NOTICE OF REGULAR MEETING OF THE CITY COUNCIL OF THE CITY OF ST. GEORGE, WASHINGTON COUNTY, UTAH

Public Notice

Public notice is hereby given that the City Council of the City of St. George, Washington County, Utah, will hold a regular meeting in the City Council Chambers at the St. George City Hall located at 61 South Main Street, St. George, Utah, on Thursday, December 18, 2025, commencing at 5:00 p.m.

The agenda for the meeting is as follows:

Call to Order
Invocation
Flag Salute

1. **Mayor's recognitions and updates.**

2. **Consent Calendar.**

   a. **Consider approval of awarding bid to TrueNorth Steel for pedestrian bridges for the Middleton Wash Trail and Lizard Wash Park projects.**

   BACKGROUND and RECOMMENDATION: This item is to award a bid to provide two pedestrian bridges for the proposed Middleton Wash Trail and Lizard Wash Park projects. Formal bids were requested for the bridges, and the City received three bids. This bid is for materials and delivery only. TrueNorth Steel is the low bidder, and staff recommends approval of awarding the bid to TrueNorth Steel in the amount of $199,740. These two projects are 2023 Trails, Parks and Recreation G.O. Bond projects and the trail is on the City's Trail Master Plan. Staff recommends approval contingent upon the associated budget amendment.

   b. **Consider approval of awarding bid to BCS Fab for pedestrian bridges for the Fort Pearce Wash Trail and Santa Clara River Trail projects.**

   BACKGROUND and RECOMMENDATION: This item is to award a bid to provide two pedestrian bridges for the proposed Fort Pearce Wash Trail and Santa Clara River Trail projects. Formal bids were requested for the bridges, and the City received three bids. This bid is for materials and delivery only. BCS Fab is the low bidder, and staff recommends approval of awarding the bid to BCS Fab in the amount of $762,526.78, contingent upon approval of the associate budget amendment. These two trail projects are 2023 Trails, Parks and Recreation G.O. Bond projects and are on the City's Trail Master Plan.

   c. **Consider approval to award Guaranteed Maximum Price (GMP) Amendment #2 to Hughes General Contractors for earthwork, retaining wall, and bleacher concrete for the Dixie Sunbowl Renovation Project.**

   BACKGROUND and RECOMMENDATION: This item is to award GMP Amendment #2 for earthwork, retaining wall, and bleacher concrete for the Dixie Sunbowl Renovation Project to Hughes General Contractors (CM/GC contractor for the project) in the amount of $4,964,376.00. Hughes General Contractors solicited

and evaluated bids for the above described work. This GMP Amendment #2 is for Hughes to provide and/or oversee earthwork, retaining walls/footings, bleacher concrete, and caissons for the Dixie Sunbowl. See attached exhibits for further explanation and cost breakdowns. Staff recommends awarding the amendment to Hughes General Contractors in the amount of $4,964,376.

d. Consider approval to award bid to Snow Canyon Construction, LLC for construction of the JC Snow Park Roller Hockey Project.

BACKGROUND and RECOMMENDATION: This item is to award a bid to construct a new roller hockey rink in JC Snow Park. This rink will be 160 feet by 75 feet and will be installed on the east side of the existing rink that measures 115 feet by 60 feet. The bid includes removals, concrete flatwork, lighting and other related work items. Formal bids were requested for the project, and the City received ten bids. After bids were received, it was determined that only the Base Bid would be awarded due to the budgeted amount for the project. Staff recommends approval of awarding the Base Bid to Snow Canyon Construction, LLC in the amount of $296,689.25.

e. Consider award of bid to Doug Hunt Construction for construction of a covered parking structure for the Energy Services building.

BACKGROUND and RECOMMENDATION: This award of bid is for a covered parking facility at the Energy Services building. The bid closed on December 5, 2025, and three bids were received. Bids were evaluated and staff recommends award of bid to Doug Hunt Construction in the amount of $135,000.

f. Consider approval to purchase a closed SCADA serial network.

BACKGROUND and RECOMMENDATION: This item is for the purchase of the Critical Schweitzer ICON Communications Equipment in the amount of $125,909.27 through a sole source purchase. The Schweitzer Engineering Laboratories (SEL) ICON equipment is a critical infrastructure purchase for the SCADA Department that provides the essential, deterministic, and highly secure wide-area connectivity required for the city's electric utility substations and control center. This purchase will replace the existing 25-year old equipment at the end of its useful life. Staff recommends approval.

g. Consider approval for a Line Extension Agreement with Dixie Power for the West Taxi Lane Extension Project.

BACKGROUND and RECOMMENDATION: This item is for a line extension agreement with Dixie Power for the West Taxi Lane extension project. The original amount was $147,030.65. Additional cost of $28,035.46 is for the temporary feed to the fuel pump station. Requires abandoning the old & pulling new permanent wire.

h. Consider approval of the payment of the NEOGOV Maintenance Contract.

BACKGROUND and RECOMMENDATION: In 2024 the City purchased NEOGOV software for HR department, which included a 5-year maintenance contract. This item is to approve the annual payments for the remainder of the contract. Staff recommends approval.

i. **Consider approval of an agreement with J&S Farms LTD for a Culinary Water Connection for Livestock and Agricultural Use.**

BACKGROUND and RECOMMENDATION: The J&S Farms property is just off of Riverside Drive east of River Rd along the Virgin River. The farm has been there for decades and uses its own source of irrigation water for all of their agricultural water needs. Their source of water is a diversion from the Virgin River, near the Fossil Falls City park. During certain times of the year, the quality of the water is such that it is not suitable for stock watering.

j. **Consider approval of a Professional Services Agreement with FFKR Architects for the design and construction administration of the remodel of the old city hall and police station.**

BACKGROUND and RECOMMENDATION: The City selected FFKR Architects through an RFP process in December 2024 to perform a needs assessment for police for the current police station and the old city hall. The recently completed programmatic design was presented to the City Council on November 13, 2025. This involves remodeling the current police station and the old city hall to expand the police campus at the 200 North location. The PSA includes design development, construction documents, plan review/permitting, bidding and construction support.

k. **Consider approval of a Professional Services Agreement with FFKR Architects for the design and construction administration of the St. George Animal Shelter Facility.**

BACKGROUND and RECOMMENDATION: This item is to approve an addendum to the existing PSA to provide for design and construction documents and services for the new Animal Shelter facility project with FFKR Architects. This includes design, development, construction documents, plan review/permitting, and construction support. Staff recommends approval contingent upon approval of the associated budget opening.

l. **Consider approval of a Professional Services Agreement with Horrocks Engineers to update the Transportation Master Plan.**

BACKGROUND and RECOMMENDATION: The Transportation Master Plan update will include travel demand modeling, traffic analysis, roadway classification evaluation, integration of bike paths, trails, and public transit, capital improvement recommendations, and cost estimating. Horrocks Engineers, which has successfully supported previous updates, will continue to provide these services. The City also received a proposal from one other firm outside the St. George area.

m. **Consider approval of a Professional Services Agreement with Stanley Consultants for the construction management services on the George Washington Boulevard Bridge.**

BACKGROUND and RECOMMENDATION: The City requested proposals from qualified Construction Management (CM) firms to provide professional oversight of the George Washington Blvd Bridge Project. Three proposals were received and Stanley Consultants was selected. They will serve as the City's representative

on the project coordinating with the City's project manager, inspectors, and other city personnel to ensure construction adheres to approved plans and specifications.

n. **Consider approval of a contract with JP Excavating to construct the George Washington Boulevard Bridge Project.**

BACKGROUND and RECOMMENDATION: The George Washington Boulevard Bridge will be 745 feet long and supported by five piers. The project includes a connecting roadway to Dixie Drive and a new signalized intersection at Crosby Drive. It also incorporates pedestrian and trail improvements, drainage systems, sidewalks, utilities, landscaping, and related work. A total of five bids were received for the project, and the two lowest bids were within 4% of each other.

o. **Consider approval of a Professional Services Agreement with Gerhart Cole for inspection services for the drilled shafts and foundation of the George Washington Boulevard Bridge Project.**

BACKGROUND and RECOMMENDATION: Gerhart Cole performed the geotechnical analysis and provided recommendations for the George Washington Blvd Bridge foundation design which included drilled shafts, footings and piers. The city would like to use their knowledge and experience in bridge construction to provide inspection services for these critical elements of the bridge.

p. **Consider approval of a fee waiver for the Downtown Farmers Market.**

BACKGROUND and RECOMMENDATION: The Downtown Farmers Market of St George is requesting a wavier of Park Use Fees and Sublicense Fees for 2026 associated with the weekly farmers market held every Saturday at Vernon Worthen Park. This market provides an outlet for over 150 small businesses to show their talents and goods throughout the year. Staff recommends approval of fee waivers for all Park Use Fees and Sublicense fees for the Downtown Farmers Market for 2026.

q. **Consider approval of a fee waiver for the Dink with Dove Pickleball Tournament sponsored by the Dove Center to be held February 27-28, 2026 at the Little Valley Pickleball Complex.**

BACKGROUND and RECOMMENDATION: The City of St George has partnered with the DOVE Center for the last 30 years to enhance community safety and wellbeing to thousands of St. George residents. The annual Dink with DOVE Pickleball Tournament creates a fun, inclusive community event that raises awareness for survivors of domestic violence and sexual assault. Funds raised through this tournament directly sustain DOVE Center's essential services, including housing, counseling, advocacy, and prevention education for more than 1,400 individuals each year. Staff recommends waiving fees for the following: 1) Special Event Permit Application Fee; 2)Pickleball courts reservations fees for both days; and 3) Up to 40 hours of City Employee time for preparation and tournament logistics.

r. **Consider approval of the minutes from the meetings held on November 6, 2025; November 13, 2025; November 18, 2025; and December 4, 2025.**

3. **Public hearing and consideration of Resolution No. 2025-029R to review and approve amendments to the Fiscal Year 2025-26 Budget.**

BACKGROUND and RECOMMENDATION: State statute requires a public hearing when changes are requested to the City's budget. Staff typically bring budget openings forward to the City Council for consideration on a quarterly basis based on changes that occur during the fiscal year. Staff recommends taking public comment and approval of the resolution.

4. **Consider approval of Resolution No. 2025-030R to amend the Master Fee Schedule for fees related to the pass through rate from the Washington County Solid Waste District.**

BACKGROUND and RECOMMENDATION: The Washington County Solid Waste District Board approved an annual 2.5% increase on garbage and BluCan services, effective January 01, 2026. Staff recommends approval of the amendment to the Master Fee Schedule to reflect the pass through rate increase from the Solid Waste District to be effective January 1, 2026.

5. **Public hearing and consideration of Ordinance No. 2025-109 to add the name 'Tech Ridge Parkway' to the existing numbered street '250 West Street' from 1190 South to 1300 South.**

BACKGROUND and RECOMMENDATION: With the construction of Tech Ridge Parkway and the intent to apply this street name from the St. George Boulevard intersection to the Black Ridge Drive intersection, this request is being made. In the segment of 250 West Street, between 1190 South and 1300 South, all addresses will continue to be assigned from 250 West Street to reduce or eliminate any potential confusion or overlapping addresses on Tech Ridge Parkway. All other addresses outside this area will be assigned from Tech Ridge Parkway.

6. **Consider approval of a Property Exchange of Real Property to Quality Development LLC for City property along Banded Ridge.**

BACKGROUND and RECOMMENDATION: This property was previously donated to the City by the developer, Quality Development LLC. The developer has requested a portion of the property be relinquished back to them in order to clean up property boundaries between the hillside and the residential lots.

7. **Consider approval of revisions to the City's Hangar lease policy.**

BACKGROUND and RECOMMENDATION: In May 2025 the Council approved the current "Non-Commercial Hangar Pad Licensing Policy." Upon further review, it is appropriate to make several revisions since publishing on the City website. The proposed revisions are for Council discussion and review. The main revision is changing "license" to "lease." The current policy refers to a "license" whereas pursuant to the Federal Aviation Administration (FAA) the proper term is a "lease." There are other revisions based on FAA guidance and staff's recommendations to simplify the policy while reserving certain terms for the hangar lease agreement.

8. **Consider approval of Ordinance No. 2025-110 amending Section 4-Construction Standards in the St. George City Standard and Specifications to address an overall update to Section 4. (Case No. 2025-ZRA-014)**

BACKGROUND and RECOMMENDATION: The last revision to Section 4 Construction Standards was June 2000. The Construction Standards are intended to guide the design and installation of general construction within the city have been identified by staff as inadequately addressing the current city standards, resulting in interpretive challenges and inconsistencies in regulatory application. This creates difficulties in the design and construction process. City staff met with Geotechnical Engineers to update Section 4 of the City Standards. The changes are in line with industry standards and current regulations. This item was heard at the November 18, 2025, Planning Commission and the Planning Commission recommended approval with a vote of 7-0.

9. **Consider approval of Ordinance No. 2025-111 approving a development agreement amendment for Kachina Cliffs Phase 1 Lot 24 and Kachina Cliffs Phase 2 Lot 38 (Case No. 2025-DAA-004)**

BACKGROUND and RECOMMENDATION: The purpose of the development agreement amendment is to allow the applicant to disturb Hillside Slope Area No Disturbance on disturbed land of Lot 24 of Kachina Cliffs Phase 1 in exchange for an equivalent portion of land undisturbed and designated as developable, on Kachina Cliffs Phase 2 Lot 38. The agreement amendment recognizes that the disturbed area on lot 24 is greater than previous Development Agreement allowed. The Planning Commission held a public hearing on December 9, 2025 to hear the request for the development agreement amendment and forwarded a positive recommendation with no further conditions.

10. **Consider approval of a Memorandum of Understanding (MOU) with Washington City regarding the 2025 St. George City Annexation Policy Plan.**

BACKGROUND and RECOMMENDATION: This MOU addresses the issues raised by Washington City regarding the City's Draft Annexation Policy Plan.

11. **Consider approval of Ordinance No. 2025-112 amending the City's General Plan to adopt an Annexation Policy Plan as an Element of the General Plan.**

BACKGROUND and RECOMMENDATION: This annexation plan was first presented to the Planning Commission on April 22, 2025. At this meeting, a public comment period was opened for affected entities to make comments. Washington City provided the only comment by an affected entity. Utah Code requires that our Annexation Policy Plan includes a statement addressing any comments made by affected entities. Please refer to page 23 of the Plan for the full statement. On May 27, 2025, the Planning Commission met to discuss this item a second time. At this meeting a public hearing was held. The Planning Commission received three comments via email and heard eight comments at the public hearing concerning this plan. The comments focused on concerns about sensitive land development, traffic impacts, the availability of water, and safety. After the public hearing, the Planning Commission discussed the policy and eventually unanimously recommended approval of this Annexation Policy Plan as presented. The Planning Commissioners ultimately recommended approval with a 6-0 vote. On June 19, 2025 a public hearing was held at the City Council meeting for this annexation policy plan. At the close of the

hearing, the council chose to make modifications to this plan and return to vote at a later date.

12. **Appointments to Boards and Commissions of the City.**

13. **Reports from Mayor, Councilmembers, and City Manager.**

14. **Request a closed meeting to discuss litigation, security, property acquisition or sale or the character and professional competence or physical or mental health of an individual.**

Christina Fernandez, City Recorder

December 12, 2025
Date

REASONABLE ACCOMMODATION: The City of St. George will make efforts to provide reasonable accommodations to disabled members of the public in accessing City programs. Please contact the City Human Resources Office, 627-4674, at least 24 hours in advance if you have special needs.

Agenda Date: 12/18/2025 **Agenda Item Number:** 2a

Subject:

Consider approval of awarding bid to TrueNorth Steel for pedestrian bridges for the Middleton Wash Trail and Lizard Wash Park projects.

Item at-a-glance:

Staff Contact: Mark Goble

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

Middleton Wash north of Arroyo Circle. Lizard Wash Park.

Item History (background/project status/public process):

This item is to award a bid to provide two pedestrian bridges for the proposed Middleton Wash Trail and Lizard Wash Park projects. Formal bids were requested for the bridges, and the City received three bids. This bid is for materials and delivery only. TrueNorth Steel is the low bidder, and staff recommends approval of awarding the bid to TrueNorth Steel in the amount of $199,740. These two projects are 2023 Trails, Parks and Recreation G.O. Bond projects and the trail is on the Citys Trail Master Plan. Staff recommends approval contingent upon the associated budget amendment.

Staff Narrative (need/purpose):

The purpose of this bid is to provide pedestrian bridges for one trail and one park project. The 80 foot span bridge is to be located over the Middleton Wash north of Arroyo Circle for Phase 1 of the proposed Middleton Wash Trail. The 110 foot span bridge is to be located over the Lizard Wash in the proposed Lizard Wash Park. The bid requested costs for five different pedestrian bridges that are to be installed at five different locations. TrueNorth Steel was the low bid on the Middleton Wash Trail and Lizard Wash Park bridges in the amount of $199,740.00. Two of the other bridges are proposed to be awarded to a different bidder. One bridge is being removed from the bid. These bridges for the proposed trail and park help connect the community to the Citys extensive trail network and provide alternate modes of transportation to travel throughout the City.

Name of Legal Dept approver: Daniel Baldwin

Budget Impact:

Cost for the agenda item: $199,740

Amount approved in current FY budget for item: Middleton Wash Trail: $600,000. Lizard Wash Park: $150,000

If not approved in current FY budget or exceeds the budgeted amount, please explain

funding source:

Recreation General Obligation Project Funds will be reallocated towards these two projects.

Description of funding source:

Recreation General Obligation Project Fund

Recommendation (Include any conditions):

Approval.

Attachments

Pedestrian Bridges for City Trails and Parks
Inquiry No. 25-249
12/9/2025

BID TABULATION									
				TRUENORTH STEEL		CONTECH BRIDGE		BCS FAB	
ITEM NO.	ITEM DESCRIPTION	EST. QTY.	UNIT	AMOUNT	EST. LEAD TIME	AMOUNT	EST. LEAD TIME	AMOUNT	EST. LEAD TIME
1	80 FOOT SPAN PREFABRICATED PEDESTRIAN BRIDGE, 10 FEET WIDE, MIDDLETON WASH TRAIL	1	LUMP	$ 75,199.00	April 1, 2026	$ 90,900.00	April 1, 2026	$ 140,512.86	March 1, 2026
2	110 FOOT SPAN PREFABRICATED PEDESTRIAN BRIDGE, 10 FEET WIDE, LIZARD WASH PARK	1	LUMP	$ 124,541.00	July 1, 2026	$ 128,500.00	July 1, 2026	$ 167,089.64	June 1, 2026
3	190 FOOT SPAN PREFABRICATED PEDESTRIAN BRIDGE, 10 FEET WIDE, FORT PEARCE WASH TRAIL	1	LUMP	$ 450,623.00	June 1, 2026	$ 380,600.00	June 1, 2026	$ 376,083.48	May 1, 2026
4	200 FOOT SPAN PREFABRICATED PEDESTRIAN BRIDGE, 10 FEET WIDE, SANTA CLARA RIVER TRAIL	1	LUMP	$ 458,750.00	September 1, 2026	$ 458,800.00	September 1, 2026	$ 386,443.30	August 1, 2026
5	10 FOOT SPAN PREFABRICATED PEDESTRIAN BRIDGE, 8 FEET WIDE, CURLY HOLLOW ADVENTURE PARK	1	LUMP	$ 27,421.00	June 1, 2026	$ 28,500.00	June 1, 2026	$ 17,564.11	May 1, 2026
	TOTAL AMOUNT			**$ 1,136,534.00**		**$ 1,087,300.00**		**$ 1,087,693.39**	
	BIT ITEMS 1 & 2 TOTAL AMOUNT			**$ 199,740.00**		**$ 219,400.00**		**$ 307,602.50**	

Agenda Date: 12/18/2025 **Agenda Item Number:** 2b

Subject:

Consider approval of awarding bid to BCS Fab for pedestrian bridges for the Fort Pearce Wash Trail and Santa Clara River Trail projects.

Item at-a-glance:

Staff Contact: Mark Goble

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

Fort Pearce Wash next to the St. George Golf Club. Santa Clara River next to Cottonwood Cove Park.

Item History (background/project status/public process):

This item is to award a bid to provide two pedestrian bridges for the proposed Fort Pearce Wash Trail and Santa Clara River Trail projects. Formal bids were requested for the bridges, and the City received three bids. This bid is for materials and delivery only. BCS Fab is the low bidder, and staff recommends approval of awarding the bid to BCS Fab in the amount of $762,526.78, contingent upon approval of the associate budget amendment. These two trail projects are 2023 Trails, Parks and Recreation G.O. Bond projects and are on the Citys Trail Master Plan.

Staff Narrative (need/purpose):

The purpose of this bid is to provide pedestrian bridges for two trail projects. The 190 foot span bridge is to be located over the Fort Pearce Wash next to the St. George Golf Club for Phase 1 of the proposed Fort Pearce Wash Trail. The 200 foot span bridge is to be located over the Santa Clara River next to the Cottonwood Cove Park for a phase of the proposed Santa Clara River Trail. The bid requested costs for five different pedestrian bridges that are to be installed at five different locations. BCS Fab was the low bid on the Fort Pearce Wash Trail and Santa Clara River Trail bridges in the amount of $762,526.78. Two of the other bridges are proposed to be awarded to a different bidder. One bridge is being removed from the bid. These bridges for the proposed trails help connect the community to the Citys extensive trail network and provide alternate modes of transportation to travel throughout the City.

Name of Legal Dept approver: Daniel Baldwin

Budget Impact:

Cost for the agenda item: $762,526.78

Amount approved in current FY budget for item: $0.00

If not approved in current FY budget or exceeds the budgeted amount, please explain
funding source:

Recreation General Obligation Project Funds will be reallocated towards these two projects.

Description of funding source:

Recreation General Obligation Project Fund

Recommendation (Include any conditions):

Approval.

Attachments

Pedestrian Bridges for City Trails and Parks
Inquiry No. 25-249
12/9/2025

BID TABULATION										
				BCS FAB		CONTECH BRIDGE		TRUENORTH STEEL		
ITEM NO.	ITEM DESCRIPTION	EST. QTY.	UNIT	AMOUNT	EST. LEAD TIME	AMOUNT	EST. LEAD TIME	AMOUNT	EST. LEAD TIME	
1	80 FOOT SPAN PREFABRICATED PEDESTRIAN BRIDGE, 10 FEET WIDE, MIDDLETON WASH TRAIL	1	LUMP	$ 140,512.86	March 1, 2026	$ 90,900.00	April 1, 2026	$ 75,199.00	April 1, 2026	
2	110 FOOT SPAN PREFABRICATED PEDESTRIAN BRIDGE, 10 FEET WIDE, LIZARD WASH PARK	1	LUMP	$ 167,089.64	June 1, 2026	$ 128,500.00	July 1, 2026	$ 124,541.00	July 1, 2026	
3	190 FOOT SPAN PREFABRICATED PEDESTRIAN BRIDGE, 10 FEET WIDE, FORT PEARCE WASH TRAIL	1	LUMP	$ 376,083.48	May 1, 2026	$ 380,600.00	June 1, 2026	$ 450,623.00	June 1, 2026	
4	200 FOOT SPAN PREFABRICATED PEDESTRIAN BRIDGE, 10 FEET WIDE, SANTA CLARA RIVER TRAIL	1	LUMP	$ 386,443.30	August 1, 2026	$ 458,800.00	September 1, 2026	$ 458,750.00	September 1, 2026	
5	10 FOOT SPAN PREFABRICATED PEDESTRIAN BRIDGE, 8 FEET WIDE, CURLY HOLLOW ADVENTURE PARK	1	LUMP	$ 17,564.11	May 1, 2026	$ 28,500.00	June 1, 2026	$ 27,421.00	June 1, 2026	
	TOTAL AMOUNT			**$ 1,087,693.39**		**$ 1,087,300.00**		**$ 1,136,534.00**		
	BIT ITEMS 3 & 4 TOTAL AMOUNT			**$ 762,526.78**		**$ 839,400.00**		**$ 909,373.00**		

Agenda Date: 12/18/2025 **Agenda Item Number:** 2c

Subject:

Consider approval to award Guaranteed Maximum Price (GMP) Amendment #2 to Hughes General Contractors for earthwork, retaining wall, and bleacher concrete for the Dixie Sunbowl Renovation Project.

Item at-a-glance:

Staff Contact: Mark Goble

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

150 South 400 East

Item History (background/project status/public process):

This item is to award GMP Amendment #2 for earthwork, retaining wall, and bleacher concrete for the Dixie Sunbowl Renovation Project to Hughes General Contractors (CM/GC contractor for the project) in the amount of $4,964,376.00. Hughes General Contractors solicited and evaluated bids for the above described work. This GMP Amendment #2 is for Hughes to provide and/or oversee earthwork, retaining walls/footings, bleacher concrete, and caissons for the Dixie Sunbowl. See attached exhibits for further explanation and cost breakdowns. Staff recommends awarding the amendment to Hughes General Contractors in the amount of $4,964,376.

Staff Narrative (need/purpose):

The purpose of the award is to finalize the second GMP Amendment for the Dixie Sunbowl Renovation project with the current CM/GC contractor, Hughes General Contractors. This GMP amendment is for the second phase of development which includes earthwork, retaining wall, and bleacher concrete. The first phase of development included demolition and bleacher design/acquisition. Additional GMP amendments will be required as the project progresses through construction and will be presented to City Council for approval.

Name of Legal Dept approver: Daniel Baldwin

Budget Impact:

Cost for the agenda item: $4,964,376

Amount approved in current FY budget for item: $8,900,000

If not approved in current FY budget or exceeds the budgeted amount, please explain funding source:

Approved.

Description of funding source:

Recreation General Obligation Project Fund

Recommendation (Include any conditions):

Approval.

Attachments

HUGHES
GENERAL CONTRACTORS

December 9, 2025

Mr. Mark Goble
City of St. George
175 East 200 North
St. George, Utah 84770

Re: Dixie Sun Bowl Project – Bid Package #2 – Earthwork, Retaining Wall & Bleacher Concrete
Issue: Proposed Guaranteed Maximum Price (GMP)

Mr. Goble

I just want to express my appreciation to you and all your team's efforts throughout the Pre-Construction phase of this project in assisting with all the details for a successful bid of the Dixie Sun Bowl – Bid Package #2 – Earthwork, Retaining Wall & Bleacher Concrete.

We have confirmed pricing and scope associated with the apparent responsible low bidders. While there are still some questions regarding subsequent scope(s) of work as it relates to this bid package (including but not limited to the following: building concrete associated with the future buildings; e.g. restroom building(s), concession building(s), stair towers, plaza, courtyard and frontage improvements along 100 South & 400 East, etc.; we have confirmed that the proposed bid(s) and scope(s) of work coincides with the prepared bid documents and information associated with the plans prepared by MRW Design Associates. (see below for additional information on this item).

Please note that ***ALL BIDDERS EXCLUDED*** any market increases, fuel escalation costs, newly implemented tariffs/taxes and/or market volatility, etc. If these type of increases occur, we will notify you immediately for further evaluation and/or review. Please note that Bid Package #2 – Earthwork, Retaining Wall & Bleacher Concrete GMP also reflects the following special conditions and/or allowances: These are as follows:

1- The concrete elements associated with this phase of construction are extremely intricate in detail and complexity. We have been coordinating closely with the approved arena bleacher subcontractor on the exact locations of these required concrete elements and their relationship to the master plans prepared by MRW Design Associates. Currently, the structural calculations are continuing to be verified by the structural engineer(s), but these calculations are not yet complete and/or finalized. While the construction documents have identified the currently "known" concrete elements required for the structural support of the bleachers, we also know that history has proven that there may be some additional concrete caissons and/or other structural supporting members required to complete this assembly when the finalized structural calculations are completed. We **HAVE NOT** currently carried any additional allowances or funds to cover this unidentified scope of work. Consequently, if there are additional caissons required, they will need to be added to the contract via contract adjustment.

Corporate Office
900 No. Redwood Road
P.O. Box 540700
North Salt Lake, UT 84054
Fax (801) 295-0530
Phone: (801) 292-1411

St. George Office
62 West Industrial Road
Washington, UT 84780
Fax (435) 628-0328
Phone: (435) 628-0047

2- In conjunction with Item #1 above, we will have a similar situation with the steel reinforcement that may be required for un-engineered concrete elements. Once all structural engineering calculations have been completed for the bleacher and/or other construction elements, we can finalize the reinforcement requirements associated with any of these undesigned concrete/arena components. We **HAVE NOT** currently carried any additional allowances or funds to cover this unidentified scope of work. Consequently, if additional steel is required, this scope of work will need to be added to the contract via a contract adjustment.

3- While we have made every effort to review the existing soils report and account for the "known" conditions, there still may be unidentified elements; i.e. pockets of unsuitable and contaminated soils (which may require export and removal and/or importing, placement and compaction of suitable soils), underground water, saturated soils, etc. which might require an underground dewatering system, soils stabilization, etc. Currently, we **HAVE NOT** carried any additional allowances or funds to cover any of these unknown existing conditions; consequently, if such conditions do surface, they will need to be added to the contract via a contract adjustment.

4- We understand that Civil Science has been contracted to design the plaza/courtyard directly east of the new arena and along 100 South and 400 East frontages. While there is an established construction demarcation line(s) of where the construction limit lines start and/or stop for this undesigned scope(s) of work by Civil Science and where the contracted work starts/stops as designed by MRW Design Associates for the arena scope of work, there still exists the possibility that there may be scope(s) of work that potentially could be missed between the two designing entities. Currently, we **HAVE NOT** carried any additional allowances or funds to cover any of these potential construction elements; consequently, if such conditions do surface, they will need to be added to the contract, via a contract adjustment.

5- At this point we understand that there are **no additional requirements** for any added scope of work and/or infrastructure improvements (including but not limited to the following: existing concrete/asphalt improvements, main utility and/or service line adjustments, upgrades and/or enhancements, utility relocation(s), etc.) on corresponding frontages of 100 South and/or 400 East beyond that which is indicated in the contract documents prepared by MRW Design. Consequently, if there are added scope(s) of work subsequent to what is currently identified in the MRW Design documents, this scope of work and/or scope(s) of work will need to be added to the contract, via a contract adjustment.

6- This proposal **DOES INCLUDE** an up-dated means and method procedure for backfilling adjacent to high retaining walls; specifically, we are currently planning on providing a "chimney" type gravel drainage system from the top of the retaining wall and directly tying into the dewatering system at the base of the retaining wall/footings. This will help ensure a better drainage, collection and disbursement of the "collected" water and better transition away from the existing wall.

7- This proposal **DOES NOT** include any costs associated with the "soft" costs of the project; ie. testing, inspections, permits, fees, architectural services, FF&E, etc. It is our understanding that these are being taken care of directly by St. George City.

8- Currently, the GMP reflects that **sales taxes are included**. Upon receipt of an approved and executed TC-721 Tax Exempt Form, contract amount can then be adjusted to reflect the sales tax requirements.

9- This proposal **DOES NOT** include any contingencies or other allowances. Consequently, if any other scope or work is desired and/or other enhancements beyond what is currently outlined in the documents prepared by MRW Design, this additional scope and/or scope(s) of work, enhancements, improvements, etc. would need to be added to the contract, via a contract adjustment.

10- Included in this GMP document is an up-dated critical path construction schedule. Please note that we have a "place-holder" for the announcer booth construction activity; however we have not assigned any specific time durations to this activity until we receive up-dated construction documents reflecting the details associated with fabrication, delivery, construction, erection and installation of the Announcers Booth.

A summary of the proposed contract GMP for Bid Package #2 – Earthwork, Retaining Walls/Footings, Bleacher Concrete & Caissons for the New Dixie Sun Bowl is as follows:

Bid Pack #2 – Earthwork, Retaining Wall/Bleacher Concrete/Caissons (Attachment A) = **$ 4,964,376**

TOTAL PROPOSED GMP for Bid Package #2 –Earthwork, Retaining Wall & Bleacher Concrete & Caissons .....$ 4,964,376

If you have any other questions, comments, etc., please call.

Sincerely,
Hughes General Contractors, Inc.

Gene Madsen
Vice President

Enclosures:

- Dixie Sun Bowl - Overall Budget Projections **(Attachment A)**
- Dixie Sun Bowl - GMP Bid Package #2- Earthwork Retaining, Bleacher Concrete & Caissons Detail Breakdown **(Attachment B)**
- Dixie Sun Bowl – Hughes Self Perform Bid – 24 hrs Advance of Bid Date **(Attachment C)**
- Dixie Sun Bowl – Hughes Self Perform Bid – Quantity Breakdown **(Attachment C1)**
- Dixie Sun Bowl – MRW Design Doc's Outlining Concrete Breakdown Specific With Area Location & Associated Details **(Attachment C2)**
- Dixie Sun Bowl - Proposed Subcontractor List for Bid Package #2 **(Attachment D)**
- Dixie Sun Bowl – Proposed Added AV Scope Budget Projection **(Attachment E)**
- Dixie Sun Bowl – Proposed Added Lighting Scope Budget Projection **(Attachment F)**
- Dixie Sun Bowl – Bleacher International Change Breakdown Summary **(Attachment G)**
- Dixie Sun Bowl–Hughes GC Proposed Budget Approach (Based on single rendering) **(Attachment H)**
- Dixie Sun Bowl – Earthwork & Caissons Bid Summary **(Attachment I)**
- Dixie Sun Bowl – Whitaker Construction (Earthwork Subcontractor Bid) **(Attachment J)**
- Dixie Sun Bowl – Suncore (Earthwork Subcontractor Bid) **(Attachment K)**
- Dixie Sun Bowl – Creative Excavation (Earthwork Subcontractor Bid) **(Attachment L)**
- Dixie Sun Bowl – Advance Shoring/Underpinning (Concrete Caissons Bid)**(Attachment M)**
- Dixie Sun Bowl – Bid Package #1 – Demolition Package **(Attachment N)**
- Dixie Sun Bowl – Hughes GC Critical Path Overall Construction Schedule **(Attachment O)**

ATTACHMENT A

HUGHES
GENERAL CONTRACTORS

Dixie Sun Bowl Overall Budget Status 12-9-2025

COMMITTED		
MRW Design Fees	$402,000.00	
Bleachers International (Original Bid)	$2,321,993.00	
Bleachers Intntl (Revised Scope/Off-set with Earthwork)	$493,320.00	Attachment G
(see attached breakdown in "Green")		
Added Bleacher Scope Mod's & Unforeseen Conditions	$531,488.00	Attachment G
(see attached breakdown in "Orange")		
Bid Package #1 - Demolition	$422,924.00	Attachment N
Bid Package #2 - Earthwork, Retaining & BleacherConc	$4,964,376.00	Attachment B
Committed-to-date	**$9,136,101.00**	
REMAINING		
Pre-Construction Fee for the Project	$15,000.00	
Bid Package #3 - Site Utilities ALLOWANCE	$603,102.00	
AV Package ALLOWANCE Added Scope	$129,290.00	Attachment E
Lighting Package ALLOWANCE Added Scope	$326,994.00	Attachment F
Projected CM/GC Fee for Remaining Scope	$39,513.00	
Announcer Booth ALLOWANCE	$250,000.00	
Remaining-to-date	**$1,363,899.00**	
Subtotal Commited & Remaining to Date Total	**$10,500,000.00**	

Contemplated Added Scope Budget Items	
Plaza/Courtyard/100 South & 400 East Frontages (Added Scope - Projected)	$1,200,000.00
Stair Towers	$700,000.00
Restroom Buildings	$1,332,000.00
Big Screen	$150,000.00
Project CM/GC Fee for Plaza/Restrm Bldg & Big Scrn	$101,460.00
Subtotal Contemplated Added Scope Budget Items	**$3,483,460.00**
Total Committed & Contemplated Budget Scope	**$13,983,460.00**

Corporate Office
900 No. Redwood Road
P.O. Box 540700
North Salt Lake, UT 84054
Fax (801) 295-0530
Phone: (801) 292-1411

St. George Office
62 West Industrial Road
Washington, UT 84780
Fax (435) 628-0328
Phone: (435) 628-0047

HUGHES
GENERAL CONTRACTORS

Dixie Sunbowl - Concrete & Earthwork Bid Package
Initial
St George

December 9, 2025

Total Building Area (SF): 0

DESCRIPTION	TOTAL
01 00 00 GENERAL REQUIREMENTS ***	$498,025
31 00 00 EARTHWORK	$1,330,171
32 00 00 EXTERIOR IMPROVEMENTS	$2,991,587
Base Estimate Cost	**$4,819,783**

FEES		TOTAL
Fee for Overhead	1.50%	$72,297
Fee for Profit	1.50%	$72,297
Base Estimate Fees		**$144,593**

BASE ESTIMATE TOTAL	$4,964,376

***** This GMP includes the balance of the General Conditions as per Hughes fee proposal**

HUGHES
GENERAL CONTRACTORS

Dixie Sunbowl - Concrete & Earthwork Bid Package
Initial
St George

December 9, 2025

Total Building Area (SF): 0

DESCRIPTION	QUANTITY	UNIT	TOTAL
01 00 00 GENERAL REQUIREMENTS			
General Conditions	1.00 ls	$498,025.00	$498,025
TOTAL: 01 00 00 GENERAL REQUIREMENTS			**$498,025**
31 00 00 EARTHWORK ATTACHMENTS I THRU L			
Earthwork	1.00 ls	$1,066,163.00	$1,066,163
Subcontractor: Whitaker Consruction ATTACHMENT J			
Caissons	1.00 ls	$264,008.00	$264,008
Subcontractor: Advanced Shoring ATTACHMENT M			
TOTAL: 31 00 00 EARTHWORK			**$1,330,171**
32 00 00 EXTERIOR IMPROVEMENTS ATTACHMENT C THRU C2 AND M			
Site Concrete	1.00 ls	$2,991,587.00	$2,991,587
Subcontractor: Hughes GC			
TOTAL: 32 00 00 EXTERIOR IMPROVEMENTS			**$2,991,587**

HUGHES
GENERAL CONTRACTORS

Dixie Sunbowl - Concrete & Earthwork Bid Package
Initial
St George

December 9, 2025

Total Building Area (SF): 0

DESCRIPTION	TOTAL
01 00 00 GENERAL REQUIREMENTS ***	$498,025
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TOTAL: 01 00 00 GENERAL REQUIREMENTS			**$498,025**
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Earthwork *Subcontractor: Whitaker Consruction*	1.00 ls	$1,066,163.00	$1,066,163
Caissons *Subcontractor: Advanced Shoring*	1.00 ls	$264,008.00	$264,008
TOTAL: 31 00 00 EARTHWORK			**$1,330,171**
32 00 00 EXTERIOR IMPROVEMENTS			
Site Concrete *Subcontractor: Hughes GC*	1.00 ls	$2,991,587.00	$2,991,587
TOTAL: 32 00 00 EXTERIOR IMPROVEMENTS			**$2,991,587**

5. BID FORM

Bid to: Hughes General Contractors, Inc.
900 North Redwood Road
North Salt Lake, Utah 84054
Fax: 801.295.0530
Email: bids@hughesgc.com

Project: **Sun Bowl Renovation**
150 South 400 East
St. George, Ut 84770

BIDDER INFORMATION:

Firm Name: Hughes General Contractors, Inc
Street Address: 900 North Redwood Road
City, State Zip: North Salt Lake, UT, 84054
Contractor License #: 5032616-5501

Contact Name: Gene Madsen
Phone #: 801-292-1411
Email: gene@hughesgc.com

ADDENDA ACKNOWLEDGED: N/A

BASE BID (refer to section 6 of the Bid Manual for Work Scope descriptions):

Work Scope #:	*Description:*	*Amount*
3-1	Site Concrete	$ 2,991,587
		$
		$

Excludes: concrete caissons, restrooms, announcers booths, and future buildings

Total - BASE BID $

ALTERNATES (see specs/drawings for descriptions):

	$ N/A	ADD/DEDUCT
	$ N/A	ADD/DEDUCT

UNIT PRICES (as requested in Work Scope documents):

Description:	*Cost/Unit*
	$ N/A /
	$ N/A /

BID REQUIREMENTS:

- Base Bid pricing must be based upon materials specified (or otherwise allowed by spec.) However, substitutions of specified materials may be proposed, and may be done so in conjunction with the submittal of the bid. Such substitutions shall be noted in the 'SUBSTITUTIONS/VOLUNTARY ALTERNATES' section of this Bid Form.
- Work outlined in bid documents shall be complete by 12/31/2026.
- Liquidated damages for this portion of the work are $500.00 per calendar day.

SUBCONTRACTOR QUALIFICATIONS:

- After bids are received from suppliers and subcontractors, the CM/GC may request additional information regarding qualifications including a letter from a bidder's surety company with specific requirements outlined by the CM/GC. Failure to comply with providing the requirements outlined and/or submission of the letter within 48 hours of request by the CM/GC may result in the bid(s) being nonresponsive. At the option of the owner or general

contractor a Performance and Payment Bond may be required and bond costs added to the total bid amount. The undersigned agrees to execute the contract within five (5) days and if requested deliver Performance and Payment Bond in the prescribed form in the amount of 100% of the contract price for faithful performance of the contract. Cost of Payment and Performance Bond $_____

- Please provide the following information, this will be used to evaluate bids. Failure to provide this information may result in this bid being nonresponsive.

Number of Employees: 2024: 2023: 2022: 2021: 2020:

Past projects - List projects completed within the last 5 years by your organization (attach separate sheet if needed).

Project	*Dates*	*Contract Amount*	*Reference Contact & Phone*
	-		
	-		
	-		
	-		

Current Workload - List projects which your organization has in progress, under contract, or scheduled. Under dates, list scheduled start and scheduled completion dates of each project (attached separate sheet if needed).

Project	*Dates*	*Contract Amount*	*Reference Contact & Phone*
	-		
	-		
	-		
	-		

SUBSTITUTIONS/VOLUNTARY ALTERNATES:

The following substitutions of materials and/or equipment are proposed (attach additional pages if needed):

Description:	*Amount*
	$ _____ ADD/DEDUCT
	$ _____ ADD/DEDUCT

By its signature, the bidder certifies that it has reviewed all pertinent documents (Hughes' Bid Manual, Specifications, Drawings, and Addenda) and has included all pertinent costs (i.e. labor, materials, equipment, overhead, etc.) for the work scopes bid. This bid shall remain valid for sixty (60) days after the bid opening.

Hughes General Contractors, Inc
Name of Bidder (Company Name)

_____ 12/01/25
Authorized Signature Date

Gene Madsen
Print Name

HUGHES
GENERAL CONTRACTORS, INC.

Dixie Sunbowl
Concrete Bid Package Summary
12/5/25

Description	Qty	Units	RATE	Total	Remarks
Footings	1	ls	783,623.00	$ 783,623.00	See attached drawings for layout
Piers & Columns	1	ls	270,073.00	$ 270,073.00	See attached drawings for layout
Retaining Walls	1	ls	1,565,403.00	$ 1,565,403.00	See attached drawings for layout
Slabs, Stairs, and Ramps	1	ls	372,488.00	$ 372,488.00	See attached drawings for layout
			TOTAL COST	$2,991,587.00	

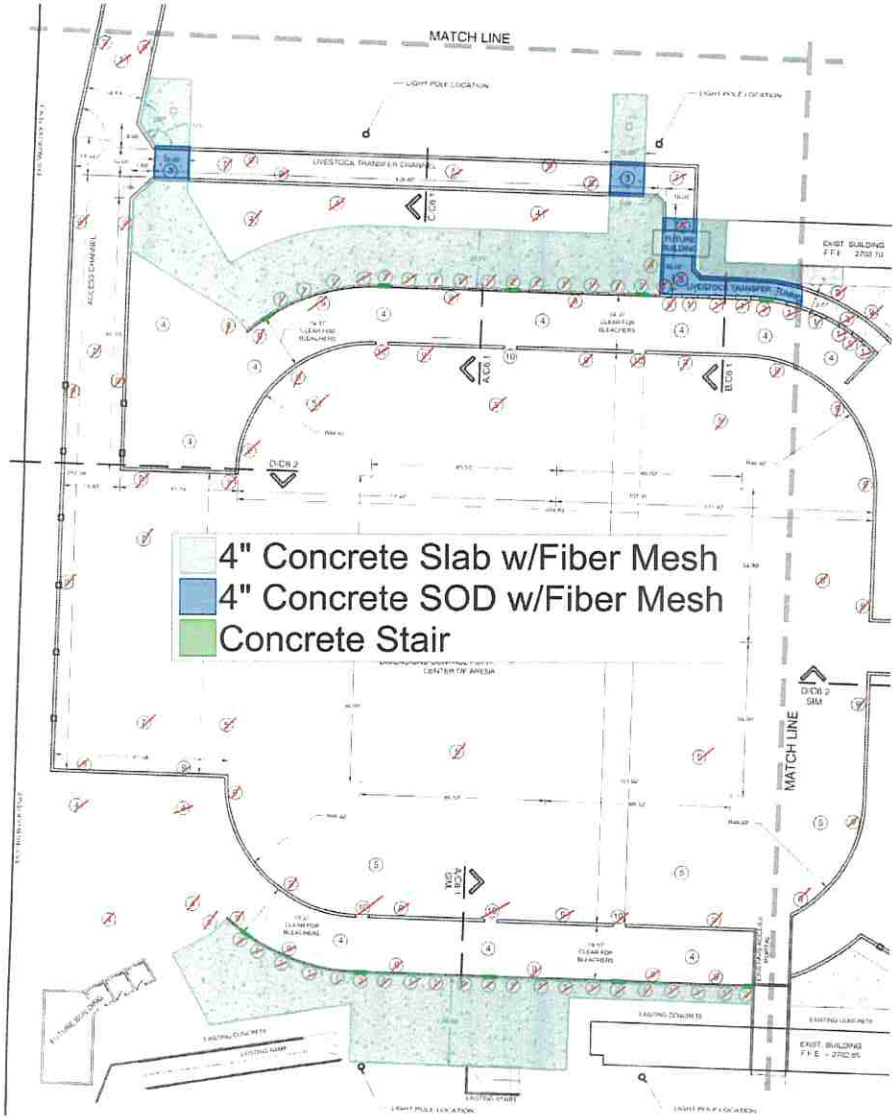
Ready-Mix Quantities

Description	Qty	Units	RATE	Total	Remarks
Footings	1,087	cy	$ 197.79	$ 214,997.73	See attached Sunroc ready-mix proposal
Piers & Columns	69	cy	$ 197.79	$ 13,647.51	
Retaining Walls	768	cy	$ 197.79	$ 151,902.72	
Slabs, Stairs, and Ramps	232	cy	$ 197.79	$ 45,887.28	
			TOTAL READY-MIX COST	$426,435.24	This cost is included above

Notes

Concrete for caissons, restroom building, announcer's booth(s), and future buildings are not included in this proposal

ATTACHMENT C2



WEST SIDE SITE PLAN

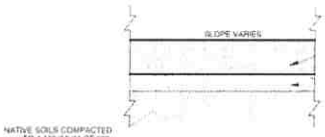
SCALE: 1" = 20'

LEGEND

NEW CONCRETE SURFACE
4" THICK WITH FIBER MESH REINFORCEMENT

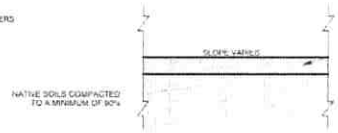
EXISTING CONCRETE TO BE REMOVED
SAWCUT EDGES AS NEEDED

1. RAISED SECTION OF RETAINING WALL FOR WHEEL STOP. SEE C4 SHEETS
2. TOP AISLE STEP IN CONCRETE. SEE C4 SHEETS AND COORDINATE WITH BLEACHERS
3. CONCRETE SLAB OVER OPENING BELOW. SEE STRUCTURAL SHEETS
4. LEVEL GRADED EXPOSED NATIVE SOIL UNDER BLEACHERS
5. ARENA SOILS SECTION AS PER DETAIL A/C2.1
7. PRACTICAL SOILS SECTION AS PER DETAIL B/C2.1
8. PROVIDE THICKENED EDGE SLAB TO CAPTUE SLOPE. SEE GRADING PLAN
9. CONCRETE RETAINING WALL. SEE C4 SHEETS
10. AISLE OPENING IN ARENA WALL. COORDINATE WITH BLEACHERS. FUTURE GATE



ARENA SOILS SECTION

DETAIL "A"



TYP. PRACTICAL SOILS SECTION

DETAIL "B"

SITE CONCRETE SPECIFICATION

1. SITE CONCRETE SHALL MEET THE SPECIFICATIONS AS STATED IN THE GENERAL STRUCTURAL NOTES. SEE STRUCTURAL SHEETS

PROPERTY INFO

PROPERTY ADDRESS – PARCEL SG-109A
150 S 400 E
ST GEORGE, UTAH 84770

OWNER / DEVELOPER
CITY OF ST. GEORGE
175 E 200 N
ST GEORGE, UT 84770
PHONE (435) 627-4300

Call Before You Dig

SITE PLAN NOTES

1. ALL PROPERTY CORNERS SHALL BE STAKED PRIOR.
2. THE CONTRACTOR IS REQUIRED TO CALL THE UTE FOR INSPECTION OF ALL IMPROVEMENTS RELATED TO THIS PROJECT.
3. THE CONTRACTOR IS REQUIRED TO OBTAIN AN ENCROACHMENT PERMIT FOR ANY WORK DONE IN A PUBLIC RIGHT OF WAY.
4. ANY NECESSARY MODIFICATIONS TO APPROVED DESIGN PLANS SHALL BE APPROVED BY THE DESIGN ENGINEER AND CITY PRIOR TO CONSTRUCTION.
5. ALL WORK SHALL BE CONTAINED ON THE SUBJECT SITE UNLESS NO STORING OR CONSTRUCTION ACTIVITY SHALL OCCUR OFF THE APPROVED LOT SITE AREA.
6. THE CONTRACTOR SHALL PROVIDE A TEMPORARY TRASH ENCLOSURE ON SITE DURING ALL CONSTRUCTION ACTIVITIES TO CONTAIN DEBRIS AND PREVENT AIRBORNE LITTERING OFF SITE.
7. A WATER TRUCK SHALL BE USED ON SITE TO WET DOWN ALL EARTHWORK AND CONTROL AIRBORNE PARTICLES DUST.
8. UNLESS NOTED OTHERWISE ON THESE PLANS, ALL CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE AND ALL RELATED UTAH STATE CODES AND BOOKS AS ADMINISTERED BY ST. GEORGE CITY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF AND PROTECTION OF ALL EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION.
10. ALL EXCAVATIONS AND GRADING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ST. GEORGE CITY, SPECIFICALLY APPENDIX J OF THE INTERNATIONAL BUILDING CODE.
11. OWNER/CONTRACTOR SHALL INSTALL AN INFORMATIONAL SIGN ON SITE BEFORE THE COMMENCEMENT OF CONSTRUCTION. SIZE OF SIGN, SIZE OF LETTERING AND PLACEMENT LOCATION SHALL BE APPROVED BY ST. GEORGE CITY PRIOR TO INSTALLATION. SIGN SHALL LIST PROJECT NAME, CONTRACTOR COMPANY NAME, CONTRACTOR PHONE CONTACT INFORMATION AND GRADING PERMIT NUMBER.
12. A MANDATORY PRE-CONSTRUCTION MEETING WILL BE REQUIRED ON ALL PROJECTS PRIOR TO ANY GRUBBING, GRADING OR CONSTRUCTION ACTIVITIES. THE PERMIT HOLDER WILL BE REQUIRED TO NOTIFY ALL DEVELOPMENT SERVICES INSPECTORS.
13. ALL OBJECTS SHALL BE KEPT OUT OF THE SIGHT DISTANCE CORRIDORS THAT MAY OBSTRUCT UNINTERRUPTED VIEW.

GRADING & RETAINING WALL PLAN SET SHEET INDEX

SHEET	SHEET DESCRIPTION
C2	COVER SHEET & WEST SIDE SITE PLAN
C2.2	EAST SIDE SITE PLAN
C2.3	NORTH SIDE SITE PLAN
C2.4	SITE PLAN WITH BLEACHER OVERLAY
C3	WEST SIDE GRADING PLAN
C3.2	EAST SIDE GRADING PLAN
C3.3	NORTH SIDE GRADING PLAN
C4	WEST SIDE RETAINING WALL PLAN
C4.2	EAST SIDE RETAINING WALL PLAN
C4.3	NORTH SIDE RETAINING WALL PLAN
C5.1	EROSION CONTROL PLAN
C6	GRADING SECTIONS
C6.2	GRADING SECTIONS
S1.1	STRUCTURAL NOTES
S2	OVERHEAD SIGN STRUCTURE
S8	STRUCTURAL DETAILS

8.22.24
24018
1" = 20'
J J M

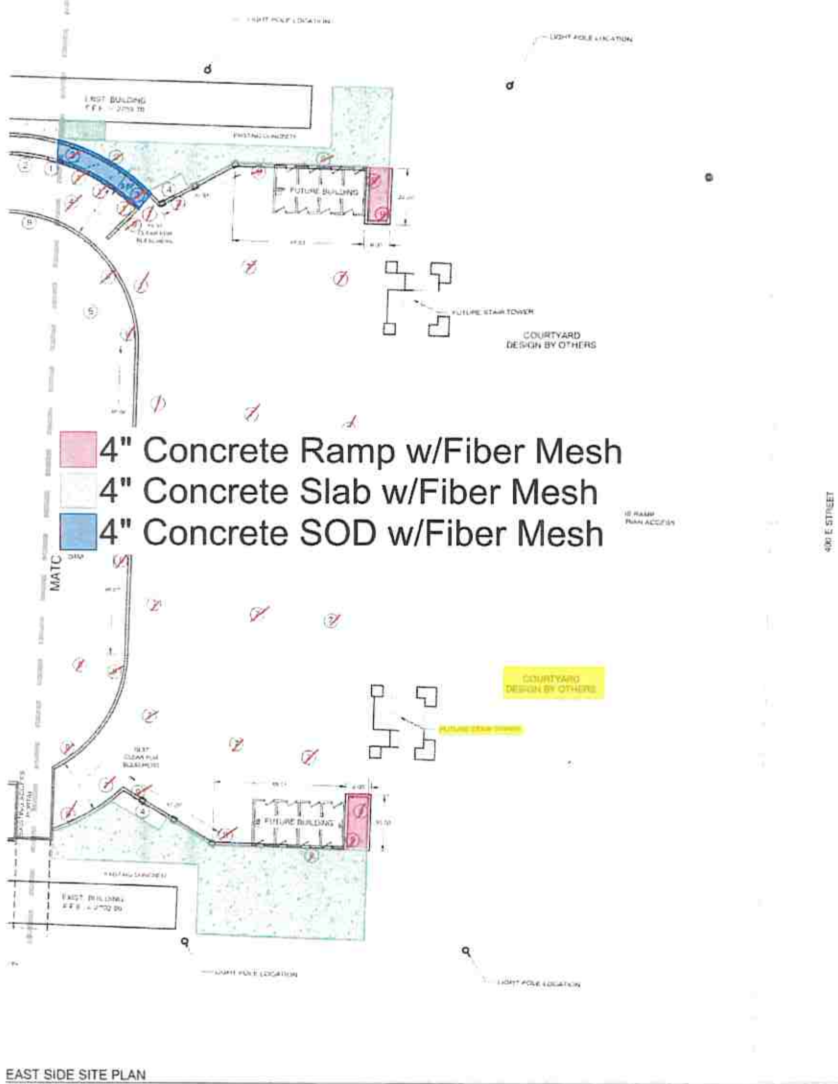
MRW DESIGN ASSOCIATES INC
ARCHITECTURE & CONSULTING ENGINEERS

73 EAST 100 SOUTH
P.O. BOX 2775
ST. GEORGE, UTAH 84770
(435) 628-2377 (435) 673-3580 fax
www.mrwdesign.com

COVER SHEET & WEST SIDE SITE PLAN

SUNBOWL REDEVELOPMENT - GRADING & RETAINING WALLS
THE CITY OF ST. GEORGE
ST. GEORGE UTAH

C2.1



EAST SIDE SITE PLAN

LEGEND

- NEW CONCRETE SURFACE 4" THICK WITH FIBER MESH REINFORCEMENT
- EXISTING CONCRETE TO BE REMOVED SAWCUT EDGES AS NEEDED

1. RAISED SECTION OF RETAINING WALL FOR WHEEL STOP. SEE C4 SHEETS
2. TOP AISLE STEP IN CONCRETE. SEE C4 SHEETS AND COORDINATE WITH BLEACHERS
3. CONCRETE SLAB OVER OPENING BELOW SEE STRUCTURAL SHEETS
4. LEVEL GRADED EXPOSED NATIVE SOIL UNDER BLEACHERS
5. ARENA SOILS SECTION AS PER DETAIL A-C2.1
7. PRACTICAL SOILS SECTION AS PER DETAIL B-C2.1
8. PROVIDE THICKENED EDGE SLAB TO CAPTUE SLOPE. SEE GRADING PLAN
9. CONCRETE RETAINING WALL. SEE C4 SHEETS

SITE CONCRETE SPECIFICATION

1. SITE CONCRETE SHALL MEET THE SPECIFICATIONS AS STATED IN THE GENERAL STRUCTURAL NOTES. SEE STRUCTURAL SHEETS

SITE PLAN NOTES

1. ALL PROPERTY CORNERS SHALL BE STAKED/PINNED.
2. THE CONTRACTOR IS REQUIRED TO CALL THE CITY FOR INSPECTION OF ALL IMPROVEMENTS RELATED TO THIS PROJECT.
3. THE CONTRACTOR IS REQUIRED TO OBTAIN AN ENCROACHMENT PERMIT FOR ANY WORK DONE IN A PUBLIC RIGHT OF WAY.
4. ANY NECESSARY MODIFICATIONS TO APPROVED DESIGNS/PLANS SHALL BE APPROVED BY THE DESIGN ENGINEER AND CITY PRIOR TO CONSTRUCTION.
5. ALL WORK SHALL BE CONTAINED ON THE SUBJECT SITE ONLY. NO STOCKPILING OR CONSTRUCTION ACTIVITY SHALL OCCUR OFF THE APPROVED LOT SITE AREA.
6. THE CONTRACTOR SHALL PROVIDE A TEMPORARY TRASH ENCLOSURE ON SITE DURING ALL CONSTRUCTION ACTIVITIES TO CONTAIN DEBRIS AND PREVENT AIRBORNE LITTERING OFF SITE.
7. A WATER TRUCK SHALL BE USED ON SITE TO WET DOWN ALL EARTHWORK AND CONTROL AIRBORNE PARTICLES/DUST.
8. UNLESS SHOWN OTHERWISE ON THESE PLANS, ALL CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE AND ALL RELATED LATEST EDITION CODE BOOKS AS ADMINISTERED BY ST. GEORGE CITY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF AND PROTECTION OF ALL EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION.
10. ALL EXCAVATIONS AND GRADING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ST. GEORGE CITY, SPECIFICALLY APPENDIX J OF THE INTERNATIONAL BUILDING CODE.
11. OWNER/CONTRACTOR SHALL INSTALL AN INFORMATIONAL SIGN ON SITE BEFORE THE COMMENCEMENT OF CONSTRUCTION. SIZE OF SIGN, SIZE OF LETTERING, AND PLACEMENT LOCATION SHALL BE APPROVED BY ST. GEORGE CITY PRIOR TO INSTALLATION. SIGN SHALL LIST PROJECT NAME, CONTRACTOR COMPANY NAME, CONTRACTOR PHONE CONTACT INFORMATION AND GRADING PERMIT NUMBER.
12. A MANDATORY PRE CONSTRUCTION MEETING WILL BE REQUIRED ON ALL PROJECTS PRIOR TO ANY GROUNDING, GRADING, OR CONSTRUCTION ACTIVITIES. THE PERMIT HOLDER WILL BE REQUIRED TO NOTIFY ALL DEVELOPMENT SERVICES INSPECTORS.
13. ALL OBJECTS SHALL BE KEPT OUT OF THE SIGHT DISTANCE CORRIDORS THAT MAY OBSTRUCT VEHICULAR OPERATOR'S VIEW.

INFORMATIONAL SIGN

CITY OWNED PROPERTY
4.5 ACRE SITE

FOR INFORMATION REGARDING THIS SITE
PLEASE CONTACT

[illegible] SUNBOWL REDEVELOPMENT
150 S 400 E
St. George UT 84770
(435) 627-4000

PROJECT INFORMATION SIGN SPECS.

1. MINIMUM SIZE OF THE SIGN SHOULD BE 4'X4' AND MADE OF PLYWOOD OR EQUIVALENT MATERIAL.
2. THE BACKGROUND AREA SHOULD BE WHITE WITH THE INFORMATIONAL LETTERING BLACK
3. THE FOLLOWING ITEMS MUST BE INCLUDED ON THE SIGN WITH THE MINIMUM SIZE LETTERING STANDARDS

PROJECT NAME AND PHASE	MIN. 4" LETTERING
GENERAL INFORMATION	MIN. 2" LETTERING
CONTACT PHONE #	MIN. 3" LETTERING
PERMIT #	MIN. 2" LETTERING

4. CONTACT NAMES FOR THE PROJECT CONSTRUCTION CAN BE INCLUDED WITH THE ABOVE INFORMATION
5. COMPANY OR DEVELOPMENT LOGO'S ON SIGN ARE APPROVED
6. THE SIGN MUST BE LOCATED AT THE MOST VISIBLE LOCATION TO THE GENERAL PUBLIC SUCH AS THE PROPERTY CORNER AREA, MID BLOCK AREA OR JOB SITE TRAILER LOCATION
7. THE SIGN MUST BER MOUNTED ON POSTS OR A JOB SITE TRAILER, NO LESS THAN 4' ABOVE GROUND HEIGHT

PROPERTY INFO

PROPERTY ADDRESS = PARCEL SG-1098
150 S 400 E
ST GEORGE UTAH 84770

OWNER / DEVELOPER:

CITY OF ST. GEORGE
175 E 200 N
ST. GEORGE, UT 84770
PHONE: (435) 627-4000

Call before you Dig

NORTH

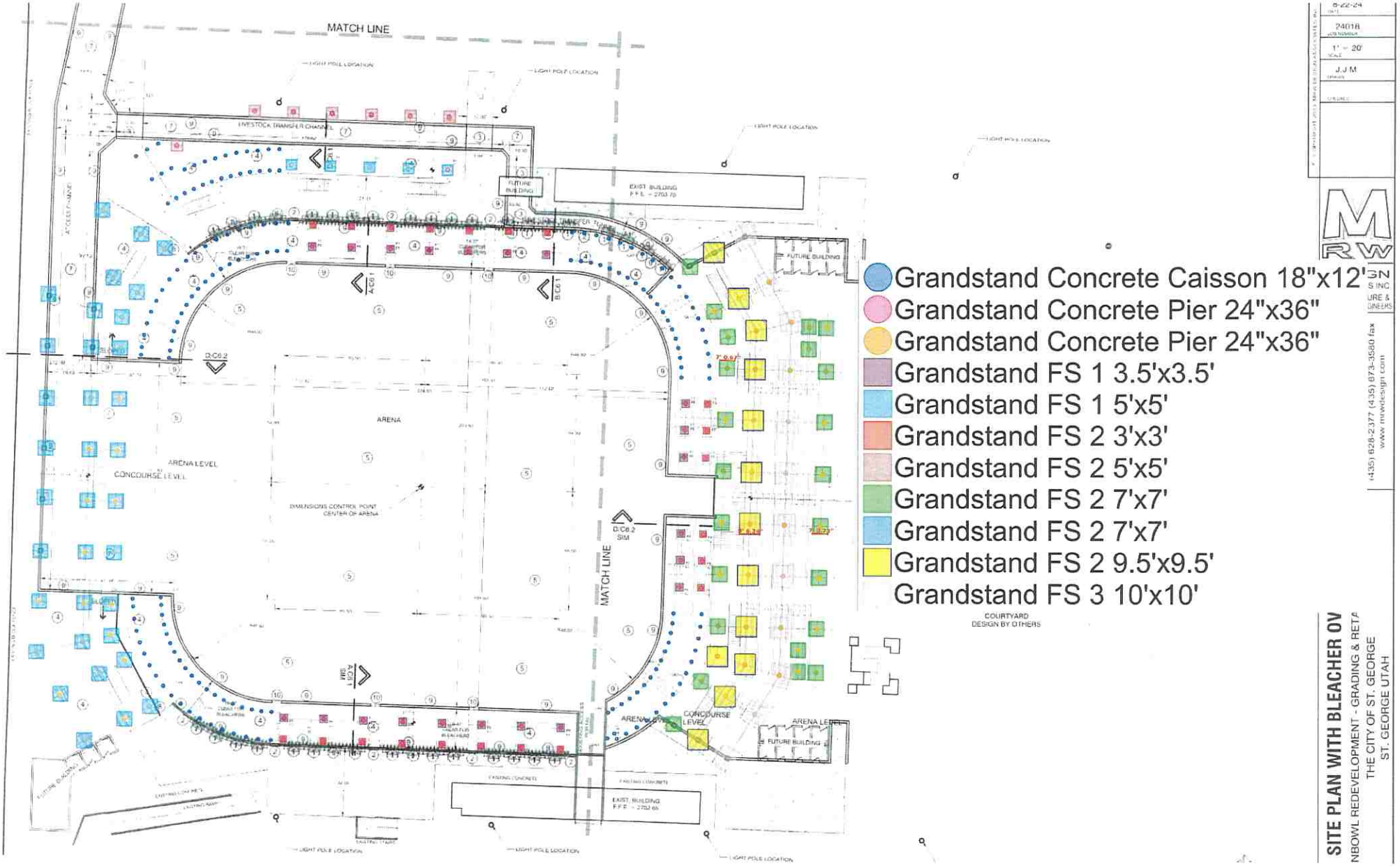
DATE	8-22-24
JOB NUMBER	24018
SCALE	1" = 20'
DRAWN	J.J.M.
CHECKED	

MRW DESIGN ASSOCIATES INC
ARCHITECTURE & CONSULTING ENGINEERS
73 EAST 100 SOUTH
P.O. BOX 2775
ST. GEORGE UTAH 84770
(435) 628-2377 (435) 673-3580 fax
www.mrwdesign.com

EAST SIDE SITE PLAN

SUNBOWL REDEVELOPMENT - GRADING & RETAINING WALLS
THE CITY OF ST. GEORGE
ST. GEORGE UTAH

C2.2



5-22-24

24018

1" = 20'

J.J.M

SITE PLAN WITH BLEACHER OV

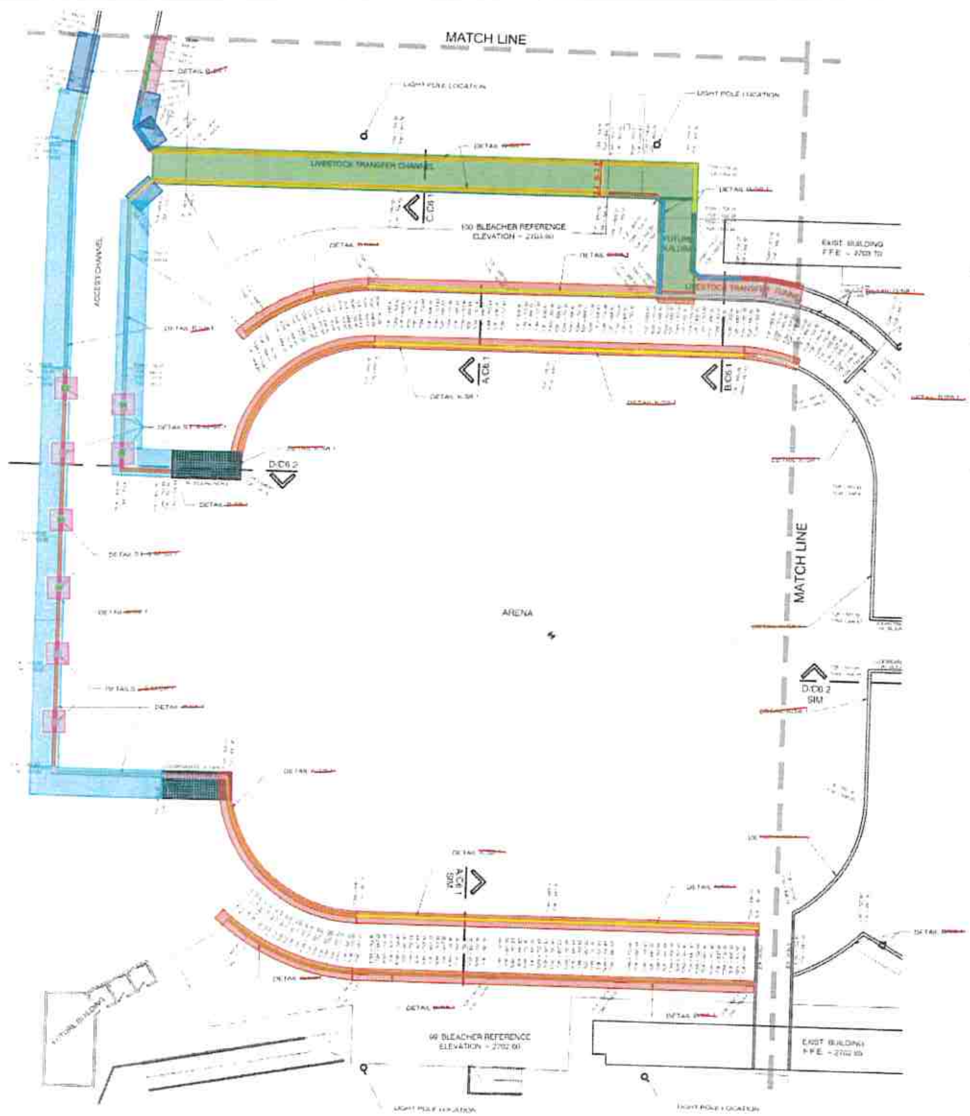
NBOWL REDEVELOPMENT - GRADING & RETA

THE CITY OF ST. GEORGE

ST. GEORGE UTAH

S INC.
URE &
GINEERS

(435) 628-2377 (435) 673-3580 fax
www.mwdesign.com



24"x24" Concrete Column at 12'2"	
Column Footing	
RTW 3 at 5'2"	
RTW 3 at 5'8"	
RTW 3 at 6'	
RTW 3 at 11'8"	
RTW 4 at 6'6"	
RTW 4 at 8'6"	
RTW 5 at 10'2"	
RTW 6 at 9'6"	
RTW 6 at 10'	
RTW 6 at 10'2"	
RTW 6 at 10'6"	
RTW 6 at 11'	
RTW 6 at 11'2"	
RTW 6 at 11'4"	
RTW 6 at 11'8"	
RTW 6 at 12'	
RTW 6 at 12'6"	
RTW 6 at 13'6"	
RTW-3 FC	
RTW-4 FC	
RTW-5 FC	
RTW-6 FC	
RTW-6 FC	
Tunnel Footing 9' C/C6.1	
Tunnel Footing 13'-6" C/C6.1	

WEST SIDE RETAINING WALL PLAN

NORTH

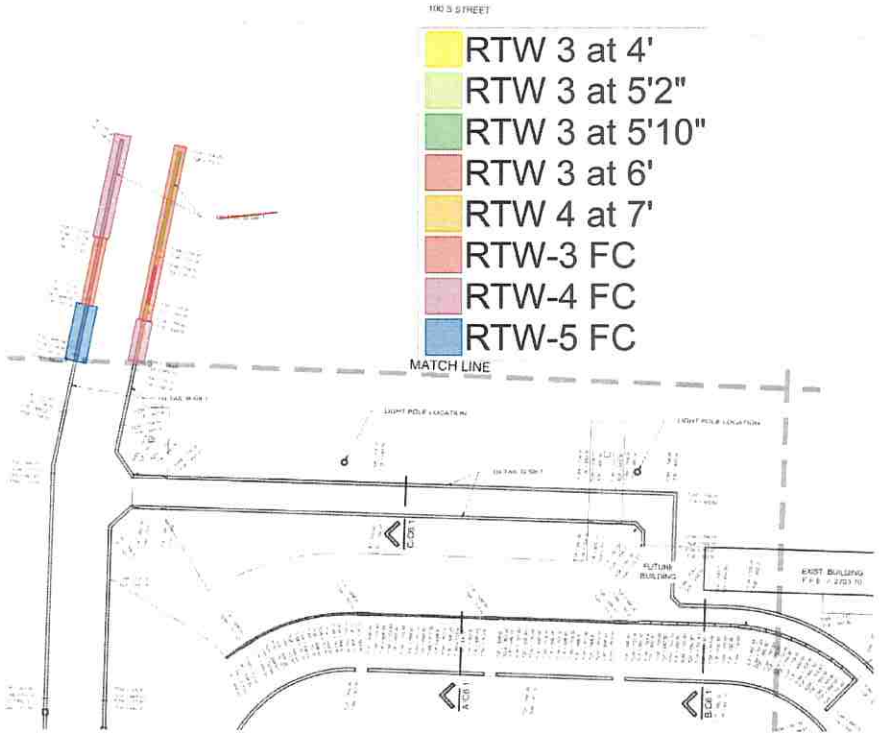
8.22.24
24016
1" = 20
J.J.M.

MRW DESIGN ASSOCIATES INC
ARCHITECTURE & CONSULTING ENGINEERS
73 EAST 100 SOUTH
P.O. BOX 2775
ST. GEORGE UTAH 84770
(435) 628-2377 (435) 673-3580 fax
www.mrwdesign.com

WEST SIDE RETAINING WALL PLAN

SUNBOWL REDEVELOPMENT - GRADING & RETAINING WALLS
THE CITY OF ST. GEORGE
ST. GEORGE UTAH

C4.1



NORTH SIDE RETAINING WALL PLAN
SCALE 1" = 20'

CONSTRUCTION NOTES

1. UNLESS SHOWN OTHERWISE ON THESE PLANS ALL CONSTRUCTION SHALL CONFORM TO THE "CITY OF ST. GEORGE STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION," "THE INTERNATIONAL PLUMBING CODE," AND THE "INTERNATIONAL BUILDING CODE." THE LATEST EDITIONS AS ADMINISTERED BY THE CITY OF ST. GEORGE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION.
3. ALL EXCAVATIONS AND GRADING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF ST. GEORGE, SPECIFICALLY APPENDIX K OF THE "INTERNATIONAL BUILDING CODE," CURRENT EDITION ADMINISTERED, AND THE SPECIFICATIONS AND REQUIREMENTS INCLUDED IN THE GEOTECHNICAL STUDY PREPARED BY OTHERS AND ON FILE AT THE CITY OF ST. GEORGE.
4. THE CONTRACTOR IS REQUIRED TO CALL THE CITY FOR INSPECTION OF ALL IMPROVEMENTS RELATED TO THIS PROJECT.
5. THE CONTRACTOR IS REQUIRED TO OBTAIN AN ENCROACHMENT PERMIT FOR ANY WORK DONE IN A PUBLIC RIGHT-OF-WAY.
6. FOR PUBLIC STREETS, TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED AT LOCATIONS SHOWN IN ACCORDANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" AND "ST. GEORGE CITY STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION." STREET NAME SIGNS SHALL BE PLACED AT ALL INTERSECTIONS.
7. ANY NECESSARY MODIFICATIONS SHALL BE APPROVED BY THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.
8. PROJECTS SHALL INSTALL AN INFORMATIONAL SIGN ON SITE BEFORE CONSTRUCTION BEGINS. THIS SIGN WILL HAVE A MINIMUM SIZE, PLACEMENT LOCATION AND CONTENT INFORMATION WITH THE COMPANY NAME, PHONE CONTACT, AND GRADING PERMIT NUMBER.
9. PROJECTS SHALL SUBMIT A DUST CONTROL PLAN WITH DETAILS ON EQUIPMENT, SCHEDULING AND REPORTING OF DUST CONTROL ACTIVITIES.
10. A MANDATORY PRE CONSTRUCTION MEETING WILL BE REQUIRED ON ALL PROJECTS PRIOR TO ANY GRUBBING, GRADING OR CONSTRUCTION ACTIVITIES. THE PERMIT HOLDER WILL BE REQUIRED TO NOTIFY ALL DEVELOPMENT SERVICES INSPECTORS.
12. ALL WORK AND MATERIALS MUST MEET CITY OF ST. GEORGE STANDARDS.

LEGEND

RETAINING WALL ELEVATIONS
TOW = TOP OF WALL ELEVATION
TOF = TOP OF FOOTING ELEVATION

RETAINING WALL NOTES

1. SEE STRUCTURAL PLANS FOR CONCRETE AND REINFORCING REQUIREMENTS AND ALSO DETAILS INCLUDING SIZES OF WALLS AND SIZES OF FOOTINGS.

Call Before You Dig

NORTH

DATE	8.22.24
JOB NUMBER	24018
SCALE	1" = 20'
DRAWN	J J M
CHECKED	

MRW DESIGN ASSOCIATES INC
ARCHITECTURE & CONSULTING ENGINEERS
73 EAST 100 SOUTH
P O BOX 2775
ST. GEORGE UTAH 84770
(435) 628.2377 (435) 673.3580 fax
www.mrwdesign.com

NORTH SIDE RETAINING WALL PLAN

SUNBOWL REDEVELOPMENT - GRADING & RETAINING WALLS
THE CITY OF ST. GEORGE
ST. GEORGE UTAH

C4.3

HUGHES
GENERAL CONTRACTORS

December 9, 2025

Proposed Subcontractors & Suppliers for Bid Package #2 @ New Dixie Sun Bowl Project

Arena Concrete
Caisson Concrete
Earthwork

Hughes General Contractors, Inc.
Advanced Shoring & Underpinning
Whitaker Construction

If you have any questions, please call.

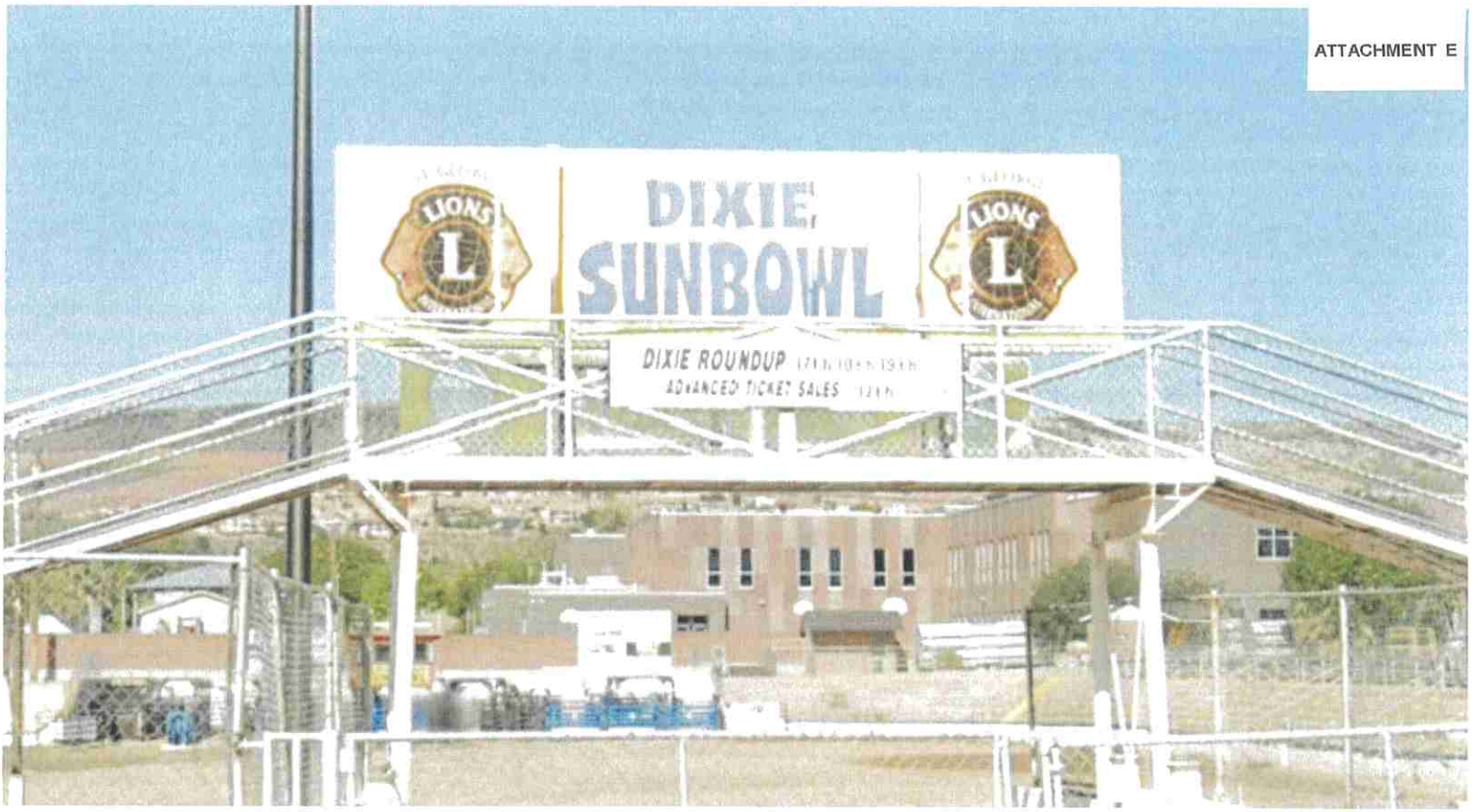
HUGHES GENERAL CONTRACTORS, INC.

Gene Madsen
Vice President

Corporate Office
900 No. Redwood Road
P.O. Box 540700
North Salt Lake, UT 84054
Fax (801) 295-0530
Phone: (801) 292-1411

St. George Office
62 West Industrial Road
Washington, UT 84780
Fax (435) 628-0328
Phone: (435) 628-0047

ATTACHMENT E



Dixie Sun Bowl AV

A PROPOSAL FOR

St. George City

Mark Goble
mark.goble@sgcityutah.gov

150 South 400 East
St. George, UT 84770

Quote #81617

PREPARED BY ADAM HANDY

Marshall Industries Inc.
Marshall Industries
(801) 870-4216

5621 W 800 S

Hurricane , UT 84737

About Us

Thank you for considering Marshall Industries for your business. This quote is based on the information you have provided in our discussions regarding your requirements.

Marshall Industries was started as a small family company in 1975 with four employees. Since then, Marshall Industries has grown to be an employee-owned company with over 100 employees and offices in Salt Lake City, St. George and Boise. As a leading commercial electronic equipment system integrator, we have designed, installed and provided service for thousands of A/V systems both nationally and internationally. Our top priority is to treat our customers with integrity, trust, and respect. Our partnerships with the best manufacturers in our industry enable us to offer superb service and competitive pricing. You can depend on us to provide top quality video & sound systems on time and within budget.

We bring components together from multiple manufactures to create fully functioning systems that meet specific needs for each customer. We help with concept, design, engineering, installation and service. Collaborative design and engineering, quality equipment and seamless installations provide the foundation for an astounding system experience. Marshall Industries delivers high performance and easy-to-use results.

Marshall Industries strives to help our customers make sense of the always-changing audiovisual industry and finding the right solution for their needs.

SUN BOWL AUDIO SYSTEM DESIGN REPORT

Marshall Industries Inc.
5621 W 800 S • Hurricane, UT 84737 • (435) 200-1033

1.0 – INTRODUCTION

Marshall Industries has prepared this design report for the Sun Bowl Stadium to provide a comprehensive, high-output, high-fidelity audio system suitable for Rodeo, Equestrian, community events, city programming, and large outdoor gatherings. The design focuses on improving coverage, clarity, and reliability while adding system flexibility with Dante networking, digital mixing, wireless microphone systems, ADA listening support, and a fully independent portable speaker alternate package.

The system is engineered around **Danley Sound Labs** loudspeakers and subwoofers—industry leaders in pattern control, output capability, and speech intelligibility in outdoor venues.

2.0 – SYSTEM OBJECTIVES

The upgraded Sun Bowl audio system is designed to meet the following goals:

- Provide consistent SPL coverage throughout the seated bowl and event grounds
- Deliver excellent vocal clarity and full-range music reinforcement
- Ensure high reliability with rugged outdoor-rated components
- Use a networked Dante architecture for future expandability
- Support local wired inputs, wireless microphones, Bluetooth audio, and stagebox connectivity
- Meet ADA requirements for assisted listening
- Offer an alternate portable speaker option for remote events and multipurpose use

3.0 – LOUDSPEAKER SYSTEM DESIGN

3.1 Primary Speaker Deployment

The Sun Bowl will be reinforced using Danley OS-series speakers mounted on lighting poles provided by the lighting contractor. Danley's proprietary horn technology ensures excellent long-throw coverage with minimal overlap and superior intelligibility.

Equipment:

- **8 × Danley OS80-G**
  12" coaxial weatherized loudspeakers with controlled directivity for outdoor stadium environments.
- **4 × Danley THMini15-EW**

15" 2000-watt tapped-horn subwoofers delivering tight, impactful low frequency reinforcement.

- **4 × Danley PMK-2-HD Mounting Kits**
  Heavy-duty brackets allowing dual-OS mounting on new lighting poles.

This combination provides full-range coverage with properly balanced LF reinforcement for game-day music playback and announcements.

4.0 – AMPLIFICATION, DSP, & CONTROL

4.1 Amplification

- **1 × Danley DNA 20K8C-Dante**
  Stadium-grade, 8-channel, high-efficiency amplifier with integrated DSP and Dante. This unit provides the power necessary for both OS80s and THMini15 subs, while optimizing phase alignment and system protection.

4.2 Digital Signal Processing

- **1 × Symetrix Prism 8×8 Dante DSP**
  Handles crossover management, system protection, EQ, matrix routing, delay alignment, loudspeaker optimization, and all networked inputs.

4.3 User Control

- **1 × Symetrix W4 Wall Remote**
  Provides intuitive control of system presets, volume, source selection, and operational modes.

4.4 Input Integration

- **1 × Symetrix xIO Bluetooth RCA-3.5 Dante Interface**
  Enables Bluetooth and analog local media input for events, music playback, and mobile devices.

5.0 – MIXING, STAGE I/O & MICROPHONE SYSTEM

5.1 Digital Mixing Console

- **1 × Allen & Heath QU-5D Digital Mixer**
  32-channel surface with integrated Dante networking. Provides operators the ability to mix live performances, announce events, route signals, and manage wireless inputs.

5.2 Dante Stage Box

- **1 × Allen & Heath DT-168 Dante Stagebox**
  16 inputs / 8 outputs for on-field microphones, music sources, or PA needs.

5.3 Wired Input Plates

- **1 × Radio Design Labs DB-XLR2F**
  Dual XLR female D-plate for field and stage inputs.

6.0 – WIRELESS MICROPHONE SYSTEM

A high-performance Shure SLX-D digital wireless package provides strong RF performance and clean audio throughout the stadium.

Equipment:

- 1 × Shure SLXD4Q Quad Receiver – G57
- 4 × Shure SLXD2/B58 Handheld Transmitters
- 1 × Shure SLXD1 Beltpack Transmitter
- 1 × Shure DL4T Duraplex Tan Lavalier
- 1 × Shure MX153T Tan Earset
- 1 × Shure SM31FH Fitness Headset
- 5 × Shure SB903 Rechargeable Batteries
- 1 × Shure SBC80-903 8-Bay Charger
- 2 × Shure UA860SWB Wideband Antennas
- 2 × Shure UA825 25' Extension Cables

This system is ideal for announcers, officials, event staff, guest speakers, and portable use cases.

7.0 – ADA LISTENING SYSTEM

To comply with ADA requirements for assisted listening at public venues:

Equipment:

- 1 × Listen Technologies LS-55-072 iDSP Prime Level III System
- 4 × Listen LR-4200 Receivers
- 8 × Listen LA-401 Ear Speakers
- 4 × Listen LA-430 Neck Loop Lanyards

This system ensures equal access for attendees with hearing challenges.

8.0 – RACK, POWER, NETWORK & CABLING

8.1 Rack Infrastructure

- **1 × Middle Atlantic MFR-1227GE**
  Mobile floor rack, properly ventilated and serviceable.

8.2 Power Management

- **1 × Middle Atlantic PDX-920R** Surge Protected Power Distribution
- **1 × Middle Atlantic RK-UQFP4RAIO Fan Panel** Cooling Assembly

8.3 Network Infrastructure

- **1 × Luxul AMS-1208P** Managed Network Switch (AV-Series, PoE+)

8.4 Cabling

- **6 × West Penn AQ227BK1000** (12AWG speaker cable)
- **1 × West Penn 254346AFBK1000** (Networking/control cable)

All cable is rated for outdoor or conduit-protected use where required.

9.0 – ALTERNATE OPTION: PORTABLE SPEAKER SYSTEM

In addition to the permanently installed system, this alternate provides a **mobile, self-powered system** for parades, overflow areas, community events, or localized staging.

9.1 Portable Loudspeakers

- **4 × dB Technologies KL 15**
  Lightweight, high-output 15" portable powered speakers with onboard DSP.

9.2 Portable Stands

- **2 × KM Manufacturing 21459**
  Two-stand kit with travel case.

9.3 Portable I/O Panels

- **4 × RDL DB-XLR2F** Dual XLR Female Plates

- **4 × RDL DB-XLR2M** Dual XLR Male Plates

9.4 Portable Cabling

- **2 × West Penn AQC293GY1000** Shielded portable audio cabling

This alternate is ideal for city events, temporary stages, field PA, or backup audio.

10.0 – MICROPHONE & ACCESSORY PACKAGE

- **2 × Shure SM58S Wired Microphones**
- **2 × Atlas DS7 Adjustable Desktop Stands**
- **2 × Whirlwind MK415 XLR Cables**

These accessories support general PA duties and backup wired solutions.

11.0 – SYSTEM SUMMARY

The Sun Bowl audio upgrade provided in this design will deliver:

- **High-output Danley loudspeakers** with excellent outdoor pattern control
- **Powerful and efficient Dante-enabled amplification**
- **A full Symetrix DSP ecosystem** for routing, protection, and customization
- **Live mixing capabilities** with Dante integration
- **Robust wireless microphone infrastructure**
- **ADA-compliant assisted listening system**
- **Clean, protected, cooled rack architecture**
- **Optional portable PA system** for flexible event support

This system is designed for long-term reliability, simple daily operation, and superior performance for all events hosted at the Sun Bowl.

Areas & Items

Sun Bowl

Items	Qty
 **Danley OS80 - Grey** 12 Coaxial loudspeaker (NL4s)	x8
 **Danley THMini15-EW** Environmental subwoofer	x4
 **Danley PMK-HD-2** cost for kit using 7 bands and CB-G-48 crossbar	x4
 **Danley DNA-20K4 Pro-Dante** 4 Channel power amplifier	x1
 **Allen & Heath AH-QU-5D** 32-Channel Digital Mixer with Dante, 96kHz FPGA Core, 17 Faders	x1
 **Allen & Heath AH-DT168** 16 x 8 Dante audio expander with dLive 96kHz mic preamps, 96kHz/48kHz	x1
Symetrix Prism 8x8 Dante Programmable DSP, 8 mic/line in, 8 line out, 64x64 Dante, ARC	x1
 **Symetrix W4 Black**	x1

Items		Qty
	**Symetrix xIO Bluetooth RCA-3.5, Black** Dante I/O Endpoint, Bluetooth media in, Bluetooth phone I/O, stereo RCA I/O, stereo 3.5mm I/O, 4x4 Dante, PoE, Decora dual gang, black	x1
	**Radio Design Labs DB-XLR2F** Dual XLR 3-pin Female Jacks On D Plate, Solder Type, Black	x1
	**Listen Technologies LM-LS55072** Listen Technologies LS-55 16-Piece iDSP Prime Level III Stationary RF System, 72 MHz	x1
	**Listen Technologies LM-LR4200072** Listen Technologies LR-4200 Intelligent DSP RF Receiver, 72 MHz	x4
	**Listen Technologies LA-401** Universal Ear Speaker	x8
	**Listen Technologies LA-430** Intelligent Earphone/Neck Loop Lanyard	x4
	**Shure SM58S** Cardioid Dynamic, On-Off Switch	x2
	**AtlasIED DS7E** EBONY DESK STAND	x2
	**Whirlwind MK415** Mic Cable, XLRM-XLRF, 15 ft	x2
	**Shure SLXD4Q+=-G57** Wireless Receiver, Quad	x1

Items	Qty
 **Shure SLXD2/SM58=-G58** Handheld Transmitter with SM58 Capsule	x4
 **Shure SLXD1=-G58** Bodypack Transmitter	x1
 **Shure DL4T/O-LM3-A** DURAPLEX LAV MIC, TAN, OMNI, LEMO	x1
 **Shure SB903** Lithium-Ion Battery for SLX-D	x5
 **Shure SBC80-903-US** 8-BAY BATTERY CHARGER FOR SB903	x1
 **Shure UA860SWB** 1/2 Wave Omni Antenna, Includes 2'BNC/BNC Cable, 25' BNC/BNC Cable and WA371 Mounting Clip, 470-1100 MHz	x1
 **Shure UA825** 25' UHF Remote Antenna Extension Cable, BNC-BNC, RG8X/U Type	x2
 **Middle Atlantic C-MA-MFR-1227GE** 12U MFR Series Stand Alone Rack	x1
 **Middle Atlantic PDX-920R-SP** 20A 9 OUT SERIES SURGE W/CTRL	x1

Items	Qty
Luxul AMS-1208P AV-Series 12-Port/8 PoE+ Gigabit Managed Switch	x1
West Penn Wire AQ227BK1000 1P 12G STRD UNSHLD AQUASL Length1000 Footer ColorBlack	x6
 **Almo LIFT-RENTAL** Lift rental	x1
 **Labor Installation Services**	

Alternate Portable Speakers

Items	Qty
 **dB Technologies KL 15** 12" 2-Way Active Bluetooth Speaker	x4
 **K&M Konig & Meyer 21459** Pair of Speaker Stands with Bag	x2
 **Radio Design Labs DB-XLR2F** Dual 3-Pin Female XLR Connector Plate (Black)	x4
 **Radio Design Labs DB-XLR2M** Dual 3-Pin Male XLR Connector Plate	x4
Altronix aqc293gy1000 West Penn AQC293GY1000 1P 18G Stranded Shielded Aquaseal Communication Cable, Gray, 1000'	x2

Financial Summary

Main Equipment and Labor	$118,899.60
Alt 1 Portable Equipment	$4,257.40
Sales Tax	$6,133.20

Proposal Total **$129,290.20**

LED Sports Lighting Proposal

ST GEORGE SUN BOWL

ephesus
SPORTS LIGHTING

Layout

PHOTOMETRIC DRAWINGS FOR:

Dixie Sunbowl
St George,UT

Project #: 2501260
November 18, 2025

Prepared By:

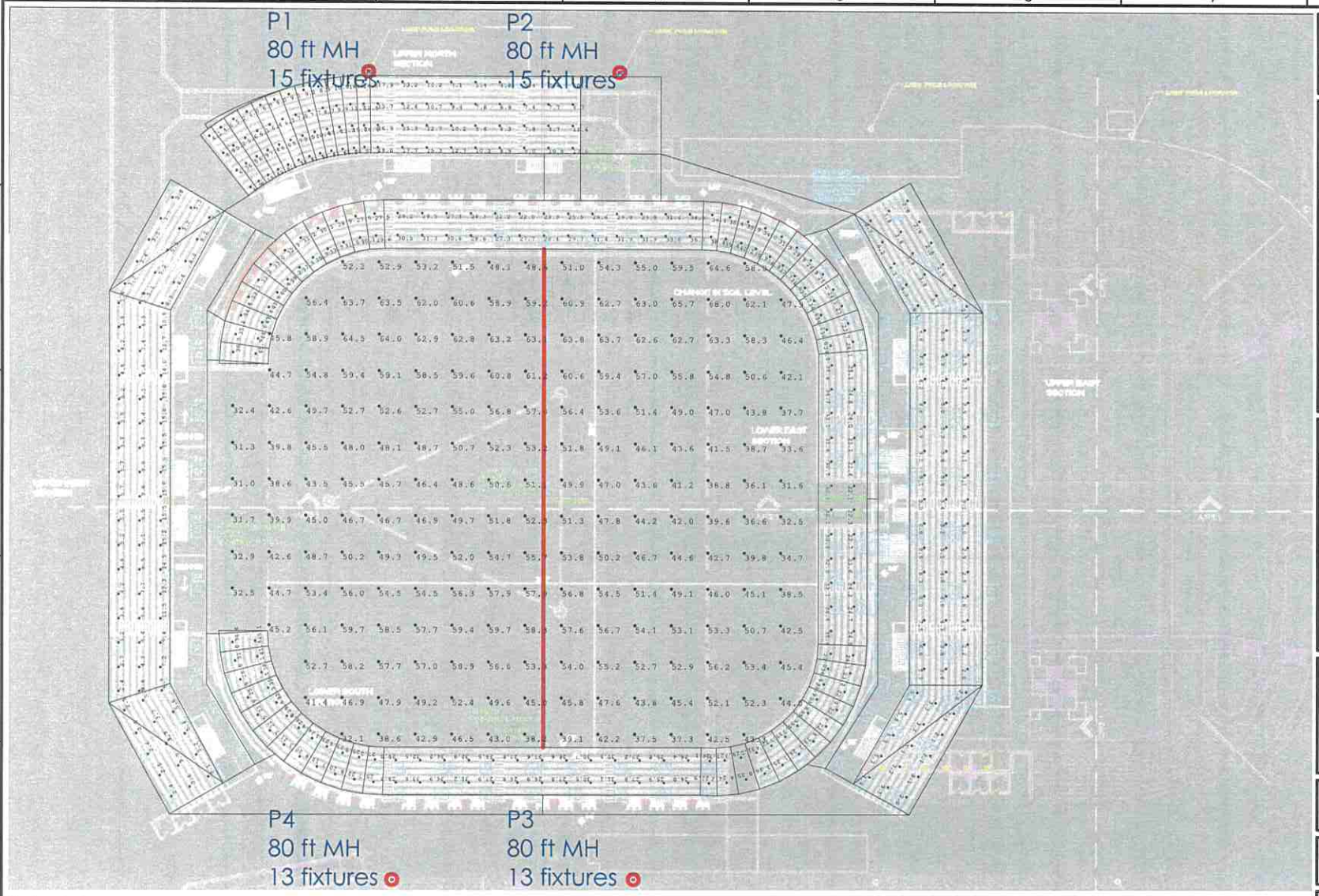
EPHESUS SPORTS LIGHTING
125 E JEFFERSON ST
SYRACUSE NY 13202
315-579-2873

ephesus
125 EAST JEFFERSON STREET
SYRACUSE, NEW YORK 13202
PHONE: 315-579-2873
WWW.EPHESUSLIGHTING.COM

LIGHTING DESIGN FOR:
Dixie Sunbowl
St George,UT
LS8 680R and Lumavision

MH: 80 ft
Reflectances: .2/.2/.2
LLF: 0.95
Calc Grid: 15 x 15
Notes:

DRAWN: C Yohe
CHECKED: D Couch
REVISION: 1
PROJECT: 2501260
Revision Notes



Horizontal
Scale: 1 inch= 30 Ft.

Luminaire Schedule					
Scene: Rodeo					
Symbol	Qty	Label	LLF	Description	Lum. Lumens
	32	EPH-LS-08-0680R-57-70-2S-CV	0.950	Lumasport 8, 680R, 70 CRI, 5700K, 2S w CV2	79394
	9	EPH-LS-08-0680R-57-70-4S-CV	0.950	Lumasport 8, 680R, 70 CRI, 5700K, 4S w CV1	85701
	3	EPH-LS-08-0680R-57-70-4S-HE	0.950	Lumasport 8, 680R, 70 CRI, 5700K, 4S	108978
	4	EPH-VN-06-E-750-U-T4W_5470	0.950	Lumavision 6, 70 CRI, 5000K, U, T4W	54708

Calculation Summary							
Scene: Rodeo							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Rodeo Calc	Illuminance	Fc	50.47	68.0	31.0	1.63	2.19
Stands Calc	Illuminance	Fc	28.00	68.0	2.0	14.00	34.00

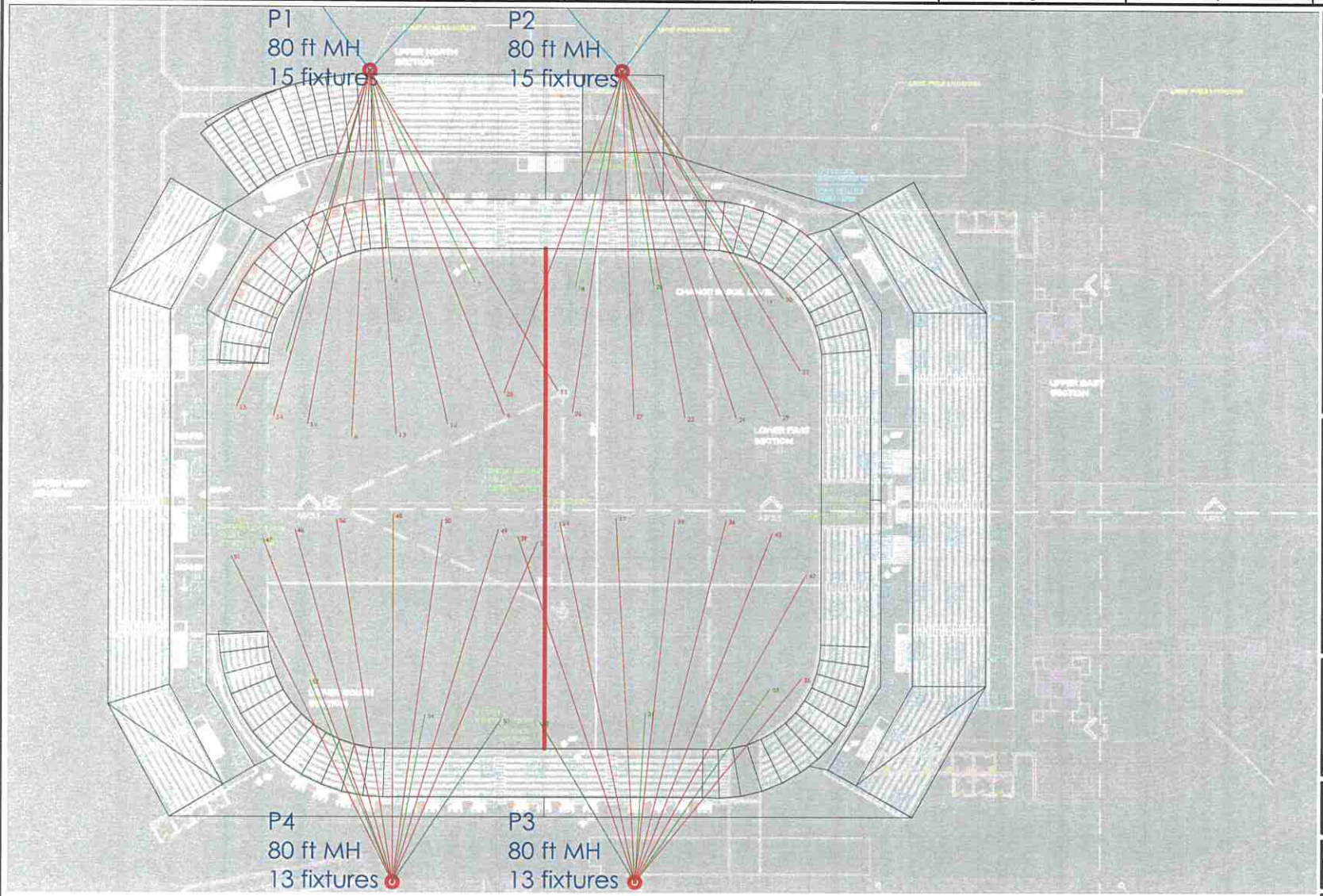
ephesus
125 EAST JEFFERSON STREET
SYRACUSE, NEW YORK 13202
PHONE: 315-579-3873
WWW.EPHESUSLIGHTING.COM

LIGHTING DESIGN FOR:
Dixie Sunbowl
St George,UT
LS8 660R and Lumavision

Horizontal Calculation Summary

MH: 80 ft
Reflectances: .2/.2/.2
LLF: 0.95
Calc Grid: 15 x 15
Notes:

DRAWN: C Yohe
CHECKED: D Couch
REVISION: 1
PROJECT: 2501260
Revision Notes



Horizontal
Scale: 1 inch= 30 Ft.

Luminaire Schedule					
Scene: Rodeo					
Symbol	Qty	Label	LLF	Description	Lum. Lumens
	32	EPH-LS-08-0680R-57-70-2S-CV	0.950	Lumasport 8, 680R, 70 CRI, 5700K, 2S w CV2	79394
	9	EPH-LS-08-0680R-57-70-4S-CV	0.950	Lumasport 8, 680R, 70 CRI, 5700K, 4S w CV1	85701
	3	EPH-LS-08-0680R-57-70-4S-HE	0.950	Lumasport 8, 680R, 70 CRI, 5700K, 4S	108978
	4	EPH-VN-06-E-750-U-T4W_54705	0.950	Lumavision 6, 70 CRI, 5000K, U, T4W	54708

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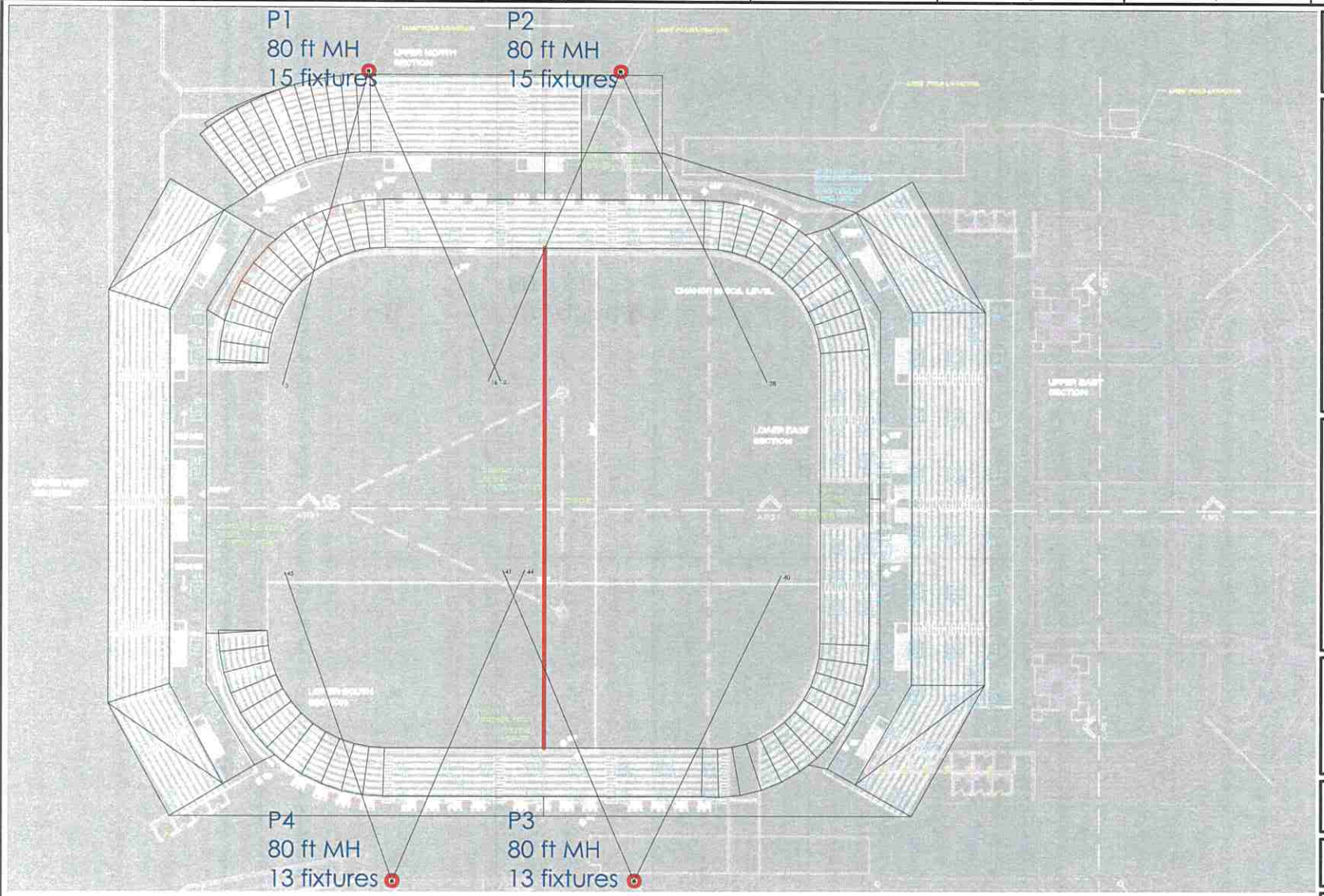
125 EAST JEFFERSON STREET
SYRACUSE, NEW YORK 13202
PHONE: 315-579-2873
WWW.EPHESUSLIGHTING.COM

LIGHTING DESIGN FOR:
Dixie Sunbowl
St George,UT
LS8 680R and Lumavision

Rodeo
Aiming
Summary

MH: 80 ft
Reflectances: .2/.2/.2
LLF: 0.95
Calc Grid: 15 x 15
Notes:

DRAWN: C Yohe
CHECKED: D Couch
REVISION: 1
PROJECT: 2501260
Revision Notes



Horizontal
Scale: 1 inch= 30 Ft.

Luminaire Schedule					
Scene: PRISM					
Symbol	Qty	Label	LLF	Description	Lum. Lumens
⊙	8	EPH-LS-08-500PL-RGB-CL-4S_A	0.950	Lumasport 8, PRISM, 4S, ALL ON	16760

ephesus
125 EAST JEFFERSON STREET
SYRACUSE, NEW YORK 13202
PHONE: 315-579-2873
WWW.EPHESUSLIGHTING.COM

LIGHTING DESIGN FOR:
Dixie Sunbowl
St George,UT
LS8 680R and Lumavision

Prism
Aiming
Summary

MH: 80 ft
Reflectances: .2/.2/.2
LLF: 0.95
Calc Grid: 15 x 15
Notes:

DRAWN
C Yohe

CHECKED
D Couch

REVISION
1

PROJECT
2501260

Revision Notes

Luminaire Schedule					
Scene: Sum					
Symbol	Qty	Label	LLF	Description	Lum. Lumens
⊙	32	EPH-LS-08-0680R-57-70-2S-CV2	0.950	Lumasport 8, 680R, 70 CRI, 5700K, 2S w CV2	79394
⊙	9	EPH-LS-08-0680R-57-70-4S-CV1	0.950	Lumasport 8, 680R, 70 CRI, 5700K, 4S w CV1	85701
⊙	3	EPH-LS-08-0680R-57-70-4S-HEG	0.950	Lumasport 8, 680R, 70 CRI, 5700K, 4S	108978
·	4	EPH-VN-06-E-750-U-T4W_54705	0.950	Lumavision 6, 70 CRI, 5000K, U, T4W	54708
⊙	8	EPH-LS-08-500PL-RGB-CL-4S_AL	0.950	Lumasport 8, PRISM, 4S, ALL ON	16760

Luminaire Location Summary								
Scene: Sum								
LumNo	Label	X	Y	Z	Orient	Tilt	X-Aimpt	Y-Aimpt
1	EPH-LS-08-0680R-57-70-4S-HEG-	-72	176	80	253.664	56.503	-106	60
2	EPH-LS-08-500PL-RGB-CL-4S_ALL	-72	176	80	292.874	60.064	-18	48
3	EPH-LS-08-500PL-RGB-CL-4S_ALL	-72	176	80	254.932	59.28	-107	46
4	EPH-VN-06-E-750-U-T4W_54705 I	-72	176	40	126.87	45	-96	208
5	EPH-LS-08-0680R-57-70-4S-CV1-	-72	176	80	296.301	50.5	-29	89
6	EPH-LS-08-0680R-57-70-4S-CV1-	-72	176	80	275.974	47.226	-63	90
7	EPH-VN-06-E-750-U-T4W_54705 I	-72	176	40	49.086	44.784	-46	206
8	EPH-LS-08-0680R-57-70-2S-CV2-	-72	176	80	267.346	62.111	-79	25
9	EPH-LS-08-0680R-57-70-2S-CV2-	-72	176	80	291.173	62.285	-17	34
10	EPH-LS-08-0680R-57-70-2S-CV2-	-72	176	80	260.283	61.627	-97	30
11	EPH-LS-08-0680R-57-70-2S-CV2-	-72	176	80	300.256	62.368	5	44
12	EPH-LS-08-0680R-57-70-2S-CV2-	-72	176	80	282.362	61.843	-40	30
13	EPH-LS-08-0680R-57-70-2S-CV2-	-72	176	80	274.194	61.991	-61	26
14	EPH-LS-08-0680R-57-70-2S-CV2-	-72	176	80	254.745	61.643	-111	33
15	EPH-LS-08-0680R-57-70-2S-CV2-	-72	176	80	248.769	61.787	-126	37
16	EPH-LS-08-500PL-RGB-CL-4S_ALL	31	176	80	247.126	60.064	-23	48
17	EPH-VN-06-E-750-U-T4W_54705 I	31	176	40	53.13	45	55	208
18	EPH-LS-08-0680R-57-70-4S-CV1-	31	176	80	257.949	48.682	12	87
19	EPH-LS-08-0680R-57-70-4S-CV1-	31	176	80	301.675	54.085	89	82
20	EPH-LS-08-0680R-57-70-4S-CV1-	31	176	80	278.403	48.034	44	88
21	EPH-VN-06-E-750-U-T4W_54705 I	31	176	40	130.914	44.784	5	206
22	EPH-LS-08-0680R-57-70-2S-CV2-	31	176	80	300.689	60.781	104	53
23	EPH-LS-08-0680R-57-70-2S-CV2-	31	176	80	280.305	61.171	57	33
24	EPH-LS-08-0680R-57-70-2S-CV2-	31	176	80	288.194	62.011	78	33
25	EPH-LS-08-0680R-57-70-2S-CV2-	31	176	80	250.155	60.499	-17	43
26	EPH-LS-08-0680R-57-70-2S-CV2-	31	176	80	261.927	60.675	11	35
27	EPH-LS-08-0680R-57-70-2S-CV2-	31	176	80	272.017	60.619	36	34
28	EPH-LS-08-500PL-RGB-CL-4S_ALL	31	176	80	295.115	60.494	91	48

Luminaire Location Summary								
Scene: Sum								
LumNo	Label	X	Y	Z	Orient	Tilt	X-Aimpt	Y-Aimpt
29	EPH-LS-08-0680R-57-70-2S-CV2-	31	176	80	294.59	62.876	96	34
30	EPH-LS-08-0680R-57-70-2S-CV2-	31	176	80	305.36	54.95	97	83
31	EPH-LS-08-0680R-57-70-4S-CV1-	37	-158	80	86.73	41.232	41	-88
32	EPH-LS-08-0680R-57-70-4S-HEG-	37	-158	80	120.57	43.779	-2	-92
33	EPH-LS-08-0680R-57-70-4S-CV1-	37	-158	80	55.491	50.51	92	-78
34	EPH-LS-08-0680R-57-70-2S-CV2-	37	-158	80	101.83	62.119	6	-10
35	EPH-LS-08-0680R-57-70-2S-CV2-	37	-158	80	51.009	53.49	105	-74
36	EPH-LS-08-0680R-57-70-2S-CV2-	37	-158	80	76.054	62.477	74	-9
37	EPH-LS-08-0680R-57-70-2S-CV2-	37	-158	80	93.053	61.961	29	-8
38	EPH-LS-08-0680R-57-70-2S-CV2-	37	-158	80	83.871	61.905	53	-9
39	EPH-LS-08-0680R-57-70-2S-CV2-	37	-158	80	108.67	61.911	-11	-16
40	EPH-LS-08-500PL-RGB-CL-4S_ALL	37	-158	80	64.537	60.177	97	-32
41	EPH-LS-08-500PL-RGB-CL-4S_ALL	37	-158	80	112.87	60.064	-17	-30
42	EPH-LS-08-0680R-57-70-2S-CV2-	37	-158	80	61.137	61.116	107	-31
43	EPH-LS-08-0680R-57-70-2S-CV2-	37	-158	80	68.749	62.626	93	-14
44	EPH-LS-08-500PL-RGB-CL-4S_ALL	-62	-158	80	67.126	60.064	-8	-30
45	EPH-LS-08-500PL-RGB-CL-4S_ALL	-62	-158	80	109.10	59.238	-106	-31
46	EPH-LS-08-0680R-57-70-2S-CV2-	-62	-158	80	105.42	61.993	-102	-13
47	EPH-LS-08-0680R-57-70-2S-CV2-	-62	-158	80	110.60	62.027	-115	-17
48	EPH-LS-08-0680R-57-70-2S-CV2-	-62	-158	80	90	62.085	-62	-7
49	EPH-LS-08-0680R-57-70-2S-CV2-	-62	-158	80	73.482	62.123	-19	-13
50	EPH-LS-08-0680R-57-70-2S-CV2-	-62	-158	80	82.355	61.981	-42	-9
51	EPH-LS-08-0680R-57-70-2S-CV2-	-62	-158	80	116.22	61.828	-128	-24
52	EPH-LS-08-0680R-57-70-4S-CV1-	-62	-158	80	112.27	48.27	-96	-75
53	EPH-LS-08-0680R-57-70-4S-HEG-	-62	-158	80	56.706	45.056	-18	-91
54	EPH-LS-08-0680R-57-70-4S-CV1-	-62	-158	80	79.33	41.273	-49	-89
55	EPH-LS-08-0680R-57-70-2S-CV2-	-62	-158	80	67.148	62.23	-3	-18
56	EPH-LS-08-0680R-57-70-2S-CV2-	-62	-158	80	98.775	62.048	-85	-9

ephesus
125 EAST JEFFERSON STREET
SYRACUSE, NEW YORK 13202
PHONE: 315-579-2573
WWW.EPHESUSLIGHTING.COM

LIGHTING DESIGN FOR:

Dixie Sunbowl
St George, UT

LS8 680R and Lumavision

Luminaire Location Summary

MH: 80 ft
Reflectances: .2/.2/.2
LLF: 0.95
Calc Grid: 15 x 15
Notes:

DRAWN: C Yohe

CHECKED: D Couch

REVISION: 1

Revision Notes

PROJECT: 2501260

Quote

COOPER Lighting Solutions

ephesus SPORTS LIGHTING

Project Name: Dixie Sunbowl
Quotation #: 000-0253084-001

Issued On: 11/21/2025

Project Number:	000-0303854	**Bid Date:**	11/19/2025
Project Location:	Saint George , UT	**Issue Date:**	11/21/2025
Agent Contact:		**Expiration Date:**	01/03/2026

Comments:

Items

Ln	Qty	Type	Brand	Catalog # / Line Comments	
1	32		EphesusSP	EPH-LS-08-0680R-BLK-57-70-2S-BH3-TY-CV2-ST	
2	9		EphesusSP	EPH-LS-08-0680R-BLK-57-70-4S-BH3-TY-CV1-ST	
3	3		EphesusSP	EPH-LS-08-0680R-BLK-57-70-4S-BH3-TY-HEG-ST	
4	8		EphesusSP	EPH-LS-08-500PL-BLK-RGB-CL-4S-PR04-XV-AM-LY-BH3-HEG	
5	4		EphesusSP	EPH-VN-06-E-HV-AP-WHT-YOKE-7XX-XX-010-AXX-10MSP-ST	
6	4		EphesusSP	EPH-PAC-0680R-GRY-XXX-AM-2-MR-ST	
7	8		EphesusSP	EPH-PAC-0680R-GRY-XXX-AM-4-MR-ST	
8	4		EphesusSP	EPH-PAC-500PR-GRY-XXX-AM-2-XL	
9	4		EphesusSP	EPH-DST-6PC-GRY-XXX-CP-ST	
10	1		EphesusSP	AF-0211	
11	1		EphesusSP	REMOTE-BASE	
12	1		EphesusSP	LM-BASE-9YR	
13	1		EphesusSr	SER-COLOR	
14	56		EphesusSP	EPH-10YR-LBRWAR-T1	
15	1		EphesusSr	EPH-LTGSTR-P-MSM	
16	1		EphesusSr	EPH-SE-N-S-PF	
17	1		EphesusSP	EPH-PSU	
				Total	$326,994.00

Cooper Lighting Terms and Conditions:

- Prices are in US Dollars
- Customer shall pay all taxes, duties, levies or fees.
- Payment terms are NET30, subject to credit approval. Tax exempt certificate required if applicable.
- Standard Incoterms of FOB Origin will apply.
- This estimate is non-contractual until matching customer Purchase Order is accepted by Cooper Lighting, LLC.
- Cooper Ephesus LED luminaries are made to order, and all sales are final. Returns are subject to a restocking fee.
- Typical lead time for fixtures, accessories and control equipment is 4-6 weeks, materials may ship independently / earlier if available.
- Materials invoice upon shipment. Services invoice upon completion of the work
- All desired shipping requirements such as Do Not Deliver Before dates shall be communicated to Cooper at time of PO.
- Prior to purchase order acceptance, Cooper Lighting requires site voltage verified. please visit and fill out https://www.cognitoforms.com/CooperLightingSolutions1/CustomerProjectSignOff
- Prices are valid for 45 days after final approval unless otherwise noted on the quotation.
- Cooper Lighting LLC reserves the right, with notice to the customer, to at any time and from time to time adjust pricing (including by enacting price increases) in the event of the imposition, enactment, adoption, or modification of any tariffs, duties, levies, or similar directly or indirectly affecting the products or services
- This assumes standard transportation methods and carriers are used.
- Any special transportation requirements, (including, but not limited to - city delivery truck, union driver, lift gate) customer will incur additional charges
- Ephesus Sports Lighting has a $5,000 minimum pre-paid freight allowance. All orders less than $5,000 will be charged $100 per fixture freight.
- Please reference Cooper Lighting's Terms & Conditions on our website for all product line freight allowances.
- All other standard terms and conditions apply - please see the website for details https://www.cooperlighting.com/global/resources/legal

Lighting Structure Notes:

- Typical pole/crossarm structure lead time is 10-12 weeks.
- Structures are designed according to ATC Hazards by location ASCE/SEI 7-10 Wind Speed requirements.
- Quote is based on standard foundation and soil conditions of 2,000 PSI. Site geotechnical analysis required with order.
- Structures are not ordered until site geotechnical report and/or existing dimension information is received. See structures guide for more information.
- Site soil conditions requiring increased foundations may result in increased cost.
- Additional foundation designs or structure modifications may result in additional charges.
- Pole sizes quoted are based on fixture mounting heights. If ground elevation at pole or structure locations varies more than +-5' relative to design origin elevation, all topographical variations must be clearly communicated to Cooper before purchase order, and any required changes in pole sizes may result in additional charges.

SCAN ME

Classified

Project Name:	**Dixie Sunbowl**
Quotation Number:	**000-0253084-001**
Issued On:	**11/21/2025**

See standard installation manuals for more information, please click below:

LED Sports Lighting - Field Lights - Ephesus | Cooper Lighting Solutions

Definitions:
Furnish = Supply materials and deliver to the ship-to address
Install = To place, secure, connect, and position for use
Provide = Furnish and install, complete and ready for the intended use

Buyer/Installer/Other Responsibilities:

Verify that the photometric design, proposal, and all included documents meet all desired project specifications
Verify all site information shown on drawings is accurate
Verify that all designed fixture locations have adequate physical and thermal clearances to facilitate fixture installation and aiming with clear line of sight to aiming points
Verify electrical service voltage and phase feeding lighting system
Verify that the capacity and integrity of all existing mounting structures and electrical distribution systems are compatible with the new lighting system and compliant with all regulatory and safety codes
Confirm that order matches the desired photometric revision quantities and configurations before submitting
Select desired configurations so all product model numbers are complete and correct (Resolve all "X" variable placeholders used in quoting)
Submit Project Confirmation Form with purchase order
Submit Tax Exemption Certificate with purchase order, if applicable
Offload material from delivery trucks
Install fixtures, including aiming
Measure light levels and verify compliance with project specifications, if required
Address fixtures (DMX/sACN) or Record MAC Addresses (Air Mesh)
Install control equipment
Provide all control system cabling in accordance with project riser diagrams
For new poles, Provide site geotechnical report to Cooper for use in foundation designs. Report must be submitted before or with purchase order
If no Geotech report is provided, design may be based on generic area soil data with safety factors which may include additional cost.
Install new poles
For retrofitting new structures, provide detailed dimensions of existing structures to ensure compatibilitys. Dimensions must be submitted before or with purchase order
Provide any mounting accessories or adapters as required if not sourced through Cooper Lighting
Install new crossarms, platforms, or pole tops on existing structures

Cooper Lighting Responsibilities:

Furnish materials as ordered
Provide control system programming
Provide stamped pole foundation drawings
Provide stamped lighting structure drawings
Provide installation technical support (instructions and guidance only)
Provide project aiming/installation drawings

Exclusions:

Notes:

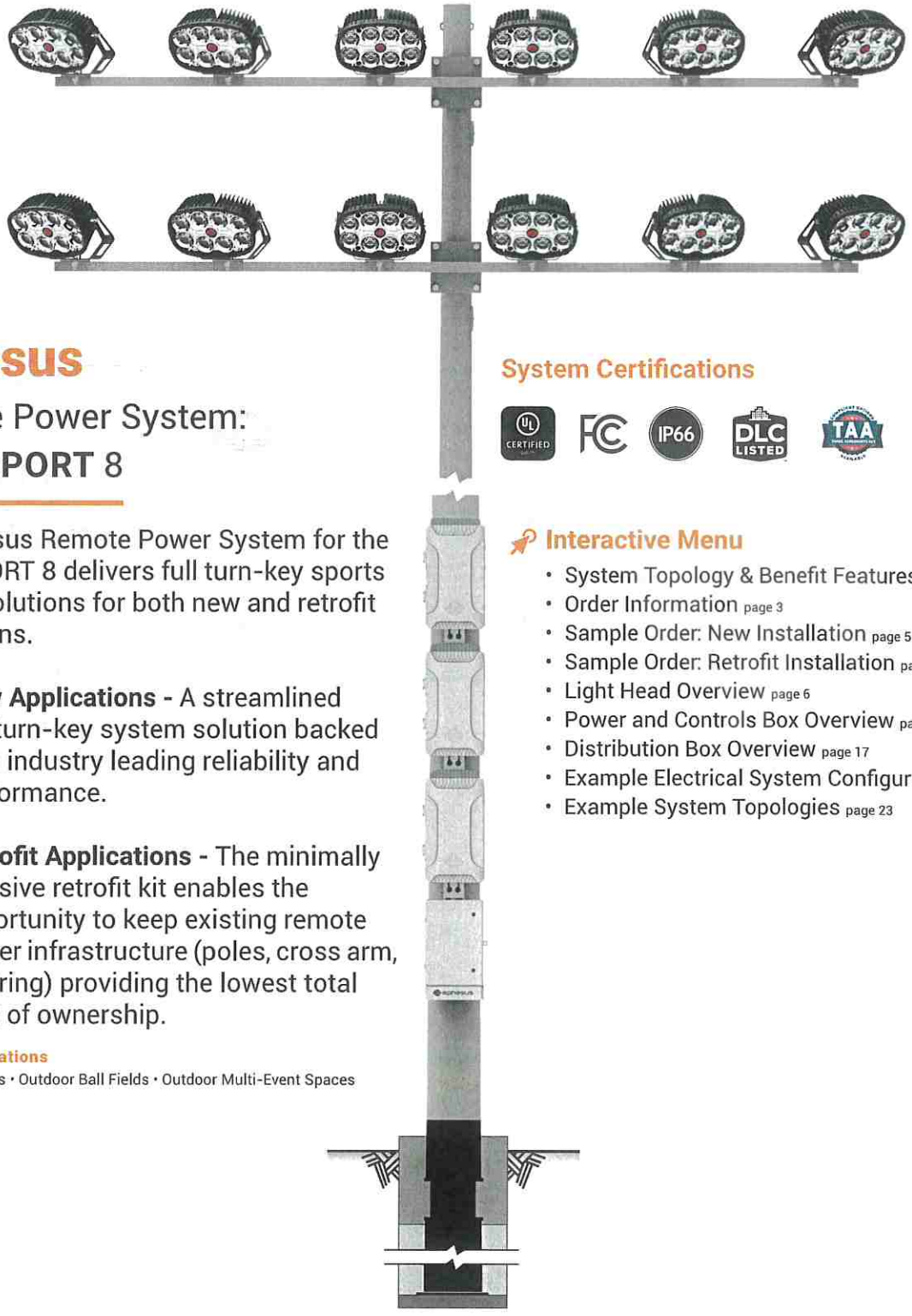
Photometric:

Quote is based on quantity of fixtures used in design 2501260
Material quantities and prices are subject to change upon design revisions and/or technical scope review.

Warranty:

Ephesus Fixture 10 Year Parts and Labor Limited Warranty https://www.assets.signify.com/is/content/Signify/Assets/cooper-lighting/Resources/legal-page-assets/legal-docs/Ephesus-Standard-Warranty-Turnkey-Labor-10-Year.pdf

Project		Catalog #		Type	
Prepared by		Notes		Date	



Ephesus

Remote Power System: LUMA**SPORT** 8

The Ephesus Remote Power System for the LUMASPORT 8 delivers full turn-key sports lighting solutions for both new and retrofit applications.

- **New Applications -** A streamlined full turn-key system solution backed with industry leading reliability and performance.
- **Retrofit Applications -** The minimally invasive retrofit kit enables the opportunity to keep existing remote power infrastructure (poles, cross arm, & wiring) providing the lowest total cost of ownership.

Typical Applications

Outdoor Stadiums • Outdoor Ball Fields • Outdoor Multi-Event Spaces

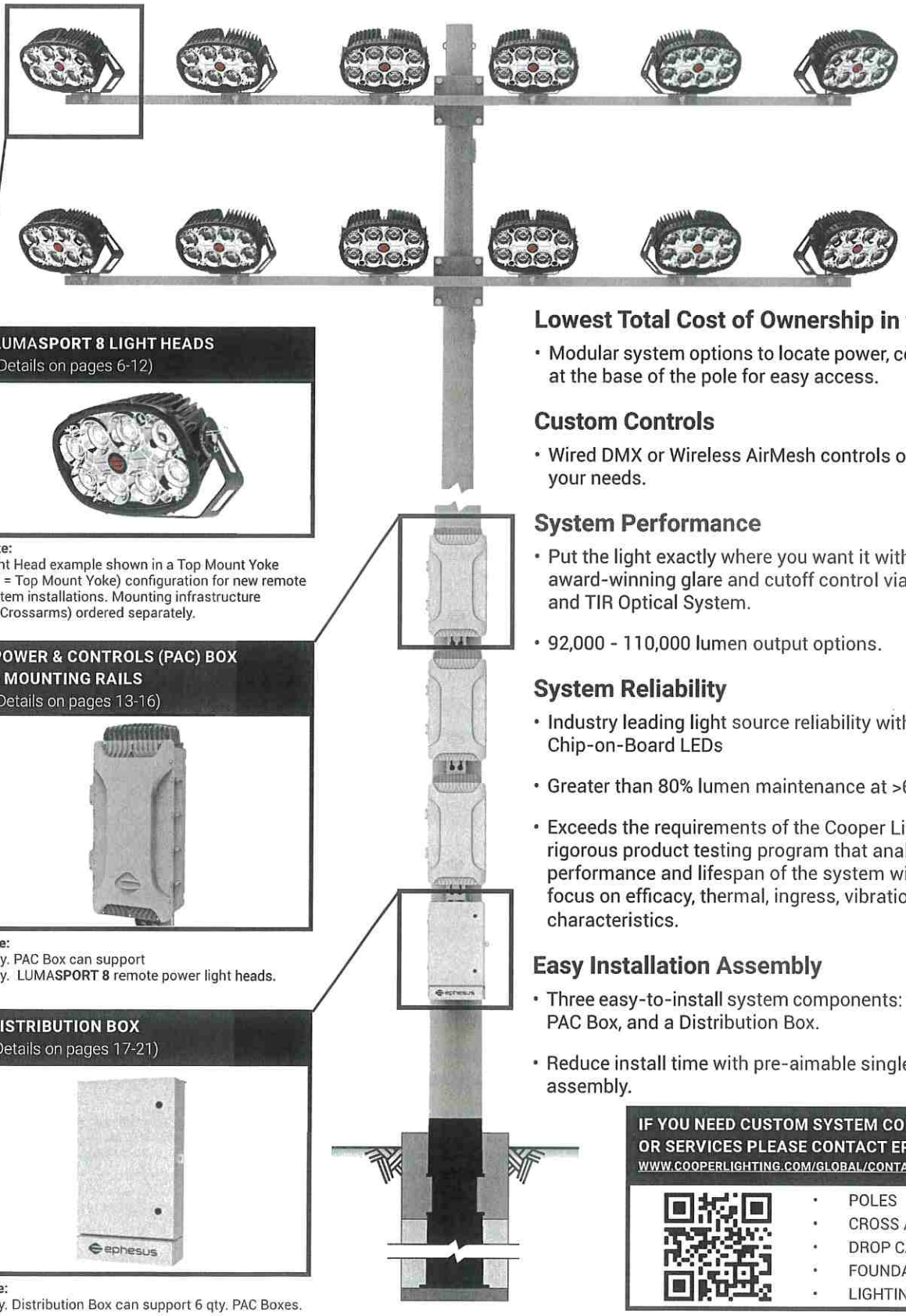
System Certifications

UL CERTIFIED · FC · IP66 · DLC LISTED · TAA

Interactive Menu

- System Topology & Benefit Features page 2
- Order Information page 3
- Sample Order: New Installation page 5
- Sample Order: Retrofit Installation page 5
- Light Head Overview page 6
- Power and Controls Box Overview page 13
- Distribution Box Overview page 17
- Example Electrical System Configuration page 22
- Example System Topologies page 23

SYSTEM TOPOLOGY & BENEFIT FEATURES



LUMASPORT 8 LIGHT HEADS
(Details on pages 6-12)

Note:
Light Head example shown in a Top Mount Yoke (TY = Top Mount Yoke) configuration for new remote system installations. Mounting infrastructure (ie, Crossarms) ordered separately.

POWER & CONTROLS (PAC) BOX + MOUNTING RAILS
(Details on pages 13-16)

Note:
1 qty. PAC Box can support
4 qty. LUMA**SPORT 8** remote power light heads.

DISTRIBUTION BOX
(Details on pages 17-21)

Note:
1 qty. Distribution Box can support 6 qty. PAC Boxes.

Lowest Total Cost of Ownership in the Industry

- Modular system options to locate power, controls, and surge at the base of the pole for easy access.

Custom Controls

- Wired DMX or Wireless AirMesh controls options to suit your needs.

System Performance

- Put the light exactly where you want it with our award-winning glare and cutoff control via Hybrid Reflector and TIR Optical System.
- 92,000 - 110,000 lumen output options.

System Reliability

- Industry leading light source reliability with Chip-on-Board LEDs
- Greater than 80% lumen maintenance at >66,000 hours.
- Exceeds the requirements of the Cooper Lighting Solutions rigorous product testing program that analyzes the performance and lifespan of the system with extensive focus on efficacy, thermal, ingress, vibration, and durability characteristics.

Easy Installation Assembly

- Three easy-to-install system components: the light head, the PAC Box, and a Distribution Box.
- Reduce install time with pre-aimable single-piece light head assembly.

IF YOU NEED CUSTOM SYSTEM COMPONENTS OR SERVICES PLEASE CONTACT EPHESUS:
WWW.COOPERLIGHTING.COM/GLOBAL/CONTACT-US/EPHESUS

- POLES
- CROSS ARMS
- DROP CABLES
- FOUNDATION DESIGN
- LIGHTING DESIGN

ORDER INFORMATION

NOTE: A complete LumaSport Remote System order requires a selection entry for:

1. LIGHT HEADS - SAMPLE ORDER NUMBER: EPH-LS-08-0680R-BLK-57-80-5S-BH3-TY-CV5-ST
2. POWER & CONTROLS BOX + MOUNTING RAILS - SAMPLE ORDER NUMBER: EPH-PAC-0680R-GRY-240-AM-4-MR-ST
3. DISTRIBUTION BOX - SAMPLE ORDER NUMBER: EPH-DST-6PC-GRY-240-CP-ST

A **OPTIONAL:** BANDING ACCESORIES - SAMPLE ORDER NUMBER: EPH-RPB-KIT

1 LIGHT HEADS

Brand	Family	Model	Power Configuration	Color[1]	CCT	CRI	Optic[2]	Light Head Cable (DC)[3]
EPH = Ephesus, Standard **TAA**=Trade Agreements Act[1]	**LS** = Lumasport	**08** = 8 Optics	**0680R** = 680W Remote Power	**BLK** = Black	**40** = 4000K **57** = 5700K	**70** = 70 CRI **80** = 80 CRI	**1S** = NEMA 3 | 17.5 | 33.3 **2S** = NEMA 3 | 21.9 | 40.2 **3S** = NEMA 3 | 25.4 | 45.7 **4S** = NEMA 4 | 36.0 | 64.4 **5S** = NEMA 5 | 46.6 | 82.6 **7F** = NEMA 7 | 72.5 | 131.0	**BH3** = 3ft, 3 pin **C10**[4] = 10ft Cable **RAC** = 3ft, Retrofit Adapter Cable
Notes: (1)Only product configurations with this designated prefix are built to be compliant with the Trade Agreements Act of 1979 (TAA). Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.				Notes: (1) Not coastal rated. Contact Ephesus for coastal fixture options.			Notes: (2) Optic = NEMA TYPE; BEAM ANGLE; FIELD ANGLE. Additional optical performance data within spec sheet.	Notes: (3) DC Cable connecting the light head to the driver box. (4) **C10** = 10ft Cable is intended to be used with the Ephesus Catwalk Bracket.

Light Head Mount[5,6]	Options	Special Options
TY = Top Mount Yoke **QC**[7] = Quick Clamp	**HEG** = No Visor, high efficiency glass **VHE** = Visor, high efficiency glass lens **CV1** = Cut-off visor, 1 **CV2** = Cut-off visor, 2 **CV5** = Cut-off visor, 5	**ST** = Standard
Notes: (5) Light Head Mounts shipped assembled to Light head (6) Installation type may vary with lighting design (7) **QC** = Quick Clamp is intended to be used to mount the light head to a 2 inch by 4 inch tubular crossarm.		

2 POWER AND CONTROLS (PAC) BOX

Brand	Family	Power Configuration	Color[1]	AC Input Voltage	Control	Light Heads	Mounting Option	Special Options
EPH = Ephesus, Standard **TAA**=Trade Agreements Act[1]	**PAC** = Power and controls box	**0680R** = 680W Remote Power	**GRY** = Grey	**208** = 208V AC **240** = 240V AC **277** = 277V AC **347** = 347V AC **480** = 480V AC	**AM** = Wireless Air Mesh Individual **LB** = Landburst (DMX) Individual **NC** = No Control	**1** = 1 qty Light Head **2** = 2 qty Light Heads **3** = 3 qty Light Heads **4** = 4 qty Light Heads	**MR** = Mounting Rails	**ST** = Standard 15ft Cables[2] **XL** = Extended 30ft Cables[3]
Notes: (1)Only product configurations with this designated prefix are built to be compliant with the Trade Agreements Act of 1979 (TAA). Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.			Notes: (1) Not coastal rated. Contact Ephesus for coastal fixture options.					Notes: (2) 15ft standard for up to 3 PAC boxes high (3) 30ft supports for more than 3 PAC boxes high

	QUANTITY OF FIXTURES PER POLE																							
LUMASPORT 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
QUANTITY OF PAC BOXES	1 PAC BOX				2 PAC BOXES				3 PAC BOXES				4 PAC BOXES				5 PAC BOXES				6 PAC BOXES			
QUANTITY OF DISTRIBUTION BOXES	1 DISTRIBUTION BOX																							

3 DISTRIBUTION BOX

Brand	Family	Configuration	Color	AC Input Voltage	Pole Access	Mounting Option
EPH = Ephesus, Standard **TAA**=Trade Agreements Act[1]	**DST** = Distribution Box	**6PC** = Compatible with up to 6 Power & Control Boxes	**GRY** = Grey	**208** = 208V AC **240** = 240V AC **277** = 277V AC **347** = 347V AC **480** = 480V AC	**CP** = Cover Plate & Adapter, Standard	**ST** = Standard
Notes: (1)Only product configurations with this designated prefix are built to be compliant with the Trade Agreements Act of 1979 (TAA). Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.						

A ACCESSORY ORDER INFORMATION

Brand	Accessory	Option
EPH = Ephesus	**RPB** = Remote Power Pole Banding	**KIT** = Banding Kit (Banding, Buckles, Tool) **BND** = Banding, 100ft roll **BKL** = Buckle, 100 quantity per pack **BTL** = Banding Tool
Notes: The quantity of banding and banding buckles needed is determined by the circumference of the pole, the quantity of PAC Boxes (quantity 3 bands per PAC Box required for mounting), and Distribution Boxes (quantity 2 bands per Distribution Box required for mounting). A typical 18-inch diameter pole using quantity 3 PAC boxes and quantity 1 Distribution box will utilize 60-70 feet of banding per pole.		

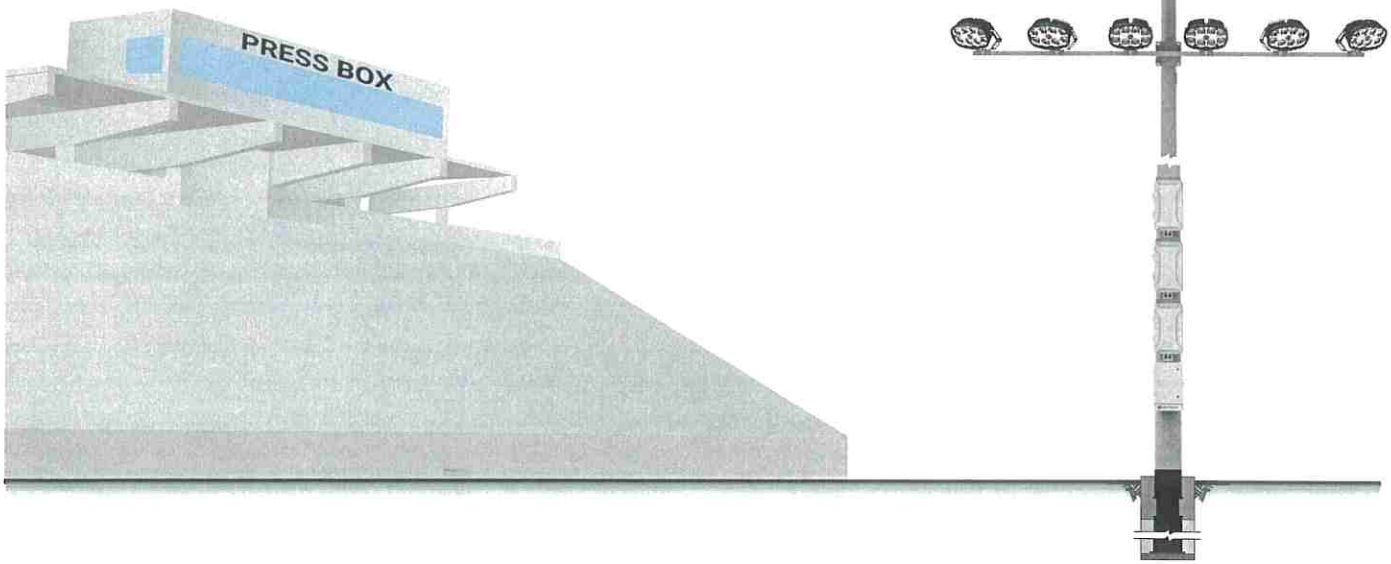
EPH-RPB-KIT = Banding Kit Components

	Banding Tool (EPH-RPB-BTL)	Banding (EPH-RPB-BND)	Banding Buckle (EPH-RPB-BKL)
			
Description	Tensioning tool for 3/4 inch stainless steel banding	Heavy duty 3/4 inch x .030 inch thick type 201 stainless steel banding.	Type 201 stainless steel banding buckle for 3/4 inch stainless steel banding.
Quantity	1 tool	2 rolls, 100 foot per roll	1 box, 100 qty per box.

SAMPLE ORDER: NEW INSTALLATION

Example Order - New (277VAC, AM CONTROLS)

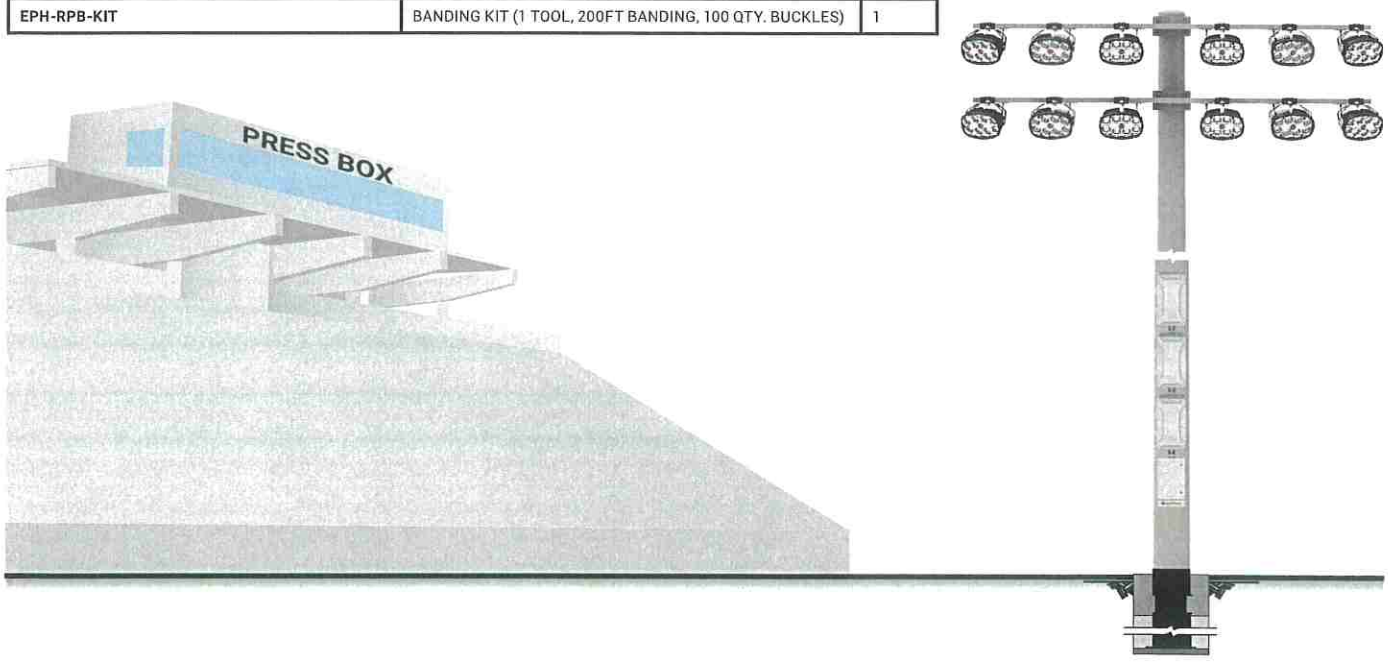
Cat Logic	Description	Qty.
EPH-LS-08-0680R-BLK-57-70-XX-BH3-TY-HEG-ST	LIGHT HEAD, 3 PIN CONNECTOR, TOP MOUNT YOKE (VARIOUS OPTICS)	12
EPH-PAC-0680R-GRY-277-AM-4-MR	PAC, 4 QTY. LIGHT HEAD PER PAC	3
EPH-DST-6PC-GRY-277-CP-ST	DISTRIBUTION BOX	1
EPH-LTGSTR-P	NEW CROSSARMS & CABLING	VARIES



SAMPLE ORDER: RETROFIT INSTALLATION

Example Order - Retrofit (277VAC, AM CONTROLS)

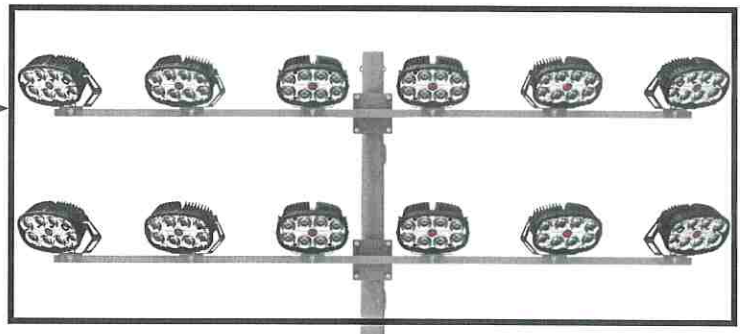
Cat Logic	Description	Qty.
EPH-LS-08-0680R-BLK-57-70-XX-RAC-QC-HEG-ST	LIGHT HEAD, RETROFIT ADAPTER CABLE, QUICK CLAMP (VARIOUS OPTICS)	12
EPH-PAC-0680R-GRY-277-AM-4-MR	PAC, 4 QTY. LIGHT HEAD PER PAC	3
EPH-DST-6PC-GRY-277-CP-ST	DISTRIBUTION BOX	1
EPH-RPB-KIT	BANDING KIT (1 TOOL, 200FT BANDING, 100 QTY. BUCKLES)	1

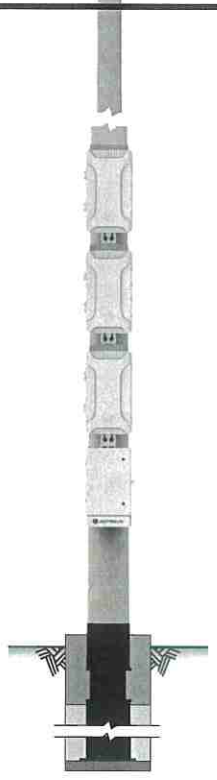


LIGHT HEAD OVERVIEW

Performance Data[1]

	LUMASPORT 8 (680W)
Lumen Output Range	92,000 - 110,000lm
Nominal Power[2]	680W
Efficacy Range	127 - 159lm/W
CRI[3]	70, 80
TLCI[4]	75
CCT Range	4000K, 5700K
Distribution (NEMA)[5]	NEMA 3 - 5
Dimming Range	DIM TO OFF, 10%-100%
Operating Temperature Range	-40°C to +40°C
Usage	INDOOR7, OUTDOOR
Mounting Options (3G RATED)	TOP YOKE; QUICK CLAMP
Electrical Certifications	FCC, UL8750, UL1598
Environmental Certifications	IP66, NEMA4X[7]
Vibration	ANSI C136.31-2010 3G8
Effective Projected Area (EPA)	1.8 (sq. ft.)
Effective Projected Area (EPA) with Visor (VHE , CV1, CV2, CV5)[9]	1.8 - 2.5 (sq. ft.)
Approximate Weight[10]	**Light Head** | 35 LBS **Visor** | + 4LBS **Remote Top Yoke** | + 6LBS **Quick Clamp Yoke** | + 12LBS





NOTES:

(1) Specifications are subject to change without notice.
(2) Values are +/- 4% when fixture is operated at 25°C ambient
(3) Values are +/- 2%
(4) Values are +/- 3 points.
(5) Optic = NEMA TYPE; BEAM ANGLE; FIELD ANGLE. Additional optical performance data within spec sheet.
(6) Indoor use limited to input voltages 277-480V.
(7) Light Head Enclosure meets NEMA4X Certification. Steel Yokes are excluded.
(8) LumaSport 8 with Quick Clamp or visors (VHE, CV1, CV2, CV5) qualifies for ANSI C136. 31-2010 1.5G
(9) EPA may vary depending on the aiming angle of the fixture.
(10) Weight may vary depending on mounting bracket, visor option, and light head configuration.

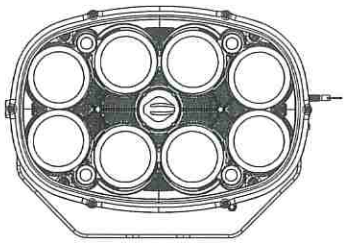
Light Head Electrical Specifications

Product	Drive Current	DC Voltage	Light Head Power
EPH-LS-08-0680R	2.35 A	285 VDC	680 W

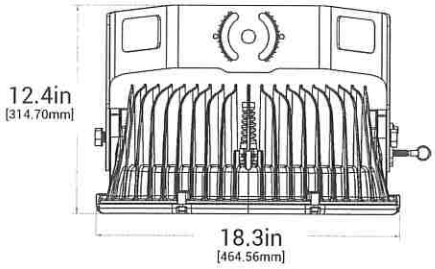
- Light Head cannot be powered independently from the PAC
- 14 AWG, 600V wire required. Rated and installed per electrical standard (contractor supplied)
- 200ft Max separation from PAC
- Electrical System (Light Head, PAC, Distribution Box) must be grounded per electrical standard
- **This is the power to the Light Head - for system input power, see sheet 13 for the PAC electrical performance data

LIGHT HEAD: DIMENSIONAL DETAILS

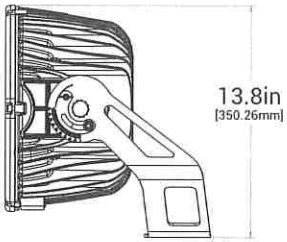
Light Head: TY = Top Yoke Dimensional Details



HEAD ON

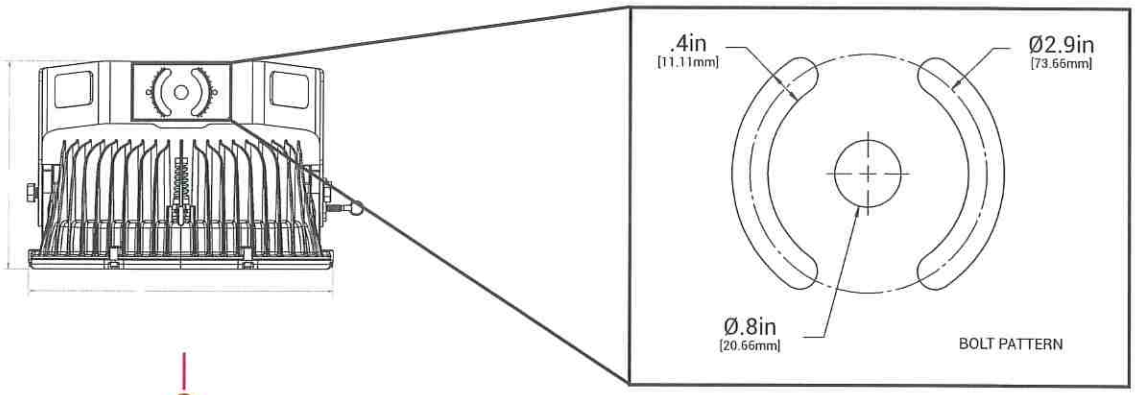


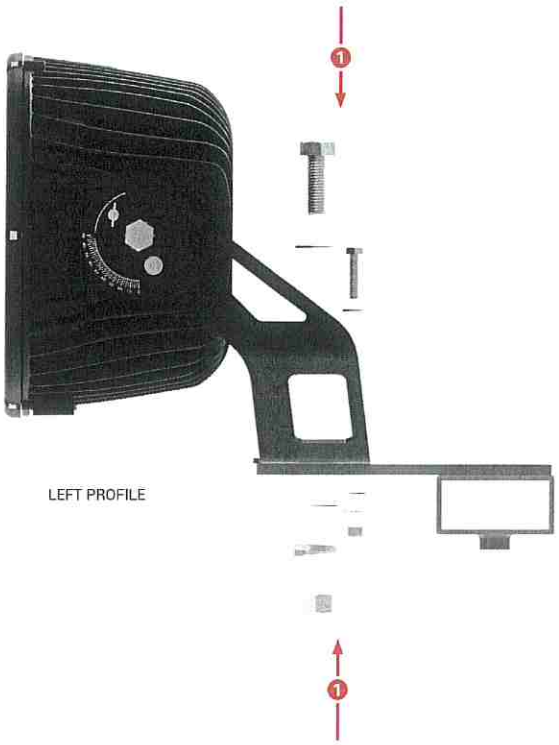
BOTTOM VIEW



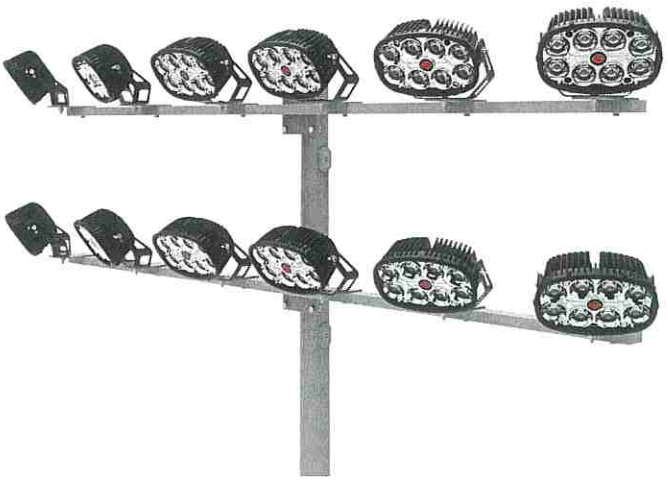
LEFT PROFILE

Light Head: TY = Top Yoke Mounting Attachment Method



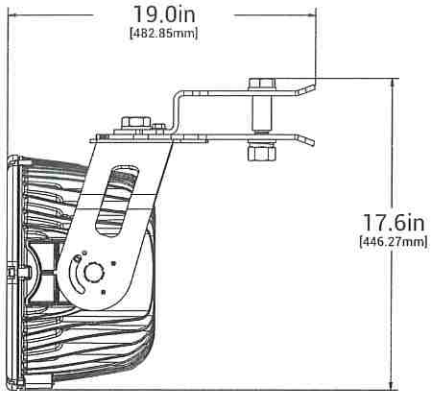


LEFT PROFILE

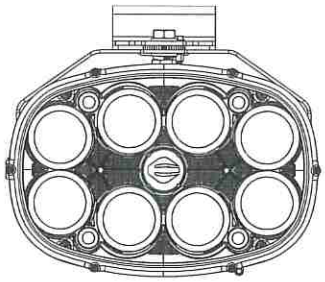


*Note: mounting hardware ordered separately for top mount yoke

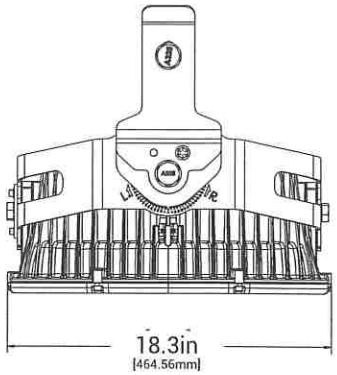
Light Head: QC = Quick Mount Dimensional Details



LEFT PROFILE



HEAD ON



TOP VIEW

Light Head: QC = Quick Mount Attachment Method

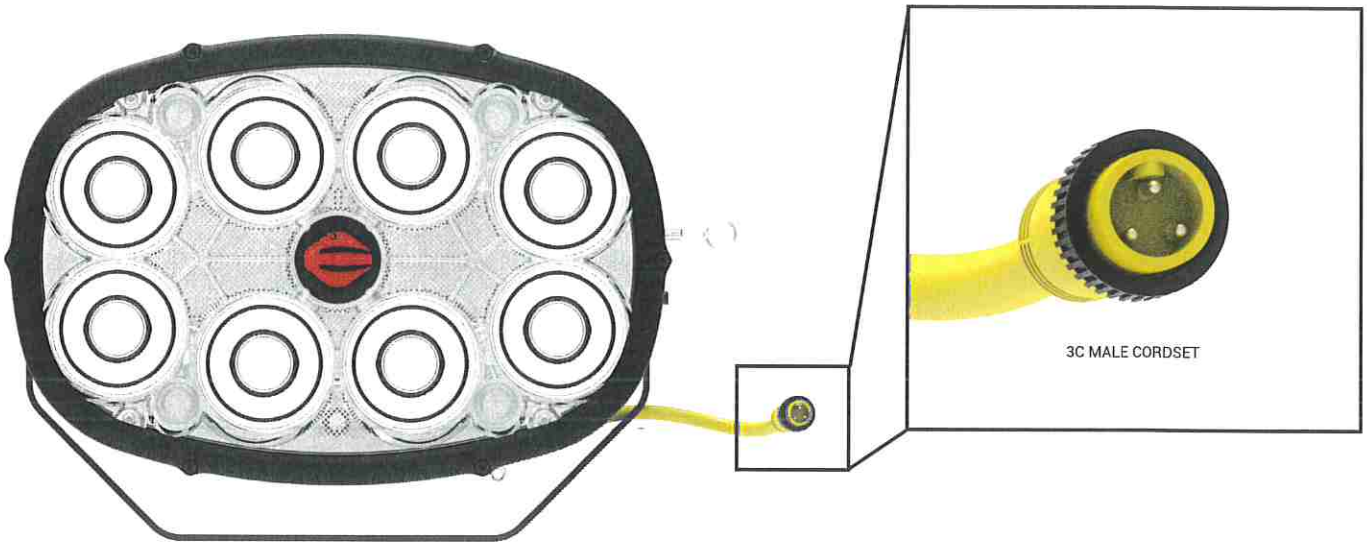
NOTE: Quick Clamp is intended to be used to mount the light head to a 2 inch by 4 inch tubular crossarm.

RIGHT PROFILE

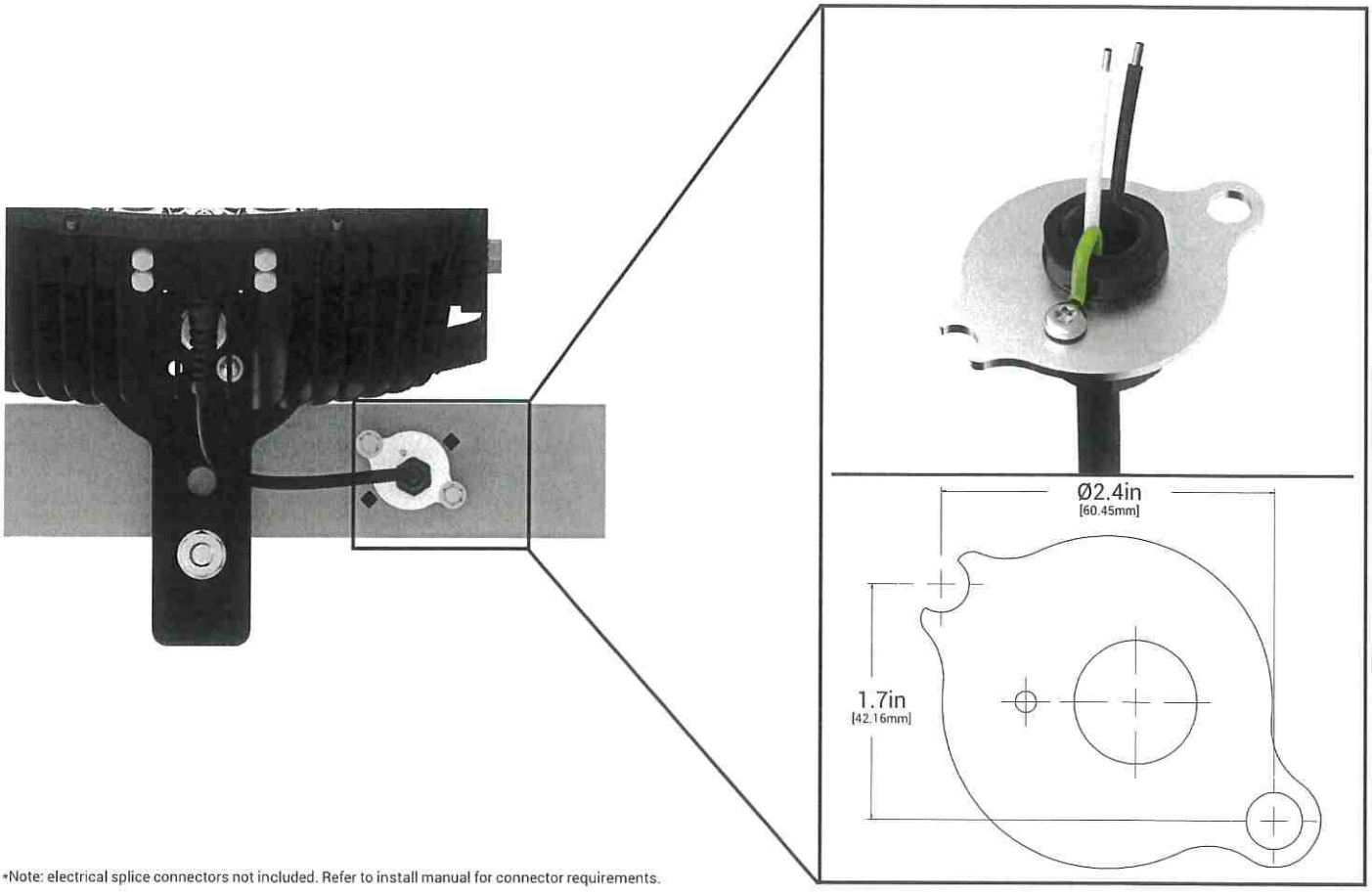
*Note: Mounting hardware included with quick clamp

LIGHT HEAD: ELECTRICAL ATTACHMENT METHODS

BH3 = 3 foot, 3 Pin Electrical Connector Details

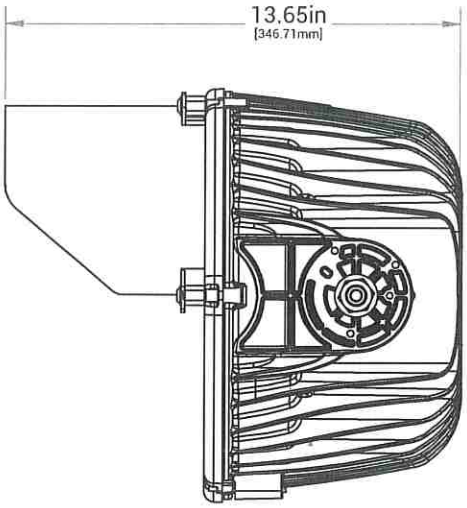


RAC = 3 Foot, Retrofit Adapter Cable Electrical Connector Details

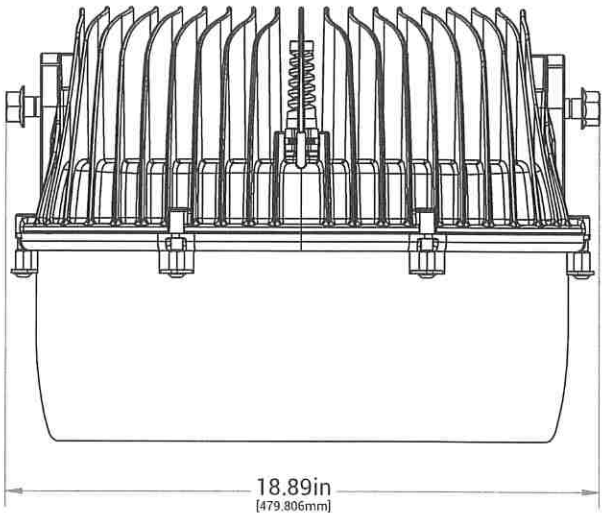


*Note: electrical splice connectors not included. Refer to install manual for connector requirements.

VHE = Visor Option Dimensional Details



LEFT PROFILE: VISOR

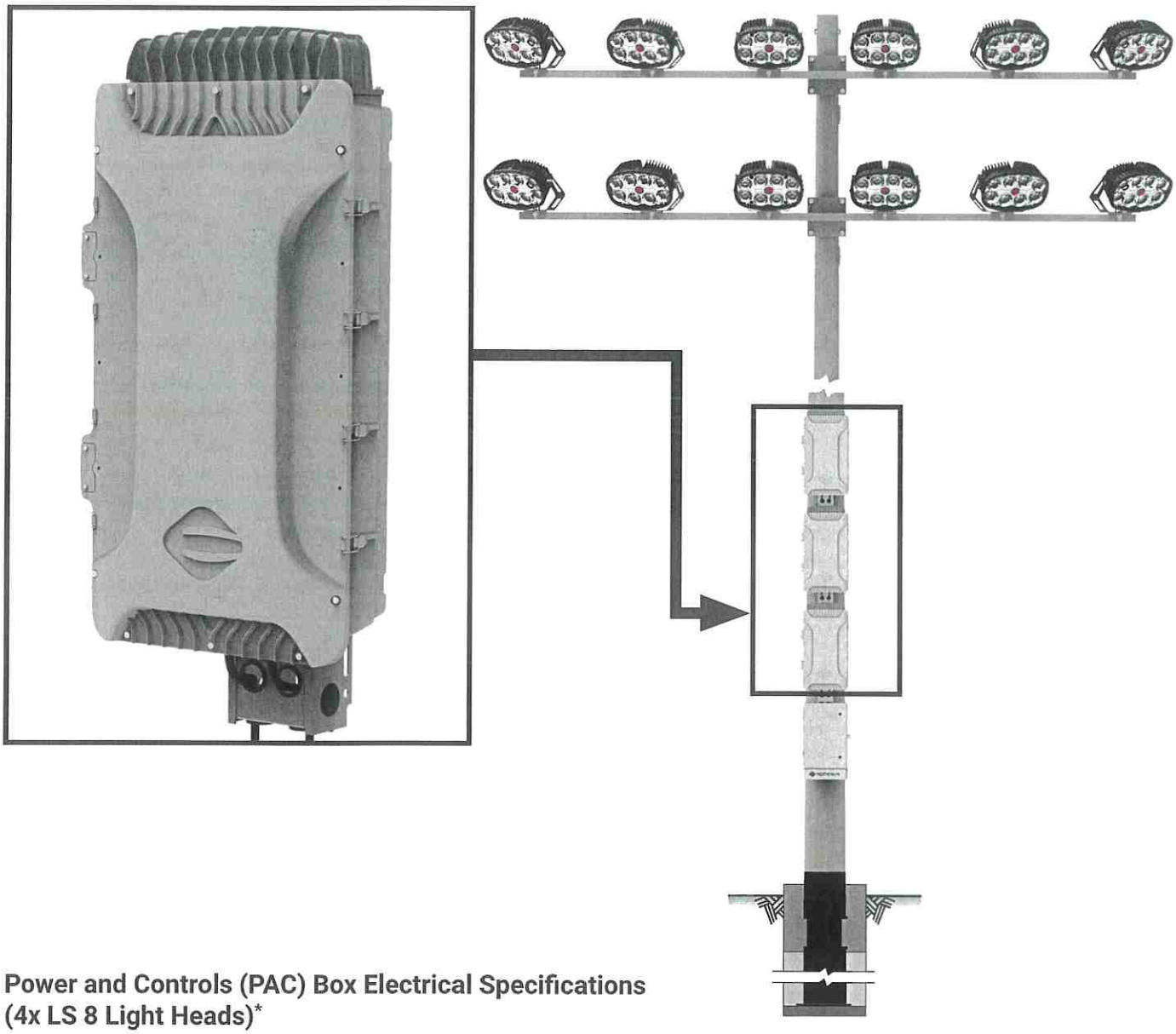


TOP: VISOR

NOTES:

The addition of a visor adds 1lb of material to the light head weight.

POWER AND CONTROLS BOX OVERVIEW

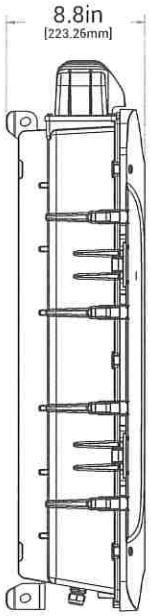


Power and Controls (PAC) Box Electrical Specifications (4x LS 8 Light Heads)*

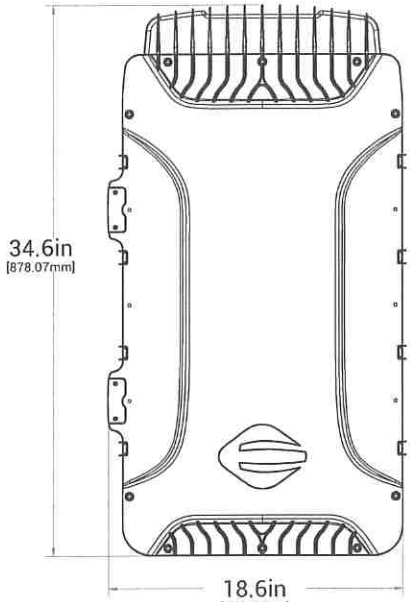
Product	Input Voltage	Surge Protection	Power Per Light Head	System Power (4X Light Heads)	Input Current (A)	Power Factor	THD	Inrush period (ms)	Peak Inrush (A)
EPH-PAC-680R (LV Drivers)	208 VAC	10KV	717 W	2868 W	13.6	>0.9	<10%	28.4	28.0
	240 VAC				12.0				
EPH-PAC-680R (HV Drivers)	277 VAC	10KV	712 W	2848 W	10.4	>0.9	<10%	13.12	35.4
	347 VAC				8.0				
	480 VAC				6.0				

*Measured at 25°C ambient

PAC BOX: DIMENSIONAL DETAILS



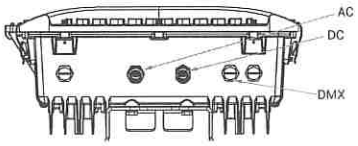
PROFILE



HEAD ON

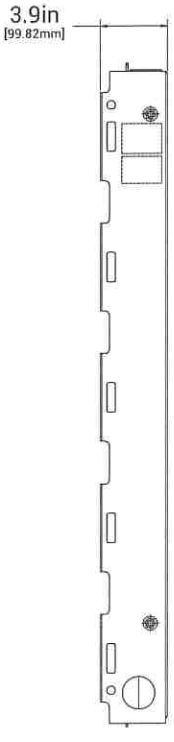
EPH-PAC-0680R (4x LumaSPORT 8 Light Heads)	
Operating Temperature Range	-40C to 40C
Usage	Indoor[1] / Outdoor
Environmental Certifications	IP66
Complaince	UL1598, UL8750, FCC
Effective Projected Area (EPA)	5.5 ft^2
Weight	65 lbs

(1) Indoor use limited to input voltages 277-480V.

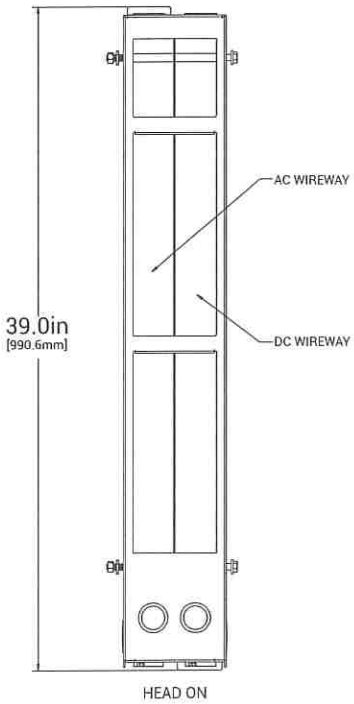


BOTTOM

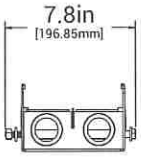
Mounting Rail for PAC Box Dimensional Details



PROFILE



HEAD ON

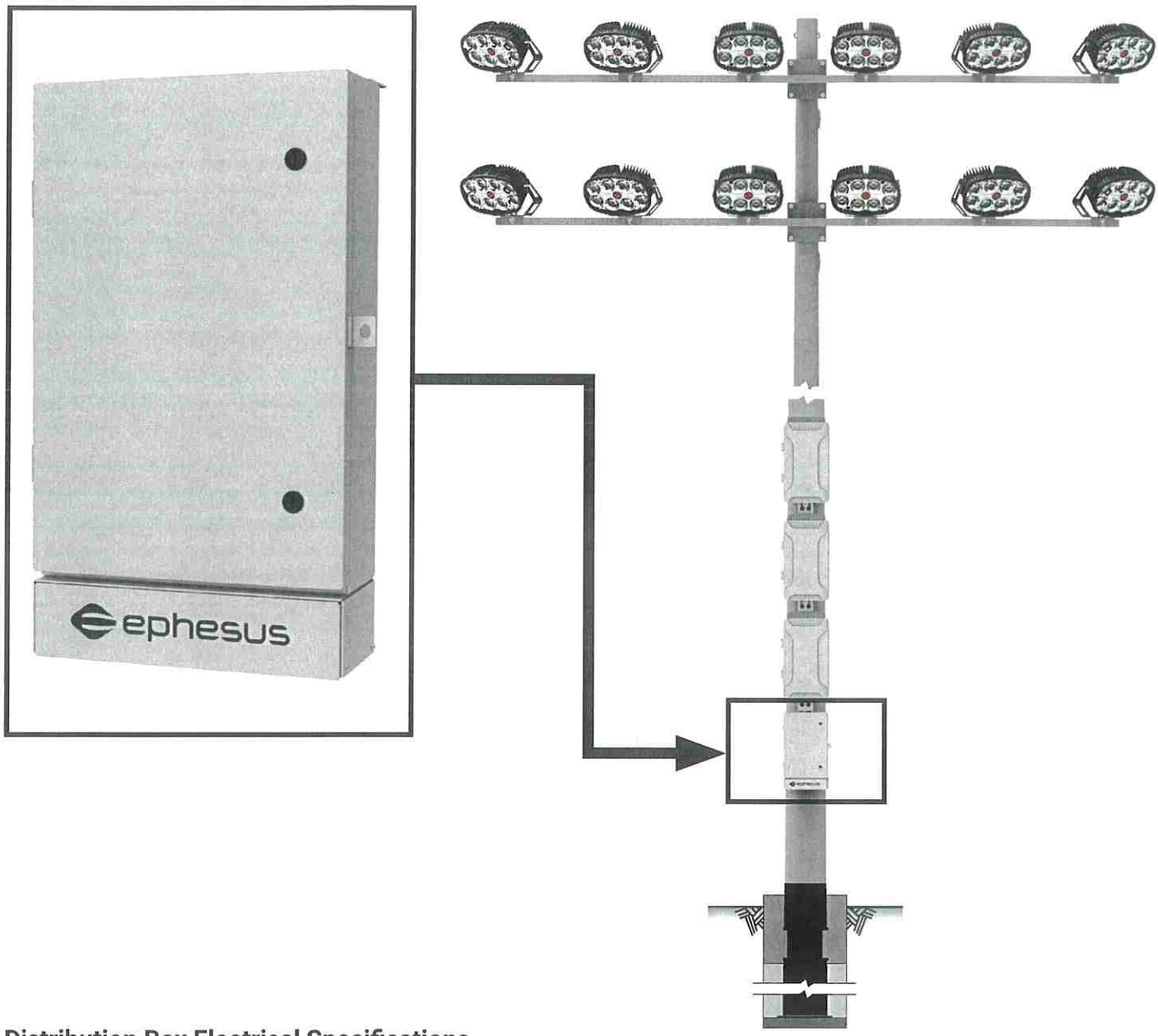


TOP

EPH-PAC-0680R (4x LumaSPORT 8 Light Heads)	
Mounting Rail Data	
Weight	10 lbs
Mounting Options	Pole New, Pole Retrofit, Wall Mount

• The mounting rail can be pole or wall mounted and is required to install the PAC

DISTRIBUTION BOX OVERVIEW

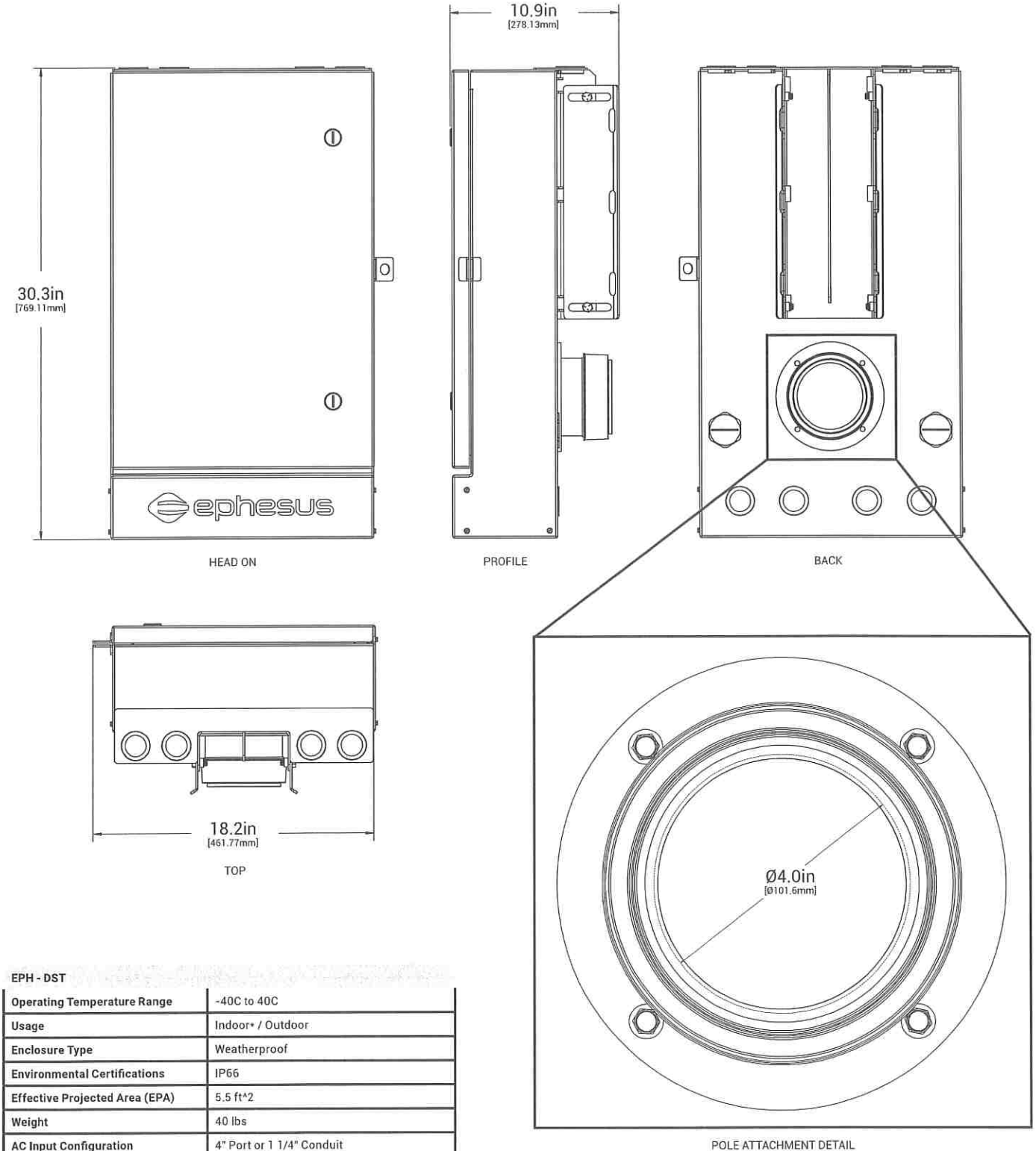


Distribution Box Electrical Specifications

Product	Input Voltage[1]	Phase	Max Input Current (A)	Surge Rating	Input Wire Gauge	Output Wire Gauge
EPH-DST-6PC	208 - 480 VAC	Single Phase or 3 Phase	95A	50 kA	8-1/0 AWG	18-12AWG

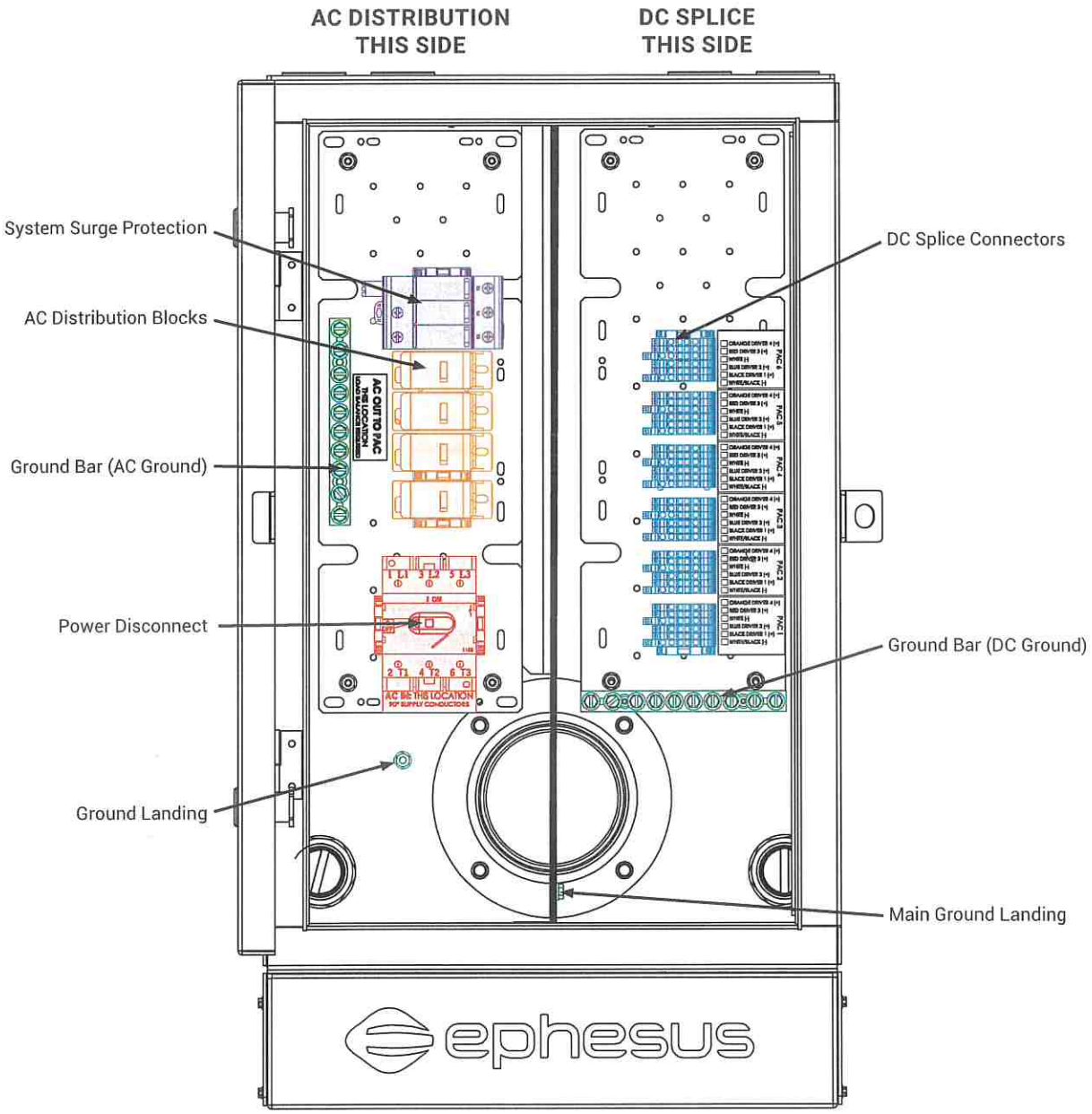
(1) Load balancing is necessary

DISTRIBUTION BOX: DIMENSIONAL DETAILS

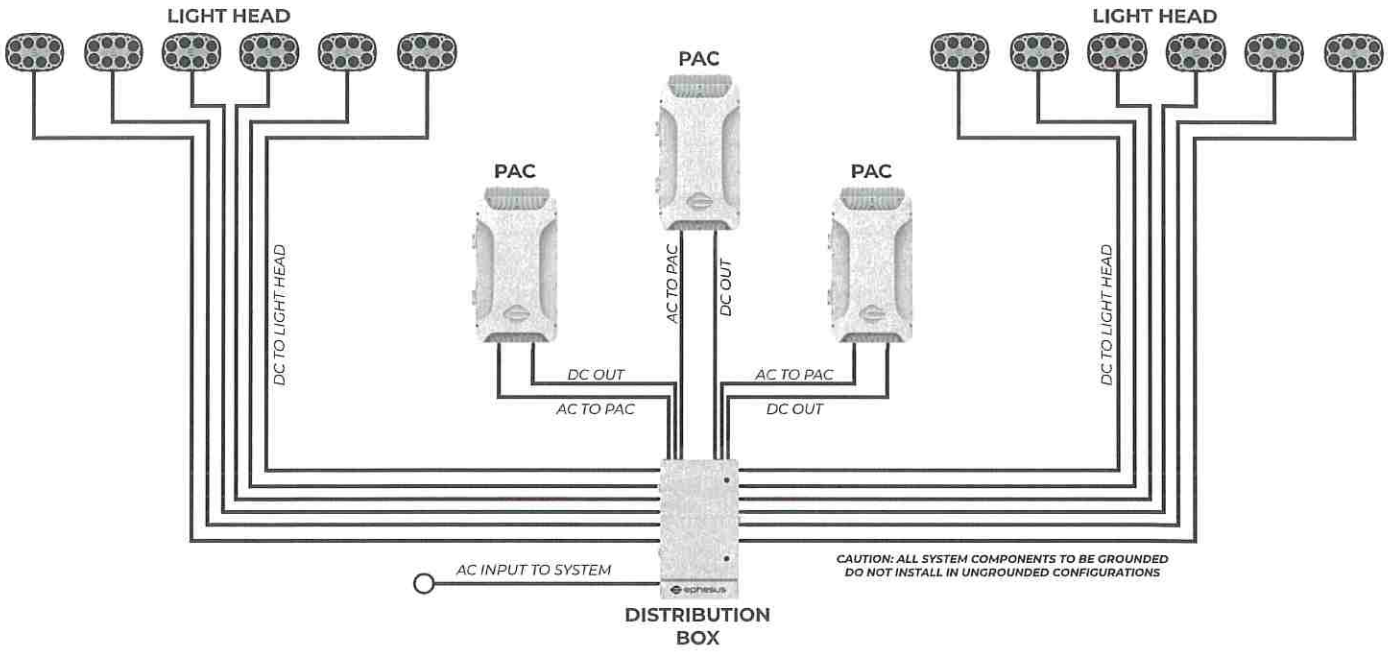


EPH - DST	
Operating Temperature Range	-40C to 40C
Usage	Indoor+ / Outdoor
Enclosure Type	Weatherproof
Environmental Certifications	IP66
Effective Projected Area (EPA)	5.5 ft^2
Weight	40 lbs
AC Input Configuration	4" Port or 1 1/4" Conduit
Mounting Options	Pole New, Pole Retrofit, Wall Mount

DISTRIBUTION BOX: ELECTRICAL DETAILS



EXAMPLE ELECTRICAL SYSTEM CONFIGURATION

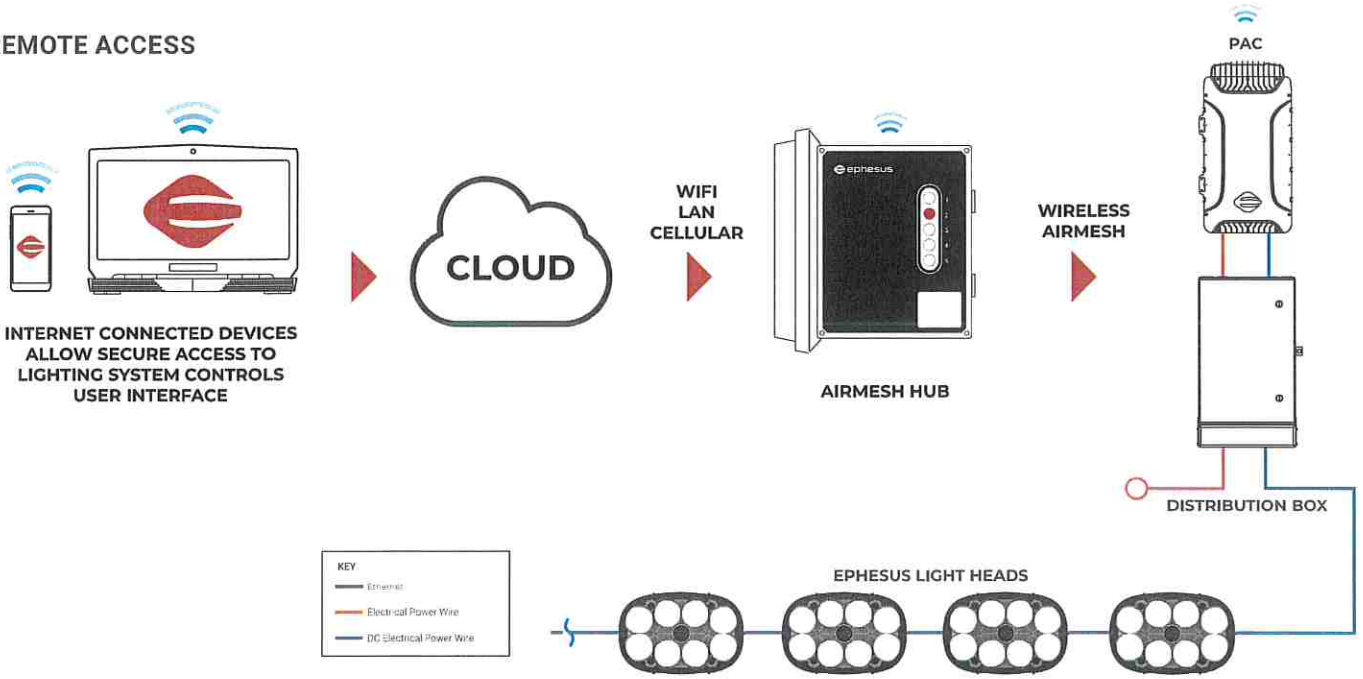


EXAMPLE SYSTEM TOPOLOGIES

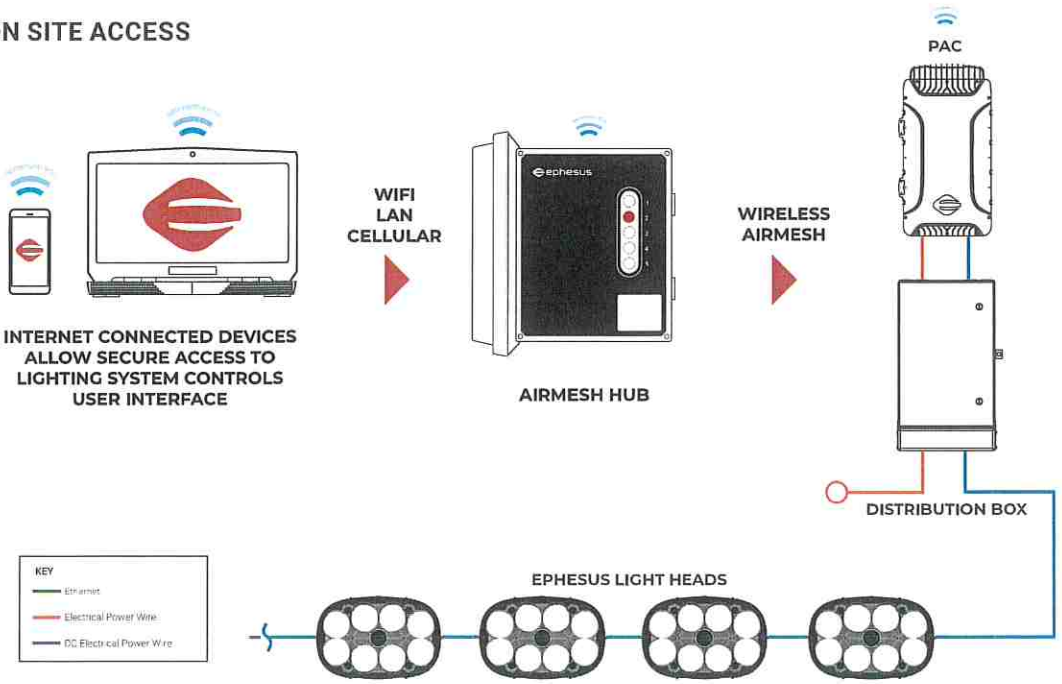
Wireless AirMesh Controls

Example system topology showing the LUMA**SPORT 8** System in a Wireless AirMesh Control Installation.
NOTE: Laptop and mobile device not included. A cellular network connection requires a cellular carrier network plan.

REMOTE ACCESS



ON SITE ACCESS



				Increase in Lbs.	
	BASE PROPOSAL CONTRACTED (July 23rd)	$ 2,321,993	cost impact	Steel	Aluminum
	1 Gradual ramps concourse on the West (aprox 270' by 12')		$ 204,378	49,600	20,218
	2 Flat Concourse on the East (aprox 270' by 12') with steps		$ 157,943	48,300	20,718
	3 Changed the Understructure of the West side; now I-beam system		$ 123,000	42,880	-
✓	4 Wider span between columns in the Upper East Bowl (24' apart, instead of 18' or 12') resulting in increase steel sizes of girders and columns:		$ 21,000	5,760	-
✓	5 More Bench seats + 516 or Plus 7%		$ 154,800	5,100	9,288
✓	6 Higher grandstands to clear Truck on East and to gain better sightlines on both East and West		$ 75,000	8,085	-
✓	7 More stadium chairs + 25		$ 5,000	-	-
✓	8 Higher risers on East & West from 14" to 16"		$ 32,760	-	420
	9 SE services adding scope - Foundation for the Councorse		$ 8,000	-	-
✓	10 More stairs and with more steps (went from 70 step to 180 steps) in all venue		$ 27,720	-	1,568
✓	11 Façade on Upper North, West and East (Option not taken for Contract figurewhen it was a 48" elevationand now it is 96")		$ 135,258	7,280	26,514
✓	12 Changed the understructure of the Upper North; nowan I-beam/leg truss system, before angle frame.		$ 79,950	29,744	-
		Total changes	$ 1,024,808	196,749	78,726

2,321,993 BASE BID
+ 1,024,808 C.O.
3,346,801 TOTAL

PROPOSED APPROACH

Dixie Sunbowl Budget
Budget Estimate
May 27, 2025
60,416 Square Foot Bowl Arena

Description	*Qty*	*Units*	*5/27/2025*	*Remarks*
Project Development				
Design & engineering	1	ls	-	
Permits & fee allowance	1	ls		
PROJECT DEVELOPMENT TOTAL			**$ -**	
Site Development				
Concrete bowl seating	1	ls	$ 2,568,361	
Earthwork	1	ls	$ 862,850	
Site demolition	1	ls	$ 284,250	
Landscape, fencing, preservation	1	ls	$ 198,892	
SITE DEVELOPMENT TOTAL			**$ 3,914,353**	
Building Shell				
Construction consumables (GC's)	1	ls	$ 543,300	
Masonry	1	ls	$ 87,984	Restroom building
Structural Steel, Metal Deck, Erection	1	ls	$ 571,382	Under the concrete slab for stadium seating
Woodwork	1	ls	$ 3,284	Restroom building parapet cap
Membrane/Metal Roofing, Caulking	1	ls	$ 251,352	Restroom building and bridge towers
Doors & Frames	1	ls	$ 15,900	Restroom building
Plumbing	1	ls	$ 8,280	Restroom building
Mechanical	1	ls	$ 7,452	Restroom building
Fire protection	1	ls	$ -	Not included
Electrical	1	ls	$ 233,694	Press box, restroom, staging area/livestock pen lighting
BUILDING SHELL TOTAL			**$ 1,722,628**	
Finishes				
Interior finishes, specialties, furnishings	1	ls	$ 101,167	
FINISHES TOTAL			**$ 101,167**	
Grandstands & Towers				
Grandstand Seating, Benches, Towers	1	ls	$ 3,426,100	
GRANDSTAND TOTAL			**$ 3,426,100**	
Sub-total			**$ 9,164,248**	
Overhead & profit			**$ 274,927**	
Grand Total			**$ 9,439,175**	

Notes

Design-Build Fees including Arch/Civil/Survey & Soils Report are not included in the budget estimate.
Floor finish is restroom area is priced as sealed concrete
This budget estimate does not include permits & fees, special inspection and utility connections or impact fees.
Phone/data/security systems are not included
Site furnishes are not included
Builders Risk Insurance is not included
No winter conditions are included
Signage is limited to code required signage for restrooms
Budget assumes Dixie Sunbowl will not have operations during construction.
Budget assumes livestock pen and staging/food truck area will be below a slab on deck with steel beams above the area
No improvements have been accounted for in the existing buildings
Stair towers to have a framed shell exterior with EIFS as surface finish
Steel beams under bleacher area is assumed to be galvanized not painted
No painting is included in this budget restroom building is assumed to be exposed CMU, railings and exposed steel are priced as galvanized

Additional three restroom allowance $880,000

COMPANY:	HUGHES GENERAL CONTRACTORS, INC.			Current Day #	5/27/2025
BID NUMBER:					
PROJECT TITLE:	Dixie Sunbowl Budget		LIQ DAMAGES		
LOCATION:			DURATION (DAYS):		420
SIZE (SF):		60,416	BID DATE:		5/27/2025
COST/SF:	$	156.24	BID TIME:		2:00 PM
SITE ACREAGE:			PRESENT DATE:		5/27/2025
TAX RATE:		6.25%	PRESENT TIME:		1:24 PM
BID TOTAL:	$	9,439,175	TIME REMAINING:		0:35:05
OH & PROFIT%:		3.00%			

SPEC NO.	DIVISION 01 - GENERAL CONDITIONS		Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
100	General Conditions		1	lsum		0		0	543,300.00	543,300		543,300		
	GENERAL CONDITIONS TOTALS					0		0		543,300		543,300	5.76%	
													Estimate	0
													% of est.	#DIV/0!

SPEC NO.	DIVISION 02 - EXISTING CONDITIONS		Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
201	Demolition - Site		1	lsum		0		0	284,250.00	284,250		284,250		
	EXISTING CONDITIONS TOTALS					0		0		284,250		284,250	3.01%	

SPEC NO.	DIVISION 31,33 - EARTHWORK & UTILITIES		Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
203	Site Survey & Layout		1	lsum		0		0	15,000.00	15,000		15,000		
207	SWPPP		1	lsum		0		0	19,000.00	19,000		19,000		
204	Earthwork		1	lsum		0		0	328,000.00	328,000		328,000		
204	Footings		1	lsum		0		0	42,000.00	42,000		42,000		
204	Site & Prep		1	lsum		0		0	340,750.00	340,750		340,750		
210	Waterline		1	lsum		0		0	21,000.00	21,000		21,000		
210	Sewerline		1	lsum		0		0	15,000.00	15,000		15,000		
211	Storm Drain System		1	lsum		0		0	82,100.00	82,100		82,100		
	EARTHWORK & UTILITIES TOTALS					0		0		862,850		862,850	9.14%	

SPEC NO.	DIVISION 32 - EXTERIOR IMPROVEMENTS		Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
218	Fence		304	lf		0		0	60.00	18,253		18,253		
285	Ex Concrete Seating Preservation		3,449	sf		0		0	25.00	86,213		86,213		
219	Landscaping		19,370	sf		0		0	4.25	82,321		82,321		
219	Topsoil		269	cy		0		0	45.00	12,106		12,106		
SITE CONCRETE	$	2,568,360.79												
230	Concrete Scope of Work		1	lsum		0		0	2,568,360.79	2,568,361	e	2,568,361		
	EXTERIOR IMPROVEMENTS TOTALS					0		0		2,767,253		2,767,253	29.32%	

SPEC NO. DIVISION 04 - MASONRY	Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
400 Masonry	2,444	sf		0		0	36.00	87,984		87,984		
MASONRY TOTALS				0		0		87,984		87,984	0.93%	

SPEC NO. DIVISION 05 - METALS	Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
510 Structural Steel Erection	16,489	sf		0	9.50	156,646		0		156,646		
515 Steel Fabrication	16,489	sf	18.00	296,802		0		0		296,802		
520 Misc. Bolts	1	lsum		0		0	4,000.00	4,000		4,000		
540 Misc. Metals	1	lsum		0		0	15,000.00	15,000		15,000		
555 Metal Decking	16,489	sf	6.00	98,934		0		0		98,934		
METALS TOTALS				395,736		156,646		19,000		571,382	6.05%	

SPEC NO. DIVISION 06 - WOOD, PLASTICS, COMPOSITES	Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
605 Treated Lumber	204	bf	4.00	815	5.00	1,018	3.00	611		2,444		
605 3/4" Plywood	6	sheets	80.00	509	52.00	331		0		840		
WOOD, PLASTICS, COMPOSITES TOTALS				1,324		1,349		611		3,284	0.03%	

SPEC NO. DIVISION 07 - THERMAL & MOISTURE PROTECTION	Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
700 Roofing	373	sqft		0		0	15	5,592		5,592		
701 Dampproofing	3,466	sf		0		0	7	24,262		24,262		
705 Metal Roofing	685	sf		0		0	32	21,920		21,920		
760 Joint Sealants	37,722	sf		0		0	1	30,178		30,178		
770 EIFS	6,776	sf		0		0	25.00	169,400		169,400		
THERMAL & MOISTURE PROTECTION TOTALS				0		0		251,352		251,352	2.66%	

SPEC NO. DIVISION 08 - OPENINGS	Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
800 HM Doors, Frames, Hardware - Supply	6	ea	2,200.00	13,200		0		0		13,200		
800 Hollow Metal Frames - Install	6	ea		0	150.00	900		0		900		
805 Metal Doors - Install	6	ea		0	150.00	900		0		900		
865 Hardware - Install	6	ea		0	150.00	900		0		900		
OPENINGS TOTALS				13,200		2,700		0		15,900	0.17%	
950 Water Repellents/Anti Graffiti	2,444	sf		0		0	1.25	3,055		3,055		
FINISHES TOTALS				0		0		96,427		96,427	1.02%	

SPEC NO.	DIVISION 10 - SPECIALTIES	Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
1006	Toilet Accessories	1	lsum		0		0	3,840.00	3,840	—	3,840		
1010	Building Signage	6	each		0		0	150.00	900	—	900		
	SPECIALTIES TOTALS				0		0		4,740		4,740	0.05%	

SPEC NO.	DIVISION 13 - SPECIAL CONSTRUCTION	Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
1320	Stadium Seating & Towers	1	lsum		0		0	3,426,100.00	3,426,100	—	3,426,100		
	SPECIAL CONSTRUCTION TOTALS				0		0		3,426,100		3,426,100	36.30%	

SPEC NO.	DIVISION 22, 23, 25 - PLUMBING, HVAC, INTEGRATED AUTO	Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
Div. 22	1500 Plumbing	414	sf		0		0	20.00	8,280	—	8,280		
Div. 23	1510 HVAC	414	sf		0		0	18.00	7,452	—	7,452		
	PLUMBING, HVAC, INTEGRATED AUTOMATION TOTALS				0		0		15,732		15,732	0.17%	

SPEC NO.	DIVISION 26,27,28 - ELECTRICAL, COMM., SAFETY	Matl Qty	Unit	Matl U/P	MATL TOTAL	Labor U/P	LABOR TOTAL	SERF U/P	SERF TOTAL	ID	TOTAL	SUB	NOTES
Div. 26	1600 Electrical	12,983	sf		0		0	18.00	233,694	—	233,694		
	ELECTRICAL, COMM., SAFETY TOTALS				0		0		233,694		233,694	2.48%	

	BID SUMMARY	Material	Labor	SERF	Total	% OF TOTAL	
02	EXISTING CONDITIONS	0	0	284,250	284,250	3.01%	
31,33	EARTHWORK & UTILITIES	0	0	862,850	862,850	9.14%	
32	EXTERIOR IMPROVEMENTS	0	0	2,767,253	2,767,253	29.32%	NO.
03	CONCRETE	0	0	0	0	0	1
04	MASONRY	0	0	87,984	87,984	0.93%	2
05	METALS	395,736	156,646	19,000	571,382	6.05%	3
06	WOOD, PLASTICS & COMPOSITES	1,324	1,348	611	3,284	0.03%	4
07	THERMAL & MOISTURE PROTECTION	0	0	251,352	251,352	2.66%	5
08	OPENINGS	13,200	2,700	0	15,900	0.17%	6
09	FINISHES	0	0	96,427	96,427	1.02%	7
10	SPECIALTIES	0	0	4,740	4,740	0.05%	8
11	EQUIPMENT	0	0	0	0	0	9
12	FURNISHINGS	0	0	0	0	0	10
13	SPECIAL CONSTRUCTION	0	0	3,426,100	3,426,100	36.30%	
14	CONVEYING SYSTEMS	0	0	0	0	0	
21	FIRE SUPPRESSION	0	0	0	0	0	
22,23,25	PLUMBING, HVAC, INTEGRATED AUTOMATION	0	0	15,732	15,732	0.17%	
26-28	ELECTRICAL, COMMUNICATION, ELECTRONIC SAFETY & SECURITY	0	0	233,694	233,694	2.48%	
		410,260	160,695	8,049,993	8,620,948		

ADDITIONS

NO.	DESCRIPTION	AMOUNT
1		0
2		0
3		0
4		0
5		0
6		0
7		0
8		0
9		0
10		0
TOTAL		0

SUB-TOTAL	8,620,948
GENERAL CONDITIONS	543,300
ADDITIONS	0
SUB-TOTAL	9,164,248
OVERHEAD & PROFIT %	3.00% Includes bond and insurance
OVERHEAD & PROFIT $	274,927
W/OVERHEAD & PROFIT	9,439,175
BOND	0
BID TOTAL	9,439,175

Bond Required (Y/N)	N
Design/Build (Y/N)	N

HUGHES
GENERAL CONTRACTORS

HUGHES
GENERAL CONTRACTORS, INC.

Dixie Sun Bowl
Earthwork Bid Package Summary
12/9/25

Sub-contractor Bid Summary

Description	*Qty*	*Units*	*RATE*	*Total*	*Remarks*
Whitaker				**$ 1,066,162.50**	
Suncore				$ 1,106,650.90	
Competative				$ 1,360,552.56	
Advanced Shoring				**$ 264,008.00**	
			TOTAL COST	**$ 1,330,170.50**	

Notes

This proposal does not include work in the plaza area other than rough grading

The **"bolded" descriptions are the subcontractors** that are being recommended to make official Notice of Awards

WHITAKER CONSTRUCTION
[an employee owned company]

44 S 1050 W
Brigham City, UT 84302
Phone # (435) 723-2921
www.whitcon.com

To:	Hughes General Contractors	**Contact:**	
Address:	PO Box 540700	**Phone:**	(801) 292-1411
	North Salt Lake, UT 84054-0700	**Fax:**	(801) 295-0530
Project Name:	Dixie Sunbowl	**Bid Number:**	
Project Location:		**Bid Date:**	12/3/2025

Line #	Item #	Item Description	Estimated Quantity	Unit	Unit Price	Total Price
	1	Mobilization/ Dust Control	1.00	LS	$165,500.00	$165,500.00
	2	SWPPP	1.00	LS	$10,100.00	$10,100.00
	3	Gravel Track Out Pad	2.00	EACH	$2,850.00	$5,700.00
	4	Load And Haul Off Concrete Casting Spoils	200.00	CY	$46.00	$9,200.00
	5	Construction Surveying	1.00	LS	$7,300.00	$7,300.00
	6	Sweeping	1.00	LS	$11,500.00	$11,500.00
	7	Earthwork	1.00	LS	$154,500.00	$154,500.00
	8	6" Perforated Pvc Pipe	1,975.00	LF	$59.00	$116,525.00
	9	Over Excavate Bleacher Footings And Backfill	1.00	LS	$86,900.00	$86,900.00
	10	Over Excavate Retaining Wall Footings And Backfill	1.00	LS	$36,300.00	$36,300.00
	11	Scarify And Recompact 8" Under Footings	58,871.00	SF	$0.50	$29,435.50
	12	Import And Place Structural Fill Under Footings	10,429.00	TON	$24.00	$250,296.00
	14	Heavy Sand Bedding For Arena Soils	812.00	CY	$50.50	$41,006.00
	15	Arena Soils	1,624.00	CY	$70.00	$113,680.00
	16	Practical Soils	680.00	CY	$41.50	$28,220.00

Total Bid Price: $1,066,162.50

Notes:

- Includes:
- Excludes: Permits, Concrete, Traffic Control, Bid Bond, Payment and Performance Bond, Toilets
- This proposal is valid for thirty days from the date of bid. This proposal will become a contract upon acceptance and shall be binding according to the terms and conditions herein stated.

  All materials and workmanship are guaranteed as specified. Any alteration or deviation from the terms, stipulations or conditions herein specified involving extra costs will be executed only upon written change order and will become an extra charge over and above the original contract.

  All agreements are contingent upon strikes, accidents, delays beyond our control, or acts of God.

  Delays in completion caused by acts or omissions of the owner shall cause the amount owing up to the date of delay to be due immediately.

  We reserve the right to make monthly billings throughout the duration of the project on a percentage of completion basis. Net payable 30 days from date of invoice.
- SWPPP is priced on our Scope Duration, Anticipating 50% Bleacher Footing Over-Excavation to be re-used.

Payment Terms:

Net Payment, 30 days from date of invoice. A late payment finance charge of 1 1/2% per month, which is an annual rate of 18% shall be applied to any unpaid balance, commencing 30 days after date of original invoice. If collection is made by suit or otherwise, I agree to pay reasonable attorney fees. I also waive all rights under the bankruptcy act of this state.

ACCEPTED:	CONFIRMED:
The above prices, specifications and conditions are satisfactory and are hereby accepted.	**Whitaker Construction Company**
Buyer: _____	
Signature: _____	**Authorized Signature:** _____
Date of Acceptance: _____	**Estimator:** Kevin Luke 435-723-2921 kevin.luke@whitcon.com

SUNCORE
CONSTRUCTION DIVISION
1825 EAST 3650 SOUTH, ST. GEORGE, UTAH 84790 (435) 634-2200

CONTRACT PROPOSAL

Customer:	HUGHES	**Contact:**	JUNIOR GARCIA
Address:		**Phone:**	() -
	,	**Fax:**	() -
Project:	DIXIE SUNBOWL	**Addendum:**	
Project Location:		**Date:**	12/3/2025

SUNCORE MAY WITHDRAW THIS PROPOSAL IF WRITTEN ACCEPTANCE IS NOT RECEIVED FROM THE BUYER WITHIN 30 DAYS OF THE PROPOSAL DATE

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
10	MOBILIZATION/SUPERVISION/SAFETY MEETINGS/ETC	1.000	LS		
20	SWEEPING (FOR OUR SCOPE)	1.000	LS		
30	EROSION CONTROL (TRACK OUT PAD ONLY)	1.000	LS		
				GENERAL CONDITIONS	$94,500.00
40	CUT & FILL ONSITE	100.000	CY		
50	CUT & HAUL OFF	7,860.000	CY		
55	HAUL OFF SPOILS	200.000	CY		
60	RETAINING WALL FOOTING EXCAVATION	2,450.000	LF		
65	6" PERFORATED PIPE	1,400.000	LF		
70	BACKFILL POURBACK PEA GRAVEL	370.000	CY		
85	BLEACHER SPOT FOOTING	113.000	EA		
90	SPOT FOOTINGS (COLUMNS)	14.000	EA		
95	FOOTING OVEREXCAVATION USING IMPORT(INCL SCARIFY)	800.000	CY		
100	SITE GRADING	78,325.000	SF		
103	12" ARENA SOIL	45,325.000	SF		
104	6" HEAVY SAND	45,325.000	SF		
105	6" CULTIVATBLE SOIL	33,000.000	SF		
106	12" NATIVE SOIL	33,000.000	SF		
110	4" CONC FLATWORK PREP (4" ROADBASE)	15,409.000	SF		
120	4' CATCH BASINS	2.000	EA		
130	12" ADS	500.000	LF		
				Grand Total:	**$1,106,650.90**

NOTES & EXCLUSIONS:

THIS PRICING IS BASED ON AN AGREED UPON CONSTRUCTION SCHEDULE BETWEEN THE CUSTOMER AND SUNCORE.

*** ALL ARENA SOIL AND SAND IS BID AS AN ASSUMPTION WITH NO SPECIFICATIONS PROVIDED. PRICING WILL BE ADJUSTED UPON DIRECTION FROM DESIGN ON EXACT SPECS***

PRICING BASED ON PLANS THAT APPEAR INCOMPLETE DATED 8-22-24. BID WILL BE REPRICED UPON RECIEPT OF STAMPED PLANS AS ASSUMPTIONS ON EXISTING GRADES HAVE BEEN MADE

EARTHWORK, UTILITIES, STRUCTURAL EXCAVATION, AND ASPHALT ARE BID AS A PACKAGE. SUNCORE DOES NOT INTEND ON DOING ONLY A PORTION OF THIS BID UNLESS OTHERWISE AGREED UPON.

ALL UTILITIES ARE BID TO WITHIN 5' OF THE BUILDING (EXCEPT ON SUBDIVISION/RESIDENTIAL PROJECTS UNLESS OTHERWISE DISCUSSED AND AGREED UPON).

EARTHWORK QUANTITIES ARE BASED ON GRADES AS SHOWN ON THE DRAWINGS. IF THE ONSITE GRADES VARY FROM THE GRADES ON THE PLANS, WE RESERVE THE RIGHT TO ADJUST OUR PRICING ACCORDINGLY.

EXCLUDES: SWPPP/NOI PERMIT/EROSION CONTROL INSTALLATION AND INSPECTIONS, SWEEPING FOR OTHER SCOPES, SAW CUTTING, TRAFFIC CONTROL, SIGNAGE & STRIPING, ENGINEERING, SURVEYING, SURVEY MONUMENTS, TESTING, LAYOUT, FEES, PERMITS, BONDS, DEWATERING, SOFT SPOT REPAIR/SOIL STABILIZATION, OVEREXCAVATION, ROCK EXCAVATION/TRENCHING, IMPORT TRENCH BEDDING, FLOWABLE FILL AROUND PIPES,CASINGS, ELECTRICAL/GAS/IRRIGATION TRENCHING & INSTALLATION, SLEEVINGS, PRESSURE REDUCER, BACKFLOW PREVENTER, BOLLARD EXCAVATION/INSTALLATION, VAPOR BARRIER, SHORING, BRACING, COLORED CONCRETE, COLD WEATHER CONCRETE PROTECTION, POOL EXCAVATION, SCREENING & SPREADING OF TOPSOIL, AND ANY AND ALL ITEMS NOT SPECIFICALLY STATED IN THIS PROPOSAL. THIS PRICING IS BASED ON THE WORK SHOWN TO BE DONE WITHIN THE QUOTED PHASES OF WORK, NOT OUTSIDE OF THE PHASE LINE OR PROJECT LIMITS SPECIFICALLY QUOTED (UNLESS OTHERWISE STATED).

ASPHALT NOTES:
THE QUANTITIES QUOTED ARE BASED ON THOSE PROVIDED ON THE PLANS OR VERBALLY BY OTHERS. IF THE ONSITE QUANTITIES VARY FROM THOSE PROVIDED AND QUOTED, WE RESERVE THE RIGHT TO ADJUST OUR PRICING ACCORDINGLY. ALSO, IF QUANTITIES ACTUALLY PLACED VARY FROM THE QUANTITIES QUOTED BY MORE THAN 20%, WE RESERVE THE RIGHT TO ADJUST OUR PRICING.

GRADES/ELEVATIONS OF SUBGRADE OR ROADBASE PREPARED BY OTHERS MUST BE VERIFIED BY SUNCORE AND/OR 3RD PARTY PRIOR TO PLACING ROADBASE OR ASPHALT. IF CUSTOMER DESIRES TO HAVE PAVEMENT PLACED WHEN TEMPERATURES DON'T MEET THE SPECIFICATIONS OF THE CITY WHERE PAVING IS TO BE PLACED, A WAIVER MUST BE SIGNED PRIOR TO PAVING BEING SCHEDULED.

THIS PRICE ALSO EXCLUDES THE PROTECTION OF NEWLY PLACED CONCRETE THAT NEEDS TO BE CROSSED OVER BY EQUIPMENT, PATCHING, COLLARING, PRIME/FOG/SEAL COAT, AND HERBICIDE (UNLESS OTHERWISE STATED).

SUNCORE NOT RESPONSIBLE FOR GRADES LESS THAN 1.5%. THIS PRICE INCLUDES ONE MOBILIZATION UNLESS OTHERWISE STATED.

**********THIS BID PROPOSAL IS TO BE INCLUDED WITH THE CONTRACT AGREEMENT BETWEEN SUNCORE AND CUSTOMER. DUE TO UNSTABLE FUEL PRICES THE CONTRACT IS SUBJECT TO A FUEL SURCHARGE PER GALLON FOR FUEL COSTS AND PER TON FOR ALL MATERIALS INCLUDED IN THE CONTRACT. THE BENCHMARK DIESEL FUEL PER GALLON PRICE (ON-HIGHWAY PRICE) DURING THE WEEK WHEN THIS BID IS SUBMITTED WILL BE USED TO CALCULATE ANY APPLICABLE FUEL SURCHARGE PER THE FOLLOWING:

BUYER AGREES TO INCREASES OR DECREASES TO FUEL COSTS (ABOVE OR BELOW THE LISTED BENCH MARK PRICE) AS STATED IN THIS PROPOSAL, WHICH IS CAUSE FOR ADJUSTMENT TO THE CONTRACT. FOR EACH $0.15/GALLON INCREMENT INCREASE/DECREASE TO THE LISTED BENCH MARK PRICE FOR DIESEL FUEL, A PER TON SURCHARGE WILL BE ADDED TO ALL CONTRACT REQUIRED MATERIAL.

ASPHALT: $0.50 PER TON FOR EACH $0.15/GALLON INCREMENT.
AGGREGATE: $0.25 PER TON FOR EACH $0.15/GALLON INCREMENT.

THE BENCH MARK FUEL PRICE IS BASED ON THE AVERAGE RETAIL PRICE OF ROCKY MOUNTAIN NO. 2 DIESEL FUEL LISTED AT:
https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD_EPD2D_PTE_NUS_DPG&f=W

THE PRICE OF ASPHALT IS BASED ON UDOT'S OIL INDEX ON THE DATE OF BID. AN INCREASE OF PRICING GREATER THAN 15% WILL RESULT IN ASPHALT AND FUEL ESCALATORS. IN THE EVENT OF THIS PRICE INCREASE, THE CUSTOMER WILL ASSUME ADDITIONAL FUEL AND ASPHALT COSTS AS PART OF THE CONTRACT.

ADDITIONAL TERMS AND CONDITIONS OF AGREEMENT

1. Purchaser represents to be the record owner or authorized agent of the record owner of the real property that shall be improved pursuant to this Agreement (the "Property") with authority to enter into contractual agreements and to grant SUNCORE authority to perform the work identified herein. The Purchaser agrees that all materials in this Agreement will be used in the construction, alteration, or improvement of the Property. Purchaser shall not use this document to acquire financing.
2. This Contract Proposal/Agreement shall only be modified by written change order signed by SUNCORE and Purchaser. Oral requests for change shall not be binding on SUNCORE unless reduced to writing by change order.
3. Purchaser shall assume full responsibility for the accuracy of all lines, levels, quantities, locations and measurements and their relation to the work to be performed by SUNCORE. No representation or warranty, express or implied, is made as to the quantities, sizes, grades, specifications, or other matters relating to the needs of the project. In all cases where dimensions are governed by conditions, already established or otherwise, the responsibility for coordination of such conditions as it relates to SUNCORE's work shall rest entirely on the Purchaser. It is the Purchaser's sole responsibility to compare the items on this Contract Proposal/Agreement with plans and specifications for accuracy and completeness. Any variations or modifications from specified lines, grades or dimensions required shall be the responsibility of the Purchaser and subject to a change order should additional work be required of SUNCORE.
4. In the event the record owner of the Property sells, mortgages, or otherwise transfers or encumbers the Property, the total amount herein provided shall become immediately due and payable as to any and all amounts then unpaid.
5. Purchaser agrees that all alleged defects in work, material or labor shall be made in writing to SUNCORE within ten (10) calendar days of the date of the billing invoice for the work performed. If said writing has not been made within the time period specified herein, Purchaser waives any right to claim defects and/or offsets for these alleged defects. In the event of defective work, SUNCORE's sole and exclusive liability shall be to repair or replace defective work at its discretion. In no event shall SUNCORE be liable for special, incidental, or consequential damages, including, but not limited to, loss of good will, loss of profits, or loss of use.
6. In the event that material costs on which this Contract Proposal/Agreement is based rise in excess of fifteen percent (15%) during the course of work, Purchaser agrees that these increased costs, in their entirety, shall be billed to Purchaser as an automatic adjustment to the Contract Proposal/Agreement.
7. To the extent that the contracted price is based on a specified unit or square foot price, Purchaser agrees that the number of units or square feet indicated is an approximation, and that SUNCORE shall be paid in full for the actual units or square feet completed as determined by field measurement by SUNCORE.
8. SUNCORE shall not be liable for failure of performance or failure of delay in delivery by reason of any event beyond the control of SUNCORE, including, but not limited to, strikes; labor disputes; fire; flood; weather; embargo; war or other hostilities; government authority or regulation; acts of God; shortage of material or fuel; as a result of actions of Purchaser, record owner, or any other person; or as a result of the extension of time granted by Purchaser. Upon the occurrence of such delay, SUNCORE shall receive an equitable extension of time for completion of the Agreement. SUNCORE shall not be entitled to any damages or compensation as a result of said delay except to the extent that said delay was caused by the Purchaser, record owner, or persons employed by the Purchaser or record owner.
9. SUNCORE assumes no risk of non-disclosed or unforeseen conditions of the Property, including, but not limited to, hazardous substances (as defined by applicable law). In the event that hazardous substances are present on the Property (other than hazardous substances introduced by SUNCORE), Purchaser agrees to indemnify SUNCORE and its officers, directors, employees, agents, representatives, and subcontractors from and against any and all losses, claims, damages, fines, penalties, liabilities, injuries, costs and expenses (including all attorney fees and costs incurred in any civil, criminal, or administrative proceeding) arising from such hazardous substances, including, but not limited to, the presence or use, generation, storage, treatment, containment, release, threatened release, disposal of, exposure, or threatened exposure.
10. Unless otherwise noted, all federal, state, and other taxes of any nature related to this Agreement shall be borne by Purchaser.
11. SUNCORE warrants that all materials covered by this Agreement shall conform to industry standards. No implied warranties of fitness or merchantability are given and are expressly disclaimed by SUNCORE.
12. The parties agree that the prevailing party in any lawsuit arising from or as a result of this Agreement, whether the action is based on the Agreement's terms and provisions or on any other theory of liability, shall be entitled to an award of attorney fees and costs incurred in said action.
13. This Contract Proposal/Agreement is the total agreement and supersedes all negotiations, representations, prior discussions, and preliminary agreements between the Parties hereto, whether oral or written. This Agreement shall be construed and interpreted as if drafted equally by all Parties hereto.
14. This Agreement shall be governed by the laws of the Local State where the project resides, without regard to its choice of law provisions.
15. PAYMENTS IS TO BE MADE AS FOLLOWS: All accounts due 15th of month following date of billing. In the event payment is not made by the due date, I or we agree to pay if collection is made by suit or otherwise a reasonable attorney's fee, plus a FINANCE CHARGE OF 1½% per month (ANNUAL PERCENTAGE RATE 18%), and hereby waive all rights to claim exemption under state laws. Signature by owner or agent constitutes acceptance of the above.

ACCEPTED:	CONFIRMED:
The above prices and specifications are satisfactory and hereby accepted.	**SUNCORE**
Buyer: _____	Authorized Signature: _____
Signature: _____	Estimator:
Date of Acceptance: _____	Estimate #: 25SG390

Competitive Excavation Inc
5585 West 720 South
Hurricane, UT 84737
(435) 691-4796

To:	Hughes GC	**Contact:**	Junior Garcia
Address:	62 West Industrial Road	**Phone:**	(435) 628-0047
	Washington, Utah 84790	**Fax:**	(435) 628-0328
Project Name:	Dixie Sunbowl	**Bid Number:**	DS-001
Project Location:	150 S 400 E, St. George, UT	**Bid Date:**	12/1/2025
Addendum #:	Plan Set, RFIs, Soils Report		

This estimate is based on the Plan Set, RFI responses, and Soils Report provided. Excludes rock excavation and assumes any rock encountered will be done as a change order. Estimate Excludes any groundwater due to depths of groundwater in borings per Geotech. No shoring of existing improvements. This does NOT include the future buildings or East towers. Includes excavation for bleacher footings. Assumes 6' over ex and 3' imported fill is required for retaining walls since it is required for bleacher footings. Assumed Caisson footings for bleachers do not need an over ex or imported fill. Assumed budget for arena sand and top materials since no spec was provided for it. Assumes that we will have room to stage materials on site. All pricing subject to fluctuate with Tariffs. See Bid Notes and Item Descriptions for Assumptions, Inclusions,& Exclusions.

Item #	Item Description	Estimated Quantity	Unit	Unit Price	Total Price
Mobilization And BMPs					
	Mobilization Of Equipment And GPS Model	1.00	LS	$5,146.10	$5,146.10
	Track Pad Installation	1.00	EACH	$2,288.56	$2,288.56
	Silt Fence Installation	309.00	LF	$2.41	$744.69
	Gravel Waddle Installation For Inlet Protection	16.00	EACH	$45.26	$724.16
	Street Sweeping For Our Scope	200.00	HR	$173.49	$34,698.00
	Total Price for above Mobilization And BMPs Items:				**$43,601.51**
Demolition					
	Saw Cut/Remove Existing Concrete Pavement/Flatwork-Assumes Haul 1 Load To Reuse Center-Assumes NO Dump Fees-Assumes ~15 LF Of Saw Cutting Required	1.00	LS	$2,366.55	$2,366.55
	Total Price for above Demolition Items:				**$2,366.55**
Earthwork					
	Scarify and Compact	148,381.00	SF	$0.10	$14,838.10
	Site Grading	148,381.00	SF	$0.14	$20,773.34
	Cut, Haul And Fill Surface Displacement	4,471.00	CY	$4.09	$18,286.39
	Over Ex Bottom 3' Of Wall, Spot Footings, Tunnel As Part Of Total 6' Over Ex Required Per Geotech-Does NOT Include Future Buildings Or Pier Footings For Bleachers-Assumed OX Not Needed For Those Footings.	13,937.00	CY	$9.80	$136,582.60
	Over Ex Concrete Flatwork 1' Per Geotech	657.00	CY	$4.84	$3,179.88
	Cut And Export 3' Of Material In Upper 6' Over Ex Required Under Footings Per Geotech And Excess Material On Site From Export Qty Provided Per Grading Plan Plus Displacement Of Finishes And Minus Shrinkage-	17,478.00	CY	$10.30	$180,023.40
	Import Road Base For Select Structural Fill To Replace Export Material Under Footings Per Geotech For Upper 3' Of Over Ex-Assumes Road Base Required	9,356.00	CY	$39.00	$364,884.00
	Stockpile Material On Site For Practical Soils For Tunnel And Access Channel And Benching Bleacher Excavation	2,400.00	CY	$4.42	$10,608.00
	Total Price for above Earthwork Items:				**$749,175.71**

Item #	Item Description	Estimated Quantity	Unit	Unit Price	Total Price
Dig/Backfill Footings					
	Place And Compact Imported Granular Fill Under Retaining Wall, Tunnel And Bleacher Spot Footings 3' Per Geotech	1.00	LS	$57,363.84	$57,363.84
	Dig/Backfill Bleacher Footings W/Native ONLY-Includes Upper North, Lower North, Lower South, Upper East, Lower East And Upper West Footings ~111 Spot Footings	1.00	LS	$35,746.40	$35,746.40
	Dig/Backfill Retaining Wall Footings W/Native ONLY ~2614 LF In Total	1.00	LS	$54,374.98	$54,374.98
	Grade For Pier Foundation Excavation-Assumes Grading Native Slope In 2 Benches For Pier Excavation For Excavator To Sit On-Assumes ~3' Bench On North And South Bleachers	1.00	LS	$32,942.13	$32,942.13
	Dig For Bleacher Caisson Footing ~18"W X 12'D Using Auger On Mini Excavator-Digging Only-No Cement/Form/Rebar Etc-No Over Ex Or Compaction In Bottom	173.00	EACH	$362.07	$62,638.11
	Total Price for above Dig/Backfill Footings Items:				**$243,065.46**
Retaining Walls					
	Backfill 15' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~48 LF	1.00	LS	$2,371.91	$2,371.91
	Backfill 13' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~103 LF	1.00	LS	$4,856.86	$4,856.86
	Backfill 12' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~128 LF	1.00	LS	$5,723.35	$5,723.35
	Backfill 11' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~1071 LF	1.00	LS	$45,912.06	$45,912.06
	Backfill 10' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~68 LF	1.00	LS	$3,004.23	$3,004.23
	Backfill 9' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~20 LF	1.00	LS	$842.94	$842.94
	Backfill 8' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~40 LF	1.00	LS	$1,668.38	$1,668.38
	Backfill 7' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~17 LF	1.00	LS	$695.44	$695.44
	Backfill 6' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~62 LF	1.00	LS	$2,419.55	$2,419.55
	Backfill 5' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~1011 LF	1.00	LS	$35,307.40	$35,307.40
	Backfill 4' Tall Retaining Wall W/1.5'x1.5' Gravel And Drain Pipe ~46 LF	1.00	LS	$1,559.65	$1,559.65
	Total Price for above Retaining Walls Items:				**$104,361.77**
Grading For Concrete And Soils					
	Budget-Grade For Arena Soils Section W/12" Arena Soil And W/6" Heavy Sand Per Detail A On C2.1-Specs And Geotech Do NOT Specify What This Material Is-Assumes Using Natural Fines For Arena Soil And Manufactured Sand For Heavy Sand From Western's Sorenson Pit	45,030.00	SF	$3.60	$162,108.00
	Grade For Practical Soils Section-Assumes Spreading And Recompacting Native 6" From Stock Pile Per Detail B On C2.1	32,992.00	SF	$0.70	$23,094.40
	Grade For Lifestock Transfer Tunnel W/6" Base-Base Thickness Required Per Geotech	2,694.00	SF	$2.05	$5,522.70
	Grade For Lifestock Transfer Tunnel Capping W/12" Native On Top Of Concrete Per B/C2.1 Using Stockpiled Native Soils	2,694.00	SF	$1.89	$5,091.66
	Grade For Concrete Pavement/Flatwork W/6" Base-Base Thickness Required Per Geotech-Includes ~102 LF Of Thickened Edge	13,853.00	SF	$1.60	$22,164.80
	Total Price for above Grading For Concrete And Soils Items:				**$217,981.56**

Base Bid Price Subtotal:	**$1,360,552.56**
Total Bid Price:	**$1,360,552.56**

Notes:

- Estimate does not include unless specified:SWPPP,MAINTENANCE,NOI, BONDS, FEES, PERMITS, COMPACTION TESTS, ENGINEERING, STAKING OR SURVEYING UNLESS SPECIFIED, LAYOUT, SWEEPING, WINTER CONDITIONS, SOFT SPOT REMEDIATION, GROUNDWATER REMEDIATION, ROCK EXCAVATION, BLASTING, OR EXPORT OF UNSUITABLE MATERIAL.
- Materials included in this bid may be subject to escalation after 30 days.
- Any Screening or sorting of materials to make suitable fill material will be hourly.
- Bid includes ONLY what is specified!
- Final Grading for asphalt and concrete is up to the respective contractors and should be verified before placement of finish surfaces.
- This estimate does NOT include any finished surfaces,(asphalt/concrete), ONLY prepping for them in ways specified.
- We reserve the right to adjust quantities to actual conditions or approved plans if they vary from what we have bid and charge these unit prices for it.
- We are NOT responsible for drainage in areas of +- 1% slope.
- Price for Asphalt and Concrete is subject to change due to market conditions and price of materials.
- All materials in this estimate are subject to a Force Majeure situation due to Natural Disasters, National Pandemic, Civil Unrest, Political Divisiveness, Tariffs, Shortages and Long Lead Times. All material increases will be passed on to the Owner/GC since they are outside of our control.
- A Good Faith Effort will be made to keep on Schedule and provide adequate Manpower. However, there are forces out of our control, for which we cannot be held liable, that may cause a shortage of labor in these trying times due to Natural Disasters, Acts of God, National Pandemic, Civil Unrest, and Political Divisiveness.
- This estimate is provided as a courtesy and as part of the normal flow of bidding. If we are awarded this project then acceptance of that award by CEI will be predicated upon our ability to perform the scope in coordination with any other obligations we already have contracted. Providing this estimate does not guarantee that we will be able to perform the scope outlined inside of a time frame we have no control over.
- Diesel Fuel in this estimate is calculated based on a $3.5/Gal price. If the price of Diesel Exceeds $4/Gallon then we reserve the right to charge for the additional cost of the fuel.
- ASPHALT OIL COST ADJUSTMENT: This contract is subject to an asphalt oil cost adjustment for all asphalt materials included in the contract. Buyer agrees increases or decreases to asphalt oil costs above or below the listed Bench Mark Price, as stated in this proposal, is cause for adjustment to the contract. The Bench Mark Price is based on UDOTs published Binder Index at the time of this proposal. Each $10.00 change to the UDOT Binder Index (published monthly) will require a contract price adjustment of $0.50 per ton of asphalt mix placed during the monthly index cycle. The binder index can be found by searching "binder Index" at www.udot.utah.gov.

ACCEPTED: The above prices, specifications and conditions are satisfactory and hereby accepted. **Buyer:** _____ **Signature:** _____ **Date of Acceptance:** _____	**CONFIRMED:** **Competitive Excavation Inc** **Authorized Signature:** _____ **Estimator:** Seth Knudson (435) 463-8210 seth@competitiveexcavation.com

ADVANCED
SHORING+UNDERPINNING

5220 W. 700 S.
Salt Lake City, Utah 84104

O 801-908-7664
F 801-908-7681

To: Hughes General Contractors
Attn: Junior Garcia
Phone: 801-296-5782
Email: jgarcia@hughesgc.com

Date: 12/1/25
Project: Dixie Sun Bowl
St George, Utah

From: Per Ole Danfors
801-330-0527
pdanfors@pdaengineering.com

Subject: Proposal for Drilled Piers

Mr. Garcia,
We appreciate the opportunity to provide you with this pricing for installing drilled piers at the subject project.
We have based this pricing on the plans dated 12-14-15 and the soils report dated 06-12-15.
Based on the plans, 173 ea caissons will be 12'-2" ft deep.
We have planned to drill the holes, supply and place the rebar and concrete.

Proposal:

Mobilization.	1 EA	$11,550.00
Supply and install (173) ea. 18" diameter drilled piers.	1 LS	$252,457.31
	TOTAL	**$264,007.31**

Terms & Conditions

1. Inclusions / Notes:

> ASU may be willing to negotiate our pricing based on methodology and approach changes that may better suit the client's plan or project requirements. Please contact us to discuss.
> Supply material, equipment and labor to install product.
> Pricing based on being able to perform our work continuously without interruption.
> We prefer 4 - 6 weeks notice to perform this work based on our current work load, we will fit you in sooner if possible.
> Pricing based on beacher shop drawings supplied and dated 10/23/25, 11/1/25, 11/3/25 and 11/26/25.
> Pricing based on Landmark Geotechnical report supplied and dated 9/23/25.
> Pricing based on assumed good soils for drilling and holes to hold open.
> Rebar cage supplied, tied and placed by ASU.
> Concrete supplied and placed by ASU.
> Based on working (40) hours a week with no overtime.
> Proposal is based on a continuous operation. If delays occur due to others, outside of our control, a standby rate of $6,500/day will apply.
> Due to the current uncertainty of the steel market and tariffs, we reserve the right to add the cost plus overhead and profit for any increases in costs that might occur after the date of this proposal.
> Due to current uncertainty of the cement market, there may be availability issues outside of our control.
> Pricing based on current diesel fuel pricing.

2. Exclusions / Client Responsibilities:

> Layout, survey and elevations of drilled shaft centers to be provided and maintained by others.
> Access to work area including flat and stable work platform to support drill rig.
> Anchor bolts to be supplied by others and orientation / elevation to be verified by others.
> Drilling spoils to be contained and disposed of by others, continuously during drilling process.
> Holes to be covered by others if required.
> Excludes drilling in cobbles, boulders, rock or flowing materials.
> Slurry drilling to hold holes open.
> Temporary casing to hold holes open.

> Dewatering and surface water control management.
> Engineering and design.
> Prevailing wage rates.
> Demolition, removal and repairs of existing hardscape or landscape to be performed by others.
> Relocation of existing interfering utilities and potholing if required.
> Staging area within close proximity to work area.
> Any and all monitoring, including vibration monitoring that may be required to be performed by others.
> Pre-construction survey of adjacent structures has not been included, however we can perform this work for an additional fee based on what is required.
> Eco Pan, if required for concrete disposal has not been included in this pricing.
> Night work.
> Walkways, safety railings and barricades to be supplied by others.
> Rerouting of pedestrian traffic.
> Road closures.
> Permits to be secured by others.
> Bonding.
> SWPPP, including dust control.
> Timely payments, net 30 days.
> The client agrees that upon entering into this agreement and for a period of no less than two years following the completion of this agreement, the client shall not make offers, enticements and/or inducements to cause employees of Advanced Shoring & Underpinning to leave its employer and enter into employment with the client or its subsidiaries or affiliates.

3. This proposal is contingent on a mutually accepted subcontract and schedule.

4. This proposal is valid for 30 days and if accepted, must be incorporated into the contract.

Please let us know if you have any questions regarding this proposal. We look forward to hearing from you on this project.

Sincerely,

Per Ole Danfors
President

HUGHES
GENERAL CONTRACTORS

September 24, 2025

Mr. Mark Goble
City of St. George
175 East 200 North
St. George, Utah 84770

Re: Dixie Sunbowl Project – Bid Package #1 - Demolition
Issue: Proposed Guaranteed Maximum Price (GMP)

Mr. Goble

I just want to express my appreciation to you and all your team's efforts throughout the Pre-Construction phase of this project in assisting with all the details for a successful bid of the Dixie Sunbowl – Bid Package #1 – Demolition.

We have confirmed pricing and scope associated with this Demolition Bid Package with the apparent responsible low bidder (Sage Demolition). While there are still some questions as to the extent of the demolition that will be required (i.e. whether the northeast and southeast existing concrete bleachers will remain or be removed, etc.), we have confirmed that their proposed bid coincides with the prepared demolition bid documents and information that was conveyed during the pre-bid walk through for the demolition contractors (see below for additional information on this item).

Please note that ***demolition bidders did not include*** any market increases, fuel escalation costs, newly implemented tariffs/taxes and/or market volatility, etc. While we do not expect any of these conditions to be associated with this first bid package and/or phase of construction, we did want you to be aware of the bidders clarifications and/or exclusions. If these type of increases occur, we will notify you immediately for further evaluation and/or review. Please note that the Demolition Bid Package #1 GMP reflects the following special conditions and/or allowances: These are as follows:

1- The construction documents have outlined the "known" site & building elements which require demolition and/or removal and while we have a qualified demolition contractor in place to complete this phase of construction, we also know that typical existing buildings sometimes have unforeseen conditions and/or unidentified existing building components, structures, and/or elements which may not be identified; but which may need to be removed during the demolition process. In addition, there have been discussions about whether portion and/or portions of the existing concrete bleachers at the Northeast and/or Southeast of the existing arena would remain and/or removed. Currently the documents outline that these section(s) would remain. However, the integrity and/or aesthetic condition(s) of these existing concrete benches/seating are currently in question and there are discussions about whether these existing concrete bleachers should remain and/or be removed (we still do not have any definitive direction on this scope of work). With the ongoing discussions

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Phone: (801) 292-1411

St. George Office
62 West Industrial Road
Washington, UT 84780
Fax (435) 628-0328
Phone: (435) 628-0047

and/or decisions still to be determined on these section of bleachers, we would recommend carrying a **carrying a DEMOLITION ALLOWANCE of $50,000 to potentially cover unidentified and/or existing elements which may require demolition, removal and/or disposal and/or the demolition and removal of the existing concrete bleachers as noted above.** If per chance the scope exceeds the allowance fund noted, we would propose that any increases be taken care of with the CM/GC Contractor Contingency. Any monies left in this special allowance and/or CM/GC Contractor Contingency will be returned to St. George City via a contract adjustment.

2- This proposal does not include any costs associated with the "soft" costs of the project; ie. testing, inspections, permits, fees, architectural services, FF&E, etc. It is our understanding that these are being taken care of directly by St. George City.

A summary of the proposed contract GMP for Bid Package #1 - Demolition in preparation for the New Dixie Sunbowl is as follows:

Bid Package #1 – Demolition @ Dixie Sunbowl (Attachment A) =	**$ 342,975**
Management, Supervision & Fee for Demo & Arena Bleacher Subs	**79,949**

TOTAL PROPOSED GMP for Bid Package #1 – Demolition & Supervision & Fee for Bleacher Subcontractor Management @ the Dixie Sunbowl Arena = $ 422,924

If you have any other questions, comments, etc., please call.

Sincerely,
Hughes General Contractors, Inc.

Eugene Madsen

Gene Madsen
Vice President

Enclosures:

- Dixie Sunbowl - GMP Bid Package #1 - Demolition - Dated 9-25-2025 **(Attachment A)**
- Proposed Subcontractor List for Demolition Bid Package #1 **(Sage Demolition-Attachment B)**
- Sage Demolition Proposal **(See Attachment C)**
- Dixie Sunbowl - Overall GMP Breakdown For Bid Package #1 – Demo, Fee & Supervision for Bleacher Sub Management – Dated 9-24-2025 **(Attachment D)**
- Dixie Sunbowl - Overall Fee Structure Breakdown - Dated 9-25-2025 **(Attachment E)**

HUGHES
GENERAL CONTRACTORS

Dixie Sunbowl - Demolition Package
GMP

September 25, 2025

Total Building Area (SF): 0

DESCRIPTION	TOTAL
01 00 00 GENERAL REQUIREMENTS	$45,275
02 00 00 EXISTING CONDITIONS	$297,700
Base Estimate Cost	**$342,975**

FEES		TOTAL
Fee For Overhead (Demolition Bid Package)	1.50%	$5,145
Fee For Profit (Demolition Bid Package)	1.50%	$5,145
Fee For Overhead (Bleacher Subcontractor)		$34,830
Fee For Profit (Bleacher Subcontractor)		$34,830
Base Estimate Fees		**$79,949**

BASE ESTIMATE TOTAL	$422,924

HUGHES
GENERAL CONTRACTORS

September 25, 2025

Proposed Subcontractors & Suppliers for the New Dixie Sunbowl Project

Building Demolition Phase 2	**Sage Demolition**
Utilities Disconnection/Rerouting/Relocation	**Hughes GC & Invited Subs**

If you have any questions, please call.

HUGHES GENERAL CONTRACTORS, INC.

Gene Madsen
Vice President

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North Salt Lake, UT 84054
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SAGE

Sage Demolition

PO Box 701 | Layton, UT 84041
801-859-6508 | info@sagedemolition.com | www.sagedemolition.com

RECIPIENT:

Hughes General Contractors
900 N Redwood Rd
North Salt Lake, UT 84054
Phone: (801) 292-1411

Quote #25250

Sent on	Aug 21, 2025
Total	**$185,500.00**

SERVICE ADDRESS:

150 South 400 East
St. George, Utah 84770

Product/Service	Description	Qty.	Unit Price	Total
Demolition of 4 Structures	Demolition and disposal of 4 structures, including Dixie Sunbowl Arena, per plans. Includes associated footings, foundations, and concrete, per demo plans	1	$161,700.00	$161,700.00*
Concrete Removal	Complete removal and disposal of concrete steps, concrete stadium slab, and west concrete retaining wall, per demo plans. Includes any necessary sawcutting.	1	$0.00	$0.00
Site Demolition - INCLUDED	Complete removal and disposal of east steel bridge and other items, per demo plans.	1	$0.00	$0.00
Salvage of Fence Panel - INCLUDED	Salvage of fence panels, per plans. To be stockpiled on site.	1	$0.00	$0.00
Removal and disposal of East Wall	Removal and disposal of east wall (1-6' high concrete), per discussion with Junior	1	$3,000.00	$3,000.00
Power Pole Bracing	Bracing and backfill around existing power poles to remain on site, per demo plans and discussion with Junior.	1	$3,000.00	$3,000.00
Mobilization - INCLUDED	One-time mobilization of all needed equipment (fee may be charged for subsequent mobilization if required by property owner) *Additional mobilization cost - up to $6,000, depending on number and type of machines needed.	1	$0.00	$0.00*
STANDARD INCLUSIONS	- Dust control, as necessary - Maintain a clean and safe work environment - Street sweeping for any track out issues caused by our team - Sloping of any remaining holes to ensure safe site conditions, where backfilling is not included - Coordination and completion of all site inspections associated with city demolition permit - Pre-demolition safety walkthrough of building and site prior to job start (including clearing building of possible occupants) - Work to be performed in compliance with DEQ and OSHA regulations	1	$0.00	$0.00

SAGE

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801-859-6508 | info@sagedemolition.com | www.sagedemolition.com

Product/Service	Description	Qty.	Unit Price	Total
EXCLUSIONS	- Asbestos Inspection -Removal and disposal of any materials and items found to be hazardous or require special disposal (including, but not limited to asbestos abatement, fluids, Salt Lake County Regulated Items, tires, etc) - Removal of any buried structures or tanks not visible or assumed during a reasonable inspection - Any necessary utility line kills - Any necessary permits that are not included in bid - SWPPP plan/permit coordination and BMPs - Coordination of, or work in, city right of way (including sidewalks, park strips, and streets) - Import and placement of structural fill material (separate bid available upon request) - Haul off and disposal of any excess dirt on the property upon demolition completion - Excavation work, except as included in "Standard Inclusions" - Removal and disposal of underground utility lines (price available upon request) - Grubbing of organic material (separate bid available upon request) - Temporary Fencing	1	$0.00	$0.00*
Pre-Demolition Administrative Work	Coordination of necessary utility line kills, permits, and inspections (ALL 3rd PARTY UTILITY LINE KILL FEES TO BE REIMBURSED ON FINAL INVOICE) Please note that in some cases, utility services refuse to work with us, in which case the owner may need to be involved. Estimated 3rd Party Costs: - Asbestos inspection - Asbestos abatement (varies, if needed) - Enbridge gas line kill ($305/line) - Rocky Mountain Power line kill (usually free, unless poles or transformers need to be removed)	1	$0.00	$0.00*
Demolition Permits (City & State) - INCLUDED	State DEQ Demolition Permit (Value of $200) and City Demolition Permit (value of $1,400.) Includes cost of permits as well as work required to obtain and manage permits.	1	$0.00	$0.00*
Standard Insurance Coverage - INCLUDED	Standard insurance coverage with the following limits. Additional insurance requests available upon requests General Liability: $1M Occurence, $2M Aggregate Umbrella: $5M Full Auto & Worker's Comp Coverage Waiver of subrogation	1	$0.00	$0.00

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Product/Service	Description	Qty.	Unit Price	Total
Bid Alternate #1 - OPTIONAL	Bid Alternate #1, per specifications. Demolition of retaining walls and Ramps to be removed upon written request. Bid alternate work to require 1 additional day.	1	$9,200.00	$9,200.00
Bid Alternate #2 - OPTIONAL	Bid Alternate #2, per specifications. Demolition of Sunbowl Historic seating specified to be removed upon written request. Bid alternate work to require 1 additional day.	1	$8,600.00	$8,600.00

* Non-taxable

Total **$185,500.00**

Base scope is anticipated to take 3-4 weeks. 1 additional day for bid alternate #1, 1 additional day for bid alternate #2

*Bid updated 8/22/25 per discussion with Junior.

TERMS & CONDITIONS:

Bid is valid for 30 days. If demolition has not started within 60 days of the signed contract date, pricing is subject to an escalation based on inflation or any major documents fuel or disposal pricing adjustments. Acceptance of awarded work is contingent upon a mutually agreeable timeline, and verification of the customer's acceptable credit history/credit rating.

Due to the complexity of scheduling in the demolition industry, mobilization and project start can not be expected prior to 3 weeks after receiving a signed contract AND a clearance from the customer to proceed.

Sage Demolition currently operates on a 4/10 schedule. Our crews work 10 hr days M-TH and do not generally work Fridays.

Please note that unless the asbestos inspection report was submitted with the bid request, this bid assumes that ALL asbestos containing materials (including non-friable) will be removed by abatement professionals prior to demolition. If non-friable ACM is to remain in structure during demolition, recycling implications will be assessed by the Sage Demolition team and a change order may or may not be needed.

If as-built drawings were NOT provided during the bidding process, bid assumes that all concrete and asphalt is recyclable. If concrete is found to be post-tension, or concrete or asphalt are found to have foam, cardboard, in-floor heating pipes, fabric, or other contaminants that result in an inability to recycle, a change order will be negotiated based on the difference in labor, disposal, and trucking costs.

Unless otherwise specified, Sage Demolition assumes all salvage rights to materials and items on the property, at time of bid walkthrough. Please notify us asap if you are planning to salvage anything.

Projects are subject to bi-weekly progress payments. Remaining payment is due within 30 days of project completion. Interest will be charged at a rate of 15% for any late payments. If left unpaid, all legal costs associated with collecting the invoice amount, plus interest, will be the responsibility of the customer.

Where deposits are required, they will be applied to the final invoice amount.

Sage Demolition
PO Box 701 | Layton, UT 84041
801-859-6508 | info@sagedemolition.com | www.sagedemolition.com

Signature: _____ **Date:** _____

September 25, 2025 Total Building Area (SF): 0

DESCRIPTION	QUANTITY	UNIT	TOTAL
01 00 00 GENERAL REQUIREMENTS			
General Conditions	1.00 mo	$45,275.00	$45,275
TOTAL: 01 00 00 GENERAL REQUIREMENTS			**$45,275**
02 00 00 EXISTING CONDITIONS			
Demolition *Subcontractor: Sage Demolition*	1.00 ls	$167,700.00	$167,700
Existing Conditions Demolition Allowance *Subcontractor: Allowance*	1.00 allow	$50,000.00	$50,000
Sawcutting	1.00 ls	$15,000.00	$15,000
Light & Power Pole Bracing	1.00 ls	$25,000.00	$25,000
Traffic Control Barricades	1.00 ls	$15,000.00	$15,000
Existing Utilities Disconnection & Relocation	1.00 ls	$25,000.00	$25,000
TOTAL: 02 00 00 EXISTING CONDITIONS			**$297,700**

a. Itemized General Conditions

Description	Total
Superintendent	$ 158,400.00
Project Manager	$ 57,600.00
Project Engineer	$ 44,400.00
Project Executive	$ 42,000.00
Safety Manager & Training	$ 18,000.00
Owner Project Sign	$ 2,500.00
DEQ & OSHA Required Signs	$ 1,000.00
Mobilization	$ 7,500.00
General Contractors Office/Storage Trailers	$ 15,600.00
Drinking Water	$ 1,800.00
Superintendent Truck, Fuel & Maintenance	$ 12,000.00
Skid Steer Loader	$ 18,000.00
Telehandler	$ 36,000.00
Temporary Fence & Gates	$ 18,000.00
Temp Power Utility	by Owner
Internet/Wifi	$ 1,500.00
Cell Phone - Project Team	$ 2,100.00
Chemical Toilets	$ 7,200.00
Progress Cleaning	$ 24,000.00
Jobsite Dumpsters	$ 11,400.00
Photography	$ 2,500.00
Security Cameras	$ 28,800.00
Project Management Software	$ 24,000.00
Closeout Documents	$ 5,000.00
Printing & Document Distribution	$ 4,000.00
Total General Conditions	**$ 543,300.00**

/ 12 MONTHS (OVERALL CONST SCHED) = 45275

(1 MONTH FOR DEMO PACK)

b. Fee for Overhead as a percentage of the Cost of Work: **1.50%**
Note: General Contractor Bonds and All Insurance other than Builder's Risk Insurance is included in this fee. Subconractors will be prequalified.

c. Fee for Profit as a percentage of the Cost of Work: **1.50%**

d. Acknowledged

e. General Contractor's Contingency. **100%** of unused contingency will be returned to the Owner.

f. Fee for Pre-Construction Services: **$15,000**

g. Maximum Fee for Change Orders
   i. Performed by general contractor: **3% Maximum**
   ii. Performed by sub-contractors: **10% Maximum**
   iii. Material changes only: **5% Maximum**

ID	Description	Original Duration	Start	Finish
10	Construction Duration	200	12/08/25	09/11/26
20	Bid Pack #2 (Earthwork, Excavation & Concrete)	1	12/01/25	12/01/25
25	Bid Pack #2 Review	5	12/01/25	12/05/25
27	Bid Pack #2 Presentation	1	12/05/25	12/05/25
28	Bid Pack #2 City Approval	1	12/18/25	12/18/25
29	Bid Pack #2 Award / Issue Contracts	5	12/18/25	12/24/25
30	BP #2 Earthwork (North Side) Starts	15	12/22/25	01/09/26
32	BP #2 Excavations (North Side) Starts	15	01/02/26	01/22/26
35	BP #2 Concrete (North Side) Footings and Tunnel	40	01/15/26	03/11/26
40		0	12/18/25A	12/17/25A
50	BP #2 Earthwork (West Side) Starts	15	01/09/26	01/29/26
55	BP #2 Excavation (West Side) Starts	15	01/22/26	02/11/26
58	BP #2 Concrete (West Side) Footings and Tunnel	30	03/01/26	04/10/26
59		0	01/09/26A	01/08/26A
60	Arena Bleacher Understructure Starts (North Side)	80	03/01/26	06/19/26
65	Arena Bleacher Parts Install Starts (North Side)	100	03/01/26	07/17/26
67		0	03/01/26A	02/27/26A
70	BP #2 Earthwork (South Side) Starts	15	02/01/26	02/20/26
80	BP #2 Excavation (South Side) Starts	15	02/15/26	03/06/26
90	BP #2 Concrete (South Side) Footings	20	04/10/26	05/07/26
100		1	04/01/26	04/01/26
110	BP #2 Earthwork (East Side) Starts	15	02/20/26	03/12/26
120	BP #2 Excavation (East Side) Starts	15	03/06/26	03/26/26
130	BP #2 Concrete (East Side) Footings and Tunnel	30	05/07/26	06/17/26
140		0	12/08/25A	12/05/25A
150	Bid Pack #3 Drawings Issued (Arena Lights, AV & Underground Utilities)	1	12/17/25	12/17/25
160	BP #3 Out for Bidding	10	12/17/25	12/30/25
170	BP #3 Review	5	12/30/25	01/05/26
180	BP #3 Presentation	1	01/10/26	01/12/26
185	BP #3 City Approval	1	01/15/26	01/15/26
190	BP #3 Award / Issue Contracts	5	01/15/26	01/21/26
200	BP #3 Underground Utilities Start	45	02/01/26	04/03/26
210	BP #3 Arena Lights Starts	40	03/15/26	05/08/26
220	BP #3 Arena AV System	30	04/01/26	05/12/26
230	Anouner Stand Start	1	02/01/26	02/02/26
240		1	02/01/26	02/02/26

Start Date: 12/08/25
Finish Date: 12/19/25
Data Date: 12/08/25
Run Date: 12/08/25
Sun Bowl 12.8.25.ppx

DRAFT

AIA® Document A133® – 2019 Exhibit A

Guaranteed Maximum Price Amendment

This Amendment dated the « eighteenth » day of « December » in the year « 2025 », is incorporated into the accompanying AIA Document A133™–2019, Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price dated the « tenth » day of « July » in the year « 2025 » (the "Agreement")
(In words, indicate day, month, and year.)

for the following **PROJECT:**
(Name and address or location)

« Dixie Sunbowl Renovation (25-217) »
« 150 South 400 East »
« St. George, UT 84770 »

THE OWNER:
(Name, legal status, and address)

« City of St. George »
« 61 South Main Street »
« St. George, Utah 84770 »
« Phone: 435-627-4000 »

THE CONSTRUCTION MANAGER:
(Name, legal status, and address)

« Hughes General Contractors, Inc. »
« 62 West Industrial Drive »
« Washington, UT 84780 »
« Phone: 435-628-0049 »
« UT DOPL #5032616-5501 »

TABLE OF ARTICLES

A.1 GUARANTEED MAXIMUM PRICE

A.2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

A.3 INFORMATION UPON WHICH AMENDMENT IS BASED

A.4 CONSTRUCTION MANAGER'S CONSULTANTS, CONTRACTORS, DESIGN PROFESSIONALS, AND SUPPLIERS

ARTICLE A.1 GUARANTEED MAXIMUM PRICE

§ A.1.1 Guaranteed Maximum Price

Pursuant to Section 3.2.6 of the Agreement, the Owner and Construction Manager hereby amend the Agreement to establish a Guaranteed Maximum Price. As agreed by the Owner and Construction Manager, the Guaranteed Maximum Price is an amount that the Contract Sum shall not exceed. The Contract Sum consists of the Construction

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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Manager's Fee plus the Cost of the Work, as that term is defined in Article 6 of the Agreement.

§ A.1.1.1 The Contract Sum is guaranteed by the Construction Manager not to exceed « Four Million, Nine Hundred Sixty-Four Thousand, Three Hundred Seventy-Six Dollars » ($ « 4,964,376.00 »), subject to additions and deductions by Change Order as provided in the Contract Documents.

§ A.1.1.2 Itemized Statement of the Guaranteed Maximum Price. Provided below is an itemized statement of the Guaranteed Maximum Price organized by trade categories, including allowances; the Construction Manager's contingency; alternates; the Construction Manager's Fee; and other items that comprise the Guaranteed Maximum Price as defined in Section 3.2.1 of the Agreement.
(Provide itemized statement below or reference an attachment.)

« See attached letter from Hughes General Contractors dated December 9, 2025 and Titled: Re: Dixie Sunbowl Project – Bid Package #2 – Earthwork, Retaining Wall & Bleacher Concrete. Issue: Proposed Guaranteed Maximum Price (GMP). »

§ A.1.1.3 The Construction Manager's Fee is set forth in Section 6.1.2 of the Agreement.

§ A.1.1.4 The method of adjustment of the Construction Manager's Fee for changes in the Work is set forth in Section 6.1.3 of the Agreement.

§ A.1.1.5 Alternates
§ A.1.1.5.1 Alternates, if any, included in the Guaranteed Maximum Price:

Item	Price
n/a	n/a

§ A.1.1.5.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Exhibit A. Upon acceptance, the Owner shall issue a Modification to the Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
n/a	n/a	n/a

§ A.1.1.6 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)
n/a	n/a	n/a

ARTICLE A.2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
§ A.2.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[« X »] The date of execution of this Amendment.

[« »] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of execution of this Amendment.

§ A.2.2 Unless otherwise provided, the Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work. The Contract Time shall be measured from the date of commencement of the Work.

§ A.2.3 Substantial Completion

§ A.2.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Construction Manager shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[« »] Not later than « » (« ») calendar days from the date of commencement of the Work.

[« X »] By the following date: « August 14, 2026 »

§ A.2.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Construction Manager shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
n/a	n/a

§ A.2.3.3 If the Construction Manager fails to achieve Substantial Completion as provided in this Section A.2.3, liquidated damages, if any, shall be assessed as set forth in Section 6.1.6 of the Agreement.

ARTICLE A.3 INFORMATION UPON WHICH AMENDMENT IS BASED

§ A.3.1 The Guaranteed Maximum Price and Contract Time set forth in this Amendment are based on the Contract Documents and the following:

§ A.3.1.1 The following Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Letter from Hughes General Contractors	Re: Dixie Sunbowl Project – Bid Package #2 – Earthwork, Retaining Wall & Bleacher Concrete Issue: Proposed Guaranteed Maximum Price (GMP)	December 9, 2025	86

§ A.3.1.2 The following Specifications:
(Either list the Specifications here, or refer to an exhibit attached to this Amendment.)

« n/a »

Section	Title	Date	Pages

§ A.3.1.3 The following Drawings:
(Either list the Drawings here, or refer to an exhibit attached to this Amendment.)

« Sunbowl Redevelopment – Grading & Retaining Walls, Prepared by MRW Design »

Number	Title	Date
24018	Sunbowl Redevelopment – Grading & Retaining Walls	8-22-2024

« »

Number	Title	Date

§ A.3.1.4 The Sustainability Plan, if any:
(If the Owner identified a Sustainable Objective in the Owner's Criteria, identify the document or documents that comprise the Sustainability Plan by title, date and number of pages, and include other identifying information. The Sustainability Plan identifies and describes the Sustainable Objective; the targeted Sustainable Measures; implementation strategies selected to achieve the Sustainable Measures; the Owner's and Construction Manager's roles and responsibilities associated with achieving the Sustainable Measures; the specific details about design reviews, testing or metrics to verify achievement of each Sustainable Measure; and the Sustainability Documentation required for the Project, as those terms are defined in Exhibit C to the Agreement.)

Title	Date	Pages
n/a		

Other identifying information:

§ A.3.1.5 Allowances, if any, included in the Guaranteed Maximum Price:
(Identify each allowance.)

Item	Price

§ A.3.1.6 Assumptions and clarifications, if any, upon which the Guaranteed Maximum Price is based:
(Identify each assumption and clarification.)

« This is the Second Guaranteed Maximum Price Amendment. The First Amendment was dated October 16, 2025. The GMP amount provided in this Document - Exhibit A is only for a portion (earthwork, retaining wall, and bleacher concrete) of the overall project as explained in the attached letter from Hughes General Contractors. Additional amendments to the GMP will occur as project plans are finalized and the Construction Manager provides associated costs. Additional work includes, but is not limited to, utilities, restroom buildings, announcer's booth, additional flatwork, road improvements, landscaping, and fencing. »

§ A.3.1.7 The Guaranteed Maximum Price is based upon the following other documents and information:
(List any other documents or information here, or refer to an exhibit attached to this Amendment.)

« n/a »

ARTICLE A.4 CONSTRUCTION MANAGER'S CONSULTANTS, CONTRACTORS, DESIGN PROFESSIONALS, AND SUPPLIERS

§ A.4.1 The Construction Manager shall retain the consultants, contractors, design professionals, and suppliers, identified below:
(List name, discipline, address, and other information.)

« Same as listed in the agreement plus Advanced Shoring & Underpinning and Whitaker Construction. »

This Amendment to the Agreement entered into as of the day and year first written above.

OWNER *(Signature)*

« Mayor Michele Randall »« Mayor »
(Printed name and title)

Attest:

Christina Fernandez, City Recorder

CONSTRUCTION MANAGER *(Signature)*

« Gene Madsen »« Vice President »
(Printed name and title)

Approved as to Form:

Daniel Baldwin, Assistant City Attorney

Agenda Date: 12/18/2025 **Agenda Item Number:** 2d

Subject:

Consider approval to award bid to Snow Canyon Construction, LLC for construction of the JC Snow Park Roller Hockey Project.

Item at-a-glance:

Staff Contact: Mark Goble

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

JC Snow Park, 275 East 900 South

Item History (background/project status/public process):

This item is to award a bid to construct a new roller hockey rink in JC Snow Park. This rink will be 160 feet by 75 feet and will be installed on the east side of the existing rink that measures 115 feet by 60 feet. The bid includes removals, concrete flatwork, lighting and other related work items. Formal bids were requested for the project, and the City received ten bids. After bids were received, it was determined that only the Base Bid would be awarded due to the budgeted amount for the project. Staff recommends approval of awarding the Base Bid to Snow Canyon Construction, LLC in the amount of $296,689.25.

Staff Narrative (need/purpose):

The purpose of the bid is to construct a roller hockey rink in JC Snow Park next to the existing rink. Roller hockey and ball hockey have become increasingly popular in the St. George area, and it is necessary to provide an additional rink to provide more opportunities for play for multiple age groups. The bid is broken down into a Base Bid and an Additive Alternate. The Base Bid is for the east rink and the Additive Alternate is for the west rink which requires removing the existing rink. Ten bids were received, but there is only enough project funding for the Base Bid. Snow Canyon Construction, LLC has the lowest Base Bid in the amount of $296,689.25. Not included in this bid is the purchase of the rink boards (which was approved by City Council at the December 4th meeting), rink sport court surfacing, and rink lights. The estimated total of these other items is about $250,000.

Name of Legal Dept approver: Daniel Baldwin

Budget Impact:

Cost for the agenda item: $296,689.25

Amount approved in current FY budget for item: $730,631

If not approved in current FY budget or exceeds the budgeted amount, please explain funding source:

Approved.

Description of funding source:

Recreation, Arts, & Parks Tax Fund

Recommendation (Include any conditions):

Approval.

Attachments

CONSTRUCTION PLANS FOR
JC SNOW PARK
ROLLER HOCKEY PROJECT
ST. GEORGE, UT
INQUIRY NO: 25-250
NOVEMBER 2025

REGISTERED PROFESSIONAL ENGINEER
No. 353590
PHIL B. GILES
11/6/2025
STATE OF UTAH

INDEX TO SHEETS	
SHEET NO.	**DESCRIPTION**
1	COVER SHEET/INDEX TO SHEETS
UT-00	UTILITY CONTACTS/UTILITY NOTES
SC-01	SURVEY CONTROL
DM-01	DEMOLITION SHEET
DT-01 TO DT-05	DETAIL SHEET
GR-01	GRADING
LS-01	LANDSCAPE RESTORATION
CJ-01	CONTROL JOINT LAYOUT
EL-01 TO EL-02	ELECTRICAL

DEVELOPER: CITY OF ST. GEORGE, PARKS DEPARTMENT
435-627-4538, MARK GOBLE

NO.	SUMMARY OF ITEMS - BASE BID		
	ITEM	**UNIT**	**BID QTY**
1	MOBILIZATION	LUMP	1
2	CONSTRUCTION SURVEY	LUMP	1
3	ENVIRONMENTAL PROTECTION	LUMP	1
4	TRAFFIC CONTROL	LUMP	1
5	CLEARING AND GRUBBING	LUMP	1
6	REMOVE CONCRETE FLATWORK	SQ FT	350
7	REMOVE ASPHALT TRAIL	SQ FT	100
8	REMOVE MOW CURB	FEET	245
9	REMOVE 8" X 8" RAILROAD TIE	FEET	285
10	SAW CUT BACK OF CURB	FEET	25
11	BORROW (UNTREATED BASE COURSE)	TON	100
12	CONCRETE FLATWORK (4 INCH THICK)	SQ FT	9,600
13	CONCRETE DRIVEWAY (6 INCH THICK)	SQ FT	110
14	CONCRETE FLATWORK (6 INCH THICK WITH REBAR)	SQ FT	12,000
15	CITY FURNISHED, CONTRACTOR INSTALLED (50' MUSCO LIGHT)	EACH	2
16	50' MUSCO LIGHTING CIRCUIT	LUMP	1
17	RELOCATE ELECTRICAL CIRCUIT	LUMP	1
18	2 INCH CONDUIT W/ 4/0 TRIPLEX	FEET	40
19	STRUCTURAL SOIL	CU YD	20

NO.	SUMMARY OF ITEMS - ADD. ALT. #1		
	ITEM	**UNIT**	**BID QTY**
1-1	MOBILIZATION	LUMP	1
1-2	CONSTRUCTION SURVEY	LUMP	1
1-3	ENVIRONMENTAL PROTECTION	LUMP	1
1-4	TRAFFIC CONTROL	LUMP	1
1-5	CLEARING AND GRUBBING	LUMP	1
1-6	REMOVE CONCRETE FLATWORK	SQ FT	7,350
1-7	REMOVE ROLLER RINK	LUMP	1
1-8	REMOVE FENCE	FEET	390
1-9	REMOVE ASPHALT TRAIL	SQ FT	3,450
1-10	REMOVE MOW CURB	FEET	420
1-11	BORROW (UNTREATED BASE COURSE)	TON	100
1-12	CONCRETE FLATWORK (4 INCH THICK)	SQ FT	9,900
1-13	CONCRETE FLATWORK (6 INCH THICK WITH REBAR)	SQ FT	12,000
1-14	CITY FURNISHED, CONTRACTOR INSTALLED (50' MUSCO LIGHT)	EACH	2
1-15	50' MUSCO LIGHTING CIRCUIT	LUMP	1
1-16	STRUCTURAL SOIL	CU YD	20

NO.	BY	DATE	REVISIONS

MAINLINE ENGINEERING

DESIGN ENGINEER:
MAINLINE ENGINEERING
321 NORTH MALL DRIVE
SUITE 115
ST. GEORGE, UT 84790

DEVELOPER:
CITY OF ST. GEORGE
PARK PLANNING
950 NORTH 200 EAST
ST. GEORGE, UT 84790

CHECKED BY: TAR
DRAWN BY: PBG
DATE: 11/6/25

PROFESSIONAL ENGINEER

PROJECT: JC SNOW PARK ROLLER HOCKEY PROJECT
INQUIRY NUMBER: 25-250
MAINLINE PROJ. #: 25-029
SHEET NAME: COVER SHEET INDEX TO SHEETS
SHEET 1

P:\2025\25-029 - St George - JC Snow Roller Hockey\Plans\1.dwg Nov 06, 2025 - 11:08am

NOTES:

1. PROTECT EXISTING UTILITIES IN PLACE.
2. PROTECT EXISTING LANDSCAPING IN PLACE
3. PROTECT EXISTING IRRIGATION IN PLACE
4. SEE COVER SHEET FOR VICINITY MAP AND DEVELOPER INFORMATION.
5. SEE UT-00 FOR JOINT UTILITY TRENCH DETAIL.

JC SNOW PARK

100 EAST

5+00

4+00

3+00

2+00

1+00

EXISTING SEWER LINE
PROTECT IN PLACE

P1, STA:3+53.21, 83.21' LT
CITY FURNISHED,
CONTRACTOR INSTALLED
(50' MUSCO LIGHT)

P3, STA:3+53.21, 21.79' RT
CITY FURNISHED,
CONTRACTOR INSTALLED
(50' MUSCO LIGHT)

50' MUSCO LIGHTING
CIRCUIT (BASE BID)
1 1/4" CONDUIT W/
(3) #6 & (1) #8 GR

50' MUSCO LIGHTING
CIRCUIT (ADD. ALT. #1)
1 1/4" CONDUIT W/
(3) #6 & (1) #8 GR

A-2,4,6,8

P2, STA:2+06.79, 21.79' LT
CITY FURNISHED,
CONTRACTOR INSTALLED
(50' MUSCO LIGHT)

RELOCATE ELECTRICAL
CIRCUIT, COORDINATE
LOCATION WITH CITY

P4, STA:2+06.79, 83.21' RT
CITY FURNISHED,
CONTRACTOR INSTALLED
(50' MUSCO LIGHT)

A-1,3,5,7

50' MUSCO LIGHTING
CIRCUIT (BASE BID)
1 1/4" CONDUIT W/
(5) #6 & (1) #8 GR

50' MUSCO LIGHTING
CIRCUIT (ADD. ALT #1)
1 1/4" CONDUIT W/
(5) #6 & (1) #8 GR

50' MUSCO LIGHTING CIRCUIT (BASE BID)
(2) - 1 1/4" CONDUIT W/
(5) #6 & (1) #8 GR (EACH CONDUIT)

NEW 200 AMP SERVICE ON
UNISTRUT PEDESTAL BY XFMR
OR ON WALL AS SHOWN

(1) 2" CONDUIT W/ 4/0 WIRE
ALUM. TRIPLEX (XFMR TO METER)

EXISTING 25 kVA TRANSFORMER
(SINGLE PH., 120/240 V)

N

GRAPHIC SCALE
25 0 25 50
(IN FEET)

811 Know what's below. Call before you dig.

P:\2025\25-029 - St George - JC Snow Roller Hockey\Plans\EL.dwg Nov 06, 2025 - 11:39am

NO.	REVISIONS	BY	DATE

MAINLINE ENGINEERING

DESIGN ENGINEER:
MAINLINE ENGINEERING
321 NORTH MALL DRIVE
SUITE 103
ST. GEORGE, UT 84790

DEVELOPER:
CITY OF ST. GEORGE
PARK PLANNING
506 NORTH 200 EAST
ST. GEORGE, UT 84790

DATE 11/6/25
DRAWN BY PBG
CHECKED BY TAR

PROFESSIONAL ENGINEER

JC SNOW PARK
ROLLER HOCKEY PROJECT

PROJECT 25-250
MAINLINE PROJ. # 25-029
INQUIRY NUMBER
SHEET NAME ELECTRICAL

SHEET EL-01

ST GEORGE CITY

JC SNOW PARK ROLLER HOCKEY PROJECT (25-250)

BID TAB - DECEMBER 2, 2025

				Engineer' Estimate		Snow Canyon		Visco		Caliber Contractor		PRT		Doug Hunt		EcoPremier		Feller Enterprises		PCI		Mountain States		Beck Construction	
Item #	Item	Quantity	Units	Unit Price	Price	Unit Price	Price	Unit Price	Price	Unit Price	Price	Unit Price	Price	Unit Price	Price	Unit Price	Price	Unit Price	Price	Unit Price	Price	Unit Price	Price	Unit Price	Price
BASE BID																									
1	MOBILIZATION	1	LUMP	$40,000.00	$40,000.00	$1,250.00	$1,250.00	$27,387.50	$27,387.50	$12,000.00	$12,000.00	$4,707.00	$4,707.00	$5,000.00	$5,000.00	$5,560.00	$5,560.00	$7,939.83	$7,939.83	$5,800.00	$5,800.00	$16,999.16	$16,999.16	$13,000.00	$13,000.00
2	CONSTRUCTION SURVEY	1	LUMP	$4,000.00	$4,000.00	$5,400.00	$5,400.00	$3,723.75	$3,723.75	$20,000.00	$20,000.00	$29,800.00	$29,800.00	$30,000.00	$30,000.00	$37,683.00	$37,683.00	$30,000.00	$30,000.00	$27,000.00	$27,000.00	$39,902.00	$39,902.00	$53,750.00	$53,750.00
3	ENVIRONMENTAL PROTECTION	1	LUMP	$2,500.00	$2,500.00	$2,360.00	$2,360.00	$1,250.00	$1,250.00	$4,000.00	$4,000.00	$6,276.00	$6,276.00	$3,000.00	$3,000.00	$3,157.75	$3,157.75	$4,396.36	$4,396.36	$9,700.00	$9,700.00	$2,975.00	$2,975.00	$10,000.00	$10,000.00
4	TRAFFIC CONTROL	1	LUMP	$2,500.00	$2,500.00	$1,250.00	$1,250.00	$625.00	$625.00	$2,500.00	$2,500.00	$5,537.50	$5,537.50	$2,500.00	$2,500.00	$4,410.00	$4,410.00	$7,378.93	$7,378.93	$3,700.00	$3,700.00	$3,770.03	$3,770.03	$8,250.00	$8,250.00
5	CLEARING AND GRUBBING	1	LUMP	$5,000.00	$5,000.00	$20,500.00	$20,500.00	$5,625.00	$5,625.00	$6,250.00	$6,250.00	$6,753.00	$6,753.00	$10,000.00	$10,000.00	$10,080.00	$10,080.00	$9,702.10	$9,702.10	$14,000.00	$14,000.00	$30,164.86	$30,164.86	$32,000.00	$32,000.00
6	REMOVE CONCRETE FLATWORK	350	SQ FT	$4.00	$1,400.00	$6.35	$2,222.50	$0.94	$328.13	$2.50	$875.00	$2.30	$805.00	$3.00	$1,050.00	$3.31	$1,158.50	$2.26	$791.00	$3.50	$1,225.00	$4.02	$1,407.00	$3.00	$1,050.00
7	REMOVE ASPHALT TRAIL	100	SQ FT	$2.00	$200.00	$4.60	$460.00	$0.94	$93.75	$1.25	$125.00	$6.00	$600.00	$3.00	$300.00	$2.21	$221.00	$2.26	$226.00	$3.50	$350.00	$6.47	$647.00	$3.00	$300.00
8	REMOVE MOW CURB	245	FEET	$5.00	$1,225.00	$14.40	$3,528.00	$0.94	$229.69	$1.20	$294.00	$1.60	$392.00	$3.00	$735.00	$5.98	$1,465.10	$3.23	$791.35	$3.50	$857.50	$6.12	$1,499.40	$3.00	$735.00
9	REMOVE 8" X 8" RAILROAD TIE	285	FEET	$5.00	$1,425.00	$3.45	$983.25	$0.94	$267.19	$4.00	$1,140.00	$1.50	$427.50	$10.00	$2,850.00	$6.35	$1,809.75	$11.11	$3,166.35	$19.00	$5,415.00	$4.00	$1,140.00	$9.00	$2,565.00
10	SAW CUT BACK OF CURB	25	FEET	$50.00	$1,250.00	$18.00	$450.00	$3.13	$78.13	$33.00	$825.00	$8.90	$222.50	$100.00	$2,500.00	$3.36	$84.00	$21.57	$539.25	$12.00	$300.00	$49.06	$1,226.50	$15.00	$375.00
11	BORROW (UNTREATED BASE COURSE)	100	TON	$25.00	$2,500.00	$24.15	$2,415.00	$414.81	$41,481.25	$45.00	$4,500.00	$24.60	$2,460.00	$30.00	$3,000.00	$80.64	$8,064.00	$49.60	$4,960.00	$40.00	$4,000.00	$40.29	$4,029.00	$59.00	$5,900.00
12	CONCRETE FLATWORK (4 INCH THICK)	9,600	SQ FT	$7.00	$67,200.00	$6.75	$64,800.00	$6.38	$61,200.00	$8.00	$76,800.00	$8.10	$77,760.00	$8.12	$77,952.00	$8.63	$82,848.00	$6.71	$64,416.00	$8.70	$83,520.00	$9.46	$90,816.00	$11.00	$105,600.00
13	CONCRETE DRIVEWAY (6 INCH THICK)	110	SQ FT	$10.00	$1,100.00	$9.55	$1,050.50	$7.81	$858.75	$9.10	$1,001.00	$12.10	$1,331.00	$11.37	$1,250.70	$11.97	$1,316.70	$13.97	$1,536.70	$12.00	$1,320.00	$13.72	$1,509.20	$13.00	$1,430.00
14	CONCRETE FLATWORK (6 INCH THICK WITH REBAR)	12,000	SQ FT	$12.00	$144,000.00	$10.20	$122,400.00	$9.69	$116,250.00	$11.00	$132,000.00	$12.20	$146,400.00	$12.67	$152,040.00	$10.73	$128,760.00	$11.76	$141,120.00	$13.00	$156,000.00	$14.94	$179,280.00	$17.50	$210,000.00
15	CITY FURNISHED, CONTRACTOR INSTALLED (50' MUSCO LIGHT)	2	EACH	$10,000.00	$20,000.00	$4,555.00	$9,110.00	$1,673.75	$3,347.50	$10,250.00	$20,500.00	$1,627.20	$3,254.40	$1,839.00	$3,678.00	$5,418.00	$10,836.00	$5,047.96	$10,095.92	$1,500.00	$3,000.00	$11,277.48	$22,554.96	$9,750.00	$19,500.00
16	50' MUSCO LIGHTING CIRCUIT	1	LUMP	$15,000.00	$15,000.00	$35,850.00	$35,850.00	$32,048.75	$32,048.75	$20,000.00	$20,000.00	$31,158.30	$31,158.30	$27,639.00	$27,639.00	$27,265.00	$27,265.00	$39,688.96	$39,688.96	$30,000.00	$30,000.00	$29,140.07	$29,140.07	$17,000.00	$17,000.00
17	RELOCATE ELECTRICAL CIRCUIT	1	LUMP	$5,000.00	$5,000.00	$16,560.00	$16,560.00	$5,443.75	$5,443.75	$12,000.00	$12,000.00	$5,292.50	$5,292.50	$5,355.00	$5,355.00	$12,600.00	$12,600.00	$18,356.23	$18,356.23	$5,000.00	$5,000.00	$15,806.10	$15,806.10	$8,000.00	$8,000.00
18	2 INCH CONDUIT W/ 4/0 TRIPLEX	40	FEET	$75.00	$3,000.00	$69.00	$2,760.00	$11.22	$448.75	$105.00	$4,200.00	$10.90	$436.00	$9.78	$391.20	$61.32	$2,452.80	$75.87	$3,034.80	$70.00	$2,800.00	$76.70	$3,068.00	$130.00	$5,200.00
19	STRUCTURAL SOIL	20	CU YD	$75.00	$1,500.00	$167.00	$3,340.00	$250.00	$5,000.00	$35.00	$700.00	$261.50	$5,230.00	$150.00	$3,000.00	$269.32	$5,386.40	$172.11	$3,442.20	$74.00	$1,480.00	$594.60	$11,892.00	$275.00	$5,500.00
	BASE BID TOTAL				**$318,800.00**		**$296,689.25**		**$305,686.87**		**$319,710.00**		**$328,842.70**		**$332,240.90**		**$345,158.00**		**$351,581.98**		**$355,467.50**		**$457,826.28**		**$500,155.00**
ADDITIVE ALTERNATE #1																									
1-1	MOBILIZATION	1	LUMP	$25,000.00	$25,000.00	$5,400.00	$5,400.00	$5,875.00	$5,875.00	$12,500.00	$12,500.00	$20,800.00	$20,800.00	$15,000.00	$15,000.00	$18,980.00	$18,980.00	$30,000.00	$30,000.00	$22,000.00	$22,000.00	$36,344.99	$36,344.99	$46,500.00	$46,500.00
1-2	CONSTRUCTION SURVEY	1	LUMP	$4,000.00	$4,000.00	$2,360.00	$2,360.00	$2,415.00	$2,415.00	$2,500.00	$2,500.00	$4,184.00	$4,184.00	$1,500.00	$1,500.00	$3,150.00	$3,150.00	$2,851.22	$2,851.22	$8,700.00	$8,700.00	$2,975.00	$2,975.00	$9,000.00	$9,000.00
1-3	ENVIRONMENTAL PROTECTION	1	LUMP	$1,000.00	$1,000.00	$1,250.00	$1,250.00	$8,750.00	$8,750.00	$3,500.00	$3,500.00	$3,138.00	$3,138.00	$1,500.00	$1,500.00	$7,250.10	$7,250.10	$7,939.83	$7,939.83	$5,000.00	$5,000.00	$6,518.03	$6,518.03	$13,000.00	$13,000.00
1-4	TRAFFIC CONTROL	1	LUMP	$1,000.00	$1,000.00	$900.00	$900.00	$1,250.00	$1,250.00	$550.00	$550.00	$5,491.50	$5,491.50	$1,500.00	$1,500.00	$4,410.00	$4,410.00	$5,165.25	$5,165.25	$2,000.00	$2,000.00	$1,190.63	$1,190.63	$8,250.00	$8,250.00
1-5	CLEARING AND GRUBBING	1	LUMP	$4,000.00	$4,000.00	$20,350.00	$20,350.00	$5,625.00	$5,625.00	$4,250.00	$4,250.00	$5,753.00	$5,753.00	$5,000.00	$5,000.00	$11,912.00	$11,912.00	$9,702.10	$9,702.10	$14,000.00	$14,000.00	$19,561.60	$19,561.60	$19,750.00	$19,750.00
1-6	REMOVE CONCRETE FLATWORK	7,350	SQ FT	$4.00	$29,400.00	$5.45	$40,057.50	$0.94	$6,890.63	$3.50	$25,725.00	$0.90	$6,615.00	$2.00	$14,700.00	$3.31	$24,328.50	$0.86	$6,321.00	$3.50	$25,725.00	$3.49	$25,651.50	$2.00	$14,700.00
1-7	REMOVE ROLLER RINK	1	LUMP	$4,000.00	$4,000.00	$2,800.00	$2,800.00	$2,812.50	$2,812.50	$3,500.00	$3,500.00	$3,399.50	$3,399.50	$5,000.00	$5,000.00	$32,900.00	$32,900.00	$18,193.62	$18,193.62	$31,000.00	$31,000.00	$10,601.75	$10,601.75	$24,000.00	$24,000.00
1-8	REMOVE FENCE	390	FEET	$15.00	$5,850.00	$8.05	$3,139.50	$2.31	$901.88	$3.00	$1,170.00	$3.30	$1,287.00	$5.00	$1,950.00	$8.41	$3,279.90	$24.20	$9,438.00	$14.00	$5,460.00	$16.18	$6,310.20	$9.00	$3,510.00
1-9	REMOVE ASPHALT TRAIL	3,450	SQ FT	$2.00	$6,900.00	$4.60	$15,870.00	$0.94	$3,234.38	$1.20	$4,140.00	$0.90	$3,105.00	$0.50	$1,725.00	$2.21	$7,624.50	$0.92	$3,174.00	$1.20	$4,140.00	$0.88	$3,036.00	$2.00	$6,900.00
1-10	REMOVE MOW CURB	420	FEET	$5.00	$2,100.00	$11.50	$4,830.00	$0.94	$393.75	$1.20	$504.00	$1.80	$756.00	$3.00	$1,260.00	$5.98	$2,511.60	$3.23	$1,356.60	$2.30	$966.00	$4.82	$2,024.40	$3.00	$1,260.00
1-11	BORROW (UNTREATED BASE COURSE)	100	TON	$25.00	$2,500.00	$24.15	$2,415.00	$416.44	$41,643.75	$45.00	$4,500.00	$24.60	$2,460.00	$30.00	$3,000.00	$80.64	$8,064.00	$49.60	$4,960.00	$33.00	$3,300.00	$40.85	$4,085.00	$59.00	$5,900.00
1-12	CONCRETE FLATWORK (4 INCH THICK)	9,900	SQ FT	$7.00	$69,300.00	$6.90	$68,310.00	$6.38	$63,112.50	$8.00	$79,200.00	$7.60	$75,240.00	$8.13	$80,487.00	$8.63	$85,437.00	$6.71	$66,429.00	$8.70	$86,130.00	$9.37	$92,763.00	$11.00	$108,900.00
1-13	CONCRETE FLATWORK (6 INCH THICK WITH REBAR)	12,000	SQ FT	$12.00	$144,000.00	$10.35	$124,200.00	$9.69	$116,250.00	$11.00	$132,000.00	$11.20	$134,400.00	$12.67	$152,040.00	$10.73	$128,760.00	$11.76	$141,120.00	$14.00	$168,000.00	$14.99	$179,880.00	$17.50	$210,000.00
1-14	CITY FURNISHED, CONTRACTOR INSTALLED (50' MUSCO LIGHT)	2	EACH	$10,000.00	$20,000.00	$4,555.00	$9,110.00	$1,673.75	$3,347.50	$10,250.00	$20,500.00	$1,657.40	$3,314.80	$1,839.00	$3,678.00	$5,418.00	$10,836.00	$5,047.96	$10,095.92	$2,000.00	$4,000.00	$3,869.73	$7,739.46	$9,750.00	$19,500.00
1-15	50' MUSCO LIGHTING CIRCUIT	1	LUMP	$10,000.00	$10,000.00	$15,850.00	$15,850.00	$13,525.00	$13,525.00	$13,250.00	$13,250.00	$13,395.10	$13,395.10	$11,820.00	$11,820.00	$27,800.00	$27,800.00	$17,550.59	$17,550.59	$12,600.00	$12,600.00	$15,551.79	$15,551.79	$8,500.00	$8,500.00
1-16	STRUCTURAL SOIL	20	CU YD	$75.00	$1,500.00	$167.00	$3,340.00	$250.00	$5,000.00	$35.00	$700.00	$261.50	$5,230.00	$150.00	$3,000.00	$269.32	$5,386.40	$172.11	$3,442.20	$75.00	$1,500.00	$450.12	$9,002.40	$275.00	$5,500.00
	ADDITIVE ALTERNATE #1 TOTAL				**$330,550.00**		**$320,182.00**		**$281,026.88**		**$308,489.00**		**$288,568.90**		**$303,160.00**		**$382,630.00**		**$337,739.33**		**$394,521.00**		**$423,235.75**		**$505,170.00**
	GRAND TOTAL				**$649,350.00**		**$616,871.25**		**$586,713.75**		**$628,199.00**		**$617,411.60**		**$635,400.90**		**$727,788.00**		**$689,321.31**		**$749,988.50**		**$881,062.03**		**$1,005,325.00**

Agenda Date: 12/18/2025 **Agenda Item Number:** 2e

Subject:

Consider award of bid to Doug Hunt Construction for construction of a covered parking structure for the Energy Services building.

Item at-a-glance:

Staff Contact: Bryan Dial

Applicant Name: City of St. George Energy Services Department

Reference Number: N/A

Address/Location:

760 East Waterworks Drive

Item History (background/project status/public process):

This award of bid is for a covered parking facility at the Energy Services building. The bid closed on December 5, 2025, and three bids were received. Bids were evaluated and staff recommends award of bid to Doug Hunt Construction in the amount of $135,000.

Staff Narrative (need/purpose):

Covered Parking will help protect vehicles and equipment and increase longevity of vehicle use.

Name of Legal Dept approver: Kristopher Pearson

Budget Impact:

Cost for the agenda item: $135,000

Amount approved in current FY budget for item: $100,000

If not approved in current FY budget or exceeds the budgeted amount, please explain

funding source:

Available funding from other Energy Services account codes for this budget year will be transferred into this budget item and used

Description of funding source:

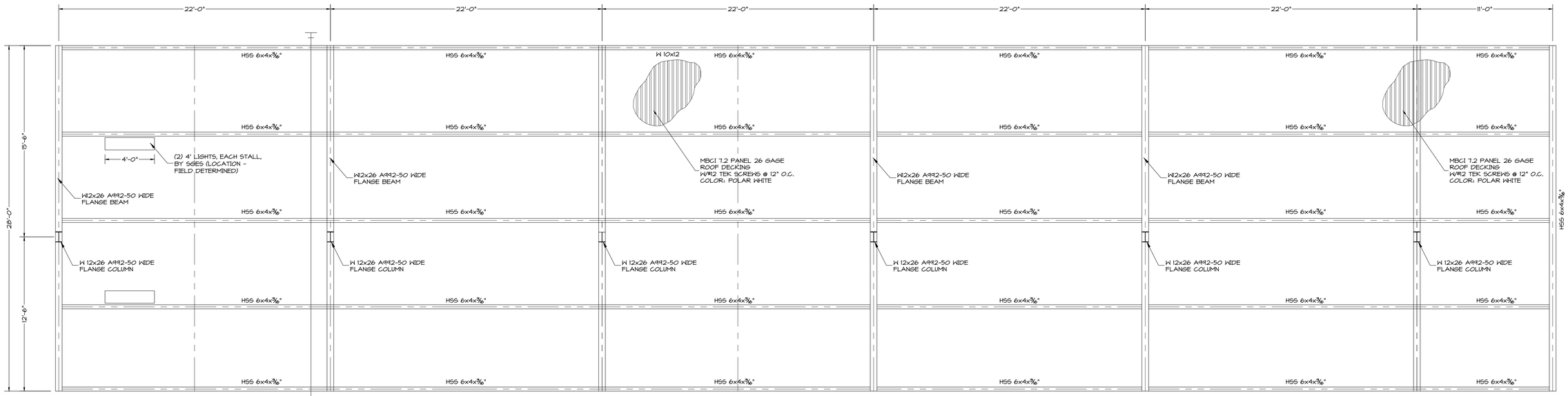
Available funding from other Energy Services account codes for this budget year will be transferred into this budget item and used

Recommendation (Include any conditions):

Recommend Approval

Attachments

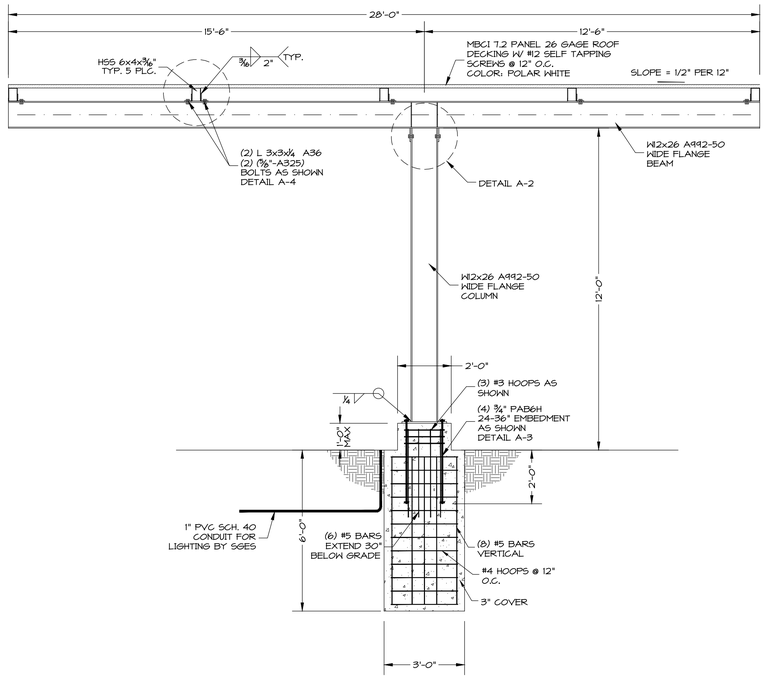
25-248 - AS READ BID TAB				Doug Hunt Construction (F18)		Mountain States Contractors, Inc. (V64)		R.D. Construction LLC (C30)	
**This is the initial reading of the bids. All of the information is subject to verification and evaluation in accordance with the published bid criteria.			**Total Cost**	$135,000.00		$162,765.94		$142,704.00	
#	Items	Quantity Required	Unit of Measure	Unit Price	Total Cost	Unit Price	Total Cost	Unit Price	Total Cost
0									
#0-1	Steel Covered Parking Structure (Steel Material, Fabrication, Welding, Shipping, etc...)	1	LUMP SUM	$67,000.00	**$67,000.00**	$100,747.21	$100,747.21	$81,890.00	$81,890.00
#0-2	Mobilization	1	LUMP SUM	$15,000.00	$15,000.00	$11,750.00	$11,750.00	$8,500.00	**$8,500.00**
#0-3	Site Layout	1	LUMP SUM	$3,000.00	$3,000.00	$625.00	**$625.00**	$4,500.00	$4,500.00
#0-4	Drilled Pier Foundation (Drilled Hole)	6	EACH	$2,500.00	$15,000.00	$1,770.83	**$10,624.98**	$2,400.00	$14,400.00
#0-5	Drilled Pier Foundation (Steel Reinforcement, Anchors, Concrete Placement, etc…)	6	EACH	$2,500.00	$15,000.00	$2,937.50	$17,625.00	$1,500.00	**$9,000.00**
#0-6	Steel Covered Parking Structure (Erection)	1	LUMP SUM	$15,000.00	$15,000.00	$14,518.75	$14,518.75	$10,164.00	**$10,164.00**
#0-7	Painting (Primer & Finish Coats)	1	LUMP SUM	$5,000.00	**$5,000.00**	$6,875.00	$6,875.00	$14,250.00	$14,250.00



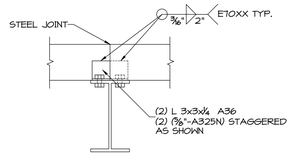
ROOF FRAMING PLAN

SCALE: 1/4" = 1'

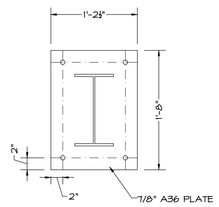
STEEL SHOP DRAWINGS SHALL BE SUBMITTED TO SGES AND ROSENBERG ASSOCIATES FOR APPROVAL.



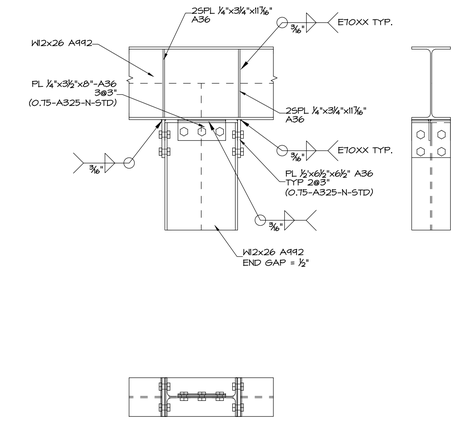
A-1 / - SIDE/SECTION VIEW
TYPICAL



A-4 / - HSS CONNECTION
TYPICAL



A-3 / - BASE PLATE
TYPICAL



A-2 / - SIDE/SECTION VIEW
TYPICAL

DATE: 6/24/25
JOB NO.: 03078-25-004
DESIGNED BY: M.S.R.
CHECKED BY: M.S.R.
DWG:

REVISIONS DATE

ROSENBERG ASSOCIATES
CIVIL ENGINEERS • LAND SURVEYORS
352 East Riverside Drive, Suite A-2
St. George, Utah 84790
Ph (435) 673-8586 Fx (435) 673-8397
www.racivil.com

STRUCTURAL PLAN
FOR
POWER YARD PARKING STRUCTURE
ST. GEORGE, UTAH

Registered Professional Engineer
308659
MICHAEL S. ROBINSON
12/2/25
STATE OF UTAH U.S.A.

SHEET
S1
1 OF 2 SHEETS

STRUCTURAL STEEL (IBC 1705.2.1, 1705.12.1, 1705.13.1)

REQUIRED	STRUCTURAL TEST OR SPECIAL INSPECTION NOTES:	CONTINUOUS	PERIODIC
	PRIOR TO WELDING (TABLE N5.4-1, AISC 360-10)		
X	VERIFY WELDING PROCEDURES (WPS) AND CONSUMABLE CERT.	X	
X	MATERIAL IDENTIFICATION		X
X	WELDER IDENTIFICATION		X
X	FIT-UP GROOVE WELDS		X
X	ACCESS HOLES		X
X	FIT-UP FILLET WELDS		X
	DURING WELDING (TABLE N5.4-2, AISC 360-10)		
X	USE OF QUALIFIED WELDERS		X
X	CONTROL AND HANDLING OF WELDING CONSUMABLES		X
X	CRACKED TACK WELDS		X
X	ENVIRONMENTAL CONDITIONS		X
X	WPS FOLLOWED		X
X	WELDING TECHNIQUES		X
	AFTER WELDING (TABLE N5.4-3, AISC 360-10)		
X	WELDS CLEANED		X
X	SIZE, LENGTH, AND LOCATION OF WELDS	X	
X	WELDS MEET VISUAL ACCEPTANCE CRITERIA	X	
X	ARC STRIKES	X	
X	K-AREA	X	
X	BACKING & WELD TABS REMOVED	X	
X	REPAIR ACTIVITIES	X	
X	DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT/MEMBERS	X	
	NONDESTRUCTIVE TESTING (SECTION N5.5, AISC 360-10)		
X	CJP WELDS (RISK CAT. II)		X
	CJP WELDS (RISK CAT. III OR IV)	X	
	ACCESS HOLES (FLANGED?)	X	
	WELDED JOINTS SUBJECT TO FATIGUE	X	
X	**PRIOR TO BOLTING (SECTION N5.6-1, AISC 360-10)**		
X	CERTIFICATIONS OF FASTENERS	X	
X	FASTENERS MARKED		X
X	PROPER FASTENERS FOR JOINT		X
X	PROPER BOLTING PROCEDURE		X
X	CONNECTING ELEMENTS		X
X	PRE-INSTALLATION VERIFICATION TESTING		X
X	PROPER STORAGE		X
	DURING BOLTING (SECTION N5.6-2, AISC 360-10)		
X	FASTENER ASSEMBLIES		X
X	SNUG-TIGHT PRIOR TO PRETENSIONING		X
X	FASTENER COMPONENT		X
X	PRETENSIONED FASTENERS		X
X	**AFTER BOLTING (SECTION N5.6-3, AISC 360-10)**		
X	DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTION	X	
	OTHER STEEL INSPECTIONS (SECTION N5.7, AISC 360-10, TABLES J8-1 & J10-1, AISC 341-10)		
X	STRUCTURAL STEEL DETAILS		X
X	ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL		X
	PRETENSIONED FASTENERS		X

**REQUIRED TESTS AND SPECIAL INSPECTIONS FOR STRUCTURAL STEEL MAY BE PERFORMED BY IN-HOUSE QUALITY CONTROL/QUALITY ASSURANCE (QA/QC) PERSONNEL AS PRE-APPROVED BY ST. GEORGE BUILDING DEPARTMENT. DOCUMENTATION OF IN-HOUSE QA/QC TESTS AND INSPECTIONS SHALL BE FURNISHED TO THE ENGINEER UPON REQUEST.

SPECIAL INSPECTION REQUIREMENTS:

1. IN ADDITION TO STANDARD INSPECTIONS BY THE BUILDING OFFICIAL REQUIRED PER IBC, THE OWNER/BUILDER SHALL EMPLOY SPECIAL INSPECTORS WHO SHALL PROVIDE INSPECTIONS DURING CONSTRUCTION FOR THE TYPES OF WORK LISTED IN THE SPECIAL INSPECTION TABLE ON THIS PAGE.
2. SPECIAL INSPECTION SHALL BE PROVIDED BY A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
3. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.
4. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR ARCHITECT OF RECORD, AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.
5. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.
6. SPECIAL INSPECTIONS AND NONDESTRUCTIVE TESTING OF STRUCTURAL STEEL ELEMENTS IN BUILDINGS, STRUCTURES SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360.

SOILS CONSTRUCTION (IBC 1705.6)

REQUIRED	STRUCTURAL TEST OR SPECIAL INSPECTION NOTES:	CONTINUOUS	PERIODIC
X	VERIFY SUBGRADE IS ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY		X
X	VERIFY EXCAVATIONS EXTEND TO PROPER DEPTH AND MATERIAL		X
X	VERIFY THAT SUBGRADE HAS BEEN APPROPRIATELY PREPARED PRIOR TO PLACING COMPACTED FILL		X
X	VERIFY EXCAVATIONS EXTEND TO PROPER DEPTH AND MATERIAL		X

CONCRETE CONSTRUCTION (IBC 1705.3 & 1705.12.1)

REQUIRED	STRUCTURAL TEST OR SPECIAL INSPECTION	CONTINUOUS	PERIODIC
X	REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS	X	
	WELDING OF REINFORCING STEEL		X
X	CAST-IN BOLTS & EMBEDS		X
X	POST-INSTALLED ANCHORS OR DOWELS		X
	USE OF REQUIRED MIX DESIGN		X
X	CONCRETE SAMPLING FOR STRENGTH TEST, SLUMP, AIR CONTENT, AND TEMP.	X	
X	CONCRETE & SHOTCRETE PLACEMENT	X	
X	CURING TEMPERATURE AND TECHNIQUES		X
X	STRENGTH VERIFICATION		X
X	FORMWORK		X

STEEL PAINTING NOTES

1. FURNISH PAINT FINISH COAT COLOR FOR HSS STEEL ROOF FRAME STEEL TO MATCH MBCI STEEL DECKING POLAR WHITE (SIGNATURE 200). FURNISH PAINT FINISH COAT COLOR FOR REMAINING STEEL BEAMS AND COLUMNS TO MATCH MBCI STEEL DECKING DEEP GREY (SIGNATURE 200).
2. SUBMIT SAMPLES OF THE PROPOSED COATING SYSTEM TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO COMMENCING PAINTING OPERATIONS. THE PROPOSED COATING SYSTEM USED SHALL YIELD A PRACTICAL MAINTENANCE TIME OF 20 YEARS MINIMUM FOR A MILD/RURAL(C2) SERVICE ENVIRONMENT, IN ACCORDANCE WITH TABLE 1A - ESTIMATED PRACTICAL MAINTENANCE TIME FOR COATING SYSTEMS FOR ATMOSPHERIC EXPOSURE, FOUND IN AMPP PAPER NO. 11696, PAGE 9. A COPY OF THIS PAPER IS INCLUDED WITH THIS ADDENDUM FOR REFERENCE.
3. CLEAN SURFACES TO BE PAINTED IN ACCORDANCE WITH THE PAINT MANUFACTURER'S INSTRUCTIONS.
4. APPLY PAINT PRODUCTS USED IN ACCORDANCE WITH THE PAINT MANUFACTURER'S INSTRUCTIONS.
5. AFTER COMPLETING THE COATING APPLICATION, CLEAN SPATTERED SURFACES. REMOVE SPATTERED COATINGS BY WASHING, SCRAPING, OR OTHER METHODS. DO NOT SCRATCH OR DAMAGE ADJACENT FINISHED SURFACES.
6. IMMEDIATELY AFTER ERECTION, CLEAN EXPOSED AREAS WHERE PRIMER OR FINISH COAT IS DAMAGED OR MISSING AND PAINT WITH THE SAME MATERIAL IN ACCORDANCE WITH THE PAINT MANUFACTURER'S INSTRUCTIONS.
7. AT THE END OF EACH WORKDAY, REMOVE RUBBISH, EMPTY CANS, RAGS, AND OTHER DISCARDED MATERIALS FROM THE WORK SITE.
8. AT COMPLETION OF CONSTRUCTION ACTIVITIES TOUCH UP AND RESTORE DAMAGED OR DEFACED COATED SURFACES.

WELDED CONNECTIONS:

1. WHERE SIZE OF WELD IS NOT INDICATED, IT SHALL DEVELOP FULL STRENGTH OF MEMBER AND CONNECTION.
2. NO SPLICES MAY BE MADE OTHER THAN THOSE DETAILED ON PLANS UNLESS SHOWN ON SHOP DRAWINGS AND APPROVED BY STRUCTURAL ENGINEER.
3. ALL BEVEL GROOVE WELDS SHALL BE COMPLETE PENETRATION WELDS.
4. ALL SHOP AND FIELD BEVEL GROOVE WELDS SHALL BE ULTRASONICALLY TESTED.
5. TESTING SHALL BE CONDUCTED BY AN INDEPENDENT CERTIFIED TESTING LABORATORY AND REPORTS SHALL BE SUBMITTED.
6. THE COST INCURRED FOR TESTING SHALL BE BORNE BY THE FABRICATOR.
7. WELDS AT ALL CONNECTIONS SHALL BE CLEANED. SLAG AND WELD SPATTER SHALL BE REMOVED FROM ALL COMPLETED WELDS, AND THE WELD AND ADJACENT BASE METAL SHALL BE CLEANED BY BRUSHING OR OTHER SUITABLE MEANS AVAILABLE FOR INSPECTION.
8. PAINT ALL WELDS AFTER WELDING HAS BEEN COMPLETED AND THE WELD ACCEPTED.

CONCRETE:

1. CODES AND REFERENCES:
   -BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE: ACI-318 LATEST
   -SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS: ACI-301 LATEST
   -GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION: ACI-302 LATEST
   -CONCRETE REINFORCING STEEL INSTITUTE HANDBOOK
2. CRITERIA DESIGN STRESSES:
   -CONCRETE STRENGTH (28 DAY) NOTE: ALL CONCRETE IN CONTACT WITH SOIL TO BE TYPE V OR EQUIVALENT SULFATE-RESISTANT CEMENT. ALL CONCRETE FOUNDATIONS WHERE DESIGNED USING 2,500 PSI CONCRETE, THUS NO SPECIAL INSPECTION IS REQUIRED FOR CONCRETE PLACEMENT.

FOUNDATION	4,500 PSI
SLAB	4,500 PSI
WATER TO CEMENT RATION	0.45 MAXIMUM

   -REINFORCING STEEL:
   #3 BAR AND SMALLER (ASTM A615, GRADE 40) Fy = 40,000 PSI
   #4 BAR AND LARGER (ASTM A615, GRADE 60) Fy = 60,000 PSI
   ALL BARS WHICH REQUIRE WELDING (ASTM A706 GRADE 60)
3. ASTM C150 TYPE V CEMENT SHALL BE PROPORTIONED FOR EXPOSURE CLASS S2 AS DESIGNATED IN ACI 318-19.
4. CONCRETE FOUNDATION WALLS SHALL PROPORTIONED FOR FREEZING AND THAWING FOR EXPOSURE CLASS F1 AS DESIGNATED IN ACI 318-19. THIS DESIGNATION REQUIRED ADEQUATE ENTRAINED AIR.
5. PROVIDE COVER FOR REINFORCING AS SPECIFIED IN ACI-318-LATEST

EXPOSURE CONDITION:	COVER:
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER (INCLUDES SLABS ON GRADE)	
NO. 5 AND SMALLER	1 ½"
NO. 6 AND LARGER	2"

6. WHERE SPLICES IN REINFORCING ARE REQUIRED, THEY SHALL BE LAPPED AND STAGGERED SUCH THAT NO MORE THAN ONE-HALF OF THE BARS ARE LAP SPLICED WITHIN A REQUIRED LAP LENGTH, AND SHALL MEET THE REQUIREMENTS OF A CLASS "B" SPLICE.
7. MINIMUM SPLICE LENGTHS FOR CLASS "B" (GRADE 60, 4,500 PSI CONCRETE):
   #3 BAR THROUGH #5 BAR: 24" OVERLAP.
   #6 BAR: 35" OVERLAP.
   #7 BAR: 51" OVERLAP.
   #8 BAR: 58" OVERLAP.
   (REF; ACI 318-14)
8. MAKE HORIZONTAL BARS CONTINUOUS AROUND CORNERS OR PROVIDE CORNER BARS.
9. ALL SLAB AND/OR WALL OPENINGS SHALL BE REINFORCED WITH (2) #5 BARS AND SHALL EXTEND TWO FEET BEYOND THE EDGES OF THE OPENING.
10. CONCRETE MIX DESIGNS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
11. MIX DESIGNS SHALL BE SUBMITTED FOR EACH TYPE OF CONCRETE AND INCLUDE: MIX IDENTIFICATION, STATEMENT OF INTENDED USE, MIX PROPORTIONS, DESIGN STRENGTH, DESIGN SLUMP, WET AND DRY UNIT WEIGHT, AND OTHER SUPPORTING DATA PER SPECIFICATIONS.
12. ADMIXTURES MAY BE USED, HOWEVER, THEY SHALL NOT BE CONSIDERED AS REPLACING ANY PART OF THE CEMENT FOR A SPECIFIED CONCRETE STRENGTH.
13. NO ALUMINUM CONDUITS OR PIPES SHALL BE EMBEDDED IN CONCRETE.
14. HOT WEATHER AND COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305 & ACI 306 RECOMMENDED PRACTICES RESPECTIVELY.
15. MECHANICALLY VIBRATE CONCRETE, EXCEPT THAT SLABS-ON-GRADE SHALL BE VIBRATED ONLY AROUND ITEMS EMBEDDED IN THE SLAB.

STRUCTURAL STEEL:

1. CODES AND REFERENCES:
   -AISC SPECIFICATIONS WITH SUPPLEMENTS
   -AISC STEEL DESIGN MANUAL
2. STRUCTURAL STEEL SHALL BE AS FOLLOWS:
   ASTM A992, ALL STEEL WIDE FLANGE BEAMS
   FY=50 (KSI)

   ASTM 36: ALL STEEL PLATES, CHANNELS, & OTHER BEAMS
   FY=36 (KSI)

   ASTM A53 GRD B: ALL STEEL PIPES
   FY=42 (KSI)

   ASTM A500 GRD B: ALL RECTANGULAR TUBE STEEL
   FY=46 (KSI)
3. WELDED JOINTS OR CONNECTIONS SHALL BE MADE WITH FULL PENETRATION WELDS OR MAX. SIZE FILLET WELDS USING E70XX ELECTRODES. ALL WELDS SHALL BE MADE IN ACCORDANCE WITH CURRENT STANDARDS OF THE AMERICAN WELDING SOCIETY AND PERFORMED BY WELDERS QUALIFIED BY AWS STANDARDS, CURRENT ISSUE.
4. CONNECTION BOLTS TO BE ASTM A307 UNLESS NOTED OTHERWISE.

REINFORCING STEEL:

1. REINFORCING STEEL SHALL BE BE DETAILED AND PLACED IN ACCORDANCE WITH ACI318 AND CRSI'S MANUAL OF STANDARD PRACTICE.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR ASTM A706 AND SHALL BE GRADE 60 DEFORMED BARS U.N.O. REINFORCING IN SLABS ON GRADE MAY BE GRADE 40 DEFORMED BARS FOR ALL BARS #3 AND SMALLER U.N.O. ON PLANS OR DETAILS.
3. ALL DIMENSIONS SHOWING THE LOCATION OF REINFORCING STEEL NOT NOTED AS CLEAR ARE TO CENTER OF STEEL. CLEAR COVER FOR CONCRETE REINFORCING SHALL BE AS FOLLOWS, U.N.O. ON PLANS.

EXPOSURE CONDITION:	COVER:
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER (INCLUDES SLABS ON GRADE)	
NO. 5 AND SMALLER	1 ½"
NO. 6 AND LARGER	2"

4. REINFORCING BAR SPACING SHOWN ON PLANS ARE MAX ON CENTER DIMENSIONS. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.
5. WHERE SPLICES IN REINFORCING ARE REQUIRED, THEY SHALL BE LAPPED AND STAGGERED SUCH THAT NO MORE THAN ONE-HALF OF THE BARS ARE LAP SPLICED WITHIN A REQUIRED LAP LENGTH, AND SHALL MEET THE REQUIREMENTS OF A CLASS "B" SPLICE.
6. MINIMUM SPLICE LENGTHS FOR CLASS "B" (GRADE 60, 4,500 PSI CONCRETE).
   #3 BAR THROUGH #5 BAR: 24" OVERLAP.
   #6 BAR: 35" OVERLAP.
   #7 BAR: 51" OVERLAP.
   #8 BAR: 58" OVERLAP.
   (REF; ACI 318-14 SEC. 12.2)

STANDARD ABBREVIATIONS:

A.B.	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT.	ALTERNATE
ANSI	ANCHOR ROD
ARCH.	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BOT.	BOTTOM
BRG	BEARING
CANT.	CANTILEVERED
C.J.	CONTROL JOINT
C.J.P.	COMPLETE JOINT PENETRATION
CL	CENTER LINE
COL.	COLUMN
CONT.	CONTINUOUS
DIA.	DIAMETER
DWG.	DRAWING
EQ.	EQUAL
E.W.	EACH WAY
F.F.	FINISH FLOOR
FT.	FOOT
FTG.	FOOTING
GA.	GAUGE
GLB	GLULAM BEAM
G.T.	GIRDER TRUSS
HSS	HOLLOW STRUCTURAL SECTION
IBC	INTERNATIONAL BUILDING CODE
I.D.	INSIDE DIAMETER
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
MFR.	MANUFACTURER
MAX	MAXIMUM
MECH.	MECHANICAL
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N.T.S.	NOT TO SCALE
O.D.	OUTSIDE DIAMETER
O.C.	ON CENTER
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
REQD.	REQUIRED
SIM.	SIMLAR
SPEC.	SPECIFICATION
STD.	STANDARD
SW	SHEARWALL
THRU	THROUGH
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE

GENERAL:

1. THE CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS, EXISTING CONDITIONS, AND NOTED ASSUMPTIONS. ANY DISCREPANCIES SHALL BE COORDINATED WITH THE ACTING ENGINEER OF RECORD PRIOR TO PROCEEDING WITH ANY WORK RELATED TO THE DEVIATION.
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE STRUCTURAL ENGINEERS IN THIS OR SIMILAR LOCALITIES. THEY NECESSARILY ASSUME THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKMEN WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE, AS NOT EVERY CONDITION OR ELEMENT IS OR CAN BY EXPLICITLY SHOWN ON THESE DRAWINGS, IT IS UNDERSTOOD THAT THE CONTRACTOR WILL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR ALL MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE SHORING, BRACING, FORM-WORK, ETC. AS REQUIRED. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE STRUCTURAL ITEMS.
4. DESIGN OF ITEMS NOT PART OF THE PRIMARY STRUCTURAL SYSTEM (SUCH AS STAIRS, RAILINGS, NON-STRUCTURAL WALLS) AND PREFABRICATED STRUCTURAL ITEMS (SUCH AS FLOOR, ROOF TRUSSES) SHALL BE PROVIDED BY OTHERS UNLESS SPECIFICALLY NOTED ON THESE DRAWINGS.
5. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.
6. STRUCTURAL REQUIREMENTS SHOWN ON THE STRUCTURAL PLANS TAKE PRECEDENCE OVER STRUCTURAL CALLOUTS INDICATED ON THE ARCHITECTURAL PLANS. DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON DRAWINGS.
7. INSPECTIONS REQUIRED BY THE BUILDING CODES, JURISDICTION, OR THESE PLANS SHALL BE PROVIDED BY AN INDEPENDENT INSPECTION COMPANY OR THE BUILDING DEPARTMENT. SITE VISITS BY THE ENGINEER ARE CONSIDERED OBSERVATION ONLY AND DO NOT CONSTITUTE AN INSPECTION.

DESIGN CRITERIA:

1. BUILDING CODE: INTERNATIONAL BUILDING CODE - 2021 EDITION
2. OCCUPANCY: II
3. ROOF LOADS:

ROOF LOAD (LIVE):	20 PSF
ROOF LOAD (DEAD):	2 PSF
GROUND SNOW LOAD, Pg	20 PSF
Ce	1.0
Ct	1.0
Is	1.0
ROOF SNOW LOAD:	15 PSF (BUILDING DEPT.)

4. FLOOR LOADS:

FLOOR LOAD (LIVE):	N/A
FLOOR LOAD (LIVE):	N/A
FLOOR LOAD (DEAD):	N/A

5. WIND LOADS:

WIND LOAD:	100 MPH EXPOSURE C

6. SEISMIC LOADS:

SITE SOIL CLASS	D
SEISMIC DESIGN CATEGORY	D
R	3.5 (STEEL)
Ss	0.386
S1	0.132
Sds	0.384
Sd1	0.205

   SEISMIC FORCE RESISTING SYSTEM:
   STEEL MOMENT RESISTING FRAME WITH DEEP CONCRETE FOUNDATION.

FOUNDATION:

1. THIS DESIGN HAS BEEN IN ACCORDANCE WITH THE INFORMATION AS CONTAINED IN THE GEOTECHNICAL INVESTIGATION REPORT AS PREPARED BY:

   ROSENBERG ASSOCIATES
   PROJECT NO. 8645-14

   THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THIS REPORT IN ITS ENTIRETY, PRIOR TO PROCEEDING WITH CONSTRUCTION.

   ALLOWABLE SOIL BEARING: 2,000 PSF

SOIL SITE CLASS	C
SULFATE EXPOSURE	SEVERE
SULFATE EXPOSURE CLASS	S2
FREEZING & THAWING	F1

DATE: 6/24/25
JOB NO.: 03018-25-004
DESIGNED BY: M.S.R.
CHECKED BY: M.S.R.
DWG:

DATE	REVISIONS

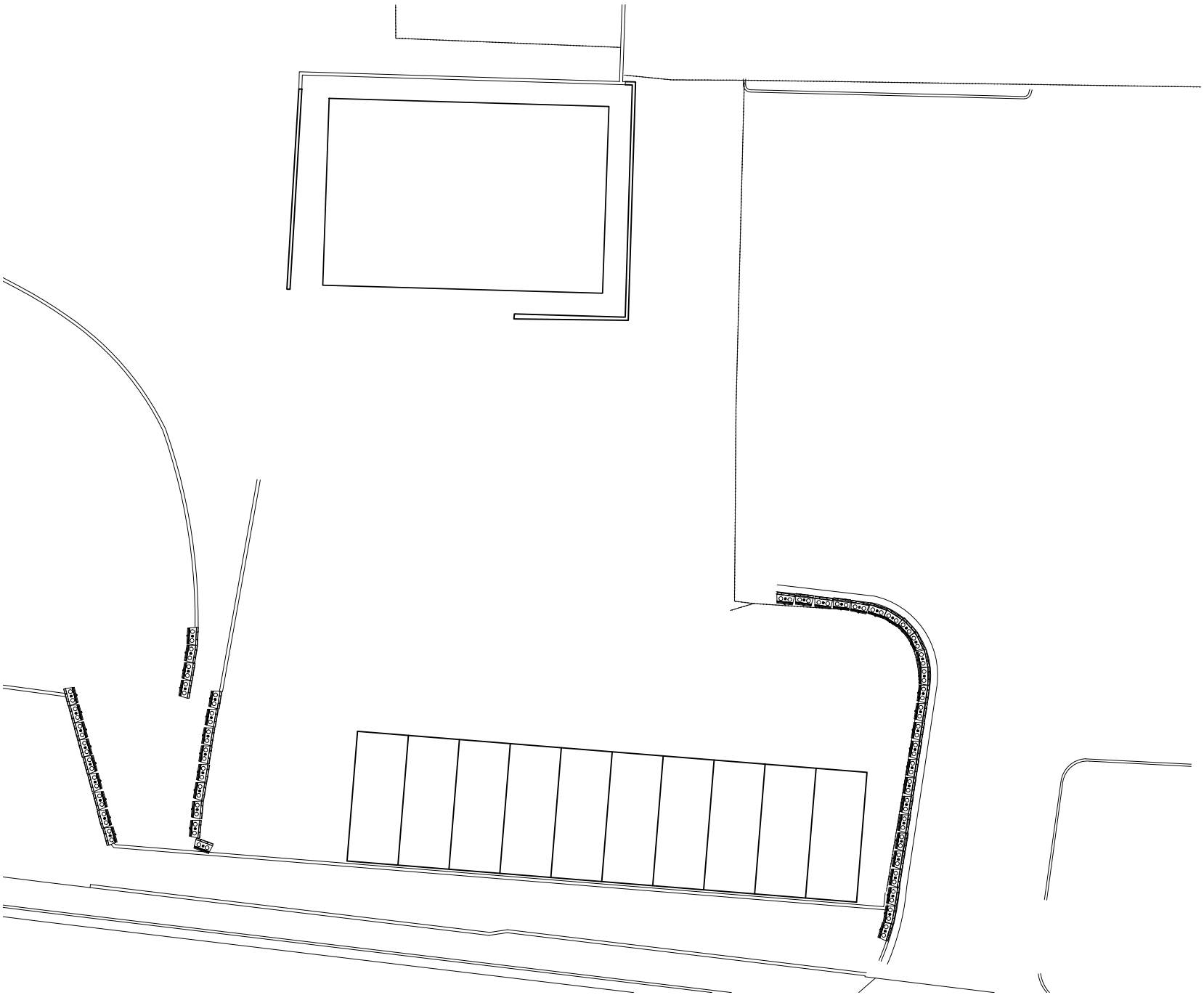
ROSENBERG ASSOCIATES
CIVIL ENGINEERS • LAND SURVEYORS
352 East Riverside Drive, Suite A-2
St. George, Utah 84790
Ph (435) 673-8586 Fx (435) 673-8397
www.racivil.com

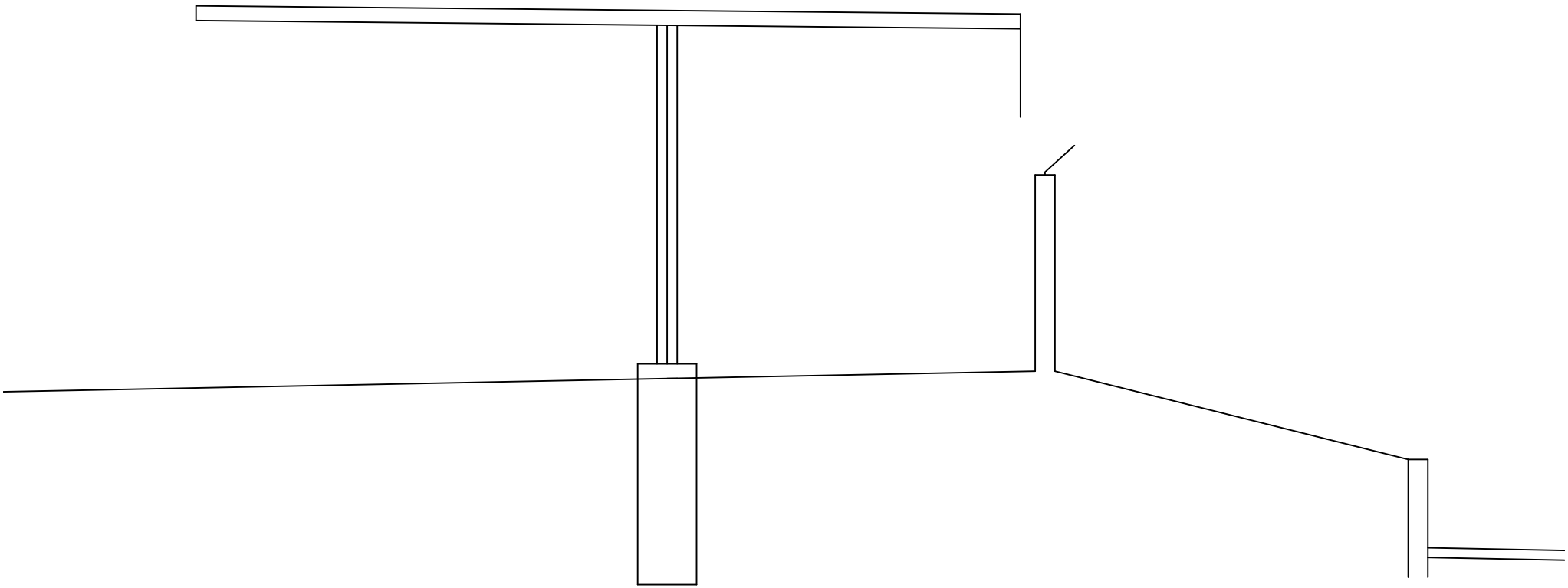
STRUCTURAL NOTES FOR POWER YARD PARKING STRUCTURE

ST. GEORGE, UTAH

Registered Professional Engineer
388659
MICHAEL S. ROBINSON
12/2/25
UTAH U S A

SHEET
S2
2 OF 2 SHEETS





Property Line defined by County Maps

Legend

- Parcels

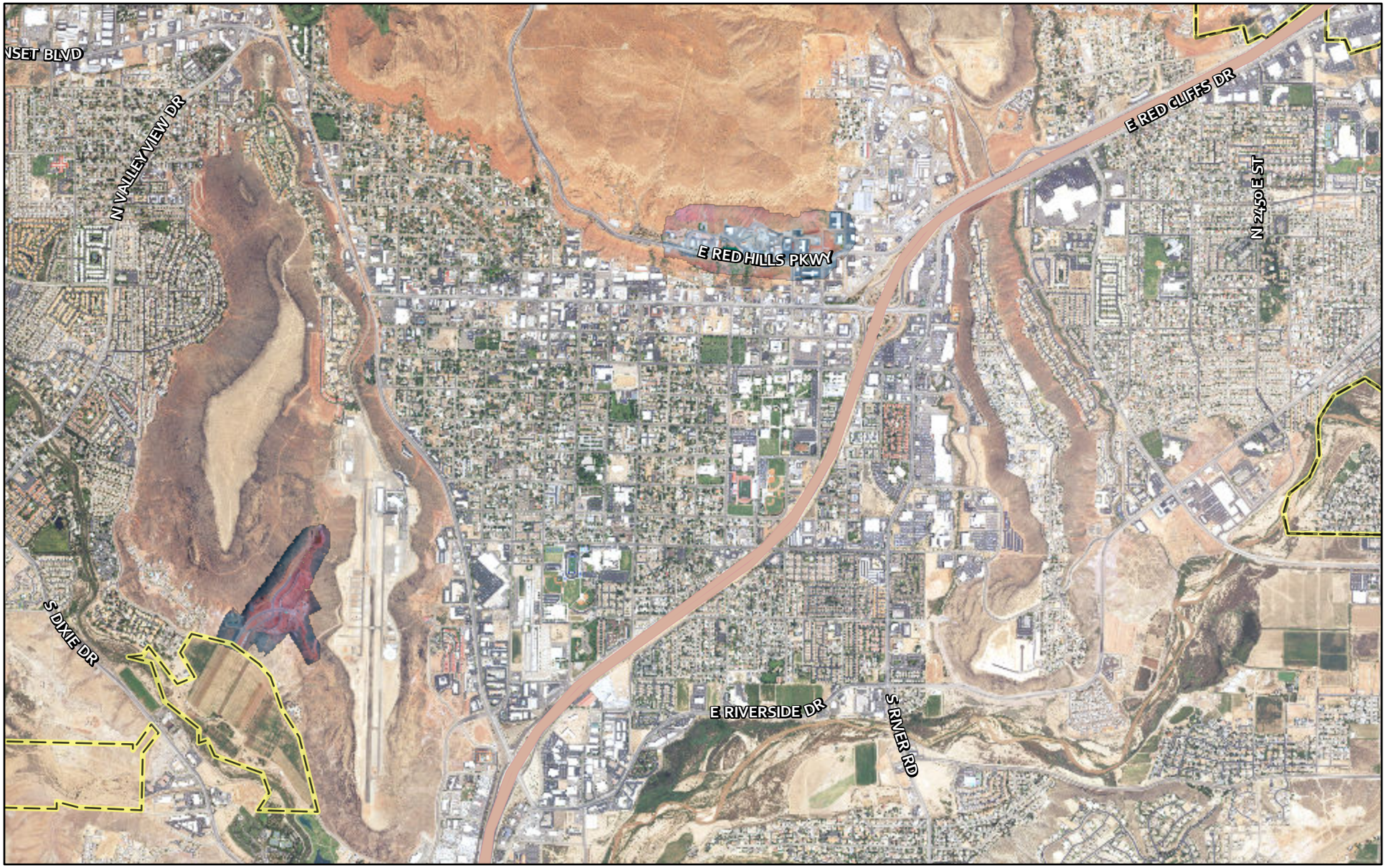
Notes

188.1 0 94.04 188.1 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

DISCLAIMER: The information shown on this map was compiled from different GIS sources. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Washington County, Utah will not be held responsible for any claims, losses or damages resulting from the use of this map.

VICINITY MAP



September 16, 2021

1:33,620

0 0.28 0.55 1.1 mi

0 0.45 0.9 1.8 km

City of

Made by the City of St. George GIS Department

SGCityMaps - https://maps.sgcity.org/sgcitymaps

25-248 - Scoring Summary

Active Submissions

	Total	TOTAL COST	PDF PROPOSAL	IDENTIFY STEEL FABRICATOR	IDENTIFY CONTRACTOR	DEMONSTRATE CONFORMANCE TO SCOPE OF SERVICES	SPECIFY PAINT FINISH TO SPEC	QUALIFIED BID	BID BOND
Supplier	**30 pts**	**/ 30 pts**	**Pass/Fail**	**Pass/Fail**	**Pass/Fail**	**Pass/Fail**	**Pass/Fail**	**Pass/Fail**	**Pass/Fail**
Doug Hunt Construction (F18)	30	30 ($135,000.00)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
R.D. Construction LLC (C30)	28.38	28.38 ($142,704.00)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Mountain States Contractors, Inc. (V64)	24.88	24.88 ($162,795.94)	Fail	Pass	Pass	Fail	Fail	Pass	Pass

MARY WAHL - Scoring Summary

Active Submissions

	Total	PDF PROPOSAL	IDENTIFY STEEL FABRICATOR	IDENTIFY CONTRACTOR	DEMONSTRATE CONFORMANCE TO SCOPE OF SERVICES	SPECIFY PAINT FINISH TO SPEC	QUALIFIED BID	BID BOND	TOTAL COST
Supplier	30 pts	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	/ 30 pts
Mountain States Contractors, Inc. (V64)	24.88	Fail	Pass	Pass	Fail	Fail	Pass	Pass	24.88 ($162,765.94)
R.D. Construction LLC (C30)	28.38	Pass	Pass	Pass	Pass	Pass	Pass	Pass	28.38 ($142,704.00)
Doug Hunt Construction (F18)	30	Pass	Pass	Pass	Pass	Pass	Pass	Pass	30 ($135,000.00)

Barbara Berrett - Scoring Summary

Active Submissions

	Total	PDF PROPOSAL	IDENTIFY STEEL FABRICATOR	IDENTIFY CONTRACTOR	DEMONSTRATE CONFORMANCE TO SCOPE OF SERVICES	SPECIFY PAINT FINISH TO SPEC	QUALIFIED BID	BID BOND	TOTAL COST
Supplier	30 pts	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	/ 30 pts
Mountain States Contractors, Inc. (V64)	24.88	Fail	Pass	Pass	Fail	Fail	Pass	Pass	24.88 ($162,765.94)
R.D. Construction LLC (C30)	28.38	Pass	Pass	Pass	Pass	Pass	Pass	Pass	28.38 ($142,704.00)
Doug Hunt Construction (F18)	30	Pass	Pass	Pass	Pass	Pass	Pass	Pass	30 ($135,000.00)

Weston Nelson - Scoring Summary

Active Submissions

	Total	PDF PROPOSAL	IDENTIFY STEEL FABRICATOR	IDENTIFY CONTRACTOR	DEMONSTRATE CONFORMANCE TO SCOPE OF SERVICES	SPECIFY PAINT FINISH TO SPEC	QUALIFIED BID	BID BOND	TOTAL COST
Supplier	30 pts	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	Pass/Fail	/ 30 pts
Mountain States Contractors, Inc. (V64)	24.88	Fail	Pass	Pass	Fail	Fail	Pass	Pass	24.88 ($162,795.94)
R.D. Construction LLC (C30)	28.38	Pass	Pass	Pass	Pass	Pass	Pass	Pass	28.38 ($142,704.00)
Doug Hunt Construction (F18)	30	Pass	Pass	Pass	Pass	Pass	Pass	Pass	30 ($135,000.00)

Agenda Date: 12/18/2025 **Agenda Item Number:** 2f

Subject:

Consider approval to purchase a closed SCADA serial network.

Item at-a-glance:

Staff Contact: Bryan Dial

Applicant Name: City of St. George Energy Services

Reference Number: N/A

Address/Location:

811 East Red Hills Parkway

Item History (background/project status/public process):

This item is for the purchase of the Critical Schweitzer ICON Communications Equipment in the amount of $125,909.27 through a sole source purchase. The Schweitzer Engineering Laboratories (SEL) ICON equipment is a critical infrastructure purchase for the SCADA Department that provides the essential, deterministic, and highly secure wide-area connectivity required for the citys electric utility substations and control center. This purchase will replace the existing 25-year old equipment at the end of its useful life. Staff recommends approval.

Staff Narrative (need/purpose):

The Schweitzer Engineering Laboratories (SEL) ICON equipment is a critical infrastructure purchase for the SCADA Department, intended to replace the existing, 25-year-old serial communication network. This dedicated, sole-source communications platform provides the essential, deterministic, and highly secure wide-area connectivity required for the citys electric utility substations and control center. By enabling reliable, high-speed data transfer for real-time monitoring, protection, and control applications, this system is vital to maintaining the stability, efficiency, and security of the power grid, ensuring uninterrupted service for our residents and compliance with modern reliability standards. This purchase is part of a multiyear replacement program. SEL is the sole source for this purchase because the purchase must match existing equipment. Staff recommends approval

Name of Legal Dept approver: Kristopher Pearson

Budget Impact:

Cost for the agenda item: $125,909.27

Amount approved in current FY budget for item: $320,000.00

If not approved in current FY budget or exceeds the budgeted amount, please explain funding source:

Amount is approved in current budget.

Description of funding source:

Amount is approved in current budget.

Recommendation (Include any conditions):

Staff recommends approval.

Attachments

PUR – Purchase Requisition Form

St.George
THE BRIGHTER SIDE

Requestor & Signer Information

Request Date	Department *	Division *
11/24/2025	Energy Services	Electric Distribution

☑ PO Request ☐ BPO Request ☐ Request for Payment (Invoice Attached)

Requested By: *	**Requestor Email** *		
JACE LARSON	JACE.LARSON@SGCITYUTAH.GOV	11/24/2025	Signed by: JACE LARSON D171DC546698486...
Authorized Signer Name (up to $25,000) *	**Authorized Signer Email** *		
TOM BIRRELL	TOM.BIRRELL@SGCITYUTAH.GOV	11/24/2025	Signed by: TOM BIRRELL D44956E97B0641C...
Department Head Name (required over $25,000)	**Department Head Email**		
BRYAN DIAL	BRYAN.DIAL@SGCITYUTAH.GOV	11/25/2025	Signed by: BRYAN DIAL A584D6E92D55411...
City Manager Name (required when any procurement policies are waived)	**City Manager Email**		
Purchasing Rep. Name	**Purchasing Rep. Email**		
INVOICES	INVOICES@SGCITYUTAH.GOV	11/25/2025	Signed by: Mary Wahl 6506E47724464EE...

Procurement Type

Contract Requirements *

- ◉ This does NOT Require a contract
- ○ Contract Drafted by the City's Legal Department
- ○ Contract Drafted by vendor; reviewed & approved by City's Legal Department

City Council Approval Date (if applicable): *
12/04/2025 12:00:00 AM

Is this a Capital Purchase or Capital outlay Item? *
○ Yes ◉ No

Procurement Type *	SHIP TO ADDRESS: *	New or Existing Vendor? *
SOLE SOURCE / O.E.M ITEM	695 East Waterworks Drive Gate 1, 84770	EXISTING PARTY

Vendor Information

Vendor Name Legal Name	DBA Name	Vendor ID
SCHWEITZER ENGINEERING LABORATORIES, INC.		1699

Please provide the legal name of the vendor

DBA / Common Name

Address
2350 NE HOPKINS COURT

City	State	Zip Code
PULLMAN	WA	99163

Country
USA

Is the Address correct?*
(•) Yes ( ) No

Sole Source

To ensure the fair and equitable treatment and to foster effective broad-based competition, a standard procurement process is followed whenever public funds are expended. Sole source contract awards do not involve a standard procurement process and should only be used when justified after reasonable research has been conducted to determine there are no other available sources that can provide the needed goods or services. Circumstances for which a sole source may be justified include:

a) An item for which there is no comparable product or service, such as a one-of-a-kind item available from only one vendor: or

b) A component or replacement part for which there is no commercially available substitute, and which can be obtained only directly from the manufacturer; O.E.M. or

c) An exclusive maintenance, services, or warranty agreement.

Utah Administrative Code R33-8-101a. See also St. George City Code 1-10-B-5

Date	Requested By:	Department	Vendor
11/24/2025	JACE LARSON	Energy Services	SCHWEITZER ENGINEERING LABORATORIES, INC.

Product Description *

Scada serial mux network continued.

Why is the service or product only available from this single supplier? *

Must match previously purchased equipment for quality and compatibility reasons.

Could the product be reasonably modified to allow for competition? *

○ Yes ◉ No

Detail all research performed to determine there is only one source for this item. Include a list of names and vendors contacted that may provide similar products and a summary of their response. *

SEL is the sole manufacturer and retailer of these network devices.

Clear and convincing evidence has been presented to me that this is the sole source vendor for this purchase:

Department Head Signature:

Signed by:
BRYAN DIAL
A584D6E92D55411...

11/25/2025

Purchase Details

QTY *	Description *	Account Code *	Project Code	Unit Cost *
7	8002-01F | 8-inch Panel or DIN-rail mount Cube Chassis	07-5313-7444		$1,971.65
20	8022-01 | Enhanced Protected Line Module (EPLM)	07-5313-7444		$2,604.77
10	8030-01 | Server Module (SRVR)	07-5313-7444		$821.31
10	8050-01 | Quattro Module	07-5313-7444		$286.65
15	8053-11 | SEL-8053 Async Data Submodule	07-5313-7444		$392.58
20	8110-02 | SFP (OC-12, 1310 nm LC Connector = 40 km)	07-5313-7444		$1,375.00
25	8099-01 | ICON Submodule Cover	07-5313-7444		$20.84
7	8010-02 | 8-Inch Cube Chassis Power Module (AC/DC 120-240V 63W, Terminal Block)	07-5313-7444		$482.32
25	8049-01 | Blank Cover for SEL ICON (Access Module)	07-5313-7444		$20.84
7	8049-03 | Blank Cover for SEL ICON (8-Inch Cube Chassis Power Module)	07-5313-7444		$163.27
3	8001-01F | 19-inch Rack-Mount Chassis	07-5313-7444		$2,617.23
3	8011-02 | 19-Inch Rack Mount Power Module (AC/DC 120-240V 92W, Terminal Block.)	07-5313-7444		$547.13
3	8049-02 | Blank Cover for SEL ICON (19-Inch Rack Power Module)	07-5313-7444		$163.27

Comments / Special Instructions:

Freight / Shipping Cost *
$0.00

Purchase Total
$125,909.27

If purchase exceeds $5,000, it is expected that a minimum of 3 bids/ quotes be obtained and attached.

Vendor 2 **Quote Amount**

Vendor 3 **Quote Amount**

General Attachments: (1)

Quotes - You can submit multiple documents with the same button. Please use the correct button for each type of document (Quotes should be uploaded using the Quotes button etc.) *

PUR - SUP - Purchasing Quote - From SCHWEITZER ENGINEERING LABORATORIES, INC. requested by JACE LARSON

Supporting Documents

PSA / Contract

Purchasing Only

Purchase Request Status	Rejection Reason
Received	

Please address purchase orders to
Schweitzer Engineering Laboratories, Inc.
2350 NE Hopkins Court
Pullman, WA 99163

Reference this quote number and send purchase orders to:

nw_quotes@selinc.com

Created Date	11/20/2025	Quote Number	00509405
Account Name	City of St George	Expiration Date	1/17/2026
Sold To Contact	Jace Larson	Prepared By	Heidi McGraw
Sold To Contact Email	jace.larson@sgcity.org	Sold To Sales Channel	SEL Rocky Mountain UT
		Business Email	nw_quotes@selinc.com

Line No.	Part Number	Description	Sales Price	Quantity	Total Price
1	8002-01F	8-inch Panel or DIN-rail mount Cube Chassis for SEL ICON (Includes Node Fee 505120XX4)	USD 1,971.65	7.00	USD 13,801.55
2	8022-01	Enhanced Protected Line Module (EPLM) for SEL ICON	USD 2,604.77	20.00	USD 52,095.40
3	8030-01	Server Module (SRVR) for SEL ICON	USD 821.31	10.00	USD 8,213.10
4	8050-01	Quattro Module for SEL ICON	USD 286.65	10.00	USD 2,866.50
5	8053-11	SEL-8053 Async Data Submodule for SEL ICON (EIA-232, EIA-422, EIA-485)	USD 392.58	15.00	USD 5,888.70
6	8110-02	SFP (OC-12, 1310 nm LC Connector = 40 km)	USD 1,375.00	20.00	USD 27,500.00
7	8099-01	ICON Submodule Cover	USD 20.84	25.00	USD 521.00
8	8010-02	8-Inch Cube Chassis Power Module for SEL ICON (AC/DC 120-240V 63W, Terminal Block)	USD 482.32	7.00	USD 3,376.24
9	8049-01	Blank Cover for SEL ICON (Access Module)	USD 20.84	25.00	USD 521.00
10	8049-03	Blank Cover for SEL ICON (8-Inch Cube Chassis Power Module)	USD 163.27	7.00	USD 1,142.89
11	8001-01F	19-inch Rack-Mount Chassis for SEL ICON (Includes Node Fee 505120XX4)	USD 2,617.23	3.00	USD 7,851.69
12	8011-02	19-Inch Rack Mount Power Module for SEL ICON (AC/DC 120-240V 92W, Terminal Block.)	USD 547.13	3.00	USD 1,641.39
13	8049-02	Blank Cover for SEL ICON (19-Inch Rack Power Module)	USD 163.27	3.00	USD 489.81

Grand Total USD 125,909.27

Lead Time

Lead times are confirmed upon receipt of a complete purchase order and can be subject to change due to special circumstances.
Lead times do not include delivery times.

End User

All submitted purchase orders must contain valid and complete end-user information, including full address. Incomplete or invalid information may delay the processing of the purchase order.

Freight

Prices include ground freight prepaid within the 48 contiguous United States via SEL's preferred carrier. Buyers may request expedited delivery service at their expense by submitting a collect account or by including added charges to their invoice. Orders with multiple items may be shipped from multiple locations and may arrive in more than one delivery.

Manuals

Equipment manuals are provided free on CD with relays. If a hard copy manual is required, this should be specified at the time of order as a separate line item and may be subject to freight charges.

Warranty

SEL is pleased to offer our 10-Year Product Warranty. Please visit https://selinc.com/company/quality/. Third-party products included in this Quote are not covered by SEL's warranty. SEL will pass on the original manufacturer warranty to the Buyer if possible.

Payment Terms

Net 30 or per the approved credit terms with SEL. SEL may require additional credit information or prepayment prior to acceptance of a purchase order if credit terms have not been established or are insufficient to cover this purchase.

Quote Terms

Prices are based on quoted quantities and may change if quantities change. Prices do not include sales tax.

Information within this quotation is for your evaluation purposes only. Disclosure of this information outside of your company is prohibited.

Purchase order modifications or cancellations may result in additional fees and adjustment to delivery schedule. To prevent delays, please carefully review the part number descriptions listed in the above table to ensure ordering options will meet requirements.

SEL values your right to privacy, and uses personal data provided to SEL only for our legitimate business interests. More information may be found at the SEL Privacy Policy. You may exercise your rights related to your personal data by contacting the SEL Data Protection Officer at data_protection@selinc.com.

All sales are subject to the attached SEL Sales Terms, available on SEL's website (https://www.selinc.com/termsandconditions/unitedstates) and incorporated herein by reference unless Buyer and SEL has a Master Agreement or signed negotiated terms on file.

Part Number	Description
8002-01F	8-inch Panel or DIN-rail mount Cube Chassis for SEL ICON (Includes Node Fee 505120XX4)
8022-01	Enhanced Protected Line Module (EPLM) for SEL ICON
8030-01	Server Module (SRVR) for SEL ICON
8050-01	Quattro Module for SEL ICON
8053-11	SEL-8053 Async Data Submodule for SEL ICON (EIA-232, EIA-422, EIA-485)
8110-02	SFP (OC-12, 1310 nm LC Connector = 40 km)
8099-01	ICON Submodule Cover
8010-02	8-Inch Cube Chassis Power Module for SEL ICON (AC/DC 120-240V 63W, Terminal Block)

8049-01	Blank Cover for SEL ICON (Access Module)
8049-03	Blank Cover for SEL ICON (8-Inch Cube Chassis Power Module)
8001-01F	19-inch Rack-Mount Chassis for SEL ICON (Includes Node Fee 505120XX4)
8011-02	19-Inch Rack Mount Power Module for SEL ICON (AC/DC 120-240V 92W, Terminal Block.)
8049-02	Blank Cover for SEL ICON (19-Inch Rack Power Module)

Agenda Date: 12/18/2025 **Agenda Item Number:** 2g

Subject:

Consider approval for a Line Extension Agreement with Dixie Power for the West Taxi Lane Extension Project.

Item at-a-glance:

Staff Contact: Dustin Warren

Applicant Name: City of St George

Reference Number: NA

Address/Location:

4508 South Airport Parkway

Item History (background/project status/public process):

This item is for a line extension agreement with Dixie Power for the West Taxi Lane extension project. The original amount was $147,030.65. Additional cost of $28,035.46 is for the temporary feed to the fuel pump station. Requires abandoning the old & pulling new permanent wire.

Staff Narrative (need/purpose):

Additional cost of $28,035.46 is for the temporary feed to the fuel pump station. Requires abandoning the old & pulling new permanent wire.

Name of Legal Dept approver: Alicia Carlton

Budget Impact:

Cost for the agenda item: $28,035.46

Amount approved in current FY budget for item: $947,368

If not approved in current FY budget or exceeds the budgeted amount, please explain funding source:

Approved in FY26

Description of funding source:

Federal Grant and Airport Restricted Funds

Recommendation (Include any conditions):

Staff recommends approval

Attachments

71 E Highway 56
Beryl, UT 84714-5197
Phone: 866-673-3297
Fax: 435-439-5352

DixiePower
ENERGIZING LIFE
A Touchstone Energy® Cooperative
The power of human connections®

145 W Brigham Rd.
St. George, UT 84790
Phone: 866-673-3297
Fax: 435-673-3315

LINE EXTENSION AGREEMENT

Date 10/20/25 **WO#** 410628

CITY OF ST GEORGE AIR

Line Extension To: SGC CITY - TAXI LANE EXPANSION AIRPORT

Address: TAXI LANE EXPANSION AIRPOR

Subdivision: Lot/Parcel Number(s): SG-6715

The costs for the above referenced project are:

Installation Cost	$ 32,541.83
Material Cost	$ 81,374.12
Trenching/Boring	$ 33,114.70
Prepayment Credit	
Impact Fees:	$ 0.00

Amount Due Before Construction Begins: **$ 147,030.65**

This cost estimate is good for 90 days; beyond the 90 days the costs will require an update due to the increasing cost of steel and materials. The full cost of construction will need to be paid before you can be placed on our construction schedule. Scheduled projects will be subject to the limited availability and increasing lead times of materials. If the full cost of construction is not paid within 90 days, this work order may be canceled, and no refunds will be made of the estimated fees.

These costs include secondary power lines to the lot(s). It will be the responsibility of the lot owner to provide the service drop to the building.

- Customer to furnish all Rights-Of-Way/Easements required by the Cooperative in extending electric services. These Rights-of-Way/Easements will need to be recorded.

- Line Extension Agreement to be signed and returned.

- Trenching provided by owner or owner's subcontractor must be to Dixie Power Service Standards (available online at https://www.dixiepower.com/service-standards/). Compaction test results to be provided to Dixie Power Engineering department once completed. If all standards are not met, there may be an additional cost to the customer.

- Full payment for Construction Costs, Impact Fees, and Security Deposit if applicable.

- Excavation to sub-grade before work is to begin. All conduit and conductor installed before curb and gutter is laid. All property corner stakes and lot lines surveyed before starting. If all requirements are not followed, there will be an additional cost to the customer.

- Customer is required to disclose knowledge of any issues, such as hard excavation, including rocks, mud, trash, and high-water table. Customer will be charged an additional fee upon completion of the project.

- Signed application form for Membership and Electric Service to be filled out with correct address, subdivision & lot number (If applicable.)

FAILURE TO DO ANY OF THE ABOVE REQUIREMENTS WILL DELAY THE PROCESS

The acceptance of the application by the cooperative shall constitute an agreement between the applicant

Signed by:
Michele Randall
D5F46532D94E473...

11/13/2025

Michele Randall, Mayor — Date

Attest:

Signed by:
4E99A810FECB43B...

Christina Fernandez, City Recorder

Approved as to form:

Signed by:
Alicia Carlton
2A9F177A729D4E4...

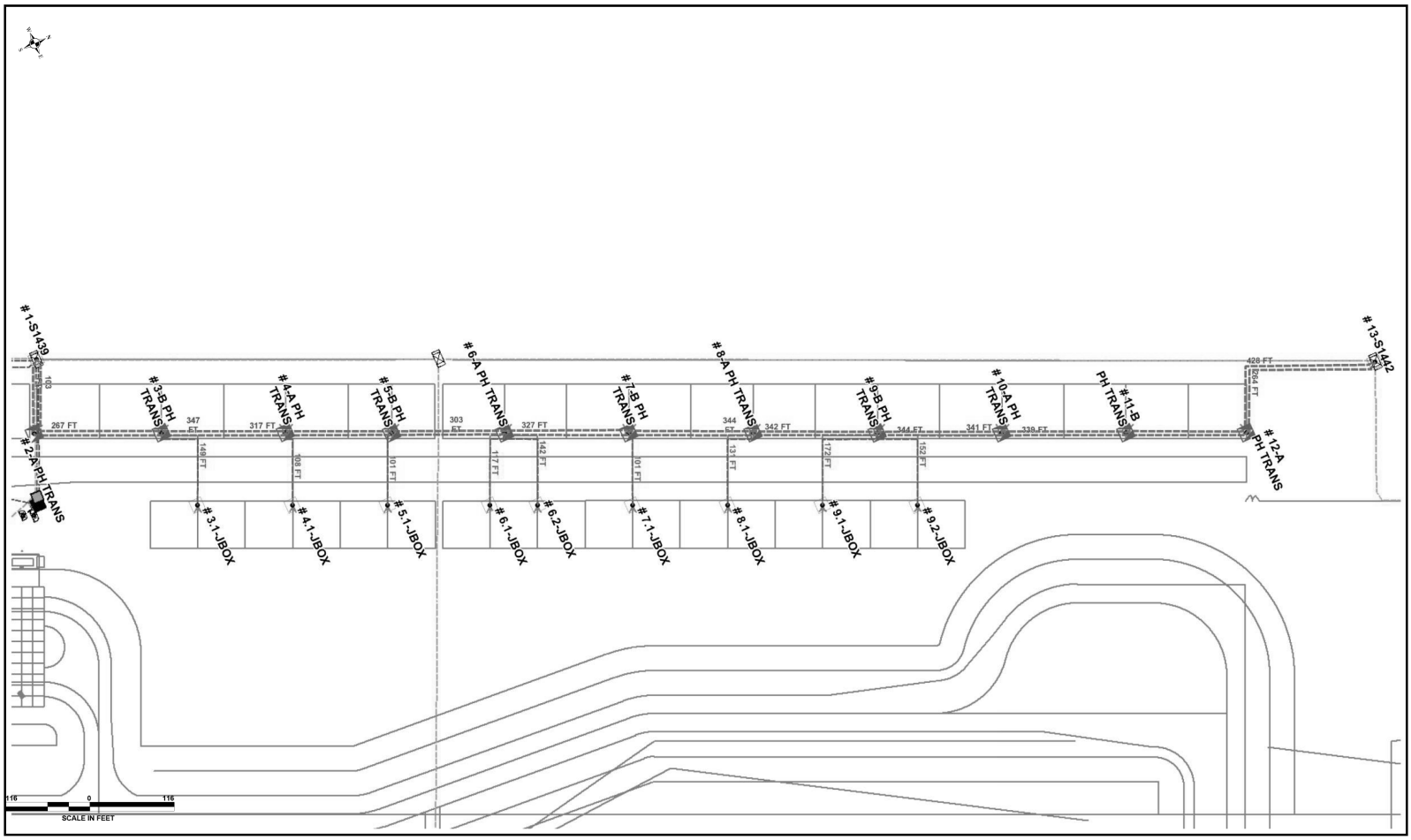
Alicia Carlton, City Assistant Attorney

Reviewed by:

Signed by:
Dustin Warren
988FBD0F249C46E...

Dustin Warren, Airport Director

Na **nt Area:** Print Area 1 **Work Order:** 410628



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DixiePower
ENERGIZING LIFE
A Touchstone Energy® Cooperative
The power of human connections®

71 EAST HIGHWAY 56
BERYL, UT 84714-5197

INVOICE: 9763

Invoice Date: 12/08/2025
Terms: DUE UPON RECEIPT
Due Date: 03/08/2026
Amount Due: $ 28,035.46

CITY OF ST GEORGE AIRPORT
175 E 200 N
SAINT GEORGE UT 84770-3795

Account: 10764
Description: WO 410628 TAXI LANE EXPANSION AIRPORT
CHANGE ORDER, Additional cost for temp feed to fuel pump station. Requires abandoning the old & pulling new permant wire.

DESCRIPTION	QUANTITY	UOM	UNIT PRICE	AMOUNT	TAX
INSTALLATION COST-ORIG	1.000	EA	32,541.8300	32,541.83	
MATERIALS COST-ORIG	1.000	EA	81,374.1200	81,374.12	
TRENCHING/BORING-ORIG	1.000	EA	33,114.7000	33,114.70	
INSTALLATION COST-CHANGE ORDER 1	1.000	EA	9,817.5100	9,817.51	
MATERIALS COST-CHANGE ORDER 1	1.000	EA	16,986.7500	16,986.75	
TRENCHING/BORING-CHANGE ORDER 1	1.000	EA	1,231.2000	1,231.20	
PREPAYMENT CREDIT-QE	-1.000	EA	147,030.6500	-147,030.65	

MESSAGES

Now you can pay this bill online. Go to dixiepower.com and click on pay now.
https://dixiepower.smarthub.coop/PayNow

Subtotal:	$ 28,035.46
Tax:	$ 0.00
Total:	$ 28,035.46
Amount Paid:	$ 0.00
Amount Due:	$ 28,035.46

DixiePower
ENERGIZING LIFE
A Touchstone Energy® Cooperative
The power of human connections®

71 EAST HIGHWAY 56
BERYL, UT 84714-5197

Account:	10764
Invoice:	9763
Due Date:	03/08/2026
Amount Due:	$ 28,035.46
Amount Of Payment:	_____

Remit To:

CITY OF ST GEORGE AIRPORT
175 E 200 N
SAINT GEORGE UT 84770-3795

DIXIE POWER
71 EAST HIGHWAY 56
BERYL UT 84714-5197

71 E Highway 56
Beryl, UT 84714-5197
Phone: 866-673-3297
Fax: 435-439-5352

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A Touchstone Energy® Cooperative
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145 W Brigham Rd.
St. George, UT 84790
Phone: 866-673-3297
Fax: 435-673-3315

LINE EXTENSION AGREEMENT

Date 10/28/25 **WO#** 410628

CITY OF ST GEORGE AIR

Line Extension To: SGC CITY - TAXI LANE EXPANSION AIRPORT

Address: TAXI LANE EXPANSION AIRPOR

Subdivision: Lot/Parcel Number(s): SG-6715

The costs for the above referenced project are:

Installation Cost	$ 42,359.34
Material Cost	$ 98,360.87
Trenching/Boring	$ 34,345.90
Prepayment Credit	
Impact Fees:	$ 0.00

Amount Due Before Construction Begins: **$ 175,066.11**

This cost estimate is good for 90 days; beyond the 90 days the costs will require an update due to the increasing cost of steel and materials. The full cost of construction will need to be paid before you can be placed on our construction schedule. Scheduled projects will be subject to the limited availability and increasing lead times of materials. If the full cost of construction is not paid within 90 days, this work order may be canceled, and no refunds will be made of the estimated fees.

These costs include secondary power lines to the lot(s). It will be the responsibility of the lot owner to provide the service drop to the building.

The Cooperative will require the following:

• Customer to furnish all Rights-Of-Way/Easements required by the Cooperative in extending electric services. These Rights-of-Way/Easements will need to be recorded.

• Line Extension Agreement to be signed and returned.

• Trenching provided by owner or owner's subcontractor must be to Dixie Power Service Standards (available online at https://www.dixiepower.com/service-standards/). Compaction test results to be provided to Dixie Power Engineering department once completed. If all standards are not met, there may be an additional cost to the customer.

• Full payment for Construction Costs, Impact Fees, and Security Deposit if applicable.

• Excavation to sub-grade before work is to begin. All conduit and conductor installed before curb and gutter is laid. All property corner stakes and lot lines surveyed before starting. If all requirements are not followed, there will be an additional cost to the customer.

• Customer is required to disclose knowledge of any issues, such as hard excavation, including rocks, mud, trash, and high-water table. Customer will be charged an additional fee upon completion of the project.

• Signed application form for Membership and Electric Service to be filled out with correct address, subdivision & lot number (If applicable.)

FAILURE TO DO ANY OF THE ABOVE REQUIREMENTS WILL DELAY THE PROCESS

The acceptance of the application by the cooperative shall constitute an agreement between the applicant

_____

Signature of Applicant Date

Michele Randall
Mayor

Approved as to Form:

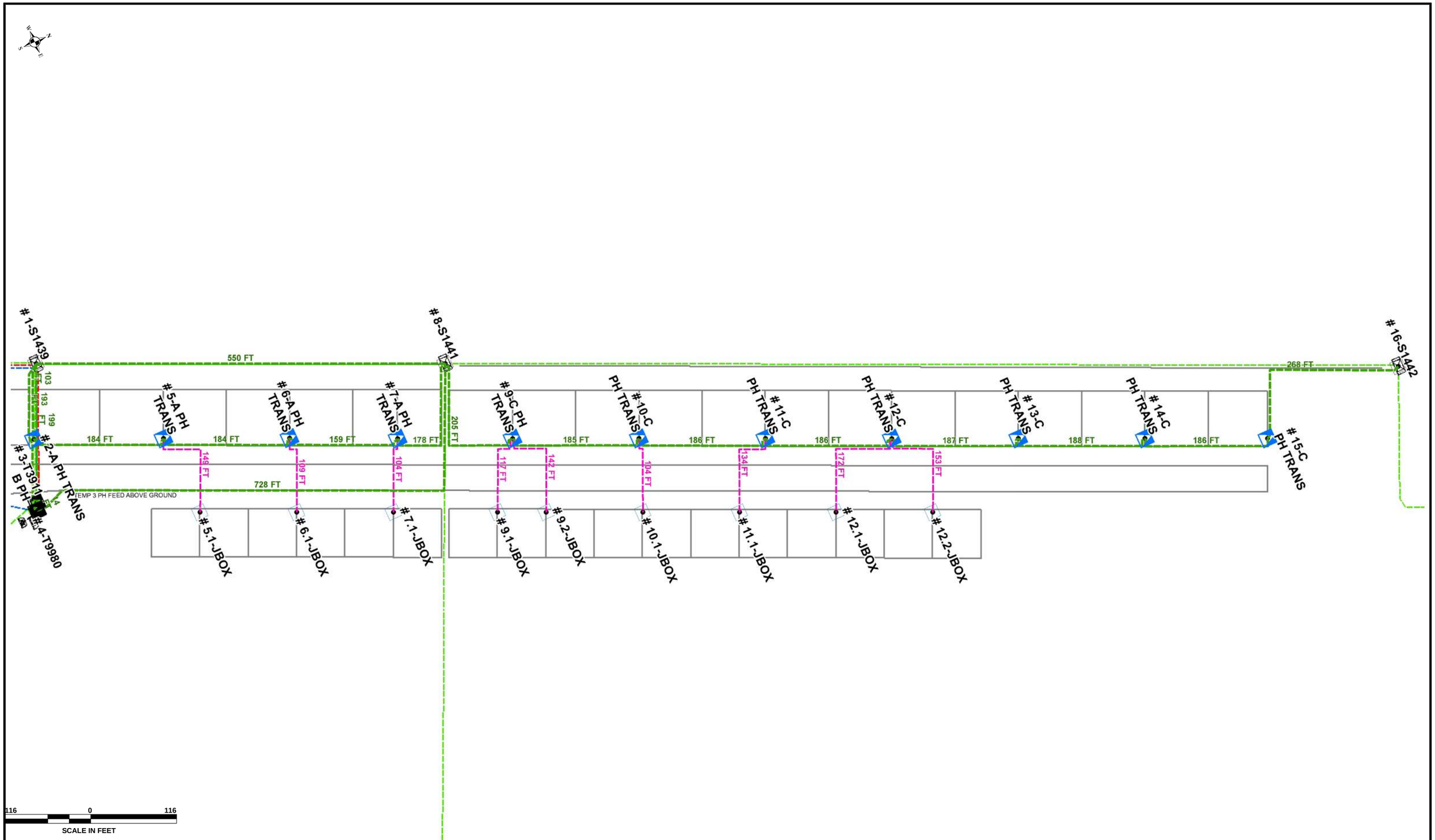
Attest:

_____
Alicia Carlton, Assistant City Attorney

_____
Christina Fernandez, City Recorder

Reviewed by:

_____
Dustin Warren, Airport Director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#3-T9911 B PH
#4-T9980
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#6.1-JBOX
#7.1-JBOX
#9.1-JBOX
#9.2-JBOX
#10.1-JBOX
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116 0 116
SCALE IN FEET

Agenda Date: 12/18/2025 **Agenda Item Number:** 2h

Subject:

Consider approval of the payment of the NEOGOV Maintenance Contract.

Item at-a-glance:

Staff Contact: Julia Layton

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

61 South Main Street

Item History (background/project status/public process):

In 2024 the City purchased NEOGOV software for HR department, which included a 5-year maintenance contract. This item is to approve the annual payments for the remainder of the contract. Staff recommends approval.

Staff Narrative (need/purpose):

Outline of remaining 4 years on Maintenance Contract for NEOGOV software:2025 Approximately $109,000 (60% of Annual Subscription Fee)2026 Approximately $136,000 (75% of Annual Subscription Fee)2027 Approximately $164,000 (90% of Annual Subscription Fee)2028 Approximately $182,000 (100% of Annual Subscription Fee) Subscription Fees should not increase more that 5% from the previous term for the 2 Annual Renewal terms after the execution of this Agreement.

Name of Legal Dept approver: Ryan N. Dooley

Budget Impact:

Cost for the agenda item: $108,902.70

Amount approved in current FY budget for item: $108,902.70

If not approved in current FY budget or exceeds the budgeted amount, please explain funding source:

Approved in current FY budget

Description of funding source:

Approved in current FY budget

Recommendation (Include any conditions):

Approve

Attachments

NEOGOV™

NEOGOV ORDERING FORM

Permitted FTE: 700-799 Quote Valid: Dec. 2024	Governmentjobs.com, Inc. (dba "NEOGOV") 2021 Park Pl. El Segundo, CA 90245 Billing@neogov.com

Customer Information

Customer Name:	St. George, City of (UT)	**Customer Contact Name:**	Julia Layton
Customer Address:	175 East 200 North St. George, UT 84770	**Email Address:**	julia.layton@sgcity.org

Fee Summary

Description of Subscriptions		SaaS Subscription Fees	Non-Recurring Professional Service Fees	Service Fee Sub-Totals
Insight Enterprise	(IN)	$18,495.00	$8,000.00	
GovernmentJobs.com	(GJC)	$3,278.00	$0.00	
Candidate Texting	(CTM)	$925.00	$0.00	
Onboard	(ON)	$16,183.00	$8,000.00	
Perform	(PE)	$27,743.00	$8,000.00	
Eforms	(EF)	$22,018.00	$8,000.00	
Learn	(LE)	$35,141.00	$8,000.00	
Core HR	(CHR)	$20,850.00	$20,000.00	
Time and Attendance	(TA)	$35,588.00	$25,000.00	
Payroll	(PR)	$35,588.00	$25,000.00	
Benefits	(BEN)	$15,827.00	$20,000.00	
Schedule	(SCH)	$22,262.00	$10,000.00	
TOTAL:		$254,813.00	$140,000.00	
Bundle Discount:	(30%)	(-$76,170.00)		
Setup Discount:	(50%)		(-$70,000.00)	
SUB TOTAL:		$177,728.00	$70,000.00	
5 Yr. Ramp Promo '24				
Year 1 Setup+ 10% of SaaS Fees		$14,218.24	$70,000.00	Year 1: $84,2128.24
Year 2 60% SaaS Fee		$106,636.80		Year 2: $106,636.80
Year 3 75% SaaS Fee		$133,296.00		Year 3: $133,296.00
Year 4 90% SaaS Fee		$159,955.20		Year 4: $159,955.20
Year 5 100% SaaS Fee		$177,728.00		Year 5: $177,728.00

A. Agreement and Applicable Modifications to the Agreement.

1. Agreement. This Ordering Document and the Services purchased herein are governed by the terms of the Services Agreement either affixed hereto or the version most recently published prior to execution of this Ordering Document available at https://www.neogov.com/service-specifications, as well as the Service Specifications and applicable Schedules incorporated therein.
2. Effectiveness & Modification. Neither Customer nor NEOGOV will be bound by this Ordering Document until it has been signed by its authorized representative. This Order Form may not be modified or amended except through a written instrument signed by the parties.

B. General Terms Summary.

1. Summary of Fees. Listed above is a summary of Fees under this Order. Once placed, your order shall be non-cancelable and the sums paid nonrefundable, except as provided in the Agreement.
2. The Effective Date. This Order is made and entered into as of the date of Customer signature on this Order Document (the "Effective Date").
3. SaaS Subscription(s) Start Date. The Effective Date.
4. Billing Frequency. Annual. Net 30 from Customer receipt of NEOGOV invoice.
5. Order of Precedence. This Ordering Document shall take precedence in the event of direct conflict with the Services Agreement, applicable Schedules, and Service Specifications.
6. Offer Validity. This Order is valid for 30 days from the date of Customer receipt of this Ordering Document unless extended by NEOGOV.

C. Special Conditions (if any).

1. Initial term: 60 months
2. Subscription Fees shall not increase more than 5% from the previous Term for the 2 Annual Renewal terms after the execution of this Agreement. Thereafter, NEOGOV may increase Fees according to the Agreement.

NEOGOV™

IN WITNESS WHEREOF, the parties have caused this Order to be executed by their respective duly authorized officers as of the date set forth below, and consent to the Agreement.

Customer	Governmentjobs.com, Inc. (DBA "NEOGOV")
Entity Name: St. George, City of (UT)	
Signature: 	Signature: 
Print Name: John Willis	Print Name: Alex Chun, CFO
Date: 12/20/24	Date: 12/20/2024

NEOGOV™

NEOGOV:		Customer Name & Address:	
Governmentjobs.com, Inc. (dba "NEOGOV") 2120 Park Pl. El Segundo, CA 90245 billing@neogov.com		St. George, City of (UT) 175 East 200 North St. George, UT 84770	
Expiration Date:	12/30/2024	Contact Name:	Julia Layton
Term: 60 months	Net 30 payment terms	Contact Email:	julia.layton@sgcity.org

Fee Summary

Service Description	Term	Term Fees
FTE: 700-799 Insight (IN) Government Jobs (GJ) Candidate Texting (CTM) Onboard (ON) Eforms (EF) Perform (PE) Learn (LE) CoreHR (CHR) Payroll (PR) Time and Attendance (TA) Benefits (BN) Schedule (SCH)	Year 1	$14,218.24
Insight (IN) Government Jobs (GJ) Candidate Texting (CTM) Onboard (ON) Eforms (EF) Perform (PE) Learn (LE) CoreHR (CHR) Payroll (PR) Time and Attendance (TA) Benefits (BN) Schedule (SCH)	Year 2	$106,636.80
Insight (IN) Government Jobs (GJ) Candidate Texting (CTM) Onboard (ON) Eforms (EF) Perform (PE) Learn (LE) CoreHR (CHR) Payroll (PR) Time and Attendance (TA) Benefits (BN) Schedule (SCH)	Year 3	$133,296.00
In Insight (IN) Government Jobs (GJ) Candidate Texting (CTM) Onboard (ON) Eforms (EF) Perform (PE) Learn (LE) CoreHR (CHR) Payroll (PR) Time and Attendance (TA) Benefits (BN) Schedule (SCH)	Year 4	$159,955.20
Insight (IN) Government Jobs (GJ) Candidate Texting (CTM) Onboard (ON) Eforms (EF) Perform (PE) Learn (LE) CoreHR (CHR) Payroll (PR) Time and Attendance (TA) Benefits (BN) Schedule (SCH)	Year 5	$177,728.00

NEOGOV™

Professional Services – Implementation and Training	Year 1	$70,000.00

A. Terms and Conditions

1. Agreement. This Ordering Document and the Services purchased herein are expressly conditioned upon the acceptance by Customer of the terms of the NEOGOV Services Agreement either affixed hereto or the version most recently published prior to execution of this Ordering Form available at https://www.neogov.com/service-specifications. Unless otherwise stated, all capitalized terms used but not defined in this Order Form shall have the meanings given to them in the NEOGOV Services Agreement.
2. Effectiveness & Modification. Neither Customer nor NEOGOV will be bound by this Ordering Document until it has been signed by its authorized representative (the "Effective Date"). Unless otherwise stated, all SaaS Subscriptions shall commence on the Effective Date. This Order Form may not be modified or amended except through a written instrument signed by the parties.
3. Summary of Fees. Listed above is a summary of Fees under this Order. Once placed, your order shall be non-cancelable and the sums paid nonrefundable, except as provided in the Agreement.
4. Order of Precedence. This Ordering Document shall take precedence in the event of direct conflict with the Services Agreement, applicable Schedules, and Service Specifications.

B. Special Conditions (if any).

NEOGOV™

1. Initial Term: 60 months
2. Subscription Fees shall not increase more than 5% from the previous Term for the 2 Annual Renewal terms after execution of this Agreement. Thereafter, NEOGOV may increase Fees according to the Agreement.

IN WITNESS WHEREOF, the parties have caused this Order to be executed by their respective duly authorized officers as of the date set forth below, and consent to the Agreement.

Customer		Governmentjobs.com, Inc. (DBA "NEOGOV")	
Entity Name:	St. George, City of (UT)		
Signature:		Signature:	
Print Name:	John R. Willis	Print Name:	Alex Chun, CFO
Date:	12/20/2024	Date:	12/20/2024

NEOGOV

PowerDMS by NEOGOV

INVOICE

Vendor Information / Contact:

2120 Park Pl, Suite 100
El Segundo, CA 90245
Email: billing@neogov.net
Phone: (310) 426-6304
EIN: 33-0888748

Need a W-9? Click here: **W-9 PDF**

Invoice Summary:

Invoice No.:	INV-147264
Invoice Date:	10-22-2025
Due Date:	12-21-2025
Payment Terms:	Net 60
Purchase Order No.:	
Customer No.:	A-698579

Customer Billing Information
Julia Layton St. George, City of (UT) 175 E. 200 N. St. George, UT 84770 United States

Customer Shipping Information
St. George, City of (UT) 175 E. 200 N. St George, UT 84770 USA

Invoice Details:

Product	Start Date	End Date	Quantity	Total Price ($USD)
API Complete Package Subscription	12-20-2025	12-19-2026	1	$0.00
Benefits Subscription	12-20-2025	12-19-2026	720	$6,783.30
Candidate Text Messaging Subscription	12-20-2025	12-19-2026	720	$793.39
Core HR Subscription	12-20-2025	12-19-2026	720	$8,941.76
eForms Subscription	12-20-2025	12-19-2026	720	$9,442.67
Governmentjobs.com Subscription	12-20-2025	12-19-2026	720	$1,405.81
Insight Subscription	12-20-2025	12-19-2026	720	$7,931.79
Learn Subscription	12-20-2025	12-19-2026	720	$15,070.62
Onboard Subscription	12-20-2025	12-19-2026	720	$6,940.26
Payroll Subscription	12-20-2025	12-19-2026	720	$15,262.31
Perform Subscription	12-20-2025	12-19-2026	720	$11,897.90
Schedule EA Subscription	12-20-2025	12-19-2026	275	$6,904.67
Single Sign On Subscription	12-20-2025	12-19-2026	820	$2,265.90
Time & Attendance Subscription	12-20-2025	12-19-2026	720	$15,262.32

SUBTOTAL ($USD)	$108,902.70
Sales Tax	$0.00

TOTAL	$108,902.70
Payments	$0.00
Credits	$0.00
Balance Due ($USD)	**$108,902.70**

Payment Instructions:

Remit checks to:	**Remit electronic payments to:**	**Credit card payments:**
Governmentjobs.com, Inc. DEPT LA 25067 Pasadena, CA 91185-5067	Silicon Valley Bank Name: Governmentjobs.com, Inc. Account #: 3302022848 Routing #: 121140399 Swift Code: SVBUS6SIBO	Credit Card Payment Portal Link

By making the payment specified in this invoice, customer agrees that the terms and conditions of the agreement previously executed by the parties shall apply to this purchase, or if there is no prior agreement, the terms and conditions of the NEOGOV Services Agreement set forth in the quote previously provided to Customer shall apply. Any other terms and conditions provided by customer to NEOGOV in a purchase order or otherwise shall be deemed void.

Agenda Date: 12/18/2025 **Agenda Item Number:** 2i

Subject:

Consider approval of an agreement with J&S Farms LTD for a Culinary Water Connection for Livestock and Agricultural Use.

Item at-a-glance:

Staff Contact: Scott Taylor

Applicant Name: John Cazier

Reference Number: N/A

Address/Location:

2028 East Judy Ln

Item History (background/project status/public process):

The J&S Farms property is just off of Riverside Drive east of River Rd along the Virgin River. The farm has been there for decades and uses its own source of irrigation water for all of their agricultural water needs. Their source of water is a diversion from the Virgin River, near the Fossil Falls City park. During certain times of the year, the quality of the water is such that it is not suitable for stock watering.

Staff Narrative (need/purpose):

J&S Farms had requested a water service to water stock. Currently they water their stock with their own source of irrigation water, but would like to be able to turn off the irrigation water and still be able to water the stock. In the past, the City has entered similar agreements where a stock watering agricultural water connection is allowed, at the expense of the property owner, and the water impact fee is deferred until such time that the water is used for something other than stock watering. This agreement will allow J&S Farms to connect to the culinary water system for stock watering and agricultural uses. Any time in the future that the water connection is used for something other than stock watering and agricultural uses, an impact fee will be collected, or the connection will be terminated.

Name of Legal Dept approver: Alicia Galvany Carlton

Budget Impact: No Impact

Recommendation (Include any conditions):

Staff recommends approval of the agricultural and livestock water connection agreement.

Attachments

WHEN RECORDED RETURN TO:
City of St. George
175 East 200 North
St. George, UT 84770

Tax ID: SG-5-2-33-1301

AGREEMENT

Between the City of St. George and J&S Farms LTD
Regarding a Culinary Water Connection for Agriculture and Livestock Use

THIS AGREEMENT is entered into this _____ day of _____, 2025, by and between the City of St. George, a municipal corporation, herein referred to as "City", and J&S Farms LTD, a Trust, herein referred to as "J&S Farms LTD" or "Owner".

RECITALS

WHEREAS, J&S Farms LTD is the owner of real property, which is located within the City of St. George, Utah, at approximately 2018 E Judy Ln, and more particularly described by the Washington County Assessor's Office as Tax ID: SG-5-2-33-1301; and

WHEREAS, J&S Farms LTD desires to connect to the City of St. George culinary water distribution system for the purpose of providing water to various livestock and for agricultural purposes on said real property; and

WHEREAS, the City will agree to allow a connection to its culinary water distribution system and supply culinary water for the purpose of agricultural and livestock watering to J&S Farms LTD; and

WHEREAS, the City will agree to waive any Water Impact Fees associated with the culinary water connection as long as the water connection is used only for the supply of water to livestock and other agricultural purposes; and

WHEREAS, J&S Farms LTD will agree that since no Water Impact Fees were collected for the connection to the culinary water distribution system, at any time in the future, due to water shortage caused by drought, increased development, or any other reason, the City may require that J&S Farms LTD cease use of the culinary water connection for any purpose.

NOW, THEREFORE, in consideration of these premises, the parties agree as follows:

AGREEMENT

1. **The Connection**. A culinary water line currently exists in a roadway at the entrance to J&S Farms property end of Judy Ln . A new water connection, comprising of corporation stop on the main pipeline, a copper water service line,

a meter setter, meter ground box, and a curb stop on the downstream side of the meter setter will be required to service the J&S Farms LTD parcel. J&S Farms LTD will be required to bear all costs associated with the installation of said water connection. In addition, J&S Farms LTD will be required to bear the costs of a ¾" culinary water meter, which current cost is $243. The meter will be installed in a meter box to protect it from the elements.

2. **Impact Fee Waiver**. The City does hereby agree to waive the cost of the Water Impact Fee for the ¾" culinary water service connection. If, at any time, the water use changes from livestock and/or agricultural uses to any other use, J&S Farms LTD will either cease use of water from the water service and the City will remove the meter and shut off the water service or J&S Farms LTD will pay any and all Water Impact Fees required at that time.

3. **Cost of Culinary Water.** The City does hereby agree to provide culinary water to the J&S Farms LTD property via a service connection and water meter described above. The monthly cost of the culinary water shall be the established ¾" Inside City culinary water rate.

4. **Use of Culinary Water.** The City does hereby allow J&S Farms LTD the use of the culinary water connection to provide water to various livestock and for general agricultural uses. If at any time in the future, the City deems it necessary to terminate J&S Farms LTD culinary water connection due to drought, increased development, or for any other reason, J&S Farms LTD agrees to cease water use from the culinary water connection. In such cases, the City will provide J&S Farms LTD a 30 day written notice of the requirement to cease use of the culinary water connection.

5. **Reserved Legislative Powers**. Nothing in this Agreement shall limit the future exercise of the police power by City in enacting zoning, subdivision, development, transportation, environment, open space, and related land use plans, policies, ordinances, and regulations after the date of this Agreement, but which shall not be retroactively applied to or modify this Agreement

6. **Compliance with Applicable Laws**. Owner expressly acknowledges and agrees that nothing in this Agreement shall be deemed to relieve Owner from any obligation to comply with all applicable requirements of City including the payment of fees and compliance with all other applicable ordinances, resolutions, regulations, policies and procedures of City, except as modified, waived or declared in this Agreement.

7. **Assignment**. Neither this Agreement nor any of the provisions, terms or conditions hereof can be assigned to any other party, individual or entity without assigning the rights as well as the responsibilities under this Agreement and without prior written consent of City.

8. **Binding Effect**. All of the provisions of this Agreement shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto.

9. **No Joint Venture, Partnership or Third Party Rights**. It is not intended by this Agreement to, and nothing contained in this Agreement shall, create any partnership, joint venture or other arrangement between the parties. No term or provision of this Agreement is intended to or shall, be for the benefit of any person, firm, organization or corporation not a party hereto, and no such other person, firm, organization or corporation shall have any right or cause of action hereunder.

10. **Integration.** This Agreement contains the entire Agreement with respect to the subject matter hereof and integrates all prior conversations, discussions or understanding of whatever kind or nature and may only be modified by a subsequent writing duly executed by the parties hereto.

11. **Severability**. If any part or provision of this Agreement shall be determined to be unconstitutional, invalid or unenforceable by a court of competent jurisdiction, then such a decision shall not affect any other part or provision of this Agreement except that specific provision determined to be unconstitutional, invalid or unenforceable. If any condition, covenant or other provision of this Agreement shall be deemed invalid due to its scope or breadth, such provision shall be deemed valid to the extent of the scope or breadth permitted by law

12. **Survival.** It is expressly agreed that the terms, covenants and conditions of this Agreement shall survive any legal act or conveyance required under this Agreement.

13. **Headings.** The section and other headings in this Agreement are for reference purposes only and shall not in any way affect the meaning or interpretation of this Agreement.

14. **Governing Law and Venue**. This Agreement shall be construed according to the laws of the State of Utah. The parties agree that venue for all legal actions unless they involve a cause of action with mandatory federal jurisdiction, shall be the Fifth District Court for the State of Utah in Washington County, Utah. The parties further agree that the Federal District Court for the District of Utah shall be the venue for any cause of action with mandatory federal jurisdiction.

15. **Notices**. All Notices required herein, and subsequent correspondence in connection with this agreement shall be mailed to the following:

City of St. George
Attn: City Attorney
175 East 200 North
St. George, UT 84770

Kris Johnson
471 North 100 West
St. George, UT 84770

Such notices shall be deemed delivered following the mailing of such notices in the United States mail. Adequate notice shall be deemed given at the addresses

set forth herein unless written notice is given by either party of a change of address.

16. Legal Fees. Each party shall pay its own costs and expenses including attorneys fees, which may arise or accrue from enforcing this Agreement or in pursuing any remedy provided hereunder or by applicable law, whether such remedy is pursued by filing a lawsuit or otherwise. This includes, without limitation, all costs and expenses, including attorneys fees for appeals and bankruptcy proceedings.

17. Counterparts. This Agreement may be executed in counterparts each of which shall be an original and shall constitute one and the same agreement.

18. Authority of Parties. The parties executing this Agreements hereby warrant and represent that they are duly authorized to do so in the capacity stated.

IN WITNESS WHEREOF, the parties have executed this agreement on the date first above written.

J&S Farms, LTC

_____
Kris Johnson

CITY OF ST. GEORGE

_____
Michele Randall, Mayor

Attest:

_____
Christina Fernandez, City Recorder

Approved as to Form:

_____
Alicia Carlton, Assistant City Attorney

Reviewed:

_____
Scott Taylor, Water Services Director

Agenda Date: 12/18/2025 **Agenda Item Number:** 2j

Subject:

Consider approval of a Professional Services Agreement with FFKR Architects for the design and construction administration of the remodel of the old city hall and police station.

Item at-a-glance:

Staff Contact: Marc Mortensen

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

61 South Main Street

Item History (background/project status/public process):

The City selected FFKR Architects through an RFP process in December 2024 to perform a needs assessment for police for the current police station and the old city hall. The recently completed programmatic design was presented to the City Council on November 13, 2025. This involves remodeling the current police station and the old city hall to expand the police campus at the 200 North location. The PSA includes design development, construction documents, plan review/permitting, bidding and construction support.

Staff Narrative (need/purpose):

Over the past 10 months police, operations and FFKR representatives have revised the programmatic design several times to reduce costs to both the city hall remodel and the police station and still provide police what they need for the next 20 years of growth. Remodels of buildings almost 50 years old are challenging as electrical and mechanical systems may need complete replacement or re-engineering to meet current International Building Code standards. Attached is a presentation with the latest design that was shared with City Council in November. Staff asked FFKR to breakdown the PSA into three phases. 1) Design development, 2) Construction documents, 3) Construction administration. If the City decides not to proceed with the next phase as outlined in the proposal, it can terminate the PSA without penalty.

Name of Legal Dept approver: Kris Pearson

Budget Impact:

Cost for the agenda item: $452,450

Amount approved in current FY budget for item: $3,500,000

If not approved in current FY budget or exceeds the budgeted amount, please explain funding source:

N/A

Description of funding source:

General Capital Project Funds

Recommendation (Include any conditions):

Staff recommends approval

Attachments

FFKR ARCHITECTS

PROPOSAL of Architectural & Engineering Design Services **12/8/2025**

Marc Mortensen
Director of Operations
St. George City
marc.mortensen@sgcityutah.gov

RE: St. George City Police & City Hall Remodel FFKR # 25010

I. SCOPE OF WORK

Project Understanding

PHASE I: CITY HALL REMODEL

1. Estimated budget for Phase I is $4,973,000
2. See attached floor plans for scope of remodel
3. Add Sally Port.
4. NO major upgrade of structural systems per City directive.
5. Upgrade of mechanical systems.
6. Upgrade electrical as req'd
7. Upgrade restrooms in the City Hall to meet current ADA.
8. Minor demolition of systems and interior, non-bearing walls.
9. Secured parking lot of Police Stn & City Hall with fence and 4 secure gate access points.

PHASE II: EXISTING POLICE STATION MINOR REMODEL

1. Estimated Budget for Phase II is $1,312,000
2. Removal of several walls throughout the main level.
3. Few new walls throughout for offices.
4. Adjustment of ceiling grids, lighting & HVAC.
5. New paint & carpet throughout.

A. Design Development: FFKR Architects will provide the following services:

- **i.** Contract & collaborate with design engineers for necessary building systems and site design.
- **ii.** Attendance at a kick-off meeting with the city and design team.
- **iii.** Attend periodic meetings with the City for the purposes of reviews, approvals, comments, and general coordination.
- **iv.** Establish deadlines and milestones which clarify the outstanding items or issues required from each team member.
- **v.** Submit Design Development package for review and approval (in writing).
- **vi.** Work with SG City to advertise and select CMGC.
- **vii.** At start of the DD phase, FFKR will coordinate and provide an updated cost estimate.

B. Construction Documents: Following the review, comments, and written approval of the DD package, FFKR Architects will provide the following services:

- **i.** Coordinate Architectural and Owner-carried Consultants designs and drawings.
- **ii.** Information gathering and or meeting(s) included in the construction document phase.
- **iii.** Schedule, manage and attend weekly design-team coordination meetings with SG City.
- **iv.** Prepare, coordinate and submit the Construction Document package to the Owner for review and approval. Package includes floor plans, reflected ceiling plans, elevations, schedules and details required to obtain building permit and bids
- **v.** Upon 90% completion of the Construction Documents, it is anticipated that a meeting will be scheduled with the Owner's Team for a full team review of the drawing package for final coordination.

C. Bidding and Negotiations: Once the Construction Document package is fully reviewed and approved by Owner (written approval) FFKR Architects will assist Owner & selected CMGC in the review of bids and making reasonable adjustments to meet budget requirements.

- **i.** Stamp and Seal documents as required and submit Construction Documents to SG City online portal for Building Permit application.
- **ii.** Provide a full (digital) set of documents to City & selected CMGC.
- **iii.** Respond to questions that may arise during contractor preparation of bid.
- **iv.** If needed, FFKR to assist with evaluation and participate in value-engineering or substitution options proposed by Contractor & Owner. Changes due to value engineering after the Construction Documents have been completed may result in additional design cost.
- **v.** Incorporate all City building permit comments and issue final "For Construction" sets to all applicable parties.

D. Construction Services: FFKR Architects will provide the following services to support the Construction Administration of the project:

- **i.** Attend weekly conference calls/meetings with IBG and Owner for the purposes of comments and general coordination (OAC Meetings).
- **ii.** Review standard Architectural/MEP shop drawing submittals.
- **iii.** Respond to contractors and vendors RFI's (Request for Information). (Note: response to RFI's related to drawing coordination are in base contract scope. Responses to RFI's related to IBG and/or Owner-generated design changes after completion of the initial CD's will be considered additional services).
- **iv.** Perform one review of material submittals and shop drawings to ensure conformance with the design intent shown in the construction documents. All reviews will be done as timely as possible and shall be returned to the contractor within 14 days of the date submitted. Additional reviews may be provided as additional services.
- **v.** Site visits:
  1. FFKR will conduct Construction Observation visits for the duration of the Construction Phase.
     a. Site visits may be in conjunction with the afore-mentioned OAC Meeting.
     b. Architect's onsite representative to generate Site Observation Report following each construction site visit and submit to Owner for review and documentation.
  2. FFKR will conduct an observation "punch walk" near the conclusion of the construction (95%+ complete and cleaned) to observe and document construction quality and conformance to the Construction Documents.
  3. FFKR will conduct a final site visit (upon 98% completion and cleaning) to observe and document completion of concerns observed at the "punch walk."

E. Deliverables: All deliverables will be performed electronically unless otherwise specified.

F. Anticipated Schedule:

- **i.** DD Documents: Three (8) weeks.
- **ii.** CD Documents: Six (10) weeks.
- **iii.** Permitting and Bidding: Four (4) weeks
- **iv.** CA: Thirty-six (52) weeks estimated (per CMGC)

G. Conditions and Exclusions: Services or information that may be necessary to perform the work and are not provided, include but are not limited to:

a. Current or existing plans such as: as-builts, engineering, site, and civil documents.
b. Materials testing or reports.
c. Mitigation plans (i.e., as related to hazardous materials).
d. Attendance at meetings not indicated within each phase or sub-phase of the work.
e. Geo Technical
f. Landscape Design
g. Major Design Revisions or significant timeline extensions.

h. FFKR cannot be liable for any unknown, undiscovered, or concealed conditions that result in additional work, changes to the work, or timeline extensions.
i. Fire Sprinkler Design.

II. COMPENSATION

For full design and documentation services as noted above, FFKR proposes a fee for services per building:

- **CITY HALL:** Budget of 4,973,000, and fee in the amount of $ **372,950** (Three Hundred Seventy-Two Thousand Nine Hundred & Fifty Dollars).
- **POLICE STN:** Budget of $1,312,000, and fee in the amount of **$79,500.**

- **TOTAL COMBINED FEE: $452,450**

FFKR proposes our services in 3 phases, to be contracted upon completion of each previous phase.

- **Phase I:** Design Development (DD) to conclude with a cost estimate, review and direction to proceed given by City.

  FEE: $144,785

- **Phase II:** Construction Documents to complete all coordination, systems design and detailing ready for bidding. Assist St. George City during bidding process, answer RFI, issue addenda.

  FEE: $212,650

- **Phase III**: Construction Administration:

  FEE: $95,015

- **Additional Services:**
  - Cost Estimating by CCC: **$7,500** / instance

  - CA Services from Civil Science to be billed on an hourly rate.

  - The indicated fees include the MEP, Structural, and Civil Engineering/Design Fees.
  - Fee includes services for Cost Estimating. One estimate at completion of DD, and a 2nd at 75% CD.
  - Project related expenses incurred such as travel, printing, reproduction, & shipping are reimbursable to the Architect & billed at a rate of cost plus fifteen (15) percent.
    - Reimbursable expenses, include, but are not limited to: cost of reprographics, shipping and postage; long distance communications; out-of-town travel (airfare, rental cars, re-fueling, meals, etc.) and lodging; fees paid for securing approval of authorities having jurisdiction over the projects; etc.
  - Payments to the Architect are due within thirty (30) days of the receipt of each invoice.
  - If budget is approved for a greater amount, FFKR will request an additional fee of 8% of the increased cost.

Additional Services

- The following shall be considered additional services, or if applicable, reimbursable expenses:
  - Permit expediting.
  - Performing changes to the documents to address jurisdictional comments that are inconsistent

with applicable written codes or are otherwise interpretive in nature.
- Signage/graphics design.
- Signage approvals and permitting.
- Any re-design due to subsequent changes in documents and or design criteria
- Permitting over and above normal procedures and controls.
- Consultant fees for additional services shall be invoiced at 1.20 times the actual cost to the architect.

- Services that are not part of this agreement, but may be offered or required after the execution of this agreement include but are not limited to:
  - Additional 3D rendering, virtual reality, and other visualization services.
  - Attendance at meetings not listed.
  - Consultant's Additional Service, or disciplines not listed above.
  - Long distance travel.
  - Significant design revisions.
  - Timeline extensions.
  - "As-Built" drawings.

Any requested or required additional services to the base contract as described above will be provided when properly authorized. The architect will be compensated based on a lump sum fee, which will be quoted upon review of the scope of the proposed additional services, or on an hourly "T & M" basis, plus applicable reimbursable expenses.

Please refer to Attachment A for a list of standard hourly billing rates.

FFKR Architects Representative:

12/8/2025
Date:

E. Ben Rogers, AIA
Principal | Architect

Client Representative:

Date:

FFKR ARCHITECTS

Attachment A

STANDARD BILLING RATES – 2024

Sr. Principal	$225.00 /hr.
Principal	$195.00 /hr.
Sr. Associate	$155.00 /hr.
Associate	$140.00 /hr.
Project Architect	$130.00 /hr.
Project Manager	$130.00 /hr.
Specifications	$120.00 /hr.
Landscape Architect/ Planner	$115.00 /hr.
Visualization (3D)	$120.00 /hr.
Interior Designer	$115.00 /hr.
Graphics Designer	$115.00 /hr.
Intern Architect	$105.00 /hr.
Interior Staff/ Purchase Management	$100.00 /hr.
Technical Staff (Drafting/BIM)	$100.00 /hr.
Contracted BIM*	$80.00 /hr.
Project Coordinator (Clerical)	$80.00 /hr.

*FFKR Architects utilizes high quality third-party or contracted drafting services when it serves both the project and Architect best.

1. Reimbursable expenses such as printing, reproduction, & shipping are in addition to the described fees & may be billed at a multiple of 1.1 times actual expense.
2. Additional Services not described in the project scope of work are subject to standard hourly billing rates.
3. Payments due within thirty (30) days of invoice date.

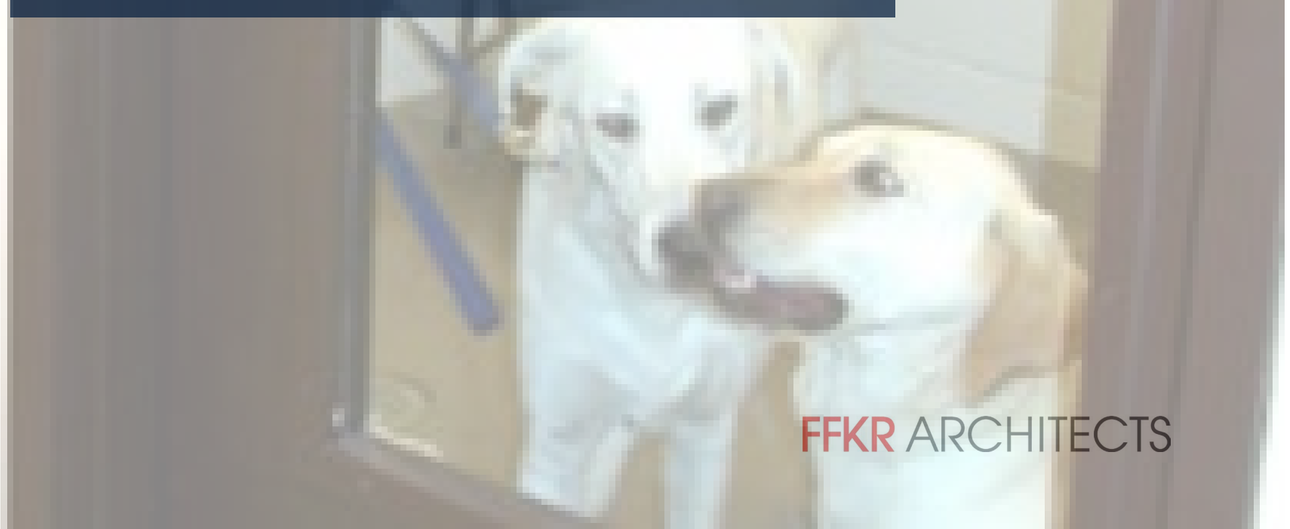
ST. GEORGE POLICE & ANIMAL SHELTER

St.George

FFKR ARCHITECTS

"Shelter Planners of America"®

A Division of FMD Architects



St. George Animal Shelter

SHELTER PROGRAM

FIGURE 1. EXISTING AND PROJECTED HUMAN POPULATION AND ANIMAL INTAKE

	2023 Human Population Estimate	2023 Actual Animal Intake	2023 Intake as a % of Population	2033 Human Population Estimate	2033 Projected Intake Ratio	2033 Projected Animal Intake	2043 Human Population Estimate	2043 Projected Intake Ratio	2043 Projected Animal Intake
Dogs		790	0.74%		0.74%	1,217		0.74%	1,807
Cats		458	0.43%		0.43%	706		0.43%	1,048
Other		38	0.04%		0.04%	59		0.04%	87
Total	107,197	1,286	1.20%	165,192	1.20%	1,982	245,196	1.20%	2,942

FIGURE 2. CURRENT AVERAGE LENGTH OF STAY (ALS)

Based on Existing Housing Spaces			
	2023 Actual Intake	Existing Housing Spaces	Current ALS
Dogs	790	42	19
Cats	458	29	23
Other	38	0	#DIV/0!
Total	1,286	71	

FIGURE 3. 2033 AND 2043 PROJECTED ANIMAL HOUSING NEEDS

2033 (10-YEAR PROJECTION)			
	2032 Projected Animal Intake	Desired ALS	Number of Animals to be Housed
Dogs	1,217	20	64
Cats	706	23	44
Other	59	20	3
Total	1,982		112

2043 (20-YEAR PROJECTION)			
	2042 Projected Animal Intake	Desired ALS	Number of Animals to be Housed
Dogs	1,807	20	99
Cats	1,048	23	66
Other	87	14	3
Total	2,942		168

SHELTER PROGRAM

Summary:	Interior	Exterior
A. Administrative	3,918	
B. Medical Clinic	0	
C. Animal Housing (Interior)	5,904	
D. Animal Housing (Exterior)		2,697
E. Animal Support Area (Interior)	2,226	
F. Animal Support Area (Exterior)		1,000
TOTAL SF	12,048	3,697
COMBINED SF	15,745	

SECTION A - ADMINISTRATIVE

	Room or Space	No. of Rooms				SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
	PUBLIC AREAS									
1	Adoption Lobby	1				300		300		Visitor seating for 8. Approximate 10' wall for retail display shelves viewable from Customer Service Counter. Consider large screen TV.
2	Vestibule for Adoption Lobby	0				80		-		
3	Animal Services Lobby	1				200		200		Visitor seating for 2, wall to separate from Adoption Lobby.
4	Vestibule for Animal Services Lobby	0				80		80		
5	Customer Service Counter (4 Customer Service Representatives at counter)	1				240		240		Arrange counter to serve both the Adoption Lobby and the Animal Services Lobby. Space for 2 staff at each Lobby and yet be connected to conserve staff time.
6	Adoption Interview Space	2				64		128	One adjacent to Adoption Lobby and one adjacent to Animal Services	Semi-private cubicles with small table where potential Adopters can fill out paperwork and then an Adoption Counselor can come speak with them.
7	Multi-purpose Meeting Room	1				450		450	Adjacent to Lobby for after-hours use, including use of toilet	Seating for 20 in chairs. As many seated at table as will fit and that is estimated at 16. Counter with sink, refrigerator, microwave
8	Meeting Room Storage	1				80		80	Adjacent to Meeting Room	To store tables and chairs when not in use and other materials to support meeting room.
9	Meeting Room Kitchen	0				80		-		In Meeting room not a separate space
10	Public Toilets	2				65		130		One mens, one womens unisex type. Verify code minimum.

SHELTER PROGRAM

SECTION A - ADMINISTRATIVE - Continued

	Room or Space	No. of Rooms			No. of People	SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
	OFFICES									
11	Shelter Manager's Office	1			1	100		100		
12	Animal Services Manager's Office	1			1	100		100		
13	Client Service Supervisor's Office	1			1	100		100		
15	Office 1	1			1	100		100		
16	Office 2	1			1	100		100		
17	Office	1			1	100		100		
18	Animal Service Office Group Office	1			6	36		216		countertop with computer work stations for 6
19	Staff Breakroom	1				150		150	Consider access to outdoor space	Counter with sink, microwave, refrigerator, coffee maker, seating at table for 4
20	Staff Locker Alcove	1				20		20	In an alcove in a Staff Only Corridor	20 Lockers for staff 1' x1' x6'
21	Staff Toilets	2				60		120		One mens, one womens unisex type. Verify code minimum.
22	Staff Shower Room	1				60		60		
23	Mechanical/ Elec Room	1				150		150		
24	Data/Phone Closet	1				40		40		
25	Janitorial Closet	1				50		50		
	Subtotal:							3,014		
	Net to Gross SF Factor 30%:							904		
	Departmental Gross Area:							3,918		

SHELTER PROGRAM

SECTION B - MEDICAL CLINIC- NO MEDICAL CLINIC

	Room or Space	No. of Rooms			No. of People	SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Prep/Treatment Room	0				150		-		
2	Pre-Op/Post-Op Holding - Dogs	0				120		-		
3	Pre-Op/Post-Op Holding - Cats	0				90		-		
15	Surgery Room	0				120		-		
17	Work Stations for Vet Techs	0			1	36		-		
18	Laboratory / Pharmacy Alcove	0			1	100		-		
22	Clean Up Area	0				80		-		
								-		
	Subtotal:							-		
	Net to Gross SF Factor 30%:							-		
	Departmental Gross Area:							-		

SHELTER PROGRAM

SECTION C - ANIMAL HOUSING - INTERIOR

	Room or Space	No. of Spaces	Animals per Space	Animals to be Housed	Size			SF of Each	SF of Walkway	Total SF	Adjacent to or Near	Equipment / Comments
1	Adoption Dog Runs - Jumbo	4	2	4	6.0	x	6.0	36	30	264		See corresponding Exterior Run
2	Adoption Dog Runs - Standard	32	1	32	4.7	x	6.0	28	23.3	1,640		See corresponding Exterior Run
3	Stray Dog Runs - Jumbo	1	1	1	6.0	x	6.0	36	30	66		See corresponding Exterior Run
4	Stray Dog Runs - Standard	16	1	16	4.7	x	6.0	28	23.3	820		See corresponding Exterior Run
5	Nursing Mother Dogs - Jumbo	0	1	0	6.0	x	6.0	36	30	-		See corresponding Exterior Run
6	Medical Observation Dog Runs	4	1	4	4.7	x	6.0	28	23.3	205		See corresponding Exterior Run
7	Medical Isolation Dog Runs	3	1	3	4.7	x	6.0	28	23.3	154		See corresponding Exterior Run
8	Quarantine Dog Runs	0	1	0	4.7	x	6.0	28	23.3	-		See corresponding Exterior Run
9	Puppy Pens	2	2	4	4.0	x	5.0	20	25	90		See corresponding Exterior Run.
10	Transfer Dog Runs - Jumbo	0	2	0	6.0	x	6.0	36	30	-		See corresponding Exterior Run
11	Transfer Dog Runs - Standard	0	1	0	4.7	x	6.0	28	23	-		See corresponding Exterior Run
	TOTAL DOGS:			64								
12	Adoption Cat Room - Adult	8	1	8				5	12	136		Each cat is housed in a 2-compartment cage.
13	Adoption Cat Room - Kitten	0		0								
14	Cat Community Rooms (18 SF / cat Free Roam)	7	6	42	9.0	x	12.0	108		756		
15	Stray Cat Room - Adult	8	1	8				5	12	136		Each cat is housed in a 2-compartment cage.
16	Stray Cat Room - Feral	0		0				5	12	-		
16	Stray Cat Room - Kitten	0		0				5	12	-		
17	Nursing Mother Cats	0		0				5	12	-		
18	Medical Observation Cats - Non-Viewable	0	1	6				5	12	102		Each cat is housed in a 2-compartment cage.
19	Medical Isolation Cats - Non-Viewable	6	1	6				5	12	102		Each cat is housed in a 2-compartment cage.
20	Quarantine Cat Room - Viewable by public	6	1	0				5	12	-		Each cat is housed in a 2-compartment cage.
	TOTAL CATS:			70								
21	Other Animals	0	1	3				6	16	71		
									-	-		
								-	-	-		
	Subtotal:									4,542		
	Net to Gross SF Factor 30%:									1,363		
	Departmental Gross Area:									5,904		

SHELTER PROGRAM

SECTION D - ANIMAL HOUSING - OUTDOOR COVERED

	Room or Space	No. of Spaces	Animals per Space		Size			SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Adoption Dog Runs - Jumbo	4	2		6.0	x	8.0	48		192		See corresponding Interior Run
2	Adoption Dog Runs - Standard	32	1		4.6	x	8.0	37		1,178		See corresponding Interior Run
3	Stray Dog Runs - Jumbo	1	1		6.0	x	8.0	48		48		See corresponding Interior Run
4	Stray Dog Runs - Standard	16	1		4.6	x	8.0	37		589		See corresponding Interior Run
5	Nursing Mother Dog Runs - Jumbo	-	1		6.0	x	8.0	48		-		See corresponding Interior Run
6	Medical Observation Dog Runs	4	1		4.6	x	8.0	37		147		See corresponding Interior Run
7	Medical Isolation Dog Runs	3	1		4.6	x	8.0	37		110		See corresponding Interior Run
8	Dog Quarantine Runs	-	1		4.6	x	8.0	37		-		See corresponding Interior Run
9	Puppy Runs -	2	2		4.6	x	6.0	28		55		See corresponding Interior Run
10	Transfer Runs - Jumbo	-	1		6.0	x	8.0	48		-		See corresponding Interior Run
11	Transfer Runs - Standard	-	2		4.6	x	8.0	37		-		See corresponding Interior Run
12	Cat Sun Porch	7			9.0	x	6.0	54		378		See corresponding Interior Run
	Subtotal:									2,697		
	Departmental Gross Area:									2,697		

SHELTER PROGRAM

SECTION E - ANIMAL SUPPORT AREA - INTERIOR

	Room or Space	No. of Rooms				SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Animal Receiving	1				250		250	Near Admissions Lobby and Sally Port	Counter with sink, refrigerator, scales, space to photograph animals,
2	Dog Intake Holding	1				72		72	Animal Receiving	two 4'x4' pens
3	Cat Intake Holding	1				40		40	Animal Receiving	2 cat cages
4	Get Acquainted Rooms	0				80		-		use Behavior traing room
6	Behavior Training Room	1				300		300		
7	Animal Kitchen	2				100		200		Counter with 3-compartment sink,NO commercial dishwasher, and refrigerator
8	Food and Litter Storage	1				150		150		
9	Food Storage for Giveaway Program	1				100		100		
10	Laundry	1				200		200		space for 2 residential washer and dryers for intial construction but plan for the possiibility to upgrade to 2 Commercial washers and dryers in the future. Folding table, shelves and space for carts. St George Animal Services to confirm number of lbs. of laundry per day per dog.
11	Cleaning Equipment Room	2				100		200	One for Dogs and one for Cats	Cleaning supplies, pressure wash equipment, space for janitor's sink, trash cans, etc.
14	Feral Cat Holding	1				50		50	Near Sally Port	stainless steel shelves of 10 cats in traps
17	Mechanical Room	1				150		150		
	Subtotal:							**1,712**		
	Net to Gross SF Factor 30%:							514		
	Departmental Gross Area:							**2,226**		

SECTION F - ANIMAL SUPPORT AREA - UNFINISHED SPACE

	Room or Space	No. of Rooms				SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Enclosed Sally Port (1 spaces)	1				500		500		back in is acceptable
5	Foster Storage	1				100		100	Medical Lobby	Space for litter, food, formula, crates
6	Event Storage	1				100		100		
7	Trap Storage	1				100		100		
8	Crate Storage	1				100		100		
9	Storage for Animal-Related Items	1				100		100		
	Subtotal:							**1,000**		
	Departmental Gross Area:							**1,000**		

SHELTER PROGRAM

G. Summary: The existing site could potentially be used to construct a new shelter the size needed to meet the 10 year planning horizon if multi-story building is acceptable. But if SGAS wants to plan for a 20 year planning horizon, it is our opinion they should look for another site. If SGAS decides to look for other sites, please allow SPA to review potential sites before purchasing to “test fit” and evaluate to the criteria provided.

Based on New Construction on an Existing Site:

	2033
Fully Enclosed Space - SF :	12,048
Exterior Space - SF :	3,697
Total SF :	15,745

			LOW	HIGH
		New Construction	Total Cost at $391.00	Total Cost at $421.00
Fully Enclosed Space		**Total SF**	**Per SF**	**Per SF**
A Administrative Areas		3,918		
B Medical Clinic		-		
C Animal Housing - Interior		5,904		
D Animal Support Areas - Interior		2,226		
Subtotals:		12,048	$ 4,710,869	$ 5,072,317
				Total Cost at
			$273.70	$294.70
Exterior Space		**Total SF**	**Per SF**	**Per SF**
E Animal Housing - OUTDOOR COVERED		2,697		
F Animal Support Areas - Exterior - UNFINISHED SPACE		1,000		
Subtotals:		3,697	$ 1,011,924	$ 1,089,565
Building - Sub-Totals:		**15,745**	**$ 5,722,793**	**$ 6,161,882**
	Low High			
Site Work & Parking	10% 15%		$ 572,279	$ 924,282
Total Construction Cost			**$ 6,295,072**	**$ 7,086,164**
		Total Cost / SF	**$ 400**	**$ 450**

Consider Budgeting for the following:

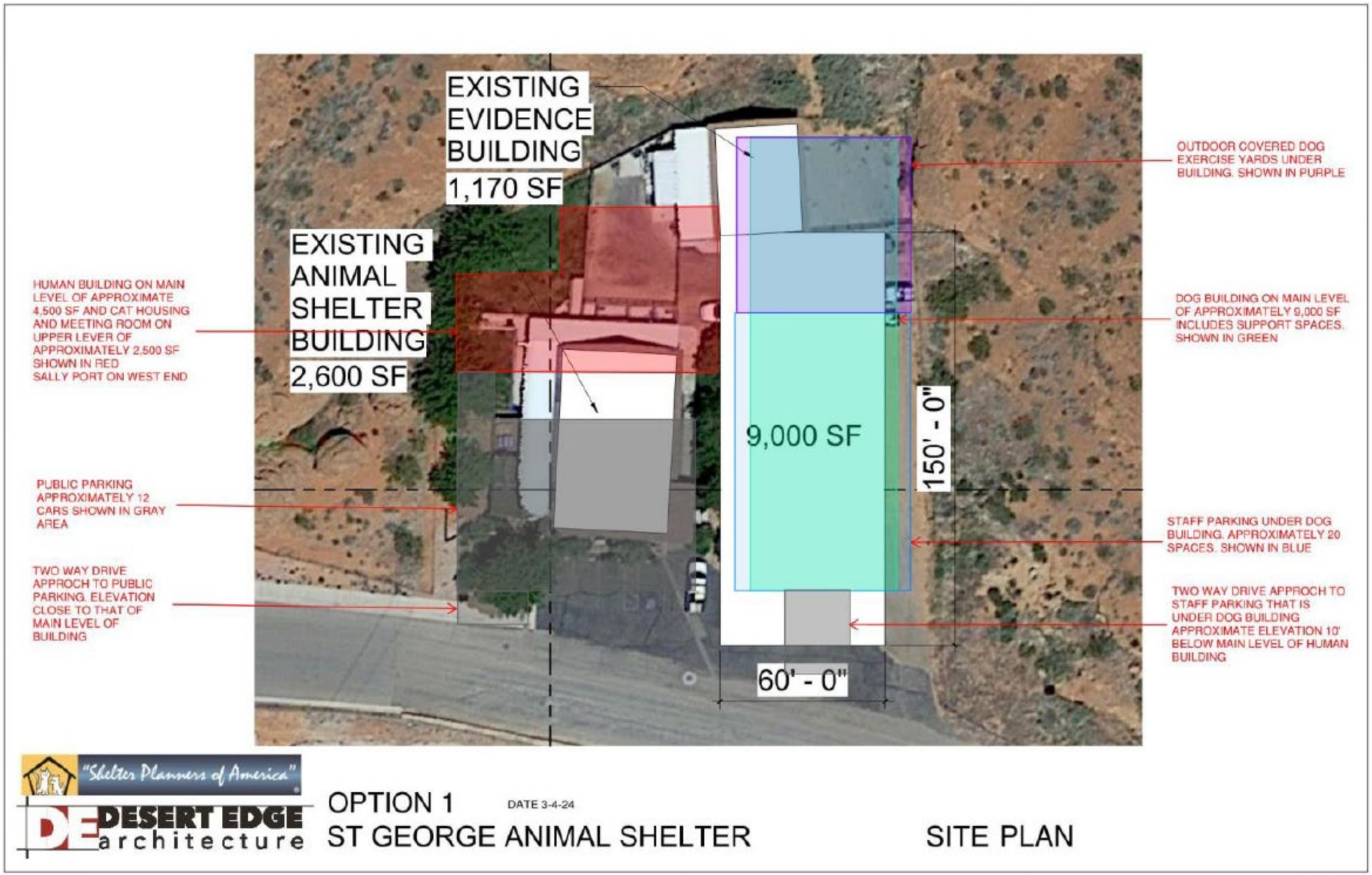
Soft Costs	15%		$ 944,261	$ 1,062,925
(AE Fees, Civil Engineering, Surveying, Soil Tests, Construction Materials Testing, Air Balancing, Furnishing, Loose Equipment, Computers & Phone System, etc.)				
Contingency	5%		$ 361,967	$ 407,454
Estimated Total Project Cost			**$ 7,601,299**	**$ 8,556,543**

*Note: 1. This does not include the cost of land.

2. Please note, the Opinion of Probable Cost provided is based on historical costs of other animal shelter projects, but the construction market is extremely unpredictable at this time.

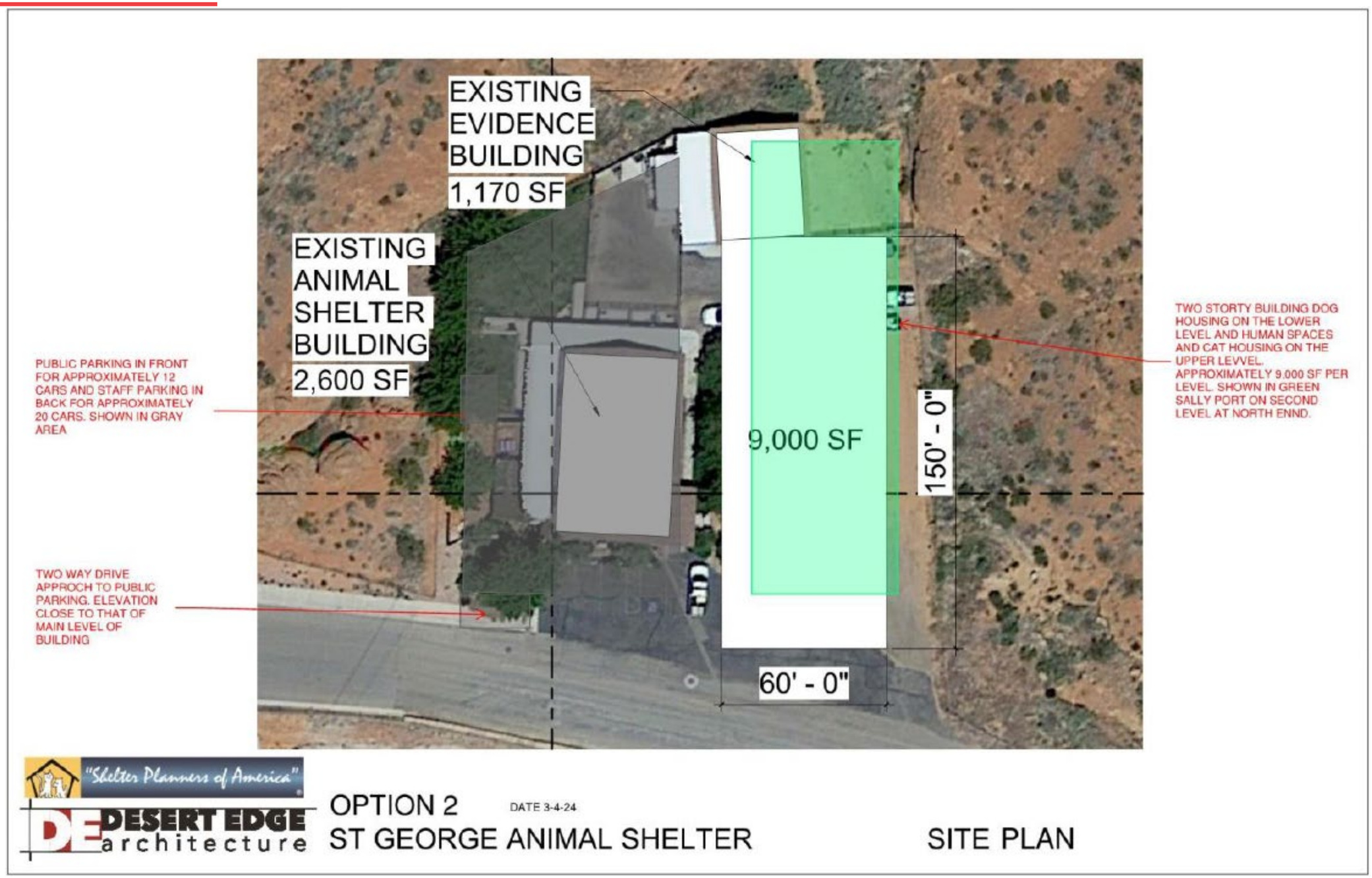
3. Please note that to construct the proposed Phase 1 project on the existing site, it will require a multi-story building set into the site with a significant grade change. Our historical construction cost of various animal shelters are for single story animal shelters. It is possible the cost of the proposed Phase 1 project at the existing site might be higher than indicated on the Opinion of Probable Cost.

SHELTER PROGRAM



COMPLETED MARCH 2024

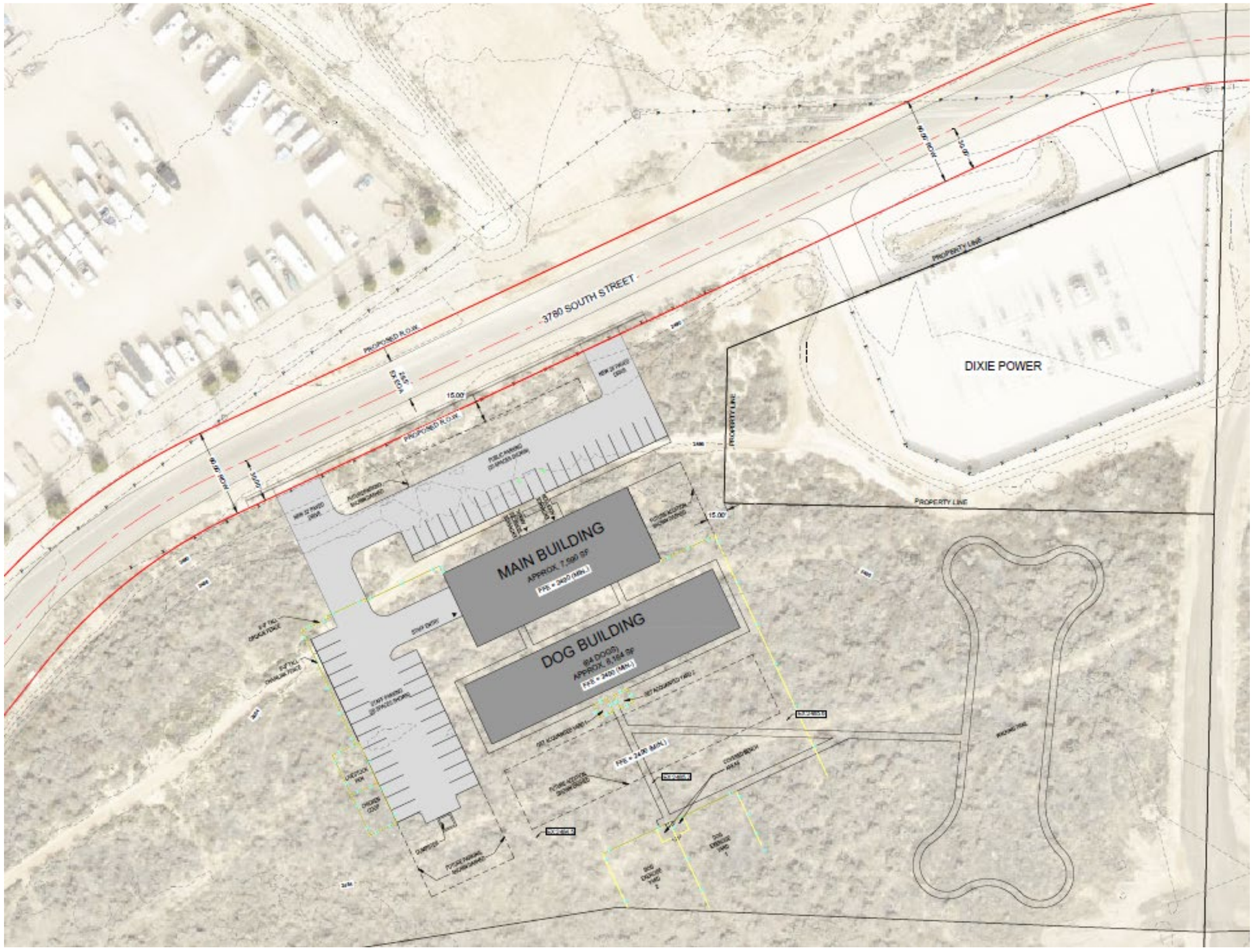
SHELTER PROGRAM



COMPLETED MARCH 2024

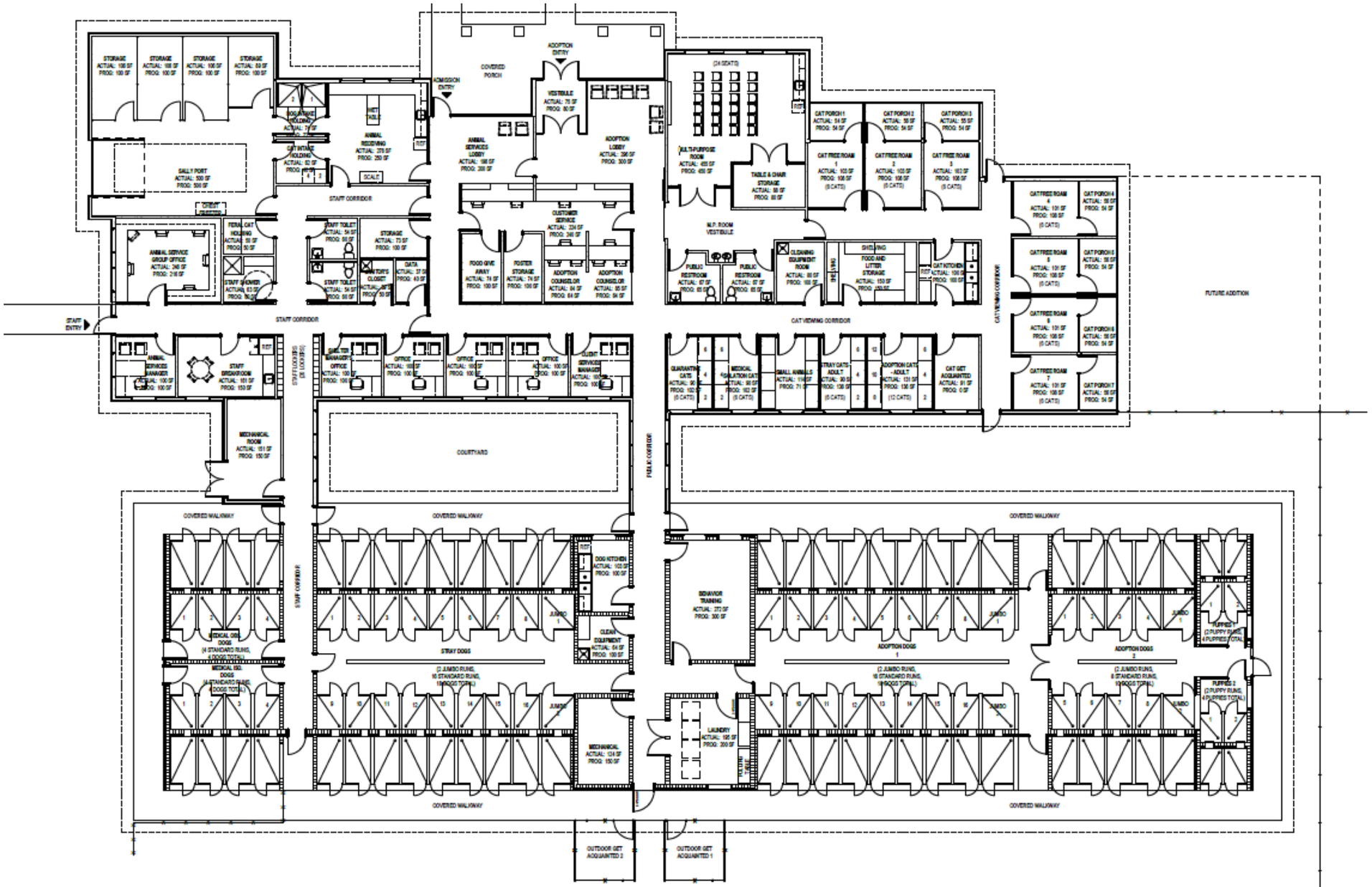
FFKR ARCHITECTS

SHELTER PROGRAM



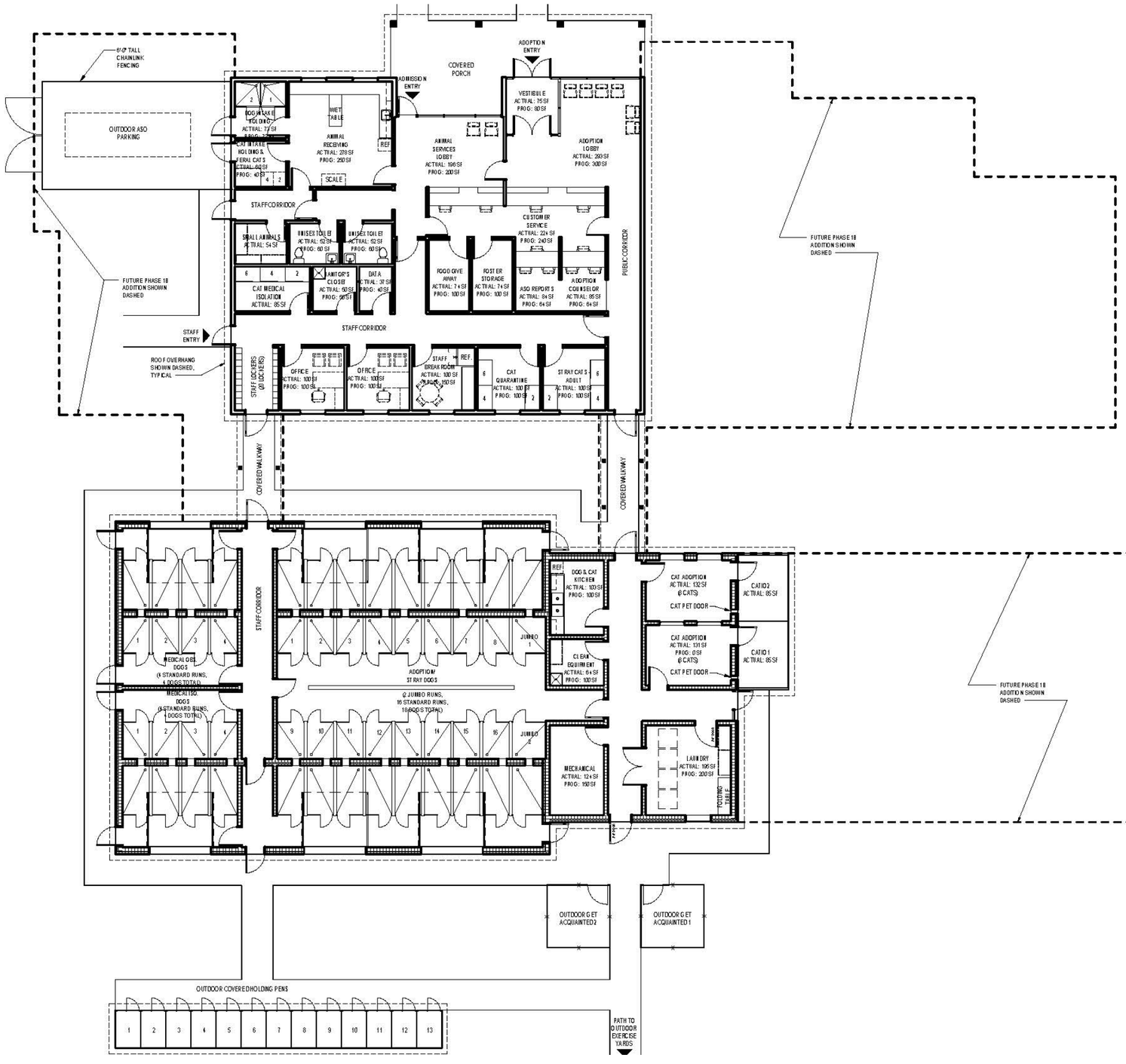
FFKR ARCHITECTS

SHELTER PROGRAM



FFKR ARCHITECTS

SHELTER PROGRAM



ANIMAL HOUSING TABULATION

CATEGORY	ACTUAL
ADOPTION DOGS[1]	18
STRAY DOGS[2]	0
PUPPIES (2 PUPPIES PER PEN)[2]	0
MEDICAL OBSERVATION DOGS[1]	4
MEDICAL ISOLATION DOGS[1]	4
DOG SUB-TOTAL	26
ADOPTION CATS	0
FREE-ROAM CATS	16
STRAY CATS	6
MEDICAL ISOLATION CATS	6
QUARANTINE CATS	6
CAT SUB-TOTAL	34
OTHER ANIMALS	6
TOTAL ANIMALS	66

NOTES:
1. THE NUMBER OF DOG HOUSING SHOWN REPRESENTS THE USE OF TWO-COMPARTMENT HOUSING, WHERE EACH DOG IS ALLOWED BOTH SIDES OF EACH RUN. HOWEVER, THE CURRENT DESIGN ALLOWS FOR SINGLE-COMPARTMENT HOUSING WHERE THE TRANSFER DOORS CAN BE SHUT AND A DOG CAN BE PUT ON EACH SIDE OF THE RUN.
2. STRAY DOGS AND PUPPIES WILL BE MIXED IN WITH ADOPTION DOGS FOR PHASE 1A.

AREA TABULATION

CATEGORY	ACTUAL
FULLY ENCLOSED SPACE	8,407
OUTDOOR COVERED SPACE	176
TOTAL	8,583

FFKR ARCHITECTS

SHELTER PROGRAM

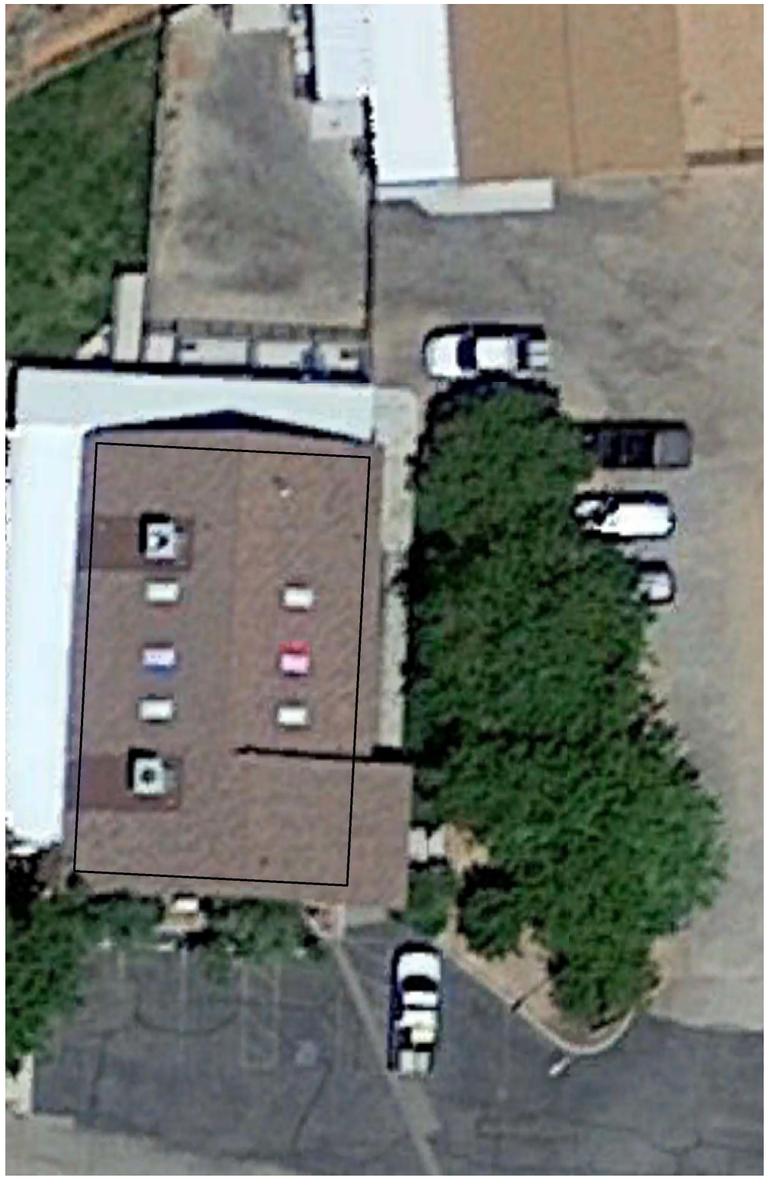
Fully Enclosed Space - SF :	**8,407**
Exterior Space - SF :	**176**
Total SF :	**8,583**

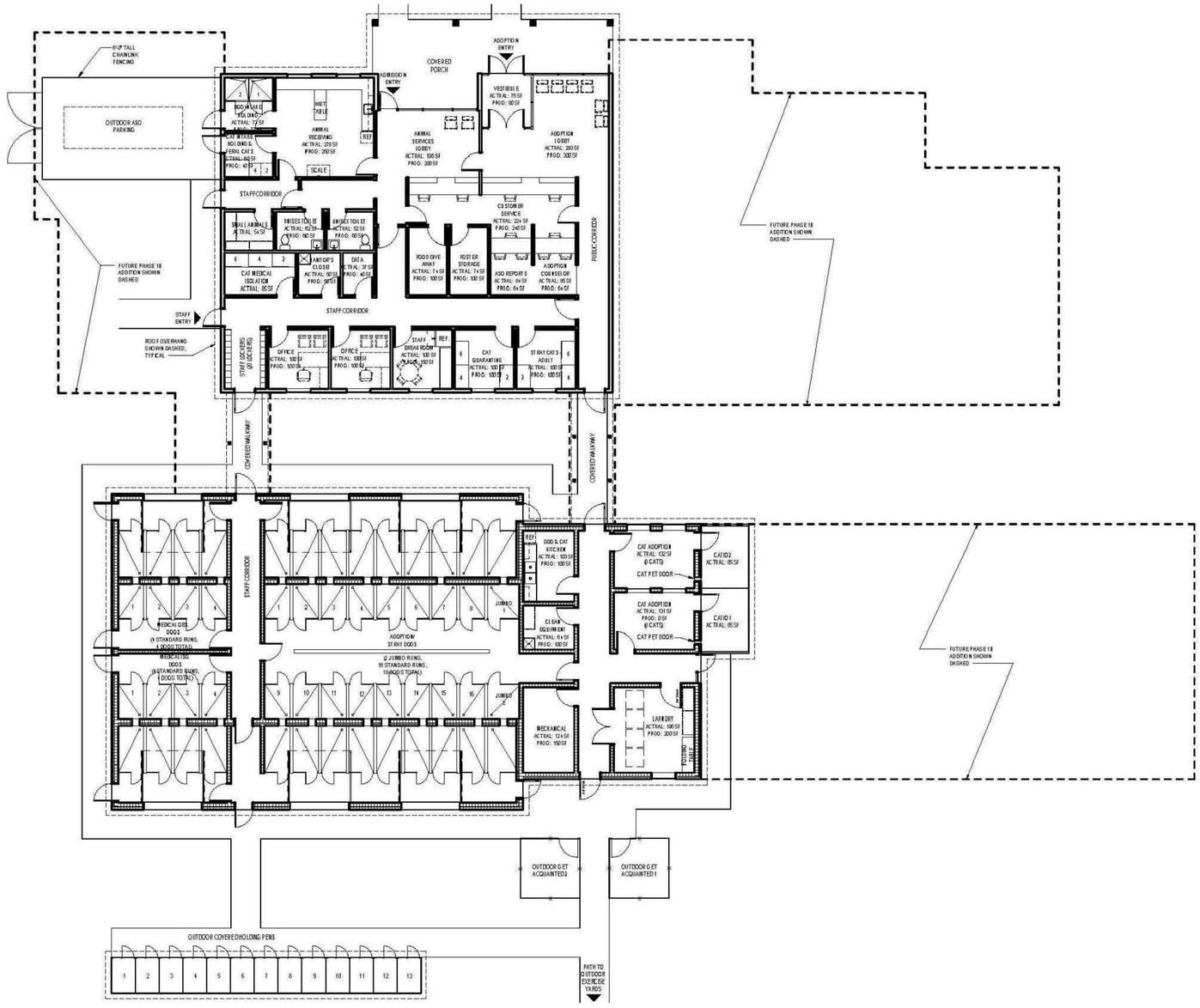
			LOW	HIGH
Fully Enclosed Space		**New Construction Total SF**	**Total Cost at $389.00 Per SF**	**Total Cost at $416.00 Per SF**
Subtotals:		8,407	$ 3,270,323	$ 3,497,312
Exterior Space		**Total SF**	**Total Cost at $272.30 Per SF**	**Total Cost at $291.20 Per SF**
Subtotals:		176	$ 47,925	$ 51,251
Building - Sub-Totals:		**8,583**	**$ 3,318,248**	**$ 3,548,563**
	Low High			
Site Work & Parking	10% 15%		$ 331,825	$ 532,284
Total Construction Cost			**$ 3,650,073**	**$ 4,080,848**
		Total Cost / SF	**$ 425**	**$ 475**
Consider Budgeting for the following:				
Soft Costs (AE Fees, Civil Engineering, Surveying, Soil Tests, Construction Materials Testing, Air Balancing, Furnishing, Loose Equipment, Computers & Phone System, etc.)	15%		$ 547,511	$ 612,127
Contingency	5%		$ 209,879	$ 234,649
Estimated Total Project Cost			**$ 4,407,463**	**$ 4,927,624**

*Note: 1. This does not include the cost of land.

2. Please note, the Opinion of Probable Cost provided is based on historical costs of other animal shelter projects, but the construction market is extremely unpredictable at this time.

SHELTER PROGRAM





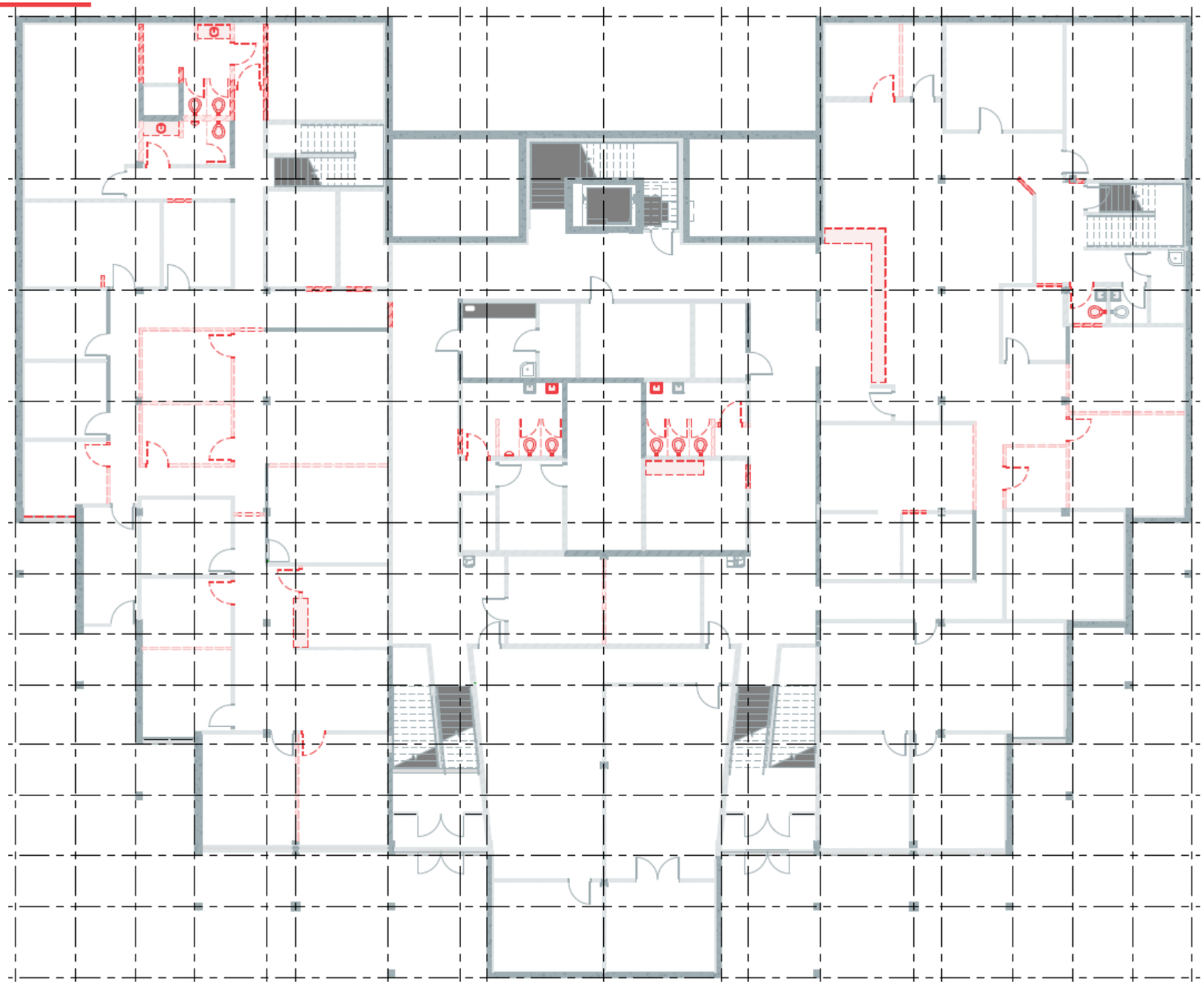
EXISTING SHELTER: 2,600 SF

NEW SHELTER: 8,407 SF

FFKR ARCHITECTS

St. George Police

ST. GEORGE POLICE



FFKR ARCHITECTS

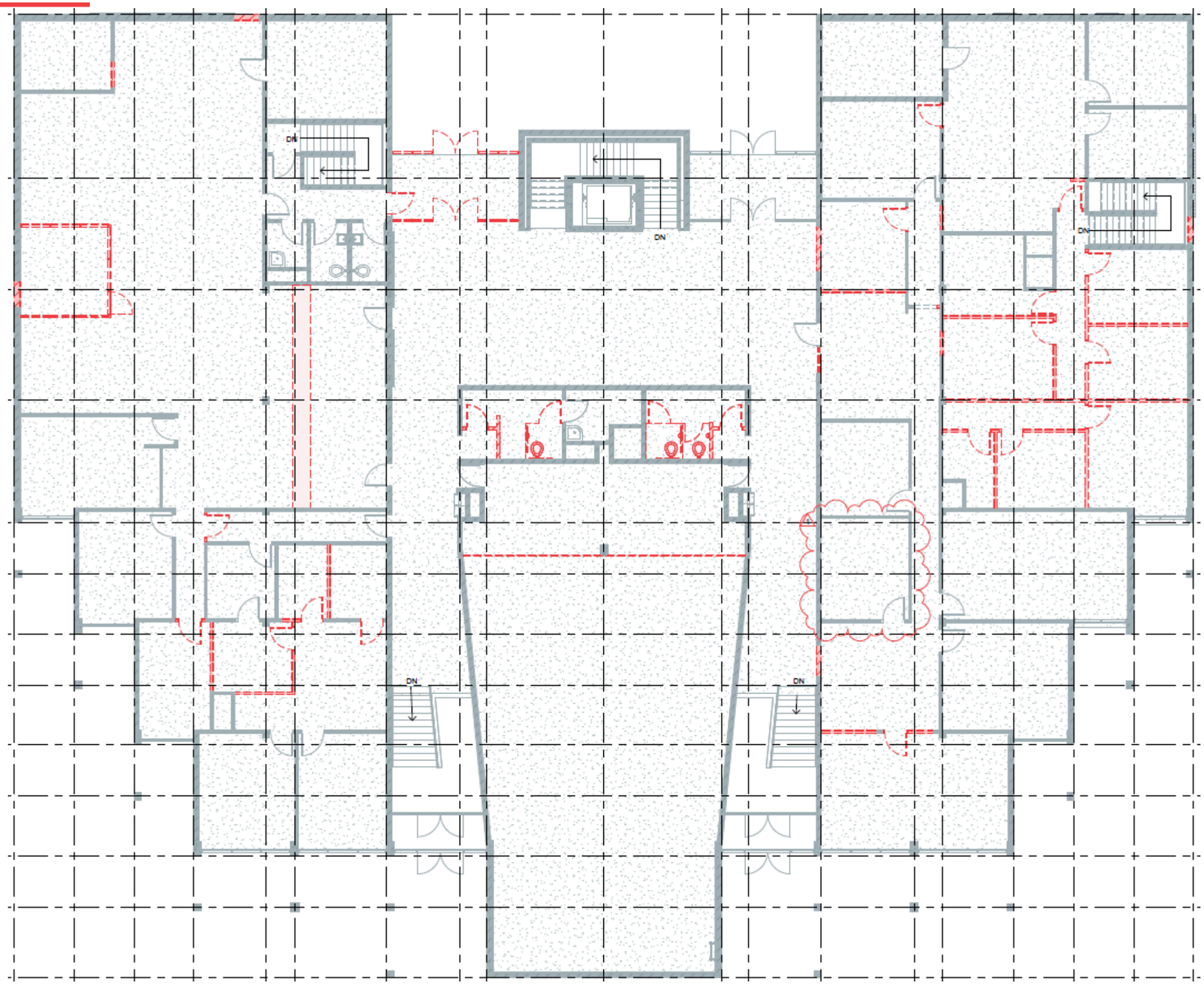
ST. GEORGE POLICE

Department Legend

- Administration
- Bldg Systems
- General Area
- Investigations
- Patrol
- Special Ops - ECHO
- Special Ops - Traffic
- Support Spaces
- Unassigned

FFKR ARCHITECTS

ST. GEORGE POLICE



FFKR ARCHITECTS

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- Administration
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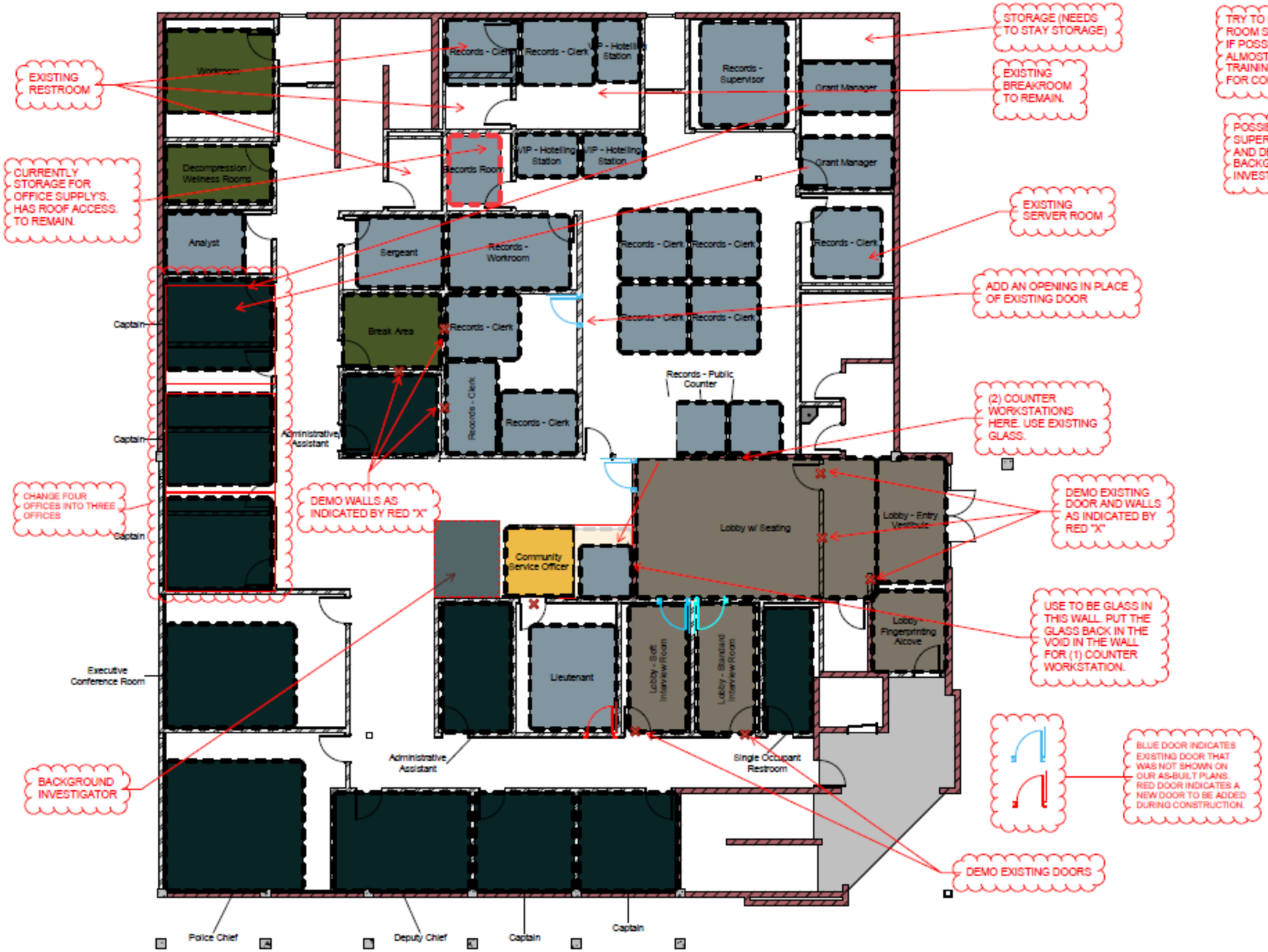
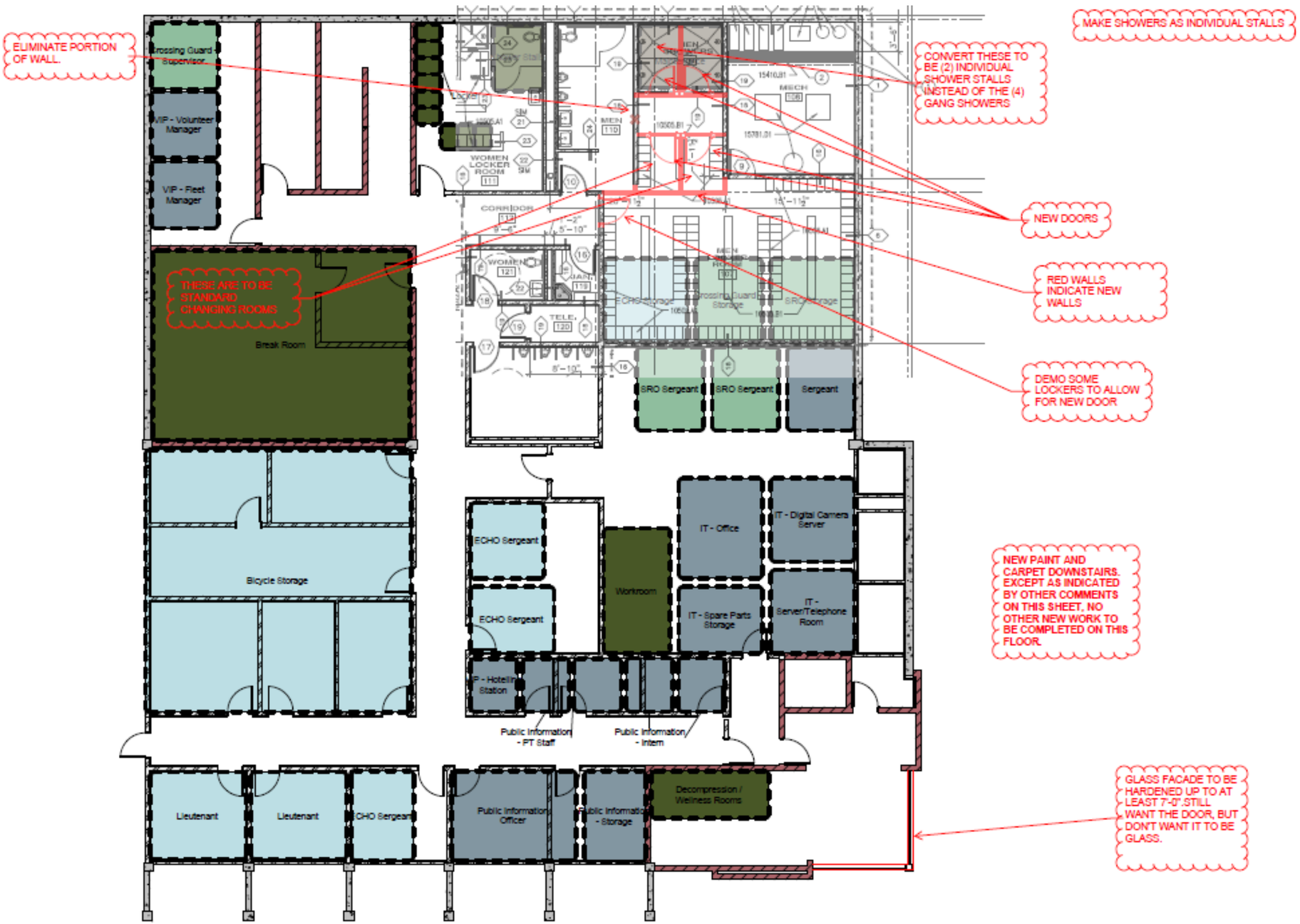
FFKR ARCHITECTS

ST. GEORGE POLICE

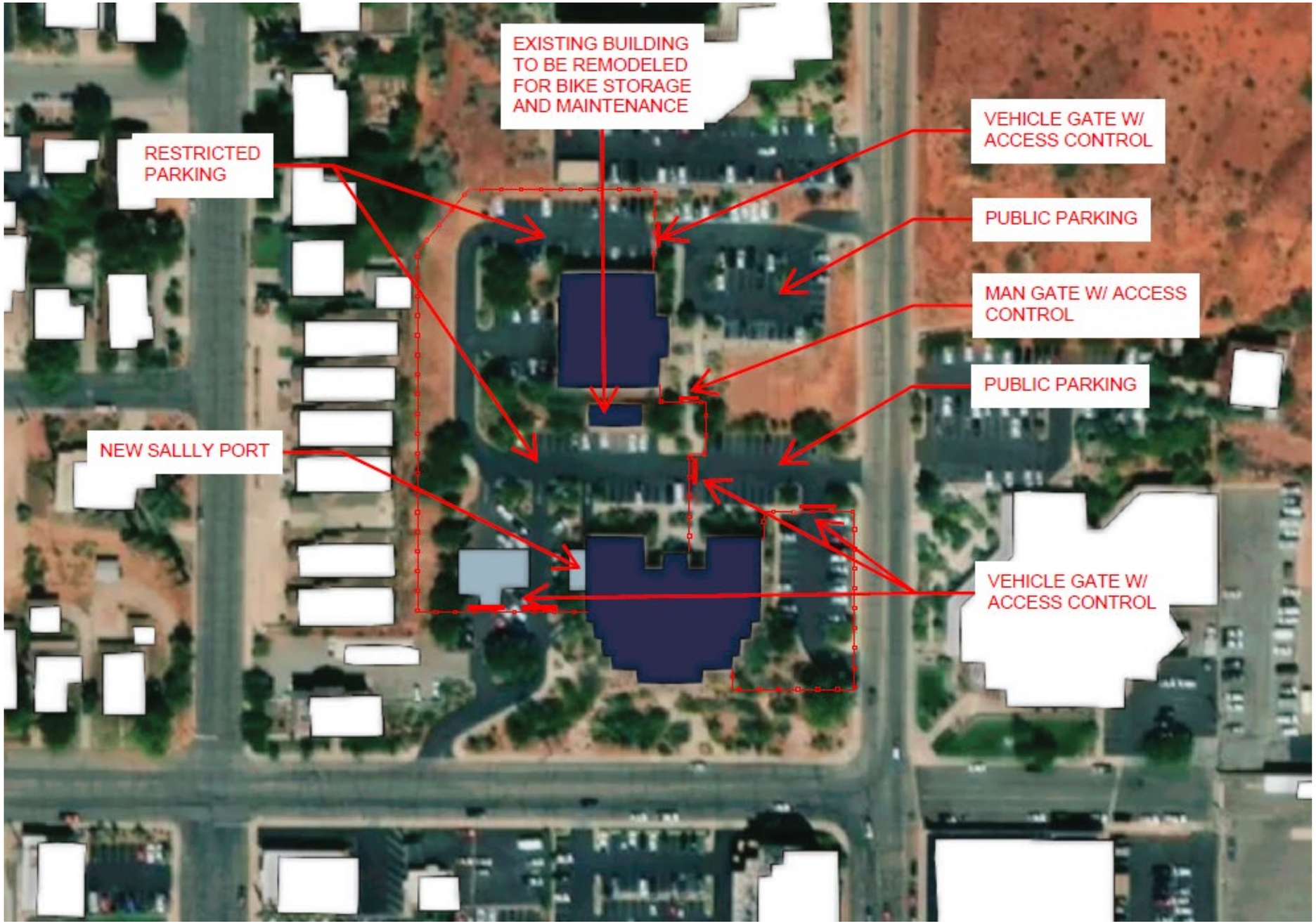


FFKR ARCHITECTS

ST. GEORGE POLICE



ST. GEORGE POLICE



ST. GEORGE POLICE

PROJECT ESTIMATE	CONSTRUCTION CONTROL CORPORATION	9/25/2025

PROJECT NAME.....ST. GEORGE CITY HALL/PD REMODEL TEST FIT 3 — CITY HALL REMODEL
LOCATION.....ST. GEORGE, UT
ARCHITECT.....FFKR — 32,018 SF
STAGE OF DESIGN.....PROGRAM — 853 Addition SF

CSI #	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
	BUILDING COST SUMMARY				
02	EXISTING CONDITIONS			$ 4.86	$ 155,683
03	CONCRETE			$ 2.92	$ 93,357
04	MASONRY			$ 2.85	$ 91,270
05	METALS			$ 0.92	$ 29,556
06	WOODS & PLASTICS			$ 0.31	$ 10,000
07	THERMAL & MOISTURE PROTECTION			$ 2.89	$ 92,578
08	DOORS & WINDOWS			$ 3.71	$ 118,810
09	FINISHES			$ 31.71	$ 1,015,417
10	SPECIALTIES			$ 1.16	$ 37,184
11	EQUIPMENT			$ -	$ -
12	FURNISHINGS			$ -	$ -
13	SPECIAL CONSTRUCTION			$ -	$ -
14	CONVEYING SYSTEMS			$ 0.94	$ 30,000
21	FIRE SUPPRESSION			$ 0.66	$ 21,127
22	PLUMBING			$ 4.58	$ 146,669
23	HVAC			$ 22.01	$ 704,694
26	ELECTRICAL			$ 19.06	$ 610,246
27	COMMUNICATION			$ 5.13	$ 164,355
28	ELECTRONIC SAFETY & SECURITY			$ 6.16	$ 197,226
31	EARTHWORK			$ 0.46	$ 14,592
32	EXTERIOR IMPROVEMENTS			$ 10.72	$ 343,339
33	UTILITIES			$ 0.31	$ 10,000
	SUBTOTAL			$ 121.37	$ 3,886,104
	GENERAL CONDITIONS	7%		$ 8.50	$ 272,027
	BONDS & INSURANCE	2%		$ 2.60	$ 83,163
	OVERHEAD & PROFIT	3.5%		$ 4.64	$ 148,445
	DESIGN CONTINGENCY	15%		$ 18.21	$ 582,916
	TOTAL CONSTRUCTION COST			$ 155.31	$ 4,972,654
	STORAGE BUILDING REMODEL				40,392

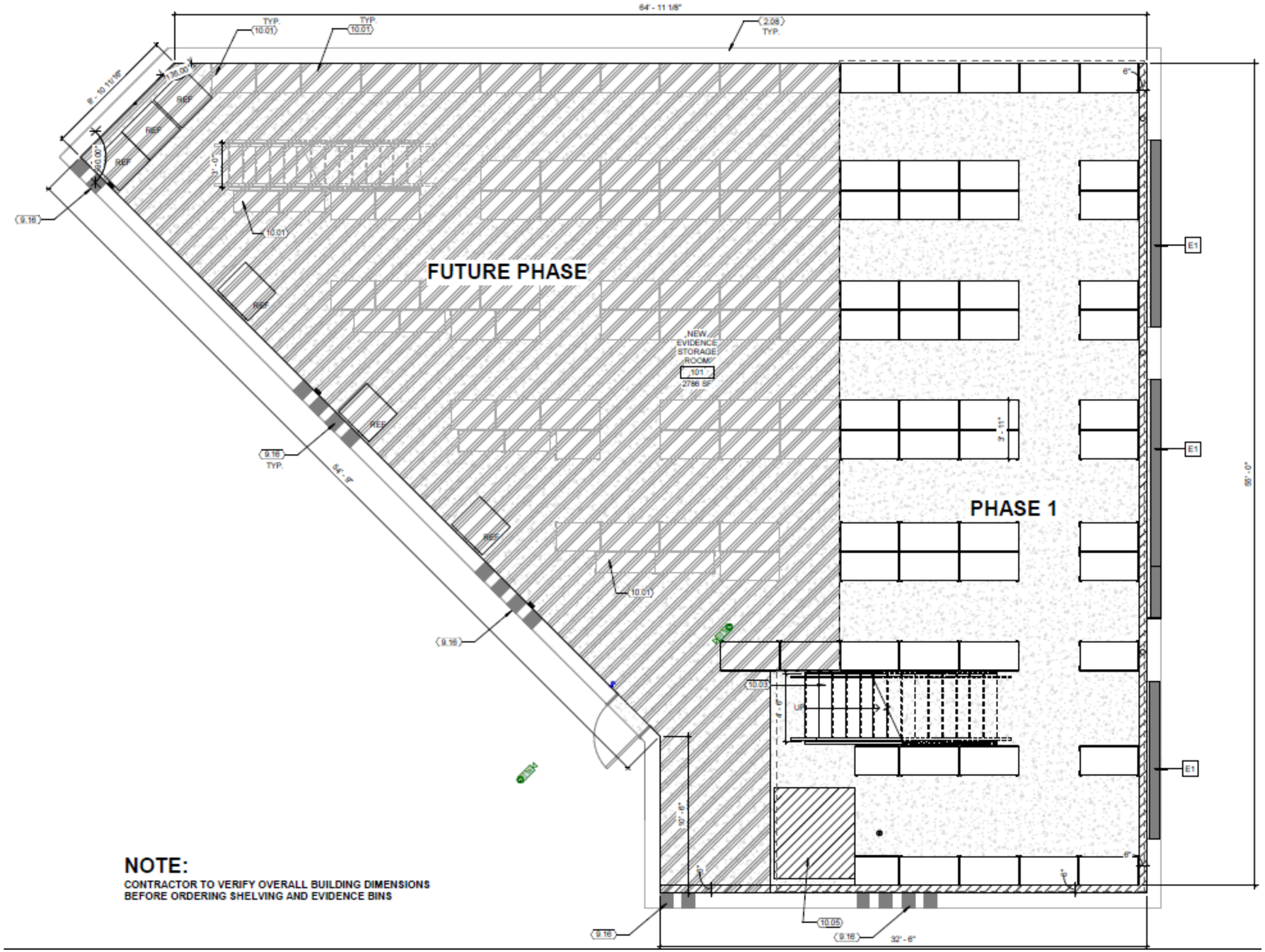
THIS ESTIMATE DOES NOT INCLUDE BUILDING SESIMIC UPGRADE

PROJECT ESTIMATE	CONSTRUCTION CONTROL CORPORATION	11/7/2025

PROJECT NAME.....ST. GEORGE CITY HALL/PD REMODEL TEST FIT 3 — POLICE DEPARTMENT REMODEL - PHASE 2
LOCATION.....ST. GEORGE, UT
ARCHITECT.....FFKR — 17,749 SF
STAGE OF DESIGN.....PROGRAM

CSI #	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
	BUILDING COST SUMMARY				
02	EXISTING CONDITIONS			$ 2.89	$ 51,242
03	CONCRETE			$ 0.95	$ 16,893
04	MASONRY			$ 0.65	$ 11,500
05	METALS			$ -	$ -
06	WOODS & PLASTICS			$ 0.31	$ 5,500
07	THERMAL & MOISTURE PROTECTION			$ 1.72	$ 30,583
08	DOORS & WINDOWS			$ 1.35	$ 23,900
09	FINISHES			$ 27.13	$ 481,552
10	SPECIALTIES			$ 1.00	$ 17,749
11	EQUIPMENT			$ -	$ -
12	FURNISHINGS			$ 2.00	$ 35,498
13	SPECIAL CONSTRUCTION			$ -	$ -
14	CONVEYING SYSTEMS			$ -	$ -
21	FIRE SUPPRESSION			$ 0.57	$ 10,098
22	PLUMBING			$ 0.89	$ 15,750
23	HVAC			$ 2.84	$ 50,490
26	ELECTRICAL			$ 11.97	$ 212,529
27	COMMUNICATION			$ 0.85	$ 15,147
28	ELECTRONIC SAFETY & SECURITY			$ 1.07	$ 18,934
31	EARTHWORK			$ 0.28	$ 5,000
32	EXTERIOR IMPROVEMENTS			$ -	$ -
33	UTILITIES			$ -	$ -
	SUBTOTAL			$ 56.47	$ 1,002,365
	GENERAL CONDITIONS	10%		$ 5.65	$ 100,236
	BONDS & INSURANCE	2%		$ 1.24	$ 22,052
	OVERHEAD & PROFIT	4%		$ 2.53	$ 44,986
	DESIGN CONTINGENCY	15%		$ 8.47	$ 150,355
	TOTAL CONSTRUCTION COST			$ 74.37	$ 1,319,994

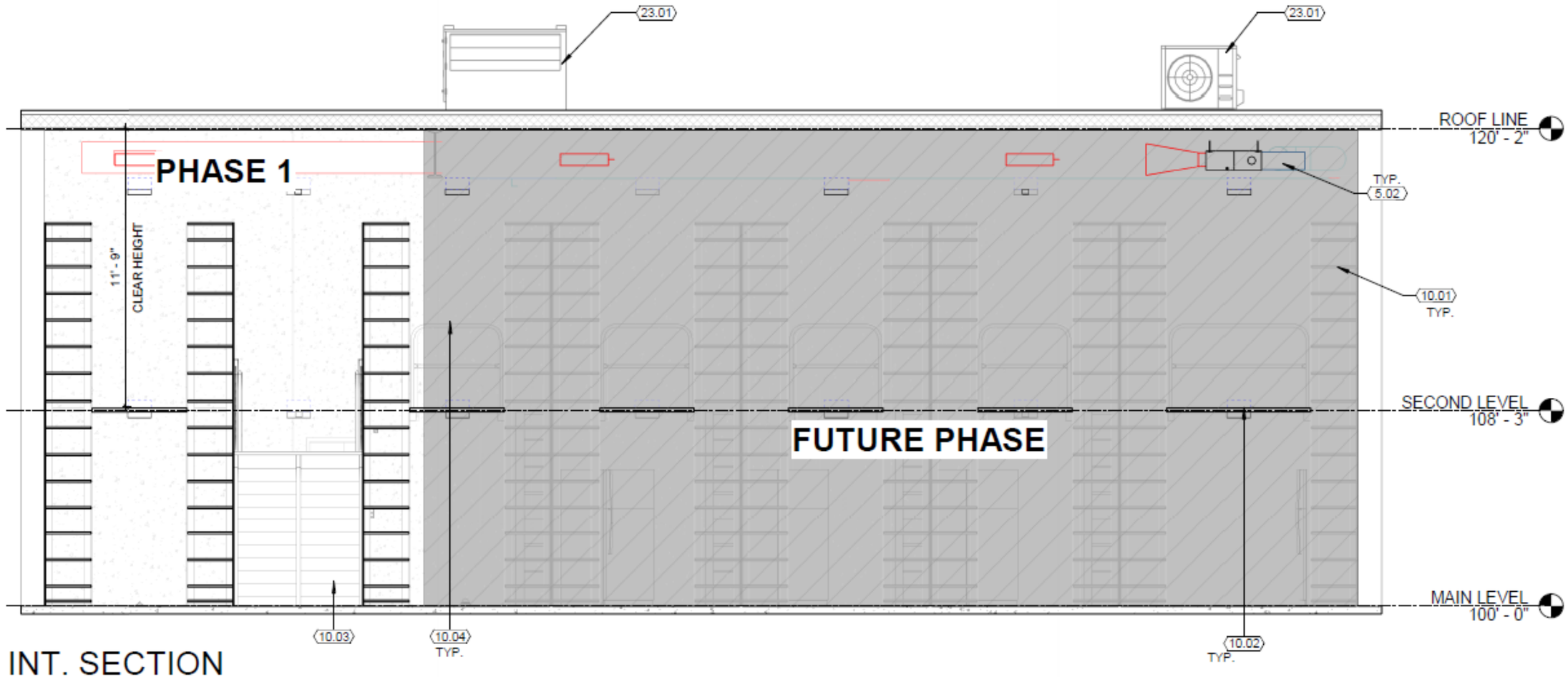
ST. GEORGE POLICE EVIDENCE STORAGE



NOTE:
CONTRACTOR TO VERIFY OVERALL BUILDING DIMENSIONS BEFORE ORDERING SHELVING AND EVIDENCE BINS

FFKR ARCHITECTS

ST. GEORGE POLICE EVIDENCE STORAGE



A2 INT. SECTION
1/4" = 1'-0"

FFKR ARCHITECTS

COST SUMMARY

SG ANIMAL SHELTER:

LOW: $425/SF = $3,650,073
+20% SOFT COSTS/CONTINGENCY: **$4,407,463**

HIGH: $475/SF = $4,080,848
+20% SOFT COSTS/CONTINGENCY: **$4,927,624**

INCL: A/E fees: **$304,000**

SG POLICE:

CITY HALL: 32,018 SF @ $155/SF = **$4,972,654**

DOES NOT INCLUDE SOFT COSTS

A/E Fees: **$372,950**

POLICE: 17,749 SF @ $74/SF = **$1,319,994**

DOES NOT INCLUDE SOFT COSTS

A/E Fees: **$79,500**

SG POLICE EVIDENCE: **$**

Questions

St.George

FFKR ARCHITECTS

FOUR **LOCATIONS**

SALT LAKE CITY, UTAH

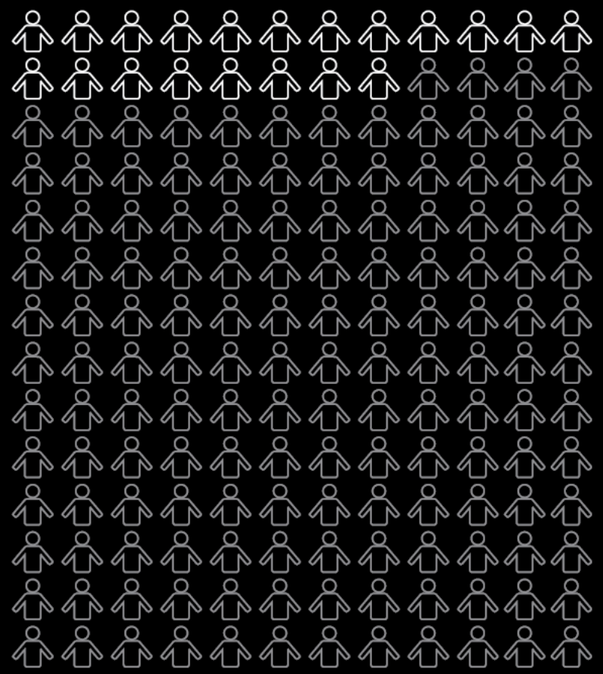
ST. GEORGE, UTAH

TEMPE, ARIZONA

BOISE, IDAHO

OVER 100 MILLION
SQUARE FEET
BUILT/DESIGNED

OVER **180 EMPLOYEES**
20 PRINCIPALS



IN-**HOUSE**

ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE + PLANNING
3-D RENDERING
GRAPHIC DESIGN + BRANDING

OVER 300
AWARDS + ACHIEVEMENTS

LEADING EDGE TOOLS

3-D PRINTING

DRONE

VIRTUAL REALITY

TOP DESIGN FIRM

#1 ARCHITECTURE FIRM IN UTAH
UTAH CONSTRUCTION & DESIGN + UTAH BUSINESS

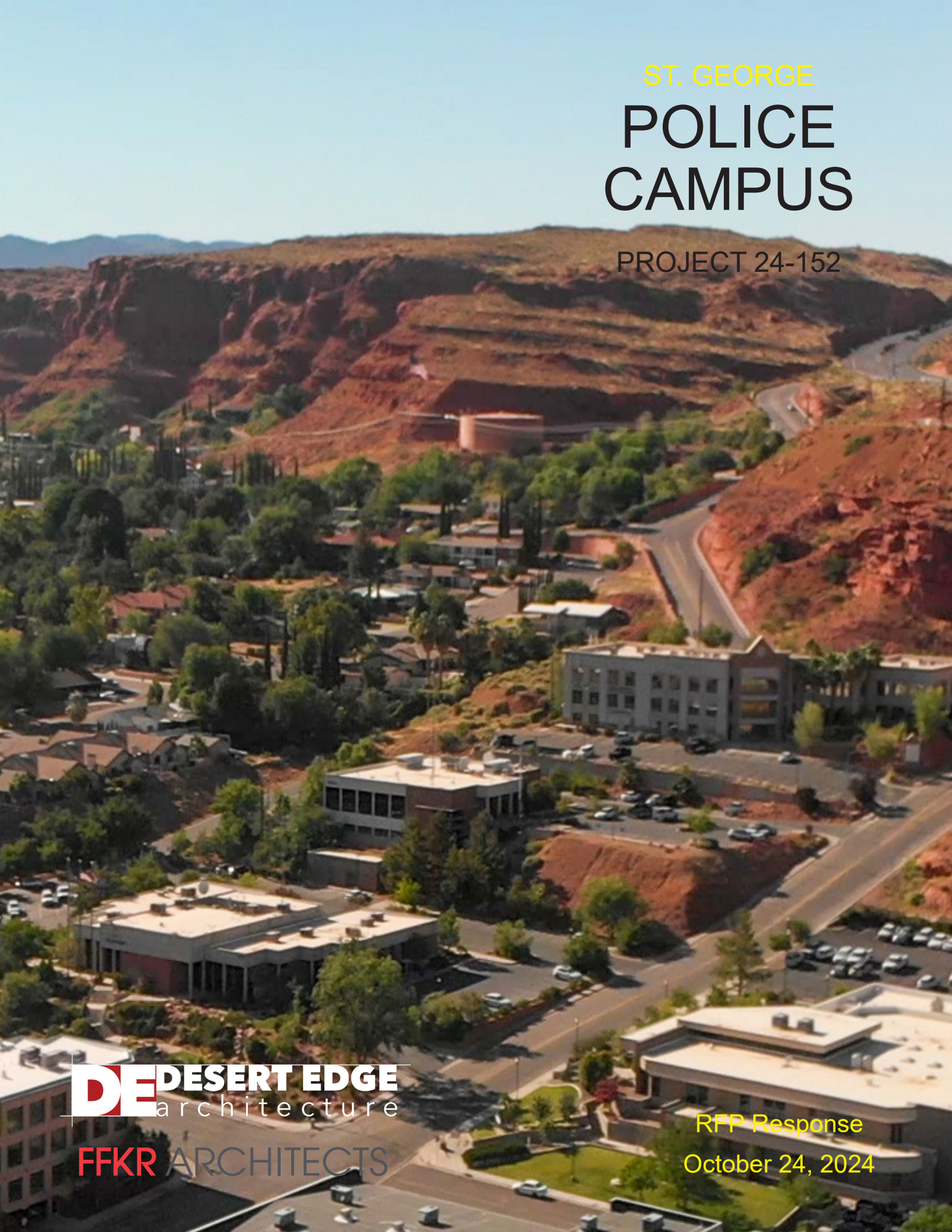
TOP INTERIOR DESIGN HOSPITALITY FIRM
NEWH ARIZONA CHAPTER

TOP 100 DESIGN FIRMS IN SOUTHWEST REGION
ENGINEERING NEWS-RECORD (ENR)

ST. GEORGE

POLICE CAMPUS

PROJECT 24-152

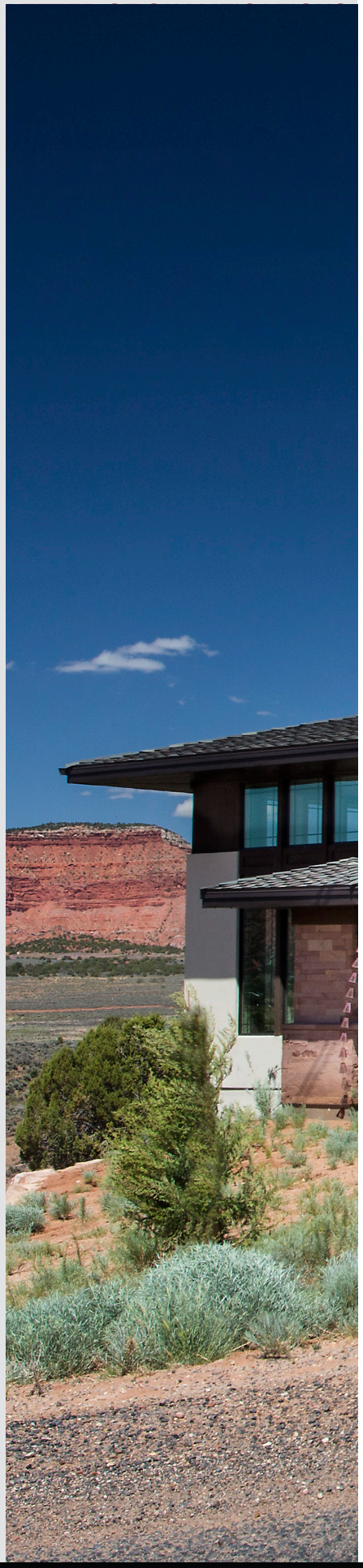


DESERT EDGE architecture

FFKR ARCHITECTS

RFP Response

October 24, 2024



October 24, 2024

Attn. Carlos Robles
Facilities Director
St. George City
carlos.robles@sgcity.org

RE: Architectural and Design for SG Police Campus

Dear Carlos,

Desert Edge Architecture enthusiastically submits our qualifications for your consideration. Our team is the largest, locally owned firm having practiced in Southern Utah for 25 years. We are committed to the future of our area and its citizens. The St. George Police Campus project is an opportunity to strengthen this commitment for us both as residents of Southern Utah & St. George.

We have thoughtfully assembled a design team based on specific experience. This team has committed key individuals with the ability to provide creative approaches resulting in critical design decisions. Key team members have a decade of experience working together and we are confident that this team, working in collaboration with you and Chief Whitehead will create a facility that will exceed your expectations. Our team reflects the highest standards and the proven ability to effectively communicate and will be with you from start to finish.

We are a service-oriented client focused practice. Our many repeat & current clients will inform you of our focus on local-community-centered design, staying on budget & schedule while responding to local environment, culture & landscape are our key practice objectives. Our constant communication & coordination with the owner & design team with a client-focused effort is unique and sets us apart from many of our peers. Our project list is notable for reponding to client & local community focused parameters, budget constraints, and design precedents and challenges.

The Desert Edge team is local and right here in St. George. Our team of consultants additonally all are local to St. George with staff living here and offices within minutes of your project. All design, production, and project management will be done right here in St. George. No other team can provide that level of service. Systems coordination with our consultants is real-time in a cloud based 3d model which provides improved coordination and conflict resolution. These elements of our team make us uniquely qualified to best assist you. We look forward to further developing a relationship with you and hope to be a continued partner with St. George City in providing exceptional architectural design services while respecting your project goals and needs for the Police Campus project.

We understand the selection of a partner in this endeavor is largely based around relationships. This team has been built on long standing relationships. We have one another's back. In turn, you can know that we will have yours. We live here, work here, and are invested in building up our community and assisting clients like the City of St. George in accomplishing their goals.

Sincerely,

E. Ben Rogers, A.I.A. NCARB
Principal
Desert Edge Architecture

PRIMARY CONTACT:

Ben Rogers
Principal
ben@desertedge.co
www.desertedge.co

720 S. River Road, Ste D2100B
St. George, UT 84790
Office Line: 435-673-7362 x101
Mobile: 435-773-2606

DESERT EDGE
architecture

WHO WE ARE

We are a small, service-oriented firm formally opened by Ben Rogers in 2006 as a branch location for another firm. Scott Gilberg joined later that year fresh out of school. In January of 2022, after spending 23 years providing architectural services to Southern Utah, we left that firm along with our entire team, changed our name, and are now...

DESERT EDGE Architecture.

Our office culture & design philosophy focuses on a relationship-centered SERVICE with our staff, clients, consultants, & contractors.

Every client and DE staff member participate actively in our design process as our team works together to find a tailored solution to each project's unique parameters & vision. With our relationship-centered commitment, the outcome is every member of the design team is provided opportunity to take ownership of the preferred direction knowing their voice was heard.

Our methodology lends to the approach there is no one, single solution to any project, but the best direction is one that is a derivative of an open & shared design process. With ego's checked at the door and by the end of every project, our clients know that we listened and participated with them to CREATE a tailor-made design to their vision.

Our philosophy extends beyond just developing a design and completing construction documents. Part of our continued success is our service-oriented approach to the general & sub-contractors selected to build our clients projects. With service as our foundation, our approach drives our active engagement with the contractors as a team-success driven member.

Our continued success due to our client-centered focus, supportive relationships, and sustainable growth can be evidenced by our numerous repeat clients.

"The desire to CREATE is one of the deepest yearnings of the human soul." (Dieter F. Uchtdorf)

Through active collaboration with our staff, clients, consultants, & contractors in the creation of something that did not exist before, we TRANSFORM visions to reality. Upon completion, we watch with great satisfaction as individuals in the new space or building, become participants who transform an idea into an active element in our communities that assist in the continued development of individual & cultural education, behaviors and attitudes.

PROJECT UNDERSTANDING AND APPROACH

LOCATION

When Ben Rogers started providing architectural services to St. George in 2001, it was from a Salt Lake CIty Office. It became quickly apparent that the kind of service he wished to provide his clients could not happen from an office in Salt Lake. By 2006, there was enough of a workload and with support of the management, he opened an office on Bluff Street behind Red Rock Bicycle.

It is criticaly important to this project, as well as every other project the Desert Edge team has worked on over the last 23 years being in St. George, to be a phone call and 5 minutes away from the project site for last minute meetings, coordination, and on site issues needing resolution. Having our entire consultant team local also provides better coordination between us and St. George City.

TEAM

We have added to our team the same consultants who designed the earlier remodel & expansion design with your former architect. This is the same team we have decades of experience with. This team will provide us reduced time to familiarize with the existing systems, electrical, mechanical, and structural.

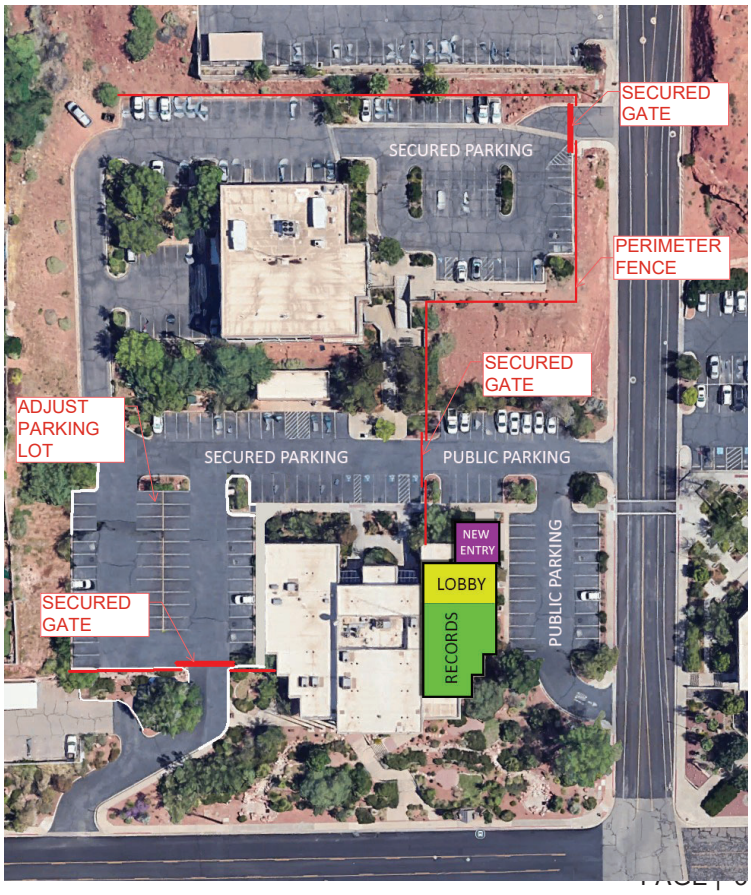
Additionally, our team has been doing work with Matrix Consulting Group who specializes in police programming and assessments. It is our expectation and understanding, that the first step of this project will be to vet the program that has been done previously and work with staff and Chief Whitehead to determine which departments and staff are located in each of the two buildings. We can bring Matrix Consulting in for an intital review and assessment if desired. Since this remodel and campus project will be expected to function for another 20-30 years, it will be critical we get the program and individual department locations correct for efficient inter-department coordination. Matrix Consulting can bring that specialty to the team.

MARKET

Having practiced architecture and worked in construction in St. George for over 35 years, no one will have the knowledge of the local market like Ben & his team. We have long team-centered relationships with the key 5, Tier-1 Utah general contractors, and similar relationships with a dozen local & regional Tier 2 GC's.

CAMPUS

Ben remembers when the SG Police Dept was downstairs, where Public Works is. A full circle and the Police will be back in the same space. The image to the right shows a quick concept of how we could secure the two buildings & parking areas, create a new public entry & lobby, and maintain a majority of the existing spaces. VBFA is already well aware of the HVAC systems having worked on the previous expansion. Ian Madison with BNA has already designed systems for this building and aware of all existing conditions. BHB has already done a siesmic evaluation of the building and knows what it will take to improve the structure to an "Essential Services Facility" for the Police.



FEE PROPOSAL

PHASED APPROACH: With a limited understanding of how fitting the new police program into an existing building will affect the existing spaces and structure, we recommend a phased approach to the design to establish a thorough basis of design for the proiject, a known scope, and establish a realistic budget to fit that scope.

PHASE ONE: We believe the most efficient means to deilver a design for the Police Campus is to first vet the program that was done several years back. Additionally, how the various departments, public records, detectives, new sally port & holding, will interact with each other and which department goes in which building will be crucial to undertstanding the level of design and remodel that will need to happen. We have Matrix Consulting Group ready to assist us if it is determined that would be the best approach. We can negotiate with them a scope of work and fee for an additonal service. It is expected that the city has well documented as built drawings of the building and no time or expense will be needed to create these drawings. We'll recommend a minimal amount of time to verify these drawings.

Phase ONE then will be the vetting of the program, determine locations of each department, how to secure the site, how the public will enter and interact with records, and the full extent of each building remodel and additions. We'll create a floorplan of each building with departments located with specific offices and spaces required. We'd also recommend early analysis by our structural team to determine the extent of upgrades required to the structure to bring it up to code for an "essential services" structure. We'll also create with you options for any exterior remodel or additions for areas such as the sally port & potential new entry. We'll then create a ***phase one design package*** to include floorplans, site plans, elevations & renderings, and a written scope for electrical, mechanical, and upgrades to the structural systems.

BUDGET: There are two options of creating and establishing a budget. After we have finalized the *phase one design package* with you as noted above, we can provide a cost estimate provided by an outside consulting firm and we move forward. A second option is for St. George City to advertise and enter into a CMGC contract with a general contractor at the earliest stages of the design. This will bring them on board very early providing that team a thorough and high level understaning of the scope of the project. It will additonally provide our design team the ability to implement designs and systems that are most efficient and cost effective based upon the GC's input. They can provide real-time estimates as we move through SD & futher into DD & CD's. By the end of phase ONE, we'll have an established scope of work, know the extent of the remodel & additions, with a finalized realistic budget. This delivery method is highly recommended and has been our most successful type of deliverable.

PHASE TWO: With the established scope of work, we will then provide an updated fee proposal based upon the scope of work and budget estasblished in Phase 1, which will have given us a thorough understanding of the extent of mechanical, electrical, and structural modifications as well as architectural. We'll then continue design through DD, CD, & bidding in preparation for the City moving to the new building on Main St. in late 2025 and the remodel can begin.

PROPOSED FEE:

Having not been provided a scope of work or budget, it is hard to provide a competent fee. Let's assume similar to other projects, the City Hall remodel comes in at $400/sf. At 34,150 SF, this would be a $13.6 mil budget for the City Hall alone, but all hinging on the level and extent of the remodel, so this is an unknown. Dependent upon the extent, a typical architectural fee for a remodel will range between 5.5 - 6.5%. We will estrablish a competent fee for Phase II upon completion of Phase I.

For *phase one design package* as noted above, we propose a fixed fee of **$75,500.** (Seventy-Five Thousand, five hundred dollars)

MATRIX Consulting Group = $ Add Service

This Phase One fee will be reduced from the Phase II fee.

PROJECT TEAM & KEY PERSONNEL

The principals at Desert Egde have been practicing and providing architectural services in Southern Utah for 24 years. Our approach to every project is to respond to it's local environment & cultral aspects. Much of a design teams success, similar to a football team, is having the best players in place, with experience working together, and first hand knowledge of how each other performs their responsibilities. Desert Edge has as long as 20 years experience working with the best consultants assembled for this project. Desert Edge is in final negotiations to complete a merger with FFKR. This alliance will strengthen our teams ability to provide quality services to our local clients and communities.

St.George

DESERT EDGE architecture

FFKR ARCHITECTS

E. BEN ROGERS, AIA, NCARB
PRINCIPAL-IN-CHARGE & PROJECT ARCHITECT

STEVE BEESLEY, NCARB
PROJECT MANAGER

NATE HENRIE
PROGRAMMER

CONSULTING TEAM

BHB — **STRUCTURAL ENGINEERING CONSULTANT**

VBFA — **MECHANICAL ENGINEERING CONSULTANT**

BNACONSULTING — **ELECTRICAL ENGINEERING CONSULTANT**

matrix consulting group — **POLICE PROGRAMMING CONSULTANT**

E. BENJAMIN ROGERS, AIA, NCARB

PRINCIPAL - LEAD ARCHITECT

BEN@DESERTEDGE.CO

720 S River Rd STE D2100B
St. George, UT 84790

EDUCATION

Master of Architecture, University of Utah
Bachelor of Science, University of Utah
Associates Degree, Dixie State University

LICENSES & CERTIFICATIONS

Architect: Utah, 2005, # 308527;
Addtnl lic: NV, AZ, WA, MD, HI, MA, MO, PA, KS, ND

PROFESSION AFFILIATIONS

American Institute of Architects
President, Southern Utah Section of AIA Utah, 2011-12; 2016
Board- AIA Utah Board of Directors, 2011-12; 2016
St. George City Planning Commissioner 2023-24

RELEVANT EXPERIENCE

- Hurricane City Hall & Police Program
- Hurricane City Hall & Police Schematic
- Garfield County Admin, UHP & Courts
- Washington County Sheriff Office
- Springdale Town Hall & Police Program
- St. George City Animal Shelter
- St. George Fleet Maintenance Facility
- St. George Sun Tran Fleet & Office Bldg
- St. George Police Evidence Storage
- St. George Temple Major Remodel
- Washington County Main Branch Library
- Santa Clara Branch Library
- Washington Branch Library
- Springdale Branch Library
- Kane County Sherrif Search & Rescue
- Kane County Water Conservancy Office
- Washington City Fire Station #62 Prgrm
- Logan City Fire Station #61
- Snow Science Building, UTU
- SUU Old Main Remodel
- SUU Teachers Education Building
- Best Western Plus
- Hampton Inn & Suites - Sun River
- Hampton Inn & Suites - Hurricane
- Western Rock Office - Sun River
- State Bank of Southern Utah - Mall Dr.
- Merrill Road Office Building
- Joule Plaza
- Orsini Mixed Use
- Cable Mtn Lodge
- Cable Mountain Suites (Big Screen Rem.)
- BYUH Banyan Hall Cafeteria

STEVE BEESLEY, RA, NCARB

SR. PROJECT MANAGER

STEVE@DESERTEDGE.CO

720 S River Rd STE D2100B
St. George, UT 84790

EDUCATION

Bachelor of Science, Dixie State University
Associate of Science, Dixie State Unitversity

LICENSES & CERTIFICATIONS

Architect: AZ - 2021
NCARB Certification: # 834333

PROFESSION AFFILIATIONS

Architect: AZ - 2021
NCARB Certification: # 834333

RELEVANT EXPERIENCE

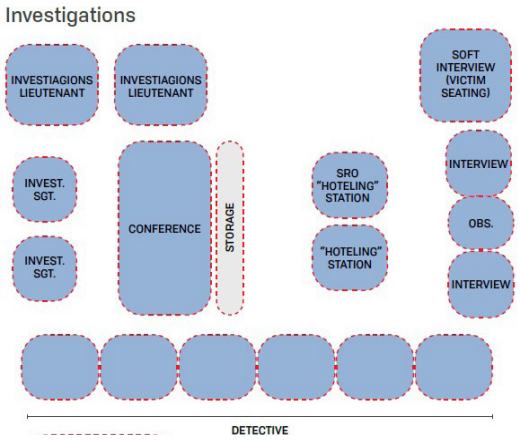
- St. George Police Evidence Storage
- Switchpoint Redhills
- Joule Plaza
- Hampton Inn & Suites - Sun River
- Hampton Inn & Suites - Hurricane
- Best Western Plus
- Coral Junction RV
- BYUH TVA - Married Housing
- BYUH Hale 11-13 Student housing
- BYUH Nu Hale Kumu Faculty Housing
- PCC Administration Remodel
- Fitness Ridge

NATE HENRIE, AIA, NCARB

ARCHITECT / PROGRAMMER
FFKR

NHENRIE@FFKR.COM

730 Pacific Avenue
Salt Lake City, Utah 84104



EDUCATION

University of Idaho, Master of Architecture
University of Utah, Bachelor of Science

LICENSES & CERTIFICATIONS

Licensed Architect: Utah, 2024
Accredited Professional, WELL Building Design

RELEVANT EXPERIENCE

Building Assessment & Seismic Evaluation

- Payson City Building Assessment
- UTA Meadowbrook Building As-Built
- UTA Jordan River Rail Service Center Building No. 2

Facility Planning

- UTA Strategic Facility Master Plan
- Rocky Mountain Power, Jordan Valley Service Center Facility Feasibility Study & Plan

Municipal Planning

- Hurricane City Center Master Plan
- Town of Alta Facilites Master Plan

Campus Planning

- Salt Lake Public Utilities Space Needs Assessment
- Wavetronix Corporate Campus Master Plan

ANDREW VAN HOOK, S.E.

PRINCIPAL STRUCTURAL ENGINEER
BHB ENGINEERS

ANDREW.VANHOOK@BHBENGINEERS.COM

4617 S. Pioneer Rd.
St. George, UT 84770

EDUCATION

University of Utah
• M.S. Civil Engineering, 2016
• Highest Honors, B.S. Civil Engineering, 2014

LICENSES & CERTIFICATIONS

Registered Structural Engineer: 9072017-2203 (UT)

ALEX PIKET, P.E.

CONSULTING STRUCTURAL ENGINEER
BHB ENGINEERS

ALEX.PIKET@BHBENGINEERS.COM

4617 S. Pioneer Rd.
St. George, UT 84770

EDUCATION

University of Utah • M.S. Civil Engineering, 2013
Hague University • B.S. Civil Engineering, 2011

LICENSES & CERTIFICATIONS

Registered Structural Engineer (SE): 11102949-2202

RELEVANT EXPERIENCE

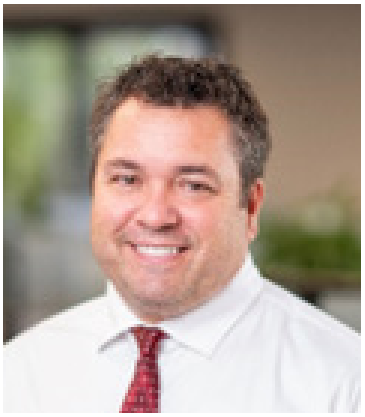
- St. George Police Station Addition
- St. George City Hall Expansion
- St. George City Hall and Parking Structure
- St. George Commons Facility Seismic Evaluation
- St. George Commons Facility T.I.
- St. George Fire Station #1
- St. George Fire Station #10
- Washington City Police Station
- Ivins City Hall
- Kane County Search and Rescue Facility
- Heber City Public Safety Building
- Kaysville Police Facility
- Lehi Police Station
- Farmington Police Station

LADD BIRCH, P.E.

PRINCIPAL MECHANICAL ENGINEER
VBFA

LBIRCH@VBFA.COM

230 N 1680 E Bldg V
St. George, UT 84790



EDUCATION
B.S. Mechanical Engineering, University of Utah

LICENSES & CERTIFICATIONS
Licensed Professional Engineer, Utah, 1998, License #353492-2202

PROFESSION AFFILIATIONS
MEMBER, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
MEMBER, American Council of Engineering Companies (ACEC)

RELEVANT EXPERIENCE
- DFCM Juvenile Justice - Youth Detention Facility
- Dixie Area Detention
- Dixie Area Detention Remodel
- Hurricane Youth Detention
- Vernal Municipal Building
- Wasatch County Justice Center
- Washington City Police Station
- Washington County Sheriff's Office at Purgatory
- Washington County Sheriff's Workers Housing Bldg. at Purgatory
- Washington County Administration Building

IAN MADISON, P.E.

PRINCIPAL ELECTRICAL ENGINEER
BNA

IMADISON@BNACONSULTING.COM

965 N. 1700 E.
St. George, UT 84770

EDUCATION
Weber State University
BS EET

Minor CS

LICENSES & CERTIFICATIONS
PE AZ License #57991
PE UT License #7892177-2202

RELEVANT EXPERIENCE
- St. George City Hall Expansion (Design completed, construction canceled)
- St. George Municpal Site Improvements
- Washington City Police Station
- Washington County Receiving Center
- Washington County Youth Crisis Center - Remodel
- Cedar City - Department of Public Safety Crime Lab
- Cedar City Juvenile Justice Services Facility
- Iron County Office Building Complex
- Iron County Courthouse Remodel
- Iron County Public Safety Building
- Colorado City Hall Expansion
- DFCM Cedar City Regional Center - Main Distribution Panels Replacement
- DFCM Department of Human Services
- Ivins City Hall

PROGRAMMING CONSULTANT

The Matrix Consulting Group is a management consulting firm that has a dedicated law enforcement practice with extensive experience evaluating operational, staffing, and facility needs. We have extensive experience with similar assessments for over 450 police departments across the country, including departments in Utah, in the last 20 years. Our firm has assisted police and municipal managers with improving department management, organizational structure, staffing and operations, and facility. The following table provides a sample list of law enforcement clients that included staffing and facility planning studies:

Asheville, NC	Goodyear, AZ	Raleigh, NC (2x)
Bend, OR	Howard County, MD	Salt Lake City (3x)
Broken Arrow, OK	Kyle, TX (2x)	Santa Fe, NM
Buckeye, AZ	La Verne, CA	Suffolk, VA
Burleson, TX	Lewisville, TX	Tacoma, WA (2x)
Columbus, OH	Madison, WI	Texas City, TX
Everett, WA	Miami Beach, FL (3x)	Virginia Beach, VA
Fort Worth, TX (2x)	Monroe County, NY	Yarmouth, MA

We are currently completing law enforcement studies for Cincinnati (OH), Escondido (CA), and Henderson (NV).

Our staffing, operational, and facility planning studies are rooted in empirical analysis of each organization's workload, service levels, and operational philosophies. We base our analysis on your historic workload and service level expectations. We have developed a projection methodology that incorporates multiple factors into projecting future staffing needs for fast-growing communities based on a variety of factors such as growth and development trends, infrastructure availability, community demographics and calls for service analysis. This project methodology is divided into subareas across the City and in aggregate to incorporate multiple projection scenarios.

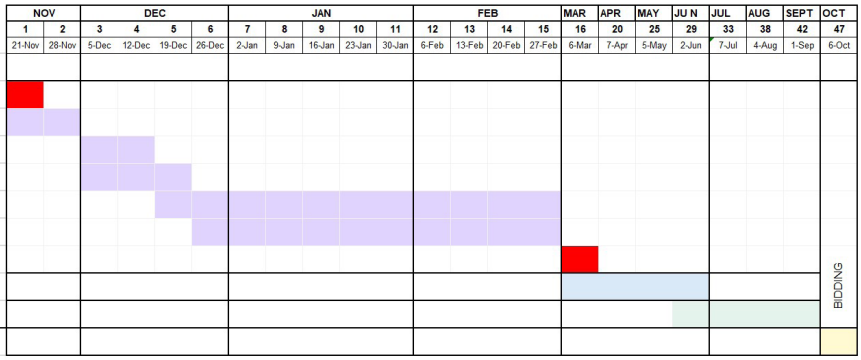
The Matrix Consulting Group is comprised of former law enforcement staff (from police officers to chief) and career consultants. We combine operational understanding and data analysis to develop a comprehensive assessment of each client's staffing, operational, and facility needs.

PROPOSED SCHEDULE

St. George Police
Campus

ESTIMATED NoA 11/11/2024

SCHEMATIC DESIGN		NOTES
NTP	11/11/24	CITY NOTICE AWARD
CONTRACT PERIOD	12/2/24	FINALIZE CONTRACT
REVIEW / VERIFY ASBUILTS & SYSTEMS	12/16/24	RECEIVE ASBUILTS FROM CITY -VERIFY ACCURACY
PROGRAM REVIEW	12/16/24	REVIEW PREVIOUS PROGRAM
MEET W STAFF & CHIEF - PROGRAM SPACES	3/3/25	MEET TO REVIEW AND CREATE NEW SPAC E PROGRAM
FLOORPLANS & EXTERIOR OPTIONS	3/3/25	PREPARE EXTRERIOR ELEVATIONS FOR ADDITIONS
SUBMIT PHASE ONE PKG	12/23/24	SUBMIT PHASE ONE DESIGN PACKAGE FOR REVIEW
DESIGN DEVELOPMENT		MAR 6 THRU JUN 2
CONSTRUCTION DOCUMENTS		JUN 2 THRU OCT 5
BIDDING & CONSTRUCTION		OCTOBER



With the notice of award expected Nov 11, we expect a few weeks for contract period. Starting first week of Dec, we'll verify the accuracy exisitng asbuilts. We'll also immediately begin reviewing the previous program. We'll have weekly progress meetings with the City through the programming process. After the 1st of the year, we'll begin heavily into program review and update to the two facilities and work through floorplans, exterior, and site plan modifications to fit the needs of the Police with Phase one submittal submitted to the city for review by Mar 6.

During DD & CD, we'll meet bi-weekly to review and coordinate progress between the City and our design team. We expect to finalize bid documents by 1st week of October. Anticipating the City will enter into a CMGC contract, we'll work with the selected GC during the month of October for bidding. Anticipating the City moves to the new building in Oct-Nov. 2025, the selected GC can mobilize and prepare for construction to commence in Dec 2025. (If the City has budgeted for the construction of the project)

RELEVANT EXPERIENCE

Project
HURRICANE CITY HALL & POLICE PROGRAMMING
HURRICANE CITY HALL & POLICE SCHEMATIC DESIGN
ST. GEORGE CITY ANIMAL SHELTER
ST. GEORGE CITY FLEET MAINTENANCE
ST GEORGE SUN TRAN FLEET MAINTENANCE & OFFICES
WASHINGTON COUNTY SHERIFF OFFICE
WASHINGTON COUNTY ANIMAL SHELTER - NOT BUILT
GARFIELD COUNTY ADMIN, UHP & COURTS
SPRINGDALE TOWN HALL & POLICE PROGRAM
PARK CITY POLICE HEADQUARTERS
PAYSON CITY OFFICE EXPANSION STUDY
TOWN OF ALTA FACILITIES MASTER PLAN

GARFIELD COUNTY ADMIN & COURTS BUILDING

RELEVANT EXPERIENCE

HURRICANE CITY HALL & POLICE PROGRAM

HURRICANE, UTAH

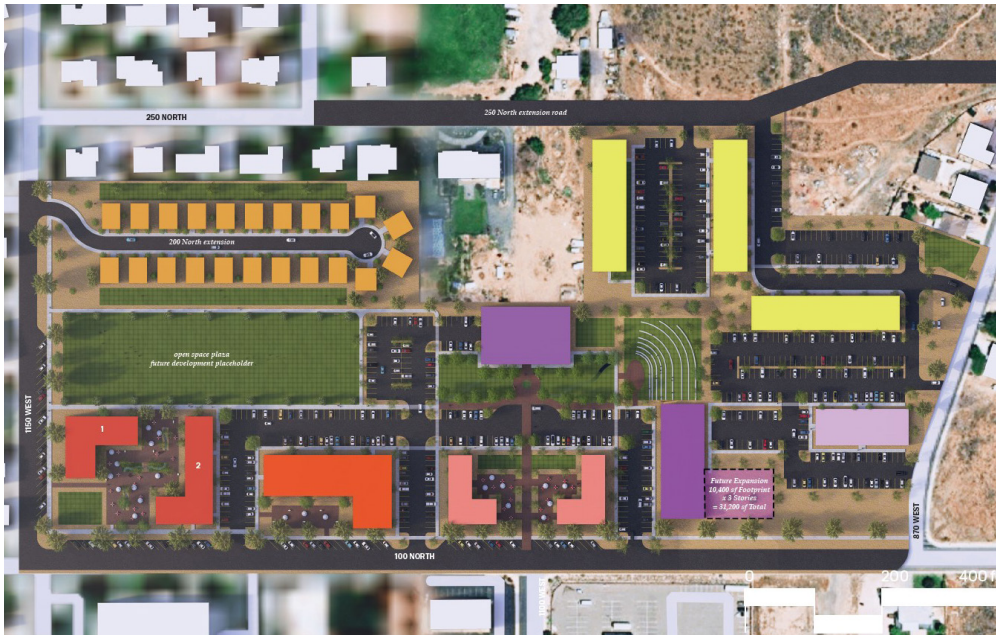
CLIENT
Hurricane City

SCOPE OF SERVICES
Programming, Architectural Design and Construction Services

SQUARE FOOTAGE
Police: 65,000 SF

City Hall: 30,000 SF

The Desert Edge Teram was selectgged to work with Hurricane City to master plan a 19 acre parcel on 100 North & 1150 West in Hurricane. The prupose of the project is to create a new Civic Center for City Offices, Police, Courts, retail & mixed use, a hotel, worker housing, a plaza and park space.



SPRINGDALE TOWN HALL & POLICE PROGRAM

SPRINGDALE, UTAH

CLIENT
Town of Springdale

SCOPE OF SERVICES
Programming, Conceptual Architectural Design

SQUARE FOOTAGE
16,800 SF

The Desert Edge team worked with the Town of Springdale to program a new Town Hall to house all town functions and expected growth for the next 30-50 years. The building includes a council chamber, offices, planning & zoning, mayor & council offices, conference rooms, Police evidence storage, fitness room for police & staff, lockers & break rooms.

Completed by the DESERT EDGE team while with CRSA - Architect of Record

RELEVANT EXPERIENCE

GARFIELD COUNTY ADMIN, UHP & COURTS

PANGUITCH, UTAH

CLIENT
Garfield County

SCOPE OF SERVICES
Programming, Architectural Design and Construction Services

SQUARE FOOTAGE
27,000 SF

We provided architectural services for the renovation/restoration and compatible addition to the historic county courthouse in Garfield County, Utah. The project included restoration of the historic building with installation of all new systems. The scope of work included the demolition of part of a one-story 1984 addition, and design and construction of a second story link to the new two-story courthouse wherein all the court facilities are housed.

Completed by the DESERT EDGE team while with CRSA - Architect of Record

WASHINGTON COUNTY SHERIFF OFFICE

HURRICANE, UTAH

CLIENT
Washington County

SCOPE OF SERVICES
Architectural Design,. Construction Admin & Interior Design.

SQUARE FOOTAGE
30,000 SF

The County building was designed to house the Sheriff's Department, Utah Highway Patrol and Adult Probation and Parole. The building totals 30,000 sq. ft. The Sheriff's Department uses the main floor which includes a 1,200 sq. ft. exercise room with locker rooms and showers, a 2,000 sq. ft. training room that can be subdivided into two, 19 individual office spaces, and interview rooms.

Completed by the DESERT EDGE team while with CRSA - Architect of Record

RELEVANT EXPERIENCE

CLIENT
Park City

SCOPE OF SERVICES
Programming, Architectural Design, and Construction Admin & Interior Design.

SQUARE FOOTAGE
28,000 SF

The Park City Police Department Headquarters has become a new civic influence with its elegant yet distinct Park City aesthetic appeal of stone, brick and heavy timber. The timber-framed public lobby and meeting room take advantage of mountain views to the south and west. The largely transparent facade provides a connection to the public and serves as a symbol of civic pride. The new police facility is located along State Route 224 at the entrance to Park City. The building makes use of a 12 foot grade change from the front to the rear of the sloping site by locating public parking and access on the upper level and secure police parking and access separately on the lower level.

An FFKR Project

PARK CITY POLICE HEADQUARTERS

PARK CITY, UTAH

CLIENT
Payson City

SCOPE OF SERVICES
Programming, Master Planning

SQUARE FOOTAGE
n/a

The City of Payson was looking to purchase a new, existing facility and move the majority of their staff there. However, they were unsure if the new facility would fit the desired staff and spaces and FFKR Architects was approached to provide a test fit study for the new building. FFKR met with city staff and toured potential facility which is a former hospital. During these meetings our team complepted studies of how current staff operated and did their duties so that the space recommendations would be more aligned to their workflow and needs. Studies and planning for growth of staff over the next 20 years to ensure this growth was accounted for in the test fit.

An FFKR Project

PAYSON CITY PUBLIC WORKS, COURTS, I.T.

PAYSON, UTAH

LICENSE & INSURANCE CERTIFICATIONS

STATE OF UTAH
DEPARTMENT OF COMMERCE
DIVISION OF PROFESSIONAL LICENSING

ACTIVE LICENSE

EFFECTIVE DATE: 05/31/2020

EXPIRATION DATE: 05/31/2026

ISSUED TO: E Benjamin Rogers

REFERENCE NUMBER(S), CLASSIFICATION(S) & DETAIL(S)

308527-0301 Architect

SIGNATURE OF HOLDER

NOTICE:
THIS LICENSE MUST BE POSTED
IN A CONSPICUOUS PLACE

CITY OF ST. GEORGE
175 E 200 N
ST. GEORGE, UT 84770

St.George
THE BRIGHTER SIDE

LICENSE NO.: BL-00050309
DATE ISSUED: 12/26/2023

BUSINESS LICENSE

EXPIRES: **01/18/2025**

THIS CERTIFIES that the business or individual listed below is hereby granted a license to do business as stated at the specified business location for the dates indicated on this certificate.

BUSINESS OWNER: DESERT EDGE ARCHITECTURE LLC
BUSINESS LOCATION: 720 S RIVER RD
TYPE OF BUSINESS: ARCHITECTS

NAME: DESERT EDGE ARCHITECTURE LLC

Angie Jessop

CITY LICENSE OFFICER

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/22/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Cindy Sheppick
Leavitt Group Insurance Advisors 2200 S. Main Street Suite 600 Salt Lake City UT 84115	PHONE (A/C, No, Ext): (801) 308-1500 FAX (A/C, No): (801) 308-1427 E-MAIL ADDRESS: cindy-sheppick@leavitt.com

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Desert Edge LLC 720 South River Rd Ste D2100B St. George UT 84790	INSURER A : Ohio Security Insurance Company	24082
	INSURER B : Ohio Casualty Insurance Company	24074
	INSURER C : Argo Group US	R58324
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** 24-25 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY [ ] PRO-JECT [ ] LOC OTHER:	X		BZS64322857	2/1/2024	2/1/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Cyber Liability	$ 1,000,000 $ $ 15,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $ 50,000
	AUTOMOBILE LIABILITY ANY AUTO ALL OWNED AUTOS [ ] SCHEDULED AUTOS X HIRED AUTOS [X] NON-OWNED AUTOS			BZS64322857	2/1/2024	2/1/2025	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
B	X UMBRELLA LIAB [X] OCCUR EXCESS LIAB [ ] CLAIMS-MADE DED X RETENTION $ 10,000			USO64322857	2/1/2024	2/1/2025	EACH OCCURRENCE AGGREGATE	$ 2,000,000 $ 2,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N [ ] If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		XWS64322857	2/1/2024	2/1/2025	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
C	Professional Liability Claims Made Retro Date 2/1/22			121AE0207312-02 Deductible $10,000	2/1/2024	2/1/2025	Each Claim Limit Aggregate Limit	5,000,000 5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

Ceder City Corporation
10 N Main Street
Cedar City, UT 84720

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Brandy Carroll/BRCARR

ACORD 25 (2014/01)
INS025 (201401)

The ACORD name and logo are registered marks of ACORD

DESERT EDGE
architecture

435-673-7362
720 S. River Road, Ste D2100B | St. George UT 84790

Agenda Date: 12/18/2025 **Agenda Item Number:** 2k

Subject:

Consider approval of a Professional Services Agreement with FFKR Architects for the design and construction administration of the St. George Animal Shelter Facility.

Item at-a-glance:

Staff Contact: Marc Mortensen

Applicant Name: City of St. George

Reference Number: 25-00240

Address/Location:

61 South Main Street

Item History (background/project status/public process):

This item is to approve an addendum to the existing PSA to provide for design and construction documents and services for the new Animal Shelter facility project with FFKR Architects. This includes design, development, construction documents, plan review/permitting, and construction support. Staff recommends approval contingent upon approval of the associated budget opening.

Staff Narrative (need/purpose):

FFKR Architects has already completed the feasibility study and programmatic design of the new Animal Shelter. This addendum to the existing PSA provides design and construction documents and services for the new Animal Shelter facility project. This includes design development, construction documents, plan review/permitting, and construction support. The budget for this project is $3.9 million which will leave a construction budget of approximately $3.5 million (this includes soft costs). FFKR has broken out their fee into phases which includes Phase 1 (design development, construction documents, bidding/negotiation) and Phase 2 (construction administration).

Name of Legal Dept approver: Kristopher Pearson

Budget Impact:

Cost for the agenda item: $285,000

Amount approved in current FY budget for item: $75,000

If not approved in current FY budget or exceeds the budgeted amount, please explain

funding source:

General Capital Project Funds

Description of funding source:

General Capital Project Funds

Recommendation (Include any conditions):

Staff recommends approval

Attachments

CITY OF ST. GEORGE
175 EAST 200 NORTH
ST. GEORGE, UT 84770
(435) 627-4000

PURCHASE ORDER

PO Number: 25-00240 **Date:** 10/22/2024

Request #: REQ85271 **Vendor #:** 053230

ISSUED TO: DESERT EDGE ARCHITECTURE, LLC
720 S RIVER RD STE D2100B
ST GEORGE, UT 84790-

SHIP TO: ST. GEORGE ANIMAL SHELTER
605 E WATERWORKS DR
ST. GEORGE, UT 84770

Requested By: CARLOS ROBLES / MARC MORTENSEN

ITEM	UNITS	DESCRIPTION	PART #	UNIT PRICE	GL ACCT NO	EXT AMNT
1	0.00	ANIMAL SHELTER - STUDY & DESIGN SERVICES		0.00	40-4000-7964	37,125.00

PROPOSAL DATED 7-17-23 / PSA 10-3-23

Approved By: _____

SUBTOTAL:	37,125.00
TAX:	0.00
SHIPPING:	0.00
TOTAL	37,125.00

PAYMENT TERMS: NET 30 DAYS

1. Original invoice to be sent to: City of St. George Attn: Accounts Payable 175 E 200 N St. George, UT 84770
2. C.O.D shipment will not be accepted.
3. Purchase order numbers must appear on all shipping containers, packing slips and invoices. Failure to comply with this request may delay payment.
4. All goods are to be shipped F.O.B. Destination unless otherwise stated.
5. All materials and services are subject to approval based on the description on the face of the purchase order or appendages thereof. Substitutions are not permitted without approval of the Requesting Department. Material not approved will be returned at no cost to the City.
6. All goods and equipment must meet or exceed all necessary city, state and federal standards and regulations.
7. Vendor or manufacturer bears risk of loss or damage until property received and/or installed.
8. The City is exempt from all federal excise and state tax. Fed ID #87-6000275 Utah State Sales Tax # 11969379-002-STC
9. By acceptance of this purchase order, supplier certifies that their company/business does not and will not during the term of the purchase order/contract performance period knowingly employ, or subcontract with any entity which employs workers in violation of 8 USC 1324a. "By accepting and performing the services stated or providing the items specified herein, the supplier acknowledges that the supplier has read, understands, and agrees to comply with the requirements of federal and state law regarding eligibility of workers. (Ord. 2008-11-01, 11-6-2008)

City of St. George Purchasing (435) 627-4717
purchasing@sgcity.org

PUR – Purchase Requisition Form

St.George
THE BRIGHTER SIDE

Requestor & Signer Information

Request Date
10/17/2024

Department *
Operations

Division *
Building Maintenance

☑ **PO Request** ☐ **BPO Request** ☐ **Request for Payment** (Invoice Attached)

Requested By: *
CARLOS ROBLES

Requestor Email *
CARLOS.ROBLES@SGCITY.ORG
10/18/2024
DocuSigned by: Carlos Robles 06B900C3B7CA481...

Authorized Signer Name (up to $25,000) *
CARLOS ROBLES

Authorized Signer Email *
CARLOS.ROBLES@SGCITY.ORG

Department Head Name (required over $25,000)
MARC MORTENSEN

Department Head Email
MARC.MORTENSEN@SGCITY.ORG
10/21/2024
DocuSigned by: MARC MORTENSEN 4540D4669104434...

City Manager Name (required when any procurement policies are waived)

City Manager Email

Purchasing Rep. Name
INVOICES

Purchasing Rep. Email
INVOICES@SGCITY.ORG
10/21/2024
DocuSigned by: Beth D'Antonio 5BE5A39A76F7466...

ISSUED 10-22-24 BD

Procurement Type

Contract Requirements *

- ○ This does NOT Require a contract
- ◉ Contract Drafted by the City's Legal Department
- ○ Contract Drafted by vendor; reviewed & approved by City's Legal Department

City Council Approval Date (if applicable):

Is this a Capital Purchase or Capital outlay Item? *
◉ Yes ○ No

Budget Information (Only Required for Capital outlay Items):

Project Title or Location: *
Animal Shelter

Is the Total Amount Approved in the Budget? *
◉ Yes ○ No

Budgeted Amount: *
$45,000.00

Will this item/Service be recieved/Completed before the fiscal year end? *
◉ Yes ○ No

Procurement Type *
PROFESSIONAL SERVICE (PSA ATTACHED)

SHIP TO ADDRESS: *
NA

New or Existing Vendor? *
EXISTING PARTY

Vendor Information

Vendor Name Legal Name	DBA Name	Vendor ID
Desert Edge Architecture		90018

Please provide the legal name of the vendor

DBA / Common Name

Address
720 S River Rd Suite D2100

City	State	Zip Code
SAINT GEORGE	UT	84770

Country
USA

Is the Address correct? *
(•) Yes ( ) No

Purchase Details

QTY *	Description *	Account Code *	Project Code	Unit Cost *
1	Animal Shelter study and design	40-4000-7964		$37,125.00

Comments / Special Instructions:

Freight / Shipping Cost *
$0.00

Purchase Total
$37,125.00

If purchase exceeds $5,000, it is expected that a minimum of 3 bids/ quotes be obtained and attached.

Vendor 2

Quote Amount

Vendor 3

Quote Amount

Contract: (2)

PSA / Contract - Multiple uploads allowed if multiple contracts. *

PUR - PSA / Contract - For Desert Edge Architecture submitted by CARLOS ROBLES

PUR - PSA / Contract - For Desert Edge Architecture submitted by CARLOS ROBLES

General Attachments: (3)

Quotes - You can submit multiple documents with the same button. Please use the correct button for each type of document (Quotes should be uploaded using the Quotes button etc.) *

PUR - Purchasing Quote - From Desert Edge Architecture requested by CARLOS ROBLES

Supporting Documents

PUR - Supporting Document - For Request # 1556 - CARLOS ROBLES

PUR - Supporting Document - For Request # 1556 - CARLOS ROBLES

PSA / Contract

Purchasing Only

Purchase Request Status	Rejection Reason
Received	

DESERT EDGE architecture

July 17, 2023

Carlos Robles
Facilities Director
St. George City

Re: Animal Shelter Needs Assessment, Feasibility & Design Services

Dear Carlos,

We appreciate the opportunity of proposing needs assessment, feasibility, & design services for a new Animal Shelter in the City of St. George.

Our basic understanding of the project is as follows:

1. It is anticipated the building will be no larger than 7,500 sf. If the needs assessment determines a larger facility is req'd and the city elects to meet that need, our fee will be increased at the cost of $3/sf.
2. Location is at 605 East Waterworks Drive.
3. Existing facility will remain in operation during construction.
4. A Needs Assessment will be provided.
5. Based upon industry pricing and recent completion of other shelters, it is estimated this facility will range on the high end @ $500/sf., or $3,750,000

General Scope:

6. Prepare industry standard large format construction documents including architectural, civil, landscape, structural, electrical, mechanical.
7. Drawings to meet compliance of local building codes and ordinances.
8. Specifications will be limited to basic design build type specifications.
9. Construction administration services to be provided, which will include answering RFI's, reviewing submittals, change orders, etc. This phase will also include one site visit per month for the duration of 9 months by Desert Edge and two site visit by our consultants with one for a substantial completion inspection.
10. Rough-in ONLY for cameras & card readers.

- Our proposed team of consultants is as follows:
  - Civil (NOT PROVIDED)
  - Landscape: TBD
  - Structural: ARW
  - Mechanical: VBFA
  - Electrical: BNA
  - Consulting Architect: Shelter Planners of America (SPOA)

Deliverables will be:

- Digital copies of the items listed above.

The following are excluded as part of our proposal:

- Civil Engineering
- Interior Design/FF&E
- Soils engineering or analysis,
- Services of specialty consultants not listed above.
- Systems for card readers & cameras.

Compensation:

For full design services including construction administration, Desert Edge Architecture proposes a fixed fee of **$ 201,406 (Two Hundred & One Thousand, Four Hundred Six Dollars)**

We also propose/recommend consideration of retaining our services for the initial needs assessment & schematic design which will give you a building design (floorplans & elevations) based upon needs projected out to 2030, and a cost estimate based upon current industry standards. For that initial Assessment & Schematic Design, we'd propose a fee of **$37,125.**

Our work is invoiced monthly based upon our estimate of the work to date. All invoices are due within 30 days. Overdue invoices are subject to interest and late charges.

We welcome the opportunity to discuss the proposal and underlying assumptions with you in detail. Feel free to contact me if you have any questions.

This proposal is not our contract and is understood SG City will prepare the final contract for review & signatures.

Respectfully Submitted,

E. Benjamin Rogers, AIA, NCARB July 18, 2023

CITY OF ST. GEORGE PROFESSIONAL SERVICES AGREEMENT FOR SERVICES WITH DESERT EDGE ARCHITECTURE

This Professional Services Agreement (hereinafter "Agreement") is made and entered into on October 3, 2023 by and between the City of St. George, a municipal corporation, with offices at 175 East 200 North, St. George, Utah 84770 (hereinafter called the "CITY"), and Desert Edge Architecture, with offices at 720 S. River Rd Suite D2100, St. George, UT 84770 (hereinafter "CONSULTANT").

WITNESSETH THAT:

WIIEREAS CITY desires professional services to be performed and has solicited CONSULTANT to provide needs assessment, feasibility & design services (briefly describe services and/or deliverables here) on one or more projects from time to time on an as needed basis (hereinafter called the PROJECT); and

WHEREAS, CONSULTANT has submitted a proposal, which outlines the general scope of services to be provided and the fees for the PROJECT; and

WHEREAS CITY selected CONSULTANT to perform the services for the PROJECT;

NOW, THEREFORE, for the consideration hereinafter set forth, the parties hereto do mutually agree as follows:

1. **ENGAGEMENT OF CONSULTANT.**

1.1 CONSULTANT is a professional licensed by the State of Utah and the City of St. George. CONSULTANT has all licenses, permits, and approvals that are legally required for CONSULTANT to practice its profession and shall keep them in effect at all times during the term of this Agreement.

1.2 CONSULTANT states that it has the necessary knowledge, experience, abilities, skills, and resources to perform its obligations under this Agreement and agrees to perform its obligations under this Agreement in a professional manner, consistent with prevailing industry standards and practices as observed by competent practitioners of the profession in which CONSULTANT and its subcontractors or agents are engaged.

1.3 CONSULTANT certifies that it does not and will not during the performance of this contract knowingly employ, or subcontract with any entity which employs workers in violation of 8 USC §1324(a). CONSULTANT agrees to require all subcontractors at the time they are hired for this project to sign a Certification of Legal Work Status and submit the Certification to CITY prior to any work being

performed by the subcontractors. CONSULTANT agrees to produce, at CITY'S request, documents to verify compliance with applicable State and Federal laws. If CONSULTANT knowingly employs workers or subcontractors in violation of 8 USC § 1324(a), such violation shall be cause for unilateral cancellation of the contract between CONSULTANT and CITY. In addition, CONSULTANT may be suspended from participating in future projects with CITY for a period of one (1) year. In the event this contract is terminated due to a violation of 8 USC § 1324(a) by CONSULTANT or a subcontractor of CONSULTANT, CONSULTANT shall be liable for any and all costs associated with such termination, including, but not limited to, any damages incurred by CITY excluding attorney fees. For purposes of compliance, CITY requires CONSULTANT and subcontractors to use E-Verify or other federally accepted forms of verification to verify the employment eligibility of all employees as allowed by law and the E-Verify procedures. CONSULTANT and subcontractors must maintain authorized documentation of the verification.

1.4 CONSULTANT shall not, either during or after the term of this Agreement, make public any reports or articles, or disclose to any third party any confidential information relative to the work of City or the operations or procedures of CITY without the prior written consent of CITY.

1.5 CONSULTANT further agrees that it shall not, during the term of this Agreement, take any action that would affect the appearance of impartiality or professionalism.

1.6 CONSULTANT, by execution of this Agreement, certifies that it does not discriminate against any person upon the basis of race, color, creed, national origin, age, sex, sexual orientation, gender identity, disability, or marital status in its employment practices.

1.7 CONSULTANT expressly acknowledges and agrees that nothing in this Agreement shall be deemed to relieve CONSULTANT from any obligation to comply with all applicable requirements of CITY during the term of this Agreement including the payment of fees and compliance with all other applicable ordinances, resolutions, regulations, policies, and procedures of CITY, except as modified or waived in this Agreement.

1.8 CONSULTANT shall comply with all applicable federal, state, and local laws, regulations, and ordinances that affect those employees or those engaged by CONSULTANT on the PROJECT, and will procure all necessary licenses, permits and insurance required.

1.9 CITY acknowledges that CONSULTANT may employ various specialized subcontractors for up to 50% of the services provided herein. CONSULTANT shall give written notice to CITY at least seven (7) days prior to CONSULTANT'S employment of the subcontractors to perform portions of the work provided for in this Agreement. It shall be solely CONSULTANT's responsibility to ensure that any of CONSULTANT'S subcontractors perform in compliance with the terms of this Agreement. Subcontractors may not be changed without ten (10) days prior

written notice to CITY.

2. **PROJECT SERVICES DESCRIPTION.**

2.1 CITY makes no guarantee as to the total volume of work, if any, that will be needed under this Agreement. CONSULTANT will provide the services on an as needed basis as described in the attached Scope of Work (**"Exhibit A Scope of Services"**) which is made a part of this Agreement by this reference. As services are needed, CITY shall provide CONSULTANT with a description of the work needed which shall be known as a "Work Order" and CONSULTANT will provide CITY with a specific scope of work and cost for the Work Order, which if accepted by the CITY shall become part of this Agreement binding both parties. CITY may at any time, as the need arises, order changes within the scope of the services without invalidating the Agreement. If such changes increase or decrease the amount due under the Agreement, or in the time required for performance of the work, an equitable adjustment shall be authorized by change order.

2.2 CONSULTANT shall furnish all the material, supplies, tools, transportation, equipment, labor, subcontractor services and other services necessary for the completion of the work described in **"Exhibit A Scope of Services"** or in subsequent Work Orders.

2.3 CONSULTANT shall provide services in compliance with all applicable requirements of federal, state, and local laws, codes, rules, regulations, ordinances, and standards.

3. **TERM OF AGREEMENT.**

3.1 This Agreement shall be effective as of the date executed by all parties and shall continue for one year unless otherwise terminated as set forth in this Agreement. If a Work Order was started during this term but not completed, the terms of this Agreement shall continue through completion of the Work Order.

3.2 CONSULTANT agrees to perform services as expeditiously as is consistent with professional skill and care and the orderly progress of the PROJECT. CONSULTANT shall perform the services in a timely manner according to the schedule approved by CITY.

3.3 CONSULTANT shall perform its services upon notice from the CITY to proceed and in accordance with the schedule approved by CITY. In the event performance of its services is delayed by causes beyond the reasonable control of CONSULTANT, and without the fault or negligence of CONSULTANT, the time for the performance of the services shall be equitably adjusted by written amendment to reflect the extent of such delay. CONSULTANT shall provide CITY with written notice of delay, including a description of the delay and the steps contemplated or taken by CONSULTANT to mitigate the effect of such delay.

4. **COMPENSATION.** For the performance of the services and completion of PROJECT set forth herein, CITY shall pay CONSULTANT as agreed in **"Exhibit A"** and each Work Order as applicable. The aggregate total of all Work Orders shall not exceed **(spell out dollar amount), $(00.00)**. Each individual Work Order shall not exceed **(spell out dollar amount), $(00.00).**

5. **INVOICING, PAYMENT, NOTICES.**

5.1 CONSULTANT shall submit invoices, no more frequently than monthly, for the services rendered during the preceding period; invoices shall describe the services performed, list all subcontractors used and the amount owed or paid to them, list all suppliers used and the amount owed or paid to them, list the contract amount, list the current invoice amount based on percentage of task complete, list the previous invoice amount, list total invoices to date, and list the contract balance.

5.2 In executing the request for payment, CONSULTANT shall attest that payment has been made to all subcontractors involved with prior requests, unless CONSULTANT provides a detailed explanation why such payments have not occurred. CONSULTANT shall also sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status and submit them with each request for payment. CONSULTANT shall require each subcontractor to sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status at the time subcontractor is paid and shall provide a copy of both documents to CITY. CONSULTANT shall also sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status and submit them with each request for payment.

5.3 A "Waiver and Release Upon Final Payment" signed by CONSULTANT attesting that all subcontractors, laborers, and material suppliers involved with prior requests for payment have been paid, and that all subcontractors, laborers, and material suppliers upon which the final payment is based will be paid immediately unless CONSULTANT provides a detailed explanation why such payments have not occurred or will not occur. CONSULTANT shall also require each subcontractor to sign a "Waiver and Release Upon Final Payment" and a Certificate of Legal Work Status at the time subcontractor is paid its final payment and shall provide a copy of both documents to CITY.

5.4 If such liens, claims, security interests or encumbrances remain unsatisfied after payments are made, CONSULTANT shall refund to CITY all money that CITY may be compelled to pay in discharging such liens, including all costs except for attorneys' fees.

5.5 All invoices for reimbursable costs shall be taken from the books of account kept by CONSULTANT, and CONSULTANT shall maintain copies of payroll distribution, receipted bills, and other documents. CITY shall have the right to review all books and records kept by CONSULTANT and any subcontractors concerning the operation and services performed under this Agreement. CITY shall

withhold payment for any expenditure not substantiated by CONSULTANT'S or subcontractor's books and records.

5.6 In the event CITY has made payment for expenditures that are not allowed, as determined by CITY'S audit, CONSULTANT shall reimburse CITY the amount of the un-allowed expenditures. If additional money is owed to CONSULTANT, the reimbursement may be deducted from the additional money owed.

5.7 CITY shall make no payment for any services not specified in this Agreement unless such additional services and the price thereof are agreed to in writing, prior to the time that such additional services are rendered.

5.8 Invoices shall be paid to CONSULTANT within thirty (30) days of presentation to CITY.

5.9 CITY may withhold 5% of billed amount as retention. Retention held shall be included in the final invoice after the contract is complete.

6. **CHARGES AND EXTRA SERVICE.**

6.1 CITY may make changes within the general scope of this Agreement. If CONSULTANT is of the opinion a proposed change causes an increase or decrease in the cost and/or the time required for performance of this Agreement, CONSULTANT shall notify CITY of that fact. An agreed-upon change will be reduced to writing signed by the parties hereto and will modify this Agreement accordingly. CONSULTANT may initiate such notification upon identifying conditions which may change the services agreed to on the effective date of this Agreement, as set forth in **Exhibit A**. However, CONSULTANT represents that to the best of its knowledge that it is not aware of any such conditions on the date hereof. Any such notification must be provided within thirty (30) days from the date of receipt by that party of the other party's written notification of a proposed change.

6.2 CITY may request CONSULTANT to perform extra services not covered by **Exhibit A**, and CONSULTANT shall perform such extra services and will be compensated for such extra services when they are reduced to a writing mutually agreed to and signed by the parties hereto amending this Agreement accordingly.

6.3 CITY shall not be liable for payment of any extra services, nor shall CONSULTANT be obligated to perform any extra services except upon such written amendment.

7. **TO BE FURNISHED BY CITY.** Resources to be furnished by CITY to CONSULTANT, at no cost to CONSULTANT, consist of CITY staff assistance for oversight and meetings to help perform the services. CONSULTANT shall verify accuracy of the information provided, unless otherwise stated in the contract documents.

8. **INSPECTIONS.** All work shall be subject to inspection and approval of CITY or its authorized representative.

9. **ACCURACY AND COMPLETENESS.**

9.1 CONSULTANT has total responsibility for the accuracy and completeness of its investigations, calculations, reports, plans and related designs, specifications and estimates prepared for the PROJECT and shall check all such material accordingly.

9.2 The plans will be reviewed by CITY for conformity with PROJECT objectives and compliance with CITY Standards.

9.3 Reviews by CITY do NOT include the detailed review or checking of major design components and related details or the accuracy with which such designs are depicted on the plans.

9.4 The responsibility for accuracy and completeness remains solely with CONSULTANT and shall be performed consistent with the standard of care.

10. **INDEPENDENT CONTRACTOR.**

10.1 CITY retains and engages CONSULTANT, as an independent contractor, to act for and represent it in all matters involved in the performance of services on the PROJECT, subject to the terms, conditions and stipulations as hereinafter stated.

10.2 It is understood and agreed that CONSULTANT will provide the services without supervision from CITY. CONSULTANT is an independent contractor and is not an employee, officer, or agent of CITY for any purposes related to the performance of this Agreement and is not an employee of CITY and is not entitled to any benefits from CITY.

10.3 Nothing in this agreement shall create nor be construed to constitute a partnership or joint venture between CONSULTANT and CITY.

10.4 CONSULTANT is advised to obtain and maintain in effect during the term of this Agreement medical insurance and disability insurance for all related work performed under this Agreement.

10.5 CONSULTANT acknowledges that CITY will not withhold any federal, state, or local taxes, including FICA, nor will CITY provide any unemployment compensation or worker's compensation coverage. As an independent contractor, CONSULTANT shall be responsible for all taxes, worker's compensation coverage and insurance coverage, and shall hold CITY harmless and indemnify CITY from and against any and all claims related to taxes, unemployment compensation, and worker's compensation.

10.6 CONSULTANT shall secure, at its own expense all personnel required in performing the services under this Agreement. The employees of CONSULTANT shall not be considered employees of CITY nor have any contractual relationship with CITY. CONSULTANT and its employees shall not hold themselves out as, nor claim to be officers or employees of CITY by reason of this Agreement. The employees of CITY shall not be considered employees of CONSULTANT.

10.7 Neither party has the right to bind or obligate the other in any way. CONSULTANT shall not use the name, trademarks, copyrighted materials, or any information related to this Agreement in any advertising or publicity without CITY'S prior written authorization.

11. **INSURANCE.**

11.1 GENERAL: CONSULTANT shall secure and maintain insurance as required by laws and regulations and the terms of this agreement to protect against any liability, loss or expense which occurs or arises as a result of the performance of the services provided pursuant to this agreement or as changed as provided herein. CONSULTANT'S insurer must be authorized to do business in Utah and must have an A.M. Best rating of A VIII or better at the time this contract is executed.

11.2 COMMENCEMENT OF WORK: Neither CONSULTANT, its Suppliers nor any subcontractors shall enter the site of the work or commence work under this contract before CITY has received and accepted Certificate(s) of Insurance and Insurance Endorsements and has issued the Notice to Proceed, as applicable.

11.3 INSURANCE CERTIFICATES AND COVERAGE: Insurance certificates shall be issued on all policies required under this contract and shall be signed by an authorized representative of the insurance company. The insurance certificate or the coverage required shall include the following:

A. The name and address of the insured.

B. CITY shall be named as a Certificate Holder.

C. CITY shall be named as an additional primary insured on the General Liability Certificate with CITY listed as non-contributory on the General Liability certificate.

D. The location of the operations to which the insurance applies.

E. The number of the policy and the type or types of insurance in force thereunder on the date borne by the certificate.

F. The expiration date of the policy and the limit or limits of liability thereunder on the date borne by the certificate.

G. A statement that all coverage is on an occurrence basis rather than a claims basis except for the Professional Errors and Omissions Malpractice Insurance coverage.

H. A provision that the policy or policies will not be canceled, denied renewal, or reduced in coverage until at least 30 days after written notice has been received by CITY.

I. Name, address, and telephone number of the insurance company's agent of process in Utah.

J. Other information to demonstrate compliance with additional requirements stipulated for the various types of insurance coverage.

11.4 COMPENSATION INSURANCE: CONSULTANT shall, as applicable, take out and maintain Workers' Compensation Insurance as required by the Labor Code for all its employees at the site of the work during the life of this contract. Coverage must be provided by a company authorized by the State of Utah to provide Workers' Compensation Insurance. The insurance shall include:

A. Insurance certificates shall provide a waiver of subrogation by the carrier to Certificate Holder.

B. CONSULTANT shall require each subcontractor to provide Workers' Compensation Insurance for its employees unless such employees are covered by CONSULTANT.

C. In the event any class of employees engaged in hazardous work under this contract is not protected by the Workers' Compensation Statute, CONSULTANT shall provide, and shall cause its subcontractors to provide, special insurance for the protection of such employees not otherwise protected.

11.5 COMMERCIAL GENERAL LIABILITY INSURANCE: CONSULTANT shall procure and maintain commercial general liability insurance for the duration of the contract against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONSULTANT, its agents, representatives, employees, or subcontractors. The insurance shall remain in effect during the term of this agreement and such that claims reported beyond the date of substantial completion of this agreement are covered and during the warranty period, to the extent that it relates to the activities covered by this Agreement, in such manner and amounts as set forth herein. The Insurance Endorsement shall evidence such provisions.

A. The minimum commercial general liability insurance shall be as follows:

i. Comprehensive general liability insurance for injuries, including

accidental death, to any one person in any one occurrence in an amount not less than $1,000,000.00 Dollars.

ii. Comprehensive general liability insurance for injuries, including accidental death, to two or more persons in any one occurrence in an amount not less than $3,000,000.00 Dollars (umbrella coverage may be considered).

iii. Broad form property damage insurance in an amount not less than $300,000.00 Dollars.

B. Such policy shall include each of the following coverages (as applicable):

i. Comprehensive form.
ii. Premises - operations.
iii. Explosion and collapse hazard.
iv. Underground hazard.
v. Product/completed operations hazard.
vi. Contractual insurance.
vii. Broad form property damage, including completed operations.
viii. Independent contractors for vicarious liability.
ix. Personal injury.
x. Cross liability or severability of interest's clause shall be included unless a separate policy covering CITY is provided.

11.6 PROFESSIONAL LIABILITY ERRORS AND OMISSIONS INSURANCE:

A. CONSULTANT shall carry and maintain Professional Liability Errors and Omissions Insurance in an amount not less than $3,000,000.00 Dollars for all work performed under this Agreement.

B. CONSULTANT shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONSULTANT, its agents, representatives, employees, or subcontractors. With respect to General Liability, Professional liability coverage should be maintained for a minimum of five (5) years after contract completion.

C. If Professional Liability coverages are written on a claims-made form:

i. The retroactive date must be shown and must be before the date of the contract or the beginning of contract work.
ii Insurance must be maintained, and evidence of insurance must be provided, for at least five (5) years after completion of the contract of work.
iii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective date, the CONSULTANT must purchase an

extended period coverage for a minimum of five (5) years after completion of contract work.

iv. A copy of the policy must be submitted to CITY for review.

11.7 BUSINESS AUTOMOBILE COVERAGE: CONSULTANT shall carry and maintain business automobile insurance coverage on each vehicle used in the performance of the work in an amount not less than $1,000,000.00 Dollars for one person and $3,000,000.00 Dollars for more than one person and for property damage resulting from any one occurrence which may arise from the operations of CONSULTANT in performing the work.

Such business automobile insurance shall include each of the following types:

A. Comprehensive form, including loading and unloading.
B. Owned.
C. Hired.
D. Non-owned.

12. **INDEMNITY AND LIMITATION.**

12.1 Except as otherwise provided herein, CONSULTANT shall indemnify, defend, and hold harmless CITY, its elected officials, officers, employees, and representatives against any and all claims, suits, causes of action, demands, losses, costs, and damages and liability of every kind including but not limited to all fees and charges of professionals, except for attorney's fees, and all court or other dispute resolution costs for:

A. death or injuries to persons or for loss of or damage to property which directly or indirectly, in whole or in part are caused by, resulting from, or arising out of the intentional, reckless, negligent, or wrongful acts, errors or omissions, or other liability imposed by law of CONSULTANT, its officers, employees, agents, or representatives in the performance of services under this Agreement or any subcontractor, any supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work;

B. CONSULTANT's failure or refusal, whatever the reason, to pay subcontractors or suppliers for Work performed under the Agreement;

C. claims by any employee of the CONSULTANT, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, CONSULTANT'S indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONSULTANT or any subcontractor under workmen's compensation acts, disability benefit acts or other employee benefits acts.

12.2 CITY shall give CONSULTANT prompt written notice of any such claims or suits filed against CITY arising out of the services provided under this Agreement. CONSULTANT agrees to defend against any claims brought or actions filed against CITY arising out of the services provided under this Agreement. If CITY'S tender of defense, based upon the indemnity provision, is rejected by CONSULTANT or CONSULTANT'S insurer, and CONSULTANT is later found by a court of competent jurisdiction to have been required to indemnify the CITY, then, in addition to any other remedies the CITY may have, CONSULTANT shall pay the CITY'S reasonable costs and expenses, except for attorney's fees, incurred in obtaining such indemnification, defending themselves or enforcing the indemnification provision.

12.3 The insurance requirements in this agreement shall not be construed as limiting CONSULTANT'S liability. Irrespective of the requirements for CONSULTANT to carry insurance as provided herein, insolvency, bankruptcy, or failure of any insurance company to pay all claims accruing shall not be held to relieve CONSULTANT of any obligations under this agreement.

12.4 This section does not apply to a design professional services contract, design professional services, and design professionals.

13. **DOCUMENTS.**

13.1 All data used in compiling CONSULTANT's work, and the results of any tests or surveys, as well as all photographs, drawings, electronically stored records of work performed, renderings, specifications, schedules, CONSULTANT's work, data processing output, computations, studies, audits, research, reports, models and other items of like kind prepared by CONSULTANT, and its employees, shall be the sole and exclusive property of CITY, and CITY shall own all intellectual property rights thereto whether the specific work project for which they are made is undertaken or not. CONSULTANT may retain reproducible copies of all the foregoing documents for information and reference and customary marketing and public relations. The originals of all the foregoing documents shall be delivered to CITY promptly upon completion thereof. This provision may be enforced by an order of specific performance and is independent of any other provision of this Agreement. Compliance by CONSULTANT with this paragraph shall be a condition precedent to CITY's obligation to make final payment to CONSULTANT. If CITY has specific requirements on the information and manner the documentation is collected, CITY shall provide those specifics to CONSULTANT in writing.

13.2 Plans, specifications, maps, and record drawings prepared or obtained under this Agreement shall be provided to CITY in a format approved by CITY which shall generally be a hard copy and an electronic copy and shall become the property of CITY whether the work for which they are prepared is executed or not.

13.3 The basic survey notes and sketches, charts, computations, and other data prepared under this Agreement shall be made available upon request to CITY without restriction or limitation on their use.

13.4 CITY shall have the right to use reports, designs, details, or products developed as part of this Agreement for purposes of maintenance, remodeling or reconstruction of existing facilities or construction of new facilities without additional compensation to CONSULTANT or without restriction or limitation on its use even if documents are considered copyrighted material.

13.5 CITY will hold harmless CONSULTANT for any use or reuse of these reports, designs, or details for purposes other than the project associated with this Agreement unless CITY obtains validation of that use or reuse from CONSULTANT.

14. **RECORDS.**

14.1 CONSULTANT shall maintain records, books, documents, and other evidence directly pertinent to the performance of services under this Agreement in accordance with generally accepted accounting principles and practices.

14.2 CONSULTANT agrees to keep proper books of records and accounts in which complete and correct entries will be made of payroll costs, travel, subsistence, and field expenses.

14.3 Said books shall, at all times, be available for at least three (3) years after final payment for reasonable examination by CITY.

15. **TERMINATION.**

15.1 CITY may terminate this Agreement by providing fourteen (14) days written notice prior to the effective termination date to CONSULTANT.

15.2 In the event of such termination, CITY shall pay CONSULTANT for all services actually rendered up to and including the date of termination.

15.3 CONSULTANT shall deliver to CITY copies of all drawings, reports, analyses, documents, and investigations, whether completed or not, that were prepared or were being prepared under the provisions of this Agreement.

16. **CONFLICT BETWEEN DOCUMENTS.** In the event of a conflict between this Agreement and any other documents with CONSULTANT, this Agreement shall govern.

17. **CONFLICT OF INTEREST.** CONSULTANT certifies that it has disclosed to CITY any actual, apparent or potential conflicts of interest that may exist relative to the services to be provided pursuant to this Agreement.

17.1 CONSULTANT agrees to advise CITY of any actual, apparent or potential conflicts of interest that may develop after the date of execution of this Agreement.

17.2 CONSULTANT further agrees to complete any statements of economic interest required by either CITY ordinance or State law.

18. **NON-WAIVER.** No failure or waiver or successive failures or waivers on the part of either party hereto, their successors or permittee assigns, in the enforcement of any condition, covenant, or Article of this Agreement shall operate as a discharge of any such condition, covenant, or Article nor render the same invalid, nor impair the right of either party hereto, their successors or permitted assigns, to enforce the same in the event of any subsequent breaches by the other party hereto, its successors or permitted assigns.

19. **NOTIFICATION.** All notices required or permitted to be made by either party in connection with this Agreement shall be in writing, and shall be deemed to have been duly given: (a) five (5) business days after the date of mailing if sent by U.S. mail, postage prepaid, (b) when transmitted if sent by facsimile, provided a confirmation of transmission is produced by the sending machine and a copy of such facsimile is promptly sent by another means specified in this Section; or (c) when delivered if delivered personally or sent by express courier service. All notices shall be sent to the other party at its address as set forth below unless written notice is given by either party of a change of address:

CITY:	City of St. George 175 East 200 North St. George, Utah 84770	CONSULTANT:	Desert Edge Architecture 720 S. River Rd Suite D2100 St. George, UT 84770
Attention:	City Attorney	Attention:	Ben Rodgers
Copy:	legal@sgcity.org		

20. **GOVERNING LAW AND VENUE.** This Agreement shall be construed according to the laws of the State of Utah. The parties agree that venue for all legal actions, unless they involve a cause of action with mandatory federal jurisdiction, shall be the Fifth District Court for the State of Utah. The parties further agree that the Federal District Court for the District of Utah shall be the venue for any cause of action with mandatory federal jurisdiction. The parties shall have all rights and remedies provided under applicable Federal or State law for a breach or threatened breach of this Agreement. These rights and remedies shall not be mutually exclusive, and the exercise of one or more of these rights and remedies shall not preclude the exercise of any other rights and remedies. Each party agree that damages at law may be an inadequate remedy for a breach or threatened breach of any provision hereof and the respective rights and obligations of the parties hereunder shall be enforceable by specific performance, injunction, or other equitable remedy. Nothing in this Agreement shall be construed to waive the sovereign immunity of the government parties.

21. **LEGAL FEES.** Should any party default on any of the covenants or agreements contained herein, the defaulting party shall pay all costs and expenses, (excluding reasonable attorney's fees,) which may arise or accrue from enforcing this Agreement or in pursuing any remedy provided hereunder or by applicable law, whether such remedy is pursued by

filing a lawsuit or otherwise. This obligation of the defaulting party to pay costs and expenses includes, without limitation, all costs, and expenses, (excluding reasonable attorney's fees) including appeals and bankruptcy proceedings. If either party commences legal action to interpret any term of this agreement, the prevailing party shall be entitled to recover all reasonable fees (excluding attorney's fees), court costs, and any other costs incurred in connection with such action. The parties agree that they shall each pay their own attorney's fees.

22. **MODIFICATION OF AGREEMENT.** CITY specifically reserves the right to modify or amend this Agreement and the total sum due hereunder either by enlarging or restricting the scope of the Work. All modifications shall be in writing and executed by both parties. Each Work Order adopted under this Agreement shall incorporate the terms and conditions of this Agreement and shall constitute a modification to this contract. A Work Order may amend the terms and conditions of this Agreement only as they apply to that particular Work Order and shall not have any general effect on this Agreement.

23. **RESERVED LEGISLATIVE POWERS.** Nothing in this Agreement shall limit the future exercise of the police power by CITY in enacting zoning, subdivision, development, transportation, environment, open space, and related land use plans, policies, ordinances, and regulations after the date of this Agreement, but which shall not be retroactively applied to or modify this Agreement.

24. **SUCCESSORS AND ASSIGNS.** CONSULTANT shall not assign, sublet, sell, transfer, or otherwise dispose of any interest in this Agreement without assigning the rights and the responsibilities under this Agreement and without the prior written approval of CITY. This Agreement shall be binding upon and inure to the benefit of the parties hereto, their successors and permitted assigns, but shall not inure to the benefit of any third party or other person.

25. **NO JOINT VENTURE, PARTNERSHIP OR THIRD-PARTY RIGHTS.** It is not intended by this Agreement to, and nothing contained in this Agreement shall, create any partnership, joint venture, or other arrangement between the parties. No term or provision of this Agreement is intended to or shall, be for the benefit of any person, firm, organization, or corporation not a party hereto, and no such other person, firm, organization, or corporation shall have any right or cause of action hereunder.

26. **INTEGRATION.** This Agreement contains the entire Agreement with respect to the subject matter hereof and integrates all prior conversations, discussions or understanding of whatever kind or nature between CITY and CONSULTANT and supersedes and replaces all terms and conditions of any prior agreements, arrangements, negotiations, or representations, written or oral, with respect to this PROJECT.

27. **SEVERABILITY.** If any part or provision of this Agreement shall be determined to be unconstitutional, invalid or unenforceable by a court of competent jurisdiction, then such a decision shall not affect any other part or provision of this Agreement except that specific provision determined to be unconstitutional, invalid or unenforceable. If any condition, covenant or other provision of this Agreement shall be deemed invalid due to its scope or

breadth, such provision shall be deemed valid to the extent of the scope or breadth permitted by law.

28. **CONSTRUCTION.** Each of the parties hereto has had the opportunity to review this agreement with counsel of their choosing and the rule of contracts requiring interpretation of a contract against the party drafting the same is hereby waived and shall not apply in interpreting this agreement.

29. **SURVIVAL.** It is expressly agreed that the terms, covenants, and conditions of this Agreement shall survive any legal act or conveyance required under this Agreement.

30. **HEADINGS.** The section and other headings in this Agreement are for reference purposes only and shall not in any way affect the meaning or interpretation of this Agreement.

31. **COUNTERPARTS.** This Agreement may be signed in counterparts and each such counterpart shall constitute an original document. All such counterparts, taken together, shall constitute one and the same instrument. Any signature on this Agreement transmitted by facsimile, electronically in PDF format, or by other generally accepted means of conveying digital signatures (e.g. DocuSign) shall by deemed an original signature for all purposes and the exchange of copies of this Agreement and of signature pages by any such transmission, or by a combination of such means, shall constitute effective execution and delivery of this Agreement as to the Parties and may be used in lieu of the original for all purposes.

32. **AUTHORITY OF PARTIES.** The parties executing this Agreement hereby warrant and represent that they are duly authorized to do so in the capacity stated and that this Agreement constitutes a valid and binding Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by the CITY and CONSULTANT effective from the day and year first written above.

CITY OF ST. GEORGE

DocuSigned by:
Michele Randall
45F03D8BD52747F...
10/11/2023
Mayor, Michele Randall — Date

ATTEST:

DocuSigned by:
13455BEE25724B4...
Christina Fernandez, City Recorder

CONSULTANT (Desert Edge Architecture)

DocuSigned by:
Ben Rogers
15ADA0904B1546F...
Ben Rodgers, Owner

APPROVED AS TO FORM:
CITY ATTORNEY'S OFFICE

DocuSigned by:
Daniel Baldwin
7B217FEC9D7D472...
Daniel Baldwin, Assistant City Attorney

EXHIBIT A
SCOPE OF SERVICES

This Exhibit A Scope of Services is attached to, and fully incorporated into, the Professional Services Agreement by and between the City of St. George (the "City") and the following individual or entity ("Contractor"):

Name: Desert Edge Architecture

Address: 720 S. River Rd Suite D2100, St. George, UT 84770

Email: ben@desertedge.co Phone Number: (435) 673-7362

Scope of Services and/or Deliverables by Contractor:

- Needs assessment
- Feasibility
- Design services

Compensation: City shall pay Contractor the following sum:

- $37,125

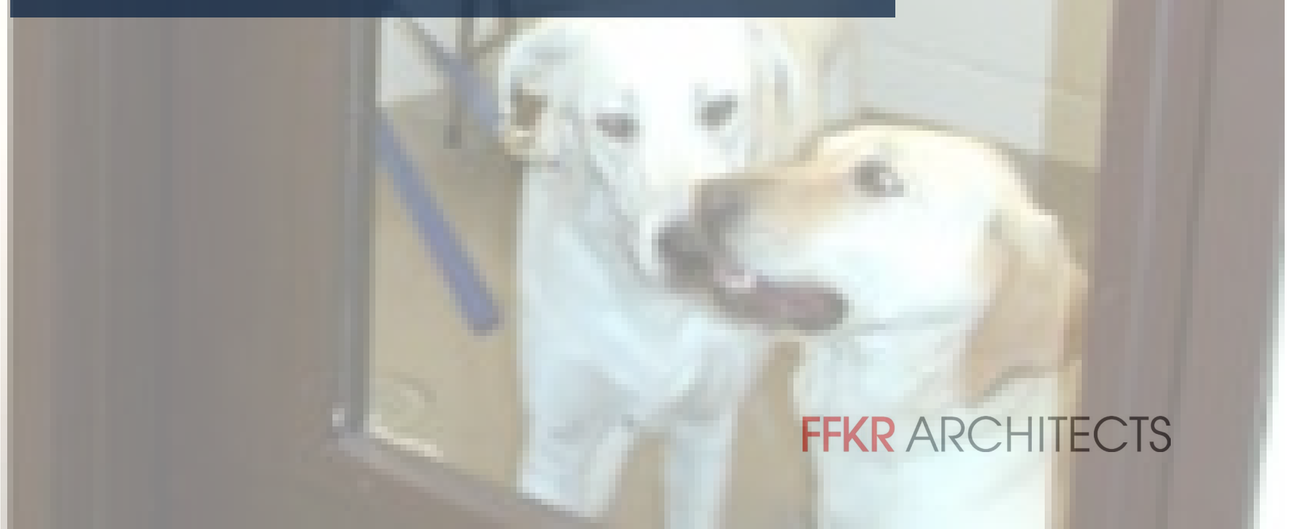
ST. GEORGE POLICE & ANIMAL SHELTER

St.George

FFKR ARCHITECTS

"Shelter Planners of America"®

A Division of FMD Architects



St. George Animal Shelter

SHELTER PROGRAM

FIGURE 1. EXISTING AND PROJECTED HUMAN POPULATION AND ANIMAL INTAKE

	2023 Human Population Estimate	2023 Actual Animal Intake	2023 Intake as a % of Population	2033 Human Population Estimate	2033 Projected Intake Ratio	2033 Projected Animal Intake	2043 Human Population Estimate	2043 Projected Intake Ratio	2043 Projected Animal Intake
Dogs		790	0.74%		0.74%	1,217		0.74%	1,807
Cats		458	0.43%		0.43%	706		0.43%	1,048
Other		38	0.04%		0.04%	59		0.04%	87
Total	107,197	1,286	1.20%	165,192	1.20%	1,982	245,196	1.20%	2,942

FIGURE 2. CURRENT AVERAGE LENGTH OF STAY (ALS)

Based on Existing Housing Spaces			
	2023 Actual Intake	Existing Housing Spaces	Current ALS
Dogs	790	42	19
Cats	458	29	23
Other	38	0	#DIV/0!
Total	1,286	71	

FIGURE 3. 2033 AND 2043 PROJECTED ANIMAL HOUSING NEEDS

2033 (10-YEAR PROJECTION)			
	2032 Projected Animal Intake	Desired ALS	Number of Animals to be Housed
Dogs	1,217	20	64
Cats	706	23	44
Other	59	20	3
Total	1,982		112

2043 (20-YEAR PROJECTION)			
	2042 Projected Animal Intake	Desired ALS	Number of Animals to be Housed
Dogs	1,807	20	99
Cats	1,048	23	66
Other	87	14	3
Total	2,942		168

SHELTER PROGRAM

Summary:	Interior	Exterior
A. Administrative	3,918	
B. Medical Clinic	0	
C. Animal Housing (Interior)	5,904	
D. Animal Housing (Exterior)		2,697
E. Animal Support Area (Interior)	2,226	
F. Animal Support Area (Exterior)		1,000
TOTAL SF	12,048	3,697
COMBINED SF	15,745	

SECTION A - ADMINISTRATIVE

	Room or Space	No. of Rooms				SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
	PUBLIC AREAS									
1	Adoption Lobby	1				300		300		Visitor seating for 8. Approximate 10' wall for retail display shelves viewable from Customer Service Counter. Consider large screen TV.
2	Vestibule for Adoption Lobby	0				80		-		
3	Animal Services Lobby	1				200		200		Visitor seating for 2, wall to separate from Adoption Lobby.
4	Vestibule for Animal Services Lobby	0				80		80		
5	Customer Service Counter (4 Customer Service Representatives at counter)	1				240		240		Arrange counter to serve both the Adoption Lobby and the Animal Services Lobby. Space for 2 staff at each Lobby and yet be connected to conserve staff time.
6	Adoption Interview Space	2				64		128	One adjacent to Adoption Lobby and one adjacent to Animal Services	Semi-private cubicles with small table where potential Adopters can fill out paperwork and then an Adoption Counselor can come speak with them.
7	Multi-purpose Meeting Room	1				450		450	Adjacent to Lobby for after-hours use, including use of toilet	Seating for 20 in chairs. As many seated at table as will fit and that is estimated at 16. Counter with sink, refrigerator, microwave
8	Meeting Room Storage	1				80		80	Adjacent to Meeting Room	To store tables and chairs when not in use and other materials to support meeting room.
9	Meeting Room Kitchen	0				80		-		In Meeting room not a separate space
10	Public Toilets	2				65		130		One mens, one womens unisex type. Verify code minimum.

SHELTER PROGRAM

SECTION A - ADMINISTRATIVE - Continued

	Room or Space	No. of Rooms			No. of People	SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
	OFFICES									
11	Shelter Manager's Office	1			1	100		100		
12	Animal Services Manager's Office	1			1	100		100		
13	Client Service Supervisor's Office	1			1	100		100		
15	Office 1	1			1	100		100		
16	Office 2	1			1	100		100		
17	Office	1			1	100		100		
18	Animal Service Office Group Office	1			6	36		216		countertop with computer work stations for 6
19	Staff Breakroom	1				150		150	Consider access to outdoor space	Counter with sink, microwave, refrigerator, coffee maker, seating at table for 4
20	Staff Locker Alcove	1				20		20	In an alcove in a Staff Only Corridor	20 Lockers for staff 1' x1' x6'
21	Staff Toilets	2				60		120		One mens, one womens unisex type. Verify code minimum.
22	Staff Shower Room	1				60		60		
23	Mechanical/ Elec Room	1				150		150		
24	Data/Phone Closet	1				40		40		
25	Janitorial Closet	1				50		50		
	Subtotal:							3,014		
	Net to Gross SF Factor 30%:							904		
	Departmental Gross Area:							3,918		

SHELTER PROGRAM

SECTION B - MEDICAL CLINIC- NO MEDICAL CLINIC

	Room or Space	No. of Rooms			No. of People	SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Prep/Treatment Room	0				150		-		
2	Pre-Op/Post-Op Holding - Dogs	0				120		-		
3	Pre-Op/Post-Op Holding - Cats	0				90		-		
15	Surgery Room	0				120		-		
17	Work Stations for Vet Techs	0			1	36		-		
18	Laboratory / Pharmacy Alcove	0			1	100		-		
22	Clean Up Area	0				80		-		
								-		
	Subtotal:							-		
	Net to Gross SF Factor 30%:							-		
	Departmental Gross Area:							-		

SHELTER PROGRAM

SECTION C - ANIMAL HOUSING - INTERIOR

	Room or Space	No. of Spaces	Animals per Space	Animals to be Housed	Size			SF of Each	SF of Walkway	Total SF	Adjacent to or Near	Equipment / Comments
1	Adoption Dog Runs - Jumbo	4	2	4	6.0	x	6.0	36	30	264		See corresponding Exterior Run
2	Adoption Dog Runs - Standard	32	1	32	4.7	x	6.0	28	23.3	1,640		See corresponding Exterior Run
3	Stray Dog Runs - Jumbo	1	1	1	6.0	x	6.0	36	30	66		See corresponding Exterior Run
4	Stray Dog Runs - Standard	16	1	16	4.7	x	6.0	28	23.3	820		See corresponding Exterior Run
5	Nursing Mother Dogs - Jumbo	0	1	0	6.0	x	6.0	36	30	-		See corresponding Exterior Run
6	Medical Observation Dog Runs	4	1	4	4.7	x	6.0	28	23.3	205		See corresponding Exterior Run
7	Medical Isolation Dog Runs	3	1	3	4.7	x	6.0	28	23.3	154		See corresponding Exterior Run
8	Quarantine Dog Runs	0	1	0	4.7	x	6.0	28	23.3	-		See corresponding Exterior Run
9	Puppy Pens	2	2	4	4.0	x	5.0	20	25	90		See corresponding Exterior Run.
10	Transfer Dog Runs - Jumbo	0	2	0	6.0	x	6.0	36	30	-		See corresponding Exterior Run
11	Transfer Dog Runs - Standard	0	1	0	4.7	x	6.0	28	23	-		See corresponding Exterior Run
	TOTAL DOGS:			64								
12	Adoption Cat Room - Adult	8	1	8				5	12	136		Each cat is housed in a 2-compartment cage.
13	Adoption Cat Room - Kitten	0		0								
14	Cat Community Rooms (18 SF / cat Free Roam)	7	6	42	9.0	x	12.0	108		756		
15	Stray Cat Room - Adult	8	1	8				5	12	136		Each cat is housed in a 2-compartment cage.
16	Stray Cat Room - Feral	0		0				5	12	-		
16	Stray Cat Room - Kitten	0		0				5	12	-		
17	Nursing Mother Cats	0		0				5	12	-		
18	Medical Observation Cats - Non-Viewable	0	1	6				5	12	102		Each cat is housed in a 2-compartment cage.
19	Medical Isolation Cats - Non-Viewable	6	1	6				5	12	102		Each cat is housed in a 2-compartment cage.
20	Quarantine Cat Room - Viewable by public	6	1	0				5	12	-		Each cat is housed in a 2-compartment cage.
	TOTAL CATS:			70								
21	Other Animals	0	1	3				6	16	71		
									-	-		
								-	-	-		
	Subtotal:									4,542		
	Net to Gross SF Factor 30%:									1,363		
	Departmental Gross Area:									5,904		

SHELTER PROGRAM

SECTION D - ANIMAL HOUSING - OUTDOOR COVERED

	Room or Space	No. of Spaces	Animals per Space		Size			SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Adoption Dog Runs - Jumbo	4	2		6.0	x	8.0	48		192		See corresponding Interior Run
2	Adoption Dog Runs - Standard	32	1		4.6	x	8.0	37		1,178		See corresponding Interior Run
3	Stray Dog Runs - Jumbo	1	1		6.0	x	8.0	48		48		See corresponding Interior Run
4	Stray Dog Runs - Standard	16	1		4.6	x	8.0	37		589		See corresponding Interior Run
5	Nursing Mother Dog Runs - Jumbo	-	1		6.0	x	8.0	48		-		See corresponding Interior Run
6	Medical Observation Dog Runs	4	1		4.6	x	8.0	37		147		See corresponding Interior Run
7	Medical Isolation Dog Runs	3	1		4.6	x	8.0	37		110		See corresponding Interior Run
8	Dog Quarantine Runs	-	1		4.6	x	8.0	37		-		See corresponding Interior Run
9	Puppy Runs -	2	2		4.6	x	6.0	28		55		See corresponding Interior Run
10	Transfer Runs - Jumbo	-	1		6.0	x	8.0	48		-		See corresponding Interior Run
11	Transfer Runs - Standard	-	2		4.6	x	8.0	37		-		See corresponding Interior Run
12	Cat Sun Porch	7			9.0	x	6.0	54		378		See corresponding Interior Run
	Subtotal:									2,697		
	Departmental Gross Area:									2,697		

SHELTER PROGRAM

SECTION E - ANIMAL SUPPORT AREA - INTERIOR

	Room or Space	No. of Rooms				SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Animal Receiving	1				250		250	Near Admissions Lobby and Sally Port	Counter with sink, refrigerator, scales, space to photograph animals,
2	Dog Intake Holding	1				72		72	Animal Receiving	two 4'x4' pens
3	Cat Intake Holding	1				40		40	Animal Receiving	2 cat cages
4	Get Acquainted Rooms	0				80		-		use Behavior traing room
6	Behavior Training Room	1				300		300		
7	Animal Kitchen	2				100		200		Counter with 3-compartment sink,NO commercial dishwasher, and refrigerator
8	Food and Litter Storage	1				150		150		
9	Food Storage for Giveaway Program	1				100		100		
10	Laundry	1				200		200		space for 2 residential washer and dryers for intial construction but plan for the possiibility to upgrade to 2 Commercial washers and dryers in the future. Folding table, shelves and space for carts. St George Animal Services to confirm number of lbs. of laundry per day per dog.
11	Cleaning Equipment Room	2				100		200	One for Dogs and one for Cats	Cleaning supplies, pressure wash equipment, space for janitor's sink, trash cans, etc.
14	Feral Cat Holding	1				50		50	Near Sally Port	stainless steel shelves of 10 cats in traps
17	Mechanical Room	1				150		150		
	Subtotal:							**1,712**		
	Net to Gross SF Factor 30%:							514		
	Departmental Gross Area:							**2,226**		

SECTION F - ANIMAL SUPPORT AREA - UNFINISHED SPACE

	Room or Space	No. of Rooms				SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Enclosed Sally Port (1 spaces)	1				500		500		back in is acceptable
5	Foster Storage	1				100		100	Medical Lobby	Space for litter, food, formula, crates
6	Event Storage	1				100		100		
7	Trap Storage	1				100		100		
8	Crate Storage	1				100		100		
9	Storage for Animal-Related Items	1				100		100		
	Subtotal:							**1,000**		
	Departmental Gross Area:							**1,000**		

SHELTER PROGRAM

G. Summary: The existing site could potentially be used to construct a new shelter the size needed to meet the 10 year planning horizon if multi-story building is acceptable. But if SGAS wants to plan for a 20 year planning horizon, it is our opinion they should look for another site. If SGAS decides to look for other sites, please allow SPA to review potential sites before purchasing to “test fit” and evaluate to the criteria provided.

Based on New Construction on an Existing Site:

	2033
Fully Enclosed Space - SF :	12,048
Exterior Space - SF :	3,697
Total SF :	15,745

			LOW	HIGH
		New Construction	Total Cost at $391.00	Total Cost at $421.00
Fully Enclosed Space		**Total SF**	**Per SF**	**Per SF**
A Administrative Areas		3,918		
B Medical Clinic		-		
C Animal Housing - Interior		5,904		
D Animal Support Areas - Interior		2,226		
Subtotals:		12,048	$ 4,710,869	$ 5,072,317
				Total Cost at
			$273.70	$294.70
Exterior Space		**Total SF**	**Per SF**	**Per SF**
E Animal Housing - OUTDOOR COVERED		2,697		
F Animal Support Areas - Exterior - UNFINISHED SPACE		1,000		
Subtotals:		3,697	$ 1,011,924	$ 1,089,565
Building - Sub-Totals:		**15,745**	**$ 5,722,793**	**$ 6,161,882**
	Low High			
Site Work & Parking	10% 15%		$ 572,279	$ 924,282
Total Construction Cost			**$ 6,295,072**	**$ 7,086,164**
		Total Cost / SF	**$ 400**	**$ 450**

Consider Budgeting for the following:

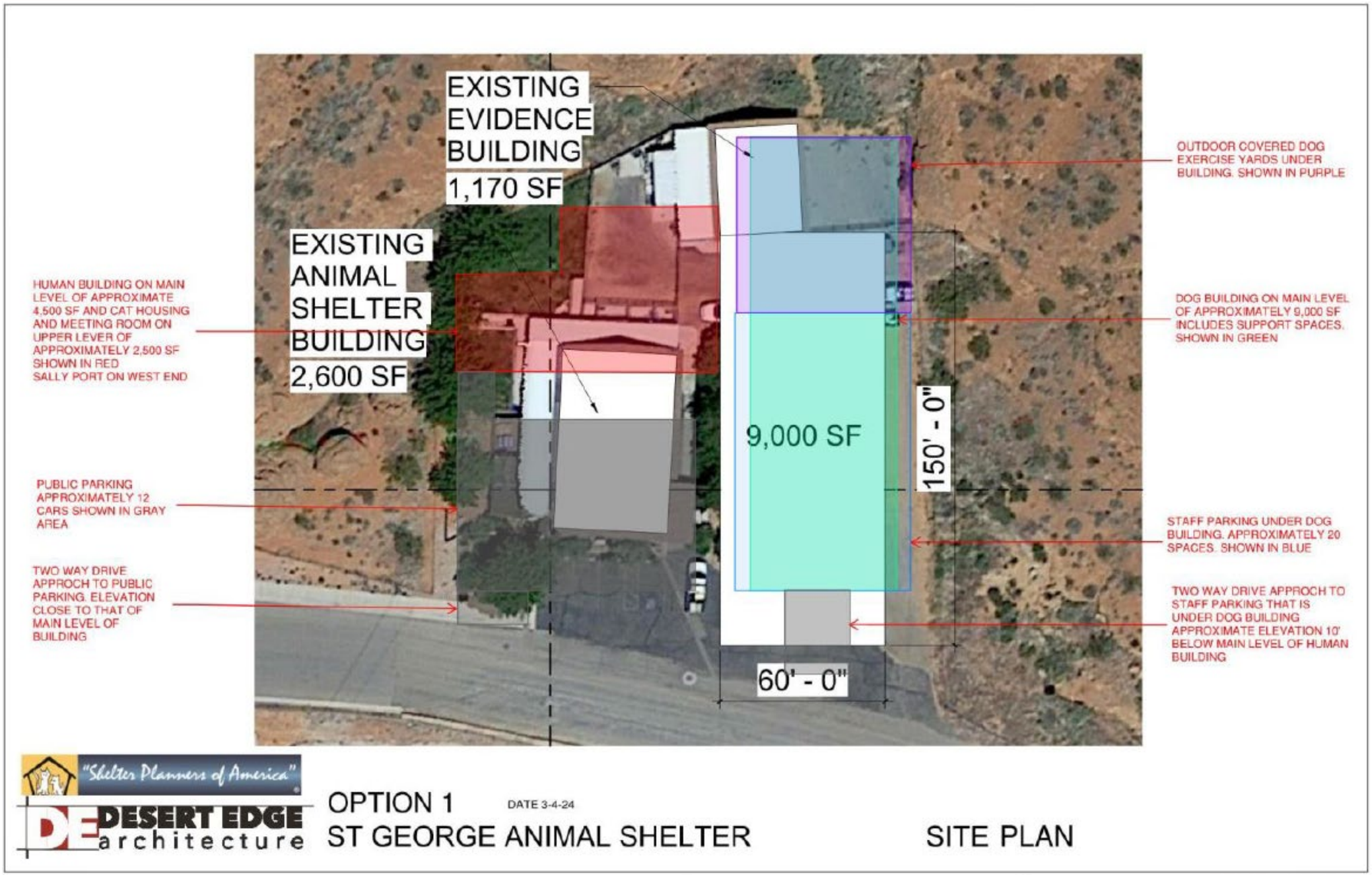
Soft Costs	15%		$ 944,261	$ 1,062,925
(AE Fees, Civil Engineering, Surveying, Soil Tests, Construction Materials Testing, Air Balancing, Furnishing, Loose Equipment, Computers & Phone System, etc.)				
Contingency	5%		$ 361,967	$ 407,454
Estimated Total Project Cost			**$ 7,601,299**	**$ 8,556,543**

*Note: 1. This does not include the cost of land.

2. Please note, the Opinion of Probable Cost provided is based on historical costs of other animal shelter projects, but the construction market is extremely unpredictable at this time.

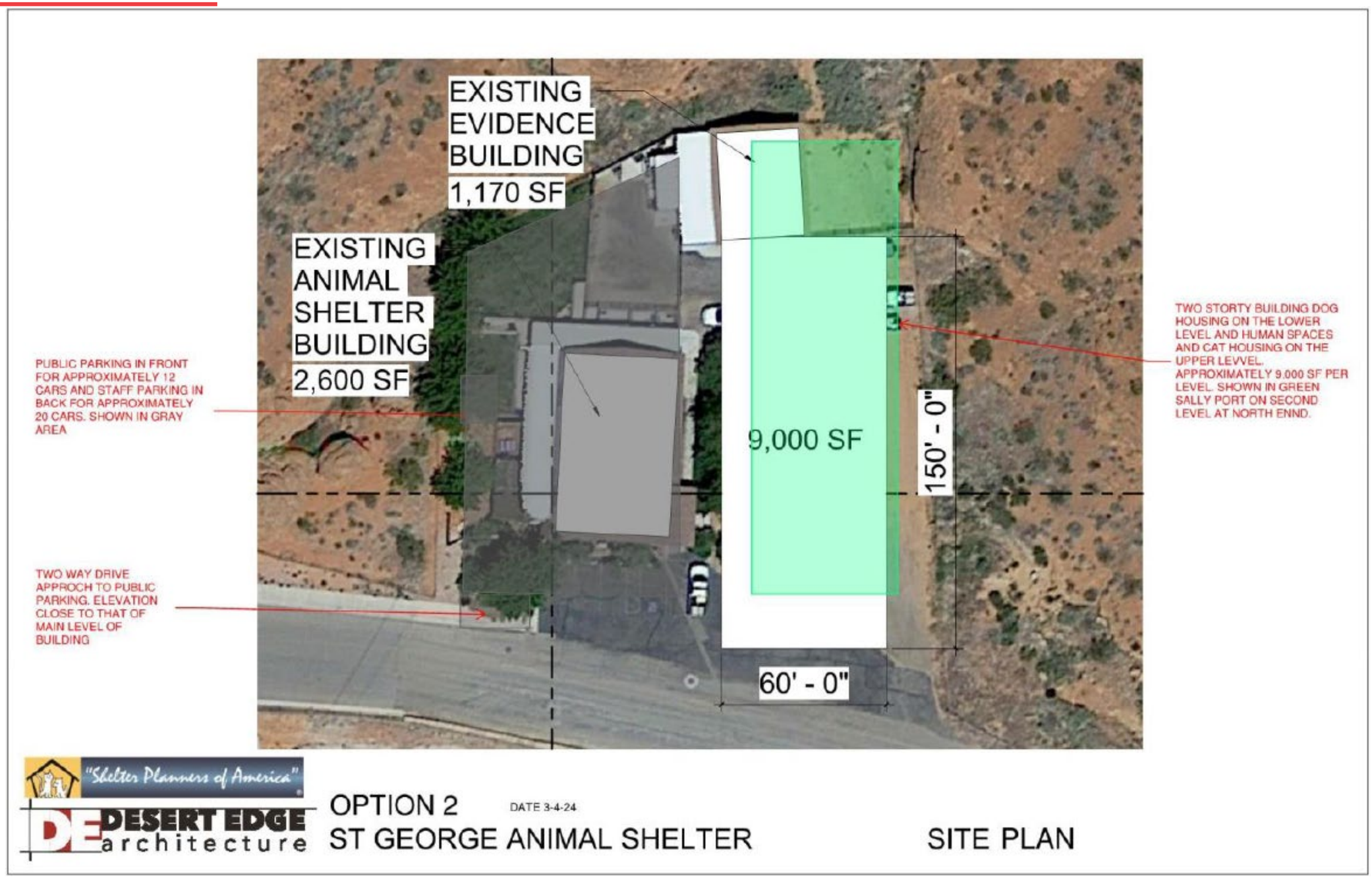
3. Please note that to construct the proposed Phase 1 project on the existing site, it will require a multi-story building set into the site with a significant grade change. Our historical construction cost of various animal shelters are for single story animal shelters. It is possible the cost of the proposed Phase 1 project at the existing site might be higher than indicated on the Opinion of Probable Cost.

SHELTER PROGRAM



COMPLETED MARCH 2024

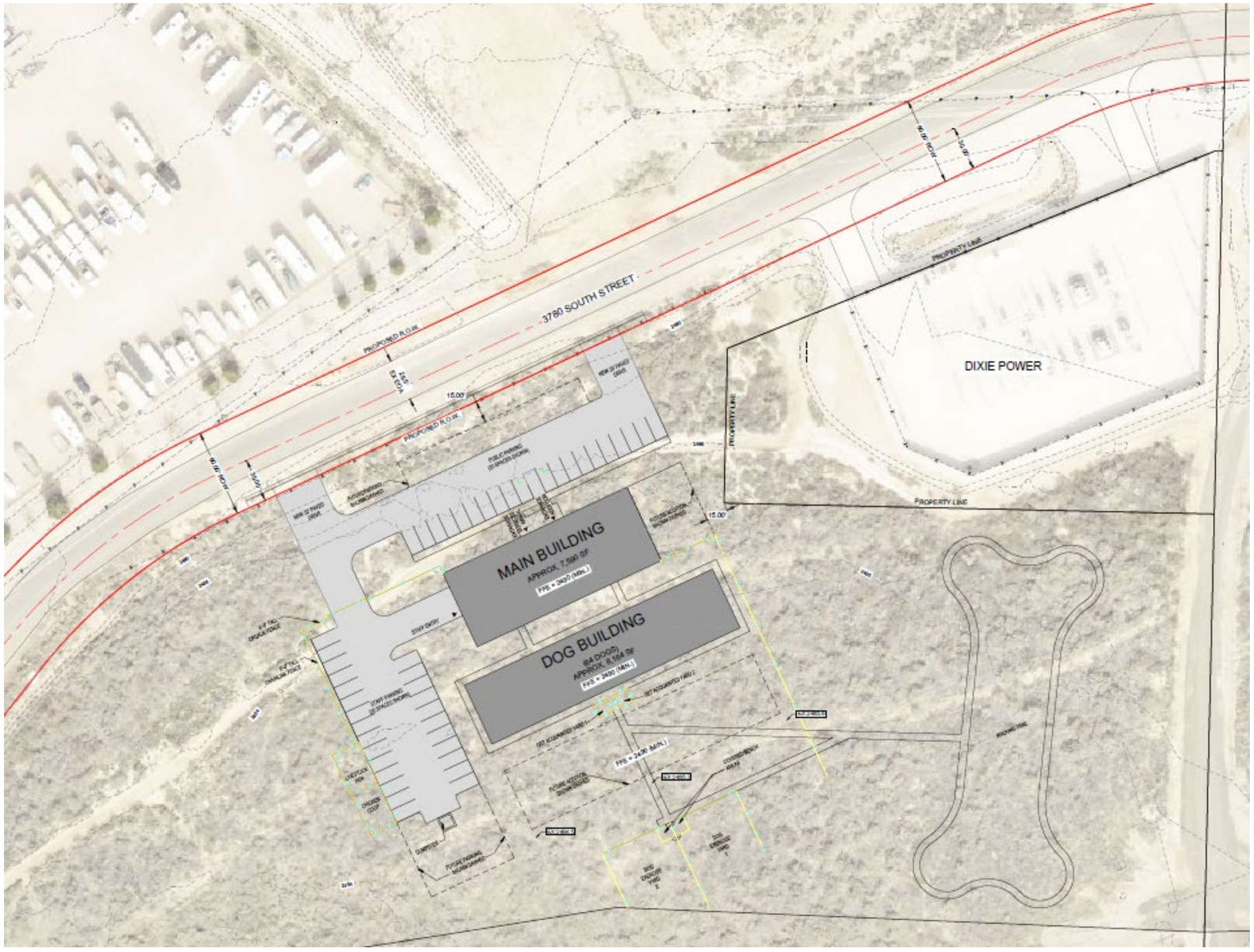
SHELTER PROGRAM



COMPLETED MARCH 2024

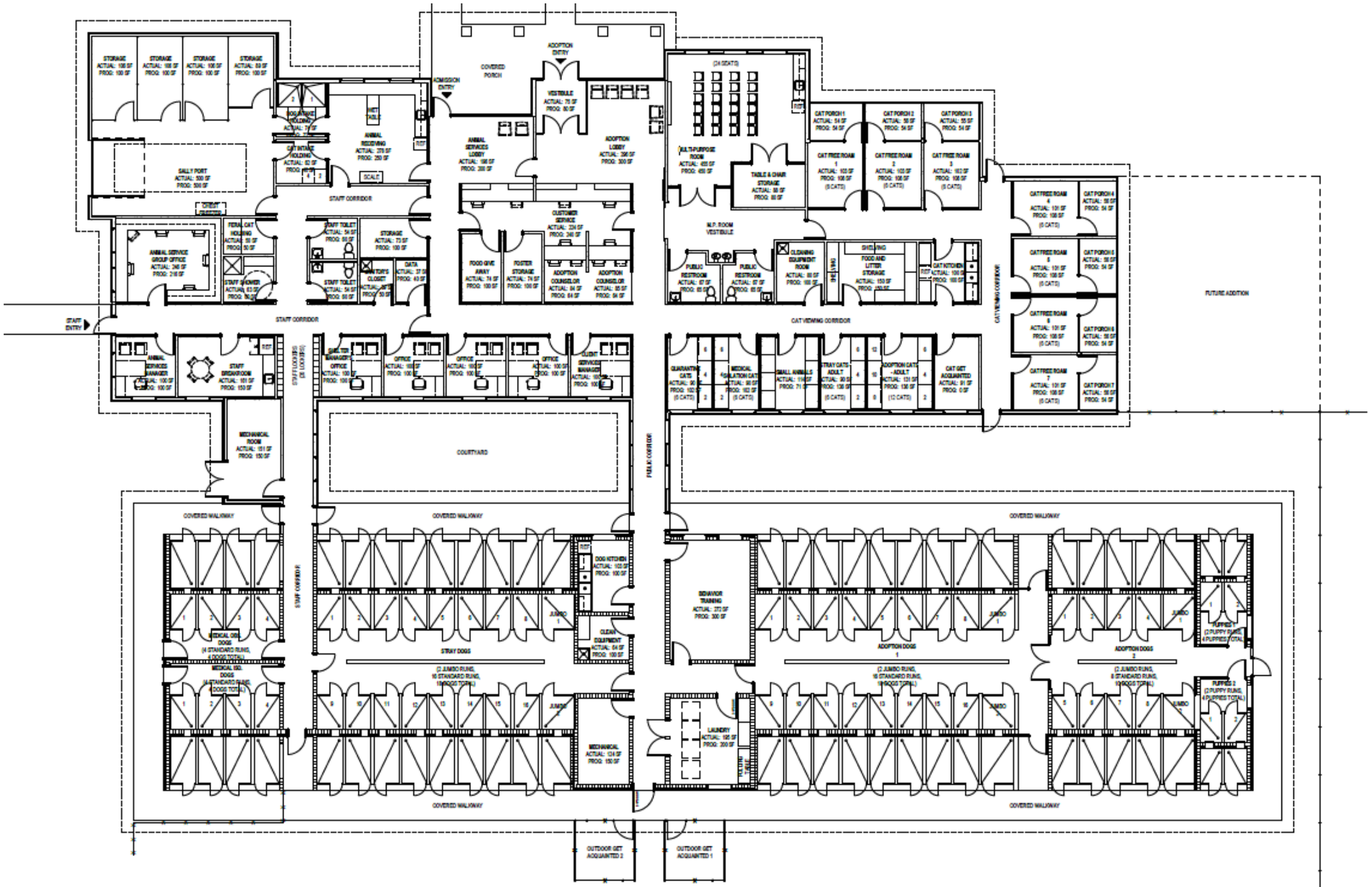
FFKR ARCHITECTS

SHELTER PROGRAM



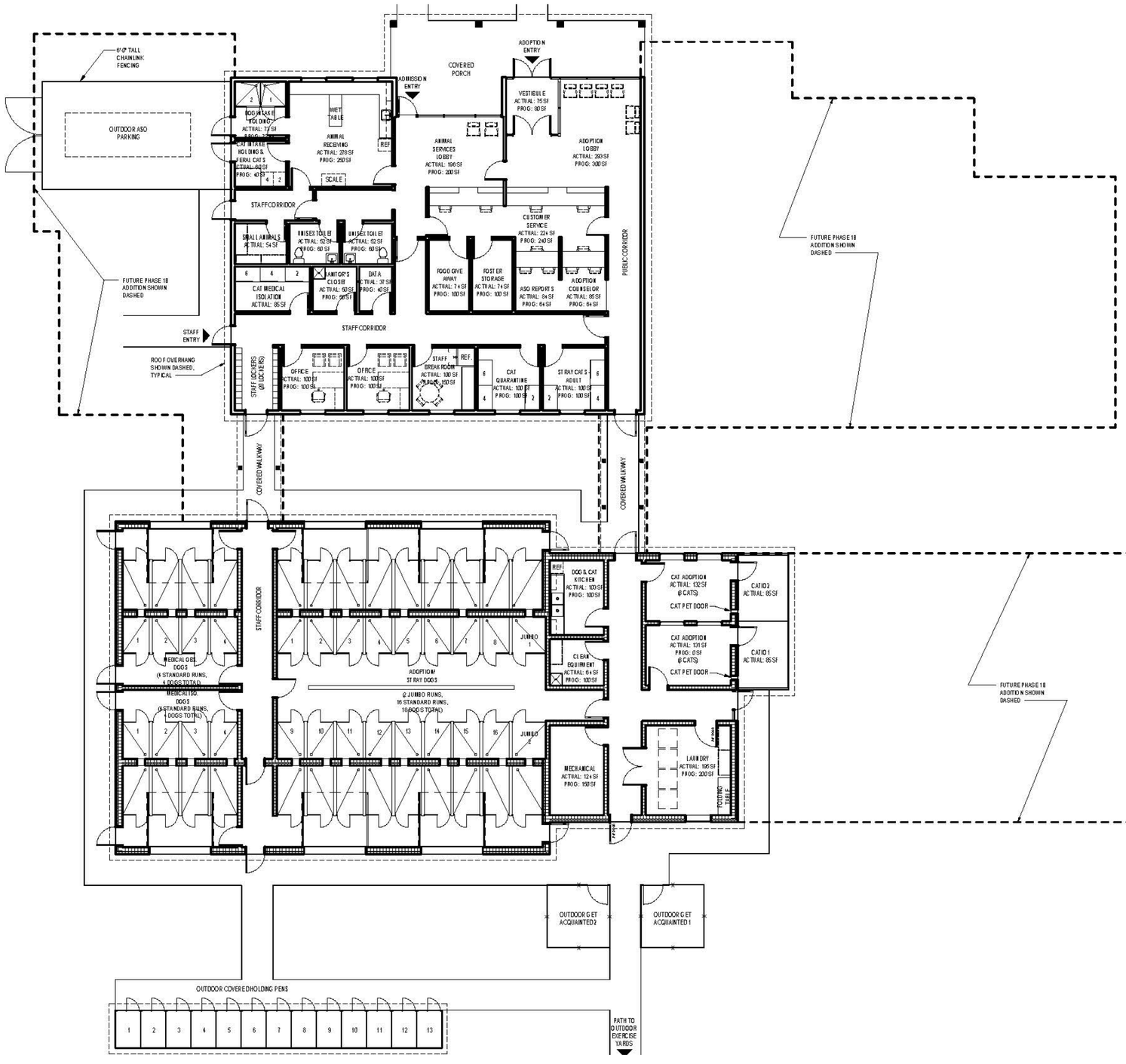
FFKR ARCHITECTS

SHELTER PROGRAM



FFKR ARCHITECTS

SHELTER PROGRAM



ANIMAL HOUSING TABULATION

CATEGORY	ACTUAL
ADOPTION DOGS[1]	18
STRAY DOGS[2]	0
PUPPIES (2 PUPPIES PER PEN)[2]	0
MEDICAL OBSERVATION DOGS[1]	4
MEDICAL ISOLATION DOGS[1]	4
DOG SUB-TOTAL	26
ADOPTION CATS	0
FREE-ROAM CATS	16
STRAY CATS	6
MEDICAL ISOLATION CATS	6
QUARANTINE CATS	6
CAT SUB-TOTAL	34
OTHER ANIMALS	6
TOTAL ANIMALS	66

NOTES:
1. THE NUMBER OF DOG HOUSING SHOWN REPRESENTS THE USE OF TWO-COMPARTMENT HOUSING, WHERE EACH DOG IS ALLOWED BOTH SIDES OF EACH RUN. HOWEVER, THE CURRENT DESIGN ALLOWS FOR SINGLE-COMPARTMENT HOUSING WHERE THE TRANSFER DOORS CAN BE SHUT AND A DOG CAN BE PUT ON EACH SIDE OF THE RUN.
2. STRAY DOGS AND PUPPIES WILL BE MIXED IN WITH ADOPTION DOGS FOR PHASE 1A.

AREA TABULATION

CATEGORY	ACTUAL
FULLY ENCLOSED SPACE	8,407
OUTDOOR COVERED SPACE	176
TOTAL	8,583

FFKR ARCHITECTS

SHELTER PROGRAM

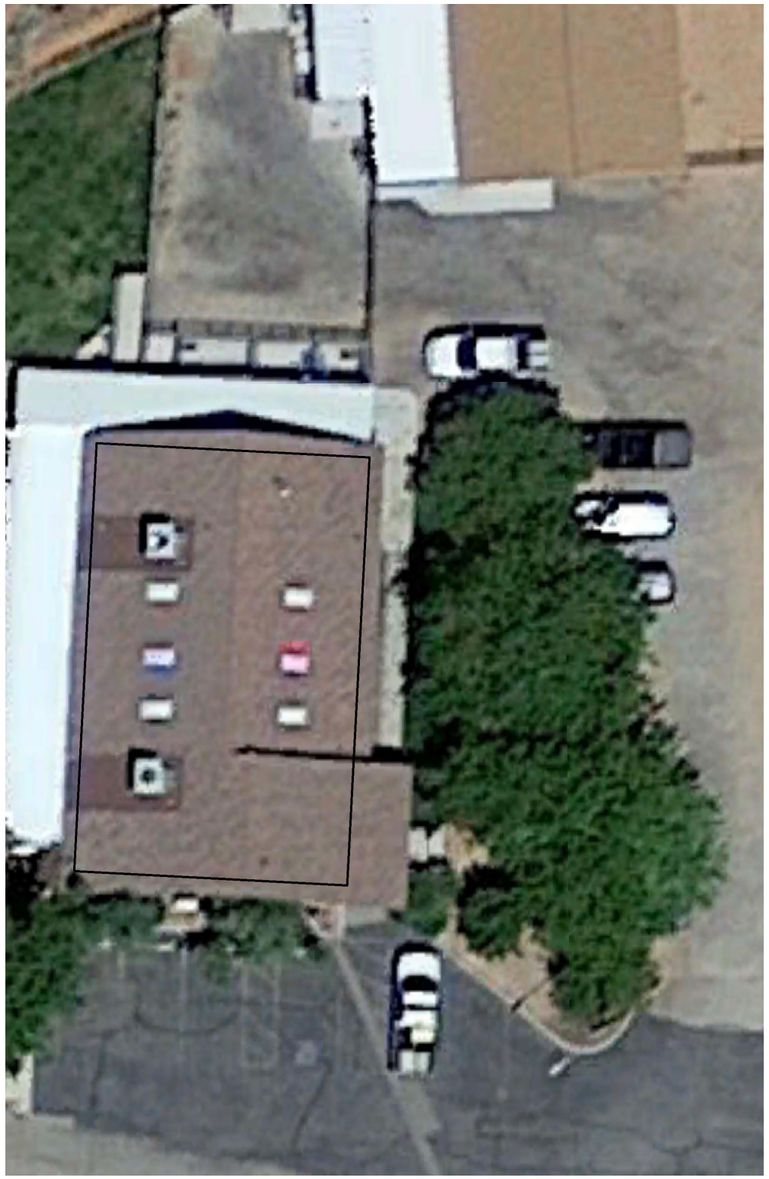
Fully Enclosed Space - SF :	**8,407**
Exterior Space - SF :	**176**
Total SF :	**8,583**

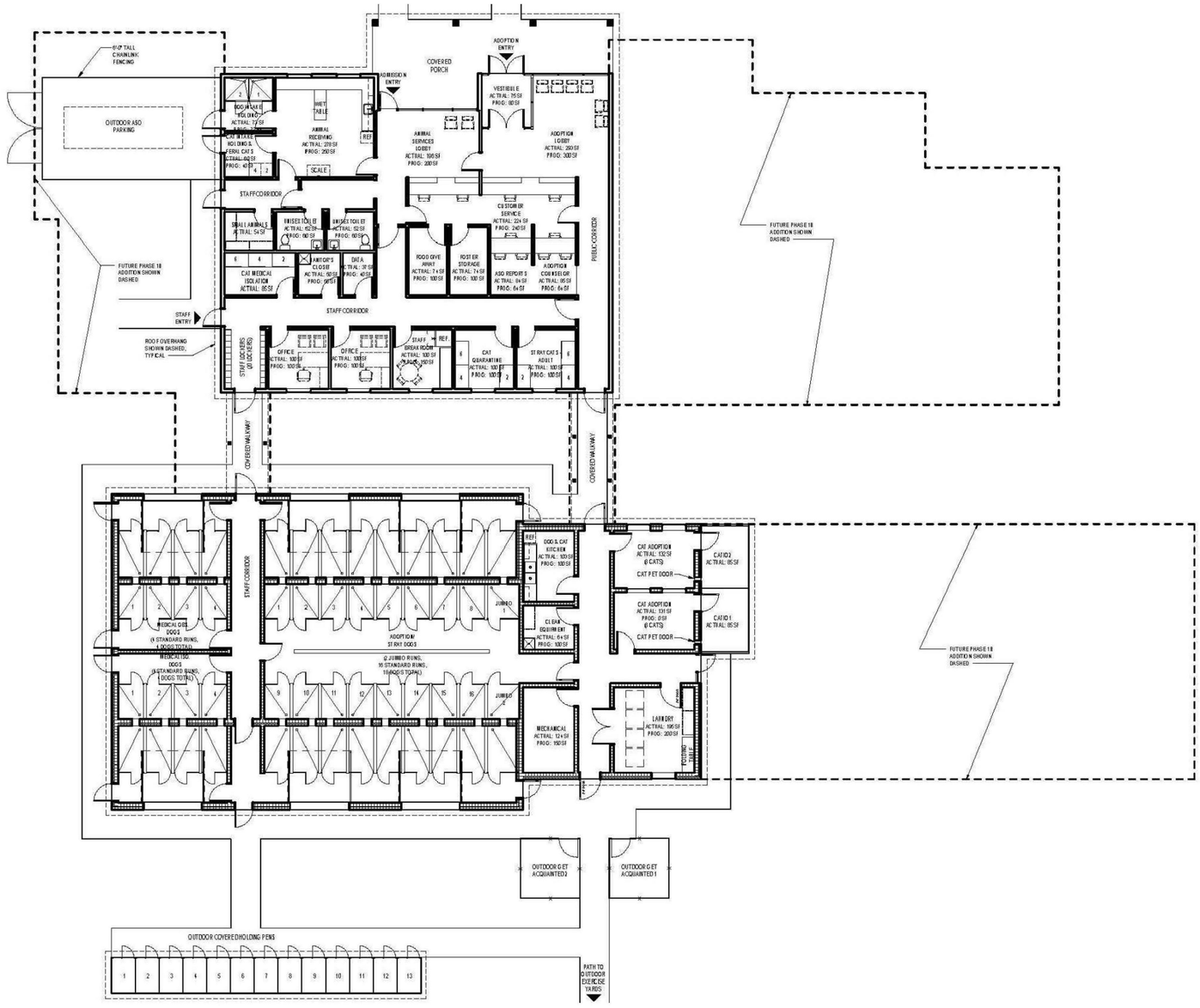
			LOW	HIGH
Fully Enclosed Space		**New Construction Total SF**	**Total Cost at $389.00 Per SF**	**Total Cost at $416.00 Per SF**
Subtotals:		8,407	$ 3,270,323	$ 3,497,312
Exterior Space		**Total SF**	**Total Cost at $272.30 Per SF**	**Total Cost at $291.20 Per SF**
Subtotals:		176	$ 47,925	$ 51,251
Building - Sub-Totals:		**8,583**	**$ 3,318,248**	**$ 3,548,563**
	Low High			
Site Work & Parking	10% 15%		$ 331,825	$ 532,284
Total Construction Cost			**$ 3,650,073**	**$ 4,080,848**
		Total Cost / SF	**$ 425**	**$ 475**
Consider Budgeting for the following:				
Soft Costs (AE Fees, Civil Engineering, Surveying, Soil Tests, Construction Materials Testing, Air Balancing, Furnishing, Loose Equipment, Computers & Phone System, etc.)	15%		$ 547,511	$ 612,127
Contingency	5%		$ 209,879	$ 234,649
Estimated Total Project Cost			**$ 4,407,463**	**$ 4,927,624**

*Note: 1. This does not include the cost of land.

2. Please note, the Opinion of Probable Cost provided is based on historical costs of other animal shelter projects, but the construction market is extremely unpredictable at this time.

SHELTER PROGRAM





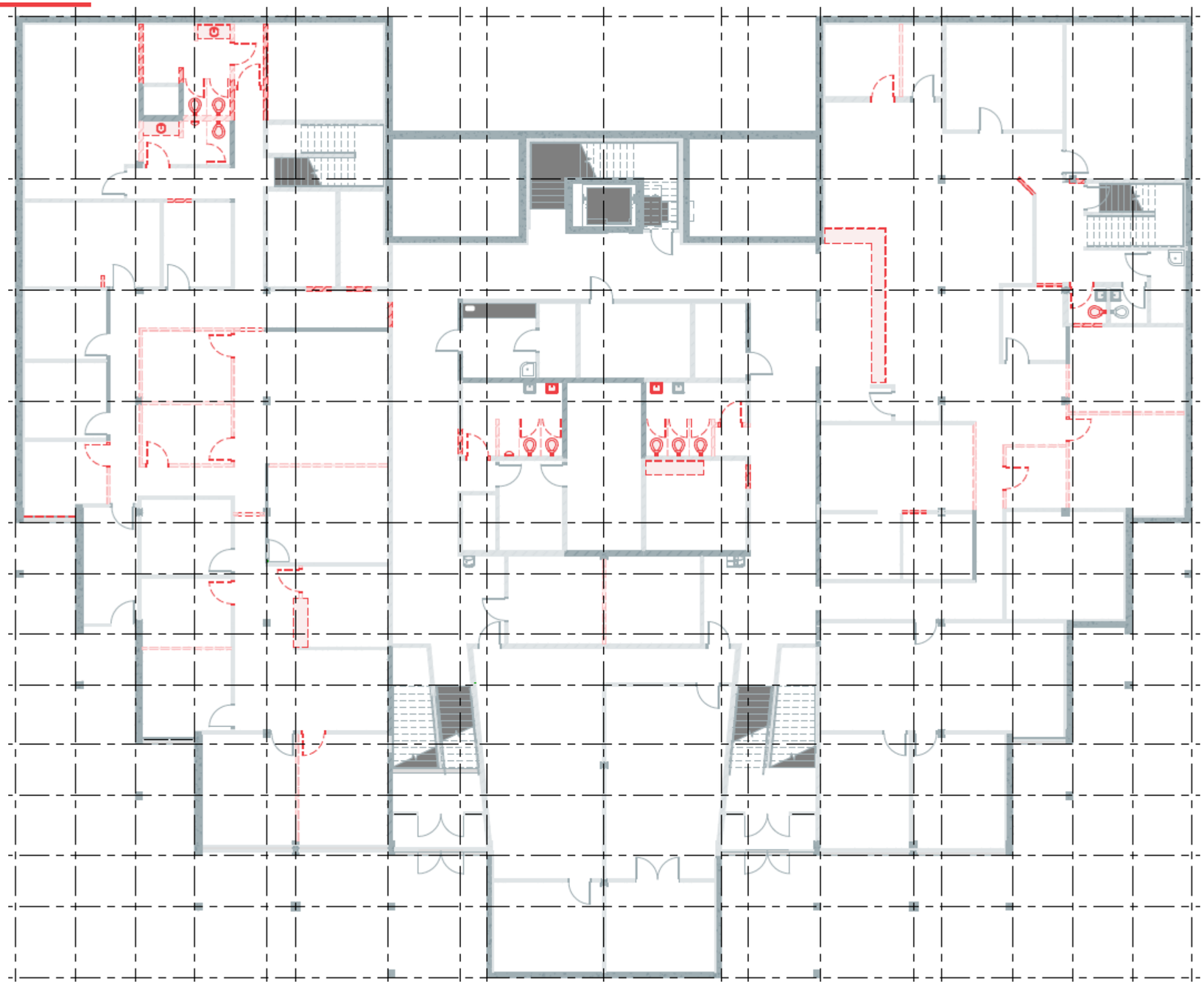
EXISTING SHELTER: 2,600 SF

NEW SHELTER: 8,407 SF

FFKR ARCHITECTS

St. George Police

ST. GEORGE POLICE



FFKR ARCHITECTS

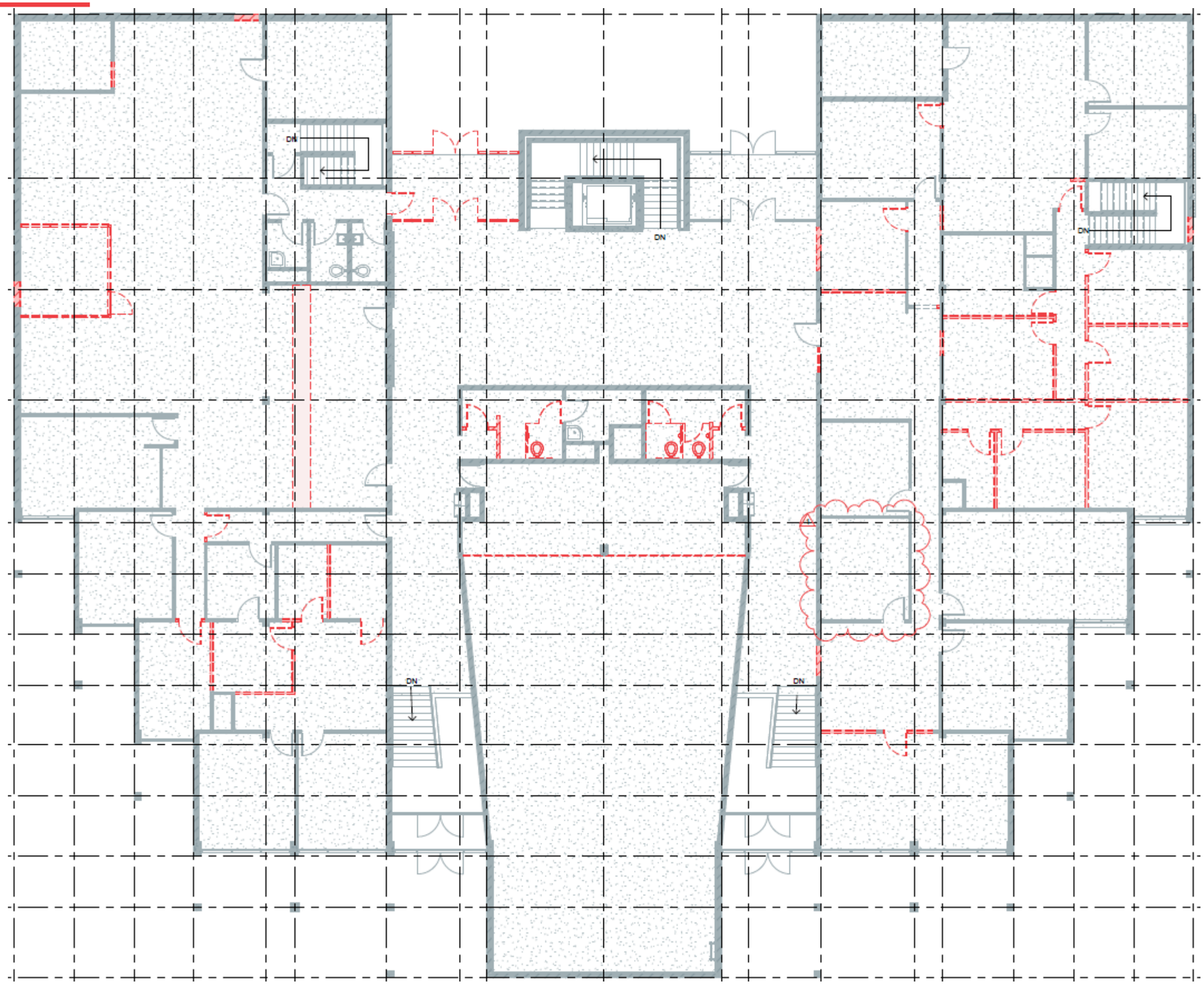
ST. GEORGE POLICE

Department Legend

- Administration
- Bldg Systems
- General Area
- Investigations
- Patrol
- Special Ops - ECHO
- Special Ops - Traffic
- Support Spaces
- Unassigned

FFKR ARCHITECTS

ST. GEORGE POLICE



FFKR ARCHITECTS

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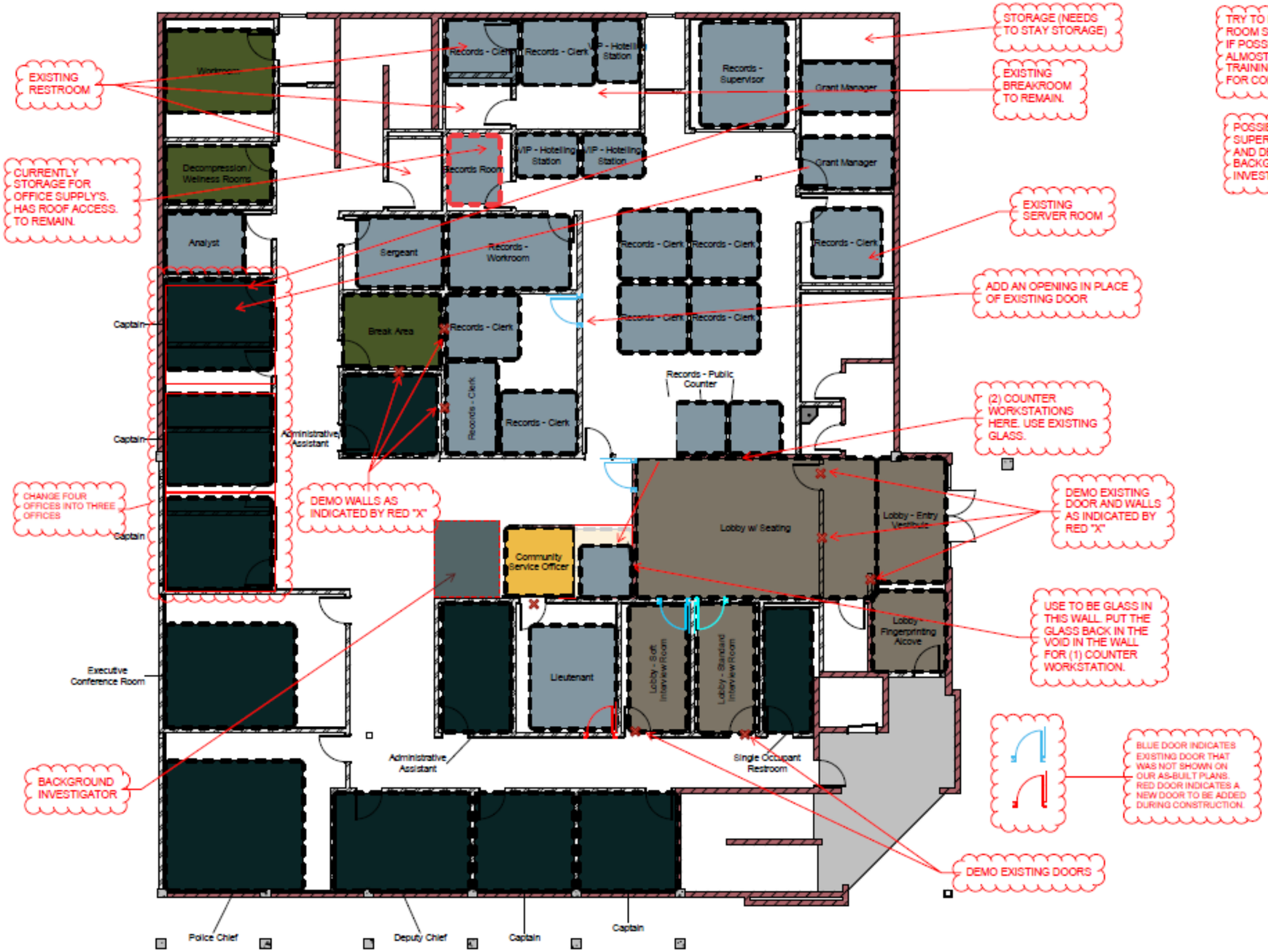
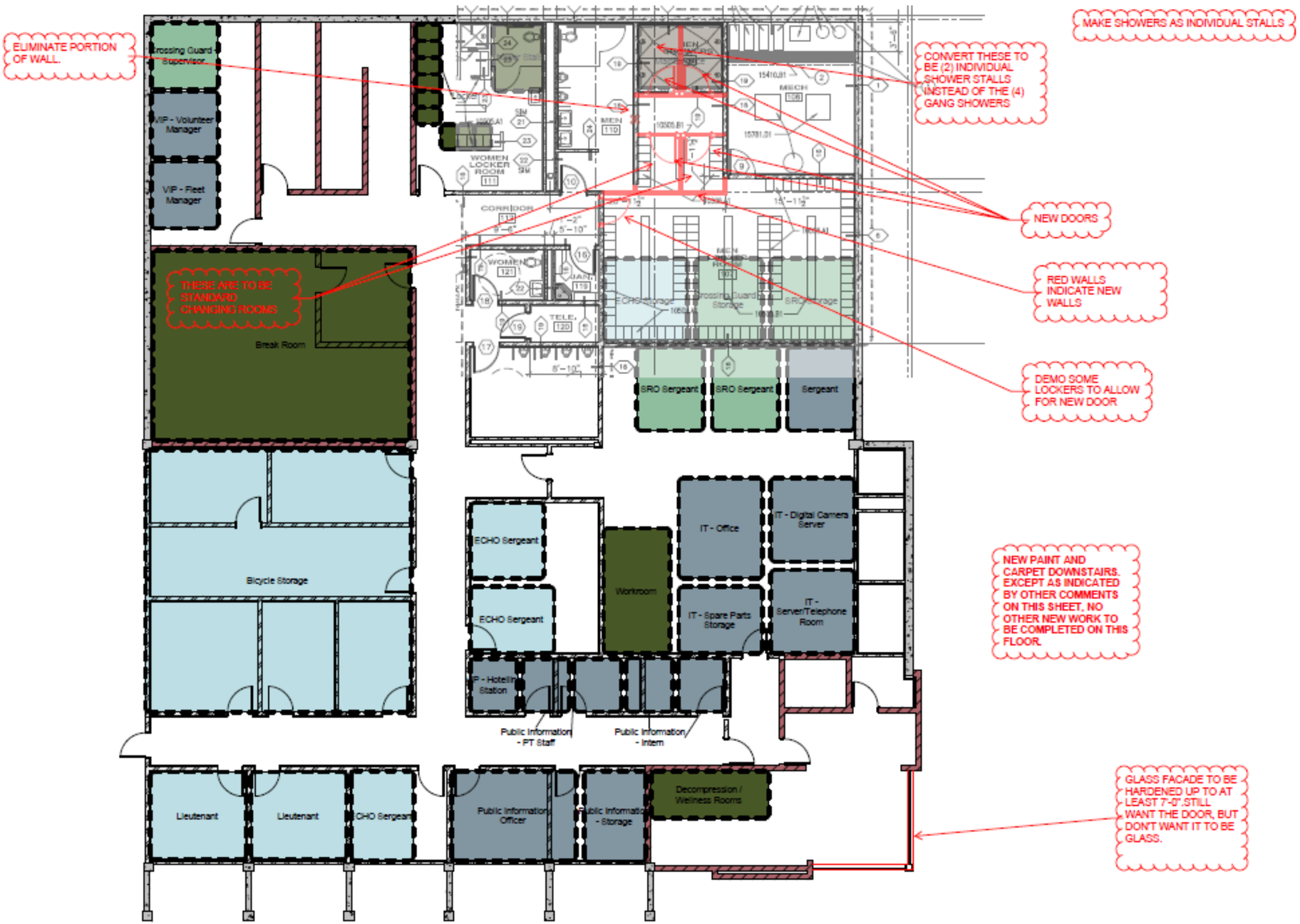
FFKR ARCHITECTS

ST. GEORGE POLICE

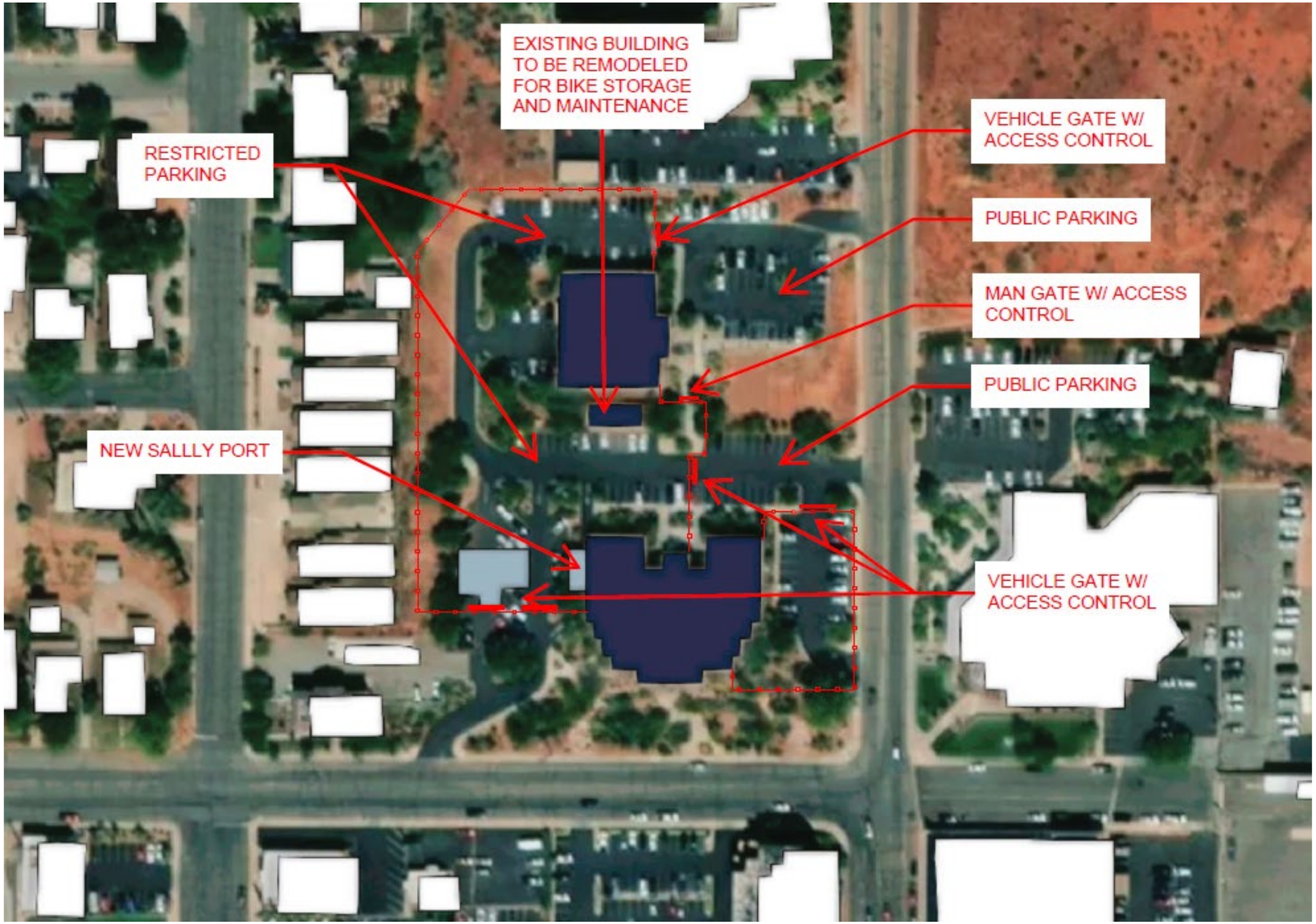


FFKR ARCHITECTS

ST. GEORGE POLICE



ST. GEORGE POLICE



ST. GEORGE POLICE

PROJECT ESTIMATE	CONSTRUCTION CONTROL CORPORATION	9/25/2025

PROJECT NAME.....ST. GEORGE CITY HALL/PD REMODEL TEST FIT 3 — CITY HALL REMODEL
LOCATION.....ST. GEORGE, UT
ARCHITECT.....FFKR — 32,018 SF
STAGE OF DESIGN.....PROGRAM — 853 Addition SF

CSI #	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
	BUILDING COST SUMMARY				
02	EXISTING CONDITIONS			$ 4.86	$ 155,683
03	CONCRETE			$ 2.92	$ 93,357
04	MASONRY			$ 2.85	$ 91,270
05	METALS			$ 0.92	$ 29,556
06	WOODS & PLASTICS			$ 0.31	$ 10,000
07	THERMAL & MOISTURE PROTECTION			$ 2.89	$ 92,578
08	DOORS & WINDOWS			$ 3.71	$ 118,810
09	FINISHES			$ 31.71	$ 1,015,417
10	SPECIALTIES			$ 1.16	$ 37,184
11	EQUIPMENT			$ -	$ -
12	FURNISHINGS			$ -	$ -
13	SPECIAL CONSTRUCTION			$ -	$ -
14	CONVEYING SYSTEMS			$ 0.94	$ 30,000
21	FIRE SUPPRESSION			$ 0.66	$ 21,127
22	PLUMBING			$ 4.58	$ 146,669
23	HVAC			$ 22.01	$ 704,694
26	ELECTRICAL			$ 19.06	$ 610,246
27	COMMUNICATION			$ 5.13	$ 164,355
28	ELECTRONIC SAFETY & SECURITY			$ 6.16	$ 197,226
31	EARTHWORK			$ 0.46	$ 14,592
32	EXTERIOR IMPROVEMENTS			$ 10.72	$ 343,339
33	UTILITIES			$ 0.31	$ 10,000
	SUBTOTAL			$ 121.37	$ 3,886,104
	GENERAL CONDITIONS	7%		$ 8.50	$ 272,027
	BONDS & INSURANCE	2%		$ 2.60	$ 83,163
	OVERHEAD & PROFIT	3.5%		$ 4.64	$ 148,445
	DESIGN CONTINGENCY	15%		$ 18.21	$ 582,916
	TOTAL CONSTRUCTION COST			$ 155.31	$ 4,972,654
	STORAGE BUILDING REMODEL				40,392

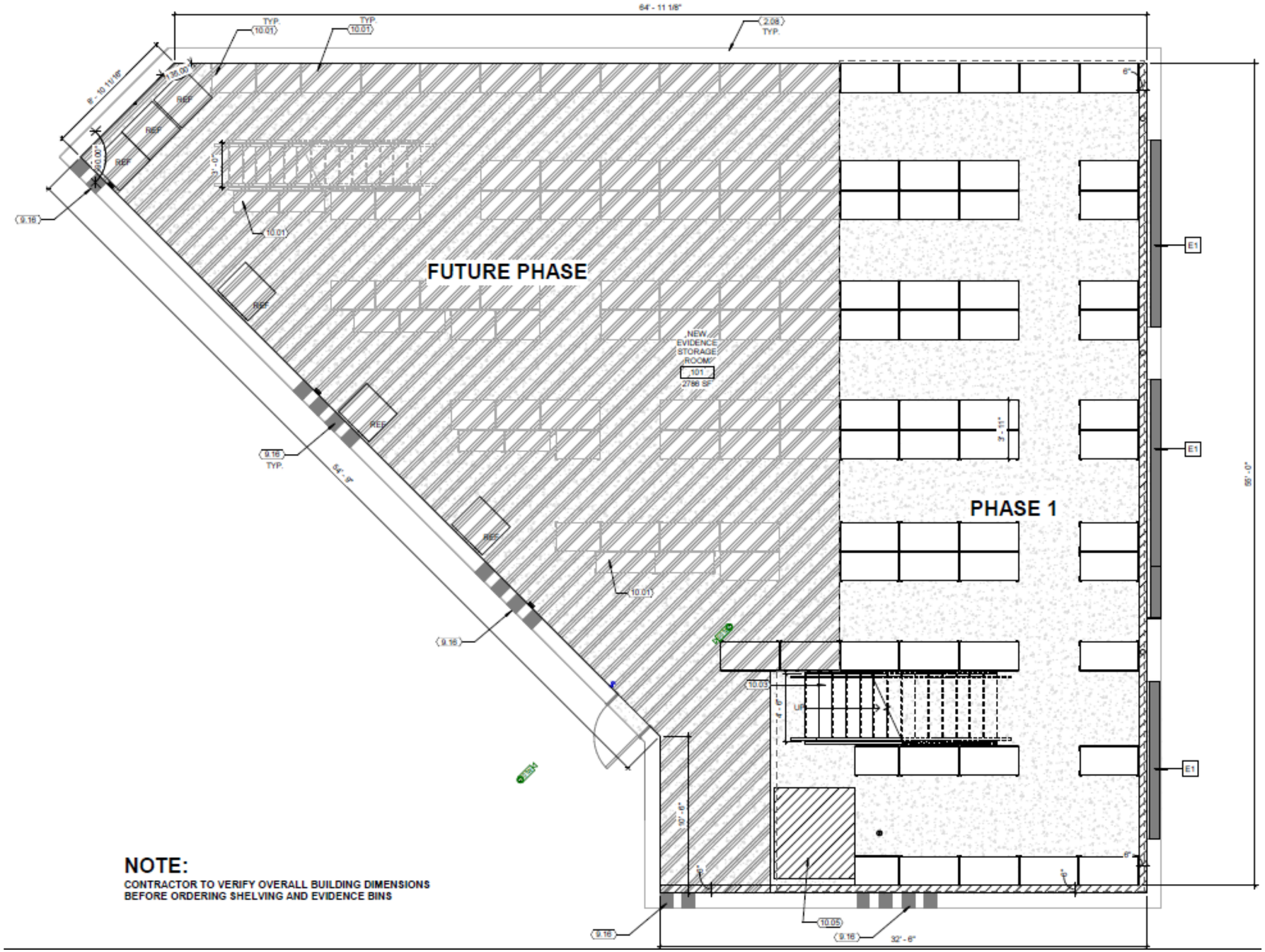
THIS ESTIMATE DOES NOT INCLUDE BUILDING SESIMIC UPGRADE

PROJECT ESTIMATE	CONSTRUCTION CONTROL CORPORATION	11/7/2025

PROJECT NAME.....ST. GEORGE CITY HALL/PD REMODEL TEST FIT 3 — POLICE DEPARTMENT REMODEL - PHASE 2
LOCATION.....ST. GEORGE, UT
ARCHITECT.....FFKR — 17,749 SF
STAGE OF DESIGN.....PROGRAM

CSI #	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
	BUILDING COST SUMMARY				
02	EXISTING CONDITIONS			$ 2.89	$ 51,242
03	CONCRETE			$ 0.95	$ 16,893
04	MASONRY			$ 0.65	$ 11,500
05	METALS			$ -	$ -
06	WOODS & PLASTICS			$ 0.31	$ 5,500
07	THERMAL & MOISTURE PROTECTION			$ 1.72	$ 30,583
08	DOORS & WINDOWS			$ 1.35	$ 23,900
09	FINISHES			$ 27.13	$ 481,552
10	SPECIALTIES			$ 1.00	$ 17,749
11	EQUIPMENT			$ -	$ -
12	FURNISHINGS			$ 2.00	$ 35,498
13	SPECIAL CONSTRUCTION			$ -	$ -
14	CONVEYING SYSTEMS			$ -	$ -
21	FIRE SUPPRESSION			$ 0.57	$ 10,098
22	PLUMBING			$ 0.89	$ 15,750
23	HVAC			$ 2.84	$ 50,490
26	ELECTRICAL			$ 11.97	$ 212,529
27	COMMUNICATION			$ 0.85	$ 15,147
28	ELECTRONIC SAFETY & SECURITY			$ 1.07	$ 18,934
31	EARTHWORK			$ 0.28	$ 5,000
32	EXTERIOR IMPROVEMENTS			$ -	$ -
33	UTILITIES			$ -	$ -
	SUBTOTAL			$ 56.47	$ 1,002,365
	GENERAL CONDITIONS	10%		$ 5.65	$ 100,236
	BONDS & INSURANCE	2%		$ 1.24	$ 22,052
	OVERHEAD & PROFIT	4%		$ 2.53	$ 44,986
	DESIGN CONTINGENCY	15%		$ 8.47	$ 150,355
	TOTAL CONSTRUCTION COST			$ 74.37	$ 1,319,994

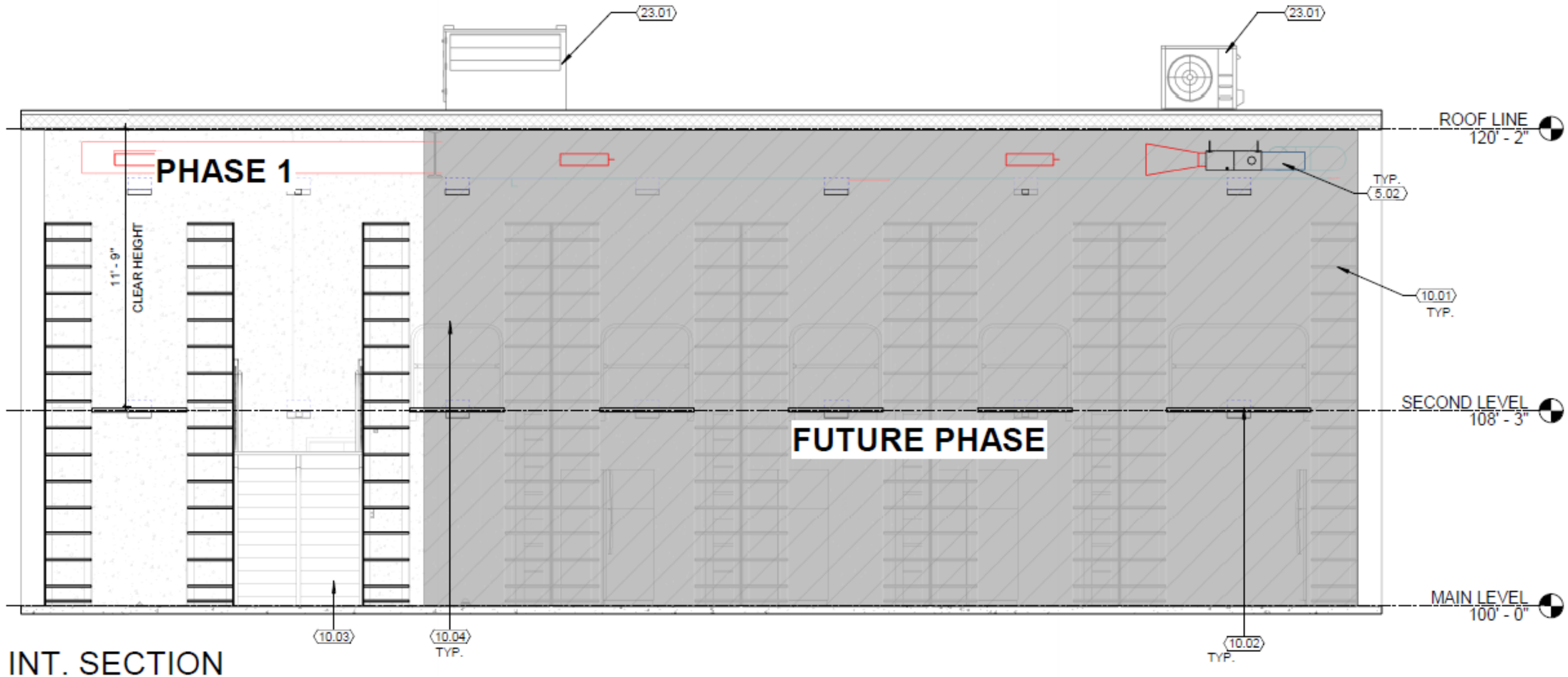
ST. GEORGE POLICE EVIDENCE STORAGE



NOTE:
CONTRACTOR TO VERIFY OVERALL BUILDING DIMENSIONS BEFORE ORDERING SHELVING AND EVIDENCE BINS

FFKR ARCHITECTS

ST. GEORGE POLICE EVIDENCE STORAGE



A2 INT. SECTION
1/4" = 1'-0"

FFKR ARCHITECTS

COST SUMMARY

SG ANIMAL SHELTER:

LOW: $425/SF = $3,650,073
+20% SOFT COSTS/CONTINGENCY: **$4,407,463**

HIGH: $475/SF = $4,080,848
+20% SOFT COSTS/CONTINGENCY: **$4,927,624**

INCL: A/E fees: **$304,000**

SG POLICE:

CITY HALL: 32,018 SF @ $155/SF = **$4,972,654**

DOES NOT INCLUDE SOFT COSTS

A/E Fees: **$372,950**

POLICE: 17,749 SF @ $74/SF = **$1,319,994**

DOES NOT INCLUDE SOFT COSTS

A/E Fees: **$79,500**

SG POLICE EVIDENCE: **$**

Questions

St.George

FFKR ARCHITECTS

FOUR **LOCATIONS**

SALT LAKE CITY, UTAH

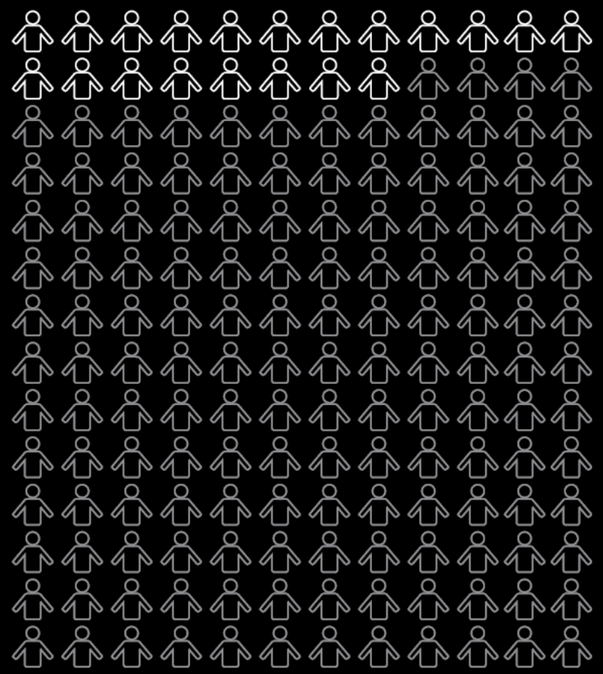
ST. GEORGE, UTAH

TEMPE, ARIZONA

BOISE, IDAHO

OVER 100 MILLION
SQUARE FEET
BUILT/DESIGNED

OVER **180 EMPLOYEES**
20 PRINCIPALS



IN-**HOUSE**

ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE + PLANNING
3-D RENDERING
GRAPHIC DESIGN + BRANDING

OVER 300
AWARDS + ACHIEVEMENTS

LEADING EDGE TOOLS

3-D PRINTING

DRONE

VIRTUAL REALITY

TOP DESIGN FIRM

#1 ARCHITECTURE FIRM IN UTAH
UTAH CONSTRUCTION & DESIGN + UTAH BUSINESS

TOP INTERIOR DESIGN HOSPITALITY FIRM
NEWH ARIZONA CHAPTER

TOP 100 DESIGN FIRMS IN SOUTHWEST REGION
ENGINEERING NEWS-RECORD (ENR)

FFKR ARCHITECTS

PROPOSAL of Architectural & Engineering Design Services **12/8/2025**

Carlos Robles
Director of Facilities
St. George City
carlos.robles@sgcityutah.gov

RE: St. George City Animal Shelter FFKR # _____

I. SCOPE OF WORK

Project Understanding

1. Estimated Construction budget of $3,500,000
2. See Attached floorplans for scope of work created during programming phase. Plans were created for a construction budget of $3,900,000.
3. Property is located adjacent to the power station on Treatment Plant Rd.
4. Direction given to reduce program & SF to meet new budget.
5. Look for methods to reduce administration spaces and increase animal pens.
6. Direction to reduce program & floorplan will require additional time and services, intended to have been completed during programming phase.

A. Schematic Design:

- **i.** Meet with Shelter Staff & PD to reprogram and downsize Administration spaces.
- **ii.** Provide conceptual space layout for review. Once conceptual layout is confirmed, finalize floorplan.
- **iii.** Explore building massing, exterior finishes & materials.
- **iv.** Provide conceptual exterior design with proposed materials & finishes.
- **v.** Finalize site design, including parking, animal exercise areas, walking paths and area for future phases.
- **vi.** Ensure the design aligns with local building codes, zoning regulations, and site constraints.
- **vii.** Provide R.O.M cost estimate.
- **viii.** Attend periodic meetings with the City for the purposes of reviews, approvals, comments, and general coordination.
- **ix.** Establish deadlines and milestones which clarify the outstanding items or issues required from each team member.
- **x.** Once floorplan, site plan and exterior design are complete, provide ONE conceptual rendering.

B. Design Development: FFKR Architects will provide the following services:

- **i.** Contract & collaborate with design engineers for necessary building systems and site design.
- **ii.** Attendance at a kick-off meeting with the City, and design team.
- **iii.** Attend periodic meetings with the City for the purposes of reviews, approvals, comments, and general coordination.
- **iv.** Establish deadlines and milestones which clarify the outstanding items or issues required from each team member.
- **v.** Submit Design Development package for review and approval (in writing).

C. Construction Documents: Following the review, comments, and written approval of the DD package, FFKR Architects will provide the following services:

- **i.** Coordinate Architectural and Owner-carried Consultants designs and drawings.
- **ii.** Information gathering and or meeting(s) included in the construction document phase.
- **iii.** Schedule, manage and attend weekly design-team coordination meetings with SG City.
- **iv.** Prepare, coordinate and submit the Construction Document package to the Owner for review and

approval. Package includes floor plans, reflected ceiling plans, elevations, schedules and details required to obtain building permit and bids

v. Upon 90% completion of the Construction Documents, it is anticipated that a meeting will be scheduled with the Owner's Team for a full team review of the drawing package for final coordination.

vi. Assist the City in advertising for GC and pre-select qualified bidders.

D. Bidding and Negotiations: Once the Construction Document package is fully reviewed and approved by Owner (written approval) FFKR Architects will assist Owner & selected GC in the review of bids and making reasonable adjustments to meet budget requirements.

i. Stamp and Seal documents as required and submit Construction Documents to SG City online portal for Building Permit application.

ii. Provide a full (digital) set of documents to City & selected GC.

iii. Respond to questions that may arise during contractor preparation of bid.

iv. If needed, FFKR to assist with evaluation and participate in value-engineering or substitution options proposed by Contractor & Owner. Changes due to value engineering after the Construction Documents have been completed may result in additional design cost.

v. Incorporate all City building permit comments and issue final "For Construction" sets to all applicable parties.

E. Construction Services: FFKR Architects will provide the following services to support the Construction Administration of the project:

i. Attend weekly conference calls/meetings for the purposes of comments and general coordination (OAC Meetings).

ii. Review standard Architectural/MEP shop drawing submittals.

iii. Respond to contractors and vendors RFI's (Request for Information). (Note: response to RFI's related to drawing coordination are in base contract scope. Responses to RFI's related to IBG and/or Owner-generated design changes after completion of the initial CD's will be considered additional services).

iv. Perform one review of material submittals and shop drawings to ensure conformance with the design intent shown in the construction documents. All reviews will be done as timely as possible and shall be returned to the contractor within 14 days of the date submitted. Additional reviews may be provided as additional services.

v. Site visits:

1. FFKR will conduct Construction Observation visits for the duration of the Construction Phase.
   a. Site visits may be in conjunction with the afore-mentioned OAC Meeting.
   b. Architect's onsite representative to generate Site Observation Report following each construction site visit and submit to Owner for review and documentation.
2. FFKR will conduct an observation "punch walk" near the conclusion of the construction (95%+ complete and cleaned) to observe and document construction quality and conformance to the Construction Documents.
3. FFKR will conduct a final site visit (upon 98% completion and cleaning) to observe and document completion of concerns observed at the "punch walk."

F. Deliverables: All deliverables will be performed electronically unless otherwise specified.

G. Anticipated Schedule:

i. DD Documents: Three (8) weeks.

ii. CD Documents: Six (12) weeks.

iii. Permitting and Bidding: Four (4) weeks

iv. CA: Thirty-six (52) weeks estimated (per selected GC)

H. Conditions and Exclusions: Services or information that may be necessary to perform the work and are not provided, include but are not limited to:

a. Current or existing plans such as: as-builts, engineering, site, and civil documents.
b. Materials testing or reports.
c. Mitigation plans (i.e., as related to hazardous materials).
d. Attendance at meetings not indicated within each phase or sub-phase of the work.
e. Geo Technical
f. Landscape Design
g. Major Design Revisions or significant timeline extensions.
h. FFKR cannot be liable for any unknown, undiscovered, or concealed conditions that result in additional work, changes to the work, or timeline extensions.
i. Fire Sprinkler Design.

II. COMPENSATION

For full design and documentation services as noted above, FFKR proposes a basic services fee for the provided budget of $3,500,000, in the amount of $ 280,000 (Two Hundred and Eighty Thousand Dollars)

Phase I: Design Development (DD), Construction Documents (CD), & Bidding phases.

Base Fee: $223,000
Additional Services: Re-program new floorplan to meet directed budget of $3,500,000
Added Fee: $5,000

Total Fee: $228,000

Phase II: Construction Administration

Fee: $57,000

TOTAL FEE:	**$285,000**

- The indicated fees include the MEP, Structural, and Civil Engineering/Design Fees.
- Project related expenses incurred such as travel, printing, reproduction, & shipping are reimbursable to the Architect & billed at a rate of cost plus fifteen (15) percent.
  - Reimbursable expenses, include, but are not limited to: cost of reprographics, shipping and postage; long distance communications; out-of-town travel (airfare, rental cars, re-fueling, meals, etc.) and lodging; fees paid for securing approval of authorities having jurisdiction over the projects; etc.
- Payments to the Architect are due within thirty (30) days of the receipt of each invoice.

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Additional Services

- The following shall be considered additional services, or if applicable, reimbursable expenses:
  - **Cost Estimating**
  - Permit expediting.
  - Performing changes to the documents to address jurisdictional comments that are inconsistent with applicable written codes or are otherwise interpretive in nature.
  - Signage/graphics design.
  - Signage approvals and permitting.
  - Any re-design due to subsequent changes in documents and or design criteria
  - Permitting over and above normal procedures and controls.
  - Consultant fees for additional services shall be invoiced at 1.20 times the actual cost to the architect.

- Services that are not part of this agreement, but may be offered or required after the execution of this agreement include but are not limited to:
  - Additional 3D rendering, virtual reality, and other visualization services.
  - Attendance at meetings not listed.
  - Consultant's Additional Service, or disciplines not listed above.
  - Long distance travel.
  - Significant design revisions.
  - Timeline extensions.
  - "As-Built" drawings.

Any requested or required additional services to the base contract as described above will be provided when properly authorized. The architect will be compensated based on a lump sum fee, which will be quoted upon review of the scope of the proposed additional services, or on an hourly "T & M" basis, plus applicable reimbursable expenses.

FFKR Architects Representative:

12/8/2025
Date:

E. Ben Rogers, AIA
Principal | Architect

Client Representative:

Date:

FFKR ARCHITECTS

720 S River Rd. Suite D2100B O 435.673.7362 FFKR.COM

FFKR ARCHITECTS

Attachment A

STANDARD BILLING RATES – 2024

Sr. Principal	$225.00 /hr.
Principal	$195.00 /hr.
Sr. Associate	$155.00 /hr.
Associate	$140.00 /hr.
Project Architect	$130.00 /hr.
Project Manager	$130.00 /hr.
Specifications	$120.00 /hr.
Landscape Architect/ Planner	$115.00 /hr.
Visualization (3D)	$120.00 /hr.
Interior Designer	$115.00 /hr.
Graphics Designer	$115.00 /hr.
Intern Architect	$105.00 /hr.
Interior Staff/ Purchase Management	$100.00 /hr.
Technical Staff (Drafting/BIM)	$100.00 /hr.
Contracted BIM*	$80.00 /hr.
Project Coordinator (Clerical)	$80.00 /hr.

*FFKR Architects utilizes high quality third-party or contracted drafting services when it serves both the project and Architect best.

1. Reimbursable expenses such as printing, reproduction, & shipping are in addition to the described fees & may be billed at a multiple of 1.1 times actual expense.
2. Additional Services not described in the project scope of work are subject to standard hourly billing rates.
3. Payments due within thirty (30) days of invoice date.

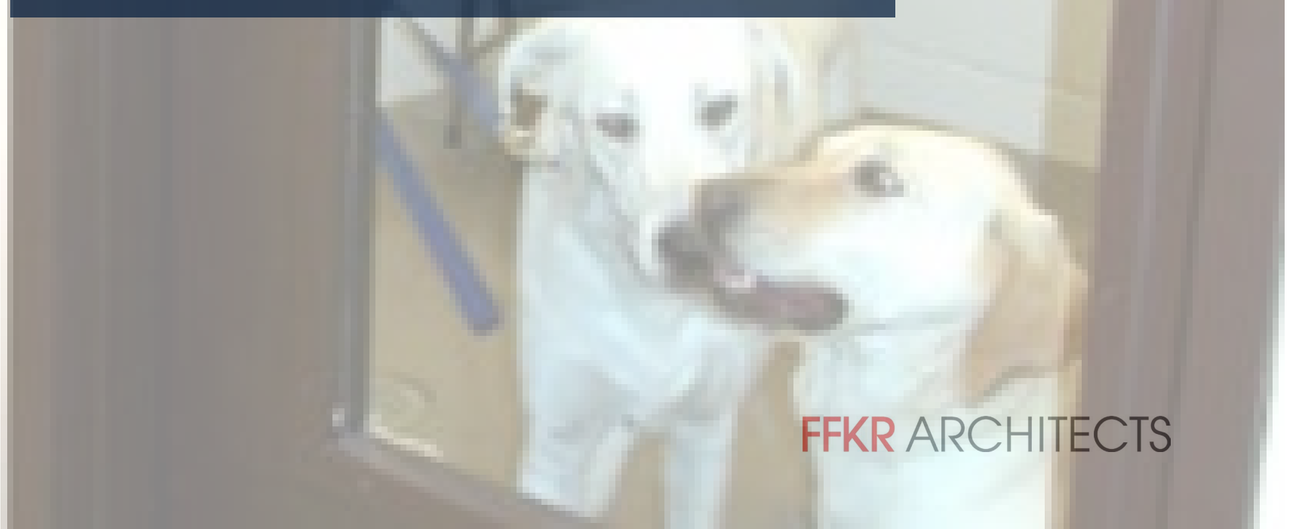
ST. GEORGE POLICE & ANIMAL SHELTER

St.George

FFKR ARCHITECTS

"Shelter Planners of America"®

A Division of FMD Architects



St. George Animal Shelter

SHELTER PROGRAM

FIGURE 1. EXISTING AND PROJECTED HUMAN POPULATION AND ANIMAL INTAKE

	2023 Human Population Estimate	2023 Actual Animal Intake	2023 Intake as a % of Population	2033 Human Population Estimate	2033 Projected Intake Ratio	2033 Projected Animal Intake	2043 Human Population Estimate	2043 Projected Intake Ratio	2043 Projected Animal Intake
Dogs		790	0.74%		0.74%	1,217		0.74%	1,807
Cats		458	0.43%		0.43%	706		0.43%	1,048
Other		38	0.04%		0.04%	59		0.04%	87
Total	107,197	1,286	1.20%	165,192	1.20%	1,982	245,196	1.20%	2,942

FIGURE 2. CURRENT AVERAGE LENGTH OF STAY (ALS)

Based on Existing Housing Spaces			
	2023 Actual Intake	Existing Housing Spaces	Current ALS
Dogs	790	42	19
Cats	458	29	23
Other	38	0	#DIV/0!
Total	1,286	71	

FIGURE 3. 2033 AND 2043 PROJECTED ANIMAL HOUSING NEEDS

2033 (10-YEAR PROJECTION)			
	2032 Projected Animal Intake	Desired ALS	Number of Animals to be Housed
Dogs	1,217	20	64
Cats	706	23	44
Other	59	20	3
Total	1,982		112

2043 (20-YEAR PROJECTION)			
	2042 Projected Animal Intake	Desired ALS	Number of Animals to be Housed
Dogs	1,807	20	99
Cats	1,048	23	66
Other	87	14	3
Total	2,942		168

SHELTER PROGRAM

Summary:	Interior	Exterior
A. Administrative	3,918	
B. Medical Clinic	0	
C. Animal Housing (Interior)	5,904	
D. Animal Housing (Exterior)		2,697
E. Animal Support Area (Interior)	2,226	
F. Animal Support Area (Exterior)		1,000
TOTAL SF	12,048	3,697
COMBINED SF	15,745	

SECTION A - ADMINISTRATIVE

	Room or Space	No. of Rooms				SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
	PUBLIC AREAS									
1	Adoption Lobby	1				300		300		Visitor seating for 8. Approximate 10' wall for retail display shelves viewable from Customer Service Counter. Consider large screen TV.
2	Vestibule for Adoption Lobby	0				80		-		
3	Animal Services Lobby	1				200		200		Visitor seating for 2, wall to separate from Adoption Lobby.
4	Vestibule for Animal Services Lobby	0				80		80		
5	Customer Service Counter (4 Customer Service Representatives at counter)	1				240		240		Arrange counter to serve both the Adoption Lobby and the Animal Services Lobby. Space for 2 staff at each Lobby and yet be connected to conserve staff time.
6	Adoption Interview Space	2				64		128	One adjacent to Adoption Lobby and one adjacent to Animal Services	Semi-private cubicles with small table where potential Adopters can fill out paperwork and then an Adoption Counselor can come speak with them.
7	Multi-purpose Meeting Room	1				450		450	Adjacent to Lobby for after-hours use, including use of toilet	Seating for 20 in chairs. As many seated at table as will fit and that is estimated at 16. Counter with sink, refrigerator, microwave
8	Meeting Room Storage	1				80		80	Adjacent to Meeting Room	To store tables and chairs when not in use and other materials to support meeting room.
9	Meeting Room Kitchen	0				80		-		In Meeting room not a separate space
10	Public Toilets	2				65		130		One mens, one womens unisex type. Verify code minimum.

SHELTER PROGRAM

SECTION A - ADMINISTRATIVE - Continued

	Room or Space	No. of Rooms			No. of People	SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
	OFFICES									
11	Shelter Manager's Office	1			1	100		100		
12	Animal Services Manager's Office	1			1	100		100		
13	Client Service Supervisor's Office	1			1	100		100		
15	Office 1	1			1	100		100		
16	Office 2	1			1	100		100		
17	Office	1			1	100		100		
18	Animal Service Office Group Office	1			6	36		216		countertop with computer work stations for 6
19	Staff Breakroom	1				150		150	Consider access to outdoor space	Counter with sink, microwave, refrigerator, coffee maker, seating at table for 4
20	Staff Locker Alcove	1				20		20	In an alcove in a Staff Only Corridor	20 Lockers for staff 1' x1' x6'
21	Staff Toilets	2				60		120		One mens, one womens unisex type. Verify code minimum.
22	Staff Shower Room	1				60		60		
23	Mechanical/ Elec Room	1				150		150		
24	Data/Phone Closet	1				40		40		
25	Janitorial Closet	1				50		50		
	Subtotal:							3,014		
	Net to Gross SF Factor 30%:							904		
	Departmental Gross Area:							3,918		

SHELTER PROGRAM

SECTION B - MEDICAL CLINIC- NO MEDICAL CLINIC

	Room or Space	No. of Rooms			No. of People	SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Prep/Treatment Room	0				150		-		
2	Pre-Op/Post-Op Holding - Dogs	0				120		-		
3	Pre-Op/Post-Op Holding - Cats	0				90		-		
15	Surgery Room	0				120		-		
17	Work Stations for Vet Techs	0			1	36		-		
18	Laboratory / Pharmacy Alcove	0			1	100		-		
22	Clean Up Area	0				80		-		
								-		
	Subtotal:							-		
	Net to Gross SF Factor 30%:							-		
	Departmental Gross Area:							-		

SHELTER PROGRAM

SECTION C - ANIMAL HOUSING - INTERIOR

	Room or Space	No. of Spaces	Animals per Space	Animals to be Housed	Size			SF of Each	SF of Walkway	Total SF	Adjacent to or Near	Equipment / Comments
1	Adoption Dog Runs - Jumbo	4	2	4	6.0	x	6.0	36	30	264		See corresponding Exterior Run
2	Adoption Dog Runs - Standard	32	1	32	4.7	x	6.0	28	23.3	1,640		See corresponding Exterior Run
3	Stray Dog Runs - Jumbo	1	1	1	6.0	x	6.0	36	30	66		See corresponding Exterior Run
4	Stray Dog Runs - Standard	16	1	16	4.7	x	6.0	28	23.3	820		See corresponding Exterior Run
5	Nursing Mother Dogs - Jumbo	0	1	0	6.0	x	6.0	36	30	-		See corresponding Exterior Run
6	Medical Observation Dog Runs	4	1	4	4.7	x	6.0	28	23.3	205		See corresponding Exterior Run
7	Medical Isolation Dog Runs	3	1	3	4.7	x	6.0	28	23.3	154		See corresponding Exterior Run
8	Quarantine Dog Runs	0	1	0	4.7	x	6.0	28	23.3	-		See corresponding Exterior Run
9	Puppy Pens	2	2	4	4.0	x	5.0	20	25	90		See corresponding Exterior Run.
10	Transfer Dog Runs - Jumbo	0	2	0	6.0	x	6.0	36	30	-		See corresponding Exterior Run
11	Transfer Dog Runs - Standard	0	1	0	4.7	x	6.0	28	23	-		See corresponding Exterior Run
	TOTAL DOGS:			64								
12	Adoption Cat Room - Adult	8	1	8				5	12	136		Each cat is housed in a 2-compartment cage.
13	Adoption Cat Room - Kitten	0		0								
14	Cat Community Rooms (18 SF / cat Free Roam)	7	6	42	9.0	x	12.0	108		756		
15	Stray Cat Room - Adult	8	1	8				5	12	136		Each cat is housed in a 2-compartment cage.
16	Stray Cat Room - Feral	0		0				5	12	-		
16	Stray Cat Room - Kitten	0		0				5	12	-		
17	Nursing Mother Cats	0		0				5	12	-		
18	Medical Observation Cats - Non-Viewable	0	1	6				5	12	102		Each cat is housed in a 2-compartment cage.
19	Medical Isolation Cats - Non-Viewable	6	1	6				5	12	102		Each cat is housed in a 2-compartment cage.
20	Quarantine Cat Room - Viewable by public	6	1	0				5	12	-		Each cat is housed in a 2-compartment cage.
	TOTAL CATS:			70								
21	Other Animals	0	1	3				6	16	71		
									-	-		
								-	-	-		
	Subtotal:									4,542		
	Net to Gross SF Factor 30%:									1,363		
	Departmental Gross Area:									5,904		

SHELTER PROGRAM

SECTION D - ANIMAL HOUSING - OUTDOOR COVERED

	Room or Space	No. of Spaces	Animals per Space		Size			SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Adoption Dog Runs - Jumbo	4	2		6.0	x	8.0	48		192		See corresponding Interior Run
2	Adoption Dog Runs - Standard	32	1		4.6	x	8.0	37		1,178		See corresponding Interior Run
3	Stray Dog Runs - Jumbo	1	1		6.0	x	8.0	48		48		See corresponding Interior Run
4	Stray Dog Runs - Standard	16	1		4.6	x	8.0	37		589		See corresponding Interior Run
5	Nursing Mother Dog Runs - Jumbo	-	1		6.0	x	8.0	48		-		See corresponding Interior Run
6	Medical Observation Dog Runs	4	1		4.6	x	8.0	37		147		See corresponding Interior Run
7	Medical Isolation Dog Runs	3	1		4.6	x	8.0	37		110		See corresponding Interior Run
8	Dog Quarantine Runs	-	1		4.6	x	8.0	37		-		See corresponding Interior Run
9	Puppy Runs -	2	2		4.6	x	6.0	28		55		See corresponding Interior Run
10	Transfer Runs - Jumbo	-	1		6.0	x	8.0	48		-		See corresponding Interior Run
11	Transfer Runs - Standard	-	2		4.6	x	8.0	37		-		See corresponding Interior Run
12	Cat Sun Porch	7			9.0	x	6.0	54		378		See corresponding Interior Run
	Subtotal:									2,697		
	Departmental Gross Area:									2,697		

SHELTER PROGRAM

SECTION E - ANIMAL SUPPORT AREA - INTERIOR

	Room or Space	No. of Rooms				SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Animal Receiving	1				250		250	Near Admissions Lobby and Sally Port	Counter with sink, refrigerator, scales, space to photograph animals,
2	Dog Intake Holding	1				72		72	Animal Receiving	two 4'x4' pens
3	Cat Intake Holding	1				40		40	Animal Receiving	2 cat cages
4	Get Acquainted Rooms	0				80		-		use Behavior traing room
6	Behavior Training Room	1				300		300		
7	Animal Kitchen	2				100		200		Counter with 3-compartment sink,NO commercial dishwasher, and refrigerator
8	Food and Litter Storage	1				150		150		
9	Food Storage for Giveaway Program	1				100		100		
10	Laundry	1				200		200		space for 2 residential washer and dryers for intial construction but plan for the possiibility to upgrade to 2 Commercial washers and dryers in the future. Folding table, shelves and space for carts. St George Animal Services to confirm number of lbs. of laundry per day per dog.
11	Cleaning Equipment Room	2				100		200	One for Dogs and one for Cats	Cleaning supplies, pressure wash equipment, space for janitor's sink, trash cans, etc.
14	Feral Cat Holding	1				50		50	Near Sally Port	stainless steel shelves of 10 cats in traps
17	Mechanical Room	1				150		150		
	Subtotal:							**1,712**		
	Net to Gross SF Factor 30%:							514		
	Departmental Gross Area:							**2,226**		

SECTION F - ANIMAL SUPPORT AREA - UNFINISHED SPACE

	Room or Space	No. of Rooms				SF of Each		Total SF	Adjacent to or Near	Equipment / Comments
1	Enclosed Sally Port (1 spaces)	1				500		500		back in is acceptable
5	Foster Storage	1				100		100	Medical Lobby	Space for litter, food, formula, crates
6	Event Storage	1				100		100		
7	Trap Storage	1				100		100		
8	Crate Storage	1				100		100		
9	Storage for Animal-Related Items	1				100		100		
	Subtotal:							**1,000**		
	Departmental Gross Area:							**1,000**		

SHELTER PROGRAM

G. Summary: The existing site could potentially be used to construct a new shelter the size needed to meet the 10 year planning horizon if multi-story building is acceptable. But if SGAS wants to plan for a 20 year planning horizon, it is our opinion they should look for another site. If SGAS decides to look for other sites, please allow SPA to review potential sites before purchasing to “test fit” and evaluate to the criteria provided.

Based on New Construction on an Existing Site:

	2033
Fully Enclosed Space - SF :	12,048
Exterior Space - SF :	3,697
Total SF :	15,745

			LOW	HIGH
		New Construction	Total Cost at $391.00	Total Cost at $421.00
Fully Enclosed Space		**Total SF**	**Per SF**	**Per SF**
A Administrative Areas		3,918		
B Medical Clinic		-		
C Animal Housing - Interior		5,904		
D Animal Support Areas - Interior		2,226		
Subtotals:		12,048	$ 4,710,869	$ 5,072,317
				Total Cost at
			$273.70	$294.70
Exterior Space		**Total SF**	**Per SF**	**Per SF**
E Animal Housing - OUTDOOR COVERED		2,697		
F Animal Support Areas - Exterior - UNFINISHED SPACE		1,000		
Subtotals:		3,697	$ 1,011,924	$ 1,089,565
Building - Sub-Totals:		**15,745**	**$ 5,722,793**	**$ 6,161,882**
	Low High			
Site Work & Parking	10% 15%		$ 572,279	$ 924,282
Total Construction Cost			**$ 6,295,072**	**$ 7,086,164**
		Total Cost / SF	**$ 400**	**$ 450**

Consider Budgeting for the following:

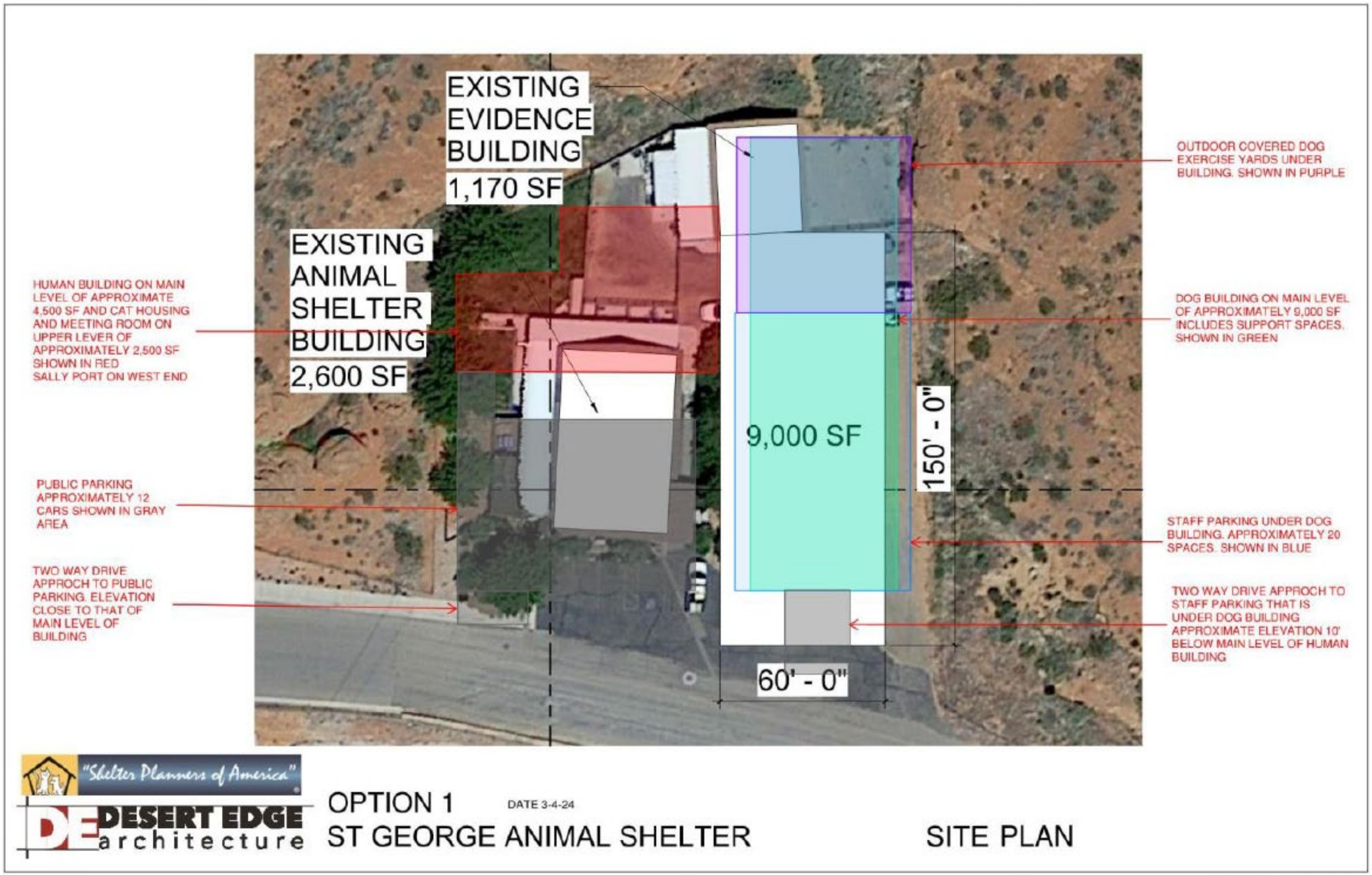
Soft Costs	15%		$ 944,261	$ 1,062,925
(AE Fees, Civil Engineering, Surveying, Soil Tests, Construction Materials Testing, Air Balancing, Furnishing, Loose Equipment, Computers & Phone System, etc.)				
Contingency	5%		$ 361,967	$ 407,454
Estimated Total Project Cost			**$ 7,601,299**	**$ 8,556,543**

*Note: 1. This does not include the cost of land.

2. Please note, the Opinion of Probable Cost provided is based on historical costs of other animal shelter projects, but the construction market is extremely unpredictable at this time.

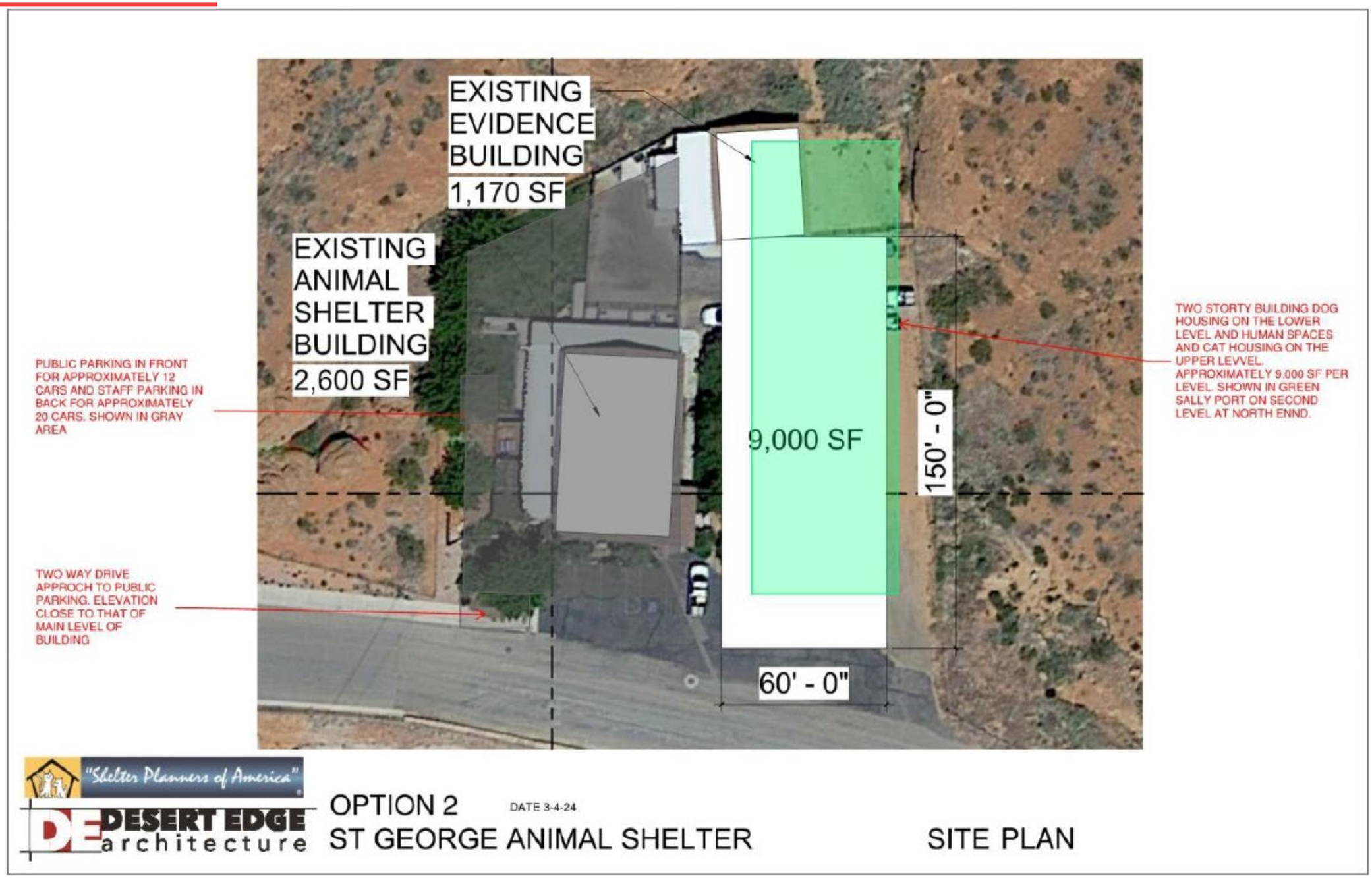
3. Please note that to construct the proposed Phase 1 project on the existing site, it will require a multi-story building set into the site with a significant grade change. Our historical construction cost of various animal shelters are for single story animal shelters. It is possible the cost of the proposed Phase 1 project at the existing site might be higher than indicated on the Opinion of Probable Cost.

SHELTER PROGRAM



COMPLETED MARCH 2024

SHELTER PROGRAM



COMPLETED MARCH 2024

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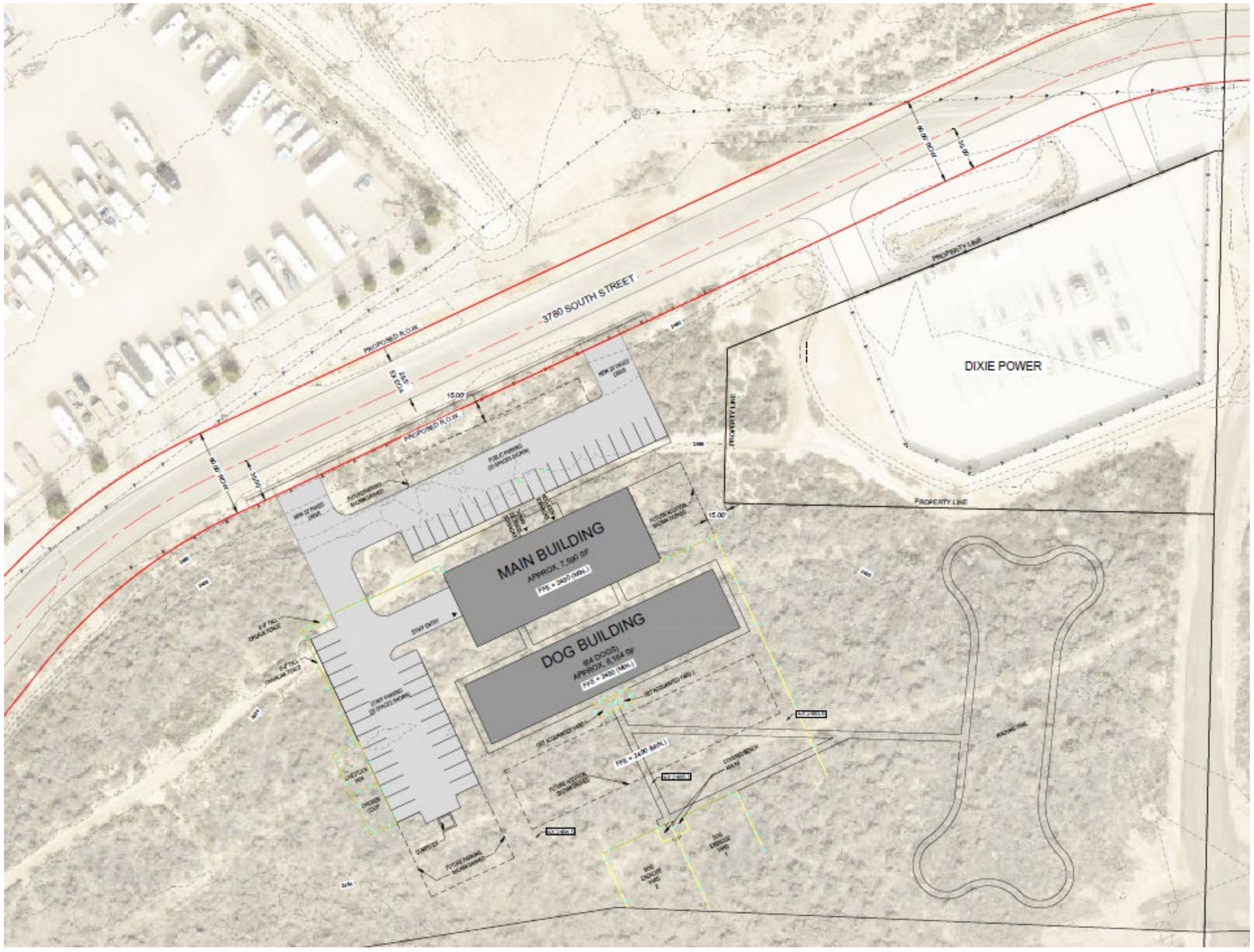

FFKR ARCHITECTS

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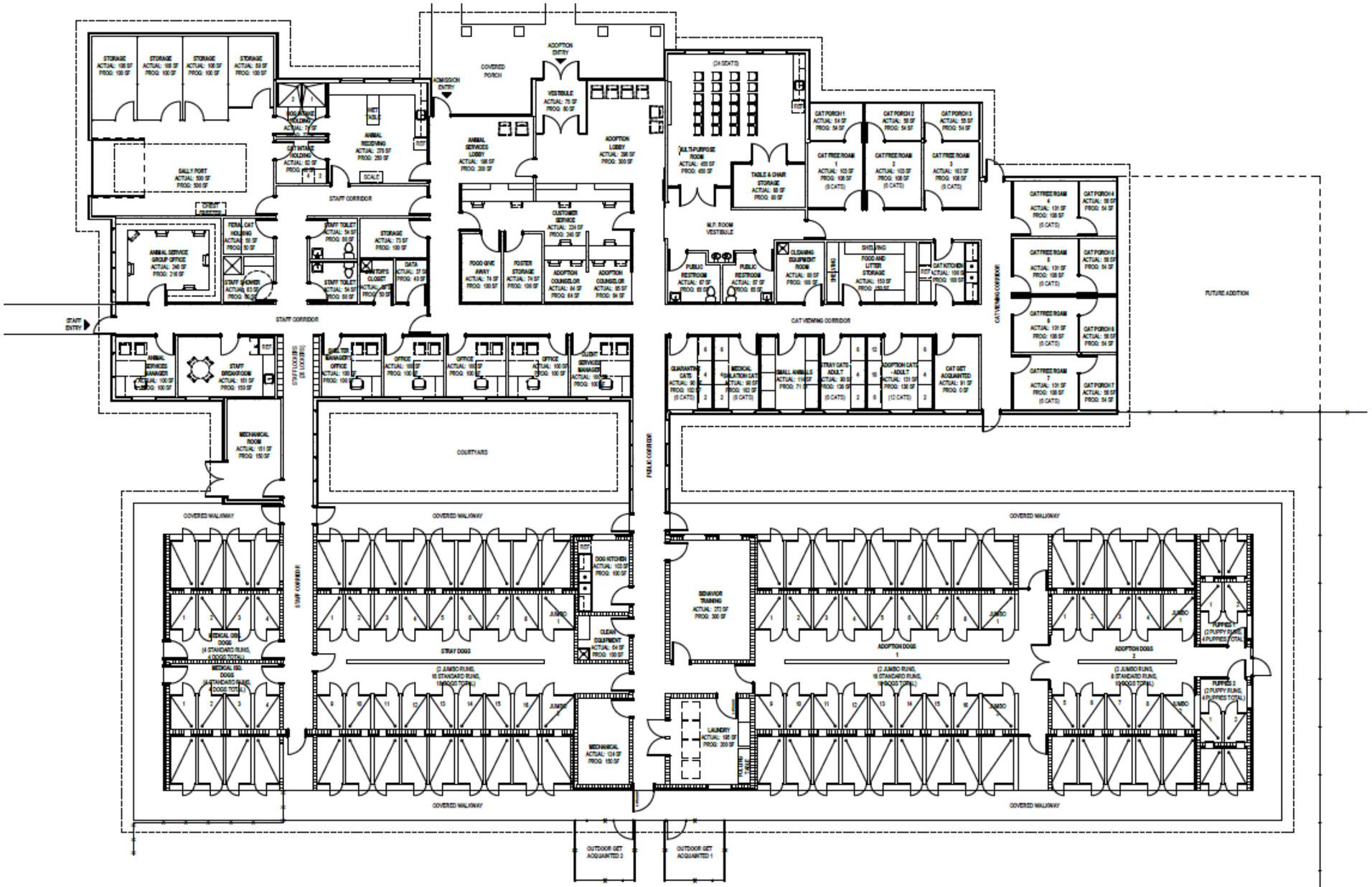

FFKR ARCHITECTS

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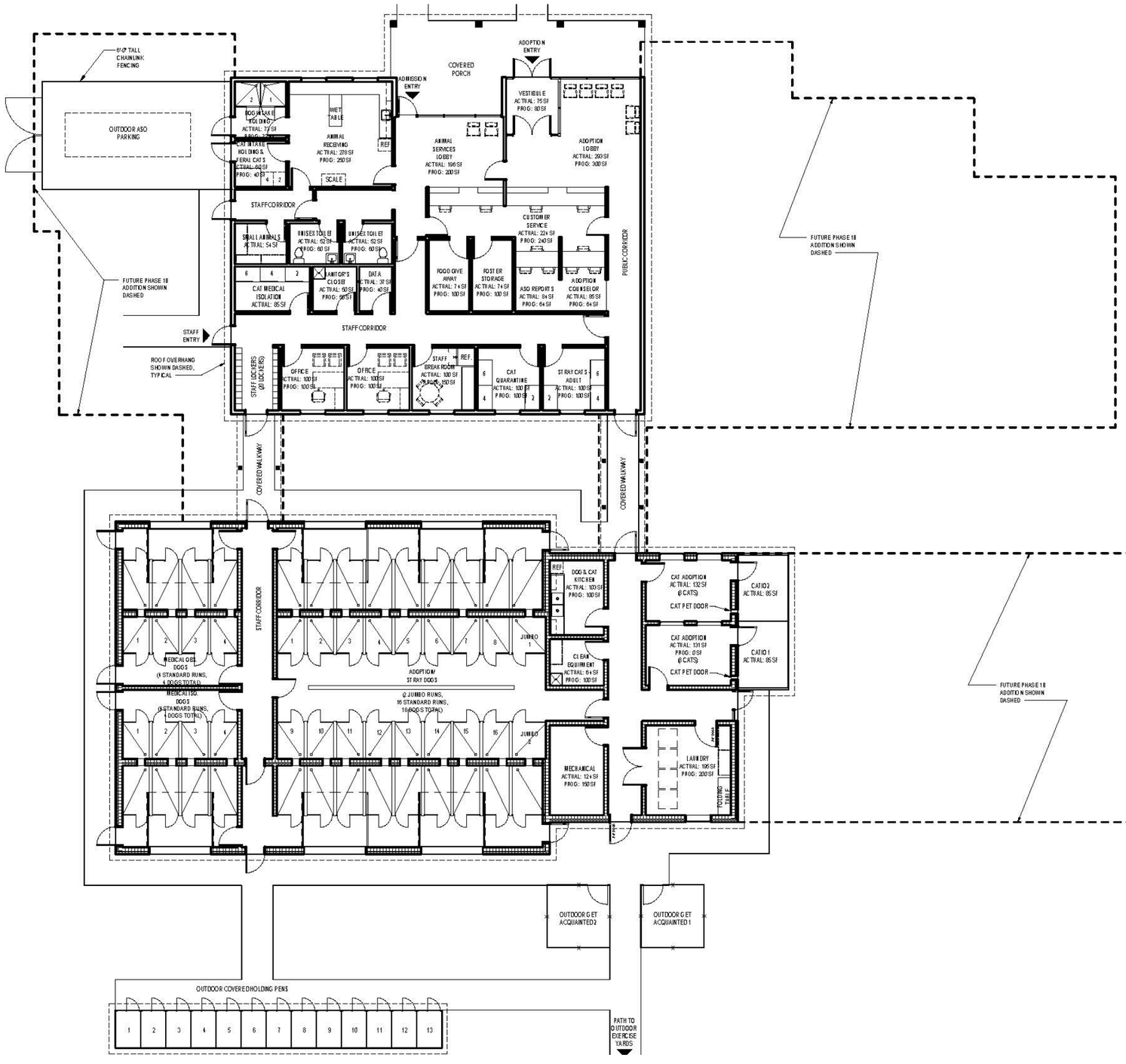


ANIMAL HOUSING TABULATION

CATEGORY	ACTUAL
ADOPTION DOGS[1]	18
STRAY DOGS[2]	0
PUPPIES (2 PUPPIES PER PEN)[2]	0
MEDICAL OBSERVATION DOGS[1]	4
MEDICAL ISOLATION DOGS[1]	4
DOG SUB-TOTAL	26
ADOPTION CATS	0
FREE-ROAM CATS	16
STRAY CATS	6
MEDICAL ISOLATION CATS	6
QUARANTINE CATS	6
CAT SUB-TOTAL	34
OTHER ANIMALS	6
TOTAL ANIMALS	66

NOTES:
1. THE NUMBER OF DOG HOUSING SHOWN REPRESENTS THE USE OF TWO-COMPARTMENT HOUSING, WHERE EACH DOG IS ALLOWED BOTH SIDES OF EACH RUN. HOWEVER, THE CURRENT DESIGN ALLOWS FOR SINGLE-COMPARTMENT HOUSING WHERE THE TRANSFER DOORS CAN BE SHUT AND A DOG CAN BE PUT ON EACH SIDE OF THE RUN.
2. STRAY DOGS AND PUPPIES WILL BE MIXED IN WITH ADOPTION DOGS FOR PHASE 1A.

AREA TABULATION

CATEGORY	ACTUAL
FULLY ENCLOSED SPACE	8,407
OUTDOOR COVERED SPACE	176
TOTAL	8,583

FFKR ARCHITECTS

SHELTER PROGRAM

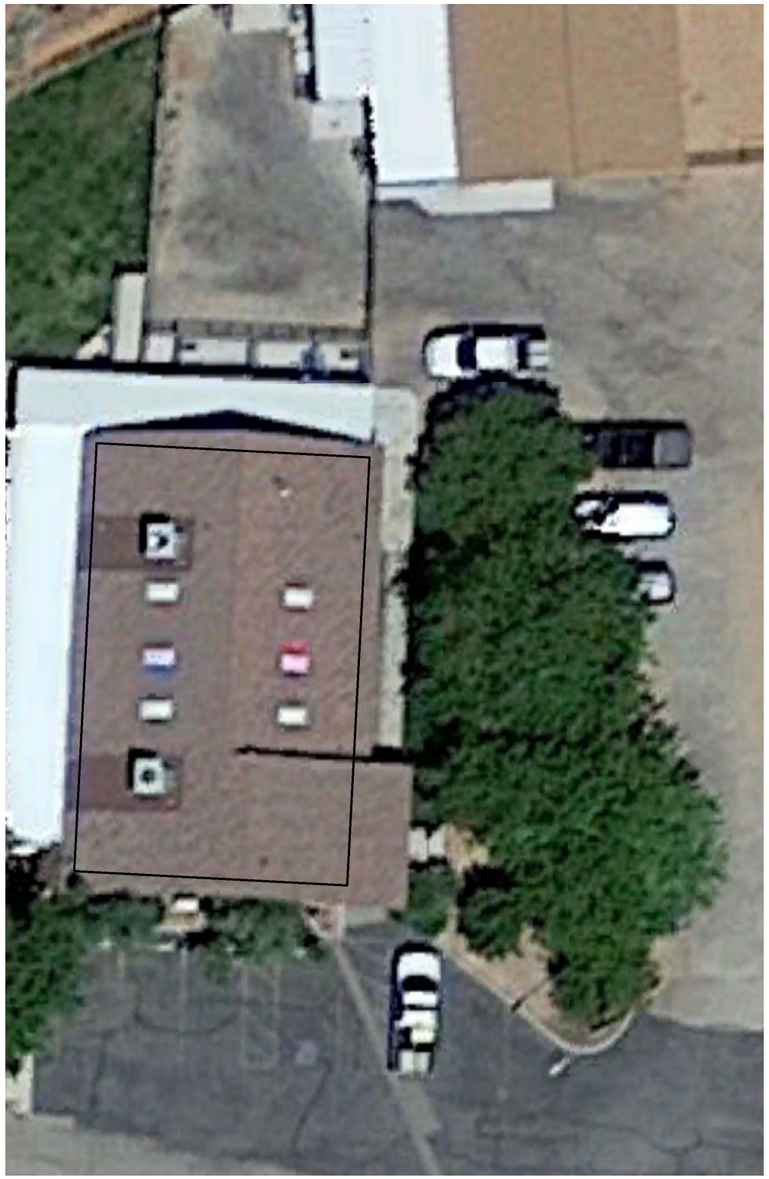
Fully Enclosed Space - SF :	**8,407**
Exterior Space - SF :	**176**
Total SF :	**8,583**

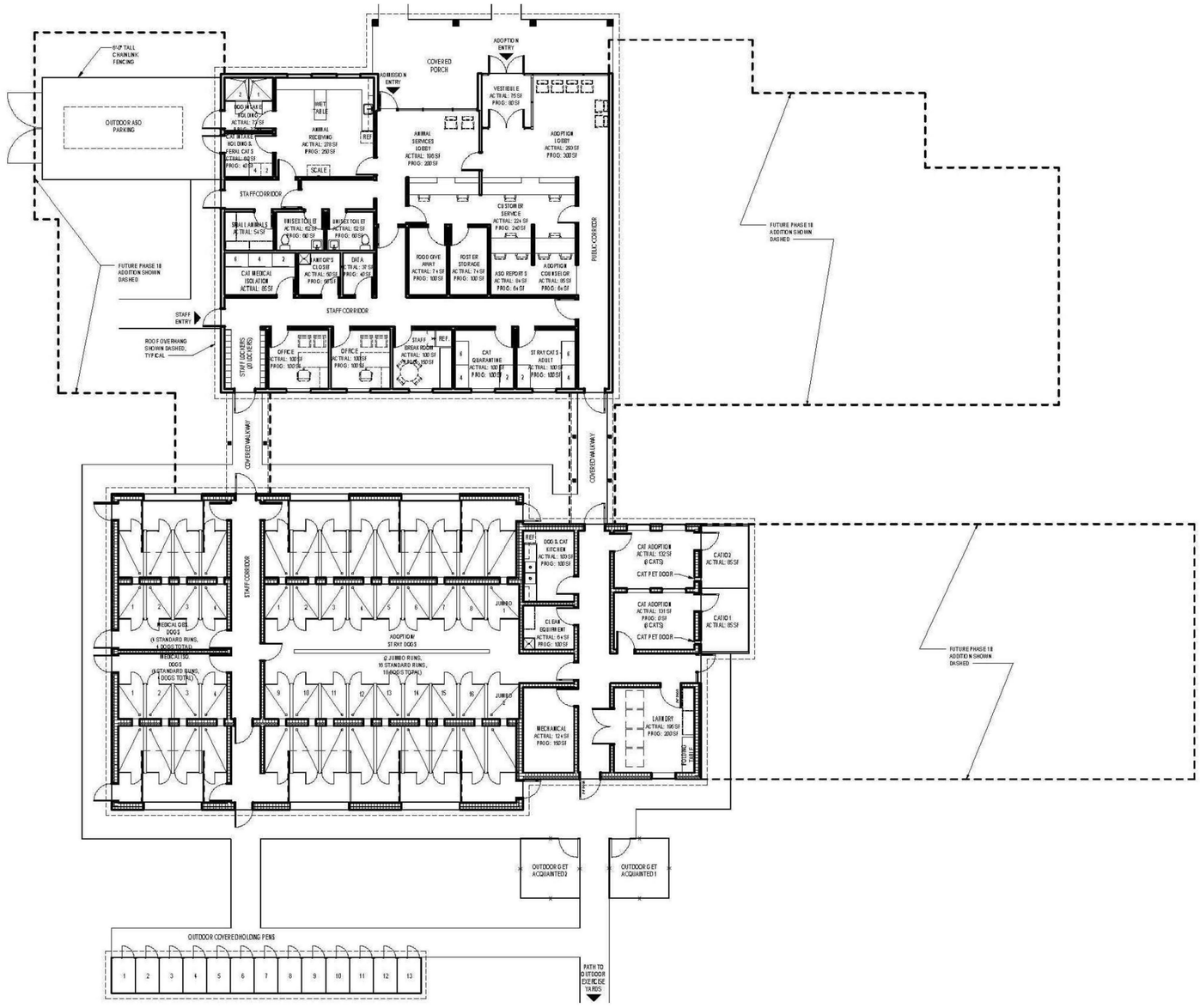
			LOW	HIGH
Fully Enclosed Space		**New Construction Total SF**	**Total Cost at $389.00 Per SF**	**Total Cost at $416.00 Per SF**
Subtotals:		8,407	$ 3,270,323	$ 3,497,312
Exterior Space		**Total SF**	**Total Cost at $272.30 Per SF**	**Total Cost at $291.20 Per SF**
Subtotals:		176	$ 47,925	$ 51,251
Building - Sub-Totals:		**8,583**	**$ 3,318,248**	**$ 3,548,563**
	Low High			
Site Work & Parking	10% 15%		$ 331,825	$ 532,284
Total Construction Cost			**$ 3,650,073**	**$ 4,080,848**
		Total Cost / SF	**$ 425**	**$ 475**
Consider Budgeting for the following:				
Soft Costs (AE Fees, Civil Engineering, Surveying, Soil Tests, Construction Materials Testing, Air Balancing, Furnishing, Loose Equipment, Computers & Phone System, etc.)	15%		$ 547,511	$ 612,127
Contingency	5%		$ 209,879	$ 234,649
Estimated Total Project Cost			**$ 4,407,463**	**$ 4,927,624**

*Note: 1. This does not include the cost of land.

2. Please note, the Opinion of Probable Cost provided is based on historical costs of other animal shelter projects, but the construction market is extremely unpredictable at this time.

SHELTER PROGRAM





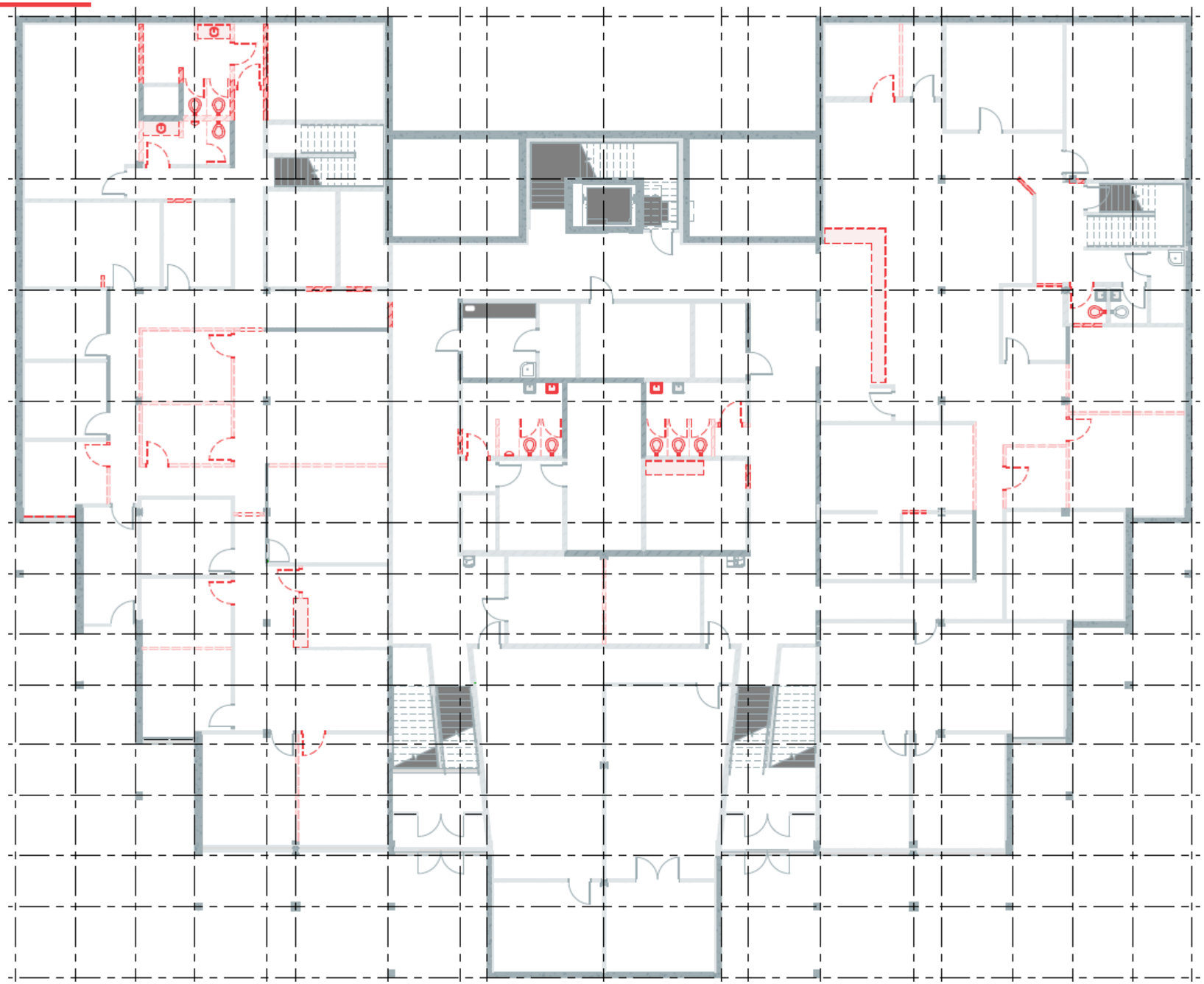
EXISTING SHELTER: 2,600 SF

NEW SHELTER: 8,407 SF

FFKR ARCHITECTS

St. George Police

ST. GEORGE POLICE



FFKR ARCHITECTS

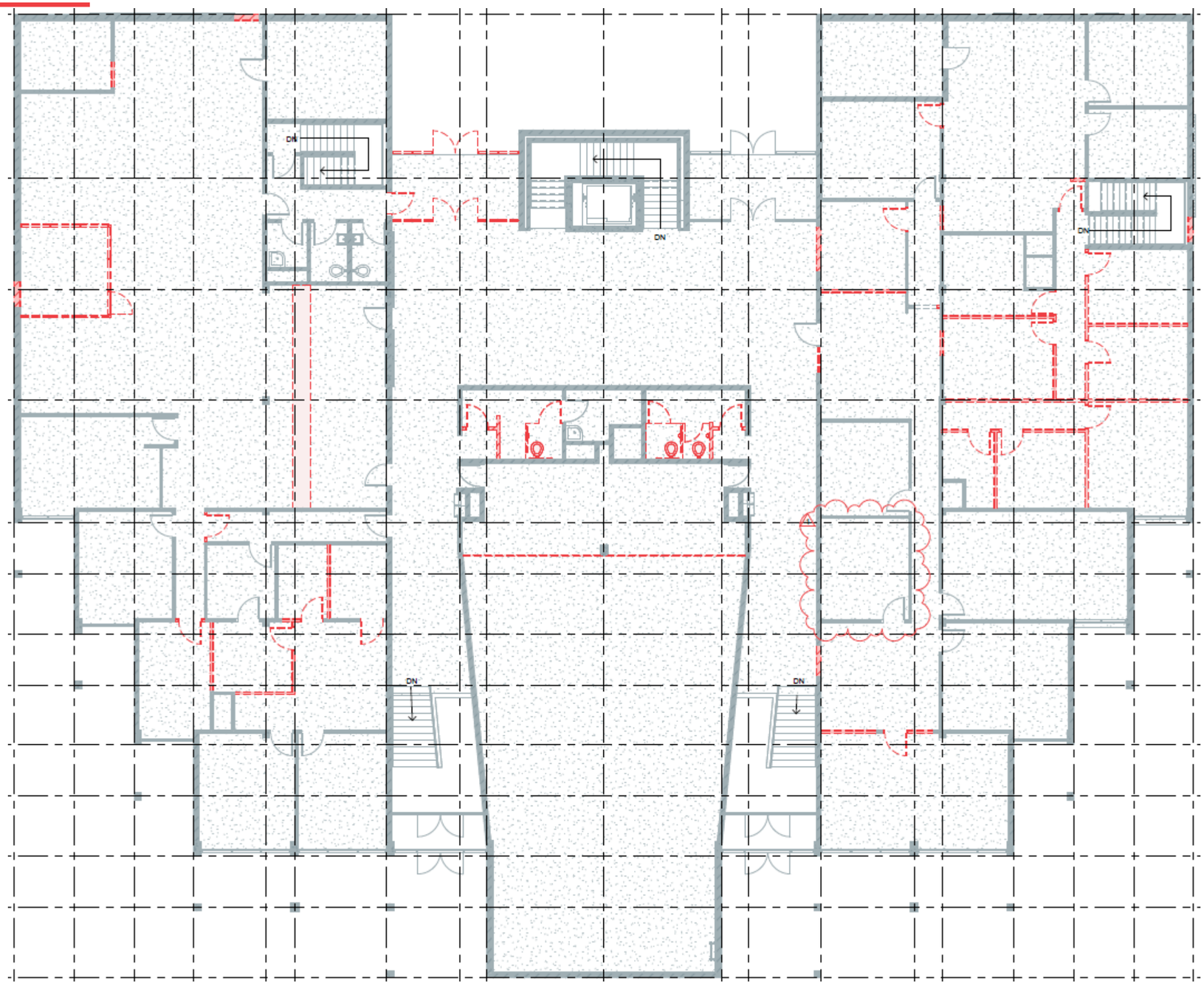
ST. GEORGE POLICE

Department Legend

- Administration
- Bldg Systems
- General Area
- Investigations
- Patrol
- Special Ops - ECHO
- Special Ops - Traffic
- Support Spaces
- Unassigned

FFKR ARCHITECTS

ST. GEORGE POLICE



FFKR ARCHITECTS

ST. GEORGE POLICE

Department Legend

- Administration
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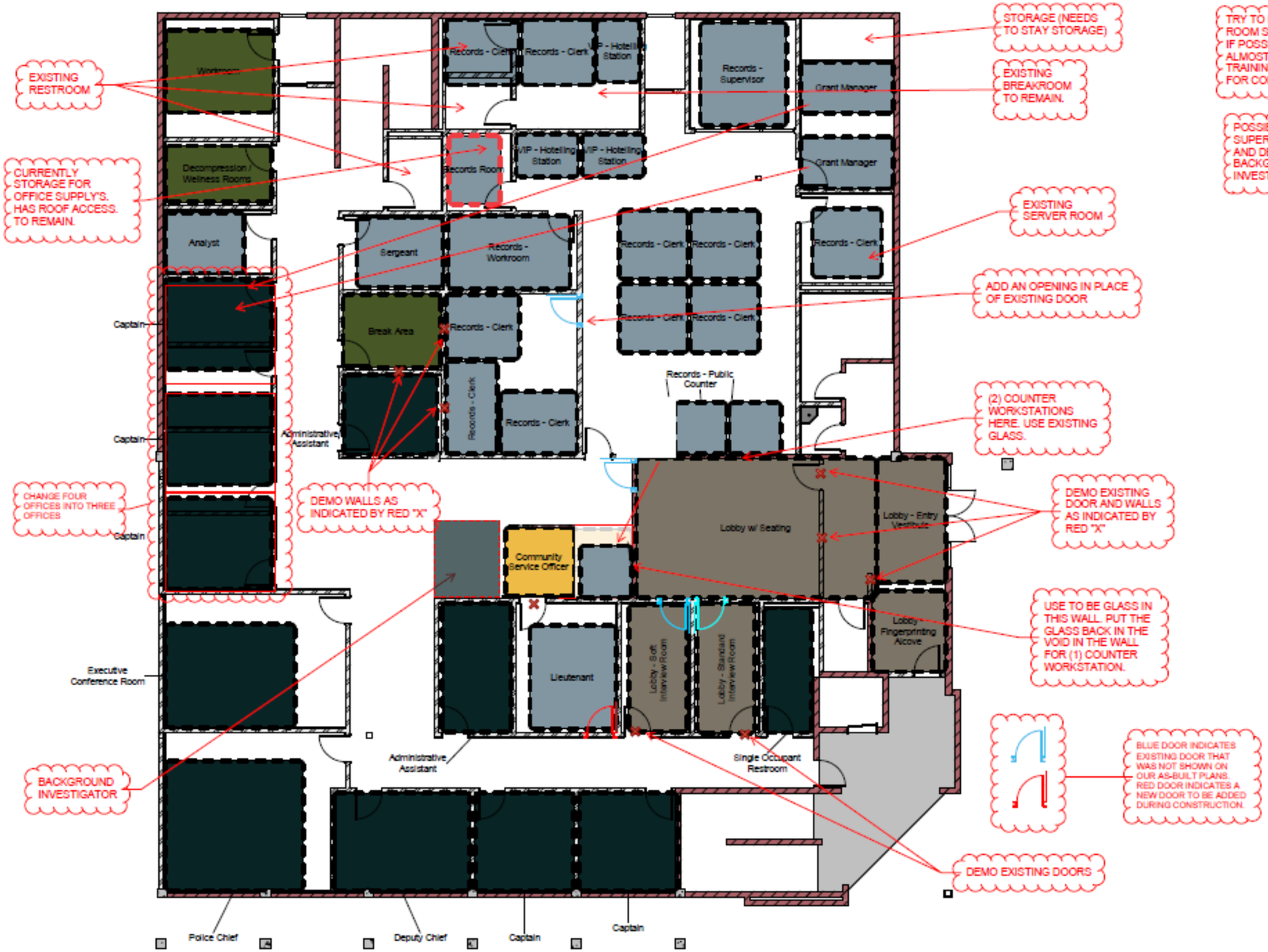
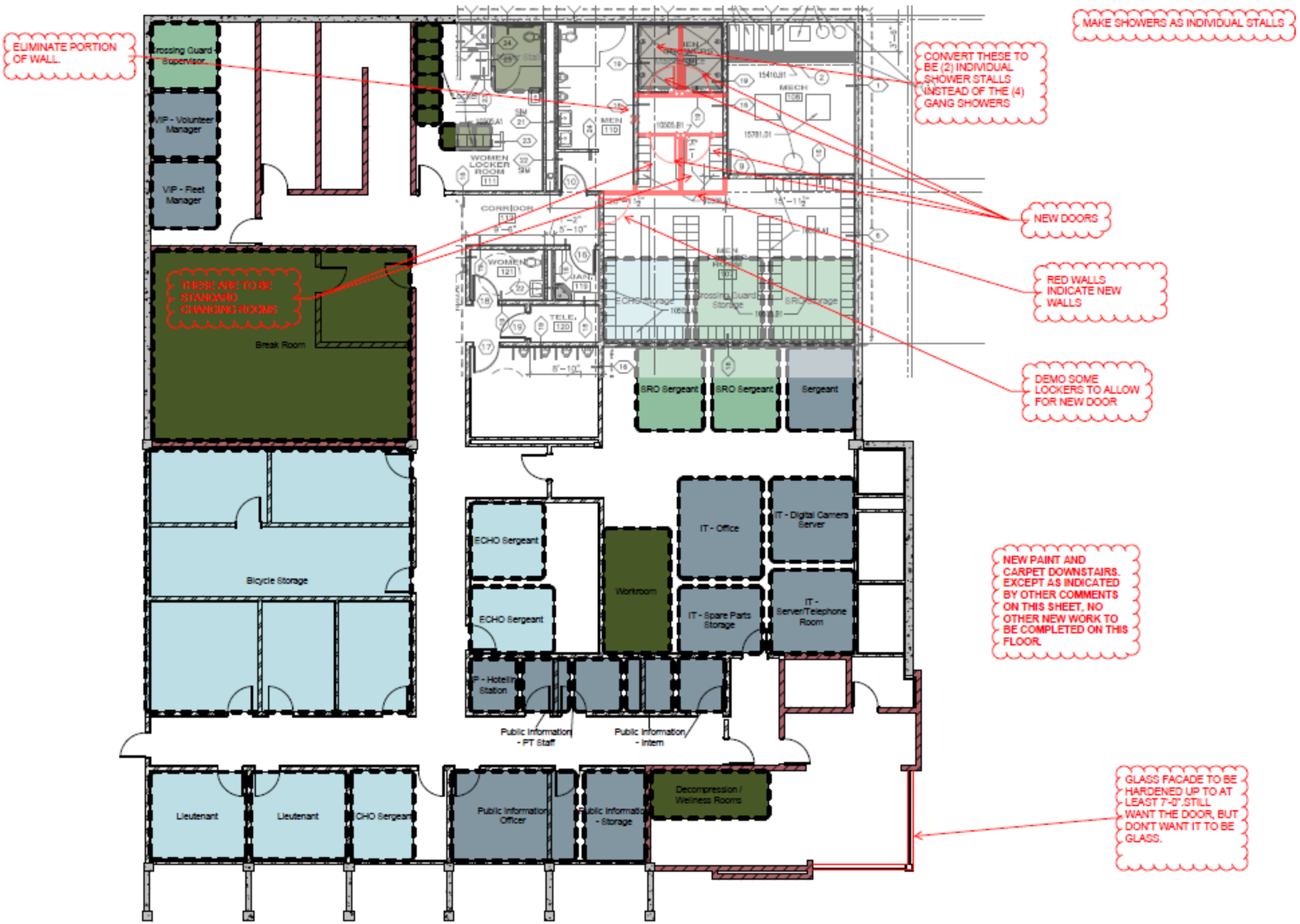
FFKR ARCHITECTS

ST. GEORGE POLICE

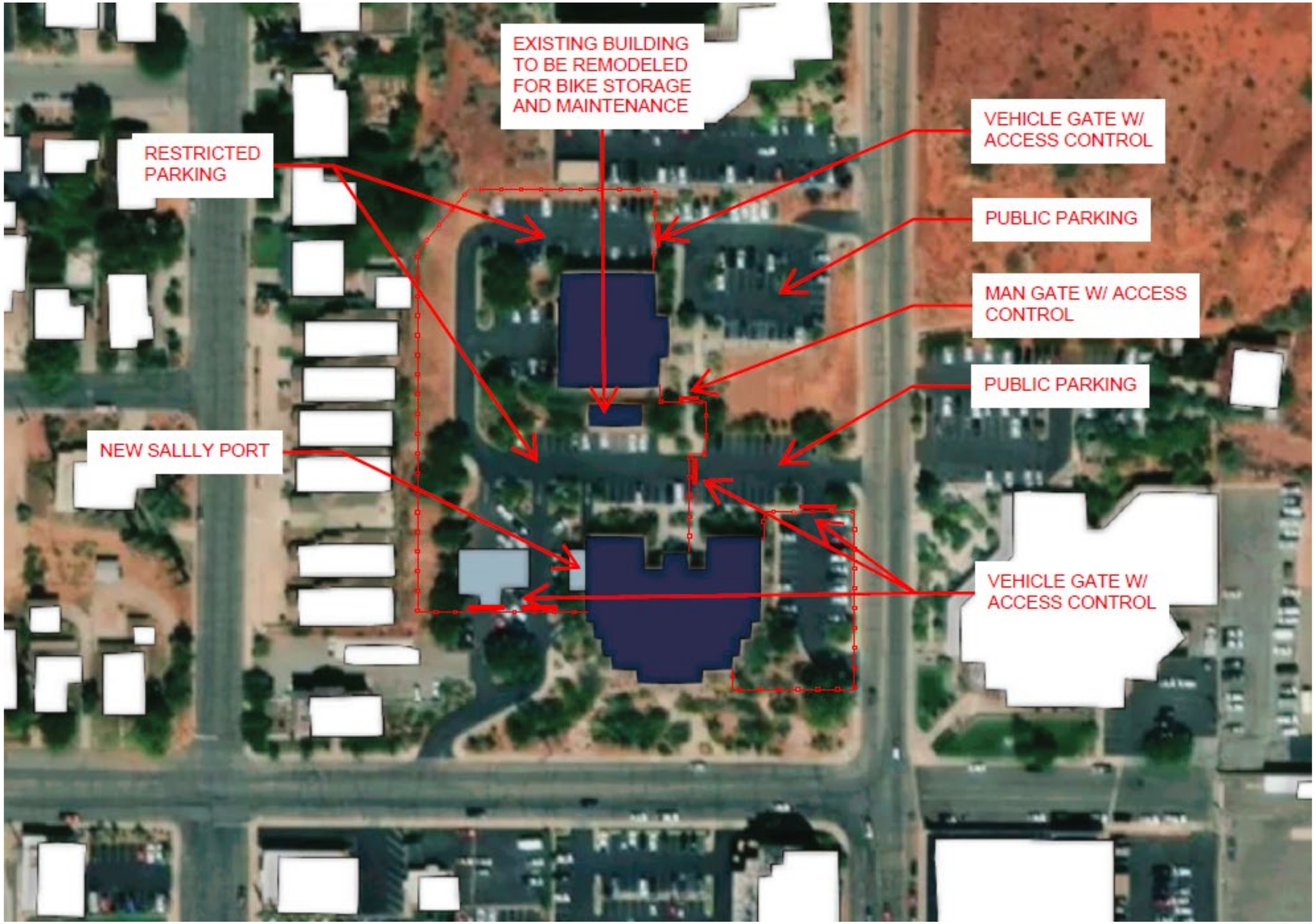


FFKR ARCHITECTS

ST. GEORGE POLICE



ST. GEORGE POLICE



ST. GEORGE POLICE

PROJECT ESTIMATE	CONSTRUCTION CONTROL CORPORATION	9/25/2025

PROJECT NAME.....ST. GEORGE CITY HALL/PD REMODEL TEST FIT 3 — CITY HALL REMODEL
LOCATION.....ST. GEORGE, UT
ARCHITECT.....FFKR — 32,018 SF
STAGE OF DESIGN.....PROGRAM — 853 Addition SF

CSI #	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
	BUILDING COST SUMMARY				
02	EXISTING CONDITIONS			$ 4.86	$ 155,683
03	CONCRETE			$ 2.92	$ 93,357
04	MASONRY			$ 2.85	$ 91,270
05	METALS			$ 0.92	$ 29,556
06	WOODS & PLASTICS			$ 0.31	$ 10,000
07	THERMAL & MOISTURE PROTECTION			$ 2.89	$ 92,578
08	DOORS & WINDOWS			$ 3.71	$ 118,810
09	FINISHES			$ 31.71	$ 1,015,417
10	SPECIALTIES			$ 1.16	$ 37,184
11	EQUIPMENT			$ -	$ -
12	FURNISHINGS			$ -	$ -
13	SPECIAL CONSTRUCTION			$ -	$ -
14	CONVEYING SYSTEMS			$ 0.94	$ 30,000
21	FIRE SUPPRESSION			$ 0.66	$ 21,127
22	PLUMBING			$ 4.58	$ 146,669
23	HVAC			$ 22.01	$ 704,694
26	ELECTRICAL			$ 19.06	$ 610,246
27	COMMUNICATION			$ 5.13	$ 164,355
28	ELECTRONIC SAFETY & SECURITY			$ 6.16	$ 197,226
31	EARTHWORK			$ 0.46	$ 14,592
32	EXTERIOR IMPROVEMENTS			$ 10.72	$ 343,339
33	UTILITIES			$ 0.31	$ 10,000
	SUBTOTAL			$ 121.37	$ 3,886,104
	GENERAL CONDITIONS	7%		$ 8.50	$ 272,027
	BONDS & INSURANCE	2%		$ 2.60	$ 83,163
	OVERHEAD & PROFIT	3.5%		$ 4.64	$ 148,445
	DESIGN CONTINGENCY	15%		$ 18.21	$ 582,916
	TOTAL CONSTRUCTION COST			$ 155.31	$ 4,972,654
	STORAGE BUILDING REMODEL				40,392

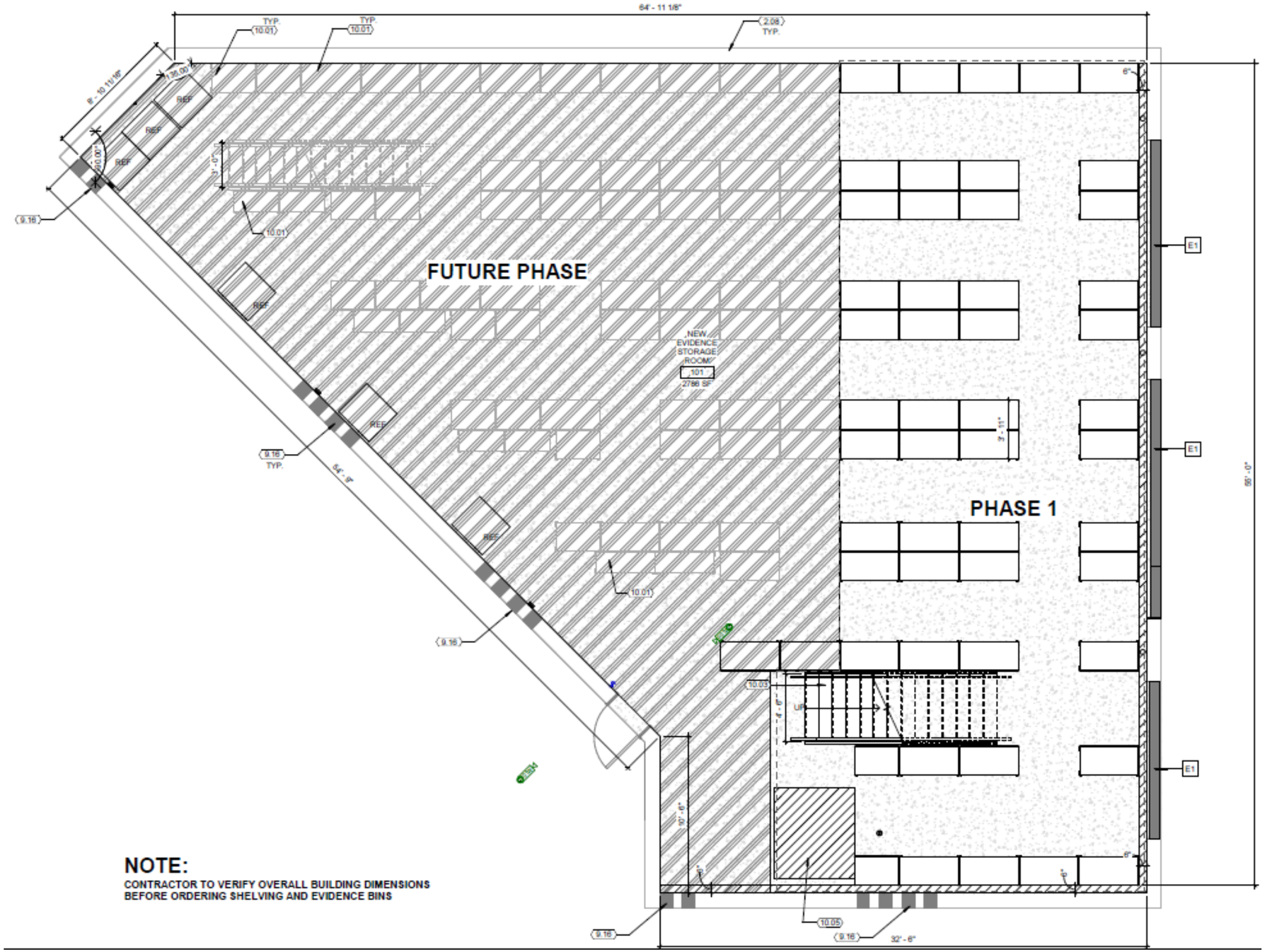
THIS ESTIMATE DOES NOT INCLUDE BUILDING SESIMIC UPGRADE

PROJECT ESTIMATE	CONSTRUCTION CONTROL CORPORATION	11/7/2025

PROJECT NAME.....ST. GEORGE CITY HALL/PD REMODEL TEST FIT 3 — POLICE DEPARTMENT REMODEL - PHASE 2
LOCATION.....ST. GEORGE, UT
ARCHITECT.....FFKR — 17,749 SF
STAGE OF DESIGN.....PROGRAM

CSI #	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL
	BUILDING COST SUMMARY				
02	EXISTING CONDITIONS			$ 2.89	$ 51,242
03	CONCRETE			$ 0.95	$ 16,893
04	MASONRY			$ 0.65	$ 11,500
05	METALS			$ -	$ -
06	WOODS & PLASTICS			$ 0.31	$ 5,500
07	THERMAL & MOISTURE PROTECTION			$ 1.72	$ 30,583
08	DOORS & WINDOWS			$ 1.35	$ 23,900
09	FINISHES			$ 27.13	$ 481,552
10	SPECIALTIES			$ 1.00	$ 17,749
11	EQUIPMENT			$ -	$ -
12	FURNISHINGS			$ 2.00	$ 35,498
13	SPECIAL CONSTRUCTION			$ -	$ -
14	CONVEYING SYSTEMS			$ -	$ -
21	FIRE SUPPRESSION			$ 0.57	$ 10,098
22	PLUMBING			$ 0.89	$ 15,750
23	HVAC			$ 2.84	$ 50,490
26	ELECTRICAL			$ 11.97	$ 212,529
27	COMMUNICATION			$ 0.85	$ 15,147
28	ELECTRONIC SAFETY & SECURITY			$ 1.07	$ 18,934
31	EARTHWORK			$ 0.28	$ 5,000
32	EXTERIOR IMPROVEMENTS			$ -	$ -
33	UTILITIES			$ -	$ -
	SUBTOTAL			$ 56.47	$ 1,002,365
	GENERAL CONDITIONS	10%		$ 5.65	$ 100,236
	BONDS & INSURANCE	2%		$ 1.24	$ 22,052
	OVERHEAD & PROFIT	4%		$ 2.53	$ 44,986
	DESIGN CONTINGENCY	15%		$ 8.47	$ 150,355
	TOTAL CONSTRUCTION COST			$ 74.37	$ 1,319,994

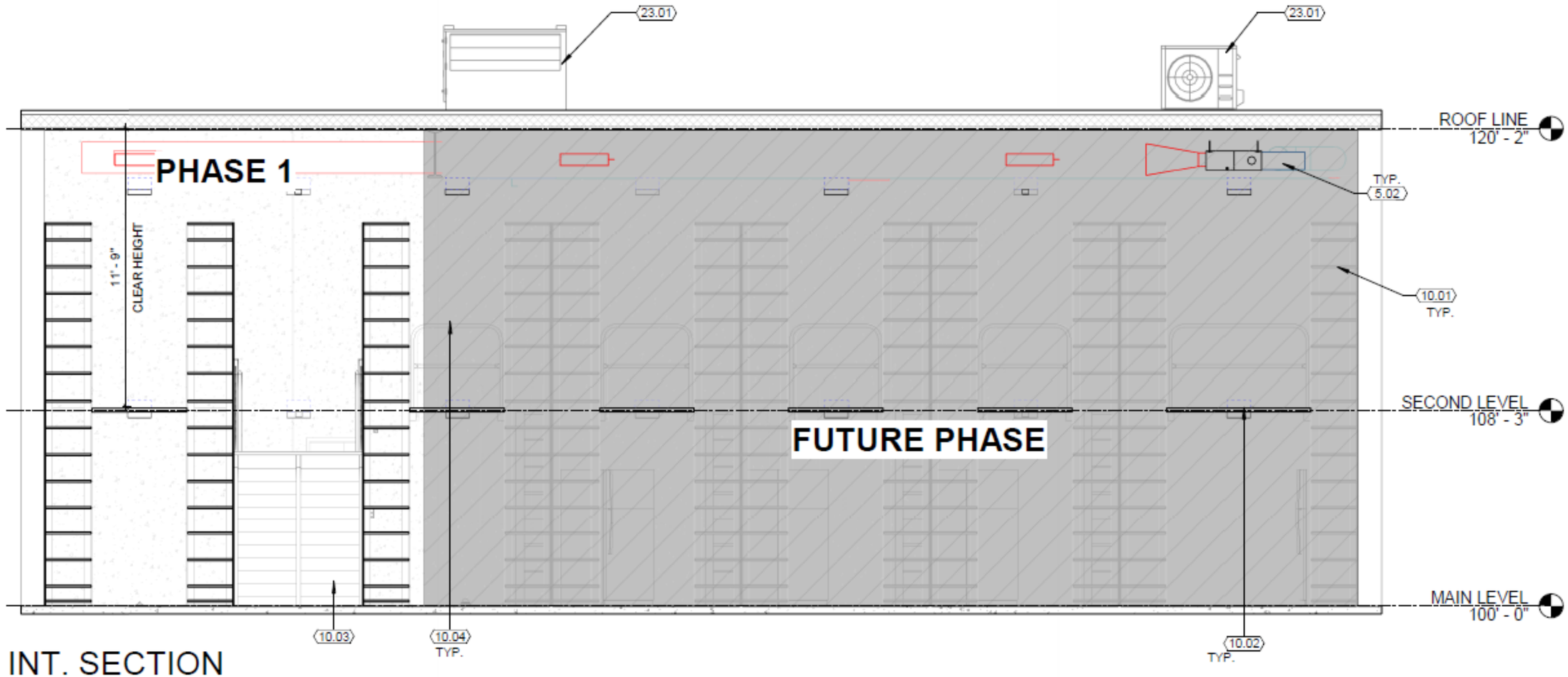
ST. GEORGE POLICE EVIDENCE STORAGE



NOTE:
CONTRACTOR TO VERIFY OVERALL BUILDING DIMENSIONS BEFORE ORDERING SHELVING AND EVIDENCE BINS

FFKR ARCHITECTS

ST. GEORGE POLICE EVIDENCE STORAGE



A2 INT. SECTION
1/4" = 1'-0"

FFKR ARCHITECTS

COST SUMMARY

SG ANIMAL SHELTER:

LOW: $425/SF = $3,650,073
+20% SOFT COSTS/CONTINGENCY: **$4,407,463**

HIGH: $475/SF = $4,080,848
+20% SOFT COSTS/CONTINGENCY: **$4,927,624**

INCL: A/E fees: **$304,000**

SG POLICE:

CITY HALL: 32,018 SF @ $155/SF = **$4,972,654**

DOES NOT INCLUDE SOFT COSTS

A/E Fees: **$372,950**

POLICE: 17,749 SF @ $74/SF = **$1,319,994**

DOES NOT INCLUDE SOFT COSTS

A/E Fees: **$79,500**

SG POLICE EVIDENCE: **$**

Questions

St.George

FFKR ARCHITECTS

FOUR **LOCATIONS**

SALT LAKE CITY, UTAH

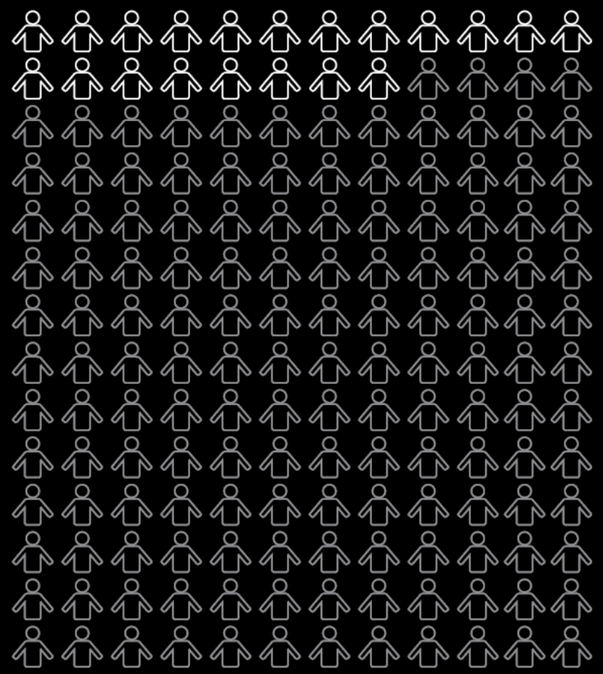
ST. GEORGE, UTAH

TEMPE, ARIZONA

BOISE, IDAHO

OVER 100 MILLION
SQUARE FEET
BUILT/DESIGNED

OVER **180 EMPLOYEES**
20 PRINCIPALS



IN-**HOUSE**

ARCHITECTURE
INTERIOR DESIGN
LANDSCAPE + PLANNING
3-D RENDERING
GRAPHIC DESIGN + BRANDING

OVER 300
AWARDS + ACHIEVEMENTS

LEADING EDGE TOOLS

3-D PRINTING

DRONE

VIRTUAL REALITY

TOP DESIGN FIRM

#1 ARCHITECTURE FIRM IN UTAH
UTAH CONSTRUCTION & DESIGN + UTAH BUSINESS

TOP INTERIOR DESIGN HOSPITALITY FIRM
NEWH ARIZONA CHAPTER

TOP 100 DESIGN FIRMS IN SOUTHWEST REGION
ENGINEERING NEWS-RECORD (ENR)

Agenda Date: 12/18/2025 **Agenda Item Number:** 2

Subject:

Consider approval of a Professional Services Agreement with Horrocks Engineers to update the Transportation Master Plan.

Item at-a-glance:

Staff Contact: Cameron Cutler

Applicant Name: N/A

Reference Number: N/A

Address/Location:

N/A

Item History (background/project status/public process):

The Transportation Master Plan update will include travel demand modeling, traffic analysis, roadway classification evaluation, integration of bike paths, trails, and public transit, capital improvement recommendations, and cost estimating. Horrocks Engineers, which has successfully supported previous updates, will continue to provide these services. The City also received a proposal from one other firm outside the St. George area.

Staff Narrative (need/purpose):

The Citys Transportation Masterplan, typically updated every four to five years, should be reviewed and updated to ensure the roadway system aligns with current and future growth. Updating the plan in conjunction with the upcoming Impact Fee Analysis (IFA) will provide coordinated planning for transportation improvements and funding.

Name of Legal Dept approver: Alicia Galvany Carlton

Budget Impact:

Cost for the agenda item: $129,700

Amount approved in current FY budget for item: $129,700

If not approved in current FY budget or exceeds the budgeted amount, please explain funding source:

N/A

Description of funding source:

Approved budgeted funds

Recommendation (Include any conditions):

Approval

Attachments

CITY OF ST. GEORGE PROFESSIONAL SERVICES AGREEMENT FOR SERVICES WITH HORROCKS ENGINEERS LLC TO UPDATE THE TRANSPORTATION MASTER PLAN

This Professional Services Agreement (hereinafter "Agreement") is made and entered into on _____ by and between the City of St. George, a municipal corporation, with offices at 175 East 200 North, St. George, Utah 84770 (hereinafter called the "CITY"), and Horrocks Engineers LLC, with offices at 555 South Bluff Suite 200 St. George, Utah 84770 (hereinafter "CONSULTANT").

WITNESSETH THAT:

WHEREAS CITY desires professional services to be performed and has solicited CONSULTANT to provide engineering services on one or more projects from time to time on an as needed basis (hereinafter called the PROJECT); and

WHEREAS, CONSULTANT has submitted a proposal, which outlines the general scope of services to be provided and the fees for the PROJECT; and

WHEREAS CITY selected CONSULTANT to perform the services for the PROJECT;

NOW, THEREFORE, for the consideration hereinafter set forth, the parties hereto do mutually agree as follows:

1. **ENGAGEMENT OF CONSULTANT.**

1.1 CONSULTANT is a professional licensed by the State of Utah and the City of St. George. CONSULTANT has all licenses, permits, and approvals that are legally required for CONSULTANT to practice its profession and shall keep them in effect at all times during the term of this Agreement.

1.2 CONSULTANT states that it has the necessary knowledge, experience, abilities, skills, and resources to perform its obligations under this Agreement and agrees to perform its obligations under this Agreement in a professional manner, consistent with prevailing industry standards and practices as observed by competent practitioners of the profession in which CONSULTANT and its subcontractors or agents are engaged.

1.3 CONSULTANT certifies that it does not and will not during the performance of this contract knowingly employ, or subcontract with any entity which employs workers in violation of 8 USC §1324(a). CONSULTANT agrees to require all subcontractors at the time they are hired for this project to sign a Certification of Legal Work Status and submit the Certification to CITY prior to any work being performed by the subcontractors. CONSULTANT agrees to produce, at CITY'S request, documents to verify compliance

with applicable State and Federal laws. If CONSULTANT knowingly employs workers or subcontractors in violation of 8 USC § 1324(a), such violation shall be cause for unilateral cancellation of the contract between CONSULTANT and CITY. In addition, CONSULTANT may be suspended from participating in future projects with CITY for a period of one (1) year. In the event this contract is terminated due to a violation of 8 USC § 1324(a) by CONSULTANT or a subcontractor of CONSULTANT, CONSULTANT shall be liable for any and all costs associated with such termination, including, but not limited to, any damages incurred by CITY excluding attorney fees. For purposes of compliance, CITY requires CONSULTANT and subcontractors to use E-Verify or other federally accepted forms of verification to verify the employment eligibility of all employees as allowed by law and the E-Verify procedures. CONSULTANT and subcontractors must maintain authorized documentation of the verification.

1.4 CONSULTANT shall not, either during or after the term of this Agreement, make public any reports or articles, or disclose to any third party any confidential information relative to the work of City or the operations or procedures of CITY without the prior written consent of CITY.

1.5 CONSULTANT further agrees that it shall not, during the term of this Agreement, take any action that would affect the appearance of impartiality or professionalism.

1.6 CONSULTANT, by execution of this Agreement, certifies that it does not discriminate against any person upon the basis of race, color, creed, national origin, age, sex, sexual orientation, gender identity, disability, or marital status in its employment practices.

1.7 CONSULTANT expressly acknowledges and agrees that nothing in this Agreement shall be deemed to relieve CONSULTANT from any obligation to comply with all applicable requirements of CITY during the term of this Agreement including the payment of fees and compliance with all other applicable ordinances, resolutions, regulations, policies, and procedures of CITY, except as modified or waived in this Agreement.

1.8 CONSULTANT shall comply with all applicable federal, state, and local laws, regulations, and ordinances that affect those employees or those engaged by CONSULTANT on the PROJECT, and will procure all necessary licenses, permits and insurance required.

1.9 CONSULTANT certifies it is in compliance with the public contract boycotting restrictions set forth in Utah Code § 63G-27-201 and agrees not to engage in any such restricted boycotting for the duration of this Agreement, and to notify the City in writing if it begins engaging in an economic boycott.

1.10 CITY acknowledges that CONSULTANT may employ various specialized subcontractors for up to 15% of the services provided herein. CONSULTANT shall give written notice to CITY at least seven (7) days prior to CONSULTANT'S employment of the subcontractors to perform portions of the work provided for in this Agreement. It shall be solely CONSULTANT's responsibility to ensure that any of CONSULTANT'S

subcontractors perform in compliance with the terms of this Agreement. Subcontractors may not be changed without ten (10) days prior written notice to CITY.

2. **PROJECT SERVICES DESCRIPTION.**

2.1 CITY makes no guarantee as to the total volume of work, if any, that will be needed under this Agreement. CONSULTANT will provide the services on an as needed basis as described in the attached Scope of Work (**"Exhibit A Scope of Services"**) which is made a part of this Agreement by this reference. As services are needed, CITY shall provide CONSULTANT with a description of the work needed which shall be known as a "Work Order" and CONSULTANT will provide CITY with a specific scope of work and cost for the Work Order, which if accepted by the CITY shall become part of this Agreement binding both parties. CITY may at any time, as the need arises, order changes within the scope of the services without invalidating the Agreement. If such changes increase or decrease the amount due under the Agreement, or in the time required for performance of the work, an equitable adjustment shall be authorized by change order.

2.2 CONSULTANT shall furnish all the material, supplies, tools, transportation, equipment, labor, subcontractor services and other services necessary for the completion of the work described in **"Exhibit A Scope of Services"** or in subsequent Work Orders.

2.3 CONSULTANT shall provide services in compliance with all applicable requirements of federal, state, and local laws, codes, rules, regulations, ordinances, and standards.

3. **TERM OF AGREEMENT.**

3.1 This Agreement shall be effective as of the date executed by all parties and shall continue for one year unless otherwise terminated as set forth in this Agreement. If a Work Order was started during this term but not completed, the terms of this Agreement shall continue through completion of the Work Order.

3.2 CONSULTANT agrees to perform services as expeditiously as is consistent with professional skill and care and the orderly progress of the PROJECT. CONSULTANT shall perform the services in a timely manner according to the schedule approved by CITY.

3.3 CONSULTANT shall perform its services upon notice from the CITY to proceed and in accordance with the schedule approved by CITY. In the event performance of its services is delayed by causes beyond the reasonable control of CONSULTANT, and without the fault or negligence of CONSULTANT, the time for the performance of the services shall be equitably adjusted by written amendment to reflect the extent of such delay. CONSULTANT shall provide CITY with written notice of delay, including a description of the delay and the steps contemplated or taken by CONSULTANT to mitigate the effect of such delay.

4. **COMPENSATION.**

4.1 For the performance of the services and completion of PROJECT set forth herein, CITY shall pay CONSULTANT as agreed in **"Exhibit A"** and each Work Order as applicable. The aggregate total of all Work Orders shall not exceed one hundred twenty-nine thousand, seven hundred dollars**, $**129,700.00. Each individual Work Order shall not exceed one hundred twenty-nine thousand, seven hundred dollars**, $**129,700.00.

5. **INVOICING, PAYMENT, NOTICES.**

5.1 CONSULTANT shall submit invoices, no more frequently than monthly, for the services rendered during the preceding period; invoices shall describe the services performed, list all subcontractors used and the amount owed or paid to them, list all suppliers used and the amount owed or paid to them, list the contract amount, list the current invoice amount based on percentage of task complete, list the previous invoice amount, list total invoices to date, and list the contract balance.

5.2 In executing the request for payment, CONSULTANT shall attest that payment has been made to all subcontractors involved with prior requests, unless CONSULTANT provides a detailed explanation why such payments have not occurred. CONSULTANT shall also sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status and submit them with each request for payment. CONSULTANT shall require each subcontractor to sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status at the time subcontractor is paid and shall provide a copy of both documents to CITY. CONSULTANT shall also sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status and submit them with each request for payment.

5.3 A "Waiver and Release Upon Final Payment" signed by CONSULTANT attesting that all subcontractors, laborers, and material suppliers involved with prior requests for payment have been paid, and that all subcontractors, laborers, and material suppliers upon which the final payment is based will be paid immediately unless CONSULTANT provides a detailed explanation why such payments have not occurred or will not occur. CONSULTANT shall also require each subcontractor to sign a "Waiver and Release Upon Final Payment" and a Certificate of Legal Work Status at the time subcontractor is paid its final payment and shall provide a copy of both documents to CITY.

5.4 If such liens, claims, security interests or encumbrances remain unsatisfied after payments are made, CONSULTANT shall refund to CITY all money that CITY may be compelled to pay in discharging such liens, including all costs except for attorneys' fees.

5.5 All invoices for reimbursable costs shall be taken from the books of account kept by CONSULTANT, and CONSULTANT shall maintain copies of payroll distribution, receipted bills, and other documents. CITY shall have the right to review all books and records kept by CONSULTANT and any subcontractors concerning the operation and services performed under this Agreement. CITY shall withhold payment for any

expenditure not substantiated by CONSULTANT'S or subcontractor's books and records.

5.6 In the event CITY has made payment for expenditures that are not allowed, as determined by CITY'S audit, CONSULTANT shall reimburse CITY the amount of the un-allowed expenditures. If additional money is owed to CONSULTANT, the reimbursement may be deducted from the additional money owed.

5.7 CITY shall make no payment for any services not specified in this Agreement unless such additional services and the price thereof are agreed to in writing, prior to the time that such additional services are rendered.

5.8 Invoices shall be paid to CONSULTANT within thirty (30) days of presentation to CITY.

5.9 CITY may withhold 5% of billed amount as retention. Retention held shall be included in the final invoice after the contract is complete.

6. **CHARGES AND EXTRA SERVICE.**

6.1 CITY may make changes within the general scope of this Agreement. If CONSULTANT is of the opinion a proposed change causes an increase or decrease in the cost and/or the time required for performance of this Agreement, CONSULTANT shall notify CITY of that fact. An agreed-upon change will be reduced to writing signed by the parties hereto and will modify this Agreement accordingly. CONSULTANT may initiate such notification upon identifying conditions which may change the services agreed to on the effective date of this Agreement, as set forth in **Exhibit A**. However, CONSULTANT represents that to the best of its knowledge that it is not aware of any such conditions on the date hereof. Any such notification must be provided within thirty (30) days from the date of receipt by that party of the other party's written notification of a proposed change.

6.2 CITY may request CONSULTANT to perform extra services not covered by **Exhibit A**, and CONSULTANT shall perform such extra services and will be compensated for such extra services when they are reduced to a writing mutually agreed to and signed by the parties hereto amending this Agreement accordingly.

6.3 CITY shall not be liable for payment of any extra services, nor shall CONSULTANT be obligated to perform any extra services except upon such written amendment.

7. **TO BE FURNISHED BY CITY.** Resources to be furnished by CITY to CONSULTANT, at no cost to CONSULTANT, consist of CITY staff assistance for oversight and meetings to help perform the services. CONSULTANT shall verify accuracy of the information provided, unless otherwise stated in the contract documents.

8. **INSPECTIONS.** All work shall be subject to inspection and approval of CITY or its authorized representative.

9. **ACCURACY AND COMPLETENESS.**

9.1 CONSULTANT has total responsibility for the accuracy and completeness of its investigations, calculations, reports, plans and related designs, specifications and estimates prepared for the PROJECT and shall check all such material accordingly.

9.2 The plans will be reviewed by CITY for conformity with PROJECT objectives and compliance with CITY Standards.

9.3 Reviews by CITY do NOT include the detailed review or checking of major design components and related details or the accuracy with which such designs are depicted on the plans.

9.4 The responsibility for accuracy and completeness remains solely with CONSULTANT and shall be performed consistent with the standard of care.

10. **INDEPENDENT CONTRACTOR.**

10.1 CITY retains and engages CONSULTANT, as an independent contractor, to act for and represent it in all matters involved in the performance of services on the PROJECT, subject to the terms, conditions and stipulations as hereinafter stated.

10.2 It is understood and agreed that CONSULTANT will provide the services without supervision from CITY. CONSULTANT is an independent contractor and is not an employee, officer, or agent of CITY for any purposes related to the performance of this Agreement and is not an employee of CITY and is not entitled to any benefits from CITY.

10.3 Nothing in this agreement shall create nor be construed to constitute a partnership or joint venture between CONSULTANT and CITY.

10.4 CONSULTANT is advised to obtain and maintain in effect during the term of this Agreement medical insurance and disability insurance for all related work performed under this Agreement.

10.5 CONSULTANT acknowledges that CITY will not withhold any federal, state, or local taxes, including FICA, nor will CITY provide any unemployment compensation or worker's compensation coverage. As an independent contractor, CONSULTANT shall be responsible for all taxes, worker's compensation coverage and insurance coverage, and shall hold CITY harmless and indemnify CITY from and against any and all claims related to taxes, unemployment compensation, and worker's compensation.

10.6 CONSULTANT shall secure, at its own expense all personnel required in performing the services under this Agreement. The employees of CONSULTANT shall not be considered employees of CITY nor have any contractual relationship with CITY. CONSULTANT and its employees shall not hold themselves out as, nor claim to be

officers or employees of CITY by reason of this Agreement. The employees of CITY shall not be considered employees of CONSULTANT.

10.7 Neither party has the right to bind or obligate the other in any way. CONSULTANT shall not use the name, trademarks, copyrighted materials, or any information related to this Agreement in any advertising or publicity without CITY'S prior written authorization.

11. **INSURANCE.**

11.1 GENERAL: CONSULTANT shall secure and maintain insurance as required by laws and regulations and the terms of this agreement to protect against any liability, loss or expense which occurs or arises as a result of the performance of the services provided pursuant to this agreement or as changed as provided herein. CONSULTANT'S insurer must be authorized to do business in Utah and must have an A.M. Best rating of A VIII or better at the time this contract is executed. Required limits may be met with Umbrella or Excess insurance policies.

11.2 COMMENCEMENT OF WORK: Neither CONSULTANT, its Suppliers nor any subcontractors shall enter the site of the work or commence work under this contract before CITY has received and accepted Certificate(s) of Insurance and Insurance Endorsements and has issued the Notice to Proceed, as applicable.

11.3 INSURANCE CERTIFICATES AND COVERAGE: Insurance certificates shall be issued on all policies required under this contract and shall be signed by an authorized representative of the insurance company. The insurance certificate or the coverage required shall include the following:

A. The name and address of the insured.

B. CITY shall be named as a Certificate Holder.

C. CITY shall be named as an additional primary insured on the General Liability Certificate with CITY listed as non-contributory on the General Liability certificate.

D. The location of the operations to which the insurance applies.

E. The number of the policy and the type or types of insurance in force thereunder on the date borne by the certificate.

F. The expiration date of the policy and the limit or limits of liability thereunder on the date borne by the certificate.

G. A statement that all coverage is on an occurrence basis rather than a claims basis except for the Professional Errors and Omissions Malpractice Insurance coverage.

H. A provision that the policy or policies will not be canceled, denied renewal, or reduced in coverage until at least 30 days after written notice has been received by CITY.

I. Name, address, and telephone number of the insurance company's agent of process in Utah.

J. Other information to demonstrate compliance with additional requirements stipulated for the various types of insurance coverage.

11.4 WORKER'S COMPENSATION INSURANCE: CONSULTANT shall, as applicable, take out and maintain Workers' Compensation Insurance as required by the Labor Code for all its employees at the site of the work during the life of this contract. Coverage must be provided by a company authorized by the State of Utah to provide Workers' Compensation Insurance. The insurance shall include:

A. Insurance certificates shall provide a waiver of subrogation by the carrier to Certificate Holder.

B. CONSULTANT shall require each subcontractor to provide Workers' Compensation Insurance for its employees unless such employees are covered by CONSULTANT.

C. In the event any class of employees engaged in hazardous work under this contract is not protected by the Workers' Compensation Statute, CONSULTANT shall provide, and shall cause its subcontractors to provide, special insurance for the protection of such employees not otherwise protected.

11.5 COMMERCIAL GENERAL LIABILITY INSURANCE: CONSULTANT shall procure and maintain commercial general liability insurance for the duration of the contract against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONSULTANT, its agents, representatives, employees, or subcontractors. The insurance shall remain in effect during the term of this agreement and such that claims reported beyond the date of substantial completion of this agreement are covered and during the warranty period, to the extent that it relates to the activities covered by this Agreement, in such manner and amounts as set forth herein. The Insurance Endorsement shall evidence such provisions.

A. The minimum commercial general liability insurance shall be as follows:

i. Comprehensive general liability insurance for injuries, including accidental death, to any one person in any one occurrence in an amount not less than $1,000,000.00 Dollars.
ii. Comprehensive general liability insurance for injuries, including

accidental death, to two or more persons in any one occurrence in an amount not less than $4,000,000.00 Dollars (umbrella coverage may be considered).

iii. Broad form property damage insurance in an amount not less than $300,000.00 Dollars.

B. Such policy shall include each of the following coverages (as applicable):

i. Comprehensive form.
ii. Premises - operations.
iii. Explosion and collapse hazard.
iv. Underground hazard.
v. Product/completed operations hazard.
vi. Contractual insurance.
vii. Broad form property damage, including completed operations.
viii. Independent contractors for vicarious liability.
ix. Personal injury.
x. Cross liability or severability of interest's clause shall be included unless a separate policy covering CITY is provided.

11.6 PROFESSIONAL LIABILITY ERRORS AND OMISSIONS INSURANCE:

A. CONSULTANT shall carry and maintain Professional Liability Errors and Omissions Insurance in an amount not less than $3,000,000.00 Dollars for all work performed under this Agreement.

B. CONSULTANT shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONSULTANT, its agents, representatives, employees, or subcontractors. With respect to General Liability, Professional liability coverage should be maintained for a minimum of five (5) years after contract completion.

C. If Professional Liability coverages are written on a claims-made form:

i. The retroactive date must be shown and must be before the date of the contract or the beginning of contract work.
ii Insurance must be maintained, and evidence of insurance must be provided, for at least five (5) years after completion of the contract of work.
iii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective date, the CONSULTANT must purchase an extended period coverage for a minimum of five (5) years after completion of contract work.

iv. A copy of the policy must be submitted to CITY for review.

11.7 BUSINESS AUTOMOBILE COVERAGE: CONSULTANT shall carry and maintain business automobile insurance coverage on each vehicle used in the performance of the work in an amount not less than $1,000,000.00 Dollars for one person and $3,000,000.00 Dollars for more than one person and for property damage resulting from any one occurrence which may arise from the operations of CONSULTANT in performing the work.

Such business automobile insurance shall include each of the following types:

A. Comprehensive form, including loading and unloading.
B. Owned.
C. Hired.
D. Non-owned.

12. **INDEMNITY AND LIMITATION.**

12.1 Except as otherwise provided herein, CONSULTANT shall indemnify, defend, and hold harmless CITY, its elected officials, officers, employees, and representatives against any and all claims, suits, causes of action, demands, losses, costs, and damages and liability of every kind including but not limited to all fees and charges of professionals, except for attorney's fees, and all court or other dispute resolution costs for:

A. death or injuries to persons or for loss of or damage to property which directly or indirectly, in whole or in part are caused by, resulting from, or arising out of the intentional, reckless, negligent, or wrongful acts, errors or omissions, or other liability imposed by law of CONSULTANT, its officers, employees, agents, or representatives in the performance of services under this Agreement or any subcontractor, any supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work;

B. CONSULTANT's failure or refusal, whatever the reason, to pay subcontractors or suppliers for Work performed under the Agreement;

C. claims by any employee of the CONSULTANT, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, CONSULTANT'S indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONSULTANT or any subcontractor under workmen's compensation acts, disability benefit acts or other employee benefits acts.

12.2 CITY shall give CONSULTANT prompt written notice of any such claims or suits filed against CITY arising out of the services provided under this Agreement. CONSULTANT agrees to defend against any claims brought or actions filed against CITY arising out of

the services provided under this Agreement. If CITY'S tender of defense, based upon the indemnity provision, is rejected by CONSULTANT or CONSULTANT'S insurer, and CONSULTANT is later found by a court of competent jurisdiction to have been required to indemnify the CITY, then, in addition to any other remedies the CITY may have, CONSULTANT shall pay the CITY'S reasonable costs and expenses, except for attorney's fees, incurred in obtaining such indemnification, defending themselves or enforcing the indemnification provision.

12.3 The insurance requirements in this agreement shall not be construed as limiting CONSULTANT'S liability. Irrespective of the requirements for CONSULTANT to carry insurance as provided herein, insolvency, bankruptcy, or failure of any insurance company to pay all claims accruing shall not be held to relieve CONSULTANT of any obligations under this agreement.

12.4 This section does not apply to a design professional services contract, design professional services, and design professionals.

13. **DOCUMENTS.**

13.1 All data used in compiling CONSULTANT's work, and the results of any tests or surveys, as well as all photographs, drawings, electronically stored records of work performed, renderings, specifications, schedules, CONSULTANT's work, data processing output, computations, studies, audits, research, reports, models and other items of like kind prepared by CONSULTANT, and its employees, shall be the sole and exclusive property of CITY, and CITY shall own all intellectual property rights thereto whether the specific work project for which they are made is undertaken or not. CONSULTANT may retain reproducible copies of all the foregoing documents for information and reference and customary marketing and public relations. The originals of all the foregoing documents shall be delivered to CITY promptly upon completion thereof. This provision may be enforced by an order of specific performance and is independent of any other provision of this Agreement. Compliance by CONSULTANT with this paragraph shall be a condition precedent to CITY's obligation to make final payment to CONSULTANT. If CITY has specific requirements on the information and manner the documentation is collected, CITY shall provide those specifics to CONSULTANT in writing.

13.2 Plans, specifications, maps, and record drawings prepared or obtained under this Agreement shall be provided to CITY in a format approved by CITY which shall generally be a hard copy and an electronic copy and shall become the property of CITY whether the work for which they are prepared is executed or not.

13.3 The basic survey notes and sketches, charts, computations, and other data prepared under this Agreement shall be made available upon request to CITY without restriction or limitation on their use.

13.4 CITY shall have the right to use reports, designs, details, or products developed as part

of this Agreement for purposes of maintenance, remodeling or reconstruction of existing facilities or construction of new facilities without additional compensation to CONSULTANT or without restriction or limitation on its use even if documents are considered copyrighted material.

13.5 CITY will hold harmless CONSULTANT for any use or reuse of these reports, designs, or details for purposes other than the project associated with this Agreement unless CITY obtains validation of that use or reuse from CONSULTANT.

14. **RECORDS.**

14.1 CONSULTANT shall maintain records, books, documents, and other evidence directly pertinent to the performance of services under this Agreement in accordance with generally accepted accounting principles and practices.

14.2 CONSULTANT agrees to keep proper books of records and accounts in which complete and correct entries will be made of payroll costs, travel, subsistence, and field expenses.

14.3 Said books shall, at all times, be available for at least three (3) years after final payment for reasonable examination by CITY.

15. **TERMINATION.**

15.1 CITY may terminate this Agreement by providing fourteen (14) days written notice prior to the effective termination date to CONSULTANT.

15.2 In the event of such termination, CITY shall pay CONSULTANT for all services actually rendered up to and including the date of termination.

15.3 CONSULTANT shall deliver to CITY copies of all drawings, reports, analyses, documents, and investigations, whether completed or not, that were prepared or were being prepared under the provisions of this Agreement.

16. **CONFLICT BETWEEN DOCUMENTS.** In the event of a conflict between this Agreement and any other documents with CONSULTANT, this Agreement shall govern.

17. **CONFLICT OF INTEREST.** CONSULTANT certifies that it has disclosed to CITY any actual, apparent or potential conflicts of interest that may exist relative to the services to be provided pursuant to this Agreement.

17.1 CONSULTANT agrees to advise CITY of any actual, apparent or potential conflicts of interest that may develop after the date of execution of this Agreement.

17.2 CONSULTANT further agrees to complete any statements of economic interest required by either CITY ordinance or State law.

18. **NON-WAIVER.** No failure or waiver or successive failures or waivers on the part of either party hereto, their successors or permittee assigns, in the enforcement of any condition, covenant, or Article of this Agreement shall operate as a discharge of any such condition, covenant, or Article nor render the same invalid, nor impair the right of either party hereto, their successors or permitted assigns, to enforce the same in the event of any subsequent breaches by the other party hereto, its successors or permitted assigns.

19. **NOTIFICATION.** All notices required or permitted to be made by either party in connection with this Agreement shall be in writing, and shall be deemed to have been duly given: (a) five (5) business days after the date of mailing if sent by U.S. mail, postage prepaid, (b) when transmitted if sent by facsimile, provided a confirmation of transmission is produced by the sending machine and a copy of such facsimile is promptly sent by another means specified in this Section; or (c) when delivered if delivered personally or sent by express courier service. All notices shall be sent to the other party at its address as set forth below unless written notice is given by either party of a change of address:

CITY:	City of St. George 175 East 200 North St. George, Utah 84770	CONSULTANT:	Horrocks Engineers LLC 555 South Bluff Suite 200 St. George, Utah 84770
Attention:	City Attorney	Attention:	Derek Stonebraker
Copy:	legal@sgcity.org		

20. **GOVERNING LAW AND VENUE.** This Agreement shall be construed according to the laws of the State of Utah. The parties agree that venue for all legal actions, unless they involve a cause of action with mandatory federal jurisdiction, shall be the Fifth District Court for the State of Utah. The parties further agree that the Federal District Court for the District of Utah shall be the venue for any cause of action with mandatory federal jurisdiction. The parties shall have all rights and remedies provided under applicable Federal or State law for a breach or threatened breach of this Agreement. These rights and remedies shall not be mutually exclusive, and the exercise of one or more of these rights and remedies shall not preclude the exercise of any other rights and remedies. Each party agrees that damages at law may be an inadequate remedy for a breach or threatened breach of any provision hereof and the respective rights and obligations of the parties hereunder shall be enforceable by specific performance, injunction, or other equitable remedy. Nothing in this Agreement shall be construed to waive the sovereign immunity of the government parties.

21. **LEGAL FEES.** Each party shall bear its own costs, expenses, and attorneys' fees in connection with this Agreement. This obligation includes, without limitation, all costs and expenses which may arise or accrue from enforcing this Agreement or in pursuing any remedy provided hereunder or by applicable law, whether such remedy is pursued by filing a lawsuit or otherwise.

22. **MODIFICATION OF AGREEMENT.** CITY specifically reserves the right to modify or amend this Agreement and the total sum due hereunder either by enlarging or restricting the scope of the Work. All modifications shall be in writing and executed by both parties. Each Work Order adopted under this Agreement shall incorporate the terms and conditions of this Agreement and shall constitute a modification to this contract. A Work Order may amend the

terms and conditions of this Agreement only as they apply to that particular Work Order and shall not have any general effect on this Agreement.

23. **RESERVED LEGISLATIVE POWERS.** Nothing in this Agreement shall limit the future exercise of the police power by CITY in enacting zoning, subdivision, development, transportation, environment, open space, and related land use plans, policies, ordinances, and regulations after the date of this Agreement, but which shall not be retroactively applied to or modify this Agreement.

24. **SUCCESSORS AND ASSIGNS.** CONSULTANT shall not assign, sublet, sell, transfer, or otherwise dispose of any interest in this Agreement without assigning the rights and the responsibilities under this Agreement and without the prior written approval of CITY. This Agreement shall be binding upon and inure to the benefit of the parties hereto, their successors and permitted assigns, but shall not inure to the benefit of any third party or other person.

25. **NO JOINT VENTURE, PARTNERSHIP OR THIRD-PARTY RIGHTS.** It is not intended by this Agreement to, and nothing contained in this Agreement shall, create any partnership, joint venture, or other arrangement between the parties. No term or provision of this Agreement is intended to or shall, be for the benefit of any person, firm, organization, or corporation not a party hereto, and no such other person, firm, organization, or corporation shall have any right or cause of action hereunder.

26. **INTEGRATION.** This Agreement contains the entire Agreement with respect to the subject matter hereof and integrates all prior conversations, discussions or understanding of whatever kind or nature between CITY and CONSULTANT and supersedes and replaces all terms and conditions of any prior agreements, arrangements, negotiations, or representations, written or oral, with respect to this PROJECT.

27. **SEVERABILITY.** If any part or provision of this Agreement shall be determined to be unconstitutional, invalid or unenforceable by a court of competent jurisdiction, then such a decision shall not affect any other part or provision of this Agreement except that specific provision determined to be unconstitutional, invalid or unenforceable. If any condition, covenant or other provision of this Agreement shall be deemed invalid due to its scope or breadth, such provision shall be deemed valid to the extent of the scope or breadth permitted by law.

28. **CONSTRUCTION.** Each of the parties hereto has had the opportunity to review this agreement with counsel of their choosing and the rule of contracts requiring interpretation of a contract against the party drafting the same is hereby waived and shall not apply in interpreting this agreement.

29. **SURVIVAL.** It is expressly agreed that the terms, covenants, and conditions of this Agreement shall survive any legal act or conveyance required under this Agreement.

30. **HEADINGS.** The section and other headings in this Agreement are for reference purposes only and shall not in any way affect the meaning or interpretation of this Agreement.

31. **COUNTERPARTS.** This Agreement may be signed in counterparts and each such counterpart shall constitute an original document. All such counterparts, taken together, shall constitute one and the same instrument. Any signature on this Agreement transmitted by facsimile, electronically in PDF format, or by other generally accepted means of conveying digital signatures (e.g. DocuSign) shall by deemed an original signature for all purposes and the exchange of copies of this Agreement and of signature pages by any such transmission, or by a combination of such means, shall constitute effective execution and delivery of this Agreement as to the Parties and may be used in lieu of the original for all purposes.

32. **AUTHORITY OF PARTIES.** The parties executing this Agreement hereby warrant and represent that they are duly authorized to do so in the capacity stated and that this Agreement constitutes a valid and binding Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by the CITY and CONSULTANT effective from the day and year first written above.

CITY OF ST. GEORGE	HORROCKS ENGINEERS LLC
Michele Randall, Mayor	Derek Stonebraker, Utah Transportation Operations Director
ATTEST:	APPROVED AS TO FORM: CITY ATTORNEY'S OFFICE
Christina Fernandez, City Recorder	Alicia Galvany Carlton, Assistant City Attorney

EXHIBIT A
SCOPE OF SERVICES

This Exhibit A Scope of Services is attached to, and fully incorporated into, the Professional Services Agreement by and between the City of St. George (the "City") and the following individual or entity ("Contractor") to the extent that it does not conflict with any provisions in this Agreement. If there are any conflicts between the Agreement and the Scope of Services, the terms of the Agreement apply.:

Name: Horrocks Engineers LLC

Address: 555 South Bluff Suite 200 St. George, Utah 84770

Email: dereks@horrocks.com Phone Number: 801-763-5285

Scope of Services and/or Deliverables by Contractor:

- See attached Scope of Work
-
-
-

Compensation: City shall pay Contractor the following sum:

- Not to exceed $129,700
-

EXECUTIVE SUMMARY

Horrocks established its commitment to St. George 20 years ago by opening a local office to partner with the city and UDOT on the Southern Parkway and St. George Boulevard projects. Since then, our relationship with the City has continued to strengthen, and we remain dedicated to supporting the city with successful transportation planning efforts.

WHAT WE OFFER THE CITY OF ST. GEORGE

- The ability to efficiently complete the transportation master planning update process with a core team based in our local St. George office.
- The assurance that Horrocks is well acquainted with the City's TMP from our previous work in updating the plan in 2009, 2016, and 2020.
- Our efficiency and dedication are demonstrated by an abundance of understanding, commitment to fulfill the project requirements within the allocated time frame and budget, and the resources to perform the work. Our reputation and track record on similar projects are the best evidence of our capability to meet this commitment.
- Experience in walkable/bikeable community planning, including: trail design and planning, sidewalk, bicycle lane design, traffic calming measures, safe routes to school, and more.

MASTER PLANNING, TRAVEL DEMAND MODELING, AND TRAFFIC ANALYSIS

Horrocks' travel demand modeling experience is well known throughout the Utah transportation planning community including with UDOT, the DMPO, and numerous local entities. We have utilized regional TDMs for transportation projects in St. George, Ivins, Hurricane, Washington City, Leeds, Riverton, Draper, Sandy, Kaysville, Syracuse, South Jordan, Bountiful, West Bountiful, Provo, Orem, Lehi, Pleasant Grove, American Fork, Lindon, Ogden, Heber, Farmington, Eagle Mountain, and Santa Clara in completing master plans, area plans, corridor studies, environmental documents, and roadway design projects.

ENGINEERING SOLUTIONS

Horrocks has a proven history of working with local governments and regional agencies on transportation projects. Our ability to work with local governments and state and federal agencies to develop appropriate and context-sensitive solutions has been demonstrated multiple times. One advantage our team offers is the roadway design and construction experience and understanding we bring to our transportation planning efforts. Because we have actually designed and constructed numerous projects from cities' Capital Facility Plans, we understand how to properly evaluate the construction feasibility and provide realistic cost estimates. We have worked with local municipalities on several design and construction projects that provide us with a better understanding of the local construction costs for capital improvement projects.

FIRM EXPERIENCE AND REFERENCES

The chart below showing a summary of our local projects experience, including a reference for each.

PROJECT	DATE	WORK PERFORMED	REFERENCE
St. George Master Traffic & Transportation Study, St. George, UT	2007-2019	Project included travel demand modeling; traffic analysis; roadway classification evaluation; integration of bike paths, trails and public transit; capital improvement recommendations and plan development; cost estimating; and stakeholder coordination.	Cameron Cutler Public Works Director 435-627-4050
Eagle Mountain Transportation Master Plan, Eagle Mountain, UT	2025	Horrocks recently updated Eagle Mountain's TMP, which included comprehensive data collection, travel demand modeling, active transportation planning, and updates to the CFP and impact fees. We spent additional time adjusting all traffic data to ensure that existing conditions were realistic and represented pre-pandemic conditions with the current pandemic. We worked with the city to provide recommendations to update typical cross-sections to allow better traffic flow and incorporate active transportation. We pushed the planning horizon to 2050 to align with current Mountainland of Associations projections and worked with City staff to recommend projects accommodating 2050 traffic.	David Salazar Assistant City Engineer 385-392-2069

PROJECT	DATE	WORK PERFORMED	REFERENCE
Washington City Transportation Master Plan Update, Washington, UT	2021	Horrocks updated Washington City's TMP to reflect recent growth and future needs. We built upon the 2014 plan, incorporating the latest data from Dixie Metropolitan Planning Organization (DMPO) and traffic counts to refine traffic forecasts and identify system deficiencies. Our team also updated analysis of existing and future conditions, revised the CFP, and updated Street Impact Fee Study. The updated plan provided a strategic, data-driven framework to guide transportation investments and support safe, efficient mobility for years to come.	Blake Fonnesbeck Public Works Director 435-656-6319
DMPO On-Call Engineering Services, Washington County, UT	2012-2026	Horrocks is providing on-call support for the DMPO CUBE TDM. Services include updating the model to reflect latest land use plans and population projections, network to reflect latest transportation plans from state and local governments, evaluating various roadway projects using the travel demand model measurements, developing interim year models, helping coordinate various traffic studies in the area to maintain consistency with projected traffic volumes, and preparing cost estimates to develop the MPO's Long Range Plan.	Myron Lee DMPO Director 435-673-3548
Ivins City Transportation Master Plan, Ivins, UT	2020, 2015, 2006	The study included analyzing current traffic conditions within Ivins City. Using the latest proposed land use plans, future traffic demands were identified and recommendations made to accommodate growth and maintain quality of life for local residents. The transportation planning efforts included working with local stakeholders, city staff, and the DMPO to build consensus regarding recommended improvements. We also evaluating street cross sections, roundabouts, Western Corridor, and the inclusion of a newly approved trail plan and Ivin's first ITS plan. The findings of the study were used to identify construction costs for planned improvements and update traffic impact fees.	Chuck Gillette City Manager 435-634-0689

PROJECT UNDERSTANDING AND APPROACH

Each community has distinct characteristics that require a tailored approach to transportation planning. Rather than applying a generic solution, our process focuses on understanding St. George's unique values, issues, and vision before developing solutions. To efficiently achieve the goals outlined in the RFP, we propose the following work plan:

TASK 1 – Review and Data Collection. An evaluation of social, economic, and transportation-related trends in St. George over recent years serves as a reference point for assessing the relative success of transportation and land-use decisions. Population, housing, and employment trends and forecasts will be evaluated in this update. These trends will serve as a basis for planning-level analysis to determine the overall development, the amount required to accommodate forecasted growth, and the amount of growth that may occur outside the City.

Our team will utilize the newly calibrated DMPO's CUBE traffic modeling software to justify road planning and improvement needs. This task will compare the current model with St. George City land-use data to refine forecasted traffic. Horrocks will take a close look at Traffic Analysis Zones with the City to ensure that land uses remain accurate. The sizes of the TAZs will be refined to capture socio-economic and travel data better. The City has collected recent traffic counts with its speed trailer, which could be a resource for capturing counts at Plan-critical locations. Horrocks Engineers will augment these counts with up to 20 counts at locations similar to those in the 2019 study for comparison. These traffic counts will be compared with the current model's results to support fine-tuning. Horrocks is also working with the DMPO on their regionwide model so that further refinements will improve the model's output for St. George's Plan.

UDOT performs bridge and culvert inspections every two years to evaluate their condition and functionality. As bridges are an essential part of the transportation system, these bridge performance ratings will be scrutinized and, if necessary, included in the list of project improvements.

If any additional data has been acquired that would be help analyze existing conditions, it will be gathered and applied. The existing model will then be run to establish base conditions. Horrocks will coordinate with staff during this essential data-gathering stage.

TASK 2 – Roadway Master Plan Update. After completing the data collection in Task 1, the key transportation planning activities can begin, including the following:

- Review the Road Master Plan and propose updates to ensure it aligns with current conditions and anticipated future growth.
- Evaluate and discuss existing road cross-sections to assess their effectiveness and consider how emerging active transportation needs may influence future cross-section designs.
- Discuss how current and future growth areas might identify new or expanded corridors.
- Utilize UDOT's corridor safety database to examine high-accident corridors to determine causes of accidents on these segments. Improvements will target reducing accidents in these segments.
- Perform a review of the current and future land uses and transportation network in the model, such as at Tech Ridge, the airport region, and in the vicinity of the Mall Drive Crossing.
- Review Road Masterplan and compare with UDOT's Statewide Functional Classification Map.
- Suggest any changes in the Road Masterplan to align with land use and future traffic trends.

TASK 3 – Active Transportation Plan Integration. Alta Planning & Design led the development of St. George's 2017 Active Transportation Plan, and is currently contracting with the City to update the plan in 2026. The 2026 ATP will focus primarily on downtown corridors, but will also include updating City-wide active transportation data intended for use in the analysis and development of recommendations in the TMP. We will leverage our team's knowledge of the City's active transportation network to assess pedestrian and bicycle network connectivity. The assessment will include connectivity to recent and future development in the region and identify missing links in the network. We will also assess previously planned facility types to determine whether they are appropriate for the roadway context and goals of the City. Our approach follows FHWA guidance for network planning, which establishes a backbone network of high-comfort facilities that is supplemented by secondary connections, allowing the City to prioritize implementation on corridors that have the highest demand for active transportation.

- Verify existing proposed projects in the TIP and identify additional projects. Once projects are targeted, they are prioritized into short-, medium-, and long-term projects with an emphasis on resolving existing deficiencies first.
- Review cost estimates. Update construction costs and verify quantities. These costs will help with programming funds for the future and approaching other agencies for budget participation.
- Prepare prioritized list of improvements for each planning year with costs & funding opportunities.
- Update project improvement maps and databases for the purpose of displaying and tracking projects.
- Update the StoryMap with latest project updates.

TASK 4 – Capital Project Prioritization. The next step involves projecting future transportation needs and identifying deficiencies to address city-wide transportation issues. This step involves analyzing model output and applying it to overall land-use and road master plans to ensure that future infrastructure can accommodate growth. The current TIP will serve as a basis for comparing completed projects, identifying which projects should be added, and prioritizing which projects should be moved up.

Key work tasks involve a coordinated effort to:

- Utilize the latest DMPO CUBE model and traffic volumes to develop calibrated and validated traffic projections for the current MPO model planning years for 5-year, 10-year, and 20-year scenarios.
- Review planning level traffic "screenlines" to compare road volumes. Screenlines allow an intuitive look at current and future conditions to determine if there are enough road lanes to accommodate traffic now and into the future.
- Meet with staff to discuss model output, maps, and screenlines to determine system adequacy.
- Hold one Open House at a prominent location to allow public discussion of the City's plans. This Open House could be integrated into the Dixie Transportation Expo, but for this scope, it is proposed as a stand-alone event in case the Expo does not meet the project schedule. We will also plan to provide booth support for the Expo.

TASK 5 – Support for Impact Fee Analysis. The TIP creates a revitalized nexus for the purpose of calculating impact fees. Although an Impact Fee Study is not included with scope of work, this study will update project nexus so that specific projects identified in Task 4 are listed in a future Impact Fee Study.

This task will provide a support memorandum that contains the amount of recommended improvements that are caused by new growth, revise the cost estimates, and update the necessary data that is used for impact fee studies.

B. PROJECT TEAM, ROLES, AND AVAILABILITY

PROJECT TEAM

A key advantage of our team is the capability of our local staff to perform the work on the project. ***Short bios for key (🔑) team members are shown here.***

Org Chart St.George

Cameron Cutler, Public Works Director
Jay Sandberg, Engineering Services Manager

Principal-in-Charge
Lee Cabell, PE

Project Manager
Aron Baker, PE 🔑

Project Engineer
Shane Eller, PE 🔑

Transportation Eng.
Emily Andrus, PE 🔑

Travel Demand Model
Michael Heaps 🔑

Roadway Design
Tyrone Atkin, PE 🔑

QA/QC
Andrew Jackson, AICP/CTP 🔑

GIS
Steve Clark

ITS
Brad Smith

Active Transportation Alta
Mack Drzayich 🔑

Aron Baker, PE | Project Manager Availability: 30% Aron has over 30 years of experience varying in multiple disciplines, including bike/pedestrian route design, community transportation planning, traffic planning, and roadway and intersection design. Some of his previous projects include Ivins TMP, Ivins Traffic Impact Fee Analysis, St. George Master Traffic and Transportation Master Plan, Mesquite TMP and Impact Fee Facilities Plan (IFFP), Washington TMP and Impact Fee Plan, 2012-2026 DMPO On-Call, and Washington City Active Transportation Plan. *Aron will oversee the project and collaborate closely with city staff to update all planning documents, ensuring a productive and successful study.*

Shane Eller, PE | Project Engineer | Availability: 45% Shane has 7 years of experience participating in multiple TMPs and traffic impact statements (TISs) throughout Utah. Shane has also led the traffic modeling and engineering for several traffic analysis and transportation planning efforts, most recently for American Fork and Eagle Mountain cities' TMP and IFFP updates, where he performed level of service (LOS) analysis for existing and future roadway networks. *Shane will lead all traffic engineering tasks, including capital improvements, LOS analysis, design considerations, and Impact Fee Facilities Plan analysis.*

Emily Andrus, PE | Transportation Engineer | Availability: 20% Emily's experience consists of traffic modeling and analysis, transportation planning, bike and pedestrian planning and design, and street lighting analysis. She was a large contributor to the 2020 St. George TMP, as well as the most recent St. George Master Traffic and Transportation Study and various IFFPs. *Emily will focus on active transportation plan, updating the street lighting plan, and provide insight into the traffic data acquisition, previous TMP.*

Michael Heaps | Travel Demand Model (TDM) | Availability: 25% Michael has worked on transportation projects over 20 years, providing planning analysis with an emphasis on traffic modeling. His recent experience includes traffic analysis providing travel demand model for various transportation master plans. Michael has provided traffic operation analysis for various projects. He is an expert in VISSIM, Synchro, SimTraffic, Cube, and Highway Capacity Software. Michael has direct experience overall, including more than 40 separate interchanges and 60 miles of freeway. *His modeling experience will aid in accuracy and provide analysis that will provide a successful TMP.*

Tyrone Atkin, PE | Roadway Design | Availability: 20% Tyrone has 15 years of experience in roadway and trail design. He has worked on George Washington Blvd. Bridge design, Snow Canyon Pkwy and 2000 N Roundabout, and I-15 6-8 Widening. *Tyrone will provide design support for typical section evaluations and in generating cost estimates for alternatives analysis, the CFP, and impact fees.*

ANDREW JACKSON, AICP & CTP | QA/QC | Availability: 40% Andrew recently joined Horrocks after a 27-year career at MAG, where he served as Executive Director. With 35 years of experience in transportation and community planning, he has held various leadership roles and taught planning courses at BYU for nearly 20 years. Andrew is certified by the American Institute of Certified Planners (AICP) and is a Certified Transportation Planner (CTP).

Mack Drzayich | Active Transportation (Alta) | Availability: 45% Mack is a designer with over 8 years of experience and a passion for urban placemaking and active living. He brings experience in conceptual design, implementation drawings, spatial analysis, public engagement, and graphics that communicate project details and options. Mack's recent work in the region includes the Active Transportation and Wayfinding plans for St. George, Southern Utah Regional Trail Standards, Zion National Park Regional Recreation Management Plan, and the statewide Utah Trail Network Design. As the PM for the 2026 Active Transportation Plan update led by Lloyd Sutton, Mack will bring an understanding of the most current state of active transportation in St. George.

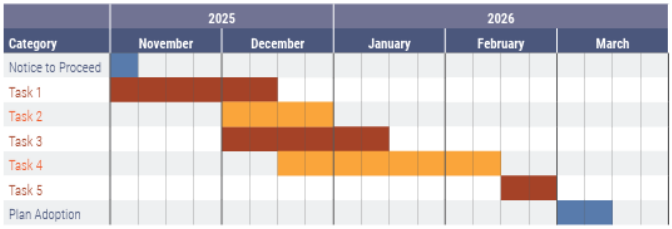
PROPOSED FEE

	Total Hours	Total Cost	Aron Baker	Shane Eller	Emily Andrus	Cody Gunn	Mitch Skiles	Tyrone Atkin	Lee Cabell	Samuel Hancock	Steven Clarke
TASK 1: ANALYZE EXISTING CONDITIONS											
Prepare and Hold Team Meetings to Discuss Conditions	12	$3,072	4	4				2	2		
Integrate City's Existing Traffic Counts	5	$940	1	4							
Perform Traffic Counts to Augment City Data for Model	105	$10,397	1			25	5			74	
Gather and Review Land Use Data, Bridge Data and TAZ's	8	$1,766	2		2		2				2
Run Base Year Traffic Model and Review Results	6	$1,170		4			2				
TASK 2: DEVELOPMENT OF TRANSPORTATION SCENARIOS											
Review Future Land Use Networks	6	$1,564	2				4				
Prepare and Hold Team Meetings to Discuss Scenarios	12	$2,867	4	3			5				
Develop Calibrated and Validated Traffic Projections	7	$1,840					4	3			
Prepare and Update Planning Screenlines	20	$4,196	1				4	1			14
Review UDOT Corridor Safety Data and Determine Safety Spot Improvements	12	$2,212	2	5	5						
Hold an Open House for the Public for the Transportation Master Plan	11	$2,406	2			5		4			
Run and Analyze Future Year Traffic Models	12	$2,514		6			6				
TASK 3: CAPITAL FACILITIES PLAN UPDATE											
Verify Proposed Projects, Identify Additional Projects	11	$2,732	3	4				2	2		
Prepare and Hold Team Meetings to Discuss Project Prioritization	8	$1,642	3	4		1					
Update Project Improvement Plan Maps and Databases	28	$5,264	2	8							18
Update Story Map	66	$13,024	12	20							34
Review Cost Estimates	18	$3,428	4	14							

	Total Hours	Total Cost	Aron Baker	Shane Eller	Emily Andrus	Cody Gunn	Mitch Skiles	Tyrone Atkin	Lee Cabell	Samuel Hancock	Steven Clarke
TASK 4: SPECIAL CONSIDERATIONS											
Prepare Prioritized List of Improvements	12	$2,432	4	8							
Make Changes to Accommodate Comments	22	$4,268	4	10							8
Meetings to Discuss Status and Results, Addressing of Storymap Comments	18	$3,384	2	8							8
Assemble Final Report to Publish in Storymap	28	$5,464	6	8		4					10
TASK 5: SUPPORTING DATA FOR FUTURE STREET IMPACT FEE											
Determine Growth-Related Traffic Increase	10	$2,274	4	4			2				
Update TIP Storymap	31	$6,026	4	7							20
Update Impact Fee Costs for Each Project	26	$5,724	12	10							4
Total Hours	**494**		**79**	**131**	**7**	**35**	**34**	**12**	**4**	**74**	**118**
Alta - Active Transportation Plan Integration		$38,980									
GRAND TOTAL		**$129,700**									

Assumptions: The City would provide available traffic counts, bridge inspection data from UDOT, ITS plans, GIS base maps, accident data, planning maps, documents, electronic files, and studies.

PROPOSED TIMELINE AND MILESTONE SCHEDULE



Agenda Date: 12/18/2025 **Agenda Item Number:** 2m

Subject:

Consider approval of a Professional Services Agreement with Stanley Consultants for the construction management services on the George Washington Boulevard Bridge.

Item at-a-glance:

Staff Contact: Jay Sandberg

Applicant Name: N/A

Reference Number: N/A

Address/Location:

N/A

Item History (background/project status/public process):

The City requested proposals from qualified Construction Management (CM) firms to provide professional oversight of the George Washington Blvd Bridge Project. Three proposals were received and Stanley Consultants was selected. They will serve as the Citys representative on the project coordinating with the Citys project manager, inspectors, and other city personnel to ensure construction adheres to approved plans and specifications.

Staff Narrative (need/purpose):

To ensure adequate daily oversight and coordination for the George Washington Blvd Bridge, a construction management firm will provide an on-site inspector, limited office support, and supplemental professional management assistance. These services will augment the Citys project manager and inspection staff, maintain construction quality control, and support efficient project delivery.

Name of Legal Dept approver: Alicia Galvany Carlton

Budget Impact:

Cost for the agenda item: 567,763.20

Amount approved in current FY budget for item: 567,763.20

If not approved in current FY budget or exceeds the budgeted amount, please explain

funding source:

N/A

Description of funding source:

City budgeted funds

Recommendation (Include any conditions):

Approval

Attachments

CITY OF ST. GEORGE PROFESSIONAL SERVICES AGREEMENT FOR SERVICES WITH STANLEY CONSULTANTS, INC FOR GEORGE WASHINGTON BRIDGE CM PROJECT

This Professional Services Agreement (hereinafter "Agreement") is made and entered into on _____ by and between the City of St. George, a municipal corporation, with offices at 175 East 200 North, St. George, Utah 84770 (hereinafter called the "CITY"), and Stanley Consultants, Inc, with offices at 1173 South 250 West #308 St. George, Utah 84770 (hereinafter "CONSULTANT").

WITNESSETH THAT:

WHEREAS CITY desires professional services to be performed and has solicited CONSULTANT to provide engineering services for the George Washington Bridge on one or more projects from time to time on an as needed basis (hereinafter called the PROJECT); and

WHEREAS, CONSULTANT has submitted a proposal, which outlines the general scope of services to be provided and the fees for the PROJECT; and

WHEREAS CITY selected CONSULTANT to perform the services for the PROJECT;

NOW, THEREFORE, for the consideration hereinafter set forth, the parties hereto do mutually agree as follows:

1. **ENGAGEMENT OF CONSULTANT.**

1.1 CONSULTANT is a professional licensed by the State of Utah and the City of St. George. CONSULTANT has all licenses, permits, and approvals that are legally required for CONSULTANT to practice its profession and shall keep them in effect at all times during the term of this Agreement.

1.2 CONSULTANT states that it has the necessary knowledge, experience, abilities, skills, and resources to perform its obligations under this Agreement and agrees to perform its obligations under this Agreement in a professional manner, consistent with prevailing industry standards and practices as observed by competent practitioners of the profession in which CONSULTANT and its subcontractors or agents are engaged.

1.3 CONSULTANT certifies that it does not and will not during the performance of this contract knowingly employ, or subcontract with any entity which employs workers in violation of 8 USC §1324(a). CONSULTANT agrees to require all subcontractors at the time they are hired for this project to sign a Certification of Legal Work Status and submit the Certification to CITY prior to any work being performed by the subcontractors. CONSULTANT agrees to produce, at CITY'S request, documents to verify compliance

with applicable State and Federal laws. If CONSULTANT knowingly employs workers or subcontractors in violation of 8 USC § 1324(a), such violation shall be cause for unilateral cancellation of the contract between CONSULTANT and CITY. In addition, CONSULTANT may be suspended from participating in future projects with CITY for a period of one (1) year. In the event this contract is terminated due to a violation of 8 USC § 1324(a) by CONSULTANT or a subcontractor of CONSULTANT, CONSULTANT shall be liable for any and all costs associated with such termination, including, but not limited to, any damages incurred by CITY excluding attorney fees. For purposes of compliance, CITY requires CONSULTANT and subcontractors to use E-Verify or other federally accepted forms of verification to verify the employment eligibility of all employees as allowed by law and the E-Verify procedures. CONSULTANT and subcontractors must maintain authorized documentation of the verification.

1.4 CONSULTANT shall not, either during or after the term of this Agreement, make public any reports or articles, or disclose to any third party any confidential information relative to the work of City or the operations or procedures of CITY without the prior written consent of CITY.

1.5 CONSULTANT further agrees that it shall not, during the term of this Agreement, take any action that would affect the appearance of impartiality or professionalism.

1.6 CONSULTANT, by execution of this Agreement, certifies that it does not discriminate against any person upon the basis of race, color, creed, national origin, age, sex, sexual orientation, gender identity, disability, or marital status in its employment practices.

1.7 CONSULTANT expressly acknowledges and agrees that nothing in this Agreement shall be deemed to relieve CONSULTANT from any obligation to comply with all applicable requirements of CITY during the term of this Agreement including the payment of fees and compliance with all other applicable ordinances, resolutions, regulations, policies, and procedures of CITY, except as modified or waived in this Agreement.

1.8 CONSULTANT shall comply with all applicable federal, state, and local laws, regulations, and ordinances that affect those employees or those engaged by CONSULTANT on the PROJECT, and will procure all necessary licenses, permits and insurance required.

1.9 CONSULTANT certifies it is in compliance with the public contract boycotting restrictions set forth in Utah Code § 63G-27-201 and agrees not to engage in any such restricted boycotting for the duration of this Agreement, and to notify the City in writing if it begins engaging in an economic boycott.

1.10 CITY acknowledges that CONSULTANT may employ various specialized subcontractors for up to 15% of the services provided herein. CONSULTANT shall give written notice to CITY at least seven (7) days prior to CONSULTANT'S employment of the subcontractors to perform portions of the work provided for in this Agreement. It shall be solely CONSULTANT's responsibility to ensure that any of CONSULTANT'S

subcontractors perform in compliance with the terms of this Agreement. Subcontractors may not be changed without ten (10) days prior written notice to CITY.

2. **PROJECT SERVICES DESCRIPTION.**

2.1 CITY makes no guarantee as to the total volume of work, if any, that will be needed under this Agreement. CONSULTANT will provide the services on an as needed basis as described in the attached Scope of Work (**"Exhibit A Scope of Services"**) which is made a part of this Agreement by this reference. As services are needed, CITY shall provide CONSULTANT with a description of the work needed which shall be known as a "Work Order" and CONSULTANT will provide CITY with a specific scope of work and cost for the Work Order, which if accepted by the CITY shall become part of this Agreement binding both parties. CITY may at any time, as the need arises, order changes within the scope of the services without invalidating the Agreement. If such changes increase or decrease the amount due under the Agreement, or in the time required for performance of the work, an equitable adjustment shall be authorized by change order.

2.2 CONSULTANT shall furnish all the material, supplies, tools, transportation, equipment, labor, subcontractor services and other services necessary for the completion of the work described in **"Exhibit A Scope of Services"** or in subsequent Work Orders.

2.3 CONSULTANT shall provide services in compliance with all applicable requirements of federal, state, and local laws, codes, rules, regulations, ordinances, and standards.

3. **TERM OF AGREEMENT.**

3.1 This Agreement shall be effective as of the date executed by all parties and shall continue for one year unless otherwise terminated as set forth in this Agreement. If a Work Order was started during this term but not completed, the terms of this Agreement shall continue through completion of the Work Order.

3.2 CONSULTANT agrees to perform services as expeditiously as is consistent with professional skill and care and the orderly progress of the PROJECT. CONSULTANT shall perform the services in a timely manner according to the schedule approved by CITY.

3.3 CONSULTANT shall perform its services upon notice from the CITY to proceed and in accordance with the schedule approved by CITY. In the event performance of its services is delayed by causes beyond the reasonable control of CONSULTANT, and without the fault or negligence of CONSULTANT, the time for the performance of the services shall be equitably adjusted by written amendment to reflect the extent of such delay. CONSULTANT shall provide CITY with written notice of delay, including a description of the delay and the steps contemplated or taken by CONSULTANT to mitigate the effect of such delay.

4. **COMPENSATION.**

4.1 For the performance of the services and completion of PROJECT set forth herein, CITY shall pay CONSULTANT as agreed in **"Exhibit A"** and each Work Order as applicable. The aggregate total of all Work Orders shall not exceed five hundred sixty-seven thousand, seven hundred sixty-three dollars**, $**567,763.00. Each individual Work Order shall not exceed five hundred sixty-seven thousand, seven hundred sixty-three dollars**, $**567,763.00.

5. **INVOICING, PAYMENT, NOTICES.**

5.1 CONSULTANT shall submit invoices, no more frequently than monthly, for the services rendered during the preceding period; invoices shall describe the services performed, list all subcontractors used and the amount owed or paid to them, list all suppliers used and the amount owed or paid to them, list the contract amount, list the current invoice amount based on percentage of task complete, list the previous invoice amount, list total invoices to date, and list the contract balance.

5.2 In executing the request for payment, CONSULTANT shall attest that payment has been made to all subcontractors involved with prior requests, unless CONSULTANT provides a detailed explanation why such payments have not occurred. CONSULTANT shall also sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status and submit them with each request for payment. CONSULTANT shall require each subcontractor to sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status at the time subcontractor is paid and shall provide a copy of both documents to CITY. CONSULTANT shall also sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status and submit them with each request for payment.

5.3 A "Waiver and Release Upon Final Payment" signed by CONSULTANT attesting that all subcontractors, laborers, and material suppliers involved with prior requests for payment have been paid, and that all subcontractors, laborers, and material suppliers upon which the final payment is based will be paid immediately unless CONSULTANT provides a detailed explanation why such payments have not occurred or will not occur. CONSULTANT shall also require each subcontractor to sign a "Waiver and Release Upon Final Payment" and a Certificate of Legal Work Status at the time subcontractor is paid its final payment and shall provide a copy of both documents to CITY.

5.4 If such liens, claims, security interests or encumbrances remain unsatisfied after payments are made, CONSULTANT shall refund to CITY all money that CITY may be compelled to pay in discharging such liens, including all costs except for attorneys' fees.

5.5 All invoices for reimbursable costs shall be taken from the books of account kept by CONSULTANT, and CONSULTANT shall maintain copies of payroll distribution, receipted bills, and other documents. CITY shall have the right to review all books and records kept by CONSULTANT and any subcontractors concerning the operation and services performed under this Agreement. CITY shall withhold payment for any

expenditure not substantiated by CONSULTANT'S or subcontractor's books and records.

5.6 In the event CITY has made payment for expenditures that are not allowed, as determined by CITY'S audit, CONSULTANT shall reimburse CITY the amount of the un-allowed expenditures. If additional money is owed to CONSULTANT, the reimbursement may be deducted from the additional money owed.

5.7 CITY shall make no payment for any services not specified in this Agreement unless such additional services and the price thereof are agreed to in writing, prior to the time that such additional services are rendered.

5.8 Invoices shall be paid to CONSULTANT within thirty (30) days of presentation to CITY.

5.9 CITY may withhold 5% of billed amount as retention. Retention held shall be included in the final invoice after the contract is complete.

6. **CHARGES AND EXTRA SERVICE.**

6.1 CITY may make changes within the general scope of this Agreement. If CONSULTANT is of the opinion a proposed change causes an increase or decrease in the cost and/or the time required for performance of this Agreement, CONSULTANT shall notify CITY of that fact. An agreed-upon change will be reduced to writing signed by the parties hereto and will modify this Agreement accordingly. CONSULTANT may initiate such notification upon identifying conditions which may change the services agreed to on the effective date of this Agreement, as set forth in **Exhibit A**. However, CONSULTANT represents that to the best of its knowledge that it is not aware of any such conditions on the date hereof. Any such notification must be provided within thirty (30) days from the date of receipt by that party of the other party's written notification of a proposed change.

6.2 CITY may request CONSULTANT to perform extra services not covered by **Exhibit A**, and CONSULTANT shall perform such extra services and will be compensated for such extra services when they are reduced to a writing mutually agreed to and signed by the parties hereto amending this Agreement accordingly.

6.3 CITY shall not be liable for payment of any extra services, nor shall CONSULTANT be obligated to perform any extra services except upon such written amendment.

7. **TO BE FURNISHED BY CITY.** Resources to be furnished by CITY to CONSULTANT, at no cost to CONSULTANT, consist of CITY staff assistance for oversight and meetings to help perform the services. CONSULTANT shall verify accuracy of the information provided, unless otherwise stated in the contract documents.

8. **INSPECTIONS.** All work shall be subject to inspection and approval of CITY or its authorized representative.

9. **ACCURACY AND COMPLETENESS.**

9.1 CONSULTANT has total responsibility for the accuracy and completeness of its investigations, calculations, reports, plans and related designs, specifications and estimates prepared for the PROJECT and shall check all such material accordingly.

9.2 The plans will be reviewed by CITY for conformity with PROJECT objectives and compliance with CITY Standards.

9.3 Reviews by CITY do NOT include the detailed review or checking of major design components and related details or the accuracy with which such designs are depicted on the plans.

9.4 The responsibility for accuracy and completeness remains solely with CONSULTANT and shall be performed consistent with the standard of care.

10. **INDEPENDENT CONTRACTOR.**

10.1 CITY retains and engages CONSULTANT, as an independent contractor, to act for and represent it in all matters involved in the performance of services on the PROJECT, subject to the terms, conditions and stipulations as hereinafter stated.

10.2 It is understood and agreed that CONSULTANT will provide the services without supervision from CITY. CONSULTANT is an independent contractor and is not an employee, officer, or agent of CITY for any purposes related to the performance of this Agreement and is not an employee of CITY and is not entitled to any benefits from CITY.

10.3 Nothing in this agreement shall create nor be construed to constitute a partnership or joint venture between CONSULTANT and CITY.

10.4 CONSULTANT is advised to obtain and maintain in effect during the term of this Agreement medical insurance and disability insurance for all related work performed under this Agreement.

10.5 CONSULTANT acknowledges that CITY will not withhold any federal, state, or local taxes, including FICA, nor will CITY provide any unemployment compensation or worker's compensation coverage. As an independent contractor, CONSULTANT shall be responsible for all taxes, worker's compensation coverage and insurance coverage, and shall hold CITY harmless and indemnify CITY from and against any and all claims related to taxes, unemployment compensation, and worker's compensation.

10.6 CONSULTANT shall secure, at its own expense all personnel required in performing the services under this Agreement. The employees of CONSULTANT shall not be considered employees of CITY nor have any contractual relationship with CITY. CONSULTANT and its employees shall not hold themselves out as, nor claim to be

officers or employees of CITY by reason of this Agreement. The employees of CITY shall not be considered employees of CONSULTANT.

10.7 Neither party has the right to bind or obligate the other in any way. CONSULTANT shall not use the name, trademarks, copyrighted materials, or any information related to this Agreement in any advertising or publicity without CITY'S prior written authorization.

11. **INSURANCE.**

11.1 GENERAL: CONSULTANT shall secure and maintain insurance as required by laws and regulations and the terms of this agreement to protect against any liability, loss or expense which occurs or arises as a result of the performance of the services provided pursuant to this agreement or as changed as provided herein. CONSULTANT'S insurer must be authorized to do business in Utah and must have an A.M. Best rating of A VIII or better at the time this contract is executed. Required limits may be met with Umbrella or Excess insurance policies.

11.2 COMMENCEMENT OF WORK: Neither CONSULTANT, its Suppliers nor any subcontractors shall enter the site of the work or commence work under this contract before CITY has received and accepted Certificate(s) of Insurance and Insurance Endorsements and has issued the Notice to Proceed, as applicable.

11.3 INSURANCE CERTIFICATES AND COVERAGE: Insurance certificates shall be issued on all policies required under this contract and shall be signed by an authorized representative of the insurance company. The insurance certificate or the coverage required shall include the following:

A. The name and address of the insured.

B. CITY shall be named as a Certificate Holder.

C. CITY shall be named as an additional primary insured on the General Liability Certificate with CITY listed as non-contributory on the General Liability certificate.

D. The location of the operations to which the insurance applies.

E. The number of the policy and the type or types of insurance in force thereunder on the date borne by the certificate.

F. The expiration date of the policy and the limit or limits of liability thereunder on the date borne by the certificate.

G. A statement that all coverage is on an occurrence basis rather than a claims basis except for the Professional Errors and Omissions Malpractice Insurance coverage.

H. A provision that the policy or policies will not be canceled, denied renewal, or reduced in coverage until at least 30 days after written notice has been received by CITY.

I. Name, address, and telephone number of the insurance company's agent of process in Utah.

J. Other information to demonstrate compliance with additional requirements stipulated for the various types of insurance coverage.

11.4 WORKER'S COMPENSATION INSURANCE: CONSULTANT shall, as applicable, take out and maintain Workers' Compensation Insurance as required by the Labor Code for all its employees at the site of the work during the life of this contract. Coverage must be provided by a company authorized by the State of Utah to provide Workers' Compensation Insurance. The insurance shall include:

A. Insurance certificates shall provide a waiver of subrogation by the carrier to Certificate Holder.

B. CONSULTANT shall require each subcontractor to provide Workers' Compensation Insurance for its employees unless such employees are covered by CONSULTANT.

C. In the event any class of employees engaged in hazardous work under this contract is not protected by the Workers' Compensation Statute, CONSULTANT shall provide, and shall cause its subcontractors to provide, special insurance for the protection of such employees not otherwise protected.

11.5 COMMERCIAL GENERAL LIABILITY INSURANCE: CONSULTANT shall procure and maintain commercial general liability insurance for the duration of the contract against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONSULTANT, its agents, representatives, employees, or subcontractors. The insurance shall remain in effect during the term of this agreement and such that claims reported beyond the date of substantial completion of this agreement are covered and during the warranty period, to the extent that it relates to the activities covered by this Agreement, in such manner and amounts as set forth herein. The Insurance Endorsement shall evidence such provisions.

A. The minimum commercial general liability insurance shall be as follows:

i. Comprehensive general liability insurance for injuries, including accidental death, to any one person in any one occurrence in an amount not less than $1,000,000.00 Dollars.

ii. Comprehensive general liability insurance for injuries, including

accidental death, to two or more persons in any one occurrence in an amount not less than $4,000,000.00 Dollars (umbrella coverage may be considered).

iii. Broad form property damage insurance in an amount not less than $300,000.00 Dollars.

B. Such policy shall include each of the following coverages (as applicable):

i. Comprehensive form.
ii. Premises - operations.
iii. Explosion and collapse hazard.
iv. Underground hazard.
v. Product/completed operations hazard.
vi. Contractual insurance.
vii. Broad form property damage, including completed operations.
viii. Independent contractors for vicarious liability.
ix. Personal injury.
x. Cross liability or severability of interest's clause shall be included unless a separate policy covering CITY is provided.

11.6 PROFESSIONAL LIABILITY ERRORS AND OMISSIONS INSURANCE:

A. CONSULTANT shall carry and maintain Professional Liability Errors and Omissions Insurance in an amount not less than $3,000,000.00 Dollars for all work performed under this Agreement.

B. CONSULTANT shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONSULTANT, its agents, representatives, employees, or subcontractors. With respect to General Liability, Professional liability coverage should be maintained for a minimum of five (5) years after contract completion.

C. If Professional Liability coverages are written on a claims-made form:

i. The retroactive date must be shown and must be before the date of the contract or the beginning of contract work.
ii Insurance must be maintained, and evidence of insurance must be provided, for at least five (5) years after completion of the contract of work.
iii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective date, the CONSULTANT must purchase an extended period coverage for a minimum of five (5) years after completion of contract work.

iv. A copy of the policy must be submitted to CITY for review.

11.7 BUSINESS AUTOMOBILE COVERAGE: CONSULTANT shall carry and maintain business automobile insurance coverage on each vehicle used in the performance of the work in an amount not less than $1,000,000.00 Dollars for one person and $3,000,000.00 Dollars for more than one person and for property damage resulting from any one occurrence which may arise from the operations of CONSULTANT in performing the work.

Such business automobile insurance shall include each of the following types:

A. Comprehensive form, including loading and unloading.
B. Owned.
C. Hired.
D. Non-owned.

12. **INDEMNITY AND LIMITATION.**

12.1 Except as otherwise provided herein, CONSULTANT shall indemnify, defend, and hold harmless CITY, its elected officials, officers, employees, and representatives against any and all claims, suits, causes of action, demands, losses, costs, and damages and liability of every kind including but not limited to all fees and charges of professionals, except for attorney's fees, and all court or other dispute resolution costs for:

A. death or injuries to persons or for loss of or damage to property which directly or indirectly, in whole or in part are caused by, resulting from, or arising out of the intentional, reckless, negligent, or wrongful acts, errors or omissions, or other liability imposed by law of CONSULTANT, its officers, employees, agents, or representatives in the performance of services under this Agreement or any subcontractor, any supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work;

B. CONSULTANT's failure or refusal, whatever the reason, to pay subcontractors or suppliers for Work performed under the Agreement;

C. claims by any employee of the CONSULTANT, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, CONSULTANT'S indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONSULTANT or any subcontractor under workmen's compensation acts, disability benefit acts or other employee benefits acts.

12.2 CITY shall give CONSULTANT prompt written notice of any such claims or suits filed against CITY arising out of the services provided under this Agreement. CONSULTANT agrees to defend against any claims brought or actions filed against CITY arising out of

the services provided under this Agreement. If CITY'S tender of defense, based upon the indemnity provision, is rejected by CONSULTANT or CONSULTANT'S insurer, and CONSULTANT is later found by a court of competent jurisdiction to have been required to indemnify the CITY, then, in addition to any other remedies the CITY may have, CONSULTANT shall pay the CITY'S reasonable costs and expenses, except for attorney's fees, incurred in obtaining such indemnification, defending themselves or enforcing the indemnification provision.

12.3 The insurance requirements in this agreement shall not be construed as limiting CONSULTANT'S liability. Irrespective of the requirements for CONSULTANT to carry insurance as provided herein, insolvency, bankruptcy, or failure of any insurance company to pay all claims accruing shall not be held to relieve CONSULTANT of any obligations under this agreement.

12.4 This section does not apply to a design professional services contract, design professional services, and design professionals.

13. **DOCUMENTS.**

13.1 All data used in compiling CONSULTANT's work, and the results of any tests or surveys, as well as all photographs, drawings, electronically stored records of work performed, renderings, specifications, schedules, CONSULTANT's work, data processing output, computations, studies, audits, research, reports, models and other items of like kind prepared by CONSULTANT, and its employees, shall be the sole and exclusive property of CITY, and CITY shall own all intellectual property rights thereto whether the specific work project for which they are made is undertaken or not. CONSULTANT may retain reproducible copies of all the foregoing documents for information and reference and customary marketing and public relations. The originals of all the foregoing documents shall be delivered to CITY promptly upon completion thereof. This provision may be enforced by an order of specific performance and is independent of any other provision of this Agreement. Compliance by CONSULTANT with this paragraph shall be a condition precedent to CITY's obligation to make final payment to CONSULTANT. If CITY has specific requirements on the information and manner the documentation is collected, CITY shall provide those specifics to CONSULTANT in writing.

13.2 Plans, specifications, maps, and record drawings prepared or obtained under this Agreement shall be provided to CITY in a format approved by CITY which shall generally be a hard copy and an electronic copy and shall become the property of CITY whether the work for which they are prepared is executed or not.

13.3 The basic survey notes and sketches, charts, computations, and other data prepared under this Agreement shall be made available upon request to CITY without restriction or limitation on their use.

13.4 CITY shall have the right to use reports, designs, details, or products developed as part

of this Agreement for purposes of maintenance, remodeling or reconstruction of existing facilities or construction of new facilities without additional compensation to CONSULTANT or without restriction or limitation on its use even if documents are considered copyrighted material.

13.5 CITY will hold harmless CONSULTANT for any use or reuse of these reports, designs, or details for purposes other than the project associated with this Agreement unless CITY obtains validation of that use or reuse from CONSULTANT.

14. **RECORDS.**

14.1 CONSULTANT shall maintain records, books, documents, and other evidence directly pertinent to the performance of services under this Agreement in accordance with generally accepted accounting principles and practices.

14.2 CONSULTANT agrees to keep proper books of records and accounts in which complete and correct entries will be made of payroll costs, travel, subsistence, and field expenses.

14.3 Said books shall, at all times, be available for at least three (3) years after final payment for reasonable examination by CITY.

15. **TERMINATION.**

15.1 CITY may terminate this Agreement by providing fourteen (14) days written notice prior to the effective termination date to CONSULTANT.

15.2 In the event of such termination, CITY shall pay CONSULTANT for all services actually rendered up to and including the date of termination.

15.3 CONSULTANT shall deliver to CITY copies of all drawings, reports, analyses, documents, and investigations, whether completed or not, that were prepared or were being prepared under the provisions of this Agreement.

16. **CONFLICT BETWEEN DOCUMENTS.** In the event of a conflict between this Agreement and any other documents with CONSULTANT, this Agreement shall govern.

17. **CONFLICT OF INTEREST.** CONSULTANT certifies that it has disclosed to CITY any actual, apparent or potential conflicts of interest that may exist relative to the services to be provided pursuant to this Agreement.

17.1 CONSULTANT agrees to advise CITY of any actual, apparent or potential conflicts of interest that may develop after the date of execution of this Agreement.

17.2 CONSULTANT further agrees to complete any statements of economic interest required by either CITY ordinance or State law.

18. **NON-WAIVER.** No failure or waiver or successive failures or waivers on the part of either party hereto, their successors or permittee assigns, in the enforcement of any condition, covenant, or Article of this Agreement shall operate as a discharge of any such condition, covenant, or Article nor render the same invalid, nor impair the right of either party hereto, their successors or permitted assigns, to enforce the same in the event of any subsequent breaches by the other party hereto, its successors or permitted assigns.

19. **NOTIFICATION.** All notices required or permitted to be made by either party in connection with this Agreement shall be in writing, and shall be deemed to have been duly given: (a) five (5) business days after the date of mailing if sent by U.S. mail, postage prepaid, (b) when transmitted if sent by facsimile, provided a confirmation of transmission is produced by the sending machine and a copy of such facsimile is promptly sent by another means specified in this Section; or (c) when delivered if delivered personally or sent by express courier service. All notices shall be sent to the other party at its address as set forth below unless written notice is given by either party of a change of address:

CITY:	City of St. George 175 East 200 North St. George, Utah 84770	CONSULTANT:	Stanley Consultants, Inc 1173 South 250 West #308 St. George, Utah 84770
Attention:	City Attorney	Attention:	Kurt Miller
Copy:	legal@sgcity.org		

20. **GOVERNING LAW AND VENUE.** This Agreement shall be construed according to the laws of the State of Utah. The parties agree that venue for all legal actions, unless they involve a cause of action with mandatory federal jurisdiction, shall be the Fifth District Court for the State of Utah. The parties further agree that the Federal District Court for the District of Utah shall be the venue for any cause of action with mandatory federal jurisdiction. The parties shall have all rights and remedies provided under applicable Federal or State law for a breach or threatened breach of this Agreement. These rights and remedies shall not be mutually exclusive, and the exercise of one or more of these rights and remedies shall not preclude the exercise of any other rights and remedies. Each party agrees that damages at law may be an inadequate remedy for a breach or threatened breach of any provision hereof and the respective rights and obligations of the parties hereunder shall be enforceable by specific performance, injunction, or other equitable remedy. Nothing in this Agreement shall be construed to waive the sovereign immunity of the government parties.

21. **LEGAL FEES.** Each party shall bear its own costs, expenses, and attorneys' fees in connection with this Agreement. This obligation includes, without limitation, all costs and expenses which may arise or accrue from enforcing this Agreement or in pursuing any remedy provided hereunder or by applicable law, whether such remedy is pursued by filing a lawsuit or otherwise.

22. **MODIFICATION OF AGREEMENT.** CITY specifically reserves the right to modify or amend this Agreement and the total sum due hereunder either by enlarging or restricting the scope of the Work. All modifications shall be in writing and executed by both parties. Each Work Order adopted under this Agreement shall incorporate the terms and conditions of this Agreement and shall constitute a modification to this contract. A Work Order may amend the

terms and conditions of this Agreement only as they apply to that particular Work Order and shall not have any general effect on this Agreement.

23. **RESERVED LEGISLATIVE POWERS.** Nothing in this Agreement shall limit the future exercise of the police power by CITY in enacting zoning, subdivision, development, transportation, environment, open space, and related land use plans, policies, ordinances, and regulations after the date of this Agreement, but which shall not be retroactively applied to or modify this Agreement.

24. **SUCCESSORS AND ASSIGNS.** CONSULTANT shall not assign, sublet, sell, transfer, or otherwise dispose of any interest in this Agreement without assigning the rights and the responsibilities under this Agreement and without the prior written approval of CITY. This Agreement shall be binding upon and inure to the benefit of the parties hereto, their successors and permitted assigns, but shall not inure to the benefit of any third party or other person.

25. **NO JOINT VENTURE, PARTNERSHIP OR THIRD-PARTY RIGHTS.** It is not intended by this Agreement to, and nothing contained in this Agreement shall, create any partnership, joint venture, or other arrangement between the parties. No term or provision of this Agreement is intended to or shall, be for the benefit of any person, firm, organization, or corporation not a party hereto, and no such other person, firm, organization, or corporation shall have any right or cause of action hereunder.

26. **INTEGRATION.** This Agreement contains the entire Agreement with respect to the subject matter hereof and integrates all prior conversations, discussions or understanding of whatever kind or nature between CITY and CONSULTANT and supersedes and replaces all terms and conditions of any prior agreements, arrangements, negotiations, or representations, written or oral, with respect to this PROJECT.

27. **SEVERABILITY.** If any part or provision of this Agreement shall be determined to be unconstitutional, invalid or unenforceable by a court of competent jurisdiction, then such a decision shall not affect any other part or provision of this Agreement except that specific provision determined to be unconstitutional, invalid or unenforceable. If any condition, covenant or other provision of this Agreement shall be deemed invalid due to its scope or breadth, such provision shall be deemed valid to the extent of the scope or breadth permitted by law.

28. **CONSTRUCTION.** Each of the parties hereto has had the opportunity to review this agreement with counsel of their choosing and the rule of contracts requiring interpretation of a contract against the party drafting the same is hereby waived and shall not apply in interpreting this agreement.

29. **SURVIVAL.** It is expressly agreed that the terms, covenants, and conditions of this Agreement shall survive any legal act or conveyance required under this Agreement.

30. **HEADINGS.** The section and other headings in this Agreement are for reference purposes only and shall not in any way affect the meaning or interpretation of this Agreement.

31. **COUNTERPARTS.** This Agreement may be signed in counterparts and each such counterpart shall constitute an original document. All such counterparts, taken together, shall constitute one and the same instrument. Any signature on this Agreement transmitted by facsimile, electronically in PDF format, or by other generally accepted means of conveying digital signatures (e.g. DocuSign) shall by deemed an original signature for all purposes and the exchange of copies of this Agreement and of signature pages by any such transmission, or by a combination of such means, shall constitute effective execution and delivery of this Agreement as to the Parties and may be used in lieu of the original for all purposes.

32. **AUTHORITY OF PARTIES.** The parties executing this Agreement hereby warrant and represent that they are duly authorized to do so in the capacity stated and that this Agreement constitutes a valid and binding Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by the CITY and CONSULTANT effective from the day and year first written above.

CITY OF ST. GEORGE	STANLEY CONSULTANTS, INC
Michele Randall, Mayor	Kurt Miller, Vice President
ATTEST:	APPROVED AS TO FORM: CITY ATTORNEY'S OFFICE
Christina Fernandez, City Recorder	Alicia Galvany Carlton, Assistant City Attorney

EXHIBIT A
SCOPE OF SERVICES

This Exhibit A Scope of Services is attached to, and fully incorporated into, the Professional Services Agreement by and between the City of St. George (the "City") and the following individual or entity ("Contractor") to the extent that it does not conflict with any provisions in this Agreement. If there are any conflicts between the Agreement and the Scope of Services, the terms of the Agreement apply.:

Name: Stanley Consultants, Inc

Address: 1173 South 250 West #308 St. George, Utah 84770

Email: LamoreauxBob@stanleygroup.com Phone Number: 435-272-4370

Scope of Services and/or Deliverables by Contractor:

- See Attached
-
-
-

Compensation: City shall pay Contractor the following sum:

- Not to Exceed $567,763.00
-

Exhibit A

Jay Sandberg
City of St. George, Utah
61 South Main
St. George, UT 84770

Subject: George Washington Boulevard Bridge Project Construction Management (CM)

Dear Selection Committee:

Stanley Consultants (Stanley) proudly submits our proposal for CM services for the George Washington Boulevard (GWB) Bridge Project. Our nimble, local team of bridge experts brings deep community roots, local knowledge and proven expertise to deliver this vital east-west connection across the Virgin River for the City of St. George and Washington County.

Our team has provided a constructability review for this project, and we understand the critical elements. We excel at managing the unique challenges this project presents. In Washington County over the last 10 years, we have successfully completed eight large bridge/interchange projects. These involved drilled shafts, multiple bridge spans and bike trails. When located in the river, complex environmental mitigation protected endangered species, wetlands and floodplains. Our experience also includes roadway tie-ins, utility relocations, drainage installations, traffic signal integration, pedestrian underpass construction and landscaping improvements. We understand the importance of this bridge to the regional transportation plan.

Stanley will serve as an extension of your team and meticulously oversee project construction. All of our team members are fully available for this project. We employ proactive risk management, clear communication, stringent quality control and precise schedule control to reduce change orders, control costs and increase efficiency. We implement robust project controls to deliver on time, on budget, with zero surprises.

We go beyond standard services. As a responsive partner, we provide public engagement visuals to support the city and explore innovative solutions to reduce community impact. Stanley delivers the ideal combination of proven experience, technical expertise and a collaborative approach to achieve project success. We will seamlessly integrate with your team, maintain an unwavering focus on quality and schedule adherence delivering exceptional value to the City of St. George.

We welcome the opportunity to discuss our qualifications and demonstrate how our partnership will benefit your community.

Sincerely,
Bob Lamoreaux, PE, Resident Engineer

$ Fee Proposal

Proposed Personnel	Role/Responsibilities	Hours	Rate ($)	Amount ($)
Bob Lamoreaux, PE	Resident Engineer	288	$ 227.50	$ 65,520.00
Clayton Wilson, PE	Field Engineer	288	$ 221.00	$ 63,648.00
Shana Gardner, MBA	Office Staff/Document Control	720	$ 73.00	$ 52,560.00
Jeff Walbeck	Bridge Inspector	2,160	$ 178.72	$ 386,035.20
Sam Morris	Field Engineer/Inspector	0	$ 154.00	$ -
Boyce Mulder	Roadway Inspector	0	$ 133.00	$ -
Gary John	Roadway Inspector/Tester	0	$ 108.00	$ -
John Lange	Design Support	0	$ 217.00	$ -
Dan Cluff	Cost Estimating/Schedule Review	0	$ 202.00	$ -
Dan Brock	Lab Manager	0	$ 168.50	$ -
Total		**3,456**		
			Not to Exceed Total Labor	**$ 567,763.20**

Agenda Date: 12/18/2025 **Agenda Item Number:** 2n

Subject:

Consider approval of a contract with JP Excavating to construct the George Washington Boulevard Bridge Project.

Item at-a-glance:

Staff Contact: Jay Sandberg

Applicant Name: N/A

Reference Number: N/A

Address/Location:

N/A

Item History (background/project status/public process):

The George Washington Boulevard Bridge will be 745 feet long and supported by five piers. The project includes a connecting roadway to Dixie Drive and a new signalized intersection at Crosby Drive. It also incorporates pedestrian and trail improvements, drainage systems, sidewalks, utilities, landscaping, and related work. A total of five bids were received for the project, and the two lowest bids were within 4% of each other.

Staff Narrative (need/purpose):

The George Washington Boulevard Bridge is part of the citys long-range plan to improve regional transportation and connectivity in the region. The bridge and its connecting roadways will help relieve congestion on River Road and Riverside Drive and create another much-needed eastwest route. Construction is scheduled to begin in early spring 2026 and will take about 500 days. Work on the connecting roadway to River Road is planned for fall 2026. Both the bridge and roadway are expected to be completed by summer 2027.

Name of Legal Dept approver: Alicia Galvany Carlton

Budget Impact:

Cost for the agenda item: $23,654,704.10

Amount approved in current FY budget for item: $20,000,000

If not approved in current FY budget or exceeds the budgeted amount, please explain funding source:

Funding will be covered by savings in other projects.

Description of funding source:

Public Works Capital Projects Fund.

Recommendation (Include any conditions):

Approval

Attachments

NOTICE OF AWARD

To: JP Excavating, Inc.

Project: GEORGE WASHINGTON BLVD BRIDGE
Project No.: 25-231

The CITY has considered the BID submitted by you for the above described project in response to its Advertisement for BIDS and Information for BIDDERS.

You are hereby notified that your BID has been accepted in the amount of $ 23,654,704.10 on the condition that you execute the Agreement and obtain the performance BOND, the payment BOND, and the certificate of insurance within ten (10) calendar days from the date this NOTICE is delivered to you.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the CITY.

Dated this 18th day of December, 2025.

City of St. George
CITY

By _____

Name Michele Randall

Title Mayor

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

By _____,

this the _____ day of _____, 20__.

Name Judd Palmer

Title President

Project: George Washington Blvd Bridge Construction
Bid Date: Dec 9, 2025

Schedule	#	JP Excavating, Inc.	Wadsworth Brothers Construction	Interstate Rock Products, Inc.	Suncore Construction & Materials Inc	Ralph L Wadsworth Construction Company, LLC
Roadway	1	4,090,004.00	4,939,721.04	3,945,555.50	5,113,107.00	5,706,376.00
Drainage	2	923,914.00	933,190.00	728,289.50	863,780.00	1,096,560.00
Utilities	3	1,554,527.00	1,349,934.00	1,256,851.50	1,263,250.00	1,555,522.00
Structure	4	16,835,519.10	17,148,353.40	19,717,545.85	20,398,314.40	20,742,676.00
Signing/Striping	6	12,955.00	11,263.00	9,085.50	12,310.00	14,255.00
Signal	7	94,000.00	94,451.00	96,400.00	103,800.00	110,000.00
Lighting	8	52,000.00	51,704.00	52,800.00	56,820.00	60,000.00
ITS Communication	9	91,785.00	89,817.00	91,264.00	98,905.00	103,665.00
Total Bid Amount		**23,654,704.10**	**24,618,433.44**	**25,897,791.85**	**27,910,286.40**	**29,389,054.00**

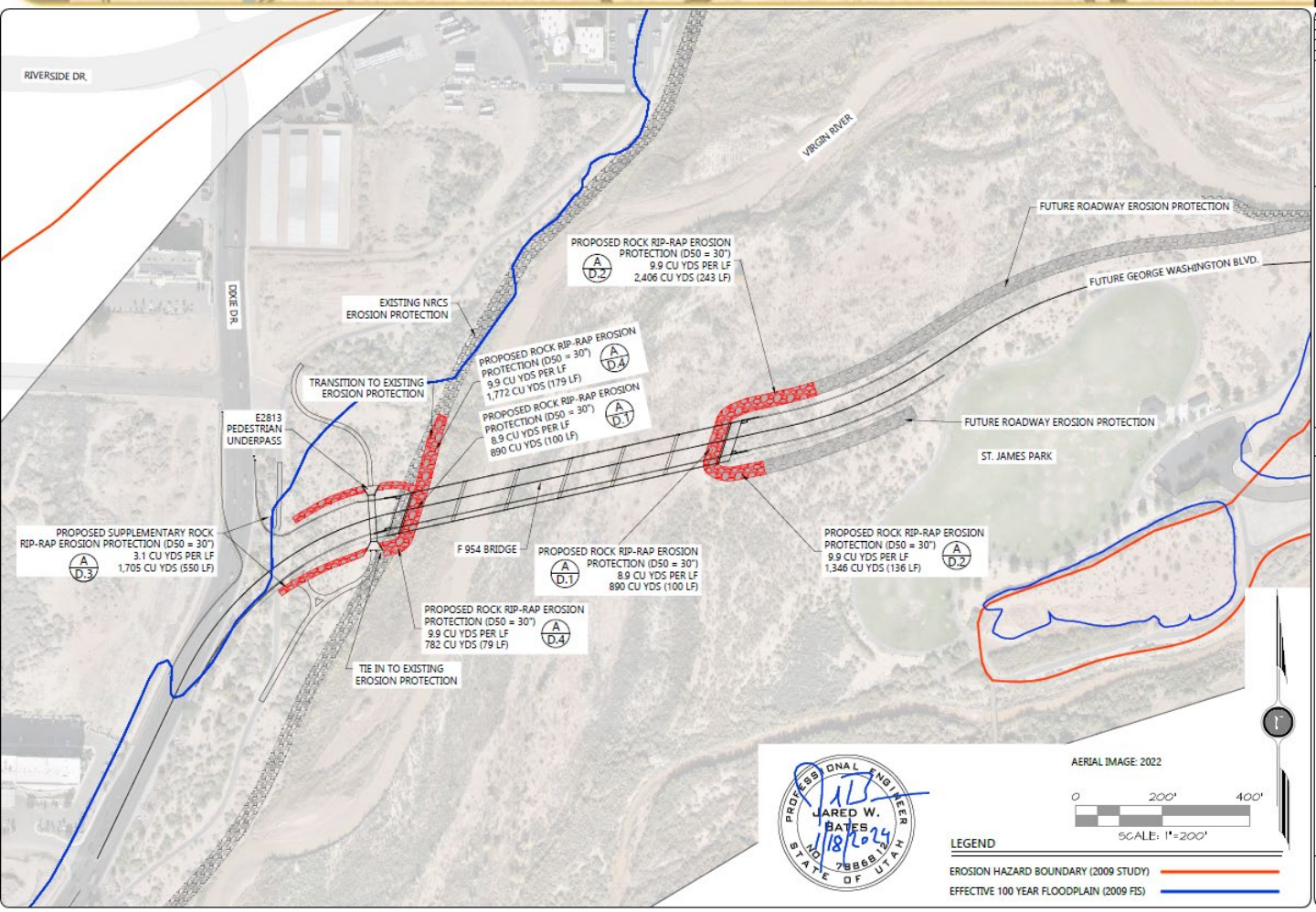
**This is the initial reading of the bids. All of the information is subject to verification and evaluation in accordance with the published bid criteria.

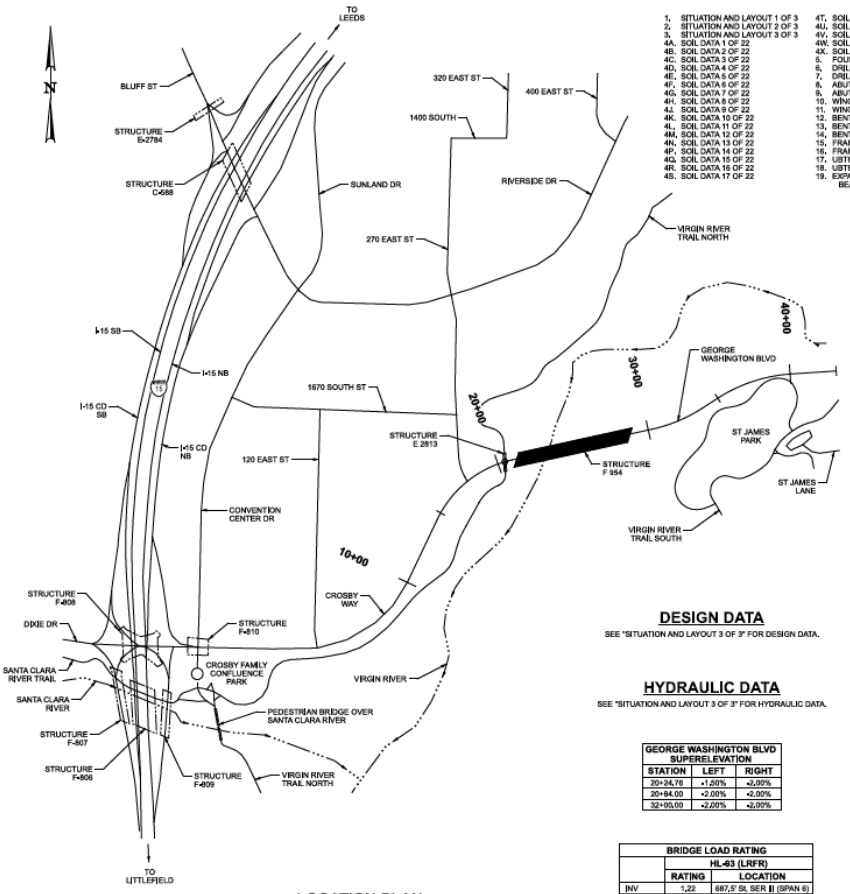
Project: George Washington Blvd Bridge Construction					JP Excavating, Inc. (N63)		Wadsworth Brothers Construction (G48)		Interstate Rock Products, Inc. (T18)		Suncore Construction & Materials Inc (D73)		Ralph L Wadsworth Construction Company, LLC (Y35)	
#	Items	Item	Quantity	Unit	Unit Price	Total Cost	Unit Price	Total Cost	Unit Price	Total Cost	Unit Price	Total Cost	Unit Price	Total Cost
1														
#1-1	Mobilization	15017010	1	Lump	1,500,000.00	1,500,000.00	2,439,206.04	2,439,206.04	1,814,500.00	1,814,500.00	2,834,560.00	2,834,560.00	2,700,000.00	2,700,000.00
#1-2	Traffic Control	15547005	1	Lump	120,000.00	120,000.00	109,195.00	109,195.00	22,300.00	22,300.00	60,800.00	60,800.00	200,000.00	200,000.00
#1-3	Survey	17217010	1	Lump	85,000.00	85,000.00	80,110.00	80,110.00	59,300.00	59,300.00	96,940.00	96,940.00	155,000.00	155,000.00
#1-4	Borrow (Plan Quantity)	20567005	8651	Cu Yd	23.00	198,973.00	31.00	268,181.00	38.00	328,738.00	27.00	233,577.00	37.00	320,087.00
#1-5	Embankment for Bridge	20567070	9949	Cu Yd	40.00	397,960.00	45.00	447,705.00	40.00	397,960.00	42.00	417,858.00	54.00	537,246.00
#1-6	Remove Concrete Curb and Gutter	22217125	1184	Ft	10.00	11,840.00	4.40	5,209.60	3.45	4,084.80	3.50	4,144.00	5.00	5,920.00
#1-7	Clearing and Grubbing	22317010	1	Lump	115,000.00	115,000.00	33,685.00	33,685.00	15,700.00	15,700.00	28,550.00	28,550.00	40,000.00	40,000.00
#1-8	Subgrade Preparation	02313700*	6052	Cu Yd	34.00	205,768.00	4.40	26,628.80	13.00	78,676.00	3.50	21,182.00	6.00	36,312.00
#1-9	Roadway Excavation (Plan Quantity)	23167020	2458	Cu Yd	18.00	44,244.00	75.00	184,350.00	15.50	38,099.00	60.00	147,480.00	90.00	221,220.00
#1-10	Untreated Base Course (Plan Quantity)	27217020	3432	Cu Yd	48.00	164,736.00	55.00	188,760.00	51.00	175,032.00	48.00	164,736.00	65.00	223,080.00
#1-11	HMA – ½ inch	27417050	3261	Ton	97.00	316,317.00	105.00	342,405.00	95.50	311,425.50	97.00	316,317.00	125.00	407,625.00
#1-12	HMA – ½ inch A/C Trail	02743704*	217	Ton	105.00	22,785.00	131.00	28,427.00	110.00	23,870.00	120.00	26,040.00	160.00	34,720.00
#1-13	Emulsified Asphalt (Tack)	27487020	4	Ton	1,000.00	4,000.00	1,036.00	4,144.00	810.00	3,240.00	1,000.00	4,000.00	1,300.00	5,200.00
#1-14	Perpendicular/Parallel Pedestrian Access Ramp	27717059	4	Each	3,100.00	12,400.00	3,173.00	12,692.00	2,350.00	9,400.00	3,150.00	12,600.00	3,800.00	15,200.00
#1-15	Concrete Sidewalk	27767010	11918	Sq Ft	10.50	125,139.00	9.70	115,604.60	7.60	90,576.80	8.50	101,303.00	11.00	131,098.00
#1-16	Concrete Curb and Gutter Type HB30-7	02776702P	2120	Ft	27.00	57,240.00	30.00	63,600.00	27.00	57,240.00	34.00	72,080.00	35.00	74,200.00
#1-17	Concrete Flatwork, 4 inch Thick	27767030	196	Sq Ft	12.00	2,352.00	11.00	2,156.00	9.15	1,793.40	15.00	2,940.00	13.00	2,548.00
#1-18	Concrete Curb and Gutter Transition	27767037	8	Each	550.00	4,400.00	527.00	4,216.00	580.00	4,640.00	150.00	1,200.00	620.00	4,960.00
#1-19	42 inch CIP Half Barrier – Sloped End Section	02844733P	4	Each	9,200.00	36,800.00	9,683.00	38,732.00	8,350.00	33,400.00	11,280.00	45,120.00	11,000.00	44,000.00
#1-20	42 inch CIP Half Barrier – End Section with Moment Slab	02844735P	4	Each	15,000.00	60,000.00	13,500.00	54,000.00	11,700.00	46,800.00	15,470.00	61,880.00	15,000.00	60,000.00
#1-21	Landscape Rock Type 1	02909701*	75	Cu Yd	130.00	9,750.00	145.00	10,875.00	110.00	8,250.00	110.00	8,250.00	120.00	9,000.00
#1-22	Landscape Rock Type 2	02909702*	168	Cu Yd	130.00	21,840.00	174.00	29,232.00	110.00	18,480.00	110.00	18,480.00	120.00	20,160.00
#1-23	Landscape Rock Type 3	02909703*	430	Cu Yd	130.00	55,900.00	164.00	70,520.00	140.00	60,200.00	150.00	64,500.00	160.00	68,800.00
#1-24	Landscape Rock Type 4	02909704*	388	Cu Yd	130.00	50,440.00	164.00	63,632.00	130.00	50,440.00	140.00	54,320.00	150.00	58,200.00
#1-25	Relocate Landscape Boulders	02909705*	1	Lump	2,200.00	2,200.00	6,368.00	6,368.00	9,450.00	9,450.00	10,190.00	10,190.00	11,000.00	11,000.00
#1-26	Small Landscape Boulders	02909706*	1	Lump	16,000.00	16,000.00	16,733.00	16,733.00	9,650.00	9,650.00	10,390.00	10,390.00	11,000.00	11,000.00
#1-27	Large Landscape Boulders	02909707*	1	Lump	21,000.00	21,000.00	20,192.00	20,192.00	13,400.00	13,400.00	14,380.00	14,380.00	15,000.00	15,000.00
#1-28	Protect in Place Existing Trees	02910701*	1	Lump	5,500.00	5,500.00	43,619.00	43,619.00	5,000.00	5,000.00	5,390.00	5,390.00	6,000.00	6,000.00
#1-29	Imported Amended Topsoil For Plantings	02912701*	1820	Cu Yd	91.00	165,620.00	32.00	58,240.00	35.50	64,610.00	38.00	69,160.00	40.00	72,800.00
#1-30	Imported Soil For Mounding	02912702*	400	Cu Yd	70.00	28,000.00	37.00	14,800.00	35.50	14,200.00	38.00	15,200.00	40.00	16,000.00
#1-31	Landscape Irrigation System	02913701*	1	Lump	133,000.00	133,000.00	65,327.00	65,327.00	94,600.00	94,600.00	101,870.00	101,870.00	100,000.00	100,000.00
#1-32	Landscape Planting	02932701*	1	Lump	93,000.00	93,000.00	85,176.00	85,176.00	79,200.00	79,200.00	85,270.00	85,270.00	90,000.00	90,000.00
#1-33	Flowable Fill (Contingent Item)	03575701P	10	Cu Yd	280.00	2,800.00	600.00	6,000.00	130.00	1,300.00	240.00	2,400.00	1,000.00	10,000.00
2														
#2-1	Rock Rip-Rap Erosion Protection (D50 = 30 inches)	02373700*	9794	Cu Yd	34.00	332,996.00	56.00	548,464.00	40.00	391,760.00	51.00	499,494.00	65.00	636,610.00
#2-2	Drainage Pipe – 15 inch, Reinforced Concrete Class III, Silt-Tight	02610761P	68	Ft	135.00	9,180.00	82.00	5,576.00	73.00	4,964.00	72.00	4,896.00	100.00	6,800.00
#2-3	Drainage Pipe – 18 inch, Reinforced Concrete Class III, Silt-Tight	02610762P	901	Ft	138.00	124,338.00	85.00	76,585.00	75.50	68,025.50	76.00	68,476.00	110.00	99,110.00
#2-4	Drainage Pipe – 24 inch, Reinforced Concrete Class III, Silt-Tight	02610763P	182	Ft	163.00	29,666.00	101.00	18,382.00	90.00	16,380.00	92.00	16,744.00	120.00	21,840.00
#2-5	Drainage Pipe – 24 inch, Reinforced Concrete Class IV, Silt-Tight	02610764P	166	Ft	199.00	33,034.00	131.00	21,746.00	110.00	18,260.00	120.00	19,920.00	150.00	24,900.00
#2-6	Circular Concrete End Section 18 inch	26137140	5	Each	2,500.00	12,500.00	1,472.00	7,360.00	1,500.00	7,500.00	1,330.00	6,650.00	1,800.00	9,000.00
#2-7	Circular Concrete End Section 24 inch	26137145	1	Each	37,000.00	37,000.00	1,745.00	1,745.00	1,750.00	1,750.00	1,590.00	1,590.00	2,000.00	2,000.00
#2-8	4 Foot Standard Manhole 5 ft to 7 ft Deep	02632701*	2	Each	7,000.00	14,000.00	5,780.00	11,560.00	5,950.00	11,900.00	5,350.00	10,700.00	6,500.00	13,000.00
#2-9	4 Foot Standard Manhole 7 ft to 9 ft Deep	02632702*	2	Each	9,400.00	18,800.00	6,663.00	13,326.00	6,800.00	13,600.00	6,220.00	12,440.00	7,500.00	15,000.00
#2-10	5 Foot Junction Manhole 5 ft to 7 ft Deep	02632703*	2	Each	8,400.00	16,800.00	6,706.00	13,412.00	6,750.00	13,500.00	6,270.00	12,540.00	7,500.00	15,000.00

#2-11	5 Foot Junction Manhole 11 ft to 13 ft Deep	02632704*	1	Each	10,000.00	10,000.00	7,383.00	7,383.00	8,150.00	8,150.00	6,920.00	6,920.00	8,500.00	8,500.00
#2-12	Standard Catch Basin Structure 3 ft to 5 ft Deep	02632705*	3	Each	10,200.00	30,600.00	8,342.00	25,026.00	4,050.00	12,150.00	7,710.00	23,130.00	9,500.00	28,500.00
#2-13	Standard Catch Basin Structure 7 ft to 9 ft Deep	02632706*	1	Each	12,000.00	12,000.00	9,138.00	9,138.00	5,000.00	5,000.00	8,490.00	8,490.00	10,500.00	10,500.00
#2-14	Concrete Drainage Structure 3 Ft to 5 Ft Deep - CB 9	26337120	4	Each	10,500.00	42,000.00	8,331.00	33,324.00	6,750.00	27,000.00	7,700.00	30,800.00	9,700.00	38,800.00
#2-15	Concrete Drainage Structure 5 Ft to 7 Ft Deep - CB 9	26337130	15	Each	11,400.00	171,000.00	9,225.00	138,375.00	7,650.00	114,750.00	8,570.00	128,550.00	11,000.00	165,000.00
#2-16	Concrete Apron, Type B - Modified	02633740P	4	Each	7,500.00	30,000.00	447.00	1,788.00	3,400.00	13,600.00	3,110.00	12,440.00	500.00	2,000.00
3														
#3-1	Reconstruct Manhole	18927050	2	Each	1,600.00	3,200.00	2,650.00	5,300.00	1,250.00	2,500.00	2,370.00	4,740.00	3,200.00	6,400.00
#3-2	Test-Hole Utility	22167001	8	Each	1,600.00	12,800.00	491.00	3,928.00	910.00	7,280.00	370.00	2,960.00	600.00	4,800.00
#3-3	Remove Pipe	22217095	116	Ft	10.00	1,160.00	17.00	1,972.00	23.50	2,726.00	13.00	1,508.00	20.00	2,320.00
#3-4	Remove Hydrant	02511701*	1	Each	2,600.00	2,600.00	545.00	545.00	1,550.00	1,550.00	420.00	420.00	600.00	600.00
#3-5	Remove Gate Valve	02511702*	1	Each	2,000.00	2,000.00	545.00	545.00	1,550.00	1,550.00	420.00	420.00	600.00	600.00
#3-6	6 in Gate Valve	02511705*	4	Each	3,000.00	12,000.00	4,678.00	18,712.00	2,700.00	10,800.00	4,130.00	16,520.00	5,500.00	22,000.00
#3-7	Fire Hydrant	02511715*	2	Each	9,400.00	18,800.00	12,159.00	24,318.00	7,550.00	15,100.00	11,360.00	22,720.00	15,000.00	30,000.00
#3-8	6 in C-900 Waterline	02511720*	72	Ft	92.00	6,624.00	43.00	3,096.00	94.50	6,804.00	37.00	2,664.00	50.00	3,600.00
#3-9	24 in DI Waterline	02511725*	1880	Ft	355.00	667,400.00	349.00	656,120.00	330.00	620,400.00	330.00	620,400.00	400.00	752,000.00
#3-10	24 in Butterfly Valve	02511730*	6	Each	24,000.00	144,000.00	37,916.00	227,496.00	27,100.00	162,600.00	36,830.00	220,980.00	44,000.00	264,000.00
#3-11	24 in Expansion Fitting	02511735*	2	Each	49,000.00	98,000.00	14,678.00	29,356.00	37,300.00	74,600.00	14,270.00	28,540.00	17,000.00	34,000.00
#3-12	36 in Steel Casing	02511740*	38	Ft	1,100.00	41,800.00	545.00	20,710.00	460.00	17,480.00	520.00	19,760.00	650.00	24,700.00
#3-13	12 in C-900 Irrigation Line	02522701*	996	Ft	183.00	182,268.00	109.00	108,564.00	110.00	109,560.00	100.00	99,600.00	125.00	124,500.00
#3-14	Loop 4 in C-900 Irrigation Line	02522702*	1	Each	20,500.00	20,500.00	4,111.00	4,111.00	3,550.00	3,550.00	3,450.00	3,450.00	4,800.00	4,800.00
#3-15	12 in DI Irrigation Line	02522705*	909	Ft	272.00	247,248.00	174.00	158,166.00	150.00	136,350.00	150.00	136,350.00	200.00	181,800.00
#3-16	12 in Gate Valve	02522710*	6	Each	6,700.00	40,200.00	9,694.00	58,164.00	7,650.00	45,900.00	9,060.00	54,360.00	11,000.00	66,000.00
#3-17	12 in Expansion Fitting	02522715*	2	Each	16,000.00	32,000.00	5,256.00	10,512.00	11,300.00	22,600.00	5,000.00	10,000.00	6,000.00	12,000.00
#3-18	20 in Steel Casing	02522720*	38	Ft	415.00	15,770.00	327.00	12,426.00	250.00	9,500.00	300.00	11,400.00	380.00	14,440.00
#3-19	One 2 in Conduit	135537015	83	Ft	25.00	2,075.00	25.00	2,075.00	25.50	2,116.50	28.00	2,324.00	30.00	2,490.00
#3-20	One 4 in Conduit	13553702P	86	Ft	27.00	2,322.00	27.00	2,322.00	27.50	2,365.00	29.00	2,494.00	32.00	2,752.00
#3-21	Composite Plastic Junction Box Type III	135547075	4	Each	440.00	1,760.00	374.00	1,496.00	380.00	1,520.00	410.00	1,640.00	430.00	1,720.00
4														
#4-1	Granular Backfill Borrow (Plan Quantity)	28247010	303	Cu Yd	88.00	26,664.00	88.00	26,664.00	44.50	13,483.50	120.00	36,360.00	65.00	19,695.00
#4-2	Free Draining Granular Backfill (Plan Quantity)	28247010	130	Cu Yd	90.00	11,700.00	101.00	13,130.00	86.50	11,245.00	120.00	15,600.00	110.00	14,300.00
#4-3	Separation Geotextiles	20757010	178	Sq Yd	7.00	1,246.00	5.30	943.40	2.30	409.40	6.50	1,157.00	6.00	1,068.00
#4-4	Drilled Shafts, 36 Inch	02466705*	1033	Ft	1,080.00	1,115,640.00	674.00	696,242.00	550.00	568,150.00	800.00	826,400.00	1,200.00	1,239,600.00
#4-5	Drilled Shafts, 96 Inch	02466710*	1679	Ft	2,900.00	4,869,100.00	3,229.00	5,421,491.00	2,550.00	4,281,450.00	3,840.00	6,447,360.00	3,000.00	5,037,000.00
#4-6	2ft x 2ft Grate and Frame – Bicycle Safe	26357055	15	Each	1,500.00	22,500.00	2,618.00	39,270.00	3,100.00	46,500.00	3,120.00	46,800.00	7,500.00	112,500.00
#4-7	2 Ft – 6 Inch Ornamental Fence on Structure	02824702*	803	Ft	320.00	256,960.00	336.00	269,808.00	320.00	256,960.00	400.00	321,200.00	400.00	321,200.00
#4-8	4 Ft – 9 Inch Ornamental Fence on Structure	02824703*	803	Ft	371.00	297,913.00	402.00	322,806.00	380.00	305,140.00	480.00	385,440.00	500.00	401,500.00
#4-9	Reinforcing Steel – Coated (Plan Quantity)	32117010	1099077	Lb	1.50	1,648,615.50	1.50	1,648,615.50	1.75	1,923,384.75	1.80	1,978,338.60	1.70	1,868,430.90
#4-10	Structural Concrete (Est. Qty: 2096 Cu Yd)	03310701D	1	Lump	1,700,000.00	1,700,000.00	1,835,343.00	1,835,343.00	2,522,500.00	2,522,500.00	2,070,850.00	2,070,850.00	2,000,000.00	2,000,000.00
#4-11	Structural Concrete – Fiber (Est. Qty: 1946 Cu Yd)	03310704D	1	Lump	1,100,000.00	1,100,000.00	1,217,756.00	1,217,756.00	3,302,500.00	3,302,500.00	1,449,710.00	1,449,710.00	2,400,000.00	2,400,000.00
#4-12	Partial-Depth Precast Concrete Deck Panel	33417010	36036	Sq Ft	25.00	900,900.00	25.00	900,900.00	27.50	990,990.00	30.00	1,081,080.00	33.00	1,189,188.00
#4-13	Thin Bonded Polymer Overlay, Type I	33727010	55488	Sq Ft	4.50	249,696.00	4.20	233,049.60	6.65	368,995.20	5.00	277,440.00	5.00	277,440.00
#4-14	Prestressed Concrete Member 125 Ft 0 Inch Type UBT66	03412701D	16	Each	68,000.00	1,088,000.00	67,017.00	1,072,272.00	75,600.00	1,209,600.00	79,780.00	1,276,480.00	85,000.00	1,360,000.00
#4-15	Prestressed Concrete Member 123 Ft 6 Inch Type UBT66	03412702D	32	Each	67,000.00	2,144,000.00	65,820.00	2,106,240.00	71,500.00	2,288,000.00	78,360.00	2,507,520.00	85,000.00	2,720,000.00
#4-16	Structural Steel (Est. Qty: 23124 Lb)	05120701D	1	Lump	162,500.00	162,500.00	157,086.00	157,086.00	287,000.00	287,000.00	310,920.00	310,920.00	400,000.00	400,000.00
#4-17	Modular Expansion Joint	58357010	196	Ft	3,000.00	588,000.00	3,021.00	592,116.00	2,600.00	509,600.00	3,530.00	691,880.00	2,900.00	568,400.00
#4-18	Concrete Coating (Plan Quantity)	99817010	14228	Sq Ft	1.50	21,342.00	1.20	17,073.60	5.00	71,140.00	1.50	21,342.00	1.50	21,342.00
#4-19	Concrete Coating Parapet	99817020	1628	Ft	15.00	24,420.00	15.00	24,420.00	12.00	19,536.00	18.00	29,304.00	17.00	27,676.00
#4-20	Concrete Coating Girder	99817030	1422	Ft	24.00	34,128.00	24.00	34,128.00	25.00	35,550.00	28.00	39,816.00	28.00	39,816.00
#4-21	Concrete Coating Column	99817040	25	Each	1,600.00	40,000.00	1,636.00	40,900.00	600.00	15,000.00	1,950.00	48,750.00	2,000.00	50,000.00
#4-22	Electrical Work Bridges	165287010	1	Lump	83,000.00	83,000.00	82,900.00	82,900.00	84,600.00	84,600.00	98,690.00	98,690.00	100,000.00	100,000.00
#4-23	Granular Backfill Borrow (Plan Quantity)	20567025	345	Cu Yd	91.00	31,395.00	89.00	30,705.00	43.50	15,007.50	52.00	17,940.00	66.00	22,770.00
#4-24	Free Draining Granular Backfill (Plan Quantity)	20567060	143	Cu Yd	90.00	12,870.00	94.00	13,442.00	90.00	12,870.00	92.00	13,156.00	120.00	17,160.00

#4-25	Stabilization Geotextiles	20757050	379	Sq Yd	7.00	2,653.00	5.30	2,008.70	2.30	871.70	4.50	1,705.50	5.00	1,895.00
#4-26	Chain Link Fence on Structure	28247010	123	Ft	184.00	22,632.00	195.00	23,985.00	180.00	22,140.00	200.00	24,600.00	280.00	34,440.00
#4-27	Reinforcing Steel – Coated (Plan Quantity)	32117010	63018	Lb	2.50	157,545.00	1.50	94,527.00	1.75	110,281.50	0.60	37,810.80	1.70	107,130.60
#4-28	Structural Concrete (Est. Qty: 277 Cu Yd)	03310701D	1	Lump	206,000.00	206,000.00	214,443.00	214,443.00	429,000.00	429,000.00	321,880.00	321,880.00	370,000.00	370,000.00
#4-29	Concrete Coating (Plan Quantity)	99817010	6083	Sq Ft	1.20	7,299.60	1.20	7,299.60	1.10	6,691.30	1.50	9,124.50	1.50	9,124.50
#4-30	Electrical Work Bridges	165287010	1	Lump	8,800.00	8,800.00	8,789.00	8,789.00	8,950.00	8,950.00	9,660.00	9,660.00	11,000.00	11,000.00
6														
#6-1	Pavement Message Paint	27657020	14	Each	70.50	987.00	71.00	994.00	72.50	1,015.00	78.00	1,092.00	90.00	1,260.00
#6-2	Trail Pavement Marking Paint	02765704P	3	Gallon	65.00	195.00	60.00	180.00	44.50	133.50	66.00	198.00	80.00	240.00
#6-3	Pavement Marking Paint	27657050	166	Gallon	65.00	10,790.00	55.00	9,130.00	44.50	7,387.00	60.00	9,960.00	70.00	11,620.00
#6-4	Sign Type A-1, 48 inch x 24 inch	02891707P	1	Each	490.00	490.00	463.00	463.00	180.00	180.00	510.00	510.00	550.00	550.00
#6-5	Relocate Sign Less Than 20 Square Feet	28917285	1	Each	190.00	190.00	191.00	191.00	220.00	220.00	210.00	210.00	225.00	225.00
#6-6	2 inch Square Post	02891730P	1	Each	135.00	135.00	136.00	136.00	94.50	94.50	150.00	150.00	160.00	160.00
#6-7	2-1/2 inch Square Anchor	02891732P	1	Each	168.00	168.00	169.00	169.00	55.50	55.50	190.00	190.00	200.00	200.00
7														
#7-1	Traffic Signal System – George Washington Blvd & Crosby Way	02892701D	1	Lump	94,000.00	94,000.00	94,451.00	94,451.00	96,400.00	96,400.00	103,800.00	103,800.00	110,000.00	110,000.00
8														
#8-1	Street Lighting System	16525701D	1	Lump	52,000.00	52,000.00	51,704.00	51,704.00	52,800.00	52,800.00	56,820.00	56,820.00	60,000.00	60,000.00
9														
#9-1	One 2-inch Conduit	135537015	10	Ft	4.50	45.00	3.60	36.00	3.65	36.50	4.00	40.00	4.00	40.00
#9-2	1D Conduit	135537035	1625	Ft	40.00	65,000.00	39.00	63,375.00	39.50	64,187.50	43.00	69,875.00	45.00	73,125.00
#9-3	Polymer Concrete Junction Box Type II	135547030	3	Each	1,600.00	4,800.00	1,557.00	4,671.00	1,600.00	4,800.00	1,710.00	5,130.00	1,800.00	5,400.00
#9-4	Polymer Concrete Junction Box Type III	135547040	2	Each	2,800.00	5,600.00	2,824.00	5,648.00	2,900.00	5,800.00	3,100.00	6,200.00	3,300.00	6,600.00
#9-5	Fusion Splice	135947130	2	Each	220.00	440.00	214.00	428.00	220.00	440.00	230.00	460.00	250.00	500.00
#9-6	6 Strand Pre-Terminated Drop Cable Unit	135947140	1	Each	13,000.00	13,000.00	13,025.00	13,025.00	13,300.00	13,300.00	14,310.00	14,310.00	15,000.00	15,000.00
#9-7	Fiber Optic Cable Splice Enclosure	135947150	1	Each	2,900.00	2,900.00	2,634.00	2,634.00	2,700.00	2,700.00	2,890.00	2,890.00	3,000.00	3,000.00
			Total Bid Amount			**$23,654,704.10**		**$24,618,433.44**		**$25,897,791.85**		**$27,910,286.40**		**$29,389,054.00**
**This is the initial reading of the bids. All of the information is subject to verification and evaluation in accordance with the published bid criteria.														


ST GEORGE
15
Riverside Dr
Virgin River North Trail
Virgin River
Virgin River South Trail
George Washington Blvd
River Rd
Alignment
Existing trail
New trail
Trail realignm
Bridge & trail to be constructed as a separate project
Trail crossing structure
St James Ln
St. James Park
Crosby Wy
New trail connection to St. James Park


RIVERSIDE DR.
DOLE DR.
VIRGIN RIVER
FUTURE ROADWAY EROSION PROTECTION
FUTURE GEORGE WASHINGTON BLVD.
PROPOSED ROCK RIP-RAP EROSION PROTECTION (D50 = 30")
9.9 CU YDS PER LF
2,406 CU YDS (243 LF)
A D.2
EXISTING NRCS EROSION PROTECTION
PROPOSED ROCK RIP-RAP EROSION PROTECTION (D50 = 30")
9.9 CU YDS PER LF
1,772 CU YDS (179 LF)
A D.4
TRANSITION TO EXISTING EROSION PROTECTION
PROPOSED ROCK RIP-RAP EROSION PROTECTION (D50 = 30")
8.9 CU YDS PER LF
890 CU YDS (100 LF)
A D.1
E2813 PEDESTRIAN UNDERPASS
FUTURE ROADWAY EROSION PROTECTION
ST. JAMES PARK
PROPOSED SUPPLEMENTARY ROCK RIP-RAP EROSION PROTECTION (D50 = 30")
3.1 CU YDS PER LF
1,705 CU YDS (550 LF)
A D.3
F 954 BRIDGE
PROPOSED ROCK RIP-RAP EROSION PROTECTION (D50 = 30")
8.9 CU YDS PER LF
890 CU YDS (100 LF)
A D.1
PROPOSED ROCK RIP-RAP EROSION PROTECTION (D50 = 30")
9.9 CU YDS PER LF
1,346 CU YDS (136 LF)
A D.2
PROPOSED ROCK RIP-RAP EROSION PROTECTION (D50 = 30")
9.9 CU YDS PER LF
782 CU YDS (79 LF)
A D.4
TIE IN TO EXISTING EROSION PROTECTION
PROFESSIONAL ENGINEER
JARED W. BATES
78868
STATE OF UTAH
1/18/2024
AERIAL IMAGE: 2022
0
200'
400'
SCALE: 1"=200'
LEGEND
EROSION HAZARD BOUNDARY (2009 STUDY)
EFFECTIVE 100 YEAR FLOODPLAIN (2009 FIS)



LOCATION PLAN

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47. ELECTRICAL DETAILS
48. AESTHETIC DETAILS
49. REINFORCING STEEL SCHEDULE 1 OF 5
50. REINFORCING STEEL SCHEDULE 2 OF 5
51. REINFORCING STEEL SCHEDULE 3 OF 5
52. REINFORCING STEEL SCHEDULE 4 OF 5
53. REINFORCING STEEL SCHEDULE 5 OF 5

GENERAL NOTES

1. USE COATED DEFORMED CARBON STEEL BARS CONFORMING TO ASTM A767 OR ASTM A775, AND AASHTO M31 GRADE 60, UNLESS SHOWN OTHERWISE.
2. USE COATED DEFORMED CARBON STEEL BARS CONFORMING TO ASTM A767 OR ASTM A775, AND ASTM A706 GRADE 60 IN CONCRETE COLUMNS.
3. USE STRUCTURAL STEEL CONFORMING TO AASHTO M270 GRADE 36 UNLESS SHOWN OTHERWISE.
4. CHAMFER EXPOSED CONCRETE CORNERS 3/4 INCH UNLESS SHOWN OTHERWISE.
5. PROVIDE 2 INCH MINIMUM CONCRETE COVER TO REINFORCING STEEL UNLESS SHOWN OTHERWISE.
6. COAT OR GALVANIZE MISCELLANEOUS STEEL PLACED IN STRUCTURAL CONCRETE, UNLESS SHOWN OTHERWISE.
7. DO NOT SCALE DRAWINGS. HORIZONTAL DIMENSIONS ARE PLAN. VERTICAL DIMENSIONS ARE PLUMB.
8. VERIFY UTILITY LOCATIONS BEFORE CONSTRUCTION. PROTECT EXISTING UTILITIES IN PLACE UNLESS SHOWN OTHERWISE.
9. USE TYPE V CEMENT (HIGH SULFATE RESISTANCE) OR APPROVED EQUAL.

PROFESSIONAL ENGINEER 8260999 JARED H OLSEN 8/21/25 ELECTRONIC SEAL STATE OF UTAH

THIS SEAL APPLIES TO ALL SHEETS CONTAINING THE SIGNATURE ON THE SEAL.

REGISTERED PROFESSIONAL ENGINEER No. 196897 DAVID R. BLACK 8/21/25 STATE OF UTAH

THIS SEAL APPLIES TO ALL SHEETS CONTAINING THE SIGNATURE ON THE SEAL.

DESIGN DATA

SEE "SITUATION AND LAYOUT 3 OF 3" FOR DESIGN DATA.

HYDRAULIC DATA

SEE "SITUATION AND LAYOUT 3 OF 3" FOR HYDRAULIC DATA.

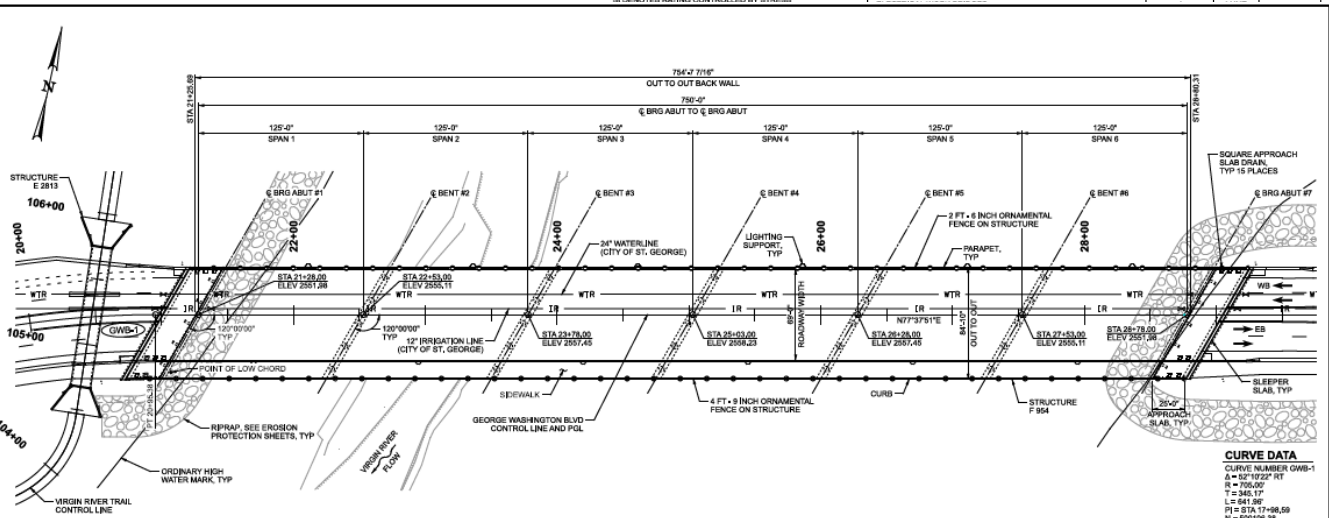
GEORGE WASHINGTON BLVD SUPERELEVATION		
STATION	LEFT	RIGHT
20+24.76	-1.20%	+2.00%
20+84.00	-2.00%	+2.00%
32+05.00	+2.00%	+2.00%

BRIDGE LOAD RATING		
	HL-93 (LRFR)	
	RATING	LOCATION
INV	1.22	687.5' SL SER II (SPAN 6)
OPER	1.71	100.8' S, STR I (SPAN 1)

F DENOTES RATING CONTROLLED BY FLEXURE
S DENOTES RATING CONTROLLED BY SHEAR
St DENOTES RATING CONTROLLED BY STRESS

QUANTITIES

ITEM	EST	UNIT	AS CONST
GRANULAR BACKFILL BORROW (PLAN QUANTITY)	303	CU YD	
FREE DRAINING GRANULAR BACKFILL (PLAN QUANTITY)	130	CU YD	
SEPARATION GEOTEXTILES	178	SQ YD	
DRILLED SHAFTS, 36 INCH	1033	FT	
DRILLED SHAFTS, 96 INCH	1679	FT	
2FT X 2FT GRATE AND FRAME - BICYCLE SAFE	15	EACH	
2 FT • 6 INCH ORNAMENTAL FENCE ON STRUCTURE	803	FT	
4 FT • 9 INCH ORNAMENTAL FENCE ON STRUCTURE	803	FT	
REINFORCING STEEL • COATED (PLAN QUANTITY)	1099077	LB	
STRUCTURAL CONCRETE (EST, LUMP QTY; 2096 CU YD)	1	LUMP	
STRUCTURAL CONCRETE • FIBER (EST, LUMP QTY; 1946 CU YD)	1	LUMP	
PARTIAL-DEPTH PRECAST CONCRETE DECK PANEL	36936	SQ FT	
THIN BONDED POLYMER OVERLAY, TYPE I	55488	SQ FT	
PRESTRESSED CONCRETE MEMBER, 125 FT 0 INCH TYPE UBT66	16	EACH	
PRESTRESSED CONCRETE MEMBER, 123 FT 6 INCH TYPE UBT66	32	EACH	
STRUCTURAL STEEL (EST, LUMP QTY; 23124 LB)	1	LUMP	
MODULAR EXPANSION JOINT	196	FT	
CONCRETE COATING (PLAN QUANTITY)	14228	SQ FT	
CONCRETE COATING PARAPET	1628	FT	
CONCRETE COATING GIRDER	1422	FT	
CONCRETE COATING COLUMN	25	EACH	

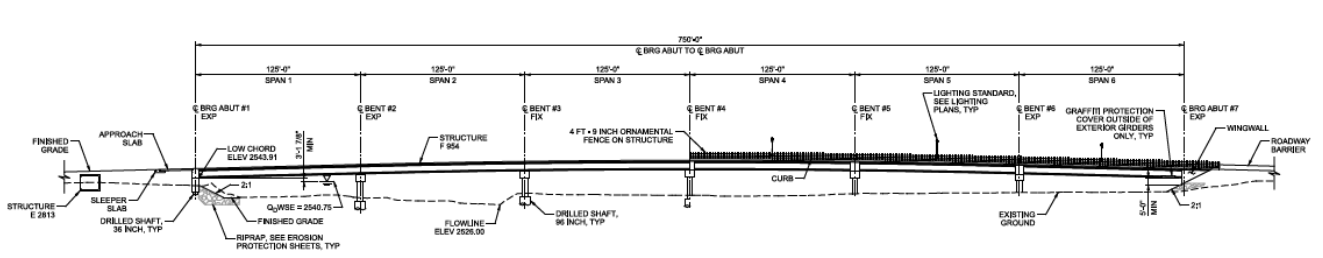


PLAN

NOTE:
1. CENTER LINE OF ALL SUBSTRUCTURE COMPONENTS ARE PARALLEL TO N17°37'51"E.
2. THE ENTIRE PROJECT IS LOCATED WITHIN THE CITY OF ST. GEORGE ROW LIMITS.

CURVE DATA

CURVE NUMBER GWB-1
Δ = 52°10'22" RT
R = 705.00'
T = 345.17'
L = 641.96'
PI = STA 17+66.59
N = 500106.38
E = 3439.1.35
PC TO PI = N25°27'29"E



ELEVATION

NORMAL TO GEORGE WASHINGTON BLVD CONTROL LINE

REVISIONS | NO. | DATE | APPROVED BY | REMARKS

CITY OF ST. GEORGE PUBLIC WORKS 175 EAST 200 NORTH ST. GEORGE, UT 84770
DRAWN BY: LM
QC CHECKED BY: JHO

HORROCKS ENGINEERS 859 SOUTH BLUFF ST ST. GEORGE, UT 84770
Horrocks.
APPROVED: 8/21/25 DATE

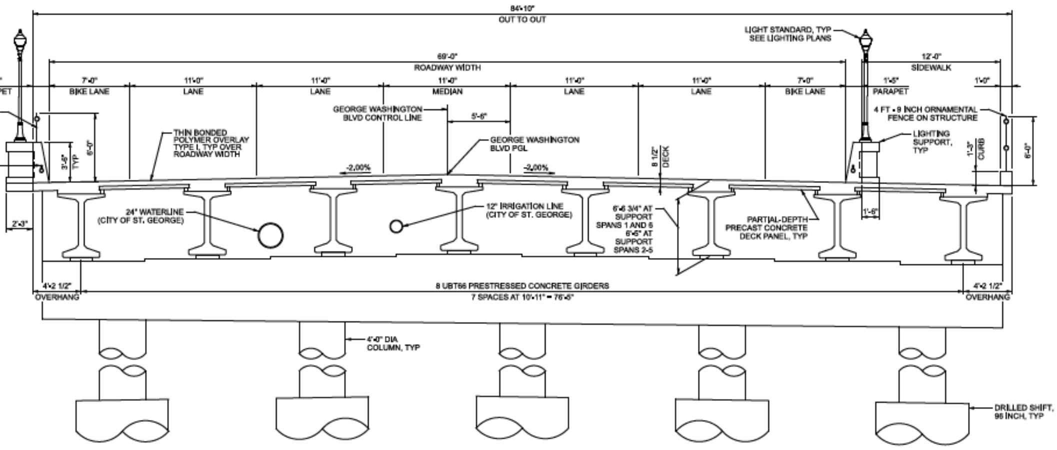
PROJECT: GEORGE WASHINGTON BLVD BRIDGE
STRUCTURE: F 954; BRIDGE OVER VIRGIN RIVER
PROJECT SEC.NO.: 25-231 HORROCKS PROJECT #: UT-TR-3295-23
SITUATION AND LAYOUT 1 OF 3

REVISIONS | NO. | DATE | APPROVED BY | REMARKS

CITY OF ST. GEORGE PUBLIC WORKS 175 EAST 200 NORTH ST. GEORGE, UT 84770
DRAWN BY: LM
QC CHECKED BY: JHO

HORROCKS ENGINEERS 859 SOUTH BLUFF ST ST. GEORGE, UT 84770
Horrocks.
APPROVED: 8/21/25 DATE

PROJECT: GEORGE WASHINGTON BLVD BRIDGE
STRUCTURE: F 954; BRIDGE OVER VIRGIN RIVER
PROJECT SEC.NO.: 25-231 HORROCKS PROJECT #: UT-TR-3295-23
SITUATION AND LAYOUT 2 OF 3



SECTION THROUGH STRUCTURE

DESIGN DATA

HL-93 LOADING IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION 2020 AND THE UDOT STRUCTURES DESIGN AND DETAILING MANUAL, 2022. SEISMIC DESIGN IN ACCORDANCE WITH AASHTO GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN, 2ND EDITION 2011 WITH INTERIM REVISIONS THROUGH 2015. LOAD RATING IN ACCORDANCE WITH THE MANUAL FOR BRIDGE EVALUATION, 3RD EDITION 2018 WITH 2020 INTERIM REVISIONS AND THE UDOT BRIDGE MANAGEMENT MANUAL, 2022.

STRUCTURAL CONCRETE
ALL LOCATIONS UNLESS SHOWN OTHERWISE: 145 PCF f'c = 4.0 KSI n = 8 CLASS AA(AE)
PRESTRESSED CONCRETE: 150 PCF f'c = 10.0 KSI f'ci = 7.5 KSI n = 5 CLASS AAA(AE)
155 PCF FOR LOADS

STRUCTURAL CONCRETE - FIBER
DECK, APPROACH SLABS, SLEEPER SLABS AND DIAPHRAGMS: 145 PCF f'c = 4.0 KSI n = 8 CLASS AA(LSF)

STRUCTURAL CONCRETE - LOW SHRINKAGE
PARTIAL-DEPTH PRECAST DECK PANELS 145 PCF f'c = 6.0 KSI f'ci = 4.5 KSI n = 8 CLASS AAA(AE)

CONCRETE WEIGHT FOR LOADS 150 PCF UNLESS SHOWN OTHERWISE

REINFORCING STEEL
ALL LOCATIONS UNLESS SHOWN OTHERWISE: fy = 60 KSI

PRESTRESSED STRAND: 0.600 INCH DIA GRADE 270 LOW RELAXATION STRAND (GIRDERS)
0.375 INCH DIA GRADE 270 LOW RELAXATION STRAND (PANELS)

STRUCTURAL STEEL: Fy = 36 KSI (GRADE 36)
UNLESS SHOWN OTHERWISE

SACRIFICIAL WEARING SURFACE: 1/2" CONCRETE

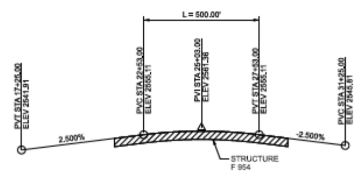
FUTURE WEARING SURFACE: 40 PSF

DESIGN SPEED: 40 MPH GEORGE WASHINGTON BLVD

SEISMIC: 7% PROBABILITY OF EXCEEDANCE IN 75 YR DESIGN EVENT
PGA = 0.14g, Ss = 0.31g, S1 = 0.09g
As = 0.21g, SDs = 0.49g, SD1 = 0.21g
SITE CLASS D, SDC B (DETAILED TO SDC C)
BRIDGE CLASSIFICATION - NORMAL

TRAFFIC DATA: GEORGE WASHINGTON BLVD 2025 ADT = 13000 2050 ADT = 23000

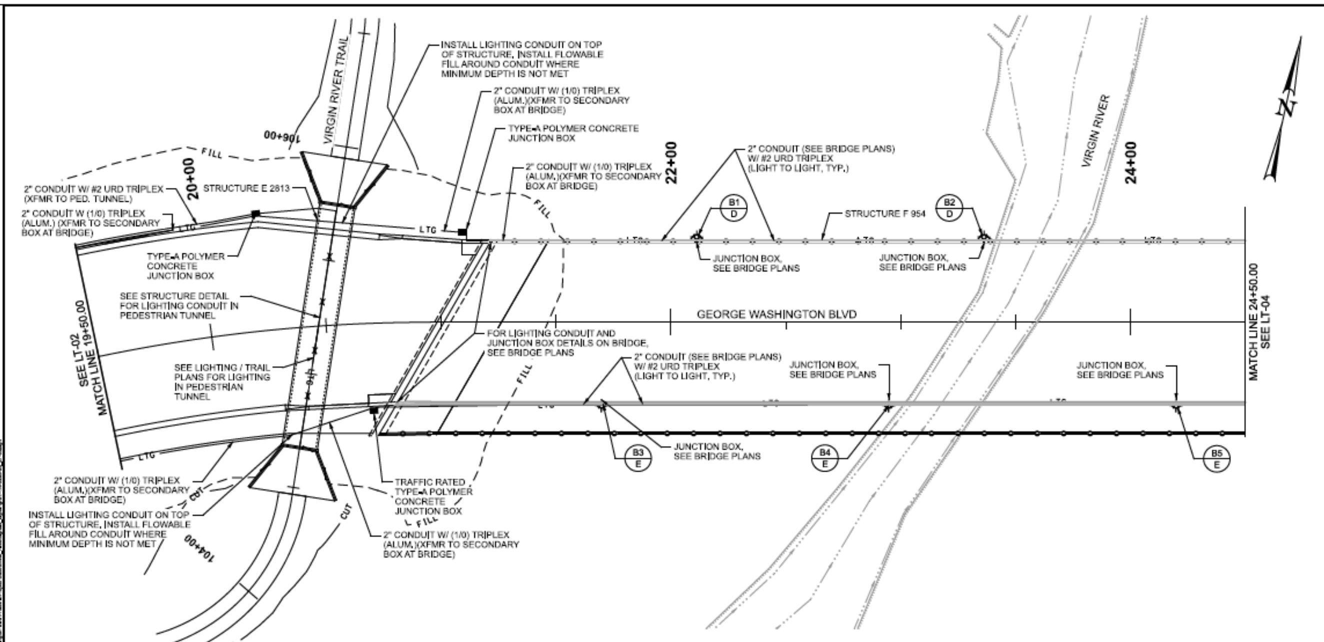
PARAPET TEST LEVEL: TL-4



GEORGE WASHINGTON BLVD PROFILE

HYDRAULIC DATA			
ATTRIBUTE	UNIT	CONVEYANCE DESIGN	SCOUR DESIGN
DRAINAGE AREA	MI²	1640	
FREQUENCY	YR	100	100
DISCHARGE	CFS	23,500	23,500
APPROACH WATER SURFACE ELEVATION	FT	2,541.28	2,541.28
UPSTREAM CHANNEL ELEVATION	FT	2,526.33	
UPSTREAM WATER SURFACE ELEVATION	FT	2,540.75	2,540.75
MINIMUM FREEBOARD	FT	2.00	
MAXIMUM VELOCITY	FT/S	7.91	7.9
CONTRACTION SCOUR DEPTH	FT		1.1
TOTAL SCOUR DEPTH AT ABUTMENT #1	FT		25.9
TOTAL SCOUR DEPTH AT ABUTMENT #7	FT		25.9
TOTAL SCOUR DEPTH AT BENT #2	FT		24.9
TOTAL SCOUR DEPTH AT BENT #3	FT		24.9
TOTAL SCOUR DEPTH AT BENT #4	FT		24.9
TOTAL SCOUR DEPTH AT BENT #5	FT		24.9
TOTAL SCOUR DEPTH AT BENT #6	FT		24.9

REVISIONS
NO. DATE APPROVED BY REMARKS
CITY OF ST. GEORGE PUBLIC WORKS 175 EAST 200 NORTH ST. GEORGE, UT 84770
HORROCKS ENGINEERS 555 SOUTH BLUFF ST SUITE 200 ST. GEORGE, UT 84770
DRAWN BY LM
QC CHECKED BY JHO
8/21/25 DATE
Horrocks.
APPROVED
PROJECT GEORGE WASHINGTON BLVD BRIDGE
STRUCTURE F 954; BRIDGE OVER VIRGIN RIVER
PROJECT REF. NO. 25-231
HORROCKS PROJECT # UT-TR-3295-23
SITUATION AND LAYOUT 3 OF 3
SHEET NO. 3



LEGEND:

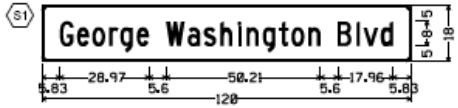
- Existing Lighting Conduit
- LTG — LIGHTING CIRCUIT
- PWR — POWER SOURCE CIRCUIT
- Existing Light Pole
- LED COBRA HEAD STREET LIGHT ON TRAFFIC SIGNAL POLE PER SGES STANDARDS
- HISTORICAL LIGHT FIXTURE
- UNDERPASS LIGHT FIXTURE
- TYPE A - POLYMER CONCRETE JUNCTION BOX
- SGES APPROVED SECONDARY JUNCTION BOX
- PS EXISTING POWER SOURCE
- TRANSFORMER (XFMR)
- UNDERGROUND SERVICE PEDESTAL
- LIGHT POLE IDENTIFICATION
  B# = BRIDGE LIGHT ID
  L# = NEW LIGHT POLE ID
  U# = UNDERPASS LIGHT ID

LIGHTING SCHEDULE											
ID	CIRCUIT	ALIGNMENT	STATION	OFFSET	SGES LED COBRA HEAD STREET LIGHT ON TRAFFIC POLE	HISTORICAL LIGHT FIXTURE	UNDERPASS LIGHT FIXTURE	SECONDARY JUNCTION BOX	TRAFFIC RATED JUNCTION BOX	TYPE A POLYMER JUNCTION BOX	REMARKS
					EACH	EACH	EACH	EACH	EACH	EACH	
		GEORGE WASHINGTON BLVD	20+24.41	-51.10						1	
		GEORGE WASHINGTON BLVD	20+69.41	37.99					1		
		GEORGE WASHINGTON BLVD	21+09.35	-39.25						1	
B1	D	GEORGE WASHINGTON BLVD	22+11.21	-37.13		1					14' POLE
B2	D	GEORGE WASHINGTON BLVD	23+36.21	-37.13		1					14' POLE
B3	E	GEORGE WASHINGTON BLVD	21+69.81	36.38		1					14' POLE
B4	E	GEORGE WASHINGTON BLVD	22+94.79	36.38		1					14' POLE

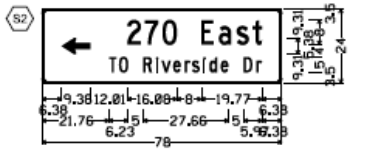
REVISIONS
NO. DATE APPROVED BY REMARKS
CITY OF ST. GEORGE PUBLIC WORKS 175 NORTH 200 EAST ST. GEORGE, UT 84770
HORROCKS ENGINEERS 555 SOUTH BLUFF ST SUITE 200 ST. GEORGE, UT 84770
DRAWN BY BLA
QC CHECKED BY ALD
10/10/2025 DATE
Horrocks.
APPROVED
PROJECT GEORGE WASHINGTON BLVD BRIDGE
PROJECT REF. NO. 25-231
HORROCKS PROJECT # UT-TR-3295-23
LIGHTING

NOTES:

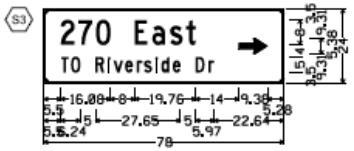
1. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.
2. TRAFFIC SIGNAL SYSTEM - GEORGE WASHINGTON BLVD & CROSBY WAY REQ'D.
3. INSTALL NEW 8 PHASE TS-2, TYPE 1 CONTROLLER AND TS-2 SIZE 6 CABINET WITH FOUNDATION. PLACE TYPE III BOX ON DOOR SIDE OF CABINET.
4. MOUNT STOP BAR RADAR DETECTION SYSTEM. CONTACT JAY SMITH, 435-703-0102, WITH THE CITY, A MINIMUM 2 WEEKS IN ADVANCE FOR ASSISTANCE WITH MOUNTING AND DETECTION AREA LOCATING.
5. INSTALL CONTRACTOR FURNISHED COBRA HEAD FIXTURE (SG CITY SPEC).
6. INSTALL MAST ARM MOUNTED SIGN.
7. INSTALL CITY FURNISHED VIBRATION MITIGATOR.
8. INSTALL NEW 100 AMP MAIN WITH DISCONNECT & METER 240/120 V SINGLE PHASE SERVICE ON CONCRETE PAD NEAR SIGNAL CONTROLLER AS PER UDOT STANDARD DRAWING NO. SL 4C. INSTALL METER BASE ON STAND ALONE BASE. TRAFFIC SIGNAL METERED, STREET LIGHTS UNMETERED; SIGNAL AND STREET LIGHTS ON SEPARATE BREAKERS. PROVIDE A ONE-LINE DIAGRAM. COORDINATE WITH ST. GEORGE ENERGY SERVICES (SGES). PLEASE NOTE, REFERENCED UDOT DETAILS ARE SUBJECT TO SGES STANDARDS
9. INSTALL 3 INCH PVC WITH 1/0 TRIPLEX (SECONDARY) FROM UNDERGROUND SERVICE PEDESTAL TO TRANSFORMER AT STA 17+11.85 LT 54.68. SEE LT SHEETS FOR MORE INFORMATION ON POWER SOURCE CONDUIT AND TRANSFORMER. MAKE ALL ARRANGEMENTS WITH SGES, MATERIALS AND INSTALLATION BY CONTRACTOR.
10. INSTALL AUDIBLE PEDESTRIAN PUSH BUTTON.
11. CENTER SIGNAL HEADS OVER LANES THEY SERVICE.
12. PROVIDE A 17.5' MINIMUM AND 19.5' MAXIMUM CLEARANCE FROM THE BOTTOM OF SIGNAL HEADS TO TOP OF PAVEMENT.
13. SEE THE UT & UTTR SERIES SHEETS FOR EXISTING UTILITIES AND TO IDENTIFY POTENTIAL CONFLICTS, CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS WHERE IMPACTS MAY EXIST PRIOR TO CONSTRUCTION. COORDINATE FINAL LOCATION OF ALL PROPOSED IMPROVEMENTS WITH CITY AND UTILITY REPRESENTATIVES WHERE CONFLICTS EXIST.
14. COORDINATE INSTALLATION AND INSPECTION OF ALL FOUNDATIONS, CONDUIT, ELECTRICAL CIRCUITS, AND JUNCTION BOXES WITH JAY SMITH, 435-703-0102, WITH CITY OF ST. GEORGE, A MINIMUM OF 8 DAYS ADVANCE NOTICE.
15. CONTACT BLUE STAKES UTILITY NOTIFICATION CENTER AT 811 AT LEAST 48 HOURS PRIOR TO EXCAVATION ACTIVITIES.



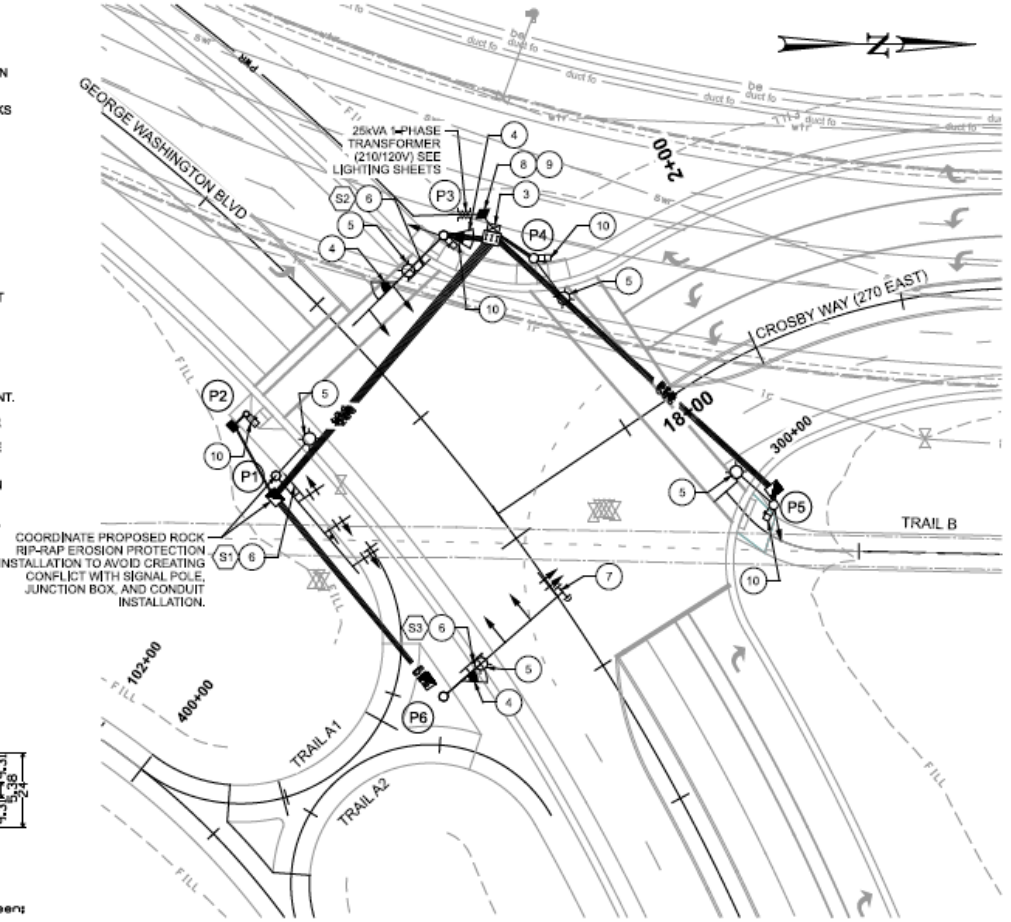
1.50' Radius, 0.50' Border, White on Green;
'George Washington Blvd', C 70% spacing;



1.50' Radius, 0.50' Border, White on Green;
Standard Arrow Custom 9.38' X 5.38' 180 33/64;
'270 East', C; 'TO Riverside Dr', C;



1.50' Radius, 0.50' Border, White on Green;
'270 East', C; 'TO Riverside Dr', C;
Standard Arrow Custom 9.38' X 5.38' 0 33/64;



POLE SCHEDULE

POLE IDENT.	STATION	OFFSET (FT) LEFT	OFFSET (FT) RIGHT	MAST ARM LENGTH	END OF ARM STATION	OFFSET (FT) LEFT	OFFSET (FT) RIGHT	LUMINAIRE MOUNTING HEIGHT	LUMINAIRE ARM LENGTH	REMARKS
⊠	17+20.85	58.67								CONTROLLER
P1	17+32.58		47.88	40'	17+77.11		47.66	40'	15'	
P2	17+09.88		41.316							11' PED POLE
P3	17+12.09	46.707		40'	17+13.00	5.218		40'	15'	
P4	17+35.63	61.77						40'	15'	40' HIGHWAY LUMINAIRE POLE
P5	18+37.01	75.01						40'	15'	40' HIGHWAY LUMINAIRE POLE
P6	18+29.41		48.928	50'	18+22.93	2.189		40'	15'	

MAST ARM MOUNTED SIGN SCHEDULE

POLE IDENT.	CENTER OF SIGN TO END OF MAST ARM	SIGN
P1	5.0'	GEORGE WASHINGTON BLVD
P3	28.3'	270 EAST TO RIVERSIDE DR (RIGHT ARROW)
P6	7.6'	270 EAST TO RIVERSIDE DR (LEFT ARROW)

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

CITY OF ST. GEORGE
DEPT. OF PUBLIC WORKS
175 NORTH 200 EAST
ST. GEORGE, UT 84770

DRAWN BY: BLA
QC CHECKED BY: ALD

HORROCKS ENGINEERS
1434 SOUTH BLUFF ST
SUITE 200
ST. GEORGE, UT 84770

Horrocks.

APPROVED
10/10/2025
DATE

PROJECT: GEORGE WASHINGTON BLVD BRIDGE
PROJECT REF. NO.: 25-231
HORROCKS PROJECT #: UT-TR-3295-23
SIGNAL

SHEET NO. SG-01A

Agenda Date: 12/18/2025 **Agenda Item Number:** 2o

Subject:

Consider approval of a Professional Services Agreement with Gerhart Cole for inspection services for the drilled shafts and foundation of the George Washington Boulevard Bridge Project.

Item at-a-glance:

Staff Contact: Jay Sandberg

Applicant Name: N/A

Reference Number: N/A

Address/Location:

N/A

Item History (background/project status/public process):

Gerhart Cole performed the geotechnical analysis and provided recommendations for the George Washington Blvd Bridge foundation design which included drilled shafts, footings and piers. The city would like to use their knowledge and experience in bridge construction to provide inspection services for these critical elements of the bridge.

Staff Narrative (need/purpose):

The city would like to use Gerhart Cole to review contractor submittals, log drilled shaft excavations, perform Thermal Integrity Profiling testing on each shaft, and provide additional geotechnical support needed throughout the construction of the bridge foundation.

Name of Legal Dept approver: Alicia Galvany Carlton

Budget Impact:

Cost for the agenda item: 147,430

Amount approved in current FY budget for item: 147,430

If not approved in current FY budget or exceeds the budgeted amount, please explain

funding source:

N/A

Description of funding source:

Budgeted City Funds for the project

Recommendation (Include any conditions):

Recommend Approval

Attachments

CITY OF ST. GEORGE PROFESSIONAL SERVICES AGREEMENT
FOR SERVICES WITH GERHART COLE, INC.
FOR GEORGE WASHINGTON BOULEVARD BRIDGE PROJECT

This Professional Services Agreement (hereinafter "Agreement") is made and entered into on _____ by and between the City of St. George, a municipal corporation, with offices at 175 East 200 North, St. George, Utah 84770 (hereinafter called the "CITY"), and Gerhart Cole, Inc., with offices at 7657 South Holden Street, Midvale, Utah 84047 (hereinafter "CONSULTANT").

WITNESSETH THAT:

WHEREAS CITY desires professional services to be performed and has solicited CONSULTANT to provide testing and geotechnical construction services for the foundation of the George Washington Blvd Bridge on one or more projects from time to time on an as needed basis (hereinafter called the PROJECT); and

WHEREAS, CONSULTANT has submitted a proposal, which outlines the general scope of services to be provided and the fees for the PROJECT; and

WHEREAS CITY selected CONSULTANT to perform the services for the PROJECT;

NOW, THEREFORE, for the consideration hereinafter set forth, the parties hereto do mutually agree as follows:

1. **ENGAGEMENT OF CONSULTANT.**

1.1 CONSULTANT is a professional licensed by the State of Utah and the City of St. George. CONSULTANT has all licenses, permits, and approvals that are legally required for CONSULTANT to practice its profession and shall keep them in effect at all times during the term of this Agreement.

1.2 CONSULTANT states that it has the necessary knowledge, experience, abilities, skills, and resources to perform its obligations under this Agreement and agrees to perform its obligations under this Agreement in a professional manner, consistent with prevailing industry standards and practices as observed by competent practitioners of the profession in which CONSULTANT and its subcontractors or agents are engaged.

1.3 CONSULTANT certifies that it does not and will not during the performance of this contract knowingly employ, or subcontract with any entity which employs workers in violation of 8 USC §1324(a). CONSULTANT agrees to require all subcontractors at the time they are hired for this project to sign a Certification of Legal Work Status and submit the Certification to CITY prior to any work being performed by the subcontractors.

CONSULTANT agrees to produce, at CITY'S request, documents to verify compliance with applicable State and Federal laws. If CONSULTANT knowingly employs workers or subcontractors in violation of 8 USC § 1324(a), such violation shall be cause for unilateral cancellation of the contract between CONSULTANT and CITY. In addition, CONSULTANT may be suspended from participating in future projects with CITY for a period of one (1) year. In the event this contract is terminated due to a violation of 8 USC § 1324(a) by CONSULTANT or a subcontractor of CONSULTANT, CONSULTANT shall be liable for any and all costs associated with such termination, including, but not limited to, any damages incurred by CITY excluding attorney fees. For purposes of compliance, CITY requires CONSULTANT and subcontractors to use E-Verify or other federally accepted forms of verification to verify the employment eligibility of all employees as allowed by law and the E-Verify procedures. CONSULTANT and subcontractors must maintain authorized documentation of the verification.

1.4 CONSULTANT shall not, either during or after the term of this Agreement, make public any reports or articles, or disclose to any third party any confidential information relative to the work of City or the operations or procedures of CITY without the prior written consent of CITY.

1.5 CONSULTANT further agrees that it shall not, during the term of this Agreement, take any action that would affect the appearance of impartiality or professionalism.

1.6 CONSULTANT, by execution of this Agreement, certifies that it does not discriminate against any person upon the basis of race, color, creed, national origin, age, sex, sexual orientation, gender identity, disability, or marital status in its employment practices.

1.7 CONSULTANT expressly acknowledges and agrees that nothing in this Agreement shall be deemed to relieve CONSULTANT from any obligation to comply with all applicable requirements of CITY during the term of this Agreement including the payment of fees and compliance with all other applicable ordinances, resolutions, regulations, policies, and procedures of CITY, except as modified or waived in this Agreement.

1.8 CONSULTANT shall comply with all applicable federal, state, and local laws, regulations, and ordinances that affect those employees or those engaged by CONSULTANT on the PROJECT, and will procure all necessary licenses, permits and insurance required.

1.9 CONSULTANT certifies it is in compliance with the public contract boycotting restrictions set forth in Utah Code § 63G-27-201 and agrees not to engage in any such restricted boycotting for the duration of this Agreement, and to notify the City in writing if it begins engaging in an economic boycott.

1.10 CITY acknowledges that CONSULTANT may employ various specialized subcontractors for up to 15% of the services provided herein. CONSULTANT shall give written notice to CITY at least seven (7) days prior to CONSULTANT'S employment of the subcontractors to perform portions of the work provided for in this Agreement. It shall

be solely CONSULTANT's responsibility to ensure that any of CONSULTANT'S subcontractors perform in compliance with the terms of this Agreement. Subcontractors may not be changed without ten (10) days prior written notice to CITY.

2. **PROJECT SERVICES DESCRIPTION.**

2.1 CITY makes no guarantee as to the total volume of work, if any, that will be needed under this Agreement. CONSULTANT will provide the services on an as needed basis as described in the attached Scope of Work (**"Exhibit A Scope of Services"**) which is made a part of this Agreement by this reference. As services are needed, CITY shall provide CONSULTANT with a description of the work needed which shall be known as a "Work Order" and CONSULTANT will provide CITY with a specific scope of work and cost for the Work Order, which if accepted by the CITY shall become part of this Agreement binding both parties. CITY may at any time, as the need arises, order changes within the scope of the services without invalidating the Agreement. If such changes increase or decrease the amount due under the Agreement, or in the time required for performance of the work, an equitable adjustment shall be authorized by change order.

2.2 CONSULTANT shall furnish all the material, supplies, tools, transportation, equipment, labor, subcontractor services and other services necessary for the completion of the work described in **"Exhibit A Scope of Services"** or in subsequent Work Orders.

2.3 CONSULTANT shall provide services in compliance with all applicable requirements of federal, state, and local laws, codes, rules, regulations, ordinances, and standards.

3. **TERM OF AGREEMENT.**

3.1 This Agreement shall be effective as of the date executed by all parties and shall continue for one year unless otherwise terminated as set forth in this Agreement. If a Work Order was started during this term but not completed, the terms of this Agreement shall continue through completion of the Work Order.

3.2 CONSULTANT agrees to perform services as expeditiously as is consistent with professional skill and care and the orderly progress of the PROJECT. CONSULTANT shall perform the services in a timely manner according to the schedule approved by CITY.

3.3 CONSULTANT shall perform its services upon notice from the CITY to proceed and in accordance with the schedule approved by CITY. In the event performance of its services is delayed by causes beyond the reasonable control of CONSULTANT, and without the fault or negligence of CONSULTANT, the time for the performance of the services shall be equitably adjusted by written amendment to reflect the extent of such delay. CONSULTANT shall provide CITY with written notice of delay, including a description of the delay and the steps contemplated or taken by CONSULTANT to mitigate the effect of such delay.

4. **COMPENSATION.**

4.1 For the performance of the services and completion of PROJECT set forth herein, CITY shall pay CONSULTANT as agreed in **"Exhibit A"** and each Work Order as applicable. The aggregate total of all Work Orders shall not exceed one hundred forty-seven thousand four hundred thirty dollars**, $**147,430.00. Each individual Work Order shall not exceed one hundred forty-seven thousand four hundred thirty dollars**, $**147,430.00.

5. **INVOICING, PAYMENT, NOTICES.**

5.1 CONSULTANT shall submit invoices, no more frequently than monthly, for the services rendered during the preceding period; invoices shall describe the services performed, list all subcontractors used and the amount owed or paid to them, list all suppliers used and the amount owed or paid to them, list the contract amount, list the current invoice amount based on percentage of task complete, list the previous invoice amount, list total invoices to date, and list the contract balance.

5.2 In executing the request for payment, CONSULTANT shall attest that payment has been made to all subcontractors involved with prior requests, unless CONSULTANT provides a detailed explanation why such payments have not occurred. CONSULTANT shall also sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status and submit them with each request for payment. CONSULTANT shall require each subcontractor to sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status at the time subcontractor is paid and shall provide a copy of both documents to CITY. CONSULTANT shall also sign a "Conditional Waiver and Release Upon Progress Payment" and a Certificate of Legal Work Status and submit them with each request for payment.

5.3 A "Waiver and Release Upon Final Payment" signed by CONSULTANT attesting that all subcontractors, laborers, and material suppliers involved with prior requests for payment have been paid, and that all subcontractors, laborers, and material suppliers upon which the final payment is based will be paid immediately unless CONSULTANT provides a detailed explanation why such payments have not occurred or will not occur. CONSULTANT shall also require each subcontractor to sign a "Waiver and Release Upon Final Payment" and a Certificate of Legal Work Status at the time subcontractor is paid its final payment and shall provide a copy of both documents to CITY.

5.4 If such liens, claims, security interests or encumbrances remain unsatisfied after payments are made, CONSULTANT shall refund to CITY all money that CITY may be compelled to pay in discharging such liens, including all costs except for attorneys' fees.

5.5 All invoices for reimbursable costs shall be taken from the books of account kept by CONSULTANT, and CONSULTANT shall maintain copies of payroll distribution, receipted bills, and other documents. CITY shall have the right to review all books and records kept by CONSULTANT and any subcontractors concerning the operation and services performed under this Agreement. CITY shall withhold payment for any

expenditure not substantiated by CONSULTANT'S or subcontractor's books and records.

5.6 In the event CITY has made payment for expenditures that are not allowed, as determined by CITY'S audit, CONSULTANT shall reimburse CITY the amount of the un-allowed expenditures. If additional money is owed to CONSULTANT, the reimbursement may be deducted from the additional money owed.

5.7 CITY shall make no payment for any services not specified in this Agreement unless such additional services and the price thereof are agreed to in writing, prior to the time that such additional services are rendered.

5.8 Invoices shall be paid to CONSULTANT within thirty (30) days of presentation to CITY.

5.9 CITY may withhold 5% of billed amount as retention. Retention held shall be included in the final invoice after the contract is complete.

6. **CHARGES AND EXTRA SERVICE.**

6.1 CITY may make changes within the general scope of this Agreement. If CONSULTANT is of the opinion a proposed change causes an increase or decrease in the cost and/or the time required for performance of this Agreement, CONSULTANT shall notify CITY of that fact. An agreed-upon change will be reduced to writing signed by the parties hereto and will modify this Agreement accordingly. CONSULTANT may initiate such notification upon identifying conditions which may change the services agreed to on the effective date of this Agreement, as set forth in **Exhibit A**. However, CONSULTANT represents that to the best of its knowledge that it is not aware of any such conditions on the date hereof. Any such notification must be provided within thirty (30) days from the date of receipt by that party of the other party's written notification of a proposed change.

6.2 CITY may request CONSULTANT to perform extra services not covered by **Exhibit A**, and CONSULTANT shall perform such extra services and will be compensated for such extra services when they are reduced to a writing mutually agreed to and signed by the parties hereto amending this Agreement accordingly.

6.3 CITY shall not be liable for payment of any extra services, nor shall CONSULTANT be obligated to perform any extra services except upon such written amendment.

7. **TO BE FURNISHED BY CITY.** Resources to be furnished by CITY to CONSULTANT, at no cost to CONSULTANT, consist of CITY staff assistance for oversight and meetings to help perform the services. CONSULTANT shall verify accuracy of the information provided, unless otherwise stated in the contract documents.

8. **INSPECTIONS.** All work shall be subject to inspection and approval of CITY or its authorized representative.

9. **ACCURACY AND COMPLETENESS.**

9.1 CONSULTANT has total responsibility for the accuracy and completeness of its investigations, calculations, reports, plans and related designs, specifications and estimates prepared for the PROJECT and shall check all such material accordingly.

9.2 The plans will be reviewed by CITY for conformity with PROJECT objectives and compliance with CITY Standards.

9.3 Reviews by CITY do NOT include the detailed review or checking of major design components and related details or the accuracy with which such designs are depicted on the plans.

9.4 The responsibility for accuracy and completeness remains solely with CONSULTANT and shall be performed consistent with the standard of care.

10. **INDEPENDENT CONTRACTOR.**

10.1 CITY retains and engages CONSULTANT, as an independent contractor, to act for and represent it in all matters involved in the performance of services on the PROJECT, subject to the terms, conditions and stipulations as hereinafter stated.

10.2 It is understood and agreed that CONSULTANT will provide the services without supervision from CITY. CONSULTANT is an independent contractor and is not an employee, officer, or agent of CITY for any purposes related to the performance of this Agreement and is not an employee of CITY and is not entitled to any benefits from CITY.

10.3 Nothing in this agreement shall create nor be construed to constitute a partnership or joint venture between CONSULTANT and CITY.

10.4 CONSULTANT is advised to obtain and maintain in effect during the term of this Agreement medical insurance and disability insurance for all related work performed under this Agreement.

10.5 CONSULTANT acknowledges that CITY will not withhold any federal, state, or local taxes, including FICA, nor will CITY provide any unemployment compensation or worker's compensation coverage. As an independent contractor, CONSULTANT shall be responsible for all taxes, worker's compensation coverage and insurance coverage, and shall hold CITY harmless and indemnify CITY from and against any and all claims related to taxes, unemployment compensation, and worker's compensation.

10.6 CONSULTANT shall secure, at its own expense all personnel required in performing the services under this Agreement. The employees of CONSULTANT shall not be considered employees of CITY nor have any contractual relationship with CITY. CONSULTANT and its employees shall not hold themselves out as, nor claim to be

officers or employees of CITY by reason of this Agreement. The employees of CITY shall not be considered employees of CONSULTANT.

10.7 Neither party has the right to bind or obligate the other in any way. CONSULTANT shall not use the name, trademarks, copyrighted materials, or any information related to this Agreement in any advertising or publicity without CITY'S prior written authorization.

11. **INSURANCE.**

11.1 GENERAL: CONSULTANT shall secure and maintain insurance as required by laws and regulations and the terms of this agreement to protect against any liability, loss or expense which occurs or arises as a result of the performance of the services provided pursuant to this agreement or as changed as provided herein. CONSULTANT'S insurer must be authorized to do business in Utah and must have an A.M. Best rating of A VIII or better at the time this contract is executed. Required limits may be met with Umbrella or Excess insurance policies.

11.2 COMMENCEMENT OF WORK: Neither CONSULTANT, its Suppliers nor any subcontractors shall enter the site of the work or commence work under this contract before CITY has received and accepted Certificate(s) of Insurance and Insurance Endorsements and has issued the Notice to Proceed, as applicable.

11.3 INSURANCE CERTIFICATES AND COVERAGE: Insurance certificates shall be issued on all policies required under this contract and shall be signed by an authorized representative of the insurance company. The insurance certificate or the coverage required shall include the following:

A. The name and address of the insured.

B. CITY shall be named as a Certificate Holder.

C. CITY shall be named as an additional primary insured on the General Liability Certificate with CITY listed as non-contributory on the General Liability certificate.

D. The location of the operations to which the insurance applies.

E. The number of the policy and the type or types of insurance in force thereunder on the date borne by the certificate.

F. The expiration date of the policy and the limit or limits of liability thereunder on the date borne by the certificate.

G. A statement that all coverage is on an occurrence basis rather than a claims basis except for the Professional Errors and Omissions Malpractice Insurance coverage.

H. A provision that the policy or policies will not be canceled, denied renewal, or reduced in coverage until at least 30 days after written notice has been received by CITY.

I. Name, address, and telephone number of the insurance company's agent of process in Utah.

J. Other information to demonstrate compliance with additional requirements stipulated for the various types of insurance coverage.

11.4 WORKER'S COMPENSATION INSURANCE: CONSULTANT shall, as applicable, take out and maintain Workers' Compensation Insurance as required by the Labor Code for all its employees at the site of the work during the life of this contract. Coverage must be provided by a company authorized by the State of Utah to provide Workers' Compensation Insurance. The insurance shall include:

A. Insurance certificates shall provide a waiver of subrogation by the carrier to Certificate Holder.

B. CONSULTANT shall require each subcontractor to provide Workers' Compensation Insurance for its employees unless such employees are covered by CONSULTANT.

C. In the event any class of employees engaged in hazardous work under this contract is not protected by the Workers' Compensation Statute, CONSULTANT shall provide, and shall cause its subcontractors to provide, special insurance for the protection of such employees not otherwise protected.

11.5 COMMERCIAL GENERAL LIABILITY INSURANCE: CONSULTANT shall procure and maintain commercial general liability insurance for the duration of the contract against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONSULTANT, its agents, representatives, employees, or subcontractors. The insurance shall remain in effect during the term of this agreement and such that claims reported beyond the date of substantial completion of this agreement are covered and during the warranty period, to the extent that it relates to the activities covered by this Agreement, in such manner and amounts as set forth herein. The Insurance Endorsement shall evidence such provisions.

A. The minimum commercial general liability insurance shall be as follows:

i. Comprehensive general liability insurance for injuries, including accidental death, to any one person in any one occurrence in an amount not less than $1,000,000.00 Dollars.

ii. Comprehensive general liability insurance for injuries, including

accidental death, to two or more persons in any one occurrence in an amount not less than $4,000,000.00 Dollars (umbrella coverage may be considered).

iii. Broad form property damage insurance in an amount not less than $300,000.00 Dollars.

B. Such policy shall include each of the following coverages (as applicable):

i. Comprehensive form.
ii. Premises - operations.
iii. Explosion and collapse hazard.
iv. Underground hazard.
v. Product/completed operations hazard.
vi. Contractual insurance.
vii. Broad form property damage, including completed operations.
viii. Independent contractors for vicarious liability.
ix. Personal injury.
x. Cross liability or severability of interest's clause shall be included unless a separate policy covering CITY is provided.

11.6 PROFESSIONAL LIABILITY ERRORS AND OMISSIONS INSURANCE:

A. CONSULTANT shall carry and maintain Professional Liability Errors and Omissions Insurance in an amount not less than $3,000,000.00 Dollars for all work performed under this Agreement.

B. CONSULTANT shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONSULTANT, its agents, representatives, employees, or subcontractors. With respect to General Liability, Professional liability coverage should be maintained for a minimum of five (5) years after contract completion.

C. If Professional Liability coverages are written on a claims-made form:

i. The retroactive date must be shown and must be before the date of the contract or the beginning of contract work.
ii Insurance must be maintained, and evidence of insurance must be provided, for at least five (5) years after completion of the contract of work.
iii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective date, the CONSULTANT must purchase an extended period coverage for a minimum of five (5) years after completion of contract work.

iv. A copy of the policy must be submitted to CITY for review.

11.7 BUSINESS AUTOMOBILE COVERAGE: CONSULTANT shall carry and maintain business automobile insurance coverage on each vehicle used in the performance of the work in an amount not less than $1,000,000.00 Dollars for one person and $3,000,000.00 Dollars for more than one person and for property damage resulting from any one occurrence which may arise from the operations of CONSULTANT in performing the work.

Such business automobile insurance shall include each of the following types:

A. Comprehensive form, including loading and unloading.
B. Owned.
C. Hired.
D. Non-owned.

12. **INDEMNITY AND LIMITATION.**

12.1 Except as otherwise provided herein, CONSULTANT shall indemnify, defend, and hold harmless CITY, its elected officials, officers, employees, and representatives against any and all claims, suits, causes of action, demands, losses, costs, and damages and liability of every kind including but not limited to all fees and charges of professionals, except for attorney's fees, and all court or other dispute resolution costs for:

A. death or injuries to persons or for loss of or damage to property which directly or indirectly, in whole or in part are caused by, resulting from, or arising out of the intentional, reckless, negligent, or wrongful acts, errors or omissions, or other liability imposed by law of CONSULTANT, its officers, employees, agents, or representatives in the performance of services under this Agreement or any subcontractor, any supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work;

B. CONSULTANT's failure or refusal, whatever the reason, to pay subcontractors or suppliers for Work performed under the Agreement;

C. claims by any employee of the CONSULTANT, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, CONSULTANT'S indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONSULTANT or any subcontractor under workmen's compensation acts, disability benefit acts or other employee benefits acts.

12.2 CITY shall give CONSULTANT prompt written notice of any such claims or suits filed against CITY arising out of the services provided under this Agreement. CONSULTANT agrees to defend against any claims brought or actions filed against CITY arising out of

the services provided under this Agreement. If CITY'S tender of defense, based upon the indemnity provision, is rejected by CONSULTANT or CONSULTANT'S insurer, and CONSULTANT is later found by a court of competent jurisdiction to have been required to indemnify the CITY, then, in addition to any other remedies the CITY may have, CONSULTANT shall pay the CITY'S reasonable costs and expenses, except for attorney's fees, incurred in obtaining such indemnification, defending themselves or enforcing the indemnification provision.

12.3 The insurance requirements in this agreement shall not be construed as limiting CONSULTANT'S liability. Irrespective of the requirements for CONSULTANT to carry insurance as provided herein, insolvency, bankruptcy, or failure of any insurance company to pay all claims accruing shall not be held to relieve CONSULTANT of any obligations under this agreement.

12.4 This section does not apply to a design professional services contract, design professional services, and design professionals.

13. **DOCUMENTS.**

13.1 All data used in compiling CONSULTANT's work, and the results of any tests or surveys, as well as all photographs, drawings, electronically stored records of work performed, renderings, specifications, schedules, CONSULTANT's work, data processing output, computations, studies, audits, research, reports, models and other items of like kind prepared by CONSULTANT, and its employees, shall be the sole and exclusive property of CITY, and CITY shall own all intellectual property rights thereto whether the specific work project for which they are made is undertaken or not. CONSULTANT may retain reproducible copies of all the foregoing documents for information and reference and customary marketing and public relations. The originals of all the foregoing documents shall be delivered to CITY promptly upon completion thereof. This provision may be enforced by an order of specific performance and is independent of any other provision of this Agreement. Compliance by CONSULTANT with this paragraph shall be a condition precedent to CITY's obligation to make final payment to CONSULTANT. If CITY has specific requirements on the information and manner the documentation is collected, CITY shall provide those specifics to CONSULTANT in writing.

13.2 Plans, specifications, maps, and record drawings prepared or obtained under this Agreement shall be provided to CITY in a format approved by CITY which shall generally be a hard copy and an electronic copy and shall become the property of CITY whether the work for which they are prepared is executed or not.

13.3 The basic survey notes and sketches, charts, computations, and other data prepared under this Agreement shall be made available upon request to CITY without restriction or limitation on their use.

13.4 CITY shall have the right to use reports, designs, details, or products developed as part

of this Agreement for purposes of maintenance, remodeling or reconstruction of existing facilities or construction of new facilities without additional compensation to CONSULTANT or without restriction or limitation on its use even if documents are considered copyrighted material.

13.5 CITY will hold harmless CONSULTANT for any use or reuse of these reports, designs, or details for purposes other than the project associated with this Agreement unless CITY obtains validation of that use or reuse from CONSULTANT.

14. **RECORDS.**

14.1 CONSULTANT shall maintain records, books, documents, and other evidence directly pertinent to the performance of services under this Agreement in accordance with generally accepted accounting principles and practices.

14.2 CONSULTANT agrees to keep proper books of records and accounts in which complete and correct entries will be made of payroll costs, travel, subsistence, and field expenses.

14.3 Said books shall, at all times, be available for at least three (3) years after final payment for reasonable examination by CITY.

15. **TERMINATION.**

15.1 CITY may terminate this Agreement by providing fourteen (14) days written notice prior to the effective termination date to CONSULTANT.

15.2 In the event of such termination, CITY shall pay CONSULTANT for all services actually rendered up to and including the date of termination.

15.3 CONSULTANT shall deliver to CITY copies of all drawings, reports, analyses, documents, and investigations, whether completed or not, that were prepared or were being prepared under the provisions of this Agreement.

16. **CONFLICT BETWEEN DOCUMENTS.** In the event of a conflict between this Agreement and any other documents with CONSULTANT, this Agreement shall govern.

17. **CONFLICT OF INTEREST.** CONSULTANT certifies that it has disclosed to CITY any actual, apparent or potential conflicts of interest that may exist relative to the services to be provided pursuant to this Agreement.

17.1 CONSULTANT agrees to advise CITY of any actual, apparent or potential conflicts of interest that may develop after the date of execution of this Agreement.

17.2 CONSULTANT further agrees to complete any statements of economic interest required by either CITY ordinance or State law.

18. **NON-WAIVER.** No failure or waiver or successive failures or waivers on the part of either party hereto, their successors or permittee assigns, in the enforcement of any condition, covenant, or Article of this Agreement shall operate as a discharge of any such condition, covenant, or Article nor render the same invalid, nor impair the right of either party hereto, their successors or permitted assigns, to enforce the same in the event of any subsequent breaches by the other party hereto, its successors or permitted assigns.

19. **NOTIFICATION.** All notices required or permitted to be made by either party in connection with this Agreement shall be in writing, and shall be deemed to have been duly given: (a) five (5) business days after the date of mailing if sent by U.S. mail, postage prepaid, (b) when transmitted if sent by facsimile, provided a confirmation of transmission is produced by the sending machine and a copy of such facsimile is promptly sent by another means specified in this Section; or (c) when delivered if delivered personally or sent by express courier service. All notices shall be sent to the other party at its address as set forth below unless written notice is given by either party of a change of address:

CITY:	City of St. George 175 East 200 North St. George, Utah 84770	CONSULTANT:	Gerhart Cole, Inc 7657 South Holden Street Midvale, Utah 84047
Attention:	City Attorney	Attention:	Ryan Cole
Copy:	legal@sgcity.org		

20. **GOVERNING LAW AND VENUE.** This Agreement shall be construed according to the laws of the State of Utah. The parties agree that venue for all legal actions, unless they involve a cause of action with mandatory federal jurisdiction, shall be the Fifth District Court for the State of Utah. The parties further agree that the Federal District Court for the District of Utah shall be the venue for any cause of action with mandatory federal jurisdiction. The parties shall have all rights and remedies provided under applicable Federal or State law for a breach or threatened breach of this Agreement. These rights and remedies shall not be mutually exclusive, and the exercise of one or more of these rights and remedies shall not preclude the exercise of any other rights and remedies. Each party agrees that damages at law may be an inadequate remedy for a breach or threatened breach of any provision hereof and the respective rights and obligations of the parties hereunder shall be enforceable by specific performance, injunction, or other equitable remedy. Nothing in this Agreement shall be construed to waive the sovereign immunity of the government parties.

21. **LEGAL FEES.** Each party shall bear its own costs, expenses, and attorneys' fees in connection with this Agreement. This obligation includes, without limitation, all costs and expenses which may arise or accrue from enforcing this Agreement or in pursuing any remedy provided hereunder or by applicable law, whether such remedy is pursued by filing a lawsuit or otherwise.

22. **MODIFICATION OF AGREEMENT.** CITY specifically reserves the right to modify or amend this Agreement and the total sum due hereunder either by enlarging or restricting the scope of the Work. All modifications shall be in writing and executed by both parties. Each Work Order adopted under this Agreement shall incorporate the terms and conditions of this Agreement and shall constitute a modification to this contract. A Work Order may amend the

terms and conditions of this Agreement only as they apply to that particular Work Order and shall not have any general effect on this Agreement.

23. **RESERVED LEGISLATIVE POWERS.** Nothing in this Agreement shall limit the future exercise of the police power by CITY in enacting zoning, subdivision, development, transportation, environment, open space, and related land use plans, policies, ordinances, and regulations after the date of this Agreement, but which shall not be retroactively applied to or modify this Agreement.

24. **SUCCESSORS AND ASSIGNS.** CONSULTANT shall not assign, sublet, sell, transfer, or otherwise dispose of any interest in this Agreement without assigning the rights and the responsibilities under this Agreement and without the prior written approval of CITY. This Agreement shall be binding upon and inure to the benefit of the parties hereto, their successors and permitted assigns, but shall not inure to the benefit of any third party or other person.

25. **NO JOINT VENTURE, PARTNERSHIP OR THIRD-PARTY RIGHTS.** It is not intended by this Agreement to, and nothing contained in this Agreement shall, create any partnership, joint venture, or other arrangement between the parties. No term or provision of this Agreement is intended to or shall, be for the benefit of any person, firm, organization, or corporation not a party hereto, and no such other person, firm, organization, or corporation shall have any right or cause of action hereunder.

26. **INTEGRATION.** This Agreement contains the entire Agreement with respect to the subject matter hereof and integrates all prior conversations, discussions or understanding of whatever kind or nature between CITY and CONSULTANT and supersedes and replaces all terms and conditions of any prior agreements, arrangements, negotiations, or representations, written or oral, with respect to this PROJECT.

27. **SEVERABILITY.** If any part or provision of this Agreement shall be determined to be unconstitutional, invalid or unenforceable by a court of competent jurisdiction, then such a decision shall not affect any other part or provision of this Agreement except that specific provision determined to be unconstitutional, invalid or unenforceable. If any condition, covenant or other provision of this Agreement shall be deemed invalid due to its scope or breadth, such provision shall be deemed valid to the extent of the scope or breadth permitted by law.

28. **CONSTRUCTION.** Each of the parties hereto has had the opportunity to review this agreement with counsel of their choosing and the rule of contracts requiring interpretation of a contract against the party drafting the same is hereby waived and shall not apply in interpreting this agreement.

29. **SURVIVAL.** It is expressly agreed that the terms, covenants, and conditions of this Agreement shall survive any legal act or conveyance required under this Agreement.

30. **HEADINGS.** The section and other headings in this Agreement are for reference purposes only and shall not in any way affect the meaning or interpretation of this Agreement.

31. **COUNTERPARTS.** This Agreement may be signed in counterparts and each such counterpart shall constitute an original document. All such counterparts, taken together, shall constitute one and the same instrument. Any signature on this Agreement transmitted by facsimile, electronically in PDF format, or by other generally accepted means of conveying digital signatures (e.g. DocuSign) shall by deemed an original signature for all purposes and the exchange of copies of this Agreement and of signature pages by any such transmission, or by a combination of such means, shall constitute effective execution and delivery of this Agreement as to the Parties and may be used in lieu of the original for all purposes.

32. **AUTHORITY OF PARTIES.** The parties executing this Agreement hereby warrant and represent that they are duly authorized to do so in the capacity stated and that this Agreement constitutes a valid and binding Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by the CITY and CONSULTANT effective from the day and year first written above.

CITY OF ST. GEORGE	GERHART COLE, INC
Michele Randall, Mayor	Ryan Cole, President
ATTEST:	APPROVED AS TO FORM: CITY ATTORNEY'S OFFICE
Christina Fernandez, City Recorder	Alicia Galvany Carlton, Assistant City Attorney

EXHIBIT A
SCOPE OF SERVICES

This Exhibit A Scope of Services is attached to, and fully incorporated into, the Professional Services Agreement by and between the City of St. George (the "City") and the following individual or entity ("Contractor") to the extent that it does not conflict with any provisions in this Agreement. If there are any conflicts between the Agreement and the Scope of Services, the terms of the Agreement apply.:

Name: Gerhart Cole, Inc

Address: 7657 South Holden Street Midvale, UT 84047

Email: ryan@gerhartcole.com Phone Number: 801-849-0055

Scope of Services and/or Deliverables by Contractor:

- See Attached
-
-
-

Compensation: City shall pay Contractor the following sum:

- Not to exceed $147,430
-

GERHART COLE

PO Box 880
7657 S Holden Street
Midvale, Utah 84047
801.849.0055
gerhartcole.com

December 4, 2025

Jay Sandberg, PE
City of St. George
61 S. Main Street
St, George, UT 84770
435.703.2672
jay.sandberg@sgcity.org

Proposal: George Washginton Boulevard Bridge
Drilled Shaft Integrity Testing and Geotechnical Construction Services

INTRODUCTION AND BACKGROUND

The George Washington Boulevard Bridge in St. George, Utah crosses the Virgin River and will be supported by forty-one (41) drilled shafts. These shafts include 3-foot diameter drilled shafts at each abutment and 8-foot diameter drilled shafts at the piers. The project drawings and specifications Sections 024266 and 02466M require that the integrity of each drilled shaft be assessed by Thermal Integrity Profiling (TIP) testing methods with the thermal wire procurement and installation provided by the Contractor, but testing performed by St. George City (City). The City has requested Gerhart Cole (GC) to provide geotechnical support during construction to address requests for information (RFI), review submittals, log drilled shaft excavations, and complete the integrity testing. Based on this understanding and our discussions with you, we have developed the following scope of work.

SCOPE OF WORK

Objectives: Address project RFIs, review contractor submittals, develop shaft soil excavation logs, and perform TIP testing for each drilled shaft.

Task 1.0 – Geotechnical Review Support

Objective: Support project delivery in addressing project RFIs and reviewing contractor submittals.

Activities:

1. Provide geotechnical construction support to project in construction.
2. Support the City with geotechnical details on up to three RFIs.
3. Review up to two geotechnical related submittals (e.g., shaft construction).
4. Attend up to two construction meetings virtually.

Assumptions:

1. Up to 4 hours per RFI; RFI response to be delivered to the City via email; City to coordinate and submit final responses to Contractor.
2. Up to 8 hours per review of geotechnical submittals (includes internal GC review of comments); limited to a single round of comments / comment closeout per submittal.
3. Construction meetings will be attended virtually with a duration of 1 hour or less.
4. Horrocks to provide additional input/RFI text to address other discipline (e.g., structures) aspects of RFIs.

Deliverables:

- Redlines / comment table on submittal packages emailed to the City for submittal to the Contractor.
- RFI text delivered to City for incorporating in RFI response.

Task 2.0 – Drilled Shaft Excavation Observation

Objective: Provide onsite representative from GC to observe and log drilled shaft excavations.

Activities:

1. Travel to and from project site.
2. Observe and log shaft excavations on-site.
3. Complete a drilled shaft excavation log for each drilled shaft.
4. Internal review of draft field shaft excavation logs developed by GC.
5. Review of concrete yield plots developed by Contractor.
6. Finalize and provide excavation logs to City.

Assumptions:

1. Drilled shaft excavation observations will be documented on a Drilled Shaft Excavation Log.
2. Shaft excavation logging will be based on excavated materials that can be observed as part of drilling. Contractor to allow GC access to drilling spoils and provide measured excavation depths as needed.
3. Handwritten field logs (no processing or typing required, but may also be provided in typed format).
4. Inspection and documentation of the reinforcing steel / cage, reinforcing steel placement, concrete placement, and development of the Drilled Shaft Concrete Placement Logs will be completed by the Contractor or City's Engineer or Firm retained for Construction management / testing services.
5. Bottom cleanliness of each drilled shaft will be assessed by the Contractor in the presence of the City's Engineer or retained Construction Management Firm using a weighted tape or other device as detailed by Section 02466. GC to provide support of this activity if requested.
6. Estimated costs include up to 10 hours of onsite drilled shaft excavation observations per site visit and up to thirty-five (35) site visits (approximately one 8-ft shaft per shift and two 3-ft shafts per shift).

a. All work will be done in a single mobilization; additional costs will be associated with the second mobilization beyond what is provided in table below.

7. Cancellation of site observation requires a minimum of a 24-hour notice; if a 24-hour notice is not provided than GC will invoice for a full-day on-site.
9. These costs exclude:
    b. Working weekends, holidays, or night work.
    c. Any and all material (e.g., concrete / steel) testing.
    d. Laboratory testing / classification; all classifications will be made visually in the field.
    e. Any design services, drafting / figure, or memo development, recommendations, or deliverables; if needed these services would be provided as part of Task 4.0.

Deliverables:

- Shaft excavation log in electronic (PDF) format for each drilled shaft.

Task 3.0 – TIP Testing

Objective: Perform TIP testing on each drilled shaft.

Activities:

1. While on-site logging shaft excavations, provide training to Contractor on the installation of the thermal wires to the drilled shaft reinforcing cages.
2. Connect data acquisition system (TAP boxes) to each thermal wire.
3. Analyze the collected temperature data.
4. Summarize the TIP testing data and results in Technical Memorandums (TM).

Assumptions:

1. Reinforcing steel / cages will be provided and constructed by others; the Contractor to provide and install TIP wires.
2. There are no construction joints planned for the drilled shafts and only one TIP test will be required per shaft.
3. TIP testing will be performed using a Thermal Integrity Profiler manufactured by Pile Dynamics, Inc. and in general accordance with ASTM D7949 and Section 02466.
4. The 3-foot diameter drilled shafts and 8-foot diameter drilled shafts will have four (4) and eight (8) thermal wires per shaft, respectively. Additional thermal wires for redundancy provided by the Contractor as they feel needed.
5. TAP boxes will be connected to each thermal wire after the reinforcing cage is placed into the drilled excavation and prior to concrete placement.
6. Thermal data will be transmitted remotely to GC and analyzed after the peak temperature has been recorded which occurs generally 24 to 48 hours after the drilled shaft concrete has been placed.
7. Up to sixteen (16) TAP boxes will be provided by Gerhart Cole. This quantity of TAP boxes will allow for up to two (2) drilled 8-foot diameter shafts to be tested simultaneously. Additional TAP boxes, if required based on drilled shaft construction schedule, can be provided at an additional cost of $300 per box per month.

8. Drilled Shaft Concrete Placement Log for each drilled shaft will be provided to GC by the Drilled Shaft Contractor or City's Engineer and will include concrete yield data with shaft depth.
9. Contractor will be responsible for the protection and security of TIP testing equipment required to be left onsite. If damaged or stolen; equipment will be replaced at replacement cost plus ten (10 percent).
10. Up to two memos (14 in total) summarizing testing and interpreted results per abutment or pier.

Deliverables:

- TM in electronic (PDF) format that will be signed and sealed by a Professional Engineer, licensed in the State of Utah.

Task 4.0 – Additional Geotechnical Project Support

Objective: Support additional project geotechnical needs as requested.

Activities:

1. Respond to project needs and additional tasks for the City; although not immediately identified additional project geotechnical support may include:
    a. Additional site visits,
    b. Laboratory testing of samples collected from foundation shaft drilling activities,
    c. Meeting attendance, and
    d. Document preparation and review.

Assumptions:

1. Individual project tasks authorized through email communication.
2. Rates for these additional services will be on a time and materials basis using the following hourly rates (subject to modification if work does not occur in 2026) and laboratory testing schedule.
    a. Principal / Senior Consultant: $240/hr
    b. Project Consultant: $200/hr
    c. Consultant: $135 to 150/hr
    d. Laboratory Testing:
        i. Moisture Content: $15/test
        ii. Atterberg Limits: $115/test
        iii. Grain-Size (Bulk Sample): $150/test
        iv. Other testing and costs coordinated by email.
3. Any potential subsurface contamination will be negligible, thus not requiring any special equipment, handling procedures, or disposal methods. Further we have assumed any potential soil contaminate would not preclude testing in our geotechnical laboratory.
4. Soil samples will be disposed of immediately following testing unless other arrangements are made.

Deliverables:

- As established through email correspondence

COST AND SCHEDULE

We propose to perform these services in accordance with a mutual agreement for Professional Services Agreement and on a time and materials basis, with the following unit rates and estimated costs indicated below.

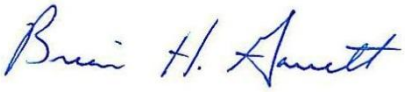
Description	Estimated Cost
Task 1.0: Geotechnical Review Support	
Request for Information (RFI) geotechnical support ($1,300 x 2)	$ 2,600
Geotechnical submittal review support ($1,900 x 2)	$ 3,800
Attend project meetings [virtually] ($240 x 2)	$ 480
Task 2.0: Drilled Shaft Excavation Observation	
Drilled shaft excavation logging ($2,250/shift for 35 shifts)	$78,750
Mobilization/travel to and from site ($1,700/trip for 5 trips)	$8,500
Task 3.0: TIP Testing	
TIP testing per shaft ($1,300/shaft for 41 shafts)	$53,300
Task 4.0: Additional Geotechnical Project Support	To Be Determined
Total not to exceed	**$147,430**

We require that at least a six (6) week's notice be provided prior to the start of work. Failure to provide adequate notice will have cost and/or performance impacts on our Proposal and Scope of Services.

This proposal is valid for 30 days. If you have any questions or comments or would like us to revise this proposal to better suit your needs, please let us know. We look forward to helping you meet your project objectives.

Respectfully submitted,
GERHART COLE, INC

Ryan Maw, PE, DGE
Principal



Brian Garrett, PE
Principal

Agenda Date: 12/18/2025 **Agenda Item Number:** 2p

Subject:

Consider approval of a fee waiver for the Downtown Farmers Market.

Item at-a-glance:

Staff Contact: Angie Jessop

Applicant Name: Ashley Tiller

Reference Number: N/A

Address/Location:

200 S 400 E, Vernon Worthen Park

Item History (background/project status/public process):

The Downtown Farmers Market of St George is requesting a wavier of Park Use Fees and Sublicense Fees for 2026 associated with the weekly farmers market held every Saturday at Vernon Worthen Park. This market provides an outlet for over 150 small businesses to show their talents and goods throughout the year. Staff recommends approval of fee waivers for all Park Use Fees and Sublicense fees for the Downtown Farmers Market for 2026.

Staff Narrative (need/purpose):

The Downtown Farmers Market is a weekly special event held at Vernon Worthen Park every Saturday. The Downtown Farmers Market is the only farmers market in Southern Utah that does not allow resale of commercial goods. Every productwhether produce, baked goods, crafts, or artisan itemsis handmade or homegrown directly by the vendors themselves. This ensures that our market maintains the highest level of authenticity, supports true local makers, and strengthens the local agricultural and artisan economy.In addition, the Downtown Farmers Market proudly provides access to SNAP/EBT benefits, allowing community members and families to use their benefits to purchase fresh, locally grown produce. This program significantly improves food access and supports healthier eating options for residents who rely on these benefits.We are requesting a wavier of the park use fees and sublicense fees associated with hosting the Downtown Farmers Mark in St George.Waiving these fees would greatly reduce our operational costs and enable us to continue offering this high-quality, inclusive, and community-centered market throughout the season. Your support would directly benefit local growers and artisans, bolster downtown economic activity, and ensure that fresh, healthy food remains accessible to all members of the St. George community.We value our relationship with the City and deeply appreciate the Councils commitment to supporting initiatives that enhance the quality of life for residents, and the importance of the support they are helping us give over 150 small businesses we support throughout the season.

Name of Legal Dept approver: N/A

Budget Impact: No Impact

Recommendation (Include any conditions):

Staff recommends approval of fee waivers for all Park Use Fees and Sublicense fees for the Downtown Farmers Market for 2026.

Attachments

St.George
THE BRIGHTER SIDE

Angie Jessop <angie.jessop@sgcityutah.gov>

DFM request for fee waiver 2026

The Downtown Farmers Market <downtownfarmerstg@gmail.com> Wed, Dec 3, 2025 at 5:33 PM
To: Angie Jessop <angie.jessop@sgcityutah.gov>

Dear St. George City Council:

I am writing on behalf of **The Downtown Farmers Market** to respectfully request a waiver of the **park use fees** and **sublicense fees** associated with hosting the **Downtown Farmers Market in St. George**, a weekly special event held at **Vernon Worthen Park every Saturday**.

The Downtown Farmers Market is the only farmers market in Southern Utah that does **not** allow resale of commercial goods. Every product—whether produce, baked goods, crafts, or artisan items—is handmade or homegrown directly by the vendors themselves. This ensures that our market maintains the highest level of authenticity, supports true local makers, and strengthens the local agricultural and artisan economy.

In addition, the Downtown Farmers Market proudly provides access to **SNAP/EBT benefits**, allowing community members and families to use their benefits to purchase fresh, locally grown produce. This program significantly improves food access and supports healthier eating options for residents who rely on these benefits.

Waiving these fees would greatly reduce our operational costs and enable us to continue offering this high-quality, inclusive, and community-centered market throughout the season. Your support would directly benefit local growers and artisans, bolster downtown economic activity, and ensure that fresh, healthy food remains accessible to all members of the St. George community.

We value our relationship with the City and deeply appreciate the Council's commitment to supporting initiatives that enhance the quality of life for residents, and the importance of the support they are helping us give over 150 small businesses we support throughout the season.

We respectfully request your approval of this fee waiver and sublicense fees for the weekly Downtown Farmers Market.

Thank you for your time, consideration, and dedicated service to our community.

Sincerely,
Ashley & Kat

Owners of The Downtown Farmers Market St. George

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>

Agenda Date: 12/18/2025 **Agenda Item Number:** 2q

Subject:

Consider approval of a fee waiver for the Dink with Dove Pickleball Tournament sponsored by the Dove Center to be held February 27-28, 2026 at the Little Valley Pickleball Complex.

Item at-a-glance:

Staff Contact: Angie Jessop

Applicant Name: Trudy Despain

Reference Number: N/A

Address/Location:

2149 Horseman Park Drive

Item History (background/project status/public process):

The City of St George has partnered with the DOVE Center for the last 30 years to enhance community safety and wellbeing to thousands of St. George residents. The annual Dink with DOVE Pickleball Tournament creates a fun, inclusive community event that raises awareness for survivors of domestic violence and sexual assault. Funds raised through this tournament directly sustain DOVE Center's essential services, including housing, counseling, advocacy, and prevention education for more than 1,400 individuals each year.

Staff Narrative (need/purpose):

Staff recommends waiving fees for the following: 1) Special Event Permit Application Fee; 2)Pickleball courts reservations fees for both days; and 3) Up to 40 hours of City Employee time for preparation and tournament logistics.

Name of Legal Dept approver: N/A

Budget Impact: No Impact

Recommendation (Include any conditions):

Staff recommends approval.

Attachments

DOVE center

November 6, 2025

St. George City Council
175 East 200 North
St. George, UT 84770

Dear Members of the St. George City Council,

This letter serves as a friendly reminder that we are approaching the annual review of our three-year partnership agreement between the City of St. George and DOVE Center. We are pleased to submit this request for the second year, with the expectation of your approval to continue our collaboration.

We are once again inviting the City to partner with DOVE Center for our annual pickleball tournament fundraiser at the Little Valley Pickleball Complex, tentatively scheduled for February 27–28, 2026. The 2025 event was a great success, thanks in large part to the City's generous partnership and outstanding support.

We deeply appreciate the City's ongoing commitment—providing facility use, staff time, and logistical assistance—which helped create a fun, inclusive community event that raised awareness for survivors of domestic violence and sexual assault. To continue that success in 2026, we respectfully request:

1. Use of the Little Valley Pickleball Complex on tournament dates.
2. Waiver of standard facility fees for DOVE Center's fundraiser event.
3. Up to 40 hours of City employee time for preparation and tournament logistics.

For more than 30 years, DOVE Center and the City of St. George have partnered to enhance community safety and wellbeing, from the city's donation of land for DOVE House in 1993 to our collaboration with the St. George Police Department through the Lethality Assessment Protocol. Our ongoing collaboration has provided safety to thousands of St. George residents.

Funds raised through this tournament directly sustain DOVE Center's essential services, including housing, counseling, advocacy, and prevention education for more than 1,400 individuals each year. We look forward to continuing our work together.

Warm regards,

Jillian Penhale, Executive Director
DOVE Center

ST. GEORGE CITY COUNCIL MINUTES
REGULAR MEETING
NOVEMBER 6, 2025, 5:00 P.M.
CITY COUNCIL CHAMBERS

PRESENT:

Mayor Pro Tem Jimmie Hughes
Councilmember Dannielle Larkin
Councilmember Natalie Larsen
Councilmember Michelle Tanner
Councilmember Steve Kemp

EXCUSED:

Mayor Michele Randall

STAFF MEMBERS PRESENT:

City Manager John Willis
City Attorney Ryan Dooley
City Recorder Christina Fernandez
Assistant Public Works Director Wes Jenkins
Planner Dan Boles
Parks and Community Services Director Shane Moore
Planner Brenda Hatch
Planner Brian Dean
Community Development Director Carol Winner

OTHERS PRESENT:

Representatives from Youth Futures

CALL TO ORDER:

Mayor Pro Tem Hughes called the meeting to order and welcomed all in attendance. An invocation was offered by Reverend Katie Langston with the New Promise Lutheran Church and The Pledge of Allegiance to the Flag was led by Councilmember Larkin.

Link to call to order, invocation, and flag salute: 00:00:00

MAYOR'S RECOGNITIONS, PROCLAMATIONS, AND UPDATES:

a. Read a Proclamation proclaiming November, 2025 as Homeless Youth Awareness Month.

Link to Councilmember Larsen reading a proclamation proclaiming November, 2025 as Homeless Youth Awareness Month; the proclamation was accepted by representatives from Youth Futures: 00:01:20

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Link to Mayor Pro Tem Hughes noting that items 7 and 8 have been removed from the agenda: 00:06:08

COMMENTS FROM THE PUBLIC:

Link to Mayor Pro Tem Hughes outlining the rules for commenting: 00:06:30

Link to comments from resident Aubrey Stevens: 00:07:23

Link to comments from resident Cordell Stevens: 00:10:38

Link to comments from resident Weston Stevens: 00:13:00

Link to comments from resident Nicole Mowery: 00:14:07

Link to comments from resident Brad Bennett: 00:14:41

CONSENT CALENDAR:

a. Consider approval of the purchase of a Vaccon Hydro Excavator VX312LHE from Cate Equipment for the Water Services Department.

BACKGROUND and RECOMMENDATION: This item is for the purchase of a Vaccon Hydro Excavator from Cate Equipment through state contract in the total amount of $234,879.82 (net trade-in value). The Water Services Department utilizes hydro-excavation equipment for most of the pipeline break repairs and to locate utilities. With a high pressure jet stream, the hydro-excavator is less damaging to the roadways and other utilities than conventional excavation. Excavation with the hydro-excavator can happen prior to utilities being located by Blue Stakes as this method is not damaging to existing utilities. This Vaccon Hydro-Excavator will replace an existing unit #3152. Staff recommends approval.

b. Consider approval of a Line Extension Agreement with Dixie Power for the West Taxi Lane Extension Project.

BACKGROUND and RECOMMENDATION: This item is for a line extension agreement with Dixie Power for the West Taxi Lane Extension Project in the total amount of $147,030.65. This agreement is for the installation, materials, and trenching to bring power service for the West Side Taxi Lane infrastructure. Staff recommends approval.

c. Consider approval of a Professional Services Agreement (PSA) with The Quotient Group dba QFactor for advertising services inside the St George Regional Airport Terminal.

BACKGROUND and RECOMMENDATION: This agreement is for the Quotient Group (QFactor) to provide professional services, including the selling of advertising for placement on static and digital displays, wall murals, banners and any other types of displays that City may install for purposes of advertising in various locations.

d. Consider approval of a Professional Service Agreement with Rosenberg Associates for the design of Gap Canyon Parkway - Alienta to Sunbrook.

BACKGROUND and RECOMMENDATION: This contract is for the design of Gap Canyon Parkway from Alienta to Sunbrook with Rosenberg Associates in the amount of $107,500. Staff recommends approval.

e. Consider approval of awarding change order to Bleachers International for additional bleacher engineering, bleacher system (materials), and installation for the Dixie Sunbowl Renovation Project.

BACKGROUND and RECOMMENDATION: This item is to award a change order to Bleachers International for additional bleacher engineering, bleacher system (materials), and installation for the Dixie Sunbowl Renovation Project in the amount of $1,024,808. The original amount approved by City Council on August 8, 2025 for Bleachers International was $2,321,993. Since the original approval, several bleacher design and layout meetings were held with Bleachers International, Hughes General Contractors (CM/GC on project), and the consulting architect to refine and finalize the bleacher layout in order to provide the best viewing opportunities and comfortable seating for spectators. Another outcome of the meeting was to use bleacher materials for ramps and concourses that would otherwise be constructed of more expensive concrete. The Dixie Sunbowl Renovation Project is a 2023 Trails, Parks and Recreation G.O. Bond project. Staff recommends approval.

f. Consider approval of a Professional Services Agreement with Rosenberg Associates for the design of George Washington Boulevard from River Road to the proposed George Washington Boulevard Bridge.

BACKGROUND and RECOMMENDATION: This item is a professional service agreement with Rosenberg Associates for the design of the George Washington Blvd. from River Road in the amount of $198,500. This agreement provides a comprehensive engineering work plan for the City of St. George, including coordination with city departments, utilities, consultants, and property owners; completion of FEMA and USCOE permitting; updates to base maps and technical studies; and preparation of detailed civil, roadway, and trail construction plans, as well as bid and contract documents. Staff recommends approval.

g. Consider approval to continue sponsorship of the annual Festival de Juan Event, organized by Canyon Media/Juan 106 FM on December 6, 2025 at Vernon Worthen Park.

BACKGROUND and RECOMMENDATION: This event started in 2017. The sponsorship includes: 1) Fee waiver for the Special Event application fee; 2) Fee waiver for sublicense fees; 3)Fee waiver for Park reservation fee; 4) Fee Waiver for Encroachment Fee for street closure of 300 South Street; 5) Setup of additional stage at Vernon Worthen Park; 6)Booth for St George Police Department to interact with community members; 7)Provide and set up 20 picnic tables near food area; 8) Provide and setup trash cans and liners throughout festival; 9) Provide City Fire Truck for display, if truck and crew are available.

h. Consider approval of the minutes from the meetings held on October 9, 2025 (work meeting); October 9, 2025 (regular meeting); October 16, 2025; October 23, 2025; and October 23, 2025 (joint work meeting with Washington County Commission).

Link to presentation from City Manager John Willis: 00:15:45

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Link to motion: 00:16:10

MOTION:
A motion was made by Councilmember Larkin to approve the consent calendar as presented.
SECOND:
The motion was seconded by Councilmember Kemp.
VOTE:
Mayor Pro Tem Hughes called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

PUBLIC HEARING/VACATE MUNICIPAL UTILITY EASEMENT/ORDINANCE:
Public hearing and consideration of Ordinance No. 2025-091 vacating a municipal utility easement, adjoining Lot 114 of Waters Edge at Desert Color Shores.

BACKGROUND and RECOMMENDATION: The subdivision plat identifies Lot 114 as a building pad surrounded by common areas. The new owner of Lot 114 intends to construct a slightly larger home that extends beyond the original building pad limits. By vacating the adjoining municipal utility easements, which are designated as common, limited common, and limited common driveways, and by amending the subdivision plat, Lot 114 will function more like a traditional building lot rather than a designated building pad. The Joint Utilities Commission recommended approval.

Link to introduction from City Manager John Willis and presentation from Assistant Public Works Director Wes Jenkins, including discussion between the City Council, Planner Dan Boles, and Mr. Jenkins: 00:16:31

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Link to public hearing; no comments were provided: 00:19:56

Link to motion: 00:20:15

MOTION:
A motion was made by Councilmember Tanner to approve Ordinance No. 2025-091 vacating a municipal utility easement, adjoining Lot 114 of Waters Edge at Desert Color Shores.

SECOND:
The motion was seconded by Councilmember Larsen.

VOTE:
Mayor Pro Tem Hughes called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

FILING OF APPLICATION AND DESIGNATION OF AUTHORIZED OFFICER/RESOLUTION:

Consider approval of Resolution No. 2025-026R authorizing the filing of an application and designation of an authorized officer to execute the application for a lease or patent of land under the recreation and public purposes act, as amended for a future Tonaquint cemetery.

BACKGROUND and RECOMMENDATION: This is a resolution that is required by the BLM to apply for a R&PP lease on 10 acres of property located in the Tonaquint area on Mesa Palms Drive. Staff recommends approval.

Link to introduction from City Manager John Willis and presentation from Parks and Community Services Director Shane Moore: 00:20:48

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Link to motion: 00:21:46

MOTION:
A motion was made by Councilmember Larsen to approve Resolution No. 2025-026R authorizing the filing of an application and designation of an authorized officer to execute the application for a lease or patent of land under the recreation and public purposes act, as amended for a future Tonaquint cemetery.

SECOND:
The motion was seconded by Councilmember Larkin.

VOTE:
Mayor Pro Tem Hughes called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

ZONE CHANGE/ORDINANCE:

Consider approval of Ordinance No. 2025-092 amending the City Zoning Map by changing the zone on a parcel that was designated as part of the UDOT right of way and has not been zoned, to C-2 (Highway Commercial) on approximately 0.98 acres generally located at the northeast corner of Desert Canyons Parkway and the off ramp for the Southern Parkway. (2025-ZC-017 - Desert Corner Zone Change)

BACKGROUND and RECOMMENDATION: The underlying general plan is COM (Commercial) with the adjacent zoning of C-2 (Highway Commercial) and PD-R (Planned Development Residential). At their meeting held on October 14, 2025, the Planning Commission held a public hearing, and recommended approval with no conditions with a unanimous vote of 7-0. There were no public comments.

Link to introduction from City Manager John Willis and presentation from Planner Brenda Hatch: 00:22:32

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Link to motion: 00:23:52

MOTION:

A motion was made by Councilmember Kemp to approve Ordinance No. 2025-092 amending the City Zoning Map by changing the zone on a parcel that was designated as part of the UDOT right of way and has not been zoned, to C-2 (Highway Commercial) on approximately 0.98 acres generally located at the northeast corner of Desert Canyons Parkway and the off ramp for the Southern Parkway.

SECOND:

The motion was seconded by Councilmember Tanner.

VOTE:

Mayor Pro Tem Hughes called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

GENERAL PLAN AMENDMENT/ORDINANCE:

Consider approval of Ordinance No. 2025-095 amending the City's General Plan by changing the general plan from LDR (Low Density Residential) to COM (Commercial) on approximately 5.0 acres located west of the Tuscan Hills and Tuscan Heights development. (Case No. 2025-GPA-014 - Planetboys Commercial GPA)

BACKGROUND and RECOMMENDATION: The General Plan on the subject property calls for LDR (Low Density Residential). LDR and OS (Open Space) are prevalent in the area. With some of the changes anticipated in the area, the applicant is asking for a change of general plan designation from LDR (Low Density Residential) to COM (Commercial) on 5.0 acres of their property. The Planning Commission heard their request and held a public hearing on October 14, 2025 and recommend approval with a 7-0 vote and no conditions.

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Link to introduction from City Manager John Willis and presentation from Planner Dan Boles, including comments from Councilmember Kemp: 00:24:34

Link to motion: 00:27:02

MOTION:

A motion was made by Councilmember Kemp to approve Ordinance No. 2025-095 amending the City's General Plan by changing the general plan from LDR (Low Density Residential) to COM (Commercial) on approximately 5.0 acres located west of the Tuscan Hills and Tuscan Heights development.

SECOND:

The motion was seconded by Councilmember Larsen.

VOTE:

Mayor Pro Tem Hughes called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

GENERAL PLAN AMENDMENT/ORDINANCE:

Consider approval of Ordinance No. 2025-096 amending the City General Plan by changing the general plan from AE (Agriculture Estates) to MDR (Medium Density Residential) and SL (Sensitive Lands) on approximately 10.977 acres generally located south of Southern Parkway and east of the Desert Canyons Master Planned Community. (Case No. 2025-GPA-013 - Desert Canyons Addition 2)

BACKGROUND and RECOMMENDATION: The General Plan is a guide for land-use decisions and contains various policies to help direct decisions related to land use and development of the City. In September 2025, the City Council approved an ordinance to annex the property mentioned above into the City of St. George. Per 10-1-11 of City Code, all new annexed areas shall be assigned a general plan land use designation of AE (Agricultural Estates) and zoned A-20 (Agricultural).

Link to introduction from City Manager John Willis and presentation from Planner Brian Dean: 00:27:43

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Link to motion: 00:29:20

MOTION:
A motion was made by Councilmember Kemp to approve Ordinance No. 2025-096 amending the City General Plan by changing the general plan from AE (Agriculture Estates) to MDR (Medium Density Residential) and SL (Sensitive Lands) on approximately 10.977 acres.

SECOND:
The motion was seconded by Councilmember Larsen.

VOTE:
Mayor Pro Tem Hughes called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

PD AMENDMENT/ORDINANCE:

Consider approval of Ordinance No. 2025-097 amending the White Dome Townhomes PD-R (Planned Development Residential) zone on approximately 8.22 acres generally located south of White Dome Drive and west of White Trails Drive. (2025-PDA-029 - White Dome Townhomes)

BACKGROUND and RECOMMENDATION: The proposal is to revise the townhome height, materials, colors and finishes only. The unit count, density and layout will remain the same. At their meeting held on October 14, 2025, the Planning Commission held a public hearing and recommended approval with the following condition, 1. That the applicant work with Staff to break up the back of all the units with some kind of variation or color to improve that back stretch, with a unanimous 7-0 vote.

Link to introduction from City Manager John Willis and presentation from Planner Brenda Hatch, including discussion between the City Council, City Manager John Willis, applicant Mike Terry, and Ms. Hatch: 00:30:25

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Link to motion: 00:37:22

MOTION:

A motion was made by Councilmember Tanner to approve Ordinance No. 2025-097 amending the White Dome Townhomes PD-R (Planned Development Residential) zone on approximately 8.22 acres generally located south of White Dome Drive and west of White Trails Drive, without including any additional conditions.

SECOND:

The motion was seconded by Councilmember Kemp.

VOTE:

Mayor Pro Tem Hughes called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

PD AMENDMENT/ORDINANCE:

Consider approval of Ordinance No. 2025-098 amending the White Cliffs Townhomes PD-R (Planned Development Residential) zone. (Case No. 2025-PDA-028 – White Cliff Townhomes)

BACKGROUND and RECOMMENDATION: In March of 2021, the City Council approved the Southern Hills – West Area Zone Plan. Included as part of the approval was the White Cliffs Townhomes in Area 4, generally located north of White Dome Dr. and west of White Trails Dr. The White Cliffs Townhomes PD-R was approved for 16 buildings, comprising of 58 total units and an overall density of 11.93 units per acre, which aligned with the medium-high density designation in the General Plan in effect at the time. The buildings were to have a maximum height of 29’ 8”, measured to the highest point. City code permits PD-R zones to have a building height of 40 feet, measured to the midpoint of the roof. Approved building materials, as specified in the 2021 elevations, include Hardiplank facia and trim, shingles, lap siding, and board-and-batten siding, stone siding, and concrete roof tiles, with a white and grey color palette.

Link to introduction from City Manager John Willis and presentation from Planner Brian Dean: 00:38:12

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Link to motion: 00:40:15

MOTION:

A motion was made by Councilmember Larkin to approve Ordinance No. 2025-098 amending the White Cliffs Townhomes PD-R (Planned Development Residential) zone, not adding conditions.

SECOND:
The motion was seconded by Councilmember Larsen.
VOTE:
Mayor Pro Tem Hughes called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

AMEND CITY CODE/ORDINANCE:
Consider approval of Ordinance No. 2025-099 amending portions of Title 3 of City Code as it relates to Temporary Parking Lot Business standards. (Case No. 2025-ZRA-013)

BACKGROUND and RECOMMENDATION: On December 15, 2022, an amendment was approved to add mobile business to Title 10 as a permitted use with standards and to create those specific standards. In 2022, the City's code did not allow mobile businesses; therefore, provisions were created and adopted. In 2023, the State adopted a new code that prevented cities from requiring mobile businesses to comply with the adopted zoning ordinance. On November 16, 2023, the City Council approved a Zoning Regulation Amendment to rename mobile businesses to temporary parking lot businesses and adjust the requirements in Title 3. Section 3-2W-5 enacted a two year time limit for this code.

Link to introduction from City Manager John Willis and presentation from Planner Brian Dean, including discussion between the City Council, City Manager John Willis, Community Development Director Carol Winner, and Mr. Dean: 00:40:57

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Link to motion: 00:45:00

MOTION:
A motion was made by Councilmember Kemp to approve Ordinance No. 2025-099 amending portions of Title 3 of City Code as it relates to Temporary Parking Lot Business standards.
SECOND:
The motion was seconded by Councilmember Larkin.
VOTE:
Mayor Pro Tem Hughes called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye

Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

APPOINTMENTS:

Appointments to Boards and Commissions of the City.

No appointments were made.

REPORTS FROM MAYOR, COUNCILMEMBERS, AND CITY MANAGER:

Link to reports from Mayor, Councilmembers, and City Manager: 00:45:49

ADJOURN TO A CLOSED MEETING:

Request a closed meeting to discuss litigation, security, property acquisition or sale or the character and professional competence or physical or mental health of an individual.

Link to motion: 00:46:59

MOTION:

A motion was made by Councilmember Larkin to adjourn to a closed meeting to discuss property acquisition or sale.

SECOND:

The motion was seconded by Councilmember Kemp.

VOTE:

Mayor Pro Tem Hughes called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

The meeting adjourned following the closed meeting.

_____
Christina Fernandez, City Recorder

ST. GEORGE CITY COUNCIL MINUTES
WORK MEETING
NOVEMBER 13, 2025, 4:00 P.M.
ADMINISTRATIVE CONFERENCE ROOM

PRESENT:

Mayor Michele Randall
Councilmember Jimmie Hughes
Councilmember Dannielle Larkin
Councilmember Natalie Larsen
Councilmember Michelle Tanner
Councilmember Steve Kemp

STAFF MEMBERS PRESENT:

City Manager John Willis
City Attorney Ryan Dooley
City Recorder Christina Fernandez
Police Support Services Manager
Victim Services Advocate Stephany Alvarez
Police Chief Kyle Whitehead
Police Captain Jeff Bahlmann
Police Captain Johnny Heppler
Operations Director Marc Mortensen
Police Lieutenant Aaron Bergquis
Animal Services Officer Supervisor Cathy Freitas

OTHERS PRESENT:

Architect Ben Rogers

CALL TO ORDER:

Mayor Randall called the meeting to order and welcomed all in attendance. An invocation was offered by a representative from the Interfaith Council and The Pledge of Allegiance to the Flag was led by Councilmember Larsen.

Link to call to order, invocation, and flag salute: 00:00:00

UPDATE FROM VICTIM SERVICES:

Link to introduction from City Manager John Willis and Police Support Services Manager Taft Tracy and update from Victim Services Advocate Stephany Alvarez, including discussion between Mayor Randall, the City Council, Police Captain Jeff Bahlmann, Police Chief Kyle Whitehead, Police Captain Johnny Heppler, Mr. Tracy, and Ms. Alvarez: 00:01:49

UPDATE REGARDING CONSTRUCTION PROJECTS FOR THE POLICE DEPARTMENT:

Link to introduction from City Manager John Willis and update from Operations Director Marc Mortensen, including discussion between Assistant City Manager Robert Myers, Architect Ben Rogers, Police Lieutenant Aaron Bergquist, Mayor Randall, City Manager John Willis, Police Chief Kyle Whitehead, Animal Services Officer Supervisor Cathy Freitas, and Mr. Mortensen: 00:14:45

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REPORTS FROM MAYOR, COUNCILMEMBERS, AND CITY MANAGER:

Link to reports from Mayor, Councilmembers, and City Manager: 01:15:27

REQUEST A CLOSED MEETING:

Request a closed meeting to discuss litigation, security, property acquisition or sale, or the character and professional competence or physical or mental health of an individual.

A closed meeting was not held.

ADJOURN:

Link to motion: 01:27:20

MOTION:

A motion was made by Councilmember Tanner to adjourn.

SECOND:

The motion was seconded by Councilmember Larsen.

VOTE:

Mayor Randall called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

_____
Christina Fernandez, City Recorder

ST. GEORGE CITY COUNCIL MINUTES
SPECIAL MEETING
NOVEMBER 18, 2025, 4:00 P.M.
ADMINISTRATIVE CONFERENCE ROOM

PRESENT:

Mayor Michele Randall
Councilmember Jimmie Hughes
Councilmember Dannielle Larkin
Councilmember Natalie Larsen
Councilmember Michelle Tanner
Councilmember Steve Kemp

STAFF MEMBERS PRESENT:

City Manager John Willis
City Attorney Ryan Dooley
City Recorder Christina Fernandez

CALL TO ORDER:

Mayor Randall called the meeting to order and welcomed all in attendance. The Pledge of Allegiance to the Flag was led by Councilmember Kemp.

Link to call to order and flag salute: 00:00:00

CANVASS OF THE 2025 MUNICIPAL GENERAL ELECTION:

BACKGROUND and RECOMMENDATION: Pursuant to §20a-4-301, Utah Code Annotated, the Mayor and City Council are the Board of Municipal Canvassers for the City of St. George. The Board of Municipal Canvassers shall meet to canvass the returns for the municipal general election, at the usual place of their meeting no sooner than 7 days after the election and no later than 14 days after the election.

Link to presentation from City Recorder Christina Fernandez, including discussion between the City Council, Mayor Randall, and Ms. Fernandez: 00:00:25

The results of the election are as follows:

Number of active registered voters:	54,043
Number of mail ballots counted:	21,825
Total number of ballots were curable, but not cured:	251
Total number of ballots received that were not legally curable:	134
Total persons who were issued a provisional ballot:	26
Number of provisional ballots not counted:	4
In-Person Voting:	477

This number includes early voting and election day voting at the Dixie Center

Mayor Race:

Total votes cast for each candidate:

Michele Randall	9,859
Jimmie B Hughes	12,334
Overvotes:	4
Undervotes:	146
Contest totals	22,343

City Council Race:

Total votes cast for each candidate:

Greg Aldred	7,532
Jami Leavitt	9,018
Natalie Larsen	12,013
Michelle Tanner	11,397
Overvotes:	38
Undervotes:	4,688
Contest totals	44,686

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Link to motion: 00:07:05

MOTION:

A motion was made by Councilmember Larkin to certify the canvass results.

SECOND:

The motion was seconded by Councilmember Kemp.

VOTE:

Mayor Randall called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

ADJOURN:

Link to motion: 00:07:20

MOTION:

A motion was made by Councilmember Kemp to adjourn.

SECOND:

The motion was seconded by Councilmember Larsen.

VOTE:

Mayor Randall called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

_____
Christina Fernandez, City Recorder

ST. GEORGE CITY COUNCIL MINUTES
REGULAR MEETING
DECEMBER 4, 2025, 5:00 P.M.
CITY COUNCIL CHAMBERS

PRESENT:
Mayor Michele Randall
Councilmember Jimmie Hughes
Councilmember Dannielle Larkin
Councilmember Michelle Tanner
Councilmember Steve Kemp

EXCUSED:
Councilmember Natalie Larsen

STAFF MEMBERS PRESENT:
City Manager John Willis
City Attorney Ryan Dooley
City Recorder Christina Fernandez
Assistant City Manager Robert Myers
Assistant Public Works Director Wes Jenkins
Energy Services Director Bryan Dial
Community Development Director Carol Winner
Water Services Director Scott Taylor
Planner Brian Dean
Planner Dan Boles
Planner Brenda Hatch
Police Captain Jordan Minnick

OTHERS PRESENT:
Construction Team Member for the new City Hall
Valerie King

CALL TO ORDER:
Mayor Randall called the meeting to order and welcomed all in attendance, recognizing the construction team of the new City Hall. An invocation was offered by Michael Kruse of Unitarian Universalist Fellowship and The Pledge of Allegiance to the Flag was led by Councilmember Larkin.

Link to call to order, invocation, and flag salute: 00:00:00

MAYOR'S RECOGNITIONS, PROCLAMATIONS, AND UPDATES:
a. Read a Proclamation proclaiming December 13, 2025 as Wreaths Across America Day.

Link to Mayor Randall reading a proclamation December 13, 2025 as Wreaths Across America Day; the proclamation was accepted by Valerie King: 00:03:00

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Link to City Manager John Willis stating that item 3i has been removed from the agenda: 00:10:11

COMMENTS FROM THE PUBLIC:

Link to comments from resident Steve Horner: 00:10:30

CONSENT CALENDAR:

a. Consider approval of a bid for the construction of the SGRWRF Laboratory Building.

BACKGROUND and RECOMMENDATION: This item is to consider award of the construction of a new Laboratory/Pretreatment Building at the St. George Regional Water Reclamation Facility to Westland Construction in the amount of $4,410,225. The St. George Regional Water Reclamation Facility (SGRWRF) is required to perform various testing of its influent and effluent to ensure all environmental regulations are met throughout the wastewater treatment process. The existing laboratory is inadequate to meet our needs and future testing requirements. The City went out for proposals and received six responses back. Based on review of the proposals, Westland Construction received the highest score. Staff recommends award to Westland Construction in the amount of $4,410,225.

b. Consider approval of an award of bid with Zion Engineering for replacement boilers at the St. George Police Station.

BACKGROUND and RECOMMENDATION: This item is to consider award of a contract to replace two boilers at the St. George Police Station to Zion Engineering in the amount of $121,226.21. The two boilers at the St. George Police Station are 30 years old. One recently failed and the other one is in need of immediate replacement. Staff went out for bids and received two bids back. The low bid was received from Zion Engineering. Staff recommends award of the contract to Zion Engineering in the amount of $121,226.21.

c. Consider approval to purchase custom playground on state contract from Lucky Dog Recreation for Boots-Cox Family Park.

BACKGROUND and RECOMMENDATION: This item is to consider approval of the purchase of playground equipment for the Boots-Cox Family Park from Lucky Dog Recreation through state contract in the amount of $377,081.26. The existing playground at the Boots-Cox Family park is at the end of life and in need of replacement. This project was included as part of the 2023 Trails, Parks and Recreation General Obligation Bond. Staff recommends approval of the purchase from Lucky Dog Recreation in the amount of $377,081.26.

d. Consider approval of purchasing roller hockey rink boards via cooperative contract with Athletica Sport Systems for the JC Snow Park Roller Hockey project.

BACKGROUND and RECOMMENDATION: This proposed purchase is to provide new roller hockey rink boards and goals for the JC Snow Park Roller Hockey project. This is for materials and installation for only one new rink. The

proposed materials include 42-inch boards, fencing, penalty boxes, players boxes, players benches, timekeeper's box, timekeeper's table, gates, hardware, and goals. The cooperative contract is through Sourcewell – Athletica Contract #120320. Staff recommends approval of the purchase in the amount of $147,570.

e. Consider approval of a Professional Services Agreement (PSA) with Civil Science Infrastructure, Inc. for construction phase services for the SR-7 Active Transportation Path.

BACKGROUND and RECOMMENDATION: Civil Science recently completed the civil design portion of the construction documents for the SR-7 Active Transportation Path and now the project is about to start construction. On October 16, 2025, City Council approved the construction bid for the project to Suncore Construction and Materials. The SR-7 Active Transportation Path is six miles of a 12-foot-wide multi-use trail in St. George and Hurricane. The St. George trail segment is on the City's Park & Trail Master Plan, St. George Active Transportation Plan, and is also part of the UDOT SR-7 Active Transportation Plan. This proposed PSA with Civil Science is to provide construction phase services for the SR-7 Active Transportation Path in the amount of $158,500. Staff recommends approval.

f. Consider approval of a Reimbursement Agreement for the 1100 West Sewer Line Extension project.

BACKGROUND and RECOMMENDATION: The 100 West Street area is part of the original Bowler, Ence, & Marsh subdivision was constructed in 1969, prior to the sanitary sewer being available. The homes in this area are on private septic systems, which are nearing their useful life. In the past, the City has entered into agreements with residents in certain areas where sewer service is not available to participate in the cost of extending sewer services to the area.

g. Consider approval of Reimbursement Agreement with Quality Excavation for upsizing of water lines in the Desert Canyons area.

BACKGROUND and RECOMMENDATION: The City's Culinary Water and Secondary Irrigation Master Plans have identified the need of large diameter waterlines within the Desert Canyons development to meet the future demands of development through the South Block area of the City. In the past, the City has reimbursed developers for the cost of upsizing waterlines within their developments as the developments are constructed. Staff recommends approval.

h. Consider approval of Task #9 for the Air Traffic Control Tower Minimum Equipment List (MEL) Design & CM.

BACKGROUND and RECOMMENDATION: In support of the new Airport Traffic Control Tower (ATCT), which is currently scheduled to be completed in December, 2026, furniture and air traffic control equipment are required by the FAA to support Air Traffic Operations, this project includes the professional design

services supporting the new furniture, equipment, associated services, and the preparation of documents related to the relocation of limited FAA Equipment. Staff recommends approval.

Link to presentation from City Manager John Willis, including comments from Councilmember Larkin and her request to remove item a for a separate motion as she may have a potential conflict: 00:14:28

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Link to motion: 00:15:08

MOTION:
A motion was made by Councilmember Larkin to approve the consent calendar, noting that item i has been removed and her removal of item 3a.
SECOND:
The motion was seconded by Councilmember Hughes.
VOTE:
Mayor Randall called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

Link to motion for item 3a: 00:15:30

MOTION:
A motion was made by Councilmember Tanner to approve item 3a.
SECOND:
The motion was seconded by Councilmember Kemp.
VOTE:
Mayor Randall called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – abstain
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

PUBLIC HEARING/COMPENSATION INCREASES FOR EXECUTIVE MUNICIPAL OFFICERS:

Public hearing concerning compensation increases for executive municipal officers as determined by the city's annual compensation study.

BACKGROUND and RECOMMENDATION: The City conducts a compensation study each year to ensure our competitiveness with the municipal market within Utah. This study is critical in helping the city attract and retain qualified and skilled employees to provide consistent and effective delivery of services for our residents, businesses and visitors to the community. Effective May 1, 2024, the state legislature approved SB 91 which requires a public hearing to be held on the compensation increases determined as part of the city's annual compensation study prior to including these increases within the city's budget for municipal officers. Staff recommends holding the public hearing. No action is required.

Link to introduction from City Manager John Willis and presentation from Assistant City Manager Robert Myers, including discussion between the City Council and Mr. Myers: 00:15:47

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Link to public hearing; no comments were given: 00:21:26

PUBLIC HEARING/AMEND FY25-26 BUDGET/RESOLUTION:

Public hearing and consideration of Resolution No. 2025-027R to review and approve amendments to the Fiscal Year 2025-26 Budget.

BACKGROUND and RECOMMENDATION: State statute requires a public hearing when changes are requested to the City's budget. Staff typically bring budget openings forward to the City Council for consideration on a quarterly basis based on changes that occur during the fiscal year. Staff recommends taking public comment and approval of the resolution.

Link to introduction from City Manager John Willis and presentation from Assistant City Manager Robert Myers, including discussion between the City Council and Mr. Myers: 00:21:42

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Link to public hearing, including comments from resident Greg Aldred: 00:23:48

Link to motion: 00:24:27

MOTION:

A motion was made by Councilmember Tanner to approve Resolution No. 2025-027R to review and approve amendments to the Fiscal Year 2025-26 Budget.

SECOND:

The motion was seconded by Councilmember Larkin.

VOTE:

Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye

Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

PUBLIC HEARING/VACATE MUNICIPAL UTILITY EASEMENT/ORDINANCE:
Public hearing and consideration of Ordinance No. 2025-100 vacating a municipal utility easement located at the rear of Lots 16, 17, 18, 19, and 20 of the Banded Ridge Subdivision.

BACKGROUND and RECOMMENDATION: The homeowners of the lots listed herein have encroached onto property that was conveyed to the City by Quality Development. The City has agreed to deed the encroached areas back to Quality Development, who has applied for a subdivision amendment to incorporate the deeded parcels into the respective lots. The Joint Utilities Commission recommended approval.

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and

HILLSIDE DEVELOPMENT PERMIT:
Consider approval of a Hillside Development Permit for a modification to the approved location of the rock fall hazard line on approximately 0.23 acres located on the open space south of the existing Banded Ridge Subdivision. (Case No. 2025-HS-009 - Banded Ridge Hillside Revision)

BACKGROUND and RECOMMENDATION: The proposal is a hillside development permit for the open space directly south of Banded Ridge subdivision. The applicant is asking for a modification for the location of the rock fall runoff line based on a more in depth analysis performed by AGEC. At their meeting held on November 18, 2025, the Planning Commission recommended approval with conditions, with a vote of 7-0.

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Link to introduction from City Manager John Willis and presentation from Assistant Public Works Director Wes Jenkins, including comments from the City Council and Mr. Jenkins: 00:25:05

Link to public hearing; no comments were provided: 00:30:25

Link to motion: 00:30:36

MOTION:
A motion was made by Councilmember Larkin to approve Ordinance No. 2025-100 vacating a municipal utility easement located at the rear of Lots 16, 17, 18, 19, and 20 of the Banded Ridge Subdivision.

SECOND:
The motion was seconded by Councilmember Tanner.

VOTE:
Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

Link to motion: 00:31:09

MOTION:
A motion was made by Councilmember Larkin to approve the Hillside Development Permit for a modification to the approved location of the rock fall hazard line on approximately 0.23 acres located on the open space south of the existing Banded Ridge Subdivision.

SECOND:
The motion was seconded by Councilmember Hughes.

VOTE:
Mayor Randall called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

GAS SUPPLY CONTRACT/RESOLUTION:
Consider approval Resolution No. 2025-028R authorizing a gas supply contract with the Public Energy Authority of Kentucky (PEAK) to participate in a prepaid natural gas program with BP Energy Company and acknowledging PEAK's related bond issuance.

BACKGROUND and RECOMMENDATION: The City is proposing to source a portion of its long-term natural gas needs through a "prepaid" program administered by PEAK, with gas supplied by BP Energy Company (BPEC). Under this structure, PEAK issues tax-exempt bonds and prepays BPEC for future gas deliveries; St. George then purchases gas from PEAK under a NAESB contract at a stated per-MMBtu discount. The draft confirmation sets a delivery window beginning May 1, 2026, through September 30, 2034, with automatic one-year renewals thereafter; the City pays the discounted contract price for delivered quantities each month. The City is not issuing debt and has no financial liability for PEAK's bonds; our obligations are limited to taking and paying for gas under the NAESB terms.

Link to introduction from City Manager John Willis and presentation from Energy Services Director Bryan Dial, including discussion between the City Council and Mr. Dial: 00:31:41

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Link to motion: 00:33:36

MOTION:
A motion was made by Councilmember Kemp to approve Resolution No. 2025-028R authorizing a gas supply contract with the Public Energy Authority of Kentucky (PEAK).

SECOND:
The motion was seconded by Councilmember Tanner.

VOTE:
Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

AMEND GENERAL PLAN/ORDINANCE:

Consider approval of Ordinance No. 2025-101 amending the City's General Plan by adding a Water Use and Preservation Element to the General Plan. (Case No. 2025-GPA-016)

BACKGROUND and RECOMMENDATION: In 2022, Utah State Legislature recognized the need to address the state's water use practices and required that each municipal General Plan includes a water use and preservation element to address water capacity, water use, and the effect that different land development could have on the water supply and availability. At their meeting held on November 18, 2025, the Planning Commission recommended approval.

Link to introduction from City Manager John Willis and presentation from Community Development Director Carol Winner and Water Services Director Scott Taylor, including discussion between the City Council and Mr. Taylor: 00:34:05

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Link to motion: 00:50:48

MOTION:
A motion was made by Councilmember Hughes to approve Ordinance No. 2025-101 amending the City's General Plan by adding a Water Use and Preservation Element to the General Plan.

SECOND:
The motion was seconded by Councilmember Larkin.
VOTE:
Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

AMEND PD-C ZONE/ORDINANCE:
Consider approval of Ordinance No. 2025-102 amending the Atkinville Interchange Zone Plan PD-C (Planned Development Commercial) zone on approximately 0.81 acres located on the southwest corner of Pioneer Road and Bluegrass Way. (Case No. 2025-PDA-031 - Utah First Credit Union - Sun River)

BACKGROUND and RECOMMENDATION: The proposal is for a financial institution. The underlying general plan is PD (Planned Development). At their meeting held on November 18, 2025, the Planning Commission held a public hearing, and recommended approval with conditions, with a vote of 6-0; there were no public comments.

Link to introduction from City Manager John Willis and presentation from Planner Brian Dean, including discussion between the City Council, City Manager John Willis, and Mr. Dean: 00:51:15

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Link to motion: 00:57:47

MOTION:
A motion was made by Councilmember Kemp to approve Ordinance No. 2025-102 amending the Atkinville Interchange Zone Plan PD-C (Planned Development Commercial) zone on approximately 0.81 acres located on the southwest corner of Pioneer Road and Bluegrass Way, including the Planning Commission's recommendations.
SECOND:
The motion was seconded by Councilmember Hughes.
VOTE:
Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent

Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

ZONE CHANGE/ORDINANCE:

Consider approval of Ordinance No. 2025-103 amending the City Zoning Map by changing the zone from C-3 (General Commercial), RE-37.5 (Residential Estates, 37,500 ft² minimum lot size), R-3 (Residential, multi-family) to PD-C (Planned Development Commercial) on approximately 1.0 acre located at southeast of 1050 North and 1020 West. (Case No. 2025-ZC-016 - 1037 W 1050 N Zone Change)

BACKGROUND and RECOMMENDATION: The applicant made an application to change the zoning on the property to C-3. After the Planning Commission hearing and prior to review by the City Council, the applicant amended their application rezone the property to PD-C (Planned Development Commercial) instead. On November 18, 2025, Planning Commission held a public hearing on the request and received three public comments asking to not change the zoning. The Planning Commission discussed the case and recommended approval Zone Change as proposed by the applicant with a 7-0 vote.

Link to introduction from City Manager John Willis and presentation from Planner Dan Boles, including discussion between the City Council and Mr. Boles: 00:58:35

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Link to motion: 01:07:05

MOTION:

A motion was made by Councilmember Larkin to approve Ordinance No. 2025-103 amending the City Zoning Map by changing the zone from C-3 (General Commercial), RE-37.5 (Residential Estates, 37,500 ft² minimum lot size), R-3 (Residential, multi-family) to PD-C (Planned Development Commercial) on approximately 1.0 acre located at southeast of 1050 North and 1020 West, including the uses: construction services, plumbing and electrical shop, and personal instruction services.

SECOND:

The motion was seconded by Councilmember Kemp.

VOTE:

Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

ZONE CHANGE/ORDINANCE:

Consider approval of Ordinance No. 2025-104 amending the City Zoning Map by changing the zone from C-3 (General Commercial) to PD-C (Planned Development Commercial) on approximately 1.86 acres located at 559 East St. George Boulevard. (Case No. 2025-ZC-018 - St. George Downtown Hyatt)

BACKGROUND and RECOMMENDATION: The underlying general plan is Downtown Connected Corridor with the adjacent zoning of MH-6 (Mobile Home minimum of 6,000 sq. ft. lots) and C-3 (General Commercial). At their meeting held on October 28, 2025 the Planning Commission held a public hearing, no public comments were made. They forwarded a positive recommendation with a 6-0 vote including that the height is increased to allow the additional height as requested by the applicant and as shown in the staff report with the following conditions: 1. The applicant must combine the lots before the site can be approved. 2. A 15-foot landscape strip must be provided along the right of way on 600 East. 3. The use list be changed to only include Bar Establishment, Restaurant, Hotel/Motel.

Link to introduction from City Manager John Willis and presentation from Planner Brenda Hatch, including discussion between the City Council and Ms. Hatch: 01:07:53

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Link to motion: 01:12:24

MOTION:

A motion was made by Councilmember Larkin to approve Ordinance No. 2025-104 amending the City Zoning Map by changing the zone from C-3 (General Commercial) to PD-C (Planned Development Commercial) on approximately 1.86 acres located at 559 East St. George Boulevard, amending the use list: bar establishment, restaurant, hotel/motel and adding retail establishment.

SECOND:

The motion was seconded by Councilmember Tanner.

VOTE:

Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

ZONE CHANGE/ORDINANCE:

Consider approval of Ordinance No. 2025-105 amending the City Zoning Map by changing the zone from C-4 (Central Business District) to PD-MU (Planned Development Mixed Use) on approximately 3.76 acres located at

the northwest and northeast corners of St. George Boulevard and 100 West Street. (Case No. 2025-ZC-019 - First West)

BACKGROUND and RECOMMENDATION: The underlying general plan is Downtown Lively with the adjacent zoning of C-4 (Central Business District), PD-C (Planned Development Commercial), and A-P (Administrative Professional). At their meeting held on October 28, 2025, the Planning Commission held a public hearing, and recommended approval with the increased heights requested by the applicant with a vote of 6-0. There was one public comment regarding overflow parking on the public streets from Ancestor Square.

Link to introduction from City Manager John Willis and presentation from Planner Brenda Hatch, including discussion between Mayor Randall, the City Council, and Ms. Hatch: 01:13:18

Agenda Packet [Page 367]

Link to comments from Councilmember Hughes and motion: 01:21:55

MOTION:
A motion was made by Councilmember Hughes to approve Ordinance No. 2025-105 amending the City Zoning Map by changing the zone from C-4 (Central Business District) to PD-MU (Planned Development Mixed Use) on approximately 3.76 acres located at the northwest and northeast corners of St. George Boulevard and 100 West Street.

SECOND:
The motion was seconded by Councilmember Kemp.

VOTE:
Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

ZONE CHANGE/ORDINANCE:

Consider approval of Ordinance No. 2025-106 amending the City Zoning Map by changing the zone from C-4 (Central Business District) to PD-MU (Planned Development Mixed Use) on approximately 1.28 acres located at 311 West St George Boulevard. (Case No. 2025-ZC-020 - 311 West Mixed Use)

BACKGROUND and RECOMMENDATION: The underlying general plan is Downtown Connected Corridor with the adjacent zoning of C-4 (Central Business District) and C-3 (General Commercial). At their meeting held on November 18, 2025, the

Planning Commission held a public hearing and recommended approval with a 5-0 vote.

Link to introduction from City Manager John Willis and presentation from Planner Brenda Hatch, including discussion between the City Council and City Manager John Willis: 01:23:18

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Link to motion: 01:29:34

MOTION:

A motion was made by Councilmember Larkin to approve Ordinance No. 2025-106 amending the City Zoning Map by changing the zone from C-4 (Central Business District) to PD-MU (Planned Development Mixed Use) on approximately 1.28 acres located at 311 West St George Boulevard.

SECOND:

The motion was seconded by Councilmember Kemp.

VOTE:

Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

AMEND CITY CODE/ORDINANCE:

Consider approval of Ordinance No. 2025-107 amending portions of Title 10 of City Code and modifying the TNZ Design Manual as it pertains to setbacks along alleyways and frontage on open space. (Case No. 2025-ZRA-012 - Alley Setbacks)

BACKGROUND and RECOMMENDATION: In 2023, a code change to the St. George city code was approved which increased the setback between an alleyway and a garage from 5’ to 25’. This was done as a larger change to sections of city code. Staff recently received an application from SUHBA (Southern Utah Home Builders Association) requesting a Zoning Regulation Amendment in order to revise the requirement for alley loaded garages to maintain a 20-foot setback between the alley and garage. Planning Commission held a public hearing on October 28, 2025, to receive comments on the proposed changes to Title 10. No public comment was received and after discussion, they recommend approval of the changes as presented with a 5-1 vote.

Link to introduction from City Manager John Willis and presentation from Planner Dan Boles, including discussion between the City Council, City Manager John Willis, and Mr. Boles: 01:30:17

Agenda Packet [Page 442]

Link to motion: 01:34:21

MOTION:
A motion was made by Councilmember Tanner to approve Ordinance No. 2025-107 amending portions of Title 10 of City Code and modifying the TNZ Design Manual as it pertains to setbacks along alleyways and frontage on open space.

SECOND:
The motion was seconded by Councilmember Larkin.

VOTE:
Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

AMEND CITY CODE/ORDINANCE:

Consider approval of Ordinance No. 2025-108 amending City Code Title 1, Chapter 13 Disposal of City-Owned Real Property, to add a paragraph titled "1-13-6: Disposal of Police Department-Owned Firearms"

BACKGROUND and RECOMMENDATION: The Police Department has historically presented and currently presents a retiring officer with their firearm upon retirement from the City. While not universal, it is common practice in police departments throughout Utah and the United States. Staff recommends approval.

Link to introduction from City Manager John Willis and presentation from Police Captain Jordan Minnick: 01:34:53

Agenda Packet [Page 462]

Link to motion: 01:36:33

MOTION:
A motion was made by Councilmember Larkin to approve Ordinance No. 2025-108 amending City Code Title 1, Chapter 13 Disposal of City-Owned Real Property, to add a paragraph titled "1-13-6: Disposal of Police Department-Owned Firearms"

SECOND:
The motion was seconded by Councilmember Hughes.

VOTE:
Mayor Randall called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

APPOINTMENTS TO BOARDS AND COMMISSIONS OF THE CITY:

Link to Mayor Randall making a recommendation to appoint Sarah Reynolds as President Elect of the Arts Commission effective January 1, 2026 and to reappoint Ginger Nelson, Karin Edwards, Tara Griffith, Robert Schmidt, Jane Anderson and Steve Brough to the Arts Commission for 3-year terms effective January 1, 2026: 01:37:20

Link to motion: 01:37:48

MOTION:
A motion was made by Councilmember Kemp to approve the appointments to the Arts Commission as recommended.

SECOND:
The motion was seconded by Councilmember Larkin.

VOTE:
Mayor Randall called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

Link to Mayor Randall making a recommendation to reappoint Scott Messel to the Historic Preservation for a 4-year term: 01:38:00

Link to motion: 01:38:07

MOTION:
A motion was made by Councilmember Hughes to approve the reappointment to the Historic Preservation as recommended.

SECOND:
The motion was seconded by Councilmember Kemp.

VOTE:
Mayor Randall called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent

Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

REPORTS FROM MAYOR, COUNCILMEMBERS, AND CITY MANAGER:

Link to reports from Mayor, Councilmembers, and City Manager: 01:38:15

ADJOURN TO A CLOSED MEETING:

Request a closed meeting to discuss litigation, security, property acquisition or sale or the character and professional competence or physical or mental health of an individual.

A closed meeting was not held.

ADJOURN:

Link to motion: 01:39:06

MOTION:

A motion was made by Councilmember Kemp to adjourn.

SECOND:

The motion was seconded by Councilmember Hughes.

VOTE:

Mayor Randall called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larkin – aye
Councilmember Larsen – absent
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

_____
Christina Fernandez, City Recorder

Agenda Date: 12/18/2025 **Agenda Item Number:** 03

Subject:

Public hearing and consideration of Resolution No. 2025-029R to review and approve amendments to the Fiscal Year 2025-26 Budget.

Item at-a-glance:

Staff Contact: Robert Myers

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

61 S. Main

Item History (background/project status/public process):

State statute requires a public hearing when changes are requested to the City's budget. Staff typically bring budget openings forward to the City Council for consideration on a quarterly basis based on changes that occur during the fiscal year. Staff recommends taking public comment and approval of the resolution.

Staff Narrative (need/purpose):

Budget amendments are requested to the budget for capital projects as detailed in Exhibit A.

Name of Legal Dept approver: Ryan Dooley

Budget Impact:

Cost for the agenda item: $1,175,454

Amount approved in current FY budget for item: $0

If not approved in current FY budget or exceeds the budgeted amount, please explain funding source:

This item is to request amendments to the budget as detailed in Exhibit A

Description of funding source:

This item is to request amendments to the budget as detailed in Exhibit A

Recommendation (Include any conditions):

Staff recommends taking public comment and approval of the resolution.

Attachments

RESOLUTION NO. _____

AMENDING THE 2025-2026 FISCAL BUDGET FOR THE CITY OF ST. GEORGE, UTAH.

WHEREAS, pursuant to the Uniform Fiscal Procedures Act for Utah Cities (the "Act"), the City of St. George is required to adopt an annual budget with regard to the funds of the City; and

WHEREAS, the City has complied with the provisions of the Act in adopting a budget and setting and conducting public hearings on such budget.

NOW, THEREFORE, at a regular meeting of the City Council of the City of St. George, Utah, duly called, noticed and held on the 18th day of December, 2025, upon motion duly made and seconded, it is

RESOLVED that the 2025-2026 fiscal budget for the City of St. George thereto is hereby amended. Said amendments are attached hereto as Exhibit "A."

VOTED UPON AND PASSED BY THE CITY COUNCIL OF THE CITY OF ST. GEORGE AT A REGULAR MEETING OF SAID COUNCIL HELD ON THE 18TH DAY OF DECEMBER, 2025.

ST. GEORGE CITY:

_____
Michele Randall, Mayor

ATTEST:

_____
Christina Fernandez, City Recorder

APPROVED AS TO FORM:
City Attorney's Office

_____
Ryan N Dooley, City Attorney

VOTING OF CITY COUNCIL:

Councilmember Hughes _____
Councilmember Larkin _____
Councilmember Larsen _____
Councilmember Tanner _____
Councilmember Kemp _____

CITY OF ST. GEORGE
Budget Opening - Fiscal Year 2025-26
December 18, 2025

EXHIBIT A

St.George
THE BRIGHTER SIDE

OTHER FUND ADJUSTMENTS

			Debit	Credit
1	40-38800	General Capital Project Fund - Appropriate Fund Balance		226,000
	40-4000-7964	General Capital Project Fund - Animal Shelter	226,000	

Staff requests to amend the budget for the professional services associated (design, bid document creation, contract administration) for the construction of a new animal shelter. This project is to relocate the existing animal shelter to a new facility that will be located near the city's wastewater treatment plant. The cost of the PSA is $285,000. The FY 2026 budget included funding of $75,000 to complete a needs assessment for the project and for initial design work. Of this amount $59,000 is available to fund this change order which leaves a gap of $226,000 to fully fund the professional service costs associated with this project. Funding for this project is available within the fund balance of the General Capital Project Fund. Staff requests to amend the budget by $226,000 to add funding for the remaining design costs for the project and costs for project administration and bid document creation.

2	85-38800	Recreation General Obligation Project Fund - Appropriated Fund Balance		466,884
	85-8520-7229	Recreation General Obligation Project Fund - Fort Pierce Wash Trail	466,884	

The Parks & Community Services Department requests to add funds for the Fort Pierce Wash Trail project. In November 2023 voters approved a $29 million General Obligation bond to fund trails, parks and park facility improvements throughout the community. The Fort Pierce Wash Trail is a G.O. bond funded project that includes the construction of a trail from the Virgin River South Trail close to St. James Park following the Fort Pearce Wash south to the Little Valley Sports Complex. The total budget for this project is $2,500,000. Funding for this project was not included in the FY 2026 budget. Staff requests to amend the budget to add the bridge portion of the project and to roll over funds from the FY 2025 budget for design costs in the amount of $466,884. Funding for this request will come from G.O. bonds issued for this project as part of the FY 2024 issuance. Staff requests to amend the budget in the amount of $466,884 for the Fort Pierce Wash Trail project.

3	85-38800	Recreation General Obligation Project Fund - Appropriated Fund Balance		29,541
	85-8520-7783	Recreation General Obligation Project Fund - Lizard Wash Park	29,541	

The Parks & Community Services Department requests to add funds for the prefabricated pedestrian bridge for the Lizard Wash Park. In November 2023 voters approved a $29 million General Obligation bond to fund trails, parks and park facility improvements throughout the community. The Lizard Wash Park project is a community park planned in the Desert Color Community. This park will include a bike park, playground, pond, pickleball courts, pavilion and restroom facilities. The total budget for this project is $5,000,000. Funding in the amount of $150,000 was included in the FY 2026 budget. $55,000 of this funding is anticipated to be spent on design work leaving a balance of $95,000. Staff requests to amend the budget to fully fund the pedestrian bridge in the amount of $29,541. Funding for this request will come from G.O. bonds issued for this project as part of the FY 2024 issuance. Staff requests to amend the budget in the amount of $29,541 for the Lizard Wash Park project.

4	85-38800	Recreation General Obligation Project Fund - Appropriated Fund Balance		453,029
	85-8520-7640	Recreation General Obligation Project Fund - Santa Clara River Trail	453,029	

The Parks & Community Services Department requests to add funds for the Santa Clara River Trail project. In November 2023 voters approved a $29 million General Obligation bond to fund trails, parks and park facility improvements throughout the community. The Santa Clara River Trail is a G.O. bond funded project that includes the construction of a trail from Cottonwood Cove Park to Mathis Park. The total budget for this project is $3,000,000. Funding for this project was not included in the FY 2026 budget. Staff requests to amend the budget to add the bridge portion of the project and to roll over funds from the FY 2025 budget for design costs in the amount of $453,029. Funding for this request will come from G.O. bonds issued for this project as part of the FY 2024 issuance. Staff requests to amend the budget in the amount of $453,029 for the Fort Pierce Wash Trail project.

Agenda Date: 12/18/2025 **Agenda Item Number:** 04

Subject:

Consider approval of Resolution No. 2025-030R to amend the Master Fee Schedule for fees related to the pass through rate from the Washington County Solid Waste District.

Item at-a-glance:

Staff Contact: Nick Carlson

Applicant Name: City of St George

Reference Number: N/A

Address/Location:

61 South Main Street

Item History (background/project status/public process):

The Washington County Solid Waste District Board approved an annual 2.5% increase on garbage and BluCan services, effective January 01, 2026. Staff recommends approval of the amendment to the Master Fee Schedule to reflect the pass through rate increase from the Solid Waste District to be effective January 1, 2026.

Staff Narrative (need/purpose):

This increase is a pass through rate from the Solid Waste District and is related to the District's contract with Republic Services as well as a District loan to make improvements to the landfill and the District's buildings. The increase is $0.34 for garbage service and $0.16 for blucan service.

Name of Legal Dept approver: N/A

Budget Impact: No Impact

Recommendation (Include any conditions):

Staff recommends approval of the amendment to the Master Fee Schedule to reflect the pass through rate increase from the Solid Waste District to be effective January 1, 2026.

Attachments

WCSWD SOLID WASTE FEES

Residential Service			$14.90 ~~$14.56~~ - Pass through increase from WCSWD
Recycling Service			$6.66 ~~$6.50~~ - Pass through increase from WCSWD

RESOLUTION NO. _____

A RESOLUTION OF THE CITY OF ST. GEORGE, UTAH AMENDING AND ADOPTING FEES FOR VARIOUS SERVICES

WHEREAS, the City of St. George charges fees for various services and recreational activities; and

WHEREAS, the City has identified a few necessary updates to the Master Fee Schedule; and

WHEREAS, the City will amend the Washington County Solid Waste pass-through fee for solid waste services, including a $0.34 increase to Residential Service (from $14.56 to $14.90 and a $0.16 increase to Recycling Service (from $6.50 to $6.66) to be effective January 1, 2026; and

WHEREAS, in order to continue offering these services and recreational activities in an economically feasible manner, it is necessary to amend and adopt the associated fees for the Southgate Golf Course, variance applications, airport Customer Facility Charges, and solid waste services.

NOW, THEREFORE, BE IT RESOLVED that the Mayor and City Council of the City of St. George hereby authorize the fee changes outlined in Exhibit A.

PASSED AND ADOPTED by the City Council of the City of St. George this 18th day of December, 2025.

CITY OF ST. GEORGE:

_____
Michele Randall, Mayor

APPROVED AS TO FORM:
City Attorney's Office

_____
Ryan Dooley, City Attorney

ATTEST:

_____
Christina Fernandez, City Recorder

VOTING OF CITY COUNCIL:

Councilmember Hughes _____
Councilmember Larkin _____
Councilmember Larsen _____
Councilmember Tanner _____
Councilmember Kemp _____

Agenda Date: 12/18/2025 **Agenda Item Number:** 05

Subject:

Public hearing and consideration of Ordinance No. 2025-109 to add the name 'Tech Ridge Parkway' to the existing numbered street '250 West Street' from 1190 South to 1300 South.

Item at-a-glance:

Staff Contact: Todd Jacobsen

Applicant Name: Cameron Cutler, Public Works Director

Reference Number: N/A

Address/Location:

250 West ST from 1190 South to 1300 South

Item History (background/project status/public process):

With the construction of Tech Ridge Parkway and the intent to apply this street name from the St. George Boulevard intersection to the Black Ridge Drive intersection, this request is being made. In the segment of 250 West Street, between 1190 South and 1300 South, all addresses will continue to be assigned from 250 West Street to reduce or eliminate any potential confusion or overlapping addresses on Tech Ridge Parkway. All other addresses outside this area will be assigned from Tech Ridge Parkway.

Staff Narrative (need/purpose):

This is to clean up the street naming in this area. The streets department will create and install the signs located at Black Ridge Drive, the developer responsible for all other signage along Tech Ridge Parkway.

Name of Legal Dept approver: Jami Brakin

Budget Impact: No Impact

Recommendation (Include any conditions):

Cameron Cutler, Public Works Director recommends approval.

Attachments

When Recorded Return To:
City of St. George
City Recorder's Office
175 East 200 North
St. George, UT 84770

ORDINANCE NO. _____

Tax ID: SG-PL

AN ORDINANCE ADDING THE NAME OF 'TECH RIDGE PARKWAY' TO '250 WEST STREET' LOCATED IN THE CITY OF ST. GEORGE, WASHINGTON COUNTY, UTAH
(between 1190 South and 1300 South)

WHEREAS, the Public Works Director of the City of St. George is requesting to complete the naming of 'Tech Ridge Parkway' from the St. George Boulevard intersection to the Black Ridge Drive intersection by adding the name 'Tech Ridge Parkway' to the section of '250 West Street' located between 1190 South and 1300 South, as more particularly described and shown in Exhibit A and Exhibit B; and

WHEREAS, the section of '250 West Street' between 1190 South and 1300 South will also be identified as 'Tech Ridge Parkway' and all (current and future) addresses as described and shown in Exhibit A and Exhibit B will continue to follow the 250 West Street numbering system. This addressing approach is intended to reduce or eliminate any potential confusion or overlapping addresses on 'Tech Ridge Parkway' as it continues to extend westerly and northerly; and

WHEREAS, the City Council finds that adding the name 'Tech Ridge Parkway' to '250 West Street' between 1190 South and 1300 South, as described and shown in Exhibit A and Exhibit B, will not be detrimental to the public interest and that good cause exists for such action;

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of St. George, Washington County, Utah, as follows:

1. **Street Name Addition:** The portion of '250 West Street' between 1190 South and 1300 South, as described in Exhibit A, is hereby assigned the additional street name 'Tech Ridge Parkway,' thereby completing the use of that name from the St. George Boulevard intersection to the Black Ridge Drive intersection.
2. **Effective Date:** This ordinance shall take effect upon the recording of all necessary documents and the posting of this ordinance in the manner prescribed by law.

APPROVED AND ADOPTED by the St. George City Council on this ____ day of _____, 2025.

CITY OF ST. GEORGE:

_____
Michele Randall, Mayor

APPROVED AS TO FORM:
City Attorney's Office

_____
Jami Brackin, Deputy City Attorney

ATTEST:

_____
Christina Fernandez, City Recorder

VOTING OF CITY COUNCIL:
Councilmember Hughes _____
Councilmember Larkin _____
Councilmember Larsen _____
Councilmember Tanner _____
Councilmember Kemp _____

EXHIBIT A
(Tech Ridge Drive / 250 West Street)

Commencing at the East Quarter Corner of Section 36, Township 42 South, Range 16 West, Salt Lake Base & Meridian and running thence 774.54 feet S 00°36'38" W and 90.41 feet N 89°23'22" W to the POINT OF BEGINNING;
thence S 56°20'09" W 98.26 feet to the point of curve of a non tangent curve to the left, of which the radius point lies N 36°10'00" W, a radial distance of 20.00 feet;
thence Northerly along the arc, through a central angle of 87°47'06", a distance of 30.64 feet;
thence N 33°57'07" W 340.27 feet to a point of curve to the left having a radius of 770.00 feet and a central angle of 08°57'33";
thence Northwesterly along the arc a distance of 120.40 feet;
thence N 42°54'40" W 30.00 feet to a point of curve to the right having a radius of 800.50 feet and a central angle of 02°51'45";
thence Northwesterly along the arc a distance of 39.99 feet;
thence N 40°02'56" W 60.12 feet to a point of curve to the left having a radius of 800.50 feet and a central angle of 02°51'45";
thence Northwesterly along the arc a distance of 39.99 feet;
thence N 42°54'40" W 145.72 feet to a point of curve to the right having a radius of 325.00 feet and a central angle of 43°25'24";
thence Northerly along the arc a distance of 246.31 feet;
thence along a line non-tangent to said curve, S 89°29'16" E 50.00 feet to the point of curve of a non tangent curve to the left, of which the radius point lies S 89°29'16" E a radial distance of 275.00 feet;
thence Southerly along the arc, through a central angle of 43°25'24", a distance of 208.42 feet;
thence S 42°54'40" E 145.72 feet to a point of curve to the left having a radius of 800.50 feet and a central angle of 02°51'45";
thence Southeasterly along the arc a distance of 39.99 feet;
thence S 45°46'25" E 60.12 feet to a point of curve to the right having a radius of 800.50 feet and a central angle of 02°51'45";
thence Southeasterly along the arc a distance of 39.99 feet;
thence S 42°54'40" E 30.00 feet to a point of curve to the right having a radius of 830.00 feet and a central angle of 08°57'33";
thence Southeasterly along the arc a distance of 129.79 feet;
thence S 33°57'07" E 340.77 feet to a point of curve to the left having a radius of 20.00 feet and a central angle of 87°13'38";
thence Easterly along the arc a distance of 30.45 feet to the POINT OF BEGINNING.

Containing 57,461.15 square feet or 1.3191 acres, more or less.

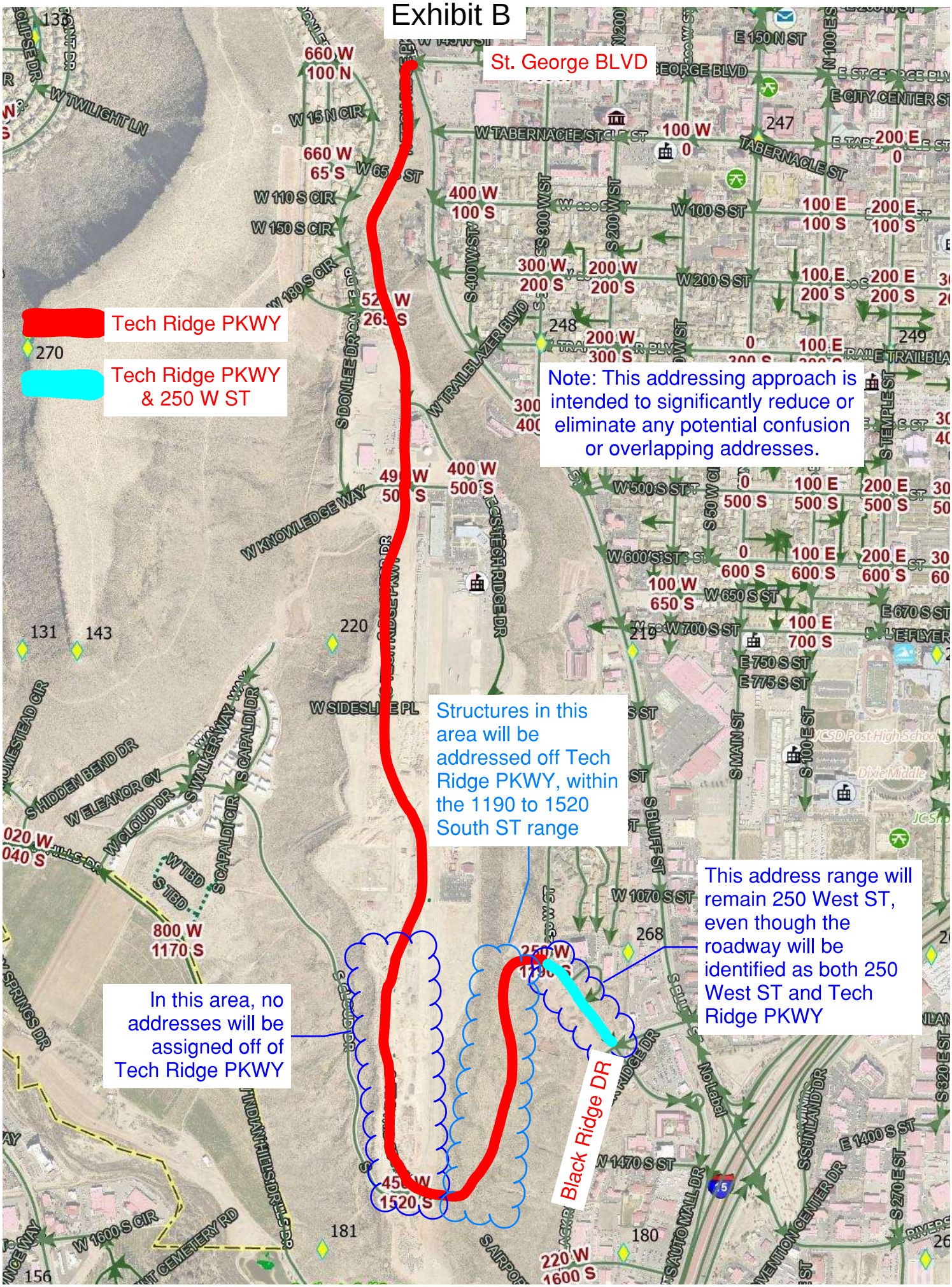
Exhibit B
St. George BLVD
Tech Ridge PKWY
Tech Ridge PKWY & 250 W ST
Note: This addressing approach is intended to significantly reduce or eliminate any potential confusion or overlapping addresses.
Structures in this area will be addressed off Tech Ridge PKWY, within the 1190 to 1520 South ST range
This address range will remain 250 West ST, even though the roadway will be identified as both 250 West ST and Tech Ridge PKWY
In this area, no addresses will be assigned off of Tech Ridge PKWY
Black Ridge DR
660 W 100 N
660 W 65 S
400 W 100 S
300 W 200 S
200 W 200 S
400 W 500 S
800 W 1170 S
250 W
1520 S
100 W 0
100 E 100 S
200 E 100 S
200 E 0
100 E 200 S
200 E 200 S
100 E 500 S
200 E 500 S
100 E 600 S
200 E 600 S
100 W 650 S
100 E 700 S
W TWILIGHT LN
W 15 N CIR
W 110 S CIR
W 150 S CIR
W 180 S CIR
S DONLEE DR
W KNOWLEDGE WAY
W TRAILBLAZER BLVD
S TECH RIDGE DR
W SIDESLIDE PL
S HIDDEN BEND DR
W ELEANOR CV
W CLOUD DR
S CAPALDI CIR
S WALKER WAY
W TBD
S TBD
S SPRINGS DR
INDIAN HILLS DR
W 1600 S CIR
CEMETERY RD
W TABERNACLE ST
E 150 N ST
E CITY CENTER ST
TABERNACLE ST
W 100 S ST
W 200 S ST
W 500 S ST
W 600 S ST
W 650 S ST
W 700 S ST
E 750 S ST
E 775 S ST
W 1070 S ST
W 1470 S ST
S MAIN ST
S BLUFF ST
S 100 E ST
S 320 E ST
S 270 E ST
E 1400 S ST
S AUTO MALL DR
S SUNLAND DR
CONVENTION CENTER DR
S AIRPORT
TEMPLE ST
E TRAILBLA
E FLYER
JCSD Post High School
Dixie Middle
No Label
131
143
220
219
268
181
180
156
247
248
249
270

Agenda Date: 12/18/2025 **Agenda Item Number:** 06

Subject:

Consider approval of a Property Exchange of Real Property to Quality Development LLC for City property along Banded Ridge.

Item at-a-glance:

Staff Contact: Wes Jenkins

Applicant Name: Quality Development LLC

Reference Number: N/A

Address/Location:

Banded Ridge

Item History (background/project status/public process):

This property was previously donated to the City by the developer, Quality Development LLC. The developer has requested a portion of the property be relinquished back to them in order to clean up property boundaries between the hillside and the residential lots.

Staff Narrative (need/purpose):

The purpose is to relinquish city property to allow Quality Development LLC to obtain city property along Banded Ridge as shown on Exhibit A.

Name of Legal Dept approver: Jami Brackin

Budget Impact: No Impact

Recommendation (Include any conditions):

Staff Recommends Approval

Attachments

St.George
THE BRIGHTER SIDE

APPLICATION FOR PURCHASE AND SALE OF CITY PROPERTY
AS APPROVED BY THE CITY OF ST. GEORGE CITY COUNCIL
CITY OF ST. GEORGE, UT

I. APPLICANT INFORMATION

APPLICANT: St. George City

MAILING ADDRESS: 61 South Main

St. George, Utah 84770

WORK PHONE: 435-627-4065 E-MAIL ADDRESS: wes.jenkins@sgcityutah.gov

II. PROPERTY INFORMATION

LOCATION OF SUBJECT PROPERTY: Banded Ridge Hillside

TAX ID (PARCEL) NUMBER: A portion of SG-5-3-15-322 AREA/ACRES .234

TAX ID (PARCEL) NUMBER: _____ AREA/ACRES _____

EXISTING GENERAL PLAN: _____ EXISTING ZONING: _____

WHAT IS THE INTENT OF THIS APPLICATION? Sale City Property

III. INITIAL SUBMISSION REQUIREMENTS

☒ MAP DEPICTING PROPOSED PROPERTY

IV. APPLICANT AGREEMENT

I (we) have read and understood the requirements of this application and all information is true and accurate to the best of my (our) abilities.

Wes Jenkins	Wes Jenkins	12/9/2025
Printed Name	Signature	Date
Wes Jenkins	Wes Jenkins	12/9/2025
Printed Name	Signature	Date

OFFICE USE ONLY

- Attended Planning Staff Review meeting on N/A (date)
  - Any change to general plan, zoning, or plat required? □ Yes □ No
- Attended the Joint Utility Committee Meeting on N/A (date)
  - Any easements that need to be vacated? □ Yes □ No
  - Approvals and or conditions attached hereto □ Yes □ No

****

☐ Application fee of $200.00 received N/A

- City Code §1-13-4.A and §1-13-4.B City Council work meeting on N/A (date)
  - Property in Public Use? □ Yes □ No

****

■ Professional Land Surveyor prepared documents (e.g. legal descriptions and maps, amended plat)

****

■ City Code §1-13-4.C and §1-13-4.D Public Notice

- §1-13-4.E City Council public hearing on N/A (date)
- Property okay for Disposal? ■ Yes □ No

****

☐ Appraisal Report

Report States $ N/A per _____

Appraisal conducted by: N/A with _____

☐ Title Report – from a title company showing all owner(s) of land described by a professional land surveyor and any encumbrances thereon (e.g. mortgagee(s), unpaid taxes, easements, leans, etc.). This will be your current property along with the requested property you wish to purchase.

☐ Purchase and Sale Agreement

****

- City Council Purchase and Sale Agreement on 12/18/2025 (date)

When Recorded mail deed and tax notice To:
St. George City Attorney's Office
61 South Main Street
St. George, Utah 84770

Quality Development LLC
1472 East 3950 South
St. George, Utah 84790

Tax ID: a portion of SG-5-3-15-322

WARRANTY DEED

The City of St. George, a Utah municipal corporation, Grantor, hereby conveys and warrants to the Quality Development, LLC, a Utah limited liability company, Grantee, for the sum of TEN DOLLARS, the following described tract of land in Washington County, Utah:

See Exhibit A for legal description;

TOGETHER WITH all improvements and appurtenances thereunto belonging, LESS AND EXCEPTING public utility easements and any other easement that belongs to the City of St. George, including rights of way, restrictions, and reservations of record for the City of St. George and those enforceable in law or equity.

TO HAVE AND TO HOLD such property to Grantee, Quality Development, LLC, a Utah limited liability company.

IN WITNESS WHEREOF, the Grantor has executed this Warranty Deed this _____ day of _____, 20___.

GRANTOR
CITY OF ST. GEORGE

Attest:

_____
Michele Randall, Mayor

_____
Christina Fernandez, City Recorder

Approved as to form:

_____
Jami Brackin, Deputy City Attorney

STATE OF UTAH)
ss.
WASHINGTON COUNTY)

On the _____ day of _____, 2025, appeared before me, _____, a notary public, personally appeared Michele Randall, Mayor of the City of St. George, and Christina Fernandez, City Recorder of the City of St. George, proved on the basis of satisfactory evidence to be the person whose name is subscribed to in this document, and acknowledged each executed the same voluntarily for its state purpose.

_____
Notary Public

Exhibit A

City of St. George to Quality Development, L.L.C.
Legal Description of Property

BEGINNING AT THE SOUTHWESTERLY CORNER OF LOT 16, BANDED RIDGE SUBDIVISION, AS RECORDED AND ON FILE WITH THE WASHINGTON COUNTY RECORDER'S OFFICE, SAID POINT BEING SOUTH 88°45'10" EAST ALONG THE SECTION LINE, A DISTANCE OF 1279.113 FEET, AND SOUTH 01°14'50" WEST 1325.778 FEET FROM THE WEST QUARTER CORNER OF SECTION 15, TOWNSHIP 43 SOUTH, RANGE 15 WEST, SALT LAKE BASE AND MERIDIAN AND RUNNING THENCE ALONG THE BOUNDARY OF SAID SUBDIVISION THE FOLLOWING (7) SEVEN COURSES: (1) NORTH 69°48'46" EAST 86.841 FEET; (2) NORTH 70°51'56" EAST 101.677 FEET; (3) NORTH 85°14'24" EAST 42.618 FEET; (4) SOUTH 76°01'50" EAST 54.167 FEET; (5) SOUTH 62°05'08" EAST 8.928 FEET; (6) NORTH 85°52'22" EAST 100.236 FEET; AND (7) NORTH 81°47'14" EAST 99.910 FEET; THENCE SOUTH 08°12'46" EAST 17.857 FEET; THENCE SOUTH 81°24'04" WEST 99.912 FEET; THENCE SOUTH 81°47'14" WEST 99.981 FEET; THENCE NORTH 84°58'03" WEST 102.640 FEET; THENCE SOUTH 81°24'33" WEST 99.829 FEET; THENCE SOUTH 74°26'09" WEST 85.029 FEET; THENCE NORTH 15°52'06" WEST 4.736 FEET TO THE POINT OF BEGINNING.

CONTAINS 10,176 SQ. FT. (0.234 ACRES)

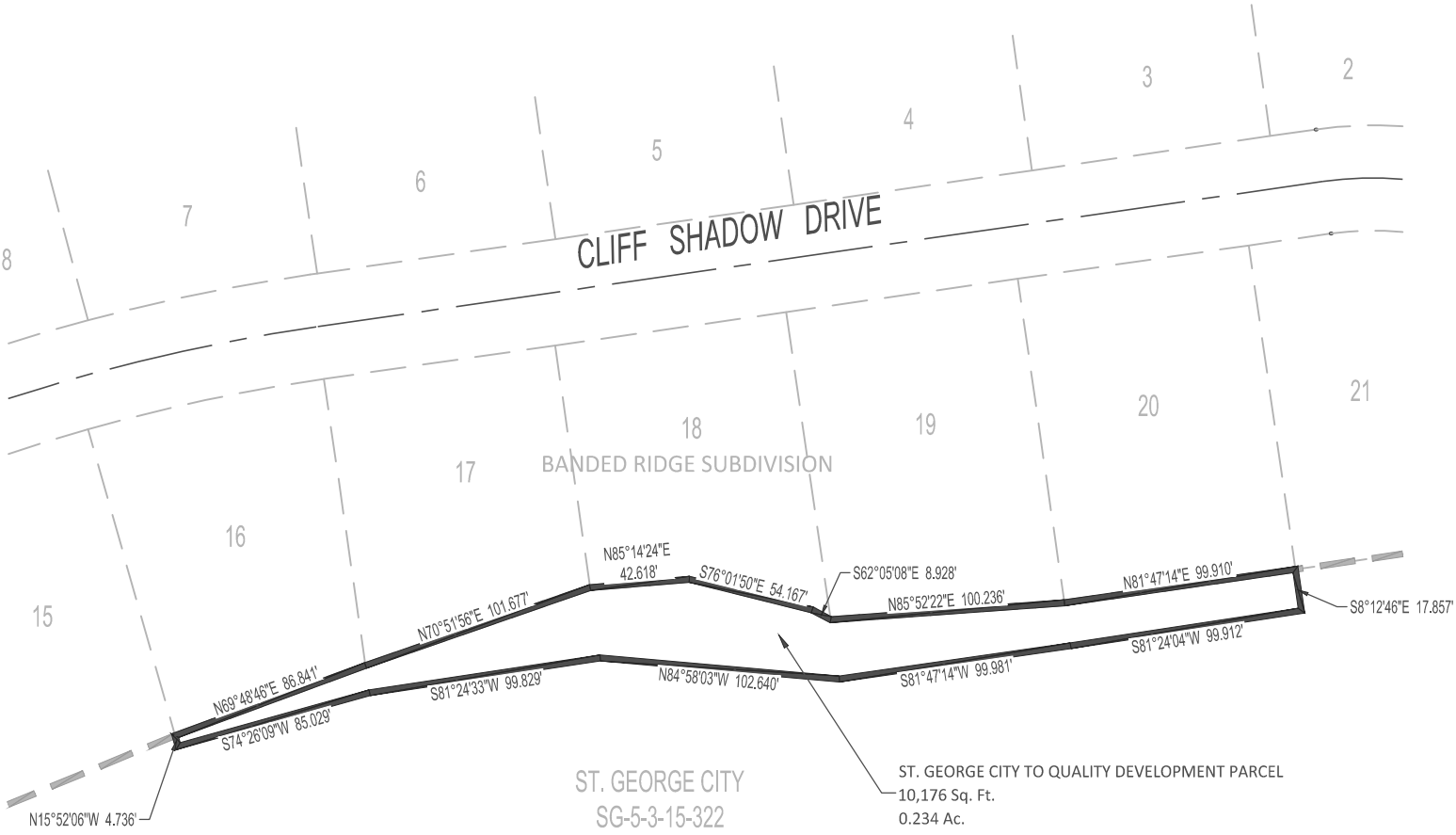
CLIFF SHADOW DRIVE
BANDED RIDGE SUBDIVISION
ST. GEORGE CITY
SG-5-3-15-322
N15°52'06"W 4.736'
N69°48'46"E 86.841'
S74°26'09"W 85.029'
N70°51'56"E 101.677'
S81°24'33"W 99.829'
N85°14'24"E 42.618'
S76°01'50"E 54.167'
N84°58'03"W 102.640'
S62°05'08"E 8.928'
N85°52'22"E 100.236'
S81°47'14"W 99.981'
N81°47'14"E 99.910'
S81°24'04"W 99.912'
S8°12'46"E 17.857'
ST. GEORGE CITY TO QUALITY DEVELOPMENT PARCEL
10,176 Sq. Ft.
0.234 Ac.

EXHIBIT B

Agenda Date: 12/18/2025 **Agenda Item Number:** 07

Subject:

Consider approval of revisions to the City's Hangar lease policy.

Item at-a-glance:

Staff Contact: Dustin Warren

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

N/A

Item History (background/project status/public process):

In May 2025 the Council approved the current "Non-Commercial Hangar Pad Licensing Policy." Upon further review, it is appropriate to make several revisions since publishing on the City website. The proposed revisions are for Council discussion and review. The main revision is changing "license" to "lease." The current policy refers to a "license" whereas pursuant to the Federal Aviation Administration (FAA) the proper term is a "lease." There are other revisions based on FAA guidance and staff's recommendations to simplify the policy while reserving certain terms for the hangar lease agreement.

Staff Narrative (need/purpose):

In May 2025 the Council approved the current "Non-Commercial Hangar Pad Licensing Policy." Upon further review, it is appropriate to make several revisions since publishing on the City website. The proposed revisions are for Council discussion and review. The main revision is changing "license" to "lease." The current policy refers to a "license" whereas pursuant to the Federal Aviation Administration (FAA) the proper term is a "lease." There are other revisions based on FAA guidance and staff's recommendations to simplify the policy while reserving certain terms for the hangar lease agreement.

Name of Legal Dept approver: Alicia Carlton

Budget Impact: No Impact

Recommendation (Include any conditions):

Staff recommends approval.

Attachments

St. George Regional Airport
Non-Commercial Hangar Lease~~Pad Licensing~~ Policy
Effective Date: December 18, ~~May 22~~, 2025

1. **Purpose and Applicability**. This Non-Commercial Hangar ~~Pad~~ Leasing~~Licensing~~ Policy (this "Policy") establishes certain policies and procedures through which the City of St. George (the "City") shall make available property and facilities at the St. George Regional Airport (the "Airport") for the construction and/or maintenance of aircraft storage hangars for Non-Commercial, General Aviation use ("Hangars"). This Policy shall apply to any new Hangar lease ~~pad license~~ and to the renewal or material amendment of any existing Hangar lease. This Policy does *not* apply to the use of property or facilities by an Entity seeking to conduct Commercial Aeronautical Activity. Entities seeking to conduct Commercial Aeronautical Activity must submit an application in accordance with Section II of the Airport Minimum Standards.

2. **Definitions**. Capitalized terms used in this Policy and not defined herein shall have the meanings assigned to them in the Airport Minimum Standards and/or Rules and Regulations. All other words or phrases shall be construed in a manner consistent with common meaning or as generally understood throughout the aviation industry.

3. **General Leasing~~License~~ Policies**. Each lease~~license~~ of City-owned property for the construction or maintenance of Hangars shall be subject to the following non-exhaustive list of terms and conditions, as further detailed in the written lease ~~license~~ agreement, hereafter, ("Agreement"):

   3.1 **Leased~~icensed~~ Premises**. All land at the Airport is owned by the City. The City maintains an Airport Layout Plan ("ALP") which specifically designates those areas on which Hangars may be constructed and maintained, as revised from time to time by the City in its discretion, and as may be subject to the FAA's approval. No Hangar may be constructed in any area not specifically designated for that purpose on the ALP. The Leased~~Licensed~~ Premises shall be clearly defined, including the total square footage of each Hangar pad and any existing improvements.

   3.2 **Not a Ground Lease**. The lease~~license~~ of City-owned property at the Airport is not a ground lease of land to which any lessee~~licensee~~ has a secured real property interest. ~~Rather, all licenses of City-owned property at the Airport shall be construed as a license to use, with the City retaining all property interests and rights. No licensee shall have the right to record or cause any document to be recorded against the land on which license to use is located without the express written consent of the City. Negotiable instruments such as promissory notes, related to the personal property of any licensee may be recorded as a security filing, commonly known as a Uniform Commercial Code, ("UCC") filing consistent with the Utah Division of Corporations & Commercial Code. Additional terms or conditions related to this subject will be detailed in the final Agreement between the City and each licensee.~~

   3.3 **Term and Renewal**. The City will lease~~license~~ existing City-owned Hangars (if

any) for a one-year Term. This Term may ~~shall~~ be renewable. ~~by written agreement between the City and the licensee of the Hangar.~~ If a private Hangar is to be constructed on City-owned property, the Term of the lease~~license~~ shall be thirty (30) years ("Initial Term"). The lessee~~licensee~~ shall have the right to extend the Initial Term for no more than two successive ten (10) year terms (together, the "Term"), provided (i) the City finds the Leased~~Licensed~~ Premises suitable for continued use as a Hangar, (ii) the lessee~~licensee~~ has remained in good standing with all monetary and non-monetary obligations throughout the Term, and (iii) the Hangar is in good repair and suitable for continued occupancy throughout the extended Term, each as determined by the City and further detailed in the Agreement. At the expiration of the Term, the lessee~~licensee~~ shall have a right-of-first refusal to lease~~license~~ the City-owned property on the Leased Premises, ~~which the Hangar is located,~~ on the terms and conditions then offered by the City, subject to 3.7 hereof. ~~Notwithstanding the foregoing, the City may, in its discretion offer the licensee a new license agreement under the City's then prevailing form at the end of the Initial Term or at the end of each successive 10 year option to renew the Agreement, as the case may be.~~

3.4 **Rent~~Rate~~ Adjustments**. The initial rental ~~Hangar license~~ rates shall be established as of the date of the Agreement and shall be increased effective January 1 of each calendar year ending in one~~zero~~ (1~~0~~) and six~~five~~ (6~~5~~). For example, if party A leases~~licenses~~ City-owned Property in 2021 and party B leases~~licenses~~ City-Owned Property in 2024 both parties will receive a rate increase effective January 1 of 2026~~5~~ and 2031~~0~~, regardless of the date each party entered into their respective Agreements Notice of the rate increase shall be provided on the City's published Master Fee~~rate~~ schedule.

3.5 **Termination**. The City may terminate an Agreement in the event of a default by lessee~~licensee~~, after notice has been given and an opportunity to cure has been provided. The City may also terminate an Agreement as to all or a portion of the Leased~~Licensed~~ Premises upon terms and conditions set forth in the lease Agreement. ~~not less than one-hundred eighty (180) days' notice to the licensee if deemed necessary for any non-urgent critical or safety-related Airport purpose; provided that there is a corresponding reduction in rent or, if the licensee has constructed improvements on the Licensed Premises, the City compensates the lessee for the fair market value thereof as determined by independent appraisal. In the event of an immediate critical or safety-related Airport purpose, the notice time shall not apply, and the Agreement may be terminated upon written notice to licensee, which notice shall detail whether the City intends to purchase any existing Hangar or fixtures, or whether it will require removal of the personal property.~~

3.6 **Aeronautical Use Required.** The demand for Hangars at the Airport regularly exceeds available supply. Accordingly, the City will strictly require that all Hangars be used for aeronautical purposes, as set forth below:

3.6.1 Lessee~~Licensee~~ or a corporate entity under common control with lessee~~licensee~~ must own or lease one or more aircraft (the "Based Aircraft") which is properly registered and insured and in an airworthy condition. Licensees may own a fractional interest in Based Aircraft, provided that such

interest is not less than twenty percent (20%). The City will temporarily waive this requirement if lessee~~licensee~~ intends to utilize the Hangar for the construction of an amateur-built or kit-built aircraft, provided that lessee~~licensee~~ shall be required to complete such construction and deliver a copy of the airworthiness certificate to the City within a reasonable time frame that shall be detailed in the Agreement. ~~three (3) years, or such longer period as the City and the licensee may agree based on documented progress toward completion and anticipated completion of the built aircraft. This extended period shall be detailed in the Agreement.~~

3.6.2 Based Aircraft shall be stored in the Hangar at least fourteen (14) days out of any twelve (12) month period, and the Hangar shall not remain vacant for a period exceeding six (6) months without written notification to the City with detailed explanation as to the reason. ~~Based Aircraft must be flown at least once every twelve (12) months.~~ The City may, in its discretion, permit longer compliance periods than those identified in this subsection based on reasonable delays in performing required maintenance on Based Aircraft.

3.6.3 Lessee~~Licensee~~ shall comply at all times with the FAA's policy on the Non-Aeronautical Use of Airport Hangars and the Airport Rules and Regulations.

3.7 **Hangar Construction.** If a Hangar is to be constructed on the City-owned property, licensee shall complete construction of the Hangar within two (2) years of the effective date of the ~~license a~~Agreement. Licensee may be permitted to assign or otherwise encumber the Hangar for the purpose of obtaining financing on a limited basis, with the City's prior written consent, which shall not be unreasonably denied. Persons requiring financing for the construction of a Hangar are strongly advised to consult with the Airport Director regarding the City's financing policies prior to submitting an application in accordance with Section 5 below.

3.8 **Disposition of Tenant Improvements.** Upon the expiration (without renewal) or earlier termination of an Agreement under which the licensee has constructed a Hangar, the lessee~~licensee~~ may remove the Hangar from the City-owned property, less any mitigation conducted in connection with the Hangar's construction. If the lessee~~licensee~~ elects not to remove the Hangar, the City shall, in its sole discretion, determine whether to take title to the Hangar or require the lessee~~licensee~~, at lessee~~licensee~~'s expense and in a manner acceptable to the City, to remove the Hangar and restore the City-owned property to its original condition (except for any mitigation conducted in connection with the Hangar's construction that the City requests remain on the City-owned property).

3.9 **Subleasing and Assignments.**

3.9.1 Subletting or assignment of City-owned Hangar leases ~~(licenses)~~ is prohibited.

3.9.2 Lessee~~Licensee~~ may sublease~~license~~ all or a portion of a Hangar constructed by lessee~~licensee~~ on City-owned property only after obtaining the City's prior written consent. Lessee~~. Licensee~~ shall be required to pay to the City a

hangar subleasesublicense fee as per the City's published Master Fee Schedule.which represents fifty dollars ($50.00) per month per sublicense (sublease). Licensee shall be required to pay the City a shade hangar sublicense fee which represents twenty-five dollars ($25.00) per month per sublicense (sublease).

3.9.3 LesseeLicensee may only assign its interest in an License Agreement in connection with the permanent sale of the Hangar constructed by lesseelicensee on City-owned property, after obtaining the City's prior written consent. Lessee. Licensee shall be required to pay a transfer fee equal to one percent (1%) of the assessed value of the Hangar (personal property) at the time of sale, as determined by the Washington County Assessor's most recent assessment of the Hanger. It is the intent of the City that all fees associated with any Agreementthis Section shall be used by the City for asphalt improvements, taxi-way improvements and Airport construction. An assignment shall abide by the terms and conditions (including the length of the term) of the lease agreement being assigned. The City shall have the discretion, but not the obligation, to enter into a new Agreement with the purchaser on then prevailing terms.

3.10 **Required FAA Provisions.** The Hangar Agreement shall include all provisions required by the FAA which shall, at a minimum, include subordination of the Hangar licensee to the terms of the City's grant agreements with the United States and State of Utah, and applicable non-discrimination clauses.

4. **Commercial Use.** Persons or entities wishing to use a Hangar for Commercial Aeronautical Activities shall be required to apply for and obtain a permit in conformity with the Airport Minimum Standards for Commercial Aeronautical Activities. The use of Based Aircraft in connection with non-aeronautical commercial activities (i.e., corporate aircraft) is not considered a prohibited commercial use of a Hangar.

5. **Hangar Wait List.** Demand for Hangars at the Airport is greater than the availability. As a result, the City maintains an active waiting list for prospective Hangar lesseeslicensees (the "Wait List") in accordance with the following policies and procedures.

5.1 Application Required. All Hangar applicants must complete and submit a completed hangar application form found at the airport page. The City will contact persons on the Wait List prior to the Effective Date of this Policy and require them to reapply (without losing their position on the Wait List). The application must be accompanied by all supporting information and documentation requested below, including the application fee, (1) by e-mail to sguadminpro@sgcityutah.govorg; (2) in person at 4508 S. Airport Parkway, St. George, Utah 84790; or (3) by US mail to the address on the application form.

5.1.1 Applicants must be 18 years of age or older.

5.1.2 Applicants must provide a current physical address, mailing address (if different), telephone number, and email address where the applicant may be contacted during business hours. It is the responsibility of the applicant to

keep this information current with the City. Failure to keep this information current may result in removal from the Wait List.

5.1.3 Applicants must identify the make, model and registration number of the Based Aircraft. The applicant may be required to make such Based Aircraft available for inspection by airport operations personnel prior to the execution of any Hangar lease~~license~~. Applications may be received without identification of the Based Aircraft if accompanied by evidence that the applicant is in the process of purchasing, leasing, repairing, or constructing a Based Aircraft.

5.1.4 Applicants shall identify whether they seek to lease~~license~~ an existing City-owned Hangar, are willing to construct a Hangar, or would accept either of the first available opportunities.

5.1.5 Each applicant will receive an application identification number upon the City's acceptance of a complete application. The City will maintain the Wait List on the airport website listing the position of each identification number as assigned.

5.2 **Wait List Fees.** There is a one-time fee of five hundred dollars ($500) which is non-refundable and represents the administrative costs of processing each application and maintaining the Wait List.

5.2.1 Deposit: In addition to the application fee a refundable deposit of one thousand dollars ($1,000) shall be required before any application shall be deemed completed. The deposit shall be held by the City Treasurer during the Wait List period until such time as the applicant executes an Agreement with the City at which time the deposit may be applied to the license or may be refunded, at the licensee's option. In the event an applicant wishes to remove their name from the Wait List, the deposit shall be refunded to the applicant in a manner consistent with the City's administrative practices.

5.3 **Wait List Placement**. Applicants will generally be added to the Wait List in the order a complete application is received; however, applicants which do not currently lease ~~or license~~ one or more parcels of City-owned property at the Airport shall receive priority over any applicant which already leases ~~or licenses~~ one or more parcels of City-owned property for the use of Hangars at the time of their application. A person or entity under common control may have only one position on the Wait List at a time.

5.4 **Notification**. Applicants will be notified via email and telephone of the availability of a Hangar or suitable site for Hangar development in the order they appear on the Wait List. If the City is unable to reach the applicant within fourteen (14) calendar days, the applicant shall forfeit the opportunity and the City shall contact the next applicant on the Wait List. If such forfeiture occurs on two consecutive occasions, the applicant will be automatically removed from the Wait List.

5.5 **Acceptance and Rejection.**

5.5.1 Acceptance. An applicant electing to accept the opportunity to lease~~license~~ must make the Based Aircraft available for the City's inspection and execute a Hangar lease no later than thirty (30) calendar days after the City's notification.

5.5.2 Unsuitability for Based Aircraft. An applicant may reject an opportunity to lease if the Based Aircraft's dimensional requirements are larger than the available Hangar opportunity (i.e., Hangar size or taxiway limitations for the available Hangar lot). An applicant who rejects an opportunity under this paragraph will not lose their place on the Wait List. The City reserves the right to verify ~~applicant's~~applicants' ownership or control of the Based Aircraft.

5.5.3 Other Rejections. If an applicant does not accept the opportunity to lease~~license~~ as provided in Section 5.5.1, and Section 5.5.2 does not apply, then, at the applicant's election, the applicant will either be moved to the end of the Wait List or removed from the Wait List. After two such rejections, the applicant will be automatically removed from the Wait List.

5.6 **Non-Transferability**. Positions on the Wait List are not fungible and may not be sold, gifted, assigned, or otherwise transferred.

5.7 **Violations**. Applicants on the Wait List who have an existing ~~Hangar~~ Agreement~~lease or license~~ at the Airport will be removed from the Wait List in the event of a default by the applicant under the existing Agreement ~~Hangar lease or license~~ which continues beyond notice and an opportunity to cure pursuant to the existing Agreement. ~~lease or license.~~ The City may refuse to add a current ~~Hangar~~ lessee to the Wait List unless and until any existing event of default is cured.

Agenda Date: 12/18/2025 **Agenda Item Number:** 08

Subject:

Consider approval of Ordinance No. 2025- 110 amending Section 4- Construction Standards in the St. George City Standard and Specifications to address an overall update to Section 4. (Case No. 2025-ZRA-014)

Item at-a-glance:

Staff Contact: Wes Jenkins

Applicant Name: City of St. George

Reference Number: 2025-ZRA-014

Address/Location:

61 South Main Street

Item History (background/project status/public process):

The last revision to Section 4 Construction Standards was June 2000. The Construction Standards are intended to guide the design and installation of general construction within the city have been identified by staff as inadequately addressing the current city standards, resulting in interpretive challenges and inconsistencies in regulatory application. This creates difficulties in the design and construction process. City staff met with Geotechnical Engineers to update Section 4 of the City Standards. The changes are in line with industry standards and current regulations. This item was heard at the November 18, 2025, Planning Commission and the Planning Commission recommended approval with a vote of 7-0.

Staff Narrative (need/purpose):

This request is to amend the St. George Standard Specifications Section 4 Construction Standards to modify the design and construction of projects and provide clarification and consistency. Over the past year, city engineering staff, in coordination with other city departments and Geotechnical Engineers have been working to update Section 4 of the Standard and Specifications.

Name of Legal Dept approver: Jami Brackin

Budget Impact: No Impact

Recommendation (Include any conditions):

With a 7-0 vote, the Planning Commission recommended approved of the amendment to Section 4 of St. George Standard and Specifications.

Attachments

St.George
Community Development

ITEM 6

Zoning Regulation Amendment

PLANNING COMMISSION AGENDA REPORT: 11/18/2025

AMENDMENT TO STANDARD SPECIFICATIONS
Section 4 Construction Standards
(2025-ZRA-014)

Amendment to Section 4 Construction Standards

REQUEST:
Consider a request to amend Standard Specification Section 4 Construction Standards to address an overall update to Section 4 including, revisions to Table 4.3 (Minimum Roadway Structural Requirements) for Major Collector roadways and larger, Roadbase gradation allowances for acceptance limits and suspension limits, revisions to Table 4.6 (Master Grading Bands) to meet target tolerances for aggregate gradation, removal of the Chip Seal and Slurry Seal sections and an update to the Standard Drawing 170 - Trench Backfill and Repair Detail in section 4 of City Standards and Specifications. The applicant is Engineering Division representing the City of St. George (Case No. 2025-ZRA-014)

BACKGROUND:
The last revision to Section 4 Construction Standards was June 2000. The Construction Standards are intended to guide the design and installation of general construction within the city have been identified by staff as inadequately addressing the current city standards, resulting in interpretive challenges and inconsistencies in regulatory application. This creates difficulties in the design and construction process.

City staff met with Geotechnical Engineers to update Section 4 of the City Standards. The changes to the standards and specifications are in line with industry standards and current regulations.

This request is to amend the St. George Standard Specifications Section 4 – Construction Standards to modify the design and construction of projects and provide clarification and consistency. This update includes the following:

- A revision to Table 4.3 (Minimum Roadway Structural Requirements) specifying the minimum pavement thickness for Major Collector and larger roadways. The City will pay for any upsizing of asphalt pavement thickness above the minimum required per project specific geotechnical investigations.
- Clarify roadbase gradation acceptance and suspension limits to meet the minimum acceptable CBR. If the material is unacceptable,

it must be removed and replace at the contractor's expense. The geotechnical firm shall notify the City, the source will be removed from the City's Approved Supplier List, and the supplier may not furnish roadbase for city projects until quality control results are demonstrated and the city re-approves the source.

- Require aggregate gradations for Table 4.6 (Master Grading Bands) meet the specified target tolerance, with gradations analyzed by weight, percent-passing basis; the project's target grading curve must lie within the selected aggregate grade in Table 4.6, and the field gradations may not deviate from the target by more than the allowed tolerance.

Proposed Changes:
The proposed revisions are shown in Exhibit A.
The proposed additions are in red and underlined, and the deletions are in red with a ~~strikethrough~~.

RECOMMENDATION:
Staff recommends approval of the amendment to Standard Specifications Section 4 Construction Standards.

ALTERNATIVES:
1. Recommend approval as presented.
2. Recommend approval with changes.
3. Recommend denial.
4. Continue the proposed zoning regulation amendment to a specific date.

POSSIBLE MOTION:
The Planning Commission recommends approval of the amendment to City Standard Specifications, Section 4 – Construction Standards based on the proposed amendments.

FINDINGS:
1. It is in the best interest of the city to review and update city zoning regulations periodically as needed.
2. The proposed revisions will allow more flexibility to address the existing topography within the city and the ability to develop property.

EXHIBIT A
Standard
Specifications
Section 4

SECTION 4
CONSTRUCTION STANDARDS

4.1 INTRODUCTION. This section sets forth the requirements for earthwork, pipeline construction, roadway construction, ~~chip seals, slurry seals,~~ concrete work ~~and~~, restoration of surface improvements, utilities, and other similar projects.

4.2 SURVEY REQUIREMENTS. Prior to commencing the work, all construction shall have appropriate construction staking in conformance with the approved drawings unless otherwise approved by the City ~~Engineer.~~ The staking shall have all necessary information including, but not limited to, stationing, cut or fill data, off-set distance and invert elevations. The information shall be placed on the face of stakes in a legible manner using weatherproof marking materials and shall be in accordance with general surveying practice. All construction staking shall be under the direction of the Engineer responsible for the project.

When a water main design has a profile with grades, a grade line will be staked at the designated grades prior to installation of any pipe. A laser may be used in lieu of a grade line. All sewer lines and storm drains will require that a grade line be set and checked prior to installation of any pipe.

4.3 EARTHWORK. This subsection defines the requirements for excavation and backfill ~~for structures~~, preparation of embankments and fills, ~~and~~ subgrade preparation for pavement, and other underground and surface improvements.

4.3.1 MATERIALS. Earthwork materials shall conform to the following:

4.3.1.1 EXCAVATION. All structures shall be founded on prepared original soil or engineered fill. Unauthorized excavation below the specified structure subgrade shall be replaced with concrete, untreated base course, or approved engineering fill thoroughly compacted to a minimum of ninety-five percent (95%) of maximum dry density. Subgrade soil for all concrete structures, regardless of type or location, shall be firm and thoroughly compacted to a minimum of ninety-five percent (95%) of maximum dry density for granular soils or ninety percent (90%) of maximum dry density for silty/clay (fine-grained) soils.

4.3.1.2 SUBSOIL REINFORCEMENT. Coarse gravel, crushed stone, or a geotextile may be used for subsoil reinforcement when approved by the ~~City Engineer.~~city. Coarse gravel or crushed stone shall be applied in six (6) inch layers, each layer being embedded in the subsoil by thorough tamping. Approved geotextile shall be installed in accordance with manufacturers recommendations. All excess soil shall be removed.

~~The finished elevation of any subsoil shall not be above the specified sub- grade elevation.~~

4.3.1.3 BACKFILL. Backfill shall be placed to the lines and grades shown on the approved drawings, or as directed by the ~~City's Representative.~~city. Prior to backfilling any construction work, the excavation shall be cleaned of all forms, trash and debris, and such

material shall be removed from the site. Backfill material shall be approved and consist of excavated material or clean imported materials such as sand, gravel, or other suitable material.

Backfill shall be placed in ~~layers compatible with the equipment and~~loose lift not exceeding ~~six (6)~~eight inches ~~in compacted thickness.~~(8"). Each ~~layer~~lift shall be compacted to a minimum density of ninety-five percent (95%) of maximum dry density for granular soils or ninety percent (90%) of maximum dry density for silty/clay (fine-grained) soils.

4.3.2. CONSTRUCTION METHODS. The methods employed in performing the work shall be the responsibility of the Contractor. These methods shall include, but are not limited to, the following:

4.3.2.1 CONSTRUCTION OF EMBANKMENTS. Unsuitable materials that occur in the foundations for embankments shall be removed by clearing, stripping and/or grubbing. When required by the ~~City Engineer~~city, the embankment and the materials used shall be approved by a Geotechnical Engineer. All materials in embankments shall be placed, moistened, and compacted as outlined in the following paragraphs.

When the material needed for embankment exceeds the amount of material available from excavation, sufficient additional materials shall be provided by the ~~Contractor.~~Owner. All materials used for embankment construction shall be free from deleterious materials and rocks larger than three inches in diameter and all other material unsuitable for construction of embankments. Rocks larger than three inches (3") may be used when recommended by the Geotechnical Engineer and approved by the ~~City Engineer~~city.

~~Grading of completed embankments shall bring the surfaces to a smooth, uniform condition with final grades being within 0.1 foot of the design grade.~~ Cut and fill slopes shall be a 2 horizontal to 1 vertical ~~maximum~~ (2h:1v~~).~~) or flatter. Construction of slopes steeper than 2h:1v or fills in excess of ~~five~~eight feet~~,~~ (8'), or when placement is on a slope of greater than 5h:1v, shall be reviewed ~~and~~, recommended, and approved by the Engineer.

4.3.2.2 COMPACTION OF EARTH MATERIALS. The fill material shall be deposited in horizontal layers having a thickness of not more than eight ~~(8)~~ inches (8") and then compacted to the density as herein specified. Moisture content during compaction operations shall be within two percent (2%) of optimum for granular soils and shall be two to five percent above (2~~% %~~%-5~~)~~%) optimum for fine-grained soils unless otherwise directed by the Geotechnical Engineer. The moisture content shall be uniform throughout the layers.

If the moisture content is greater than specified for compaction, the compaction operations shall be delayed until such time as the material has dried to the specified moisture content. When the material has been conditioned as herein specified, the backfill or embankment shall be compacted as directed below.

Under roadways, curb and gutter, sidewalks and driveways, and extending one foot (1')

beyond the proposed construction (or to a distance equal to the depth of the embankment material, whichever is greater), the embankment material shall be compacted to a density equal to not less than ninety ~~-~~five percent (95%) for granular soils and ninety (90%) percent for fine-grained soils. Other fills and embankments not noted above shall be compacted to ninety ~~(90)~~ percent (90%) maximum dry density. When compaction cannot be met with native or imported materials, a sand/cement slurry (flowable fill) mix (no gravel) may be used in lieu of compacted materials for backfill which is above the six to eight (6-8) inch zone above the pipe, as approved by the city.

Exposed natural soils within construction areas, beneath walkways, slabs and pavement shall be scarified to a depth of ~~twelve (12)~~six inches (6") or greater as approved by the Geotechnical Engineer, moisture conditioned~~,~~ and compacted to the specified density. Where rock or other acceptable material is exposed, scarification may not be necessary.

Foundations for structures shall be uniform throughout and shall not be placed partially on undisturbed soil or compacted fill and partially on cemented deposits or rock.

Foundation soils should not be allowed to become saturated during construction.

4.3.2.3 SUBGRADE PREPARATION. As a minimum, the original soils under roadways, curb and gutter, sidewalks, and driveways shall be scarified to a depth of ~~one foot~~six inches (6") or greater as approved by the Geotechnical Engineer prior to compaction operations. All~~-~~ scarified soils shall be compacted to the equivalent of ninety ~~-~~five percent (95%) of maximum dry density for granular soils or ninety percent (90%) of maximum dry density for fine grain soils. Additional overexcavation and recompaction of original soils due to poor subgrade conditions may be required. Subgrades shall be shaped and graded to the design grade. Drainage shall be maintained at all times. Subgrades shall be stabilized and compacted as directed. When springs or underground water is encountered during construction the Engineer and the ~~City's Representative~~city shall be notified immediately. Work shall not proceed until an acceptable mitigation plan is approved. Ground water discovered during construction shall not be ignored~~!~~.

The subgrade preparation requirements listed above are considered to be the minimum. When required, the subgrade shall be overexcavated and the material removed from the site. Select borrow material may be imported, placed and compacted as directed by the ~~City's Representative~~city.

To demonstrate the stability and compaction of the subgrade, the Contractor ~~may be required to~~shall proof-roll the subgrade prior to placing any base gravel. The subgrade shall be proof-rolled with at least one pass coverage with ~~a roller with pneumatic tires or other acceptable~~moderate weighted rubber tire construction equipment ~~of at least ten ton capacity.~~. All proof-rolling shall be accomplished in the presence of the ~~City's Representative. Ground contact pressure for all tires shall be eighty five to ninety (85-90) psi unless otherwise recommended.~~city. When the proof-rolling shows an area to be unstable, ~~it~~the contractor shall contact the geotechnical engineer for stability recommendations. It shall be brought to

satisfactory stability by additional compaction, reworking, or removal of unsuitable material and replacement with acceptable material.

4.3.2.4 CONSTRUCTION OF NON-STRUCTURAL FILLS. Fills shall be placed to the lines and grades shown on the approved drawings and shall include all areas not specifically designated for support of structures, roads, utilities, easements, drainage ways, etc. (such as landscape areas, open space areas, etc.). Fill material shall generally be compacted to a minimum of ninety percent (90%) of maximum density and shall consist of material that can be compacted to prevent settlement such as soil, rocks, blocks, crushed stone, broken concrete, etc. Fill material shall not include broken asphalt, concrete chunks, crushed stone (unless geotechnical engineer determines a maximum size for these materials.), toxic or hazardous materials waste sludge, deleterious materials such as muck, ash, sod, grass, trash, tree stumps, lumber, dead animals, etc.

4.3.3 QUALITY CONTROL. All earthwork shall be performed in accordance with these standards and shall be tested and accepted as follows:

4.3.3.1 TESTING. Minimum testing of earthwork shall be as follows:

~~A.~~ A. Soil Classification - One per material source. Soil classifications shall be in accordance with AASHTO M-145. For determination of granular soils or fine grained soils use ASTM D-2487 (Unified Soil Classification System). The sieve analysis shall be according to ASTM C-136 and C-117.

~~B.~~ B. Soil Proctor - One determination for each significant change in soil type as necessary to provide required compaction testing. Tests shall be performed using method ASTM D-1557 ~~method A or D~~ (modified proctor). Earth fill moisture/density determination - One test per five hundred (500) cubic yards of fill density placed in an embankment. Tests shall be determination - ASTM D-1556 or D-2922 and D-3017.

~~C.~~ C. Subgrade moisture/density determination - One test per seven hundred fifty (750) square density yards of surface area. Tests shall be ASTM D-~~determination~~ 1556 or D-2922 and D-3017. Additional moisture density determinations may be made when required by the ~~City's Representative~~city.

4.3.3.2 ACCEPTANCE. Any earthwork determined not to be in compliance with these standards shall be removed and replaced or reworked until compliance is obtained. Costs for the rework or testing the rework shall be paid for by the Contractor.

4.3.4 SPECIAL REQUIREMENTS. The requirements outlined in this section are only a minimum. When a geotechnical investigation is required, the recommendations of the geotechnical investigation report shall be followed unless said recommendations are less than minimum standards.

All development projects shall submit a final soils engineering and engineering geology report in

accordance with ~~Uniform~~the International Building Code~~, 1994 Edition~~ 2021, Appendix Chapter 33, or as subsequently modified.

~~4.4 PIPELINE CONSTRUCTION.~~

4.4 ROCKERY AND SEGMENTAL BLOCK RETAINING WALLS. This subsection defines the requirements for this section, based on the Rockery and Segmental Block Retaining Wall Ordinance, Title 10, Ch 18A.

4.4.1 SITE PREPARATION. As a minimum, subgrade preparation within the limits of the wall construction shall be performed in accordance with the St. George City Standard Specifications 4.3.2.3. Additional subgrade preparation such as over excavation and recompaction may be required in the geotechnical report. Groundwater discovered during construction shall not be ignored and shall be addressed by the Geotechnical Engineer prior to continuing construction of the wall.

4.4.2 MONITORING. The phases of rockery and segmental block wall construction, including site preparation, shall be monitored in accordance with the inspection frequency schedule specified on the construction drawings prepared by the geotechnical engineer. The geotechnical engineer employed by the Owner/Contractor shall verify that the nature and quality of the materials being used are appropriate and that the construction is in accordance with the engineered design. The geotechnical engineer shall verify to the City in writing that the materials and construction of the rockery/segmental block wall as-built is in accordance with the engineered design after construction is complete.

4.4.3 BACKFILL. Backfill materials shall consist of quality fill materials meeting the requirements specified by the geotechnical engineer and the geotechnical recommendations. Backfill shall be placed in uniform lifts per the geotechnical recommendations.

4.4.4 BACKFILL COMPACTION AND TESTING. Compaction shall be in accordance with the geotechnical recommendations. Compaction within three feet (3') of the back of the facing units shall be accomplished with walk-behind compactors. No heavy equipment shall be operated within three feet (3') of the back of the rocks/blocks. Density tests to verify compaction shall be taken at random locations. At least two (2) tests per one hundred feet (100') of wall length per eighteen inches (18") of backfill shall be taken. In critical locations, the geotechnical engineer may request additional testing.

4.4.5 GEOGRID REINFORCEMENT. Mechanically stabilized earth (MSE) retaining walls shall be reinforced with geogrid as specified by the geotechnical engineer. Geogrid design embedment length shall be measured from the back of the rock or segmental block facing units. Geogrid shall be positively connected to the block facing units. No substitutions of geogrid reinforcement products shall be allowed unless specifically approved by the geotechnical engineer. Gravity segmental block retaining walls generally do not require geogrid reinforcement in their design.

4.4.6 ROCK SELECTION AND PLACEMENT. The rock source shall be preapproved by the geotechnical engineer. The contractor shall have sufficient space and stockpile material available to select from among a number of rocks for each space in the rockery wall to be filled. Rock shall be of a generally cubical, tabular or rectangular shape. Rounded rocks shall not be used. Internal void spaces in the facing shall be kept to a minimum. Prior to being placed, rocks shall be approved by the geotechnical engineer. Base keyway rocks shall have a minimum width extending back into the wall of at least one third (1/3) the exposed height of the wall tier. Rocks shall be placed to

decrease in size with increasing wall height. Cap rocks shall have a minimum width of two feet (2') extending back into the wall.

Rocks shall be placed to bear on good flat-to-flat surfaces. The long dimension of the rocks shall extend back toward the cut/fill face. Except for basal rocks, rocks shall bear on at least two (2) or more other rocks. The base rocks shall be embedded at least one foot (1') to provide a keyway into unyielding soil competent subgrade soils. Additional embedment may be required by the geotechnical engineer.

4.4.7 SEGMENTAL BLOCK RETAINING WALL UNITS. Concrete used in the production of the precast modular block units shall be first-purpose, fresh concrete.

It shall not consist of returned, reconstituted, surplus or waste concrete. It shall be an original production mix meeting the requirements of ASTM C94 and have a minimum net average twenty-eight (28) days compressive strength of 4,000 psi. The concrete shall have adequate freeze/thaw protection and meet the requirements of ASTM C 1372. Higher strengths may be required by the geotechnical engineer based on site conditions.

All units shall be: (a) obtained from the same manufacturer, (b) sound, and (c) free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the construction. Any cracks or chips observed during construction shall fall within the guidelines outlined in ASTM C 1372.

Except for base blocks, each block unit shall bear on at least two (2) blocks. The base blocks shall be embedded at least one foot (1') to provide a keyway into unyielding soil competent subgrade soils. Additional embedment may be required by the geotechnical engineer.

Segmental block units shall match the color as approved by City, surface finish, and dimension for height, width, depth, and batter as shown on the drawings.

If pins or clips are used to interconnect block units, they shall consist of a non-degrading polymer or galvanized steel and be made for the express use with the block units supplied.

Any cap adhesives shall meet the requirements of the block unit manufacturer.

4.4.8 WALL DRAINAGE. Wall drainage behind the retaining walls shall include a free draining gravel layer and filter fabric with a drainpipe daylighting to a proper outlet. If the engineering can substantiate proper filtering between the retained soils and the drain rock, then the filter fabric may be omitted. If the retained soils or backfill is free draining as substantiated by backfill material type for general conditions in the area, then drainage material may be omitted from the design.

4.4.9 SURFACE DRAINAGE. Surface drainage shall be directed away from the rockery/block wall face to a positive and permanent discharge away and beyond the retaining walls. The surrounding site shall be graded such that water cannot flow over the top of the retaining walls. If drainage cannot be directed away from the wall, additional precautions should be taken.

4.4.10 BATTER. The batter (steepness) of a rock wall face shall not exceed one horizontal to

four vertical (1h:4v). The batter steepness of a segmented block wall face shall not exceed 1h:10v unless approved steeper by the geotechnical engineer.

Batter requirements for segmental block retaining wall shall be noted on the design drawings from the geotechnical engineer. The steepness of the wall face shall not exceed the block Manufacturer's design recommendations.

4.4.11 SLOPES. Slopes above and below rockery and segmental block retaining walls shall not exceed two horizontal to one vertical (2:1); shall be shown on the drawings, and shall be included in the stability analysis and the design considerations. (Ord. 2019-10-002, 10-10-2019)

4.4.12 STRUCTURAL ANALYSIS. Structural analysis of rockery retaining walls should be in general accordance with the current Federal Highway Administration (FHWA) Guidelines for Rockery Walls for both static and seismic forces with minimum factors of**:**

	Static	**Seismic**
Sliding	1.5	1.1
Overturning	2.0	1.5
Bearing	2.5	1.5
Global	1.5	1.1

Structural analysis of stacked segmental block retaining walls should be in general accordance with the current National Concrete Masonry Association (NCMA) Design Manual for both static and seismic forces with minimum factors of:

	Static	Seismic
Sliding	1.5	1.1
Overturning	2.0	1.1
Bearing	3.0	1.5
Global	1.5	1.1

The following analysis provisions shall apply:

1. The maximum unit weight of the rocks and blocks used in the design of a wall system shall be specific to the construction material used.

2. The maximum coefficient of friction between rocks or blocks in a wall system shall be specific to the construction material used.

3. Surcharge loading conditions with a horizontal distance equal to the height of the upper most wall shall be taken into consideration in the analysis. The distance shall be measured from the exposed face of the upper most wall.

4. Specifications shall be provided to clearly define acceptance criteria for rock or block materials. (Ord. 2019-10-002, 10-10-2019).

5. Retaining wall shall be designed assuming wet soil conditions.

The geotechnical engineer shall provide design details specific to the location and conditions with a professional stamp and signature. The geotechnical engineer shall provide upon request a printout of the input and output files with factors of safety within the applicable design standard used as follows:

1. Design calculations ensuring stability against overturning, base sliding, excessive foundation settlement, bearing capacity, internal shear, and global stability.

2. Calculations shall include analysis under static and seismic loads.

3. Factors of safety results shall be presented to the nearest hundredth.

4. Seismic loads shall be based on the Peak Ground Acceleration (PGA) as determined from probabilistic analysis for the maximum credible earthquake, with spectral acceleration factored for site conditions in accordance with the current International Building Code.

5. Upon request, a cross-sectional view of each analysis shall be provided, and the printout of the input and output files in an appendix.

6. The geotechnical engineer shall include wall drainage details, if applicable.

7. The geotechnical engineer shall acknowledge that the site is suitable for the retaining wall.

8. The geotechnical engineer shall specify an inspection frequency schedule on the drawings.

Rock and block material shall meet the minimum requirements of the St. George City Standard Specifications section 4.4.10 and 4.4.11 unless other materials are specifically preapproved by the geotechnical engineer. (Ord. 2019-10-002, 10-10-2019)

4.4.13 INSPECTIONS. Construction of rockery and segmental block retaining walls shall be observed by a qualified geotechnical engineer employed by the owner/contractor and shall include all phases of construction. Testing shall be at the frequency specified by the geotechnical engineer,

Upon completion of the wall, the geotechnical engineer shall submit a final compliance report to the authority having jurisdiction. The report shall include a summary of testing and observations per the Pre-Wall Geotechnical Data Sheet provided as part of the construction permit. The report shall provide a professional opinion as to the compliance with the design recommendations and acceptance of the construction. All pertinent compaction testing results and photos shall be included with the final report**. (Ord. 2019-10-002, 10-10-2019)**

4.5 PIPELINE CONSTRUCTION. This subsection covers the requirements for materials, trenching, placing, backfilling, cleaning, testing and other miscellaneous requirements for underground pipeline construction and associated work. This section incorporates the requirements of the American Water Works Association (AWWA) Standards and the Manufacturer's Recommended Installation Procedures, whichever is more stringent.

4.~~4~~5.1 MATERIALS. This subsection specifies the acceptable materials for pipeline construction for use in sanitary sewers, underground culverts, storm drains, water pipes, and appurtenant construction. All materials shall be new and conform to the requirements for class, brand, size and material as specified herein. All materials shall be stored and handled in accordance with ~~manufacturer's~~manufacturers recommendations.

4.~~4~~5.1.1 SEWER PIPE AND FITTINGS. Only those pipe materials listed below may be used in the construction of sanitary sewer line unless otherwise approved in writing by the ~~City Engineer~~city.

A. POLYVINYL CHLORIDE (PVC) PLASTIC SEWER PIPE. This specification covers rigid polyvinyl chloride (PVC) pipe and fittings. PVC pipe and fittings from four (4) inches to fifteen (15) inches in diameter shall meet or exceed all of the requirements of ASTM D-3034 with a minimum wall thickness to diameter ratio of SDR-35. PVC pipe and fittings from eighteen ~~(18)~~ inches (18") to twenty-seven ~~(27)~~ inches (27") in diameter shall meet or exceed the requirements of ASTM F-679.

Each pipe shall be stamped by the manufacturer indicating compliance with the requirements of the appropriate specification. Any pipe not so stamped shall be rejected.

All pipe and fittings shall be homogeneous throughout and free from cracks, holes, foreign inclusions or other defects. All PVC pipe and fittings shall be made from clean, virgin, Type 1, Grade 1, Polyvinyl Chloride conforming to ASTM D-1784.

All pipe joints shall be bell and spigot type with flexible elastomeric seals in accordance with ASTM F-477. Pipe and fittings shall be assembled with a non-toxic lubricant. Pipes of four ~~(4)~~ inch (4") and six ~~(6)~~ inch (6") diameter may be the solvent weld type, in accordance with ASTM F-656 for primer and ASTM D-2564 for glue. Pipe shall have the following minimum SDR-35 dimensions.

Nominal Pipe Size (Inches)	Outside Diameter (Inches)	Minimum Wall Thickness (Inches)
4	4.215	0.125
6	6.275	0.180
8	8.400	0.240
10	10.500	0.300
12	12.500	0.360

Spigot ends shall have a fifteen (15) degree tapered end with a memory mark around the diameter of the pipe to indicate proper insertion depth. Fittings shall be of the same material as the pipe, and shall not have a wall thickness less than that of the pipe furnished.

B.——A.B.S. COMPOSITE AND SOLID WALL SEWER PIPE. This specification covers Acrylonitrile-Butadiene-Styurine (ABS) gravity sewer pipe.

All ABS composite sewer pipe shall conform to the latest revision of ASTM Specification D-2680. The ABS material used shall be a virgin rigid plastic conforming to ASTM Specification D-1788 for rigid ABS plastics. The other component shall be Portland Cement, Perlite concrete or other inert filler material exhibiting the same degree of performance.

All solid wall ABS pipe shall conform to ASTM Specifications D-2751. Solid wall pipe used for laterals shall have a minimum wall thickness to diameter ratio of SDR-35. Fittings not described by these standards shall be shop fabricated or molded from materials listed in paragraphs 4 and 5 of ASTM D-2680 and shall be of equivalent quality to those described.

All field joints shall be chemically welded. Primer, then cement, shall be applied liberally to the outside of the spigot end and the inside of the coupling immediately prior to stabbing the pipe together. The pipe spigot end shall be supplied with home marks to assure proper jointing.

4.5.1.2 STORM DRAIN PIPE. Pipe listed under Sections 4.5.1.1 A. "Sewer Pipes" of these standards, as well as the following pipes, may be used in the construction of storm drain lines and culverts.

A. CORRUGATED POLYETHYLENE PIPE. Corrugated polyethylene pipe shall be high density polyethylene corrugated exterior with a smooth interior wall. Eight to ten inch (8”- 10”) diameter shall meet the requirements of AASHTO M-252 and have a smooth interior liner. Twelve to thirty-six inch (12”- 36”) diameters shall conform to AASHTO M-294 Type S. Forty-two to forty-eight inch (42”- 48”) diameter shall conform to AASHTO MP-6 type. Materials shall conform to ASTM D-3350. All pipe joints and fittings shall be water tight and conform to AASHTO M-353 or M-294, and shall be approved by the city.

B. ~~C.~~ **NON-REINFORCED CONCRETE PIPE.** Non-reinforced concrete ~~sewer~~ pipe may be used up to and including twenty-four ~~(24)~~ inch (24”) size, unless otherwise designated by the City Engineer or these specifications. Appropriate design justification shall be submitted by the Engineer to the City for review and approval prior to use. Pipe shall be extra strength and manufactured to comply with the requirements set forth in ASTM Designation C-14, Class 3 unless otherwise approved by the City Engineer. Type V cement shall be used unless otherwise approved. Joints shall be of the bell and spigot-type with rubber gasket design, and with joints and gaskets conforming to the requirements of ASTM Designation C-443. Pipe joints shall be so designed to provide for self-centering, and when assembled the gasket shall compress to form a water-tight seal. The gasket shall be confined in a groove on the spigot so that pipe movement or hydrostatic pressure will not displace the gasket.

~~D.~~ **C. REINFORCED CONCRETE PIPE.** Reinforced concrete pipe may be used for all appropriate applications. For pipe greater than twenty-four inches (24”) in diameter, and where any non-reinforced concrete pipe installation does not provide a cover of at least three feet over the top of the pipe, reinforced concrete pipe shall be used. Reinforced concrete pipe shall comply with the requirements of ASTM C-76 (Class II - V) unless otherwise approved by the City Engineer. Type V cement shall be used unless otherwise approved. Joints shall be of the bell and spigot design with rubber gasket type joints, with an alternate option of tongue and groove joints for storm drain lines when approved by the ~~City Engineer~~city.

~~4.4.1.2 STORM DRAIN PIPE. Pipe listed under Sections 4.4.1.1 A. C. and D. "Sewer Pipes" of these standards, as well as the following pipes, may be used in the construction of storm drain lines and culverts.~~

~~A. **CORRUGATED POLYETHYLENE PIPE.** Corrugated polyethylene pipe shall be high density polyethylene corrugated exterior with a smooth interior wall. Eight to ten (8-10) inch diameter shall meet the requirements of AASHTO M-252 and have a smooth interior liner. Twelve to thirty six (12-36) inch diameters shall conform to AASHTO M-294 Type S. Forty-two to forty-eight (42-48) inch diameter shall conform to AASHTO MP-6 type. Materials shall conform to ASTM D-3350. All pipe joints and fittings shall be water tight and conform to AASHTO M-353 or M-294, and shall be approved by the City’s Representative.~~

~~B. CORRUGATED ALUMINUM PIPE: Corrugated aluminum alloy pipe shall conform to AASHTO designation M-196. Any aluminum alloy to be in contact with concrete shall first be spray or brush coated to a minimum thickness of 0.05 inch with an asphalt- fiber compound conforming to the requirements of Section 702 of the State of Utah Standard Specifications for Road and Bridge Construction. The aluminum alloy shall be thoroughly cleaned, including the removal of oil and grease, and shall be dry prior to treatment. Pipe installation and appurtenances shall conform to UDOT Standard Specifications, 1992.~~
~~C. CORRUGATED STEEL PIPE. Use of corrugated steel pipe shall require pre-approval from the City Engineer and shall be on a case-by-case basis.~~

~~Corrugated steel pipe shall be in conformance with AASHTO M-36 and other applicable AASHTO standards as required. Smooth flow spiral rib pipe shall generally be used in storm drain applications while other applications may require annular or helical corrugations.~~

~~Pipes shall be fabricated with a continuous lock seam or ultra high- frequency resistance welded seams.~~

~~(1) COATINGS. All pipe shall have an aluminized coating, both sides, in accordance with AASHTO M-274 specifications unless otherwise approved. The pipe shall be fabricated from steel coils that have been hot-dipped coated in a bath of commercially pure aluminum. This coating shall be uniform throughout on both sides of the sheet and be metallurgically bonded between the metals.~~

~~When a polymer coating is approved for use, such coating shall be a minimum of 10 mils in thickness and shall be a two-sided coating and shall conform to AASHTO M-245~~

~~When a galvanized coating is approved for use, such coating shall be hot dipped in accordance with AASHTO M-245. The coating shall be on both sides.~~

~~Other coatings and linings may be approved.~~

~~(2) JOINTS. All joints shall have the same base metal and coating as the pipe being joined. Joints shall provide circumferential and longitudinal strength to preserve the pipe alignment, to prevent separation of the pipe, to prevent infiltration of fill material and to provide water tight joints. O-ring gaskets or other acceptable material shall be used.~~

~~(3) FITTINGS AND ACCESSORIES. All fittings, bolts and accessories shall meet applicable specifications of the pipe being used. Use accessories and gaskets recommended by the manufacturer.~~

~~(**4**) INSTALLATION. Installation shall be in accordance with the manufacturer's recommendations and these specifications.~~

~~NOTE: Use of this pipe may require significant testing and evaluation to determine compatibility with the ground and the intended installation. Soil Ph, resistibility and other necessary determinations should be made to ensure compatibility.~~

~~4.4~~**.5.1.3** **SEWER MANHOLES.** This subsection covers the requirements for

the materials used in sanitary sewer and storm water manholes. Manholes shall be water tight and be furnished complete with cast iron rings and covers as follows:

A. **CONCRETE BASES.** Manhole bases shall be either pre-cast or ~~cast in place.~~ Precast manhole bases shall conform to ASTM C-478. Concrete for cast in place bases shall be in accordance with Section 4.~~8~~7.1 of these specifications. Type V cement shall be used for precast and cast in place bases.

Where sewer lines pass through or enter manholes, the invert channels shall be smooth and semi-circular in cross-section. Changes of direction of flow within the manholes shall be made with a smooth curve with the longest radius possible. The depth of the channel in the manhole base shall be the full diameter of the sewer pipe being used at that manhole. The floor of the manhole outside the flow channels shall be smooth and slope toward the channel in accordance with standard drawings and not less than one-half ~~(1/2)~~ inch (½") per foot nor more than one ~~(1)~~ inch (1") per foot.

B. **WALL AND CONE SECTIONS.** All manholes shall be constructed of ~~either forty eight (48) inch or~~ sixty (60) inch or larger inside diameter pre~~-~~-cast, sectional, reinforced concrete manholes. Both ~~cylindrical~~cylin-dri-cal and taper sections shall conform to the requirements of ASTM ~~Designation~~Designa-tion C-478 for precast Reinforced Concrete Manhole Sections. ~~All~~ Manholes shall have ladders in accordance with the standard drawings.

Throat length of manholes shall be ~~adjustable~~adjust-able by use of appropriate diameter manhole sections and grade ring sections. The use of a "whirly-gig, Pro-Ring, or approved equal shall be used if throat section is not perpendicular to road grade. All throat sections shall be installed per manufactures specifications. Biodegradable shims shall not be allowed. The maximum height of the throat section shall be eighteen ~~(18)~~ inches~~. The taper section shall be a maximum of three (3) feet in height, shall be of eccentric conical design, and shall taper uniformly from forty eight (48) or sixty (60) inches to thirty (30) inches inside diameter. The cone shall be set on the manhole sections so all ladder rungs are aligned~~ (18) regardless of angles or grade.

When manhole depths are less than four ~~(4)~~ feet (4') manhole cones shall not be used. The manhole shall consist of a cylindrical manhole section with a precast flat manhole top in accordance with ASTM C-478.

Sixty inch (60~~) inch~~") inside diameter sewer manholes shall be required for all sewers greater than twelve ~~(12)~~ inches (12") in diameter or deeper than twelve feet~~,~~ (12'), or

where three (3) or more eight ~~(8)~~ inch or greater lines converge in the manhole.

The shaft section of the manhole shall be furnished in section lengths of one (1), two (2), three (3), and four (4) feet as required. The least number of sections should be used.

Manholes larger than sixty (60) inch inside diameter may be required when designated by the ~~City Engineer~~city.

All joint surfaces of pre-~~-~~cast sections and the face of the manhole base shall be thoroughly cleaned prior to setting the sections. Joints shall be sealed with a minimum one inch (1") thick flexible joint sealant which shall conform to the requirements of ASTM C-923.

~~Joints shall be sealed with a minimum one (1) inch thick flexible joint sealant which shall conform to the requirements of ASTM C- 923.~~

~~C.~~All joints including any grade rings where the joint has not protruded to the interval of the manhole shall be filled with grout prior to final acceptance.

C. WATER-TIGHTNESS.~~–~~ All manholes shall be water tight. Any cracks or imperfections shall be satisfactorily repaired. Materials and methods used shall be subject to approval of the ~~City's Representative~~city.

D. IRON CASTINGS. All iron castings shall conform to the requirements of ASTM A-48 (Class 30) for grey iron castings. Frames and covers shall have a minimum combined weight of four hundred (400) pounds. All castings shall be designed to carry a minimum HS-20 traffic loading.

The cover and ring seat shall be machined so that the entire area of the seat will be in contact with the cover, in any position of the cover on the seat. Frames and covers shall be so constructed and machined that the parts are interchangeable. The tops of the cover and frames shall be flush, and the clearance between the frame and cover shall be one-eighth (1/8) of an inch all around. The top surface of each cover shall be cast with a studded pattern including the word "Sewer" for sanitary application and "Storm" for storm drain applications. Letters and studs shall be raised three-eighth (3/8) inch. Each cover shall be provided with not less than twelve (12) ventilating holes of three quarter (3/4) inch diameter each.

All manhole frames shall be carefully set to the finished grade or as directed by the ~~City's Representative.~~city. When set in roadways, walkways or other travelways, the finished manhole cover, grade, and slope shall be adjusted to match that of the traveled surface.

Manhole frames shall be set in place on the manhole throat and shall be sealed with an approved flexible joint sealant which shall conform to the requirements of ASTM C-923. Frames or covers loosened from the manhole throat shall be reset and any frames, covers or throat sections damaged or broken shall be replaced prior to acceptance by the ~~City's Representative~~city.

~~E. MANHOLE STEPS. Manhole steps shall be constructed in accordance with ASTM C-478 and the standard drawings.~~

~~Manhole steps shall be installed at intervals no closer than twelve (12) inches and at evenly spaced intervals not to exceed eighteen (18) inches between steps. Steps shall be firmly installed into the concrete wall and taper sections of all manholes to a minimum depth of three and three-eighth (3 3/8) inches, as shown in the drawings. Each step shall be solidly anchored to the wall so it will not pull out or break under repeated use. Steps shall be aligned vertically to form a continuous ladder from top to bottom.~~

4.~~4~~5.1.4~~.~~ WATER PIPE AND FITTINGS. The materials used for pipe and fittings shall all be new and conform to the requirements for class, brand, size and material as specified.

A copy of the manufacturer's installation recommendation for each type of pipe shall be provided for each construction job and shall be available on the jobsite at all times. These recommendations shall be followed during construction unless instructed otherwise by the ~~City's Representative.~~city. All pipe materials are as outlined below.

A~~.~~. GENERAL PIPE REQUIREMENTS. Pipe materials shall conform to the following requirements.

SIZE	TYPE
3/4" to 1"	Copper Type K
1 ½" - 2"	~~Black or~~ Blue Poly (HDPE) Copper Tube Size
Over 2"	Ductile Iron Class 51 with poly jacket sock or- PVC C-900, Class 150 (sand bedded) see note #1 below ~~Ultra-Blue PVC (mo) Pressure Pipe C-909PC150~~.

Note:

~~1.~~ 1. High density polyethylene pipe may be used upon approval of the Water Department.

~~2.~~ 2. For pipes greater than 12 inches, material type will be determined by the Water Department. When the pipe is to be installed in a rocky area, the pipe material will be ductile iron.

3. All pipe shall conform to the current AWWA standards for each class of pipe listed above.

B. **CONNECTING WATER METERS.** Only authorized employees of the Water Department shall be allowed to connect or disconnect water meters. All boxes set in concrete shall be flanged to prevent settlement.

C. **DUCTILE IRON PIPE.** All ductile iron pipe shall be Class 51 conforming to the latest edition of AWWA Specifications C-151 (ANSI A21.51).

C.1 **JOINTS.** Ductile Iron Pipe shall be either Mechanical Joints, Rubber Gasket Slip-on Joints, Flanged Joints, or a combination of the above as specified on the plans. Pipe shall also conform to all current AWWA standards.

C.2 **POLYETHYLENE WRAPPING.** ~~A polyethylene wrap~~ Polyethylene wraps (sleeve) shall be required on all ductile iron pipe. Wrap shall be v-bio® type. The polyethylene wrap tubing shall be cut to provide for a minimum of one foot of lap over both the adjoining pipes. The ends of the tubing shall be wrapped using three circumferential turns of ~~plastic adhesive~~approved duct tape. The loose wrap on the barrel shall be pulled snugly around the barrel of the pipe and the excess folded over at the top. This fold shall be held in place by means of ~~six~~ twelve-inch ~~-~~long strips of ~~plastic~~ tape placed at intervals of three feet along the pipe barrel. High Performance 8 mil or greater tape or approved equal.

Bends, reducers, offsets and restraint gland locations shall be wrapped in the same manner as the pipe. Valves shall be wrapped by bringing the tube wrap on the adjacent pipe over the bells of the valve and sealing with adhesive tape. The valve bodies shall then be wrapped with flat sheets passed under the valve bottom and brought up around the body to the stem and fastened with the tape.

D. ~~ULTRA BLUE. All ultra blue~~ **PVC** ~~(mo) pressure pipe shall meet the latest AWWA Standards C-909.~~

~~E. PVC~~ **PIPE.** All PVC Pipe used shall meet the latest AWWA standards C-900 and C-905.

E. **HDPE** pipe shall meet the latest AWWA standards C-901 and C-906.

1. installation operator cert, data logger, minimum experience

F. **COPPER PIPE.** Where service lines are ~~two (2~~one (1) inch or less in diameter, type K copper pipe ~~may~~shall be ~~allowed with prior approval of the City Water Department.~~used. Pipe which has outside dimensions greater than ~~two (2)~~1 ½" inches in diameter shall not be copper. All copper pipe shall conform to the current AWWA standards.

G. **PIPE FITTINGS**. ~~(Two~~ (4 inches through 30 inches) flanged and mechanical joint fittings shall be ductile iron class 250, and shall be produced in accordance with ANSI/AWWA C-110/A 21.10 and ANSI/AWWA C-111/A21.11 and shall conform to details and dimensions published therein. Fittings are cement lined and seal coated in accordance with ANSI/AWWA C-104/A21.04. The fittings will be manufactured by Tyler or approved equal.

Connections of 6 inch and greater into existing piping shall be done with a cut-in tee. Size on size taps are not allowed. Hot taps may be allowed on a case by case basis as follows. For large tappings (6 inch and greater) tapped into PVC or ductile iron pipe, the following tapping sleeves are approved for pressures less than 125 psi:

Romac Style fts 419, fts 420
Power Seal (5 bolt), model 3480
Romac 305 Stainless Steel Service Saddle

For pressures greater than 125 psi, a mechanical joint sleeve type will be required. The following are approved for use.

Mueller H-615
5-149-DI
Clow F-5205
Power Seal Model 3490
Romac SST-III with ductile flange rated at 200 psi
Ford FTSS

For larger diameter pipe:

FTS-425 Class D
For HDPE - Romac SST-H

H. **TAPPING MATERIAL SPECIFICATION.** For small tappings (three quarter (3/4) inch through two (2) inch) tapped into cast iron, steel, PVC, or ductile iron pipe, the following materials shall be required:

H.1 **SADDLE CASTINGS.** Large saddle tappings shall be stainless

steel or bronze single/double strap.

H.2 STAINLESS STEEL STRAP. The stainless steel strap shall consist of a two (2) inch wide strap and shall come complete with sufficient stainless steel or bronze bolts, nuts and washers (with five-eighths [5/8] inch N.C. Teflon coated roll threads) to properly clamp the strap to the pipe. M.I.G. welds shall be ~~pasivated~~passivated for resistance to corrosion.

H.3 GASKETS. Gaskets shall be made from virgin SBR compounded for water services

H.4 HDPE saddles shall have spring washers

I. REPAIR CLAMPS. All repair clamps shall be stainless steel and be equal to the following approved brands:

Romac SS1-552
Power Seal 3121AS, 3122 AS

For HDPE
Romac Style SS1-H, SS2-H

J. VALVES AND BOXES. Unless otherwise specified by the Water Department, all valves, ten (10) inches and smaller, shall be of a resilient-seat-gate-valve type, and all valves over ten (10) inches shall be butterfly valves~~; except for a ten (10) inch "hot tap".~~.

J.1 GATE AND BUTTERFLY VALVES. Valves shall conform to the latest revision of AWWA valve standards. All valves shall be Mueller, Kennedy, Clow, or Pratt. Exceptions to this will require the ~~City Water Department Engineer's~~city's approval.

All valves, ten (10) inches and less, installed next to a fitting must be flange x mechanical joint (MJ) and installed with the flange end connecting to the tee, cross, or fitting and megaluged to the line unless otherwise approved by the ~~Water Department.~~city. Valves greater than twelve inches shall have flange x flange with an MJ adaptor in order to flange to tee, cross, or fitting and shall be megaluged to line.

All six and eight inch valves shall have a ~~16~~12"x 16"x 4" slab of concrete placed under them for support. Valves ten inches and greater shall have a 20"x 20"x 4" concrete slab placed under them for support. All support slabs shall be tied to the valves.

All setter shut off valves shall be provided with bronze handles.

J.2 VALVE BOXES. All valves shall be provided with a cast iron valve box of the extension sleeve type ~~or a screw type adjustable~~, and the height shall be adjusted to bring the top of the valve box flush with the finished surface. Extension sleeve shall be drilled or slotted below the lid seat, and the marking wire shall be threaded through. Slot or drill shall be a minimum of ½" dimension. The valve box shall sawcut to proper length, and not be less than five inches in diameter and shall have a minimum wall thickness of .375 inch. The box shall be provided with a suitable base and cover. The word "WATER" shall be cast on the cover. Cover shall be Bingham & Taylor, 22 pound weight.. Valve boxes intended for irrigation main line valves shall be triangle in shape and the word "IRRIGATION" shall be cast on the cover.

Valve boxes shall be installed plumb and properly positioned to center operating nut and allow access of the operating wrench. To ensure that the box is not displaced during backfill operations, the backfill shall be hand mechanically tamped for a distance of five feet each way along the trench. All valve boxes shall include a concrete collar in accordance with the standard drawings with flow indication arrows~~.~~ and pipe size. The letter size shall be 4"-6" in height, and 1/4" deep stamped into the "wet" collar. The valve operating nut SHALL be at a depth not to exceed 48". If the operating nut is deeper than 48" a operating extension SHALL be required. See standard drawing detail #304

K. WATER SERVICE LATERALS. The material used for water service connections shall comply with the following requirements.

K.1 SERVICE PIPE. Service pipe shall be copper or polyethylene. Note: When polyethylene pipe is used, only ~~Instatite~~locking compression fittings shall be used.

K.2 CORPORATION STOPS. Corporation stops shall be as manufactured by the Mueller Company, or Ford or approval equal, and shall conform to the several designations shown below for the various sizes.

	WATER SERVICE CONNECTION SIZE			
	3/4"	1"	1-1/2"	2"
MUELLER CO.	H-1500	H-1500	H-1510	H-1501
FORD	F600	F600	F6125	F6125

All services shall have a ~~flare or~~locking compression type joint for the service pipe and shall be threaded on the inlet end with an AWWA corporation stop thread.

K.3~~—~~ METER SETTER YOKES. Meter setters or meter yokes shall have a built-in backflow prevention device and shall have a corrosion-resistant bronze body, dual acetyl plastic valves with natural rubber gaskets that are independently acting and capable of giving two levels of protection; stainless steel springs; a resilient O-ring end-tap seal; and full port inlet angle ball valve with brass handle. All internal parts shall be accessible without removing the valve from the line. Meters shall be installed by Water Department personnel only.

K.4~~—~~ METER BOX AND LID.~~—~~ The meter boxes shall be high density polyethylene (HDPE) "Brooks" design or equal. Size shall be as follows unless otherwise approved by ~~City's Representative.~~the city.

PIPE SIZE	METER BOX SIZE
3/4"	17" x 11 3/4"~~—~~ #1419-18
1"	25" x 16"~~——~~ #1324-18
1 ½" - 2"	32" x 19"~~——~~ #1730-18

The meter box lids shall have a hinged opening for meter reading. Lid marking shall be approved by the Water Department. A concrete collar shall be installed around the meter box in accordance with standard drawings. All meter boxes shall be placed behind sidewalks in accordance with standard drawings unless otherwise directed by ~~City's Representative~~the city.

Any meter box covered, or damaged, during construction operations shall be uncovered, replaced, and raised to finish grade by the Contractor. In areas without sidewalks, meter boxes shall be flush, or one inch above the finish grade.

K.5 SERVICE CONNECTIONS. At all points designated by the Water Department, service connections shall be installed and shall extend from the property line to the building, unless otherwise directed by the Water Department.

Individual water services shall be one inch for dual services and three quarter (3/4) inch for a single service from the water main to the meter setter for normal domestic service. When directed by the Water Department, the water service shall be one and one half (1 1/2) or two inches in diameter. Services shall have a minimum of three (3) feet of cover and be constructed as shown in the standard drawings. For service laterals two inches in diameter and smaller, service saddles shall not be closer than twelve inches (12) from the end of the main, nor closer than eighteen (18) inches to any other service saddle or pipe joint.

A mechanical joint type tapping sleeve shall be used on all “hot taps” where the line pressure is greater than one hundred twenty five (125) psi,. The approved mechanical joint sleeves and type shall be as shown in the standard drawings.

L. MARKING WIRE. 12 Gauge type UP Marking wire shall be installed on all waterline installations unless otherwise approved by the Water Department. Marking wire shall conform to the following:

L.1 Marking wire shall be spliced together with ~~“grease” nuts~~a deep silicone wire splice kit, or equal. Prior to installation of the wire nut, a minimum amount of wire shall be bared and twisted together with pliers to assure good contact.

L.2 Marking wire should be taped and pulled tight along the top of the pipe to ensure against breakage.

L.3 Marking wire shall extend up to all hydrants and valves. At valve clusters marking wire shall be run to all valves. The wire should be ~~pig tailed, not~~ looped.

L.4 Marking wire shall extend out of the valve box four (4) to six (6) inches.

L.5 It is the Contractor's responsibility to guarantee and show that the marking wire performs satisfactorily for its intended use. It is recommended that the contractor test the performance of the wire prior to installation of surface improvements.

L.6 After all ~~the~~ boxes are raised and prior to placing concrete collars, the Contractor shall notify the Water Department to perform the final acceptance testing.

M. **FIRE HYDRANTS.** Fire hydrants shall be a three-nozzle, five and one-half inch (5½) diameter ~~Mueller, Modern Centurion, Model A-423~~; Kennedy, Model K-81A; American Flow Control Waterous 51/4" Pacer Model WB-67-250; or approved equal, with foot valve and six (6) inch mechanical joint connection. Fire hydrants shall conform to the latest edition of AWWA C-502, "Dry Barrel Fire Hydrants." All hydrants shall be designed for a working pressure of two hundred (200) psi and a hydrostatic pressure of three hundred fifty (350) psi. Hydrants shall be furnished with a paint finish above the ground line identical in color to the existing hydrant paint (red).

Hydrants shall be installed with a shut-off valve at the mainline. If the hydrant lateral is greater than two hundred (200) feet long, a second valve shall be installed at a location determined by the Water Department.

After the hydrant is installed and accepted, it will be the responsibility of the Water Department to maintain the hydrant. Where applicable, the customer/property owner will allow the Water Department access for said maintenance.

Dead-end mains shall not be installed without prior approval of the Water Department. If installed, they shall not exceed six hundred (600) feet in length. Hydrants shall be located at the end of dead-end mains for flushing purposes as well as for fire protection.

Washout valves, in lieu of fire hydrants, are not allowed without prior approval of the Water Department.

Hydrants shall be of a flanged joint type or mechanical joint inlet. All hydrants shall be so designed as to allow the flanges at sidewalk level to separate without material damage to the main barrel section when struck by a large object, such as a vehicle. Hydrant extensions are not allowed for "new" construction and shall have a minimum bury depth of three feet. Upon such damage, the main gate valve must remain closed to avoid flooding or washout. New fire hydrants shall have "greaseable" operating stem, oil filled stems are not acceptable. Hydrants with a nominal five ~~-~~inch valve opening shall be furnished with two nominal two and one half (2½) inch National Standard Thread Hose Nozzles and one nominal four and one half (4½) inch National Standard Thread Pumper Nozzle. All nozzles shall be furnished with a cap and gasket with attaching chain. All hydrants shall open ~~counter clockwise~~counterclockwise with a pentagon operating nut conforming in size to the specifications of the Water Department.

Fire hydrants shall be set to provide at least the minimum pipe cover for the branch supply line. Nozzles shall be at least eighteen (18) inches above finish grade. Each hydrant shall be set on a concrete foundation at least eighteen (18) inches square and four (4) inches thick. ~~Each hydrant shall be blocked against the end of the trench with concrete.~~ Hydrant drainage shall be provided by installing gravel or crushed rock (~~-~~3/4" ~~to 2"~~minus washed gravel) around the hydrant, and below the top of the hydrant supply line. One third (1/3) cubic yard of ~~one and one half (1½)~~three quarter (3/4) inch gravel shall be placed around the drain holes just above the hydrant valve casing~~.~~, and a mechanical barrier to stop fines infiltration. All hydrants shall stand plumb~~.~~ and the breakaway flange shall be 4"- 6" above collar or as approved by city. Collar shall match finish grade, dishing of concrete collar is not allowed. Collar shall extend to top back curb at -2%, with flared splash pad. Minimum width behind hydrant shall be 30", flare at 6":1' to TBC. Hydrant extensions shall not be used on newly constructed hydrants. The hydrant pumper nozzles shall face the street and be perpendicular to the curb line. The hose nozzle shall be parallel to the street. Hydrants shall be located inside the street utility easements or as otherwise directed by the Water Department.

~~**N. FLOWABLE BACKFILL.** Flowable backfill material for water main trenches shall be sand slurry with in-place relative density greater than ninety five percent (95%).~~

~~O.~~ **PRESSURE REDUCING VALVES**. Pressure reducing valve installation will be constructed as per the detail shown in the standard drawings. The valves will be as manufactured by Singer and approved by the ~~Water and Power Engineer~~city.

~~P.~~ **O. MEGALUG SYSTEM.** A megalug retainer gland system shall be used on all mechanical joints and shall meet UNI-B-13 for PVC and be UL/FM approved through twelve (12) inch diameter for both ductile iron and PVC pipe.

A megalug retainer gland system shall be used on all mechanical joints and shall meet Uni-B-13 for PVC and be UL/FM approved through twelve (12) inch diameter for both ductile iron and PVC pipe. The restraint mechanism shall consist of individually activated gripping surfaces to maximize restraint capability. Twist-off nuts, sized the same as the tee-head bolts, shall be used to ensure proper activating of restraining devices. The gland shall be manufactured of ductile iron conforming to ASTM A-536-80. The retainer-gland shall have a pressure rating equal to that of the pipe on which it is used (through fourteen inches) with a minimum safety factor of 2:1. Gland shall be Megalug by EBAA Iron, Inc. or approved equal. The type and model of retainer and amount for each connector is shown on standard drawings.

As an alternate to the megalug system, Ford Uniflange Series 1400 retainer glands and Series 1300 and 1390 joint restraints will be used. For PVC, Ford Uniflange Service 1500 retainer gland will be used. These materials listed are approved for use on the St. George City Water System.
~~George City Water System.~~

Thrust blocks shall only be placed to accommodate connection to existing facilities and only when deemed necessary by the engineer and agreed to by the city.

4.~~4~~5.2 CONSTRUCTION METHODS. This subsection covers the requirements for trenching, placing, and back filling of all underground pipelines (sewer, water, storm drains, etc.). The methods employed in performing the work shall be the responsibility of the Contractor. The Contractor shall make such changes in the methods used as are necessary to install an acceptable finished product. The methods shall include, but are not limited to the following:

4.~~4~~5.2.1 CONTROL OF GROUND WATER. All trenches shall be kept free from water during excavation, fine grading, pipe laying, jointing, and embedding operations. Where the trench bottom is mucky or otherwise unstable because of the presence of ground water, and in cases where the static ground water elevation is above the bottom of any trench or bell hole excavation, such ground water shall be lowered and controlled to the extent necessary to keep the trench free from water and the trench bottom stable when the work within the trench is in progress. Surface water shall be prevented from entering the trenches.

Dewatering for pipeline construction shall commence when groundwater is first encountered and shall continue until such time as water can be allowed to rise. Requirements of section 4.3.2.2 shall be complied with when groundwater is encountered. Dewatering shall be conducted such that no pipelines are placed in water nor shall water be allowed to rise over the pipe until the pipeline has been pressure tested and any concrete or mortar has achieved final set. Water shall not be allowed to rise in pipeline trenches or drained excavations until pipelines are backfilled or restrained to prevent flotation.

4.~~4~~5.2.2 EXCAVATION FOR PIPELINES. Trench excavation shall include all operations necessary for excavation of all materials of whatever nature in relation to pipeline installation. All excavation, including the manner of support and provisions for access to trenches, shall comply with all current regulations as determined by OSHA. Trenches shall be excavated to the lines and grade shown on the drawings, and to a depth to provide the minimum required cover of three (3) feet over the pipe unless otherwise approved by the ~~Water Department.~~city. Pipe installation shall be in accordance with the pipe manufacturer's recommendations. The bottom two feet of the trench should have vertical walls. All finish grading necessary for preparation of the trench bottom shall be made manually. Over-excavating shall not be allowed without re-compaction of backfill in accordance with these standards.

Excavation for trenches in rock shall extend to a depth of at least four inches below the bottom of the pipe. Bedding material as outlined in Table 4.1 shall be placed and mechanically compacted to ninety-five percent (95%) of maximum dry density in maximum six inch lifts to provide a smooth, well compacted and stable foundation for the pipe or appurtenant works.

Trench bottoms shall be hand-shaped as specified and the maximum width of the trench, measured at the top of the pipe, shall be as narrow as possible, but ~~not wider than fifteen (15)~~at least twelve inches (12") on each side of the pipe.

If gravel is to be used as a backfill material, it must be installed with an approved filter fabric to prevent fine material from migrating into the gravel. Use of gravel as backfill material must be approved by the city on a case by case basis.

Where unstable earth, mud or muck is encountered in the excavation at the grade of the pipe, the unsuitable material shall be removed to a minimum of twelve inches below grade and the subsequent hole shall be backfilled with crushed rock or gravel (as called out in Table 4.1 under "foundation material") to provide a stable subgrade. The gravel material shall be deposited over the entire trench width. The maximum layer thickness shall be six inches. Each layer shall be compacted by tamping, rolling, vibrating, spading, slicing, rodding or by a combination of one or more of these methods. In addition, the material shall be graded to produce a uniform and continuous support for the entire length of the installed pipe.

Should the Contractor elect to install the pipe by boring, or jacking, approval must first be obtained from the ~~City's Representative.~~city. The Contractor shall furnish, place, and maintain all supports and shoring that may be required for the sides of the excavation, and all pumping, ditching, or other approved measures for the removal or exclusion of water, including, but not limited to, storm water and waste water reaching the worksite from any source so as to prevent damage to the work or adjoining property.

The maximum amount of open trench permitted in any one location shall be five hundred (500) feet, or the length necessary to accommodate the amount of pipe installed in a single day, unless otherwise approved by the ~~City's Representative.~~city. Open trenches shall not be allowed to stay open without proper safety precautions and barricading. Trenches should not be left open over night.

In the event "foundation material" is used in backfill, or replacement of over excavated material, the Contractor shall construct dams within the drain rock bedding material at maximum intervals of six hundred (600) feet. The dams shall be constructed to the top of the pipe or the level of groundwater, whichever is greater, with Class "B" Portland Cement Concrete or other approved material and shall have a minimum thickness of six inches.

TABLE 4.1

BACKFILL MATERIAL			
SIEVE SIZE	FOUNDATION MATERIAL (Angular/Crushed)	*PIPE BEDDING/ PIPE ZONE & INITIAL BACKFILL MATERIAL*	FINAL BACKFILL MATERIAL (above the initial Backfill)
	PERCENTAGE PASSING		
~~12~~ 3"	100	- -	Native material which is well mixed or processed/crushed to be well mixed and contains no sod, vegetation, rocks larger than ~~12~~6" diameter, asphalt or concrete chunks, etc. **Expansive Soils (Liquid Limit >35 and Plastic Index > 15 percent), and Gypsiferous Soils (Solubility > 6% by dry weight) are not suitable for final backfill material
~~6"~~	~~—~~	~~—~~	~~90 – 100~~
~~3"~~ ¾ "	~~100~~	~~80 –~~ 100	
~~2"~~ ½ "		90 - 100	~~—~~
~~1"~~	~~70 – 90~~	~~100~~	~~50 – 100~~
½" ~~#4~~	~~51 – 75~~	~~90~~ 50 - 100	~~30 – 100~~
~~#4~~	~~31 – 65~~	~~50 – 80~~	~~25 – 80~~

#16	16 - 40	30 - 42	16 - 50
#200	2 - 12	9 0 - 25	10 - 50

* 3/4" or 1" clean crushed gravel may be used in lieu of the above table on a case by case basis and must be approved by the City for each project. Upon prior written approval from the City, select excavated on-site soils may be utilized as bedding material.

** Particular site-specific conditions may exist where these normally unsuitable materials may be used as final backfill when specifically recommended by the project Geotechnical Engineer, and upon written approval from the City.

4.45.2.3 SHEETING, BRACING, AND SHORING OF EXCAVATIONS. All excavations shall be sheeted, braced, and shored as required to protect the workers and existing utilities and improvements from sliding, sloughing, settling or other movement of the trench walls while the work is in progress. All such sheeting, bracing and shoring shall comply with theOSHA requirements of the Utah State Industrial Commission. All damage resulting from lack of adequate sheeting, bracing and shoring shall be the sole responsibility of the Contractor, and the Contractor shall effect all necessary repairs or reconstruction resulting from such damage.

4.4.2.4 BLASTING. Blasting shall not be allowed except by written permit from the Fire Chief. If the permit is granted, the Contractor shall comply with all laws, ordinances, and applicable safety code requirements and regulations relative to the handling, storage, and use of explosives and protection of life and property.

In addition to the above, all requirements contained in Section 2.9, Use of Explosives, shall be followed.

4.**4.5.2.4 BLASTING.** See Standard Specifications Section 4.4

4.5.2.5 PIPE LAYING AND BEDDING. Pipe will be carefully inspected in the field by the Contractor and the City's Representativecity before and after laying. If any cause for rejection is discovered in a pipe before or after it has been laid, it shall be removed and replaced by the Contractor.

When connections are to be made to any existing pipe, conduit, or other appurtenances,

the actual elevation or position of which cannot be determined without excavation, the Contractor shall excavate for, and expose the existing improvement before laying any pipe or conduit. The ~~City's Representative~~city shall be given the opportunity to inspect the existing pipe or conduit before the connection is made. Adjustments in line or grade of the connecting pipe which may be necessary to accomplish the intent of the plans will be made at this time.

Pipe shall be laid up grade with the socket bell, or collar ends of the pipe up grade unless otherwise authorized by the ~~City's Representative~~city~~.~~

In general cases, the pipe will be laid in one direction only.

Pipe shall be laid true to line and grade, with uniform bearing under the full length of the barrel of the pipe. Suitable excavation shall be made to receive the bell or collar, which shall not bear upon the subgrade or bedding. Any pipe which is not true to alignment or shows any settlement after laying, shall be removed and re-laid to the proper grade and alignment.

A. **REQUIREMENTS FOR LINE AND GRADE.** All sewer and drainage pipe shall be installed to the defined line and grade within the following limits.

A.1 Variance from established grade shall be not greater than one tenth (1/10) of a foot between manholes. ~~Variance from established line shall be not more than one half foot between manholes.~~ Any variances approved shall not impact the system design capacity and shall be approved by the ~~City's Representative~~city. Any variations shall not result in a level or reverse slope installation.

A.2 The invert elevations of each manhole and box at the inlet and outlet and distance between manholes and/or boxes shall be accurately verified by use of surveying instruments prior to pouring the floor.

A.3 On main lines, invert elevations of each manhole inlet and outlet and the distance measurements between manholes shall be verified by use of surveying instruments prior to installing precast manhole bases. For service laterals, grades may be verified by use of a ~~carpenter's~~digital level or surveying instrument.

A.4 All sewer and drainage pipe systems shall be visually inspected for defects, displacement, proper workmanship, alignment and general compliance.

B. **INSTALLATION OF PIPE.** ~~A groove shall be excavated along the bottom of the trench to receive the pipe.~~ Bell holes shall be excavated so that only the barrel of the pipe receives bearing from the trench bottom. ~~Large rocks (over six inches in least~~

~~dimension)~~ Rocks near the trench bottom shall be removed and ~~the hole refilled~~replaced with approved backfill ~~in accordance with Table 4.1~~.

Water pipe shall not be deflected at the joint more than a maximum of ~~three percent (3%), or three~~one degrees, per hundred (100) feet, or as per the manufacturer's recommendation.

Sewer and drain pipe shall be laid up grade. All pipe installation shall proceed with joints closely and accurately fitted. Gaskets shall be fitted properly in place and care shall be taken in joining the pipes to avoid twisting the gaskets. Joints shall be clean and dry and a joint lubricant, as recommended by the pipe supplier, shall be applied uniformly to the mating joint surfaces to facilitate easy and positive joint closures. If adjustments to the position of a pipe length are required after being laid, the pipe shall be removed and rejoined as a new pipe. When pipe laying is not in progress, the ends of the pipe shall be closed with a tight-fitting stopper to prevent the entrance of foreign material. In addition to the above requirements, all pipe installation shall comply with the specific requirements of the pipe manufacturer.

C. SETTING OF BENDS, TEES, CROSSES AND REDUCERS. Bends, tees, crosses, and reducers shall be lowered into the trench, inspected, cleaned and joined to the pipe.

Concrete thrust blocks shall not be used as a restraining system for waterline mains or laterals without prior approval of Water Department. ~~Reaction~~ Joint restraints or, when permitted by the ~~City's~~

~~Representative~~city, thrust blocking, shall be applied at bends and tees, and at points of reduction or at fittings where changes in pipe diameter occur.

The design of concrete thrust blocking shall be as shown in the standard drawings or as directed by the Water Department. The material used for thrust blocking shall be Class C concrete Blocking shall be placed between solid ground and the fitting to be anchored. The area of bearing on the fitting and on the ground shall in each instance be that required in the standard drawings or by the ~~City's Representative.~~city. Unless otherwise directed by the ~~City's Representative~~city, the blocking shall be placed so that the pipe and fitting joints will be easily accessible for repair. Restraining joints (megalug or equal) shall also be used to prevent movement wherever thrust blocks are required.

If a megalug retainer system cannot be used, a concrete thrust block system can be substituted, if approved by the Water Department, on a case by case basis.

~~D.~~ **D. PLUGGING OF DEAD-ENDS.** Standard plugs shall be inserted into the bells of all dead-end fittings. Spigot ends of fittings and plain ends of pipe shall be capped. When directed by the ~~City's Representative~~city, a concrete reaction or thrust block shall be provided at all plugged outlet fittings in the sizes indicated on the

standard drawings or as directed by the ~~City's Representative.~~city. The plugs and caps shall also be tied to the pipe with restraining joints. The number and size of rods shall be as specified.

~~E.~~ **E. SERVICE LINES.** All service lines shall be installed in accordance with the details shown on the standard drawings.

~~F.~~ **F. PIPE TO BE KEPT CLEAN.** All dirt and foreign matter shall be removed from the interior of the pipe before lowering into position in the trench. Pipe shall be kept clean by means approved by the ~~City's Representative~~city during and after laying.

~~G.~~ **G. JOINTING PIPE SECTIONS.** The sealing surface of the pipe, the bell to be joined, and the elastomeric gaskets shall be cleaned immediately prior to assembly, and assembly shall be made as recommended by the manufacturer. When pipe laying is not in progress, the open ends of installed pipe shall be closed to prevent entrance of trench water into the line. Whenever water is excluded from the interior of the pipe, enough backfill shall be placed on the pipe to prevent floating. Any pipe that has floated shall be removed from the trench and the bedding restored. No pipe shall be laid when the trench or weather conditions are unsuitable for proper installations as determined by the ~~City's Representative~~city.

~~H.~~ **H. CUTTING PIPE.** The pipe shall be cut in a neat manner without damage so as to produce a smooth end at right angles to the axis of the pipe. ~~Existing transit~~The minimum length of PVC type pipe shall be 3 feet. Pipe lengths shorter than 3 feet shall be ductile iron. Existing transite AC pipe shall not be cut and should be removed and replaced with ductile or PVC pipe.

~~I.~~ **I. END PREPARATION.** Pipe ends shall be cut square, deburred and beveled in accordance with the pipe manufacturer's recommendations.

~~J.~~ **J. PUSH-ON JOINTS.** The push-on joint shall be a single elastomeric gasketed joint which shall be assembled by positioning the elastomeric gasket in the annular groove of the bell and inserting the spigot end of the pipe into the bell. The spigot end of the pipe shall compress the gasket radially to form a positive seal. The gasket and annular groove shall be designed, sized and shaped so that the gasket will resist displacement. Care shall be taken so that only the correct elastomeric gasket, compatible with the annular groove of the bell, is used. Insertion of the elastomeric gasket in the annular groove of the bell must be in accordance with the manufacturer's recommendations.

~~K.~~ **K. MECHANICAL JOINTS.** The mechanical joint shall be a bolted joint of the stuffing box type, and installation recommendations from the manufacturer shall be followed. Each joint shall consist of:

K.1 A bell provided with an exterior gland having bolt holes or slots and a socket with an annular recess for the sealing gasket and the spigot end of the pipe. On all slotted holes the bolts will be supplied with square shoulders.

K.2 A sealing gasket.

K.3 A follower gland with bolt holes matching those in the fitting.

K.4 Tee bolts and hexagonal nuts of cor-ten metal.

~~L.~~ **L. PIPE BEDDING.** Pipe shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded in accordance with the bedding details in the standard drawings and as recommended by the manufacturer.

Pipe bedding materials shall be deposited and compacted in layers not to exceed six (6) inches in compacted thickness. Deposition and compaction of bedding materials shall be completed simultaneously and uniformly on both sides of the pipe. Compaction shall be accomplished with hand or mechanical compactors to the satisfaction of the ~~City's Representative.~~city. All bedding materials shall be placed in the trench with hand tools, or other approved methods in such a manner that the bedding materials will be scattered alongside the pipe and not dropped into the trench in compact masses. Bedding materials shall conform to the requirements of Table 4.1 of these standards and shall be free from roots, sod, vegetation or other deleterious material.

In the event trench materials are not satisfactory for pipe bedding, imported bedding will be required. Imported bedding material shall be graded in accordance with Table 4.1, under "bedding material".

See Trench Backfill and Repair Detail City Standards Drawing 170.

~~M.~~ **M. METER BOXES.** All meter boxes shall be located behind the sidewalk. All meters will be provided with concrete collars. Any meter box damaged or covered during the construction operations shall be replaced and/or uncovered and raised to finish grade by the Contractor as determined by the ~~City Representative.~~city.

4.~~4~~5.2.6 BACKFILLING AND COMPACTION. Backfill shall include filling of all trenches to the original ground surface or final grading elevation as shown on the drawings, or otherwise directed by the ~~City's Representative.~~city. Backfill shall be carefully placed around and over pipes and shall not be permitted to fall directly on a pipe from such a height, or in such a manner as to cause damage. Backfill material shall be as required by Table 4.1 or as approved by the ~~City's Representative~~city and shall not contain any wood, grass, roots, broken concrete, frozen soil, asphalt chunks, trash or debris of any kind that may

cause unequal settlement or improper consolidation.

The backfill in all utility trenches under proposed or existing roadways, curb and gutter, sidewalks and driveways shall be compacted to the equivalent of ninety five percent (95~~%)~~%), of maximum dry density within 2% of optimum moisture content for granular soils or ninety percent (90%) of maximum dry density between 2% and 4% above optimum moisture content for silty/clay soils. ~~In shoulders and other street right-of-way areas,~~ Utilities that extend outside of the ~~in-place density~~roadway section within the municipal utility easement shall be ~~a minimum of ninety percent (90%) of the maximum dry density~~compacted to the percentages .

A.~~——~~ INITIAL BACKFILL PROCEDURE. (Pipe Zone) Backfill of selected material, which shall conform to the requirements of Table 4.1, shall be placed carefully in eight inch non-compacted horizontal layers and compacted to a depth of twelve inches over the top of the pipe. During compaction of the initial backfill, special care shall be taken so as to not move the pipe, either vertically or horizontally. All backfill operations shall be performed in such a manner so as to avoid any damage to the pipe, valves, laterals, etc. In the event such damage or displacement occurs, such damaged or displaced pipe shall be removed and replaced with undamaged pipe on proper grade and alignment.

B.~~——~~ FINAL BACKFILL PROCEDURE. The backfill above a point twelve (12) inches above the top of the pipe shall be filled in horizontal layers twelve (12) inches thick or less with materials free from roots, vegetation or other deleterious material, or rocks, ~~-~~stones or boulders larger than six inches in the greatest dimension. The material shall be mechanically compacted with appropriate vibrating compaction equipment. ~~Wherever, in the opinion of the City Engineer, surface settlement is not critical compaction may be reduced to a minimum of ninety percent (90%) of maximum dry density and the backfill shall be neatly rounded over the trench to a sufficient height to allow for settlement to grade after consolidation.~~

C.~~——~~ MECHANICAL COMPACTION OF BACKFILL. The backfill shall be thoroughly compacted by mechanical compaction.

Structural and trench backfill shall be deposited in horizontal layers and compacted by the following method in such manner that the compacted material will be homogeneous and free from lenses, pockets, streaks, and other imperfections.

The materials shall be deposited in horizontal layers across the length or width of the excavation of not more than ~~six inches compacted thickness.~~twelve inches (12”) loose lifts depending on the type of equipment used. The excavation and placing operations shall be such that the materials when compacted will be blended sufficiently to secure the best degree of compaction, impermeability and stability.

Prior to and during compaction operations, all backfill material shall have the required

moisture content and shall be uniform throughout each layer.

If the moisture content is not optimum for compaction, the compaction operations shall be delayed until such time that the material has been brought to the required moisture content. ~~When the material has been properly conditioned, it shall be compacted by using appropriate mechanical compaction equipment as indicated below or as otherwise approved by the City's Representative.~~

~~C.1 Vibrating rollers shall consist of a self-propelled roller with a vibrating steel drum of at least one ton capacity. The roller shall have an effective rolling width of at least twenty four (24) inches and shall deliver a compaction force of at least seven hundred (700) pounds per square inch when vibrating.~~

~~C.2 Pneumatic rollers shall consist of a self- propelled roller with pneumatic tires arranged in a manner so as to provide a satisfactory compacting unit. The roller shall have an effective rolling width of at least thirty (30) inches and shall give a compaction force of at least five hundred (500) pounds per inch of width of tread when fully loaded. The tires shall be uniformly inflated.~~

~~C.3 Vibrating plates shall consist of a pneumatic vibrating plate attached to the boom of a backhoe and capable of compacting an area of at least three square feet. The plate and backhoe combination shall together be capable of exerting a compactive force of at least one thousand (1,000) pounds per square inch.~~

~~C.4 Hand compactors shall be used when hand- compacted methods are specified or required because the location of the area to be compacted does not permit the use of self-propelled mechanical compactors. Vibrating plates, "pogo-stick" tampers or other approved hand-compacting equipment shall be used.~~

~~C.5 Jetting and flooding or other water consolidation methods are not permitted.~~

~~D. FLOWABLE BACKFILLING.~~**D. Controlled Low Strength Material (CLSM).**
For trenches under pavement, sidewalk, curb and gutter, and in all existing city streets, ~~flowable backfill~~CLSM may be used (unless otherwise directed by the ~~City's Representative~~city) for backfill and shall be in conformance with the standards for "~~Flowable Fill~~CLSM" as described below. ~~Flowable fill~~ CLSM shall not be used as backfill for water main trenches without prior approval of the ~~City's Representative. Flowable fill~~city. CLSM shall be discharged from the ready mix truck by reasonable means into the trench to be filled. The fill shall be brought to an elevation equal to the bottom of the road base and shall be finished level to provide a uniform surface. ~~Flowable~~ CLSM fill shall not take the place of roadbase~~-~~ or asphalt in the roadway section.

When surface restoration cannot take place promptly in existing ~~City~~city streets or in other areas where safety is a concern, the flowable fill may be extended to the bottom of the surface course and a temporary driving surface installed. When the permanent surface is installed the temporary surface and flowable fill shall be removed to the

level of the bottom of the roadbase and the roadway structure properly restored in accordance with these standards.

~~Flowable fill:~~

Controlled Low Strength Material (CLSM):

D.1 Portland Cement - Type II or V.

D.2 Fly Ash - ASTM C-618, Class F, except loss on ignition shall not exceed three percent (3%) maximum, and shall come from a source approved by the City Engineer.

D.3 The coarse and fine aggregate for flowable fill shall be natural material and consisting of mineral aggregate particles meeting the following requirements.

Sieve Size	Percent Passing
3/4	100
200	0-10

D.4 Mix Design - shall meet the following:

Minimum compressive strength (28 days)	50 PSI
Maximum compressive strength (28 days)	150 PSI
Maximum fly ash per cubic yard	100 lb
Minimum cement per cubic yard	50 lb.
Minimum slump	6 in.
Maximum slump	10 in.

4.~~4~~5.2.7 TRENCHES ON HIGHWAYS AND STREETS. No work of any kind shall be performed in any public right-of-way without first obtaining an encroachment permit. Wherever any trenches will be in, or must cross any State road or any ~~City~~city road, alley or drainage way, the Contractor, or other responsible party, shall obtain any and all encroachment permits as are required for these crossings and shall become familiar with and abide by the rules and regulations of the Utah Department of Transportation and the ~~City~~city of St. George.

All Contractors or responsible parties excavating or encroaching over or under any public right-of-way including roads, drainage way, easements or other public property shall first obtain an encroachment permit in compliance with the applicable local ordinances prior to excavating.

All asphalt cuts shall be made with a diamond or carbide-tipped masonry or asphalt cutting saw unless otherwise approved by the ~~City's representative~~city. No scarifier-tooth cuts, back-

hoe or bucket rips will be allowed.

All backfilled trenches in roadways shall be patched with hot-mix asphalt within five days of initial excavation, unless otherwise directed by the ~~City's Representative.~~city. All backfill shall be in accordance with these standards.

All concrete or asphalt surfaces damaged or cut in trenching operations or other work within the right-of-way shall be restored to an "as-good or better condition" in accordance with the provisions outlined in Section 4.7 of these standards.

During the entire trenching, backfilling and patching operations, the Contractor shall be required to observe all safety and traffic control procedures as outlined in these standards.

The Developer and/or Contractor shall be responsible for maintenance of the trench, patch, and related work for a period of twelve (12) months from date of completion.

~~A single asphalt patch shall be contisubgra~~

No more than ~~four~~one hundred ~~(400)~~ feet (100') of trench shall be left unfilled at any time in one continuous run, unless otherwise approved by the ~~City's Representative~~city.

All streets and roads shall be kept free from dust and shall be open to through traffic. Approval to close the street must be obtained by the Contractor from the ~~City Engineer or his designated representative.~~city. At least one-half (1/2) the width of any street or road shall be temporarily restored for use before excavation is commenced on the remaining portion of the street or road.

All excavation, backfilling and temporary resurfacing on any portion of any street or road shall be completed in one working day so that trenches are not left open or uncovered over night.

All requirements governing work within a right-of-way as contained in Section 2.5 (Barricades and Warning Signs - Work Area Protection) of these standards shall be adhered to.

All utility installations, i.e., gas, power, phone, cable T.V. and associated utilities, shall conform to the applicable test requirements contained within these standards for earthwork, compaction, base course, bituminous surface course, concrete and other materials.

For new water main connections requiring joint restraints on an existing pipe, a single contiguous asphalt patch shall be installed along the entire length of the existing water main where new joint restraints have been installed. Asphalt patching between new or existing parallel utility trenches that are less than three feet (3') apart (edge of trench to edge of trench) shall be a contiguous patch. See Standard Drawing 170.

4.~~4~~5.2.8 CLEANING OF SANITARY SEWER LINES. When sewer lines have been placed and the trench backfilled, the sewer lines shall be thoroughly cleaned, flushed, and tested prior to acceptance by the ~~City's Representative.~~city. No debris shall be permitted to enter any sewer lines in service. All debris shall be removed from the ~~sewerline~~sewer line and manholes. Methods of cleaning are subject to approval by the ~~City's Representative.~~city.

4.~~4~~5.2.9 CLEANING AND DISINFECTION OF WATER SYSTEMS. After being tested and prior to being placed in service, all lines shall be disinfected by chlorination. Prior to chlorination the entire line shall be flushed to ensure that all dirt or foreign objects have been removed from the line. Sufficient chlorine shall be added to ensure a residual of twenty- five (25) parts per million in the water after twenty-four (24) hours standing in the pipe. Chlorine calcium hypochlorite dry chlorinating chemical solution may be used for this purpose. Methods of application shall be approved by the Water Department. Following chlorination, all treated water shall be drained and the pipeline thoroughly flushed with clean water.

All lines being disinfected shall be flushed after the specified twenty-four (24) hour contact period. Such flushing shall be continued until the water is free from excess chlorine. All lines being disinfected including hydrant laterals, branch lines, and dead-end mains shall be flushed. After final flushing the chlorine residual shall be tested by the Water Department. It is the contractor's responsibility to coordinate this test. The discharge of flushed water shall not cause erosion or damage to streets or other property. Procedures for discharge will be subject to the review and approval of the ~~City's Representative~~city and Water Department.

4.~~4~~5.2.10 SPECIAL REQUIREMENTS.

~~A.~~ A. **CONNECTIONS TO EXISTING FACILITIES - DRY TAPS.** All connections to existing facilities shall be approved by the City Water Department. The Contractor shall make the approved connections to existing facilities as shown on the drawings. Dry connections to existing facilities shall be made only at locations shown on the drawings and shall be made at such times which will cause the least inconvenience to the water user(s). Dry connections shall be planned to minimize the duration of any shut down. The Contractor shall notify the Water Department at least two business days prior to beginning any connections to the existing facilities. When a connection to an existing water main is made, approximately four ounces of high test calcium hypochlorite (HTH) shall be placed in the pipe at each point where the existing main is cut. All new pipe and fittings at such connections shall be swabbed internally with an approved chlorine solution. All connections shall be made in the presence of the Water Department ~~representative.~~.

Valves shall not be operated without a Water Department ~~representative~~ present. Existing facilities shall not be shut down for connections to new facilities without prior Water Department approval. In no case shall an existing pipeline be shut down for a total of more than twenty four (24) hours (a maximum of three (3~~) ,~~), eight-hour periods).

The actual work plan and schedule for making a connection to an existing facility which requires an existing pipeline to be shut down, shall be submitted to the Water Department and shall be approved before the Contractor will be allowed to proceed. The Contractor shall notify, by a method approved by the Water Department, all affected Water Department customers at least twenty four hours prior to shut down. Valves at connections to all existing facilities shall be operated by the Contractor, but only in the presence of the Water Department ~~representative.~~ If the water will be shut off for an extended period of time, the Water Department may require the Contractor to supply water for the Water Department's customers.

~~B.~~ B. **CONNECTION TO EXISTING FACILITIES - WET TAPS** (Steel and Steel Composite Mains). The Contractor shall furnish and install, at his sole cost and expense, all tapping fittings and valves for all wet taps on existing ~~City~~city water pipelines. The Contractor shall notify the Water Department a minimum of two (2)

business days prior to the time the wet tap is required. No wet taps shall be made without prior approval.

Prior to tapping the main, the tapping valve and fittings shall be properly installed and pressure tested and approved by the Water Department. All wet taps to existing ~~City~~city water pipelines shall be made by the ~~City~~city Water Department at the sole expense of the Contractor requesting the work. The Contractor shall also provide all necessary equipment, labor and appurtenances necessary to complete the job. The wet tap materials shall be obtained from a source pre-approved by the Water Department.

4.45.3 QUALITY CONTROL. All underground pipelines shall be installed in accordance with these standards and tested as outlined below. These are minimum requirements and additional testing may be required. to verify compaction.

4.45.3.1 TRENCH BACKFILL MOISTURE/DENSITY TESTING. Minimum testing of trench backfill shall be as follows:

Soil Proctor - One determination for each significant change in soil type as necessary to provide required compaction testing. Tests shall be method ASTM D-1557 Method A or D (modified proctor).

Trench backfill moisture/
Soil Classification (Gradation & Atterberg Limits) - One determination for each source and soil type of materials used for bedding, pipe zone, initial backfill, and final backfill.

Trench Backfill Determination

A set of in-place density determination - Testscompaction tests includes the pipe zone and every two feet (2') of fill above the pipe zone are required for trench backfill for every two hundred (200) lineal feet of trench or portion thereof and all service laterals, valve locations and manholes. Tests shall be run at the following trench elevations: linear feet. One (1) test per each valve location, three (3) tests per each manhole and three (3) tests per each catch basin. For water, power, and gas crossings, one (1) test per each crossing. See Table 4. Roadway Frequency Requirement Testing

One test at top of pipe zone.

One test per two (2) feet of depth measured from the bottom of the subgrade to the top of the pipe zone. Tests shall be evenly spaced vertically through the trench with one (1) test at top of trench (bottom of subgrade).

For sewer laterals two (2) complete sets of tests per each lateral.

In a public right-of-way and municipal utility easements, natural gas and power may install one foot of moisture conditioned sand material (plus or minus 2% optimum moisture content with a thoroughly mixed material) above the pipe with one foot of native material above that and a compaction test will be taken at the top of native material, and additional test will be taken at subgrade. Both tests within the public right-of-way shall meet ninety-five percent (95%) compaction. Within the municipal utility easement (MUE) the same test shall be taken as listed above but with a ninety percent (90%) compaction test. For all power switch gears and vaults in-place

density/compaction shall be taken at subgrade and achieve a minimum ninety-five percent (95%) compaction.

Additional testing may be required by the ~~City's Representative~~city or ~~soils testing laboratory~~geotechnical engineer to verify compaction.

Tests shall be according to ASTM D-1556 or D-2922 and D-3017.

Moisture/density determinations shall be made in accordance with Section 3 of these standards. Proctors for all trench backfill compaction shall be determined using ASTM D-1557 modified proctor method.

4.~~4~~5.3.2 SANITARY AND STORM SEWER LINE TESTING AND ACCEPTANCE. This subsection specifies requirements for the testing and acceptance of all sewer systems. Prior to testing, all sewer lines shall be cleaned. On main lines, invert elevations of the inlet/outlet of each manhole and the distance measurements between manholes shall be verified with surveying practices prior to installation of manhole floor. For service laterals, grades shall be verified by a carpenter's level or surveying instruments. All sewer trench compaction testing shall be completed and approved prior to performing air and deflection tests. The sewer lines, service laterals and manholes shall be tested for leakage and alignment in the presence of the ~~City's Representative~~city as follows.

~~A.~~ **A. DISPLACEMENT TEST.** The displacement test shall be conducted by the Contractor in accordance with the following procedure.

A light shall be flashed between manholes or, if the manholes have not as yet been constructed, between the locations of the manholes, by means of a flashlight or by reflecting sunlight with a mirror. If the illuminated interior of the pipe shows broken, misaligned or displaced pipe, or other defects, the defects identified by the ~~City's Representative~~city shall be remedied by the Contractor. After cleaning and inspection have been completed, the line shall be tested for leakage.

~~After cleaning and inspection have been completed, the line shall be tested for leakage.~~

~~B.~~ **B. AIR TESTING.** The air test shall be performed on all sanitary sewer and other storm sewer lines as directed by the ~~City's Representative.~~city. This test applies to all types of pipe. When concrete pipe is used, it shall be pre-wetted prior to testing.

The reach of pipe to be tested shall be isolated by completely plugging all outlets in the section under test. Careful attention shall be given to blocking all plugs. Prior to installing the lower and upper plugs, any concrete pipe and manholes used shall be wetted to minimize any loss of air through the pipe or manhole walls as a result of permeability in the dry condition. One of the plugs used at the manhole must be equipped to control the air entry rate and to prevent the pressure from exceeding five

p.s.i.g. which shall be done by means of a blow-off valve set to operate at five p.s.i.g.

After the plugs are installed (and any concrete pipe has been wetted) the air shall be allowed to slowly fill the pipe until a constant pressure of four p.s.i.g. is maintained for at least two minutes. During the two-minute stabilization period, all plugs and exposed fittings shall be checked with a soap solution. If a leak is found, the air shall be bled off, the leak repaired and a new two minute stabilization period begun. When the temperature of the air has reached equilibrium with that of the pipe wall, the air pressure shall be brought to four p.s.i.g. and the supply shall then be disconnected. When the pressure gauge reaches three and one-half p.s.i.g., a stop watch shall be started. The watch shall then be stopped when the pressure reaches two and one-half p.s.i.g. The time shown on the watch for a loss of one p.s.i.g. at an average pressure of three p.s.i.g. is used to calculate the rate of air loss. The pipeline may be considered to have passed the air test successfully if the loss of air is not greater than a rate of 0.0030 cubic feet per minute per square foot of internal pipe surface. The following table shows the allowable time for the pressure to drop from three and one-half to two and one-half p.s.i.g. for respective pipe diameters.

Pipe Diameter	Time Min. Sec.	Pipe Diameter	Time Min. Sec.
6-inch	3 0	18-inch	8 30
8-inch	3 45	20-inch	9 30
10-inch	4 45	21-inch	10 0
12-inch	5 45	24-inch	11 15
14-inch	6 30	27-inch	12 45
15-inch	7	30-inch	14 0
16-inch	0	36-inch	17 0
	7 30		

~~C.~~ **C. EXFILTRATION TEST.** In lieu of the standard air test, the Contractor may make an exfiltration test in accordance with the following procedure:

The test section shall be plugged at both ends and the pipe subjected to a hydrostatic pressure produced by a head of water at a depth of three feet above the invert of the sewer at the upper manhole under test. In areas where ground water exists, the head of water shall be three feet above the existing water table.

For concrete pipe, the three foot head of water shall be maintained for a period of one hour to obtain full absorption of the pipe body and thereafter for a further period of one hour for the actual leakage test. For all other types of pipe, the three foot head of water shall be maintained for a period of one hour only. During the one hour test period the measured maximum allowable rate of exfiltration for any section of sewer, including service stubs, shall be as listed below.

Sewer Main Diameter (inches)	Maximum Drop in Head in a 4-ft. Diameter Manhole (Non-taper sect.) per 100 ft. of sewer pipe	Maximum Allowable Leakage (Exfiltration) (Gallons/Hour/100 ft.)
6	0.1563 inch	1.2
8	0.2031 inch	1.6
10	0.2500 inch	2.0
12	0.3125 inch	2.4
15	0.3594 inch	2.8
18	0.4063 inch	3.2
21	0.4531 inch	3.6
24 or larger	0.5156 inch	4.0

When measurements indicate an exfiltration greater than the maximum allowable leakage, additional measurements shall be taken and continued until all leaks are located and the necessary repairs and corrective work have reduced the leakage in the section being tested below the maximum allowable by these standards.

For purposes of the exfiltration test, the line between adjoining manholes will be considered a section and will be tested as such.

The Contractor shall furnish the plugs and other material and labor for placing the plugs in the sewer and shall assist the ~~City's Representative~~city in making all measurements required. The introduction of any substance into the testing water with the intent of sealing leaks will not be permitted.

When the results of the air test or the exfiltration test is not satisfactory, repairs or pipe replacement shall be required until the ~~City's Representative~~city is satisfied that the leakage requirements have been met. All repair methods and materials used shall be approved and accepted by the ~~City's Representative~~city.

~~D.~~ **D. PVC DEFLECTION TEST.** All PVC sewer pipe shall be tested for deflection with a mandrel. The mandrel shall be a rigid device sized to pass through a pipe having five percent (5%) or less deflection. These allowances shall include deformations due to all causes (wall thickness variations, shipping, production, backfill, heat, etc.). The mandrel device shall be cylindrical in shape and shall comply with the manufacturer's recommendations.

The mandrel shall be hand pulled through all sewer lines. Any sections of sewer not passing the mandrel shall be uncovered and repaired by the Contractor. The Contractor shall re-round or replace the sewer to the satisfaction of the ~~City's Representative.~~city. All repaired sections shall be re-tested as noted above.

Deflection tests shall be conducted only after the final trench backfill is placed to final grade and compacted.

~~E.~~ **E. INSPECTION AND FLUSHING.** Prior to final acceptance of each section of sanitary and storm sewer lines, all lines shall be flushed by the Contractor. All dirt and debris shall be prevented from entering the existing sewer system by means of water-tight plugs or other suitable methods.

Upon completion of the project, the ~~City's Representative~~city will carefully inspect all sewers and appurtenances. Any unsatisfactory work shall be removed and replaced in a proper manner. The invert of the sewer lines and manholes shall be left smooth, clean, and free from any obstructions throughout the entire line. All manhole rings and covers shall be adjusted to finished grade, concrete collars installed and all sanitary sewer laterals shall be properly extended, capped and

marked prior to acceptance of the sewer system.

~~F.~~ **F. MANHOLE LEAKAGE TEST.** Sewer manholes located in areas of ground water or probable flooding or if their water tightness is suspect, as determined by the ~~City's Representative~~city, shall be tested for leakage prior to acceptance. The contractor shall perform all testing. Allowable leakage shall be one gallon per hour per manhole. At least two manholes shall be tested, and based on these tests and visual inspection of all manholes, additional tests may be required for other manholes. Any manhole which tests unsatisfactorily shall be repaired and retested until satisfactory results are obtained.

4.~~4~~5.3.3 WATER SYSTEM TESTING AND ACCEPTANCE. The Contractor shall test all water mains prior to final acceptance. Testing shall be done in the presence of the City Water Department ~~Representative.~~ When existing facilities must be included in the test and are determined to be faulty and not capable of holding test pressures, the existing facilities must be repaired prior to testing. When concrete thrust blocks are used, they shall be in place at least five days prior to initial filling of the line. (If high early strength concrete is used, three days will be required.

A. PRESSURE TEST. After the pipe has been laid, including fittings, valves, corporation stops, services, and hydrants, and the line has been backfilled in accordance with these standards, each valved section, unless otherwise directed by the Water Department, shall be subjected to a hydrostatic pressure test of not less than two hundred pounds per square inch. The duration of each such test shall be two hours. Water added to maintain the pressure shall not exceed 0.3 gallons per inch diameter per one thousand ~~lineal~~linear feet of pipe being tested during the two hour test period.

Each valved section of pipe shall be slowly filled with water, and the specified test pressure measured at the lowest point of elevation. The pressure shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connection, gauges, and all necessary apparatus for the test must be furnished by the Contractor. Gauges and measuring devices must be approved by the City Water Department and the necessary pipe taps shall be made as directed. Before applying the specified test pressure, all air shall be expelled from the pipe by a method approved by the Water Department.

Any cracked or defective pipes, fittings, valves, or hydrants discovered in the pressure test shall be removed and replaced with new materials in accordance with the standard specifications. The test shall be repeated until the water main passes the pressure test and is accepted by the City's Water Department or ~~City's Representative~~the city.

B. OPERATIONAL INSPECTION. At the completion of the project and in the

presence of the ~~City's Representative~~city, the Contractor shall operate all valves, hydrants, and water services to ascertain that the entire facility is in good working order; that all valve

~~B.~~ boxes are centered and valves are operational; that all hydrants operate and drain properly and that water is available at all meter boxes.

~~C.~~ **C. TEST RESULTS AND CERTIFICATES OF COMPLIANCE.** Test results shall be submitted for pressure and operational testing in accordance with current City Water Department requirements. Certificates of compliance from material suppliers may be required, at the option of the ~~City's Representative~~city, for any materials not specifically covered herein.

4.5.3.4 ROADWAY TESTING FREQUENCY REQUIREMENTS. The Roadway Testing Frequency Requirement Table below includes all roadway frequency requirement for subgrade, pavement and concrete .

TABLE 4.2
SUBGRADE AND PAVEMENT/CONCRETE REQUIREMENTS
St. ~~4.5~~ **George City Minimum Testing Requirements**

Subgrade Requirements

Location	Minimum Requirements	Frequency
Roadway Subgrade	95% for granular soils, 90% for fine grained soilsand +/- 2% per D-1557	1 test per 750 square yards
Roadway/Embankment/Backfill	95% for granular soils, 90% for fine grained soilsand +/- 2% per D-1557	Embankments: 1 test per 250 linear feet of roadway
Under Curb and Gutter	95% and +/- 2% per D-1557	1 test per 400 feet of linear roadway
Under Sidewalks and Driveways	95% and +/- 2% per D-1557	1 test per 500 feet of linear sidewalk and 1 per entrance (commercial)
Utility Trenches under Roadway, Curb and Gutter, or Sidewalk*	95% and +/- 2% per D-1557	1 test per 200 linear feet and 2 vertical feet (additionally 1 test per crossing)
Sewer and Water Laterals*	95% and +/- 2% per D-1557	2 tests per sewer lateral , 1 test per water lateral
Sewer Manhole and Storm Drain Box/Curb Inlet*	95% and +/- 2% per D-1557	3 tests per sewer/storm drain manhole, 1 tests per storm drain box/curb inlet
Water Valves*	95% and +/- 2% per D-1557	1 test per valve/valve cluster

Untreated Base Course and Subbase Requirements

Location & Test Type	Minimum Requirements	Frequency
Roadway (Compaction)	95% and +/- 2% per D-1557	1 test per 200 linear foot of roadway
Roadway (Gradation)	Job-Mix Target	1 test per 500 linear foot
Curb and Gutter (Compaction)	95% and +/- 2% per D-1557	1 test per 300 linear feet
Curb and Gutter (Gradation)	Job-Mix Target	1 sample per 750 lineal feet
Sidewalk/Trail (Compaction)	95% and +/- 2% per D-1557	1 test per 300 linear feet
Sidewalk/Trail (Gradation)	Job-Mix Traget	1 sample per 750 linear feet

Bituminous Surface Course Requirements (Asphalt)**

Location and Test Type	Minimum Requirements	Frequency
Roadway (Compaction)	96% Average, no test below 92% Marshall 92% Average, no test below 90% Rice	1 test per 7,000 square feet
Roadway (Extraction)	Job-Mix Target	1 Rice test per 500 tons
Roadway (Extraction)	Job-Mix Target	1 Marshall test per 1 day's production

**Temperature observation required during winter months (December 1 through February 15)

Concrete Testing Requirements (Curb, Gutter and Sidewalk)

Test Type	Requirements	Frequency
Compressive Strength	4,000 psi at 28 days	1 set (4 cylinders) per 50 cubic yards
Air Entrainment	4-6% by volume	Until 2 consecutive tests pass
Slump	4-inch maximum 1 1/2-inch maximum for machine placement	Until 2 consecutive tests pass
Temperature	90° F. Maximum concrete temperature 60° F. Minimum concrete temperature	At least once per load

4.6 ROADWAY CONSTRUCTION. This subsection covers roadway construction including subgrade, subbase, roadbase, recycled aggregate materials (RAM), prime coat, tack coat, plant mix bituminous surfaces (dense and open graded), construction staking and other related work.

4.6.1 ~~4.5.1~~ GENERAL REQUIREMENTS. The Contractor shall furnish all labor, material, equipment, tools, transportation, traffic control and supplies required to complete the work in accordance with the approved plans and these specifications. The approved plans do not ~~purport~~intend to show all the details of the work. The plans are intended to illustrate the character and extent of work required and therefore, they may be, if necessary, supplemented or revised as the work progresses. The Contractor shall keep the most current set of approved plans available on the job site at all times.

The Contractor shall arrange the work and shall place and dispose of the materials being used so as not to interfere with the public during the course of the project. The Contractor shall join the new work with that of existing in an acceptable manner and shall perform all work in proper sequence.

The Contractor shall provide and maintain or have provided for, all necessary work zone traffic control in accordance with the requirements of Section 2.5 of these specifications. The Contractor shall also maintain the job site and all adjoining private and public areas in a clean, safe manner. This maintenance shall constitute continuous and effective work prosecuted day-by-day, with proper equipment and adequate work forces to keep all areas related to and adjoining the job site in a condition satisfactory to the ~~City's Representative.~~city. If, at any time, the Contractor fails to comply with these provisions the ~~City's Representative~~city will immediately notify the Contractor of such non-compliance. If the Contractor fails to remedy the unsatisfactory maintenance within twenty-four (24) hours after receipt of such notice, the ~~City's Representative~~city may immediately proceed to cause correction(s) to the job site and adjoining areas. The entire~~-~~ cost of this corrective maintenance will be billed to the Contractor and shall be paid in full prior to the ~~City's~~city acceptance of the work.

If a condition develops due to a lack of maintenance by the Contractor that is dangerous to public safety, the Contractor shall proceed to immediately remedy the condition with whatever means are available. The entire cost of~~–~~ the corrective remedy will be the Contractor's responsibility

~~4.5.2~~

4.6.2 CONSTRUCTION STAKING. Construction stakes shall be furnished and set, establishing lines and grades for roadway excavation including, but not limited to all cut and fill slopes finished subgrade, finished subbase and finished roadbase grades for streets, curb & gutter, cross-gutters, sidewalks, drive approaches, any contiguous structures and utilities (to help prevent conflicts of location). In development related projects the Developer and his Engineer shall be responsible for all surveying and the accuracy thereof.

The line and grade stakes shall be, whenever possible, off-set from the construction area a minimum of five feet~~,~~ and shall show the stationing (corresponding with the approved plans), off-set distance, required cut or fill to the finished grade, flow line, and TBC as indicated on the approved plans. ~~-~~Grade stakes with hubs set to the finished grade of the subgrade shall be painted appropriately. Stakes with hubs set to the finished grade of the subbase or roadbase shall be painted appropriately. Plastic "whiskers" may be used in connection with painted hubs. All stakes and grades shall be set by appropriate methods under the direction of the professional engineer whose seal is on the approved plans. The Contractor constructing the facilities should be provided with copies of the cut sheets generated during construction staking. Cut sheets shall include roadway stationing, reference elevations, grade elevations, etc.

The line and grade stakes and cut sheets along with the most current set of approved plans shall constitute the field control by which the work shall be executed.

The Contractor shall be responsible for preserving property markers, corner survey markers, construction survey stakes and marks for the duration of their usefulness.

If any construction survey stakes or markers are lost or disturbed and need to be replaced, such replacement shall be done at no expense to the ~~City~~city. At no time shall a permanent monument be removed without prior authorization by the ~~City Engineer~~city. When construction work encounters such monuments, the City Surveyor should be contacted immediately.

~~4.5.3 GRADE CONTROL SYSTEMS. Non-contact grade control systems may be used to establish the roadway elevations of subgrade, subbase and roadbase on public streets providing the following conditions are met.~~

~~4.5.3.1 The system shall be equipped with a "self diagnostic" function that continuously monitors all system functions and shuts the system down if an error in the system occurs. It shall also be equipped with a "thermistor" to electronically compensate for differences in air and ground temperature with a minimum operating range not less than zero to 160 degrees F. (-18 to 71 degrees C.).~~

~~4.5.3.2 The system shall meet the following minimum specifications:~~

~~Blade Slope Sensor Resolution~~	~~0.01% slope~~
~~Main Fall Sensor Resolution~~	~~0.01% slope~~
~~Rotation Sensor Resolution~~	~~0.1 degree~~
~~Tractor Grade Controller Accuracy~~	~~"0.015 foot (4.5 mm)~~
~~Cross Slope Resolution~~	~~0.1% slope or 0.01 foot/10 foot (3 mm in 3 m)~~
~~Cross Slope System Accuracy~~	~~0.02 foot/10 feet (6 mm in 3m)~~

~~4.5.3.3 A system meeting the above requirement must be properly installed on a "tight"* properly maintained motor grader.~~

~~*Meeting the equipment manufacturer's service specification tolerances for all controlling surfaces and connecting points that effect the ability of that specific type of equipment to provide proper grade control.~~

~~With all the above conditions met the system will be permitted to be used, providing a preset grade and line for curb & gutter, edge of pavement or curb grade line has been established by the Engineer.~~

~~The City's Representative has the right to prohibit the use of such equipment, if in his opinion the equipment has not been properly maintained or is not being properly operated.~~

~~4.5.4~~

4.6.3 GEOTECHNICAL INVESTIGATION. A geotechnical investigation shall be conducted under the direction and control of a Geotechnical Engineer experienced in flexible pavement design. The investigation shall include a thorough exploration and sampling program of the subgrade to determine the nature and engineering properties of the on-site soils within the roadway construction areas. The minimum sampling and testing requirements shall be as outlined in Section 3.2.5 and where otherwise outlined in these specifications.

The structural details shown on the plans and/or Standard Drawings, and Table 4.2 are minimum requirements. The actual structural section for each roadway shall be designed by accepted engineering design methods for flexible pavement (i.e., AASHTO, UDOT, Caltrans). Required subgrade soil properties shall be obtained from an on-site geotechnical investigation. Required traffic ~~-~~design traffic information is provided in Table 4.2. When, in the opinion of the ~~City Engineer~~city the traffic information listed is inappropriate for the street under consideration the Traffic Index will be adjusted accordingly.

4.6.4 ~~4.5.5~~ **ROADWAY SUBGRADE.** This subsection shall govern the preparation of natural, filled or excavated material prior to placement of subbase. The preparation of subgrade shall extend a minimum of one foot beyond the proposed

construction limits. This includes roadways, curbs & gutters, drive approaches, sidewalks or any other roadway structures.

4.6.4.1 ~~4.5.5.1~~ **PREPARATION.** The subgrade soils shall be prepared by scarifying and processing to a minimum depth of one foot unless otherwise recommended by the geotechnical firm approved by the ~~City representative~~city.

Unsuitable material found below the processing depth such as saturated soils from groundwater, expansive soils, soluble soils, deleterious and/or organic materials shall be addressed by a Geotechnical Engineer who shall provide a written recommendation to the ~~City's Representative~~city for approval prior to performing any work in the areas being addressed.

TABLE 4.3: MINIMUM ROADWAY STRUCTURAL REQUIREMENTS

	Roadway Class	Design ESALs (Million)	Travel Lanes	Min. CBR	Asphalt (in.)	Road Base (in.)
Residential-Local	I	≤0.150	2	10	3	6
Residential-Standard	II	0.150-0.400	2	10	3	8
Residential-Collector	II	0.400-0.700	2	10	3	8
Major Collector	II	0.700-2.2	2	10	3	8
Minor Arterial	III	2.2-7.0	4	10	3.5	10
Arterial Major	III	7.0-9.5	4	10	4	10
Commercial-Local	III	7.0-9.5		10	4	10
Industrial-Local	III	9.5-22		10	5	12

Notes:

1. For Major Collector and larger Roadways, a structural pavement design based on a project-specific traffic study shall be submitted to the City for review and approval by the project geotechnical engineer. Pavement designs should be based on AASHTO 98 or UDOT Pavement Design Methods. For new roadway construction, the minimum design life shall be 25 years.
2. Where the CBR value of the subgrade soil is < than 10, sub-base materials, or additional road base materials, or geogrid are required in the structural pavement section as recommended by the project geotechnical engineer.
3. Where collapsible soils (>3 percent) are identified in the initial geotechnical investigation or during construction, the subgrade soil shall be over-excavated and recompacted to a minimum of 1½ feet or deeper as directed by the project geotechnical engineer.
4. Where expansive soils (Liquid Limit > 35 and Plastic Index > 15 percent) are identified in the initial geotechnical investigation, or during construction, the subgrade soil shall be over-excavated to a minimum of 4 feet or deeper and replaced with approved embankment fill materials as directed by the project geotechnical engineer.
5. City will pay cost difference between Table and specified pavement thickness per geotechnical investigation.

4.6.4.1

~~**TABLE 4.2**~~

~~**Minimum Roadway Structural Requirements**~~

Classification	Traffic Index	(3)(4) Roadway Minimum Asphalt Pavement (inches)	(4) Required Roadway Road Base (inches)	(5) Required Roadway Sub-base (inches)	Sidewalk Minimum Concrete Thickness (inches)	Sidewalk Minimum Road Base Thickness (inches)	Driveway Minimum Concrete Thickness (inches) (5)	Driveway Minimum Road Base Thickness "residential" (inches) (6)
Residential – Local (7)	5	2.5 (1)	6	varies	4	4	6	6
Residential – Standard (7)	5	2.5 (1)	6	varies	4	4	6	6
Residential – Collector (7)	5.5	3	6	varies	4	4	6	6
Major Collector (8)	6	3	6	varies	4	4	6	8
Minor Arterial (8)	7	3.5	7	varies	4	4	8	8
Major Arterial (8)	8	4	8	varies	4	4	8	8
Commercial Local (9)	10	4	8	varies	4	4	8 (2)	8
Industrial Local (9)	10	5	12	varies	4	4	9 (2)	8

(1) Asphalt pavements containing more than 1% gypsum (CaSO4+2H2 calcium sulfate, dehydrate) shall be a minimum of 3" thick; consisting of 2" of 3/4" dense-graded asphalt base course containing no more than 2% gypsum and 1" of 1/2" dense-graded asphalt wearing course with less than 1% gypsum. This road classification does not require a prime coat unless otherwise specifically designated by the City Representative.
(2) #4 rebar to be placed three inches above the bottom of concrete spaced 12 inches on center each way.
(3) All wearing courses shall have less than 1% gypsum content.
(4) Thickness may vary based upon structural section design by a registered professional engineer experienced in flexible pavement design. Minimum values are shown.
(5) Roadway sb-base is required. The thickness varies based upon the structural section designed by the engineer.
(6) Thickness' shown here do not apply outside the public right of way or behind the back of sidewalk unless otherwise designated.

4.5.5.1 **(continued)** Uniform pervious soils that allow the immediate penetration of water to a depth of one foot, will not require scarifying and processing unless a condition previously stated requires it. When scarifying and processing are not required, the moisture content of the top one foot of the subgrade material shall be brought to not less than two percent (2%) of optimum by the addition of water on the surface, and the material shall be

compacted by approved equipment to the specified compaction requirements.

When scarifying and processing, the roadbed shall be loosened to a depth of at least one foot, then alternate blading, moistening and rolling will be required to provide a smooth, even and uniformly compacted course true to cross-section and grade. ~~-~~Moisture content at the time of processing and testing shall be not less than two percent (2%) of optimum. All rocks larger than six inches in diameter shall be removed.

4.6.4.2 ~~4.5.5.2~~ **TOLERANCES.** When subbase material is placed on the subgrade the subgrade tolerance shall not vary more than 0.10-foot from the specified grade and cross-section. However, when roadbase or recycled aggregate materials (RAM) placed on the subgrade the subgrade tolerances shall not vary more than 0.05-foot from the specified grade and cross-section.

4.6.5 ~~4.5.6~~ **SUBBASE - CLASS I AND CLASS II.** All gravel pits supplying aggregate shall be UDOT approved pits. Subbase for all roadways and associated areas shall consist of select materials, either natural or crushed. Aggregate wear shall be less than fifty percent (50%) when tested by AASHTO T-96. The material passing the 40 (4.75 mm) sieve shall be non-plastic per AASHTO T-90. The subbase shall contain no more than three percent (3%) gypsum or any other deleterious or organic materials by weight. The test for gypsum shall follow ~~City~~city of St. George Chemical Quantitative Analysis of Gypsum in Aggregates, Test Procedure S-3171-96 or AASHTO T267 and dividing the total combined water percentage by a factor of 20.93 to determine the purity of gypsum.

Prior to delivering any subbase to any site the supplier shall submit, in writing, a job-mix gradation to the ~~City Engineer~~city for approval. The job-mix gradation shall have definite single values for the percentage of aggregate passing each specified sieve based on the dry weight of the aggregate. Dry weight values shall fall within the band limits shown in Table 4.3.

Annual job-mix gradations shall be submitted in writing to the ~~City Engineer~~city for approval prior to January 31 each calendar year or upon selection of new aggregate sources. Any revisions to the approved job mix gradations shall fall within the requirements listed above.

If a supplier does not have an approved job-mix gradation that is current for the aggregate source or calendar year, the “Ideal Gradation” in Table 4.3 will apply.

The subbase mixture placed on projects during one day's operation shall come from a single source. Intermixing from more than one source will not be permitted.

Subbase material shall be deposited and spread in uniform lifts not to exceed eight inches compacted thickness for Class I and six inches compacted thickness for Class II without segregation of size. Each layer shall be compacted for the full width and depth by mechanical means of compaction. When mixing, moistening and placing subbase the moisture content shall be not less than two percent (2%) below optimum. However, caution shall be used to avoid over watering to a state of instability. Alternate blading and rolling will be required to provide a smooth, evenly moistened and uniformly compacted course true to cross-section and grade. Locations inaccessible to rolling shall be compacted with mechanically operated hand tampers. The subbase shall be compacted to not less than ninety-five (95%) percent maximum dry density as determined by ASTM D1557-78 orD1557or AASHTO T-180 Method D. Subbase tolerances when compacted shall not vary more than 0.05-foot from the specified grade and cross-section.

Table 4.34

SUBBASE AGGREGATE GRADATION

PERCENTAGE OF TOTAL AGGREGATE PASSING					
SIEVE SIZE		CLASS I BAND LIMITS	IDEAL GRADATION	CLASS II BAND LIMITS	IDEAL GRADATION
METRIC	AMERICAN STANDARD				
152.4 mm	6"	100	100	- -	- -
76.20 mm	3"	90 – 100	95	100	100
50.80 mm	2"	80 – 100	90	90 - 100	95
25.0 mm	1"	70 – 90	80	70 - 90	80
12.5 mm	½"	51 – 75	63	51 - 75	63
4.75 mm	#4	31 – 65	48	31 - 65	48
1.18 mm	#16	16 – 40	28	16 - 40	28
.075 mm	#200	2 – 12	7	2 - 12	7

4.5.7. UNTREATED ROADBASE - ONE INCH AND THREE-QUARTER INCH. All gravel pits supplying aggregate shall be UDOT approved pits. Roadbase for all roadways and associated areas shall consist of select materials, natural and/or crushed. Coarse aggregate shall be all material retained on the #4 (4.75

~~mm) sieve, and shall be crushed stone, crushed gravel, or crushed slag with a minimum of forty percent (40%) fractured faces per FLH designation T-506-94.~~

~~Fine aggregate may be a natural, or manufactured, product and shall pass through a #4 (4.75 mm) sieve. All aggregates shall be clean, hard, tough, durable and sound containing no more than two percent (2%) gypsum and be free from other deleterious and/or organic materials and harmful adherent coatings. The test for gypsum shall follow City of St. George Chemical Quantitative Analysis of Gypsum in Aggregates, Test Procedure S-3171-96.~~

~~Aggregate wear shall be less than fifty percent (50%) when tested by AASHTO T-96 and the material passing the #40 (.0425 mm) sieve shall be non-plastic per AASHTO T-90. The dry-rodded unit weight shall be at least seventy five pounds per cubic foot (1200 kg/m3) per AASHTO T-19.~~

4.6.6. UNTREATED ROADBASE

Prior to delivering any roadbase to any site, the supplier shall submit, in writing, a physical property test report of the material meeting Table 4.4 and a job-mix gradation and a standard aggregate gradation plot to the ~~City Engineer~~city for approval. The job-mix gradation shall have definite single values for the percentage of aggregate passing each specified sieve based on the dry weight of the aggregate. Dry weight values shall fall within the band limits shown in Table 4.45**,** and provide a uniform curve when plotted on a standard aggregate gradation chart. The ~~City Engineer~~city has the right to request modification to the job-mix gradation to provide an acceptable curve. The accepted job mix will ~~-~~then become the target gradation for the aggregate source for the calendar year.

Annual job-mix gradations shall be submitted in writing to the ~~City Engineer~~city for approval prior to January 31 each calendar year, or upon selection of new aggregate sources. Any revisions to the approved job-mix gradation shall fall within the requirements listed ~~above~~in Table 4.5.

~~If a supplier does not have an approved job-mix gradation that is current for the aggregate source, or calendar year, the "Ideal Gradation" in Table 4.4 will apply.~~The roadbase placed on a project during one day's operation shall come from a single source. Intermixing from more than one source will not be permitted.

Material shall be crushed rock, gravel, sand, or other high quality mineral particle, or combination that is free of organic matter, free of chemical or petroleum contamination, and meets the following physical properties.

Table 4.5
Untreated Roadbase Physical Properties

Physical Property	ASTMs	Aggregate Class
		A
Coarse aggregate		

Angularity (2 fractured faces), min., percent	D5821	50
Wear (toughness or hardness), max., percent	C131	50
Fine aggregate		
Liquid Limit, max.	D4318	25
Plastic Index, max.	D4318	6
Sand Equivalent, min., percent	D2419	22
Blended aggregate		
Dry Rodded Unit Weight, min., percent	C29	75
CBR, min., percent	D1883	70
Percent of Gypsum, Max	S3176 or AASHTO T267	2.0

NOTES
(a) Faces: Retained on No. 4 sieve.
(b) Wear: Retained on No. 12 sieve after 500 revolutions.
(c) Liquid limit and plastic index: Passing No. 40 sieve.
(d) Sand equivalent (clay content or cleanliness): Passing No. 4 sieve.
(e) CBR: Use a surcharge of 10 pounds measured at 0.20 inch penetration at 95 percent relative to a modified proctor density. A reduction in aggregate class may be accepted providing any costs for difference in excavation, backfill, and alternate design for CBR does not increase Concrete Price.
(f) AASHTO equivalents may be substituted for the listed ASTM's. Please reference AASHTO re:source equivalencies.
(g) Modify AASHTO T267 by dividing the total combined water percentage by a factor of 20.93 to determine the purity of gypsum

Gradations shall be analyzed according to ASTM C136 on a dry weight and percent passing basis. Target Grading Curve must lie within the selected aggregate grade in Table 4.5. Field gradation shall not vary from target by more than the target tolerance.

Table 4.6 – Master Grading Bands

Sieve	Aggregate Grade			Target Tolerance
	Grade 1-1/2	Grade 1	Grade 3/4	
1-1/2"	100	–	–	
1 "	–	100	–	±11%
3/4 "	70 – 85	–	100	±11%
1/2 "	–	79 – 91	–	±11%
3/8 "	55 – 75	–	78 – 92	±10%
No. 4	40 – 65	49 – 61	55 – 67	±9%
No. 16	25 – 40	27 – 35	28 – 38	±7%
No. 200	7 – 11	7 – 11	7 – 11	±2.9%

NOTES
(a) It is assumed fine and coarse aggregate have same bulk specific gravity.
(b) Target tolerance for 3/4 sieve in Grade 3/4, and 1" sieve in Grade 1 is not applicable.
(c) Percentage of fines passing No. 200 sieve determined by washing, ASTM C117.

The roadbase placed on a project during one day's operation shall come from a single source. Intermixing from more than one source will not be permitted.

Roadbase shall be placed in layers compatible with the equipment and not exceeding eight ~~(8)~~ inches (8") in non-compacted thickness. Where the required thickness is more than eight inches (8") the roadbase shall be spread and compacted in two or more layers of approximately equal thickness. However, if vibratory compaction equipment of a type approved by the ~~City's Representative~~city is used, and the requirements for density and moisture content are complied with, the noncompacted thickness of any one layer may be increased to ten ~~(10)~~ inches~~.~~ (10"). Each layer shall be compacted for the full width and depth by mechanical means. When mixing, moistening and placing roadbase the moisture content shall be not less than two percent (2%) below optimum. Care shall be used to avoid overwatering. Alternate blading and rolling will be required to provide a smooth, evenly moistened and uniformly compacted course true to cross-section and grade. Locations inaccessible to rolling shall be compacted with mechanically operated hand tampers. The roadbase shall be compacted to not less than ninety-five percent (95%) maximum dry density as determined by ASTM D-~~1557- 78 or~~1557or AASHTO T-180~~ method D~~. Roadbase tolerances when compacted shall meet or exceed the required minimum thickness and shall not vary more than 0.02 foot from the specified grade and cross-section at the time the asphalt pavement is placed.

When the roadbase surface is used to convey traffic~~,~~ or is left unpaved for an extended period of time, the contractor shall preserve the integrity and grade and an asphalt prime coat meeting the requirements in Section 4.~~5.8~~6.7 shall be applied. When asphalt prime is not used, the contractor shall maintain the roadbase moisture, structural integrity and finish, to the finished tolerances of this subsection.

~~Table~~ 4.~~4~~
~~ROADBASE AGGREGATE GRADATION~~

~~PERCENTAGE OF TOTAL AGGREGATE~~				
~~Sieve Size~~	~~1 inch/~~			

Metric	American Standard	25mm Band Limits	Ideal Gradation	3/4 Inch/ 19mm Band Limits	Ideal Gradation
25mm	1"	100	100	–	–
19mm	3/4"	–	–	100	100
12.5mm	½"	79-91	85	–	–
9.5mm	3/8"	–	–	78-92	85
4.75mm	#4	49-61	55	55-67	61
1.18mm	#16	27-35	31	28-38	33
.075mm	#200	7-11	9	7-11	9

4.5.86.7**PRIME COAT.** Prime coastcoat is required for all roadway work unless otherwise approved by the City Engineer.city. This work shall consist of preparing and treating an existing aggregate base with bituminous material and blotter material, if required, in accordance with these specifications and in conformity with the lines shown on the plans or established by the City's Representative.city. The type and grade of bituminous material shall be MC-70 liquid asphalt, unless otherwise approved by the City's Representativecity.

The Contractor shall provide equipment for heating and applying the bituminous material. The asphalt distributor shall be so designed, equipped, maintained and operated that bituminous material will be applied uniformly on variable widths of surface at readily determined and controlled rates from 0.05 to 2.0 gallons per square yard with uniform pressure and an allowable variation from any specified rate not to exceed 0.02 gallon per square yard. Distributor equipment shall include a tachometer, pressure gauges, accurate volume measuring devices or a calibrated tank, and thermometer for measuring temperatures of tank contents. Distributors shall be equipped with a power unit for the pump and full circulation spray bars adjustable laterally and vertically.

Bituminous material shall not be applied on a wet surface that has free standing water, or when the atmospheric and surface temperature is less than 50^0 F. (10^0C.) or when weather conditions, in the opinion of the City's Representativecity, would prevent the proper application of the prime coat. The surface upon which the bituminous prime coat will be placed shall conform to the established lines and grades, shall be smooth and uniform and shall be compacted to the required density with the optimum moisture content at plus, or minus, two percent (2%).

If, for any reason, the required density and/or moisture deteriorates between the time the gravel course was compacted and the time the prime coat is placed, the surface shall be recompacted and/or moisture conditioned to the required density and moisture content.

Bituminous material shall be applied to the width of the section to be primed by means of a pressure distributor in a uniform, continuous spread. When traffic is maintained, not more than one-half of the width of the section shall be treated in one application. Traffic will not be allowed on the treated surface until the bituminous material is absorbed and will not adhere to the vehicle tires. Care shall be taken that the application of bituminous material at the junctions of spreads is not in excess of the specified amount. Skipped areas or deficiencies shall be corrected.

Application rate shall be 0.25 gallon per square yard, or as directed by the ~~City's Representative.~~city. At the time of placement the temperature of the liquid asphalt shall be uniform and not less than 120 degrees F. (49 degrees C.) nor more than 180 degrees F. (82 degrees C.).

If the bituminous material fails to penetrate within forty-eight hours, blotter material shall be spread as required to absorb any excess bituminous material. All loose blotter material shall be completely removed from the treated areas prior to placing surfacing material. Prior to placing asphalt concrete, additional prime coat shall be applied as directed by the ~~City's Representative~~city to areas where the prime coat has been damaged, and loose or extraneous material shall be removed.

Sand blotter material shall meet the following requirements. The material may be accepted in the stockpile at the source.

Required Tests	Test Methods
Sieve Analysis	AASHTO T27
Sampling Aggregate	ASTM D 75
Organic Impurities	ASTM C 40

GRADATION REQUIREMENTS
Percentage by Weight

Sieve Sizes	Passing Sieve
½ Inch	100
No. 4	90-100
No. 16	30-75
No. 200	0-12

Liquid asphalt shall not be sprayed upon adjacent pavements, that portion of the traveled way being used by traffic, structures, railings and barriers, markers, adjacent property and improvements, and other roadway improvements or facilities not mentioned herein.

4.~~5.9~~6.8 TACK COAT. This work shall consist of preparing and treating an existing bituminous or concrete surface with asphaltic emulsion in accordance with these specifications and in conformity with the lines shown on the plans or established by the ~~City's Representative.~~city. The type and grade of bituminous material shall be SS-1h asphalt emulsion, unless otherwise directed.

Asphalt emulsion used as a tack coat between courses of plant mix surface, or over an existing surface, shall be prepared for application by using warm water to cut back the emulsion in the quantity of fifty percent (50%) of the emulsion by weight.

Bituminous material shall be applied to the width of the section to be tacked by means of a pressure distributor in a uniform, continuous spread. Care shall be taken that the application of bituminous material at the junctions of spreads is not in excess of the specified amount. Skipped areas or deficiencies shall be corrected.

The Contractor shall provide equipment for heating and applying the bituminous material. The asphalt distributor shall be so designed, equipped, maintained and operated that bituminous material will be applied uniformly on variable widths of surface at readily determined and controlled rates from 0.05 to 2.0 gallons per square yard with uniform pressure and with an allowable variation from any specified rate not to exceed 0.02 gallon per square yard. Distributor equipment shall include a tachometer, pressure gauge(s), accurate volume measuring devices or a calibrated tank, and a thermometer for measuring temperatures of tank contents. Distributors shall be equipped with a power unit for the pump and full circulation spray bars adjustable laterally and vertically.

Application of tack coat may occur only when the surface and air temperature is 50 degrees F. (10 degrees C.) and rising. The surface shall be clean, dry, free of irregularities and shall be smooth and uniform.

At the time of placement the temperature of the asphaltic emulsion shall be uniform and not less than 75 degrees F. (24 degrees C.) nor more than 130 degrees F. (54 degrees C.). The tack shall be applied at a rate of 0.05 to 0.10 gallon per square yard. The rate of application may be adjusted by the ~~City's Representative~~city.

Liquid asphalt shall not be sprayed upon adjacent pavements, structures, railing, barriers, markers, adjacent property improvements, and other ~~facilities not~~

~~mentioned herein.~~
facilities not mentioned herein.

4.~~5.10~~6.9 DENSE-GRADED ASPHALT. This work shall consist of mixing, laying and compacting an asphalt course of one or more layers composed of aggregate, asphalt cement, applicable additives and lime, as required. All materials shall be mixed at a central mixing plant.

4.6.9.1 ~~4.5.10.1~~ **RELATED WORK.** Work related to asphalt concrete pavement shall include surface preparation, prime coat, tack coat, transporting, placement, compaction and finishing of asphalt mixture as required. Work zone traffic control shall be in accordance with the requirements of Section 2.5 of these specifications.

~~4.5.10.2 ASPHALT CEMENT. Viscosity graded asphalt cement shall meet AASHTO designation M-226-80 (1993). Viscosity is to be measured at 140BF (60BC) when used in pavement construction. The asphalt cement shall be homogeneous, free from water, and shall not foam when heated to 347B F (175B C). Sampling and testing of asphalt cements shall be in accordance with the following AASHTO Standard Methods:~~

4.6.9.2 ROAD CLASS: Attribute of a public or private thoroughfare based upon equivalent el loads (ESAL).

Class I: (ESAL < 10^4 per year) Includes maintenance mixes, bike paths, parking lots, residential driveways, light traffic residential streets, light traffic rural farm roads.

Class II: (ESAL between 10^4 and10^6 per year). Includes heavy traffic residential streets, rural farm collector roads, non-industrial parking lots, urban low volume collector streets.

Class III: (ESAL > 10^6 per year). Includes high volume collectors, arterials, industrial parking lots (primary load from 3-axle or greater vehicles), climbing lanes, truck weigh stations.

4.6.9.3 ASPHALT CEMENT. Performance Graded Asphalt Binder (PGAB): See ASTM D6373. Use the following minimum virgin mix binder grades unless otherwise specified.

~~Sampling~~**Table 4.7 – Minimum Virgin Binder Grade**	
~~Viscosity at 140EF (60 E)~~**Road Class**	~~T202~~PGAB

~~Viscosity at 275EF (135EC)~~Class I & II	~~T201~~PG 64-22 (≤ 15% RAP) PG 64-34 (>15% RAP)
~~Penetration~~Class III	~~T49~~PG 70-28 (≤ 15% RAP) PG 64-34 (>15% RAP)

a. ~~Flash Point (COC)~~Blending chart limitations for mixes exceeding 15% RAP must meet -28 for low end PG temperatures.

b. Mixes shall not exceed 20% RAP by total weight of aggregate

~~Solubility in bituminous materials~~	~~T44~~
~~Thin-film oven test~~	~~T179~~
~~Ductility~~	~~T51~~
~~Spot Test~~	~~T102~~
~~Rolling thin film oven test~~	~~T240~~
~~Water~~	~~T55~~

~~The asphalt cements shall conform to the requirements given in Table 4.5.~~

Adjust virgin binder grade to accommodate RAP contents in excess of 15% as identified in Table 2. Do not use grades lower than xx-34. Use M323 Appendix X1 Blending chart to determine acceptable RAP content up to maximum allowed based on virgin binder grade selected or additives incorporated. Submit RAP binder grading and blending charts with mix design.

Use of Virgin Binder Grades exceeding the minimums, i.e. grades with ranges encompass greater temperature ranges than required for virgin binder, is acceptable.

4.6.9.4

TABLE 4.5

Paving Grade Liquid Asphalt Requirements

AC	AC-10	AC-20	AC30
PG	58 - 28	64 - 22	70 - 16
Viscosity: 140°F (60°C) poises	1,000 ± 200	2,000 ± 400	3,000 ± 600
Viscosity: 275°F (135°C), Cs-minimum	250	300	350
Penetration: 77°F (25° C), 100g, 5 sec min.	80	60	50
Flash Point: COC, C(F) minimum	219(425)	232(450)	232(450)
Solubility in trichloroethylene: percent minimum	99.0	99.0	99.0
Tests on residue from thin-film oven test:			
Loss on heating: percent - maximum (1)	0.5	0.5	0.5
Viscosity: 140°F (60°C), poises-maximum	4,000	8,000	12,000
Ductility: (77°F (26°C), 5cm per minutes), cm minimum	75	50	40

Spot test (when and as specified (2) with: Standard naphtha solvent	Negative for all grades
Naphtha-Xylene solvent, % Xylene	Negative for all grades
Hepthan-Xylene solvent, % Xylene	Negative for all grades

The use of loss on heating requirement is optional.

The use of the spot test is optional. When it is specified, the City Engineer's Representative shall indicate whether the standard naphtha solvent, the naphtha-xylene solvent, or the heptane xylene solvent will be used in determining compliance with the requirement. If xylene solvent is used the percentage of xylene shall be indicated.

4.5.10.3 **SHIPMENT OF ASPHALT MATERIAL.** Asphalt cement shall be uniform in appearance and consistency and show no foaming when heated to the specified loading temperature. Shipments of asphalt shall not be contaminated with any other type or grade of asphalt material. A bill of lading shall accompany each shipment of material and shall include the following information:

- Type and grade of material.
- Type and amount of additives used, if applicable.
- Destination.
- Consignee's name.

- Date of shipment.
- Truck identification.
- Loading temperature.
- Net weight or net gallons corrected to 60°F (16.6°C).)
- Specific gravity.
- Bill of lading number.
- Manufacturer of asphalt material.

4.5.11 HYDRATED LIME FOR ASPHALT MIXTURE. The physical properties of hydrated lime shall conform to ASTM C-1097, subparagraph d.1; use test method ASTM C-110, paragraph 6.

The water used in saturating the aggregate to be coated shall be potable or water that is clean and free of dirt, silt and other damaging material. The aggregate bulk specific gravity (saturated-surface-dry (SSD)) shall be not less than one and one-half percent (1 ½%) nor more than three percent (3%) using AASHTO T-85 for the course aggregate retained on a No. 4 (4.75 mm) sieve and AASHTO T-84 for the fine aggregate passing the No. 4 (4.75 mm) sieve. Hydrated lime shall be applied at a rate determined during the Marshall Design requirements in Table 4.6, unless otherwise directed by the City Engineer. Two options for coating the aggregate with lime are as follows:

4.5.11.1 Aggregate shall be monitored for SSD by taking a belt cut between the stockpile and the pugmill or drum. The pugmill or drum shall be equipped with metering devices that will introduce the required amount of hydrated lime and water into the mixer to produce an aggregate SSD of one and one-half percent (1½%) to three percent (3%).

4.5.11.2 Use of a lime slurry of one (1) part lime and three (3) parts water by volume may be used, if the plant is equipped with a mixing chamber that can maintain the lime suspension in the slurry. Spraybars for introducing the required quantity of slurry into the mixer shall be equipped with a positive shutoff. If this option is used the aggregate stockpile shall be maintained at two percent (2%) SSD.

Asphalt plants shall provide a positive signal system that automatically closes down the cold feed when the appropriate amount of hydrated lime and water ceases to be introduced into the aggregate. This shall be accomplished by the use of interlocked and synchronized metering devices and feeders. The plant shall be equipped in such a way that the quantity of hydrated lime incorporated into the mix can be readily checked at any time.

~~TABLE 4.6~~

~~MARSHALL DESIGN REQUIREMENTS~~

4.6.10 AGGREGATE

A. Crushed stone, crushed gravel, slag, sand, or combination.

B. Use Table 4.7 to determine suitability of aggregate source.

Table 4.8 – Aggregate Physical Properties

	Standard		**Road Class**	
~~TRAFFIC CATEGORY*~~		~~I~~	**I & II**	**III**
~~ASTM D 1559 (number of blows)~~	**Coarse Aggregate**			
~~TEST PROPERTY~~ Angularity, percent, minimum	~~MIN~~ One Fractured face	~~MAX~~ D5821	~~MIN~~ 90	~~MAX~~ 95
	Two Fractured faces		90	90
Wear (hardness or toughness), percent, maximum		C131	35	35
~~1500~~		~~—~~	~~1200~~	~~—~~
~~8~~		~~16~~	~~10~~	~~18~~
~~3~~ Flats or elongates (3:1 length to width), percent, maximum		~~5~~ D4791	~~3~~ -	~~5~~ - 20
~~VOIDS IN MINERAL AGGREGATE (VMA)~~	**Fine Aggregate**			
Angularity (uncompacted void content), percent, minimum		T304	40	45
Sand equivalent, percent, minimum		D2419	45	60
Plastic limit, maximum		D4318	0	0
Blended Physical Properties				
Dry-rodded Unit Weight, lb/ft^3, minimum		C29	~~FRACTURED FACES RETAINED ON THE NO. 4 (4.75 mm) SIEVE PER FLH DESIGNATION: T 506-94 2.1~~ 75	~~—~~ 75 ~~%~~

Weight Loss (Soundness), percent, maximum	C88	16	16
~~SAND EQUIVALENT PER AASHTO T-176-86 (1993)~~ ~~4.3.2, 4.3.3~~Friable particles, percent, maximum	~~5~~ ~~5~~C 142	~~—~~2	~~40~~2
Quantitative Analysis of Gypsum, percent, maximum	~~W EA R TE ST~~ S-317 1-96 or AA SH TO ~~T 96~~ T267	~~—~~2.00	~~30%~~2.00

~~DRY-RODDED UNIT WEIGHT AASHTO T-19~~	~~AM. STD.~~	~~METRIC~~	~~AM. STD.~~	~~METRIC~~
	~~75 pounds per cubic foot~~	~~1200 kg/m³~~	~~75 pounds per cubic foot~~	~~1200 kg/m³~~

~~Shall be used to determine the required amount of hydrated lime in the asphalt. The mix design shall have a tensile strength ratio of 70 percent.~~

NOTES
(a) Coase aggregate is material retained on No. 4 sieve.
(b) Fine aggregate is material passing No. 4 sieve.
(c) Sand equivalent is waived for RAP aggregate but applies to the remainder of the aggregate blend.
(d) Plastic limit, passing No. 40 sieve. Aggregate is non-plastic even when filler material is added to the aggregate.
(e) Weight loss, using sodium sulfate.
(f) Friable particles are clay lumps, shale, wood, mica, coal passing the No. 4 sieve, and other deleterious materials.
(g) Road class as identified in project documents and as defined in Table 4.6
(h) Modify AASHTO T267 by dividing the total combined water percentage by a factor of 20.93 to determine the purity of gypsum

~~Traffic Category I applies to arterial streets or truck routes with a Traffic Index of seven or more. Traffic Category II applies to streets with a Traffic Index of less than seven.~~

~~4.5.12 AGGREGATE. The requirements for crushed rock, rock dust, gravel, stone, slag, and sand are included in this subsection. All aggregate shall be clean, hard, sound, durable and uniform in quality. The quality of soft, friable, thin, elongated, laminated pieces and disintegrated materials will be determined by the supplier's professional Geotechnical Engineer at the time the mix design is submitted, at which time the City's Representative will have the option to approve or reject the material. Organic matter, oil, alkali or other salts shall not exceed two percent (2%) total weight. In the surface course this material may be restricted to less than one percent (1%) by weight.~~

~~4.5.12.1 Aggregate for three-quarter (3/4) inch (19.0 mm) Category I (NR), (see Table 4.7) shall be one hundred percent (100%) crushed material (all manufactured). This is considered a~~

~~non-rutting (NR) mix.~~

~~4.5.12.2 Coarse aggregate for three-quarter (3/4) inch standard (19.0 mm standard) and one-half inch (12.5 mm) Category II (see Table 4.7) shall be retained on the No. 4 (4.75 mm) sieve and shall have no less than seventy-five percent (75%) fractured face material as defined in FLH T 506-94 2.1.~~

~~4.5.12.3 Fine aggregate for other than the three quarter (3/4) inch NR, may be a natural or manufactured product. It shall pass the No. 4 (4.75 mm) sieve. It shall be clean, hard-grained angular, non-plastic, and have no more than two percent (2%) by weight of organic matter or other detrimental substances, including gypsum.~~

~~4.5.12.4 The test for gypsum shall be conducted using City of St. George Chemical Quantitative Analysis of Gypsum in Aggregates, Test Procedure S-3171-96.~~

~~4.5.12.5 Surface courses, or asphalt wearing courses, shall be free from organic materials and contain less than one percent (1%) by weight of soluble minerals, such as gypsum, and phosphate~~

~~TABLE 4.7~~

~~DENSE-GRADED ASPHALT AGGREGATE GRADATION~~

4.6.10.1 ADDITIVES

A. Mineral Filler: ASTM D242.

B. Recycle Agent: ASTM D4552.

C. Anti-strip Agent: Heat stable cement slurry, lime slurry, or chemical liquid as required to meet Tensile Strength Ratio (Lottman)or Hamburg test requirements.

D. RAP: Free of detrimental quantities of deleterious materials.

1. Use RAP Content as requirements of Table 2.
2. Determine RAP binder content by chemical extraction or ignition.

4.6.10.2 MIX DESIGN

A. **Preparation**:

1. Road Class as defined by Section 4.6.9.2.
2. Determine submittal requirements from paragraph 1.4C.

B. **Aggregate Gradation:** See Table 4.8. The Target Gradation Curve for the specified aggregate grade must lie within the Master Grading Band limits. The target grading band limits using the applied deviation in <> are allowed to extend outside of the Master Grading Band limits.

~~PERCENT OF TOTAL AGGREGATE PASSING (DRY WEIGHT)~~ **Table 4.9 - Master Grading Bands - Superpave Mix Design**

~~TRAFFIC CATEGORY~~**Sieve**	~~I~~ **Gradation Limits of Target Gradation**				
	~~METRIC~~		~~19.0 mm NR~~	~~19.0 mm std.~~	~~12.5mm~~
~~AMERICAN STANDARD~~	~~SP-~~**1/2** ~~inch~~	**SP-3/8**			
	~~SIEVE SIZE~~				
	~~METRIC~~	~~AMERICAN STANDARD~~			
	~~25.0 mm~~	~~1 inch~~	~~---~~	~~---~~	~~---~~
3/4 inch 1/2 inch 3/8 inch No. 4 No. 8 No. 200	100 90.0 – 100 < 90.0 – 28.0 – 58.0 2.0 – 10.0	– 100 90.0 – 100 < 90.0 32.0 – 67.0 2.0 – 10.0			
	~~12.5 mm~~	~~1/2 inch~~	~~74 – 99~~	~~---~~	~~100~~
	~~9.5 mm~~	~~3/8 inch~~	~~69 – 91~~	~~75 – 91~~	~~---~~
	~~4.75 mm~~	~~#4~~	~~49 – 65~~	~~46 – 62~~	~~60 – 80~~
	~~2.36 mm~~	~~#8~~	~~33 – 47~~	~~---~~	~~---~~
	~~1.18 mm~~	~~#16~~	~~21 – 35~~	~~22 – 34~~	~~28 – 42~~
	~~.300 mm~~	~~#50~~	~~6 – 18~~	~~11 – 23~~	~~11 – 23~~

~~#200~~NOTES

(a) Gradation is expressed in percent passing by weight per ASTM C136. Percentage of fines passing No. 200 sieve determined by washing per ASTM C117.

(b) The numerical portion of the grade designator (1/2, 3/8) represents the ***nominal maximum*** sieve size. Comparable ***maximum*** mix designs would be one sieve size larger, i.e. ½" nominal (superpave) maximum is comparable to ¾" maximum (Marshall).

~~4.5.13~~ C. **Design Parameters:** Determined by AI SP-2 and in accordance with Table 4.9.

Table 4.10 - Mix Design Parameters	
Compaction Level (a)	Asphalt Institute SP-2
Road Class I/II	50Nd
Road Class III	75Nd
Design Air Void Target, percent (b)	3.5
Voids in Mineral Aggregate (VMA) relative to nominal sieve size grading and calculated using Gsb(dry), percent, minimum	ASTM D3203
Class II and III: SP-1/2	14.2
Class I: SP-3/8	15.2
RAP specific gravity for calculations	Gsb (dry) by chemical extraction
Dust to Binder Ratio, maximum	1.6
Tensile Strength Ratio (moisture sensitivity), minimum (a,c)	AASHTO T283
Road Class I (e)	80% or HWT
Rutting (Hamburg Rut Test) (a,d)	AASHTO T324
Road Class II	15 mm/10,000 passes
Road Class III	10 mm/20,000 passes

NOTES
(a) Road Class as identified in project documents and as defined in Section 32 01 31.
(b) Design Density Target: ASTM D2041. Percent of maximum theoretical specific gravity.
(c) Tensile Strength Ratio (moisture sensitivity): Use one cycle of Freeze-thaw conditioning. Compact test specimen to seven (7) percent plus or minus one (1) percent air voids. Applicable to Road Class I only.
(d) With testing performed at temperatures representing the specified binder grade in the Hamburg rut test, the average rut depth of two (2) mix design test samples is less than the amount shown for the respective Road Classes.
(e) TSR not required if passing Hamburg Wheel Tracker with Road Class II parameters
(f) For Class I and II Mixes, submit an alternative asphalt content target to produce a mix with a Design Air Voids of less than 2.0% for use on trails, bike paths, and other requested uses. Designate this target as the voidless mix design target.

4.6.11 STORING, MIXING AND SHIPPING OF PLANT MIX BITUMINOUS PAVEMENTS. Hot mix plants may be batch or drier-drum type plants (with not less than four aggregate bins).

4.6.11.1 ~~4.5.13.1~~ **STORAGE.** The various natural and manufactured

aggregates shall be stored separately. The various aggregate sizes shall be placed in bins which allow the material to be properly and evenly fed to the dryer to ensure a uniform flow of properly combined aggregates. When placing materials in storage bins, or when moving them from storage to the feeder, no method will be used which may cause segregation, degradation or the intermingling of different size aggregates. Materials not meeting the gradation requirements shall be reprocessed to comply with the requirements. All scales and meters shall be certified and sealed by the Utah Department of Agriculture, Division of Weights & Measures, annually and when the plant has been moved.

~~4.5.13.2 BATCH PLANT METHOD. The aggregates shall be dried and heated for sufficient time in the dryer so that the moisture content of the aggregate will not be greater than one percent (1%). The dryer shall be equipped with a calibrated thermometer to determine the temperature of the aggregate leaving the dryer. The thermometer shall be accurate to the nearest 10BF (5.5BC), and shall be installed in such a manner that a fluctuation of 10BF (5.5BC) in the aggregate temperature will be indicated within one minute and be clearly read from the operator's platform.~~

~~After drying, the aggregates shall be evenly fed to screens having clear square openings to separate, classify and quantify materials for hot storage bins. The aggregate passing these screens shall be separately stored in individual bins until proportioned into the mixer.~~

~~Each bin shall be provided with an opening to prevent overflow into adjacent bins. All overflow material shall be returned to an appropriate storage area for reprocessing.~~

~~If a substantial change is made in the cold feed to accommodate the demands of a different type of mixture, the hot storage bins shall be emptied and recharged with the correct materials.~~

~~All materials shall be proportioned by weight. The aggregate scales shall be fully automatic, solid-state digital strain-gage transducer with a capacity exceeding one and one-quarter times the total amount of materials to be weighed in one operation. Asphalt binder shall be weighed by a fully automatic scale having a capacity of not more than five hundred pounds (227kg) with one pound (0.45kg) resolution for mixers with a manufacturer's rated capacity of four thousand pounds (1814kg) or less, and a capacity of not more than one thousand pounds (454 kg) with one pound (0.45kg) resolution for mixers with a manufacturer's rated capacity over four thousand pounds (1814kg).~~

~~When bag house fines or mineral filler is used, it shall be proportioned by weight or volume. The method used shall uniformly feed the material within ten percent (10%) of the required amount.~~

~~Utah Department of Agriculture, Division of Weights & Measures, annually and when the plant has been moved.~~

~~4.5.13.2 BATCH PLANT METHOD. The aggregates shall be dried and heated for sufficient time in the dryer so that the moisture content of the aggregate will not be greater than one percent (1%). The dryer shall be equipped with a calibrated thermometer to determine the temperature of the aggregate leaving the dryer. The thermometer shall be accurate to the nearest 10BF (5.5BC), and shall be installed in such a manner that a fluctuation of 10BF (5.5BC) in the aggregate temperature will be indicated within one minute and be clearly read from the operator's platform.~~

~~After drying, the aggregates shall be evenly fed to screens having clear square openings to separate, classify and quantify materials for hot storage bins. The aggregate passing these screens shall be separately stored in individual bins until proportioned into the mixer.~~

~~Each bin shall be provided with an opening to prevent overflow into adjacent bins. All overflow material shall be returned to an appropriate storage area for reprocessing.~~

4.6.11.2 CONSTRUCTION EQUIPMENT

A. Mixing Plant: Capable of meeting ASTM D995 or UDOT Qualified Plant. Provide:

1. Positive means to determine the moisture content of aggregate.

2. Positive means to sample all material components.

3. Sensors to measure the temperature of the mix at discharge.

4. Ability to maintain discharge temperature of mix.

5. Capability of maintaining plus or minus five (5) percent tolerance on component percentages in final mix.

6. Ability to document control efforts.

~~If a substantial change is made in the cold feed to accommodate the demands of a different type of mixture, the hot storage bins shall be emptied and recharged with the correct materials.~~

~~All materials shall be proportioned by weight. The aggregate scales shall be fully automatic, solid-state digital strain-gage transducer with a capacity exceeding one and one-quarter times the total amount of materials to be weighed in one operation. Asphalt binder shall be weighed by a fully automatic scale having a capacity of not more than five hundred pounds (227kg) with one pound (0.45kg) resolution for mixers with a manufacturer's rated capacity of four thousand pounds (1814kg) or less, and a capacity of not more than one thousand pounds (454 kg) with one pound (0.45kg) resolution for mixers with a manufacturer's rated capacity over four thousand pounds (1814kg).~~

~~When bag house fines or mineral filler is used, it shall be proportioned by weight or volume. The method used shall uniformly feed the material within ten percent (10%) of the required amount.~~

~~4.5.12.6 Mixing shall be done with a twin shaft pug mill-type mixer and shall be operated at the speed recommended by the manufacturer. The paddles shall be of sufficient size and quantity to deliver a uniform mixture.~~

~~The weight of the material that may be mixed per batch shall not exceed the manufacturer's rated capacity of the mixer, nor exceed an amount that will permit complete mixing of all the materials. Dead areas in the mixer, in which the material does not move or is not sufficiently agitated, shall be corrected by reduction in the volume of materials or by repairs to the mixing equipment before any further production will be allowed.~~

~~The entire batch shall be mixed until all the materials are thoroughly blended. The batch mixing time will begin on the charging stroke of the weight hopper dump mechanism and conclude when discharge from the mixer has started. The mixer shall be equipped with a time lock which locks the mixer discharge gate for the mixing period and actuates an indicator light visible from the operator's platform.~~

~~The aggregate and liquid asphalt drop time into the mixer shall not exceed ten seconds and the time for mixing materials will not be less than thirty seconds per batch. If the City's Representative determines that the mixture is not thoroughly blended, and all aggregate properly coated with asphalt cement, the mixing time will be increased to produce a homogeneous material.~~

~~The weight-box housings and mixer platform shall provide safe and convenient access with properly sized gates and tracks for sampling the discharged materials.~~

~~4.5.13.3 DRIER-DRUM METHOD. When a drier-drum is used, aggregate shall be fed directly to the mixer drum at a uniform rate, and monitored for combined aggregate moisture and gradation by taking belt cut samples. A minimum of one moisture content check and gradation test per day and one moisture and gradation test per five hundred tons (551 tonne), or as conditions require, shall be made. The results of these tests shall be kept on logs for review by the City's Representative. Sampling and testing may be performed by the manufacturers properly trained and equipped staff or by an approved testing lab. If sampling is performed by the manufacturer, five percent of the samples shall be split and a testing firm approved by the City shall verify that the test results accurately represent the product being tested by the manufacturer. The sample to be split may be selected at random by the manufacturer's quality control team, or the City's Representative.~~

~~If the cold feed material gradation is outside the allowable mean of deviations of the approved mix design as determined in Section 4.5.24, production shall be stopped until the necessary corrections are made. If the moisture content of the cold feed reaches five percent, production shall be stopped until certified by an approved independent materials testing firm under the direction of a Registered Professional Engineer, licensed in the state of Utah. This firm shall then be employed to provide continuous plant quality control and testing, and production may be resumed.~~

~~All production shall be prohibited if the cold feed material reaches seven percent moisture, without exception. During lay down operations, if in the opinion of the City's Representative excess moisture is present in the asphalt material, it shall be sampled and tested for moisture under AASHTO T-164-94 Note-6 or ASTM D 2172-93 Note 3. Asphalt found to contain excess moisture shall be removed in its entirety and properly disposed of.~~

~~The drier-drum shall be equipped with a calibrated thermometer to determine the temperature of the mixed materials leaving the drum. The thermometer shall be accurate to the nearest 10°F (5.5°C), and shall be installed in such a manner that changes of 10°F (5.5°C) in temperature of the mixed material will be shown within one minute and be clearly read from the operators station.~~

~~Asphalt cement shall be measured through a meter under constant pressure with a gage indicating the pressure and temperature at all times. This metering system shall be calibrated and certified for accuracy every six months, or whenever the plant is moved.~~

~~During any day's run, the temperature of asphalt cement shall not vary more than 50°F (10C). If the meter loses pressure the operator's computer shall be equipped to warn the operator or automatically shut down the system.~~

~~The aggregate feeders for each material in the mixture and for the combined aggregates shall be equipped with devices by which the rate of feed can be determined while the plant is in full operation. The combined aggregate shall be weighed on a belt scale. The scale shall be of such accuracy that, when the plant is operating between thirty percent and one hundred percent of belt capacity, the average difference between the indicated weight of the material delivered and the actual weight delivered will not exceed one percent of the actual weight for three two-minute runs. For any of the three individual two-minute runs, the indicated weight of material delivered shall not vary more than two percent from the actual weight delivered.~~

~~The belt scale for the combined aggregate, the other proportioning devices for additives and the asphalt cement proportioning meter shall be interlocked so that the rates of feed will be automatically adjusted to maintain the proper material ratios as designated by the approved mix design. The plant shall not be operated unless this automatic system is operable and in good working condition.~~

~~The asphalt cement meters, additive feeders and aggregate belt scales used for metering the aggregate additives and asphalt cement into the mixer shall be equipped so that the actual quantities of asphalt cement, additives and aggregate introduced into the mixture can be determined.~~

~~Mixing shall be performed for sufficient time, and at a sufficiently high temperature, so that at discharge from the mixer, the sizes of aggregates are uniformly distributed throughout the completed mixture and all particles are thoroughly and uniformly coated with asphalt cement.~~

~~Temperature of the completed mixture at discharge from the drum shall not exceed 325BF (163BC) for all dense-graded mixes using AC-10, AC-20 and AC-30 grades of asphalt cements. Maximum temperatures for open- graded mixes using AC-20 and AC-30 shall not exceed 275BF (135BC). Open-graded mixes using AC-20R shall not exceed 325BF (163BC).~~

~~The mixed material shall be discharged from the drum into a surge silo of not less than forty tons in capacity. The manufacturer shall also provide a means of diverting the flow of material away from the silo, when starting and stopping the plant production, to prevent incompletely or improperly mixed portions of the mixture from entering.~~

~~Paving grade asphalts shall be added to the aggregates, in both batch and drier-drum plants, at a temperature between 285BF (140BC) and 350BF (177BC). The temperature of the aggregates at the time of adding the asphalt cement shall not be less than 265BF (130BC), nor more than 325BF (163BC). A thermometer with a 500BF (260BC) capacity, and accurate to 10BF (5.5BC) will be~~

~~fixed in the asphalt cement feed line or storage tank at a suitable location to view when sampling the asphalt. The manufacturer will provide a suitable sampling outlet in the asphalt cement feed lines connecting the storage tank(s) to the asphalt cement meter. The sampling valve shall consist of a one-half inch (12.7 mm) or three- quarter inch (19 mm) valve constructed in such a manner that a one quart (.95 liter) sample may be withdrawn slowly at any time during plant operations. The sampling valve shall be placed in the least hazardous location that is readily accessible. A drainage receptacle shall be provided for flushing the valve prior to sampling. One gallon (3.8 liters) shall be drawn from the sampler prior to taking the sample.~~

~~4.5.14 ASPHALT CONCRETE SURGE AND STORAGE SILOS. The type of conveying equipment used to deliver the hot-mix asphalt from the discharge chute on the drier-drum mixer or from the hopper under the pugmill may be either a variable or constant speed - bucket elevator, drag slat conveyor or hot material belt conveyor.~~

~~The manner in which the mix exits from the conveyor or elevator and enters the top of the silo, shall be such as to prevent segregation of the completed asphalt mixture. Properly installed, maintained and operated systems such as rotating spreader chutes, batchers and gob hoppers are all acceptable segregation prevention systems. Splitter systems, or a series of baffles, may be used providing they are approved by the City's Representative.~~

~~Silos shall be cylindrical with conical bottoms providing a minimum angle of 55B and maximum angle of 70B. The gate opening in the bottom shall be sized to work with the angle of the cone to prevent center draw down resulting in material segregation.~~

~~Heated or insulated surge silos are not required, however, a heated discharge cone is preferred.~~

~~The asphalt mixture that develops lumps, hardening or chills below 250B (120BC) while the mix heats the silo and discharge cone, shall not be used. All surge silos shall be emptied of mix at the end of each production day.~~

~~Storage silos shall be well insulated and equipped with heated discharge cones and well sealed discharge gates. Dense-graded asphalt may be stored up to forty eight hours in silos with heated cones, and seventy-two hours with heating of the silo vertical walls and cone.~~

~~Storage silos may be used for storage or surge purposes, but under no circumstance may a surge silo be used for storage. Either silo must be equipped with high and low indicator systems.~~

4.6.12 ~~4.5.15~~ **SHIPPING ASPHALT MIXTURES.** Trucks used for hauling mix shall have tight, clean, smooth beds which are treated to prevent the mix from adhering to the bed. Amounts of solution that form visible pools in the truck bed shall be removed prior to loading asphalt mix. Diesel is not permitted as a release agent.

Asphalt mix shall be deposited in a mass into the haul truck or loading hopper from the silo. The gates on the bottom of the silo cone shall open and close quickly. To prevent segregation, it is also necessary for the gates to open completely so that the flow of mix is unrestricted. The mix shall be delivered in evenly divided drops into the length of the truck bed. In no case shall the truck be loaded continuously by the truck driver moving forward under the silo as the mix is being discharged.

Multiple drops of small quantities or dribbling mix into the haul vehicle at the end of the main delivery should be avoided to prevent segregation.

For each batch delivered to site provide a paper or electronic (e-ticket) delivery ticket with the following:

1. Date and project description.
2. Producer and plant.
3. Name of contractor.
4. Serial number of ticket.
5. ~~16~~ Mix identification number or code.
6. Truck number and time dispatched.
7. Weight of mix delivered.

4.6.13 SURFACE PREPARATION FOR ASPHALT OVERLAYS. Prior to placing asphalt overlays, all manholes, utility covers, monuments and other items affected by the paving operations shall be located, referenced and protected. The existing asphalt surface shall be thoroughly cleaned of all deleterious materials and brought to a uniform grade by spot leveling or by the application of a bituminous leveling course to the surface. A bituminous tack coat shall be applied to the existing prepared surface immediately prior to placing the finish asphalt course in accordance with Section 4.~~5.9~~6.8 of these specifications.

4.6.14 ~~4.5.17~~ **ADJUSTMENT OF MANHOLE AND UTILITY COVERS.** Prior to paving
and after roadbase is placed, all manholes and utility covers shall be brought to the base grade. Damaged valve boxes, covers, grade rings, cones, flattops**,** risers, etc. replaced. Manhole cones or flattops that are more than eighteen inches below finish grade shall be raised by using risers etc. under the cone or flattop. Existing roadbase shall not be contaminated with soil or subbase. Backfill material around adjusted manholes and utilities shall comply with roadbase standards meeting Section 4.~~5.7~~6.8 of these specifications, and be compacted to ninety five percent as determined by ASTM D-~~1557-78 or~~1557or AASHTO T-180 Method D. When paving is complete, all manhole and utility covers shall be raised to finished grade, including concrete collars, in accordance with standard requirements.

4.6.15 ~~4.5.18~~ **ASPHALT PAVING EQUIPMENT.** A self-propelled paver with a screed unit that provides a smooth, steady pull on the screed arms shall be used. The screed unit shall strike off, partially compact, and iron the surface of the mat at least twelve feet (3.7 m) wide. The screed unit shall be equipped with automatic controls and heaters and vibrators. The screed plate must be smooth and not excessively worn. All screed extensions shall be ridged, or hydraulically extendable. The screed extensions shall maintain the proper elevation and angle of attack to the main screed at all times and shall also be heated and provide vibration. Augers shall adequately feed all areas of the extended screed.

The automatic screed controls shall be full contact electronic or non-contact ultrasonic grade control systems. These systems shall be adaptable to a floating-beam system a minimum of thirty feet long. The floating-beam shall be equipped with shoes that are allowed to rotate and can be individually displaced by isolated disruptions in the existing surface without changing the height of the whole beam. The automatic grade sensor shall be set at the midpoint of the floating beam.

Ultrasonic grade control systems may be used without the floating beam on all Traffic Category II streets unless otherwise directed. The ultrasonic grade- control system must meet the following conditions in order to be used without the floating beam.

4.6.15.1 ~~4.5.18.1~~ The system shall be equipped with a "self--diagnostic" function that continuously monitors all system functions and shuts the system down if an error in the system occurs. It shall also be equipped with a "reference bail" to electronically compensate for differences in air and ground temperature with a minimum operating range not less than zero to 160 degrees F. (-18 to 71 degrees C.).

4.6.15.2 ~~4.5.18.2~~ The system shall perform to a minimum of the following specifications:

Ultra sonic grade controller:

On-grade tolerance	±0.01 foot
Resolution	0.001 foot
Operating range	10 in. to 42 in.
Mat thickness control	- 0.01 foot

Slope controller:

Correction window	- 1.0%
On-grade tolerance	- 0.1%
Resolution	- 0.01%
Operating range	±0.0% to 100%.

The systems meeting the above requirements must be properly installed on a "tight," properly maintained self-propelled paver with a screed unit. A "tight" system shall meet the equipment manufacturer's service specification tolerances for all controlling surfaces and connecting points that affect the ability of that specific type of equipment to provide proper grade control.

The ~~City's Representative~~city has the right to prohibit the use of such equipment if in his opinion the equipment has not been properly maintained or is not being properly operated.

If the automatic grade control becomes inoperative, the Contractor may

finish the day's work using manual controls provided the required grade, thickness and smoothness tolerances are met. Paving shall not continue on the project, or any new project, until the automatic control system has been repaired.

4.6.16 ~~4.5.19~~ **ROLLERS.** Rollers shall be vibratory, steel-wheeled double-drum with a static weight of not less than 10 tons (9.10 tonnes) for breakdown rolling. Pneumatic-tired rollers with a minimum operating weight of two thousand pounds (907 kg) per tire shall be used for intermediate rolling and leveling course compaction. The roller shall be in good condition, and capable of reversing without backlash. The number of rollers shall be sufficient to compact the asphalt mixture before it cools below 175°F (80°C). Finish rolling may be performed with the breakdown roller in the static mode, or with a steel-wheeled roller of sufficient size to remove the roller marks in the finished surface. If a roller breaks down and a back-up roller is not available, paving operations shall stop until adequate rollers are available.

4.6.17 ~~4.5.20~~ **WEATHER AND DATE LIMITATIONS.** Asphalt shall not be placed during the period from December 1st through February 15th unless otherwise the Contractor has submitted a Cold Weather Paving Plan approved by the ~~City Engineer~~city. Paving approved during this time shall conform to winter paving requirements and policies. Minor repairs and patching will be allowed during winter months. Cold Weather Paving Plans must include the following at a minimum:

a. Haul details.
b. Placement details.
c. Compaction aids used in production.
d. Additional equipment and procedures for achieving compaction.
e. Coordination procedure for acceptance testing.

The asphalt mixture shall not be placed upon any wet surface, or when the air and surface temperature of the underlying course is less than specified in Table 4.~~8~~10. The temperature requirements may be modified, but only when so approved and directed by the ~~City Engineer.~~city. Open-graded asphalt mix shall be placed only when the air temperature is 70°F (~~21C~~21°C) and rising, and the surface temperature is a minimum of 60°F (16°C). Air and roadbed temperature shall be measured in the shade. Asphalt mixtures shall not be placed during adverse weather conditions such as rain, wind, hail, etc.

~~TABLE 4.8~~
~~Climate Limitations~~Table 4.11 – Minimum Pavement Temperature in Degrees F.

Mat Thickness Wink of 5 mph or LessAir Temperature Deg F	Minimum Air and Surface TemperatureCompacted Mat Thickness					
3 inches or greater			40*			4*
	3/4"	1"	1-1/2"	Greater than 2 inches, but less than 3 inches 2"	45 *3"	7*4"+
45 – 50* 50 - 59 60 - 69 70 - 79 80 - 89 90 +	10 *– – – 285 280 275 270	– – – 285 280 275 270	– – 285 280 270 265	– 280 275 270 265 260	280 270 265 265 260 250	265 255 250 250 250 250
Open graded asphalt mix			70*			21*

4.5.21 If a warm mix additive or manufacturing process is used, delivery temperature may be reduced by 15°F, but not below 250°F. This temperature may be reduced further upon the completion of a successful test section using the modification.

4.6.18 SPREADING AND FINISHING. The asphalt mix shall be placed upon an approved surface, by a self-propelled paver meeting the requirements in Section 4.5.18. The travel rate of the paving machine shall be regulated to a speed dependent upon the capacity of the mixing plant and/or trucking service to supply the mixture. The paving machine shall be operated so that material does not accumulate and cool below 250˚F (121˚C) along the sides of the receiving hopper.

Where unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the mixture may be spread, raked with hand tools, and mechanically compacted. For such areas, the mixture shall conform to the required mix design, density, compacted thickness, grade and cross section.

The asphalt mix may be windrowed in front of the self-propelled paver properly equipped to transfer the asphalt mix directly into the hopper, provided that the following conditions and requirements are strictly adhered to.

4.6.18.1 ~~4.5.21.1~~ The windrow is properly sized, thereby insuring the delivery of the correct amount of material to the paving machine at all times.

4.6.18.2 ~~4.5.21.2~~ The asphalt mixture shall be transferred from the windrow to the paving machine in such a manner that the materials in the paver will be a uniform mixture. The base, upon which the windrow was formed, shall not be disturbed. There shall be a minimum amount of asphalt mixture remaining on the base between the pickup device and the paving machine.

4.6.18.3 ~~4.5.21.3~~ The material in the hopper of the paving machine shall meet with the temperature requirements. Asphalt mixture that does not meet the minimum specified temperatures shall not be used, and shall be properly disposed of.

When it is determined by the ~~City Representative~~city that the asphalt course being placed by use of a windrow is inferior to that being placed by direct transfer of the asphalt from the hauling vehicle to the spreading machine, the use of the windrow method shall be discontinued.

The asphalt mixture placed by the use of a paving machine during one day's operation shall come from a single plant manufacturer. Intermixing from more than one source shall not be allowed. Intermixing is defined as when more than one plant is used as a routine supply source to a single operation.

The asphalt mixture shall have a temperature not less than ~~270BF (132BC~~270°F (132°C) nor more than ~~325BF (163BC~~325°F (163°C), at the time the paving machine places the asphalt mixture on grade. Depending on environmental conditions and compaction requirements, the ~~City's Representative~~city may specify more strict temperature requirements.

Asphalt pavement courses of more than three inches in total compacted thickness shall be placed in two or more courses. One course shall not be placed over another course until the compaction requirements have been met and the mat temperature has cooled to ~~160BF (71BC~~160°F (71°C) at mid-depth.

Placing of the asphalt pavement shall be as continuous as possible. Rollers should not pass over the unprotected edge of the freshly laid

asphalt mixture. Transverse joints shall be formed by cutting back on the previous run to expose the full depth and proper grade of that course. A tack coat meeting Section 4.~~5.9~~6.8 of these specifications shall be applied on the contact surface of the prepared transverse joints just before the new asphalt mixture is placed.

Longitudinal joints shall be spaced in such a manner that joints in succeeding courses will be offset at least twelve inches horizontally from joints in any preceding course. Lanes will be evened up each day to minimize cold longitudinal joints and to provide proper transverse joints. Where possible, the top course longitudinal joints shall be placed a minimum of one foot either side of the lane line.

Transverse joints shall be spaced in such a manner that joints in succeeding passes will be a minimum of five feet horizontally from joints in any adjacent pass.

Existing roadway pavements to be widened shall be sawcut far enough into the roadway to provide the proper grade, cross-section and thickness with a straight vertical longitudinal or transverse joint. These joints shall have a tack coat meeting Section 4.~~5.9~~6.8 of these specifications applied on the contact surface immediately prior to paving.

Longitudinal joints on previously compacted passes should have an overlap of new asphalt mixture one to one and one-half inches over the existing mat. Raking should be merely to "bump" the joint, pushing the asphalt mixture off the previous pass and onto the new pass directly over the joint. If the adjacent mat is overlapped too far and too much asphalt mixture is deposited on the existing mat, the excess material shall be pulled away from the new mat rather than being pushed onto the new mat. Excess mix shall never be broadcast across the newly ~~layed~~laid asphalt. The excess mix shall be picked up and recycled.

4.6.19 ~~4.5.22~~ ROLLING AND COMPACTING. Compaction equipment shall meet the requirements of Section 4.5.~~19~~16 of these specifications, unless otherwise approved or required by the ~~City's Representative~~city.

A pass shall be one movement of a roller in either direction. A coverage shall be as many passes as are necessary to cover the entire width being paved. Overlap of passes during any coverage, made to ensure compaction without displacement of material shall be in accordance with good rolling practice.

The breakdown rolling shall consist of one or more complete coverages of the

asphalt mat with a vibratory steel-wheeled roller. Initial rolling shall commence at the lowest edge and shall progress toward the highest portion of the asphalt mat. Initial rolling shall not commence on the interior portion of any mat.

The breakdown rolling shall be followed immediately by additional rolling with a pneumatic-tired roller that will provide uniform density throughout the depth of the course being compacted. A minimum of two rollers, one steel-wheeled, and one pneumatic-tired, shall be used. However, the total number of rollers used beyond the minimum of two shall be sufficient to obtain the required compaction while the asphalt mixture is above ~~175BF (80BC~~175°F (80°C).

The final rolling of the asphalt mixture shall be performed by a steel wheel roller of sufficient size to remove all roller marks caused during the compaction of the asphalt mixture. The vibratory roller used for breakdown rolling may be used as the finish roller provided it is operated with the vibratory unit turned off.

The rollers shall be kept in continuous motion while rolling so that all parts of the asphalt mixture will receive as close to equal compaction as possible. The roller speed shall be slow enough at all times to avoid displacement of the pavement. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected immediately by use of rakes and fresh asphalt mixture when required.

To prevent adhesion of the asphalt mixture to the rollers, the wheels/tires, bars, pads and release agent pumps shall be kept properly maintained.

The use of diesel oil on pneumatic-tired rollers shall be kept to a minimum and used only in conjunction with coca pads to prevent the asphalt mixture from adhering until the tires heat enough to prevent mix adherence.

The completed surface shall be thoroughly compacted, smooth and free from ruts, humps, depressions, or irregularities. Any ridges, indentations or other objectionable marks left in the surface of the finished pavement shall be eliminated by rolling or other means. The use of any equipment that leaves ridges, indentations, or other objectionable marks in the asphalt surface shall be discontinued, and acceptable equipment shall be furnished.

Compacting the longitudinal joint shall be performed by placing the roller on the hot uncompacted mat and overlapping the joint by a distance of approximately six inches over the cold compacted mat. For proper compaction, the level of the uncompacted mix at the longitudinal joint must be above the elevation of the compacted mix by an amount equal to one- quarter inch for each one inch of compacted pavement. This ratio is “rule of thumb” and may vary slightly depending on the type of asphalt mix and the supplier. A test strip is advisable.

A good source of information for rolling asphalt is a document by AASHTO, FAA, Federal Highway Administration and the National Asphalt Pavement Association entitled "AC 150/5370-14, Appendix 1, July 31, 1991". The following information is taken from that document.

1. Rolling From The Cold Side - It was common practice in the past to do the initial rolling of the longitudinal joint from the cold (previously placed mat) side of the joint. The major portion of the weight of the roller was supported by the cold, compacted mat. Only six inches or so of the width of the roller hung over the fresh mat, compressing the mix along the joint. The majority of the compactive effort was wasted because the roller essentially was applying its compactive effort to an already-compacted asphalt material.

   During the time that the roller was operating on the cold side of the longitudinal joint, the mix on the hot side of the joint, and the rest of the mix in the course being laid, was cooling. Depending on the environmental conditions and the thickness of the mix being placed, the process of compacting the joint from the cold side often proved to be detrimental to the ability to obtain density on the whole pavement layer.

   The reason often given for rolling the joint from the cold side of the joint was that this compaction method allowed the rollers to "pinch" the joint and obtain a higher degree of density. There is no evidence that this is true.

2. **Rolling From The Hot Side** - The most efficient way to compact the longitudinal joint is to put the roller on the hot mat and overlap the joint by a distance of approximately six inches over the cold mat. This places the majority of the weight of the compaction equipment where it is needed. The mix at the joint is still pushed into the joint area by the roller as long as the elevation of the new mix at the joint is proper. The longitudinal joint can be compacted effectively by keeping the roller on the new mix, instead of on the previously compacted mix. Any type of roller used for the breakdown rolling of the mix can be employed to compact the longitudinal joint as long as the elevation of the mix at the joint is above the level of the cold mat and the mix is still hot.

   Sometimes the first pass of the roller is completed with the edge of the machine about six inches inside of the longitudinal joint. The theory behind this method of compaction is that the mix will be shoved toward the joint by the roller, and better compaction will be obtained. If the mix being placed is stable enough, the roller

should not be able to move the material laterally to any significant degree. If the mix design is proper, this method of compacting the joint does not provide any advantage over moving the first pass of the roller outward one foot (from six inches inside the joint to six inches outside the joint). Rolling the mat by lapping the roller over the adjacent old pavement typically is the more efficient way to provide roller coverage for the whole pavement width.

4.6.20 ~~4.5.23~~ OPEN-GRADED WEARING COURSE.

4.6.20.1 ~~4.5.23.1~~ WEARING COURSE. An open-graded wearing course shall be placed over a dense-graded asphalt course. The dense-graded asphalt shall be true to line and grade, cleaned and tacked.

The following specifications shall be complied with:

Item	Section
Dense-graded asphalt	4.5.10
Tack Coat	4.5.9
Asphalt Cement for (existing road) Overlays	Table 4.~~10~~12
Asphalt Cement for New Construction	4.5.10.2
Hydrated Lime	4.5.11
Other related requirements	

Aggregate gradation shall conform to Table 4.~~9~~11 when tested under AASHTO T-30.

The percent passing the No. 200 (.075 mm) sieve will be determined by using AASHTO T-11, test procedures.

That portion of aggregate retained on the No. 4 (4.75 mm) sieve shall have no more than ten percent rounded particles when tested in accordance with UDOT Test Procedure 8-929.

TABLE 4.~~9~~12
Open-Graded Asphalt Gradation

Sieve Size		Ideal Gradation Percent Passing	Ideal Gradation Tolerance
American	Metric		
½ inch	12.5 mm	100	0
3/8 inch	9.5 mm	96	93-100
No. 4	4.75 mm	40	35-45
No. 8	2.36 mm	17	13-21
No. 200	.075 mm	3	1.3 - 4.7

TABLE 4.~~10~~13 Rubberized Liquid Asphalt Requirements			
AC-20R:			
Property	ASTM	Specification	
Viscosity @ 140EF, poise	D-2171	1,600	2,400
Viscosity @ 275EF, cs	D2170	325	
Pen @ 77EF (100 g, 5 sec)	D-5	70	
Flash Point, EF, C.O.C.	D-92	450	
Duct. @ 39.2EF, (5 cm/min)	D-113	50	
Cm		2.0	
Rubber, Weight %	*	110	
Toughness, in-lb	*	75	
Tenacity, in-lb	D-2872		
Rolling Thin-Film Oven Test	**		
Tests on Redsidue:		8.000	
Viscosity @ 140EF, pois	D-2171	25	
Duct. 39.2EF, (5 cm/min)	D-113		
Cm			
*Benson Method of Toughness and Tenacity: Scott Tester, inch-pounds @ 77EF, 20 inches per minute pull. Tension head 7/8-inch diameter			
** TFOT ASTM D-1754 may be used. The Rolling Thin-Film Circulating Oven Test is the preferred method.			

4.6.20.2 ~~4.5.23.2~~ **SUITABILITY OF AGGREGATE.** The following requirements shall be used to determine the suitability of the aggregate during the mix design:

4.6.20.2.1 Wear shall not exceed thirty percent when tested in accordance with AASHTO T-96.

4.6.20.2.2 The weighted loss shall not exceed twelve percent by weight when subjected to five cycles of sodium sulfate tested in accordance with AASHTO T-104.

4.6.20.2.3 Aggregates consisting mainly of carbonate type rocks shall not be used unless approved by UDOT as satisfactory long-term friction values for comparable traffic volumes when tested in accordance with AASHTO T-242 or ASTM E-274-79.

Aggregates shall be separated into two or more sizes and stored separately.

Stockpiling or handling methods that cause segregation, degradation or the combining of materials of different sizes when placing the aggregate in storage or moving it from storage to the cold bins shall not be used. Any segregated or degraded material shall be re-screened.

4.6.20.3 ~~4.5.23.3~~ **MIX DESIGN.** Annual mix designs shall be submitted in writing to the ~~City Engineer~~city for approval two weeks prior to the first job each calendar year, or upon selection of new aggregate sources. Any revisions to the approved mix design shall fall within the requirements listed above. Open-graded wearing courses that do not meet the tolerances shown in Section 4.~~5.24~~6.20 shall be removed and replaced with material meeting the required gradation. The asphalt cement shall be within 0.10 percent of the mix design. At no time shall the asphalt cement content be such that asphalt slicks form on the surface of the roadway.

Based on the mix design, the open-graded wearing course shall have a tensile strength ratio of seventy (70) percent, or greater, in accordance with AASHTO T-283 UDOT modified. Hydrated lime or anti-stripping agent may be added to the asphalt mix to meet the minimum tensile strength of seventy (70) percent.

4.6.20.4 ~~4.5.23.4~~ **MIXING.** The mixing shall be done as specified in Section 4.~~5.13~~6.20. The mineral aggregate will be considered satisfactorily coated with asphalt when all particles are coated. During mixing the viscosity of asphalt shall be maintained between four hundred and nine hundred centistokes. The viscosity of polymer-modified asphalt, when used, shall be maintained between one hundred fifty and three hundred (150-300) centistokes.

If a drier-drum mixing process is used, the temperature of the mixture shall not be less than ~~220BF (104BC~~220°F (104°C), or more than ~~275BF (135BC~~275°F (135°C), when discharged from the mixer. When using a polymer-modified asphalt the temperature of the mixture when discharged from the mixer, shall be maintained between ~~270BF (132BC~~270°F (132°C) and ~~320BF (160BC~~320°F (160°C). Viscosity will be determined in accordance with ASTM T-201.

4.6.20.5 ~~4.5.23.5~~ **SURFACE PLACEMENT.** Tack coat shall be applied in accordance with Section 4.~~5.9~~6.8.

Self-propelled asphalt paving equipment and automatic screed controls meeting the requirements of Section 4.~~5.18~~6.15 shall be used. Rollers

shall meet the requirements of Section 4.~~5.19~~6.16 and shall be a ten ton (9.10 tonne) vibratory operated static or a ten ton (9.10 tonne) static steel ~~wheeled roller for asphalt pavement finishing.~~

wheeled roller for asphalt pavement finishing.

Paving operations should be planned such that all passes will be brought even “transversely” at the end of each working day. Joints between old and new pavements, or between successive days worked shall ensure continuous bond between adjoining work. Construct joints to have the same texture, density, and smoothness as other sections of the bituminous pavement course. Clean contact surface and apply tack coat.

Offset longitudinal joints a minimum of 12 inches in succeeding courses and at least 6 feet transversely to avoid vertical joints through more than one course. In the top course restrict longitudinal joint to 1 foot either side of the lane line. Prevent traffic, including construction traffic, from crossing vertical joint edges.

Excessive rolling shall not be allowed. Wearing course compaction shall be completed prior to the mix temperature drop below 180°F (82°C). When using polymer-modified asphalt, compaction shall be completed prior to the mix temperature dropping below ~~200 (93C).~~ 200°F (93°C).

Asphalt slicks shall be raked immediately. Slick spots that cannot be removed by raking, shall be replaced. All humps or depressions exceeding tolerances shall be corrected. Correction methods shall be approved by the ~~City's Representative.~~ city. All traffic shall be prevented from traveling on the completed wearing course until it has hardened sufficiently and the surface temperature has dropped below 160BF (71BC). The thickness of the compacted wearing course shall not vary more than one-quarter inch (6.35 mm) from the specified thickness. Testing and acceptance shall conform to Section 4.5.24.

4.6.21 ~~4.5.24~~ ACCEPTANCE TESTING REQUIREMENTS AND TOLERANCES. The following subsections list the requirements for testing and acceptance for subbase, roadbase, RAM, dense-graded asphalt, open graded asphalt and asphalt pavement surfaces. Testing documentation shall fully address the requirements of these standards.

4.6.21.1 ~~4.5.24.1~~ SUBBASE. The following will be required for testing and acceptance of subbase:

A. One moisture/density test per seven thousand square feet of roadway, or fraction thereof.

B. One thickness test hole per five thousand square feet.

C. One gradation test per fifteen thousand square feet of roadway, or fraction thereof. The allowable deviations from the approved subbase targets are as follows:

SIEVE SIZE ~~AMERICAN (METRIC)~~	ACCEPTABLE LIMIT ~~ALLOWABLE DEVIATION~~	SUSPENSION LIMIT
2~~" (50.80 mm)~~" to 6~~" (152.4 mm)~~"	± 12.~~1~~%	± 15%
~~½" (12.5 mm)~~1/2" to 1~~" (25.0 mm)~~"	± ~~10.8~~11%	± 15%
3/8~~" (9.5 mm)~~"	± ~~9.8~~10%	± 15%
No. 4 ~~(4.75 mm)~~	± ~~8.8~~9%	± 14%
No. 16 ~~(1.18 mm)~~	± ~~6.9~~7%	± 11%
No. 200 ~~(.075 mm)~~	± ~~2.9~~3.0%	± 4.5%

C.1 ~~C.1~~ One sand equivalent *(SE)* value for every gradation outside the allowable deviation. A CBR ~~or R~~ value shall be performed on twenty~~-~~five percent (25%) of all sand equivalent test results with a minimum of one test required. Where multiple SE tests are run, the CBR ~~or R~~ value shall be determined on those SE ~~tests~~test that exhibit the lowest values.

The ~~Following Are~~following are the Minimum Values for Roadway Subbases.

- The minimum acceptable SE value shall be ~~eighteen.~~twenty-two (22)

~~The minimum acceptable R-value shall be sixty.(1)~~

- The minimum acceptable CBR value shall be ~~8.8.(2)~~70

Note 1: ~~R-value test: AASHTO T-190 or ASTM D-2844 (300 psi exudation pressure) Note 2:~~ CBR Value Test: AASHTO T-193, (3 point)

~~4.5.24.2~~ C.2 If more than two sample gradations from a project exceed the Suspension Limit or fail to meet the minimum acceptable CBR value, the subbase is unacceptable and shall be removed and replaced with acceptable subbase.

4.6.21.2 ROADBASE ~~AND RECYCLED AGGREGATE MATERIALS (RAM).~~

A. One moisture/density test per seven thousand square feet of roadway, or fraction thereof.

B. One thickness test hole per five thousand square feet.

C. One gradation test per fifteen thousand square feet of roadway, or fraction thereof. The allowable deviation from the approved roadbase ~~and RAM~~ targets are as follows:

SIEVE SIZE ~~AMERICAN (METRIC)~~	~~ALLOWABLE DEVIATION~~ACCEPTANCE LIMIT	SUSPENSION LIMIT
~~½" (12.5 mm) to 1" (25.0 mm)~~1/2" TO 1"	± ~~10.8~~11%	± 15%
3/8~~" (9.5 mm)~~"	± ~~9.8~~10%	± 15%
No. 4 ~~(4.75 mm)~~	± ~~8.8~~9%	± 14%
No. 16 ~~(1.18 mm)~~	± ~~6.9~~7%	± 11%
No. 200 ~~(.075 mm)~~	± ~~2.9~~3.0%	± 4.5%

~~C.1 One sand equivalent (SE) value for every gradation outside the allowable deviation. A CBR or R-value shall be performed on twenty five percent of all sand~~

~~equivalent test results with a minimum of one test required. Where multiple SE tests are run, the CBR or R-value shall be determined on those SE tests that exhibit the lowest values.~~

~~The Following Are the Minimum Values for Roadbase and RAM.~~

~~The minimum acceptable SE value shall be twenty-two.~~

~~The minimum acceptable R-value shall be seventy-six.(1)~~

C.1 ~~The~~If roadbase gradations exceed the Suspension Limit or fail to meet the minimum acceptable CBR value, the material shall be considered unacceptable and must be removed and replaced with acceptable roadbase at the Contractor's expense.

The geotechnical firm shall notify the city and the city will remove the roadbase source from the City's Approved Supplier List if any of the following conditions occur:

- A gradation test result exceeds the Suspension limit;
- A CBR value does not meet the minimum acceptable ~~CBR~~ value ~~shall be 14.5.(2)~~;

~~Note 1: R-value test: AASHTO T-190 or ASTM-D 2884 (300 psi exudation pressure) Note 2: CBR Value Test: AASHTO T-193, (3 point)~~

- ~~4.5.24.3~~ Fifty percent (50%) of more of gradation test results on a project exceed the Acceptance Limit; or
- Four (4) or more consecutive gradation test results exceed the Acceptance Limit.

The supplier shall not furnish roadbase for any City projects until a quality control plan has been submitted, acceptable quality control results have been demonstrated, and the city has provided written re-approval of the source.

4.6.21.3 DENSE-GRADED ASPHALT PAVEMENTS ACCEPTANCE.

~~A. One density test per seven thousand square feet of surface area, or fraction thereof.~~

~~B. One core sample per nine thousand square feet, or fraction thereof, unless sufficient inspection has been made by the City's Representative to verify required thickness.~~

~~C. One extraction and gradation test per days work, or one for every five hundred tons or fraction thereof, whichever is greater.~~

~~In the event that the asphalt pavement fails to meet the allowable deviation for extraction or gradation tests, or shows a tendency under traffic loading to rut, tear, or distort, or in the opinion of the City's Representative is "tender" or deficient in appearance, the asphalt pavement shall be cored and tested in accordance with AASHTO T-283-89 or ASTM D 4867-92 including Note 5.~~

~~The asphalt pavement must possess seventy percent of the tensile strength ratio based on the approved Marshall mix design. Asphalt pavement not meeting this requirement shall be removed.~~

~~The maximum allowable deviations from the approved Marshall mix design are:~~

Acceptance testing shall be performed by an Accredited Laboratory. Verify laboratory complies with ASTM D3666 or AASHTO R-18

Submit Acceptance data to the Engineer within 3 working days after completion of each day of paving or prior to the start of the next paving day, whichever is sooner.

The Supplier shall submit daily plant production records to the Engineer within 1 working day after completion of each day of paving and prior to the start of the next paving day.

a. Plant report must include weights of all individual aggregates, bitumens, water and other additives incorporated in mix, including RAP, lime, mineral filler, fiber or other additives.

Observation of CONTRACTOR's field quality control testing does not constitute acceptance.

4.5.21.3.A TESTING PROTOCOL

A. Sub-lot size is 500 tons or part thereof.

B. Sampling Protocol: ASTM D3665 and ASTM D979. Collect at least one (1) random Sample per sub-lot from behind paver and before compaction. For placements with a design thickness of 2 inches or less, samples may be taken at the plant. Any sample collected because of non-uniform appearance shall not be used in determining acceptance for the Lot.

1. Sampling binder, ASTM D140. At owner's request, take 1 qt sample and provide to owner's representative.

C. Testing Protocol (Performed by Owner's Verification Testing Organization):

a. Project Less than 1000 tons – Mix samples will be compacted in the laboratory and tested for:

1) Binder content, ASTM D6307.
2) Aggregate gradation, ASTM D5444.
3) Maximum Specific Gravity (Rice), ASTM D2041

a. Project greater than 1000 tons - Mix samples will be compacted in the laboratory and tested for:

1) Air voids, ASTM D3203.
2) Voids in the mineral aggregate, AI MS 2.
3) Binder content, ASTM D6307.
4) Aggregate gradation, ASTM D5444.
5) Maximum Specific Gravity (Rice), ASTM D2041

D. Reporting: The Owner or the Owner's Verification Testing organization will provide the contractor with acceptance results within 3 working days after completion of each day of paving, or prior to the start of the next paving day, whichever is sooner.

E. Lot Acceptance: A Lot is acceptable if binder content and aggregate gradation test average deviations are within limits the limits below.

Criteria	ALLOWABLE DEVIATION
Asphalt ~~content~~Content	~~+/-~~ ± 0.~~49~~38%
Nominal Sieve ½" (12.5mm) ~~and larger~~or 3/8" (9.5 mm)	~~+/-~~ ± 6.~~3~~0%
~~3/8" (9.5mm)~~	~~+/- 5.9%~~
~~No. 4 (4.75mm)~~	~~+/- 5.7%~~
No. 8 (~~2.36mm~~4.75 mm)	~~+/-~~ ± 4.~~8~~0%
~~No. 16 (1.18mm)~~	~~+/- 4.6%~~
No. 50 ~~(.300mm~~(1.18 mm)	~~+/-~~ ± 3.~~8~~0%
No. 200 (.~~075mm~~075 mm)	~~+/-~~ ± 2.0%

~~2.5.24.4~~ **F. Un-Accepted Lots (Contracts Issued by Someone Other Than The Ultimate Owner of The Pavement)**: Provide recommended corrective measures based on Engineering Analysis, described below, based on durability and serviceability relative to the specified product requirements, including expected performance compared to design life. The ultimate owner of the pavement or a representative of such will review and either approve corrective measures or provide basis for rejection.

G. Un-Accepted Lots (Contracts Issued by The Ultimate Owner of The Pavement): At the Engineer's discretion, a lot that does not meet the criteria in 4.5.21.3 may be accepted given the following corrective action.

Alternative Corrective Action				
Lab Air Voids:	**2.0-5.0%**	**< 2.0%**	**5.0-7.0%**	**>7.0%**
Average Relative Compaction	VMA – Voids > 10.7	VMA – Voids > 10.7	VMA – Voids > 11.7	Or VMA not Met
93.0 – 98.0%	No Action	2	1	3
> 98.0%	2	3	2	3
91.0 – 93.0%	1	2	3	3
<91.0%	3	3	3	3
1: Application of Owner-Approved Surface Treatment 2: Application of minimum 1.5" Overlay 3: Removal and Replacement				

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4.6.21.4 COMPACTION OF DENSE-GRADED ASPHALT PAVEMENT.

Test results must be from a UDOT qualified laboratory using UDOT qualified technicians, or results must be verified and certified (stamped) by a Utah Registered Professional Engineer.

A. Acceptance of compaction of dense graded asphalt pavement shall be as follows:

~~When the average of all density tests is not less than ninety six (96) percent of the maximum laboratory density (Marshall) and when no single test is lower than ninety two (92) percent of the Marshall.~~
~~When the average of all density testing falls between ninety three (93) percent to 95.9% of the Marshall with no test lower than ninety two (92) percent of the Marshall, the asphalt pavement shall be tested to determine the percent of air voids. If the percent of air voids are between three to five (3-5) percent, the asphalt pavement will be considered acceptable. If the percent of air voids are between five to seven (5-7) percent, the asphalt pavement will require a slurry seal per these specifications. When the average of all density testing falls between ninety one (91) percent of the Marshall and 92.9% of the Marshall with no single test below ninety (90) percent of the Marshall, the asphalt pavement shall be overlaid with a minimum of one inch thick asphalt pavement. Prior to the overlay, the existing asphalt next to the curb, gutter, cross gutter, etc. shall be milled one inch below the top edge of the concrete to provide a finished asphalt surface that is flush with or not more than .02 foot above the concrete gutter. Asphalt pavements with an average density less than ninety one percent of the Marshall, or with any single test less than ninety percent of the Marshall, shall be removed and replaced.~~

~~4.5.24.5~~ 1) core density or 2) non-destructive test density, or 3) control strip density with visual observation. Use core density unless specified elsewhere. A Lot is acceptable if density test averages are within the Acceptable Compaction Levels defined in Table 4.13 and no test is below Lowest Test limit. For lots outside of this acceptable level, reference the Alternative Correction Action in 4.5.21.3.A.

Mat Sampling Protocol: Use ASTM D3665 to randomly select in each sub-lot at least one (1) surface test location. Samples are full depth or overlay depth in overlay construction.

1) Projects less than 500 Tons: Use 10 sublots and non-destructive tests. Coring may be used for dispute resolution.

2) Projects between 500 and 1000 Tons: Use 4 equal sublots.

3) Projects between 1000 and 1500 Tons: Use 6 equal sublots

4) Projects greater than 1500 Tons: Use 8 equal sublots.

5) Joint Sampling Protocol: Use ASTM D3665 to randomly select a total of three (3) longitudinal joint test locations for each joint. Samples are full depth or overlay depth in overlay construction.

a. Use 6” diameter cores, centered within 1 inch of center of joint

b. Do not core projects smaller than 250 Tons.

c. Testing Protocol: ASTM D2726 for core density and ASTM D2041 (Rice) for maximum theoretical density.

6) Non-Destructive Density Testing by Electronic Gauge:

a. Lot Size: One (1) day production, with sublots as defined in Article 1.8.E 2 Core Density.

b. Mat Sampling Protocol: Use ASTM D3665 to randomly select in each sub-lot at least two (2) surface test locations.

c. Testing Protocol: ASTM D2950 (nuclear gauge) or AASHTO TP68 (non-nuclear gauge) and ASTM D2041 (Rice) for maximum theoretical density. A non-destructive test is the average of two (2) test results at each test location with a minimum 90 degree offset between test samples using mix correlated gauges. Use minimum 60 second count with Nuclear Gauge.

Table 4.14 – Compaction Acceptable Levels				
Acceptance Parameter	Mat Density, in Percent Relative to ASTM D2041 (a)		Joint Density, in Percent Relative to ASTM D2041 (a) (d)	
	Average	Lowest Test	Average	Lowest Test
Requirement	93.0 to 98.0	90.0 or greater	91.0 to 98.0	89.0 or greater

Notes:
(a) For overlay design thicknesses of less than 2.0", mat density targets are reduced by 1% and no joint density cores are taken.
(b) Difference based on actual sublot mat density and sublot core density values.
(c) Report and calculate all density values to 0.1%.
(d) A paving Joint is defined as a longitudinal seam between two adjacent passes of asphalt placed during the project, and where the initial pass cools below 180 deg F prior to placement of the adjacent pass. Do not take Joint cores where the "Joint" is comprised of existing asphalt or concrete. Use 6" diameter cores for joint density determination.

B. Thickness Acceptance of dense graded asphalt pavement shall be as follows:

1. **Lot Size**: One (1) day production with 1,000 square yard sub-lots or part thereof. Samples are full depth. Overlay construction measured only on overlay portion of core sample. Use one of the following methods for thickness determination:
2. Measurement of Density Cores
   i. A Lot specified to have actual thickness is acceptable if any sub-lot measurement does not exceed deficiency limits for thickness tolerances in Table 4.14
3. Probe of uncooled mix by representative of the city – perform between intermediate and final rolling operations.
   i. A Lot specified to have actual thickness is acceptable if any sub-lot measurement does not exceed deficiency limits for thickness tolerances in Table 4.14
4. Ground Penetrating Radar (not applicable to overlay applications). Perform GPR evaluation by scanning and recording depth for full-width of the pavement at one random location for each sublot. Engineer will mark locations for scans. Measure HMA thickness every 6 inches on the recorded scan. Calculate the average thickness, and the percentage of the thickness below each of the tolerance levels described in Table 4.14. A lot is accepted for thickness based on GPR evaluation when the average thickness of all scans is not more than ¼ inch less than the total thickness specified and no individual scan shows a deficient thickness of more than ⅜ inch for more than 5% of any scan.
5. A Lot is acceptable if average of test deficiencies, applied to the total design thickness, exceeds design thickness or is within the acceptance limits; and no sublot or individual test below the individual test limit. Reference Table 4.14.
6. At the Engineer's discretion, a lot with an average deviation that does not meet acceptable limits and/or has an individual deviation greater than the individual limits may be accepted upon the

completion and review of an Engineering Analysis and other requested actions.

Table 4.15 – Thickness Tolerance	
Acceptance Criteria	**Deficiency Limits, in Inches**
Acceptable	0.00 to 0.25
Individual	0.25 to 0.375
Remediate	Average >0.25 or Individual >0.375

Cores not meeting acceptable limits will be provided to the Contractor for verification of measurements.

Reject mixes in the transport material exceeding the limits identified in the mix design. Use calibrated temperature probes for rejection of mix. Use temperature guns for quick approximate temperature readings only.

Opening a paved surface to traffic does not constitute acceptance. Observation of CONTRACTOR's field quality control testing does not constitute acceptance.

4.6.21.5 OPEN-GRADED ASPHALT WEARING COURSE.

In the event that the extraction or gradation fails to meet the allowable deviation, the remaining sample material shall be remolded and tested in accordance with AASHTO T ~~283 89 or~~283or ASTM D 4867~~ 92~~ including Note 5. The open-graded asphalt pavement must possess seventy percent of the tensile strength ratio based on the approved mix design. Open-graded asphalt not meeting this requirement shall be removed and replaced.

The allowable maximum deviations from the approved Marshall mix design shall be as follows:

Asphalt content	+/- 0.46%
~~½"~~½" (12.5 mm)	+/- 6.3%
3/8~~"~~" (9.5 mm)	+/- 5.9%
No. 4 (4.75 mm)	+/- 5.7%
No. 8 (2.36 mm)	+/- 4.8%
No. 200 (.075 mm)	+/- 2.0%

4.6.21.6 ~~4.5.24.6~~ ASPHALT PAVEMENT SURFACES.

The completed surfacing shall be thoroughly compacted, smooth and free from ruts, humps, depressions, rock pockets or slick spots. Any ridges, indentations or other objectionable marks left in the pavement's finished surface shall be corrected prior to acceptance.

The paving contractor shall provide adequate quality control during spreading and finishing procedures to meet or exceed the following longitudinal and transverse profiles:

- Longitudinal deviations shall not exceed ± 0.025 foot in 25 feet when checked by a taut string line.

- Transverse deviations shall not exceed ± 0.01 foot in 10 feet when checked with a ten foot straight edge.

- Longitudinal construction joint deviations shall not exceed ± 0.01 foot when checked with a ten foot straight edge.

- The completed pavement surfaces shall be constructed to the required grades and cross sections. When pavement surfaces contact concrete structures such as drainage structures, curbs & gutters, utility vaults, or manholes, the pavement surfaces shall be flush with or above the concrete structures by not more than 0.02 foot. All deviations exceeding the specified profile tolerances shall be corrected prior to final rolling.

~~4.6 BITUMINOUS SEAL COAT (CHIP SEAL). Bituminous surface treatments (chip seals) shall be applied to the road surface only when required, or approved by the City Engineer. The bituminous surface treatment shall consist of an application of bitumen covered with mineral aggregate and rolled to a smooth surface presenting an even texture. The materials used in the application of the bituminous surface treatment shall be bituminous mineral, and mineral aggregate, as specified below.~~

~~4.6.1 MATERIAL SPECIFICATIONS.~~

~~4.6.1.1 BITUMINOUS MATERIAL. The bituminous material shall be cationic emulsified asphalt with a natural latex rubber material (type LMCRS-2H) and shall conform to the following requirements:~~

~~TEST~~	~~SPECIFICATION~~	~~PARAMETERS~~

~~Viscosity @ 122°F.~~	~~AASHTO T-59~~	~~100-300 sec.~~
~~Sieve~~	~~AASHTO T-59~~	~~0.3% max.~~
~~Settlement, 5 days~~	~~AASHTO T-59~~	~~5% max.~~
~~Demulsibility Storage~~	~~AASHTO T-59~~	~~40% min.~~
~~Stability~~	~~AASHTO T-59~~	~~1% max.~~
~~(1 day test) Ash Content~~	~~ASTM D3723~~	~~0.2% max.~~

Tests on Residue by Drying: Percent Residue Penetration @ 77 F., (100 g., 5 sec.) Ductility @ 77 F., (5 cm./min.) Torsional Recovery	 NV 756 AASHTO T-49 AASHTO T-51 NV 756	 65% min. 40-150 mm. 40 cm. min. 18% min.
Particle Charge	AASHTO T-59	POSITIVE

4.6.1.2 AGGREGATE (CHIPS). Mineral aggregate shall consist of crushed stone or crushed gravel, free from adherent films of clay or dust, and shall be of such nature that a thorough coating of the bituminous material used in the work will not strip off upon contact with water.

The gravel or rock shall have a percent of wear not greater than thirty when tested by the Los Angeles Abrasion Test (AASHTO T-9 ASTM C 131). Chips shall be cubical or pyramidal in shape with at least ninety-five (95) percent fractured faces. The crushed aggregate shall have a weighted percent of loss not exceeding ten percent by weight when subjected to five cycles of sodium sulfate and tested in accordance with AASHTO Designation T-104.

Stripping tests of the mineral aggregate which the Contractor proposes to use shall be furnished to the City's Representative before crushing operations begin. During aggregate crushing, additional stripping tests shall be furnished to the City's Representative upon request. No stripping test shall show a percent stripping greater than ten for LMCRS-2H asphalt. The chip shall be electrically compatible to the asphalt emulsion used.

The crushed aggregate shall conform to the gradation requirements shown in following table.

TABLE 4.11
GRADATION OF AGGREGATE FOR CHIP SEAL COATS

SIEVE SIZE	PERCENT BY WEIGHT PASSING (Ideal)	IDEAL GRADATION TOLERANCE (Percent)
1/2 Inch	100	0
3/8 Inch	95	+/- 5
No. 4	10	+/- 5
No. 8	2	+/- 2
No. 200	0.5	+/- 0.5

~~The initial mineral aggregate used for the production of chips shall be retained on a one-inch sieve prior to being crushed to the gradation specified.~~

~~4.6.2 AGGREGATE QUALITY CONTROL. Prior to delivery to the project site the designated wear test, striping test, sodium sulfate test, fracture face count, and gradation tests shall be performed on the crushed aggregate. Each time a source changes said tests will be repeated.~~

~~All aggregate (chips) shall be tested for compliance with the gradation and fracture face count during the production of the chips. There shall be no less than one test performed for every five hundred tons of material produced or one day's production, whichever is less. One gradation test and fracture face count test shall be defined as the average results of tests taken on three different samples taken at one particular time.~~

~~All material produced shall be stockpiled in designated stockpile site(s).~~

~~When chips are delivered to the project stockpile site there shall be one gradation test conducted for every five hundred tons of material. If the gradation test requirements are not met, the City's Representative may require that the failed material be removed from the stockpile. Chips shall be considered to be out of specification if one test (as defined herein above) fails.~~

~~The City's Representative will not accept any chips which do not meet all the designated specifications. No reduction in pay or other remedial terms will be allowed or negotiated.~~

~~In addition to the random acceptance samples taken at the stockpile, the City's Representative may sample the aggregate from any portion of stockpile which exhibits a non-uniform appearance.~~

~~The Contractor shall take immediate steps to bring the aggregate into specifications when test results show any deviation from the established maximum or minimum values for any sieve as shown in Table 4.11 of these specifications.~~

~~At designated stockpile site(s), the Contractor may be required to "push up" the unloaded aggregate into piles suitable for loading into the delivery dump trucks.~~

~~Extreme care shall be taken so as not to mix any of the crushed aggregate with the underlying material at the stockpile or the crushing site. In the event that there is contamination of the chip seal aggregate with foreign material, as determined by the City's Representative, or by tests conducted, the contaminated section of material shall be immediately removed from the stockpile or crushing area and properly disposed of. All contaminated material removed from the stockpile, or crushing area, shall be replaced with aggregate which meets the requirements of these specifications.~~

~~All testing required by the City's Representative, or by the plans and specifications, shall be performed by an independent testing laboratory. The Contractor shall do everything in his power to ensure that the City's Representative has full access to the testing procedure and shall deliver to the City's Representative any and all results of tests run. The Contractor shall not proceed with subsequent construction until certified copies of appropriate tests are delivered to the City's Representative. Any materials not properly tested shall be subject to rejection and removal.~~

~~4.6.3 EQUIPMENT. Work shall be subject to the approval of the City's Representative, and shall be maintained in satisfactory working conditions at all times.~~

4.6.3.1 ASPHALT DISTRIBUTOR. The asphalt distributor shall be equipped with a calibrated dipstick marked in gallons per inch of length, and an accurate thermometer and speedometer. The distributor shall also be capable of maintaining proper pump pressure to ensure a uniform distribution of liquid asphalt emulsion at all times. The pump shall be able to maintain the correct pump speed, or pressure, without either atomizing the asphalt or distorting the spray fan. However, the pump shall be able to maintain a pressure which shall be sufficient to prevent streaking from a non-uniform discharge of material from the individual nozzles.

The distributor shall be equipped with a rear-mounted spray bar capable of covering widths of six to fifteen feet in a single pass. The distributor tank shall be well insulated and be equipped with one or more heaters capable of bringing the asphalt emulsion to spray application temperature. The tank shall have a full circulating system which shall include the spray bar unit. The truck shall also be equipped with a hand-spray for applying the asphalt emulsion to areas that cannot be reached with the spray bar.

The distributor shall be equipped with a computer which will automatically determine the discharge based on the nozzle size, the truck speeds for various application rates, and the corrections for temperature-viscosity variations.

4.6.3.2 AGGREGATE SPREADER. The spreader shall be a self- propelled Flarity chip spreader, or equal, capable of uniformly spreading aggregate at varying application rates as required. The spreader shall be equipped with a tachometer and/or a speedometer to ensure the maintenance of a uniform spreader speed. The aggregate spreader shall also be equipped with a device and so operated that the coarse particles of the screening shall be deposited on the bituminous binder before the finer particles.

4.6.3.3 ROLLERS. The Contractor shall provide at least two self propelled, smooth-tread, pneumatic tired rollers on the job during the chipping operations. Each roller shall weigh at least ten tons and have staggered (offset) front and rear tires to obtain a uniformly rolled pass. Tire pressure in all tires shall be uniform and inflated to eighty psi. No steel wheel rollers shall be used to roll the chip seal surface treatments. Rolling speed shall not exceed ten miles per hour.

4.6.3.4 DUMP TRUCKS. The Contractor shall provide sufficient ten- wheel dump trucks during the chip sealing operations to ensure that the project can proceed without interruption. FREQUENT STOPS AND STARTS DURING THE CHIP SEAL OPERATION WILL NOT BE PERMITTED.

4.6.3.5 FRONT END LOADERS. The Contractor shall have on hand at least one front end loader to load the aggregate into the dump trucks from the aggregate stockpile(s). The loaders shall have at least a two-and-one- half yard capacity bucket.

4.6.3.6 POWER BROOMS. The Contractor shall provide at least one self-propelled rotary power broom or sweeper at the job site, and shall use said sweeper (supplemented with hand brooms as necessary) as required, to sweep the excess aggregate on the edge of each pass which will be in contact with the next pass so that there will be no build up of aggregate at the seams or joints between passes. The broomed aggregate shall be swept onto the freshly laid course.

4.6.4 BITUMINOUS CHIP SEAL CONSTRUCTION METHODS. The methods employed in installing bituminous chip seal(s) shall include, but are not limited to, the following:

4.6.4.1 SURFACE PREPARATION. All dust, dirt, tracked on clay and foreign material shall be removed from the surfaces to be sealed by sweeping the surface with power brooms, hand

brooms, power blowers, or by flushing it with water or a combination of the above. All patching, crack filling and drainage improvements required by the City's Representative shall be completed prior to the commencement of the surface treatment application. After the cleaning operation has been completed, and prior to the application of the surface treatment, the area to be treated will be inspected by the City's Representative to determine its fitness for receiving the surface treatment.

All sewer manhole lids, water valve covers nd survey monument covers shall be protected from the application of the seal coat by placing building paper over the lids (cut to the exact dimensions of the lids) prior to the application of the seal coat. At the completion of the sealing operations, all protective coverings shall be removed from said survey monument covers, manhole lids and valve covers.

At the edges of all passes which will form longitudinal joints in the surface treatment (chip seal) the edge of the pass shall be swept clean of all chips for a distance of from four to six inches back from the edge prior to the application of the adjacent pass to allow for overlap without chip buildup (humps) in the previous pass. Building paper shall be laid on all cross gutters (concrete waterways) to prevent the chip seal from being applied to said gutters. The Contractor shall place building paper at the beginning of all chip passes. Immediately after the chip application, the building paper shall be removed and destroyed.

4.6.4.2 ASPHALT APPLICATION. Application of the bituminous material shall not be permitted until the loaded aggregate trucks, rollers, and chip- spreader are in place and ready to apply, and roll, the cover aggregate. No surface will be chip sealed until authorization to do so has been obtained from the City's Representative. The asphalt material shall be applied at 0.32 to 0.40 gallons per square yard or as determined by the City's Representative and at a temperature between 125 degrees to 185 degrees Fahrenheit. The exact temperature used to apply the bituminous material shall be determined by the City's Representative.

The bituminous material shall be applied by an asphalt distributor, as described above, so that uniform distribution in the quantities specified is obtained over all points of the surface to be treated. All lightly-coated areas and spots missed by the distributor shall be properly treated with bituminous material applied by hand. No more asphalt shall be applied than can be covered with aggregate in sixty seconds or less. Distances between the distributer and chip-spreader shall be as close as possible, but in no case shall the chip-spreader be greater than fifty feet behind the distributer during the chipping operations.

4.6.4.3 AGGREGATE SPREADING. Immediately following the application of the bituminous material, the aggregate shall be evenly spread over the surface at a uniform quantity of twenty-five to thirty (25-30) pounds per square yard of surface area. Upon commencement of the work, and during it's progress, the individual quantities of bitumen and aggregate may be varied to meet specific field conditions, as directed by the City's Representative. An adequate supply of aggregate shall be available on the job site to permit continual spreading operations. Aggregate shall be damp (not wet) prior to being spread on the surface. The aggregate shall be spread by using a self-propelled spreader machine (Flarity or equal). The aggregate shall be spread evenly by hand on all areas missed by the aggregate spreader. Back-spotting or sprinkling of additional aggregate over the areas having insufficient cover shall be done by hand and shall be continued during the operations whenever necessary.

As the distributor moves forward to spray the asphalt, the aggregate spreader shall start right behind it, spreading the damp chips uniformly and at the specified rate. The asphalt distributor shall travel at the same rate of speed as the chip spreader and in no case shall the two machines

be separated by more than fifty feet during the sealing process. Operating the chip spreader at speeds which cause the chips to roll over after striking the bituminous-covered surface will not be permitted.

Excess aggregate deposited in localized areas shall be immediately removed with square-end shovels, and in areas where application is insufficient, additional aggregate shall be added by hand prior to the time the asphalt "breaks".

4.6.4.4 AGGREGATE COMPACTION. The treated surface shall be rolled with rubber-tired rollers immediately after the distribution of the cover aggregate, and rolling shall continue until the aggregate is properly seated in the binder. Rollers shall proceed in the longitudinal direction, working across the treated surface until the entire width and length of the treated surface has been rolled at least four times. All rolling shall be completed within one hour after the application of the cover aggregate. Rollers and gravel trucks shall not be operated at speeds great enough to kick up chips, and in no case shall rollers be operated above ten miles per hour. In all places not accessible to the rollers, the aggregate shall be adequately compacted with pneumatic type hand tampers. Any aggregate that becomes coated, or mixed with dirt or any other foreign material shall be removed, replaced with clean aggregate over a newly-sprayed surface, and then re-rolled as directed by the City's Representative.

Bituminous material and chips shall not be spread more than one hundred feet ahead of completion of initial rolling operations.

No aggregate will be allowed to be swept into the gutters, onto the sidewalks, or thrown onto private property. The Contractor shall be responsible for the clean up of any and all aggregate swept into these areas.

Prior to placing the second chip seal course on streets designated for double chip seals, the first course shall be thoroughly rolled to set the chips, then no less than 24 hours later the excess chips shall be removed. Upon removal of the excess chips, the second course may be applied.

4.6.4.5 LOOSE AGGREGATE REMOVAL. Upon completion of rolling, traffic will be allowed to use the streets at a speed not to exceed fifteen miles per hour for a period of not less than twenty four hours. After the chips are set in the bituminous binder, but not earlier than the following day, or as directed by City's Representative, loose chips on the surface of the road shall be broomed and removed in such a manner that the aggregate set in the binder will not be displaced. Excessive brooming will not be permitted. At the end of seven days, any excess chips shall be removed in such a manner that the aggregate set in the binder will not be displaced. Excessive rolling or brooming will not be permitted.

4.6.4.6 SANDING. After the surface has been opened to traffic, any excess bituminous material that comes to the surface (bleeds) shall be immediately covered with CLEAN SAND. The Contractor shall be required to have sufficient CLEAN sand (NOT DIRT) on hand or available to immediately sand any bleeding spots when requested by the City's Representative. Sanding shall be accomplished by evenly spreading the sand over the affected area and then hand brooming the sand to a smooth even surface with no bumps, ruts, depressions or irregularities visible.

4.6.4.7 APPEARANCE. The completed chip sealed surface shall present a uniform appearance and shall be thoroughly rolled and compacted and free from ruts, humps, depressions or irregularities due to an uneven distribution of bituminous binder or aggregate. In the event the surface presents an unacceptable appearance, as determined by the City's Representative, the

Contractor shall repair unacceptable areas in accordance with the City Representative's directions.

4.6.4.8 WEATHER LIMITATIONS. Chip seal treatments shall be placed only when the air temperature in the shade is above 75 degrees Fahrenheit. The chip seal shall not be placed when the temperature of the road surface is below 70 degrees Fahrenheit, above 120 degrees Fahrenheit, during rainy weather, when the surface is wet or during other unfavorable weather conditions as determined by the City's Representative.

4.7 ASPHALT EMULSION SEAL COAT (SLURRY SEAL This sub-section covers the requirements for the application of slurry seal coats on existing road surfaces. The slurry seal surface treatment shall consist of a mixture of emulsified asphalt, mineral aggregate, mineral filler, set control additive, and water. The slurry shall be properly proportioned, mixed, and spread evenly on a prepared surface in accordance with these specifications, or as directed by the City's Representative. When cured, the slurry shall have a homogeneous appearance, fill all cracks, adhere firmly to the road surface, and have a skid resistant texture.

4.7.1 MATERIAL SPECIFICATIONS.

4.7.1.1 ASPHALT EMULSION. The asphalt emulsion shall conform to the specifications outlined in Tables 4.12, 4.13 and 4.14. Either cationic or anionic emulsion may be used, whichever is best suited to the aggregate and job conditions to be encountered, as determined by compatibility tests and procedures as specified in the latest edition of the ISSA Technical Bulletin #115.

4.7.1.2 AGGREGATE. The mineral aggregate shall consist of angular sand, or crushed stone, that is free from dirt, organic matter, clay balls, adherent films of clay, dust or other objectionable matter. When tested according to AASHTO T-176, the aggregate shall have a sand equivalent of not less than forty five (45), and the aggregate shall be non-plastic. When tested according to AASHTO T-104, the aggregate shall show a loss of not more than fifteen (15) percent, and when tested according to AASHTO T-96, the aggregate shall show a loss of not more than thirty five (35) percent.

The combined mineral aggregate shall conform to the requirements of type II or type III slurry as outlined in Table 4.15.

4.7.1.3 FILLER. The mineral filler shall conform to the requirements of AASHTO M-16 and shall be used to improve the gradation of the aggregate, to provide improved stability and workability of the slurry, and to increase the durability of the cured slurry.

4.7.1.4 SET CONTROL ADDITIVE. To control the setting time of the slurry mixture, an additive shall be added which will retard the set when a cationic emulsion is used, or accelerate the set when an anionic emulsion is used. The set control additive shall be aluminum sulfate or Portland Cement Type I/II, and shall be added to the slurry mix by an approved method that will assure uniform distribution and proper control. The exact amount shall be determined by conditions in the field and as directed by City's Representative.

TABLE 4.12
SLURRY SEAL TEST SPECIFICATIONS
TESTS OF EMULSIONS

TESTS	TEST METHOD	TYPE OF EMULSION	
	ASTM	ANIONIC	CATIONIC
		Quick Setting	Quick Setting
		QS-1H	CQS-1H CQS-1H-LM
Particle Charge Test	D244	Negative	Positive
Viscosity, 60 ml., @ 77^0 F., 5 seconds	D244	15 min. to 100 max.	
Residue by distillation	D244	60 percent by weight, minimum	
Settlement After Five Days (%)	D244	5 percent maximum	
Sieve Test Wt., (%)	D244	0.10 maximum	
Cement Mixing Test	D244, 32-36	2 % Maximum	Not Applicable

TABLE 4.13
SLURRY SEAL TEST SPECIFICATIONS
TESTS OF RESIDUE

TESTS	TEST METHOD	TYPE OF EMULSION	
	ASTM	ANIONIC	CATIONIC
		Quick Setting	Quick Setting
		QS-1H	CQS-1H CQS-1H-LM
Penetration 100 gm. @ 77^0 F for 5 seconds	D244	40 to 90 mm	40 to 90 mm
Solubility in Trichloroethylne	D2042-4d	97.5 percent, minimum	
Ductility, 5 cm/mm @	D244	40 cm., minimum	

TABLE 4.14
SLURRY SEAL TEST
SPECIFICATIONS TESTS ON
SLURRY SEAL JOB MIXTURE

TESTS	TEST METHOD		TYPE OF EMULSION	
	AASHTO	ASTM	ANIONIC	CATIONIC
			Quick Setting	Quick Setting
			QS-1H	CQS-1H CQS-1H-LM
Mixing Time @ 77^0 F (ISSA TB #102)	---	---	120 seconds minimum	120 seconds minimum
Set Time Tests (30 minutes) Blotter Test (ISSA TB #102)	---	---	No Brown Stain	No Brown Stain
Displacement Test	---	---	No Displacement	No Displacement
Water Resistance Test @ 30 Min. (ISSA TB #102)	---	---	No Discoloration	No Discoloration
Wet Stripping Test, Coating (ISSA TB #114)	---	---	90 percent, minimum	
System Compatability	---	---	Compatible	

TABLE 4.15
SLURRY MIXTURE GRADATION

Type of Slurry	II	III
General Usage	General seal, medium textured surfaces; second course slurry	First and/or second application of two-course slurry; highly textured surfaces
Sieve Size (USA Standard Series)	PERCENT PASSING	
3/8 inch	100	100
No. 4	90-100	70-90
No. 8	65-90	45-70
No. 16	45-70	28-50
No. 30	30-50	19-34
No. 50	18-30	12-25
No. 100	10-21	7-18
No. 200	5-15	5-15

4.7.1.5 WATER. Water for the slurry mixture shall be potable and free from harmful soluble salts.

4.7.2 MATERIAL QUALITY CONTROL.

4.7.2.1 SAMPLING AND TESTING. Prior to the commencement of sealing operations, sources of all materials shall be selected and tested in accordance with the appropriate test requirements. Additional samples of materials shall be furnished as directed by the City's Representative during the progress of the work. The Contractor's proposed job mix design shall be approved by the City's Representative prior to the commencement of construction.

4.7.2.2 JOB MIX DESIGN. No slurry mixture shall be placed until a mix design submitted by the Contractor has been approved by the City's Representative. The exact proportions of asphalt emulsion, aggregate, mineral filler, and water to be used in the preparation of the slurry seal shall be determined by an approved testing laboratory experienced in slurry mix design procedures.

The residual asphalt content of the mix shall be from 7.5 to 13.5 percent of the dry aggregate for type II slurry seal or 6.5 to 12 percent of the dry aggregate for type III slurry seal.

The slurry shall be a homogeneous mixture, sufficiently stable during the entire mixing-spreading period so that the emulsion will not "break". There shall be no segregation of the fines from the coarser aggregate, and the liquid portion of the mix shall not float to the surface. If it is established that a satisfactory mixture meeting the requirements specified herein cannot be produced from the

materials furnished, the materials shall be rejected and the Contractor shall submit new samples.

The wet track abrasion test shall not exceed a maximum wear loss of seventy five grams per square foot.

4.7.3 EQUIPMENT. The equipment, tools, and machines required for the performance of the work shall be subject to the approval of the City's Representative and shall be maintained in a satisfactory working condition at all times.

4.7.3.1 SLURRY MIXING MACHINE. The slurry mixing machine shall be a continuous flow mixing unit, capable of delivering accurately predetermined proportions of aggregate, water and asphalt emulsion to a revolving spiraled multi-blade mixer tank, and of discharging the thoroughly-mixed product on a continuous basis. The aggregate shall be pre-wetted immediately prior to mixing with the emulsion. The mixing unit shall be capable of thoroughly blending all ingredients together without violent action. The mixing machine shall be equipped with an approved fines feeder with an accurate metering device or method of introducing a predetermined proportion of mineral filler into the mixer as the aggregate is fed into the mixer. The fines feeder shall be used when mineral filler is part of the aggregate blend. The mixing machine shall be equipped with a water pressure system and fog-type spray-bar adequate for completely fogging the surface to be sealed with up to 0.05 gallons of water per square yard, immediately ahead of the spreading equipment. The machine shall be capable of mixing materials at pre-set proportions regardless of the speed of the machine and without changing machine settings.

4.7.3.2 SLURRY SPREADER. Attached to the mixing machine shall be a mechanical-type squeegee distributor, having a rubber-like material in contact with the surface to be sealed to prevent unwanted egress of slurry. An appropriate mechanical device for lateral distribution of the slurry shall be operated within the spreader box. There shall also be a steering device and a flexible strike-off. The spreader box shall be adjustable to various widths from eight (8) to twelve (12) feet. The box shall be kept clean with no extensive build-up of asphalt and aggregate on the box. A burlap drag of at least one foot in width shall be attached to the back of the spreader box to smooth out irregularities in the slurry surface.

4.7.3.3 SURFACE CLEANING EQUIPMENT. Power brooms, power blowers, vacuums, air compressors, water flushing equipment, and hand brooms suitable for cleaning the road surface and cracks therein may be used for surface cleaning.

4.7.3.4 AUXILIARY EQUIPMENT. Hand squeegees, burlap mops, shovels and other equipment shall be provided as necessary to perform the work.

4.7.4 ASPHALT EMULSION SLURRY CONSTRUCTION METHODS.

4.7.4.1 RESIDENT NOTIFICATION. The Contractor shall be responsible for notifying all affected residents of pending cleaning and/or sealing operations on streets abutting their properties. Notification shall be no more than forty eight hours, nor less than twenty four hours, in advance of said cleaning/sealing operations. If there should be any change in scheduling for a particular days production, the Contractor shall be required to notify all of the residents affected by the schedule change no later than one hour after the schedule change has been determined.

4.7.4.2 VEHICLE REMOVAL. The Contractor shall be responsible for the removal of all vehicles from the streets to be cleaned, and shall endeavor to notify the owners of the vehicles to move them prior to his cleaning operations. In the event owners of said vehicles cannot be located, the

~~Contractor shall have them towed from the construction zone prior to cleaning and shall be responsible for all costs incurred for said towing.~~

~~4.7.4.3 PREPARATION OF SURFACE. In the event that patching or surface smoothing is required to prepare the street surface for the slurry seal, the Contractor shall patch the street surface with hot mix asphalt prior to the application of the slurry sealing. Prior to the application of the slurry seal, the City's Representative shall give approval that the surfaces have been properly prepared. No slurry seal material will be laid without the City Representative's approval.~~

~~4.7.4.4 CLEANING STREETS. Prior to the commencement of Slurry Seal operations, the Contractor shall thoroughly clean and remove all silt mud spots and loose or objectionable material from the existing pavement surface. Any standard cleaning method will be acceptable, except that water flushing will not be permitted in areas where poor drainage conditions on the road or at the sides of the road are present, as determined by the City's Representative.~~

~~Traffic paint on the surface to be treated that is not tightly bonded to the surface shall be removed.~~

~~Areas impregnated with grease, oil, or fuel shall be scrubbed with industrial-type detergent and flushed thoroughly to remove all traces of detergent and oil.~~

~~After the cleaning operations have been completed, and prior to the application of the surface treatment, the area to be treated will be inspected by the City's Representative to determine it's fitness for receiving the surface treatment. No surface shall be slurry sealed until authorization to do so has been obtained from the City's Representative.~~

~~4.7.4.5 SEWER MANHOLE LIDS AND WATER VALVE COVERS. Prior to the application of the seal coat, all sewer manhole lids, survey monument lids, storm drain manhole lids and water valve covers shall be protected from the application of the slurry seal coat by placing building paper over the lids (cut to the exact dimensions of the frames so as to prevent the slurry seal from entering into the seam between the frame and lid). At the completion of the sealing operations, the Contractor shall remove all building paper protectors placed on said lids and covers.~~

~~4.7.4.6 TEST SECTION. Prior to full production, the Contractor shall place a test section of at least sixty square yards in an area designated by the City's Representative. The test section shall be placed using the same equipment, methods, and mix as will be used on the job.~~

~~If the test section should prove to be unsatisfactory, necessary adjustments to the mix design, equipment, and/or placement methods shall be made. Additional test sections, as required, shall be placed and evaluated for compliance with the specifications. If the test section does not conform to the specification requirements, the defective slurry seal shall be removed. Full production shall not begin without approval of the City's representative.~~

~~4.7.4.7 WATER FOG. Immediately prior to application of the slurry seal, the surface of the pavement shall be moistened with a fog spray of water, applied at the rate of 0.02 to 0.05 gallon per square yard from the spray bar attached to the slurry seal machine. No free water shall pond on the surface of the pavement following the fog spray. The rate of application of the fog spray shall be adjusted during the day to suit pavement temperatures, surface texture, humidity, and dryness of the pavement surface.~~

~~4.7.4.8 PREPARATION OF SLURRY. The slurry seal shall be mixed and applied with a slurry machine as outlined below. The amount and type of asphalt emulsion to be blended with~~

~~aggregate shall be determined by the laboratory mix design. A minimum amount of water, added as specified by the City's Representative, shall be used as necessary, to obtain a workable and homogeneous mixture. The slurry mixture shall be of proper consistency with no segregation when deposited on the surface of the pavement and no additional elements shall be added. The slurry mixture shall show no signs of uncoated aggregate, or premature breaking of emulsion, when applied to the pavement surface. Total time of mixing shall not exceed four minutes.~~

~~4.7.4.9 APPLICATION OF SLURRY. Sufficient quantities of the slurry seal mixture shall be fed into the spreader box such that a uniform and complete coverage of the pavement is obtained. The slurry seal machine shall be operated at such a speed that the amount of slurry in the spreader box shall remain essentially constant. The slurry seal shall be placed at a rate within the following general limits: Type II slurry - 10-15 #/yd.2; Type II slurry - 15-20 #/yd.2. The finished slurry thickness shall not be less than 3/8 of an inch. No build-up of the cured slurry seal mix shall be allowed to collect in the spreader box. No streaks caused by oversized aggregate particles, or build-up of slurry mix on squeegees, shall be left on the finished surface.~~

~~If a uniform thickness cannot be met with one application due to irregularities in the pavement surface, multiple applications shall be made. Where multiple applications are required, as determined by the City's Representative, each application shall be thoroughly cured prior to the application of the subsequent courses.~~

~~4.7.4.10 HANDWORK. Approved squeegees and mops shall be used to spread slurry in areas not accessible to the slurry spreader box. Care shall be exercised in leaving no unsightly appearance from handwork. When doing handwork in small areas, especially fill-in behind the slurry machine, the material shall be spread and mopped in the direction of the machine pass.~~

~~4.7.4.11 JOINTS. The longitudinal joints between adjacent lanes shall have no visible lap, pinholes, or uncovered areas. Thick spots caused by overlapping shall be smoothed immediately with hand squeegees before the emulsion breaks. Overlaps which occur at transverse joints shall also be smoothed before the emulsion breaks, so that a uniform surface is obtained which contains no breaks or discontinuities.~~

~~4.7.4.12 CURING. Treated areas shall be allowed to cure until the treated pavement will not be damaged by traffic. The Contractor shall protect this area for the full curing period with suitable barricades or markers. Areas which are damaged before being opened to traffic shall be repaired by the Contractor.~~

~~4.7.4.13 WEATHER LIMITATIONS. The slurry seal shall not be applied when either atmospheric or pavement temperature is below 55 degrees, or above 100 degrees Fahrenheit, when raining or during periods of abnormally high relative humidity, or as determined by the City's Representative~~

~~4.8~~

4.7 CONCRETE WORK. This section defines the materials to be used and the requirements for mixing, placing, finishing and curing all Portland cement concrete work.

4.7.1 ~~4.8.1~~ **MATERIALS**. Concrete materials shall conform to the following requirements.

4.7.1.1 ~~4.8.1.1~~ **PORTLAND CEMENT CONCRETE MATERIAL.** Concrete shall be composed of coarse aggregate, fine aggregate, Portland Cement and water, air entrainment and add mixtures and shall conform to the requirements of this section. A concrete mix design shall be prepared by the supplier, certified by an independent testing lab and submitted to the ~~City~~city for review and approval prior to concrete being used in ~~City~~city projects.

A. ~~A.~~ **PORTLAND CEMENT.** ~~ANSI/ASTM C 150~~AASHTO M 85, Type V or equivalent according to the table below, shall be used unless otherwise indicated, or approved by the ~~City Engineer.~~city. Only one brand of cement shall be used throughout a project, unless otherwise approved by ~~City's Representative.~~the city. Certified copies of the mill test for the cement shall be furnished upon request of the ~~City's Representative~~city.

1. ~~B. AGGREGATE. Except as otherwise specified herein, concrete aggregate shall conform to all applicable provisions of the latest revision of ASTM Standard Specification C 33~~ Blended Hydraulic Cement

a. Blended hydraulic cement substituted for Portland Cement:

1. Use ASTM C 1567 to verify that expansion is less than 0.1 percent 14 days after the zero reading.

2. Refer to the equivalent cements listed in the table below.

b. Do not exceed 30 percent total pozzolan limit when adding fly ash to a blended hydraulic cement.

1. Submit documentation of the total pozzolan content with the mix design.

Do not mix cements originating from different sources.

Do not use air-entrained cement.

~~**B.**1 Fine Aggregate. Fine aggregate shall consist of natural sand having clean, hard, durable, uncoated grains and shall conform to the requirements of these standards. Other inert materials with similar characteristics shall not be used unless approved by the City Engineer. The amount of deleterious substances shall not exceed the following limits.~~

DELETERIOUS MATERIALS MAXIMUMS

MATERIAL Portland Cement/Blended Hydraulic Cement Equivalencies		
Clay Lumps AASHTO M 85 Equivalent Alkalis 0.80 max percent	1.00 ASTM C 595	ASTM C 1157
Coal and lignite Type I	0.50 IP, IL, IT	GU
Material passing No. 200 sieve Type II	3.00 IP(MS), IT(MS)	MS
Other deleterious substances such as shale, alkali, mica, coated grains, soft and flaky particles, etc. Type III	3.00	HE
Gypsum Type V	1.00 IP(HS), IT(HS)	HS

The combined sum

B. AGGREGATE.

1. Coarse Aggregate

a. Use coarse aggregate that meets AASHTO M 80 physical properties.

b. Do not exceed 1.0 percent gypsum by Quantitative Analysis of the percentage Gypsum test procedure S-3171-96.

Do not exceed percentages of all deleterious substances as specified in fine aggregate listed above shall not exceed three percent by weight.

Fine aggregate shall be well graded and shall range in size from fine to coarse within the following percentages by weight:

FINE AGGREGATE GRADATION REQUIREMENTS

SIEVE SIZE	PERCENT PASSING (by weight)
3/8 inch	100

~~No. 4~~	~~95-100~~
~~No. 8~~	~~80-90~~
~~No. 16~~	~~50-75~~
~~No. 30~~	~~30-50~~
~~No. 50~~	~~10-20~~
~~No. 100~~	~~2-5~~

AASHTO M 80, Table 2,~~**Coarse Aggregate**. Coarse aggregate shall consist of crushed or natural stone, gravel, slag or other approved inert material with similar characteristics or combination thereof, having clean, hard, durable, uncoated~~

particles free from deleterious matter. Deleterious substances shall not be present in the aggregate in excess of the following limits:

FINE AGGREGATE GRADATION REQUIREMENTS

SIEVE SIZE	PERCENT PASSING (by weight)
3/8 inch	100
No. 4	95-100
No. 8	80-90
No. 16	50-75
No. 30	30-50
No. 50	10-20
No. 100	2-5

COARSE AGGREGATE DELETERIOUS MATERIAL MAXIMUMS

MATERIAL	PERCENT (by weight)
Soft fragments	2.00
Coal and lignite	0.30
Clay Lumps	0.25
Material passing No. 200 sieve	1.00
Other deleterious substances such as shale, alkali, mica, coated grains, soft and flaky particles, etc.	3.00
Gypsum	1.00

The combined sum of the percentages of deleterious substances (in both course and fine aggregate), shall not exceed five percent, by weight.

Coarse aggregate shall be rejected if it fails to meet the following test requirements:

~~a. Los Angeles Abrasion Test. If the percent of loss by weight exceeds ten percent at one hundred revolutions, or forty percent at five hundred revolutions.~~

~~b. Sodium Sulfate Test for Soundness. If the weighted average loss after five cycles is more than twelve percent by weight.~~

c. for Class A aggregates.

d. Gradation. Coarse aggregate shall be graded by weights as follows:

~~c.~~

COURSE AGGREGATE GRADATION REQUIREMENTS

SIEVE SIZE	PERCENT PASSING (by weight)
1 inch	100
3/4 inch	90-100
3/8 inch	20-55
No. 4	0-10
No. 8	0-5
No. 200	0-1.0

~~d.~~ **e.** Aggregate Size. The maximum size of the aggregate shall ~~be~~ not be larger than one-fifth of the narrowest dimension between forms within which the concrete is to be encased, and in no case larger than three-fourths of the minimum clear spacing between reinforcing bars or between reinforcing bars and forms. For non-reinforced concrete slabs, the maximum size of aggregates shall not be larger than one-fourth the slab thickness.

2. ~~C.~~ **Fine Aggregate**

a. Use fine aggregate that meets AASHTO M 6 physical properties.

b. Do not exceed 1.0 percent gypsum by Quantitative Analysis of Gypsum test procedure S-3171-96.

c. Do not exceed percentages of deleterious substances as specified in AASHTO M 6, Table 2, for class A aggregates, using option “b” for material finer than the No. 200 sieve.

d. Fine aggregate shall be graded by weights as follows:

FINE AGGREGATE GRADATION REQUIREMENTS

SIEVE SIZE	PERCENT PASSING (by weight)
3/8 inch	100
No. 4	95-100
No. 16	45-80
No. 50	10-30
No. 100	2-10
No. 200	0-3.0

C. WATER. Sufficient potable water shall be added to the mix to produce concrete with the minimum practical slump, the slump shall not be greater than four inches. However, a higher slump may be allowed with plasticizers, providing there is no loss of strength or durability and prior approval for use is obtained from the ~~City's Representative~~city.

The maximum permissible water-cement ratio (including free moisture in the aggregate) shall be five gallons per bag of cement (0.44) for Class A and five and three-quarter gallons per bag of cement (0.51) for Class C concrete.

D. ~~**D. ENTRAINING AGENT. An air-entraining agent shall be used in all concrete exposed to**~~**ADMIXTURES**

D.1 Do not use calcium chloride.

D.2 Air Entrainment according to ASTM C 260 as modified by AASHTO M 154 including the ~~**weather.**~~optional uniformity requirements in ASTM C 260, Section 5. The ~~**agent shall conform to ASTM designation C 260. Air**~~ air content ~~**for**~~of air-entrained concrete mixes shall be five percent (5%) by volume (plus or minus one percent~~**). The air-entraining agent shall be added as a liquid**~~ (1%)).

D.3 Water Reducing Agents

a. Refer to AASHTO M 194

b. High Range Water Reducer (HRWR) – Include details regarding HRWH ingredients, production methods, handling, and placing in the written plan for admixtures

D.4 Accelerators – Refer to ~~**the mixing water by means of mechanical equipment capable of accurate measurement and control.**~~AASHTO M 194

D.5 ~~**E.**~~ Set Retarding and Hydration Stabilizing Admixtures – Refer to AASHTO M 194

~~**C.**~~ Establish and inform ~~**ADMIXTURES**~~

a. ~~**E.1 Pozzolan. When authorized by**~~ the ~~**City**~~ Engineer~~**, pozzolan conforming**~~ of the effective life of the set-retarding or stabilizing admixture by trial batch if admixtures are required due to ~~**the requirements of ASTM**~~ haul times exceeding the time limitations in section 4.8.2.1.C ~~**618 Class F may be added to**~~Concrete Mixing.

b. Do not exceed manufacturer's recommendations for the use of the set retarding admixture.

c. Do not re-dose the concrete ~~**mix as outlined below:**~~with additional set retarding admixture.

d. ~~**Pozzolan may be used as**~~Add admixture at the batch plant at the time of initial batching operations.

e. Show on batch tickets the amount of admixture used.

f. Time of placement is established by the trial batch and supersedes the requirements in section 4.8.2.1.C Concrete Mixing.

E. POZZOLAN. Use at least twenty percent (20%) pozzolan and no more than thirty percent (30%) pozzolan by weight of the total cementitious material at a replacement of ratio of 1.1

E.1 Fly Ash

a. Class F according to ~~**the required Portland Cement**~~AASHTO M 295 except modify Table 2 with the following:

- Loss of Ignition (LOI) Not to exceed three percent (3%)
- Allowable CaO content Not to exceed fifteen percent (15%)

b. Label the storage silo for fly ash to distinguish it from cement

c. Use different size unloading hoses and fittings for cement and fly ash

E.2 Natural Pozzolan (Class N)

a. Refer to AASHTO M 295

~~**a.**~~**b.** May use instead of fly ash provided ~~**no other supplemental specification prevents its use. The maximum percentage of Portland Cement replacement on a weight basis is 15 percent**~~that the expansion does not exceed 0.1 percent. Refer to ASTC C 1567.

~~b. Pozzolan/cement replacement ratio is 1.25 to 1 (pozzolan/cement).~~

c. Water/cement ratio is established before Portland Cement is replaced with pozzolan.
d. Loss of ignition of pozzolan is less than 1 percent.
e. Trial batches for each aggregate source and concrete class have been run for each mix design.
f. All other requirements and references to testing procedures and specifications of Section 4.8 “Concrete Work” shall apply.

Pozzolan shall be sampled and tested as prescribed in ASTM C 618 and ASTM C 311. The Concrete Supplier shall obtain and deliver to the City’s Representative a certification of compliance signed by the pozzolan supplier identifying the pozzolan and stating that the pozzolan delivered to the batching site complies with applicable specifications.

Pozzolan material shall be handled and stored in the same manner as Portland Cement. When facilities for handling bulk pozzolan are not available, the pozzolan shall be delivered in original unopened sacks bearing the name and brand of supplier, the type and source of the pozzolan, and the weight contained in each sack plainly marked thereon.

Different brands or types of pozzolan shall not be mixed together unless written permission has first been obtained from the Owner’s Representative. All pozzolan used in the manufacture of concrete for any individual structure shall be of the same type, and from the same source unless otherwise approved by the City’s Representative.

COMPLIANCE ANALYSIS. During the course of concrete testing, the ~~City~~city may require, at random, additional concrete cylinders for the purpose of performing a "Petrographic Examination" in accordance with ASTM C 856.

The "Petrographic Examination" may be initiated when compressive strength tests show inconsistencies, when batch tickets show indications that material is batched which is not in accordance with approved mix designs, or when there are other indicators that the concrete may not meet Standards.

The "Petrographic Examination" will be performed by a Certified Testing Laboratory qualified to perform such testing. In the event that the sampled concrete is not in compliance with these standards, the supplier of the concrete will be required to pay for the "Petrographic Examination" and will no longer be allowed to supply concrete for use in any improvements for which ~~City~~city Standards apply until acceptable adjustments are made. If the sampled concrete is found to be in compliance with these standards, the ~~City~~city will pay the cost for the "Petrographic Examination". Additional testing may be required by the ~~City Engineer~~city, at the supplier's expense, to determine the extent of the non-compliant concrete. All work on a project, affected by the non- compliant concrete, will be suspended until the non-compliant concrete work is brought into compliance.

The "Petrographic Examination" will determine the quantity of cementitious matrix including mineral admixture (pozzolan/fly ash) in the mix, proportions of the mix, and other properties of the sampled concrete to verify compliance with the approved mix design. The acceptability of the concrete represented by the examination shall be established by comparing the proportions determined by the examination with those indicated on the batch tickets. When this comparison shows that the pozzolan proportions are within 2% +/- of the approved mix design the admixture proportions will be considered to be in compliance. When comparisons of other proportions of the mix indicate that the concrete is not within acceptable allowable deviation limits the concrete may be rejected even though the pozzolan proportion is acceptable.

The ~~City~~city may use the results of the "Petrographic Examination", inspection _records, _observation _of _batch _plant _operation,

compressive strength test results, or any other pertinent information to determine compliance. If any portion of a project is found to be -in non-compliance, additional testing shall be required to verify full compliance of all concrete within the project. If the ~~City Engineer~~city has reasonable cause, ~~he~~ may require removal and replacement of any concrete which has been found to be in non-compliance. (For the purpose of demonstrating the acceptability of this admixture specification, compressive strength alone shall not be considered as justification for acceptance).

Repeated violations of these admixture standards may subject the offending concrete supplier to be prohibited from providing concrete that is used in public or private infrastructure improvements within the ~~City of~~ city~~St. George~~.

E.2~~.~~ **Calcium Chloride.** Calcium Chloride shall not be added to any concrete mix. Non-chloride accelerators may be used upon approval of the ~~City Engineer or his Representative~~city.

F. ~~F.~~ **CONCRETE MIX.** For the purpose of practical identification, concrete has been divided into classes. The basic requirements of class A and class C concrete and the use for each is defined in Table 4.~~16~~15 of the ~~City~~city Standard Specifications.

r, r.1 02/03

F.1. **Submittals.** -The following information must be included with all concrete -mix designs submitted for review and approval by the ~~City~~city as per subsection 4.~~8~~7.1.1 "Portland Cement Concrete Material".

a. Test results on ~~coarse~~course and fine aggregates to verify compliance with applicable specifications.

b. Trial batch test results and past history test information on proposed mix designs, which support compliance with the requirements for compressive strength, durability, etc. Performance curves used to verify 28 day, 56 -day, and 90-day strengths must be submitted with trial batch tests or history information.

c. Certification of compliance from the cement supplier, the pozzolan supplier, and the air-entraining agent supplier, stating that the materials being delivered are in compliance with applicable specifications.

d. All mix designs shall be certified by a Certified Testing Laboratory.

G. ~~G.~~ **BATCH PLANT TICKET**. All concrete produced and delivered to a

job site within ~~St. George City~~the city, will be accompanied by a batch plant ticket. The ticket will state the time manufactured or batched and accurately show all components used for that particular load or batch. Sufficient copies shall be provided for testing personnel and ~~St.George City representatives~~the city, if requested.

TABLE 4.16

CONCRETE MIX SPECIFICATIONS

Class	~~Minimum Cement Content~~**Maximum Water/Cementitious Ratio**	**Maximum** ~~Water Content** (gal./bag of cement~~**Slump (inch)**	~~Maximum Slump~~**Air Content Percent (%)**	**Minimum 28-day** ~~Comp.~~**Compressive Strength (psi)**	**Primary Use**
A	~~(Bags/ C.Y.)~~0.45	~~(pounds/ C.Y.)~~4 (1.5 inches for machine placement)	4.0-7.5	4500	Reinforced structural concrete; curbs & gutters; cross gutters; pavements; unreinforced footings
~~A~~B	~~6~~0.45	4.5~~*~~	4~~"~~ ~~1 ½"*~~.0-7.5	~~4000~~4500	~~Reinforced structural concrete; sidewalks; curbs & gutters; cross gutters; pavements; unreinforced footings~~Sidewalks
C	0.5	~~4~~704	~~5.75~~4.0-7.5 (exposed/exterior) ≤ 2.0% (buried/interior/ mass)	3000	Minor non-structural items such as thrust blocks; anchors, mass concrete, etc.

~~*For machine placement only.~~
~~** Including free moisture in aggregate.~~

NOTE: Unless otherwise specifically designated by the ~~City Engineer~~city all concrete placed shall be Class "A", six-bag mix, with a minimum allowable compressive strength of 4000 psi at the age of twenty~~-~~eight days. ~~r, r.1 02/03~~

4.7.1.2 ~~4.8.1.2~~ **CONCRETE REINFORCING MATERIALS.** Concrete reinforcing materials shall conform to the following requirements.

A. ~~A.~~ **STEEL BARS.** All bar material used for reinforcement of concrete shall be hard grade deformed round steel conforming to the requirements of ASTM Designation A 615. All reinforcing steel shall be minimum grade sixty (60) unless approved otherwise by the ~~City Engineer.~~city. All bars shall be deformed, round and have a net section equivalent to that of plain bar of equal nominal size. Only hard grades will be used. Twisted bars will ~~-~~not be accepted.

All rebar shall be clearly marked with identifying markings in accordance with industry standards.

All reinforcing steel, at the time concrete is placed, shall be free from flaws, cracks, rust, oil, dirt, paint, or other coatings that will destroy or reduce the bond.

B. ~~B.~~ **WIRE OR WIRE FABRIC REINFORCEMENT.** Welded wire fabric for concrete reinforcement shall conform to the requirements of ASTM A 185. Wire for concrete reinforcement shall conform to the requirements of the "Standard Specification for Cold Drawn Steel Wire for Concrete Reinforcement" ASTM A-82. All wire reinforcement, wire fabric, or expanded metal shall be of the type designated unless an alternate type is approved by the ~~City Engineer~~city.

C. ~~C.~~ **STEEL FIBER REINFORCEMENT.** Deformed steel fiber for concrete reinforcement shall conform to the requirements of ASTM A-820, type I, deformed fiber, except that the average tensile strength shall be not less than 150,000 psi.

D. ~~D.~~ **SYNTHETIC REINFORCING FIBERS.** Engineered synthetic reinforcing fibers shall be 100% polypropylene collated, fibrillated fibers. Fiber length, and amount per manufacturer's recommendations shall correspond with the concrete mixture (generally 1.5 pounds per cubic yard of concrete).

Physical property of the fibers shall be as follows:

Specific Gravity	**0.91**
Modulus of elasticity	500,000 to 700,000 psi
Tensile strength	70,000 to 110,000 psi
Length	0.25 to 2.50 inches

The fiber manufacturer shall certify that all polypropylene fibers meet the physical properties~~,~~ and are specifically manufactured for use in concrete from virgin polypropylene, containing no reprocessed olefin materials. If

the fiber manufacturer is other than the brand name listed on the literature and packaging, the certification must be from the original manufacturer of the fibers.

Fiber-mesh shall be added only at the concrete batch plant to assure uniform and complete dispersion of the collated-fibrillated fiber bundles into single mono-filaments within the concrete.

~~4.8.1.3~~

4.7.1.3 CURB, GUTTER, SIDEWALK AND BASE MATERIALS.

Concrete and base materials shall conform to the following requirements.

A. ~~A,~~GENERAL. This subsection defines materials, practices and designs to be used in the construction of all public curb, gutter and sidewalk.

All curb, gutter and sidewalk shall consist of air-entrained Type V Portland Cement Concrete and shall be constructed on a prepared subgrade in accordance with these specifications. All work shall conform to the lines and grades, thickness, and typical cross sections shown on the approved plans or established by the ~~City's Representative~~city.

B. SUBGRADE. The subgrade shall be excavated and filled with suitable material, as specified in Section 4.3.2.3 of these standards. All soft, yielding and otherwise unsuitable material shall be removed and replaced with suitable materials as outlined above. Filled sections shall be compacted and extend to a minimum of one (1) foot outside the form lines according to Section 4.3.2.3 of these standards.

C. ~~B.~~GRAVEL BASE COURSE. A gravel base course consisting of crushed road base gravel shall be placed under all curbs, gutters, driveways, waterways, sidewalks and other miscellaneous flatwork. The gravel base material shall conform to the requirements contained in Section 4.5.7 of these specifications. Where the foundation material is found to be unstable, the Contractor shall furnish and place sufficient additional gravel or other suitable material as directed by the ~~City's Representative~~city to provide an adequate foundation upon which the concrete will be placed.

4.7.2 ~~4.8.2~~ CONSTRUCTION METHODS AND EQUIPMENT. The methods employed in performing the work, all equipment, tools and machinery, and other appliances used in handling the materials and executing the work shall be the responsibility of the Contractor. The Contractor shall make such changes in the methods employed and in the equipment used as are necessary whenever the concrete being installed does not meet the specifications herein established. ~~These methods shall include, but are not limited to the following:~~

These methods shall include, but are not limited to the following:

~~**4.8.2.1**~~

4.7.2.1 GENERAL CONCRETE PLACEMENT. Generally, concrete shall be placed as follows.

A. ~~A.~~ **FORMS.** Forms shall be properly built and adequately braced to withstand the liquid weight of concrete being placed in the forms. All linings, studding, whaling and bracing shall be such as to prevent bulging, spreading, loss of true alignment or displacement while placing and during setting of concrete.

B. ~~B.~~ **PREPARATIONS.** Prior to batching and placing concrete, all equipment for mixing and transporting the concrete shall be cleaned. All debris and ice shall be removed from the areas to be occupied by the concrete. All forms shall be oiled with a form-release agent. Masonry support or filler units that will be in contact with concrete shall be well drenched with water (except in freezing weather). Reinforcement shall be thoroughly cleaned of ice or other coatings. Water shall be removed from areas to receive concrete.

Reinforcement that has become too hot, due to sun exposure, in the opinion of the ~~City Representative~~city, will be cooled with water prior to concrete being placed.

When placing concrete on earth surfaces, the surfaces shall be free from frost, ice, mud, water and other deleterious materials. When the subgrade is dry or pervious, it shall be sprayed with water prior to the placing of concrete or shall be covered with water-proof sheathing paper or a plastic membrane. No concrete shall be placed until the preparatory work (i.e. forms, reinforcement, etc~~).~~) has been inspected and approved by the ~~City's Representative~~city.

C. ~~C.~~ **CONCRETE MIXING.** The concrete shall be mixed until there is a uniform distribution of the materials. Sufficient water shall be used in concrete in which reinforcement is to be imbedded, to produce a mixture which will flow sluggishly when worked and can be conveyed from the mixer to the forms without separation of the coarse aggregate from the mortar. In no case shall the quantity of water used be sufficient to cause the collection of a surplus in the forms.

Ready-mixed concrete shall be mixed and delivered in accordance with the requirements set forth in Specifications for Ready-Mixed Concrete (ASTM C-94). Concrete shall be delivered and deposited in its final position within sixty (60) minutes after the cement and water have been added to the mixture.

D. ~~D.~~ **DEPOSITING.** Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. Concrete placement shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the corners of forms and around reinforcing bars. Concrete that has partially hardened or is contaminated by foreign material shall not be deposited in the work. Re-tempered concrete shall not be used.

Temperature of the mixed concrete shall be maintained between 60BF and 90BF at time of placement.

All concrete in structures shall be compacted by means of high- frequency internal vibrators of approved type and design during the

operation of placing, and shall be thoroughly worked around reinforcement and embedded fixtures and into the corners of the forms. Care must be taken not to over use vibrators causing separation of cement and aggregates.

E. ~~E.~~ FINISHING. ~~-~~ After the concrete for slabs has been brought to the established grade and screeded, it shall be worked with a magnesium float and then given a light "broom" finish. In no case shall dry cement or a mixture of dry cement and sand be sprinkled on the surface to absorb moisture or hasten hardening. Surface edges of all slabs shall be rounded to a radius of one quarter to one half (1/2) inch with standard concrete finishing tools. Additional water shall not be sprinkled on the surface to aid finishing.

F. ~~F.~~ CURING AND PROTECTION. As soon as the concrete has hardened sufficiently, it shall be protected and cured in accordance with ACI Standards. The finished surface shall be kept moist for a minimum of seven days, or a chemical curing agent used to prevent the concrete from premature drying.

The freshly finished surface shall be protected from hot sun and drying winds until it can be sprinkled or covered as above specified. The concrete surface shall not be damaged or pitted by rain. The Contractor shall provide and use, when necessary, sufficient tarpaulins to completely cover all sections that have been placed within the preceding twelve (12) hours. The Contractor shall erect and maintain suitable barriers to protect the finished surface. Any section damaged from traffic, weather, people or other causes occurring prior to its final acceptance, shall be repaired or replaced by the Contractor in a manner satisfactory to the ~~City's Representative~~city.

G. ~~G.~~ WEATHER LIMITATIONS. Concrete shall not be poured where the air temperature is lower than thirty ~~-~~ five (35^0)degrees F. unless approved by the ~~City's Representative~~city. When there is likelihood of freezing during the curing period, the concrete shall be protected by means of an insulating covering to prevent freezing of the concrete for a period of not less than seven days after placing. Equipment for protecting the concrete from freezing shall be available at the job site prior to placing concrete. Particular care shall be exercised to protect edges and exposed corners from freezing. Cold weather placement shall generally follow the requirements of ACI 306.1

Hot weather placement shall generally conform to the requirements of ACI 305.

~~4.8.2.2~~

4.7.2.2 CONCRETE REINFORCEMENT INSTALLATION. Concrete reinforcement shall be installed in accordance with ACI (American Concrete Institute) standard requirements for reinforced concrete and generally as follows.

A. ~~A.~~BENDING. Reinforcing bars shall be accurately formed to the dimensions indicated on the plans. Bends for stirrups and ties shall be made around a pin having a diameter not less than two (2) times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than six (6) times the minimum thickness of the bar, except that for bars larger than one(1) inch, the pin shall be not less than eight (8) times the minimum thickness of the bar.
~~(1) inch, the pin shall be not less than eight (8) times the minimum thickness of the bar.~~

~~**B.**~~
B. SPLICING. Splicing of bars at points other than where shown on the plans will be permitted only by approval of the ~~City's Representative.~~city. Splices of reinforcement at points of maximum stress shall be avoided wherever possible, and when used shall be staggered and in accordance with ACI Standards. The minimum overlap for a lapped splice shall be twenty four (24) bar diameters, but not less than twelve (12) inches and properly tied together.

C. ~~C.~~PLACING. All reinforcing bars shall be placed accurately in the position shown on the plans, and shall be securely held in position by annealed iron wire ties of not less than sixteen (16) gauge or suitable clips at intersections. All reinforcing bars shall be supported by metal supports, spacers or hangers, in such a manner that there will not be any displacement while placing concrete.

D. ~~D.~~ EMBEDMENT AND PROTECTION. All reinforcing steel shall be protected by concrete embedment and protective cover as shown in Table 4.~~17~~16, such cover in each case being the shortest distance between the face of the form or concrete surface, and the nearest edge or face of the reinforcement.

TABLE 4.~~21REINFORCING~~17
REINFORCING BAR CLEARANCE

LOCATION OF REINFORCEMENT	COVER
Bottom bars - where concrete is deposited against ground without use of forms.	Not less than 3"
Main bars - where concrete is exposed to the weather, or exposed to the ground but placed in forms.	Not less than 2"
Bars in slabs and walls not exposed to the ground or weather.	Not less than 1"

4.7.2.3 ~~4.8.2.3~~ CURB, GUTTER AND SIDEWALK CONCRETE PLACEMENT. The concrete shall be placed either by an approved slipform/extrusion machine, by the formed method, or by a combination of both methods. Curb and gutter shall be placed as follows:

A. ~~A.~~ MACHINE PLACEMENT. The slipform/extrusion machine shall place, spread, consolidate, screed, and finish the concrete in one complete pass to provide a dense and homogeneous concrete section. A minimum amount of hand finishing should be necessary. The machine shall shape, vibrate, and/or extrude the concrete for the full width and depth of the concrete section being placed. It shall be operated with as nearly a continuous forward movement as possible. All operations of mixing, delivery, and spreading concrete shall provide for uniform progress, with stopping and starting of the machine held to a minimum.

B. ~~B.~~ FORMED METHOD. The forms shall be of wood, metal, or other suitable material straight and free from warp, having sufficient strength to resist the pressure of the concrete without displacement and sufficient tightness to prevent the leakage of mortar. ~~-~~Flexible or rigid forms of proper curvature shall be used for curves having a radius of one hundred feet, or less.

Forms shall be cleaned and coated with an approved form-release agent before concrete is placed against them.

The concrete shall be deposited into the forms without segregation and then tamped and spaded or mechanically vibrated for thorough consolidation. Front and back forms shall be removed without damage to the concrete after it has set.

~~C.~~

C. **FINISHING.** The concrete shall be finished smooth, by a wood or magnesium float and then given a final surface texture using a light broom or burlap drag unless otherwise specified or directed. Concrete that is adjacent to forms and formed joints shall be edged with a standard jointer or edging tool as shown in the standard drawings. The top, face, and flow-line of the curb, and the top of driveway apron, shall be finished true to line and grade without any noticeable surface irregularities.

The Contractor shall be responsible for neatly stamping an "S" in the curb face at all sewer lateral locations and a "W" in the curb face at all water lateral locations along the curb.

The gutter shall not pond water. The surface of the curb and gutter shall not exceed more than one fourth (1/4) of an inch in ten (10) feet. No part of the exposed surface shall present a wavy appearance.

D. JOINTING.

D.1 ~~D.1~~ **Contraction Joints**. Transverse weakened-plane contraction joints shall be constructed at right angles to the curb line at intervals not exceeding the values in accordance with standard drawings. Where the sidewalk abuts the curb and gutter, joints should align unless otherwise approved by the ~~City's Representative.~~city. Joint depth shall at least be one quarter (1/4) of the cross section depth of the concrete. Generally, surface areas shall not exceed fifty square feet without contraction joints unless otherwise approved by the ~~City's Representative~~city.

Contraction joints may be sawed, hand-formed, or made by placing division plates in the form-work. Sawing shall be done within twenty four hours after the concrete has set to prevent the formation of uncontrolled cracking. The joints may be hand-formed either by using an appropriate jointing tool, or a thin metal blade to impress a plane of weakness into the plastic concrete, or by inserting one eighth (1/8) inch thick steel strips into the plastic concrete temporarily. Steel strips shall be withdrawn before final finishing of the concrete. Where division plates are used to make contraction joints, the plates shall be removed after the concrete has set while the forms are still in place.

D.2 ~~**D.2**~~ Expansion Joints. Expansion joints for curb and gutter shall be constructed at right angles to the curb line at no greater than one hundred fifty (150) foot intervals, at immovable structures and at points of curvature for short-radius curves. Spacing for sidewalk

expansion joint shall not exceed twenty (20) feet. Filler material for expansion joints shall conform to requirements of ASTM D-994, D- 1751, or D-1752 and shall be furnished in a single one half inch thick piece for the full depth and width of the joint.

Expansion joints in a ~~slipformed~~slip formed curb and gutter shall be constructed with an appropriate hand tool by raking or sawing through partially set concrete for the full depth and width of the section. The cut shall be only wide enough to permit a snug fit for the joint filler. After the filler is placed, open areas adjacent to the filler shall be filled with concrete and then troweled and edged.
Contaminated concrete shall be discarded.

Alternately, an expansion joint may be installed by removing a short section of freshly extruded curb and gutter, immediately installing temporary holding forms, placing the expansion joint filler, and replacing and reconsolidating the concrete that was removed.
Contaminated concrete shall be discarded.

D.3 ~~D.3~~ Other Jointing. Construction joints may be either butt or expansion-type joints. Curbs and gutters constructed adjacent to existing concrete shall have the same type of joints as in the existing concrete with similar spacing, however, contraction joint spacing shall not exceed ten feet.

A silicone joint sealer as defined in ASTM C 962 shall be applied to all form-plate expansion joints. The silicone joint sealer shall be applied under pressure to a depth of not less than two inches from the outside surface of the curb and gutter.

E. ~~E.~~ **PROTECTION.** At all times during the construction of the project, the Contractor shall have materials available at the site to protect the surface of the plastic concrete against rain or other detrimental elements. These materials shall consist of waterproof paper, plastic sheeting or other approved material. For slip-form construction, materials to protect the edges shall also be required.

When concrete is being placed in cold weather and the temperature is expected to drop below 35 degrees F., suitable protection shall

be provided to keep the concrete from freezing until it is at least seven (7) days old. Concrete damaged by frost action shall be removed and replaced.

F. ~~F.~~ CURING. Concrete shall be cured for at least three days after placement to protect against loss of moisture, rapid temperature change, and mechanical damage. Liquid membrane curing compound, or other approved methods, or a combination thereof maybe used as the curing material. Membrane curing shall not be permitted in frost-affected areas when the concrete will be exposed to de-icing chemicals within thirty days after completion of the curing period.

G. ~~G.~~ BACKFILLING. At least three days after placement and after form removal, the concrete shall be backfilled to the lines and elevations as shown on the drawings or as required by the ~~City's Representative.~~city. The length of time may be shortened if it can be demonstrated that the concrete has reached design strength. Any concrete damaged during backfill or other operations, shall be removed and replaced as directed by the ~~City's Representative~~city.

H. ~~H.~~ CONCRETE REPAIR. In lieu of removing and replacing concrete containing minor cracks, the ~~City's Representative~~city may direct the Contractor to repair the affected sections by sawing, routing, cleaning and sealing the cracks. All cracks repaired shall be sealed with a polyurethane TTS-230 type II crack filler or an approved silicone base joint sealer. Where modifications are to be made to existing concrete, the edges to be poured against shall be sawcut in neat, straight lines and the new concrete shall be edged with a standard edging tool.

I. ~~I.~~ WEATHER LIMITATIONS. Concrete shall not be poured when there is likelihood of freezing. During the curing period, the concrete shall be protected by means of insulating covers to prevent freezing of the concrete for a period of not less than seven days after placing. Equipment for protecting the concrete from freezing shall be available at the job site prior to placing concrete. Particular care shall be exercised to protect edges and exposed corners from freezing.

Hot weather concreting shall be in accordance with the latest ACI 305 Standards for "Hot Weather Concreting".

4.7.2.4 ~~4.8.2.4~~ CONCRETE BASE MATERIALS PLACEMENT. The placement

of concrete base materials under curb, gutter and sidewalk shall conform to Section 4.5.7 of these standards.

4.~~8~~7.3 QUALITY CONTROL. All concrete and base materials shall be placed in accordance with these standards and tested as follows. These are minimum requirements and additional testing may be required by the ~~City's Representative~~city or the Project Geotechnical Engineer. Testing documentation provided to the city shall fully address the requirements of these standards.

~~Testing documentation provided to the City's Representative shall fully address the requirements of these standards.~~

4.7.3.1 CONCRETE TESTING. Minimum testing of the concrete shall be as follows:

Mix Design Certification: One per job. Testing shall be according to the latest ASTM standards.

Compressive Strength Tests: One set of four cylinders for each fifty cubic yards of concrete placed or portion thereof. Tests shall be according to ASTM C-31.

Air Entrainment: Tested at beginning of placement until two consecutive loads pass. Others tests shall be taken as required. Tests shall be according to ASTM C-231.

Slump Tests: Tested at beginning of placement until two consecutive loads pass. Others tests shall be taken as required. Tests shall be according to ASTM C-143.

4.7.3.2 CONCRETE BASE MATERIAL TESTING. Minimum testing of the curb, gutter and sidewalk base materials shall be as follows:

Gradation Tests: One test per five hundred (500) lineal feet of curb & gutter or fraction thereof. One test per one thousand three hundred fifty (1,350) square feet of a combination of sidewalk and driveway, or fraction thereof.

The sieve analysis shall be according to ASTM C-136, C-117.

Proctor: One determination for each source of base course as necessary to provide required compaction testing.

Test shall be according to ASTM D-1557, Method A or D (modified proctor).

Moisture Density Tests: One test per three hundred (300) lineal feet of curb & gutter and one test per three hundred (300) lineal feet of a combination of sidewalk and driveway or fraction thereof. Moisture content shall be at plus or minus two percent of optimum. Proper moisture shall be maintained until the concrete is poured. Tests shall be according to ASTM D-1556 or D-2922 and D-3017.

Thickness: One random boring or test hole per two hundred (200) lineal feet of curb & gutter and one random boring or test hole per two hundred (200) lineal feet of a combination of sidewalk and driveway or fraction thereof. If sufficient observation has been made by the ~~City's Representative~~city to verify required thickness, the ~~City's Representative~~city may waive thickness testing. Said waiver must be in writing.

No single measured thickness shall be less than the required thickness.

4.7.3.3 ACCEPTANCE. A total of four (4) concrete test cylinders shall be taken at time of pouring from loads passing the requirements of section 4.8.3.1. One cylinder, shall be broken at seven (7) days and shall be used as an indication of future strength. Two (2) cylinders shall be broken at twenty eight (28) days. If the average of the twenty-eight day breaks is below minimum compressive strength, the concrete may be rejected unless retests prove otherwise. At the Contractor's option, the fourth cylinder (the "hold" cylinder) may be broken at twenty eight (28) days, and included with the average, or it can be held for future testing if additional tests are needed.

Concrete with an average compressive strength below the required strength shall be reviewed by the ~~City's Representative~~city. The "hold" cylinder, if available, may be broken or other specialized tests (such as a spectrum analysis) may be required. If additional tests are required to determine if strength tests are representative they shall be performed by coring in accordance with ASTM C-42 method or other acceptable non- destructive methods. The re-tested strength shall be the average of three cores (or other acceptable method). The ~~City's Representative~~city may accept the concrete as a result of these additional tests~~,~~ or may require the work to be removed and replaced. The ~~City's Representative~~city shall make the final decision. All costs incurred in resampling and retesting are not the responsibility of the ~~City~~city.

All curb, gutter or sidewalk base material not in compliance with these standards shall be removed and replaced. Any costs for testing the re- work are not the responsibility of the ~~City~~city.

4.8 RESTORATION OF EXISTING SURFACE IMPROVEMENTS.

4.8.1 INTRODUCTION. The Contractor shall be responsible for the protection and restoration, or replacement, of all existing improvements on public or private property and all improvements placed during the progress of the work. Existing improvements shall include, but not be limited to, asphalt, curbs, gutters, ditches, driveways, culverts, fences, signs, sidewalks, utilities, landscaping and walls, etc.

All existing improvements damaged during construction shall be reconstructed to equal or better condition than that which existed. However, as a minimum, the requirements contained in these specifications shall be adhered to.

All traveled surfaces shall be maintained flush with the existing surfaces at all times until permanent repairs are completed.

Prior to the beginning of any work activity involving tunneling under, or making any excavation in any street, alley or other public place, the Contractor shall comply with all requirements for permits and bonding. The Contractor shall also comply, during the work activity, with all of the requirements contained within Section 2.5, BARRICADES AND WARNING SIGNS - WORK AREA PROTECTION, of these specifications.

4.8.2 **GRAVEL SURFACES.** Where existing gravel surfaces are damaged due to trenching or other works the surfaced areas (such as roads and driveways) shall be restored and maintained as follows.

4.8.2.1 The gravel shall be placed deep enough to provide a minimum of six inches thickness , or to match the thickness of existing material, or to these specifications, whichever is greater.

4.8.2.2 The gravel shall be placed and compacted in the trench (or other work) at the time it is backfilled. The surface shall be maintained by blading, sprinkling, rolling or adding gravel in order to maintain a safe uniform surface satisfactory to the ~~City's Representative.~~city. Excess material shall be removed from the premises immediately.

4.8.2.3 Material for use on gravel surfaces shall conform to the requirements contained within these specifications.

4.8.3 **BITUMINOUS SURFACES.** Where existing bituminous surface is damaged due to trenches or other works, the bituminous surfaced roads, driveways, parking areas, etc., shall be restored within five (5) days as follows:

4.8.3.1 Mud or other soft or spongy material shall be removed from the trench and the space filled with granular backfill to within twelve (12) inches of finished grade. The granular backfill shall be rolled and compacted to a minimum of ninety-five (95) percent of maximum dry density in layers not exceeding six (6) inches in compacted thickness. Base gravel shall then be placed to a depth equal to the original gravel base or the requirements of these specifications, but not less than six (6) inches thick and compacted to a minimum of ninety five (95) percent of maximum dry density.

4.8.3.2 Prior to permanent resurfacing, the Contractor shall saw-cut the

existing paving to provide vertical, clean, straight lines as nearly parallel to the centerline of the trench as practical. The existing bituminous paving shall be cut back beyond the limits of any excavation so that the edges of the new paving will rest on at least six (6) inches of undisturbed base material.

4.8.3.3 Pavement restoration shall include tacking of pavement edges with type SS-1H bituminous material, and placing and compacting plant mix asphalt in accordance with these specifications to the level of the adjacent pavement surfaces.

4.8.3.4 The bituminous surface shall be restored by standard paving practices to a thickness equal to the original pavement or the requirements of these specifications, but in no case less than two inches. The finished repaired surface shall not deviate more than one quarter (1/4) inch (vertically) from the existing road surface. Any deviations greater than that specified shall be immediately removed and replaced to the proper standards.

4.8.4 CONCRETE SURFACES. All concrete curbs, gutter, sidewalks, and driveways shall be removed and replaced to the next joint or score line beyond the actually damaged or broken sections; or saw-cut to neat, plane faces. All new concrete shall match, as nearly as possible, the appearance and texture of adjacent concrete improvements unless adjacent improvements do not meet these specifications.

All damaged base material shall be restored and compacted in accordance with these specifications.

EXHIBIT B
PowerPoint Presentation

Standard Specifications
Section 4 - Construction Standards

A revision to Table 4.3 (Minimum Roadway Structural Requirements) specifying that for Major Collector roadways and larger, the City will pay for any upsizing of asphalt pavement thickness required by a project specific geotechnical investigation, covering the difference between the Table values and the geotechnically specified thickness.

TABLE 4.3: MINIMUM ROADWAY STRUCTURAL REQUIREMENTS

	Roadway Class	Design ESALs (Million)	Travel Lanes	Min. CBR	Asphalt (in.)	Road Base (in.)
Residential-Local	I	≤0.150	2	10	3	6
Residential- Standard	II	0.150-0.400	2	10	3	8
Residential- Collector	II	0.400-0.700	2	10	3	8
Major Collector	II	0.700-2.2	2	10	3	8
Minor Arterial	III	2.2-7.0	4	10	3.5	10
Arterial Major	III	7.0-9.5	4	10	4	10
Commercial- Local	III	7.0-9.5		10	4	10
Industrial- Local	III	9.5-22		10	5	12

TABLE 4.3: ACTUAL MINIMUM ROADWAY STRUCTURAL REQUIREMENTS

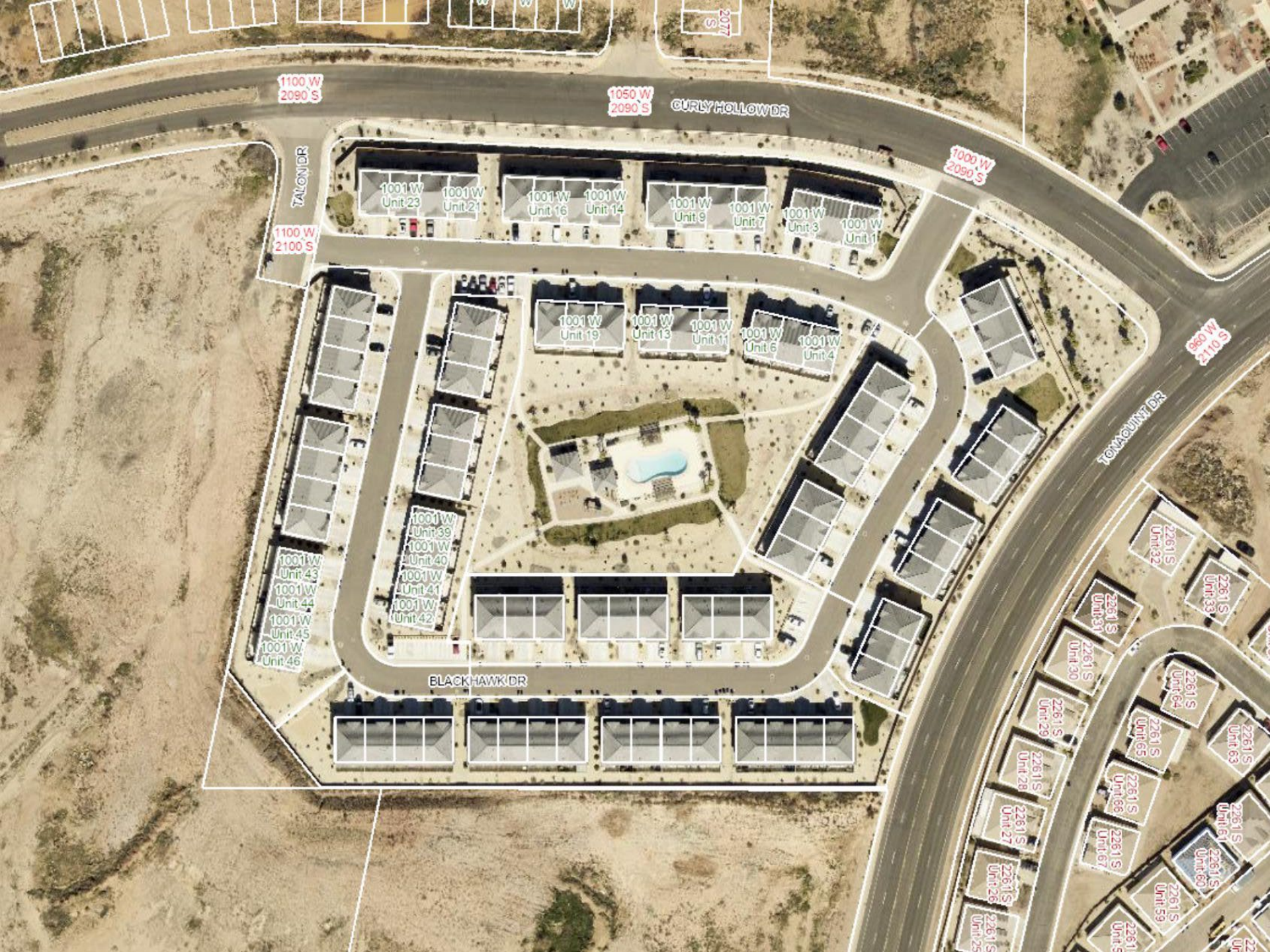
	Roadway Class	Design ESALs (Million)	Travel Lanes	Min. CBR	Asphalt (in.)	Road Base (in.)
Residential-Local	I	≤0.150	2	10	3	6
Residential-Standard	II	0.150-0.400	2	10	3	8
Residential-Collector	II	0.400-0.700	2	10	4	8
Major Collector	II	0.700-2.2	2	10	5	8
Minor Arterial	III	2.2-7.0	4	10	6	10
Arterial Major	III	7.0-9.5	4	10	6½	10
Commercial - Local	III	7.0-9.5		10	6½	10
Industrial-Local	III	9.5-22		10	7	12

Notes:

1. For Major Collector and larger Roadways, a structural pavement design based on a project-specific traffic study shall be submitted to the City for review and approval by the project geotechnical engineer. Pavement designs should be based on AASHTO 98 or UDOT Pavement Design Methods. For new roadway construction, the minimum design life shall be 25 years.
2. Where the CBR value of the subgrade soil is < than 10, sub-base materials, or additional road base materials, or geogrid are required in the structural pavement section as recommended by the project geotechnical engineer.
3. Where collapsible soils (>3 percent) are identified in the initial geotechnical investigation or during construction, the subgrade soil shall be over-excavated and recompacted to a minimum of 1½ feet or deeper as directed by the project geotechnical engineer.
4. Where expansive soils (Liquid Limit ≥ 35 and Plastic Index ≥ 15 percent) are identified in the initial geotechnical investigation, or during construction, the subgrade soil shall be over-excavated to a minimum of 4 feet or deeper and replaced with approved embankment fill materials as directed by the project geotechnical engineer.

Definitions


BRYNLEE ST
BRYNLEE ST
PRW
SOPHIE DR
DAWSON DR
450 N ST
450 N ST
450 N ST
2720 E
490 N
2720 E
450 N
2720 E
430 N
2675 E
450 N
2675 E Unit 25
2675 E Unit 26
2675 E Unit 27
2675 E Unit 28
2675 E Unit 29
2675 E Unit 30
2675 E Unit 24
2675 E Unit 23
2675 E Unit 22
2675 E Unit 21
2675 E Unit 20
2675 E Unit 19
2675 E Unit 18
2675 E Unit 17
2675 E Unit 16
2675 E Unit 15
2675 E Unit 14
2675 E Unit 13
2675 E Unit 31
2675 E Unit 32
2675 E Unit 33
2675 E Unit 34
2675 E Unit 35
2675 E Unit 36
2675 E Unit 37
2675 E Unit 38
2675 E Unit 9
2675 E Unit 10
2675 E Unit 11
2675 E Unit 12
2675 E Unit 8
2675 E Unit 7
2675 E Unit 6
2675 E Unit 5
2675 E Unit 4
2675 E Unit 3
2675 E Unit 2
2675 E Unit 1
2801 E Unit 601
2801 E Unit 602
2733 E
2713 E
2699 E
2687 E
2679 E
2663 E
2641 E
2609 E
615
614
613
2480 E CIR


1100 W
2090 S
1050 W
2090 S
CURLY HOLLOW DR
1000 W
2090 S
TALON DR
1100 W
2100 S
1001 W
Unit 23
1001 W
Unit 21
1001 W
Unit 16
1001 W
Unit 14
1001 W
Unit 9
1001 W
Unit 7
1001 W
Unit 3
1001 W
Unit 1
GARAGE
1001 W
Unit 19
1001 W
Unit 13
1001 W
Unit 11
1001 W
Unit 6
1001 W
Unit 4
980 W
2110 S
TONAQUINT DR
1001 W
Unit 39
1001 W
Unit 40
1001 W
Unit 41
1001 W
Unit 42
1001 W
Unit 43
1001 W
Unit 44
1001 W
Unit 45
1001 W
Unit 46
BLACKHAWK DR
2261 S
Unit 32
2261 S
Unit 33
2261 S
Unit 31
2261 S
Unit 30
2261 S
Unit 64
2261 S
Unit 29
2261 S
Unit 65
2261 S
Unit 63
2261 S
Unit 28
2261 S
Unit 66
2261 S
Unit 27
2261 S
Unit 67
2261 S
Unit 61
2261 S
Unit 60
2261 S
Unit 59

Clarify roadbase gradation acceptance and suspension limits to meet the minimum acceptable CBR, if the material is unacceptable, it must be removed and replace at the contractor's expense. The geotechnical firm shall notify the City, the source will be removed from the City’s Approved Supplier List, and the supplier may not furnish roadbase for city projects until quality control results are demonstrated and the city re-approves the source.

SIEVE SIZE	ACCEPTANCE LIMIT	SUSPENSION LIMIT
1/2” TO 1”	± 11%	± 15%
3/8”	± 10%	± 15%
No. 4	± 9%	± 14%
No. 16	± 7%	± 11%
No. 200	± 3.0%	± 4.5%

If roadbase gradations exceed the Suspension Limit or fail to meet the minimum acceptable CBR value, the material shall be considered unacceptable and must be removed and replaced with acceptable roadbase at the Contractor’s expense.

The geotechnical firm shall notify the city and the city will remove the roadbase source from the City’s Approved Supplier List if any of the following conditions occur:

- A gradation test result exceeds the Suspension limit;
- A CBR value does not meet the minimum acceptable value;
- Fifty percent (50%) of more of gradation test results on a project exceed the Acceptance Limit;

or

- Four (4) or more consecutive gradation test results exceed the Acceptance Limit.

Require aggregate gradations for Table 4.6 (Master Grading Bands) to meet the specified target tolerance, with gradations analyzed by weight, percent-passing basis; the project's target grading curve must lie within the selected aggregate grade in Table 4.6, and the field gradations may not deviate from the target by more than the allowed tolerance.

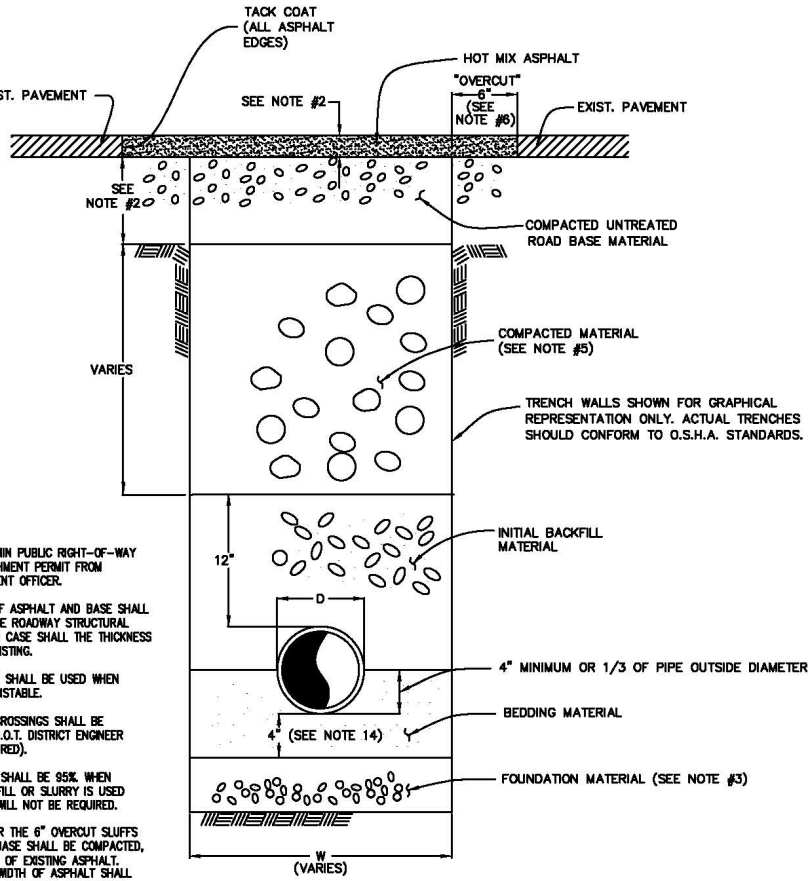
Table 4.6 – Master Grading Bands

Sieve	Aggregate Grade			Target Tolerance
	Grade 1-1/2	Grade 1	Grade 3/4	
1-1/2"	100	–	–	
1 "	–	100	–	±11%
3/4 "	70 – 85	–	100	±11%
1/2 "	–	79 – 91	–	±11%
3/8 "	55 – 75	–	78 – 92	±10%
No. 4	40 – 65	49 – 61	55 – 67	±9%
No. 16	25 – 40	27 – 35	28 – 38	±7%
No. 200	7 – 11	7 – 11	7 – 11	±2.9%

NOTES
(a) It is assumed fine and coarse aggregate have same bulk specific gravity.
(b) Target tolerance for 3/4 sieve in Grade 3/4, and 1” sieve in Grade 1 is not applicable.
(c) Percentage of fines passing No. 200 sieve determined by washing, ASTM C117.

Removal of section 4.6 “Bituminous Seal Coat (Seal Coat) and section 4.7 Asphalt Emulsion Seal Coat (Slurry Seal) as these specifications are provided in contract specifications.

Revision to Standard Drawing 170 – Trench Backfill and Repair Detail



NOTES:

1- ALL EXCAVATIONS WITHIN PUBLIC RIGHT-OF-WAY REQUIRE AN ENCROACHMENT PERMIT FROM THE CITY ENCROACHMENT OFFICER.

2- MINIMUM THICKNESS OF ASPHALT AND BASE SHALL BE AS OUTLINED IN THE ROADWAY STRUCTURAL REQUIREMENTS. IN NO CASE SHALL THE THICKNESS BE LESS THAN THE EXISTING.

3- FOUNDATION MATERIAL SHALL BE USED WHEN TRENCH BOTTOM IS UNSTABLE.

4- ALL STATE HIGHWAY CROSSINGS SHALL BE APPROVED BY THE U.D.O.T. DISTRICT ENGINEER (U.D.O.T. PERMIT REQUIRED).

5- MINIMUM COMPACTION SHALL BE 95% WHEN APPROVED FLOWABLE FILL OR SLURRY IS USED COMPACTION TESTING WILL NOT BE REQUIRED.

6- WHEN MATERIAL UNDER THE 6" OVERCUT SLUFFS OFF OR IS REMOVED, BASE SHALL BE COMPACTED, TO THE BOTTOM LEVEL OF EXISTING ASPHALT. AN ADDITIONAL 6" IN WIDTH OF ASPHALT SHALL BE CUT, REMOVED AND REPLACED AS PART OF THE OVERALL PATCH.

7- WHERE ROAD SECTION HAS A DESIGNED GRANULAR SUB-BASE, IT SHALL BE REPLACED IN KIND OR WITH ROAD BASE GRAVEL.

8- IN GENERAL, STREET SURFACES LESS THAN 24 MONTHS OLD WILL NOT BE CUT I IF A CUT MUST BE MADE, ADDITIONAL, STRICTER REQUIREMENTS MAY BE INVOKED. SEE ENCROACHMENT OFFICER.

9- 24 HOUR NOTICE REQUIRED ON ALL INSPECTIONS.

10- ALL TRENCH BACKFILL SHALL MEET MIN. COMPACTION REQUIREMENTS.

11- EXCLUDING EMERGENCY CLOSURES ALL ROAD CLOSURES AND DETOURS REQUIRE 48 HOURS PRIOR NOTICE.

12- ASPHALT PATCHWORK OVER 3.5" THICK SHALL REQUIRE PLACEMENT IN 2 SEPARATE COMPACTED LIFTS.

13- WHEN WATER MAIN JOINT RESTRAINTS ARE REQUIRED, THE ASPHALT PATCH SHALL BE CONTIGUOUS ALONG THE ENTIRE LENGTH OF THE RESTRAINED SECTION.

14- WHEN ROCK IS ENCOUNTERED AT THE BOTTOM OF THE PIPE TRENCH, 4" OF PIPE BEDDING SHALL BE INSTALLED BETWEEN ROCK AND BOTTOM OF PIPE.

CITY OF ST. GEORGE ENGINEERING DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

TRENCH BACKFILL AND REPAIR DETAIL

STANDARD DWG. NO.	
170	1 OF 1
APPROVED:	
DATE: 2025	BY: JPT

Revisions to Minimum Testing Requirements

the requirements of these standards.

4.8.3.1 CONCRETE TESTING. Minimum testing of the concrete shall be as follows:

Mix Design Certification:	One per job. Testing shall be according to the latest ASTM standards.
Compressive Strength Tests:	One set of four cylinders for each fifty cubic yards of concrete placed or portion thereof. Tests shall be according to ASTM C-31.
Air Entrainment:	Tested at beginning of placement until two consecutive loads pass. Others tests shall be taken as required. Tests shall be according to ASTM C-231.
Slump Tests:	Tested at beginning of placement until two consecutive loads pass. Others tests shall be taken as required. Tests shall be according to ASTM C-143.

4.8.3.2 CONCRETE BASE MATERIAL TESTING. Minimum testing of the curb, gutter and sidewalk base materials shall be as follows:

Gradation Tests:One test per five hundred (500) lineal feet of curb & gutter or fraction thereof. One test per one thousand three hundred fifty (1,350) square feet of a combination of sidewalk and driveway, or fraction thereof.

The sieve analysis shall be according to ASTM C-136, C-117.

Proctor:	One determination for each source of base course as necessary to provide required compaction testing. Test shall be according to ASTM D-1557, Method A or D (modified proctor).
Moisture Density Tests:	One test per three hundred (300) lineal feet of curb & gutter and one test per three hundred (300) lineal feet of a combination of sidewalk and driveway or fraction thereof. Moisture content shall be at plus or minus two percent of optimum. Proper moisture shall be maintained until the concrete is poured. Tests shall be according to ASTM D-1556 or D-2922 and D-3017.

Subgrade and Pavement/Concrete Requirements

St. George City Minimum Testing Requirements

Subgrade Requirements

Location	Minimum Requirements	Frequency	Specification Reference
Roadway Subgrade	95% for granular soils, 90% for fine grained soilsand +/- 2% per D-1557	1 test per 750 square yards	Section 4.3.3.1
Roadway/Embankment/Backfill	95% for granular soils, 90% for fine grained soilsand +/- 2% per D-1557	Embankments: 1 test per 250 linear feet of roadway	Section 4.3.3.1
Under Curb and Gutter	95% and +/- 2% per D-1557	1 test per 400 feet of linear roadway	Section 4.3.3.1
Under Sidewalks and Driveways	95% and +/- 2% per D-1557	1 test per 500 feet of linear sidewalk and 1 per entrance (commercial)	Section 4.3.3.1
Utility Trenches under Roadway, Curb and Gutter, or Sidewalk*	95% and +/- 2% per D-1557	1 test per 200 linear feet and 2 vertical feet (additionally 1 test per crossing)	Section 4.4.3.1
Sewer and Water Laterals*	95% and +/- 2% per D-1557	2 tests per sewer lateral , 1 test per water lateral	Section 4.4.3.1
Sewer Manhole and Storm Drain Box/Curb Inlet*	95% and +/- 2% per D-1557	3 tests per sewer/storm drain manhole, 1 tests per storm drain box/curb inlet	Section 4.4.3.1
Water Valves*	95% and +/- 2% per D-1557	1 test per valve/valve cluster	Section 4.4.3.1

Untreated Base Course and Subbase Requirements

Location & Test Type	Minimum Requirements	Frequency	Specification Reference
Roadway (Compaction)	95% and +/- 2% per D-1557	1 test per 200 linear foot of roadway	Section 4.5.24.1 part A
Roadway (Gradation)	Job-Mix Target	1 test per 500 linear foot	Section 4.5.24.1 part C
Curb and Gutter (Compaction)	95% and +/- 2% per D-1557	1 test per 300 linear feet	Section 4.8.3.2
Curb and Gutter (Gradation)	Job-Mix Target	1 sample per 750 lineal feet	Section 4.5.24.1 part C Section 4.8.3.2
Sidewalk/Trail (Compaction)	95% and +/- 2% per D-1557	1 test per 300 linear feet	Section 4.8.3.2
Sidewalk/Trail (Gradation)	Job-Mix Traget	1 sample per 750 linear feet	Section 4.5.24.1 part C Section 4.8.3.2

Bituminous Surface Course Requirements (Asphalt)**

Location and Test Type	Minimim Requirements	Frequency	Specification Reference
Roadway (Compaction)	96% Average, no test below 92% Marshall 92% Average, no test below 90% Rice	1 test per 7,000 square feet	Section 4.5.24.3 Part A
Roadway (Extraction)	Job-Mix Target	1 Rice test per 500 tons	Section 4.5.24.3 Part C
Roadway (Extraction)	Job-Mix Target	1 Marshall test per 1 day's production	Section 4.5.24.4

**Temperature observation required during winter months (December 1 through February 15)

Concrete Testing Requirements (Curb, Gutter and Sidewalk)

Test Type	Requirements	Frequency	Specification Reference
Compressive Strength	4,000 psi at 28 days	1 set (4 cylinders) per 50 cubic yards	Section 4.8.3.1
Air Entrainment	4-6% by volume	Until 2 consecutive tests pass	Section 4.8.3.1
Slump	4-inch maximum 1 1/2-inch maximum for machine placement	Until 2 consecutive tests pass	Section 4.8.3.1
Temperature	90° F. Maximum conrete temperature 60° F. Minimum concrete termperature	At least once per load	Section 4.8.3.1

ORDINANCE NO. _____

AN ORDINANCE AMENDING CITY STANDARD SPECIFICATIONS SECTION 4 CONSTRUCTION STANDARDS ADDRESS UPDATES TO CURRENT STANDARDS, INCONSISTENCIES, AND PROVIDE CLARIFICATION WITH THE ST. GEORGE CITY CODES. CASE No. 2025-ZRA-014

WHEREAS, the City Council has determined that it is in the best interest of the City and the public to amend provisions of city standard specifications, amending city standard specifications Section 4 Construction Standards; to address updates and revising standard specifications; and

WHEREAS, after careful consideration, the city council has determined that amending city standard specifications Section 4 is in the best interest of the health, safety and welfare of the citizens of St. George; and

WHEREAS, the Planning Commission held a public hearing on November 18, 2025, and thereafter forwarded a recommendation for approval on for the requested amendment to the City Council; and

NOW, THEREFORE, BE IT ORDAINED, by the St. George city council, as follows:

Section 1. Repealer. Any provision of the St. George city code found to be in conflict with this Ordinance is hereby repealed.

Section 2. Enactment. The St. George Standard Specifications are hereby amended by adopting changes and revisions to St. George Standard Specifications Section 4 Construction Standards for the protection of the City and the public, as set forth in Exhibit 'A' attached hereto and incorporated herein.

Section 3. Severability. If any provision of this Ordinance is declared to be invalid by a court of competent jurisdiction, the remainder shall not be affected thereby.

Section 4. Effective Date. This Ordinance shall take effect immediately upon execution below and upon posting in the manner required by law.

APPROVED AND ADOPTED by the St. George City Council, this 18th day of December 2025.

ST. GEORGE CITY:

Michele Randall, Mayor

ATTEST:

Christina Fernandez, City Recorder

APPROVED AS TO FORM:
City Attorney's Office

Jami Brackin, Deputy City Attorney

VOTING OF CITY COUNCIL:

Councilmember Hughes _____
Councilmember Larkin _____
Councilmember Larsen _____
Councilmember Tanner _____
Councilmember Kemp _____

SECTION 4
CONSTRUCTION STANDARDS

4.1 INTRODUCTION. This section sets forth the requirements for earthwork, pipeline construction, roadway construction, concrete work, restoration of surface improvements, utilities, and other similar projects.

4.2 SURVEY REQUIREMENTS. Prior to commencing the work, all construction shall have appropriate construction staking in conformance with the approved drawings unless otherwise approved by the City. The staking shall have all necessary information including, but not limited to, stationing, cut or fill data, off-set distance and invert elevations. The information shall be placed on the face of stakes in a legible manner using weatherproof marking materials and shall be in accordance with general surveying practice. All construction staking shall be under the direction of the Engineer responsible for the project.

When a water main design has a profile with grades, a grade line will be staked at the designated grades prior to installation of any pipe. A laser may be used in lieu of a grade line. All sewer lines and storm drains will require that a grade line be set and checked prior to installation of any pipe.

4.3 EARTHWORK. This subsection defines the requirements for excavation and backfill, preparation of embankments and fills, subgrade preparation for pavement, and other underground and surface improvements.

4.3.1 MATERIALS. Earthwork materials shall conform to the following:

4.3.1.1 EXCAVATION. All structures shall be founded on prepared original soil or engineered fill. Unauthorized excavation below the specified structure subgrade shall be replaced with concrete, untreated base course, or approved engineering fill thoroughly compacted to a minimum of ninety-five percent (95%) of maximum dry density. Subgrade soil for all concrete structures, regardless of type or location, shall be firm and thoroughly compacted to a minimum of ninety-five percent (95%) of maximum dry density for granular soils or ninety percent (90%) of maximum dry density for silty/clay (fine-grained) soils.

4.3.1.2 SUBSOIL REINFORCEMENT. . Coarse gravel, crushed stone, or a geotextile may be used for subsoil reinforcement when approved by the city. Coarse gravel or crushed stone shall be applied in six (6) inch layers, each layer being embedded in the subsoil by thorough tamping. Approved geotextile shall be installed in accordance with manufacturers recommendations. All excess soil shall be removed.

4.3.1.3 BACKFILL. Backfill shall be placed to the lines and grades shown on the approved drawings, or as directed by the city. Prior to backfilling any construction work, the excavation shall be cleaned of all forms, trash and debris, and such material shall be removed from the site. Backfill material shall be approved and consist of excavated material

or clean imported materials such as sand, gravel, or other suitable material.

Backfill shall be placed in loose lift not exceeding eight inches (8”). Each lift shall be compacted to a minimum density of ninety-five percent (95%) of maximum dry density for granular soils or ninety percent (90%) of maximum dry density for silty/clay (fine-grained) soils.

4.3.2 CONSTRUCTION METHODS. The methods employed in performing the work shall be the responsibility of the Contractor. These methods shall include, but are not limited to, the following:

4.3.2.1 CONSTRUCTION OF EMBANKMENTS. Unsuitable materials that occur in the foundations for embankments shall be removed by clearing, stripping and/or grubbing. When required by the city, the embankment and the materials used shall be approved by a Geotechnical Engineer. All materials in embankments shall be placed, moistened, and compacted as outlined in the following paragraphs.

When the material needed for embankment exceeds the amount of material available from excavation, sufficient additional materials shall be provided by the Owner. All materials used for embankment construction shall be free from deleterious materials and rocks larger than three inches in diameter and all other material unsuitable for construction of embankments. Rocks larger than three inches (3”) may be used when recommended by the Geotechnical Engineer and approved by the city.

Cut and fill slopes shall be a 2 horizontal to 1 vertical (2h:1v) or flatter. Construction of slopes steeper than 2h:1v or fills in excess of eight feet (8’), or when placement is on a slope of greater than 5h:1v, shall be reviewed, recommended, and approved by the Engineer.

4.3.2.2 COMPACTION OF EARTH MATERIALS. The fill material shall be deposited in horizontal layers having a thickness of not more than eight inches (8”) and then compacted to the density as herein specified. Moisture content during compaction operations shall be within two percent (2%) of optimum for granular soils and shall be two to five percent above (2%-5%) optimum for fine-grained soils unless otherwise directed by the Geotechnical Engineer. The moisture content shall be uniform throughout the layers.

If the moisture content is greater than specified for compaction, the compaction operations shall be delayed until such time as the material has dried to the specified moisture content. When the material has been conditioned as herein specified, the backfill or embankment shall be compacted as directed below.

Under roadways, curb and gutter, sidewalks and driveways, and extending one foot (1’) beyond the proposed construction (or to a distance equal to the depth of the embankment material, whichever is greater), the embankment material shall be compacted to a density equal to not less than ninety-five percent (95%) for granular soils and ninety (90%) percent for fine-grained soils. Other fills and embankments not noted above shall be compacted to

ninety percent (90%) maximum dry density. When compaction cannot be met with native or imported materials, a sand/cement slurry (flowable fill) mix (no gravel) may be used in lieu of compacted materials for backfill which is above the six to eight (6-8) inch zone above the pipe, as approved by the city.

Exposed natural soils within construction areas, beneath walkways, slabs and pavement shall be scarified to a depth of six inches (6") or greater as approved by the Geotechnical Engineer, moisture conditioned and compacted to the specified density. Where rock or other acceptable material is exposed, scarification may not be necessary.

Foundations for structures shall be uniform throughout and shall not be placed partially on undisturbed soil or compacted fill and partially on cemented deposits or rock.

Foundation soils should not be allowed to become saturated during construction.

4.3.2.3 SUBGRADE PREPARATION. As a minimum, the original soils under roadways, curb and gutter, sidewalks, and driveways shall be scarified to a depth of six inches (6") or greater as approved by the Geotechnical Engineer prior to compaction operations. All scarified soils shall be compacted to the equivalent of ninety-five percent (95%) of maximum dry density for granular soils or ninety percent (90%) of maximum dry density for fine grain soils. Additional overexcavation and recompaction of original soils due to poor subgrade conditions may be required. Subgrades shall be shaped and graded to the design grade. Drainage shall be maintained at all times. Subgrades shall be stabilized and compacted as directed. When springs or underground water is encountered during construction the Engineer and the city shall be notified immediately. Work shall not proceed until an acceptable mitigation plan is approved. Ground water discovered during construction shall not be ignored.

The subgrade preparation requirements listed above are considered to be the minimum. When required, the subgrade shall be overexcavated and the material removed from the site. Select borrow material may be imported, placed and compacted as directed by the city.

To demonstrate the stability and compaction of the subgrade, the Contractor shall proof-roll the subgrade prior to placing any base gravel. The subgrade shall be proof-rolled with at least one pass coverage with moderate weighted rubber tire construction equipment. All proof-rolling shall be accomplished in the presence of the city. When the proof-rolling shows an area to be unstable, the contractor shall contact the geotechnical engineer for stability recommendations. It shall be brought to satisfactory stability by additional compaction, reworking, or removal of unsuitable material and replacement with acceptable material.

4.3.2.4 CONSTRUCTION OF NON-STRUCTURAL FILLS. Fills shall be placed to the lines and grades shown on the approved drawings and shall include all areas not specifically designated for support of structures, roads, utilities, easements, drainage ways,

etc. (such as landscape areas, open space areas, etc.). Fill material shall generally be compacted to a minimum of ninety percent (90%) of maximum density and shall consist of material that can be compacted to prevent settlement such as soil, rocks, blocks, crushed stone, broken concrete, etc. Fill material shall not include broken asphalt, concrete chunks, crushed stone (unless geotechnical engineer determines a maximum size for these materials.) , toxic or hazardous materials waste sludge, deleterious materials such as muck, ash, sod, grass, trash, tree stumps, lumber, dead animals, etc.

4.3.3 QUALITY CONTROL. All earthwork shall be performed in accordance with these standards and shall be tested and accepted as follows:

4.3.3.1 TESTING. Minimum testing of earthwork shall be as follows:

A. Soil Classification - One per material source. Soil classifications shall be in accordance with AASHTO M-145. For determination of granular soils or fine grained soils use ASTM D-2487 (Unified Soil Classification System). The sieve analysis shall be according to ASTM C-136 and C-117.

B. Soil Proctor - One determination for each significant change in soil type as necessary to provide required compaction testing. Tests shall be performed using method ASTM D-1557 (modified proctor). Earth fill moisture/density determination - One test per five hundred (500) cubic yards of fill density placed in an embankment. Tests shall be determination - ASTM D-1556 or D-2922 and D-3017.

C. Subgrade moisture/density determination - One test per seven hundred fifty (750) square density yards of surface area. Tests shall be ASTM D-1556 or D-2922 and D-3017. Additional moisture density determinations may be made when required by the city.

4.3.3.2 ACCEPTANCE. Any earthwork determined not to be in compliance with these standards shall be removed and replaced or reworked until compliance is obtained. Costs for the rework or testing the rework shall be paid for by the Contractor.

4.3.4 SPECIAL REQUIREMENTS. The requirements outlined in this section are only a minimum. When a geotechnical investigation is required, the recommendations of the geotechnical investigation report shall be followed unless said recommendations are less than minimum standards.

All development projects shall submit a final soils engineering and engineering geology report in accordance with the International Building Code 2021, Appendix Chapter 33, or as subsequently modified.

4.4 ROCKERY AND SEGMENTAL BLOCK RETAINING WALLS. This subsection defines the requirements for this section, based on the Rockery and Segmental Block Retaining Wall Ordinance, Title 10, Ch 18A.

4.4.1 SITE PREPARATION. As a minimum, subgrade preparation within the limits of the wall construction shall be performed in accordance with the St. George City Standard Specifications 4.3.2.3. Additional subgrade preparation such as over excavation and recompaction may be required in the geotechnical report. Groundwater discovered during construction shall not be ignored and shall be addressed by the Geotechnical Engineer prior to continuing construction of the wall.

4.4.2 MONITORING. The phases of rockery and segmental block wall construction, including site preparation, shall be monitored in accordance with the inspection frequency schedule specified on the construction drawings prepared by the geotechnical engineer. The geotechnical engineer employed by the Owner/Contractor shall verify that the nature and quality of the materials being used are appropriate and that the construction is in accordance with the engineered design. The geotechnical engineer shall verify to the City in writing that the materials and construction of the rockery/segmental block wall as-built is in accordance with the engineered design after construction is complete.

4.4.3 BACKFILL. Backfill materials shall consist of quality fill materials meeting the requirements specified by the geotechnical engineer and the geotechnical recommendations. Backfill shall be placed in uniform lifts per the geotechnical recommendations.

4.4.4 BACKFILL COMPACTION AND TESTING. Compaction shall be in accordance with the geotechnical recommendations. Compaction within three feet (3') of the back of the facing units shall be accomplished with walk-behind compactors. No heavy equipment shall be operated within three feet (3') of the back of the rocks/blocks. Density tests to verify compaction shall be taken at random locations. At least two (2) tests per one hundred feet (100') of wall length per eighteen inches (18") of backfill shall be taken. In critical locations, the geotechnical engineer may request additional testing**.**

4.4.5 GEOGRID REINFORCEMENT. Mechanically stabilized earth (MSE) retaining walls shall be reinforced with geogrid as specified by the geotechnical engineer. Geogrid design embedment length shall be measured from the back of the rock or segmental block facing units. Geogrid shall be positively connected to the block facing units. No substitutions of geogrid reinforcement products shall be allowed unless specifically approved by the geotechnical engineer. Gravity segmental block retaining walls generally do not require geogrid reinforcement in their design.

4.4.6 ROCK SELECTION AND PLACEMENT. The rock source shall be preapproved by the geotechnical engineer. The contractor shall have sufficient space and stockpile material available to select from among a number of rocks for each space in the rockery wall to be filled. Rock shall be of a generally cubical, tabular or rectangular shape. Rounded rocks shall not be used. Internal void spaces in the facing shall be kept to a minimum. Prior to being placed, rocks shall be approved by the geotechnical engineer. Base keyway rocks shall have a minimum width extending back into

the wall of at least one third (1/3) the exposed height of the wall tier. Rocks shall be placed to decrease in size with increasing wall height. Cap rocks shall have a minimum width of two feet (2') extending back into the wall.

Rocks shall be placed to bear on good flat-to-flat surfaces. The long dimension of the rocks shall extend back toward the cut/fill face. Except for basal rocks, rocks shall bear on at least two (2) or more other rocks. The base rocks shall be embedded at least one foot (1') to provide a keyway into unyielding soil competent subgrade soils. Additional embedment may be required by the geotechnical engineer.

4.4.7 SEGMENTAL BLOCK RETAINING WALL UNITS. Concrete used in the production of the precast modular block units shall be first-purpose, fresh concrete.

It shall not consist of returned, reconstituted, surplus or waste concrete. It shall be an original production mix meeting the requirements of ASTM C94 and have a minimum net average twenty-eight (28) days compressive strength of 4,000 psi. The concrete shall have adequate freeze/thaw protection and meet the requirements of ASTM C 1372. Higher strengths may be required by the geotechnical engineer based on site conditions.

All units shall be: (a) obtained from the same manufacturer, (b) sound, and (c) free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the construction. Any cracks or chips observed during construction shall fall within the guidelines outlined in ASTM C 1372.

Except for base blocks, each block unit shall bear on at least two (2) blocks. The base blocks shall be embedded at least one foot (1') to provide a keyway into unyielding soil competent subgrade soils. Additional embedment may be required by the geotechnical engineer.

Segmental block units shall match the color as approved by City, surface finish, and dimension for height, width, depth, and batter as shown on the drawings.

If pins or clips are used to interconnect block units, they shall consist of a non-degrading polymer or galvanized steel and be made for the express use with the block units supplied.

Any cap adhesives shall meet the requirements of the block unit manufacturer.

4.4.8 WALL DRAINAGE. Wall drainage behind the retaining walls shall include a free draining gravel layer and filter fabric with a drainpipe daylighting to a proper outlet. If the engineering can substantiate proper filtering between the retained soils and the drain rock, then the filter fabric may be omitted. If the retained soils or backfill is free draining as substantiated by backfill material type for general conditions in the area, then drainage material may be omitted from the design.

4.4.9 SURFACE DRAINAGE. Surface drainage shall be directed away from the rockery/block wall face to a positive and permanent discharge away and beyond the retaining walls. The surrounding site shall be graded such that water cannot flow over the top of the retaining walls. If

drainage cannot be directed away from the wall, additional precautions should be taken.

4.4.10 BATTER. The batter (steepness) of a rock wall face shall not exceed one horizontal to four vertical (1h:4v). The batter steepness of a segmented block wall face shall not exceed 1h:10v unless approved steeper by the geotechnical engineer.

Batter requirements for segmental block retaining wall shall be noted on the design drawings from the geotechnical engineer. The steepness of the wall face shall not exceed the block Manufacturer's design recommendations.

4.4.11 SLOPES. Slopes above and below rockery and segmental block retaining walls shall not exceed two horizontal to one vertical (2:1); shall be shown on the drawings, and shall be included in the stability analysis and the design considerations. (Ord. 2019-10-002, 10-10-2019)

4.4.12 STRUCTURAL ANALYSIS. Structural analysis of rockery retaining walls should be in general accordance with the current Federal Highway Administration (FHWA) Guidelines for Rockery Walls for both static and seismic forces with minimum factors of**:**

	Static	**Seismic**
Sliding	1.5	1.1
Overturning	2.0	1.5
Bearing	2.5	1.5
Global	1.5	1.1

Structural analysis of stacked segmental block retaining walls should be in general accordance with the current National Concrete Masonry Association (NCMA) Design Manual for both static and seismic forces with minimum factors of:

	Static	Seismic
Sliding	1.5	1.1
Overturning	2.0	1.1
Bearing	3.0	1.5
Global	1.5	1.1

The following analysis provisions shall apply:

1. The maximum unit weight of the rocks and blocks used in the design of a wall system shall be specific to the construction material used.

2. The maximum coefficient of friction between rocks or blocks in a wall system shall be specific to the construction material used.

3. Surcharge loading conditions with a horizontal distance equal to the height of the upper most wall shall be taken into consideration in the analysis. The distance shall be measured from the exposed face of the upper most wall.

4. Specifications shall be provided to clearly define acceptance criteria for rock or block materials. (Ord. 2019-10-002, 10-10-2019).

5. Retaining wall shall be designed assuming wet soil conditions.

The geotechnical engineer shall provide design details specific to the location and conditions with a professional stamp and signature. The geotechnical engineer shall provide upon request a printout of the input and output files with factors of safety within the applicable design standard used as follows:

1. Design calculations ensuring stability against overturning, base sliding, excessive foundation settlement, bearing capacity, internal shear, and global stability.

2. Calculations shall include analysis under static and seismic loads.

3. Factors of safety results shall be presented to the nearest hundredth.

4. Seismic loads shall be based on the Peak Ground Acceleration (PGA) as determined from

probabilistic analysis for the maximum credible earthquake, with spectral acceleration factored for site conditions in accordance with the current International Building Code.

5. Upon request, a cross-sectional view of each analysis shall be provided, and the printout of the input and output files in an appendix.

6. The geotechnical engineer shall include wall drainage details, if applicable.

7. The geotechnical engineer shall acknowledge that the site is suitable for the retaining wall.

8. The geotechnical engineer shall specify an inspection frequency schedule on the drawings.

Rock and block material shall meet the minimum requirements of the St. George City Standard Specifications section 4.4.10 and 4.4.11 unless other materials are specifically preapproved by the geotechnical engineer. (Ord. 2019-10-002, 10-10-2019)

4.4.13 INSPECTIONS. Construction of rockery and segmental block retaining walls shall be observed by a qualified geotechnical engineer employed by the owner/contractor and shall include all phases of construction. Testing shall be at the frequency specified by the geotechnical engineer,

Upon completion of the wall, the geotechnical engineer shall submit a final compliance report to the authority having jurisdiction. The report shall include a summary of testing and observations per the Pre-Wall Geotechnical Data Sheet provided as part of the construction permit. The report shall provide a professional opinion as to the compliance with the design recommendations and acceptance of the construction. All pertinent compaction testing results and photos shall be included with the final report**. (Ord. 2019-10-002, 10-10-2019)**

4.5 PIPELINE CONSTRUCTION. This subsection covers the requirements for materials, trenching, placing, backfilling, cleaning, testing and other miscellaneous requirements for underground pipeline construction and associated work. This section incorporates the requirements of the American Water Works Association (AWWA) Standards and the Manufacturer's Recommended Installation Procedures, whichever is more stringent.

4.5.1 MATERIALS. This subsection specifies the acceptable materials for pipeline construction for use in sanitary sewers, underground culverts, storm drains, water pipes, and appurtenant construction. All materials shall be new and conform to the requirements for class, brand, size and material as specified herein. All materials shall be stored and handled in accordance with manufacturers recommendations.

4.5.1.1 SEWER PIPE AND FITTINGS. Only those pipe materials listed below may be used in the construction of sanitary sewer line unless otherwise approved in writing by the city.

A. **POLYVINYL CHLORIDE (PVC) PLASTIC SEWER PIPE.** This specification covers rigid polyvinyl chloride (PVC) pipe and fittings. PVC pipe and fittings from four (4) inches to fifteen(15) inches in diameter shall meet or exceed all of the requirements of ASTM D-3034 with a minimum wall thickness to diameter ratio of SDR-35. PVC pipe and fittings from eighteen inches (18") to twenty-seven inches (27") in diameter shall meet or exceed the requirements of ASTM F-679.

Each pipe shall be stamped by the manufacturer indicating compliance with the requirements of the appropriate specification. Any pipe not so stamped shall be rejected.

All pipe and fittings shall be homogeneous throughout and free from cracks, holes, foreign inclusions or other defects. All PVC pipe and fittings shall be made from clean, virgin, Type 1, Grade 1, Polyvinyl Chloride conforming to ASTM D-1784.

All pipe joints shall be bell and spigot type with flexible elastomeric seals in accordance with ASTM F-477. Pipe and fittings shall be assembled with a non-toxic lubricant. Pipes of four inch (4") and six inch (6") diameter may be the solvent weld type, in accordance with ASTM F-656 for primer and ASTM D-2564 for glue. Pipe shall have the following minimum SDR-35 dimensions.

Nominal Pipe Size (Inches)	Outside Diameter (Inches)	Minimum Wall Thickness (Inches)
4	4.215	0.125
6	6.275	0.180
8	8.400	0.240
10	10.500	0.300
12	12.500	0.360

Spigot ends shall have a fifteen (15) degree tapered end with a memory mark around the diameter of the pipe to indicate proper insertion depth. Fittings shall be of the same material as the pipe, and shall not have a wall thickness less than that of the pipe furnished.

B. **A.B.S. COMPOSITE AND SOLID WALL SEWER PIPE.** This specification covers Acrylonitrile-Butadiene-Styurine (ABS) gravity sewer pipe.

All ABS composite sewer pipe shall conform to the latest revision of ASTM Specification D-2680. The ABS material used shall be a virgin rigid plastic conforming to ASTM Specification D-1788 for rigid ABS plastics. The other component shall be Portland Cement, Perlite concrete or other inert filler material exhibiting the same degree of performance.

All solid wall ABS pipe shall conform to ASTM Specifications D-2751. Solid wall pipe used for laterals shall have a minimum wall thickness to diameter ratio of SDR-35. Fittings not described by these standards shall be shop fabricated or molded from materials listed in paragraphs 4 and 5 of ASTM D-2680 and shall be of equivalent quality to those described.

All field joints shall be chemically welded. Primer, then cement, shall be applied liberally to the outside of the spigot end and the inside of the coupling immediately prior to stabbing the pipe together. The pipe spigot end shall be supplied with home marks to assure proper jointing.

4.5.1.2 STORM DRAIN PIPE. Pipe listed under Sections 4.5.1.1 A. "Sewer Pipes" of these standards, as well as the following pipes, may be used in the construction of storm drain lines and culverts.

A. CORRUGATED POLYETHYLENE PIPE. Corrugated polyethylene pipe shall be high density polyethylene corrugated exterior with a smooth interior wall. Eight to ten inch (8”- 10”) diameter shall meet the requirements of AASHTO M-252 and have a smooth interior liner. Twelve to thirty-six inch (12”- 36”) diameters shall conform to AASHTO M-294 Type S. Forty-two to forty-eight inch (42”- 48”) diameter shall conform to AASHTO MP-6 type. Materials shall conform to ASTM D-3350. All pipe joints and fittings shall be water tight and conform to AASHTO M-353 or M-294, and shall be approved by the city.

B. **NON-REINFORCED CONCRETE PIPE.** Non-reinforced concrete pipe may be used up to and including twenty-four inch (24”) size, unless otherwise designated by the City Engineer or these specifications. Appropriate design justification shall be submitted by the Engineer to the City for review and approval prior to use. Pipe shall be extra strength and manufactured to comply with the requirements set forth in ASTM Designation C-14, Class 3 unless otherwise approved by the City Engineer. Type V cement shall be used unless otherwise approved. Joints shall be of the bell and spigot-type with rubber gasket design, and with joints and gaskets conforming to the requirements of ASTM Designation C-443. Pipe joints shall be so designed to provide for self-centering, and when assembled the gasket shall compress to form a water-tight seal. The gasket shall be confined in a groove on the spigot so that pipe movement or hydrostatic pressure will not displace the gasket.

C. **REINFORCED CONCRETE PIPE.** Reinforced concrete pipe may be used for all appropriate applications. For pipe greater than twenty-four inches (24”) in diameter, and where any non-reinforced concrete pipe installation does not provide a cover of at least three feet over the top of the pipe, reinforced concrete pipe shall be used. Reinforced concrete pipe shall comply with the requirements of ASTM C-76 (Class II - V) unless otherwise approved by the City Engineer. Type V cement shall be used unless otherwise approved. Joints shall be of the bell and spigot design with rubber gasket type joints, with an alternate option of tongue and groove joints for storm drain lines when approved by the city.

4.5.1.3 SEWER MANHOLES. This subsection covers the requirements for the materials used in sanitary sewer and storm water manholes. Manholes shall be water tight and be furnished complete with cast iron rings and covers as follows:

A. **CONCRETE BASES.** Manhole bases shall be either pre-cast or Precast manhole bases shall conform to ASTM C-478. Concrete for cast in place bases shall be in accordance with Section 4.7.1 of these specifications. Type V cement shall be used for precast and cast in place bases.

Where sewer lines pass through or enter manholes, the invert channels shall be smooth and semi-circular in cross-section. Changes of direction of flow within the manholes shall be made with a smooth curve with the longest radius possible. The depth of the channel in the manhole base shall be the full diameter of the sewer pipe being used at that manhole. The floor of the manhole outside the flow channels shall be smooth and slope toward the channel in accordance with standard drawings and not less than one-half inch (½") per foot nor more than one inch (1") per foot.

B. **WALL AND CONE SECTIONS.** All manholes shall be constructed of sixty (60) inch or larger inside diameter pre--cast, sectional, reinforced concrete manholes. Both cylin-dri-cal and taper sections shall conform to the requirements of ASTM Designa-tion C-478 for precast Reinforced Concrete Manhole Sections. Manholes shall have ladders in accordance with the standard drawings.

Throat length of manholes shall be adjust-able by use of appropriate diameter manhole sections and grade ring sections. The use of a "whirly-gig, Pro-Ring, or approved equal shall be used if throat section is not perpendicular to road grade. All throat sections shall be installed per manufactures specifications. Biodegradable shims shall not be allowed. The maximum height of the throat section shall be eighteen inches (18) regardless of angles or grade.

When manhole depths are less than four feet (4') manhole cones shall not be used. The manhole shall consist of a cylindrical manhole section with a precast flat manhole top in accordance with ASTM C-478.

Sixty inch (60") inside diameter sewer manholes shall be required for all sewers greater than twelve inches (12") in diameter or deeper than twelve feet (12'), or where three (3) or more eight inch or greater lines converge in the manhole.

The shaft section of the manhole shall be furnished in section lengths of one (1), two (2), three (3), and four (4) feet as required. The least number of sections should be used.

Manholes larger than sixty (60) inch inside diameter may be required when designated by the city.

All joint surfaces of pre-cast sections and the face of the manhole base shall be thoroughly cleaned prior to setting the sections. Joints shall be sealed with a minimum one inch (1") thick flexible joint sealant which shall conform to the requirements of ASTM C-923.

All joints including any grade rings where the joint has not protruded to the interval of the manhole shall be filled with grout prior to final acceptance.

C. **WATER-TIGHTNESS.** All manholes shall be water tight. Any cracks or imperfections shall be satisfactorily repaired. Materials and methods used shall be subject to approval of the city.

D. **IRON CASTINGS.** All iron castings shall conform to the requirements of ASTM A-48 (Class 30) for grey iron castings. Frames and covers shall have a minimum combined weight of four hundred (400) pounds. All castings shall be designed to carry a minimum HS-20 traffic loading.

The cover and ring seat shall be machined so that the entire area of the seat will be in contact with the cover, in any position of the cover on the seat. Frames and covers shall be so constructed and machined that the parts are interchangeable. The tops of the cover and frames shall be flush, and the clearance between the frame and cover shall be one-eighth (1/8) of an inch all around. The top surface of each cover shall be cast with a studded pattern including the word "Sewer" for sanitary application and “Storm” for storm drain applications. Letters and studs shall be raised three-eighth (3/8) inch. Each cover shall be provided with not less than twelve (12) ventilating holes of three quarter (3/4) inch diameter each.

All manhole frames shall be carefully set to the finished grade or as directed by the city. When set in roadways, walkways or other travelways, the finished manhole cover, grade, and slope shall be adjusted to match that of the traveled surface. Manhole frames shall be set in place on the manhole throat and shall be sealed with an approved flexible joint sealant which shall conform to the requirements of ASTM C-923. Frames or covers loosened from the manhole throat shall be reset and any frames, covers or throat sections damaged or broken shall be replaced prior to acceptance by the city.

4.5.1.4 WATER PIPE AND FITTINGS. The materials used for pipe and fittings shall all be new and conform to the requirements for class, brand, size and material as specified.

A copy of the manufacturer's installation recommendation for each type of pipe shall be provided for each construction job and shall be available on the jobsite at all times. These recommendations shall be followed during construction unless instructed otherwise by the city. All pipe materials are as outlined below.

A. **GENERAL PIPE REQUIREMENTS.** Pipe materials shall conform to the following requirements.

SIZE	TYPE
3/4" to 1"	Copper Type K
1 ½" - 2"	Blue Poly (HDPE) Copper Tube Size
Over 2"	Ductile Iron Class 51 with poly jacket sock or PVC C-900, Class 150 (sand bedded) see note #1 below.

Note:
1. High density polyethylene pipe may be used upon approval of the Water Department.
2. For pipes greater than 12 inches, material type will be determined by the Water Department. When the pipe is to be installed in a rocky area, the pipe material will be ductile iron.
3. All pipe shall conform to the current AWWA standards for each class of pipe listed above.

B. **CONNECTING WATER METERS**. Only authorized employees of the Water Department shall be allowed to connect or disconnect water meters. All boxes set in concrete shall be flanged to prevent settlement.

C. **DUCTILE IRON PIPE.** All ductile iron pipe shall be Class 51 conforming to the latest edition of AWWA Specifications C-151 (ANSI A21.51).

C.1 JOINTS. Ductile Iron Pipe shall be either Mechanical Joints, Rubber Gasket Slip-on Joints, Flanged Joints, or a combination of the above as specified on the plans. Pipe shall also conform to all current AWWA standards.

C.2 POLYETHYLENE WRAPPING. Polyethylene wraps (sleeve) shall be required on all ductile iron pipe. Wrap shall be v-bio® type. The polyethylene wrap tubing shall be cut to provide for a minimum of one foot of lap over both the adjoining pipes. The ends of the tubing shall be wrapped using three circumferential turns of approved duct tape. The loose wrap on the barrel shall be pulled snugly around the barrel of the pipe and the excess folded over at the top. This fold shall be held in place by means of twelve-inch-long strips of tape placed at intervals of three feet along the pipe barrel. High Performance 8 mil or greater tape or approved equal.

Bends, reducers, offsets and restraint gland locations shall be wrapped in the same manner as the pipe. Valves shall be wrapped by bringing the tube wrap on the adjacent pipe over the bells of the valve and sealing with adhesive tape. The valve bodies shall then be wrapped with flat sheets passed under the valve bottom and brought up around the body to the stem and fastened with

the tape.

D. **PVC PIPE**. All PVC Pipe used shall meet the latest AWWA standards C-900 and C-905.

E. HDPE pipe shall meet the latest AWWA standards C-901 and C-906.

1. installation operator cert, data logger, minimum experience

F. **COPPER PIPE.** Where service lines are one (1) inch or less in diameter, type K copper pipe shall be used. Pipe which has outside dimensions greater than 1 ½" inches in diameter shall not be copper. All copper pipe shall conform to the current AWWA standards.

G. **PIPE FITTINGS**. (4 inches through 30 inches) flanged and mechanical joint fittings shall be ductile iron class 250, and shall be produced in accordance with ANSI/AWWA C-110/A 21.10 and ANSI/AWWA C-111/A21.11 and shall conform to details and dimensions published therein. Fittings are cement lined and seal coated in accordance with ANSI/AWWA C-104/A21.04. The fittings will be manufactured by Tyler or approved equal.

Connections of 6 inch and greater into existing piping shall be done with a cut-in tee. Size on size taps are not allowed. Hot taps may be allowed on a case by case basis as follows. For large tappings (6 inch and greater) tapped into PVC or ductile iron pipe, the following tapping sleeves are approved for pressures less than 125 psi:

Romac Style fts 419, fts 420
Power Seal (5 bolt), model 3480
Romac 305 Stainless Steel Service Saddle

For pressures greater than 125 psi, a mechanical joint sleeve type will be required. The following are approved for use.

Mueller H-615
5-149-DI
Clow F-5205
Power Seal Model 3490
Romac SST-III with ductile flange rated at 200 psi
Ford FTSS

For larger diameter pipe:

FTS-425 Class D
For HDPE - Romac SST-H

H. **TAPPING MATERIAL SPECIFICATION.** For small tappings (three quarter (3/4) inch through two (2) inch) tapped into cast iron, steel, PVC, or ductile iron pipe, the following materials shall be required:

H.1 SADDLE CASTINGS. Large saddle tappings shall be stainless steel or bronze single/double strap.

H.2 STAINLESS STEEL STRAP. The stainless steel strap shall consist of a two (2) inch wide strap and shall come complete with sufficient stainless steel or bronze bolts, nuts and washers (with five-eighths [5/8] inch N.C. Teflon coated roll threads) to properly clamp the strap to the pipe. M.I.G. welds shall be passivated for resistance to corrosion.

H.3 GASKETS. Gaskets shall be made from virgin SBR compounded for water services

H.4 HDPE saddles shall have spring washers

I. **REPAIR CLAMPS**. All repair clamps shall be stainless steel and be equal to the following approved brands:

Romac SS1-552
Power Seal 3121AS, 3122 AS
For HDPE
Romac Style SS1-H, SS2-H

J. **VALVES AND BOXES.** Unless otherwise specified by the Water Department, all valves, ten (10) inches and smaller, shall be of a resilient-seat-gate-valve type, and all valves over ten (10) inches shall be butterfly valves.

J.1 GATE AND BUTTERFLY VALVES. Valves shall conform to the latest revision of AWWA valve standards. All valves shall be Mueller, Kennedy, Clow, or Pratt. Exceptions to this will require the city's approval.

All valves, ten (10) inches and less, installed next to a fitting must be flange x mechanical joint (MJ) and installed with the flange end connecting to the tee, cross, or fitting and megaluged to the line unless otherwise approved by the city. Valves greater than twelve inches shall have flange x flange with an MJ adaptor in order to flange to tee, cross, or fitting and shall be megaluged

to line.

All six and eight inch valves shall have a 12"x 16"x 4" slab of concrete placed under them for support. Valves ten inches and greater shall have a 20"x 20"x 4" concrete slab placed under them for support. All support slabs shall be tied to the valves.

All setter shut off valves shall be provided with bronze handles.

J.2 VALVE BOXES. All valves shall be provided with a cast iron valve box of the extension sleeve type, and the height shall be adjusted to bring the top of the valve box flush with the finished surface. Extension sleeve shall be drilled or slotted below the lid seat, and the marking wire shall be threaded through. Slot or drill shall be a minimum of ½" dimension. The valve box shall sawcut to proper length, and not be less than five inches in diameter and shall have a minimum wall thickness of .375 inch. The box shall be provided with a suitable base and cover. The word "WATER" shall be cast on the cover. Cover shall be Bingham & Taylor, 22 pound weight.. Valve boxes intended for irrigation main line valves shall be triangle in shape and the word "IRRIGATION" shall be cast on the cover.

Valve boxes shall be installed plumb and properly positioned to center operating nut and allow access of the operating wrench. To ensure that the box is not displaced during backfill operations, the backfill shall be hand mechanically tamped for a distance of five feet each way along the trench. All valve boxes shall include a concrete collar in accordance with the standard drawings with flow indication arrows and pipe size. The letter size shall be 4"-6" in height, and 1/4" deep stamped into the "wet" collar. The valve operating nut SHALL be at a depth not to exceed 48". If the operating nut is deeper than 48" a operating extension SHALL be required. See standard drawing detail #304

K. WATER SERVICE LATERALS. The material used for water service connections shall comply with the following requirements.

K.1 SERVICE PIPE. Service pipe shall be copper or polyethylene. Note: When polyethylene pipe is used, only locking compression fittings shall be used.

K.2 CORPORATION STOPS. Corporation stops shall be as manufactured by the Mueller Company, or Ford or approval equal, and shall conform to the several designations shown below for the various sizes.

	WATER SERVICE CONNECTION SIZE			
	3/4"	**1"**	**1-1/2"**	**2"**
MUELLER CO.	H-1500	H-1500	H-1510	H-1501
FORD	F600	F600	F6125	F6125

All services shall have a locking compression type joint for the service pipe and shall be threaded on the inlet end with an AWWA corporation stop thread.

K.3 METER SETTER YOKES. Meter setters or meter yokes shall have a built-in backflow prevention device and shall have a corrosion-resistant bronze body, dual acetyl plastic valves with natural rubber gaskets that are independently acting and capable of giving two levels of protection; stainless steel springs; a resilient O-ring end-tap seal; and full port inlet angle ball valve with brass handle. All internal parts shall be accessible without removing the valve from the line. Meters shall be installed by Water Department personnel only.

K.4 METER BOX AND LID. The meter boxes shall be high density polyethylene (HDPE) “Brooks” design or equal. Size shall be as follows unless otherwise approved by the city.

PIPE SIZE	METER BOX SIZE
3/4"	17" x 11 3/4" #1419-18
1"	25" x 16" #1324-18
1 ½" - 2"	32" x 19" #1730-18

The meter box lids shall have a hinged opening for meter reading. Lid marking shall be approved by the Water Department. A concrete collar shall be installed around the meter box in accordance with standard drawings. All meter boxes shall be placed behind sidewalks in accordance with standard drawings unless otherwise directed by the city.

Any meter box covered, or damaged, during construction operations shall be uncovered, replaced, and raised to finish grade by the Contractor. In areas without sidewalks, meter boxes shall be flush, or one inch above the finish grade.

K.5 SERVICE CONNECTIONS. At all points designated by the Water Department, service connections shall be installed and shall extend from the property line to the building, unless otherwise directed by the Water Department.

Individual water services shall be one inch for dual services and three quarter (3/4) inch for a single service from the water main to the meter setter for normal domestic service. When directed by the Water Department, the water service shall be one and one half (1 1/2) or two inches in diameter. Services shall have a minimum of three (3) feet of cover and be constructed as shown in the standard drawings. For service laterals two inches in diameter and smaller, service saddles shall not be closer than twelve inches (12) from the end of the main, nor closer than eighteen (18) inches to any other service saddle or pipe joint.

A mechanical joint type tapping sleeve shall be used on all “hot taps” where the line pressure is greater than one hundred twenty five (125) psi,. The approved mechanical joint sleeves and type shall be as shown in the standard drawings.

L. **MARKING WIRE.** 12 Gauge type UP Marking wire shall be installed on all waterline installations unless otherwise approved by the Water Department. Marking wire shall conform to the following:

L.1 Marking wire shall be spliced together with a deep silicone wire splice kit, or equal. Prior to installation of the wire nut, a minimum amount of wire shall be bared and twisted together with pliers to assure good contact.

L.2 Marking wire should be taped and pulled tight along the top of the pipe to ensure against breakage.

L.3 Marking wire shall extend up to all hydrants and valves. At valve clusters marking wire shall be run to all valves. The wire should be looped.

L.4 Marking wire shall extend out of the valve box four (4) to six (6) inches.

L.5 It is the Contractor's responsibility to guarantee and show that the marking wire performs satisfactorily for its intended use. It is recommended that the contractor test the performance of the wire prior to installation of surface improvements.

L.6 After all boxes are raised and prior to placing concrete collars, the Contractor shall notify the Water Department to perform the final acceptance testing.

M. **FIRE HYDRANTS.** Fire hydrants shall be a three-nozzle, five and one-half inch (5½) diameter; Kennedy, Model K-81A; American Flow Control Waterous 51/4" Pacer Model WB-67-250; or approved equal, with foot valve and six (6) inch mechanical joint connection. Fire hydrants shall conform to the latest edition of AWWA C-502, "Dry Barrel Fire Hydrants." All hydrants shall be designed for a working pressure of two hundred (200) psi and a hydrostatic pressure of three hundred fifty (350) psi. Hydrants shall be furnished with a paint finish above the ground line identical in color to the existing hydrant paint (red).

Hydrants shall be installed with a shut-off valve at the mainline. If the hydrant lateral is greater than two hundred (200) feet long, a second valve shall be installed at a location determined by the Water Department.

After the hydrant is installed and accepted, it will be the responsibility of the Water Department to maintain the hydrant. Where applicable, the customer/property owner will allow the Water Department access for said maintenance.

Dead-end mains shall not be installed without prior approval of the Water Department. If installed, they shall not exceed six hundred (600) feet in length. Hydrants shall be located at the end of dead-end mains for flushing purposes as well as for fire protection. Washout valves, in lieu of fire hydrants, are not allowed without prior approval of the Water Department.

Hydrants shall be of a flanged joint type or mechanical joint inlet. All hydrants shall be so designed as to allow the flanges at sidewalk level to separate without material damage to the main barrel section when struck by a large object, such as a vehicle. Hydrant extensions are not allowed for "new" construction and shall have a minimum bury depth of three feet. Upon such damage, the main gate valve must remain closed to avoid flooding or washout. New fire hydrants shall have "greaseable" operating stem, oil filled stems are not acceptable. Hydrants with a nominal five-inch valve opening shall be furnished with two nominal two and one half (2½) inch National Standard Thread Hose Nozzles and one nominal four and one half (4½) inch National Standard Thread Pumper Nozzle. All nozzles shall be furnished with a cap and gasket with attaching chain. All hydrants shall open counterclockwise with a pentagon operating nut conforming in size to the specifications of the Water Department.

Fire hydrants shall be set to provide at least the minimum pipe cover for the branch supply line. Nozzles shall be at least eighteen (18) inches above finish grade. Each hydrant shall be set on a concrete foundation at least eighteen (18) inches square

and four (4) inches thick. Hydrant drainage shall be provided by installing gravel or crushed rock (3/4" minus washed gravel) around the hydrant, and below the top of the hydrant supply line. One third (1/3) cubic yard of three quarter (3/4) inch gravel shall be placed around the drain holes just above the hydrant valve casing, and a mechanical barrier to stop fines infiltration. All hydrants shall stand plumb and the breakaway flange shall be 4”- 6” above collar or as approved by city. Collar shall match finish grade, dishing of concrete collar is not allowed. Collar shall extend to top back curb at -2%, with flared splash pad. Minimum width behind hydrant shall be 30”, flare at 6”:1’ to TBC. Hydrant extensions shall not be used on newly constructed hydrants. The hydrant pumper nozzles shall face the street and be perpendicular to the curb line. The hose nozzle shall be parallel to the street. Hydrants shall be located inside the street utility easements or as otherwise directed by the Water Department.

N. PRESSURE REDUCING VALVES. Pressure reducing valve installation will be constructed as per the detail shown in the standard drawings. The valves will be as manufactured by Singer and approved by the city.

O. MEGALUG SYSTEM. A megalug retainer gland system shall be used on all mechanical joints and shall meet UNI-B-13 for PVC and be UL/FM approved through twelve (12) inch diameter for both ductile iron and PVC pipe.

A megalug retainer gland system shall be used on all mechanical joints and shall meet Uni-B-13 for PVC and be UL/FM approved through twelve (12) inch diameter for both ductile iron and PVC pipe. The restraint mechanism shall consist of individually activated gripping surfaces to maximize restraint capability. Twist-off nuts, sized the same as the tee-head bolts, shall be used to ensure proper activating of restraining devices. The gland shall be manufactured of ductile iron conforming to ASTM A-536-80. The retainer-gland shall have a pressure rating equal to that of the pipe on which it is used (through fourteen inches) with a minimum safety factor of 2:1. Gland shall be Megalug by EBAA Iron, Inc. or approved equal. The type and model of retainer and amount for each connector is shown on standard drawings.

As an alternate to the megalug system, Ford Uniflange Series 1400 retainer glands and Series 1300 and 1390 joint restraints will be used. For PVC, Ford Uniflange Service 1500 retainer gland will be used. These materials listed are approved for use on the St. George City Water System.

Thrust blocks shall only be placed to accommodate connection to existing facilities and only when deemed necessary by the engineer and agreed to by the city.

4.5.2 CONSTRUCTION METHODS. This subsection covers the requirements for trenching, placing, and back filling of all underground pipelines (sewer, water, storm drains, etc.). The methods employed in performing the work shall be the responsibility of the Contractor. The Contractor shall make such changes in the methods used as are necessary to install an acceptable finished product. The methods shall include, but are not limited to the following:

4.5.2.1 CONTROL OF GROUND WATER. All trenches shall be kept free from water during excavation, fine grading, pipe laying, jointing, and embedding operations. Where the trench bottom is mucky or otherwise unstable because of the presence of ground water, and in cases where the static ground water elevation is above the bottom of any trench or bell hole excavation, such ground water shall be lowered and controlled to the extent necessary to keep the trench free from water and the trench bottom stable when the work within the trench is in progress. Surface water shall be prevented from entering the trenches.

Dewatering for pipeline construction shall commence when groundwater is first encountered and shall continue until such time as water can be allowed to rise. Requirements of section 4.3.2.2 shall be complied with when groundwater is encountered. Dewatering shall be conducted such that no pipelines are placed in water nor shall water be allowed to rise over the pipe until the pipeline has been pressure tested and any concrete or mortar has achieved final set. Water shall not be allowed to rise in pipeline trenches or drained excavations until pipelines are backfilled or restrained to prevent flotation.

4.5.2.2 EXCAVATION FOR PIPELINES. Trench excavation shall include all operations necessary for excavation of all materials of whatever nature in relation to pipeline installation. All excavation, including the manner of support and provisions for access to trenches, shall comply with all current regulations as determined by OSHA. Trenches shall be excavated to the lines and grade shown on the drawings, and to a depth to provide the minimum required cover of three (3) feet over the pipe unless otherwise approved by the city. Pipe installation shall be in accordance with the pipe manufacturer's recommendations. The bottom two feet of the trench should have vertical walls. All finish grading necessary for preparation of the trench bottom shall be made manually. Over-excavating shall not be allowed without re-compaction of backfill in accordance with these standards.

Excavation for trenches in rock shall extend to a depth of at least four inches below the bottom of the pipe. Bedding material as outlined in Table 4.1 shall be placed and mechanically compacted to ninety-five percent (95%) of maximum dry density in maximum six inch lifts to provide a smooth, well compacted and stable foundation for the pipe or appurtenant works.

Trench bottoms shall be hand-shaped as specified and the maximum width of the trench, measured at the top of the pipe, shall be as narrow as possible, but at least twelve inches

(12”) on each side of the pipe.

If gravel is to be used as a backfill material, it must be installed with an approved filter fabric to prevent fine material from migrating into the gravel. Use of gravel as backfill material must be approved by the city on a case by case basis.

Where unstable earth, mud or muck is encountered in the excavation at the grade of the pipe, the unsuitable material shall be removed to a minimum of twelve inches below grade and the subsequent hole shall be backfilled with crushed rock or gravel (as called out in Table 4.1 under "foundation material") to provide a stable subgrade. The gravel material shall be deposited over the entire trench width. The maximum layer thickness shall be six inches. Each layer shall be compacted by tamping, rolling, vibrating, spading, slicing, rodding or by a combination of one or more of these methods. In addition, the material shall be graded to produce a uniform and continuous support for the entire length of the installed pipe.

Should the Contractor elect to install the pipe by boring, or jacking, approval must first be obtained from the city. The Contractor shall furnish, place, and maintain all supports and shoring that may be required for the sides of the excavation, and all pumping, ditching, or other approved measures for the removal or exclusion of water, including, but not limited to, storm water and waste water reaching the worksite from any source so as to prevent damage to the work or adjoining property.

The maximum amount of open trench permitted in any one location shall be five hundred (500) feet, or the length necessary to accommodate the amount of pipe installed in a single day, unless otherwise approved by the city. Open trenches shall not be allowed to stay open without proper safety precautions and barricading. Trenches should not be left open over night.

In the event "foundation material" is used in backfill, or replacement of over excavated material, the Contractor shall construct dams within the drain rock bedding material at maximum intervals of six hundred (600) feet. The dams shall be constructed to the top of the pipe or the level of groundwater, whichever is greater, with Class "B" Portland Cement Concrete or other approved material and shall have a minimum thickness of six inches.

TABLE 4.1

BACKFILL MATERIAL			
SIEVE SIZE	FOUNDATION MATERIAL (Angular/Crushed)	*PIPE BEDDING PIPE ZONE & INITIAL BACKFILL MATERIAL	FINAL BACKFILL MATERIAL (above the initial Backfill)
	PERCENTAGE PASSING		
3"	100	- -	Native material which is well mixed or processed/crushed to be well mixed and contains no sod, vegetation, rocks larger than 6" diameter, asphalt or concrete chunks, etc. **Expansive Soils (Liquid Limit >35 and Plastic Index > 15 percent), and Gypsiferous Soils (Solubility > 6% by dry weight) are not suitable for final backfill material
¾ "		100	
½ "		90 - 100	
#4		50 - 100	
#200		0 - 25	

* 3/4" or 1" clean crushed gravel may be used in lieu of the above table on a case by case basis and must be approved by the City for each project. Upon prior written approval from the City, select excavated on-site soils may be utilized as bedding material.

** Particular site-specific conditions may exist where these normally unsuitable materials may be used as final backfill when specifically recommended by the project Geotechnical Engineer, and upon written approval from the City.

4.5.2.3 SHEETING, BRACING, AND SHORING OF EXCAVATIONS. All excavations shall be sheeted, braced, and shored as required to protect the workers and existing utilities and improvements from sliding, sloughing, settling or other movement of the trench walls while the work is in progress. All such sheeting, bracing and shoring shall comply with OSHA requirements. All damage resulting from lack of adequate sheeting, bracing and shoring shall be the sole responsibility of the Contractor, and the Contractor shall effect all necessary repairs or reconstruction resulting from such damage.

4.5.2.4 BLASTING. See Standard Specifications Section 4.4

4.5.2.5 PIPE LAYING AND BEDDING. Pipe will be carefully inspected in the field by the Contractor and the city before and after laying. If any cause for rejection is discovered in a pipe before or after it has been laid, it shall be removed and replaced by the Contractor.

When connections are to be made to any existing pipe, conduit, or other appurtenances, the actual elevation or position of which cannot be determined without excavation, the Contractor shall excavate for, and expose the existing improvement before laying any pipe or conduit. The city shall be given the opportunity to inspect the existing pipe or conduit before the connection is made. Adjustments in line or grade of the connecting pipe which may be necessary to accomplish the intent of the plans will be made at this time.

Pipe shall be laid up grade with the socket bell, or collar ends of the pipe up grade unless otherwise authorized by the city~~.~~

In general cases, the pipe will be laid in one direction only.

Pipe shall be laid true to line and grade, with uniform bearing under the full length of the barrel of the pipe. Suitable excavation shall be made to receive the bell or collar, which shall not bear upon the subgrade or bedding. Any pipe which is not true to alignment or shows any settlement after laying, shall be removed and re-laid to the proper grade and alignment.

A. **REQUIREMENTS FOR LINE AND GRADE.** All sewer and drainage pipe shall be installed to the defined line and grade within the following limits.

A.1 Variance from established grade shall be not greater than one tenth (1/10) of a foot between manholes. ~~Variance from established line shall be not more than one half foot between manholes.~~ Any variances approved shall not impact the system design capacity and shall be approved by the city. Any variations shall not result in a level or reverse slope installation.

A.2 The invert elevations of each manhole and box at the inlet and outlet and distance between manholes and/or boxes shall be accurately verified by use of surveying instruments prior to pouring the floor.

A.3 On main lines, invert elevations of each manhole inlet and outlet and the distance measurements between manholes shall be verified by use of surveying instruments prior to installing precast manhole bases. For service laterals, grades may be verified by use of a digital level or surveying instrument.

A.4 All sewer and drainage pipe systems shall be visually inspected for defects, displacement, proper workmanship, alignment and general compliance.

B. INSTALLATION OF PIPE. Bell holes shall be excavated so that only the barrel of the pipe receives bearing from the trench bottom. Rocks near the trench bottom shall be removed and replaced with approved backfill.

Water pipe shall not be deflected at the joint more than a maximum of one degrees, per hundred (100) feet, or as per the manufacturer's recommendation.

Sewer and drain pipe shall be laid up grade. All pipe installation shall proceed with joints closely and accurately fitted. Gaskets shall be fitted properly in place and care shall be taken in joining the pipes to avoid twisting the gaskets. Joints shall be clean and dry and a joint lubricant, as recommended by the pipe supplier, shall be applied uniformly to the mating joint surfaces to facilitate easy and positive joint closures. If adjustments to the position of a pipe length are required after being laid, the pipe shall be removed and rejoined as a new pipe. When pipe laying is not in progress, the ends of the pipe shall be closed with a tight-fitting stopper to prevent the entrance of foreign material. In addition to the above requirements, all pipe installation shall comply with the specific requirements of the pipe manufacturer.

C. SETTING OF BENDS, TEES, CROSSES AND REDUCERS. Bends, tees, crosses, and reducers shall be lowered into the trench, inspected, cleaned and joined to the pipe.

Concrete thrust blocks shall not be used as a restraining system for waterline mains or laterals without prior approval of Water Department. Joint restraints or, when permitted by the city, thrust blocking, shall be applied at bends and tees, and at points of reduction or at fittings where changes in pipe diameter occur.

The design of concrete thrust blocking shall be as shown in the standard drawings or as directed by the Water Department. The material used for thrust blocking shall be Class C concrete Blocking shall be placed between solid ground and the fitting to be anchored. The area of bearing on the fitting and on the ground shall in each instance be that required in the standard drawings or by the city. Unless otherwise directed by the city, the blocking shall be placed so that the pipe and fitting joints will be easily accessible for repair. Restraining joints (megalug or equal) shall also be used to prevent movement wherever thrust blocks are required.

If a megalug retainer system cannot be used, a concrete thrust block system can be substituted, if approved by the Water Department, on a case by case basis.

D. PLUGGING OF DEAD-ENDS. Standard plugs shall be inserted into the bells of

all dead-end fittings. Spigot ends of fittings and plain ends of pipe shall be capped. When directed by the city, a concrete reaction or thrust block shall be provided at all plugged outlet fittings in the sizes indicated on the standard drawings or as directed by the city. The plugs and caps shall also be tied to the pipe with restraining joints. The number and size of rods shall be as specified.

E. SERVICE LINES. All service lines shall be installed in accordance with the details shown on the standard drawings.

F. PIPE TO BE KEPT CLEAN. All dirt and foreign matter shall be removed from the interior of the pipe before lowering into position in the trench. Pipe shall be kept clean by means approved by the city during and after laying.

G. JOINTING PIPE SECTIONS. The sealing surface of the pipe, the bell to be joined, and the elastomeric gaskets shall be cleaned immediately prior to assembly, and assembly shall be made as recommended by the manufacturer. When pipe laying is not in progress, the open ends of installed pipe shall be closed to prevent entrance of trench water into the line. Whenever water is excluded from the interior of the pipe, enough backfill shall be placed on the pipe to prevent floating. Any pipe that has floated shall be removed from the trench and the bedding restored. No pipe shall be laid when the trench or weather conditions are unsuitable for proper installations as determined by the city.

H. CUTTING PIPE. The pipe shall be cut in a neat manner without damage so as to produce a smooth end at right angles to the axis of the pipe. The minimum length of PVC type pipe shall be 3 feet. Pipe lengths shorter than 3 feet shall be ductile iron. Existing transite AC pipe shall not be cut and should be removed and replaced with ductile or PVC pipe.

I. END PREPARATION. Pipe ends shall be cut square, deburred and beveled in accordance with the pipe manufacturer's recommendations.

J. PUSH-ON JOINTS. The push-on joint shall be a single elastomeric gasketed joint which shall be assembled by positioning the elastomeric gasket in the annular groove of the bell and inserting the spigot end of the pipe into the bell. The spigot end of the pipe shall compress the gasket radially to form a positive seal. The gasket and annular groove shall be designed, sized and shaped so that the gasket will resist displacement. Care shall be taken so that only the correct elastomeric gasket, compatible with the annular groove of the bell, is used. Insertion of the elastomeric gasket in the annular groove of the bell must be in accordance with the manufacturer's recommendations.

K. MECHANICAL JOINTS. The mechanical joint shall be a bolted joint of the stuffing box type, and installation recommendations from the manufacturer shall be

followed. Each joint shall consist of:

K.1 A bell provided with an exterior gland having bolt holes or slots and a socket with an annular recess for the sealing gasket and the spigot end of the pipe. On all slotted holes the bolts will be supplied with square shoulders.

K.2 A sealing gasket.

K.3 A follower gland with bolt holes matching those in the fitting.

K.4 Tee bolts and hexagonal nuts of cor-ten metal.

L. PIPE BEDDING. Pipe shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded in accordance with the bedding details in the standard drawings and as recommended by the manufacturer.

Pipe bedding materials shall be deposited and compacted in layers not to exceed six (6) inches in compacted thickness. Deposition and compaction of bedding materials shall be completed simultaneously and uniformly on both sides of the pipe. Compaction shall be accomplished with hand or mechanical compactors to the satisfaction of the city. All bedding materials shall be placed in the trench with hand tools, or other approved methods in such a manner that the bedding materials will be scattered alongside the pipe and not dropped into the trench in compact masses. Bedding materials shall conform to the requirements of Table 4.1 of these standards and shall be free from roots, sod, vegetation or other deleterious material.

In the event trench materials are not satisfactory for pipe bedding, imported bedding will be required. Imported bedding material shall be graded in accordance with Table 4.1, under "bedding material".

See Trench Backfill and Repair Detail City Standards Drawing 170.

M. METER BOXES. All meter boxes shall be located behind the sidewalk. All meters will be provided with concrete collars. Any meter box damaged or covered during the construction operations shall be replaced and/or uncovered and raised to finish grade by the Contractor as determined by the city.

4.5.2.6 BACKFILLING AND COMPACTION. Backfill shall include filling of all trenches to the original ground surface or final grading elevation as shown on the drawings, or otherwise directed by the city. Backfill shall be carefully placed around and over pipes and shall not be permitted to fall directly on a pipe from such a height, or in such a manner as to cause damage. Backfill material shall be as required by Table 4.1 or as approved by the city and

shall not contain any wood, grass, roots, broken concrete, frozen soil, asphalt chunks, trash or debris of any kind that may cause unequal settlement or improper consolidation.

The backfill in all utility trenches under proposed or existing roadways, curb and gutter, sidewalks and driveways shall be compacted to the equivalent of ninety five percent (95%), of maximum dry density within 2% of optimum moisture content for granular soils or ninety percent (90%) of maximum dry density between 2% and 4% above optimum moisture content for silty/clay soils. Utilities that extend outside of the roadway section within the municipal utility easement shall be compacted to the percentages .

A. INITIAL BACKFILL PROCEDURE. (Pipe Zone) Backfill of selected material, which shall conform to the requirements of Table 4.1, shall be placed carefully in eight inch non-compacted horizontal layers and compacted to a depth of twelve inches over the top of the pipe. During compaction of the initial backfill, special care shall be taken so as to not move the pipe, either vertically or horizontally. All backfill operations shall be performed in such a manner so as to avoid any damage to the pipe, valves, laterals, etc. In the event such damage or displacement occurs, such damaged or displaced pipe shall be removed and replaced with undamaged pipe on proper grade and alignment.

B. FINAL BACKFILL PROCEDURE. The backfill above a point twelve (12) inches above the top of the pipe shall be filled in horizontal layers twelve (12) inches thick or less with materials free from roots, vegetation or other deleterious material, or rocks, stones or boulders larger than six inches in the greatest dimension. The material shall be mechanically compacted with appropriate vibrating compaction equipment.

C. MECHANICAL COMPACTION OF BACKFILL. The backfill shall be thoroughly compacted by mechanical compaction.

Structural and trench backfill shall be deposited in horizontal layers and compacted by the following method in such manner that the compacted material will be homogeneous and free from lenses, pockets, streaks, and other imperfections.

The materials shall be deposited in horizontal layers across the length or width of the excavation of not more than twelve inches (12”) loose lifts depending on the type of equipment used. The excavation and placing operations shall be such that the materials when compacted will be blended sufficiently to secure the best degree of compaction, impermeability and stability.

Prior to and during compaction operations, all backfill material shall have the required moisture content and shall be uniform throughout each layer.

If the moisture content is not optimum for compaction, the compaction operations

shall be delayed until such time that the material has been brought to the required moisture content.

D. Controlled Low Strength Material (CLSM). For trenches under pavement, sidewalk, curb and gutter, and in all existing city streets, CLSM may be used (unless otherwise directed by the city) for backfill and shall be in conformance with the standards for "CLSM" as described below. CLSM shall not be used as backfill for water main trenches without prior approval of the city. CLSM shall be discharged from the ready mix truck by reasonable means into the trench to be filled. The fill shall be brought to an elevation equal to the bottom of the road base and shall be finished level to provide a uniform surface. CLSM fill shall not take the place of roadbase or asphalt in the roadway section.

When surface restoration cannot take place promptly in existing city streets or in other areas where safety is a concern, the flowable fill may be extended to the bottom of the surface course and a temporary driving surface installed. When the permanent surface is installed the temporary surface and flowable fill shall be removed to the level of the bottom of the roadbase and the roadway structure properly restored in accordance with these standards.

Controlled Low Strength Material (CLSM):

D.1 Portland Cement - Type II or V.

D.2 Fly Ash - ASTM C-618, Class F, except loss on ignition shall not exceed three percent (3%) maximum, and shall come from a source approved by the City Engineer.

D.3 The coarse and fine aggregate for flowable fill shall be natural material and consisting of mineral aggregate particles meeting the following requirements.

Sieve Size	Percent Passing
3/4	100
200	0-10

D.4 Mix Design - shall meet the following:

Minimum compressive strength (28 days)	50 PSI
Maximum compressive strength (28 days)	150 PSI
Maximum fly ash per cubic yard	100 lb.
Minimum cement per cubic yard	50 lb.
Minimum slump	6 in.
Maximum slump	10 in.

4.5.2.7 TRENCHES ON HIGHWAYS AND STREETS. No work of any kind shall be performed in any public right-of-way without first obtaining an encroachment permit. Wherever any trenches will be in, or must cross any State road or any city road, alley or drainage way, the Contractor, or other responsible party, shall obtain any and all encroachment permits as are required for these crossings and shall become familiar with and abide by the rules and regulations of the Utah Department of Transportation and the city of St. George.

All Contractors or responsible parties excavating or encroaching over or under any public right-of-way including roads, drainage way, easements or other public property shall first obtain an encroachment permit in compliance with the applicable local ordinances prior to excavating.

All asphalt cuts shall be made with a diamond or carbide-tipped masonry or asphalt cutting saw unless otherwise approved by the city. No scarifier-tooth cuts, back-hoe or bucket rips will be allowed.

All backfilled trenches in roadways shall be patched with hot-mix asphalt within five days of initial excavation, unless otherwise directed by the city. All backfill shall be in accordance with these standards.

All concrete or asphalt surfaces damaged or cut in trenching operations or other work within the right-of-way shall be restored to an “as-good or better condition” in accordance with the provisions outlined in Section 4.7 of these standards.

During the entire trenching, backfilling and patching operations, the Contractor shall be required to observe all safety and traffic control procedures as outlined in these standards.

The Developer and/or Contractor shall be responsible for maintenance of the trench, patch, and related work for a period of twelve (12) months from date of completion.

No more than one hundred feet (100’) of trench shall be left unfilled at any time in one continuous run, unless otherwise approved by the city.

All streets and roads shall be kept free from dust and shall be open to through traffic. Approval to close the street must be obtained by the Contractor from the city. At least one-half (1/2) the width of any street or road shall be temporarily restored for use before excavation is commenced on the remaining portion of the street or road.

All excavation, backfilling and temporary resurfacing on any portion of any street or road shall be completed in one working day so that trenches are not left open or uncovered over night.

All requirements governing work within a right-of-way as contained in Section 2.5

(Barricades and Warning Signs - Work Area Protection) of these standards shall be adhered to.

All utility installations, i.e., gas, power, phone, cable T.V. and associated utilities, shall conform to the applicable test requirements contained within these standards for earthwork, compaction, base course, bituminous surface course, concrete and other materials.

For new water main connections requiring joint restraints on an existing pipe, a single contiguous asphalt patch shall be installed along the entire length of the existing water main where new joint restraints have been installed. Asphalt patching between new or existing parallel utility trenches that are less than three feet (3') apart (edge of trench to edge of trench) shall be a contiguous patch. See Standard Drawing 170.

4.5.2.8 CLEANING OF SANITARY SEWER LINES. When sewer lines have been placed and the trench backfilled, the sewer lines shall be thoroughly cleaned, flushed, and tested prior to acceptance by the city. No debris shall be permitted to enter any sewer lines in service. All debris shall be removed from the sewer line and manholes. Methods of cleaning are subject to approval by the city.

4.5.2.9 CLEANING AND DISINFECTION OF WATER SYSTEMS. After being tested and prior to being placed in service, all lines shall be disinfected by chlorination. Prior to chlorination the entire line shall be flushed to ensure that all dirt or foreign objects have been removed from the line. Sufficient chlorine shall be added to ensure a residual of twenty-five (25) parts per million in the water after twenty-four (24) hours standing in the pipe. Chlorine calcium hypochlorite dry chlorinating chemical solution may be used for this purpose. Methods of application shall be approved by the Water Department. Following chlorination, all treated water shall be drained and the pipeline thoroughly flushed with clean water.

All lines being disinfected shall be flushed after the specified twenty-four (24) hour contact period. Such flushing shall be continued until the water is free from excess chlorine. All lines being disinfected including hydrant laterals, branch lines, and dead-end mains shall be flushed. After final flushing the chlorine residual shall be tested by the Water Department. It is the contractor's responsibility to coordinate this test. The discharge of flushed water shall not cause erosion or damage to streets or other property. Procedures for discharge will be subject to the review and approval of the city and Water Department.

4.5.2.10 SPECIAL REQUIREMENTS.

A. **CONNECTIONS TO EXISTING FACILITIES - DRY TAPS.** All connections to existing facilities shall be approved by the City Water Department. The Contractor shall make the approved connections to existing facilities as shown on the drawings. Dry connections to existing facilities shall be made only at locations shown on the drawings and shall be made at such times which will cause the least inconvenience

to the water user(s). Dry connections shall be planned to minimize the duration of any shut down. The Contractor shall notify the Water Department at least two business days prior to beginning any connections to the existing facilities. When a connection to an existing water main is made, approximately four ounces of high test calcium hypochlorite (HTH) shall be placed in the pipe at each point where the existing main is cut. All new pipe and fittings at such connections shall be swabbed internally with an approved chlorine solution. All connections shall be made in the presence of the Water Department.

Valves shall not be operated without a Water Department present. Existing facilities shall not be shut down for connections to new facilities without prior Water Department approval. In no case shall an existing pipeline be shut down for a total of more than twenty four (24) hours (a maximum of three (3), eight-hour periods).

The actual work plan and schedule for making a connection to an existing facility which requires an existing pipeline to be shut down, shall be submitted to the Water Department and shall be approved before the Contractor will be allowed to proceed. The Contractor shall notify, by a method approved by the Water Department, all affected Water Department customers at least twenty four hours prior to shut down. Valves at connections to all existing facilities shall be operated by the Contractor, but only in the presence of the Water Department. If the water will be shut off for an extended period of time, the Water Department may require the Contractor to supply water for the Water Department's customers.

B. **CONNECTION TO EXISTING FACILITIES - WET TAPS** (Steel and Steel Composite Mains). The Contractor shall furnish and install, at his sole cost and expense, all tapping fittings and valves for all wet taps on existing city water pipelines. The Contractor shall notify the Water Department a minimum of two (2) business days prior to the time the wet tap is required. No wet taps shall be made without prior approval.

Prior to tapping the main, the tapping valve and fittings shall be properly installed and pressure tested and approved by the Water Department. All wet taps to existing city water pipelines shall be made by the city Water Department at the sole expense of the Contractor requesting the work. The Contractor shall also provide all necessary equipment, labor and appurtenances necessary to complete the job. The wet tap materials shall be obtained from a source pre-approved by the Water Department.

4.5.3 QUALITY CONTROL. All underground pipelines shall be installed in accordance with these standards and tested as outlined below. These are minimum requirements and additional testing may be required to verify compaction.

4.5.3.1 TRENCH BACKFILL TESTING. Minimum testing of trench backfill shall be as follows:

Soil Proctor - One determination for each significant change in soil type as necessary to provide required compaction testing. Tests shall be method ASTM D-1557 (modified proctor).

Soil Classification (Gradation & Atterberg Limits) - One determination for each source and soil type of materials used for bedding, pipe zone, initial backfill, and final backfill.

Trench Backfill Determination

A set of in-place density compaction tests includes the pipe zone and every two feet (2') of fill above the pipe zone are required for trench backfill for every two hundred (200) linear feet. One (1) test per each valve location, three (3) tests per each manhole and three (3) tests per each catch basin. For water, power, and gas crossings, one (1) test per each crossing. See Table 4. Roadway Frequency Requirement Testing
For sewer laterals two (2) complete sets of tests per each lateral.

In a public right-of-way and municipal utility easements, natural gas and power may install one foot of moisture conditioned sand material (plus or minus 2% optimum moisture content with a thoroughly mixed material) above the pipe with one foot of native material above that and a compaction test will be taken at the top of native material, and additional test will be taken at subgrade. Both tests within the public right-of-way shall meet ninety-five percent (95%) compaction. Within the municipal utility easement (MUE) the same test shall be taken as listed above but with a ninety percent (90%) compaction test. For all power switch gears and vaults in-place density/compaction shall be taken at subgrade and achieve a minimum ninety-five percent (95%) compaction.

Additional testing may be required by the city or geotechnical engineer to verify compaction.

Tests shall be according to ASTM D-1556 or D-2922 and D-3017. Moisture/density determinations shall be made in accordance with Section 3 of these standards. Proctors for all trench backfill compaction shall be determined using ASTM D-1557 modified proctor method.

4.5.3.2 SANITARY AND STORM SEWER LINE TESTING AND ACCEPTANCE. This

subsection specifies requirements for the testing and acceptance of all sewer systems. Prior to testing, all sewer lines shall be cleaned. On main lines, invert elevations of the inlet/outlet of each manhole and the distance measurements between manholes shall be verified with surveying practices prior to installation of manhole floor. For service laterals, grades shall be verified by a carpenter's level or surveying instruments. All sewer trench compaction testing shall be completed and
approved prior to performing air and deflection tests. The sewer lines, service laterals and manholes shall be tested for leakage and alignment in the presence of the city as follows.

A. DISPLACEMENT TEST. The displacement test shall be conducted by the Contractor in accordance with the following procedure.

A light shall be flashed between manholes or, if the manholes have not as yet been constructed, between the locations of the manholes, by means of a flashlight or by reflecting sunlight with a mirror. If the illuminated interior of the pipe shows broken, misaligned or displaced pipe, or other defects, the defects identified by the city shall be remedied by the Contractor. After cleaning and inspection have been completed, the line shall be tested for leakage.

B. AIR TESTING. The air test shall be performed on all sanitary sewer and other storm sewer lines as directed by the city. This test applies to all types of pipe. When concrete pipe is used, it shall be pre-wetted prior to testing.

The reach of pipe to be tested shall be isolated by completely plugging all outlets in the section under test. Careful attention shall be given to blocking all plugs. Prior to installing the lower and upper plugs, any concrete pipe and manholes used shall be wetted to minimize any loss of air through the pipe or manhole walls as a result of permeability in the dry condition. One of the plugs used at the manhole must be equipped to control the air entry rate and to prevent the pressure from exceeding five p.s.i.g. which shall be done by means of a blow-off valve set to operate at five p.s.i.g.

After the plugs are installed (and any concrete pipe has been wetted) the air shall be allowed to slowly fill the pipe until a constant pressure of four p.s.i.g. is maintained for at least two minutes. During the two-minute stabilization period, all plugs and exposed fittings shall be checked with a soap solution. If a leak is found, the air shall be bled off, the leak repaired and a new two minute stabilization period begun. When the temperature of the air has reached equilibrium with that of the pipe wall, the air pressure shall be brought to four p.s.i.g. and the supply shall then be disconnected. When the pressure gauge reaches three and one-half p.s.i.g., a stop watch shall be started. The watch shall then be stopped when the pressure reaches two and one-half p.s.i.g. The time shown on the watch for a loss of one p.s.i.g. at an average pressure of three p.s.i.g. is used to calculate the rate of air loss. The pipeline may be considered to have passed the air test successfully if the loss of air is not greater than a rate of 0.0030 cubic feet per minute per square foot of internal pipe surface.

The following table shows the allowable time for the pressure to drop from three and one-half to two and one-half p.s.i.g. for respective pipe diameters.

Pipe Diameter	Time Min.	Time Sec.	Pipe Diameter	Time Min.	Time Sec.
6-inch	3	0	18-inch	8	30
8-inch	3	45	20-inch	9	30
10-inch	4	45	21-inch	10	0
12-inch	5	45	24-inch	11	15
14-inch	6	30	27-inch	12	45
15-inch	7	0	30-inch	14	0
16-inch	7	30	36-inch	17	0

C. EXFILTRATION TEST. In lieu of the standard air test, the Contractor may make an exfiltration test in accordance with the following procedure:

The test section shall be plugged at both ends and the pipe subjected to a hydrostatic pressure produced by a head of water at a depth of three feet above the invert of the sewer at the upper manhole under test. In areas where ground water exists, the head of water shall be three feet above the existing water table.

For concrete pipe, the three foot head of water shall be maintained for a period of one hour to obtain full absorption of the pipe body and thereafter for a further period of one hour for the actual leakage test. For all other types of pipe, the three foot head of water shall be maintained for a period of one hour only. During the one hour test period the measured maximum allowable rate of exfiltration for any section of sewer, including service stubs, shall be as listed below.

Sewer Main Diameter (inches)	Maximum Drop in Head in a 4-ft. Diameter Manhole (Non-taper sect.) per 100 ft. of sewer pipe	Maximum Allowable Leakage (Exfiltration) (Gallons/Hour/100 ft.)
6	0.1563 inch	1.2
8	0.2031 inch	1.6
10	0.2500 inch	2.0
12	0.3125 inch	2.4
15	0.3594 inch	2.8
18	0.4063 inch	3.2
21	0.4531 inch	3.6
24 or larger	0.5156 inch	4.0

When measurements indicate an exfiltration greater than the maximum allowable leakage, additional measurements shall be taken and continued until all leaks are located and the necessary repairs and corrective work have reduced the leakage in the section being tested below the maximum allowable by these standards. For purposes of the exfiltration test, the line between adjoining manholes will be considered a section and will be tested as such.

The Contractor shall furnish the plugs and other material and labor for placing the plugs in the sewer and shall assist the city in making all measurements required. The introduction of any substance into the testing water with the intent of sealing leaks will not be permitted.

When the results of the air test or the exfiltration test is not satisfactory, repairs or pipe replacement shall be required until the city is satisfied that the leakage requirements have been met. All repair methods and materials used shall be approved and accepted by the city.

D. PVC DEFLECTION TEST. All PVC sewer pipe shall be tested for deflection with a mandrel. The mandrel shall be a rigid device sized to pass through a pipe having five percent (5%) or less deflection. These allowances shall include deformations due to all causes (wall thickness variations, shipping, production, backfill, heat, etc.). The mandrel device shall be cylindrical in shape and shall comply with the manufacturer's recommendations. The mandrel shall be hand pulled through all sewer lines. Any sections of sewer not passing the mandrel shall be uncovered and repaired by the Contractor. The Contractor shall re-round or replace the sewer to the satisfaction of the city. All repaired sections shall be re-tested as noted above.

Deflection tests shall be conducted only after the final trench backfill is placed to final grade and compacted.

E. INSPECTION AND FLUSHING. Prior to final acceptance of each section of sanitary and storm sewer lines, all lines shall be flushed by the Contractor. All dirt and debris shall be prevented from entering the existing sewer system by means of water-tight plugs or other suitable methods.

Upon completion of the project, the city will carefully inspect all sewers and appurtenances. Any unsatisfactory work shall be removed and replaced in a proper manner. The invert of the sewer lines and manholes shall be left smooth, clean, and free from any obstructions throughout the entire line. All manhole rings and covers shall be adjusted to finished grade, concrete collars installed and all sanitary sewer laterals shall be properly extended, capped and marked prior to acceptance of the sewer system.

F. **MANHOLE LEAKAGE TEST.** Sewer manholes located in areas of ground water or probable flooding or if their water tightness is suspect, as determined by the city, shall be tested for leakage prior to acceptance. The contractor shall perform all testing. Allowable leakage shall be one gallon per hour per manhole. At least two manholes shall be tested, and based on these tests and visual inspection of all manholes, additional tests may be required for other manholes. Any manhole which tests unsatisfactorily shall be repaired and retested until satisfactory results are obtained.

4.5.3.3 WATER SYSTEM TESTING AND ACCEPTANCE. The Contractor shall test all water mains prior to final acceptance. Testing shall be done in the presence of the City Water Department. When existing facilities must be included in the test and are determined to be faulty and not capable of holding test pressures, the existing facilities must be repaired prior to testing. When concrete thrust blocks are used, they shall be in place at least five days prior to initial filling of the line. (If high early strength concrete is used, three days will be required.

A. PRESSURE TEST. After the pipe has been laid, including fittings, valves, corporation stops, services, and hydrants, and the line has been backfilled in accordance with these standards, each valved section, unless otherwise directed by the Water Department, shall be subjected to a hydrostatic pressure test of not less than two hundred pounds per square inch. The duration of each such test shall be two hours. Water added to maintain the pressure shall not exceed 0.3 gallons per inch diameter per one thousand linear feet of pipe being tested during the two hour test period.

Each valved section of pipe shall be slowly filled with water, and the specified test pressure measured at the lowest point of elevation. The pressure shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connection, gauges, and all necessary apparatus for the test must be furnished by the Contractor. Gauges and measuring devices must be approved by the City Water Department and the necessary pipe taps shall be made as directed. Before applying the specified test pressure, all air shall be expelled from the pipe by a method approved by the Water Department.

Any cracked or defective pipes, fittings, valves, or hydrants discovered in the pressure test shall be removed and replaced with new materials in accordance with the standard specifications. The test shall be repeated until the water main passes the pressure test and is accepted by the City's Water Department or the city.

B. OPERATIONAL INSPECTION. At the completion of the project and in the presence of the city, the Contractor shall operate all valves, hydrants, and water services to ascertain that the entire facility is in good working order; that all valve

boxes are centered and valves are operational; that all hydrants operate and drain properly and that water is available at all meter boxes.

C. TEST RESULTS AND CERTIFICATES OF COMPLIANCE. Test results shall be submitted for pressure and operational testing in accordance with current City Water Department requirements. Certificates of compliance from material suppliers may be required, at the option of the city, for any materials not specifically covered herein.

4.5.3.4 ROADWAY TESTING FREQUENCY REQUIREMENTS. The Roadway Testing Frequency Requirement Table below includes all roadway frequency requirement for subgrade, pavement and concrete .

TABLE 4.2
SUBGRADE AND PAVEMENT/CONCRETE REQUIREMENTS
St. George City Minimum Testing Requirements

Subgrade Requirements

Location	Minimum Requirements	Frequency
Roadway Subgrade	95% for granular soils, 90% for fine grained soilsand +/- 2% per D-1557	1 test per 750 square yards
Roadway/Embankment/Backfill	95% for granular soils, 90% for fine grained soilsand +/- 2% per D-1557	Embankments: 1 test per 250 linear feet of roadway
Under Curb and Gutter	95% and +/- 2% per D-1557	1 test per 400 feet of linear roadway
Under Sidewalks and Driveways	95% and +/- 2% per D-1557	1 test per 500 feet of linear sidewalk and 1 per entrance (commercial)
Utility Trenches under Roadway, Curb and Gutter, or Sidewalk*	95% and +/- 2% per D-1557	1 test per 200 linear feet and 2 vertical feet (additionally 1 test per crossing)
Sewer and Water Laterals*	95% and +/- 2% per D-1557	2 tests per sewer lateral , 1 test per water lateral
Sewer Manhole and Storm Drain Box/Curb Inlet*	95% and +/- 2% per D-1557	3 tests per sewer/storm drain manhole, 1 tests per storm drain box/curb inlet
Water Valves*	95% and +/- 2% per D-1557	1 test per valve/valve cluster

Untreated Base Course and Subbase Requirements

Location & Test Type	Minimum Requirements	Frequency
Roadway (Compaction)	95% and +/- 2% per D-1557	1 test per 200 linear foot of roadway
Roadway (Gradation)	Job-Mix Target	1 test per 500 linear foot
Curb and Gutter (Compaction)	95% and +/- 2% per D-1557	1 test per 300 linear feet
Curb and Gutter (Gradation)	Job-Mix Target	1 sample per 750 lineal feet
Sidewalk/Trail (Compaction)	95% and +/- 2% per D-1557	1 test per 300 linear feet
Sidewalk/Trail (Gradation)	Job-Mix Traget	1 sample per 750 linear feet

Bituminous Surface Course Requirements (Asphalt)**

Location and Test Type	Minimum Requirements	Frequency
Roadway (Compaction)	96% Average, no test below 92% Marshall 92% Average, no test below 90% Rice	1 test per 7,000 square feet
Roadway (Extraction)	Job-Mix Target	1 Rice test per 500 tons
Roadway (Extraction)	Job-Mix Target	1 Marshall test per 1 day's production

**Temperature observation required during winter months (December 1 through February 15)

Concrete Testing Requirements (Curb, Gutter and Sidewalk)

Test Type	Requirements	Frequency
Compressive Strength	4,000 psi at 28 days	1 set (4 cylinders) per 50 cubic yards
Air Entrainment	4-6% by volume	Until 2 consecutive tests pass
Slump	4-inch maximum 1 1/2-inch maximum for machine placement	Until 2 consecutive tests pass
Temperature	90° F. Maximum concrete temperature 60° F. Minimum concrete temperature	At least once per load

4.6 ROADWAY CONSTRUCTION. This subsection covers roadway construction including subgrade, subbase, roadbase, recycled aggregate materials (RAM), prime coat, tack coat, plant mix bituminous surfaces (dense and open graded), construction staking and other related work.

4.6.1 GENERAL REQUIREMENTS. The Contractor shall furnish all labor, material, equipment, tools, transportation, traffic control and supplies required to complete the work in accordance with the approved plans and these specifications. The approved plans do not intend to show all the details of the work. The plans are intended to illustrate the character and extent of work required and therefore, they may be, if necessary, supplemented or revised as the work progresses. The Contractor shall keep the most current set of approved plans available on the job site at all times.

The Contractor shall arrange the work and shall place and dispose of the materials being used so as not to interfere with the public during the course of the project. The Contractor shall join the new work with that of existing in an acceptable manner and shall perform all work in proper sequence.

The Contractor shall provide and maintain or have provided for, all necessary work zone traffic control in accordance with the requirements of Section 2.5 of these specifications. The Contractor shall also maintain the job site and all adjoining private and public areas in a clean, safe manner. This maintenance shall constitute continuous and effective work prosecuted day-by-day, with proper equipment and adequate work forces to keep all areas related to and adjoining the job site in a condition satisfactory to the city. If, at any time, the Contractor fails to comply with these provisions the city will immediately notify the Contractor of such non-compliance. If the Contractor fails to remedy the unsatisfactory maintenance within twenty-four (24) hours after receipt of such notice, the city may immediately proceed to cause correction(s) to the job site and adjoining areas. The entire cost of this corrective maintenance will be billed to the Contractor and shall be paid in full prior to the city acceptance of the work.

If a condition develops due to a lack of maintenance by the Contractor that is dangerous to public safety, the Contractor shall proceed to immediately remedy the condition with whatever means are available. The entire cost of the corrective remedy will be the Contractor’s responsibility

4.6.2 CONSTRUCTION STAKING. Construction stakes shall be furnished and set, establishing lines and grades for roadway excavation including, but not limited to all cut and fill slopes finished subgrade, finished subbase and finished roadbase grades for streets, curb & gutter, cross-gutters, sidewalks, drive approaches, any contiguous structures and utilities (to help prevent conflicts of location). In development related projects the Developer and his Engineer shall be responsible for all surveying and the accuracy thereof.

The line and grade stakes shall be, whenever possible, off-set from the construction area a minimum of five feet and shall show the stationing (corresponding with the approved plans), off-set distance, required cut or fill to the finished grade, flow line, and TBC as indicated on the approved plans. Grade stakes with hubs set to the finished grade of the subgrade shall be painted appropriately. Stakes with hubs set to the finished grade of the subbase or roadbase shall be painted appropriately. Plastic "whiskers" may be used in connection with painted hubs. All stakes and grades shall be set by appropriate methods under the direction of the professional engineer whose seal is on the approved plans. The Contractor constructing the facilities should be provided with copies of the cut sheets generated during construction staking. Cut sheets shall include roadway stationing, reference elevations, grade elevations, etc.

The line and grade stakes and cut sheets along with the most current set of approved plans shall constitute the field control by which the work shall be executed.

The Contractor shall be responsible for preserving property markers, corner survey markers, construction survey stakes and marks for the duration of their usefulness.

If any construction survey stakes or markers are lost or disturbed and need to be replaced, such replacement shall be done at no expense to the city. At no time shall a permanent monument be removed without prior authorization by the city. When construction work encounters such monuments, the City Surveyor should be contacted immediately.

4.6.3 GEOTECHNICAL INVESTIGATION. A geotechnical investigation shall be conducted under the direction and control of a Geotechnical Engineer experienced in flexible pavement design. The investigation shall include a thorough exploration and sampling program of the subgrade to determine the nature and engineering properties of the on-site soils within the roadway construction areas. The minimum sampling and testing requirements shall be as outlined in Section 3.2.5 and where otherwise outlined in these specifications.

The structural details shown on the plans and/or Standard Drawings, and Table 4.2 are minimum requirements. The actual structural section for each roadway shall be designed by accepted engineering design methods for flexible pavement (i.e., AASHTO,

UDOT, Caltrans). Required subgrade soil properties shall be obtained from an on-site geotechnical investigation. Required traffic design traffic information is provided in Table 4.2. When, in the opinion of the city the traffic information listed is inappropriate for the street under consideration the Traffic Index will be adjusted accordingly.

4.6.4 ROADWAY SUBGRADE. This subsection shall govern the preparation of natural, filled or excavated material prior to placement of subbase. The preparation of subgrade shall extend a minimum of one foot beyond the proposed construction limits. This includes roadways, curbs & gutters, drive approaches, sidewalks or any other roadway structures.

4.6.4.1 PREPARATION. The subgrade soils shall be prepared by scarifying and processing to a minimum depth of one foot unless otherwise recommended by the geotechnical firm approved by the city.

Unsuitable material found below the processing depth such as saturated soils from groundwater, expansive soils, soluble soils, deleterious and/or organic materials shall be addressed by a Geotechnical Engineer who shall provide a written recommendation to the city for approval prior to performing any work in the areas being addressed.

TABLE 4.3: MINIMUM ROADWAY STRUCTURAL REQUIREMENTS

	Roadway Class	Design ESALs (Million)	Travel Lanes	Min. CBR	Asphalt (in.)	Road Base (in.)
Residential-Local	I	≤0.150	2	10	3	6
Residential-Standard	II	0.150-0.400	2	10	3	8
Residential-Collector	II	0.400-0.700	2	10	3	8
Major Collector	II	0.700-2.2	2	10	3	8
Minor Arterial	III	2.2-7.0	4	10	3.5	10
Arterial Major	III	7.0-9.5	4	10	4	10
Commercial-Local	III	7.0-9.5		10	4	10
Industrial-Local	III	9.5-22		10	5	12

Notes:

1. For Major Collector and larger Roadways, a structural pavement design based on a project-specific traffic study shall be submitted to the City for review and approval by the project geotechnical engineer. Pavement designs should be based on AASHTO 98 or UDOT Pavement Design Methods. For new roadway construction, the minimum design life shall be 25 years.
2. Where the CBR value of the subgrade soil is < than 10, sub-base materials, or additional road base materials, or geogrid are required in the structural pavement section as recommended by the project geotechnical engineer.
3. Where collapsible soils (>3 percent) are identified in the initial geotechnical investigation or during construction, the subgrade soil shall be over-excavated and recompacted to a minimum of 1½ feet or deeper as directed by the project geotechnical engineer.
4. Where expansive soils (Liquid Limit $\geq$ 35 and Plastic Index $\geq$ 15 percent) are identified in the initial geotechnical investigation, or during construction, the subgrade soil shall be over-excavated to a minimum of 4 feet or deeper and replaced with approved embankment fill materials as directed by the project geotechnical engineer.
5. City will pay cost difference between Table and specified pavement thickness per geotechnical investigation.

4.6.4.1(continued) Uniform pervious soils that allow the immediate penetration of water to a depth of one foot, will not require scarifying and scarifying and processing are not required, the moisture content of the top one foot of the subgrade material shall be brought to not less than two percent (2%) of optimum by the addition of water on the surface, and the material shall be compacted by approved equipment to the specified compaction requirements.

When scarifying and processing, the roadbed shall be loosened to a depth of at least one foot, then alternate blading, moistening and rolling will be required to provide a smooth, even and uniformly compacted course true to cross-section and grade. Moisture content at the time of processing and testing shall be not less than two percent (2%) of optimum. All rocks larger than six inches in diameter shall be removed.

4.6.4.2 TOLERANCES. When subbase material is placed on the subgrade the subgrade tolerance shall not vary more than 0.10-foot from the specified grade and cross-section. However, when roadbase or recycled aggregate materials (RAM) placed on the subgrade the subgrade tolerances shall not vary more than 0.05-foot from the specified grade and cross-section.

4.6.5 SUBBASE - CLASS I AND CLASS II. All gravel pits supplying aggregate shall be UDOT approved pits. Subbase for all roadways and associated areas shall consist of select materials, either natural or crushed. Aggregate wear shall be less than fifty percent (50%) when tested by AASHTO T-96. The material passing the 40 (4.75 mm) sieve shall be non-plastic per AASHTO T-90. The subbase shall contain no more than three percent (3%) gypsum or any other deleterious or organic materials by weight. The test for gypsum shall follow city of St. George Chemical Quantitative Analysis of Gypsum in Aggregates, Test Procedure S-3171-96 or AASHTO T267 and dividing the total combined water percentage by a factor of 20.93 to determine the purity of gypsum.

Prior to delivering any subbase to any site the supplier shall submit, in writing, a job-mix gradation to the city for approval. The job-mix gradation shall have definite single values for the percentage of aggregate passing each specified sieve based on the dry weight of the aggregate. Dry weight values shall fall within the band limits shown in Table 4.3.

Annual job-mix gradations shall be submitted in writing to the city for approval prior to January 31 each calendar year or upon selection of new aggregate sources. Any revisions to the approved job mix gradations shall fall within the requirements listed above.
If a supplier does not have an approved job-mix gradation that is current for the aggregate source or calendar year, the “Ideal Gradation” in Table 4.3 will apply.

The subbase mixture placed on projects during one day's operation shall come from a single source. Intermixing from more than one source will not be permitted.

Subbase material shall be deposited and spread in uniform lifts not to exceed eight

inches compacted thickness for Class I and six inches compacted thickness for Class II without segregation of size. Each layer shall be compacted for the full width and depth by mechanical means of compaction. When mixing, moistening and placing subbase the moisture content shall be not less than two percent (2%) below optimum. However, caution shall be used to avoid over watering to a state of instability. Alternate blading and rolling will be required to provide a smooth, evenly moistened and uniformly compacted course true to cross-section and grade. Locations inaccessible to rolling shall be compacted with mechanically operated hand tampers. The subbase shall be compacted to not less than ninety-five (95%) percent maximum dry density as determined by ASTM D1557or AASHTO T-180. Subbase tolerances when compacted shall not vary more than 0.05-foot from the specified grade and cross-section.

Table 4.4
SUBBASE AGGREGATE GRADATION

PERCENTAGE OF TOTAL AGGREGATE PASSING					
SIEVE SIZE		CLASS I BAND LIMITS	IDEAL GRADATION	CLASS II BAND LIMITS	IDEAL GRADATION
METRIC	AMERICAN STANDARD				
152.4 mm	6"	100	100	- -	- -
76.20 mm	3"	90 – 100	95	100	100
50.80 mm	2"	80 – 100	90	90 - 100	95
25.0 mm	1"	70 – 90	80	70 - 90	80
12.5 mm	½"	51 – 75	63	51 - 75	63
4.75 mm	#4	31 – 65	48	31 - 65	48
1.18 mm	#16	16 – 40	28	16 - 40	28
.075 mm	#200	2 – 12	7	2 - 12	7

4.6.6. UNTREATED ROADBASE

Prior to delivering any roadbase to any site, the supplier shall submit, in writing, a physical property test report of the material meeting Table 4.4 and a job-mix gradation and a standard aggregate gradation plot to the city for approval. The job-mix gradation shall have definite single values for the percentage of aggregate passing each specified sieve based on the dry weight of the aggregate. Dry weight values shall fall within the band limits shown in Table 4.5**,** and provide a uniform curve when plotted on a standard aggregate gradation chart. The city has the right to request modification to the job-mix gradation to provide an acceptable curve. The accepted job mix will then become the target gradation for the aggregate

source for the calendar year.

Annual job-mix gradations shall be submitted in writing to the city for approval prior to January 31 each calendar year, or upon selection of new aggregate sources. Any revisions to the approved job-mix gradation shall fall within the requirements listed in Table 4.5.

The roadbase placed on a project during one day's operation shall come from a single source. Intermixing from more than one source will not be permitted.

Material shall be crushed rock, gravel, sand, or other high quality mineral particle, or combination that is free of organic matter, free of chemical or petroleum contamination, and meets the following physical properties.

Table 4.5
Untreated Roadbase Physical Properties

Physical Property	**ASTMs**	**Aggregate Class**
		A
Coarse aggregate		
Angularity (2 fractured faces), min., percent	D5821	50
Wear (toughness or hardness), max., percent	C131	50
Fine aggregate		
Liquid Limit, max.	D4318	25
Plastic Index, max.	D4318	6
Sand Equivalent, min., percent	D2419	22
Blended aggregate		
Dry Rodded Unit Weight, min., percent	C29	75
CBR, min., percent	D1883	70
Percent of Gypsum, Max	S3176 or AASHTO T267	2.0

NOTES
(a) Faces: Retained on No. 4 sieve.
(b) Wear: Retained on No. 12 sieve after 500 revolutions.
(c) Liquid limit and plastic index: Passing No. 40 sieve.
(d) Sand equivalent (clay content or cleanliness): Passing No. 4 sieve.
(e) CBR: Use a surcharge of 10 pounds measured at 0.20 inch penetration at 95 percent relative to a modified proctor density. A reduction in aggregate class may be accepted providing any costs for difference in excavation, backfill, and alternate design for CBR does not increase Concrete Price.
(f) AASHTO equivalents may be substituted for the listed ASTM's. Please reference AASHTO re:source equivalencies.
(g) Modify AASHTO T267 by dividing the total combined water percentage by a factor of 20.93 to determine the purity of gypsum

Gradations shall be analyzed according to ASTM C136 on a dry weight and percent passing basis. Target Grading Curve must lie within the selected aggregate grade in

Table 4.5. Field gradation shall not vary from target by more than the target tolerance.

Table 4.6 – Master Grading Bands

Sieve	Aggregate Grade			Target Tolerance
	Grade 1-1/2	Grade 1	Grade 3/4	
1-1/2"	100	–	–	
1 "	–	100	–	±11%
3/4 "	70 – 85	–	100	±11%
1/2 "	–	79 – 91	–	±11%
3/8 "	55 – 75	–	78 – 92	±10%
No. 4	40 – 65	49 – 61	55 – 67	±9%
No. 16	25 – 40	27 – 35	28 – 38	±7%
No. 200	7 – 11	7 – 11	7 – 11	±2.9%

NOTES
(a) It is assumed fine and coarse aggregate have same bulk specific gravity.
(b) Target tolerance for 3/4 sieve in Grade 3/4, and 1" sieve in Grade 1 is not applicable.
(c) Percentage of fines passing No. 200 sieve determined by washing, ASTM C117.

The roadbase placed on a project during one day's operation shall come from a single source. Intermixing from more than one source will not be permitted.

Roadbase shall be placed in layers compatible with the equipment and not exceeding eight inches (8") in non-compacted thickness. Where the required thickness is more than eight inches (8") the roadbase shall be spread and compacted in two or more layers of approximately equal thickness. However, if vibratory compaction equipment of a type approved by the city is used, and the requirements for density and moisture content are complied with, the noncompacted thickness of any one layer may be increased to ten inches (10"). Each layer shall be compacted for the full width and depth by mechanical means. When mixing, moistening and placing roadbase the moisture content shall be not less than two percent (2%) below optimum. Care shall be used to avoid overwatering. Alternate blading and rolling will be required to provide a smooth, evenly moistened and uniformly compacted course true to cross-section and grade. Locations inaccessible to rolling shall be compacted with mechanically operated hand tampers. The roadbase shall be compacted to not less than ninety-five percent (95%) maximum dry density as determined by ASTM D-1557or AASHTO T-180. Roadbase tolerances when compacted shall meet or exceed the required minimum thickness and shall not vary more than 0.02 foot from the specified grade and cross-section at the time the asphalt pavement is placed.

When the roadbase surface is used to convey traffic or is left unpaved for an extended period of time, the contractor shall preserve the integrity and grade and

an asphalt prime coat meeting the requirements in Section 4.6.7 shall be applied. When asphalt prime is not used, the contractor shall maintain the roadbase moisture, structural integrity and finish, to the finished tolerances of this subsection.

4.6.7 PRIME COAT. Prime coat is required for all roadway work unless otherwise approved by the city. This work shall consist of preparing treating an existing aggregate base with bituminous material and blotter material**,** if required, in accordance with these specifications and in conformity with the lines shown on the plans or established by the city. The type and grade of bituminous material shall be MC-70 liquid asphalt, unless otherwise approved by the city.

The Contractor shall provide equipment for heating and applying the bituminous material. The asphalt distributor shall be so designed, equipped, maintained and operated that bituminous material will be applied uniformly on variable widths of surface at readily determined and controlled rates from 0.05 to 2.0 gallons per square yard with uniform pressure and an allowable variation from any specified rate not to exceed 0.02 gallon per square yard. Distributor equipment shall include a tachometer, pressure gauges, accurate volume measuring devices or a calibrated tank, and thermometer for measuring temperatures of tank contents. Distributors shall be equipped with a power unit for the pump and full circulation spray bars adjustable laterally and vertically.

Bituminous material shall not be applied on a wet surface that has free standing water, or when the atmospheric and surface temperature is less than 50^0 F. (10^0C.) or when weather conditions, in the opinion of the city, would prevent the proper application of the prime coat. The surface upon which the bituminous prime coat will be placed shall conform to the established lines and grades, shall be smooth and uniform and shall be compacted to the required density with the optimum moisture content at plus, or minus, two percent (2%). If, for any reason, the required density and/or moisture deteriorates between the time the gravel course was compacted and the time the prime coat is placed, the surface shall be recompacted and/or moisture conditioned to the required density and moisture content.

Bituminous material shall be applied to the width of the section to be primed by means of a pressure distributor in a uniform, continuous spread. When traffic is maintained, not more than one-half of the width of the section shall be treated in one application. Traffic will not be allowed on the treated surface until the bituminous material is absorbed and will not adhere to the vehicle tires. Care shall be taken that the application of bituminous material at the junctions of spreads is not in excess of the specified amount. Skipped areas or deficiencies shall be corrected.

Application rate shall be 0.25 gallon per square yard, or as directed by the city. At the time of placement the temperature of the liquid asphalt shall be uniform and

not less than 120 degrees F. (49 degrees C.) nor more than 180 degrees F. (82 degrees C.). If the bituminous material fails to penetrate within forty-eight hours, blotter material shall be spread as required to absorb any excess bituminous material. All loose blotter material shall be completely removed from the treated areas prior to placing surfacing material. Prior to placing asphalt concrete, additional prime coat shall be applied as directed by the city to areas where the prime coat has been damaged, and loose or extraneous material shall be removed.

Sand blotter material shall meet the following requirements. The material may be accepted in the stockpile at the source.

Required Tests	Test Methods
Sieve Analysis	AASHTO T27
Sampling Aggregate	ASTM D 75
Organic Impurities	ASTM C 40

GRADATION REQUIREMENTS
Percentage by Weight

Sieve Sizes	Passing Sieve
½ Inch	100
No. 4	90-100
No. 16	30-75
No. 200	0-12

Liquid asphalt shall not be sprayed upon adjacent pavements, that portion of the traveled way being used by traffic, structures, railings and barriers, markers, adjacent property and improvements, and other roadway improvements or facilities not mentioned herein.

4.6.8 TACK COAT. This work shall consist of preparing and treating an existing bituminous or concrete surface with asphaltic emulsion in accordance with these specifications and in conformity with the lines shown on the plans or established by the city. The type and grade of bituminous material shall be SS-1h asphalt emulsion, unless otherwise directed.

Asphalt emulsion used as a tack coat between courses of plant mix surface, or over an existing surface, shall be prepared for application by using warm water to cut back the emulsion in the quantity of fifty percent (50%) of the emulsion by weight.

Bituminous material shall be applied to the width of the section to be tacked by means of a pressure distributor in a uniform, continuous spread. Care shall be taken that the application of bituminous material at the junctions of spreads is not in excess of the specified amount. Skipped areas or deficiencies shall be corrected.

The Contractor shall provide equipment for heating and applying the bituminous material. The asphalt distributor shall be so designed, equipped, maintained and operated that bituminous material will be applied uniformly on variable widths of surface at readily determined and controlled rates from 0.05 to 2.0 gallons per square yard with uniform pressure and with an allowable variation from any specified rate not to exceed 0.02 gallon per square yard. Distributor equipment shall include a tachometer, pressure gauge(s), accurate volume measuring devices or a calibrated tank, and a thermometer for measuring temperatures of tank contents. Distributors shall be equipped with a power unit for the pump and full circulation spray bars adjustable laterally and vertically.

Application of tack coat may occur only when the surface and air temperature is 50 degrees F. (10 degrees C.) and rising. The surface shall be clean, dry, free of irregularities and shall be smooth and uniform.

At the time of placement the temperature of the asphaltic emulsion shall be uniform and not less than 75 degrees F. (24 degrees C.) nor more than 130 degrees F. (54 degrees C.). The tack shall be applied at a rate of 0.05 to 0.10 gallon per square yard. The rate of application may be adjusted by the city.

Liquid asphalt shall not be sprayed upon adjacent pavements, structures, railing**,** barriers, markers, adjacent property improvements, and other facilities not mentioned herein.

4.6.9 DENSE-GRADED ASPHALT. This work shall consist of mixing, laying and compacting an asphalt course of one or more layers composed of aggregate, asphalt cement, applicable additives and lime, as required. All materials shall be mixed at a central mixing plant.

4.6.9.1 RELATED WORK. Work related to asphalt concrete pavement shall include surface preparation, prime coat, tack coat, transporting, placement, compaction and finishing of asphalt mixture as required. Work zone traffic control shall be in accordance with the requirements of Section 2.5 of these specifications.

4.6.9.2 ROAD CLASS: Attribute of a public or private thoroughfare based upon equivalent el loads (ESAL).

Class I: (ESAL < 10^4 per year) Includes maintenance mixes, bike paths, parking lots, residential driveways, light traffic residential streets, light traffic rural farm roads.

Class II: (ESAL between 10^4 and10^6 per year). Includes heavy traffic residential streets, rural farm collector roads, non-industrial parking lots, urban low volume collector streets.

Class III: (ESAL > 10^6 per year). Includes high volume collectors, arterials, industrial parking lots (primary load from 3-axle or greater vehicles), climbing lanes, truck weigh stations.

4.6.9.3 ASPHALT CEMENT. Performance Graded Asphalt Binder (PGAB): See ASTM D6373. Use the following minimum virgin mix binder grades unless otherwise specified.

Table 4.7 – Minimum Virgin Binder Grade

Road Class	PGAB
Class I & II	PG 64-22 (≤ 15% RAP) PG 64-34 (>15% RAP)
Class III	PG 70-28 (≤ 15% RAP) PG 64-34 (>15% RAP)

a. Blending chart limitations for mixes exceeding 15% RAP must meet -28 for low end PG temperatures.
b. Mixes shall not exceed 20% RAP by total weight of aggregate

Adjust virgin binder grade to accommodate RAP contents in excess of 15% as identified in Table 2. Do not use grades lower than xx-34. Use M323 Appendix X1 Blending chart to determine acceptable RAP content up to maximum allowed based on virgin binder grade selected or additives incorporated. Submit RAP binder grading and blending charts with mix design.

Use of Virgin Binder Grades exceeding the minimums, i.e. grades with ranges encompass greater temperature ranges than required for virgin binder, is acceptable.

4.6.9.4 SHIPMENT OF ASPHALT MATERIAL. Asphalt cement shall be uniform in appearance and consistency and show no foaming when heated to the specified loading temperature. Shipments of asphalt shall not be contaminated with any other type or grade of asphalt material. A bill of lading shall accompany each shipment of material and shall include the following information:

- Type and grade of material.
- Type and amount of additives used, if applicable
- Destination
- Consignee's name.
- Date of shipment.
- Truck identification
- Loading temperature

- Net weight or net gallons corrected to 60°F (16.6°C)
- Specific gravity
- Bill of lading number
- Manufacturer of asphalt material

4.6.10 AGGREGATE

A. Crushed stone, crushed gravel, slag, sand, or combination.

B. Use Table 4.7 to determine suitability of aggregate source.

Table 4.8 – Aggregate Physical Properties

		Standard	Road Class	
			I & II	III
Coarse Aggregate				
Angularity, percent, minimum	One Fractured face	D5821	90	95
	Two Fractured faces		90	90
Wear (hardness or toughness), percent, maximum		C131	35	35
Flats or elongates (3:1 length to width), percent, maximum		D4791	--	20
Fine Aggregate				
Angularity (uncompacted void content), percent, minimum		T304	40	45
Sand equivalent, percent, minimum		D2419	45	60
Plastic limit, maximum		D4318	0	0
Blended Physical Properties				
Dry-rodded Unit Weight, lb/ft^3, minimum		C29	75	75
Weight Loss (Soundness), percent, maximum		C88	16	16
Friable particles, percent, maximum		C142	2	2
Quantitative Analysis of Gypsum, percent, maximum		S-3171-96 or AASHTO T267	2.00	2.00

NOTES
(a) Coase aggregate is material retained on No. 4 sieve.
(b) Fine aggregate is material passing No. 4 sieve.
(c) Sand equivalent is waived for RAP aggregate but applies to the remainder of the aggregate blend.
(d) Plastic limit, passing No. 40 sieve. Aggregate is non-plastic even when filler material is added to the aggregate.
(e) Weight loss, using sodium sulfate.
(f) Friable particles are clay lumps, shale, wood, mica, coal passing the No. 4 sieve, and other deleterious materials.
(g) Road class as identified in project documents and as defined in Table 4.6
(h) Modify AASHTO T267 by dividing the total combined water percentage by a factor of 20.93 to determine the purity of gypsum

4.6.10.1 ADDITIVES

A. Mineral Filler: ASTM D242.

B. Recycle Agent: ASTM D4552.

C. Anti-strip Agent: Heat stable cement slurry, lime slurry, or chemical liquid as required to meet Tensile Strength Ratio (Lottman)or Hamburg test

requirements.

D. RAP: Free of detrimental quantities of deleterious materials.

1. Use RAP Content as requirements of Table 2.
2. Determine RAP binder content by chemical extraction or ignition.

4.6.10.2 MIX DESIGN

A. **Preparation**:

1. Road Class as defined by Section 4.6.9.2.
2. Determine submittal requirements from paragraph 1.4C.

B. **Aggregate Gradation:** See Table 4.8. The Target Gradation Curve for the specified aggregate grade must lie within the Master Grading Band limits. The target grading band limits using the applied deviation in <> are allowed to extend outside of the Master Grading Band limits.

Table 4.9 - Master Grading Bands - Superpave Mix Design

Sieve	Gradation Limits of Target Gradation	
	SP-1/2	SP-3/8
3/4 inch	100	–
1/2 inch	90.0 – 100	100
3/8 inch	< 90.0	90.0 – 100
No. 4	–	< 90.0
No. 8	28.0 – 58.0	32.0 – 67.0
No. 200	2.0 – 10.0	2.0 – 10.0

NOTES

(a) Gradation is expressed in percent passing by weight per ASTM C136. Percentage of fines passing No. 200 sieve determined by washing per ASTM C117.

(b) The numerical portion of the grade designator (1/2, 3/8) represents the ***nominal maximum*** sieve size. Comparable ***maximum*** mix designs would be one sieve size larger, i.e. ½" nominal (superpave) maximum is comparable to ¾" maximum (Marshall).

C. **Design Parameters:** Determined by AI SP-2 and in accordance with Table 4.9.

Table 4.10 - Mix Design Parameters	
Compaction Level (a)	Asphalt Institute SP-2
Road Class I/II	50Nd
Road Class III	75Nd
Design Air Void Target, percent (b)	3.5
Voids in Mineral Aggregate (VMA) relative to nominal sieve size grading and calculated using Gsb(dry), percent, minimum	ASTM D3203
Class II and III: SP-1/2	14.2
Class I: SP-3/8	15.2
RAP specific gravity for calculations	Gsb (dry) by chemical extraction
Dust to Binder Ratio, maximum	1.6
Tensile Strength Ratio (moisture sensitivity), minimum (a,c)	AASHTO T283
Road Class I (e)	80% or HWT
Rutting (Hamburg Rut Test) (a,d)	AASHTO T324
Road Class II	15 mm/10,000 passes
Road Class III	10 mm/20,000 passes
NOTES (a) Road Class as identified in project documents and as defined in Section 32 01 31. (b) Design Density Target: ASTM D2041. Percent of maximum theoretical specific gravity. (c) Tensile Strength Ratio (moisture sensitivity): Use one cycle of Freeze-thaw conditioning. Compact test specimen to seven (7) percent plus or minus one (1) percent air voids. Applicable to Road Class I only. (d) With testing performed at temperatures representing the specified binder grade in the Hamburg rut test, the average rut depth of two (2) mix design test samples is less than the amount shown for the respective Road Classes. (e) TSR not required if passing Hamburg Wheel Tracker with Road Class II parameters (f) For Class I and II Mixes, submit an alternative asphalt content target to produce a mix with a Design Air Voids of less than 2.0% for use on trails, bike paths, and other requested uses. Designate this target as the voidless mix design target.	

4.6.11 STORING, MIXING AND SHIPPING OF PLANT MIX BITUMINOUS PAVEMENTS. Hot mix plants may be batch or drier-drum type plants (with not less than four aggregate bins).

4.6.11.1 STORAGE. The various natural and manufactured aggregates shall be stored separately. The various aggregate sizes shall be placed in

bins which allow the material to be properly and evenly fed to the dryer to ensure a uniform flow of properly combined aggregates. When placing materials in storage bins, or when moving them from storage to the feeder, no method will be used which may cause segregation, degradation or the intermingling of different size aggregates. Materials not meeting the gradation requirements shall be reprocessed to comply with the requirements. All scales and meters shall be certified and sealed by the Utah Department of Agriculture, Division of Weights & Measures, annually and when the plant has been moved.

4.6.11.2 CONSTRUCTION EQUIPMENT

A. Mixing Plant: Capable of meeting ASTM D995 or UDOT Qualified Plant. Provide:

1. Positive means to determine the moisture content of aggregate.

2. Positive means to sample all material components.

3. Sensors to measure the temperature of the mix at discharge.

4. Ability to maintain discharge temperature of mix.

5. Capability of maintaining plus or minus five (5) percent tolerance on component percentages in final mix.

6. Ability to document control efforts.

4.6.12 SHIPPING ASPHALT MIXTURES. Trucks used for hauling mix shall have tight, clean, smooth beds which are treated to prevent the mix from adhering to the bed. Amounts of solution that form visible pools in the truck bed shall be removed prior to loading asphalt mix. Diesel is not permitted as a release agent.

Asphalt mix shall be deposited in a mass into the haul truck or loading hopper from the silo. The gates on the bottom of the silo cone shall open and close quickly. To prevent segregation, it is also necessary for the gates to open completely so that the flow of mix is unrestricted. The mix shall be delivered in evenly divided drops into the length of the truck bed. In no case shall the truck be loaded continuously by the truck driver moving forward under the silo as the mix is being discharged. Multiple drops of small quantities or dribbling mix into the haul vehicle at the end of the main delivery should be avoided to prevent segregation.

For each batch delivered to site provide a paper or electronic (e-ticket) delivery ticket with the following:

1. Date and project description.
2. Producer and plant.
3. Name of contractor.
4. Serial number of ticket.
5. Mix identification number or code.
6. Truck number and time dispatched.
7. Weight of mix delivered.

4.6.13 SURFACE PREPARATION FOR ASPHALT OVERLAYS. Prior to placing asphalt overlays, all manholes, utility covers, monuments and other items affected by the paving operations shall be located, referenced and protected. The existing asphalt surface shall be thoroughly cleaned of all deleterious materials and brought to a uniform grade by spot leveling or by the application of a bituminous leveling course to the surface. A bituminous tack coat shall be applied to the existing prepared surface immediately prior to placing the finish asphalt course in accordance with Section 4.6.8 of these specifications.

4.6.14 ADJUSTMENT OF MANHOLE AND UTILITY COVERS. Prior to paving and after roadbase is placed, all manholes and utility covers shall be brought to the base grade. Damaged valve boxes, covers, grade rings, cones, flattops**,** risers, etc. replaced. Manhole cones or flattops that are more than eighteen inches below finish grade shall be raised by using risers etc. under the cone or flattop. Existing roadbase shall not be contaminated with soil or subbase. Backfill material around adjusted manholes and utilities shall comply with roadbase standards meeting Section 4.6.8 of these specifications, and be compacted to ninety five percent as determined by ASTM D-1557or AASHTO T-180 Method D. When paving is complete, all manhole and utility covers shall be raised to finished grade, including concrete collars, in accordance with standard requirements.

4.6.15 ASPHALT PAVING EQUIPMENT. A self-propelled paver with a screed unit that provides a smooth, steady pull on the screed arms shall be used. The screed unit shall strike off, partially compact, and iron the surface of the mat at least twelve feet (3.7 m) wide. The screed unit shall be equipped with automatic controls and heaters and vibrators. The screed plate must be smooth and not excessively worn. All screed extensions shall be ridged, or hydraulically extendable. The screed extensions shall maintain the proper elevation and angle of attack to the main screed at all times and shall also be heated and provide vibration. Augers shall adequately feed all areas of the extended screed.

The automatic screed controls shall be full contact electronic or non-contact ultrasonic grade control systems. These systems shall be adaptable to a floating-beam system a minimum of thirty feet long. The floating-beam shall be equipped with shoes that are allowed to rotate and can be individually displaced by isolated

disruptions in the existing surface without changing the height of the whole beam. The automatic grade sensor shall be set at the midpoint of the floating beam.

Ultrasonic grade control systems may be used without the floating beam on all Traffic Category II streets unless otherwise directed. The ultrasonic grade control system must meet the following conditions in order to be used without the floating beam.

4.6.15.1 The system shall be equipped with a “self-diagnostic” function that continuously monitors all system functions and shuts the system down if an error in the system occurs. It shall also be equipped with a “reference bail” to electronically compensate for differences in air and ground temperature with a minimum operating range not less than zero to 160 degrees F. (-18 to 71 degrees C.).

4.6.15.2 The system shall perform to a minimum of the following specifications:

Ultra sonic grade controller:

On-grade tolerance	±0.01 foot
Resolution	0.001 foot
Operating range	10 in. to 42 in.
Mat thickness control	- 0.01 foot

Slope controller:

Correction window	- 1.0%
On-grade tolerance	- 0.1%
Resolution	- 0.01%
Operating range	±0.0% to 100%.

The systems meeting the above requirements must be properly installed on a “tight,” properly maintained self-propelled paver with a screed unit. A “tight” system shall meet the equipment manufacturer's service specification tolerances for all controlling surfaces and connecting points that affect the ability of that specific type of equipment to provide proper grade control.

The city has the right to prohibit the use of such equipment if in his opinion the equipment has not been properly maintained or is not being properly operated.

If the automatic grade control becomes inoperative, the Contractor may finish the day's work using manual controls provided the required grade, thickness and smoothness tolerances are met. Paving shall not continue on the project, or any new project, until the automatic control system has been repaired.

4.6.16 ROLLERS. Rollers shall be vibratory, steel-wheeled double-drum with a static weight of not less than 10 tons (9.10 tonnes) for breakdown rolling. Pneumatic-tired rollers with a minimum operating weight of two thousand pounds (907 kg) per tire shall be used for intermediate rolling and leveling course compaction. The roller shall be in good condition, and capable of reversing without backlash. The number of rollers shall be sufficient to compact the asphalt mixture before it cools below 175°F (80°C). Finish rolling may be performed with the breakdown roller in the static mode, or with a steel-wheeled roller of sufficient size to remove the roller marks in the finished surface. If a roller breaks down and a back-up roller is not available, paving operations shall stop until adequate rollers are available.

4.6.17 WEATHER AND DATE LIMITATIONS. Asphalt shall not be placed during the period from December 1st through February 15th unless otherwise the Contractor has submitted a Cold Weather Paving Plan approved by the city. Paving approved during this time shall conform to winter paving requirements and policies. Minor repairs and patching will be allowed during winter months. Cold Weather Paving Plans must include the following at a minimum:

a. Haul details.
b. Placement details.
c. Compaction aids used in production.
d. Additional equipment and procedures for achieving compaction.
e. Coordination procedure for acceptance testing.

The asphalt mixture shall not be placed upon any wet surface, or when the air and surface temperature of the underlying course is less than specified in Table 4.10. The temperature requirements may be modified, but only when so approved and directed by the city. Open-graded asphalt mix shall be placed only when the air temperature is 70°F (21°C) and rising, and the surface temperature is a minimum of 60°F (16°C). Air and roadbed temperature shall be measured in the shade. Asphalt mixtures shall not be placed during adverse weather conditions such as rain, wind, hail, etc.

Table 4.11 – Minimum Pavement Temperature in Degrees F.

Air Temperature Deg F	Compacted Mat Thickness					
	3/4"	1"	1-1/2"	2"	3"	4"+
45 – 50	–	–	–	–	280	265
50 - 59	–	–	–	280	270	255
60 - 69	–	–	285	275	265	250
70 - 79	285	285	280	270	265	250
80 - 89	280	275	270	265	260	250
90 +	275	270	265	260	250	250

If a warm mix additive or manufacturing process is used, delivery temperature may be reduced by 15°F, but not below 250°F. This temperature may be reduced

further upon the completion of a successful test section using the modification.

4.6.18 SPREADING AND FINISHING. The asphalt mix shall be placed upon an approved surface, by a self-propelled paver meeting the requirements in Section 4.5.18. The travel rate of the paving machine shall be regulated to a speed dependent upon the capacity of the mixing plant and/or trucking service to supply the mixture. The paving machine shall be operated so that material does not accumulate and cool below 250˚F (121˚C) along the sides of the receiving hopper.

Where unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the mixture may be spread, raked with hand tools, and mechanically compacted. For such areas, the mixture shall conform to the required mix design, density, compacted thickness, grade and cross section.

The asphalt mix may be windrowed in front of the self-propelled paver properly equipped to transfer the asphalt mix directly into the hopper, provided that the following conditions and requirements are strictly adhered to.

4.6.18.1 The windrow is properly sized, thereby insuring the delivery of the correct amount of material to the paving machine at all times.

4.6.18.2 The asphalt mixture shall be transferred from the windrow to the paving machine in such a manner that the materials in the paver will be a uniform mixture. The base, upon which the windrow was formed, shall not be disturbed. There shall be a minimum amount of asphalt mixture remaining on the base between the pickup device and the paving machine.

4.6.18.3 The material in the hopper of the paving machine shall meet with the temperature requirements. Asphalt mixture that does not meet the minimum specified temperatures shall not be used, and shall be properly disposed of.

When it is determined by the city that the asphalt course being placed by use of a windrow is inferior to that being placed by direct transfer of the asphalt from the hauling vehicle to the spreading machine, the use of the windrow method shall be discontinued.

The asphalt mixture placed by the use of a paving machine during one day's operation shall come from a single plant manufacturer. Intermixing from more than one source shall not be allowed. Intermixing is defined as when more than one plant is used as a routine supply source to a single operation.

The asphalt mixture shall have a temperature not less than 270°F (132°C) nor more than 325°F (163°C), at the time the paving machine places the asphalt mixture on grade. Depending on environmental conditions and compaction requirements, the city may specify more strict temperature requirements.

Asphalt pavement courses of more than three inches in total compacted thickness shall be placed in two or more courses. One course shall not be placed over another course until the compaction requirements have been met and the mat temperature has cooled to 160°F (71°C) at mid-depth.

Placing of the asphalt pavement shall be as continuous as possible. Rollers should not pass over the unprotected edge of the freshly laid asphalt mixture. Transverse joints shall be formed by cutting back on the previous run to expose the full depth and proper grade of that course. A tack coat meeting Section 4.6.8 of these specifications shall be applied on the contact surface of the prepared transverse joints just before the new asphalt mixture is placed.

Longitudinal joints shall be spaced in such a manner that joints in succeeding courses will be offset at least twelve inches horizontally from joints in any preceding course. Lanes will be evened up each day to minimize cold longitudinal joints and to provide proper transverse joints. Where possible, the top course longitudinal joints shall be placed a minimum of one foot either side of the lane line.

Transverse joints shall be spaced in such a manner that joints in succeeding passes will be a minimum of five feet horizontally from joints in any adjacent pass.

Existing roadway pavements to be widened shall be sawcut far enough into the roadway to provide the proper grade, cross-section and thickness with a straight vertical longitudinal or transverse joint. These joints shall have a tack coat meeting Section 4.6.8 of these specifications applied on the contact surface immediately prior to paving.

Longitudinal joints on previously compacted passes should have an overlap of new asphalt mixture one to one and one-half inches over the existing mat. Raking should be merely to "bump" the joint, pushing the asphalt mixture off the previous pass and onto the new pass directly over the joint. If the adjacent mat is overlapped too far and too much asphalt mixture is deposited on the existing mat, the excess material shall be pulled away from the new mat rather than being pushed onto the new mat. Excess mix shall never be broadcast across the newly laid asphalt. The excess mix shall be picked up and recycled.

4.6.19 ROLLING AND COMPACTING. Compaction equipment shall meet the requirements of Section 4.5.16 of these specifications, unless otherwise approved or required by the city.

A pass shall be one movement of a roller in either direction. A coverage shall be as many passes as are necessary to cover the entire width being paved. Overlap of passes during any coverage, made to ensure compaction without displacement of material shall be in accordance with good rolling practice.

The breakdown rolling shall consist of one or more complete coverages of the asphalt mat with a vibratory steel-wheeled roller. Initial rolling shall commence at the lowest edge and shall progress toward the highest portion of the asphalt mat. Initial rolling shall not commence on the interior portion of any mat.

The breakdown rolling shall be followed immediately by additional rolling with a pneumatic-tired roller that will provide uniform density throughout the depth of the course being compacted. A minimum of two rollers, one steel-wheeled, and one pneumatic-tired, shall be used. However, the total number of rollers used beyond the minimum of two shall be sufficient to obtain the required compaction while the asphalt mixture is above 175°F (80°C).

The final rolling of the asphalt mixture shall be performed by a steel wheel roller of sufficient size to remove all roller marks caused during the compaction of the asphalt mixture. The vibratory roller used for breakdown rolling may be used as the finish roller provided it is operated with the vibratory unit turned off.

The rollers shall be kept in continuous motion while rolling so that all parts of the asphalt mixture will receive as close to equal compaction as possible. The roller speed shall be slow enough at all times to avoid displacement of the pavement. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected immediately by use of rakes and fresh asphalt mixture when required.

To prevent adhesion of the asphalt mixture to the rollers, the wheels/tires, bars, pads and release agent pumps shall be kept properly maintained. The use of diesel oil on pneumatic-tired rollers shall be kept to a minimum and used only in conjunction with coca pads to prevent the asphalt mixture from adhering until the tires heat enough to prevent mix adherence.

The completed surface shall be thoroughly compacted, smooth and free from ruts, humps, depressions, or irregularities. Any ridges, indentations or other objectionable marks left in the surface of the finished pavement shall be eliminated by rolling or other means. The use of any equipment that leaves ridges, indentations, or other objectionable marks in the asphalt surface shall be

discontinued, and acceptable equipment shall be furnished.

Compacting the longitudinal joint shall be performed by placing the roller on the hot uncompacted mat and overlapping the joint by a distance of approximately six inches over the cold compacted mat. For proper compaction, the level of the uncompacted mix at the longitudinal joint must be above the elevation of the compacted mix by an amount equal to one- quarter inch for each one inch of compacted pavement. This ratio is “rule of thumb” and may vary slightly depending on the type of asphalt mix and the supplier. A test strip is advisable.

A good source of information for rolling asphalt is a document by AASHTO, FAA, Federal Highway Administration and the National Asphalt Pavement Association entitled "AC 150/5370-14, Appendix 1, July 31, 1991". The following information is taken from that document.

1. Rolling From The Cold Side - It was common practice in the past to do the initial rolling of the longitudinal joint from the cold (previously placed mat) side of the joint. The major portion of the weight of the roller was supported by the cold, compacted mat. Only six inches or so of the width of the roller hung over the fresh mat, compressing the mix along the joint. The majority of the compactive effort was wasted because the roller essentially was applying its compactive effort to an already-compacted asphalt material.

   During the time that the roller was operating on the cold side of the longitudinal joint, the mix on the hot side of the joint, and the rest of the mix in the course being laid, was cooling. Depending on the environmental conditions and the thickness of the mix being placed, the process of compacting the joint from the cold side often proved to be detrimental to the ability to obtain density on the whole pavement layer.

   The reason often given for rolling the joint from the cold side of the joint was that this compaction method allowed the rollers to "pinch" the joint and obtain a higher degree of density. There is no evidence that this is true.

2. **Rolling From The Hot Side** - The most efficient way to compact the longitudinal joint is to put the roller on the hot mat and overlap the joint by a distance of approximately six inches over the cold mat. This places the majority of the weight of the compaction equipment where it is needed. The mix at the joint is still pushed into the joint area by the roller as long as the elevation of the new mix at the joint is proper. The longitudinal joint can be compacted effectively by keeping the roller on the new mix, instead of on the

previously compacted mix. Any type of roller used for the breakdown rolling of the mix can be employed to compact the longitudinal joint as long as the elevation of the mix at the joint is above the level of the cold mat and the mix is still hot.

Sometimes the first pass of the roller is completed with the edge of the machine about six inches inside of the longitudinal joint. The theory behind this method of compaction is that the mix will be shoved toward the joint by the roller, and better compaction will be obtained. If the mix being placed is stable enough, the roller should not be able to move the material laterally to any significant degree. If the mix design is proper, this method of compacting the joint does not provide any advantage over moving the first pass of the roller outward one foot (from six inches inside the joint to six inches outside the joint). Rolling the mat by lapping the roller over the adjacent old pavement typically is the more efficient way to provide roller coverage for the whole pavement width.

4.6.20 OPEN-GRADED WEARING COURSE.

4.6.20.1 WEARING COURSE. An open-graded wearing course shall be placed over a dense-graded asphalt course. The dense-graded asphalt shall be true to line and grade, cleaned and tacked.

The following specifications shall be complied with:

Item	Section
Dense-graded asphalt	4.5.10
Tack Coat	4.5.9
Asphalt Cement for (existing road) Overlays	Table 4.12
Asphalt Cement for New Construction	4.5.10.2
Hydrated Lime	4.5.11
Other related requirements	

Aggregate gradation shall conform to Table 4.11 when tested under AASHTO T-30.

The percent passing the No. 200 (.075 mm) sieve will be determined by using AASHTO T-11, test procedures.

That portion of aggregate retained on the No. 4 (4.75 mm) sieve shall have no more than ten percent rounded particles when tested in accordance with UDOT Test Procedure 8-929.

TABLE 4.12 Open-Graded Asphalt Gradation			
Sieve Size		Ideal Gradation Percent Passing	Ideal Gradation Tolerance
American	Metric		
½ inch	12.5 mm	100	0
3/8 inch	9.5 mm	96	93-100
No. 4	4.75 mm	40	35-45
No. 8	2.36 mm	17	13-21
No. 200	.075 mm	3	1.3 - 4.7

TABLE 4.13 Rubberized Liquid Asphalt Requirements			
AC-20R:			
Property	ASTM	Specification	
Viscosity @ 140EF, poise	D-2171	1,600	2,400
Viscosity @ 275EF, cs	D2170	325	
Pen @ 77EF (100 g, 5 sec)	D-5	70	
Flash Point, EF, C.O.C.	D-92	450	
Duct. @ 39.2EF, (5 cm/min)	D-113	50	
Cm		2.0	
Rubber, Weight %	*	110	
Toughness, in-lb	*	75	
Tenacity, in-lb	D-2872		
Rolling Thin-Film Oven Test	**		
Tests on Redsidue:		8.000	
Viscosity @ 140EF, pois	D-2171	25	
Duct. 39.2EF, (5 cm/min)	D-113		
Cm			
*Benson Method of Toughness and Tenacity: Scott Tester, inch-pounds @ 77EF, 20 inches per minute pull. Tension head 7/8-inch diameter			
** TFOT ASTM D-1754 may be used. The Rolling Thin-Film Circulating Oven Test is the preferred method.			

4.6.20.2 SUITABILITY OF AGGREGATE. The following requirements shall be used to determine the suitability of the aggregate during the mix design:

4.6.20.2.1 Wear shall not exceed thirty percent when tested in accordance with AASHTO T-96.

4.6.20.2.2 The weighted loss shall not exceed twelve percent by weight when subjected to five cycles of sodium sulfate tested in accordance with AASHTO T-104.

4.6.20.2.3 Aggregates consisting mainly of carbonate type rocks shall not be used unless approved by UDOT as satisfactory long-term friction values for comparable traffic volumes when tested in accordance with AASHTO T-242 or ASTM E-274-79.

Aggregates shall be separated into two or more sizes and stored separately.

Stockpiling or handling methods that cause segregation, degradation or the combining of materials of different sizes when placing the aggregate in storage or moving it from storage to the cold bins shall not be used. Any segregated or degraded material shall be re-screened.

4.6.20.3 MIX DESIGN. Annual mix designs shall be submitted in writing to the city for approval two weeks prior to the first job each calendar year, or upon selection of new aggregate sources. Any revisions to the approved mix design shall fall within the requirements listed above. Open-graded wearing courses that do not meet the tolerances shown in Section 4.6.20 shall be removed and replaced with material meeting the required gradation. The asphalt cement shall be within 0.10 percent of the mix design. At no time shall the asphalt cement content be such that asphalt slicks form on the surface of the roadway.

Based on the mix design, the open-graded wearing course shall have a tensile strength ratio of seventy (70) percent, or greater, in accordance with AASHTO T-283 UDOT modified. Hydrated lime or anti-stripping agent may be added to the asphalt mix to meet the minimum tensile strength of seventy (70) percent.

4.6.20.4 MIXING. The mixing shall be done as specified in Section 4.6.20. The mineral aggregate will be considered satisfactorily coated with asphalt when all particles are coated. During mixing the viscosity of asphalt shall be maintained between four hundred and nine hundred centistokes. The viscosity of polymer-modified asphalt, when used, shall be maintained between one hundred fifty and three hundred (150-300) centistokes.

If a drier-drum mixing process is used, the temperature of the mixture shall not be less than 220°F (104°C), or more than 275°F (135°C), when discharged from the mixer. When using a polymer-modified asphalt the temperature of the mixture when discharged from the mixer, shall be maintained between 270°F (132°C) and 320°F (160°C). Viscosity will be determined in accordance with ASTM T-201.

4.6.20.5 SURFACE PLACEMENT. Tack coat shall be applied in accordance with Section 4.6.8.

Self-propelled asphalt paving equipment and automatic screed controls meeting the requirements of Section 4.6.15 shall be used. Rollers shall meet the requirements of Section 4.6.16 and shall be a ten ton (9.10 tonne) vibratory operated static or a ten ton (9.10 tonne) static steel

wheeled roller for asphalt pavement finishing.

Paving operations should be planned such that all passes will be brought even “transversely” at the end of each working day. Joints between old and new pavements, or between successive days worked shall ensure continuous bond between adjoining work. Construct joints to have the same texture, density, and smoothness as other sections of the bituminous pavement course. Clean contact surface and apply tack coat.

Offset longitudinal joints a minimum of 12 inches in succeeding courses and at least 6 feet transversely to avoid vertical joints through more than one course. In the top course restrict longitudinal joint to 1 foot either side of the lane line. Prevent traffic, including construction traffic, from crossing vertical joint edges.

Excessive rolling shall not be allowed. Wearing course compaction shall be completed prior to the mix temperature drop below 180°F (82°C). When using polymer-modified asphalt, compaction shall be completed prior to the mix temperature dropping below 200°F (93°C).

Asphalt slicks shall be raked immediately. Slick spots that cannot be removed by raking, shall be replaced. All humps or depressions exceeding tolerances shall be corrected. Correction methods shall be approved by the city. All traffic shall be prevented from traveling on the completed wearing course until it has hardened sufficiently and the surface temperature has dropped below 160BF (71BC). The thickness of the compacted wearing course shall not vary more than one-quarter inch (6.35 mm) from the specified thickness. Testing and acceptance shall conform to Section 4.5.24.

4.6.21 ACCEPTANCE TESTING REQUIREMENTS AND TOLERANCES.

The following subsections list the requirements for testing and acceptance for subbase, roadbase, RAM, dense-graded asphalt, open graded asphalt and asphalt pavement surfaces. Testing documentation shall fully address the requirements of these standards.

4.6.21.1 SUBBASE. The following will be required for testing and acceptance of subbase:

A. One moisture/density test per seven thousand square feet of roadway, or fraction thereof.

B. One thickness test hole per five thousand square feet.

C. One gradation test per fifteen thousand square feet of roadway, or fraction thereof. The allowable deviations from the approved subbase targets are as follows:

SIEVE SIZE	ACCEPTABLE LIMIT	SUSPENSION LIMIT
2" to 6"	± 12%	± 15%
1/2" to 1"	± 11%	± 15%
3/8"	± 10%	± 15%
No. 4	± 9%	± 14%
No. 16	± 7%	± 11%
No. 200	± 3.0%	± 4.5%

C.1 One sand equivalent *(SE)* value for every gradation outside the allowable deviation. A CBR value shall be performed on twenty-five percent (25%) of all sand equivalent test results with a minimum of one test required. Where multiple SE tests are run, the CBR value shall be determined on those SE test that exhibit the lowest values.

The following are the Minimum Values for Roadway Subbases.

- The minimum acceptable SE value shall be twenty-two (22)
- The minimum acceptable CBR value shall be 70

Note 1: CBR Value Test: AASHTO T-193, (3 point)

C.2 If more than two sample gradations from a project exceed the Suspension Limit or fail to meet the minimum acceptable CBR value, the subbase is unacceptable and shall be removed and replaced with acceptable subbase.

4.6.21.2 ROADBASE

A. One moisture/density test per seven thousand square feet of roadway, or fraction thereof.

B. One thickness test hole per five thousand square feet.

C. One gradation test per fifteen thousand square feet of roadway, or fraction thereof. The allowable deviation from the approved roadbase targets are as follows:

SIEVE SIZE	ACCEPTANCE LIMIT	SUSPENSION LIMIT
1/2" TO 1"	± 11%	± 15%
3/8"	± 10%	± 15%
No. 4	± 9%	± 14%
No. 16	± 7%	± 11%
No. 200	± 3.0%	± 4.5%

C.1 If roadbase gradations exceed the Suspension Limit or fail to meet the minimum acceptable CBR value, the material shall be considered unacceptable and must be removed and replaced with acceptable roadbase at the Contractor's expense.

The geotechnical firm shall notify the city and the city will remove the roadbase source from the City's Approved Supplier List if any of the following conditions occur:

- A gradation test result exceeds the Suspension limit;
- A CBR value does not meet the minimum acceptable value;
- Fifty percent (50%) of more of gradation test results on a project exceed the Acceptance Limit;

or

- Four (4) or more consecutive gradation test results exceed the Acceptance Limit.

The supplier shall not furnish roadbase for any City projects until a quality control plan has been submitted, acceptable quality control results have been demonstrated, and the city has provided written re-approval of the source.

4.6.21.3 DENSE-GRADED ASPHALT PAVEMENTS ACCEPTANCE.

Acceptance testing shall be performed by an Accredited Laboratory. Verify laboratory complies with ASTM D3666 or AASHTO R-18

Submit Acceptance data to the Engineer within 3 working days after completion of each day of paving or prior to the start of the next paving day, whichever is sooner.

The Supplier shall submit daily plant production records to the Engineer within 1 working day after completion of each day of paving and prior to the start of the next paving day.

a. Plant report must include weights of all individual aggregates, bitumens, water and other additives incorporated in mix, including RAP, lime, mineral filler, fiber or other additives.

Observation of CONTRACTOR's field quality control testing does not constitute acceptance.

4.5.21.3.A TESTING PROTOCOL

A. Sub-lot size is 500 tons or part thereof.

B. Sampling Protocol: ASTM D3665 and ASTM D979. Collect at least one (1) random Sample per sub-lot from behind paver and before compaction. For placements with a design thickness of 2 inches or less, samples may be taken at the plant. Any sample collected because of non-uniform appearance shall not be used in determining acceptance for the Lot.

1. Sampling binder, ASTM D140. At owner's request, take 1 qt sample and provide to owner's representative.

C. Testing Protocol (Performed by Owner's Verification Testing Organization):

a. Project Less than 1000 tons – Mix samples will be compacted in the laboratory and tested for:

1) Binder content, ASTM D6307.
2) Aggregate gradation, ASTM D5444.
3) Maximum Specific Gravity (Rice), ASTM D2041

a. Project greater than 1000 tons - Mix samples will be compacted in the laboratory and tested for:

1) Air voids, ASTM D3203.
2) Voids in the mineral aggregate, AI MS 2.
3) Binder content, ASTM D6307.
4) Aggregate gradation, ASTM D5444.
5) Maximum Specific Gravity (Rice), ASTM D2041

D. **Reporting**: The Owner or the Owner's Verification Testing organization will provide the contractor with acceptance results within 3 working days after completion of each day of paving, or prior to the start of the next paving day, whichever is sooner.

E. **Lot Acceptance**: A Lot is acceptable if binder content and aggregate gradation test average deviations are within limits the limits below.

Criteria	ALLOWABLE DEVIATION
Asphalt Content	± 0.38%
Nominal Sieve ½" (12.5mm) or 3/8" (9.5 mm)	± 6.0%
No. 8 (4.75 mm)	± 4.0%
No. 50 (1.18 mm)	± 3.0%
No. 200 (.075 mm)	± 2.0%

F. **Un-Accepted Lots (Contracts Issued by Someone Other Than The Ultimate Owner of The Pavement)**: Provide recommended corrective measures based on Engineering Analysis, described below, based on durability and serviceability relative to the specified product requirements, including expected performance compared to design life. The ultimate owner of the pavement or a representative of such will review and either approve corrective measures or provide basis for rejection.

G. **Un-Accepted Lots (Contracts Issued by The Ultimate Owner of The Pavement)**: At the Engineer's discretion, a lot that does not meet the criteria in 4.5.21.3 may be accepted given the following corrective action.

Alternative Corrective Action				
Lab Air Voids:	**2.0-5.0%**	**< 2.0%**	**5.0-7.0%**	**>7.0%**
Average Relative Compaction	VMA – Voids > 10.7	VMA – Voids > 10.7	VMA – Voids > 11.7	Or VMA not Met
93.0 – 98.0%	No Action	2	1	3
> 98.0%	2	3	2	3
91.0 – 93.0%	1	2	3	3
<91.0%	3	3	3	3
1: Application of Owner-Approved Surface Treatment 2: Application of minimum 1.5" Overlay 3: Removal and Replacement				

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4.6.21.4 COMPACTION OF DENSE-GRADED ASPHALT PAVEMENT.

Test results must be from a UDOT qualified laboratory using UDOT qualified technicians, or results must be verified and certified (stamped) by a Utah Registered Professional Engineer.

A. Acceptance of compaction of dense graded asphalt pavement shall be as follows:
1) core density or 2) non-destructive test density, or 3) control strip density with visual observation. Use core density unless specified elsewhere. A Lot is acceptable if density test averages are within the Acceptable Compaction Levels defined in Table 4.13 and no test is below Lowest Test limit. For lots outside of this acceptable level, reference the Alternative Correction Action in 4.5.21.3.A.

Mat Sampling Protocol: Use ASTM D3665 to randomly select in each sub-lot at least one (1) surface test location. Samples are full depth or overlay depth in overlay construction.

1) Projects less than 500 Tons: Use 10 sublots and non-destructive tests. Coring may be used for dispute resolution.
2) Projects between 500 and 1000 Tons: Use 4 equal sublots.
3) Projects between 1000 and 1500 Tons: Use 6 equal sublots
4) Projects greater than 1500 Tons: Use 8 equal sublots.
5) Joint Sampling Protocol: Use ASTM D3665 to randomly select a total of three (3) longitudinal joint test locations for each joint. Samples are full depth or overlay depth in overlay construction.
   a. Use 6” diameter cores, centered within 1 inch of center of joint
   b. Do not core projects smaller than 250 Tons.
   c. Testing Protocol: ASTM D2726 for core density and ASTM D2041 (Rice) for maximum theoretical density.
6) Non-Destructive Density Testing by Electronic Gauge:
   a. Lot Size: One (1) day production, with sublots as defined in Article 1.8.E 2 Core Density.
   b. Mat Sampling Protocol: Use ASTM D3665 to randomly select in each sub-lot at least two (2) surface test locations.
   c. Testing Protocol: ASTM D2950 (nuclear gauge) or AASHTO TP68 (non-nuclear gauge) and ASTM D2041

(Rice) for maximum theoretical density. A non-destructive test is the average of two (2) test results at each test location with a minimum 90 degree offset between test samples using mix correlated gauges. Use minimum 60 second count with Nuclear Gauge.

Table 4.14 – Compaction Acceptable Levels

Acceptance Parameter	Mat Density, in Percent Relative to ASTM D2041 (a)		Joint Density, in Percent Relative to ASTM D2041 (a) (d)	
	Average	Lowest Test	Average	Lowest Test
Requirement	93.0 to 98.0	90.0 or greater	91.0 to 98.0	89.0 or greater

Notes:
(a) For overlay design thicknesses of less than 2.0", mat density targets are reduced by 1% and no joint density cores are taken.
(b) Difference based on actual sublot mat density and sublot core density values.
(c) Report and calculate all density values to 0.1%.
(d) A paving Joint is defined as a longitudinal seam between two adjacent passes of asphalt placed during the project, and where the initial pass cools below 180 deg F prior to placement of the adjacent pass. Do not take Joint cores where the "Joint" is comprised of existing asphalt or concrete. Use 6" diameter cores for joint density determination.

B. Thickness Acceptance of dense graded asphalt pavement shall be as follows:

1. **Lot Size**: One (1) day production with 1,000 square yard sub-lots or part thereof. Samples are full depth. Overlay construction measured only on overlay portion of core sample. Use one of the following methods for thickness determination:
2. Measurement of Density Cores
   i. A Lot specified to have actual thickness is acceptable if any sub-lot measurement does not exceed deficiency limits for thickness tolerances in Table 4.14
3. Probe of uncooled mix by representative of the city – perform between intermediate and final rolling operations.
   i. A Lot specified to have actual thickness is acceptable if any sub-lot measurement does not exceed deficiency limits for thickness tolerances in Table 4.14
4. Ground Penetrating Radar (not applicable to overlay applications). Perform GPR evaluation by scanning and recording depth for full-width of the pavement at one random location for each sublot. Engineer will mark locations for scans. Measure HMA thickness every 6 inches on the recorded scan. Calculate the average thickness, and the percentage of the thickness below each of the tolerance levels described in Table 4.14. A lot is accepted for thickness based on GPR evaluation when the average thickness of all scans is not more than ¼ inch less than the total thickness specified and no individual scan shows a deficient thickness of

more than ⅜ inch for more than 5% of any scan.

5. A Lot is acceptable if average of test deficiencies, applied to the total design thickness, exceeds design thickness or is within the acceptance limits; and no sublot or individual test below the individual test limit. Reference Table 4.14.
6. At the Engineer's discretion, a lot with an average deviation that does not meet acceptable limits and/or has an individual deviation greater than the individual limits may be accepted upon the completion and review of an Engineering Analysis and other requested actions.

Table 4.15 – Thickness Tolerance	
Acceptance Criteria	**Deficiency Limits, in Inches**
Acceptable	0.00 to 0.25
Individual	0.25 to 0.375
Remediate	Average >0.25 or Individual >0.375

Cores not meeting acceptable limits will be provided to the Contractor for verification of measurements.

Reject mixes in the transport material exceeding the limits identified in the mix design. Use calibrated temperature probes for rejection of mix. Use temperature guns for quick approximate temperature readings only.

Opening a paved surface to traffic does not constitute acceptance. Observation of CONTRACTOR's field quality control testing does not constitute acceptance.

4.6.21.5 OPEN-GRADED ASPHALT WEARING COURSE.

In the event that the extraction or gradation fails to meet the allowable deviation, the remaining sample material shall be remolded and tested in accordance with AASHTO T 283or ASTM D 4867 including Note 5. The open-graded asphalt pavement must possess seventy percent of the tensile strength ratio based on the approved mix design. Open-graded asphalt not meeting this requirement shall be removed and replaced.

The allowable maximum deviations from the approved Marshall mix design shall be as follows:

Asphalt content	+/- 0.46%
½" (12.5 mm)	+/- 6.3%
3/8" (9.5 mm)	+/- 5.9%
No. 4 (4.75 mm)	+/- 5.7%

No. 8 (2.36 mm)	+/- 4.8%
No. 200 (.075 mm)	+/- 2.0%

4.6.21.6 ASPHALT PAVEMENT SURFACES.

The completed surfacing shall be thoroughly compacted, smooth and free from ruts, humps, depressions, rock pockets or slick spots. Any ridges, indentations or other objectionable marks left in the pavement's finished surface shall be corrected prior to acceptance.

The paving contractor shall provide adequate quality control during spreading and finishing procedures to meet or exceed the following longitudinal and transverse profiles:

- Longitudinal deviations shall not exceed ± 0.025 foot in 25 feet when checked by a taut string line.
- Transverse deviations shall not exceed ± 0.01 foot in 10 feet when checked with a ten foot straight edge.
- Longitudinal construction joint deviations shall not exceed ± 0.01 foot when checked with a ten foot straight edge.
- The completed pavement surfaces shall be constructed to the required grades and cross sections. When pavement surfaces contact concrete structures such as drainage structures, curbs & gutters, utility vaults, or manholes, the pavement surfaces shall be flush with or above the concrete structures by not more than 0.02 foot. All deviations exceeding the specified profile tolerances shall be corrected prior to final rolling.

4.7 CONCRETE WORK. This section defines the materials to be used and the requirements for mixing, placing, finishing and curing all Portland cement concrete work.

4.7.1 MATERIALS. Concrete materials shall conform to the following requirements.

4.7.1.1 PORTLAND CEMENT CONCRETE MATERIAL. Concrete shall be composed of coarse aggregate, fine aggregate, Portland Cement and water, air entrainment and add mixtures and shall conform to the requirements of this section. A concrete mix design shall be prepared by the supplier, certified by an independent testing lab and submitted to the

city for review and approval prior to concrete being used in city projects.

A. PORTLAND CEMENT. AASHTO M 85, Type V or equivalent according to the table below, shall be used unless otherwise indicated, or approved by the city. Only one brand of cement shall be used throughout a project, unless otherwise approved by the city. Certified copies of the mill test for the cement shall be furnished upon request of the city.

1. Blended Hydraulic Cement
- **a.** Blended hydraulic cement substituted for Portland Cement:
  - **1.** Use ASTM C 1567 to verify that expansion is less than 0.1 percent 14 days after the zero reading.
  - **2.** Refer to the equivalent cements listed in the table below.
- **b.** Do not exceed 30 percent total pozzolan limit when adding fly ash to a blended hydraulic cement.
  - **1.** Submit documentation of the total pozzolan content with the mix design.

Do not mix cements originating from different sources.
Do not use air-entrained cement.

Portland Cement/Blended Hydraulic Cement Equivalencies		
AASHTO M 85 Equivalent Alkalis 0.80 max percent	**ASTM C 595**	**ASTM C 1157**
Type I	IP, IL, IT	GU
Type II	IP(MS), IT(MS)	MS
Type III	-	HE
Type V	IP(HS), IT(HS)	HS

B. AGGREGATE.

1. Coarse Aggregate

a. Use coarse aggregate that meets AASHTO M 80 physical properties.

b. Do not exceed 1.0 percent gypsum by Quantitative Analysis of Gypsum test procedure S-3171-96.

c. Do not exceed percentages of deleterious substances as specified in AASHTO M 80, Table 2, for Class A aggregates.

d. Gradation. Coarse aggregate shall be graded by weights as follows:

COURSE AGGREGATE GRADATION REQUIREMENTS

SIEVE SIZE	PERCENT PASSING (by weight)
1 inch	100
3/4 inch	90-100
3/8 inch	20-55
No. 4	0-10
No. 8	0-5
No. 200	0-1.0

e. Aggregate Size. The maximum size of the aggregate shall not be larger than one-fifth of the narrowest dimension between forms within which the concrete is to be encased, and in no case larger than three-fourths of the minimum clear spacing between reinforcing bars or between reinforcing bars and forms. For non-reinforced concrete slabs, the maximum size of aggregates shall not be larger than one-fourth the slab thickness.

2. Fine Aggregate

a. Use fine aggregate that meets AASHTO M 6 physical properties.
b. Do not exceed 1.0 percent gypsum by Quantitative Analysis of Gypsum test procedure S-3171-96.
c. Do not exceed percentages of deleterious substances as specified in AASHTO M 6, Table 2, for class A aggregates, using option “b” for material finer than the No. 200 sieve.
d. Fine aggregate shall be graded by weights as follows:

FINE AGGREGATE GRADATION REQUIREMENTS

SIEVE SIZE	PERCENT PASSING (by weight)
3/8 inch	100
No. 4	95-100
No. 16	45-80
No. 50	10-30
No. 100	2-10
No. 200	0-3.0

C. WATER. Sufficient potable water shall be added to the mix to produce concrete with the minimum practical slump, the slump shall not be greater than four inches. However, a higher slump may be allowed with plasticizers, providing there is no loss of strength or durability and prior approval for use is obtained from the city.

The maximum permissible water-cement ratio (including free moisture in the aggregate) shall be five gallons per bag of cement (0.44) for Class A and five and three-quarter gallons per bag of cement (0.51) for Class C concrete.

D. ADMIXTURES

D.1 Do not use calcium chloride.

D.2 Air Entrainment according to ASTM C 260 as modified by AASHTO M 154 including the optional uniformity requirements in ASTM C 260, Section 5. The air content of air-entrained concrete mixes shall be five percent (5%) by volume (plus or minus one percent (1%)).

D.3 Water Reducing Agents

a. Refer to AASHTO M 194

b. High Range Water Reducer (HRWR) – Include details regarding HRWH ingredients, production methods, handling, and placing in the written plan for admixtures

D.4 Accelerators – Refer to AASHTO M 194

D.5 Set Retarding and Hydration Stabilizing Admixtures – Refer to AASHTO M 194

a. Establish and inform the Engineer of the effective life of the set-retarding or stabilizing admixture by trial batch if admixtures are required due to haul times exceeding the time limitations in section 4.8.2.1.C Concrete Mixing.

b. Do not exceed manufacturer's recommendations for the use of the set retarding admixture.

c. Do not re-dose the concrete with additional set retarding admixture.

d. Add admixture at the batch plant at the time of initial batching operations.

e. Show on batch tickets the amount of admixture used.

f. Time of placement is established by the trial batch and supersedes the requirements in section 4.8.2.1.C Concrete Mixing.

E. POZZOLAN. Use at least twenty percent (20%) pozzolan and no more than thirty percent (30%) pozzolan by weight of the total cementitious material at a replacement of ratio of 1.1

E.1 Fly Ash

a. Class F according to AASHTO M 295 except modify Table 2 with the following:

- Loss of Ignition (LOI) Not to exceed three percent (3%)
- Allowable CaO content Not to exceed fifteen percent (15%)

b. Label the storage silo for fly ash to distinguish it from cement

c. Use different size unloading hoses and fittings for cement and fly ash

E.2 Natural Pozzolan (Class N)

a. Refer to AASHTO M 295

b. May use instead of fly ash provided that the expansion does not exceed 0.1 percent. Refer to ASTC C 1567.

COMPLIANCE ANALYSIS. During the course of concrete testing, the city may require, at random, additional concrete cylinders for the purpose of performing a “Petrographic Examination” in accordance with ASTM C 856.

The “Petrographic Examination” may be initiated when compressive strength tests show inconsistencies, when batch tickets show indications that material is batched which is not in accordance with approved mix designs, or when there are other indicators that the concrete may not meet Standards.

The “Petrographic Examination” will be performed by a Certified Testing Laboratory qualified to perform such testing. In the event that the sampled concrete is not in compliance with these standards, the supplier of the concrete will be required to pay for the “Petrographic Examination” and will no longer be allowed to supply concrete for use in any improvements for which city Standards apply until acceptable adjustments are made. If the sampled concrete is found to be in compliance with these standards, the city will pay the cost for the “Petrographic Examination”. Additional testing may be required by the city, at the supplier’s expense, to determine the extent of the non-compliant concrete. All work on a project, affected by the non-compliant concrete, will be suspended until the non-compliant concrete work is brought into compliance.

The “Petrographic Examination” will determine the quantity of cementitious matrix including mineral admixture (pozzolan/fly ash) in the mix, proportions of the mix, and other properties of the sampled concrete to verify compliance with the approved mix design. The acceptability of the concrete represented by the examination shall be established by comparing the proportions determined by the examination with those indicated on the batch tickets. When this comparison shows that the pozzolan proportions are within 2% +/- of the approved mix design the admixture proportions will be considered to be in compliance. When comparisons of other proportions of the mix indicate that the concrete is not within acceptable allowable deviation limits the concrete may be rejected even though the pozzolan proportion is acceptable.

The city may use the results of the “Petrographic Examination”, inspection records, observation of batch plant operation,

compressive strength test results, or any other pertinent information to determine compliance. If any portion of a project is found to be in non-compliance, additional testing shall be required to verify full compliance of all concrete within the project. If the city has reasonable cause, may require removal and replacement of any concrete which has been found to be in non-compliance. (For the purpose of demonstrating the acceptability of this admixture specification, compressive strength alone shall not be considered as justification for acceptance).

Repeated violations of these admixture standards may subject the offending concrete supplier to be prohibited from providing concrete that is used in public or private infrastructure improvements within the city.

E.2. **Calcium Chloride.** Calcium Chloride shall not be added to any concrete mix. Non-chloride accelerators may be used upon approval of the city.

F. CONCRETE MIX. For the purpose of practical identification, concrete has been divided into classes. The basic requirements of class A and class C concrete and the use for each is defined in Table 4.15 of the city Standard Specifications.

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F.1. **Submittals.** The following information must be included with all concrete mix designs submitted for review and approval by the city as per subsection 4.7.1.1 "Portland Cement Concrete Material".

a. Test results on course and fine aggregates to verify compliance with applicable specifications.

b. Trial batch test results and past history test information on proposed mix designs, which support compliance with the requirements for compressive strength, durability, etc. Performance curves used to verify 28 day, 56 day, and 90-day strengths must be submitted with trial batch tests or history information.

c. Certification of compliance from the cement supplier, the pozzolan supplier, and the air-entraining agent supplier, stating that the materials being delivered are in compliance with applicable specifications.

d. All mix designs shall be certified by a Certified Testing Laboratory.

G. BATCH PLANT TICKET. All concrete produced and delivered to a job site within the city, will be accompanied by a batch plant ticket. The ticket will state the time manufactured or batched and accurately show all components used for that particular load or batch. Sufficient copies shall be provided for

testing personnel and the city, if requested.

TABLE 4.16
CONCRETE MIX SPECIFICATIONS

Class	Maximum Water/Cementitious Ratio	Maximum Slump (inch)	Air Content Percent (%)	Minimum 28-day Compressive Strength (psi)	Primary Use
A	0.45	4 (1.5 inches for machine placement)	4.0-7.5	4500	Reinforced structural concrete; curbs & gutters; cross gutters; pavements; unreinforced footings
B	0.45	4.5*	4.0-7.5	4500	Sidewalks
C	0.5	4	4.0-7.5 (exposed/exterior) ≤ 2.0% (buried/interior/ mass)	3000	Minor non-structural items such as thrust blocks; anchors, mass concrete, etc.

NOTE: Unless otherwise specifically designated by the city all concrete placed shall be Class "A", six-bag mix, with a minimum allowable compressive strength of 4000 psi at the age of twenty-eight days.

4.7.1.2 CONCRETE REINFORCING MATERIALS. Concrete reinforcing materials shall conform to the following requirements.

A. STEEL BARS. All bar material used for reinforcement of concrete shall be hard grade deformed round steel conforming to the requirements of ASTM Designation A 615. All reinforcing steel shall be minimum grade sixty (60) unless approved otherwise by the city. All bars shall be deformed, round and have a net section equivalent to that of plain bar of equal nominal size. Only hard grades will be used. Twisted bars will not be accepted.

All rebar shall be clearly marked with identifying markings in accordance with industry standards.

All reinforcing steel, at the time concrete is placed, shall be free from flaws, cracks, rust, oil, dirt, paint, or other coatings that will destroy or reduce the bond.

B. WIRE OR WIRE FABRIC REINFORCEMENT. Welded wire fabric for concrete reinforcement shall conform to the requirements of ASTM A 185. Wire for concrete reinforcement shall conform to the requirements of the "Standard Specification for Cold Drawn Steel Wire for Concrete Reinforcement" ASTM A-82. All wire reinforcement, wire fabric, or expanded metal shall be of the type designated unless an alternate type is approved by the city.

C. STEEL FIBER REINFORCEMENT. Deformed steel fiber for concrete reinforcement shall conform to the requirements of ASTM A-820, type I, deformed fiber, except that the average tensile strength shall be not less than 150,000 psi.

D. SYNTHETIC REINFORCING FIBERS. Engineered synthetic reinforcing fibers shall be 100% polypropylene collated, fibrillated fibers. Fiber length, and amount per manufacturer's recommendations shall correspond with the concrete mixture (generally 1.5 pounds per cubic yard of concrete).

Physical property of the fibers shall be as follows:

Specific Gravity	**0.91**
Modulus of elasticity	500,000 to 700,000 psi
Tensile strength	70,000 to 110,000 psi
Length	0.25 to 2.50 inches

The fiber manufacturer shall certify that all polypropylene fibers meet the physical properties and are specifically manufactured for use in concrete from virgin polypropylene, containing no reprocessed olefin materials. If the fiber manufacturer is other than the brand name listed on the literature and packaging, the certification must be from the original manufacturer of the fibers.

Fiber-mesh shall be added only at the concrete batch plant to assure uniform and complete dispersion of the collated-fibrillated fiber bundles into single mono-filaments within the concrete.

4.7.1.3 CURB, GUTTER, SIDEWALK AND BASE MATERIALS.

Concrete and base materials shall conform to the following requirements.

A. GENERAL. This subsection defines materials, practices and designs to be used in the construction of all public curb, gutter and sidewalk.

All curb, gutter and sidewalk shall consist of air-entrained Type V Portland Cement Concrete and shall be constructed on a prepared subgrade in accordance with these specifications. All work shall conform to the lines and grades, thickness, and typical cross sections shown on the approved plans or established by the city.

B. SUBGRADE. The subgrade shall be excavated and filled with suitable material, as specified in Section 4.3.2.3 of these standards. All soft, yielding and otherwise unsuitable material shall be removed and replaced with suitable materials as outlined above. Filled sections shall be compacted and extend to a minimum of one (1) foot outside the form lines according to Section 4.3.2.3 of these standards.

C. GRAVEL BASE COURSE. A gravel base course consisting of crushed road base gravel shall be placed under all curbs, gutters, driveways, waterways, sidewalks and other miscellaneous flatwork. The gravel base material shall conform to the requirements contained in Section 4.5.7 of these specifications. Where the foundation material is found to be unstable, the Contractor shall furnish and place sufficient additional gravel or other suitable material as directed by the city to provide an adequate foundation upon which the concrete will be placed.

4.7.2 CONSTRUCTION METHODS AND EQUIPMENT. The methods employed in performing the work, all equipment, tools and machinery, and other appliances used in handling the materials and executing the work shall be the responsibility of the Contractor. The Contractor shall make such changes in the methods employed and in the equipment used as are necessary whenever the concrete being installed does not meet the specifications herein established.
These methods shall include, but are not limited to the following:

4.7.2.1 GENERAL CONCRETE PLACEMENT. Generally, concrete shall be placed as follows.

A. FORMS. Forms shall be properly built and adequately braced to withstand the liquid weight of concrete being placed in the forms. All linings, studding, whaling and bracing shall be such as to prevent bulging, spreading, loss of true alignment or displacement while placing and during setting of concrete.

B. PREPARATIONS. Prior to batching and placing concrete, all equipment for mixing and transporting the concrete shall be cleaned. All debris and ice shall be removed from the areas to be occupied by the concrete. All forms shall be oiled with a form-release agent. Masonry support or filler units that will be in contact with concrete shall be well drenched with water (except in freezing weather). Reinforcement shall be thoroughly cleaned of ice or other coatings. Water shall be removed from areas to receive concrete.

Reinforcement that has become too hot, due to sun exposure, in the opinion of the city, will be cooled with water prior to concrete being placed.

When placing concrete on earth surfaces, the surfaces shall be free from frost, ice, mud, water and other deleterious materials. When the subgrade is dry or pervious, it shall be sprayed with water prior to the placing of concrete or shall be covered with water-proof sheathing paper or a plastic membrane. No concrete shall be placed until the preparatory work (i.e. forms, reinforcement, etc.) has been inspected and approved by the city.

C. CONCRETE MIXING. The concrete shall be mixed until there is a uniform distribution of the materials. Sufficient water shall be used in concrete in which reinforcement is to be imbedded, to produce a mixture which will flow sluggishly when worked and can be conveyed from the mixer to the forms without separation of the coarse aggregate from the mortar. In no case shall the quantity of water used be sufficient to cause the collection of a surplus in the forms.

Ready-mixed concrete shall be mixed and delivered in accordance with the requirements set forth in Specifications for Ready-Mixed Concrete (ASTM C-94). Concrete shall be delivered and deposited in its final position within sixty (60) minutes after the cement and water have been added to the mixture.

D. DEPOSITING. Concrete shall be deposited as nearly as practical in its final position to avoid segregation due to rehandling or flowing. Concrete placement shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the corners of forms and around reinforcing bars. Concrete that has partially hardened or is contaminated by foreign material shall not be deposited in the work. Re-tempered concrete shall not be used.

Temperature of the mixed concrete shall be maintained between 60BF and 90BF at time of placement.

All concrete in structures shall be compacted by means of high- frequency internal vibrators of approved type and design during the

operation of placing, and shall be thoroughly worked around reinforcement and embedded fixtures and into the corners of the forms. Care must be taken not to over use vibrators causing separation of cement and aggregates.

E. FINISHING. After the concrete for slabs has been brought to the established grade and screeded, it shall be worked with a magnesium float and then given a light "broom" finish. In no case shall dry cement or a mixture of dry cement and sand be sprinkled on the surface to absorb moisture or hasten hardening. Surface edges of all slabs shall be rounded to a radius of one quarter to one half (1/2) inch with standard concrete finishing tools. Additional water shall not be sprinkled on the surface to aid finishing.

F. CURING AND PROTECTION. As soon as the concrete has hardened sufficiently, it shall be protected and cured in accordance with ACI Standards. The finished surface shall be kept moist for a minimum of seven days, or a chemical curing agent used to prevent the concrete from premature drying.

The freshly finished surface shall be protected from hot sun and drying winds until it can be sprinkled or covered as above specified. The concrete surface shall not be damaged or pitted by rain. The Contractor shall provide and use, when necessary, sufficient tarpaulins to completely cover all sections that have been placed within the preceding twelve (12) hours. The Contractor shall erect and maintain suitable barriers to protect the finished surface. Any section damaged from traffic, weather, people or other causes occurring prior to its final acceptance, shall be repaired or replaced by the Contractor in a manner satisfactory to the city.

G. WEATHER LIMITATIONS. Concrete shall not be poured where the air temperature is lower than thirty-five (35^0)degrees F. unless approved by the city. When there is likelihood of freezing during the curing period, the concrete shall be protected by means of an insulating covering to prevent freezing of the concrete for a period of not less than seven days after placing. Equipment for protecting the concrete from freezing shall be available at the job site prior to placing concrete. Particular care shall be exercised to protect edges and exposed corners from freezing. Cold weather placement shall generally follow the requirements of ACI 306.1

Hot weather placement shall generally conform to the requirements of ACI 305.

4.7.2.2 CONCRETE REINFORCEMENT INSTALLATION. Concrete reinforcement shall be installed in accordance with ACI (American Concrete Institute) standard requirements for reinforced concrete and generally as follows.

A. BENDING. Reinforcing bars shall be accurately formed to the dimensions indicated on the plans. Bends for stirrups and ties shall be made around a pin having a diameter not less than two (2) times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than six (6) times the minimum thickness of the bar, except that for bars larger than one(1) inch, the pin shall be not less than eight (8) times the minimum thickness of the bar.

B. SPLICING. Splicing of bars at points other than where shown on the plans will be permitted only by approval of the city. Splices of reinforcement at points of maximum stress shall be avoided wherever possible, and when used shall be staggered and in accordance with ACI Standards. The minimum overlap for a lapped splice shall be twenty four (24) bar diameters, but not less than twelve (12) inches and properly tied together.

C. PLACING. All reinforcing bars shall be placed accurately in the position shown on the plans, and shall be securely held in position by annealed iron wire ties of not less than sixteen (16) gauge or suitable clips at intersections. All reinforcing bars shall be supported by metal supports, spacers or hangers, in such a manner that there will not be any displacement while placing concrete.

D. EMBEDMENT AND PROTECTION. All reinforcing steel shall be protected by concrete embedment and protective cover as shown in Table 4.16, such cover in each case being the shortest distance between the face of the form or concrete surface, and the nearest edge or face of the reinforcement.

TABLE 4.17
REINFORCING BAR CLEARANCE

LOCATION OF REINFORCEMENT	COVER
Bottom bars - where concrete is deposited against ground without use of forms.	Not less than 3"
Main bars - where concrete is exposed to the weather, or exposed to the ground but placed in forms.	Not less than 2"
Bars in slabs and walls not exposed to the ground or weather.	Not less than 1"

4.7.2.3 CURB, GUTTER AND SIDEWALK CONCRETE PLACEMENT.
The concrete shall be placed either by an approved slipform/extrusion machine, by the formed method, or by a combination of both methods. Curb and gutter shall be placed as follows:

A. MACHINE PLACEMENT. The slipform/extrusion machine shall place, spread, consolidate, screed, and finish the concrete in one complete pass to provide a dense and homogeneous concrete section. A minimum amount of hand finishing should be necessary. The machine shall shape, vibrate, and/or extrude the concrete for the full width and depth of the concrete section being placed. It shall be operated with as nearly a continuous forward movement as possible. All operations of mixing, delivery, and spreading concrete shall provide for uniform progress, with stopping and starting of the machine held to a minimum.

B. FORMED METHOD. The forms shall be of wood, metal, or other suitable material straight and free from warp, having sufficient strength to resist the pressure of the concrete without displacement and sufficient tightness to prevent the leakage of mortar. Flexible or rigid forms of proper curvature shall be used for curves having a radius of one hundred feet, or less.

Forms shall be cleaned and coated with an approved form-release agent before concrete is placed against them.

The concrete shall be deposited into the forms without segregation and then tamped and spaded or mechanically vibrated for thorough consolidation. Front and back forms shall be removed without damage to the concrete after it has set.

C. FINISHING. The concrete shall be finished smooth, by a wood or magnesium float and then given a final surface texture using a light broom or burlap drag unless otherwise specified or directed. Concrete that is adjacent to forms and formed joints shall be edged with a standard jointer or edging tool as shown in the standard drawings. The top, face, and flow-line of the curb, and the top of driveway apron, shall be finished true to line and grade without any noticeable surface irregularities.

The Contractor shall be responsible for neatly stamping an "S" in the curb face at all sewer lateral locations and a "W" in the curb face at all water lateral locations along the curb.

The gutter shall not pond water. The surface of the curb and gutter shall not exceed more than one fourth (1/4) of an inch in ten (10) feet. No part of the exposed surface shall present a wavy appearance.

D. JOINTING.

D.1 **Contraction Joints**. Transverse weakened-plane contraction joints shall be constructed at right angles to the curb line at intervals not exceeding the values in accordance with standard drawings. Where the sidewalk abuts the curb and gutter, joints should align unless otherwise approved by the city. Joint depth shall at least be one quarter (1/4) of the cross section depth of the concrete. Generally, surface areas shall not exceed fifty square feet without contraction joints unless otherwise approved by the city.

Contraction joints may be sawed, hand-formed, or made by placing division plates in the form-work. Sawing shall be done within twenty four hours after the concrete has set to prevent the formation of uncontrolled cracking. The joints may be hand-formed either by using an appropriate jointing tool, or a thin metal blade to impress a plane of weakness into the plastic concrete, or by inserting one eighth (1/8) inch thick steel strips into the plastic concrete temporarily. Steel strips shall be withdrawn before final finishing of the concrete. Where division plates are used to make contraction joints, the plates shall be removed after the concrete has set while the forms are still in place.

D.2 Expansion Joints. Expansion joints for curb and gutter shall be constructed at right angles to the curb line at no greater than one hundred fifty (150) foot intervals, at immovable structures and at points of curvature for short-radius curves. Spacing for sidewalk

expansion joint shall not exceed twenty (20) feet. Filler material for expansion joints shall conform to requirements of ASTM D-994, D- 1751, or D-1752 and shall be furnished in a single one half inch thick piece for the full depth and width of the joint.

Expansion joints in a slip formed curb and gutter shall be constructed with an appropriate hand tool by raking or sawing through partially set concrete for the full depth and width of the section. The cut shall be only wide enough to permit a snug fit for the joint filler. After the filler is placed, open areas adjacent to the filler shall be filled with concrete and then troweled and edged.
Contaminated concrete shall be discarded.

Alternately, an expansion joint may be installed by removing a short section of freshly extruded curb and gutter, immediately installing temporary holding forms, placing the expansion joint filler, and replacing and reconsolidating the concrete that was removed.
Contaminated concrete shall be discarded.

D.3 Other Jointing. Construction joints may be either butt or expansion-type joints. Curbs and gutters constructed adjacent to existing concrete shall have the same type of joints as in the existing concrete with similar spacing, however, contraction joint spacing shall not exceed ten feet.

A silicone joint sealer as defined in ASTM C 962 shall be applied to all form-plate expansion joints. The silicone joint sealer shall be applied under pressure to a depth of not less than two inches from the outside surface of the curb and gutter.

E. PROTECTION. At all times during the construction of the project, the Contractor shall have materials available at the site to protect the surface of the plastic concrete against rain or other detrimental elements. These materials shall consist of waterproof paper, plastic sheeting or other approved material. For slip-form construction, materials to protect the edges shall also be required.

When concrete is being placed in cold weather and the temperature is expected to drop below 35 degrees F., suitable protection shall be provided to keep the concrete from freezing until it is at least seven (7) days old. Concrete damaged by frost action shall be

removed and replaced.

F. CURING. Concrete shall be cured for at least three days after placement to protect against loss of moisture, rapid temperature change, and mechanical damage. Liquid membrane curing compound, or other approved methods, or a combination thereof maybe used as the curing material. Membrane curing shall not be permitted in frost-affected areas when the concrete will be exposed to de-icing chemicals within thirty days after completion of the curing period.

G. BACKFILLING. At least three days after placement and after form removal, the concrete shall be backfilled to the lines and elevations as shown on the drawings or as required by the city. The length of time may be shortened if it can be demonstrated that the concrete has reached design strength. Any concrete damaged during backfill or other operations, shall be removed and replaced as directed by the city.

H. CONCRETE REPAIR. In lieu of removing and replacing concrete containing minor cracks, the city may direct the Contractor to repair the affected sections by sawing, routing, cleaning and sealing the cracks. All cracks repaired shall be sealed with a polyurethane TTS-230 type II crack filler or an approved silicone base joint sealer. Where modifications are to be made to existing concrete, the edges to be poured against shall be sawcut in neat, straight lines and the new concrete shall be edged with a standard edging tool.

I. WEATHER LIMITATIONS. Concrete shall not be poured when there is likelihood of freezing. During the curing period, the concrete shall be protected by means of insulating covers to prevent freezing of the concrete for a period of not less than seven days after placing. Equipment for protecting the concrete from freezing shall be available at the job site prior to placing concrete. Particular care shall be exercised to protect edges and exposed corners from freezing.

Hot weather concreting shall be in accordance with the latest ACI 305 Standards for “Hot Weather Concreting”.

4.7.2.4 CONCRETE BASE MATERIALS PLACEMENT. The placement of concrete base materials under curb, gutter and sidewalk shall conform to Section 4.5.7 of these standards.

4.7.3 QUALITY CONTROL. All concrete and base materials shall be placed in accordance with these standards and tested as follows. These are minimum

requirements and additional testing may be required by the city or the Project Geotechnical Engineer. Testing documentation provided to the city shall fully address the requirements of these standards.

4.7.3.1 CONCRETE TESTING. Minimum testing of the concrete shall be as follows:

Mix Design Certification: One per job. Testing shall be according to the latest ASTM standards.

Compressive Strength Tests: One set of four cylinders for each fifty cubic yards of concrete placed or portion thereof. Tests shall be according to ASTM C-31.

Air Entrainment: Tested at beginning of placement until two consecutive loads pass. Others tests shall be taken as required. Tests shall be according to ASTM C-231.

Slump Tests: Tested at beginning of placement until two consecutive loads pass. Others tests shall be taken as required. Tests shall be according to ASTM C-143.

4.7.3.2 CONCRETE BASE MATERIAL TESTING. Minimum testing of the curb, gutter and sidewalk base materials shall be as follows:

Gradation Tests: One test per five hundred (500) lineal feet of curb & gutter or fraction thereof. One test per one thousand three hundred fifty (1,350) square feet of a combination of sidewalk and driveway, or fraction thereof.

The sieve analysis shall be according to ASTM C-136, C-117.

Proctor: One determination for each source of base course as necessary to provide required compaction testing. Test shall be according to ASTM D-1557, Method A or D (modified proctor).

Moisture Density Tests: One test per three hundred (300) lineal feet of curb & gutter and one test per three hundred (300) lineal feet of a combination of sidewalk and driveway or fraction thereof. Moisture content shall be at plus or minus two percent of optimum. Proper moisture shall be maintained until the concrete is poured. Tests shall be according to ASTM D-1556 or D-2922 and D-3017.

Thickness: One random boring or test hole per two hundred (200) lineal feet of curb & gutter and one random boring or test hole per two hundred (200) lineal feet of a combination of sidewalk and driveway or fraction thereof. If sufficient observation has been made by the city to verify required thickness, the city may waive thickness testing. Said waiver must be in writing.

No single measured thickness shall be less than the required thickness.

4.7.3.3 ACCEPTANCE. A total of four (4) concrete test cylinders shall be taken at time of pouring from loads passing the requirements of section 4.8.3.1. One cylinder, shall be broken at seven (7) days and shall be used as an indication of future strength. Two (2) cylinders shall be broken at twenty eight (28) days. If the average of the twenty-eight day breaks is below minimum compressive strength, the concrete may be rejected unless retests prove otherwise. At the Contractor's option, the fourth cylinder (the “hold” cylinder) may be broken at twenty eight (28) days, and included with the average, or it can be held for future testing if additional tests are needed.

Concrete with an average compressive strength below the required strength shall be reviewed by the city. The "hold" cylinder, if available, may be broken or other specialized tests (such as a spectrum analysis) may be required. If additional tests are required to determine if strength tests are representative they shall be performed by coring in accordance with ASTM C-42 method or other acceptable non- destructive methods. The re-tested strength shall be the average of three cores (or other acceptable method). The city may accept the concrete as a result of these additional tests or may require the work to be removed and replaced. The city shall make the final decision. All costs incurred in resampling and retesting are not the responsibility of the city.

All curb, gutter or sidewalk base material not in compliance with these standards shall be removed and replaced. Any costs for testing the re- work are not the responsibility of the city.

4.8 RESTORATION OF EXISTING SURFACE IMPROVEMENTS.

4.8.1 INTRODUCTION. The Contractor shall be responsible for the protection and restoration, or replacement, of all existing improvements on public or private property and all improvements placed during the progress of the work. Existing improvements shall include, but not be limited to, asphalt, curbs, gutters, ditches, driveways, culverts, fences, signs, sidewalks, utilities, landscaping and walls, etc.

All existing improvements damaged during construction shall be reconstructed to equal or better condition than that which existed. However, as a minimum, the requirements contained in these specifications shall be adhered to.

All traveled surfaces shall be maintained flush with the existing surfaces at all times until permanent repairs are completed.

Prior to the beginning of any work activity involving tunneling under, or making any excavation in any street, alley or other public place, the Contractor shall comply with all requirements for permits and bonding. The Contractor shall also comply, during the work activity, with all of the requirements contained within Section 2.5, BARRICADES AND WARNING SIGNS - WORK AREA PROTECTION, of these specifications.

4.8.2 GRAVEL SURFACES. Where existing gravel surfaces are damaged due to trenching or other works the surfaced areas (such as roads and driveways) shall be restored and maintained as follows.

4.8.2.1 The gravel shall be placed deep enough to provide a minimum of six inches thickness , or to match the thickness of existing material, or to these specifications, whichever is greater.

4.8.2.2 The gravel shall be placed and compacted in the trench (or other work) at the time it is backfilled. The surface shall be maintained by blading, sprinkling, rolling or adding gravel in order to maintain a safe uniform surface satisfactory to the city. Excess material shall be removed from the premises immediately.

4.8.2.3 Material for use on gravel surfaces shall conform to the requirements contained within these specifications.

4.8.3 BITUMINOUS SURFACES. Where existing bituminous surface is damaged due to trenches or other works, the bituminous surfaced roads, driveways, parking areas, etc., shall be restored within five (5) days as follows:

4.8.3.1 Mud or other soft or spongy material shall be removed from the trench and the space filled with granular backfill to within twelve (12) inches of finished grade. The granular backfill shall be rolled and compacted to a minimum of ninety-five (95) percent of maximum dry density in layers not exceeding six (6) inches in compacted thickness. Base gravel shall then be placed to a depth equal to the original gravel base or the requirements of these specifications, but not less than six (6) inches thick and compacted to a minimum of ninety five (95) percent of maximum dry density.

4.8.3.2 Prior to permanent resurfacing, the Contractor shall saw-cut the existing paving to provide vertical, clean, straight lines as nearly parallel to the centerline of the trench as practical. The existing bituminous paving shall be cut back beyond the limits of any excavation so that the edges of the new paving will rest on at least six (6) inches of undisturbed base material.

4.8.3.3 Pavement restoration shall include tacking of pavement edges with type SS-1H bituminous material, and placing and compacting plant mix asphalt in accordance with these specifications to the level of the adjacent pavement surfaces.

4.8.3.4 The bituminous surface shall be restored by standard paving practices to a thickness equal to the original pavement or the requirements of these specifications, but in no case less than two inches. The finished repaired surface shall not deviate more than one quarter (1/4) inch (vertically) from the existing road surface. Any deviations greater than that specified shall be immediately removed and replaced to the proper standards.

4.8.4 CONCRETE SURFACES. All concrete curbs, gutter, sidewalks, and driveways shall be removed and replaced to the next joint or score line beyond the actually damaged or broken sections; or saw-cut to neat, plane faces. All new concrete shall match, as nearly as possible, the appearance and texture of adjacent concrete improvements unless adjacent improvements do not meet these specifications.

All damaged base material shall be restored and compacted in accordance with these specifications.

Agenda Date: 12/18/2025 **Agenda Item Number:** 09

Subject:

Consider approval of Ordinance No. 2025-111 approving a development agreement amendment for Kachina Cliffs Phase 1 Lot 24 and Kachina Cliffs Phase 2 Lot 38 (Case No. 2025-DAA-004)

Item at-a-glance:

Staff Contact: Wes Jenkins

Applicant Name: Pridepoint Construction LC

Reference Number: 2025-DAA-005

Address/Location:

2912 North Chinle Circle, Kachina Cliffs Phase 1 Lot 24

Item History (background/project status/public process):

The purpose of the development agreement amendment is to allow the applicant to disturb Hillside Slope Area No Disturbance on disturbed land of Lot 24 of Kachina Cliffs Phase 1 in exchange for an equivalent portion of land undisturbed and designated as developable, on Kachina Cliffs Phase 2 Lot 38. The agreement amendment recognizes that the disturbed area on lot 24 is greater than previous Development Agreement allowed. The Planning Commission held a public hearing on December 9, 2025 to hear the request for the development agreement amendment and forwarded a positive recommendation with no further conditions.

Staff Narrative (need/purpose):

The purpose of this amended agreement is to allow the Developer to exchange property greater than previous Development Agreement from Kachina Cliffs Phase 1 Lot 24 "Hillside Slope Area - No Disturbance" with undisturbed developable property from Kachina Cliffs Phase 2 Lot 38 to be designated as No Buld - No Disturb" area.

Name of Legal Dept approver: Jami Brackin

Budget Impact: No Impact

Recommendation (Include any conditions):

On December 9, 2025, the Planning Commission held a public hearing on the requested development agreement and the Planning Commission recommends approval with no further conditions.

Agenda Date: 12/18/2025 **Agenda Item Number:** 10

Subject:

Consider approval of a Memorandum of Understanding (MOU) with Washington City regarding the 2025 St. George City Annexation Policy Plan.

Item at-a-glance:

Staff Contact: Ryan Dooley

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

61 South Main Street

Item History (background/project status/public process):

This MOU addresses the issues raised by Washington City regarding the City's Draft Annexation Policy Plan.

Staff Narrative (need/purpose):

On April 7, 2025, St. George City sent Washington City notice of its Draft Annexation Policy Plan (Policy). On April 25, 2025, Washington City responded to the notice via a letter to St. George City Community Development Director Carol Winner outlining several concerns regarding the draft Policy. The St. George City Planning Commission heard the Policy on May 27, 2025, and forwarded a positive recommendation to the St. George City Council. The St. George City Council held a public hearing on the Draft Policy on June 19, 2025. Subsequent to these meetings, Mayors Randall and Staheli of St. George and Washington, met along with staff members of each city to resolve the disputed annexation overlap areas which addressed in the MOU. This MOU reflects the agreement reached that Expansion Area F will be removed from the City's Annexation Policy Plan with Washington City removing its objection to Expansion area D in the southeast corner of St. George City.

Name of Legal Dept approver: Ryan N. Dooley

Budget Impact: No Impact

Recommendation (Include any conditions):

Approve

Attachments

MEMORANDUM OF UNDERSTANDING
(2025 St. George City Annexation Policy Plan)

This Memorandum of Understanding (MOU) is made between Washington City (Washington) and City of St. George (St. George) (Collectively the Cities) and shall be effective on the date when both Cities have signed.

I. AUTHORITY

The statutes and regulations authorizing Washington and St. George to enter into this MOU and engage in the activities described herein include but are not limited to Utah Code Sections 10-8-101 (Powers and Duties of Municipalities) and Article XI, Section 6 of the Utah Constitution.

II. BACKGROUND

On April 7, 2025, St. George sent Washington notice of its Draft Annexation Policy Plan (Policy). On April 25, 2025, Washington responded to the notice via a letter to St. George City Community Development Director Carol Winner outlining several issues regarding the draft Policy. The St. George City Planning Commission heard the Policy on May 27, 2025, and forwarded a positive recommendation to the St. George City Council. The St. George City Council held a public hearing on the Draft Policy on June 19, 2025. Subsequent to these meetings, Mayors Randall and Staheli of St. George and Washington, met along with staff members of each city to resolve the disputed annexation overlap areas.

III. St. George Annexation Policy Plan

St. George identified areas in its Draft Policy for possible annexation. See Attached Exhibit A. To resolve Washington's issues and concerns, the Cities have agreed to the following understanding:

Expansion Area D: Southeast to Arizona

Expansion Area D is located at the southeast corner of the existing St. George boundary, and it overlaps significantly with Washington's Annexation Policy Plan. The Cities agree that Washington will not protest this area annexing into St. George, and, in exchange, St. George agrees to withdraw Expansion Area F from its Annexation Policy Plan.

Expansion Area F: East Fields 6495

Expansion Area F is located east of the Little Valley area and north of the St. George Regional Airport. St. George will remove Expansion Area F from its 2025 Annexation Policy Plan, and Washington will not protest Expansion Area D coming into St. George.

The Cities understand and agree that the property owner will request annexation of Expansion Area D into St. George, and that the property owner will request annexation of Expansion Area F into Washington at the same time.

IV. GENERAL

Amendment. This MOU may be amended through written agreement of all Parties.

No Third-Party Beneficiaries. Nothing in this MOU is intended to create any rights, duties, or obligations by the Parties to any person or entity not a party, and this MOU shall not be deemed to give rise to any right by any person or entity not a party against any Party to this MOU. Nothing in this MOU is intended to, nor shall it be deemed, to relieve or discharge the obligation or liability of any person or entity not a party to this MOU.

Authorities not altered. Nothing in this MOU alters, limits, or supersedes the authorities and responsibilities of any Party on any matter within their respective jurisdictions. Nothing in this MOU shall require any of the Parties to perform beyond its respective authority.

Financial obligations. Nothing in this MOU shall require any of the Parties to assume any obligation or expend any sum in excess of authorization and appropriations available.

Immunity and defenses retained. Each Party retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of this MOU.

Counterparts. The parties may execute this MOU in multiple counterparts with the same force and effect as if all signatures were set forth in a single document. Facsimile and other copies shall have the same force and effect as the original.

Paragraph Headings. The paragraph and subparagraph headings used herein are for convenience only and shall not be considered in the interpretation of this MOU.

Laws and Regulations. Any and all actions performed pursuant to this MOU will comply fully with all applicable Federal, State of Utah and local laws and regulations.

Notices, Requests, and Communications. Unless otherwise set forth above, all notices, requests, and communications required by this MOU shall be in writing. Any party delivering any written document shall deliver the written document by any of the following means: (a) certified or registered mail, postage prepaid, return receipt requested, in which case the written document shall be deemed delivered upon the earlier of actual receipt or three business days after the postmark date, (b) recognized commercial overnight courier, in which case the written document shall be deemed delivered one business day after acceptance for next business-day delivery by the courier, or (c) personal delivery, in which case the written document shall be deemed delivered when received. The addresses to which the written documents shall be delivered are as follows:

If delivered to the City:	City of St. George Attn: City Recorder 61 S. Main Street St. George, UT 84770
with a copy to:	City of St. George Attn: City Attorney 61 S. Main Street St. George, UT 84770

If delivered to Washington:	Washington City Attn: City Recorder 111 North 100 East Washington, Utah 84780
with a copy to:	Washington City Attn: City Attorney 111 North 100 East Washington, Utah 84780

Any party shall deliver notice of change of address in the manner described in this section. Rejection or other refusal to accept a notice or the inability to deliver a notice because of a changed address of which no notice was given will be deemed to constitute receipt of the notice sent.

Execution. By executing this MOU below, the executing individuals acknowledge that (1) they have read this MOU, (2) they understand its terms, (3) they have had the opportunity to have this MOU reviewed by independent counsel, (4) they have the full and complete authority to execute this MOU on their own behalf or on the behalf of any entity which they represent, and (5) they intend to bind themselves or the entity which they represent, if any, to the terms of this MOU in full. The failure of any executing individual to date their signature will not affect the validity of this MOU.

***

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[SIGNATURES FOLLOW]

In witness of their intention to be bound by the above terms, the parties hereby execute this MOU as follows:

CITY OF ST. GEORGE

_____ By: _____
Date Michele Randall, Mayor

Attested: By: _____
Christina Fernandez, City Recorder

Approved: By: _____
Ryan N. Dooley, City Attorney

WASHINGTON CITY

_____ By: _____
Date Kress Staheli, Mayor

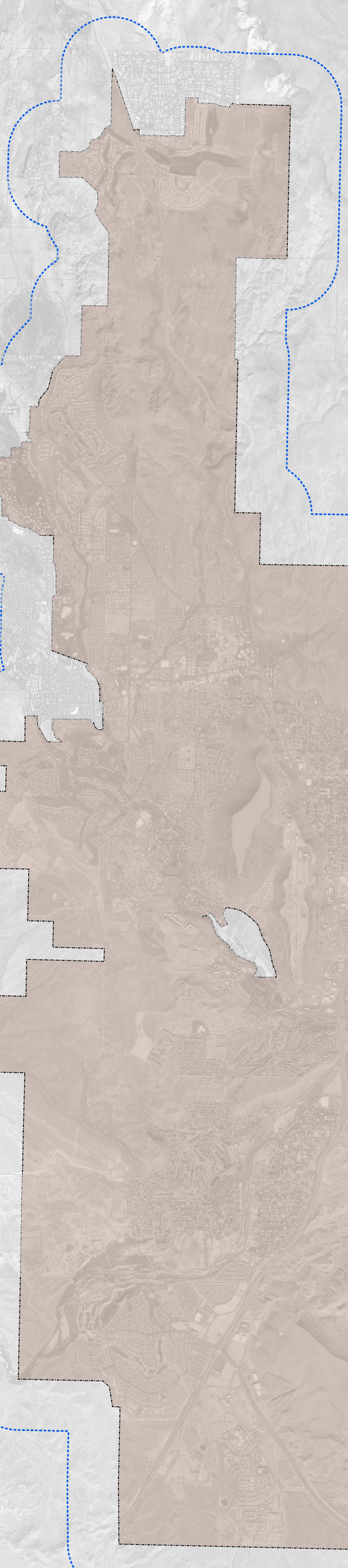
Attested: By: _____
Tara Pentz, City Recorder

Approved: By: _____
Thad Seegmiller, City Attorney

St.George

Expansion Areas

- Potential Annexation
  - D Southeast to Arizona
  - F East Fields 6495
- City Boundary
- 1/2 Mile Buffer
- Previously Annexed Areas



0 0.5 1 2 3 4 Miles

N

Vantor, City of St. George GIS

Agenda Date: 12/18/2025 **Agenda Item Number:** 11

Subject:

Consider approval of Ordinance No. 2025-112 amending the City's General Plan to adopt an Annexation Policy Plan as an Element of the General Plan.

Item at-a-glance:

Staff Contact: Carol Winner

Applicant Name: City of St George

Reference Number: 2025-GPA-009

Address/Location:

n/a

Item History (background/project status/public process):

This annexation plan was first presented to the Planning Commission on April 22, 2025. At this meeting, a public comment period was opened for affected entities to make comments. Washington City provided the only comment by an affected entity. Utah Code requires that our Annexation Policy Plan includes a statement addressing any comments made by affected entities. Please refer to page 23 of the Plan for the full statement. On May 27, 2025, the Planning Commission met to discuss this item a second time. At this meeting a public hearing was held. The Planning Commission received three comments via email and heard eight comments at the public hearing concerning this plan. The comments focused on concerns about sensitive land development, traffic impacts, the availability of water, and safety. After the public hearing, the Planning Commission discussed the policy and eventually unanimously recommended approval of this Annexation Policy Plan as presented. The Planning Commissioners ultimately recommended approval with a 6-0 vote. On June 19, 2025 a public hearing was held at the City Council meeting for this annexation policy plan. At the close of the hearing, the council chose to make modifications to this plan and return to vote at a later date.

Staff Narrative (need/purpose):

The Annexation Policy Plan is a land use element which is part of the General Plan. Under Utah Code (10-2-401.5), cities must adopt an Annexation Policy Plan and identify potential annexable areas before a person can petition to annex into the city. This policy was last updated in 2009. The proposed Annexation Policy Plan is intended to replace our existing annexation plan. According to Utah Code, all municipalities must follow the process below to adopt an annexation policy plan.

Name of Legal Dept approver: Jami Bracken

Budget Impact: No Impact

Recommendation (Include any conditions):

On May 27, 2025, with a 6-0 vote, the planning commission recommended approval of the Annexation Policy Plan.

Attachments

PLANNING COMMISSION AGENDA REPORT: 04/22/2025
PLANNING COMMISSION AGENDA REPORT: 05/27/2025
CITY COUNCIL AGENDA REPORT: 06/19/2025
CITY COUNCIL AGENDA REPORT: 12/18/2025

REQUEST: Consider a request to adopt an **Annexation Policy Plan** as an Element of the General Plan. (2025-GPA-009)

BACKGROUND:
The Annexation Policy Plan is a land use element which is part of the General Plan. Under Utah Code (§10-2-401.5), cities must adopt an Annexation Policy Plan and identify potential annexable areas before a person can petition to annex into the city. This policy was last updated in 2009. The proposed Annexation Policy Plan is intended to replace our existing annexation plan. According to Utah Code, all municipalities must follow the process below to adopt an annexation policy plan.

This Annexation Policy Plan includes a map, criteria for annexation, justification for excluding areas, and responses to comments from affected entities. The State of Utah and the City of St. George have established standards. These standards are:

1. Utah Code Standards include contiguity, no creation of unincorporated islands, comprehensive parcel inclusion, and avoiding annexation solely for revenue.
2. City of St. George Standards focus on urban development potential, natural boundary alignment, socio-economic similarity, and discourage peninsula annexations.

Within this annexation policy the following items are addressed:

1. Municipal Services.
   The policy outlines how municipal services are to be extended and explains the need for adequate public facilities. The policy also discusses the idea that new annexed growth will pay its own way through impact fees.

2. Annexation Petition Process.
   The process a petitioner must follow to annex into the city is outlined in this policy. The petitioner is required to demonstrate the viability and benefit to the community with their annexation request. They also must prepare analyses and studies that show all impacts to the community. This includes utilities, transportation, parks, public safety, and tax impacts.

3. Consideration of Annexation.
   This policy explains the process when considering an annexation. Public input is taken into account along with our ability to offer services. The growth areas of the City should be of sufficient size to accommodate planned residential and non-residential growth consistent with the General Plan. In addition, finance and tax consequences are considered

4. Expansion Areas
   This policy details six possible expansion areas. They are Expansion Area A – Red Cliffs Reserve, Expansion Area B – Tonaquint West, Expansion Area C – Dixie Drive/Indian hills, Expansion Area D – Southeast to Arizona, Expansion Area E – East Fields 6615, and Expansion Area F – East Fields 6495. The conditions of each of these six areas are mentioned in the policy.

HISTORY OF APPROVAL PROCESS:
This annexation plan was first presented to the Planning Commission on April 22, 2025. At this meeting, a public comment period was opened for affected entities to make comments. Washington City provided the only comment by an affected entity. Utah Code requires that our Annexation Policy Plan includes a statement addressing any comments made by affected entities. Please refer to page 23 of the Plan for the full statement.

On May 27, 2025, the Planning Commission met to discuss this item a second time. At this meeting a public hearing was held. The Planning Commission received three comments via email and heard eight comments at the public hearing concerning this plan. The comments focused on concerns about sensitive land development, traffic impacts, the availability of water, and safety. After the public hearing, the Planning Commission discussed the policy and eventually unanimously recommended approval of this Annexation Policy Plan as presented.

On June 19, 2025 a public hearing was held at the City Council meeting for this annexation policy plan. At the close of the hearing, the council chose to make modifications to this plan and return to vote at a later date.

There has been one modification to this plan since it was presented on June 19, 2025. Area F has been removed from this Plan. As previously mentioned, Washington City had concerns with portions of this proposed that overlapped with both cities. Through discussions with both cities, an understanding was reached, Area F was removed, and a Memorandum of Understanding was drafted and will be presented at this same meeting.

RECOMMENDATION:
With a 6-0 vote, the Planning Commission recommended approval of the attached Annexation Policy Plan as presented.

Exhibit A
St. George 2025 Annexation Policy Plan

Exhibit B
PowerPoint Presentation

City of St. George Annexation Policy Plan – Land Use Element

Introduction

Under Utah law (Utah Code §10-2-401.5), each city desiring to annex unincorporated area may not do so unless the municipality has adopted an Annexation Policy Plan. An Annexation Policy Plan must include:

1. A map of the proposed expansion area;
2. A statement of the specific criteria that will guide the municipality's decision whether or not to grant future annexation petitions, address matters relevant to those criteria; and
3. Justification for excluding from the expansion area any area containing urban development within ½ mile of the municipality's boundary; and
4. A statement addressing comments made by "affected entities" at or within 10 days after the public meeting.

In order to qualify for annexation, a parcel of property must meet the annexation standards as established by Utah Code as well as standards established by the City of St. George.

Annexation Standards Established by Utah Code (Utah Code §10-2-402)

1. The area to be annexed must be contiguous to the boundaries of the City of St. George and must not leave an unincorporated island or peninsula;
2. The area to be annexed must file a petition per Utah Code §10-2-403;
3. The area to be annexed may not include part of a parcel of real property and exclude part of the same parcel unless the owner of that parcel has signed the annexation petition; and
4. The City of St. George may not annex an unincorporated area for the sole purpose of acquiring municipal revenue or to retard the capacity of another municipality to annex the same or related area unless the municipality has the ability and intent to benefit the annexed area by providing municipal services to the annexed area.

Annexation Standards Established by the City of St. George

1. Part or all of the area to be annexed should be developed for urban purposes, or such development should be anticipated in the near future.
2. New City boundaries should conform, wherever practical, with natural topographic features such as ridge lines, streams, creeks, or section lines; established streets, highways or other recognized logical boundaries.
3. New City boundaries, if using a street, road, or highway as a boundary, should include land on both sides of the street, etc., within the boundary.
4. Socio-economic and land use characteristics of the area to be annexed should generally be similar to conditions within the contiguous regions of the City.
5. The annexation of peninsulas that extend into unincorporated areas is discouraged and should be avoided

City Policies Regarding Extension of Municipal Services

Upon the annexation of territory to the City of St. George, the following guidelines with respect to the extension of municipal services will be adhered to.

1. Immediately upon the final acceptance of an annexation by the City, police and fire protection will be extended into the annexed area. However, if fire hydrants, water lines or water capacity are inadequate, fire protection will be compromised. New construction shall meet city development standards.
2. Culinary water will be made available to the annexed area. If existing waterlines are inadequate (as determined by the City) or no waterlines are present, the cost of extending adequate water lines shall be paid by the individual(s) desiring the service.
3. Residents of an annexed area will be allowed to connect to the City sanitary sewer system if there is capacity in existing lines. The cost of extending sewer lines shall be paid by the individual(s) desiring the service. The development of any subdivision in an annexed area will be regulated by the City of St. George Land Use Regulations (City Code Title 10).
4. St. George Energy Services will make power available to the annexed area. If existing powerline are inadequate (as determined by the City) or no powerlines exist, the cost of extending adequate power lines shall be paid by the individual(s) desiring the service.
5. Prior to granting permission for any construction or development in an annexed area, the City will carefully evaluate access and any potential changes in traffic patterns and flow. Using the Road Master Plan as a guide, the City will require adequate access on streets to efficiently handle anticipated traffic patterns or flow.
6. The costs of any street improvements shall be paid by those individuals who desire the improvements, or those who propose new development.
7. Problems encountered as a result of changes in land use shall be solved to the satisfaction of the City by the landowner or developer at his/her expense.

Adequate Public Facilities

The adequacy and availability of public utilities and facilities is a key issue in St. George and surrounding communities. The City believes as a general principle that growth should "pay its own way" and that infrastructure necessary to support growth must be developed concurrently as the population increases.

For new subdivisions and major commercial or industrial projects the levels of service (LOS) listed below must be concurrently available if new development is to be approved.

If these basic infrastructure facilities are not adequate, the proposed development must either be denied or deferred until services are available. In some situations, the developer may be willing to advance a necessary service or facility at his own expense in order to satisfy the "adequacy" requirement.

Only four basic public facilities and services are included in the "concurrency" requirement:

1. Culinary water

2. Wastewater
3. Power (as applicable – expansion area may not be in St. George Energy Services boundaries)
4. Roadways

These facilities and services represent a critical threshold without which development should not proceed. It is assumed other public services/ facilities will be provided through impact fees and/or other governmental revenues in a timely manner that will satisfy public service needs.

The LOS standards for culinary water, wastewater and roads are as follows:

Water - The minimum LOS for culinary water is to maintain a water system capable of meeting the daily and peak demands of City residents and businesses, including the provision for adequate fire flows. The distribution system must be sized to accommodate peak hourly instantaneous flows with a minimum of 40 psi pressure existing in the system at all points, and shall not fall below 20 psi, to comply with the fire flow standards required by the State (Utah Administrative Code rule 309-105-9).

Wastewater - The minimum LOS is to maintain a collection and treatment system capable of meeting the daily and peak flows of the service area in compliance with State and Federal standards. The sewer collection lines shall not flow more than 2/3 full under peak flow conditions. The permitted capacity of the treatment facility shall not be exceeded.

Power – The minimum LOS is to maintain a power system that is reliable, responsive and committed to meeting customer needs while ensuring safety and regulatory compliances.

Roads - Developments that will increase traffic volume on collector and arterial road intersections will be required to improve such intersections to maintain not less than LOS D during peak hours (less than 40 seconds average wait at an intersection).

They will be considered concurrently available with development if one of the following applies:

1. The minimum LOS will be available when building permits are issued, or
2. The City has made provisions to meet the service demand in a timely manner by either (a) including the service or facility improvement in its capital improvements program, or (b) establishing a Special Improvement District to provide the service or facility, or
3. The developer has entered into a binding agreement guaranteeing that the facilities or services will be available when the impacts of the development occur (i.e. at time of occupancy).

<u>Procedure and Involvement</u>

The process and procedure for annexation, as outlined in the Utah State Code, is one that is extensive and lengthy but provides ample opportunity for protest and consideration, including

general public scrutiny and input. It is a process that hinges on the Annexation Policy Plan. In similar fashion, the adoption of an Annexation Policy Plan is an extensive one designed to have a built-in element of public review and input. It is a procedure that intricately involves both the Planning Commission and the City Council.

Responsibilities of the Planning Commission (Recommending Body)

- Prepare a proposed Annexation Policy Plan.
- Provide notice and hold a public meeting to allow Affected Entities, as defined in the Utah State Code, to examine the proposed Annexation Policy Plan and to provide input on it.
- Accept and consider any additional written comments from Affected Entities after the public meeting.
- Make any modifications to the proposed Annexation Policy Plan the Planning Commission considers appropriate, based on input provided at or following the public meeting.
- Provide notice and hold an official public hearing on the proposed Annexation Policy Plan.
- Make any further modifications to the proposed Annexation Policy Plan the Planning Commission considers appropriate, based on input provided at the public hearing.
- Submit its recommended Annexation Policy Plan to the City Council for consideration.

Responsibilities of the City Council Duties (Adopting Body)

- Provide notice, including notice to Affected Entities, of a public hearing.
- Hold a public hearing on the Annexation Policy Plan recommended by the Planning Commission.
- After the public hearing, make any modifications to the recommended Annexation Policy Plan that the City Council considers appropriate.
- Adopt the recommended Annexation Policy Plan, with or without modifications.

Responsibilities of the Petitioner

The process for annexation is generally reactionary for a municipality based on an application indicating a petitioner's intent to annex rather than a city initiative to add property to the municipal boundary. As such the emphasis should be placed upon the petitioner to demonstrate the viability and benefit to the community of the annexation request. The petitioner for any annexation should be solely responsible for providing, to the satisfaction of the City, professionally -prepared analyses and studies that clearly, thoroughly, and specifically identify and outline the viability of the petition and resulting impacts to the community, should the petition be approved, in at least each of the areas:

- Culinary Water: source provision, storage, delivery, and infrastructure
- Sewer & Wastewater: collection, treatment, secondary water, and infrastructure
- Power: Infrastructure capacity, infrastructure development – expansion or upgrades, and energy demand
- Storm Water: collection, disposal, regionalization, and infrastructure
- Transportation: vehicular, non-motorized, active transportation, transit, pedestrian modes, and infrastructure
- Parks, Recreation, & Open Space: services provided, impact on existing facilities and programs, needs for additional and expanded facilities and programs, active recreation, and

open space preservation
- Public Safety: services provided, impact on existing facilities, needs for additional and expanded facilities, and impacts on response capabilities to the area(s) proposed for annexation, and infrastructure
- Taxes: implications to the public funds from added areas and land uses proposed in the immediate circumstances as well as over 5- and 10-year horizons

Annexation Goals and Considerations

The management of growth and expansion should be considered with all types of development applications and activities. These considerations should separate areas of the unincorporated county into areas that the City has identified as possible areas of expansion that can reasonably be accommodated with municipal services by the City of St. George. These areas should be coordinated with Washington County and other entities to ensure that growth is consistent with appropriate goals and plans. By discouraging growth in outlying areas and encouraging growth in areas where services are available, or can easily be extended, the City can discourage sprawl development and allow for the efficient cost-effective provision of municipal services.

The growth areas of the City should be of sufficient size to accommodate planned residential and non- residential growth consistent with the General Plan, taking into account the following:

1. Land with natural constraints, i.e. sensitive lands, water sheds, water drainage, cliffs, steep slopes, views, vegetation preservation, rock slides, liquefaction, and fault lines, etc.;
2. Agricultural land to be preserved;
3. Greenbelt and open space lands;
4. Transportation corridors and preservation;
5. Existing projects with development potential;
6. Land use patterns already created by existing development;
7. Development buildout potential and timing;
8. Preservation of public infrastructure and water sources;
9. Preservation of viewsheds and scenic vistas where possible; and
10. Needs for preservation of open-space, parks, and wildlife habitats.

The following factors should be considered in determining the precise location of annexation growth area boundaries:

1. Geographic, topographic, and manmade features;
2. The location of public facilities;
3. Availability of needed services, limits of capacities and extension limits;
4. Jurisdictional boundaries of other public entities and improvement districts; and
5. Location of natural resource lands and critical areas.

Planning growth in this way could provide the following advantages for the City:

1. An efficient development pattern;
2. Identification and maintenance of protected agricultural areas;
3. Avoidance of unnecessary and premature consumption of land that cannot be developed or serviced efficiently;
4. A focused plan for preserving existing public facilities, capital investments and extension of public facilities in the future;
5. Development and maintenance of fiscal integrity in City operations by encouraging the full utilization of existing infrastructure;
6. Diversification and strengthening of the tax base of the community;
7. Development of local job opportunities;
8. Protection and preservation of natural and environmental features that are desired by the community; and
9. Facilitation of development by providing sufficient areas to support anticipated populations.

Annexation Policy Plan Information

Without an adopted Annexation Policy Plan the City would be prohibited from considering petitions for annexation. An Annexation Policy Plan is required to review and address specific topics and aspects of property annexation. Based on current Utah State Code requirements, the following aspects and topics are required and included within this Annexation Policy Plan:

- A map of the Expansion Areas which identify those areas considered reasonable for potential annexation and those that are not.
- A statement of the specific criteria that will guide the city's decision whether or not to approve future annexation petitions, addressing matters relevant to those criteria including:
  - The character of the community
  - The need for municipal services in developed and undeveloped unincorporated areas
  - The city's plans for extension of municipal services;
  - How the services will be financed
  - An estimate of the tax consequences to residents both currently within the municipal boundaries and in the Expansion Area
  - The interests of all affected entities
- The justification for excluding from the Expansion Areas any area containing urban development within ½-mile of the city's boundary
- A statement addressing any comments made by Affected Entities at or after the public meeting and public hearings

This plan shall be construed neither as an expression of the City's intention or ability to annex property or extend municipal services and infrastructure to any particular property, nor to do so in any particular time frame or at all. Rather it should only be considered as a statement of policy by which consideration of petitions for annexation will be reviewed and areas where that consideration may be possible. Simply put, should the City choose to annex any land identified in this plan, the City's stated policy is for the landowners and developers to construct and dedicate all land and facilities necessary to extend and provide municipal services, e.g., roads, water, sewer, storm drain, etc., as a condition to annexation.

Expansion Area Map

Each Annexation Policy Plan is required by state law to include a map of the Expansion Area(s) which may be considered by the City for possible inclusion in the future. Identification of properties within an Expansion Area does not suggest or entitle any such property to annexation. Adoption of an Expansion Area Map represents solely the scope of properties that may be considered for potential annexation.

Utah State law states that, if practicable and feasible, annexation boundaries should be aligned with surrounding entities under the following considerations:

- The boundaries of existing local districts and special service districts for sewer, water and other services
- The boundaries of school districts whose boundaries follow city boundaries
- The boundaries of other taxing entities
- To eliminate islands and peninsulas of territory that are not receiving municipal-type services
- To facilitate the consolidation of overlapping functions of local government
- To promote the efficient delivery of services
- To encourage the equitable distribution of community resources and obligations

The City has weighed each of these considerations in determining the proposed Expansion Areas illustrated in the Expansion Area Map and anticipates possible annexations in the following areas:

Expansion Area A – Red Cliffs Desert Reserve

Expansion Area A is located north of the downtown core and existing Red Cliffs Desert Reserve Area. The potential area would include more of the City Creek area of the Red Cliffs Desert Reserve as well as areas in Broken Mesa.

This area is currently part of the Red Cliffs Desert Reserve. To maintain the goals and purpose of the reserve, this area may be best suited for Sensitive Lands preservation, utilities, roadways and recreational projects only.

Expansion Area B – Tonaquint West

Expansion Area B is located west of Dixie Drive going north to Santa Clara City and south to the Arizona state border.

This area consists of some privately owned, unincorporated land however the bulk of the area is owned by the State of Utah.

This area may be best suited for residential and commercial uses with area to be protected as Sensitive Lands.

Expansion Area C – Dixie Drive/Indian Hills

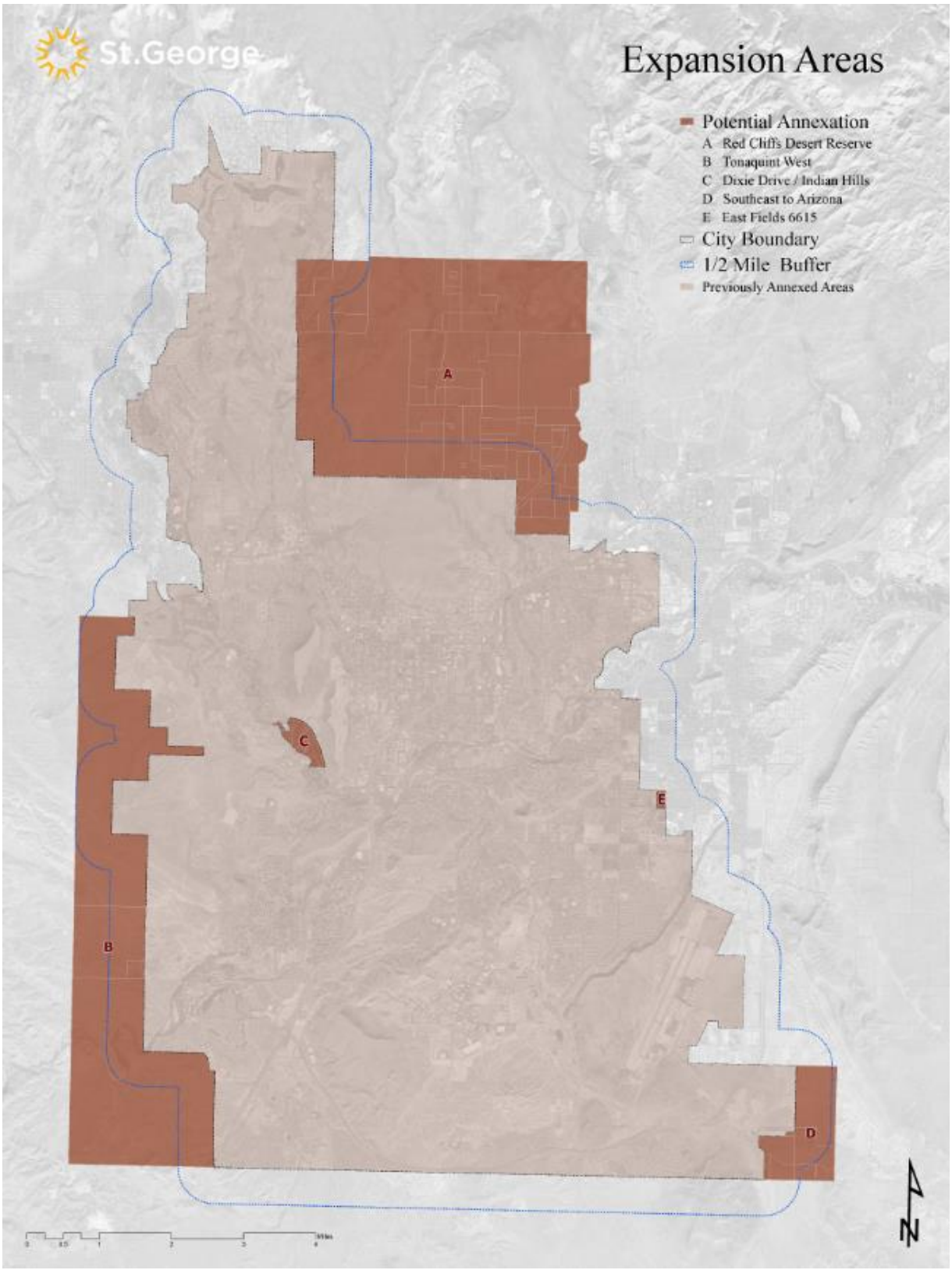
Expansion Area C is bounded by the Santa Clara River and development to the south (see Dixie Drive) and north by Indian Hills Drive. It is a remnant island of unincorporated land surrounded by properties located within City of St. George boundaries.

This area is currently agricultural in nature.
This area may be best suited for Sensitive Lands protection near the Santa Clara River and the Black Hill. Outside of the Sensitive Lands, the area may be best suited for agricultural, residential, and commercial uses.

Expansion Area D – Southeast to Arizona
Expansion Area D is located at the southeast corner of the existing municipal boundary. The potential area would closely align to the existing easternmost boundary and expand south down to the Arizona border.
This area is currently unincorporated land undeveloped with some agricultural uses.
This area may be best suited for Sensitive Lands protection near the Fort Pearce Wash with residential, commercial, and industrial uses in the remaining areas.

Expansion Area E – East Fields 6615
Expansion Area E is located east of the Little Valley area and north of the St. George Regional Airport. These are properties located along the eastern border of St. George.
This area is currently unincorporated land undeveloped with some agricultural uses.
This area may be best suited for residential uses.

Expansion Area Map (rvsd 12.2025)



Annexation Petition Criteria

Utah Code Section §10-2-401.5)(3)(b) specifies that each Annexation Policy Plan shall include a statement of the specific criteria that will guide the municipality's decision whether or not to grant future annexation petitions, addressing matters relevant to those criteria including:

- The character of the community;
- The need for municipal services in developed and undeveloped unincorporated areas;
- The municipality's plans for extension of municipal services;
- How the services will be financed;
- An estimate of the tax consequences to residents both currently within the municipal boundaries and in the Expansion Area; and
- The interests of all affected entities.

Community Character

The City of St. George is located in the breathtaking red rocks of Southwest Utah. Our thriving, culturally rich City is home to a burgeoning entrepreneurial ecosystem anchored by a healthy blend of high tech, knowledge-based, outdoor, manufacturing, and tourist industries, two higher education institutions (Utah Tech University and Dixie Technical College) and St. George Regional Hospital, an accredited Level II Trauma Center. The City hosts large global events such as the IRONMAN and IRONMAN 70.3 World Championships, the Huntsman World Senior Games, the St. George Marathon, the CAIRN Symposium, and more. With more than 50 miles of trails and nearly 50 parks, St. George truly is the brighter side. With a 2022 estimated population of 102,519 and median age of 38.6, the City of St. George is the largest city in the St. George metro area (Washington County). As the regional hub, St. George consistently ranks in the top five of the nation's fastest-growing metro areas by the United States Census Bureau (#1/2021, #1/2020; #5/2019; #3/2018, #1/2017), and is projected to grow to approximately 266,000 in 2030. The City of St. George also ranks consistently high on WalletHub's Best Small Cities for Starting a Business (#2/2022; #1/2021; #2/2019) and is the 2022 Milken Institute's #2 Best Performing City.

The Annexation Policy Plan seeks to embrace and balance varying demands of the City, providing areas for continued residential and commercial growth. In addition, Expansion Area A offers a unique Sensitive Lands preservation opportunity.

The City of St. George must plan carefully for a mix of residential and commercial development that will generate a sustainable and diversified economic base for the community. Because residential development often costs more to service relative to the revenues generated by this development type, it is important to provide for appropriate non-residential development that will generate jobs, increase the property tax base of the area, and generate additional sales tax revenues as well as be consistent with the City's open space preservation priorities. Therefore, the City should consider an appropriate mix of development when considering annexation petitions, taking into consideration the existing and planned land uses already within the City and those that will remain outside of the city that will border an area proposed for annexation.

Need for Municipal Services

The need for services must be outlined on the petition for annexation by the petitioners with a suggestion for how these services are to be provided. For each annexation proposal received, the Planning Commission and City Council must review and consider what services are actually needed, how and when those services are to be provided and financed and consider the most logical and efficient service provider. The projected uses for each of the Expansion Areas is described below to better understand the need for municipal services.

In general, the City should consider, as a minimum, the following factors for all areas of service provision:

1. If the proposed area is in an existing special service district (SSD);
2. Whether or not it would be more logical and efficient for the municipal services to continue to be provided by the SSD;
3. Whether or not municipal services are currently being provided by another jurisdiction;
4. If municipal services are already being provided, whether or not it would be more logical and efficient for the City to contract with that jurisdiction to continue the provision of municipal services;
5. The cost of the capital facilities to be incurred that are associated with the proposed Expansion Area; and
6. Whether or not the capital facilities costs can be entirely offset through developer contributions and impact fees.

Expansion Area A – Red Cliffs Desert Reserve. This area is in the Red Cliffs Desert Reserve and is part of a Habitat Conservation Plan. Red Cliffs Desert Reserve maintains this area with the primary goal of recovering the threatened desert tortoise while carefully managing recreational activities and utility projects to benefit future generations in an extraordinary unique environment. As some of the Reserve exists within City boundaries and maintains this goal and purpose, expansion would be intended for utility, roadway and recreational projects only.

Existing Municipal Services

Power – Power runs north and south through the property, with substations along the route. However, power is not stubbed to private development. Power is the main feed from PacificCorp and runs to a substation owned by PacificCorp and UAMPs. There is a distribution line that feeds the wells in that area.

Water – Water follows Cottonwood Road north to a water tower. From the tower, water continues north and splits to the east. Water is not stubbed to private development. There is also a transmission line that goes west to the Ledges tank.

Sewer – no Sewer exists in the proposed area

Public Safety – Washington County Sheriff's Department

Roadways – Cottonwood Road

Future Municipal Service Needs
Development in Expansion Area A will be very limited. Future infrastructure needs would be development based and the responsibility of the Reserve to install. Emergency Services would fall under the City of St. George's Police and Fire Departments is annexed.

Expansion Area B – Tonaquint West. This area is unincorporated land predominantly owned by the State of Utah. There are many opportunities in Expansion Area B for Sensitive Lands protection and recreational uses.

Existing Municipal Services
Power – No services
Water – No services
Sewer – No services
Public Safety – Washington County Sheriff's Department
Roadways – No services

Future Municipal Service Needs. Future water, sewer, and power infrastructure would need to be constructed by development and maintained by the City of St. George following dedication. It is not anticipated that the City will need to provide any capital improvements to this area within the next five years. If annexed, the City will be responsible to maintain and regulate the roads. City of St. Goerge Police and Fire Departments would be responsible to provide emergency services to this expansion area.

Expansion Area C – Dixie Drive/Indian Hills. This area is unincorporated land impacted by Sensitive Lands. The area is partially developed with a few homes. Remaining land is used for agricultural purposes.

Existing Municipal Services
Power – St. George Energy Services currently services this property with limited connections.
Water – No services; water borders the expansion area to the north.
Sewer – No services; sewer borders the expansion area to the north and cuts through the property along the master planned 50' road.
Public Safety – St. George Police and Fire
Roadways – No services; roadways border to the north, Indian Hills Drive, with additional access to the property to the east, Shady Springs Drive.

Future Municipal Service Needs. Future water and sewer infrastructure would need to be constructed by development and maintained by the City of St. George following dedication. It is not anticipated that the City will need to provide any

capital improvements to this area within the next five years. If annexed, the City will be responsible to maintain and regulate the roads.

Expansion Area D – Southeast to Arizona. This area is unincorporated land that goes south to the Arizona border and east of the existing municipal boundary. The area is partially developed with a few homes. Remaining land is used for agricultural purposes.

Existing Municipal Services
Power – located within Dixie Power boundaries
Water – No services
Sewer – No services
Public Safety – Hurricane Valley Fire District
Roadways – No services

Future Municipal Service Needs. Future water and sewer infrastructure would need to be constructed by development and maintained by the City of St. George following dedication. It is not anticipated that the City will need to provide any capital improvements to this area within the next five years. If annexed, the City will be responsible to maintain and regulate the roads. City of St. Goerge Police and Fire Departments would be responsible to provide emergency services to this expansion area.

Expansion Area E – East Fields 6615. This is unincorporated property bounded by the City of St. George to the west and south and Washington City to the east and north.

Existing Municipal Services
Power – located within Dixie Power boundaries
Water – No services; water is located to the west in 3430 East as well as to the south in 2000 South
Sewer – No services
Public Safety – Washington City Fire Department
Roadways – No services, bounded by 3430 East to the west and 2000 South to the south

Future Municipal Service Needs. Future water and sewer infrastructure would need to be constructed by development and maintained by the City of St. George following dedication. It is not anticipated that the City will need to provide any capital improvements to this area within the next five years. If annexed, the City will be responsible to maintain and regulate the roads. City of St. Goerge Police and Fire Departments would be responsible to provide emergency services to this expansion area.

Plans for Extension of Municipal Services

The City of St. George plans to provide services within its boundaries first and foremost. The City's policy is to consider annexation only in those areas where the City has the potential to efficiently and effectively provide municipal services which may include culinary water, sanitary sewer, power, road maintenance and regulation, recreation, and public safety services. Petitions for annexation should be required to perform appropriate infrastructure planning and financing to determine the feasibility of and provide for the infrastructure needs within the petitioned area for annexation to ensure adequate services can be provided. As stated earlier in this Element, the Expansion Areas identified in this Element do not represent areas that *will* be annexed by the City, but rather represent areas that the City may be willing to accept and consider petitions for annexations. As future capital facilities are built, they must conform to the appropriate master plans and standards of the City.

At this point, The City has no plans to build any capital facilities in any of Expansion Areas. Any capital facilities that may be needed would be required of the developers as a condition of annexation and development approval.

How the Services Will be Financed

The construction and development of infrastructure for the provision of services should be financed by the developer installing the improvements as a condition of annexation and development. As a condition of annexation, developers of annexed areas should be responsible to pay for master planning and capital facilities planning, with oversight, review and approval by the City, in at least seven areas: transportation, water, sewer, power, storm drain, public safety, and parks and recreation.

An Estimate of the Tax Consequences

Petitioners for annexation should be required to prepare and submit a report showing the tax consequences to properties covered by the annexation petition and present these with the petition for annexation. The tax impact, among other considerations, within the municipal boundaries should also be reviewed by the City Council before a final decision is made on annexation.

The impact to the City's General Fund are determined largely on the ultimate development pattern and land use types constructed. Using detached single-family residential uses as an example, the implications are two- fold: developed land, typically through a subdivision, would yield more properties that each provide property tax income than does a single piece of undeveloped property; and a development pattern that, for example, yields five units per acre results in more properties providing property tax revenues than would a development pattern of two or three units per acre. Additionally, the same works in the inverse for expenditures. The more dense the development, as a general statement, the more efficiently utilized the serving infrastructure becomes providing a more favorable cost to expenditure ratio for the City, although it typically increases the public safety services needed. Similar is the case for non-residential development patterns, although the density component plays less of a role.

It is not the intent of this Plan to provide specific tax impacts as the variability of the ultimate

development types and patterns and changing tax rates year to year can make significant differences in resulting revenues and expenditures. This Plan is intended solely to give a general overview of the fiscal impacts of annexation into the City of St. George using the 2023 tax rates.

The properties identified within the various Expansion Areas are currently largely undeveloped. Properties in these Expansion Areas are currently assigned to taxing districts Unincorporated County (15) and Hurricane Valley Fire SSD (47).

These are not the only taxing entities or districts assigned to properties in these Expansion Areas. The properties in these Expansion Areas are also a part of the Washington County, Washington County School District, Washington County Water Conservancy District, and Southwest Mosquito Abatement and Control Districts. The funding for these other districts makes up a portion of the overall rate of each Taxing District.

The Unincorporated County District (15) and Hurricane Valley Fire SSD District (47) represent those districts that could potentially be affected by annexation of properties into the City of St. George. Taxing districts 15 and 47 currently carry the tax rates of 0.5923 and 0.6618 respectively. Annexing property from these districts into the City, thereby reassigning them to taxing district 8 (St George City), would adjust their taxation rate to 0.6693.

This results in an anticipated tax increase of 13.00% for those properties annexed from district 15. This results in an anticipated tax decrease of 1.14% for those properties annexed from district 47.

From that overall tax rate, the City of St. George receives approximately 11.5% of those tax revenues (the city's adopted tax rate is 0.000770; the total tax rate for St. George residents which includes all taxing entities is .006693) with the remainder going to various other taxing entities. Development of properties for anticipated non- residential land uses generally provides a significant increase in taxable value through the transition to improved land and constructed value but the overall difference in this increase tax burden to the property owner is anticipated to remain with a consistent difference between that development activity happening with or without annexation.

As an example, development of non-residential land uses would also provide an increase in the number of properties, albeit to a lesser quantity than residential development as these land uses each typically consume larger areas of land compared to individual residential properties. This also does not take into account the added benefit from those non-residential developments that would also generate sales tax, which provides an added revenue stream for the City as well as the property owner. For properties that would ultimately develop for residential uses, the same holds true difference in revenues relative to annexation although the overall revenue would not be as significant considering the 45% taxation credit provided to primary residential units. This credit also impacts the cost-benefit ratio for the City as residential uses are typically a net draw on resources on a per unit basis whereas non-residential uses are typically a net gain on the cost of providing services. As an example, development of residential uses on newly annexed land at an average five units-per-acre density with an average $550,000 home would provide, on average, around $2,024.63 in property tax revenue per unit, of which around $232.93 goes to the City coffers. That

adds up to around an additional $1,164.63 of property tax revenue per acre (0.00108% of the City total General Fund budget) of residential development, not considering the costs from the net draw on resources and services.

Expansion Area A. This Expansion Area contains properties assigned to taxing district Unincorporated County (15).

Expansion Area B. This Expansion Area contains property owned by the State of Utah. Privately owned properties are assigned to taxing district Unincorporated County (15).

Expansion Area C. This Expansion Area contains properties assigned to taxing district Unincorporated County (15).

Expansion Area D. This Expansion Area contains properties assigned to taxing district Hurricane Valley Fire SSD (47).

Expansion Area E. This Expansion Area contains properties assigned to taxing district Unincorporated County (15).

The Interests of All Affected Entities

In consideration of this Annexation Policy Plan, the determined Affected Entities would be those taxing entities that provide services to currently unincorporated properties within the various Expansion Areas identified within the plan. The City of St. George, desiring to be good neighbors and partners, also includes neighboring jurisdictions in the identified roster of affected entities. The affected entities identified for The City of St. George's Annexation Policy plan include:

Washington County
Washington County School District
Washington County Water Conservancy District
Southwest Mosquito Abatement and Control District

The Washington County School District currently serves the educational needs of the proposed Expansion Areas and will continue to do so if any or all of the annexations should occur. Therefore, there are no projected impacts to the Washington County School District other than the effect of revenues from additional development of land, which could occur with or without annexation.

Service obligations currently provided by the Washington County Sheriff's Department. would be transferred to the City of St. George Police Department and Fire Department, respectively, should annexation occur. Annexation would result in properties being removed from the District's responsibility resulting not only in a reduction of tax revenues for the District but also a corresponding reduction in service requirements. Gold Cross Ambulance service provides universal emergency medical services to Washington County regardless of governmental jurisdiction so the occurrence of annexation would not affect their provision of services.

The governmental organization and leadership of Washington County in their various capacities, has

the underlying responsibility for administering the governmental responsibility for unincorporated properties within the County. Annexation of properties into the City of St. George would transfer the governmental oversight and responsibility for those properties from Washington County to the City.

The following table is a comparison of the services provided by affected entities to the Expansion Areas shown in this plan as they currently exist and as they would be provided if annexed into the City of St. George.

COMPARISON OF SERVICES IN EXPANSION AREAS				
SERVICE	CURRENT PROVIDER		PROVIDER, IF ANNEXED	
Education	Areas A - E	Washington County School District	Areas A - E	Washington County School District
Mosquito Abatement	Areas A - E	Southwest Mosquito Abatement	Areas A - E	Southwest Mosquito Abatement
Water	Areas A - E	No services	Areas A - E	City of St. George
Sewer	Areas A - E	No services	Areas A - E	City of St. George
Storm Drain	Areas A - E	No services	Areas A - E	City of St. George
Power	Area A	No services	Area A	City of St. George
	Area B	No services	Area B	City of St. George
	Area C	No services	Area C	City of St. George
	Area D	No services	Area D	Dixie Power
	Area E	No services	Area E	Dixie Power
Roadways	Area A	Washington County	Area A	City of St. George
	Area B	Washington County	Area B	City of St. George
	Area C	Washington County	Area C	City of St. George
	Area D	Washington County	Area D	City of St. George
	Area E	Washington City	Area E	City of St. George
Fire Protection	Area A	Utah Division of Forestry, Fire and State Lands	Area A	St. George Fire Department
	Area B	Utah Division of Forestry, Fire and State Lands	Area B	St. George Fire Department
	Area C	St. George Fire Department	Area C	St. George Fire Department
	Area D	Hurricane Valley Fire Department	Area D	St. George Fire Department
	Area E	Washington City Fire Department	Area E	St. George Fire Department

Law Enforcement	Area A	Washington County Sheriff's Department	Area A	St. George Police Department
	Area B	Washington County Sheriff's Department	Area B	St. George Police Department
	Area C	St. George Police Department	Area C	St. George Police Department
	Area D	Washington County Sheriff's Department	Area D	St. George Police Department
	Area E	Washington City Police Department	Area E	St. George Police Department
Emergency Medical Services	Areas A - E	Gold Cross Ambulance	Area A	Gold Cross Ambulance

Exclusions from Expansion Area

One of the requirements from the Utah State Code for Annexation Policy Plans is a justification for the exclusion from identified Expansion Areas of any area containing urban development within one-half mile of the municipality's boundary. That regulation defines urban development to be either a housing development with more than 15 residential equivalent units and an average density greater than one residential unit per acre or a commercial or industrial development for which cost projections exceed $750,000 for all phases.

A ½-mile buffer was drawn around the existing municipal boundaries to identify any development that could be defined as an urban development that may not be a part of an Expansion Area identified in this Plan, see the Expansion Area Map above. The following areas were identified within the ½-mile buffer and have been excluded along with an explanation for their exclusion:

1. Winchester is located within ½-mile of the City's northwestern boundary. This unincorporated residential development has expressed their desire to remain unincorporated. There is no active effort to incorporate Winchester into the City of St. George.
2. All other developed areas in the vicinity of the City's current incorporated boundaries, or within ½- mile of those boundaries are already incorporated into other jurisdictions' boundaries whether or not they meet the definition of urban development.

Considerations of The Planning Commission and City Council

The decision whether or not to annex a piece of property for any purpose is one that should not be

taken lightly by the City. In the process of their review, the Planning Commission is charged with the weighty task of not only a making recommendation whether or not the petition for annexation is justified as an asset to the community and whether it's best served being annexed or remain outside of the incorporated boundaries of the city, but also what types of land uses should be incorporated into the areas they believe to be justified.

Similarly, in making decisions the City Council, in their role as the municipal governing body, not only has to weigh the recommendations of the Planning Commission but also determine the terms and conditions upon which property is to be annexed, should that be the ultimate decision, that reduce or eliminate the burden on the City's existing infrastructure and services. These are not simple decisions to be made by either body and should not be rushed. It is anticipated, and highly appropriate, that these decisions could be debated, discussed at length, vetted thoroughly, differing opinions expressed, and decided without unanimous consent. Aside from and in addition to the concerns for infrastructure and services involved with annexation, there are other political, social, and financial considerations that should be considered.

Relationship with Expansion Areas of Other Municipalities

The City of St. George abuts the cities of Ivins, Santa Clara, and Washington. As such, the annexation policies of these Cities should be considered in the adoption of this plan. The City of St. George and Washington City have agreed to allow the unincorporated properties between the municipalities (Area E) the option to elect which municipality to annex into. The City of St. George and Ivins City do not have any overlapping expansion areas. Santa Clara and St. George have limited overlap in expansion Area B. This property owner will also be able to elect which municipality to annex into.

Willingness and Probability of Other Municipality to Annex the Area

Expansion Area A. According to the 2009 Annexation Policy Plan, Washington City has indicated a potential of annexing into this area, just as this plan identifies. The areas listed in both annexation policy plans are immediately adjacent to both communities.

Expansion Area B. According to the 2014 General Plan, Santa Clara has indicated a potential annexation in this area at the northern most end of the potential Expansion Area. Expansion Area B is directly south of undeveloped areas of Santa Clara.

Expansion Area C. There is no other surrounding municipality that would be able to annex into this area, thus there is no probability of another municipality annexing for the foreseeable future.

Expansion Area D. Currently there are no incorporated municipalities to the east of this area. Annexation into an incorporated municipality is only possible through the City of St. George. An effort to incorporate Expansion Area D into Washington City would have to involve a significant amount of property in addition to this Expansion Area and require an amendment to their current Annexation Policy Plan.

Expansion Area E. Washington City has the potential to annex into this area. Both the City of St. George and Washington City have infrastructure immediately adjacent to Expansion Area E.

Current and Projected Costs of Infrastructure

It is the position of the City of St. George that future capital costs for the establishment and construction of infrastructure should be financed by the developer installing the improvements. It is not the City's position that the City should incur costs related to capital improvements into the Expansion Areas.

In developing, considering, and adopting an Annexation Policy Plan, the Planning Commission and City Council are to consider current and projected costs of infrastructure, urban services, and public facilities necessary to expand the infrastructure, services, and facilities into the area being considered for inclusion in the Expansion Area.

Expansion Area A Future Capital Costs. Development within this area after annexation will need to connect to the City's water, sewer, power, and storm drain utility systems, which may first constitute extension of infrastructure into the Expansion Area. If annexed, City of St. George would be responsible to maintain and regulate the roads, once constructed by development activities, other than State and County roads. City of St. George's Police and Fire Departments would be responsible to provide emergency services to Expansion Area A. All other anticipated costs would be of an operations and maintenance nature as typical with the various areas of the existing community.

Expansion Area B Future Capital Costs. Development within this area after annexation will need to connect to the City's water, sewer, power, and storm drain utility systems, which may first constitute extension of infrastructure into the Expansion Area. If annexed, City of St. George would be responsible to maintain and regulate the roads, once constructed by development activities, other than State and County roads. City of St. George's Police and Fire Departments would be responsible to provide emergency services to Expansion Area A. All other anticipated costs would be of an operations and maintenance nature as typical with the various areas of the existing community.

Expansion Area C Future Capital Costs. Development within this area after annexation will need to connect to the City's water, sewer, power, and storm drain utility systems, which may first constitute extension of infrastructure into the Expansion Area. If annexed, City of St. George would be responsible to maintain and regulate the roads, once constructed by development activities, other than State and County roads. City of St. George's Police and Fire Departments would be responsible to provide emergency services to Expansion Area A. All other anticipated costs would be of an operations and maintenance nature as typical with the various areas of the existing community.

Expansion Area D Future Capital Costs. Development within this area after annexation will

need to connect to the City's water, sewer, and storm drain utility systems, which may first constitute extension of infrastructure into the Expansion Area. If annexed, City of St. George would be responsible to maintain and regulate the roads, once constructed by development activities, other than State and County roads. City of St. George's Police and Fire Departments would be responsible to provide emergency services to Expansion Area A. All other anticipated costs would be of an operations and maintenance nature as typical with the various areas of the existing community.

Expansion Area E Future Capital Costs. Development within this area after annexation will need to connect to the City's water, sewer, and storm drain utility systems, which may first constitute extension of infrastructure into the Expansion Area. If annexed, City of St. George would be responsible to maintain and regulate the roads, once constructed by development activities, other than State and County roads. City of St. George's Police and Fire Departments would be responsible to provide emergency services to Expansion Area A. All other anticipated costs would be of an operations and maintenance nature as typical with the various areas of the existing community.

Consistency with the General Plan for Additional Land Suitable for Development

The City should encourage development within the municipal boundaries as a primary focus in an effort to utilize undeveloped lands first, before extensions are made to existing City boundaries. Policies should be adopted to encourage the appropriate use of undeveloped lands within the City consistent with its General Plan. If lands within the City are not available to be built on, annexations may be considered when services can be provided consistent with the General Plan.

All annexations should be considered from the point of view of the General Plan. The goals and objectives of the General Plan should serve as a guide to the consideration and land use assignments of the annexed area.

The City of St. George is experiencing a pattern of rapid growth that is anticipated to continue. Projections have shown that the City's population is expected to continually grow throughout the next decade. The new households that will constitute this growth should be accommodated on infill and existing sites within the City's current boundaries primarily and supplemented by future annexed areas as deemed appropriate. The amount of residential acreage needed for these new households is dependent on the overall density associated with new residential development. In addition, non-residential land uses would also be needed to support a community in which residents can enjoy the ability to live, work, shop, and recreate.

Inclusion of Agricultural, Forest, Recreational and Wildlife Areas

The City of St. George has established and pursued a policy of open space acquisition for the protection of values important to the City's residents, including viewsheds, scenic vistas, watersheds, drinking water source protection, non-motorized recreation, and wildlife habitat. Some of the areas contemplated for possible annexation by this plan, including Expansion Areas A, B, and C, present unique opportunities for open space preservation.

Agricultural Areas. Active agricultural areas are included in the Expansion Areas and should be considered for annexation when it is consistent with the Agriculture Protection Act of Utah, the General Plan, and the desires of the owners of said properties. In general, agricultural areas should be protected from development as feasible, unless it is the desire of the property owners of said lands to develop their properties.

Forested Areas. Forested areas should be considered for annexation with consideration to the preservation and beauty of surrounding environmental land consistent with the General Plan. Hillside protection and cluster housing should be used where practicable to preserve these areas when being considered for annexation. Expansion Areas B may include some forested and hillside areas. These areas are primarily owned by the State of Utah.

Recreational Areas. Recreational areas should be considered for annexation to the City with the intent that municipal services are generally not needed and the recreational and open space benefits are effectively consistent with the General Plan.

Wildlife Areas. There are an abundance of areas in and around the City that currently enjoy the benefit of wildlife. As annexations occur further into these areas, a balance between the needs of people and the needs of wildlife should be considered and appropriate steps taken to plan for these needs.

Agriculture Protected Areas

The Annexation Policy Plan intends to recognize Agriculture Protection Areas adopted by Washington County. Expansion Areas are intended to be sensitive to the future development of these lands with planning in coordination with the property owners in these areas with the intent of protecting agricultural lands consistent with right-to-farm laws. To be included in an agriculture protection area established within Washington County, land must comply in nature and configuration with the requirements of the state code and applicable Washington County ordinances. There are no existing agricultural protection areas within the proposed Expansion Areas.

Comments From Affected Entities

The City of St. George's Planning Commission and City Council, in their capacity as the municipal legislative body, have held multiple public meetings and public hearings to consider this Annexation Policy Plan. Compliant with the requirements of the Utah State Code, the City has also provided an opportunity for identified affected entities to provide comment on the Annexation Policy Plan. From this effort, the City has included the following statements regarding comments and information received from those affected entities during the public comment period as well as a logging of the comments and information received from the affected entities:

Log of Affected Entities' Comments and Information Received

Section 10-2-401.5 (now §10-2-803) of the Utah State Code specifies, in part, that the City is to provide a window of time at least 10 days in length for affected entities, as defined in the Utah State Code, to provide written comment regarding the adoption of an Annexation Policy Plan or an

amendment to an adopted Annexation Policy Plan. This window of time is called for in the Utah State Code and is to occur following an initial discussion of the proposal during a public meeting of the Planning Commission and before a public hearing is held by the Planning Commission.

On April 22, 2025, the Planning Commission held a public meeting where an initial discussion of the proposed Annexation Policy Plan took place. After the discussion, the 10-day comment period for the affected entities was opened. On May 2, 2025, the 10-day comment period ended. During this 10-day comment period, the City of St. George received one response from Washington City.

City of St. George Response to Affected Entities' Comments and Information Received

The City of St. George is grateful to its affected entity partners that have taken the time and interest to review this proposed amendment for the identification and inclusion of expansion areas in the adopted Annexation Policy Plan and provide comments. Their input and information is valuable to the City. It is the desire of the City to continue the working relationship with these entities to provide the best services possible to all City of St. George residents. The City also respects the rights and decisions of property owners. One of those rights is the right to make application and be heard. As such, the City's intent is to allow property owners to make application for annexation, should they choose to do so, and the City will hear the application and make decisions based on what is best for the community.

Washington City provided the only comment to this Annexation Plan by an affected entity. In the comment, Washington City expressed concerns about the overlaps that exist between the proposed expansion areas in this Plan and their Annexation Plan. According to Utah Code §10-2-401.5.4a (now §10-2-803(3)), municipalities shall attempt to avoid gaps and overlaps with the expansion areas of other municipalities, however overlaps are not prohibited and provide property owners with options regarding municipal annexations. The only land which the City is prohibited from annexing is land on which a petition to incorporate as a new city has been proposed.[1] All areas of expansion in this Plan can reasonably be accommodated with all municipal services by the City of St. George. Because the City cannot annex without a petition from the property owner[2], where there are properties covered by overlaps in more than one municipality, the property owner has the right to choose which municipality into which they would like to annex.

[1] Utah Code §10-2-804(9)
[2] Utah Code §10-2-804

Annexation Policy Plan

2025-GPA-009

Annexation Policy Adoption Process

- [x] 1. 14-day Public Notice for Planning Commission Public Meeting
- [x] 2. Planning Commission Public Meeting –comments accepted for Affected Entities
- [x] 3. 10-day comment Period for Affected Entities
- [x] 4. 14-day Public Notice for Planning Commission Public Hearing
- [x] 5. Planning Commission Recommendation Public Hearing
- [x] 6. 14-day notice for City Council Public Hearing
- [x] 7. City Council Public Hearing –
- [ ] 8. City Council Adoption

Annexation Policy Adoption Process

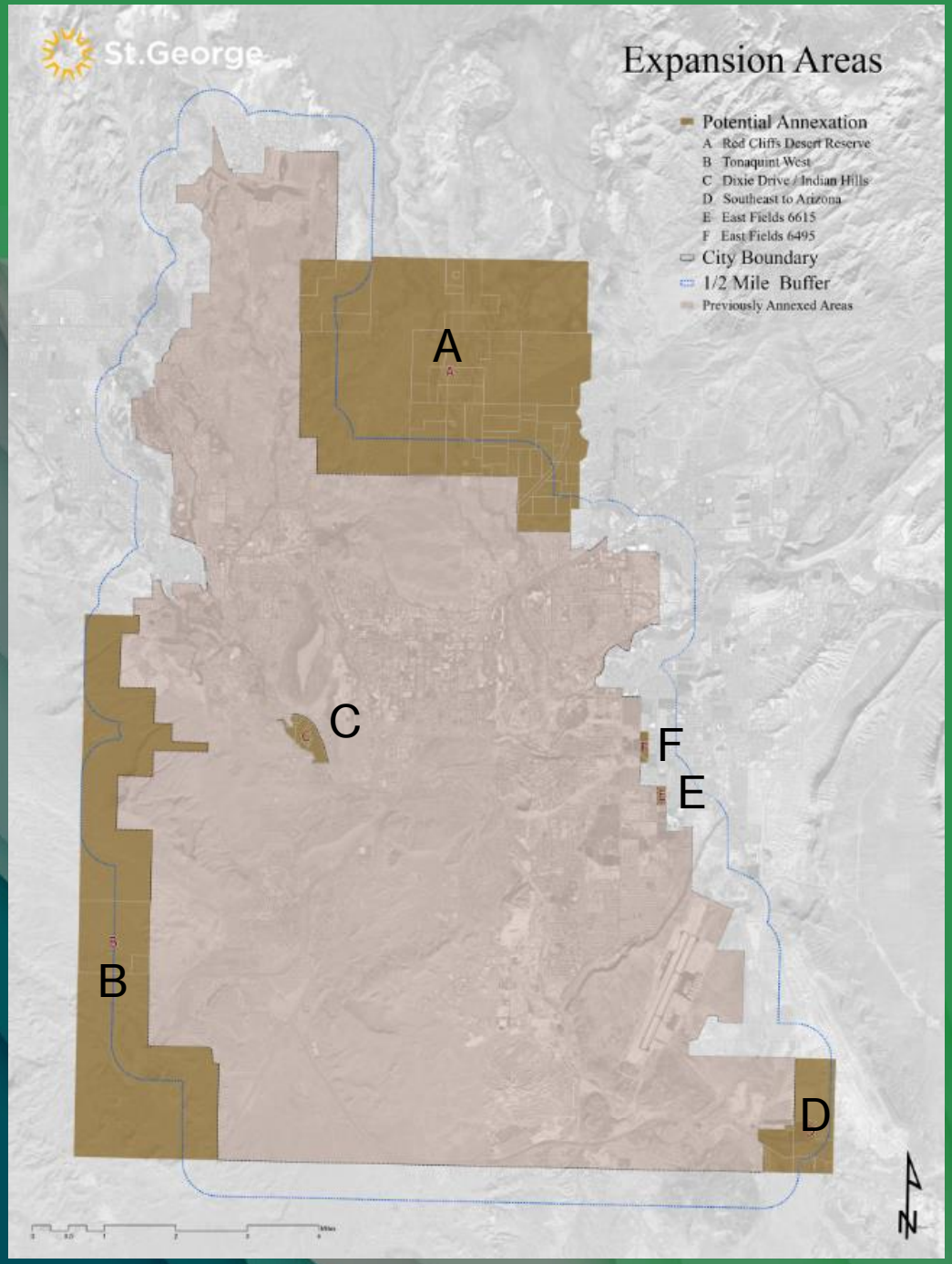
- [x] 1. 14-day Public Notice for Planning Commission Public Meeting
- [x] 2. Planning Commission Public Meeting –comments accepted for Affected Entities
- [x] 3. 10-day comment Period for Affected Entities
- [x] 4. 14-day Public Notice for Planning Commission Public Hearing
- [x] 5. Planning Commission Recommendation Public Hearing
- [x] 6. 14-day notice for City Council Public Hearing
- [x] 7. City Council Public Hearing –
- [x] 8. City Council Adoption

Policy Details

- Follows state code on requirements and standards
- Outlines how utilities will be extended
- Growth paid through impact fees
- To annex, petitioner must prepare analyses that show all impacts, including utilities, transportation, parks, public safety and tax impacts
- Annexation growth must be consistent with General Plan

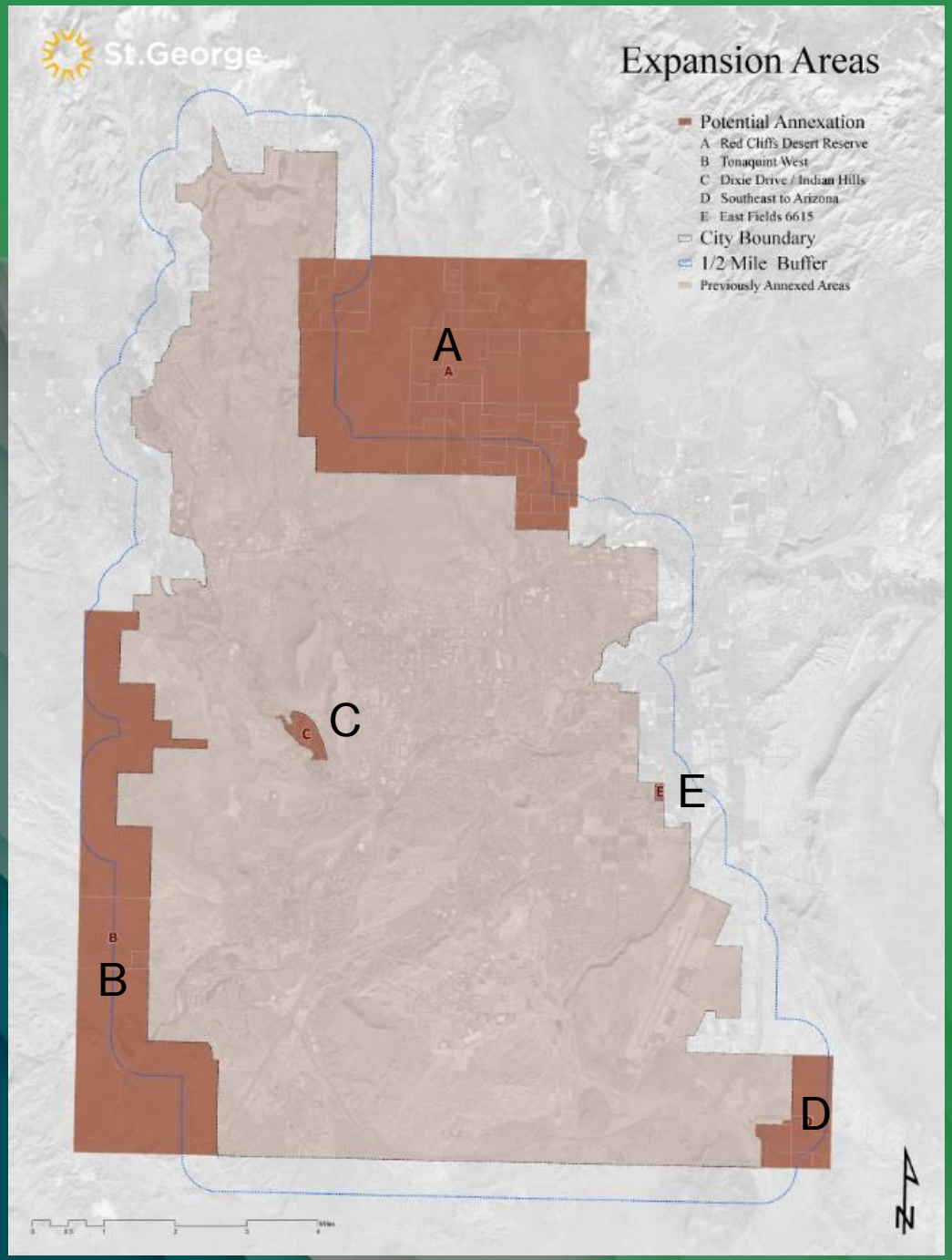
Expansion Areas:

- A – Red Cliffs Reserve
- B – Tonaquint West
- C – Dixie Drive/Indian hills
- D – Southeast to Arizona
- E – East Fields 6615



Expansion Areas:

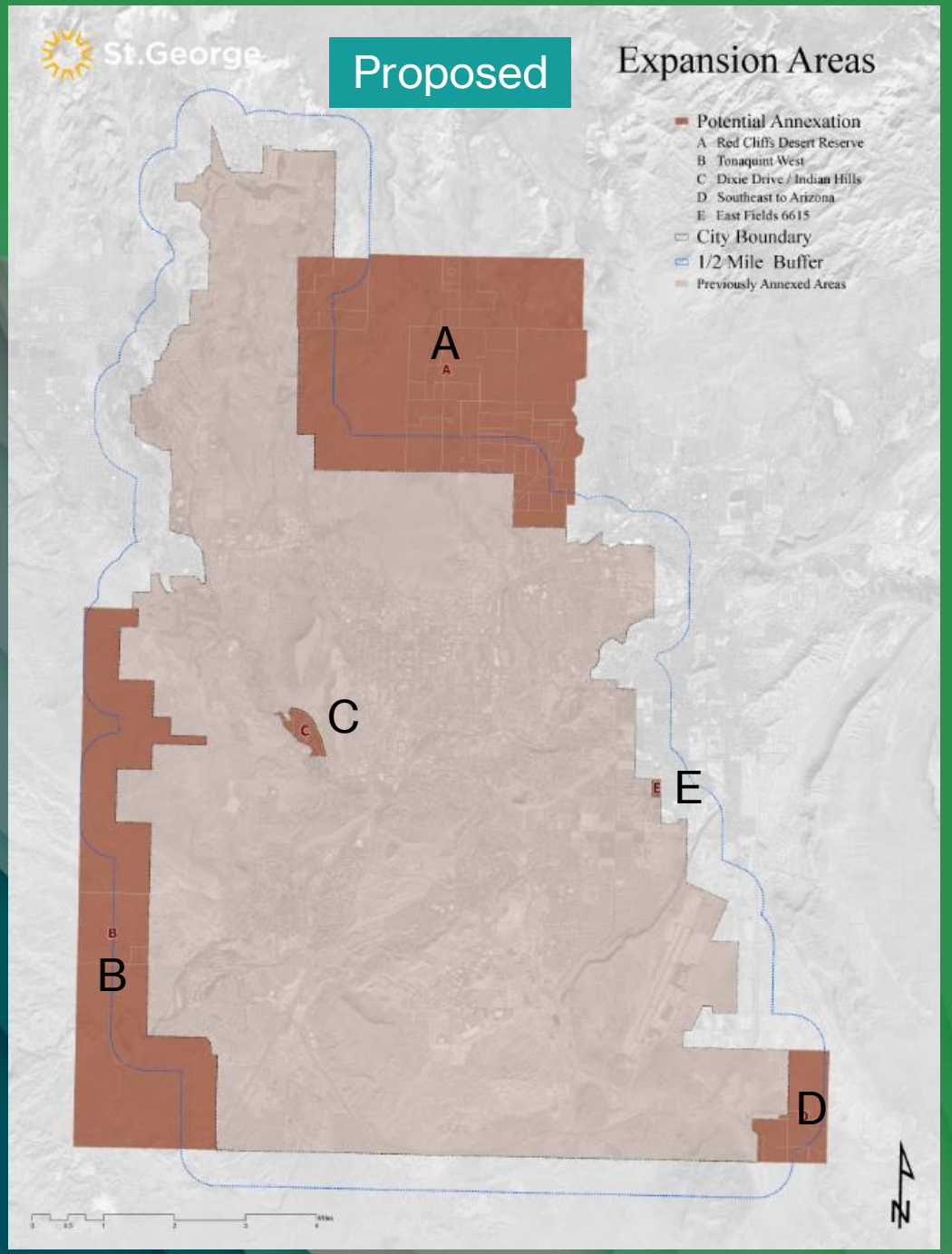
- A – Red Cliffs Reserve
- B – Tonaquint West
- C – Dixie Drive/Indian hills
- D – Southeast to Arizona
- E – East Fields 6615



2009 Expansion Areas

2009

Proposed

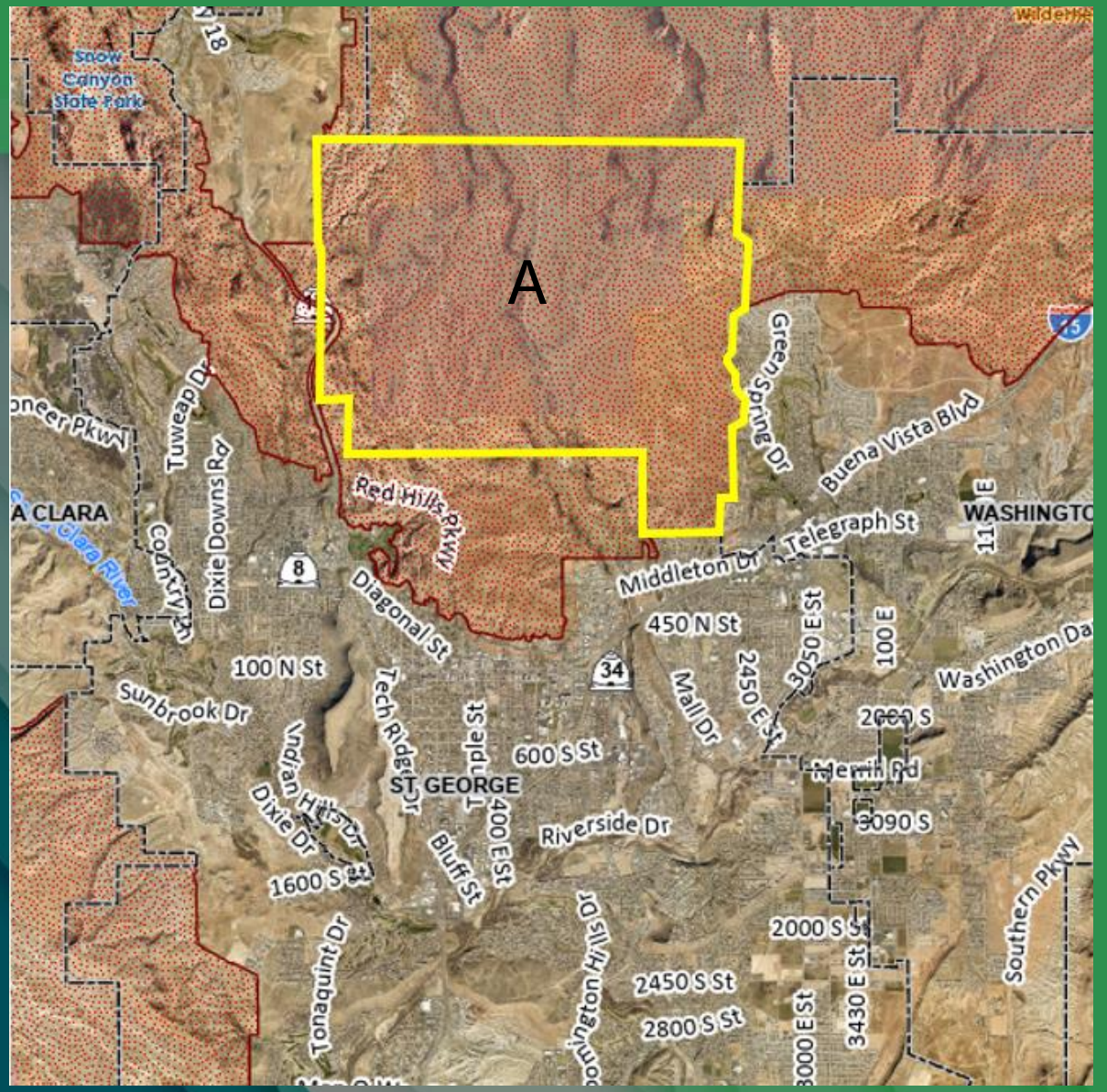


A – Red Cliffs Reserve

- Part of Habitat Conservation Plan
- Expansion for Utilities, roadway, and recreational projects only

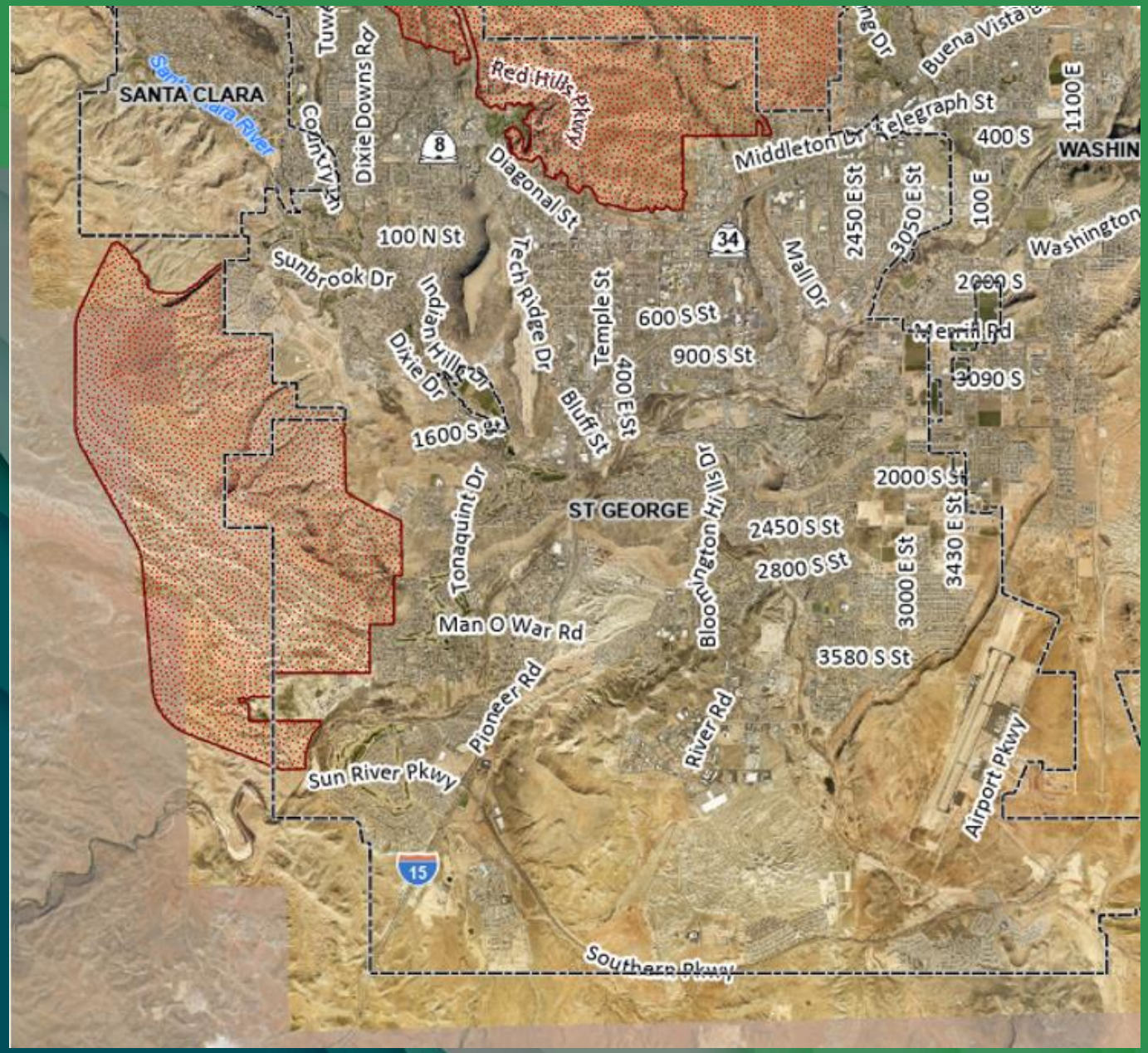
A – Red Cliffs Reserve

- Part of Habitat Conservation Plan
- Expansion for Utilities, roadway, and recreational projects only



B – Tonaquint West

- Portions in Zone 6
- Mostly owned by State of Utah
- Sensitive Land protection
- Recreational uses



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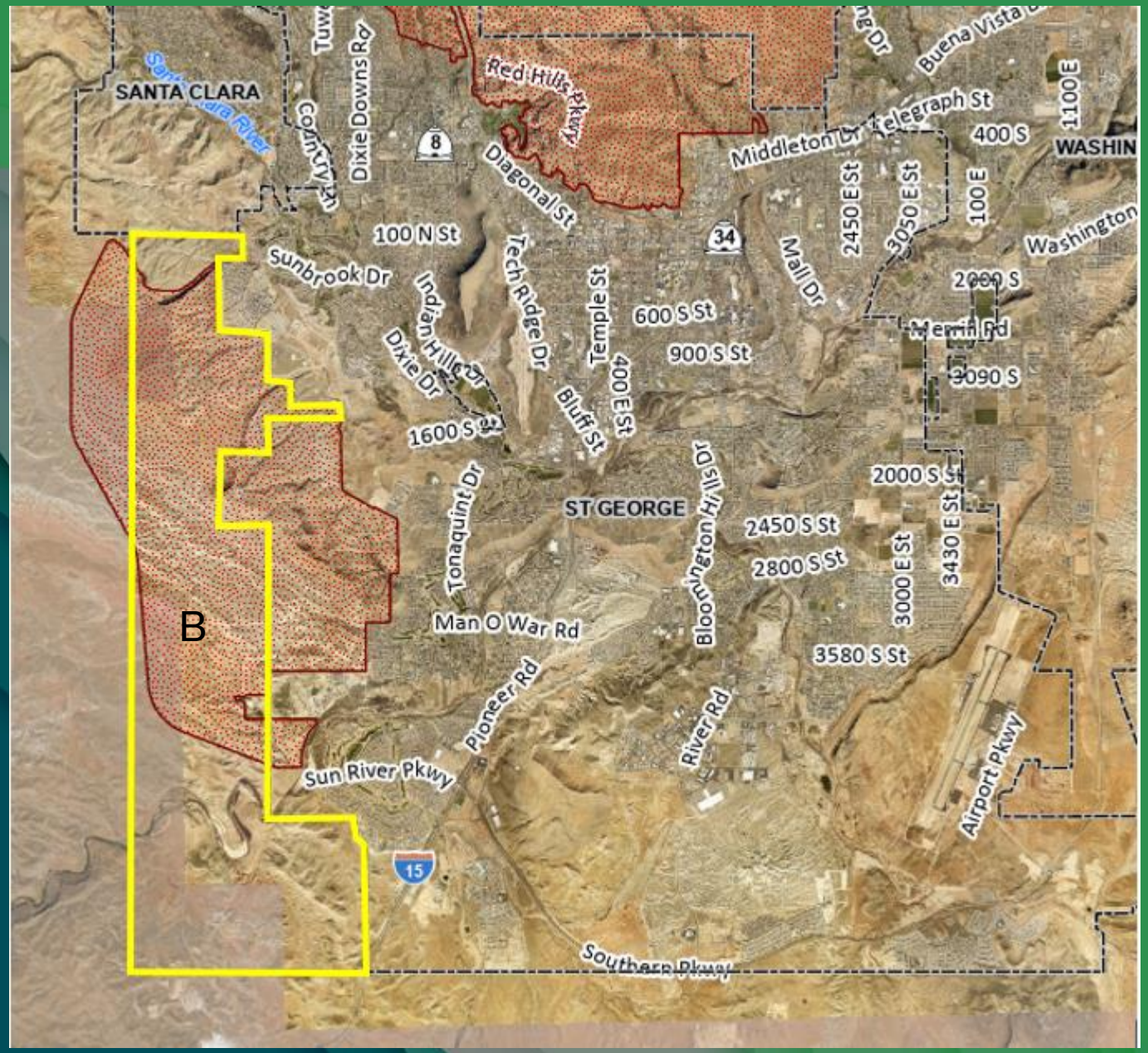
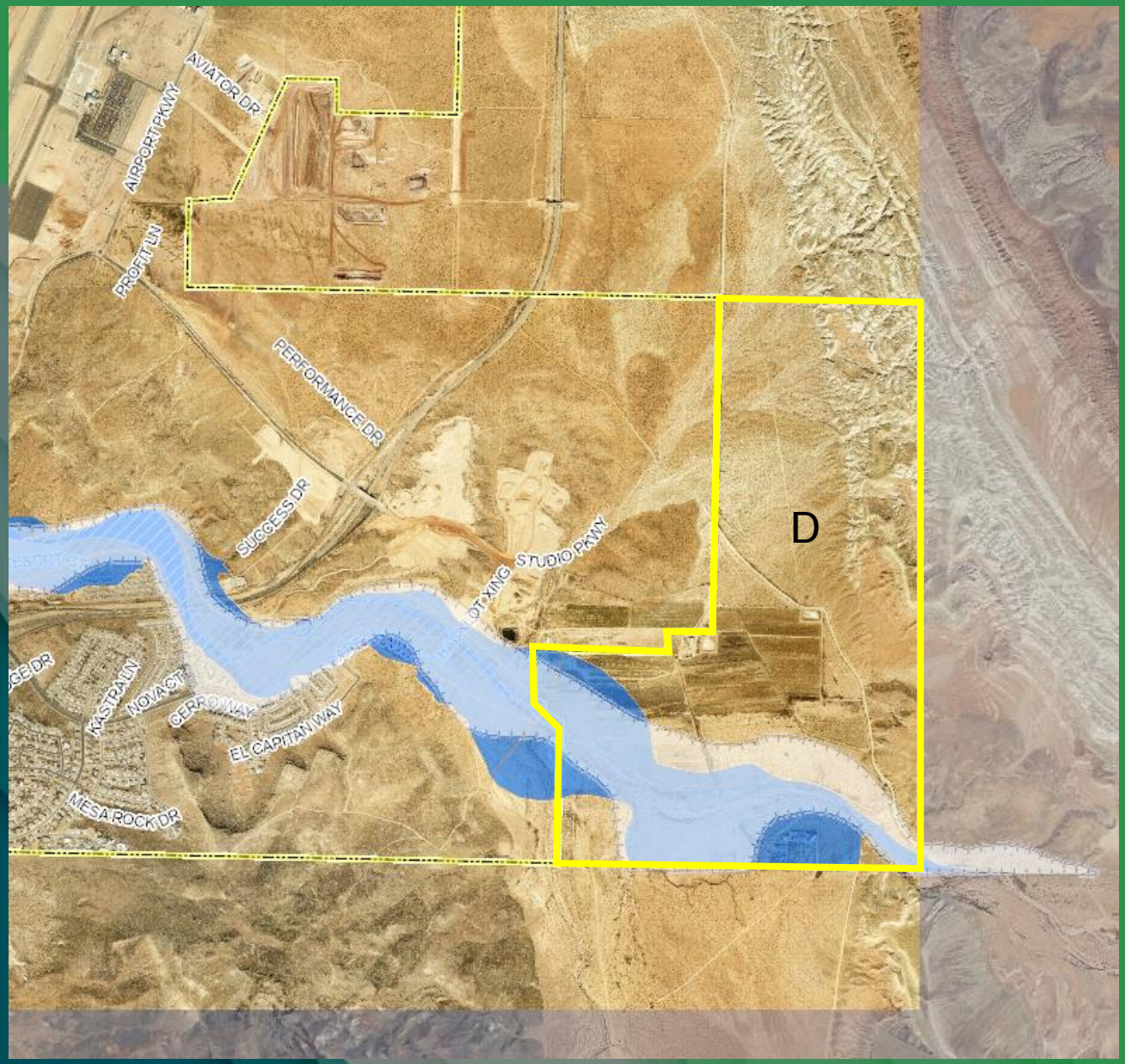


C – Dixie Drive/Indian Hills

- Mostly used as agricultural land
- Sensitive Lands
- Floodplain
- St. George Power and Public Safety

D – Southeast to Arizona

- Partially developed with agricultural uses
- Hurricane Valley Fire
- Sensitive Lands
- Future Development

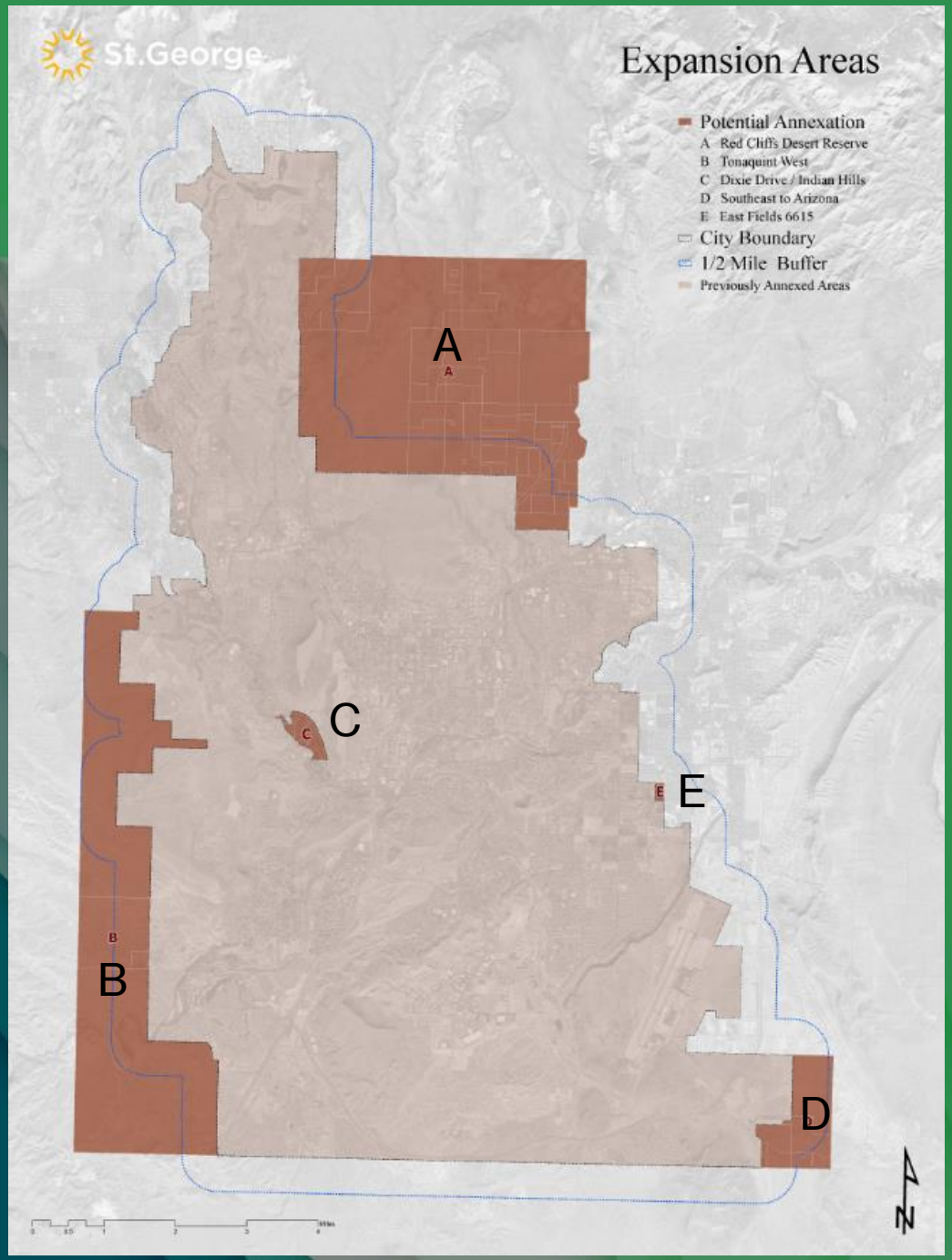


E – East Fields 6615

- Undeveloped
- Washington City Fire

Expansion Areas:

- A – Red Cliffs Reserve
- B – Tonaquint West
- C – Dixie Drive/Indian hills
- D – Southeast to Arizona
- E – East Fields 6615



Planning Commission Recommendation

The Planning Commission Recommended approval of this Annexation Policy Plan with a 6-0 vote on May 27, 2025

ORDINANCE NO. _____

AN ORDINANCE AMENDING THE CITY GENERAL PLAN TO UPDATE THE ANNEXATION POLICY PLAN ELEMENT FOR THE CITY OF ST. GEORGE

WHEREAS, The General Plan provides guidance for goals and policies in the community and the City may revise the General Plan as appropriate; and

WHEREAS, Utah Code requires municipalities to adopt an annexation policy plan prior to annexing an unincorporated area located within a specified county; and

WHEREAS, the Planning Commission held a public meeting on April 22, 2025, and held a public hearing on May 27, 2025; and

WHEREAS, the City Council held a public hearing on June19, 2025 and held a public meeting on December 18, 2025 to consider adoption; and

WHEREAS, the City Council has determined that a comprehensive update to the Annexation Policy Plan as an element of the General Plan is justified at this time and is in the best interest of the health, safety, and welfare of the citizens of the City of St. George.

NOW, THEREFORE, BE IT ORDAINED, by the St. George City Council, as follows:

Section 1. Repealer. Any provision of the St. George City Code found to be in conflict with this ordinance is hereby repealed.

Section 2. Enactment. The Annexation Policy Plan is hereby amended by Exhibit 'A' attached.

Section 3. Severability. If any provision of this Ordinance is declared to be invalid by a court of competent jurisdiction, the remainder shall not be affected thereby.

Section 4. Effective Date. This Ordinance shall take effect immediately upon posting in the manner required by law.

APPROVED AND ADOPTED by the St. George City Council, this 18th day of December 2025.

ST. GEORGE CITY: ATTEST:

_____ _____

Michele Randall, Mayor Christina Fernandez, City Recorder

APPROVED AS TO FORM:
City Attorney's Office

_____
Jami Brackin, Deputy City Attorney

VOTING OF CITY COUNCIL:

Councilmember Hughes _____
Councilmember Larkin _____
Councilmember Larsen _____
Councilmember Tanner _____
Councilmember Kemp _____

EXHIBIT A
City of St. George Annexation Policy Plan

City of St. George Annexation Policy Plan – Land Use Element

Introduction

Under Utah law (Utah Code §10-2-401.5), each city desiring to annex unincorporated area may not do so unless the municipality has adopted an Annexation Policy Plan. An Annexation Policy Plan must include:

1. A map of the proposed expansion area;
2. A statement of the specific criteria that will guide the municipality's decision whether or not to grant future annexation petitions, address matters relevant to those criteria; and
3. Justification for excluding from the expansion area any area containing urban development within ½ mile of the municipality's boundary; and
4. A statement addressing comments made by "affected entities" at or within 10 days after the public meeting.

In order to qualify for annexation, a parcel of property must meet the annexation standards as established by Utah Code as well as standards established by the City of St. George.

Annexation Standards Established by Utah Code (Utah Code §10-2-402)

1. The area to be annexed must be contiguous to the boundaries of the City of St. George and must not leave an unincorporated island or peninsula;
2. The area to be annexed must file a petition per Utah Code §10-2-403;
3. The area to be annexed may not include part of a parcel of real property and exclude part of the same parcel unless the owner of that parcel has signed the annexation petition; and
4. The City of St. George may not annex an unincorporated area for the sole purpose of acquiring municipal revenue or to retard the capacity of another municipality to annex the same or related area unless the municipality has the ability and intent to benefit the annexed area by providing municipal services to the annexed area.

Annexation Standards Established by the City of St. George

1. Part or all of the area to be annexed should be developed for urban purposes, or such development should be anticipated in the near future.
2. New City boundaries should conform, wherever practical, with natural topographic features such as ridge lines, streams, creeks, or section lines; established streets, highways or other recognized logical boundaries.
3. New City boundaries, if using a street, road, or highway as a boundary, should include land on both sides of the street, etc., within the boundary.
4. Socio-economic and land use characteristics of the area to be annexed should generally be similar to conditions within the contiguous regions of the City.
5. The annexation of peninsulas that extend into unincorporated areas is discouraged and should be avoided

City Policies Regarding Extension of Municipal Services

Upon the annexation of territory to the City of St. George, the following guidelines with respect to the extension of municipal services will be adhered to.

1. Immediately upon the final acceptance of an annexation by the City, police and fire protection will be extended into the annexed area. However, if fire hydrants, water lines or water capacity are inadequate, fire protection will be compromised. New construction shall meet city development standards.
2. Culinary water will be made available to the annexed area. If existing waterlines are inadequate (as determined by the City) or no waterlines are present, the cost of extending adequate water lines shall be paid by the individual(s) desiring the service.
3. Residents of an annexed area will be allowed to connect to the City sanitary sewer system if there is capacity in existing lines. The cost of extending sewer lines shall be paid by the individual(s) desiring the service. The development of any subdivision in an annexed area will be regulated by the City of St. George Land Use Regulations (City Code Title 10).
4. St. George Energy Services will make power available to the annexed area. If existing powerline are inadequate (as determined by the City) or no powerlines exist, the cost of extending adequate power lines shall be paid by the individual(s) desiring the service.
5. Prior to granting permission for any construction or development in an annexed area, the City will carefully evaluate access and any potential changes in traffic patterns and flow. Using the Road Master Plan as a guide, the City will require adequate access on streets to efficiently handle anticipated traffic patterns or flow.
6. The costs of any street improvements shall be paid by those individuals who desire the improvements, or those who propose new development.
7. Problems encountered as a result of changes in land use shall be solved to the satisfaction of the City by the landowner or developer at his/her expense.

Adequate Public Facilities

The adequacy and availability of public utilities and facilities is a key issue in St. George and surrounding communities. The City believes as a general principle that growth should "pay its own way" and that infrastructure necessary to support growth must be developed concurrently as the population increases.

For new subdivisions and major commercial or industrial projects the levels of service (LOS) listed below must be concurrently available if new development is to be approved.

If these basic infrastructure facilities are not adequate, the proposed development must either be denied or deferred until services are available. In some situations, the developer may be willing to advance a necessary service or facility at his own expense in order to satisfy the "adequacy" requirement.

Only four basic public facilities and services are included in the "concurrency" requirement:

1. Culinary water
2. Wastewater
3. Power (as applicable – expansion area may not be in St. George Energy Services boundaries)
4. Roadways

These facilities and services represent a critical threshold without which development should not proceed. It is assumed other public services/ facilities will be provided through impact fees and/or other governmental revenues in a timely manner that will satisfy public service needs.

The LOS standards for culinary water, wastewater and roads are as follows:

Water - The minimum LOS for culinary water is to maintain a water system capable of meeting the daily and peak demands of City residents and businesses, including the provision for adequate fire flows. The distribution system must be sized to accommodate peak hourly instantaneous flows with a minimum of 40 psi pressure existing in the system at all points, and shall not fall below 20 psi, to comply with the fire flow standards required by the State (Utah Administrative Code rule 309-105-9).

Wastewater - The minimum LOS is to maintain a collection and treatment system capable of meeting the daily and peak flows of the service area in compliance with State and Federal standards. The sewer collection lines shall not flow more than 2/3 full under peak flow conditions. The permitted capacity of the treatment facility shall not be exceeded.

Power – The minimum LOS is to maintain a power system that is reliable, responsive and committed to meeting customer needs while ensuring safety and regulatory compliances.

Roads - Developments that will increase traffic volume on collector and arterial road intersections will be required to improve such intersections to maintain not less than LOS D during peak hours (less than 40 seconds average wait at an intersection).

They will be considered concurrently available with development if one of the following applies:

1. The minimum LOS will be available when building permits are issued, or
2. The City has made provisions to meet the service demand in a timely manner by either (a) including the service or facility improvement in its capital improvements program, or (b) establishing a Special Improvement District to provide the service or facility, or
3. The developer has entered into a binding agreement guaranteeing that the facilities or services will be available when the impacts of the development occur (i.e. at time of occupancy).

Procedure and Involvement

The process and procedure for annexation, as outlined in the Utah State Code, is one that is extensive and lengthy but provides ample opportunity for protest and consideration, including general public scrutiny and input. It is a process that hinges on the Annexation Policy Plan. In similar fashion, the adoption of an Annexation Policy Plan is an extensive one designed to have a built-in element of public review and input. It is a procedure that intricately involves both the

Planning Commission and the City Council.

Responsibilities of the Planning Commission (Recommending Body)

- Prepare a proposed Annexation Policy Plan.
- Provide notice and hold a public meeting to allow Affected Entities, as defined in the Utah State Code, to examine the proposed Annexation Policy Plan and to provide input on it.
- Accept and consider any additional written comments from Affected Entities after the public meeting.
- Make any modifications to the proposed Annexation Policy Plan the Planning Commission considers appropriate, based on input provided at or following the public meeting.
- Provide notice and hold an official public hearing on the proposed Annexation Policy Plan.
- Make any further modifications to the proposed Annexation Policy Plan the Planning Commission considers appropriate, based on input provided at the public hearing.
- Submit its recommended Annexation Policy Plan to the City Council for consideration.

Responsibilities of the City Council Duties (Adopting Body)

- Provide notice, including notice to Affected Entities, of a public hearing.
- Hold a public hearing on the Annexation Policy Plan recommended by the Planning Commission.
- After the public hearing, make any modifications to the recommended Annexation Policy Plan that the City Council considers appropriate.
- Adopt the recommended Annexation Policy Plan, with or without modifications.

Responsibilities of the Petitioner

The process for annexation is generally reactionary for a municipality based on an application indicating a petitioner's intent to annex rather than a city initiative to add property to the municipal boundary. As such the emphasis should be placed upon the petitioner to demonstrate the viability and benefit to the community of the annexation request. The petitioner for any annexation should be solely responsible for providing, to the satisfaction of the City, professionally -prepared analyses and studies that clearly, thoroughly, and specifically identify and outline the viability of the petition and resulting impacts to the community, should the petition be approved, in at least each of the areas:

- Culinary Water: source provision, storage, delivery, and infrastructure
- Sewer & Wastewater: collection, treatment, secondary water, and infrastructure
- Power: Infrastructure capacity, infrastructure development – expansion or upgrades, and energy demand
- Storm Water: collection, disposal, regionalization, and infrastructure
- Transportation: vehicular, non-motorized, active transportation, transit, pedestrian modes, and infrastructure
- Parks, Recreation, & Open Space: services provided, impact on existing facilities and programs, needs for additional and expanded facilities and programs, active recreation, and

open space preservation
- Public Safety: services provided, impact on existing facilities, needs for additional and expanded facilities, and impacts on response capabilities to the area(s) proposed for annexation, and infrastructure
- Taxes: implications to the public funds from added areas and land uses proposed in the immediate circumstances as well as over 5- and 10-year horizons

Annexation Goals and Considerations

The management of growth and expansion should be considered with all types of development applications and activities. These considerations should separate areas of the unincorporated county into areas that the City has identified as possible areas of expansion that can reasonably be accommodated with municipal services by the City of St. George. These areas should be coordinated with Washington County and other entities to ensure that growth is consistent with appropriate goals and plans. By discouraging growth in outlying areas and encouraging growth in areas where services are available, or can easily be extended, the City can discourage sprawl development and allow for the efficient cost-effective provision of municipal services.

The growth areas of the City should be of sufficient size to accommodate planned residential and non- residential growth consistent with the General Plan, taking into account the following:

1. Land with natural constraints, i.e. sensitive lands, water sheds, water drainage, cliffs, steep slopes, views, vegetation preservation, rock slides, liquefaction, and fault lines, etc.;
2. Agricultural land to be preserved;
3. Greenbelt and open space lands;
4. Transportation corridors and preservation;
5. Existing projects with development potential;
6. Land use patterns already created by existing development;
7. Development buildout potential and timing;
8. Preservation of public infrastructure and water sources;
9. Preservation of viewsheds and scenic vistas where possible; and
10. Needs for preservation of open-space, parks, and wildlife habitats.

The following factors should be considered in determining the precise location of annexation growth area boundaries:

1. Geographic, topographic, and manmade features;
2. The location of public facilities;
3. Availability of needed services, limits of capacities and extension limits;

4. Jurisdictional boundaries of other public entities and improvement districts; and
5. Location of natural resource lands and critical areas.

Planning growth in this way could provide the following advantages for the City:

1. An efficient development pattern;
2. Identification and maintenance of protected agricultural areas;
3. Avoidance of unnecessary and premature consumption of land that cannot be developed or serviced efficiently;
4. A focused plan for preserving existing public facilities, capital investments and extension of public facilities in the future;
5. Development and maintenance of fiscal integrity in City operations by encouraging the full utilization of existing infrastructure;
6. Diversification and strengthening of the tax base of the community;
7. Development of local job opportunities;
8. Protection and preservation of natural and environmental features that are desired by the community; and
9. Facilitation of development by providing sufficient areas to support anticipated populations.

Annexation Policy Plan Information

Without an adopted Annexation Policy Plan the City would be prohibited from considering petitions for annexation. An Annexation Policy Plan is required to review and address specific topics and aspects of property annexation. Based on current Utah State Code requirements, the following aspects and topics are required and included within this Annexation Policy Plan:

- A map of the Expansion Areas which identify those areas considered reasonable for potential annexation and those that are not.
- A statement of the specific criteria that will guide the city's decision whether or not to approve future annexation petitions, addressing matters relevant to those criteria including:
  - The character of the community
  - The need for municipal services in developed and undeveloped unincorporated areas
  - The city's plans for extension of municipal services;
  - How the services will be financed
  - An estimate of the tax consequences to residents both currently within the municipal boundaries and in the Expansion Area
  - The interests of all affected entities
- The justification for excluding from the Expansion Areas any area containing urban development within ½-mile of the city's boundary
- A statement addressing any comments made by Affected Entities at or after the public meeting and public hearings

This plan shall be construed neither as an expression of the City's intention or ability to annex property or extend municipal services and infrastructure to any particular property, nor to do so in any particular time frame or at all. Rather it should only be considered as a statement of policy by which consideration of petitions for annexation will be reviewed and areas where that consideration may be possible. Simply put, should the City choose to annex any land identified in this plan, the City's stated policy is for the landowners and developers to construct and dedicate all land and facilities necessary to extend and provide municipal services, e.g., roads, water, sewer, storm drain, etc., as a condition to annexation.

Expansion Area Map

Each Annexation Policy Plan is required by state law to include a map of the Expansion Area(s) which may be considered by the City for possible inclusion in the future. Identification of properties within an Expansion Area does not suggest or entitle any such property to annexation. Adoption of an Expansion Area Map represents solely the scope of properties that may be considered for potential annexation.

Utah State law states that, if practicable and feasible, annexation boundaries should be aligned with surrounding entities under the following considerations:

- The boundaries of existing local districts and special service districts for sewer, water and other services
- The boundaries of school districts whose boundaries follow city boundaries
- The boundaries of other taxing entities
- To eliminate islands and peninsulas of territory that are not receiving municipal-type services
- To facilitate the consolidation of overlapping functions of local government
- To promote the efficient delivery of services
- To encourage the equitable distribution of community resources and obligations

The City has weighed each of these considerations in determining the proposed Expansion Areas illustrated in the Expansion Area Map and anticipates possible annexations in the following areas:

Expansion Area A – Red Cliffs Desert Reserve

Expansion Area A is located north of the downtown core and existing Red Cliffs Desert Reserve Area. The potential area would include more of the City Creek area of the Red Cliffs Desert Reserve as well as areas in Broken Mesa.

This area is currently part of the Red Cliffs Desert Reserve. To maintain the goals and purpose of the reserve, this area may be best suited for Sensitive Lands preservation, utilities, roadways and recreational projects only.

Expansion Area B – Tonaquint West

Expansion Area B is located west of Dixie Drive going north to Santa Clara City and south to the Arizona state border.

This area consists of some privately owned, unincorporated land however the bulk of the area is owned by the State of Utah.

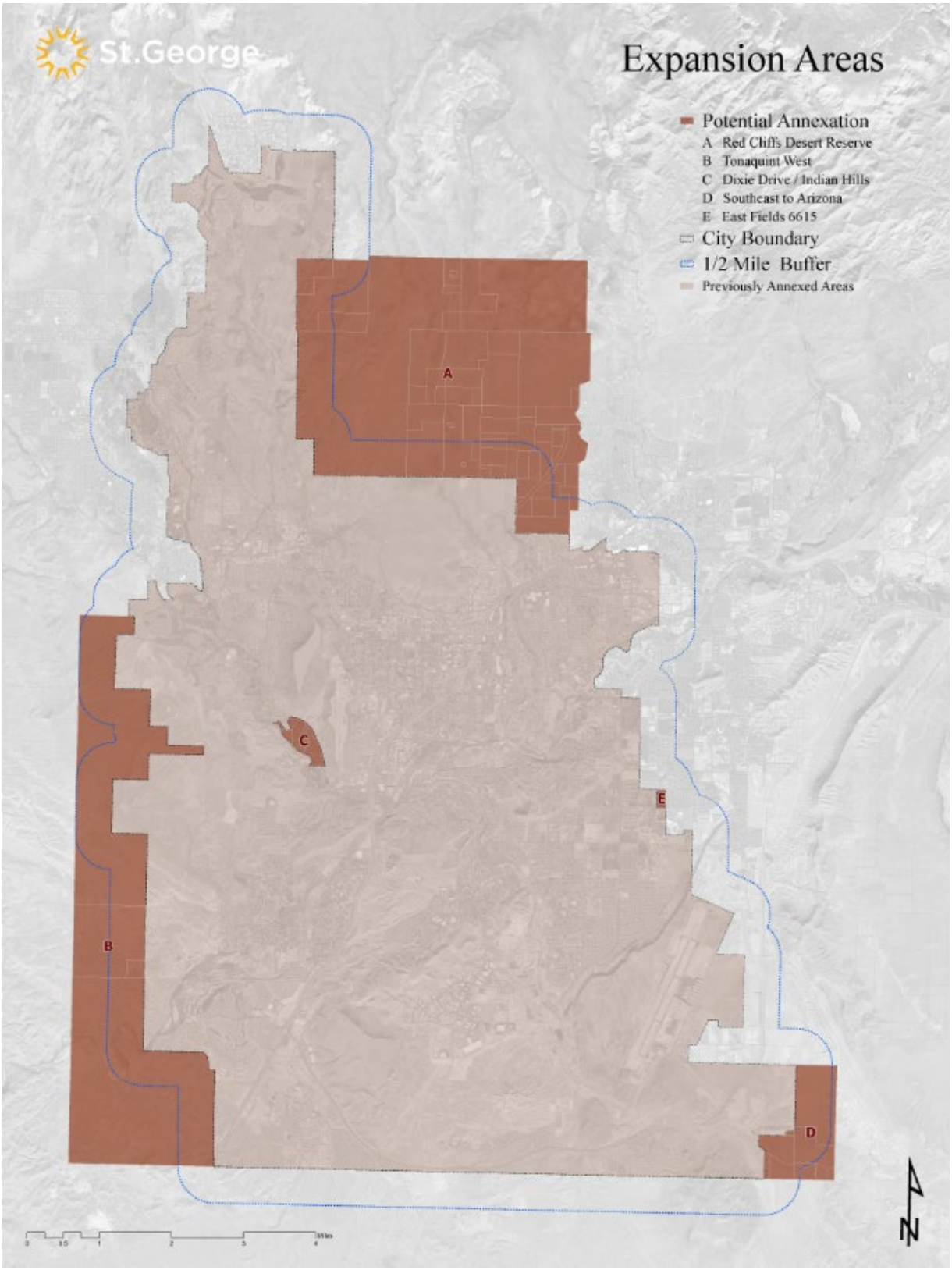
This area may be best suited for residential and commercial uses with area to be protected as Sensitive Lands.

Expansion Area C – Dixie Drive/Indian Hills
Expansion Area C is bounded by the Santa Clara River and development to the south (see Dixie Drive) and north by Indian Hills Drive. It is a remnant island of unincorporated land surrounded by properties located within City of St. George boundaries.
This area is currently agricultural in nature.
This area may be best suited for Sensitive Lands protection near the Santa Clara River and the Black Hill. Outside of the Sensitive Lands, the area may be best suited for agricultural, residential, and commercial uses.

Expansion Area D – Southeast to Arizona
Expansion Area D is located at the southeast corner of the existing municipal boundary. The potential area would closely align to the existing easternmost boundary and expand south down to the Arizona border.
This area is currently unincorporated land undeveloped with some agricultural uses.
This area may be best suited for Sensitive Lands protection near the Fort Pearce Wash with residential, commercial, and industrial uses in the remaining areas.

Expansion Area E – East Fields 6615
Expansion Area E is located east of the Little Valley area and north of the St. George Regional Airport. These are properties located along the eastern border of St. George.
This area is currently unincorporated land undeveloped with some agricultural uses.
This area may be best suited for residential uses.

Expansion Area Map (rvsd 12.2025)



Annexation Petition Criteria

Utah Code Section §10-2-401.5)(3)(b) specifies that each Annexation Policy Plan shall include a statement of the specific criteria that will guide the municipality's decision whether or not to grant future annexation petitions, addressing matters relevant to those criteria including:

- The character of the community;
- The need for municipal services in developed and undeveloped unincorporated areas;
- The municipality's plans for extension of municipal services;
- How the services will be financed;
- An estimate of the tax consequences to residents both currently within the municipal boundaries and in the Expansion Area; and
- The interests of all affected entities.

Community Character

The City of St. George is located in the breathtaking red rocks of Southwest Utah. Our thriving, culturally rich City is home to a burgeoning entrepreneurial ecosystem anchored by a healthy blend of high tech, knowledge-based, outdoor, manufacturing, and tourist industries, two higher education institutions (Utah Tech University and Dixie Technical College) and St. George Regional Hospital, an accredited Level II Trauma Center. The City hosts large global events such as the IRONMAN and IRONMAN 70.3 World Championships, the Huntsman World Senior Games, the St. George Marathon, the CAIRN Symposium, and more. With more than 50 miles of trails and nearly 50 parks, St. George truly is the brighter side. With a 2022 estimated population of 102,519 and median age of 38.6, the City of St. George is the largest city in the St. George metro area (Washington County). As the regional hub, St. George consistently ranks in the top five of the nation's fastest-growing metro areas by the United States Census Bureau (#1/2021, #1/2020; #5/2019; #3/2018, #1/2017), and is projected to grow to approximately 266,000 in 2030. The City of St. George also ranks consistently high on WalletHub's Best Small Cities for Starting a Business (#2/2022; #1/2021; #2/2019) and is the 2022 Milken Institute's #2 Best Performing City.

The Annexation Policy Plan seeks to embrace and balance varying demands of the City, providing areas for continued residential and commercial growth. In addition, Expansion Area A offers a unique Sensitive Lands preservation opportunity.

The City of St. George must plan carefully for a mix of residential and commercial development that will generate a sustainable and diversified economic base for the community. Because residential development often costs more to service relative to the revenues generated by this development type, it is important to provide for appropriate non-residential development that will generate jobs, increase the property tax base of the area, and generate additional sales tax revenues as well as be consistent with the City's open space preservation priorities. Therefore, the City should consider an appropriate mix of development when considering annexation petitions, taking into consideration the existing and planned land uses already within the City and those that will remain outside of the city that will border an area proposed for annexation.

Need for Municipal Services

The need for services must be outlined on the petition for annexation by the petitioners with a suggestion for how these services are to be provided. For each annexation proposal received, the Planning Commission and City Council must review and consider what services are actually needed, how and when those services are to be provided and financed and consider the most logical and efficient service provider. The projected uses for each of the Expansion Areas is described below to better understand the need for municipal services.

In general, the City should consider, as a minimum, the following factors for all areas of service provision:

1. If the proposed area is in an existing special service district (SSD);
2. Whether or not it would be more logical and efficient for the municipal services to continue to be provided by the SSD;
3. Whether or not municipal services are currently being provided by another jurisdiction;
4. If municipal services are already being provided, whether or not it would be more logical and efficient for the City to contract with that jurisdiction to continue the provision of municipal services;
5. The cost of the capital facilities to be incurred that are associated with the proposed Expansion Area; and
6. Whether or not the capital facilities costs can be entirely offset through developer contributions and impact fees.

Expansion Area A – Red Cliffs Desert Reserve. This area is in the Red Cliffs Desert Reserve and is part of a Habitat Conservation Plan. Red Cliffs Desert Reserve maintains this area with the primary goal of recovering the threatened desert tortoise while carefully managing recreational activities and utility projects to benefit future generations in an extraordinary unique environment. As some of the Reserve exists within City boundaries and maintains this goal and purpose, expansion would be intended for utility, roadway and recreational projects only.

Existing Municipal Services
Power – Power runs north and south through the property, with substations along the route. However, power is not stubbed to private development. Power is the main feed from PacificCorp and runs to a substation owned by PacificCorp and UAMPs. There is a distribution line that feeds the wells in that area.
Water – Water follows Cottonwood Road north to a water tower. From the tower, water continues north and splits to the east. Water is not stubbed to private development. There is also a transmission line that goes west to the Ledges tank.
Sewer – no Sewer exists in the proposed area
Public Safety – Washington County Sheriff's Department
Roadways – Cottonwood Road

Future Municipal Service Needs
Development in Expansion Area A will be very limited. Future infrastructure needs would be development based and the responsibility of the Reserve to install. Emergency Services would fall under the City of St. George's Police and

Fire Departments is annexed.

Expansion Area B – Tonaquint West. This area is unincorporated land predominantly owned by the State of Utah. There are many opportunities in Expansion Area B for Sensitive Lands protection and recreational uses.

Existing Municipal Services
Power – No services
Water – No services
Sewer – No services
Public Safety – Washington County Sheriff's Department
Roadways – No services

Future Municipal Service Needs. Future water, sewer, and power infrastructure would need to be constructed by development and maintained by the City of St. George following dedication. It is not anticipated that the City will need to provide any capital improvements to this area within the next five years. If annexed, the City will be responsible to maintain and regulate the roads. City of St. Goerge Police and Fire Departments would be responsible to provide emergency services to this expansion area.

Expansion Area C – Dixie Drive/Indian Hills. This area is unincorporated land impacted by Sensitive Lands. The area is partially developed with a few homes. Remaining land is used for agricultural purposes.

Existing Municipal Services
Power – St. George Energy Services currently services this property with limited connections.
Water – No services; water borders the expansion area to the north.
Sewer – No services; sewer borders the expansion area to the north and cuts through the property along the master planned 50' road.
Public Safety – St. George Police and Fire
Roadways – No services; roadways border to the north, Indian Hills Drive, with additional access to the property to the east, Shady Springs Drive.

Future Municipal Service Needs. Future water and sewer infrastructure would need to be constructed by development and maintained by the City of St. George following dedication. It is not anticipated that the City will need to provide any capital improvements to this area within the next five years. If annexed, the City will be responsible to maintain and regulate the roads.

Expansion Area D – Southeast to Arizona. This area is unincorporated land that goes south to the Arizona border and east of the existing municipal boundary. The area is partially developed with a few homes. Remaining land is used for agricultural purposes.

Existing Municipal Services

Power – located within Dixie Power boundaries
Water – No services
Sewer – No services
Public Safety – Hurricane Valley Fire District
Roadways – No services

Future Municipal Service Needs. Future water and sewer infrastructure would need to be constructed by development and maintained by the City of St. George following dedication. It is not anticipated that the City will need to provide any capital improvements to this area within the next five years. If annexed, the City will be responsible to maintain and regulate the roads. City of St. Goerge Police and Fire Departments would be responsible to provide emergency services to this expansion area.

Expansion Area E – East Fields 6615. This is unincorporated property bounded by the City of St. George to the west and south and Washington City to the east and north.

Existing Municipal Services
Power – located within Dixie Power boundaries
Water – No services; water is located to the west in 3430 East as well as to the south in 2000 South
Sewer – No services
Public Safety – Washington City Fire Department
Roadways – No services, bounded by 3430 East to the west and 2000 South to the south

Future Municipal Service Needs. Future water and sewer infrastructure would need to be constructed by development and maintained by the City of St. George following dedication. It is not anticipated that the City will need to provide any capital improvements to this area within the next five years. If annexed, the City will be responsible to maintain and regulate the roads. City of St. Goerge Police and Fire Departments would be responsible to provide emergency services to this expansion area.

Plans for Extension of Municipal Services

The City of St. George plans to provide services within its boundaries first and foremost. The City's policy is to consider annexation only in those areas where the City has the potential to efficiently and effectively provide municipal services which may include culinary water, sanitary sewer, power, road maintenance and regulation, recreation, and public safety services. Petitions for annexation should be required to perform appropriate infrastructure planning and financing to

determine the feasibility of and provide for the infrastructure needs within the petitioned area for annexation to ensure adequate services can be provided. As stated earlier in this Element, the Expansion Areas identified in this Element do not represent areas that *will* be annexed by the City, but rather represent areas that the City may be willing to accept and consider petitions for annexations. As future capital facilities are built, they must conform to the appropriate master plans and standards of the City.

At this point, The City has no plans to build any capital facilities in any of Expansion Areas. Any capital facilities that may be needed would be required of the developers as a condition of annexation and development approval.

How the Services Will be Financed

The construction and development of infrastructure for the provision of services should be financed by the developer installing the improvements as a condition of annexation and development. As a condition of annexation, developers of annexed areas should be responsible to pay for master planning and capital facilities planning, with oversight, review and approval by the City, in at least seven areas: transportation, water, sewer, power, storm drain, public safety, and parks and recreation.

An Estimate of the Tax Consequences

Petitioners for annexation should be required to prepare and submit a report showing the tax consequences to properties covered by the annexation petition and present these with the petition for annexation. The tax impact, among other considerations, within the municipal boundaries should also be reviewed by the City Council before a final decision is made on annexation.

The impact to the City's General Fund are determined largely on the ultimate development pattern and land use types constructed. Using detached single-family residential uses as an example, the implications are two- fold: developed land, typically through a subdivision, would yield more properties that each provide property tax income than does a single piece of undeveloped property; and a development pattern that, for example, yields five units per acre results in more properties providing property tax revenues than would a development pattern of two or three units per acre. Additionally, the same works in the inverse for expenditures. The more dense the development, as a general statement, the

more efficiently utilized the serving infrastructure becomes providing a more favorable cost to expenditure ratio for the City, although it typically increases the public safety services needed. Similar is the case for non-residential development patterns, although the density component plays less of a role.

It is not the intent of this Plan to provide specific tax impacts as the variability of the ultimate development types and patterns and changing tax rates year to year can make significant differences in resulting revenues and expenditures. This Plan is intended solely to give a general overview of the fiscal impacts of annexation into the City of St. George using the 2023 tax rates.

The properties identified within the various Expansion Areas are currently largely undeveloped. Properties in these Expansion Areas are currently assigned to taxing districts Unincorporated County (15) and Hurricane Valley Fire SSD (47).

These are not the only taxing entities or districts assigned to properties in these Expansion Areas. The properties in these Expansion Areas are also a part of the Washington County, Washington County School District, Washington County Water Conservancy District, and Southwest Mosquito Abatement and Control Districts. The funding for these other districts makes up a portion of the overall rate of each Taxing District.

The Unincorporated County District (15) and Hurricane Valley Fire SSD District (47) represent those districts that could potentially be affected by annexation of properties into the City of St. George. Taxing districts 15 and 47 currently carry the tax rates of 0.5923 and 0.6618 respectively. Annexing property from these districts into the City, thereby reassigning them to taxing district 8 (St George City), would adjust their taxation rate to 0.6693.

This results in an anticipated tax increase of 13.00% for those properties annexed from district 15.
This results in an anticipated tax decrease of 1.14% for those properties annexed from district 47.

From that overall tax rate, the City of St. George receives approximately 11.5% of those tax revenues (the city's adopted tax rate is 0.000770; the total tax rate for

St. George residents which includes all taxing entities is .006693) with the remainder going to various other taxing entities. Development of properties for anticipated non- residential land uses generally provides a significant increase in taxable value through the transition to improved land and constructed value but the overall difference in this increase tax burden to the property owner is anticipated to remain with a consistent difference between that development activity happening with or without annexation.

As an example, development of non-residential land uses would also provide an increase in the number of properties, albeit to a lesser quantity than residential development as these land uses each typically consume larger areas of land compared to individual residential properties. This also does not take into account the added benefit from those non-residential developments that would also generate sales tax, which provides an added revenue stream for the City as well as the property owner. For properties that would ultimately develop for residential uses, the same holds true difference in revenues relative to annexation although the overall revenue would not be as significant considering the 45% taxation credit provided to primary residential units. This credit also impacts the cost-benefit ratio for the City as residential uses are typically a net draw on resources on a per unit basis whereas non-residential uses are typically a net gain on the cost of providing services. As an example, development of residential uses on newly annexed land at an average five units-per-acre density with an average $550,000 home would provide, on average, around $2,024.63 in property tax revenue per unit, of which around $232.93 goes to the City coffers. That adds up to around an additional $1,164.63 of property tax revenue per acre (0.00108% of the City total General Fund budget) of residential development, not considering the costs from the net draw on resources and services.

Expansion Area A. This Expansion Area contains properties assigned to taxing district Unincorporated County (15).

Expansion Area B. This Expansion Area contains property owned by the State of Utah. Privately owned properties are assigned to taxing district Unincorporated County (15).

Expansion Area C. This Expansion Area contains properties assigned to taxing district Unincorporated County (15).

Expansion Area D. This Expansion Area contains properties assigned to taxing district Hurricane Valley Fire SSD (47).

Expansion Area E. This Expansion Area contains properties assigned to taxing district Unincorporated County (15).

The Interests of All Affected Entities

In consideration of this Annexation Policy Plan, the determined Affected Entities would be those taxing entities that provide services to currently unincorporated properties within the various Expansion Areas identified within the plan. The City of St. George, desiring to be good neighbors and partners, also includes neighboring jurisdictions in the identified roster of affected entities. The affected entities identified for The City of St. George's Annexation Policy plan include:
Washington County
Washington County School District
Washington County Water Conservancy District
Southwest Mosquito Abatement and Control District

The Washington County School District currently serves the educational needs of the proposed Expansion Areas and will continue to do so if any or all of the annexations should occur. Therefore, there are no projected impacts to the Washington County School District other than the effect of revenues from additional development of land, which could occur with or without annexation.

Service obligations currently provided by the Washington County Sheriff's Department. would be transferred to the City of St. George Police Department and Fire Department, respectively, should annexation occur. Annexation would result in properties being removed from the District's responsibility resulting not only in a reduction of tax revenues for the District but also a corresponding reduction in service requirements. Gold Cross Ambulance service provides universal emergency medical services to Washington County regardless of governmental jurisdiction so the occurrence of annexation would not affect their provision of services.

The governmental organization and leadership of Washington County in their various capacities, has the underlying responsibility for administering the governmental responsibility for unincorporated properties within the County.

Annexation of properties into the City of St. George would transfer the governmental oversight and responsibility for those properties from Washington County to the City.

The following table is a comparison of the services provided by affected entities to the Expansion Areas shown in this plan as they currently exist and as they would be provided if annexed into the City of St. George.

COMPARISON OF SERVICES IN EXPANSION AREAS				
SERVICE	CURRENT PROVIDER		PROVIDER, IF ANNEXED	
Education	Areas A - E	Washington County School District	Areas A - E	Washington County School District
Mosquito Abatement	Areas A - E	Southwest Mosquito Abatement	Areas A - E	Southwest Mosquito Abatement
Water	Areas A - E	No services	Areas A - E	City of St. George
Sewer	Areas A - E	No services	Areas A - E	City of St. George
Storm Drain	Areas A - E	No services	Areas A - E	City of St. George
Power	Area A	No services	Area A	City of St. George
	Area B	No services	Area B	City of St. George
	Area C	No services	Area C	City of St. George
	Area D	No services	Area D	Dixie Power
	Area E	No services	Area E	Dixie Power
Roadways	Area A	Washington County	Area A	City of St. George
	Area B	Washington County	Area B	City of St. George
	Area C	Washington County	Area C	City of St. George
	Area D	Washington County	Area D	City of St. George
	Area E	Washington City	Area E	City of St. George
Fire Protection	Area A	Utah Division of Forestry, Fire and State Lands	Area A	St. George Fire Department
	Area B	Utah Division of Forestry, Fire and State Lands	Area B	St. George Fire Department
	Area C	St. George Fire Department	Area C	St. George Fire Department
	Area D	Hurricane Valley Fire Department	Area D	St. George Fire Department

	Area E	Washington City Fire Department	Area E	St. George Fire Department
Law Enforcement	Area A	Washington County Sheriff's Department	Area A	St. George Police Department
	Area B	Washington County Sheriff's Department	Area B	St. George Police Department
	Area C	St. George Police Department	Area C	St. George Police Department
	Area D	Washington County Sheriff's Department	Area D	St. George Police Department
	Area E	Washington City Police Department	Area E	St. George Police Department
Emergency Medical Services	Areas A - E	Gold Cross Ambulance	Area A	Gold Cross Ambulance

Exclusions from Expansion Area

One of the requirements from the Utah State Code for Annexation Policy Plans is a justification for the exclusion from identified Expansion Areas of any area containing urban development within one-half mile of the municipality's boundary. That regulation defines urban development to be either a housing development with more than 15 residential equivalent units and an average density greater than one residential unit per acre or a commercial or industrial development for which cost projections exceed $750,000 for all phases.

A ½-mile buffer was drawn around the existing municipal boundaries to identify any development that could be defined as an urban development that may not be a part of an Expansion Area identified in this Plan, see the Expansion Area Map above. The following areas were identified within the ½-mile buffer and have been excluded along with an explanation for their exclusion:

1. Winchester is located within ½-mile of the City's northwestern boundary. This unincorporated residential development has expressed their desire to remain unincorporated. There is no active effort to incorporate Winchester into the City of St. George.
2. All other developed areas in the vicinity of the City's current incorporated boundaries, or within ½- mile of those boundaries are already incorporated into other jurisdictions' boundaries whether or not they meet the definition of urban development.

Considerations of The Planning Commission and City Council

The decision whether or not to annex a piece of property for any purpose is one that should not be taken lightly by the City. In the process of their review, the Planning Commission is charged with the weighty task of not only a making recommendation whether or not the petition for annexation is justified as an asset to the community and whether it's best served being annexed or remain outside of the incorporated boundaries of the city, but also what types of land uses should be incorporated into the areas they believe to be justified.

Similarly, in making decisions the City Council, in their role as the municipal governing body, not only has to weigh the recommendations of the Planning Commission but also determine the terms and conditions upon which property is to be annexed, should that be the ultimate decision, that reduce or eliminate the burden on the City's existing infrastructure and services. These are not simple decisions to be made by either body and should not be rushed. It is anticipated, and highly appropriate, that these decisions could be debated, discussed at length, vetted thoroughly, differing opinions expressed, and decided without unanimous consent. Aside from and in addition to the concerns for infrastructure and services involved with annexation, there are other political, social, and financial considerations that should be considered.

Relationship with Expansion Areas of Other Municipalities

The City of St. George abuts the cities of Ivins, Santa Clara, and Washington. As such, the annexation policies of these Cities should be considered in the adoption of this plan. The City of St. George and Washington City have agreed to allow the unincorporated properties between the municipalities (Area E) the option to elect which municipality to annex into. The City of St. George and Ivins City do not have any overlapping expansion areas. Santa Clara and St. George have limited overlap in expansion Area B. This property owner will also be able to elect which municipality to annex into.

Willingness and Probability of Other Municipality to Annex the Area

Expansion Area A. According to the 2009 Annexation Policy Plan, Washington City has indicated a potential of annexing into this area, just as this plan identifies. The areas listed in both annexation policy plans are immediately adjacent to both communities.

Expansion Area B. According to the 2014 General Plan, Santa Clara has indicated a potential annexation in this area at the northern most end of the potential Expansion Area. Expansion Area B is directly south of undeveloped areas of Santa Clara.

Expansion Area C. There is no other surrounding municipality that would be able to annex into this area, thus there is no probability of another municipality annexing for the foreseeable future.

Expansion Area D. Currently there are no incorporated municipalities to the east of this area. Annexation into an incorporated municipality is only possible through the City of St. George. An effort to incorporate Expansion Area D into Washington City would have to involve a significant amount of property in addition to this Expansion Area and require an amendment to their current Annexation Policy Plan.

Expansion Area E. Washington City has the potential to annex into this area. Both the City of St. George and Washington City have infrastructure immediately adjacent to Expansion Area E.

Current and Projected Costs of Infrastructure

It is the position of the City of St. George that future capital costs for the establishment and construction of infrastructure should be financed by the developer installing the improvements. It is not the City's position that the City should incur costs related to capital improvements into the Expansion Areas.

In developing, considering, and adopting an Annexation Policy Plan, the Planning Commission and City Council are to consider current and projected costs of infrastructure, urban services, and public facilities necessary to expand the

infrastructure, services, and facilities into the area being considered for inclusion in the Expansion Area.

Expansion Area A Future Capital Costs. Development within this area after annexation will need to connect to the City's water, sewer, power, and storm drain utility systems, which may first constitute extension of infrastructure into the Expansion Area. If annexed, City of St. George would be responsible to maintain and regulate the roads, once constructed by development activities, other than State and County roads. City of St. George's Police and Fire Departments would be responsible to provide emergency services to Expansion Area A. All other anticipated costs would be of an operations and maintenance nature as typical with the various areas of the existing community.

Expansion Area B Future Capital Costs. Development within this area after annexation will need to connect to the City's water, sewer, power, and storm drain utility systems, which may first constitute extension of infrastructure into the Expansion Area. If annexed, City of St. George would be responsible to maintain and regulate the roads, once constructed by development activities, other than State and County roads. City of St. George's Police and Fire Departments would be responsible to provide emergency services to Expansion Area A. All other anticipated costs would be of an operations and maintenance nature as typical with the various areas of the existing community.

Expansion Area C Future Capital Costs. Development within this area after annexation will need to connect to the City's water, sewer, power, and storm drain utility systems, which may first constitute extension of infrastructure into the Expansion Area. If annexed, City of St. George would be responsible to maintain and regulate the roads, once constructed by development activities, other than State and County roads. City of St. George's Police and Fire Departments would be responsible to provide emergency services to Expansion Area A. All other anticipated costs would be of an operations and maintenance nature as typical with the various areas of the existing community.

Expansion Area D Future Capital Costs. Development within this area after annexation will need to connect to the City's water, sewer, and storm drain utility systems, which may first constitute extension of infrastructure into the Expansion Area. If annexed, City of St. George would be responsible to maintain and regulate the roads, once constructed by development activities, other than State and County roads. City of St. George's Police and Fire Departments would be responsible to provide emergency services to Expansion Area A. All other anticipated costs would be of an operations and maintenance nature as typical with the various areas of the existing community.

Expansion Area E Future Capital Costs. Development within this area after annexation will need to connect to the City's water, sewer, and storm drain utility systems, which may first constitute extension of infrastructure into the Expansion Area. If annexed, City of St. George would be responsible to maintain and regulate the roads, once constructed by development activities, other than State and County roads. City of St. George's Police and Fire Departments would be responsible to provide emergency services to Expansion Area A. All other anticipated costs would be of an operations and maintenance nature as typical with the various areas of the existing community.

Consistency with the General Plan for Additional Land Suitable for Development

The City should encourage development within the municipal boundaries as a primary focus in an effort to utilize undeveloped lands first, before extensions are made to existing City boundaries. Policies should be adopted to encourage the appropriate use of undeveloped lands within the City consistent with its General Plan. If lands within the City are not available to be built on, annexations may be considered when services can be provided consistent with the General Plan.

All annexations should be considered from the point of view of the General Plan. The goals and objectives of the General Plan should serve as a guide to the consideration and land use assignments of the annexed area.

The City of St. George is experiencing a pattern of rapid growth that is anticipated to continue. Projections have shown that the City's population is expected to continually grow throughout the next decade. The new households that will constitute this growth should be accommodated on infill and existing sites within the City's current boundaries primarily and supplemented by future annexed areas as deemed appropriate. The amount of residential acreage needed for these new households is dependent on the overall density associated with new residential development. In addition, non-residential land uses would also be needed to support a community in which residents can enjoy the ability to live, work, shop, and recreate.

Inclusion of Agricultural, Forest, Recreational and Wildlife Areas

The City of St. George has established and pursued a policy of open space acquisition for the protection of values important to the City's residents, including viewsheds, scenic vistas, watersheds, drinking water source protection, non-motorized recreation, and wildlife habitat. Some of the areas contemplated for possible annexation by this plan, including Expansion Areas A, B, and C, present unique opportunities for open space preservation.

Agricultural Areas. Active agricultural areas are included in the Expansion Areas and should be considered for annexation when it is consistent with the Agriculture Protection Act of Utah, the General Plan, and the desires of the owners of said properties. In general, agricultural areas should be protected from development as feasible, unless it is the desire of the property owners of said lands to develop their properties.

Forested Areas. Forested areas should be considered for annexation with consideration to the preservation and beauty of surrounding environmental land consistent with the General Plan. Hillside protection and cluster housing should be used where practicable to preserve these areas when being considered for annexation. Expansion Areas B may include some forested and hillside areas. These areas are primarily owned by the State of Utah.

Recreational Areas. Recreational areas should be considered for annexation to the City with the intent that municipal services are generally not needed and the recreational and open space benefits are effectively consistent with the General

Plan.

Wildlife Areas. There are an abundance of areas in and around the City that currently enjoy the benefit of wildlife. As annexations occur further into these areas, a balance between the needs of people and the needs of wildlife should be considered and appropriate steps taken to plan for these needs.

Agriculture Protected Areas

The Annexation Policy Plan intends to recognize Agriculture Protection Areas adopted by Washington County. Expansion Areas are intended to be sensitive to the future development of these lands with planning in coordination with the property owners in these areas with the intent of protecting agricultural lands consistent with right-to-farm laws. To be included in an agriculture protection area established within Washington County, land must comply in nature and configuration with the requirements of the state code and applicable Washington County ordinances. There are no existing agricultural protection areas within the proposed Expansion Areas.

Comments From Affected Entities

The City of St. George's Planning Commission and City Council, in their capacity as the municipal legislative body, have held multiple public meetings and public hearings to consider this Annexation Policy Plan. Compliant with the requirements of the Utah State Code, the City has also provided an opportunity for identified affected entities to provide comment on the Annexation Policy Plan. From this effort, the City has included the following statements regarding comments and information received from those affected entities during the public comment period as well as a logging of the comments and information received from the affected entities:

Log of Affected Entities' Comments and Information Received

Section 10-2-401.5 (now §10-2-803) of the Utah State Code specifies, in part, that the City is to provide a window of time at least 10 days in length for affected entities, as defined in the Utah State Code, to provide written comment regarding the adoption of an Annexation Policy Plan or an amendment to an adopted

Annexation Policy Plan. This window of time is called for in the Utah State Code and is to occur following an initial discussion of the proposal during a public meeting of the Planning Commission and before a public hearing is held by the Planning Commission.

On April 22, 2025, the Planning Commission held a public meeting where an initial discussion of the proposed Annexation Policy Plan took place. After the discussion, the 10-day comment period for the affected entities was opened. On May 2, 2025, the 10-day comment period ended. During this 10-day comment period, the City of St. George received one response from Washington City.

City of St. George Response to Affected Entities' Comments and Information Received

The City of St. George is grateful to its affected entity partners that have taken the time and interest to review this proposed amendment for the identification and inclusion of expansion areas in the adopted Annexation Policy Plan and provide comments. Their input and information is valuable to the City. It is the desire of the City to continue the working relationship with these entities to provide the best services possible to all City of St. George residents. The City also respects the rights and decisions of property owners. One of those rights is the right to make application and be heard. As such, the City's intent is to allow property owners to make application for annexation, should they choose to do so, and the City will hear the application and make decisions based on what is best for the community.

Washington City provided the only comment to this Annexation Plan by an affected entity. In the comment, Washington City expressed concerns about the overlaps that exist between the proposed expansion areas in this Plan and their Annexation Plan. According to Utah Code §10-2-401.5.4a (now §10-2-803(3)), municipalities shall attempt to avoid gaps and overlaps with the expansion areas of other municipalities, however overlaps are not prohibited and provide property owners with options regarding municipal annexations. The only land which the City is prohibited from annexing is land on which a petition to incorporate as a new city has been proposed.[1] All areas of expansion in this Plan can reasonably be accommodated with all municipal services by the City of St. George. Because the

[1] Utah Code §10-2-804(9)

City cannot annex without a petition from the property owner[2], where there are properties covered by overlaps in more than one municipality, the property owner has the right to choose which municipality into which they would like to annex.

[2] Utah Code §10-2-804