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 Offices located at 175 East 200 North, St. George, Utah, on Thursday, April 4, 2024, 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.**

   a. **Read a proclamation proclaiming April 27, 2024 as Arbor Day.**

2. **Appoint Deputy City Recorder.**

3. **Comments from the public.**

   The Open Comment Period provides an opportunity to address the Mayor and City Council regarding concerns or ideas about the City which the Council may choose to address. Comments pertaining to an agenda item that includes a public hearing or public input should be given as that item is being discussed during the meeting.

   Up to ten (10) members of the public will be given a limit of two (2) minutes per person. The Council will not respond to comments or questions but will take the comments under consideration for possible discussion at another time. If there are more than 10 individuals wishing to provide public comment, speakers will be selected by random draw.

   Rules for making comments:
   1. You must be a resident of the City of St. George.
   2. Public input shall not be allowed on any agenda item or pending land use application.
   3. Comments should relate to City business.
   4. Speakers shall be courteous and show respect. Comments shall not include obscene or profane language, nor contain attacks on any individual.

   In order to provide an opportunity for a broader scope of residents to provide public comments, any person selected to provide comments at a meeting will not be able to provide public comments again for three (3) months (once per quarter); however, written comments may be submitted anytime to the City Recorder at 175 East 200 North, St. George, UT 84770 or publiccomments@sgcity.org.

   The Mayor and City Council encourage civil discourse for everyone who participates in the meeting.

4. **Consent Calendar.**

a. **Consider approval to award bid to AGEC for the City Hall and parking structure materials testing and special inspections.**

BACKGROUND and RECOMMENDATION: The construction specifications for the New City Hall and Parking structure require special testing and inspections on the project. Staff recommends awarding the bid to AGEC in the amount of $106,306.

b. **Consider approval to award bid to American Chiller Services for the replacement HVAC chiller for the Dinosaur Discovery Site.**

BACKGROUND and RECOMMENDATION: The Dinosaur Discovery Site HVAC is over 20 years old and will not work correctly in high temperatures, making the facility very uncomfortable and unsafe for staff and guests. Staff recommends awarding the bid to American Chiller Services in the amount of $148,753.

c. **Consider approval to award bid to Whitaker Construction for the construction of portions of the Virgin River South Trail Phase 2.**

BACKGROUND and RECOMMENDATION: This portion of the trail will connect phase 1, Bloomington Park to Brigham Rd, to the existing Virgin River South Trail near the I-15. There were some property issues that were unresolved when phase 1 was constructed. These issues have been resolved resulting in a trail connection to Walmart. Staff recommends awarding the bid to Whitaker Construction in the amount of $1,491,838.

d. **Consider approval to award bid to Caliber Contractor LLC for the JC Snow Park Pavilions Replacement project.**

BACKGROUND and RECOMMENDATION: This bid is to remove two of the existing pavilions and associated concrete flatwork. The bid also includes installing new concrete flatwork for two of the new replacement pavilions. Currently the park has three existing pavilions that were installed in the late '70s that need to be replaced. The three replacement pavilions have already been ordered by the city in a separate contract. Staff recommends awarding the bid to Caliber Contractor LLC in the amount of $117,864.50.

e. **Consider approval to award bid to Interstate Rock Products for the construction of portions of the Halfway Wash Trail (North).**

BACKGROUND and RECOMMENDATION: This portion of the trail will connect the Snow Canyon Parkway trail to the Red Cliffs Desert Reserve. Staff met with residents of the Paradise Canyon community in the area and addressed concerns regarding the trail proximity to residents, the private roads etc. Adjustments were made to the trail alignment based on resident feedback and a bridge was added to the project. This keeps the trail within City property, gives residents more of a buffer and provides a better trail experience. Staff recommends awarding the bid to Interstate Rock Products in the amount of $396,228.70.

f. **Consider approval of a Professional Services Agreement with Rosenberg Associates for the design of Gap Canyon Parkway.**

BACKGROUND and RECOMMENDATION: This contract includes the construction design of Gap Canyon Parkway including, base map, floodplain assessment,

erosion hazard assessment, drainage study, geotechnical study, and civil construction plans. Staff recommends approval of the agreement.

g. Consider approval of a Construction Contract with Whitaker Construction for the R1 Sewer Project.

The R1 Sewer project consists of upsizing an existing 10" line to 18" for 1,560 L.F. in the Paiute Springs subdivision. The project was publicly bid last week and we received (2) bids. Staff recommends approval of the contract.

h. Consider approval of a land exchange with Freeport West-Daybreak, LLC.

BACKGROUND and RECOMMENDATION: Freeport is willing to also build the City's portion of Washington Fields Road and the East-West connector road at their expense and provide 60,000 cubic yards of fill dirt for the City's use if there is a need for clay removal. Staff recommends approval.

i. Consider approval of the minutes from the meeting held on March 21, 2024.

5. Consider approval of Ordinance No. 2024-019 amending 10-13-C of the St. George City Code pertaining to Development and the Flood and Erosion Hazard Overlay Zone.

BACKGROUND and RECOMMENDATION: To be eligible for federal disaster assistance St. George participates in the National Flood Insurance Program and is required to enact regulations to minimize flood losses. The original ordinance was adopted in 1987 with minor revisions since then to enact some erosion hazard regulations. This revision brings the ordinance up-to-date in compliance with current Federal and State requirements. At their meeting held on March 26, 2024, the Planning Commission recommended approval.

6. Consider approval of Ordinance No. 2024-020 amending an approved PD-C (Planned Development Commercial) on 0.89 acres located on the southeast corner of River Road and George Washington Boulevard, with the conditions from the Planning Commission. (Case No. 2024-PDA-004 - Cypress Credit Union)

BACKGROUND and RECOMMENDATION: The purpose of the amendment is to add a 4,160 ft² credit union. This lot is a part of the River Crossing Planned Development and the last lot to seek site approval in the development. At their meeting held on March 12, 2024, the Planning Commission held a public hearing and recommended approval of the application with a 6-0 vote and with conditions.

7. Consider approval of a Hillside Permit for the South Rim at Foremaster subdivision Phase 2 Lot 32 to adjust the ridgeline location to the south. (Case No. 2024-HS-006)

BACKGROUND and RECOMMENDATION: This is a request to obtain a hillside permit for the property located at 1636 East Howard Lane (Lot 32, South Rim at Foremaster Ridge Phase 2). The Hillside Review Board met with the applicant on March 12, 2024 and recommended adjusting the ridgeline location approximately 11 feet. The Planning Commission heard the request on March 26, 2024, and recommended approval with the condition that any wall built at the new proposed ridgeline be stained to match the existing ridgeline.

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

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

10. **Request a closed session 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

March 29, 2024
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.

PROCLAMATION

WHEREAS, in 1872, Sterling J. Morton proposed to the Nebraska Board of Agriculture that a special day be set aside for the planting of trees; and

WHEREAS, this holiday, called Arbor Day, was first observed with the planting of more than a million trees in Nebraska; and

WHEREAS, Arbor Day is now observed throughout the nation and the world; and

WHEREAS, the City of St. George recognizes the contributions a healthy community forest has to clean the air and water, reduce storm water runoff, enhance energy conservation, improve public health and safety, and provide habitat for wildlife; and

WHEREAS, trees in our City increase property value, enhance the economic vitality of business areas, and beautify our community; and

WHEREAS, the City of St. George has now been recognized as a Tree City USA for the past 33 consecutive years by the National Day Arbor Foundation; and

WHEREAS, the City of St. George is committed to plant at least 500 new trees each year to renew its urban forest.

NOW, THEREFORE, I, Michele Randall, Mayor, along with the City Council of the City of St. George, Utah, do hereby proclaim April 27, 2024 as

ARBOR DAY

in the City of St. George, and encourage all public officials, educators, civic groups and citizens to plant new trees and properly care for our existing trees to help create and promote a healthy environment for the well-being of present and future generations.

IN WITNESS WHEREOF, I have hereunto set my hand and caused to be affixed the Seal of the City of St. George, Utah this 4th day of April, 2024.

OFFICIAL SEAL
STATE OF UTAH

Michele Randall, Mayor

Agenda Date: 04/04/2024 **Agenda Item Number:** 4a

Subject:

Consider approval to award bid to AGEC for the City Hall and parking structure materials testing and special inspections.

Item at-a-glance:

Staff Contact: Carlos Robles

Applicant Name: City of St. George

Reference Number: 23-148

Address/Location:

65 E. Main Street

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

Material testing and Special inspections.

Staff Narrative (need/purpose):

The construction specifications for the New City Hall and Parking structure require special testing and inspections on the project.

Name of Legal Dept approver: Daniel Baldwin

Budget Impact:

Cost for the agenda item: $106,306

Amount approved in current FY budget for item: $110,000

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

NA

Description of funding source:

Capital project fund

Recommendation (Include any conditions):

Staff recommends approval

AGEC
Applied GeoTech

St. George City Offices - Parking Garage

EXHIBIT A, Cost Estimate of Testing and Special Inspection

AGEC Project No. 2231757 **September 28, 2023**

Item No.	Item	Unit	Estimated Amount	Unit Rate	Total Cost
	Building Testing and Inspections				
1	Soil Testing (building)	hr.	50	$60.00	$3,000.00
	Geo Pier Installation	hr.	50	$100.00	$5,000.00
2	Special Inspection, Reinforcing Steel, Concrete Placement	hr.	150	$80.00	$12,000.00
3	Concrete Testing ACI Level 1	hr.	200	$60.00	$12,000.00
4	Structural Concrete	per set of 4	100	$52.00	$5,200.00
5	Structural Steel Special Inspection	hr.	20	$110.00	$2,200.00
6	Post Tension Special Inspection and NWC Placement	hr.	150	$90.00	$13,500.00
7	Proctors / Soil Classification	each	3	$250.00	$750.00
				Building Subtotal	**$53,650.00**
	Site Work Testing				
8	Compaction Testing (site grading)	hr.	20	$60.00	$1,200.00
9	Site Work Concrete	hr.	25	$60.00	$1,500.00
10	Concrete Cylinders, set of 4 (parking lot and misc. placements)	each	8	$52.00	$416.00
11	Gradations (base course)	each	4	$60.00	$240.00
				Site Work Subtotal	**$3,356.00**
	Management and Reports				
12	Project Management	hr.	10	$125.00	$1,250.00
13	Grading Report	each	1	$500.00	$500.00
14	Special Inspection Report	each	1	$500.00	$500.00
				Management and Reports Subtotal	**$2,250.00**
				Project Total	**$59,256.00**

Notes

1. Estimate does not include reinspection's and retests.
2. Engineering observations for consultation are not included in the estimate
3.
4.

AGEC
Applied GeoTech

St. George City Offices - Office Building

EXHIBIT A, Cost Estimate of Testing and Special Inspection

AGEC Project No. 2231757 **September 28, 2023**

Item No.	Item	Unit	Estimated Amount	Unit Rate	Total Cost
	Building Testing and Inspections				
1	Soil Testing (buildings)	hr.	30	$60.00	$1,800.00
2	Geopier	hr.	50	$100.00	$5,000.00
2	Special Inspection, Reinforcing Steel, Concrete Placement, required for mezanine decks, tilt panels, footings and dock walls, not required for floor slabs based on 2500 psi design criteria	hr.	120	$80.00	$9,600.00
3	Concrete Testing ACI Level 1	hr.	100	$60.00	$6,000.00
4	Structural Concrete	per set of 4	40	$52.00	$2,080.00
5	Structural Steel Special Inspection / UT Testing	hr.	135	$110.00	$14,850.00
6	Proctors / Soil Classification	each	3	$250.00	$750.00
				Building Subtotal	**$40,080.00**
	Site Work Testing				
7	Compaction Testing (site grading)	hr.	40	$60.00	$2,400.00
8	Site work -Concrete Testing	hr.	25	$60.00	$1,500.00
9	Concrete Cylinders, set of 4 (parking lot and misc. placements)	each	10	$52.00	$520.00
10	Gradations (base course)	each	5	$60.00	$300.00
				Site Work Subtotal	**$4,720.00**
	Management and Reports				
11	Project Management	hr.	10	$125.00	$1,250.00
12	Grading Report	each	1	$500.00	$500.00
13	Special Inspection Report	each	1	$500.00	$500.00
				Management and Reports Subtotal	**$2,250.00**
				Project Total	**$47,050.00**

Notes

1 Estimate does not include reinspection's and retests.
2 Engineering observations for consultation are not included in the estimate

Agenda Date: 04/04/2024 **Agenda Item Number:** 4b

Subject:

Consider approval to award bid to American Chiller Services for the replacement HVAC chiller for the Dinosaur Discovery Site.

Item at-a-glance:

Staff Contact: Carlos Robles

Applicant Name: City of St. George

Reference Number: 24-116

Address/Location:

2180 E. Riverside Drive

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

The Dinosaur Discovery Site HVAC is over 20 years old and will not work correctly in high temperatures, making the facility very uncomfortable and unsafe for staff and guests.

Staff Narrative (need/purpose):

Bids were opened on March 27 for the HVAC chiller replacement located at the Dinosaur discovery site (24-116). The city received two bids and the low/responsible bid is from American Chiller Services. See the attached bid. Construction is planned to start late-April and should be completed before 5/30/2024.

Name of Legal Dept approver: Daniel Baldwin

Budget Impact:

Cost for the agenda item: $148,753

Amount approved in current FY budget for item: $150,000

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

NA

Description of funding source:

Capital Project fun

Recommendation (Include any conditions):

Staff recommends approval

PROPOSAL

American Chiller Mechanical Service PO Box 954 Riverton UT 84065
Phone 801-946-5850

March 27, 2024

From: John Henstra

To: Kameron

LOCATION OF SERVICE: St. George Dinosaur Discovery
2180 E Riverside Dr.
St George Utah 84790

SCOPE OF SERVICE Provided by American Chiller Mechanical Service in accordance with the following:

American Chiller purposes the replacement of the existing DX system with like sized chiller system.

Included: Removal and disposal of existing DX system, installation of like sized (40 ton) YORK chiller, installation of pumps, coil, piping etc.. to meet specifications, crane, labor, pipe insulation, electrical. The Installation of iVU controls per specifications to include web based access, control of space area, chiller, pumps, air handler including economizer, boiler, boiler pumps, feed valves to coils etc.

Not Included: General construction, paint, drywall and anything not listed or implied.

Investment Price..... ***$148,753.00***

(Standard ACMS Terms Apply, available upon request)

ACCEPTANCE AND APPROVAL

This shall become a valid AGREEMENT upon signature by CUSTOMER and signature by a ACMS representative in the ACMS Approval blocks below. The undersigned acknowledges and agrees by its signature that the Scope of Service and any amendment or addenda prepared by ACMS constitutes the entire AGREEMENT.

SUBMITTED BY: John Henstra DATE: March 27, 2024

Execution by Authorized Representatives:

CUSTOMER ACCEPTANCE:

Customer Company Name

Customer Acceptance (type/printed name)

Title

Customer Acceptance (signature) *Date*

ACMS APPROVAL:

ACMS Approval (type/printed name)

Title

ACMS Approval (signature) *Date*

CERTIFICATION OF LEGAL WORK STATUS (Contractor)

Project Dinosaur Discovery Chiller Replacement
Inquiry No.:

Contractor 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 § 1324a. Contractor 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. Contractor agrees to produce, at the City's request, documents to verify compliance with applicable State and Federal laws. If Contractor knowingly employs workers or subcontractors in violation of 8 USC § 1324a, such violation shall be cause for unilateral cancellation of the contract between Contractor and City. In addition, Contractor may be suspended from participating in future projects with the City for a period of one (1) year. In the event this contract is terminated due to a violation of 8 USC § 1324a by Contractor or a subcontractor of Contractor, Contractor shall be liable for any and all costs associated with such termination, including, but not limited to, any damages incurred by the City as well as attorney fees. For purposes of compliance, the City requires Contractor and subcontractors to use E-Verify to verify the employment eligibility of all employees as allowed by law and the E-Verify procedures. Contractor and subcontractors must maintain authorized documentation of the E-Verify.

I certify that I have read, understand and agree to comply with the requirements herein.

Contractor Name: American Chiller Mechanical Service

Company Address: P.O. Box 954 Riverton UT 84065

Company's Unique E-Verification Number: RAAVJPE7DMT2

Kristy Proctor — Signature

3/27/2024 — Date

Branch Service Manager — Official Title

STATE OF UTAH)
ss.
County of Washington)

On the 27 day of March 2024 personally appeared before me, Kristee Proctor, known or identified to me to be the person whose name is signed on the foregoing document and acknowledged that s/he is authorized on behalf of said company to execute all documents pertaining hereto and acknowledged to me that he/she executed the same voluntarily for its stated purpose.

Loryn Killian — Notary Public

LORYN KILLIAN
Notary Public
State of Utah
My Commission Expires 11/17/2025
Commission Number 721463

Document A310™ – 2010

Conforms with The American Institute of Architects AIA Document 310

Bid Bond

CONTRACTOR:
(Name, legal status and address)

American Chiller Mechanical Service DBA Johnson Controls, Inc.
11738 S 1300 W
Riverton, UT 84065

SURETY:
(Name, legal status and principal place of business)
Liberty Mutual Insurance Company
175 Berkeley Street
Boston, MA 02116
Mailing Address for Notices
175 Berkeley Street
Boston , MA 02116

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:
(Name, legal status and address)

St. George City
175 E 200 N St.
George, UT 84770

BOND AMOUNT: 5% Five Percent of Amount Bid

PROJECT:
(Name, location or address, and Project number, if any)

Dinosaur Discovery Park

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 27th day of March, 2024.

(Witness) Imani Schley

American Chiller Mechanical Service
DBA Johnson Controls, Inc.
(Principal) *(Seal)*

By:
(Title) Sarah Murtha Attorney-in-Fact

(Witness) Ally Nardini

Liberty Mutual Insurance Company
(Surety) *(Seal)*

By:
(Title) Michelle Anne McMahon, Attorney-in-Fact

Johnson Controls

DELEGATION OF AUTHORITY

The undersigned, Craig A. Bartol, Executive Director Risk Management, pursuant to the authority vested in him by a certain Delegation of Authority Certificate issued by Johnson Controls, Inc. on June 1 of 2023, hereby authorizes:

Sarah Murtha
Assistant Client Services Specialist
Willis of New York, Inc
10 State House Square, Floor 11
Hartford, CT, 06103

to perform, on behalf of the Company, the acts described below:

To execute, seal and deliver, as attorney-in-fact for the Company, surety bonds forwarded to Willis of New York, Inc. by the Company that do not exceed Two Million Dollars ($2,000,000.00) that are necessary and proper in carrying on the business of the Company.

This authority shall remain in full force and effect for one (1) year from the date of issue unless earlier revoked in writing by the undersigned or the President or any Vice President of Johnson Controls, Inc.

Signed at Milwaukee, Wisconsin, this 27th day of March 2024.

Craig A. Bartol
Executive Director Risk Management

Liberty Mutual SURETY

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint Michelle Anne McMahon all of the city of New York, state of NY its true and lawful attorney-in-fact, with full power and authority hereby conferred to sign, execute and acknowledge the following surety bond:

Principal Name: American Chiller Mechanical Service DBA Johnson Controls, Inc.

Obligee Name: St. George City

Surety Bond Number: Bid Bond **Bond Amount:** See Bond Form

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 27th day of March, 2024.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: _____
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 27th day of March, 2024, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.

Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: _____
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS: Section 12. Power of Attorney.
Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts: Section 5. Surety Bonds and Undertakings.
Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, of Liberty Mutual Insurance Company, The Ohio Casualty Insurance Company, and West American Insurance Company do hereby certify that this power of attorney executed by said Companies is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 27th day of March, 2024.

By: _____
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

For bond and/or Power of Attorney (POA) verification inquiries, please call 610-832-8240 or email HOSUR@libertymutual.com.

Telephone: +1 816 552-7295
Website: wtwco.com
E-mail: Wendy.lewis@wtwco.com

March 28, 2024

American Chiller Mechanical Service DBA Johnson Controls, Inc.
11738 S 1300 W
Riverton, UT 84065

RE: Obligee: St. George City
Bid Bond for: Dinosaur Discovery Park
Bid Date: March 27, 2024

As you requested, we are pleased to provide the attached bid bond documents. This bond has been executed based upon the information we received from your office.

We urge you to check all bond documents, including signatures, dates, amounts, job description, Power of Attorney and any other attachments to avoid the possibility of having a low bid rejected. Additionally, please verify that the bid bond form attached is the form required by the specifications.

The Bid Bond authorization is based upon your original estimate. If the bid exceeds this estimate by 10% or more, the bond must be reauthorized by the surety. Please contact us for additional authority.

Your bid results are very important. Please send your bid results to my email address shown above as soon as they are available.

Thank you for the opportunity to service your surety needs. Should you have any questions, please do not hesitate to contact me or any member of your Willis surety team.

Sincerely,

Wendy Lewis

Your Bid Results are very important. Please forward them to us as soon as the job bids.
Were you Low? ____ Yes ____ No

1st Bidder & Amount Bid _____
2nd Bidder & Amount Bid _____
3rd Bidder & Amount Bid_____
Your bid (if not listed above)_____

Willis Towers Watson Northeast, Inc.
2010 Main Street, Suite 1050
Irvine, CA 92614

Agenda Date: 04/04/2024 **Agenda Item Number:** 4c

Subject:

Consider approval to award bid to Whitaker Construction for the construction of portions of the Virgin River South Trail Phase 2.

Item at-a-glance:

Staff Contact: Paul Stead

Applicant Name: City of St. George

Reference Number: 23-161

Address/Location:

650 West Man O War Road

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

This portion of the trail will connect phase 1, Bloomington Park to Brigham Rd, to the existing Virgin River South Trail near the I-15. There were some property issues that were unresolved when phase 1 was constructed. These issues have been resolved resulting in a trail connection to Walmart.

Staff Narrative (need/purpose):

Construction Bids were opened on March 21 for the Virgin River South Trail Phase 2, project (23-161). The city received four bids and the low/responsible bid is from Whitaker Construction. See attached bid tab and construction plans. Construction is planned to start mid-April and should be completed before 7/30/2024.

Name of Legal Dept approver: Alicia Galvany Carlton

Budget Impact:

Cost for the agenda item: $1,491,838

Amount approved in current FY budget for item: $1,127,806

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

funding source:

Updated project estimates show a cost of almost 2 million. The budget has not yet been updated to reflect these new numbers so the low bid, plus funds encumbered for design, environmental evaluation, geotechnical work, engineering, etc. leaves this project approximately $550,000 short of the budgeted amount. Park Planning has been awarded a $150,000 grant for this project from the Recreation Trails Program.Park Impact Funds will be re-allocated to cover the remaining expense.

Description of funding source:

Park Impact Fund, Recreational Trails Program (RTP) Grant.

Recommendation (Include any conditions):

Approve.

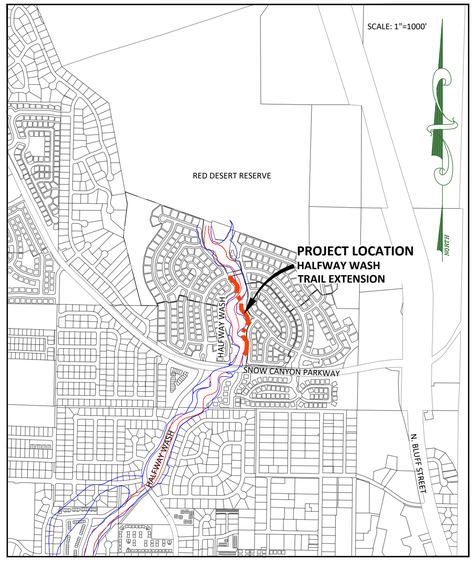
BID TABULATION
HALFWAY WASH NORTH TRAIL
PREPARED BY Alliance Consulting
Project No. 4629-23
CLOSING DATE 03-21-2024
INQUIRE NO. 23-159

ALLIANCE CONSULTING
A Planning and Engineering Firm
2303 North Coral Canyon Blvd
Suite 201
Washington, UT 84780
t. 435.673.8060
f. 435.673.8065

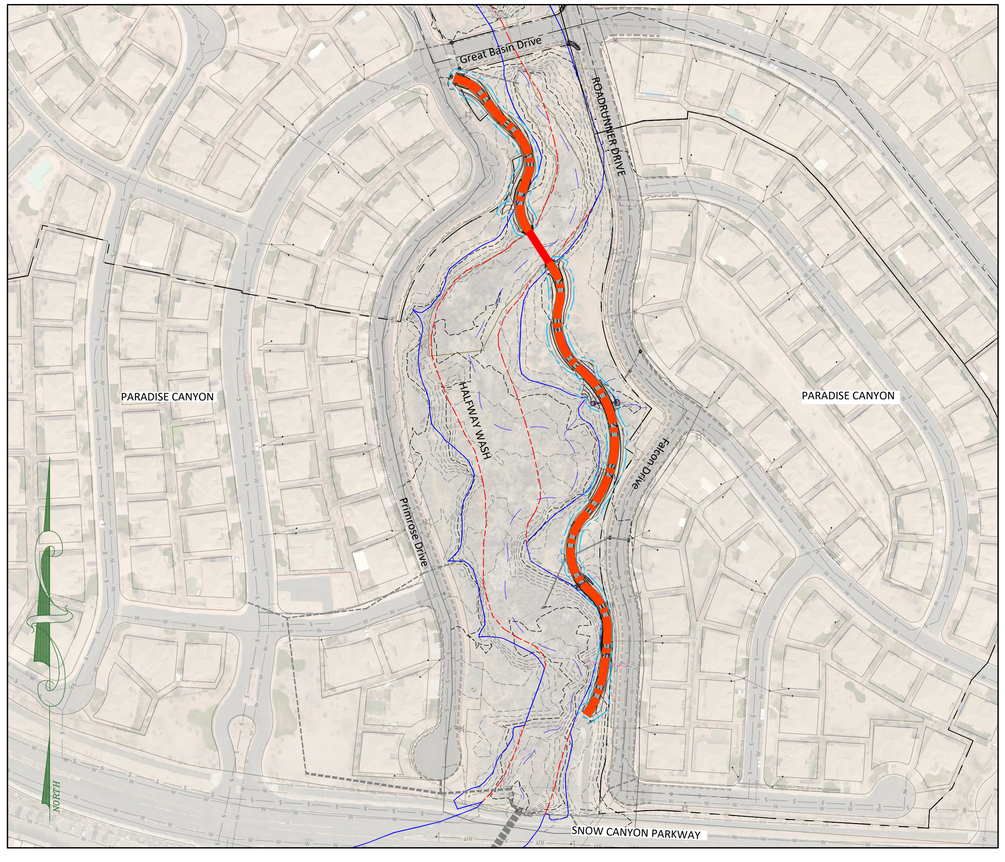
HALFWAY WASH NORTH TRAIL

No.	Item	Unit	Quantity	WRX Contracting		Interstate Rock		Caliber Contractor LLC		Progressive Contracting		JNJ Engineering Construction Inc.	
				Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
1	General Condition/Mobilization	LS	1	$38,000.00	$38,000.00	$37,700.00	$37,700.00	$8,548.50	$8,548.50	$65,000.00	$65,000.00	$89,000.00	$89,000.00
2	Dust Control	LS	1	$19,600.00	$19,600.00	$18,700.00	$18,700.00	$7,380.00	$7,380.00	$7,000.00	$7,000.00	$13,600.00	$13,600.00
3	Traffic Control (Trail and Road)	LS	1	$2,500.00	$2,500.00	$15,100.00	$15,100.00	$15,127.52	$15,127.52	$14,000.00	$14,000.00	$12,500.00	$12,500.00
4	Clear & Grub/ Tree Removal	LS	1	$18,860.00	$18,860.00	$8,400.00	$8,400.00	$22,140.00	$22,140.00	$10,000.00	$10,000.00	$69,225.00	$69,225.00
5	Pre-Construction Condition/SWPPP Documentation	LS	1	$3,000.00	$3,000.00	$5,550.00	$5,550.00	$11,420.55	$11,420.55	$14,000.00	$14,000.00	$6,790.00	$6,790.00
6	Berm	LF	1,070	$3.50	$3,745.00	$4.90	$5,243.00	$6.15	$6,580.50	$3.50	$3,745.00	$32.00	$34,240.00
7	Wattles	LF	100	$5.00	$500.00	$5.50	$550.00	$5.35	$535.00	$22.00	$2,200.00	$79.00	$7,900.00
8	Earthwork/Re-work/Imported Fill (Approx 640 CY)	LS	1	$21,081.60	$21,081.60	$40,640.00	$40,640.00	$36,900.00	$36,900.00	$102,400.00	$102,400.00	$40,192.00	$40,192.00
9	Install Stacked Rock Walls with Geo-Grid Fabric (Basalt Rock)	SF	1,990	$48.49	$96,495.10	$30.00	$59,700.00	$31.98	$63,640.20	$65.00	$129,350.00	$48.00	$95,520.00
10	Install Diamond Block Walls	SF	1,100	$29.48	$32,428.00	$32.50	$35,750.00	$36.90	$40,590.00	$40.00	$44,000.00	$22.40	$24,640.00
11	18" HDPE Storm Drain Pipe	LF	30	$85.00	$2,550.00	$75.50	$2,265.00	$123.00	$3,690.00	$103.00	$3,090.00	$88.00	$2,640.00
12	12" HDPE Storm Drain Pipe	LF	20	$75.00	$1,500.00	$63.00	$1,260.00	$110.70	$2,214.00	$95.00	$1,900.00	$88.00	$1,760.00
13	18" End Section with Rip-Rap & Filter Fabric	Each	2	$685.00	$1,370.00	$2,700.00	$5,400.00	$1,968.00	$3,936.00	$5,200.00	$10,400.00	$1,495.00	$2,990.00
14	12" End Section with Rip-Rap & Filter Fabric	Each	2	$600.00	$1,200.00	$2,150.00	$4,300.00	$1,845.00	$3,690.00	$5,400.00	$10,800.00	$1,495.00	$2,990.00
15	12" D50 Rip-Rap & Filter Fabric (Basalt Rock)	SF	225	$9.00	$2,025.00	$16.50	$3,712.50	$18.45	$4,151.25	$11.00	$2,475.00	$98.00	$22,050.00
16	2.5" Thick Asphalt(Voidless Asphalt Mix)	SF	10,750	$1.89	$20,317.50	$1.90	$20,425.00	$4.13	$44,397.50	$3.10	$33,325.00	$4.80	$51,600.00
17	6" thick Concrete Trail Flatwork with Base	SF	200	$16.00	$3,200.00	$19.00	$3,800.00	$11.07	$2,214.00	$9.50	$1,900.00	$16.00	$3,200.00
18	6" Thick Type II Gravel Roadbase (Trail)	SF	10,750	$1.53	$16,447.50	$1.60	$17,200.00	$2.46	$26,445.00	$2.00	$21,500.00	$3.40	$36,550.00
19	Shoulder Type II Gravel Roadbase	SF	4,900	$1.53	$7,497.00	$1.55	$7,595.00	$2.46	$12,054.00	$2.20	$10,780.00	$3.40	$16,660.00
20	Saw Cut and Tie to Existing Trail	LS	1	$500.00	$500.00	$330.00	$330.00	$615.00	$615.00	$1,500.00	$1,500.00	$3,900.00	$3,900.00
21	Remove and Replace Existing ADA Ramp Match Stain	Each	1	$3,500.00	$3,500.00	$4,800.00	$4,800.00	$3,075.00	$3,075.00	$3,600.00	$3,600.00	$5,980.00	$5,980.00
22	Signs Plaques and Wood Posts	Each	2	$250.00	$500.00	$580.00	$1,160.00	$369.00	$738.00	$700.00	$1,400.00	$990.00	$1,980.00
23	Trail Pavement Markings	LS	1	$5,000.00	$5,000.00	$1,050.00	$1,050.00	$645.75	$645.75	$2,320.00	$2,320.00	$3,529.00	$3,529.00
24	Trail Safety Rail (Powder-Coated)	LF	200	$110.86	$22,172.00	$150.00	$30,000.00	$209.10	$41,820.00	$105.00	$21,000.00	$238.00	$47,600.00
25	Install 60' Pedestrian Span Bridge with Concrete Deck	LS	1	$20,180.00	$20,180.00	$30,800.00	$30,800.00	$6,765.00	$6,765.00	$53,000.00	$53,000.00	$96,900.00	$96,900.00
26	Pedestrian Span Bridge Concrete Abutment Walls	LS	1	$52,060.00	$52,060.00	$54,500.00	$54,500.00	$83,025.00	$83,025.00	$120,000.00	$120,000.00	$94,786.00	$94,786.00
			TOTAL		**$396,228.70**		**$415,930.50**		**$452,337.77**		**$690,685.00**		**$788,722.00**

HALFWAY WASH NORTH TRAIL PROJECT
FOR
CITY OF ST. GEORGE
LOCATED IN
CITY OF ST. GEORGE,
WASHINGTON COUNTY, UT



CITY OF ST. GEORGE VICINITY MAP



GRAPHIC SCALE

120 0 60 120 240

(IN FEET)

1 inch = 120 ft.

If Printed 11x17 use Half Scale

SHEET NO.		DESCRIPTION
1	C1.0	COVER
2	C1.1	GRADING OVERALL
3	C1.2	OVERALL CUT/FILL
4	C1.3	OVERALL DUST AND SWPPP/ EROSION CONTROL PLAN
5	C2.0	TRAIL GRADING PLAN AND PROFILE
6	C2.1	TRAIL GRADING PLAN AND PROFILE
7	C2.2	TRAIL GRADING PLAN AND PROFILE
8	C2.3	TRAIL GRADING PLAN AND PROFILE
9	C3.0	TRAIL OVERALL PAVING
10	C4.0	DETAILS
11	C4.1	WALLS & PED SPAN BRIDGE DETAILS
12	C4.2	PED BRIDGE DETAILS
13	C4.3	UTILITY NOTES

GEOTECHNICAL REPORTS:

1. Landmark Testing and Engineering: Project NO. 19341, Halfway Wash Trail Extension. Dated June, 28, 2019

DEVELOPER

CITY OF ST.GEORGE
ATT: PAUL STEAD
390 N 3050 E
ST. GEORGE, UT 84790
PHONE: (435) 627-4539
EMAIL: paul.stead@sgcity.org

ENGINEER

ALLIANCE CONSULTING
2303 N. CORAL CANYON BLVD. SUITE 201
WASHINGTON, UT 84780-0577
PHONE: (435) 673-8060
FAX: (435) 673-8065
ENGINEER: MR. DELOSS HAMMON
CONTACT: MR. CRAIG COATS
EMAIL: ccoats@allianceconsulting.us

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BLUE STAKES OF UTAH

GENERAL NOTES:

1. Unless shown otherwise on these plans, all construction shall conform to the codes and ordinances of St. George City, the State of Utah Administrative Codes, "The International Plumbing Code", and the "International Building Code" latest editions as administered by St. George City.
2. The Contractor shall be responsible for the location of and protection of all existing underground utilities and overhead power line during construction.
3. The Benchmark for this Project is the North 1/4 of Section 14, Township 42 South, Range 16 West Salt Lake Base and Meridian - Elevation: 2996.71
3. Existing contour and finish contour interval is 2 feet.
4. Any necessary design modifications shall be approved by the design engineer.
5. All grading to be within ±0.1' of proposed elevation.
6. Project shall install an information sign on site before construction begins. This sign shall have a minimum size, placement location and content information with the company name, phone & permit number.
7. A mandatory pre-construction meeting shall be required on all projects prior to any grubbing, grading, or construction activities. The permit holder shall be required to notify all Development Services inspectors.
8. Projects shall submit a dust control plan with details on equipment scheduling and reporting of dust control activities.
9. Follow Appendix J standards found in the IBC.
10. All work materials shall meet City of St. George standards.

CONSTRUCTION NOTES:

1. All excavations and grading shall be in accordance with the requirements of the City of St. George [phone:435-627-4000], of the "International Building Code", 2018 edition, and the specifications and requirements included in the Tech Ridge Grading Recommendations...
1. All excavation, grading, and fill operations within the building area should be observed by the Field Engineer to verify subsoil conditions and determine adequacy of site preparation, suitability of fill materials and compliance with compaction requirements.
2. The Contractor shall provide suitable equipment to control dust and air pollution caused by construction operations. The Contractor shall also provide suitable mud and dirt containment to maintain clean conditions on the work site, access roadways, and adjacent properties.
3. Project shall submit a Dust Control Plan with details on equipment, scheduling and reporting of dust control activities.
4. Contractor is responsible and required to obtain their own UPDES/NOI permits.
5. It is the contractors responsibility to identify all and any SWPPP requirements.
6. Prior to and during compaction operations, all backfill material shall have the required moisture content uniform throughout each layer.
7. All Rip-Rap rock shall be Angular Basalt Rock and approved by owner.
8. Contractor must coordinate with other Contractors working in areas.
9. Contractor must protect existing facilities.
10. Any Damage to Existing Sidewalk, Curb & Gutter shall be replaced.

Date: 2-06-24

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH
NORTH TRAIL
COVER

FOR

CITY OF ST. GEORGE

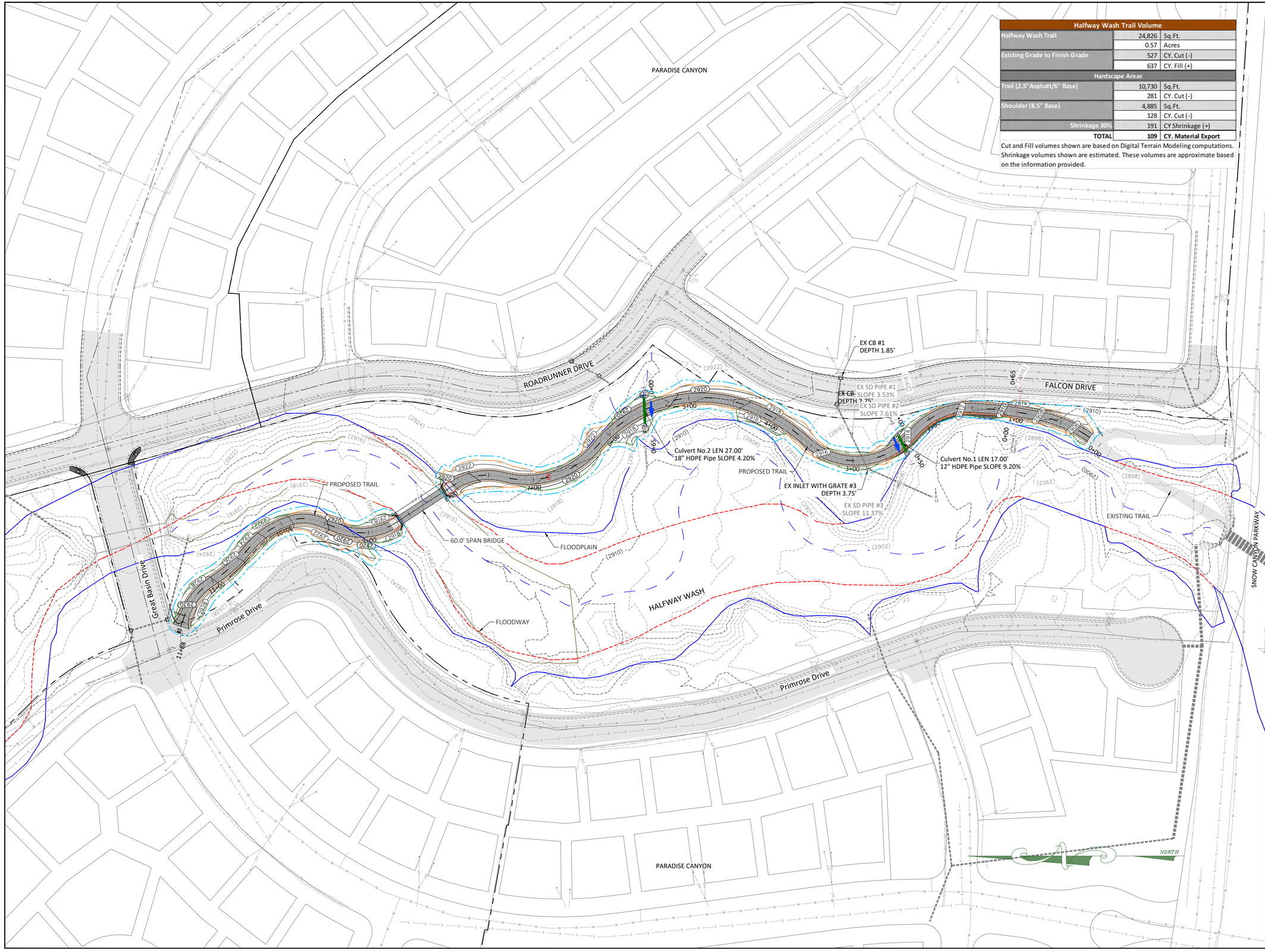
LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/2024
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=120'
Client No.	Project No.
4491-4629	4491-4629

Drawing Sheet
C1.0

Sheet 1 of 13 Sheets



Halfway Wash Trail Volume		
Halfway Wash Trail	24,826	Sq.Ft.
	0.57	Acres
Existing Grade to Finish Grade	527	CY. Cut (-)
	637	CY. Fill (+)
Hardscape Areas		
Trail (2.5"Asphalt/6" Base)	10,730	Sq.Ft.
	281	CY. Cut (-)
Shoulder (8.5" Base)	4,885	Sq.Ft.
	128	CY. Cut (-)
Shrinkage 30%	191	CY Shrinkage (+)
TOTAL	**109**	**CY. Material Export**

Cut and Fill volumes shown are based on Digital Terrain Modeling computations. Shrinkage volumes shown are estimated. These volumes are approximate based on the information provided.

Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

- 100 YEAR FLOODPLAIN
- FLOODWAY
- 10' TRAIL WITH SHOULDER BASE
- SUBDIVISION BOUNDARIES
- STORM DRAIN
- EXISTING STORM DRAIN
- CUT LINE
- FILL LINE
- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE
- PROPOSED STORM DRAIN FLOW DIRECTION

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.
If Printed 11x17 use Half Scale

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UTAH
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SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL OVERALL GRADING

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=50'
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet

C1.1

Sheet 2 of 13 Sheets

PARADISE CANYON

ROADRUNNER DRIVE

FALCON DRIVE

Great Basin Drive

Primrose Drive

HALFWAY WASH

SNOW CANYON PARKWAY

PARADISE CANYON

NORTH

ELEVATIONS TABLE

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-6.131	-5.000	0.00	
2	-5.000	-4.000	70.50	
3	-4.000	-3.000	575.78	
4	-3.000	-2.000	1373.48	
5	-2.000	-1.000	4070.61	
6	-1.000	0.000	5737.71	
7	0.000	1.000	6565.61	
8	1.000	2.000	3499.74	
9	2.000	3.000	1533.05	
10	3.000	4.000	579.94	
11	4.000	5.000	466.34	
12	5.000	6.486	181.77	

Halfway Wash Trail Volume		
Halfway Wash Trail	24,826	Sq.Ft.
	0.57	Acres
Existing Grade to Finish Grade	527	CY. Cut (-)
	637	CY. Fill (+)
Hardscape Areas		
Trail (2.5"Asphalt/6" Base)	10,730	Sq.Ft.
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Shoulder (8.5" Base)	4,885	Sq.Ft.
	128	CY. Cut (-)
Shrinkage 30%	191	CY Shrinkage (+)
TOTAL	**109**	**CY. Material Export**

Cut and Fill volumes shown are based on Digital Terrain Modeling computations. Shrinkage volumes shown are estimated. These volumes are approximate based on the information provided.

Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

- 100 YEAR FLOODPLAIN
- FLOODWAY
- 10' TRAIL WITH SHOULDER BASE
- SUBDIVISION BOUNDARIES
- STORM DRAIN
- EXISTING STORM DRAIN
- CUT LINE
- FILL LINE
- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL OVERALL VOLUME

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=50'
Client No.	Project No.
4491-4629	4491-4629

Drawing Sheet
C1.2

Sheet 3 of 13 Sheets

PARADISE CANYON

ROADRUNNER DRIVE

FALCON DRIVE

SNOW CANYON PARKWAY

Great Basin Drive

Primrose Drive

HALFWAY WASH

PROPOSED TRAIL

EXISTING TRAIL

FLOODPLAIN

FLOODWAY

60.0' SPAN BRIDGE

BERM BAG

TRACKING PAD
SEE DETAIL A/C4.0

STRAW WATTLE
LEN 20'
SEE DETAIL D/C4.0

STRAW WATTLE
LEN 30'
SEE DETAIL D/C4.0

Temporary Erosion and Sediment Control Notes

1. Provide and Maintain all Erosion Control Measures, Plans, Permits, Maintenance, Expenses, Etc.
2. All temporary erosion and sediment control devices shall be installed, monitored, and maintained until final cover has been established and accepted by the City.
3. Inspections shall be performed by the Contractor at Least Once Every 7 Calendar Days and within 24 Hours After a Storm Event of 0.5" or More. Inspections shall be documented in Writing and shall Include: Date and Time, Name of Inspector, Findings, Corrective Actions Taken, and Dates and Amounts of Rainfalls.
4. All Erosion Prevention and Sediment Control devices must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/3 of the height of the device. These repairs must be made within 24 hour of Discovery, or as soon as field conditions allows.
5. Provide Temporary Erosion Protection or Permanent cove for the Exposed soil areas where activities have been completed or temporarily cease within 21 day of ceasing earth moving activities.
6. Sediment tracked on the street shall be removed within 24 hours using a street sweeper with pick-up broom
7. All temporary Erosion and Sediment control devices must be removed by the Contractor when final cover is established and acceptable to the Owner.
8. If construction traffic proceeds onto existing paved roadway tire tracking pads will be required.

DUST CONTROL NOTES

1. The Contractor shall provide suitable equipment to control dust and air pollution caused by construction operations. The Contractor shall also provide suitable mud and dirt containment to maintain clean conditions on the work site, access roadways, and adjacent properties.
2. Project shall submit a Dust Control Plan with details on equipment, scheduling and reporting of dust control activities.
3. All non-roadway dust control material shall be firmly placed and compacted to a 3" crust at 5% over optimum, and all grading shall be compacted to 95%.

THESE DUST CONTROL MEASURES MUST BE OBSERVED AT ALL TIMES:

1. Apply water by means of trucks, hoses and/or sprinklers at sufficient frequency and quantity, prior to conducting, during and after earthmoving activities.
2. Pre-apply water to the depth of the proposed cuts, or equipment penetration.
3. Apply water as necessary and prior to expected wind events.
4. Operate haul vehicles appropriately in order to minimize fugitive dust and apply water as necessary during loading operations.

DISTURBED SURFACE AREAS OR INACTIVE CONSTRUCTION SITES:

1. When active construction operations have ceased, apply water at sufficient frequency and quantity to develop a surface crust and prior to expected wind events
2. Install fence barrier and /or "no trespassing" signs to prevent access to disturbed suffice areas.

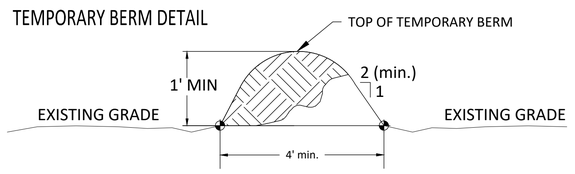
NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.
If Printed 11x17 use Half Scale

TEMPORARY BERM DETAIL



Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

- 100 YEAR FLOODPLAIN
- FLOODWAY
- 10' TRAIL WITH SHOULDER BASE
- SUBDIVISION BOUNDARIES
- STORM DRAIN
- EXISTING STORM DRAIN
- CUT LINE
- FILL LINE
- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE

SWPPP LEGEND

- 12" WATTLE - 100 LNFT
- DIRT BERM - 1,070 LNFT
- TRACKING PAD - 2 LOCATIONS

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL OVERALL DUST AND SWPPP/ EROSION CONTROL PLAN

FOR

CITY OF ST. GEORGE

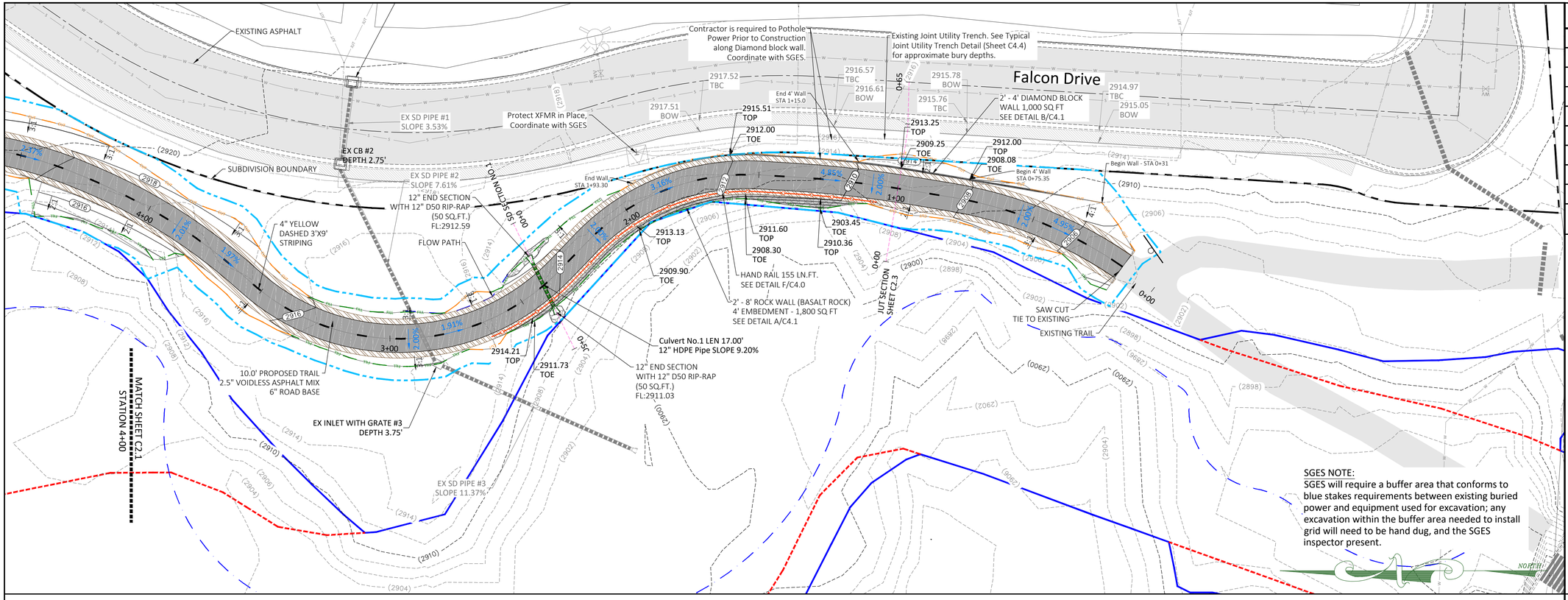
LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

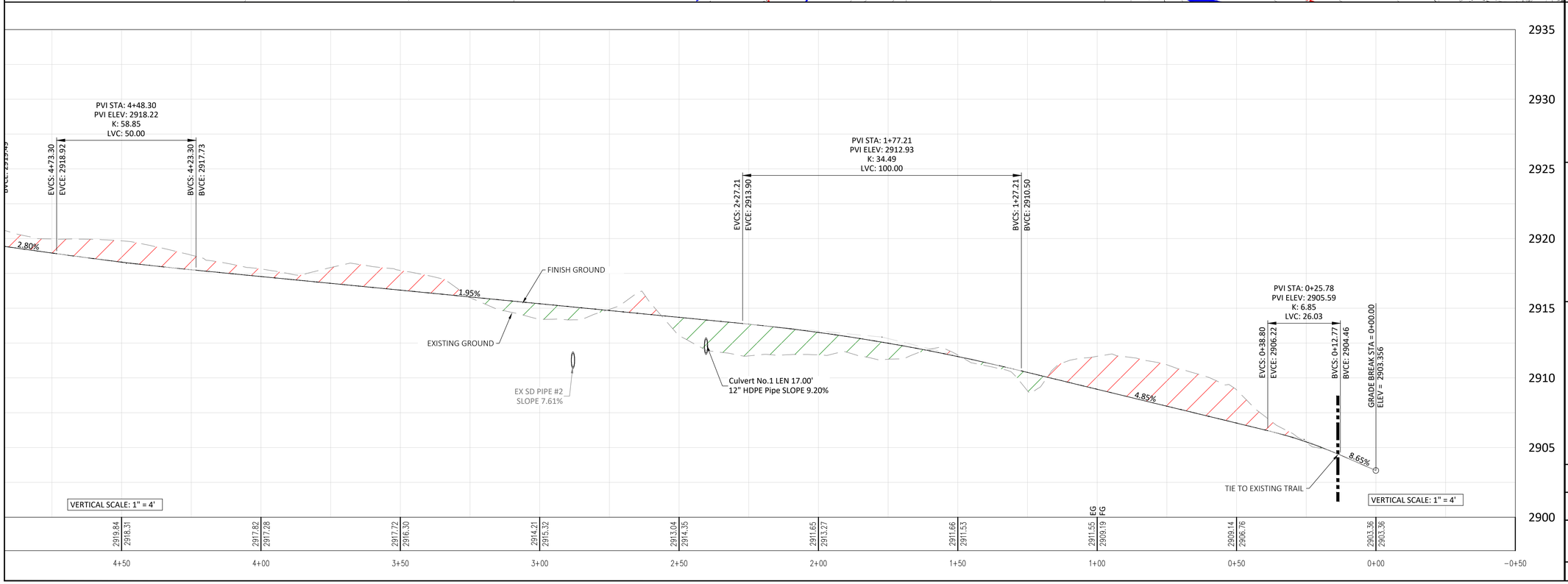
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
8/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=50'
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C1.3

Sheet 4 of 13 Sheets





Date: 2-06-24

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS
2	12-23-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

- 100 YEAR FLOODPLAIN
- FLOODWAY
- 10' TRAIL WITH SHOULDER BASE
- SUBDIVISION BOUNDARIES
- STORM DRAIN
- EXISTING STORM DRAIN
- CUT LINE
- FILL LINE
- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL GRADING PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

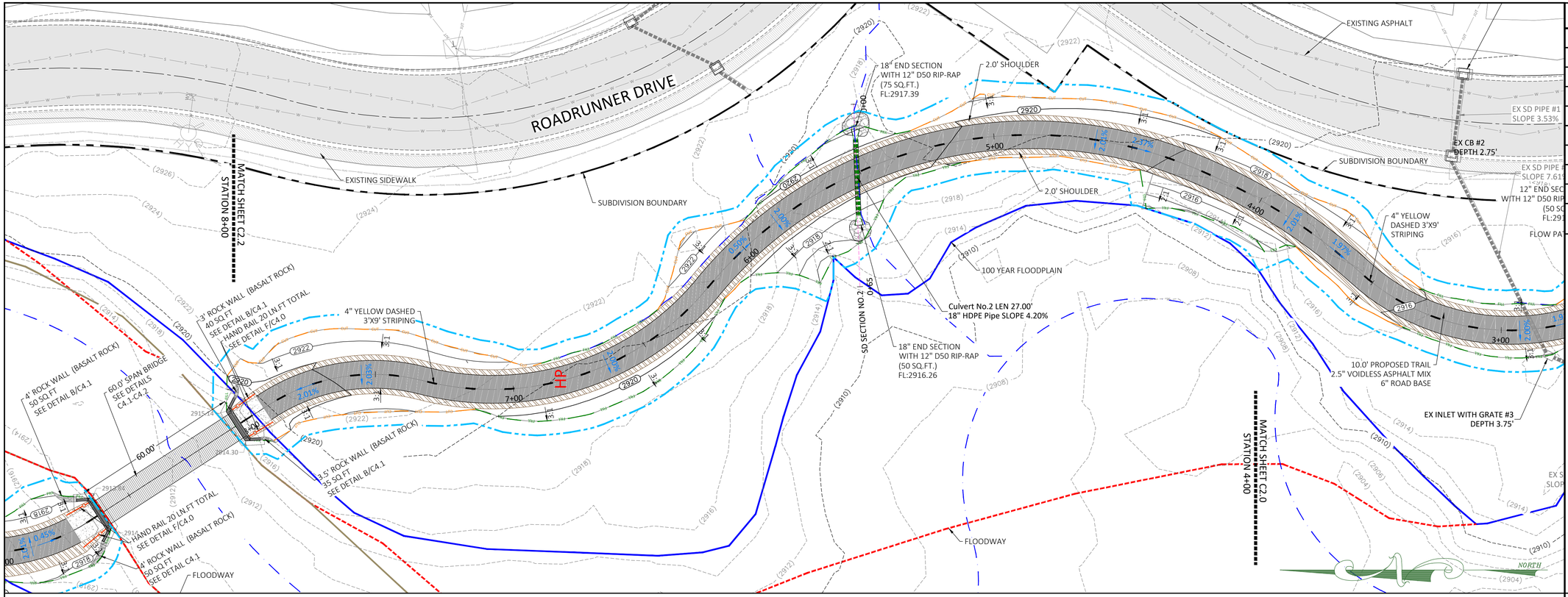
LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

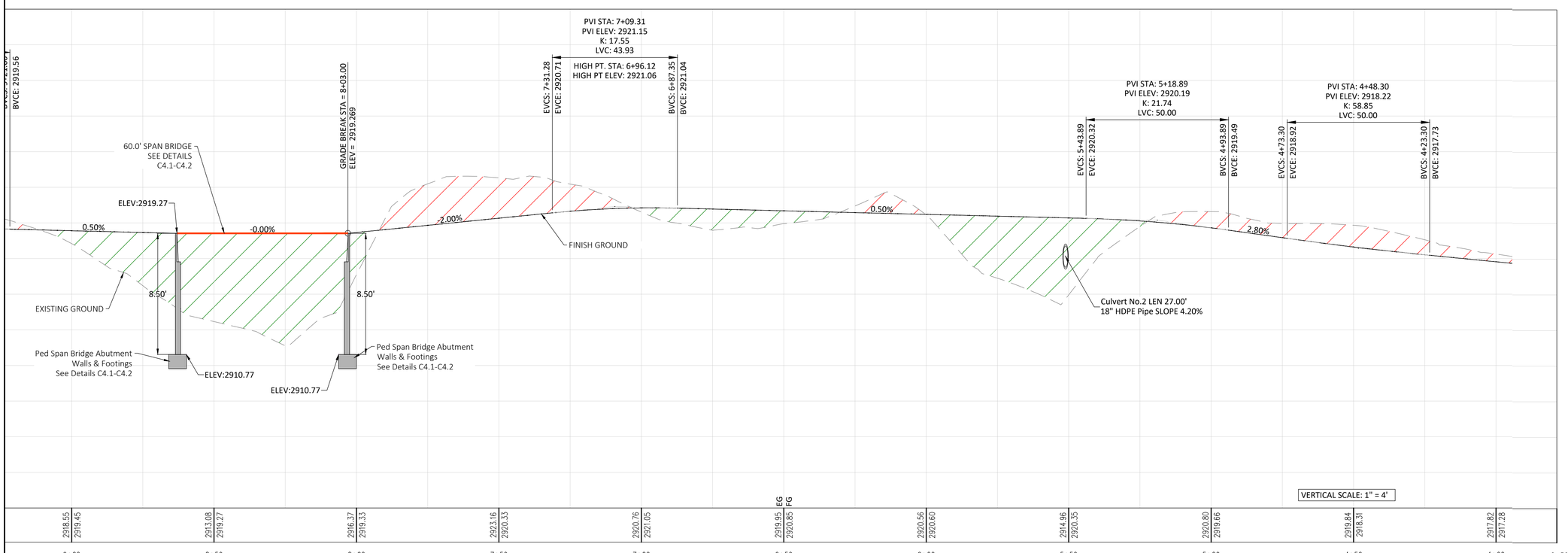
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=20'
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C2.0

Sheet 5 of 13 Sheets





Date: 12-13-2023

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

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(IN FEET)
1 inch = 20 ft.
If Printed 11x17 use Half Scale

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HALFWAY WASH NORTH TRAIL GRADING PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
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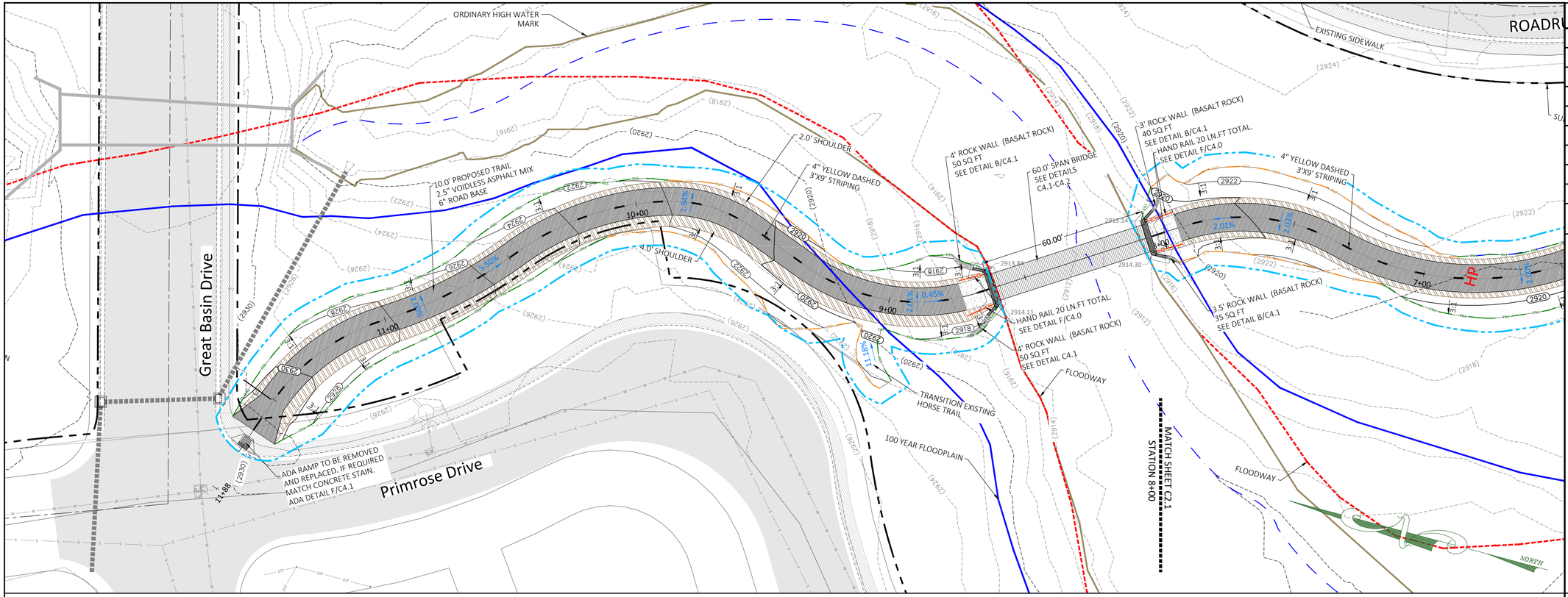
CITY OF ST.GEORGE, WASHINGTON CO., UT

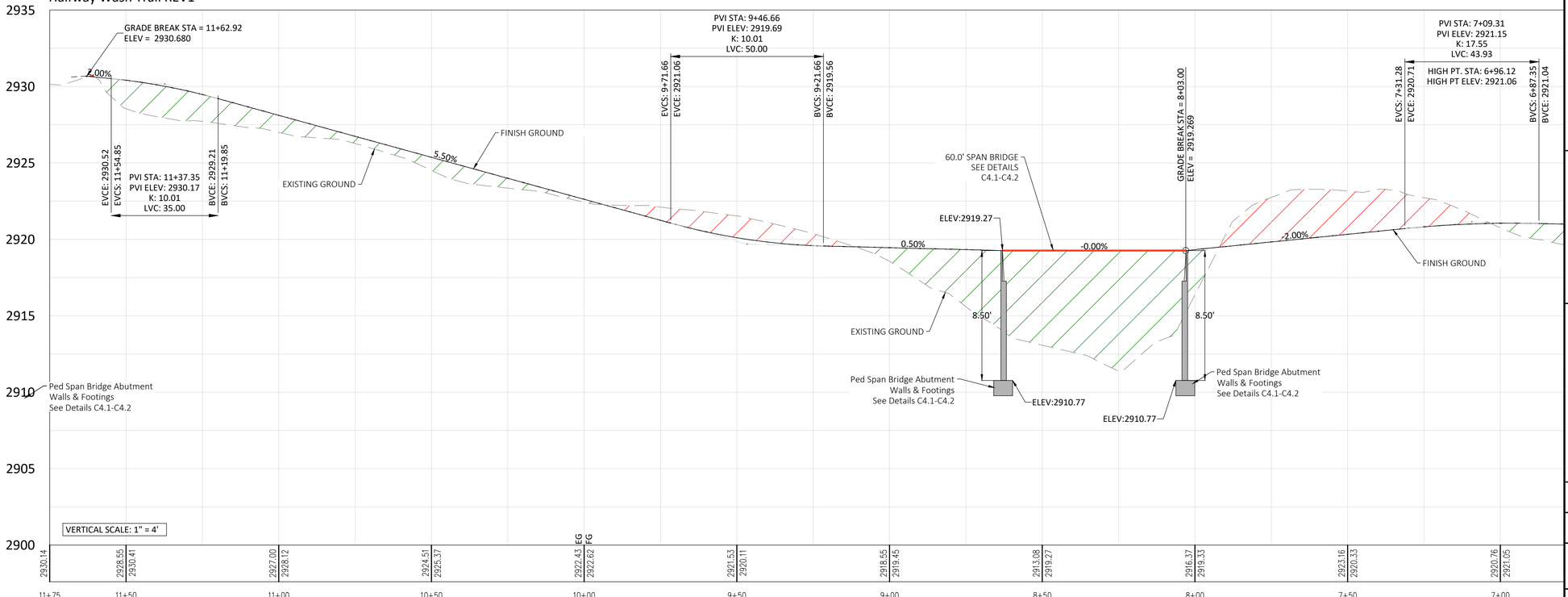
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/25
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=20'
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C2.1

Sheet 6 of 13 Sheets





Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

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GRAPHIC SCALE

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(IN FEET)
1 inch = 20 ft.
If Printed 11x17 use Half Scale

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A PLANNING AND ENGINEERING FIRM

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NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
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HALFWAY WASH NORTH TRAIL GRADING PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

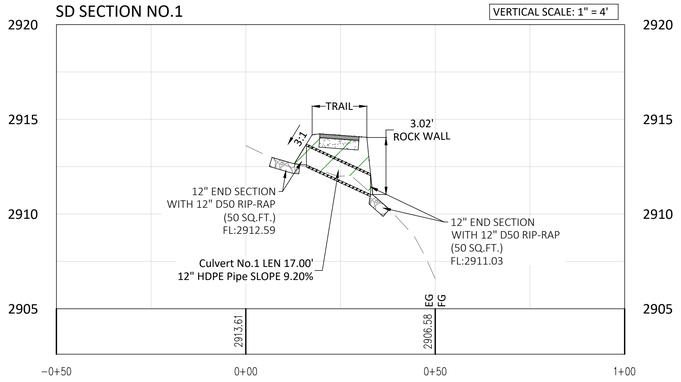
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=20'
Client No. 4491-4629	Project No. 4491-4629

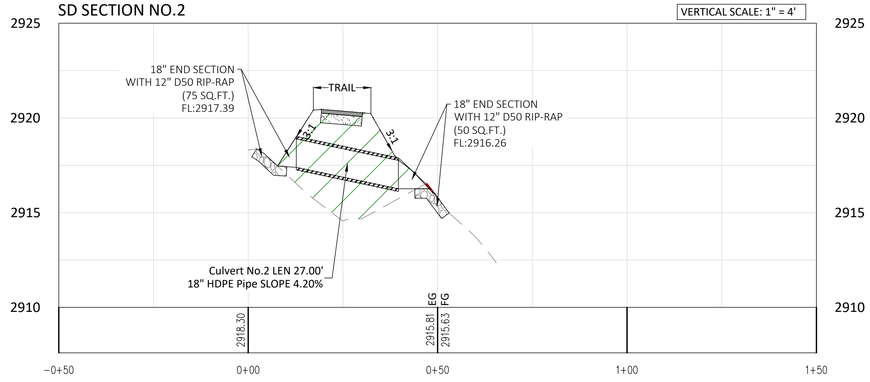
Drawing Sheet
C2.2

Sheet 7 of 13 Sheets

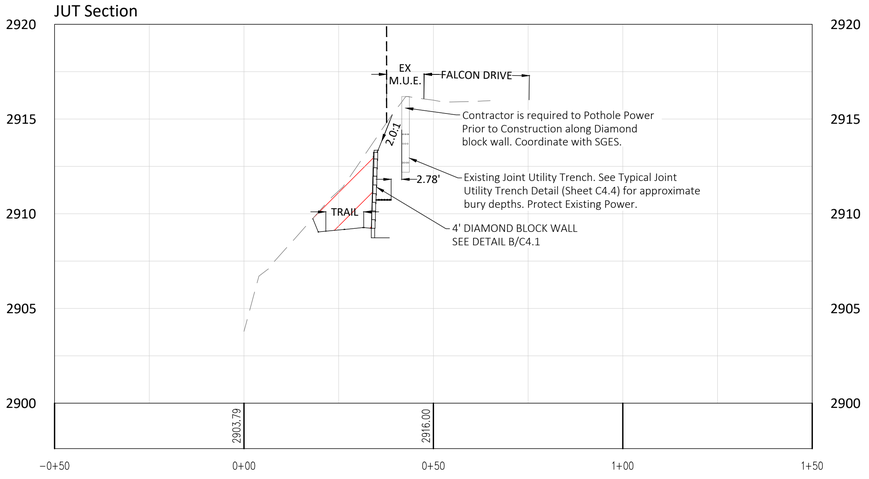
SD SECTION NO.1



SD SECTION NO.2



JUT Section



SGES NOTE:
SGES will require a buffer area that conforms to blue stakes requirements between existing buried power and equipment used for excavation; any excavation within the buffer area needed to install grid will need to be hand dug, and the SGES inspector present.

Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS
2	12-21-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
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WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL
GRADING
STORM DRAIN SECTIONS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

Drawn By:	Scale:
AZ	1"=20'
Client No.	Project No.
4491-4629	4491-4629

Drawing Sheet
C2.3

Sheet 8 of 13 Sheets

PARADISE CANYON

ROADRUNNER DRIVE

FALCON DRIVE

INSTALL MUTCD SIGN
#R1-1 18"x318"
WOOD POST

STOP

2' - 4' DIAMOND BLOCK
WALL 1,000 SQ FT
SEE DETAIL B/C4.1

HAND RAIL 155 LN.FT.
SEE DETAIL F/C4.0

SAW CUT EX TRAIL

2' - 5' ROCK WALL
(BASALT ROCK)
4' EMBEDMENT
1,800 SQ FT
SEE DETAIL A/C4.1

EXISTING TRAIL

SNOW CANYON PARKWAY

6"/6" THICK CONCRETE
FLAT WORK
100 SF.

4" SINGLE YELLOW
DASHED 3'X9' STRIPING

10.0' PROPOSED TRAIL
2.5" VOIDLESS ASPHALT MIX
6" ROAD BASE

2.0' WIDE
SHOULDER BASE

4" SINGLE YELLOW
DASHED 3'X9' STRIPING

10.0' PROPOSED TRAIL
2.5" VOIDLESS ASPHALT MIX
6" ROAD BASE

HAND RAIL 20 LN.FT. TOTAL
SEE DETAIL F/C4.0

60.0' SPAN BRIDGE
SEE DETAILS C4.1-C4.2

HAND RAIL 20 LN.FT. TOTAL
SEE DETAIL F/C4.0

4.0' WIDE
SHOULDER BASE

FLOODPLAIN

FLOODWAY

HALFWAY WASH

INSTALL MUTCD SIGN
#R1-1 18"x318"
WOOD POST

STOP

Great Basin Drive

Primrose Drive

ADA RAMP TO BE REMOVED
AND REPLACED. IF REQUIRED
MATCH CONCRETE STAIN.
ADA DETAIL F/C4.1

Primrose Drive

PARADISE CANYON

NORTH

Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

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- FILL LINE
- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
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701-572-8100

HALFWAY WASH
NORTH TRAIL
OVERALL PAVING

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

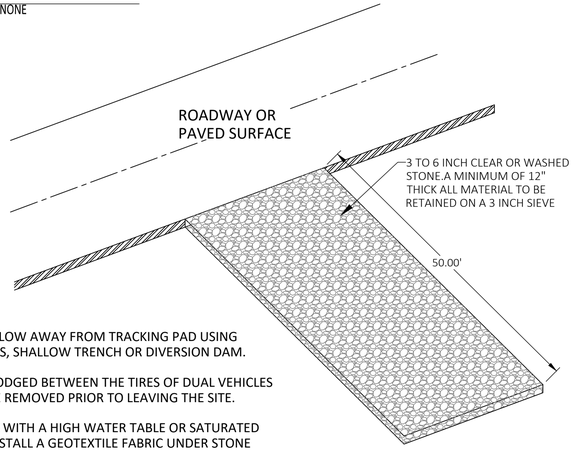
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=50'
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C3.0

Sheet 9 of 13 Sheets

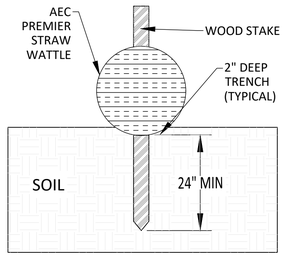
A C4.0 TRACKING PAD DETAIL
SCALE: NONE



NOTES:
1. DIVERT FLOW AWAY FROM TRACKING PAD USING CULVERTS, SHALLOW TRENCH OR DIVERSION DAM.
2. ROCKS LODGED BETWEEN THE TIRES OF DUAL VEHICLES SHALL BE REMOVED PRIOR TO LEAVING THE SITE.
3. ON SITES WITH A HIGH WATER TABLE OR SATURATED SOILS. INSTALL A GEOTEXTILE FABRIC UNDER STONE TRACKING PAD.
4. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND /OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

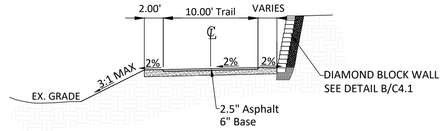
D C4.0 WATTLE DETAIL
SCALE: NONE

WATTLE CROSS SECTION:
ON BARE SOIL

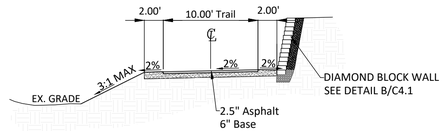


NOTES
1. INSTALL STAKES ALONG WATTLES APPROXIMATELY 3' TO 4' OF SPACING BETWEEN STAKES
2. ENDS OF WATTLES SHALL BE TURNED SLIGHTLY UP SLOPE.
3. RECOMMENDED STAKES ARE 1-½" WIDE x 1-¼" THICK x 30" LONG.
4. STAKES SHALL NOT EXTEND ABOVE THE STRAW WATTLES MORE THAN 2"
5. DO NOT OVERLAP THE ENDS ON TOP OF EACH OTHER.
6. OVERLAP BESIDE EACH END AT A MINIMUM OF 1.0'
7. ALL WATTLES MUST BE INSTALLED AT THE BEGINNING OF CONSTRUCTION UNLESS NOTED OTHERWISE.

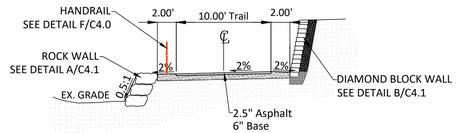
E C4.0 TRAIL SECTION DETAILS
SCALE: NONE



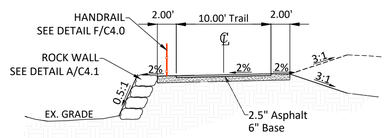
3:1 L DB Wall R - Trail Section
STA: 0+00 - 0+80



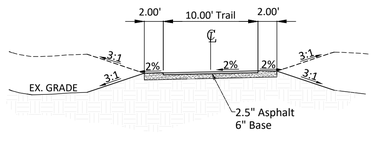
3:1 L DB Wall R - Trail Section
STA: 0+80 - 1+10



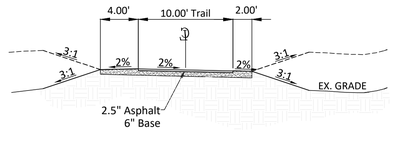
Wall L DB Wall L - Trail Section
STA: 1+10 - 2+05



Wall L 3:1 R - Trail Section
STA: 2+05 - 2+60

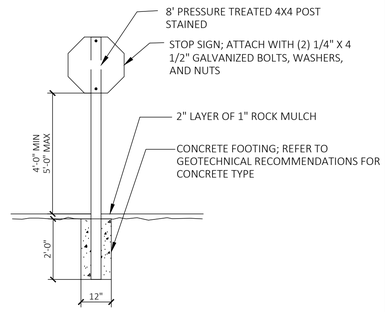


3:1 L 3:1 R - Trail Section
STA: 2+60 - 3+80, 4+45 - 8+00

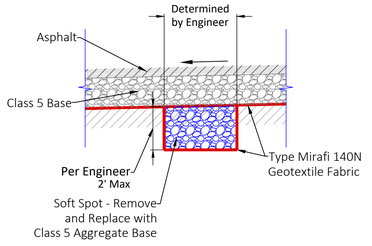


3:1 L 3:1 R - Trail Section
STA: 8+75 - 11+50

G C4.0 TRAIL WOOD POST DETAIL
SCALE: NONE



H C4.0 SOFT SPOT REPAIR
SCALE: NONE

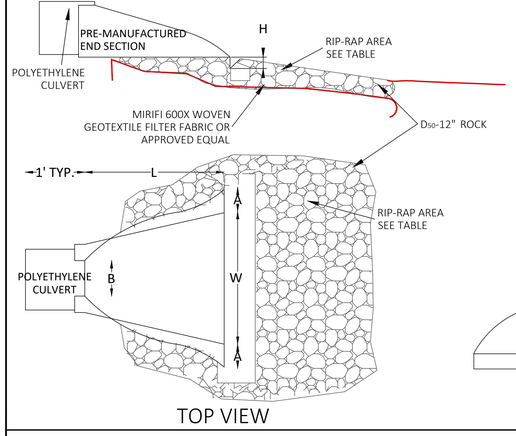


GENERAL NOTES:
1. Over excavate "soft spot" to a maximum of 2'.
2. Place Mirafi 140N Geotextile Fabric in over excavated area.
3. Overlap geotextile fabric per manufacturer specification.
4. Place aggregate base (City Spec) over geotextile fabric Type Mirafi 140N Geotextile in 6 inch lifts between compaction.
5. Proof roll all roadway and repaired soft spots before paving to insure proper conditions.
6. Soft spot repair items are indeterminate and will be paid at the engineers discretion.

B C4.0 OUTLET STRUCTURE WITH RIP-RAP
SCALE: NONE

* MAINTAIN MINIMUM COVER DURING CONSTRUCTION

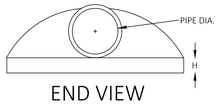
SIDE ELEVATION



TOP VIEW

NOTES:
1. IN ORDER TO ASSURE PROPER FIT WITH 24" AND 36". THESE END SECTIONS ARE ATTACHED BY WELDING TO A SHORT STUB OF 24" OR 36" PIPE AND REQUIRE A STANDARD CONNECTION BAND TO MAKE THE ATTACHMENT.
2. DO NOT USE THESE CULVERT END SECTION WITHIN THE CLEAR ZONE.
3. CLEAR ZONE- THE TOTAL ROADSIDE BORDER AREA, STARTING AT THE EDGE OF THE TRAVELED WAY, AVAILABLE FOR SAFE USE BY ERRANT VEHICLES. THIS AREA MAY CONSIST OF A SHOULDER, A RECOVERABLE SLOPE, A NON-RECOVERABLE SLOPE, AND/OR A CLEAR RUN-OUT AREA. THE DESIRED WIDTH IS DEPENDENT UPON THE TRAFFIC VOLUMES AND SPEEDS, AND ON THE ROADSIDE GEOMETRY.

PIPE DIAMETER (inch)	DIMENSIONS IN INCHES					RIP-RAP AREA (sq.ft.)
	A(1"±)	B MAX	H(1"±)	L(1/2"±)	W(2"±)	
12" and 15"	6 1/2"	10"	6 1/2"	25"	29"	25
18"	7 1/2"	15"	6 1/2"	32"	35"	36
24"	7 1/2"	18"	6 1/2"	36"	45"	49
30"	10 1/2"	N/A	7"	53"	68"	81
36"	10 1/2"	N/A	7"	53"	68"	81
48"	N/A	N/A	N/A	N/A	N/A	100

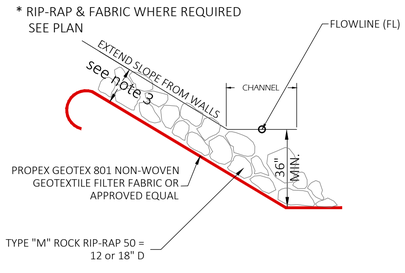


END VIEW

FILL HEIGHT TABLE

CORRUGATED POLYETHYLENE PIPE (AASHTO M-294)		
DIAMETER (in)	MIN. COVER (in) *	MAX. COVER (ft)
12"	12"	36
15"	12"	36
18"	12"	36
24"	12"	36
30"	12"	36
36"	12"	36

C C4.0 RIP RAP DETAIL
SCALE: NONE

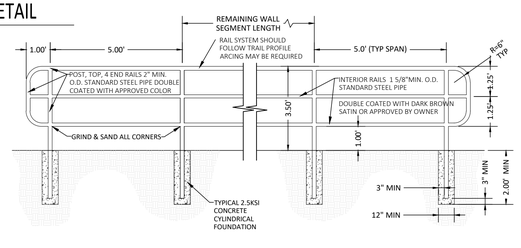


1. FILTER FABRIC SHALL BE PROPEX GEOTEX 801 WOVEN GEOTEXTILE OR AN APPROVED EQUAL. FABRIC SHALL BE PLACED AS SHOWN HEREON AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. CARE SHALL BE TAKEN TO PREVENT FABRIC FROM TEARING DURING ROCK PLACEMENT.
2. ROCK USED FOR HAND PLACED RIP-RAP SHALL BE HARD, DURABLE, ANGULAR IN SHAPE, AND FREE FROM CRACKS, OVERBURDEN, SHALE, AND ORGANIC MATTER. NEITHER BREADTH NOR THICKNESS OF A SINGLE STONE SHALL BE LESS THAN 1/3 ITS LENGTH AND ROUNDED STONES SHALL BE AVOIDED. ROCK HAVING A MINIMUM SPECIFIC GRAVITY OF 2.60 IS PREFERRED; HOWEVER, IN NO CASE SHOULD ROCK HAVE A SPECIFIC GRAVITY LESS THAN 2.50. CLASSIFICATION AND GRADATION FOR RIPRAP IS SHOWN IN THE ROCK GRADATION TABLE. ALL ROCK RIP-RAP SHALL BE INSPECTED BY THE ENGINEER PRIOR TO BACKFILLING.
3. RIP-RAP THICKNESS SHALL BE 2 X MAX. ROCK DIA..
4. ROCK USED SHALL BE BASALT ROCK.

ROCK GRADATION TABLE

Loose Riprap Gradations		Riprap D_{50}**				
Stone Diameter Range (ft)	Percent of Gradation Smaller Than	12"	14"	18"	24"	30"
1.5 D_{50} to 1.7D_{50}	100	18-20	21-24	27-31	36-41	45-51
1.2 D_{50} to 1.4D_{50}	85	14-17	17-20	22-25	29-34	36-42
1.0 D_{50} to 1.15D_{50}	50	12-14	14-16	18-21	24-28	30-35
0.4 D_{50} to 0.6D_{50}	15	5-7	6-9	7-11	10-15	12-18
0.1 D_{50}	10	1	1.5	2	2.5	3
*D50 = Nominal particle size						

F C4.0 HANDRAIL DETAIL
SCALE: NONE



Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Details.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH
NORTH TRAIL
DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

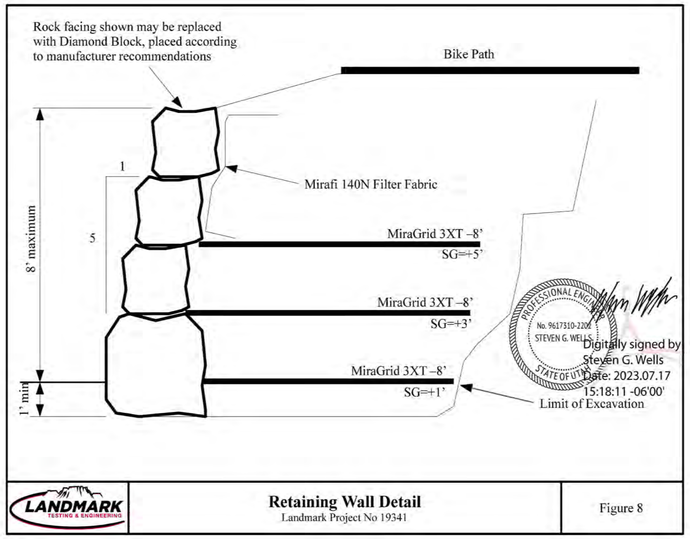
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/2024
STATE OF UTAH

Drawn By:	Scale:
AZ	NTS
Client No.	Project No.
4491	4491-4629

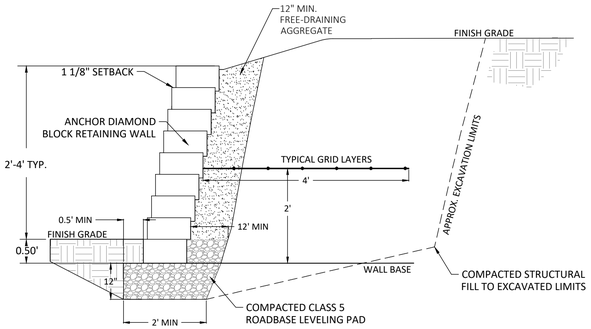
Drawing Sheet
C4.0

Sheet 10 of 13 Sheets

A C4.1 RETAINING WALL
SCALE: NONE



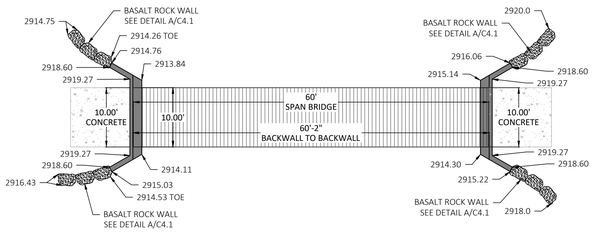
B C4.1 DIAMOND BLOCK WALL
SCALE: NONE



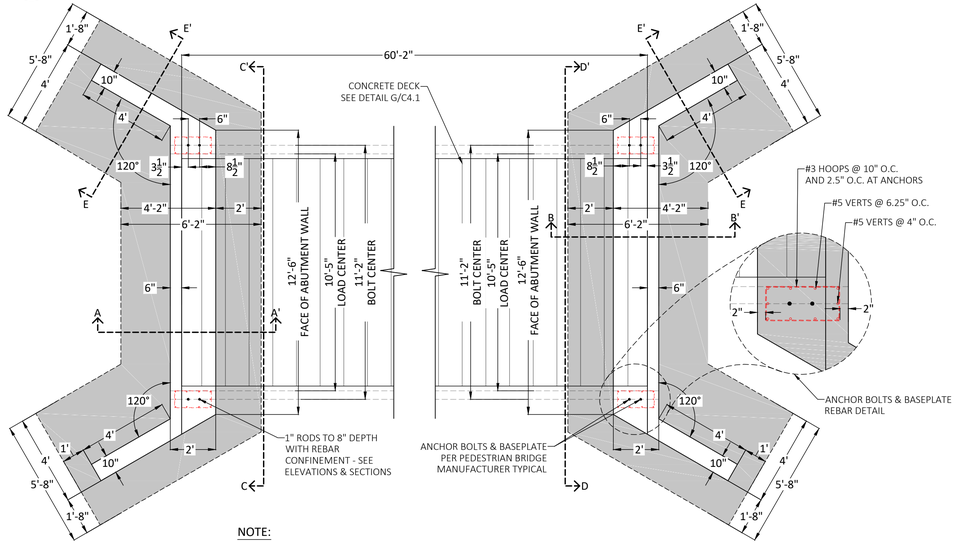
2' TO 4' RETAINING WALL

NOTES:
1. GEOGRID REQUIRED IN RETAINING WALL SYSTEMS WALLS OVER 4 FEET IN HEIGHT SHALL HAVE LAYERS APPROX. 1.5' APART
2. RETAINING WALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ANCHOR DIAMOND WALL SYSTEMS.
3. REFER TO MANUFACTURERS RECOMMENDATIONS FOR ALL DESIGN CRITERIA.

D C4.1 BRIDGE PLAN VIEW W/ ABUTMENT WALLS
SCALE: NONE



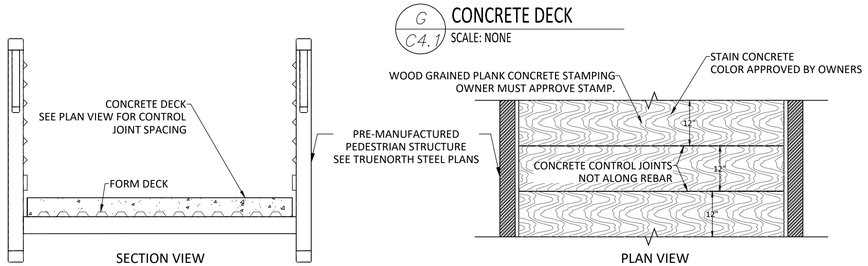
E C4.1 BRIDGE PLAN VIEW W/ ABUTMENT WALLS
SCALE: NONE



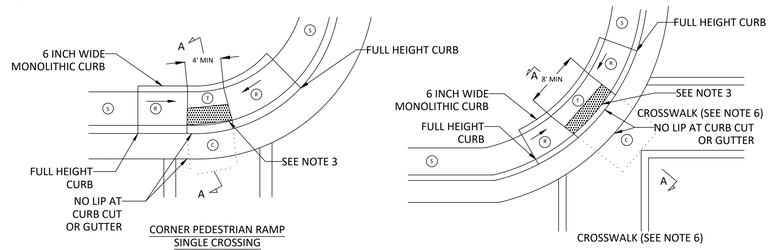
NOTE:

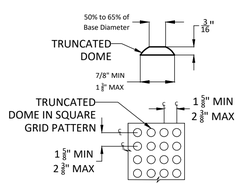
See Sheet C4.2 for Section Details

G C4.1 CONCRETE DECK
SCALE: NONE



F C4.1 ADA RAMP - CORNER
SCALE: NONE





DETECTABLE WARNING SURFACE

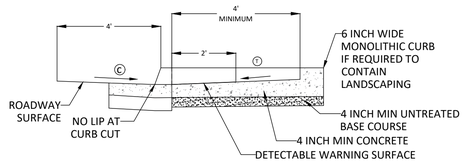
SLOPE TABLE			
	ITEM	MAX. RUNNING SLOPE *	MAX. CROSS SLOPE *
T	TURNING SPACE	2%	2% (c)
R	RAMP	8.33% (a)	2% (c)
C	CLEAR SPACE	5% (b)	2% (c)
S	SIDEWALK	STREET GRADE	2%

* RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL. CROSS SLOPE IS PERPENDICULAR TO PEDESTRIAN TRAVEL

(a) LENGTH OF RUNNING SLOPE FOR PARALLEL RAMPS IS NOT REQUIRED TO EXCEED 15FT.

(b) MAINTAIN CONSISTENCY OF CLEAR SPACE RUNNING SLOPE ACROSS ENTIRE CURB CUT. WARP CUTTER PAN TO MEET REQUITED CLEAR SPACE SLOPE AT CURB CUT.

(c) DO NOT EXCEED THE ROADWAY PROFILE GRADE FOR THE CROSS SLOPE AT CROSSWALKS WITHOUT STOP OR YIELD CONTROL AND AT MID-BLOCK CROSSWALKS.



SECTION A-A

NOTES:
1. DIMENSIONS SHOWN IN THE SLOPE TABLE ON ARE NOT SUBJECT TO CONVENTIONAL INDUSTRY TOLERANCES. CONSTRUCT SIDEWALKS AND RAMPS SUCH THAT THE MAXIMUM OR MINIMUM VALUES ARE NOT EXCEEDED. WORK THAT EXCEEDS THOSE VALUES WILL NOT BE ACCEPTED.
2. PROVIDE DETECTABLE WARNING SURFACE FOR FULL WIDTH OF CURB CUT.
3. LOCATE DETECTABLE WARNING SURFACE SO THE CORNERS NEAREST THE STREET ARE WITHIN 1 INCH OF THE BACK OF CURB.
4. RAMP GRADE BREAK MUST BE PERPENDICULAR TO THE RUNNING SLOPE.
5. CLEAR SPACE AND TURNING SPACE SIZE: 4 FT MIN. X 4 FT MIN.
6. CROSSWALK DELINEATION IF REQUIRED ON PROJECT STRIPING PLAN.
7. ALL TRAIL ADA RAMPS SHALL HAVE AN 8' WIDE DETECTABLE WARNING SURFACE.

Date: 2-06-24

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HALFWAY WASH NORTH TRAIL DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON CO., UT

LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	NTS
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C4.1

Sheet 11 of 13 Sheets

A C4.2 BRIDGE SECTION VIEW W/ ABUTMENT WALL

SCALE: NONE

DESIGN CONDITIONS

NOTES:

f'_c = 4,500 PSI

f_y= 60,000 PSI

q_a= 4,000 PSF

TENSION DEVELOPMENT LENGTHS

BAR #	LENGTH
#4	20"
#5	24"
#6	30"

*1" CHAMFER AT ALL EXPOSED CONCRETE EDGES

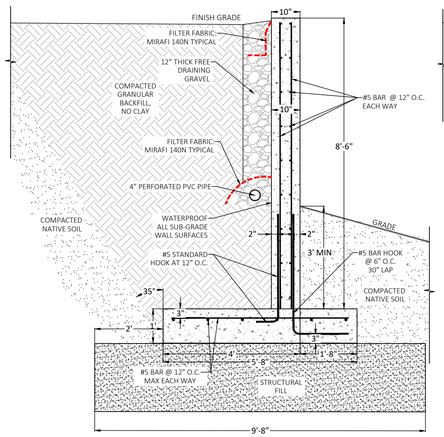
LOADING ASSUMPTIONS

SOIL LOADS:

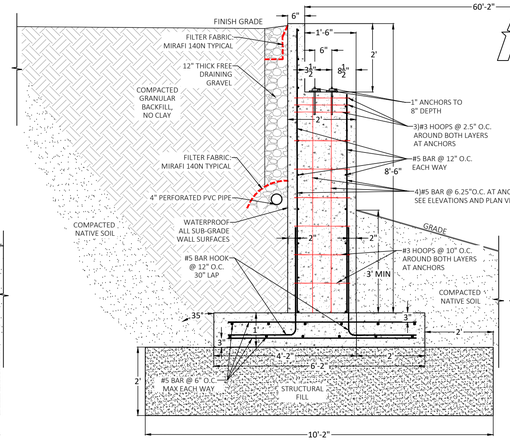
ACTIVE: W/ SEISMIC:	36 PSF/FT 51 PSF/FT
AT REST :	57 PSF/FT
PASSIVE: W/ SEISMIC	496 PSF/FT 392 PSF/FT
FRICTION COEFF:	0.37

APPLIED LOADS:

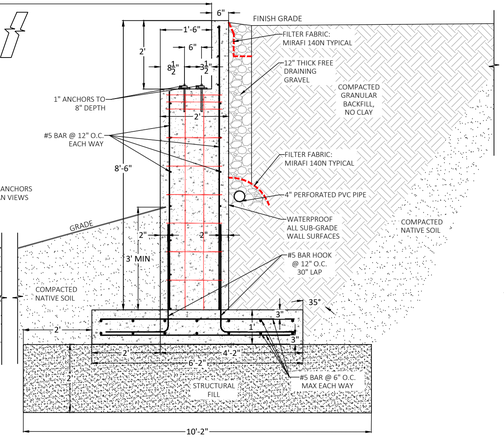
DEAD LOAD:	13,500 LBS
LIVE LOAD:	13,500 LBS
VEHICLE LOAD:	4,800 LBS
WIND UPLIFT:	-4,400 LBS (W)
WIND:	±3,000 LBS
WIND(HORIZ.):	10,800 LBS
EARTHQUAKE:	23,400 LBS



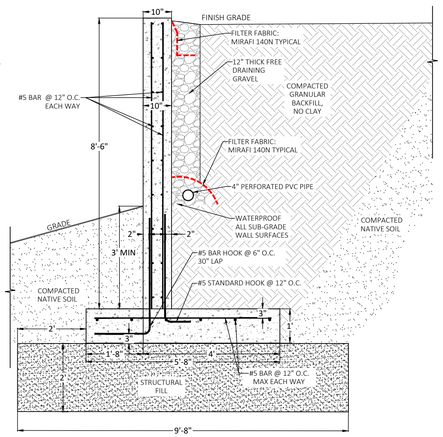
SECTION E-E'
8.5' WING WALL



SECTION A-A'
8.5' ABUTMENT WALL



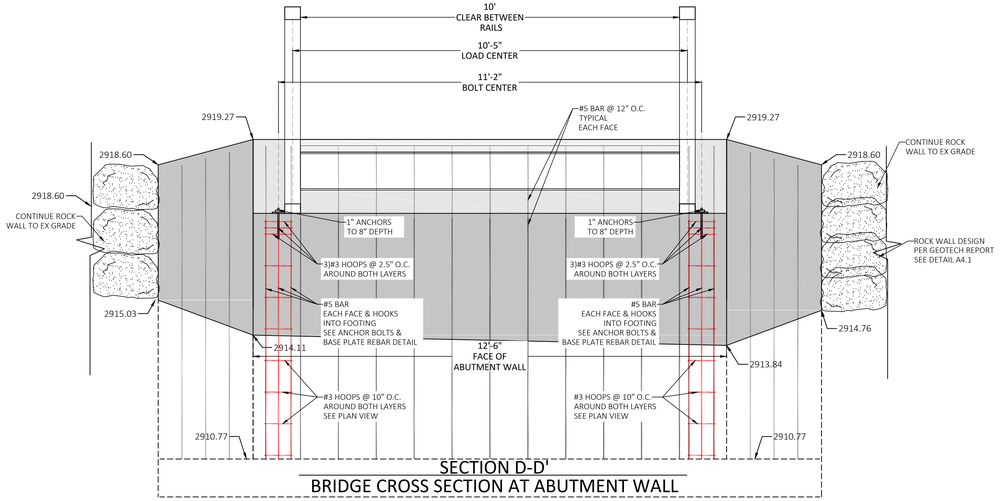
SECTION B-B'
8.5' ABUTMENT WALL



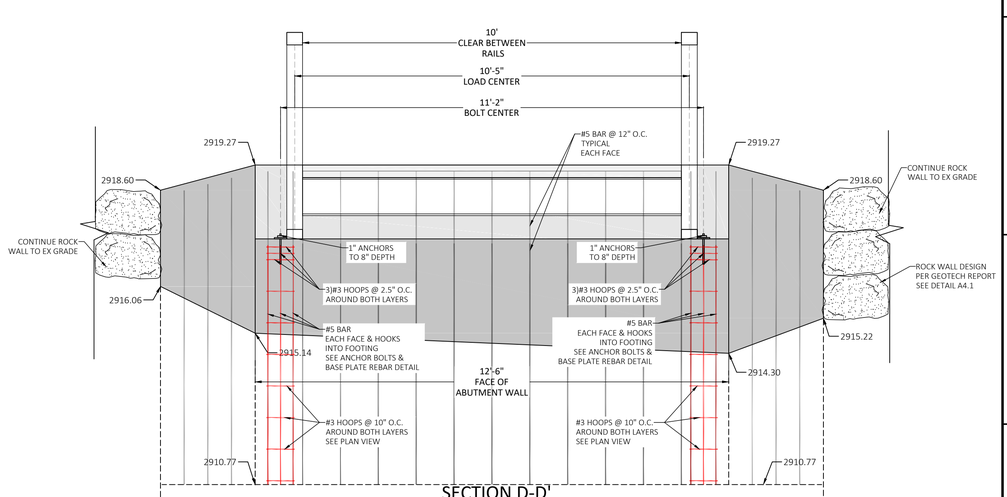
SECTION F-F'
8.5' WING WALL

B C4.2 BRIDGE PLAN VIEW W/ ABUTMENT WALLS

SCALE: NONE



SECTION D-D'
BRIDGE CROSS SECTION AT ABUTMENT WALL



SECTION D-D'
BRIDGE CROSS SECTION AT ABUTMENT WALL

Date: 12-13-2023

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Drawn By:	Scale:
AZ	NTS
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C4.2

Sheet 12 of 13 Sheets

SEWER NOTES:

1. No sewers under 9' deep unless approved by the city of St. George.
2. Any sewers not in public streets shall show recorded easements.
3. Buildings may require interceptors at later date.
4. All sewer manholes shall have city of St. George logo lids for final inspection.
5. All sewer fittings shall be approved by the city of ST. George prior to purchase and installation.
6. All construction shall conform to the "City of St. George Standard Specifications for Design and Construction","The International Plumbing Code", and the "Uniform Building Code" latest edition as administered by the City of St. George.
7. Backfill materials shall conform to the requirements outlined in detail.
8. Bedding materials shall be placed and compacted in horizontal lifts not to exceed 6-in in compacted thickness. Initial backfill materials shall be placed carefully in 8-in non-compacted horizontal lifts and compacted to a depth of 12-in above the top of the pipe. Final backfill materials shall be placed in 12-in compacted horizontal lifts up to the existing ground surface.
9. Minimum compaction shall be 95%. when approved flowable fill or slurry is used, compaction testing will not be required.
10. Prior to and during compaction operations, all backfill material shall have the required moisture content uniform throughout each layer.
11. The contractor is responsible for conducting displacement, air or ex-filtration and deflection testing on all newly installed sewer pipe. The contractor is also responsible for conducting leakage tests on all newly installed manholes.
12. Following inspection, all newly installed sewer lines and manholes shall be flushed by the contractor.
13. Contractor is responsible for all existing waste water flow during construction. The contractor shall be responsible to make sure all waste water flow is transported down stream during construction.
14. The city must approve all means and methods prior to beginning construction work.
15. All sewer pipe are PVC 8" SDR-35 and size indicated on the plan, unless otherwise noted.
16. Concrete collars are required on all manholes.

CITY OF ST. GEORGE WATER NOTES:

1. All waterline works must be installed by a contractor that has been pre-qualified by the City of St. George Water Department.
2. All construction shall conform to the "City of St. George Standard Specifications for design and construction", "The Uniform Plumbing Code", and the "Uniform Building Code" latest edition as administered by the City of St. George.
3. Contractor shall pothole all pipelines and verify location and depth prior to proceeding with any building or pipeline construction. If the in field conditions varies from design teh contractor is responsible for costs due to changes in conditions. City maps are "Best Knowledge" and Approximate.
4. The potable water supply to lawn irrigation systems shall be protected against backflow per the International Plumbing Code (IPC) Section 608. I6.5 and for fire sprinkler systems per (IPC) 608.I6.4.
5. All backflow assembly installation and test requirements shall be in accordance with the City of St. George backflow ordinance 9-1-1997-5-6-5.
6. 14 gauge wire shall be taped to all water lines for locating purposes. the wire shall also be brought up at each valve box and hydrant.
7. Thrust restraint on the new pipeline will be as shown on the details. use mega-lug on the fittings and field lock gaskets on the required length of restrained pipe.
8. Asphalt replaced over the pipe trenching is to match existing pavement depths with a 6" over cut from edge of the trench line on each side of the trench.
9. Contractors shall cut off and cap (back at the water main), all existing service lines or
un-used stub lines that will be abandoned.
10. Any changes made in the field must be first approved and documented by the City of St. George water services representative & the design engineer.
11. All New Fire Hydrants shall be installed at the correct height, Risers will not be allowed.
12. Irrigation Water works may require additional approval from Respective Irrigation Companies

GENERAL WATER NOTES:

1. All water pipe shall be PVC C-900 class 150, unless otherwise noted.
2. All water lines shall maintain 1 foot minimum separation between adjacent water pipes.
3. All water fittings shall be approved by St. George City Public Works prior to purchase and installation.
4. Backfill materials shall conform to the requirements outlined in detail.
5. Bedding materials shall be placed and compacted in horizontal lifts not to exceed 6-in in compacted thickness. Initial backfill materials shall be placed carefully in 8-in non-compacted horizontal lifts and compacted to a depth of 12-in above the top of the pipe. Final backfill materials shall be placed in 12-in compacted horizontal lifts up to the existing ground surface.
6. Prior to and during compaction operations, all backfill material shall have the required moisture content uniform throughout each layer.
7. The Contractor is responsible for conducting pressure testing, for flushing and disinfecting the entire water distribution system as per St. George City specifications.

ST. GEORGE ENERGY SERVICES POWER NOTES

1. Primary power from switch to switch shall be 750 wire in 3"conduit.
2. Primary power from vault to transformer shall be 1/0 wire in 3" conduit unless otherwise noted. All wire shall have a temperature rating of 90° C
3. Secondary power from transformer to meter (90° C Temp. Rating):
   A. For residential lots - where length is less than or equal to 200 ft
      - 100 - 150 amps = 1/0 in 2" conduit
      - 200 amps = 4/0 in 2" conduit
      - 400 amps = 350 mcm in 3" conduit
      - 600 amps = 500 mcm in 3" conduit
      - Contact SGES for lengths > 200 ft if not specified per plan.

   B. For C.T. connections (services > 400 amps) secondary conduit and wire shall be sized by building electrical engineer.
   C. For commercial and/or apartment complex ≤ 400 amps or > 400 amps with gang pack individual meters - sized by SGES based on load calculations.
4. Contractor to follow all blue stakes protocols.
5. The power design on the utility plans is considered by St. George Energy Services (SGES) as preliminary and non-biddable until accompanied by a JUC approval stamp.
6. All primary underground power work/installation must be completed by a contractor that has been prequalified by SGES and meet all SGES standrads. All overhead work/installation must be completed by SGES.
7. All work done by SGES will be prepaid by the developer.
8. It is the responsibility of the design engineer to provide locations and elevations of all existing and design underground/overhead utilities and structures that will impact the SGES power design.
9. All JUC trenches will be backfilled and compacted in 6" to 8" lifts to a compaction of 95% in roadways/sidewalks and 90% behind sidewalk. Testing is to be done at middle and top of trench.
10. All changes to existing grades near existing power utilities must be approved by SGES prior to construction.
11. Any in field changes to the JUC approved power design will be at the developer's expense and must be pre-approved and documented by SGES prior to installation.

DOMINION ENERGY GAS NOTES

1. Developer needs to contact Dominion Energy Pre-Construction department prior to breaking ground for gas sign up. COLBY BATTY (435)414-3607.
2. Developer will be responsible to get all compaction tests done at developer's expense.
3. If casings/conduits are needed, they are to be installed by developer at their costs. A map will be available at Dominion Energy for casing locations (1155 E 350 N--St George).
4. All of the 10 foot utility easements back of sidewalk will be graded, at full 10 foot width, to within 6 inches of top back of curb before gas lines will be installed. ****NO RETAINING, ROCK, OR BLOCK WALLS MAY BE CONSTRUCTED ON/IN A PUE**Developer will be responsible for the costs of any gas lines to be lowered and/or relocated after installation.****
5. All trenches shall be backfilled and all debris, construction materials, and excess dirt piles shall be cleared away.
6. Property lot lines, back of curb, and grade **must** be staked by developer before gas will be installed.
7. Power, water, sewer lines, culverts, or other hazards not clearly noticeable shall be staked by developer.
8. Failure to comply with the above notes will result in delay of service to this project.
9. Contact JC Hall, 435-210-0729, at least two weeks prior to being ready, for scheduling of installation.
10. ****IMPORTANT NOTICE**Gas will be put on the schedule for installation when power trench is buried, streets are within 6 inches of subgrade, and the 10 foot utility easement is graded to the top back of curb.**

INFOWEST, CATV/FIBER OPTIC NOTES

1. DEVELOPER TO PROVIDE ALL REQUIRED TRENCHING WITHIN THE PROJECT.
2. ANY MODIFICATIONS REQUIRED TO FEED PROJECT WILL BE BILLED TO THE DEVELOPER.
3. INFOWEST WILL PROVIDE ALL CONDUITS. CALL 435-272-3559 OR EMAIL JUC@infowest.com FOR CONDUIT DELIVERY AT LEAST ONE (1) WEEK PRIOR TO OPENING THE TRENCH.
4. FOR COMMERCIAL PROJECTS WITH AN MDF/COMM ROOM. DEVELOPER WILL INSTALL A 2" PVC RUN TO THE EXTERIOR OF BUILDING.
5. ANY QUESTIONS REGARDING SERVICE SHOULD BE DIRECTED TOWARDS GAB TREMBLEY AT 435-272- 3559 OR JUC@infowest.com.
6. RELOCATION OF EXISTING NEW OR EXISTING INFOWEST FACILITIES ARE BILLABLE TO THE DEVELOPER. THE DEVELOPER WILL BE PROVIDED WITH AN ESTIMATE OF COSTS FOR WORK DONE.

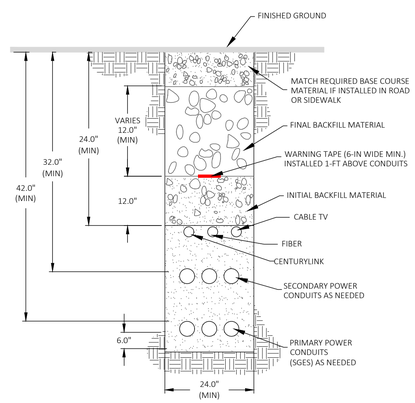
CENTURY LINK TELEPHONE NOTES

1. Developer to provide all trench, backfill, and road crossings. Centurylink sub contractor (Neils Fugal) will place conduit in trench. Call 435-632-6553 15 days prior to requiring conduit to schedule delivery.
2. Any breaks/blockages in conduit resulting from improper backfill or other construction/utility placement are the developer responsibility to repair and may result in delay of service.
3. Contract Centurylink Engineer at 435-884-7920 with any questions or changes in JUC plans.
4. Any Centurylink facility relocations associated with project will be billable 100% to owner/developer and must be scheduled and must be scheduled a minimum of 45 days in advance.

TDS, CATV/BROADBAND NOTES

1. THE DEVELOPER WILL PROVIDE ALL REQUIRED TRENCH WITHIN THE PROJECT. ANY MODIFICATIONS ALONG THE PERIPHERY TO FEED THIS PROJECT WILL BE BILLED TO THE DEVELOPER.
2. TDS WILL PLACE CONDUITS IN AN OPEN/JOINT TRENCH. PLEASE CONTACT TDS ENGINEERING AT 435-288-1415 AT LEAST 3 WEEKS PRIOR TO OPENING TRENCH TO CREATE DESIGN AND SCHEDULE WORK.
3. CONTACT TDS PRIOR TO CONSTRUCTING BUILDINGS FOR PREWIRE OPTIONS FOR FIBER OPTIC SERVICE. ANY OTHER QUESTIONS REGARDING CONSTRUCTION OF SERVICE SHOULD BE DIRECTED TO TDS ENGINEERING AT 435-288-1415.
4. RELOCATION OF NEW OR EXISTING TDS FACILITIES WILL BE BILLABLE TO THE DEVELOPER/CONTRACTOR
5. ANY MODIFICATIONS AFTER CONDUIT/CABLE PLACEMENT WILL BE BILLABLE TO THE DEVELOPER/CONTRACTOR AS WILL DAMAGES CAUSED BY OTHER CONTRACTORS WORKING FOR THE DEVELOPER ON THIS PROJECT.

TYPICAL SGES JOINT UTILITY TRENCH



NOTE:
SHOWN BURY DEPTHS ARE TYPICAL; EXISTING BURY DEPTH MAY VARY FROM WHAT IS SHOWN. WHERE WALL CONSTRUCTION OR GRADING ADJACENT TO THE EXISTING JOINT UTILITY TRENCH OCCURS, CONTRACTOR SHALL FIELD VERFIY BURY DEPTH WHILE SGES INSPECTOR IS PRESENT AND COORDINATE CONSTRUCTION METHODS AND TIMELINE WITH SGES WHILE WORKING IN THESE AREAS.

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STATE OF UTAH

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Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C4.3

Sheet 13 of 13 Sheets

Agenda Date: 04/04/2024 **Agenda Item Number:** 4d

Subject:

Consider approval to award bid to Caliber Contractor LLC for the JC Snow Park Pavilions Replacement 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 bid is to remove two of the existing pavilions and associated concrete flatwork. The bid also includes installing new concrete flatwork for two of the new replacement pavilions. Currently the park has three existing pavilions that were installed in the late 70s that need to be replaced. The three replacement pavilions have already been ordered by the city in a separate contract.

Staff Narrative (need/purpose):

The purpose of the bid is to remove two of the three pavilions with associated concrete flatwork and then install new concrete flatwork for two of the pavilions. Due to the limited budget, neither the removal of the third pavilion, nor the installation of the three pavilions is included in the bid. This work will be performed by the Parks Division Tech Crew. The bid is broken down into three bid schedules. Each bid schedule relates to one pavilion. It is proposed to award Bid Schedule #1 (pavilion next to the playground) with the removal of the following bid items: Bid Item No. 2 City Furnished, Contractor Installed Pavilion (60x30); Bid Item No. 12 Architectural Wall Pack; and Bid Item No. 13 Outlet, WP GFI. Total for Bid Schedule #1 is $61,932.00. It is also proposed to award Bid Schedule #2 (north pavilion) with the removal of the following bid items: Bid Item No. 2 City Furnished, Contractor Installed Pavilion (45x30); Bid Item No. 14 Architectural Wall Pack; and Bid Item No. 15 Outlet, WP GFI. Total for Bid Schedule #2 is $55,932.50. Bid Schedule #3 will not be awarded. The total bid amount for Bid Schedules #1 and #2 is $117,864.50.

Name of Legal Dept approver: Alicia Galvany Carlton

Budget Impact:

Cost for the agenda item: $117,864.50

Amount approved in current FY budget for item: $445,000.00 (but only have about $120,000.00 remaining)

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

funding source:

Approved in budget.

Description of funding source:

Recreation, Arts, & Parks Tax (RAP)

Recommendation (Include any conditions):

Approval. It is proposed to award Bid Schedule #1, minus bid items 2, 12, and 13 as well as Bid Schedule #2, minus bid items 2, 14, and 15 for a total amount of $117,864.50 to Caliber Contractor LLC for the JC Snow Park Pavilions

Replacement project.

PROJECT: JC SNOW PARK PAVILIONS REPLACEMENT
BID INQUIRY NO.: 24-109
BID OPENING DATE: MARCH 19, 2024 @ 2:00 pm

BID TABULATION

St.George
THE BRIGHTER SIDE

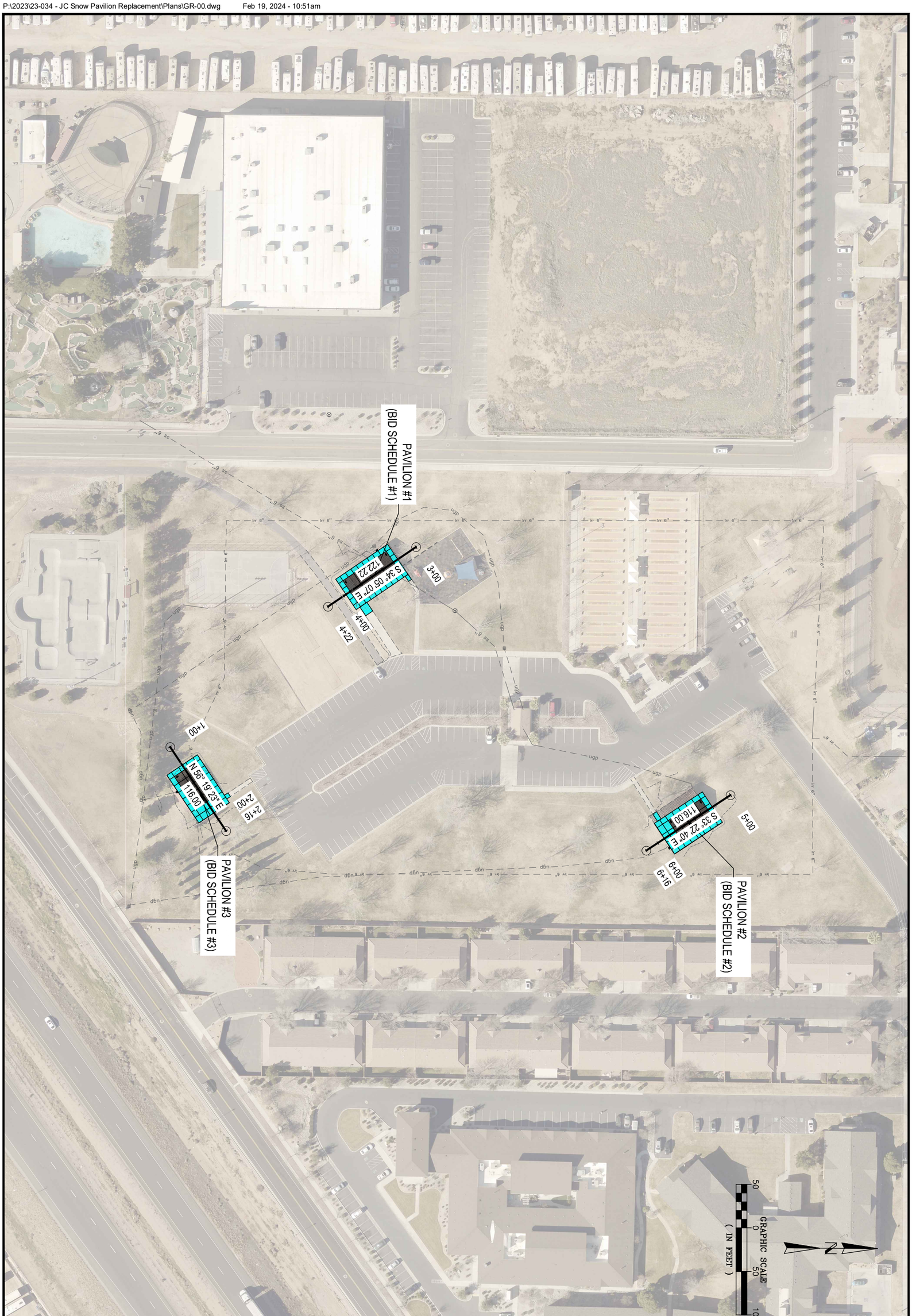
BID SCHEDULE #1

ITEM NO.	ITEM DESCRIPTION	QTY	UNIT	ENGINEER'S ESTIMATE		CALIBER CONTRACTOR LLC		WRX CONTRACTING		PROGRESSIVE CONTRACTING INC		FELLER ENTERPRISES	
				UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT
1	MOBILIZATION	1	LUMP	$ 15,000.00	$ 15,000.00	$ 3,500.00	$ 3,500.00	$ 8,200.00	$ 8,200.00	$ 11,000.00	$ 11,000.00	$ 10,000.00	$ 10,000.00
2	CITY FURNISHED, CONTRACTOR INSTALLED PAVILION (60' X 30')	0	LUMP	$ 70,000.00	$ -	$ 15,500.00	$ -	$ 19,500.00	$ -	$ 30,700.00	$ -	$ 84,225.42	$ -
3	REMOVE PAVILION	1	LUMP	$ 10,000.00	$ 10,000.00	$ 3,000.00	$ 3,000.00	$ 5,775.00	$ 5,775.00	$ 11,600.00	$ 11,600.00	$ 15,991.30	$ 15,991.30
4	REMOVE CONCRETE FLATWORK	2,400	SQ FT	$ 3.00	$ 7,200.00	$ 2.50	$ 6,000.00	$ 2.04	$ 4,896.00	$ 4.00	$ 9,600.00	$ 2.32	$ 5,568.00
5	RECONSTRUCT IRRIGATION BOX	2	EACH	$ 250.00	$ 500.00	$ 500.00	$ 1,000.00	$ 420.00	$ 840.00	$ 2,320.00	$ 4,640.00	$ 1,082.03	$ 2,164.06
6	RELOCATE IRRIGATION BOX	2	EACH	$ 250.00	$ 500.00	$ 500.00	$ 1,000.00	$ 315.00	$ 630.00	$ 2,320.00	$ 4,640.00	$ 2,316.92	$ 4,633.84
7	CONCRETE FLATWORK (4" THICK)	1,400	SQ FT	$ 9.00	$ 12,600.00	$ 8.13	$ 11,382.00	$ 11.01	$ 15,414.00	$ 8.20	$ 11,480.00	$ 11.84	$ 16,576.00
8	CONCRETE FLATWORK (5" THICK PAVILION SLAB)	1,800	SQ FT	$ 16.00	$ 28,800.00	$ 10.00	$ 18,000.00	$ 14.52	$ 26,136.00	$ 10.80	$ 19,440.00	$ 12.56	$ 22,608.00
9	PAVILION SPREAD FOOTING (3'-6" X 3'-6")	8	EACH	$ 1,000.00	$ 8,000.00	$ 2,000.00	$ 16,000.00	$ 1,500.00	$ 12,000.00	$ 1,200.00	$ 9,600.00	$ 774.88	$ 6,199.04
10	REMOVE ELECTRICAL PEDESTAL	1	EACH	$ 1,000.00	$ 1,000.00	$ 1,025.00	$ 1,025.00	$ 825.00	$ 825.00	$ 2,080.00	$ 2,080.00	$ 2,288.94	$ 2,288.94
11	NEW UNMETERED 100 AMP ELECTRICAL PEDESTAL W/CIRCUIT BREAKERS	1	EACH	$ 5,000.00	$ 5,000.00	$ 1,025.00	$ 1,025.00	$ 2,420.00	$ 2,420.00	$ 4,300.00	$ 4,300.00	$ 4,694.05	$ 4,694.05
12	ARCHITECTURAL WALL PACK	0	EACH	$ 1,500.00	$ -	$ 1,012.50	$ -	$ 550.00	$ -	$ 1,300.00	$ -	$ 1,420.85	$ -
13	OUTLET, WP GFI	0	EACH	$ 1,000.00	$ -	$ 256.25	$ -	$ 110.00	$ -	$ 800.00	$ -	$ 871.92	$ -
BID SCHEDULE #1 - TOTAL AMOUNT					**$ 88,600.00**		**$ 61,932.00**		**$ 77,136.00**		**$ 88,380.00**		**$ 90,723.23**

BID SCHEDULE #2															
ITEM NO.	ITEM DESCRIPTION	QTY	UNIT	ENGINEER'S ESTIMATE		CALIBER CONTRACTOR LLC		WRX CONTRACTING		PROGRESSIVE CONTRACTING INC		FELLER ENTERPRISES	
				UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT
1	MOBILIZATION	1	LUMP	$ 12,000.00	$ 12,000.00	$ 3,500.00	$ 3,500.00	$ 8,200.00	$ 8,200.00	$ 10,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00
2	CITY FURNISHED, CONTRACTOR INSTALLED PAVILION (45' X 30')	0	LUMP	$ 50,000.00	$ -	$ 13,500.00	$ -	$ 16,800.00	$ -	$ 25,100.00	$ -	$ 66,473.20	$ -
3	REMOVE PAVILION	1	LUMP	$ 7,500.00	$ 7,500.00	$ 3,000.00	$ 3,000.00	$ 5,197.50	$ 5,197.50	$ 11,720.00	$ 11,720.00	$ 16,634.16	$ 16,634.16
4	REMOVE CONCRETE FLATWORK	1,770	SQ FT	$ 3.00	$ 5,310.00	$ 2.50	$ 4,425.00	$ 2.04	$ 3,610.80	$ 4.00	$ 7,080.00	$ 2.32	$ 4,106.40
5	REMOVE DRINKING FOUNTAIN	1	EACH	$ 500.00	$ 500.00	$ 1,250.00	$ 1,250.00	$ 500.00	$ 500.00	$ 350.00	$ 350.00	$ 1,646.52	$ 1,646.52
6	RECONSTRUCT IRRIGATION BOX	2	EACH	$ 250.00	$ 500.00	$ 500.00	$ 1,000.00	$ 420.00	$ 840.00	$ 2,320.00	$ 4,640.00	$ 1,082.03	$ 2,164.06
7	RECONSTRUCT ELECTRICAL BOX	1	EACH	$ 500.00	$ 500.00	$ 1,250.00	$ 1,250.00	$ 250.00	$ 250.00	$ 2,320.00	$ 2,320.00	$ 73.88	$ 73.88
8	CITY FURNISHED, CONTRACTOR INSTALLED DRINKING FOUNTAIN	1	EACH	$ 2,500.00	$ 2,500.00	$ 1,250.00	$ 1,250.00	$ 500.00	$ 500.00	$ 2,320.00	$ 2,320.00	$ 3,293.04	$ 3,293.04
9	CONCRETE FLATWORK (4" THICK)	1,500	SQ FT	$ 9.00	$ 13,500.00	$ 8.13	$ 12,195.00	$ 11.01	$ 16,515.00	$ 8.20	$ 12,300.00	$ 11.24	$ 16,860.00
10	CONCRETE FLATWORK (5" THICK PAVILION SLAB)	1,350	SQ FT	$ 16.00	$ 21,600.00	$ 10.00	$ 13,500.00	$ 12.21	$ 16,483.50	$ 10.80	$ 14,580.00	$ 15.24	$ 20,574.00
11	PAVILION SPREAD FOOTING (3'-6" X 3'-6")	6	EACH	$ 1,000.00	$ 6,000.00	$ 2,000.00	$ 12,000.00	$ 1,500.00	$ 9,000.00	$ 1,200.00	$ 7,200.00	$ 984.80	$ 5,908.80
12	REMOVE ELECTRICAL PEDESTAL	1	EACH	$ 1,000.00	$ 1,000.00	$ 1,281.25	$ 1,281.25	$ 825.00	$ 825.00	$ 2,080.00	$ 2,080.00	$ 2,288.94	$ 2,288.94
13	NEW UNMETERED 100 AMP ELECTRICAL PEDESTAL W/CIRCUIT BREAKERS	1	EACH	$ 5,000.00	$ 5,000.00	$ 1,281.25	$ 1,281.25	$ 2,420.00	$ 2,420.00	$ 4,300.00	$ 4,300.00	$ 4,694.05	$ 4,694.05
14	ARCHITECTURAL WALL PACK	0	EACH	$ 1,500.00	$ -	$ 640.63	$ -	$ 550.00	$ -	$ 1,300.00	$ -	$ 1,420.85	$ -
15	OUTLET, WP GFI	0	EACH	$ 1,000.00	$ -	$ 320.31	$ -	$ 110.00	$ -	$ 800.00	$ -	$ 871.92	$ -
BID SCHEDULE #2 - TOTAL AMOUNT					**$ 75,910.00**		**$ 55,932.50**		**$ 64,341.80**		**$ 78,890.00**		**$ 88,243.85**

BID SCHEUDLE #3															
ITEM NO.	ITEM DESCRIPTION	QTY	UNIT	ENGINEER'S ESTIMATE		CALIBER CONTRACTOR LLC		WRX CONTRACTING		PROGRESSIVE CONTRACTING INC		FELLER ENTERPRISES	
				UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT	UNIT COST	AMOUNT
1	MOBILIZATION	0	LUMP	$ 11,000.00	$ -	$ 3,500.00	$ -	$ 8,200.00	$ -	$ 9,300.00	$ -	$ 10,000.00	$ -
2	CITY FURNISHED, CONTRACTOR INSTALLED PAVILION (45' X 30')	0	LUMP	$ 50,000.00	$ -	$ 13,500.00	$ -	$ 16,800.00	$ -	$ 25,100.00	$ -	$ 66,473.20	$ -
3	REMOVE PAVILION	0	LUMP	$ 7,500.00	$ -	$ 3,000.00	$ -	$ 5,197.50	$ -	$ 11,600.00	$ -	$ 10,409.18	$ -
4	REMOVE CONCRETE FLATWORK	0	SQ FT	$ 3.00	$ -	$ 2.50	$ -	$ 2.04	$ -	$ 4.00	$ -	$ 2.22	$ -
5	CONCRETE FLATWORK (4" THICK)	0	SQ FT	$ 9.00	$ -	$ 8.13	$ -	$ 11.01	$ -	$ 8.20	$ -	$ 11.63	$ -
6	CONCRETE FLATWORK (5" THICK PAVILION SLAB)	0	SQ FT	$ 16.00	$ -	$ 10.00	$ -	$ 12.21	$ -	$ 10.80	$ -	$ 16.10	$ -
7	PAVILION SPREAD FOOTING (3'-6" X 3'-6")	0	EACH	$ 1,000.00	$ -	$ 2,000.00	$ -	$ 1,500.00	$ -	$ 1,200.00	$ -	$ 984.80	$ -
8	REMOVE ELECTRICAL PEDESTAL	0	EACH	$ 1,000.00	$ -	$ 1,281.25	$ -	$ 825.00	$ -	$ 1,080.00	$ -	$ 2,288.94	$ -
9	NEW UNMETERED 100 AMP ELECTRICAL PEDESTAL W/CIRCUIT BREAKERS	0	EACH	$ 5,000.00	$ -	$ 1,281.25	$ -	$ 2,420.00	$ -	$ 4,300.00	$ -	$ 4,694.05	$ -
10	ARCHITECTURAL WALL PACK	0	EACH	$ 1,500.00	$ -	$ 640.63	$ -	$ 550.00	$ -	$ 1,300.00	$ -	$ 1,420.85	$ -
11	OUTLET, WP GFI	0	EACH	$ 1,000.00	$ -	$ 320.31	$ -	$ 110.00	$ -	$ 800.00	$ -	$ 871.92	$ -
	BID SCHEDULE #3 - TOTAL AMOUNT				**$ -**		**$ -**		**$ -**		**$ -**		**$ -**
	BID SCHEDULES #1 & #2 TOTAL				**$ 164,510.00**		**$ 117,864.50**		**$ 141,477.80**		**$ 167,270.00**		**$ 178,967.08**

P:\2023\23-034 - JC Snow Pavilion Replacement\Plans\GR-00.dwg Feb 19, 2024 - 10:51am



SHEET GR-00	PROJECT	JC SNOW PARK PAVILIONS REPLACEMENT PROJECT	DATE 2/19/24	DRAWN BY PBG	CHECKED BY TAR
	INQUIRY NUMBER	24-109 / MAINLINE PROJ. # 23-034	Phil B. Giles		
	SHEET NAME	OVERALL PAVILION LAYOUT GRADING SHEET	PROFESSIONAL ENGINEER		

MAINLINE ENGINEERING
321 NORTH MALL DRIVE
SUITE T101
ST. GEORGE, UT 84790

CITY OF ST. GEORGE
PARK PLANNING
390 NORTH 3050 EAST
ST. GEORGE, UT 84790

NO.	REVISIONS	BY	DATE

Agenda Date: 04/04/2024 **Agenda Item Number:** 4e

Subject:

Consider approval to award bid to Interstate Rock Products for the construction of portions of the Halfway Wash Trail (North).

Item at-a-glance:

Staff Contact: Paul Stead

Applicant Name: Paul Stead

Reference Number: 23-159

Address/Location:

approximately 1500 North Falcon Drive

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

This portion of the trail will connect the Snow Canyon Parkway trail to the Red Cliffs Desert Reserve. Staff met with residents of the Paradise Canyon community in the area and addressed concerns regarding the trail proximity to residents, the private roads etc. Adjustments were made to the trail alignment based on resident feedback and a bridge was added to the project. This keeps the trail within City property, gives residents more of a buffer and provides a better trail experience.

Staff Narrative (need/purpose):

Construction Bids were opened on March 21 for the Halfway Wash Trail project (23-159). The city received five bids and the low bid is from WRX Contracting, with a bid from Interstate Rock Products within 5% of the low bid. Interstate Rock Products is selected as the local preference/responsible bidder, qualifying as they are willing to match the low bid. See attached bid tab, letter from Interstate Rock and construction plans. Construction is planned to start mid April and should be completed before 6/30/2024.

Name of Legal Dept approver: Alicia Galvany Carlton

Budget Impact:

Cost for the agenda item: $396,228.70

Amount approved in current FY budget for item: $510,473

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

With all encumbered expenses this will push this project over budget by about $5,000. Park Impact Funds will be re-allocated to cover this expense.

Description of funding source:

Park Impact Fund

Recommendation (Include any conditions):

Approve

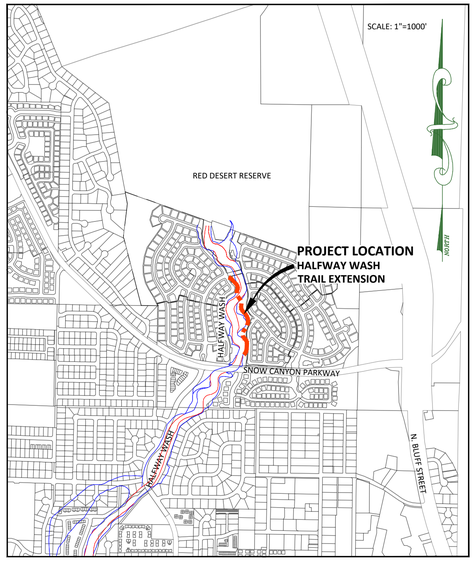
BID TABULATION
HALFWAY WASH NORTH TRAIL
PREPARED BY Alliance Consulting
Project No. 4629-23
CLOSING DATE 03-21-2024
INQUIRE NO. 23-159

ALLIANCE CONSULTING
A Planning and Engineering Firm
2303 North Coral Canyon Blvd
Suite 201
Washington, UT 84780
t. 435.673.8060
f. 435.673.8065

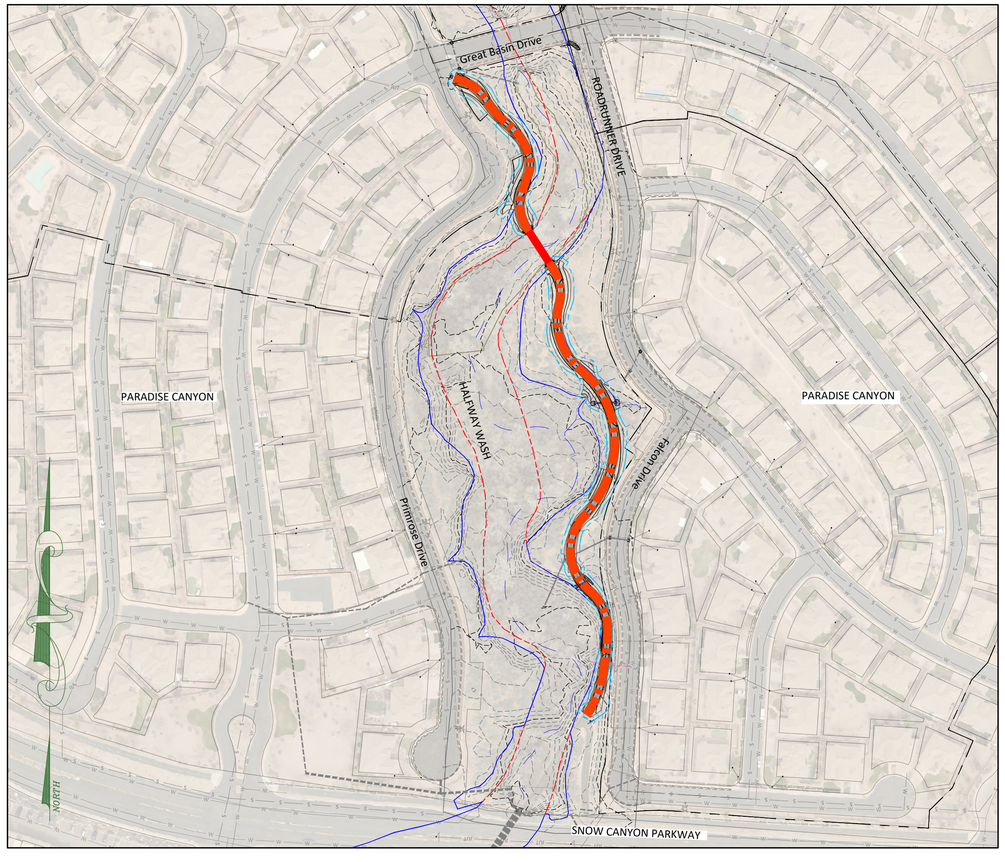
HALFWAY WASH NORTH TRAIL

No.	Item	Unit	Quantity	WRX Contracting		Interstate Rock		Caliber Contractor LLC		Progressive Contracting		JNJ Engineering Construction Inc.	
				Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
1	General Condition/Mobilization	LS	1	$38,000.00	$38,000.00	$37,700.00	$37,700.00	$8,548.50	$8,548.50	$65,000.00	$65,000.00	$89,000.00	$89,000.00
2	Dust Control	LS	1	$19,600.00	$19,600.00	$18,700.00	$18,700.00	$7,380.00	$7,380.00	$7,000.00	$7,000.00	$13,600.00	$13,600.00
3	Traffic Control (Trail and Road)	LS	1	$2,500.00	$2,500.00	$15,100.00	$15,100.00	$15,127.52	$15,127.52	$14,000.00	$14,000.00	$12,500.00	$12,500.00
4	Clear & Grub/ Tree Removal	LS	1	$18,860.00	$18,860.00	$8,400.00	$8,400.00	$22,140.00	$22,140.00	$10,000.00	$10,000.00	$69,225.00	$69,225.00
5	Pre-Construction Condition/SWPPP Documentation	LS	1	$3,000.00	$3,000.00	$5,550.00	$5,550.00	$11,420.55	$11,420.55	$14,000.00	$14,000.00	$6,790.00	$6,790.00
6	Berm	LF	1,070	$3.50	$3,745.00	$4.90	$5,243.00	$6.15	$6,580.50	$3.50	$3,745.00	$32.00	$34,240.00
7	Wattles	LF	100	$5.00	$500.00	$5.50	$550.00	$5.35	$535.00	$22.00	$2,200.00	$79.00	$7,900.00
8	Earthwork/Re-work/Imported Fill (Approx 640 CY)	LS	1	$21,081.60	$21,081.60	$40,640.00	$40,640.00	$36,900.00	$36,900.00	$102,400.00	$102,400.00	$40,192.00	$40,192.00
9	Install Stacked Rock Walls with Geo-Grid Fabric (Basalt Rock)	SF	1,990	$48.49	$96,495.10	$30.00	$59,700.00	$31.98	$63,640.20	$65.00	$129,350.00	$48.00	$95,520.00
10	Install Diamond Block Walls	SF	1,100	$29.48	$32,428.00	$32.50	$35,750.00	$36.90	$40,590.00	$40.00	$44,000.00	$22.40	$24,640.00
11	18" HDPE Storm Drain Pipe	LF	30	$85.00	$2,550.00	$75.50	$2,265.00	$123.00	$3,690.00	$103.00	$3,090.00	$88.00	$2,640.00
12	12" HDPE Storm Drain Pipe	LF	20	$75.00	$1,500.00	$63.00	$1,260.00	$110.70	$2,214.00	$95.00	$1,900.00	$88.00	$1,760.00
13	18" End Section with Rip-Rap & Filter Fabric	Each	2	$685.00	$1,370.00	$2,700.00	$5,400.00	$1,968.00	$3,936.00	$5,200.00	$10,400.00	$1,495.00	$2,990.00
14	12" End Section with Rip-Rap & Filter Fabric	Each	2	$600.00	$1,200.00	$2,150.00	$4,300.00	$1,845.00	$3,690.00	$5,400.00	$10,800.00	$1,495.00	$2,990.00
15	12" D50 Rip-Rap & Filter Fabric (Basalt Rock)	SF	225	$9.00	$2,025.00	$16.50	$3,712.50	$18.45	$4,151.25	$11.00	$2,475.00	$98.00	$22,050.00
16	2.5" Thick Asphalt(Voidless Asphalt Mix)	SF	10,750	$1.89	$20,317.50	$1.90	$20,425.00	$4.13	$44,397.50	$3.10	$33,325.00	$4.80	$51,600.00
17	6" thick Concrete Trail Flatwork with Base	SF	200	$16.00	$3,200.00	$19.00	$3,800.00	$11.07	$2,214.00	$9.50	$1,900.00	$16.00	$3,200.00
18	6" Thick Type II Gravel Roadbase (Trail)	SF	10,750	$1.53	$16,447.50	$1.60	$17,200.00	$2.46	$26,445.00	$2.00	$21,500.00	$3.40	$36,550.00
19	Shoulder Type II Gravel Roadbase	SF	4,900	$1.53	$7,497.00	$1.55	$7,595.00	$2.46	$12,054.00	$2.20	$10,780.00	$3.40	$16,660.00
20	Saw Cut and Tie to Existing Trail	LS	1	$500.00	$500.00	$330.00	$330.00	$615.00	$615.00	$1,500.00	$1,500.00	$3,900.00	$3,900.00
21	Remove and Replace Existing ADA Ramp Match Stain	Each	1	$3,500.00	$3,500.00	$4,800.00	$4,800.00	$3,075.00	$3,075.00	$3,600.00	$3,600.00	$5,980.00	$5,980.00
22	Signs Plaques and Wood Posts	Each	2	$250.00	$500.00	$580.00	$1,160.00	$369.00	$738.00	$700.00	$1,400.00	$990.00	$1,980.00
23	Trail Pavement Markings	LS	1	$5,000.00	$5,000.00	$1,050.00	$1,050.00	$645.75	$645.75	$2,320.00	$2,320.00	$3,529.00	$3,529.00
24	Trail Safety Rail (Powder-Coated)	LF	200	$110.86	$22,172.00	$150.00	$30,000.00	$209.10	$41,820.00	$105.00	$21,000.00	$238.00	$47,600.00
25	Install 60' Pedestrian Span Bridge with Concrete Deck	LS	1	$20,180.00	$20,180.00	$30,800.00	$30,800.00	$6,765.00	$6,765.00	$53,000.00	$53,000.00	$96,900.00	$96,900.00
26	Pedestrian Span Bridge Concrete Abutment Walls	LS	1	$52,060.00	$52,060.00	$54,500.00	$54,500.00	$83,025.00	$83,025.00	$120,000.00	$120,000.00	$94,786.00	$94,786.00
			TOTAL		**$396,228.70**		**$415,930.50**		**$452,337.77**		**$690,685.00**		**$788,722.00**

HALFWAY WASH NORTH TRAIL PROJECT
FOR
CITY OF ST. GEORGE
LOCATED IN
CITY OF ST. GEORGE,
WASHINGTON COUNTY, UT



CITY OF ST. GEORGE VICINITY MAP



GRAPHIC SCALE

120 0 60 120 240

(IN FEET)

1 inch = 120 ft.

If Printed 11x17 use Half Scale

SHEET NO.		DESCRIPTION
1	C1.0	COVER
2	C1.1	GRADING OVERALL
3	C1.2	OVERALL CUT/FILL
4	C1.3	OVERALL DUST AND SWPPP/ EROSION CONTROL PLAN
5	C2.0	TRAIL GRADING PLAN AND PROFILE
6	C2.1	TRAIL GRADING PLAN AND PROFILE
7	C2.2	TRAIL GRADING PLAN AND PROFILE
8	C2.3	TRAIL GRADING PLAN AND PROFILE
9	C3.0	TRAIL OVERALL PAVING
10	C4.0	DETAILS
11	C4.1	WALLS & PED SPAN BRIDGE DETAILS
12	C4.2	PED BRIDGE DETAILS
13	C4.3	UTILITY NOTES

GEOTECHNICAL REPORTS:

1. Landmark Testing and Engineering: Project NO. 19341, Halfway Wash Trail Extension. Dated June, 28, 2019

DEVELOPER

CITY OF ST.GEORGE
ATT: PAUL STEAD
390 N 3050 E
ST. GEORGE, UT 84790
PHONE: (435) 627-4539
EMAIL: paul.stead@sgcity.org

ENGINEER

ALLIANCE CONSULTING
2303 N. CORAL CANYON BLVD. SUITE 201
WASHINGTON, UT 84780-0577
PHONE: (435) 673-8060
FAX: (435) 673-8065
ENGINEER: MR. DELOSS HAMMON
CONTACT: MR. CRAIG COATS
EMAIL: ccoats@allianceconsulting.us

CALL 811 BEFORE YOU DIG
811
SAFE DIGGING PARTNER
BLUE STAKES OF UTAH

GENERAL NOTES:

1. Unless shown otherwise on these plans, all construction shall conform to the codes and ordinances of St. George City, the State of Utah Administrative Codes, "The International Plumbing Code", and the "International Building Code" latest editions as administered by St. George City.
2. The Contractor shall be responsible for the location of and protection of all existing underground utilities and overhead power line during construction.
3. The Benchmark for this Project is the North 1/4 of Section 14, Township 42 South, Range 16 West Salt Lake Base and Meridian - Elevation: 2996.71
3. Existing contour and finish contour interval is 2 feet.
4. Any necessary design modifications shall be approved by the design engineer.
5. All grading to be within ±0.1' of proposed elevation.
6. Project shall install an information sign on site before construction begins. This sign shall have a minimum size, placement location and content information with the company name, phone & permit number.
7. A mandatory pre-construction meeting shall be required on all projects prior to any grubbing, grading, or construction activities. The permit holder shall be required to notify all Development Services inspectors.
8. Projects shall submit a dust control plan with details on equipment scheduling and reporting of dust control activities.
9. Follow Appendix J standards found in the IBC.
10. All work materials shall meet City of St. George standards.

CONSTRUCTION NOTES:

1. All excavations and grading shall be in accordance with the requirements of the City of St. George [phone:435-627-4000], of the "International Building Code", 2018 edition, and the specifications and requirements included in the Tech Ridge Grading Recommendations...
1. All excavation, grading, and fill operations within the building area should be observed by the Field Engineer to verify subsoil conditions and determine adequacy of site preparation, suitability of fill materials and compliance with compaction requirements.
2. The Contractor shall provide suitable equipment to control dust and air pollution caused by construction operations. The Contractor shall also provide suitable mud and dirt containment to maintain clean conditions on the work site, access roadways, and adjacent properties.
3. Project shall submit a Dust Control Plan with details on equipment, scheduling and reporting of dust control activities.
4. Contractor is responsible and required to obtain their own UPDES/NOI permits.
5. It is the contractors responsibility to identify all and any SWPPP requirements.
6. Prior to and during compaction operations, all backfill material shall have the required moisture content uniform throughout each layer.
7. All Rip-Rap rock shall be Angular Basalt Rock and approved by owner.
8. Contractor must coordinate with other Contractors working in areas.
9. Contractor must protect existing facilities.
10. Any Damage to Existing Sidewalk, Curb & Gutter shall be replaced.

Date: 2-06-24

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH
NORTH TRAIL
COVER

FOR

CITY OF ST. GEORGE

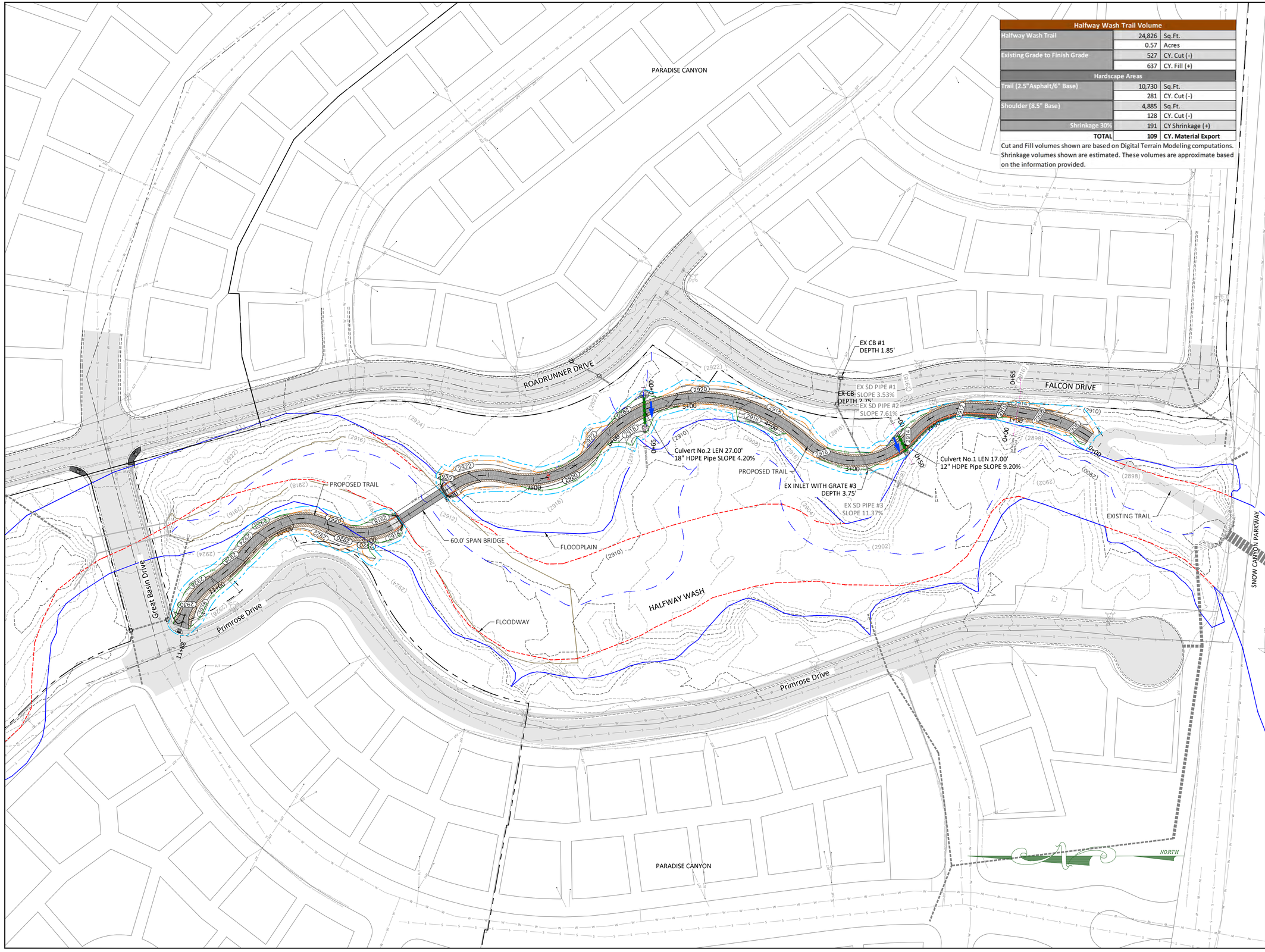
LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/2024
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=120'
Client No.	Project No.
4491-4629	4491-4629

Drawing Sheet
C1.0

Sheet 1 of 13 Sheets



Halfway Wash Trail Volume		
Halfway Wash Trail	24,826	Sq.Ft.
	0.57	Acres
Existing Grade to Finish Grade	527	CY. Cut (-)
	637	CY. Fill (+)
Hardscape Areas		
Trail (2.5"Asphalt/6" Base)	10,730	Sq.Ft.
	281	CY. Cut (-)
Shoulder (8.5" Base)	4,885	Sq.Ft.
	128	CY. Cut (-)
Shrinkage 30%	191	CY Shrinkage (+)
TOTAL	**109**	**CY. Material Export**

Cut and Fill volumes shown are based on Digital Terrain Modeling computations. Shrinkage volumes shown are estimated. These volumes are approximate based on the information provided.

Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

- 100 YEAR FLOODPLAIN
- FLOODWAY
- 10' TRAIL WITH SHOULDER BASE
- SUBDIVISION BOUNDARIES
- STORM DRAIN
- EXISTING STORM DRAIN
- CUT LINE
- FILL LINE
- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE
- PROPOSED STORM DRAIN FLOW DIRECTION

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL OVERALL GRADING

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=50'
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet

C1.1

Sheet 2 of 13 Sheets

PARADISE CANYON

ROADRUNNER DRIVE

FALCON DRIVE

Great Basin Drive

Primrose Drive

HALFWAY WASH

SNOW CANYON PARKWAY

PARADISE CANYON

NORTH

ELEVATIONS TABLE

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-6.131	-5.000	0.00	
2	-5.000	-4.000	70.50	
3	-4.000	-3.000	575.78	
4	-3.000	-2.000	1373.48	
5	-2.000	-1.000	4070.61	
6	-1.000	0.000	5737.71	
7	0.000	1.000	6565.61	
8	1.000	2.000	3499.74	
9	2.000	3.000	1533.05	
10	3.000	4.000	579.94	
11	4.000	5.000	466.34	
12	5.000	6.486	181.77	

Halfway Wash Trail Volume		
Halfway Wash Trail	24,826	Sq.Ft.
	0.57	Acres
Existing Grade to Finish Grade	527	CY. Cut (-)
	637	CY. Fill (+)
Hardscape Areas		
Trail (2.5"Asphalt/6" Base)	10,730	Sq.Ft.
	281	CY. Cut (-)
Shoulder (8.5" Base)	4,885	Sq.Ft.
	128	CY. Cut (-)
Shrinkage 30%	191	CY Shrinkage (+)
TOTAL	**109**	**CY. Material Export**

Cut and Fill volumes shown are based on Digital Terrain Modeling computations. Shrinkage volumes shown are estimated. These volumes are approximate based on the information provided.

Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

- 100 YEAR FLOODPLAIN
- FLOODWAY
- 10' TRAIL WITH SHOULDER BASE
- SUBDIVISION BOUNDARIES
- STORM DRAIN
- EXISTING STORM DRAIN
- CUT LINE
- FILL LINE
- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL OVERALL VOLUME

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=50'
Client No.	Project No.
4491-4629	4491-4629

Drawing Sheet
C1.2

Sheet 3 of 13 Sheets

PARADISE CANYON

ROADRUNNER DRIVE

FALCON DRIVE

SNOW CANYON PARKWAY

Great Basin Drive

Primrose Drive

HALFWAY WASH

PROPOSED TRAIL

EXISTING TRAIL

FLOODPLAIN

FLOODWAY

60.0' SPAN BRIDGE

BERM BAG

TRACKING PAD
SEE DETAIL A/C4.0

STRAW WATTLE
LEN 20'
SEE DETAIL D/C4.0

STRAW WATTLE
LEN 30'
SEE DETAIL D/C4.0

Temporary Erosion and Sediment Control Notes

1. Provide and Maintain all Erosion Control Measures, Plans, Permits, Maintenance, Expenses, Etc.
2. All temporary erosion and sediment control devices shall be installed, monitored, and maintained until final cover has been established and accepted by the City.
3. Inspections shall be performed by the Contractor at Least Once Every 7 Calendar Days and within 24 Hours After a Storm Event of 0.5" or More. Inspections shall be documented in Writing and shall Include: Date and Time, Name of Inspector, Findings, Corrective Actions Taken, and Dates and Amounts of Rainfalls.
4. All Erosion Prevention and Sediment Control devices must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/3 of the height of the device. These repairs must be made within 24 hour of Discovery, or as soon as field conditions allows.
5. Provide Temporary Erosion Protection or Permanent cove for the Exposed soil areas where activities have been completed or temporarily cease within 21 day of ceasing earth moving activities.
6. Sediment tracked on the street shall be removed within 24 hours using a street sweeper with pick-up broom
7. All temporary Erosion and Sediment control devices must be removed by the Contractor when final cover is established and acceptable to the Owner.
8. If construction traffic proceeds onto existing paved roadway tire tracking pads will be required.

DUST CONTROL NOTES

1. The Contractor shall provide suitable equipment to control dust and air pollution caused by construction operations. The Contractor shall also provide suitable mud and dirt containment to maintain clean conditions on the work site, access roadways, and adjacent properties.
2. Project shall submit a Dust Control Plan with details on equipment, scheduling and reporting of dust control activities.
3. All non-roadway dust control material shall be firmly placed and compacted to a 3" crust at 5% over optimum, and all grading shall be compacted to 95%.

THESE DUST CONTROL MEASURES MUST BE OBSERVED AT ALL TIMES:

1. Apply water by means of trucks, hoses and/or sprinklers at sufficient frequency and quantity, prior to conducting, during and after earthmoving activities.
2. Pre-apply water to the depth of the proposed cuts, or equipment penetration.
3. Apply water as necessary and prior to expected wind events.
4. Operate haul vehicles appropriately in order to minimize fugitive dust and apply water as necessary during loading operations.

DISTURBED SURFACE AREAS OR INACTIVE CONSTRUCTION SITES:

1. When active construction operations have ceased, apply water at sufficient frequency and quantity to develop a surface crust and prior to expected wind events
2. Install fence barrier and /or "no trespassing" signs to prevent access to disturbed suffice areas.

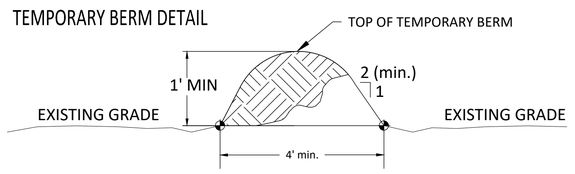
NORTH

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.
If Printed 11x17 use Half Scale

TEMPORARY BERM DETAIL



Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

- 100 YEAR FLOODPLAIN
- FLOODWAY
- 10' TRAIL WITH SHOULDER BASE
- SUBDIVISION BOUNDARIES
- STORM DRAIN
- EXISTING STORM DRAIN
- CUT LINE
- FILL LINE
- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE

SWPPP LEGEND

- 12" WATTLE - 100 LNFT
- DIRT BERM - 1,070 LNFT
- TRACKING PAD - 2 LOCATIONS

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL OVERALL DUST AND SWPPP/ EROSION CONTROL PLAN

FOR

CITY OF ST. GEORGE

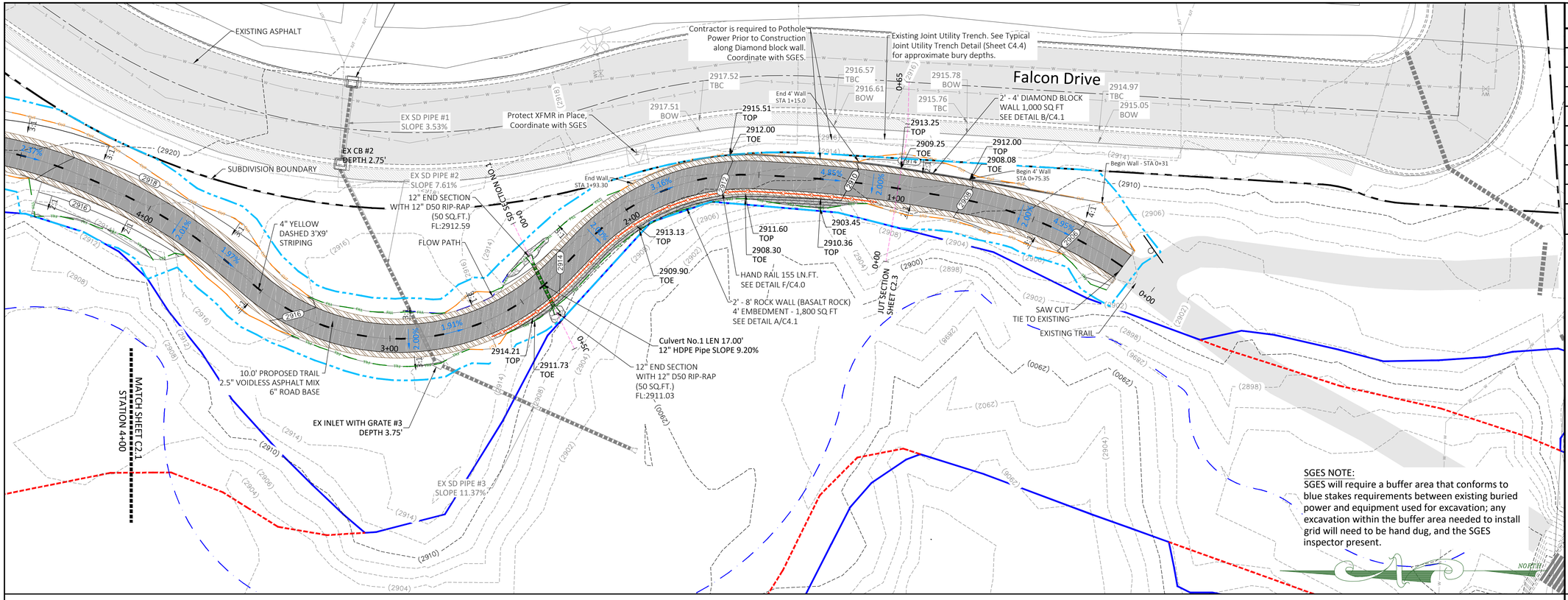
LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

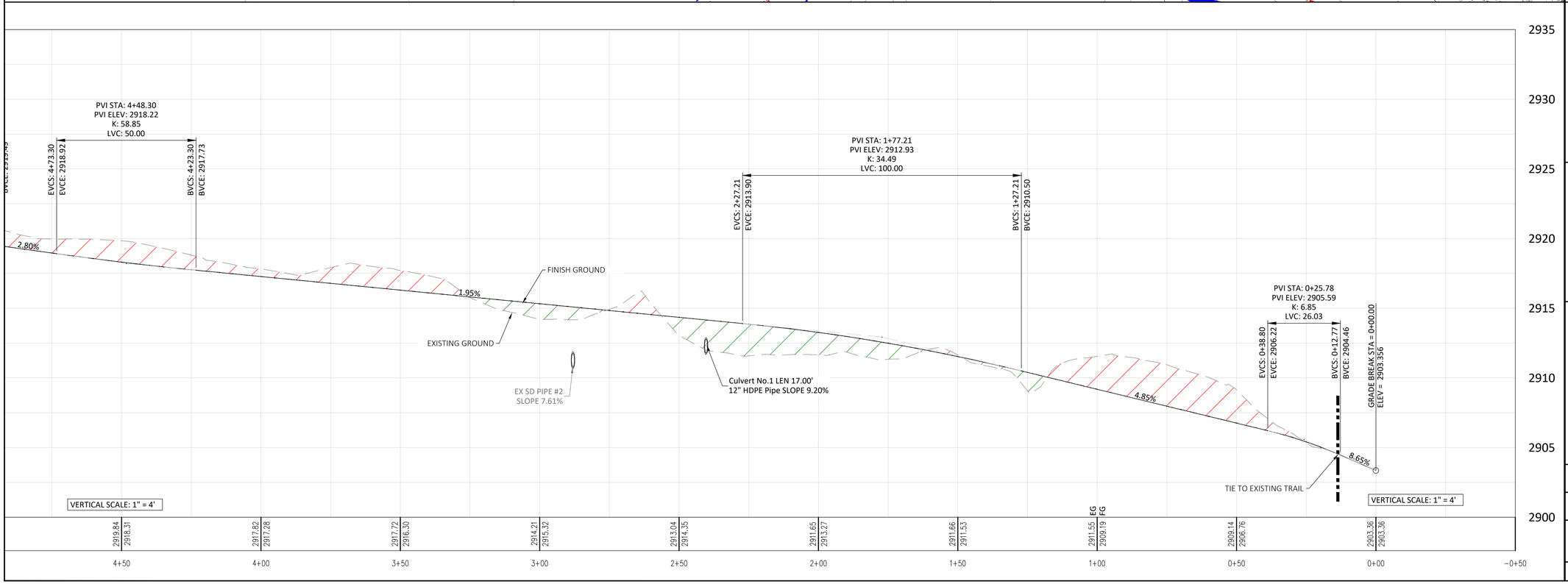
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
8/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=50'
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C1.3

Sheet 4 of 13 Sheets





Date: 2-06-24

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS
2	12-23-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

- 100 YEAR FLOODPLAIN
- FLOODWAY
- 10' TRAIL WITH SHOULDER BASE
- SUBDIVISION BOUNDARIES
- STORM DRAIN
- EXISTING STORM DRAIN
- CUT LINE
- FILL LINE
- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL GRADING PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

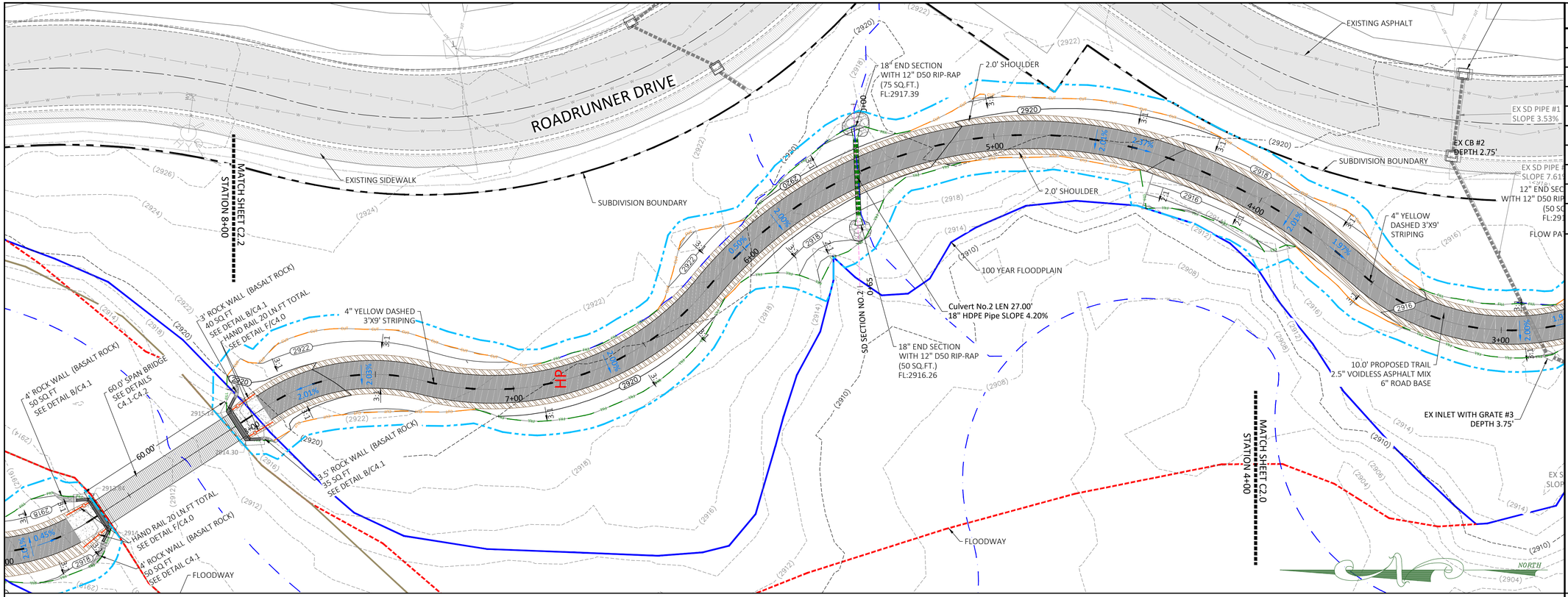
LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

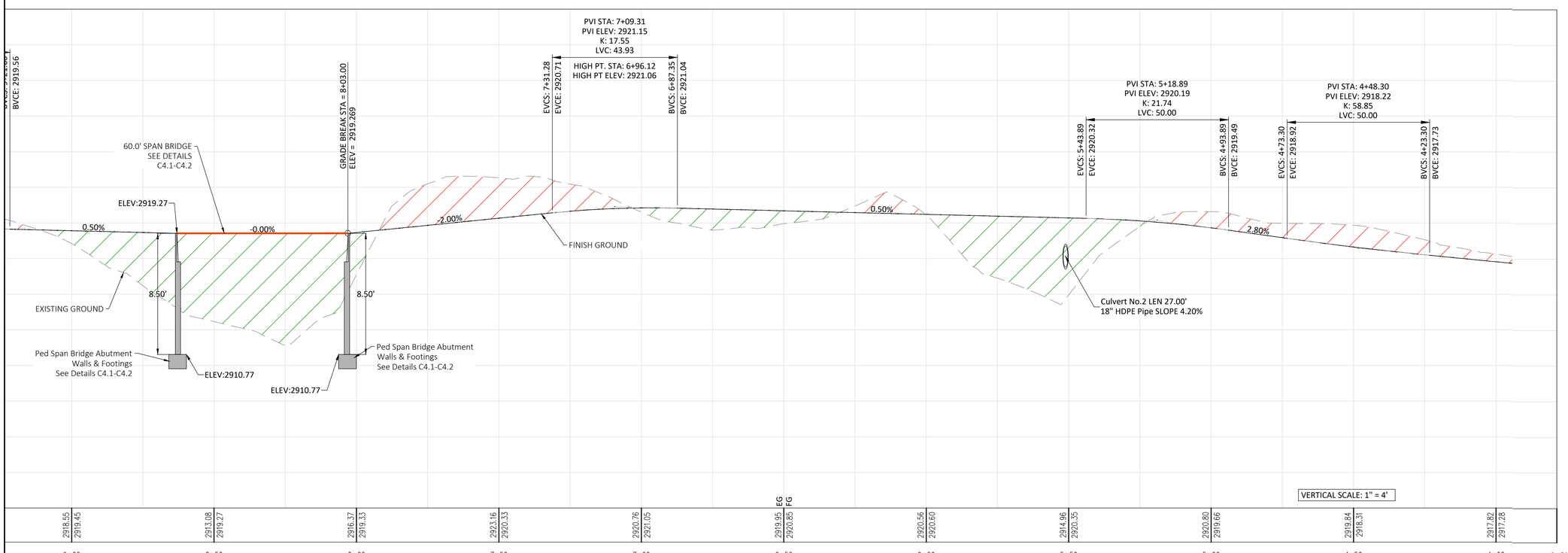
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=20'
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C2.0

Sheet 5 of 13 Sheets





Date: 12-13-2023

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

- 100 YEAR FLOODPLAIN
- FLOODWAY
- 10' TRAIL WITH SHOULDER BASE
- SUBDIVISION BOUNDARIES
- STORM DRAIN
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- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
1 inch = 20 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL GRADING PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

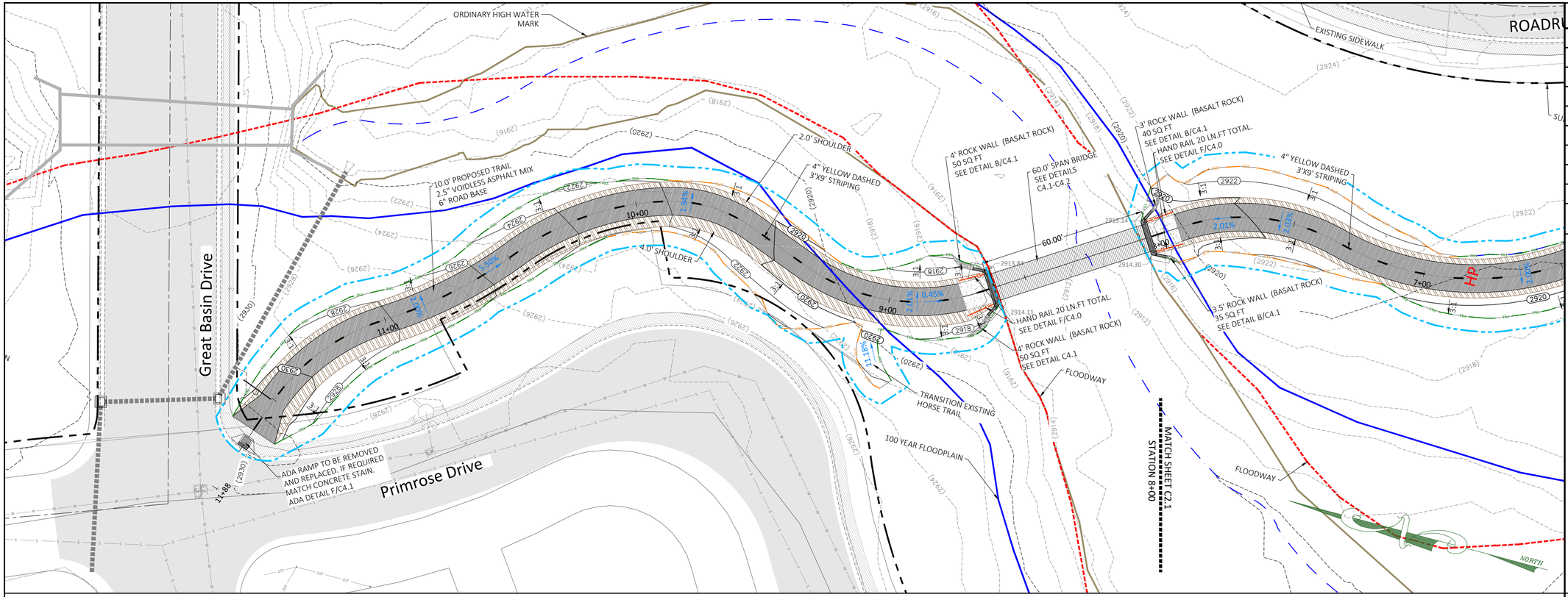
LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

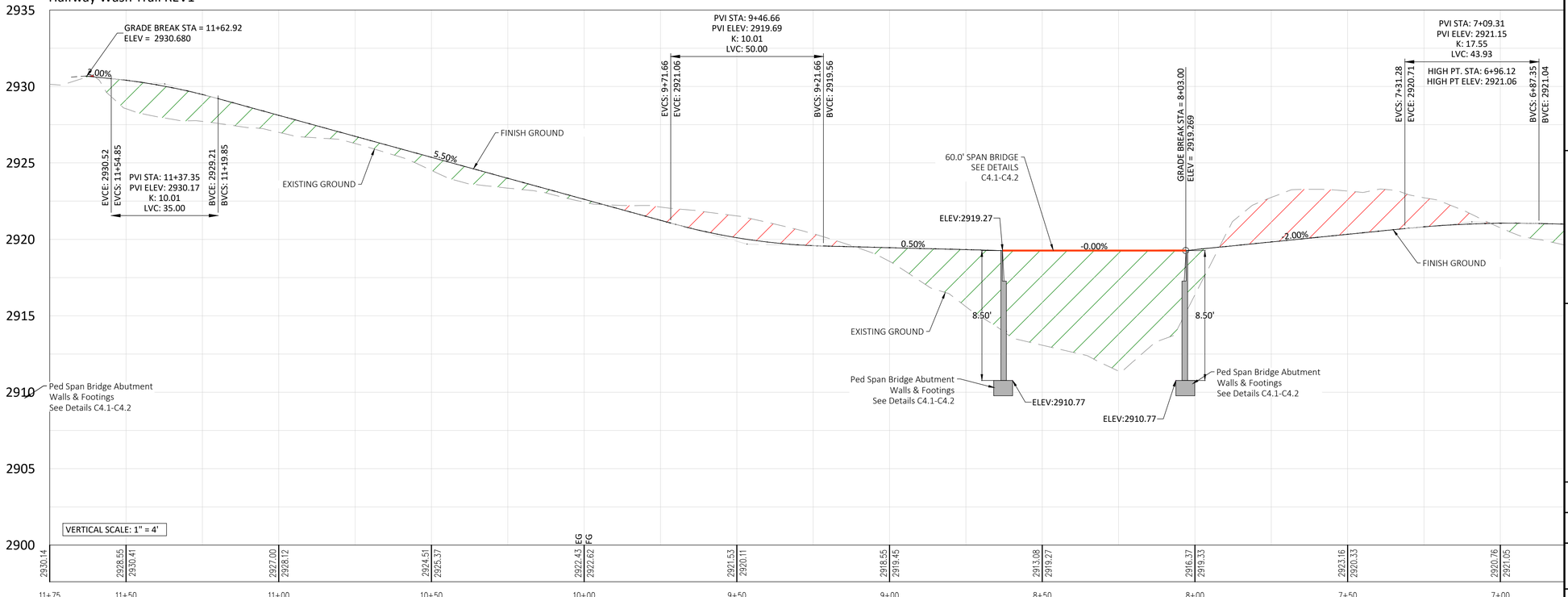
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/25
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=20'
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C2.1

Sheet 6 of 13 Sheets





Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

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GRAPHIC SCALE

20 0 10 20 40
(IN FEET)
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ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
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HALFWAY WASH NORTH TRAIL GRADING PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

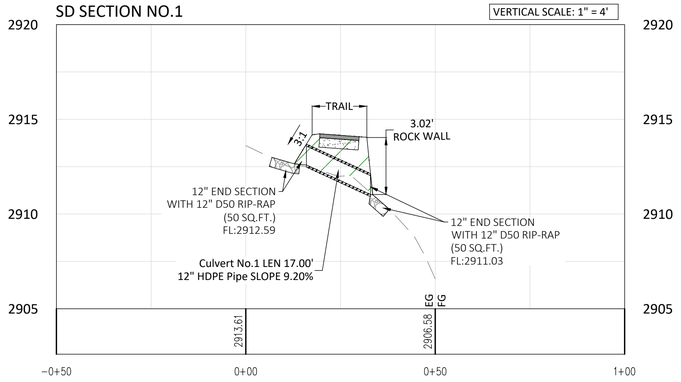
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=20'
Client No. 4491-4629	Project No. 4491-4629

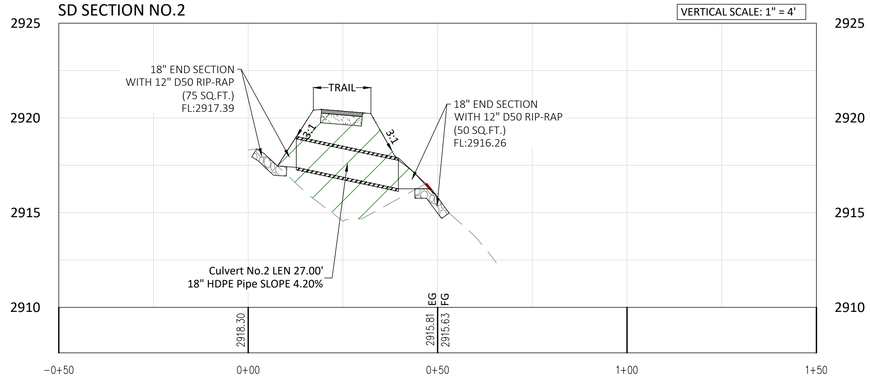
Drawing Sheet
C2.2

Sheet 7 of 13 Sheets

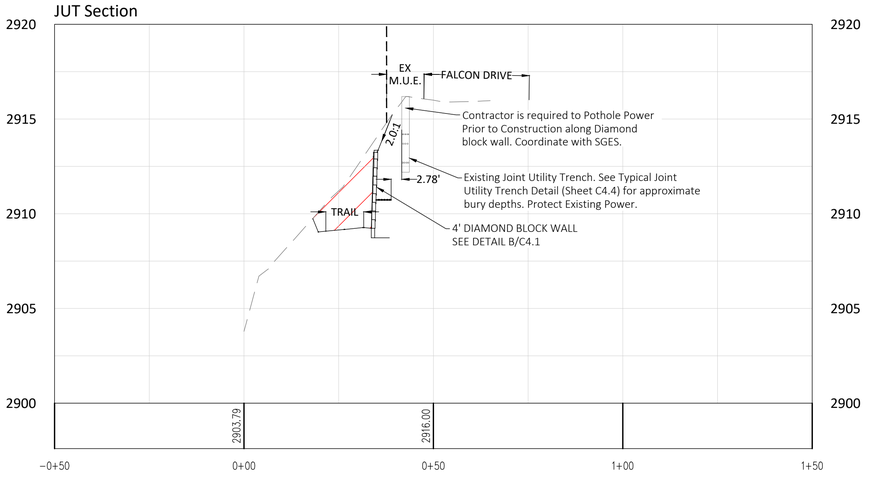
SD SECTION NO.1



SD SECTION NO.2



JUT Section



SGES NOTE:
SGES will require a buffer area that conforms to blue stakes requirements between existing buried power and equipment used for excavation; any excavation within the buffer area needed to install grid will need to be hand dug, and the SGES inspector present.

Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS
2	12-21-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL
GRADING
STORM DRAIN SECTIONS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

Drawn By:	Scale:
AZ	1"=20'
Client No.	Project No.
4491-4629	4491-4629

Drawing Sheet
C2.3

Sheet 8 of 13 Sheets

PARADISE CANYON

ROADRUNNER DRIVE

FALCON DRIVE

INSTALL MUTCD SIGN
#R1-1 18"x318"
WOOD POST

STOP

2' - 4' DIAMOND BLOCK
WALL 1,000 SQ FT
SEE DETAIL B/C4.1

HAND RAIL 155 LN.FT.
SEE DETAIL F/C4.0

SAW CUT EX TRAIL

2' - 5' ROCK WALL
(BASALT ROCK)
4' EMBEDMENT
1,800 SQ FT
SEE DETAIL A/C4.1

EXISTING TRAIL

SNOW CANYON PARKWAY

6"/6" THICK CONCRETE
FLAT WORK
100 SF.

4" SINGLE YELLOW
DASHED 3'X9' STRIPING

10.0' PROPOSED TRAIL
2.5" VOIDLESS ASPHALT MIX
6" ROAD BASE

2.0' WIDE
SHOULDER BASE

4" SINGLE YELLOW
DASHED 3'X9' STRIPING

10.0' PROPOSED TRAIL
2.5" VOIDLESS ASPHALT MIX
6" ROAD BASE

HAND RAIL 20 LN.FT. TOTAL
SEE DETAIL F/C4.0

60.0' SPAN BRIDGE
SEE DETAILS C4.1-C4.2

HAND RAIL 20 LN.FT. TOTAL
SEE DETAIL F/C4.0

4.0' WIDE
SHOULDER BASE

FLOODPLAIN

FLOODWAY

HALFWAY WASH

INSTALL MUTCD SIGN
#R1-1 18"x318"
WOOD POST

STOP

Great Basin Drive

Primrose Drive

ADA RAMP TO BE REMOVED
AND REPLACED. IF REQUIRED
MATCH CONCRETE STAIN.
ADA DETAIL F/C4.1

Primrose Drive

PARADISE CANYON

NORTH

Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Design REV2.dwg

LEGEND

- 100 YEAR FLOODPLAIN
- FLOODWAY
- 10' TRAIL WITH SHOULDER BASE
- SUBDIVISION BOUNDARIES
- STORM DRAIN
- EXISTING STORM DRAIN
- CUT LINE
- FILL LINE
- HAND RAIL
- SPAN BRIDGE
- EXISTING ASPHALT
- OHWM
- LIMIT OF DISTURBANCE

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
1 inch = 50 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH
NORTH TRAIL
OVERALL PAVING

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

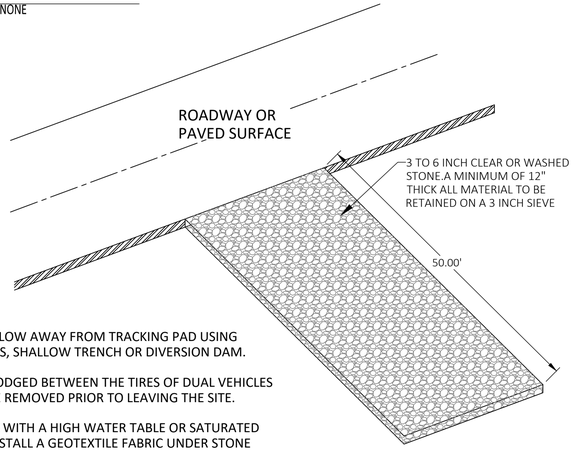
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	1"=50'
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C3.0

Sheet 9 of 13 Sheets

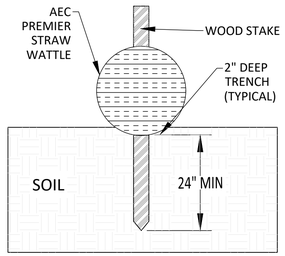
A C4.0 TRACKING PAD DETAIL
SCALE: NONE



NOTES:
1. DIVERT FLOW AWAY FROM TRACKING PAD USING CULVERTS, SHALLOW TRENCH OR DIVERSION DAM.
2. ROCKS LODGED BETWEEN THE TIRES OF DUAL VEHICLES SHALL BE REMOVED PRIOR TO LEAVING THE SITE.
3. ON SITES WITH A HIGH WATER TABLE OR SATURATED SOILS. INSTALL A GEOTEXTILE FABRIC UNDER STONE TRACKING PAD.
4. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND /OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

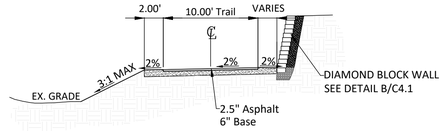
D C4.0 WATTLE DETAIL
SCALE: NONE

WATTLE CROSS SECTION:
ON BARE SOIL

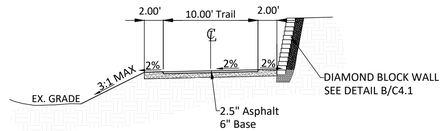


NOTES
1. INSTALL STAKES ALONG WATTLES APPROXIMATELY 3' TO 4' OF SPACING BETWEEN STAKES
2. ENDS OF WATTLES SHALL BE TURNED SLIGHTLY UP SLOPE.
3. RECOMMENDED STAKES ARE 1-½" WIDE x 1-¼" THICK x 30" LONG.
4. STAKES SHALL NOT EXTEND ABOVE THE STRAW WATTLES MORE THAN 2"
5. DO NOT OVERLAP THE ENDS ON TOP OF EACH OTHER.
6. OVERLAP BESIDE EACH END AT A MINIMUM OF 1.0'
7. ALL WATTLES MUST BE INSTALLED AT THE BEGINNING OF CONSTRUCTION UNLESS NOTED OTHERWISE.

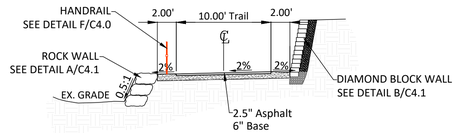
E C4.0 TRAIL SECTION DETAILS
SCALE: NONE



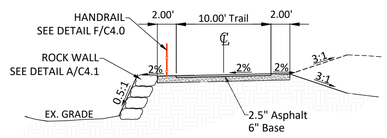
3:1 L DB Wall R - Trail Section
STA: 0+00 - 0+80



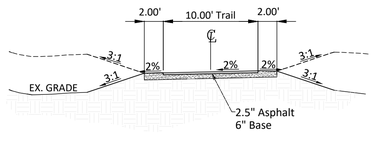
3:1 L DB Wall R - Trail Section
STA: 0+80 - 1+10



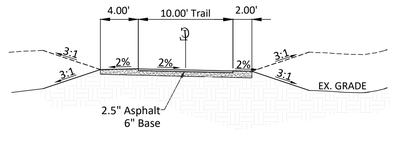
Wall L DB Wall L - Trail Section
STA: 1+10 - 2+05



Wall L 3:1 R - Trail Section
STA: 2+05 - 2+60

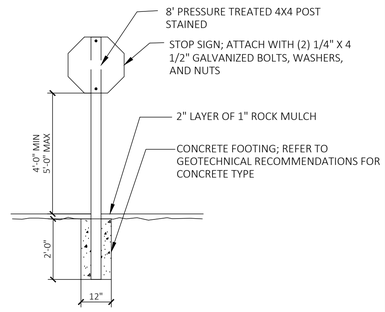


3:1 L 3:1 R - Trail Section
STA: 2+60 - 3+80, 4+45 - 8+00

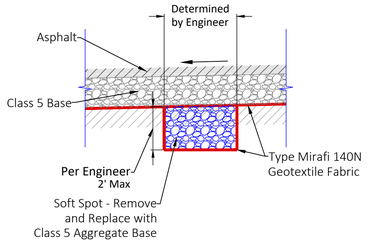


3:1 L 3:1 R - Trail Section
STA: 8+75 - 11+50

G C4.0 TRAIL WOOD POST DETAIL
SCALE: NONE



H C4.0 SOFT SPOT REPAIR
SCALE: NONE

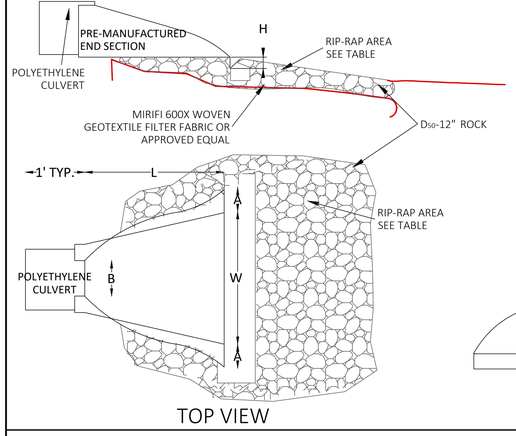


GENERAL NOTES:
1. Over excavate "soft spot" to a maximum of 2'.
2. Place Mirafi 140N Geotextile Fabric in over excavated area.
3. Overlap geotextile fabric per manufacturer specification.
4. Place aggregate base (City Spec) over geotextile fabric Type Mirafi 140N Geotextile in 6 inch lifts between compaction.
5. Proof roll all roadway and repaired soft spots before paving to insure proper conditions.
6. Soft spot repair items are indeterminate and will be paid at the engineers discretion.

B C4.0 OUTLET STRUCTURE WITH RIP-RAP
SCALE: NONE

* MAINTAIN MINIMUM COVER DURING CONSTRUCTION

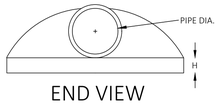
SIDE ELEVATION



TOP VIEW

NOTES:
1. IN ORDER TO ASSURE PROPER FIT WITH 24" AND 36". THESE END SECTIONS ARE ATTACHED BY WELDING TO A SHORT STUB OF 24" OR 36" PIPE AND REQUIRE A STANDARD CONNECTION BAND TO MAKE THE ATTACHMENT.
2. DO NOT USE THESE CULVERT END SECTION WITHIN THE CLEAR ZONE.
3. CLEAR ZONE- THE TOTAL ROADSIDE BORDER AREA, STARTING AT THE EDGE OF THE TRAVELED WAY, AVAILABLE FOR SAFE USE BY ERRANT VEHICLES. THIS AREA MAY CONSIST OF A SHOULDER, A RECOVERABLE SLOPE, A NON-RECOVERABLE SLOPE, AND/OR A CLEAR RUN-OUT AREA. THE DESIRED WIDTH IS DEPENDENT UPON THE TRAFFIC VOLUMES AND SPEEDS, AND ON THE ROADSIDE GEOMETRY.

PIPE DIAMETER (inch)	DIMENSIONS IN INCHES					RIP-RAP AREA (sq.ft.)
	A(1"±)	B MAX	H(1"±)	L(1/2"±)	W(2"±)	
12" and 15"	6 1/2"	10"	6 1/2"	25"	29"	25
18"	7 1/2"	15"	6 1/2"	32"	35"	36
24"	7 1/2"	18"	6 1/2"	36"	45"	49
30"	10 1/2"	N/A	7"	53"	68"	81
36"	10 1/2"	N/A	7"	53"	68"	81
48"	N/A	N/A	N/A	N/A	N/A	100

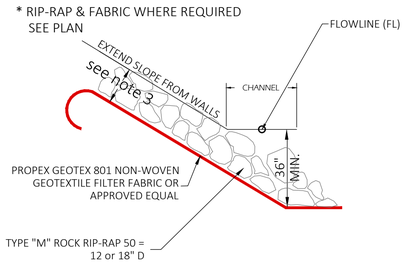


END VIEW

FILL HEIGHT TABLE

CORRUGATED POLYETHYLENE PIPE (AASHTO M-294)		
DIAMETER (in)	MIN. COVER (in) *	MAX. COVER (ft)
12"	12"	36
15"	12"	36
18"	12"	36
24"	12"	36
30"	12"	36
36"	12"	36

C C4.0 RIP RAP DETAIL
SCALE: NONE

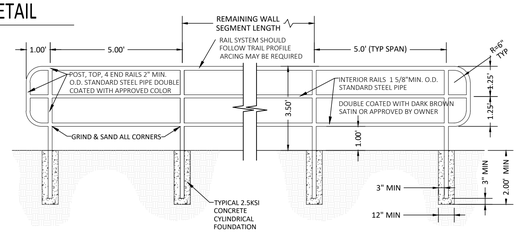


1. FILTER FABRIC SHALL BE PROPEX GEOTEX 801 WOVEN GEOTEXTILE OR AN APPROVED EQUAL. FABRIC SHALL BE PLACED AS SHOWN HEREON AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. CARE SHALL BE TAKEN TO PREVENT FABRIC FROM TEARING DURING ROCK PLACEMENT.
2. ROCK USED FOR HAND PLACED RIP-RAP SHALL BE HARD, DURABLE, ANGULAR IN SHAPE, AND FREE FROM CRACKS, OVERBURDEN, SHALE, AND ORGANIC MATTER. NEITHER BREADTH NOR THICKNESS OF A SINGLE STONE SHALL BE LESS THAN 1/3 ITS LENGTH AND ROUNDED STONES SHALL BE AVOIDED. ROCK HAVING A MINIMUM SPECIFIC GRAVITY OF 2.60 IS PREFERRED; HOWEVER, IN NO CASE SHOULD ROCK HAVE A SPECIFIC GRAVITY LESS THAN 2.50. CLASSIFICATION AND GRADATION FOR RIPRAP IS SHOWN IN THE ROCK GRADATION TABLE. ALL ROCK RIP-RAP SHALL BE INSPECTED BY THE ENGINEER PRIOR TO BACKFILLING.
3. RIP-RAP THICKNESS SHALL BE 2 X MAX. ROCK DIA..
4. ROCK USED SHALL BE BASALT ROCK.

ROCK GRADATION TABLE

Loose Riprap Gradations		Riprap D_{50}**				
Stone Diameter Range (ft)	Percent of Gradation Smaller Than	12"	14"	18"	24"	30"
1.5 D_{50} to 1.7D_{50}	100	18-20	21-24	27-31	36-41	45-51
1.2 D_{50} to 1.4D_{50}	85	14-17	17-20	22-25	29-34	36-42
1.0 D_{50} to 1.15D_{50}	50	12-14	14-16	18-21	24-28	30-35
0.4 D_{50} to 0.6D_{50}	15	5-7	6-9	7-11	10-15	12-18
0.1 D_{50}	10	1	1.5	2	2.5	3
*D50 = Nominal particle size						

F C4.0 HANDRAIL DETAIL
SCALE: NONE



Date: 2-06-2024

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Details.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
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435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH
NORTH TRAIL
DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST.GEORGE, WASHINGTON CO., UT

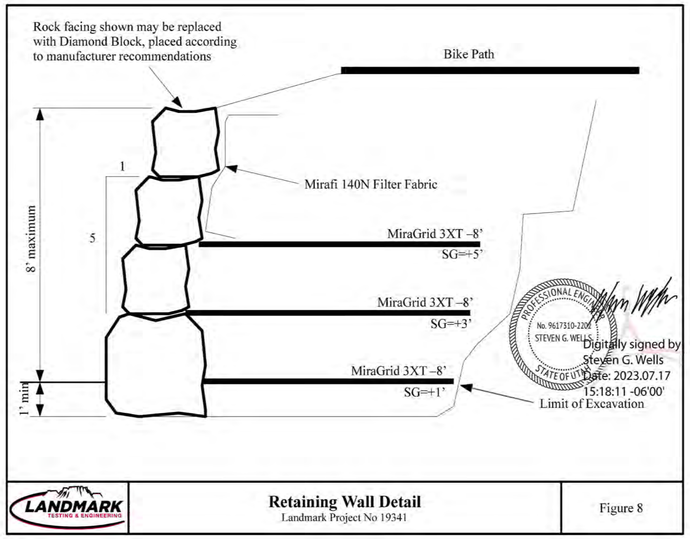
LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/2024
STATE OF UTAH

Drawn By:	Scale:
AZ	NTS
Client No.	Project No.
4491	4491-4629

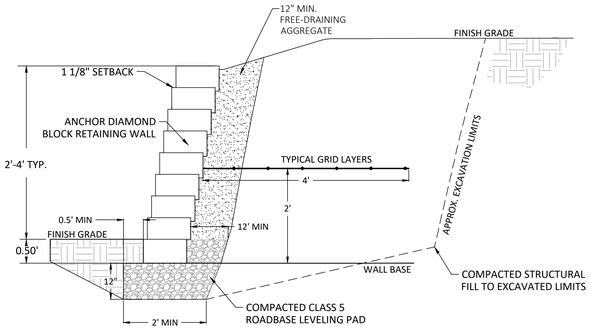
Drawing Sheet
C4.0

Sheet 10 of 13 Sheets

A C4.1 RETAINING WALL
SCALE: NONE



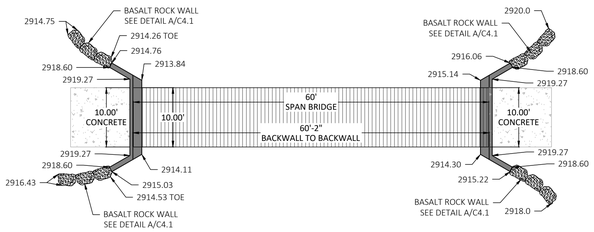
B C4.1 DIAMOND BLOCK WALL
SCALE: NONE



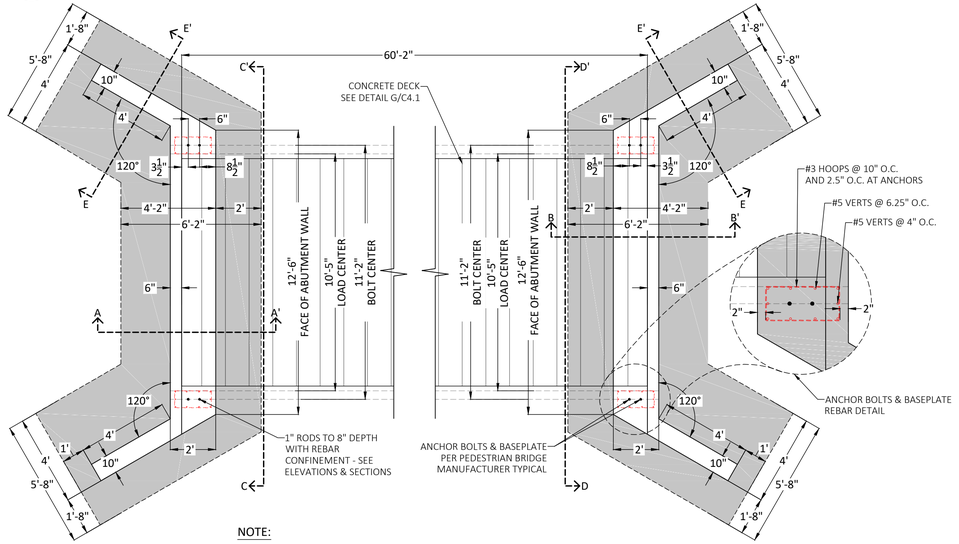
2' TO 4' RETAINING WALL

NOTES:
1. GEOGRID REQUIRED IN RETAINING WALL SYSTEMS WALLS OVER 4 FEET IN HEIGHT SHALL HAVE LAYERS APPROX. 1.5' APART
2. RETAINING WALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ANCHOR DIAMOND WALL SYSTEMS.
3. REFER TO MANUFACTURERS RECOMMENDATIONS FOR ALL DESIGN CRITERIA.

D C4.1 BRIDGE PLAN VIEW W/ ABUTMENT WALLS
SCALE: NONE



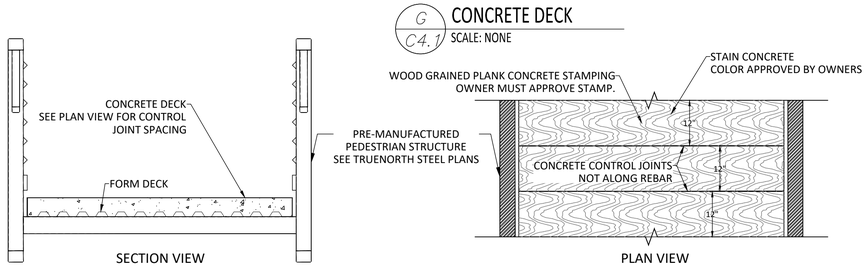
E C4.1 BRIDGE PLAN VIEW W/ ABUTMENT WALLS
SCALE: NONE



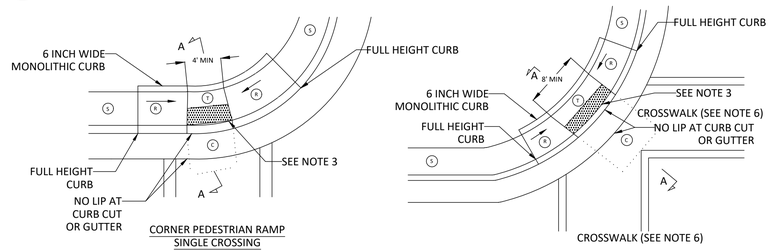
NOTE:

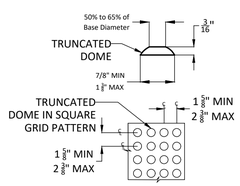
See Sheet C4.2 for Section Details

G C4.1 CONCRETE DECK
SCALE: NONE



F C4.1 ADA RAMP - CORNER
SCALE: NONE





DETECTABLE WARNING SURFACE

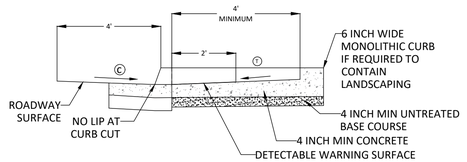
SLOPE TABLE			
	ITEM	MAX. RUNNING SLOPE *	MAX. CROSS SLOPE *
T	TURNING SPACE	2%	2% (c)
R	RAMP	8.33% (a)	2% (c)
C	CLEAR SPACE	5% (b)	2% (c)
S	SIDEWALK	STREET GRADE	2%

* RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL. CROSS SLOPE IS PERPENDICULAR TO PEDESTRIAN TRAVEL

(a) LENGTH OF RUNNING SLOPE FOR PARALLEL RAMPS IS NOT REQUIRED TO EXCEED 15FT.

(b) MAINTAIN CONSISTENCY OF CLEAR SPACE RUNNING SLOPE ACROSS ENTIRE CURB CUT. WARP CUTTER PAN TO MEET REQUITED CLEAR SPACE SLOPE AT CURB CUT.

(c) DO NOT EXCEED THE ROADWAY PROFILE GRADE FOR THE CROSS SLOPE AT CROSSWALKS WITHOUT STOP OR YIELD CONTROL AND AT MID-BLOCK CROSSWALKS.



SECTION A-A

NOTES:
1. DIMENSIONS SHOWN IN THE SLOPE TABLE ON ARE NOT SUBJECT TO CONVENTIONAL INDUSTRY TOLERANCES. CONSTRUCT SIDEWALKS AND RAMPS SUCH THAT THE MAXIMUM OR MINIMUM VALUES ARE NOT EXCEEDED. WORK THAT EXCEEDS THOSE VALUES WILL NOT BE ACCEPTED.
2. PROVIDE DETECTABLE WARNING SURFACE FOR FULL WIDTH OF CURB CUT.
3. LOCATE DETECTABLE WARNING SURFACE SO THE CORNERS NEAREST THE STREET ARE WITHIN 1 INCH OF THE BACK OF CURB.
4. RAMP GRADE BREAK MUST BE PERPENDICULAR TO THE RUNNING SLOPE.
5. CLEAR SPACE AND TURNING SPACE SIZE: 4 FT MIN. X 4 FT MIN.
6. CROSSWALK DELINEATION IF REQUIRED ON PROJECT STRIPING PLAN.
7. ALL TRAIL ADA RAMPS SHALL HAVE AN 8' WIDE DETECTABLE WARNING SURFACE.

Date: 2-06-24

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Bridge Details.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON CO., UT

LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By:	Scale:
AZ	NTS
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C4.1

Sheet 11 of 13 Sheets

A C4.2 BRIDGE SECTION VIEW W/ ABUTMENT WALL

SCALE: NONE

DESIGN CONDITIONS

NOTES:

f'_c = 4,500 PSI

f_y= 60,000 PSI

q_a= 4,000 PSF

TENSION DEVELOPMENT LENGTHS

BAR #	LENGTH
#4	20"
#5	24"
#6	30"

*1" CHAMFER AT ALL EXPOSED CONCRETE EDGES

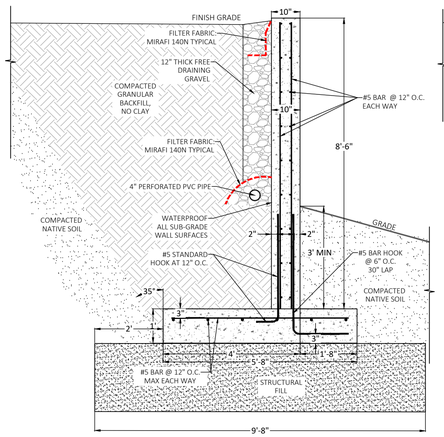
LOADING ASSUMPTIONS

SOIL LOADS:

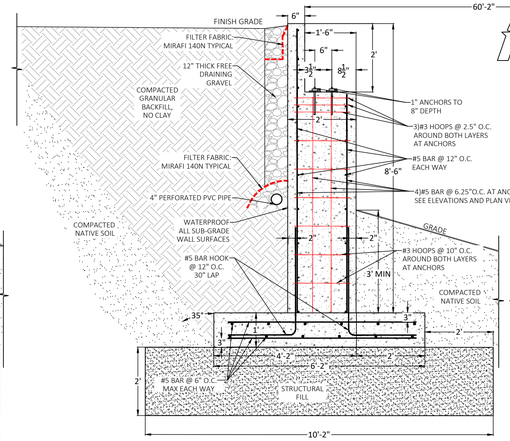
ACTIVE: W/ SEISMIC:	36 PSF/FT 51 PSF/FT
AT REST :	57 PSF/FT
PASSIVE: W/ SEISMIC	496 PSF/FT 392 PSF/FT
FRICTION COEFF:	0.37

APPLIED LOADS:

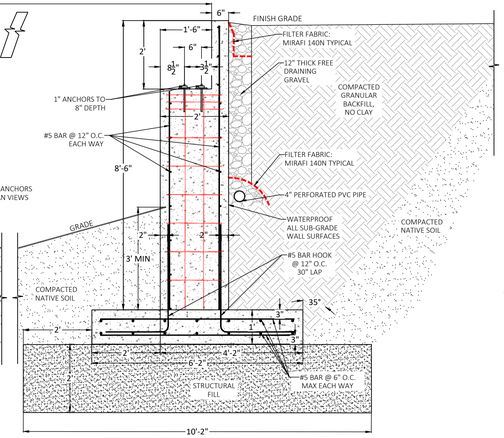
DEAD LOAD:	13,500 LBS
LIVE LOAD:	13,500 LBS
VEHICLE LOAD:	4,800 LBS
WIND UPLIFT:	-4,400 LBS (W)
WIND:	±3,000 LBS
WIND(HORIZ.):	10,800 LBS
EARTHQUAKE:	23,400 LBS



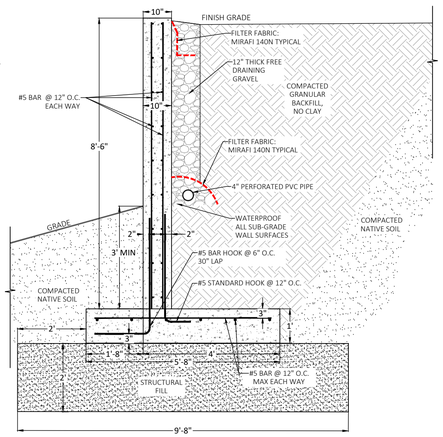
SECTION E-E'
8.5' WING WALL



SECTION A-A'
8.5' ABUTMENT WALL



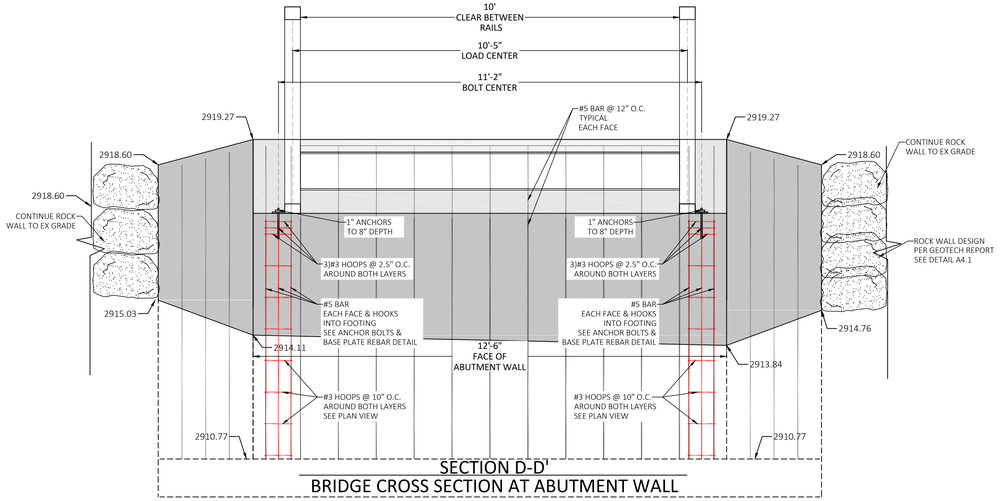
SECTION B-B'
8.5' ABUTMENT WALL



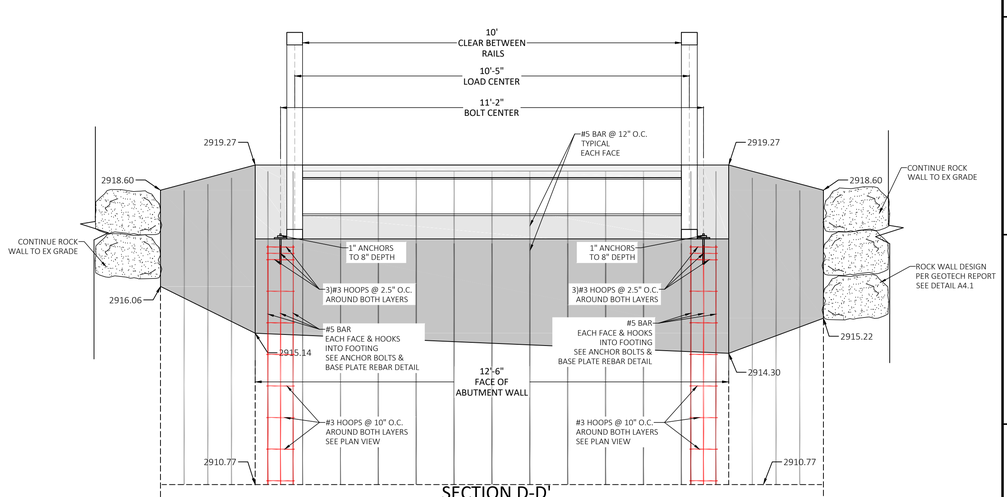
SECTION F-F'
8.5' WING WALL

B C4.2 BRIDGE PLAN VIEW W/ ABUTMENT WALLS

SCALE: NONE



SECTION D-D'
BRIDGE CROSS SECTION AT ABUTMENT WALL



SECTION D-D'
BRIDGE CROSS SECTION AT ABUTMENT WALL

Date: 12-13-2023

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HALFWAY WASH NORTH TRAIL DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14

TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M

CITY OF ST. GEORGE, WASHINGTON CO., UT

LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/23
STATE OF UTAH

Drawn By:	Scale:
AZ	NTS
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C4.2

Sheet 12 of 13 Sheets

SEWER NOTES:

1. No sewers under 9' deep unless approved by the city of St. George.
2. Any sewers not in public streets shall show recorded easements.
3. Buildings may require interceptors at later date.
4. All sewer manholes shall have city of St. George logo lids for final inspection.
5. All sewer fittings shall be approved by the city of ST. George prior to purchase and installation.
6. All construction shall conform to the "City of St. George Standard Specifications for Design and Construction","The International Plumbing Code", and the "Uniform Building Code" latest edition as administered by the City of St. George.
7. Backfill materials shall conform to the requirements outlined in detail.
8. Bedding materials shall be placed and compacted in horizontal lifts not to exceed 6-in in compacted thickness. Initial backfill materials shall be placed carefully in 8-in non-compacted horizontal lifts and compacted to a depth of 12-in above the top of the pipe. Final backfill materials shall be placed in 12-in compacted horizontal lifts up to the existing ground surface.
9. Minimum compaction shall be 95%. when approved flowable fill or slurry is used, compaction testing will not be required.
10. Prior to and during compaction operations, all backfill material shall have the required moisture content uniform throughout each layer.
11. The contractor is responsible for conducting displacement, air or ex-filtration and deflection testing on all newly installed sewer pipe. The contractor is also responsible for conducting leakage tests on all newly installed manholes.
12. Following inspection, all newly installed sewer lines and manholes shall be flushed by the contractor.
13. Contractor is responsible for all existing waste water flow during construction. The contractor shall be responsible to make sure all waste water flow is transported down stream during construction.
14. The city must approve all means and methods prior to beginning construction work.
15. All sewer pipe are PVC 8" SDR-35 and size indicated on the plan, unless otherwise noted.
16. Concrete collars are required on all manholes.

CITY OF ST. GEORGE WATER NOTES:

1. All waterline works must be installed by a contractor that has been pre-qualified by the City of St. George Water Department.
2. All construction shall conform to the "City of St. George Standard Specifications for design and construction", "The Uniform Plumbing Code", and the "Uniform Building Code" latest edition as administered by the City of St. George.
3. Contractor shall pothole all pipelines and verify location and depth prior to proceeding with any building or pipeline construction. If the in field conditions varies from design teh contractor is responsible for costs due to changes in conditions. City maps are "Best Knowledge" and Approximate.
4. The potable water supply to lawn irrigation systems shall be protected against backflow per the International Plumbing Code (IPC) Section 608. I6.5 and for fire sprinkler systems per (IPC) 608.I6.4.
5. All backflow assembly installation and test requirements shall be in accordance with the City of St. George backflow ordinance 9-1-1997-5-6-5.
6. 14 gauge wire shall be taped to all water lines for locating purposes. the wire shall also be brought up at each valve box and hydrant.
7. Thrust restraint on the new pipeline will be as shown on the details. use mega-lug on the fittings and field lock gaskets on the required length of restrained pipe.
8. Asphalt replaced over the pipe trenching is to match existing pavement depths with a 6" over cut from edge of the trench line on each side of the trench.
9. Contractors shall cut off and cap (back at the water main), all existing service lines or
un-used stub lines that will be abandoned.
10. Any changes made in the field must be first approved and documented by the City of St. George water services representative & the design engineer.
11. All New Fire Hydrants shall be installed at the correct height, Risers will not be allowed.
12. Irrigation Water works may require additional approval from Respective Irrigation Companies

GENERAL WATER NOTES:

1. All water pipe shall be PVC C-900 class 150, unless otherwise noted.
2. All water lines shall maintain 1 foot minimum separation between adjacent water pipes.
3. All water fittings shall be approved by St. George City Public Works prior to purchase and installation.
4. Backfill materials shall conform to the requirements outlined in detail.
5. Bedding materials shall be placed and compacted in horizontal lifts not to exceed 6-in in compacted thickness. Initial backfill materials shall be placed carefully in 8-in non-compacted horizontal lifts and compacted to a depth of 12-in above the top of the pipe. Final backfill materials shall be placed in 12-in compacted horizontal lifts up to the existing ground surface.
6. Prior to and during compaction operations, all backfill material shall have the required moisture content uniform throughout each layer.
7. The Contractor is responsible for conducting pressure testing, for flushing and disinfecting the entire water distribution system as per St. George City specifications.

ST. GEORGE ENERGY SERVICES POWER NOTES

1. Primary power from switch to switch shall be 750 wire in 3"conduit.
2. Primary power from vault to transformer shall be 1/0 wire in 3" conduit unless otherwise noted. All wire shall have a temperature rating of 90° C
3. Secondary power from transformer to meter (90° C Temp. Rating):
   A. For residential lots - where length is less than or equal to 200 ft
      - 100 - 150 amps = 1/0 in 2" conduit
      - 200 amps = 4/0 in 2" conduit
      - 400 amps = 350 mcm in 3" conduit
      - 600 amps = 500 mcm in 3" conduit
      - Contact SGES for lengths > 200 ft if not specified per plan.

   B. For C.T. connections (services > 400 amps) secondary conduit and wire shall be sized by building electrical engineer.
   C. For commercial and/or apartment complex ≤ 400 amps or > 400 amps with gang pack individual meters - sized by SGES based on load calculations.
4. Contractor to follow all blue stakes protocols.
5. The power design on the utility plans is considered by St. George Energy Services (SGES) as preliminary and non-biddable until accompanied by a JUC approval stamp.
6. All primary underground power work/installation must be completed by a contractor that has been prequalified by SGES and meet all SGES standrads. All overhead work/installation must be completed by SGES.
7. All work done by SGES will be prepaid by the developer.
8. It is the responsibility of the design engineer to provide locations and elevations of all existing and design underground/overhead utilities and structures that will impact the SGES power design.
9. All JUC trenches will be backfilled and compacted in 6" to 8" lifts to a compaction of 95% in roadways/sidewalks and 90% behind sidewalk. Testing is to be done at middle and top of trench.
10. All changes to existing grades near existing power utilities must be approved by SGES prior to construction.
11. Any in field changes to the JUC approved power design will be at the developer's expense and must be pre-approved and documented by SGES prior to installation.

DOMINION ENERGY GAS NOTES

1. Developer needs to contact Dominion Energy Pre-Construction department prior to breaking ground for gas sign up. COLBY BATTY (435)414-3607.
2. Developer will be responsible to get all compaction tests done at developer's expense.
3. If casings/conduits are needed, they are to be installed by developer at their costs. A map will be available at Dominion Energy for casing locations (1155 E 350 N--St George).
4. All of the 10 foot utility easements back of sidewalk will be graded, at full 10 foot width, to within 6 inches of top back of curb before gas lines will be installed. ****NO RETAINING, ROCK, OR BLOCK WALLS MAY BE CONSTRUCTED ON/IN A PUE**Developer will be responsible for the costs of any gas lines to be lowered and/or relocated after installation.****
5. All trenches shall be backfilled and all debris, construction materials, and excess dirt piles shall be cleared away.
6. Property lot lines, back of curb, and grade **must** be staked by developer before gas will be installed.
7. Power, water, sewer lines, culverts, or other hazards not clearly noticeable shall be staked by developer.
8. Failure to comply with the above notes will result in delay of service to this project.
9. Contact JC Hall, 435-210-0729, at least two weeks prior to being ready, for scheduling of installation.
10. ****IMPORTANT NOTICE**Gas will be put on the schedule for installation when power trench is buried, streets are within 6 inches of subgrade, and the 10 foot utility easement is graded to the top back of curb.**

INFOWEST, CATV/FIBER OPTIC NOTES

1. DEVELOPER TO PROVIDE ALL REQUIRED TRENCHING WITHIN THE PROJECT.
2. ANY MODIFICATIONS REQUIRED TO FEED PROJECT WILL BE BILLED TO THE DEVELOPER.
3. INFOWEST WILL PROVIDE ALL CONDUITS. CALL 435-272-3559 OR EMAIL JUC@infowest.com FOR CONDUIT DELIVERY AT LEAST ONE (1) WEEK PRIOR TO OPENING THE TRENCH.
4. FOR COMMERCIAL PROJECTS WITH AN MDF/COMM ROOM. DEVELOPER WILL INSTALL A 2" PVC RUN TO THE EXTERIOR OF BUILDING.
5. ANY QUESTIONS REGARDING SERVICE SHOULD BE DIRECTED TOWARDS GAB TREMBLEY AT 435-272- 3559 OR JUC@infowest.com.
6. RELOCATION OF EXISTING NEW OR EXISTING INFOWEST FACILITIES ARE BILLABLE TO THE DEVELOPER. THE DEVELOPER WILL BE PROVIDED WITH AN ESTIMATE OF COSTS FOR WORK DONE.

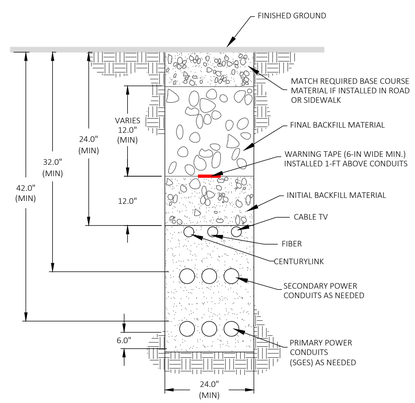
CENTURY LINK TELEPHONE NOTES

1. Developer to provide all trench, backfill, and road crossings. Centurylink sub contractor (Neils Fugal) will place conduit in trench. Call 435-632-6553 15 days prior to requiring conduit to schedule delivery.
2. Any breaks/blockages in conduit resulting from improper backfill or other construction/utility placement are the developer responsibility to repair and may result in delay of service.
3. Contract Centurylink Engineer at 435-884-7920 with any questions or changes in JUC plans.
4. Any Centurylink facility relocations associated with project will be billable 100% to owner/developer and must be scheduled and must be scheduled a minimum of 45 days in advance.

TDS, CATV/BROADBAND NOTES

1. THE DEVELOPER WILL PROVIDE ALL REQUIRED TRENCH WITHIN THE PROJECT. ANY MODIFICATIONS ALONG THE PERIPHERY TO FEED THIS PROJECT WILL BE BILLED TO THE DEVELOPER.
2. TDS WILL PLACE CONDUITS IN AN OPEN/JOINT TRENCH. PLEASE CONTACT TDS ENGINEERING AT 435-288-1415 AT LEAST 3 WEEKS PRIOR TO OPENING TRENCH TO CREATE DESIGN AND SCHEDULE WORK.
3. CONTACT TDS PRIOR TO CONSTRUCTING BUILDINGS FOR PREWIRE OPTIONS FOR FIBER OPTIC SERVICE. ANY OTHER QUESTIONS REGARDING CONSTRUCTION OF SERVICE SHOULD BE DIRECTED TO TDS ENGINEERING AT 435-288-1415.
4. RELOCATION OF NEW OR EXISTING TDS FACILITIES WILL BE BILLABLE TO THE DEVELOPER/CONTRACTOR
5. ANY MODIFICATIONS AFTER CONDUIT/CABLE PLACEMENT WILL BE BILLABLE TO THE DEVELOPER/CONTRACTOR AS WILL DAMAGES CAUSED BY OTHER CONTRACTORS WORKING FOR THE DEVELOPER ON THIS PROJECT.

TYPICAL SGES JOINT UTILITY TRENCH



NOTE:
SHOWN BURY DEPTHS ARE TYPICAL; EXISTING BURY DEPTH MAY VARY FROM WHAT IS SHOWN. WHERE WALL CONSTRUCTION OR GRADING ADJACENT TO THE EXISTING JOINT UTILITY TRENCH OCCURS, CONTRACTOR SHALL FIELD VERFIY BURY DEPTH WHILE SGES INSPECTOR IS PRESENT AND COORDINATE CONSTRUCTION METHODS AND TIMELINE WITH SGES WHILE WORKING IN THESE AREAS.

Date: 2-06-24

REVISIONS

No.	Date	by	Description
1	12-13-23	AZ	JUC COMMENTS
2	12-21-23	AZ	JUC COMMENTS

File Name
Halfway Wash North Bridge Details.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

HALFWAY WASH NORTH TRAIL DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 14
TOWNSHIP 42 SOUTH, RANGE 16 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON CO., UT

LICENSED PROFESSIONAL ENGINEER
No. 4804458
DELOSS S. HAMMON
9/6/24
STATE OF UTAH

Drawn By: AZ	Scale: NTS
Client No. 4491-4629	Project No. 4491-4629

Drawing Sheet
C4.3

Sheet 13 of 13 Sheets

INTERSTATE ROCK

March 27, 2024

Paul Stead
St. George City
Park Planning Division

RE: Halfway Wash North Trail

Interstate Rock Products has reviewed the supplied bid tabulations for this project and we would like to use the 5% local preference for this project. We are good with matching the unit prices of WRX Contracting as shown in the bid tabulation.

Thanks,

Colt D. Stratton, P.E.
Interstate Rock Products, Inc.
Engineering Department Head

Agenda Date: 04/04/2024 **Agenda Item Number:** 4f

Subject:

Consider approval of a Professional Services Agreement with Rosenberg Associates for the design of Gap Canyon Parkway.

Item at-a-glance:

Staff Contact: Wes Jenkins

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

Gap Canyon Parkway

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

This contract is for the design of Gap Canyon Parkway.

Staff Narrative (need/purpose):

This contract includes the construction design of Gap Canyon Parkway including, base map, floodplain assessment, erosion hazard assessment, drainage study, geotechnical study, and civil construction plans.

Name of Legal Dept approver: Daniel Baldwin

Budget Impact:

Cost for the agenda item: $111,800

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

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

N/A

Description of funding source:

N/A

Recommendation (Include any conditions):

Approval

CITY OF ST. GEORGE PROFESSIONAL SERVICES AGREEMENT FOR SERVICES WITH ROSENBERG ASSOCIATES FOR GAP CANYON PARKWAY

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 Rosenberg Associates, with offices at 352 East Riverside Drive A-2, St. Geroge, Utah 84790 (hereinafter "CONSULTANT").

WITNESSETH THAT:

WHEREAS CITY desires professional services to be performed and has solicited CONSULTANT to provide engineering design services for Gap Canyon Parkway (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 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.** 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 eleven thousand, eight hundred dollars **($111,800.00)**.

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:	Rosenberg Associates 352 East Riverside Drive A-2 St. George, Utah 84790
Attention:	City Attorney	Attention:	Jared Bates
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

Michele Randall, Mayor Date

ATTEST:

Christina Fernandez, City Recorder

ROSENBERG ASSOCIATES

Jared Bates, Principal Engineer

APPROVED AS TO FORM:
CITY ATTORNEY'S OFFICE

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: Rosenberg Associates

Address: 352 East Riverside Drive A-2 St. George, Utah 84790

Email: jaredb@racivil.com Phone Number: (435)673-8586

Scope of Services and/or Deliverables by Contractor:

- See attached
-
-
-
-
-
-
-
-
-
-

Compensation: City shall pay Contractor the following sum:

- Not to exceed $111,800.00
-
-

ROSENBERG ASSOCIATES
CIVIL ENGINEERS • LAND SURVEYORS

EXHIBIT A
WORK PLAN

CLIENT **City of St. George**
Wes Jenkins
175 East 200 North
St. George, UT 84770

ENGINEER **Rosenberg Associates**
352 East Riverside Drive, Suite A-2
St. George, UT 84790

PROJECT **10621-24-011**
Gap Canyon Parkway Design
St. George, UT

EFFECTIVE DATE January 25, 2024

WORK PLAN

120 BASE MAP: Perform a field mapping and aerial drone survey to determine project topography and existing site features, including fences, trees, above ground utilities, structures, and adjacent roadway features. Prepare a project base map using the field survey and existing available project boundary and topographic information.

142 FLOODPLAIN ASSESSMENT OF PROPOSED IMPROVEMENTS: Evaluate floodplain impacts to the project study area based on the final design of the road and culvert crossing.

20 Floodplain Analysis: Prepare a HEC-RAS model encompassing the project area to incorporate the final design elements. Evaluate the model to determine the 100-year floodplain and floodway impacts based on proposed improvements vs. concept designs provided in the CLOMR documents.

144 EROSION HAZARD ASSESSMENT: Evaluate erosion hazard impacts to the project study area.

20 Erosion Hazard Analysis: Evaluate the hydraulic model to determine the water surface elevations, velocities, and local scour produced during the 100-year event along the project area and proposed crossing structure. Perform an erosion hazard analysis of the study reach to determine the level of protection provided by existing erosion protection improvements, evaluate erosion protection options and alternatives, and recommend additional improvements (if needed) to mitigate impacts to the project from the 100-year flood event.

30 Erosion Hazard Drawings: Prepare erosion hazard exhibits to include the project site plan and typical erosion protection cross sections.

80 Opinion of Cost: Prepare an opinion of probable construction costs based on the typical cross-section and assumed project length.

90 Assessment Report: Summarize erosion hazard assessment in a technical memorandum.

240 DRAINAGE STUDY: Research hydrologic conditions of the proposed project and prepare a hydrologic delineation of the watershed impacting the project area. Develop a hydrologic model to estimate peak storm water flow values at key locations within the project study area based on the proposed preliminary design. Evaluate hydraulic improvement options to meet local drainage requirements to include road capacity evaluation, storm drain inlet and pipe sizes, and detention requirements. Make recommendations for evaluated drainage improvement alternatives. Summarize findings and recommended improvements in a written drainage study report.

250 GEOTECHNICAL STUDY: Perform a field investigation consisting of 1 drilled boring up to a depth of 20 feet, plus 7-8 excavations with a backhoe to depths on the order of up to 10 feet, or refusal, below the existing site grade. Perform dynamic cone penetrometer (DCP) testing adjacent to the location of each backhoe excavation. Collect, package, and label representative soil samples from the explorations at selected intervals and return to the laboratory for further testing and evaluation.

Evaluate the nature and engineering properties of the on-site soils and present opinions and recommendations based on the findings of the field and laboratory investigations regarding 1) general surface and subsurface conditions at the site, including depths to groundwater and/or bedrock, if encountered; 2) site preparation and grading, including the suitability of any on-site soils for use as structural fill; 3) roadway pavement sections; and 3) suitable foundation type(s) and depth(s) for crossing structures. Present results, opinions, and recommendations in a written report complete with logs of the explorations, a site plan, and

laboratory test results. *Geotechnical services will be performed in accordance with the accompanying General Conditions. Recommendations will be based on the following assumptions:*

- *The conditions encountered in the explorations are representative of the conditions throughout the site;*
- *The Engineer's interpretation of the findings of the field and laboratory investigation programs;*
- *The Engineer's geotechnical experience with similar soil conditions;*
- *Subject to conditions encountered during construction; and*
- *Prepared in accordance with generally accepted professional geotechnical engineering principles and practice.*

260 CIVIL CONSTRUCTION PLANS: Research, evaluate, design, and develop project civil construction plans for the elements listed below. Review completed plans with the Client.

20 Grading and Drainage: Prepare a grading and drainage plan for the project site to show existing and proposed contours, and cross-sections. Correlate design with the drainage study. Determine earthwork quantities.

22 Erosion Control: Prepare an erosion control plan and related details to mitigate flood damage to proposed site improvements located adjacent to or on the 100-year floodplain and through the Gap Wash crossing structure, based on the recommendations of the erosion hazard assessment.

24 Storm Water Mitigation: Prepare a storm water mitigation plan document and preliminary design plans to illustrate the methods and procedures proposed to control and eliminate storm water pollution sources during construction. *Work excludes the preparation of a Storm Water Pollution Prevention Plan (SWPPP), which will be the responsibility of the construction contractor.*

28 Gap Wash Culvert Crossing: Perform structural design and prepare drawings for a cast-in-place concrete culvert crossing to include foundation, apron, headwalls, wingwalls, and associated details.

30 Plan and Profile: Prepare horizontal and vertical alignment plans for the project street and sewer system to include typical cross sections, construction notes, and details.

40 Utility: Prepare a project utility construction plan to include water, wastewater, storm water, electrical, natural gas, telephone; and cable. Review plan design with the local utility service providers. *Utility mapping will be based upon information obtained from utility service providers.*

80 Opinion of Cost: Prepare an engineer's opinion of probable construction costs for the public infrastructure improvements as required by the local governing agency for bonding.

261 PLAN REVIEWS: Submit the construction plan package to the City and follow through with the staff review process. *The cost for this work is estimated, assuming one round of reviews with minor corrections, if needed. Actual cost will vary, and work will be invoiced based on the Engineer's hourly rate.*

270 CONSTRUCTION CONTRACT DOCUMENTS: Prepare material and construction specifications for the preliminary design plans. Prepare bidding documents and work agreement forms. Compile into a contract bidding package to include with the project general conditions and construction specifications.

344 ENVIRONMENTAL PERMITTING: Conduct a Section 404 consultation with the state and/or federal US Army Corps of Engineer representative. Complete a Section 404 Joint Use Permit Application and submit with the preliminary design plans to the reviewing agency for approval. Follow through with the review process. Prepare a floodplain development permit application to include with the approved final construction plans. *The cost does not include fees for a biological assessment or archeological evaluation, if required.*

410 PROJECT BID AND CONTRACTOR SELECTION: Assist the City in advertising for and obtaining bids for the project. Receive and process contractor deposits or charges for the bidding documents and maintain a record of prospective bidders. Attend the pre-bid conference and issue addenda to clarify, correct, or change the bidding documents.

Attend the bid opening, prepare bid tabulation sheets, and assist the City in evaluating the bids. Assemble the contractor bonding information. *The Engineer shall not provide or have any responsibility for surety bonding or insurance-related advice, recommendations, counseling, or research, or enforcement of construction insurance or surety bonding requirements.*

The following services are not included in the Work Plan:

- Site landscape or irrigation construction plans. These drawings are to be prepared by a licensed landscape architect and furnished to the Engineer for inclusion in the civil construction plans.
- FEMA Conditional Letter of Map Revision (CLOMR). It is assumed that the FEMA CLOMR will be prepared by the adjacent land developer and proposed improvements will closely match those shown in the CLOMR documents.

- Environmental permitting does not include fees for a biological assessment or archeological evaluation. This will be provided by an outside Consultant at an additional cost if required by the state or US Army Corps of Engineers.
- Wetlands delineation.
- Construction engineering support or construction contract administration.
- Construction surveying and field staking.
- Final drawing of record.
- Road dedication plat.
- FEMA Letter of Map Revision (LOMR).
-

COST ESTIMATE

120	**BASE MAP**		**$4,500**
142	**FLOODPLAIN ASSESSMENT OF PROPOSED IMPROVEMENTS**		**$6,800**
	20 Floodplain Analysis	$6,800	
144	**EROSION HAZARD ASSESSMENT**		**$12,200**
	20 Erosion Hazard Analysis	$4,500	
	30 Erosion Hazard Drawings	$3,500	
	80 Opinion of Cost	$800	
	90 Assessment Report	$3,400	
240	**DRAINAGE STUDY**		**$6,100**
250	**GEOTECHNICAL STUDY**		**$13,500**
260	**CIVIL CONSTRUCTION PLANS**		**$41,800**
	20 Grading and Drainage	$7,500	
	22 Erosion Control	$3,050	
	24 Storm Water Mitigation	$3,050	
	28 Gap Wash Culvert Crossing	$12,000	
	30 Plan and Profile	$10,000	
	40 Utility	$5,400	
	80 Opinion of Cost	$800	
261	**PLAN REVIEWS**	*Invoiced on an hourly basis with an estimated cost of*	**$4,300**
270	**CONSTRUCTION CONTRACT DOCUMENTS**		**$6,100**
344	**ENVIRONMENTAL PERMITTING**		**$12,000**
410	**PROJECT BID AND CONTRACTOR SELECTION**		**$4,500**
PROJECT TOTAL			**$111,800**

FEE SCHEDULE

ENGINEERING		
Principal Engineer 2	hour	$200
Principal Engineer 1	hour	$175
Project Engineer 3	hour	$165
Project Engineer 2	hour	$145
Project Engineer 1	hour	$135
Staff Engineer 2	hour	$115
Staff Engineer 1	hour	$65
DESIGN		
Designer 4	hour	$145
Designer 3	hour	$140
Designer 2	hour	$105
Designer 1	hour	$95
Drafter 3	hour	$90
Drafter 2	hour	$80
Drafter 1	hour	$55
TECHNICIAN		
Technician 3	hour	$135
Technician 2	hour	$105
Technician 1	hour	$80
SURVEY		
Land Surveyor 3	hour	$180
Land Surveyor 2	hour	$150
Land Surveyor 1	hour	$130
Survey Crew 1-Man	hour	$130
Survey Crew 2-Man	hour	$170
Survey Crew Drone	hour	$180
ADMINISTRATIVE		
Admin 1	hour	$80
Admin 2	hour	$55
OTHER FEES		
Travel	mile	$0.66
Per Diem	day	$50.00
Large Copies	sheet	$4.00
Small Copies	sheet	$0.20
Lodging	invoice + 10%	
Outside Services	invoice + 10%	

ROSENBE-01 CWILCOCK

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 3/20/2024

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 have ADDITIONAL INSURED provisions or 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
American Insurance & Investment Corp.
448 South 400 East
Salt Lake City, UT 84111

CONTACT NAME: Cathy Wilcock
PHONE (A/C, No, Ext): (801) 364-3434 662 FAX (A/C, No): (801) 355-5234
E-MAIL ADDRESS: Cathy.Wilcock@american-ins.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Hartford Underwriters Ins. Co.	30104
INSURER B : Sentinel Insurance Co Ltd	11000
INSURER C : Hartford Fire Insurance Co.	19682
INSURER D : XL Specialty Insurance Company	37885
INSURER E :	
INSURER F :	

INSURED
Rosenberg Associates, Inc
352 E Riverside Dr, Ste A-2
St. George, UT 84790

COVERAGES **CERTIFICATE NUMBER:** **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						EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR			34SBWAV0K0P	12/25/2023	12/25/2024	DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 1,000,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	POLICY PRO-JECT X LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:						DRONE LIABILITY	$ 1,000,000
B	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO			34UEGAQ8217	12/25/2023	12/25/2024	BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
A	X UMBRELLA LIAB X OCCUR						EACH OCCURRENCE	$ 2,000,000
	EXCESS LIAB CLAIMS-MADE			34SBWAV0K0P	12/25/2023	12/25/2024	AGGREGATE	$ 2,000,000
	DED X RETENTION $ 10,000							$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						X PER STATUTE / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N: N	N / A		34WEGAV0JMM	12/15/2023	12/15/2024	E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
D	Prof. Liability			DPR5022164	1/11/2024	1/11/2025	Each Claim	2,000,000
D	RetroDate: 7/1/1989			DPR5022164	1/11/2024	1/11/2025	Aggregate	3,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
RE: Cap Canyon Parkway Design

CERTIFICATE HOLDER

City of St. George
% Wes Jenkins
175 East 200 North
Saint George, UT 84770

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
Jeffrey M. Hirst

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Agenda Date: 04/04/2024 **Agenda Item Number:** 4g

Subject:

Consider approval of a Construction Contract with Whitaker Construction for the R1 Sewer Project.

Item at-a-glance:

Staff Contact: Kade Bringhurst

Applicant Name: City of St. George

Reference Number: na

Address/Location:

na

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

The R1 Sewer project consists of upsizing an existing 10" line to 18" for 1,560 L.F. in the Paiute Springs subdivision. The project was publicly bid last week and we received (2) bids.

Staff Narrative (need/purpose):

R1 Sewer Project is a project located within the Entrada Community that was identified in the Sewer Masterplan as needing to be upsized to prevent surcharging and overflows of the existing system.

Name of Legal Dept approver: Daniel Baldwin

Budget Impact:

Cost for the agenda item: $913,900

Amount approved in current FY budget for item: $1,000,000

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

Impact Fees

Description of funding source:

Impact Fees

Recommendation (Include any conditions):

Staff recommends approval

BOWEN COLLINS & ASSOCIATES

20 NORTH MAIN, SUITE NO. 107 • ST. GEORGE, UTAH 84770
TEL: (435) 656-3299

March 21, 2024

Kade Bringhurst, P.E.
City of St. George Water Services – Project Manager
811 East Red Hills Parkway
St. George, UT 84770

Subject: **Recommendation of Award of Contract to Whitaker Construction for the R1 Sewer Project.**

Dear Kade:

Bids for construction of the R1 Sewer Project were received by the City of St. George on Thursday, March 21, 2024. Bowen Collins & Associates (BC&A) completed a review of the bids that were received from two general contractors. Whitaker Construction was the apparent low bidder with a Base Bid price of $913,900. Whitaker Construction has signed and submitted the appropriate bid forms, provided a 5% Bid Bond, acknowledged all contract addenda, submitted the Certification of Legal Work Status (Contractor), and provided the Bidder's General Information. A summary of the bids received for the project is provided below for reference and a detailed breakdown of the bids is attached for information.

Rank	Contractor	Base Bid Price	Difference from Low Bid
1	Whitaker Construction	$913,900	-
2	Phaze Concrete	$980,182.25	$66,282.25 (7.25%)

We have found the bid from Whitaker Construction to be responsive and we recommend that the City consider awarding a construction contract to Whitaker Construction in the amount of $913,900 for the R1 Sewer Project. An Agreement should be executed pending receipt of appropriate bonds and insurance documents following Notice of Award.

It should also be noted that the Base Bid price included installation of concrete manholes which will be lined by the City during construction. An alternative bid item to replace the concrete manholes with polymer manholes was submitted. For an additional $25,800 the concrete manholes may be replaced with polymer manholes.

Please call with any questions or concerns regarding this recommendation. BC&A looks forward to working with the City through the successful completion of this important project.

Sincerely,

Bowen, Collins & Associates

Todd Olsen, P.E.
Project Manager

Attachment

BID SCHEDULE SUMMARY
R1 Sewer Project
City of St. George Water Services
Bids Were Opened On: Thursday, March 21, 2024

BOWEN COLLINS & ASSOCIATES

BASE BID SCHEDULE				Engineer's Opinion		Phaze Concrete		Whitaker Construction		Price Summary		
Item No.	Description	Quantity	Unit	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	*Average*	*Low*	*High*
1	Mobilization, Demobilization, and Administrative Items (not to exceed 8% of Total Base Bid)	1	LS	$ 72,710	$ 72,710	$ 77,006.00	$ 77,006.00	$ 98,000.00	$ 98,000.00	*$ 82,572.00*	*$ 72,710.00*	*$ 98,000.00*
2	Traffic Control, See Section 01 55 26	1	LS	$ 32,750	$ 32,750	$ 18,918.00	$ 18,918.00	$ 47,170.00	$ 47,170.00	*$ 32,946.00*	*$ 18,918.00*	*$ 47,170.00*
3	Survey Control and Staking	1	LS	$ 15,000	$ 15,000	$ 9,722.00	$ 9,722.00	$ 20,100.00	$ 20,100.00	*$ 14,940.67*	*$ 9,722.00*	*$ 20,100.00*
4	Remove and Dispose of existing Sewerline and Manholes	1	LS	$ 40,500	$ 40,500	$ 37,237.00	$ 37,237.00	$ 87,800.00	$ 87,800.00	*$ 55,179.00*	*$ 37,237.00*	*$ 87,800.00*
5	Provide and Install 18-inch SDR 35 PVC Sewerline	1,560	LF	$ 285	$ 444,600	$ 277.00	$ 432,120.00	$ 195.00	$ 304,200.00	*$ 252.33*	*$ 195.00*	*$ 285.00*
6	Provide and Install 8-inch SDR 35 PVC Sewerline	10	LF	$ 280	$ 2,800	$ 449.00	$ 4,490.00	$ 520.00	$ 5,200.00	*$ 416.33*	*$ 280.00*	*$ 520.00*
7	5-ft Diameter Concrete Sewer Manholes, See Detail STD/220	12	EA	$ 12,000	$ 144,000	$ 11,692.00	$ 140,304.00	$ 8,980.00	$ 107,760.00	*$ 10,890.67*	*$ 8,980.00*	*$ 12,000.00*
8	Sewer Service Connection, See Detail C/2608	16	EA	$ 3,000	$ 48,000	$ 2,088.00	$ 33,408.00	$ 1,860.00	$ 29,760.00	*$ 2,316.00*	*$ 1,860.00*	*$ 3,000.00*
9	Remove and Replace Asphalt Surface (3" Thick with 6" Base)	30	SY	$ 55	$ 1,650	$ 442.00	$ 13,260.00	$ 85.00	$ 2,550.00	*$ 194.00*	*$ 55.00*	*$ 442.00*
10	Remove and Replace Asphalt Surface (2.5" Thick with 6" Base)	2,600	SY	$ 35	$ 91,000	$ 44.07	$ 114,582.00	$ 36.00	$ 93,600.00	*$ 38.36*	*$ 35.00*	*$ 44.07*
11	Remove and Replace Curb & Gutter, See Detail STD/100	15	LF	$ 55	$ 825	$ 81.19	$ 1,217.85	$ 60.00	$ 900.00	*$ 65.40*	*$ 55.00*	*$ 81.19*
12	Remove and Replace Colored Curb & Gutter, See Detail STD/101	100	LF	$ 70	$ 7,000	$ 86.50	$ 8,650.00	$ 54.50	$ 5,450.00	*$ 70.33*	*$ 54.50*	*$ 86.50*
13	Remove and Replace Concrete Colored Cross Gutter, See Detail STD /150 and STD/151	1	LS	$ 6,500	$ 6,500	$ 6,939.00	$ 6,939.00	$ 5,320.00	$ 5,320.00	*$ 6,253.00*	*$ 5,320.00*	*$ 6,939.00*
14	Remove and Replace Concrete Colored Driveway, See Detail STD/111	1	LS	$ 17,500	$ 17,500	$ 16,965.00	$ 16,965.00	$ 12,200.00	$ 12,200.00	*$ 15,555.00*	*$ 12,200.00*	*$ 17,500.00*
15	Remove and Replace 6-ft Concrete Sidewalk, See Detail STD/120	440	SF	$ 13	$ 5,500	$ 23.26	$ 10,234.40	$ 11.00	$ 4,840.00	*$ 15.59*	*$ 11.00*	*$ 23.26*
16	Flowable Fill Backfill, Only As Directed by Engineer	50	CY	$ 215	$ 10,750	$ 223.00	$ 11,150.00	$ 245.00	$ 12,250.00	*$ 227.67*	*$ 215.00*	*$ 245.00*
17	Trench Stabilization Material, Only as Directed by Engineer	100	CY	$ 55	$ 5,500	$ 111.00	$ 11,100.00	$ 49.00	$ 4,900.00	*$ 71.67*	*$ 49.00*	*$ 111.00*
18	Landscaping removal and replacement between Tuweap Drive and Moenkopi Circle and Moenkopi Trail and Entrada Golf Course	1	LS	$ 35,000	$ 35,000	$ 32,879.00	$ 32,879.00	$ 71,900.00	$ 71,900.00	*$ 46,593.00*	*$ 32,879.00*	*$ 71,900.00*
	Base Bid Schedule Price:				**$981,585.00**		**$980,182.25**		**$913,900.00**			
	BASE BID DIFFERENCE FROM LOW BID:				**$67,685**		**$66,282**		**$0**			
	BASE BID % DIFFERENCE FROM LOW BID:				**7.41%**		**7.25%**		**0.00%**			

ALTERNATIVE BID SCHEDULE				Engineer's Opinion		Phaze Concrete		Whitaker Construction		Price Summary		
Item No.	Description	Quantity	Unit	Unit Cost	Amount	Unit Cost	Amount	Unit Cost	Amount	*Average*	*Low*	*High*
1	Replace Concrete Manholes with Polymer Manholes, See Detail C/2510	12	EA	$ -	$ -	$ 25,636.00	$ 307,632.00	$ 25,800.00	$ 309,600.00	*$ 17,145.33*	*$ 25,636.00*	*$ 25,800.00*
	Alternative Bid Schedule Price:				**$0.00**		**$307,632.00**		**$309,600.00**			
	TOTAL ALL SCHEDULES:				**$981,585.00**		**$1,287,814.25**		**$1,223,500.00**			
	DIFFERENCE FROM LOW BID:						**$64,314**		**$0**			
	% DIFFERENCE FROM LOW BID:						**5.26%**		**0.00%**			

Corrected arithmetic error

CONTRACT DOCUMENTS

FOR

R1 SEWER PROJECT
Inquiry No. 24-101
Near Tuweap Dr
St. George, Utah

MARCH, 2024

Prepared By:

Bowen Collins & Associates
20 North Main, Suite 107
St. George, Utah
(435) 656-3299

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GEOTECHNICAL REPORT

Geotechnical Investigation, St. George City R1 Sewer Project, St. George, Utah, August 2022, prepared by RB&G Engineering, Inc.

PUBLIC NOTICE
24-110

Sealed BIDS will be received for the construction of the R1 Sewer Project, located near: Tuweap Drive, St. George, Utah.

BIDS must be submitted in a sealed envelope prior to 2:00 p.m., March 21, 2024 to:

The City of St. George, Purchasing Department
Attn: Mary Wahl, Purchasing Manager
175 East 200 North, St. George, Utah, 84770.

Each sealed envelope containing a BID must be plainly marked on the outside # 24-110 and R1 Sewer Project.

The BIDS shall be opened in an electronic meeting. Notice for the BID opening shall be sent to everyone on the Plan Holders List prior to the BID opening.

There will be a mandatory pre-BID meeting and site visit at the northwest corner of the Canyon Softball Fields on DATE March 14 at 10:00 a.m., MST. The bidder shall visit the project site and become familiar with the existing site conditions.

Technical questions regarding the bidding documents shall be directed to Bowen Collins & Associates, 435-656-3299, tolsen@bowencollins.com

The BID includes the following: All labor, equipment, and materials needed to construct the R1 Sewer Project which generally includes: construction of approximately 1,536 linear feet of 18-inch sewer pipeline; and sewer service pipeline reconnections within the project boundaries shown on the drawings in St. George, Utah. The work also includes traffic control, bypass pumping and dewatering, manhole installation, asphalt surface restoration, landscape restoration, and appurtenances associated with a sewer pipeline job.

All BIDDERS who submit a BID are required to be on the Plan Holders List. Addenda will only be provided to the plan holders that are on the Plan Holders List.

To be added to the Plan Holders List go to: 24-110 Plan Holders List

To view the bidding documents, go to: 24-110 - R1 SEWER PROJECT

If either of the links do not work, email mary.wahl@sgcity.org.

The 100% performance – labor and materials bond will be required on this project. Every BID shall be accompanied by a bid bond in the amount of 5% of the BID, naming the City of St. George as obligee, this bid bond must be issued by a surety company licensed to do business in the State of Utah and be on a bond form acceptable to the City of St. George.

As required by St. George City Code 1-10B-14 a signed certificate of legal work status for the BIDDER must accompany the BID.

City of St. George reserves the right to reject any, or all BIDS, or to waive any formality or technicality in any BID, in the interest of the city.

Post: March 1 to March 21st

INFORMATION FOR BIDDERS

BID OPENING:

1. The City of St. George, hereinafter called "CITY", shall receive BIDS for the following:
   Project: R1 Sewer Project
   Project Address: near Tuweap Drive, St. George, Utah
   Inquiry No.: Inquiry Number

2. Each BID must be submitted in a sealed envelope addressed to:
   City of St. George Purchasing Department
   Attention: Mary Wahl, Purchasing Manager
   175 East 200 North
   St George, Utah 84770

3. BIDS must be submitted by:
   March 21, 2024, 2:00 p.m.

4. BIDS shall be opened in an electronic meeting. Notice for the BID opening shall be sent to everyone on the Plan Holders List prior to the BID opening.

5. All BIDS must be plainly marked with BIDDER'S Name, BIDDER'S address and license number, and the name of the project for which the BID is submitted and the inquiry number on the outside of the sealed envelope. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to Mary Wahl, Purchasing Manager; City of St. George at 175 East 200 North, St George, Utah 84770.

6. All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the submitted BID form must be fully completed and executed. Only one copy of the BID form is required. Bids with notations, handwritten marks, non-specified attachments, or otherwise qualified will not be considered.

7. Any BID may be withdrawn in writing prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the CITY and the BIDDER.

8. BIDS shall be based on the BID SCHEDULE UNIT PRICES and shall include all work called for by the plans and specifications and bidding documents. In the case of a discrepancy in the extension of a line item, the unit price shall govern. In the case of a difference between the amount written in words and the amount written in figures, the written words shall govern. BIDDERS must satisfy themselves of the accuracy of the estimated quantities, where given, by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done. UNIT PRICES as called for in the BID Schedule shall be submitted to cover all additions and deductions in the scope of the WORK. CITY has the right to reduce or remove items from the project.

9. The CONSTRUCTION SCHEDULE is very important to the CITY. The BID shall include a construction schedule prepared using spreadsheet or scheduling software, showing all main work categories, including at least clearing and grubbing, grading and drainage, building construction, building interiors, concrete work, and asphalt paving.

10. It is the CITY'S intention to commence construction no later than April 1, 2024 and to complete the project no later than August 1, 2024. BIDDER'S must be able to commit to these dates if submitting a Bid.

11. The CITY shall provide to BIDDERS prior to BIDDING, all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

CONTRACT DOCUMENTS INCLUDING BONDS:

1. The CONTRACT DOCUMENTS contain the provisions required for the construction of the project. Information obtained from an officer, agent, or employee of the CITY or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

2. Each BID must be accompanied by a BID bond payable to the CITY for five percent of the total amount of the BID. As soon as the BID prices have been compared, the CITY will return the BONDS of all except the three lowest responsible BIDDERS. The BID BOND of the successful BIDDER will be retained until the payment BOND and performance BOND have been executed and approved and the Notice to Proceed has been issued, after which the BID BOND will be returned. A certified check may be used in lieu of a BID BOND.

3. A performance BOND and a payment BOND, each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the CITY, will be required for the faithful performance of the contract.

4. Attorneys-in-fact who sign BID BONDS, payment BONDS or performance BONDS must file with each BOND a certified copy of their power of attorney with the effective date.

AWARDING CONTRACT:

1. The CITY may waive any informalities or minor defects or reject any and all BIDS.

2. The CITY may make such investigations as it deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the CITY all such information and data for this purpose as the CITY may request. The CITY reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the CITY that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the Agreement and to complete the WORK contemplated therein.

3. The BIDDER, by evidence of the submission of the BID, acknowledges that BIDDER and BIDDER'S subcontractors meet or exceed the specified requirements for related project experience and insurances, and that should the CITY discover at any time evidence to the contrary, BIDDER agrees to withdraw BIDDER'S BID and to allow the CITY to award the CONTRACT to the next lowest responsible BIDDER. BIDDER must have the proper contractor's license for

this type of project prior to bidding on the project. It is solely BIDDER'S responsibility to comply with all applicable federal, state, and local laws, regulations, and ordinances that affect this project.

4. Award will be made to the lowest responsible BIDDER as determined by the City using the criteria contained in City ordinances governing the award of contracts. The BID shall be awarded on the condition that the BIDDER provides all required documents prior to the NOTICE TO PROCEED being issued. Failure to provide the required documents shall be considered a default on the Contract and may result in the CITY awarding the Contract to another BIDDER in addition to other legal remedies.

5. The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance BOND, the payment BOND, the Certificate of Legal Work Status for the BIDDER and all Subcontractors and the certificate of insurance within ten (10) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. The bid shall be awarded on the condition that the BIDDER provides all required documents prior to the NOTICE TO PROCEED being issued. Failure to provide the required documents shall be considered a default on the Contract and may result in the City Awarding the CONTRACT to another BIDDER in addition to other legal remedies.

6. In case of failure of the BIDDER to execute the Agreement or is found to be ineligible or becomes ineligible to meet all the requirements for the project, the CITY may at its option consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the CITY.

7. Upon receipt of acceptable performance BOND, payment BOND, insurance certificates and Agreement signed by the party to whom the Agreement was awarded, the CITY shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the CITY not execute the Agreement, the BIDDER may by WRITTEN NOTICE withdraw the BIDDER'S signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the CITY.

8. The NOTICE TO PROCEED shall be issued immediately upon the following occurring: providing the executed Agreement to the CITY, providing the performance and payment BONDS to City, and providing the insurance certificates to City. Should there be reasons why the City wants to delay and the NOTICE TO PROCEED cannot be issued within such period the time may be extended by mutual agreement between the CITY and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

9. All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout.

10. Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. Failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

11. Questions concerning information in the bid package should be directed to:

Mary Wahl
Purchasing Manager
City of St. George
175 East 200 North
St. George, Utah 84770
(435) 627-4717
mary.wahl@sgcity.org

END OF SECTION

BID FORM

Project: R1 Sewer Project
Inquiry No: 24-110

Proposal of _____ ("BIDDER"), organized and existing under the laws of the State of _____ doing business as a corporation, partnership, or an individual (circle applicable status), to the City of St. George ("CITY"). Pursuant to and in compliance with the Public Notice, BIDDER hereby proposes to perform all Work for the above named Project in strict accordance with the Contract Documents, BIDDER'S Instructions, Drawings, Specifications, and other documents related thereto, the undersigned, having familiarized themselves with the existing conditions on the site and the conditions under which the work on the Drawings and in the Specifications is to be done, hereby proposes to furnish all labor, materials, equipment, incidental items, permits, fees, and services to perform all specified work on the above named project.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID each party thereto certifies as to his own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.

All Work shall be in strict accordance with the Contract Documents and documents issued thereto and shall be installed at the price/prices set forth in the Contract Documents. Bidder acknowledges that all Work shall be done subject to CITY'S approval. Decisions and questions as to the quality, suitability, and acceptability of the materials, interpretation of drawings and specifications, and acceptable fulfillment of the Contract by the BIDDER shall be made by CITY.

Of particular importance to be considered in the BID are the following:

CONTRACT TIME AND LIQUIDATED DAMAGES

The WORK is to be performed within the specified CONTRACT TIME. If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the CITY, then the CONTRACTOR will pay the CITY LIQUIDATED DAMAGES assessed at the rates established as follows:

a. $250.00 (dollars) per day for each calendar day that the CONTRACTOR shall be in default after the CONTRACT TIME.

b. $250.00 (dollars) per day for failure to make repairs to deficiencies in the work within 10 days of notification to repair.

The rates specified in 'b.' above are cumulative and are in addition to LIQUIDATED DAMAGES assessed in association with the overall Contract Time as listed in 'a.' above. Additional information on LIQUIDATED DAMAGES is provided in the GENERAL CONDITIONS.

BIDDER acknowledges receipt of the following ADDENDUM:

_____ Addendum No. _____ Dated _____

_____ Addendum No. _____ Dated _____

_____ Addendum No. _____ Dated _____

BID SUMMARY

BID Total: $_____

BID SCHEDULE

Project: R1 Sewer Project
Inquiry No: 24-110

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the following unit or lump sum prices. If an alternate is asked for, the contractor may elect to BID either or both BID schedules, however only one schedule will be awarded.

BIDDER will complete the work in accordance with the Contract Documents for the following unit prices. Quantities indicated are not guaranteed; they are solely for comparing BIDS and establishing the initial Contract Price. Final payment will be based on actual quantities.

NOTE: The Engineer shall check all BIDS for mathematical errors. If errors have been made in the extension of the figures, the unit prices will be the binding amount and the total amounts will be revised to reflect the corrections.

BASE BID SCHEDULE

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL
1	Mobilization, Demobilization, and Administrative Items (not to exceed 8% of Total Base Bid)	1	LS	$	$
2	Traffic Control, See Section 01 55 26	1	LS	$	$
3	Survey Control and Staking	1	LS	$	$
4	Remove and Dispose of existing Sewerline and Manholes	1	LS	$	$
5	Provide and Install 18-inch SDR 35 PVC Sewerline	1,560	LF	$	$
6	Provide and Install 8-inch SDR 35 PVC Sewerline	10	LF	$	$
7	5-ft Diameter Concrete Sewer Manholes, See Detail STD/220	12	EA	$	$
8	Sewer Service Connection, See Detail C/2608	16	EA	$	$
9	Remove and Replace Asphalt Surface (3” Thick with 6” Base)	30	SY	$	$
10	Remove and Replace Asphalt Surface (2.5” Thick with 6” Base)	1,120	SY	$	$
11	Remove and Replace Curb & Gutter, See Detail STD/100	15	LF	$	$
12	Remove and Replace Colored Curb & Gutter, See Detail STD/101	100	LF	$	$
13	Remove and Replace Concrete Colored Cross Gutter, See Detail STD /150 and STD/151	1	LS	$	$

14	Remove and Replace Concrete Colored Driveway, See Detail STD/111	1	LS	$	$
15	Remove and Replace 6-ft Concrete Sidewalk, See Detail STD/120	440	SF	$	$
16	Flowable Fill Backfill, Only As Directed by Engineer	50	CY	$	$
17	Trench Stabilization Material, Only as Directed by Engineer	100	CY	$	$
18	Landscaping removal and replacement between Tuweap Drive and Moenkopi Circle and Moenkopi Trail and Entrada Golf Course	1	LS	$	$
TOTAL OF BASE BID SCHEDULE					

ALTERNATIVE BID SCHEDULE

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL
A1	Replace Concrete Manholes with Polymer Manholes, See Detail C/2510	12	EA	$	$
A2	Remove and Repave entire Section of Road on Moenkopi Circle and Moenkopi Trail (2.5” Thick with 6” Base)	1,480	SY	$	$
TOTAL OF ALTERNATIVE BID SCHEDULE					

BIDDER certifies that BIDDER has read the Request for BIDS and fully understands its intent. BIDDER certifies that BIDDER has adequate personnel and resources to fulfill the proposal requirements. BIDDER further understands that BIDDER’S ability to meet the criteria and provide the required services shall be judged solely by the City. BIDDER further certifies that, since the receipt of the Request for BIDS, no contact, discussion, or negotiation has been made nor will be made regarding this proposal for construction services with any City employee other than the contact people listed in the Request for BIDS. BIDDER understands that any such contact could disqualify this proposal. BIDDER further certifies that BIDDER is properly licensed to conduct business within the scope of this BID as required by the State of Utah. BIDDER certifies that all schedules and addenda contained herein shall be considered part of the entire Request for BIDS response and that the complete document submitted shall be considered a legally binding document.

The undersigned swears and deposes that the information provided herein is true, accurate, and complete so as not to be misleading.

Dated this _____ day of _____ 20__.

Respectfully Submitted:

Business Name: _____ Seal (if BID is by Corporation)

Business Address: _____

Representative Name: _____

Signature: _____

Title: _____

Date: _____

Attest Signature: _____

Attest Name: _____

END OF SECTION

BIDDER'S GENERAL INFORMATION

Project: R1 Sewer Project
Inquiry No: 24-110

Date: _____

To verify adequate qualifications and experience, BIDDER must submit this sheet, filled out in its entirety,
with their sealed BID. Attach additional sheets as required to completely fill out the required information.
Failure to complete any item, or failure to completely and truthfully provide the requested information, shall constitute grounds for the BID to be considered non-responsive and to cause its rejection.

(1) BIDDER'S Name and Address:

_____

_____

_____

(2) BIDDER'S Telephone Number / Facsimile Number:

_____

(3) BIDDER'S Email Address

_____

(4) Contractor's License Primary Classification:
□ B100 □ E100 □ Other:
_____
State and License Number (ATTACH A COPY):

_____

Supplemental classifications held, if any (ATTACH A COPY IF NOT INCLUDED IN ABOVE):

_____

A City Business License from their Principal Place of Business in Utah (ATTACH A COPY):

_____
_____

(5) Work in Progress (WIP) limit*: $ _____ Current Status of WIP: $_____

* attach a list of all projects currently in progress, including the owner, location, and phone number. State the percentage of work remaining for each project and the expected completion date.

(6) Provide a list of all construction contracts involving work of a similar scope and comparable value completed over the past five (5) years. Include the following information for each project:

a. Name and location of project.
b. Name, address, and telephone number of the project Owner.
c. Brief description of the work involved.
d. Contract amount.
e. Contract date for completion.
f. Date of actual completion - reason for delay, if any.
g. Name, address, and phone number of Engineer / Architect / Landscape Architect.
h. Name of Owner's Inspecting Officer.
i. State your involvement in any litigation arising out of the project.
j. Status of current litigation, if any, associated with any project. If none, state N/A.

(7) Provide a list of the prospective subcontractors, materials suppliers and equipment suppliers you expect to use on this project. * City reserves the right to reject subcontractors and suppliers.

* CITY understands that the subcontractor's, materials suppliers and equipment suppliers provided may not be the final subcontractor's used. A final subcontractor's, material suppliers and equipment suppliers list must be presented by the successful BIDDER at the Pre-Construction Conference and will be updated at each subsequent construction meeting. BIDDER understands that CITY reserves the right to accept or reject proposed subcontractors.

Project: R1 Sewer Project
Inquiry No. 24-110

Major Subcontractors Listing
Mark amount "NA" if not applicable. Provide only the subcontractor's name whose BID was used and who will be doing the work for each area of work at the time proposal is due. This will also become a schedule of values to check each monthly progress payment. If General Contractor will self-perform work, they shall list the employee of their firm who will act as foreman for said work.

GENERAL CONTRACTOR:
Subcontractor Name: _____
Subcontractor Address: _____
Amount: $_____

SITE CONCRETE
Subcontractor Name: _____
Subcontractor Address: _____
Amount: $ _____

EARTHWORK:
Subcontractor Name: _____
Subcontractor Address: _____
Amount: $_____

LANDSCAPING AND IRRIGATION
Subcontractor Name: _____
Subcontractor Address: _____
Amount: $_____

ASPHALT PAVING
Subcontractor Name: _____
Subcontractor Address: _____
Amount: $_____

END OF SECTION

BID BOND

Project: R1 Sewer Project
Inquiry No. 24-110

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____as Principal, and _____ as Surety, are hereby held and firmly bound unto The City of St. George in the penal sum of _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns. Signed, this ____ day of _____, 20___. The Condition of the above obligation is such that whereas the Principal has submitted to _____ a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the construction of the above-named project.

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID,

THEN this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the CITY may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____

Principal

Surety

By: _____

_____

_____

_____

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

CONSTRUCTION AGREEMENT
WITH _____

Project: R1 Sewer Project
Inquiry No. 24-110

THIS AGREEMENT, made this _____ day of _____, 20__ by and between the City of St. George, hereinafter called "CITY" and _____ doing business as a _____ hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS on or before _____ and will complete the work on or before _____ in accordance with the Contract Documents unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
2. CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of $ ____.
3. CONTRACTOR agrees to file a notice of commencement for this project with the Utah State Construction Registry no later than 15 days after commencement of physical construction of the WORK described in the CONTRACT DOCUMENTS. CONTRACTOR shall comply with all provisions of Title 38 Chapter 1b, Utah Code Annotated, relating to government construction projects.
4. CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the project described therein.
5. The term "CONTRACT DOCUMENTS" means and includes the following:

- Public Notice
- Information for Bidders
- Bid Form
- Bid Schedule
- Bidder's General Information
- Bid Bond
- Agreement
- Payment Bond
- Performance Bond
- Certification of Legal Work Status (Contractor)
- Certification of Legal Work Status (Sub-Contractor)
- Notice of Award
- Notice to Proceed
- Certification of Legal Work Status (Pay Request)
- Conditional Waiver and Release upon Progress Payment (General Contractor)
- Conditional Waiver and Release upon Progress Payment (Sub-Contractor)
- Waiver and Release upon Final Payment (General Contractor)
- Waiver and Release upon Final Payment (Sub-Contractor)
- Request for Information
- Change Order
- Notice of Substantial Completion
- Final Acceptance Letter
- General Conditions

- City of St. George Standard Specifications for Design and Construction
- Technical Specifications prepared by Bowen Collins & Associates, dated March, 2024.
- Construction Plans prepared by Bowen Collins & Associates, dated March, 2024.
- ADDENDA:

  No. ____, dated: _____.
  No. ____, dated: _____.
  No. ____, dated: _____.

6. CITY will pay CONTRACTOR in the manner and at such times as set forth in the CONTRACT DOCUMENTS.
7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials this Agreement on the date written above.

CITY: CITY OF ST. GEORGE

By: _____

Name: Michele Randall, Mayor

(SEAL)

ATTEST:

Name Christina Fernandez

Title City Recorder

CONTRACTOR:

_____

By _____

Name _____

(Please Type)

Address _____

_____

(SEAL)

ATTEST:
Name _____
Title _____

APPROVED AS TO FORM

BY: _____
Tani Pack Downing, City Attorney

PAYMENT BOND

Project: R1 Sewer Project
Inquiry No. 24-110

KNOW ALL MEN BY THESE PRESENTS:

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____, (Corporation, Partnership, or Individual) hereinafter called Principal, and

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto the City of St. George located at, 175 East 200 North, St. George, Utah 84770 hereinafter called CITY, in the penal sum of _____ Dollars, $ (_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the CITY, dated the _____ day of _____ 20___, a copy of which is hereto attached and made a part hereof for the construction of the above-named project.

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including but not limited to all amounts due for all materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the CONTRACT DOCUMENTS.

PROVIDED, FURTHER, that no final settlement between the CITY and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this the _____ day of _____ 20___.

ATTEST:

_____
Principal

_____
(Principal) Secretary

(SEAL)

By

_____
_____
Address

_____
Witness as to Principal

_____
_____
Address

ATTEST:

_____
Surety

_____
(Surety) Secretary

(SEAL)

By_____

_____
_____
Address

_____
Witness as to Surety

_____
_____

Attorney-in-fact

Address

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.
IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

PERFORMANCE BOND

Project: R1 Sewer Project
Inquiry No. 24-110

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____ (Corporation, Partnership, or Individual), hereinafter called Principal, and

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto the City of St. George located at 175 East 200 North, St. George, Utah 84770 hereinafter called CITY, in the penal sum of _____ ___ Dollars, $ (_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the CITY, dated the _____ day of _____ 20___, a copy of which is hereto attached and made a part hereof for the construction of the above-named project.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the CITY, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the CITY from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the CITY all outlay and expense which the CITY may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the CONTRACT DOCUMENTS.

PROVIDED, FURTHER, that no final settlement between the CITY and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this the ____ day of _____ 20___.

ATTEST:

_____
Principal

_____
(Principal) Secretary

(SEAL)

By

_____
_____
Address

_____
Witness as to Principal

_____
_____
Address

ATTEST:

_____
Surety

By_____
_____
_____
Address

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.
IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

CERTIFICATION OF LEGAL WORK STATUS (Contractor)

Project: R1 Sewer Project
Inquiry No.: 24-110

Contractor 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 § 1324a. Contractor 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. Contractor agrees to produce, at the City's request, documents to verify compliance with applicable State and Federal laws. If Contractor knowingly employs workers or subcontractors in violation of 8 USC § 1324a, such violation shall be cause for unilateral cancellation of the contract between Contractor and City. In addition, Contractor may be suspended from participating in future projects with the City for a period of one (1) year. In the event this contract is terminated due to a violation of 8 USC § 1324a by Contractor or a subcontractor of Contractor, Contractor shall be liable for any and all costs associated with such termination, including, but not limited to, any damages incurred by the City, excluding attorney fees. Contractor and City each agree to pay their own respective attorney fees. For purposes of compliance, the City requires Contractor and subcontractors to use E-Verify to verify the employment eligibility of all employees as allowed by law and the E-Verify procedures. Contractor and subcontractors must maintain authorized documentation of the E-Verify.

I certify that I have read, understand and agree to comply with the requirements herein.

Contractor Name: _____

Company Address: _____

Company's Unique E-Verification Number: _____

_____ _____
Signature Date

_____
Official Title

STATE OF UTAH)
ss.
County of Washington)

On the _____ day of _____ 20__, before me, _____, a notary public, personally appeared _____ proved on the basis of satisfactory evidence to be the person whose name is subscribed to in this document, and acknowledged he/she executed the same voluntarily for its stated purpose.

_____
Notary Public

CERTIFICATION OF LEGAL WORK STATUS (Subcontractors)

Project: R1 Sewer Project
Inquiry No.: 24-110

Subcontractor 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 § 1324a. Subcontractor agrees to require all their 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. Subcontractor agrees to produce, at the City's request, documents to verify compliance with applicable State and Federal laws. If Subcontractor knowingly employs workers or subcontractors in violation of 8 USC § 1324a, such violation shall be cause for unilateral cancellation of the contract between Contractor and City. In addition, Subcontractor may be suspended from participating in future projects with the City for a period of one (1) year. For purposes of compliance, the City requires Subcontractor and their subcontractors to use E-Verify to verify the employment eligibility of all employees as allowed by law and the E-Verify procedures. Subcontractor and their subcontractors must maintain authorized documentation of the E-Verify.

I certify that I have read, understand and agree to comply with the requirements herein.

Subcontractor Name: _____

Company Address: _____

Company's Unique E-Verification Number: _____

_____ _____
Signature Date

_____
Official Title

STATE OF UTAH)
ss.
County of Washington)

On the _____ day of _____ 20__, before me, _____, a notary public, personally appeared _____ proved on the basis of satisfactory evidence to be the person whose name is subscribed to in this document, and acknowledged he/she executed the same voluntarily for its stated purpose.

_____
Notary Public

NOTICE OF AWARD

To:_____

Project: R1 Sewer Project
Inquiry No.: 24-110

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 $_____ 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 _____ day of _____, 20__.

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 _____

Title _____

NOTICE TO PROCEED

Date: _____.

To: _____.

Project: R1 Sewer Project
Inquiry No.: 24-110

You are hereby notified to commence WORK in accordance with the Agreement entered into for this project on or before _____, and you are to complete all WORK in accordance with the Contract Documents on or before_____.

City of St. George
CITY

By _____

Name Michele Randall

Title Mayor

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO
PROCEED is hereby acknowledged

By_____

this the ____ day of _____, 20__

Name _____

Title _____

CERTIFICATION OF LEGAL WORK STATUS (Payment request)

Project: R1 Sewer Project
Inquiry No.: 24-110

Contractor certifies that it has not and will not during the performance of this contract knowingly employed, or subcontracted with any entity which employs workers in violation of 8 USC § 1324a. Contractor has required all subcontractors at the time they were hired for this project to sign a Certification of Legal Work Status and submitted the Certification to City prior to any work being performed by the subcontractors.

Contractor agrees to produce, at the City's request, documents to verify compliance with applicable State and Federal laws. If Contractor knowingly employs workers or subcontractors in violation of 8 USC § 1324a, such violation shall be cause for unilateral cancellation of the contract between Contractor and City. In addition, Contractor may be suspended from participating in future projects with the City for a period of one (1) year. In the event this contract is terminated due to a violation of 8 USC § 1324a by Contractor or a subcontractor of Contractor, Contractor shall be liable for any and all costs associated with such termination, including, but not limited to, any damages incurred by the City, excluding attorney fees. Contractor and City each agree to pay their own respective attorney fees. For purposes of compliance, the City requires Contractor and subcontractors to use E-Verify to verify the employment eligibility of all employees as allowed by law and the E-Verify procedures. Contractor and subcontractors must maintain authorized documentation of the E-Verify.

I certify that I have read, understand and agree to comply with the requirements herein.

Contractor Name: _____

Company Address: _____

Company's Unique E-Verification Number: _____

_____ _____
Signature Date

_____
Official Title

STATE OF UTAH)
ss.
County of Washington)

On the _____ day of _____ 20__, before me, _____, a notary public, personally appeared _____ proved on the basis of satisfactory

evidence to be the person whose name is subscribed to in this document, and acknowledged he/she executed the same voluntarily for its stated purpose.

_____

Notary Public

CONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT
(General Contractor)

Project: R1 Sewer Project
Inquiry No.: 24-110

Undersigned's Customer: City of St. George

Invoice/Payment Application Number: _____

Payment Amount: _____

Payment Period: _____

Contractor hereby releases and waives any notice of lien or right under Utah Code Ann., Title 38, Chapter 1, Mechanics' Liens, or any bond right under Utah Code Ann., Title 14, Contractors' Bonds, or Section **63G-6-505** related to payment rights the undersigned has on the above described Property once:

(1) the undersigned endorses a check in the above referenced Payment Amount payable to the undersigned; and

(2) the check is paid by the depository institution on which it is drawn.

This waiver and release applies to a progress payment for the work, materials, equipment, or a combination of work, materials, and equipment furnished by the undersigned to the Property or to the Undersigned's Customer which are the subject of the Invoice or Payment Application, but only to the extent of the Payment Amount. This waiver and release does not apply to any retention withheld; any items, modifications, or changes pending approval; disputed items and claims; or items furnished or invoiced after the Payment Period.

The undersigned warrants that the undersigned either has already paid or will use the money the undersigned receives from this progress payment promptly to pay in full all the undersigned's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or combination of work, materials, and equipment that are the subject of this waiver and release.

Dated: _____

Contractor Name: _____

Company Address: _____

_____ _____
Signature Date

_____
Official Title

CONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT

(Sub-Contractor)

Project: R1 Sewer Project
Inquiry No.: 24-110

Undersigned's Customer: City of St. George

Invoice/Payment Application Number: _____

Payment Amount: _____

Payment Period: _____

To the extent provided below, this document becomes effective to release and the undersigned is considered to waive any notice of lien or right under Utah Code Ann., Title 38, Chapter 1, Mechanics' Liens, or any bond right under Utah Code Ann., Title 14, Contractors' Bonds, or Section **63G-6-505** related to payment rights the undersigned has on the above described Property once:

(1) the undersigned endorses a check in the above referenced Payment Amount payable to the undersigned; and

(2) the check is paid by the depository institution on which it is drawn.

This waiver and release applies to a progress payment for the work, materials, equipment, or a combination of work, materials, and equipment furnished by the undersigned to the Property or to the Undersigned's Customer which are the subject of the Invoice or Payment Application, but only to the extent of the Payment Amount. This waiver and release does not apply to any retention withheld; any items, modifications, or changes pending approval; disputed items and claims; or items furnished or invoiced after the Payment Period.

The undersigned warrants that the undersigned either has already paid or will use the money the undersigned receives from this progress payment promptly to pay in full all the undersigned's laborers, subcontractors, material men, and suppliers for all work, materials, equipment, or combination of work, materials, and equipment that are the subject of this waiver and release.

Dated: _____

Contractor Name: _____

Company Address: _____

_____ _____
Signature Date

_____
Official Title

WAIVER AND RELEASE UPON FINAL PAYMENT
(General Contractor)

Project: R1 Sewer Project
Inquiry No.: 24-110

Undersigned's Customer: City of St. George

Invoice/Payment Application Number:
_____

Payment Amount:
_____

To the extent provided below, this document becomes effective to release and the undersigned is considered to waive any notice of lien or right under Utah Code Ann., Title 38, Chapter 1, Mechanics' Liens, or any bond right under Utah Code Ann., Title 14, Contractors' Bonds, or Section **63G-6-505** related to payment rights the undersigned has on the above described Property once:

(1) the undersigned endorses a check in the above referenced Payment Amount payable to the undersigned; and

(2) the check is paid by the depository institution on which it is drawn.

This waiver and release applies to the final payment for the work, materials, equipment, or combination of work, materials, and equipment furnished by the undersigned to the Property or to the Undersigned's Customer.

The undersigned warrants that the undersigned either has already paid or will use the money the undersigned receives from the final payment promptly to pay in full all the undersigned's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or combination of work, materials, and equipment that are the subject of this waiver and release.

Dated this _____ day of _____, 20___.

Contractor Name: _____

Company Address: _____

_____ _____
Signature Date

_____
Official Title

WAIVER AND RELEASE UPON FINAL PAYMENT
(Sub-Contractor)

Project: R1 Sewer Project
Inquiry No.: 24-110

Undersigned's Customer: City of St. George

Invoice/Payment Application Number: _____

Payment Amount: _____

To the extent provided below, this document becomes effective to release and the undersigned is considered to waive any notice of lien or right under Utah Code Ann., Title 38, Chapter 1, Mechanics' Liens, or any bond right under Utah Code Ann., Title 14, Contractors' Bonds, or Section **63G-6-505** related to payment rights the undersigned has on the above described Property once:

(1) the undersigned endorses a check in the above referenced Payment Amount payable to the undersigned; and

(2) the check is paid by the depository institution on which it is drawn.

This waiver and release applies to the final payment for the work, materials, equipment, or combination of work, materials, and equipment furnished by the undersigned to the Property or to the Undersigned's Customer.

The undersigned warrants that the undersigned either has already paid or will use the money the undersigned receives from the final payment promptly to pay in full all the undersigned's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or combination of work, materials, and equipment that are the subject of this waiver and release.

Dated this _____ day of _____, 20___.

Contractor Name: _____

Company Address: _____

_____ _____
Signature Date

_____
Official Title

REQUEST FOR INFORMATION (RFI)

R.F.I. NO.		Date:	

Project: R1 Sewer Project
Inquiry No.: 24-110

To:	
Sender:	

REASON FOR REQUEST: PROBABLE EFFECT:

	INSUFFICIENT INFORMATION		INCREASE/DECREASE COST	$	ESTIMATE
	CONFLICT		INCREASE/DECREASE TIME	days	ESTIMATE
	ALTERNATE PROPOSAL		NO CHANGE		
	OTHER		UNKNOWN		

DRAWING NO.		DETAIL NO.		SPEC. SECTION	

INFORMATION NEEDED:

SUGGESTED RESOLUTION:

REQUIRED RESPONSE DATE:		SUBMITTED BY:	

PROCEED WITH THESE INSTRUCTIONS:

RESPONSE DATE:		RESPONSE BY:		ATTACHMENTS:	

CHANGE ORDER

Order No. _____
Date. _____
Agreement Date. _____

Project: R1 Sewer Project
Inquiry No.: 24-110

CITY: City of St. George

CONTRACTOR: _____

The following changes are hereby made to the CONTRACT DOCUMENTS:
ITEM #1 –

Justification:

ITEM #2 –

Justification:

CHANGE TO CONTRACT PRICE:

Original CONTRACT PRICE	**$**
Current CONTRACT PRICE adjusted by previous CHANGE ORDERS	**$**
The CONTRACT PRICE due to this CHANGE ORDER will be _____ by	**$**
The new CONTRACT PRICE including this CHANGE ORDER will be	**$**

CHANGE TO CONTRACT TIME: The CONTRACT TIME will be (increased) / by ____ calendar days.
The date for completion of all WORK will be _____.

APPROVALS:

CIVIL ENGINEER: _____

CONTRACTOR: _____

CITY: _____

NOTICE OF SUBSTANTIAL COMPLETION

To:_____

_____

_____

Project: R1 Sewer Project
Inquiry No.: 24-110

The CITY has considered your request for a NOTICE OF SUBSTANTIAL COMPLETION. You are hereby notified that this project is substantially complete according to the terms and conditions set forth in the Contract Documents. Attached to this notice is the list of items (Final Punchlist) that need to be completed or corrected before final payment.

The Final Completion Inspection will be held on a future date agreed upon by Contractor and CITY.

Commencement of warranties will begin on final acceptance of project.

You are required to return an acknowledged copy of this NOTICE OF SUBSTANTIAL COMPLETION to the CITY.

Dated this _____.

CITY OF ST. GEORGE:

By

_____

Name ____

_____

Title ____

_____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF SUBSTANTIAL COMPLETION is hereby acknowledged

by _____

this the _____day of _____, 20__.

By _____

Name _____

Title _____

Final Acceptance Letter

Date:

RE: Project: R1 Sewer Project
Inquiry No. 24-110

To the best of my knowledge, information, and belief, and on the basis of my observations, the Work has been completed in accordance with the terms and conditions of the Agreement. The entire balance, as shown on the attached Final Request for Payment, is due and payable.

Name Title

Check Items That Have Been Completed:

- ❑ Contractor's Final Pay Request Form is attached with Lien Waivers from all sub-contractors and material suppliers, Waiver and Release Upon Final Payment and Certification of Legal Work Status (Payment request).
- ❑ Letter of 1-year warrantee written by contractor.
- ❑ All punchlist items are completed and accepted.
- ❑ Equipment Start-Up has been performed and observed.
- ❑ All Warranties, Guarantees, etc. for equipment and materials have been received, approved and submitted to the CITY.
- ❑ Operating Manual, Parts List, Lists of Products, Maintenance Manuals, Operating Tools and Devices, Maintenance Materials, Extra Parts, Etc. as required under the contract, have been submitted to the CITY.
- ❑ As-built Drawings have been received, reviewed, approved and submitted to the CITY.
- ❑ Submit Contractor Evaluation form to purchasing
- ❑ Certificate of Occupancy/Use – Restroom Building or other occupied buildings

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GENERAL CONDITIONS

1. DEFINITIONS

1.1. Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

1.2. ADDENDA - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS and SPECIFICATIONS, by additions, deletions, clarifications or corrections.

1.3. BID - The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.

1.4. BIDDER - Any person, firm or corporation submitting a BID for the WORK.

1.5. BONDS - Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the CONTRACT DOCUMENTS.

1.6. CHANGE ORDER - A written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.

1.7. CITY – The City of St. George.

1.8. CITY'S REPRESENTATIVE – Name
175 E 200 N
St. George, UT 84770
435-Phone #

1.9. CONTRACT DOCUMENTS – The documents listed as contract documents in the agreement signed by the parties.

1.10. CONTRACT PRICE - The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

1.11. CONTRACT TIME - The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.

1.12. CONTRACTOR - The person, firm or corporation with whom the CITY has executed the Agreement.

1.13. DRAWINGS - The part of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared by a licensed professional Landscape Architect, Architect, or Engineer and reviewed and approved by the INSPECTING OFFICER.

1.14. INSPECTING OFFICER - The person designated by the City of St. George.

1.15. FIELD ORDER - A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the INSPECTING OFFICER to the CONTRACTOR during construction.

1.16. NOTICE OF AWARD - The written notice of the acceptance of the BID from the CITY to the successful BIDDER.

1.17. NOTICE TO PROCEED - Written communication issued by the CITY to the CONTRACTOR authorizing him to proceed with the WORK and establishing the date of commencement of the WORK.

1.18. PROJECT - The undertaking to be performed as provided in the CONTRACT DOCUMENTS.

1.19. SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed, or as described below:

1.19.1. Shop drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data which are prepared by CONTRACTOR or any SUBCONTRACTOR, manufacturer, supplier, or distributor. Shop drawings illustrate some portion of the WORK and confirm dimensions and conformance to Contract Documents.

1.19.2. Samples are physical examples furnished by CONTRACTOR to illustrate materials, equipment, color, or workmanship and to assist in the establishment of standards by which the WORK will be judged.

1.20. SPECIFICATIONS OR TECHNICAL SPECIFICATIONS - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature about the materials, equipment, construction systems, standards and workmanship.

1.21. SUBCONTRACTOR - An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.

1.22. SUBSTANTIAL COMPLETION - That date as certified by the INSPECTING OFFICER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended. Obtaining a certificate of occupancy does not mean the WORK has reached SUBSTANTIAL COMPLETION.

1.23. SUPPLEMENTAL GENERAL CONDITIONS - Modifications to General Conditions required for participation in the PROJECT and approved in writing prior to inclusion in the CONTRACT DOCUMENTS, or such requirements that may be imposed by applicable state laws.

1.24. SUPPLIER - Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.

1.25. WORK - All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.

1.26. WRITTEN NOTICE - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the WORK.

2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

2.1. The CONTRACTOR may be furnished additional instructions and detail drawings by the INSPECTING OFFICER as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

2.2. The additional drawings and instruction thus supplied will become a part of the CONTRACT DOCUMENTS. The CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

3. SCHEDULES, REPORTS AND RECORDS

3.1. The CONTRACTOR shall submit to the CITY such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable when requested by the CITY for the WORK to be performed.

3.2. Prior to the first partial payment request the CONTRACTOR shall submit construction progress schedules showing the order in which he proposes to carry on the WORK, including dates at which he will start the various parts of the WORK, estimated date of completion of each part and as applicable:

3.2.1. The dates at which special detail drawings will be required; and

3.2.2. Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.

4. DRAWINGS AND SPECIFICATIONS

4.1. The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the CITY.

4.2. In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.

4.3. Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the INSPECTING OFFICER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.

5. SHOP DRAWINGS AND SAMPLES

5.1. The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The INSPECTING OFFICER shall promptly review all SHOP DRAWINGS. The INSPECTING OFFICER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.

5.2. When submitted for the INSPECTING OFFICER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

5.3. Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the INSPECTING OFFICER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the INSPECTING OFFICER.

5.4. Procedure: CONTRACTOR shall review and designate (stamp) his approval and submit to CITY'S REPRESENTATIVE, with reasonable promptness and in orderly sequence, all shop drawings and samples required by the Contract Documents. Three copies of the Drawings are required. CONTRACTOR shall bear cost of reproducing copies of shop drawings required by all concerned.

5.5. By approving shop drawings and samples, CONTRACTOR thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers, and similar data, or will do so, and that he has checked and coordinated each shop drawing and sample with requirements of the WORK and of the Contract Documents.

5.6. No WORK requiring a shop drawing or sample submission shall be commenced until submission has been approved by CITY'S REPRESENTATIVE.

5.7. Samples.

5.7.1. Where specified or required, CONTRACTOR shall submit samples to CITY'S REPRESENTATIVE together with specification material, affidavits, and other documentation as may be required by CITY'S REPRESENTATIVE.

5.7.2. It is the CONTRACTOR'S specific responsibility to ascertain that samples submitted have been checked and approved by him.

5.7.3. Cost of samples, together with transportation, delivery, and any other costs, shall be borne by CONTRACTOR. Samples shall be retained in the office of the CITY'S REPRESENTATIVE until completion of the Project.

5.7.4. Where samples are specifically required to be submitted for approval, no WORK involving the sampled materials shall proceed until written approval has been obtained from CITY'S REPRESENTATIVE.

5.8. Review of shop drawings and Samples by CITY'S REPRESENTATIVE shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory. Review of such drawings and samples will not relieve CONTRACTOR of responsibility for any error which may exist in the Submittals.

6. MATERIALS, SERVICES AND FACILITIES

6.1. It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time. Materials incorporated into Project shall be new, except as otherwise indicated in the Specifications, of specified quality, and furnished in sufficient quantity to facilitate proper and speedy execution of the WORK. CONTRACTOR shall, if requested, furnish evidence of the quality of any materials. Materials not meeting the requirements of the Contract Documents shall be removed from the Project by CONTRACTOR without expense to CITY.

6.2. Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection.

6.2.1. Materials shall be delivered to the site in original packaging with labels and trademarks intact, and such labels and trademarks shall remain intact until used.

6.2.2. CONTRACTOR shall confine his apparatus, storage of materials, and operations of his workmen to limits indicated by law, ordinances, and permits and shall arrange and maintain parking of vehicles and storage of materials in an orderly manner leaving all walks, driveways, roads, and entrances, unencumbered.

6.3. All equipment on site shall be protected from physical damage and from the elements. All rotating equipment shall be rotated four turns once each week during construction.

6.4. Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

6.5. Materials, supplies and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the INSPECTING OFFICER.

6.6. Materials, supplies or equipment to be incorporated into the WORK shall not be purchased by the CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

7. INSPECTION AND TESTING

7.1. All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.

7.2. The CITY shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.

7.3. The CONTRACTOR shall provide at his expense the testing and inspection services required by the CONTRACT DOCUMENTS unless otherwise stated in the CONTRACT DOCUMENTS.

7.4. If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the INSPECTING OFFICER timely notice of readiness. The CONTRACTOR will then furnish the INSPECTING OFFICER the required certificates of inspection, testing or approval.

7.5. Inspections, tests or approvals by the INSPECTING OFFICER or others shall not relieve the CONTRACTOR from his obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

7.6. The INSPECTING OFFICER and his representatives will at all times have access to the WORK. In addition, authorized representatives and agents of the CITY or any participating Federal or state agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection, or testing thereof.

7.7. If any WORK is covered prior to inspections, tests, or approval or contrary to the CONTRACT DOCUMENTS it must, if requested by the INSPECTING OFFICER, be uncovered for his observation and replaced at the CONTRACTOR'S expense.

7.8. If the INSPECTING OFFICER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the INSPECTING OFFICER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the INSPECTING OFFICER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate CHANGE ORDER shall be issued.

8. SUBSTITUTIONS

8.1. Whenever a material, article or piece or equipment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may, by written request with supporting documentation, recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue number, and if, in the opinion of the INSPECTING OFFICER, such material, article, or piece of equipment provides equal or better level of performance than that expected from the originally specified material, article, or piece of equipment at equal or less cost to the CITY, and provides an equal or better warranty and service conditions, such materials, articles, and pieces of equipment may be considered for substitution. Such consideration on the part of the INSPECTING OFFICER does not constitute agreement to or approval of any substituted materials, articles, or pieces of equipment. The written request for substitution shall include a statement that CONTRACTOR accepts responsibility for any and all adjustments to the rest of the project to accommodate the proposed substitution, including any additional costs created by the change.

8.2. INSPECTING OFFICER retains the right to reject any and all materials, articles, and pieces of equipment offered for consideration as substitutes for those originally specified, and may require the CONTRACTOR to install all materials, articles, and pieces of equipment as originally specified.

8.3. When several materials are specified in the Contract Documents by name for one use, CONTRACTOR may select any one of those so specified. The mixing of several products specified by name for one use is prohibited.

8.4. Wherever an item or class of material is specified exclusively by trade name, by name of maker, or by catalog reference, use such item only unless CITY’S REPRESENTATIVE’S approval for a substitution is secured. Items and material not specified in the Contract Documents and installed in the WORK shall be removed and replaced by specified items and material at no additional cost to CITY and for no additional time added to Contract.

9. PATENTS

The CONTRACTOR shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and save the CITY harmless from loss on account thereof, except that the CITY shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, however if the CONTRACTOR has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the INSPECTING OFFICER.

10. SURVEYS, PERMITS, REGULATIONS

10.1. The CITY shall furnish all boundary and topographic surveys, establish a point of beginning, and provide a plan showing the basic data necessary for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the CITY, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.

10.2. The STAKING AND LAYOUT PLAN shall be the responsibility of the CONTRACTOR in coordination with the CITY.

10.3. The CONTRACTOR shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, the CONTRACTOR shall be charged with the resulting expense, which expense shall include the cost of all labor and materials necessary to repair the damage, and the CONTRACTOR shall be responsible to remedy any mistakes that may be caused by their unnecessary loss or disturbance.

10.4. Permits and licenses necessary and required for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the CONTRACT DOCUMENTS. Such permits and documents shall include but not be limited to a City business license or registration, the SWPPP (Storm Water Pollution Prevention Plan), NOI (Notice of Intent which is part of the SWPPP), Air Quality Control Permit, Grading Permit, Building Permit, Encroachment permit, and NOT (Notice of Termination of the Stormwater Permit). Easements shall be secured and paid for by the CITY, unless otherwise specified in the CONTRACT DOCUMENTS. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR observes that the CONTRACT DOCUMENTS are at variance therewith, he shall promptly notify the INSPECTING OFFICER in writing, and any necessary changes shall be adjusted as provided in Section 13, CHANGES IN THE WORK.

11. PROTECTION OF WORK, PROPERTY AND PERSONS

11.1. The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the WORK and other persons who may be affected thereby, all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the

site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

11.2. The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the CITY or the INSPECTING OFFICER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

11.3. In emergencies affecting the safety of persons or the WORK or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the INSPECTING OFFICER or CITY, shall act to prevent threatened damage, injury or loss. He will give the INSPECTING OFFICER prompt WRITTEN NOTICE of significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

12. SUPERVISION BY CONTRACTOR

The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

13. CHANGES IN THE WORK

13.1. The CITY may at any time, as the need arises, order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.

13.2. The INSPECTING OFFICER, also may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the INSPECTING OFFICER unless the CONTRACTOR believes that such FIELD ORDER entitles him to a change in CONTRACT PRICE or TIME, or both, in which event he shall give the INSPECTING OFFICER WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the

basis for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER or further instruction from the CITY.

14. CHANGES IN CONTRACT PRICE

14.1. The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any work covered by a CHANGE ORDER or of any claim for increase of decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:

14.1.1. Unit prices previously approved;

14.1.2. An agreed lump sum; or

14.1.3. The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work. In addition there shall be added an amount to be agreed upon but not to exceed fifteen (15) percent of the actual cost of the WORK to cover the cost of general overhead and profit.

15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

15.1. The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.

15.2. The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the CITY, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

15.3. If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the CITY, then the CONTRACTOR will pay to the CITY the amount for LIQUIDATED DAMAGES as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.

15.4. The CONTRACTOR shall not be charged with LIQUIDATED DAMAGES or any excess cost when the delay in completion of the WORK is due to the following and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the CITY or INSPECTING OFFICER.

15.4.1. To any preference, priority or allocation order duly issued by the CITY;

15.4.2. To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to acts of God, or of the public enemy, acts of the CITY, acts of another CONTRACTOR in the performance of a contract with the CITY, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

15.4.3. To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

15.5. Failure to make repairs to deficiencies throughout the Guaranty Period within 10 days after the monthly inspection will result in the assessment of LIQUIDATED DAMAGES at the rate specified in the BID.

15.6. Failure to remove and / or replace defective or rejected materials and WORK found not in compliance with the CONTRACT DOCUMENTS, as specified in Section 16 - CORRECTION OF WORK, within TEN DAYS (10) after receipt of WRITTEN NOTICE given by the INSPECTING OFFICER will result in the assessment of LIQUIDATED DAMAGES at the rate specified in the BID.

15.7. The conditions specified in 15.5 and 15.6 and the rates specified in the Bid are cumulative and are in addition to any LIQUIDATED DAMAGES assessed in accordance with 15.1, 15.2, 15.3, and 15.4 that may be associated with the overall Contract Time.

16. CORRECTION OF WORK

16.1. The CONTRACTOR shall promptly remove from the premises all WORK rejected by the INSPECTING OFFICER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the CITY and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.

16.2. All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, CONTRACTOR shall be assessed LIQUIDATED DAMAGES as specified in the CONTRACT DOCUMENTS. CITY has the right to remove the WORK and store the materials at the expense of CONTRACTOR.

17. SUBSURFACE CONDITIONS

17.1. The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the CITY by WRITTEN NOTICE of:

17.1.1. Subsurface or latent physical conditions at the site differing materially from those indicated in the CONTRACT DOCUMENTS; or

17.1.2. Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

17.2. The CITY shall promptly investigate the conditions, and if it finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given the required WRITTEN NOTICE; provided that the CITY may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

18. SUSPENSION OF WORK, TERMINATION AND DELAY

18.1. The CITY may suspend the WORK or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the INSPECTING OFFICER which notice shall fix the date on which WORK shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed

an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.

18.2. If the CONTRACTOR is adjudged bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to SUBCONTRACTOR or for labor, materials or equipment or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or if he disregards the authority of the INSPECTING OFFICER, or if he otherwise violates any provision of the CONTRACT DOCUMENTS, then the CITY may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such cost exceeds such unpaid balance, the CONTRACTOR will pay the difference to the CITY. Such costs incurred by the CITY will be determined by the INSPECTING OFFICER and incorporated in a CHANGE ORDER.

18.3. Where the CONTRACTOR'S services have been so terminated by the CITY, said termination shall not affect any right of the CITY against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the CITY due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.

18.4. After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the INSPECTING OFFICER, the CITY may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the Contract. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.

18.5. If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the CITY or under an order of court or other public authority, or the INSPECTING OFFICER fails to act on any request for payment within thirty (30) days after it is submitted, or the CITY fails to pay the CONTRACTOR substantially the sum approved by the INSPECTING OFFICER within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the CITY and the INSPECTING OFFICER, terminate the CONTRACT and recover from the CITY payment for all WORK executed and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the INSPECTING OFFICER has failed to act on a request for payment or if the CITY has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days written notice to the CITY and the INSPECTING OFFICER stop the WORK until he has been paid all amounts then

due, in which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

18.6. If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the CITY or INSPECTING OFFICER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, shall be made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the CITY or INSPECTING OFFICER.

19. PAYMENTS TO CONTRACTORS

19.1. **REQUEST FOR PAYMENT**. Payment request shall be submitted on CITY'S standard payment request form. The breakdown shall follow the trade Divisions of the Specification and each item there under shall include its pro rata part of overhead and profit so the sum of the items equal the contract price. The breakdown will correspond exactly to items of WORK in the schedule including WORK of SUBCONTRACTORS.

19.1.1. **PROGRESS PAYMENTS**. The following general requirements shall be met:

19.1.1.1. CONTRACTOR shall submit to INSPECTING OFFICER three (3) copies of an itemized request for payment or partial payment for work completed in accordance with the terms of the Contract. The request for payment shall not be submitted more than once a month and must be on forms approved by CITY.

19.1.1.2. The request shall be supported by data substantiating CONTRACTOR's right to payment as CITY may require. Said data may include, but is not limited to, copies of requisitions from Subcontractors, invoices for material purchased, timecards for employees, proof of payment to Subcontractors and photographs clearly showing the work for which payment is requested.

19.1.1.3. The request may include requests for payment pursuant to approved Change Orders or Construction Change Directives.

19.1.1.4. The request may not include requests for payment for portions of the work performed by a Subcontractor when CONTRACTOR does not intend to pay a Subcontractor because of a dispute or other reason. CONTRACTOR shall notify CITY of intent not to pay a Subcontractor and clearly state the reasons for nonpayment.

19.1.1.5. In executing the request for payment, CONTRACTOR shall attest that CONTRACTOR’S employees and Subcontractors involved with prior requests for payment have been paid, unless CONTRACTOR provides a detailed explanation why such payment may not have occurred. CONTRACTOR 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. CONTRACTOR 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.

19.1.2. **PAYMENT FOR MATERIAL AND EQUIPMENT**. If payment is requested on the basis of materials and equipment not incorporated in the work, but delivered and suitably stored at or near the site the payment request shall be conditioned upon compliance by CONTRACTOR with procedures satisfactory to CITY to establish CITY's title to such materials and equipment or otherwise protect CITY's interest, and shall include applicable insurance, storage and transportation to the site for such materials and equipment stored off the site. CITY may require copies of invoices or other suitable documentation.

19.1.3. **CONTINUE WORK EVEN IF PAYMENT DISPUTED**. If CONTRACTOR disputes any determination by INSPECTING OFFICER with regard to any Certification of Payment, CONTRACTOR nevertheless shall expeditiously continue to perform the work as set out in the Contract.

19.1.4. **CONTRACTOR'S RESPONSIBILITY FOR SUBCONTRACTOR**. CONTRACTOR shall promptly pay each Subcontractor, upon receipt of payment from CITY, out of the amount paid to CONTRACTOR on account of such Subcontractor's portion of the work, the amount to which said Subcontractor is entitled. CONTRACTOR shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payment to its Subcontractors in a similar manner.

19.1.5. **CERTIFICATE, PAYMENT OR USE NOT ACCEPTANCE OF IMPROPER WORK**. A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by CITY shall not constitute acceptance of work that is not in accordance with the Contract Documents.

19.1.6. **CONDITIONS FOR FINAL PAYMENT**. Upon completion and acceptance of the work, CONTRACTOR shall submit to INSPECTING OFFICER, to the extent required by INSPECTING OFFICER, the following:

19.1.6.1. An affidavit that payrolls, bills for material and equipment, and other indebtedness connected with the work for which CITY or CITY's property might be responsible or encumbered have been paid or otherwise satisfied;

19.1.6.2. A current or additional certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days prior written notice, by certified mail, return receipt requested, has been given to CITY;

19.1.6.3. A written statement that CONTRACTOR knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents;

19.1.6.4. If requested by surety in a timely manner or by CITY, consent of surety, to final payment;

19.1.6.5. Receipt of Record Drawings, the warranties, instructions, operation and maintenance manuals, and training videos required to be furnished by the Contract Documents; and

19.1.6.6. Other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by CITY. If a Subcontractor refuses to furnish a release or waiver required by CITY, CITY may require consent of Surety to the final payment. If such liens, claims, security interests or encumbrances remain unsatisfied after payments are made, CONTRACTOR shall refund to CITY all money that CITY may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

19.1.6.7. After INSPECTING OFFICER has reviewed the items submitted, INSPECTING OFFICER shall issue a Certificate for Payment attached to the final payment request and shall include a Final Acceptance Letter that the work has been accepted by INSPECTING OFFICER under the conditions of the Contract Documents.

19.1.7. **FINAL PAYMENT**. In executing the request for final payment, CONTRACTOR shall provide a "Waiver and Release Upon Final Payment" signed by CONTRACTOR 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 CONTRACTOR provides a detailed explanation why such payments have not occurred or will not occur. CONTRACTOR shall also submit a Certificate of Legal Work Status a copy of which shall be given to City. CONTRACTOR shall require each Subcontractor, vendor, and supplier to sign a "Waiver and Release Upon Final Payment" at the time Subcontractors are paid their final payment and shall provide a copy of the waiver to CITY. Subcontractors shall also submit a Certificate of Legal Work Status a copy of which shall be given to City. Retainage shall be released after receipt of all final waivers.

19.2. **CERTIFICATES FOR PAYMENT**.

19.2.1. **SSUED BY INSPECTING OFFICER.** INSPECTING OFFICER shall within ten (10) days after receipt of CONTRACTOR's request for payment, either issue to CITY a Certificate for Payment, with a copy to CONTRACTOR, for the amount requested, or notify CONTRACTOR and CITY in writing of INSPECTING OFFICER reasons for withholding certification in whole or in part.

19.2.2. **REQUIREMENTS FOR ISSUANCE**. INSPECTING OFFICER's issuance of a Certificate for Payment shall constitute a representation to CITY that to the best of INSPECTING OFFICER's knowledge, information and belief, based upon INSPECTING OFFICER's observations at the site, reviewing supporting data such as but not limited to, copies of requisitions from Subcontractors, invoices for material purchased, timecards for employees, proof of payment to Subcontractors and color photographs clearly showing the work for which payment is requested, reviewing other data comprising the request for payment, and what is reasonably inferable from the observations and data, that the work has progressed to the point indicated in the request and

that the quality of the work is in accordance with the Contract Documents. The foregoing representations are subject to minor deviations from the Contract Documents correctable prior to completion and to specific qualifications expressed by INSPECTING OFFICER. The issuance of a Certificate for Payment will further constitute a representation that CONTRACTOR is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment shall not be a representation that INSPECTING OFFICER has:

19.2.2.1. made exhaustive or continuous on-site inspections to check the quality or quantity of the work;

19.2.2.2. reviewed construction means, methods, techniques, sequences or procedures;

19.2.2.3. reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by CITY to substantiate CONTRACTOR's right to payment;

19.2.2.4. ascertained how or for what purpose CONTRACTOR used money previously paid on account of Contract Sum; or

19.2.2.5. any duty to make such inquiries.

CONTRACTOR is solely responsible for and is not relieved of liability for compliance with the terms of this Contract.

19.2.3. **DECISIONS TO WITHHOLD CERTIFICATION**. INSPECTING OFFICER may decide not to certify payment and may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect CITY, if in INSPECTING OFFICER's judgment the representations to CITY required above cannot be made. If INSPECTING OFFICER is unable to certify payment in the amount of the request, INSPECTING OFFICER shall notify CONTRACTOR and CITY. If CONTRACTOR and INSPECTING OFFICER cannot agree on a revised amount, INSPECTING OFFICER shall promptly issue a Certificate for Payment for the amount to which INSPECTING OFFICER is able to make such representations to CITY. INSPECTING OFFICER may decide not to certify any amount or, because of subsequently discovered evidence or observations, may nullify the whole or part of a Certificate for Payment previously issued, to such extent as may be necessary in INSPECTING OFFICER's opinion to protect CITY from loss because of:

19.2.3.1. Defective work not remedied;

19.2.3.2. Third party claims filed or reasonable evidence indicating probable filing of such claims;

19.2.3.3. Failure of CONTRACTOR to make payments properly to Subcontractors or for labor, materials or equipment;

19.2.3.4. Reasonable evidence that the work cannot be completed for the unpaid balance of the Contract Sum;

19.2.3.5. Damage to CITY or another CONTRACTOR;

19.2.3.6. Reasonable evidence that the work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or LIQUIDATED DAMAGES for the anticipated delay; or

19.2.3.7. Failure to carry out the work in accordance with the Contract Documents.

19.2.4. **CERTIFICATION ISSUED WHEN REASONS FOR WITHHOLDING REMOVED.** When the reasons for withholding certification are removed, certification will be made for the remaining amount requested.

19.3. **CITY PAYMENT PROCEDURE.**

19.3.1. **TIME FOR PAYMENT.** CITY shall pay any undisputed amount, less retainage, within thirty (30) days of the date that the request for payment was submitted to INSPECTING OFFICER. CITY is not required to pay any disputed amount until the dispute is resolved.

19.3.2. **PAYMENT UPON SUBSTANTIAL COMPLETION**. Upon substantial completion of the work or designated portion thereof and upon request by CONTRACTOR and certification by INSPECTING OFFICER, CITY may reduce the retainage to less than five (5) percent, if any, for such work or portion thereof which has not been completed. CITY may pay part of the retained portion of the payments to CONTRACTOR, continuing to retain up to 200% of the fair market value of the work that has not been completed in accordance with the Contract Documents.

19.3.3. **FINAL PAYMENT.** After receiving the Certificate for Payment with the final payment request, the entire balance due CONTRACTOR, less the retained percentages and less deductions that may be lawfully retained by CITY, shall be paid to CONTRACTOR within thirty (30) days of completion and acceptance of the work.

19.3.4. **RETAINAGE.** CITY shall retain five (5) percent of the amount of each payment until the final completion and acceptance of all work and after the CITY has received all items required for final payment, such as the Final Acceptance Letter and waivers.

19.3.5. **HOLDBACKS.**

19.3.5.1. **FOR CLAIMS.** CITY may withhold from payment to CONTRACTOR such amounts as, in CITY's judgment, may be necessary to pay claims against CONTRACTOR or Subcontractor at any tier for labor and services rendered and materials furnished in and about the work. CITY may apply such withheld amounts for the payment of such claims in CITY's discretion. Payment so made by CITY shall be considered as payments made under this Contract by CITY to CONTRACTOR. CITY shall not be liable to CONTRACTOR for any such payment made in good faith. Such withholdings and payments may be made without prior approval of CONTRACTOR.

19.3.5.2. **FAILURE TO PERFORM OBLIGATIONS.** CITY may withhold any payment to CONTRACTOR if and for so long as CONTRACTOR fails to perform any of its obligations or otherwise is in default under any of the Contract Documents.

19.3.6. **CITY NOT IN BREACH**. CITY shall not be deemed to be in breach of this Contract by reason of the withholding of any payment pursuant to any provision of the Contract Documents.

19.4. **WARRANTY OF TITLE**.

19.4.1. **TITLE.** CONTRACTOR warrants that title to all work covered by a request for payment will pass to CITY no later than the time for payment. CONTRACTOR further warrants that upon submittal of a request for payment, all work for which Certificates for Payment have been previously issued and payments received from CITY shall, to the best of CONTRACTOR's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of CONTRACTOR, Subcontractors, or other persons or entities making a claim by reason of having provided labor, materials and/or equipment relating to the work.

19.4.2. **INDEMNIFY CITY.** CONTRACTOR will indemnify and save CITY or CITY'S agents harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the work. CONTRACTOR shall, at CITY'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If CONTRACTOR fails to do so CITY may, after having notified CONTRACTOR, either pay unpaid bills or withhold from CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the CITY to either the CONTRACTOR, his Surety, or any third party. In paying any unpaid bills of the CONTRACTOR, any payment so made by the CITY shall be considered as a payment made under the CONTRACT DOCUMENTS by the CITY to the CONTRACTOR and the CITY shall not be liable to the CONTRACTOR for any such payments made in good faith.

19.5. **INFORMATION TO SUBCONTRACTOR**. INSPECTING OFFICER or CITY shall, on request, furnish to the Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by CONTRACTOR and action taken thereon by INSPECTING OFFICER and CITY on account of portions of the work done by Subcontractor.

19.6. **CITY NOT LIABLE**. Neither CITY nor INSPECTING OFFICER shall have an obligation to pay, monitor or enforce the payment of money to a Subcontractor, except to the extent as may otherwise be required by law.

20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE.

The acceptance by CONTRACTOR or a Subcontractor of final payment shall be and shall operate as a release to CITY of all claims, all liability, every act including negligence of the CITY and others relating to or arising out of this work, to CONTRACTOR or Subcontractor other than claims previously made in writing and identified by Contractor or Subcontractor as unsettled at the time of final request for payment. Any payment, however, final or otherwise, shall not release CONTRACTOR or his sureties or Subcontractor from any obligations under the Contract Documents or the Performance Bond and Payment Bonds.

21. INSURANCE

21.1. CONTRACTOR shall carry insurance required by LAWS and REGULATIONS to protect CONTRACTOR, CITY and CITY'S officials, employees and CONSULTANTS.

21.2. Neither CONTRACTOR, nor any SUBCONTRACTOR, shall enter the site of the WORK or commence work under this CONTRACT before CITY has received and accepted CERTIFICATES(s) of INSURANCE, and INSURANCE ENDORSEMENTS, and has issued the NOTICE TO PROCEED.

21.3. To the fullest extent permitted by laws and regulations, CONTRACTOR shall indemnify and hold harmless CITY, and its CONSULTANTS and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages (including but not limited to all fees and charges of architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting from the performance of the WORK, provided that any such claim, cost, loss or damage: (i) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the WORK itself, including the loss of use resulting therefrom, and (ii) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any subcontractor, any supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the WORK or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by negligence or omission of a person or entity indemnified hereunder or whether liability is imposed upon such indemnified party by laws and regulations regardless of the negligence of any such person or entity.

21.4. In any and all claims against CITY or its CONTRACTOR or any of their respective consultants, agents, officers, directors or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any subcontractor, any supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the WORK, or anyone for whose acts any of them may be liable, the indemnification obligations shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such subcontractor, supplier or other person or organization under workers' compensation acts, disability benefit acts or other employee benefit acts.

21.5. CONTRACTOR shall secure and maintain during the CONTRACT TIME and warranty period certain insurance that shall protect CONTRACTOR, CITY, and its CONSULTANTS in such manner and amounts as set forth hereinafter. The insurance requirements stipulated herein shall not be construed as limiting CONTRACTOR'S liability.

21.6. All loss or damage arising from obstructions or difficulties which may be encountered in the prosecution of the WORK, from the action of the elements, or from any act or omission on the part of CONTRACTOR or any SUBCONTRACTOR, supplier, person, or agent employed by CONTRACTOR shall be borne by CONTRACTOR.

21.7. INSURANCE CERTIFICATES, shall set forth the following information and shall be signed by an authorized representative of the insurance company:

21.7.1. Name and address of the insured.

21.7.2. Shall name as CERTIFICATE HOLDER the CITY and CITY'S CONSULTANTS.
21.7.3. The location of the operations to which the insurance applies.
21.7.4. The number of the policy and the type or types of insurance in force thereunder on the date borne by the certificate.
21.7.5. The expiration date of the policy and the limit or limits of liability thereunder on the date borne by the certificate.
21.7.6. A statement that the insurance covered by the certificate applies to all of the operations on and at the site of the WORK which are undertaken by the insured during the life of the CONTRACT.
21.7.7. A statement that all coverage is on an occurrence basis rather than a claims basis.
21.7.8. A provision that the policy or policies may not be cancelled, denied renewal, or reduced in coverage until at least 30 days after written notice has been received by CITY.
21.7.9. A statement that a cross liability or severability of interests' clause is included, unless a separate policy covering CITY is provided.
21.7.10. Name, address, and telephone number of the insurance company's agent of process in Utah.
21.7.11. Other information to demonstrate compliance with additional requirements stipulated for the various types of insurance coverages.

21.8. Compensation Insurance. CONTRACTOR shall take out and maintain WORKER'S COMPENSATION INSURANCE as required by the LABOR CODE for all its employees at the site of the WORK during the life of this CONTRACT:
21.8.1. Insurance certificates shall provide a waiver of subrogation by the carrier to CERTIFICATE HOLDER.
21.8.2. CONTRACTOR shall require each SUBCONTRACTOR to provide WORKER'S COMPENSATION INSURANCE for its employees unless such employees are covered by the CONTRACTOR.
21.8.3. In the event any class of employees engaged in hazardous work under this CONTRACT is not protected by the WORKER'S COMPENSATION STATUTE, CONTRACTOR shall provide, and shall cause its SUBCONTRACTORS to provide, special insurance for the protection of such employees not otherwise protected.

21.9. Commercial General Liability and Property Damage Insurance:
21.9.1. CONTRACTOR shall procure, and maintain during the life of the CONTRACT, such general liability and property damage insurance necessary to protect itself, CITY, the CERTIFICATE HOLDER, and SUBCONTRACTORS performing work under this CONTRACT, from all claims and legal costs for bodily injury or personal injury, including accidental death and property damage claims arising from operations under this CONTRACT, whether such operations are the CONTRACTOR'S or the SUBCONTRACTORS'.
21.9.2. CERTIFICATE HOLDER shall be named as additional primary insured without offset against their existing insurance.
21.9.3. The INSURANCE ENDORSEMENT shall evidence such provisions.
21.9.4. The minimum general liability and property damage liability shall be as follows:

21.9.4.1. 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.

21.9.4.2. 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.

21.9.4.3. Broad form property damage insurance in an amount not less than $300,000 Dollars.

21.9.5. Such policy shall include each of the following coverages:

21.9.5.1. Comprehensive form.

21.9.5.2. Premises - operations.

21.9.5.3. Explosion and collapse hazard.

21.9.5.4. Underground hazard.

21.9.5.5. Product/completed operations hazard.

21.9.5.6. Contractual insurance.

21.9.5.7. Broad form property damage, including completed operations.

21.9.5.8. Independent contractors.

21.9.5.9. Personal injury.

21.9.5.10. Fire and extended coverage with endorsement for vandalism and malicious mischief in an amount of at least 50 percent of the CONTRACT PRICE.

21.10. Motor Vehicle Public Liability and Property Damage Insurance.

21.10.1. CONTRACTOR shall carry and maintain a motor vehicle public liability and property damage insurance coverage on each vehicle used in the performance of the WORK in an amount not less than $1,000,000 Dollars for one person and $3,000,000 Dollars for more than one person and for property damage resulting from any one occurrence which may arise from the operations of CONTRACTOR in performing the WORK in the sum of $1,000,000 Dollars.

21.10.2. Such motor vehicle liability insurance shall include each of the following types:

21.10.2.1. Comprehensive form, including loading and unloading.

21.10.2.2. Owned.

21.10.2.3. Hired.

21.10.2.4. Non-owned.

21.10.3. CERTIFICATE HOLDER shall be named as additional primary insureds without offset against their existing insurance. Insurance certificates shall name CERTIFICATE HOLDER as additional insureds.

21.11. Builder's "All Risk" Insurance. CONTRACTOR shall provide CERTIFICATES OF INSURANCE showing that CONTRACTOR has obtained, for the duration of the CONTRACT TIME, BUILDER’S RISK "ALL RISK" insurance in the amount equal to the CONTRACT PRICE including flood, tidal wave, and earthquake, but excluding tidal wave and earthquake coverage in excess of 5 percent of the CONTRACT PRICE. INSURANCE CERTIFICATES, shall name CERTIFICATE HOLDER as additional insureds.

22. CONTRACT SECURITY.

The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the CITY with a Performance Bond and a Payment Bond in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by the CONTRACTOR of all undertakings, covenants, terms, conditions and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the state in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in the state in which the WORK is to be performed or is removed from the list of Surety Companies accepted on Federal BONDS, CONTRACTOR shall within ten (10) days after notice from the CITY to do so, substitute an acceptable BOND (or BONDS) in such form and sum and signed by such other surety or sureties as may be satisfactory to the CITY. The premiums on such BOND shall be paid by the CONTRACTOR. No further payments shall be deemed due nor shall have furnished an acceptable BOND to the CITY.

23. ASSIGNMENTS.

Neither the CONTRACTOR nor the CITY shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title or interest therein, or his obligations thereunder, without written consent of the other party.

24. INDEMNIFICATION.

24.1. The CONTRACTOR will indemnify and hold harmless the CITY and the INSPECTING OFFICER and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

24.2. In any and all claims against the CITY or the INSPECTING OFFICER, or any of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the 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 CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

24.3. The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the INSPECTING OFFICER, his agents or employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

25. SEPARATE CONTRACTS

25.1. The CITY reserves the right to let other contracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate his WORK with theirs. If the proper execution or results of any part of the CONTRACTOR'S WORK depends on the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the INSPECTING OFFICER any defects in such WORK that render it unsuitable for proper execution and results.

25.2. The CITY may perform additional WORK related to the PROJECT by himself, or he may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are parties to such Contracts (or the CITY, if he is performing the additional WORK himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate his WORK with theirs.

25.3. If the performance of additional WORK by other CONTRACTORS or the CITY is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the CITY or others involves him in additional expense or entities him to an extension of the CONTRACT TIME, he may make a claim therefor as provided in Sections 14 and 15.

26. SUBCONTRACTING.

26.1. The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the WORK which, under normal contracting practices, are performed by specialty SUBCONTRACTORS.

26.2. The CONTRACTOR shall not award WORK to SUBCONTRACTOR(s), in excess of SEVENTY (70%) percent of the CONTRACT PRICE, without prior written approval of the CITY.

26.3. The CONTRACTOR shall be fully responsible to the CITY for the acts and omissions of his SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

26.4. The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the CITY may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.

26.5. Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the CITY.

27. INSPECTING OFFICER'S AUTHORITY.

27.1. The INSPECTING OFFICER shall act as the CITY 'S representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and WORK performed. He shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The INSPECTING OFFICER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

27.2. The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship and execution of the WORK. Inspections may be made at the factory or fabrication plant of the source of material supply.

27.3. The INSPECTING OFFICER will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

27.4. The INSPECTING OFFICER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

28. LAND AND RIGHTS-OF-WAY.

28.1. Prior to issuance of NOTICE TO PROCEED, the CITY shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.

28.2. The CITY shall provide to the CONTRACTOR information which delineates and describes the lands owned and rights-of-way acquired.

28.3. The CONTRACTOR shall provide at his own expense and without liability to the CITY any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

29. GUARANTEE.

29.1. The CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of FINAL ACCEPTANCE. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of FINAL ACCEPTANCE of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall within 10 days of receipt of Notice of Defect make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The CITY will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the CITY reserves the right to make the necessary repairs and charge the CONTRACTOR the cost thereby incurred and assess LIQUIDATED DAMAGES as specified in the CONTRACT DOCUMENTS. The PERFORMANCE BOND shall remain in full force and effect through the guarantee period.

29.2. WARRANTY INSPECTION. CONTRACTOR shall, upon the twelve month anniversary of the date of FINAL ACCEPTANCE, arrange for and conduct a warranty inspection of all WORK completed under this Agreement.

29.3. Failure of CONTRACTOR to affect repairs as specified in Sub-Section 29.1 above within the 10 day grace period shall constitute a failure to perform and shall be cause to initiate LIQUIDATED DAMAGES in the rate stated in the CONTRACT DOCUMENTS and shall be assessed per day for each day said repairs are not corrected.

29.4. WARRANTY DELIVERY: Delivery of guarantees and warranties shall not relieve CONTRACTOR from any obligation assumed under any other provisions of this contract.

29.5. EXCLUSIONS: Nothing herein intends or implies that guarantees and/or warranties shall apply to WORK or materials abused or neglected by CITY.

30. TAXES.

The CONTRACTOR will pay all sales, consumer, use and other similar taxes required by the law of the place where the WORK is performed.

31. CONSTRUCTION STAKING.

CONTRACTOR shall coordinate with the CITY on layout and staking of all WORK associated with this Project. All WORK shall be staked in the field prior to commencing construction of any portion of the WORK. No WORK shall be commenced without inspection and approval of the Inspecting Officer. (See: Section 10- Survey, Permits, Regulations; Section 10.2-Additional clarifications and information.)

32. SAFETY AND HEALTH.

32.1. The CONTRACTOR shall comply with, and is responsible for enforcement of safety and health regulations for construction, promulgated by the Secretary of Labor under Section 107 of the Contract Hours and Safety Standards Act, as set forth in Title 29, C.F.R.

32.2. Copies of these regulations may be obtained from the Labor Building, 14th and Constitution Avenue NW, Washington, DC 20013.

32.3. The CONTRACTOR shall also comply with the provisions of the Federal Occupational Safety and Health Act as amended and Utah Occupational Safety and Health.

33. REFERENCES. Abbreviations used in this specification for various societies, organizations, or government bodies shall stand for the following:

AASHTO American Association of State Highway and Transportation Officials
ACI American Concrete Institute
ANSI American National Standards Institute
ASTM American Society for Testing and Materials
AISC American Institute of Steel Construction
AITC American Institute of Timber Construction
AISI American Iron and Steel Institute
APA American Plywood Association
AWWA American Water Works Association
AWS American Welding Society

FHA Federal Housing Authority
ICBO International Conference of Building Officials
NEMA National Electrical Manufacturers' Association
UBC Uniform Building Code

34. SITE EXAMINATION.

CONTRACTOR shall examine the site before submitting bids or proposals for any WORK and inform himself regarding existing facilities and conditions affecting the proposed WORK. Failure to make such inspection shall in no way relieve the CONTRACTOR of any of the obligations or conditions of the specifications and special provisions or serve in any way as a basis of extra remuneration to the CONTRACTOR for conditions arising from unfamiliarity with the site or conditions affecting the WORK.

35. COORDINATION WITH EXISTING TRADES.

Coordinate the WORK of this Contract with the WORK and schedules of other trades so as not to cause delay or damage to WORK, WORK of others, existing improvements, or additional costs.

36. PUBLIC SAFETY AND TRAFFIC CONTROL.

36.1. The cost of all safety and traffic control devices shall be included in the lump sum bid price.

36.2. CONTRACTOR shall submit a traffic control plan for the City's review and shall obtain a traffic control permit from CITY'S Public Works Department. CONTRACTOR shall comply with all applicable laws, ordinances and safety standards including those established by the Department of Transportation. The CONTRACTOR shall be solely responsible for maintaining a safe Project Site by complying with the traffic plan, all safety standards, and by keeping all stockpiles, debris, construction materials, and temporary facilities out of the clear zone.

37. PROJECT MEETINGS

37.1. PRE-CONSTRUCTION CONFERENCE. A pre-construction conference between CITY'S REPRESENTATIVE, Trade Contractors currently occupying the Project Site and CONTRACTOR shall be held at the site prior to commencement of the WORK. This meeting shall be for the purpose of:

37.1.1. Coordinating schedules.

37.1.2. Further orienting CONTRACTOR to requirements of the Contract Documents.

37.1.3. Informing CONTRACTOR of the INSPECTING OFFICER'S responsibility.

37.1.4. Working out with CONTRACTOR a general schedule of inspection.

37.2. Periodic job site meetings will be scheduled by CITY, attended by CONTRACTOR's staff, SUBCONTRACTORs and inspecting officers for the purposes of:

37.2.1. Addressing proper coordination of all activities on project;

37.2.2. To assist in staying on schedule; and

37.2.3. Checking Status of:

37.2.3.1 Submittals;
37.2.3.2 Changes;
37.2.3.3 Progress payments; and
37.2.3.4 Other matters will be reviewed.

38. OPERATIONS WITHIN THE RIGHT-OF-WAY

38.1. CONTRACTOR shall permit vehicular and pedestrian traffic to pass through and around the Project Area safely with a minimum of inconvenience. Specifications described in this section shall in no way supersede the requirements set forth in the Department of Transportation Standard Specifications for Traffic and Roadway Safety and City Ordinances and Regulations.

38.2. The CONTRACTOR's trucks and other vehicles shall travel in the direction of normal roadway traffic unless separated from the through-traffic by positive construction barriers approved by the CITY'S REPRESENTATIVE. On Interstates or other divided highways, the CONTRACTOR's vehicles shall not cross the medians and shall enter and exit at the existing ramps.

38.3. Where traffic is permitted through the site under stage construction, the CONTRACTOR may choose to construct, at no additional expense to the CITY or the Department of Transportation, temporary on-site bypasses or detours in order to expedite the WORK. Plans for such bypasses shall be submitted to the CITY and any other agency as required by law for approval 30 calendar days prior to the proposed construction. Such bypasses or detours shall be removed promptly when in the opinion of the Inspecting Officer, they are no longer necessary for the satisfactory progress of the WORK.

38.4. If construction operations necessitate regulation of traffic by off-duty police officer(s), CONTRACTOR shall furnish said officer(s) at his own expense.

38.5. The CONTRACTOR shall not simultaneously perform WORK on both the inside and outside shoulders on either direction of traffic flow when WORK is within 12' - 0" of the traveled way, unless such areas are separated by at least one-half mile of distance in rural areas or at least 500 feet of distance in urban areas.

38.6. All areas within the Project Limits which are determined by the INSPECTING OFFICER to be damaged, due either directly or indirectly to the process of construction, shall be cleaned up, redressed and grassed. All surplus materials shall be immediately removed and disposed of in approved manner.

38.7. The CONTRACTOR shall schedule and arrange the WORK to ensure the least inconvenience and the utmost safety to the travelling public, the CITY and to the CONTRACTOR's and Department of Transportation's forces.

38.8. Grading, clearing, and planting operations shall not be performed in such a way as to cause water or stormwater runoff to back up onto pavement, or to cause silt or debris to be deposited onto pavement. Roadways shall be kept free of debris, dust, mud, silt, and trash at all times, and shall be kept dry as possible.

38.9. Should prosecution of the WORK require removal of existing signs, markers, guardrail, etc., not covered by any specific Bid Item, they shall be removed, stored, and reinstalled, in the same condition as when removed, at the earliest time that construction has been completed in the area said marker or sign is located.

38.10. Sequencing of construction as described in this Section is intended as a guideline for the orderly execution of the WORK. CONTRACTOR shall prepare staging and sequencing plans for the WORK and shall submit them two weeks prior to commencing construction.

39. TEMPORARY FACILITIES AND UTILITIES.

39.1. Provide on-site, portable toilet facilities to service the needs of the Workers. Such facilities shall be serviced regularly to avoid build-up of sewage waste.

39.2. The CONTRACTOR shall make arrangements for, secure and pay for, any and all utility supplies such as electric power, water, natural gas, or telephone that may be required for prosecution of the WORK.

39.3. If needed, CONTRACTOR to provide temporary lighting.

39.4. The CONTRACTOR shall maintain a clean work site by keeping the site free from litter and debris. The CONTRACTOR shall provide an adequate number of trash

receptacles on site. Failure to maintain a clean work site may constitute a breach of contract and/or violate city ordinances.

40. CONTRACT CLOSEOUT.

40.1. FINAL CLEANING: CONTRACTOR shall, at completion of WORK, remove all rubbish from under and about the Construction Site. If CONTRACTOR fails to clean up, CITY may do so and the cost thereof will be charged to the CONTRACTOR.

40.2. SUBSTANTIAL COMPLETION INSPECTION:

40.2.1. At a point during the Construction Time that at least 90% of the entire WORK is deemed by the Inspecting Officer to be complete and not in a rejectable condition, a substantial completion inspection by the CITY'S REPRESENTATIVE, INSPECTING OFFICER, and CONTRACTOR will be made with the purpose of creating a list of items required to be completed in an acceptable manner before the WORK can be accepted. At this time a Certificate of Substantial Completion will be issued which states the dates for:

40.2.1.1. Commencement of warranties;

40.2.1.2. Final completion inspection; and

40.2.1.3. Modifications to the amount assessed for LIQUIDATED DAMAGES.

40.2.2. Inspecting Officer retains the right to declare the WORK unsatisfactory for receipt of a Certificate of Substantial Completion should the WORK at the time of the Inspection not be at least 90% satisfactorily completed and in an acceptable condition.

40.2.3. After inspection, CITY'S REPRESENTATIVE will furnish final list of items to be corrected.

40.3. A FINAL COMPLETION INSPECTION will be conducted to ensure that all deficiencies noted at the substantial completion inspection have been corrected according to terms of the substantial completion certificate.

40.3.1. The CONTRACTOR shall obtain and submit signed release waivers from all suppliers and SUBCONTRACTOR'S before final payment will be authorized.

40.3.2. When all items have been corrected, CITY'S REPRESENTATIVE will issue a certificate authorizing final payment and a letter of final acceptance. Commencement of warrantees will begin on final acceptance of project.

40.3.3. If all items have not been corrected as agreed, CITY may elect to complete the WORK and deduct the cost for such WORK from the remaining CONTRACT FUNDS not yet paid to the CONTRACTOR.

41. BREACH OF CONTRACT.

In addition to collecting allowable damages as such may be determined by applicable law or the terms of this contract, if either party is determined to be in material breach of any provision of the contract, the non-breaching party shall be entitled to terminate the contract.

If CITY is the non-breaching party, CITY may choose to specifically enforce the contract by its terms in lieu of termination.

42. COMPLIANCE CERTIFICATION OF LEGAL WORK STATUS.

CONTRACTOR 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 § 1324a. CONTRACTOR 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. CONTRACTOR agrees to produce, at CITY's request, such documents which are required to verify compliance with applicable State and Federal laws. If CONTRACTOR knowingly employs workers in violation of 8 USC § 1324a, such violation shall be cause of unilateral cancellation of the contract between CONTRACTOR and CITY. In the event this contract is terminated due to violation of 8 USC § 1324a by CONTRACTOR or subcontractor of CONTRACTOR, CONTRACTOR shall be liable for any and all costs associated with such termination, including, but not limited to, any damages incurred by CITY as well as attorney fees. In addition, CONTRACTOR may be suspended from participating in future projects with CITY. For purposes of compliance, CITY requires CONTRACTOR 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. CONTRACTOR and subcontractors must maintain authorized documentation of the verification.

END OF GENERAL CONDITIONS

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DIVISION 01
GENERAL REQUIREMENTS

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SECTION 01 11 00
SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. The Work to be performed under this Contract consists of furnishing all plant, tools, equipment, materials, supplies, and manufactured articles and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all Work, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The Work shall be complete, and all Work, materials, and services not expressly indicated or called for in the Contract Documents, which may be necessary for the complete, safe, and proper construction of the Work in good faith shall be provided by Contractor as though originally so indicated, at no increase in cost to Owner.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of this Contract comprises the construction of all labor, equipment, and materials needed to construct the R1 Sewer Sewer Project which generally includes: construction of approximately 1,536 linear feet of 18-inch sewer pipeline; and sewer service pipeline reconnections within the project boundaries shown on the drawings in St. George, Utah. The work also includes traffic control, bypass pumping and dewatering, manhole installation, asphalt surface restoration, landscape restoration, and appurtenances associated with a sewer pipeline job.

B. The Work is located within the northwest section of the City of St. George near Tuweap Drive as indicated on the Drawings.

1.3 CONTRACT METHOD

A. The Work hereunder will be constructed under a single unit price contract.

1.4 STREAMLINED SPECIFICATIONS

A. These specifications are written in streamlined or declarative style, often using incomplete sentences. This imperative language is directed to Contractor unless specifically noted otherwise.

B. Omissions of such words and phrases as “Contractor shall,” “in conformity therewith,” “shall be,” “as shown on the Drawings,” “a,” “an,” “the,” and “all” are intentional in streamlined sections.
   1. Omitted words shall be supplied by inference in the same manner as when a note appears on the Drawings.
   2. Omission of such words shall not relieve Contractor from providing the items and work described herein or indicated on the Drawings.
   3. Words “shall be” are included by inference where a colon (:) is used within sentences or phrases.

1.5 WORK BY OTHERS

A. Owner reserves the right to perform or award other work concurrent with the Work included in this Contract
   1. Work may be conducted at or adjacent to the Site by other contractors during the performance of the Work under this Contract. Conduct operations to cause a minimum of interference with the Work of such other contractors and cooperate fully with such contractors to provide continued safe access to their respective portions of the Site, as required to perform Work under their respective contracts.

B. Interference With Work On Utilities:
   1. Cooperate and coordinate fully with all utility forces of Owner or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the Work.
   2. Schedule the Work to minimize interference with said relocation, altering, or other rearranging of facilities.

1.6 WORK SEQUENCE AND SCHEDULING CONSTRAINTS

A. Schedule and perform the Work in such a manner as to result in the least possible disruption to the public's use of roadways, driveways, and utilities. Utilities shall include but not be limited to water, sewerage, drainage structures, ditches and canals, gas, electric, cable television, and telephone. Refer to Utility Adjustment and other plan and profile sheets for approximate location of utilities. However, there is no guarantee as to accuracy or completeness. Contractor shall incorporate as-built locations on the reproducible record plans, in red ink, showing proper location on each sheet where these utilities are located.

1.7 CONTRACTOR USE OF PROJECT SITE

A. Use of the Project Site shall be limited to construction operations, including on-Site storage of materials, on-Site fabrication facilities, and field offices.

1.8 OWNER USE OF THE PROJECT SITE

A. Owner may utilize all or part of the Site during the entire construction period for other Owners projects. Cooperate and coordinate with Owner to facilitate Owner's operations and projects and to minimize interference with Contractor's operations at the same time. In any event, Owner shall be allowed safe access to the Project Site during the period of construction.

1.9 CONTRACTOR'S WORKING HOURS

A. Perform work within Owner's regular working hours from 7:00 a.m. to 7:00 p.m. If Contractor desires to work overtime or work on a Saturday, Sunday, or any legal holiday, obtain prior approval from Owner and Engineer.

1.10 STORAGE

A. Storage conditions shall be acceptable to Owner for all materials and equipment not incorporated into the Work but included in Applications for Payment. Such storage arrangements and conditions shall be presented in writing for Owner's review and approval

and shall afford adequate and satisfactory security and protection. Off-site storage facilities shall be accessible to Engineer. The stored materials shall be insured for full value. Certificates of liability insurance coverage must be submitted to Engineer with the request for payment by Contractor. All arrangements and costs for storage facilities shall be paid by Contractor, unless specifically designated in the Contract Documents to be furnished by Owner.

1.11 NOTICES TO OWNERS OF ADJACENT PROPERTIES AND UTILITIES

A. Notify Owners of adjacent property and utilities when prosecution of the Work may affect them.

B. When it is necessary to temporarily deny access by owners or tenants to their property, or when any utility service connection must be interrupted, Give notices sufficiently in advance to enable the affected person(s) to provide for their needs. Notices shall conform to any applicable local ordinance and, whether delivered orally or in writing, shall include appropriate information concerning the interruption and instructions on how to limit any resulting inconvenience.

C. Utilities and other concerned agencies shall be contacted at least seven days prior to cutting or closing streets or other traffic areas or excavating near underground utilities or pole lines.

D. Review with the various utility companies the construction methods, safety procedures, and Work to be done in the vicinity of utilities. When temporary relocation of utilities is necessary, provide sufficient advance notice to the utility involved.

1.12 LINES AND GRADES

A. Perform all Work to the lines, grades, and elevations shown on the Drawings.

B. Basic horizontal and vertical control points will be established or designated as provided in General Conditions paragraphs. Use these points as datum for the Work. Perform any additional survey, layout, or measurement work needed for proper construction of the Work as a part of the Work at no additional cost to Owner.

C. Employ experienced instrument personnel, competent assistants, and such instruments, tools, stakes, and other materials required to complete the survey, layout, and measurement work. In addition, furnish, without additional charge, competent personnel and such tools, stakes, and other materials as Engineer may require in establishing or designating control points or in checking survey, layout, and measurement of Work performed.

D. Keep Engineer informed, a reasonable time in advance, of the times and places at which Work is to be done, so that horizontal and vertical control points may be established, and any checking deemed necessary by Engineer may be done with minimum delay to the Project.

E. Remove and reconstruct Work, which is improperly located.

1.13 PROJECT MEETINGS

A. Preconstruction Conference

1. Prior to the commencement of Work at the Site, a preconstruction conference will be held at a mutually agreed time and place which shall be attended by Contractor's Project Manager, its Superintendent, its Safety Representative, and its Subcontractors as Contractor deems appropriate. Other attendees will be:
    a. Engineer
    b. Representatives of Owner
    c. Others as requested by Contractor, Owner, or Engineer
    d. Engineer's Representative
2. Bring to the conference, any submittals so indicated in Section 01 33 20 - Contractor Submittals.
3. The purpose of the conference is to designate responsible personnel, discuss contract requirements and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished by Engineer prior to the meeting date. However, be prepared to discuss all the items listed below.
    a. Contractor's assignments for safety and first aid, including Designated Competent person(s) and Contractor's safety Representative.
    b. Status of Contractor's insurance and bonds.
    c. Contractor's tentative schedules.
    d. Transmittal, review, and distribution of Contractor's submittals.
    e. Processing applications for payment.
    f. Maintaining record documents.
    g. Critical Work sequencing.
    h. Field decisions and Change Orders.
    i. Use of project site, office and storage areas, security, housekeeping, and Owner's needs.
    j. Major equipment deliveries and priorities.
    k. Permits required for construction.
    l. Utilities required for construction.
    m. Contract Owner and channels of communication.
    n. Coordination with others.
4. Engineer will preside at the preconstruction conference and will arrange for keeping and distributing the minutes to all persons in attendance.

B. Progress Meetings
1. Engineer will schedule and hold regular on-Site progress meetings at least weekly and at other times as deemed necessary by Engineer or as required by progress of the Work. Contractor, Engineer, and all Subcontractors active on the Site must attend each meeting. Contractor may at its discretion request attendance by representatives of its Suppliers, manufacturers, and other Subcontractors.
2. Engineer will preside at the meetings and will arrange for keeping and distributing the minutes. The purpose of the meetings will be to review the progress of the Work, discuss safety, maintain coordination of efforts, discuss commercial issues, discuss changes in scheduling, and resolve other problems, which may develop. During each meeting, all parties are required to present any issues, which may impact its Work, with a view toward resolving these issues expeditiously.

1.14 AVAILABLE SUPPLEMENTAL REPORTS

A. Geotechnical Report: Geotechnical data referenced in these Contract Documents are based upon the report titled "St. George City R1 Sewer Project", prepared by RB&G Engineering, Inc, dated August 1, 2022. Report is available from Owner upon request.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

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SECTION 01 20 00
MEASUREMENT AND PAYMENT

1.1 DESCRIPTION

A. This Section defines the manner in which the Lump Sum Prices, Unit Prices, and the Allowances listed in the Bid Schedule will be used to determine measurement and payment for all Work and describes the required procedures for monthly progress payments to the Contractor.

B. Bid amounts will include all plant, equipment, tools materials, labor, service, and all other items required to complete the Work included in the Agreement unless specifically excluded by this section. Work required for which no separate Bid item is identified will be considered as a subsidiary obligation of the Contractor, and the cost therefore shall be included in the most applicable Bid item. Bid amounts for each item will be the basis for development of budget values for activities included in the Construction Schedule and in the Schedule of Values. Adjustments to Allowance Bid Item amounts will be applied to the Contract Price when Work is completed, and actual Allowance item amounts are known.

C. Payment for all items in the Bid Schedule will include full compensation for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of Work being described, as necessary to complete the various items of the Work in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including but not limited to all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).

D. All costs shall be included in the prices named in the Bid Schedule for the various items of Work. Except as otherwise provided herein, no separate payment will be made for any item that is not specifically set forth in the Bid Schedule.

E. When included, all estimated quantities stipulated in the Bid or other Contract Documents are approximate and are to be used only as a basis for estimating the probable cost of the Work and for the purpose of comparing the Bids submitted for the Work. The actual amounts of Work done and materials furnished under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and materials furnished. Contractor agrees that it will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts thereof.

F. The unit or lump sum item of work, which involves excavation or trenching shall include all costs for such work. No direct payment will be made for excavation or trenching. All excavation and trenching will be unclassified as to materials which may be encountered; in addition, trenches will be unclassified as to depth. No additional payment will be made for rock or caliche excavation, nor for blasting which the Contractor determines is required for rock or caliche excavations.

G. Monthly pay requests are due on the 30th of each month, and while pay requests will be accepted prior to this date, pay request processing will not begin until this date for purposes of meeting the Owner's pay request processing obligations. Failure to submit a pay request by this day may be cause for the rejection of the pay request. If rejected, Contractor may have to resubmit the pay request the next month. Should the submittal date fall on a holiday or weekend day during the month, then consider the next working day as the due date.

H. Note that the information provided in this Section is intended for use as a general description of the breakdown of work to be included in the Bid Schedule. The following descriptions are NOT intended to represent a complete listing of all Work required by the Contract Documents. It is the Bidder's responsibility to make sure that costs for all Work required in the plans and specifications is accounted for in the appropriate Bid Items, whether or not specifically described in this Measurement and Payment section. The Owner is not responsible for Contractor's failure to properly coordinate with Subcontractors and Suppliers regarding the breakdown of Work in these Contract Documents.

1.2 MEASUREMENT AND PAYMENT

A. The unit or lump sum item of work, which involves excavation or trenching shall include all costs for such work. No direct payment will be made for excavation or trenching. All excavation and trenching will be unclassified as to materials which may be encountered; in addition, trenches will be unclassified as to depth. No additional payment will be made for rock or caliche excavation, nor for blasting which the Contractor determines is required for rock or caliche excavations.

B. Payment covers the cost of incidental work which includes, but is not limited to: progress schedule; QC program; safety procedure plan; maintaining construction schedule; submittals; manufacturer's service in accordance with the specifications; dust control; surface water and drainage management; requirements associated with the storm water pollution prevention plan (SWPPP); pipeline connections except as identified specifically in other bid items; coordination with property owners, businesses, contractors, and government agencies; all provisions required to provide and maintain access to all properties affected by construction operations; construction surveying; saw cutting, removal, and disposal of existing trench pavement; demolition and disposal of curb & gutter, sidewalk, asphalt, and of other miscellaneous items; unclassified excavation; pot hole excavations; trench excavations; structure excavations; removal and disposal of waste materials; compaction of backfill materials; hauling and stockpiling of materials and equipment; stockpiling and restoration of topsoil in unimproved areas; protection and support of existing surface and subsurface features; providing assistance to other utility companies in locating and relocating service laterals, as needed; replacement and restoration of existing utilities (mains and services) and other items damaged by the CONTRACTOR's operations; and all other necessary work, to install the Work complete in place.

C. BASE BID, Measurement and Payment to be as follows:

Bid Item No. 1 – Mobilization, Demobilization, and Administrative Items

a. Measurement: Mobilization, Demobilization, and Administrative Items will be paid for on a Lump Sum basis. Payment shall be made on a percent complete basis as described below.

b. Payment: Cost of mobilization and demobilization including, but not limited to: bonds and insurance; contract administration; mobilization; demobilization; videotaping site conditions prior to construction; furnishing and erecting temporary construction facilities; project signs, and obtaining any additional permits not already obtained by the OWNER. This pay item shall constitute full compensation for all labor, equipment, tools, supplies and materials required to complete this portion of the Work for this construction project.

c. For purposes of payment, this bid item shall be paid for on a percent complete basis. The lump sum bid price for this bid item shall not exceed 8 percent of the total bid price. Any bid proposal for mobilization, demobilization, temporary facilities, and administration items that is greater than 8 percent will be adjusted to the maximum amount of 8 percent of the total bid. The bid item so adjusted will be the Contractor's bid for that item, and the Contractor's bid for the project will be recalculated and the revised total used to compare with other bidders to determine the low bid. The OWNER will pay the adjusted lump sum price. Bid item will be paid on a percent complete basis as summarized in the following table:

Partial Payment	Amount	When Paid
1st	50 percent of bid item lump sum.	With 1st pay request
2nd	40 percent of bid item lump sum.	With 1st pay request following completion of 10 percent of contract
3rd	10 percent of bid item lump sum (for demobilization).	With 1st pay request following completion of 90 percent of contract

Bid Item No. 2 – Traffic Control

a. Measurement: Measured and paid for on a Lump Sum basis.

b. Payment Covers: Costs associated with all labor, materials, and equipment required to develop a traffic control plan in accordance with requirements from St. George City; providing temporary road closures, maintain smooth vehicular traffic flow on Indian Hills Drive during construction upstream and downstream of closures, providing temporary access for residents, and all other affected roads during the time of construction, including but not limited to: removing existing striping, temporary striping, permanent striping, signage, barriers, electronic message boards, warning devices, flaggers, and cleaning roads to maintain a clean condition with no accumulation of dirt, debris or other foreign objects as required by Specifications and street cut permit.

c. Payment shall also include all labor, materials, and equipment required to maintain safe pedestrian access through the project area during construction, including but not limited to signage, warning devices, PVC or polyethylene safety fencing, and maintaining a clean sidewalk that is free of dirt, gravel and other construction debris.

Bid Item No. 3 – Field Survey and Staking

a. Measurement: Measured and paid for on a Lump Sum basis.

b. Payment Covers: All construction surveying and staking required to layout and construct the work defined in the Contract Documents, including but not limited to: slope staking; grade staking; staking the lines and grades of pipelines, manholes, catch basins; and all other construction surveying required to complete the work.

Bid Item No. 4 – Remove and Dispose of Existing Sewerline and Manholes

a. Measurement: Measured and paid for on a Lump Sum basis.

c. Payment Covers: All removal and disposal of existing sewer pipelines, manholes, and appurtenances as shown on the drawings, including, but not limited to: excavation; breaking, cutting, and demolishing; removal; hauling; disposal; site cleanup; and all other work needed to remove and disposal of existing sewer facilities.

Bid Item Nos. 5 and 6 – 18-inch and 8-inch SDR 35 PVC Sewerline

a. Measurement: Measured and paid for on a linear foot basis as measured in the field, to the nearest foot.

b. Payment covers providing and installation of the sewer main of the size and type indicated, complete in place, including but not limited to: connection of new piping to existing manhole or pipe; removal of existing trough in manhole and reconstruction of new trough; piping; all sheeting, shoring and bracing; grout; jackhammer work; removal and disposal of waste materials; restoration of all utilities damaged as a result of operations; pipe line cleaning; piping or structure repair or replacement if damaged by CONTRACTOR; additional saw cut and removal of trench pavement; excavation; pipe line dewatering; roadbase outside the typical trench section required for the installation of the sewer line; provide wastewater bypass pumping as required; capping or plugging of the existing sewer pipe(s) to be abandoned; and other appurtenant items necessary to complete the work and commissioning of the pipeline, and all other work required to complete this work item. There will be no payment for over excavation unless approved in written form by the ENGINEER prior to the excavation.

Bid Item No. 7 – 5-ft Diameter Concrete Sewer Manholes, see STD/220

a. Measurement: Measured and paid for on a per each basis. Measurement to be by actual field count of each type and size of installed structure identified on the Contract Documents.

B. Payment Covers: Furnishing and installing each size and type of sanitary sewer structure of the number indicated; additional saw cut and removal of trench pavement; excavation; and supplying and installing roadbase outside the typical trench section due to the additional size of the structure box; furnishing and installing reinforcing steel and concrete; field collars; ladder rungs; furnishing and installing metal frames, and covers; installing concrete collars in paved areas in accordance with St. George City Standards; supplying and installing select soils in backfilling the structure; piping and plugs for stub

outs where identified; adjustment of metal frame and covers to final grade; provide and install sewer drops; and connection(s) to existing and/or new pipes, grouting of base to form a smooth continuous bench and channel; and all other items needed to complete the work including cleaning and placing structures in service.

c. This bid items includes installation of concrete manholes per City of St. George standards. An alternative bid item has been provide to replace the concrete manholes with polymer manholes meeting Detail C/2510.

Bid Item No. 8 – Sewer Service Connections

a. Measurement: Measured and paid for on a per each basis. Measurement to be by actual field count of each sewer service connections identified on the Contract Documents.

B. Payment Covers: Furnishing and installing each sewer service connection of the number indicated; additional saw cut and removal of trench pavement; excavation; and supplying and installing roadbase outside the typical trench section due to the additional size of the connection; removing and disposing existing service connection; furnishing and installing sewer service and fittings; field collars; supplying and installing select soils in backfilling the structure; and connection(s) to existing and/or new pipes; maintaining service flow during construction and all other items needed to complete the work.

Bid Item Nos. 9 and 10 – Remove and Replace Asphalt Surface per depths specified

a. Measurement: Measured and paid for on a square yard basis as measured in the field by the Engineer, and based on the depth of asphalt placed in accordance with the Contract Documents.

b. Payment Covers: All labor, materials, tools, and equipment required to complete the asphalt surface removal, replacement, and restoration, including, but not limited to: saw cutting; removal and disposal of existing asphalt; furnishing, placing, compacting, and compaction density testing of the asphalt trench restoration material, tack coat, adjusting all street fixtures not specified elsewhere to final grade; concrete; and restriping and marking the new pavement; and all other items needed to complete the work.

c. Work associated with this bid item only includes restoration of the sewer line trench. An additive alternate bid item is provided to remove and replace the whole asphalt section for both Moenkopi Circle and Moenkopi Trail roads.

Bid Item Nos. 11 and 12 – Remove and Replace Curb and Gutter

a. Measurement: Measured and paid for on a linear foot basis for the type of curb and gutter indicated or on the Bid Schedule.

b. Payment Covers: All labor, equipment, tools, and materials required in replacing curb and gutter, including, but not limited to: Concrete saw cutting if required, excavation, removal and disposal of the existing curb and gutter

and other waste materials; installation and compaction of the untreated base course; furnishing, forming, placing, finishing, and testing of the concrete; concrete curb transitions at rolled gutter section; and irrigation systems repair or replacement when damaged by the contractors operations.

c. This item to be used to pay the contractor to replace any curb and gutter within the trench zone that was disturbed or damaged while constructing facilities identified on the drawings where protection of and maintaining the existing curb and gutter is not possible or reasonable in the opinion of the engineer. Asphalt tie-in to be paid under the bid item for asphalt trench restoration. Curb & gutter associated with the Winged Assemblies will be paid for as part of that bid item.

d. The bid price listed in the bid schedule will be used to compensate the contractor for the curb and gutter placed, regardless of the amount used in this project.

e. Curb and gutter on Tuweap Drive shall match St. George Standard Detail STD/100 and will be concrete with no color. Curb and gutter within the private development shall match St. George Standard Detail STD/101 and shall be colored to match existing.

Bid Item No. 13 – Remove and Replace Concrete Colored Cross Gutter

a. Measurement: Measured and paid for on a Lump Sum basis.

b. Payment Covers: All labor, equipment, tools, and materials required to remove and replace concrete waterway, including, but not limited to: concrete saw cutting if required, excavation, removal and disposal of the existing concrete and other waste materials; installation and compaction of the untreated base course: furnishing, forming, placing, finishing, coloring, and testing of the concrete.

c. This item to be used to pay the contractor to replace any cross gutter within the trench zone that was disturbed or damaged while constructing facilities identified on the drawings where protection of and maintaining the existing concrete is not possible or reasonable in the opinion of the engineer. Asphalt tie-in to be paid under the bid item for asphalt trench restoration.

d. The bid price listed in the bid schedule will be used to compensate the contractor for the cross gutter placed, regardless of the amount used in this project.

Bid Item Nos. 14 and 15 – Remove and Replace Concrete Colored Driveway and Concrete Sidewalk

a. Measurement: Measured and paid for on a Lump Sum basis or a square foot basis as noted in the bid schedule.

b. Payment Covers: All labor, equipment, tools, and materials required to replace concrete sidewalk, including, but not limited to: Concrete saw cutting if required, excavation, removal and disposal of the existing concrete and other waste materials; installation and compaction of the untreated base course: furnishing, forming, placing, finishing, coloring, and testing of the concrete.

c. Colored concrete driveway shall match the color of the existing driveway to be replaced. Coordinate colors with driveway owner before ordering materials.

d. Sidewalk removal and replacement includes along Tuweap Drive and within the Entrada Golf Course. This concrete will not be colored.

Bid Item No. 16 – Flowable Fill Backfill

a. Measurement: Measured and paid for on a cubic yard basis as calculated by the engineer, based on cubic yardage of the truck.

b. Payment Covers: Furnishing and placing flowable fill (cement treated fill) at utility crossings and in abandoned pipelines as shown on the plans; providing any needed forms; providing plastic or polyethylene covering over area of pipe to be backfilled with flowable fill, and all other work necessary to complete the work associated with this item.

c. This pay item will be used at the discretion of the ENGINEER to backfill the trench to the bottom of the untreated base course material in areas where new pipelines cross under existing buried utilities and mechanical compaction equipment access is limited to prevent proper mechanical compaction of granular fill.

d. The bid price listed in the bid schedule will be used to compensate the contractor for the flowable fill material placed, regardless of the amount used in this project.

Bid Item No. 17 – Trench Stabilization Material

a. Measurement: Measurement of trench stabilization material will be based upon Unit Price per in place cubic yard measured from the dimensions of the trench prior to installation of the material and the depth of material placed as measured by the Engineer.

b. Payment: Payment for trench stabilization material will include additional over excavation of the trench; dewatering; furnishing, transporting, and installing trench stabilization material in accordance with the specifications.

c. This item is to be used only at the discretion of the engineer.

d. The bid price listed in the bid schedule will be used to compensate the contractor for the trench stabilization material placed, regardless of the amount used in this project.

Bid Item No. 18 – Landscape Restoration

a. Measurement: Landscape restoration will be paid on a Lump Sum basis for all restoration required as part of the project.

b. Payment: Cost of landscape restoration including, but not limited to: removal and disposal of existing signs, trees, sod, curbing, landscape rock, sprinklers, etc.; installation of new landscaping materials and signs; installation and maintenance of landscaping for the duration of the project; warranties; and all other labor, tools, and materials to complete the work.

D. ALTERNATIVE BID, Measurement and Payment to be as follows:

Bid Item No. 1A – 5-ft Diameter Polymer Sewer Manholes, see Detail C/2510

a. Measurement: Measured and paid for on a per each basis. Measurement to be by actual field count of each polymer manhole installed.

B. Payment Covers: Furnishing and installing each size and type of polymer sanitary sewer manhole of the number indicated; additional saw cut and removal of trench pavement; excavation; and supplying and installing roadbase outside the typical trench section due to the additional size of the structure box; furnishing and installing polymer manhole; field collars; furnishing and installing metal frames, and covers; installing concrete collars in paved areas in accordance with St. George City Standards; supplying and installing select soils in backfilling the structure; piping and plugs for stub outs where identified; adjustment of metal frame and covers to final grade; provide and install sewer drops; and connection(s) to existing and/or new pipes, grouting of base to form a smooth continuous bench and channel; and all other items needed to complete the work including cleaning and placing structures in service.

c. This bid items includes an alternative to replace the concrete manholes with polymer manholes meeting Detail C/2510.

Bid Item No. 2A – Remove and Replace entire Asphalt Section of Road on Moenkopi Circle and Moenkopi Trail

a. Measurement: Measured and paid for on a square yard basis as measured in the field by the Engineer, and based on the depth of asphalt placed in accordance with the Contract Documents.

b. Payment Covers: All labor, materials, tools, and equipment required to complete the asphalt surface removal, replacement, and restoration, including, but not limited to: saw cutting; removal and disposal of existing asphalt; furnishing, placing, compacting, and compaction density testing of the asphalt trench restoration material, tack coat, adjusting all street fixtures not specified elsewhere to final grade; concrete; and restriping and marking the new pavement; and all other items needed to complete the work.

c. Work associated with this bid item only includes restoration of the road outside of the sewerline trench. Trench asphalt surface restoration will be paid as part of another bid item.

1.3 GENERAL PROGRESS PAYMENT REQUIREMENTS

A. A Payment for Work performed shall be in accordance with installed quantities as assessed in comparison to the Schedule of Values and the Construction Schedule. The Engineer will verify measurements and quantities. Each activity necessary to manage and complete the Work is identified on the Contract schedules. Each activity will be assigned its respective value, a portion of the Contract Price, as shown on the Schedule of Values (Roll-up), and detailed cost loaded activity schedule.

B. Payment for all lump sum costs and services incurred on this Agreement shall be based on the earned value of Work accomplished during the reporting period. Earned value is determined by the completion percentage of each activity as determined by the Schedule of

Values and the Construction Schedule applied to the total value of the activity. No construction activity shall be deemed 100 percent complete until the Contractor has completed the physical check out and inspection of the completed Work and has submitted the signed inspection form to the Engineer.

C. Earned value is derived from the current status of the Contractor Construction Schedule as determined by the monthly schedule status submittals. Each schedule status submittal is reviewed and approved by the Engineer prior to the Contractor obtaining approval for the Summary of Earned Values or quantities installed and the Application for Payment.

1.4 APPLICATION FOR PAYMENT

A. Submit application for payment on the Owner's form and be certified by signature of an Authorized Officer of the Contractor.

B. The Application for Payment shall contain all necessary references and attachments that substantiate the invoice for progress payment (e.g., certified payrolls, labor reports, progress schedule data, and Summary of Earned Values). It shall substantiate the invoice for progress payment and shall be preceded or accompanied by the schedule and status data as a condition of payment, in accordance with the Construction Schedule and the Schedule of Values.

1.5 REVIEWS/APPLICATION FOR PAYMENT

A. Review meetings between the Contractor and the Engineer will be held weekly and within 7 Days prior to the payment application date designated by the Engineer. Three Days prior to the last review meeting of the month, submit an updated schedule and a signed application for payment showing a Summary of Earned Values for the reporting and payment period so that the Engineer can compare earned values to available status data. Make any adjustments to the Master Record Documents, updated schedule, and payment applications required by the Engineer. Upon completion of the adjustments, the Engineer will sign the payment request and forward it to the Owner. The Engineer will determine payment amounts if agreement with the Contractor is not reached.

1.6 PAYMENT FOR SUPPLIES AND MATERIALS

A. Payment based on the actual cost of supplies, materials and equipment on hand shall be made by the Owner with or without a paid invoice. "Actual cost" of materials shall be the invoice amount, whether paid or not, and shall not include any costs associated with installation, testing, etc. The Contractor shall be entitled to payment of the actual cost of supplies, materials and equipment only if it (1) presents an invoice to the Owner with the application for payment and (2) states in the application for payment that the materials have been delivered and stored in the time and manner specified in the contract between the Contractor and his Supplier or Subcontractor. If Contractor fails to comply with those conditions, the Owner may withhold payment in accordance with the provisions. The Owner expressly reserves the right to withhold retention until Contractor presents to the Owner a paid invoice, or some other proof of payment satisfactory to the Owner, for the Owner's use in verifying the accuracy of the actual cost of the supplies, materials or equipment. If the amount paid does not match the actual cost, the Owner will adjust the amount of retention accordingly.

Payment for supplies, materials or equipment on hand does not alter the responsibility of the Contractor for all supplies, materials and equipment until Final Acceptance of the Work.

END OF SECTION

SECTION 01 31 30
SAFETY

PART 1 - GENERAL

1.1 SUMMARY

A. Contractor's safety program shall conform to the requirements specified in the General Conditions and Supplementary Conditions.

1.2 DEFINITIONS

A. For the purposes of this Section, an "active construction area" is any area where construction activities are occurring, or construction activities could be considered a potential hazard to people.

B. A "Designated Safety Officer" or "Safety Representative" for the purposes of this Contract, means anyone who can identify the existing and predictable hazards in the areas surrounding a construction project or those working conditions at a construction project that are unsanitary or dangerous to employees. A "Designated Safety Officer" has the authority to make prompt corrective measures to eliminate those hazards.

1.3 SUBMITTALS

A. Demonstrate compliance action with the stipulations of Utah Occupational Safety and Health Administration (OSHA), Mine Safety and Health Administration (MSHA), and other applicable local, state, and federal safety requirements by submitting to Engineer a copy of all safety plans, programs, and permits. Such plans and programs shall include, but are not limited to:
   1. Hazard Analysis Prior to Major Activities (job safety analysis, JSA).
   2. Emergency Plan.
   3. Rigging and Hoisting Plans.
   4. Excavation and Trenching Plans.
   5. Respiratory Protection Program.
   6. Confined Space Entry Program.
   7. Electrical Safety (drop cords, temporary power, GFCI's, etc.)
   8. Lock Out/Tag Out.
   9. Heavy Equipment Operations.
   10. Training Plan.
   11. Project Site Rules and Regulations (hazard protection plan).
   12. Material Handling (storage-disposal).
   13. Fuel Storage and Refueling.
   14. Hazard Communication/Right to Know.
   15. Subcontractor Requirements.
   16. Personal Protective Equipment (hearing, eye, face).
   17. Traffic Control.
   18. Environmental Controls.
   19. Safety Meetings.
   20. Spill Control Plan.
   21. First Aid Facilities.

B. Engineer's receipt of safety plans or programs will not relieve Contractor in any way from the full and complete responsibility for safety and training of its personnel, and the onsite personnel of Owner, Engineer, and other visitors to areas of active construction areas. Daily, inform Engineer of changes to the boundaries of the active construction areas.

C. Be responsible for safety training all personnel who will have access to the active construction areas to meet state, federal, local and Contractor requirements. Maintain reasonable, regularly scheduled training sessions in mutually accessible facilities through entire Contract. Training costs for all personnel and visitors, except those costs associated with training personnel of Contractor, subcontractors, suppliers, and visitors will be considered incidental to other lump-sum portions of the Work and no additional compensation for such training will be provided.

D. Safety Program Requirements:
   1. Safety Representative Requirements:
      a. Assign a full-time Safety Representative as defined in the General Conditions of the Contract.
      b. The Safety Representative's duties and responsibilities will be hazard recognition, accidents prevention, new employee orientation (including subcontractors), and the maintaining and supervising of safety precautions and program. The Safety Representative or a qualified and approved deputy shall be onsite at all times while Work is ongoing.
      c. Qualifications of the Safety Representative and assigned deputies shall be submitted to Engineer for review. Acceptance of their qualifications by Engineer is required prior to the start of any activity on the Project. The Safety Representative will, as a minimum, meet the requirements of regulations for the Utah Occupational Safety & Health Enforcement Program.
   2. Hazardous Substances:
      a. Provide Engineer with a list of all hazardous substances anticipated to be brought on-site.
      b. Maintain on site Material Safety Data Sheets (MSDS) prior to arrival of any hazardous substances on the Project.
      c. Use storage area(s) as outlined in the spill control plan.
   3. Job Safety Analysis (JSA):
      a. Outline the sequence of the Work, equipment to be used, identify hazards that may exist or may be created and what procedures and/or safety equipment will be used to eliminate or reduce these hazards. A Scope of Work JSA shall be prepared and provided to the Engineer prior to the start of unusual, hazardous, or have risk potential activities on the Project. The name of the competent person assigned to this activity will be included on the JSA.
      b. Complete a JSA for any activity, which may be of an unusual nature or involves unique hazards.
   4. Reports
      a. Provide to Engineer copies of Contractor's and subcontractor's:
         1) First aid, recordable, lost time and near miss, monthly logs.
         2) OSHA 200 injury log (annually).
         3) Safety meeting reports and topics (weekly).

4) List of competent persons as required by OSHA and the Project Health and Safety Manual for each required task and their qualification as such.

5) Injury and accident reports will be submitted to Engineer within 24 hours of any incident. **Immediate** notification to Engineer of an accident is **required**. Full cooperation with Engineer in accident investigation is required.

b. Conduct weekly safety inspections. Corrective actions shall be taken within 24 hours to address all deficiencies identified during inspections. Deficiency reports shall be prepared and submitted to Engineer within 48 hours indicating corrective actions taken. Failure to comply with required corrective measures identified in the safety inspection will result in the delayed signing of the monthly application for progress payment by Engineer.

c. Provide Engineer with a report of any periodic audit of Contractor's safety performance and/or records.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01 32 16
CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 GENERAL

A. Employ a bar chart schedule for the planning and scheduling of all Work required under the Contract Documents.

B. In addition to the scheduling aspect, the same chart shall show an "S" curve for scheduled dollar expenditures versus time.

C. In the process of preparing baseline schedule and monthly updates, consult with all key subcontractors and suppliers to assure concurrence with the feasibility and achievability of planned start dates, sequencing, durations, and completion dates.

1.2 RELATED SECTIONS

A. Section 01 20 00 – Measurement and Payment

1.3 QUALIFICATIONS

A. Demonstrate competence through the submission of a fully compliant Construction Progress Schedule with the initial schedule submission. Upon failure to so demonstrate competence in scheduling, Engineer may direct Contractor to employ the services of a scheduler that can demonstrate competence. Comply with such directives.

1.4 SUBMITTAL PROCEDURES

A. Submittal Requirements
   1. Submit Construction Progress Schedule on a standard drawing sheet, size 24 inches by 36 inches or electronically via portable document format (PDF).
   2. The time scale (horizontal) shall be in weeks. The activities shall be listed on the left-hand side (vertical).
   3. Break down activities into sufficient detail to show all work activities. The listing from top to bottom shall be in a logical manner of which the Work will be accomplished. Provide space between activities or within bars to allow for marking of actual progress.
   4. Provide a written narrative of the planning logic along with a description of Work and quantities included in each activity of the bar chart schedule.
   5. Duration: The duration indicated for each activity shall be in units of whole working days and shall represent the single best time considering the scope of the Work and resources planned for the activity, including time for holidays and inclement weather. The calendar for the network shall be in calendar days. Except for certain non-labor activities, such as curing concrete or delivering materials, activity durations shall not exceed 14 days, be less than one day, nor exceed $ 50,000 in value unless otherwise accepted by Engineer.

B. Time of Submittals

1. Submit the bar chart schedule with "S" curves and narrative within fifteen (15) working days after Notice to Proceed for review by Engineer. The schedule submitted shall indicate a project completion date the same as the contract completion date.
2. Submit a copy of the schedule, clearly showing progress made and actual "S" curves, on a two or four week basis depending on the duration of the project and reporting time agreed to in the preconstruction meeting.

C. Acceptance

1. The bar chart schedule and "S" curves, when accepted by Engineer, constitute the Construction Progress Schedule unless a revised schedule is required due to one or more of the following:
   a. Substantial changes in the Work scope.
   b. A change in Contract time.
   c. Delinquency by Contractor that requires a recovery schedule.
2. Owner's review and acceptance of the Construction Progress Schedule is for conformance to the requirements of the Contract Documents only. Review and acceptance by Owner of Contractor's Construction Progress Schedule does not relieve Contractor of any of its responsibility whatsoever for the accuracy or feasibility of the Construction Progress Schedule, or of Contractor's ability to meet interim milestone dates and the Contract completion date, nor does such review and acceptance expressly or impliedly warrant, acknowledge, or admit the reasonableness of the logic and durations of the Construction Progress Schedule.

1.5 SCHEDULE UPDATES

A. The Construction Progress Schedule shall be updated to reflect the as-built conditions of the Work and to accurately forecast the status of incomplete activities. Provide progress reports at each weekly progress meeting, stating actual percent earned versus percent planned. Submit Construction Progress Schedule updates to Engineer with each payment request, including approved changes in the Work and accurately depicting the current status and sequence of all activities.

B. Submit the updated Construction Progress Schedule in the form, sequence, and number of copies requested for the initial schedule.

C. Engineer will review each submitted Construction Progress Schedule update and provide comments within seven days of the submittal. Revise and resubmit the schedule within five days of receipt of comments from Engineer. Engineer will review the re-submittal within five days and provide comments if the schedule update is still unacceptable. Revise and resubmit the schedule within five days of receipt of comments from Engineer.

1.6 PROGRESS MEETINGS AND LOOK-AHEAD SCHEDULES

A. For the weekly progress meetings, submit a look-ahead schedule. This schedule will cover four weeks: the immediate past week, the current week, and the forthcoming two weeks. List all activities from the accepted Construction Progress Schedule, which are complete, are scheduled for Work during the period, are currently planned to be worked, even if out of sequence, and Work which is unfinished but scheduled to be finished. Provide actual start

and completion dates for the Work that has been completed the prior week. Forecast early start and early finish dates for the Work that is in process or upcoming.

B. Identify each activity noted above by activity number corresponding to the accepted Construction Progress Schedule and detailed description of the activity.

C. Deliver the look-ahead schedule to Engineer 24 hours prior to the weekly progress meeting in a format approved by Engineer.

1.7 CONSTRUCTION SCHEDULE REVISIONS

A. Engineer may direct and, if so directed, Contractor shall propose, revisions to the Construction Progress Schedule upon occurrence of any of the following instances:
   1. The actual physical progress of the Work falls more than five percent (5%) behind the accepted Construction Progress Schedule, as demonstrated by comparison to the accepted monthly Construction Progress Schedule updates or as determined by Engineer if a current accepted Construction Progress Schedule does not exist.
   2. Engineer considers milestone or completion dates to be in jeopardy because of "activities behind schedule". "Activities behind schedule" are all activities that have not or cannot be started or completed by the dates shown in the Construction Progress Schedule.
   3. A Change Order has been issued that changes, ads, or deletes scheduled activities, or affects the time for completion of scheduled activities.

B. When instances requiring revision to the Construction Progress Schedule occur, submit the proposed revised Construction Progress Schedule within ten (10) working days after receiving direction from Engineer to provide such schedule. No additional payment will be made for preparation and submittal of proposed revised Construction Progress Schedules. However, if Engineer accepts the proposed revised Construction Progress Schedule, it shall replace and supersede all previous Construction Progress Schedules and substitute for the next monthly Construction Progress Schedule update that would otherwise be required.

C. Revisions to the Construction Progress Schedule shall comply with all the same requirements applicable to the original schedule.

1.8 SCHEDULE RECOVERY

A. If a revised Construction Progress Schedule accepted by Engineer requires additional manpower, equipment, hours of work or work shifts, or to accelerate procurement of materials or equipment, or any combination thereof, as schedule recovery measures to meet Contract milestones, implement such schedule recovery measures without additional charge to Owner.

1.9 EARLY COMPLETION SCHEDULES

A. Early completion schedules are generally not acceptable to Owner but may be accepted as a convenience to Contractor and under the following conditions.
   1. Submit a specific written request outlining the specific reasons for using the early completion schedule.

2. Acknowledge and agree in writing that the proposed reduction in time represents Project time already paid for by Owner as part of the Bid Price, and available to both Contractor and Owner for the mitigation of impacts to the Project from any source. Contractor is not entitled to any increase in Contract price for failure to achieve the early completion and waives all claim to same.
3. Early completion schedules shall not be based upon or rely on expedited approvals by Owner or Engineer.
4. Early completion schedules must meet all other requirements of the Contract.

B. Revise early completion schedules, which have activities behind schedule, when and as requested by Engineer.

1.10 BASIS OF SCHEDULE NARRATIVES

A. Furnish a basis of schedule narrative to Engineer with each Application for Payment. If the Work falls behind schedule, submit additional narrative at such intervals as Engineer may request.

B. In each narrative, include a summary of progress for the month, description of any current and anticipated delaying factors, a variance analysis for varying activities, impacts on the construction schedule, and proposed corrective actions. Any Work reported complete, but which is not readily apparent to Engineer, must be substantiated with satisfactory evidence.

C. In each narrative, include a list of the activities completed during the preceding month and a list of the activities started during the month but not yet completed.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 33 20
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for submittals required in performance of the Work, including shop drawings, schedules, surveys, reports, samples, plans, lists, drawings, documents, warranties, certifications, findings, programs, manuals, data sheets, or any other item of information required by the Contract Documents to be submitted in accomplishing the Work.

1.2 DEFINITIONS

A. Action Submittal: Written and graphic information submitted by Contractor that requires Engineer's approval for inclusion in the Work.

B. Deferred Submittal: Information in accordance with the applicable Building Code, submitted by Contractor for portions of the design that are to be submitted to permitting agency after the time of permit application and prior to installation of that portion of Work. Deferred Submittals must include Engineer's review documentation stating that submittal has been found to be in general conformance with overall Project design.

C. Informational Submittal: Information submitted by Contractor to represent compliance with Contract Requirements included in the Work, but which are not part of the Work itself. Informational Submittals must be submitted to Engineer for information and for determination that submitted information is in accordance with Contract requirements.

D. Shop Drawing: The term "Shop Drawing" as used herein shall be understood to include detail design calculations, shop drawings, fabrication and installation drawings, erection drawings, lists, graphs, and similar items.

E. PDF: Abbreviation for "Portable Document Format", used for transmittal of electronic documents.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Whenever submittals are required hereunder, transmit all documents to Engineer in electronic format.

B. Be responsible for the accuracy, completeness, and coordination of all submittals. Do not delegate this responsibility in whole or in part to any subcontractor. Submittals may be prepared by Contractor, subcontractor, or supplier, but Contractor shall ascertain that each submittal meets the requirements of the Contract and the Project. Ensure that there is no conflict with other submittals and notify Engineer in each case where a submittal may affect the work of another contractor or Owner.

C. Coordination

1. Ensure coordination of submittals of related crafts and subcontractors.
2. Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently ahead of performance of related construction activities to avoid delay.
3. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
4. Carefully review all submittals prior to submission. Sign and date each transmittal with a direct statement acknowledging that the equipment or material in the submittal meets all the requirements specified or shown in the Contract Documents without exception. No consideration or review of any submittals will be made for any items, which have not been so certified. All non-certified submittals will be returned without action taken, and any delays caused thereby shall be the total responsibility of Contractor. Submittals which cannot bear this certification because they contain an exception or deviation to the Contract Documents shall be so noted in the electronic transmittal and shall only be submitted in accordance with Section 01 25 10 – Products, Materials, Equipment and Substitutions.

D. Processing: Allow sufficient review time so that installation will not be delayed because of the time required to process submittals, including time for resubmittals.
1. Except as may otherwise be indicated herein, Engineer will return each submittal, with comments noted thereon, within 14 calendar days following receipt by Engineer.
2. For resubmittal, Engineer will be allowed the same review period as for the original submittal.
3. It is considered reasonable that Contractor will make a complete and acceptable submittal to Engineer by the second submission of an item. Owner reserves the right to withhold monies due Contractor to cover additional costs of any review beyond the second submittal.
4. Allow additional time if processing must be delayed for coordination with subsequent submittals. Engineer will promptly advise Contractor when a submittal being processed must be delayed for coordination.
5. If an intermediate submittal is necessary, process the same as the initial submittal.
6. No extension of Contract Time will be authorized resulting from non-compliant submittals or failure to transmit submittals to Engineer sufficiently in advance of the Work to permit processing.
7. If an incomplete submittal is made, the submittal may be returned without review. A complete submittal will contain sufficient data to demonstrate that the items contained therein comply with the Contract Documents, meet the minimum requirements for submittals as described in the Contract Documents, and include all corrections as required from previous submittals.

E. Submittal Schedule
1. Within 30 days of the Notice to Proceed, submit a complete list of anticipated submittals, which includes Specification and Drawing references.
    a. Coordinate submittal schedule with any subcontracts, schedule of values, the list of products, and Contractor's construction schedule.
    b. Prepare schedule in chronological order.

c. Update the list with “early start” submittal dates within 15 days of submittal of the Construction Progress Schedule.
d. Update submittal dates whenever the schedule is updated and include any additional submittals identified after the initial submittal in the updates.

F. Unsolicited Submittals: Unsolicited submittals may be returned without being reviewed.

G. Changes in Work: Changes in the Work will not be authorized by submittal review actions. No review action, implicit or explicit, will be interpreted to authorize changes in the Work. Changes will only be authorized by separate written direction from Owner, in accordance with the General Conditions.

1.4 ACTION SUBMITTALS / INFORMATIONAL SUBMITTALS

A. Product Data:
1. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard published data is not suitable for use, submit as "Shop Drawings."
2. Mark each data sheet to show applicable choices and options pertinent to the Project. Where printed Product Data includes information on several products, some of which are not required for the Project, mark the data sheets to indicate the applicable information. Include the following information:
a. Manufacturer's printed recommendations.
b. Compliance with recognized trade association standards.
c. Compliance with recognized testing agency standards.
d. Application of testing agency labels and seals.
e. Notation of dimensions verified by field measurement.
f. Notation of coordination requirements.
3. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

B. Samples
1. Whenever in the Specifications, samples are required, submit not less than 3 samples of each item or material to Engineer for acceptance at no additional cost to Owner.
2. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
3. Submit samples for acceptance, a minimum of 21 days prior to ordering such material for delivery to the jobsite. Submit in an orderly sequence so that dependent materials or equipment can be assembled and reviewed without causing delays in the Work.
4. Individually and indelibly label and tag all samples to indicate all specified physical characteristics and Manufacturer's name for identification. Upon receiving acceptance by Engineer, one set of the samples will be stamped, dated, and returned. One set of samples will be retained by Engineer, and one set of samples will remain at the Project site until completion of the Work.

5. Unless indicated otherwise, all colors and textures of specified items presented in sample submittals shall be from the manufacturer's standard colors and standard materials, products, or equipment lines. If the samples represent non-standard colors, materials, products, or equipment lines and their selection will require an increase in Contract time or Price, clearly indicate this information in the submittal.

C. Shop Drawings

1. Wherever called for in the Contract Documents, or where required by Engineer, transmit an electronic Shop Drawing Submittal to Engineer for review. Whenever required to submit design calculations as part of a Submittal, such calculations shall bear the signature and seal of a professional engineer registered in the appropriate discipline in the state of Utah unless otherwise directed.
2. Organization
    a. Prepare a single shop drawing submittal for each item or class of material or equipment for which submittal is required. At a minimum, separate submittals are required for different Specification Sections except as follows. A single submittal covering multiple sections will not be accepted unless the primary specification references other sections for components. Example: If a pump section references other sections for the motor, protective coating, anchor bolts, local control panel, and variable frequency drive, a single submittal would be accepted; a single submittal covering vertical turbine pumps and horizontal split case pumps would not be acceptable.
    b. Index the components for the submittal and reference the specification sections and paragraph numbers for all components in the description field of the electronic submittal. Relate the submittal components to drawing number, detail number, schedule title, or room number and building name, as applicable.
    c. Unless indicated otherwise, terminology and equipment names and numbers used in submittals shall match the Contract Documents.
    d. Engineer will assign a single review action to each submittal, which action shall pertain to every part of the submittal as a whole.
    e. Disorganized submittals, which do not meet the requirements specified herein will be returned without review.
3. Format
    a. Assemble submittals into a single PDF file for each transmittal. Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on PDF sheets at least 8-1/2” x 11” and no larger than 36” X 48”
    b. Where product data from a manufacturer is submitted, clearly mark which model is proposed, with all pertinent data, capacities, dimensions, clearances, diagrams, controls, connections, anchorage, and supports. Present sufficient level of detail for assessment of compliance with the Contract Documents.
    c. Assign each Submittal a unique number, including the specification section under which it is submitted. Number all submittals sequentially within the applicable specification section. Original submittals will be assigned a numeric submittal number. Resubmittals shall be numbered with a revision number in addition to the original submittal number.

D. Engineer’s Action

1. If submittal is returned to Contractor marked "NO ACTION TAKEN", indicating that the submittal has been received and is being retained for record-keeping purposes. Formal revision and resubmission of said submittal will not be required.
2. If submittal is returned to Contractor marked "NO EXCEPTIONS TAKEN", formal revision and resubmission of said Submittal will not be required and construction may proceed.
3. If submittal is returned to the Contractor marked "MAKE CORRECTIONS NOTED", formal revision and resubmission of said submittal will not be required but construction must proceed according to the review comments included with the submittal.
4. If submittal is returned marked "REVISE AND RESUBMIT", revise said submittal and resubmit. Construction may not proceed.
5. If submittal is returned marked "REJECTED-RESUBMIT", revise said submittal and resubmit. Construction may not proceed.
6. Resubmittal of portions of multi-page or multi-drawing submittals will not be allowed. For example, if a Shop Drawing Submittal that consists of ten drawings contains only one drawing that needs to be amended and resubmitted, the submittal as a whole is deemed as "REVISE AND RESUBMIT", and all ten drawings included in the submittal are required to be resubmitted.
7. On resubmittals, flag any changes made, other than those made or requested by Owner or Engineer.

E. Commence fabrication of an item only after Engineer has reviewed the pertinent submittals and Engineer has assigned action as either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED". Corrections indicated on submittals are considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for changes to the Contract requirements.

F. Owner's and/or Engineer's review of shop drawing submittals does not relieve Contractor of the responsibility for correctness of details and dimensions and for compliance with the Contract Documents. Assume responsibility and risk for misfits due to errors in submittals. Be responsible for dimensions and design of adequate connections and details.

G. Deferred Design Submittals: Items noted on the Contract Documents as "Deferred Submittals" must be submitted to Engineer, who will review them and forward them to the building official with a notation indicating that the deferred submittal documents have been reviewed and found to be in general conformance with the design of the Project. Do not install Deferred Submittal items until the deferred submittal documents have been approved by the permitting agency.

H. Test and Evaluation Reports: Submit technical data, test reports, calculations, surveys, and certifications based on field tests and inspections by independent inspection and testing agency and by authorities having jurisdiction.
1. Reports of results of inspections and tests will not be considered Contract Documents.
2. Refer to Section 01 45 00 - Quality Control for additional requirements.

1.5 PRECONSTRUCTION CONFERENCE SUBMITTALS

A. At the preconstruction conference referred to in Section 01 11 00 - Summary of Work, submit the following items for review:
   1. A preliminary schedule of Shop Drawings, Samples, and proposed Substitute ("Or-Equal") submittals listed in the Bid.
   2. A list of all permits and licenses to be obtained, indicating the agency required to grant the permit, the expected date of submittal for the permit, and required date for receipt of the permit.
   3. A preliminary Schedule of Values in accordance with Section 01 29 73 – Schedule of Values.
   4. A preliminary Construction Project Schedule in accordance with requirements of Section 01 32 16 – Construction Progress Schedule.
   5. The names and qualifications of the Designated Safety Representative and Designated Competent Persons.

1.6 NEIGHBORHOOD CONSTRUCTION PLAN

A. Provide for Engineer's review, a Neighborhood Construction Plan detailing the plan of operation for construction of the work within the subdivision. When preparing this plan consider, at minimum, the following:
   1. Pertinent elements of permits granted by governmental agencies.
   2. The planned work schedule, hours of operation, and plans for temporary and permanent pavement replacement.
   3. Material hauling routes for trench excavation material, pipe, and backfill material such that materials are not stored in the street right-of-way. Also, construction routes that avoid school zones or other areas of safety consideration.
   4. Plans for detours, access to each occupied property during the period of construction, and emergency vehicle access.
   5. Plans for barricades and neighborhood signage during construction.
   6. Safety measures to be taken to protect persons and private property in the vicinity of construction and including contingency or emergency plans for unplanned events such as excavation cave in or storm runoff.
   7. Identify neighborhood specific dust and noise control measures.
   8. Plans for public notices to adjacent property owners.
   9. Plans for maintaining access to private residences and businesses, including restoration procedures for temporary asphalt patching and the length of time restoration will be maintained.

B. Make submittal upon receiving permits described above, and at least 14 days prior to work beginning in the Project segments.

C. Engineer will use the Neighborhood Construction Plan to monitor the construction activities.

1.7 SITE CONDITIONS SURVEYS

A. Submit the site conditions survey data as required in Section 01 71 30 – Site Conditions Surveys.

1.8 CONSTRUCTION PROGRESS REPORTS

A. Transmit a progress report to Engineer with each Application for Payment. If the Work falls behind schedule, submit additional progress reports at such intervals as Engineer may request.

B. In each progress report, include sufficient narrative to describe any current and anticipated delaying factors, effect on the construction schedule, and proposed corrective actions. Any Work reported complete, but which is not readily apparent to Engineer, must be substantiated with satisfactory evidence.

C. In each progress report, include a list of the activities completed with their actual start and completion dates, a list of the activities currently in progress, and the number of working days required to complete each.

1.9 SURVEY DATA

A. Make available for examination throughout the construction period, all field books, notes, and other data developed while performing the surveys required by the Work and submit all such data to Engineer with documentation required for final acceptance of the Work.

1.10 UTILITY INVESTIGATION

A. Submit the findings of the utility investigation in accordance with Section 01 71 50 – Protection and Restoration of Existing Facilities.

1.11 QUALITY ASSURANCE/QUALITY CONTROL PLAN

A. Prepare and submit a Quality Assurance/Quality Control Plan for the Work contained in the Contract in accordance with Section 01 45 00 – Quality Control.

1.12 CONTRACTOR DAILY REPORT

A. Submit to Engineer, or designee, a daily report. Deliver report not later than 9:00 A.M. of the workday following the report date and include the following:
   1. Day of week, date, Contractor name and Report number.
   2. Summary of work in process (segregated by Contractor and Subcontractor).
   3. Details of work accomplished including quantities of Work installed.
   4. Summary of equipment working and where working.
   5. Summary of manpower by work element and Subcontractor.
   6. Receipt of major equipment or materials.
   7. All required testing performed and, if available, documented results.
   8. Notification of percent of Work delayed by abnormal weather conditions.
   9. Notification of percent of Work delayed by other utility conflicts or conditions.

1.13 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Manual
   1. Submit technical operation and maintenance information for each item of mechanical, electrical and instrumentation equipment in an organized manner in the *Operations*

and Maintenance Manual, written so that it can be used and understood by the Owner's operation and maintenance staff.

2. Furnish initial submittal of the *Operations and Maintenance Manual* to Engineer upon delivery of the respective equipment.
3. Transmit to Engineer, one copy of the *Operations and Maintenance Manual* in digital format. In addition to the digital copy, furnish Engineer with four identical hard copies of the *Operations and Maintenance Manual*. Each set shall consist of one or more volumes, each of which shall be bound in a standard size, 3-ring, loose-leaf, vinyl plastic hard cover binder suitable for bookshelf storage. Binder ring size shall not exceed 2.5 inches. Prepare a table of contents indicating all equipment in the manuals. Display the title of each volume on the cover and spine.
4. Submit *Operations and Maintenance Manuals* in final form, not later than the 75 percent of construction completion date. Correct all discrepancies found by Owner or Engineer in the *Operations and Maintenance Manual* within 30 days from the date of written notification.
5. Incomplete or unacceptable *Operations and Maintenance Manuals* at the 75 percent construction completion point constitute sufficient justification to withhold the amount stipulated in paragraph "*Operations and Maintenance Manual* Submittals" of Section 01 77 00 – Project Closeout, from any monies due.

B. Record Documents

1. Prepare and maintain one set of record documents at the Project Site per the requirements of Section 01 78 39 – Project Record Documents. Submit to Engineer at close of Project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

CONTRACTOR SUBMITTAL

Submittal Number	
Specification Section	
Area/Phase	
Requested Priority (1, 2, or 3)	

Owner: _____ Project: _____

Construction Mgr: _____ Project Number: _____

CONTRACTOR	
Contractor:	
Address:	
Contact:	
Phone:	
Date Submitted:	
No. of Copies Submitted:	
Supplier:	

DESIGN ENGINEER	
Engineer:	Bowen, Collins and Associates
Address:	154 East 14000 South
	Draper, Utah 84020
Contact:	
Phone	(801) 495-2224
Date Returned:	
No. of Copies Returned:	

☐ See Attached Sheet(s) for Review Comments

Specification Paragraph	Description

☐ Electronic Copy Enclosed

☐ Contractor has verified that the materials or equipment contained in this submittal meet all requirements specified or shown (no exceptions.

☐ Contractor has verified that the material or equipment contained in this submittal meets all the requirements specified or shown, except for the following deviations (list deviations below):

Action Taken

☐ **NAT** No Action Taken – Record Submittal Only

No Resubmittal Required

☐ **NET** No Exceptions Taken

☐ **MCN** Make Corrections Noted

Resubmittal Required

☐ **RAR** Revise and Resubmit

☐ **RR** Rejected - Resubmit

Corrections or comments made on submittals during review do not relieve the Contractor from compliance with Contract Drawings and Specifications. Review is for conformance to the design concept and general compliance with the Contract Documents only. The Contractor is responsible for confirming and correlating quantities and dimensions, fabrication processes and techniques, coordinating Work with the trades, and satisfactory and safe performance of the Work.

Contractor Authorized Representative Signature Date

Reviewing Engineer Signature Date

Project Manager Signature Date

Requested Priority Legend (Engineer will attempt to meet these goals):
1: Highest priority -- as fast as possible.
2: Moderate priority -- 10 day target
3: Low priority – 30 day turnaround per contract

SECTION 01 35 53
SECURITY

PART 1 - GENERAL

1.1 SUMMARY

A. Protect the active construction areas of the Work, including all material, equipment, field office trailers, and their contents from theft, vandalism, and unauthorized entry.

B. Protect the subdivision from unauthorized access through temporary cut security walls or entrance gate access.

1.2 DEFINITIONS

A. For the purposes of this Section, an "active construction area" is any area where construction activities are occurring, or construction activities could be considered a potential hazard to people.

1.3 RELATED SECTIONS

A. Section 01 57 19 – Temporary Environmental Controls

1.4 SUBMITTALS

A. Prior to performance of any work at the Project Site, submit to Engineer for record only, two copies of the security plan commensurate with the needs of the Project, signed by officer of Contractor. Be solely responsible for adequacy of the security plan.

B. Provide Engineer with drawing and data showing temporary fencing and gate locations, along with materials to be used.

C. Provide Engineer with a list of 24-hour emergency phone numbers for Contractor personnel.

1.5 SECURITY PROGRAM

A. Protect Work and existing premises from theft, vandalism, and unauthorized entry during working and non-working hours.

B. Accept sole responsibility for Project Site security and protection of the Work.

C. Initiate the security program at job mobilization and maintain the security program throughout construction period.

D. Limit lighting to basic safety and security requirements, and shield when possible.

E. Be responsible for the security of storage compound and lay down area, and for all plant material, equipment, and tools always.

F. Prohibit firearms for the Project Site.

1.6 ENTRY CONTROL

A. Restrict entry of unauthorized persons and vehicles into Project Site.

B. Allow entry only to authorized persons and residents that live within the project site.

C. Contractor has the right to refuse access to the Project Site or require that a person or vehicle be removed from the Project Site if found violating any of the project rules.

D. Give jobsite security orientation training to all affected employees, including subcontractor employees. Employee participation in the security orientation shall be acknowledged by their respective individual signatures affixed to an orientation roster.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 41 26
PERMITS

PART 1 - GENERAL

1.1 ADMINISTRATIVE REQUIREMENTS

A. Obtain permits required for the execution of Work in accordance with the Contract Documents. Provide copies of these permits to Owner.

B. The intent of this Section is to furnish the known list of required permits for the Work under the Contract Documents. Owner does not guarantee that this list is complete. Be responsible for determining and verifying the extent of all permits required and for obtaining such permits.

C. In the Bid Price, include costs for obtaining all necessary permits, including application fees and other costs, and the costs of complying with the conditions of all permits. Any fees listed in this section are estimates and are for information only. Verify and pay all actual fees.

D. Within 30 Days of the Limited Notice to Proceed, submit a list of all permits and licenses to be obtained, indicating the agency required to grant the permit, the expected date of submittal for the permit, and required date for receipt of the permit.

1.2 SUMMARY OF PERMITS TO BE OBTAINED BY CONTRACTOR

A. Obtain the following permits. Submit copies of these permits to Engineer and maintain copies on-site. Comply with all conditions of the permits.

A. Obtain the following permits. Submit copies of these permits to Engineer and maintain copies on-site. Comply with all conditions of the permits.

1. Utah Division of Environmental Protection, General Storm Water Permit for Construction Activities:
    a. As a condition of contract award, sign a certification of agreement to comply with the terms and conditions of the permit. Permit not required if area of disturbance is less than one acre.
    b. Agency and Contact Person:
        1) Agency: City of St. George Public Works
        2) Contact Person: Jay Sandberg
        3) Address: 175 East 200 North, St. George, Utah 84770
        4) Telephone No.: (435) 627-4122
        5) Email: jay.sandberg@sgcity.org
2. City of St. George
    a. Encroachment Permit: This permit is for the construction or excavation of all projects within the public right-of-way in St. George, Utah. A Traffic Control Plan will be required with this permit.
        1) Agency: St. George City

PART 2 - MATERIALS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 45 00
QUALITY CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. The requirements of this Section apply to, and are a component part of, each Section of the Specifications.

1.2 REFERENCES

A. ASTM International (ASTM) standards, most recent editions:

ASTM C1077	Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM D3740	Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

1.3 SUBMITTALS

A. Submit in accordance with Section 01 33 20 – Submittal Procedures.

B. Submit Quality Control Plan.

C. Submit credentials for field Quality Control Representative showing experience acceptable to Engineer.

D. Submit credentials for testing laboratory showing compliance with Specifications and acceptable to Engineer.

E. Submit results of testing as specified below.

1.4 SITE INVESTIGATION AND CONTROL

A. Check and verify all dimensions and conditions in the field continuously during construction. Be solely responsible for any inaccuracies built into the Work due to Contractor's (including Subcontractor's) failure to comply with this requirement.

B. Inspect related and appurtenant Work and report in writing to Engineer, any conditions which will prevent proper completion of the Work. Failure to report any such conditions constitutes acceptance of all Site conditions. Required removal, repair, or replacement caused by unsuitable conditions shall be performed at no additional cost to Owner.

1.5 INSPECTION OF THE WORK

A. Inspect all Work performed by both Contractor and Subcontractors. Nonconforming Work and any safety hazards in the work area shall be noted and promptly corrected. Be responsible for the Work to be performed safely and in conformance with the Contract Documents.

B. The Work shall be conducted under the general observation of Engineer and is subject to inspection by representatives of Owner acting on behalf of Owner to ensure strict compliance with the requirements of the Contract Documents. Such inspection may include mill, plant, shop, or field inspection, as required. Owner, Engineer, or any inspector(s) shall be permitted access to all parts of the Work, including plants where materials or equipment are manufactured or fabricated.

C. The presence of Engineer, or any inspector(s), shall not relieve Contractor of responsibility for the proper execution of the Work in accordance with all requirements of the Contract Documents. Compliance is the responsibility of Contractor. No act or omission on the part of Engineer, or any inspector(s) shall be construed as relieving Contractor of this responsibility. Inspection of Work later determined to be nonconforming shall not be cause or excuse for acceptance of the nonconforming Work. Owner may accept nonconforming Work when adequate compensation is offered, and it is in Owner's best interest as determined solely by Owner.

D. All materials and articles furnished shall be subject to rigid documented inspection by qualified personnel. No materials or articles shall be used in the Work until they have been inspected and accepted by Contractor's Quality Control Representative and Engineer or other designated representative. No Work shall be backfilled, buried, cast in concrete, covered, or otherwise hidden until it has been inspected. Any Work covered in the absence of inspection shall be subject to uncovering. Where uninspected Work cannot be easily uncovered, such as in concrete cast over reinforcing steel, all such Work shall be subject to demolition, removal, and reconstruction under proper inspection.

E. All Owner furnished materials and articles shall be subject to rigid inspection by Contractor's Quality Control Representative before being used or placed in the Work. Inform Engineer, in writing, of the results of said inspections within one working day after completion of inspection. If any material or articles provided by Owner are considered to be of insufficient quality for use in the Work, immediately notify Engineer.

1.6 TIME OF INSPECTION AND TESTS

A. Furnish and prepare samples and test specimens required under these Specifications and for testing in ample time for the completion of the necessary tests and analyses before said articles or materials are to be used. Furnish and prepare all required test specimens without additional expense to Owner. As provided in the Contract Documents, performance of certain tests will be by Owner, and all costs therefore will be borne by Owner, except that the costs of any test, which shows unsatisfactory results shall be back charged to Contractor.

B. Notify Engineer at least three Workdays before being ready to backfill, bury, cast in concrete, hide, or otherwise cover any Work under this Contract and request inspection before

beginning any such Work of covering. Failure to notify Engineer at least three Workdays in advance of any such inspections shall be reasonable cause for Engineer to order a sufficient delay in scheduled operations to allow time for such inspection. Be responsible for costs of any remedial or corrective work required, and all costs of such delays, including its impact on other portions of the Work.

1.7 SAMPLING AND TESTING

A. Unless otherwise specified, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered. However, Engineer reserves the right to use any generally-accepted system of inspection which, in the opinion of Engineer, will ensure Engineer that the quality of the workmanship is in full accord with the Contract Documents.

B. Owner reserves the right to waive tests or quality control measures. However, waiver of any specific testing or other quality control measure, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality control requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial work, shall not be construed as a waiver of any technical or qualitative requirements of the Contract Documents.

C. Notwithstanding the existence of such waiver, Owner reserves the right to make independent investigations and tests as specified in the following paragraph and failure of any portion of the Work to meet qualitative requirements of the Contract Documents shall be reasonable cause for Owner to require the removal or correction and reconstruction of any such Work.

D. In addition to any other inspection or quality control provisions that may be specified, Owner reserves the right to independently select, test, and analyze, at the expense of Owner, additional test specimens of any or all the materials to be used. Results of such additional tests and analyses shall be considered along with the tests or analyses made by the Contractor to determine compliance with the applicable specifications for the materials so tested or analyzed provided that wherever any portion of the Work is discovered, as a result of such independent testing or investigation by Engineer, which fails to meet the requirements of the Contract Documents, all costs of such independent inspection and investigation and all costs of removal, correction, reconstruction, or repair of any such Work shall be borne by Contractor.

1.8 RIGHT OF REJECTION

A. Engineer or designated representative, acting for Owner, always reserves the right to reject any articles or materials furnished hereunder which, in any respect, fail to meet the requirements of the Contract Documents, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completion of the Work at the Site. If Engineer or designated representative, through an oversight or otherwise, has accepted materials or Work which are defective or in any way contrary to the Contract Documents, such materials, no matter in what stage or condition of manufacture, delivery, or erection, may be rejected.

B. Promptly remove or replace rejected articles or materials from the Site of the Work after notification of rejection.

C. Bear all costs of removal and replacement of rejected articles or materials.

D. Failure to promptly remove and replace rejected Work shall be considered a breach of this Contract and Owner may, after 7 days' notice, terminate Contractor's right to proceed with the affected Work and remove and replace the Work and issue a back charge to cover the cost of the Work.

1.9 QUALITY CONTROL REQUIREMENTS

A. Establish and execute a Quality Control program for the services, which are being provided. The program shall provide adequate measures for verification and conformance to defined requirements of all personnel, including lower-tier subcontractors (including fabricators, suppliers, and sub-subcontractors). Prepare and submit a plan responsive to this Section for review by Engineer.

B. Furnish Engineer with a project specific Quality Control Plan. The plan shall contain a comprehensive account of quality control procedures applicable to this Project. The detailed requirements for this Plan are delineated in the following paragraphs. No progress payments will be made until the Quality Control Plan is fully accepted by Engineer.

C. Using the Quality Control Plan, describe and define the personnel requirements described herein. Provide personnel with assigned quality control functions reporting to a field Quality Control Representative. The field Quality Control Representative shall report to a senior manager of Contractor and shall not have supervisory or managerial responsibility over the work force. Persons performing quality control functions shall have sufficient qualifications, authority, and organizational freedom to identify quality problems and to initiate and recommend solutions. Contractor's Quality Control representative(s) shall be on-site as often as necessary (but not less than the daily hours specified in the Contract Documents) to remedy and demonstrate that Work is being performed properly and to make multiple observations of all Work in progress. The Quality Control Plan shall include a statement by the senior manager designating the Quality Control Representative and specifying authorities delegated to the Quality Control Representative to direct cessation or removal and replacement of defective Work.

D. The Quality Control Plan shall ensure the achievement of adequate quality throughout all applicable areas of the contract. In the Quality Control Plan, describe the program and include procedures, work instructions and records. In addition, describe methods relating to areas that require special testing and procedures as noted in the Specifications.

E. Identification and Control of Items and Materials: Describe procedures in the Quality Control Plan to ensure that items or materials that have been accepted at the site are properly used and installed. Provide procedures for proper identification and storage, and to prevent the use of incorrect or defective materials.

F. Inspection and Tests: Provide written procedures defining a program for control of inspections performed. These procedures shall be described in the Quality Control Plan.

1. Inspections and tests shall be performed and documented by qualified individuals. At a minimum, "qualified" shall mean having performed similar quality control functions on similar type projects. Records of personnel experience, training and qualifications shall be maintained and made available for review by Engineer upon request.
2. Maintain and provide to Engineer, within two working days of completion of each inspection and test, adequate records of all such inspections and tests. Inspection and test results shall be documented and evaluated to ensure that requirements have been satisfied.
3. Procedures shall include:
    a. Specific instructions defining procedures for observing all Work in process and comparing this Work with the Contract requirements (organized by specification section).
    b. Maintaining and providing Daily Inspection Reports. Such reports shall, at a minimum, include the following:
        1) Item(s) inspected
        2) Quality characteristics in compliance
        3) Quality characteristics not in compliance
        4) Corrective/remedial actions taken
        5) Statement of certification
        6) QC Manager's signature
    c. Specific instructions for recording all observations and requirements for demonstrating through the reports that the Work observed complied, or a deficiency was noted and action to be taken.
    d. Procedures to preclude the covering of deficient or rejected Work.
    e. Procedures for halting or rejecting Work.
    f. Procedures for resolution of differences between the Quality Control Representative(s) and the production representative(s).
4. The Quality Control Plan shall identify all contractual hold/inspection points as well as any Contractor imposed hold/inspections points.
5. The Quality Control Plan shall include procedures to provide verification and control of all testing provided, including:
    a. Maintaining and providing to Engineer Daily Testing Records. Such records shall, at a minimum, contain the following:
        1) Item(s) tested
        2) Quality characteristics in compliance
        3) Statement of correctness & certification
        4) Quality characteristics not in compliance
        5) Corrective/remedial actions taken
        6) QC Manager's signature
    b. Individual test records will contain the following information:
        1) Item tested –item number and description
        2) Test results
        3) Test designation
        4) Test work sheet including location sample was obtained
        5) Acceptance or rejection
        6) Date sample was obtained
        7) Retest information, if applicable
        8) Control requirements
        9) Tester signature

10) Testing QC staff initials

c. Providing for location maps for all tests performed or location of Work covered by the tests.

d. Maintaining copies of all test results.

e. Ensuring Engineer receives independent copy of all tests.

f. Ensuring testing lab(s) are functioning independently and in accordance with the specifications.

g. Ensuring re-tests are properly taken and documented.

G. Control of Measuring and Test Equipment: Measuring and/or testing instruments shall be adequately maintained, calibrated, and adjusted to maintain accuracy within prescribed limits. Perform calibration at specified periods against valid standards traceable to nationally recognized standards and documented.

H. Supplier Quality Assurance: The Quality Control Plan shall include procedures to ensure that procured products and services conform to the requirements of the Contract Documents. Requirements of these procedures shall be applied, as appropriate, to lower-tier suppliers and/or Subcontractors.

I. Deficient and Nonconforming Work and Corrective Action: The Quality Control Plan shall include procedures for handling of deficiencies and non-conformances. Deficiencies and non-conformances are defined as documentation, drawings, material, equipment, and Work not conforming to the specified requirements or procedures. The procedure shall prevent non-conformances by identification, documentation, evaluation, separation, disposition, and corrective action to prevent recurrence. Conditions having adverse effects on quality shall be promptly identified and reported to the senior level management. The cause of conditions adverse to quality shall be determined and documented and measures implemented to prevent recurrence. In addition, at a minimum, this procedure shall address:

1. Personnel responsible for identifying deficient and non-complying items within the work.
2. How and by whom deficient and non-compliant items are documented “in the field”.
3. The personnel and process utilized for logging deficient and non-compliant work at the end of each day onto a Deficiency Log.
4. Tracking processes and tracking documentation for deficient and non-compliant items.
5. Personnel responsible for achieving resolution of outstanding deficiencies.
6. Once resolved, how are the resolutions documented and by whom.

J. Special Processes and Personnel Qualifications

1. The Quality Control Plan shall include detailed procedures for the performance and control of special process (e.g., welding, soldering, heat treating, cleaning, plating, nondestructive examination, etc.).
2. Personnel performing special process tasks shall have the experience, training, and certifications commensurate with the scope, complexity, or nature of the activity. They shall be approved by Engineer before the start of Work on the Project.

K. Audits: The Quality Control Plan shall provide for documented audits to verify that quality control procedures are being fully implemented by Contractor as well as its subcontractors. Audit records shall be made available to Engineer upon request.

L. Documented Control/Quality Records

1. Establish methods for control of Contract Documents, which describe how Drawings and Specifications are received and distributed to assure the correct issue of the document being used. The methods shall also describe how as-built data are documented and furnished to Engineer.
2. Maintain evidence of activities affecting quality, including operating logs, records of inspections and tests, audit reports, material analyses, personnel qualification and certification records, procedures, and document review records.
3. Quality records shall be maintained in a manner that provides for timely retrieval, and traceability. Quality records shall be protected from deterioration, damage, and destruction.
4. Provide a list with specific records as specified in the Contract Documents, which will be furnished to Engineer at the completion of activities.

M. Acceptance of Quality Control Plan: Engineer's review and acceptance of the Quality Control Plan shall not relieve Contractor from any of its obligations for the performance of the Work. Contractor's quality control staffing is subject to Engineer's review and continued acceptance. Owner, at its sole option, without cause, may direct Contractor to remove and replace the Quality Control Representative. No Work covered by the Quality Control Plan shall start until Engineer's acceptance of the Quality Control Plan has been obtained.

N. Engineer may perform independent quality assurance audits to verify that actions specified in the Quality Control Plan have been implemented. No Engineer audit finding or report shall in any way remove any requirements of this Contract.

1.10 TESTING SERVICES

A. All tests which require the services of a laboratory to determine compliance with the Contract Documents shall be performed by an independent commercial testing firm acceptable to Engineer. The testing firm's laboratory shall be staffed with experienced technicians, properly equipped and fully qualified to perform the tests in accordance with the specified standards.

B. Independent testing laboratory shall be accredited by the American Association of State Highway and Transportation Officials (AASHTO) for the tests they will perform and as appropriate for the Work being performed. The laboratory shall also be accredited under ASTM C1077, ASTM D3740, and ASTM D3666.

C. Engineer shall have the right to inspect work performed by the independent testing laboratory both at the project and at the laboratory. This shall include inspection of the independent testing laboratory's internal quality assurance records (quality assurance manual, equipment calibrations, proficiency sample performance, etc.).

D. Obtain Engineer's acceptance of the testing firm before having services performed. Pay all costs for these testing services.

E. Testing services provided by Owner, if any, are for the sole benefit of Owner. However, test results shall be available to Contractor. Testing necessary to satisfy Contractor's internal quality control procedures shall be the sole responsibility of Contractor.

F. Testing Services furnished by Contractor: Unless otherwise specified, and in addition to all other specified testing requirements, provide all testing services in connection with the following materials as required for Engineer's review:
   1. Concrete materials and mix designs.
   2. Embankment, fill, and backfill materials.
   3. Quality control testing of all precast concrete.
   4. All other tests and engineering data required for Engineer's review of materials and equipment proposed to be used in the Work.

G. Testing Services furnished by Owner: Unless otherwise specified, Owner will provide quality control testing services in connection with the following materials and equipment incorporated in the Work.
   1. Concrete strength tests.
   2. Moisture-density and relative density tests on embankment, fill, and backfill materials.
   3. In-place field density test on embankments, fills, and backfill.
   4. Other materials and equipment as specified herein.
   5. Testing, including sampling, shall be performed by Engineer or testing firm's laboratory personnel, in general manner and frequency indicated in the Specifications.
   6. Furnish all sample materials and cooperate in the testing activities, including sampling. Interrupt the Work when necessary to allow testing, including sampling to be performed. There shall be no claim for an increase in Contract Price or Contract Times due to such interruption. When testing activities, including sampling, are performed in the field by the testing firm's laboratory personnel, furnish personnel and facilities to assist in the activities.
   7. The testing firm's laboratory shall perform all laboratory tests within a reasonable time consistent with the specified standards and will furnish a written report of each test. Distribution of the reports shall be as directed by Engineer.

H. Transmittal of Test Reports: Written reports of tests and engineering data furnished for Engineer's review of materials and equipment proposed to be used in the Work shall be submitted per Section 01 33 20 - Submittal Procedures.

I. The testing firm retained for material field testing shall furnish a minimum of five copies of written report of each test. Three copies of each test report will be transmitted to Engineer within three Workdays after each test is completed. Consecutively number each report for each type of test.

J. Testing firm shall furnish one copy of each field and laboratory quality control test to Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01 50 10
SITE ACCESS AND STORAGE

PART 1 - GENERAL

1.1 REFERENCES

A. U.S. Dept. of Transportation, Federal Highway Administration (FHWA) standards.

MUTCD	Manual of Uniform Traffic Control Devices

B. U.S. Dept. of Labor, Occupational Safety and Health Administration (OSHA) standards.

Subpart G, Part 1926	Safety and Health Standards for Construction

1.2 SUBMITTALS

A. Provide design and engineering calculations for custom temporary bridges or steel plates to be employed.

B. Submit hazardous materials storage plan.

C. Submit the EPA issued number for wastes generated at the site.

1.3 ROADWAY AND TRAFFIC LIMITATIONS

A. Investigate the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the Work. Comply with the provisions specified in the Traffic Management Plan. Accept responsibility to construct and maintain any haul roads required for construction operations.

B. Maintain a maximum speed limit of 25 mph while on the Project Site.

C. Confine all vehicles to the designated construction area. Cross-country travel is prohibited.

1.4 TEMPORARY CROSSINGS

A. General: Provide continuous, unobstructed, safe, and adequate pedestrian and vehicular access to fire hydrants, commercial and industrial establishments, churches, schools, parking lots, service stations, motels, fire and police stations, and hospitals. Provide safe and adequate public transportation stops and pedestrian crossings at intervals not exceeding 300 feet. Cooperate with parties involved in the delivery of mail and removal of trash and garbage to maintain existing schedules for such services. Maintain vehicular access to residential driveways to the property line except when required construction precludes such access for reasonable periods of time.

B. Temporary Bridges: Wherever necessary, provide suitable temporary bridges or steel plates over unfilled excavations, except where written consent of the individuals or authorities

concerned to omit such temporary bridges or steel plates has been secured. Any such obtained written consent shall be delivered to Engineer prior to excavation. Maintain all such bridges or steel plates in service until access is provided across the backfilled excavation. Temporary bridges or steel plates for street and highway crossing shall conform to the requirements of the authority having jurisdiction in each case. Adopt designs furnished by said authority for such bridges or steel plates, or submit designs to said authority for approval, as may be required. New designs shall be stamped and signed by a professional engineer, licensed to practice in Utah.

C. Street Use: Nothing herein shall be construed to entitle Contractor to the exclusive use of any public street, alleyway, or parking area during the performance of the Work hereunder. Conduct operations so as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. No street shall be closed to the public without first obtaining permission of Engineer and proper governmental authority. Where excavation is being performed in primary streets or highways, always maintain one lane in each direction open to traffic unless otherwise indicated. Provide toe boards to retain excavated material if required by Engineer or the agency having jurisdiction over the street or highway. Fire hydrants on or adjacent to the Work shall always BE kept accessible to fire-fighting equipment. Temporary provisions shall be made to assure the use of sidewalks and the proper functioning of all gutters, storm drain inlets, and other drainage facilities.

D. Traffic Control: For the protection of traffic in public or private streets and ways, provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights, and other safety devices in accordance with the requirements of the MUTCD, Part VI - Traffic Controls for Street and Highway Construction and Maintenance Operations."

E. Take all necessary precautions for the protection of the Work and the safety of the public. All barricades and obstructions shall be illuminated at night, and all lights shall be kept burning from sunset until sunrise. Station such guards or flaggers and conform to such special safety regulations relating to traffic control as may be required by the public authorities within their respective jurisdictions. All signs, signals, and barricades shall conform to OSHA Safety and Health Standards for Construction.

F. Temporary Street Closure: If closure of any street is required during construction, apply in writing to the authority having jurisdiction at least 30 days in advance of the required closure for signage and detour requirements.

G. Temporary Driveway Closure: Notify property owner or occupant (if not owner-occupied) of the closure of the driveways to be closed more than one eight-hour workday at least three working days prior to the closure. Minimize the inconvenience and minimize the time that the driveways will be closed. Fully explain to the owner/occupant how long the work will take and when closure is to start.

1.5 WORK AND STORAGE AREA

A. Make independent arrangements for any necessary off-site storage or shop areas necessary for the proper execution of the Work.

B. Lands to be furnished by Owner for construction operation and other purposes are indicated. Should it be necessary to use any additional land for staging or for other purposes during the construction of the Work, independently arrange for the use of such lands and pay any required rental or use fees. Unless otherwise shown, specified, or agreed, all sites shall be returned to their original condition or better upon completion of the Work.

C. Nothing herein shall imply granting an exclusive use of roadways or public and/or private land employed to perform the Work.

D. Temporary Storage Buildings and Enclosures
   1. Provide environmental control systems that meet recommendations of manufacturers of equipment and materials to be stored therein.
   2. Arrange and partition to provide security of contents and ready access for inspection and inventory.

E. In the event machinery and equipment need servicing on site, be responsible to clean environmentally hazardous materials from the site immediately.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01 57 19
TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

1.1 EXPLOSIVES AND BLASTING

A. The use of explosives on the Work will will not be permitted.

1.2 DUST ABATEMENT

A. Furnish all labor, equipment, and methods required to prevent, control, and mitigate fugitive dust from the construction activities. In complying with this requirement, conform to all local requirements in all circumstances. Be responsible for damage resulting from dust generated by its activities. Dust abatement measures shall be continued until Engineer directs otherwise.
   1. Unpaved Roads: Apply water as appropriate for traffic areas as approved by Engineer.

1.3 RUBBISH CONTROL

A. Prepare a trash abatement program and submit to Engineer for review. The program shall include placing all litter, trash, garbage, construction debris, and refuse in scavenger-proof, resealable containers. Trash includes, but is not limited to, cigarettes, cigars, gum wrappers, tissue, cans, paper, and bags. During the progress of the Work, keep the Project Site and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. Dispose of all rubbish and waste materials of any nature occurring at the Project Site, establish regular intervals of collection and disposal of such materials and waste. Keep haul roads free from dirt, rubbish, and unnecessary obstructions resulting from construction operations. Disposal of all rubbish and surplus materials shall be off the Site in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.

B. Clean up and properly dispose of any oil, fuel, and other equipment leaks at the time of occurrence. Service and maintenance vehicles shall carry a bucket and pads to absorb leaks and spills. Notify Engineer of any spills or leaks at the time of occurrence.

1.4 SANITATION

A. Toilet Facilities: Provide fixed or portable chemical toilets wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.

B. Sanitary and Other Organic Wastes: Establish a regular collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities or organic material wastes from any other source related to the construction operations shall be disposed of away from the Site in

a manner satisfactory to Engineer and in accordance with all laws and regulations pertaining thereto.

1.5 CHEMICALS

A. All chemicals used during project construction or furnished for project operation, whether soil sterilant, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

1.6 AIR QUALITY

A. Maintain all vehicles and equipment in proper tune.

B. Use Best Available Control Technology on construction equipment, including a timing retardation.

C. Use natural-gas powered construction equipment where possible.

D. Encourage employee car-pooling.

1.7 NOISE

A. Comply with the hours of work as allowed by the local jurisdiction or land management agency.

B. Noise limits on construction equipment will comply with the noise limits of the local jurisdiction or land management agency. All construction equipment shall be equipped with manufacturer's standard noise control devices (i.e., mufflers, acoustical lagging, and/or engineer enclosures). Take special care not to throttle the engine excessively and keep engine speed as low as possible. Do not leave the equipment running or idling needlessly, especially when near noise-sensitive land uses. Noise-sensitive land uses include, but are not limited to, residences, schools, hospitals, libraries, retirement and elderly care centers, religious and worship facilities, courts of law, certain noise-sensitive professional offices, and quiet recreational areas such as campgrounds and hiking trails.

C. Use newer equipment whenever possible. Inspect all construction equipment at periodic intervals to ensure proper maintenance and the presence of noise control devices (i.e., mufflers and shrouding, etc.)

D. Keep heavy, noisier equipment a minimum of 100 feet away from the property line of any noise-sensitive land use for any length of time. Avoid coming closer than 200 feet if multiple pieces of equipment are operating simultaneously. If such cases are unavoidable, avoid throttling the engine excessively or leaving the equipment running needlessly. Heavy equipment shall be operated in a manner to comply with the jurisdiction's noise ordinance and vibration performance standard. To comply with these requirements, it may be necessary to operate heavy equipment only 30 minutes out of each one-hour period at distances closer than 200 feet from an occupied property. During the remaining 30 minutes, the equipment should move further away or be shut down, but may resume 30 minutes later.

E. Locate stationary noisy equipment away from construction boundaries that are near noise-sensitive uses.

F. Concrete trucks shall perform initial mixing and other activities that require high revving of the truck engine a minimum of 600 feet from noise-sensitive land uses. Keep engine revolutions per minute as low as possible at closer distances.

G. Whenever possible, use electric hand tools rather than gas-powered tools.

H. If operation of dewatering pumps and generators is required between the hours of 6 p.m. and 7 a.m. and within 600 feet of a noise-sensitive land use, they shall be treated with acoustical noise control measures (e.g., mufflers, shrouding, and/or enclosures) so as not to exceed 56 dba at 50 feet or other appropriate requirements of the local jurisdiction.

I. If requested by the Engineer, install temporary noise barriers for construction activities, including staging areas that occur closer than 100 feet from noise-sensitive land uses. Noise barriers can be made of plywood, heavy vinyl curtain material, natural or temporary earth berms, or stockpiles of construction material.

1.8 CONTROL OF SURFACE WATER

A. Be advised that portions of the Work site are subject to flooding from surface waters from the subdivision and golf course. These sites are subject to minor channelized flows and overland sheet flow during some rainfall events.

B. Be responsible for protecting the Work and temporary facilities from damage due to flooding, runoff, surface water flows, and related subsurface flows until final Project closeout. Provide protection for all aspects of the Work whether temporary or permanent. Provide all materials and equipment required to protect the Work. No additional payment will be made by Owner for providing protective measures or for any damage resulting from said flows. All damage from said flows shall be completely replaced in accordance with the Contract Documents at no additional cost to Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01 71 00
MOBILIZATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Organization and mobilization of the forces.

B. Transporting construction plant and equipment to the jobsite and setting up of same.

C. Transporting various tools, materials, and equipment to the jobsite.

D. Erection of temporary buildings and facilities as required for field offices, staging, storage, and construction operations.

1.2 PAYMENT FOR MOBILIZATION

A. Payment for mobilization shall be as described in Section 01 20 00 – Measurement and Payment.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL

A. Mobilization shall include the following principal items:
1. Provide all required insurance certificates and bonds.
2. Move onto the site, or portion of site as available, of all plant and equipment required for first month's operations including office and storage trailers.
3. Install temporary construction power, wiring, and lighting facilities.
4. Develop construction water supply.
5. Provide all on-site communication facilities, including telephones, cordless phone antenna, and radio pagers.
6. Provide on-site sanitary facilities and potable water facilities.
7. Arrange for and erection of work and storage yard.
8. Construct and implement security features and requirements complying with Section 01 31 30 – Safety.
9. Obtain all required permits.
10. Post all OSHA required notices and establish safety programs.
11. Provide Superintendent at the job site full time.

3.2 SUBMITTAL REQUIREMENTS

A. The following submittals are due by the day indicated and must be approved by Owner as a condition precedent to completion of mobilization.

No.	Submittal	Specification Section
1.	Quality Assurance / Control Plan	01 45 00
2.	Mobilization Plan	01 71 00
3.	Safety Program	01 31 30
4.	Concrete Mix Designs	03 30 00
5.	List of Permits and Licenses	01 41 26
6.	Schedule of Submittals	01 33 20

3.3 MOBILIZATION PLAN

A. Within 15 Days after receipt of the Notice to Proceed, submit a mobilization plan to Engineer for approval, which shall include a breakdown showing the estimated value of each component of mobilization as described in paragraphs 3.1 and 3.2 herein.

B. Include a bar chart schedule showing each item of mobilization listed in paragraphs 3.1 and 3.2 herein and include scheduled start date, finish dates, and total duration. The plan shall also list each activity to be initiated in the first 90 Days following Notice to Proceed, complete, with scheduled start date, finish date, and total duration.

END OF SECTION

SECTION 01 71 30
SITE CONDITIONS SURVEYS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements to document conditions of the Project Site and adjacent properties before construction begins and after completion of the Work. Methods include still photographs, digital video recordings, and topographic surveys.

1.2 SUBMITTALS

A. Submit all photographs, digital videos, and topographic survey data of the preconstruction conditions to Engineer for record purposes prior to, but not more than three weeks before, commencement of any construction activities.

1.3 CLOSEOUT SUBMITTALS

A. Complete and submit all digital videos, still photographs, mapping, and survey data of the postconstruction conditions to Engineer prior to final inspection by Owner and Engineer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Conduct thorough preconstruction and postconstruction Site conditions surveys of the entire Project. Site conditions surveys shall consist of photographs and digital video recordings. Provide and submit sufficient photographs, supplemented by digital video, to Engineer to resolve any damage claims, which may arise due to the construction of this Project.

B. Digital video or photographic surveys shall include, but not be limited to, all access roads used to transport material or equipment to and from the Site and elevation of roadways, drives, walks, and buildings. Use spot elevation surveys to document the elevation on abutting roadways, drives, and walks, taken at approximately 20-foot intervals and at the point of juncture with any structure to which they are attached or otherwise influenced by the Work. In addition, take elevations of all building slabs along the Project route.

C. As a minimum, note preconstruction and postconstruction conditions and perform digital video surveys of the following:
   1. Areas used to access the Site or haul materials and equipment to the Site.
   2. The access road, both original and relocated locations and ultimately to the Site.
   3. All Work areas, including, but not limited to, access corridors, disposal areas, and staging areas.

4. Any work completed by other contractors at the Site that will be impacted or otherwise affected by Work of this Project.

D. Supplement digital video surveys with still photographs and spot elevation surveys as required to document the original condition and location of existing features and facilities.

E. Provide digital video records in DVD-R format.

END OF SECTION

SECTION 01 71 50
PROTECTION AND RESTORATION OF EXISTING FACILITIES

PART 1 - GENERAL

A. Protect all existing utilities and improvements not designated for removal and restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, in accordance with the Contract Documents.

B. Call Blue Stakes before commencing any digging for location of underground utility lines and cable locations. The number is 811 or (801) 208-2100.

C. Continuously backfill the trench through residential areas and provide trench plate access at the end of each day for residential home access.

D. Provide temporary caps over all large diameter pipe during non-working hours to prevent unauthorized access.

1.2 RIGHTS-OF-WAY

A. Do not perform any work that would affect any gas, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; any fence; or any other structure. Do not enter upon the rights-of-way involved until notified by Engineer that Owner has secured authority therefore from the proper party.

B. After authority has been obtained, give said party due notice of intention to begin work, if required by said party, and remove, shore, support or otherwise protect such pipeline, transmission line, ditch, fence, or structure or replace same.

C. No such decision as to the method or time of conducting the Work or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the Work in the General Conditions of the Contract.

1.3 PROTECTION OF STREET OR ROADWAY MARKERS

A. Do not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. Do not begin pavement breaking or excavation until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. Accurately replace survey markers or points disturbed after all street or roadway resurfacing has been completed.

1.4 RESTORATION OF PAVEMENT

A. General: Replace all paved areas cut or damaged during construction with similar materials of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing a permit. The pavement restoration requirement to match existing sections applies to all components of existing sections, including sub-base,

base and pavement. Conform temporary and permanent pavement to the requirements of the affected jurisdictional agency. Neatly saw cut pavements, which are subject to partial removal, in straight lines. Refer to City of St. George Standards for specific pavement restoration requirements.

B. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, place temporary surfacing promptly after backfilling and maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.

C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, saw cut back and trim the edge to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement. Refer to plans for minimum dimension of T-patch replacement width over disturbed pipeline trenches in paved areas.

D. Pavement Crown: In areas where pipeline trenching impacts an existing crown of asphalt, survey, and submit to Engineer documentation showing the pre-construction location of the crown prior to trenching. Replace the crown of asphalt to its pre-construction location to the satisfaction of the governing agency and Engineer.

E. Restoration of Sidewalks or Private Driveways: Wherever sidewalks or private roads have been removed for purposes of construction, place suitable temporary sidewalks or roadways promptly after backfilling and maintain them in satisfactory condition for the period fixed by the authorities having jurisdiction over the affected portions before proceeding with the final restoration. If no such period of time is so fixed, maintain said temporary sidewalks or roadways until the final restoration thereof has been made.

F. Restoration of Curb and Gutter: Wherever curb and gutter, including driveway and sidewalk approaches, have been removed for purposes of construction, replace these improvements following construction to the specific dimension and requirements of the authority having jurisdiction. Replace improvements, including required ADA access details to the latest version of the authoritative standard regardless of their preconstruction condition.

1.5 EXISTING UTILITIES AND IMPROVEMENTS

A. General. Protect underground utilities and other improvements, which may be impaired during construction operations, regardless of whether the utilities are indicated on the Drawings. Take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

B. Except for utilities specifically located on the Drawings, be responsible for exploratory excavations (potholing) as deemed necessary to determine the exact locations and depths of utilities, which may interfere with the Work. Perform all such exploratory excavations as soon as practicable after Notice to Proceed and, in any event, a sufficient time in advance of construction to avoid possible delays to the Work's progress. When such exploratory excavations show the utility locations as shown on the Drawings to be in error, so notify

Engineer. Refer to plans for minimum advance distance that potholing must be performed prior to pipeline trenching work.

C. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.

D. Utilities to be Moved: In case it becomes necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of Contractor, be notified by Owner to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, notify Engineer a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.

E. Utilities to be Removed: Where the proper completion of the Work requires temporary or permanent removal and/or relocation of an existing utility or other improvement which is indicated, remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to Engineer and the owner of the facility. In all cases of such temporary removal or relocation, restoration to the former location shall be accomplished in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition as found prior to removal.

F. Owner's Right of Access: Owner and owners of public utilities and franchises reserve right to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work of this Contract.

G. Underground Utilities Indicated: Existing utility lines that are indicated or the locations of which are made known prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced unless otherwise repaired by the owner of the damaged utility. If the owner of the damaged facility performs its own repairs, reimburse said owner for the costs of repair.

H. Underground Utilities Not Indicated: In the event of damage to existing utility lines that are not indicated or the locations of which are not made known prior to excavation, make a verbal report of such damage immediately to Engineer and a written report thereof promptly thereafter. Notify the utility owner of the damage. If directed by Engineer, repairs shall be made under the provisions for changes and extra work contained in the General Conditions.

I. Damages. Costs of locating and/or repairing damage not due to failure to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Contract Documents with reasonable accuracy, and for equipment on the project which was actually working on that portion of the Work which was interrupted or idled by removal or relocation of such utility facilities, and which was necessarily idled during such Work will be paid for as extra Work in accordance with the provisions of the General Conditions.

J. Approval of Repairs: All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement owner before being concealed by backfill or other work.

K. Fire Hydrants: Keep all fire hydrants and water control valves free from obstruction and available for use at all times.

L. Maintaining in Service: Unless indicated otherwise, power, and telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the Work shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the Engineer are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. Be responsible for and repair all damage due to construction operations. The provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

M. Utility Service Laterals: Utility service laterals are not shown on the plans. Anticipate that there are no less service laterals than there are homes where project trenches are located in the vicinity of a street between a home and the utility main. Protect in place, or remove and replace to the satisfaction of the utility owner, all utility service laterals encountered during construction. Duration of utility service outages and public notification procedures shall conform to the standards of the controlling agency and these Contract documents.

1.6 TREES OR SHRUBS WITHIN STREET RIGHTS-OF-WAY AND PROJECT LIMITS

A. General: Except where trees or shrubs are indicated to be removed, exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within street rights-of-way and project limits. Do not trim or remove any trees unless such trees have been approved for trimming or removal by the jurisdictional agency or Owner. Trim or replace existing trees and shrubs which are damaged during construction using the services of a certified tree company under permit from the jurisdictional agency and/or Owner.

B. Trimming: Symmetry of the tree shall be preserved; no stubs or splits or torn branches left; clean cuts shall be made close to the trunk or large branch. Cuts over 1-1/2 inches in diameter shall be coated with a tree paint product that is waterproof, adhesive, and elastic, and free from kerosene, coal tar, creosote, or other material injurious to the life of the tree.

C. Replacement: Immediately notify the jurisdictional agency and/or Owner if any tree or shrub is damaged by construction operations. If, in the opinion of said agency or Owner, the damage is such that replacement is necessary, replace the tree or shrub at no additional expense to Owner. The tree or shrub shall be of a like size and variety as the one damaged, or, if of a small size, the pay to the owner of said tree a compensatory payment acceptable to the tree or shrub owner, subject to the approval of the jurisdictional agency or Owner. The size of the tree or shrub shall not be less than 1-inch diameter nor less than 6 feet in height. Planting of replacement trees and shrubs shall be in accordance with the recommendations of the nursery furnishing the plants. Unless otherwise indicated, water and maintain the replacement trees and shrubs for 6 months after planting.

1.7 LAWN AREAS

A. Repair lawn or landscaped areas damaged during construction to match the pre-construction condition to the satisfaction of the landowner and Owner. Use high quality sod to restore all

lawn areas. Location and quality of irrigation system equipment shall be confirmed prior to construction. Where lawn irrigation systems have been removed or damaged during construction, be responsible for replacement of systems in kind to the satisfaction of the landowner. Anticipate that pressurized irrigation systems are present in all maintained lawn areas that will be impacted by construction. Verify proper operation of the irrigation system with landowner as required for maintenance of newly installed sod prior to transferring of watering responsibilities.

1.8 UNIMPROVED AREAS

A. Remove and stockpile topsoil prior to construction. Replace topsoil prior to restoration of unimproved areas.

B. Unimproved areas, including unclassified open spaces, fields, and unimproved rights-of-way, damaged during construction shall be repaired to match pre-construction conditions to the satisfaction of the land owner and Owner. At a minimum, unimproved areas shall be smoothed and finished graded with topsoil to match preconstruction topography, and reseeded using a native seed mix acceptable to the land owner and Owner.

1.9 OTHER SURFACE IMPROVEMENTS

A. Conduct a pre-construction survey of all properties that will be impacted by construction operations. All improvements that have the potential to be impacted by construction, including but not limited to fencing, landscaping, boulders, retaining walls, irrigation systems, and other public and/or private improvements, shall be protected in place, or if necessary, removed and replaced with like kind or better quality following construction.

1.10 NOTIFICATION BY CONTRACTOR

A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way, notify the owners or agencies responsible for such facilities not less than three days nor more than seven days prior to excavation so that a representative of said owner or agencies can be present during such Work if they so desire.

B. When it is necessary to temporarily deny access to property, or when any utility service connection must be interrupted, give notices sufficiently in advance to enable the affected persons to provide for their needs. Notices shall conform to any applicable local ordinance and, whether delivered orally or in writing, shall include appropriate information concerning the interruption and instructions on how to limit inconvenience caused thereby.

C. Contact, cooperate with, and provide written notice (including Contractor's phone number) at least seven days prior to beginning Work on each street. The written notice shall include the approximate schedule and explanation of Work and shall be given to each homeowner, business, all emergency agencies, schools, and residents, which will be affected by the project; particularly in reference to temporary interruptions to vehicular access. At least twenty-four hours prior to initiation of Work, provide a second notice to confirm the scope of scheduled Work. Submit a copy of the notifications to Engineer, for approval, prior to the start of construction. Make verbal door-to-door communication prior to construction to remind all

affected parties of the construction to take place. In addition, be responsible to answer and resolve any conflicts that may arise between a homeowner or business owner and the construction personnel.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 77 00
PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Contract closeout, including final cleaning, preparation, and submittal of closeout documents, warranties and bonds, and final completion certification.

B. Closeout submittals and submittal forms in both hard copy and electronic format.

1.2 SUBMITTALS

A. Closeout Documents: Submit the following closeout documents prior to making a written request for Final Completion.
   1. Project record drawings and documents per Section 01 78 39 – Project Record Documents.
   2. Shop drawings.
   3. Post construction survey record documents, where required.
   4. Quality Control reports per Section 01 45 00 – Quality Control.
   5. Final Operation and Maintenance Manuals.
   6. Maintenance stock items; spare parts and special tools.
   7. Written warranties and bonds where required.
   8. Release of liens or release of claims forms submitted by all subcontractors and suppliers, if requested by Owner

B. Operation and Maintenance Manuals
   1. One percent of the contract price will be withheld from any monies due as progress payments, if at the 75 percent construction completion point, the approved *Operations and Maintenance Manual* complying with Section 01 33 20 - Submittal Procedures has not been submitted. The aforementioned amount will be withheld by Owner as the agreed, estimated value of the approved *Operations and Maintenance Manuals.* Any such retention of money for failure to submit the approved *Operations and Maintenance Manuals* on or before the 75 percent construction completion point shall be in addition to the retention of any payments due under General Conditions of the Contract.

C. Final Change Order: A final Change Order shall be submitted and processed if required. Final payment and close-out procedures shall comply with requirements of the Contract Documents.

1.3 CLOSEOUT TIMETABLE

A. Establish dates for equipment testing, acceptance periods, and on-site instructional periods as required under the Contract Documents. Such dates shall be established not less than one week prior to beginning any of the required activities, to allow Owner, Engineer, and their authorized representatives sufficient time to schedule attendance at such activities.

1.4 COMPLETION PROCEDURES

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Prior to making such request, the following must be complete:
   1. Work necessary for the safe, proper, and complete use or operation of the facility as intended.
   2. Punch list of items remaining to be completed, for submission with the request for issuance of a Certificate of Substantial Completion.
   3. Submit and receive acceptance of accurate record drawings for all work completed to date.
   4. Submit and receive acceptance of all specified warranties, bonds, guarantees and operation and *Operations and Maintenance Manuals*.

B. Upon receipt of the request, Engineer and designated representatives will review the request, the Work, and the above requirements to determine whether Substantial Completion has been achieved. If this review fails to support Substantial Completion, Engineer will notify Contractor in writing citing the reasons for rejection. If Engineer determines that Substantial Completion has been achieved, the following procedures will be followed:
   1. Engineer, his/her representative, and user representatives will review the Work and the punch list to assure all deficiencies are noted on a final punch list.
   2. Engineer will schedule and conduct a pre-final walk-through of the facility with representatives of Owner, Engineer, Contractor, and others, for the purpose of formally reviewing the Work, the final punch list, and the readiness of the Work for use. A copy of the final punch list will be furnished to all participants and any additional items noted during the walk-through will be added to the list.
   3. Upon completion of the pre-final walk-through, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion as the date of the walk-through, provided the walk-through has verified that the Work is in fact ready for use and occupancy by Owner for its intended purpose. Engineer will attach to the certificate a punch list of items to be completed or corrected before final payment. In accordance with the General Conditions of the Contract, upon approval of this request by Owner, the facility will be considered Substantially Complete.

C. When Contractor deems that the entire Work or an agreed portion thereof is complete, Contractor shall notify Engineer and Owner in writing that the entire Work is complete. Final Completion will be deemed to have occurred when Work is completed including the following:
   1. All final punch list items have been corrected, signed off by Contractor and Engineer, and demonstrated to Owner during a final walk-through.
   2. All updates to record drawings, and *Operations and Maintenance Manuals* have been made.
   3. Demobilization and site cleanup are complete.
   4. Facilities and/or equipment have been properly demonstrated to be functioning as required.
   5. Owner has received releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.

D. Final Inspection and Payment
   1. When all items have been completed or corrected, Engineer, Contractor, and Owner will promptly make a final inspection to verify completion. Final payment and Engineer's *Notice of Acceptability* will then be processed in accordance with the General Conditions of the Contract.

1.5 CLOSE-OUT PROCEDURE

A. Engineer and Contractor shall meet and resolve all outstanding issues including, but not limited to:
   1. Claims and adjustments for time or costs
   2. Outstanding, unused allowances
   3. Procedures for handling warranty issues.

B. A Final Change Order shall be processed if required. Final payment and close out procedures shall comply with all requirements of the Contract Documents.

1.6 MAINTENANCE AND GUARANTEE

A. Comply with the maintenance and guarantee requirements contained in General Conditions of the Contract.

B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless Contractor has obtained a statement in writing from the affected private authority or public agency releasing Owner from further responsibility in connection with such repair or resurfacing. Submit such release(s) to Engineer.

C. Make all repairs and replacements promptly upon receipt of written order from Owner. If Contractor fails to make such repairs or replacements promptly, Owner reserves the right to do the Work and Contractor, and his surety shall be liable to Owner for the cost thereof.

1.7 BOND

A. Furnish a Performance Bond as required by General Conditions of the Contract.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 WASTE DISPOSAL

A. Remove temporary structures and facilities and arrange for and dispose of surplus materials, waste products, and debris as follows:
   1. Prior to making disposal on private property, obtain written permission from owner of such private property.
   2. Do not fill ditches, washes, or drainage ways which may create drainage problems.

3. Do not create unsightly or unsanitary nuisances during disposal operations.
4. Maintain disposal site in safe condition and good appearance.
5. Complete leveling and clean-up prior to final acceptance of the Work.

3.2 DEMOBILIZATION

A. Demobilization shall include moving equipment, field trailers, construction materials, debris, and so forth from the Site as well as performing final cleanup.
1. Disturbed areas shall be restored to their original state or better.
2. Permanent improvements damaged during construction operations shall be repaired or replaced at no additional cost to Owner.
3. Remove all equipment, materials, waste, and debris from the site and restore site to original condition upon completion of construction.
4. The work area shall be restored to its original or better condition and shall be inspected and approved by Engineer.

END OF SECTION

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Maintain at the Site for Owner, one record copy of the Drawings, Specifications, Operation and Maintenance manuals, coordination drawings, and Shop Drawings that are clearly marked with a red pen to indicate all changes and or revisions resulting from, but not limited to, the following:
   1. Actual Project as constructed.
   2. Addenda.
   3. Change Orders and other modifications.
   4. Engineer's instructions.
   5. Field revisions.
   6. Requests for Information (RFI).
   7. All other changes.

B. Give special attention to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the Contract Drawings.

C. Record drawings shall be supplemented by any detailed sketches as necessary or directed to fully indicate the Work, as actually constructed.

D. Section Includes:
   1. Maintenance of Documents and Samples
   2. Marking Devices.
   3. Recording.
   4. Close-out Submittal Delivery.

1.2 MAINTENANCE OF DOCUMENTS AND SAMPLES

B. Store documents and samples in field office apart from documents used for construction.

C. Maintain documents in clean, dry, legible condition and in good order. Keep record documents separate from those used for construction.

D. Always make documents and samples available for reference by Engineer and Owner.

E. During progress meetings, record documents may be reviewed to ascertain that changes have been recorded.

F. Updated Drawings, when provided by Engineer, will be substituted for the hand markups provided Contractor prints the applicable Drawings and inserts them into the record set each month.

G. Copies of the record drawings will be audited regularly by Engineer after the month in which the Notice to Proceed is given as well as on completion of the Work. Failure to properly maintain record drawings in an up-to-date condition may result in the withholding of payments due at the sole discretion of Owner.

1.3 MARKING DEVICES

A. Use a red color pen for recording all information to all documents defined herein.

1.4 RECORDING

A. Label each document "CONFORMING TO CONSTRUCTION RECORD" in neat large red printed letters.

B. Record information concurrently with construction progress, at the time the material or equipment is installed. Do not conceal any work until required information is recorded.

C. Specifications and Addenda shall be legibly marked to record:
   1. Manufacturer, trade name, catalog number, and supplier for each product and item of equipment installed.
   2. Changes made by instruction from Engineer or by Change Order.

D. Record potholing data and installation of marker balls.

E. All surveying for record documents shall be performed by a licensed surveyor.

1.5 CLOSEOUT SUBMITTALS

A. At Contract closeout, deliver complete record documents to Engineer as required in Section 01 77 00 - Project Closeout. Final payment will not be acted upon until the record drawings have been prepared and delivered to Engineer.

B. The information submitted will be incorporated by Engineer into final drawings to be provided to Owner. Be responsible for the accuracy of submitted construction information. Engineer will assume that the information provided by Contractor is correct and faithfully represents actual construction.

C. This submittal shall include the record paper set along with 2 CDs. Each CD shall contain .pdf files and .dwg files of each drawing.

D. Prepare submittal with transmittal letter containing:
   1. Date.
   2. Project title and number.
   3. Contractor's name and address.
   4. Title and number of each record as-built document.
   5. Signature of Contractor's authorized representative and a statement that certifies that the record documents are accurate and reflect what was installed during construction.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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GEOTECHNICAL INVESTIGATION

ST. GEORGE CITY
R1 SEWER PROJECT

St. George, Utah

Prepared for:
Bowen, Collins & Associates, Inc.

August 2022

RB&G
ENGINEERING, INC.

202201-018

RB&G ENGINEERING, INC.

August 17, 2022

Bowen, Collins & Associates, Inc.
Attn: Todd Olsen, P.E.
20 North Main, Suite No. 107
St. George, UT 84790

Re: St. George City R1 Sewer Project – Geotechnical Investigation

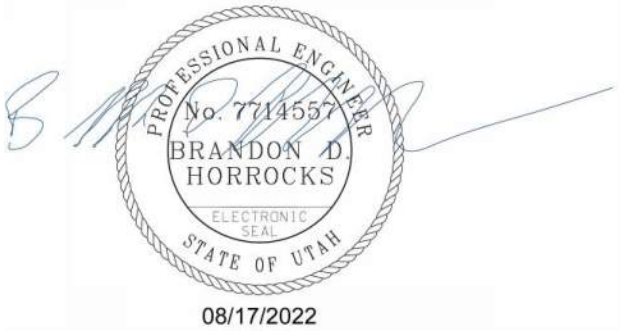
Dear Mr. Olsen:

A Geotechnical Investigation has been completed for the St. George City R1 Sewer Project to be located St. George, Utah. The results of this study are summarized in the report transmitted herewith.

We appreciate the opportunity of providing this service for you. If there are any questions relating to the information contained herein, please call.

Sincerely,

RB&G ENGINEERING, INC.



Brandon D. Horrocks, P.E.

1435 WEST 820 NORTH, PROVO, UTAH 84601-1343
PROVO 801-374-5771 SALT LAKE CITY 801-521-5771 FAX 801-374-5773

GEOTECHNICAL INVESTIGATION

St. George City
R1 Sewer Project

St. George, Utah

Prepared for:
Bowen, Collins & Associates, Inc.

August 2022

RB&G ENGINEERING, INC.

RB&G ENGINEERING, INC.

ST. GEORGE CITY
R1 SEWER PROJECT

GEOTECHNICAL INVESTIGATION REPORT

St. George, Utah

1. INTRODUCTION

This report describes the results of a geotechnical investigation performed for the St. George City R1 Sewer Project. We understand that a trenchless crossing about 300 feet long is being considered for installation of the planned sewer replacement pipeline within the Entrada Golf Course. Preliminary drawings provided to us show that the trenchless crossing will be about 10 feet below the existing ground surface.

The purpose of this investigation was to determine the characteristics of the subsurface material at the location of the planned trenchless pipeline installation. The information contained in the report is discussed under the following headings: (1) Geological and Existing Site Conditions, (2) Subsurface Soil and Water Conditions, and (3) Sewer pipeline Design Considerations.

2. GEOLOGIC AND EXISTING SITE CONDITIONS

The location of the proposed sewer pipeline alignment is shown on the Vicinity Map on Figure 1 and the Site Plan on Figure 2. The sewer pipeline alignment is generally oriented in a north-south direction near the southerly end of the Entrada Golf Course. The purpose of the trenchless alignment will be to allow installation of the sewer replacement pipeline without excavating within the golf course fairway.

As shown on the Geologic Map included as Figure 3, surficial deposits at the proposed trenchless alignment have been mapped as Holocene to upper Pleistocene age eolian and alluvial deposits (Qea). Older alluvial-fan deposits (Qafo) are mapped a short distance north of the trenchless alignment. Lower Jurassic age Kayenta formation (Jk) bedrock is mapped east and west of the proposed trenchless alignment, and this formation underlies the overburden deposits in the project area. Eolian deposits, which are generally sand deposits with little fines, do not appear to have

been encountered at the boring locations. The materials at the boring locations appear to be alluvial deposits, weathered Kayenta formation materials, and Kayenta bedrock.

3. SUBSURFACE SOIL AND WATER CONDITIONS

The characteristics of the subsurface material along the alignment were evaluated by drilling three borings to depths between 15 and 20 feet below the ground surface. The locations of the borings drilled for this investigation are shown on Figure 2.

The boring numbers each include the prefix "22" on the site plan and logs to indicate the year the investigation was performed; however, the prefix will generally be omitted in this report for simplicity.

Materials classified as sandy and clayey soils were encountered within the upper 8 to 14 feet of the soil profile at the boring locations. The materials classified as soils gradually transitioned to weathered mudstone/siltstone bedrock, which generally became more competent with depth.

The results of moisture, classification and unconfined compressive strength tests performed for this investigation are presented on the boring logs and summarized in the Summary of Test Data table in the appendix. The results of chemical tests (pH, resistivity, sulfate, and chloride) are also summarized in the Summary of Test Data table.

Laboratory classification tests were performed on four samples obtained during the field investigations. Two of the samples was classified as silty clayey sand (SC-SM), and two as sandy lean clay (CL). The samples had moisture contents between 9.6 and 16.6% (average = 11.9%), liquid limits between 19 and 31 (average = 24), and plastic indices between 5 and 12 (average = 9). Sieve analysis tests were performed on three of the samples, which had 0 to 1% gravel, 46 to 52% sand (average = 50%), and 48 to 54% fines passing a No. 200 sieve (average = 50%).

Unconfined compression tests were performed on three soil/ weathered bedrock samples obtained from Borings 2 and 3. The samples tested had measured unconfined compressive strength values between 1,861 and 2,516 psf (average = 2,182 psf).

Resistivity, pH, chloride and sulfate tests were performed on a sample of the silty clayey sand obtained from Boring 1 a depth of 6.3 feet below the ground surface. The sample had a pH value of 8.6, resistivity of 350 ohm-cm, chloride content of 430 mg/kg-dry, and a sulfate content of 1,690 mg/kg-dry.

4. PIPELINE DESIGN CONSIDERATIONS

The resistivity and chloride tests performed during this investigation indicate that steel in contact with the native soils at this site may experience accelerated corrosion. We recommend that steel

to be in contact with the native soil be protected against corrosion. The sulfate test performed indicates a potential for sulfate attack of concrete at the site. We recommend that cement used for the project meet the requirement of ASTM C150 Type II cement or an equivalent blended hydraulic cement meeting the requirements of ASTM C595 such as IP(MS) or IT(MS).

We recommend that the proposed pipeline be buried at least 18 inches below finish grade to provide protection against freezing temperatures. It is likely that other design considerations will result in deeper pipeline embedment.

The results of the investigations indicate that overburden subsurface materials at this site have few, if any, cobbles, and no boulders. The soils also have appreciable amounts of fines, and relatively good unconfined compressive strength. A number of trenchless techniques could likely be successful at this site; however, jack and bore trenchless construction may be preferred to reduce project costs. It is our opinion that jack and bore construction can be successful at this site provided the invert of the pipeline is not more than about 10 feet below the existing ground surface. Jack and bore may be successful for deeper pipeline profiles; however, this type of construction will be significantly more difficult at deeper depths due to the increased competency (hardness) of the mudstone materials. Final construction methods should be determined by an experienced specialty trenchless construction contractor.

Pits will likely be required at the ends of the trenchless alignment. The overburden soils at the project site classify as Type B as defined by OSHA. We recommend that excavations at this site be sloped 1H:1V (Horizontal:Vertical) or flatter, or be shored. If the pit excavations will be shored, we recommend that the shoring design assume the on-site soils have a total unit weight of 130 pcf with an internal friction angle of 34 degrees. Stabilization at the bottom of the excavations is unlikely to be required at this site provided surface water is directed away from the excavations.

We recommend that pit excavations extend at least 4 inches below the bottom of the pipeline; however, deeper excavations will likely be necessary for the trenchless construction. Backfill up to 4 inches below the bottom of the pipeline should meet the requirements for Trench Backfill described below. A 4-to 6-inch thick layer of Bedding material should be installed directly beneath the pipeline outside the trenchless construction. The Bedding should be 1½-inch minus relatively well graded granular soil. The bedding should be compacted to at least 90% of the maximum laboratory density as determined in accordance with ASTM D1557, except that bedding materials directly beneath the pipe should be left uncompacted. The recommended width of the uncompacted zone is the outside diameter of the pipe divided by 3.

Pipe Zone Backfill (top of Bedding to one-foot above top of pipe) should consist of 1 ½-inch minus relatively well graded granular soil. Pipe Zone Backfill should be placed in loose lifts not exceeding 8 inches in thickness and compacted to at least 90% of the maximum laboratory density determined in accordance with ASTM D1557. Bedding and Pipe Zone Backfill can be imported or can be sandy soils excavated during trench construction provided any rocks larger than 1½ inches are removed. If imported Bedding or Pipe Zone Backfill is used, we recommend that it have no more than 20% passing a No. 200 sieve.

It is our understanding that the trenchless construction pits will be excavated in landscaped or undisturbed areas, and not within paved areas or at locations where structures will be placed. Trench Backfill in unpaved areas (top of Pipe Zone Backfill to the top of the trench) should consist of 6-inch minus soil from the trench excavation compacted to at least 90% of the maximum laboratory density determined in accordance with ASTM D1557.

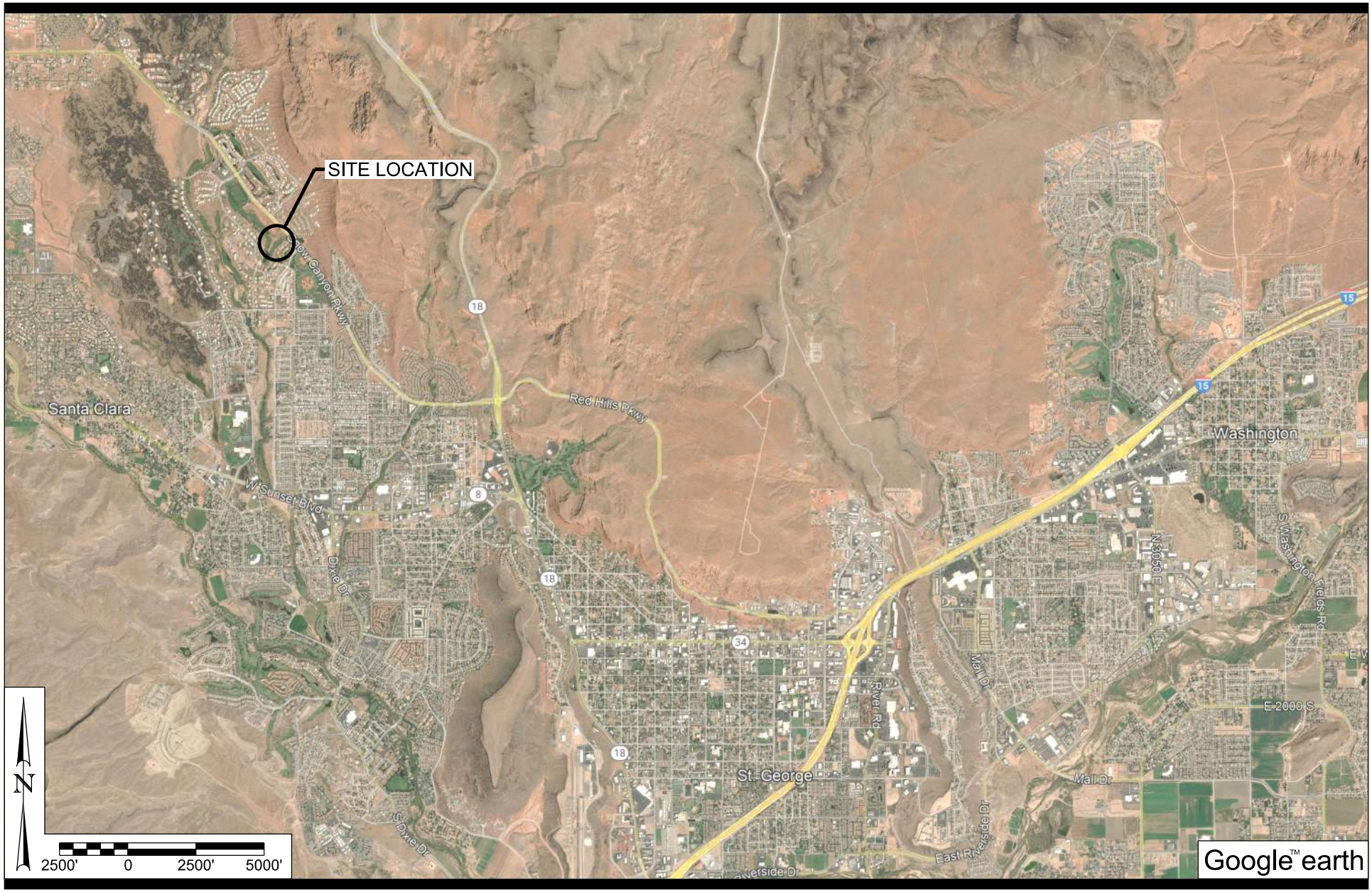
Groundwater was not encountered at this site during the subsurface investigations performed during this study. Depending upon environmental and site conditions during construction, excavations at the ends of the trenchless alignment may encountered some water within the shallow soil deposits perched on less permeable soil or bedrock deposits. The most efficient method to remove groundwater, if encountered, will likely be using trenches and sumps.

5. LIMITATIONS

The conclusions and recommendations presented in this report are based upon the results of the field and laboratory tests which, in our opinion, define the characteristics of the subsurface material throughout the site in a satisfactory manner for the proposed project. It should be recognized that soil and rock materials are inherently heterogeneous and that conditions may exist throughout this site which could not be defined during this investigation. If, during construction, conditions are encountered which appear to be different than those presented in this report, it is requested that we be notified so that appropriate action may be taken.

The information contained in this report is provided for the specific location and purpose of the client named herein and is not intended or suitable for reuse by any other person or entity whether for the specified use, or for any other use. Any such unauthorized reuse, by any other party is at that party's sole risk and RB&G Engineering, Inc. does not accept any liability or responsibility for its use.

FIGURES



RB&G ENGINEERING, INC.

Figure 1 VICINITY MAP

St. George City R1 Sewer Project

St. George, Washington County, Utah

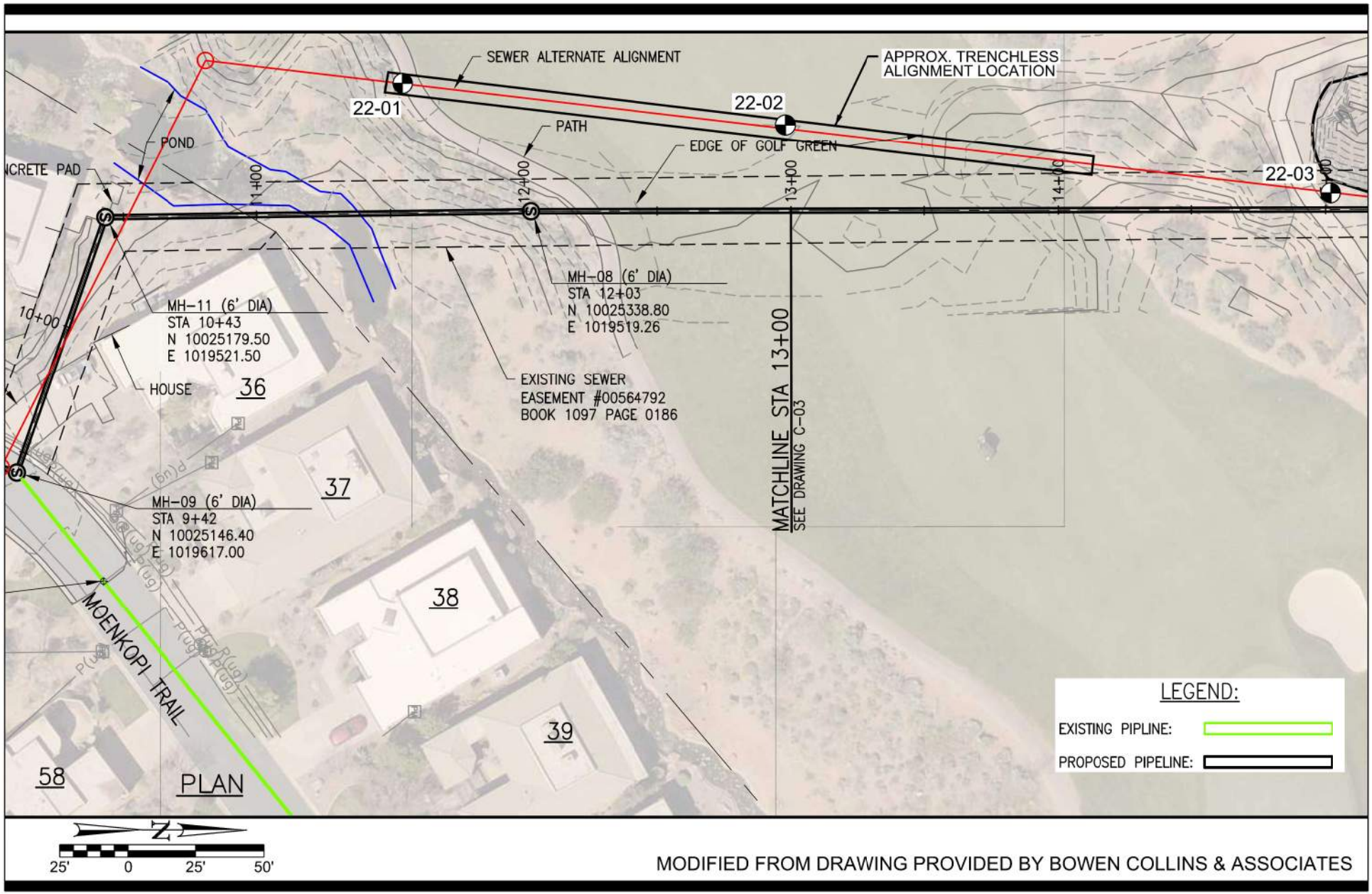


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Figure 2 SITE PLAN & TEST HOLE LOCATIONS

St. George City R1 Sewer Project

St. George, Washington County, Utah

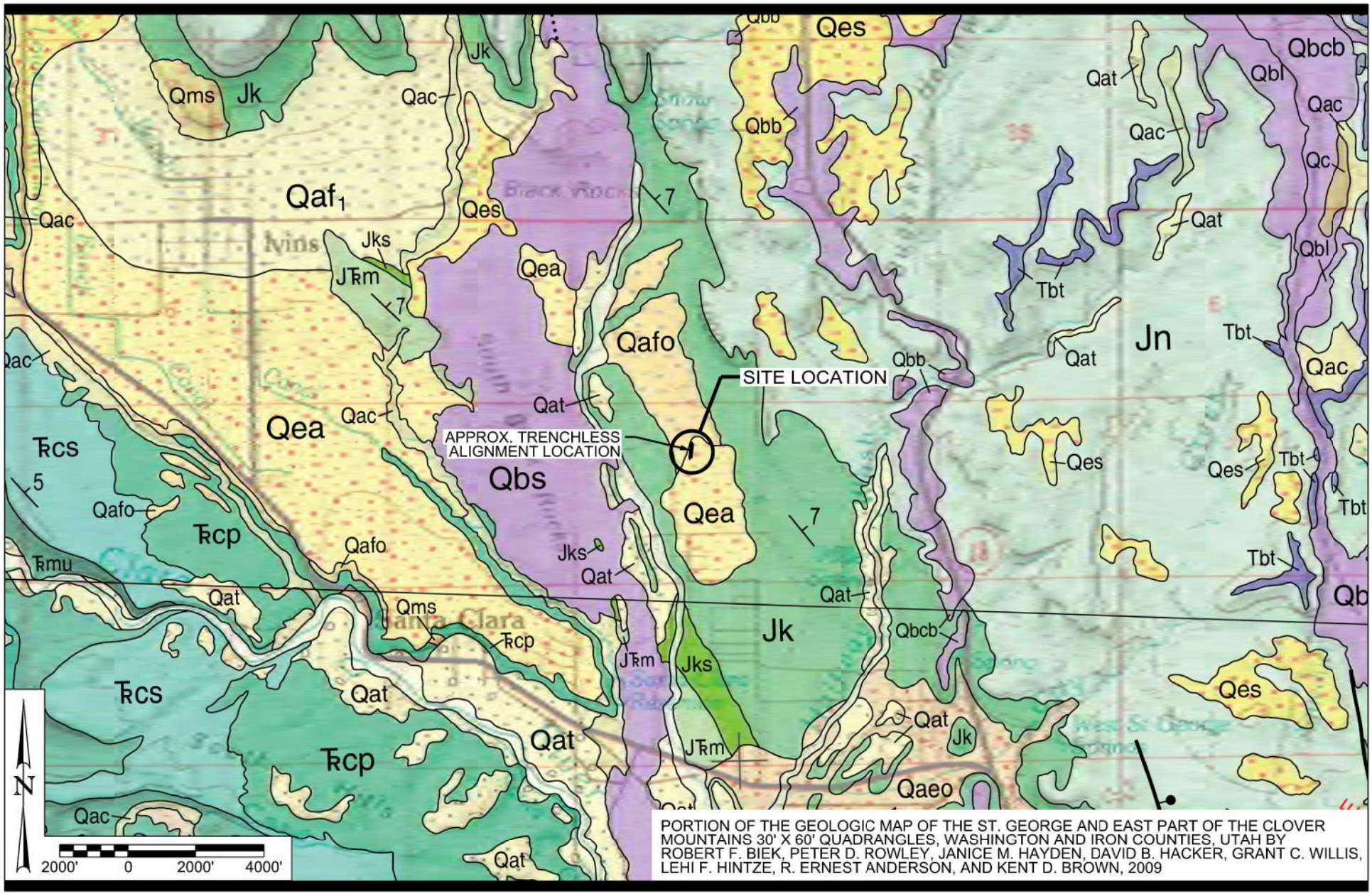

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Figure 3A GEOLOGIC MAP

St. George City R1 Sewer Project

St. George, Washington County, Utah

APPENDIX

FIELD AND LABORATORY TESTING PROCEDURES

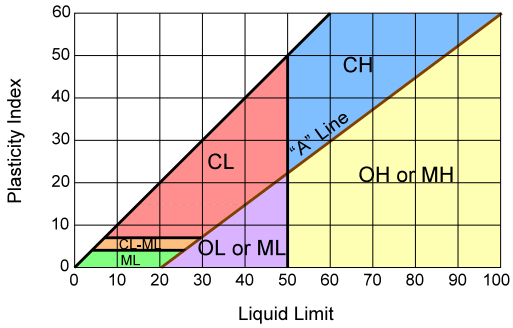
The subsurface investigation was performed using a CME 55 rotary drill rig with a tri-cone rock bit, NW casing, and water as the drilling fluid. Sampling within the borings was generally performed at three-foot intervals within the upper 15 feet, and at 5-foot intervals when investigating materials more than 15 feet below the ground surface. Disturbed samples were obtained by driving a 2-inch split spoon sampling tube through a distance of 18 inches using a 140-pound weight dropped from a height of 30 inches. The number of blows required to drive the sampling spoon through each 6 inches of penetration is shown on the boring logs. The sum of the last two blow counts, which represents the number of blows to drive the sampling spoon through 12 inches, is defined as the standard penetration value. The standard penetration value, corrected for overburden and hammer energy, provides a good indication of the in-place density of sandy material; however, it only provides an indication of the relative stiffness of the cohesive material, since the penetration resistance of materials of this type is a function of the moisture content. Considerable care should be used when interpreting the penetration resistance in gravelly soils. The standard penetration value typically provides a good indication of the density of gravelly materials when the spoon can be driven through the full 18 inches with reasonable sample recovery.

Relatively undisturbed Shelby samples of the cohesive soils at the site were obtained at the locations indicated on the boring logs. The Shelby samples were obtained by pushing a thin-walled steel tube into the subsurface material using the hydraulic pressure of the drill rig.

Each sample obtained in the field was classified in the laboratory according to the Unified Soil Classification System. The symbol designating the soil type according to this system is presented on the boring logs. A description of the Unified Soil Classification System is presented in the appendix, and the meaning of the various symbols shown on the logs can be obtained from this figure.

Laboratory tests performed during this investigation to define the characteristics of the subsurface material at the site included natural moisture content, Atterberg Limits, mechanical analyses, unconfined compressive strength, pH, resistivity, chloride and sulfate tests. Testing was performed following procedures outlined in the American Society for Testing and Materials (ASTM) standards, except the chloride and sulfate tests were performed by Chemtech-Ford Laboratories using the EPA 300.0 method.

Unified Soil Classification System

Major Divisions			Group Symbols		Typical Names	Laboratory Classification Criteria		
COARSE-GRAINED SOILS *more than half of material is larger than No. 200 sieve*	**Gravels** *more than half of coarse fraction is larger than No. 4 sieve size*	**Clean Gravels** *little or no fines*	**GW**		Well graded gravels, gravel-sand mixtures, little or no fines	*For laboratory classification of coarse-grained soils*	$C_u = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3	
			GP		Poorly graded gravels, gravel-sand mixtures, little or no fines		Not meeting all gradation requirements for GW	
		Gravels With Fines *appreciable amount of fines*	**GM***	**d**	Silty gravels, poorly graded gravel-sand-silt mixtures	Determine percentage of gravel and sand from grain-size curve. Depending on percentage of fines (*fraction smaller than No. 200 sieve size*), coarse-grained soils are classified as follows: **Less than 5%** GW, GP, SW, SP **More than 12%** GM, GC, SM, SC **5% to 12%** Borderline cases requiring use of dual symbols**	Atterberg limits below "A" line, or PI less than 4	Above "A" line with PI between 4 and 7 are borderline cases requiring uses of dual symbols
				u				
			GC		Clayey gravels, poorly graded gravel-sand-clay mixtures		Atterberg limits above "A" line, or PI greater	
	Sands *more than half of coarse fraction is smaller than No. 4 sieve size*	**Clean Sands** *little or no fines*	**SW**		Well graded sands, gravelly sands, little or no fines		$C_u = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3	
			SP		Poorly graded sands, gravelly sands, little or no fines		Not meeting all gradation requirements for SW	
		Sands with Fines *appreciable amount of fines*	**SM***	**d**	Silty sands, poorly graded sand-silt mixtures		Atterberg limits below "A" line, or PI less than 4	Above "A" line with PI between 4 and 7 are borderline cases requiring uses of dual symbols
				u				
			SC		Clayey sands, poorly graded sand-clay mixtures		Atterberg limits above "A" line, or PI greater	
FINE-GRAINED SOILS *more than half of material is smaller than No. 200 sieve*	**Silts and Clays** *liquid limit is less than 50*		**ML**		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	*For laboratory classification of fine-grained soils*	 Plasticity Chart	
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays			
			OL		Organic silts and organic silt-clays of low plasticity			
	Silts and Clays *liquid limit is greater than 50*		**MH**		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts			
			CH		Inorganic clays of high plasticity, fat clays			
			OH		Organic clays of medium to high plasticity, organic silts			
HIGHLY ORGANIC SOILS			**Pt**		Peat and other highly organic soils			

*Division of GM and SM groups into subdivisions of d and u for roads and airfields only. Subdivision is based on Atterberg limits; suffix d used when liquid limit is 28 or less and the PI is 6 or less, the suffix u used when liquid limit is greater than 28.

***Borderline classification*: Soils possessing characteristics of two groups are designated by combinations of group symbols. (For example GW-GC, well graded gravel-sand mixture with clay biner.)

DRILL HOLE LOG

BORING NO. 22-01

PROJECT: ST. GEORGE CITY R1 SEWER PROJECT

SHEET 1 OF 1

CLIENT: BOWEN COLLINS & ASSOCIATES

PROJECT NUMBER: 202201-018

LOCATION: SEE SITE PLAN

DATE STARTED: 7/11/22

DRILLING METHOD: 08-CME-55 / NW CASING TO 5'

DATE COMPLETED: 7/11/22

DRILLER: T.K.

GROUND ELEVATION:

DEPTH TO WATER - INITIAL: ▽ DRY'

AFTER 24 HOURS: ▼ N.M.

LOGGED BY: M.N.H., J.B.

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
				4	9,10,9,(40)	CL-ML	orange-red-brown, sl. moist, stiff — SANDY SILTY CLAY								
				14	15,20,25,(96)	SC-SM	orange-red-brown, sl. moist, very dense								
	5			3	Pushed	SC-SM	orange-red-brown, sl. moist								
				15	23,42,60,(99+)	SC-SM	orange-red-brown, sl. moist, very dense — SILTY CLAYEY SAND								
	10			16	14,25,31,(94)	SC-SM	red-brown, sl. moist, very dense		9.6	19	5	1	51	48	
				16	8,17,25,(62)	CL	red-brown, sl. moist, hard — SANDY LEAN CLAY								
	15			2	60/2"	CL	red-brown, sl. moist — MUDSTONE (LEAN CLAY) highly weathered								
	20			1	60/1"	CL	red-brown, sl. moist — BOTTOM OF HOLE								

DH_LOG_V8-2014-1 R1_SEWER_PROJECT.GPJ US EVAL.GDT 8/15/22

RB&G ENGINEERING, INC.

LEGEND:

- 2" OD Split Spoon (SPT)
- 2.5" OD Split Spoon
- 3" OD Split Spoon

Split Spoon Sample: 2,3,2,(6) ← Blow Count per 6" / $(N_1)_{60}$ Value; * *T 0.45* ← Torvane (tsf); *PP 2.0* ← Pocket Penetrometer (tsf) With Liners

Thin-Walled Tube Sample: Pushed; *T 0.45* ← Torvane (tsf); *PP 2.0* ← Pocket Penetrometer (tsf)

OTHER TESTS

UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
Chem. = pH, Resistivity, Sulfate, Chloride
Hyd. = Hydrometer
DC = Dispersive Clay
SS = Soluble Salts

DRILL HOLE LOG

BORING NO. 22-02

PROJECT: ST. GEORGE CITY R1 SEWER PROJECT

SHEET 1 OF 1

CLIENT: BOWEN COLLINS & ASSOCIATES

PROJECT NUMBER: 202201-018

LOCATION: SEE SITE PLAN

DATE STARTED: 7/11/22

DRILLING METHOD: 08-CME-55 / NW CASING TO 3'

DATE COMPLETED: 7/11/22

DRILLER: T.K.

GROUND ELEVATION:

DEPTH TO WATER - INITIAL: ▽ DRY'

AFTER 24 HOURS: ▼ N.M.

LOGGED BY: M.N.H., J.B.

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
				16	8,13,18,(66)	SC-SM	orange-red, sl. moist, very dense — SILTY CLAYEY SAND								
				14	16,15,13,(62) *PP >4.5*	CL	orange-red, sl. moist, very stiff — SANDY LEAN CLAY partially cemented								
	5			7	Pushed *PP >4.5*	CL	orange-red, sl. moist, stiff	117.6	12.2	23	10	0	46	54	UC 1,861 psf
				14	12,12,15,(46)	SC-SM	orange-red, sl. moist, dense — SILTY CLAYEY SAND								
	10			8	Pushed *PP >4.5*	CL-ML	orange-red, sl. moist, stiff — SANDY SILTY CLAY	110.7	16.6						UC 2,516 psf
							SILTSTONE/MUDSTONE (LEAN CLAY)								
	15			4	63/4"	CL	orange-red, sl. moist								
							BOTTOM OF HOLE								

DH_LOG_V8-2014-1 R1_SEWER_PROJECT.GPJ US EVAL.GDT 8/15/22

RB&G ENGINEERING, INC.

LEGEND:

- 2" OD Split Spoon (SPT)
- 2.5" OD Split Spoon
- 3" OD Split Spoon

Split Spoon Sample: 2,3,2,(6) ← Blow Count per 6" / $(N_1)_{60}$ Value; *T 0.45* ← Torvane (tsf); *PP 2.0* ← Pocket Penetrometer (tsf); With Liners

Thin-Walled Tube Sample: Pushed; *T 0.45* ← Torvane (tsf); *PP 2.0* ← Pocket Penetrometer (tsf)

OTHER TESTS

UC = Unconfined Compression
CT = Consolidation
DS = Direct Shear
UU = Unconsolidated, Undrained
CU = Consolidated, Undrained
Chem. = pH, Resistivity, Sulfate, Chloride
Hyd. = Hydrometer
DC = Dispersive Clay
SS = Soluble Salts

DRILL HOLE LOG

BORING NO. 22-03

PROJECT: ST. GEORGE CITY R1 SEWER PROJECT

SHEET 1 OF 1

CLIENT: BOWEN COLLINS & ASSOCIATES

PROJECT NUMBER: 202201-018

LOCATION: SEE SITE PLAN

DATE STARTED: 7/18/22

DRILLING METHOD: 08-CME-55 / NW CASING TO 5'

DATE COMPLETED: 7/18/22

DRILLER: T.K.

GROUND ELEVATION:

DEPTH TO WATER - INITIAL: ▽ DRY'

AFTER 24 HOURS: ▼ N.M.

LOGGED BY: M.N.H., J.B.

Elev. (ft)	Depth (ft)	Lithology	Sample Type	Sample Rec. (in)	Sample See Legend	Sample USCS (AASHTO)	Material Description	Dry Density (pcf)	Moisture Content (%)	Atter. Liquid Limit	Atter. Plast. Index	Gradation Gravel (%)	Gradation Sand (%)	Gradation Silt/Clay (%)	Other Tests
				16	3,6,6,(26)	SC-SM	red-brown, sl. moist, med. dense — SILTY CLAYEY SAND W/GRAVEL								
				13	3,4,6,(21)	SM	red-brown, sl. moist, med. dense — SILTY SAND, slightly plastic								
	5			11	Pushed	SC-SM	red-brown, sl. moist to moist, stiff — SILTY CLAYEY SAND	116.7	11.0	24	7	0	52	48	UC 2,169 psf
				16	12,22,53,(99+)	CL	red-brown, sl. moist								
	10			12	33,47,50/3"	CL	red-brown, sl. moist	123.1	10.1	31	12				
							MUDSTONE/SILTSTONE (LEAN CLAY) very highly weathered, less weathered w/depth								
	15			10	30,60/4"	CL	red-brown, sl. moist								
	20			4	60/1"	CL	red-brown, sl. moist								
							BOTTOM OF HOLE								

DH_LOG_V8-2014-1 R1_SEWER_PROJECT.GPJ US EVAL.GDT 8/15/22

RB&G ENGINEERING, INC.

LEGEND:

- 2" OD Split Spoon (SPT)
- 2.5" OD Split Spoon
- 3" OD Split Spoon

Split Spoon Sample: 2,3,2,(6) ← Blow Count per 6" / $(N_1)_{60}$ Value; * *T 0.45* ← Torvane (tsf); *PP 2.0* ← Pocket Penetrometer (tsf); With Liners

Thin-Walled Tube Sample: Pushed; *T 0.45* ← Torvane (tsf); *PP 2.0* ← Pocket Penetrometer (tsf)

OTHER TESTS

UC = Unconfined Compression
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CU = Consolidated, Undrained
Chem. = pH, Resistivity, Sulfate, Chloride
Hyd. = Hydrometer
DC = Dispersive Clay
SS = Soluble Salts

RB&G ENGINEERING, INC.

Table 1

SUMMARY OF TEST DATA

PROJECT: St. George City R1 Sewer Project
PROJECT NO.: 202201-018
LOCATION: see site plan
FEATURE: Foundations

HOLE NO.	DEPTH BELOW GROUND SURFACE (ft)	IN-PLACE		UNCONFINED OR UU TRIAXIAL COMPRESSIVE STRENGTH (psf)	ATTERBERG LIMITS			MECHANICAL ANALYSIS			PERCENT FINER THAN 0.005 mm	UNIFIED SOIL CLASSIFICATION SYSTEM
		DRY UNIT WEIGHT (pcf)	MOISTURE (%)		LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	PERCENT GRAVEL	PERCENT SAND	PERCENT SILT & CLAY		
22-01	9-10.5		9.6		19	14	5	1	51	48		SC-SM
22-02	6-6.9	117.6	12.2	UC 1,861	23	13	10	0	46	54		CL
	12-12.9	110.7	16.6	UC 2,516								
22-03	6-7.5	116.7	11.0	UC 2,169	24	17	7	0	52	48		SC-SM
	12-13.2	123.1	10.1		31	19	12					CL
		pH	RESISTIVITY (ohm-cm)	CHLORIDE (mg/kg-dry)	SULFATE (mg/kg-dry)							
22-01	6.3-7.9	8.6	350	430	1690							

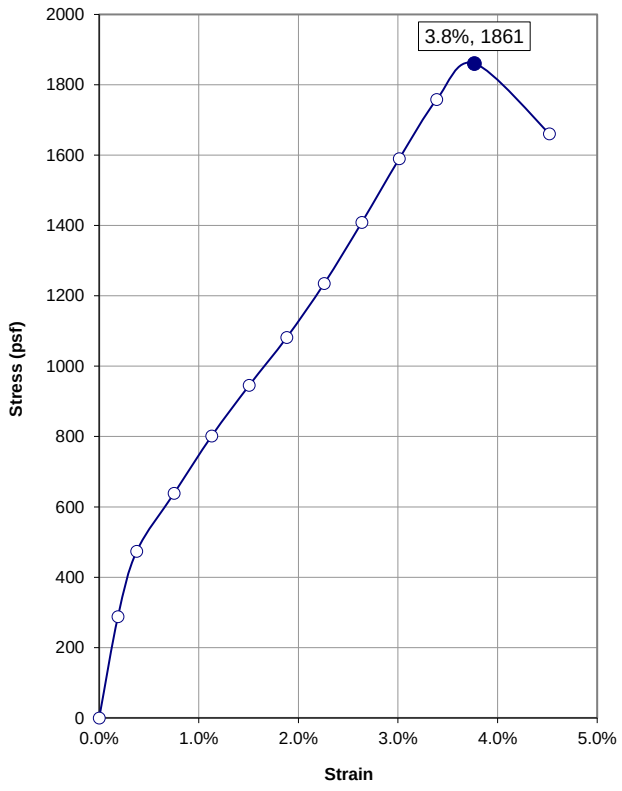
NP=Non-Plastic

RB&G ENGINEERING, INC.

UNCONFINED COMPRESSION TEST ON COHESIVE SOILS

Project	St George City R1 Sewer Project	**Boring No.**	22-02
Project No.	202201-018	**Sample**	1
Location	See Site Plan	**Depth / Elev. (ft)**	6-6.9'
Date	Saturday, July 23, 2022	**Sample Description**	Sandy Lean Clay CL
Tested By	S Neil	**Sample Type**	Undisturbed (shelby)

Apparatus No.	UC-1	**Proving Ring No.**	5552



Total Strain	Stress (psf)	Sketch of Specimen After Failure
0.0%	0	
0.2%	288	
0.4%	474	
0.8%	639	
1.1%	802	
1.5%	946	
1.9%	1082	
2.3%	1235	
2.6%	1409	
3.0%	1590	
3.4%	1758	
3.8%	1861	
4.5%	1661	
		C

Initial Sample Data

Initial height of specimen	L_o	5.31	(in)	**Liquid limit**	LL	23
Initial diameter of specimen	D_o	2.6	(in)	**Plastic index**	PI	10
Height-to-diameter ratio	L_o / D_o	2.04		**Moisture content***	w	12.2%
Dry unit weight	γ_d	117.6	(pcf)			

Test Results

Unconfined compressive strength	q_u	1861	(psf)
Shear strength	τ_f	930	(psf)
Average strain rate to failure		1%	
Strain at failure		3.8%	

Remarks

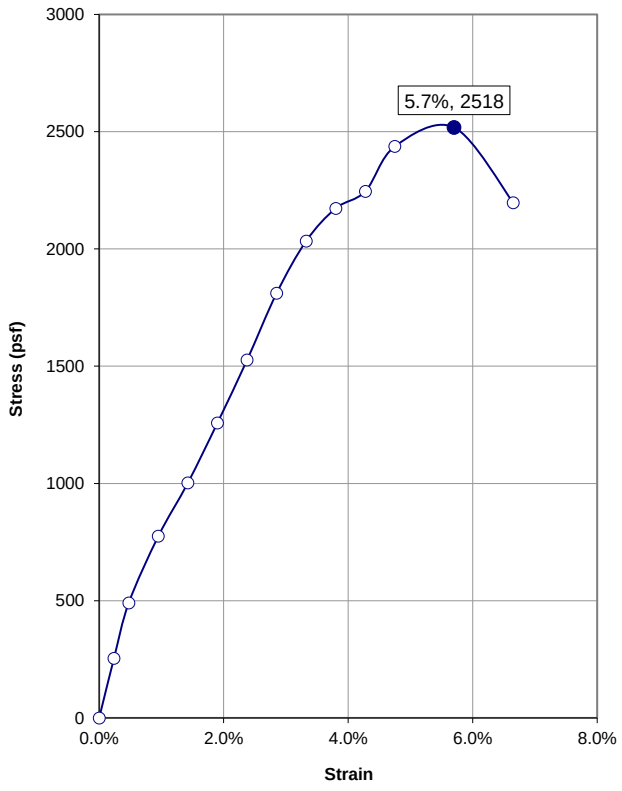
*Moisture content obtained from cuttings and or excess material

RB&G ENGINEERING, INC.

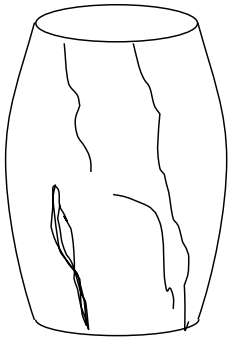
UNCONFINED COMPRESSION TEST ON COHESIVE SOILS

Project	St George City R1 Sewer Project	**Boring No.**	22-02
Project No.	202201-018	**Sample**	1
Location	See Site Plan	**Depth / Elev. (ft)**	12-12.9'
Date	Saturday, July 23, 2022	**Sample Description**	Sandy Silty Clay (visual) CL-ML
Tested By	S Neil	**Sample Type**	Undisturbed (shelby)

Apparatus No.	UC-1	**Proving Ring No.**	5552



Total Strain	Stress (psf)	Sketch of Specimen After Failure
0.0%	0	
0.2%	254	
0.5%	490	
1.0%	775	
1.4%	1003	
1.9%	1259	
2.4%	1526	
2.9%	1811	
3.3%	2034	
3.8%	2173	
4.3%	2246	
4.8%	2437	
5.7%	2518	
6.7%	2198	



Initial Sample Data

Initial height of specimen	L_o	4.21	(in)	**Liquid limit**	LL	NT
Initial diameter of specimen	D_o	2.6	(in)	**Plastic index**	PI	NT
Height-to-diameter ratio	L_o / D_o	1.62		**Moisture content***	w	16.6%
Dry unit weight	γ_d	110.7	(pcf)			

Test Results

Unconfined compressive strength	q_u	2518	(psf)
Shear strength	τ_f	1259	(psf)
Average strain rate to failure		1%	
Strain at failure		5.7%	

Remarks

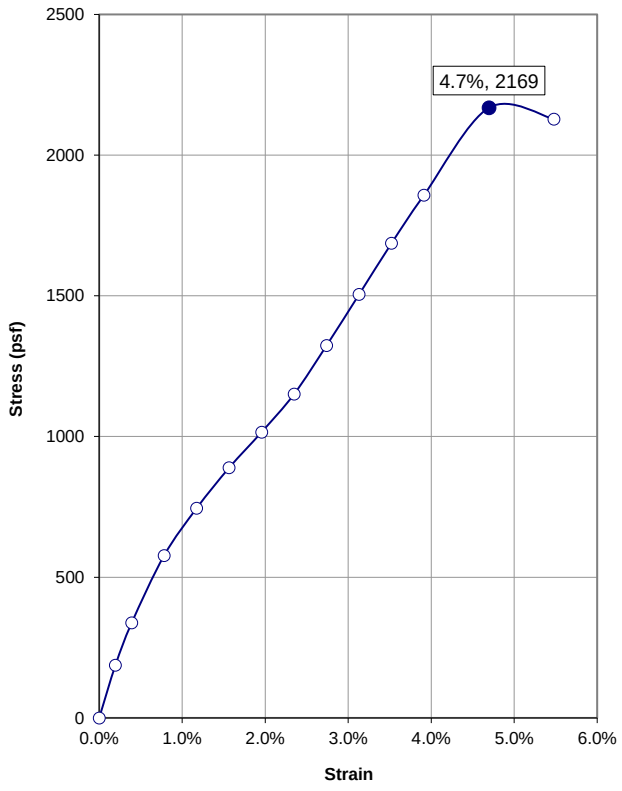
*Moisture content obtained from cuttings and or excess material

RB&G ENGINEERING, INC.

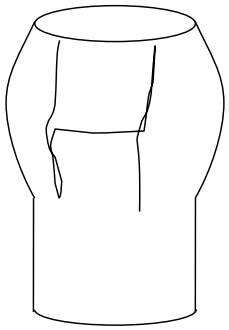
UNCONFINED COMPRESSION TEST ON COHESIVE SOILS

Project	St George City R1 Sewer Project	**Boring No.**	22-03
Project No.	202201-018	**Sample**	1
Location	See Site Plan	**Depth / Elev. (ft)**	6-7.5'
Date	Saturday, July 23, 2022	**Sample Description**	Silty Clayey Sand SC-SM
Tested By	S Neil	**Sample Type**	Undisturbed (shelby)

Apparatus No.	UC-1	**Proving Ring No.**	5552



Total Strain	Stress (psf)	Sketch of Specimen After Failure
0.0%	0	
0.2%	187	
0.4%	338	
0.8%	577	
1.2%	745	
1.6%	889	
2.0%	1016	
2.3%	1151	
2.7%	1324	
3.1%	1505	
3.5%	1687	
3.9%	1858	
4.7%	2169	
5.5%	2128	



Initial Sample Data

Initial height of specimen	L_o	5.11	(in)	**Liquid limit**	LL	24
Initial diameter of specimen	D_o	2.6	(in)	**Plastic index**	PI	7
Height-to-diameter ratio	L_o / D_o	1.97		**Moisture content***	w	11.0%
Dry unit weight	γ_d	116.7	(pcf)			

Test Results

Unconfined compressive strength	q_u	2169	(psf)
Shear strength	τ_f	1084	(psf)
Average strain rate to failure		1%	
Strain at failure		4.7%	

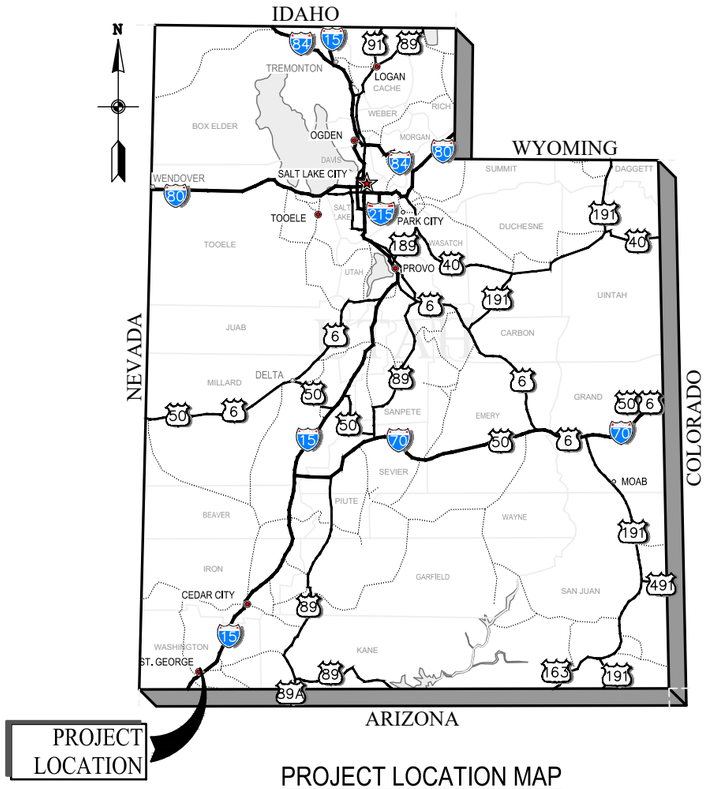
Remarks

*Moisture content obtained from cuttings and or excess material

DRAWINGS FOR CONSTRUCTION OF THE

R1 SEWER PROJECT

ST. GEORGE, UTAH

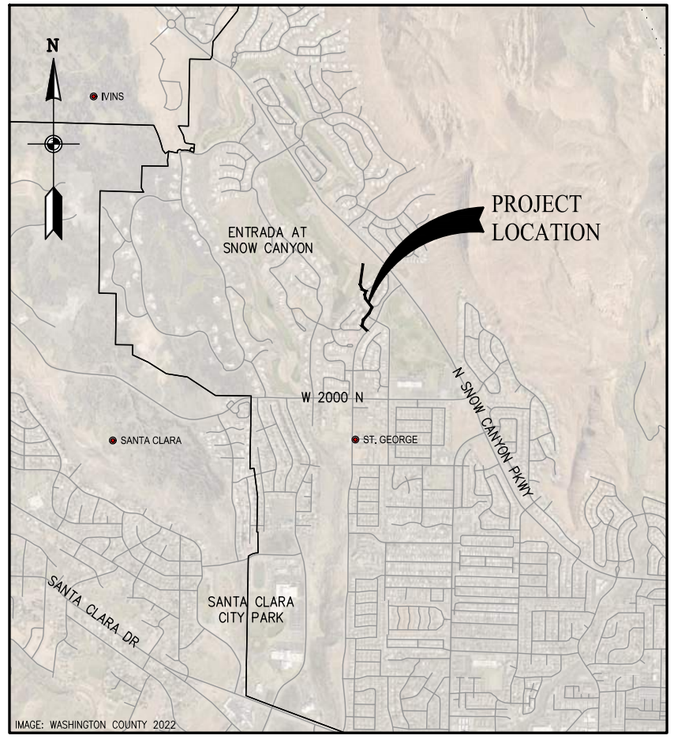


PROJECT LOCATION MAP

INDEX OF DRAWINGS

SHT NO.	DWG NO.	DESCRIPTION
		GENERAL
01	G-01	INDEX OF DRAWINGS, PROJECT LOCATION AND VICINITY MAPS
02	G-02	ABBREVIATIONS
03	G-03	SYMBOLS AND NOTES
04	G-04	JUC NOTES
05	G-05	KEY SHEET
06	G-06	ACCESS AND SECURITY PLAN
		CIVIL
07	C-01	PLAN & PROFILE STA 0+00 TO 6+00
08	C-02	PLAN & PROFILE STA 6+00 TO 12+00
09	C-03	PLAN & PROFILE STA 12+00 TO 16+18
		GENERAL CIVIL DETAILS
10	GC-01	GENERAL CIVIL DETAILS - 1

AGENCY	CONTACT NAME	PHONE NUMBER
BLUESTAKES LOCATE SERVICE	N/A	800-662-4111
ST. GEORGE CITY WATER	JOHN CAZIER	435-627-4853
ST. GEORGE CITY WASTEWATER	JOHN CAZIER	435-627-4853
ST. GEORGE CITY ENERGY SERVICES	BRYCE MITCHELL	435-703-0904
ST. GEORGE CITY PUBLIC WORKS	TOM SKROCKI	435-627-4064
QUESTAR NATURAL GAS	JEFF BURTON	435-632-4566
CENTURY LINK	ZACH MATHEWS	435-673-9639
TDS TELECOM	DAVID TRAUNTVEIN	435-703-8932
GO FIBER	LYNN BEECHER	801-318-0869
TONAQUINT NETWORKS	MATT HEATON	801-930-0444
HOME DEPOT	ALLAN WILLIAMS	770-384-3570



PROJECT VICINITY MAP

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
TODD A. OLSEN
5150046
STATE OF UTAH
03-01-2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

ST. GEORGE CITY
R1 SEWER PROJECT
ST. GEORGE, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED T. OLSEN
APPROVED T. OLSEN

DESIGN
DESIGN W. ANDERSEN
DRAWN M. WASHBURN

GENERAL
INDEX OF DRAWINGS, PROJECT LOCATION AND VICINITY MAPS

DATE: NOVEMBER 2022
PROJECT NUMBER 001-21-03

DRAWING NO.
G-01
SHEET 01 OF 10

S:\St. George City\001-21-03 R21, R19, and R1 Sewer Projects\2,0 Design Phase\2,7 Drawings\sht\0012103_G-01.dwg Plotted: 2/28/2024 9:49 AM By: Bridger Clymore

@	AT
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABBR	ABBREVIATION
ABS	ACRYLONITRILE–BUTADIENE–STYRENE
AC	ASPHALTIC CONCRETE OR ALTERNATING CURRENT OR ACTIVATED CARBON
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASPHALTIC CONCRETE PAVEMENT
ADDL	ADDITIONAL
ADJ	ADJACENT OR ADJUSTABLE
AER	AERATION
AFF	ABOVE FINISH FLOOR
AGGR	AGGREGATE
AH	AIR HANDLER
AIR CONT	AIR CONDITIONING
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL	ALUMINUM, ALUM
ALTN	ALTERNATIVE, ALTERNATE
ANOD	ANODIZED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
APVD	APPROVED
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
ASSY	ASSEMBLY
AUTO	AUTOMATIC
AUX	AUXILIARY
AVAR	AIR VACUUM AND AIR RELEASE VALVE
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B & S	BELL & SPIGOT
BC	BEGIN CURVE, BOLT CIRCLE
BF	BLIND FLANGE, BUTTERFLY VALVE
BFG	BELOW FINISH GRADE
BFP	BACK FLOW PREVENTER
BFV	BUTTERFLY VALVE
BHD	BULKHEAD
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLK	BLACK OR BLOCK
BLKG	BLOCKING
BLT	BOLT
BM	BEAM, BENCH MARK
BO	BLOW–OFF ASSEMBLY, BLOW–OFF
BOT	BOTTOM
BPS	BOOSTER PUMPING STATION
BPV	BACK PRESSURE VALVE
BRK	BRICK
BTU	BRITISH THERMAL UNIT
BTWN	BETWEEN
BUR	BUILT–UP ROOFING
BVC	BEGIN VERTICAL CURVE
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
BW	BACK WASH, FILTER BACKWASH
C	CENTIGRADE OR CELSIUS
CAB	CABINET
CAP	CAPACITY
CARV	COMBINATION AIR RELEASE VALVE
CB	CATCH BASIN
CC	CENTER TO CENTER
CCP	CONCRETE CYLINDER PIPE
CD	CEILING DIFFUSER CHEMICAL DRAIN AND VENT
CER	CERAMIC
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFR	CODE OF FEDERAL REGULATIONS
CFS	CUBIC FEET PER SECOND
CG	CHLORINE GAS
CGB	CORD GRIP BUSHING
CHBD	CHALKBOARD
CHEM	CHEMICAL
CHG	CHANGE
CHKD PL	CHECKERED PLATE
CI	CAST IRON
CIP	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CHLORINATOR, CHAIN LINK, CENTERLINE OR CHLORINE

CLR	CLEAR, CLEARANCE
CLST	CEMENT LINED STEEL PIPE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CM	CENTIMETER
CML & C	CEMENT MORTAR LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATION
COMB	COMBINED
CONC	CONCRETE, CONCENTRIC
COND	CONDENSER, CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCTION, CONSTRUCT
CONT	CONTINUED, CONTINUOUS, CONTINUATION
COORD	COORDINATE
COP	COPPER
COTG	CLEAN–OUT TO GRADE
CPLG	COUPLING
CPS	CULINARY PUMP STATION
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CAST STEEL OR CAUSTIC SODA
CTRD	CENTERED
CTR	CENTER
CTSK	COUNTERSUNK
CU FT	CUBIC FOOT
CU IN	CUBIC INCH
CU YD	CUBIC YARD
CULV	CULVERT
CV	CHECK VALVE
CW	COLD WATER
CWO	CHAIN WHEEL OPERATOR
CYL	CYLINDER
d	PENNY
DBA	DEFORMED ANCHOR
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DEMO	DEMOLITION, DEMOLISH
DEQ	DEPARTMENT OF ENVIRONMENTAL QUALITY
DET	DETAIL
DI	DUCTILE IRON, DROP INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DISCH	DISCHARGE
DIST	DISTANCE
DIV	DIVISION
D–LOAD	LOADING CONDITION FOR RCP
DMPR	DAMPER
DN	DOWN, DECANT
DOT	DEPARTMENT OF TRANSPORTATION
DP	DAMP PROOFING
DR	DOOR, DRAIN
DS	DRENCH SHOWER & EYE WASH, DOWNSPOUT
DWG	DRAWING
DWL	DOWEL
E(UG)	ELECTRICAL (UNDERGROUND)
E(OH)	ELECTRICAL (OVERHEAD POWER)
E	EAST
EA	EACH
EB	EXPANSION BOLT
EC	END CURVE
ECC	ECCENTRIC
EF	EACH FACE, EXHAUST FAN
EFF	EFFLUENT
EG	EXISTING GRADE
EL	ELEVATION
ELB	ELBOW
ELEV	ELEVATION
ELEC	ELECTRICAL, ELECTRONIC
EMB	EMBEDMENT
EMER	EMERGENCY
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER
EP	EDGE OF PAVEMENT
EPDM	ETHYL PROPYLENE DIENE MONOMER
EPS	EXPANDED POLYSTYRENE
EQ	EQUAL
EQL SP	EQUALLY SPACED

EQUIP	EQUIPMENT
ETC	ETCETERA
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EW	EACH WAY, EYE WASH
EXH	EXHAUST
EXIST	EXISTING
EXP ANR	EXPANSION BOLT, ANCHOR
EXP JT	EXPANSION JOINT
EXT	EXTERIOR, EXTENSION, EXTERNAL
F	FAHRENHEIT, FACE
F TO F	FACE TO FACE
FAB	FABRICATION, FABRICATE, OR FABRICATED
FB	FLAT BAR
FC	FLEXIBLE COUPLING
FCA	FLANGE COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FDR	FEEDER
FEXT	FIRE EXTINGUISHER
FF	FLAT FACE, FAR FACE, FINISH FLOOR
FG	FINISH GRADE, FLOW GLASS
FH	FIRE HYDRANT
FLR	FLOOR
FL	FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE
FM	FORCE MAIN (SANITARY SEWER)
FND	FOUND
FNSH	FINISH
FO	FIBER OPTIC
FRP	FIBERGLASS REINFORCED PLASTIC
FW	FINISH WATER
FWR	FINISH WATER RESERVOIR
G	GAS
GA	GAGE, GAUGE
GAL	GALLON
GALV	GALVANIZED
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GI	GALVANIZED IRON
GIS	GEOGRAPHIC INFORMATION SYSTEM
GL	GLASS
GLAZ	GLAZING
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GR BRK	GRADE BREAK, GRADE CHANGE
GRTG	GRATING
GRV	GROOVED
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GYP	GYPSUM BOARD
H	HEIGHT
HAS	HEADED ANCHOR STUD
HB	HOSE BIBB
HD	HUB DRAIN
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDW	HARDWARE
HEX	HEXAGONAL
HGR	HANGER
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSEPOWER, HIGH PRESSURE,HEAT PUMP, HIGH POINT
HR	HEATING RETURN, HOUR, HOSE RACK
HS	HIGH STRENGTH
HSS	HOLLOW STRUCTURAL SECTION
HTG	HEATING
HTR	HEATER
HV	HOSE VALVE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HWL	HIGH WATER LEVEL
HWO	HANDWHEEL OPERATED
HYD	HYDRANT, HYDRAULIC
ICFM	INLET CUBIC FEET PER MINUTE

ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IN	INCH
IN LB	INCH–POUND
INFL	INFLUENT
INSUL	INSULATING
INVT	INVERT
IOB	INLET OUTLET BYPASS
IPS	IRON PIPE SIZE
IRR	IRRIGATION
JA	JORDAN AQUEDUCT
JT	JOINT
JTS	JOINTS
JVWTP	JORDAN VALLEY WATER TREATMENT PLANT
K	KELVIN, KILO OR THOUSAND POUNDS
KG	KILOGRAM
KV	KILOVOLT
KW	KILOWATT
KWH	KILOWATT HOUR
L	LEFT OR LITER
LAB	LABORATORY
LAV	LAVATORY
LB	POUND
LC	LENGTH OF CURVE
LF	LINEAR FEET
LG	LENGTH OR LONG
LH	LEFT HAND
LIP	LIP OF GUTTER
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LOL	LENGTH OF LINE
LP	LOW POINT
LR	LONG RADIUS
LT	LIGHT, LEFT
LVL	LEVEL
LWL	LOW WATER LEVEL
LWR	LOWER
M	METER, MALE (PIPE THREAD)
MACH	MACHINE
MAN	MAGNETIC, MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL, MECHANISM
MEMB	MEMBRANE
MET	METAL
MFR	MANUFACTURER
MG	MILLION GALLONS
MGD	MILLION GALLONS PER DAY
MH	MANHOLE, MONORAIL HOIST
MI	MALLEABLE IRON
MID	MIDDLE
MIL	1/1,000 INCH
MIN	MINIMUM OR MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MO	MASONRY OPENING
MPH	MILES PER HOUR
MTG	MOUNTING
MTL	METAL OR MATERIAL
MTR	MOTOR
MWS	MAXIMUM WATER SURFACE
N	NORTH
NAVD	NORTH AMERICAN VERTICAL DATUM
NBS	NATIONAL BUREAU OF STANDARDS
NC	NORMALLY CLOSED
NE	NORTHEAST
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER OR NORMALLY OPEN
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NS	NEAR SIDE
NSF	NATIONAL SANITATION FOUNDATION
NTS	NOT TO SCALE

NW	NORTHWEST
O TO O	OUT TO OUT
OC	ON CENTER, OVER–CROSSING
OD	OUTSIDE DIAMETER, OVERALL DIMENSION
OF	OUTSIDE FACE, OVERFLOW
OFS	OVERFLOW STRUCTURE
OH	OVERHEAD
OPER	OPERATOR, OPERATING
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OVHD	OVERHEAD
OZ	OUNCE
PC	PORTLAND CEMENT, POINT OF CURVE OR PRIMARY CLARIFIER
PCC	PORTLAND CEMENT CONCRETE
PCF	POUNDS PER CUBIC FOOT
PE	PLAIN END, POLYELECTROLYTE POLYMER, POLYETHYLENE
PG	PRESSURE GAUGE
pH	HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT, POINT OF INTERSECTION
PJF	PREMOLDED JOINT FILLER
PL	PLATE, PROPERTY LINE, PLACE
PLYWD	PLYWOOD
PM	PUMP, PROPELLER METER
POB	POINT OF BEGINNING
PP	POTASSIUM PERMANGANATE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PR	PAIR
PRC	POINT OF REVERSE CURVE
PREFAB	PREFABRICATED
PRI	PRIMARY
PRV	PRESSURE REGULATING/REDUCING VALVE
PS	PRESSURE SWITCH, PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENT, PRESSURE TREATED
PTDF	PRESSURE TREATED DOUGLAS FIR
PV	PAVEMENT
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PW	POTABLE WATER
RAD	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN OR ROAD
RDCR	REDUCER, REDUCING
RECIRC	RECIRCULATION
RED	REDUCING
REF	REFERENCE, REFER
REG	REGULATING, REGISTER
REINF	REINFORCE, REINFORCED
REQD	REQUIRED
REV	REVISION
RF	ROOF, RAISED FACE
RND	ROUND
RPM	REVOLUTIONS PER MINUTE
RP	RADIUS POINT
RS	RAW SEWAGE
RST	REINFORCING STEEL, RESET
RT	REGULATING TANK, RADIOGRAPHIC, RIGHT
RV	ROOF VENT
R/W	RIGHT OF WAY
RW	RAW WATER
S	SOUTH, SECOND
SA	SAMPLE, SAMPLE LINE
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	STORM DRAIN
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SLP	SLOPE
SP	SPACING, STATIC PRESSURE
SPA	SPACED

SPEC	SPECIFIED, SPECIFICATION
SPECS	SPECIFICATIONS
SPG	SPACING
SPKR	SPEAKER
SPLY	SUPPLY
SPRT	SUPPORT
SQ	SQUARE
SQ FT	SQUARE FOOT
SR	SUPPLY REGISTER
SS	SANITARY SEWER, SERVICE SINK
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRL	STRUCTURAL
SUC	STRUCTURAL UNDERDRAIN COLLECTOR
SWA	SOUTHWEST AQUEDUCT
SYM	SYMBOL
SYMM	SYMMETRICAL
SYS	SYSTEM
T	THICKNESS, TOP, TOILET
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN	TANGENT
TBC	TOP BACK OF CURB
TBM	TEMPORARY BENCH MARK
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPERATURE, TEMPORARY
THK	THICK
THR'D	THREADED
TK	TANK
TO	TOP OF
TOC	TOP OF CONCRETE
TOG	TOP OF GRADE
TP	TELEPHONE POLE, TURNING POINT
TW	TOP OF WALL
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UD	UNDERDRAIN
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
USBR	U.S. BUREAU OF RECLAMATION
V	VALVE, VENT, VOLT, VACUUM
VAR	VARIES, OR VARIABLE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VIC	VICTAULIC COUPLING
VOL	VOLUME
VPI	VERTICAL POINT OF INFLECTION
VSS	VOLATILE SUSPENDED SOLIDS
VTC	VENT THROUGH CEILING
VTR	VENT THROUGH ROOF
W	WEST, WASTE, WIDE FLANGE (BEAM)
W/	WITH
W/O	WITHOUT
WC	WATER COLUMN OR WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
WH	WATER HEATER
WS	WATER STOP, WATER SURFACE
WSP	WELDED STEEL PIPE
WSTP	WATER STOP
WT	WEIGHT
WWM	WELDED WIRE MESH
XMFR	TRANSFORMER
XMTR	TRANSMITTER
XS	EXTRA STRONG
YD	YARD
YP	YARD PIPING
YR	YEAR

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — TODD A. OLSEN — 5150046 — STATE OF UTAH — 03-01-2024

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

ST. GEORGE CITY
R1 SEWER PROJECT
ST. GEORGE, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED T. OLSEN
APPROVED T. OLSEN

DESIGN
DESIGN W. ANDERSEN
DRAWN M. WASHBURN

GENERAL
ABBREVIATIONS

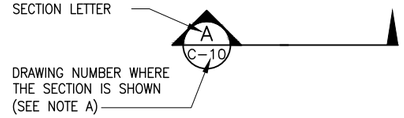
PROJECT NUMBER 001-21-03
DATE: NOVEMBER 2022

DRAWING NO.
G-02
SHEET 02 OF 10

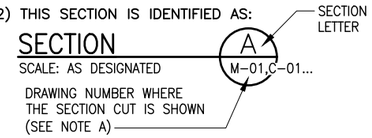
S:\St. George City\001-21-03 R21, R19, and R1 Sewer Projects\2,0 Design Phase\2,7 Drawings\sht\0012103_G-02.dwg Plotted: 2/28/2024 9:49 AM By: Bridger Clymore

SECTION IDENTIFICATION

(1) SECTION CUT SHOWN ON DRAWING AS:

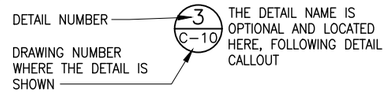


(2) THIS SECTION IS IDENTIFIED AS:



DETAIL IDENTIFICATION

(1) DETAIL IDENTIFICATION SHOWN ON DRAWING AS:



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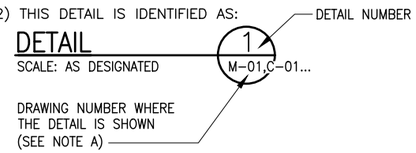
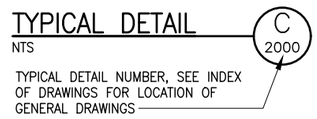
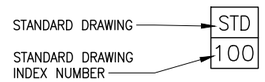


TYPICAL DETAIL IDENTIFICATION



ST. GEORGE CITY STANDARD



DRAWING IDENTIFICATION SYSTEM

LETTER	DISCIPLINE
G	GENERAL
C	CIVIL
GC	GENERAL CIVIL

C-02
- C: DISCIPLINE
- 02: INDIVIDUAL DRAWING NUMBER

NOTES:

A. IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A HORIZONTAL LINE.

B. ELECTRICAL SYMBOLS SHOWN ON ELECTRICAL DRAWINGS. FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS. SEE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.

- 1 — COORDINATE IDENTIFICATION
- ELEVATION INDICATOR
- SECTION CORNER
- BENCH MARK
- MONUMENT INDICATOR
- POTHOLE
- TEST HOLE
- BORING HOLE
- SECTION LINE
- PROPERTY LINE
- EASEMENT
- PARCEL
- R/W — RIGHT-OF-WAY
- NEW ASPHALT
- EXISTING ASPHALT
- CENTERLINE
- 4500 — CONTOUR LINE, FINISHED GRADE
- 4500 — CONTOUR LINE, EXISTING GRADE
- 4500.20 — FINISHED ELEVATION
- (4500.20) — EXISTING ELEVATION
- TOP / TOE — CUT OR FILL SLOPE TO BE CONSTRUCTED
- SILT FENCE
- X — X — FENCE
- RAILING
- DITCH
- CULVERT
- RIPRAP
- TREE LINE/VEGETATION
- EXISTING STRUCTURE OR FACILITY
- NEW STRUCTURE OR FACILITY
- FUTURE STRUCTURE OR FACILITY
- NEW PIPELINE (CIVIL SHEETS)
- NEW PIPELINE 10" DIA AND SMALLER (CIVIL SHEETS)
- EXISTING UTILITY PIPELINE
- ATMS — ATMS
- CTV — CABLE
- C(ug) — COMMUNICATION BURIED
- COMM — COMMUNICATION OVERHEAD
- P(ug) — ELECTRICAL BURIED
- OHP — ELECTRICAL OVERHEAD
- FO — FIBER OPTICS OVERHEAD
- FO(ug) — FIBER OPTICS UNDERGROUND
- G — GAS
- IRR — IRRIGATION
- PETRO — PETROLEUM LINE
- SS — SANITARY SEWER
- SD — STORM DRAIN
- T(ug) — TELEPHONE BURIED
- TEL — TELEPHONE OVERHEAD
- W — WATERLINE
- TV — CABLE BOX
- CATCH BASIN
- EB — ELECTRICAL BOX
- HYDRANT
- G — GAS MANHOLE
- S — SEWER MANHOLE
- D — STORM DRAIN MANHOLE
- T — TELEPHONE MANHOLE
- W — WATER MANHOLE
- WM — WATER METER

- POWER POLE
- TB — TELEPHONE BOX
- LIGHT POLE ONE LUMINAIRE
- LIGHT POLE TWO LUMINAIRS
- LIGHT POLE
- STREET LIGHT WITH BRACKET
- MASONRY
- STEEL
- INSULATION
- GRAVEL
- CONCRETE
- EARTH
- SAND
- ALUMINUM OR METAL DECKING
- CHECKERED PLATE
- SPAN — GRATING
- PLASTIC, RUBBER OR NEOPRENE
- WOOD (ROUGH FRAMING) OR, OPENING OR DEPRESSION IN SLAB OR WALL
- CHANGE IN PIPING MATERIAL
- LIQUID SURFACE EL
- 1 — REVISION WORK
- 3 — REFERENCE TO NOTE

GENERAL NOTES

1. SYMBOLS FOR STRUCTURES, PIPE AND ETC. USED FOR IDENTIFICATION ARE SHOWN IN LEGENDS AND SHALL BE FOLLOWED THROUGHOUT THE PLANS WHENEVER APPLICABLE. NOT ALL OF THE VARIOUS COMPONENTS SHOWN IN THESE LEGENDS ARE NECESSARILY USED IN THE PROJECT.

2. SCALE OF THE DRAWINGS OR DETAILS ARE SHOWN IN TITLE BLOCK OR DIRECTLY UNDER THE PLAN OR DETAIL. THE SIZE OF THE ORIGINAL PLOTTED DRAWINGS IS 22"X34". CARE SHOULD BE TAKEN TO VERIFY THE SCALE BAR IN THE TITLE BLOCK AREA TO DETERMINE THE SCALE OF REDUCED REPRODUCTIONS.

3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PERFORM CONSTRUCTION ACTIVITIES PER THE CONTRACT DOCUMENTS. ANY ADDITIONS, DELETIONS, OR MODIFICATIONS SHALL FIRST MEET WITH THE WRITTEN APPROVAL OF THE ENGINEER AND THE OWNER.

4. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMIT(S) AND COMPLY WITH ALL REQUIREMENTS OF GOVERNING AGENCIES.

5. THE CONTRACTOR SHALL PREPARE AND SUBMIT TRAFFIC CONTROL PLANS FOR REVIEW AND APPROVAL BY ST. GEORGE CITY. WORK WILL NOT BEGIN UNTIL THE PLANS HAVE BEEN APPROVED.

6. THE CONTRACTOR SHALL KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE ESTABLISHED RIGHTS-OF-WAY. THIS SHALL INCLUDE BUT NOT BE LIMITED TO, VEHICLES AND EQUIPMENT, LIMITS OF TRENCH EXCAVATION, AND EXCAVATED MATERIAL AND BACKFILL STORAGE. IF THE CONTRACTOR REQUIRES ADDITIONAL CONSTRUCTION EASEMENTS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SUCH EASEMENTS FROM INDIVIDUAL PROPERTY OWNERS.

7. UTILITY LOCATIONS:
   - CONTRACTOR SHALL CONTACT BLUE STAKES TO LOCATE EXISTING UTILITIES.
   - ALL UTILITY LOCATIONS, SHOWN ON DRAWINGS, ARE APPROXIMATE AND ARE NOT INCLUSIVE OF ALL EXISTING UTILITIES.
   - CONTRACTOR TO VERIFY DEPTHS OF UTILITIES IN THE FIELD BY POT HOLING A MINIMUM OF TWO WEEKS TIME OR 400-FEET AHEAD OF PIPELINE CONSTRUCTION TO AVOID CONFLICTS WITH DESIGNED PIPELINE GRADE AND ALIGNMENT. IF A CONFLICT ARISES RESULTING FROM THE CONTRACTOR NEGLECTING TO POT HOLE UTILITIES, THE CONTRACTOR TO RESOLVE THE CONFLICT WITHOUT ADDITIONAL COST OR CLAIM TO THE OWNER.
   - CONTRACTOR SHALL POT HOLE CRITICAL LOCATIONS AND OBTAIN ALL EXISTING PIPE O.D. PRIOR TO ORDERING OR OBTAINING MATERIALS REQUIRED FOR CONNECTIONS TO EXISTING PIPING. UTILITY SHUT-DOWNS AND OTHER WORK WILL NOT BE SCHEDULED OR ALLOWED UNTIL THIS IS ACCOMPLISHED AND MATERIALS ARE ON SITE AND APPROVED FOR USE BY ST. GEORGE CITY.

8. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS FROM DAMAGE WHICH ARE TO REMAIN IN PLACE. ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTORS OPERATIONS SHALL BE REPAIRED OR RECONSTRUCTED TO ORIGINAL OR BETTER CONDITION TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR.

9. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING SERVICE LINES FOR GAS, SEWER, WATER, AND OTHER UTILITIES AND REPAIRING DAMAGE TO SUCH LINES AS A RESULT OF THE CONTRACTOR'S OPERATIONS. SERVICE CONNECTIONS FOR UTILITIES ARE NOT SHOWN ON THE DRAWINGS.

10. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMANCE WITH LOCAL AND FEDERAL CODES GOVERNING SHORING AND BRACING OF EXCAVATIONS AND TRENCHES. CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF THE PUBLIC AND PROTECTION OF PERSONNEL AND WORKERS.

11. CONTRACTOR SHALL NOT DESTROY, REMOVE, OR DISTURB ANY EXISTING SURVEY MONUMENTS WITHOUT AUTHORIZATION OF CONTROLLING AGENCY. NO PAVEMENT CUTTING OR REMOVAL SHALL BEGIN UNTIL ALL SURVEY MARKERS OR MONUMENT POINTS THAT HAVE THE POTENTIAL OF BEING DISTURBED BY THE CONSTRUCTION OPERATIONS HAVE BEEN PROPERLY REFERENCED BY A REGISTERED LAND SURVEYOR. ALL SURVEY MONUMENTS OR POINTS DISTURBED BY THE CONTRACTOR SHALL BE ACCURATELY RESET BY A REGISTERED LAND SURVEYOR AFTER ALL RESTORATION AND RESURFACING HAS BEEN COMPLETED.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY SETTLEMENT OF EXCAVATIONS, AND ANY DAMAGE OF UTILITIES RESULTING FROM SETTLEMENT.

13. CONTRACTOR SHALL PREVENT ANY GROUND WATER OR DEBRIS FROM ENTERING NEW PIPES DURING CONSTRUCTION. THE ENDS OF THE PIPES SHALL BE SEALED AT THE END OF EACH WORKDAY.

14. PROFILE DRAWINGS ARE HORIZONTAL PROJECTIONS OF THE PIPELINE CENTERLINE, UNLESS OTHERWISE NOTED.

15. LAY PIPE TO DEPTH AND ALONG HORIZONTAL ALIGNMENT AS DEFINED IN THESE DRAWINGS. CONTRACTOR SHALL NOT DEVIATE FROM PROPOSED ALIGNMENT OR GRADE WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

16. CONTRACTOR SHALL MAINTAIN A 10-FOOT HORIZONTAL AND AN 18-INCH VERTICAL SEPARATION (OUTSIDE OF PIPE TO OUTSIDE OF PIPE/MANHOLE) BETWEEN ALL SEWER AND WATER LINES, UNLESS EXCEPTION IS NOTED.

17. CONTRACTOR TO PROVIDE AND DISTRIBUTE APPROVED WRITTEN NOTICE OF CONSTRUCTION ACTIVITIES TO ALL RESIDENTS AND BUSINESSES LOCATED IN THE CONSTRUCTION AREA AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. WRITTEN NOTICE SHALL BE APPROVED BY THE ENGINEER PRIOR TO DISTRIBUTION.

18. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTROL OF DRAINAGE AND EROSION DURING CONSTRUCTION AT CONSTRUCTION SITE, STAGING, AND SPOILS AREA. CONTRACTOR SHALL SUBMIT STORM RUNOFF CONTROL PLAN FOR APPROVAL BY ENGINEER AND OBTAIN A SWPPP PERMIT FROM THE UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY.

19. CONTRACTOR SHALL SAW CUT ASPHALT, SIDEWALK TO THE NEAREST JOINT, AND WHERE REQUIRED CURB AND GUTTER TO THE NEAREST JOINT AT THE LIMITS OF ALL TRENCH EXCAVATION.

PROJECT NOTES:

1. STAKING, TESTING, AS-BUILTS AND TV INSPECTION: CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION STAKING AND CONSTRUCTION REDLINED DRAWINGS DOCUMENTING ANY MINOR CHANGES TO THE PROJECT. CONTRACTOR WILL ALSO PROVIDE SOIL AND ASPHALT CONCRETE PAVEMENT COMPACTION TESTING AND TV INSPECTION OF THE PIPELINE. CONTRACTOR IS RESPONSIBLE FOR ALL OTHER TESTING OF THE MANHOLES AND SEWER PIPE. CONTRACTOR SHALL PROVIDE CITY ENGINEER WITH A QA/QC PLAN FOR APPROVAL PRIOR TO THE BEGINNING OF CONSTRUCTION.

2. MANHOLES: UNLESS OTHERWISE SHOWN, MANHOLES ARE 5-FT DIAMETER AND SHALL HAVE VENTED LIDS.

3. BYPASS PUMPING: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO KEEP ALL SEWER MAIN LINES AND LATERALS IN SERVICE AT ALL TIMES DURING CONSTRUCTION PER SPECIFICATIONS. ANY INTERRUPTION OF SEWER LINE SERVICE SHALL BE COORDINATED WITH PROPERTY OWNERS. BYPASS PUMPING OR OTHER MEANS MAY BE NECESSARY AND SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ACTUAL PEAK FLOWS DURING CONSTRUCTION MAY EXCEED ESTIMATED CONDITIONS. CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE BYPASS PUMPING NEEDS. CONTRACTOR SHALL PROVIDE A PLAN TO PROTECT BYPASS PUMPING LINES USED DURING CONSTRUCTION TO CROSS DRIVEWAYS, TRAILS, STREETS, ETC. AS PART OF THE BYPASS PUMPING PLAN. BYPASS PLANS USING PUMPING EQUIPMENT SHALL INCLUDE CONTINUOUS (24 HR/DAY) MONITORING OF THE PUMPING EQUIPMENT. PLAN SHALL ALSO INCLUDE PUMPING CALCULATIONS, PUMP CURVES, PIPING INFO, THRUST RESTRAINT METHODS WHERE NEEDED, ROAD/TRAIL RAMPS/BRIDGES WHERE NEEDED, SIGN NOTIFICATIONS WHERE NEEDED, TRAFFIC LIGHTS WHERE NEEDED, REFLECTIVE BARRICADES AS NEEDED, ETC. THE WORDING ON THE SIGNS SHALL BE APPROPRIATE FOR THE SITUATION. ALL RAMPS/BRIDGES SHALL BE IN COMPLIANCE WITH ADA REQUIREMENTS AND STANDARDS. CONTRACTOR SHALL PROVIDE SPILL CONTAINMENT FOR ALL EQUIPMENT AND FUEL STORAGE AT THE PUMPING SITES. RESTORATION OF ALL AREAS DISTURBED BY BYPASS PUMPING OPERATIONS SHALL BE TO THE SATISFACTION OF PROPERTY OWNERS AND ST. GEORGE CITY STANDARDS. ESTIMATED 2019 PEAK FLOWS FOR THE SEWER LINES THAT MAY NEED BYPASS PUMPING ARE SHOWN UPSTREAM OF ALL EXISTING PEAK SEWER MANHOLES IN GPM ON THE SEWER CONSTRUCTION DRAWINGS. BYPASS PUMPING HOSES SHALL BE FUSED HDPE OR POLYURETHANE LAYFLAT HOSE BY MIDWEST HOSE & SPECIALTY AND INSTALLED PER THE MANUFACTURER'S GUIDELINES.

4. EXISTING SEWER LATERALS: EXISTING SEWER LATERAL LOCATIONS ARE APPROXIMATE AND BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL CONTACT CITY TO VERIFY APPROXIMATE LATERAL LOCATIONS DURING CONSTRUCTION. CONTRACTOR SHALL LOCATE AND RECONNECT ALL EXISTING LATERALS TO PROPOSED PIPE USING SDR-35 PVC PIPE PER SPECIFICATIONS AND REQUIREMENTS. UNLESS OTHERWISE NOTED, IF EXISTING LATERAL AND PROPOSED LATERAL PIPES ARE OF DISSIMILAR MATERIALS, CONTRACTOR SHALL PROVIDE AND INSTALL A FERNCO STRONGBACK COUPLING TO MAKE CONNECTION BETWEEN THE TWO LATERAL PIPE TYPES. IF EXISTING LATERAL AND PROPOSED LATERAL PIPES ARE OF SIMILAR MATERIALS AND ARE OF PVC, CONTRACTOR SHALL PROVIDE AND INSTALL A PVC REPAIR COUPLING AS NEEDED. ANY INTERRUPTION OF SEWER LINE SERVICE SHALL BE COORDINATED WITH PROPERTY OWNERS.

5. ABANDONED SEWER:
   A. PIPING: SEWER PIPES TO BE ABANDONED SHALL HAVE INLETS AND OUTLETS SEALED WITH PIPE PLUGS AND GROUT.
   B. MANHOLES: SEWER MANHOLES TO BE ABANDONED SHALL HAVE CONES AND SECTIONS REMOVED TO AT LEAST 3 FEET BELOW SUBGRADE OR FINISHED GROUND SURFACE, INLET(S) SEALED AND OUTLET(S) SEALED WITH PIPE PLUGS AND GROUT, AND BASE FILLED WITH FLOWABLE FILL CONCRETE. REMAINING MANHOLE SECTIONS LEFT IN PLACE SHALL BE FILLED WITH GRAVEL (GRADATION BETWEEN 1 ½" AND ¼"). SALVAGED CAST IRON RINGS, FRAMES AND COVERS REMAIN THE PROPERTY OF THE CITY AND SHALL BE DELIVERED TO A LOCATION SPECIFIED BY THE CITY INSPECTOR.

6. DEWATERING: GROUND WATER AND SURFACE WATER CONTROL SHALL BE PERFORMED AND RESPONSIBLY HANDLED BY THE CONTRACTOR ACCORDING TO, AND IN COMPLIANCE WITH, ALL LOCAL GOVERNING AUTHORITIES. HEAVY GROUND WATER AND/OR SURFACE WATER PUMPING MAY BE REQUIRED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE POTENTIAL PUMPING NEEDS. THE CONTRACTOR SHALL NOT RELY ON OWNER SUPPLIED PROCTOR, GROUND WATER AND/OR SURFACE WATER DATA. CONTRACTOR SHALL OBTAIN DEWATERING PERMIT AS NECESSARY.

7. SEWER TIE INS: FIELD VERIFY TIE IN LOCATION FOR SEWER LINES PRIOR TO COMMENCING WORK. REPORT ANY DISCREPANCIES BETWEEN EXPECTED LOCATION AND ACTUAL LOCATION TO THE CITY IMMEDIATELY.

8. PAVEMENT CLEANING: PRIOR TO FINAL ACCEPTANCE OR OPENING OF PAVEMENT FOR TRAVEL, PAVEMENT SHALL BE SWEPT CLEAN. THE CONTRACTOR SHALL ENSURE THAT DUST IS CONTROLLED DURING THE SWEEPING OPERATION THROUGH THE USE OF PROPER EQUIPMENT.

9. MATERIAL DISPOSAL: EXISTING SANITARY SEWER STRUCTURES AND PIPES THAT ARE DAMAGED AND DISPOSED OF MUST COMPLY WITH DISPOSAL REQUIREMENTS FROM ALL FEDERAL, STATE, AND LOCAL AGENCIES.

10. REMOVE AND REPLACE LANDSCAPING, IRRIGATION SYSTEM, AND LANDSCAPE CURBING WHERE NEW SEWER LINE CROSSES LANDSCAPED AREA.

11. SURFACE RESTORATION: C 2125
    A. STREET RESTORATION: SEE
    B. LANDSCAPE RESTORATION: CONTRACTOR SHALL GRADE AND RESTORE GROUND MATCHING OR EXCEEDING ORIGINAL LANDSCAPE CONDITIONS. THIS INCLUDES, BUT NOT LIMITED TO: TOPSOIL, GRASS, SHRUBS, TREES, FENCES, WALLS, PAVERS, ROCK MULCH, SHEDS, LANDSCAPE CURBING, DRIVEWAYS AND SPRINKLERS, ETC. TYPE AND COLOR OF RESTORATION MATERIALS SHALL MATCH ORIGINAL MATERIALS.
    C. GOLF COURSE RESTORATION: GOLF COURSE IS RESPONSIBLE FOR SURFACE IMPROVEMENTS. CONTRACTOR SHALL STRIP, STOCKPILE AND REPLACE EXISTING TOPSOIL (MINIMUM 24 INCHES OF MATERIAL) WITHIN TRENCH CUT. CONTRACTOR SHALL GRADE AND RESTORE GROUND MATCHING OR EXCEEDING ORIGINAL CONDITIONS, INCLUDING TOPSOIL. GOLF COURSE WILL BE RESPONSIBLE FOR TOPSOIL AND SOD INSTALLATION.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — TODD A. OLSEN — 5150046 — STATE OF UTAH — 03-01-2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

ST. GEORGE CITY
R1 SEWER PROJECT
ST. GEORGE, UTAH

REVIEW — CHECKED T. OLSEN — APPROVED T. OLSEN

DESIGN — DESIGN W. ANDERSEN — DRAWN M. WASHBURN

GENERAL

SYMBOLS AND NOTES

PROJECT NUMBER 001-21-03

DATE: NOVEMBER 2022

DRAWING NO. G-03

SHEET 03 OF 10

ST. GEORGE ENERGY SERVICE POWER NOTES

1. PRIMARY POWER FROM SWITCH TO SWITCH SHALL BE 750 WIRE IN 3" CONDUIT.
2. PRIMARY POWER FROM VAULT TO TRANSFORMER SHALL BE 1/0 WIRE IN 3" CONDUIT UNLESS OTHERWISE NOTED. ALL WIRE SHALL HAVE A TEMPERATURE RATING OF 90°C
3. SECONDARY POWER FROM TRANSFORMER TO METER (90°C TEMP. RATING):
   A. FOR RESIDENTIAL LOTS – WHERE LENGTH IS LESS THAN OR EQUAL TO 200–FT

      100 – 150 AMPS = 1/0 IN 2" CONDUIT

      200 AMPS = 4/0 IN 2" CONDUIT

      400 AMPS = 350 MCM IN 3" CONDUIT

      600 AMPS = 500 MCM IN 3" CONDUIT

   B. FOR C.T. CONNECTIONS (SERVICES > 400 AMPS) – SECONDARY CONDUIT AND WIRE SHALL BE SIZED BY BUILDING ELECTRICAL ENGINEER.

   C. FOR COMMERCIAL AND/OR APARTMENT COMPLEX ≤ 400 AMPS, OR > 400 AMPS WITH GANG PACK INDIVIDUAL METERS–SIZED BY SGES BASED ON LOAD CALC'S.
4. CONTRACTOR TO FOLLOW ALL BLUE STAKES PROTOCOLS.
5. THE POWER DESIGN ON THIS UTILITY PLAN IS CONSIDERED BY ST. GEORGE ENERGY SERVICES (SGES) AS PRELIMINARY AND NON–BIDDABLE UNTIL ACCOMPANIED BY A JUC APPROVAL STAMP.
6. ALL PRIMARY UNDERGROUND POWER WORK/INSTALLATION MUST BE COMPLETED BY A CONTRACTOR THAT HAS BEEN PREQUALIFIED BY SGES AND MEET ALL SGES STANDARDS. ALL OVERHEAD WORK/INSTALLATION MUST BE COMPLETED BY SGES.
7. ALL WORK DONE BY SGES WILL BE PREPAID BY THE DEVELOPER.
8. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO PROVIDE LOCATION AND ELEVATION OF ALL EXISTING AND DESIGN UNDERGROUND/OVERHEAD UTILITIES AND STRUCTURES THAT WILL IMPACT THE SGES POWER DESIGN.
9. ALL JUC TRENCHES WILL BE INSTALLED IN ACCORDANCE WITH THE SGES TYPICAL JOINT UTILITY TRENCH DETAIL (D18).
10. ALL JUC TRENCHES WILL BE BACKFILLED AND COMPACTED IN 6" TO 8" LIFTS TO A COMPACTION OF 95% IN ROADWAYS/SIDEWALKS AND 90% BEHIND SIDEWALK. TESTING IS TO BE DONE AT MIDDLE AND TOP OF TRENCH.
11. ALL CHANGES TO EXISTING GRADES NEAR EXISTING POWER UTILITIES MUST BE APPROVED BY SGES PRIOR TO CONSTRUCTION.
12. ANY IN FIELD CHANGES TO THE JUC APPROVED POWER DESIGN WILL BE AT THE DEVELOPER'S EXPENSE AND MUST BE PRE–APPROVED AND DOCUMENTED BY SGES PRIOR TO INSTALLATION.

SGES POWER PROJECT NOTES (COMMERCIAL)

A. CONTRACTOR SHALL HAVE ADJACENT TBC LOCATION AND ELEVATION, AND ANY OTHER APPLICABLE IMPROVEMENTS, STAKED PRIOR TO PLACEMENT OF ELECTRICAL EQUIPMENT.i

B. INSTALL NEW ELECTRICAL EQUIPMENT 6–FT. MIN. BEHIND TBC UNLESS OTHERWISE NOTED; INSTALL TOP OF GROUND SLEEVE 6–INCHES ABOVE ADJACENT TBC GRADE PER CURRENT SGES STANDARDS.

C. COORDINATE WITH SGES DEPARTMENT INSPECTOR FOR PHASE SEQUENCE NUMBERS AND TAPING INFORMATION TO BE LABELED ON NEW OR REPLACED TRANSFORMERS, AND PULLED OR RE–PULLED WIRE.

D. ELECTRICAL ENGINEER SHALL PROVIDE AIC AND COMPLETE ALL NECESSARY CALCULATIONS IN ACCORDANCE TO CURRENT BUILDING CODES; INFORMATION TO BE INCLUDED WITH BUILDING PLANS. SGES WILL PROVIDE EXISTING EQUIPMENT INFORMATION AS NECESSARY.

E. METERS AND MAIN PANELS WITH DISCONNECTS SHALL BE MOUNTED OUTSIDE ON AN EXTERIOR BLDG. WALL, LOCATED TO BE VISIBLE & ACCESSIBLE TO THE POWER DEPARTMENT AND PUBLIC SAFETY ENTITIES.

F. EASEMENTS ARE REQUIRED FOR ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRE TO POINT OF SERVICE.

G. METER BASES SHALL CONFORM TO A 5–JAW 12–S TYPE METER FOR SINGLE PHASE SERVICES BEING FED FROM A 3–PHASE TRANSFORMER.

CENTURY LINK NOTES:

1. DEVELOPER TO PLACE CONDUIT IN ALL JUC TRENCH AND STUB UP AT ALL POWER LOCATIONS. CONTACT CENTURY LINK ENGINEER FOR PRINT IF NEEDED.
2. CENTURY LINK WILL PROVIDE ALL CONDUIT AND DELIVER TO JOB SITE. CALL 435–632–6553 TO SCHEDULE DELIVERY.
3. CONTRACTOR TO INSTALL CONDUIT AND PLACE PULL STRING IN ALL CONDUIT TO VERIFY CONDUIT INTEGRITY.
4. ALL CONDUIT IS 2" UNLESS OTHERWISE NOTED.
5. ANY QUESTIONS TO JUC APPROVED PLANS PLEASE CONTACT CENTURY LINK ENGINEER AT 435–673–9639.
6. ANY PLANT RELOCATIONS ASSOCIATED WITH PROJECT WILL BE BILLABLE TO OWNER/DEVELOPER. CENTURY LINK ENGINEER MUST BE CONTACTED A MINIMUM OF 4 WEEKS BEFORE RELOCATION IS REQUIRED.
7. DEVELOPER IS RESPONSIBLE TO PROVIDE ALL STREET NAMES AND ADDRESSES WITHIN 3 WEEKS OF UTILITY PLAN APPROVAL. FAILURE TO PROVIDE ADDRESSES WILL RESULT IN A DELAY OF SERVICE TO PROJECT.

TDS, CATV,/BROADBAND NOTES:

1. THE DEVELOPER WILL PROVIDE ALL REQUIRED TRENCH WITHIN THE PROJECT. ANY MODIFICATIONS ALONG THE PERIPHERY TO FEED THIS PROJECT WILL BE BILLED TO THE DEVELOPER.
2. TDS WILL PROVIDE CONDUITS. PLEASE CONTACT DAVID AT 435–703–8932 AT LEAST 3 WEEKS PRIOR TO OPENING TRENCH TO SCHEDULE WORK.
3. ANY QUESTIONS REGARDING SERVICE SHOULD BE DIRECTED TO DAVID TRAUNTVEIN WITH TDS AT 435–703–8932
4. RELOCATION OF NEW OR EXISTING TDS FACILITIES WILL BE BILLABLE TO THE DEVELOPER/CONTRACTOR.
5. ANY MODIFICATIONS AFTER CONDUIT/CABLE PLACEMENT WILL BE BILLABLE TO THE DEVELOPER/CONTRACTOR AS WILL DAMAGES CAUSED BY OTHER CONTRACTORS WORKING FOR THE DEVELOPER ON THIS PROJECT.

CITY OF ST. GEORGE WATER NOTES:

1. ALL WATERLINE WORKS MUST BE INSTALLED BY A CONTRACTOR THAT HAS BEEN PRE–QUALIFIED BY THE CITY OF ST. GEORGE WATER DEPARTMENT.
2. ALL CONSTRUCTION SHALL CONFORM TO THE "CITY OF ST. GEORGE STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION", "THE INTERNATIONAL PLUMBING CODE", AND THE "UNIFORM BUILDING CODE" LATEST EDITION AS ADMINISTERED BY THE CITY OF ST. GEORGE.
3. CONTRACTOR SHALL POTHOLE ALL PIPELINES AND VERIFY LOCATION AND DEPTH PRIOR TO PROCEEDING WITH ANY BUILDING OR PIPELINE CONSTRUCTION. IF THE IN FIELD CONDITION VARIES FROM DESIGN THE CONTRACTOR IS RESPONSIBLE FOR COSTS DUE TO CHANGES IN CONDITION. CITY MAPS ARE "BEST KNOWLEDGE" AND APPROXIMATE.
4. THE POTABLE WATER SUPPLY TO LAWN IRRIGATION SYSTEMS SHALL BE PROTECTED AGAINST BACKFLOW PER THE "INTERNATIONAL PLUMBING CODE (IPC)" SECTION 608.16.5 AND FIRE SPRINKLER SYSTEMS PER (IPC) 608.16.4.
5. ALL BACKFLOW ASSEMBLY INSTALLATION AND TEST REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF ST. GEORGE BACKFLOW ORDINANCE 9–1–1997–5–6–5.
6. 14 GAUGE WIRE SHALL BE TAPED TO ALL WATER LINES FOR LOCATING PURPOSES. THE WIRE SHALL ALSO BE BROUGHT UP AT EACH VALVE BOX AND HYDRANT.
7. THRUST RESTRAINT ON THE NEW PIPELINE WILL BE AS SHOWN ON THE DETAILS. USE MEGA–LUG ON THE FITTINGS AND FIELD LOCK GASKETS ON THE REQUIRED LENGTH OF RESTRAINED PIPE.
8. ASPHALT REPLACED OVER THE PIPE TRENCHING IS TO MATCH EXISTING PAVEMENT DEPTHS WITH A 6" OVER CUT FROM EDGE OF THE TRENCH ON EACH SIDE OF THE TRENCH.
9. CONTRACTORS SHALL CUT OFF AND CAP (BACK AT THE WATER MAIN), ALL EXISTING SERVICE LINES OR UNUSED STUB LINES THAT WILL BE ABANDONED.
10. ANY CHANGES MADE IN THE FIELD MUST BE FIRST APPROVED AND DOCUMENTED BY THE CITY OF ST. GEORGE WATER SERVICES REPRESENTATIVE.
11. ALL NEW FIRE HYDRANTS SHALL BE INSTALLED AT THE CORRECT HEIGHT. RISERS WILL NOT BE ALLOWED.
12. IRRIGATION WATER WORKS MAY REQUIRE ADDITIONAL APPROVALS FROM RESPECTIVE IRRIGATION COMPANIES.

CITY OF ST. GEORGE SANITARY SEWER NOTES:

1. NO SEWER UNDER 9' DEEP UNLESS APPROVED BY THE CITY OF ST. GEORGE.
2. ANY SEWERS NOT IN PUBLIC STREETS SHALL SHOW RECORDED EASEMENTS.
3. BUILDINGS MAY REQUIRE INTERCEPTORS AT A LATER DATE.
4. ALL SEWER MANHOLES SHALL HAVE "CITY OF ST. GEORGE" LOGO LIDS FOR FINAL INSPECTION.
5. 100' MAXIMUM SPACE BETWEEN SEWER LATERAL CLEANOUTS.
6. ALL CONSTRUCTION SHALL CONFORM TO THE "CITY OF ST. GEORGE STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION", "THE INTERNATIONAL PLUMBING CODE", AND THE "UNIFORM BUILDING CODE" LATEST EDITION AS ADMINISTERED BY THE CITY OF ST. GEORGE.

DOMINION ENERGY NOTES:

1. DEVELOPER NEEDS TO CONTACT DOMINION PRE–CONSTRUCTION DEPARTMENT IN ST. GEORGE, PRIOR TO BREAKING GROUND FOR GAS SIGN UP.

   SERVICE LINES:
   JEFF BURTON @ 435–674–6157

2. DEVELOPER WILL BE RESPONSIBLE TO GET ALL COMPACTION TESTS DONE AT DEVELOPERS EXPENSE.

3. IF CASINGS/CONDUITS ARE NEEDED, THEY ARE TO BE INSTALLED BY DEVELOPER AT THEIR COST. A MAP WILL BE AVAILABLE AT DOMINION ENERGY FOR CASING LOCATIONS (1155 EAST 350 NORTH IN ST. GEORGE)

4. **ALL OF THE 10 FOOT UTILITY EASEMENTS BACK OF SIDEWALK WILL BE GRADED, AT FULL 10 FOOT WIDTH, TO WITHIN 6 INCHES OF TOP OF CURB BEFORE GAS LINES WILL BE INSTALLED. *****DEVELOPER WILL BE RESPONSIBLE FOR THE COST OF ANY GAS LINES TO BE LOWERED AND/OR RELOCATED AFTER INSTALLATION.**

5. ALL TRENCHES SHALL BE BACKFILLED AND ALL DEBRIS, CONSTRUCTION MATERIALS AND EXCESS DIRT PILES SHALL BE CLEARED AWAY.

6. PROPERTY LOT LINES, BACK OF CURB AND GRADE MUST BE STAKED BY DEVELOPER BEFORE GAS WILL BE INSTALLED.

7. POWER, WATER, SEWER LINES, AND CULVERTS OR OTHER HAZARDS NOT CLEARLY NOTICEABLE SHALL BE STAKED BY DEVELOPER.

8. FAILURE TO COMPLY WITH THE ABOVE NOTES WILL RESULT IN DELAY OF GAS SERVICE TO THIS PROJECT.

9. AT LEAST TWO WEEKS PRIOR TO BEING READY FOR INSTALLATION OF GAS: CONTACT CRAIG HANSEN @ 435–674–6144 FOR SCHEDULING.

10. ******IMPORTANT NOTE******
    GAS WILL BE PUT ON THE SCHEDULE FOR INSTALLATION WHEN POWER TRENCH IS BURIED, STREETS ARE WITHIN 6 INCHES OF SUB–GRADE AND THE 10 FOOT UTILITY EASEMENT IS GRADED TO TOP BACK OF CURB.

11. HIGH PRESSURE GAS NOTE:

    IF HIGH PRESSURE GAS LINES ARE LOCATED IN OR NEAR YOUR DIGGING AREA:
    BEFORE DIGGING PLEASE CALL:
    BRYAN WARD @ 435–559–6547

GO FIBER, CATV / FIBER OPTIC NOTES:

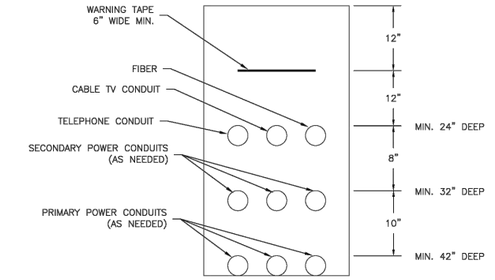
1. DEVELOPER WILL PROVIDE ALL REQUIRED TRENCHING WITHIN THE PROJECT. ANY MODIFICATIONS TO GO FIBER FACILITIES REQUIRED TO FEED THE PROJECT WILL BE BILLED TO THE DEVELOPER.

2. GO FIBER WILL PROVIDE CONDUIT. CALL 435–767–9053 OR EMAIL JUC@GOFIBER.TECH FOR CONDUIT DELIVER AT LEAST ONE WEEK PRIOR TO OPENING TRENCH.

3. FOR COMMERCIAL PROJECTS WITH AN MDF/COMMUNICATIONS ROOM. DEVELOPER WILL PROVIDE A 2" PVC CONDUIT RUN TO THE EXTERIOR OF THE BUILDING.

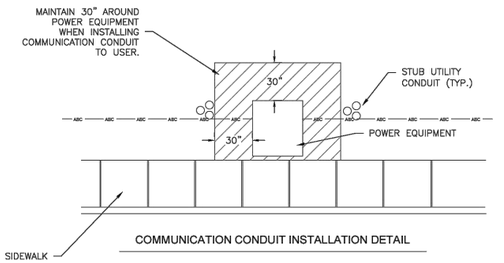
4. ANY QUESTIONS REGARDING GO FIBER FACILITIES SHOULD BE DIRECTED TO LYNN BEECHER AT JUC@GOFIBER.TECH OR 435–767–9053

5. RELOCATION OF EXISTING GO FIBER FACILITIES IS BILLABLE TO THE DEVELOPER. THE DEVELOPER WILL BE PROVIDED WITH AN ESTIMATE OF COSTS FOR WORK DONE.



TYPICAL JOINT TRENCH DETAIL

TRENCHING, BEDDING, AND COMPACTION SHALL CONFORM TO CURRENT SGES AND CITY STANDARDS. SEE SGES DETAILS D13 - D15 IN UNDERGROUND STANDARDS. PROVIDE COMPACTION TEST RESULTS TO CITY; COPY SGES ON POWER RELATED TESTING



COMMUNICATION CONDUIT INSTALLATION DETAIL

REVISIONS:			
REV	DATE	BY	DESCRIPTION

APPROVED BY: –
DRAWN BY: –
DATE: –
FILE: –

TYPICAL JOINT UTILITY TRENCH DETAIL
CITY OF ST. GEORGE
ENERGY SERVICES DEPARTMENT
UNDERGROUND STANDARDS

DETAIL D18

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — TODD A. OLSEN — 5150046 — STATE OF UTAH — 03-01-2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

ST. GEORGE CITY
R1 SEWER PROJECT
ST. GEORGE, UTAH

REVIEW
CHECKED T. OLSEN
APPROVED T. OLSEN

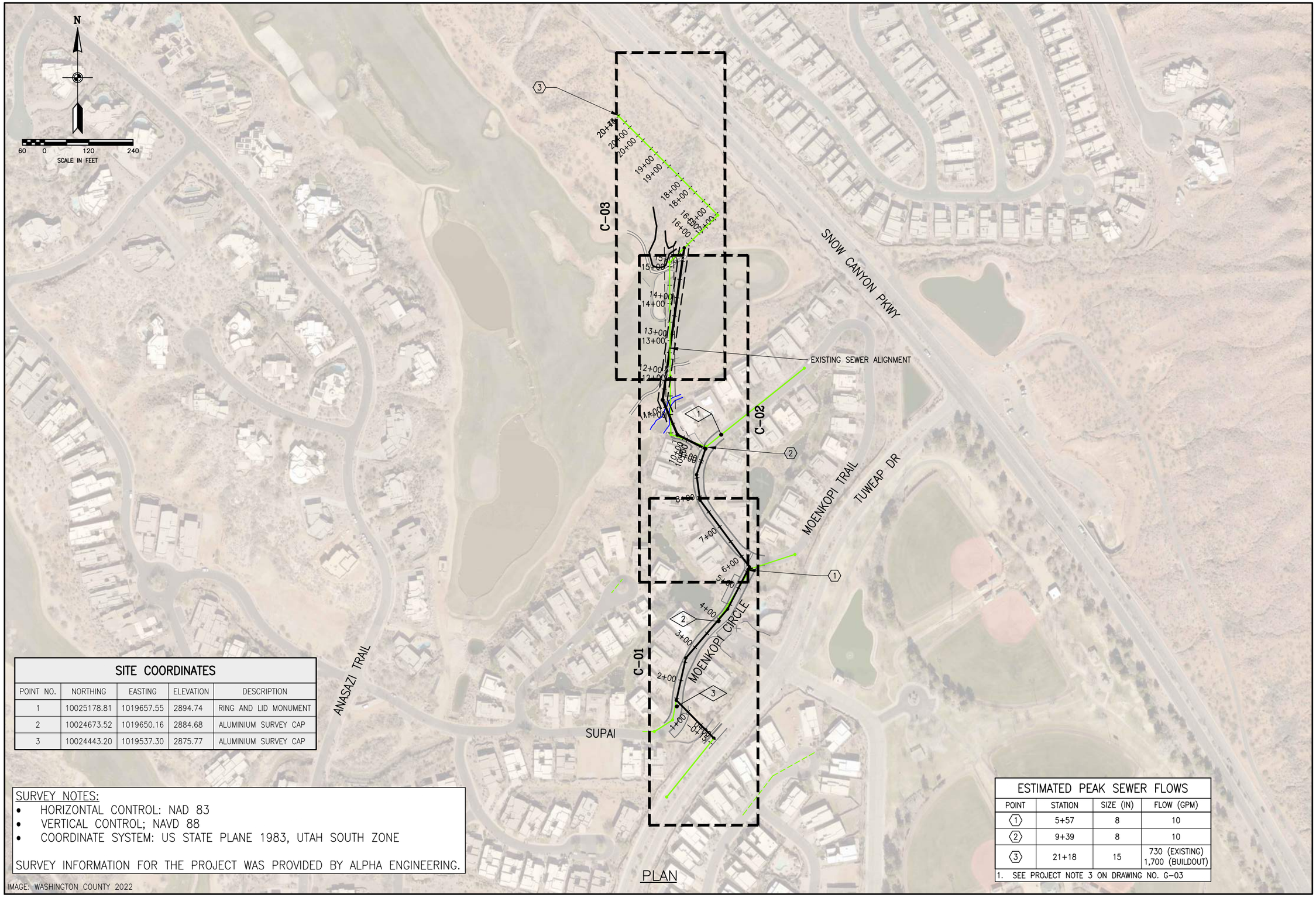
DESIGN
DESIGN W. ANDERSEN
DRAWN M. WASHBURN

GENERAL

JUC NOTES

PROJECT NUMBER 001-21-03
DATE: NOVEMBER 2022

DRAWING NO.
G-04
SHEET 04 OF 10



PLAN

SITE COORDINATES				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	10025178.81	1019657.55	2894.74	RING AND LID MONUMENT
2	10024673.52	1019650.16	2884.68	ALUMINIUM SURVEY CAP
3	10024443.20	1019537.30	2875.77	ALUMINIUM SURVEY CAP

SURVEY NOTES:
- HORIZONTAL CONTROL: NAD 83
- VERTICAL CONTROL; NAVD 88
- COORDINATE SYSTEM: US STATE PLANE 1983, UTAH SOUTH ZONE

SURVEY INFORMATION FOR THE PROJECT WAS PROVIDED BY ALPHA ENGINEERING.

IMAGE: WASHINGTON COUNTY 2022

ESTIMATED PEAK SEWER FLOWS			
POINT	STATION	SIZE (IN)	FLOW (GPM)
1	5+57	8	10
2	9+39	8	10
3	21+18	15	730 (EXISTING) 1,700 (BUILDOUT)
1. SEE PROJECT NOTE 3 ON DRAWING NO. G-03			

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
TODD A. OLSEN
5150046
STATE OF UTAH
03-01-2024

NO.	DATE	REV. BY	DESCRIPTION
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ST. GEORGE CITY
R1 SEWER PROJECT
ST. GEORGE, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED T. OLSEN
APPROVED T. OLSEN

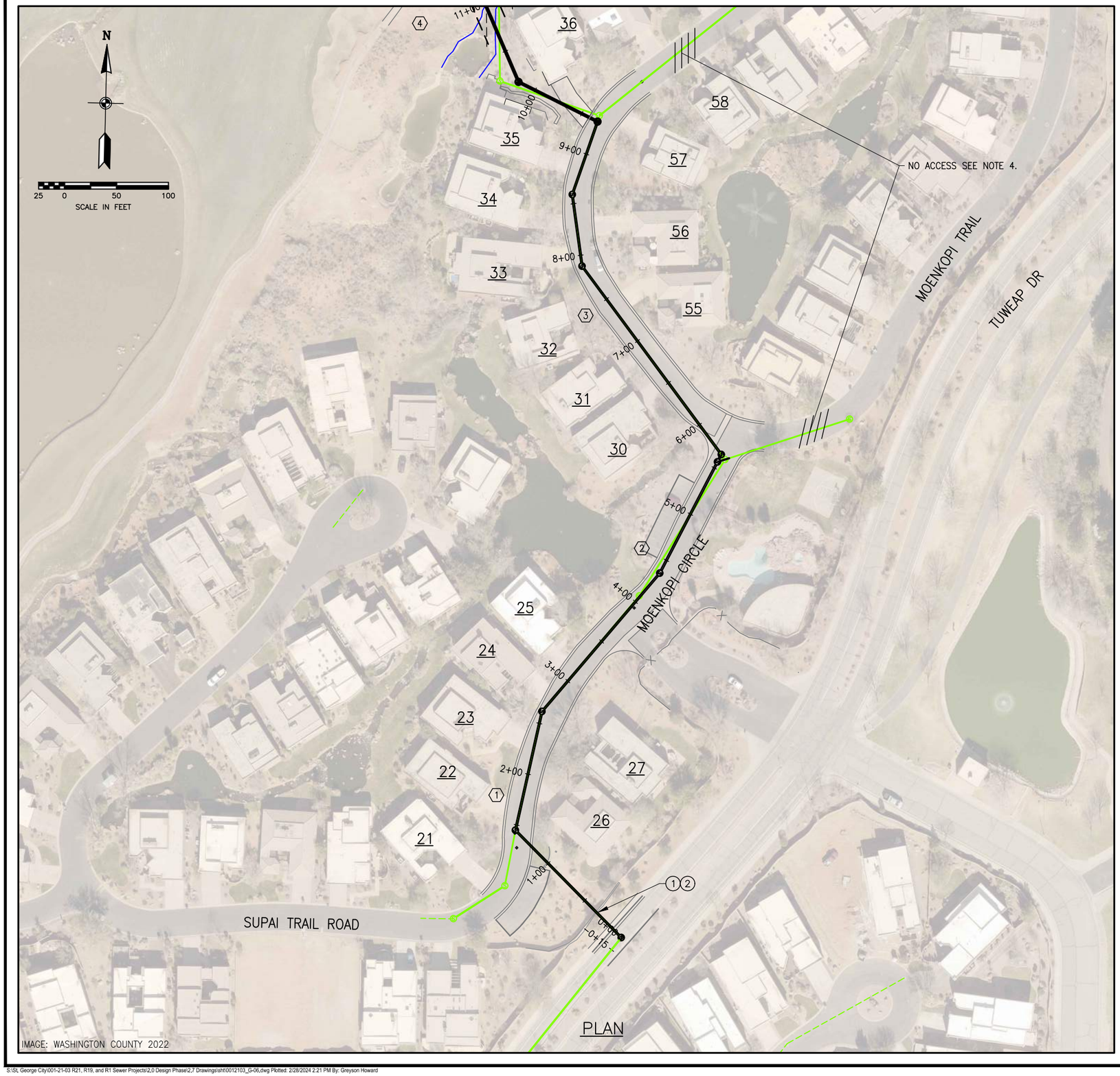
DESIGN
DESIGN W. ANDERSEN
DRAWN M. WASHBURN

GENERAL
KEY SHEET

DATE: NOVEMBER 2022
PROJECT NUMBER 001-21-03

DRAWING NO.
G-05
SHEET 05 OF 10

S:\St. George City\001-21-03 R21, R19, and R1 Sewer Projects\2,0 Design Phase\2,7 Drawings\sht\0012103_G-05.dwg Plotted: 2/28/2024 9:53 AM By: Bridger Clymore



NOTES:

1. PROVIDE ACCESS TO EMERGENCY PERSONNEL THROUGH THE SITE AT ALL TIMES DURING CONSTRUCTION.
2. CONTINUOUSLY BACKFILL THE TRENCH THROUGH RESIDENTIAL AREAS AND PROVIDE TRENCH PLATE ACCESS AT THE END OF EACH DAY FOR RESIDENTIAL HOME ACCESS.
3. STAGE MATERIALS SO THEY ARE NOT BLOCKING ACCESS TO RESIDENTIAL HOMES AND THROUGHOUT THE SUBDIVISION.
4. NO ACCESS WILL BE ALLOWED ON MOENKOPI TRAIL OUTSIDE OF WORK AREA.
5. MAINTAIN ROADBASE SURFACE PRIOR TO PAVING.

KEY NOTES:

(1) DURING CONSTRUCTION, SECURE SECTION OF REMOVED WALL TO PREVENT PEDESTRIAN AND VEHICULAR ACCESS.

(2) WALL SHALL BE RECONSTRUCTED AFTER THE PIPELINE INSTALLATION HAS REACHED MOENKOPI CIRCLE ROAD AND WHEN ACCESS IS NOT NEEDED OFF MOENKOPI TRAIL ROAD.

R1 SEWER PROJECT – ACCESS PLAN:

(1) PHASE 1
- A. REMOVE SECTION OF SECURITY WALL AT STATION 0+35. SECURE WALL DURING CONSTRUCTION TO PREVENT VEHICLE AND PEDESTRIAN ACCESS AT WALL.
- B. INSTALL PIPELINE FROM STATION 0+00 TO STATION 3+50.
- C. REPAIR SECURITY WALL TO EXISTING OR BETTER CONDITION ONCE ACCESS THROUGH THIS AREA IS COMPLETED.
- D. PROVIDE TEMPORARY SHUTDOWN OF RESIDENT HOUSE NUMBERS #22, #23, #24, #25, #26, AND #27. PROVIDE NIGHTLY ACCESS INTO THESE RESIDENTS' HOUSES WITH BACKFILLED TRENCH AND TRENCH PLATES.
- E. RESIDENTIAL ACCESS DURING THIS PHASE WILL BE FROM SUPIA TRAIL ROAD AND MOENKOPI CIRCLE THROUGH THE SECURITY GATE.

(2) PHASE 2
- A. INSTALL PIPELINE FROM STATION 3+50 TO STATION 6+00 WHILE MAINTAINING ONE LANE OF TRAFFIC THROUGH CONSTRUCTION SITE.
- B. RESIDENTIAL ACCESS DURING THIS PHASE WILL BE FROM SUPIA TRAIL ROAD AND EAST SECURITY GATE.

(3) PHASE 3
- A. INSTALL PIPELINE FROM STATION 6+00 TO STATION 9+50.
- B. PROVIDE TEMPORARY SHUTDOWN OF RESIDENT HOUSE NUMBERS #30, #31, #32, #33, #34, #35, AND #36. PROVIDE NIGHTLY ACCESS INTO THESE RESIDENTS' HOUSES WITH BACKFILLED TRENCH AND TRENCH PLATES.
- C. RESIDENTIAL ACCESS DURING THIS PHASE WILL BE EAST AROUND MOENKOPI TRAIL ROAD.

(4) PHASE 4
- A. WORK SHALL NOT COMMENCE ON THE GOLF COURSE UNTIL AFTER JUNE 1, 2024.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER TODD A. OLSEN 5150046 STATE OF UTAH 03-01-2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

ST GEORGE CITY
R1 SEWER PROJECT
ST. GEORGE, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED T. OLSEN APPROVED T. OLSEN

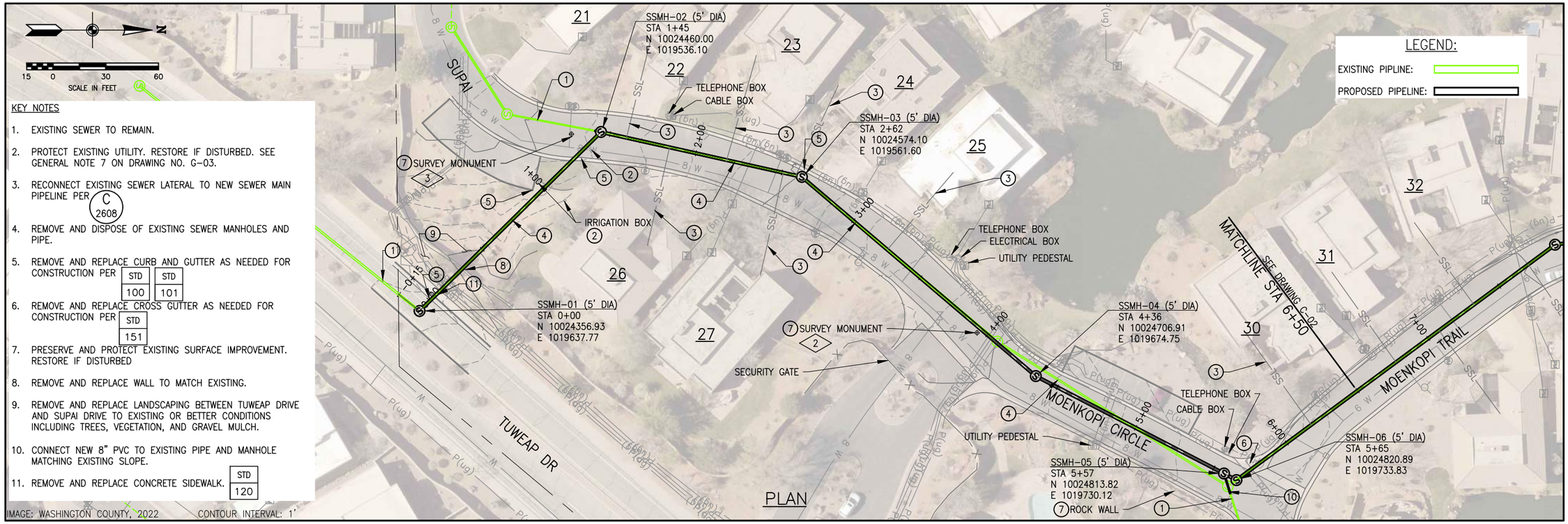
DESIGN DESIGN W. ANDERSEN DRAWN S. RIGGS

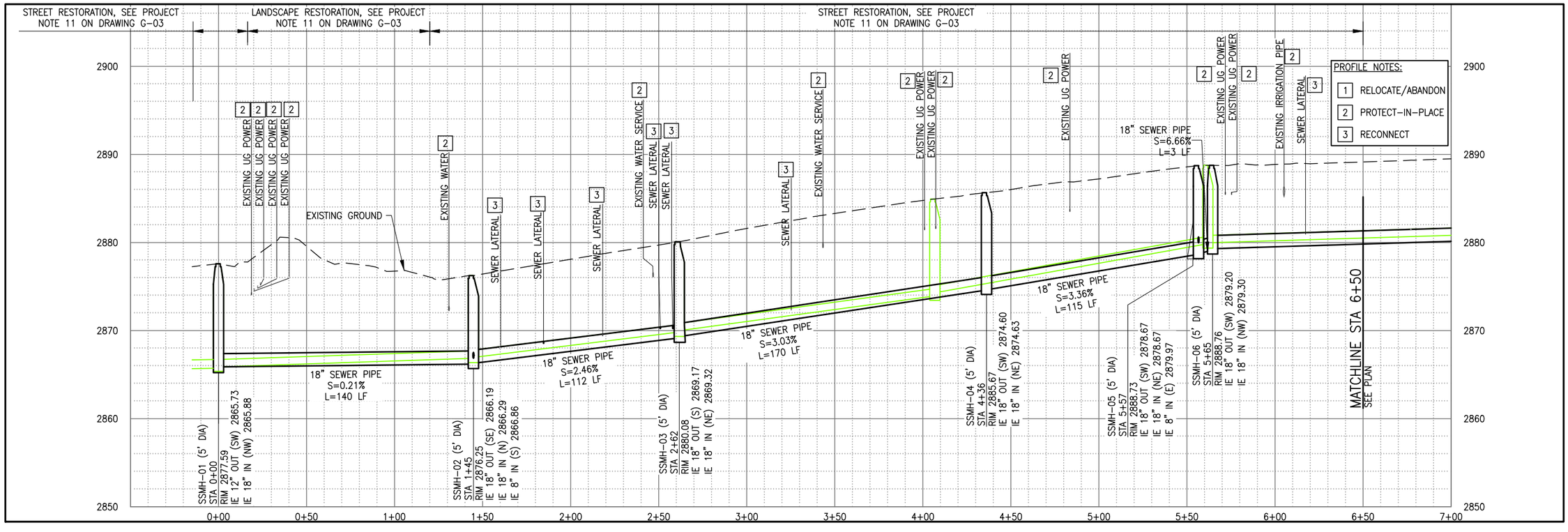
GENERAL
ACCESS AND SECURITY PLAN

DATE: NOVEMBER 2022
PROJECT NUMBER 001-21-03

DRAWING NO.
G-06
SHEET 06 OF 10

S:\St. George City\001-21-03 R21, R19, and R1 Sewer Projects\2,0 Design Phase\2,7 Drawings\sht\0012103_G-06.dwg Plotted: 2/28/2024 2:21 PM By: Greyson Howard





BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER TODD A. OLSEN 5150046 STATE OF UTAH 03-01-2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

ST. GEORGE CITY
R1 SEWER PROJECT
ST. GEORGE, UTAH

REVIEW
CHECKED T. OLSEN
APPROVED T. OLSEN

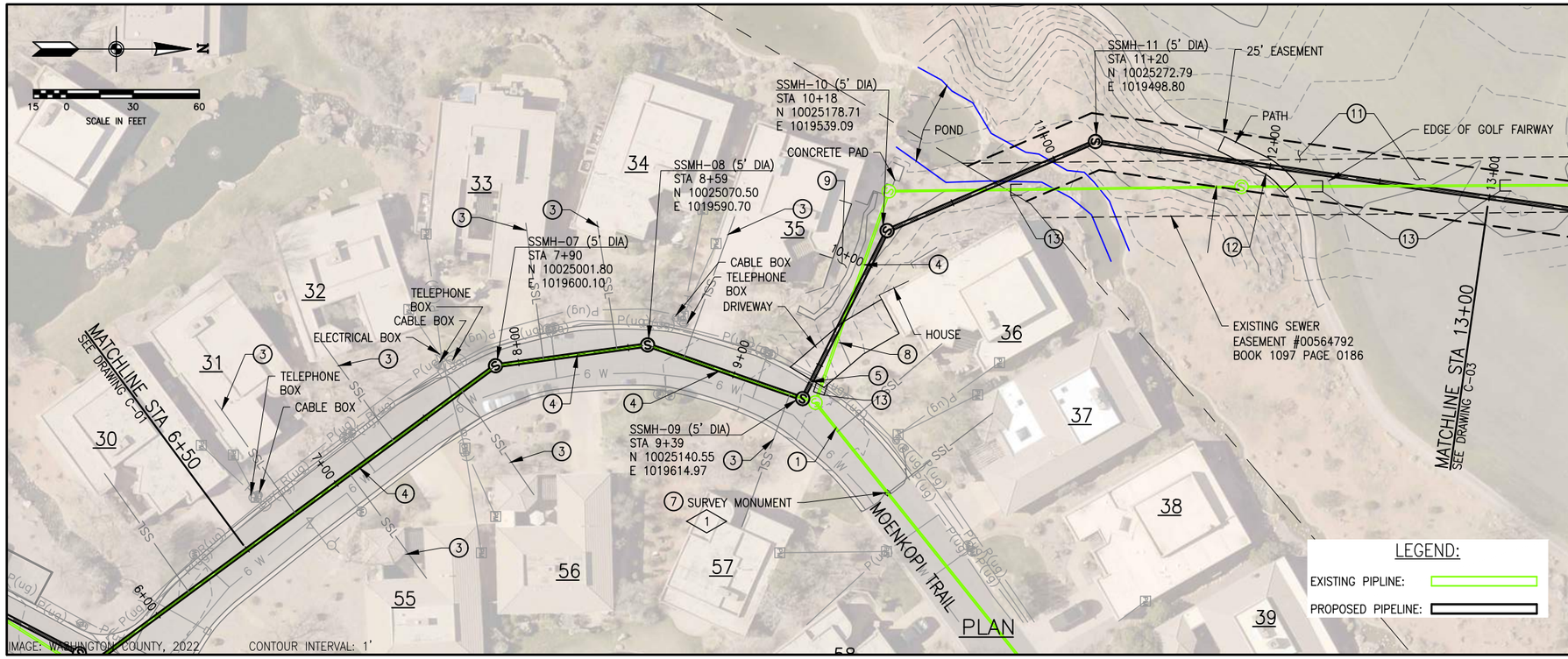
DESIGN
DESIGN W. ANDERSEN
DRAWN M. WASHBURN

CIVIL
PLAN & PROFILE
STA 0+00 TO 6+00

DATE: NOVEMBER 2022
PROJECT NUMBER 001-21-03

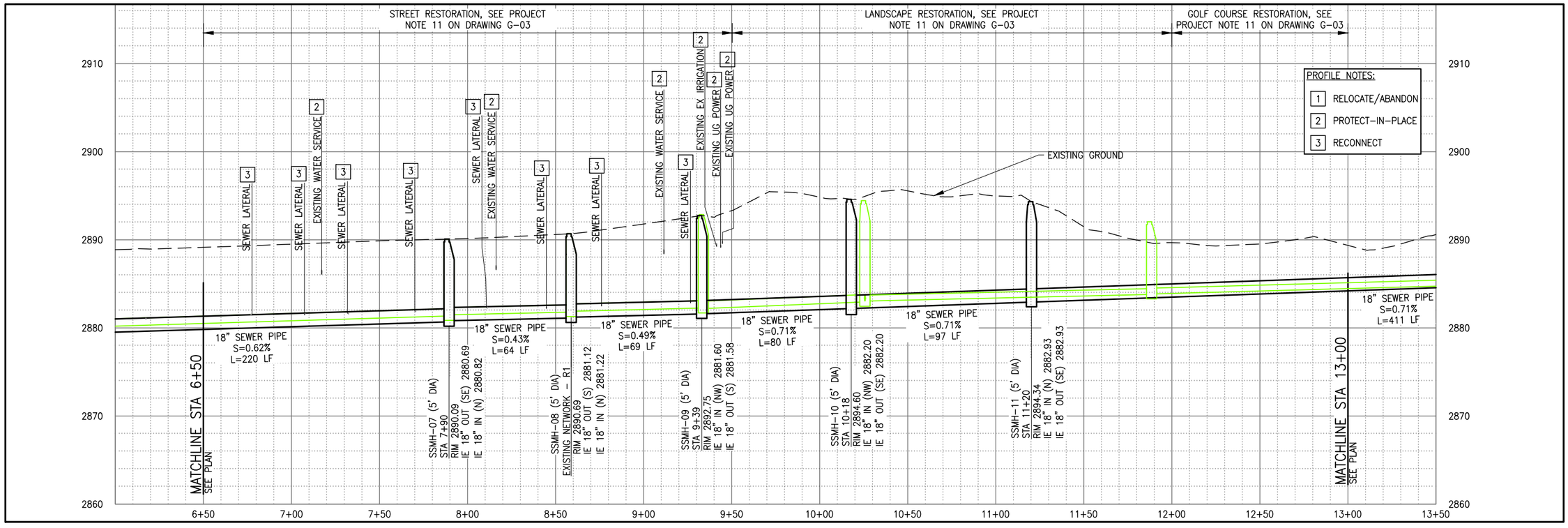
DRAWING NO.
C-01
SHEET 07 OF 10

S:\St George City\001-21-03 R21, R19, and R1 Sewer Projects\2,0 Design Phase\2,7 Drawings\sht\0012103_C-01.dwg Plotted: 2/28/2024 9:55 AM By: Bridger Clymore



KEY NOTES

1. EXISTING SEWER TO REMAIN.
2. PROTECT EXISTING UTILITY. RESTORE IF DISTURBED. SEE GENERAL NOTE 7 ON DRAWING NO. G-03.
3. RECONNECT EXISTING SEWER LATERAL TO NEW SEWER MAIN PIPELINE PER C 2608
4. REMOVE AND DISPOSE OF EXISTING SEWER MANHOLES AND PIPE.
5. REMOVE AND REPLACE CURB AND GUTTER AS NEEDED FOR CONSTRUCTION PER STD 101
6. REMOVE AND REPLACE CROSS GUTTER AS NEEDED FOR CONSTRUCTION PER STD 151
7. PRESERVE AND PROTECT EXISTING SURFACE IMPROVEMENT. RESTORE IF DISTURBED.
8. REMOVE AND REPLACE COLORED DRIVEWAY AS NEEDED FOR CONSTRUCTION PER STD 111, MATCH EXISTING COLOR.
9. REMOVE AND REPLACE LANDSCAPING BETWEEN HOUSES TO EXISTING OR BETTER CONDITIONS INCLUDING SPRINKLERS, TREES, VEGETATION AND GRAVEL MULCH.
10. SAWCUT AND REMOVE CONCRETE LINED POND AS NEEDED FOR CONSTRUCTION. REMOVE AND DISPOSE OF DEBRIS AND LEAVE SITE CLEAN AND SMOOTH GRADED.
11. COORDINATE WITH GOLF COURSE TO CUT AND REMOVE SOD PRIOR TO EXCAVATION. RESTORATION THROUGH THE GOLF COURSE WILL BE TO THE TOP OF THE TRENCH WITH THE GOLF COURSE COMPLETING THE SURFACE RESTORATION.
12. SAWCUT, REMOVE AND REPAVE CONCRETE GOLF COURSE PATH. STD 120
13. PLUG EXISTING PIPE WITH CONCRETE.



BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
TODD A. OLSEN
5150046
STATE OF UTAH
03-01-2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

ST. GEORGE CITY
R1 SEWER PROJECT
ST. GEORGE, UTAH

REVIEW
CHECKED T. OLSEN
APPROVED T. OLSEN

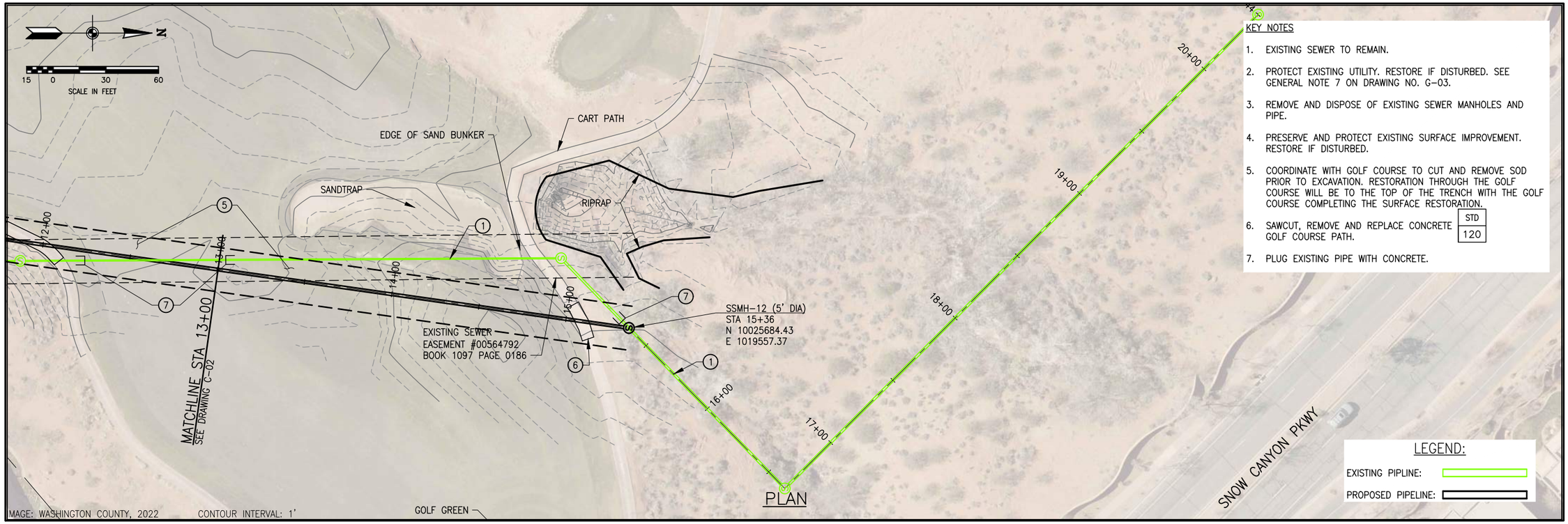
DESIGN
DESIGN W. ANDERSEN
DRAWN M. WASHBURN

CIVIL
PLAN & PROFILE
STA 6+00 TO 12+00

DATE: NOVEMBER 2022
PROJECT NUMBER 001-21-03

DRAWING NO.
C-02
SHEET 08 OF 10

S:\St. George City\001-21-03 R21, R19, and R1 Sewer Projects\2,0 Design Phase\2,7 Drawings\sht\0012103_C-02.dwg Plotted: 2/28/2024 2:31 PM By: Greyson Howard



KEY NOTES

1. EXISTING SEWER TO REMAIN.
2. PROTECT EXISTING UTILITY. RESTORE IF DISTURBED. SEE GENERAL NOTE 7 ON DRAWING NO. G-03.
3. REMOVE AND DISPOSE OF EXISTING SEWER MANHOLES AND PIPE.
4. PRESERVE AND PROTECT EXISTING SURFACE IMPROVEMENT. RESTORE IF DISTURBED.
5. COORDINATE WITH GOLF COURSE TO CUT AND REMOVE SOD PRIOR TO EXCAVATION. RESTORATION THROUGH THE GOLF COURSE WILL BE TO THE TOP OF THE TRENCH WITH THE GOLF COURSE COMPLETING THE SURFACE RESTORATION.
6. SAWCUT, REMOVE AND REPLACE CONCRETE GOLF COURSE PATH.

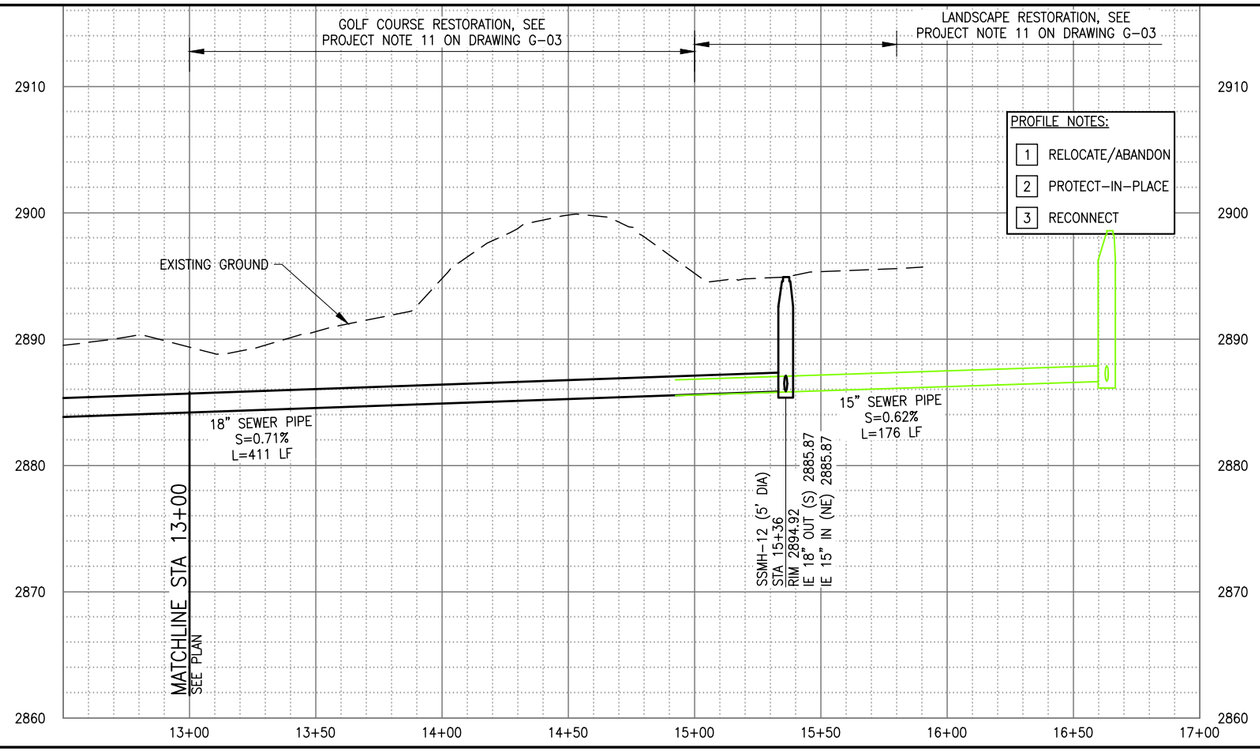
STD
120

7. PLUG EXISTING PIPE WITH CONCRETE.

LEGEND:

EXISTING PIPLINE:

PROPOSED PIPELINE:



BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
TODD A. OLSEN
5150046
STATE OF UTAH
03-01-2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

ST. GEORGE CITY
R1 SEWER PROJECT
ST. GEORGE, UTAH

REVIEW
CHECKED T. OLSEN
APPROVED T. OLSEN

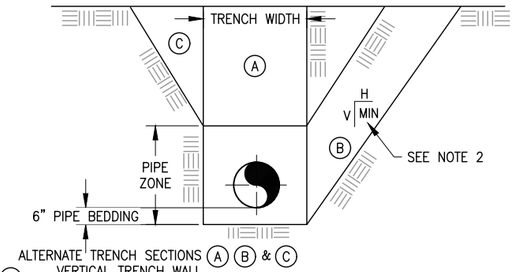
DESIGN
DESIGN W. ANDERSEN
DRAWN M. WASHBURN

CIVIL
PLAN & PROFILE
STA 12+00 TO 16+18

DATE: NOVEMBER 2022
PROJECT NUMBER 001-21-03

DRAWING NO.
C-03
SHEET 09 OF 10

S:\St. George City\001-21-03 R21, R19, and R1 Sewer Projects\2,0 Design Phase\2,7 Drawings\sht\0012103_C-03.dwg Plotted: 2/28/2024 9:57 AM By: Bridger Clymore



ALTERNATE TRENCH SECTIONS (A) (B) & (C)

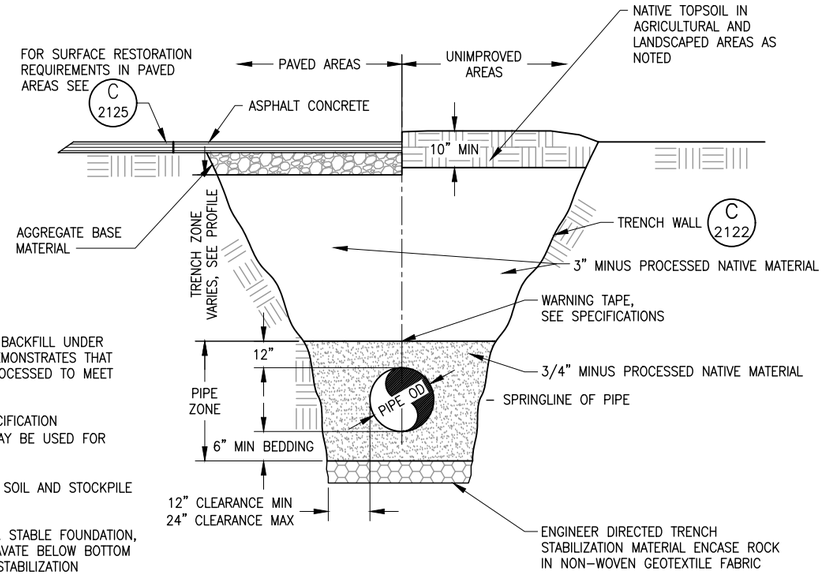
(A) VERTICAL TRENCH WALL
1. MAX UNSUPPORTED HEIGHT = 3.5 FT.
2. FOR DEPTH OVER 3.5 FT SHORING OR SHEATHING REQUIRED.

(B) SLOPING TRENCH WALL
1. NOT TO BE USED WITHOUT APPROVAL OF ENGINEER.
2. REQUIRES IMPROVED PIPE ZONE BACKFILL OR INCREASE IN PIPE CLASS

(C) COMBINATION VERTICAL/SLOPING TRENCH
1. TRENCH IN PIPE ZONE SHALL HAVE VERTICAL WALLS WHERE STABLE SOIL EXISTS

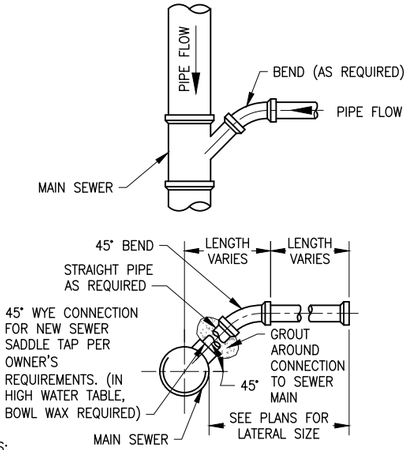
NOTES:
1. TRENCH EXCAVATIONS TO BE IN ACCORDANCE WITH OSHA SAFETY AND HEALTH STANDARDS FOR CONSTRUCTION. (29 CFR 1926).
2. CONTRACTOR TO PROVIDE SHORING OR TRENCH BOX IN ROADWAY AREAS TO MINIMIZE TRENCH WIDTH.
3. CONTRACTOR TO PROVIDE ALL DEWATERING MEASURES AS REQUIRED. GROUNDWATER ELEVATION SHALL BE MAINTAINED AT LEAST 2' BELOW BOTTOM OF TRENCH UNTIL BACKFILL IS COMPLETE.
4. SLIDE SLOPES SHALL MEET MINIMUM REQUIREMENTS OF THE GEOTECHNICAL INVESTIGATION.

TYPICAL TRENCH EXCAVATION SECTION
NTS — C 2122



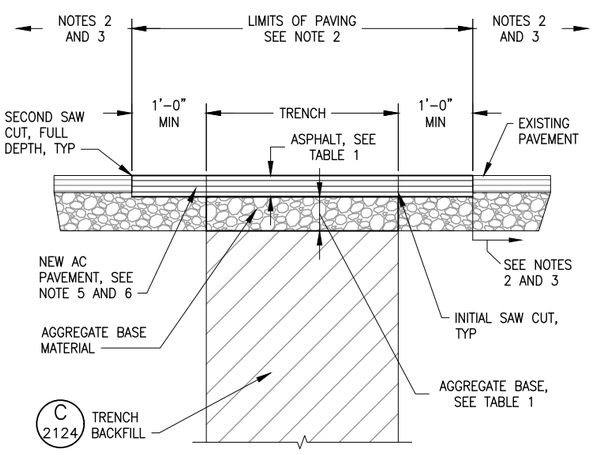
NOTES:
1. IMPORT BACKFILL REQUIRED FOR TRENCH BACKFILL UNDER ROADWAY AREAS, UNLESS CONTRACTOR DEMONSTRATES THAT SUITABLE ON-SITE MATERIAL CAN BE PROCESSED TO MEET SPECIFIED BACKFILL REQUIREMENTS.
2. SCREENED NATIVE MATERIAL MEETING SPECIFICATION REQUIREMENT FOR 'SUITABLE MATERIAL' MAY BE USED FOR TRENCH ZONE BACKFILL.
3. IN UNIMPROVED AREAS, STRIP TOP 8" OF SOIL AND STOCKPILE PRIOR TO TRENCH EXCAVATION.
4. IF NATIVE SOILS DO NOT PROVIDE A FIRM, STABLE FOUNDATION, AS DETERMINED BY ENGINEER, OVER EXCAVATE BELOW BOTTOM OF TRENCH AND BACKFILL WITH TRENCH STABILIZATION MATERIAL AS SHOWN.
5. TOP 6" OF TRENCH BACKFILL BENEATH THE TOPSOIL LAYER SHOULD BE INSTALLED, SMOOTHED, BUT LEFT UN-COMPACTED.

TYPICAL TRENCH BACKFILL SECTION
NTS — C 2124



NOTES:
1. SERVICE SIZE SHALL BE AS INDICATED ON PLANS.
2. SLOPE FOR SEWER SERVICES SHALL BE 2% MINIMUM FOR 4" DIAMETER AND 1% MINIMUM FOR 6" DIAMETER. FLATTER SLOPES SHALL BE APPROVED BY ENGINEER.
3. ALL CHANGES IN DIRECTION SHALL BE ACCOMPLISHED WITH STANDARD FITTINGS WITH A DEFLECTION ANGLE NO GREATER THAN 45°. (NO 90° BENDS)
4. DIRECT NOSE-ON CONNECTIONS MAY BE USED WHERE WYE FITTINGS ARE NOT AVAILABLE FOR THE PIPE MATERIAL USED FOR THE MAIN WITH PRIOR APPROVAL BY THE ENGINEER.

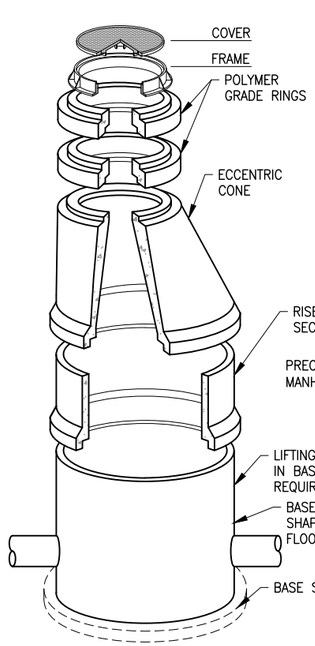
SEWER LATERAL CONNECTION
SCALE: NTS — C 2608



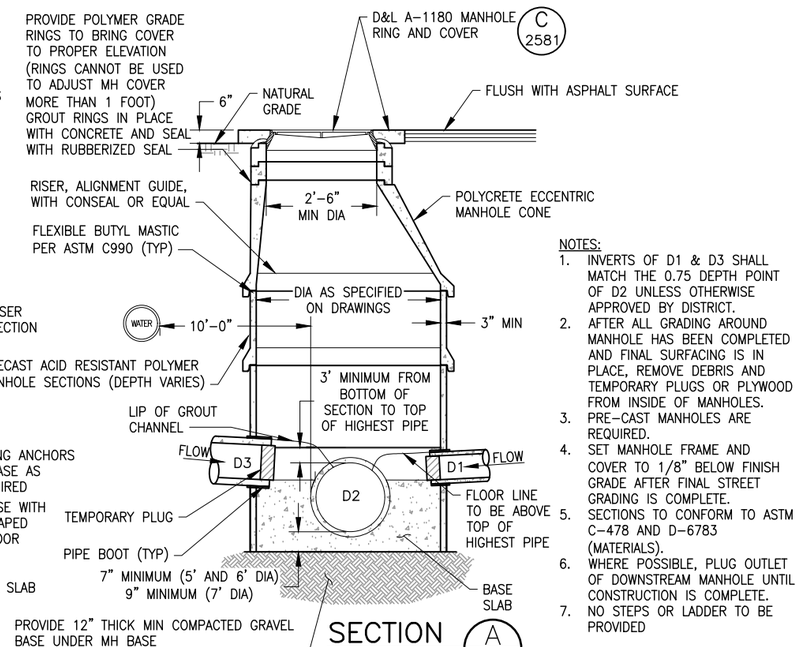
NOTES:
1. CONTRACTOR SHALL PERMANENTLY REPLACE ALL PAVEMENT SURFACES, STRIPING, AND TRAFFIC CONTROLS IN ACCORDANCE WITH STANDARDS PRIOR TO REMOVING DETOURS.
2. REMOVE ADDITIONAL PAVEMENT TO A PAINTED LANE STRIPE, A LIP OF GUTTER, A CURB, AN EXISTING PAVEMENT PATCH, OR AN EDGE OF THE PAVEMENT IF SUCH A FEATURE IS WITHIN FIVE FEET OF THE SECOND SAW CUT. IN NO CASE SHALL ASPHALT SEAM BE PLACED IN WHEEL PATH. IF MORE THAN 50% OF THE PERMANENT SURFACING OF A TRAVELED LANE IS IMPACTED BY THE EXCAVATION, THE ENTIRE LANE WIDTH SHALL BE SAW CUT, REMOVED, AND REPLACED.
3. ALL CONTRACTOR DAMAGED PAVEMENT OUTSIDE OF THE LIMITS SHOWN SHALL BE REMOVED AND REPLACED AT CONTRACTORS EXPENSE.
4. AMBIENT TEMPERATURE MUST BE 45° F AND RISING IN ORDER TO PLACE ASPHALT. ASPHALT PLACEMENT BETWEEN NOVEMBER 1ST AND FEBRUARY 1ST MUST HAVE ENGINEERS APPROVAL.
5. HOT ASPHALTIC CONCRETE PAVEMENT SHALL BE PLACED IN A MINIMUM TWO LIFTS. A TACK COAT SHALL BE PLACED BETWEEN LIFTS AND ALONG ALL VERTICAL SURFACES OF EXISTING PAVEMENT.
6. ASPHALT MIX DESIGN SHALL MEET LATEST VERSION OF THE GOVERNING AGENCIES CONSTRUCTION SPECIFICATIONS, SEE TABLE. MIX DESIGN MUST BE SUBMITTED AND APPROVED PRIOR TO PLACEMENT.

TABLE 1		
LOCATION	PAVEMENT THICKNESS	AGGREGATE BASE THICKNESS
TUWEAP DRIVE	3"	6"
MOENKOPI CIRCLE/MOENKOPI TRAIL	2.5"	6"

TRENCH BACKFILL AND SURFACE RESTORATION IN PAVED AREAS
NTS — C 2125



ISOMETRIC VIEW
SCALE — B



NOTES:
1. INVERTS OF D1 & D3 SHALL MATCH THE 0.75 DEPTH POINT OF D2 UNLESS OTHERWISE APPROVED BY DISTRICT.
2. AFTER ALL GRADING AROUND MANHOLE HAS BEEN COMPLETED AND FINAL SURFACING IS IN PLACE, REMOVE DEBRIS AND TEMPORARY PLUGS OR PLYWOOD FROM INSIDE OF MANHOLES.
3. PRE-CAST MANHOLES ARE REQUIRED.
4. SET MANHOLE FRAME AND COVER TO 1/8" BELOW FINISH GRADE AFTER FINAL STREET GRADING IS COMPLETE.
5. SECTIONS TO CONFORM TO ASTM C-478 AND D-6783 (MATERIALS).
6. WHERE POSSIBLE, PLUG OUTLET OF DOWNSTREAM MANHOLE UNTIL CONSTRUCTION IS COMPLETE.
7. NO STEPS OR LADDER TO BE PROVIDED

SECTION
SCALE — A

POLYMER MANHOLE
SCALE: NTS — C 2510

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — TODD A. OLSEN 5150046 — STATE OF UTAH — 03-01-2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

ST. GEORGE CITY
ST. GEORGE, UTAH
R1 SEWER PROJECT

DESIGN — DESIGN W. ANDERSEN — DRAWN M. WASHBURN
REVIEW — CHECKED T. OLSEN — APPROVED T. OLSEN

CIVIL
GENERAL CIVIL DETAILS - 1

DATE: NOVEMBER 2022
PROJECT NUMBER 001-21-03

DRAWING NO. GC-01
SHEET 10 OF 10

S:\St. George City\001-21-03 R21, R19, and R1 Sewer Projects\2,0 Design Phase\2,7 Drawings\sht\0012103_GC-01.dwg Plotted: 2/28/2024 9:57 AM By: Bridger Clymore

Agenda Date: 04/04/2024 **Agenda Item Number:** 4h

Subject:

Consider approval of a land exchange with Freeport West-Daybreak, LLC.

Item at-a-glance:

Staff Contact: Jami Brackin

Applicant Name: Freeport West-Daybreak, LLC

Reference Number: n/a

Address/Location:

Airport road

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

Freeport has proposed an acre for acre land exchange on real property located near the airport. Freeport is willing to also build the City's portion of Washington Fields Road and the East-West connector road at their expense and provide 60,000 cubic yards of fill dirt for the City's use if there is a need for clay removal.

Staff Narrative (need/purpose):

Freeport has proposed an acre for acre land exchange on real property located near the airport. Freeport is willing to also build the City's portion of Washington Fields Road and the East-West connector road at their expense and provide 60,000 cubic yards of fill dirt for the City's use if there is a need for clay removal.

Name of Legal Dept approver: Jami Brackin

Budget Impact: No Impact

Recommendation (Include any conditions):

Recommend approval

ST. GEORGE CITY COUNCIL MINUTES
REGULAR MEETING
MARCH 21, 2024, 5:00 P.M.
CITY COUNCIL CHAMBERS

PRESENT:
Mayor Pro Tem Jimmie Hughes
Councilmember Natalie Larsen
Councilmember Michelle Tanner
Councilmember Steve Kemp

EXCUSED:
Mayor Michele Randall
Councilmember Dannielle Larkin

STAFF MEMBERS PRESENT:
City Manager John Willis
City Attorney Shawn Guzman
City Recorder Christina Fernandez
Police Chief Kyle Whitehead
Emergency Medical Dispatcher Julie Packer
Dispatch Shift Supervisor Michael Higley
Special Events Coordinator Sarah Reber
Assistant City Attorney Ryan Dooley
Economic Development Director Chad Thomas
Water Services Director Scott Taylor
Community Development Director Carol Winner
Planner Dan Boles

OTHERS PRESENT:
Several Members of the Daughters of the American Revolution
Several Vietnam Veterans

CALL TO ORDER, INVOCATION AND FLAG SALUTE:
Mayor Pro Tem Hughes called the meeting to order and welcomed all in attendance. The invocation was offered by Tim Martin with the Church of Jesus Christ and Latter-day Saints and The Pledge of Allegiance to the Flag was led by Councilmember Tanner.

Link to call to order, invocation, and flag salute: 00:00:11

MAYOR'S RECOGNITIONS AND UPDATES:
Read a Proclamation proclaiming March 29th as Welcome Home Vietnam Veterans Day.

Link to Councilmember Larsen reading a proclamation proclaiming March 29th as Welcome Home Vietnam Veterans Day; the proclamation was accepted by Nancy Tafoya, along with several Vietnam Veterans and members of the Daughters of the American Revolution, including comments from Mayor Pro Tem Hughes: 00:03:17

Agenda Packet [Page 9]

DRAFT

Recognize Emergency Medical Dispatcher Julie Packer and Dispatch Shift Supervisor Michael Higley.

Link to Police Chief Kyle Whitehead recognizing Emergency Medical Dispatcher Julie Packer and Dispatch Shift Supervisor Michael Higley for their life-saving efforts at a recent event, including comments from Councilmember Kemp: 00:09:17

Agenda Packet [Page 10]

Link to Parks Planners Paul Stead and Mark Goble presenting an award the City was given for the American Public Works Association 2023 Project of the Year for the Little Valley Park Turf Replacement Project, including comments from Councilmember Larsen: 00:14:10

CONSENT CALENDAR:

a. Consider approval to award bid to Northstar Recreation Company for the slide refurbish at the City Pool.

BACKGROUND and RECOMMENDATION: This project was previously awarded to another vendor out of Texas, but the contract had to be terminated due the vendor not securing a contractor's license in Utah. Accordingly, the project was re-bid and Northstar Recreation Co was selected. The hydrotube at the City Pool has to be refurbished periodically; the slide was last refurbished in 2013. Staff recommends awarding the bid to Northstar Recreation Co in the amount of $174,890.51.

b. Consider approval to award bid to Interstate Rock Products for the Brigham Road at Bloomington Drive Traffic Signal Project.

BACKGROUND and RECOMMENDATION: This project was a formal bid and two bids were received. Staff recommends awarding the bid to Interstate Rock Products in the amount of $328,971.

c. Consider approval to award bid to Interstate Rock Products for the Sun River Parkway at Pioneer Road Traffic Signal Project.

BACKGROUND and RECOMMENDATION: This project was a formal bid and two bids were received. Staff recommends awarding the bid to Interstate Rock Products in the amount of $298,792.77.

d. Consider approval to award bid to Inliner Solutions for the 2024 Sewer Relining Project.

BACKGROUND and RECOMMENDATION: This is an annual construction project to rehabilitate aging sewer mains throughout the city. The project went through the bid process; 2 bids were received ranging from a low bid of $765,042 to a high bid of $1,098,998. The project include installing 8,630 lineal feet of pipe liners from 8" through 21" in existing mains. Staff recommends awarding the bid to Inliner Solutions in the amount of $765,042.

DRAFT

e. Consider approval of a Reimbursement Agreement with the Washington County Flood Control Authority for the purchase of property to restore the Ft. Pierce Wash at Quarry Ridge Drive.

BACKGROUND and RECOMMENDATION: This project will improve river flow during floods, along the Ft. Pierce Wash in the vicinity of Meadow Valley Farms and Meadows Edge subdivisions and Quarry Ridge Drive. Staff recommends approval of the agreement.

f. Consider approval of a Reimbursement Agreement with Quality Development for a 12" Desert Canyon Southern Parkway Extension.

BACKGROUND and RECOMMENDATION: Quality Excavation is currently constructing Desert Terrace Subdivision that includes irrigation lines from the Master Plan. This agreement has Quality install the lines prior to the roadways being constructed to save future construction costs. Staff recommends approval of the agreement.

g. Consider approval of a Real Property Donation Agreement between City of St. George and Fort Pearce, LLC.

BACKGROUND and RECOMMENDATION: This is a landlocked .46 acre parcel that has no direct access to an adjacent roadway and the current owners (Fort Pearce, LLC) would like to transfer ownership. Because the Middleton Wash Trail runs through the parcel, the owners would like to donate the property to the City. The property to the east of this parcel is open space that was dedicated to the City as part of the Knetta's Knoll Subdivision Final Plat so this donation will add to the existing open space. Staff recommends approval of the agreement.

h. Consider approval of a Professional Services Agreement with FIF St. George, LLC for the design and installation of ITS services.

BACKGROUND and RECOMMENDATION: The purpose of this project is to provide dark fiber connectivity to five traffic signal locations for an Advanced Traffic Management System (ATMS). Staff recommends approval of the agreement.

i. Consider approval of a Beer Garden at the Selkirk Red Rock Open on April 24-28, 2024 at the Little Valley Pickleball Complex.

BACKGROUND and RECOMMENDATION: This event is organized by the Professional Pickleball Association and has become an annual event held at the Little Valley Pickleball Facility. The event takes place on Tuesday and championship concludes on Sunday. This year the organizers would like to have a fenced-in beer garden near the entrance of the pickleball courts. Staff has no objection as long as the applicant has the correct insurance coverage for alcohol, IDs are checked, and organizer's staff is making sure there is no alcohol being passed through the fence.

DRAFT

j. Consider approval of the minutes from the meeting held on March 7, 2024.

Link to presentation from City Manager John Willis: 00:16:40

Agenda Packet [Page 12]

Link to motion: 00:17:07

MOTION:
A motion was made by Councilmember Larsen to approve the consent calendar, except for item i.
SECOND:
The motion was seconded by Councilmember Kemp.
VOTE:
Mayor Pro Tem Hughes called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

Link to discussion between the City Council, Special Events Coordinator Sarah Reber, City Attorney Shawn Guzman, and Assistant City Attorney Ryan Dooley regarding item i: 00:17:50

Link to motion: 00:22:40

MOTION:
A motion was made by Councilmember Kemp to continue item 2i until the end of the meeting to give staff the opportunity to research state code.
SECOND:
The motion was seconded by Councilmember Larsen.
VOTE:
Mayor Pro Tem Hughes called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

PUBLIC INFRASTRUCTURE POLICY/RESOLUTION:
Consider approval of Resolution No. 2024-008R adopting a Public Infrastructure Policy.

DRAFT

BACKGROUND and RECOMMENDATION: With the rise in development costs, staff has fielded an increase in inquiries regarding PIDs. To ensure the city's interests are protected, Staff recommends that policy be created around PIDs. Staff brought a draft PID policy document to the City Council in a work session on February 08, 2024. The Council was favorable with having a PID policy and provided comments to help strengthen the policy. The agenda item tonight addresses those comments from the Council in the meeting. Staff recommends approval.

Link to introduction from City Manager John Willis and presentation from Economic Development Director Chad Thomas, including discussion between the City Council, City Manager John Willis, and Mr. Thomas: 00:23:02

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Link to motion: 00:42:45

MOTION:
A motion was made by Councilmember Larsen to approve Resolution No. 2024-008R adopting a Public Infrastructure Policy.

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 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. 2024-016 amending portions of Title 10 of the City code related to Landscape Standards and Golf Course - Specific Standards. (Case No. 2024-ZRA-004)

BACKGROUND and RECOMMENDATION: Since 2021, Washington County Water conservancy District along with the surrounding communities, including St. George, have been discussing what can be done to conserve water in Washington County. This led to the approval of the water conservation amendments to Title 8 and 10 in the summer of 2022. These amendments were drafted to be in compliance with a model ordinance presented by the Washington County Water conservancy District. Since the approval of the amendments, city staff has recognized the need to update our code to make some additional changes to aid in the water conservation efforts. The proposed amendment addresses water conservation as it relates to landscaping and golf courses. A public hearing was held at the Planning Commission meeting held on February 13, 2024. This item was heard and continued at the City Council meeting held on March 7, 2024.

DRAFT

Link to introduction from City Manager John Willis and presentation from Water Services Director Scott Taylor and Community Development Director Carol Winner, including discussion between Mayor Pro Tem Hughes, the City Council, and Mr. Taylor: 00:43:32

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Link to motion: 00:51:04

MOTION:
A motion was made by Councilmember Kemp to approve Ordinance No. 2024-016 amending portions of Title 10 of the City code related to Landscape Standards and Golf Course - Specific Standards.

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 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. 2024-018 amending the City General Plan Future Land Use Map from: 1) MDR (Medium Density Residential) to Commercial on 6.56 acres; 2) LDR (Low Density Residential) to Commercial on 1.22 acres; 3) LDR (Low Density Residential) to MDR (Medium Density Residential) on 4.09 acres; 4) PK (Park) to LDR (Low Density Residential) on 4.19 acres; and 5) LDR (Low Density Residential) to PK (Park) on 3.34 acres located on the northwest corner of 2450 South and 3000 East. (Case No. 2024-GPA-004 – Old Farm)

BACKGROUND and RECOMMENDATION: At their meeting held on February 27, 2024, the Planning Commission held a public hearing, received considerable input on the proposal, and recommended approval of the changes with a 5-0 vote.

Link to introduction from City Manager John Willis and presentation from Planner Dan Boles, including discussion between the City Council, Assistant Public Works Director Wes Jenkins, City Manager John Willis, Mayor Pro Tem Hughes, and Mr. Boles: 00:52:05

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Link to motion: 01:08:10

DRAFT

MOTION:

A motion was made by Councilmember Kemp to approve Ordinance No. 2024-018 amending the City General Plan Future Land Use Map from: 1) MDR (Medium Density Residential) to Commercial on 6.56 acres; 2) LDR (Low Density Residential) to Commercial on 1.22 acres; 3) LDR (Low Density Residential) to MDR (Medium Density Residential) on 4.09 acres; 4) PK (Park) to LDR (Low Density Residential) on 4.19 acres; and 5) LDR (Low Density Residential) to PK (Park) on 3.34 acres located on the northwest corner of 2450 South and 3000 East.

SECOND:

The motion was seconded by Councilmember Larsen.

Link to further discussion between the City Council and City Manager John Willis: 01:09:02

Link to vote: 01:09:46

VOTE:

Mayor Pro Tem Hughes called for a roll call vote, as follows:

Councilmember Hughes – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

ITEM 2i FROM CONSENT CALENDAR:

i. Consider approval of a Beer Garden at the Selkirk Red Rock Open on April 24-28, 2024 at the Little Valley Pickleball Complex.

Link to further discussion between City Attorney Shawn Guzman, the City Council, and Police Chief Kyle Whitehead regarding item i from the consent calendar; clarifications are as follows: 1) §32B-9-201(5), Utah Code Annotated states the proximity requirements do not apply for single events and if approved by the Council, the commission can consider the proximity of an educational, religious, or recreational facility, or any other relevant factor when deciding to issue a permit; and 2) the condition the one officer be present during all hours of the event and a second officer be present during the hours staff deems necessary: 01:10:03

Link to motion: 01:13:48

MOTION:

A motion was made by Councilmember Kemp to approve item 2i, with the clarifications of the City Attorney and Police Chief added to the record and part of the motion.

SECOND:

The motion was seconded by Councilmember Tanner.

DRAFT

VOTE:

Mayor Pro Tem Hughes called for a vote, as follows:

Councilmember Hughes – 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:

ADJOURN TO A CLOSED MEETING:

Request a closed session 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: 01:15:07

MOTION:

A motion was made by Councilmember Tanner to adjourn to a closed meeting to discuss litigation and property acquisition.

SECOND:

The motion was seconded by Councilmember Larsen.

VOTE:

Mayor Pro Tem Hughes called for a vote, as follows:

Councilmember Hughes – aye
Councilmember Larsen – aye
Councilmember Tanner – aye
Councilmember Kemp – aye

The vote was unanimous and the motion carried.

ADJOURN:

The meeting adjourned following the closed meeting.

_____
Christina Fernandez, City Recorder

DRAFT

Agenda Date: 04/04/2024 **Agenda Item Number:** 05

Subject:

Consider approval of Ordinance No. 2024-019 amending 10-13-C of the St. George City Code pertaining to Development and the Flood and Erosion Hazard Overlay Zone.

Item at-a-glance:

Staff Contact: Jay Sandberg

Applicant Name: City of St. George

Reference Number: N/A

Address/Location:

N/A

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

To be eligible for federal disaster assistance St. George participates in the National Flood Insurance Program and is required to enact regulations to minimize flood losses. The original ordinance was adopted in 1987 with minor revisions since then to enact some erosion hazard regulations. This revision brings the ordinance up-to-date in compliance with current Federal and State requirements.

Staff Narrative (need/purpose):

As part of a "Community Assistance Visit" (Audit) by the Federal Emergency Management Agency, it was determined that our current floodplain ordinance verbiage and requirements were not entirely in agreement with the current FEMA minimum requirements. Also, the city participates in the National Flood Insurance Program Community Rating System. The current ordinance does not meet their minimum standards. After this ordinance is updated St. George City's rating will go from an 8 to a 6 which will lower insurance rates for flood insurance. The only significant change from this ordinance is a requirement that non-residential structures be elevated 2' above the floodplain. The current ordinance requires 1' above the floodplain. Residential structures have always been required to be 2' and this requirement does not change.

Name of Legal Dept approver: Daniel Baldwin

Budget Impact: No Impact

Recommendation (Include any conditions):

At their meeting held on March 26, 2024, the Planning Commission recommended approval.

ARTICLE C. DEVELOPMENT IN FLOOD AND EROSION HAZARD OVERLAY ZONE (FLOODPLAIN ORDINANCE)

10-13C-1: STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND METHODS
10-13C-2: DEFINITIONS
10-13C-3: GENERAL PROVISIONS
10-13C-4: ADMINISTRATION
10-13C-5: PROVISIONS FOR FLOOD HAZARD REDUCTION
10-13C-6: BUILDING PERMIT REQUIREMENTS
10-13C-7: STANDARDS FOR AREAS OF SHALLOW FLOODING
10-13C-8: DRAINAGE ENCROACHMENT
10-13C-9: FLOODWAYS
10-13C-10: ENFORCEMENT

10-13C-1:
STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND METHODS

A. *Statutory Authorization:* The Legislature of the State of Utah has delegated to local governmental units the responsibility to adopt regulations designed to minimize flood losses. See Utah Code Annotated 10-3-701. Therefore, the city of St. George (City) does ordain as follows:
The City elects to comply with the requirements of the National Flood Insurance Act of 1968 (P.L. 90-488, as amended). The National Flood Insurance Program (NFIP) is a voluntary program administered by the Federal Emergency Management Agency (FEMA) The National Flood Insurance Program, established in the aforesaid act, provides that areas of the city having a special flood hazard be identified by the Federal Emergency Management Agency and that floodplain management measures be applied in such flood hazard areas. The National Flood Insurance Reform Act of 1994. The National Flood Insurance Program is administered by the Federal Emergency Management Agency, a component of the U.S. Department of Homeland Security.

B. *Findings of Fact:* The flood hazard areas of the City are subject to periodic inundation by flood waters, which results in possible loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief, all of which adversely affect the public health, safety, and general welfare.

These potential flood losses are caused by:

1. The cumulative effect of obstructions in floodplains that are known to cause increases in flood heights and velocities.
2. The occupancy of flood hazard areas by structures vulnerable to floods because they are inadequately elevated, or otherwise unprotected from flood damages; and
3. Uses deemed unsuitable for floodplain areas or that do not account for the increased flood risk.

C. *Statement of Purpose*: It is the purpose of this chapter to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

1. Protect human life and health.
2. Minimize damage to public infrastructure, including but not limited to utilities, streets, and bridges that are susceptible to flooding.
3. Minimize prolonged business interruptions caused by flooding.
4. Minimize public expenditures on flood control projects.
5. Minimize the need for rescue and relief efforts associated with flooding that are generally undertaken at the expense of the general public.
6. Protect and safeguard the welfare and safety of first responders should an emergency response be needed.
7. Help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future blight areas; and
8. Promote that potential buyers are notified if properties are in a flood area.

D. *Methods of reducing flood losses:* To accomplish the purposes outlined in Title 10, Chapter13 Article C, Section 1.C statement of purpose, this chapter applies the following methods:

1. Restricts or prohibits land uses that are dangerous to health, safety, or property in times of flooding, or cause excessive increase in flood heights or velocities.

2. Require that land uses vulnerable to floods, including facilities which serve such uses, be protected, against flood damage at the time of initial construction.
3. Controls the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of flood waters.
4. Control filling, grading, dredging and other development that may increase flood damage; and
5. Prevents or regulates the construction of flood barriers that will unnaturally divert flood waters or may increase flood hazards to other lands.

10-13C-2: DEFINITIONS

Unless specifically defined below, words or phrases used in this chapter shall be interpreted to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

For the purpose of this chapter, the definitions in section 10-2-1 shall apply in this chapter as well as the following definitions:

100-YEAR FLOOD means a flood having a recurrence interval that has a 1-percent chance of being equaled or exceeded during any given year (1-percent-annual-chance flood). The terms "100- hundred-year flood" and "1-percent-annual-chance flood" are synonymous. The term does not imply that the flood will necessarily happen once every 100 hundred years. Mandatory flood insurance requirements may apply.

100-YEAR FLOODPLAIN means the area of land susceptible to being inundated due to the occurrence of a 1-percent-annual-chance flood. The term does not imply that the flood will necessarily happen once every 100 years.

500-YEAR FLOODPLAIN means the area of land susceptible to being inundated due to the occurrence of a 0.2-percent-annual-chance flood. The term does not imply that the flood will necessarily happen once every 500 years and mandatory flood insurance requirement generally does not apply.

ACCESSORY STRUCTURE is a structure that is on the same parcel of property as a principal structure. Its use is incidental to the use of the principal structure; the ownership of the accessory structure is the same owner as of the principal structure. An accessory structure is a non-residential structure. No human habitation is allowed within an accessory structure.

ADDITION is any improvement that expands the enclosed footprint or increases the square footage of an existing structure. This includes lateral additions added to the side, front, or rear of a structure; vertical additions added on top of a structure; and enclosures added underneath a structure.

ALLUVIAL FAN FLOODING means flooding occurring on the surface of an alluvial fan or similar landform that originates at the apex. It is characterized by high-velocity flows; active processes or erosion, sediment transport, and deposition; and unpredictable flow paths.

APPURTENANT STRUCTURE—see Accessory Structure.

AREA OF SHALLOW FLOODING means a designated AO, AH, AR/AO, or AR/AH zone on the City's Flood Insurance Rate Map (FIRM) with a 1 percent or greater annual chance of flooding to an average depth of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

AREA OF FUTURE-CONDITIONS FLOOD HAZARD means the land area that would be inundated by the 1-percent -annual-chance (100-year) flood, based on future-conditions hydrology.

AREA OF SPECIAL FLOOD-RELATED EROSION HAZARD is the land within the City that is most likely to be subject to severe flood-related erosion losses. The area may be designated as Zone E on the Flood Hazard Boundary Map (FHBM). After the detailed evaluation of the special flood-related erosion hazard area, in preparation for publication of the FIRM, Zone E may be further refined.

AREA OF SPECIAL FLOOD HAZARD is the land within the flood plain within a community subject to a 1 percent or greater chance of flooding in any given year. The area may be designated as Zone A on the FHBM. After detailed ratemaking has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zone A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A or V1-30, VE or V. For the purposes of these regulations, the term "special flood hazard area" is synonymous in meaning with the phrase "area of special flood hazard".

BASE FLOOD means the flood having a 1-percent chance of being equaled or exceeded in any given year.

BASE FLOOD ELEVATION (BFE) is the water surface elevation of the 1-percent-annual-chance flood event. It is the height in relation to mean sea level expected to be reached by the waters of the base flood at pertinent points in the floodplains of coastal and riverine areas. It is also the elevation shown on the FIRM and found in the accompanying Flood Insurance Study (FIS) for Zones A, AE, AH, A1-A30, AR, V1-V30, or VE that indicates the water

surface elevation resulting from the flood that has a 1-percent chance of equaling or exceeding that level in any given year.

BASE LEVEL ENGINEERING (BLE) generates watershed-wide flood hazard information built from foundation level hydrologic and hydraulic engineering models – providing floodplain boundaries, flood depth and water surface elevation grids in areas not included in the FIRM data coverage.

BASEMENT means any area of the building having its floor subgrade (below ground level) on all sides. A walkout basement that does not require a step up to grade is not considered a basement.

BEST AVAILABLE DATA is existing flood hazard information adopted by a community and reflected on an effective FIRM, FBFM, and/or within an FIS report; or draft or preliminary flood hazard information supplied by FEMA or from another source. Other sources may include, but are not limited to, the state, other federal agencies, or local studies, the more restrictive of which would be reasonably used by the city.

BREAKAWAY WALL means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

BUILDING—see Structure.

CHANNELIZATION means the artificial creation, enlargement, realignment, or alteration of a stream channel's slope, shape, or alignment. Streambank restoration may be deemed as channelization.

CODE OF FEDERAL REGULATIONS (CFR) is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.

CONDITIONAL LETTER OF MAP REVISION (CLOMR) is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic and/or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, and/or the SFHA. The letter does not revise an effective map; it indicates whether the project, if built as proposed, would be recognized by FEMA.

CONDITIONAL LETTER OF MAP REVISION BASED ON FILL (CLOMR-F) is FEMA's comment on a proposed structure of property. The letter does not revise an effective map; it indicates whether the project, if built as proposed, would be removed from the floodplain.

CRAWLSPACE means an under-floor space that has its interior floor area (finished or not) no more than 4 feet from the bottom floor joist the next higher floor elevation, designed with proper openings that equalize hydrostatic pressures of flood water, and is not used for habitation. Reference: Article C, Section 5.B.4 CRAWLSPACE

CRITICAL FEATURE – means a facility or building where even a slight chance of flooding is too great a threat. Typical critical facilities include hospitals, fire stations, police stations, schools, storage or critical records, assisted living and similar facilities.

DEED RESTRICTION refers to a clause in a deed that limits the future use of the property in some respect. Deed restrictions may impose a vast variety of limitations and conditions. For example, they may limit the density of buildings, dictate the types of structures that can be erected, or prevent buildings from being used for specific purposes or from being used at all.

DETACHED GARAGE is a building that is used solely for storage of materials or vehicle parking for up to four housing occupants. If a detached garage is designed or used for habitation or conducting business, or has multiple stories, then the building is not considered a detached garage under the NFIP.

DEVELOPMENT means any human-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, demolition, excavation or drilling operations, or storage either temporary or permanent of equipment or materials.

ELEVATED BUILDING is a non-basement building built, in the case of a building in Zone A1-30, AE, A, A99, AR, AO, AH, B, C, X and D, to have the top of the elevated floor above the ground level by means of pilings, columns (post and piers), or shear walls parallel to the flow of the water and adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. In the case of a building in Zone A1-30, AE, A, A99, AR, AO, AH, B, C, X and D, an “elevated building” also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of flood waters.

ENCLOSURE refers to an enclosed walled-in area below the lowest floor of an elevated building. Enclosures below the BFE may only be used for building access, vehicle parking and storage.

EROSION means the process of the gradual wearing away of land masses by wind, water, or other natural agents.

EROSION HAZARD OVERLAY ZONE means an area identified by a scientific and engineering report entitled “River Stability Study” for the city of St. George, Utah, dated January, 1997, with an accompanying stability study boundary map, is hereby adopted as an overlay zone

by reference and declared to be a part of this chapter, and any amendments, alterations or additions to said study shall immediately and automatically be adopted by reference and, in their amended form, become a part of this chapter. The study and overlay map may be revised from time to time, shall be kept on file at the city office, 175 East 200 North, St. George, Utah.

EXISTING CONSTRUCTION refers to structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date. It may also be referred to as Existing Structures.

EXISTING MANUFACTURED HOME PARK OR SUBDIVISION means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.

EXPANSION TO AN EXISTING MANUFACTURED HOME PARK OR SUBDIVISION means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufacturing homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

FEMA means the Federal Emergency Management Agency.

FHBM means Flood Hazard Boundary Map.

FILL refers to the placement of materials, such as dirt, sand, or rock to elevate a structure, property, or portion of a property above the natural elevation of the site, regardless of where the material was obtained from. The common practice of removing unsuitable material and replacing it with engineered material is not considered fill if the elevations are returned to the existing conditions. Any fill placed or used prior to the area being mapped or remapped as a flood hazard area is not deemed as fill.

FLOOD OR FLOODING means:

1. A general and temporary condition of partial or complete inundation of normally dry land areas from:
   a. The overflow of inland or tidal waters.
   b. The unusual and rapid accumulation or runoff of surface waters from any source.
2. Mudslides (i.e., mudflows) that are proximately caused by flooding as a defined in this chapter and are akin to a river of liquid and flossing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water deposited along the path of the current.

3. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in this chapter.

FLOOD INSURANCE RATE MAP (FIRM) means an official map of a community, on which the Administrator has delineated both the SFHAs and the risk premium zones applicable to the City.

FLOOD INSURANCE STUDY (FIS) OR FLOOD ELEVATION STUDY means an examination, evaluation, and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

FLOODPLAIN DEVELOPMENT PERMIT is the City issued permit or document that is used for any development that occurs within an SFHA identified by FEMA or the City. It is used to address the proposed development to ensure compliance with this chapter.

FLOODPLAIN or ***FLOOD-PRONE AREA*** means any land area susceptible to being inundated by water from any source whether or not identified by FEMA (see definition of Flooding).

FLOODPLAIN MANAGEMENT means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works, mitigation plans, and floodplain management regulations.

FLOODPLAIN MANAGEMENT REGULATIONS means zoning and subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for flood damage prevention and reduction.

FLOOD OPENING refers to an opening in the wall of an enclosed structure that allows floodwaters to automatically enter and exit the enclosure. Refer to FEMA Technical Bulletin 1.

FLOOD PROTECTION SYSTEM means those physical structural works for which funds have been authorized, appropriated, and expended and which have been constructed specifically to modify flooding, in order to reduce the extent of the area within the City subject to an SFHA and to reduce the depths of associated flooding. Such a system typically

includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized, flood modifying works are those constructed in conformance with sound engineering standards. FEMA only accredits levees, both private and public, that have been certified by a professional engineer or firm in which the certification shows that the levee has met and continue to meet the minimum regulatory standards cited in Title 44, Chapter 1, Section 65.10 of the Code of Federal Regulations (44 CFR 65.10).

FLOODPROOFING means any combination of structural and non-structural additions, changes, or adjustments to structures that reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents. Floodproofing can either be accomplished in the form of dry floodproofing in which the structure is watertight below the 8 levels that need flood protection, or wet floodproofing in permanent or contingent measures applied to a structure that prevent or provide resistance to damage from flooding, while allowing floodwaters to enter the structure or area.

FLOODWAY— (Regulatory Floodway) - means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

FLOODWAY ENCROACHMENT LINES means the lines marking the limits of floodways on federal, state and local flood plain maps.

FREEBOARD means a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. “Freeboard” tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

FUNCTIONALLY DEPENDENT USE means a development that cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and repair facilities. It does not include long-term storage or related manufacturing facilities.

HIGHEST ADJACENT GRADE (HAG) means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure. In AO Zones, the highest adjacent grade is utilized by comparing the lowest floor elevation to that of the highest adjacent grade and the depth of the AO Zone. Standards for Areas of Shallow Flooding (AO/AH Zones).

HISTORIC STRUCTURE means any structure that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register.
2. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district.
3. Individually listed on a state inventory of historic places in states with historic reservation programs that have been approved by the Secretary of the Interior or
4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:

    a. By an approved state program as determined by the Secretary of the Interior, or

    b. Directly by the Secretary of the Interior in states without approved programs

LETTER OF MAP AMENDMENT (LOMA) means an official amendment, by letter, to an effective FIRM. A LOMA establishes a property's location in relation to the SFHA. It is usually issued because a property or structure has been inadvertently mapped as being in the floodplain, when the property or structure is actually on natural high ground above the BFE.

LETTER OF MAP REVISION (LOMR) means FEMA's modification or revision to an entire or portion of the effective FIRM, or Flood Boundary and Floodway Map, or both. LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, or the SFHA.

LETTER OF MAP REVISION BASED ON FILL (LOMR-F) means FEMA's amendment, by letter, to an effective FIRM where fill was brought in or used to elevate a property, portion of property or structure above the BFE.

LEVEE means a man-made structure usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

LEVEE SYSTEM means a flood protection system that consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

LOWEST ADJACENT GRADE (LAG) means the lowest natural elevation of the ground surface prior to construction next to the proposed walls of a structure. For an existing structure, it means the lowest point where the structure and ground touch, including but not limited to attached garages, decks, stairs, and basement windows.

LOWEST FLOOR means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Section 60.3.

MANUFACTURED HOME means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term “manufactured home” does not include a “recreational vehicle”; however, a manufactured home may be used for both residential and non-residential use.

MANUFACTURED HOME PARK OR SUBDIVISION means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

MAP means the FHBM or the FIRM for the City issued by FEMA.

MEAN SEA LEVEL means, for purposes of the NFIP, the National Geodetic Vertical Datum (NGVD) of 1929, North American Vertical Datum (NAVD) of 1988, or other datum, to which BFEs shown on the unincorporated community FIRM are referenced.

MIXED USE STRUCTURES are structures with both a business and a residential component.

NEW CONSTRUCTION means structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures. For the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures.

NEW MANUFACTURED HOME PARK OR SUBDIVISION means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of floodplain management regulations adopted by a community.

NO-RISE CERTIFICATIONS are formal certifications signed and stamped by a professional engineer licensed to practice in the state, demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that a proposed development will not result in any increase in flood levels within the community during the occurrence of a base flood event.

PHYSICAL MAP REVISION (PMR) is FEMA's action whereby one or more map panels are physically revised and republished.

RECREATIONAL VEHICLE means a vehicle which is: (a) Built on a single chassis; (b) 400 square feet or less when measured at the largest horizontal projection; (c) Designed to be self-propelled or permanently towable by a light duty truck; and (d) Designed primarily, not for use as a permanent dwelling but, as temporary living quarters for recreational, camping, travel, or seasonal use.

REGULATORY FLOODWAY means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

RIVERINE means relating to, formed by, or resembling a river (including tributaries), stream, brook, creek, etcetera, which can be intermittent or perennial.

SECTION 1316 refers to the section of the National Flood Insurance Act of 1968, as amended, which provides for the denial of flood insurance coverage for any property that the Administrator finds has been declared by a duly constituted State or local authority to be in violation of State or local floodplain management regulations. Section 1316 is issued for a property, not a property owner, and remains with the property even after a change of ownership.

SPECIAL FLOOD HAZARD AREA (SFHA) see ***AREA OF SPECIAL FLOOD HAZARD***

START OF CONSTRUCTION (for other than new construction or substantial improvements under the Coastal Barrier Resources Act (Pub. L . 97-348)) includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as cleaning, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

STRUCTURE means, for floodplain management purposes, a walled and roofed building, culvert, bridge, dam, or a gas or liquid storage tank that is principally above ground, as well as a manufactured home.

STRUCTURE, for insurance purposes, means: (1) A building with two or more outside rigid walls and a fully secured roof, which is affixed to a permanent site; (2) A manufactured home; or (3) A travel trailer without wheels built on a chassis and affixed to a permanent foundation, that is regulated under the City's floodplain management and building ordinances or laws. For purposes of this section, “structure” does not mean a recreational vehicle or a park trailer or other similar vehicle, except as described in paragraph (3) of this definition, or a gas or liquid storage tank.

SUBSTANTIAL DAMAGE means damage of any origin sustained by a structure whereby the cost of restoring the structure to its pre-damaged condition would equal or exceed fifty percent of the market value of the structure only before the damage occurred.

SUBSTANTIAL IMPROVEMENT means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty percent of the market value of the structure before the “start of construction” of the improvement. This term includes structures which have incurred “substantial damage”, regardless of the actual repair work performed. The term does not, however, include: 1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code enforcement official and are the minimum necessary to assure safe living conditions; or 2. Any alteration of a “historic structure”, of the alteration will not preclude the structure’s continued designation as a “historic structure.”

VARIANCE for the purposes of this sections means a grant of relief by the City from the terms of a floodplain management regulation.

VIOLATION means the failure of a structure or other development to be fully compliant with the City's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Sections 44 CFR 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) is presumed to be in violation until such time as that documentation is provided.

WATER SURFACE ELEVATION means the height, in relation to the North American Vertical Datum (NAVD) of 1988, (or other datum, where specified) of floods of various magnitudes and frequencies, such as the 1-percent-annual-chance flood event, in the floodplains of coastal or riverine areas.

WATERCOURSE means the channel and banks of an identifiable water in a creek, brook, stream, river, ditch or other similar feature.

10-13C-3:
GENERAL PROVISIONS

A. *Lands to which this ordinance applies*: The ordinance shall apply to all areas of special flood hazard identified by FEMA, and areas of erosion hazard identified by studies commissioned by the City.

B. *Basis for establishing the areas of special flood and erosion hazard*: The areas of special flood hazard identified by the Federal Emergency Management Agency (FEMA) in a scientific and engineering report entitled "the flood insurance study" (FIS) for the city of St. George, Utah dated August 18, 1987, and updated April 2, 2009, with the accompanying flood insurance rate map are effective April 2, 2009 Flood Insurance Rate Maps and Flood Boundary-Floodway Maps (FIRM and FBFM) or Digital Flood Insurance Rate Maps (DFIRM), and other supporting data, are hereby adopted as an overlay zone by reference and declared to be a part of this chapter, and any amendments, alterations or additions to said study or the FIRM hereafter at any time made by FEMA shall immediately and automatically be adopted by reference and, in their amended form, become a part of this chapter. The study and FIRM, as either or both may be revised from time to time, shall be kept on file at the city office, 175 East 200 North, St. George, Utah. (Ord. 2019-10-002, 10-10-2019)
* ***EROSION HAZARD OVERLAY ZONE*** means an area identified by a scientific and engineering report entitled "River Stability Study" for the city of St. George, Utah, dated August 19, 1987, with an accompanying stability study boundary map, is hereby adopted as an overlay zone by reference and declared to be a part of this chapter, and any amendments, alterations or additions to said study shall immediately and automatically be adopted by reference and, in their amended form, become a part of this chapter. The study and overlay map may be revised from time to time, shall be kept on file at the city office, 175 East 200 North, St. George, Utah.

1. Use of Best Available Data. Where Base Level Engineering is available Base Level Engineering data shall be reviewed and reasonably used in FEMA-identified Special Flood Hazard Areas. Where base flood elevation and floodway data have not been identified and in areas where FEMA has not identified Special Flood Hazard Areas, the use of Best Available Data may be used when approved by the floodplain administrator. In areas where Base Level Engineering data is determined to be inaccurate, a FEMA map revision or amendment is required.
    ii. Base flood elevations, floodway, and floodplain boundaries delineated by Base Level Engineering shall take precedence over base flood elevations, floodway and floodplain boundaries delineated by effective FIRMs and in Flood Insurance Studies (FIS) if the Base Level

Engineering shows increased floodplain or floodway boundaries and/or higher base flood elevations.

iii. Base flood elevations and designated floodway boundaries on effective FIRMs and in Flood Insurance Studies (FIS) shall take precedence over base flood elevation and floodway boundaries delineated by Base Level Engineering if the FIRMs and/or Flood Insurance Studies show reduced floodway width and/or lower base flood elevations.

C. *Establishment of Floodplain Development Permit*: A Floodplain Development Permit shall be required to ensure conformance with the provisions of this ordinance.

D. *Abrogation and Greater Restrictions:* This chapter is not intended to repeal, abrogate or impair any existing easement, covenant or deed restriction. However, where this chapter and another ordinance, easement, covenant or deed restriction conflict or overlap, the more stringent restriction shall prevail.

E. *Interpretation:* In the interpretation and application of this ordinance, all provisions shall be:
   1. Considered as minimum requirements.
   2. Liberally construed in favor of the governing body; and
   3. Deemed neither to limit nor repeal any other powers granted under state statues.

F. *Warning and disclaimer of liability*: The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. On rare occasions, greater floods can and will occur and flood heights may be increased by human-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damage. This ordinance shall not create liability on the part of the community or any official or employee thereof for any flood damages that result from reliance on this ordinance, or any administrative decision lawfully made thereunder.

G. *Severability*: If any section, provision, or portion of this chapter is adjudged unconstitutional or invalid by a court, the remainder of this ordinance shall not be affected.

H. *Compliance:* No structures or developments including buildings, recreation vehicles, or manufactured homes or land shall hereafter be located, altered, or have its use changed without full compliance with the terms of this ordinance and other applicable regulations. Nothing herein shall prevent the city from taking such lawful action as is necessary to prevent or remedy any violations.

I. *Stop Work Order:*
   1. Authority. Whenever the floodplain administrator or other designated City official discovers any work or activity regulated by this ordinance being

performed in a manner contrary to the provision of this ordinance, the floodplain administrator is authorized to issue a stop work order.

2. Issuance: The stop work order shall be in writing and shall be given to the owner of the property involved, or to the owner's agent, or the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work will be permitted to resume.
3. Unlawful continuance: Any person who shall continue any work after having been served with a stop work order, except shall work as that person directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by local or state law including but not limited to the penalties outlined in Article III, Section J. PENALTIES FOR NONCOMPLIANCE

J. *Penalties for Noncompliance:* In accordance with Section 59.2(b) of CFR44, Chapter 1, of the NFIP regulation, to qualify for the sale of federally subsidized flood insurance, a community must adopt floodplain management regulations that meet or exceed the minimum standards of Section 60. "These regulations must include effective enforcement provisions." In accordance with Section 60.1(b) of CFR 44, Chapter 1 of the NFIP regulations, "These regulations must be legally enforceable, applied uniformly throughout the community to all privately and publicly owned land within flood-prone (i.e. mudflow) or flood-related erosion areas, and the community must provide that the regulations take precedence over less restrictive conflicting local laws, ordinances, or codes." No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this ordinance and other applicable regulations. Violation of the provisions of this ordinance by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Any person who violates this ordinance or fails to comply with any of its requirements shall upon conviction thereof be fined not more than $1,000 or imprisoned for not more than 60 days, or both, for each violation assessed daily, and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the City from taking such other lawful action as is necessary to prevent or remedy any violation.

10-13C-4: ADMINISTRATION

A. *Floodplain administrator*: The city floodplain administrator shall be responsible to implement the provisions of this chapter and other appropriate sections of 44 CFR (National Flood Insurance Program Regulations) pertaining to floodplain management.

B. *Duties and responsibilities of the floodplain administrator*: Shall include, but not be limited to, the following:
   1. Uphold the goals of the community and the NFIP to reduce risk when possible and increase the city's resistance to future disasters.
   2. Maintain and hold open for public inspection all records, in perpetuity, pertaining to the provisions of this ordinance, including the actual elevation of the lowest floor (including basement or crawlspace) of all new or substantially improved structures and any floodproofing certificates, including the data supporting such certificates.
   3. Maintain and hold open for public inspection maps that identify and locate the boundaries of the SFHAs to which this ordinance applies, including, but not limited to, the FIRM.
   4. Review development proposals to determine whether proposed building sites, including the sites designed for the placement of manufactured homes, will be reasonably safe from flooding.
   5. Review, approve, or deny all applications for floodplain development permits required by adoption of this ordinance.
   6. Ensure that all necessary permits have been obtained from those federal, state, or local governmental agencies (including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334 and the Endangered Species Act of 1973) from which prior approval is required.
   7. Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained and will not be diminished.
   8. Notify, in riverine situations, adjacent communities and the State Coordinating Agency, which is the Utah Division of Emergency Management, State Floodplain Manager, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
   9. Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), the Floodplain Administrator shall make the necessary interpretation.
   10. When BFE data has not been provided by FEMA, the floodplain administrator shall obtain, review, and reasonably utilize any BFE data and floodway data available from a federal, state, or other source, including data provided by the applicant, in order to administer the provisions of this ordinance.
   11. When a regulatory floodway has not been designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase

the water surface elevation of the base flood more than 1.00 feet at any point within the community.

12. Under the provisions of 44 CFR Chapter 1, Section 65.12, of the NFIP regulations, a community may approve certain development in Zones A1-30, AE and AH on the community's FIRM which increases the water surface elevation of the base flood by more than 1.00 foot, provided that the community first meets the requirements of Section 65.12 for a conditional FIRM revision through FEMA's CLOMR process.
13. If the project is determined or reasonably believed to cause an adverse effect on the boundaries of the floodplain or any insurable structures, technical justification for the proposed development shall be submitted and the City may require a CLOMR or LOMR to be submitted prior to the permit approval or as a requirement of the permit.

C. *Requirement to Submit New Technical Data*
   1. The property owner shall notify FEMA and City by submittal of a LOMR within 6 months of project completion when an applicant had obtained a CLOMR from FEMA or when development altered a watercourse, modified floodplain boundaries, or modified BFE.
   2. The property owner or developer shall be responsible for preparing technical data to support the CLOMR or LOMR application and paying any processing or application fees to FEMA. The property owner or developer is responsible for submitting the CLOMR and LOMR to FEMA and shall provide all necessary data to FEMA if requested during the review process to ensure the CLOMR or LOMR is issued.
   3. The Floodplain Administrator shall be under no obligation to sign the Community Acknowledgement Form, which is part of the CLOMR/LOMR application, until the applicant demonstrates that the project will or has met the requirements of this ordinance all applicable state, federal, and local laws.

D. *Permit Procedure*: Application (online) for a floodplain development permit shall be presented to the floodplain administrator on forms furnished by the city and may include but not be limited to:
   1. Plans drawn to scale showing the nature, location, dimensions, and elevations of proposed landscape alteration.
   2. Plans drawn to scale showing the location, dimensions, and elevation of existing and proposed structures, including the placement of manufactured homes.
   3. Location of the foregoing in relation to SFHAs.
   4. Elevation (in relation to mean sea level) of the lowest floor (including basement and crawlspace) of all new and substantially improved structures if applicable.
   5. Elevation (in relation to mean sea level), to which any nonresidential structure (if applicable) shall be floodproofed.

6. A certificate from a registered professional engineer that structure shall meet the floodproofing criteria of FEMA and this ordinance; and the NFIP regulations.
7. Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development, if applicable.
8. Description shall include details of erosion protection, floodplain cross sections, profiles, and any other relevant information, prepared by a registered professional engineer. At the community's discretion, the community may charge a fee for issuance of floodplain development permits.
9. Copies of all floodplain development permits and the associated documents shall become property of the community and a permanent record.

Approval or denial of a floodplain development permit by the floodplain administrator shall be based on all of the provisions of this ordinance and the following relevant factors:

1. Danger to life and property due to flooding or erosion damage.
2. Susceptibility of the proposed facility and its contents to flood damage.
3. The danger that materials may be swept onto other lands to the injury of others.
4. The compatibility of the proposed use with existing and anticipated development.
5. The safety of access to the property in times of flood for ordinary and emergency vehicles.
6. The costs of providing governmental services at this site during and after flood conditions including, maintenance and repair of streets and bridges, and public utilities and facilities such as sewer, gas, electrical and water systems.
7. The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters expected at the site.
8. The necessity to the facility of a waterfront location, where applicable.
9. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use.
10. The relationship of the proposed use to the comprehensive plan for that area.

E. *Variance Procedure*

Variance procedures for technical decisions made by the authority of this ordinance are outlined in Title 10, Chapter 3, Appeals and Variances, Section 10-3-1-5.

1. Any person or persons aggrieved by the decision of the Appeal Board may appeal such decision in the courts of competent jurisdiction.
2. The Appeal Board, as established by the community, shall hear and render judgement on an appeal only when it is alleged there is an error in any requirement, decision, or determination made by the Floodplain Administrator in the enforcement of administration of this ordinance.

3. The Floodplain Administrator shall maintain a record of all actions involving an appeal and shall report variances to FEMA and the State Coordinating Agency upon issuing a variance.
4. Upon consideration of the factors noted above and the intent of this ordinance, the Appeal Board may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of this ordinance.
5. Variances shall not be issued within any designated floodway if any increase (0.00) in flood levels during the base flood discharge would result.
6. Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure. The term “substantial improvement’ does not include any alteration of a structure or facility listed on the National Register of Historic Places or a State Inventory of Historic Places.

Prerequisites for granting variances:

7. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief. Variances shall only be issued upon:
    a. Showing a good and sufficient cause.
    b. A determination that failure to grant the variance would result in exceptional hardship to the applicant.
    c. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, conflict with existing local laws or ordinances, considers the need of ingress and egress during times of floods, and does not jeopardize first responders’ health and welfare.
8. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with the lowest floor elevation below the BFE, and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
9. Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that:
    a. The criteria outlined in ARTICLE V, SECTION A.3. SUBSTANTIAL IMPROVEMENT are met; and
    b. The structure or other development is protected by methods that minimize flood damage during the base flood and create no additional threats to public safety.

10-13C-5:
PROVISIONS FOR FLOOD HAZARD REDUCTION

A. *General Standards* – In all areas of special flood hazards, the following provisions are required for all new construction and substantial improvements:

1. All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrostatic and hydrodynamic loads, including the effects of buoyancy.
2. All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.
3. All new construction or substantial improvements shall be elevated and anchored to resist flotation, collapse, or lateral movement and be capable of resisting hydrostatic and hydrodynamic loads. Methods of anchoring may include, but are not limited to, the use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces. Specific requirements for resisting wind are:
    a. Over-the-top ties shall be provided at each of the four (4) corners of the manufactured home, with two (2) additional ties per side at intermediate locations; with manufactured homes less than fifty feet (50') long requiring one (1) additional tie per side.
    b. Frame ties shall be provided at each corner of the home with five (5) additional ties per side at intermediate points; with manufactured homes less than fifty feet (50') long requiring four (4) additional ties per side.
    c. All components of the anchoring system shall be capable of carrying a force of four thousand eight hundred (4,800) pounds; and
    d. Any additions to the manufactured home shall be similarly anchored.
4. All new construction and substantial improvements shall be constructed with materials resistant to flood damage.
5. All new construction and substantial improvements shall be constructed with mechanical, electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located two feet (2') above the base flood elevation.
6. All new construction and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

7. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and minimize or eliminate discharge from the systems into flood waters.
8. On-site waste disposal systems shall be located to avoid impairment to them, or contamination from them, during flooding.
9. Protection of mechanical equipment and outside appliances. Mechanical equipment and outside appliances such as but not limited to air conditioners, furnaces, propane tanks, water heating equipment and electrical services boxes shall be designed and/or located two feet (2') above the base flood elevation.

A.1. *Substantial Improvement*

Any combination of repair, reconstruction, rehabilitation, addition, or improvement of a building or structure, if the cumulative cost of the entire project equals or exceeds 50 percent, unless a higher standard option is selected below, of the market value of the structure only (not of the structure and land value combined) before the improvement or repair is started then the work shall be considered as substantial improvement. If the structure has sustained substantial damage, any repairs are considered substantial improvements regardless of the actual repair work performed. For Substantial Damage, refer to **ARTICLE 3, SECTION 5.A.2 SUBSTANTIAL DAMAGE**. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary, or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions.
2. Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.

A.2 *Substantial Damage*

Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its pre-damaged condition would equal or exceed 50 percent of the market value of the structure only, unless a higher standard option is selected, before the damage occurred. This term also applies to structures which have incurred any damage that equals or exceeds 50 percent of the structure's market value regardless of the actual repair work performed. When a structure or building has been determined as substantially damaged, any work or repair on said structure or building will be considered as substantial improvement

and will be required to meet the development requirements set forth within this ordinance for substantial improvement.

A.3*. Substantial Improvement and Substantial Damage Determination*

For applications for building permits to improve buildings and structures, including alterations, movement, enlargement, replacement, repair, change of occupancy, additions, rehabilitations, renovations, and any other improvement of or work on such buildings and structures, the Floodplain Administrator, in coordination with the applicable community officials and staff, shall:

1. Estimate the market value or require the applicant to obtain an appraisal of the market value prepared by a qualified independent appraiser, of the building or structure only, not of land and building, before the start of construction of the proposed work. In the case of repair, the market value of the building or structure shall be the market value before the damage occurred and before any repairs are made.
2. Compare the cost to perform the improvement, the cost to repair a damaged building to its pre-damaged condition, or the combined costs of improvements and repairs, if applicable, to the market value of the building or structure.
3. Determine and document whether the proposed work constitutes substantial improvement or repair of substantial damage; the determination requires evaluation of previous permits issued for improvements and repairs as specified in **ARTICLE V, SECTION A.3. SUBSTANTIAL IMPROVEMENT;** and if elected.
4. Utilize FEMA's Substantial Improvement/Substantial Desk Reference when making any determination on Substantial Improvement and/or Substantial Damage.
5. The substantial improvement regulations apply to all of the work that is proposed as the improvement, even if multiple permits are issued. Therefore, the determination of the cost of the improvement should consider all costs of all phases of the work before issuance of the first permit.
6. Notify the applicant that if it is determined that the work constitutes substantial improvement or repair of substantial damage and that compliance with the flood, this ordinance is required.

B. *Specific Standards* -All proposals for development in areas of special flood hazards and areas of known or suspected flood risk, including subdivisions and manufactured home parks shall meet the floodplain development permit requirements of this ordinance to minimize flood damage and shall meet the following provisions:

1. *Residential Construction:* New construction and substantial improvement of any residential structure shall have the lowest floor (including basement) elevated to two feet (2') or more above the base flood elevation. A registered professional engineer, architect, or land surveyor shall submit certified elevations to the Floodplain administrator that the standards of this ordinance are satisfied. All new development proposals, including subdivisions, located within an erosion hazard area shall be

consistent with the need to minimize erosion damage. Proposals within these areas shall comply with the following requirements:

a. Meet all applicable provisions of this title.

b. Meet all applicable provisions of the International Building Code with regard to wall and footing setbacks for slopes, grading, drainage and compaction of fills.

c. Provide an engineering study, prepared by a professional civil engineer licensed to practice in the state, which includes a hydraulic analysis, a historical and geological evaluation of potential erosion hazards, and an analysis of long-term channel degradation, movement and bank erosion. The study shall also include recommendations for erosion protection measures, if any. The study shall include the engineer's professional opinion that when the erosion protection measures, if any, are implemented, the proposed development will not be adversely affected by erosion and that the erosion protection measures, if any, will not adversely affect reaches or development upstream, downstream, and across river over a one hundred (100) year planning period;

d. Provide for the perpetual maintenance of the erosion protection, at no cost to the city or other public agency.

e. Provide a maintenance and access easement to any erosion protection. Access to erosion protection shall be located and constructed to minimize flood damage.

f. Obtain necessary environmental permits from the United States Army Corps of Engineers, and stream alteration permits from the office of the Utah State Engineer prior to any construction activity at no cost to the city; and

g. Hold the city harmless from all claims resulting from erosion or any other flood-related damage to development within an "erosion hazard area" by executing a "flood and erosion hazard disclaimer of liability and agreement" form of said agreement is on file at the City and by placing a "notice of hazard" on the final plat if applicable.

h. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.

i. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage by providing drainage through each lot, unless joint drainage facilities are owned and maintained by an owners' association.

j. Base flood elevation data shall be provided for subdivision proposals and other proposed developments which contain at least fifty (50) lots or five (5) acres (whichever is less), or as may be otherwise required by the city engineer or designee. Be consistent with the need to minimize flood damage, have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage and have adequate drainage provided to reduce exposure to flood damage.

2. *Nonresidential Construction:*

New construction and substantial improvements of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated to two feet (2') above the level of the base flood elevation, or together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification that includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the Floodplain Administrator. If the use or occupancy of the building changes in the future to residential, then the dry floodproofing of the structure cannot be used when determining compliance of the structure to the residential construction of this ordinance, **ARTICLE V, SECTION B.1 RESIDENTIAL CONSTRUCTION** and as such, the building will not be grandfathered into compliance and will be required to be brought into compliance with the residential construction requirements of this ordinance. Require within an A zone on the FIRM that all new construction and substantial improvements of residential structures have the lowest floor (including basements) elevated at least two feet (2') above the highest adjacent grades; and Require within zone A on the FIRM adequate drainage paths around structures on slopes to guide flood waters around and away from proposed structures.

3. *Enclosures*:

New construction and substantial improvements, with fully enclosed areas below the lowest floor that are to be used solely for parking of vehicle, building access, or storage in an area other than a basement; and are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect, or must meet or exceed the following minimum criteria:

a. A minimum of two flood openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding shall be provided.

b. The bottom of all flood opening shall be no higher than one (1) foot above grade.

c. Flood openings shall be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

d. The development and construction of the structure must conform with the provision in FEMA/Federal Insurance Administration (FIA) – Technical Bulletins 1 and 2. Enclosures below the BFE may only be used for building access, vehicle parking, and storage. Certification and documentation from a professional licensed engineer is required if the structure's lowest floor is built below the BFE. Applicant shall enter into a maintenance and non-conversion agreement with the City that will maintain the improvements outlined in this paragraph and not modify or convert them to uses other than approved uses.

4. *Crawlspace*:

New construction and substantial improvements built on a crawlspace or sub-grade (below grade) crawlspace may be permitted if the development is designed and meets or exceeds the standards found in FEMA's Technical Bulletins 1, 2, and 11, which include but are not limited to the following:

a. The structure must be affixed to a permanent foundation, designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. Because of hydrodynamic loads, crawlspace construction is not allowed in areas with flood velocities greater than 5 feet per second unless the design is reviewed by a qualified design professional, such as a registered architect or professional engineer.
b. The crawlspace is an enclosed area below the BFE and, as such, must have openings that equalize hydrostatic pressures by allowing the automatic entry and exit of floodwaters. The bottom of each flood vent opening can be no more than 1 foot above the LAG.
c. The crawlspace enclosure must have proper openings that allow equalization of hydrostatic pressure by allowing automatic entry and exit of floodwaters. To achieve this, a minimum of 1 square inch of flood opening is required per 1 square foot of the enclosed area subject to flooding.
d. Portions of the building below the BFE must be constructed with materials resistant to flood damage. This includes not only the foundation walls of the crawlspace used to elevate the building, but also any joists, insulation, piers, or other materials that extend below the BFE. Ductwork, in particular, must either be placed above the BFE or sealed from floodwaters.
e. Any building utility systems within the crawlspace must be elevated above the BFE or designed so that floodwaters cannot enter or accumulate within the system components during flood conditions.
f. The interior grade of a crawlspace below the BFE must not be more than 2 feet below the LAG.
g. The height of the below-grade crawlspace, measured from the lowest interior grade of the crawlspace floor to the bottom of the floor joist of the next higher floor cannot exceed 4 feet at any point.

h. There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event.

i. Buildings with below-grade crawlspaces will have higher flood insurance premiums than buildings that have the preferred crawlspace construction, with the interior elevation at or above the LAG.

5. *Manufactured Homes:*

a. Require that all manufactured homes to be placed within Zone A on a community's FHBM or FIRM shall be installed using methods and practices that minimize flood damage. For the purpose of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.

b. Require that all manufactured homes or those to be substantially improved within Zones A1-30, AE, and AE on the community's FIRM on sites:

1. Outside of a manufactured home park or subdivision.
2. In a new manufactured home park or subdivision.
3. In an expansion to an existing manufactured home park or subdivision, or
4. In an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to two feet (2') above the level of the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement, and

c. In A-1-30, AH, AO and AE Zones, require that manufactured homes to be placed or substantially improved in an existing manufactured home park to be elevated so that

1. The lowest flood is elevated to two feet (2') above the BFE.
2. or the chassis is supported by reinforced piers no less than 36 inches in height above grade and securely anchored, whichever is higher.

6. *Recreational Vehicles:* Recreational vehicles shall either:

a. Be on the site for fewer than one hundred eighty (180) consecutive days.

b. Be fully licensed and ready for highway use, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached structures or addition, or

c. Meet all the permit requirements, elevation, and anchoring requirements for resisting wind forces that are applicable to "manufactured homes" of this ordinance.

10-13C-6:
BUILDING PERMIT REQUIREMENTS

A. *Drainage and Flood Protection Plan:* Prior to issuance of a building permit in any area designated by the city as flood prone, a drainage and flood protection plan shall be submitted for approval by the city engineer or designee. Any or all information as outlined in section 10-13C-3 shall be provided before the building permit applicant.

B. *Improvements Completed Prior to Occupancy:* Prior to occupancy of said building all flood control improvements, including applicable sections of master planned flood control improvements shall be completed with approval by the city engineer or designee. (Ord. 2019-10-002, 10-10-2019)

10-13C-7:
STANDARDS FOR AREAS OF SHALLOW FLOODING (AO/AH ZONES)

Located within the SFHAs established in **ARTICLE III, SECTION A. LANDS TO WHICH THIS ORDINANCE APPLIES**, are areas designated as shallow flooding. These areas have special flood hazards associated with base flood depths of 1 to 3 feet where a clearly defined channel does not exist and where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

A. All new construction and substantial improvements of residential structures have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least 2 feet if no depth number is specified). If the community has elected a freeboard standard, then the lowest floor elevation must be elevated above the highest adjacent grade above the depth number specified in feet on the community's FIRM (at least 2 feet if no depth number is specified) plus the freeboard height option selected below.

B. All new construction and substantial improvements of non-residential structures:
    1. Have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least 2 feet if no depth number is specified). If the community has elected a freeboard standard, then the lowest floor elevation must be elevated above the highest adjacent grade above the depth number specified in feet on the community's

FIRM (at least 2 feet if no depth number is specified) plus the freeboard height option selected below; or

2. Together with attendant utility and sanitary facilities be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy.

C. A registered professional engineer or architect shall submit a certification to the Floodplain Administrator that the standards of this Section.

D. Require within Zones AH or AO adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures.

10-13C-8:
DRAINAGE ENCROACHMENT

It shall be unlawful to place any fill, landscaping, walls, fences or material of any kind in any watercourse, whether natural or manmade, which redirects the flow of drainage to create a nuisance or damage to neighboring property. (Ord. 2019-10-002, 10-10-2019)**:**

10-13C-9:
FLOODWAYS

Floodways located within areas of special flood hazard established in section 10-13C-1 are extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles and erosion potential, the following provisions apply:

A. Designate a regulatory floodway that will not increase the base flood level more than 1 foot.

B. All encroachments are prohibited, including fill, new construction, substantial improvements and other development, within the adopted regulatory floodway *unless* it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that proposed encroachment would not result in any increase greater than 0.00 feet, and certification by a registered professional engineer is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

B. Encroachments are prohibited, including fill.

C. All new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this ordinance.

D. Under the provisions of 44 CFR Chapter 1, Section 65.12, of the NFIP Regulations, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in BFEs, provided that the community first applies for a conditional FIRM and floodway revision through FEMA.

10-13C-10: ENFORCEMENT

Penalties for noncompliance*:* No structure of land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this ordinance and other applicable regulations. The City may apply escalating enforcement procedures as necessary for the severity of violation and the recalcitrance of the violator. The City may issue notices of violation, stop work orders, citations, and impose civil penalties. The City may also perform necessary maintenance or corrective actions it deems necessary at the expense of the owner/developer. The city may complete periodic inspections to ensure that the owner/developer is in full compliance with the terms of this ordinance and other applicable regulations.

A. Violation of the provisions of this ordinance by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a class B misdemeanor. Nothing herein contained shall prevent City from taking such other lawful action as is necessary to prevent or remedy any violation.
    1. Written Notice of Violation: When the city finds that any permittee or any other person failing to comply with floodplain regulations of this ordinance, the city may serve upon such person written notice of the violation. An explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted to the city. Submission of this plan in no way relieves the permittee.
B. Administering Entity*:* The City shall administer the provision of this ordinance. Nothing in this ordinance shall relieve any person from responsibility for damage to other persons or property, nor impose upon the City, its officers, agents or employees, any liability for damage to other persons or property (Ord. 2015-11-006, 11-19-2015; amd. Ord. 2020-01-003 & 2, 1-9-2020; Ord 2020-08-004 & 1, 2, 8-6-2020 OR No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this Ordinance 10 (including violations of conditions and safeguards established in connection with conditions) shall constitute Class C misdemeanor. Nothing contained herein shall prevent the City from taking such other lawful action as is necessary to prevent, or remedy or abate any violation.

The St. George City Code is current through Ordinance 2023-01-008, passed January 5, 2023.

Disclaimer: The city recorder has the official version of the St. George City Code. Users should contact the city recorder for ordinances passed subsequent to the ordinance cited above.

City Website: www.sgcity.org
City Telephone: (435) 627-4000
Code Publishing Company, A General Code Company

NATIONAL FLOOD INSURANCE PROGRAM
COMMUNITY FLOODPLAIN MANAGEMENT REGULATIONS REVIEW CHECKLIST

Community St. George City **C.I.D** 490177 **State** UT

Reviewed by: McKenzie Goodenough Date of Review: _____

Community Floodplain Management Regulations Reviewed by (circle one): FEMA State Other: (Agency Name) _____

Reviewer's Determination: /__/ The floodplain management regulations are compliant. /__/ The floodplain management regulations are not compliant.

Approved by: _____ (FEMA only) Date of Approval: ____/____/____

The "Item Description" is a synopsis of the regulatory requirement and should not be construed as a complete description. Refer to the actual language contained in the National Flood Insurance Program Floodplain Management Regulations at Title 44 Code of Federal Regulations (CFR) Part 59 and 60 for the complete description of the required minimum criteria. Below the "Level of Regulations" column, you can indicate whether the community ordinance meets or exceeds the respective provision in the non-shaded areas.

Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
ORDINANCES MUST CONTAIN THE FOLLOWING PROVISIONS:						
1. Citation of Statutory Authority						Missing
2. Framework for administering the ordinance (including permit system, establishment of the office for administering the ordinance, record keeping, etc.).						10-13C-3 (C)(1) & (2) 10-13C-7
3. Adequate enforcement provisions (including a violation and penalty section specifying actions the community will take to assure compliance).						10-13C-10
4. Variance section with evaluation criteria and insurance notice. [60.6(a)]						Missing
5. Effective Date: Adoption Date:						Missing but might be on your official signed copy
6. Signature of Appropriate Official and Certification Official.						Missing but might be on your official copy

[1] If a community has both floodways and coastal high hazard areas, it must meet the requirements of both level 60.3(d) and 60.3(e).

NATIONAL FLOOD INSURANCE PROGRAM
COMMUNITY FLOODPLAIN MANAGEMENT REGULATIONS REVIEW CHECKLIST

Community_____ **C.I.D.**_____ **State**_____

Reviewed by: _____ Date of Review: _____

Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
OTHER PROVISIONS AND ACTIONS THAT MAY BE NECESSARY TO MAKE THE ORDINANCE LEGALLY ENFORCEABLE AND ENSURE THAT IT CAN BE PROPERLY ADMINISTERED:						
7: Purpose section citing health, safety, and welfare reasons for adoption.						Missing
8: Disclaimer of Liability section advising that the degree of flood protection required by the ordinance is considered reasonable but does not imply total flood protection.						Missing
9. Abrogation and Greater Restriction section. (e.g., This Ordinance shall not in any way impair/remove the necessity of compliance with any other applicable laws, ordinances, regulations, etc. Where this Ordinance imposes a greater restriction, the provisions of this Ordinance shall control.)				X		10-13C-2 (B)
10. Severability section. (e.g., If any section, provision, or portion of this ordinance is adjudged unconstitutional or invalid by a court, the remainder of the ordinance shall not be affected.)				X		10-13C-9
11. Public hearing (State/local laws may require hearings)						Missing: This may be in your General Municipal code, but we couldn't find the reference.
12. Publication (State/local laws may require public notices)						Missing: This may be in your General Municipal code,

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COMMUNITY FLOODPLAIN MANAGEMENT REGULATIONS REVIEW CHECKLIST

Community_____ **C.I.D.**_____ **State**_____

Reviewed by: _____ Date of Review: _____

Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
						but we couldn't find the reference.
MINIMUM NFIP CRITERIA:						
13. Definitions: [59.1] __ Base Flood; __Base Flood Elevation; __Development; __Existing manufactured home park or subdivision; __Expansion to an existing manufactured home park or subdivision; __ Flood Insurance Rate Map; __Flood Insurance Study; __Floodway; __Lowest Floor; __Manufactured Home; __Manufactured Home Park or Subdivision; __New Construction; __New Manufactured Home Park or Subdivision; __Recreational Vehicle; __Special Flood Hazard Area; __Start of Construction; __Structure; __Substantial Damage; __Substantial Improvement; __Violation; Other Definitions as appropriate such as __Floodproofing; __Highest adjacent grade for community's with mapped AO Zones; __Historic Structures						Missing
14. Adopt or reference correct Map and date. [60.3(b)] (If the community has an automatic adoption provision				X		10-13C-1 Missing correct date of 4/2/2009

NATIONAL FLOOD INSURANCE PROGRAM
COMMUNITY FLOODPLAIN MANAGEMENT REGULATIONS REVIEW CHECKLIST

Community_____ **C.I.D.**_____ **State**_____

Reviewed by: _____ Date of Review: _____

Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
in its ordinance, is it valid?)						
15. Adopt or reference correct Flood Insurance Study and date. [60.3(c), (d), and/or (e)] (If the community has an automatic adoption provision in its ordinance, is it valid?)				X		10-13C-1 Missing correct date of 4/2/2009
16. Require permits for all proposed construction or other development including placement of manufactured homes to determine whether such construction or development is in a floodplain. [60.3(a)(1)]						
17. Require permits for all proposed construction and other development within SFHAs. [60.3(b)(1)]				X		10-13C-3 (B)
18. Assure that all other State and Federal permits are obtained. [60.3(a)(2)]				X		10-13C-3 (C)(2)(a)
19. Review permits to assure sites are reasonably safe from flooding and require for new construction and substantial improvements in flood-prone areas [60.3(a)(3)]: (a) Anchoring (including manufactured homes) to prevent flotation, collapse, or lateral movement of the structure. [60.3(a)(3)(i)]				X		10-13C-4 (B)(1)

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Community_____ **C.I.D.**_____ **State**_____

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Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
(b) Use of flood-resistant materials. [60.3.(a)(3)(ii)]				X		10-13C-4 (B)(3)(a)
(c) Construction methods and practices that minimize flood damage. [60.3(a)(3)(iii)]				X		10-13C-4 (B)(3)(b)
(d) Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities designed and/or located to prevent water entry to accumulation. [60.3(a)(3)(iv)]				X		10-13C-4 (C)
20. Review subdivision proposals and other development, including manufactured home parks or subdivisions, to determine whether such proposals will be reasonably safe from flooding [60.3(a)(4)]. If a subdivision or other development proposal is in a flood-prone area, assure that: (a) Such proposals minimize flood damage. [60.3(a)(4)(i)]						Missing
(b) Public utilities and facilities are constructed so as to minimize flood damage. [60.3(a)(4)(ii)]				X		10-13C-4 (D)(5)
(c) Adequate drainage is provided. [60.3(a)(4)(iii)]				X		10-13C-4 (D)(6)
21. Require new and replacement water supply and sanitary sewage systems to be designed to minimize or eliminate infiltration. [60.3(a)(5) and 60.3(a)(6)]				X		10-13C-4 (D)(2)
22. Require onsite waste disposal systems be designed to				X		10-13C-4 (D)(3)

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COMMUNITY FLOODPLAIN MANAGEMENT REGULATIONS REVIEW CHECKLIST

Community_____ **C.I.D.**_____ **State**_____

Reviewed by: _____ Date of Review: _____

Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
avoid impairment or contamination. [60.3(a)(6)(ii)]						
23. Require base flood elevation data for subdivision proposals or other developments greater than 50 lots or 5 acres. [60.3(b)(3)]				X		10-13C-4 (D)(7)
24. In A Zones, in the absence of FEMA BFE data and floodway data, obtain, review, and reasonably utilize other BFE and floodway data as a basis for elevating residential structures to or above the base flood level, and for floodproofing or elevating non-residential structures to or above the base flood level. [60.3(b)(4)]				X		10-13C-3 (D) Not exact language, but is there.
25. Where BFE data are utilized in Zone A, obtain and maintain records of the lowest floor and floodproofing elevations for new and substantially improved construction. [60.3(b)(5)]				X		10-13C-3 (D)(1)(a)
26. In riverine areas, notify adjacent communities of watercourse alterations and relocations. [60.3(b)(6)]				X		10-13C-3 (D)(3)(a) Missing adjacent
27. Maintain the carrying capacity of an altered or relocated watercourse. [60.3(b)(7)]				X		10-13C-3 (D)(3)(b)
28. Require all manufactured homes to be elevated and anchored to resist flotation, collapse, or lateral				X		10-13C-4 (B)(2)

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Community _____ **C.I.D.** _____ **State** _____

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Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
movement. [60.3(b)(8)]						
29. Require all new and substantially improve residential structures within A1-30, AE, and AH Zones have their lowest floor (including basement) elevated to or above the Base Flood Elevation. [60.3(c)(2)]				X		10-13C-4 (D)(9)(a)
30.[2] In AO Zones, require that new and substantially improved residential structures have their lowest floor (including basement) to or above the highest adjacent grade at least as high as the FIRM's depth number. [60.3(c)(7)]				X		10-13C-4 (D)(9)(b)
31. Require that new and substantially improved non-residential structures within A1-30, AE, and AH Zones have their lowest floor elevated or floodproofed to or above the Base Flood Elevation. [60.3(c)(3)]				X		10-13C-4 (D)(8)
32.[2] In AO Zones, require new and substantially improved non-residential structures have their lowest floor elevated or completely floodproofed above the highest adjacent grade to at least as high as the depth number on the FIRM. [60.3(c)(8)]				X		10-13C-4 (D)(8)(d)(1)

[2] Item 30 and 32 are not required if the community has no AO Zones.

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Community _____ **C.I.D.** _____ **State** _____

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Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
33. Require that for floodproofed non-residential structures, a registered professional engineer/architect certify that the design and methods of construction meet requirements at 60.3(c)(3)(ii). [60.3(c)(4)]				X		10-13C-4 (D)(8)(c)
34. Require, for all new construction and substantial improvements, that fully enclosed areas below the lowest floor that are used solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing the entry and exit of floodwaters in accordance with the specifications in 60.3(c)(5). (Openings requirement)						Missing
35.[3] Until a regulatory floodway is designated, no encroachment may increase the Base Flood level more than 1 foot. [60.3(c)(10)]						Missing

[3] Item 35 is not required if all streams have floodways designated.

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Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
36. [4] In Zones AO and AH, require drainage paths around structures on slopes to guide water away from structures. [60.3(c)(11)]				X		10-13C-4 (D)(8)(e) 10-13C-4 (D)(9)(e)
37. Require that manufactured homes placed or substantially improved within A1-30, AH, and AE Zones, which meet one of the following location criteria, to be elevated such that the lowest floor is to or above the Base Flood Elevation and be securely anchored: (i) outside a manufactured home park or subdivision; (ii) in a new manufactured home park or subdivision; (iii) in an expansion to an existing manufactured home park or subdivision; iv) on a site in an existing park which a manufactured home has incurred substantial damage as a result of a flood. [60.3(c)(6)]				X		10-13C-4 (D)(9)(g)(1)
38. In A-1-30, AH, and AE Zones, require that manufactured homes to be placed or substantially improved in an existing manufactured home park to be elevated so that (i) the lowest floor is at or above the Base Flood				X		10-13C-4 (D)(9)(g)(2)

[4] Item 36 is not required if the community has no AO or AH Zones.

NATIONAL FLOOD INSURANCE PROGRAM
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Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
Elevation; OR (ii) the chassis is supported by reinforced piers no less than 36 inches in height above grade and securely anchored. [60.3(c)(12)]						
39. In A1-30, AH, and AE Zones, all recreational vehicles to be placed on a site must (i) be elevated and anchored; OR (ii) be on the site for less than 180 consecutive days; OR (iii) be fully licensed and highway ready. [60.3(c)(14)]				X		10-13C-4 (D)(10)
40. Designate a regulatory floodway which will not increase the Base Flood level more than 1 foot. [60.3(d)(2)]						Missing
41. In a regulatory floodway, prohibit any encroachment, unless hydrologic and hydraulic analyses prove that the proposed encroachment would not cause an increase in flood levels during the Base Flood discharge. [60.3(d)(3)]				X		10-13C-7 (A)
42. In V1-30, VE, and V Zones, obtain and maintain the elevation of the bottom of the lowest horizontal structural member of the lowest floor of all new and substantially improved structures. [60.3(e)(2)]						
43. In V1-30, VE, and V Zones, require that all new construction and substantial improvements: (a) Are elevated and secured to anchored pilings or columns so that the bottom of the lowest horizontal structural member is at or above the Base Flood						

NATIONAL FLOOD INSURANCE PROGRAM
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Community_____ **C.I.D.**_____ **State**_____

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Item Description *(Section reference to the NFIP Regulations follows)*	**Level of Regs**					**Applicable Ordinance Section/Comments**
	a	**b**	**c**	**d** [1]	**e**[1]	
Elevation. [60.3(e)(4)]						
(b) A registered professional engineer/architect certify that the design and methods of construction meet elevation and anchoring requirements at 60.3(e)(4)(i) and (ii). [60.3(e)(4)]						
(c) Have the space below the lowest floor either free of obstruction or constructed with breakaway walls. Any enclosed space shall be used solely for parking, building access, or storage. [60.3(e)(5)]						
(d) All new construction must be landward of mean high tide. [60.3(e)(3)]						
(e) Prohibit use of fill for structural support. [60.3(e)(6)]						
(f) Prohibit alterations of sand dunes and mangrove stands, which would increase potential flood damage. [60.3(e)(7)]						
44. Require that manufactured homes placed or substantially improved within V1-30, VE, and V Zones, which meet one of the following location criteria, meet the V Zone standards in 60.3(e)(2) through (e)(7): (i) outside a manufactured home park or subdivision; (ii) in a new manufactured home park or subdivision; (iii) in an expansion to an existing manufactured home park or subdivision; (iv) on a site in an existing park which a manufactured						

NATIONAL FLOOD INSURANCE PROGRAM
COMMUNITY FLOODPLAIN MANAGEMENT REGULATIONS REVIEW CHECKLIST

Community _____ **C.I.D.** _____ **State** _____

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	a	**b**	**c**	**d** [1]	**e**[1]	
home has incurred substantial damage as a result of a flood. [60.3(e)(8)]						
45. In V1-30, VE, and V Zones, require that manufactured homes to be placed or substantially improved in an existing manufactured home park to be elevated so that (i) the lowest floor is at or above the Base Flood Elevation; OR (ii) the chassis is supported by reinforced piers that are not less than 36 inches in height above grade and securely anchored. [60.3(e)(8)(iv)]						
46. In V1-30, VE, and V zones, all recreational vehicles to be placed on a site must (i) be elevated and anchored; OR (ii) be on the site for less than 180 consecutive days; OR (iii) be fully licensed and highway ready. [60.3(e)(9)]						

Comments

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NATIONAL FLOOD INSURANCE PROGRAM
COMMUNITY FLOODPLAIN MANAGEMENT REGULATIONS REVIEW CHECKLIST

Community_____ **C.I.D.**_____ **State**_____

Reviewed by: _____ Date of Review: _____

ST. GEORGE CITY, UTAH
ORDINANCE NO._____

AN ORDINANCE AMENDING TITLE 10, CHAPTER 13, ARTICLE C, DEVELOPMENT IN FLOOD AND EROSION HAZARD OVERLAY ZONE, OF THE ST. GEORGE CITY CODE, TO AMEND THE FLOODPLAIN REGULATIONS FOR THE PURPOSE OF UPDATING THE STANDARDS AND REGULATIONS TO MEET FEMA REQUIREMENTS.

PREAMBLE

WHEREAS, the City Council has determined that it is in the best interest of the City and the public to amend provisions of city code, Title 10-13C Development in Flood and Erosion Hazard Overlay Zone, to amend the flood and erosion hazard overlay zone for the purpose of updating the standards and regulations to meet FEMA requirements; and

WHEREAS, the Planning Commission held a public hearing on March 26, 2024, and thereafter forwarded a recommendation for approval of the requested code amendment to the City Council; and

WHEREAS, the City Council held a public meeting on this request on April 4, 2024; and

WHEREAS, the City Council has determined that the requested code amendment 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 St. George City code is hereby amended by adopting changes and revisions to Title 10, Chapter 13, Article C 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 on the date executed below, and upon posting in the manner required by law.

APPROVED AND ADOPTED by the St. George City Council, this Fourth day of the month of April, 2024.

ST. GEORGE CITY:

Michele Randall, Mayor

ATTEST:

Christina Fernandez, City Recorder

APPROVED AS TO FORM:
Shawn Guzman, City Attorney

Daniel Baldwin, Assistant City Attorney

VOTING OF CITY COUNCIL:

Councilmember Hughes _____
Councilmember Larkin _____
Councilmember Larsen _____
Councilmember Tanner _____
Councilmember Kemp _____

EXHIBIT A

Agenda Date: 04/04/2024 **Agenda Item Number:** 06

Subject:

Consider approval of Ordinance No. 2024-020 amending an approved PD-C (Planned Development Commercial) on `0.89 acres located on the southeast corner of River Road and George Washington Boulevard, with the conditions from the Planning Commission. (Case No. 2024-PDA-004 - Cypress Credit Union)

Item at-a-glance:

Staff Contact: Dan Boles

Applicant Name: Taylor Smith

Reference Number: 2024-PDA-004

Address/Location:

Southeast corner of River Road and George Washington Blvd

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

The purpose of the amendment is to add a 4,160 ft credit union. This lot is a part of the River Crossing Planned Development and the last lot to seek site approval in the development. At their meeting held on March 12, 2024, the Planning Commission held a public hearing and recommended approval of the application with a 6-0 vote and with conditions.

Staff Narrative (need/purpose):

This is the final lot to propose development in the the River Crossing development and is a request for a credit union. The use is approved in the River Crossing Planned Development zone but is required to go through the process for a PD amendment to the approved PD zone.

Name of Legal Dept approver: Jami Brackin

Budget Impact: No Impact

Recommendation (Include any conditions):

Planning Commission held a public hearing on the PD amendment and recommends approval with a 6-0 vote along with the following conditions:1.That all of the requirements for drive throughs (as presented above) be adhered to as approved previously by City Council with the exception of numbers one and six which are specific to restaurant drive through facilities.2.That the applicant provide some relief of the east wall to present to City Council.

St.George
Community Development

Planned Development Amendment

PLANNING COMMISSION AGENDA REPORT: 03/12/2024
CITY COUNCIL AGENDA REPORT: 04/04/2024

Cyprus Credit Union Planned Development Amendment (Case No. 2024-PDA-004)		
Request:	Consider an ordinance amending an approved PD-C (Planned Development Commercial) on approximately 0.89 acres, located on the southeast corner of River Road and George Washington Boulevard for the purpose of adding a 4,160 ft² credit union for a project to be known as Cyprus Credit Union.	
Applicant:	Taylor Smith	
Location:	Located at the southeast corner of River Road and George Washington Boulevard	
General Plan:	COM (Commercial)	
Existing Zoning:	PD-C (Planned Development Commercial)	
Surrounding Zoning:	North	PD-C (Planned Development Commercial)
	South	PD-C (Planned Development Commercial)
	East	PD-C (Planned Development Commercial)
	West	PD-C (Planned Development Commercial)
Land Area:	Approximately 0.89 acres	

BACKGROUND:
This lot is a part of the River Crossing Planned Development. In 2016, The Boulder Creek Commons Planned Development was established with a general layout of the property and a use list (2015-ZC-035). In 2021, the name of this development name was changed to River Crossing and a conceptual site plan was approved (2021-ZCA-081). Prior to 2020, there was a limit of three drive-thrus allowed in this development; however, in 2020, that limit was removed, and drive-thru standards were created and approved for this specific development. The standards are as follows:

1. Restaurant drive-through lanes shall provide five stacking or queuing spaces per lane from the ordering location or the first building window, whichever is greater, in addition to the space for the vehicle at the window or ordering station.
2. Stacking or queuing spaces shall not block parking spaces or loading areas on the site.
3. Queuing lanes shall be a minimum of 13 feet in width.
4. A stacking que shall not be located within 50' of a public intersection or public in-gress/egress point.
5. Drive-through facilities shall not be placed adjacent to residential properties.
6. Order boards shall be faced away from residential areas to the greatest extent possible.

The standards above were intended to minimize impacts created by restaurant drive through facilities. With that in mind, items number 1 and 6 would not apply to this particular site.

Please see the zoning requirement details below:

Zoning Requirements			
Regulation	**Section Number**	**Proposal**	**Staff Comments**
Setbacks		Front/ Street Side: 22'/27' Side: 109' Side: 106'	The required setbacks are: Front/ Street Side: 20' Side/ Rear: 0' and 10'
Uses	10-8D-2	Credit Union	The proposed use is found on the approved use list for the River Crossing PD-C
Height and Elevation	10-8D-2	Approximate Height: 27'4"	The maximum height allowed in a PD-C is 50'. This proposal meets the regulations.
Landscape Plan	10-8D-2	A conceptual landscape plan has been included.	The plans show a landscape strip along the public right-of-way that will meet or exceed 15' as required by city code, along with

			landscape in the parking area. The street trees will be required to be at least 30' on center.
Utilities	10-8D-2	None shown	All utilities will be determined and designed during the JUC process. We will ensure this is completed during the site plan approval process.
Signs	10-8D-2	They are proposing two monument signs and wall signage.	Any signs will need to meet the sign regulations found in Title 9-13 and River Crossing master sign plan.
Lighting	10-8D-2	Please see photometric plan in the presentation	The lighting will need to be at or below 1.0 foot candles at the property line with dark sky lighting.
Lot Coverage	10-8D-6	The proposed buildings cover just under 11% of the lot.	The PD-C zone allows building coverage up to 50%.
Solid Waste	10-8D-6	This development shows the solid waste location.	The solid waste location is proposed to be screened with walls and gates.
Buffer Protection of Residential Property	10-8D-6	N/A	N/A
Parking	10-19-5	The credit union will have 4,160 gross square feet. Parking provided: 37 spaces	The requirement is: 1 space per 250 ft² gross floor area. Required = 17, Exceed parking requirement by **20** Spaces
EVCS And Bike Parking	10-19-6	None shown	They will be required to have conduit to one parking space for a future EVCS and a bike rack that holds at least two bikes.

RECOMMENDATION:

Planning Commission held a public hearing on March 12, 2024, on the application and they recommend approval of the application for an amendment to the PD for the River Crossing development in order to allow the Cyprus Credit Union to be constructed with the following conditions:

1. That all of the requirements for drive throughs (as presented above) be adhered to as approved previously by City Council with the exception of numbers one and six which are specific to restaurant drive through facilities.
2. That the applicant provide some relief of the east wall to present to City Council.

ALTERNATIVES:

1. Approve as presented.
2. Approve with additional conditions.
3. Deny the request.
4. Continue the proposed PD amendment to a later date.

POSSIBLE MOTION:

"I move that we approve the PD amendment for Cyprus Credit Union as presented, case no. 2024-PDA-004, based on the findings and subject to the conditions listed in the staff report."

FINDINGS FOR APPROVAL:

1. The proposed uses are permitted uses found in the PD-C zone.
2. The proposed project meets the Planned Development Commercial general requirements found in Section 10-8D-2.

Exhibit A
Applicant's Narrative

Cyprus Credit Union is looking to propose a new branch to support their members in the St George Area. The total area of the is .89 acres and the building of the Credit Union will 4,160 sq feet.

AREA CALCULATIONS:

PROPERTY AREA:	39,063.92 sf	
BUILDING FOOTPRINT:	4,160.58 sf	11% TOTAL PROP.
DRIVE THRU CANOPY:	938 sf	2% TOTAL PROP.
PARKING LOT AREA:	26,638.69sf	68% TOTAL PROP.
PARKING LOT LANDSCAPING:	3,127.70 sf	12% PARK. LOT AREA
LANDSCAPING:	10,910.90 sf	33% TOTAL PROP.
LANDSCAPING: RIGHT OF WAY	3,269.21 sf	8% TOTAL PROP.

PARKING :

STALLS REQUIRED:
2.5 STALL PER 1000 sf
4160.58 sf ÷ 1000 sf x 2.5 STALLS= 11 STALLS

PROVIDED: 35 STALLS (2 ADA)

Exhibit B
River Crossing (fka: Boulder Creek Crossing)
Approved Use List

Boulder Creek Commons (North & South)

(Approx. 16.64 acres)

"USE LIST"

Note: Future ZCA (Zone Change Amendments) may be submitted for additional uses not listed below on a case by case basis

Amusement / Recreation / Entertainment
Dance Studio
Martial Arts Studio
Health Club
Fitness Center
Indoor entertainment activities such as paintball, bowling alley, miniature golf, arcade, etc.
Theater

Animal Services (indoor only)
Small Animal boarding
Animal Hospital
Veterinarian Clinic
Pet store, pet grooming

Automotive (indoor only)
Auto parts sales (indoor only)
Automobile rental
Tire sales (indoor)
Car Wash (excluding open bays & manual car wash)

Business & Financial
Bank or financial institution
Professional or business office (real estate, travel, accounting, attorney, etc.)

Food Service
Bakery
Catering
Delicatessen
Ice cream parlor
Restaurant, drive-thru ~~(limited to a maximum of three (3) in Boulder Creek Commons South area)~~
Restaurant, sit down

Non-Industrial Manufacturing (in shop)
Candy Shop

Medical, Dental, Counseling Services
Counseling Center (mental health, alcohol, drugs)
Laboratory, dental or medical
Medical / Dental office or clinic
Optometrist, optician

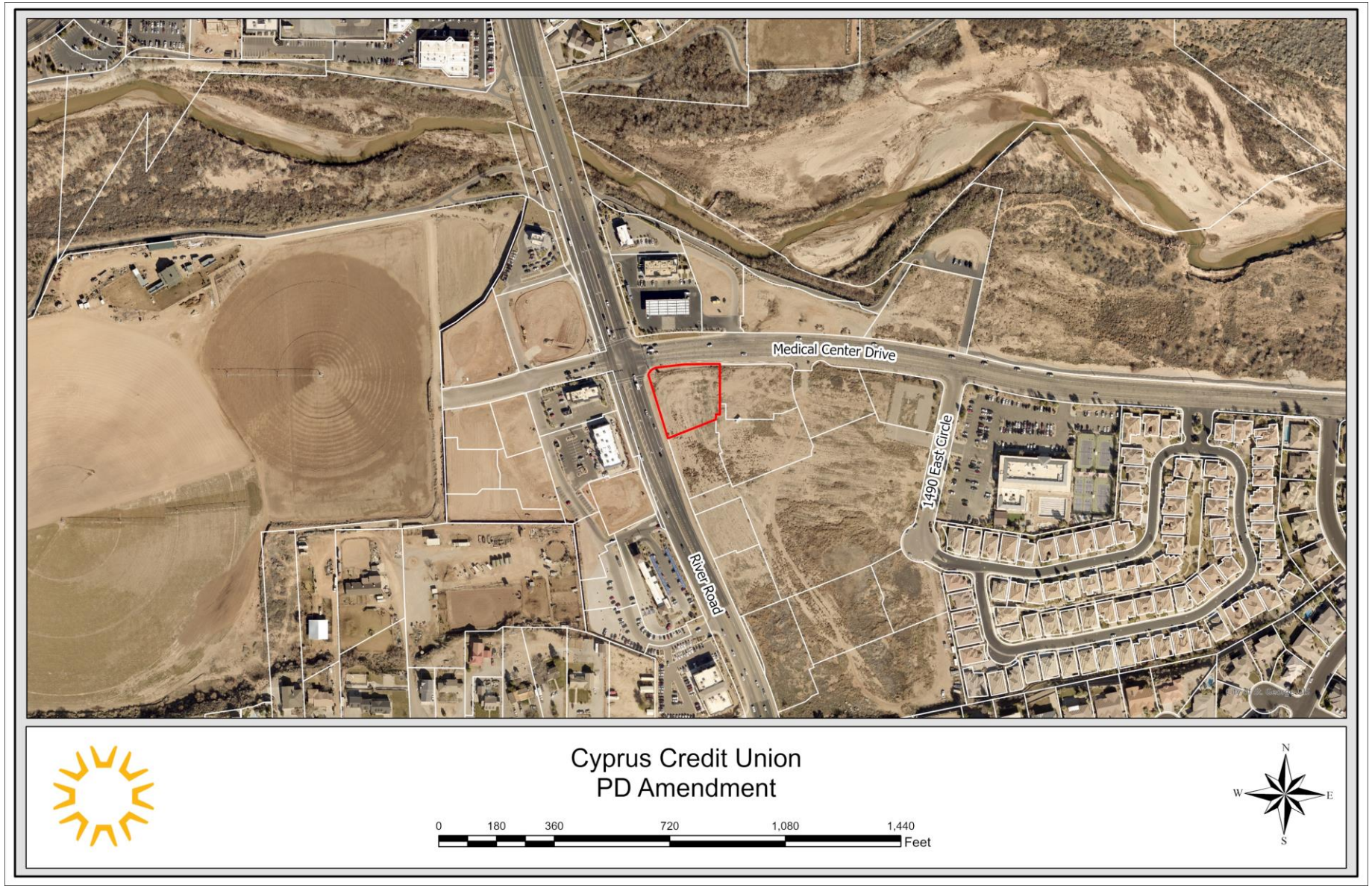
Retail Sales (indoors)
Antique store
Athletic & sporting goods
Bookstore
Department store
Drive-thru sales (pharmacy, dairy, etc.)
Florist
Furniture
Appliances
Office supplies
Paint or wall paper
Pharmacy
Retail goods establishments
Super Market / Grocery Store
Gas Station
Convenience market with gas pumps

Service Business (indoor only)
Barber Shop
Beauty Shop (incidental body piercing)
Carpet & rug cleaning
Child nursery, day care, preschool (limited outdoor with staff approval)
Educational institutions, schools, college, learning center, trade school
Janitor service & supply
Laundry or dry cleaners
Locksmith
Mail service
Massage establishment
Permanent cosmetics (as a secondary use to barber shop or beauty shop)
Pest Control
Pet grooming
Printing

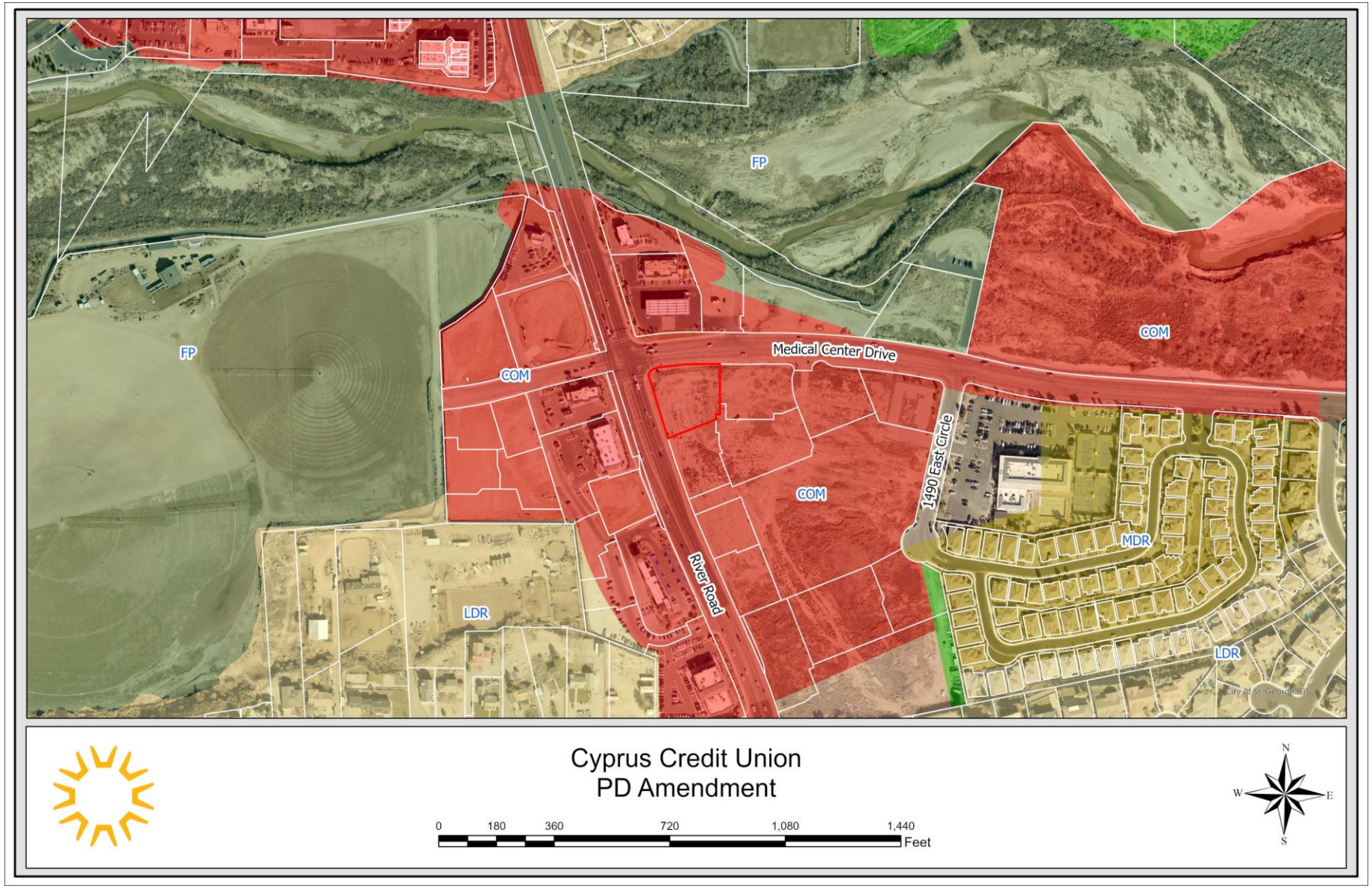
Exhibit C
PowerPoint Presentation

2024-PDA-004

Aerial Map


Medical Center Drive
1490 East Circle
River Road
Cyprus Credit Union
PD Amendment
0
180
360
720
1,080
1,440
Feet
N
W
E
S

Land Use Map


FP
FP
COM
COM
Medical Center Drive
1490 East Circle
COM
MDR
LDR
LDR
River Road
Cyprus Credit Union
PD Amendment
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Feet
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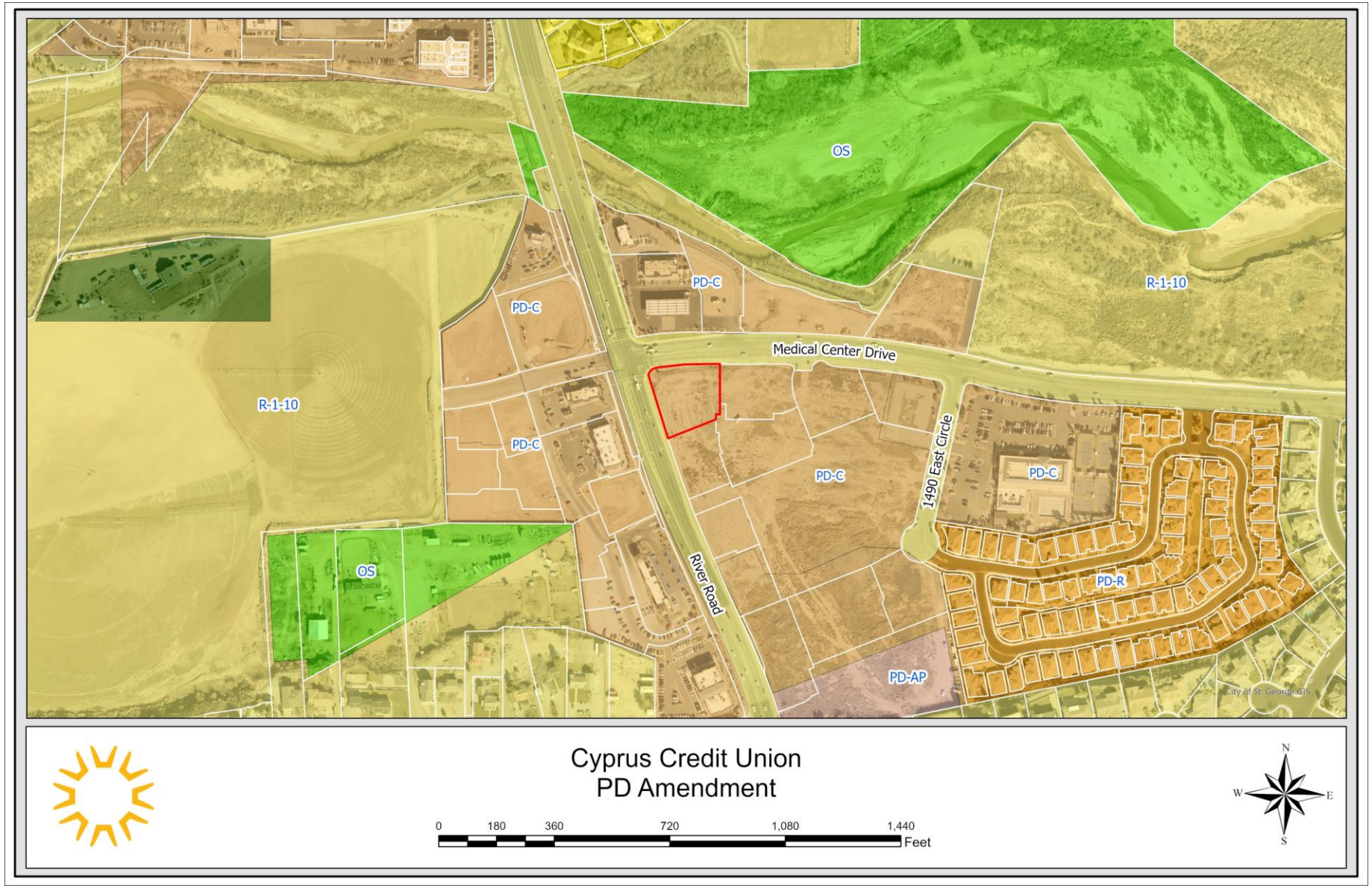
Zoning Map


OS
PD-C
PD-C
PD-C
R-1-10
Medical Center Drive
R-1-10
PD-C
PD-C
1490 East Circle
OS
River Road
PD-R
PD-AP
Cyprus Credit Union
PD Amendment
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180
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720
1,080
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S

Use List

Boulder Creek Commons (North & South)

"USE LIST"

Note: Future ZCA (Zone Change Amendments) may be submitted for additional uses not listed below on a case by case basis

Amusement / Recreation / Entertainment
Dance Studio
Martial Arts Studio
Health Club
Fitness Center
Indoor entertainment activities such as paintball, bowling alley, miniature golf, arcade, etc.
Theater

Animal Services (indoor only)
Small Animal boarding
Animal Hospital
Veterinarian Clinic
Pet store, pet grooming

Automotive (indoor only)
Auto parts sales (indoor only)
Automobile rental
Tire sales (indoor)
Car Wash (excluding open bays & manual car wash)

Business & Financial
Bank or financial institution
Professional or business office (real estate, travel, accounting, attorney, etc.)

Food Service
Bakery
Catering
Delicatessen
Ice cream parlor
Restaurant, drive-in
Restaurant, sit down

Non-Industrial Manufacturing (in shop)
Candy Shop

Medical, Dental, Counseling Services
Counseling Center (mental health, alcohol, drugs)
Laboratory, dental or medical
Medical / Dental office or clinic
Optometrist, optician

Retail Sales (indoors)
Antique store
Athletic & sporting goods
Bookstore
Department store
Drive-thru sales (pharmacy, dairy, etc.)
Florist
Furniture
Appliances
Office supplies
Paint or wall paper
Pharmacy
Retail goods establishments
Super market / grocery
Gas Station
Convenience market with gas pumps

Service Business (indoor only)
Barber Shop
Beauty Shop (incidental body piercing)
Carpet & rug cleaning
Child nursery, day care, preschool (limited outdoor with staff approval)
Educational institutions, schools, college, learning center, trade school
Janitor service & supply
Laundry or dry cleaners
Locksmith
Mail service
Massage establishment
Permanent cosmetics (as a secondary use to barber shop or beauty shop)
Pest Control
Pet grooming
Printing

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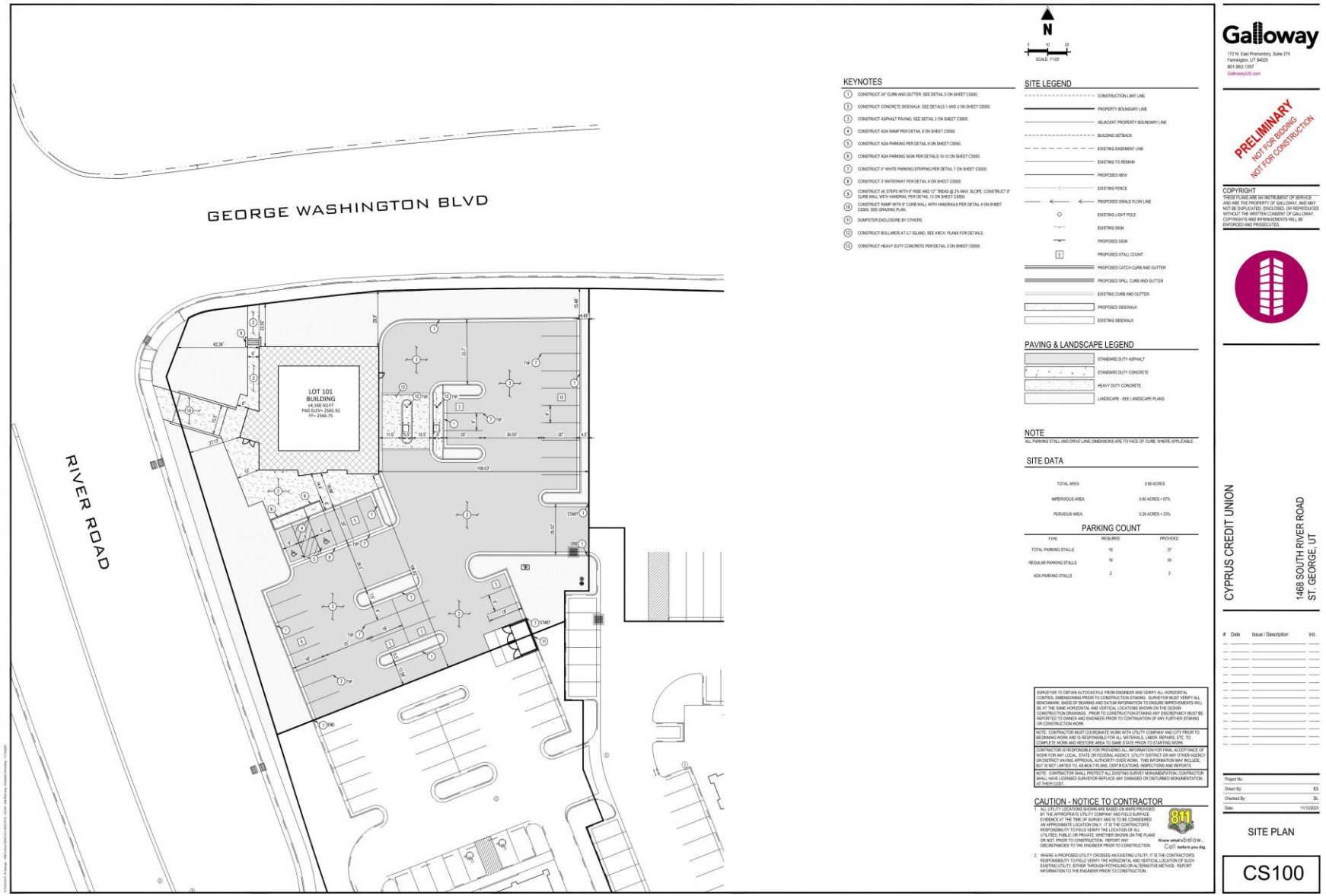
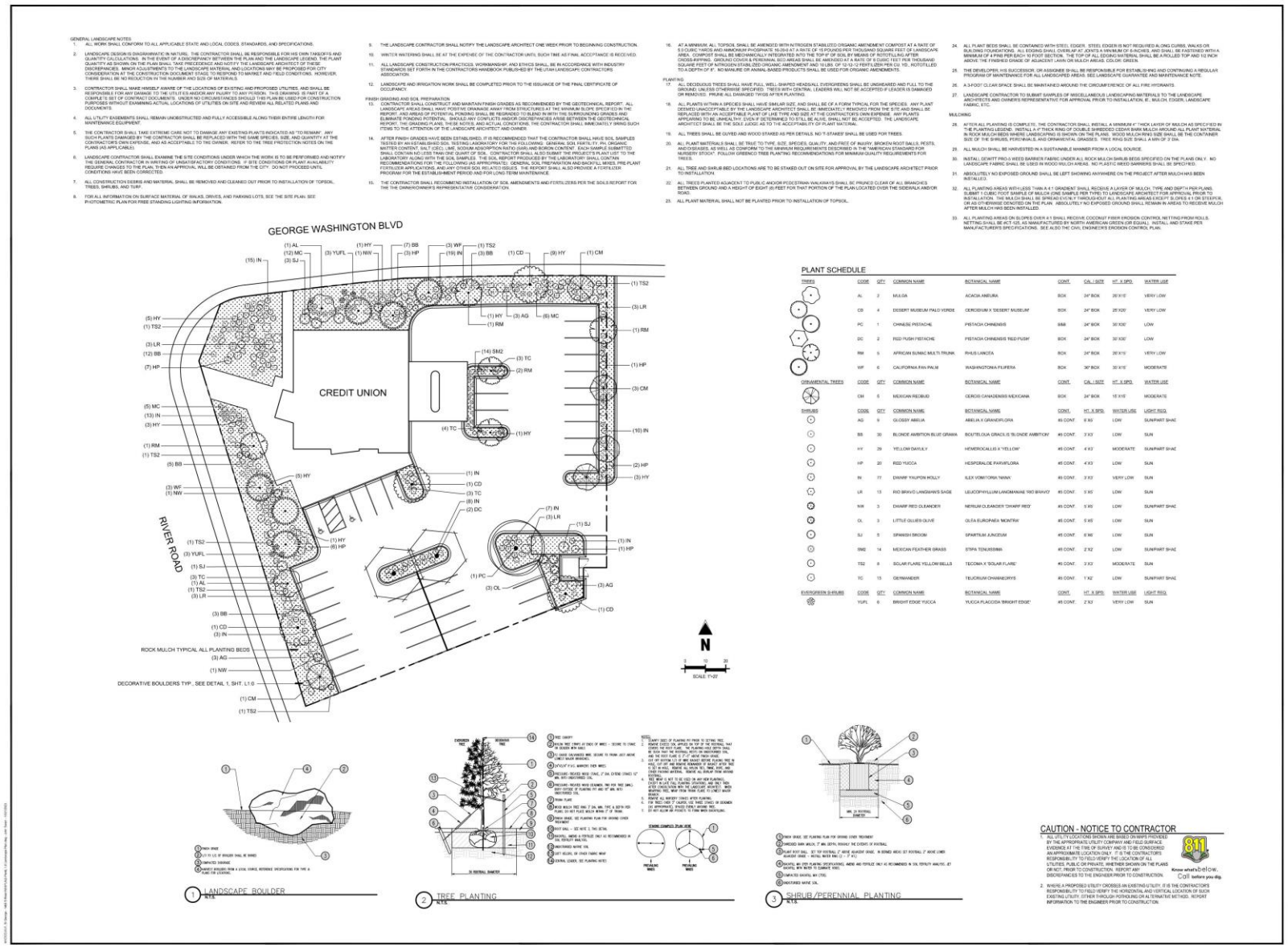
Locksmith
Mail service
Massage establishment
Permanent cosmetics (as a secondary use to barber shop or beauty shop)
Pest Control
Pet grooming
Printing

Site Plan


GEORGE WASHINGTON BLVD
RIVER ROAD
LOT 101
BUILDING
14,160 SQ FT
PAD ELEV= 2565.92
FF= 2566.75
N
SCALE: 1"=20'
KEYNOTES
1 CONSTRUCT 24" CURB AND GUTTER. SEE DETAIL 5 ON SHEET C5900.
2 CONSTRUCT CONCRETE SIDEWALK. SEE DETAILS 1 AND 2 ON SHEET C5900.
3 CONSTRUCT ASPHALT PAVING. SEE DETAIL 3 ON SHEET C5900.
4 CONSTRUCT ADA RAMP PER DETAIL 8 ON SHEET C5900.
5 CONSTRUCT ADA PARKING PER DETAIL 8 ON SHEET C5900.
6 CONSTRUCT ADA PARKING SIGN PER DETAILS 10-12 ON SHEET C5900.
7 CONSTRUCT 4" WHITE PARKING STRIPING PER DETAIL 7 ON SHEET C5900.
8 CONSTRUCT 3' WATERWAY PER DETAIL 8 ON SHEET C5900.
9 CONSTRUCT (4) STEPS WITH 9" RISE AND 12" TREAD @ 2% MAX. SLOPE. CONSTRUCT 9" CURB WALL WITH HANDRAIL PER DETAIL 13 ON SHEET C5900.
10 CONSTRUCT RAMP WITH 9" CURB WALL WITH HANDRAILS PER DETAIL 4 ON SHEET C5900. SEE GRADING PLAN.
11 DUMPSTER ENCLOSURE BY OTHERS.
12 CONSTRUCT BOLLARDS AT LT ISLAND. SEE ARCH. PLANS FOR DETAILS.
13 CONSTRUCT HEAVY DUTY CONCRETE PER DETAIL 3 ON SHEET C5900.
SITE LEGEND
CONSTRUCTION LIMIT LINE
PROPERTY BOUNDARY LINE
ADJACENT PROPERTY BOUNDARY LINE
BUILDING SETBACK
EXISTING EASEMENT LINE
EXISTING TO REMAIN
PROPOSED NEW
EXISTING FENCE
PROPOSED SWALE FLOW LINE
EXISTING LIGHT POLE
EXISTING SIGN
PROPOSED SIGN
PROPOSED STALL COUNT
PROPOSED CATCH CURB AND GUTTER
PROPOSED SPILL CURB AND GUTTER
EXISTING CURB AND GUTTER
PROPOSED SIDEWALK
EXISTING SIDEWALK
PAVING & LANDSCAPE LEGEND
STANDARD DUTY ASPHALT
STANDARD DUTY CONCRETE
HEAVY DUTY CONCRETE
LANDSCAPE - SEE LANDSCAPE PLANS
NOTE
ALL PARKING STALL AND DRIVE LANE DIMENSIONS ARE TO FACE OF CURB, WHERE APPLICABLE.
SITE DATA
TOTAL AREA 0.99 ACRES
IMPERVIOUS AREA 0.60 ACRES = 67%
PERVIOUS AREA 0.29 ACRES = 33%
PARKING COUNT
TYPE REQUIRED PROVIDED
TOTAL PARKING STALLS 16 37
REGULAR PARKING STALLS 10 35
ADA PARKING STALLS 2 2
SURVEYOR TO OBTAIN AUTOCAD FILE FROM ENGINEER AND VERIFY ALL HORIZONTAL CONTROL DIMENSIONING PRIOR TO CONSTRUCTION STAKING. SURVEYOR MUST VERIFY ALL BENCHMARK, BASIS OF BEARING AND DATUM INFORMATION TO ENSURE IMPROVEMENTS WILL BE AT THE SAME HORIZONTAL AND VERTICAL LOCATIONS SHOWN ON THE DESIGN CONSTRUCTION DRAWINGS. PRIOR TO CONSTRUCTION STAKING ANY DISCREPANCY MUST BE REPORTED TO OWNER AND ENGINEER PRIOR TO CONTINUATION OF ANY FURTHER STAKING OR CONSTRUCTION WORK.
NOTE: CONTRACTOR MUST COORDINATE WORK WITH UTILITY COMPANY AND/CITY PRIOR TO BEGINNING WORK AND IS RESPONSIBLE FOR ALL MATERIALS, LABOR, REPAIRS, ETC. TO COMPLETE WORK AND RESTORE AREA TO SAME STATE PRIOR TO STARTING WORK.
CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL INFORMATION FOR FINAL ACCEPTANCE OF WORK FOR ANY LOCAL, STATE OR FEDERAL AGENCY, UTILITY DISTRICT OR ANY OTHER AGENCY OR DISTRICT HAVING APPROVAL AUTHORITY OVER WORK. THIS INFORMATION MAY INCLUDE, BUT IS NOT LIMITED TO, AS-BUILT PLANS, CERTIFICATIONS, INSPECTIONS AND REPORTS.
NOTE: CONTRACTOR SHALL PROTECT ALL EXISTING SURVEY MONUMENTATION. CONTRACTOR SHALL HAVE LICENSED SURVEYOR REPLACE ANY DAMAGED OR DISTURBED MONUMENTATION AT THEIR COST.
CAUTION - NOTICE TO CONTRACTOR
1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
811 Know what's below. Call before you dig.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.
Galloway
172 N. East Promontory, Suite 274
Farmington, UT 84025
801.963.1357
GallowayUS.com
PRELIMINARY
NOT FOR BIDDING
NOT FOR CONSTRUCTION
COPYRIGHT
THESE PLANS ARE AN INSTRUMENT OF SERVICE AND ARE THE PROPERTY OF GALLOWAY, AND MAY NOT BE DUPLICATED, DISCLOSED, OR REPRODUCED WITHOUT THE WRITTEN CONSENT OF GALLOWAY. COPYRIGHTS AND INFRINGEMENTS WILL BE ENFORCED AND PROSECUTED.
CYPRUS CREDIT UNION
1468 SOUTH RIVER ROAD
ST. GEORGE, UT
Date Issue / Description Init.
Project No:
Drawn By: EB
Checked By: DL
Date: 11/13/2023
SITE PLAN
CS100

Landscape Plan



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CYPRUS CREDIT UNION
1468 SOUTH RIVER ROAD
ST. GEORGE, UT

#	Date	Issue / Description	Init.

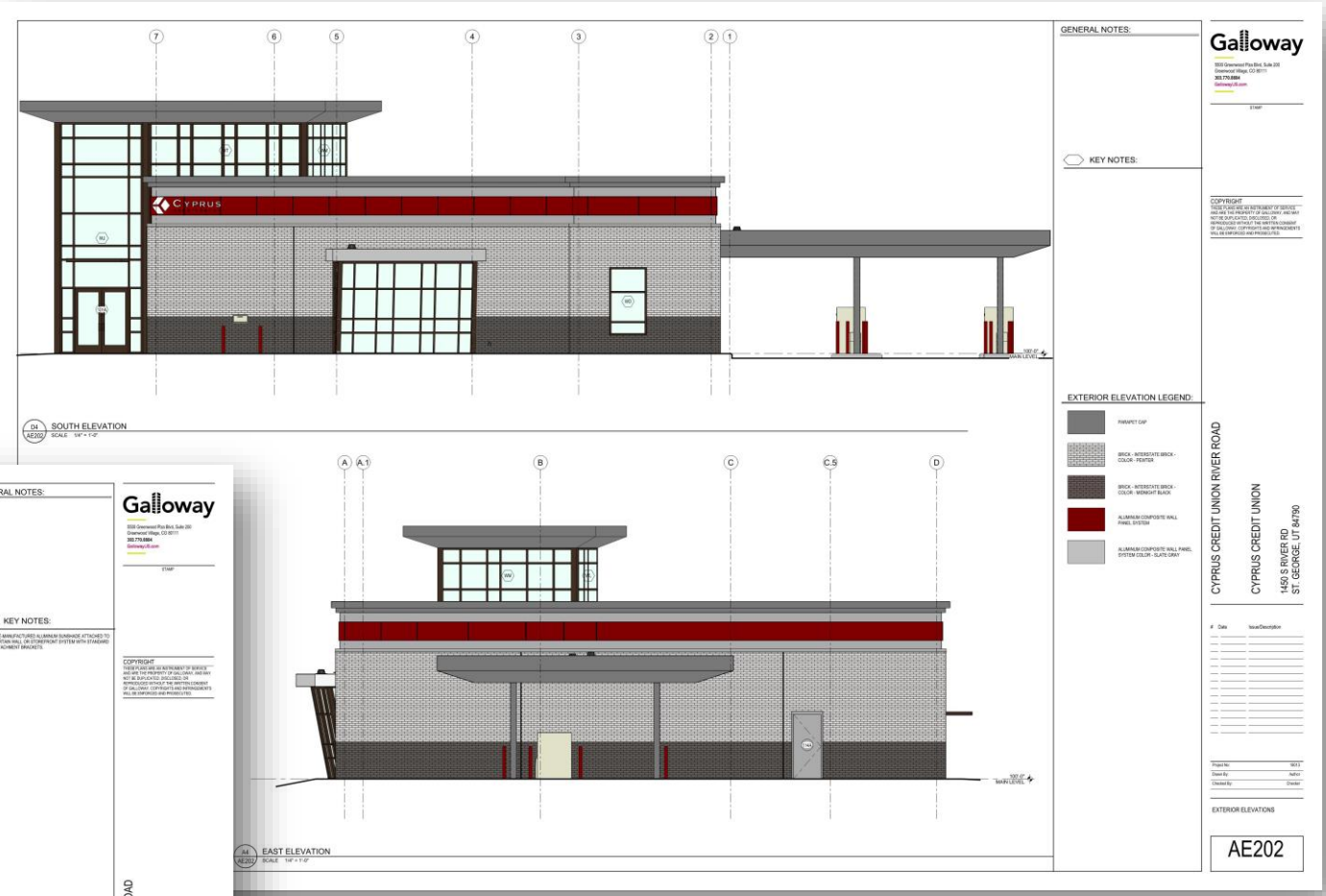
Project No:
Drawn By: JS
Checked By: JR
Date: 10/20/2021

SCHEMATIC LANDSCAPE PLAN

L 1.0

Elevations

NORTH ELEVATION
SCALE 1/4" = 1'-0"
WEST ELEVATION
SCALE 1/4" = 1'-0"
GENERAL NOTES:
KEY NOTES:
EXTERIOR ELEVATION LEGEND:
Galloway
CYPRUS CREDIT UNION RIVER ROAD
CYPRUS CREDIT UNION
1450 S RIVER RD
ST. GEORGE, UT 84790
EXTERIOR ELEVATIONS
AE201


SOUTH ELEVATION
SCALE 1/4" = 1'-0"
EAST ELEVATION
SCALE 1/4" = 1'-0"
GENERAL NOTES:
KEY NOTES:
EXTERIOR ELEVATION LEGEND:
Galloway
CYPRUS CREDIT UNION RIVER ROAD
CYPRUS CREDIT UNION
1450 S RIVER RD
ST. GEORGE, UT 84790
EXTERIOR ELEVATIONS
AE202

Renderings

Renderings

Renderings

Materials Board

ORDINANCE NO._____

AN ORDINANCE AMENDING AN APPROVED PD-C (PLANNED DEVELOPMENT COMMERCIAL) ON APPROXIMATELY 0.89 ACRES, LOCATED ON THE SOUTHEAST CORNER OF RIVER ROAD AND GEORGE WASHINGTON BOULEVARD FOR THE PURPOSE OF ADDING A 4,160 FT² CREDIT UNION FOR A PROJECT TO BE KNOWN AS CYPRUS CREDIT UNION, WITH CONDITIONS FROM THE PLANNING COMMISSION.

(Cyprus Credit Union)

WHEREAS, the property owner has requested to amend the PD-C (Planned Development Commercial) on approximately 0.89 acres, located on the southeast corner of River Road and George Washington Parkway to add a 4,160 ft² credit union; and

WHEREAS, the City Council held a public meeting on this request on April 4, 2024; and

WHEREAS, the Planning Commission held a public hearing on this request on March 12, 2024, and recommended approval with a 6-0 vote with the following conditions:

1. Stacking or queuing spaces shall not block parking spaces or loading areas on the site.
2. Queuing lanes shall be a minimum of 13 feet in width.
3. A stacking que shall not be located within 50’ of a public intersection or public ingress/egress point.
4. Drive-through facilities shall not be placed adjacent to residential properties.
5. That the applicant provide some relief of the east wall to present to City Council.

WHEREAS, the City Council has determined that the requested change to the Planned Development 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 approved planned development within the PD-C Zone for the property described in Exhibit “A”, shall be amended upon the Effective Date of this Ordinance to reflect the approval of an additional building as shown in Exhibit “C”. The planned development amendment and location is more specifically described on the attached property legal description, incorporated herein as Exhibit “A”, and parcel exhibit, incorporated herein as Exhibit “B”.

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 on the date executed below, and upon posting in the manner required by law.

APPROVED AND ADOPTED by the St. George City Council, this 4th day of April 2024.

CITY OF ST. GEORGE:

_____
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	_____

Exhibit “A” – Legal Description

RIVER CROSSING 1 AMD & EXT (SG) Lot: 101

Exhibit “B” – Parcel Exhibit

Location Of The Cyprus Credit Union At River Crossing Planned Development Amendment

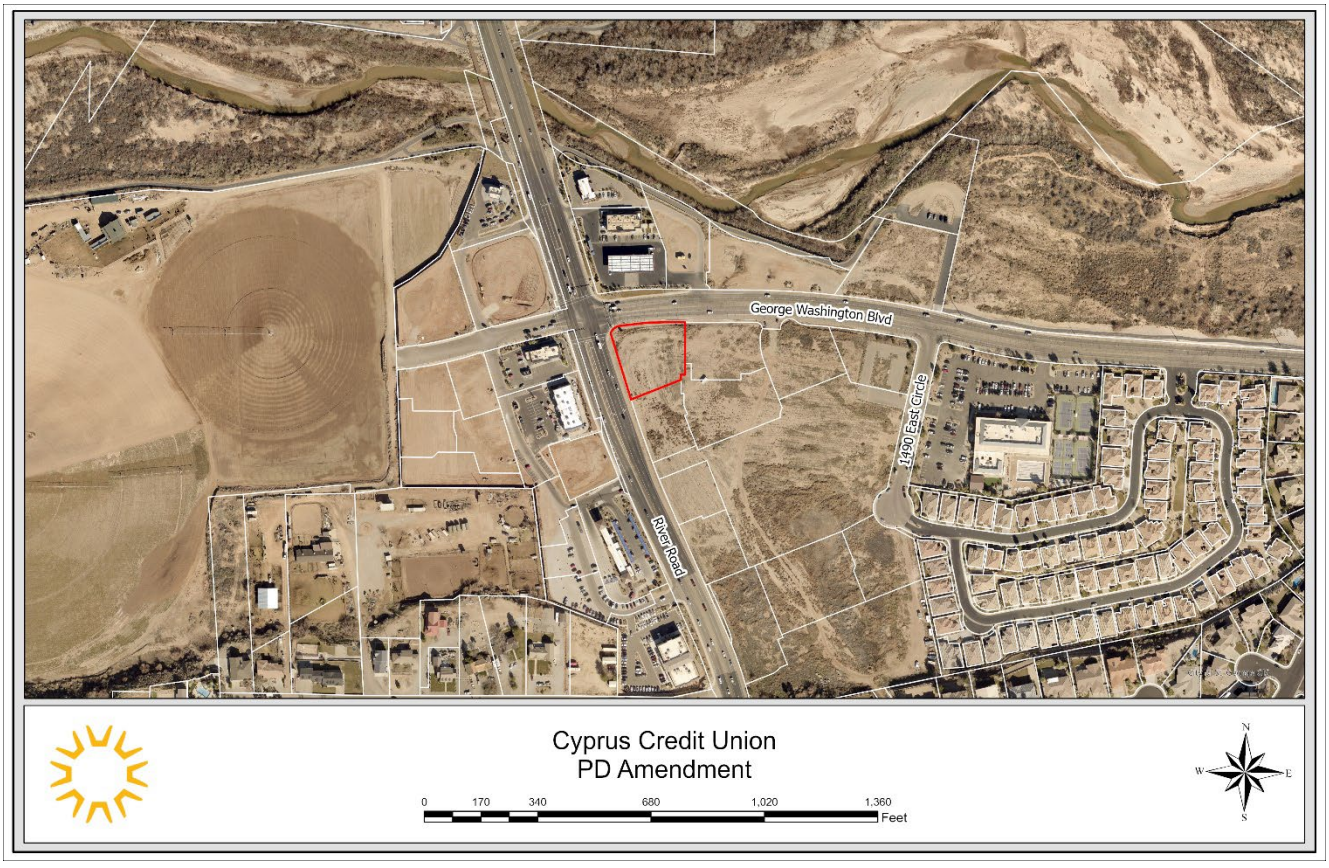
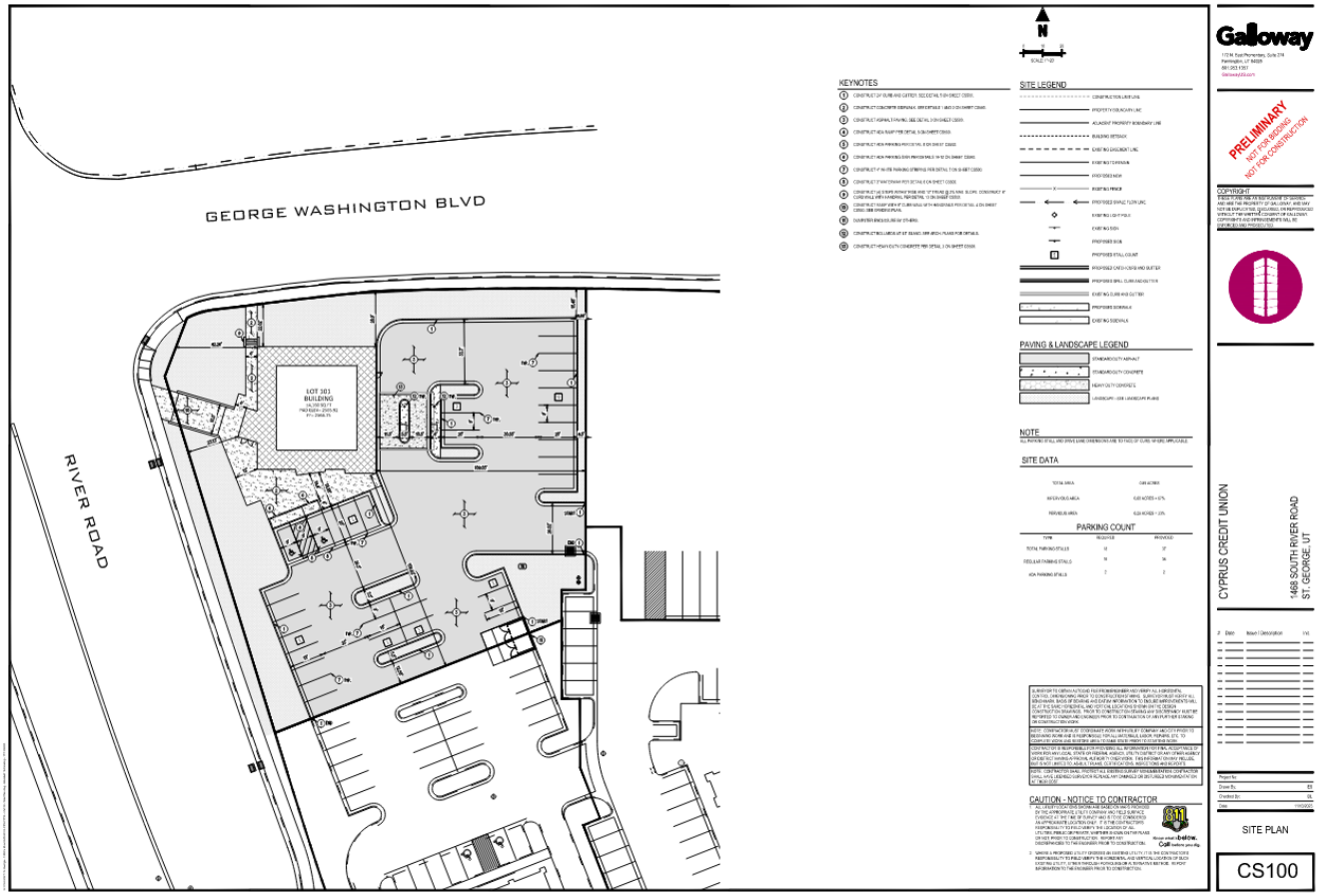


Exhibit “C” – Site Plan



Agenda Date: 04/04/2024 **Agenda Item Number:** 07

Subject:

Consider approval of a Hillside Permit for the South Rim at Foremaster subdivision Phase 2 Lot 32 to adjust the ridgeline location to the south. (Case No. 2024-HS-006)

Item at-a-glance:

Staff Contact: Dan Boles

Applicant Name: Heath Snow

Reference Number: 2024-HS-006

Address/Location:

1636 East Howard Lane

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

This is a request to obtain a hillside permit for the property located at 1636 E. Howard Lane (Lot 32, South Rim at Foremaster Ridge Phase 2). The Hillside Review Board met with the applicant on March 12, 2024 and recommended adjusting the ridgeline location approximately 11 feet. The Planning Commission heard the request on March 26, 2024, and recommended to follow the Hillside Review Board's recommendation with a condition that any wall built at the new proposed ridgeline be stained to match the existing ridgeline.

Staff Narrative (need/purpose):

This location is a residential neighborhood, and the applicant would like to build a house on this lot. The rear of the applicants property abuts the ridge line of Foremaster Ridge. The plat identifies this ridge line as having a 30 ridge line setback area and states, No structures, walls, or solid fences are allowed within the 30 foot ridge line setback area. The applicant is requesting to review the location of the 30-foot ridgeline setback as shown on the final plat for South Rim at Foremaster Ridge Phase 2 lot 32 and propose a new ridgeline which the owner feels is more indicative of the actual ridgeline.

Name of Legal Dept approver: Jami Brackin

Budget Impact: No Impact

Recommendation (Include any conditions):

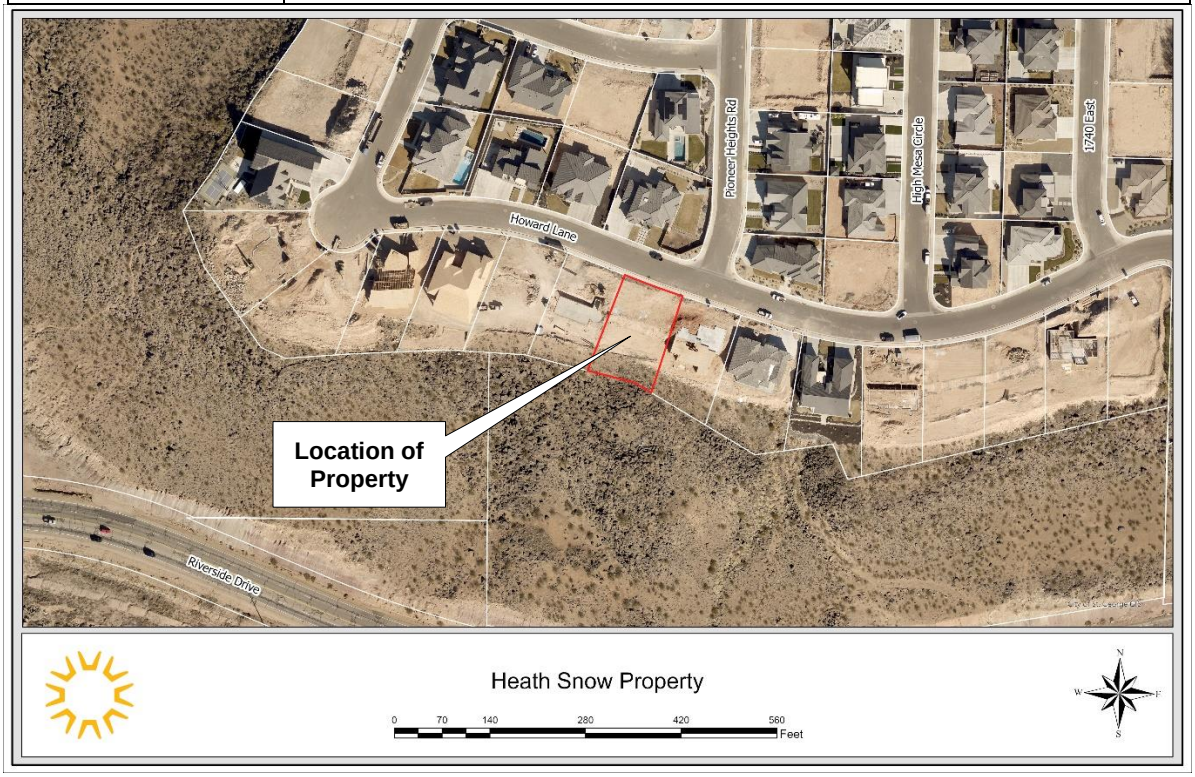
The Hillside Review Board and Planning Commission both heard the request from the applicant and recommend an adjustment of the ridgeline as shown as Exhibit "D" in the staff report with the following condition:1. That any wall built at the new proposed ridgeline be stained to match the existing ridgeline.

St.George
Community Development

Hillside Permit

HILLSIDE REVIEW BOARD AGENDA REPORT: **03/13/2024**
PLANNING COMMISSION AGENDA REPORT: **03/26/2024**
CITY COUNCIL AGENDA REPORT: **04/04/2024**

Heath Snow Property – South Rim at Foremaster Ridge Phase 2 Lot 32 Hillside Development Permit (Case No. 2024-HS-006)		
Request:	A Hillside Development Permit to adjust the location of the ridgeline and ridgeline setback on lot 32 of the South Rim at Foremaster Ridge Phase 2 subdivision in anticipation of the construction of a residential home.	
Applicant:	Heath Snow	
Location:	1636 East Howard Lane	
General Plan:	Low Density Residential (LDR)	
Existing Zoning:	Single Family Residential, minimum lot size 10,000 sf (R-1-10)	
Surrounding Zoning:	North	R-1-10
	South	R-1-10
	East	R-1-10
	West	R-1-10
Land Area:	Approximately 0.32 acres	



BACKGROUND

This is a request to obtain a hillside permit for the property located at 1636 E. Howard Lane (Lot 32, South Rim at Foremaster Ridge Phase 2). (See Exhibit A, South Rim at Foremaster Ridge Phase 2 final plat.) This location is a residential neighborhood, and the applicant would like to build a house on this lot. The rear of the applicant's property abuts the ridge line of Foremaster Ridge. The plat identifies this ridge line as having a 30' ridge line setback area and states, "*No structures, walls, or solid fences are allowed within the 30' foot ridge line setback area*."

The applicant is requesting to review the location of the 30-foot ridgeline setback as shown on the final plat for South Rim at Foremaster Ridge Phase 2 lot 32 and propose a new ridgeline which the owner feels is more indicative of the actual ridgeline.

The Hillside Review Board (HSRB) met with the applicant on the property and discussed the request to adjust the ridgeline. While the applicant had requested a fairly significant change in the boundary, the HSRB felt that it was prudent to make an adjustment approximately 11 feet to the south, which effectively would effectively move where structures would have to be setback from closer to the property line though not to the extent requested by the applicant.

APPLICABLE ORDINANCE(S) *(Selected portions)*

10-13A-6: Building Setbacks and Additional Design Standards:

A. *Front Setback along Streets:* Along streets where the slope of the adjacent property to the street is over fifteen percent (15%), the minimum setback is twenty feet (20').

B. *Setbacks:* All setbacks shall conform to the underlying zone criteria except as provided herein. No structure or accessory structure shall be constructed within the setback area as defined below. However, a see-through wrought iron fence with at least fifty percent (50%) of the fence open, landscaping, and a nonvertical swimming pool are permitted in the setback area.

1. *Ridgelines:* All ridgelines as shown on the ridgeline map shall be subject to the setback provisions contained herein. Setbacks from ridgelines not identified on the ridgeline map shall be a minimum of thirty feet (30'), or greater if recommended in the geotechnical reports.

2. *Plateaus:* On plateaus, the setback from the ridgeline shall be a minimum of fifty feet (50') unless a greater setback is recommended in the geotechnical reports.

C. *Cuesta:* Where a ridgeline occurs on a cuesta, the minimum setback shall be one hundred feet (100') measured normal (perpendicular) to the closest point of the ridge, unless a greater setback is recommended in the geotechnical report.

D. *Additional Design Standards:*

1. Retaining walls shall be colored to blend into the surrounding natural geology.

2. Retaining wall height is limited to the heights set forth in chapter 18 of this title and the standards for rock wall construction.

3. Building exterior colors shall be earth tone and blend with the surrounding natural landscape.

4. In residential zones, “no disturbance” areas shall be held as the “common area” of a project. Common areas shall be owned and maintained by the homeowners’ association or may be deeded to the city when accepted by the city.

5. In nonresidential zones, any “no disturbance” area shall be identified on the final site plan or final plat.

6. Any required no disturbance area shall be identified on the ground with temporary fencing or other approved means to prevent accidental disturbance of the area during construction and such fencing shall be installed prior to issuance of a grading permit.

7. The building site shall be located on the flattest portion of the parcel.

8. No structure shall extend over any natural ridgeline. The structure shall be in contact with the ground at all edges. (Ord. 2019-10-002, 10-10-2019)

EXHIBITS PROVIDED

1. Exhibit A – South Rim at Foremaster Ridge Phase 2 Plat
   “Exhibit A” in the packet shows the plat of South Rim at Foremaster Ridge Phase 2.

2. Exhibit B – Aerial of Existing Ridgeline with Plat Overlay
   “Exhibit B” is an aerial map with the South Rim at Foremaster Ridge Phase 2 Plat overlayed.

3. Exhibit C – Map of Proposed Ridgeline
   “Exhibit D” is a map showing the location of the proposed ridgeline designation with the proposed ridgeline and ridgeline setback of Lot 32.

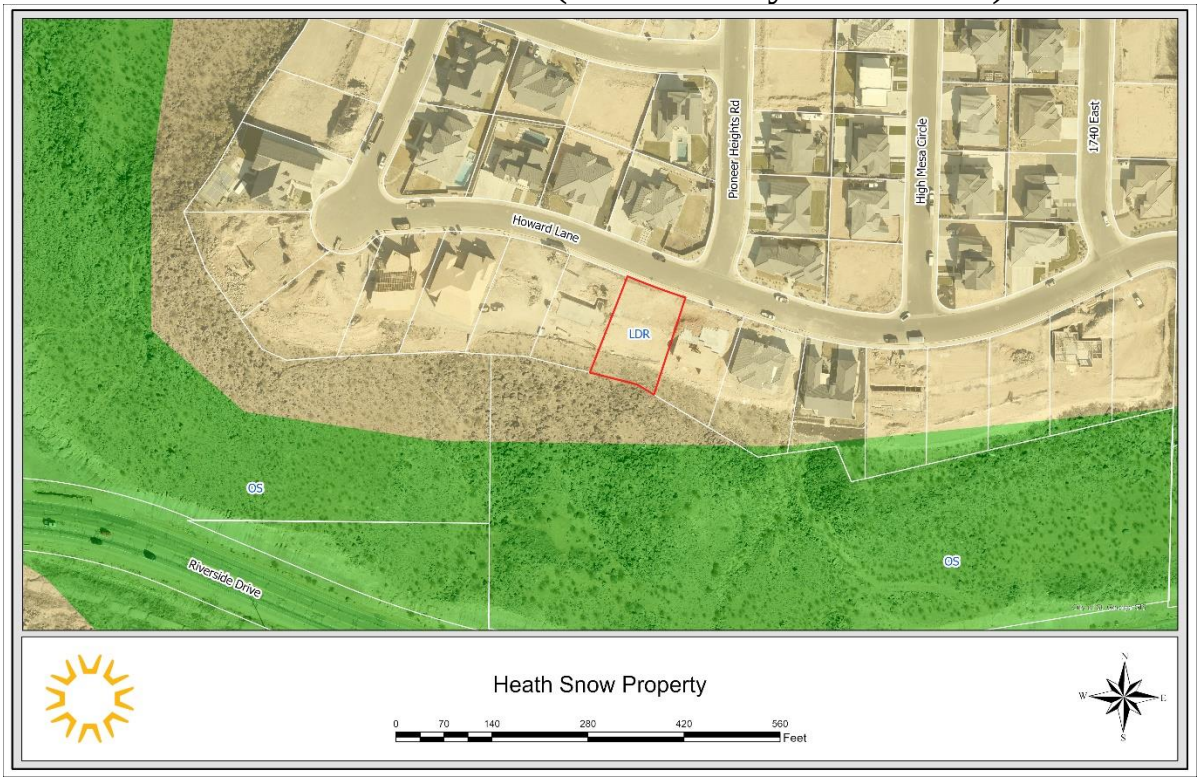
4. Exhibit D – HSRB Proposed Ridgeline Amendment

RECOMMENDATION

The HSRB met with the applicant on his request to adjust the boundary of the ridgeline and the ridgeline setback for Lot 32 of the South Rim at Foremaster Ridge Phase 2 plat. They recommended that it be adjusted in accordance with the exhibit outlined in the presentation.

On March 27, 2024, the request was heard by the Planning Commission. They recommend that the boundary be adjusted as shown on the blue line in “Exhibit D” of this staff report and with a condition that any wall built at the new proposed ridgeline be stained to match the existing ridgeline.

General Plan – LDR (Low Density Residential)



Zoning - R-1-10

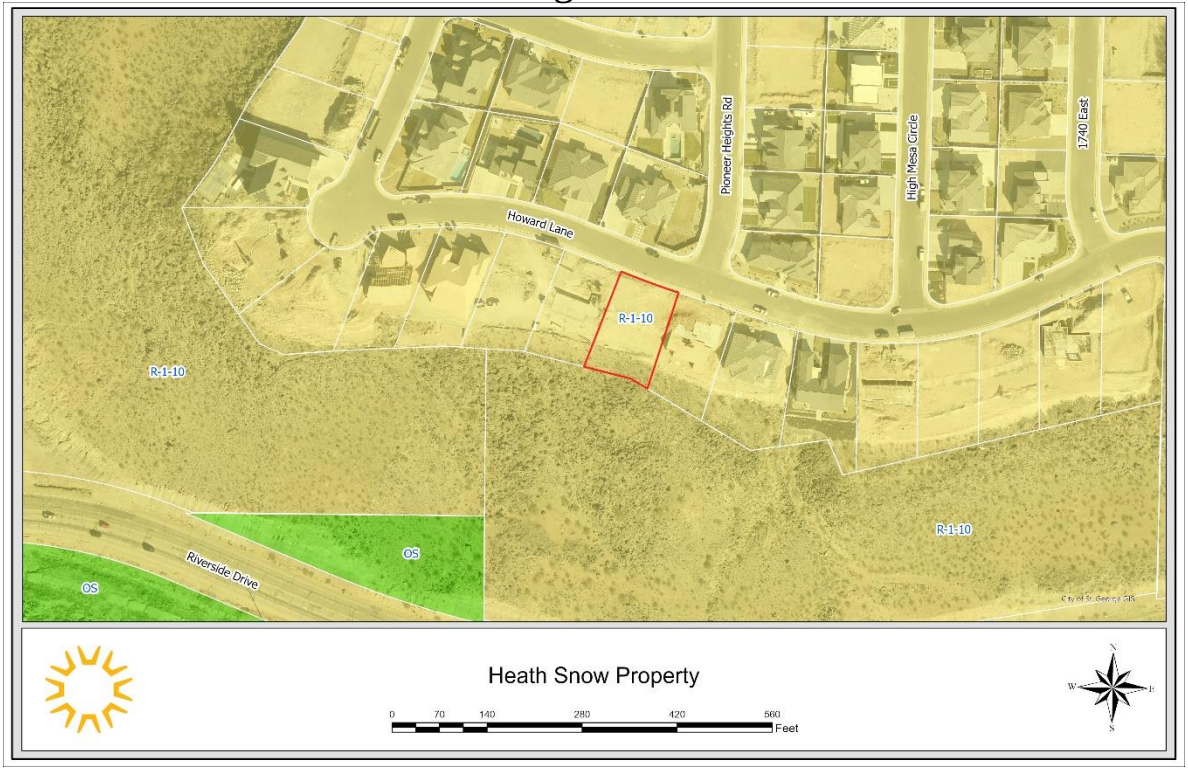


EXHIBIT A
SOUTH RIM AT FOREMASTER RIDGE PHASE 2

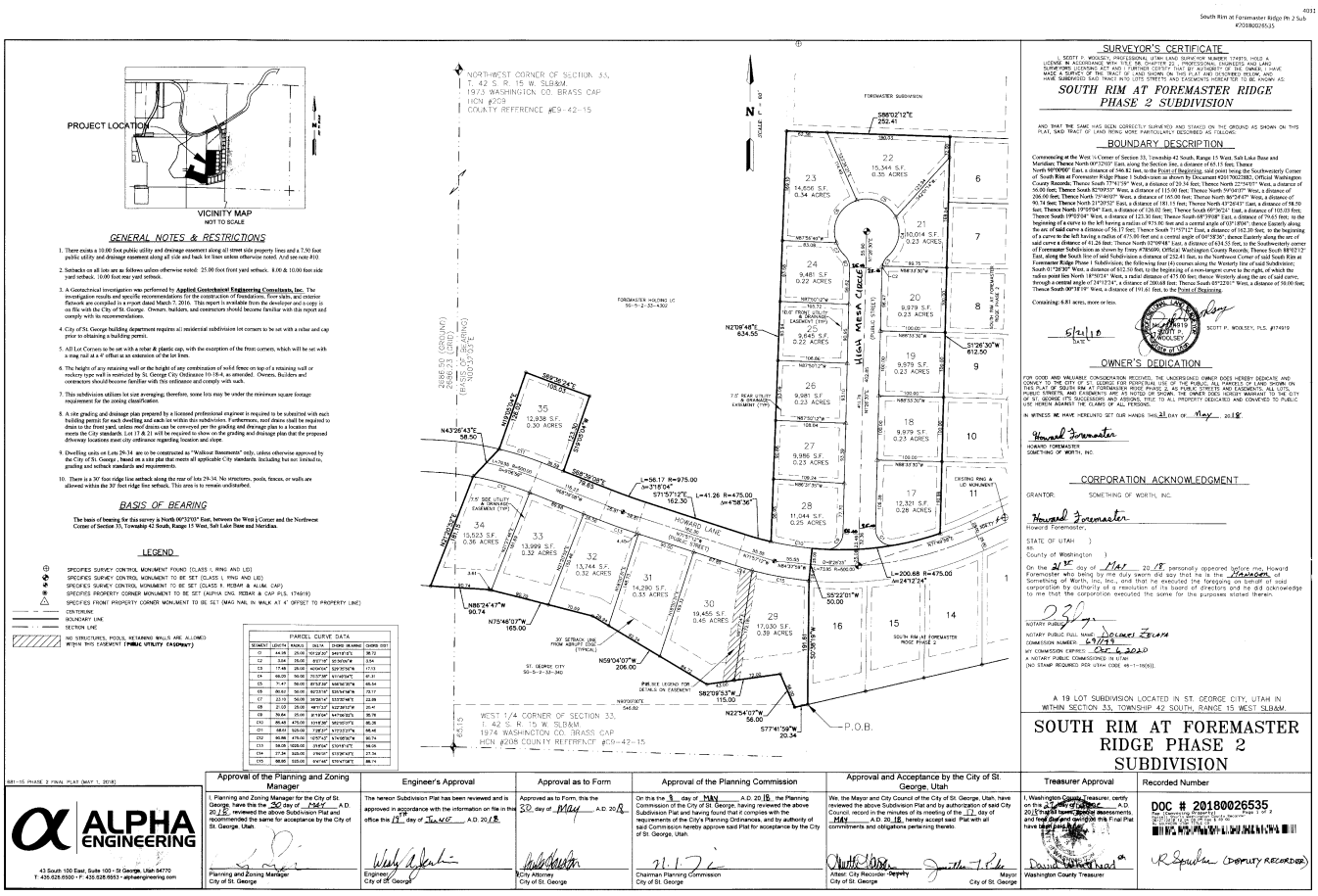
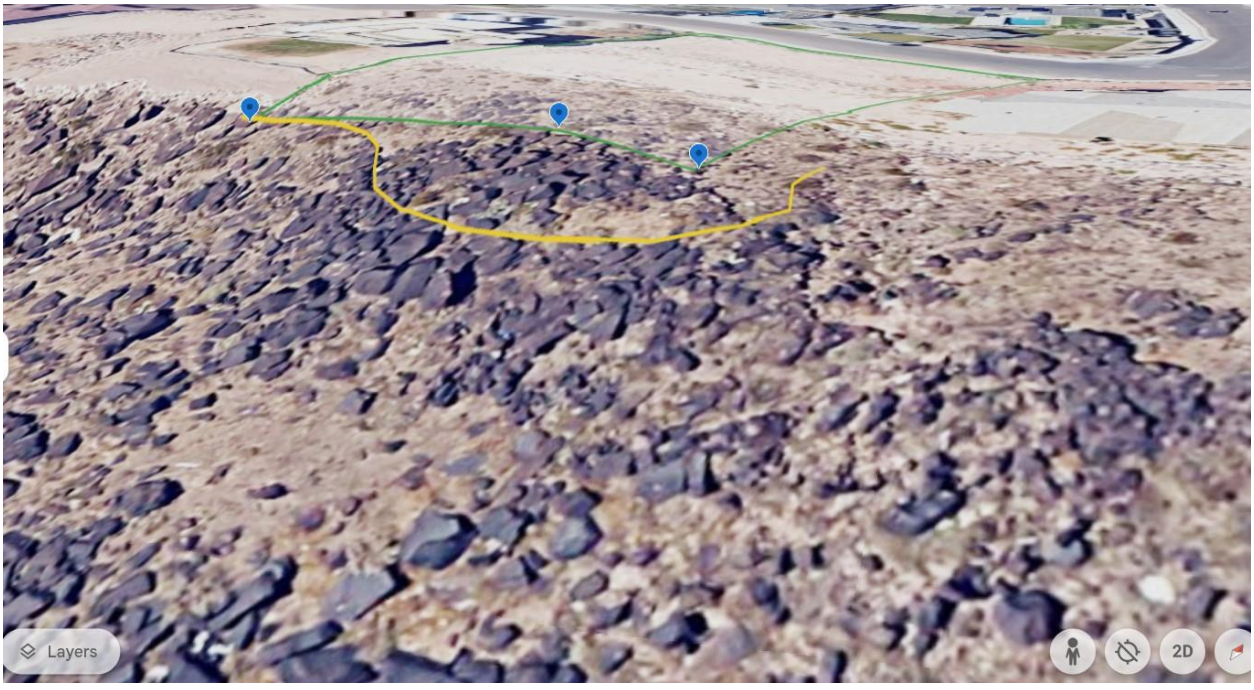
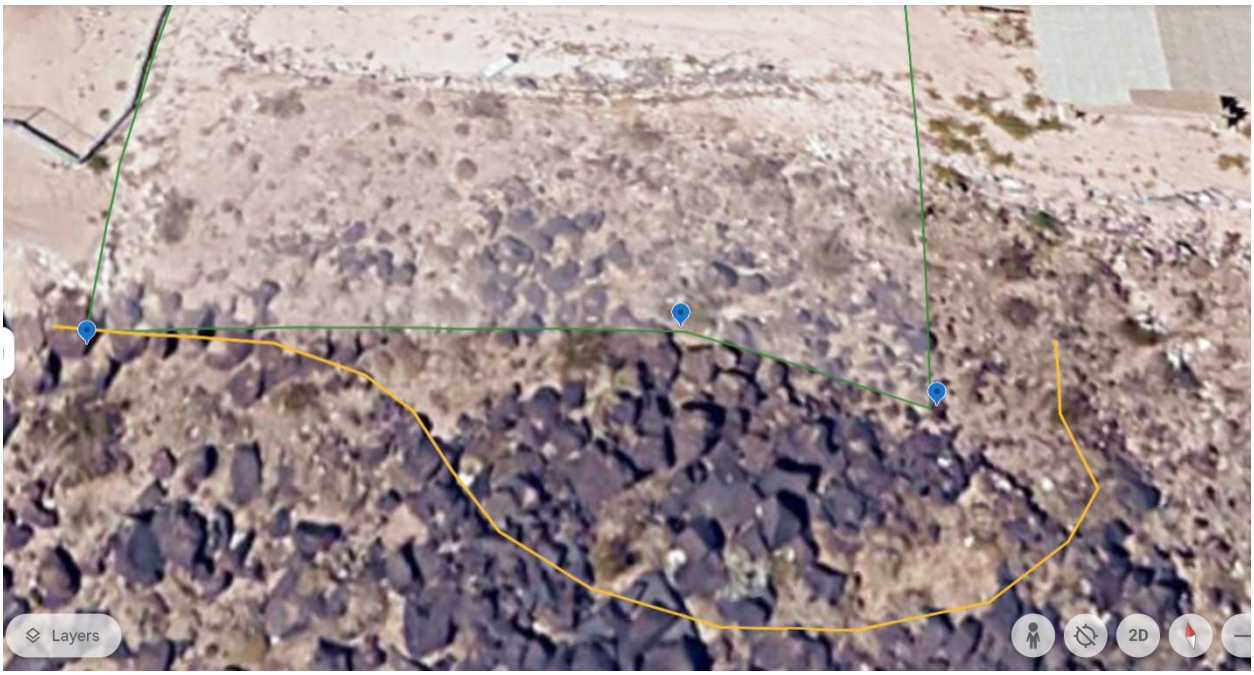


EXHIBIT B
AERIAL IMAGES OF LOT 32

2223 George Washington Blvd
St. George, Utah
View on Google Maps
Google
ST JAMES LN
BOULDER CREEK DR

EXHIBIT C
PROPOSED RIDGELINE




Layers
2D

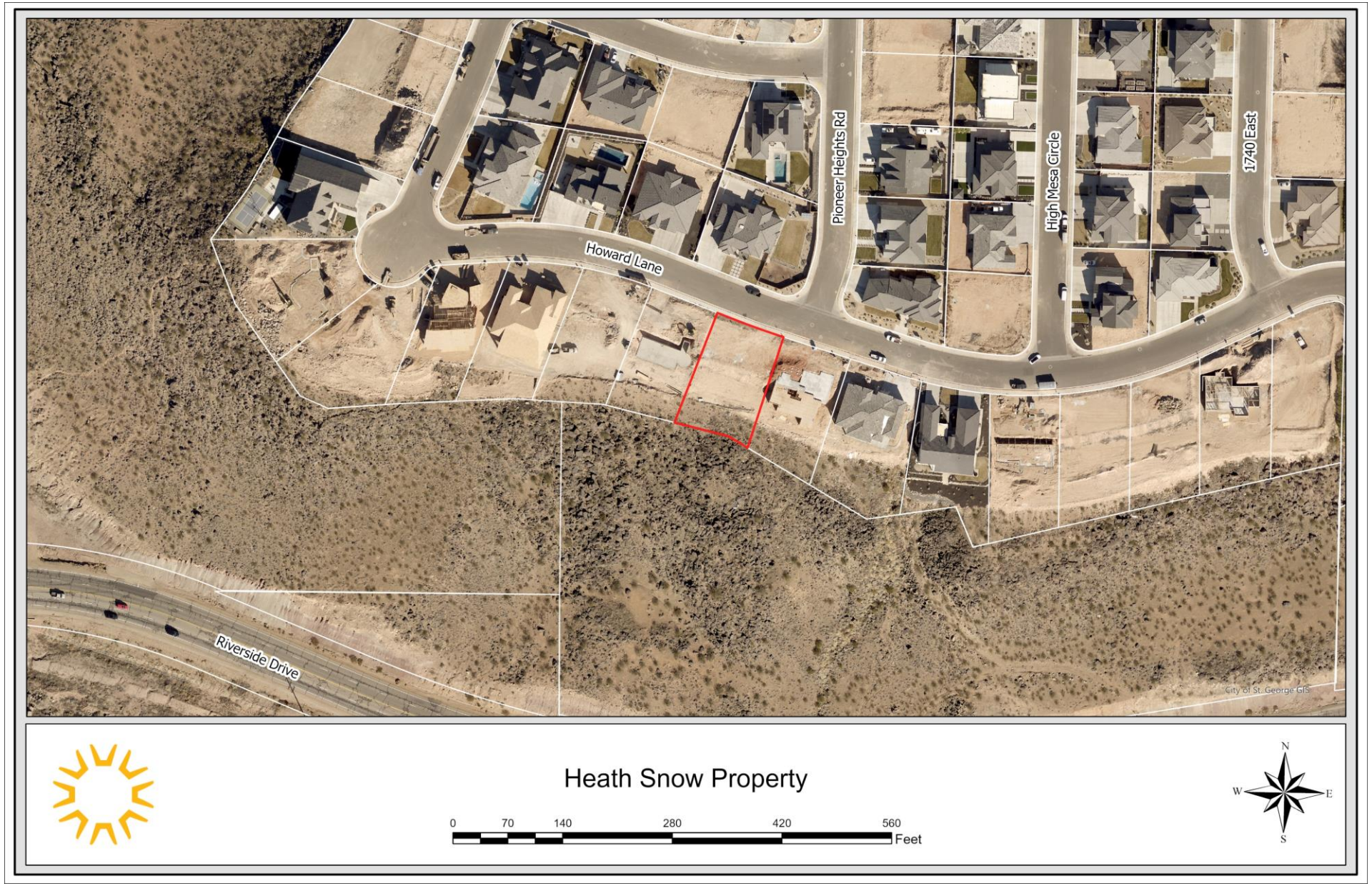
Layers

EXHIBIT D
HSRB PROPOSED RIDGELINE AMENDMENT

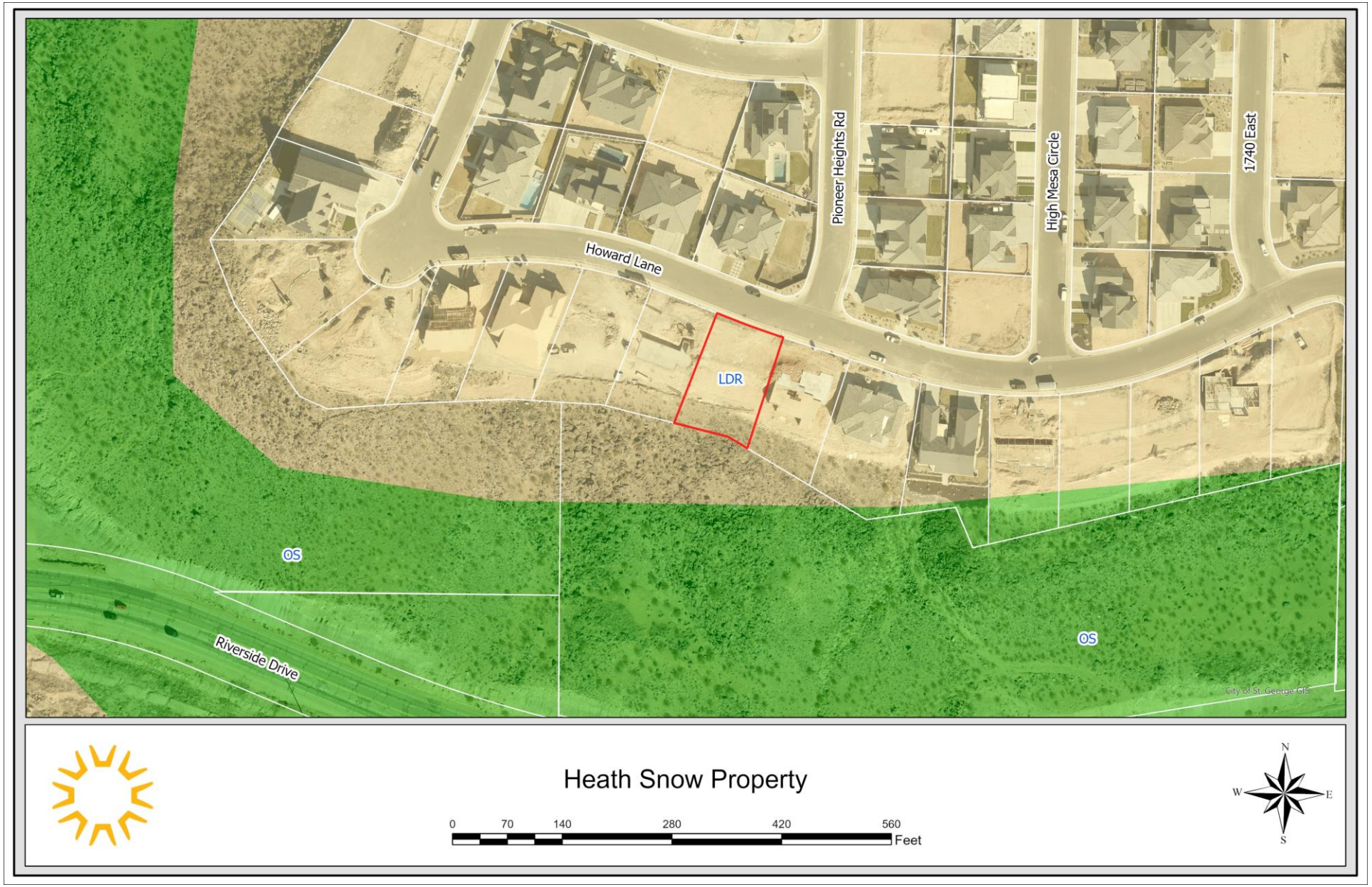
Lot 32 South Rim at Foremaster Phase 2

2024-HS-006

Aerial Map


Howard Lane
Pioneer Heights Rd
High Mesa Circle
1740 East
Riverside Drive
City of St. George GIS
Heath Snow Property
0
70
140
280
420
560
Feet
N
W
E
S

Land Use Map


Howard Lane
Pioneer Heights Rd
High Mesa Circle
1740 East
LDR
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OS
Riverside Drive
City of St. George GIS
Heath Snow Property
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70
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560
Feet
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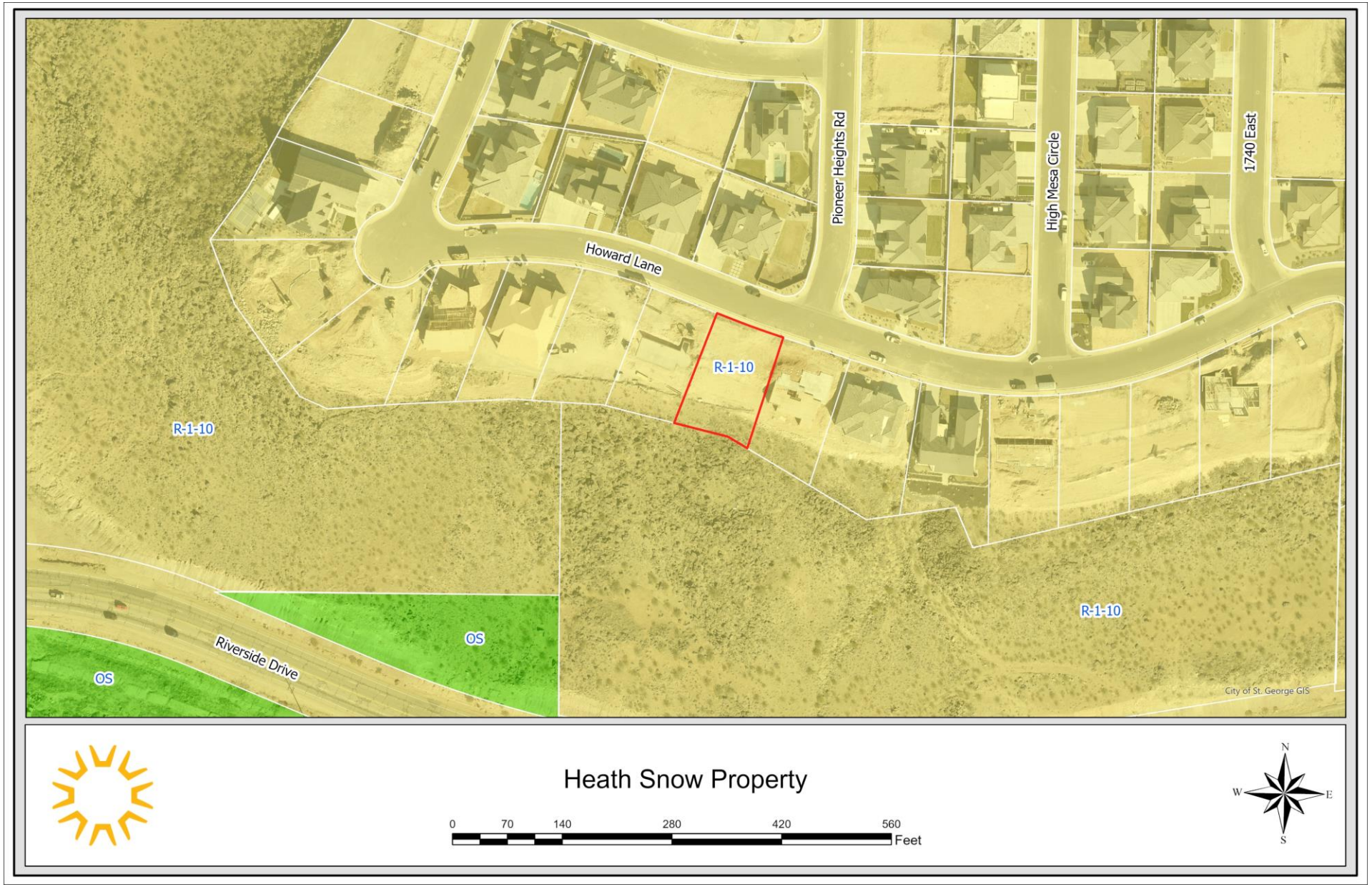
Zoning Map


Howard Lane
Pioneer Heights Rd
High Mesa Circle
1740 East
R-1-10
R-1-10
R-1-10
OS
OS
Riverside Drive
City of St. George GIS
Heath Snow Property
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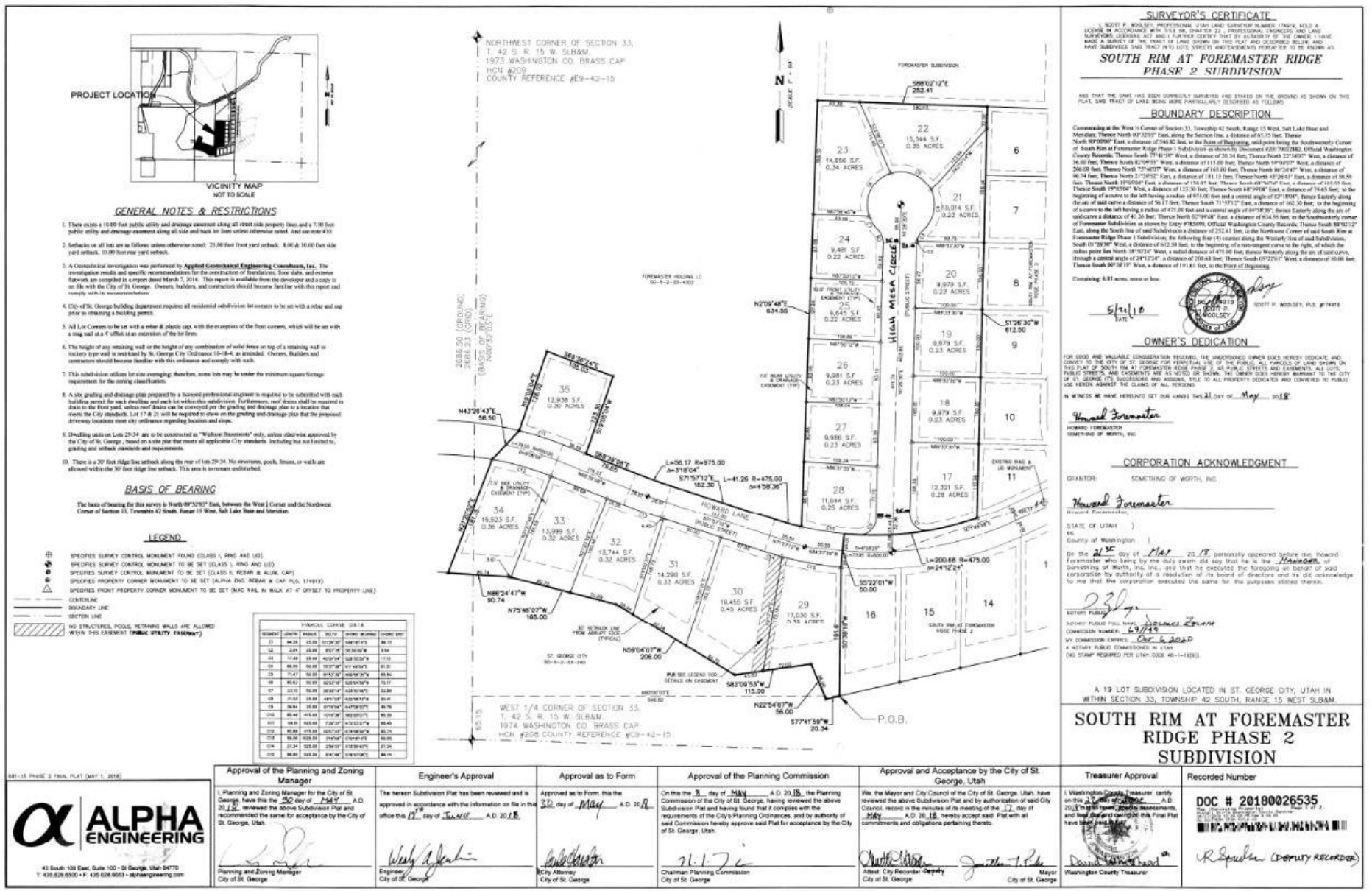
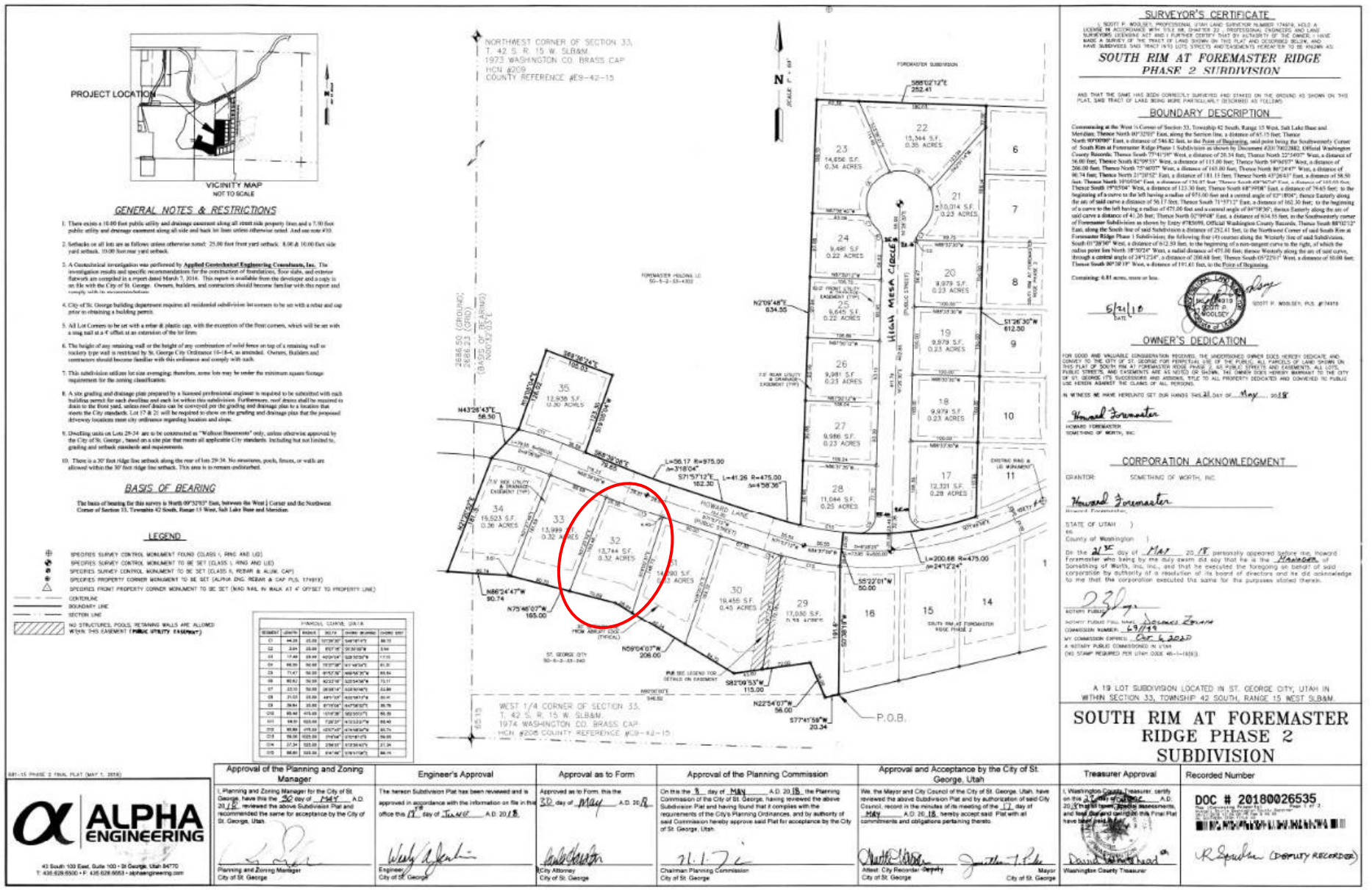
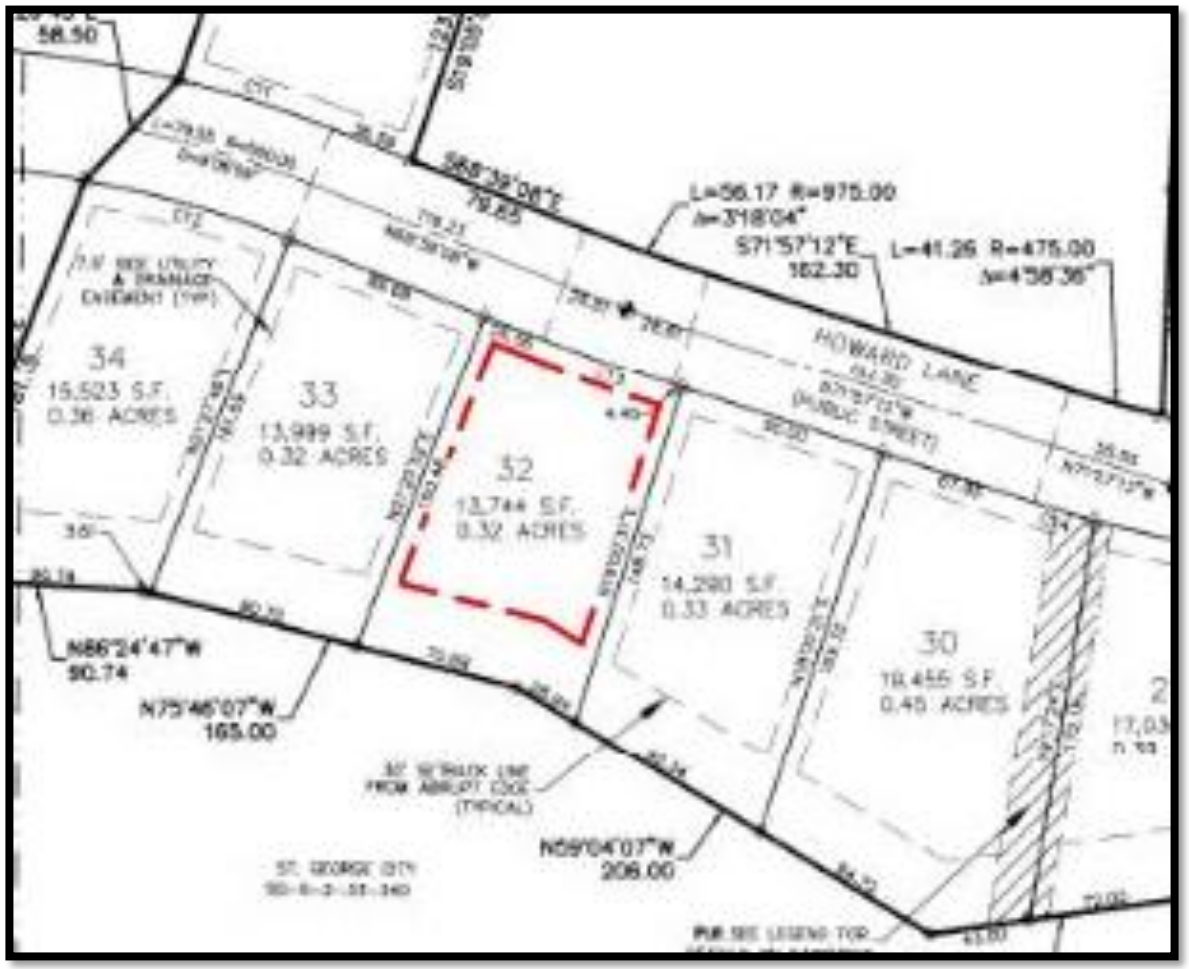
South Rim Plat



South Rim Plat



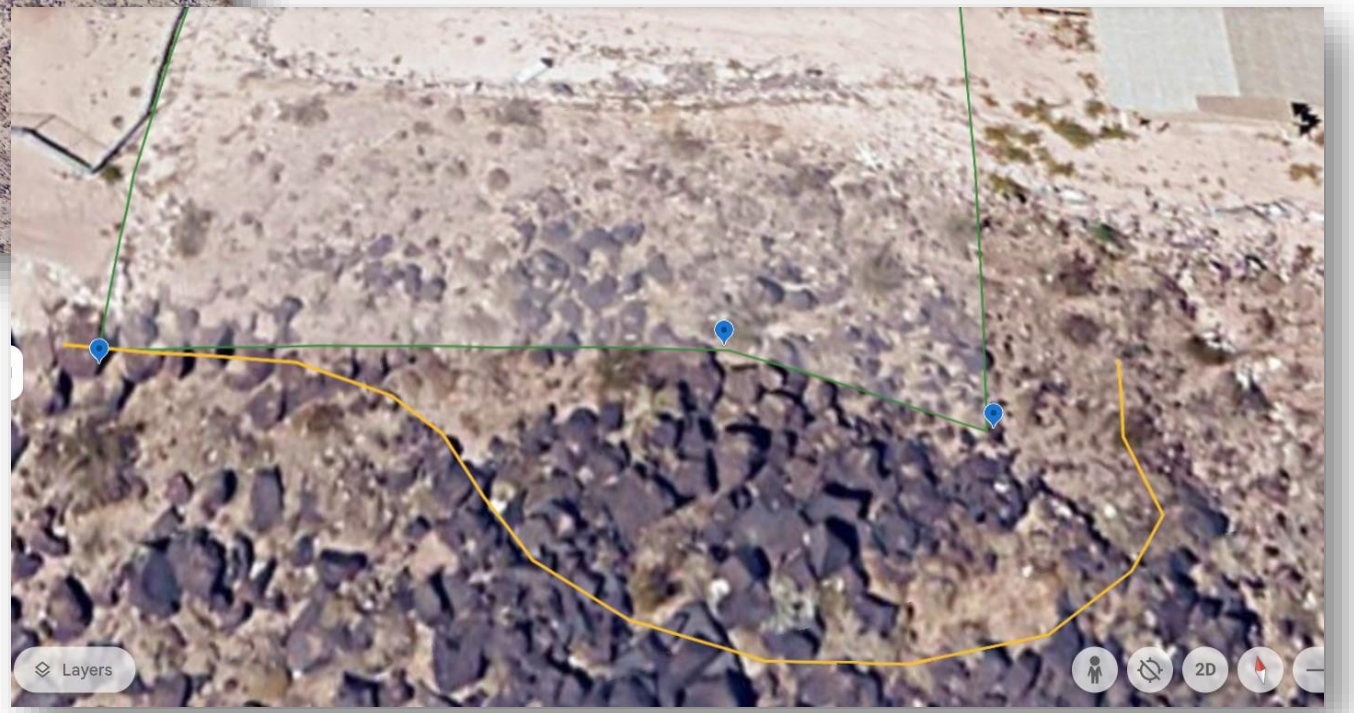
South Rim Plat



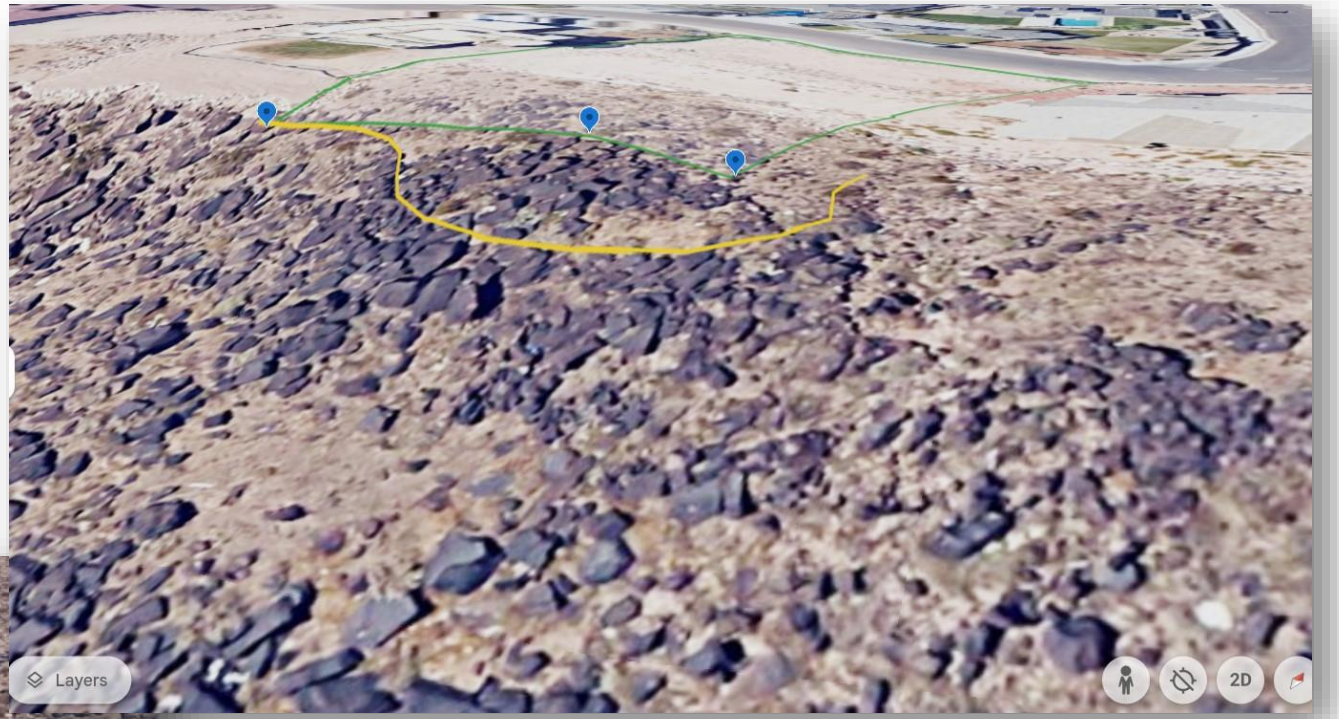
Images of Property

Images of Property

Applicant’s Proposed Ridgeline



Applicant's Proposed Ridgeline



Recommendation by the HSRB

Existing Ridgeline Boundary

Proposed Ridgeline Boundary

30 Foot Offset