NOTICE OF MEETING
PLANNING COMMISSION
CITY OF ST. GEORGE
WASHINGTON COUNTY, UTAH

Public Notice

Notice is hereby given that the Planning Commission of the City of St. George, Washington County, Utah, will hold a **Planning Commission** meeting in the City Council Chambers, 175 East 200 North, St George, Utah, on **Tuesday, November 14, 2023,** commencing at **5:00 p.m**.

The agenda for the meeting is as follows:
Call to Order
Flag Salute

1. **Factory Powersports Addition Planned Development Amendment and Development Agreement** – Russell Key, representing General Properties LLC, is requesting approval of an amendment to the Factory Powersports PD (Planned Development) and adopt a development agreement. The amendment and development agreement would allow the applicant to add a 6,900 square foot addition to an existing building. The property is approximately 2.23 acres and is located at 1685 East Red Hills Parkway. The applicant is General Properties LLC. (Staff – Carol Winner)
    a. **PUBLIC HEARING:** Consider a request for a Development Agreement that will allow the landscape strip along Red Hills Parkway to be reduced in size to accommodate a City trail that will run through the property. **Case No. 2023-DA-006**
    b. PUBLIC HEARING: Consider a request for a Planned Development Amendment to allow the applicant to add a 6,900 square foot addition to the existing building. **Case No. 2023-PDA-019**

2. **River Crossing Planned Development Amendment** – **PUBLIC HEARING:** Trevor Einerson and Steve Crandall, representing RCSG LLC, is requesting approval of an amendment to the elevations on eleven of the pads in the development. This project is located on the southeast corner of River Road and George Washington Parkway and the various buildings are scattered throughout the project. The overall River Crossing development is approximately 18 acres. **Case No. 2023-PDA-022** (Staff – Dan Boles)

3. **Tech Ridge Southeast Slope/Ridgeline Mitigation Hillside Development Permit** – Mike Bradshaw, representing Alliance Consulting, is requesting approval of a Hillside Development Permit to make modifications to the ridgeline along the southeast slope of the Tech Ridge Development. The applicant is Isaac Barlow. **Case No. 2023-HS-002** (Staff – Carol Winner)

4. **Tech Ridge Southeast Access Road** – Mike Bradshaw, representing Alliance Consulting, is requesting approval of a hillside development permit to construct the southeast access road from 250 West St. to the Tech Ridge Development. The applicant is Isaac Barlow. **Case No. 2023-HS-003** (Staff – Carol Winner)

5. **Tech Ridge Area 1.6 Subdivision Preliminary Plat** – Mike Bradshaw representing Alliance Consulting is requesting approval of a Preliminary Plat to develop fifteen (15) lots on approximately 17.78 acres located generally at 650 South Tech Ridge Parkway. The applicant is Isaac Barlow. **Case No. 2023-PP-040** (Staff – Carol Winner)

6. **Desert Color Pickleball Courts Preliminary Plat** – Ryan Lay, representing Bush and Gudgell is requesting approval of a Preliminary Plat to develop one (1) lot on approximately 1.49 acres located to the south of the Desert Color clubhouse between Lagoon Parkway and Akoya Pearl Rd. The applicant is Desert Color St George LLC. **Case No. 2023-PP-036** (Staff – Dan Boles)

7. **Red Industrial Preliminary Plat** – Eric McFadden, representing Premier Design is requesting approval of a Preliminary Plat to develop three (3) lots on approximately 20.00 acres located at approximately 1630 E Commerce Drive in Fort Pierce Industrial Park. The applicants are Kenneth and Patricia Ann Blake. **Case No. 2023-PP-041** (Staff – Mike Hadley)

8. **Rustic Estates Preliminary Plat** – Ryan Lay, representing Bush & Gudgell is requesting approval of a Preliminary Plat to develop four (4) lots on approximately 2.26 acres located on the south-east corner of Rustic Drive and River Road. The applicant is Bush and Gudgell. **Case No. 2023-PP-034** (Staff – Dan Boles)

9. **Minutes**

   Consider a request to approve the meeting minutes from the October 24, 2023, meeting.

10. **City Council Items**

    Carol Winner the Community Development Director will report on items heard at the November 2, 2023, City Council meeting.

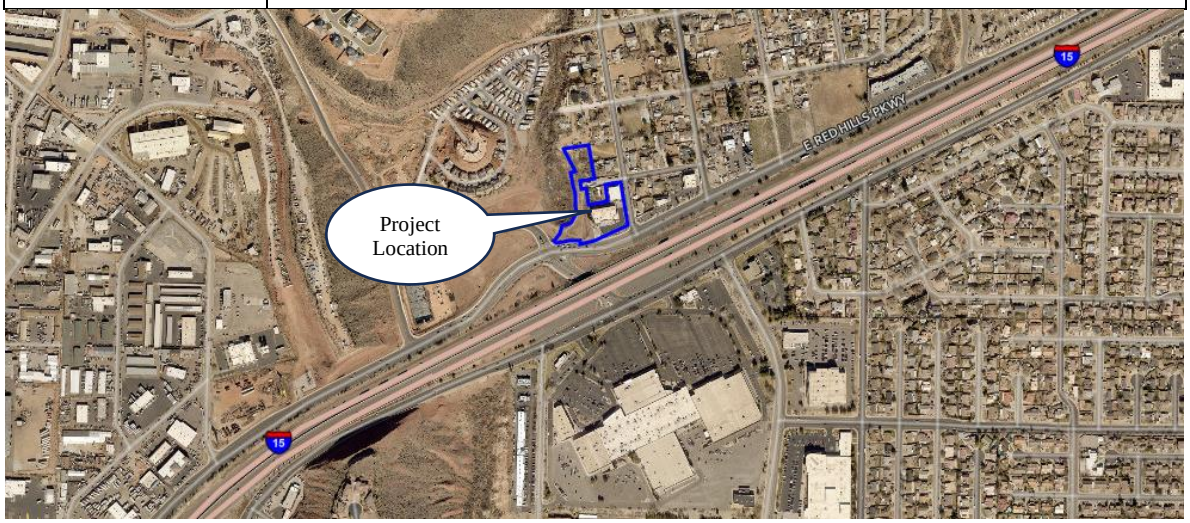
    1. 2023-PP-037 Trilogy Estates
    2. 2023-PP-038 Desert Canyons Business Park Phase 1 Amended
    3. 2023-PP-039 Venture Park Subdivision
    4. 2023-ZC-016 St George Fire Station 1
    5. 2023-PDA-020 Tuscan Hills
    6. 2023-ZC-013 NJE Family LC
    7. 2023-GPA-006 Riverside Dr Property

Brenda Hatch – Development Office Supervisor

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 at (435) 627-4674 at least 24 hours in advance if you have special needs.

PLANNING COMMISSION AGENDA REPORT: 09/26/2023
CONTINUED PLANNING COMMISSION AGENDA REPORT: 11/14/2023

Factory Powersports Addition Planned Development Amendment (Case No. 2023-PDA-019)		
Request:	Consider an ordinance amending an approved PD-C (Planned Development Commercial) and adopt a development agreement on approximately 2.23 acres, located at 1685 East Red Hills Parkway for the purpose of adding a 6900-square foot addition to an existing business for a project to be known as Factory Powersports.	
Applicant:	General Properties, LLC	
Representative:	Russell Key	
Location:	Located at 1685 East Red Hills Parkway	
General Plan:	COM (Commercial)	
Existing Zoning:	PD-C (Planned Development Commercial)	
Surrounding Zoning:	North	RE-12.5 (Residential Estates 12,500sf minimum lot size)
	South	PD-C (Planned Development Commercial)
	East	RE-12.5 (Residential Estates 12,500sf minimum lot size)
	West	PD-C (Planned Development Commercial)
Land Area:	Approximately 2.23 acres	



BACKGROUND:
This is a request to amend the PD-C (Planned Development Commercial) to allow for an addition to the existing Factory Powersports building. On August 6, 2020, Factory Powersports successfully changed their zoning from C-2 (Highway Commercial) and RE-12.5 (Residential Estates 12,500 sq. ft. minimum lot size) to PD-C designation in preparation for this addition. This addition will provide expanded showroom space and additional storage space.

The new addition will be approximately 6,900 square feet. It will be built on the west side of the existing building. Due to the significant drop on this side of the property, the new addition will appear to be one story in the front and two stories from the rear and along the west side. The exterior design will complement the existing building with EIFS, CMU block, and metal paneling. There will be 10 additional parking stalls added which meets the parking requirements. Directly to the north, there is residential property that is located at the same elevation as the existing building and the second story of the addition. A 6' block wall separates the properties, and the applicant will be required to put in a 10' landscape buffer along this wall.

On September 26, 2023, the Planning Commission heard this item. During discussion, it was mentioned that the applicant-owned property to the west, to be developed at a later date, would not have enough room for the required 15' landscape strip along Gateway Drive due to a 10' city trail the applicant would be putting in. To mitigate this, a development agreement would be needed; therefore, this item was continued. The applicant has worked with staff on the development agreement presented at this time. The development agreement states that the owner will dedicate a 10' trail easement to the city, and in return, the city will allow the 15' landscape strip be reduced to 5' at the location where the trail will be placed. (Please refer to Exhibit D.)

Please see the zoning requirement details below:

Zoning Requirements			
Regulation	**Section Number**	**Proposal**	**Staff Comments**
Setbacks		Front/ Street Side: 74'10" Side: 25' Rear: 11'73/4"	The required setbacks are: Front/ Street Side: 20' Side/ Rear: 10'
Uses	10-8D-2	Drive Thru Restaurant	The proposed use is found on the approved use list for the Twin Lakes – Gateway Commons PD-C
Height and Elevation	10-8D-2	Approximate Height in Rear: 19' 10" Approximate Avg Height: 34'	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 15' landscape strip 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	None shown	Any signs will need to meet the sign regulations found in Title 9-13.
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 building covers 17% of the expanded lot.	The PD-C zone allows building coverage up to 50%.
Solid Waste	10-8D-6	This proposed addition will not change the solid waste location.	N/A
Buffer Protection of Residential Property	10-8D-6	Nothing shown	There will need to be a 10' landscape buffer along the east and north property line that abuts residential
Parking	10-19-5	The addition will have a showroom with 17 vehicles. There will also be 6,161 sf of storage. There are 10 new parking stalls required.	The requirement is: 1 space per 7 vehicles in the showroom = 2 1 space per 1000 sf of storage = 6 The total required parking spaces = 8 Exceeds parking requirement by **2** 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.
Colors	10-17A-14	The plans show the buildings to be in the grey tones.	The code allows for natural muted tones that emulate the local geologic formations common to the area and blend with the predominant colors of the natural

			surroundings.

RECOMMENDATION:
Staff recommends approval of the Factory Powersports Addition Planned Development Amendment and the development agreement.

ALTERNATIVES:
1. Recommend approval as presented.
2. Recommend approval with additional conditions.
3. Recommend denial of this request.
4. Table or Continue the proposed zone change amendment to a specific date.

POSSIBLE MOTION:
The Planning Commission recommends approval of amending this approved PD-C (Planned Development Commercial) and approval of the development agreement on approximately 2.23 acres, located at 1685 East Red Hills Parkway for the purpose of adding a 6900-square foot addition.

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

The proposed use of the building addition is for expanded showroom space and additional storage space, to the existing Factory Powersports Building.

Factory Powersports would like to expand its current location by adding on to the existing building and expanding its parking lot. We are seeking approval of the design and site plan. Our goal is to accommodate the need for increased retail business and shift the delivery traffic to the west of the property. Our current deliveries via Semi Trucks are currently taking place along the 1700 east roadway, which creates safety and traffic congestion issues. With the expansion approval we will be able to move the delivery location off the roadway into a controlled area.

Exhibit B
Factory Powersports Approved Use List

- UTV, ATV, motorcycle and other similar recreational vehicle sales lots
- Retail sales parts and accessories related to recreational vehicles
- Warehouse storage related to recreational vehicles
- Recreational vehicle repair, storage, including paint, body and fender, brake, muffler, upholstery or transmission work; provided, conducted within completely enclosed building
- Tire sales and service; provided, conducted within completely enclosed building
- Retail athletic and sporting goods store

Exhibit C
Public Comment

St.George
THE BRIGHTER SIDE

Dan Boles <daniel.boles@sgcity.org>

Factory Powersports PD-C Case No. 2023-PDA-019

2 messages

Arri Hall-Terracciano [redacted] Thu, Sep 21, 2023 at 7:17 PM
To: dan.boles@sgcity.org

Dan, my name is Arri Terracciano, a resident of [redacted]. I would like to bring forth concerns reguarding this expansion. Currently, employees of Factory Powersports park along N 1700 E in such density it is difficult for two opposing vehicles to pass, or turn safely onto N 1700 E as we cannot see around vehicles between 0900-1800. Semis and customer trailers occasionally block the road completely with deliveries and drop offs. Im concerned the expansion will bring more employees and deliveries worsening the traffic situation. Additionally, Utvs and atvs travel around the block regularly exceeding the residential speed limits. A larger facility will likely worsen this. If Factory Powersports will build their own parking and address the Utv/atv speed issue, let them expand. If left uncorrected leading to more issues, Im sure the local residents including my family oppose the expansion. Thank you for considering.

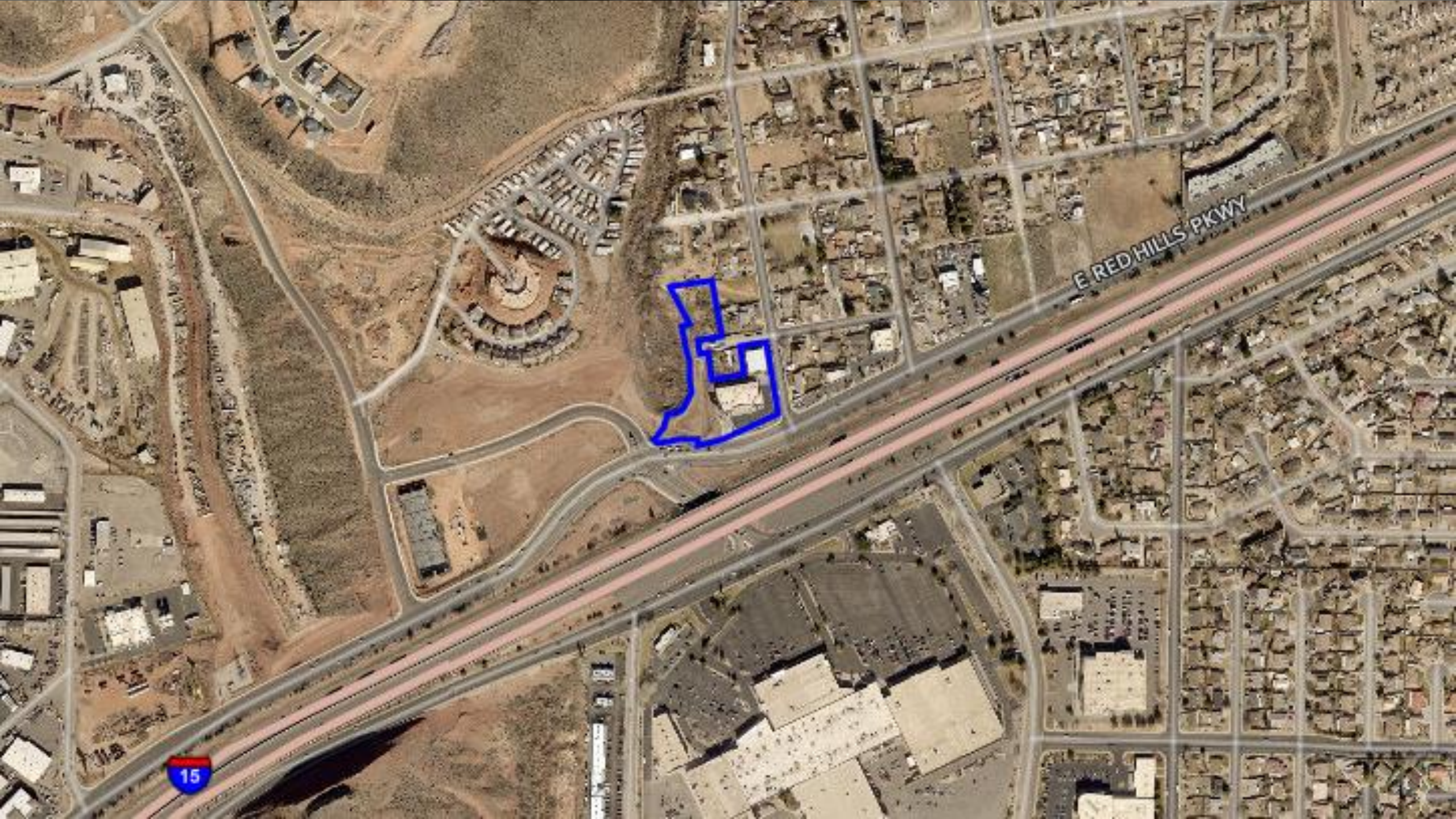
Exhibit D
Development Agreement

Exhibit E
PowerPoint Presentation

Factory Powersports Addition

Planned Development Amendment

2023-PDA-019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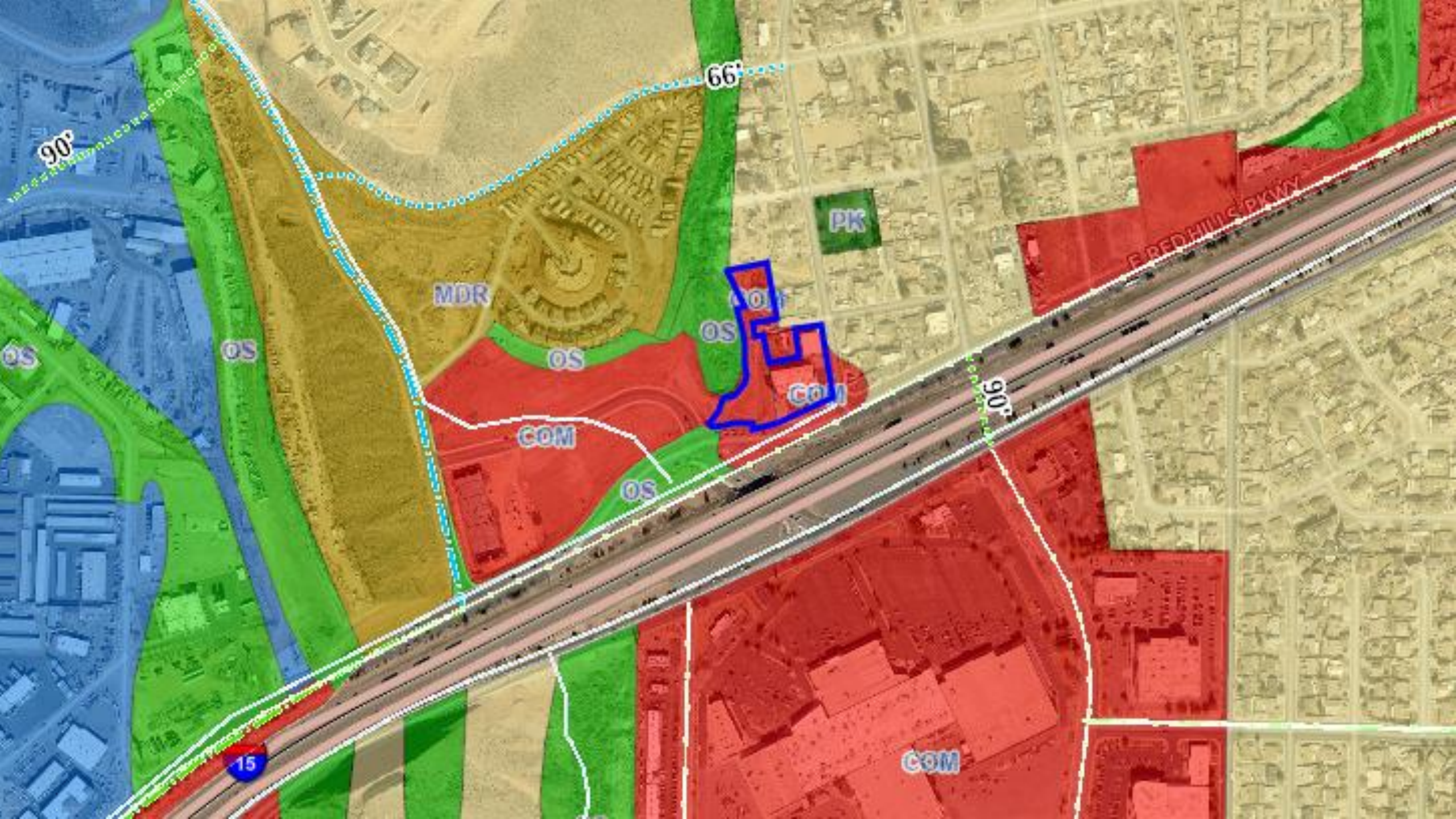
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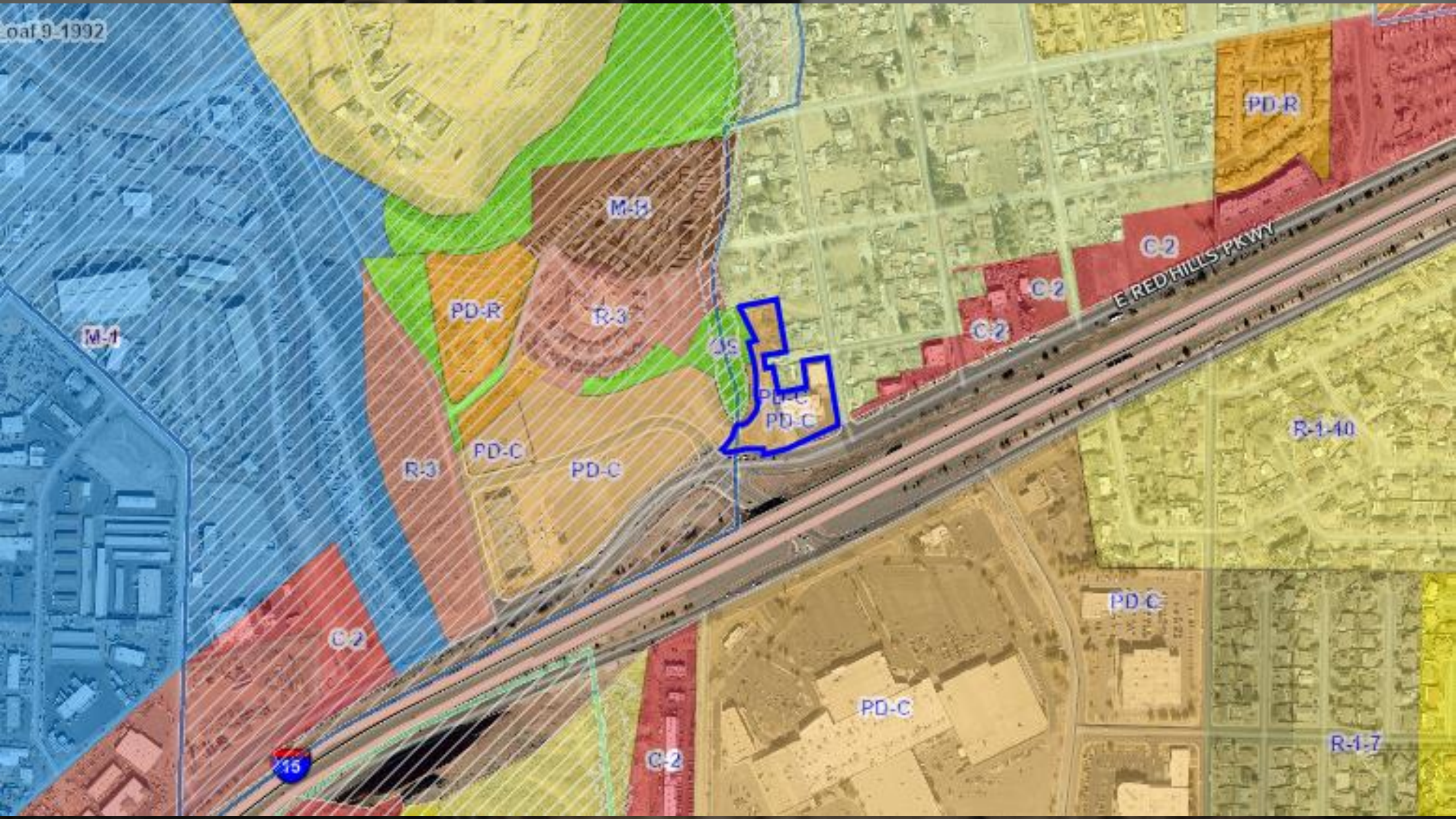
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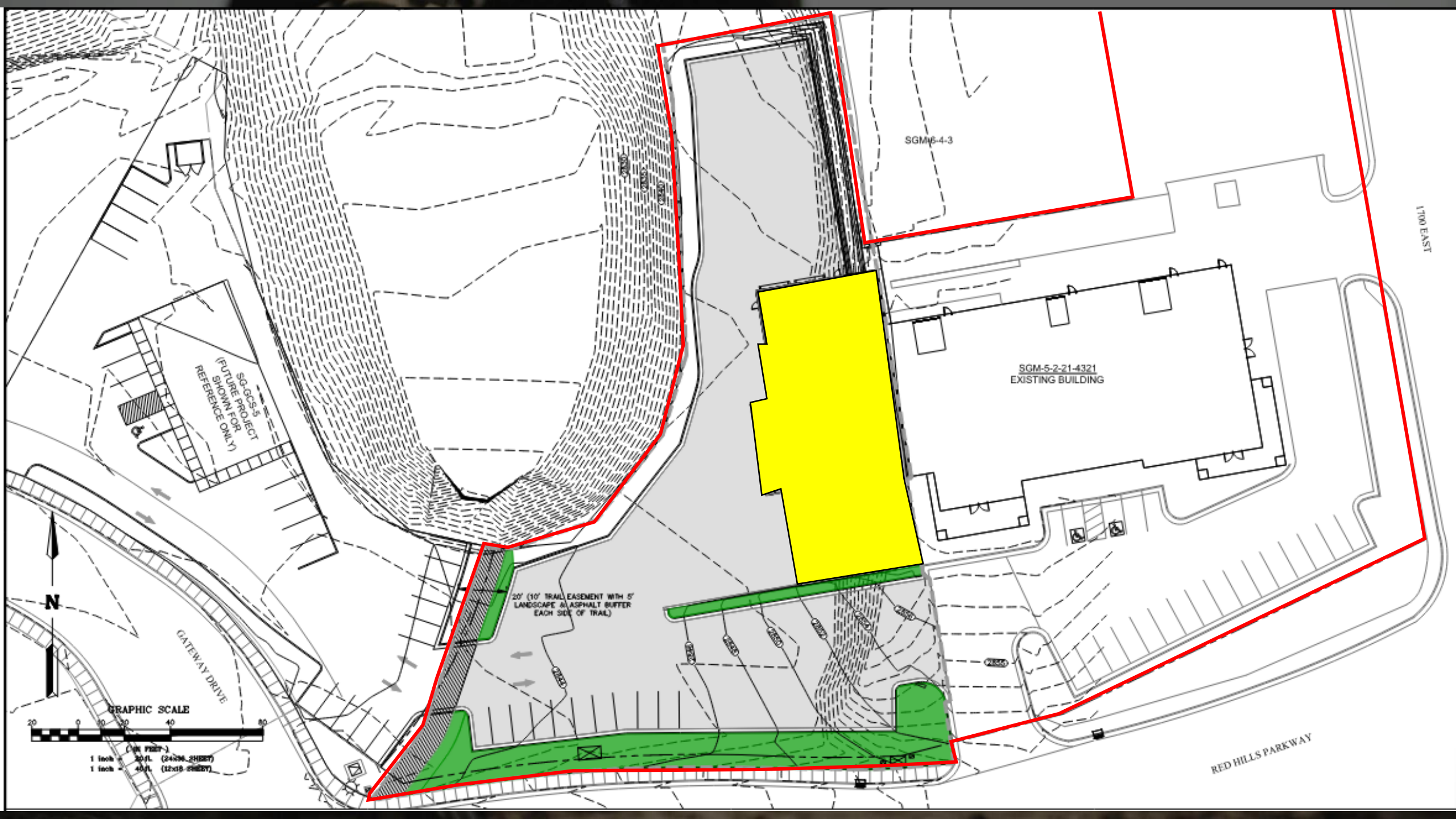

SGM-6-4-3
SGM-5-2-21-4321
EXISTING BUILDING
SG-GCS-5
(FUTURE PROJECT
SHOWN FOR
REFERENCE ONLY)
20' (10' TRAIL EASEMENT WITH 5'
LANDSCAPE & ASPHALT BUFFER
EACH SIDE OF TRAIL)
1700 EAST
GATEWAY DRIVE
RED HILLS PARKWAY
N
GRAPHIC SCALE
20 0 20 40 80
1 inch = 20 ft. (24x36 SHEET)
1 inch = 40 ft. (12x18 SHEET)

LEGAL DESCRIPTION (PARCEL SGM-5-2-21-4321)

Subdivision: MIDDLETON TOWN RESURVEY BLK 6 (SGM) Lot: 1 THRU: - Lot: 4, Subdivision: MIDDLETON TOWN RESURVEY BLK 13 (SGM) Lot: 2 S: 21 T: 42S R: 15W BEGINNING AT A POINT SOUTH 80°18'20" WEST, ALONG THE BLOCK LINE A DISTANCE OF 214.25 FEET FROM THE NORTHEASTERLY CORNER OF LOT 4, BLOCK 6, OF THE 1971 MIDDLETON TOWN RESURVEY OF THE M.M. SANDERS ENTRY IN THE NORTHEAST QUARTER (NE1/4) OF SECTION 21, TOWNSHIP 42 SOUTH, RANGE 15 WEST, SALT LAKE BASE AND MERIDIAN, SAID POINT BEING THE NORTHWESTERLY CORNER OF THAT PARCEL SHOWN BY TAX ID SGM-6-4-3 AND DOCUMENT #20130019712, OFFICIAL WASHINGTON COUNTY RECORDS, SAID POINT ALSO BEING LOCATED NORTH 01°08'59" EAST, ALONG THE SECTION LINE, A DISTANCE OF 761.61 FEET, AND NORTH 90°00'00" EAST, A DISTANCE OF 954.53 FEET FROM THE WEST 1/4 CORNER OF SECTION 21, TOWNSHIP 42 SOUTH, RANGE 15 WEST, SALT LAKE BASE AND MERIDIAN; THENCE SOUTH 09°41'40" EAST, A DISTANCE OF 100.00 FEET, TO THE SOUTHWESTERLY CORNER OF SAID PARCEL; THENCE NORTH 80°18'20" EAST, A DISTANCE OF 114.25 FEET, TO THE SOUTHEASTERLY CORNER OF SAID PARCEL; THENCE NORTH 09°41'40" WEST, A DISTANCE OF 100.00 FEET, TO THE NORTHEASTERLY CORNER OF SAID PARCEL; THENCE NORTH 80°18'20" EAST, ALONG THE BLOCK LINE, A DISTANCE OF 88.01 FEET; THENCE SOUTH 54°41'39" EAST, A DISTANCE OF 16.97 FEET, TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF 1700 EAST STREET; THENCE SOUTH 09°40'40" EAST, ALONG SAID LINE A DISTANCE OF 254.77 FEET, TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF RED HILLS PARKWAY; THENCE SOUTH 64°17'15" WEST, ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 173.30 FEET; THENCE SOUTH 75°27'09" WEST, ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 72.53 FEET, TO THE BEGINNING OF A NON-TANGENT CURVE TO THE RIGHT, OF WHICH THE RADIUS POINT LIES NORTH 02°59'04" WEST, A RADIAL DISTANCE OF 570.00 FEET, THENCE WESTERLY ALONG THE ARC OF SAID CURVE AND SAID RIGHT OF WAY LINE, THROUGH A CENTRAL ANGLE OF 05°38'52" A DISTANCE OF 56.13 FEET; THENCE NORTH 87°55'23" WEST, ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 1 3.32 FEET, TO THE BEGINNING OF A NON-TANGENT CURVE TO THE LEFT, OF WHICH THE RADIUS POINT LIES SOUTH 01°29'21" WEST, A RADIAL DISTANCE OF 670.00 FEET; THENCE WESTERLY ALONG THE ARC OF SAID CURVE, AND SAID RIGHT OF WAY LINE THROUGH A CENTRAL ANGLE OF 12°36'39", A DISTANCE OF 147.47 FEET; THENCE NORTH 53°32'46" WEST, ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 11.86 FEET; TO THE BEGINNING OF A NON-TANGENT CURVE TO THE LEFT, OF WHICH THE RADIUS POINT LIES NORTH 48°20'53" WEST, A RADIAL DISTANCE OF 217.50 FEET; THENCE NORTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 28°25'07", A DISTANCE OF 107.86 FEET; THENCE SOUTH 89°28'13" EAST, A DISTANCE OF 7.67 FEET; THENCE NORTH 71°16'33" EAST, A DISTANCE OF 38.70 FEET; THENCE NORTH 37°52'30" EAST, A DISTANCE OF 46.59 FEET; THENCE NORTH 16°23'22" EAST, A DISTANCE OF 36.13 FEET; THENCE NORTH 03°07'05" WEST, A DISTANCE OF 110.70 FEET; THENCE NORTH 10°13'28" WEST, A DISTANCE OF 129.26 FEET; THENCE NORTH 62°51'17" EAST, A DISTANCE OF 28.72 FEET; THENCE SOUTH 27°08'43" EAST, A DISTANCE OF 58.56 FEET; THENCE SOUTH 09°41'40" EAST, A DISTANCE OF 58.00 FEET; THENCE NORTH 80°18'20" EAST, A DISTANCE OF 30.89 FEET, TO THE POINT OF BEGINNING.

CONTAINING 2.23 ACRES, MORE OR LESS.

SITE DATA

- PARCEL NUMBER: SGM-5-2-21-4321
- CURRENT ZONING: PD-C
- GENERAL PLAN: PD-C
- EXPANSION PROJECT LAND USE
  - NEW BUILDING: ±6,900 SF (17.0%)
  - PARKING AREA: ±24,520 SF (60.4%)
  - LANDSCAPED AREA: ±4,960 SF (12.2%)
  - VACANT AREA: ±4,240 SF (10.4%)
  - TOTAL EXPANSION PROJECT AREA: 40,620 SF
- BUILDING HEIGHT: 41'
- PROPOSED BUILDING FOOTPRINT: 6,900 SF
- EXISTING BUILDING FOOTPRINT: 11,990 SF
- PARKING REQUIREMENTS FOR ADDITION:
  - SHOWROOM VEHICLES = 17
    1 STALL/7 VEHICLES = 3 STALLS
  - ADDITIONAL STORAGE AREA = 6,361 S.F.
    ADDITIONAL STORAGE AREA STALLS = 7 STALLS
  - TOTAL ADDITIONAL REQ'D STALLS = 10 STALLS

LEGEND

- EXISTING MINOR CONTOUR
- 2607 EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 2658 PROPOSED MAJOR CONTOUR
- PROPERTY BOUNDARY
- PROJECT LIMITS
- SETBACK (20' FRONT, 10' SIDE & REAR)
- NEW BUILDING
- NEW PARKING AREA
- LANDSCAPE BUFFER

PROPOSED USES

THE PROPOSED USE OF THE BUILDING ADDITION IS FOR EXPANDED SHOWROOM SPACE AND ADDITIONAL STORAGE SPACE, TO THE EXISTING FACTORY POWERSPORTS BUILDING.

REVISIONS

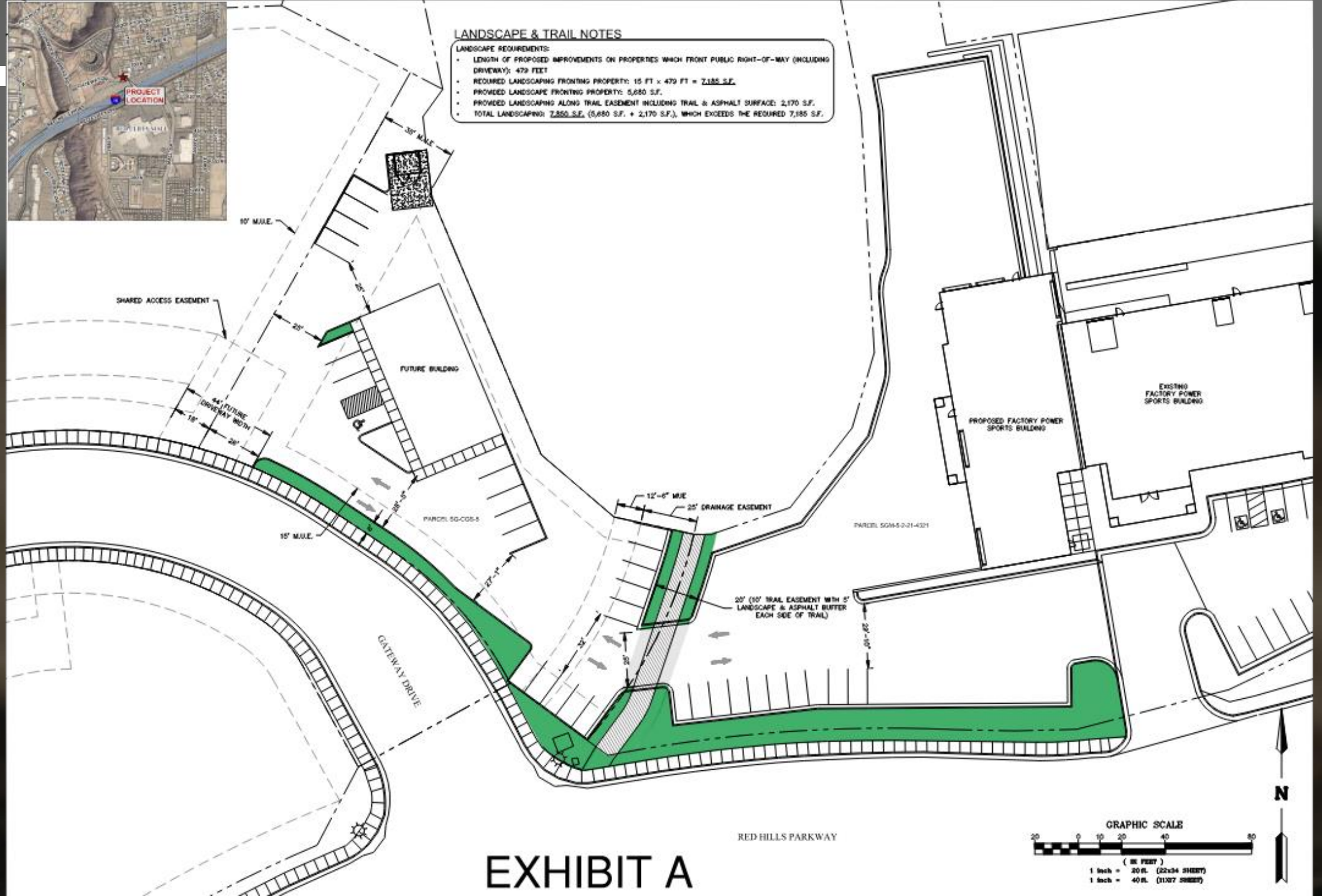
PRELIMINARY NOT FOR CONSTRUCTION

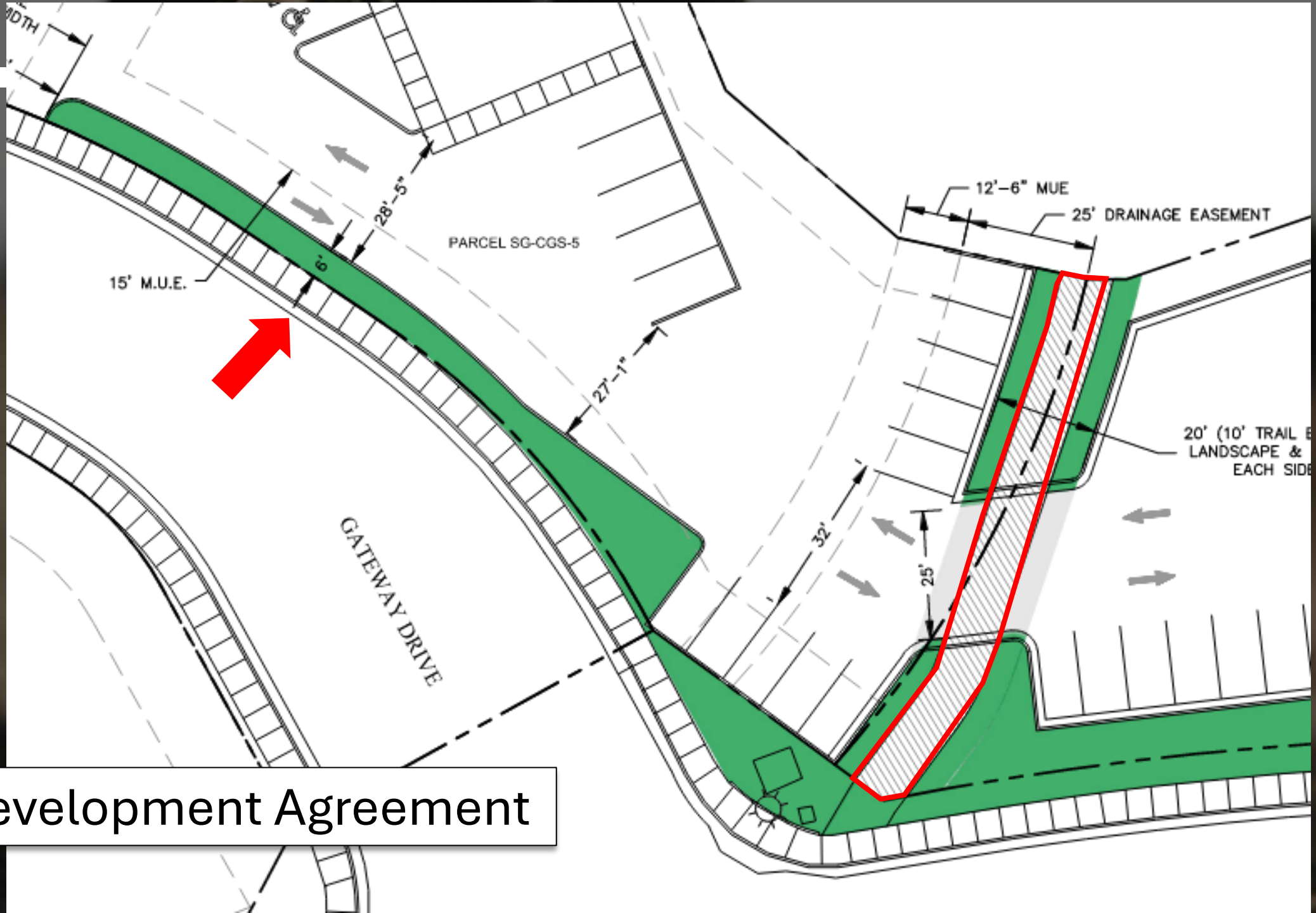
ALPHA ENGINEERING
45 South 100 East, Suite 100, St George, Utah 84770
T: 435.628.2600 F: 435.628.8533 alphaengineering.com

PRELIMINARY SITE PLAN

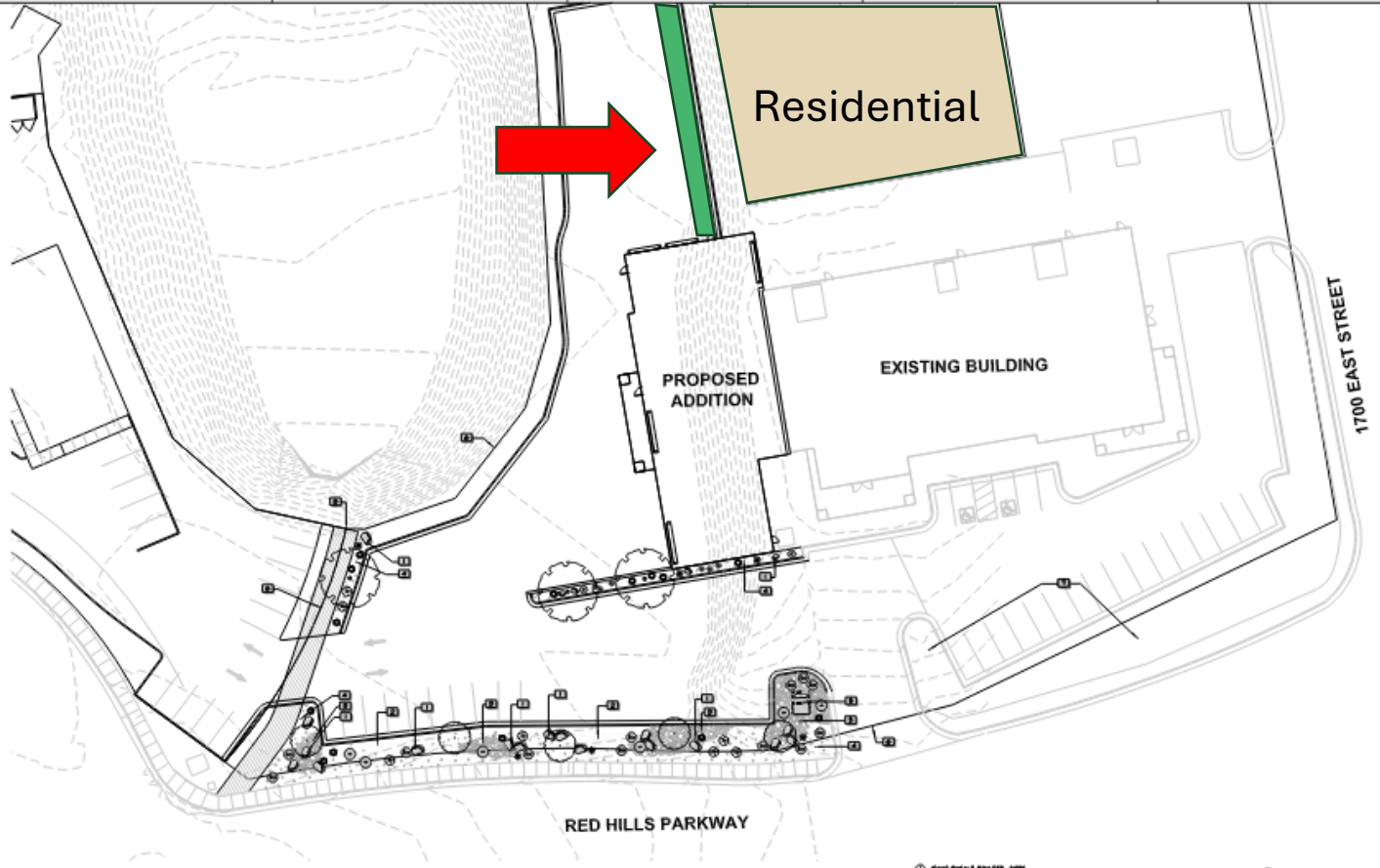
FACTORY POWERSPORTS ADDITION
ST. GEORGE, UTAH

PROJECT NO. 1799-02
DRAWN BY JRH
DATE SEPTEMBER 1, 2023
SCALE AS NOTED
SHEET 1
1 OF 1


LANDSCAPE & TRAIL NOTES
LANDSCAPE REQUIREMENTS:
• LENGTH OF PROPOSED IMPROVEMENTS ON PROPERTIES WHICH FRONT PUBLIC RIGHT-OF-WAY (INCLUDING DRIVEWAY): 479 FEET
• REQUIRED LANDSCAPING FRONTING PROPERTY: 15 FT x 479 FT = 7,185 S.F.
• PROVIDED LANDSCAPE FRONTING PROPERTY: 5,680 S.F.
• PROVIDED LANDSCAPING ALONG TRAIL EASEMENT INCLUDING TRAIL & ASPHALT SURFACE: 2,170 S.F.
• TOTAL LANDSCAPING: 7,850 S.F. (5,680 S.F. + 2,170 S.F.), WHICH EXCEEDS THE REQUIRED 7,185 S.F.
PROJECT LOCATION
10' M.U.E.
SHARED ACCESS EASEMENT
FUTURE BUILDING
44' FUTURE DRIVEWAY WIDTH
15' M.U.E.
12'-6" M.U.E.
25' DRAINAGE EASEMENT
PARCEL SG-CGS-5
PARCEL SGM-5-2-21-4321
PROPOSED FACTORY POWER SPORTS BUILDING
EXISTING FACTORY POWER SPORTS BUILDING
20' (10' TRAIL EASEMENT WITH 5' LANDSCAPE & ASPHALT BUFFER EACH SIDE OF TRAIL)
GATEWAY DRIVE
RED HILLS PARKWAY
N
GRAPHIC SCALE
EXHIBIT A



Development Agreement



PLANT SCHEDULE | A

	BOTANICAL NAME	COMMON NAME	SIZE	QTY
DECIDUOUS				
	Fraxinus oxycarpa	Raywood Ash	50 GAL	9
	Rhus lancea	African Sumac	50 GAL	9
SHRUBS	BOTANICAL NAME	COMMON NAME	SIZE	QTY
	Baccharis 'Thompson'	Thompson Baccharis	5 GAL	12
	Cassia phyllodinea	Silver Leaf Cassia	5 GAL	6
	Dasylirion wheeleri	Desert Spoon	5 GAL	6
	Hesperaloe funifera	Mexican False Yucca	5 GAL	14
	Leucophyllum zygophyllum	Cop Leaf Texas Sage	5 GAL	7
PERENNIALS	BOTANICAL NAME	COMMON NAME	SIZE	QTY
	Lantana x 'New Gold'	New Gold Lantana	1 GAL	6
	Rosmarinus officinalis 'Prostratus'	Dwarf Rosemary	1 GAL	2

* QUANTITY INFORMATION PROVIDED FOR REFERENCE ONLY. CONTRACTOR RESPONSIBLE TO VERIFY ALL QUANTITIES.

PLANTING NOTES | B

1. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COSTS INCURRED DUE TO DAMAGE OF SAID UTILITIES.
2. CONTRACTOR SHALL NOT KNOWINGLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REP. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH THE LANDSCAPE CONSTRUCTION FOR THIS PROJECT.
4. ALL PLANT MATERIAL SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE UPON DELIVERY TO THE SITE, AND PRIOR TO INSTALLATION. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE ONLY AS APPROVED BY THE OWNER'S REPRESENTATIVE.
5. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON THE DRAWINGS. IF DISCREPANCIES ARISE BETWEEN ACTUAL PLANTING AREA SIZES IN THE FIELD AND THOSE SHOWN ON THE PLANS, CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE FOR RESOLUTION. FAILURE TO MAKE SUCH CONTACTS KNOWN WILL RESULT IN CONTRACTOR'S LIABILITY FOR MATERIALS RELOCATION.
6. FINAL LOCATIONS OF ALL PLANT MATERIALS SHALL BE SUBJECT TO APPROVAL OF THE OWNER'S REPRESENTATIVE. TREES SHALL NOT BE PLANTED LESS THAN 6'-0" FROM CURBS OR HARD SURFACE AREAS UNLESS A ROOT BARRIER IS INSTALLED.
7. CONTRACTOR SHALL PROVIDE SOIL ANALYSIS AND AMEND SOIL AS RECOMMENDED. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE LAST 7 INCHES OF GRADE IN TURF SOD AREAS (5 INCHES OF TOPSOIL AND 1 INCH FOR SOD) AND 5 INCHES IN SHRUB BED AREAS (3 INCHES OF DARK TOPSOIL AND 12" OF AMENDED TOPSOIL). IF NECESSARY RIP SUBGRADE IN SHRUB BEDS AND TURF AREAS DOWN AS SPECIFIED BEFORE PLACING AMENDED TOPSOIL. THE PLANTING ISLANDS IN THE PARKING LOTS SHALL HAVE ALL ROAD BASE REMOVED PRIOR TO PLACEMENT OF TOPSOIL. REFER TO GRADING PLAN FOR FINISH GRADE AND DRAINAGE.

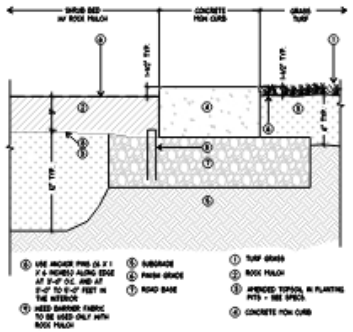
REFERENCE SCHEDULE NOTES | C

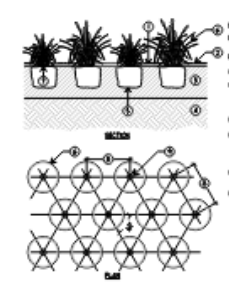
SYMBOL	DESCRIPTION	QTY
1	LANDSCAPE BOULDER, MATCH EXISTING ON SITE IN SIZE, COLOR, TEXTURE AND PLACEMENT. TYP. SEE DETAIL B THIS SHEET	21
2	DECOMPOSED GRANITE, MATCH EXISTING COLOR ON SITE . TYP. SEE DETAIL E THIS SHEET	409 sf
3	5" TO 8" RIVER ROCK TO MATCH EXISTING COBBLE FOUND ON SITE. TYP. SEE DETAIL E THIS SHEET	1,041 sf
4	5" DEEP SAT TO 1" RIVER, RED ROCK MULCH FOUND ON SITE. TYP. SEE DETAIL E THIS SHEET	2,924 sf
5	TRANSFORMER, SEE ELECTRICAL PLANS	
6	PROPERTY LINE	
7	EXISTING LANDSCAPE, PROTECT IN PLACE	
8	EXISTING TRAILHEAD	

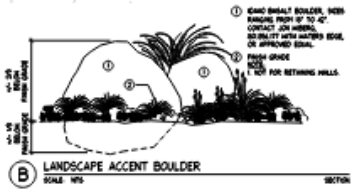
* QUANTITY INFORMATION PROVIDED FOR REFERENCE ONLY. CONTRACTOR RESPONSIBLE TO VERIFY ALL QUANTITIES.

SCALE & NORTH ARROW | E

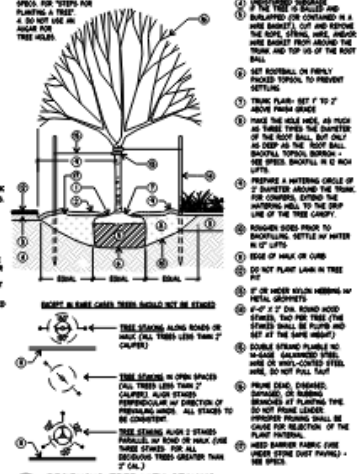
NORTH SCALE: 1" = 20'-0"


E ROCK MULCH WITH TOPSOIL
SCALE: NTS


D PERENNIAL / GROUNDCOVER
SCALE: NTS


B LANDSCAPE ACCENT BOULDER
SCALE: NTS


C SHRUB
SCALE: NTS


A DECIDUOUS TREE WITH STAKING
SCALE: NTS

DESERT EDGE architecture

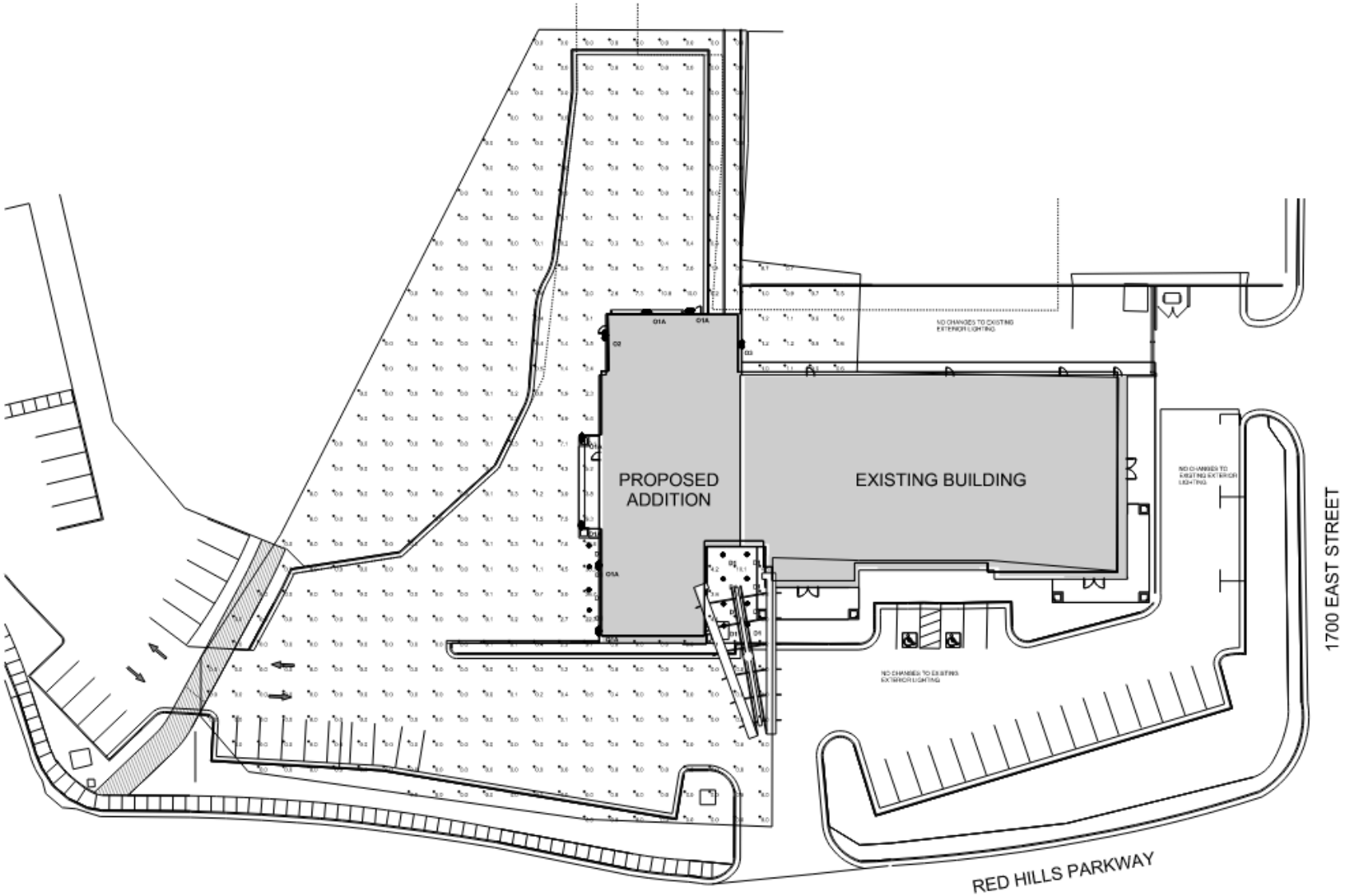
ArcSite Design

FACTORY POWERSPORTS
1685 E RED HILLS PKWY, ST. GEORGE, UT 84770

STAMP
NOT FOR CONSTRUCTION

LANDSCAPE PLAN

L101



PHOTOMETRIC PLAN
SCALE = 1" = 30'-0"

DESERT EDGE architecture
720 S. RIVER ROAD BLDG D SUITE 2100
ST. GEORGE, UT 84790

ALPHA ENGINEERING

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SALT LAKE ST GEORGE

Arcsilo Design

FACTORY POWERSPORTS
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STAMP

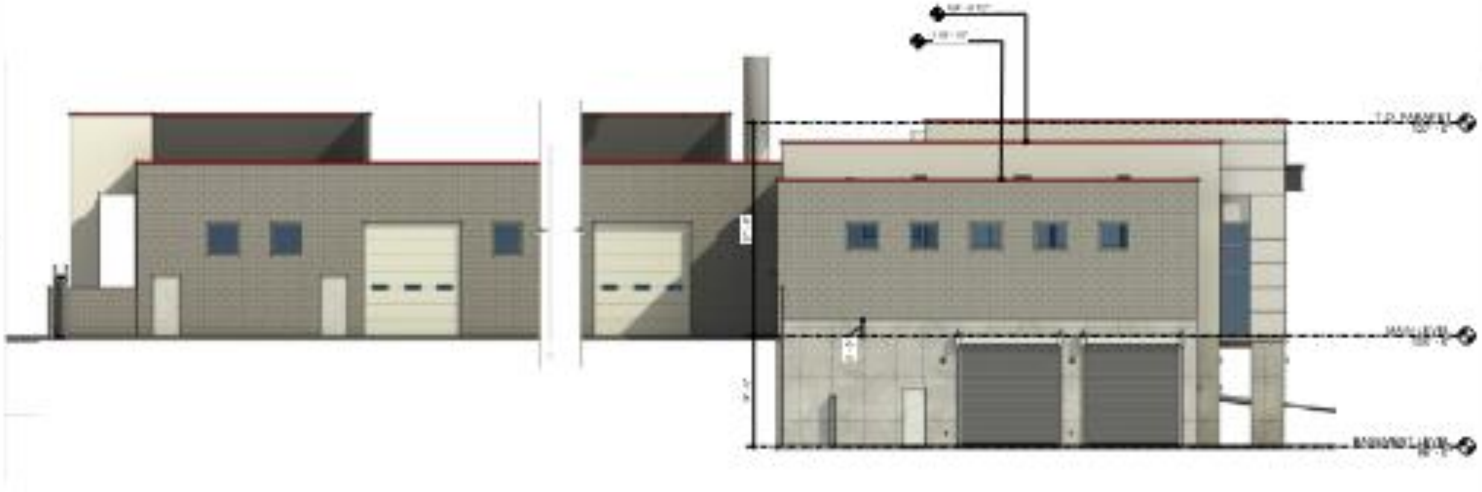
ISSUE TYPE:	DATE:
100% PERMIT SET	08/23/2023
PROJECT NUMBER	Project Number
DRAWN BY:	RHA
CHECKED BY:	EM

PHOTOMETRIC PLAN

E102

GENERAL NOTES

KEYNOTES



C1 NORTH EXTERIOR ELEVATION

A1 SOUTH EXTERIOR ELEVATION

EXTERIOR MATERIALS LEGEND

DESERT EDGE
architecture

ALPHA

ROYAL

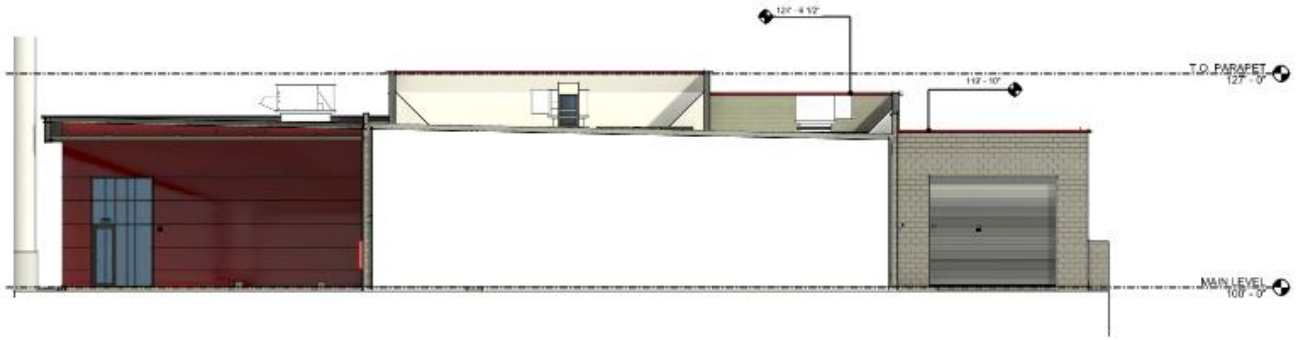
BNA
CONSULTING

FACTORY POWERSPORTS

NOT FOR CONSTRUCTION

EXTERIOR ELEVATIONS

AE201



C1 EAST EXTERIOR ELEVATION

A1 WEST EXTERIOR ELEVATION

GENERAL NOTES

A. CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DOCUMENTS PRIOR TO BEGINNING WORK; CONTACT ARCHITECT WITH ANY CONFLICTS OR INCONSISTENCIES.

B. MAIN FINISH FLOOR ELEVATION IS 100'-0"

C. PROVIDE VINYL CONTROL JOINTS IN ALL EXTERIOR STUCCO FINISHES. THE TOTAL STUCCO FINISH AREA SHALL NOT EXCEED 144 S.F. OR AS PER MANUFACTURERS WRITTEN INSTRUCTIONS. COORDINATE FINAL LOCATIONS NOT SHOWN IN THE DRAWINGS WITH THE ARCHITECT ON SITE.

KEYNOTES

EXTERIOR MATERIALS LEGEND

EIFS EXTERIOR INSULATION: (TO MATCH EXISTING) SEE MATERIALS BOARD

EIFS EXTERIOR INSULATION: (TERRA NEO FINISH) - VESUVIUS BY DRYVIT OR EQUAL

ACM PANEL: SEE MATERIALS BOARD

EXTERIOR GLAZING - SEE MATERIALS BOARD

HONED FACE CMU - SEE MATERIALS BOARD

ARCHITECTURAL CONCRETE FINISH - COORD. SEE MATERIALS BOARD

DESERT EDGE architecture
720 S. RIVER ROAD BLDG 3 SUITE 2600
ST. GEORGE, UTAH 84790

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FACTORY POWERSPORTS
1685 E RED HILLS PKWY, ST. GEORGE, UT 84770

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NOT FOR CONSTRUCTION

ISSUE TYPE:	DATE:
90% CD SET	07-21-2023
PROJECT NUMBER:	0201901
DRAWN BY:	Author
CHECKED BY:	Checker

EXTERIOR ELEVATIONS

AE202

D3 FRONT OVERALL PERSPECTIVE

B1 FRONT LEFT PERSPECTIVE

B3 FRONT PERSPECTIVE

A1 REAR LEFT PERSPECTIVE

A3 REAR RIGHT PERSPECTIVE

DESERT EDGE
architecture
720 S. RIVER ROAD BLDG D SUITE 2600
ST. GEORGE, UTAH 84790

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ArcSilo Design

FACTORY POWERSPORTS
1685 E RED HILLS PKWY, ST. GEORGE, UT 84770

STAMP

NOT FOR CONSTRUCTION

ISSUE TYPE:	DATE:
95% CD SET	01-23-2023
PROJECT NUMBER:	001901
DRAWN BY:	Author
CHECKED BY:	Checker

PERSPECTIVES

AE901

Factory Powersports Addition

Recommendation

PLANNING COMMISSION AGENDA REPORT: 11/14/2023

River Crossing Planned Development Amendment (Case No. 2023-PDA-022)		
Request:	Consider a request to amend an approved PD-C (Planned Development Commercial) on approximately 18 acres, located on the southeast corner of River Road and George Washington Boulevard for the purpose of amending the elevations on five of the previously approved buildings and approving six of the building elevations not previously approved. They are also requesting approval of a legislative exception for a wall on the south side of the site.	
Applicant:	RCSG LLC	
Representative:	Trever Einerson & Steve Crandall	
Location:	Located at the southeast corner of River Road and George Washington Boulevard	
General Plan:	COM (Commercial)	
Existing Zoning:	PD-C (Planned Development Commercial)/PD-AP (Planned Development Administrative Professional)	
Surrounding Zoning:	North	PD-C (Planned Development Commercial) & George Washington Blvd
	South	R-1-10 (Single Family, 10,000 ft² minimum lot size)
	East	PD-C (Planned Development Commercial) & PD-R (Planned Development Residential)
	West	PD-C (Planned Development Commercial) & River Rd
Land Area:	Approximately 18 acres	

BACKGROUND:
This application involves buildings throughout the River Crossing 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). Then in 2021, the name of this development name was changed to River Crossing and a conceptual site plan was approved for phase one (2021-ZCA-081). Phase two followed in 2022 (2022-ZC-038). Additionally, the limit of three drive-thru facilities was removed in 2020 if certain conditions could be met. With approval of both phases, the general layout and some building elevations of the site were approved. The applicant is now ready to get approval of the remaining building elevations (with the exception of Building A to be the final building in

the future). Additionally, as staff has worked through some of the building permits and site plans with the applicant, some discrepancies in proposed elevations and approved elevations have been noted, and a handful of previously approved elevations are now before the Planning Commission to be revised. An accounting for each building will be given in this report.

In order to create a cohesive and consistent pattern of development in the site, the applicant will utilize similar materials throughout. Those materials include light and dark colored brick, several colors and textures of CMU, Fiber cement paneling, a light and dark EIFS (stucco), aluminum storefronts, steel canopies, and light and dark canvas awnings. A materials board has been provided as well as elevations of each building.

Parking was anticipated and counted for all buildings in the original approvals (even the buildings that had no elevations). Now that all buildings are accounted for, a detailed parking analysis has been produced and included with this report. Ultimately, the parking is not only met but exceeded.

Phase 1

Building A – This Building is not a part of the application and will be the final building to be reviewed at a later date.

Building B – This building is the McDonalds that was approved earlier this year and is not included in this application.

Building C – Building C is almost completely the same as the originally approved building structurally. The materials have changed to conform to the above mentioned materials and colors.

Building D (East & West) – This building has been broken into two buildings which was always the plan. They have been updated with the new materials and colors and will stand at approximately 27 feet tall from grade to the top of the highest point. Outdoor seating has been included with this rendition.

Building E – This building was included in the original approvals but has since been significantly redesigned (again matching the current proposed design). The canopy originally approved on this building has been removed and the total square footage has been increased. Height has been increased by five feet to match the other buildings at 27 feet tall. Parking has been changed to conform to the required parking requirements.

Building F – This building is not included in this application as no changes are being proposed at this time.

Building G – This building has changed design. This time, the height of the structure decreased by two feet from 22’ in height to 20’. Building materials and colors have been updated. The square footage has slightly increased, and parking modified accordingly.

Building H – This is a new elevation and was not previously approved with the other phases. The building will be approximately 3,480 ft² and as most of the other buildings, stand at 27 feet tall. Materials and colors are the same as the other buildings.

Building I – Buildings I and L are new and not previously approved twin buildings. They flank each side of the connecting road between River Road and 1490 East Circle and will be approximately 12,580 ft² and will be multi-tenant buildings. The architect has done a good job making the rear of the buildings have visual interest and features. The height of these buildings is 26 feet from grade to the highest point. The same materials and colors will apply here as well.

Building J – This is the largest of the retail buildings on the site and will be just shy of 30,000 ft² at 29,480 ft². The applicant has signed a grocery tenant new to this market that will act as an anchor for the development. Though this building's highest point is 34.5 feet, that is to the top of an ornamental feature at the front of the building above the building's entrances. The vast bulk of the building will be 27.5 feet in height. The north and south elevations are fairly long and provide little relief. Staff would like to see some greater interest on those two sides. Additionally, it would be preferable for the building to use a split face CMU and not a smooth faced CMU.

Phase 2

Building K – Buildings K, L & M were not previously approved with phase two. Building K will be approximately 8,400 ft² and like many of the other buildings will stand at approximately 27 feet tall to the highest point and will consist of the same materials and colors as the other buildings.

Building L – See Building I for details.

Building M – This building was originally approved across the River Road in the Boulder Crossing development. The use of this building will be a medical office (specifically a dental office). The colors have been updated to match the colors in the rest of the development. From grade to the highest point, the building will stand at 23'8" though the majority of the building will be approximately 16' tall. Staff is hopeful that an office building will make a good neighbor to the residential neighborhood to the east. The building will be approximately 5,100 ft².

Building N – This building has previously been approved and is not part of the application.

Privacy Wall: As part of the site plan application, staff noted that a six foot high wall is required between the residential property to the east and south of the office building on the far south end of the development (previously approved building N). Because of an elevation change between the office building and the residences to the south, the applicant is requesting a legislative exemption from the requirements of installing the privacy wall. There is a section of the wall that will have to remain open due to a 40' irrigation easement that runs through the neighboring property and on to the subject property. There will need to be an open section for access to that property at minimum.

RECOMMENDATION:
Staff recommends approval of the application for River Crossing as proposed.

ALTERNATIVES:
1. Recommend approval as presented.
2. Recommend approval with additional conditions.
3. Recommend denial of the request.
4. Continue the proposed PD amendment to a later date.

Conditions:
1. That a legislative exemption is granted to allow the privacy wall on the south side of the property to not be constructed.
2. That each building is to be part of a site plan to be reviewed and approved by the city.

POSSIBLE MOTION:
“I move that we forward a positive recommendation to the City Council for the PD amendment for River Crossing as presented, case no. 2023-PDA-022, 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.
3. Each building will be part of a site plan to be reviewed and approved by staff.
4. That the buildings all meet the height requirements for the PD-C zone.

Aerial Map

Zoning Map

Exhibit A
Applicant's Narrative

Narrative

Overview - Proposed River Crossing Development

Submitted to St. George City

Project Description

River Crossing is a multi-phased platted commercial retail development at the corner of River Road and George Washington Parkway St. George, Utah. The property is being developed as a neighborhood community shopping center consisting of eleven (11) buildings in the first phase and four (4) additional buildings in the second phase. Previous elevation/site plans have already been approved for pads 102-107, 204. **The submitted site plan depicts the proposed buildings for lots 108(two buildings),109,201,202,203.**

Below is a recap from previous approvals and requested detail for proposed buildings. The building square footage for the first phase is approximately 98,393 square feet (excluding A & B), while the second phase will be approximately 65,500 square feet.

The breakdown of uses by building is as follows:

- Building A Pad 101 – Credit Union with Drive Thru
- Building B Pad 102 – 5205 SF Fast Food with Drive Thru
- Building C Pad 103– Two separate units. East Side 3000 square feet (Food) with drive thru side and West Side at 1,300 square feet of retail on the east side
- Building D West Pad 104 – 4,800 square feet. Food with no drive thru
- Building D East Pad 104 – 3,600 square feet food with no drive thru
- Building E Pad 105– Two separate units. West side at 2,000 square feet (Food) with drive thru. East side at 1,562 square feet, non-food service with drive thru.
- Building F Pad 106 – 7,222 square feet with option for up to five tenants. Tenant on the north edge will be a bakery in 3,924 square feet while the remainder of the spaces will be standard retail or services.

- Building G Pad 107 – 2,400 square feet. Food and Beverage with Drive Thru
- Building H Pad 109– 3,200 square feet. Food and Beverage with Drive Thru
- Building I Pad 108 – 12,000 square feet. Food, Retail, Services, no drive thru
- Building J Pad 108– 29,000 square feet. Grocery & Retail
- Building K Pad 201– 8,400 square feet. Food and Beverage with no drive thru
- Building L Pad 202– 12,000 square feet. Food, Retail, Services no drive thru
- Building M Pad 203– 5100 square feet. Professional Services
- Building N Pad 204– 40,000 square feet. Office

For Phase 1 & Phase 2 PD-C we are not proposing any additions to the "Use List" that had been previously approved for the site which was at the time of approval referred to as Boulder Creek Commons. (See attached).

Boulder Creek Commons (North & South)

(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

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

The use list for the PD-AP Building N Pad 204 remain unchanged and are as follows:

Office, Professional, Personal Care, Service, Medical Office

In addition to the elevation approvals we are asking that we not be required to build a block wall along the southern border of Phase 2. This is typically required when commercial and residential zoning meet. The elevation difference is 20’-30’ and the homes adjacent already have large retaining walls and block fences. The topography is very steep along the hillside and running a wall parallel just doesn't make sense. Furthermore the main sewer line and storm drain must remain accessible per the grading requirements. See Pictures for visual description.

Exhibit C
Parking Analysis

method studio

RIVER CROSSING - PARKING - STATISTICS — November 1, 2023

BUILDING				PARKING									EVCS
NAME	UNIT	LEVEL	GROSS AREA	REQUIRED RATIO		BYLAW	OUT DINE	TOTAL	PROVIDED ACTUAL	NON	TOTAL	
A	A-1	1	**4,563**	1/250 SF		19	0	**19**	27	2	**29**	**1**
B	B-1	1	**5,205**	1/250 SF KITCHEN & 1/100 SF DINING	60/40	34	0	**34**	29	5	**34**	**1**
C	C-1	1	3,401	1/250 SF KITCHEN & 1/100 SF DINING	50/50	23.8	0					
	C-2	1	1,098	1/250 SF KITCHEN & 1/100 SF DINING	50/50	7.7	0					
	TOTAL	1	**4,499**	1/250 SF KITCHEN & 1/100 SF DINING		32	0	**32**	26	6	**32**	**1**
D-WEST	DW-1	1	3,966	1/250 SF		15.9	10					
	DW-2	1	1,363	1/250 SF		5.5	0					
	TOTAL		**5,329**	-		22	10	**32**	35	4	**39**	**1**
D-EAST	DE-1	1	**4,010**	1/250 SF KITCHEN & 1/100 SF DINING	60/40	26	10	**36**	36	0	**36**	**1**
E	E-1	1	2,196	1/250 SF KITCHEN & 1/100 SF DINING	50/50	15.4	0					
	E-2	1	1,742	1/250 SF KITCHEN & 1/100 SF DINING	50/50	12.2	0					
	TOTAL		**3,938**			28	0	**28**	25	3	**28**	**1**
F	F-1	1	1,596	1/250 SF KITCHEN		6.4	0					
	F-2	1	1,212	1/100 SF DINING		12.1	0					
	F-3	1	1,219	1/250 SF KITCHEN		4.9	0					
	F-4	1	1,443	1/250 SF		5.8	0					
	F-5	1	1,864	1/250 SF		7.5	0					
	TOTAL		**7,334**			37	0	**37**	31	6	**37**	**1**
G	G-1	1	**2,654**	1/250 SF KITCHEN & 1/100 SF DINING	60/40	17	6	**23**	23	2	**25**	**1**
H	H-1	1	**3,481**	1/250 SF KITCHEN & 1/100 SF DINING	50/50	24	0	**24**	24	3	**27**	**1**
I	I-1	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-2	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-3	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-4	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-5	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-6	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-7	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-8	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-9	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-10	1	1,200	1/250 SF		4.8	0					
	TOTAL		**12,000**			80	0	**80**	77	7	**84**	**1**
J	J-1	1	23,256	1/250 SF		93.0	0					
	J-2	1	6,150	1/250 SF		24.6	0					
	TOTAL	1	**29,406**	1/250 SF		118	0	**118**	117	5	**122**	**2**
K	K-1	1	**8,400**	1/250 SF KITCHEN & 1/100 SF DINING		59	0	**59**	58	4	**62**	**1**
L	L-1	1	1,200	1/250 SF		4.8	0					
	L-2	1	1,200	1/250 SF		4.8	0					
	L-3	1	1,200	1/250 SF		4.8	0					
	L-4	1	1,200	1/250 SF		4.8	0					
	L-5	1	1,200	1/250 SF		4.8	0					
	L-6	1	1,200	1/250 SF		4.8	0					
	L-7	1	1,200	1/250 SF		4.8	0					
	L-8	1	1,200	1/250 SF		4.8	0					
	L-9	1	1,200	1/250 SF		4.8	0					
	L-10	1	1,200	1/250 SF		4.8	0					
	TOTAL		**12,000**	-		48	0	**48**	87	8	**95**	**1**
M	M-1	1	1,200	1/250 SF		4.8	0					
	M-2	1	1,200	1/250 SF		4.8	0					
	M-3	1	1,200	1/250 SF		4.8	0					
	M-4	1	1,500	1/250 SF		6	0					
	M-5	2	5,100	1/250 SF		20.4	0					
	TOTAL		**10,200**	-		41	0	**41**	40	1	**41**	**1**
N	N-1	1	20,644	1/250 SF OFFICE		82.6	0					
	N-1	2	18,111	1/250 SF OFFICE		72.4	0					
	TOTAL		**38,755**			155	0	**155**	139	16	**155**	**2**
			111,277			**740**	**26**	**766**	**774**	**72**	**846**	**17**

Exhibit D
PowerPoint Presentation

River Crossing PD Amendment

2023-PDA-022

Aerial Map


George Washington Blvd
River Road
1490 East Circle
River Crossing
0
240
480
960
1,440
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Feet
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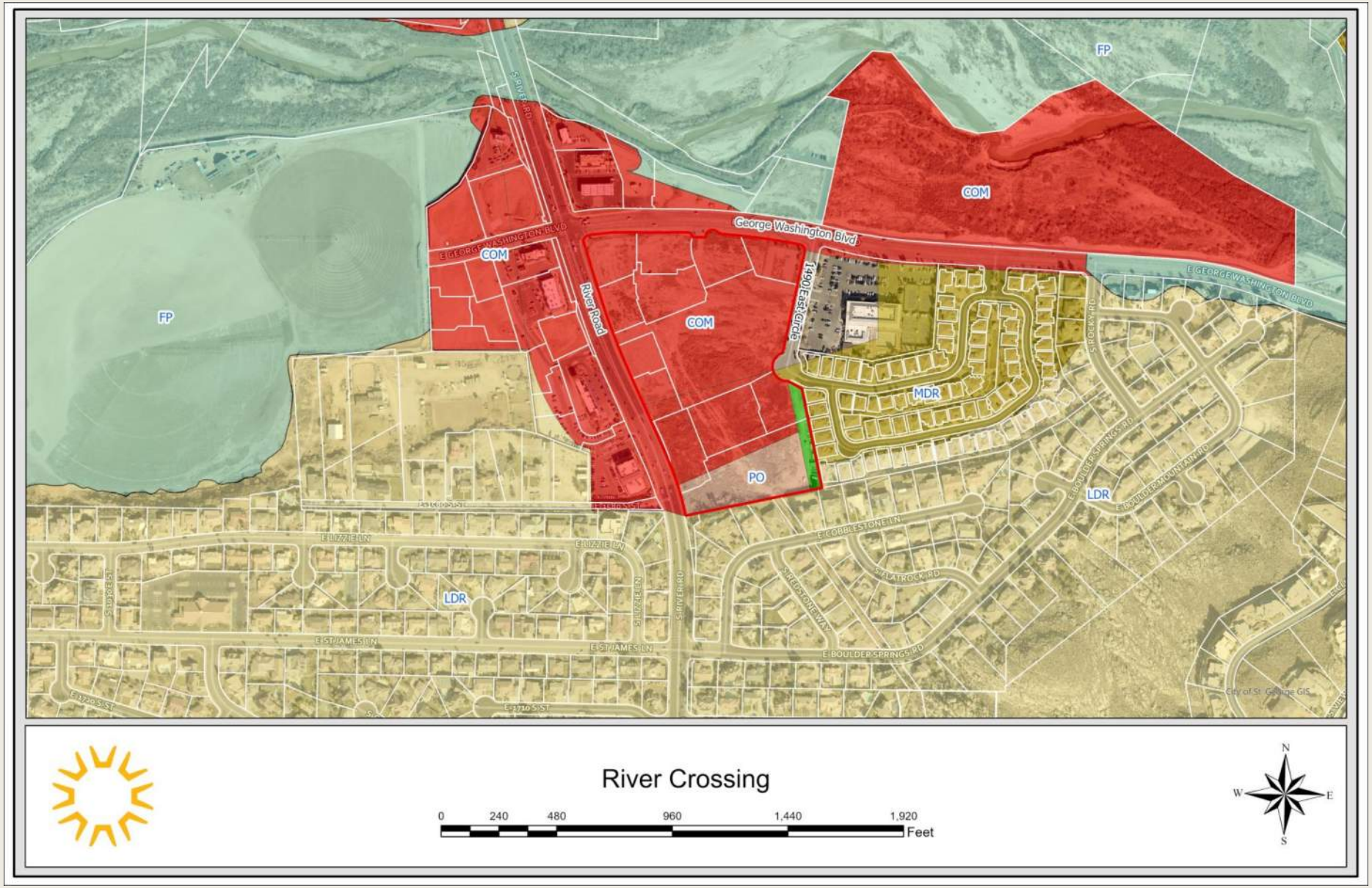
Land Use Map


FP
COM
George Washington Blvd
E GEORGE WASHINGTON BLVD
COM
River Road
COM
1490 East Circle
MDR
PO
LDR
E LIZZIE LN
E LIZZIE LN
S LIZZIE LN
LDR
E ST JAMES LN
E ST JAMES LN
S RIVER RD
E COBBLESTONE LN
S COBBLESTONE WAY
S FLATROCK RD
E BOULDER SPRINGS RD
E BOULDER SPRINGS RD
E BOULDER MOUNTAIN RD
LDR
River Crossing
0 240 480 960 1,440 1,920
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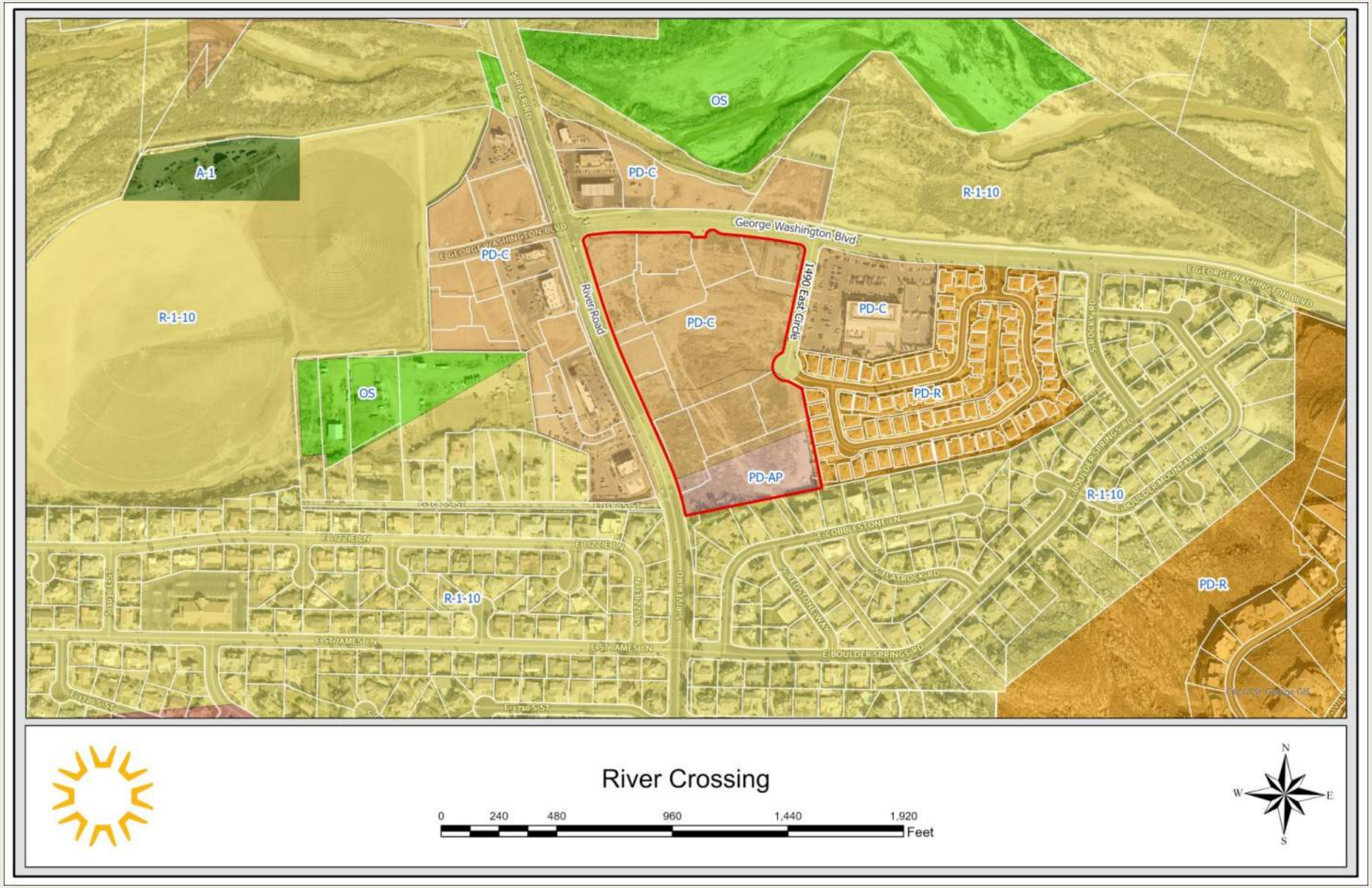
Zoning Map


A-1
R-1-10
OS
PD-C
PD-R
PD-AP
George Washington Blvd
E GEORGE WASHINGTON BLVD
S RIVER RD
River Road
1490 East Circle
E LIZZIE LN
E ST JAMES LN
E BOULDER SPRINGS RD
E COBBLESTONE LN
River Crossing
0 240 480 960 1,440 1,920
Feet
N
W
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S

Site Plan


VICINITY MAP:
1450 SOUTH
RIVER ROAD
A
B
C
D-WEST
D-EAST
E
F
G
H
I
J
K
L
M
N
SQUARE FOOTAGE AND PARKING
PARKING BYLAW
PARKING PROVIDED
A - 4563 SF 19 33
B - 5205 SF 34 34
C - 4500 SF 32 36
D-EAST - 4010 SF 32 39
D-WEST - 5329 SF 36 36
E - 3938 SF 28 28
F - 7334 SF 37 37
G - 2654 SF 23 25
H - 3480 SF 24 27
I - 12580 SF 80 84
J - 29480 SF 118 122
K - 8400 SF 59 62
L - 12580 SF 48 95
M - 5100 SF 41 41
N - 38755 SF 155 155
TOTAL: 766 854
1 SITE PLAN - OVERALL
method
project:
RIVER CROSSING
revisions :
title:
RIVER CROSSING SITE
sheet:
A001
Preliminary DD Submission

Parking Analysis

method studio M

RIVER CROSSING - PARKING - STATISTICS

November 1, 2023

BUILDING				PARKING								EVCS
NAME	UNIT	LEVEL	GROSS AREA	REQUIRED			PROVIDED					
				RATIO		BYLAW	OUT DINE	TOTAL	ACTUAL	NON	TOTAL	
A	A-1	1	**4,563**	1/250 SF		19	0	**19**	27	2	**29**	**1**
B	B-1	1	**5,205**	1/250 SF KITCHEN & 1/100 SF DINING	60/40	34	0	**34**	29	5	**34**	**1**
C	C-1	1	3,401	1/250 SF KITCHEN & 1/100 SF DINING	50/50	23.8	0					
	C-2	1	1,098	1/250 SF KITCHEN & 1/100 SF DINING	50/50	7.7	0					
	TOTAL	1	**4,499**	1/250 SF KITCHEN & 1/100 SF DINING		32	0	**32**	26	6	**32**	**1**
D-WEST	DW-1	1	3,966	1/250 SF		15.9	10					
	DW-2	1	1,363	1/250 SF		5.5	0					
	TOTAL		**5,329**	-		22	10	**32**	35	4	**39**	**1**
D-EAST	DE-1	1	**4,010**	1/250 SF KITCHEN & 1/100 SF DINING	60/40	26	10	**36**	36	0	**36**	**1**
E	E-1	1	2,196	1/250 SF KITCHEN & 1/100 SF DINING	50/50	15.4	0					
	E-2	1	1,742	1/250 SF KITCHEN & 1/100 SF DINING	50/50	12.2	0					
	TOTAL		**3,938**			28	0	**28**	25	3	**28**	**1**
F	F-1	1	1,596	1/250 SF KITCHEN		6.4	0					
	F-2	1	1,212	1/100 SF DINING		12.1	0					
	F-3	1	1,219	1/250 SF KITCHEN		4.9	0					
	F-4	1	1,443	1/250 SF		5.8	0					
	F-5	1	1,864	1/250 SF		7.5	0					
	TOTAL		**7,334**			37	0	**37**	31	6	**37**	**1**
G	G-1	1	**2,654**	1/250 SF KITCHEN & 1/100 SF DINING	60/40	17	6	**23**	23	2	**25**	**1**
H	H-1	1	**3,481**	1/250 SF KITCHEN & 1/100 SF DINING	50/50	24	0	**24**	24	3	**27**	**1**
I	I-1	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-2	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-3	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-4	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-5	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-6	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-7	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-8	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-9	1	1,200	1/250 SF KITCHEN & 1/100 SF DINING	50/50	8.4	0					
	I-10	1	1,200	1/250 SF		4.8	0					
	TOTAL		**12,000**			80	0	**80**	77	7	**84**	**1**
J	J-1	1	23,256	1/250 SF		93.0	0					
	J-2	1	6,150	1/250 SF		24.6	0					
	TOTAL	1	**29,406**	1/250 SF		118	0	**118**	117	5	**122**	**2**
K	K-1	1	**8,400**	1/250 SF KITCHEN & 1/100 SF DINING		59	0	**59**	58	4	**62**	**1**
L	L-1	1	1,200	1/250 SF		4.8	0					
	L-2	1	1,200	1/250 SF		4.8	0					
	L-3	1	1,200	1/250 SF		4.8	0					
	L-4	1	1,200	1/250 SF		4.8	0					
	L-5	1	1,200	1/250 SF		4.8	0					
	L-6	1	1,200	1/250 SF		4.8	0					
	L-7	1	1,200	1/250 SF		4.8	0					
	L-8	1	1,200	1/250 SF		4.8	0					
	L-9	1	1,200	1/250 SF		4.8	0					
	L-10	1	1,200	1/250 SF		4.8	0					
	TOTAL		**12,000**	-		48	0	**48**	87	8	**95**	**1**
M	M-1	1	1,200	1/250 SF		4.8	0					
	M-2	1	1,200	1/250 SF		4.8	0					
	M-3	1	1,200	1/250 SF		4.8	0					
	M-4	1	1,500	1/250 SF		6	0					
	M-5	2	5,100	1/250 SF		20.4	0					
	TOTAL		**10,200**			41	0	**41**	40	1	**41**	**1**
N	N-1	1	20,644	1/250 SF OFFICE		82.6	0					
	N-1	2	18,111	1/250 SF OFFICE		72.4	0					
	TOTAL		**38,755**			155	0	**155**	139	16	**155**	**2**
			111,277			**740**	**26**	**766**	**774**	**72**	**846**	**17**

360 W. Aspen Ave. Salt Lake City, UT. 84101 | 801.532.4222 method-studio.com

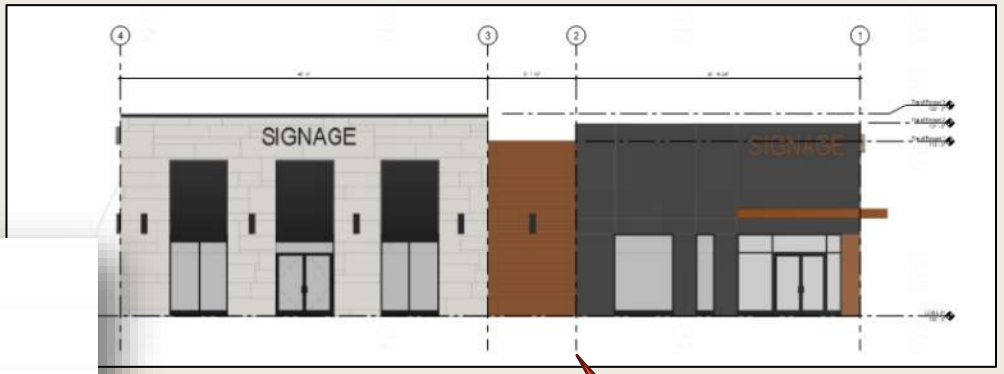
Building C

Approved Elevations

Building D (East)

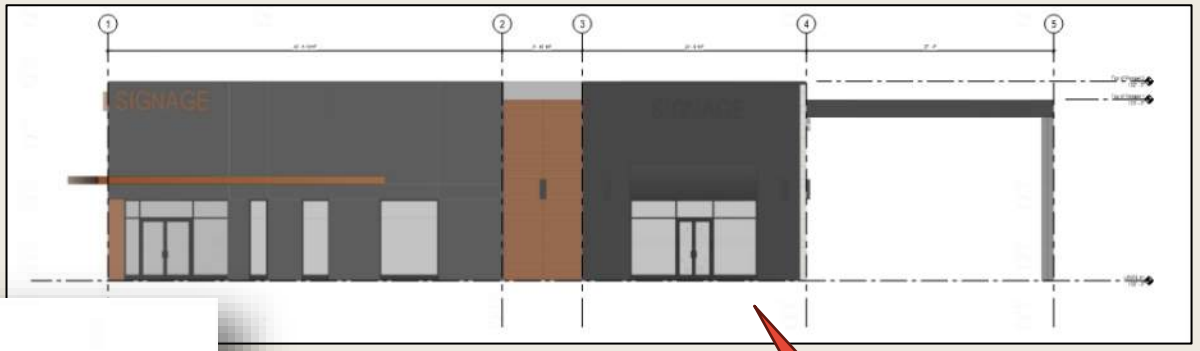
Approved Elevations

Building D (West)



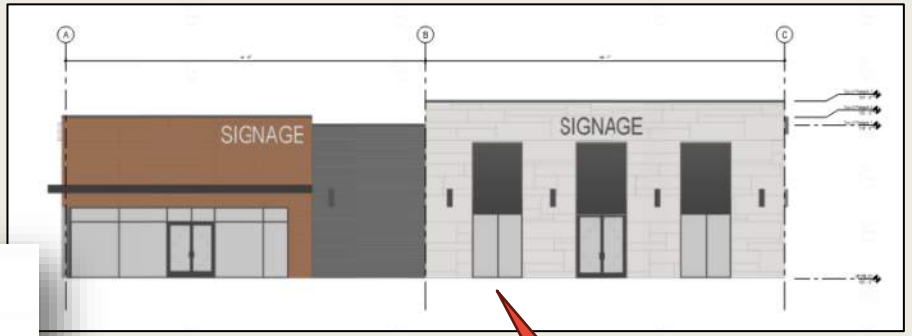
Approved Elevations

Building E



Approved Elevations

Building G



Approved Elevations

Building H


SIGNAGE
4 EAST ELEVATION
SIGNAGE
3 WEST ELEVATION
SIGNAGE
2 SOUTH ELEVATION
SIGNAGE
1 NORTH ELEVATION
RIVER CROSSING - BUILDING H
method studio
architecture | interiors | planning

Buildings I & L

Building J


SIGNAGE
4 NORTH ELEVATION
3 SOUTH ELEVATION
2 EAST ELEVATION
SIGNAGE
SIGNAGE
SIGNAGE
SIGNAGE
SIGNAGE
1 WEST ELEVATION
RIVER CROSSING - BLDG J
method studio
architecture | interiors | planning

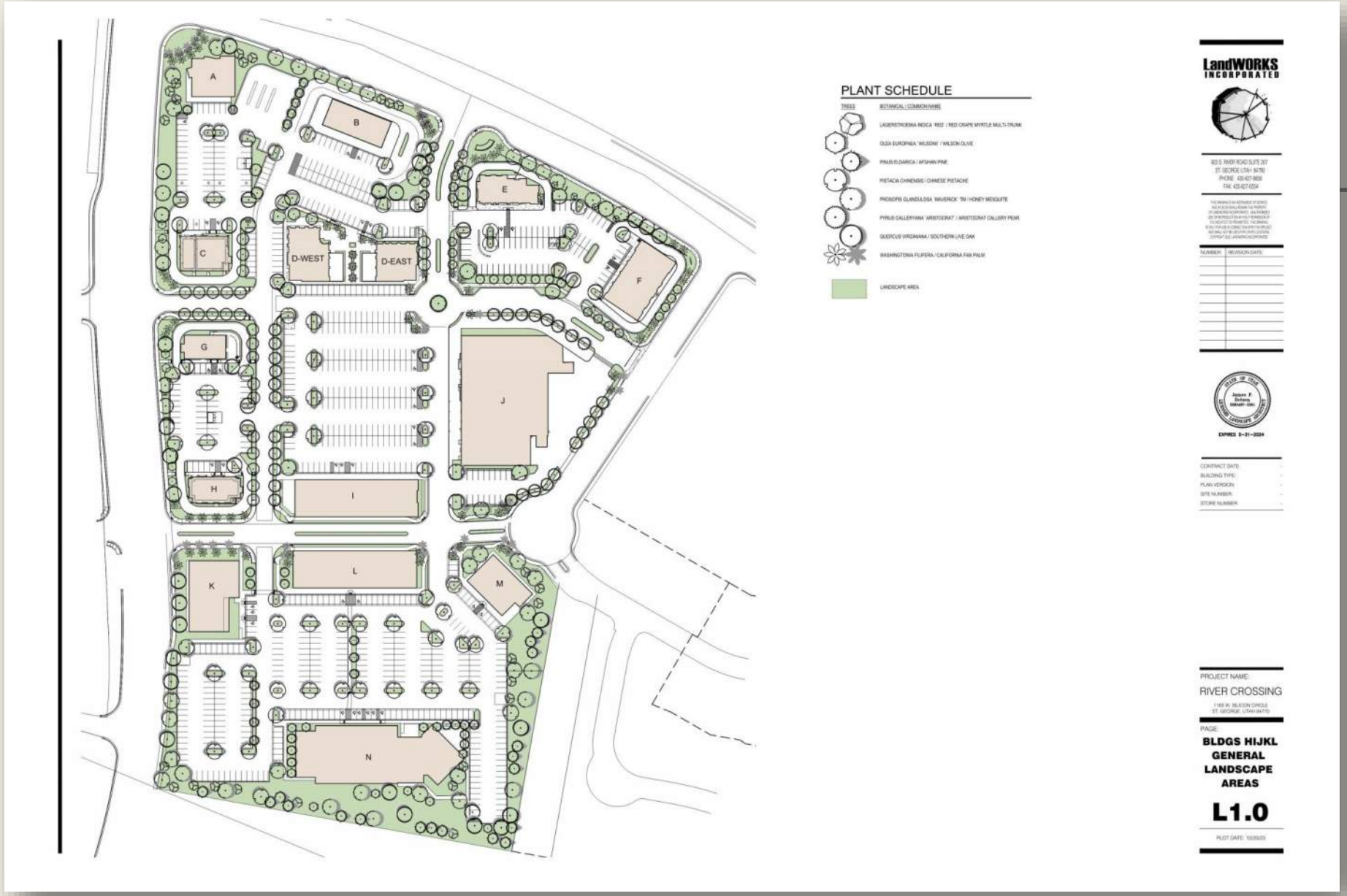
Building K


SIGNAGE
4 NORTH ELEVATION
SIGNAGE
SIGNAGE
3 SOUTH ELEVATION
SIGNAGE
2 WEST ELEVATION
SIGNAGE
SIGNAGE
1 EAST ELEVATION
RIVER CROSSING - BUILDING K
method studio
architecture | interiors | planning

Building M


4 EAST ELEVATION
3 WEST ELEVATION
2 SOUTH ELEVATION
1 NORTH ELEVATION
2ND LEVEL T.O. PLATE
SECOND LEVEL
MAIN LEVEL T.O. PLATE
MAIN LEVEL
RIVER CROSSING - BUILDING M
method studio
architecture | interiors | planning

Landscape Exhibit



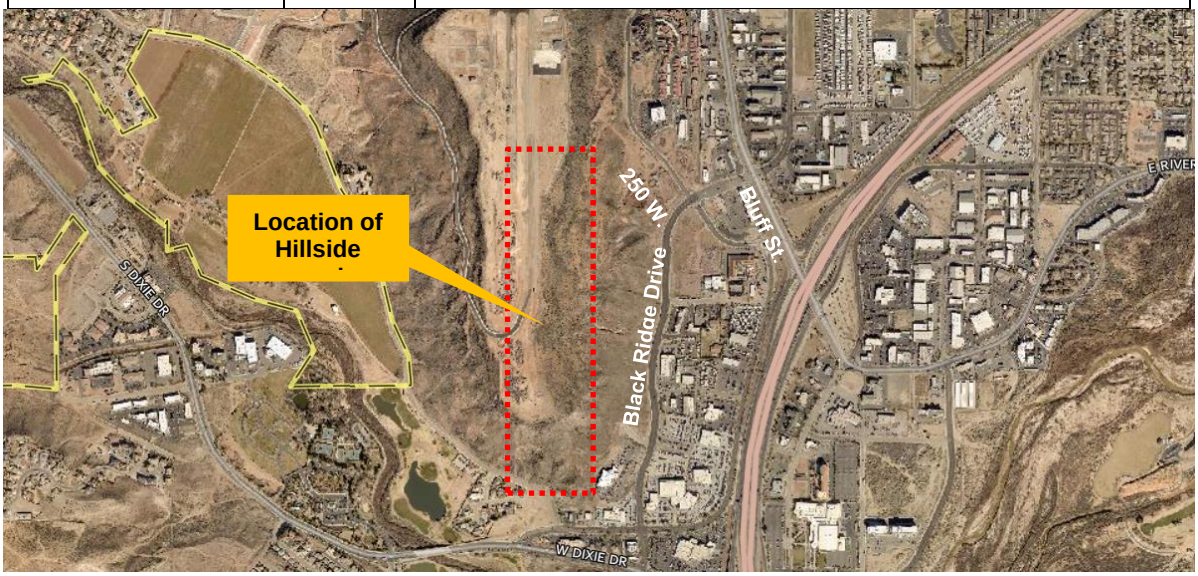
Materials Board

St.George
Community Development

ITEM 3
Hillside Permit

HILLSIDE REVIEW BOARD AGENDA REPORT: 01/25/2023
HILLSIDE REVIEW BOARD AGENDA REPORT: 11/01/2023
PLANNING COMMISSION AGENDA REPORT: **11/14/2023**

Tech Ridge Southeast Slope Hillside Development Permit (Case No. 2023-HS-002)		
Request:	Consider a Hillside Development Permit to make modifications to the ridgeline along the southeast slope of the Tech Ridge Development.	
Applicant:	Isaac Barlow	
Representative:	Mike Bradshaw	
Location:	250 West Street at approximately 1170 South	
General Plan:	COM (Commercial), OS (Open Space), and LDR (Low Density Residential)	
Existing Zoning:	R-1-10 (Single Family Residential 10,000sf), PD-MU (Planned Development Mixed Use), and OS (Open Space)	
Surrounding Zoning:	North	PD-MU and R-1-10
	South	PD-MU and R-1-10
	East	R-1-10
	West	OS, PD-MU



BACKGROUND

This is a request to obtain a hillside development permit to perform work along the hillside located on the southeast portion of the Tech Ridge development, adjacent to the proposed southeast access road that leads from 250 West Street to the Tech Ridge development. There is an existing ridgeline along the southeast portion of the Tech Ridge development that is prominent at certain locations but then fades out in other locations. This proposal is to add material to the areas where the ridgeline is not defined and to blend the new material into the existing prominent ridgeline. This proposal will add in fill and retaining walls to specific locations. Refer to Exhibit C for the location of these areas and the plans to alter the current lay of the land.

When the new ridgeline is complete, the applicants will be putting the perimeter rim trail along the side of the new stacked walls. In addition to this, the applicant is proposing to put in a pedestrian bridge over the top of the proposed access road.

EXHIBITS PROVIDED

1. Exhibit A – Maps
   "Exhibit A" in the packet shows the general plan land use map and the zoning map.

2. Exhibit B – Applicable Ordinances
   "Exhibit B" in the packet lists the applicable zoning regulation that apply to this case found in Title 10, Chapter 13A.

3. Exhibit C – Tech Ridge Southeast Hillside Protection Plan
   "Exhibit C" in the packet shows the development plan along with grading and slope analysis.

4. Exhibit D – Geotechnical Report
   "Exhibit D" in the packet shows the Geotech report for this proposal.

RECOMMENDATION

The Hillside Committee recommended approval of the Tech Ridge Southeast Slope Hillside Development Permit with the following condition:

1. That the execution of the stacked rockery walls double tiers meet the level of aesthetic appeal that is displayed on the west side (of Tech Ridge) as constructed.

ALTERNATIVES:

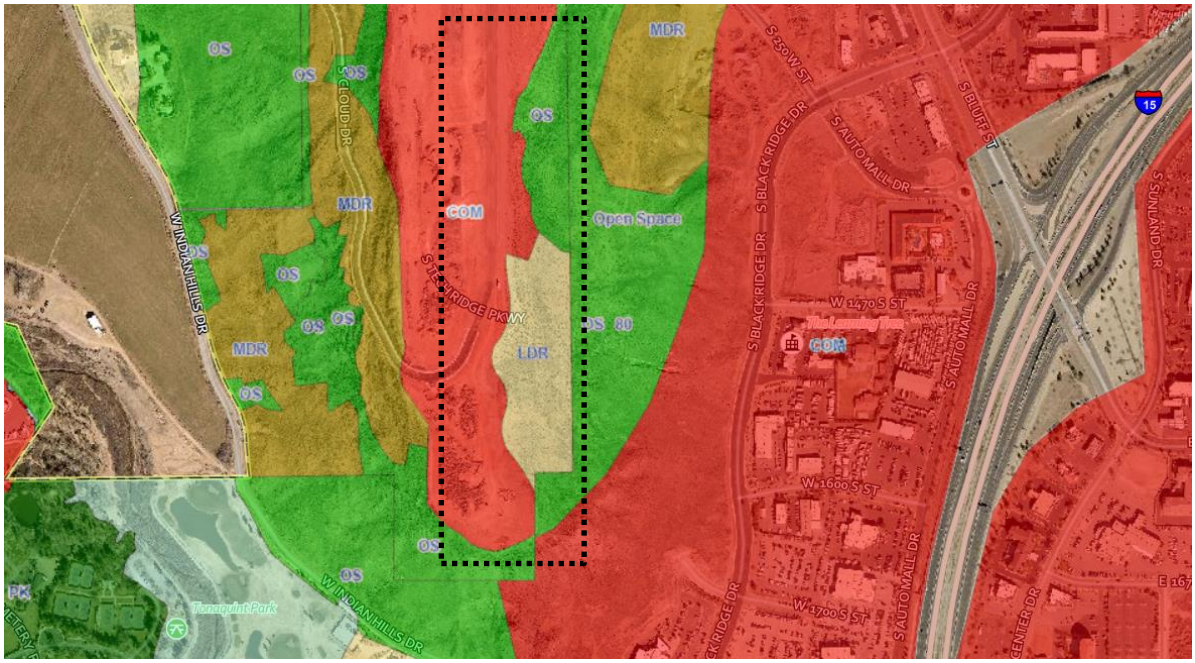
1. Recommend approval as presented.
2. Recommend approval with conditions.
3. Recommend denial.
4. Table or Continue the proposed preliminary plat to a specific date.

POSSIBLE MOTION:

The Planning Commission recommends approval of the Tech Ridge Southeast Slope Hillside Development Permit.

Exhibit A
MAPS

General Plan - COM



Zoning - R-1-10

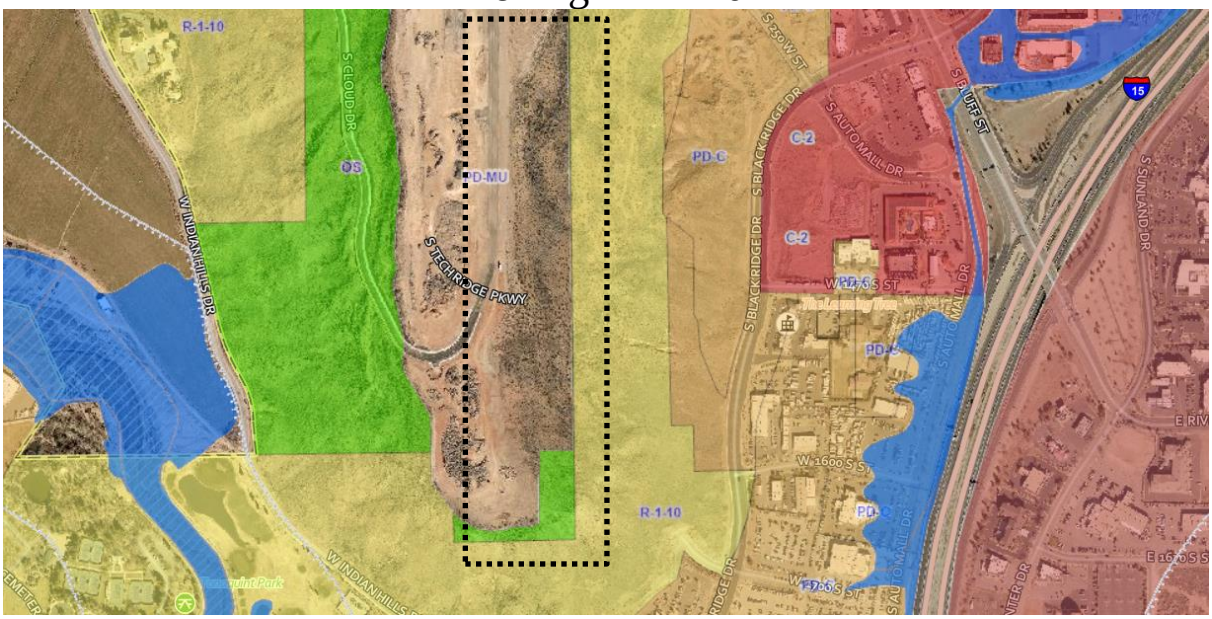


Exhibit B
APPLICABLE ORDINANCES

I. *Density and Disturbance Standards*

A. The hillside development overlay zone (HDOZ) limits development densities and provides specific development incentives to transfer underlying zone densities from hillsides (sending areas), to less steep slopes or more safe development areas (receiving areas), within a development.

B. For those portions of a proposed development with natural slopes twenty percent (20%) or less, development density follows the density and development standards in the underlying zone.

C. For those portions of a proposed development with natural slopes from twenty-one percent (21%) to thirty percent (30%), development activity shall not disturb more than thirty percent (30%) of the parcel within this slope category.

D. For those portions of a proposed development with natural slopes from thirty-one percent (31%) to forty percent (40%), development activity shall not disturb more than five percent (5%) of the area within this slope category.

E. A proposed development may not disturb slopes in excess of forty percent (40%).

F. The applicant may:

1. Transfer all development density from steeper slope categories (sending areas), to areas within the development with natural slopes of twenty percent (20%) or less (receiving areas); and

2. Develop additional bonus density, calculated from each slope category, as follows:

a. Natural slopes twenty percent (20%) or less transferred on a one-to-one (1:1) unit basis; plus

b. One (1) additional density unit for each density unit transferred from natural slopes of twenty-one percent (21%) to thirty percent (30%); plus

c. Two (2) additional density units for each density unit transferred from natural slopes of thirty-one percent (31%) to forty percent (40%).

3. Unit calculation for the receiving area shall be based on the requirements of the sending area zone.

G. Density transfers to the receiving area may occur without a zone change within the receiving area even though the resulting density or configuration may exceed the density limits of the receiving area zone. Other than density, the receiving area's zoning requirements apply to development in the receiving area. For instance, lot sizes may vary, but single-family zoning districts only allow single-family detached dwellings.

H. If the applicant proposes to develop within the twenty-one percent (21%) to forty percent (40%) slope area, the applicant cannot employ partial density transfers from the sending area and must propose a design, site development plans, and a grading plan that blends and harmonizes all aspects of the proposed development into the natural topography, and that minimizes road cuts and fills.

I. Non-disturb areas within a residential lot as shown on the slope analysis map shall not be used to calculate minimum lot size.

J. Disturbance standards do not apply to the city for limited city facilities: trails, parks, and utilities. (Ord. 2019-10-002, 10-10-2019)

II. Slope and Slope Areas Determined

A. Slope shall be determined for each significant portion of a development parcel.

B. Procedure: The applicant shall map the location of the natural slope by using the following procedure:

1. Preparation of Contour Maps: The applicant shall submit an accurate, current contour map, prepared and certified by a licensed professional engineer or surveyor, which shows all land contours at intervals no greater than five feet (5'), drawn at a one inch equals one hundred feet (1" = 100') scale maximum.

2. Verification through Field Surveys: The city engineer or designee may require the applicant to submit a field survey to verify the accuracy of the contour map.

C. Determination of Slope Areas: Using the contour map, natural slopes shall be calculated using points identified as natural slopes of twenty percent (20%), thirty percent (30%), and forty percent (40%), and shall be located on the contour map and connected by a continuous line. That area bounded by said lines and intersecting property lines shall be used for determining project density. Small washes or outcrops, which have slopes distinctly different from surrounding property, and are not part of the contiguous topography, may be excluded from the slope determination. (Ord. 2019-10-002, 10-10-2019)

III. Street Design

The following standards apply to public and private streets within the zone:

A. Street Grades: The maximum allowed street grade is fifteen percent (15%).

B. Intersections: Roads shall intersect at ninety-degree (90°) angles.

C. Intersection Spacing: Intersections should be spaced far enough apart so that the traffic stopped to make left turns at one intersection does not interfere with traffic movements at the adjacent intersections.

1. On low-volume streets such as access roads to minor collectors or minor collectors to minor collectors, the minimum spacing distance is one hundred twenty-five feet (125');

2. For minor collectors to major collectors, the minimum spacing distance is two hundred fifty feet (250').

D. Design Speed: The design of geometric features such as horizontal and vertical alignment will depend on the design speed selected for each street. The design speed is primarily determined by the street function and classification and is the maximum speed for safe and comfortable operation of a vehicle. Other than a major collector, all streets in hillside areas are classified as low speed streets (thirty-five (35) miles per hour or less).

Street Design Classification	Design Speed	Posted Speed
Minor collector	*30*	*30*
Local road	*25 – 30*	*25*
Hillside local	*25*	*25*
Hillside access	*25*	*25*

E. Clear Sight Distance at Intersections: Adequate, clear sight distance is required at intersections, as follows:

Posted Speed of Higher Order Road	Minimum Y	Desired Y
20	*210*	*240*
25	*260*	*300*
30	*310*	*380*
35	*365*	*475*

F. Vertical Curves and Intersection Relationship: The vertical alignment of residential streets shall comply with latest editions of AASHTO geometric design of highways and streets. See table below for listing of pertinent design criteria:

Design Speed	Crest "K" Value	Sag "K" Value
	Minimum Length of Vertical Curves	
20	*10*	*20*
25	*20*	*30*
30	*30*	*40*
35	*40*	*50*

L = KA (for minimum sight distance on a vertical curve).

L = Length of vertical curve for proper sight distance.

A = Algebraic difference in grade.

Vertical alignment with the intersection is also of special nature, and design alternatives may be required. As a guideline, the approach area where vehicles stop while waiting to enter an intersection shall not exceed four (4%) to five percent (5%) from the gutter line of the street being intersected for a distance of fifty feet (50'), though a range of fifty feet (50') to one hundred feet (100') is more desirable. This applies to all intersections, except those intersections where both intersecting streets are minor collectors. The landing area for a minor collector shall be designed for a grade of two percent (2%) to three percent (3%) for a distance of one hundred feet (100').

G. Safe Stopping Sight Distance: The minimum sight distance to be provided before a stop is required is included in the table below:

Design Speed	Computed	Recommended Distance	Add-On for 15% Grade
20	106.7	125	20
25	146.5	150	36
30	195.7	200	64
35	248.4	250	95

H. Horizontal Curves: The minimum centerline radius for horizontal curves on low-speed residential streets is:

Street Classification or Speed	Curve Radius in Feet
Minimum Centerline Radius	
Private streets	50 – 100
20 mph	100 – 150
25 mph	185
30 mph	310

I. Street Cross-Section Standards: The requirements for street cross-section configurations are based on the following factors:

1. Traffic capacity;

2. Design speed;

3. Projected traffic;

4. Designs to reduce scarring.

J. Alternate road cross sections, such as grade separated streets, may be used if applicable safety and traffic standards are met.

K. Elimination of sidewalk on one side of the road may be approved when elimination of one (1) sidewalk can appreciably reduce the amount of hillside disturbance. Other considerations may also warrant its elimination. When one (1) sidewalk is eliminated, the remaining sidewalk shall be increased by one foot (1') in width.

L. The following table sets forth the requirements for street standards for single-family residential development.

Maximum Grade	Street Classification	Width ROW	Width TBC	Pavement Width	Width Sidewalk	ADT
Street Cross-Section Standards for Single-Family Residential						
12%	Minor collector	60'	50'	45'	5'	1,500 – 3,500
15%	Local road	50'	40'	35'	4'	750 – 1,500
15%	Hillside local	45'	35'	30'	4'	150 – 750
15%	Hillside access	41'	31'	26'	4'	0 – 150

(Ord. 2019-10-002, 10-10-2019)

IV. 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)*

Exhibit C

TECH RIDGE SOUTHEAST HILLSIDE PROTECTION PLAN

Refer to Item 4

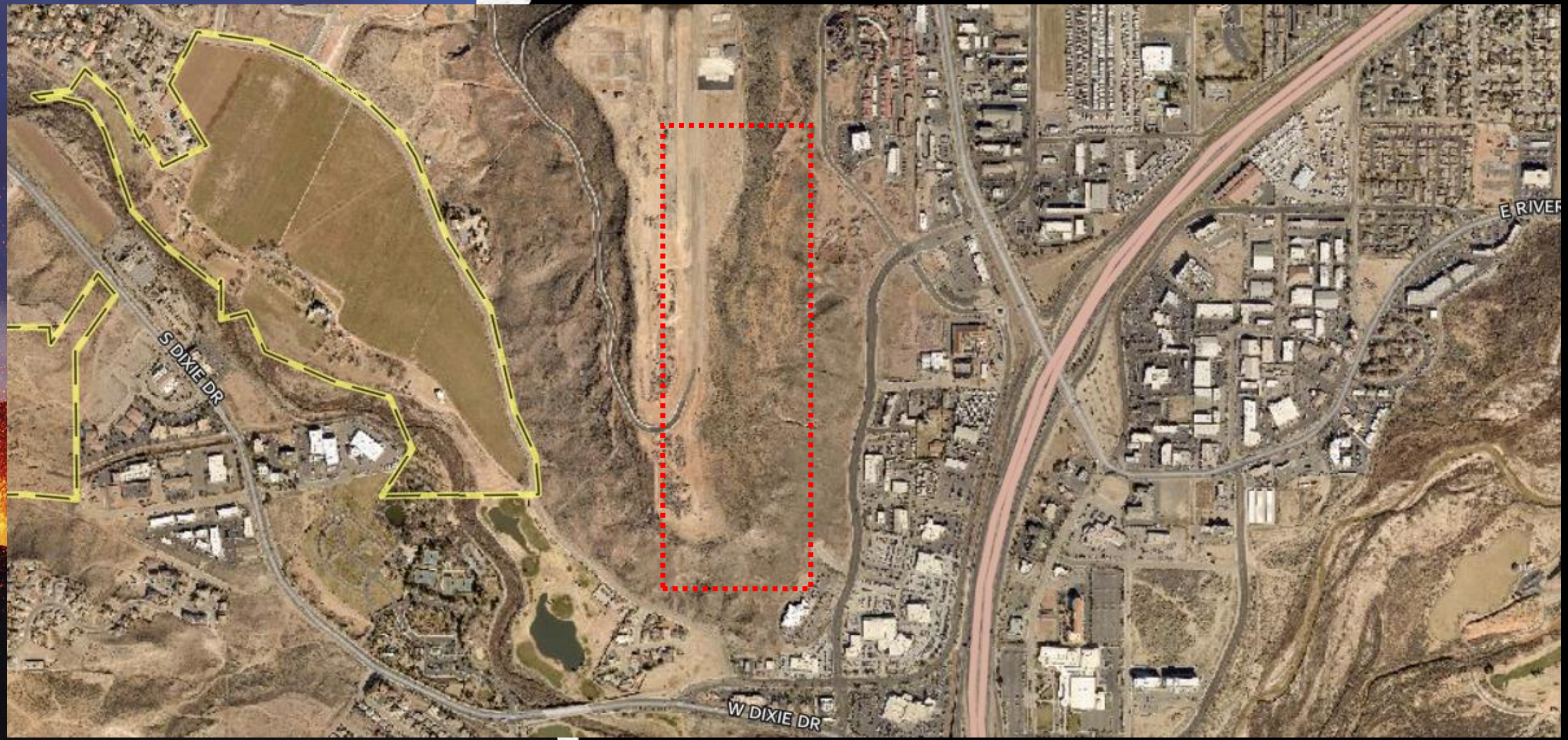
Exhibit D
GEOTECHNICAL REPORT

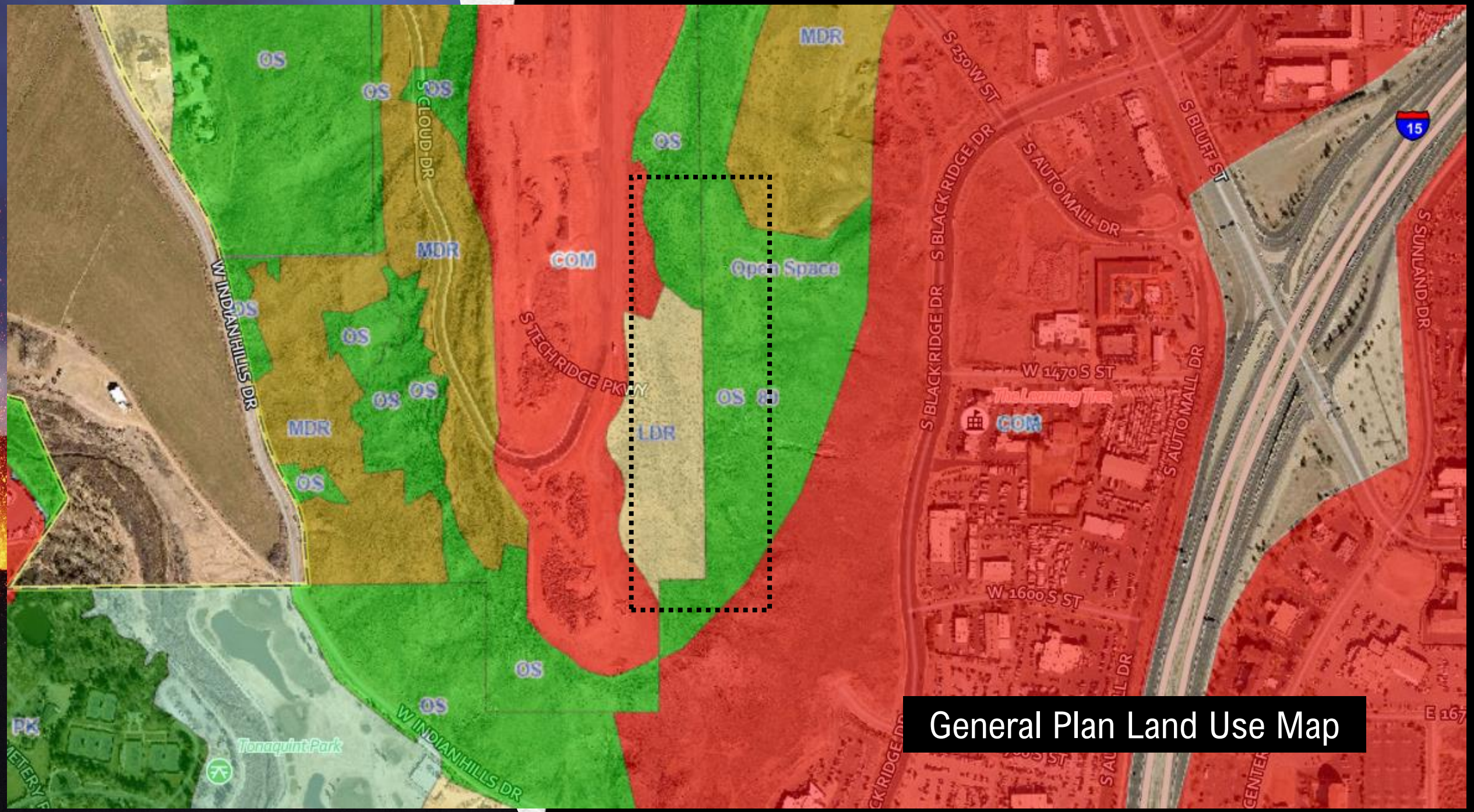
Refer to Item 4

Tech Ridge Southeast Slope

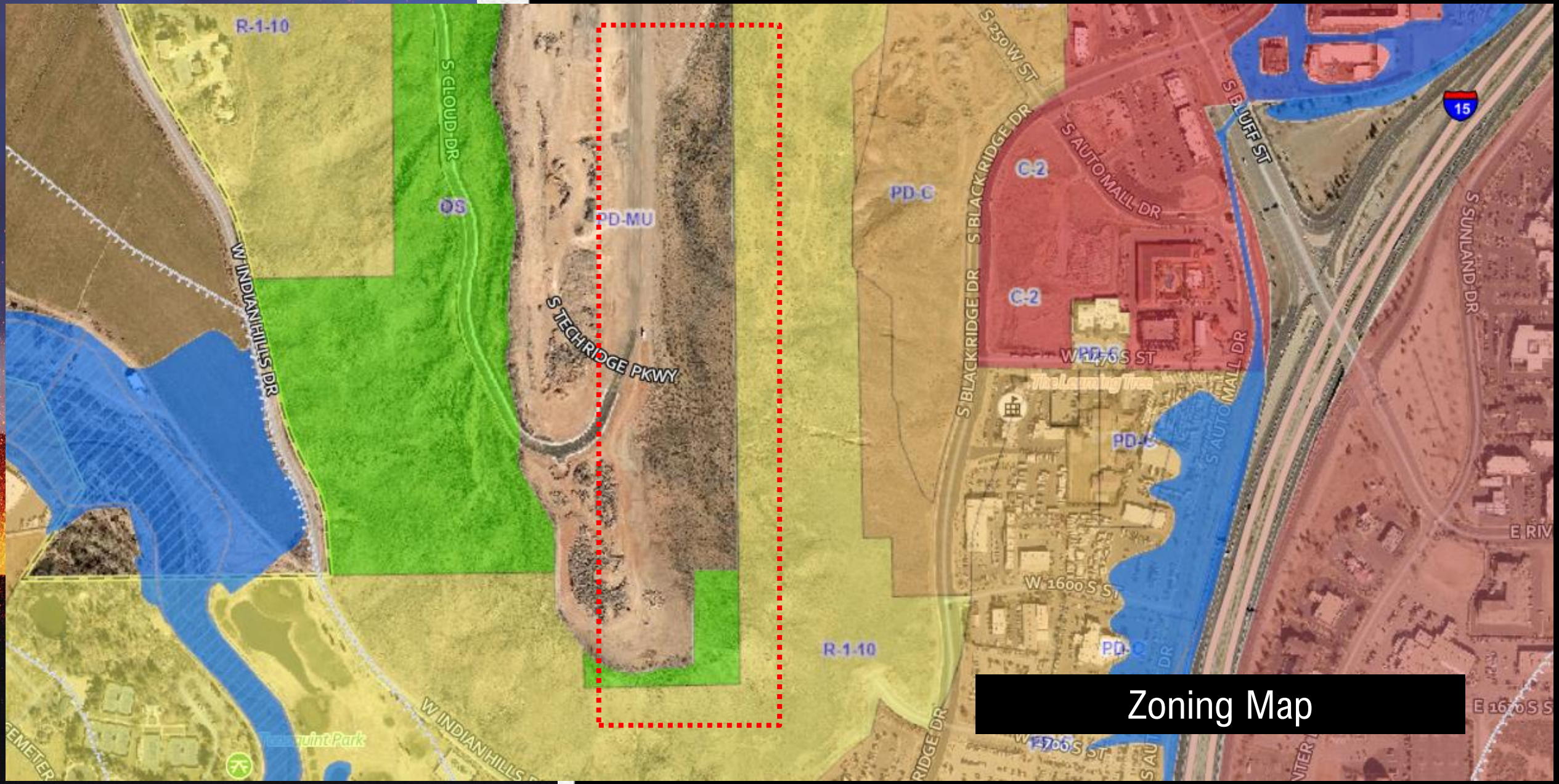
Hillside Development Permit

2023-HS-002


S DIXIE DR
W DIXIE DR
E RIVER



General Plan Land Use Map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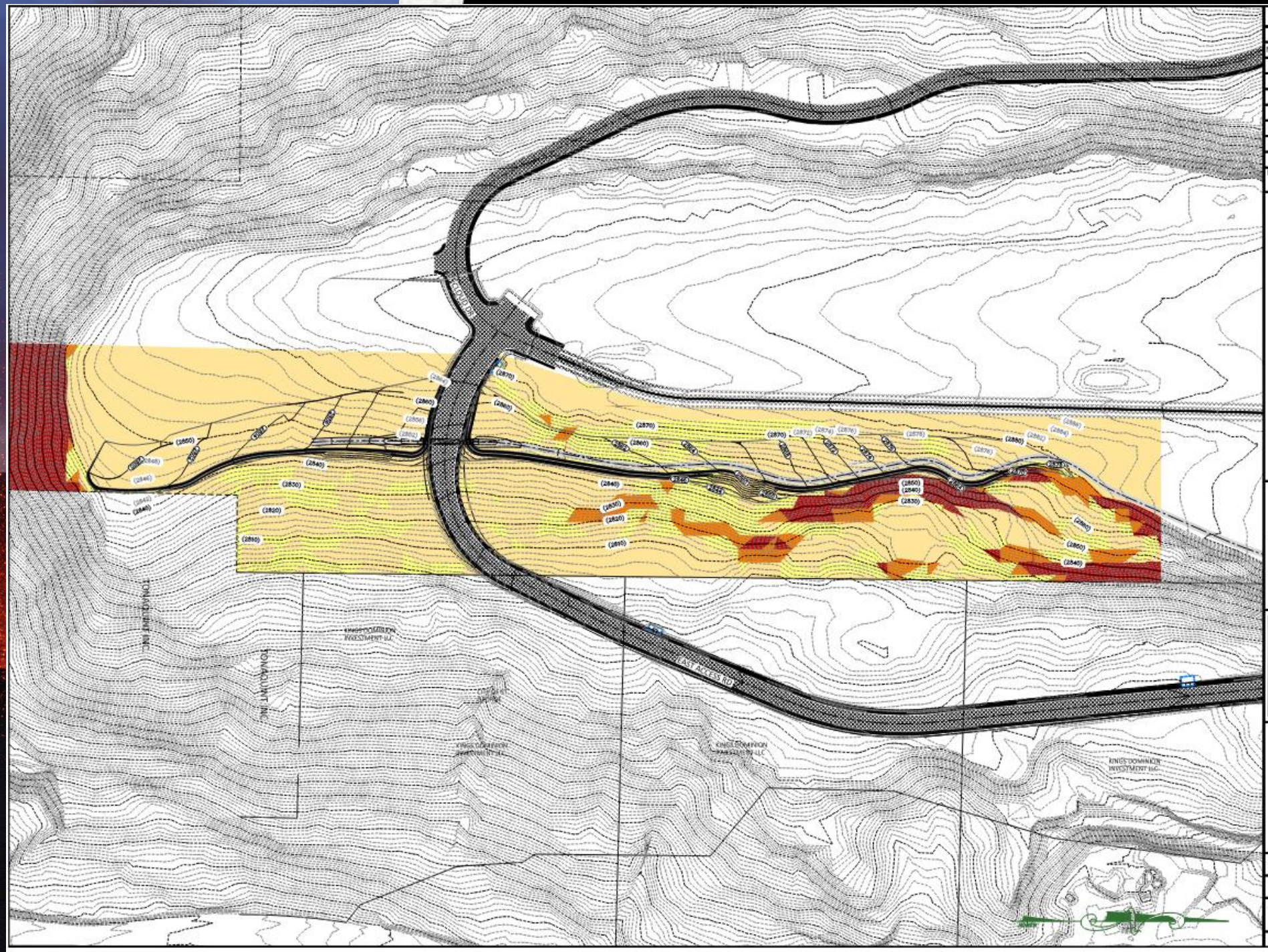
S CLOUD DR
OS
PD-MU
W INDIAN HILLS DR
S TECHRIDGE PKWY
PD-C
S 250 W ST
S BLACKRIDGE DR
S AUTOMALL DR
C-2
S BLUFF ST
15
S SUNLAND DR
W 1700 S ST
W 1600 S ST
R-1-10
W INDIAN HILLS
E 1600 S S

Zoning Map



Date: 12-30-2022

REVISIONS

No.	Date	by	Description
		ARL	

File Name: Southeast Ridge Walls.dwg

SLOPE ANALYSIS LEGEND

- 0% to 20%
- 20% to 30%
- 30% to 40%
- 40% +

GRAPHIC SCALE

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2303 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8080

NORTH DAKOTA
621 20th STREET W.
WILLISTON, ND 58801
701-572-8100

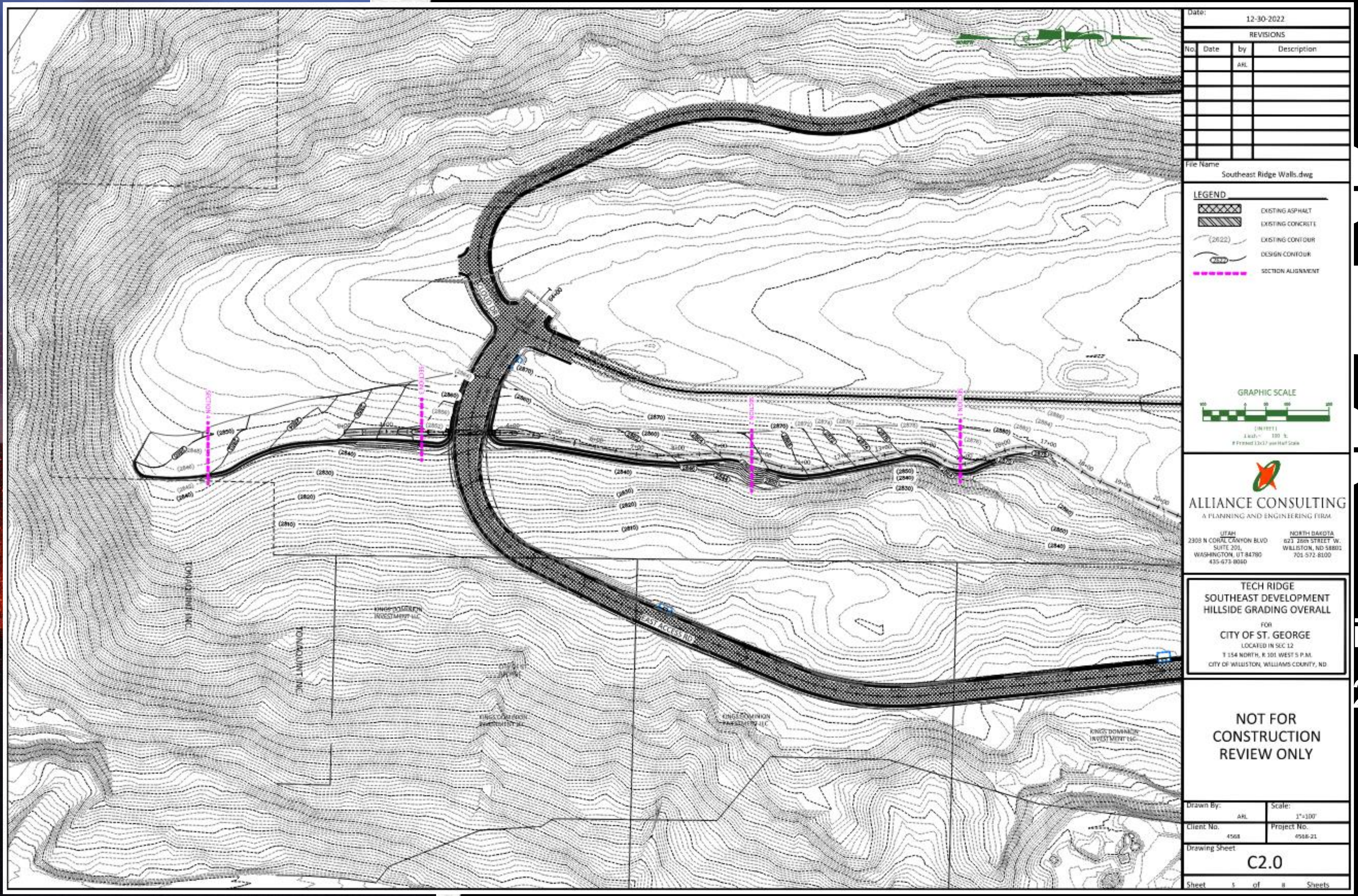
TECH RIDGE
SOUTHEAST DEVELOPMENT
HILLSIDE SLOPE ANALYSIS
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
T 42 SOUTH, R 16 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
ARL	1"=100'
Client No.: 4568	Project No.: 4568-21

Drawing Sheet: C1.2

Sheet 1 of 8 Sheets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12-30-2022
REVISIONS
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ARL
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Southeast Ridge Walls.dwg
LEGEND
EXISTING ASPHALT
EXISTING CONCRETE
EXISTING CONTOUR
DESIGN CONTOUR
SECTION ALIGNMENT
GRAPHIC SCALE
ALLIANCE CONSULTING
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TECH RIDGE
SOUTHEAST DEVELOPMENT
HILLSIDE GRADING OVERALL
FOR
CITY OF ST. GEORGE
NOT FOR
CONSTRUCTION
REVIEW ONLY
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Client No.
Project No.
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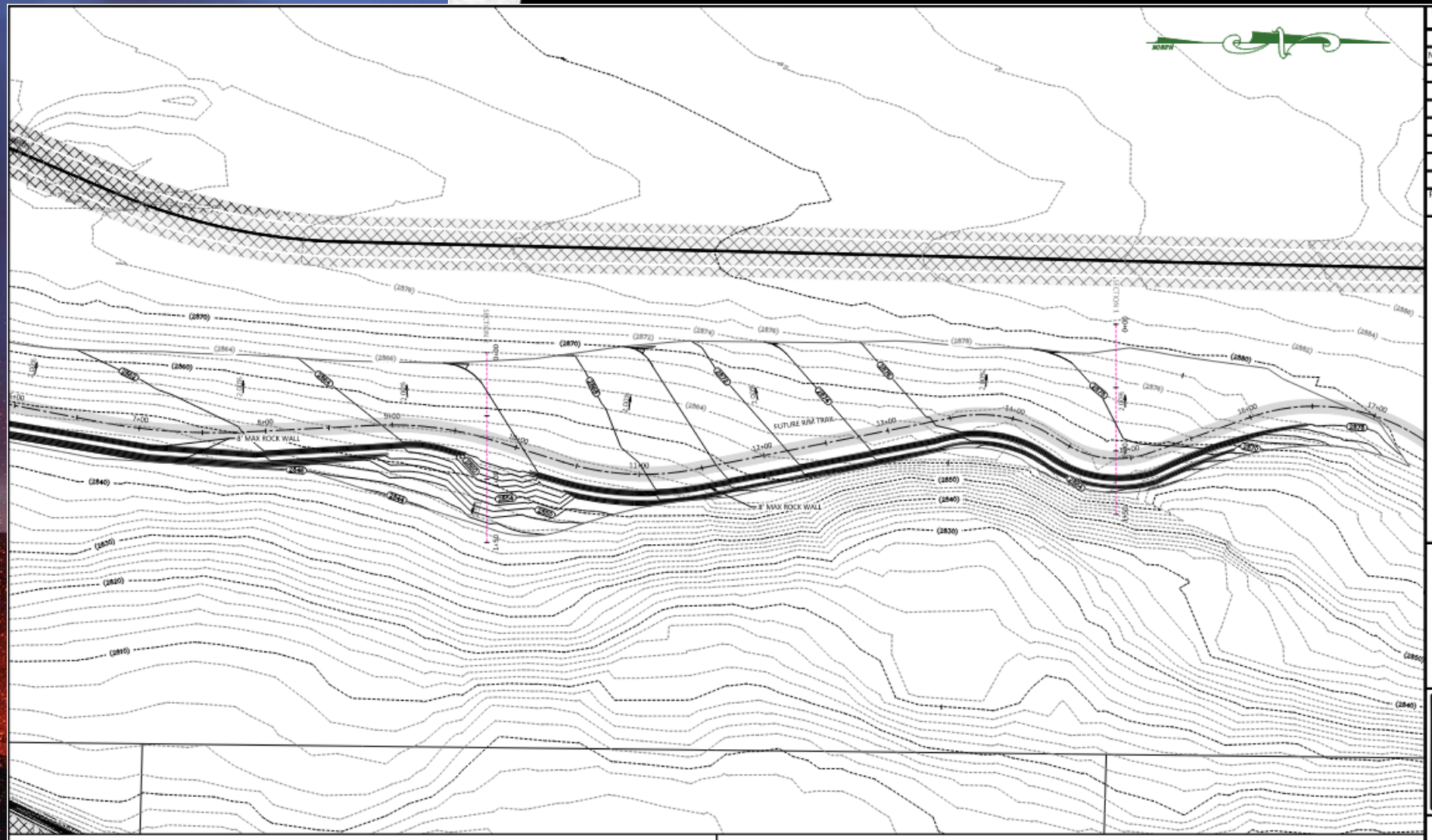

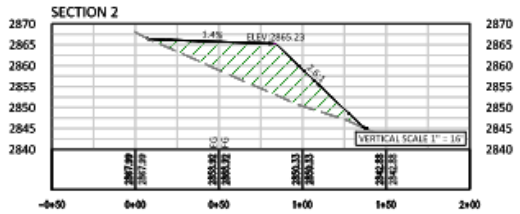

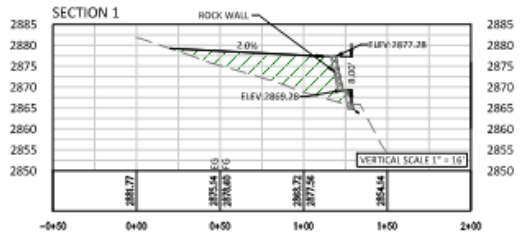

Date: 12-30-2022

REVISIONS

No	Date	by	Description
		ARL	

File Name: Southeast Ridge Walls.dwg

LEGEND

- EXISTING ASPHALT
- EXISTING CONCRETE
- (2622) EXISTING CONTOUR
- DESIGN CONTOUR
- SECTION ALIGNMENT

GRAPHIC SCALE

(IN FEET)

1 inch = 40 ft.

If Printed 11x17 use Half Scale

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WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
621 2669 STREET W.
WILLISTON, ND 58801
701-572-8100

TECH RIDGE
SOUTHEAST DEVELOPMENT
HILLSIDE GRADING

FOR
CITY OF ST. GEORGE

LOCATED IN SEC 12
T 154 NORTH, R 101 WEST S P.M.
CITY OF WILLISTON, WILLIAMS COUNTY, ND

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
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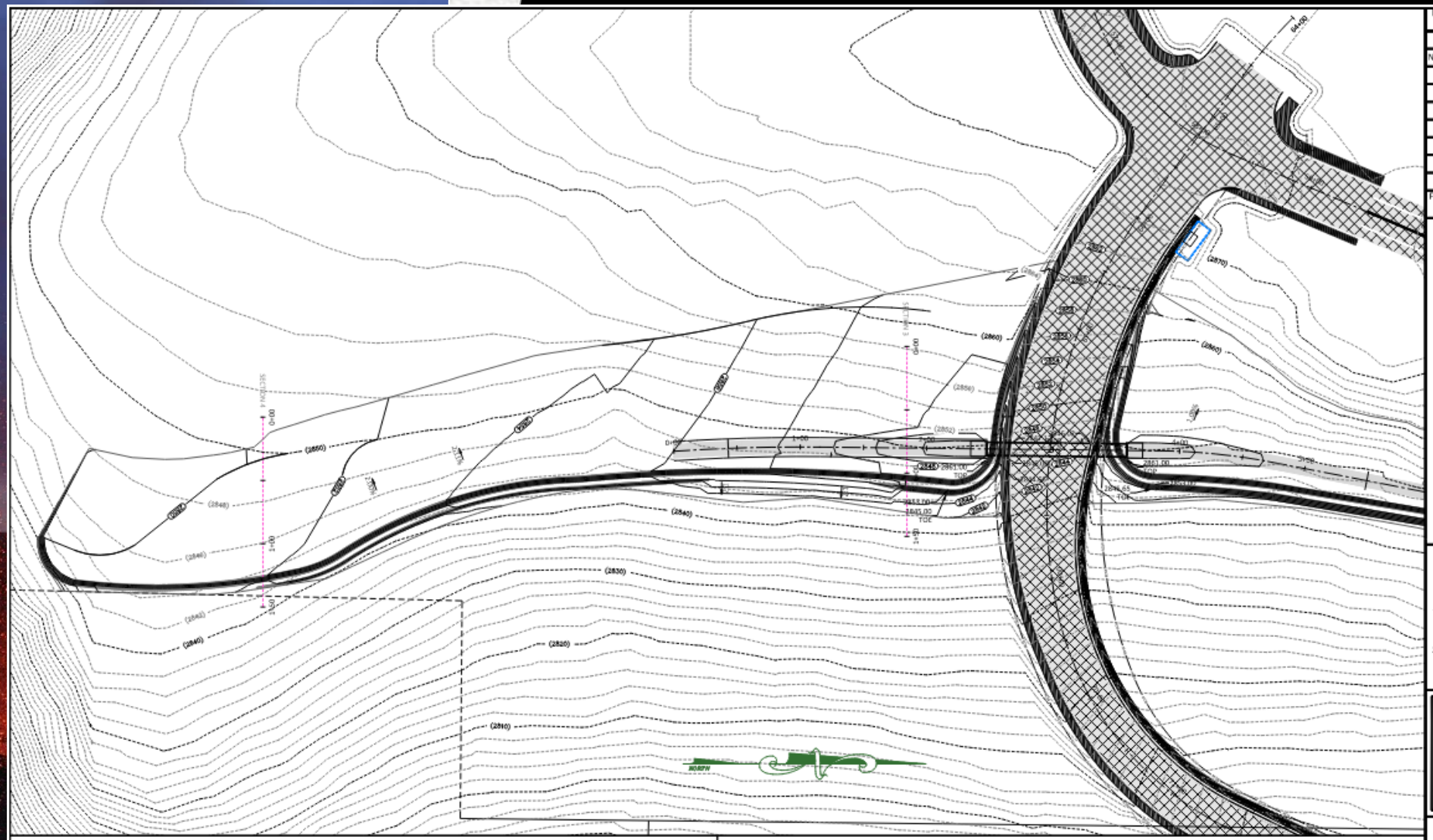
Client No.	Project No.
4568	4568-21

Drawing Sheet
C2.1

Sheet 6 of 8 Sheets



Date: 12-30-2022

REVISIONS

No.	Date	by	Description
		ARL	

File Name: Southeast Ridge Walls.dwg

LEGEND

- EXISTING ASPHALT
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- (2622) EXISTING CONTOUR
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(IN FEET)

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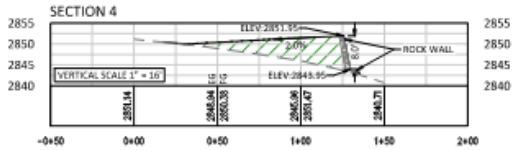
SECTION 4



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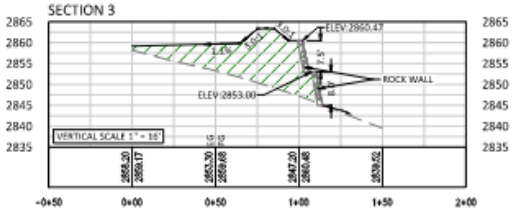

NOT FOR
CONSTRUCTION
REVIEW ONLY

Drawn By:	Scale:
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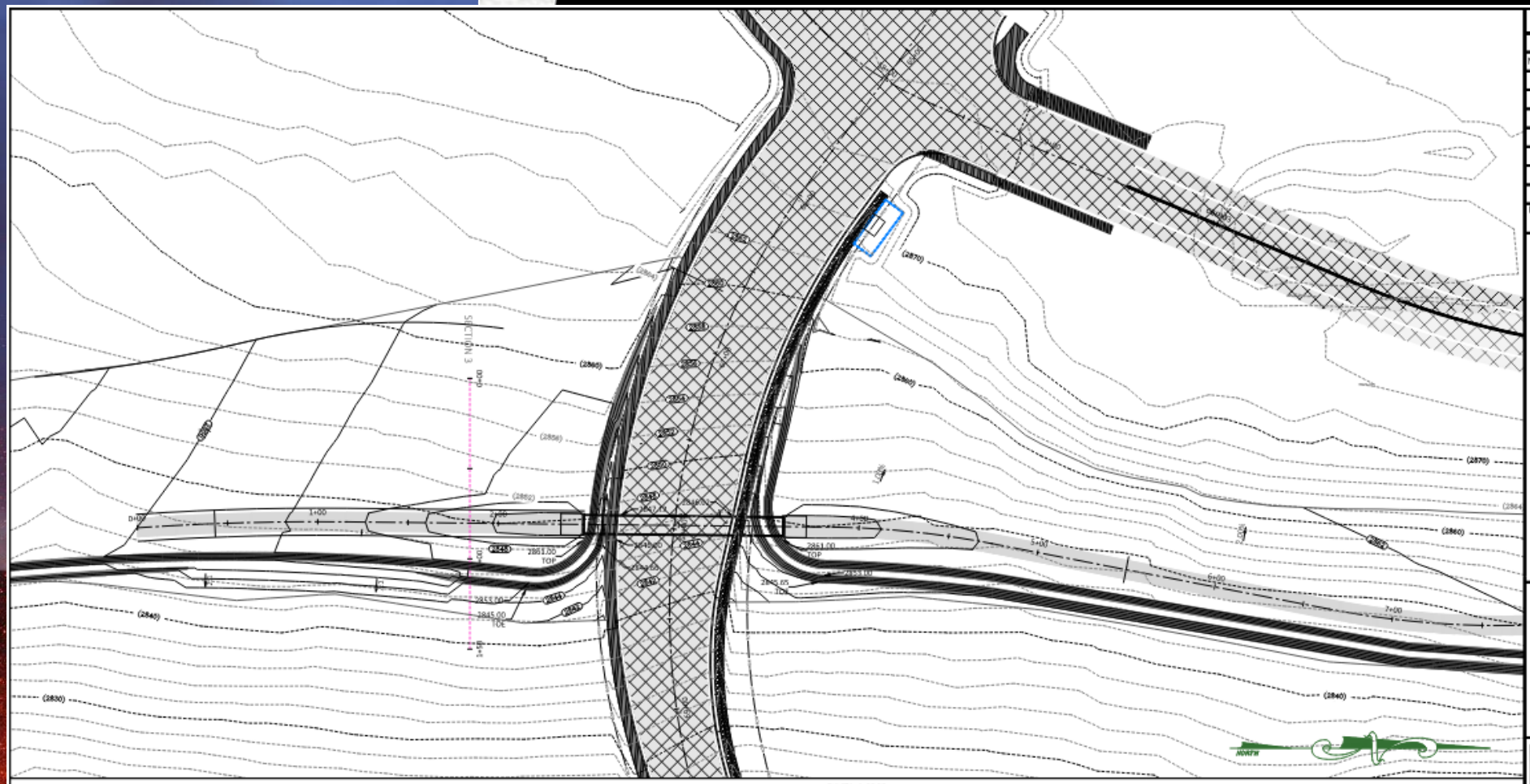
Client No. 4568	Project No. 4568-21

Drawing Sheet
C2.2

Sheet 7 of 8 Sheets



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REVISIONS

No.	Date	by	Description
		ARL	

File Name: Southeast Ridge Walls.dwg

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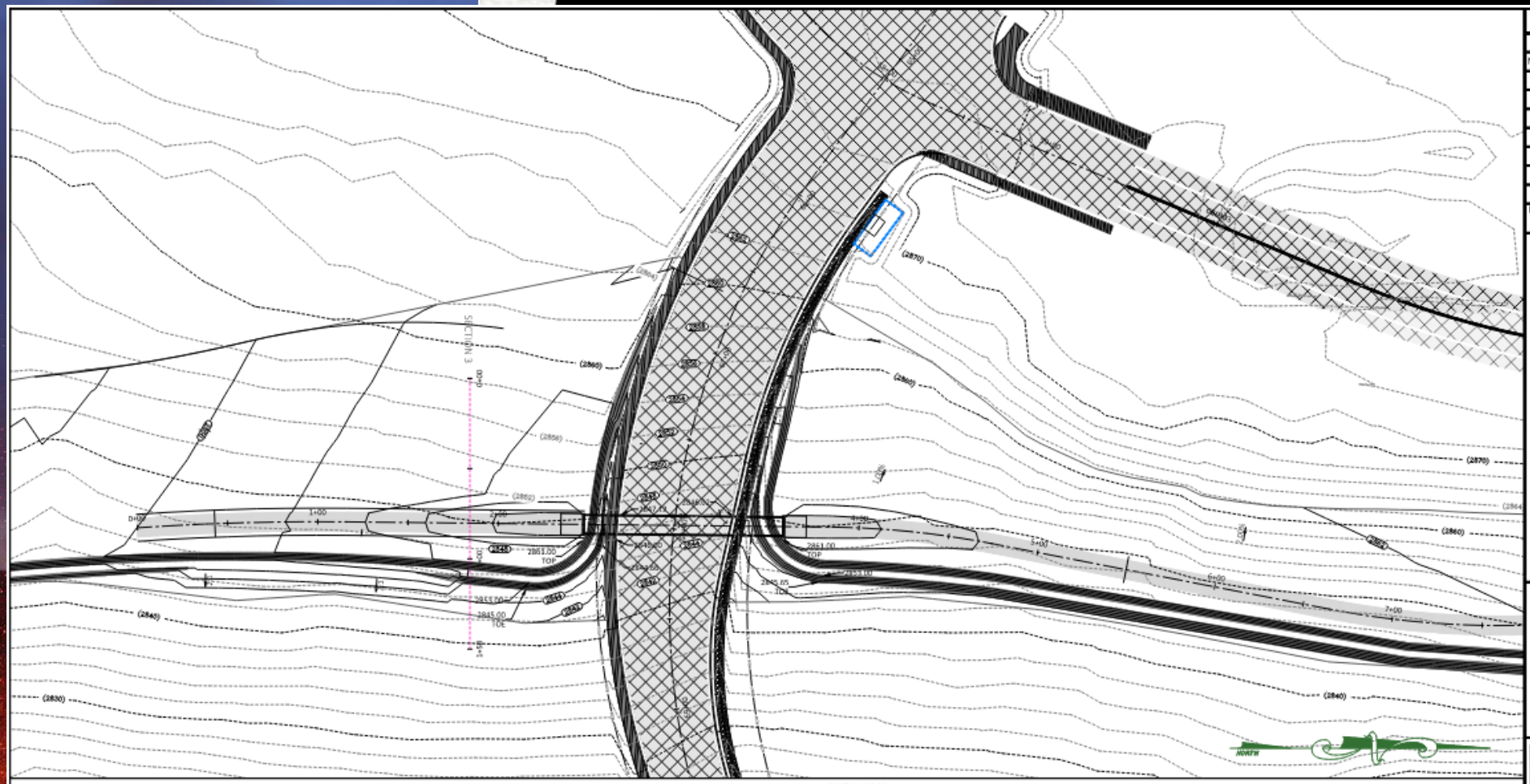
CITY OF WILLISTON, WILLIAMS COUNTY, ND

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
ARL	1"=30'
Client No. 4568	Project No. 4588-21

Drawing Sheet
C2.3

Sheet 8 of 8 Sheets



Date: 12-30-2022

REVISIONS

No.	Date	by	Description
		ARL	

File Name: Southeast Ridge Walls.dwg

LEGEND

- EXISTING ASPHALT
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GRAPHIC SCALE

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Drawn By:	Scale:
ARL	1"=30'
Client No. 4568	Project No. 4588-21

Drawing Sheet
C2.3

Sheet 8 of 8 Sheets

Recommendation

The Hillside Committee recommended approval of the Tech Ridge Southeast Slope Hillside Development Permit with the following condition:

-That the execution of the stacked rockery walls double tiers meet the level of aesthetic appeal that is displayed on the west side (of Tech Ridge) as constructed.

Tech Ridge Southeast Slope

Hillside Development Permit

2023-HS-002

St.George
Community Development

ITEM 4
Hillside Permit

HILLSIDE REVIEW BOARD AGENDA REPORT: 01/25/2023
HILLSIDE REVIEW BOARD AGENDA REPORT: 11/01/2023
PLANNING COMMISSION AGENDA REPORT: **11/14/2023**

Tech Ridge Southeast Access Road Hillside Development Permit (Case No. 2023-HS-003)		
Request:	Consider a Hillside Development Permit to construct the southeast access road from 250 West St. to the Tech Ridge Development.	
Applicant:	City of St. George	
Representative:	Mike Bradshaw	
Location:	250 West Street at approximately 1170 South	
General Plan:	COM (Commercial), OS (Open Space), and MDR (Medium Density Residential)	
Existing Zoning:	R-1-10 (Single Family Residential 10,000sf) and PD-MU (Planned Development Mixed use)	
Surrounding Zoning:	North	PD-MU and R-1-10
	South	PD-MU and R-1-10
	East	PD-C
	West	OS, PD-MU

BACKGROUND

This is a request to obtain a hillside development permit to be able to construct the southeast access road from 250 West Street to the Tech Ridge development.

EXHIBITS PROVIDED

1. Exhibit A – Maps
   "Exhibit A" in the packet shows the general plan land use map and the zoning map.

2. Exhibit B – Applicable Ordinances
   "Exhibit B" in the packet lists the applicable zoning regulation that apply to this case found in Title 10, Chapter 13A.

3. Exhibit C – Tech Ridge East Access Road Hillside Protection Plan
   "Exhibit C" in the packet shows the location of the east access road along with grading and slope analysis.

4. Exhibit D – Geotechnical Report
   "Exhibit D" in the packet shows the Geotech report for this proposal.

RECOMMENDATION

The Hillside Committee recommended approval of the Tech Ridge Southeast Access Road Hillside Development Permit with the following condition:

1. That they address and meet the recommendations in the project Geotechnical Report as stated in the letter dated September 8, 2023, starting at the bottom of page 1 and continuing onto page 2.

ALTERNATIVES:

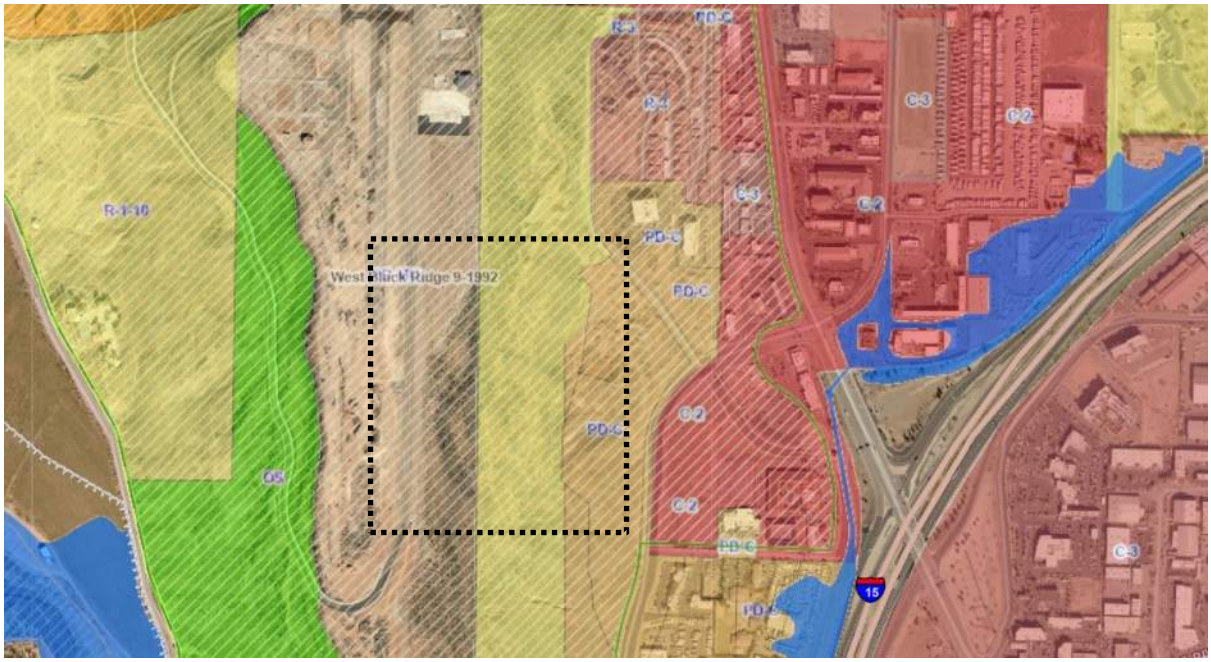
1. Recommend approval as presented.
2. Recommend approval with conditions.
3. Recommend denial.
4. Table or Continue the proposed preliminary plat to a specific date.

POSSIBLE MOTION:

The Planning Commission recommends approval of the Tech Ridge Southeast Access Road Hillside Development Permit.

Exhibit A
MAPS

General Plan - COM



Zoning - R-1-10

Exhibit B
APPLICABLE ORDINANCES

I. *Density and Disturbance Standards*

A. The hillside development overlay zone (HDOZ) limits development densities and provides specific development incentives to transfer underlying zone densities from hillsides (sending areas), to less steep slopes or more safe development areas (receiving areas), within a development.

B. For those portions of a proposed development with natural slopes twenty percent (20%) or less, development density follows the density and development standards in the underlying zone.

C. For those portions of a proposed development with natural slopes from twenty-one percent (21%) to thirty percent (30%), development activity shall not disturb more than thirty percent (30%) of the parcel within this slope category.

D. For those portions of a proposed development with natural slopes from thirty-one percent (31%) to forty percent (40%), development activity shall not disturb more than five percent (5%) of the area within this slope category.

E. A proposed development may not disturb slopes in excess of forty percent (40%).

F. The applicant may:

1. Transfer all development density from steeper slope categories (sending areas), to areas within the development with natural slopes of twenty percent (20%) or less (receiving areas); and

2. Develop additional bonus density, calculated from each slope category, as follows:

a. Natural slopes twenty percent (20%) or less transferred on a one-to-one (1:1) unit basis; plus

b. One (1) additional density unit for each density unit transferred from natural slopes of twenty-one percent (21%) to thirty percent (30%); plus

c. Two (2) additional density units for each density unit transferred from natural slopes of thirty-one percent (31%) to forty percent (40%).

3. Unit calculation for the receiving area shall be based on the requirements of the sending area zone.

G. Density transfers to the receiving area may occur without a zone change within the receiving area even though the resulting density or configuration may exceed the density limits of the receiving area zone. Other than density, the receiving area's zoning requirements apply to

development in the receiving area. For instance, lot sizes may vary, but single-family zoning districts only allow single-family detached dwellings.

H. If the applicant proposes to develop within the twenty-one percent (21%) to forty percent (40%) slope area, the applicant cannot employ partial density transfers from the sending area and must propose a design, site development plans, and a grading plan that blends and harmonizes all aspects of the proposed development into the natural topography, and that minimizes road cuts and fills.

I. Non-disturb areas within a residential lot as shown on the slope analysis map shall not be used to calculate minimum lot size.

J. Disturbance standards do not apply to the city for limited city facilities: trails, parks, and utilities. (Ord. 2019-10-002, 10-10-2019)

II. Slope and Slope Areas Determined

A. Slope shall be determined for each significant portion of a development parcel.

B. Procedure: The applicant shall map the location of the natural slope by using the following procedure:

1. Preparation of Contour Maps: The applicant shall submit an accurate, current contour map, prepared and certified by a licensed professional engineer or surveyor, which shows all land contours at intervals no greater than five feet (5'), drawn at a one inch equals one hundred feet (1" = 100') scale maximum.

2. Verification through Field Surveys: The city engineer or designee may require the applicant to submit a field survey to verify the accuracy of the contour map.

C. Determination of Slope Areas: Using the contour map, natural slopes shall be calculated using points identified as natural slopes of twenty percent (20%), thirty percent (30%), and forty percent (40%), and shall be located on the contour map and connected by a continuous line. That area bounded by said lines and intersecting property lines shall be used for determining project density. Small washes or outcrops, which have slopes distinctly different from surrounding property, and are not part of the contiguous topography, may be excluded from the slope determination. (Ord. 2019-10-002, 10-10-2019)

III. Street Design

The following standards apply to public and private streets within the zone:

A. Street Grades: The maximum allowed street grade is fifteen percent (15%).

B. Intersections: Roads shall intersect at ninety-degree (90°) angles.

C. Intersection Spacing: Intersections should be spaced far enough apart so that the traffic stopped to make left turns at one intersection does not interfere with traffic movements at the adjacent intersections.

1. On low-volume streets such as access roads to minor collectors or minor collectors to minor collectors, the minimum spacing distance is one hundred twenty-five feet (125');

2. For minor collectors to major collectors, the minimum spacing distance is two hundred fifty feet (250').

D. Design Speed: The design of geometric features such as horizontal and vertical alignment will depend on the design speed selected for each street. The design speed is primarily determined by the street function and classification and is the maximum speed for safe and comfortable operation of a vehicle. Other than a major collector, all streets in hillside areas are classified as low speed streets (thirty-five (35) miles per hour or less).

Street Design Classification	Design Speed	Posted Speed
Minor collector	30	30
Local road	25 – 30	25
Hillside local	25	25
Hillside access	25	25

E. Clear Sight Distance at Intersections: Adequate, clear sight distance is required at intersections, as follows:

Posted Speed of Higher Order Road	Minimum Y	Desired Y
20	210	240
25	260	300
30	310	380
35	365	475

F. Vertical Curves and Intersection Relationship: The vertical alignment of residential streets shall comply with latest editions of AASHTO geometric design of highways and streets. See table below for listing of pertinent design criteria:

Design Speed	Crest "K" Value	Sag "K" Value
	Minimum Length of Vertical Curves	
20	10	20
25	20	30
30	30	40
35	40	50

L = KA (for minimum sight distance on a vertical curve).

L = Length of vertical curve for proper sight distance.

A = Algebraic difference in grade.

Vertical alignment with the intersection is also of special nature, and design alternatives may be required. As a guideline, the approach area where vehicles stop while waiting to enter an intersection shall not exceed four (4%) to five percent (5%) from the gutter line of the street being intersected for a distance of fifty feet (50'), though a range of fifty feet (50') to one hundred feet (100') is more desirable. This applies to all intersections, except those intersections where both intersecting streets are minor collectors. The landing area for a minor collector shall be designed for a grade of two percent (2%) to three percent (3%) for a distance of one hundred feet (100').

G. Safe Stopping Sight Distance: The minimum sight distance to be provided before a stop is required is included in the table below:

Design Speed	Computed	Recommended Distance	Add-On for 15% Grade
20	106.7	125	20
25	146.5	150	36
30	195.7	200	64
35	248.4	250	95

H. Horizontal Curves: The minimum centerline radius for horizontal curves on low-speed residential streets is:

Street Classification or Speed	Curve Radius in Feet
Minimum Centerline Radius	
Private streets	50 – 100
20 mph	100 – 150
25 mph	185
30 mph	310

I. Street Cross-Section Standards: The requirements for street cross-section configurations are based on the following factors:

1. Traffic capacity;

2. Design speed;

3. Projected traffic;

4. Designs to reduce scarring.

J. Alternate road cross sections, such as grade separated streets, may be used if applicable safety and traffic standards are met.

K. Elimination of sidewalk on one side of the road may be approved when elimination of one (1) sidewalk can appreciably reduce the amount of hillside disturbance. Other considerations may also warrant its elimination. When one (1) sidewalk is eliminated, the remaining sidewalk shall be increased by one foot (1') in width.

L. The following table sets forth the requirements for street standards for single-family residential development.

Maximum Grade	Street Classification	Width ROW	Width TBC	Pavement Width	Width Sidewalk	ADT
Street Cross-Section Standards for Single-Family Residential						
12%	Minor collector	60'	50'	45'	5'	1,500 – 3,500
15%	Local road	50'	40'	35'	4'	750 – 1,500
15%	Hillside local	45'	35'	30'	4'	150 – 750

Maximum Grade	Street Classification	Width ROW	Width TBC		Pavement Width	Width Sidewalk	ADT
Street Cross-Section Standards for Single-Family Residential							
15%	Hillside access	41'	31'	26'	4'	0 – 150	

(Ord. 2019-10-002, 10-10-2019)

IV. 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.*

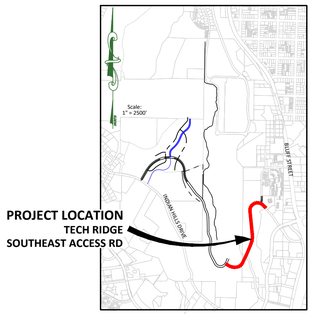
7. *The building site shall be located on the flattest portion of the parcel.*

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)*

Exhibit C

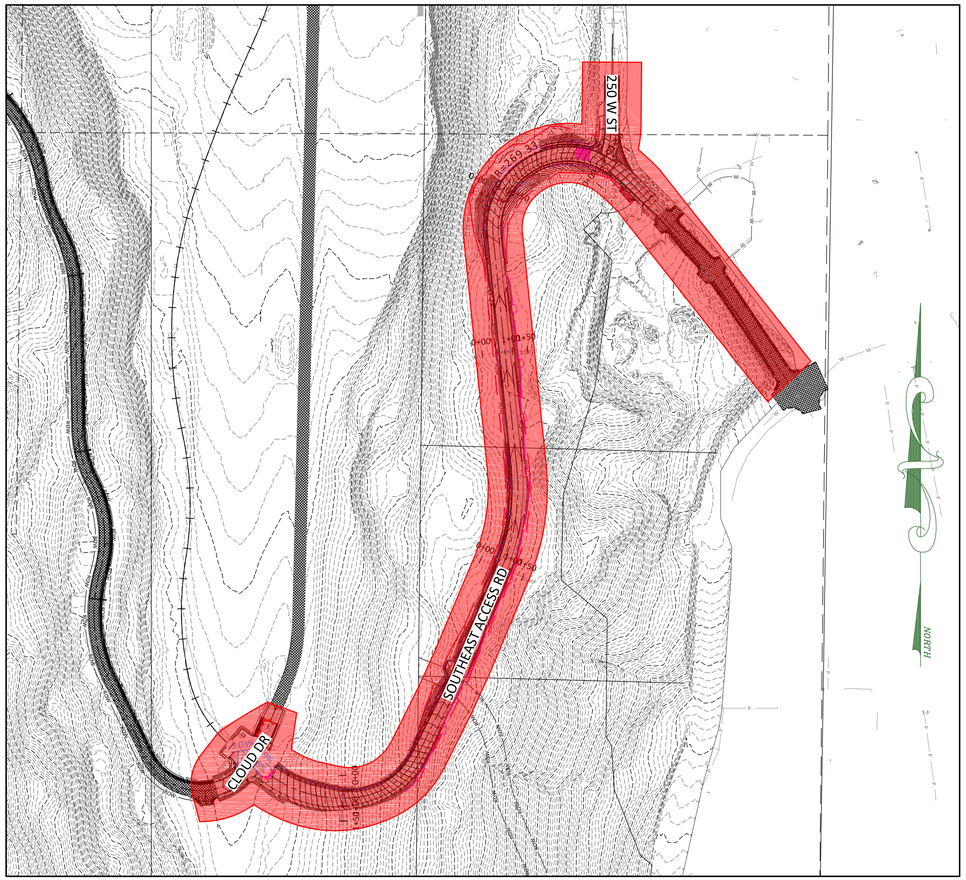
TECH RIDGE EAST ACCESS ROAD HILLSIDE PROTECTION PLAN

SOUTHEAST ACCESS ROAD
@ TECH RIDGE
FOR
CITY OF ST. GEORGE
LOCATED IN
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT



VICINITY MAP

SHEET INDEX	
SHEET NO.	DESCRIPTION
C1.0	COVER SHEET
C1.1	GRADING AND STORM DRAIN OVERALL
C1.2	GRADING OVERALL CUT AND FILL
C1.3	DUST AND SWPPP/EROSIN CONTROL PLAN
C1.4 - C1.5	DEMOLITION PLAN
C2.0 - C2.5	SOUTHEAST ACCESS RD PLAN AND PROFILE
C2.6	250 W STREET ALTERATION PLAN AND PROFILE
C2.7	CLOUD DRIVE ALTERATION PLAN AND PROFILE
C2.8	STORM DRAIN CROSSINGS
C2.9 - C2.10	SOUTHEAST ACCESS RD CROSS SECTIONS
C3.0	SEWER AND WATER OVERALL
C3.1 - C3.4	SWR AND WTR PLAN AND PROFILE
C4.0	POWER AND GAS OVERALL
C4.1 - C4.4	SOUTHEAST ACCESS RD POWER AND GAS
C5.0	PAVING OVERALL
C5.1 - C5.4	ROAD SECTIONS
C5.5 - C5.7	SOUTHEAST ACCESS RD PAVING
C6.0 - C6.5	DETAILS



GRAPHIC SCALE

250 0 125 250 500

(IN FEET)
1 inch = 250 ft.
If Printed 11x17 use Half Scale

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

CITY

CITY OF ST. GEORGE
ATT: MR. CAMERON CUTLER
175 W 200 N
ST. GEORGE, UT 84770
EMAIL: CAMERON.CUTLER@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 P.E.
CONTACT: MR. CRAIG COATS
EMAIL: ccoats@allianceconsulting.us

GEOTECHNICAL REPORTS:

The contractor is responsible to read and fully understand the Geotech report and to coordinate with the geotechnical engineer throughout the grading process to ensure that the report's recommendations are implemented from the beginning to the end of the projects construction. The owner will contract with the geotechnical engineer for their representatives to be on site throughout the grading process to ensure full compliance with the geotechnical report's recommendations. Refer to following reports.

1. Applied GeoTech Geotechnical Investigation, Tech Ridge South Access Road, Project No. 2180295, Dated: Oct 19, 2018
2. Applied GeoTech Geotechnical Investigation, Updated Tech Ridge South Access Road Report, Project No. 2230249, Dated: Sept. 08, 2023

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 South 1/4 of Section 36, Township 42 South, Range 16 West Salt Lake Base and Meridian - St. George HCN #181 - Elevation: 2667.70
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.
11. The Developer will Maintain the Temporary Detention Basin until Decommission.

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 approved by owner.
8. Contractor must coordinate with other Contractors working in areas.
9. Contractor must protect existing facilities.
10. All rock walls are to match in color and composition with the native basalt lava rock. Rock to be stained black.
11. HDPE pipe to be stubbed a minimum of 6" inside Manholes and Grouted.
12. Clay material on-site to be mitigated per Geotechnical Reports.

Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access OPT 2.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

SOUTHEAST ACCESS ROAD
AT TECH RIDGE
COVER
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION
REVIEW ONLY

Drawn By:	Scale:
AZ	1" = 250'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C1.0

Sheet 1 of 41 Sheets

LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- STORM DRAIN PIPE
- STORM DRAIN INLET BOX
- 30" CURB & GUTTER
- SLOPE EASEMENT
- EXISTING CONTOUR (2622)
- DESIGN CONTOUR 2622
- PROPOSED WALLS
- STORM DRAIN FLOW DIRECTION

SOUTHEAST ACCESS ROAD GRADING		
Southeast Access Road Finished Grade	292,350	Sq.Ft.
	6.71	Acres
Existing Grade to Finish Grade	46,011	CY. Cut (-)
	6,547	CY. Fill (+)
Hardscape Areas		
Roadways (4" Asphalt/12" Base)	138,775	Sq.Ft.
	6,836	Cu.yd.
Sidewalk (4" Concrete/4" Base)	20,455	Sq.Ft.
	505	Cu.yd.
Total	**7,341**	Cu.yd.
Existing Grade to Subgrade		
Existing Grade to Subgrade	**53,352**	CY. Cut (-)
	6,547	CY. Fill (+)
Shrinkage 15%	**982**	CY Shrinkage (+)
TOTAL	**45,823**	**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.

CLOUD DR

SOUTHEAST ACCESS RD

250 WEST STREET

2'-4' ROCK WALL (2,000 SQ FT)

6' ROCK WALL (550 SQ FT)

6' ROCK WALL (2,555 SQ FT)

3.2' MAX ROCK WALL (760 SQ FT)

5.2' MAX ROCK WALL (1,900 SQ FT)

2' - 6' ROCK WALL

2' - 8' UPPER ROCK WALL (3,300 SQ FT)

2' - 8' LOWER ROCK WALL (6,550 SQ FT)

2' - 8' LOWER ROCK WALL (7,000 SQ FT)

2' - 8' UPPER ROCK WALL (3,000 SQ FT)

4' - 8' ROCK WALL

6'-8' ROCK WALL

KINGS DOMINION INVESTMENT LLC

CITY OF ST. GEORGE

NORTH

Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name: East Access OPT 2.dwg

KEY MAP

SCALE: 1" = 1000'

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 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

SOUTHEAST ACCESS ROAD AT TECH RIDGE GRADING AND SD OVERALL

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By: AZ	Scale: 1"=100'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet

C1.1

Sheet 2 of 41 Sheets

LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- STORM DRAIN PIPE
- STORM DRAIN INLET BOX
- 30" CURB & GUTTER
- SLOPE EASEMENT
- EXISTING CONTOUR
- DESIGN CONTOUR
- PROPOSED WALLS

ELEVATIONS TABLE

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-37.200	-10.000	46630.00	
2	-10.000	-8.000	6526.71	
3	-8.000	-6.000	11732.62	
4	-6.000	-4.000	46604.60	
5	-4.000	-2.000	37328.96	
6	-2.000	-1.000	24629.53	
7	-1.000	0.000	28576.84	
8	0.000	1.000	23380.94	
9	1.000	2.000	21466.97	
10	2.000	4.000	25701.79	
11	4.000	6.000	10488.10	
12	6.000	8.000	405.82	

SOUTHEAST ACCESS ROAD GRADING

Southeast Access Road Finished Grade	292,350	Sq.Ft.
	6.71	Acres
Existing Grade to Finish Grade	46,011	CY. Cut (-)
	6,547	CY. Fill (+)
Hardscape Areas		
Roadways (4"Asphalt/12" Base)	138,775	Sq.Ft.
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Sidewalk (4" Concrete/4"Base)	20,455	Sq.Ft.
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Total	**7,341**	Cu.yd.
Existing Grade to Subgrade		
Existing Grade to Subgrade	**53,352**	CY. Cut (-)
	6,547	CY. Fill (+)
Shrinkage 15%	**982**	CY Shrinkage (+)
TOTAL	**45,823**	**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.

KINGS DOMINION INVESTMENT LLC

CITY OF ST. GEORGE

NORTH

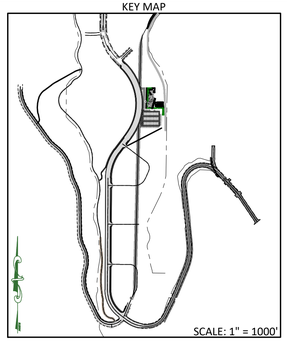
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name: East Access OPT 2.dwg

KEY MAP



SCALE: 1" = 1000'

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 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

SOUTHEAST ACCESS ROAD AT TECH RIDGE GRADING CUT/FILL

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By: AZ	Scale: 1"=100'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet

C1.2

Sheet 3 of 41 Sheets

LEGEND

- SILT FENCE (LEN: 1800 FT)
- SLOPE EASEMENT
- TRACKING PAD

DISTURBED AREA - 281,804 SQ FT
6.47 Acres

DUST CONTROL NOTES

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.

CLOUD DR

SOUTHEAST ACCESS RD

W 250 ST

TRACKING PAD
SEE DETAIL A/C6.0

SILT FENCE
SEE DETAIL C/C6.0

KINGS DOMINION
INVESTMENT LLC

CITY OF ST.
GEORGE

NORTH

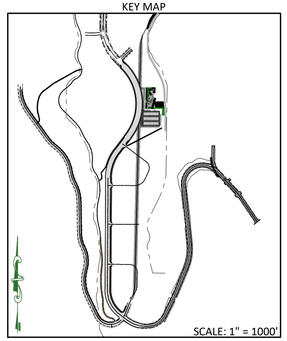
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access OPT 2.dwg

KEY MAP



SCALE: 1" = 1000'

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 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

DUST AND SWPPP/ EROSION CONTROL PLAN

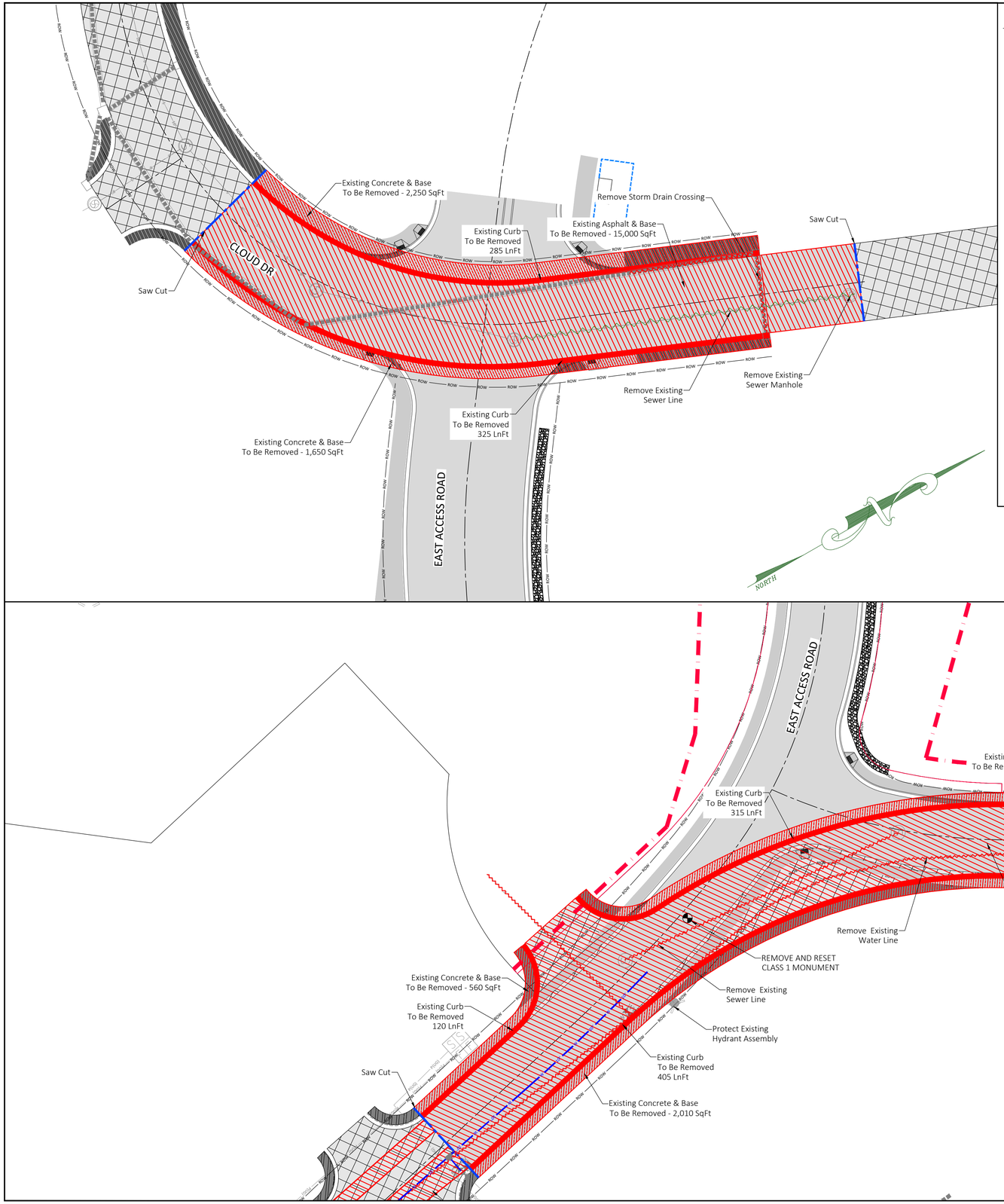
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION
REVIEW ONLY

Drawn By:	Scale:
AZ	1"=100'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C1.3

Sheet 4 of 41 Sheets



LEGEND

- EXISTING STORM SEWER
- EXISTING SEWER LINE
- EXISTING WATER LINE
- EXISTING UNDERGROUND POWER
- EXISTING GAS LINE

EXISTING

- FIRE HYDRANTS
- WATER VALVES
- SANITARY SEWER MANHOLES
- EXISTING ELECTRICAL BOX
- EXISTING HARDSCAPE
- EXISTING CONCRETE
- REMOVE EXISTING ASPHALT 33,740 SQ FT TOTAL
- REMOVE EXISTING CONCRETE 8,595 SQ FT TOTAL
- EXISTING CURB AND GUTTER
- REMOVE EXISTING CURB AND GUTTER 1,565 LN FT TOTAL
- SAW CUT - 220 LN FT TOTAL
- SLOPE EASEMENT
- REMOVE SEWER LINE 336 LN FT TOTAL
- REMOVE WATER LINE 558 LN FT TOTAL

DEMOLITION NOTES:

1. Demolition shall include removal of all Foundations, Footings, Cables, Wires, Pipes, Roots, Etc. Associated with all surface or subsurface items subject to demolition. All items subject to demolition shall be hauled to a landfill approved by the Engineer. Bidders shall satisfy themselves of all work involved in the removal of all items subject to demolition. Submission of a bid shall constitute incontrovertible evidence that bidder understands and has included in his bid all items affecting cost, progress or performance of the work.
2. Edges of Asphalt or Concrete subject to removal shall be saw cut vertically through the entire depth of the pavement structure.
3. Removal and replacement of existing concrete curb and sidewalk at curb stops shall be limited to two segments defined by existing control joints. The contractor is responsible to protect adjacent concrete curb and sidewalk during construction. Any adjacent curb or sidewalk segments damaged during construction will be replaced at the sole expense of the Contractor, with no adjustment in price.

DUST CONTROL NOTES

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.

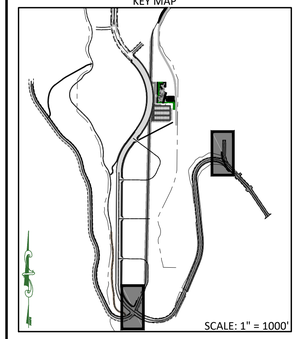
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access Demo OPT 2.dwg

KEY MAP



GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 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

CLOUD DRIVE AND 250 WEST STREET DEMOLITION

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By: AZ	Scale: 1"=30'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C1.4

Sheet 5 of 41 Sheets

LEGEND

- EXISTING STORM SEWER
- EXISTING SEWER LINE
- EXISTING WATER LINE
- EXISTING UNDERGROUND POWER
- EXISTING GAS LINE

EXISTING

- FIRE HYDRANTS
- WATER VALVES
- SANITARY SEWER MANHOLES
- EXISTING ELECTRICAL BOX
- EXISTING HARDSCAPE
- EXISTING CONCRETE
- REMOVE EXISTING ASPHALT 33,740 SQ FT TOTAL
- REMOVE EXISTING CONCRETE 8,595 SQ FT TOTAL
- EXISTING CURB AND GUTTER
- REMOVE EXISTING CURB AND GUTTER 1,565 LN FT TOTAL
- SAW CUT - 220 LN FT TOTAL
- SLOPE EASEMENT
- ABANDONED SEWER LINE 336 LN FT TOTAL
- ABANDONED WATER LINE 558 LN FT TOTAL

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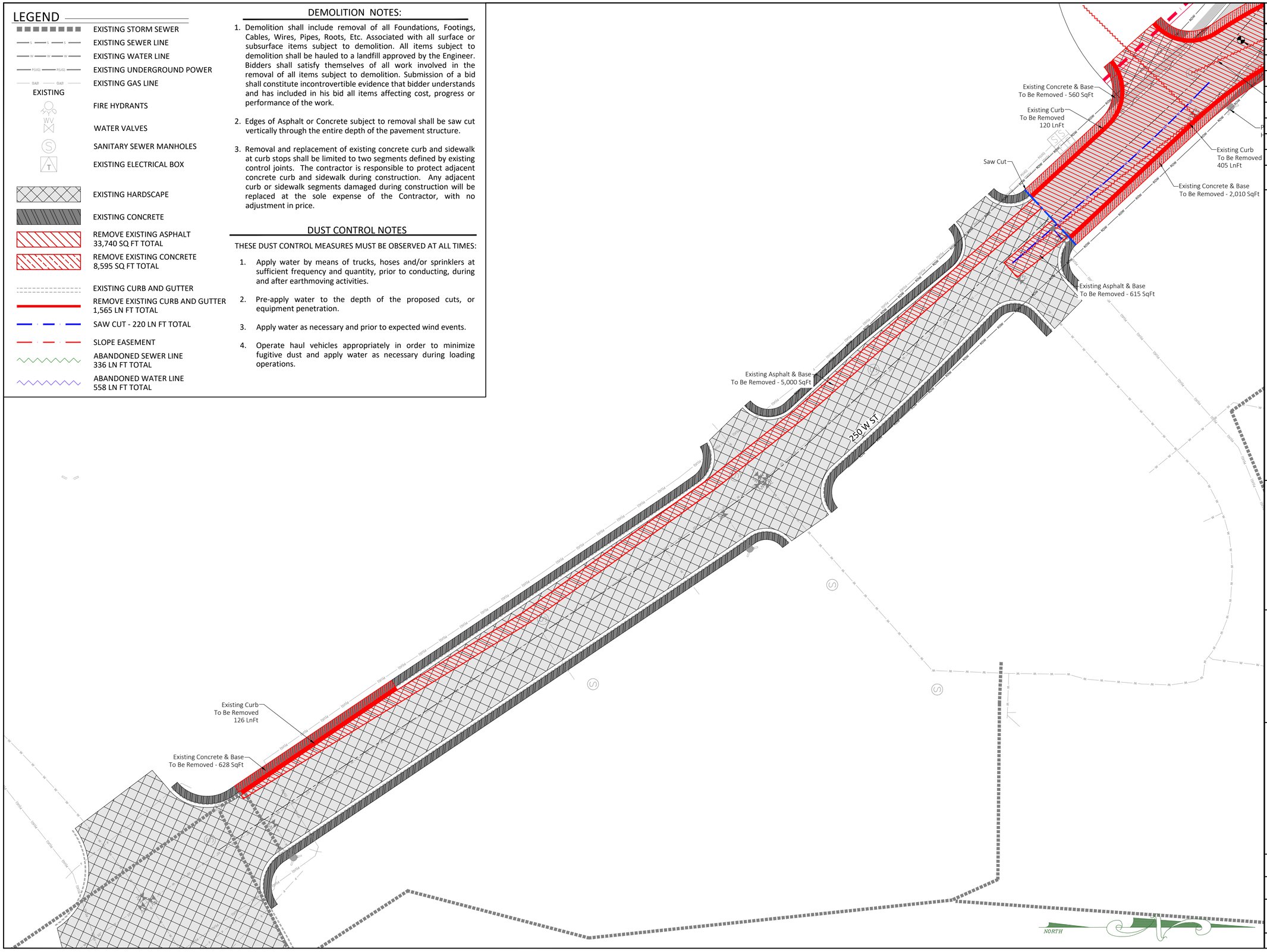


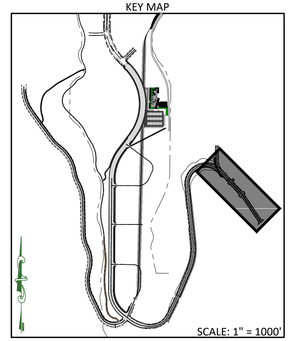
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access Demo OPT 2.dwg

KEY MAP



GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 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

EAST ACCESS DEMOLITION

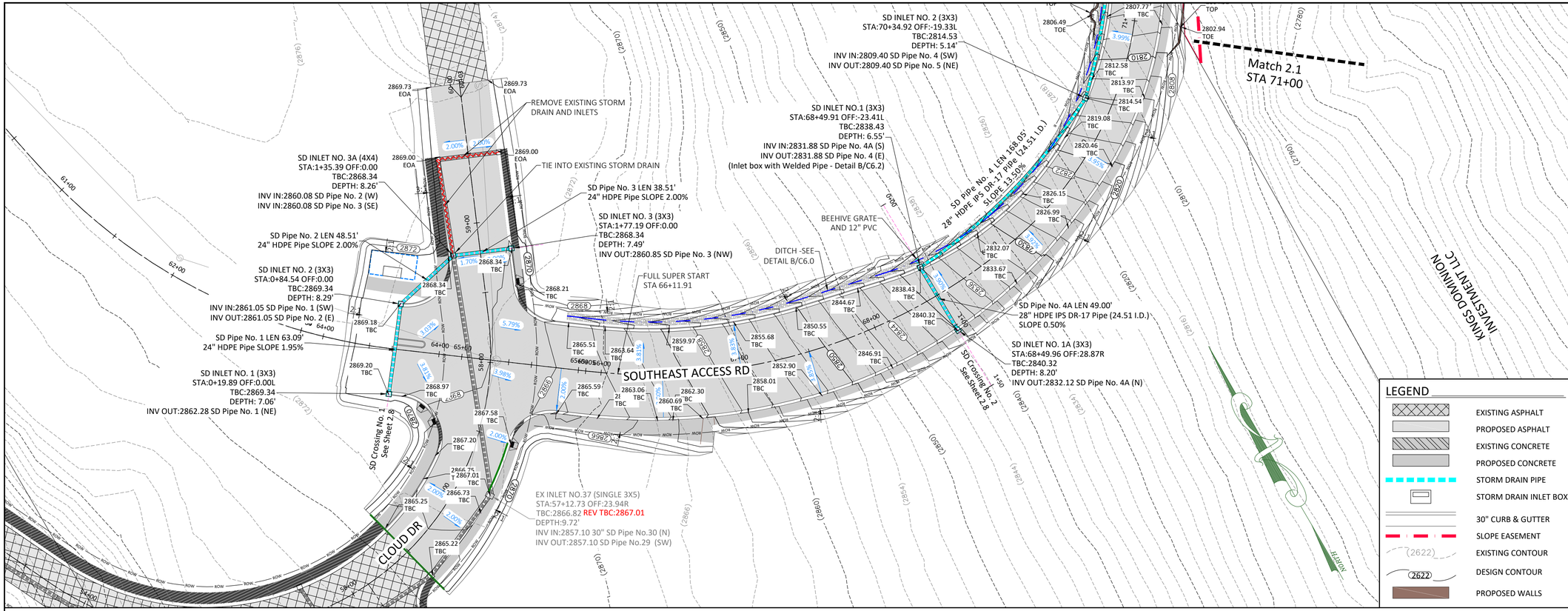
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By: AZ	Scale: 1"=30'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C1.5

Sheet 6 of 41 Sheets



LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- STORM DRAIN PIPE
- STORM DRAIN INLET BOX
- 30" CURB & GUTTER
- SLOPE EASEMENT
- (2622) EXISTING CONTOUR
- 2622 DESIGN CONTOUR
- PROPOSED WALLS

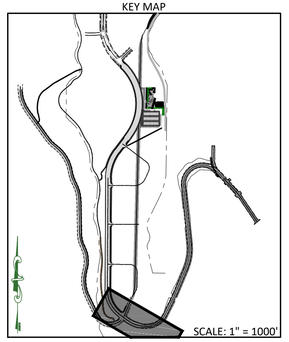
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name: East Access OPT 2.dwg

KEY MAP

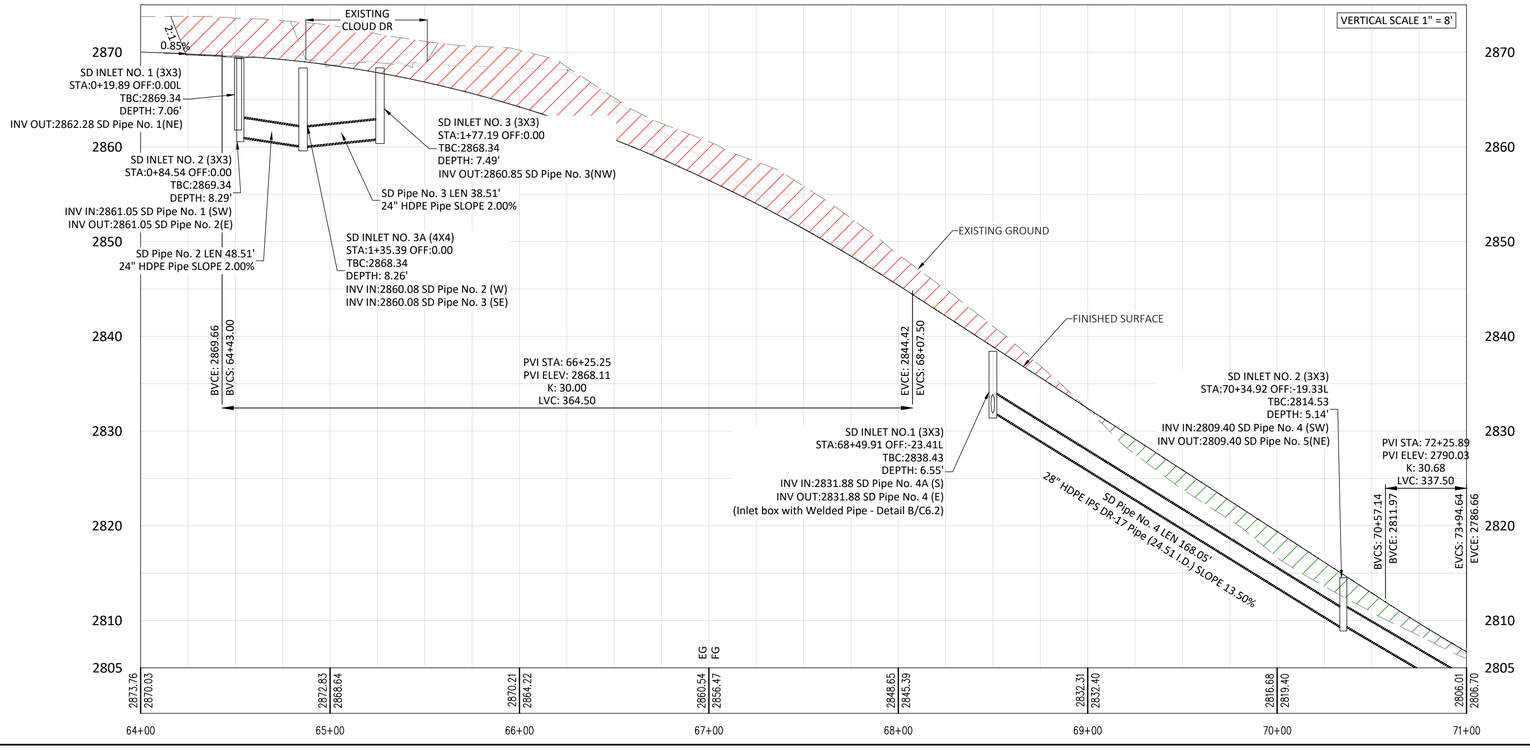


GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.
If Printed 11x17 use Half Scale

East Access REV 4



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

SOUTHEAST ACCESS ROAD GRADING AND STORM DRAIN PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

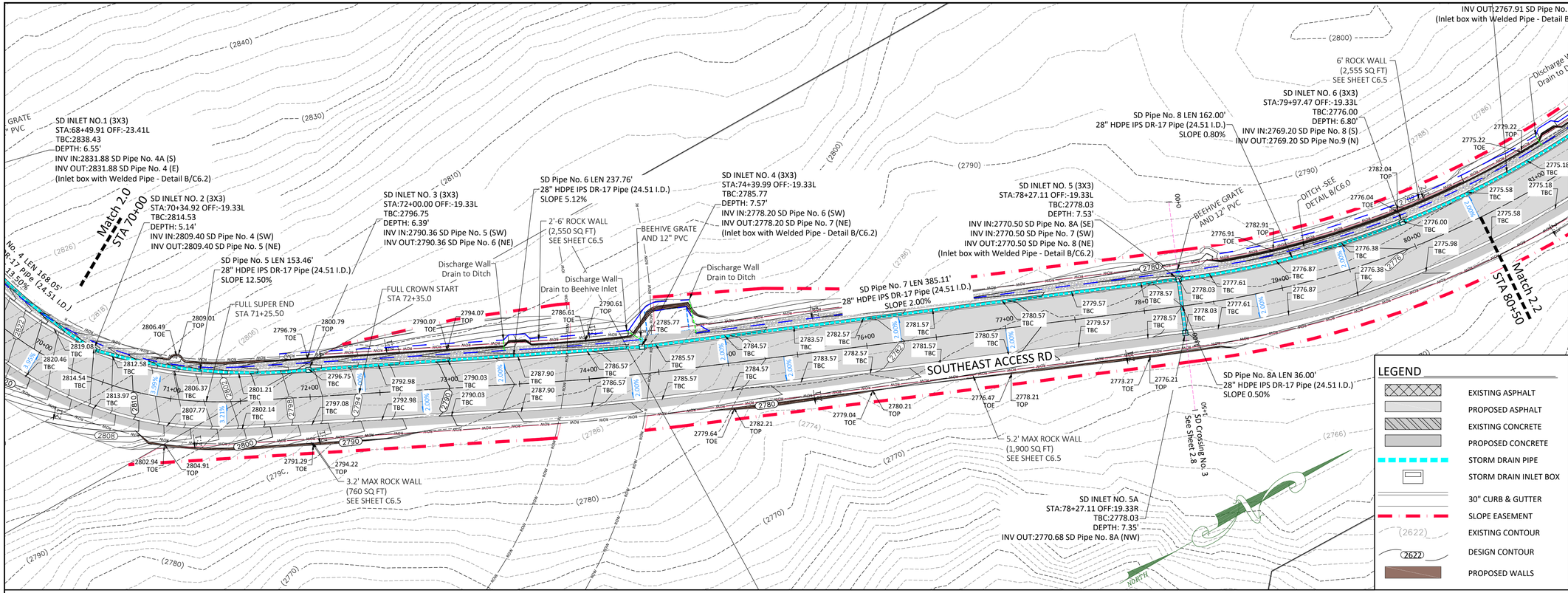
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

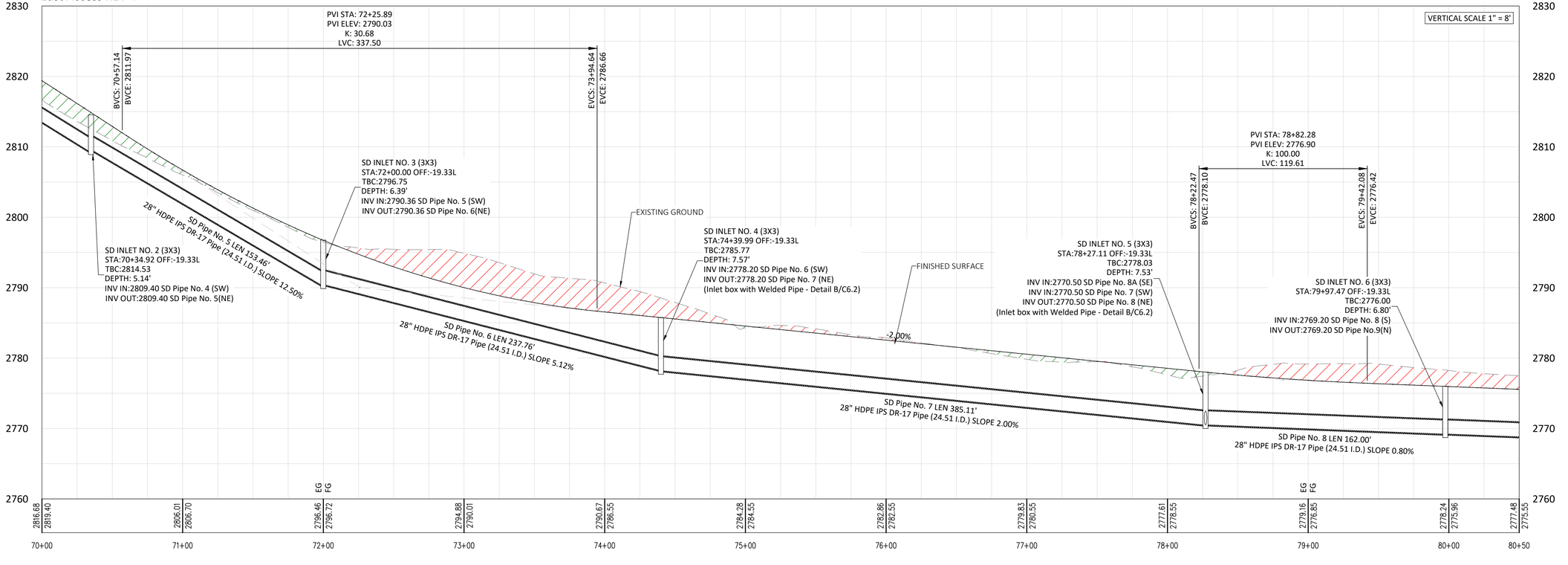
NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1" = 40"
Client No. 4568-21	Project No. 4568-21

Drawing Sheet: C2.0

Sheet 7 of 41 Sheets





Date:
10-19-2023

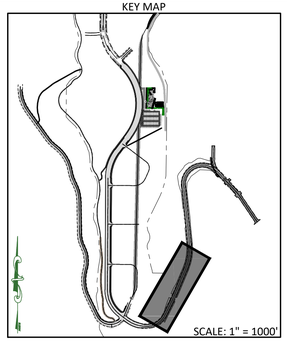
REVISIONS

No.	Date	by	Description

File Name

East Access OPT 2.dwg

KEY MAP



GRAPHIC SCALE

40 0 20 40 80

(IN FEET)

1 inch = 40 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

SOUTHEAST ACCESS ROAD GRADING AND STORM DRAIN PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36

T 42 SOUTH, R 15 WEST SLB&M

CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

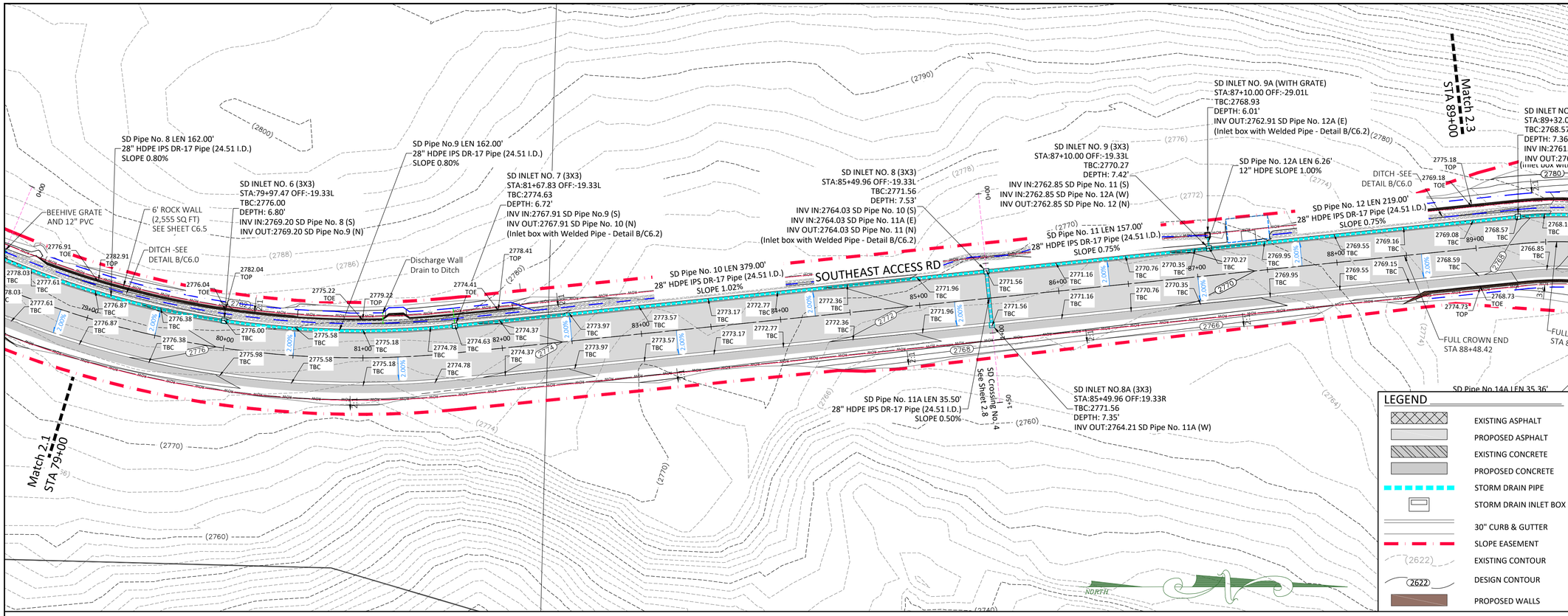
NOT FOR CONSTRUCTION REVIEW ONLY

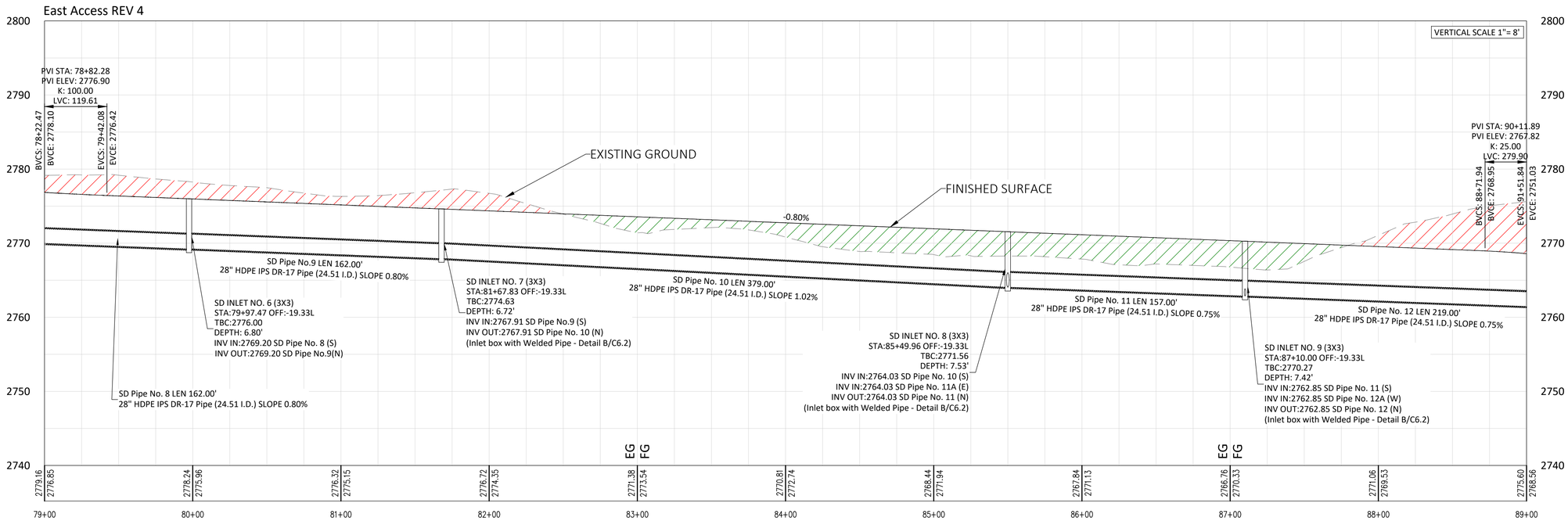
Drawn By:	Scale:
AZ	1"=40'
Client No.	Project No.
4568-21	4568-21

Drawing Sheet

C2.1

Sheet 8 of 41 Sheets





Date:
10-19-2023

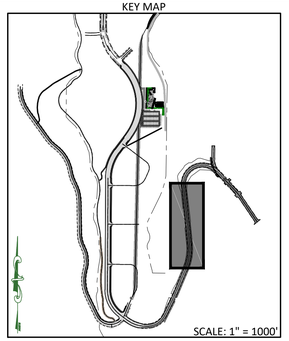
REVISIONS

No.	Date	by	Description

File Name

East Access OPT 2.dwg

KEY MAP



SCALE: 1" = 1000'

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)

1 inch = 40 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.
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701-572-8100

SOUTHEAST ACCESS ROAD GRADING AND STORM DRAIN PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36

T 42 SOUTH, R 15 WEST SLB&M

CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

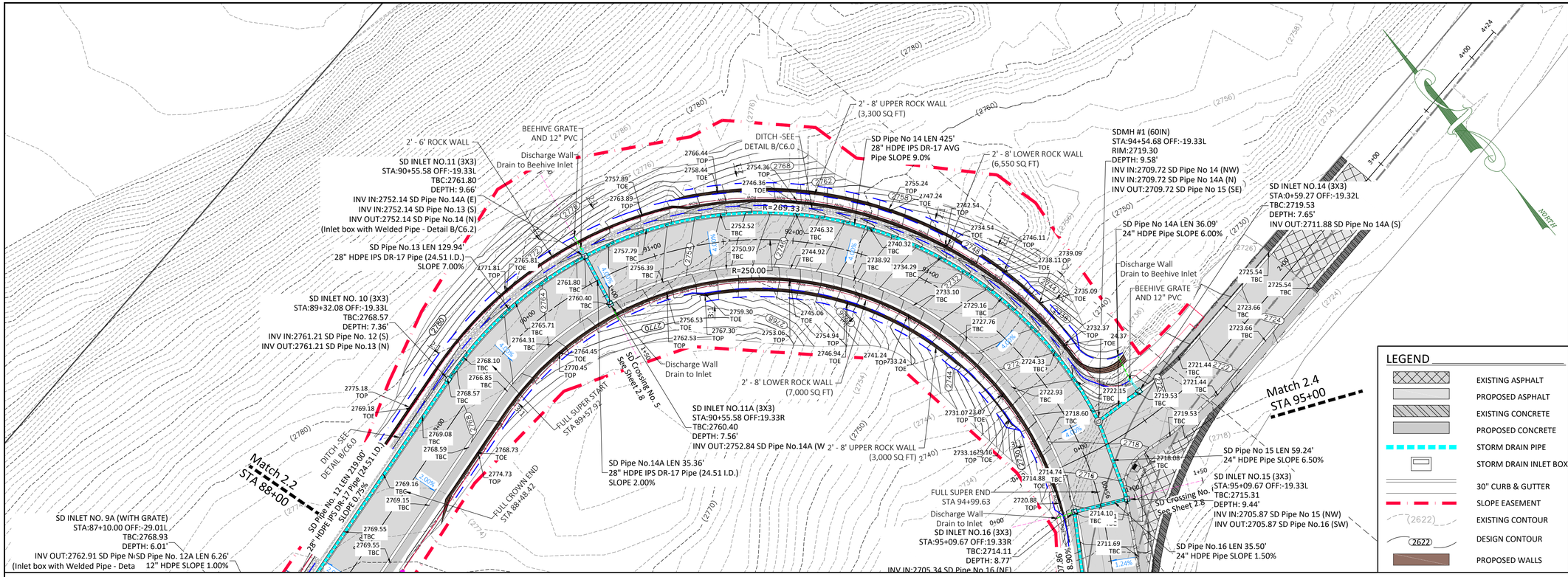
NOT FOR CONSTRUCTION REVIEW ONLY

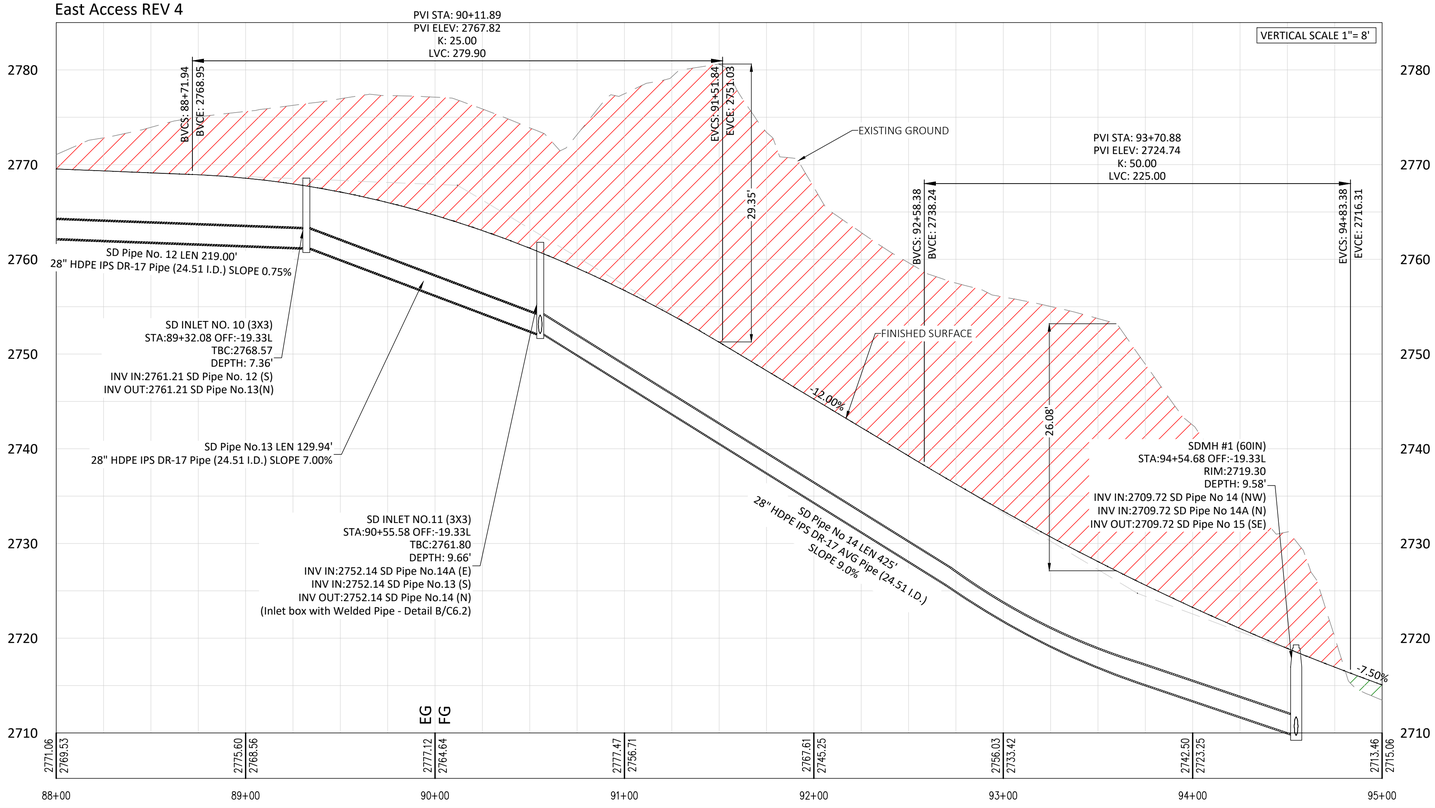
Drawn By:	Scale:
AZ	1"=40'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet

C2.2

Sheet 9 of 41 Sheets





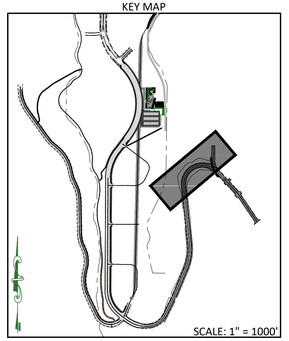
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name: East Access OPT 2.dwg

KEY MAP



GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 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

SOUTHEAST ACCESS ROAD GRADING AND STORM DRAIN PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

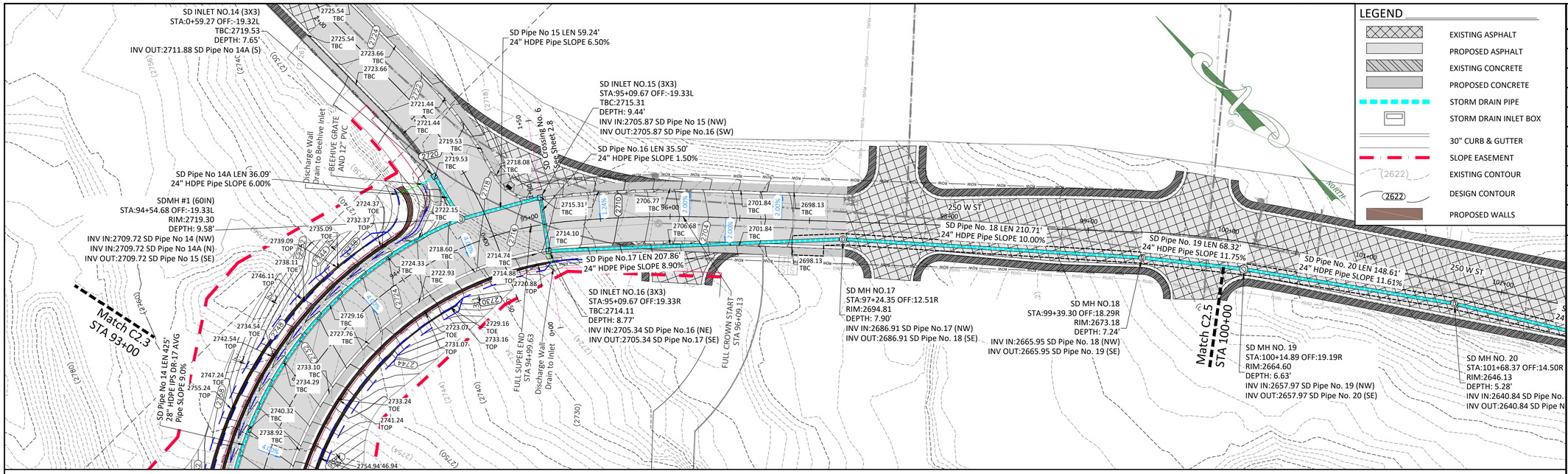
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1" = 40"
Client No.	Project No.
4568-21	4568-21

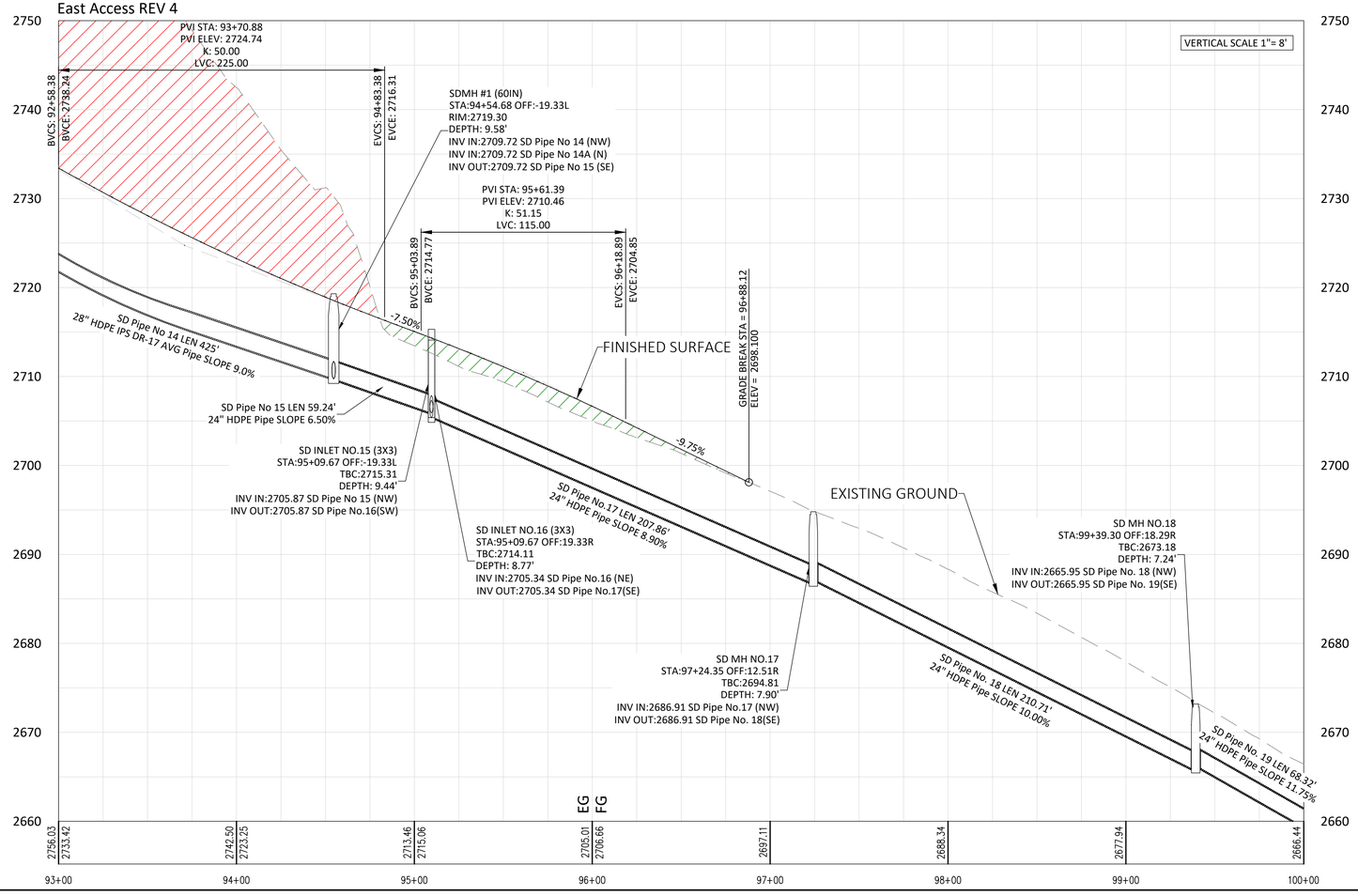
Drawing Sheet: C2.3

Sheet 10 of 41 Sheets



LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- STORM DRAIN PIPE
- STORM DRAIN INLET BOX
- 30" CURB & GUTTER
- SLOPE EASEMENT
- (2622) EXISTING CONTOUR
- 2622 DESIGN CONTOUR
- PROPOSED WALLS



Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access OPT 2.dwg

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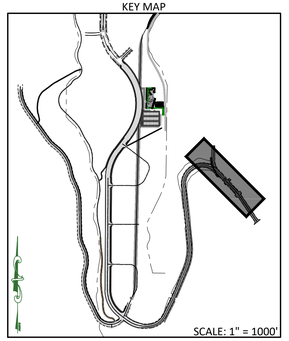

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
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NORTH DAKOTA
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WILLISTON, ND 58801
701-572-8100

SOUTHEAST ACCESS ROAD GRADING AND STORM DRAIN PLAN AND PROFILE

FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

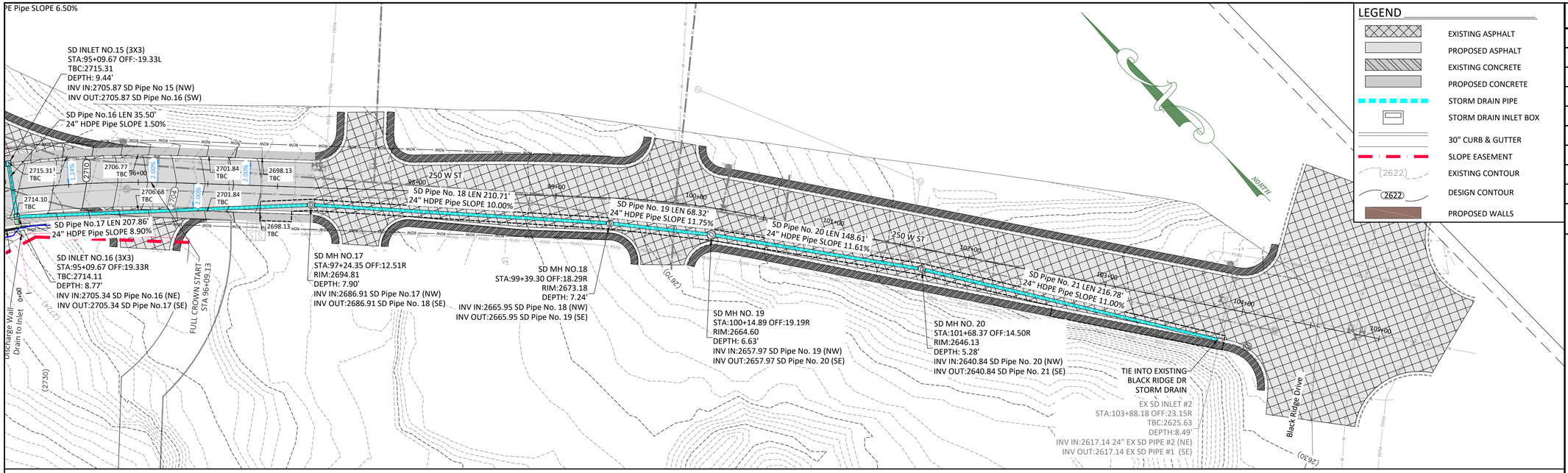
NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1" = 40"
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C2.4

Sheet 11 of 41 Sheets

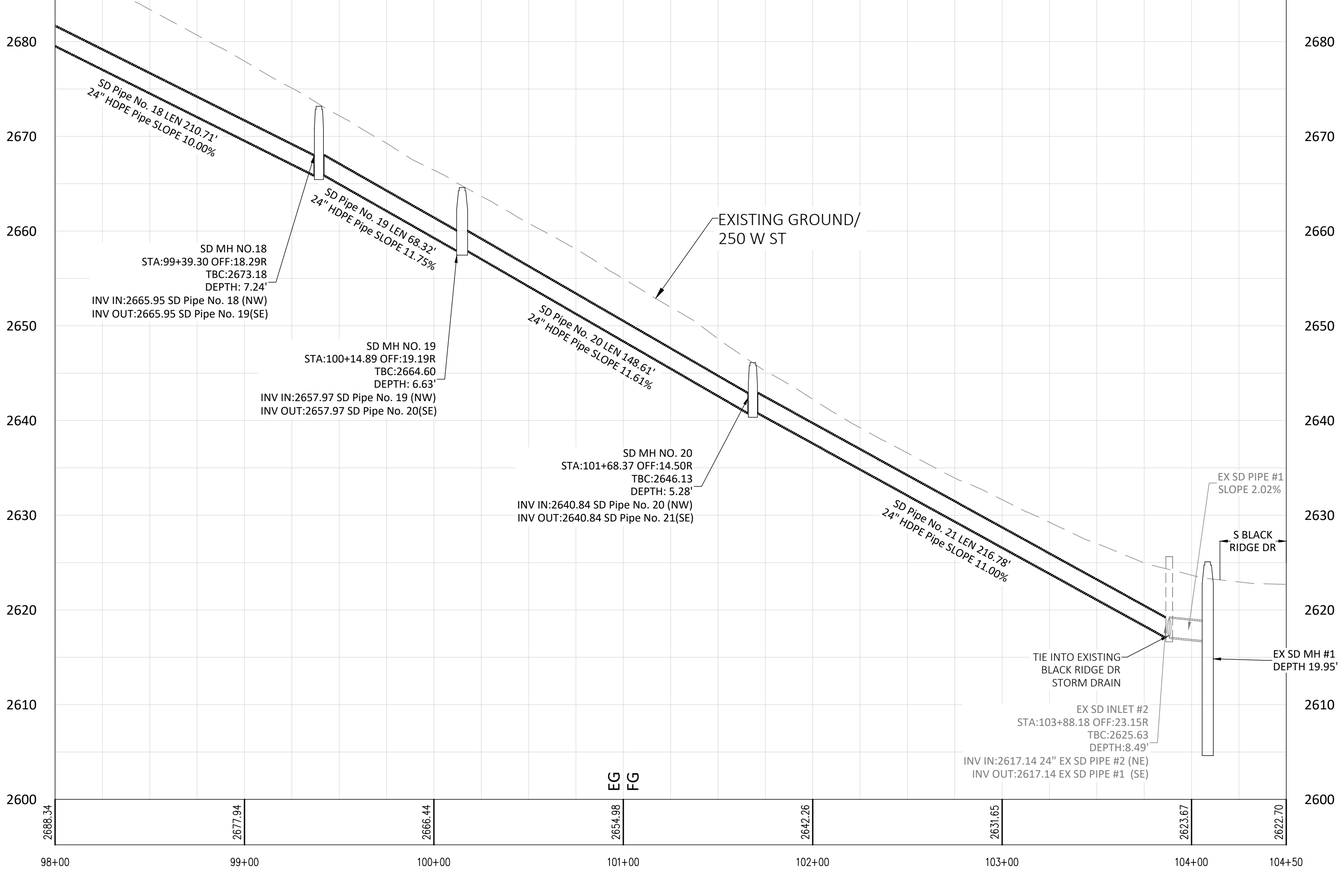
PE Pipe SLOPE 6.50%



LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- STORM DRAIN PIPE
- STORM DRAIN INLET BOX
- 30" CURB & GUTTER
- SLOPE EASEMENT
- EXISTING CONTOUR (2622)
- DESIGN CONTOUR 2622
- PROPOSED WALLS

East Access REV 4



Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access OPT 2.dwg

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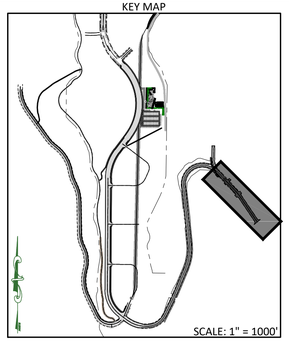

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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

SOUTHEAST ACCESS ROAD GRADING AND STORM DRAIN PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

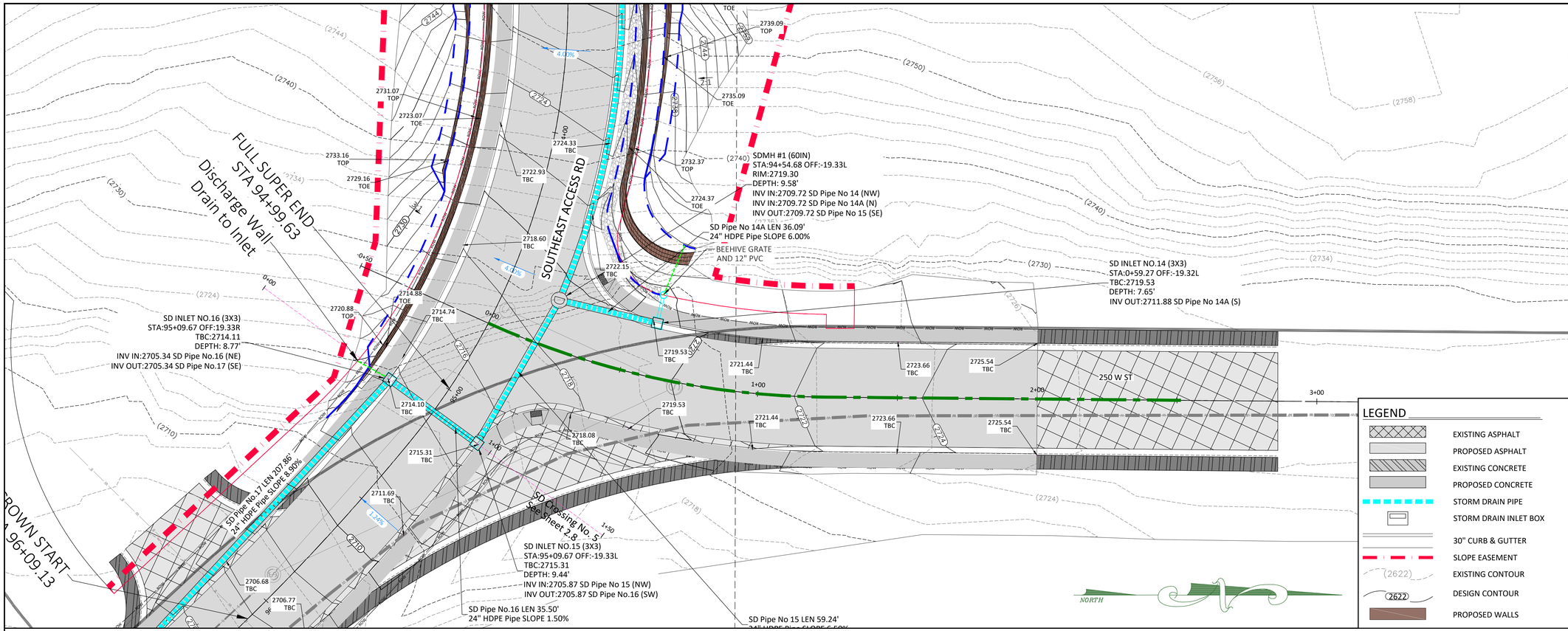
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

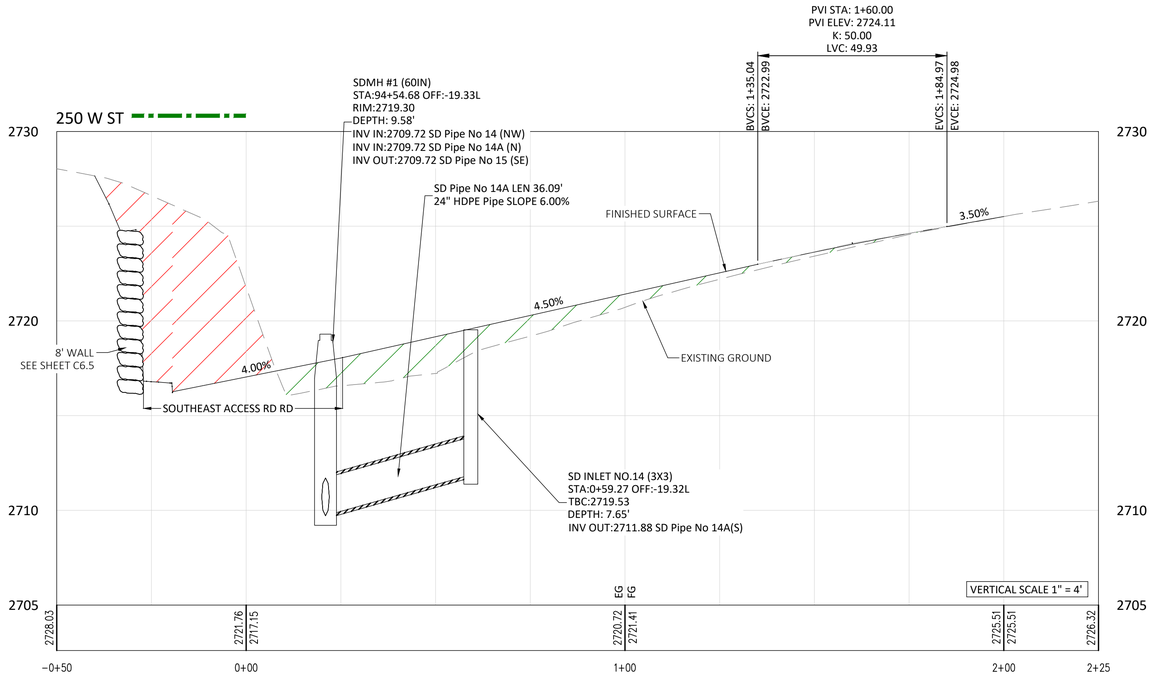
NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1" = 40"
Client No.	Project No.
4568-21	4568-21

Drawing Sheet
C2.5

Sheet 12 of 41 Sheets





Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access OPT 2.dwg

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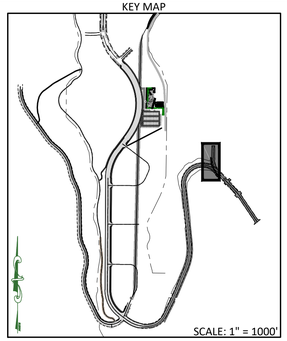

GRAPHIC SCALE

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
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621 26th STREET W.
WILLISTON, ND 58801
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250 WEST STREET ALTERATION PLAN AND PROFILE

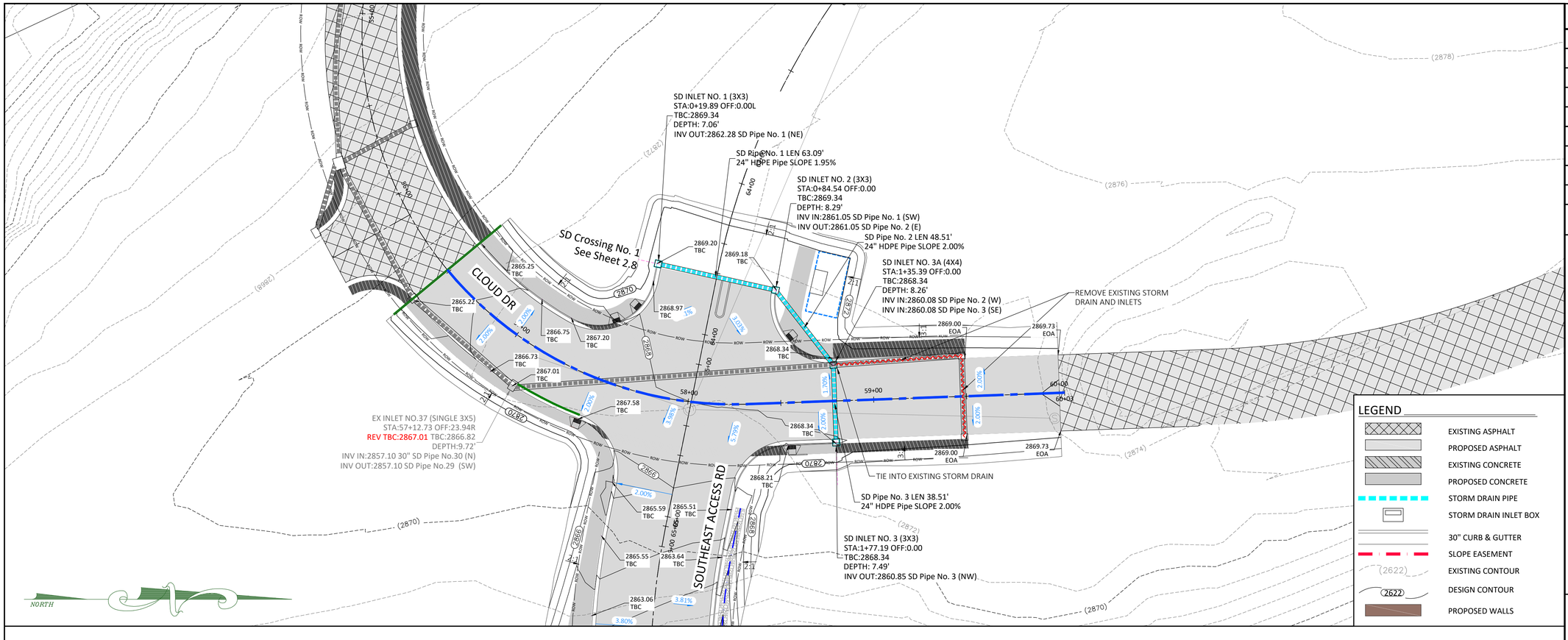
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

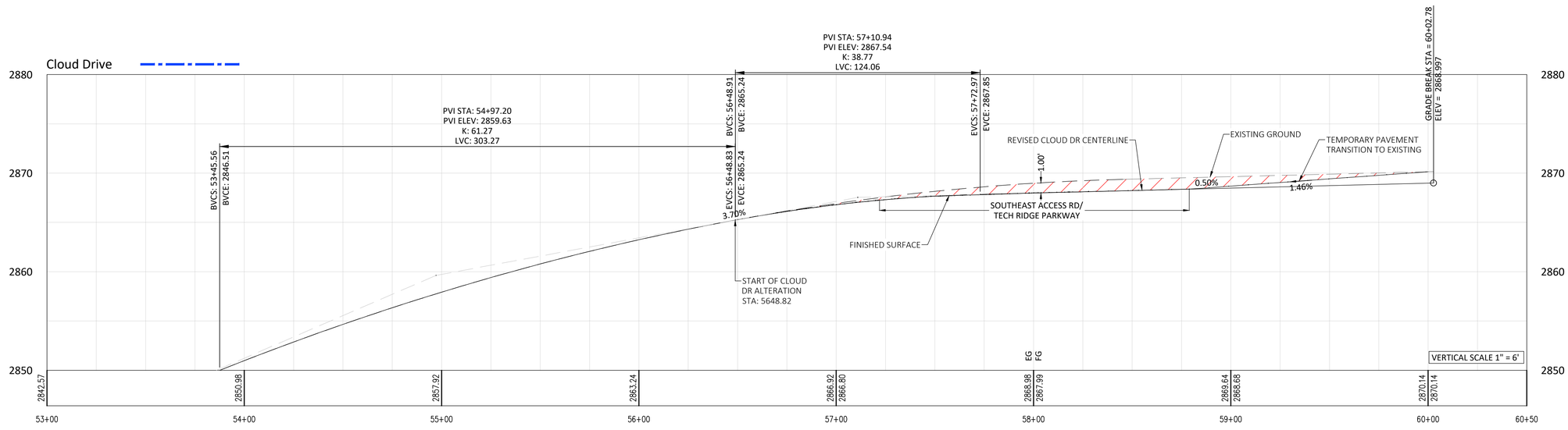
NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1"=20'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C2.6

Sheet 13 of 41 Sheets





Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name: East Access OPT 2.dwg

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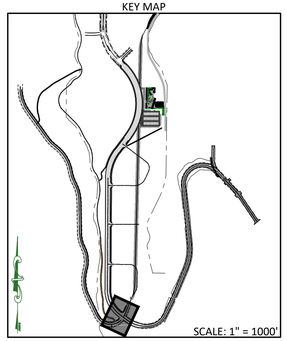

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)

1 inch = 30 ft.

If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
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CLOUD DRIVE ALTERATION GRADING PLAN AND PROFILE

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

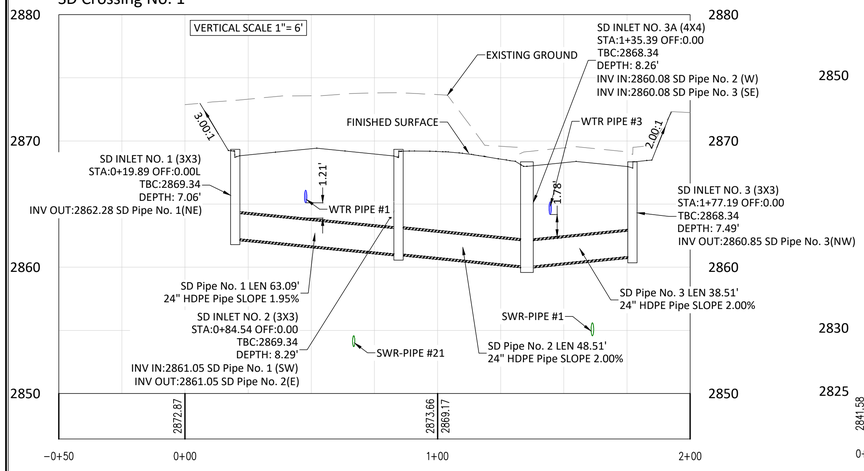
Drawn By:	Scale:
AZ	1"=30'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet

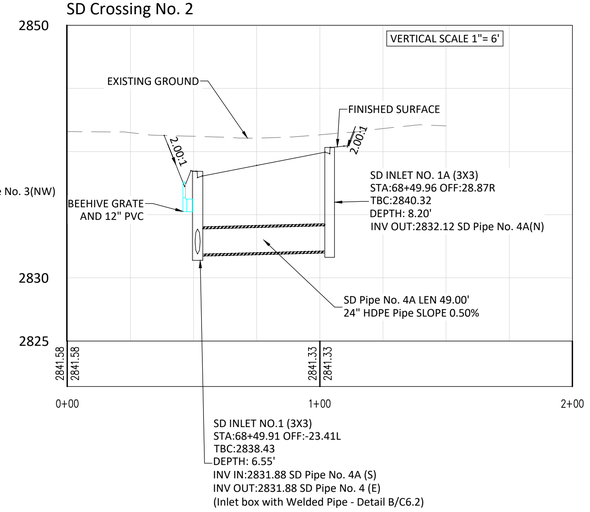
C2.7

Sheet 14 of 41 Sheets

SD Crossing No. 1



SD Crossing No. 2



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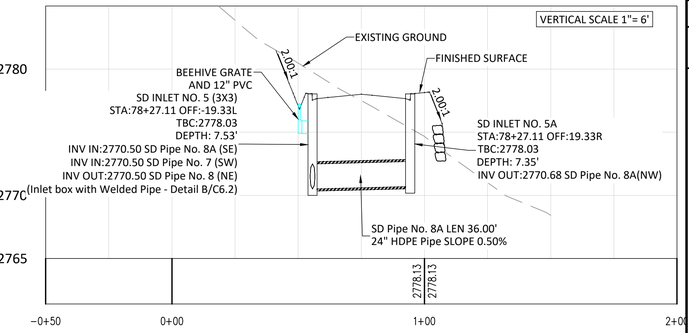

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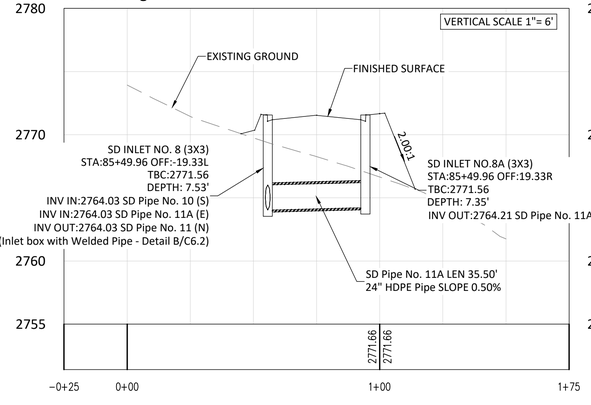

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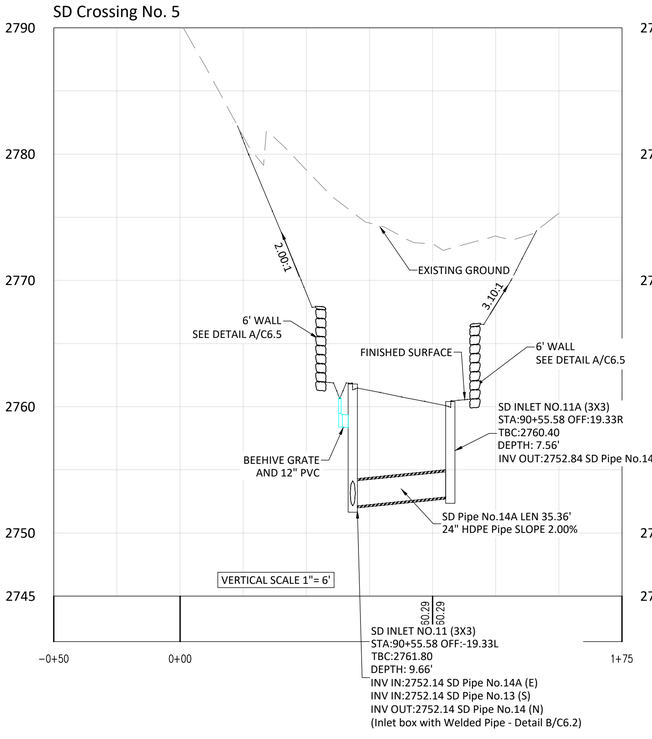

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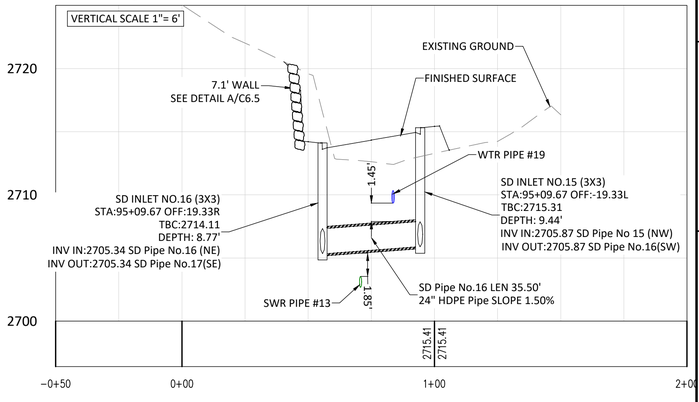

Date:
10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access OPT 2.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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

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

SOUTHEAST ACCESS RD
STORM DRAIN CROSSINGS

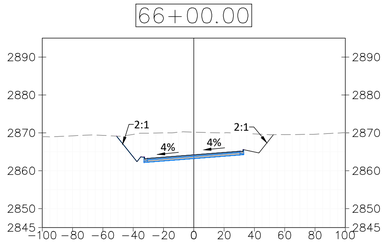
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

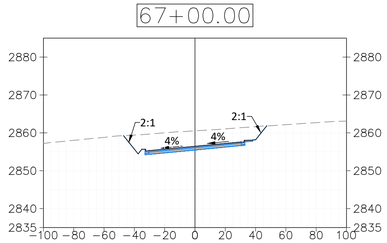
NOT FOR CONSTRUCTION
REVIEW ONLY

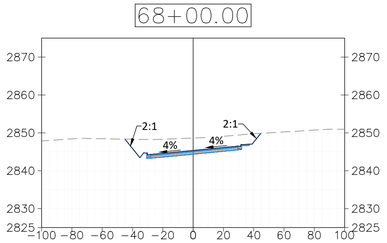
Drawn By:	Scale:
AZ	1"=30'
Client No. 4568-21	Project No. 4568-21

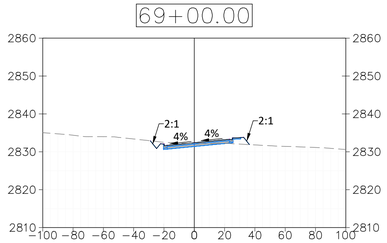
Drawing Sheet
C2.8

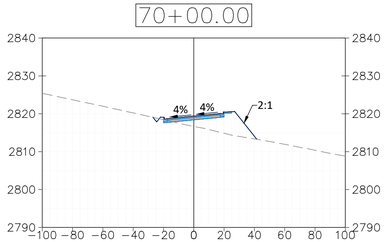
Sheet 15 of 41 Sheets

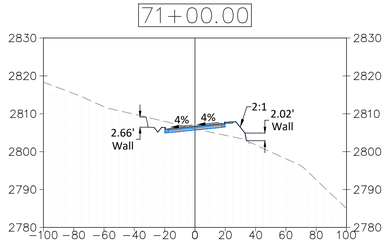


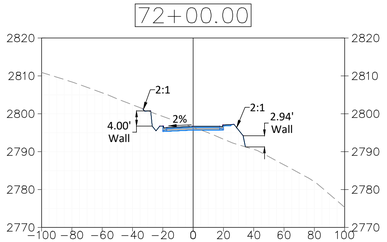


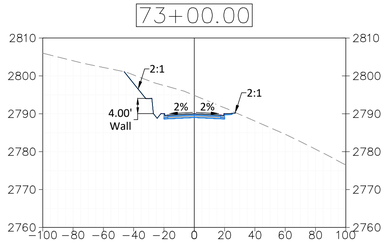


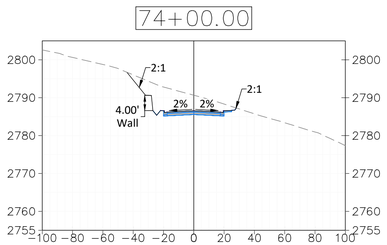


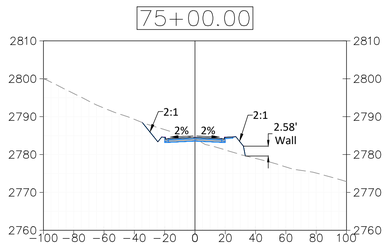


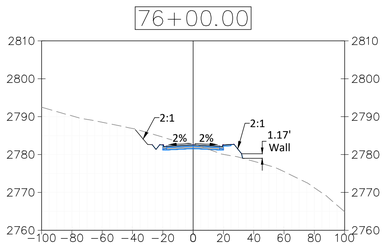


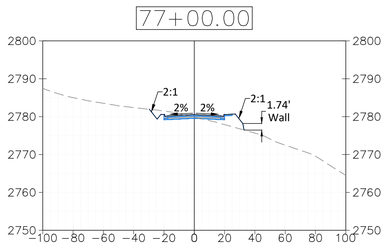


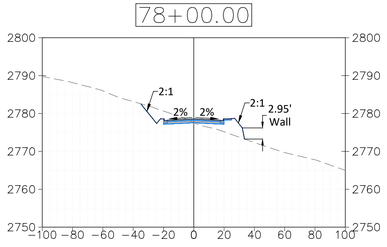


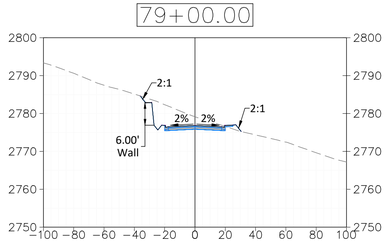


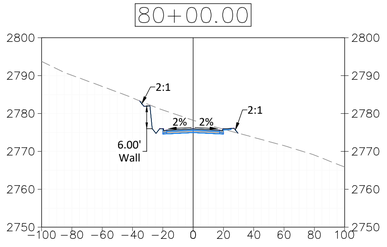


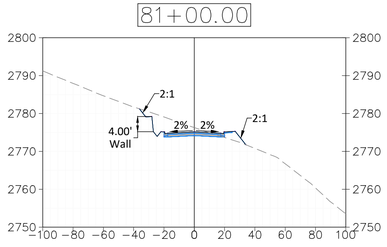












Date:
10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access OPT 2.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

SOUTHEAST ACCESS GRADING CROSS SECTIONS

FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

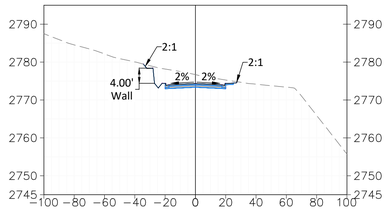
NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	NONE
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C2.9

Sheet 16 of 41 Sheets

82+00.00



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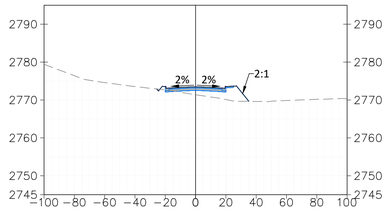

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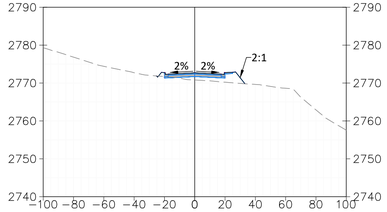

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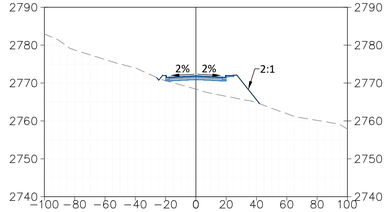

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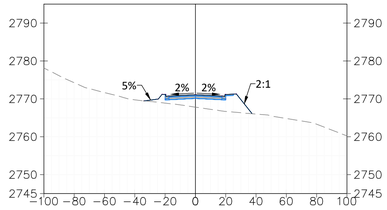

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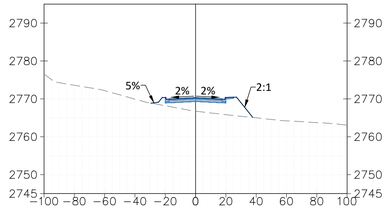

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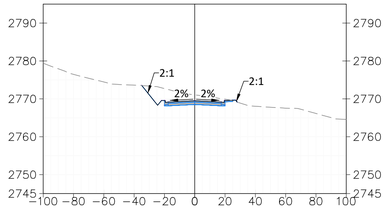

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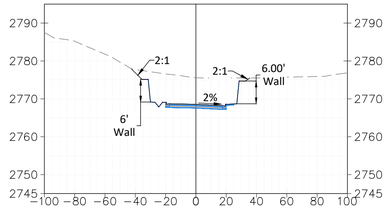

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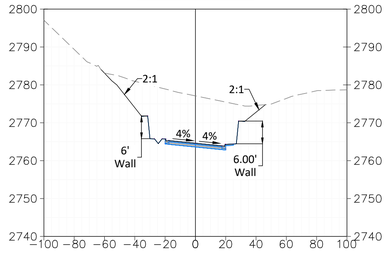

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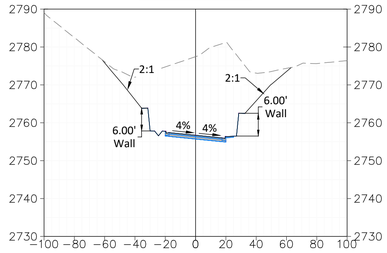

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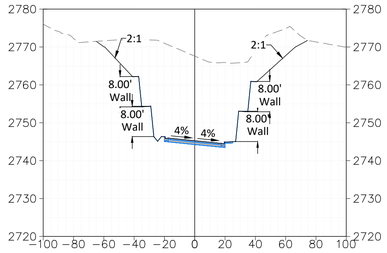

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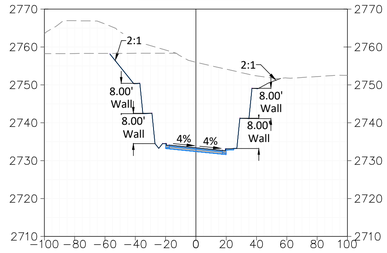

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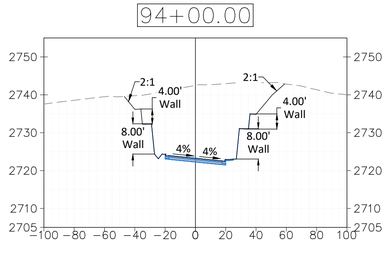

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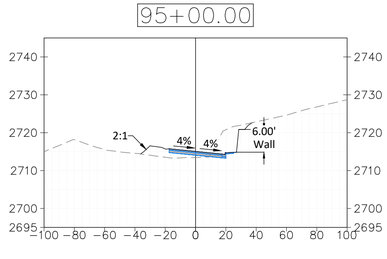

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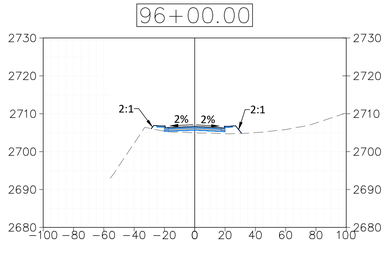

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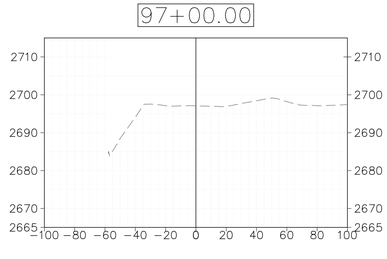


Date:
10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access OPT 2.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

SOUTHEAST ACCESS RD
GRADING CROSS SECTIONS

FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION
REVIEW ONLY

Drawn By:	Scale:
AZ	NONE
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C2.10

Sheet 17 of 41 Sheets

CITY OF ST. GEORGE WATER NOTES:

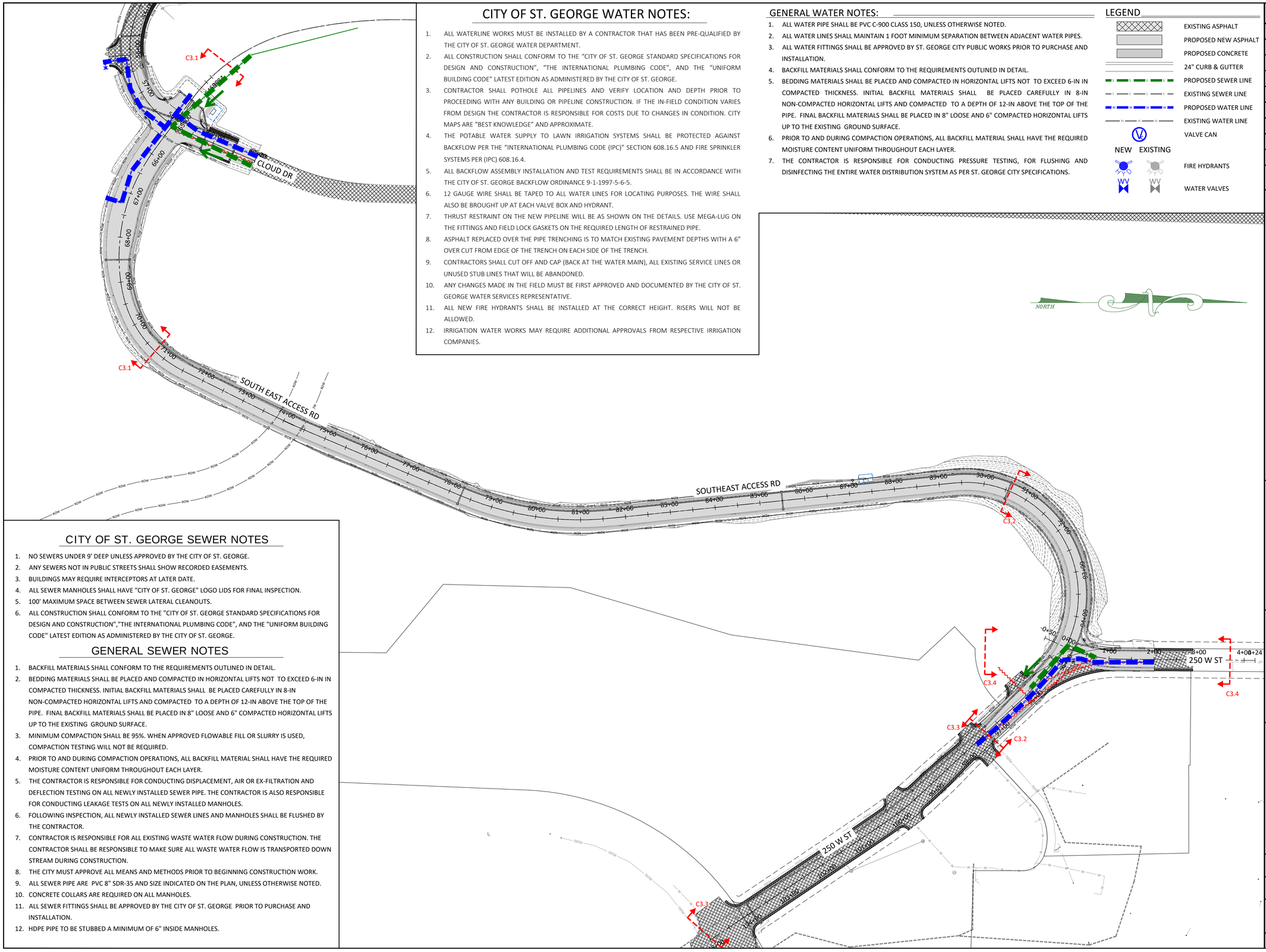
1. ALL WATERLINE WORKS MUST BE INSTALLED BY A CONTRACTOR THAT HAS BEEN PRE-QUALIFIED BY THE CITY OF ST. GEORGE WATER DEPARTMENT.
2. ALL CONSTRUCTION SHALL CONFORM TO THE "CITY OF ST. GEORGE STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION", "THE INTERNATIONAL PLUMBING CODE", AND THE "UNIFORM BUILDING 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. 12 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.

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 8" LOOSE AND 6" 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.

LEGEND

- EXISTING ASPHALT
- PROPOSED NEW ASPHALT
- PROPOSED CONCRETE
- 24" CURB & GUTTER
- PROPOSED SEWER LINE
- EXISTING SEWER LINE
- PROPOSED WATER LINE
- EXISTING WATER LINE
- VALVE CAN
- NEW / EXISTING FIRE HYDRANTS
- WATER VALVES



CITY OF ST. GEORGE 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. 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.

GENERAL SEWER NOTES

1. BACKFILL MATERIALS SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN DETAIL.
2. 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 8" LOOSE AND 6" COMPACTED HORIZONTAL LIFTS UP TO THE EXISTING GROUND SURFACE.
3. MINIMUM COMPACTION SHALL BE 95%. WHEN APPROVED FLOWABLE FILL OR SLURRY IS USED, COMPACTION TESTING WILL NOT BE REQUIRED.
4. PRIOR TO AND DURING COMPACTION OPERATIONS, ALL BACKFILL MATERIAL SHALL HAVE THE REQUIRED MOISTURE CONTENT UNIFORM THROUGHOUT EACH LAYER.
5. 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.
6. FOLLOWING INSPECTION, ALL NEWLY INSTALLED SEWER LINES AND MANHOLES SHALL BE FLUSHED BY THE CONTRACTOR.
7. 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.
8. THE CITY MUST APPROVE ALL MEANS AND METHODS PRIOR TO BEGINNING CONSTRUCTION WORK.
9. ALL SEWER PIPE ARE PVC 8" SDR-35 AND SIZE INDICATED ON THE PLAN, UNLESS OTHERWISE NOTED.
10. CONCRETE COLLARS ARE REQUIRED ON ALL MANHOLES.
11. ALL SEWER FITTINGS SHALL BE APPROVED BY THE CITY OF ST. GEORGE PRIOR TO PURCHASE AND INSTALLATION.
12. HDPE PIPE TO BE STUBBED A MINIMUM OF 6" INSIDE MANHOLES.

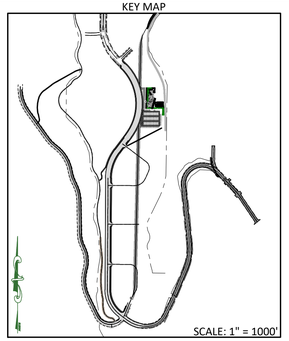
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access SWR & WTR OPT 2.dwg

KEY MAP



GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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

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

SOUTHEAST ACCESS RD
AT TECH RIDGE
SEWER AND WATER OVERALL

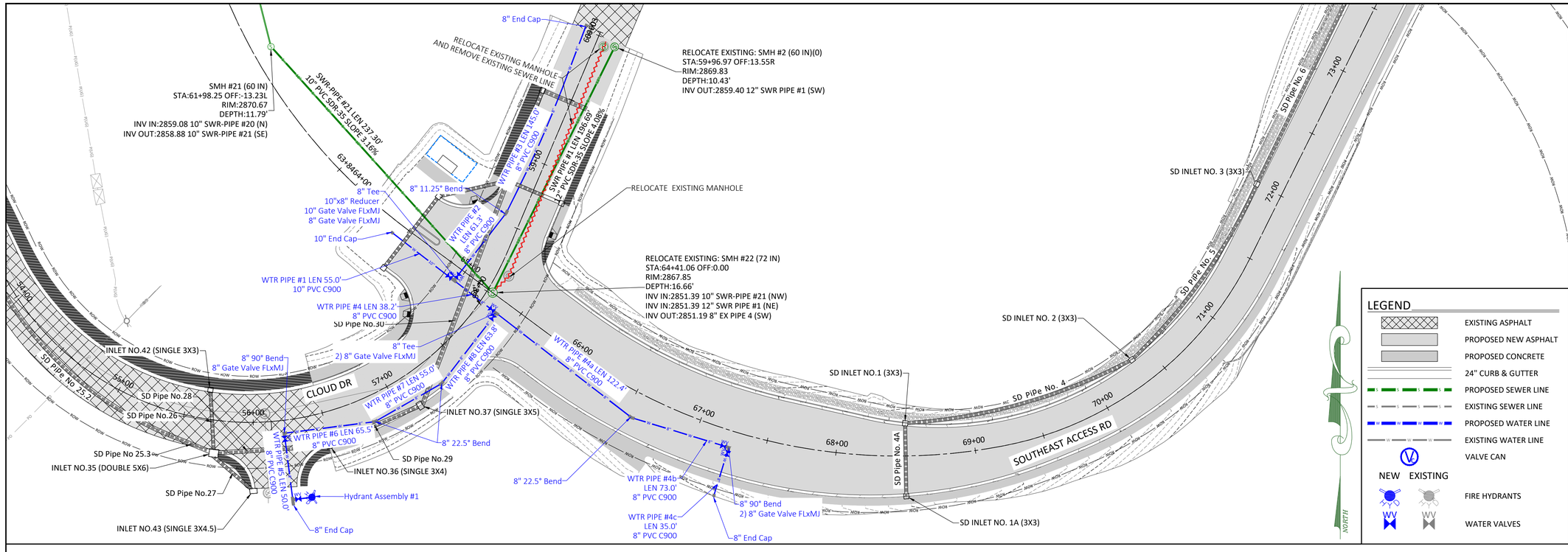
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
TOWNSHIP 42 NORTH, RANGE 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1"=100'
Client No. 4568	Project No. 4568

Drawing Sheet
C3.0

Sheet 18 of 41 Sheets



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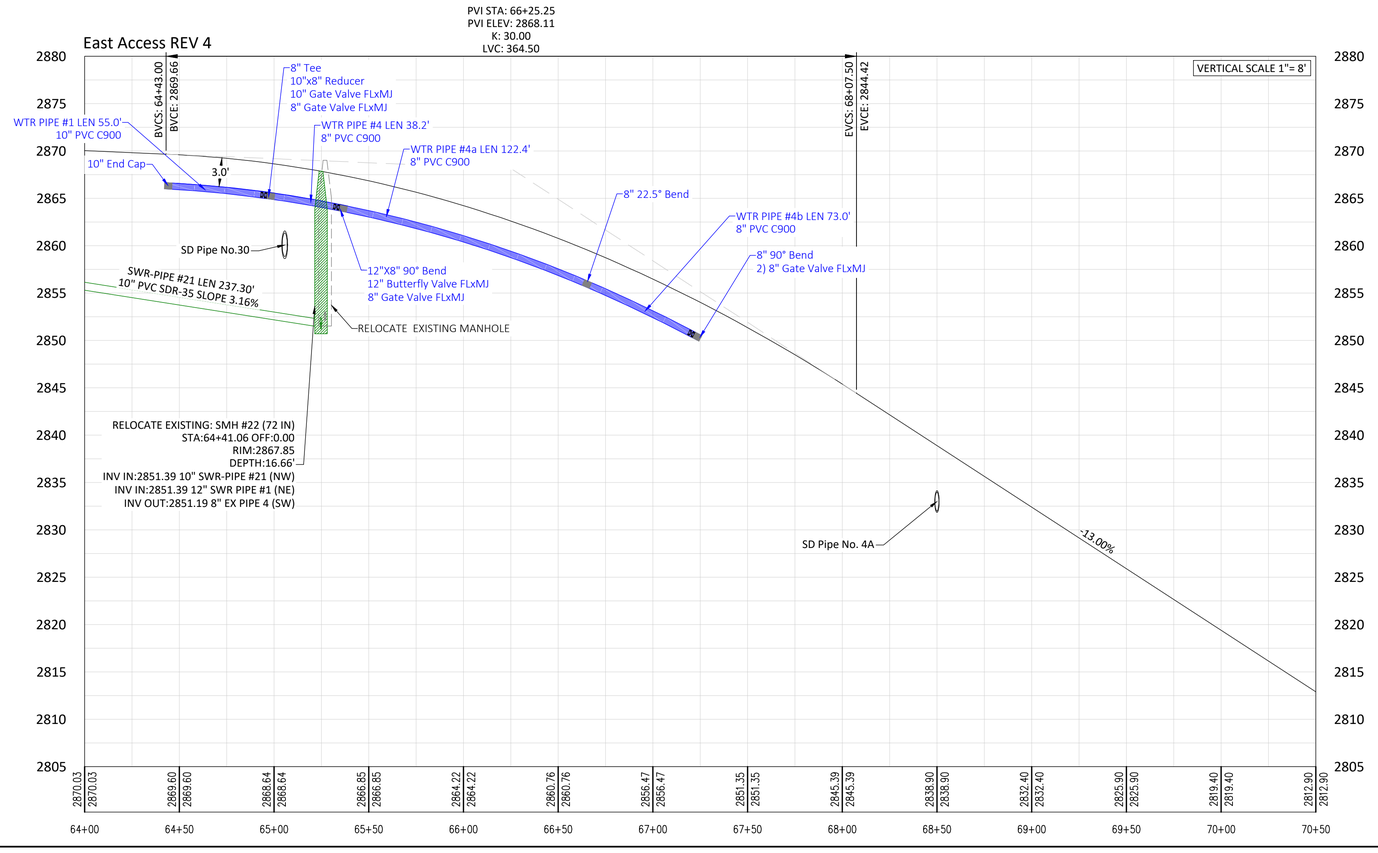

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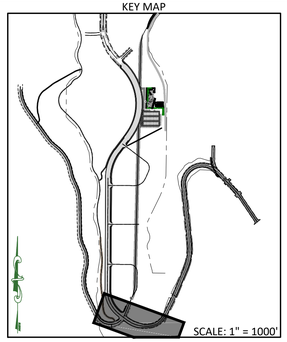

GRAPHIC SCALE

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(IN FEET)
1 inch = 40 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
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435-673-8060

NORTH DAKOTA
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701-572-8100

SOUTHEAST ACCESS RD
SEWER AND WATER
PLAN AND PROFILE

FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
TOWNSHIP 42 NORTH, RANGE 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

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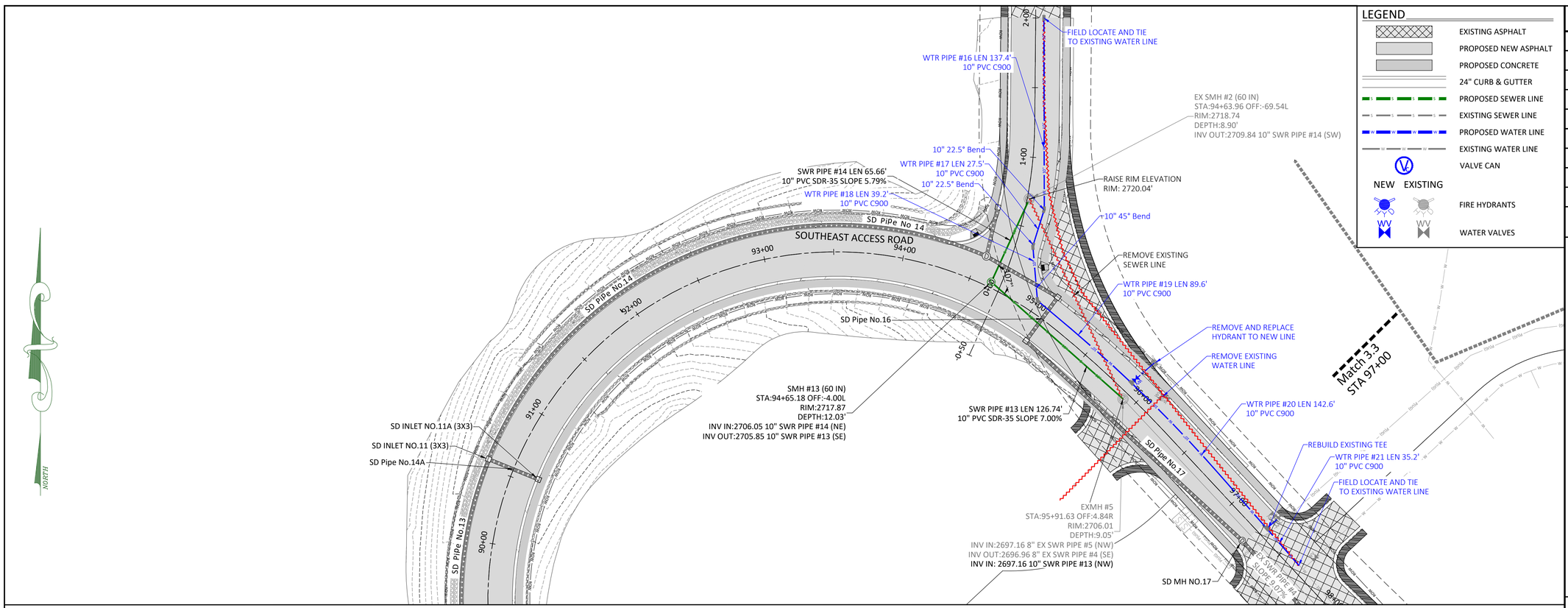
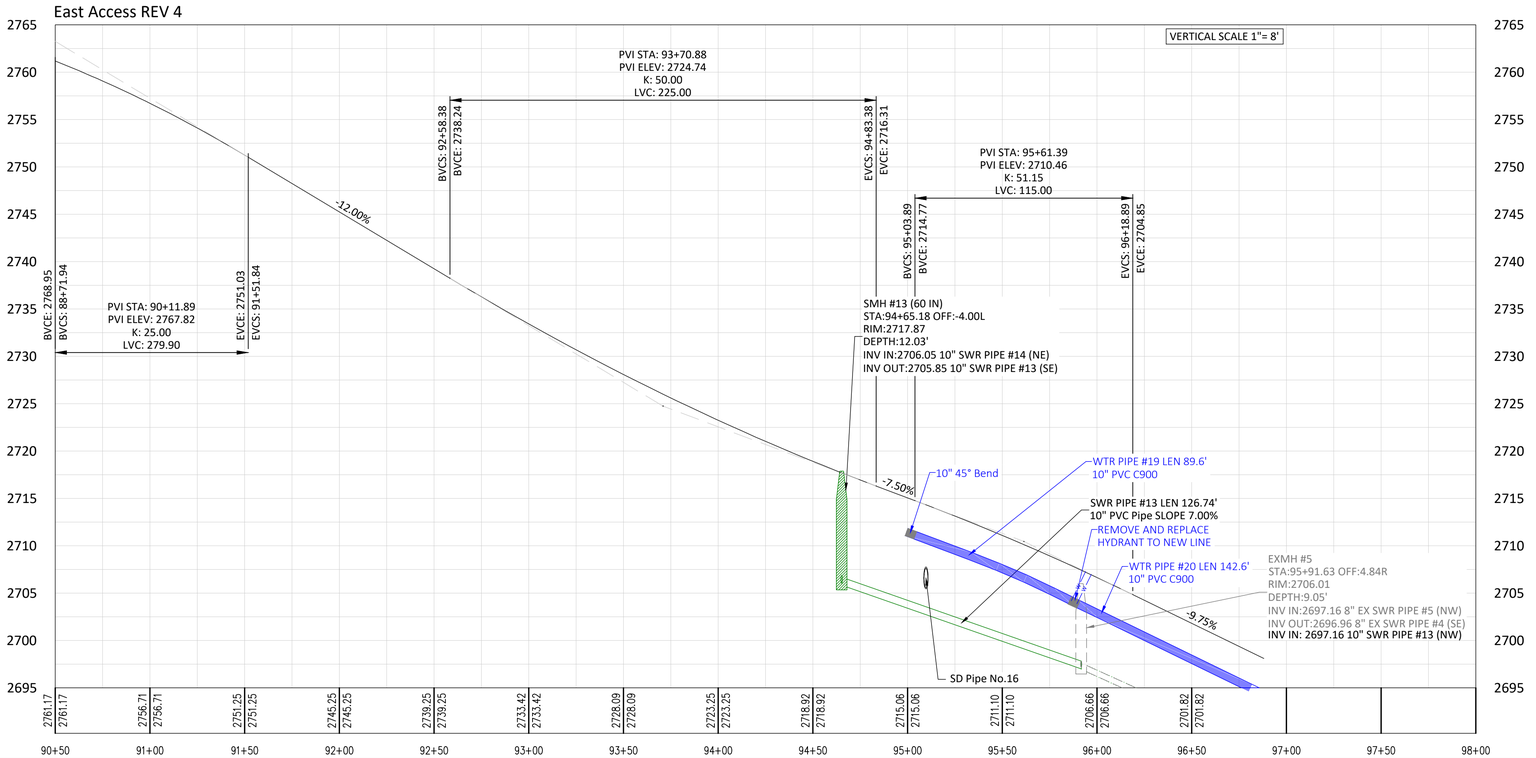
REVIEW ONLY

Drawn By:	Scale:
AZ	1"= 40'
Client No.	Project No.
4568	4568

Drawing Sheet
C3.1

Sheet 19 of 41 Sheets





Date:	10-19-2023

REVISIONS

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File Name
East Access SWR & WTR OPT 2.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

SOUTHEAST ACCESS RD SEWER AND WATER PLAN AND PROFILE

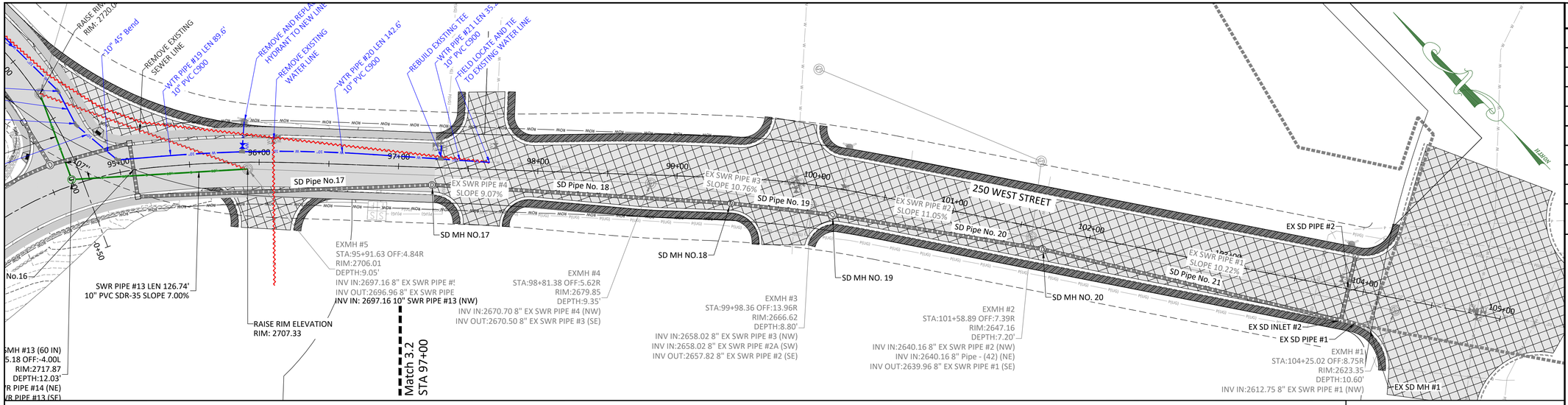
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
TOWNSHIP 42 NORTH, RANGE 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

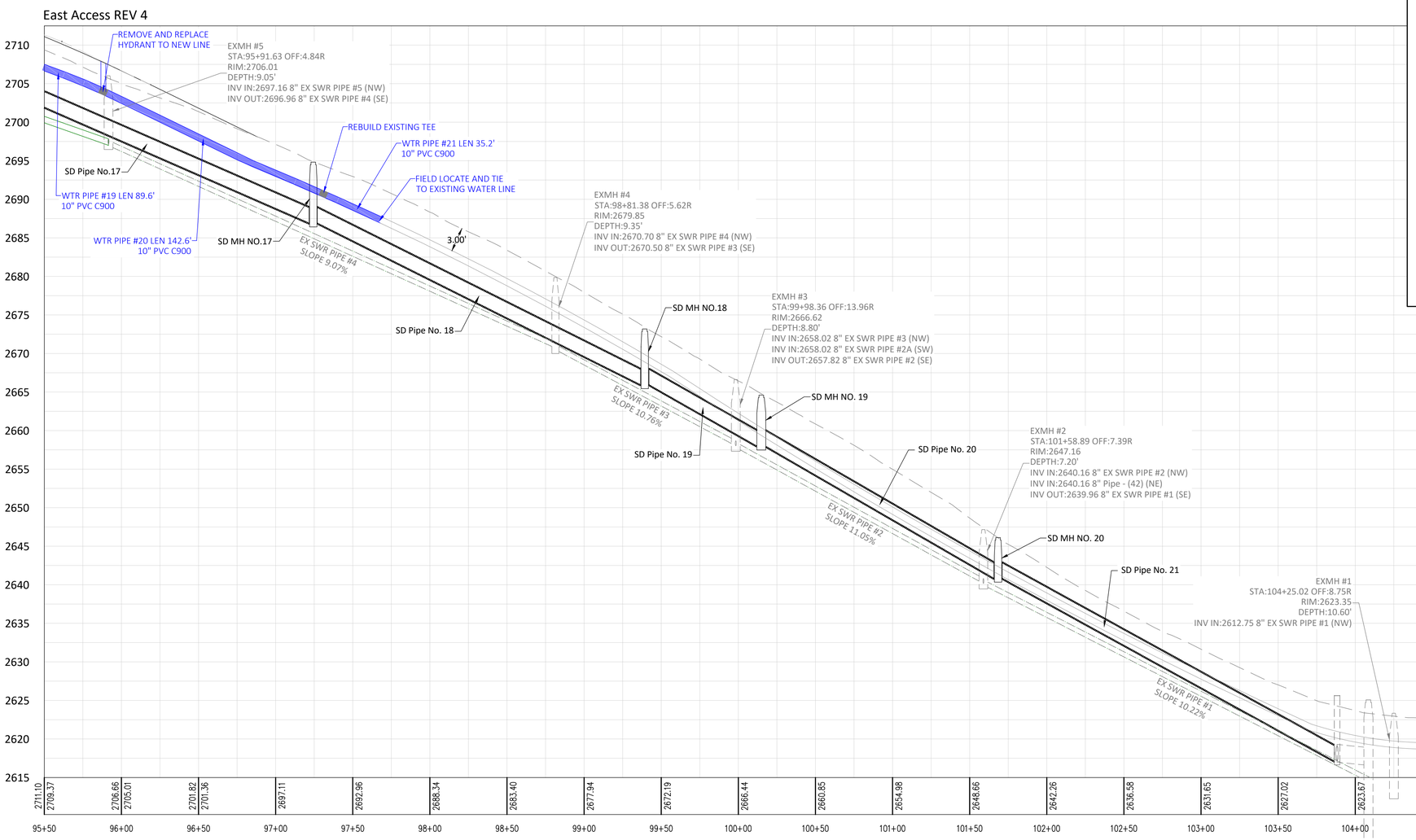
NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1"=40'
Client No. 4568	Project No. 4568

Drawing Sheet
C3.2

Sheet 20 of 41 Sheets





LEGEND

- EXISTING ASPHALT
- PROPOSED NEW ASPHALT
- PROPOSED CONCRETE
- 24" CURB & GUTTER
- PROPOSED SEWER LINE
- EXISTING SEWER LINE
- PROPOSED WATER LINE
- EXISTING WATER LINE
- VALVE CAN
- NEW / EXISTING FIRE HYDRANTS
- NEW / EXISTING WATER VALVES

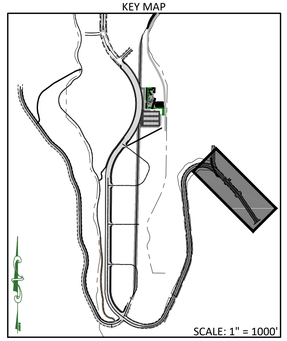
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access SWR & WTR OPT 2.dwg

KEY MAP



GRAPHIC SCALE

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(IN FEET)
1 inch = 40 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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SOUTHEAST ACCESS RD
SEWER AND WATER
PLAN AND PROFILE

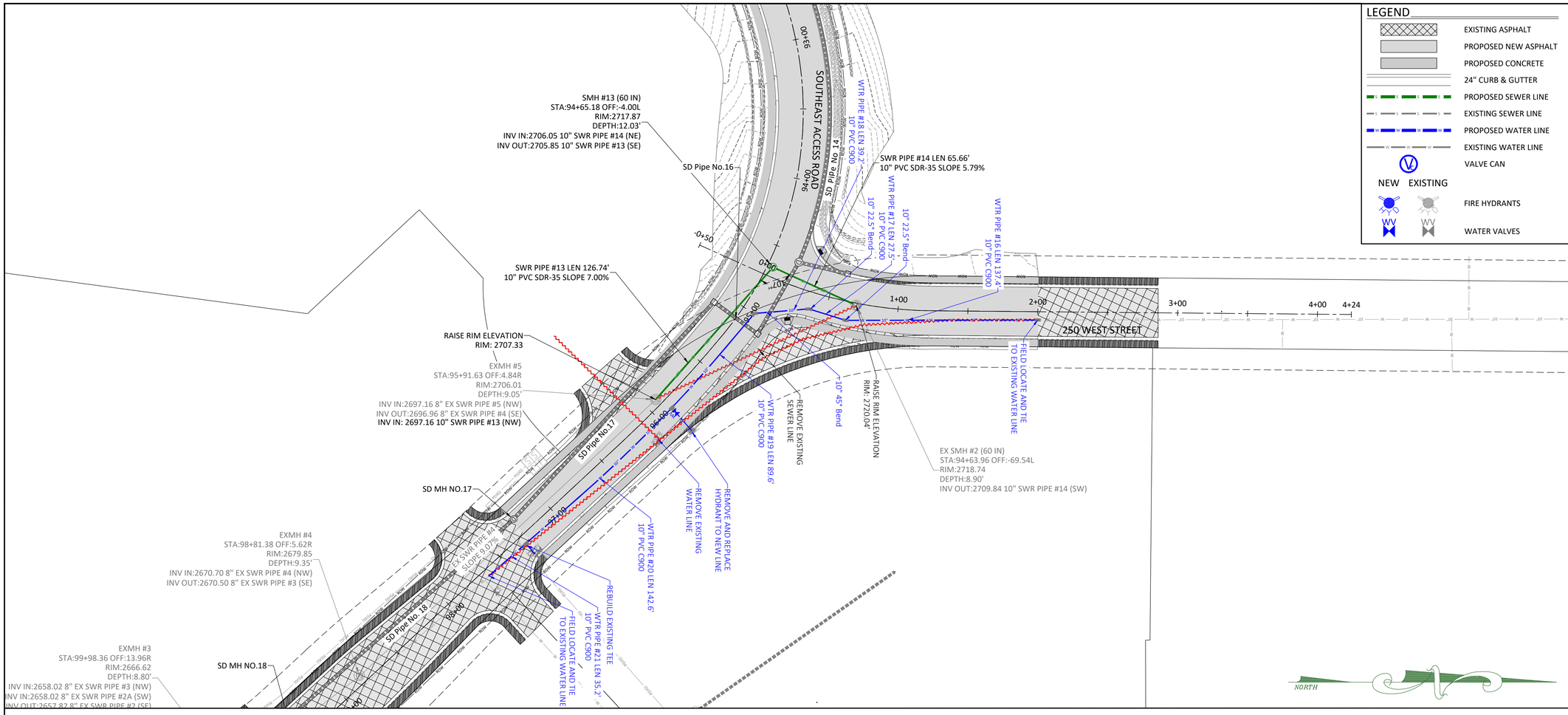
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
TOWNSHIP 42 NORTH, RANGE 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1"=40'
Client No. 4568	Project No. 4568

Drawing Sheet
C3.3

Sheet 21 of 41 Sheets



LEGEND

- EXISTING ASPHALT
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- PROPOSED CONCRETE
- 24" CURB & GUTTER
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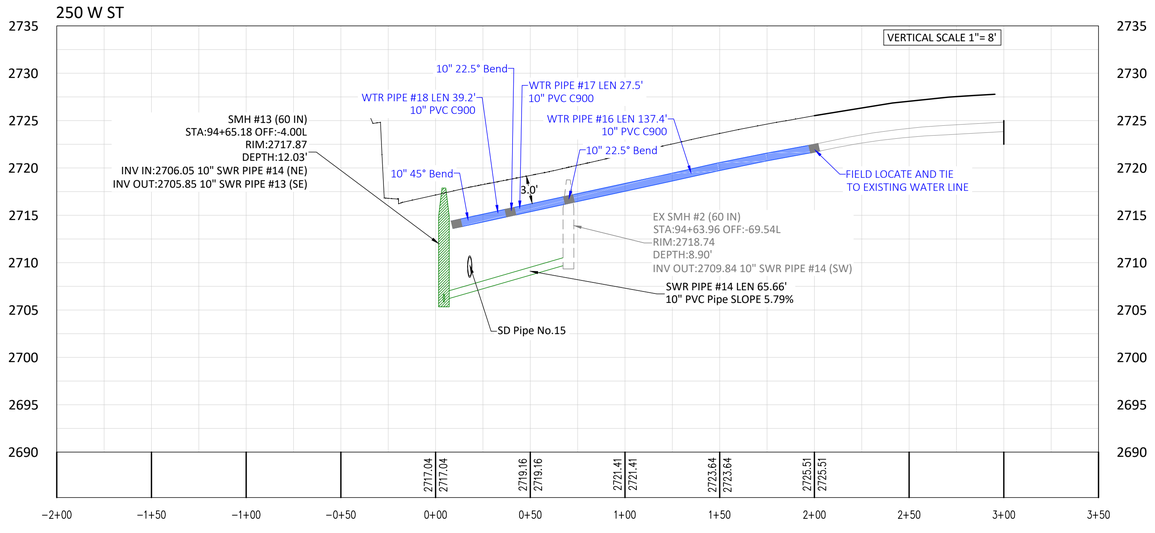

Date: 10-19-2023			
REVISIONS			
No.	Date	by	Description

File Name
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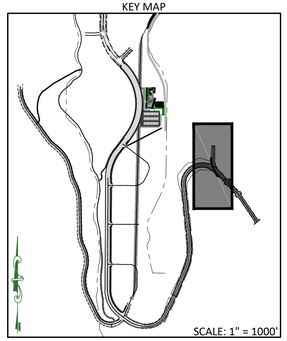

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SOUTHEAST ACCESS RD SEWER AND WATER PLAN AND PROFILE

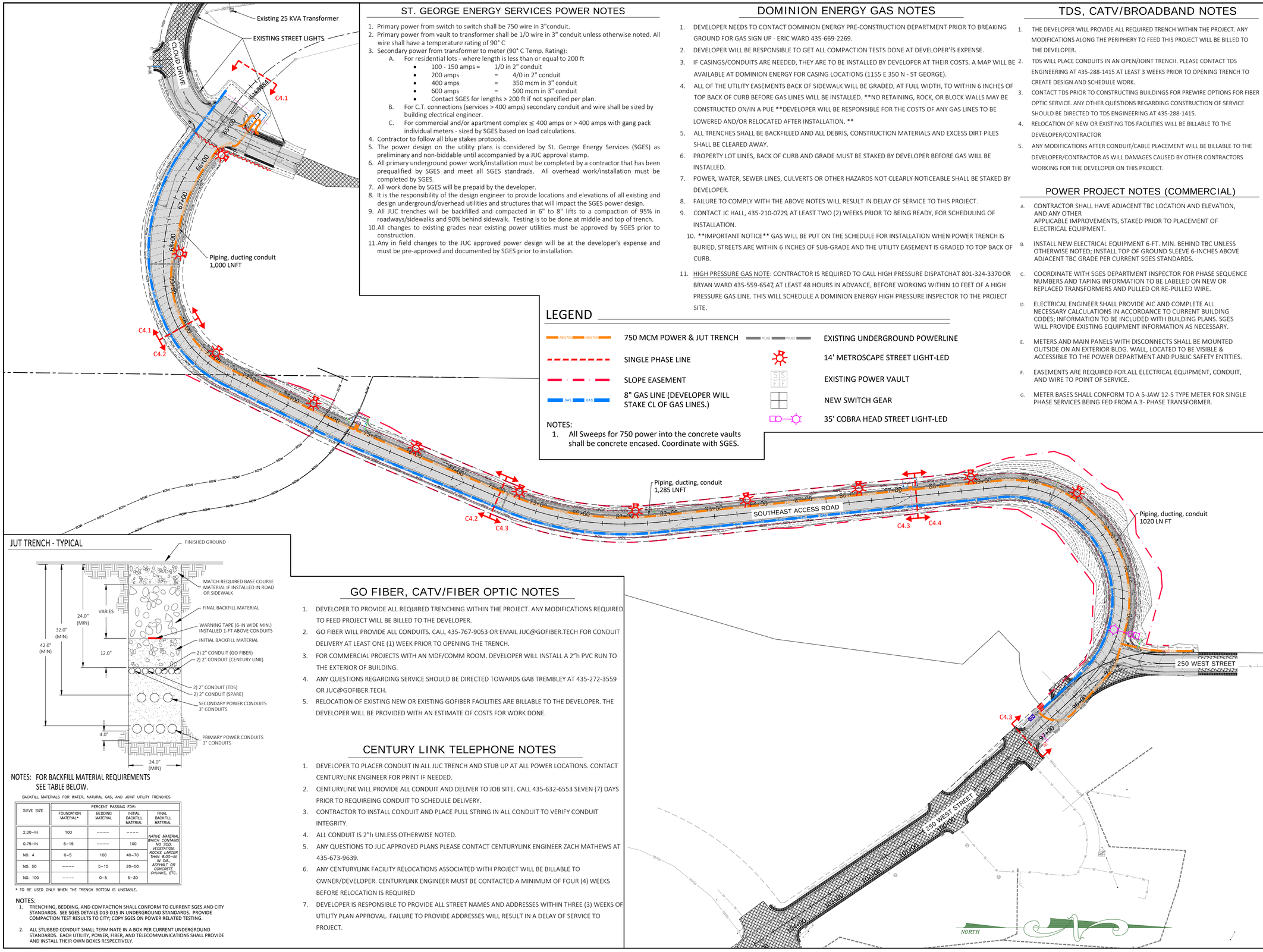
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
TOWNSHIP 42 NORTH, RANGE 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1"=40'
Client No. 4568	Project No. 4568

Drawing Sheet
C3.4

Sheet 22 of 41 Sheets



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 - ERIC WARD 435-669-2269.
2. DEVELOPER WILL BE RESPONSIBLE TO GET ALL COMPACTION TESTS DONE AT DEVELOPER'fS 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 UTILITY EASEMENTS BACK OF SIDEWALK WILL BE GRADED, AT FULL 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 (2) 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 SUB-GRADE AND THE UTILITY EASEMENT IS GRADED TO TOP BACK OF CURB.
11. HIGH PRESSURE GAS NOTE: CONTRACTOR IS REQUIRED TO CALL HIGH PRESSURE DISPATCHAT 801-324-3370 OR BRYAN WARD 435-559-6547 AT LEAST 48 HOURS IN ADVANCE, BEFORE WORKING WITHIN 10 FEET OF A HIGH PRESSURE GAS LINE. THIS WILL SCHEDULE A DOMINION ENERGY HIGH PRESSURE INSPECTOR TO THE PROJECT SITE.

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.

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.

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.

LEGEND

- 750 MCM POWER & JUT TRENCH
- SINGLE PHASE LINE
- SLOPE EASEMENT
- 8" GAS LINE (DEVELOPER WILL STAKE CL OF GAS LINES.)
- EXISTING UNDERGROUND POWERLINE
- 14' METROSCAPE STREET LIGHT-LED
- EXISTING POWER VAULT
- NEW SWITCH GEAR
- 35' COBRA HEAD STREET LIGHT-LED

NOTES:
1. All Sweeps for 750 power into the concrete vaults shall be concrete encased. Coordinate with SGES.

JUT TRENCH - TYPICAL

NOTES: FOR BACKFILL MATERIAL REQUIREMENTS SEE TABLE BELOW.

BACKFILL MATERIALS FOR WATER, NATURAL GAS, AND JOINT UTILITY TRENCHES

SIEVE SIZE	PERCENT PASSING FOR: FOUNDATION MATERIAL*	BEDDING MATERIAL	INITIAL BACKFILL MATERIAL	FINAL BACKFILL MATERIAL
2.00–IN	100	----	----	NATIVE MATERIAL WHICH CONTAINS NO SOD, VEGETATION, ROCKS LARGER THAN 8.00–IN IN DIA., ASPHALT OR CONCRETE CHUNKS, ETC.
0.75–IN	5–15	----	100	
NO. 4	0–5	100	40–70	
NO. 50	----	5–15	20–50	
NO. 100	----	0–5	5–30	

* TO BE USED ONLY WHEN THE TRENCH BOTTOM IS UNSTABLE.

NOTES:
1. 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.
2. ALL STUBBED CONDUIT SHALL TERMINATE IN A BOX PER CURRENT UNDERGROUND STANDARDS. EACH UTILITY, POWER, FIBER, AND TELECOMMUNICATIONS SHALL PROVIDE AND INSTALL THEIR OWN BOXES RESPECTIVELY.

GO FIBER, CATV/FIBER OPTIC NOTES

1. DEVELOPER TO PROVIDE ALL REQUIRED TRENCHING WITHIN THE PROJECT. ANY MODIFICATIONS REQUIRED TO FEED PROJECT WILL BE BILLED TO THE DEVELOPER.
2. GO FIBER WILL PROVIDE ALL CONDUITS. CALL 435-767-9053 OR EMAIL JUC@GOFIBER.TECH FOR CONDUIT DELIVERY AT LEAST ONE (1) WEEK PRIOR TO OPENING THE TRENCH.
3. FOR COMMERCIAL PROJECTS WITH AN MDF/COMM ROOM. DEVELOPER WILL INSTALL A 2"h PVC RUN TO THE EXTERIOR OF BUILDING.
4. ANY QUESTIONS REGARDING SERVICE SHOULD BE DIRECTED TOWARDS GAB TREMBLEY AT 435-272-3559 OR JUC@GOFIBER.TECH.
5. RELOCATION OF EXISTING NEW OR EXISTING GOFIBER 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 PLACER CONDUIT IN ALL JUC TRENCH AND STUB UP AT ALL POWER LOCATIONS. CONTACT CENTURYLINK ENGINEER FOR PRINT IF NEEDED.
2. CENTURYLINK WILL PROVIDE ALL CONDUIT AND DELIVER TO JOB SITE. CALL 435-632-6553 SEVEN (7) DAYS PRIOR TO REQUIREING CONDUIT TO SCHEDULE DELIVERY.
3. CONTRACTOR TO INSTALL CONDUIT AND PLACE PULL STRING IN ALL CONDUIT TO VERIFY CONDUIT INTEGRITY.
4. ALL CONDUIT IS 2"h UNLESS OTHERWISE NOTED.
5. ANY QUESTIONS TO JUC APPROVED PLANS PLEASE CONTACT CENTURYLINK ENGINEER ZACH MATHEWS AT 435-673-9639.
6. ANY CENTURYLINK FACILITY RELOCATIONS ASSOCIATED WITH PROJECT WILL BE BILLABLE TO OWNER/DEVELOPER. CENTURYLINK ENGINEER MUST BE CONTACTED A MINIMUM OF FOUR (4) WEEKS BEFORE RELOCATION IS REQUIRED
7. DEVELOPER IS RESPONSIBLE TO PROVIDE ALL STREET NAMES AND ADDRESSES WITHIN THREE (3) WEEKS OF UTILITY PLAN APPROVAL. FAILURE TO PROVIDE ADDRESSES WILL RESULT IN A DELAY OF SERVICE TO PROJECT.

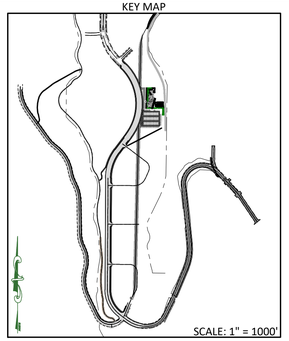
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access Pwr & Gas OPT 2.dwg

KEY MAP



GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.
If Printed 11x17 use Half Scale

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WASHINGTON, UT 84780
435-673-8060

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

SOUTHEAST ACCESS ROAD
AT TECH RIDGE
POWER AND GAS OVERALL

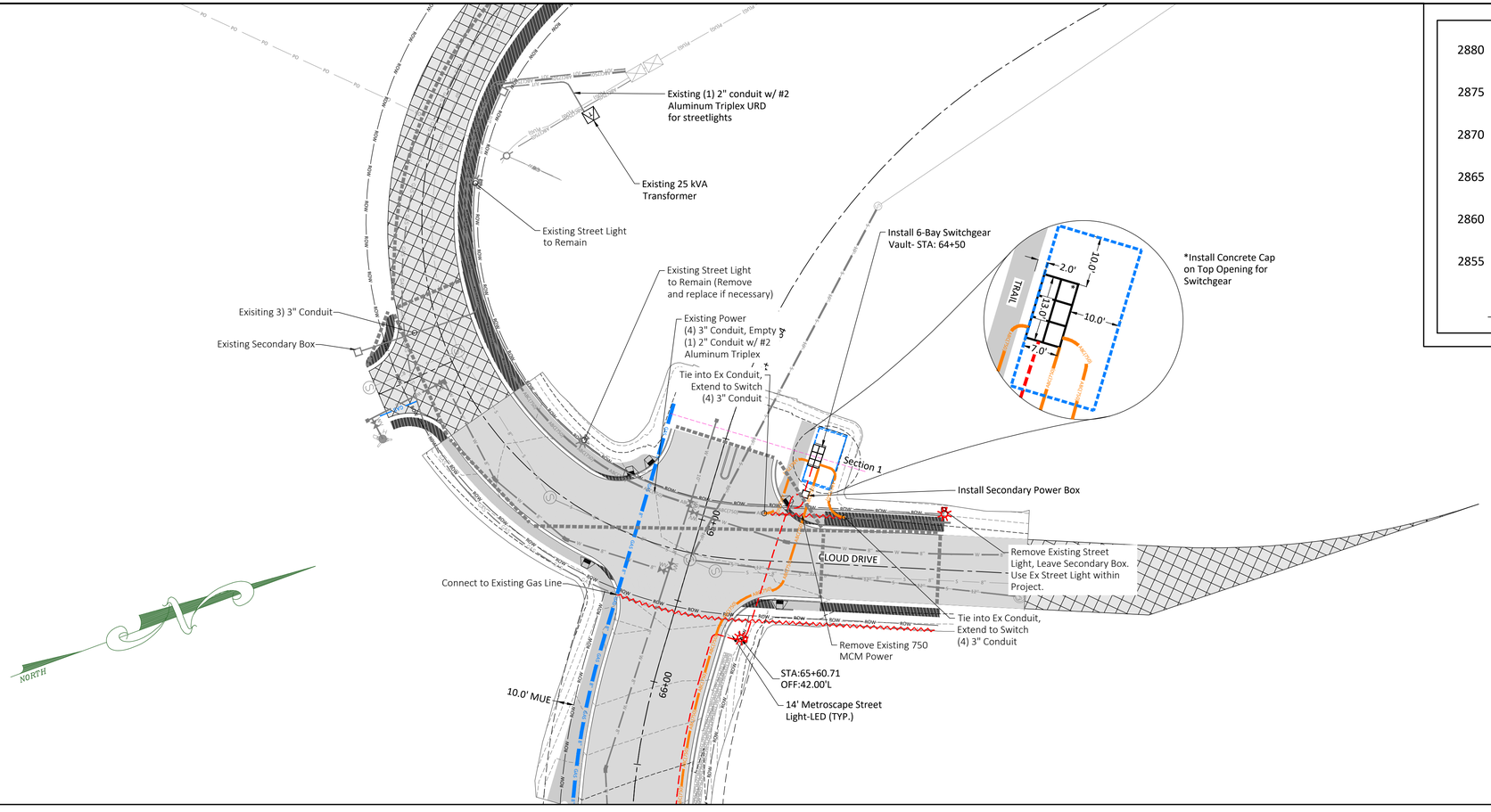
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
TOWNSHIP 24 SOUTH, RANGE 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

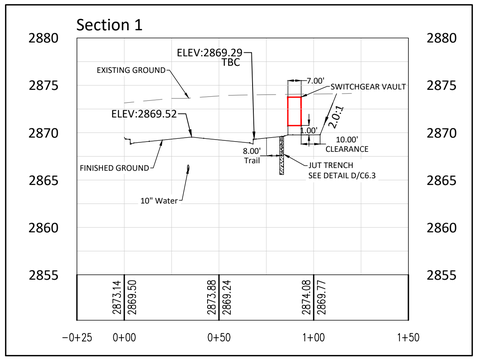
NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
NAM	1"=100'
Client No. 4568	Project No. 4568

Drawing Sheet
C4.0

Sheet 23 of 41 Sheets



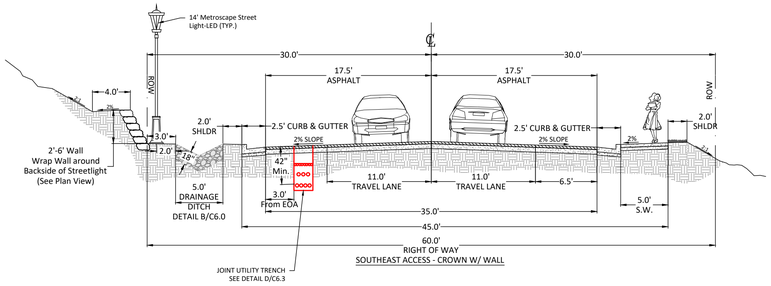


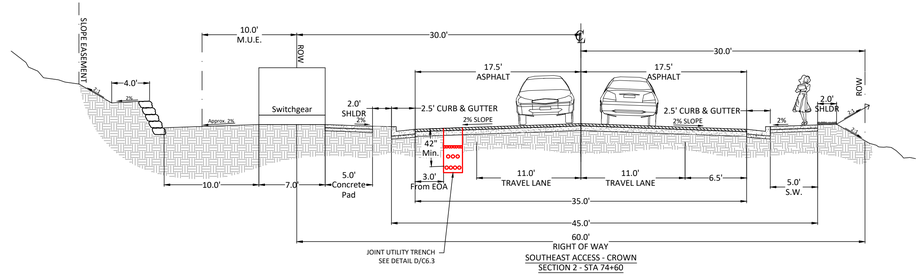
LEGEND

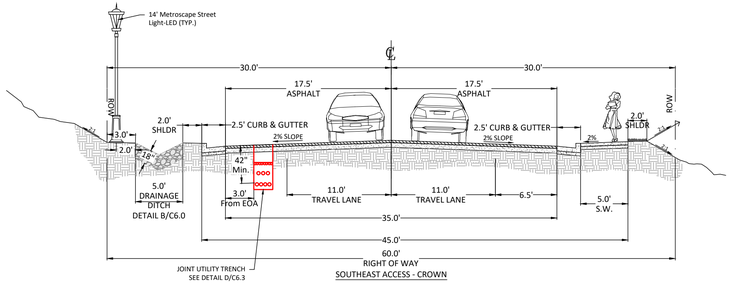
- (4) 3" EMPTY CONDUITS
- (1) 2" Conduit w/ #2 Aluminum Triplex
- SLOPE EASEMENT
- 8" GAS LINE (DEVELOPER WILL STAKE CL OF GAS LINES.)
- EXISTING UNDERGROUND POWERLINE
- 14' METROSCAPE STREET LIGHT-LED
- EXISTING POWER VAULT
- NEW SWITCH GEAR
- 35' COBRA HEAD STREET LIGHT-LED

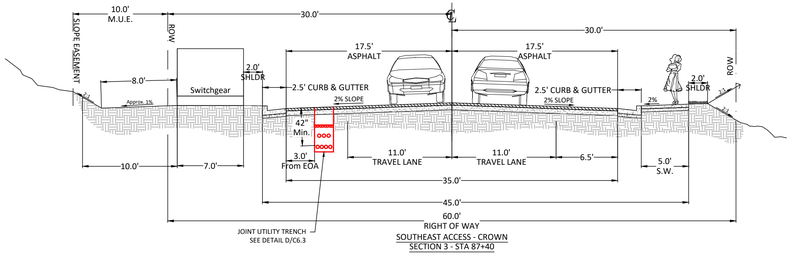
NOTES:

1. See Detail D/C6.3 for typical Joint Utility Trench Detail
2. All Sweeps for 750 power into the concrete vaults shall be concrete encased. Coordinate with SGES.









Date: 10-19-2023

REVISIONS

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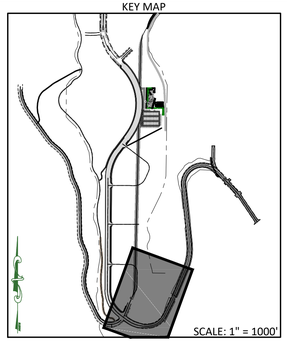
File Name
East Access Pwr & Gas OPT 2.dwg

KEY MAP



GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
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435-673-8060

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

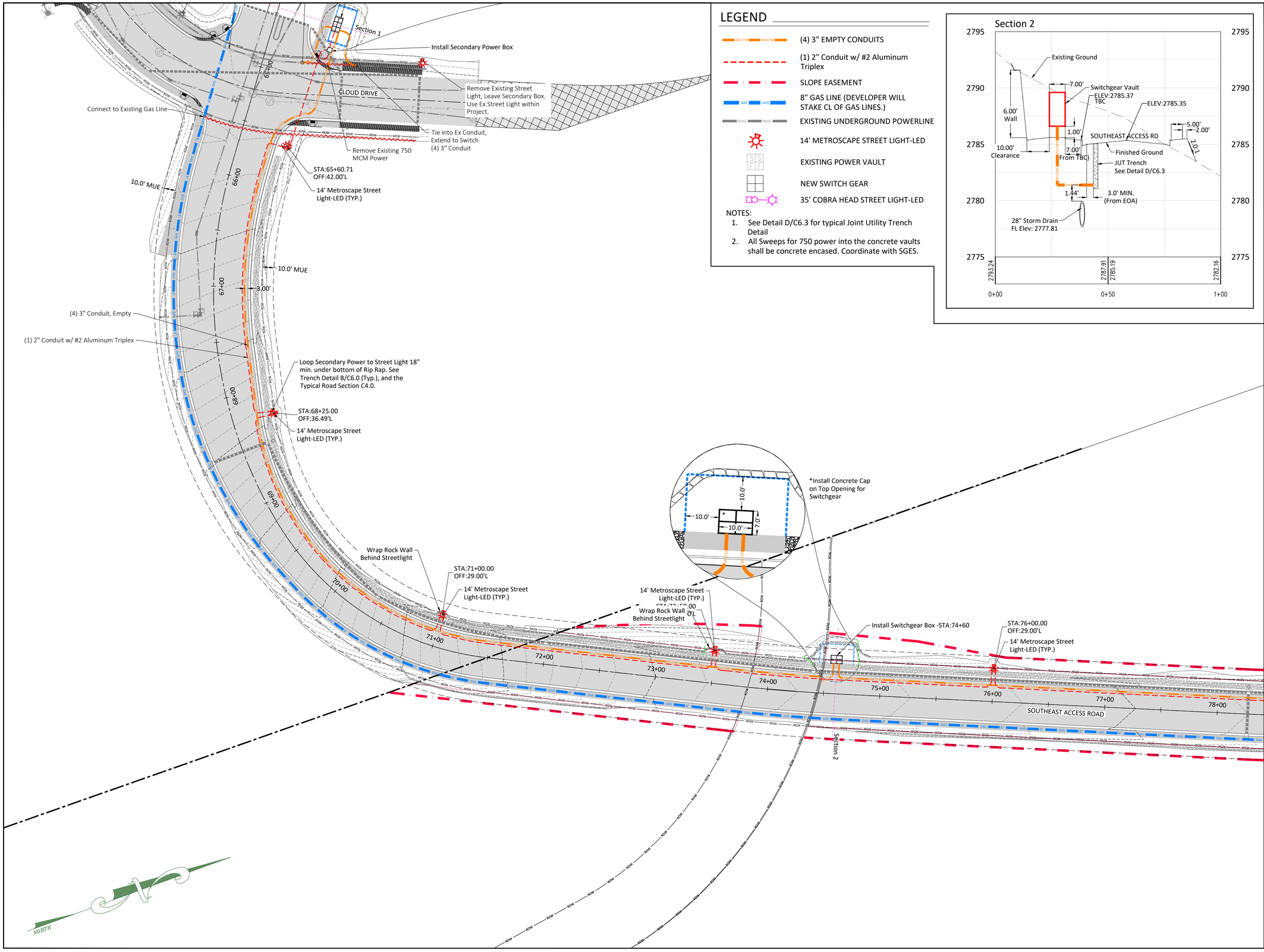
SOUTHEAST ACCESS ROAD
POWER AND GAS
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
TOWNSHIP 24 SOUTH, RANGE 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION
REVIEW ONLY

Drawn By:	Scale:
AZ	1"=40'
Client No. 4568	Project No. 4568

Drawing Sheet
C4.1

Sheet 24 of 41 Sheets



LEGEND

- (4) 3" EMPTY CONDUITS
- (1) 2" Conduit w/ #2 Aluminum Triplex
- SLOPE EASEMENT
- 8" GAS LINE (DEVELOPER WILL STAKE CL OF GAS LINES.)
- EXISTING UNDERGROUND POWERLINE
- 14' METROSCAPE STREET LIGHT-LED
- EXISTING POWER VAULT
- NEW SWITCH GEAR
- 35' COBRA HEAD STREET LIGHT-LED

NOTES:

1. See Detail D/C6.3 for typical Joint Utility Trench Detail
2. All Sweeps for 750 power into the concrete vaults shall be concrete encased. Coordinate with SGES.

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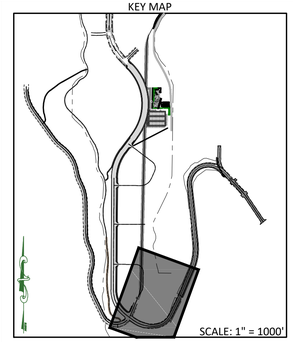

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701-572-8100

SOUTHEAST ACCESS ROAD POWER AND GAS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
TOWNSHIP 24 SOUTH, RANGE 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

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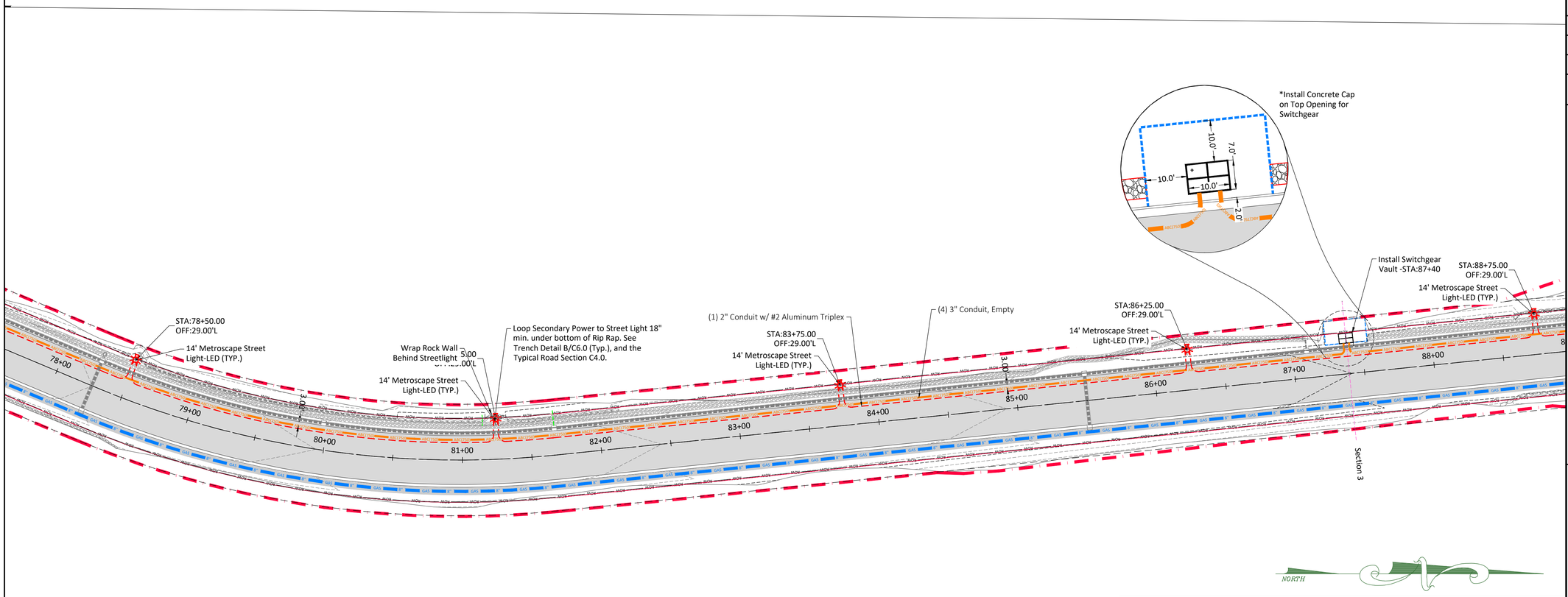
Drawn By:	Scale:
AZ	1"=40'
Client No. 4568	Project No. 4568

Drawing Sheet
C4.2

Sheet 25 of 41 Sheets

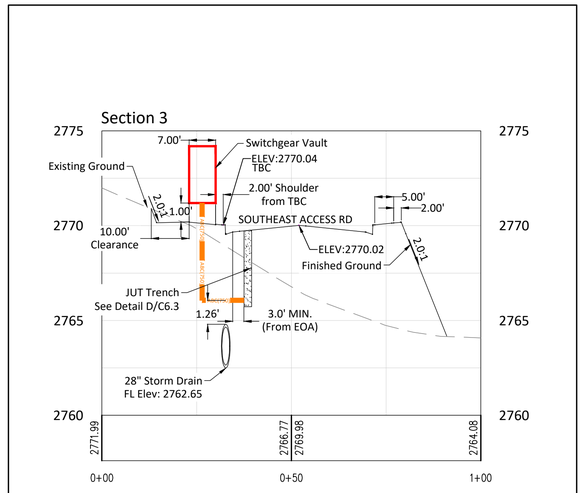


LEGEND

- (4) 3" EMPTY CONDUITS
- (1) 2" Conduit w/ #2 Aluminum Triplex
- SLOPE EASEMENT
- 8" GAS LINE (DEVELOPER WILL STAKE CL OF GAS LINES.)
- EXISTING UNDERGROUND POWERLINE
- 14' METROSCAPE STREET LIGHT-LED
- EXISTING POWER VAULT
- NEW SWITCH GEAR
- 35' COBRA HEAD STREET LIGHT-LED

NOTES:

1. See Detail D/C6.3 for typical Joint Utility Trench Detail
2. All Sweeps for 750 power into the concrete vaults shall be concrete encased. Coordinate with SGES.



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REVISIONS

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File Name
East Access Pwr & Gas OPT 2.dwg

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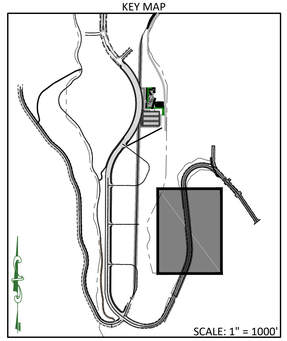

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FOR
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LOCATED IN SEC 36
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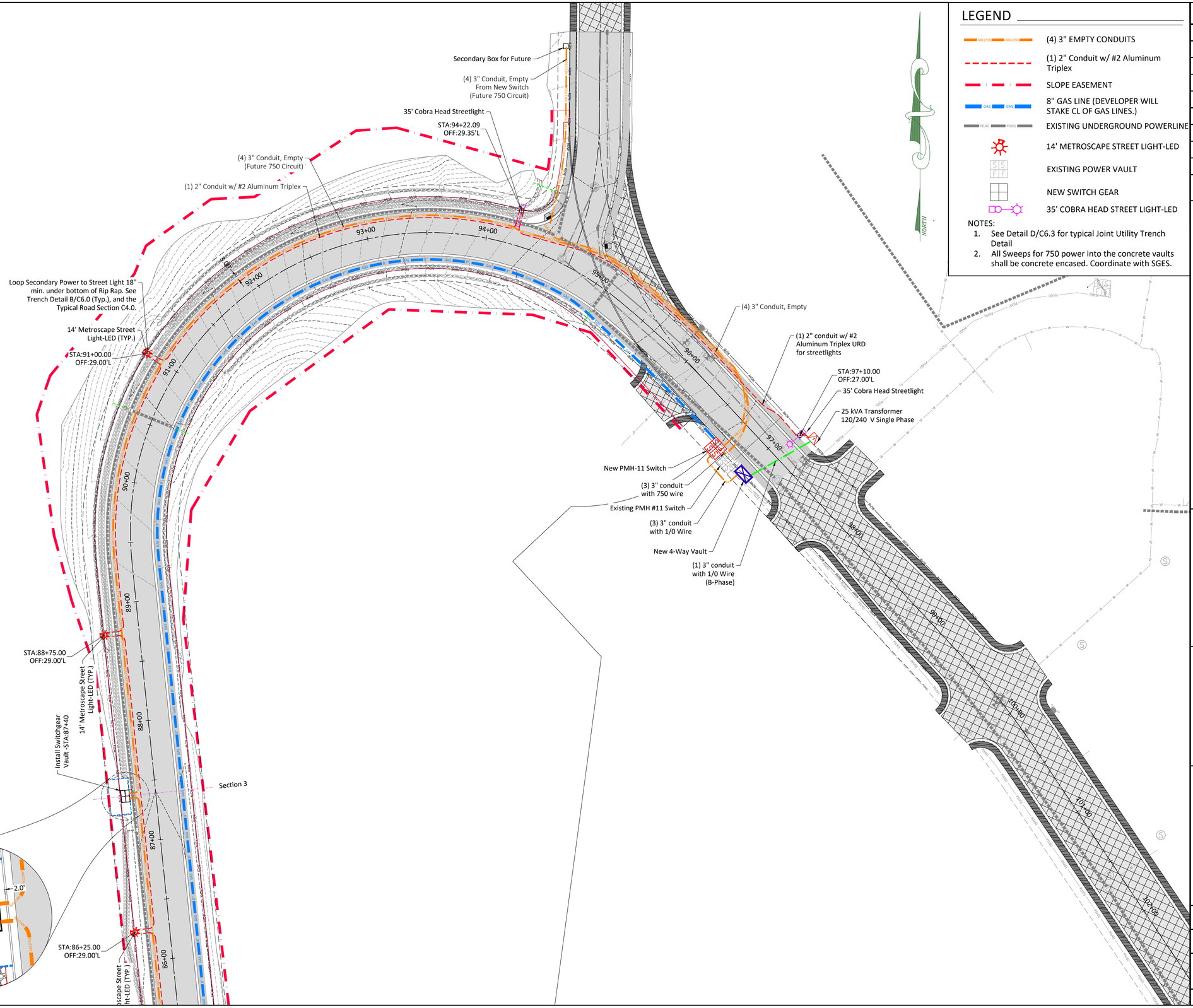
Drawing Sheet
C4.3

Sheet 26 of 41 Sheets



LEGEND

- (4) 3" EMPTY CONDUITS
- (1) 2" Conduit w/ #2 Aluminum Triplex
- SLOPE EASEMENT
- 8" GAS LINE (DEVELOPER WILL STAKE CL OF GAS LINES.)
- EXISTING UNDERGROUND POWERLINE
- 14' METROSCAPE STREET LIGHT-LED
- EXISTING POWER VAULT
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- 35' COBRA HEAD STREET LIGHT-LED

NOTES:

1. See Detail D/C6.3 for typical Joint Utility Trench Detail
2. All Sweeps for 750 power into the concrete vaults shall be concrete encased. Coordinate with SGES.

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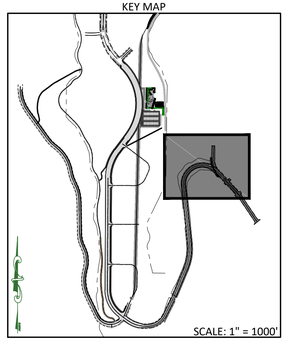

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SOUTHEAST ACCESS ROAD POWER AND GAS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
TOWNSHIP 24 SOUTH, RANGE 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

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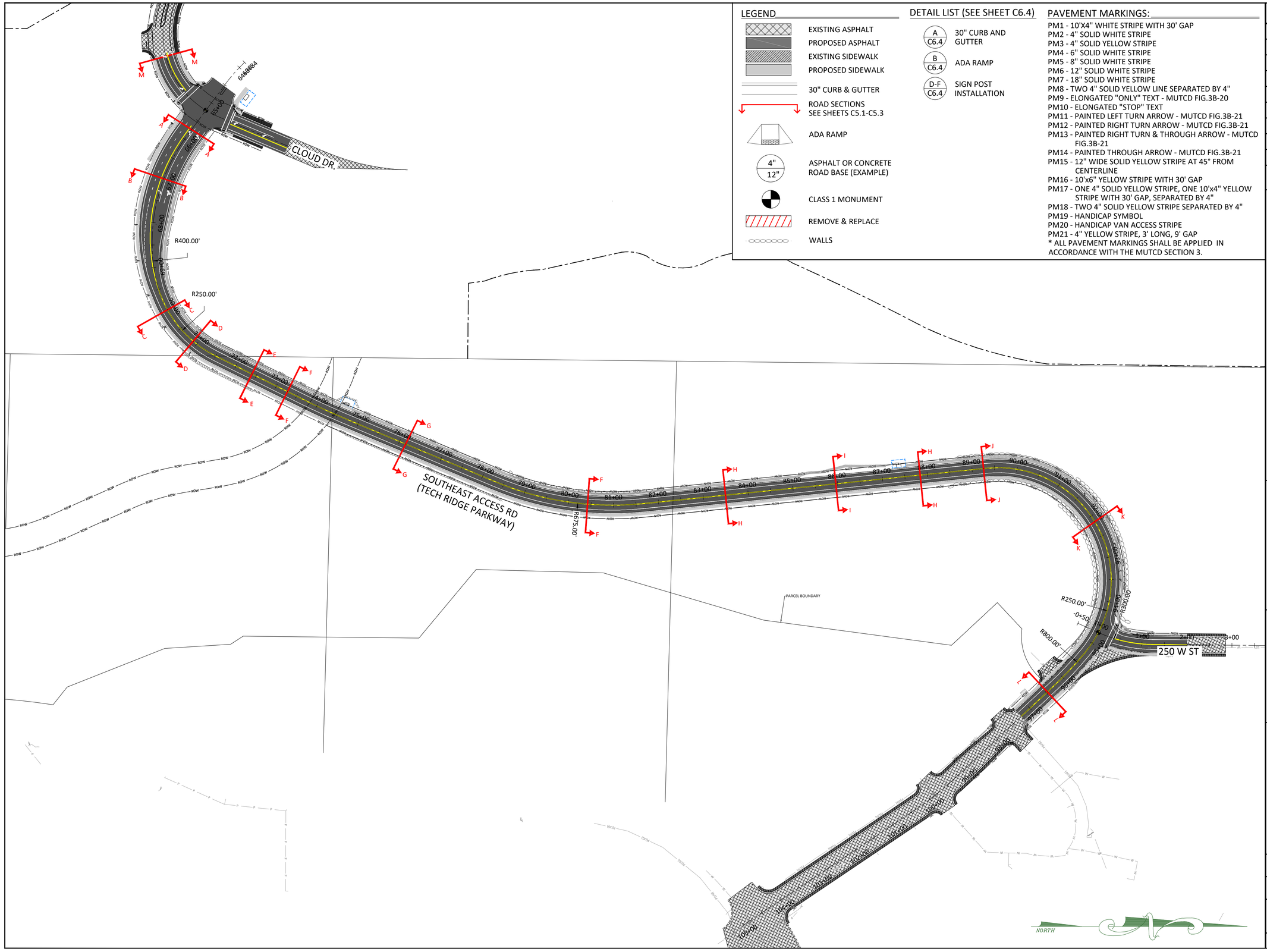
Drawn By:	Scale:
AZ	1"=40'
Client No. 4568	Project No. 4568

Drawing Sheet
C4.4

Sheet 27 of 41 Sheets



LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- 30" CURB & GUTTER
- ROAD SECTIONS SEE SHEETS C5.1-C5.3
- ADA RAMP
- 4" / 12" ASPHALT OR CONCRETE ROAD BASE (EXAMPLE)
- CLASS 1 MONUMENT
- REMOVE & REPLACE
- WALLS

DETAIL LIST (SEE SHEET C6.4)

- A / C6.4 — 30" CURB AND GUTTER
- B / C6.4 — ADA RAMP
- D-F / C6.4 — SIGN POST INSTALLATION

PAVEMENT MARKINGS:

PM1 - 10'X4" WHITE STRIPE WITH 30' GAP
PM2 - 4" SOLID WHITE STRIPE
PM3 - 4" SOLID YELLOW STRIPE
PM4 - 6" SOLID WHITE STRIPE
PM5 - 8" SOLID WHITE STRIPE
PM6 - 12" SOLID WHITE STRIPE
PM7 - 18" SOLID WHITE STRIPE
PM8 - TWO 4" SOLID YELLOW LINE SEPARATED BY 4"
PM9 - ELONGATED "ONLY" TEXT - MUTCD FIG.3B-20
PM10 - ELONGATED "STOP" TEXT
PM11 - PAINTED LEFT TURN ARROW - MUTCD FIG.3B-21
PM12 - PAINTED RIGHT TURN ARROW - MUTCD FIG.3B-21
PM13 - PAINTED RIGHT TURN & THROUGH ARROW - MUTCD FIG.3B-21
PM14 - PAINTED THROUGH ARROW - MUTCD FIG.3B-21
PM15 - 12" WIDE SOLID YELLOW STRIPE AT 45° FROM CENTERLINE
PM16 - 10'x6" YELLOW STRIPE WITH 30' GAP
PM17 - ONE 4" SOLID YELLOW STRIPE, ONE 10'x4" YELLOW STRIPE WITH 30' GAP, SEPARATED BY 4"
PM18 - TWO 4" SOLID YELLOW STRIPE SEPARATED BY 4"
PM19 - HANDICAP SYMBOL
PM20 - HANDICAP VAN ACCESS STRIPE
PM21 - 4" YELLOW STRIPE, 3' LONG, 9' GAP
* ALL PAVEMENT MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MUTCD SECTION 3.

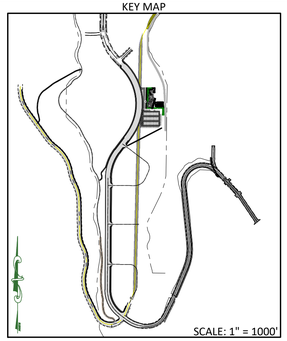
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access Paving OPT 2.dwg

KEY MAP



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SOUTHEAST ACCESS ROAD AT TECH RIDGE PAVING OVERALL

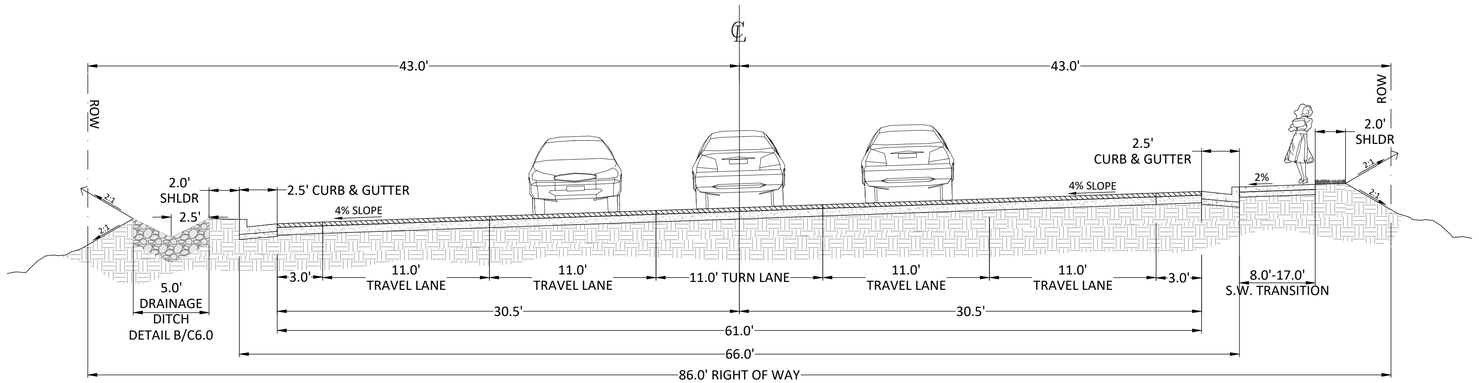
FOR
CITY OF ST. GEORGE
LOCATED IN
ST. GEORGE CITY
WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION
REVIEW ONLY

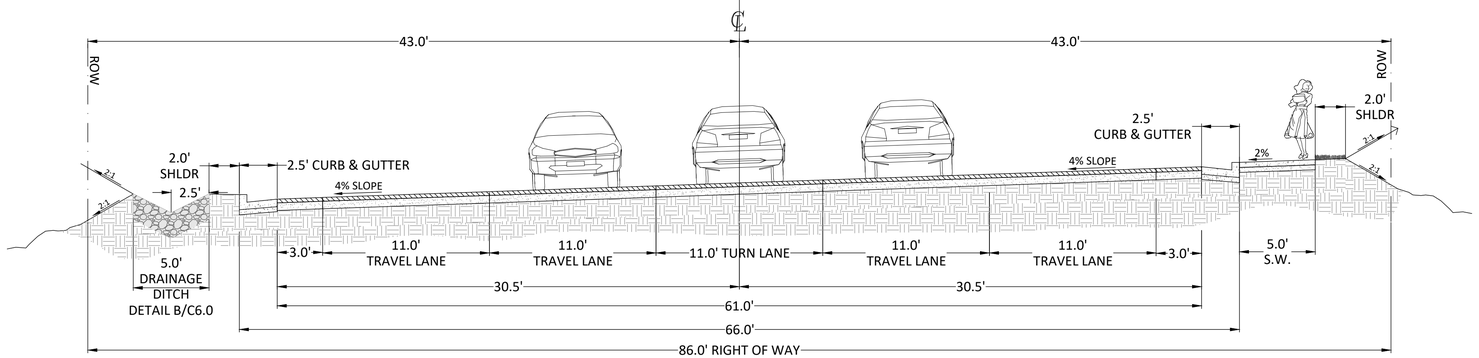
Drawn By: AZ	Scale: 1"=100'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C5.0

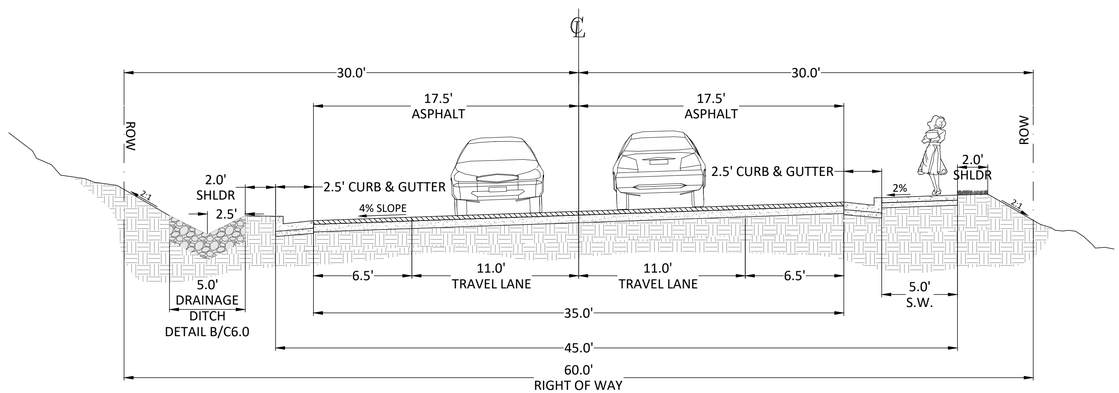
Sheet 28 of 41 Sheets



SOUTHEAST ACCESS - SUPER
SECTION A-A
STA 65+71.47 TO 66+75.0



SOUTHEAST ACCESS - SUPER
SECTION B-B
STA 66+75.0 TO 67+52.50



SOUTHEAST ACCESS-SUPER
SECTION C-C
STA 69+62+60 TO 70+80.0

Date: 10-19-2023

REVISIONS

No.	Date	by	Description

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ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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

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

SOUTHEAST ACCESS ROAD CROSS-SECTIONS

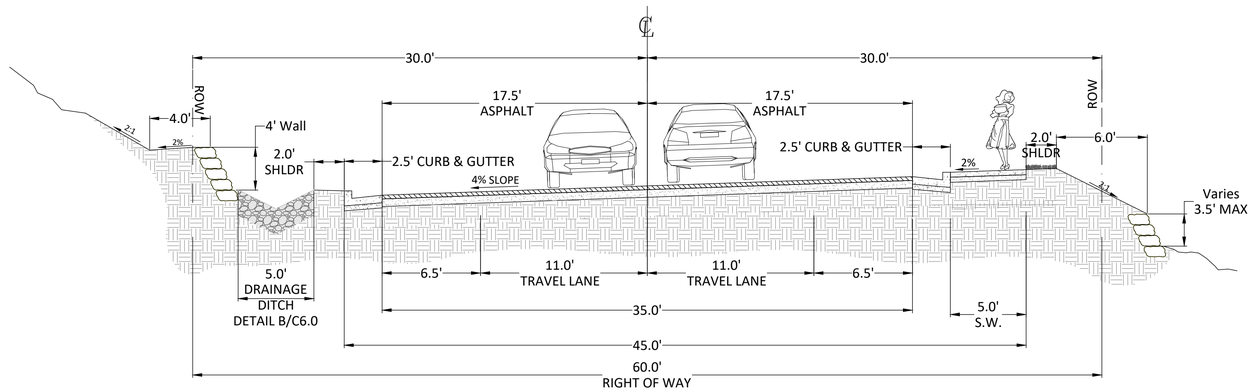
FOR
CITY OF ST. GEORGE
LOCATED IN
ST. GEORGE CITY
WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION
REVIEW ONLY

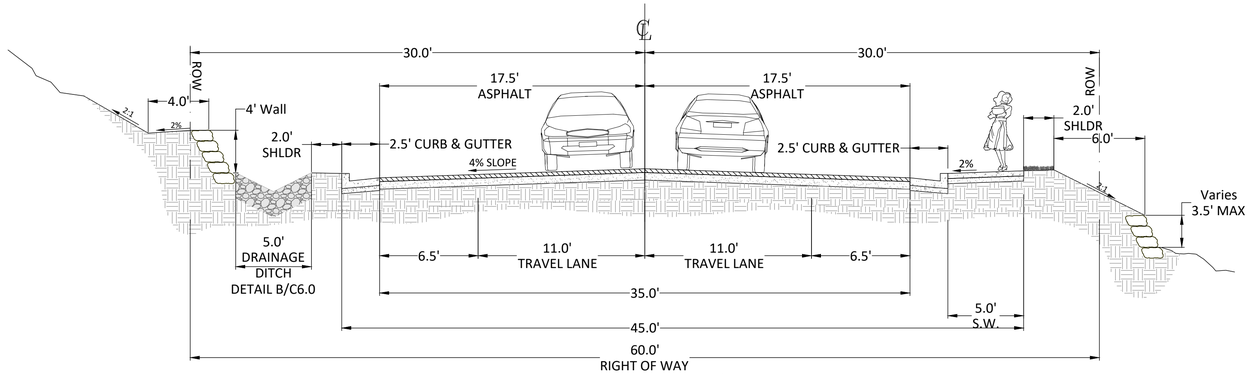
Drawn By:	Scale:
AZ	NONE
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C5.1

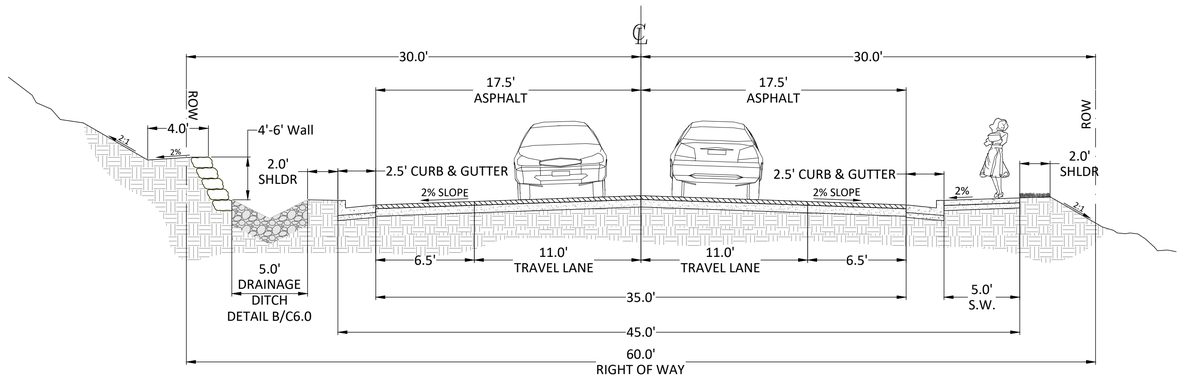
Sheet 29 of 41 Sheets



SOUTHEAST ACCESS - SUPER W/ WALLS
SECTION D-D
STA 70+80.0 TO 72+35.0



SOUTHEAST ACCESS - CROWN W/ WALLS
SECTION E-E
STA 72+35.0 TO 72+60.0



SOUTHEAST ACCESS - CROWN W/ WALL LEFT
SECTION F-F
STA 72+60.00 TO 74+44.90
STA 78+60.00 TO 82+15.50

Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access Paving OPT 2.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
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435-673-8060

NORTH DAKOTA
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WILLISTON, ND 58801
701-572-8100

SOUTHEAST ACCESS ROAD CROSS SECTIONS

FOR
CITY OF ST. GEORGE
LOCATED IN
ST. GEORGE CITY
WASHINGTON COUNTY, UT

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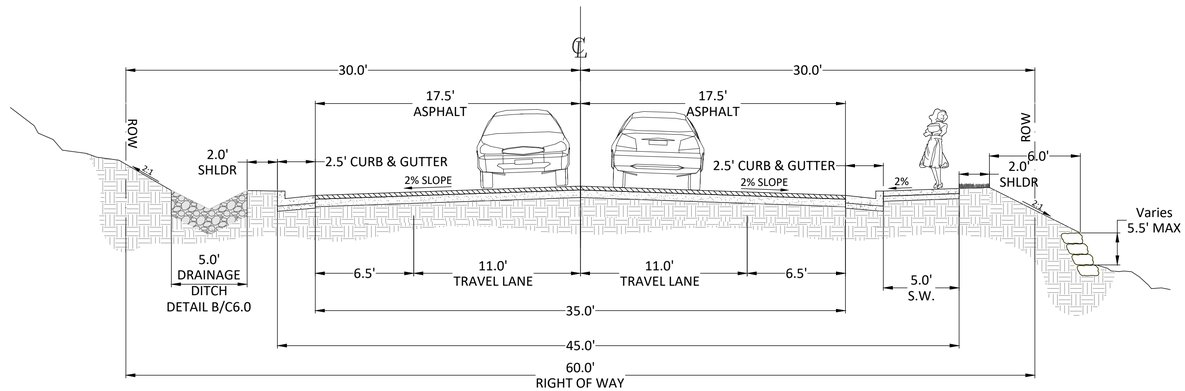
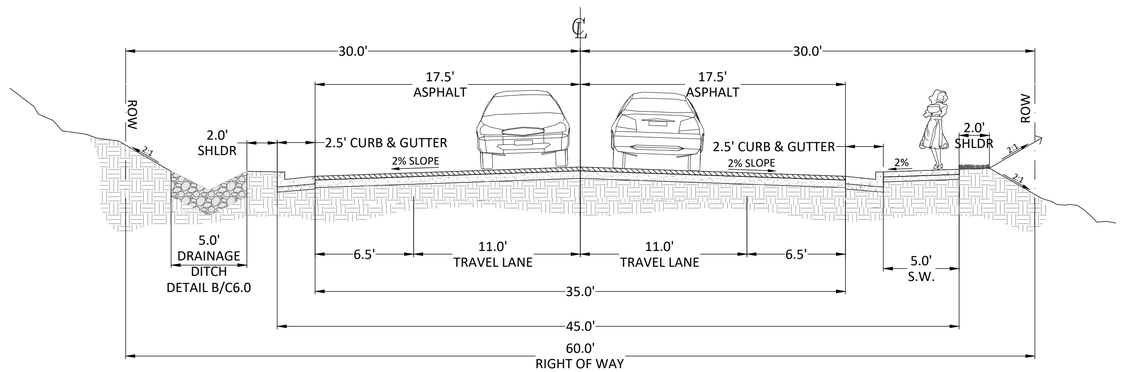
AZ	NONE
Client No. 4568-21	Project No. 4568-21

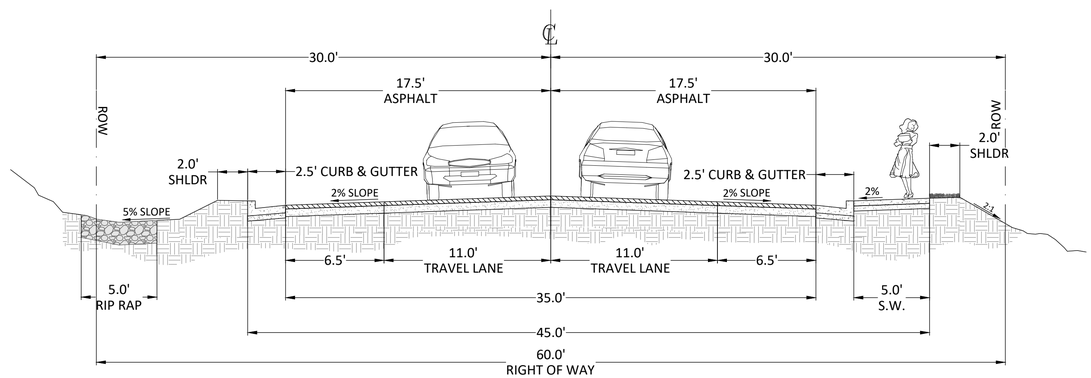
Drawing Sheet
C5.2



SOUTHEAST ACCESS - CROWN W/ WALL RIGHT
SECTION G-G
STA 74+80.0 TO 78+60.0



SOUTHEAST ACCESS - CROWN
SECTION H-H
STA 82+15.50 TO 85+10
STA 87+10.0 TO 88+48.42



SOUTHEAST ACCESS - CROWN
SECTION I-I
STA 85+10.0 TO 87+10.0

Date: 10-19-2023

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SOUTHEAST ACCESS ROAD CROSS SECTIONS

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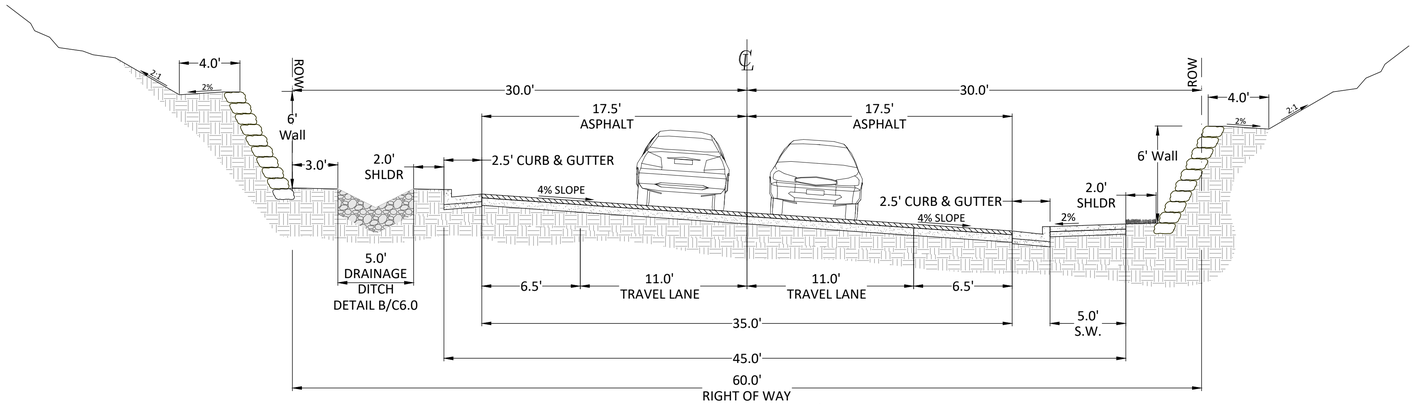
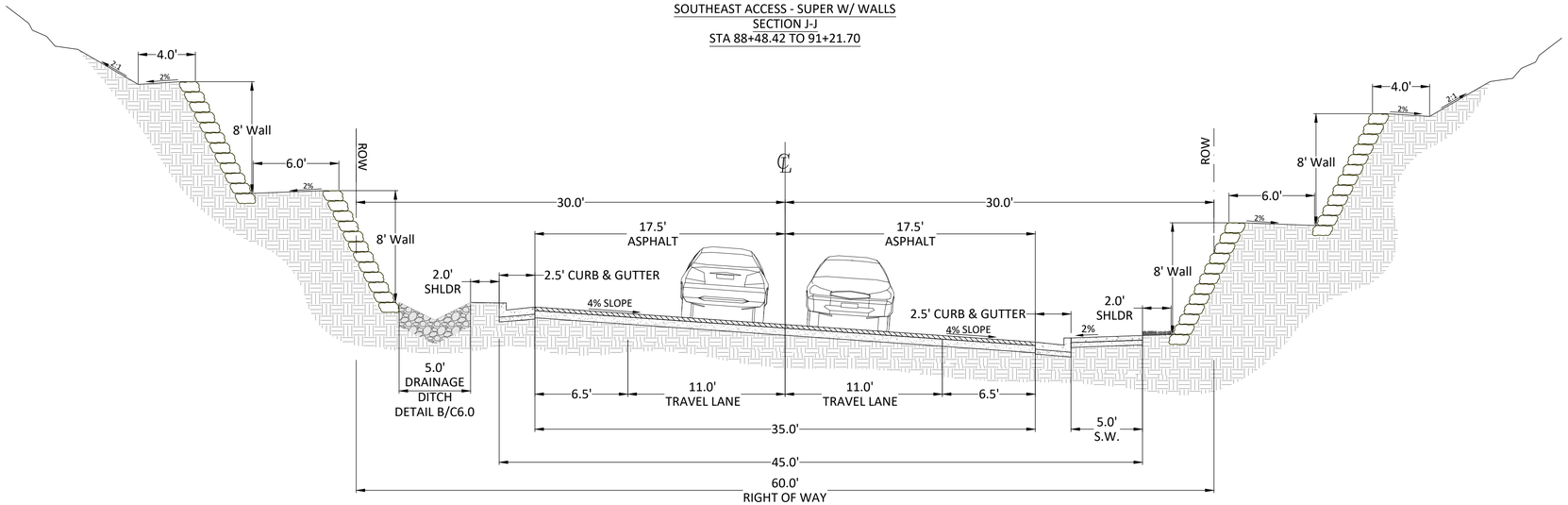
Drawn By:	Scale:
AZ	NONE
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C5.3

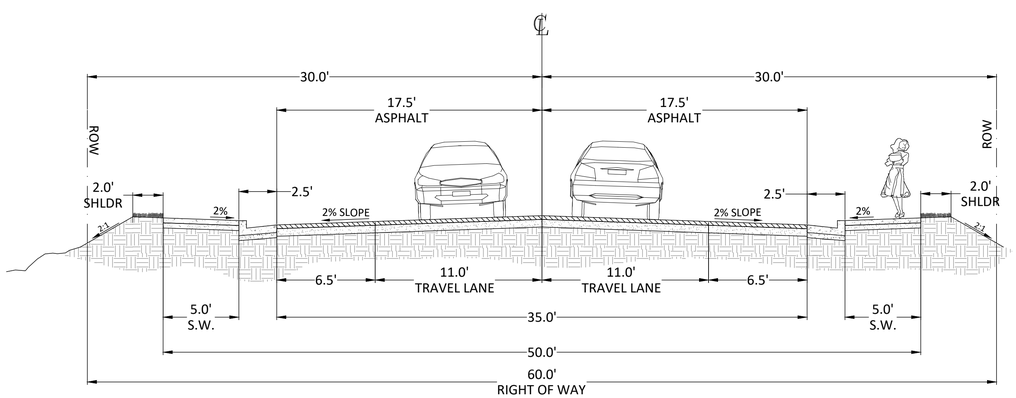
Sheet 31 of 41 Sheets



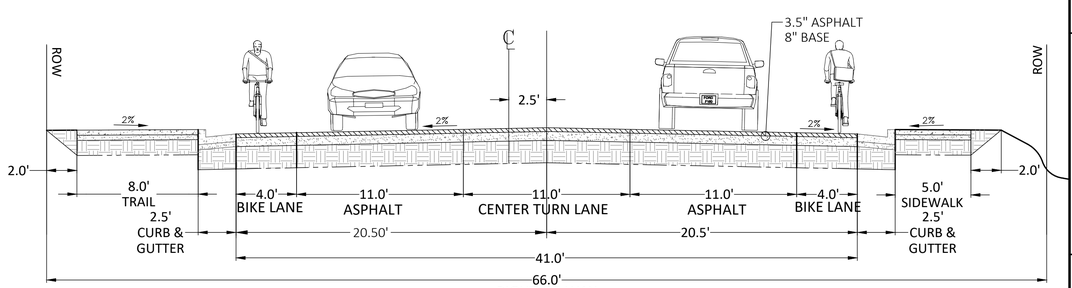
SOUTHEAST ACCESS - SUPER W/ WALLS
SECTION J-J
STA 88+48.42 TO 91+21.70



SOUTHEAST ACCESS - SUPER W/ 2 TIER WALLS
SECTION K-K
STA 91+21.70 TO 94+23.30



SOUTHEAST ACCESS - CROWN
SECTION L-L
STA 95+38.50 TO 97+26.00



CLOUD DRIVE - CROWN
SECTION M-M

Date:
10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access Paving OPT 2.dwg

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SOUTHEAST ACCESS ROAD
CROSS SECTIONS

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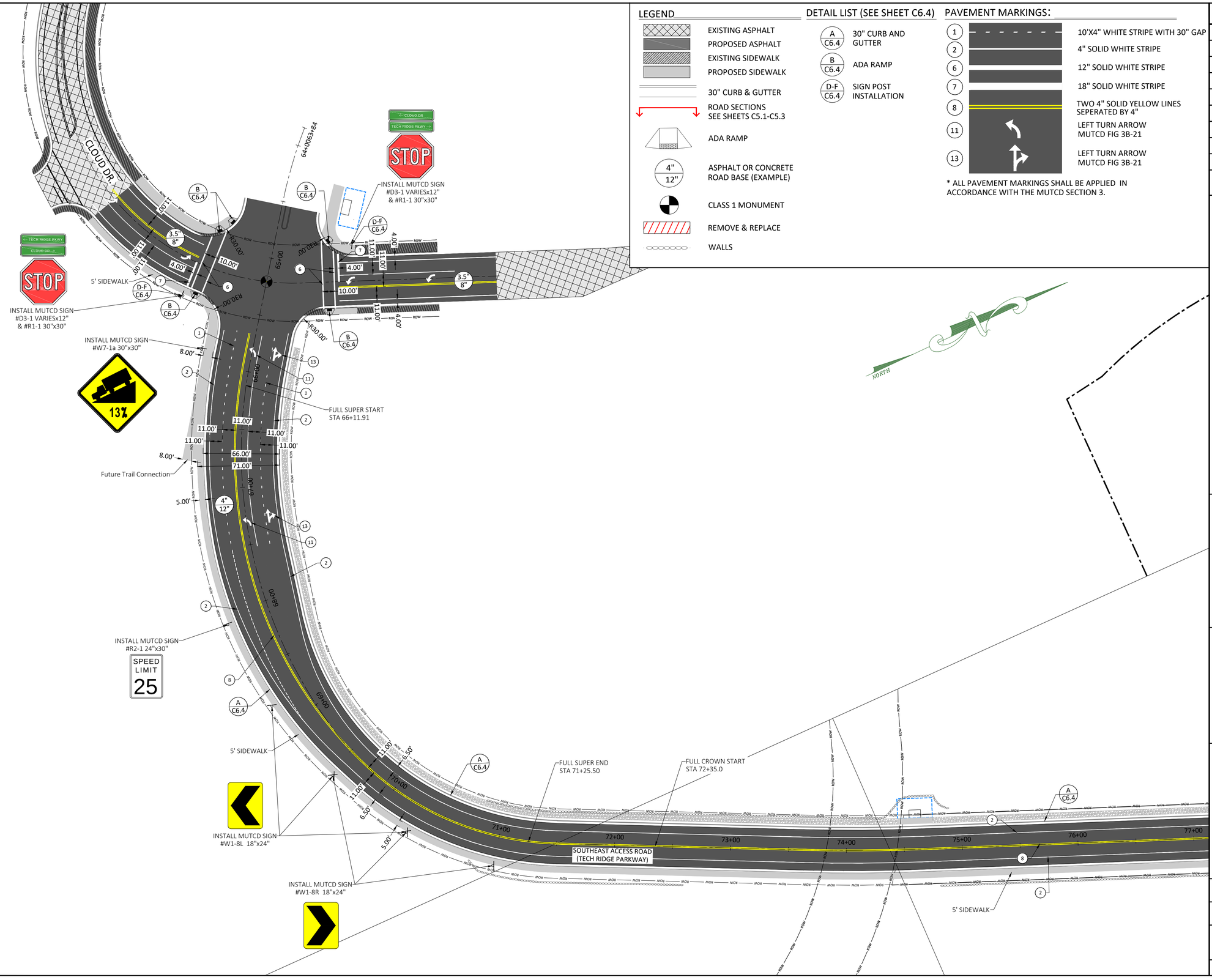
Drawn By:	Scale:
AZ	NONE
Client No.	Project No.
4568-21	4568-21

Drawing Sheet
C5.4

Sheet 32 of 41 Sheets



LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- 30" CURB & GUTTER
- ROAD SECTIONS SEE SHEETS C5.1-C5.3
- ADA RAMP
- ASPHALT OR CONCRETE ROAD BASE (EXAMPLE)
- CLASS 1 MONUMENT
- REMOVE & REPLACE
- WALLS

DETAIL LIST (SEE SHEET C6.4)

- A C6.4 — 30" CURB AND GUTTER
- B C6.4 — ADA RAMP
- D-F C6.4 — SIGN POST INSTALLATION

PAVEMENT MARKINGS:

- 1 — 10'X4" WHITE STRIPE WITH 30" GAP
- 2 — 4" SOLID WHITE STRIPE
- 6 — 12" SOLID WHITE STRIPE
- 7 — 18" SOLID WHITE STRIPE
- 8 — TWO 4" SOLID YELLOW LINES SEPERATED BY 4"
- 11 — LEFT TURN ARROW MUTCD FIG 3B-21
- 13 — LEFT TURN ARROW MUTCD FIG 3B-21

* ALL PAVEMENT MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MUTCD SECTION 3.

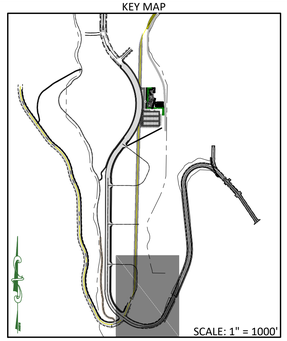
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name: East Access Paving OPT 2.dwg

KEY MAP



GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.
If Printed 11x17 use Half Scale

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SOUTHEAST ACCESS ROAD PAVING

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Drawn By:	Scale:
AZ	1"=40'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C5.5

Sheet 33 of 41 Sheets

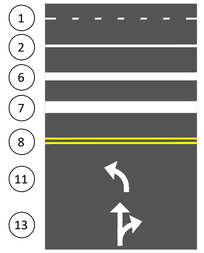
DETAIL LIST (SEE SHEET C6.4)

- A / C6.4 — 30" CURB AND GUTTER
- B / C6.4 — ADA RAMP
- D-F / C6.4 — SIGN POST INSTALLATION

LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- 30" CURB & GUTTER
- ROAD SECTIONS SEE SHEETS C5.1-C5.3
- ADA RAMP
- 4" / 12" — ASPHALT OR CONCRETE ROAD BASE (EXAMPLE)
- CLASS 1 MONUMENT
- REMOVE & REPLACE
- WALLS

PAVEMENT MARKINGS:



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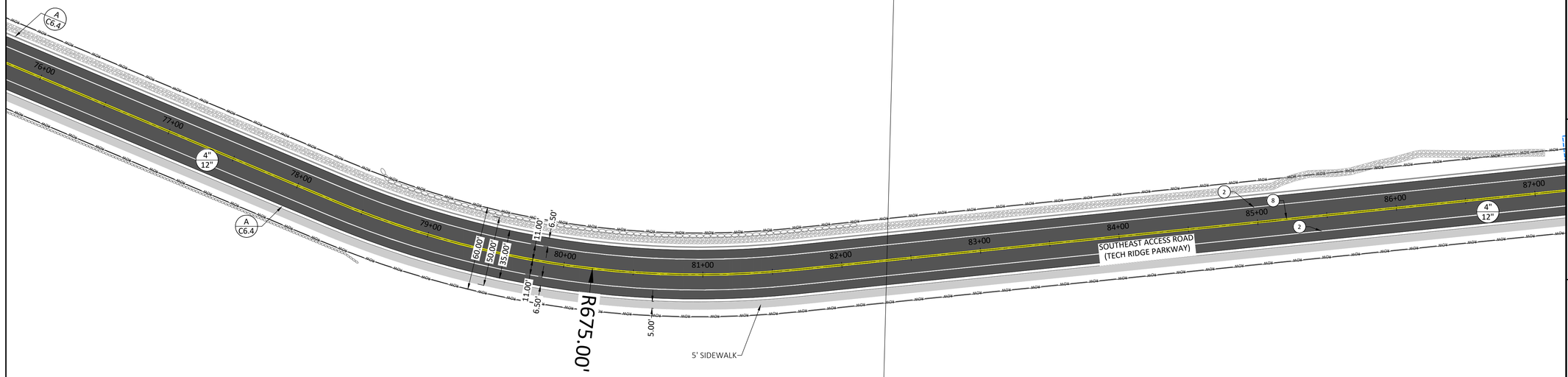
* ALL PAVEMENT MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MUTCD SECTION 3.



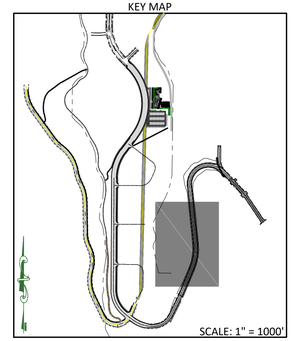
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access Paving OPT 2.dwg

KEY MAP



GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
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SOUTHEAST ACCESS ROAD PAVING

FOR
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LOCATED IN
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NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1"=40'
Client No. 4568-21	Project No. 4568-21

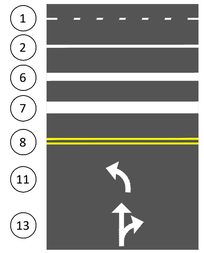
Drawing Sheet
C5.6

Sheet 34 of 41 Sheets

LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- 30" CURB & GUTTER
- ROAD SECTIONS SEE SHEETS C5.1-C5.3
- ADA RAMP
- 4" / 12" ASPHALT OR CONCRETE ROAD BASE (EXAMPLE)
- CLASS 1 MONUMENT
- REMOVE & REPLACE
- WALLS

PAVEMENT MARKINGS:



1. 10'X4" WHITE STRIPE WITH 30" GAP
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11. LEFT TURN ARROW MUTCD FIG 3B-21
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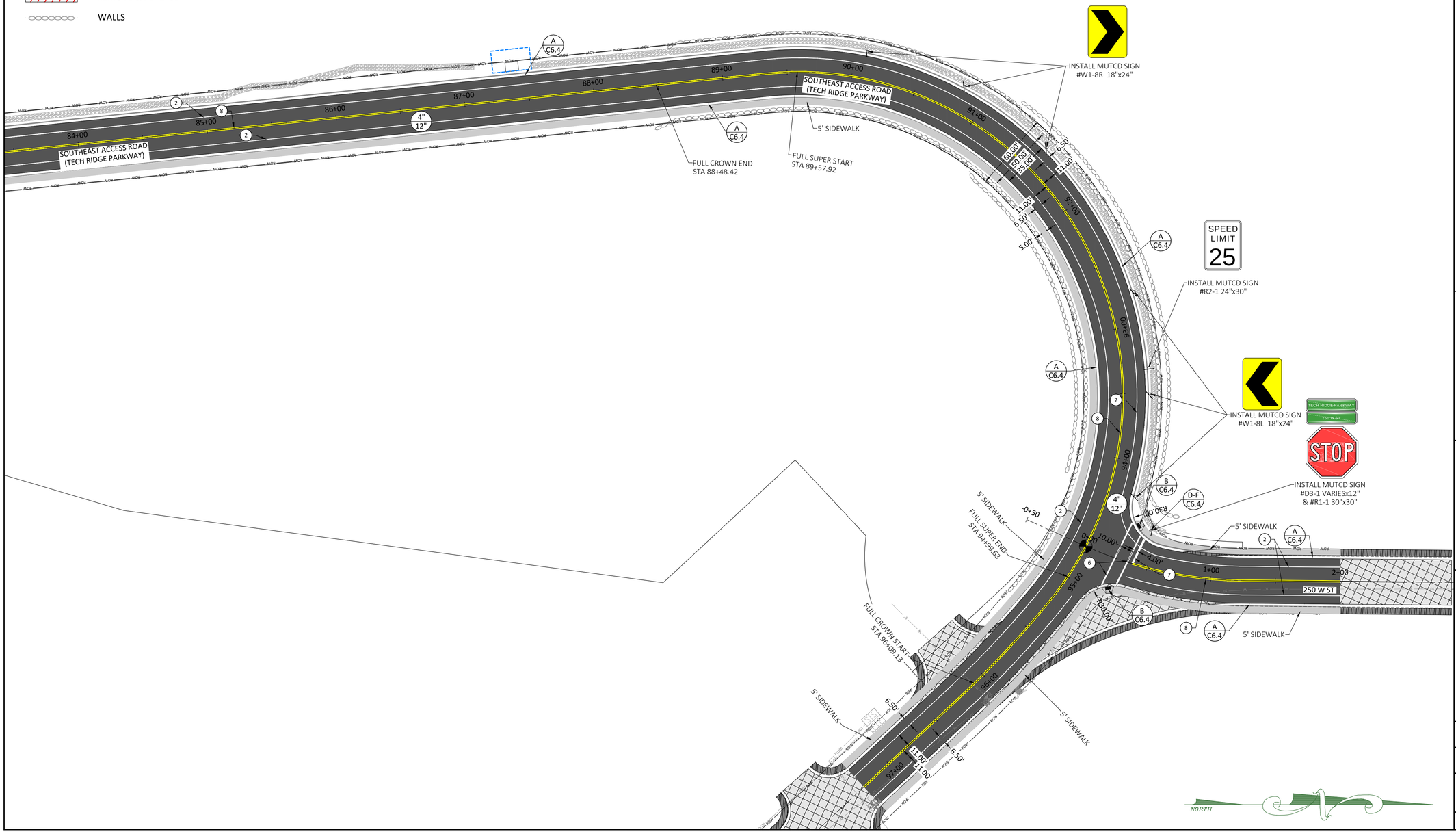
* ALL PAVEMENT MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MUTCD SECTION 3.

DETAIL LIST (SEE SHEET C6.4)

- A C6.4 — 30" CURB AND GUTTER
- B C6.4 — ADA RAMP
- D-F C6.4 — SIGN POST INSTALLATION



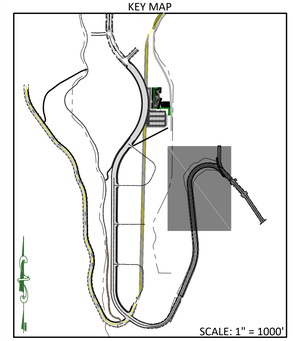
Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name: East Access Paving OPT 2.dwg

KEY MAP



GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.
If Printed 11x17 use Half Scale

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701-572-8100

SOUTHEAST ACCESS ROAD PAVING

FOR
CITY OF ST. GEORGE
LOCATED IN
ST. GEORGE CITY
WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

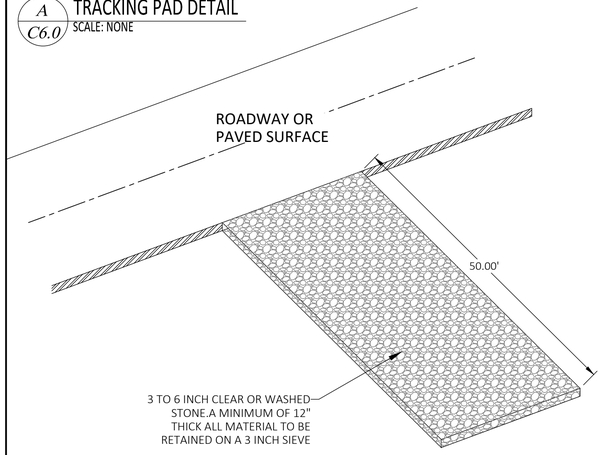
Drawn By:	Scale:
AZ	1"=40'
Client No. 4568-21	Project No. 4568-21

Drawing Sheet: C5.7

Sheet 35 of 41 Sheets

A C6.0 TRACKING PAD DETAIL

SCALE: NONE

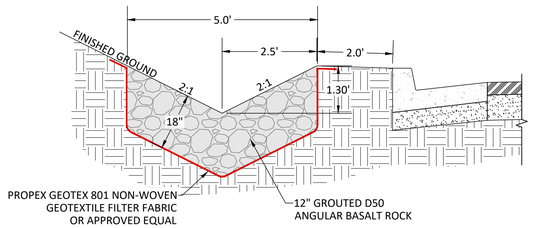


NOTES:

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.

B C6.0 RIP RAP DITCH DETAIL

SCALE: NONE



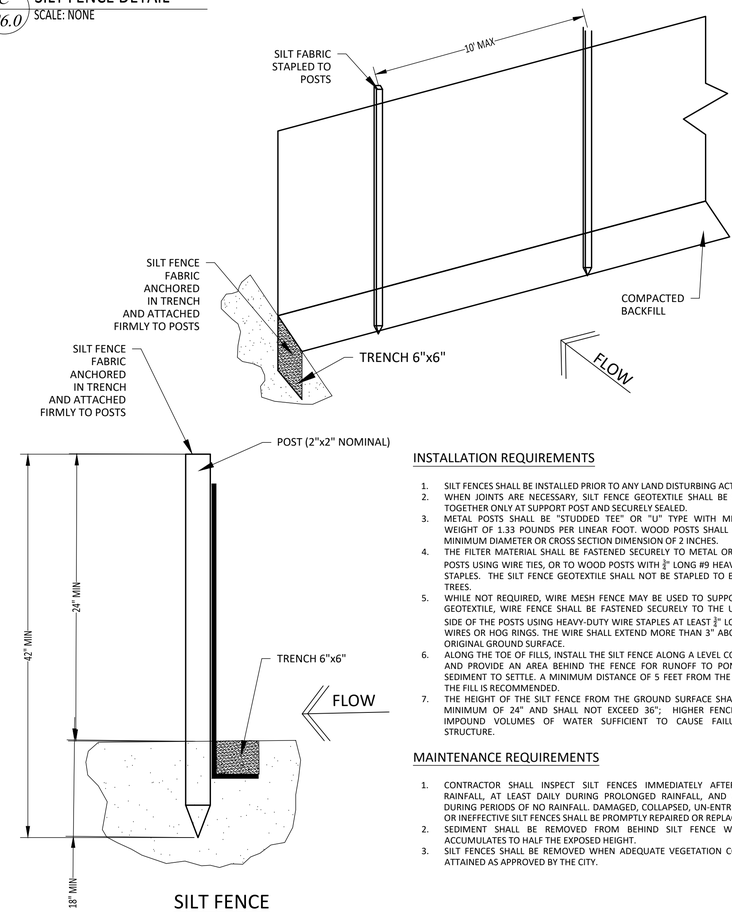
1. FILTER FABRIC SHALL BE PROPEX GEOTEX 801 WOVEN GEOTEXTILE OR AN APPROVED EQUAL. FABRIC SHALL BE PLACED AS SHOWN HEREON AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. CARE SHALL BE TAKEN TO PREVENT FABRIC FROM TEARING DURING ROCK PLACEMENT.
2. ROCK USED FOR HAND PLACED RIP-RAP SHALL BE HARD, 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.

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						

C C6.0 SILT FENCE DETAIL

SCALE: NONE



SILT FENCE

INSTALLATION REQUIREMENTS

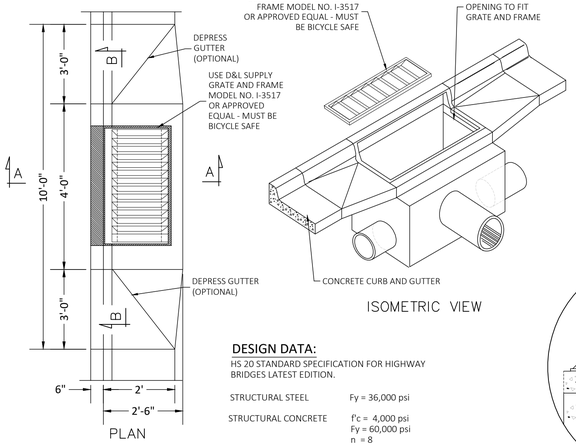
1. SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITY.
2. WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.
3. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
4. THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH $\frac{3}{4}$" LONG #9 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.
5. WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE, WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST $\frac{3}{4}$" LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND MORE THAN 3" ABOVE THE ORIGINAL GROUND SURFACE.
6. ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.
7. THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE A MINIMUM OF 24" AND SHALL NOT EXCEED 36"; HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF STRUCTURE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UN-ENTRENCHED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.
2. SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE EXPOSED HEIGHT.
3. SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATION COVER IS ATTAINED AS APPROVED BY THE CITY.

D C6.0 INLET BOX DETAIL

SCALE: NONE



PLAN

ISOMETRIC VIEW

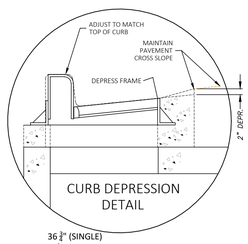
NOTES:

1. USE COATED DEFORMED REINFORCING STEEL BARS CONFORMING TO AASHTO M 284 OR M 111 AND M 31 GRADE 60 RESPECTIVELY.
2. FIELD CUT AND BEND REINFORCING STEEL AS NECESSARY TO CLEAR PIPES AND MAINTAIN 2" COVER. REPAIR ANY DAMAGE OR CUTS TO THE EPOXY COATING ON REINFORCING BARS.
3. USE CLASS AA (AE) CONCRETE.
4. USE TYPE II CEMENT (LOW ALKALI).
5. PROVIDE 2" CONCRETE COVER TO REINFORCING STEEL.
6. FOR NUMBER, LOCATION, AND SIZE OF PIPE SEE ROADWAY PLANS.
7. SEE PLANS FOR DEPRESSION DIMENSIONS.
8. PROVIDE 3/4" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
9. FOR GRATE AND FRAME USE D&L SUPPLY MODEL NO. I-3517 OR APPROVED EQUAL.

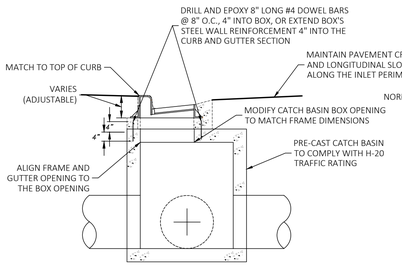
DESIGN DATA:

HS 20 STANDARD SPECIFICATION FOR HIGHWAY BRIDGES LATEST EDITION.

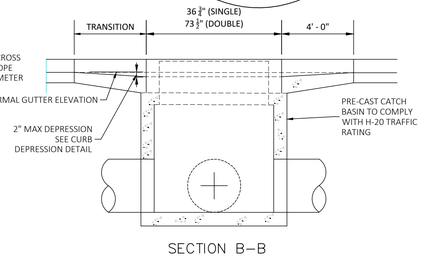
STRUCTURAL STEEL	Fy = 36,000 psi
STRUCTURAL CONCRETE	f'c = 4,000 psi Fy = 60,000 psi n = 8



CURB DEPRESSION DETAIL



SECTION A–A



SECTION B–B

Date: 10-19-2023

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SOUTHEAST ACCESS ROAD
AT TECH RIDGE
DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

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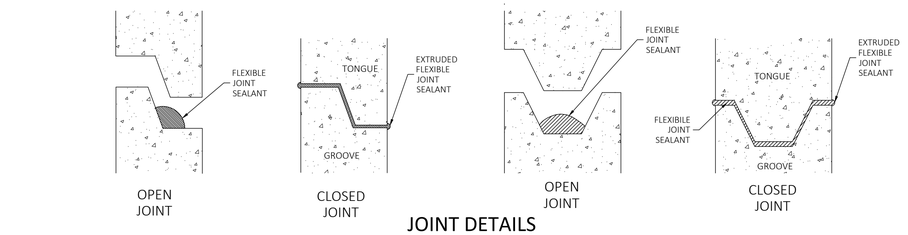
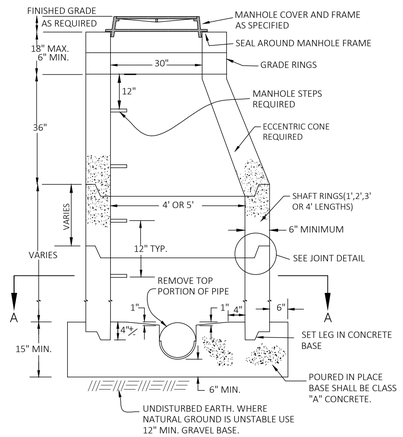
Client No. 4568-21	Project No. 4568-21

Drawing Sheet: C6.0

Sheet 36 of 41 Sheets



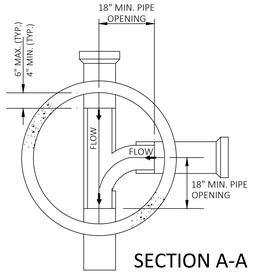
JOINT DETAILS



SECTION THRU CENTER

NOTES:

1. SEE DETAIL NO. 220 OF ST. CEORGE CITY SPECIFICATIONS FOR JUNCTION AND DROP MANHOLE DETAILS AND MANHOLES SIZES.
2. PRECAST BASE MAY BE USED BUT REQUIRES ADVANCED APPROVAL.
3. IF OPTIONAL JOINT IS USED ALL MANHOLE SECTIONS SHALL BE CLEARLY MARKED ON THE INSIDE AS TO THE MANUFACTURER AND TYPE OF JOINT BEING USED.



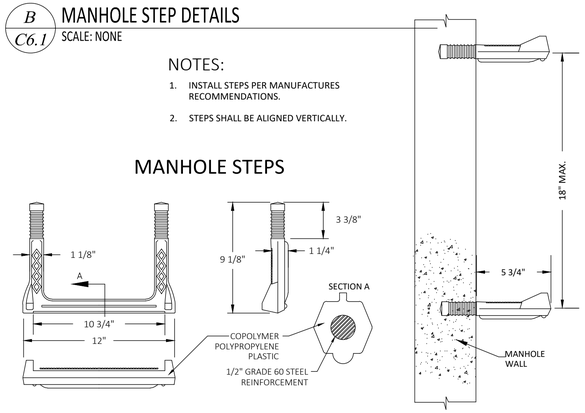
SECTION A-A

A C6.1 SEWER MANHOLE DETAIL
SCALE: NONE

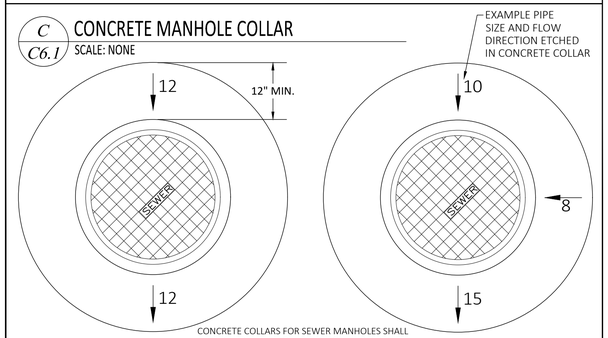
B C6.1 MANHOLE STEP DETAILS
SCALE: NONE

NOTES:

1. INSTALL STEPS PER MANUFACTURES RECOMMENDATIONS.
2. STEPS SHALL BE ALIGNED VERTICALLY.

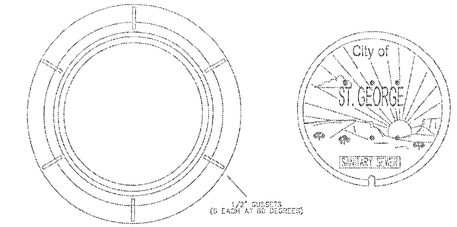


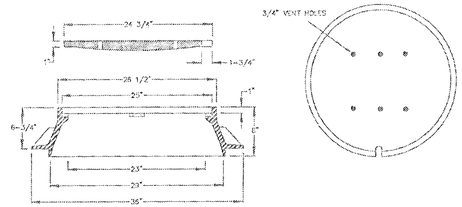
C C6.1 CONCRETE MANHOLE COLLAR
SCALE: NONE



CONCRETE COLLARS FOR SEWER MANHOLES SHALL BE ETCHED WITH FLOW DIRECTION AND PIPE SIZE

D C6.1 MANHOLE FRAME AND COVER
SCALE: NONE



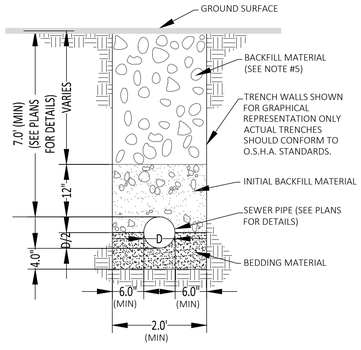


NOTES:
1.- USE D & L MODEL NO. A-1180 OR APPROVED EQUAL.
2.- MUST MEET HS-20 LOADING.

E C6.1 SEWER TRENCH DETAIL
SCALE: NONE

NOTES:

1. ALL EXCAVATIONS WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRE AN ENCROACHMENT PERMIT FROM THE CITY ENCROACHMENT OFFICER.
2. MINIMUM THICKNESS OF ASPHALT AND BASE SHALL BE AS OUTLINED IN THE ROADWAY STRUCTURAL REQUIREMENTS. IN NO CASE SHALL THE THICKNESS BE LESS THAN THE EXISTING.
3. FOUNDATION MATERIAL SHALL BE USED WHEN TRENCH BOTTOM IS UNSTABLE.
4. ALL STATE HIGHWAY CROSSINGS SHALL BE APPROVED BY THE U.D.O.T. DISTRICT ENGINEER (U.D.O.T. PERMIT REQUIRED.)
5. MINIMUM COMPACTION SHALL BE 95%. WHEN APPROVED FLOWABLE FILL OR SLURRY IS USED, COMPACTION TESTING WILL NOT BE REQUIRED.
6. WHEN MATERIAL UNDER THE 6" OVER CUT SLUFFS OFF OR IS REMOVED, BASE SHALL BE COMPACTED TO THE BOTTOM LEVEL OF EXISTING ASPHALT. AN ADDITIONAL 6" IN WIDTH OF ASPHALT SHALL BE CUT, REMOVED AND REPLACED AS PART OF THE OVERALL PATCH.
7. WHERE ROAD SECTION HAS A DESIGNED GRANULAR SUB-BASE, IT SHALL BE REPLACED IN KIND OR WITH ROAD BASE GRAVEL.
8. IN GENERAL, STREET SURFACES LESS THAN 24 MONTHS OLD WILL NOT BE CUT. IF A CUT MUST BE MADE, ADDITIONAL MORE STRICT REQUIREMENTS MAY BE INVOKED. SEE ENCROACHMENT OFFICER.
9. 24 HOUR NOTICE REQUIRED ON ALL INSPECTIONS.
10. ALL TRENCH BACKFILL SHALL MEET MIN. COMPACTION REQUIREMENTS.
11. EXCLUDING EMERGENCY CLOSURES, ALL ROAD CLOSURES AND DETOURS REQUIRE 48 HOURS PRIOR NOTICE.

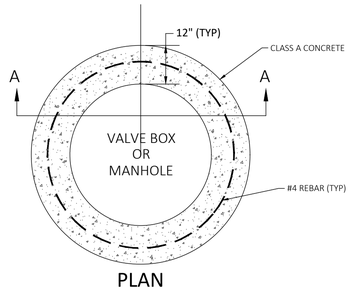


BACKFILL MATERIALS FOR SEWER TRENCHES

SIEVE SIZE	PERCENT PASSING FOR:			
	FOUNDATION MATERIAL*	BEDDING MATERIAL	INITIAL BACKFILL MATERIAL	FINAL BACKFILL MATERIAL
2.00-IN	100	----	----	NATIVE MATERIAL WHICH CONTAINS NO SOD, VEGETATION, ROCKS LARGER THAN 8.00-IN IN DIA., ASPHALT OR CONCRETE CHUNKS, ETC.
0.75-IN	5-15	----	100	
NO. 4	0-5	100	40-70	
NO. 50	----	5-15	20-50	
NO. 100	----	0-5	5-30	

* TO BE USED ONLY WHEN THE TRENCH BOTTOM IS UNSTABLE.

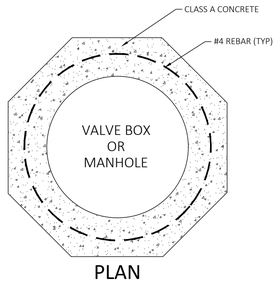
F C6.1 MANHOLE CONRETE COVER
SCALE: NONE



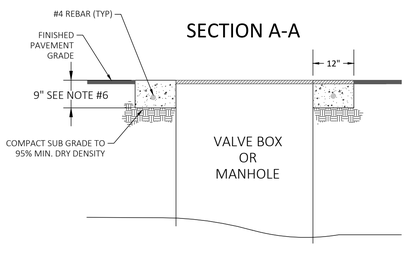
PLAN

NOTES:

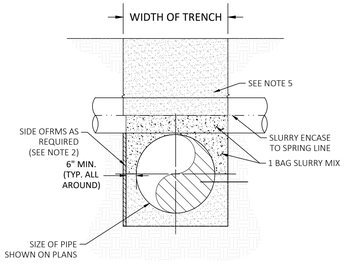
1. MANHOLES, VALVE BOXES AND OTHER SIMILAR ITEMS SHALL BE ADJUSTED TO GRADE AFTER PAVING IS COMPLETE.
2. THE SURFACE OF THE ADJUSTED RING SHALL MATCH THE GRADE OF THE CONCRETE COLLAR. CONCRETE COLLAR SHALL BE 1/8" - 1/4" LOWER THAN ASPHALT.
3. ASPHALT SHALL BE CUT IN STRAIGHT VERTICAL LINES.
4. ADJUSTMENTS TO GRADE SHALL BE MADE WITH STANDARD RINGS OR EXTENSIONS OR AS APPROVED BY THE CITY REPRESENTATIVE.
5. ALL MANHOLES, VALVE BOXES AND OTHER SIMILAR ITEMS SHALL HAVE CONCRETE COLLAR AS REQUIRED UNLESS OTHERWISE APPROVED.
6. 9" THICK COLLARS SHALL BE REINFORCED. 12" THICK COLLARS DO NOT REQUIRE REINFORCEMENT.
7. MARK CONCRETE COLLAR ON WATER VALVE BOXES WITH ARROW INDICATING DIRECTION OF FLOW.
8. MANHOLE LID SHALL COMPLY WITH ST. GEORGE CITY STANDARDS.



PLAN
OPTIONAL



G C6.1 SLURRY ENCASEMENT
SCALE: NONE



END SECTION

NOTES:

1. THIS DETAIL SHALL BE REQUIRED WHEN NEW OR EXISTING PIPE INSTALLATIONS WILL BE SUBJECT TO DAMAGE ANYTIME IN THE FUTURE DUE TO LACK OF PROPER COVER OR WHEN MINIMUM SEPARATION BETWEEN CROSSING OR ADJACENT UTILITIES CAN NOT BE MAINTAINED, AS DETERMINED BY THE ENGINEER.
2. FOR PIPE OVER 18" I.D., WOOD, METAL, OR GYPSUM BOARD FORMS MUST BE USED TO FORM THE SIDES OF THE ENCASEMENT. GYPSUM BOARD FORMS MAY BE LEFT IN THE GROUND BELOW THE TOP OF THE ENCASEMENT. THIS SHALL BE OPTIONAL WITH POURING AGAINST TRENCH WALLS FOR ENCASEMENT OF 18" AND SMALLER PIPE.
3. FOR ALL SITUATIONS WHERE SIDE FORMS ARE USED, TRENCH WALLS SHALL BE OVER-EXCAVATED TO ALLOW SUFFICIENT ROOM TO OPERATE PROPER MECHANICAL COMPACTION EQUIPMENT.
4. SLURRY WHICH SPILLS BEYOND 12" FROM THE SIDES OF THE PIPE FOR ANY REASON SHALL BE REMOVED BACK TO THE PROPER LINE PRIOR TO BACKFILLING.
5. COVER TO BE APPROVED BY ENGINEER.
6. THE SLURRY ENCASEMENT SHALL HAVE A MINIMUM THICKNESS ON ALL SIDES OF 6"

Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
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ALLIANCE CONSULTING
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WILLISTON, ND 58801
701-572-8100

SOUTHEAST ACCESS ROAD
AT TECH RIDGE
DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION REVIEW ONLY

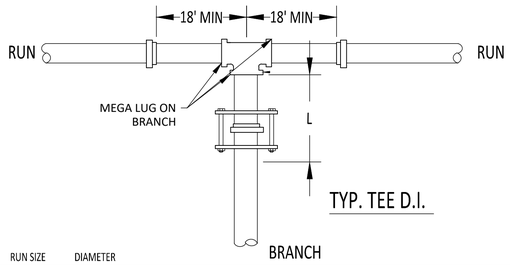
Drawn By:	Scale:
AZ	NONE
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C6.1

Sheet 37 of 41 Sheets

A C6.2 MECHANICAL JOINT DETAIL-D.I.

SCALE: NONE



TYP. TEE D.I.

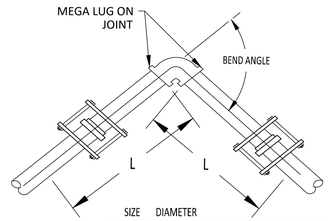
BRANCH

BRANCH SIZE \ RUN SIZE (DIAMETER)	4	6	8	10	12	14	16	18	20	24
4	*	*	*	*	*	*	*	*	*	*
6		*	*	*	*	*	*	*	*	*
8			*	*	*	*	*	*	*	*
10				10	2	*	*	*	*	*
12					19	12	4	*	*	*
14						28	22	15	8	*
16							37	31	26	13
18								46	41	30
20									55	45
24										72

* - FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

RESTRAINED LENGTHS, "L" (IN FEET)

1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 18' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARDNESS ON PUSH-ON PIPE PER CITY SPECIFICATION.
3. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

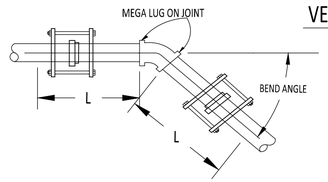


HORIZONTAL BEND FOR D.I.

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

BEND ANGLE \ SIZE (DIAMETER)	4	6	8	10	12	14	16	20
11.25	3	2	3	3	4	4	5	6
22.5	3	4	7	7	8	9	10	12
45	6	9	12	14	16	19	21	26
90	15	21	28	34	40	45	51	62

RESTRAINED LENGTHS, "L" (IN FEET)



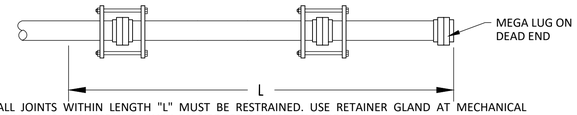
VERTICAL DOWN BEND D.I.

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

BEND ANGLE \ SIZE (DIAMETER)	4	6	8	10	12	14	16	20
11.25	3	5	7	8	8	10	11	13
22.5	6	10	11	14	16	18	22	25
45	14	18	24	28	33	38	43	53

RESTRAINED LENGTHS, "L" (IN FEET)

IN LINE VALVE/DEAD END ON D.I. PIPE



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

PIPE SIZE IN INCHES	4	6	8	10	12	14	16	18	20
	44	62	82	99	118	135	153	169	187

RESTRAINED LENGTHS, "L" (IN FEET)

RESTRAINED JOINT LENGTHS USAGE GENERAL NOTES

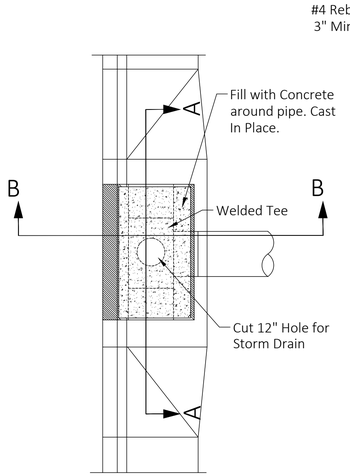
RESTRAINED LENGTH CALCULATIONS ARE BASED ON THE FOLLOWING DESIGN TYPICALLY USED WITH BACKFILL IN ST. GEORGE.

1. THREE (3) FEET MINIMUM DEPTH OF COVER.
2. A SAFETY FACTOR OF 1.5
3. SOIL TYPE SANDY CLAY
4. TYPE 5 TRENCH COMPACTION FROM FOUR (4) INCHES MINIMUM UNDER THE PIPE TO THE CENTER LINE OF THE PIPE, AND COMPACTED GRANULAR OR SELECTED MATERIAL FROM THE CENTER LINE OF THE PIPE TO THE TOPOF THE PIPE (90 PERCENT STANDARD PROCTOR DENSITY, AASHTO T-99).
5. 200 PSI TEST PRESSURES FOR FOUR (4) THROUGH SIXTEEN (16) INCH SIZE PIPES.

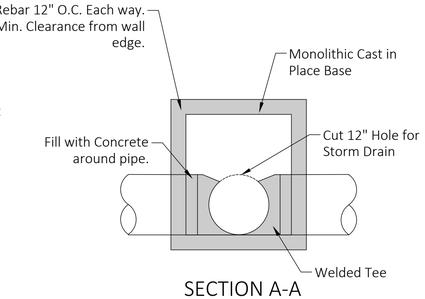
IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED JOINT LENGTH SHALL BE DETERMINED BY THE WATER ENGINEER.

B C6.2 INLET BOX WITH WELDED PIPE

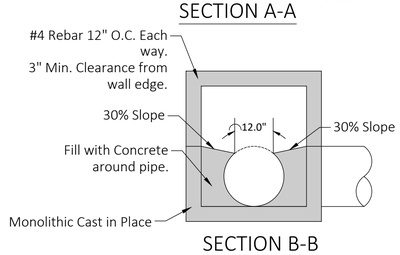
SCALE: NONE



PLAN VIEW



SECTION A-A



SECTION B-B

Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name: East Access Details OPT 2.dwg

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

SOUTHEAST ACCESS ROAD
AT TECH RIDGE
DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION
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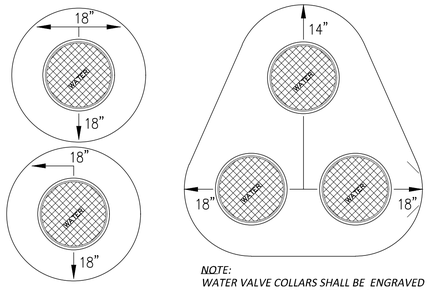
Drawn By:	Scale:
AZ	NONE
Client No. 4568-21	Project No. 4568-21

Drawing Sheet: C6.2

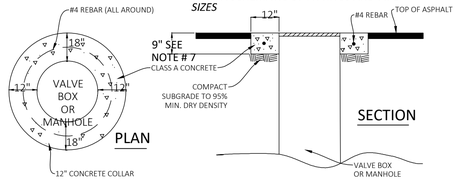
Sheet 38 of 41 Sheets

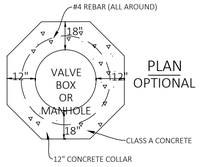
A C6.3 WATER VALVE CONC. COLLAR

SCALE: NONE



NOTE:
WATER VALVE COLLARS SHALL BE ENGRAVED WITH A SCHEMATIC OF FITTINGS AND PIPE SIZES

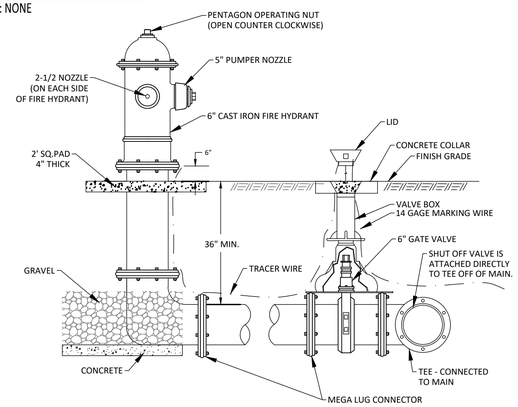




NOTES
1. MANHOLES, VALVE BOXES AND OTHER SIMILAR ITEMS SHALL BE ADJUSTED TO GRADE AFTER PAVING IS COMPLETE.
2. THE SURFACE OF THE ADJUSTED RIND SHALL MATCH THE GRADE OF THE CONCRETE COLLAR. CONCRETE COLLAR SHALL BE 1/8" - 1/4" LOWER THAN ASPHALT.
3. ASPHALT SHALL BE CUT IN STRAIGHT VERTICAL LINES.
4. ADJUSTMENTS TO GRADE SHALL BE MADE WITH STANDARD RINGS OR EXTENSIONS OR AS APPROVED BY THE CITY REPRESENTATIVE.
5. ALL MANHOLES, VALVE BOXES AND OTHER SIMILAR ITEMS SHALL HAVE CONCRETE COLLAR AS REQUIRED UNLESS OTHERWISE APPROVED.
6. 9" THICK COLLARS SHALL BE REINFORCED. 12" THICK COLLARS DO NOT REQUIRE REINFORCEMENT.
7. MARK CONCRETE COLLAR ON WATER VALVE BOXES WITH ARROW INDICATING DIRECTION OF FLOW AND LINE SIZE.

B C6.3 TYP. FIRE HYDRANT

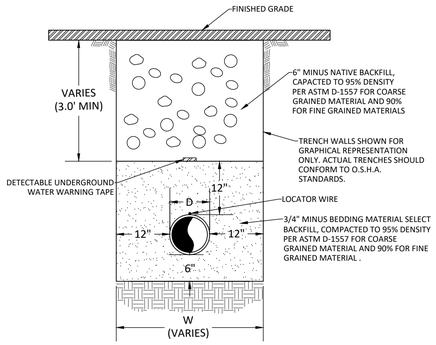
SCALE: NONE



NOTES:
1. IN GENERAL, NO PART OF THE FIRE HYDRANT SHALL BE PLACED WITHIN 12" OF THE BACK OF THE SIDEWALK.
2. INSTALL TRACER WIRE FROM SHUT OFF VALVE TO HYDRANT.

C C6.3 WATER TRENCH DETAIL

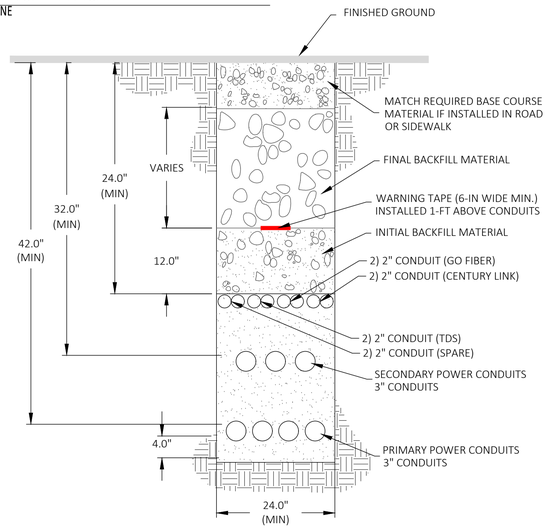
SCALE: NONE



NOTES
1. ALL EXCAVATIONS WITHIN PUBLIC RIGHT-OF-WAY REQUIRE AN ENCROACHMENT PERMIT FROM THE CITY ENCROACHMENT OFFICER.
2. EXCLUDING EMERGENCY CLOSURES ALL ROAD CLOSURES AND DETOURS REQUIRE 48 HOURS PRIOR NOTICE.
3. ALL STATE HIGHWAY CROSSING SHALL BE APPROVED BY THE U.D.O.T. DISTRICT ENGINEER (U.D.O.T. PERMIT REQUIRED)
4. MINIMUM COMPACTION SHALL BE 95% WHEN APPROVED FLOWABLE FILL OR SLURRY IS USED COMPACTION TESTING WILL NOT BE REQUIRED.
5. MINIMUM THICKNESS OF ASPHALT AND BASE SHALL BE OUTLINED IN THE ROADWAY STRUCTURAL REQUIREMENTS. IN NO CASE SHALL THE THICKNESS BE LESS THAN THE EXISTING.
6. FOUNDATION MATERIAL SHALL BE USED WHEN TRENCH BOTTOM IS UNSTABLE.
7. WHERE ROAD SECTION HAS A DESIGNED GRANULAR SUB-BASE, IT SHALL BE REPLACED IN KIND OR WITH ROAD BASE GRAVEL.
8. IN GENERAL, STREET SURFACES LESS THAN 24 MONTHS OLD WILL NOT BE CUT. IF A CUT MUST BE MADE, ADDITIONAL, STRICTER REQUIREMENTS MAY BE INVOKED SEE ENCROACHMENT OFFICER.
9. 24 HOUR NOTICE REQUIRED ON ALL INSPECTIONS.
10. ALL TRENCH BACKFILL SHALL MEET MIN COMPACTION REQUIREMENTS.
11. ALL PIPE MATERIAL SHALLBE NSF 61 COMPLIANT FOR CULINARY WATER USE.

D C6.3 JUT TRENCH - TYPICAL

SCALE: NONE



NOTES: FOR BACKFILL MATERIAL REQUIREMENTS SEE TABLE BELOW.

BACKFILL MATERIALS FOR WATER, NATURAL GAS, AND JOINT UTILITY TRENCHES

SIEVE SIZE	PERCENT PASSING FOR:			
	FOUNDATION MATERIAL*	BEDDING MATERIAL	INITIAL BACKFILL MATERIAL	FINAL BACKFILL MATERIAL
2.00–IN	100	----	----	*NATIVE MATERIAL WHICH CONTAINS NO SOD, VEGETATION, ROCKS LARGER THAN 8.00–IN IN DIA., ASPHALT OR CONCRETE CHUNKS, ETC.*
0.75–IN	5–15	----	100	
NO. 4	0–5	100	40–70	
NO. 50	----	5–15	20–50	
NO. 100	----	0–5	5–30	

* TO BE USED ONLY WHEN THE TRENCH BOTTOM IS UNSTABLE.

NOTES:
1. 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.
2. ALL STUBBED CONDUIT SHALL TERMINATE IN A BOX PER CURRENT UNDERGROUND STANDARDS. EACH UTILITY, POWER, FIBER, AND TELECOMMUNICATIONS SHALL PROVIDE AND INSTALL THEIR OWN BOXES RESPECTIVELY.

Date: 10-19-2023

REVISIONS

No.	Date	by	Description

File Name
East Access Details OPT 2.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

SOUTHEAST ACCESS ROAD AT TECH RIDGE DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

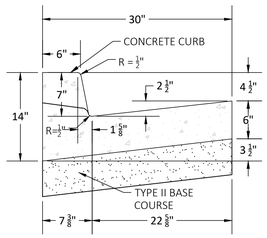
NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	NONE
Client No. 4568-21	Project No. 4568-21

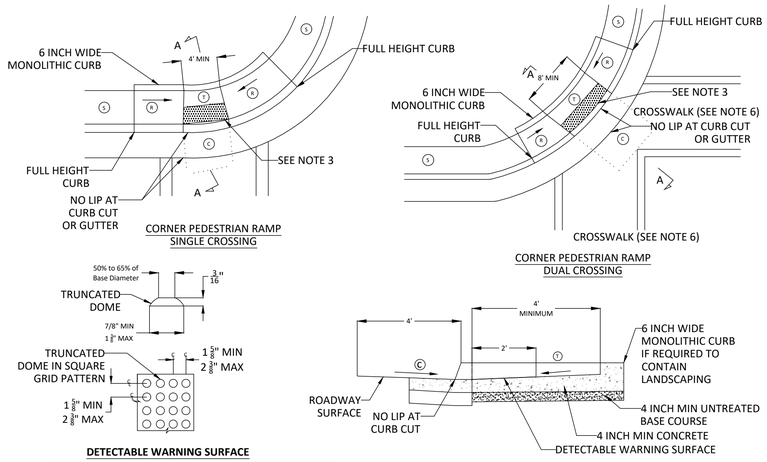
Drawing Sheet
C6.3

Sheet 39 of 41 Sheets

A C6.4 CURB & GUTTER
SCALE: NONE



B C6.4 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.

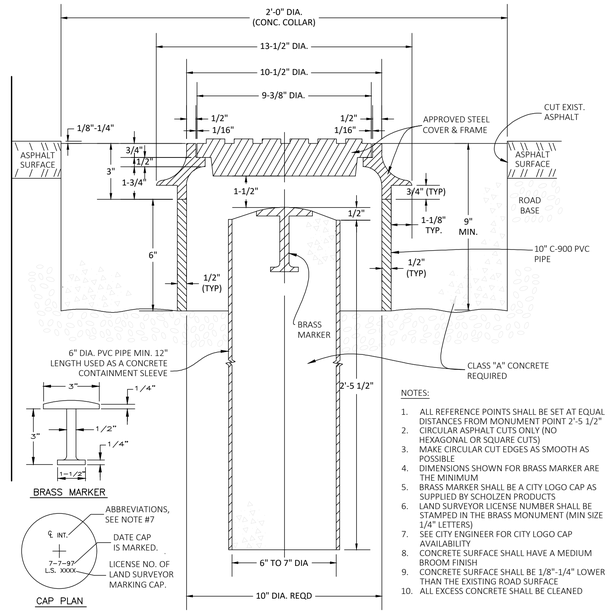
(b) MAINTAIN CONSISTENCY OF CLEAR SPACE RUNNING SLOPE ACROSS ENTIRE CURB CUT. WARP CUTTER PAN TO MEET REQUITED CLEAR SPACE SLOPE AT CURB CUT.

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

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.

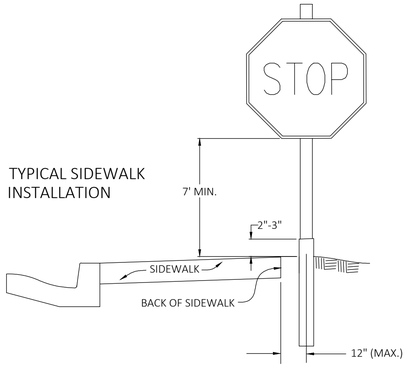
C C6.4 CLASS 1 STANDARD MONUMENT DETAIL
SCALE: NONE



NOTES:

1. ALL REFERENCE POINTS SHALL BE SET AT EQUAL DISTANCES FROM MONUMENT POINT 2'-5 1/2"
2. CIRCULAR ASPHALT CUTS ONLY (NO HEXAGONAL OR SQUARE CUTS)
3. MAKE CIRCULAR CUT EDGES AS SMOOTH AS POSSIBLE
4. DIMENSIONS SHOWN FOR BRASS MARKER ARE THE MINIMUM
5. BRASS MARKER SHALL BE A CITY LOGO CAP AS SUPPLIED BY SCHOLZEN PRODUCTS
6. LAND SURVEYOR LICENSE NUMBER SHALL BE STAMPED IN THE BRASS MONUMENT (MIN SIZE 1/4" LETTERS)
7. SEE CITY ENGINEER FOR CITY LOGO CAP AVAILABILITY
8. CONCRETE SURFACE SHALL HAVE A MEDIUM BROOM FINISH
9. CONCRETE SURFACE SHALL BE 1/8"-1/4" LOWER THAN THE EXISTING ROAD SURFACE
10. ALL EXCESS CONCRETE SHALL BE CLEANED

D C6.4 SIGN POST AND INSTALLATION DETAIL
SCALE: NONE



NOTES:

1- SIGNS SHALL BE PLACED IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. (M.U.T.C.D.).

2- STREET NAME SIGNS SHALL BE REQUIRED ON ALL CITY STREETS.

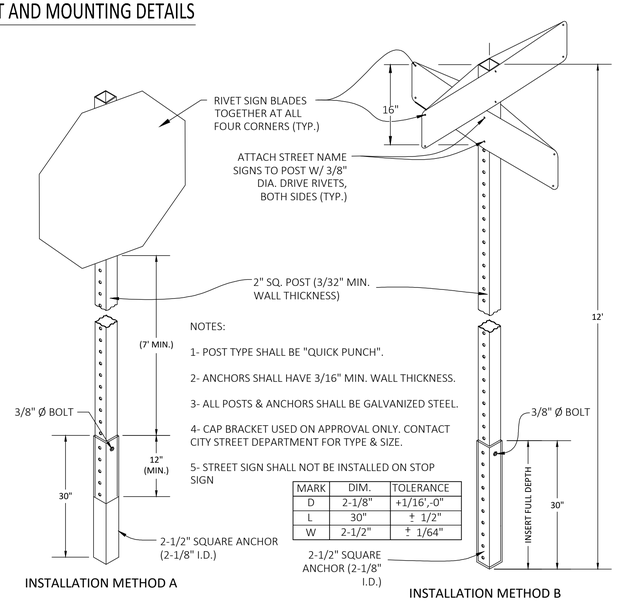
3- ALL POST COMPONENTS SHALL BE GALVANIZED STEEL.

4- STREET NAME SIGNS PLACED ABOVE STOP SIGN SHALL BE AS SHOWN IN DRAWING 110 (2 OF 2) OF THE ST. GEORGE CITY SPECIFICATIONS.

5- WHERE PLANTER STRIP LIES BETWEEN SIDEWALK AND CURB, SIGNS SHALL BE INSTALLED IN PLANTER STRIP AS PER M.U.T.C.D.

6- SIGNS SHALL BE PLACED TO BE CLEARLY VISIBLE. ALL OBSTRUCTIONS SUCH AS TREES, POLES, OTHER SIGNS, ETC, SHALL BE AVOIDED.

E C6.4 SIGN POST AND MOUNTING DETAILS
SCALE: NONE



NOTES:

1- POST TYPE SHALL BE "QUICK PUNCH".

2- ANCHORS SHALL HAVE 3/16" MIN. WALL THICKNESS.

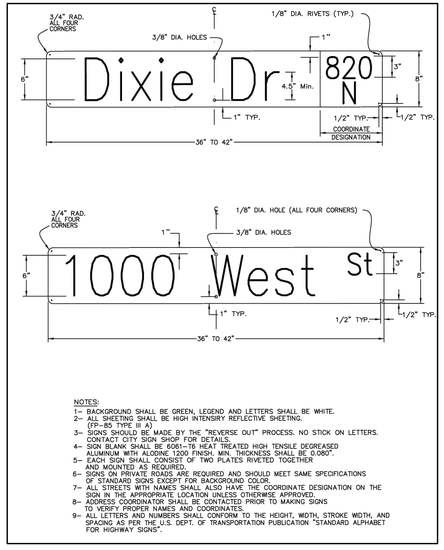
3- ALL POSTS & ANCHORS SHALL BE GALVANIZED STEEL.

4- CAP BRACKET USED ON APPROVAL ONLY. CONTACT CITY STREET DEPARTMENT FOR TYPE & SIZE.

5- STREET SIGN SHALL NOT BE INSTALLED ON STOP SIGN

MARK	DIM.	TOLERANCE
D	2-1/8"	+1/16',-0"
L	30"	± 1/2"
W	2-1/2"	± 1/64"

F C6.4 STANDARD STREET SIGN
SCALE: NONE



NOTES:

1- BACKGROUND SHALL BE GREEN, LEGEND AND LETTERS SHALL BE WHITE.
2- ALL SHEETING SHALL BE HIGH INTENSITY REFLECTIVE SHEETING. (FP-85 TYPE III A)
3- SIGNS SHOULD BE MADE BY THE "REVERSE OUT" PROCESS. NO STICK ON LETTERS. CONTACT CITY SIGN SHOP FOR DETAILS.
4- SIGN BLANK SHALL BE 6061-T6 HEAT TREATED HIGH TENSILE DEGREASED ALUMINUM WITH ALODINE 1200 FINISH. MIN. THICKNESS SHALL BE 0.080".
5- EACH SIGN SHALL CONSIST OF TWO PLATES RIVETED TOGETHER AND MOUNTED AS REQUIRED.
6- SIGNS ON PRIVATE ROADS ARE REQUIRED AND SHOULD MEET SAME SPECIFICATIONS OF STANDARD SIGNS EXCEPT FOR BACKGROUND COLOR.
7- ALL STREETS WITH NAMES SHALL ALSO HAVE THE COORDINATE DESIGNATION ON THE SIGN IN THE APPROPRIATE LOCATION UNLESS OTHERWISE APPROVED.
8- ADDRESS COORDINATOR SHALL BE CONTACTED PRIOR TO MAKING SIGNS TO VERIFY PROPER NAMES AND COORDINATES.
9- ALL LETTERS AND NUMBERS SHALL CONFORM TO THE HEIGHT, WIDTH, STROKE WIDTH, AND SPACING AS PER THE U.S. DEPT. OF TRANSPORTATION PUBLICATION "STANDARD ALPHABET FOR HIGHWAY SIGNS".

Date: 10-19-2023

REVISIONS

No.	Date	by	Description

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SOUTHEAST ACCESS ROAD
AT TECH RIDGE
DETAILS

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

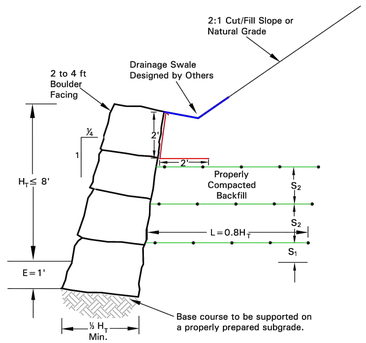
NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	NONE
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C6.4

Sheet 40 of 41 Sheets

TECH RIDGE SOUTHEAST ACCESS ROAD
ST. GEORGE, UTAH



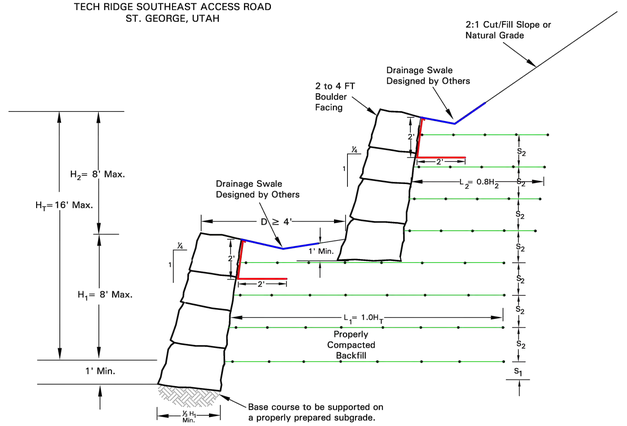
Key:

- Mirafi 140N Filter Fabric
- 10 Mil. PVC Liner or Concrete Lined Trench
- Geosynthetic Reinforcment

By: Jake Erickson, P.E.

2230249	AGEC	SINGLE TIERED ROCKERY FACED REINFORCED FILL SLOPE	Figure 3

TECH RIDGE SOUTHEAST ACCESS ROAD
ST. GEORGE, UTAH



Key:

- Mirafi 140N Filter Fabric
- 10 Mil. PVC Liner or Concrete Lined Trench
- Geosynthetic Reinforcment

By: Jake Erickson, P.E.

2230249	AGEC	TWO TIERED ROCKERY FACED REINFORCED FILL SLOPE	Figure 1

TECH RIDGE SOUTHEAST ACCESS ROAD
ST. GEORGE, UTAH

A. Boulder Placement/Construction:

1. Boulders should be angular, rectangular ledge rock. Boulders should have a flat stacking surface and decrease in size as they are stacked.
2. Base rock size = ½-⅓ H ; Minimum rock size 24 inches and/or 200 pounds.
3. Boulders should consist of durable material resistant to weathering. Typically 2 to 5 feet in size. Suitable sources in Washington County - Basalt, tan (Shinarump) sandstone, some limestone from Fort Pearce area.
4. Minimum **embedment** = 1 foot unless deeper embedment is shown on drawing.
5. Minimum **batter** ¼:1 (Horizontal to Vertical).
6. The slope/boulder subgrade should be properly prepared/compacted as directed by the geotechnical engineer prior to placing of fill or boulders.
7. Landscaping and associated irrigation systems are not recommended. Wetting of the backfill may result in settling or reduced stability. Block walls or fences may settle if placed in the backfill zone.

B. Fill:

1. Backfill should have a maximum size of 3", -200 < 30% and LL < 30%.
2. Refer to geotechnical investigation (AGEC Project No. 2180295) for approved low permeable fill criteria.
3. Each lift of backfill should be properly compacted. Hand compaction should be used within 3 feet of boulder facing. 4 inch lifts should be used for hand compaction equipment. Lift thickness may be increased to 8 inches for rubber tire or roller compaction.

C. Construction Observation:

1. Pre-construction meeting with Engineer, Owner and Contractor.
2. Observation of construction should be completed so that the quality of construction can be documented and modifications can be made if conditions require.
3. Backfill placed behind boulders and in reinforced areas should be tested frequently to verify compaction is at least 95% of the maximum dry density as determined by ASTM D-1557. We recommend a testing frequency of approximately every 1 foot of fill placed staggered approximately every 50 lineal feet. If the fill is not properly compacted, the stability of the slope will be reduced.
4. Backfill should be placed in 6 to 8-inch loose lifts prior to compacting. Proper moisture conditioning should be conducted in the backfill material before compacting.
5. A representative of AGEC should observe/verify placement of the geogrid, filter fabric and strip drains.

D. Geosynthetics:

1. The filter fabric may consist of Mirafi 140N, non-woven filter fabric or equivalent.
2. **Geosynthetic reinforcement** should be placed continuously in the primary strength direction. It may not be spliced in the primary strength direction.
3. The geogrid should be stretched by hand until taut and free of wrinkles. Individual lengths of the geosynthetic reinforcement should be overlapped at least 1 foot.
4. Where rockery wall forms an outside corner, geogrid should be placed in both directions with a minimum of 4" of backfill between the overlapping layers of geogrid.
5. The following table should be referred to for geosynthetic grid length: (See Figure 1)

Geosynthetic Reinforcement Schedule ¼:1 (H:V) Slope

Boulder Faced Fill Slope Height (ft)	Geosynthetic Reinforcement Required	Approved * Geosynthetic Reinforcement	Geosynthetic Vertical Spacing (ft)		Grid Lengths (ft)	
			S_1	S_2	L_1	L_2
$H_T \leq 3$	No	NA	NA	NA	See Detail	See Detail
$3 < H_T \leq 16$	Yes	Miragrid 5XT	1	2		

* Approved Equivalents - Tensar UX1500HS = Miragrid 5XT = WG6

By: Jake Erickson, P.E.

2230249	AGEC	Rockery Faced Slope Notes	Figure 4

NOTES:
1. All rock wall material is Basalt.

Date: 10-19-2023

REVISIONS

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FOR
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T 42 SOUTH, R 15 WEST SLB&M
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Drawn By: AZ	Scale: NONE
Client No. 4568-21	Project No. 4568-21

Drawing Sheet
C6.5

Sheet 41 of 41 Sheets

Exhibit D
GEOTECHNICAL REPORT

AGEC
Applied GeoTech

GEOTECHNICAL INVESTIGATION

TECH RIDGE SOUTH ACCESS ROAD
ST. GEORGE, UTAH

PREPARED FOR:

TECH RIDGE, LLC
446 SOUTH MALL DRIVE
ST. GEORGE, UTAH 84790

ATTENTION: ISAAC BARLOW

PROJECT NO. 2180295

OCTOBER 19, 2018

1420 South 270 East • St. George, Utah 84790 • (435) 673-6850 • FAX (435) 673-1044

TABLE OF CONTENTS

SUMMARY

A. East Slope Stability

1. Much of the proposed roadway crosses historical landslide deposits.

2. An evaluation of the east slope stability was included in the scope of this investigation.

3. Based on the available information obtained from previous investigations, inclinometer measurements, and past performance of the slope, it is apparent that the east slope for this project is currently maintaining its stability.

   Using the information available from our subsurface exploration, the laboratory test results along with our experience in the area, it is our professional opinion that the stability of the east slope is marginal. Even with the lack of apparent movement, small changes in the slope configuration and/or weakening of the material in the slope could trigger future movement.

   The strength of the slope will be adversely impacted by water infiltration. Therefore, we recommend strict drainage recommendations be followed to reduce the risk of future slope instability.

B. Roadway

If construction of the roadway is to proceed, the following information and recommendations apply.

1. A variety of soil and bedrock types were encountered in the test pits. Lean clay, silt, silty sand, well graded sand with silt, silty gravel with sand, basalt, mudstone, and shale bedrock were encountered. Practical excavator refusal was encountered on stiff clay, boulders, basalt and shale bedrock

2. Potentially expansive mudstone, potentially expansive lean clay and potentially collapsible silty sand were encountered in the test pits.

3. Subsurface water was not encountered in the excavated test pits to the maximum depths investigated. Fluctuation in groundwater level may occur over time. An evaluation of such fluctuations is beyond the scope of this report.

4. The on-site granular soils such as the silty gravel with sand (GM), silty sand (SM), and well graded sand with silt (SW-SM) free of organics, debris, and material greater than 6 inches in size, are suitable for use as site grading fill. Oversized rocks (greater than 6 inches and smaller than 12 inches) may be used as fill at depths greater than 3 feet below finished subgrade. The oversized rock should be placed so that rock to rock contact is minimized to reduce potential for nesting and voids.

5. The on-site fine grained soils range between non-plastic silt to highly plastic mudstone. The silt and portions of the lean clay observed in test pits TP-7 and TP-8 are suitable for use as low permeable fill above expansive subgrade. The mudstone and expansive lean clay similar to that encountered in test pits TP-1, should not be used as fill within 6 feet of the finished roadway subgrade elevation.

6. Consolidation testing of remolded samples of mudstone and lean clay indicate the material remains expansive upon processing and adding moisture. However, the laboratory tests also indicate the expansion potential of the processed and remolded mudstone and lean clay can be reduced with moisture contents of 4 to 6 percent above the optimum moisture content and a compaction of approximately 90 percent of the modified proctor value (ASTM D-1557). Conversely, remolded samples with moisture contents below 4 percent and compaction near or above 95% will likely exhibit higher expansive properties.

7. The proposed roadway may be supported on a properly prepared subgrade as recommended in the Subgrade Preparation section of this report.

   The on-site, potentially expansive mudstone and expansive lean clay should be overexcavated to an appropriate depth beneath the proposed roadway. Overexcavation depths may be determined from the information provided in the Subgrade Preparation section of this report.

   Areas which expose near surface loose, dry, potentially collapsible silty sand should be overexcavated prior to placing fill as recommended in the Subgrade Preparations section of this report.

   Drainage recommendations are also provided in this report to reduce the risk of the underlying expansive subgrade.

   Moisture conditioning and compaction criteria are also included in this report. The calculated asphalt, untreated base course, and borrow thickness vary depending on subgrade and traffic loading.

8. The information provided in this summary should not be used independent of that provided within the body of this report.

SCOPE OF WORK

This report presents the results of a geotechnical investigation for the proposed south access road construction project to Tech Ridge located in St. George, Utah as shown on Figures 1 and 2. The geotechnical investigation includes access from the east and west sides of Tech Ridge. AGEC was requested to perform the following tasks:

1. Conduct a subsurface investigation to determine the subsurface conditions. The subsurface investigation included the excavation of 21 test pits along the roadway alignment. The first 13 test pits which include the west access road (TP-1 through TP-11) and a portion of the east access road (TP-12 and TP-13) were excavated with a track mounted excavator (CAT 336E) equipped with a 30-inch wide bucket. A ripper tooth attachment was also used to loosen boulders encountered during test pit excavations.

2. Log the subsurface soil profile and obtain samples of the subsurface soils to conduct laboratory testing.

3. Conduct a laboratory testing program on the subsurface soils to determine their engineering characteristics and determine the support value of the subsurface soil.

4. Prepare a report which presents the subsurface conditions encountered and recommendations for the geotechnical aspects of the project including slope stability of the eastern facing slope. Our conclusions and recommendations are based on the subsurface investigation, the results of laboratory testing and our engineering analysis.

This report was prepared in accordance with our "Proposal for Professional Geotechnical Services" dated, April 30, 2018.

SITE CONDITIONS

The existing site topography consists of sloping hillsides and relatively flat areas. A dry wash runs through the west side access from the north to the south. The majority of the hillside along the proposed alignment have been mapped geologically as ancient landslide deposits and consists of undulating hummocky terrain with relatively gently benches and steeper sloping areas. Existing vegetation across the site consists of sparse, low brush. Basalt boulders are also exposed at the surface across the site. Various dirt roads traverse the sides of both hill slopes.

PROPOSED CONSTRUCTION

The proposed project consists of constructing a 2 lane roadway to the west and a 4 lane roadway to the east near the south end of Tech Ridge. Detailed roadway cross-sections and grading plans for the east access road were not provided for the preparation of this report.

Based on a review of the plan and profile sheet (dated 03/28/2018) prepared by Alliance Consulting for the west access road, we anticipate cuts of up to 9 feet and fills on the order of 19 feet will be required to grade the proposed roadway. The grading plan also indicates a 12-foot by 12-foot underpass will be constructed over the existing drainage. A flexible pavement section is proposed for the project and we anticipate the project will include curb, gutter and sidewalk.

The Average Daily Traffic (ADT) provided by Alliance Consulting includes 2,500 to 5,000 vehicles for the west access and approximately 15,000 vehicles for the east access road. These ADT values correspond to a Traffic Index of 6 for the west side access road and 7 for the east side as provided by the City of St. George Design Criteria.

GEOLOGY AND GEOLOGIC HAZARDS

Geologic conditions at the site were evaluated by a review of geologic literature and aerial photographs. Aerial photographs used during the investigation were downloaded from the Utah Geological Survey website. They have photograph numbers of 810941 AM-4-1 and 2 and a photograph date of October 23, 1981.

A. Geologic Literature Review

The site is located in the transition zone of the Basin and Range, and Colorado Plateau provinces. Hayden and Willis (2011) map the area to be underlain by the Moenave and Chinle Formations (See Figure 1). The bedrock dips gently down to the north. The bedrock is capped by the Cedar Bench lava flow at the top of the hill. Alluvial and colluvial sediments overlie the bedrock at the northwest end of the road alignment. Landslide deposits are mapped for the south and central portions of the road alignment. A geologist from AGEC visited on September 12, 2018. The geology of the area was found to be consistent with mapping by Hayden and Willis (2011).

Geologic hazards mapped by Lund and others (2008) are mostly limited to landslide and rockfall. Rockfall is not generally a hazard for the road for the current condition of the hillside but could become a hazard depending on how cut slopes are developed for the road. Similarly, landslide is not currently a significant hazard on the slope in its present condition, but could be a concern with added water or steepened slopes. This will be addressed in the geotechnical study for the project.

B. Aerial Photograph Review

Based on review of aerial photographs of the site, faulting and debris flow are not potential hazards at the site. The area of landslide deposits appears to be similar to that mapped by Hayden and Willis (2011). Lineations formed in the landslide deposits and likely representative of intermediate landslide scarps are shown on Figure 1.

C. Seismicity

The property is located in the Intermountain Seismic Zone, which consists of an area of relatively high historical seismic activity. The most intense seismic ground shaking at the site is expected to originate from the Washington fault zone. The Washington fault zone is considered capable of producing earthquakes on the order of 7 to 7.5 magnitude and can result in significant seismic ground shaking at the site. The US Geological Survey data indicate that a peak ground acceleration in bedrock of 0.24g can be expected to have a 2 percent probability of being exceeded in a 50-year time period at this site (IBC, 2015). The St George fault zone may also add to the seismic hazard in the area, although there is no evidence that the fault displaces Holocene sediments, suggesting the fault may not be active. The St George Fault is not included in the Quaternary Fault and Fold Database (Utah Geological Survey, 2018).

ROADWAY SUBSURFACE CONDITIONS

On August 8 and 9, 2018, an engineer from AGEC visited the site and observed the excavation of 13 test pits at the approximate locations shown on Figure 2. The 8 additional test pits (TP-14 to TP-21) were excavated during a previous geotechnical investigation by AGEC in August of 1998. The subsurface profile observed within the excavated test pits at the site is highly variable and consists of lean clay, silt, silty sand with gravel, well graded sand with silt, silty gravel with sand, basalt, mudstone bedrock, and shale bedrock.

Potentially expansive mudstone was encountered in test pits TP-1, TP-2, TP-10, TP-14, and TP-15 as shown on Figures 3-5. Expansive lean clay was encountered in test pits TP-1, TP-3, TP-5, TP-6, TP-7, TP-8, TP-14, TP-16 and TP-20. The shale bedrock encountered in test pits TP-16, TP-19, and TP-21 may also contain expansive layers. The dry loose nature of the near surface silty sand with gravel encountered in test pit TP-10 indicates the material is potentially collapsible if exposed to water.

Practical excavator refusal was encountered on stiff clay and boulders in test pits TP-3, TP-7, TP-8 and TP-20. Practical excavator refusal on basalt was encountered in test pits TP-11, TP-12, TP-13, and TP-17 with refusal on shale bedrock encountered in test pit TP-19. The maximum depth investigated in the test pits was 19 feet.

Detailed descriptions of the bedrock and soil types observed follow.

Lean Clay - The lean clay is medium stiff to very stiff, moist, medium plastic, contains varied amounts of sand, gravel, and boulders (1 to 4 feet in size). The lean clay varies from red-brown to brown with white mottles in color.

Laboratory tests conducted on samples of the lean clay indicate in-place moisture contents ranging from 5 to 16 percent, in-place dry densities ranging from 93 to 124 pounds per cubic foot (pcf), gravel contents (percent retained on the No. 4 sieve) ranging from 0 to 12 percent, and fines contents (percent passing the No. 200 sieve) ranging from 62 to 96 percent. Atterberg Limits tests conducted on samples of the lean clay indicated liquid limits ranging from 27 to 48 percent and plasticity indices ranging from 14 to 35 percent.

Moisture-Density relationship (ASTM D-1557) tests conducted on samples of the lean clay from test pits TP-3 and TP-8 indicate maximum dry densities (MDD) ranging from 116.5 pcf to 123.5 pcf and optimum moisture contents (OMC) ranging from 10.0 to 12.5 percent. California Bearing Ratio (CBR) tests conducted on remolded samples of the lean clay indicate CBR values ranging from 4 to 5 percent. The samples were remolded to near 90 percent of the maximum dry density (ASTM D-1557) and approximately 2% above the optimum moisture content.

One-dimensional consolidation tests conducted on samples of the native lean clay indicate it is slightly moisture sensitive when wetted under a constant pressure of approximately 1,000 pounds per square foot (psf). Swell potentials of 1 to 1½ percent and swell pressures ranging from 2,650 psf to 3,500 psf were measured in the laboratory testing.

Remolded one-dimensional consolidation tests conducted on samples of the lean clay indicate moisture conditioned and remolded samples are still expansive when wetted. The remolded one-dimensional consolidation results indicate a reduction in expansion potential with an increase moisture content during processing.

Silt - The silt is medium stiff to stiff, slightly moist to moist, contains various amount of sand, and is reddish brown in color.

Laboratory tests conducted on samples of the silt indicate in-place moisture contents ranging from 6 to 17 percent, in-place dry densities ranging from 101 to 112 pcf, and a fines content ranging from 81 to 94 percent. Atterberg Limits tests conducted on samples of the silt indicate it is non-plastic.

Silty Sand - The silty sand is loose to medium dense, dry, fine to medium grained, contains occasional gravel, cobbles, and boulders and ranges in color from light reddish brown to brown in color.

Laboratory tests conducted on samples of the silty sand indicate in-place moisture contents ranging from 3 to 8 percent, in-place dry densities ranging from 88 to 108 pcf, a gravel content of 2 percent, and fines contents ranging from 35 to 48 percent. The relatively low dry density and moisture content of the near surface silty sand indicates it is potentially collapsible.

A Moisture-Density relationship (ASTM D-1557) test indicates the silty sand has a maximum dry density of 126.0 pcf and an optimum moisture content of 7.5 percent.

Well Graded Sand with Silt - The well graded sand with silt is medium dense, dry, contains gravel, and brown in color.

Laboratory tests conducted on samples of the silty to clayey gravel with sand indicate an in-place moisture content of 1 percent, and a fines content of 6 percent.

Silty Gravel with Sand - The silty gravel with sand is medium dense to dense, dry to moist, and light brown to brown in color.

Laboratory tests conducted on the silty gravel with sand from test pit TP-4 indicate an in-place moisture content of 11 percent.

Basalt - The basaltic rock is moderately hard to very hard, dry, highly fractured to less fractured, and black in color.

A Moisture-Density relationship (ASTM D-1557) test indicates the fractured basalt with silt and sand has a maximum dry density of 134.5 pcf and an optimum moisture content of 5.5 percent.

Mudstone - The mudstone, known locally as “blue clay” is soft to moderately hard, dry to moist, medium to highly plastic, and grey to purple in color.

Laboratory tests conducted on samples of the mudstone indicate in-place moisture contents ranging from 7 to 15 percent, in-place dry densities ranging from 96 to 118 pcf, and fines contents ranging from 59 to 99 percent. Atterberg Limits tests conducted on samples of the mudstone indicate liquid limits ranging from 35 to 76 percent and plasticity indexes ranging from 19 to 39 percent.

A Moisture-Density relationship (ASTM D-1557) test indicates the mudstone has a maximum dry density of 115.0 pcf and an optimum moisture content of 12.5 percent. A CBR test conducted on a remolded sample of the mudstone indicates a CBR value of 6 percent. The sample was remolded to near 90 percent of the maximum dry density (ASTM D-1557) and approximately 2 percent above the optimum moisture content.

One-dimensional consolidation tests conducted on natural samples of the mudstone indicate it is moisture sensitive (expansive) when wetted under a constant pressure of approximately 1,000 psf. Swell potentials of ½ to 1 percent with swell pressures of 2,170 to 4,000 psf were measured in the laboratory testing.

Remolded one-dimensional consolidation tests conducted on samples of the mudstone indicate moisture conditioned and remolded samples are still expansive when wetted. The remolded one-dimensional consolidation results indicate a reduction in expansion potential with an increase moisture content during processing.

Shale Bedrock - The shale bedrock is soft to hard, dry to slightly moist, interbedded with layers of siltstone and claystone, and dark brown to dark red in color.

Laboratory tests conducted on a sample of the shale bedrock indicate an in-place moisture content of 5 percent, an in-place dry density of 110 pcf, and a fines content of 71 percent.

The Logs, Legend and Notes of Test Pits are shown on Figures 3-5. The results of laboratory testing are also shown on Figures 3 and 4 and are summarized in the Summary of Laboratory Test Results, Table 1. The One-dimensional Consolidation Test Results are shown graphically on Figures 6-12. The Gradation/Soil Classification and Moisture-Density Relationship Test Results are shown graphically on Figures 13-17. The California Bearing Ratio Test Results are shown graphically on Figures 18-22.

ROADWAY SUBSURFACE WATER

Groundwater was not encountered during the subsurface investigation to the maximum depth investigated, approximately 19 feet. Fluctuations in the groundwater level may occur over time. An evaluation of such fluctuations is beyond the scope of this report.

EAST SLOPE STABILITY

AGEC previously investigated the subsurface conditions of the east facing slope by drilling five borings to depths varying from 110 to 250 feet. Inclinometer casings were installed at each of the five locations along with an adjacent boring to facilitate measurements of the groundwater level.

Our findings of the stability analysis are presented without the boring logs, laboratory test results, inclinometer measurements, and our calculations as stipulated in our agreement for this project.

Existing Conditions

As indicated on Figure 1, portions of both arms of the access road are located on landslide deposits. In addition to verifying the geologic mapping presented on Figure 1, the east hillside stability has been evaluated. Site conditions that reflect the material behavior and characteristics of the landslide include:

1. The hummocky nature of the ground surface along with the lineations associated with each of the landslide slumps .

2. Landslide masses will often reach equilibrium at a slope angle close to the internal material strengths. The ground surface slopes from 8 to 18 degrees (3 to 7:1 horizontal to vertical) which are consistent with the internal friction values obtained from our earlier studies and from samples tested in the laboratory.

Contributing Factors

In addition to the surface geology, the following items contribute to the status of the slope stability.

1. The bedding planes in the area generally slope down to the northeast at an angle of approximately 7 to 8 degrees.

2. The weakest clay sample tested from explorations conducted on the east slope has been found to have a residual coefficient of friction of 7.5 degrees. This angle closely matches the dip of the bedding plane. With this strength and bedding plane combination, slippage would occur on 7.5 degree downward slope if the interface strength is less than 7.5 degrees or slippage would also occur if there are areas or zones where the dip angle of the bedding plane is steeper than the 7.5 degrees.

3. Investigation into landslide movements on the east slope indicate a relatively thick deposit that contains layers of this potentially weak clay. Measurements indicate that the hillside movement occurs at multiple depths indicating similar strength characteristics throughout the deposit.

4. Groundwater was encountered in each of the deep borings.

Status of Movement

Inclinometers were installed at five locations to depths of 92 to 258 feet on the east hillside in 2007. Inclinometer Measurements were obtained in 2008, 2011 and April 4, 2018. The 2018 measurements on 4 of the 5 inclinometers are within the accuracy of the equipment indicating no measurable movement.

The inclinometer located immediately west of the vacant restaurant, located at 1090 South Bluff Street, was measured before 2011. Displacement was measured at multiple depths.

Geotechnical Testing Services (GTS) installed an inclinometer on a berm placed behind the restaurant. We understand that recent measurements by GTS indicate lateral movement of approximately 0.7 inches in the last 5 years.

Anticipated Performance

With the lack of measured movement in the 4 inclinometers over the past 10½ years along with the lack of surficial evidence of movement, it is apparent that the portion of the slope for this project is currently maintaining its stability. Using the information available from our subsurface exploration, the laboratory test results along with our experience in the area, it is our professional opinion that the stability of the slope is marginal even with the lack of apparent movement.

With these conditions, small changes in the slope configuration or weakening of the material strengths in the slope could trigger future movement.

As stated in the 1996 Transportation Research Board, Special Report 247, (entitled Landslides, Investigation and Mitigation), "…old landslides are often barely stable, and they may not have significant resistance to new loadings or other changed conditions that tend to reduce their stability. Changing natural drainage patterns on the surfaces of old landslides may significantly influence their stability and cause unwanted movements. Thus, the decision to construct transportation facilities over ancient landslides must be carefully investigated and appropriate consideration given to remedial measures and long-term stability".

It is important to recognize that marginal stability of the slope indicates that:

1. A calculated factor of safety using the parameters selected to characterize the materials in the slope and the existing configuration is near 1.0 and will not meet the standard acceptable level of at least 1.5.

2. Changes in the internal conditions and/or surficial geometry modifications may improve or reduce the ability of the slope to maintain its stability. It may not be practical to quantify with confidence the impact that internal changes may have provided.

3. It is a matter of time before more movement on the slope occurs. Determining a location and/or timing of such an event is not possible with the information currently available.

4. A seismic event could introduce sufficient lateral load to initiate slope movement.

Mitigation

If the decision is made to continue with construction of the roadway on the landslides, we recommend the following items be seriously considered:

1. Introduction of moisture into the subgrade should be minimized if not eliminated. This could be accomplished by:

    a. Collecting and transporting surface drainage off of the slope in watertight catch basins and piping. This is not standard storm drainage procedures therefore, this would require specific attention to verify that the improvements are watertight.

    b. Water ways should be lined to prevent seepage into the ground.

    c. Measures need to be taken to eliminate the potential for water to pond on the slope.

    d. No water bearing utilities should be installed within the landslide area.

2. Cut and fill slopes need to be minimized. Overall impact of potential grade changes should be evaluated and the consequence of the change found to be acceptable before proceeding.

3. Water entering the ground in all areas above the slope (within the Tech Ridge area) should be reduced and ideally eliminated. Some, if not all, of the methods described above should be considered within the Tech Ridge area.

ROADWAY RECOMMENDATIONS

The following recommendations are provided with the assumption that all stakeholders recognize and accept the risk of landslide movement. The recommendations are based on the proposed construction, information obtained from the field and laboratory testing, engineering analysis, and our experience in the area.

A. Site Grading

Based on the subsurface conditions and the proposed grading provided by Alliance Consulting, the following recommendations are provided:

1. Subgrade Preparation

a. *General Subgrade Preparation*: Prior to conducting site grading, vegetation and soil containing significant amounts of roots and organics should be removed. Loose/disturbed soil, debris, deleterious material, previously placed fill, and undiscovered fill should be removed to the full depth.

b. *Expansive Mudstone and Lean Clay Subgrade Areas*: To reduce the potential for wetting and subsequent swelling of the expansive subgrade supporting the proposed roadway, we recommend the expansive mudstone and lean clay areas be overexcavated to remove a portion of the expansive material and it replace with properly compacted, low permeable fill. The low permeable fill is intended to provide a less permeable zone which reduces the potential for infiltration of water to the underlying expansive mudstone and lean clay. If the natural moisture content of the expansive mudstone and lean clay is maintained, distress to the asphalt/sidewalk and curb will be reduced.

Prior to placing the low permeable fill and subsequent to overexcavation, the exposed subgrade should be scarified a minimum of 8 inches, moisture conditioned to 4 to 6 percentage points above the optimum moisture content and compacted to 90 percent of the maximum dry density as determined by ASTM D-1557.

We recommend overexcavation and replacement of the expansive mudstone and lean clay be performed to provide a low permeable zone above expansive materials and reduce the risk of wetting and potential heave. The surface heave estimates are provided in the following table. The estimates are based on an assumed active zone (wetted depth) of 10 feet. The heave estimates should be used to assist in determining the depth of overexcavation and replacement desired based on the associated risk of surface heave.

Depth to Expansive Soil Below Finished Subgrade Elevation (feet)	Estimated Potential Surface Heave (inches)
0	3 to 4½
2	2½ to 4
4	2 to 3
6	1 to 2½

c. *Sand, and Gravel Areas (All Other Subgrades Encountered)*: Subsequent to grubbing and prior to placing fill, base course, or asphalt pavement, the exposed subgrade beneath pavement and fill slope areas should be scarified to a depth of 8 inches, moisture conditioned and properly compacted to at least 95 percent of the maximum dry density as determined by ASTM D-1557.

If the exposed subgrade consists of loose, dry silty sand or silty gravel (potentially collapsible soils), we recommend this soil be overexcavated to remove the full depth of this material. An engineer from AGEC should observe the exposed subgrade to provide guidance regarding the subgrade preparation in these areas.

d. *Potentially Soft Subgrade (Encountered in Area of TP-4):* Potentially soft subgrade conditions may be encountered near TP-4 resulting from heavy equipment and very moist subgrade conditions observed in the test pit. If soft/pumping conditions are encountered subgrade stabilization may be implemented using overexcavation to remove the soft soils or by implementing gravel and geosynthetic reinforcement may be necessary. Additional details may be provided upon request.

2. Excavation/Earthwork

The on-site soils and soft mudstone bedrock may be excavated with conventional excavation equipment. Excavations extending into large boulders, potential cemented zones, basalt and hard shale bedrock will likely require the use of heavy excavation equipment such as a trackhoe equipped with rock teeth or a single ripper tooth. A rock hammer may also be necessary to excavate portions of the basalt or shale bedrock. Difficulty may be particularly evident in confined excavations.

3. Grading Slopes

Review of the grading plan for the west side access road indicates existing slopes along the road alignment of the project will be excavated and cut to construct the roadway. We also anticipate grading along the east side access road will require cuts into hillside. Our experience with soil cut and fill slopes in the area has shown soils will tend to erode over time to their natural angle of repose. The following table provides recommendations for guidance of cut slopes based on the observed onsite soils:

Expected Soil Condition	Grading Recommendations (Horizontal:Vertical)
Basalt	½:1
Lean Clay	¾ :1
Silty Sand and gravel	1:1
Shale and Mudstone Bedrock	½ :1 (if faced) or 1½ :1 (if not faced)

Mudstone and clay slopes cut steeper than 1½ :1 would remain stable, but will dessicate, and likely ravel naturally to approximately a 1½ :1 slope. This process will require long term maintenance to remove the accumulated soils deposited at the toe of the slope. If this process is not acceptable, steep slopes may be flattened or faced to provide protection from weathering and erosion. Stacked rockery facing or reinforced gunnite facing anchored with soil nails may be considered to protect steeper cut slopes. Design and recommendations associated with reinforced/stabilized cut slopes are beyond the scope of AGEC's services.

Additionally, several existing cut slopes are part of a larger ancient landslide deposit. This analysis does not address the potential development, re-activation or stabilization of larger scale slope movement as could be possible due to the site being part of the larger landslide deposit.

We recommend fill slopes constructed with onsite soil not exceed a 2:1 (horizontal:vertical) slope. Fill slopes should be graded by overbuilding and then cutting them back to the desired grade to provide a compacted slope face. Fill placed on existing slopes steeper than 4:1 (horizontal to vertical) should be placed using a benching procedure to "key" the fill into the existing slope. Benches should be of sufficient width to extend fill placement through loose/surficial soils or to meet the criteria given in the following table, whichever is greater.

Approximate Slope Grade (Horizontal:Vertical)	Bench Width (feet)
1:1	2
2:1	4
3:1	6
4:1	8

4. Materials

The on-site granular soils such as the silty gravel with sand (GM), silty sand (SM), and well graded sand with silt (SW-SM) free of organics, debris, and material greater than 6 inches in size, are suitable for use as site grading fill. Oversized rocks (greater than 6 inches and smaller than 12 inches) may be used as fill at depths greater than 3 feet below finished subgrade. The oversized rock should be placed so that rock to rock contact is avoided to reduce potential voids and nesting of rocks.

The on-site fine grained soils range between non-plastic silt to low to medium plastic lean clay and highly plastic mudstone. The silt and portions of the lean clay observed in test pits TP-7 and TP-8 are suitable for use as low permeable fill above expansive subgrade. The on-site expansive soils (mudstone and lean clay) free of organics may be used as site grading fill in areas not supporting the roadway. The mudstone and the expansive lean clay should not be used as fill within 6 feet of the finished roadway subgrade elevation without accepting potential surface heave risks.

Listed below are the materials recommended for fill.

Area	Fill Type	Soil Type
Roadway	Untreated Base Course	CBR > 70%, **200** < 12% Maximum size: 1 inch
Roadway	Site Grading and Embankment Fill	**-200** < 35%, **LL** < 30% Maximum size: 4 inches Solubility < 1%

-200 = Percent Passing the No. 200 Sieve

LL = Liquid Limit

The potential impact of the expansive characteristics of the underlying expansive mudstone and lean clay can be reduced by protecting the expansive material from becoming wet. Placement of relatively low permeable fill above the expansive soil/bedrock can help reduce the possibility of water coming in contact with the expansive material.

Low permeable fill used to replace removed expansive soil should meet at least one of the following options:

Option No.	Liquid Limit (%)	Percent Passing the No. 200 Sieve
1	50+	15-20
2	30-50	20-40
3	0-30	30-100

Based on the above criteria, we anticipate some of the on-site soils will be suitable for use as low permeable fill. Mixing of onsite soils (lean clay and mudstone) with non-expansive fill may be necessary to produce low permeable fill meeting the above requirements. If mixing will be considered, AGEC should be contacted to conduct additional laboratory testing to determine mixing/blending recommendations.

5. Compaction

Compaction of fill materials placed at the site should meet the following moisture content criteria and equal or exceed the following compaction criteria:

Area	Moisture Content	Percent Compaction
Low Permeable Fill	+2% to +4% above OMC	90%
Subgrade - Expansive Materials	+4% to +6% above OMC	90%
Subgrade - Non-expansive Materials	± 2% of OMC	90%
Roadway Fill - Expansive Materials	+4% to+ 6% above OMC	90%
Roadway Fill - Non-expansive Materials	± 2% of OMC	95%
Roadway Base Course	± 2% of OMC	95%

OMC = Optimum moisture content

Fill tested should be compared to the maximum dry density as determined by ASTM D-1557. Soils placed as site grading fill should be moisture conditioned to the above recommendations. Soil at the site was generally below the optimum moisture content and will require moisture conditioning prior to placement to achieve the required compaction.

It is critical that the low permeable fill is moisture conditioned over the optimum moisture content (as recommended) to provide the low permeable properties necessary for the application. If the low permeable fill is placed dry of the optimum moisture content, the permeability or infiltration rate of water will be higher.

Fill should be placed in lift thicknesses which do not exceed the capacity of the compaction equipment used. Generally 6 inch loose lifts are appropriate for heavy rubber-tire compaction equipment. Lift thickness should be reduced to 4 inches for hand compaction equipment. Fill placed at the site should be tested frequently to verify proper compaction.

B. Soil Corrosion

Our experience has shown the on-site soils, bedrock and many import soils may contain sulfates in sufficient concentration to be corrosive to concrete. Therefore, we recommend concrete elements that will be exposed to the on-site soils be designed in accordance with provisions provided in the American Concrete Institute Manual of Concrete Practice (ACI) 318-14 Chapter 19. Tables 19.3.1.1 and 19.3.2.1 of ACI 318-14 should be referenced for design of concrete elements utilizing a Sulfate Exposure Class of S2.

Consideration should also be given to cathodic protection of buried metal pipes. We recommend utilizing PVC pipes where local building codes allow.

C. Pavement Analysis and Design

The following pavement design criteria were used in our pavement design based on the UDOT Pavement Management and Pavement Design Manual dated November, 1998 and updated March, 2008.

- A 20 year design life with ADT values of 2,500 to 5,000 for the west access road and 15,000 for the east access road were provided by Alliance Consulting. These traffic conditions correspond to a Major Collector (TI = 6) for the west access roadway and a Minor Arterial (TI = 7) for the east access roadway according to the St. George City Design Specifications.
- A Standard Deviation of 0.45.
- Initial and Terminal Serviceabilities of 4.2 and 2.5, respectively.
- A Reliability of 90 percent.
- CBR values of 4 and 10 percent for varying on-site soil types.
- A Subgrade Resilient Modulus of 1500*CBR value.
- A Untreated Base Course Resilient Modulus of 27,000 psi.
- A Granular Borrow Resilient Modulus of 15,000 psi.
- Layer Coefficients of 0.4, 0.1, and 0.08 for the hot mix asphalt, untreated base course, and the granular borrow, respectively.
- A Drainage Coefficient of 1 for the untreated base course and the granular borrow.

D. Pavement Support, Section, and Materials

Based on the subsurface conditions encountered, UDOT/AASHTO Design methods, and a 20-year design life, the following recommendations are given. Although the following pavement sections are based on a 20 year design life, the life span of the pavement may be shorter if not properly maintained, drained, and due to the presence of expansive materials, and landslide deposits below the roadway on some portions of the project.

1. Subgrade Support

The subgrade should be prepared as outlined in the Site Grading section of this report. We anticipate the subgrade materials at the site will generally consist of lean clay, mudstone, silty sand and gravel, and silty gravel with sand.

AGEC measured CBR values ranging from 4 to 33 percent from remolded samples of the on-site soils obtained from the test pit excavations. For the purpose of this report, a CBR value of 4 was used for design of pavement supported over the mudstone and lean clay and a CBR value of 10 was used for the design of pavement supported over the remaining subgrade soils encountered at the site.

2. Pavement Thickness

Refer to the following tables for pavement section thicknesses.

East Access Roadway (TI = 7)

Subgrade Type	CBR Value	Asphalt Thickness (in)	Base Course Thickness (in)
Mudstone and Lean Clay	4	4	12
Other Soils	10	3½	8

West Access Roadway (TI = 6)

Subgrade Type	CBR Value	Asphalt Thickness (in)	Base Course Thickness (in)
Mudstone and Lean Clay	4	3½	8
Other Soils	10	3	6

3. Pavement Materials

The pavement materials should meet St. George City specifications for gradation and quality. The pavement thicknesses indicated above assume that the base course is a high quality material with a CBR of at least 50 percent and the asphaltic concrete has a minimum Marshal stability of 1,800 pounds.

Other materials may be considered for use in the pavement section. The use of other materials may result in other pavement material thicknesses.

E. Drainage and Maintenance

The collection and diversion of drainage away from the pavement surface is extremely important to the satisfactory performance and life span of the pavement section and the slope stability. Proper drainage and precautions presented in the stability section should be provided.

Due to the moisture sensitivity of the on-site mudstone and portions of the lean clay, it is critical that infiltration of water be minimized to reduce the potential for future movement of pavement and utilities. Maintaining natural soil moisture conditions of the moisture sensitive soil and bedrock reduces potential for expansion of underlying soil/bedrock and subsequent heave. To reduce infiltration, we recommend the following:

1. Maintain positive site drainage during and following construction. Ponding of water should be eliminated.

2. Surface drainage of streets should be maintained by providing sufficient crown/grade in the road to direct flows into the curb/gutter systems or off of roadway improvements in areas not including curb and gutter. Positive flow of the gutters should be provided and maintained.

3. Seams and joints in the asphalt and concrete should be properly sealed to reduce infiltration of water to the underlying expansive soil/bedrock.

4. Maintenance should be provided to maintain asphalt cracks which may occur over time.

F. Construction Materials Observation and Testing

Construction materials observation and testing should meet St. George City testing requirements. We also recommend the following be conducted during the construction of the roadway.

1. Verify that the subgrade is properly prepared prior to placing fill and the recommended overexcavation depths are achieved to expose the underlying competent basalt.

2. Observe the placement and conduct compaction testing on each foot of site grading fill placed in roadway areas and within utility trenches.

3. Conduct materials testing on road-base, concrete, and asphalt in accordance with St. George City standards.

G. Geotechnical Recommendation Review

The client should familiarize themselves with the information contained in this report. If specific questions arise or if the client does not fully understand the conclusions/recommendations provided, AGEC should be contacted to provide clarification.

LIMITATIONS

This report has been prepared in accordance with generally accepted soil engineering practices in the area for design purposes. The conclusions and recommendations included within the report are based on the information obtained from the borings drilled and the test pits excavated at the locations indicated on the site plan, the results of laboratory testing, the referenced documents and our experience in the area. Variations in the subsurface conditions may not become evident until additional exploration or excavation is conducted. If the subsurface soil or groundwater conditions are found to be different from what is described in this report, we should be notified to reevaluate the recommendations given.

Sincerely,

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

Jake Erickson, P.E.

James E. Nordquist, P.E.

Reviewed by Arnold DeCastro, P.E.

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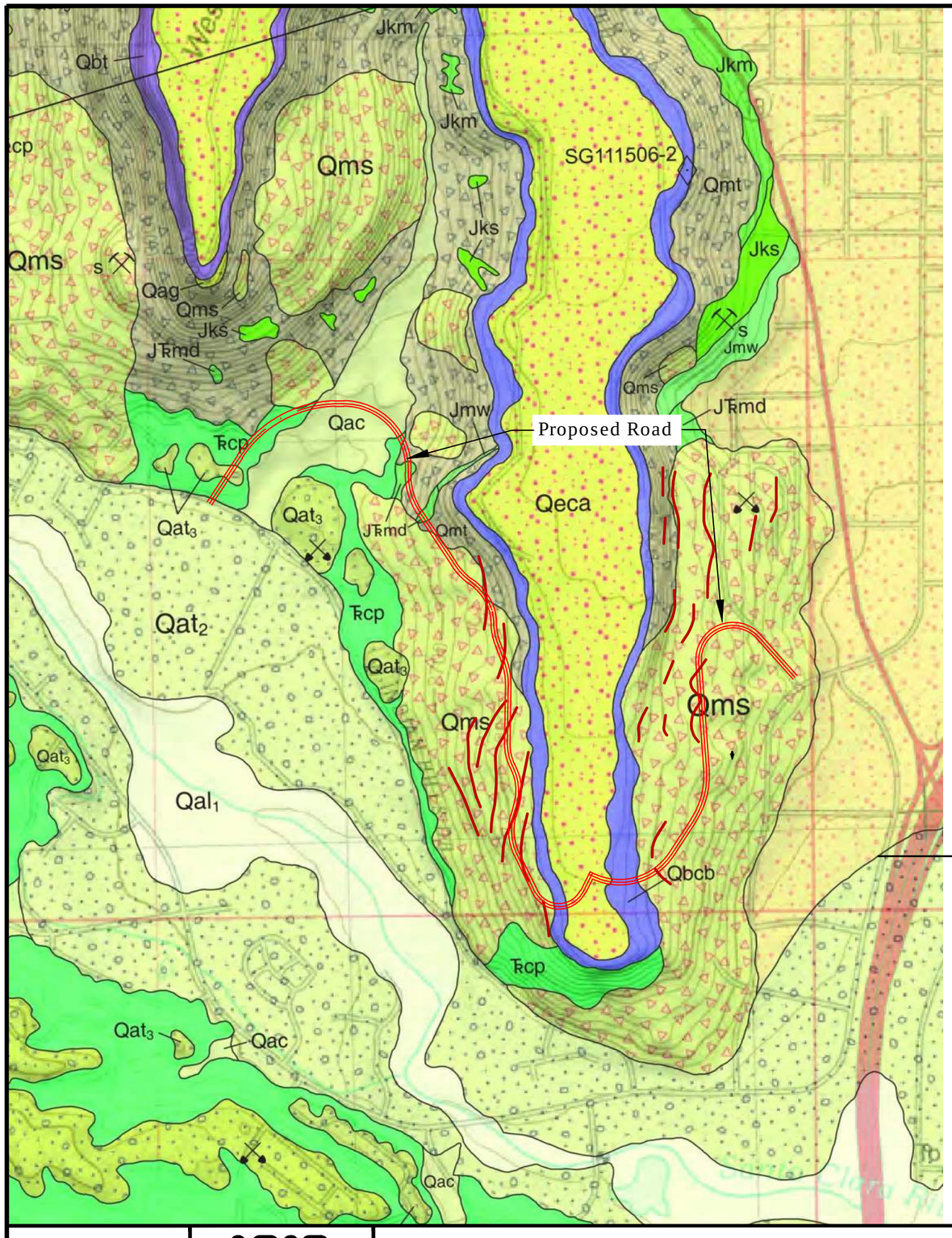
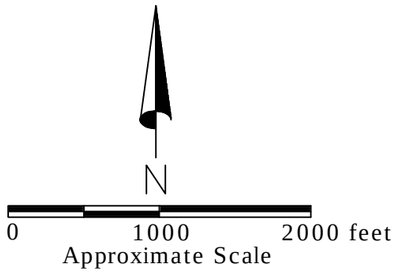




Explanation of Symbols and Geologic Units in Area of Proposed Road

Qal_1	-	Stream alluvium (Holocene)
Qac	-	Mixed alluvial and colluvial deposits (Holocene to upper Pleistocene)
Qeca	-	Eolian and alluvial deposits (Holocene to lower Pleistocene)
Qat_2	-	Alluvial-terrace deposits (Holocene)
Qat_3	-	Alluvial-terrace deposits (late Pleistocene)
Qmt	-	Talus deposits (Holocene to upper Pleistocene)
Qms	-	Landslide deposits (Holocene to middle Pleistocene)
Qbcb	-	Cedar Bench lava flow (lower Pleistocene)
Jmw	-	Whitmore Point Member of the Moenave Formation (Lower Jurassic)
JTrmd	-	Dinosaur Canyon Member of the Moenave Formation (Lower Jurassic)
Trcp	-	Petrified Forest Member of the Chinle Formation (Upper Triassic)

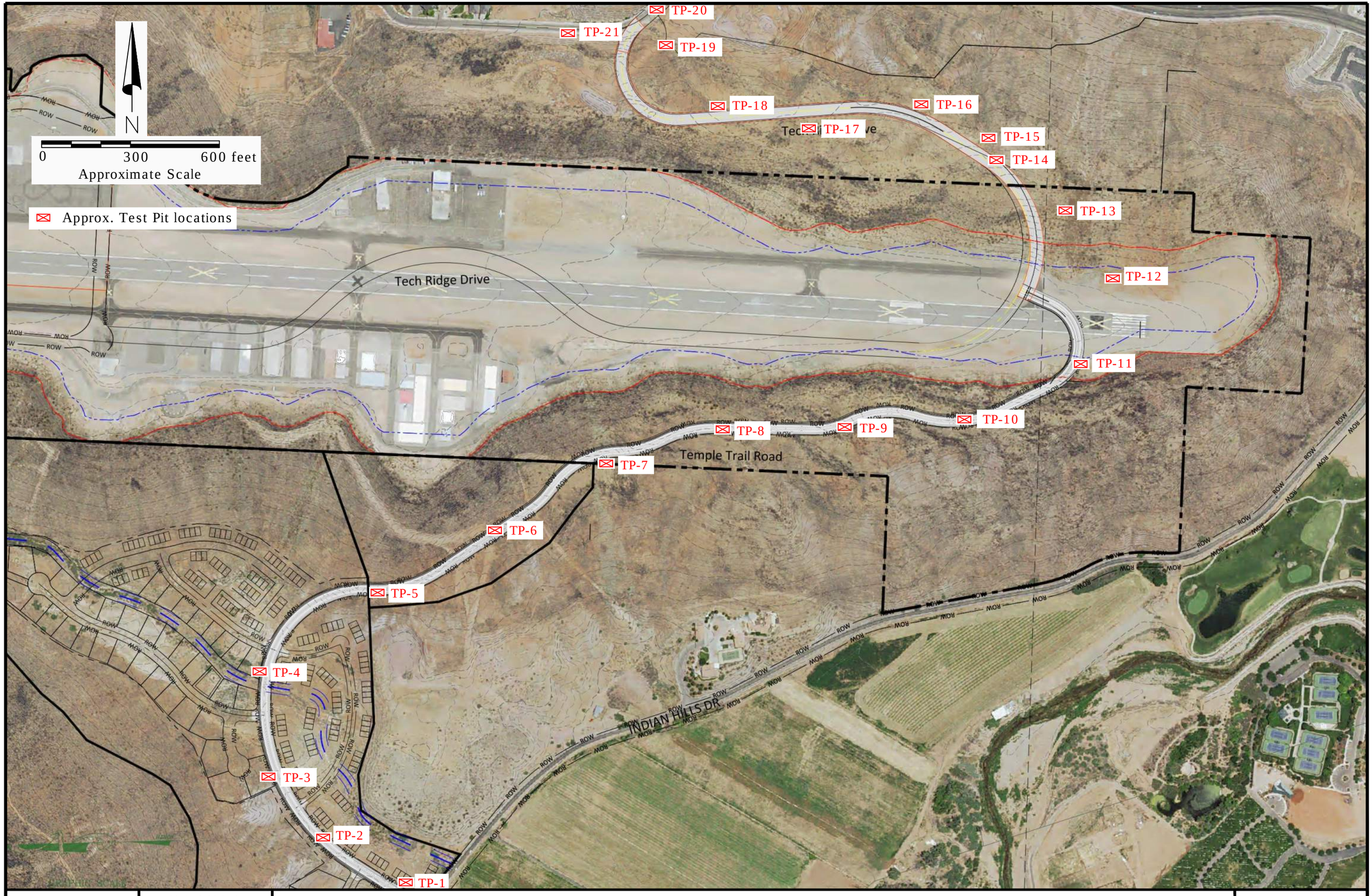
Lineation within the landslide deposits

Approximate location of proposed access roads

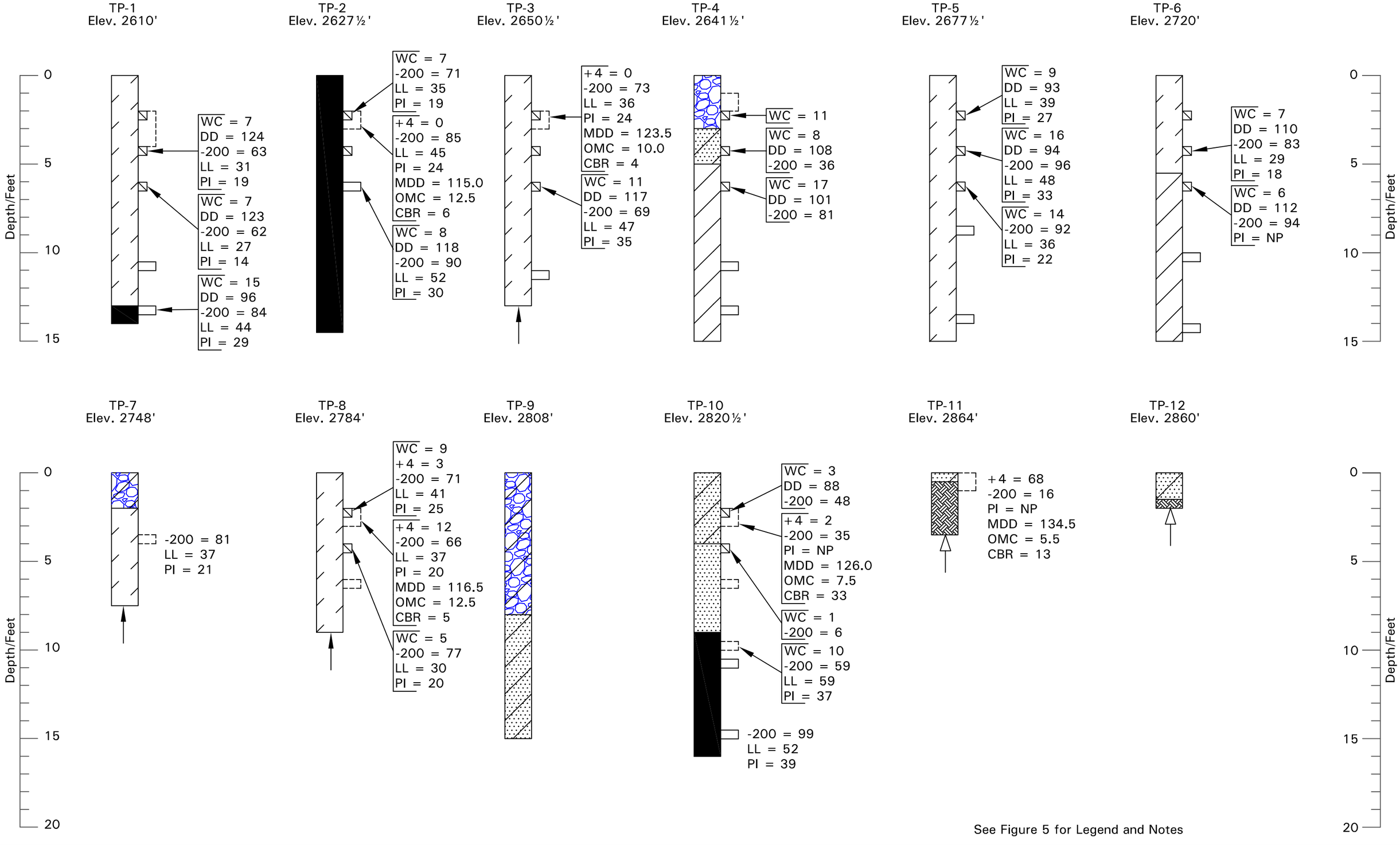
TECH RIDGE SOUTH ACCESS ROAD
ST. GEORGE, UTAH

Map taken from Hayden, J.M. and Willis, G.C., 2011; Geologic map of the St George quadrangle, Washington County, Utah, Utah Geological Survey Map 251DM.

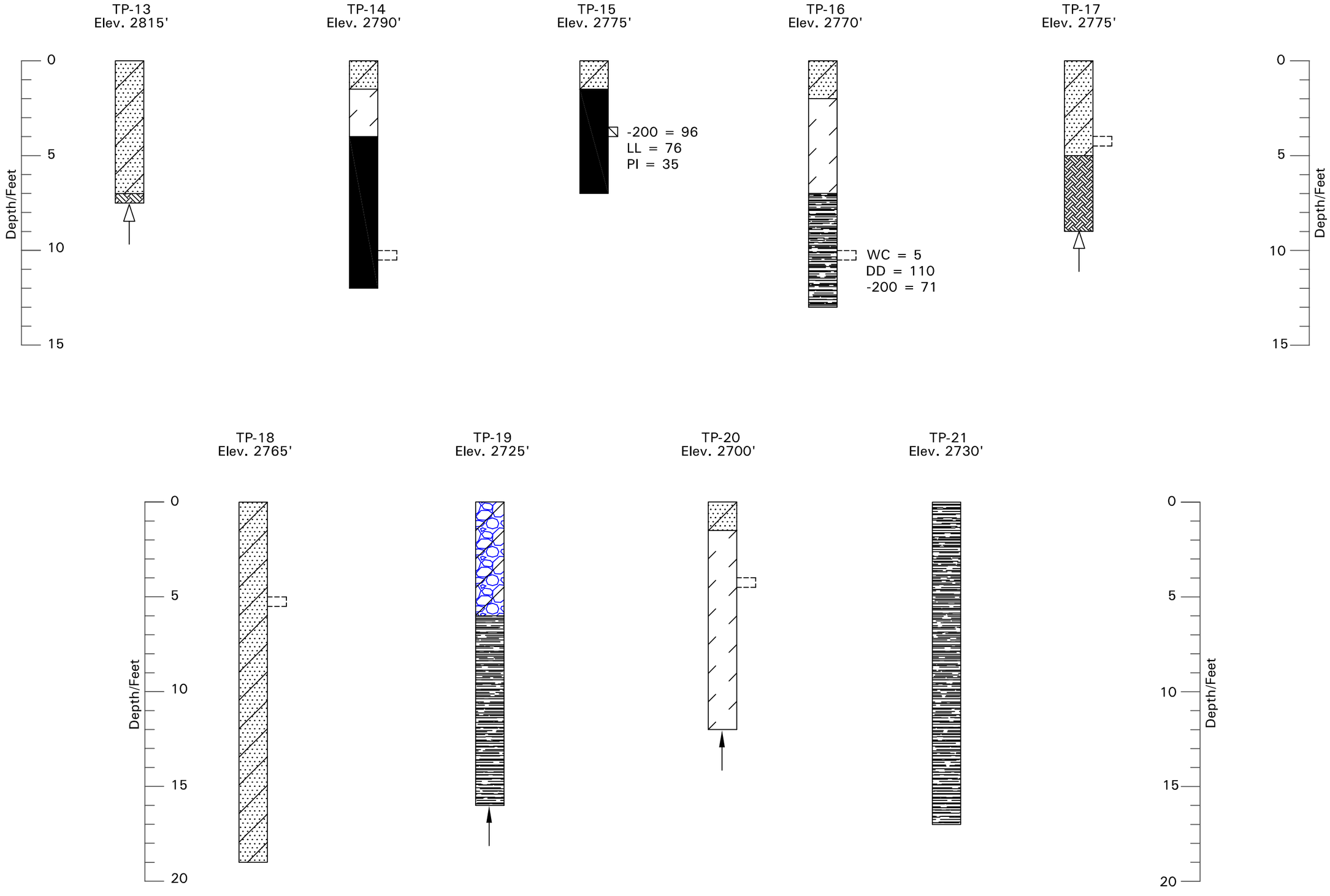
2180295	AGEC	Vicinity and Geologic Map	Figure 1



2180295	AGEC	Test Pit Locations	Figure 2



See Figure 5 for Legend and Notes



See Figure 5 for Legend and Notes

LEGEND:

Lean Clay (CL); medium stiff to very stiff, moist, medium plastic, contains varied amounts of sand, gravel, and boulders (1 to 4 feet in size), red-brown to brown with white mottles.

Silt (ML); medium stiff to stiff, slightly moist to moist, contains various amounts of sand, reddish brown.

Silty Sand (SM); loose to medium dense, dry, fine to medium grained, contains occasional gravel, cobbles and boulders (1 to 4 feet in size), light reddish brown to brown.

Well Graded Sand with Silt (SW-SM); medium dense, dry, contains gravel, brown.

Silty Gravel with Sand (GM); medium dense to dense, dry to moist, light brown to brown.

Basalt; moderately hard to very hard, dry, highly fractured near surface, black.

Mudstone; soft to moderately hard, dry to moist, medium to highly plastic, grey to purple.

Shale Bedrock; soft to hard, dry to slightly moist, interbedded with layers of siltstone and claystone, dark brown to dark red.

Indicates relatively undisturbed hand drive sample taken.

Indicates relatively undisturbed block sample taken.

Indicates disturbed sample taken.

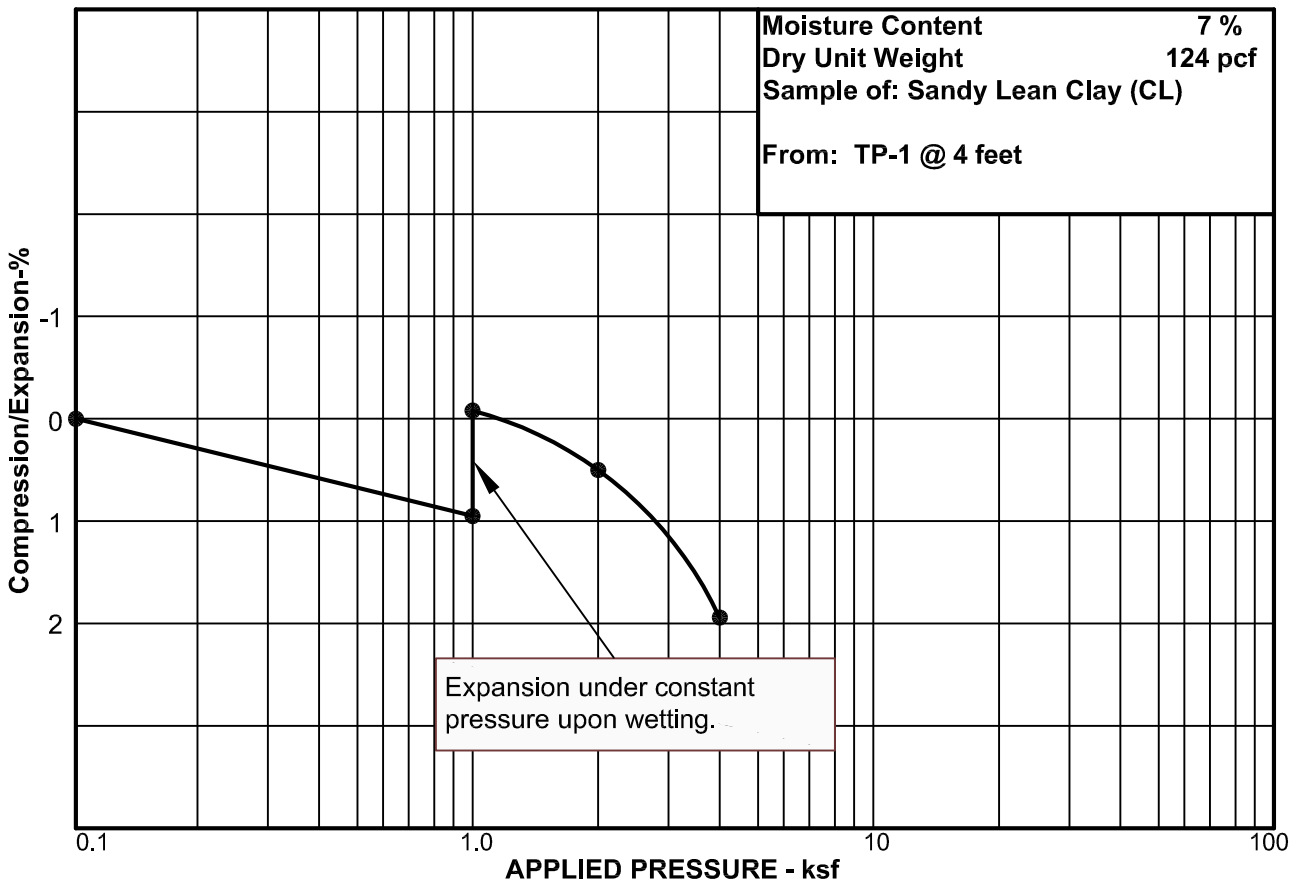
Indicates practical backhoe refusal on stiff clay and boulders or shale bedrock.

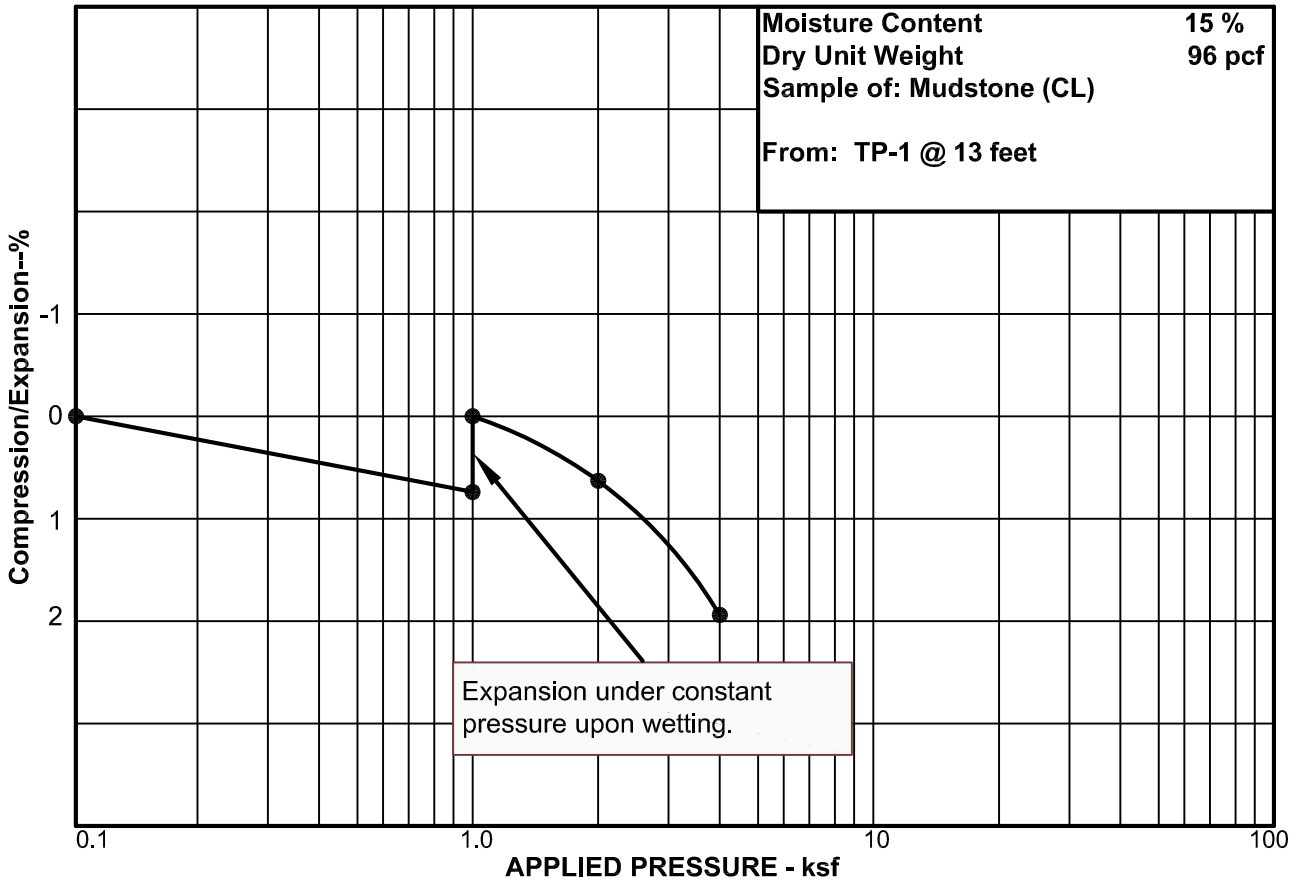
Indicates practical backhoe refusal on basalt.

NOTES:

1. Test pits TP-1 through TP-13 were excavated on August 8 and 9, 2018 and test pits TP-14 through TP-21 were excavated on August of 1998 with a trackhoe.
2. The locations and elevations of test pits TP-1 through TP-11 were measured using roadway centerline stakes, which were located using GPS by others.
3. The locations of test pits TP-12 through TP-21 were located by pacing from features shown on Figure 2. The elevations of test pits TP-12 through TP-21 were interpolated between contours shown on Figure 2.
4. The test pit locations and elevations should be considered accurate only to the degree implied by the method used.
5. The lines between the materials shown on the test pit logs represent the approximate boundaries between material types and the transitions may be gradual.
6. Free water was not encountered in the test pits at the time of excavation.
7. WC = water content (%);
   DD = dry density (pcf);
   +4 = percent retained on the No. 4 sieve;
   -200 = percent passing No. 200 sieve;
   LL = liquid limit (%);
   PI = plasticity index (%);
   NP = non-plastic;
   MDD = maximum dry density (pcf);
   OMC = optimum moisture content (%);
   CBR = california bearing ratio (%).

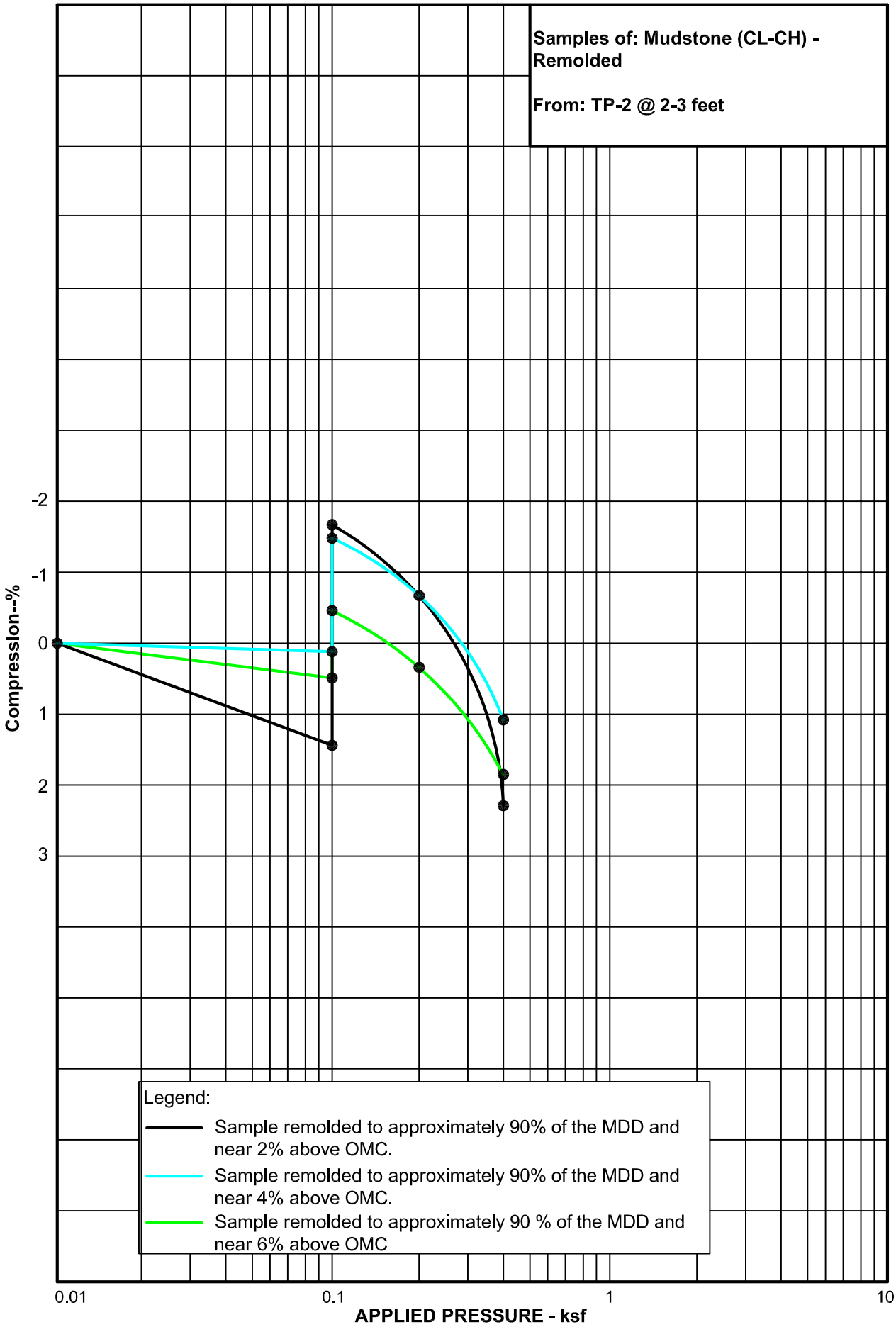
Applied Geotechnical Engineering Consultants, Inc.





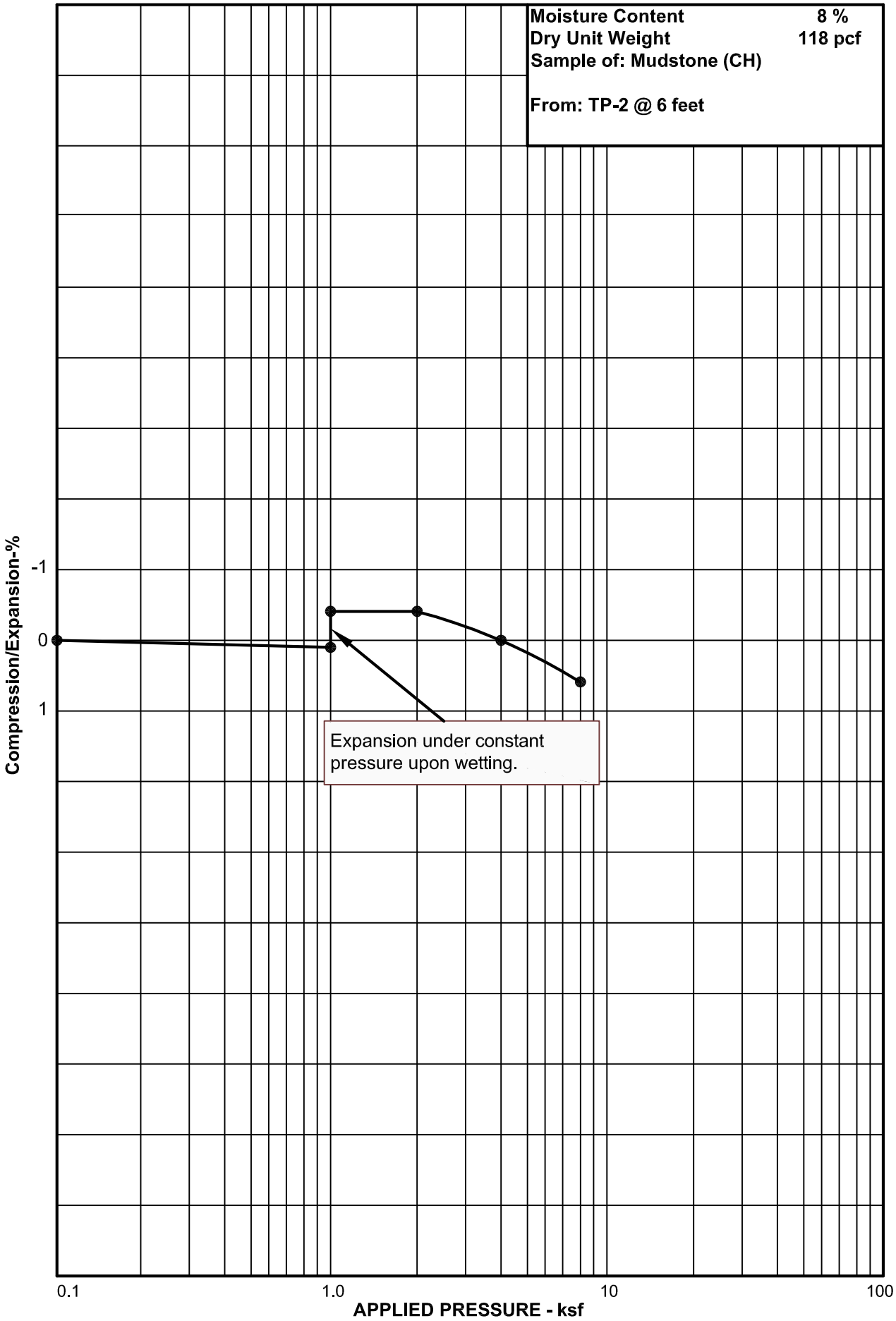
Project No. 2180295 **CONSOLIDATION TEST RESULTS** **Figure 6**

Applied Geotechnical Engineering Consultants, Inc.



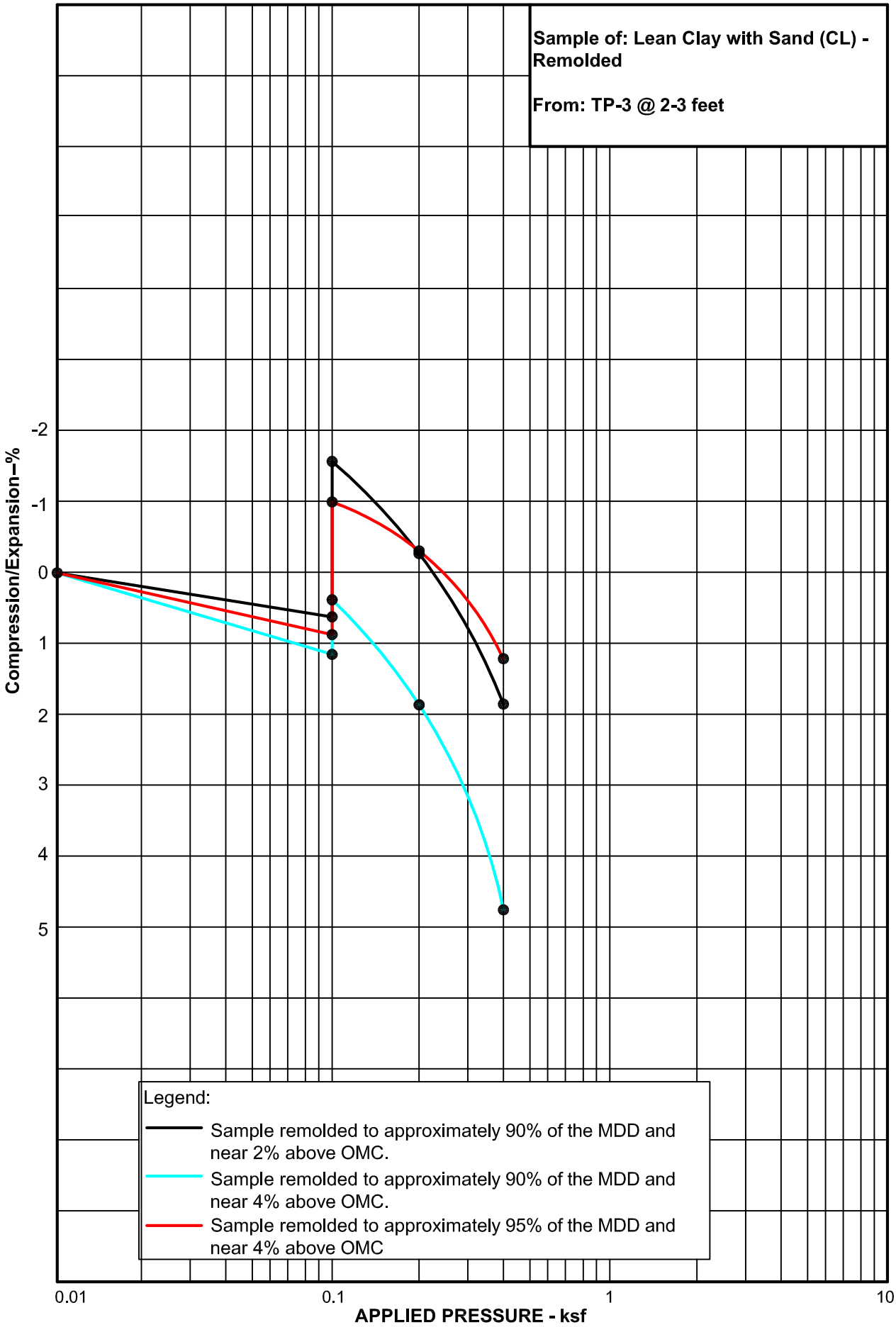
Project No. 2180295 **CONSOLIDATION TEST RESULTS** **Figure 7**

Applied Geotechnical Engineering Consultants, Inc.



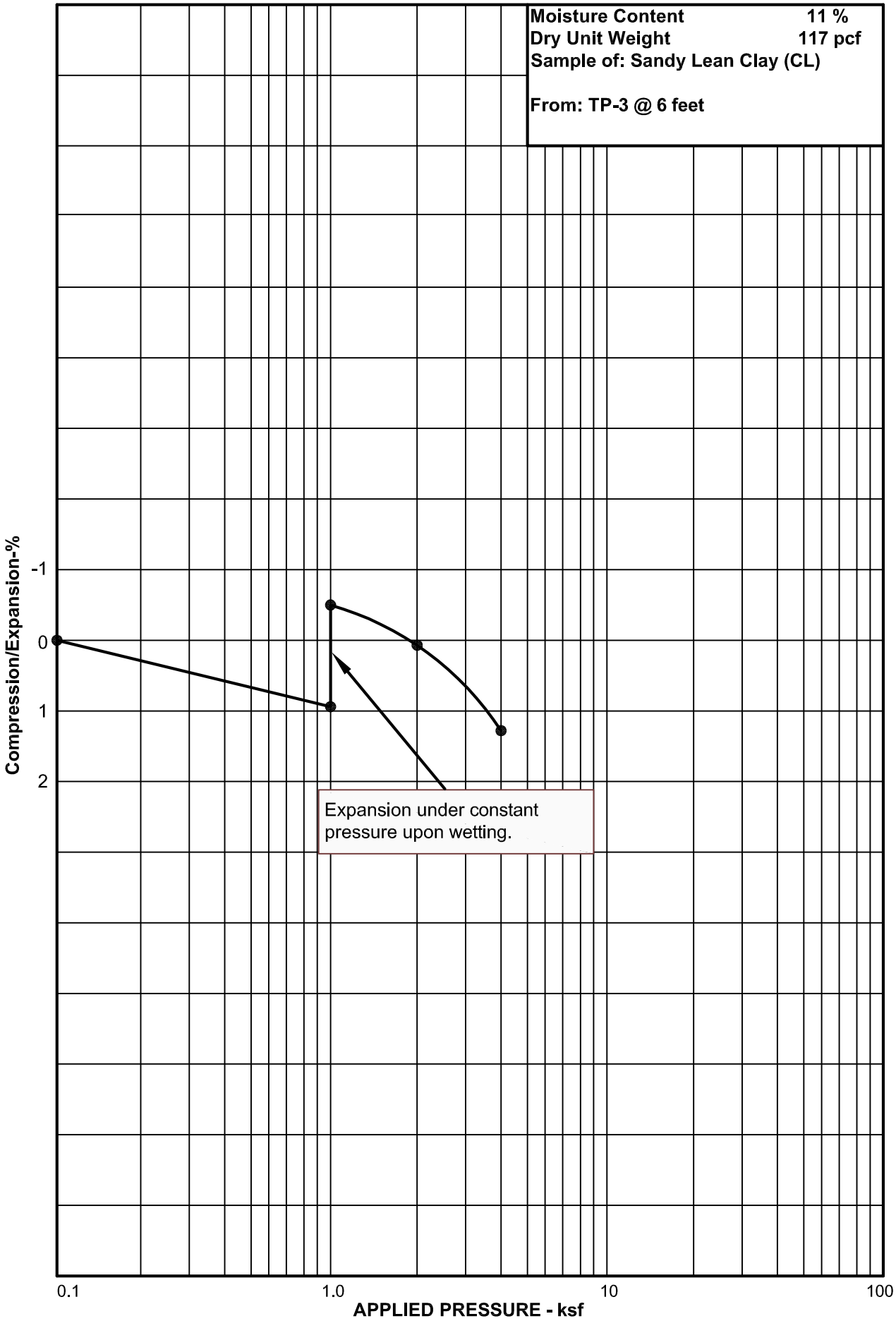
Project No. 2180295 **CONSOLIDATION TEST RESULTS** Figure 8

Applied Geotechnical Engineering Consultants, Inc.



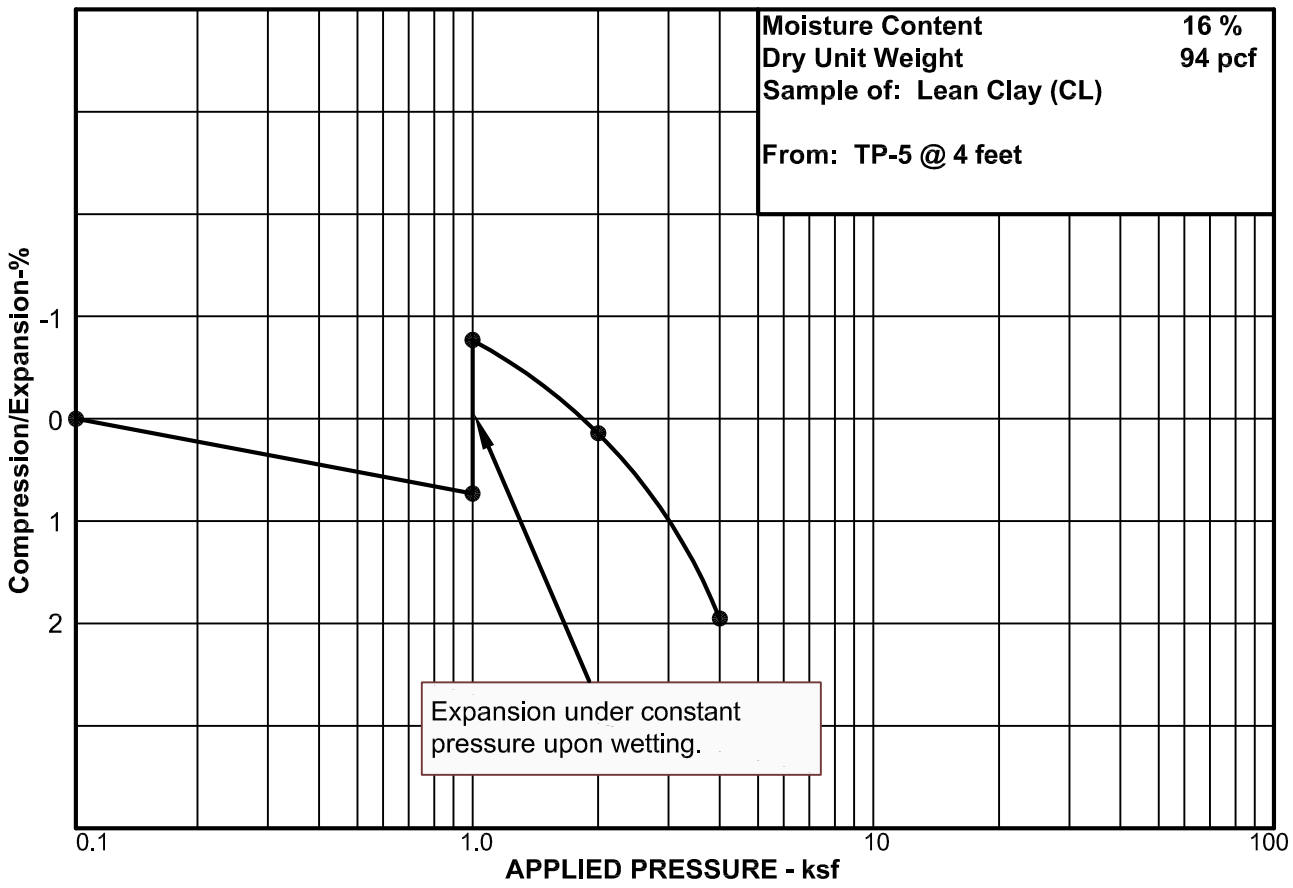
Project No. 2180295 **CONSOLIDATION TEST RESULTS** **Figure 9**

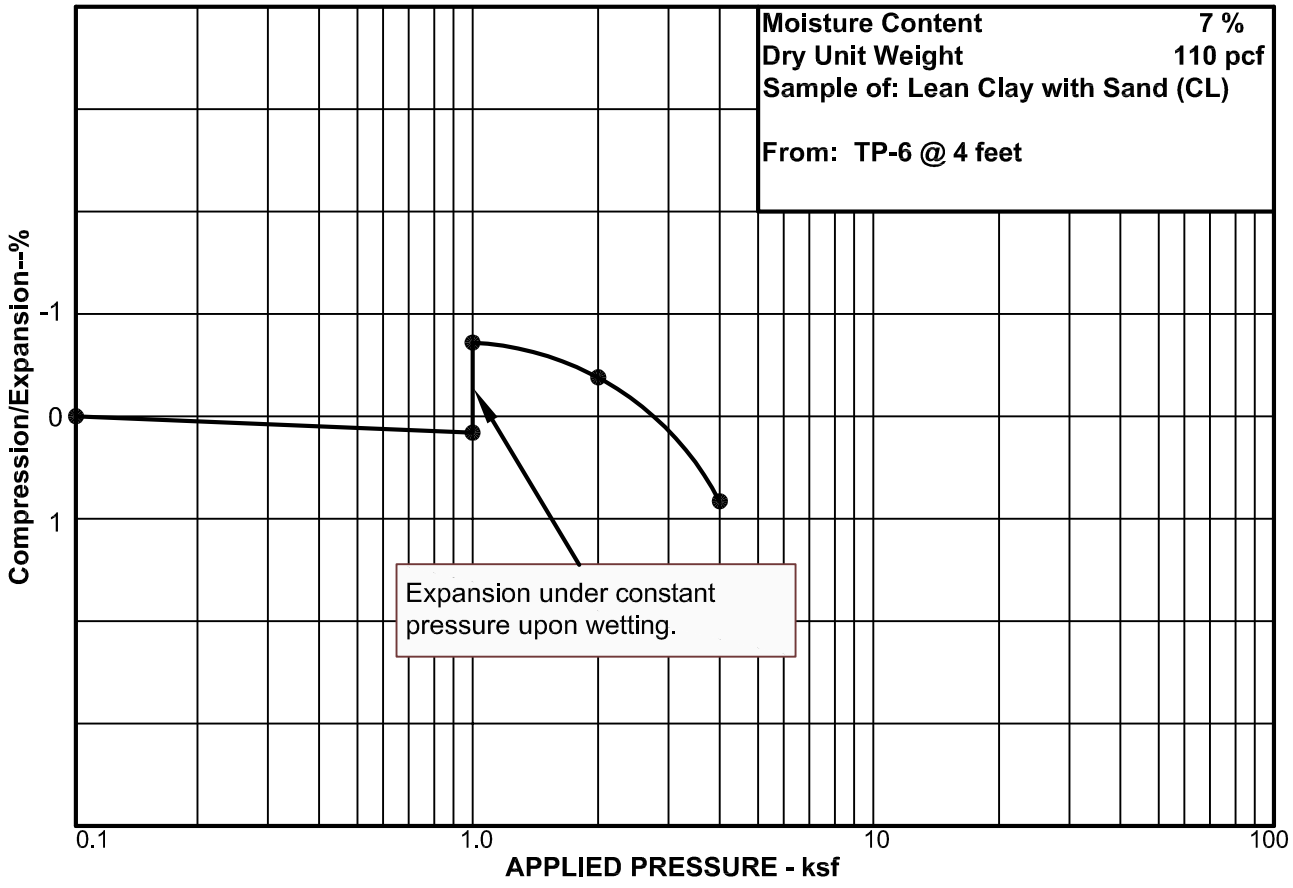
Applied Geotechnical Engineering Consultants, Inc.



Project No. 2180295 **CONSOLIDATION TEST RESULTS** **Figure 10**

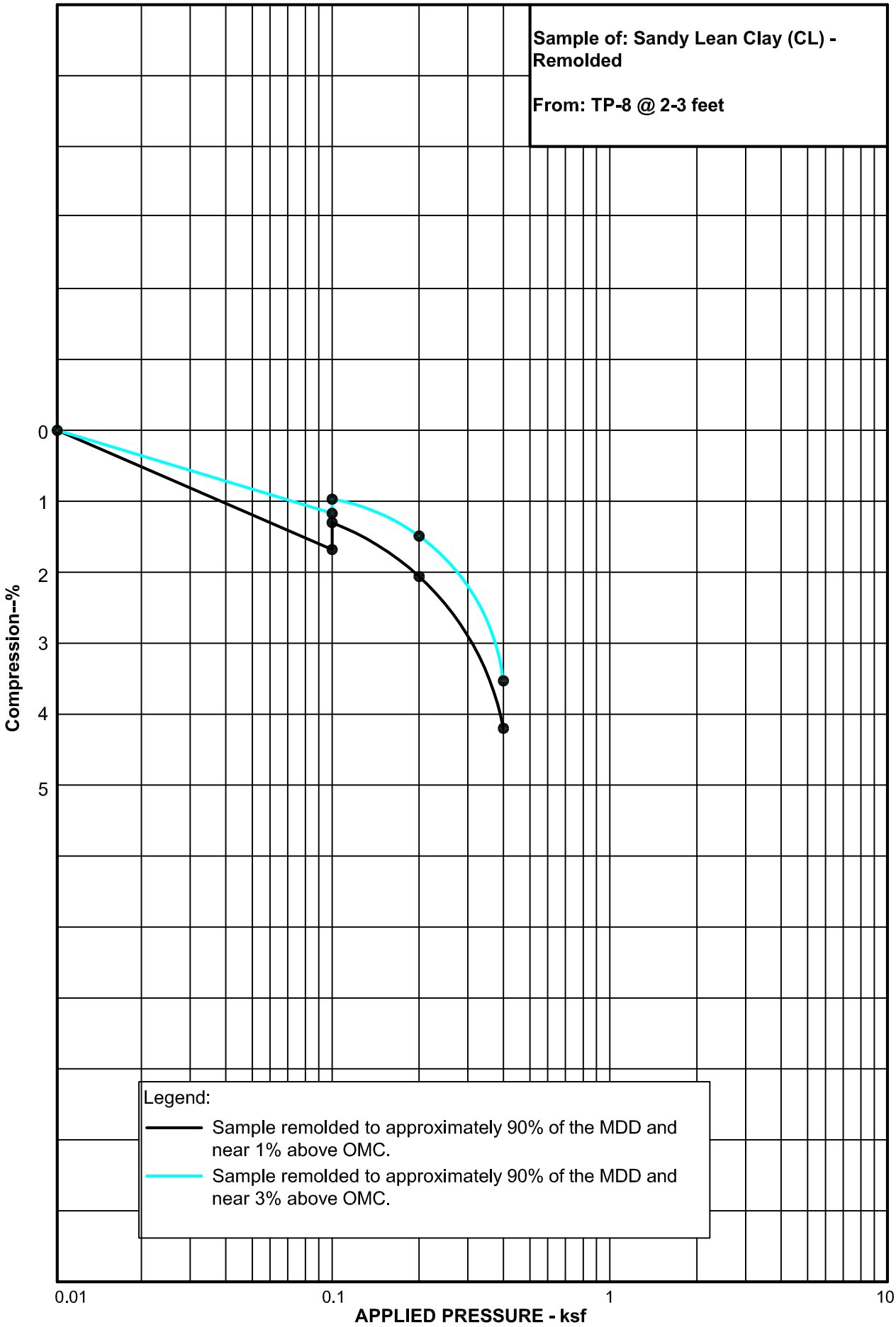
Applied Geotechnical Engineering Consultants, Inc.





Project No. 2180295 **CONSOLIDATION TEST RESULTS** **Figure 11**

Applied Geotechnical Engineering Consultants, Inc.

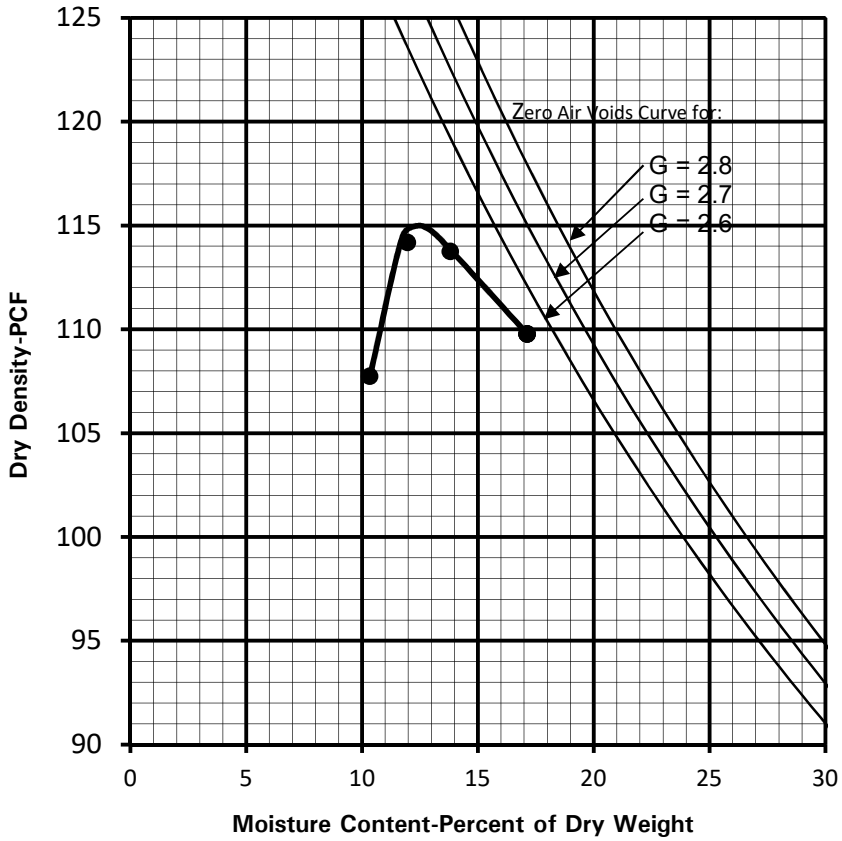


Project No. 2180295 **CONSOLIDATION TEST RESULTS** **Figure 12**

AGEC

Applied GeoTech

Project: 300 West (Tech Ridge South Access Road)



Sample Date:	8/14/18
Sample No.	180815G
Maximum Dry Density:	115.0
Optimum Moisture:	12.5
Atterberg Limits	
Liquid Limit:	45%
Plasticity Index:	24%
Gradation	
Gravel:	0%
Sand:	15%
Silt & Clay:	85%

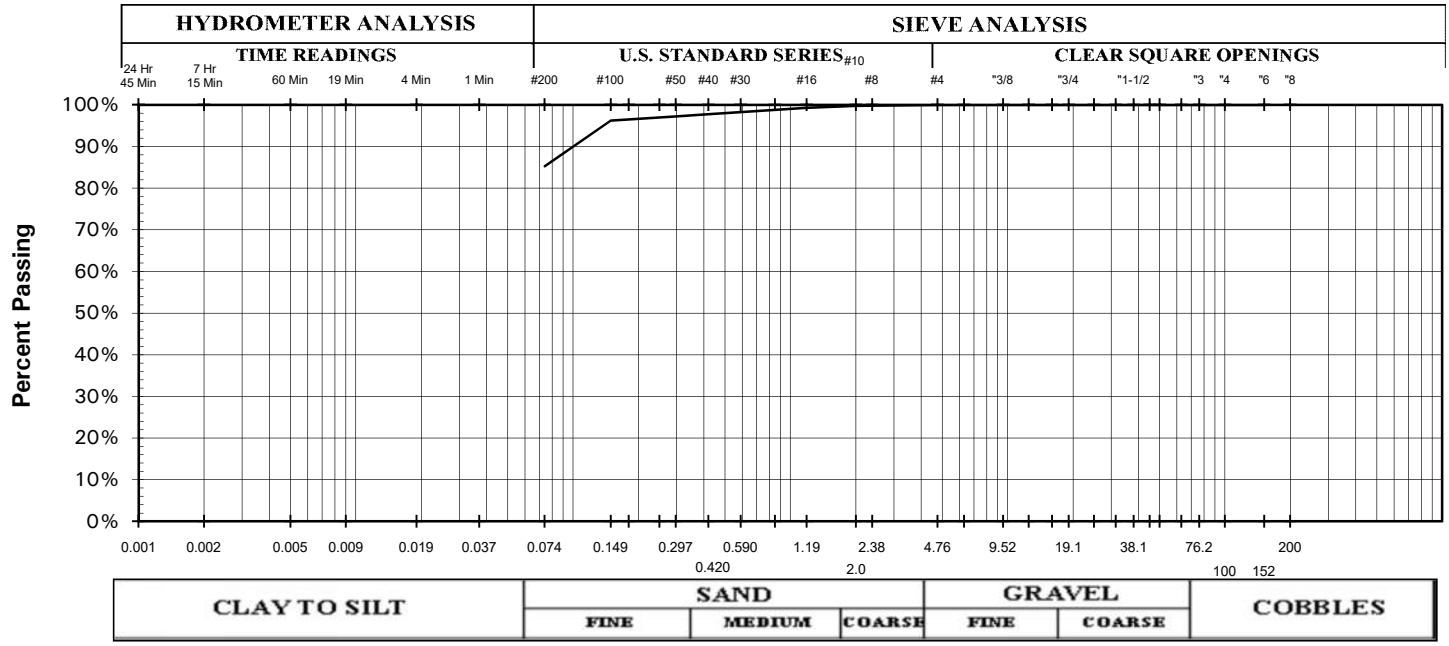
Moisture - Density Relationship Test Procedure: ASTM D-1557 B

Reviewed By: BI

Sample Description: Mudstone - lean clay (CL)

AASHTO Classification: A-7-6

Sample Location: TP-2 @ 2-3'



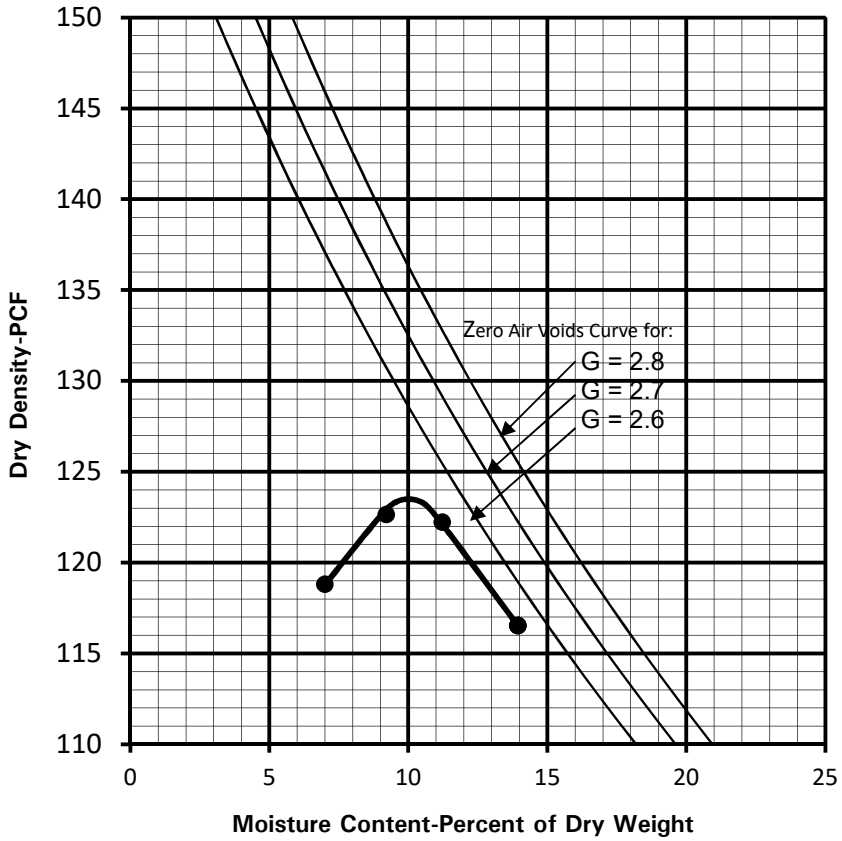
GRADATION AND MOISTURE-DENSITY RELATIONSHIP RESULTS

Project No.: 2180295

Figure: 13

AGEC
Applied GeoTech

Project: 300 West (Tech Ridge South Access Road)



Sample Date:	8/14/18
Sample No.	180816A
Maximum Dry Density:	123.5
Optimum Moisture:	10.0

Atterberg Limits

Liquid Limit:	36%
Plasticity Index:	24%

Gradation

Gravel:	0%
Sand:	27%
Silt & Clay:	73%

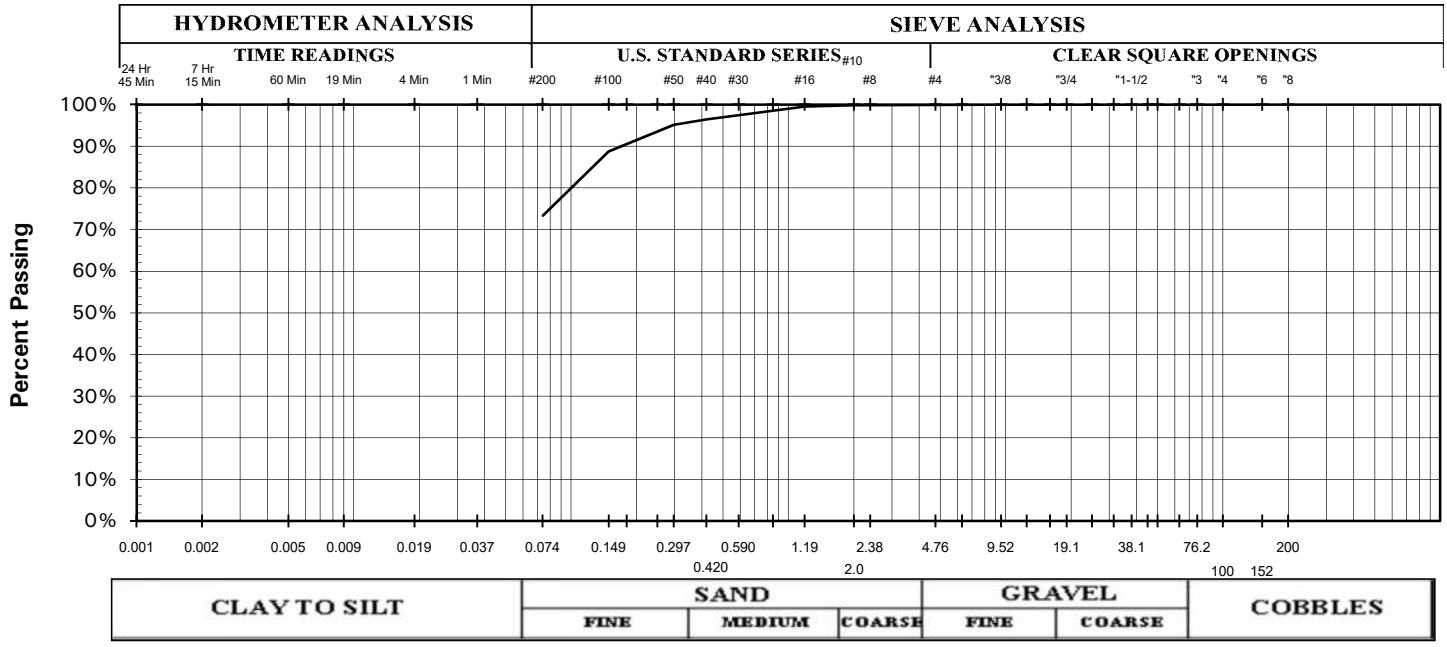
Moisture - Density Relationship Test Procedure: ASTM D-1557 B

Reviewed By: BI

USCS Classification: lean clay with sand (CL)

AASHTO Classification: A-6

Sample Location: TP-3 @ 2-3'



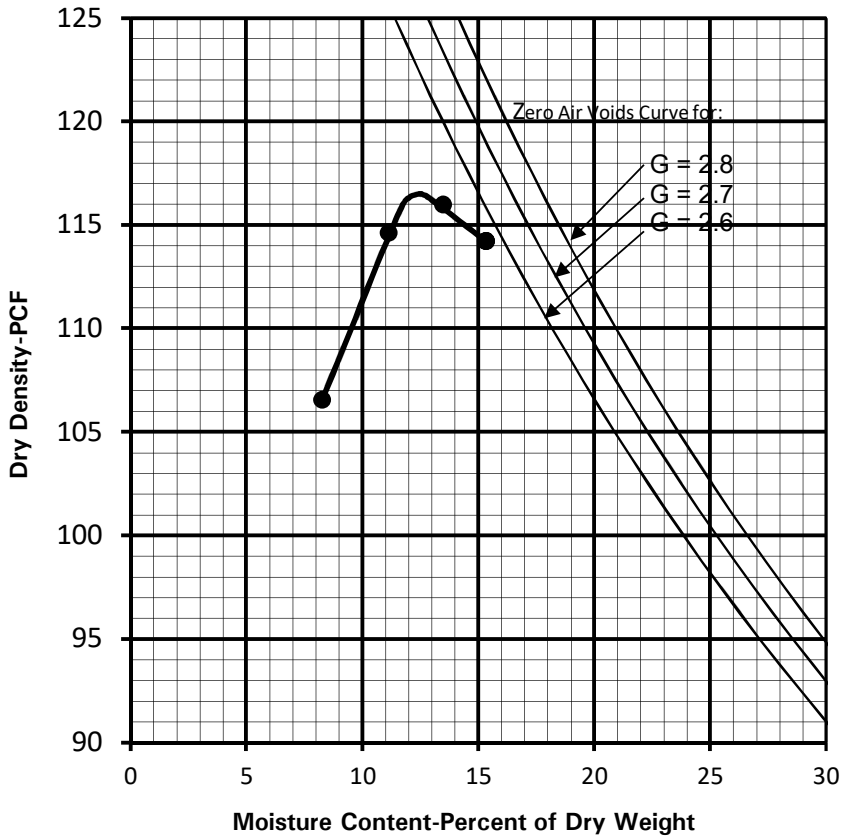
GRADATION AND MOISTURE-DENSITY RELATIONSHIP RESULTS

Project No.: 2180295

Figure: 14

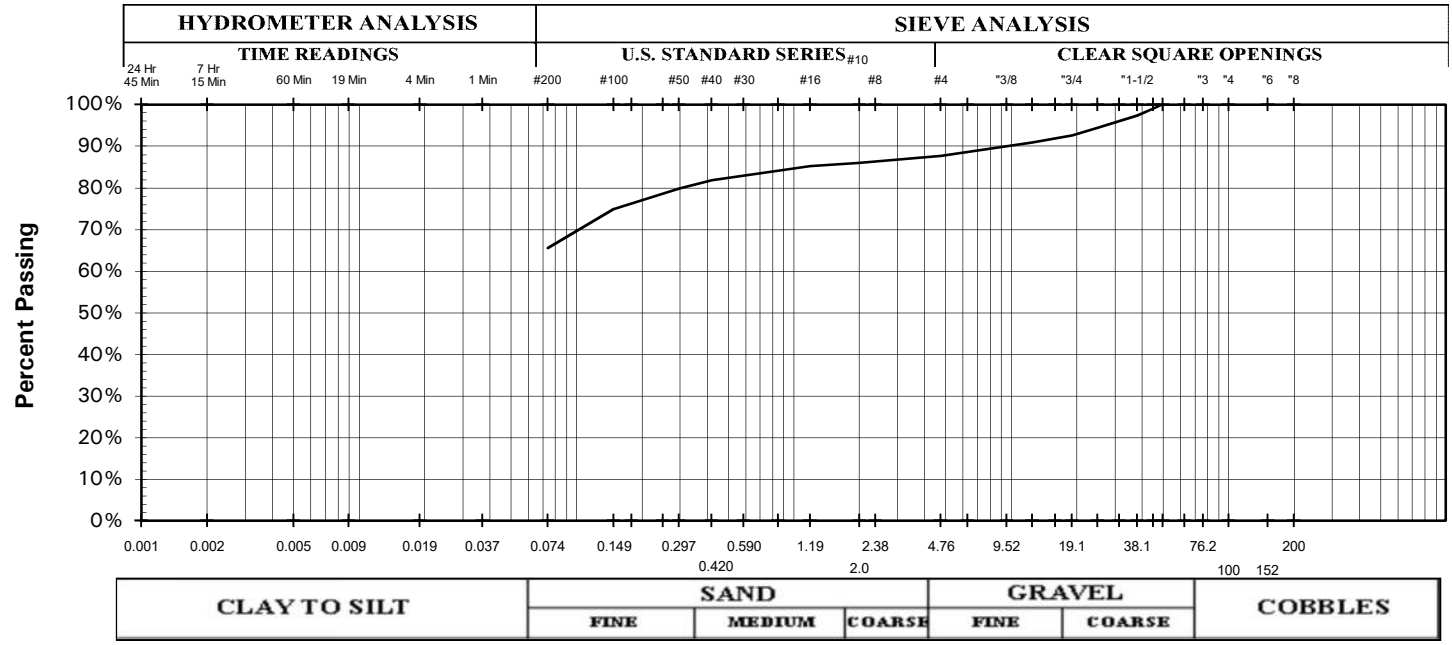
AGEC
Applied GeoTech

Project: 300 West (Tech Ridge South Access Road)



Sample Date:	8/14/18
Sample No.	180816b
Maximum Dry Density:	116.5
Optimum Moisture:	12.5
Atterberg Limits	
Liquid Limit:	37%
Plasticity Index:	20%
Gradation	
Gravel:	12%
Sand:	22%
Silt & Clay:	66%

Moisture - Density Relationship Test Procedure: ASTM D-1557 B
Reviewed By: BI
Sample Description: sandy lean clay (CL)
AASHTO Classification: A-6
Sample Location: TP-8 @ 2-3'



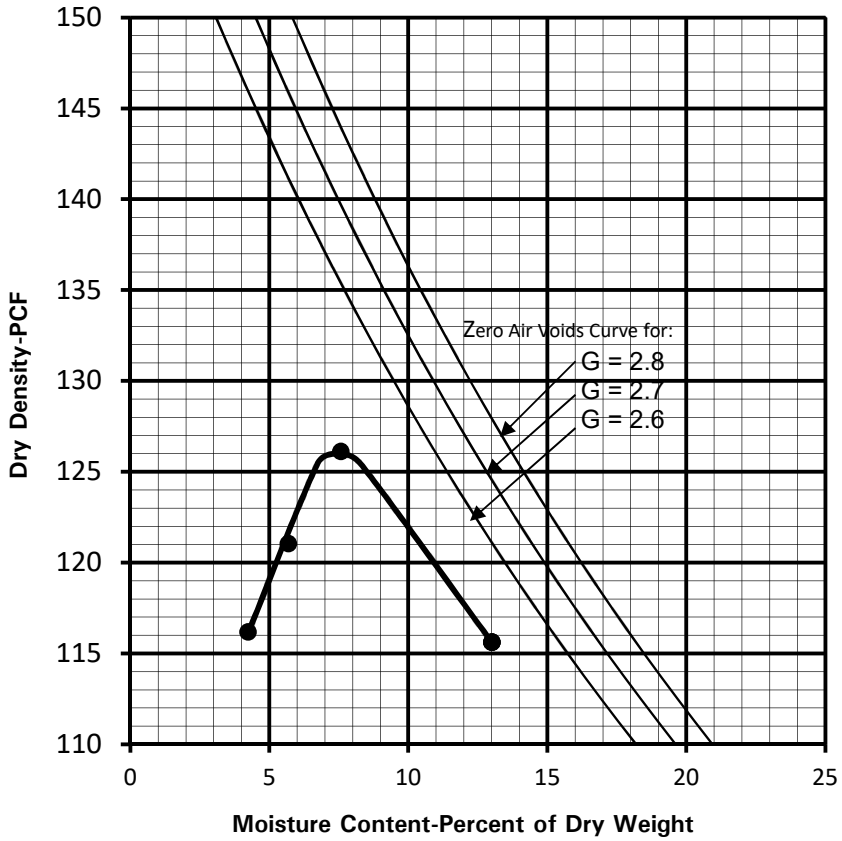
GRADATION AND MOISTURE-DENSITY RELATIONSHIP RESULTS

Project No.: 2180295

Figure: 15

AGEC
Applied GeoTech

Project: 300 West (Tech Ridge South Access Road)



Sample Date:	8/14/18
Sample No.	180816E
Maximum Dry Density:	126.0
Optimum Moisture:	7.5

Atterberg Limits

Liquid Limit:	
Plasticity Index:	Non-Plastic

Gradation

Gravel:	2%
Sand:	63%
Silt & Clay:	35%

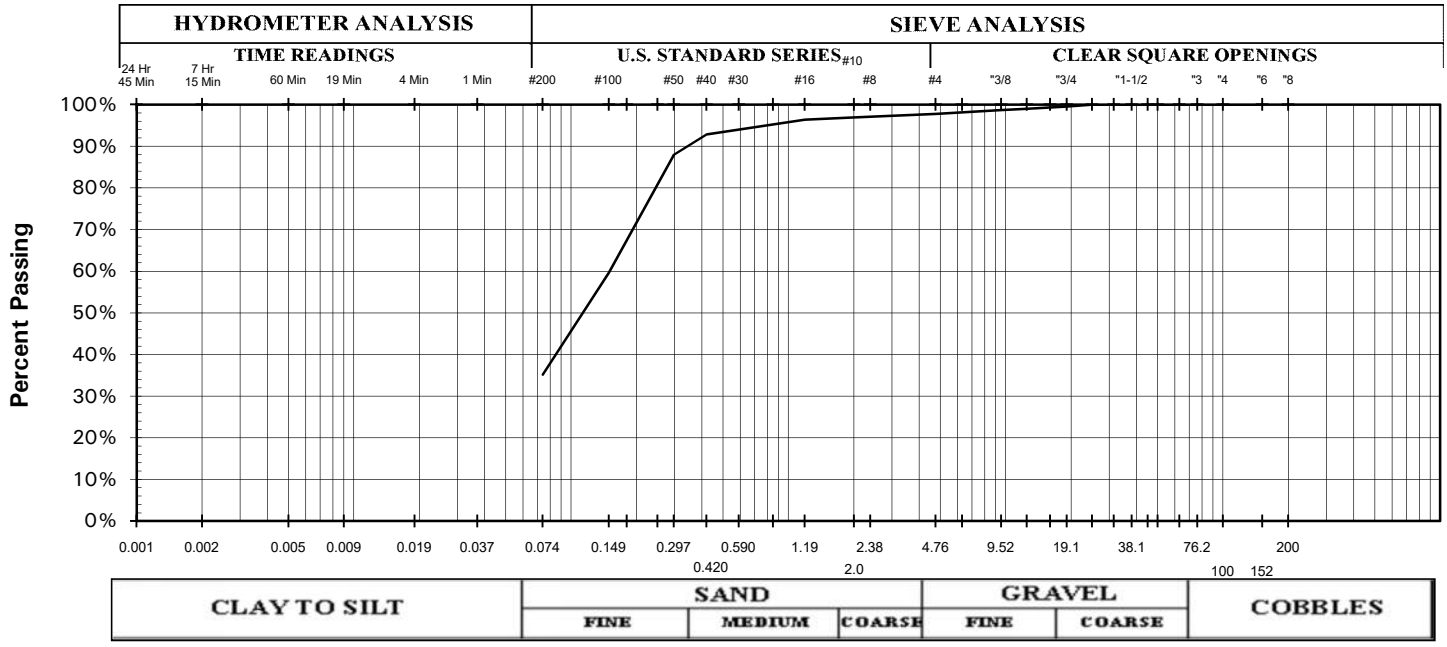
Moisture - Density Relationship Test Procedure: ASTM D-1557 B

Reviewed By: BI

USCS Classification: silty sand (SM)

AASHTO Classification: A-4

Sample Location: TP-10 @ 2-3'



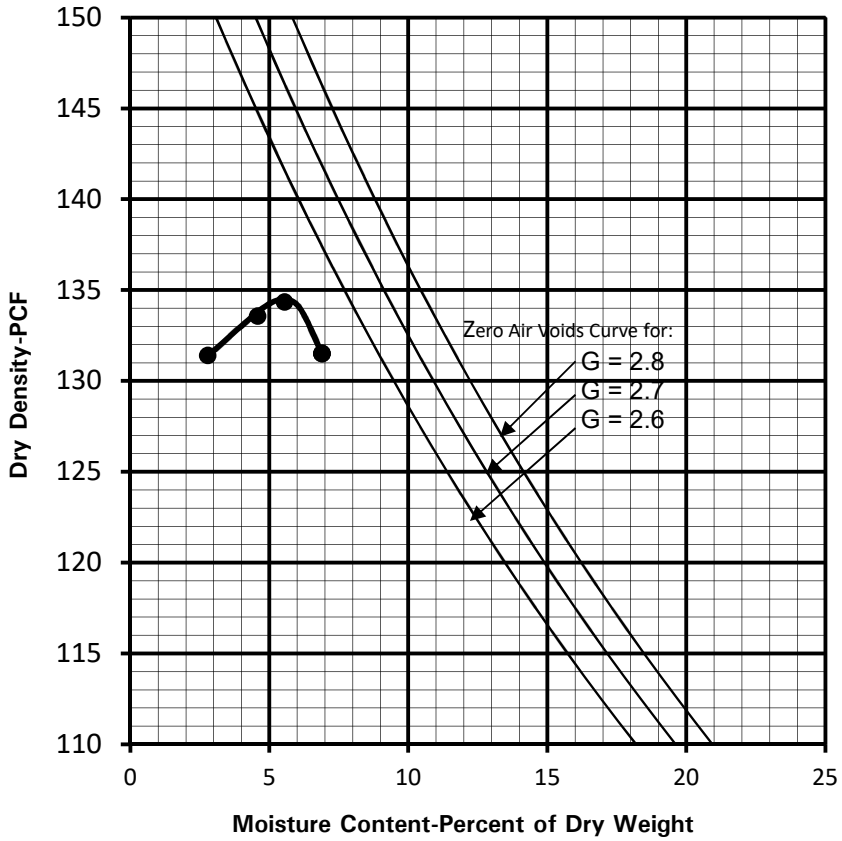
GRADATION AND MOISTURE-DENSITY RELATIONSHIP RESULTS

Project No.: 2180295

Figure: 16

AGEC
Applied GeoTech

Project: 300 West



Sample Date:	8/14/18
Sample No.	180816F
Maximum Dry Density:	134.5
Optimum Moisture:	5.5

Atterberg Limits

Liquid Limit:	
Plasticity Index:	Non-Plastic

Gradation

Gravel:	68%
Sand:	16%
Silt & Clay:	16%

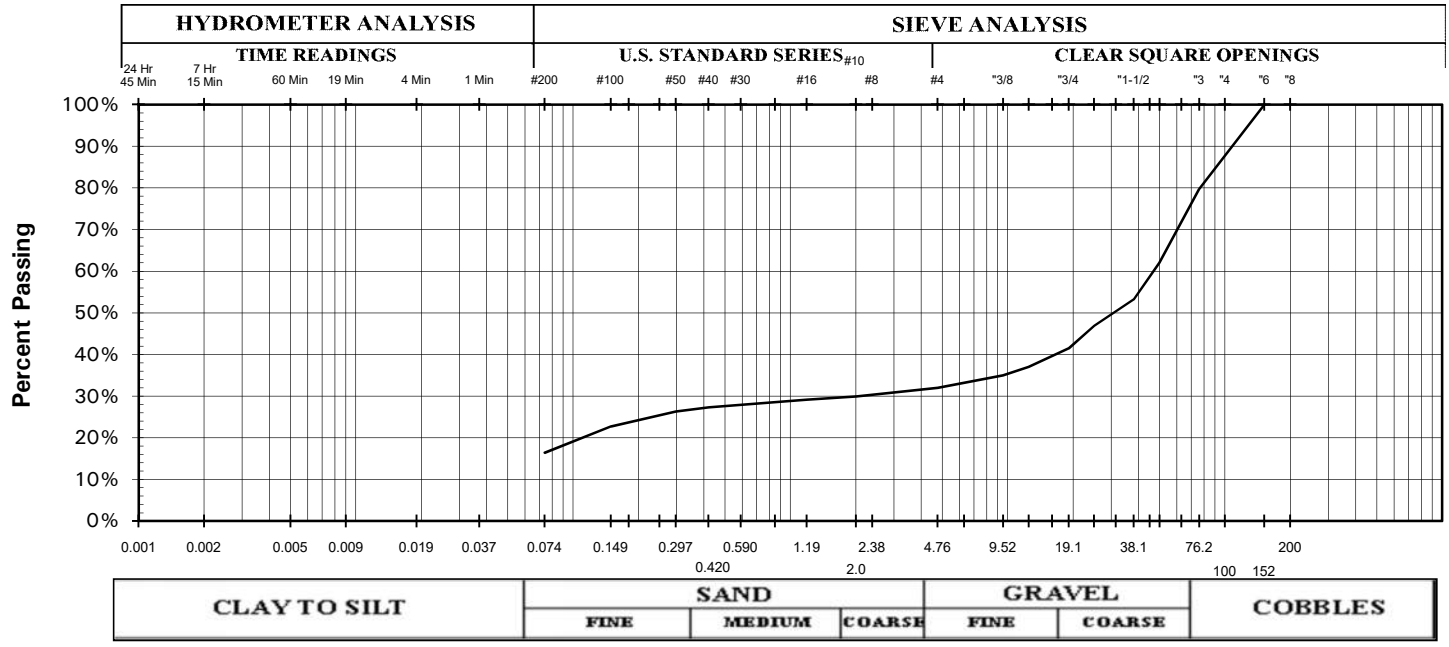
Moisture - Density Relationship Test Procedure: ASTM D-1557 B

Reviewed By: TT

USCS Classification: silty gravel with sand (GM) *Rock Corrected*

AASHTO Classification: A-1-b

Sample Location: TP-11 @ 0-1'



GRADATION AND MOISTURE-DENSITY RELATIONSHIP RESULTS

Project No.: 2180295

Figure: 17

AGEC
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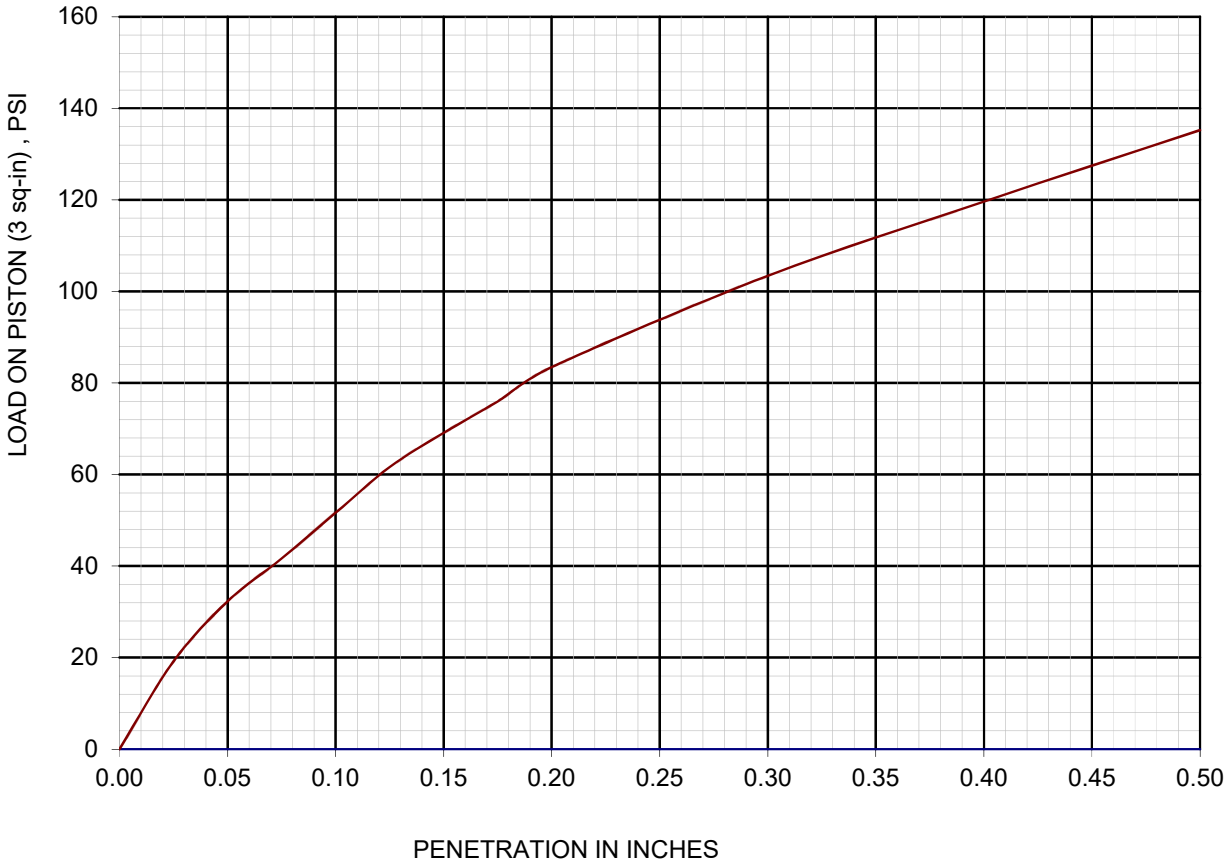


Project 300 West **Sample Location** TP-2 @ 2-3'

Sample Classification (CL) lean clay - purple mudstone **AGEC Sample ID No.** A-082718

Method of sample preparation: Remolded to approximately 90% of the maximum dry density at the optimum moisture content +2 as per ASTM D-1557

Sample penetration after soaking for 96 hours

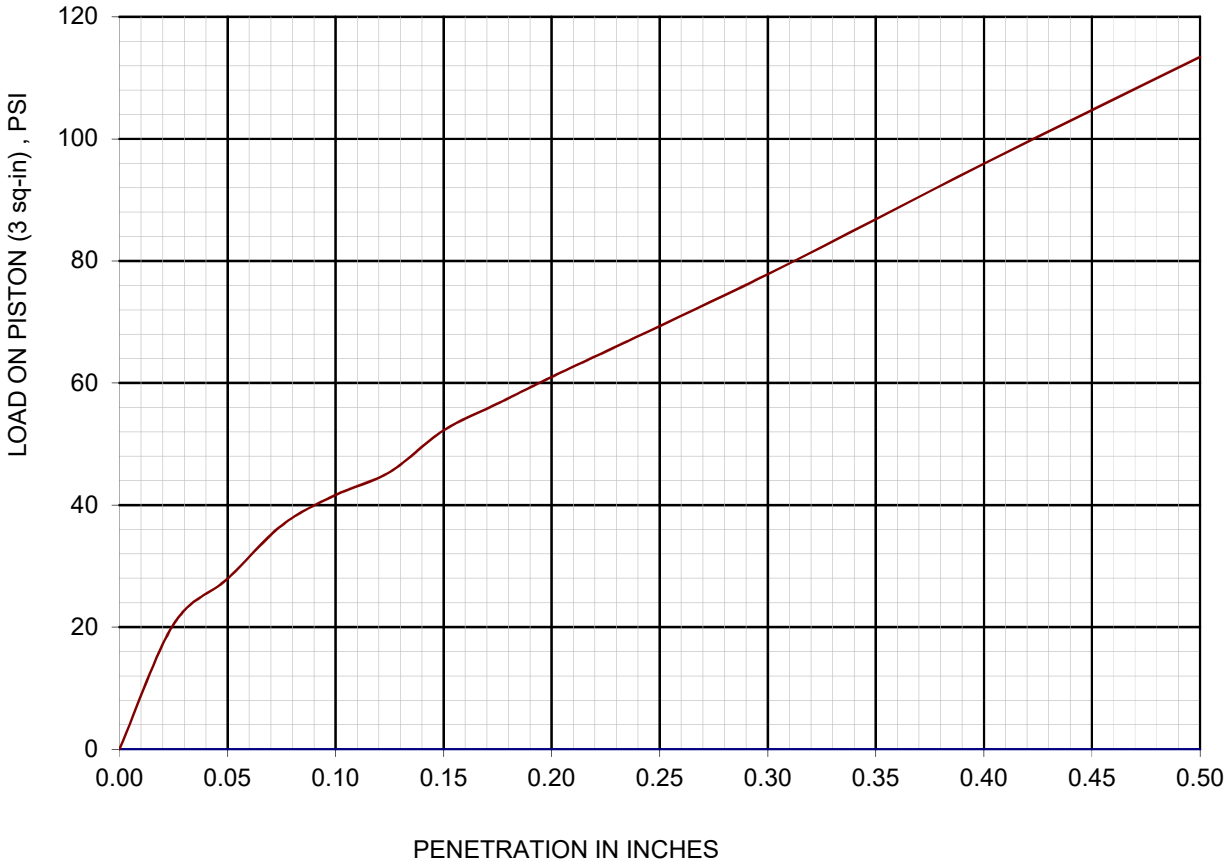
Dry Density:	as molded	103.0	pcf	**Moisture Content:**	as molded	14.1	percent
	after soaking	98.1	pcf		top 1-inch after soaking	26.0	percent
Swell:	after soaking	4.1	percent		average after soaking	25.3	percent

Comments CBR value taken at 0.2 inch penetration

Bearing Ratio of Sample, CBR = **6** percent **Surcharge** 30 lb

Proj. No. 2180295 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 18

AGEC
Applied GeoTech



Project 300 West **Sample Location** TP-3 @ 2-3'

Sample Classification (CL) lean clay with sand **AGEC Sample ID No.** B-082718

Method of sample preparation: Remolded to approximately 90% of the maximum dry density at the optimum moisture content +2% as per ASTM D-1557

Sample penetration after soaking for 96 hours

Dry Density:	as molded	113.6	pcf	**Moisture Content:**	as molded	12.0	percent
	after soaking	108.6	pcf		top 1-inch after soaking	23.1	percent
Swell:	after soaking	1.3	percent		average after soaking	20.0	percent

Comments CBR value taken at 0.2 inch penetration

Bearing Ratio of Sample, CBR = **4** percent **Surcharge** 30 lb

Proj. No. 2180295 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 19

AGEC
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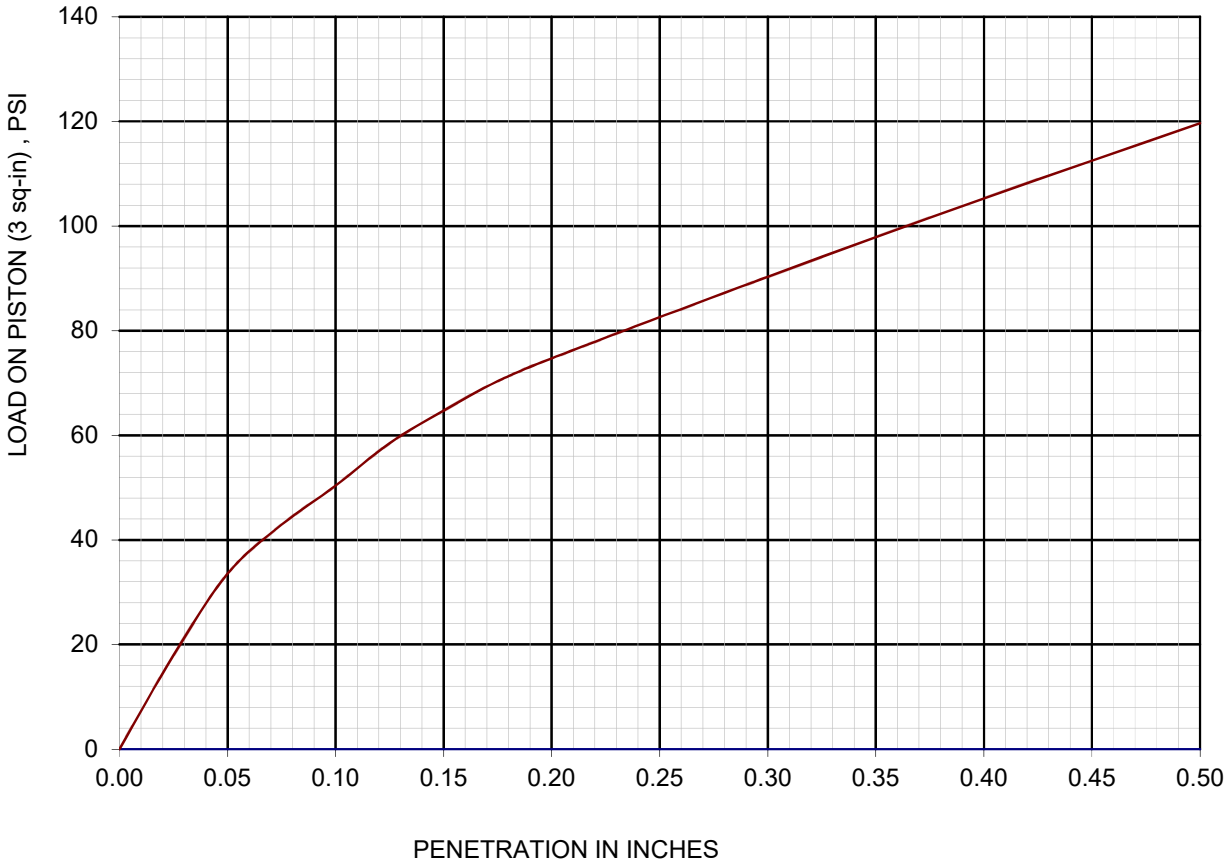

Project 300 West **Sample Location** TP-8 @ 2-3'

Sample Classification (CL) sandy lean clay **AGEC Sample ID No.** C-082718

Method of sample preparation: Remolded to approximately 90% of the maximum dry density at the optimum moisture content +2% as per ASTM D-1557

Sample penetration after soaking for 96 hours

Dry Density:	as molded	104.5	pcf	**Moisture Content:**	as molded	14.5	percent
	after soaking	104.1	pcf		top 1-inch after soaking	21.7	percent
Swell:	after soaking	1.5	percent		average after soaking	18.9	percent

Comments CBR value taken at 0.2 inch penetration

Bearing Ratio of Sample, CBR = **5** percent **Surcharge** 30 lb

Proj. No. 2180295 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 20

AGEC
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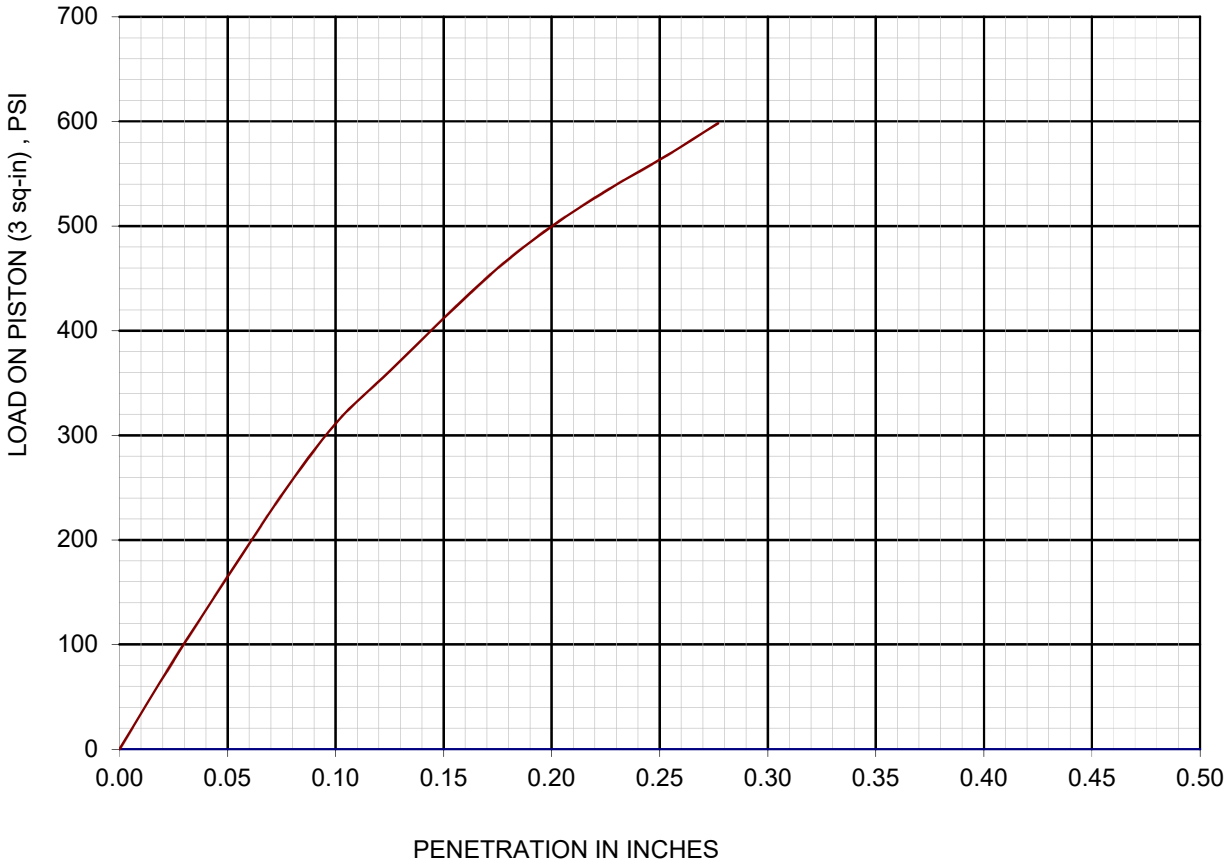

Project 300 West **Sample Location** TP-10 @ 2-3'

Sample Classification (SM) Silty sand **AGEC Sample ID No.** D-082718

Method of sample preparation: Remolded to approximately 95% of the maximum dry density at the optimum moisture content as per ASTM D-1557

Sample penetration after soaking for 96 hours

Dry Density:	as molded	122.2	pcf	**Moisture Content:**	as molded	7.4	percent
	after soaking	123.0	pcf		top 1-inch after soaking	10.3	percent
Swell:	after soaking	0.2	percent		average after soaking	10.5	percent

Comments CBR value taken at 0.2 inch penetration

Bearing Ratio of Sample, CBR = **33** percent **Surcharge** 10 lb

Proj. No. 2180295 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 21

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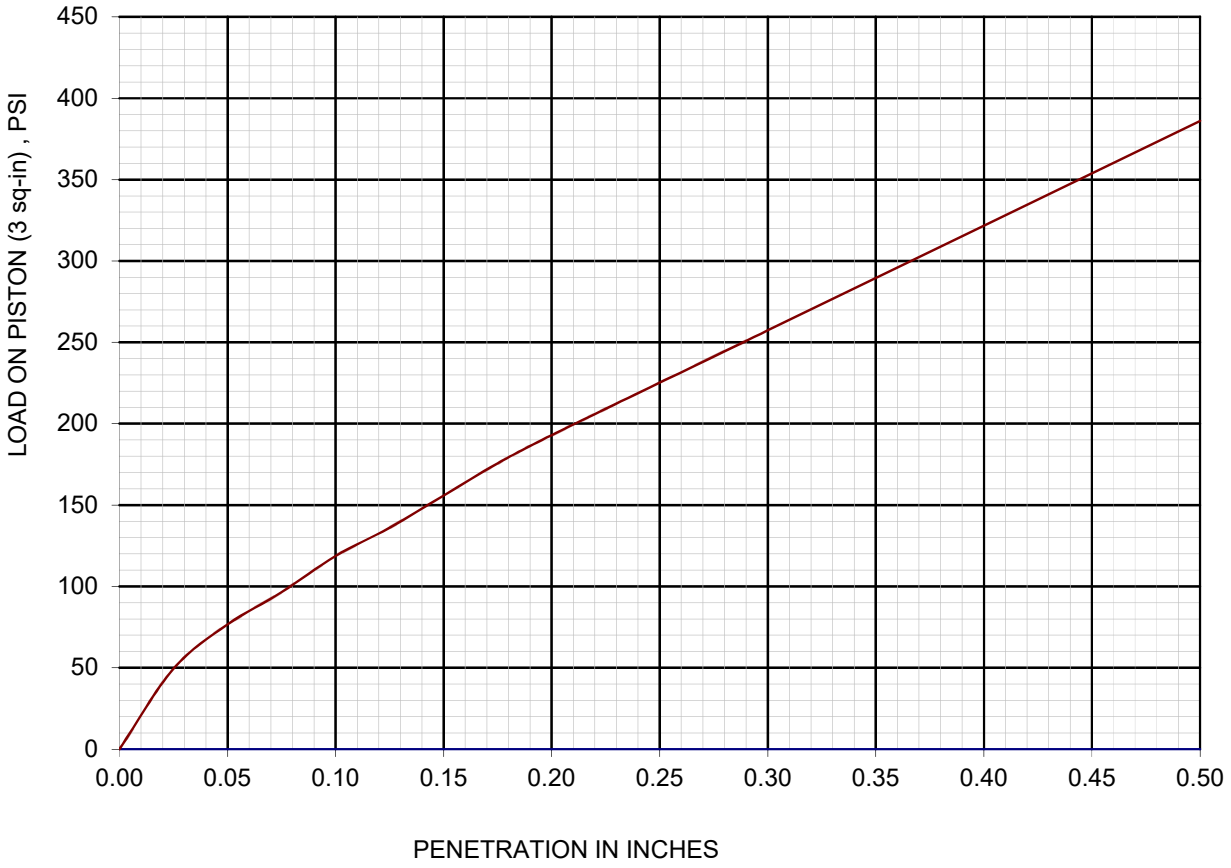

Project 300 West **Sample Location** TP-11 @ 0-1'

Sample Classification Silty sand w/gravel - Basalt **AGEC Sample ID No.** E-082718

Method of sample preparation: Remolded to approximately 95% of the maximum dry density at the optimum moisture content as per ASTM D-1557

Sample penetration after soaking for 96 hours

Dry Density:	as molded	127.1	pcf	**Moisture Content:**	as molded	5.1	percent
	after soaking	122.6	pcf		top 1-inch after soaking	18.8	percent
Swell:	after soaking	1.6	percent		average after soaking	16.7	percent

Comments CBR value taken at 0.2 inch penetration

Bearing Ratio of Sample, CBR = 13 percent **Surcharge** 30 lb

Proj. No. 2180295 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 22

Applied Geotechnical Engineering Consultants, Inc.

Table 1 - Summary of Laboratory Test Results

Tech Ridge South Access Road

Project No. 2180295

Sample Location				Gradation			Atterberg Limits		Moisture-Density Relationship			
Test Pit No.	Depth (ft)	Natural Moisture Content (%)	Natural Dry Density (pcf)	Gravel (%)	Sand (%)	Silt/Clay (%)	Liquid Limit (%)	Plastic Index (%)	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	California Bearing Ratio (%)	Soil Type
TP-1	4	7	124			63	31	19				Sandy Lean Clay (CL)
TP-1	6	7	123			62	27	14				Sandy Lean Clay (CL)
TP-1	13	15	96			84	44	29				Mudstone
TP-2	2	7				71	35	19				Mudstone
TP-2	2-3			0	15	85	45	24	115.0	12.5	6	Mudstone
TP-2	6	8	118			90	52	30				Mudstone
TP-3	2-3			0	27	73	36	24	123.5	10.0	4	Lean Clay with Sand (CL)
TP-3	6	11	117			69	47	35				Sandy Lean Clay (CL)
TP-4	2	11										Silty Gravel with Sand (GM)
TP-4	4	8	108			36						Silty Sand (SM)
TP-4	6	17	101			81						Silt with Sand (ML)
TP-5	2	9	93				39	27				Lean Clay (CL)
TP-5	4	16	94			96	48	33				Lean Clay (CL)
TP-5	6	14				92	36	22				Lean Clay (CL)
TP-6	4	7	110			83	29	18				Lean Clay with Sand (CL)

Applied Geotechnical Engineering Consultants, Inc.

Table 1 - Summary of Laboratory Test Results

Tech Ridge South Access Road

Project No. 2180295

Sample Location				Gradation			Atterberg Limits		Moisture-Density Relationship			
Test Pit No.	Depth (ft)	Natural Moisture Content (%)	Natural Dry Density (pcf)	Gravel (%)	Sand (%)	Silt/Clay (%)	Liquid Limit (%)	Plastic Index (%)	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	California Bearing Ratio (%)	Soil Type
TP-6	6	6	112			94		NP				Silt (ML)
TP-7	3½					81	37	21				Lean Clay with Sand (CL)
TP-8	2	9		3	26	71	41	25				Lean Clay with Sand (CL)
TP-8	2-3			12	22	66	37	20	116.5	12.5	5	Sandy Lean Clay (ML)
TP-8	4	5				77	30	20				Lean Clay with Sand (CL)
TP-10	2	3	88			48						Silty Sand (SM)
TP-10	2-3			2	63	35		NP	126.0	7.5	33	Silty Sand (SM)
TP-10	4	1				6						Well Graded Sand with Silt (SW-SM)
TP-10	9½	10				59	59	37				Mudstone
TP-10	14½					99	52	39				Mudstone
TP-11	0-1			68	16	16		NP	134.5	5.5	13	Silty Gravel with Sand (GM)
TP-15	4					96	77	35				Shale Bedrock
TP-16	10½	5	110			71						Mudstone

AGEC
Applied GeoTech

September 8, 2023

St. George City Public Works, Engineering Division
175 East 200 North
S. George, Utah 84770

Attention: Wes Jenkins
email: wes.jenkins@sgcity.org

Subject: Geotechnical Report Update Consultation
Tech Ridge Southeast Access Roadway
St. George, Utah
Project Nos. 22230249

REFERENCES

1. "Geotechnical Investigation, Tech Ridge South Access Road", prepared by AGEC under Project No. 2180295, dated October 19, 2018.

2. "Preliminary Construction Plans - Southeast Access Road, Sheets C1.1, C1.2, C1.3, C2.9, and C2.10", prepared by Alliance Consulting under Poject No. 4568-21, dated June 30, 2023.

AGEC was requested to provide and update to the referenced report above (Reference No. 1) and respond to items from the St. George City plan review. AGEC has reviewed the referenced report and concludes that the recommendations provided (Reference No. 1) still apply and should be used for design and construction. Additionally, we were informed that a change to include water bearing utilities such as waterline and storm drains has been added to the roadway construction.

Due to the existence of landslide deposits across the eastern slope (which the proposed roadway alignment traverses) and our analysis which indicates the eastern slope contains marginal stability, AGEC provided the following as mitigation for the landslide area:

Mitigation

If the decision is made to continue with construction of the roadway on the landslides, we recommend the following items be seriously considered:

1. *Introduction of moisture into the subgrade should be minimized if not eliminated. This could be accomplished by:*

a. *Collecting and transporting surface drainage off the slope in watertight catch basins and piping. This is not standard storm drainage procedures therefore, this would require specific attention to verify that the improvements are watertight.*

b. *Water ways should be lined to prevent seepage into the ground.*

c. *Measures need to be taken to eliminate the potential for water to pond on the slope.*

d. *No water bearing utilities should be installed within the landslide area.*

2. *Cut and fill slopes need to be minimized. Overall impact of potential grade changes should be evaluated and the consequence of the change found to be acceptable before proceeding.*

3. *Water entering the ground in all areas above the slope (within the Tech Ridge area) should be reduced and ideally eliminated. Some, if not all, of the methods described above should be considered within the Tech Ridge area.*

Due to the marginal stability of the landslide deposits, the long-term stability of the site largely depends on keeping the natural hillside topography and subsurface moisture conditions unchanged. The inclusion of water bearing utilities will likely increase the risk that future landslide movement could occur because of water infiltrating the subsurface soils and bedrock leading to weakened subsurface conditions.

St. George City should understand the risk associated with this project and plan accordingly. Frequent maintenance and inspection of the roadway drainage during and after heavy precipitation could be conducted to check for potential water ponding or infiltration issues so that repairs can be made to provide proper drainage.

Additionally, inspections of the storm drainpipes and basins could be done to check for leaks so that repairs can be made quickly to seal the leaks. Thorough inspections and testing should be provided during construction to check for any leaks prior to backfilling water bearing utilities.

Special attention to the backfill material and process should be conducted around the pipes to reduce potential damage to the pipes. We understand that fused HDPE pipe is planned to be used, which may experience lengthening/shortening under temperature fluctuations. Design and construction of the water and storm drain systems should consider the effects lengthening/shortening may have on the system to remain watertight. Unfortunately, waterline leaks on buried pipes are difficult to observe until a major failure occurs. Our experience indicates small leaks in underground water-bearing utilities will likely go unnoticed for a period, while the trenches transport water through them as a conduit. Consideration should be given to evaluating the cost of running the water bearing utilities along an alternate route outside the landslide vs. the future cost of repairs should landslide movement be triggered.

If you have any questions, or if we can be of further service, please call.

Sincerely,

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

Jake Erickson, P.E.

Reviewed by: G. Wayne Rogers, P.E.
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Tech Ridge Southeast Access Road

HILLSIDE DEVELOPMENT PERMIT

2023-HS-002


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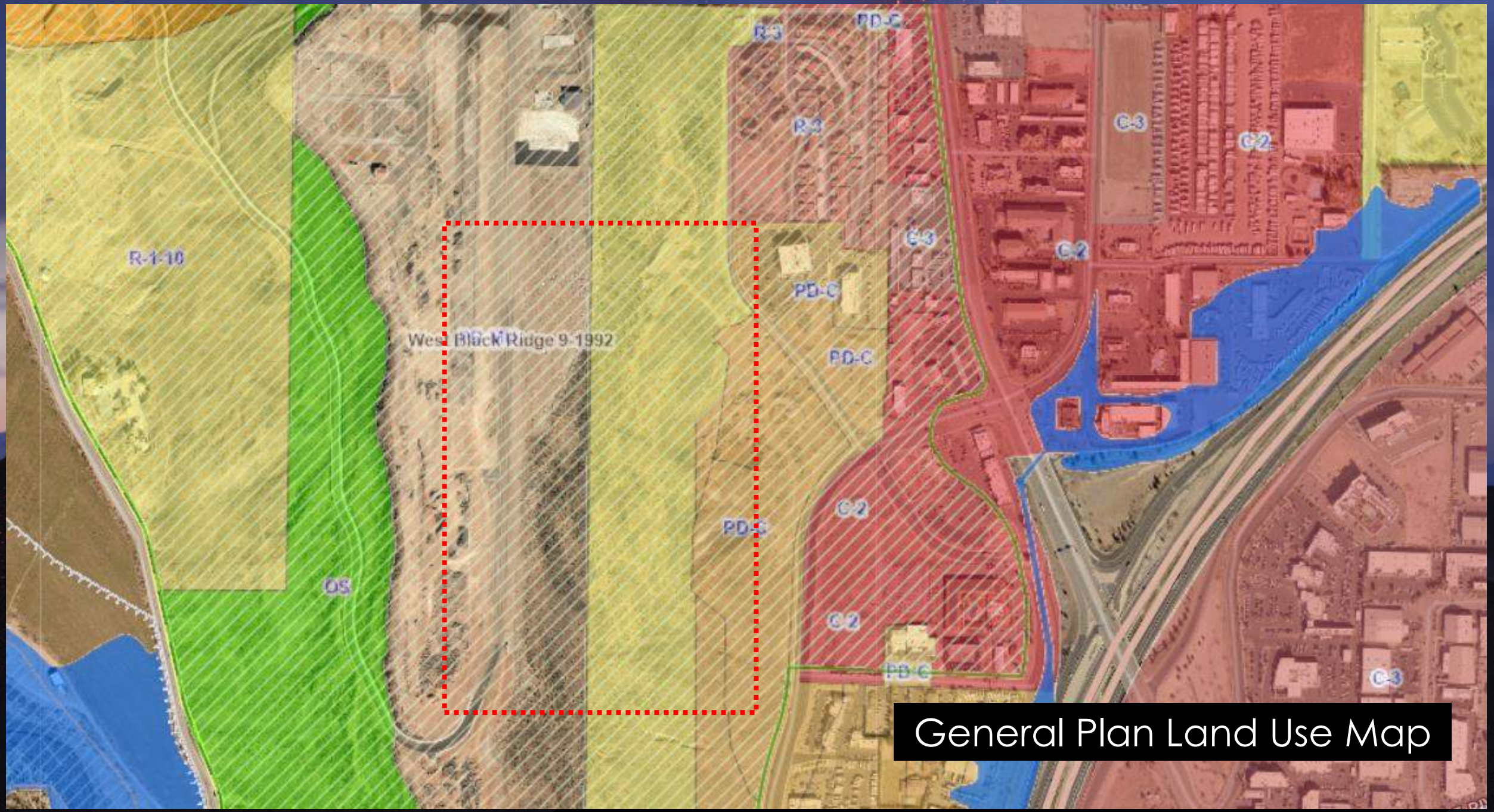
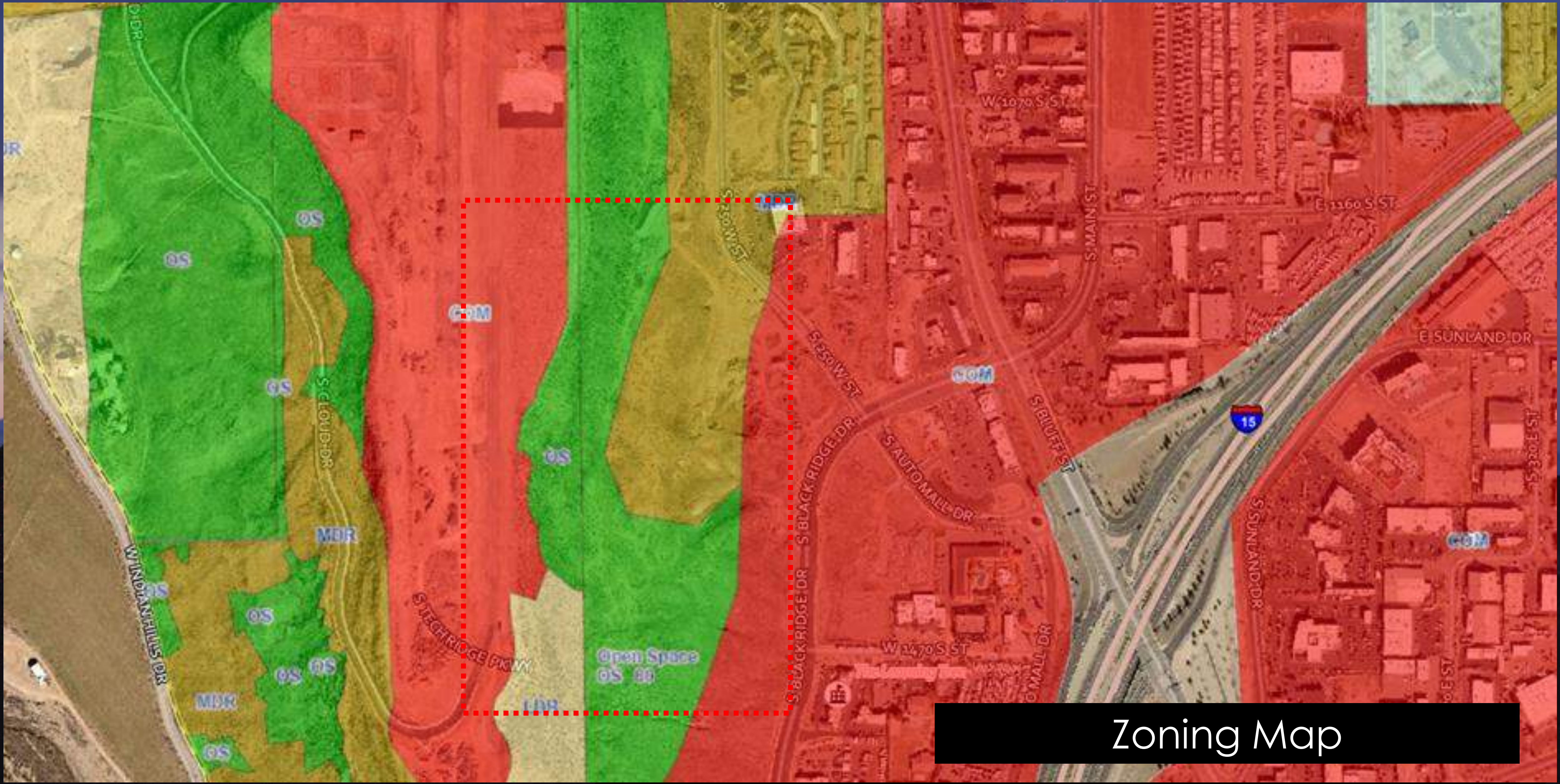


General Plan Land Use Map

Zoning Map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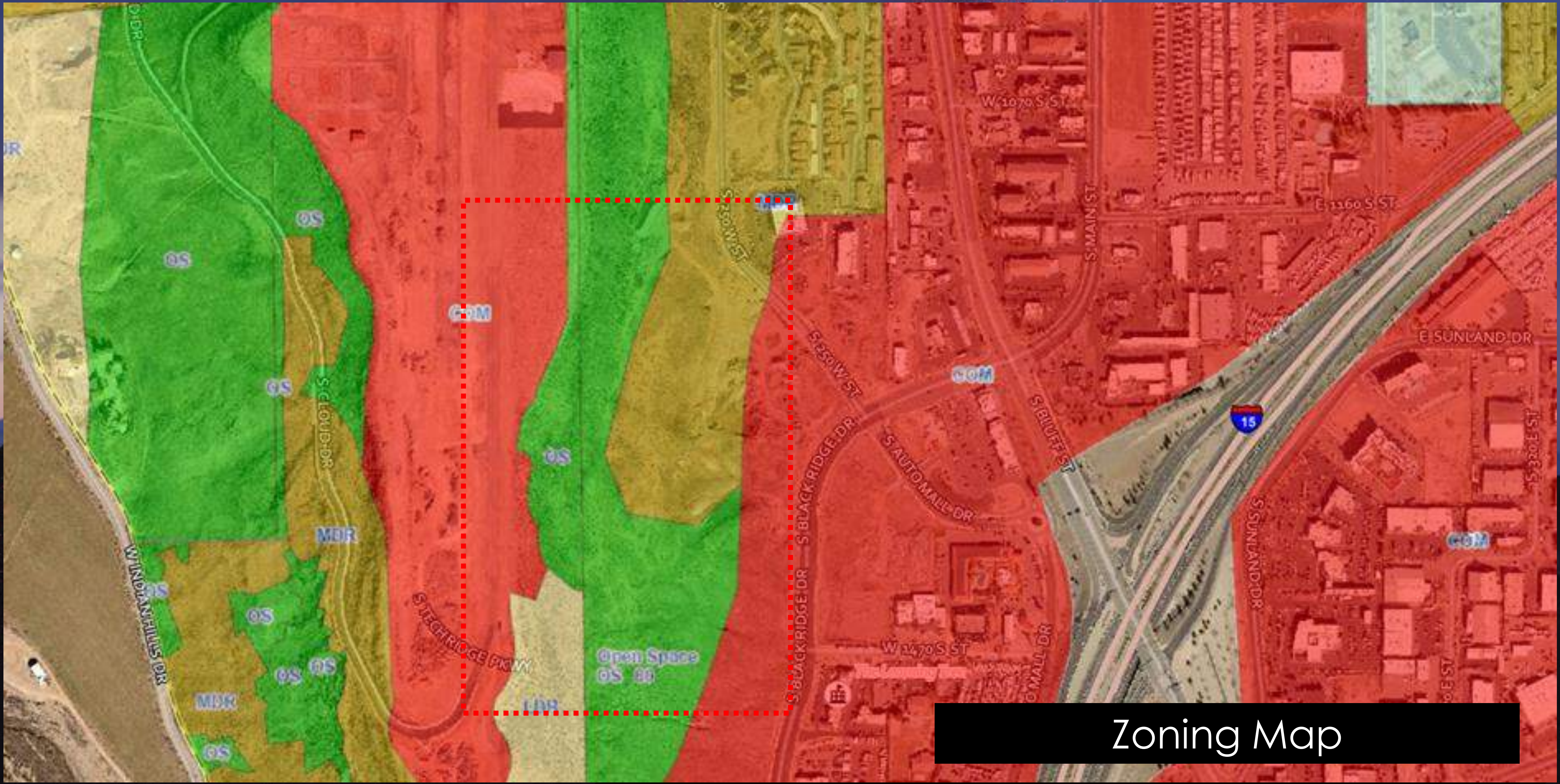
Zoning Map



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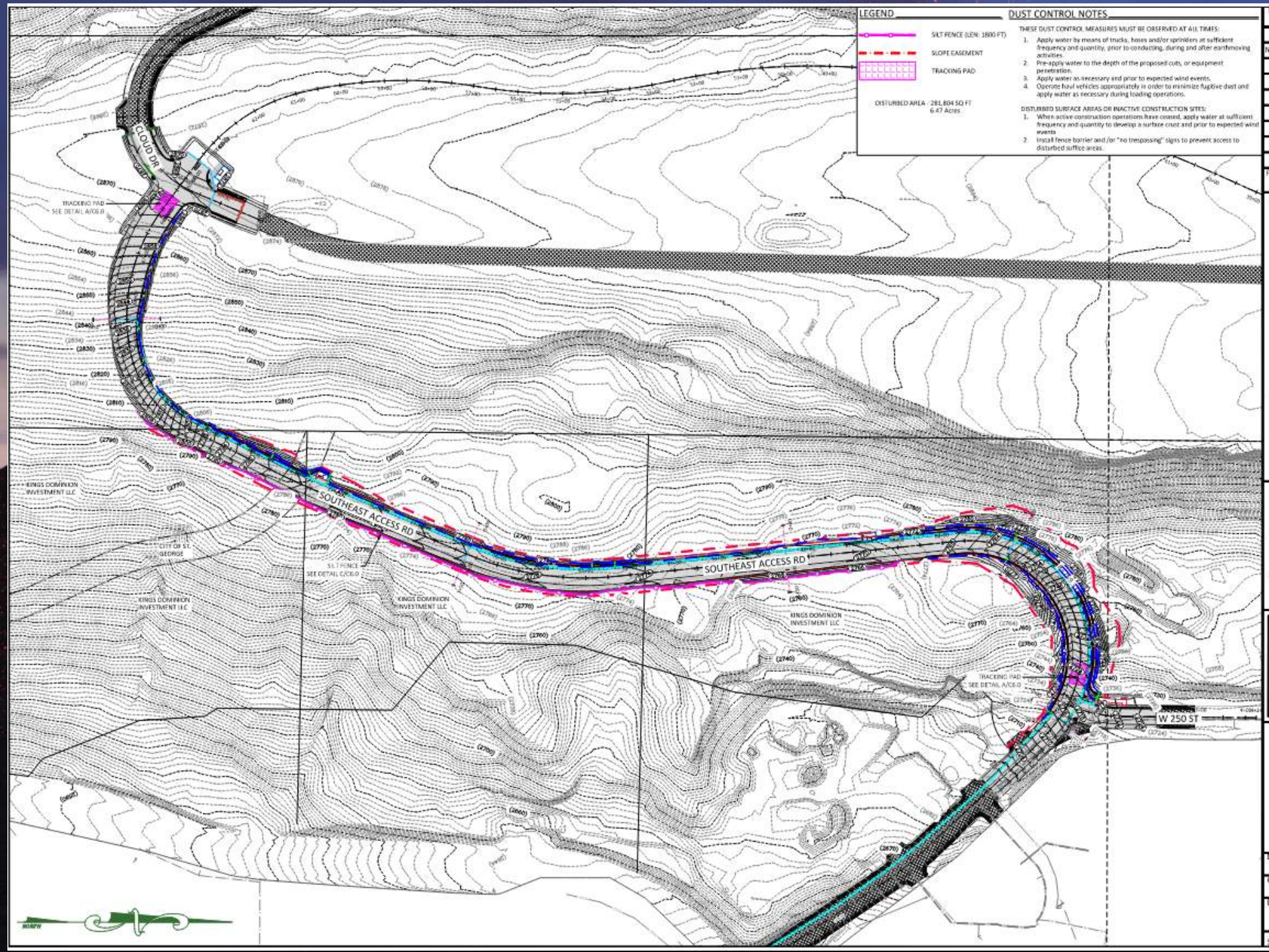
COM
MDR
LDR
Open Space
W 1070 S ST
E 1160 S ST
S MAIN ST
E SUNLAND DR
S 350 W ST
S BLUFF ST
S AUTO MALL DR
S BLACK RIDGE DR
W 1470 S ST
S TECHRIDGE PKWY
W INDIAN HILLS DR
S CLOUD DR
S SUNLAND DR
15



Date: 10-19-2023

REVISIONS

No	Date	by	Description

File Name: East Access OPT 2.dwg

KEY MAP

GRAPHIC SCALE

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
2305 N CORAL CANYON BLVD
SUITE 201,
WASHINGTON, UT 84780
435-673-8060

NORTH DAKOTA
623 26th STREET W
WILLISTON, ND 58801
701-572-8100

DUST AND SWPPP/ EROSION CONTROL PLAN

FOR

CITY OF ST. GEORGE

LOCATED IN SEC 36
T 42 SOUTH, R 15 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

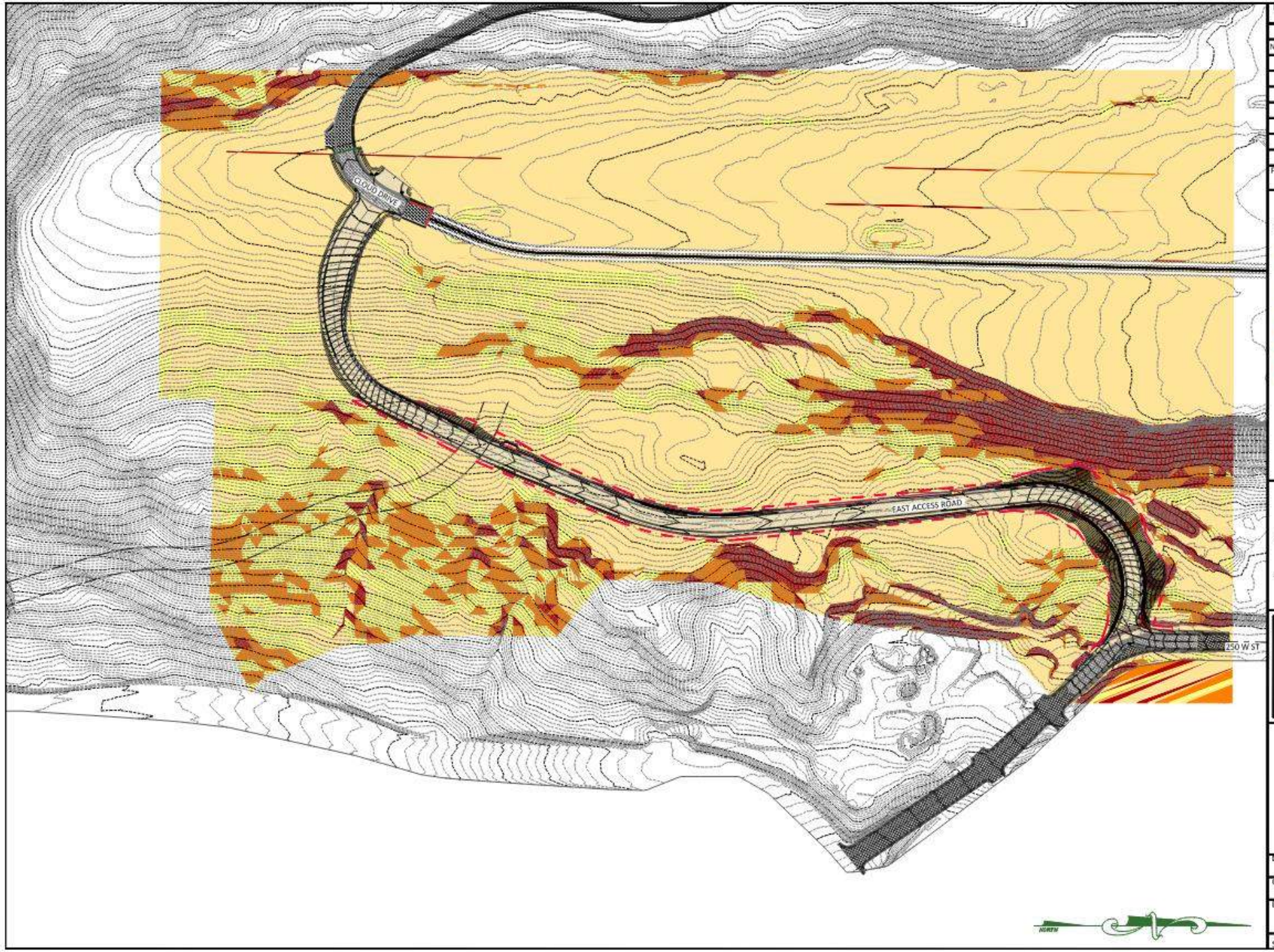
NOT FOR CONSTRUCTION REVIEW ONLY

Drawn By:	Scale:
AZ	1"=100'
Client No.	Project No.
4568-21	4568-21

Drawing Sheet: C1.3

Sheet 4 of 41 Sheets

S 250 W ST
S MAIN
S BLUFF ST
S CLOUD DR
S TECHRIDGE PKWY
W INDIAN HILLS DR
S BLACK RIDGE DR
S AUTO MALL DR
S SUNLAND DR
15



Date: 12-30-2022

REVISIONS

No.	Date	by	Description
		ARL	

File Name
East Access Hillside Application.dwg

SLOPE ANALYSIS LEGEND

- 0% to 20%
- 20% to 40%
- 40% to 60%
- 60% +

GRAPHIC SCALE

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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

NORTH DAKOTA
623 26th STREET W.
WILLISTON, ND 58801
701-572-8100

TECH RIDGE
EAST ACCESS ROAD
HILLSIDE SLOPE ANALYSIS

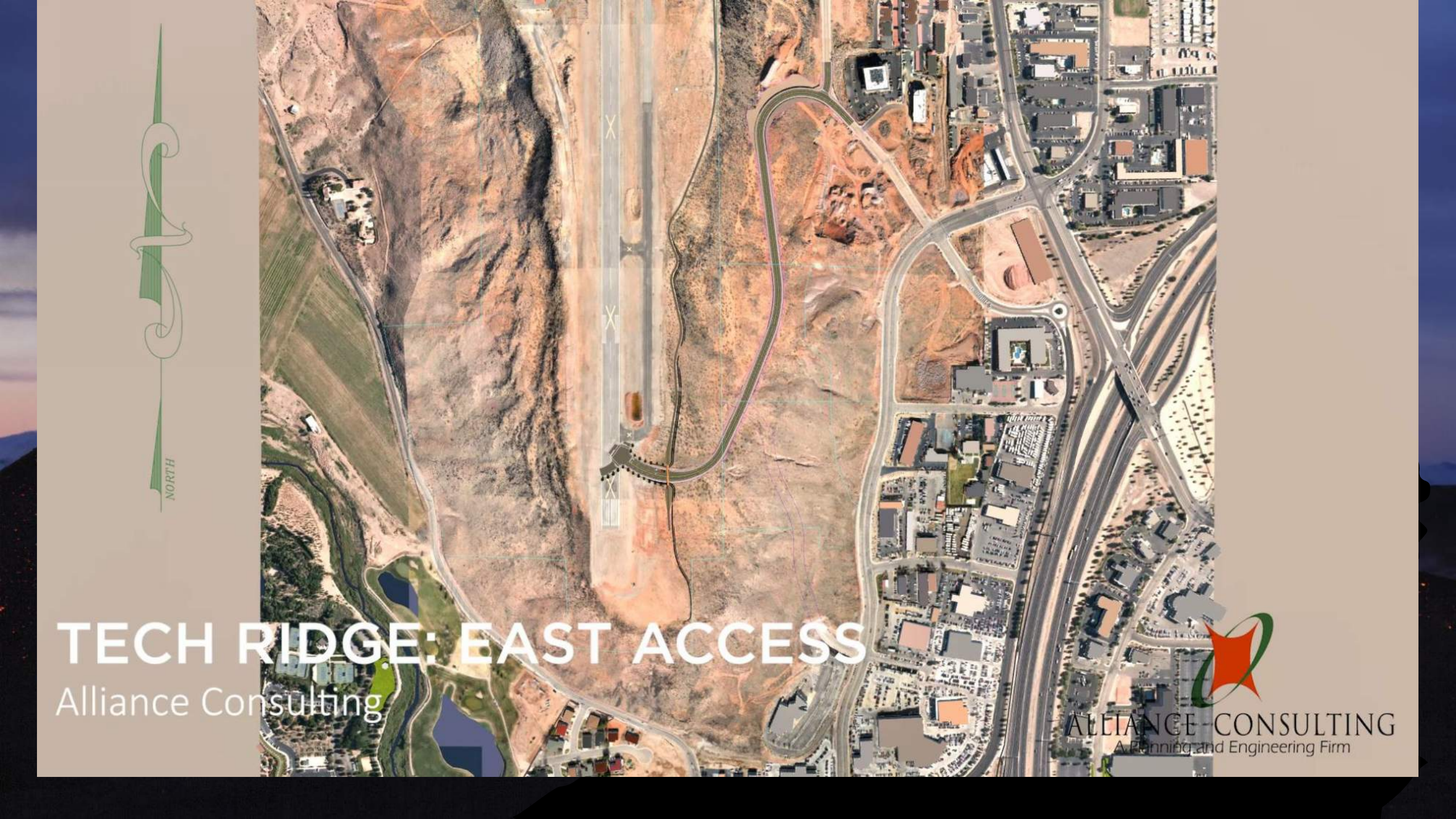
FOR
CITY OF ST. GEORGE
LOCATED IN SEC 36
T 42 SOUTH, R 16 WEST SLB&M
CITY OF ST. GEORGE, WASHINGTON COUNTY, UT

NOT FOR CONSTRUCTION
REVIEW ONLY

Drawn By:	Scale:
ARL	1"=120'
Client No.	Project No.
4568	4568

Drawing Sheet
C1.2

Sheet 3 of 14 Sheets



TECH RIDGE: EAST ACCESS

Alliance Consulting

ALLIANCE CONSULTING
A Planning and Engineering Firm

Recommendation

The Hillside Committee recommended approval of the Tech Ridge Southeast Access Road Hillside Development Permit with the following condition:

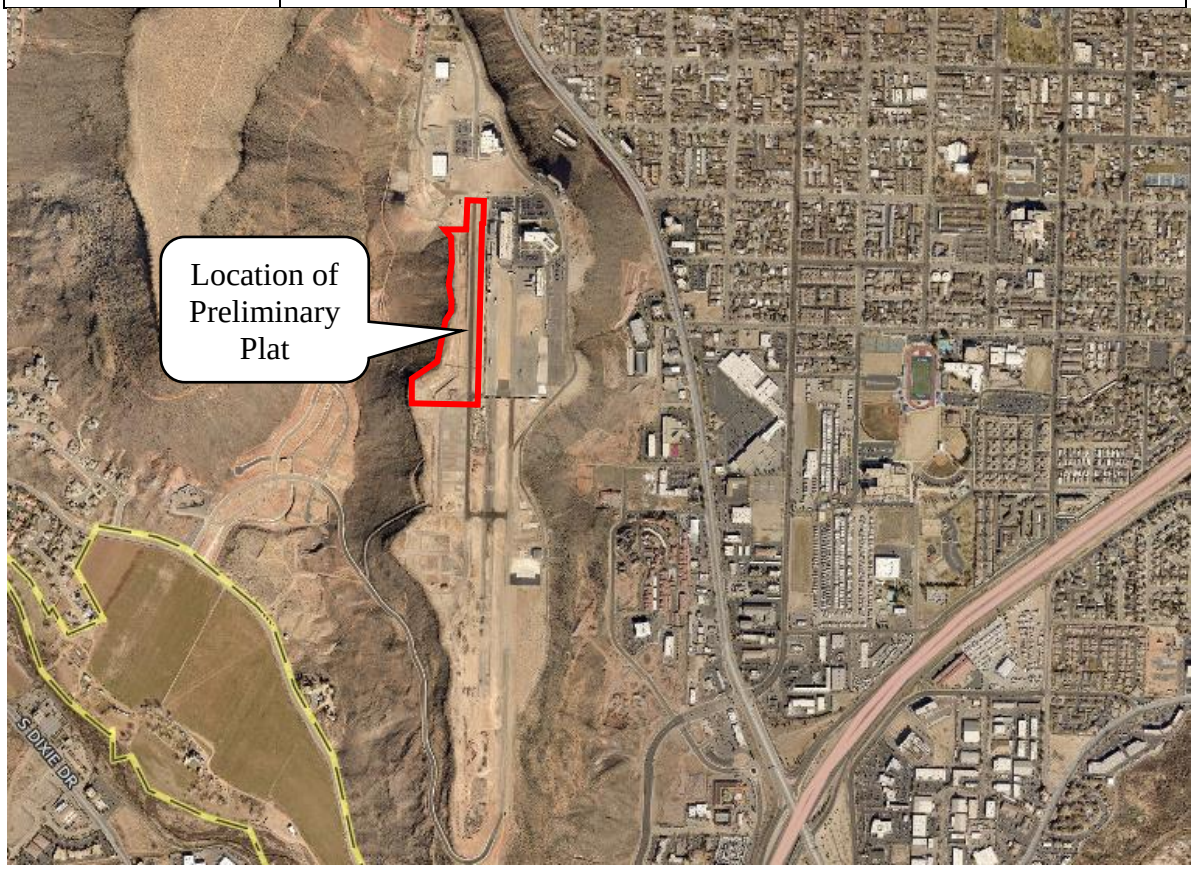
That they address and meet the recommendations in the project Geotechnical Report as stated in the letter dated September 8, 2023, starting at the bottom of page 1 and continuing onto page 2.

St.George
Community Development

ITEM 5
Preliminary Plat

PLANNING COMMISSION AGENDA REPORT: **10/24/2023**

Tech Ridge Area 1.6 Subdivision Preliminary Plat (Case No. 2023-PP-040)	
Request:	The applicant is requesting approval of a 15-lot and 6 parcel commercial preliminary plat to be called Tech Ridge Area 1.6 Subdivision
Applicant:	Tech Ridge, LLC
Representative:	Michael Bradshaw
Location:	Located at approximately 650 S. Tech Ridge Parkway
General Plan:	Traditional Neighborhood
Existing Zoning:	PD-MU (Planned Development Mixed Use)
Land Area:	Approximately 17.78 acres



BACKGROUND:
This parcel of land is located on Tech Ridge Parkway within the Tech Ridge project. This preliminary plat will create 15 new lots ready for commercial development. In addition, this preliminary plat will create 6 parcels. Three of the parcels will be used for shared parking for the commercial development. Two of the parcels will be dedicated to open space and trail use. The ridgeline trail will be built at this location on the western ridgeline.

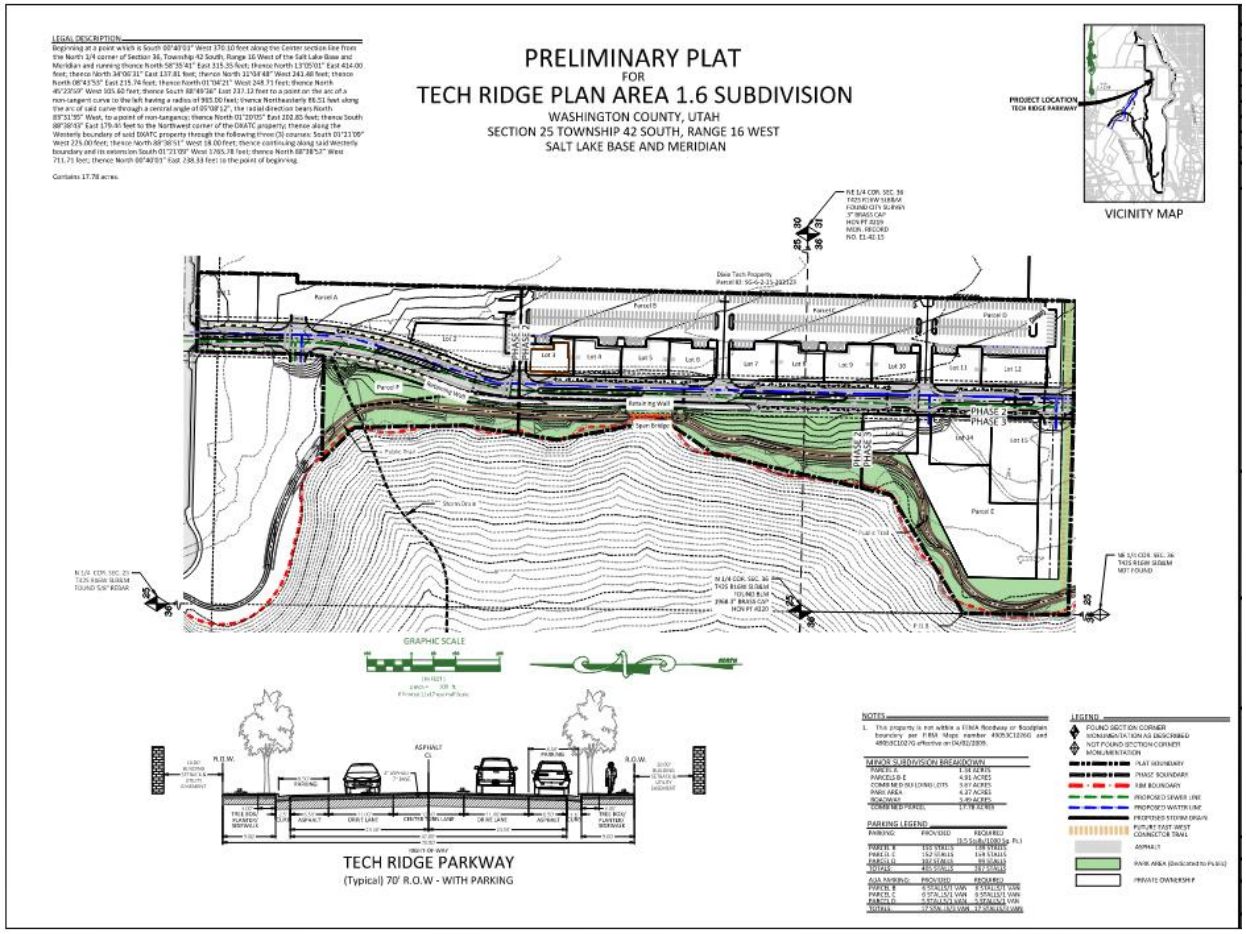
RECOMMENDATION:
Staff recommends approval of this preliminary plat.

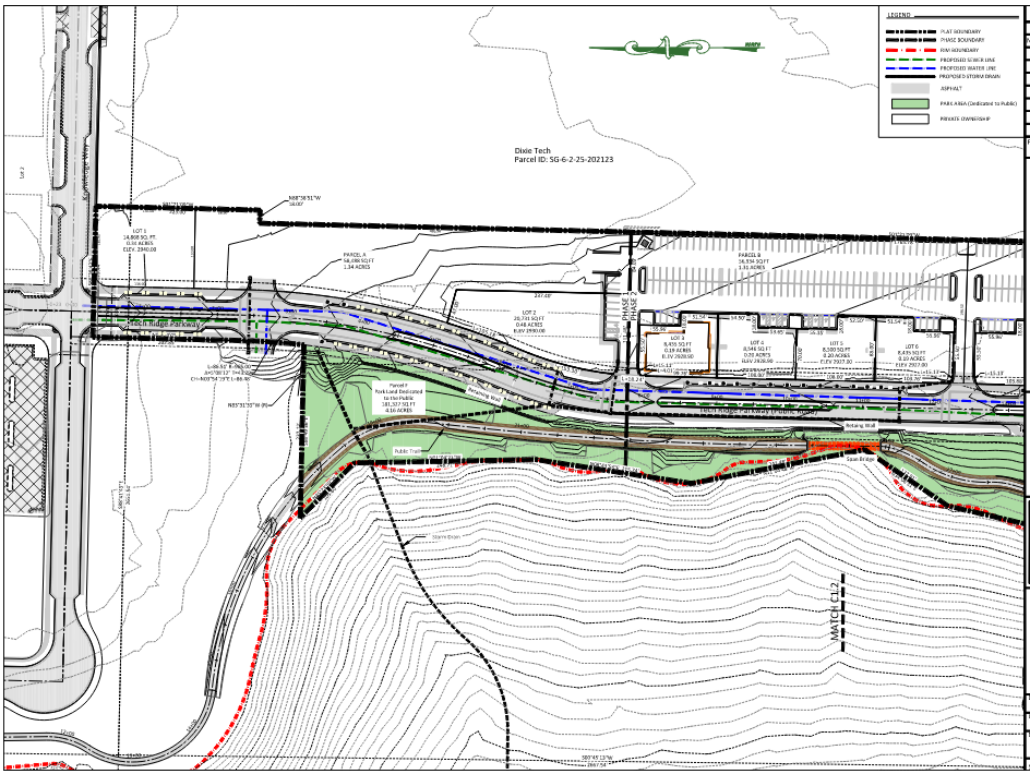
ALTERNATIVES:
1. Recommend approval as presented.
2. Recommend approval with conditions.
3. Recommend denial.
4. Table or Continue the proposed preliminary plat to a specific date.

POSSIBLE MOTION:
The Planning Commission recommends approval of the Tech Ridge Area 1.6 Subdivision Preliminary Plat.

FINDINGS FOR APPROVAL:
1. The proposed Preliminary Plat meets the requirements found in Section 10-25C-3 of the Subdivision Regulations.
2. The proposed project meets the lot size requirements found in Section 10-8B-2.

EXHIBIT A
Preliminary Plat




LEGEND
Dixie Tech
Parcel ID: SG-6-2-25-202123
PHASE 1
PHASE 2
Public Trail
Retaining Wall
Span Bridge

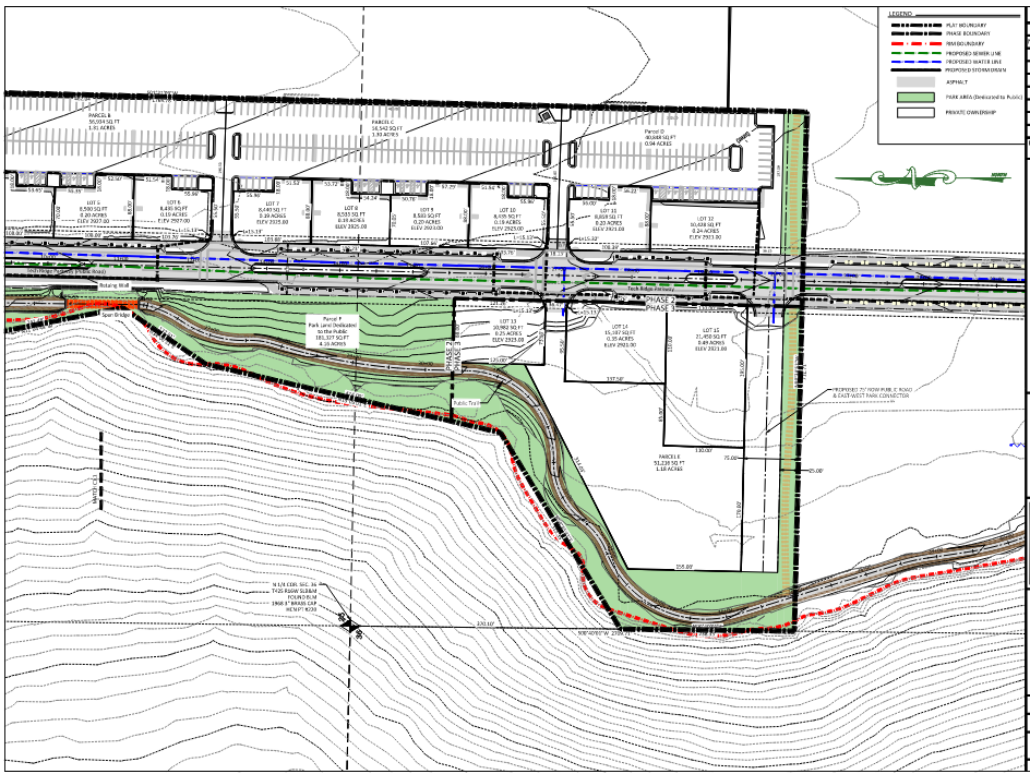
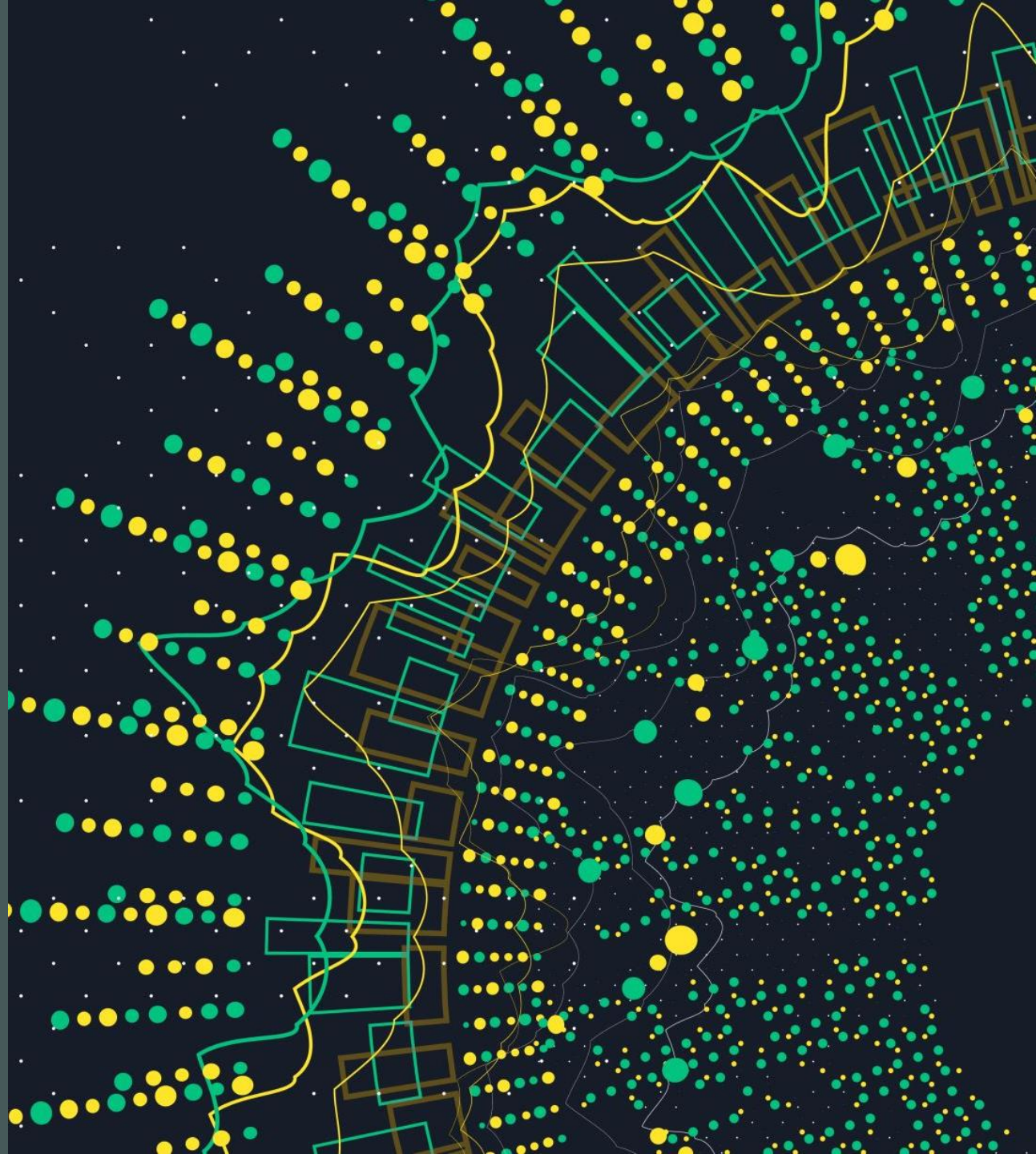

LEGEND
PHASE 1
PHASE 2
Public Trail
Retaining Wall
Span Bridge

EXHIBIT B
PowerPoint Presentation

Tech Ridge Area 1.6 Subdivision

Preliminary Plat

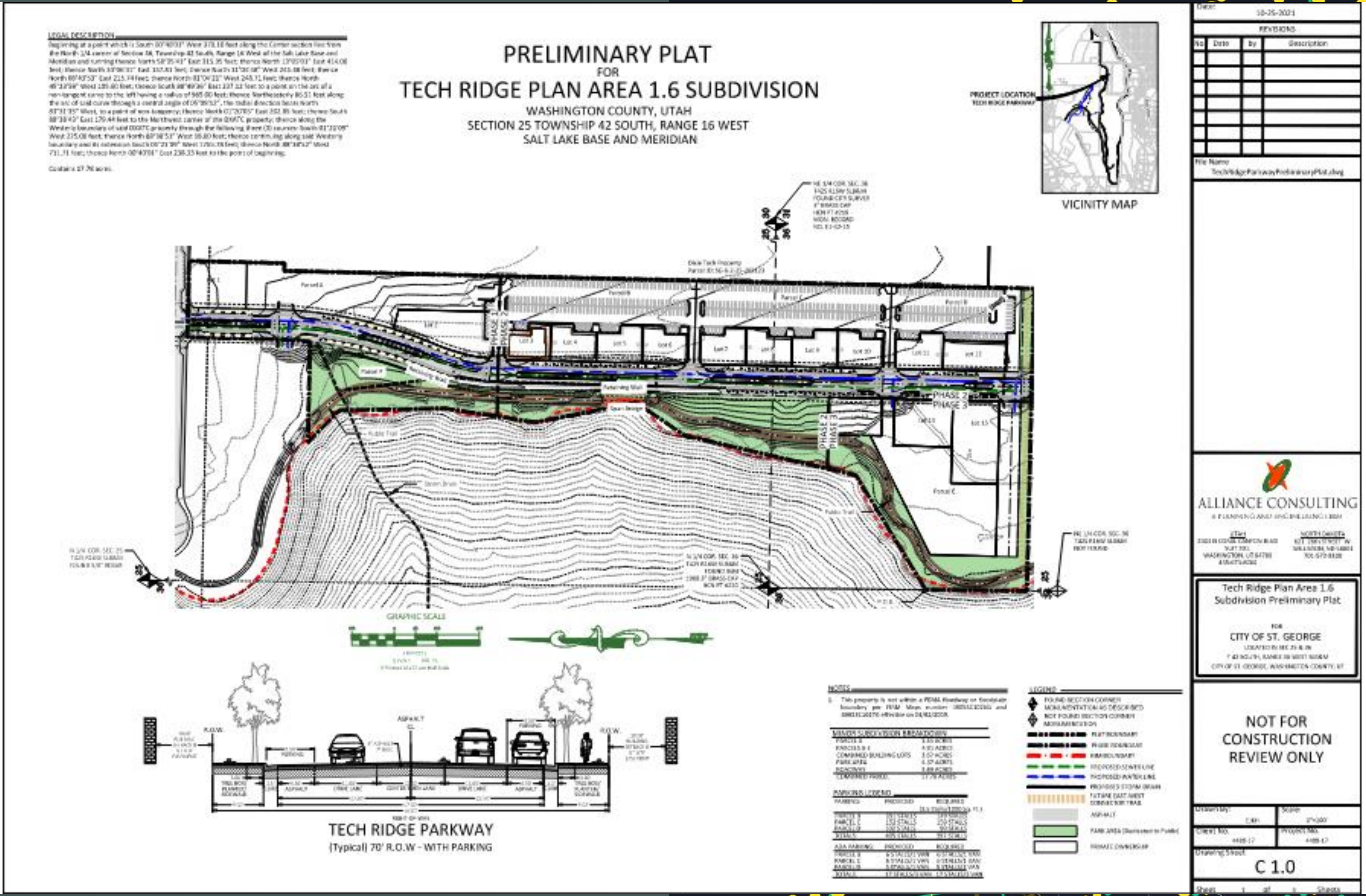
2023-PP-40

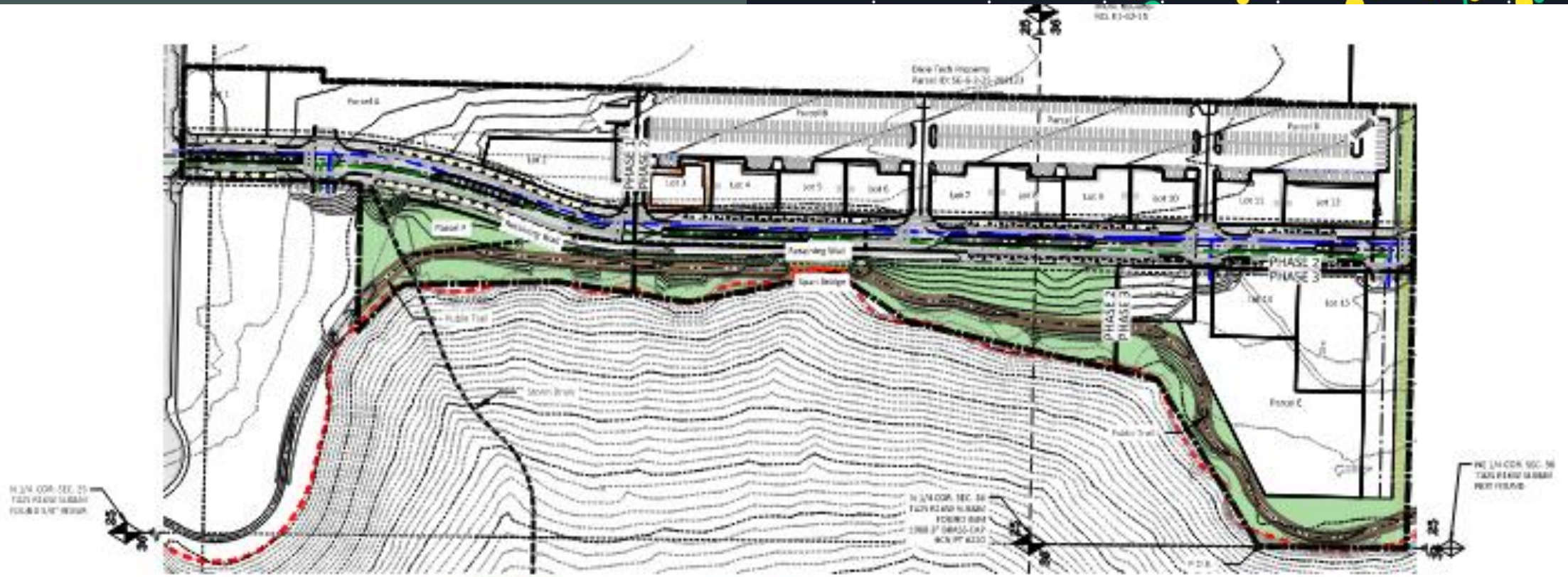



S DIXIE DR
E RIVERSIDE DR

W 400 S ST
S 100 W ST
S BLUFF ST
S MAIN ST
S 100 E ST
W 500 S ST
S TECHRIDGE DR
S RIDGETOP DR
W 600 S ST
W 700 S ST
S WALKER WAY


S WALKER WAY
S TECH RIDGE DR
S BLUFF ST
W 400 S ST
W 500 S ST
W 600 S ST
W 700 S ST
S 100 W ST
S MAIN ST
S 100 E ST


PRELIMINARY PLAT
FOR
TECH RIDGE PLAN AREA 1.6 SUBDIVISION
WASHINGTON COUNTY, UTAH
SECTION 25 TOWNSHIP 42 SOUTH, RANGE 16 WEST
SALT LAKE BASE AND MERIDIAN
LEGAL DESCRIPTION
VICINITY MAP
PROJECT LOCATION
PHASE 2
PHASE 3
GRAPHIC SCALE
ASPHALT
R.O.W.
TECH RIDGE PARKWAY
(Typical) 70' R.O.W - WITH PARKING
NOTES
LEGEND
10-25-2021
REVISIONS
Date
By
Description
ALLIANCE CONSULTING
Tech Ridge Plan Area 1.6
Subdivision Preliminary Plat
CITY OF ST. GEORGE
NOT FOR
CONSTRUCTION
REVIEW ONLY
C 1.0



GRAPHIC SCALE

TECH RIDGE PARKWAY

(Typical) 70' R.O.W - WITH PARKING

NOTES

1. This property is not within a FEMA floodway or floodplain boundary per FIRM Maps numbers [illegible] and [illegible] effective on 04/01/2008.

MINOR SUBDIVISION RESTRICTIONS

PARCEL A	[illegible] ACRES
PARCELS B-E	4.81 ACRES
COMBINED BUILDING LOTS	3.52 ACRES
PARK AREA	1.37 ACRES
ROADWAY	3.49 ACRES
COMBINED AREAS	17.26 ACRES

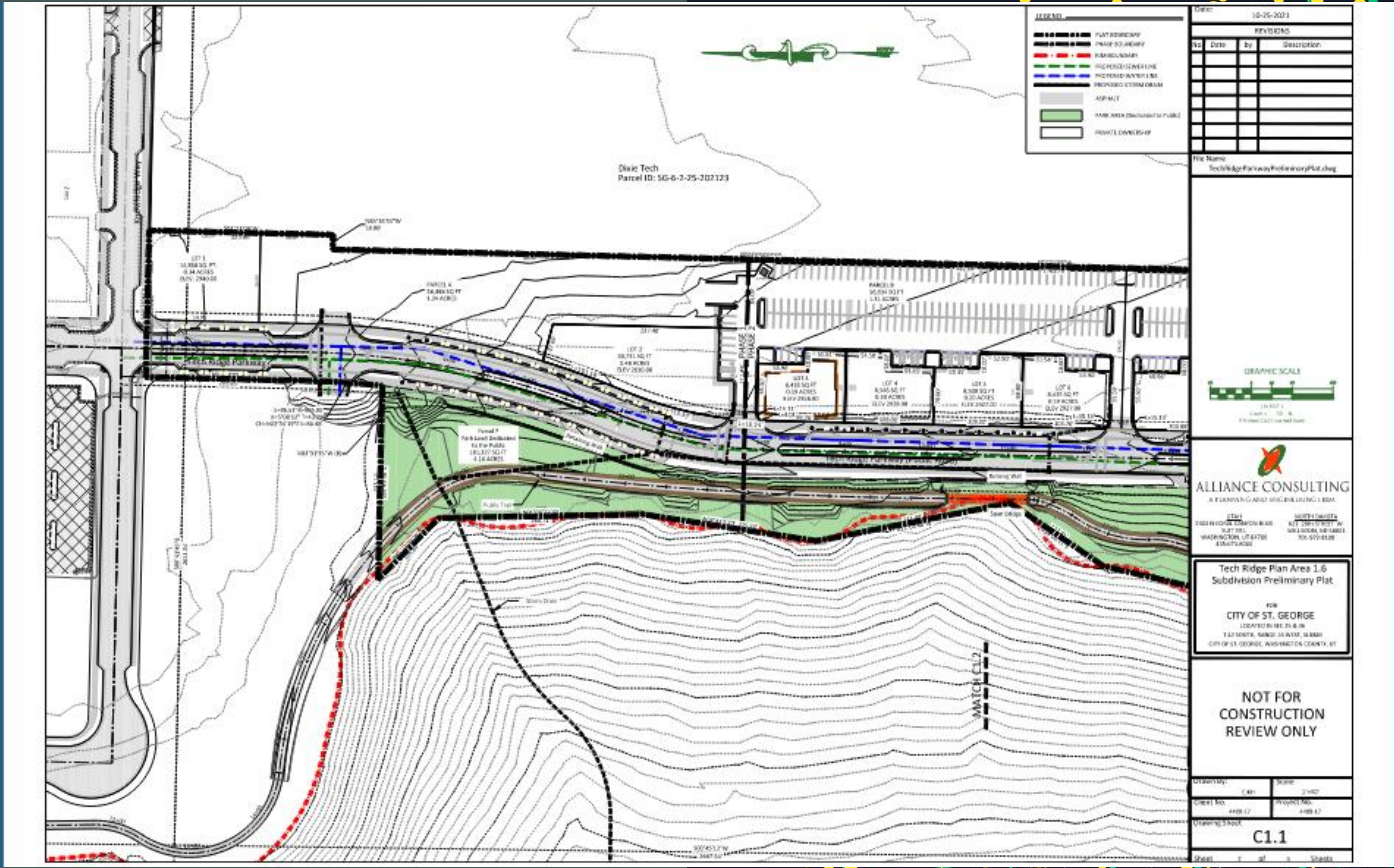
PARKING LEGEND

PARKING	PROVIDED	REQUIRED
	[illegible]	[illegible]
PARCEL A	[illegible]	[illegible]
PARCEL C	[illegible]	[illegible]
PARCEL B	[illegible]	[illegible]
TOTALS	[illegible]	[illegible]

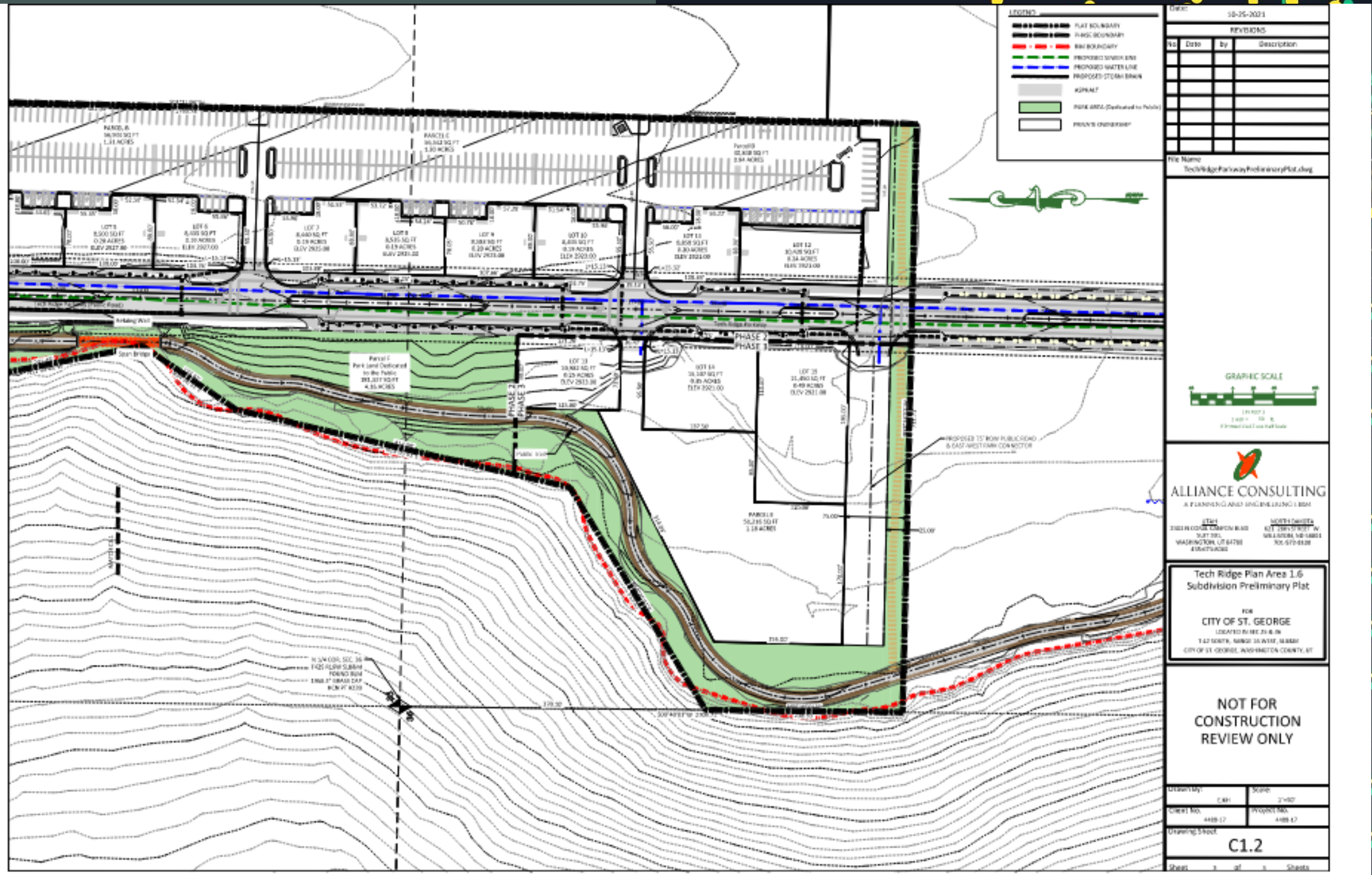
ADA PARKING	PROVIDED	REQUIRED
PARCEL A	[illegible]	[illegible]
PARCEL C	[illegible]	[illegible]
PARCEL B	[illegible]	[illegible]
TOTALS	[illegible]	[illegible]

LEGEND

- FOUND SECTION CORNER
- MONUMENTATION AS DESCRIBED
- NOT FOUND SECTION CORNER MONUMENTATION
- PLAT BOUNDARY
- PHASE BOUNDARY
- RIM BOUNDARY
- PROPOSED SEWER LINE
- PROPOSED WATER LINE
- PROPOSED STORM DRAIN
- FUTURE EAST WEST CONNECTOR TRAIL
- ASPHALT
- PARK AREA (Dedicated to Public)
- PRIVATE OWNERSHIP

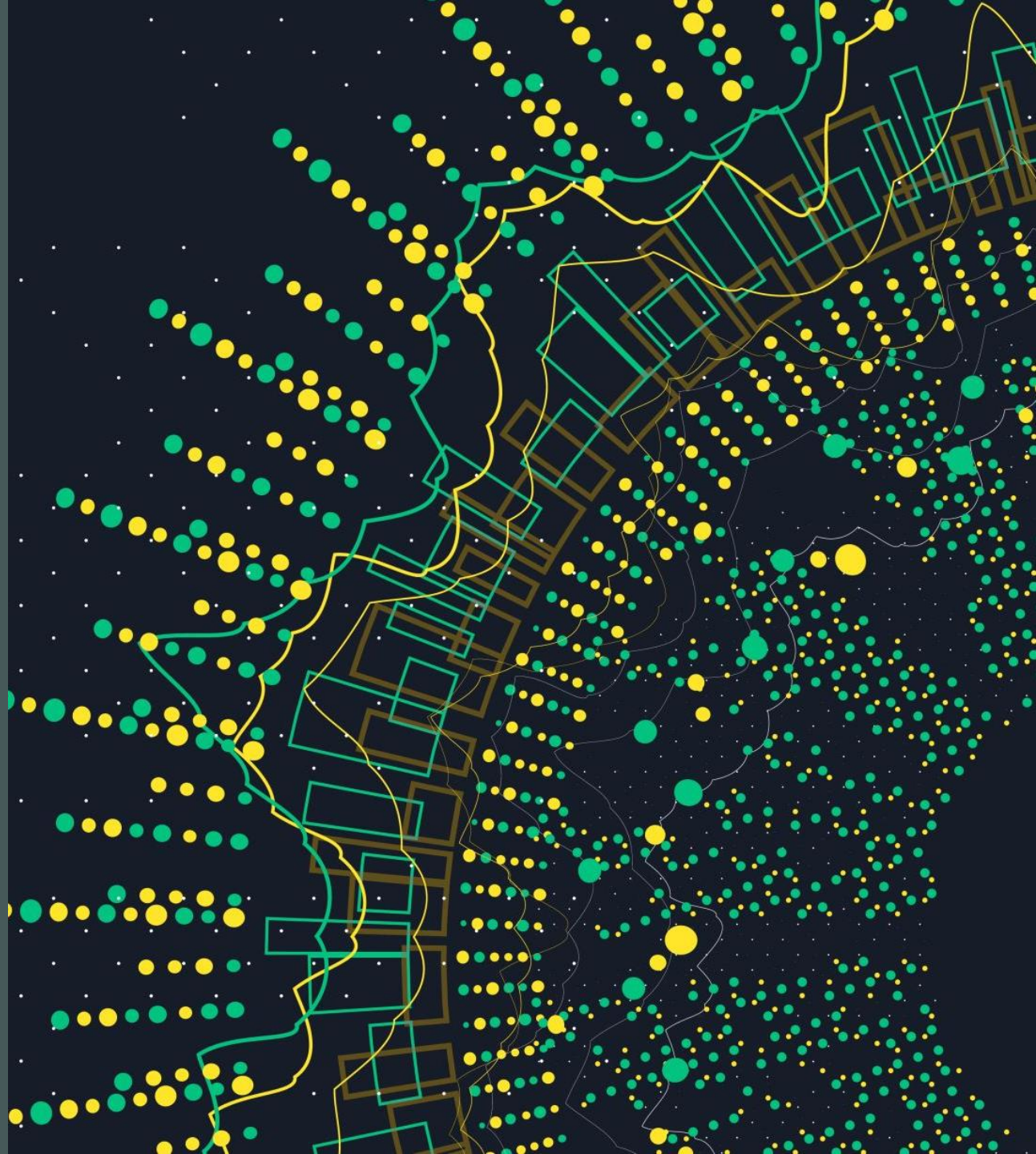


LEGEND
Dixie Tech
REVISIONS
Date
Description
File Name
GRAPHIC SCALE
ALLIANCE CONSULTING
Tech Ridge Plan Area 1.6
Subdivision Preliminary Plat
CITY OF ST. GEORGE
NOT FOR
CONSTRUCTION
REVIEW ONLY
MATCH C1.2
C1.1


LEGEND
PLAT BOUNDARY
PHASE BOUNDARY
RAV BOUNDARY
PROPOSED SEWER LINE
PROPOSED WATER LINE
PROPOSED STORM DRAIN
ASPHALT
PARK AREA (Dedicated to Public)
PRIVATE OWNERSHIP
Date: 10-25-2021
REVISIONS
No. Date By Description
File Name: TechRidgeParkwayPreliminaryPlat.dwg
GRAPHIC SCALE
ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM
UTAH
NORTH DAKOTA
Tech Ridge Plan Area 1.6
Subdivision Preliminary Plat
FOR
CITY OF ST. GEORGE
NOT FOR
CONSTRUCTION
REVIEW ONLY
Drawn By:
Scale:
Client No.
Project No.
Drawing Sheet:
C1.2
Sheet 1 of 1 Sheets

Tech Ridge Area 1.6 Subdivision

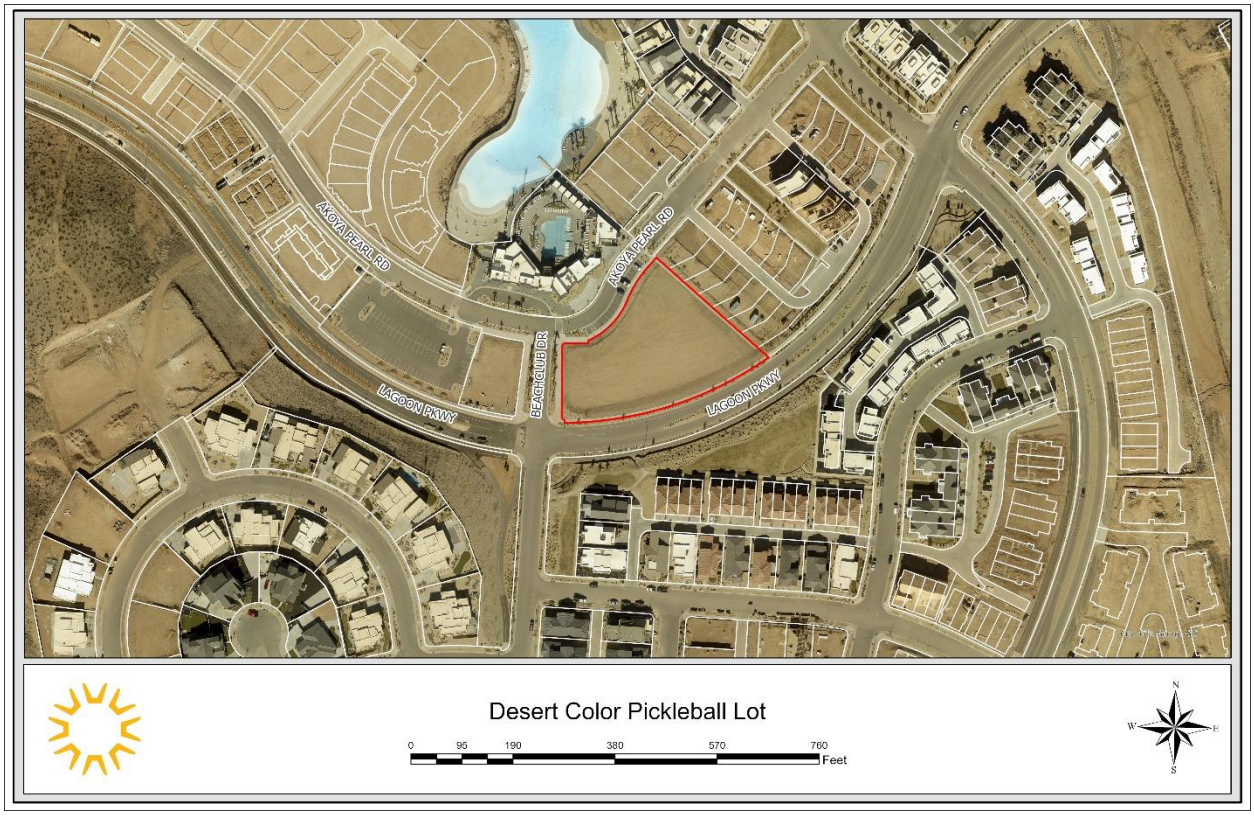
Reccomendation



PLANNING COMMISSION AGENDA REPORT: 11/14/2023

Preliminary Plat
Desert Color Pickleball Courts Preliminary Plat
Case No. 2023-PP-036

Request:	The applicant is requesting approval of a preliminary plat to create a single lot for the previously approved pickleball courts adjacent to the Desert Color clubhouse.
Representative:	Ryan Lay (Bush and Gudgell)
Location:	The property is located to the south of the Desert Color clubhouse between Lagoon Parkway and Akoya Pearl Rd.
Total Acreage:	Approximately 1.49 acres
Existing Zoning:	Planned Development Residential (PD-R)
General Plan:	RES (Residential) & TC (Town Center)



Background & Analysis: In May of 2022, the City Council approved a PD amendment on the subject property. This amendment was to allow pickleball courts and bocce ball courts as well as a grassy area for Desert Color residents and their guests. This proposed plat would create a single lot for the aforementioned amenities. The lot will be 1.49 acres in size.

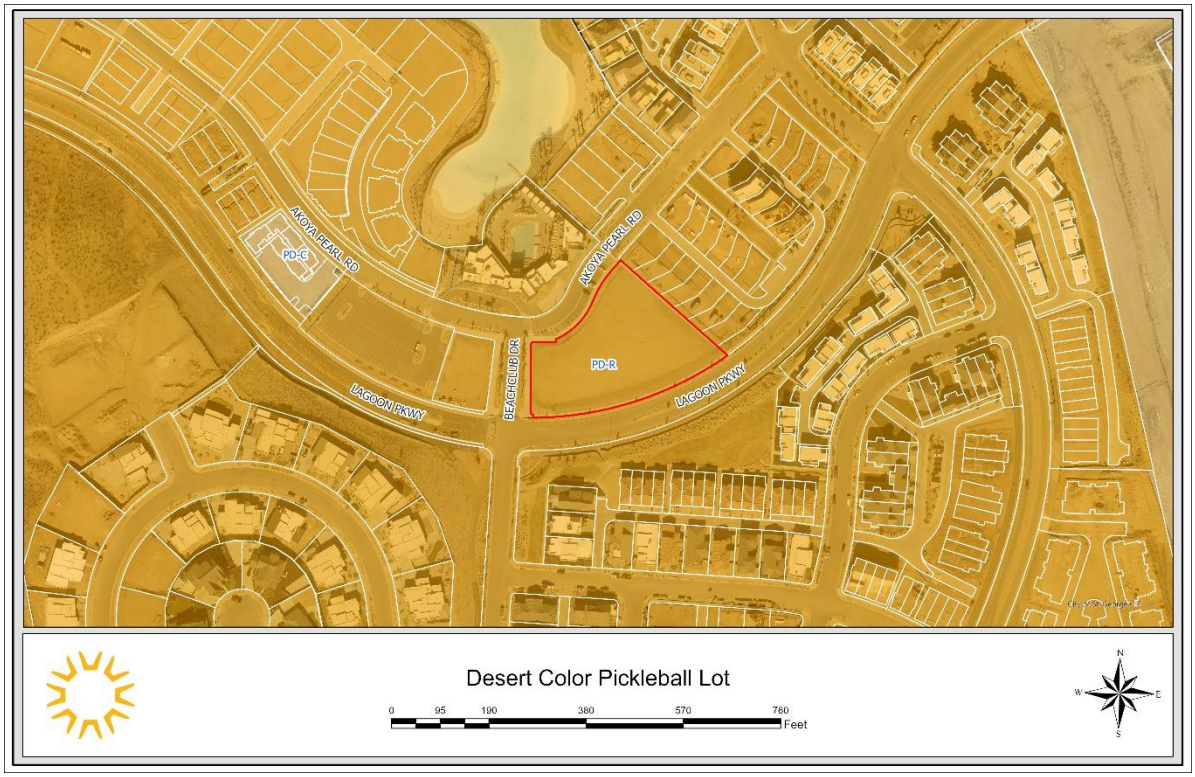
Recommendation: Staff recommends approval of this preliminary plat.

Alternatives:
1. Recommend approval as presented.
2. Recommend denial.
3. Continue the proposed preliminary plat to a future date.

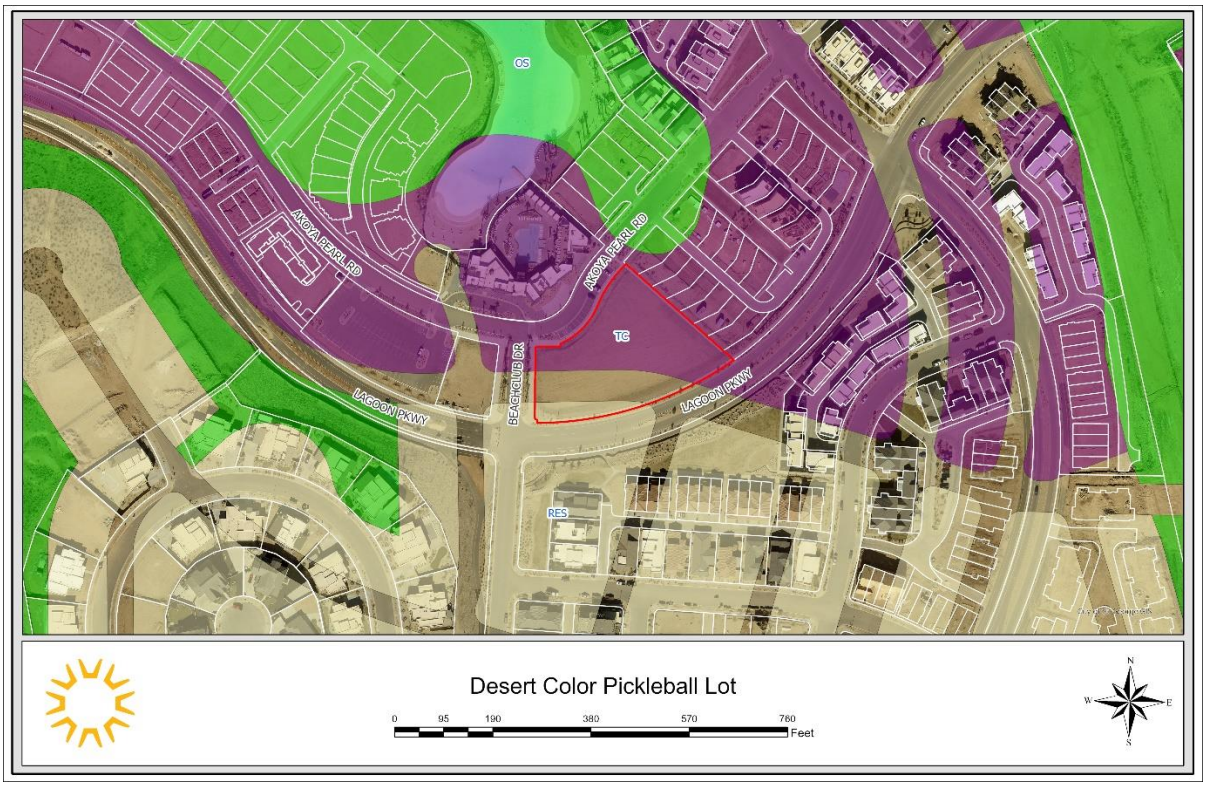
Sample Motion: **"**I move that we forward a positive recommendation to the City Council for the Desert Color Pickleball Courts Preliminary Plat request, application number 2023-PP-036, based on the findings noted in the staff report."

Possible Findings:
1. That the plat is consistent with and compliant to the zoning on the property.
2. That the plat will not leave any remnant property unaccounted for.
3. That development in the plat is consistent with the PD amendment previously approved.

Zoning Map



General Plan Map

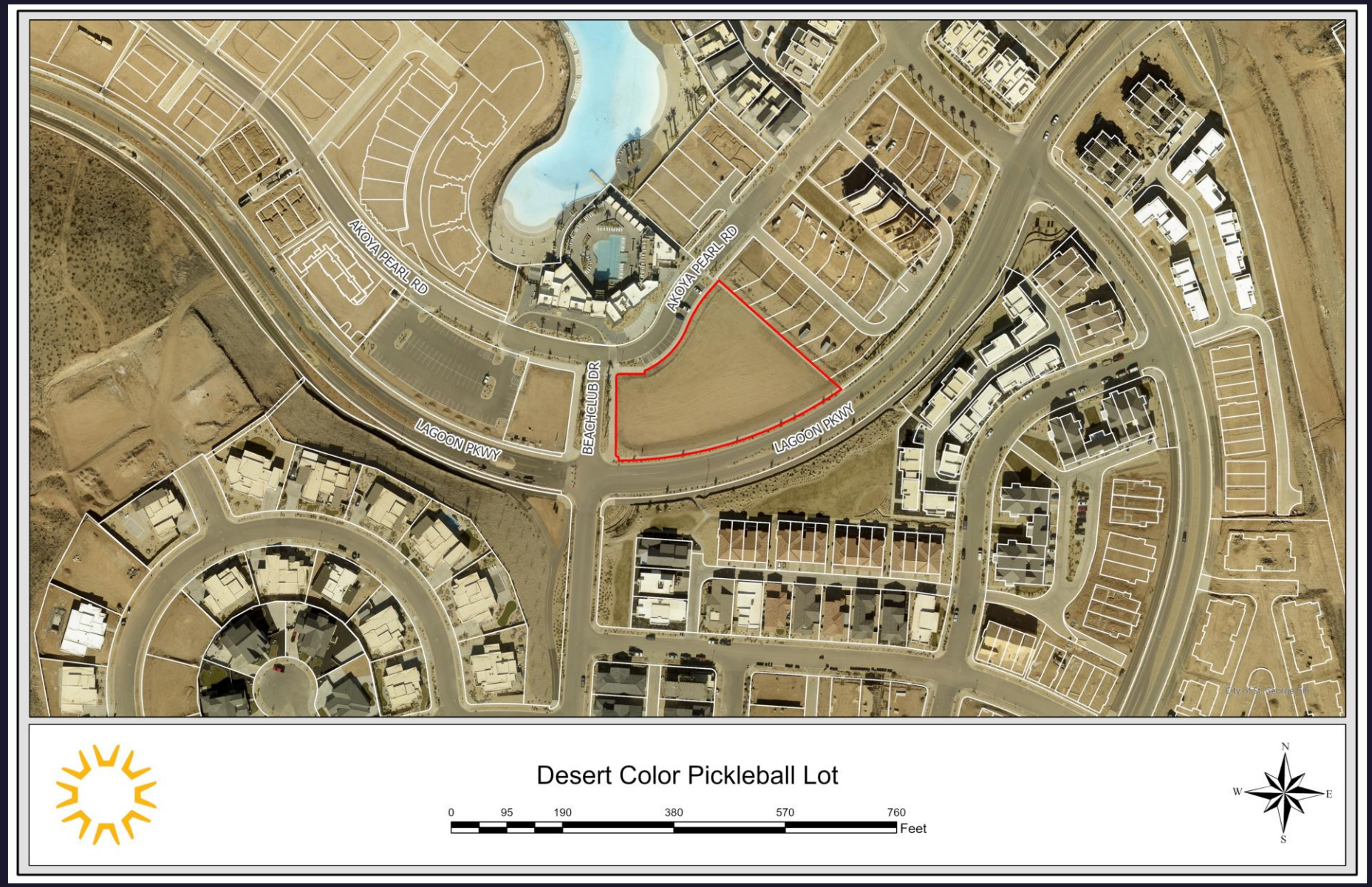


Presentation

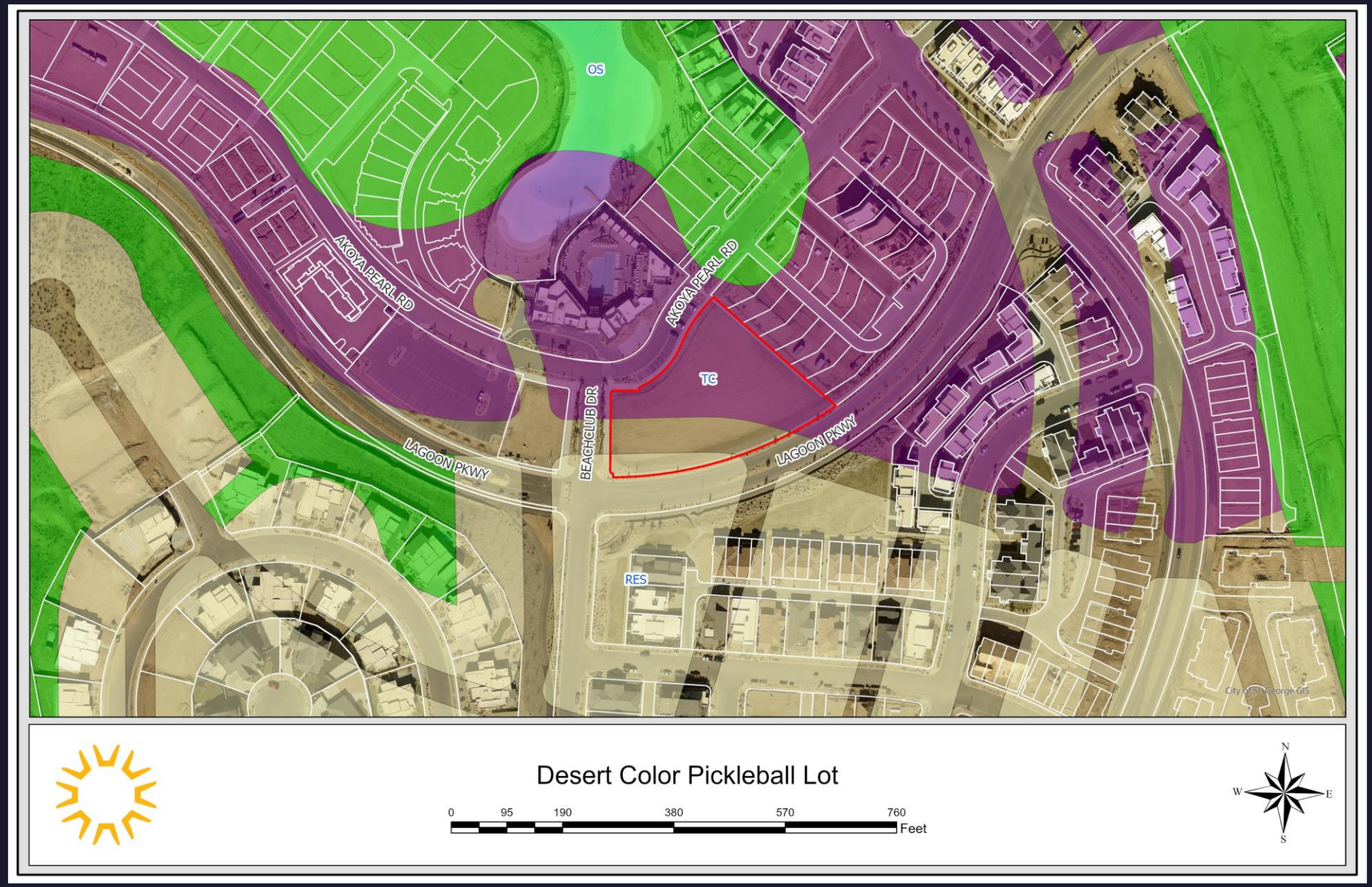
Desert Color Pickleball Court Lot

2023-PP-036

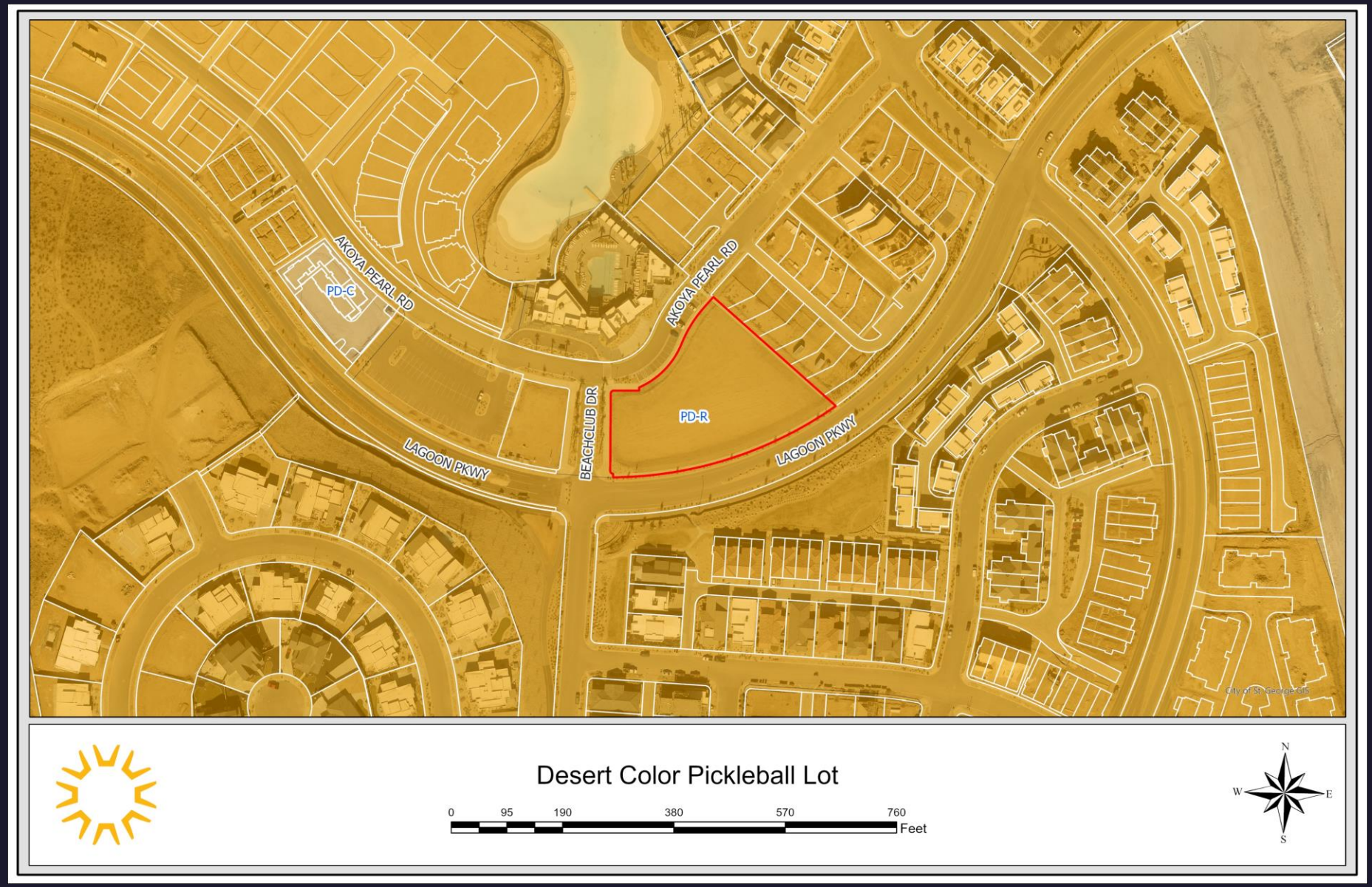
Aerial Map


AKOYA PEARL RD
AKOYA PEARL RD
LAGOON PKWY
BEACHCLUB DR
LAGOON PKWY
Desert Color Pickleball Lot
0
95
190
380
570
760
Feet
N
W
E
S

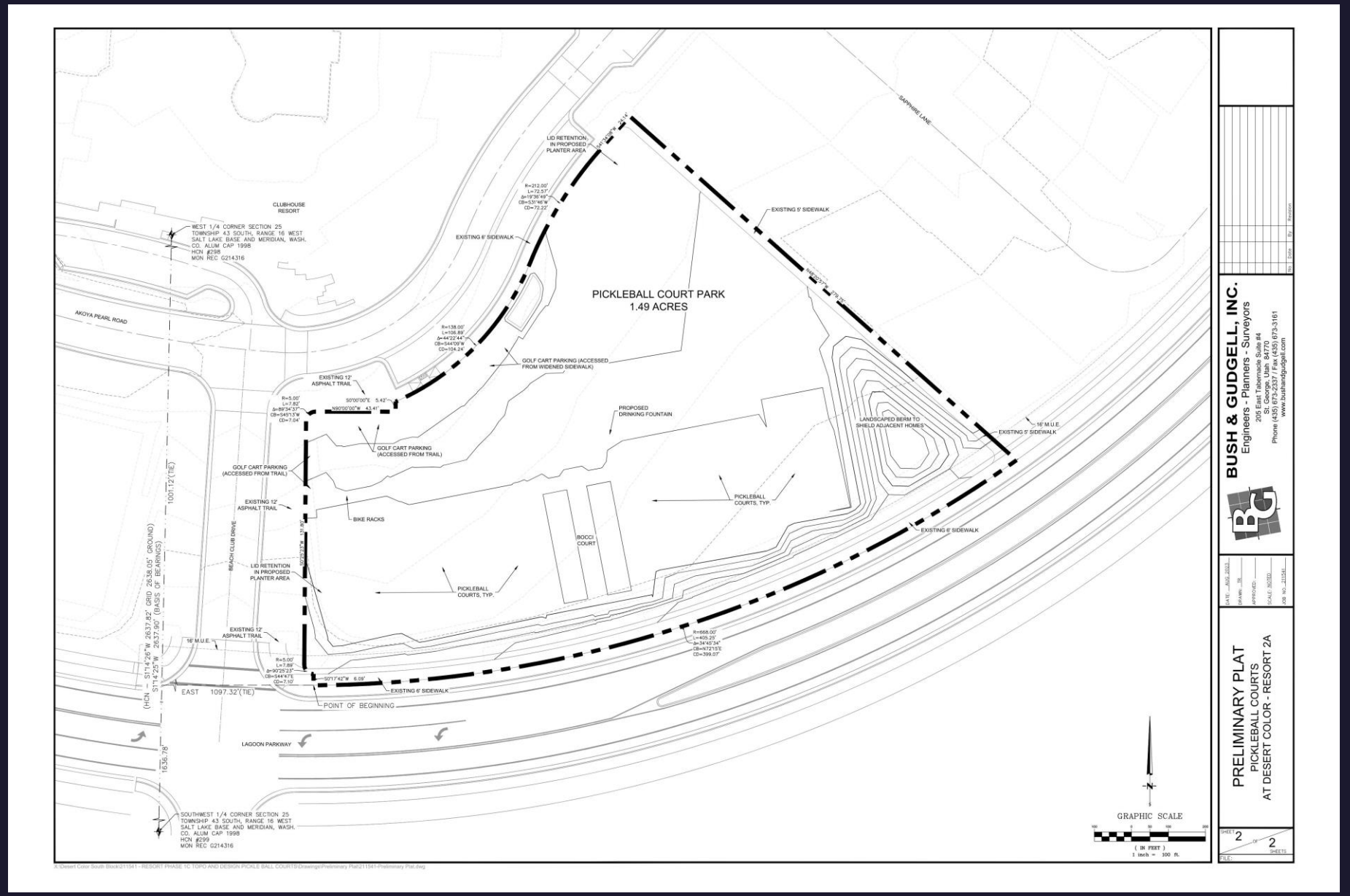
Land Use Map


OS
AKOYA PEARL RD
AKOYA PEARL RD
TC
LAGOON PKWY
BEACHCLUB DR
LAGOON PKWY
RES
City of St George GIS
Desert Color Pickleball Lot
0
95
190
380
570
760
Feet
N
W
E
S

Zoning Map


AKOYA PEARL RD
PD-C
AKOYA PEARL RD
BEACHCLUB DR
PD-R
LAGOON PKWY
LAGOON PKWY
Desert Color Pickleball Lot
0
95
190
380
570
760
Feet
N
W
E
S

Preliminary Plat



PLANNING COMMISSION AGENDA REPORT: **11/14/2023**
Red Industrial
Case No. 2023-PP-041

Request: Consider a request for a three (3) lot preliminary plat known as Red Industrial, located approximately at 1630 E and Commerce Dr in Fort Pierce Industrial Park. The property is 20 acres and is zoned M-1 (Manufacturing). The applicant is Kenneth & Patricia Ann Blake, and the representative is Eric McFadden. Case No. 2023-PP-041 (Staff – Mike Hadley)

Location: The site is located at approximately 1630 E Commerce Dr in Fort Pierce Industrial Park.

Property: 20 acres

Number of Lots: 3

Density: N/A

Zoning: M-1 (Manufacturing).

Adjacent zones: This plat is surrounded by the following zones:
North – M-1 (Manufacturing).
South – M-1 (Manufacturing).
East – R-1-10 (Single Family Residential minimum 10,000 sq ft lots).
West – M-1 (Manufacturing).

General Plan: IND (Industrial).

Applicant: Kenneth & Patricia Ann Blake.

Representative: Eric McFadden

Comments: Engineering had comment as a condition of approval.

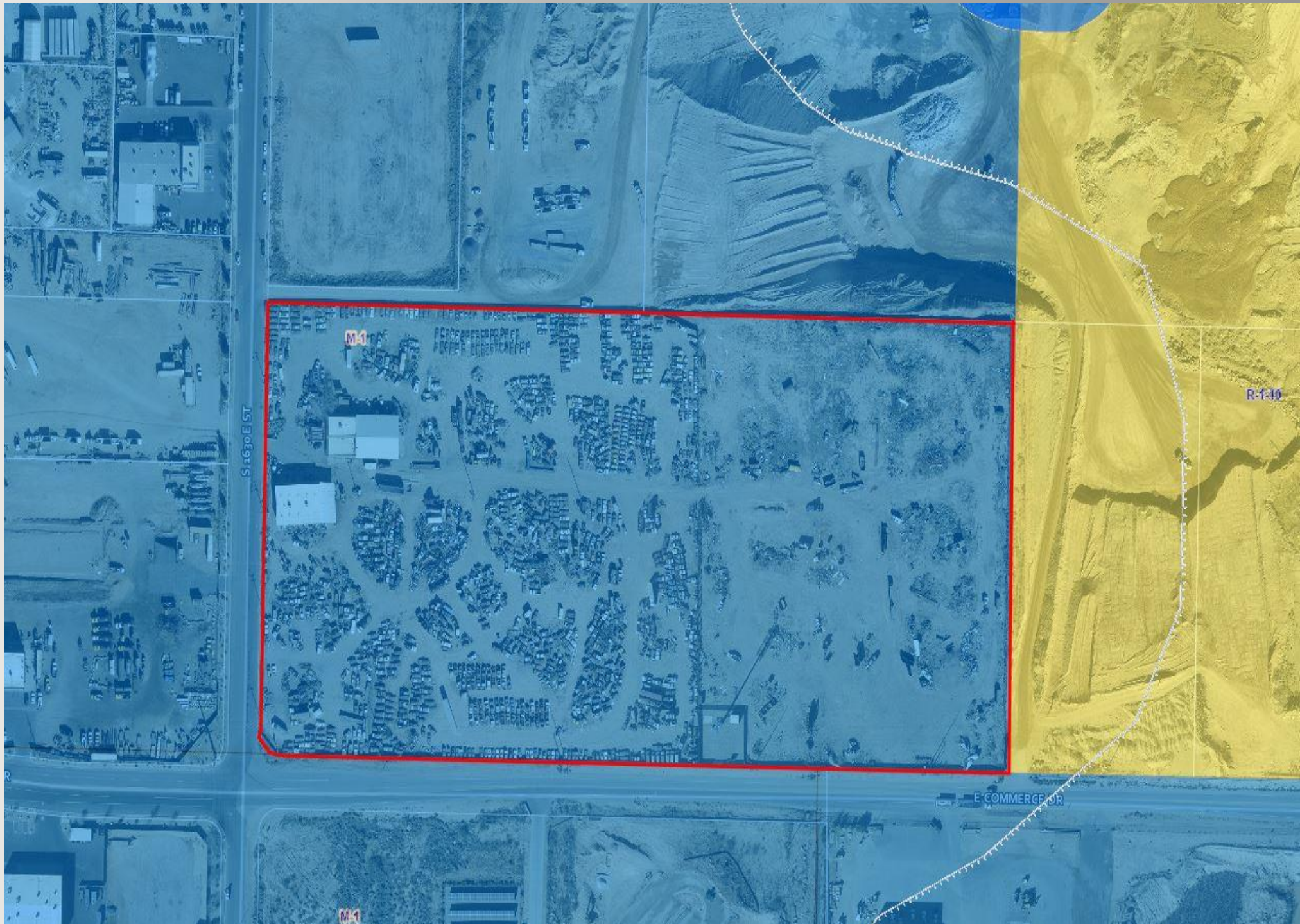
RECOMMENDATION PRELIMINARY PLAT:
Staff recommend approval of the Preliminary Plat for the Venture Park with the following condition.

1. As a condition of approval of the preliminary plat the owner will be required to finish the roadway improvements along Commerce Drive, which include asphalt pavement, curb, gutter, and sidewalk. A note will need to be added to the final plat that states this requirement.


Red Industrial
2023-PP-041

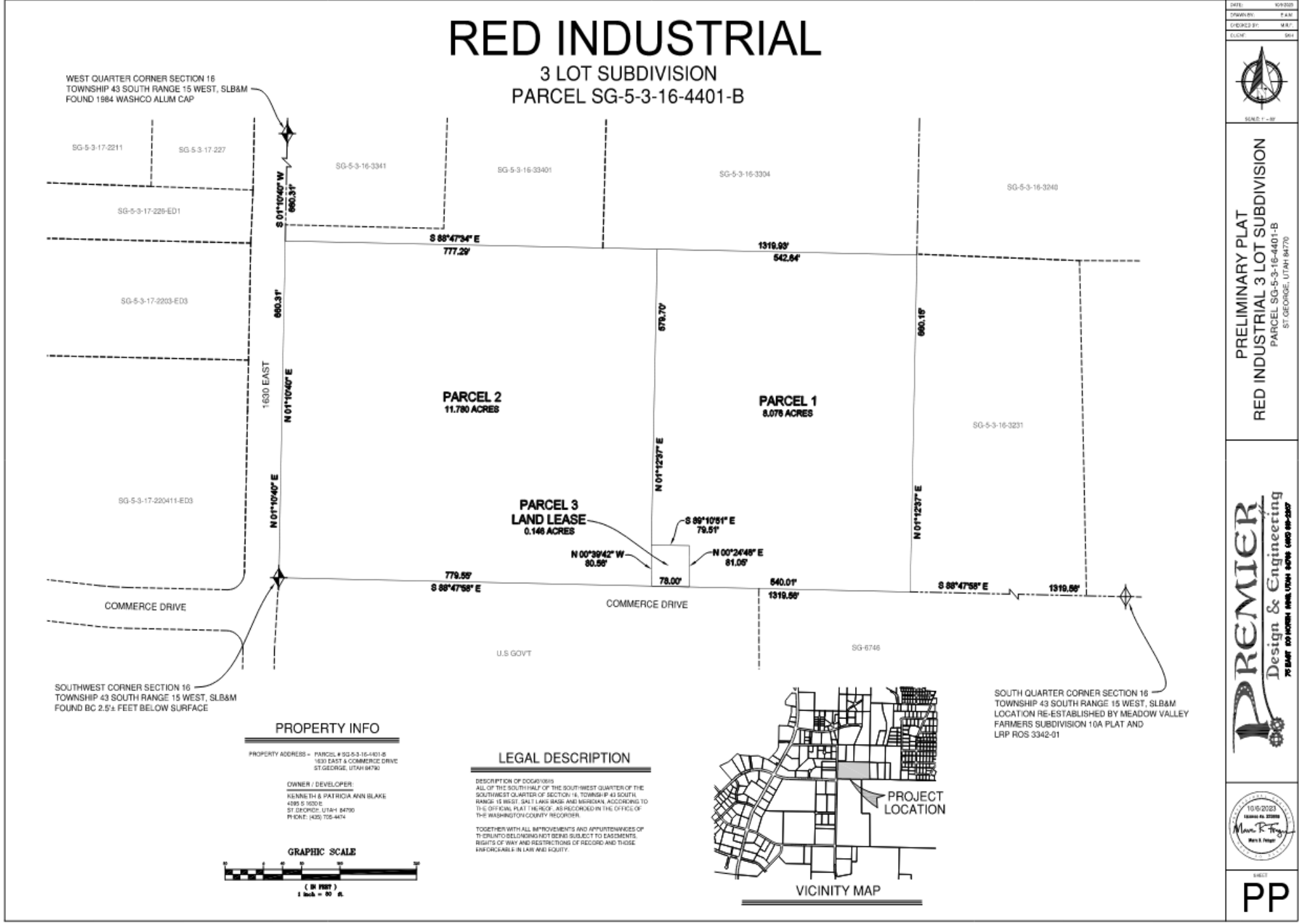
Vicinity Map

Zoning Map



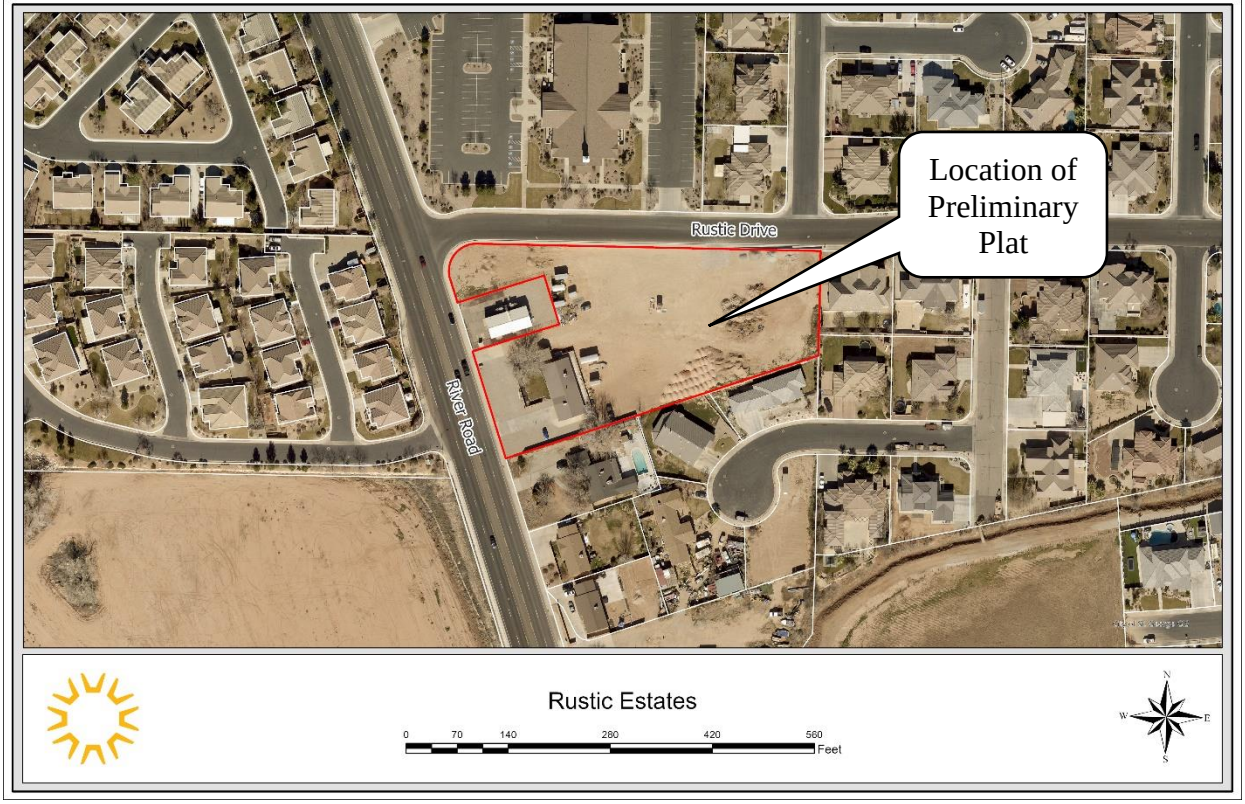
General Plan Map

Preliminary Plat



PLANNING COMMISSION AGENDA REPORT: **11/14/2023**

Rustic Estates Preliminary Plat (Case No. 2023-PP-034)	
Request:	The applicant is requesting approval of a four lot residential preliminary plat to be called Rustic Estates.
Applicant:	Bush & Gudgell
Representative:	Ryan Lay
Location:	Located on the south-east corner of Rustic Dr. & River Rd.
General Plan:	LDR (Low Density Residential, 0-2 units per acre)
Existing Zoning:	R-1-10 (Residential Single-Family, 10,000 ft² minimum lot size)
Land Area:	Approximately 2.26 acres



BACKGROUND & REQUEST:
In March of 2021, City Council approved a request for a preliminary plat on the subject property. That plat divided the property into six lots. Including the existing home on River Road but excluding the Mt. States Telephone & Telegraph Company parcel next to that home. Nearly three years later, that plat has expired. The applicant is now proposing a new layout which will divide the property into four lots.

The lots will all conform to the standards of the R-1-10 zone in which it is located. This will require each lot to have a minimum of 10,000 ft^2. Lot one is proposed to be 13,977 ft^2 (0.32 acres) while lot three would be the largest lot at 54,111 ft^2 (1.24 acres).

CONDITIONS:
1. That a final plat is approved within a year after City Council approval of this preliminary plat.

RECOMMENDATION:
Staff recommends approval of this preliminary plat.

ALTERNATIVES:
1. Recommend approval as presented.
2. Recommend approval with conditions.
3. Recommend denial.
4. Continue the proposed preliminary plat to a later date.

POSSIBLE MOTION:
"I move that we forward a positive recommendation to the City Council for Rustic Estates Preliminary Plat request, application number 2023-PP-034, based on the findings and subject to the conditions noted in the staff report."

FINDINGS FOR APPROVAL:
1. The proposed Preliminary Plat meets the requirements found in Section 10-25C-3 of the Subdivision Regulations.
2. The proposed project meets the lot size requirements found in Section 10-8B-2.

EXHIBIT A

POWERPOINT PRESENTATION

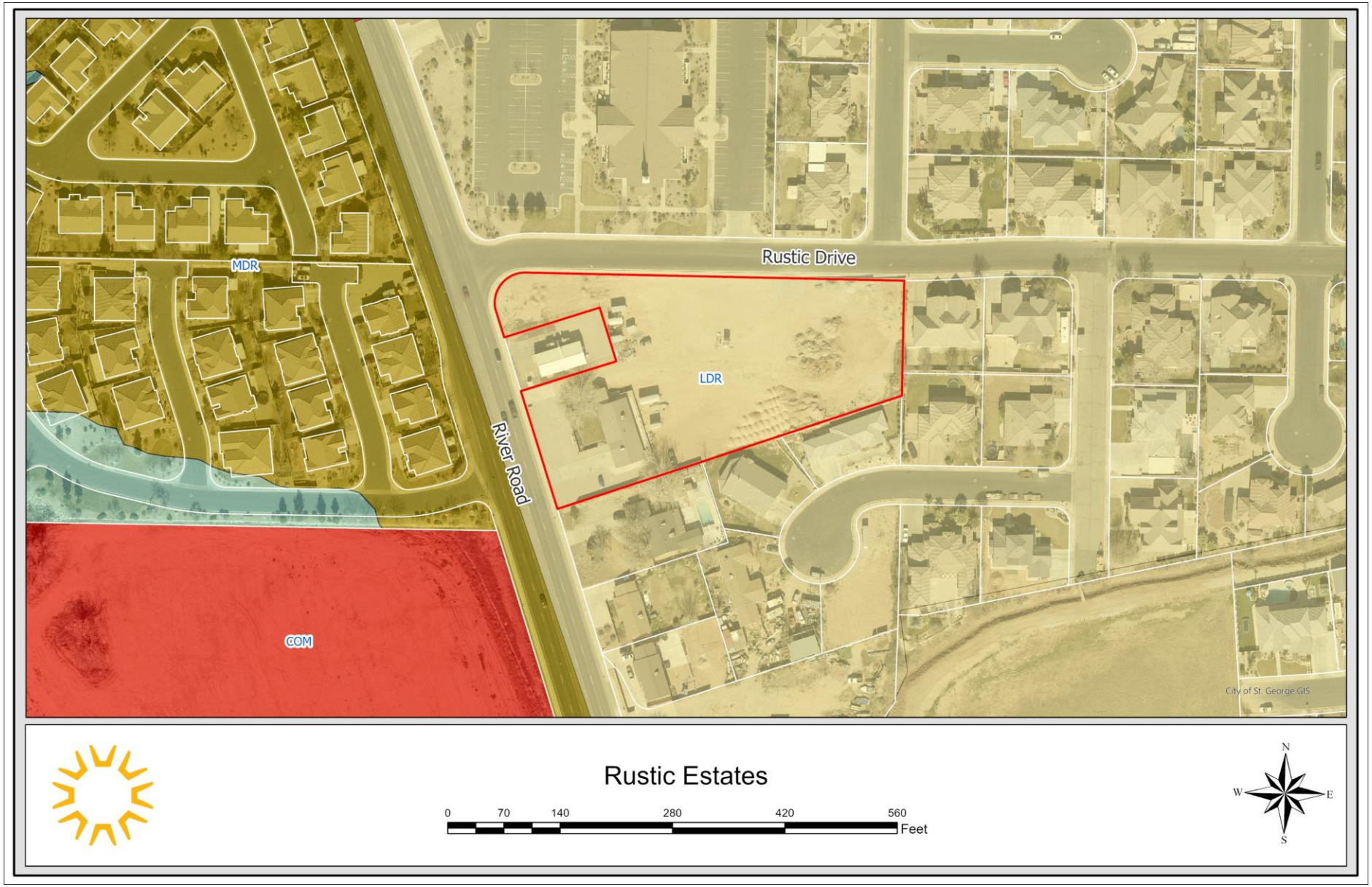
Rustic Estates Preliminary Plat

2023-PP-034

Aerial Map


Rustic Drive
River Road
Rustic Estates
0
70
140
280
420
560
Feet
N
W
E
S

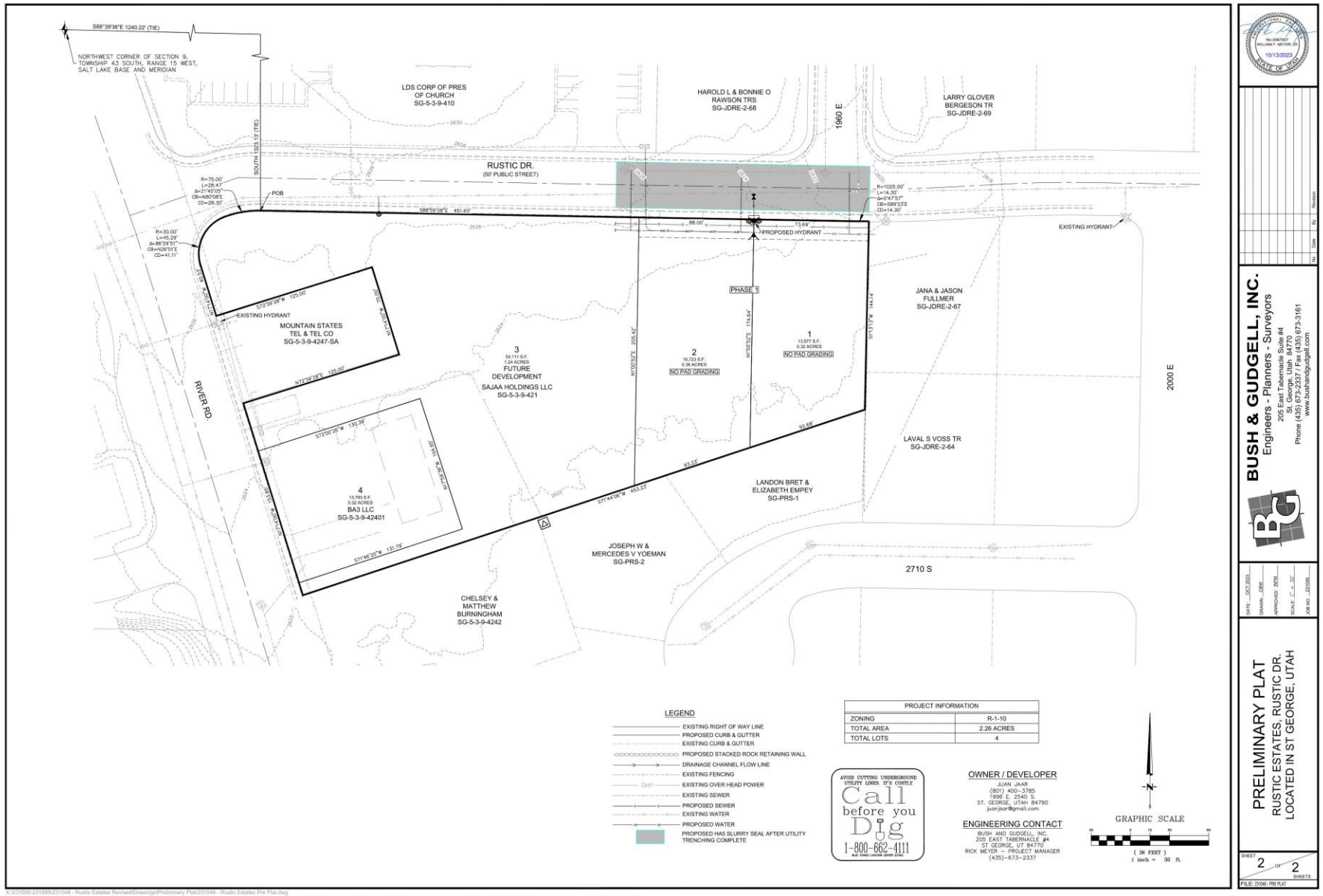
Land Use Map


MDR
Rustic Drive
LDR
River Road
COM
City of St. George GIS
Rustic Estates
0
70
140
280
420
560
Feet
N
W
E
S

Zoning Map


Rustic Drive
River Road
PD-R
A-20
R-1-10
A-20
RE-12.5
City of St. George GIS
Rustic Estates
0
70
140
280
420
560
Feet
N
W
E
S

Preliminary Plat



NOTICE OF MEETING
PLANNING COMMISSION
CITY OF ST. GEORGE
WASHINGTON COUNTY, UTAH

Public Notice

Notice is hereby given that the Planning Commission of the City of St. George, Washington County, Utah, will hold a **Planning Commission** meeting in the City Council Chambers, 175 East 200 North, St George, Utah, on **Tuesday, October 24, 2023,** commencing at **5:00 p.m**.

PRESENT: Chair Steve Kemp
Commissioner Emily Andrus
Commissioner Rogers
Commissioner Nathan Fisher
Commissioner Lori Chapman
Commissioner Austin Anderson
Commissioner Terri Draper

CITY STAFF:
Deputy City Attorney Jami Brackin
Planner III Carol Winner
Planner III Dan Boles
Planner III Mike Hadley
Development Office Supervisor Brenda Hatch

EXCUSED: Community Development Director Jim Bolser

Chair Kemp opened the meeting. Commissioner Chapman led us in the Pledge of Alliegence.

1. **Factory Powersports Addition Planned Development Amendment and Development Agreement** – Russell Key, representing General Properties LLC, is requesting approval of an amendment to the Factory Powersports PD (Planned Development) and adopt a development agreement. The amendment and development agreement would allow the applicant to add a 6,900 square foot addition to an existing building. The property is approximately 2.23 acres and is located at 1685 East Red Hills Parkway. The applicant is General Properties LLC. (Staff – Carol Winner)

   THIS ITEM WILL BE NOTICED AND HEARD AT A LATER DATE

2. **Riverstone Commercial General Plan Amendment** – **PUBLIC HEARING:** Jared Bates, representing Rosenberg and Associates, is requesting approval to change land-use map from VLDR (Very Low Density Residential) to COM (Commercial) on approximately 11.04 acres. The property is generally located west of Dixie Drive and approximately 1150 W Curley Hollow Drive. The applicant is Tim Stewart. **Case No. 2023-GPA-005** (Staff – Mike Hadley)

   Mike Hadley presented the following:

   Commissioner Rogers – I don't have a direct relationship with this project, but I do have a relationship with the project next to this property.

   Mike Hadley – They would like to take material that they are using from another site and dump it here, that is why they are requesting to change it to commercial.

Commissioner Fisher – Does it require them to change the general plan to do that?

Mike Hadley – It does not, but it would require them to do that if they want to get a mass grading permit.

Commissioner Chapman – Just so I understand, they can move their dirt without a zone change?

Mike Hadley – Yes.

Commissioner Chapman – Then why the zone change?

Mike Hadley – Probably for a future project. That could be a question for the applicant.

Commissioner Draper – The surrounding zoning is all residential?

Mike Hadley – Yes.

Tim Stewart – The idea of the application is, we don't know how much clay is coming out of the sites near here, we would like to keep as much clay in the area as possible. We are anticipating anywhere from 120 to 140,000 yards of dirt that is a lot of dirt traveling across our roads. We did have the Hillside Review Board come out and we came up with a game plan to put the dirt in nicely at a 2:1 slope. The whole idea behind the commercial is not necessarily to, like you said, we don't need it now, but there was a few, comments that were made, we couldn't remember how the commercial application was initiated. I think the idea is to build a ramp. If we did bring the dirt in we would build some kind of a pad that would be accessed through this commercial out here, a road of some sort that would be ramped up to this pad in a 2:1 slope and that slope would somehow… What we do with it long term, I don't know.

Chair Kemp – It won't be undocumented fill?

Tim Stewart – Clearly it will be documented. We are putting clay there, so whatever we do it will probably have to be over excavated again. It would be nice if I knew what I was doing there.

Chair Kemp – The point of the application is to not haul the clay on Dixie Drive and Tonaquint Drive to go into this property?

Tim Stewart – Yes.

Commissioner Anderson – Do you own this property? Will you move the dirt directly from the townhomes to this property.

Tim Stewart – I don't Gary Brown owns this property, it was actually his idea.

Chair Kemp – Can we move this material into this hole without the general plan or zone change?

Tim Stewart – Just to be clear the only part of this property that might be feasible for a project is about this 3 acres here.

Jami Brackin – In terms of moving the dirt around, we don't look at that in terms of this application. The idea we look at a General Plan is that does it make sense for Commercial there.

Chair Kemp opened the public hearing.

Chair Kemp closed the public hearing.

Commissioner Fisher – Just to reiterate Jami's point, the issue is does commercial make sense in this case?

Commissioner Anderson – The question is do we want to document what goes in there.

Chair Kemp – I think the only commercial that would make sense would be storage units.

Commissioner Chapman – And at this point there is no access. There may or may not be access.

Commissioner Rogers – I think it would come down to access.

Commissioner Anderson – There is no master road plan here.

Commissioner Chapman – I do understand that they can put the dirt there anyway, but commercial to me does not make sense.

Commissioner Rogers – If the property did not go commercial and you did the undocumented fill would that be beneficial?

Tim Stewart – If you're going to do something with the property, you would have such a small place to put it. It wouldn't make sense to put residential. The idea is to make it a part of this commercial so there would be access there. The nice thing about it is that it is down in a valley and it's hard to see.

Commissioner Anderson – If they do start disturbing this piece can you educate us how that works over time? Is that something the City would want? To create a clay landfill?

Mike Hadley – We did meet out there and it looks like it has been disturbed, there is a mound out there.

Cathy Hasfurther – The grading permits technically have a length of 1 year, we make sure they mitigate it and clean those up.

Commissioner Rogers – To do any commercial here they would still have to come back with a zone change, correct?

Commissioner Andrus – I feel conflicted, but I do think that may be the only thing that could go there. I think it does make sense to make it into something else that can be something else.

Commissioner Draper – I would be interested to see what the cost would be to the landowner to compact it to put something in there.

Commissioner Anderson – Typically you need 20 ft of good soil on top of clay to use it, so you could put 100 ft of clay here and top it with 20 ft of good soil and use it.

Jami Brackin – I am going to caution you Commissioners, the cost doesn't matter, focus on the application at this time, does the commercial make sense there at this time.

Commissioner Fisher – We need to put everything else aside, does commercial make sense here at this time?

Commissioner Rogers – Being that this is the application, and this is the access I think that it is arguable and supportive that this could be commercial.

Commercial Andrus – I think it could make sense with the terrain.

Chair Kemp – I think of what we did above Tonaquint Hills, and we approved RV Storage and RV Park, and we approved it.

Mike Hadley – One thing I did want to mention this brown portion is high density residential not commercial.

Commissioner Anderson – It's an island of commercial if we change it right now. I would need to see more information to make the change to commercial to see where the roads may come in.

Jared Bates – As part of the Hillside application we designed the grading plan and the road, you could have access to that.

Commissioner Anderson – So does it go through that high density residential?

Jared Bates – Yes.

MOTION: Commissioner Chapman made a motion to forward a negative recommendation for item number 2 to City Council.
SECOND: Commissioner Anderson
ROLL CALL VOTE:
AYES (5)
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Chair Kemp
Commissioner Rogers
Motion Carries

3. **<u>Divario PA-3 Rillisante Villas Hillside Development Permit and Planned Development Amendment</u>** – Greg Cronin, representing Unified Business Alliance, is requesting approval of a Hillside Development

Permit to develop an area shown on the slope map labeled 20-29% and a Planned Development (PD) amendment to the existing Divario PA-3 (Rillisante Villas) PD-R (Planned Development Residential) zone to change the elevations of the townhomes and make minor modifications to a portion of the street alignment. The applicant is Unified Business Alliance. (Staff – Dan Boles)

Dan Boles presented the following:

Dan Boles – There will be no change to the density or units, really no change to the bottom half. The road is the major change here, it will affect four buildings. The other changes with the change of elevations, they have been narrowed and elongated, and a little bit taller by about 3.5 feet. There will be a little more green space between each building. They are taking more space between the two roads.

Commissioner Rogers – The previous elevation shows two stories, this shows four. Is the previous elevation two stories?

Commissioner Anderson – Are they all above grade?

Dan Boles – That is probably a better question for the applicant.

Jami Brackin – Tell me again the density numbers.

Dan Boles – 206 units, that is not changing from what was previously approved. It is about 8.5 dwelling units per acre. That is taking into account any non-disturbable vs. disturbable and all that jazz.

Commissioner Rogers – Who is keeping track of the unit account of the development? There has been a significant amount of projects go through with density increases and decreases, who is keeping track of all that?

Jami Brackin – As Dan and probably the applicant will tell you, I am watching it like a hawk. They are consistent with the prior approval.

Commissioner Chapman – By adding the additional square footage, do the units change in size? Are they adding bedrooms?

Dan Boles – I will defer to the applicant on that question.

Chair Kemp – The previous height of the two-story units were 27 ft and now we are looking at 33?

Dan Boles – Yes.

Commissioner Chapman – Did the original ones have basements?

Dan Boles – I don’t think they were planning on basements in the original ones.

Commissioner Fisher – But the contours would have been the same, they would just have to build up the pad, we are not sacrificing anything by getting a basement.

Commissioner Anderson – No, they are just taking advantage of the topo.

Commissioner Fisher – Yes, it's a good use of it.

Greg Cronin – This was brought up at a Planning meeting a while back. The height measured on the existing was 29'10" and the new is 30'4". They are not any larger in bedrooms. The nice thing is these will accomplish a walk out basement on that downward slope so it will be more functional. It picks up livability there. On the top floor there, if you notice where Gap Canyon goes, the gap between these two buildings is wider so that people can see the vista. Net square footage if it has changed any it is less than 5%. The bedroom count is the same. I can double check the height, but I know we don't exceed the max per our agreement.

Dan Boles – There were a number of renditions of the townhomes, the townhomes in the packet are the townhomes that were actually approved by City Council. The townhomes Mr. Cronin spoke of were from a work meeting that was held with City Council.

a. Consider a request for a Hillside development permit to construct in the area shown on the slope map labeled 20-29%. This is specifically in the PA-3 area which is situated west of the intersection of Canyon View Drive and Gap Canyon Parkway. **Case No. 2022-HS-012**

MOTION: Commissioner Rogers made a motion to recommend approval of item 3a to City Council. **SECOND:** Commissioner Fisher **ROLL CALL VOTE:** AYES (7) Chair Kemp Commissioner Rogers Commissioner Andrus Commissioner Fisher Commissioner Chapman Commissioner Anderson Commissioner Draper NAYS (0) Motion Carries unanimous vote

b. **PUBLIC HEARING:** Consider a request for a Planned Development (PD) amendment to the existing Divario PA-3 (Rillisante Villas) PD-R (Planned Development Residential) zone. The applicant is seeking to update the townhome elevations that were previously approved and make minor modifications to a portion of the street alignment. The proposal would not change the number of units that were approved originally. **Case No. 2023-PDA-021**

Chair Kemp opened the public hearing.

Pam Hunter – I live in the Cottages North. About four years ago Divario tried to put in four level apartment buildings there. At the time we thought it was approved for single level homes there. The developer said that it has always been approved for these three-level density home apartments, townhouse, whatever you want to call it. I just want to make sure they said there would be five roads into this area. I live on Canyon View Road and that is the only road into this area still. We are concerned about the use of this heavy equipment on Canyon View Drive.

Chair Kemp closed the public hearing.

Commissioner Rogers – Back to our discussions about Divario and the access roads. Right now, they have access from Sunbrook, remind me of the intended construction of all those other roads.

Chair Kemp – Can you give us an update on the Gap Canyon Drive dedication?

Jami Brackin – The annexation now has been completed. We got the certificate from the Lieutenant Governor, so now we have contacted the property owners to grant us that easement to make Gap Canyon all the way through. They can finally start construction. I know that under the development agreement it is the master developer, Divario, that is required to build that primary road at least 30 ft of that primary road. Then the City picks up the rest. I know they are working with Cameron to do that. The developer's obligation ends at the annexation, that's where their property line ends. The City intends, it's on our master plan to pick that up on all the way through. It's on our list sooner than later is what I'm being told, so you will have a direct access to Gap Canyon from Dixie Drive. You'll have the access from Sunbrook off Dixie Drive. You'll have the access from Canyon View off of Dixie Drive. You'll have the access from Sky Rocket when PA-1 gets developed and that connection from Sky Rocket comes through. You'll also have another lateral road that is not built yet that is at the bottom of PA-1 that will also connect to Dixie Drive. That's the plan. I don't know how quickly PA-1 will develop.

Discussion continued regarding road construction in the Divario area.

Commissioner Rogers – The zoning allows the height change, the road direction is a good move, I think the basements are a good move. We need housing across the state. The only question is the price. I see no issue with the increase in height.

Commissioner Chapman – My concern is 206 more units on this road.

Dan Boles – And just to be clear, the 206 units are already approved.

MOTION: Commissioner Anderson made a motion to recommend approval of item 3b to City Council.
SECOND: Commissioner Fisher
ROLL CALL VOTE:
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

4. **St George Fire Station #1 Zoning Map Amendment** – **PUBLIC HEARING:** Tim Galloway and Carlos Robles, representing Galloway & Company and the City of St. George, are requesting approval of a zoning map amendment to build Fire Station #1. The project is generally located at 85 South and 400 East Street and is 2.20 acres. The applicant is The City of St. George. **Case No. 2023-ZC-016** (Staff – Carol Winner)

   Carol Winner presented the following:
   Carol Winner – We have a larger parking lot than what is typically at a fire station but that is because this is Fire Station 1 and all the administrative staff will be here. We don't really have a set regulation for parking, we let the fire department and Galloway come up with the required amount of stalls. The setbacks required would be 20 ft. They would not be able to make those setbacks because they need enough room to get the big trucks into the garage. This is the only way they could face the building and make it work.

   Chair Kemp – The reduced landscape they are asking for is from 10 ft to 7?

   Carol Winner – I will talk about that next. But I was talking about the building setbacks.

   Commissioner Chapman – So both sides were supposed to be 20 ft and one is going to xx and one is going to 13 ft.

   Carol Winner – The landscaping that is backing up to residential will remain and will be enhanced. The typical size would be 10 ft, but the City is asking for a legislative exception, it will remain the 7ft but will be enhanced. On the north side where it is A-P zone they will mostly see the block wall. The reason the City picked this location is because this one is bigger, and it's more centrally located. It will help the fire rating for most of the downtown area. Staff recommends approval, the conditions would be that the City Council approves a legislative exception for the proposed setbacks and the landscaping. (The wording is included in the packet)

   Carlos Robles – The doors are 14 ft. tall.

   Chair Kemp – How deep are the bays?

   Coty Chadburn – I think at one time they were 100, but I think because of the setbacks they are about 90 ft.

   Chair Kemp – What is the highest building your apparatus can service?

   Coty Chadburn – About 107 ft.

   Chair Kemp – Do they make taller ones? And do they fit in this building?

   Coty Chadburn – Yes. Chief Stoker is planning for the future with this building.

   Commissioner Fisher – All the way around there is about a 4 ft elevation change in this property.

   Chair Kemp – The City is planning to do privacy walls and landscaping where they are not.

   Chair Kemp opened the public hearing.

Bob Thornley – We think it's great, but I just really loved that church.

Chair Kemp closed the public hearing.

MOTION: Commissioner Chapman made a motion to recommend approval of Item number 4.
SECOND: Commissioner Fisher
ROLL CALL VOTE
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

5. **The Grove Zoning Map Amendment and Preliminary Plat** – Dave Nasal representing The Grove St George LLC is requesting to extend the approvals of a change in zoning from A-1 to R-1-20 as well as a fourteen (14) lot preliminary plat. The property is located on the southeast corner of 1580 South and 3000 East. The applicant The Grove LLC. (Staff – Dan Boles)

Dan Boles presented the following:

Dan Boles – This property is near the Red Cliffs Temple.

Jami Brackin explained why they are coming through to extend the approvals of the change in zoning.

   a. **PUBLIC HEARING:** Consider a request to extend approvals of a change in the zoning from A-1 to R-1-20. The zoning map was amended on November 2, 2022, with a stipulation that a plat be recorded within a year or the zoning would revert to R-1-20. Because a plat has not been recorded, the applicant is requesting an extension of the approval of the zoning. **Case No. 2023-ZC-015**

      Chair Kemp opened the public hearing.

      Chair Kemp closed the public hearing.

      MOTION: Commissioner Fisher made a motion to recommend approval to city council of item 5a.
      SECOND: Commissioner Anderson
      ROLL CALL VOTE
      AYES (7)
      Chair Kemp
      Commissioner Rogers
      Commissioner Andrus
      Commissioner Fisher

Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

b. Consider a request for a preliminary plat to develop fourteen (14) lots on approximately 18.62 acres located on the southeast corner of 1580 South and 3000 East. **Case No. 2023-PP-032**

MOTION: Commissioner Rogers made a motion to recommend approval to City Council on Item 5b.
SECOND: Commissioner Chapman
ROLL CALL VOTE
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

6. **Willow Bend Commercial Zoning Map Amendment and Preliminary Plat** – Eric McFadden, representing Smoothie Kings Holdings LLC is requesting to change the zone from PD-R (Planned Development Residential) to C-3 (General Commercial) as well as a three (3) lot preliminary plat. The property is located on the east side of Riverside Drive at approximately 700 South, south of Foremaster Drive. (Staff – Dan Boles)

Dan Boles presented the following:

Dan Boles – So there are two parts to this application, they want to divide into 3 lots, when they first did this land they got townhomes approved on the lower portion, but they zoned the entire parcel PD-R. They would like to rezone the first lot to C-3 to match the General Plan.

Commissioner Chapman – The 3-lot subdivision doesn't include the townhomes?

Chair Kemp – Yes, it does, the townhomes are approved on lot 3. Lot 1 will be rezoned to commercial.

Commissioner Chapman – And lot 2 will be?

Chair Kemp – Lot 2 will have to come back at a later time if they want to do something else with it.

Eric McFadden – We think it makes sense with the zoning to the north which is also C-3.

a. **PUBLIC HEARING:** Consider a request to change the zone from PD-R (Planned Development Residential) to C-3 (General Commercial) on approximately 3.0 acres located on the east side of Riverside Drive at approximately 700 South, south of Foremaster Drive **Case No. 2023-ZC-014**

Chair Kemp opened the public hearing.

Chair Kemp closed the public hearing.

MOTION: Commissioner Fisher made a motion to recommend approval of Item 6a a zone change amendment on lot 1.
SECOND: Commissioner Anderson
ROLL CALL VOTE
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

b. Consider a request for a preliminary plat to develop three (3) lots on approximately 43.37 acres. The property is located on the east side of Riverside Drive between 700 South and Judy Lane. **Case No. 2023-PP-035**

MOTION: Commissioner Anderson made a motion to recommend approval of item 6b a 3-lot subdivision to City Council.
SECOND: Commissioner Rogers
ROLL CALL VOTE
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

7. **Chuckwalla Estates Hillside Permit and Preliminary Plat** – Bob Hermandson, representing Bush and Gudgell is requesting approval of a Hillside Development Permit and a Preliminary Plat to develop six (6) lots on approximately 12.63 acres located generally located at Highway 18 and Snow Canyon Parkway. The applicant is Western States Lodging. (Staff – Mike Hadley)

Mike Hadley – As was mentioned there was an archaeological site, we contacted the State, and they sent us the location of the site. The six lots the applicant wants to develop are outside of the archaeological site. They want to put retaining walls to make it look as best it can along Snow Canyon Pkwy there.

Commissioner Chapman – Will that be a right in right out on Snow Canyon Pkwy?

Chair Kemp – Will they do a deceleration lane there?
Mike Hadley – Yes it will be right in right out, and a deceleration lane.

Discussion on the location of the lots and the archaeological site.

Bob Hermandson – One clarification, there will be an additional deceleration lane coming to get down the hill, there is an island there as well, so it will be a right in right out. On the other side of the project, we are just on the top. This is substantially higher than the road level. We will chase the disturbed slope up the hill.

Chair Kemp – Will you have 2 flag lots?

Bob Hermandson – Yes, there will be.

Chair Kemp – The recommendation that the retaining walls will all be done at the same time, what material will those be?

Bob Hermandson – Currently we would like them to be stacked rock walls, we are more than happy to work with the City on the coloring.

Chair Kemp – Generally speaking the lots on the west side won't be visible, the wall, not the house.

Bob Hermandson – I don't know the answer for that for sure. That is probably a 20 ft step down from the cliff to the house.

Commissioner Chapman – Will the development dedicate the land to the City, the open space part? The other question I have is that lot 3 has hillside all over it.

Bob Hermandson – It is in the 20% area, that is allowable by the ordinance.

Jami Brackin – On lot 3, my understanding is you are asking for 6 lots because of the zoning?

Bob Hermandson – No, it's R-1-10.

Jami Brackin – So do we need a pad for that lot to build on?

Bob Hermandson – The way it is laid out the whole lot can be developed on with the percentages.

Jami Brackin – Will the trail be affected by the deceleration lane?

Bob Hermandson – The intent right now is that we have designed the preliminary plat to relocate the trail along the deceleration lane. We will have a normal crossing for the trail.

Jami Brackin – So if this neighborhood goes to Digby's to shop they will have to go up Snow Canyon to the intersection, flip a U turn to go home?

Bob Hermandson – Yes, that is what they would have to do.

a. Consider a request for Hillside Development Permit in order to create a six (6) lot residential subdivision through a previously disturbed hillside. **Case No. 2023-HS-016**

MOTION: Commissioner Andrus made a motion to recommend approval to City Council of item 7a with the conditions that staff identified.
SECOND: Commissioner Draper
ROLL CALL VOTE
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

b. Consider a request to approve a preliminary plat for a six (6) lot residential subdivision on approximately 12.63 acres located generally at the northwest corner of Highway 18 and Snow Canyon Parkway. **Case No. 2023-PP-030**

MOTION: Commissioner Andrus made a motion to recommend approval of item 7b to City Council.
SECOND: Commissioner Draper
ROLL CALL VOTE
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

8. **Trilogy Estates Subdivision Preliminary Plat** – Brandee Walker, representing Civil Science is requesting approval a Preliminary Plat to develop three (3) lots on approximately 3.11 acres located

generally on the northwest corner of 3670 South and Little Valley Road. The applicant is Bearo Companies. **Case No. 2023-PP-037** (Staff – Dan Boles)

Dan Boles presented the following:

Dan Boles – They are proposing 3 lots that meet the threshold for the zone. They will need to make the improvements along 3670 and Little Valley Road.

MOTION: Commissioner Anderson made a motion to recommend approval of Item 8 Trilogy Subdivision preliminary plat.
SECOND: Commissioner Chapman
ROLL CALL VOTE
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

9. **Desert Canyons Business Park Phase 1 Amended Preliminary Plat** – Ken Miller, representing DSG Engineering is requesting approval of an Amended Preliminary Plat to develop twelve (12) lots on approximately 49.37 acres located south of Airport Parkway and northwest of Southern parkway. The applicant is Curt Gordon, Desert Canyons Land LLC. **Case No. 2023-PP-038** (Staff – Mike Hadley)

Mike Hadley presented the following:

Mike Hadley – One thing I wanted to make note of is that the trail doesn't actually go through all of their development so the condition in the staff report is not needed.

MOTION: Commissioner Draper made a motion to recommend approval of Item 9 Desert Canyons Business Park Phase 1 Amended Preliminary Plat.
SECOND: Commissioner Fisher
ROLL CALL VOTE
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

10. **Venture Park Subdivision Preliminary Plat** – Kevan Bundy, representing Aaron & Melissa Bolli is requesting approval of a Preliminary Plat to develop two (2) lots on approximately 20 acres located at approximately 1304 E Venture Drive in the Fort Pierce Industrial Park. The applicants are Aaron & Melissa Bolli. **Case No. 2023-PP-039** (Staff – Mike Hadley)

    Mike Hadley presented the following:

    Commissioner Fisher recused himself.

    Mike Hadley – They are trying to correct an illegal subdivision that was made by meets and bounds.

    Chair Kemp – The applicant only owns the 5 acres.

    Jami Brackin – Both owners would have to consent to the application.

    Chair Kemp – If the other owner of the 15 acres didn't sign the application, they will have to sign the final plat?

    Jami Brackin – Yes, they will.

    MOTION: Commissioner Rogers made a motion to recommend approval of item 10 to City Council.
    SECOND: Commissioner Anderson
    ROLL CALL VOTE
    AYES (7)
    Chair Kemp
    Commissioner Rogers
    Commissioner Andrus
    Commissioner Fisher
    Commissioner Chapman
    Commissioner Anderson
    Commissioner Draper
    NAYS (0)
    Motion Carries unanimous vote

11. **Mobile Business Zoning Regulation Amendment – PUBLIC HEARING:** Carol Winner, representing the City of St. George is requesting approval to amend portions of Title 10 of the City Code, to remove mobile business as a permitted with standards use in the C-2 and/or C-3 zone along with its specific standards, application, and parking requirements. The applicant is the City of St. George. **Case No. 2023-ZRA-003** (Staff – Carol Winner)

    Carol Winner presented the following:

    Carol Winner – This is a business that would be if someone had a vehicle where you went to get a haircut in a commercial parking lot or a dog wash, it's not when someone goes to someone's home. The State Legislature passed a law that says we can't have the items in our code that regulate mobile businesses.

Chair Kemp opened the public hearing.

Chair Kemp closed the public hearing.

MOTION: Commissioner Anderson made a motion to forward a positive recommendation of item 11 to City Council.
SECOND: Commissioner Chapman
ROLL CALL VOTE:
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

12. Minutes

Consider a request to approve the meeting minutes from the October 10, 2023, meeting.

MOTION: Commissioner Rogers made a motion to approve the minutes.
SECOND: Commissioner Draper
ROLL CALL VOTE:
AYES (7)
Chair Kemp
Commissioner Rogers
Commissioner Andrus
Commissioner Fisher
Commissioner Chapman
Commissioner Anderson
Commissioner Draper
NAYS (0)
Motion Carries unanimous vote

13. City Council Items

Carol Winner the Community Development Director will report on items heard at the October 19, 2023, City Council meeting.

1. 2023-PDA-017 Dixie Commons Lot 9 Food
2. 2023-PDA-018 Dixie Commons Lot 10 Office and Lot 11 Retail
3. 2023-PDA-015 Desert Color Resort Phase 4B

4. 2023-CUP-003 Fiesta Fun Addition
5. 2023-PP-031 Ponderosa Subdivision
6. 2023-PP-033 Sunshine Way Amended

14. Adjourn

Commissioner Fisher made a motion to adjourn at 7:15 pm.

St.George
THE BRIGHTER SIDE

Dan Boles <daniel.boles@sgcity.org>

Gap Canyon Development

Carolyn Lloyd [redacted] Sun, Oct 22, 2023 at 12:23 PM
To: Daniel.boles@sgcity.org

Mr. Boles,

We are writing in response to the request for the Planned Unit Development (PD) amendment to the existing Divario PA-3 (Rillisante Villas) PD-R (Planned Development Residential) Zone.

We have expressed our concern in the past regarding the negative impact of the height and density the proposed Rillisante Townhouse Villas on the existing quality of life, views, and traffic volumes. It is ironic the Divario marketing sign states “it is all about the views” and this development placement and design on the ridgetop will effectively block and destroy these views for everyone including the new residents..

While we understand the Planning Commission has previously created the PD-R zoning of this parcel and approved this development we are very concerned with the impact of this and other adjacent planned high density developments with little regard for public safety given the limited traffic access to the Gap Canyon Parkway area. The current volume of traffic on Canyon View Drive, the only access into and out of these developments combined with the heavy Divario construction truck traffic (High speed and dusty) has already creates a dangerous environment for the families and children in the area.

Knowing rezoning and approval of several parcels has already been given without regard for these traffic concerns we strongly ask the City either accelerate the extension of Gap Canyon Parkway connection South to Dixie prior to any further approvals. We hoping it won’t take a serious accident to have these concerns addressed.

Thank you,

Cottages South HOA

Regards property behind Tuscan Hills

List of Homeowner apposing the change from residential to commercial as requested by Jim Stewart.

Case No. 2023-GPA-005

1) Janene Stauffer - Janene Stauffer
[redacted]

2) Stacy Temple - Stacy Temple
[redacted]

3) Bob Jordan Bob Jordan
[redacted]

4) Emeline Barna
[redacted]

5) Rae Eggleston
[redacted]

6) Paula Borcher - P Borcher
[redacted]

7) Joel & Shauna Alberts
[redacted]

8) Holly Thompson Holly Thompson
[redacted]

9) Cory Jex
[redacted]

10) [redacted] - ANNA & JEFF COURSON

	Print Name	Signature	Address
11)	[illegible]	[illegible]	[redacted]
12)	LARRY TRACY	[illegible]	[redacted]
13)	Tyler Georgino	[illegible]	[redacted]
14)	[illegible]	GARY NEWMAN	[redacted]
15)	Eugenia Contratto	[illegible]	[redacted]
16)	Linda Corpus	[illegible]	[redacted]
17)	Dan Streng	[illegible]	[redacted]
20)	Karen Kowalski	[illegible]	[redacted]

Emails attached

Stan Juhl [redacted]

Annel Ortega [redacted]