HURRICANE CITY
UTAH

Mayor Nanette Billings

City Manager Kaden DeMille

Planning Commission

Mark Sampson, Chair
Shelley Goodfellow, Alternate Chair
Ralph Ballard
Paul Farthing
Rebecca Broneman
Michelle Cloud
Brad Winder
Kelby Iverson

Hurricane Planning Commission Meeting
Agenda

April 11, 2024
6:00 PM
Hurricane City Offices 147 N 870 W, Hurricane

Notice is hereby given that the Hurricane City Planning Commission will hold a Regular Meeting commencing at 6:00 p.m. at the Hurricane City Offices 147 N 870 W, Hurricane, UT.

Meeting link:
https://cityofhurricane.webex.com/cityofhurricane/j.php?MTID=me42b4eb65609e35eb0e0664c925c9dbc
Meeting number:2632 882 4836
Password:HCplanning
Host key:730111
Join by phone+1-415-655-0001 US Toll
Access code: 2632 882 4836
Host PIN: 9461
Details on these applications are available in the Planning Department at the City Office, 147 N. 870 West.

6:00 p.m. - Call to Order

Roll Call

Pledge of Allegiance

Prayer and/or thought by invitation

Declaration of any conflicts of interest

OLD BUSINESS

1. PP24-09: Discussion and consideration of a possible approval of a preliminary plat for Coral Junction Phase 1, a three-lot commercial subdivision located at 201 N Foothills Canyon Dr. MP 16 LLC-Derek Rowley, Applicant. Mike Bradshaw, Agent.

NEW BUSINESS

1. 2023-PP-09: Discussion and consideration of a possible approval of an extension of the preliminary plat approval for Sky Rim, a mixed use development consisting of 15 single family lots, 129 townhomes, 372 apartments, and six commercial buildings located at 3000 W State St. Brad Brown, Applicant.

Planning Commission Business:

1. Discussion on commercial kennel standards
2. Discussion on the Parks, Trails, and Recreation Master Plan
3. Possible approval of canceling the previously scheduled May 9th, 2024 Planning Commission meeting.

Adjournment

Hurricane City Application

Application Accepted Date: 02/23/2024

Type of Improvement: Subdivision (Preliminary Plat)

Description: 3 Lot Commercial Subdivision with Roadway Dedicati

Tenant / Project Name: Coral Junction Subdivision

Bldg. Address: 201 N Foothills Canyon Dr., Hurricane, UT

City: Hurricane City State: UT Zip: 84737

Subdivision: Coral Canyon / Coral Junction Phase:

Block: Lot #: Parcel #: H-4-2-5-127-CJ1

Zone: PC - GC

Property Owner: MP 16 LLC

Permit Contact: Michael Bradshaw P:(435) 467-8293

Email: mwb@allianceconsulting.us

CONTACT INFORMATION

Engineer of Record: Alliance Consulting

Email: mwb@allianceconsulting.us P: (435) 673-8060

General Contractor: Derek Rowley

License #: 4804458 P: (775) 250-0901

Address: 604 Churchill Dr

City: St. George State: UT Zip: 84790

Email: derek.rowley@pinnaclecd.biz

APPLICATION DETAILS

of Units: 0 | custom text:

Valuation	$	0.00

PERMIT FEES

Planning Fee	$	150.00
Planning Fee	$	150.00
Sub Total:	**$**	**150.00**
Permit Total:	**$**	**150.00**
Amount Paid:	**$**	**0.00**
Remaining Due:	**$**	**150.00**

APPROVALS	DATE	INFO

Setbacks	Front:	Rear:	Left:	Right:
Min.				
Actual:				

APPLICATION NUMBER: PLANPP24-09

This permit becomes null and void if work or construction authorized is not commenced within 180 days, or if construction or work is suspended or abandoned for a period of 180 days at any time after work is commenced. I here-by certify that I have read and examined this application and know the same to be true and correct. All provisions of laws and ordinances governing this type of work will be compiled with whether specified herein or not the granting of a permit does not presume to give authority to violate or cancel the provisions of any other state or local law regulating construction or the performance of construction and that I make this statement under penalty of perjury. Maintenance Deposit is refundable after final inspection if: 1) site is kept clean 2) building is NOT occupied prior to final inspection and issuance of Certificate of Occupancy.

Applicant Name: Michael Bradshaw

Signature of Applicant/Authorized Agent or Owner: Date:

Application Approved By: Date:

Application Issued By: Date:

Receipt #:

DRAFT

Alliance Consulting
2303 N. Coral Canyon Boulevard
Washington, Utah 84780
Ph: (435) 635-8060

DRAINAGE STUDY REPORT

Coral Junction RV Park

4499
OCTOBER, 2019

Prepared For:

DAVID NILSSON

and

State Trust Lands Administration
2303 N. CORAL CANYON BLVD. STE 100A
WASHINGTON, UTAH 84780

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SECTION 1: INTRODUCTION

1.1 PROJECT OVERVIEW

Coral Junction is currently planning to construct pads and facilities for RV rental use in City of Hurricane in southern Utah. The proposed site plan and grading plan for this project were prepared by Alliance Consulting, and includes mass grading for a 42.82-acre parcel owned by the State Trust Lands Administration. This property will be divided into eight (8) parcels. The northeast 15.79 acre parcel will be developed as a motor coach resort with concrete alleyways and landscaped pads and restroom, resort and park amenities throughout. The northwest 3.3 acre parcel is intended strictly for Air Stream rentals with gravel access roads and park and restroom facilities. The remaining 6 parcels, 23.76 acres total, are planned for various commercial uses accessed with standard asphalt roadways, but will be developed at a future time.

1.2 PURPOSE & NEED

This Drainage Study was prepared by Alliance Consulting to serve as the basis for storm drain infrastructure design for the proposed project, and to show compliance with the Hurricane City drainage requirements. The primary objectives of the study are as follows:

- Evaluate existing drainage patterns within the site. This includes delineation of drainage basins based on points of interest, including at existing infrastructure, site discharge outfalls, and off-site runoff entrance points.

- Estimate stormwater peak discharge rates at points of interest throughout the development for pre-development and post-development land use conditions;

- Provide recommendations for stormwater management facilities for the development.

The following report summarizes the procedures, methodologies, data, and results used to accomplish the above tasks.

1.3 SITE LOCATION

The proposed Coral Junction RV site will be located in Hurricane City, Section 5, Township 42 South, Range 14 West, and Section 32 Township 41 South, Range 14 West, Salt Lake Base & Meridian. The subject property is located within the southeast quadrant of the interchange between I-15 and SR-9, north of SR-9 and west of Foothills Canyon Drive. A vicinity map for the project is shown in Figure 1.

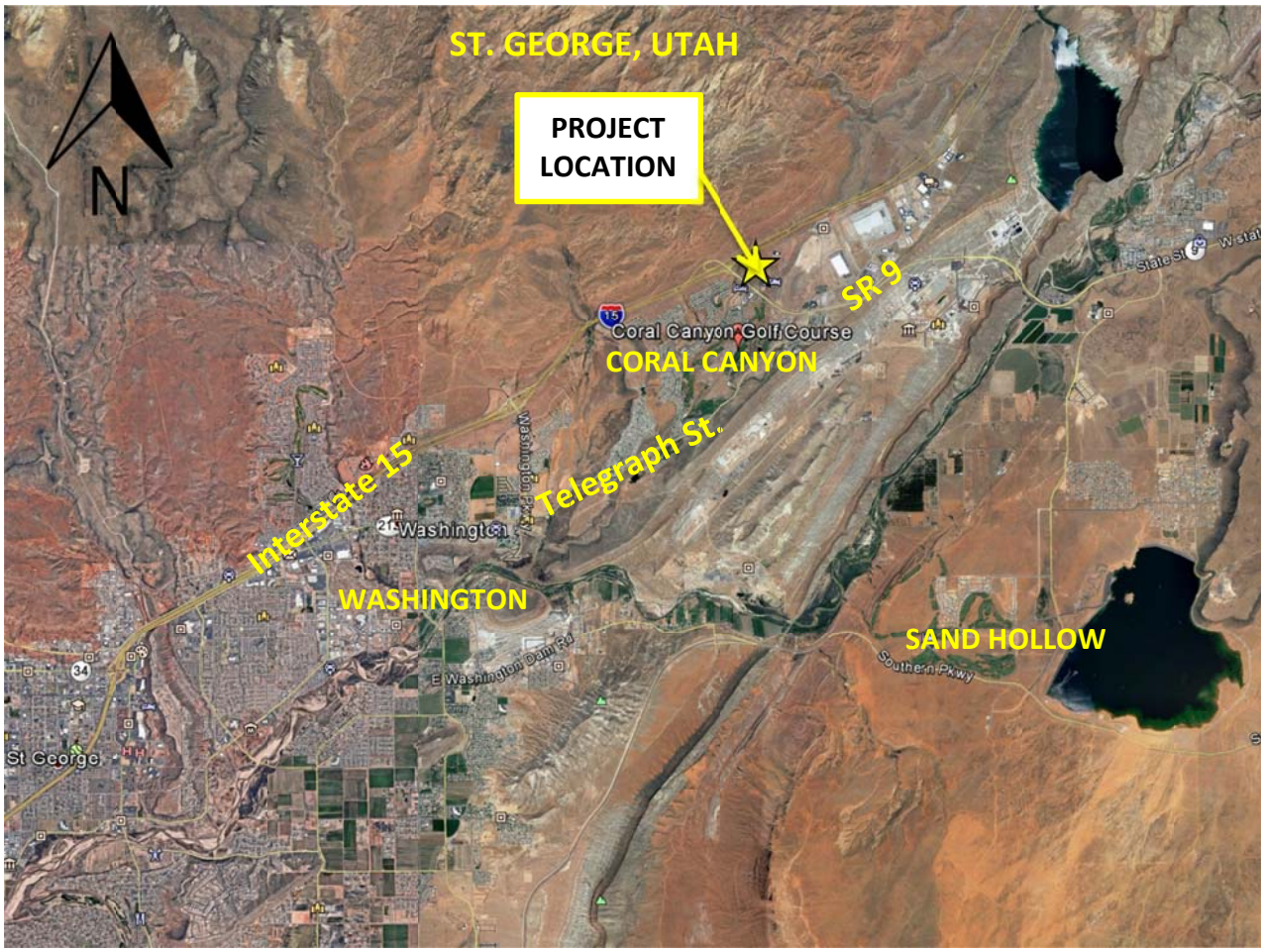


Figure 1: Coral Junction RV Park - Vicinity Map

SECTION 2: SITE CHARACTERIZATION

2.1 PROPERTY DESCRIPTION

The Coral Junction RV Park site will be located on a privately owned parcel of land approximately 42.82 acres. The property is bounded to the north by the I-15 right-of-way, to the west by SR-9, and to the south and east by public right-of-way Foothills Canyon Drive. This property will be subdivided into parcels. Finished development is planned for the two northernmost parcels of 15.79 acres and 3.3 acres, with the RV resort to the Northeast, and the Airstream Park to the northwest. The remaining commercial parcels to the south, totaling 23.76k acres will be mass graded but undeveloped till a future date. Proposed mass grading improvements are shown on the construction drawings, which are supplemental to this report. The subject property is in an un-developed state.

2.2 PAST STUDIES

The project site is located within the Coral Canyon Development master planned boundary, and is included as part of the Drainage Master Planning - Hurricane City dated October 23, 2000 by Rosenberg Associates. Per Section 1.4.1 of aforementioned report, this project site is within a boundary that does not require detention since detention is provided in the Washington portion of Coral Canyon.

2.3 LAND USE AND STRUCTURES

Current Use:

The property is currently not being used for commercial, industrial, or residential purposes. The site is assumed to be in a native state for purposes of this hydrologic study.

Proposed Use:

It is proposed to construct access roads and pads for RV rental use with accessory park and resort facilities on the two northern-most parcels. The six remaining parcels will be mass graded, but no development will occur on these parcels as part of the RV Resort project.

Structures:

There are no existing structures on the current site. It is proposed to construct a ~10,000 sq. ft. resort building, 3 restroom buildings, 3 park pavilions and a circular stage structure.

2.4 SOIL TYPE AND COVER CONDITIONS

Soil Type:

A soils report was generated using the NRCS Web Soil Survey tool and is located in Appendix A. From this report it was determined the site consists approximately 51.6% of an Eroded land-

Shalet complex (EB), with 46.4% Pintura loamy fine sand (PoD) interspersed throughout, and a 2.0% of site Rock outcrop (RT) at the northwest corner of the site.

Soil Data Source:

USDA Natural Resources Conservation Service (NRCS) Soil Classifications was the source of soils data for this study.

Hydrologic Soil Group:

The Eroded land-Shalet complex (EB) has a Hydrologic Soil Group (HSG) type "D", Pintura loamy fine sand (PoD) an HSG of "A", while the Rock outcrop (RT) have not been assigned an HSG. HSG type "D" was assumed for soils that have not been rated for HSG.

Water Transmittal

Based on the soils report (Appendix A), the Eroded land-Shalet complex has a very low to moderately high capacity (0 to 0.2 in./hr) to transmit water, while the Pintura loamy fine sand (PoD) has a high to very high (6.0 to 20.0 in./hr) to transmit water.

Cover Conditions:

The property is assumed to be in a native state, with desert shrub in fair condition.

Groundwater

According to the soils report (NRCS), the ground-water table is more than 6 feet below the ground surface.

Land Disturbance

The entire 42.82 acre site will be disturbed as part of this mass grading project.

2.5 EXISTING SITE TOPOGRAPHY & DRAINAGE

The subject property lies immediately adjacent to the Interstate 15 right-of-way. Existing site topography is shown in Exhibit 2.1 and 4.1. The property is split into four primary basins by ridges running primarily north-south; the north 6 acres drains to the southeast with an average slope of about 3% to 4%; and the south 36 acres drains to the southeast with an average slope of about 3% to 4%. The high point of the site has an elevation of 3166 and is located along the I-15 Right-of-Way, about midway along the north property line. The low point in the south basins has an elevation of 3106 where stormwater runoff currently collects into an existing 24" culvert under the Foothills Canyon Drive roadway and empties into the un-named wash to the east of the project. In the north basin the low point is located near the mid-eastern boundary of the basin, with an elevation of 3132.

Off-site stormwater run-off entering the site is a consideration for this project. Stormwater runoff from about 11.84 acres enters the site in concentrated flow along the north property line through basin B2, . This runoff comes from an un-named basins north of the I-15 right-of-way whose size and slopes were obtained from aerial topography maps. Additional off-site runoff flows through basin B4, entering at two locations from culverts crossing I-15 and conveying stormwater from about a 13.96 acre basin.

2.6 DOWNSTREAM DRAINAGE

Receiving Body:

Storm water runoff from the project site currently flows southeast to a large un-named wash bisecting the Hurricane portion of the Coral Canyon Development, which later combines with Cottonwood Wash at the southwest corner of the Coral Canyon Golf Course, and ultimately empties into the Virgin River.

Size/Type Downstream Conveyance:

Storm-water runoff from the south project basins currently flows southeast through a culvert under Foothills Canyon Drive, and is conveyed through underground storm drain system to the un-named natural wash to the east of the Coral Junction Development. Storm-water runoff from the north project basin currently flows east under Foothills Canyon Drive and into the previously mentioned un-named natural wash.

2.7 FLOODPLAIN DESIGNATIONS

FEMA Floodplain:

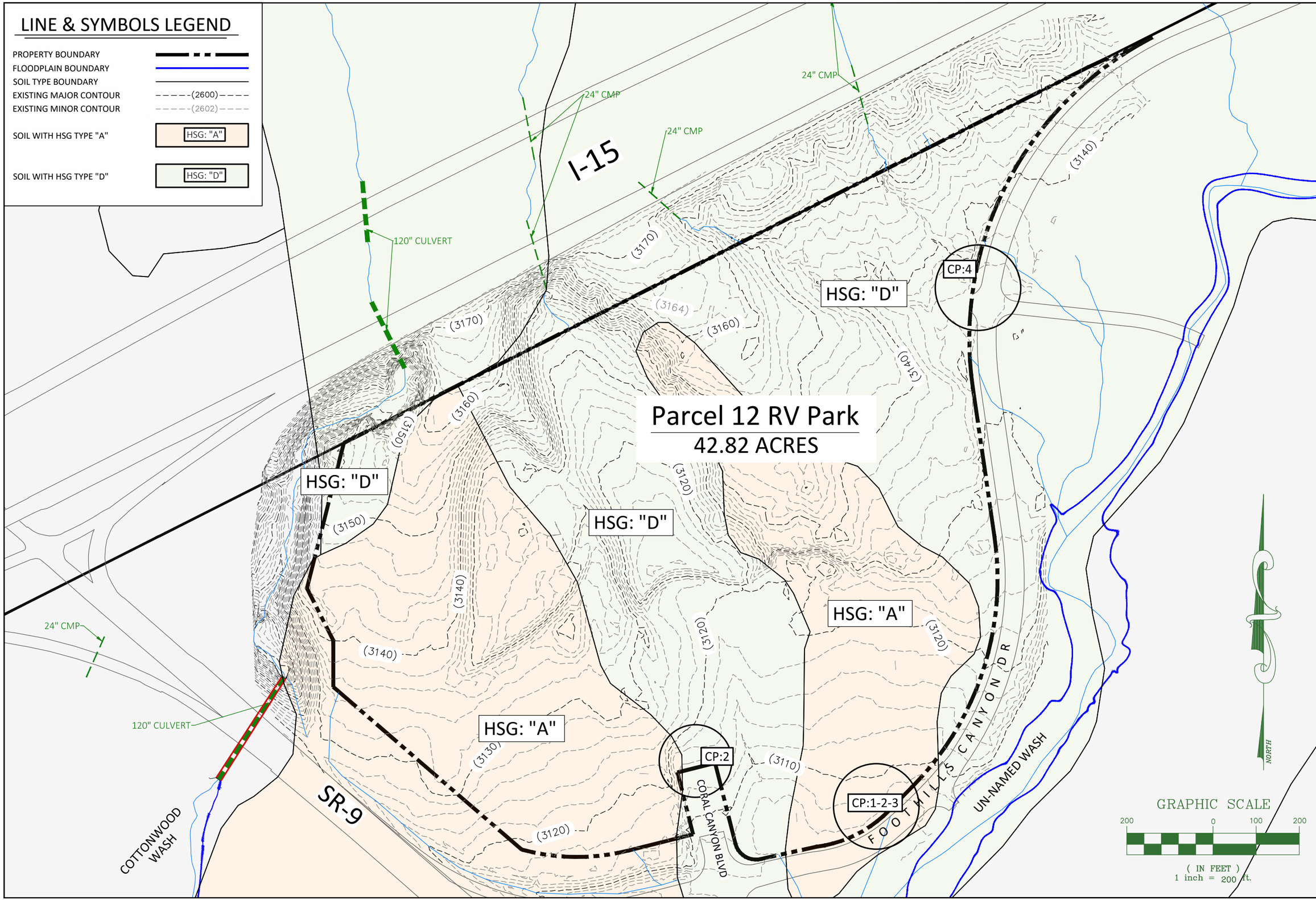
No portion of the project is within a FEMA designated flood plain or special flood hazard area.

2.8 PROJECT DATUM

The Hurricane portion of the Coral Canyon Development is on a localized control.

LINE & SYMBOLS LEGEND

PROPERTY BOUNDARY
FLOODPLAIN BOUNDARY
SOIL TYPE BOUNDARY
EXISTING MAJOR CONTOUR (2600)
EXISTING MINOR CONTOUR (2602)
SOIL WITH HSG TYPE "A" — HSG: "A"
SOIL WITH HSG TYPE "D" — HSG: "D"



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EXISTING SITE TOPOGRAPHY & SOIL HSG TYPE
FOR
CORAL JUNCTION RV PARK
LOCATED IN
CITY OF HURRICANE
WASHINGTON COUNTY, UTAH

DRAWING NAME: CC-Hurr RV Park Drainage
SHEET EX 2.1
OF 1 SHEETS

SECTION 3: METHODOLOGY

3.1 STANDARDS & GUIDELINES

This study has been conducted in accordance with the Hurricane City Drainage Manual[1] (Drainage Manual) and standard engineering practice.

3.2 DESIGN MODELS

HEC-HMS was used to generate a rainfall-runoff hydrologic model for this project.

3.3 LOSS METHOD

The USDA National Resource Conservation Service (NRCS) curve number (CN) method was used to perform the hydrologic analysis presented in this report. The runoff curve number is based on the area's hydrologic soil group, land use, land cover, treatment, and hydrologic condition. NRCS soil classifications were used to determine the CN value of the soil present within the project basin. Curve numbers vary based on land use and correspond to soil types A, B, C, and D. A weighted CN value for each sub basin was determined by overlaying the basin delineation and the NRCS soils map on the proposed land use map. The contributing areas of each soil type and land use combination were then determined for areas within all sub-basins. The composite curve number was determined using the TR-55 method for connected impervious area.

CN values shown in Table 3.1 were used to characterize each sub-basin based on land use and soil type. Because various soils types, cover types, and land uses are present within each sub-basin, it was necessary to determine a weighted CN value as described above. Determination of weighted CN values is summarized in Appendix B.

Table 3.1: CN Values

Land Cover	Condition	HSG			
		A	B	C	D
Desert Shrub (Undeveloped)	Fair	55	72	81	86
Desert Landscape	Pervious	66	80	88	91
Pavement	100% Impervious	98	98	98	98
Commercial	85% Impervious	89	92	94	95
Building	100% Impervious	98	98	98	98
Street	--	98	98	98	98

3.4 DESIGN STORMS

This hydrologic study includes stormwater runoff results for the 100-yr, and 10-yr 24-hr rainfall events, in addition to the 100-yr and 10-yr 3-hr rainfall events.

3.5 TRANSFORM METHOD

NRCS Unit Hydrograph was the transform method used for this study.

3.6 STORM DISTRIBUTION

NRCS Distribution Type II:

A NRCS Type II design storm distribution was used in this analysis for the 24-hr duration storm events. For the 3-hr duration storm events, the modified Farmer Fletcher storm distribution shown in the Drainage Manual was used. The rainfall distribution for the 100-yr and 10-yr, 3-hr storm events is shown in Appendix C.

3.7 RAINFALL PARAMETERS

Precipitation:

Precipitation-frequency data used for this project was obtained from the Drainage Manual and is shown in Table 3.2. No aerial reduction factors were applied to the precipitation depths.

Table 3.2: Rainfall Depth-Duration-Frequency

Return Frequency & Duration	Rainfall Depth (in.)
100-yr 24-hr	2.76
50-yr 24-hr	2.48
25-yr 24-hr	2.21
10-yr 24-hr	1.85
100-yr 3-hr	1.89
10-yr 3-hr	1.10

Travel Time:

Lag time is the time between the centroid of excess rainfall to the point where 50% of the runoff has passed the point of analysis, and is used to estimate peak runoff. For sub-basins less than one (1) square mile, lag time was estimated using the following NRCS equation:

$$L = \frac{l^{0.8}\left(\frac{1000}{CN} - 9\right)^{0.7}}{1900(S)^{0.5}}$$

Where:

L	=	Lag Time (hr)
l	=	Longest length of subarea (ft)
CN	=	SCS Curve Number
S	=	Average slope

SECTION 4: DATA

4.1 PRE-DEVELOPMENT DRAINAGE BASIN CHARACTERISTICS

On-site drainage basins were delineated to represent pre-development conditions and are shown Exhibit 4.1. Pre-development drainage basin characteristics were determined using the methodology described above and are summarized in Table 4.1. Basins B1, B2 & B3 (36.8 acres) drain to the south, while basin B4 (6.0 acres) drains to the east.

Table 4.1: Pre-development Drainage Basin Characteristics

Basin ID	Area (Sq.ft.)	Area (Ac.)	Area (mi^2)	Length (ft)	Composite CN	Average Slope (%)	Lag Time (min.)
On-site Drainage Basins							
B1	352,678	8.10	0.0127	934	58.3	3.21	18.2
B2	832,255	19.11	0.0299	1,514	73.7	3.83	16.4
B3	417,910	9.59	0.0150	1,260	69.9	4.29	14.8
B4	262,352	6.02	0.0094	644	86.0	3.11	6.2
Offsite B2	515,750	11.84	0.0185	1,717	86.0	3.61	12.7
Offsite B4	607,895	13.96	0.0218	1,686	86.0	3.61	12.5

4.2 POST-DEVELOPMENT DRAINAGE BASIN CHARACTERISTICS

On-site drainage basins were delineated to represent post-development conditions and are shown Exhibit 4.2, which shows proposed land use layout. Due to proposed grading and site improvements, post-development basin delineation is slightly different than pre-development, with about 8.8 acres drainage to the east, and about 34.0 acres draining to the south. Post-development drainage basin characteristics were determined using the methodology described above and are summarized in Table 4.2.

Table 4.2: Post-development Drainage Basin Characteristics

Basin ID	Area (Sq.ft.)	Area (Ac.)	Area (mi^2)	Length (ft)	Weighted Composite CN	Average Slope (%)	Lag Time (min.)
On-site Drainage Basins							
Basin B1	351,362	8.07	0.0126	1,094	85.1	2.56	10.8
Basin B2	880,552	20.21	0.0316	1,636	88.5	1.22	19.1
Basin B3	252,865	5.80	0.0091	518	85.1	3.86	4.8
Basin B4	380,338	8.73	0.0136	645	91.6	1.86	6.5
Offsite B2	515,750	11.84	0.0185	1,717	86.0	3.61	12.7
Offsite B4	607,895	13.96	0.0218	1,686	86.0	3.61	12.5

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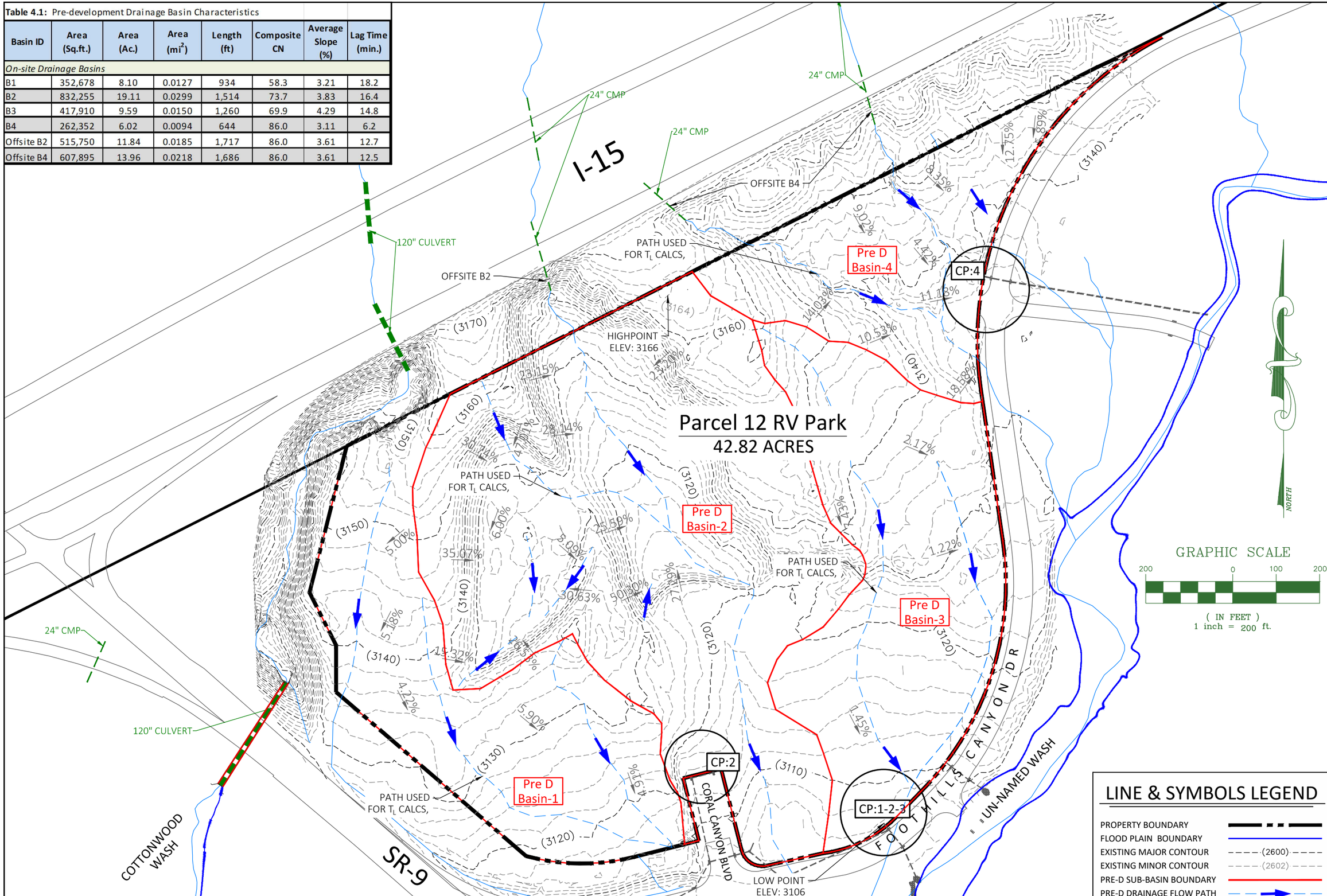

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PRE-DEVELOPMENT BASIN DELINEATION & CHARACTERIZATION
FOR
CORAL JUNCTION RV PARK
LOCATED IN
CITY OF HURRICANE
WASHINGTON COUNTY, UTAH

DRAWING NAME: CC-Hurr RV Park Drainage

SHEET EX 4.1 OF 1 SHEETS

Table 4.2: Post-development Drainage Basin Characteristics

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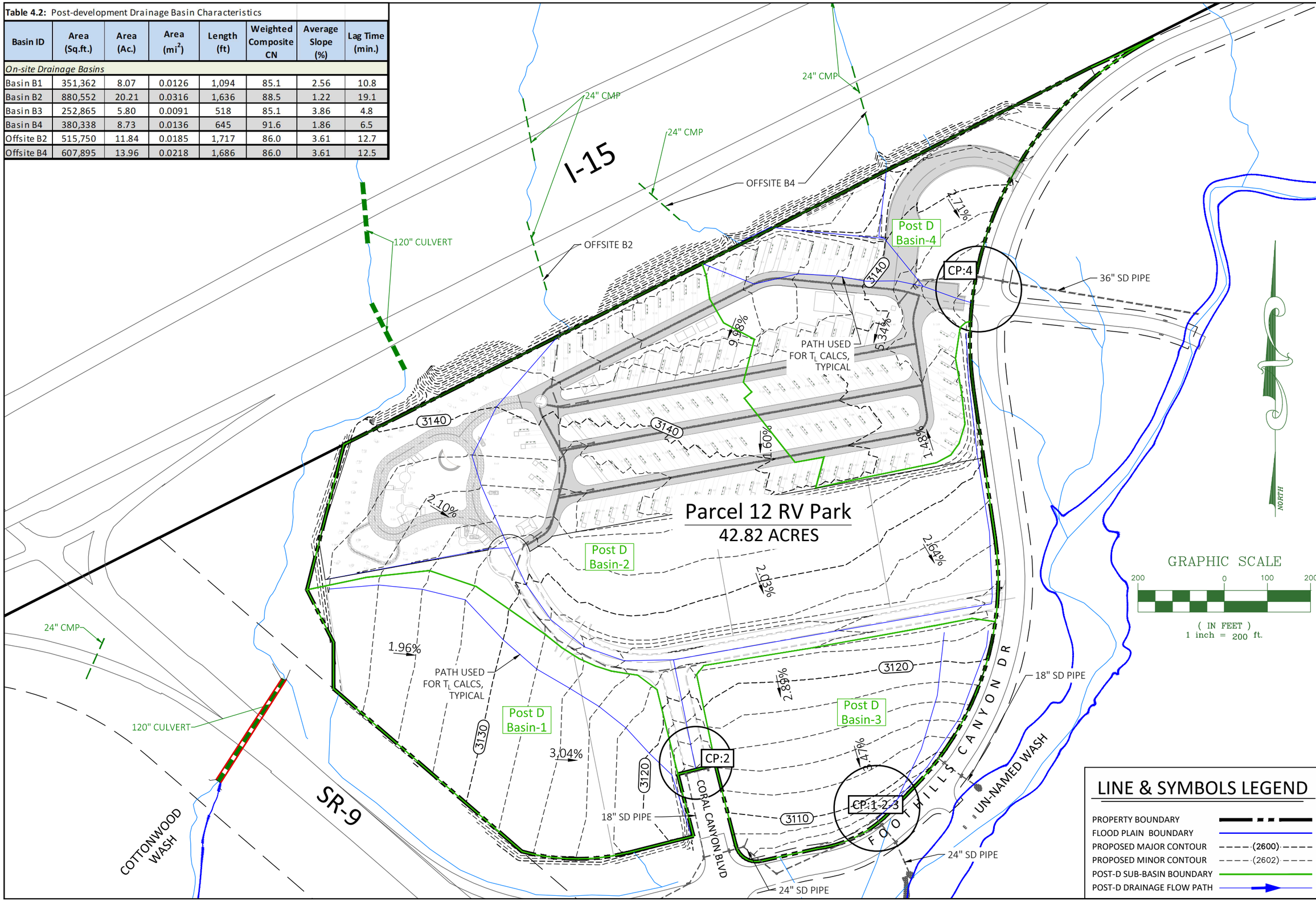

LINE & SYMBOLS LEGEND

- PROPERTY BOUNDARY
- FLOOD PLAIN BOUNDARY
- PROPOSED MAJOR CONTOUR (2600)
- PROPOSED MINOR CONTOUR (2602)
- POST-D SUB-BASIN BOUNDARY
- POST-D DRAINAGE FLOW PATH

DATE: 10-10-19
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SCALE: 1" = 200'
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POST-DEVELOPMENT BASIN DELINEATION & CHARACTERIZATION
FOR
CORAL JUNTION RV PARK
LOCATED IN
CITY OF HURRICANE
WASHINGTON COUNTY, UTAH

DRAWING NAME: CC-Hurr RV Park Drainage

SHEET EX 4.2 OF SHEETS

SECTION 5: RESULTS

5.1 DESIGN OVERVIEW

In consideration of local increases in the stormwater discharge from the site for the noted design storms, an analysis has been done to check the existing stormwater system. Off-site stormwater run-on was considered for this project, as discussed in section 2.5. As stated in Section 2.2, this project site is within a zone in the Storm-water Management Master Plan within Desert Color St. George Infrastructure Analysis, dated June, 2017, that does not require detention.

5.2 BASIN PEAK RUNOFF

A hydrologic analysis was conducted for the rainfall events shown in Table 3.2 considering pre-development and post-development on-site conditions. This analysis was performed using the data, methodology, and site characteristics outlined above. A schematic showing the hydraulic model layout is included in Appendix D. The resulting basin peak discharge values are summarized in Tables 5.1 and 5.2, as well as Exhibits 5.1 and 5.2 for pre-development and post-development, respectively.

Table 5.1: Pre-D Basin Peak Runoff Results - All Hydrologic Model Components

Element ID	Drainage Area (ac)	Peak Discharge (cfs)					
		100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
Pre-D Basin 1	8.10	0.6	0.2	0.2	0.1	0.0	0.0
Pre-D Basin 2	19.11	12.4	6.4	9.3	6.6	3.5	0.4
Pre-D Basin 3	9.59	4.7	2.1	3.3	2.2	0.9	0.1
Pre-D Basin 4	6.02	12.8	8.9	10.8	8.9	6.5	2.3
Offsite B2	11.84	19.3	13.8	16.2	13.3	9.5	3.4
Offsite B4	13.96	22.9	16.4	19.2	15.8	11.4	4.1
Combined Basins	68.62	66.2	42.4	53.6	42.3	28.6	9.3

Table 5.2: Post-D Basin Peak Runoff Results - All Hydrologic Model Components

Element ID	Drainage Area (ac)	Peak Discharge (cfs)					
		100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
Post-D Basin 1	8.07	13.6	9.3	11.3	9.2	6.6	2.2
Post-D Basin 2	20.21	29.4	23.5	25.0	20.9	15.5	6.9
Post-D Basin 3	5.80	12.6	8.5	10.5	8.6	6.2	2.0
Post-D Basin 4	8.73	23.4	19.8	20.3	17.4	13.5	6.9
Offsite B2	11.84	19.3	13.8	16.2	13.3	9.5	3.4
Offsite B4	13.96	22.9	16.4	19.2	15.8	11.4	4.1
Combined Basins	68.61	106.1	77.9	89.7	74.2	54.3	21.2

5.3 STORM WATER DETENTION

By inspection of the results presented in Tables 5.1 and 5.2, it is clear the development creates an increase in stormwater runoff discharge from the site. However, as stated in Section 2.2, this project site is within a zone in the Coral Canyon Drainage Master Plan - Hurricane City dated October 23, 2000 by Rosenberg Associates, which does not require detention. Instead the existing stormwater infrastructure has been analyzed at project collection points with the increased flows and the design summary is presented in Section 5.5 below.

5.4 CONCENTRATION POINT (CP) PEAK RUNOFF

Three points of interest were identified with respect to concentrated flow and are labeled in Exhibit 5.2. One point is located at the northeast boundary of the project (Junction 4), and the others are located at south (Junction 2) and southeast (Juntion 1-2-3). These points represent where site stormwater runoff combines immediately before flowing downstream under Foothills Canyon Road; they are used in this study as check points to assure local increase in downstream stormwater discharge as a result of the proposed project are within the capacity of the existing infrastructure. Pre-development peak runoff at these concentration points (CP) is shown in Table 5.4., post-development peak runoff at these concentration points (CP) is shown in Table 5.5., and the difference is shown in Table 5.6.

Table 5.4: Pre-D Basin Peak Runoff Results - At Concentration Points

Element ID		Peak Discharge (cfs)					
		100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
CP 1-2-3		35.7	20.5	27.9	21.1	13.2	3.5
CP 2		30.7	18.7	24.6	19.1	12.4	3.5
CP 4		33.3	23.5	27.9	22.9	16.5	5.9

Table 5.5: Post-D Basin Peak Runoff Results - At Concentration Points

Element ID		Peak Discharge (cfs)					
		100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
CP 1-2-3		64.8	48.7	54.5	44.9	32.5	13.2
CP 2		46.8	35.9	39.6	32.8	24.1	10.1
CP 4		43.0	32.1	36.7	30.7	22.9	9.6

Table 5.6: Post and Pre Peak Runoff Differences - At Concentration Points

Element ID		Peak Discharge (cfs)					
		100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
CP 1-2-3		29.1	28.2	26.6	23.8	19.3	9.7
CP 2		16.1	17.2	15.0	13.7	11.7	6.6
CP 4		9.7	8.6	8.8	7.8	6.4	3.7

5.5 CONVEYANCE

Based on the analysis performed in this study, it is recommended to construct a storm-water conveyance network throughout the resort development to transfer post development flows. Figure 5.3 details the proposed roadway section with its flow capacity and the various storm drain pipe sizes and capacities planned for this development, as well as outlet locations and general post development flow directions. The run-off tables from Section 5.2 have also been provided on Exhibit 5.3 to show compliance.

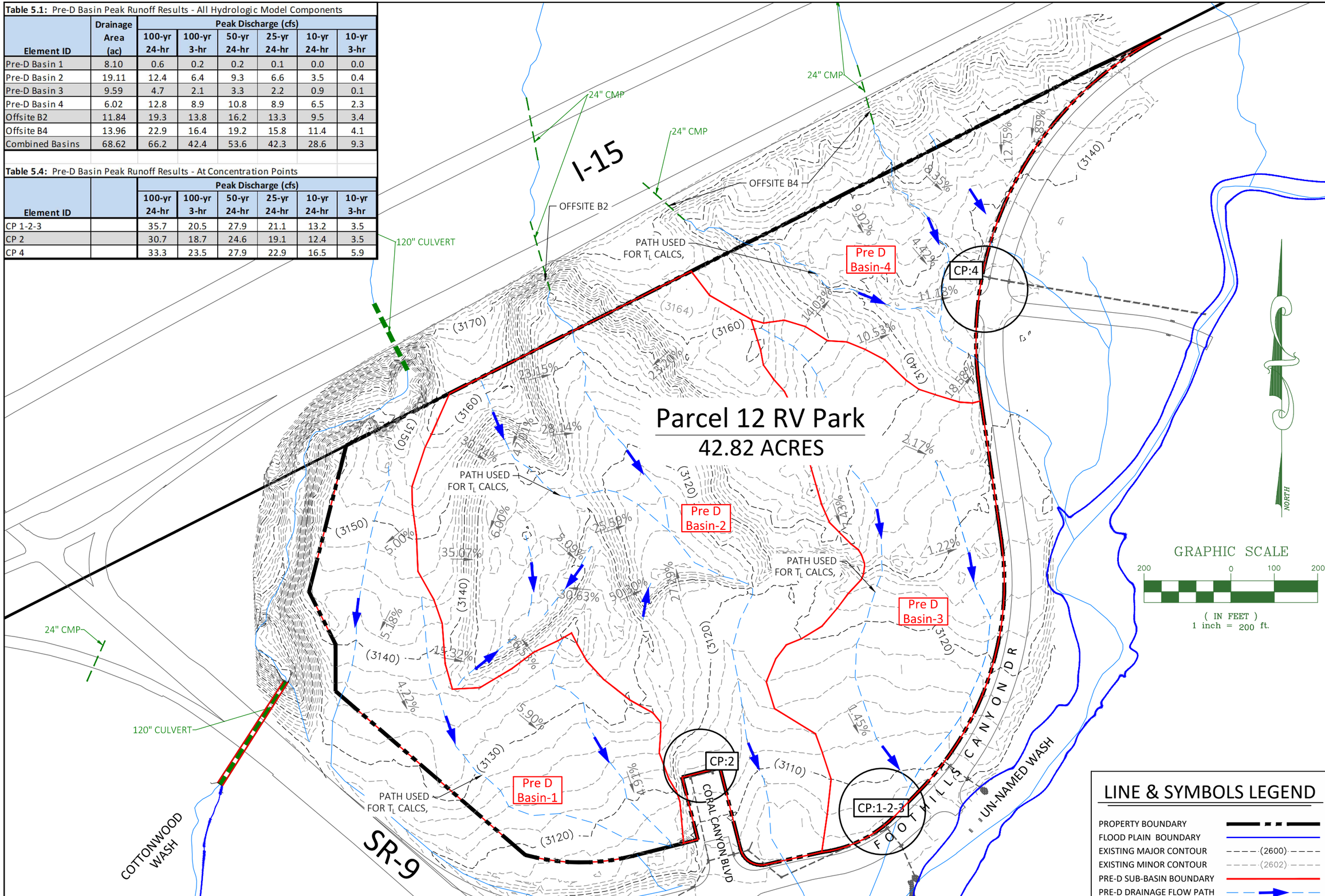
The existing storm-water conveyance system at project outlets was analyzed with post development flows and found to be adequate, for the immediate proposed development, when considered with proposed and existing roadway capacities and the proximity of the un-named natural wash for long-term routing.

Table 5.1: Pre-D Basin Peak Runoff Results - All Hydrologic Model Components

Element ID	Drainage Area (ac)	Peak Discharge (cfs) 100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
Pre-D Basin 1	8.10	0.6	0.2	0.2	0.1	0.0	0.0
Pre-D Basin 2	19.11	12.4	6.4	9.3	6.6	3.5	0.4
Pre-D Basin 3	9.59	4.7	2.1	3.3	2.2	0.9	0.1
Pre-D Basin 4	6.02	12.8	8.9	10.8	8.9	6.5	2.3
Offsite B2	11.84	19.3	13.8	16.2	13.3	9.5	3.4
Offsite B4	13.96	22.9	16.4	19.2	15.8	11.4	4.1
Combined Basins	68.62	66.2	42.4	53.6	42.3	28.6	9.3

Table 5.4: Pre-D Basin Peak Runoff Results - At Concentration Points

Element ID		Peak Discharge (cfs) 100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
CP 1-2-3		35.7	20.5	27.9	21.1	13.2	3.5
CP 2		30.7	18.7	24.6	19.1	12.4	3.5
CP 4		33.3	23.5	27.9	22.9	16.5	5.9



DATE: 10-10-19
JOB NUMBER: 4499
SCALE: 1" = 250'
DRAWN BY: J.W.
CHECKED BY: C.A.C.

ALLIANCE CONSULTING
A Planning and Engineering Firm
Suite 201
2303 N Coral Canyon Blvd
Washington, Utah 84780-0577
Tel (435) 673-8060
Fax (435) 673-8065

PRE-DEVELOPMENT BASIN PEAK RUNOFF RESULTS
FOR
CORAL JUNCTION RV PARK
LOCATED IN
CITY OF HURRICANE
WASHINGTON COUNTY, UTAH

DRAWING NAME: CC-Hurr RV Park Drainage

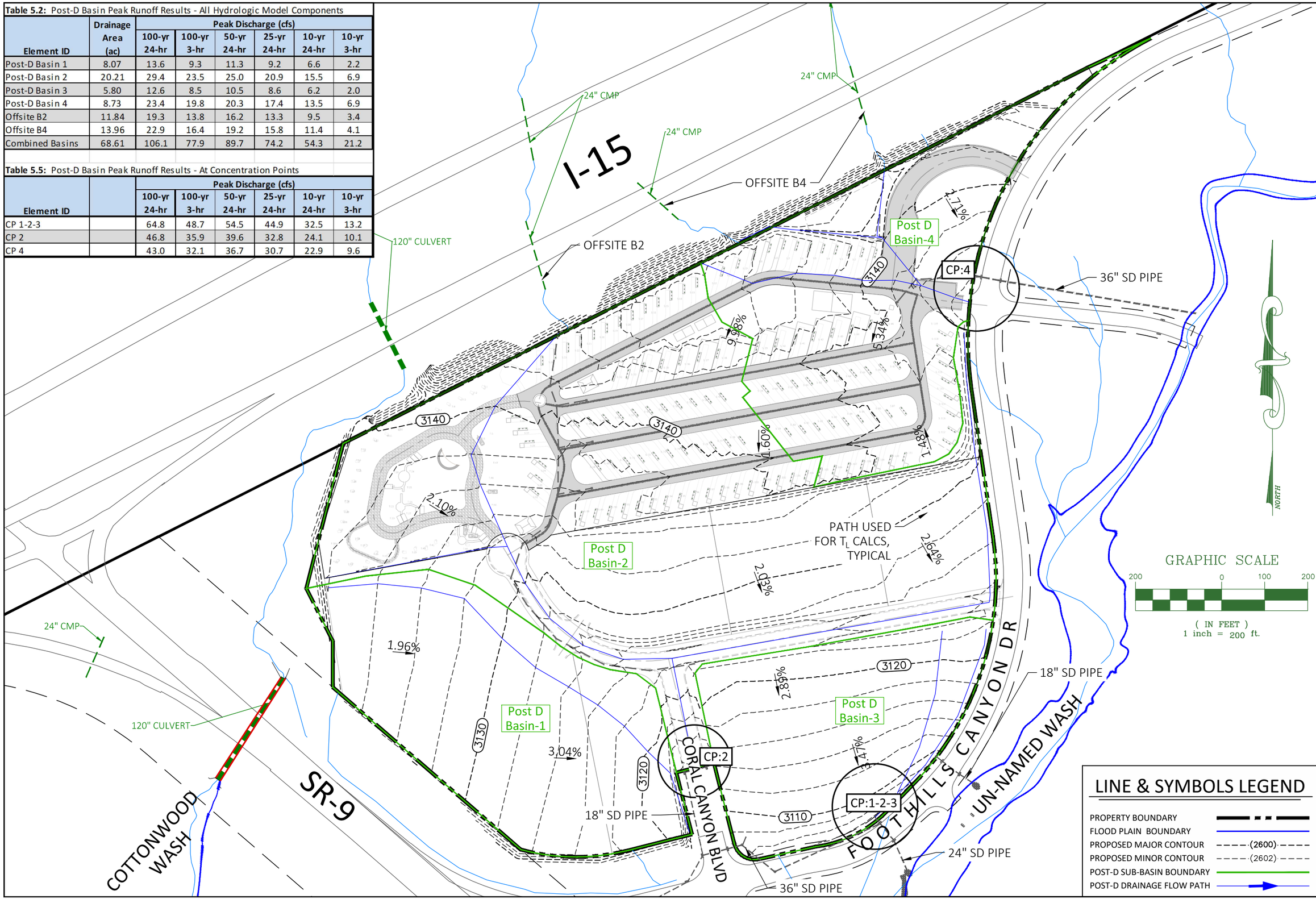
SHEET EX 5.1 OF 1 SHEETS

Table 5.2: Post-D Basin Peak Runoff Results - All Hydrologic Model Components

Element ID	Drainage Area (ac)	Peak Discharge (cfs) 100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
Post-D Basin 1	8.07	13.6	9.3	11.3	9.2	6.6	2.2
Post-D Basin 2	20.21	29.4	23.5	25.0	20.9	15.5	6.9
Post-D Basin 3	5.80	12.6	8.5	10.5	8.6	6.2	2.0
Post-D Basin 4	8.73	23.4	19.8	20.3	17.4	13.5	6.9
Offsite B2	11.84	19.3	13.8	16.2	13.3	9.5	3.4
Offsite B4	13.96	22.9	16.4	19.2	15.8	11.4	4.1
Combined Basins	68.61	106.1	77.9	89.7	74.2	54.3	21.2

Table 5.5: Post-D Basin Peak Runoff Results - At Concentration Points

Element ID		Peak Discharge (cfs) 100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
CP 1-2-3		64.8	48.7	54.5	44.9	32.5	13.2
CP 2		46.8	35.9	39.6	32.8	24.1	10.1
CP 4		43.0	32.1	36.7	30.7	22.9	9.6



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POST-DEVELOPMENT BASIN PEAK RUNOFF RESULTS
FOR
CORAL JUNTION RV PARK
LOCATED IN
CITY OF HURRICANE
WASHINGTON COUNTY, UTAH

DRAWING NAME: CC-Hurr RV Park Drainage

SHEET EX 5.2 OF SHEETS

Table 5.2: Post-D Basin Peak Runoff Results - All Hydrologic Model Components

Element ID	Drainage Area (ac)	Peak Discharge (cfs) 100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
Post-D Basin 1	8.07	13.6	9.3	11.3	9.2	6.6	2.2
Post-D Basin 2	20.21	29.4	23.5	25.0	20.9	15.5	6.9
Post-D Basin 3	5.80	12.6	8.5	10.5	8.6	6.2	2.0
Post-D Basin 4	8.73	23.4	19.8	20.3	17.4	13.5	6.9
Offsite B2	11.84	19.3	13.8	16.2	13.3	9.5	3.4
Offsite B4	13.96	22.9	16.4	19.2	15.8	11.4	4.1
Combined Basins	68.61	106.1	77.9	89.7	74.2	54.3	21.2

Table 5.5: Post-D Basin Peak Runoff Results - At Concentration Points

Element ID		Peak Discharge (cfs) 100-yr 24-hr	100-yr 3-hr	50-yr 24-hr	25-yr 24-hr	10-yr 24-hr	10-yr 3-hr
CP 1-2-3		64.8	48.7	54.5	44.9	32.5	13.2
CP 2		46.8	35.9	39.6	32.8	24.1	10.1
CP 4		43.0	32.1	36.7	30.7	22.9	9.6

PIPE CAPACITY

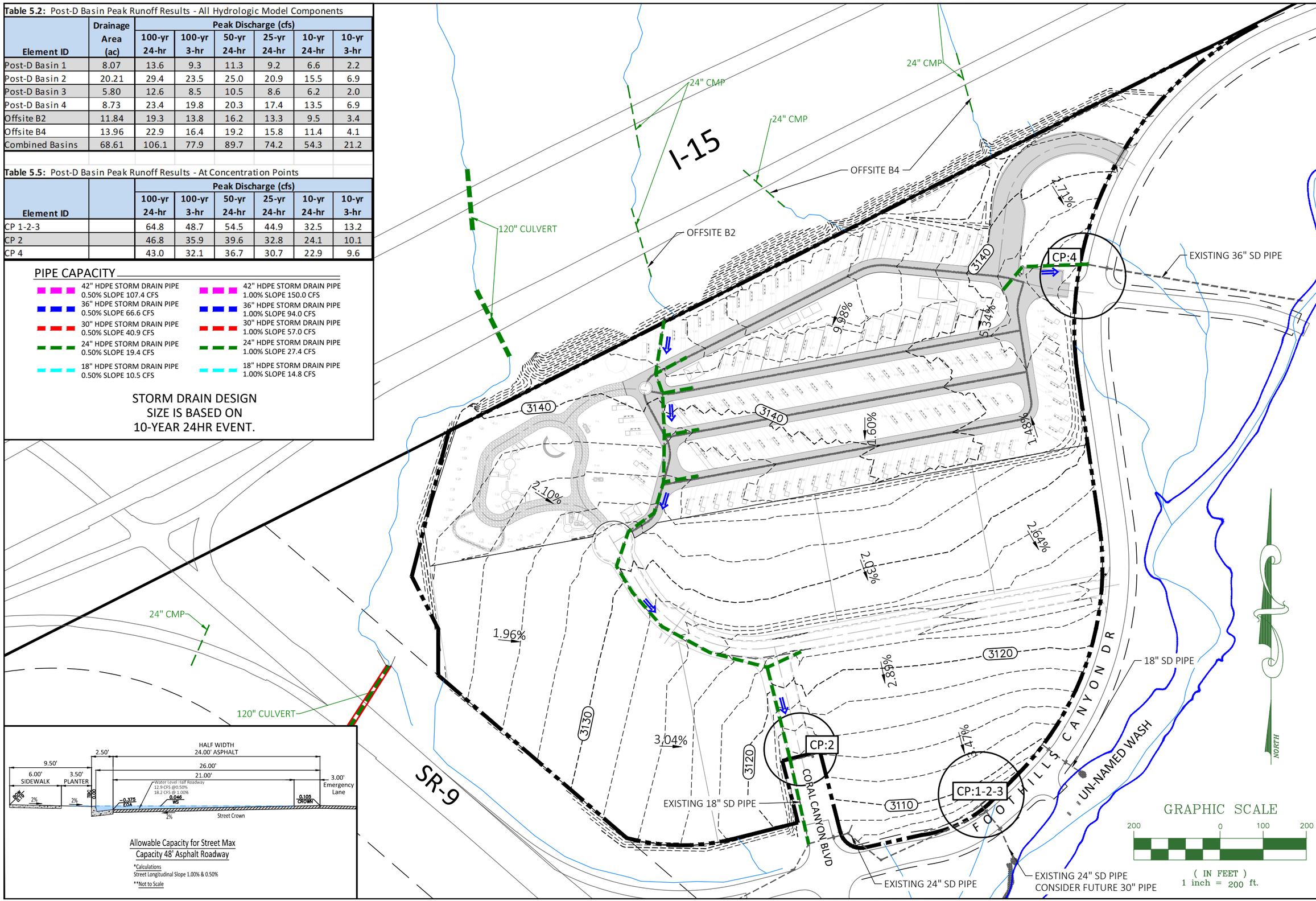
- 42" HDPE STORM DRAIN PIPE 0.50% SLOPE 107.4 CFS
- 36" HDPE STORM DRAIN PIPE 0.50% SLOPE 66.6 CFS
- 30" HDPE STORM DRAIN PIPE 0.50% SLOPE 40.9 CFS
- 24" HDPE STORM DRAIN PIPE 0.50% SLOPE 19.4 CFS
- 18" HDPE STORM DRAIN PIPE 0.50% SLOPE 10.5 CFS
- 42" HDPE STORM DRAIN PIPE 1.00% SLOPE 150.0 CFS
- 36" HDPE STORM DRAIN PIPE 1.00% SLOPE 94.0 CFS
- 30" HDPE STORM DRAIN PIPE 1.00% SLOPE 57.0 CFS
- 24" HDPE STORM DRAIN PIPE 1.00% SLOPE 27.4 CFS
- 18" HDPE STORM DRAIN PIPE 1.00% SLOPE 14.8 CFS

STORM DRAIN DESIGN
SIZE IS BASED ON
10-YEAR 24HR EVENT.

Allowable Capacity for Street Max
Capacity 48' Asphalt Roadway

*Calculations
Street Longitudinal Slope 1.00% & 0.50%

**Not to Scale



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STORM DRAIN PIPE SIZING
FOR
CORAL JUNTION RV PARK
LOCATED IN
CITY OF HURRICANE
WASHINGTON COUNTY, UTAH

DRAWING NAME: CC-Hurr RV Park Drainage

SHEET EX 5.3 OF SHEETS

SECTION 6: SUMMARY & RECOMMENDATIONS

The purpose of the hydrologic study discussed in this report was to evaluate drainage patterns for the proposed Coral Junction RV Park project, estimate peak stormwater runoff for pre-development and post-development conditions, and to provide recommendations for stormwater management facilities for the development. These tasks were accomplished by first characterizing the site to develop drainage parameters, delineating drainage basins, developing a methodology in line with standard engineering practice, and using HEC-HMS to develop a rainfall-runoff hydrologic model for the project. Peak runoff results at site discharge locations for pre-development and post-development conditions are illustrated in Exhibits 5.1 and 5.2.

As discussed in Section 5, a storm-water conveyance network throughout the resort is recommended to accommodate post development flows within the project. Exhibit 5.3 highlights the storm drain network with pipe sizes detailed and flow capacities specified in the legend. The exhibit also includes a road section showing the storm-water capacity of the major existing roadways. Tables 5.1 are 5.2 are presented in Exhibit 5.3 to compare the capacity of the combined roadway and storm drain pipes with the post development flows at concentration points. The storm drain pipe capacities are adequate for the 10 year 24 hour event and the combined storm drain pipe and roadway capacities are sufficient to accommodate the 100 year 24 hour event, for the immediate proposed development, as required per the *City of Hurricane Drainage Manual.*

It is recommended to re-evaluate the storm drain pipe crossing shown in Exhibit 5.3 under Foothills Canyon Drive at concentration point CP:1-2-3, when future development is considered.

Other recommendations include general grading to promote positive drainage, drainage berms, and drainage channels as shown on the project construction drawings prepared by Alliance Consulting.

SECTION 7: REFERENCES

1. Bowen, Collins, & Associates, Inc. *City of Hurricane Drainage Manual*. June 2008.
2. Rosenberg Associates, *Coral Canyon Master Planning – Hurricane City*, October 2000

APPENDIX A: NRCS SOILS REPORT

APPENDIX B: WEIGHTED CN VALUES

APPENDIX C: STORM DISTIBUTIONS

Table C.1: Storm Distributions

Time (min.)	10-yr 3-hr (in.)	100-yr 3-hr (in.)
0	0	0
5	0.008	0.008
10	0.008	0.008
15	0.008	0.008
20	0.008	0.008
25	0.008	0.008
30	0.008	0.008
35	0.260	0.484
40	0.200	0.382
45	0.150	0.267
50	0.090	0.17
55	0.050	0.102
60	0.040	0.078
65	0.040	0.058
70	0.020	0.044
75	0.020	0.034
80	0.010	0.031
85	0.020	0.027
90	0.010	0.022
95	0.008	0.008
100	0.008	0.008
105	0.008	0.008
110	0.008	0.008
115	0.008	0.008
120	0.008	0.008
125	0.008	0.008
130	0.008	0.008
135	0.008	0.008
140	0.008	0.008
145	0.008	0.008
150	0.008	0.008
155	0.008	0.008
160	0.008	0.008
165	0.008	0.008
170	0.008	0.008
175	0.008	0.008
180	0.008	0.008
	1.10	**1.89**

APPENDIX D: HEC-HMS HYDROLOGIC MODEL

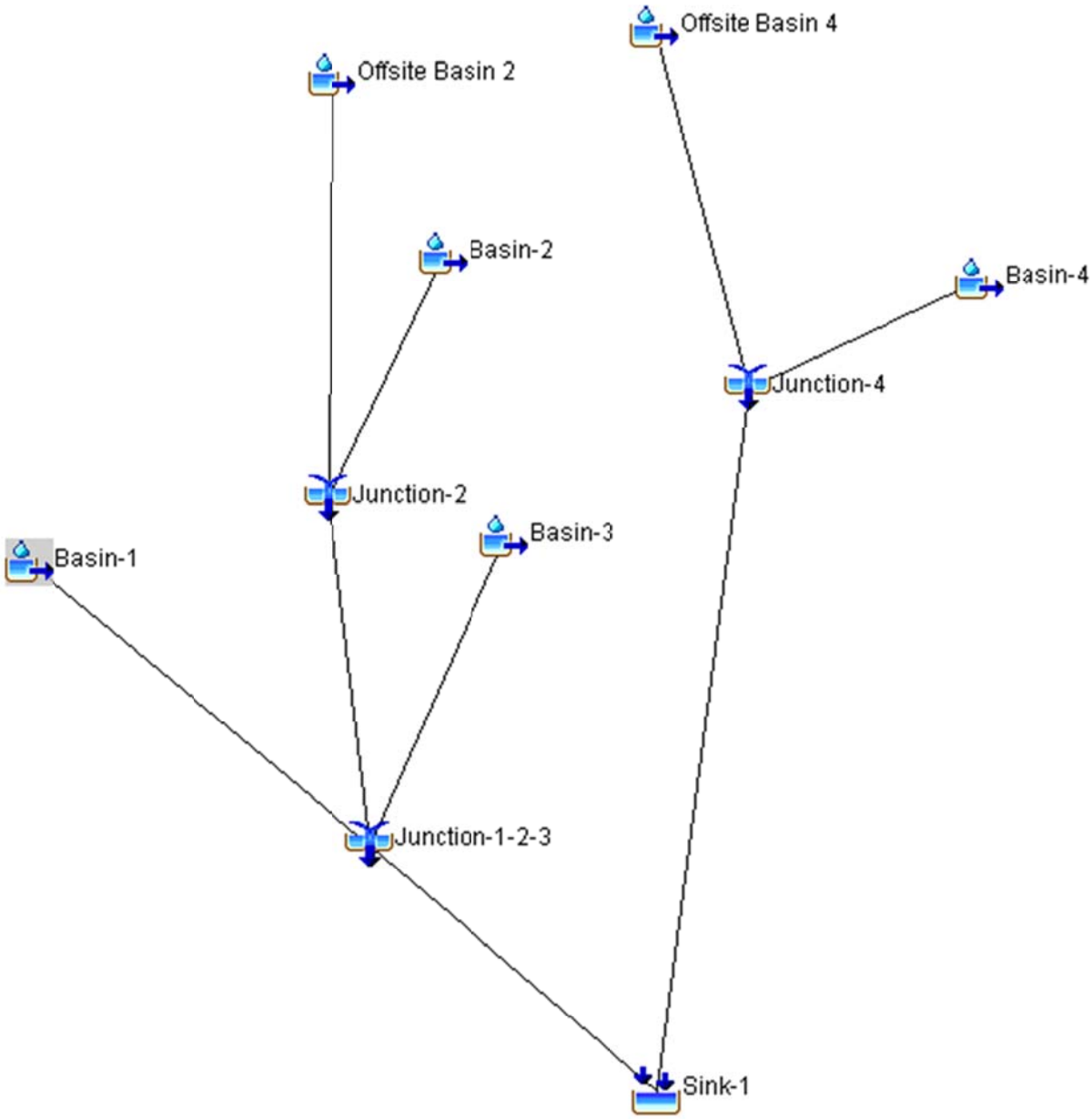


Figure D.1: Pre-development HEC-HMS Hydrologic Model

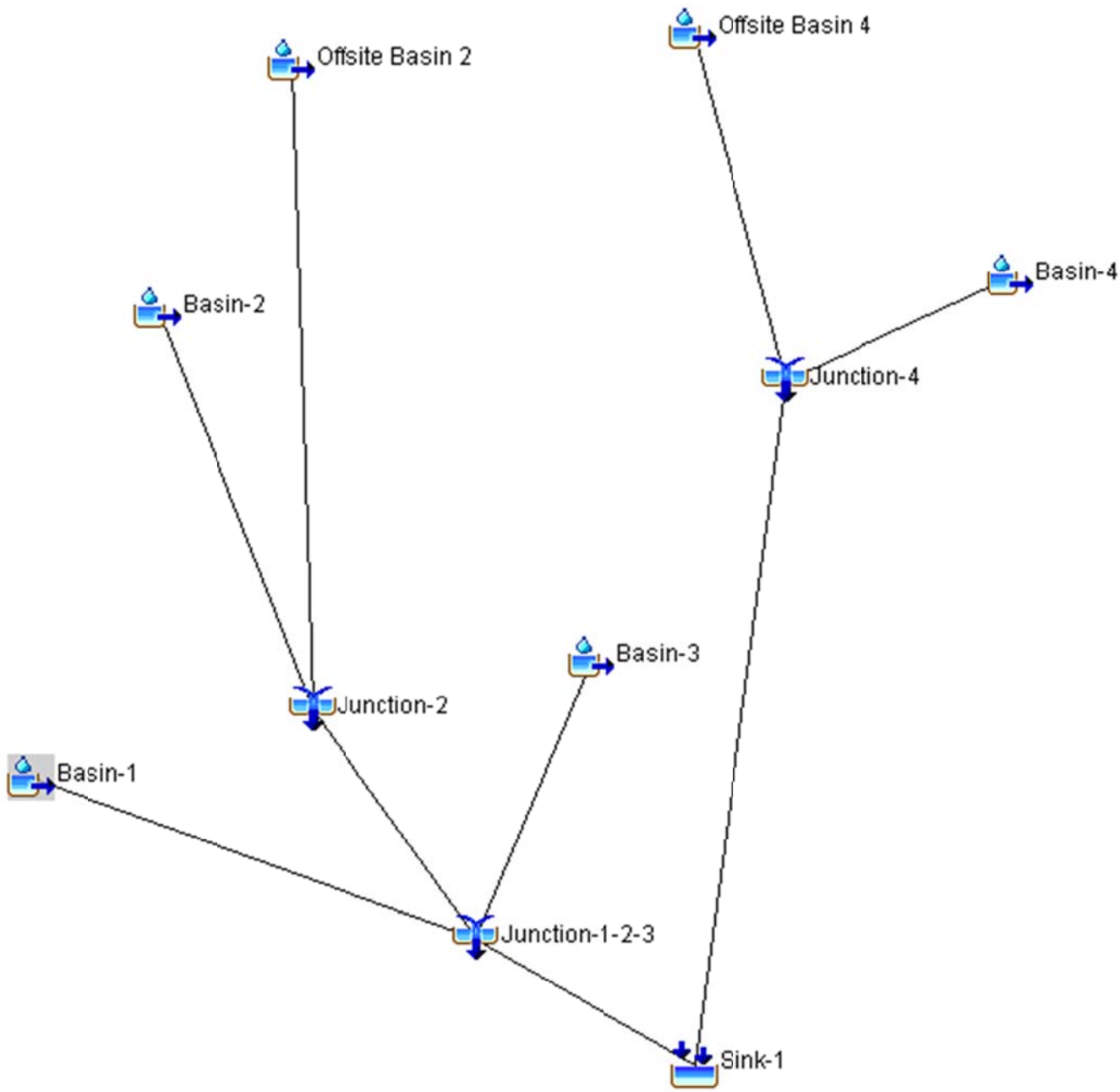


Figure D.2: Post-development HEC-HMS Hydrologic Model

February 15, 2024

Hurricane City
Gary Cupp
127 N. 870 W.
Hurricane, UT 84737

Subject: Coral Junction Subdivision Phase 1

Gary,

There is sewer capacity for this project. The developers understand and agree that they will need to get plan approval for the sewer system.

After approval, they agree to pay all costs associated with construction and impact fees. Please let us know if you have any questions.

Sincerely,

Amber Gillette

Amber Gillette, P.E.
Engineer
Ash Creek Special Service District

1350 South Sandhollow Road, Hurricane, UT 84737
phone: 435.635.2348
email: ashcreek@infowest.com

HURRICANE CITY
UTAH

Water Department
Ken Richins, Superintendent

Date February 21, 2024

To Whom It May Concern:

MP16 LLC (the "Developer") has requested a culinary water will serve letter for the subdivision known as **Coral Junction**, located at approximately **Coral Canyon Boulevard and Foothills Canyon Parkway** in Hurricane, Utah (the "Project").

Infrastructure

The City currently has infrastructure to supply culinary water in the general area of the Project. However, Developer will be responsible to connect the Project to the existing water infrastructure, including the installation of infrastructure in dedicated public streets and as otherwise required to meet City standards. In addition, Developer may be required to obtain and supply a hydraulic water study to ensure the waterline will deliver required fire flows. A looped water system may be required.

Water Supply

As of the date of this letter, the city has adequate water to supply water to **4** residential connections within the Project. However, water within the City is a finite resource with limited supply. The ability of the City to supply water to previously approved projects, as well as continue to serve additional water customers, is contingent on water supplies being available from the Washington County Water Conservancy District (the "Conservancy District"). Therefore, the City's statements in this letter regarding the adequacy of water supply is (1) contingent on water being available from the Conservancy District and (2) shall expire one year from the date of this letter, after which a renewed will serve letter will be required for any property or lot that has not obtained a metered connection to the City's culinary water system. Developer is encouraged to obtain a guarantee of water from the Conservancy District.

General Requirements

In addition to the requirements and limitations described above, Developer shall be required to comply with all applicable laws, ordinances, policies, and construction and design standards. These requirements include, but are not limited to, secondary water system requirements and any obligations described in an applicable development agreement.

Sincerely,

Ken Richins
Water Department Superintendent

646 West 600 North • Hurricane, UT • 84737
Phone: (435) 635-9442 • Fax: (435) 635-2616
WEB: www.cityofhurricane.com

PLANNING & ZONING
HURRICANE CITY
UTAH

STAFF COMMENTS

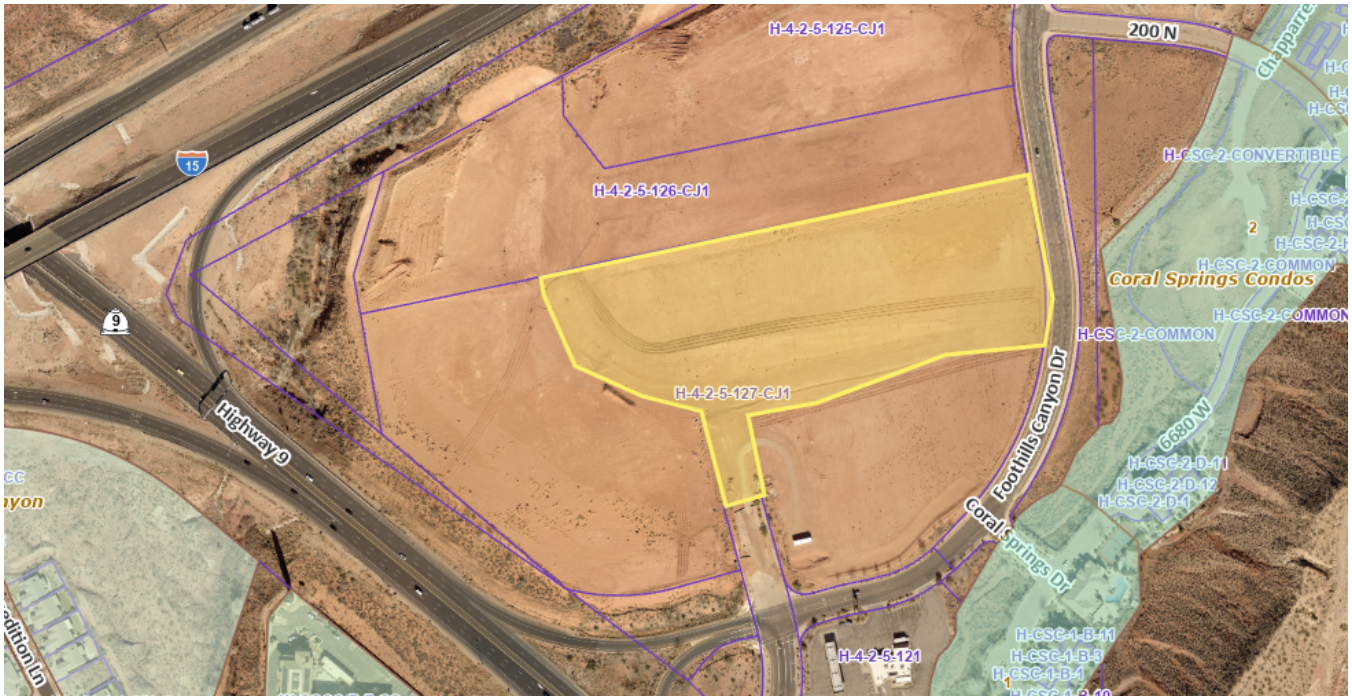
Agenda Date:	**04/11/2024**
Application Number:	PP24-09
Type of Application:	Preliminary Plat Application
Action Type:	Administrative
Applicant:	MP 16 LLC
Agent:	Mike Bradshaw
Request:	Preliminary Plat Application
Location:	201 N Foothills Canyon Dr
Zoning:	GC PDO
General Plan Map:	Planned Community
Recommendation:	Approve subject to staff and JUC comments
Report Prepared by:	Fred Resch III/Gary Cupp

Update for 4/11/2024: This item was tabled at the 3/28/24 Planning Commission meeting due to the applicant not being present and due to some outstanding concerns with the layout of the subdivision. Staff has reached out to the applicant and they have told staff that they will be present and provide updates before the meeting.

Updated Recommendation: As presented in the JUC comments, and as discussed at the 3/28/24 meeting, Lot 2 is not viable as currently shown on the preliminary plat. Therefore, approval should be contingent upon the proposed plat being revised pursuant to the City Engineer's comments, or otherwise in a manner so that Lot 2 will be a functionally independent lot should it be conveyed separately in the future.

—----------

3/28/24 Discussion: The applicant is seeking preliminary plat approval for Coral Junction Phase 1, a three lot commercial subdivision located near the SR-9 and I-15 interchange. The Planning Commission has already approved a preliminary site plan for Rush Funplex on Lot 1. Lot 2 is indicated as a shared parking area for Lots 1 and 3; Lot 3 is another commercial lot. As required by city code, subdivision improvement plans have been provided, however these plans have already been approved and constructed by the Coral Junction Public Infrastructure District; these plans will need minor modifications for final approval.



Location is approximate

JUC Comments

The following items will need to be addressed:

1. **Public Works:** No comments.

2. **Power:** The power dept will need the Coral Junction PID to install additional infrastructure to accommodate the building on this project.
3. **Sewer:** No comments.
4. **Streets:** Roadways and storm drains have already been inspected.
5. **Water**: No comment.
6. **Engineer:** Engineering would encourage the applicant to enclose all of the parcels to the north within the subdivision boundary. The site for the motor coach resort can be made into a single lot and the public drainage easements for public storm drain that crosses the site can be created and conveyed to Hurricane City by this plat. The other public storm drains need public drainage easements over them for Hurricane City to maintain them. It is preferred that either: (1) Lot 2 becomes a part of Lot 1, Lot 3 is renumbered, and the area on Lot 1 becomes a parking easement benefiting Lot 2; (2) Lot 3 absorbs Lot 2 and it's subject to a parking easement that benefits Lot 1; (3) or Lot 2 is made to a common area (HCC 10-39-7(C)(3)). The size and shape of the lot make it functionally unbuildable, it seems the perpetual use, ownership, and maintenance of Lot 2 would be better managed if the area was made an easement with an agreement between the beneficiaries or made a common area subject to CC&Rs. Include a public drainage easement (20' minimum) easement should cover all of the existing storm drain from coral junction road to the I-15 right of way boundary.
7. **Fire:** No comments.
8. **Cable/Phone:** No concerns.
9. **Fiber:** No comments.
10. **Gas:** No comments.
11. **GIS:** Good.
12. **Water Conservancy District**: Washington County Water Conservancy District hereby acknowledges that based on the information provided, the plans adequately mitigate interference with district facilities and property interests. The District reserves the right to rescind this acknowledgement if additional information becomes available. The district has not determined whether water will be available for this development and does not hereby make any guarantee of water availability. In addition, the development must conform with applicable district requirements, including but not limited to payment of fees.

Staff Comments: Preliminary Plat

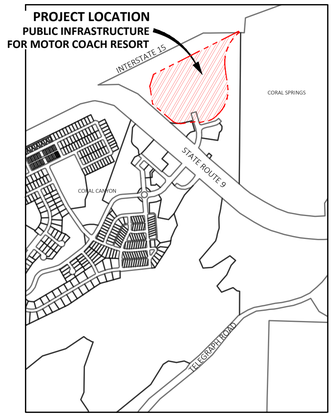
1. Zoning is GC PDO as part of the Coral Canyon Planned Development Overlay that stretches across both Hurricane City and Washington City. A family fun center has preliminary site plan approval on Lot 1.
2. The roadways and utilities depicted on the preliminary plat are currently constructed. The subdivision improvement plans submitted with the final plat will have to depict any changes to the existing utilities required by the new lot lines. These plans may be combined with the construction drawings for Rush Funplex.
    a. Specific comments on the subdivision improvement plans have been forwarded to the applicant.
3. The City has received a letter from both the local sanitary sewer provider and culinary water provider indicating service availability..
4. The applicant has noted that the property isn't located in a desert tortoise take area.
5. Planning staff would echo Engineering's recommendation that Lot 2 not be a separate lot but instead be some kind of common area or easement area between Lots 1 and 3. Staff encourages

shared parking arrangements between the different uses within the subdivision for greater land use efficiency.

6. **Water use:** The Washington County Water Conservancy District has a county-wide tracking budget of approximately 75,000 units with approximately 25,000 units being located within Hurricane City. As part of the Coral Junction Public Infrastructure District this development and its 3 lots are already accounted for within Hurricane City's tracking data.

Recommendation: Staff recommends the Planning Commission review this application based on standards with Hurricane City Code. Staff would recommend the Planning Commission approve this preliminary plat subject to staff and JUC comments

4/11/2024 - Updated Recommendation: As presented in the JUC comments, and as discussed at the 3/28/24 meeting, Lot 2 is not viable as currently shown on the preliminary plat. Therefore, approval should be contingent upon the proposed plat being revised pursuant to the City Engineer's comments, or otherwise in a manner so that Lot 2 will be a functionally independent lot should it be conveyed separately in the future.



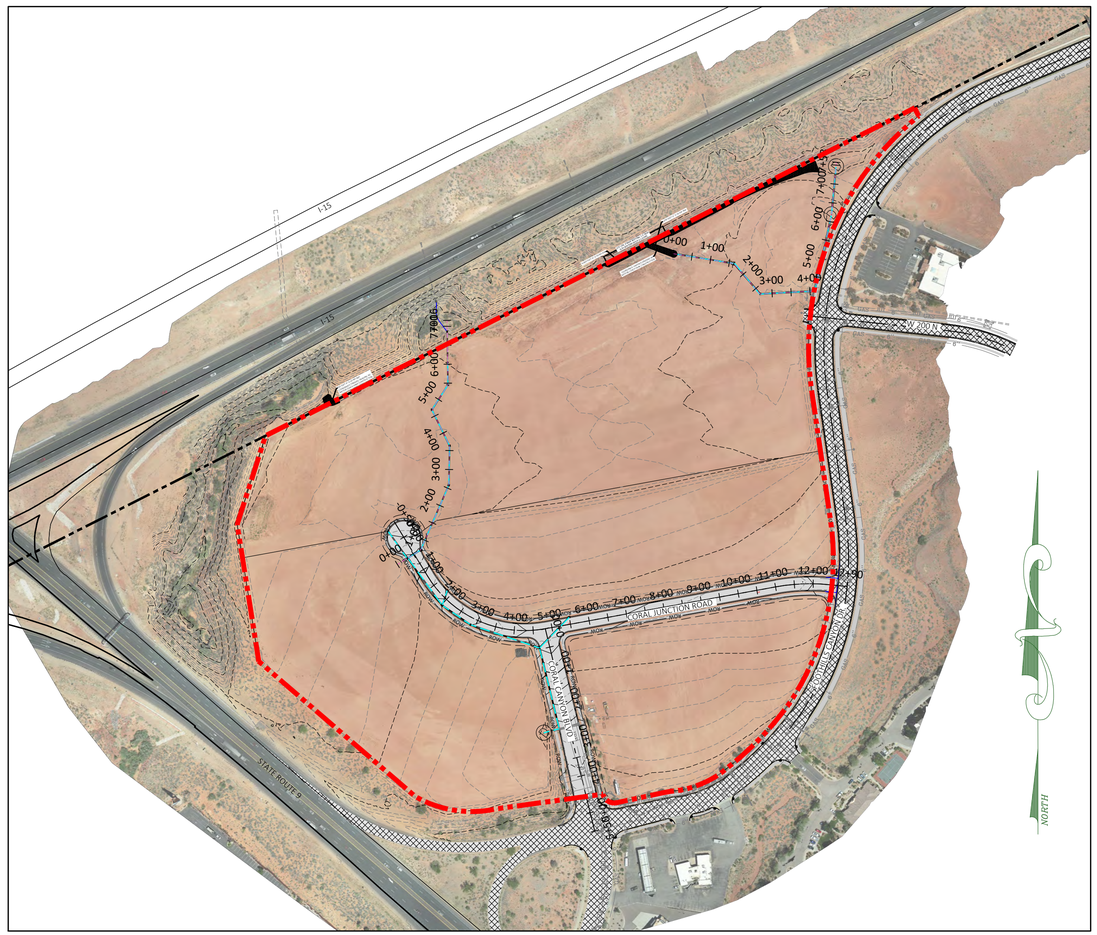
VICINITY MAP

CORAL CANYON PUBLIC INFRASTRUCTURE
FOR
PUBLIC INFRASTRUCTURE DISTRICT
LOCATED IN
HURRICANE CITY, WASHINGTON COUNTY, UT

SHEET NO.	DESCRIPTION
C1.0	COVER SHEET
C1.1	MASS GRADING OVERALL
C1.2	MASS GRADING CUT/FILL
C1.3	SWPPP
C1.4-C1.9	MASS GRADING PLAN & PROFILES
C1.10	ROAD SECTIONS
C2.0-C2.5	PUBLIC INFRASTRUCTURE GRADING
C3.0-C3.3	PUBLIC INFRASTRUCTURE WTR AND SWR
C4.0-C4.3	PUBLIC INFRASTRUCTURE POWER AND GAS
C5.0-C5.3	PUBLIC INFRASTRUCTURE PAVING AND STRIPING
C5.4	PUBLIC INFRASTRUCTURE DEMOLITION
C6.0-C6.5	DETAILS

HURRICANE CITY APPROVAL

WASHINGTON CO. WATER CONSERVANCY DIST.	DATE 12-29-21
FIRE: HURRICANE VALLEY FIRE SSD (Amber Mellette)	DATE 12/29/21
SEWER: ASH CREEK SSD	DATE 12-29-21
WATER: HURRICANE CITY	DATE 12-29-21
POWER: HURRICANE CITY	DATE 12/29/21
GAS: DOMINION ENERGY (TDS)	DATE 12/29/21
COMMUNICATIONS: TDS TELCOM	DATE 1-4-22
COMMUNICATIONS: CENTURYLINK	DATE 12-29-21
PARKS: HURRICANE CITY	DATE 12-29-21
STREETS: HURRICANE CITY	DATE 12-29-21
BUILDING OFFICIAL (Tonnie)	DATE 12-29-2021
ENGINEERING: HURRICANE CITY	DATE
PUBLIC WORKS DIRECTOR	DATE 1/5/2022
G.I.S.: HURRICANE CITY	DATE 1-5-2022



GRAPHIC SCALE
200 0 100 200 400 800
(IN FEET)
1 inch = 200 ft.

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. MICHAEL BRADSHAW
EMAIL: mwb@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 his representatives to be on site throughout the grading process to ensure full compliance with the geotechnical report's recommendations. Refer to following reports.

1. Landmark Testing and Engineering Geotechnical Report, Project No. 18646, Dated: January 30, 2018.

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 surface areas.

GENERAL NOTES:

1. Unless shown otherwise on these plans, all construction shall conform to the codes and ordinances of Hurricane City, Ash Creek Special Service District, the State of Utah Administrative Codes, "The International Plumbing Code", and the "International Building Code" latest additions as administered by Hurricane City.
2. The Contractor shall be responsible for the location of and protection of all existing underground utilities and overhead power lines during construction.
3. Coordinate with Alliance Consulting for control monuments.
4. Existing contour and finish contour interval is 2 feet.
5. Any necessary design modifications shall be approved by the design engineer.
6. All grading to be within ±0.1' of proposed elevation.
7. 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.
8. A mandatory pre-construction meeting with Hurricane City Public Works shall be required on all projects prior to any grubbing, grading, or construction activities. The permit holder shall be required to notify Public Works inspectors.
9. Projects shall submit a dust control plan with details on equipment scheduling and reporting of dust control activities.
10. Follow appendix J standards found in the IBC.
11. All work and materials shall meet Hurricane City standards.

CONSTRUCTION NOTES:

All excavations and grading shall be in accordance with the requirements of the Hurricane City [phone: 435-635-2811], and Ash Creek Special Service District [phone: 435-635-2348], of the "International Building Code", current city-adopted version, and the specifications.

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 non-roadway dust control material shall be firmly placed and compacted to a 3" crust at 5% over optimum, and all grading shall be compacted to 95%.
8. All Rip-Rap rock shall be approved by owner.
9. Contractor must coordinate with other Contractors working in areas.
10. Contractor must protect existing facilities.
11. 18" rework required (remove moisture conditions & re-compact to 95%) on all areas requiring fill prior to any fill being placed.
12. All site blasting must occur during daylight hours and have a dust control plan and a blasting permit provided by the contractor.
13. Private Sewer Agreement is required for any sewer mains not in roadway.

PARKS DEPARTMENT NOTES:

1. Any landscaping, including street landscape strips and/or medians and associated irrigation shall installed by developer/owner and is not the responsibility of Hurricane City Parks Department to maintain.

Date: 11-30-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Base.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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

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

CORAL JUNCTION
PUBLIC INFRASTRUCTURE
COVER
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

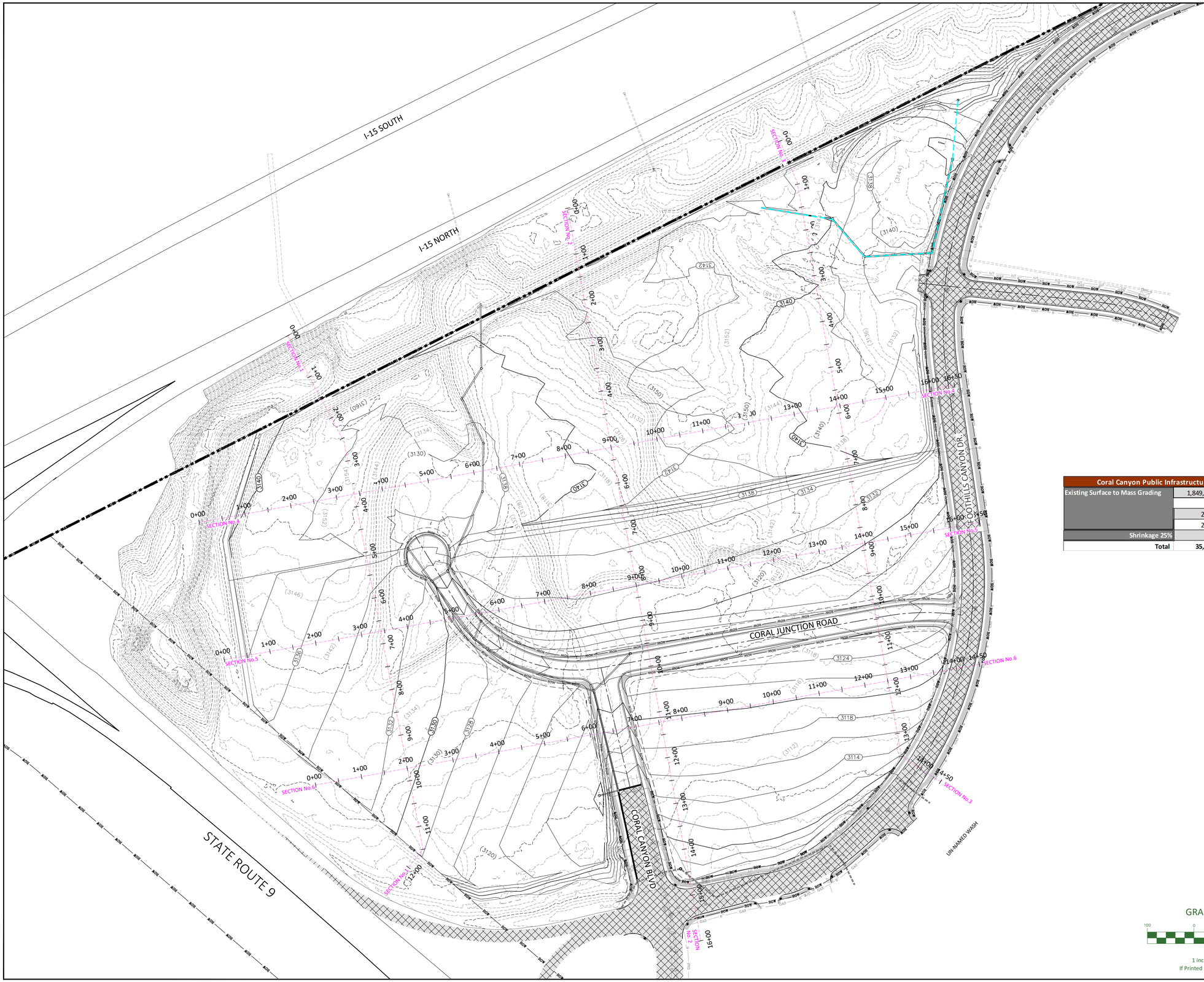
REGISTERED PROFESSIONAL ENGINEER No. 4804458 DELOSS S HAMMON 12/15/21 STATE OF UTAH

Drawn By: CJA	Scale: 1"=200'
Client No. 4499	Project No. 4499

Drawing Sheet
C1.0

Sheet 1 of 36 Sheets

JAN 0 5 2022



Coral Canyon Public Infrastructure Mass Grading		
Existing Surface to Mass Grading	1,849,909.00	Area sq.ft.
	42.47	Area Acres
	231,184	cu.yd. Cut
	213,674	cu.yd. Fill
Shrinkage 25%	53,419	cu.yd. Shrinkage
Total	**35,908.50**	**cu.yd. Material**

GRAPHIC SCALE

100 0 50 100 200

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

Date: 11-30-2021

REVISIONS

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0	10-8-21	CJA	FIRST SUBMITTAL
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File Name
CC-Public Infrastructure Mass Grading.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

CORAL JUNCTION
PUBLIC INFRASTRUCTURE
MASS GRADING OVERALL

FOR

PUBLIC INFRASTRUCTURE DIST.

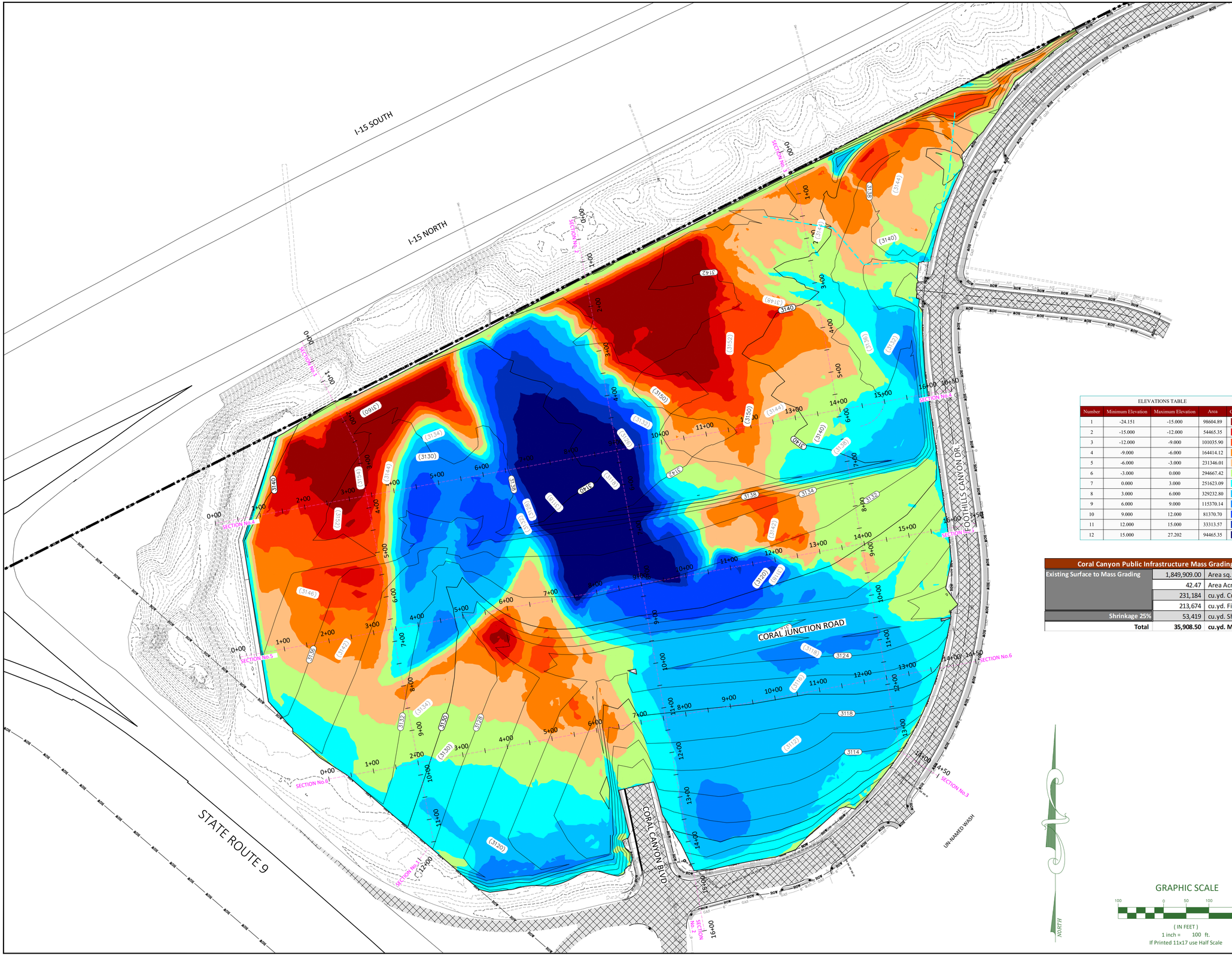
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: CJA	Scale: 1"=100'
Client No. 4499	Project No. 4499

Drawing Sheet
C1.1

Sheet 2 of 36 Sheets

JAN 0 5 2022



ELEVATIONS TABLE

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-24.151	-15.000	98604.89	
2	-15.000	-12.000	54465.35	
3	-12.000	-9.000	101035.90	
4	-9.000	-6.000	164414.12	
5	-6.000	-3.000	231346.01	
6	-3.000	0.000	294667.42	
7	0.000	3.000	251623.09	
8	3.000	6.000	329232.80	
9	6.000	9.000	115370.14	
10	9.000	12.000	81370.70	
11	12.000	15.000	33313.57	
12	15.000	27.202	94465.35	

Coral Canyon Public Infrastructure Mass Grading		
Existing Surface to Mass Grading	1,849,909.00	Area sq.ft.
	42.47	Area Acres
	231,184	cu.yd. Cut
	213,674	cu.yd. Fill
Shrinkage 25%	53,419	cu.yd. Shrinkage
Total	35,908.50	cu.yd. Material

NORTH

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
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If Printed 11x17 use Half Scale

Date: 11-30-2021

REVISIONS

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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

CORAL JUNCTION
PUBLIC INFRASTRUCTURE
MASS GRADING CUT/FILL
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

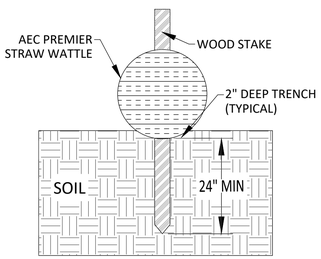
Drawn By: CJA
Scale: 1"=100'
Client No. 4499
Project No. 4499
Drawing Sheet
C1.2
Sheet 3 of 36 Sheets

JAN 0 5 2022

Temporary Erosion and Sediment Control Notes

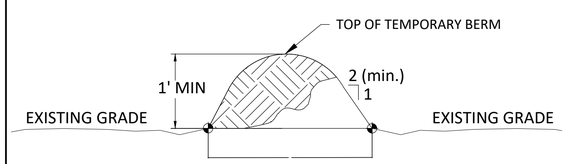
1. Provide and Maintain all Erosion Control Measures, Plans, Permits, Maintenance, Expenses, Etc.
2. All temporary erosion and sediment control devices shall be installed, monitored, and maintained until final surface roughness has been established and accepted by the City.
3. Inspections shall be performed by the Contractor at Least Once Every 14 Calendar Days and within 24 Hours After a Storm Event of 0.5" or More. Inspections shall be documented in Writing and shall Include: Date and Time, Name of Inspector, Findings, Corrective Actions Taken, and Dates and Amounts of Rainfalls.
4. All Erosion Prevention and Sediment Control devices must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/3 of the height of the device. These repairs must be made within 24 hour of Discovery, or as soon as field conditions allows.
5. Provide Temporary Erosion Protection or Permanent cover for the Exposed soil areas where activities have been completed or temporarily cease within 21 days of ceasing earth moving activities.
6. Sediment tracked on the street shall be removed within 24 hours using a street sweeper with pick-up broom
7. All temporary Erosion and Sediment control devices must be removed by the Contractor when final cover is established and acceptable to the Owner.

WATTLE CROSS SECTION: ON BARE SOIL



NOTES
1. INSTALL STAKES ALONG WATTLES APPROXIMATELY 3' TO 4' OF SPACING BETWEEN STAKES
2. ENDS OF WATTLES SHALL BE TURNED SLIGHTLY UP SLOPE.
3. RECOMMENDED STAKES ARE $1\frac{1}{8}$" WIDE x $1\frac{1}{8}$" THICK x 30" LONG.
4. STAKES SHALL NOT EXTEND ABOVE THE STRAW WATTLES MORE THAN 2"
5. DO NOT OVERLAP THE ENDS ON TOP OF EACH OTHER.
6. OVERLAP BESIDE EACH END AT A MINIMUM OF 1.0'
7. ALL WATTLES MUST BE INSTALLED AT THE BEGINNING OF CONSTRUCTION UNLESS NOTED OTHERWISE.

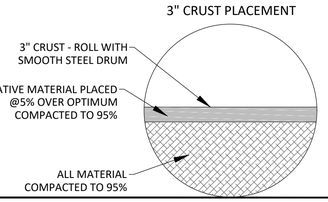
TEMPORARY BERM DETAIL

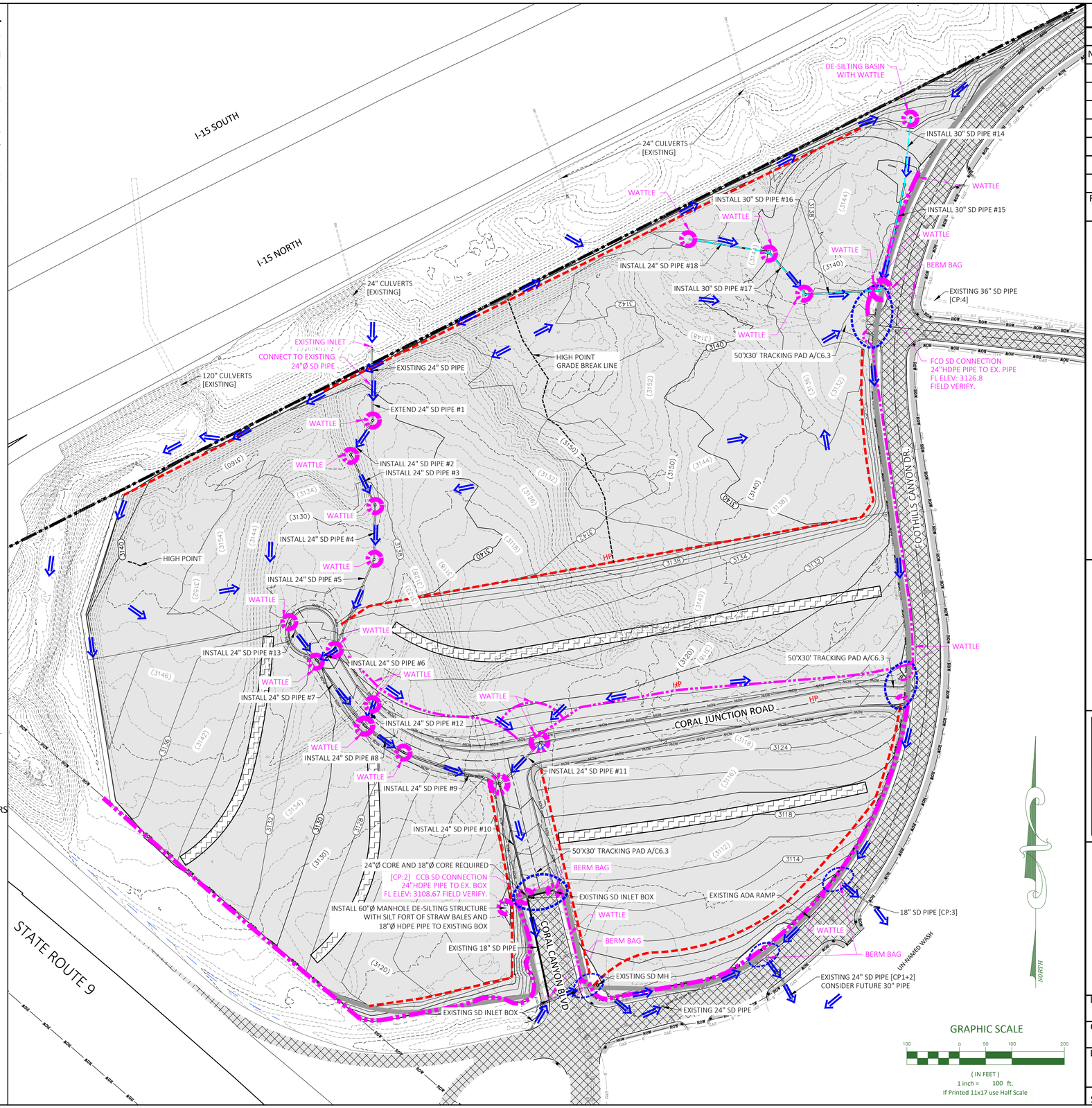


LEGEND

- 12" WATTLE (6,076 LNFT) OR ALTERNATIVE APPROVED BY OWNERS
- DIRT BERM PRE-CONSTRUCTION (COMPLETE)
- COLLECTED POST-CONSTRUCTION DRAINAGE LEAVING SITE
- DIRT BERM (4,646 LNFT) POST-CONSTRUCTION
- RIP PAD 1 WIDTH AFTER CRUSTING (48,800 SQFT)
- 3" NATIVE MATERIAL CRUST (1,801,669 SQFT)
- STORM DRAINAGE FLOW DIRECTION

3" CRUST PLACEMENT





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

Date: 11-30-2021			
REVISIONS			
No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Mass Grading.dwg

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UTAH
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SUITE 201,
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NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

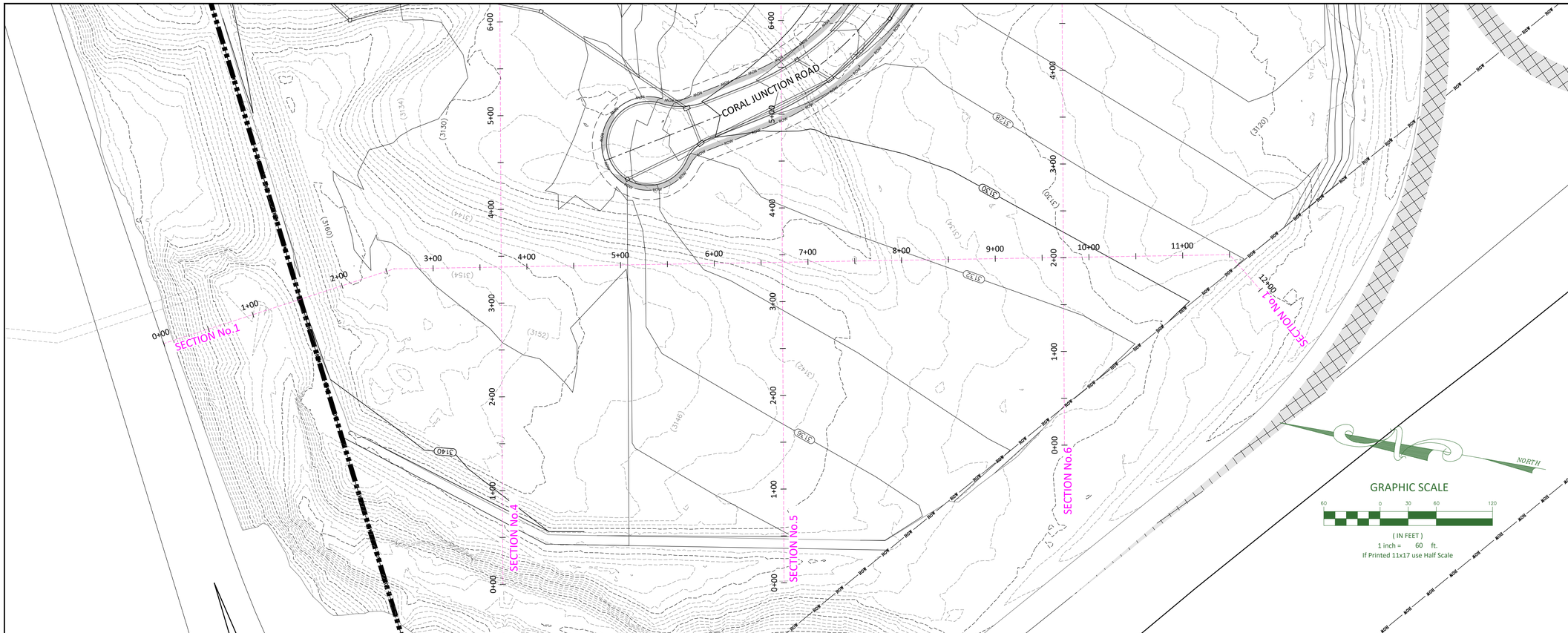
CORAL JUNCTION
PUBLIC INFRASTRUCTURE
SWPPP
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

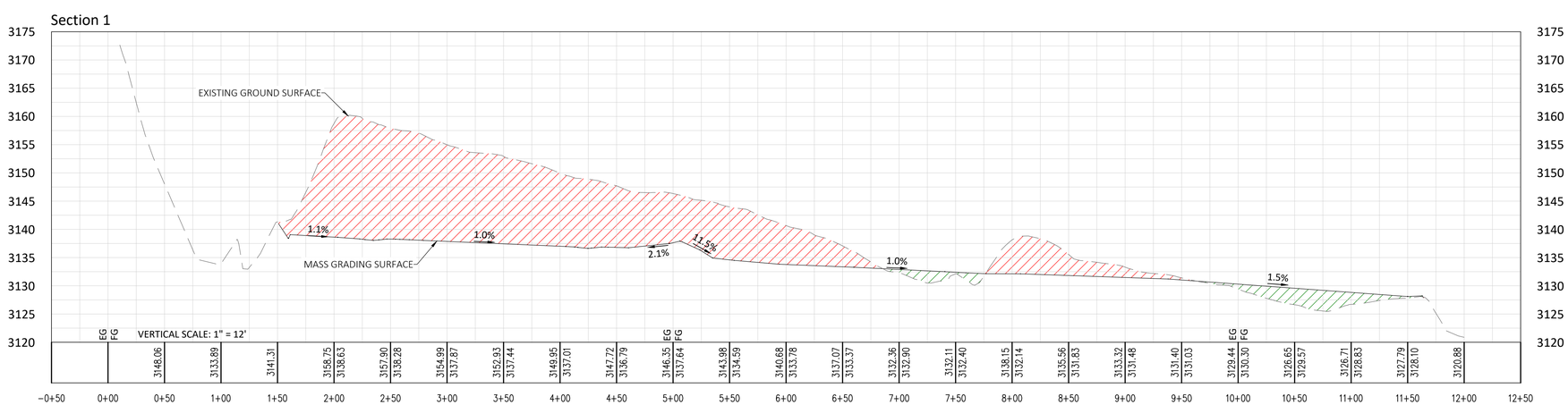
Drawn By: CJA	Scale: 1"=100'
Client No. 4499	Project No. 4499

Drawing Sheet
C1.3

Sheet 4 of 36 Sheets

JAN 0 5 2022





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REVISIONS			
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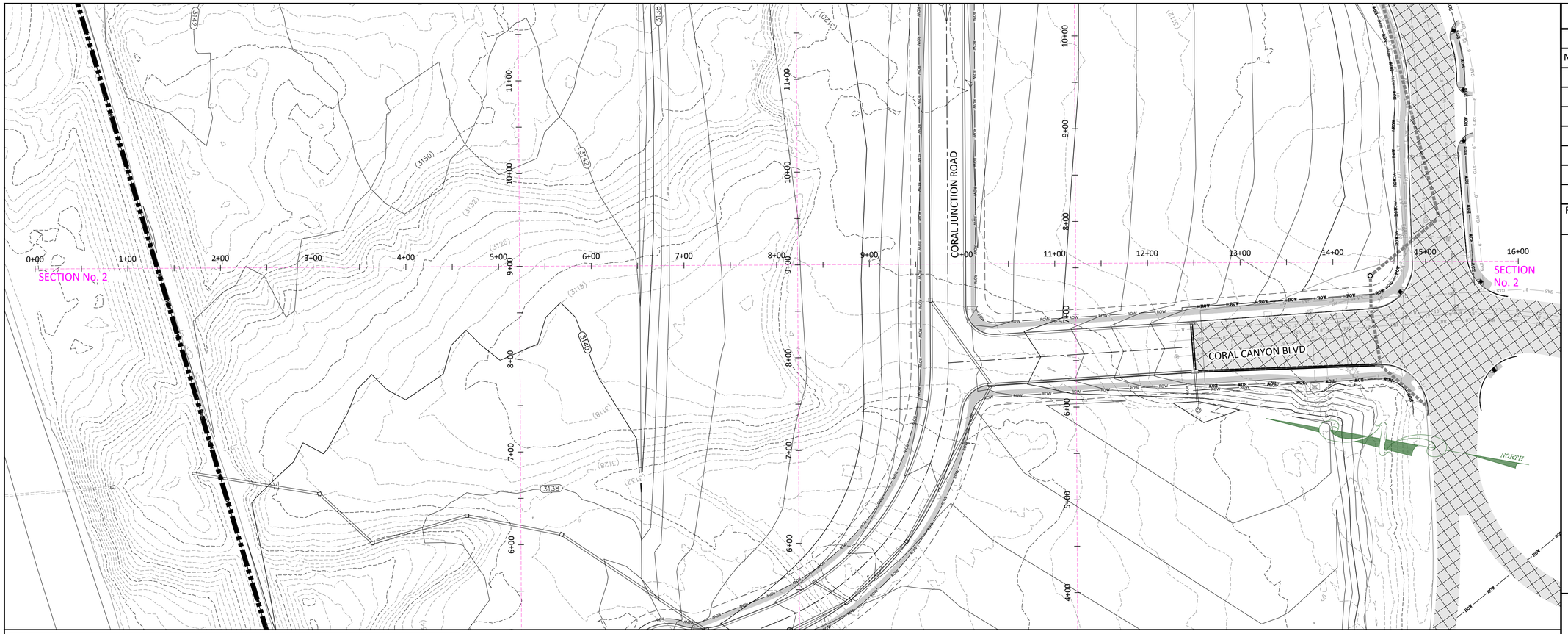
CORAL JUNCTION
PUBLIC INFRASTRUCTURE
MASS GRADING
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

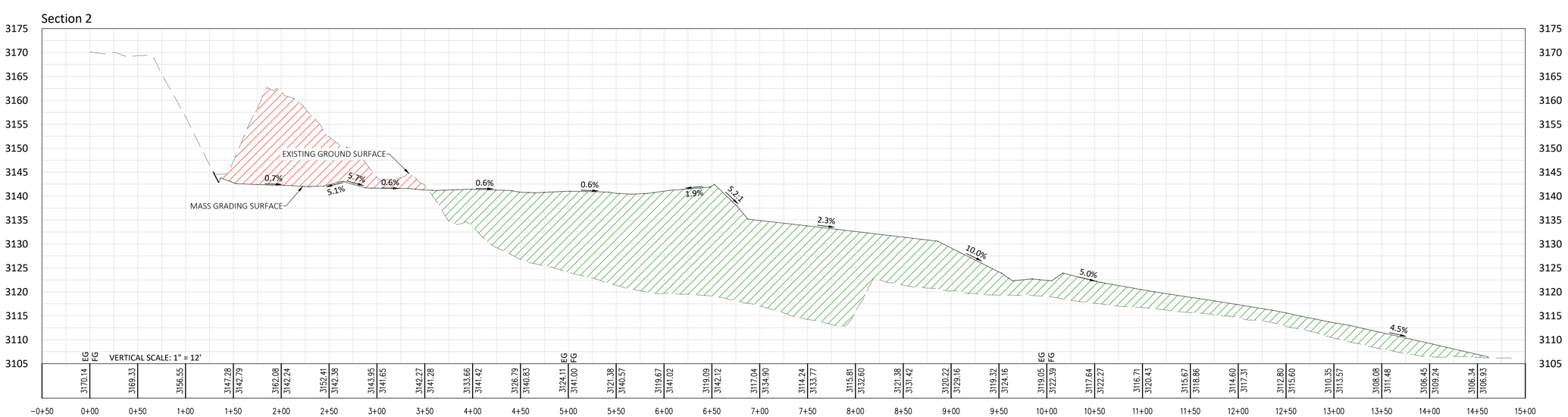
Drawn By: CJA	Scale: 1"=60'
Client No. 4499	Project No. 4499

Drawing Sheet
C1.4

Sheet 5 of 36 Sheets

JAN 0 5 2022





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REVISIONS			
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1	11-30-21	CJA	CITY REVISIONS

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GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
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621 26th STREET W.
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701-572-8100

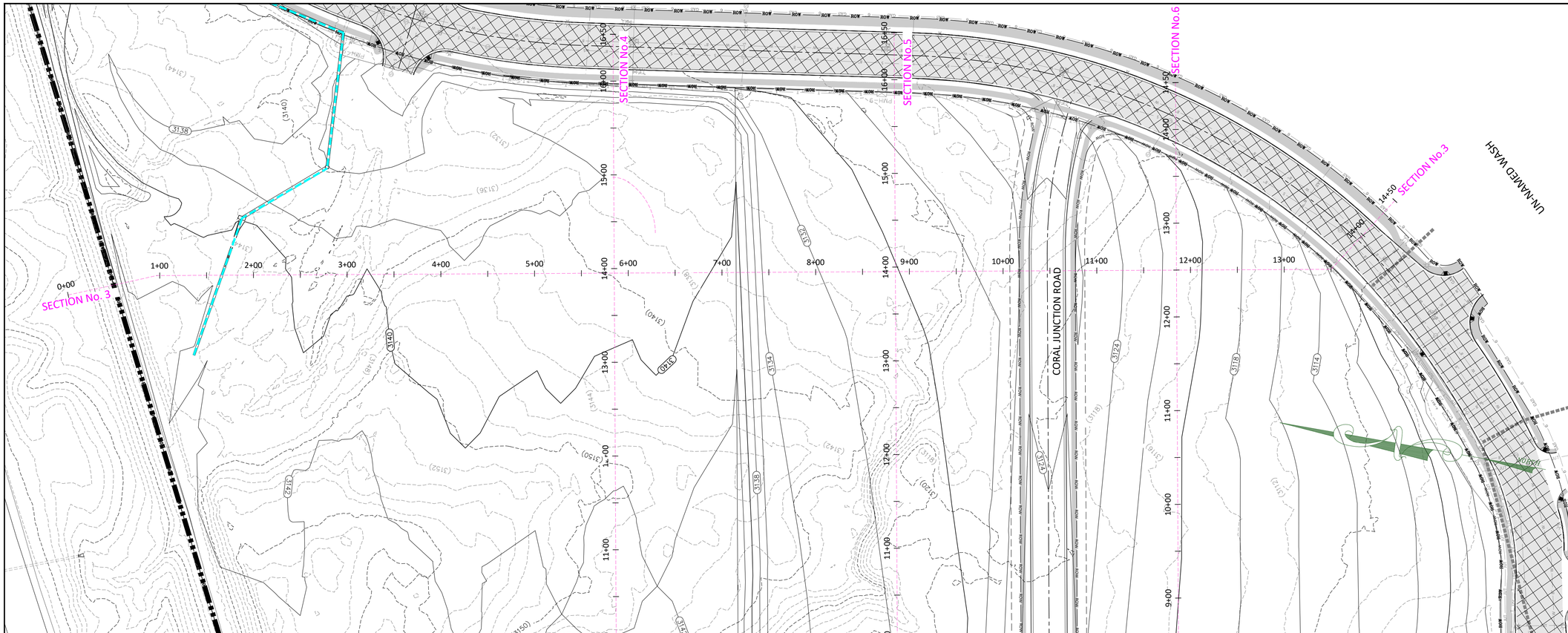
CORAL JUNCTION
PUBLIC INFRASTRUCTURE
MASS GRADING
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

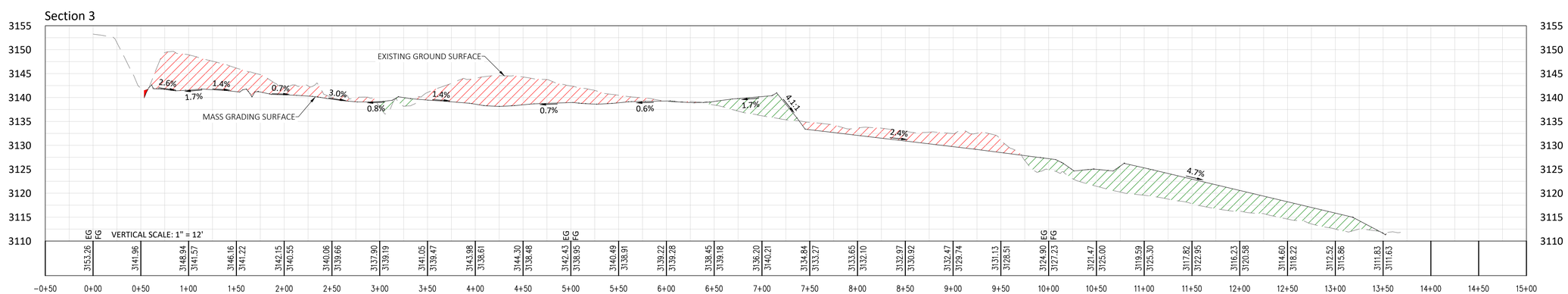
Drawn By: CJA	Scale: 1"=60'
Client No. 4499	Project No. 4499

Drawing Sheet
C1.5

Sheet 6 of 36 Sheets

JAN 0 5 2022





Date: 11-30-2021

REVISIONS

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ALLIANCE CONSULTING
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CORAL JUNCTION
PUBLIC INFRASTRUCTURE
MASS GRADING
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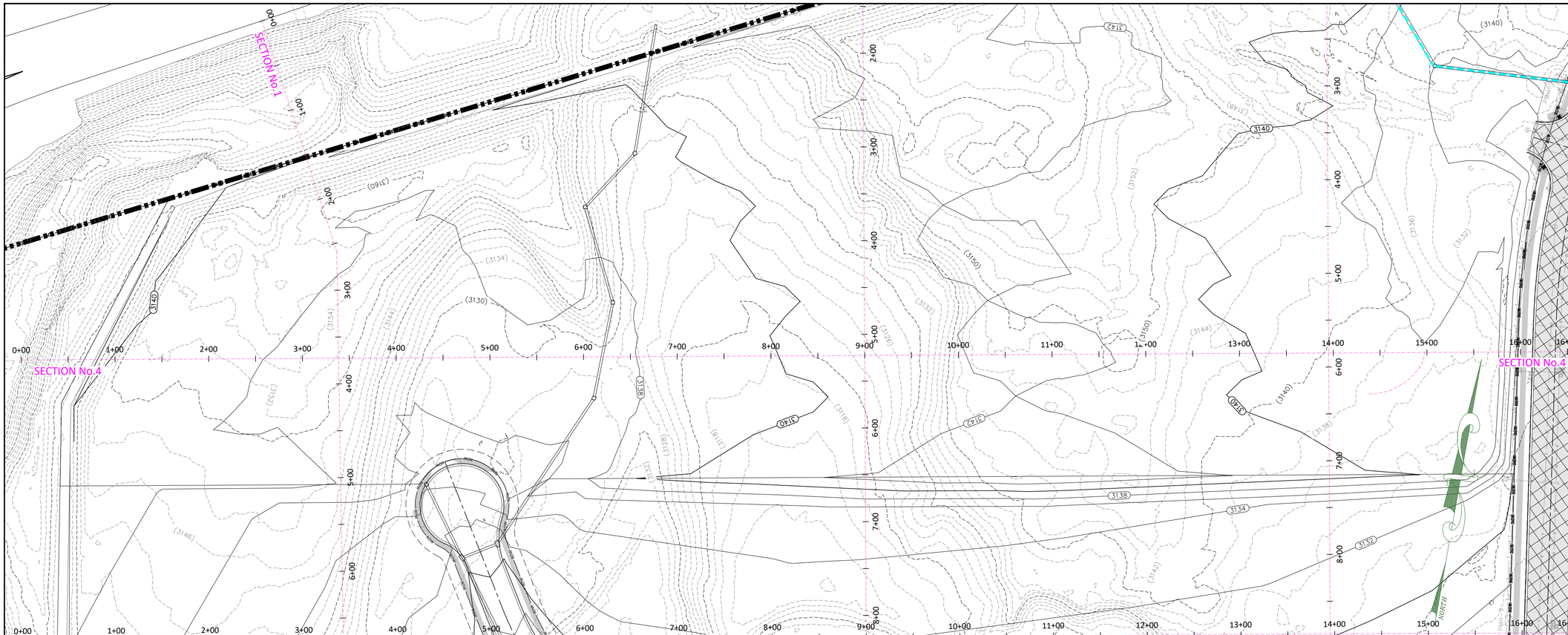
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: CJA	Scale: 1"=60'
Client No. 4499	Project No. 4499

Drawing Sheet
C1.6

Sheet 7 of 36 Sheets

JAN 0 5 2022



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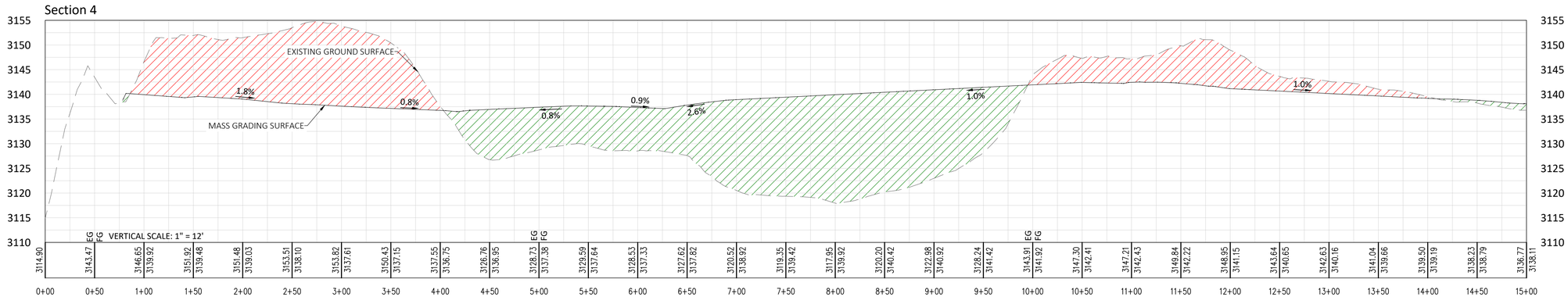

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1	11-30-21	CJA	CITY REVISIONS

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GRAPHIC SCALE

60 0 30 60 120

(IN FEET)
1 inch = 60 ft.
If Printed 11x17 use Half Scale

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

UTAH
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SUITE 201,
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435-673-8060

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CORAL JUNCTION
PUBLIC INFRASTRUCTURE
MASS GRADING

FOR

PUBLIC INFRASTRUCTURE DIST.

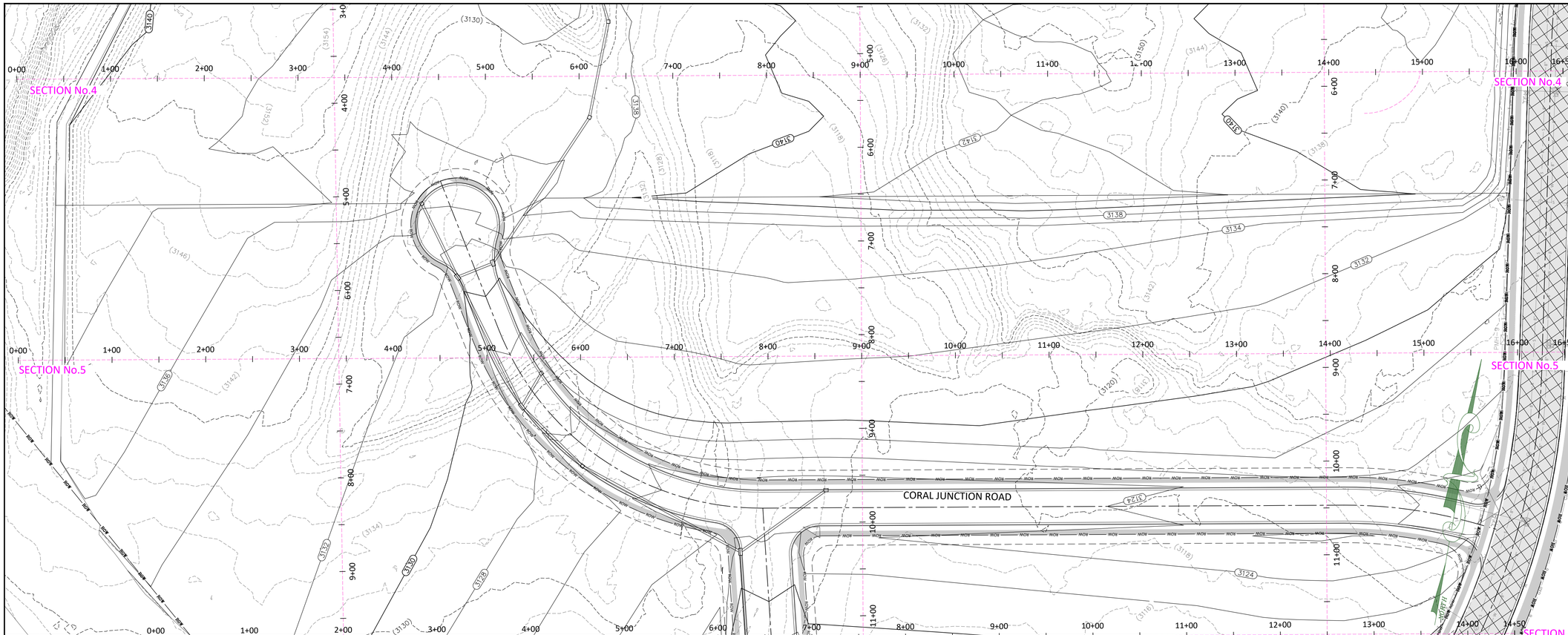
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

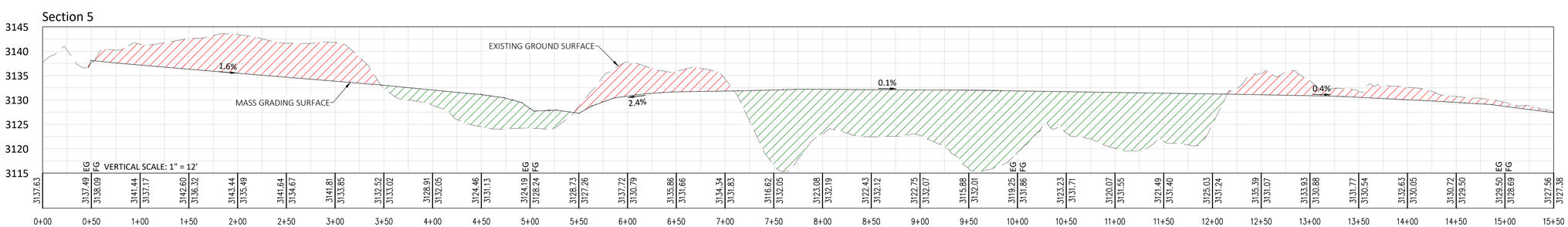
Drawn By: CJA	Scale: 1"=60'
Client No. 4499	Project No. 4499

Drawing Sheet
C1.7

Sheet 8 of 36 Sheets

JAN 0 5 2022





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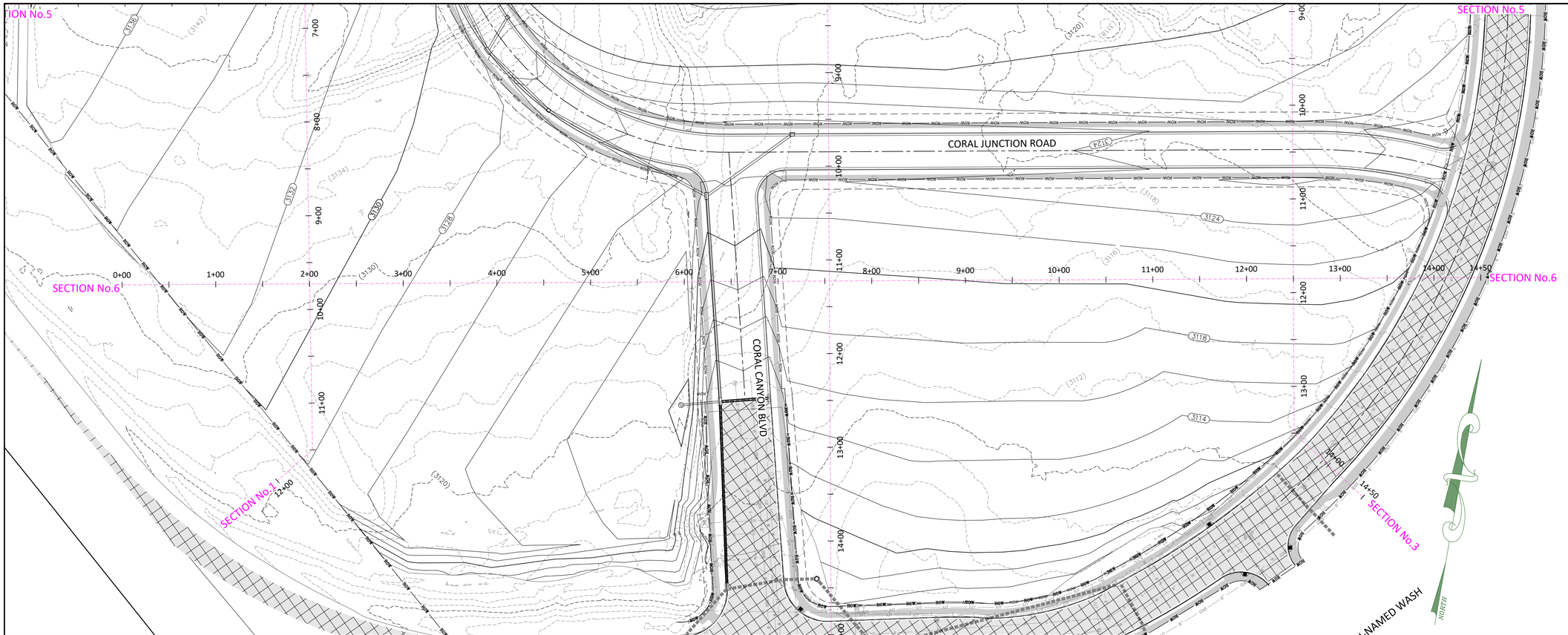
CORAL JUNCTION
PUBLIC INFRASTRUCTURE
MASS GRADING
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

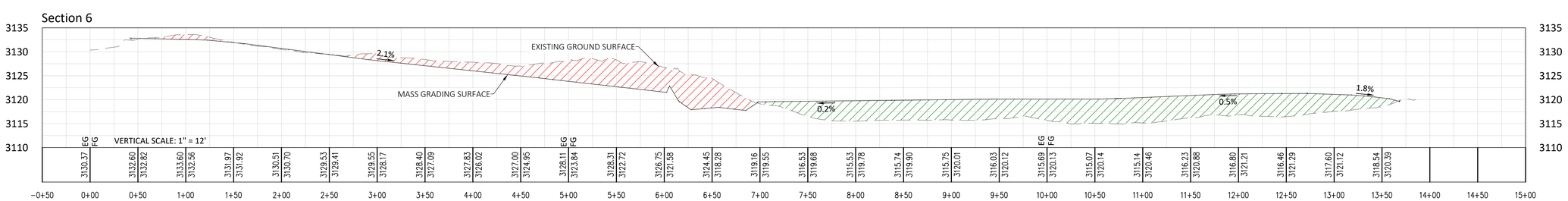
Drawn By: CJA	Scale: 1"=60'
Client No. 4499	Project No. 4499

Drawing Sheet
C1.8

Sheet 9 of 36 Sheets

JAN 0 5 2022





Date:			
11-30-2021			
REVISIONS			
No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Mass Grading.dwg

GRAPHIC SCALE
60 0 30 60 120
(IN FEET)
1 inch = 60 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

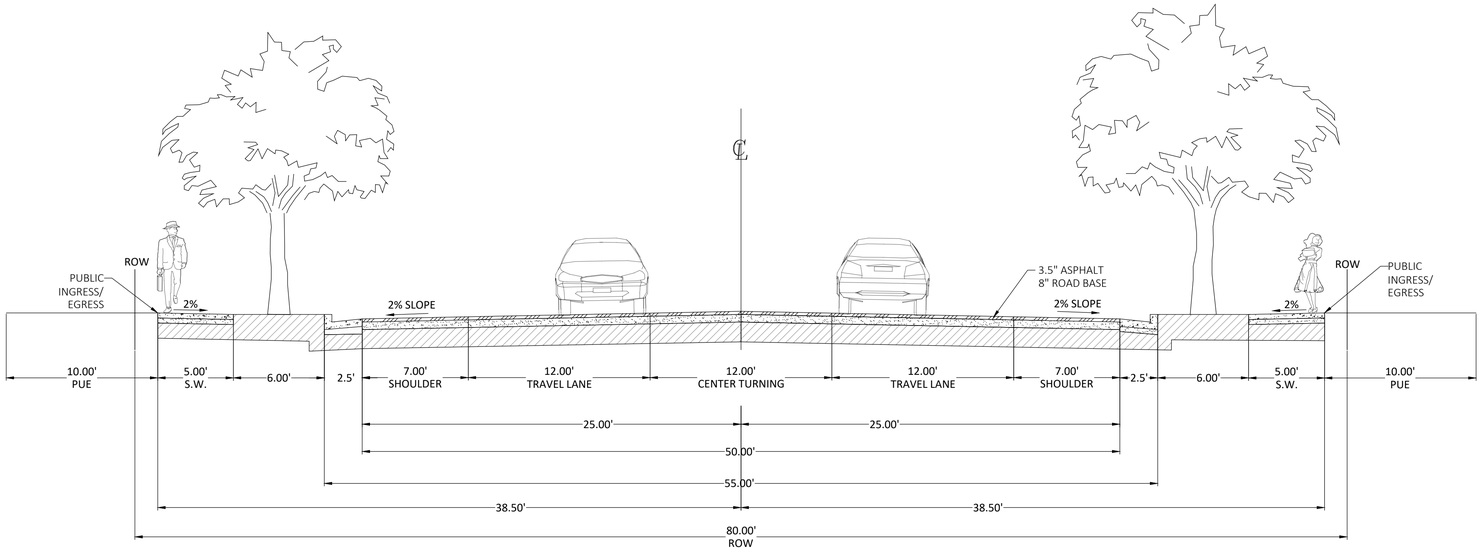
CORAL JUNCTION
PUBLIC INFRASTRUCTURE
MASS GRADING
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: CJA	Scale: 1"=60'
Client No. 4499	Project No. 4499

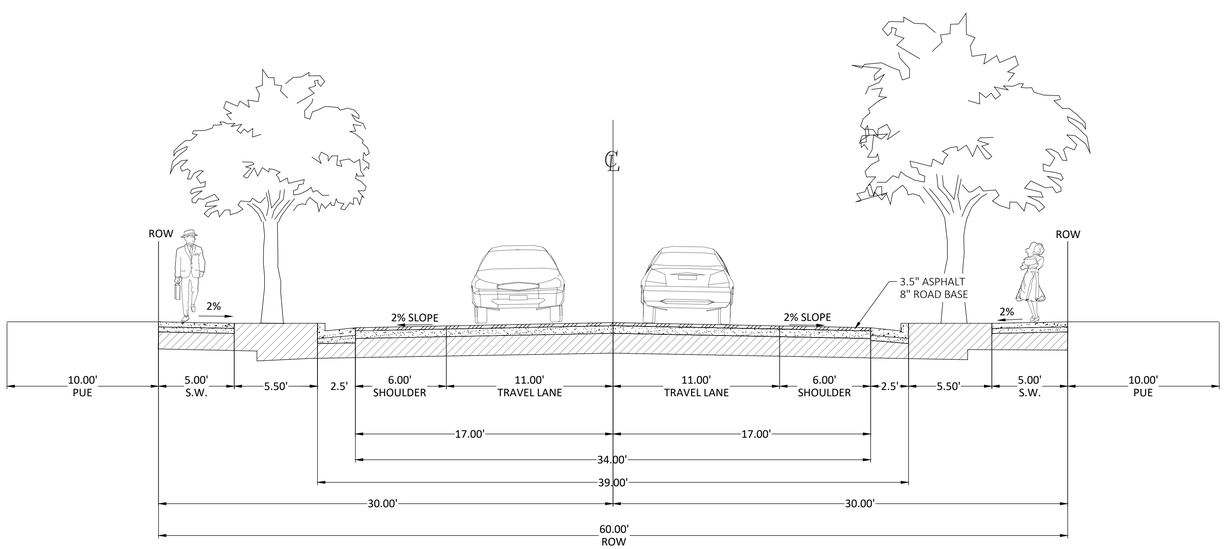
Drawing Sheet
C1.9

Sheet 10 of 36 Sheets

JAN 0 5 2022



CORAL CANYON BLVD
80' ROW



CORAL JUNCTION ROAD
60' ROW

Date: 10-8-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Paving.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

CORAL JUNCTION
PUBLIC INFRASTRUCTURE
ROAD SECTIONS
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLBM
CITY OF WASHINGTON, WASHINGTON COUNTY, UT

Drawn By: ARL
Scale: 1"=5'
Client No. 4499
Project No. 4499
Drawing Sheet C1.10

JAN 0 5 2022

LEGEND

- ON-SITE STORM WATER RUN-OFF FLOW DIRECTION
- OFF-SITE STORM WATER RUN-OFF FLOW DIRECTION
- FLOWLINE
- STORM DRAIN PIPE

GRAPHIC SCALE

100 0 50 100 200

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

Date: 11-30-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Base.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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

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

CORAL JUNCTION
PUBLIC INFRASTRUCTURE
ROADWAY GRADING OVERALL

FOR

PUBLIC INFRASTRUCTURE DIST.

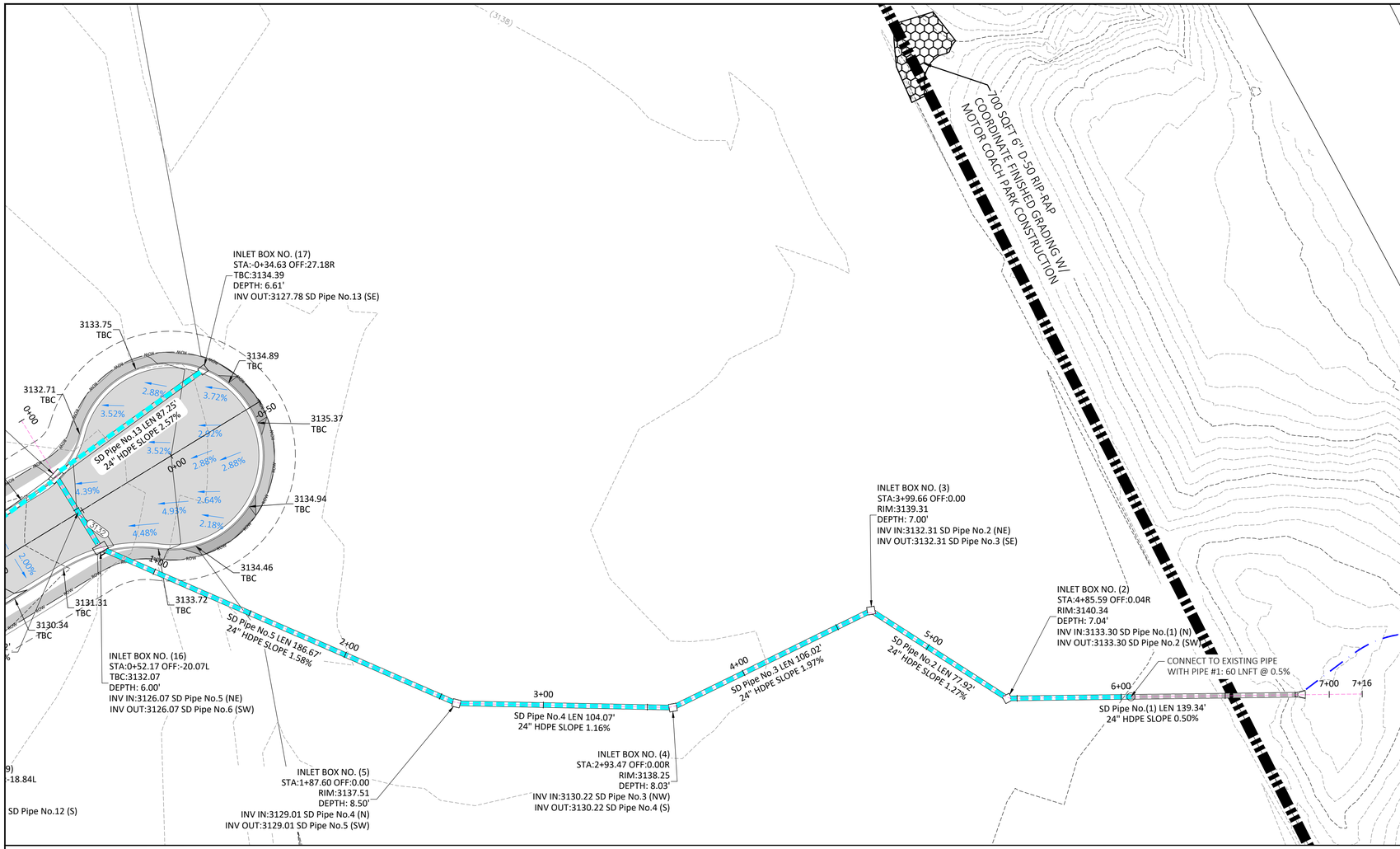
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: CJA	Scale: 1"=100'
Client No. 4499	Project No. 4499

Drawing Sheet
C2.0

Sheet 12 of 36 Sheets

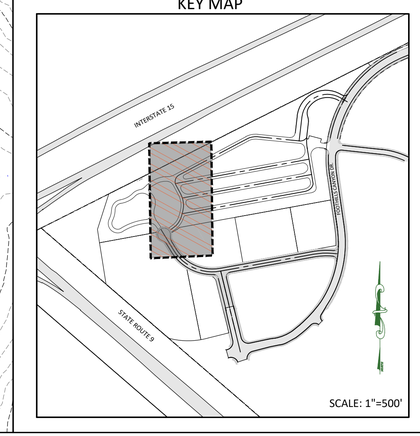
JAN 0 5 2022



LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- SIDEWALK
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- STORM DRAIN INLET BOX
- 30" CURB & GUTTER
- FLOWLINE
- PROJECT BOUNDARY
- HP/LP HIGH POINT/LOW POINT
- (2622) EXISTING CONTOUR
- 2622 DESIGN CONTOUR

KEY MAP



Date: 11-30-2021			
REVISIONS			
No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Base.dwg

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

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

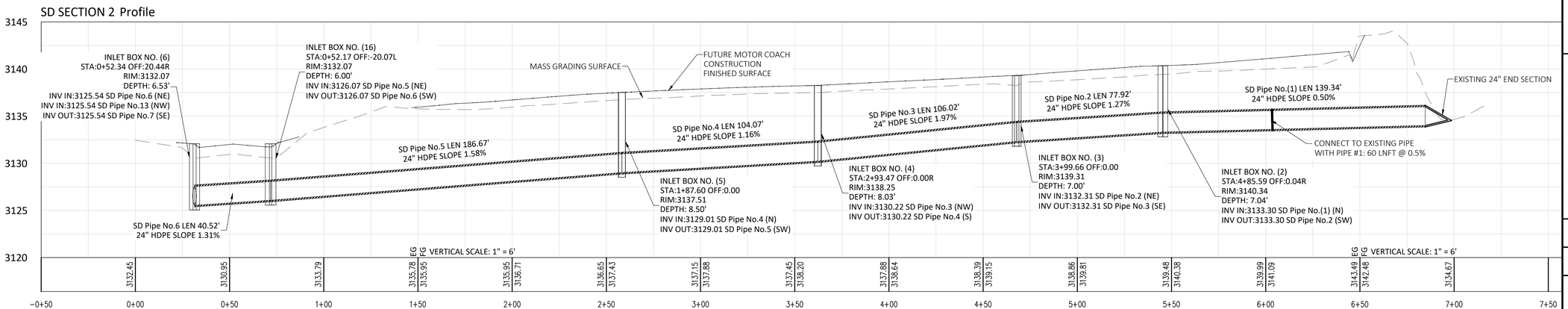
CORAL JUNCTION PUBLIC INFRASTRUCTURE GRADING PLAN & PROFILE

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

SD SECTION 2 Profile

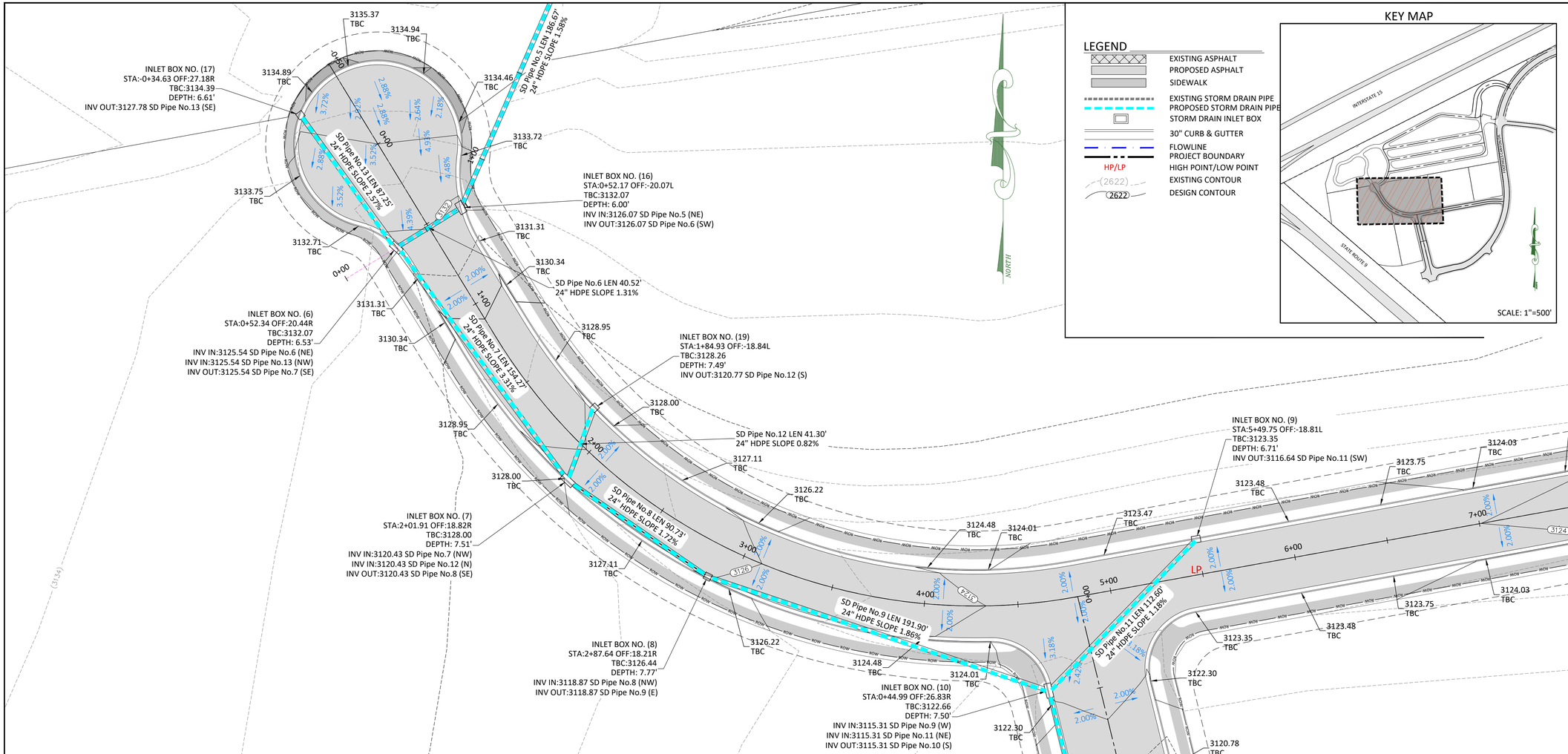


Drawn By: CJA	Scale: 1"=30'
Client No. 4499	Project No. 4499

Drawing Sheet
C2.1

Sheet 13 of 36 Sheets

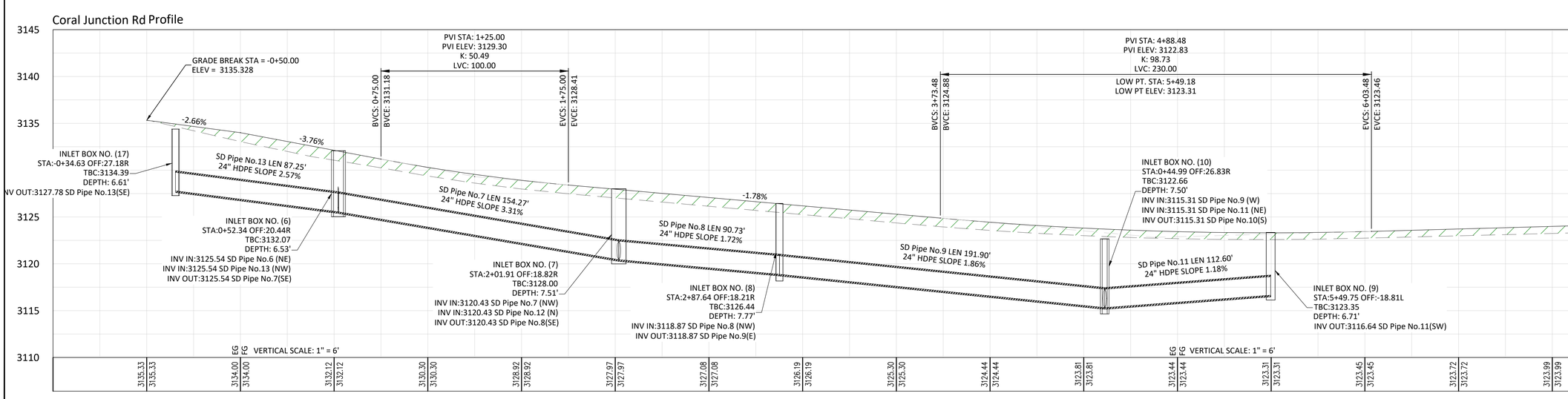
JAN 0 5 2022



LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- SIDEWALK
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- STORM DRAIN INLET BOX
- 30" CURB & GUTTER
- FLOWLINE
- PROJECT BOUNDARY
- HP/LP — HIGH POINT/LOW POINT
- (2622) — EXISTING CONTOUR
- 2622 — DESIGN CONTOUR

KEY MAP



Date:			
11-30-2021			
REVISIONS			
No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Base.dwg

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
SUIT 201,
WASHINGTON, UT 84780
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NORTH DAKOTA
621 26th STREET W.
WILLISTON, ND 58801
701-572-8100

CORAL JUNCTION PUBLIC INFRASTRUCTURE GRADING PLAN & PROFILE

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: CJA	Scale: 1"=30'
Client No. 4499	Project No. 4499

Drawing Sheet
C2.2

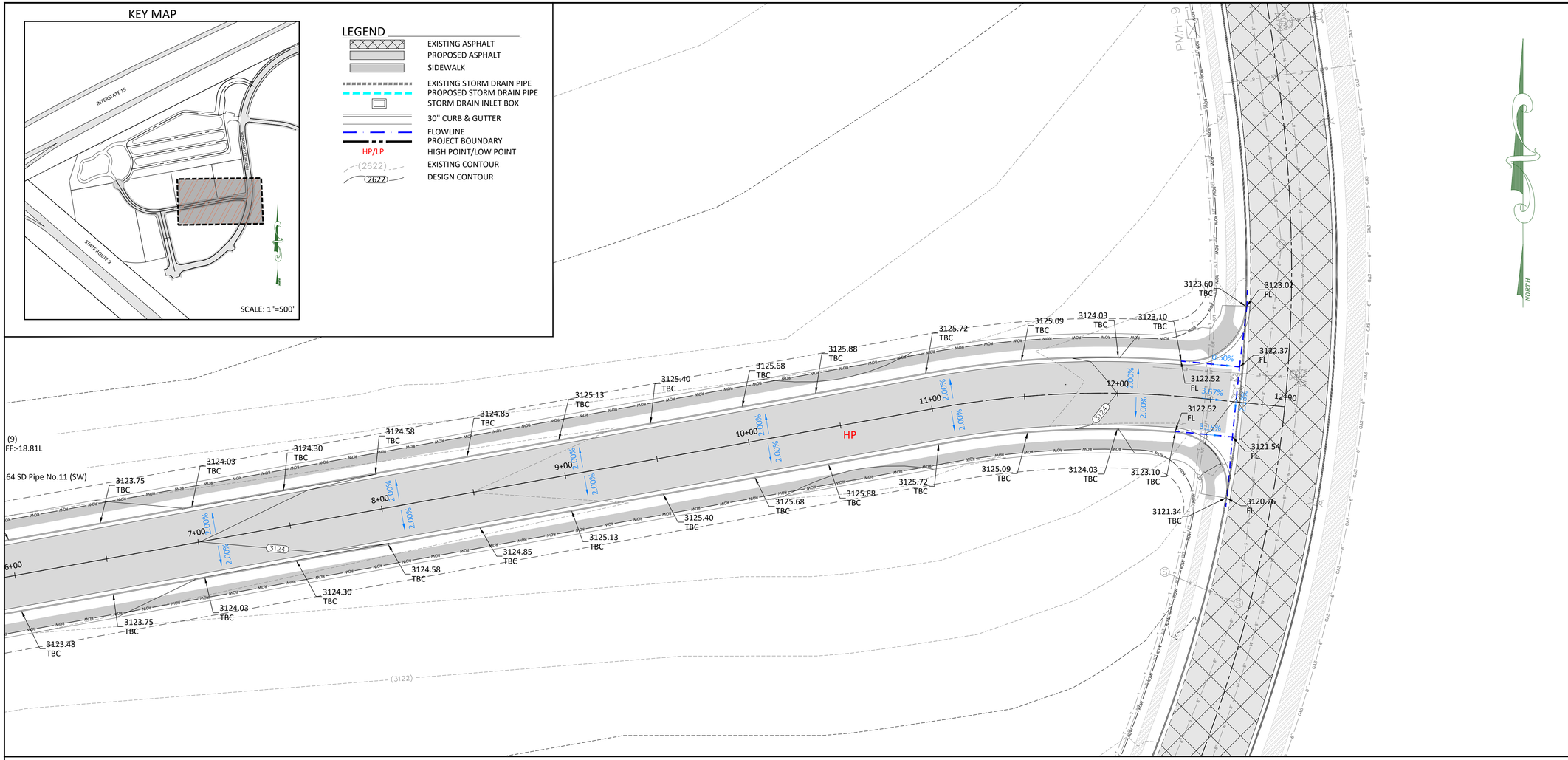
Sheet 14 of 36 Sheets

JAN 0 5 2022

KEY MAP

LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- SIDEWALK
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- STORM DRAIN INLET BOX
- 30" CURB & GUTTER
- FLOWLINE
- PROJECT BOUNDARY
- HP/LP — HIGH POINT/LOW POINT
- (2622) — EXISTING CONTOUR
- 2622 — DESIGN CONTOUR



Date: 11-30-2021			
REVISIONS			
No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Base.dwg

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

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

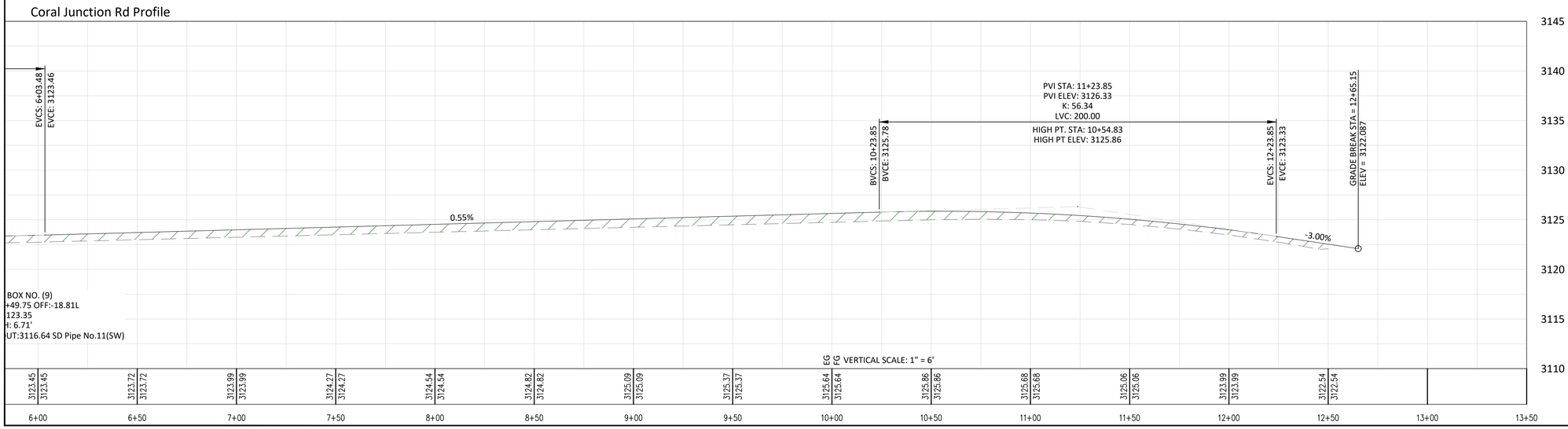
CORAL JUNCTION PUBLIC INFRASTRUCTURE GRADING PLAN & PROFILE

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Coral Junction Rd Profile

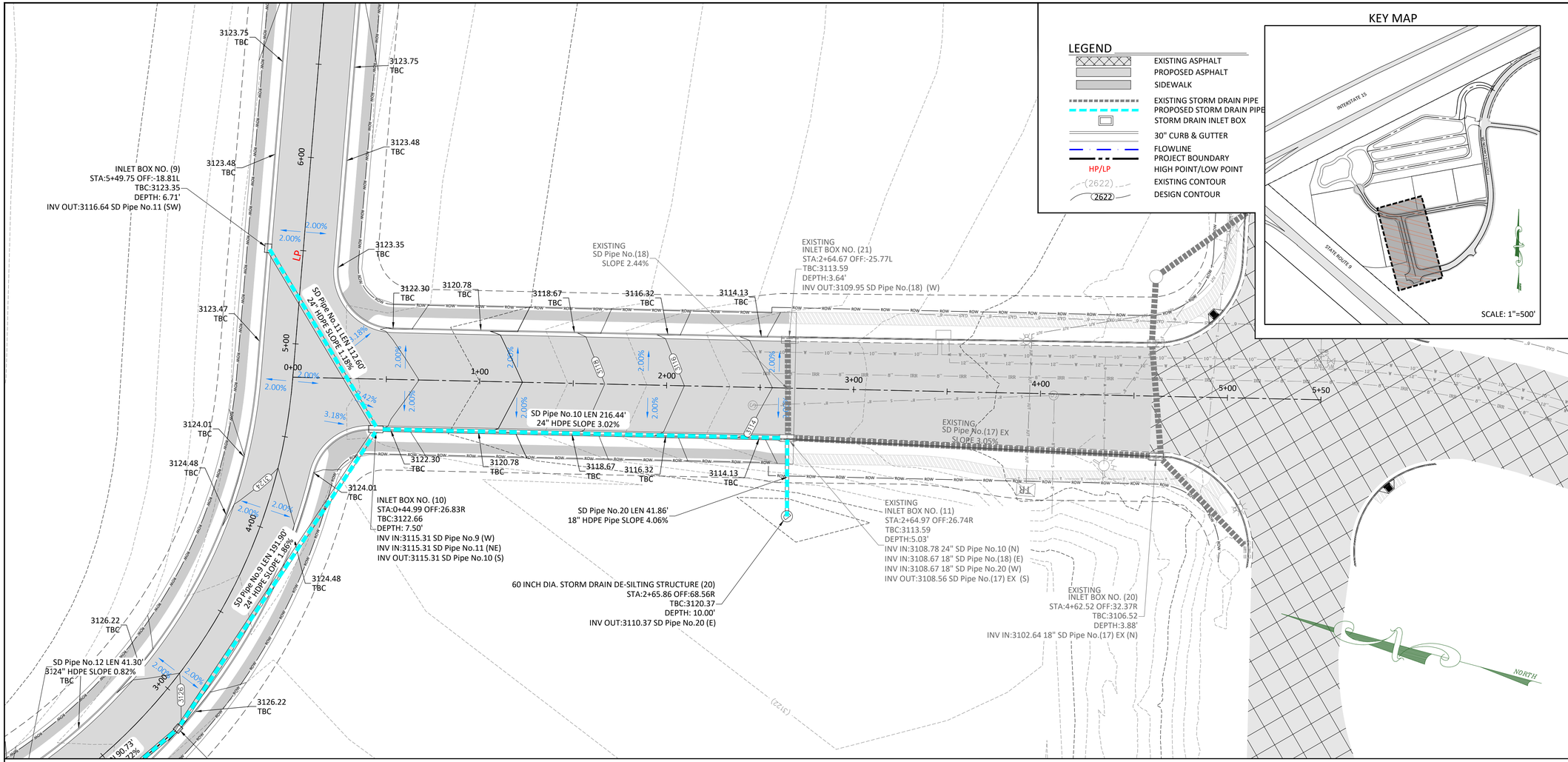


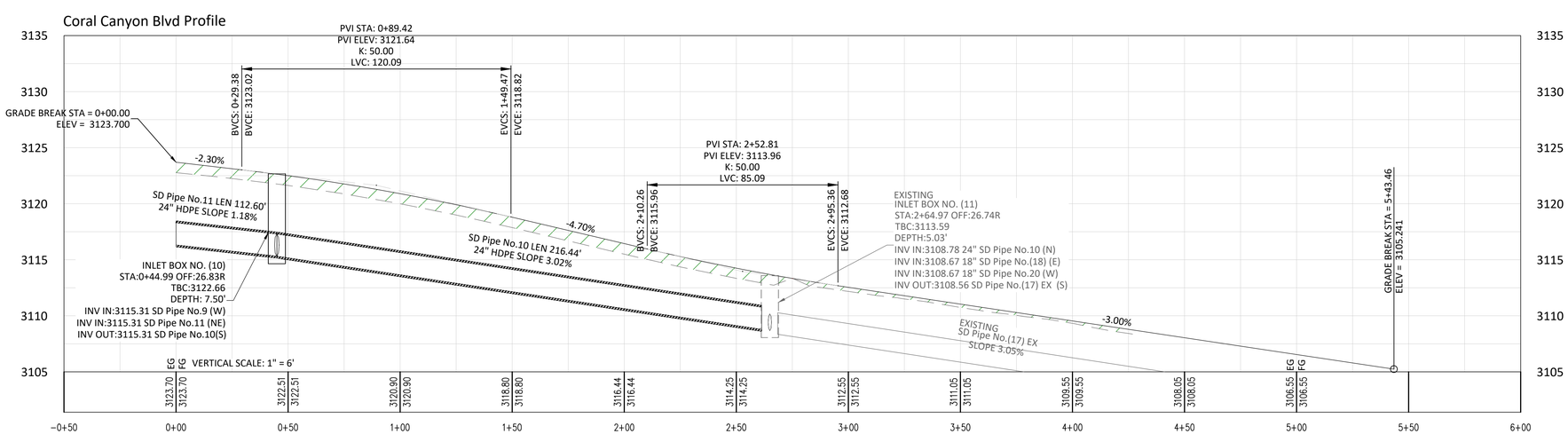
Drawn By: CJA	Scale: 1"=30'
Client No. 4499	Project No. 4499

Drawing Sheet
C2.3

Sheet 15 of 36 Sheets

JAN 0 5 2022





Date:			
11-30-2021			
REVISIONS			
No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Base.dwg

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

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

CORAL JUNCTION PUBLIC INFRASTRUCTURE GRADING PLAN & PROFILE

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: CJA	Scale: 1"=30'
Client No. 4499	Project No. 4499

Drawing Sheet
C2.4

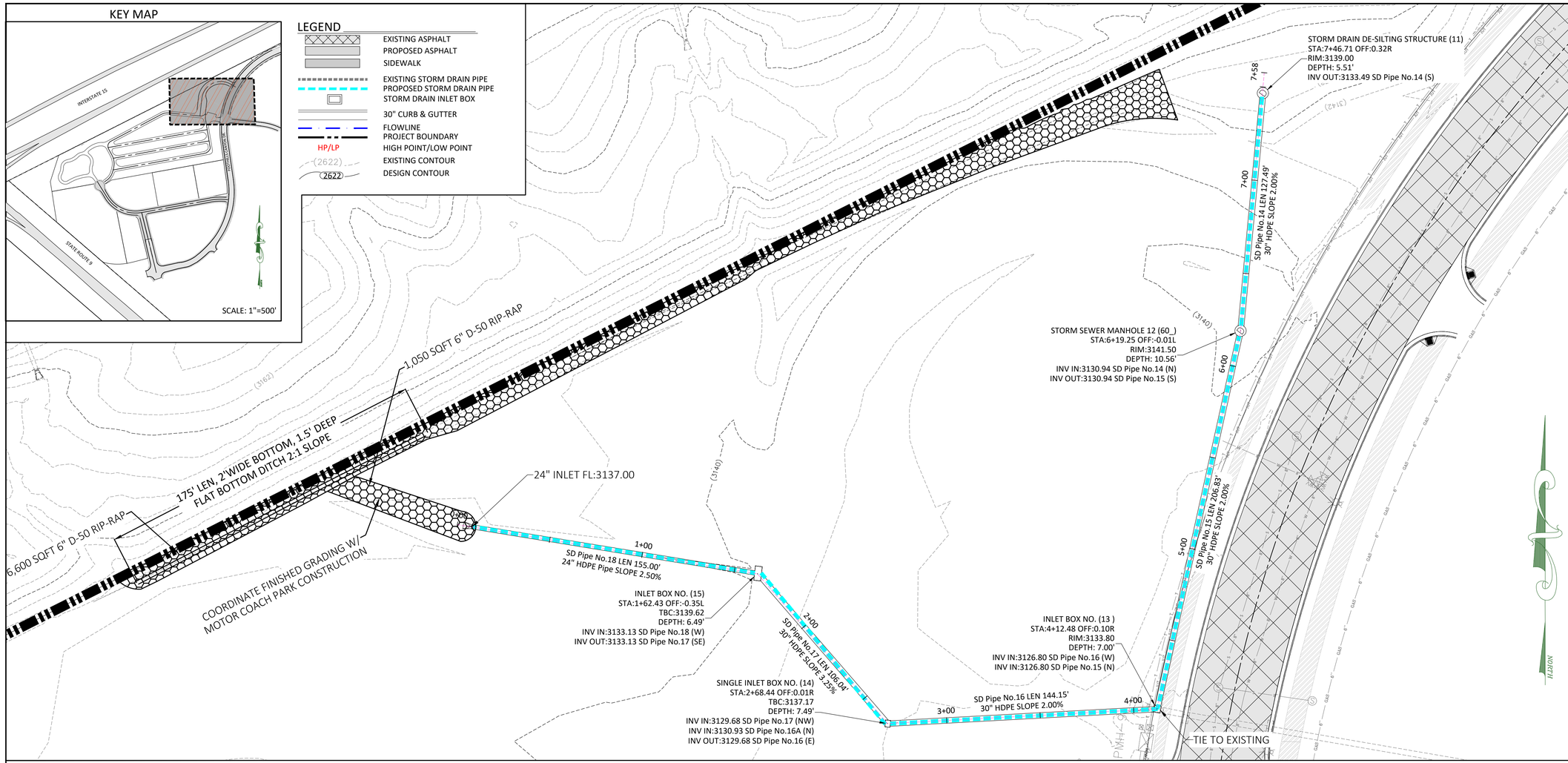
Sheet 16 of 36 Sheets

JAN 0 5 2022

KEY MAP

LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT
- SIDEWALK
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE
- STORM DRAIN INLET BOX
- 30" CURB & GUTTER
- FLOWLINE
- PROJECT BOUNDARY
- HP/LP HIGH POINT/LOW POINT
- (2622) EXISTING CONTOUR
- (2622) DESIGN CONTOUR



Date: 11-30-2021			
REVISIONS			
No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Base.dwg

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

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

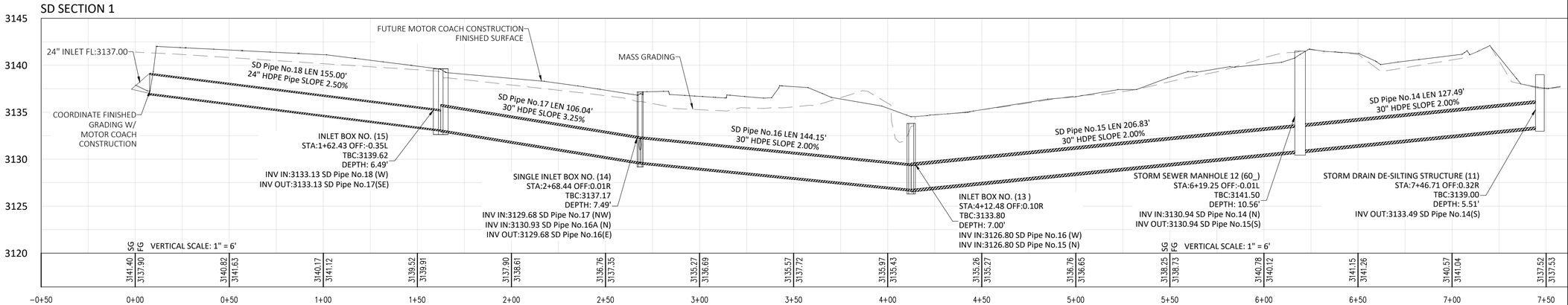
CORAL JUNCTION PUBLIC INFRASTRUCTURE GRADING PLAN & PROFILE

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB &M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

SD SECTION 1



Drawn By: CJA	Scale: 1"=30'
Client No. 4499	Project No. 4499

Drawing Sheet
C2.5

Sheet 17 of 36 Sheets

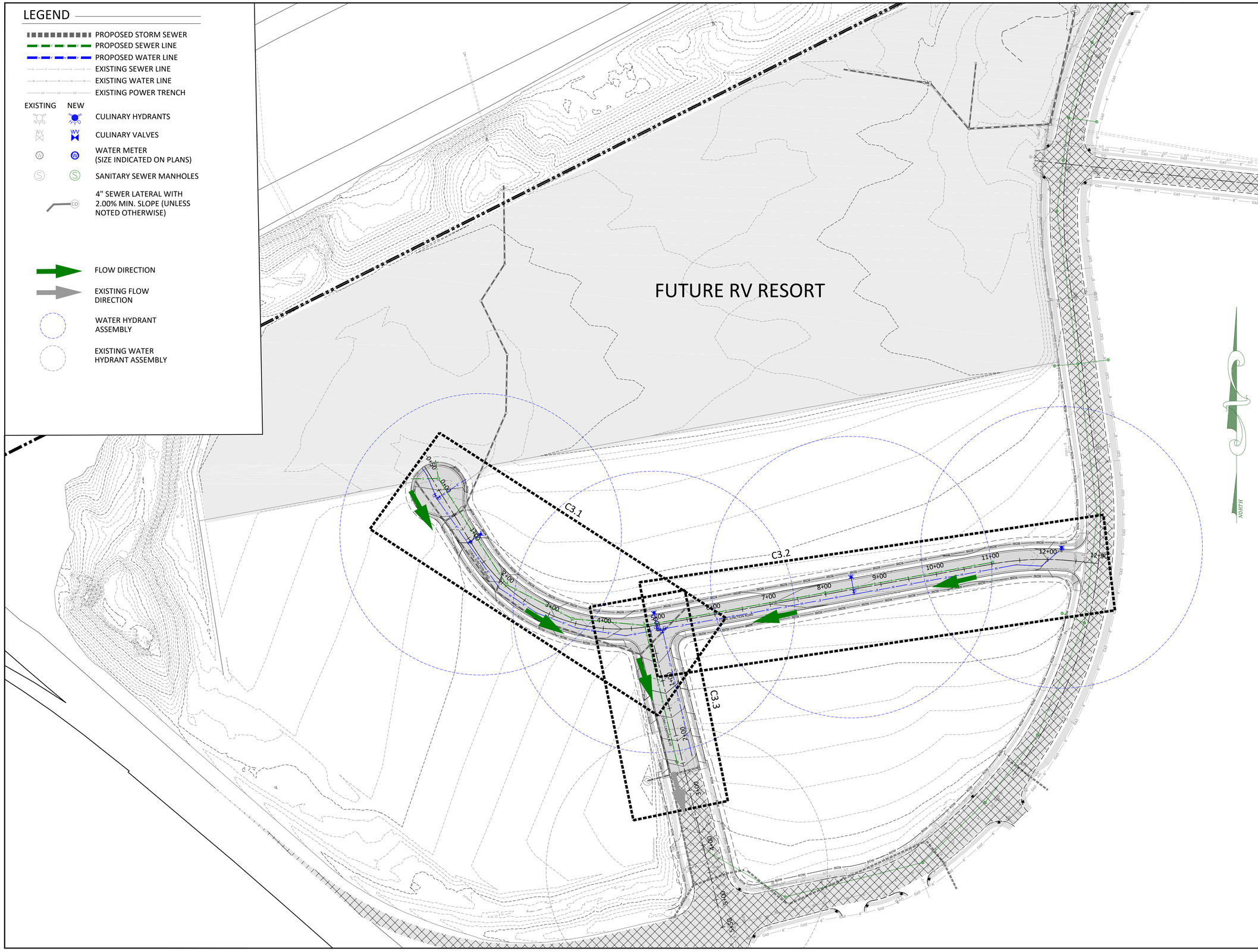
JAN 0 5 2022

LEGEND

- PROPOSED STORM SEWER
- PROPOSED SEWER LINE
- PROPOSED WATER LINE
- EXISTING SEWER LINE
- EXISTING WATER LINE
- EXISTING POWER TRENCH

EXISTING NEW

- CULINARY HYDRANTS
- CULINARY VALVES
- WATER METER (SIZE INDICATED ON PLANS)
- SANITARY SEWER MANHOLES
- 4" SEWER LATERAL WITH 2.00% MIN. SLOPE (UNLESS NOTED OTHERWISE)
- FLOW DIRECTION
- EXISTING FLOW DIRECTION
- WATER HYDRANT ASSEMBLY
- EXISTING WATER HYDRANT ASSEMBLY



DATE:	
	11-30-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure SWR & WTR.dwg

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
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WASHINGTON, UT 84780
435-673-8060

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

CORAL JUNCTION
PUBLIC INFRASTRUCTURE
SWR & WTR

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB&M,
CITY OF HURRICANE, WASH CO. UTAH

Drawn By: ALT	Scale: 1"=30'
Client No. 4499	Project No. 4499

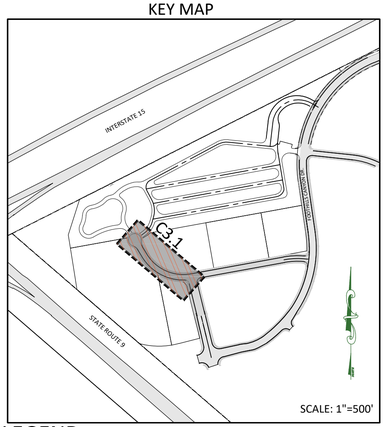
Drawing Sheet

C3.0

Sheet 18 of 36 Sheets

JAN 0 5 2022

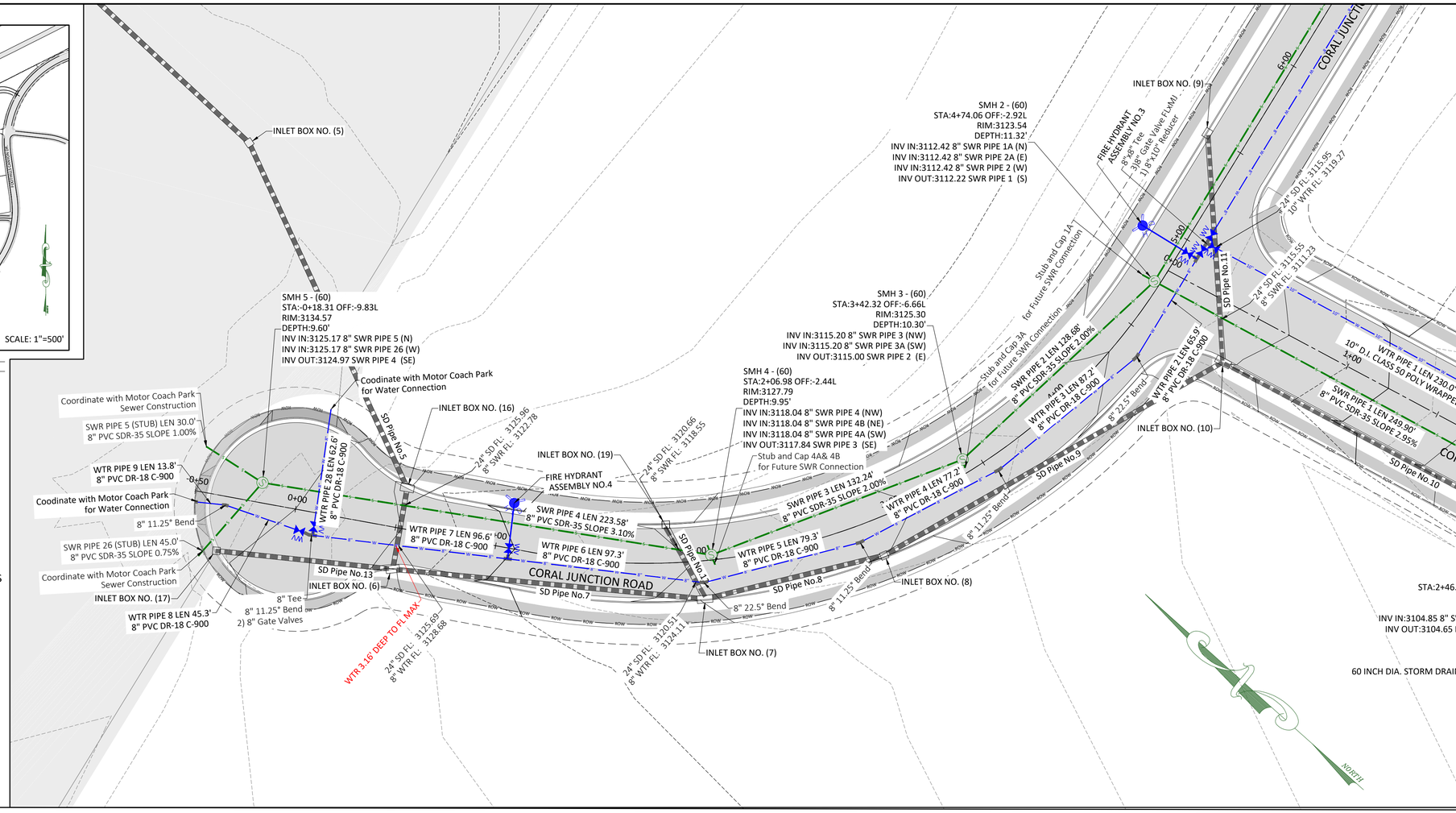
KEY MAP

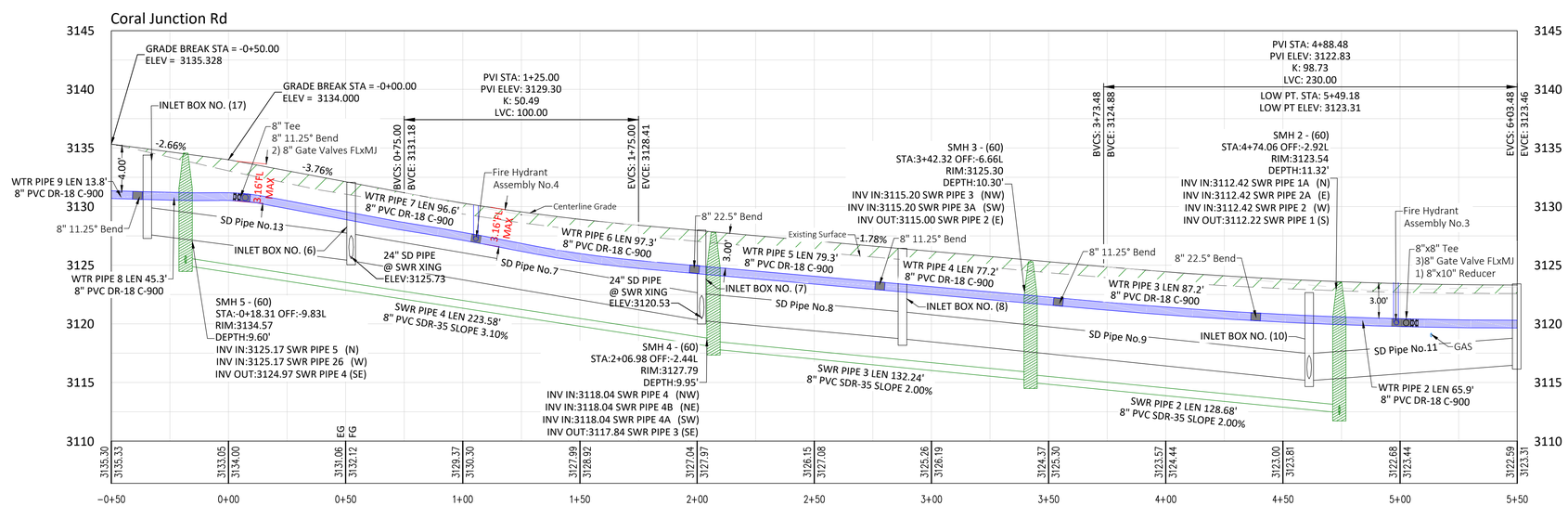


LEGEND

- PROPOSED STORM SEWER
- PROPOSED SEWER LINE
- PROPOSED WATER LINE
- EXISTING SEWER LINE
- EXISTING WATER LINE
- EXISTING POWER TRENCH

EXISTING	NEW	
		CULINARY HYDRANTS
		CULINARY VALVES
		WATER METER (SIZE INDICATED ON PLANS)
		SANITARY SEWER MANHOLES
		4" SEWER LATERAL WITH 2.00% MIN. SLOPE (UNLESS NOTED OTHERWISE)





DATE: 11-30-2021			
REVISIONS			
No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure SWR & WTR.dwg

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

CORAL JUNCTION
PUBLIC INFRASTRUCTURE
SWR & WTR
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB&M
CITY OF HURRICANE, WASH CO. UTAH

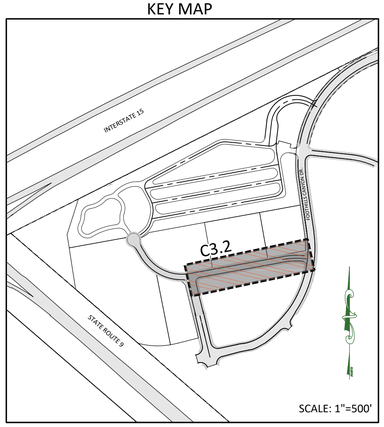
Drawn By: ALT	Scale: 1"=30'
Client No. 4499	Project No. 4499

Drawing Sheet
C3.1

Sheet 19 of 36 Sheets

JAN 0 5 2022

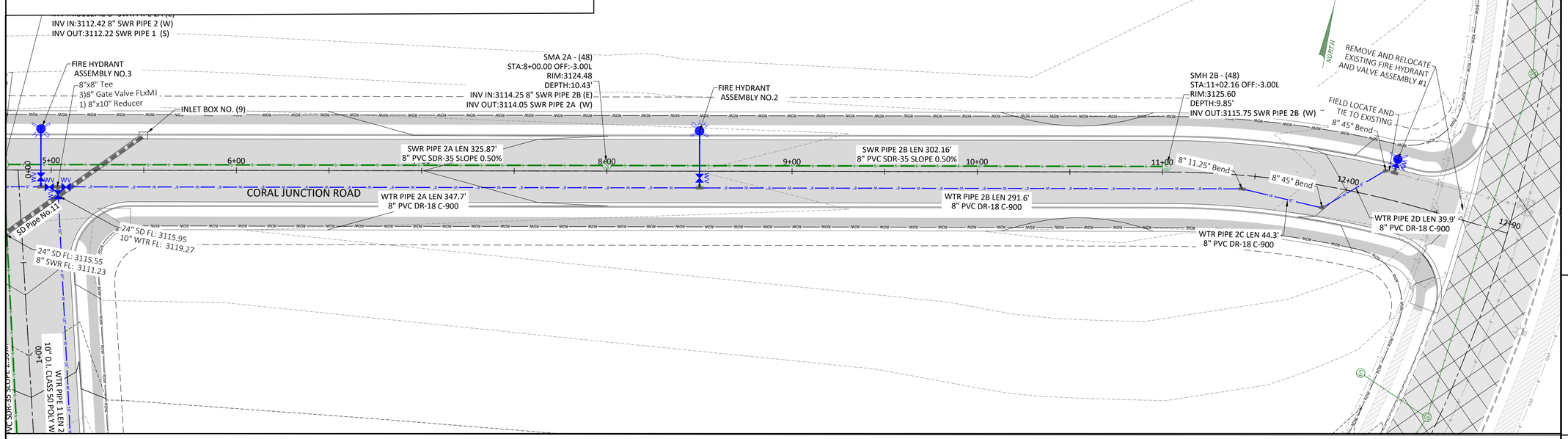
KEY MAP

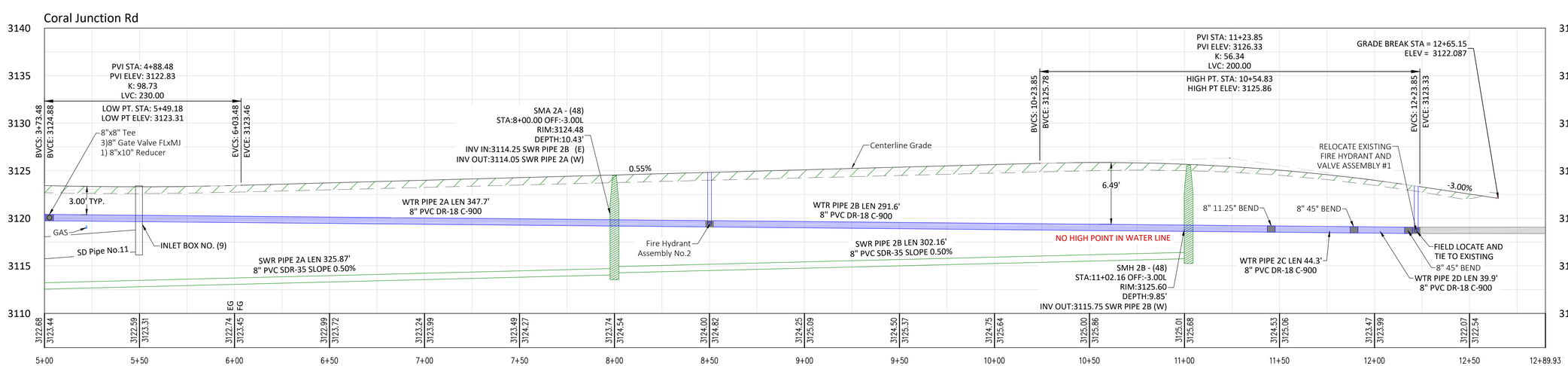


LEGEND

- PROPOSED STORM SEWER
- PROPOSED SEWER LINE
- PROPOSED WATER LINE
- EXISTING SEWER LINE
- EXISTING WATER LINE
- EXISTING POWER TRENCH

EXISTING	NEW	
		CULINARY HYDRANTS
		CULINARY VALVES
		WATER METER (SIZE INDICATED ON PLANS)
		SANITARY SEWER MANHOLES
		4" SEWER LATERAL WITH 2.00% MIN. SLOPE (UNLESS NOTED OTHERWISE)





DATE:	
	11-30-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure SWR & WTR.dwg

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

CORAL JUNCTION
PUBLIC INFRASTRUCTURE
SWR & WTR
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB&M
CITY OF HURRICANE, WASH CO. UTAH

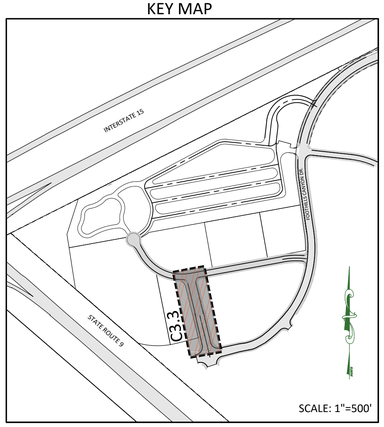
Drawn By: ALT	Scale: 1"=30'
Client No. 4499	Project No. 4499

Drawing Sheet
C3.2

Sheet 20 of 36 Sheets

JAN 0 5 2022

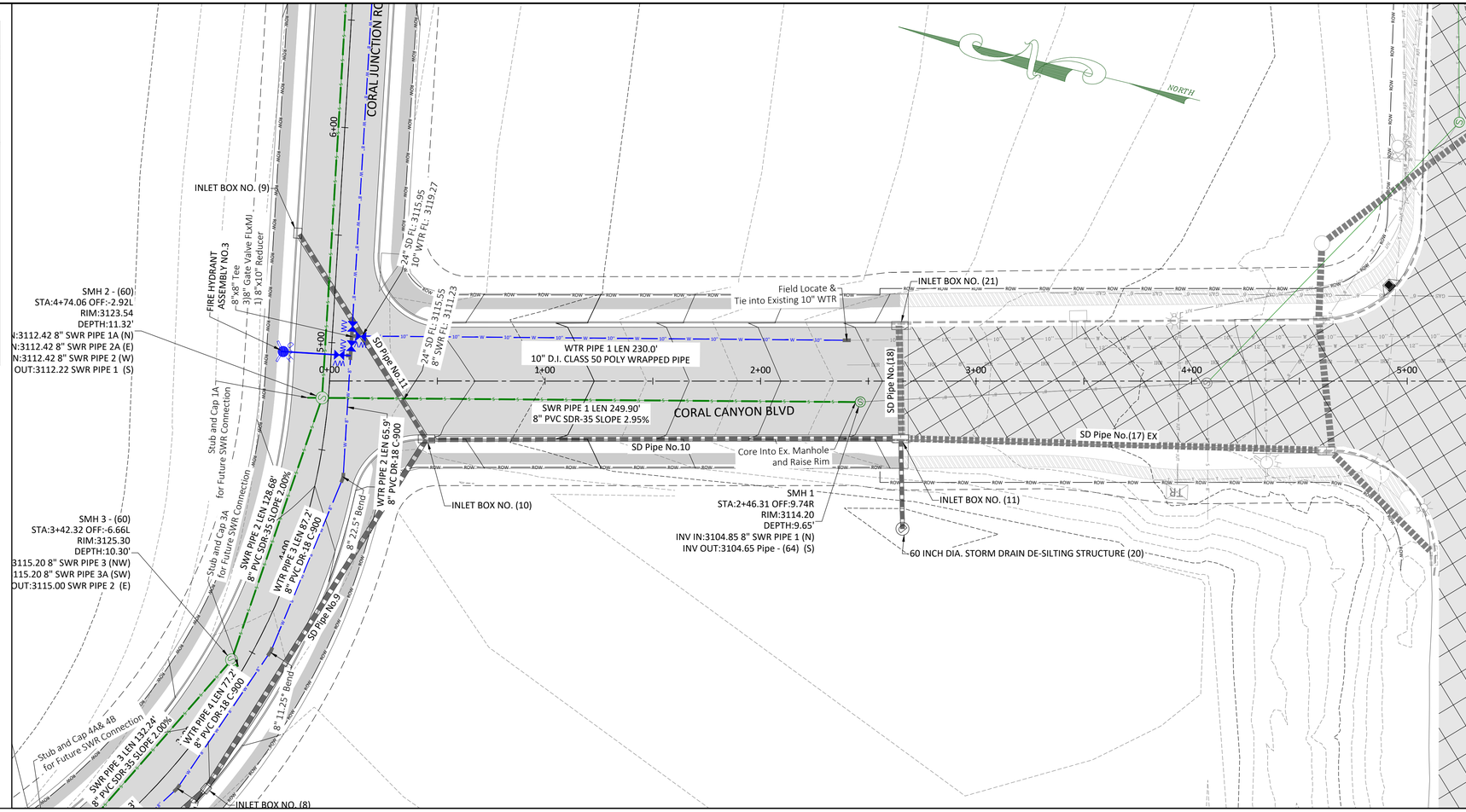
KEY MAP

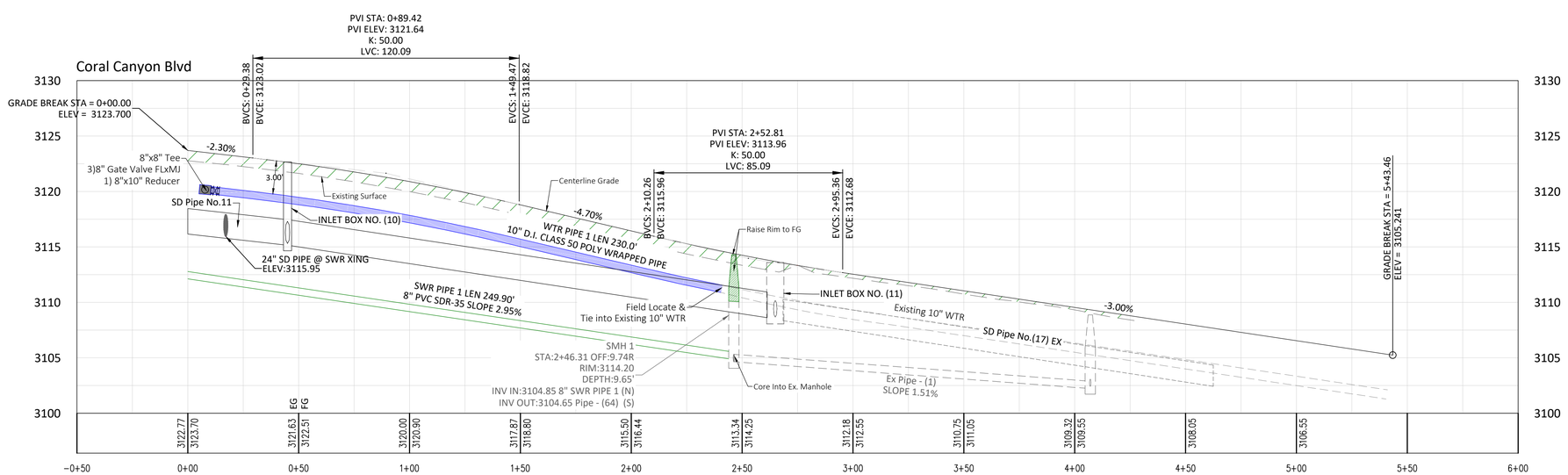


LEGEND

- PROPOSED STORM SEWER
- PROPOSED SEWER LINE
- PROPOSED WATER LINE
- EXISTING SEWER LINE
- EXISTING WATER LINE
- EXISTING POWER TRENCH

EXISTING	NEW	
		CULINARY HYDRANTS
		CULINARY VALVES
		WATER METER (SIZE INDICATED ON PLANS)
		SANITARY SEWER MANHOLES
		4" SEWER LATERAL WITH 2.00% MIN. SLOPE (UNLESS NOTED OTHERWISE)





DATE: 11-30-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure SWR & WTR.dwg

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

CORAL JUNCTION
PUBLIC INFRASTRUCTURE
SWR & WTR
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST, SLB&M
CITY OF HURRICANE, WASH CO. UTAH

Drawn By: ALT	Scale: 1"=30'
Client No. 4499	Project No. 4499

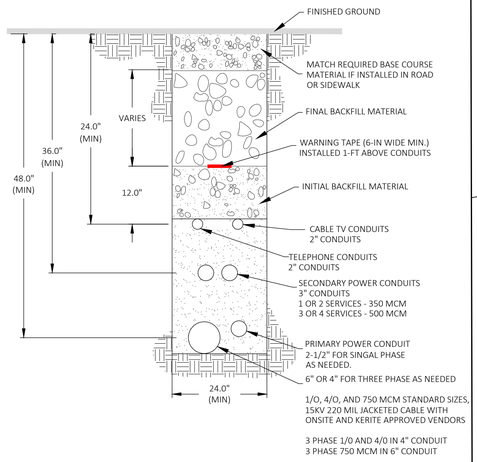
Drawing Sheet
C3.3

Sheet 21 of 36 Sheets

JAN 0 5 2022

JUT TRENCH - TYPICAL

SCALE: NONE



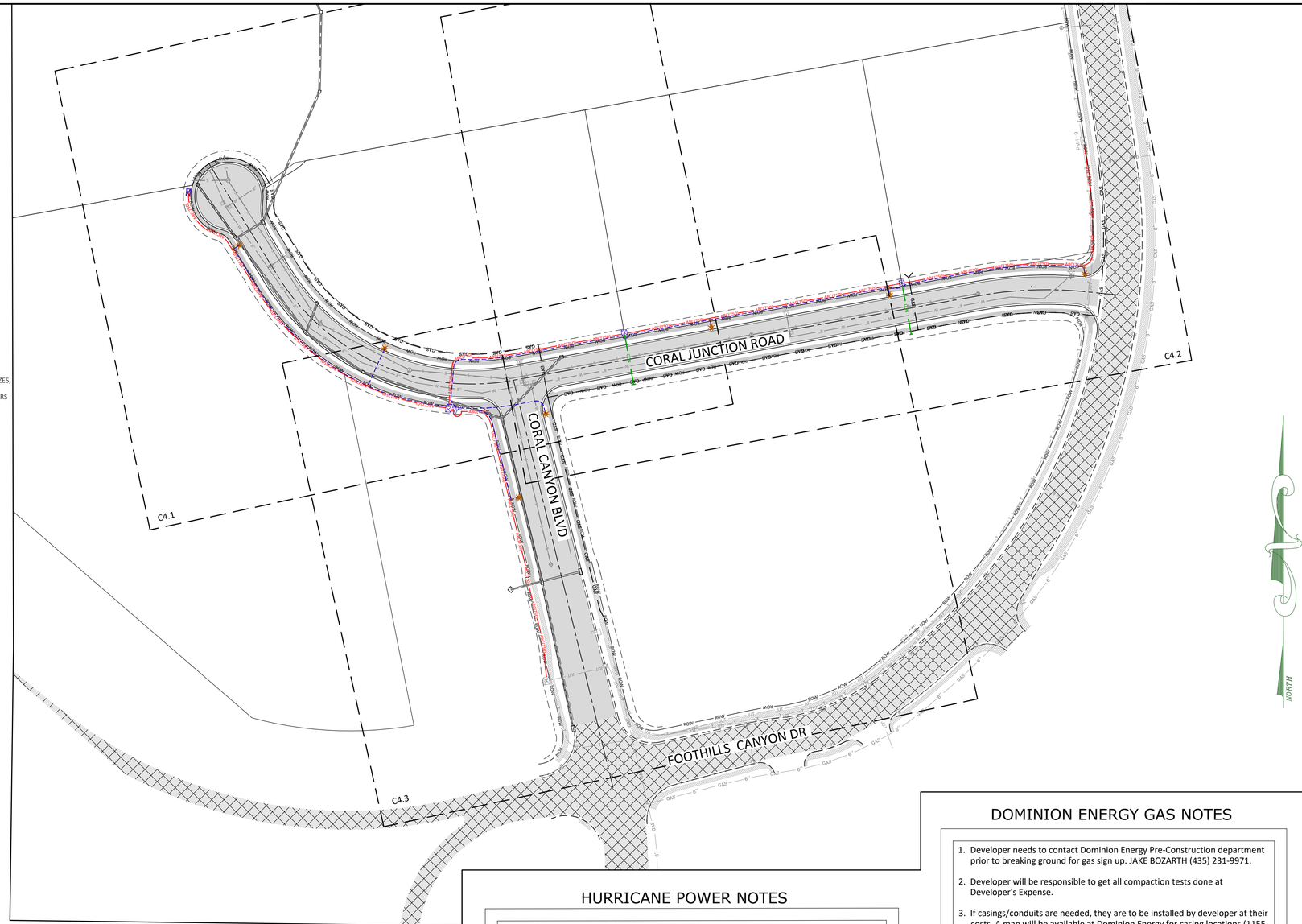
NOTES
1. THIS TRENCH IS TO BE LOCATED ON THE NORTH OR WEST SIDE.
2. GAS TRENCH ON THE EAST AND SOUTH SIDE
3. BURIAL DEPTH MEASURED TO CENT OF CONDUIT.

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 6.00-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.



NOTE

1. Coordinate internal private communication lines with JUT contractor.

CENTURYLINK INTERNET FIBER OPTIC NOTES

1. Developer to provide all trench, backfill, and road crossings. Centurylink sub contractor (Neils Fugal) will place conduit in trench. Call 435-632-6553 15 days prior to requiring conduit to schedule delivery.
2. Any breaks/blockages in conduit resulting from improper backfill or other construction/utility placement are the developer responsibility to repair and may result in delay of service.
3. Contract Centurylink Engineer at 385-479-7339 or Braxton.Peterson@centurylink.com with any questions or changes in JUC plans.
4. Any Centurylink facility relocations associated with project will be billable 100% to owner/developer and must be scheduled and must be scheduled a minimum of 45 days in advance.

TDS, CATV/BROADBAND NOTES

1. The developer will provide all required trench within the project. Any modifications along the periphery to feed this project will be billed to the developer.
2. TDS will provide conduits. Please contact David at 435-703-8932 at least 3 weeks prior to opening trench to schedule work.
3. Any questions regarding service should be directed to David Trauntvein with TDS at 435-703-8932 or at david.trauntvein@tdstelecom.com
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.

HURRICANE POWER NOTES

1. Developer is responsible for all costs, unless otherwise stated on print.
2. Only pre-approved contractors to work on and install any part of the electrical system
3. Pre-approved contractor to go over prints with Hurricane Power before beginning work. Contact Hurricane Power for an appointment. (435) 635-5536
4. Lines are for schematic purposes only. All equipment and placement to be to Hurricane Power Specs.
5. Easements to be signed over to Hurricane City. It is the developer's responsibility to make sure easements are obtained from any properties that may be affected.
6. No retaining walls to run into utility easements.
7. Any changes to the signed set of plans must be approved by Hurricane Power.
8. The entire JUC trench must be backfilled with 1" minus from the bottom to the top of the trench and around electrical boxes and equipment.
9. Developer will be billed a $99.00 fee per primary elbow termination.
10. Hurricane Power has changed our streetlights specification to LED's. See Hurricane Power for new specifications.
11. Impact fees to be collected by Building Department. Impact fees to be charged by service main breaker size. Contact Hurricane Power regarding questions on this.
12. Depending on transformer location transformer may need bollards to protect it from traffic. Contact Hurricane Power regarding questions on this.
13. Cement basements, three phase transformer pads and street light bases to be pre-cast only. To be supplied by approved vendors only.
14. Hurricane power will bill developer a $1,690.00 for 3-phase switch bay fee.

DOMINION ENERGY GAS NOTES

1. Developer needs to contact Dominion Energy Pre-Construction department prior to breaking ground for gas sign up. JAKE BOZARTH (435) 231-9971.
2. Developer will be responsible to get all compaction tests done at Developer's Expense.
3. If casings/conduits are needed, they are to be installed by developer at their costs. A map will be available at Dominion Energy for casing locations (1155 E. 350 N.-St. George)
4. All of the 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 could result in delay of service to this project.
9. Contact **JC HALL, (435) 210-0729,** at least two weeks prior to being ready, for scheduling of installation.

10.IMPORTANT NOTICE**Gas will be put on the schedule for installation when power trench is buried, streets are within 6 inches of subgrade, and the full width of the utility easement is graded to the top back of curb.**

11.High pressure gas note:

If high presssure gas lines are located in or near your digging area, before digging please call: **BRYAN WARD (435) 559-6547.**

POWER LEGEND:

- STORM DRAIN LINE
- SEWER LINE
- WATER LINE
- GAS LINE
- (1) INSTALL 2" PVC WITH 1/0 TRIPLEX
- (2) INSTALL 4" PVC WITH 4/0 15KV 3-PHASE
- (3) INSTALL 2 1/2" PVC WITH 1/0 15 KV
- (4) INSTALL 4" PVC FOR FUTURE
- (5) INSTALL STREETLIGHT BOX
- (6) INSTALL PMH-9 SWITCH
- (7) INSTALL STREET LIGHT
- (8) INSTALL 3-PHASE VAULT
- (9) INSTALL 1" PVC WITH #10 COPPER
- INSTALL TRANSFORMER - SIZE INDICATED
- 3-PHASE POWER LINE
- STREETLIGHT POWER LINE

Date: 11-30-2021

REVISIONS

No.	Date	by	Description
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GRAPHIC SCALE

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CORAL JUNCTION
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LOCATED IN SEC 5
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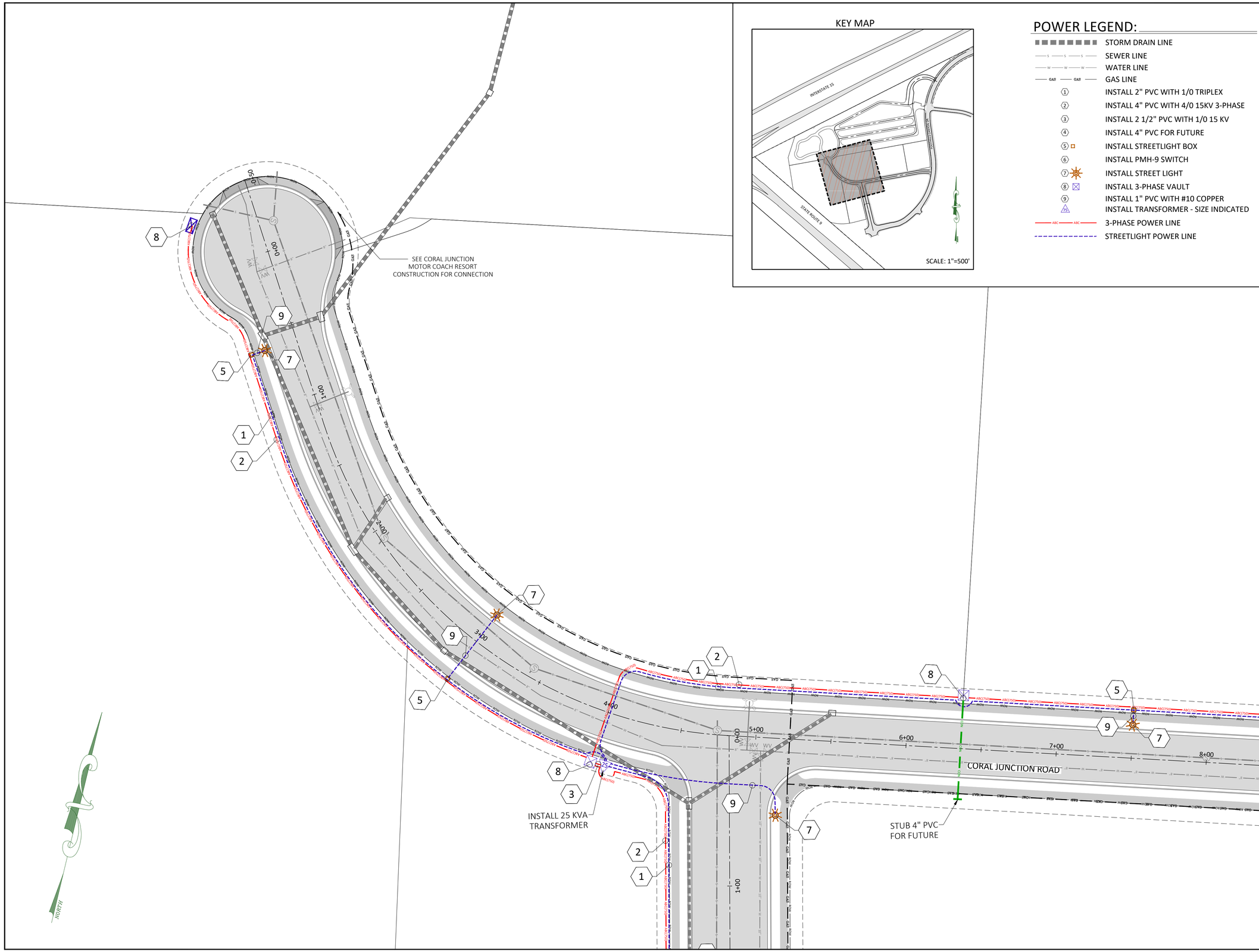
Drawn By: ARL	Scale: 1"=70'
Client No. 4499	Project No. 4499

Drawing Sheet
C4.0

Sheet 21 of 35 Sheets

JAN 0 5 2022



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LOCATED IN SEC 5
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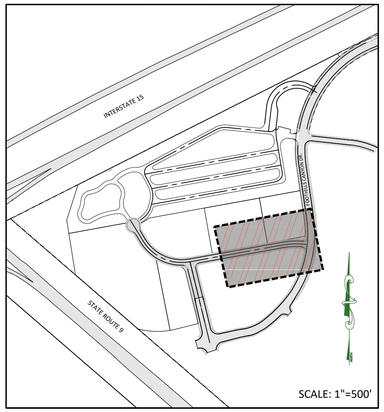
Client No. 4499	Project No. 4499

Drawing Sheet
C4.1

Sheet 22 of 35 Sheets

JAN 0 5 2022

KEY MAP



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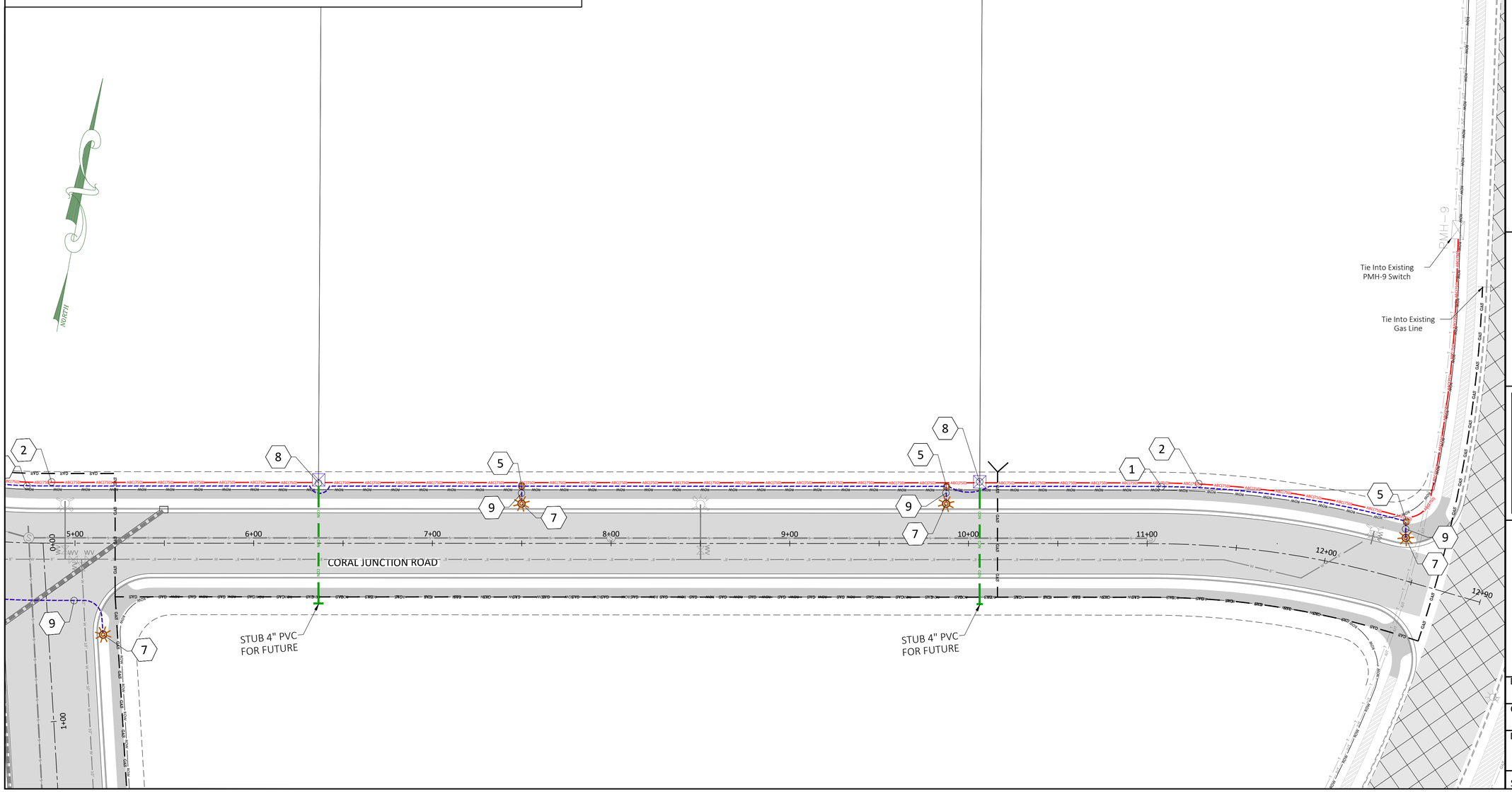

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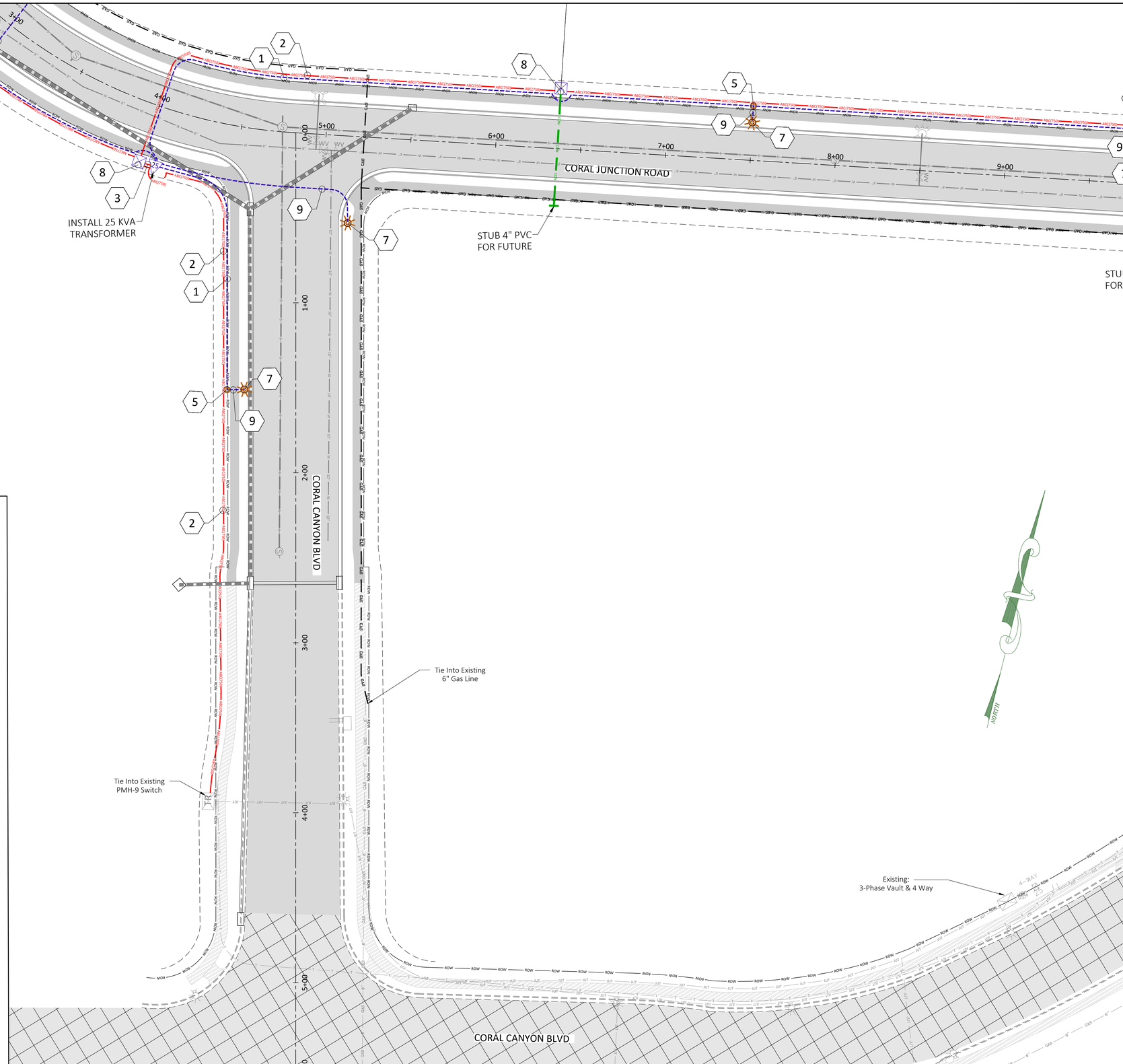
CORAL JUNCTION
PUBLIC INFRASTRUCTURE
POWER & GAS
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLB&M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: ARL	Scale: 1"=30'
Client No. 4499	Project No. 4499

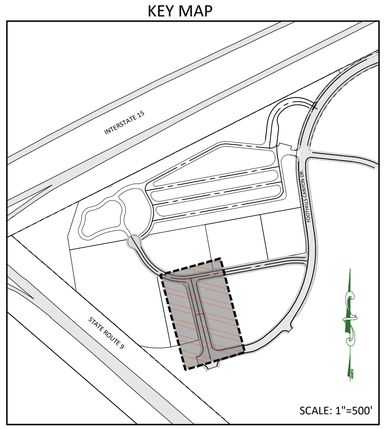
Drawing Sheet
C4.2

Sheet 23 of 35 Sheets

JAN 0 5 2022



KEY MAP



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CORAL JUNCTION
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POWER & GAS
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLB&M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

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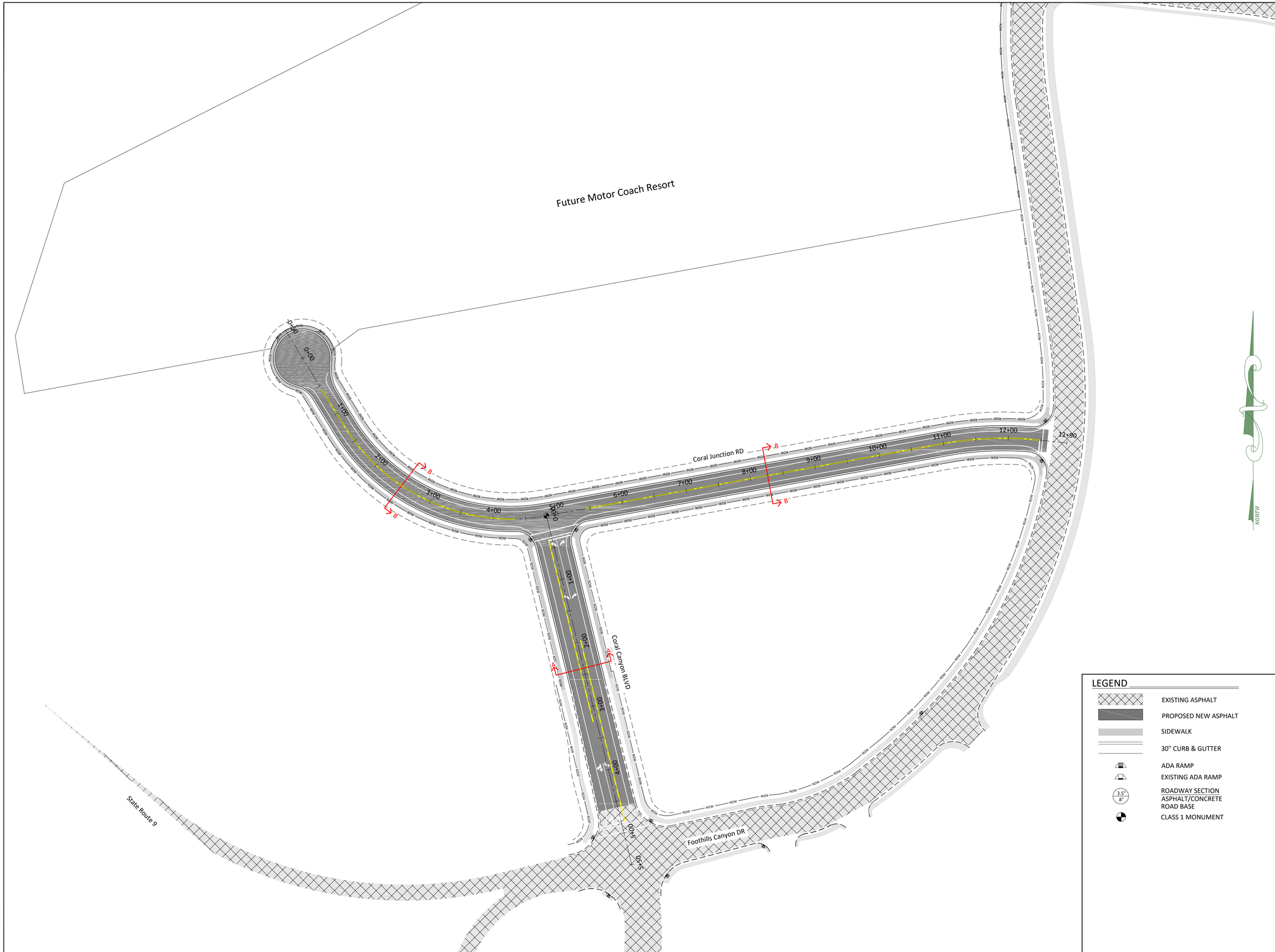
Drawing Sheet
C4.3

Sheet 24 of 35 Sheets

JAN 0 5 2022



LEGEND

- EXISTING ASPHALT
- PROPOSED NEW ASPHALT
- SIDEWALK
- 30" CURB & GUTTER
- ADA RAMP
- EXISTING ADA RAMP
- 3.5" / 8" — ROADWAY SECTION ASPHALT/CONCRETE ROAD BASE
- CLASS 1 MONUMENT

Date: 10-8-2021

REVISIONS

No.	Date	by	Description
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CORAL JUNCTION PUBLIC INFRASTRUCTURE PAVING & STRIPING OVERALL

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLB&M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: ARL	Scale: 1"=70'
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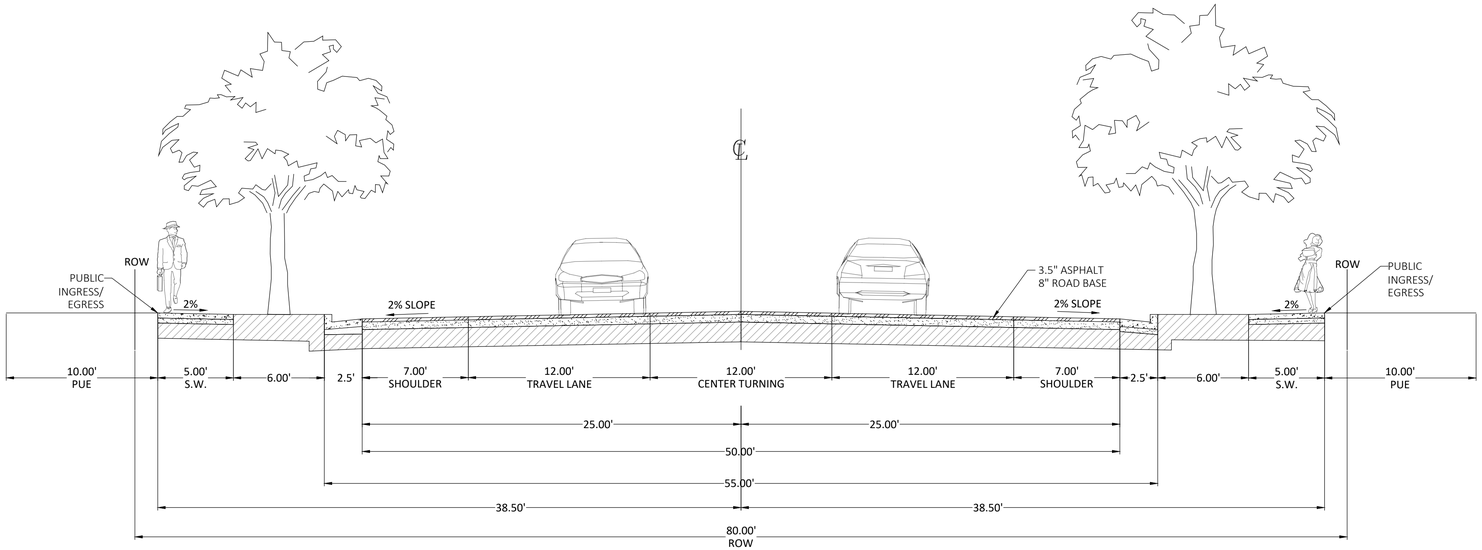
Drawing Sheet
C5.0

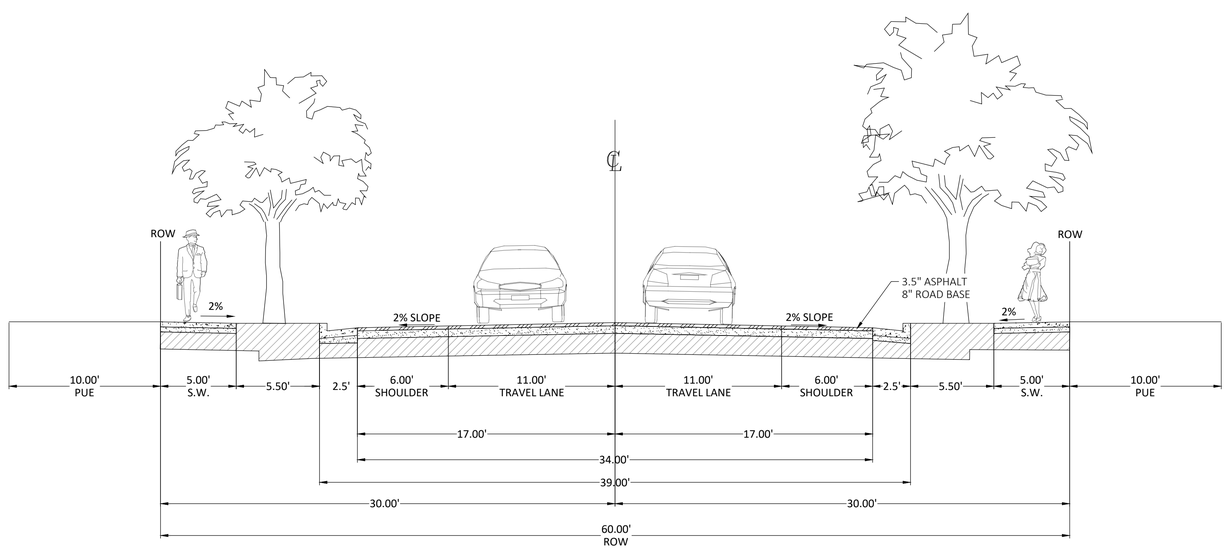
Sheet 26 of 36 Sheets

JAN 0 5 2022



SECTION A-A

CORAL CANYON BLVD
80' ROW



SECTION B-B

CORAL JUNCTION ROAD
60' ROW

Date: 10-8-2021			
REVISIONS			
No.	Date	by	Description
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CORAL JUNCTION
PUBLIC INFRASTRUCTURE
ROAD SECTIONS
FOR
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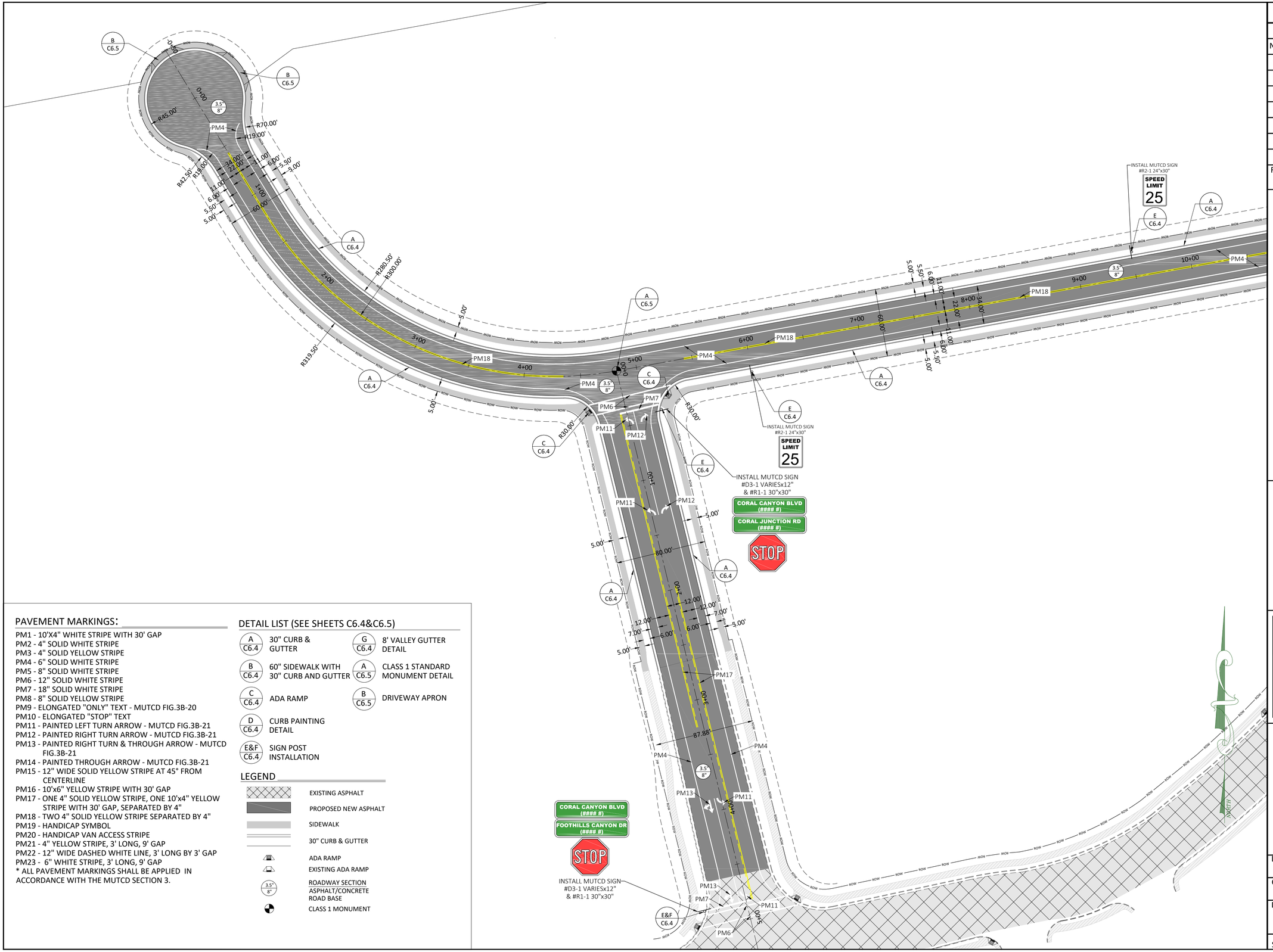

PAVEMENT MARKINGS:

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 - 8" SOLID YELLOW STRIPE
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
PM22 - 12" WIDE DASHED WHITE LINE, 3' LONG BY 3' GAP
PM23 - 6" WHITE STRIPE, 3' LONG, 9' GAP
* ALL PAVEMENT MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MUTCD SECTION 3.

DETAIL LIST (SEE SHEETS C6.4&C6.5)

- A C6.4 — 30" CURB & GUTTER
- B C6.4 — 60" SIDEWALK WITH 30" CURB AND GUTTER
- C C6.4 — ADA RAMP
- D C6.4 — CURB PAINTING DETAIL
- E&F C6.4 — SIGN POST INSTALLATION
- G C6.4 — 8' VALLEY GUTTER DETAIL
- A C6.5 — CLASS 1 STANDARD MONUMENT DETAIL
- B C6.5 — DRIVEWAY APRON

LEGEND

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- SIDEWALK
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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

CORAL JUNCTION PUBLIC INFRASTRUCTURE PAVING & STRIPING

FOR

PUBLIC INFRASTRUCTURE DIST.

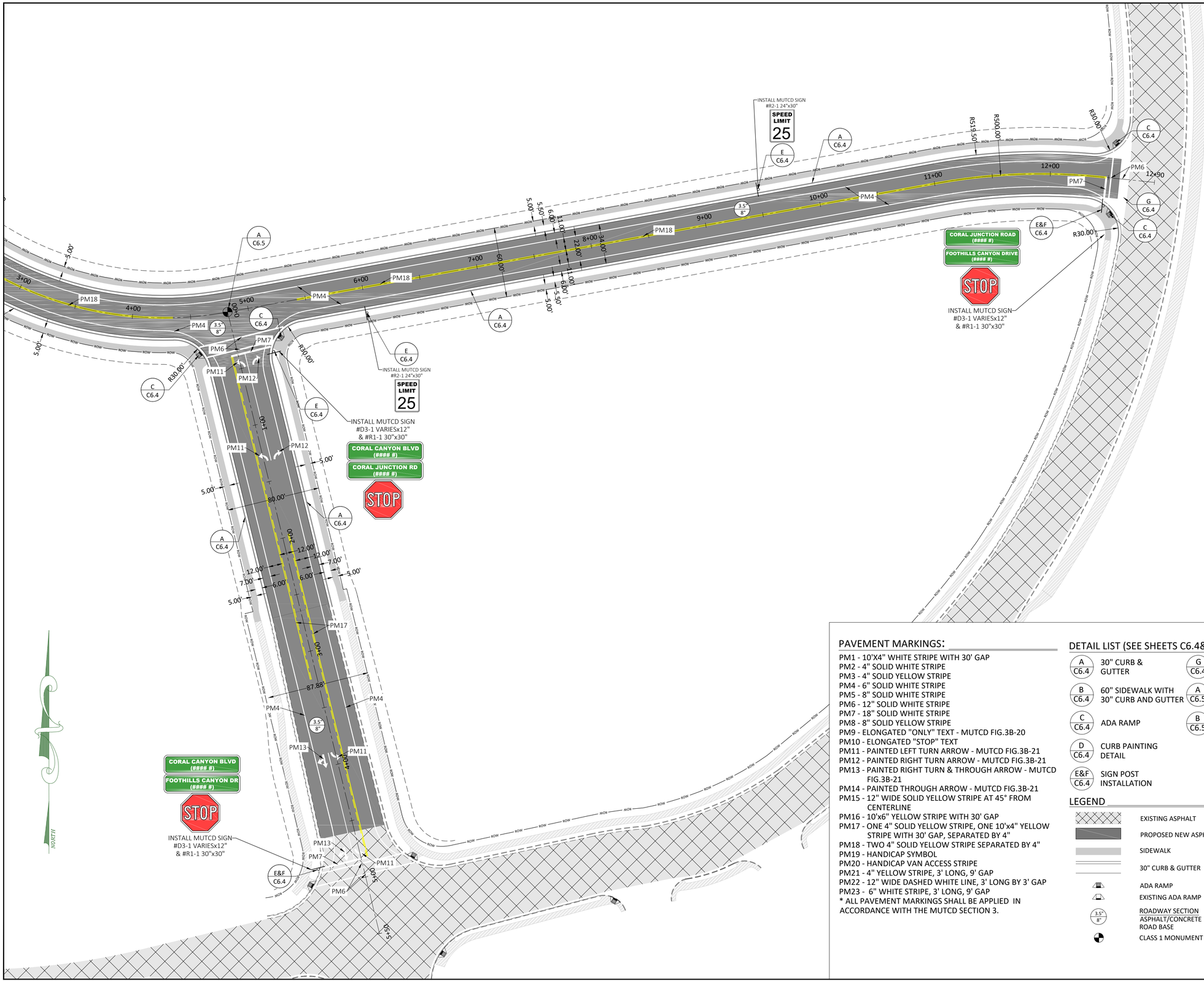
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLBM
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: ARL	Scale: 1"=40'
Client No. 4499	Project No. 4499

Drawing Sheet
C5.2

Sheet 28 of 36 Sheets

JAN 0 5 2022



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 - 8" SOLID YELLOW STRIPE
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
PM22 - 12" WIDE DASHED WHITE LINE, 3' LONG BY 3' GAP
PM23 - 6" WHITE STRIPE, 3' LONG, 9' GAP
* ALL PAVEMENT MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MUTCD SECTION 3.

DETAIL LIST (SEE SHEETS C6.4&C6.5)

- A C6.4 — 30" CURB & GUTTER
- B C6.4 — 60" SIDEWALK WITH 30" CURB AND GUTTER
- C C6.4 — ADA RAMP
- D C6.4 — CURB PAINTING DETAIL
- E&F C6.4 — SIGN POST INSTALLATION
- G C6.4 — 8' VALLEY GUTTER DETAIL
- A C6.5 — CLASS 1 STANDARD MONUMENT DETAIL
- B C6.5 — DRIVEWAY APRON

LEGEND

- EXISTING ASPHALT
- PROPOSED NEW ASPHALT
- SIDEWALK
- 30" CURB & GUTTER
- ADA RAMP
- EXISTING ADA RAMP
- 3.5" / 8" — ROADWAY SECTION ASPHALT/CONCRETE ROAD BASE
- CLASS 1 MONUMENT

Date: 10-8-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Paving.dwg

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.
If Printed 11x17 use Half Scale

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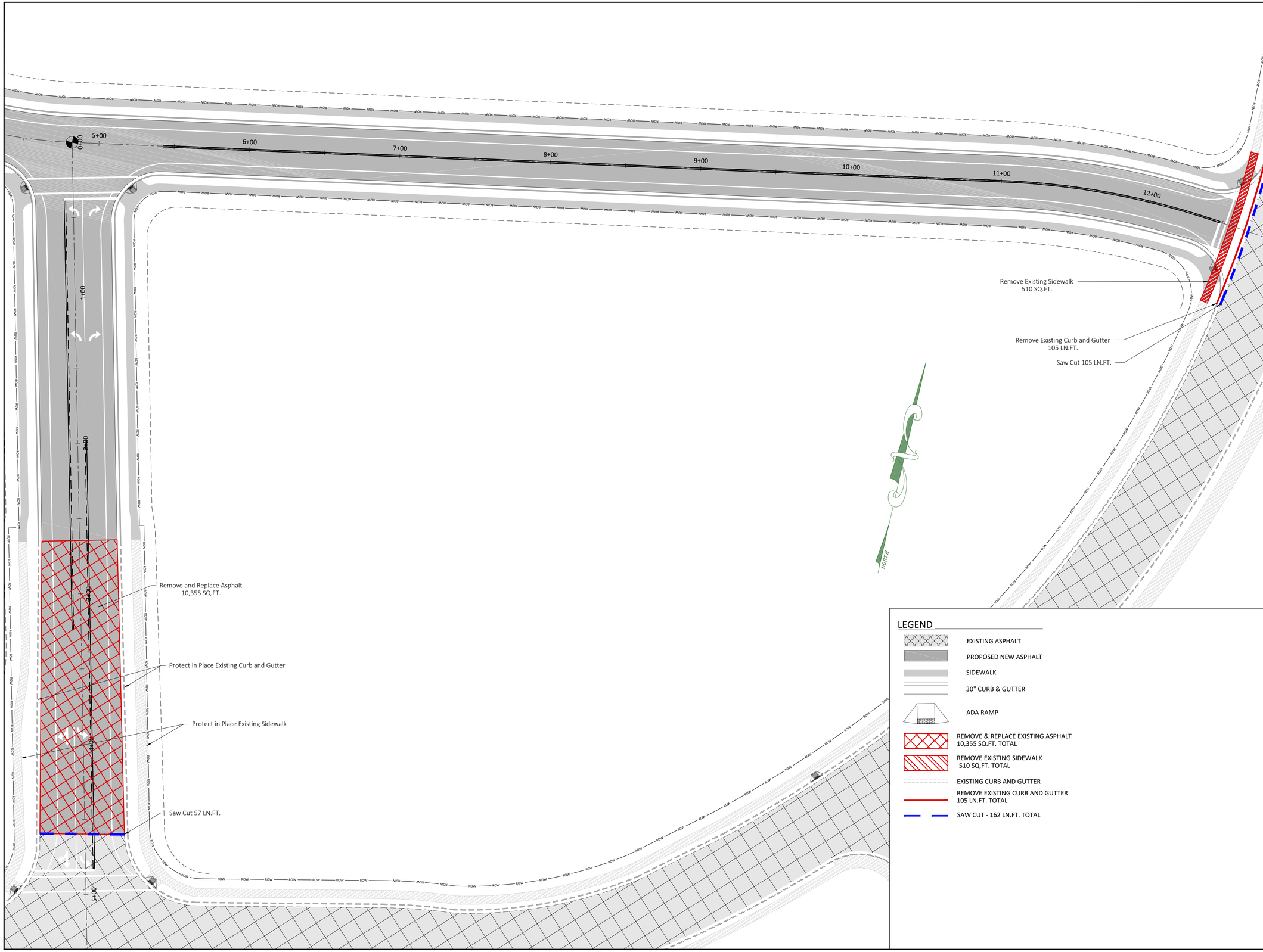
PUBLIC INFRASTRUCTURE
PAVING & STRIPING
FOR
PUBLIC INFRASTRUCTURE DIST.
LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLBM
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: ARL	Scale: 1"=40'
Client No. 4499	Project No. 4499

Drawing Sheet
C5.3

Sheet 29 of 36 Sheets

JAN 0 5 2022



LEGEND

- EXISTING ASPHALT
- PROPOSED NEW ASPHALT
- SIDEWALK
- 30" CURB & GUTTER
- ADA RAMP
- REMOVE & REPLACE EXISTING ASPHALT 10,355 SQ.FT. TOTAL
- REMOVE EXISTING SIDEWALK 510 SQ.FT. TOTAL
- EXISTING CURB AND GUTTER
- REMOVE EXISTING CURB AND GUTTER 105 LN.FT. TOTAL
- SAW CUT - 162 LN.FT. TOTAL

Date: 10-8-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Paving.dwg

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.
If Printed 11x17 use Half Scale

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CORAL JUNCTION PUBLIC INFRASTRUCTURE DEMOLITION SHEET

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLBM
CITY OF HURRICANE, WASHINGTON COUNTY, UT

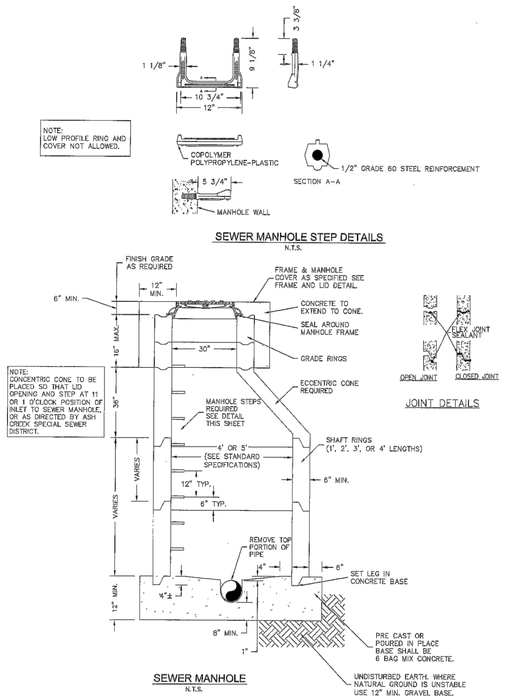
Drawn By: ARL	Scale: 1"=30'
Client No. 4499	Project No. 4499

Drawing Sheet
C5.4

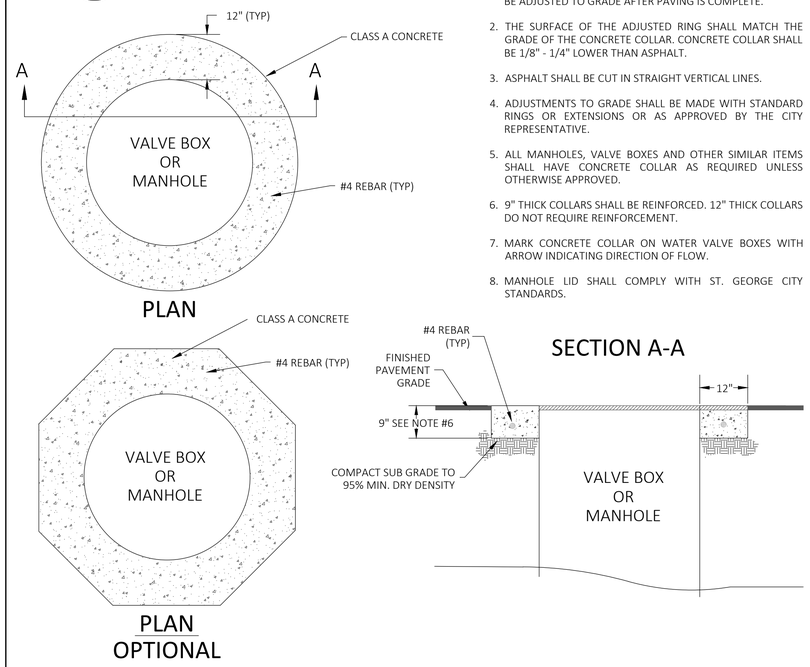
Sheet 30 of 36 Sheets

JAN 0 5 2023

A / C6.0 SEWER MANHOLE DETAIL
SCALE: NONE



B / C6.0 MANHOLE CONRETE COVER
SCALE: NONE



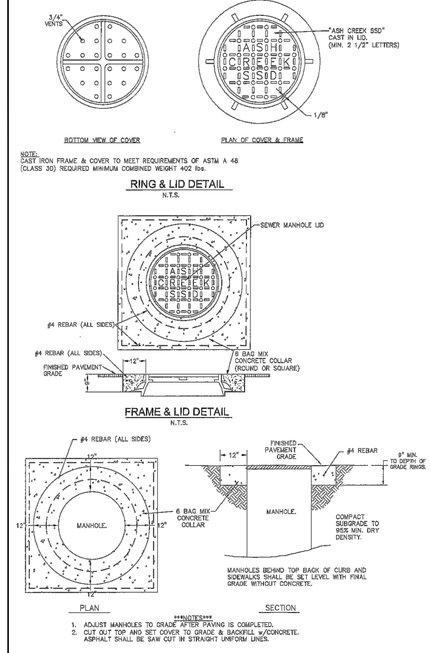
NOTES:

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.

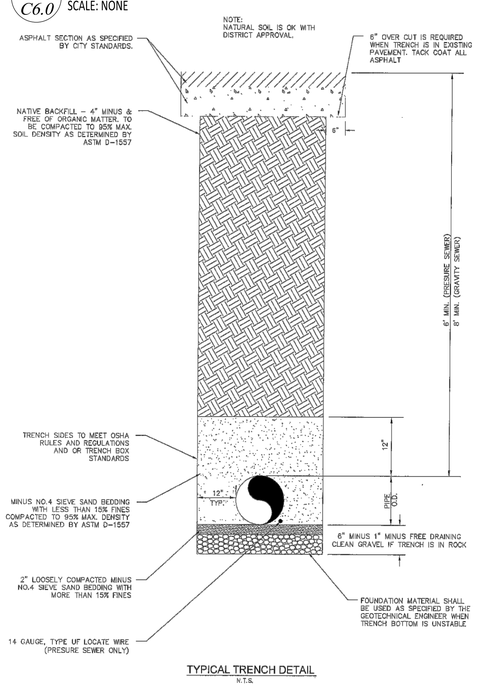
SEWER NOTES:

1. ALL SEWER PIPE ARE PVC 10" - 8" SDR-35 AND SIZE INDICATED ON THE PLAN, UNLESS OTHERWISE NOTED.
2. ALL SEWER FITTINGS SHALL BE APPROVED BY ASH-CREEK SEWER DISTRICT PRIOR TO PURCHASE AND INSTALLATION.
3. BACKFILL MATERIALS SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN DETAIL.
4. BEDDING MATERIALS SHALL BE PLACED AND COMPACTED IN HORIZONTAL LIFTS NOT TO EXCEED 6-IN IN COMPACTED THICKNESS. INITIAL BACKFILL MATERIALS SHALL BE PLACED CAREFULLY IN 8-IN NON-COMPACTED HORIZONTAL LIFTS AND COMPACTED TO A DEPTH OF 12-IN ABOVE THE TOP OF THE PIPE. FINAL BACKFILL MATERIALS SHALL BE PLACED IN 12-IN COMPACTED HORIZONTAL LIFTS UP TO THE EXISTING GROUND SURFACE.
5. MINIMUM COMPACTION SHALL BE 95%. WHEN APPROVED FLOWABLE FILL OR SLURRY IS USED, COMPACTION TESTING WILL NOT BE REQUIRED.
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 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.
8. FOLLOWING INSPECTION, ALL NEWLY INSTALLED SEWER LINES AND MANHOLES SHALL BE FLUSHED BY THE CONTRACTOR.
9. 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.
10. ASH CREEK MUST APPROVE ALL MEANS AND METHODS PRIOR TO BEGINNING CONSTRUCTION WORK.
11. CONCRETE COLLARS ARE REQUIRED ON ALL MANHOLES

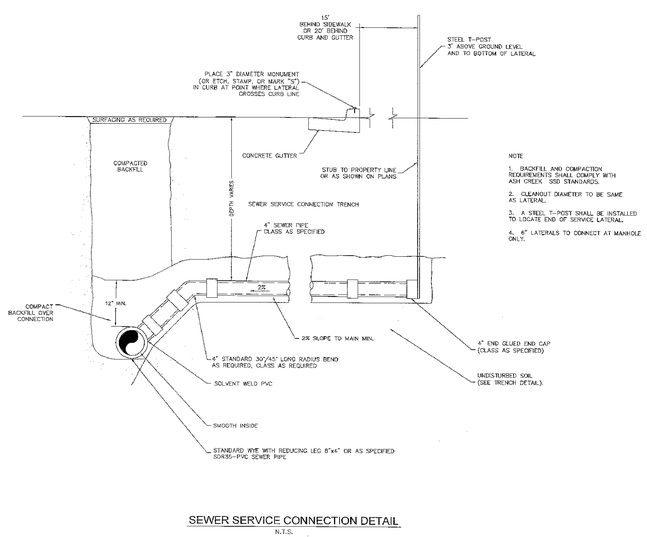
C / C6.0 MANHOLE RING AND LID DETAILS
SCALE: NONE



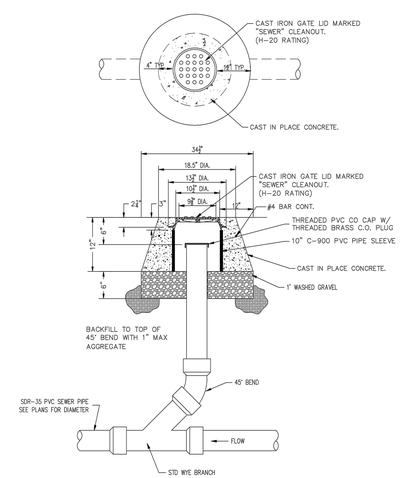
D / C6.0 SEWER TRENCH DETAIL
SCALE: NONE



E / C6.0 SERVICE LATERAL CONNECTION
SCALE: NONE



F / C6.0 SEWER CLEANOUT WITH LID
SCALE: NONE



Date:			
11-30-2021			
REVISIONS			
No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

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CORAL JUNCTION PUBLIC INFRASTRUCTURE DETAILS

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CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: ARL	Scale: NTS
Client No. 4499	Project No. 4499

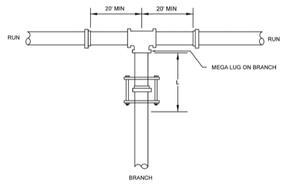
Drawing Sheet
C6.0

Sheet 31 of 36 Sheets

JAN 0 5 2022

A C6.1 MECHANICAL JOINT DETAIL

SCALE: NONE



BRANCH SIZE \ DIAMETER	4	6	8	10	12	14	16	18	20	24
4	*	*	*	*	*	*	*	*	*	*
6		*	*	*	*	*	*	*	*	*
8			*	*	*	*	*	*	*	*
10				10	*	*	*	*	*	*
12					28	12	*	*	*	*
14						44	30	17	3	*
16							61	48	35	10
18								77	65	41
20									93	70
24										124

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

RESTRAINED LENGTHS, "L" (IN FEET)

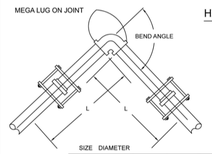
1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 20' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER CITY SPECIFICATION.
3. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

CITY OF HURRICANE ENGINEERING

STANDARD TEE FOR PVC RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO. WD 306 | 1 OF 1 | APPROVED | DATE: OCT. 2020 | BY: H.C.E.

REVISIONS: DATE | DESCRIPTION | BY

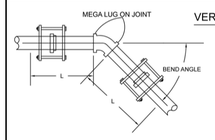


HORIZONTAL BEND

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	18	20
11.25	2	3	4	5	6	6	7	8	8
22.5	4	6	8	9	11	12	14	15	17
45	9	12	16	19	22	25	28	31	34
90	20	28	37	44	52	60	67	74	81

RESTRAINED LENGTHS, "L" (IN FEET)



VERTICAL DOWN BEND

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	18	20
11.25	6	8	11	13	15	18	20	22	24
22.5	12	17	22	26	31	35	39	44	48
45	24	34	45	53	63	72	81	90	99

RESTRAINED LENGTHS, "L" (IN FEET)

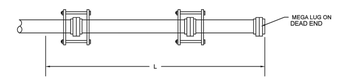
CITY OF HURRICANE ENGINEERING

STANDARD BENDS FOR PVC RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO. WD 307 | 1 OF 1 | APPROVED | DATE: OCT. 2020 | BY: H.C.E.

REVISIONS: DATE | DESCRIPTION | BY

B C6.1 WATER TRENCH DETAIL



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 THE CITY OF HURRICANE.

1. THREE (3) FEET MINIMUM DEPTH OF COVER.
2. A SAFTEY 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 TOP OF 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 AND POWER ENGINEER.

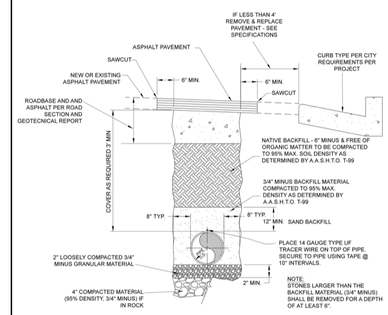
CITY OF HURRICANE ENGINEERING

STD. DEAD END/INLINE VALVE FOR PVC PIPE RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO. WD 308 | 1 OF 1 | APPROVED | DATE: 5/6/2021 | BY: H.C.E.

REVISIONS: DATE | DESCRIPTION | BY

C C6.1 TYP. FIRE HYDRANT



CULINARY WATER TRENCH

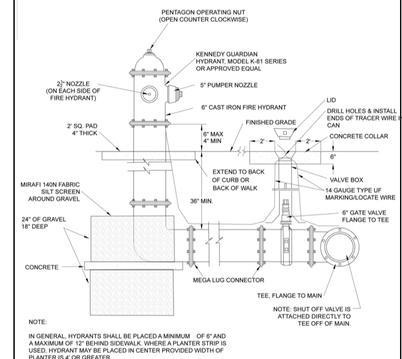
N.T.S.

CITY OF HURRICANE

CULINARY WATER TRENCH DETAIL

STANDARD DWG. NO. WD 300 | 1 OF 1 | APPROVED | DATE: 5/5/2020 | BY: H.C.E.

REVISIONS: DATE | DESCRIPTION | BY



NOTE:

IN GENERAL, HYDRANTS SHALL BE PLACED A MINIMUM OF 6" AND A MAXIMUM OF 12" BEHIND SIDEVALK, WHERE A PLANTER STRIP IS USED; HYDRANT MAY BE PLACED IN CENTER PROVIDED WIDTH OF PLANTER IS 4' OR GREATER

STANDARD FIRE HYDRANT

N.T.S.

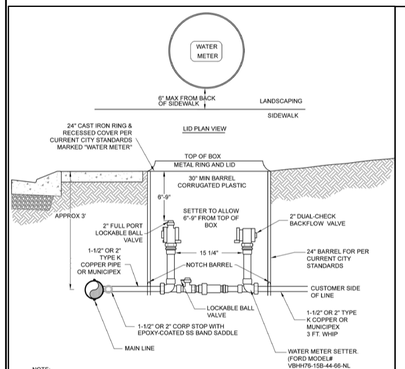
CITY OF HURRICANE

STANDARD FIRE HYDRANT DETAILS

STANDARD DWG. NO. WD 302 | 1 OF 1 | APPROVED | DATE: APRIL 2020 | BY: H.C.E.

REVISIONS: DATE | DESCRIPTION | BY

D C6.1 WATER METER DETAIL



NOTE:

2" DESIGN IS SHOWN. 1½" METER USES 1½" COMPONENTS.

1½ " OR 2" WATER SERVICE & METER

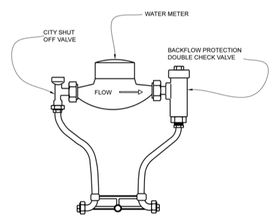
N.T.S.

CITY OF HURRICANE

1½ " OR 2" WATER SERVICE & METER

STANDARD DWG. NO. WD 303-4 | 4 OF 4 | APPROVED | DATE: 5/5/2020 | BY: H.C.E.

REVISIONS: DATE | DESCRIPTION | BY



APPROVED METER SETTERS	
SIZE	FORD MODEL NUMBER
¾"	VBHC72-15W-11-33-NL
1"	VBHC72-15W-11-44-NL
1½"	VBHH76-15B-44-66-NL
2"	VBHH77-15B-44-77-NL

WATER METER SETTER

N.T.S.

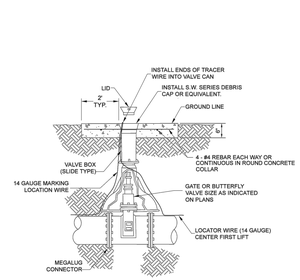
CITY OF HURRICANE

WATER METER SETTER DETAILS

STANDARD DWG. NO. WD 303-1 | 1 OF 4 | APPROVED | DATE: 5/5/2020 | BY: H.C.E.

REVISIONS: DATE | DESCRIPTION | BY

E C6.1 TYP. VALVE BOX INSTALLATION



NOTES:

1- PAD SHALL EXTEND 2'-0" BEYOND EACH VALVE BOX.

2- MARK CONCRETE COLLAR ON WATER VALVE BOXES WITH ARROW INDICATING DIRECTION OF FLOW & SIZE OF LINE.

CITY OF HURRICANE

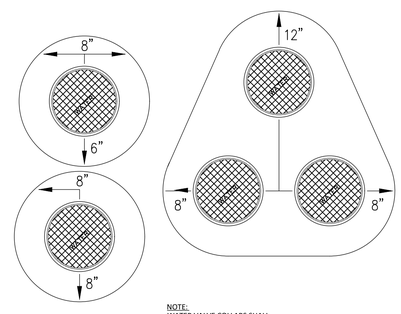
MAIN LINE VALVE

STANDARD DWG. NO. WD 318 | 1 OF 1 | APPROVED | DATE: 5/6/2021 | BY: H.C.E.

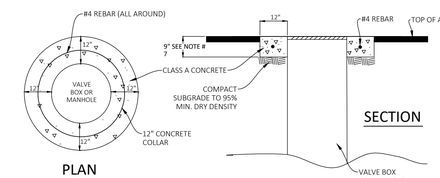
REVISIONS: DATE | DESCRIPTION | BY

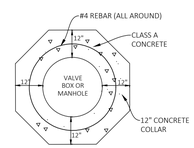
F C6.1 WATER VALVE CONC. COLLAR

SCALE: NONE



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





PLAN
OPTIONAL

NOTES:

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

WATER NOTES:

1. ALL 8" AND BELOW DIAMETER WATER PIPE SHALL BE PVC C-900 CLASS 200. ALL 10" AND ABOVE DIAMETER WATER PIPE SHALL BE CLASS D50 POLY-WRAPPED DUCTILE IRON PIPE.
2. ALL WATER LINES SHALL MAINTAIN 1 FOOT MINIMUM SEPARATION BETWEEN ADJACENT WATER PIPES.
3. ALL WATER FITTINGS SHALL BE APPROVED BY CITY OF HURRICANE PUBLIC WORKS PRIOR TO PURCHASE AND INSTALLATION.
4. ALL WATERLINE WORKS MUST BE INSTALLED BY A CONTRACTOR THAT HAS BEEN PRE-QUALIFIED BY THE CITY OF HURRICANE WATER DEPARTMENT.
5. ALL CONSTRUCTION SHALL CONFORM TO THE "CITY OF HURRICANE STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION", "THE INTERNATIONAL PLUMBING CODE", AND THE "INTERNATIONAL BUILDING CODE" LATEST EDITION AS ADMINISTERED BY THE CITY OF HURRICANE.
6. CONTRACTOR SHALL POTHOLE ALL PIPELINES AND VERIFY LOCATION AND DEPTH PRIOR TO PROCEEDING WITH ANY BUILDING OR PIPELINE CONSTRUCTION.
7. THE POTABLE WATER SUPPLY TO LAWN IRRIGATION SYSTEMS SHALL BE PROTECTED AGAINST BACKFLOW PER THE INTERNATIONAL PLUMBING CODE (IPC) SECTION G08. I G.5 AND FOR FIRE SPRINKLER SYSTEMS PER (IPC) G08. I G.4.
8. ALL BACKFLOW ASSEMBLY INSTALLATION AND TEST REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF HURRICANE.
9. 12 GAUGE TRACER WIRE SHALL BE TAPED TO THE UNDERSIDE ALL WATER LINES FOR LOCATING PURPOSES. THE WIRE SHALL ALSO BE BROUGHT UP AT EACH VALVE BOX AND HYDRANT.
10. 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.
11. ASPHALT REPLACED OVER THE PIPE TRENCHING IS TO MATCH EXISTING PAVEMENT DEPTHS WITH A 6" OVER CUT FROM EDGE OF THE TRENCH LINE ON EACH SIDE OF THE TRENCH.
12. CONTRACTORS SHALL CUT OFF AND CAP (BACK AT THE WATER MAIN), ALL EXISTING SERVICE LINES OR UN-USED STUB LINES THAT WILL BE ABANDONED.
13. ANY CHANGES MADE IN THE FIELD MUST BE FIRST APPROVED AND DOCUMENTED BY THE HURRICANE CITY WATER SERVICES ENGINEER & THE DESIGN ENGINEER.
14. BACKFILL MATERIALS SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN DETAIL.
15. BEDDING MATERIALS SHALL BE PLACED AND COMPACTED IN HORIZONTAL LIFTS NOT TO EXCEED 6-IN IN COMPACTED THICKNESS. INITIAL BACKFILL MATERIALS SHALL BE PLACED CAREFULLY IN 8-IN NON-COMPACTED HORIZONTAL LIFTS AND COMPACTED TO A DEPTH OF 12-IN ABOVE THE TOP OF THE PIPE. FINAL BACKFILL MATERIALS SHALL BE PLACED IN 12-IN COMPACTED HORIZONTAL LIFTS UP TO THE EXISTING GROUND SURFACE.
16. PRIOR TO AND DURING COMPACTION OPERATIONS, ALL BACKFILL MATERIAL SHALL HAVE THE REQUIRED MOISTURE CONTENT UNIFORM THROUGHOUT EACH LAYER.
17. THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING PRESSURE TESTING, FOR FLUSHING AND DISINFECTING THE ENTIRE WATER DISTRIBUTION SYSTEM AS PER HURRICANE CITY SPECIFICATIONS.
18. ALL DUCTILE IRON PIPE TO BE WRAPPED WITH POLY SOCK.

Date: 11-30-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Details.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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WASHINGTON, UT 84780
435-673-8060

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

CORAL JUNCTION PUBLIC INFRASTRUCTURE DETAILS

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLB&M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

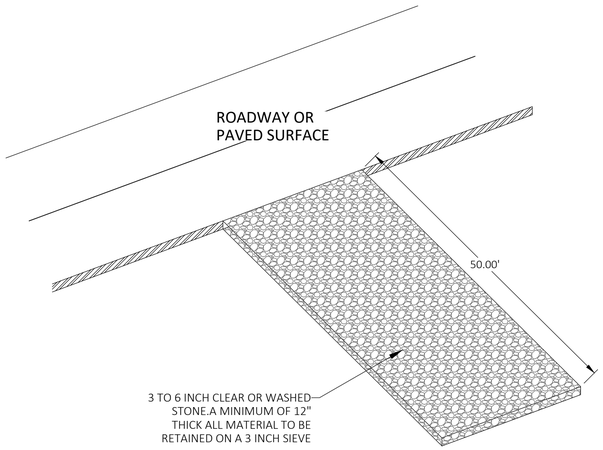
Drawn By: ARL	Scale: NTS
Client No. 4499	Project No. 4499

Drawing Sheet C6.1

Sheet 32 of 36 Sheets

JAN 0 5 2022

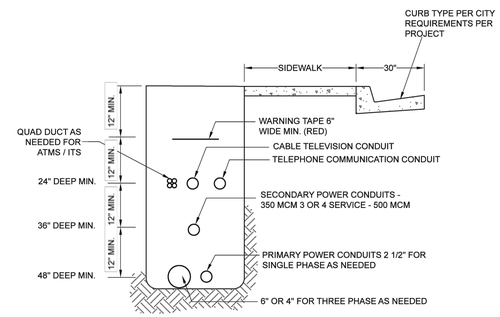
A / C6.2 TRACKING PAD DETAIL
SCALE: NONE



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 / C6.2 JUT TRENCH - TYPICAL
SCALE: NONE



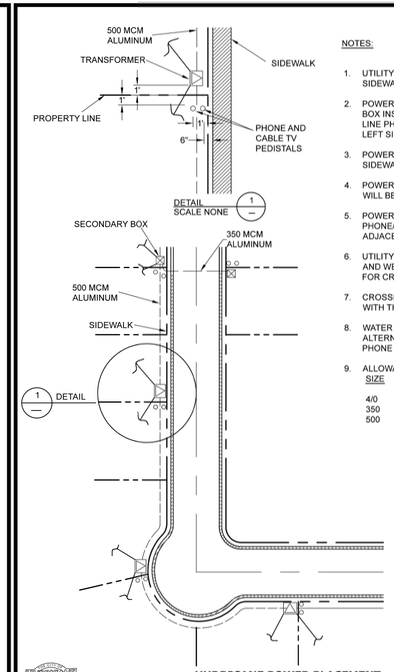
NOTE:

*BURIAL DEPTH MEASURED TO CENTER OF CONDUIT

CITY OF HURRICANE ENGINEERING

REVISIONS			JOINT UTILITIES TRENCH DETAIL	STANDARD DWG. NO.	
DATE	DESCRIPTION	BY		TD 101	1 OF 1
				APPROVED:	
				DATE: APRIL 2020 BY:	H.C.E.

C / C6.2 POWER DETAIL
SCALE: NONE



NOTES:

1. UTILITY TRENCH WILL BE 1'-0" BEHIND SIDEWALK.
2. POWER TRANSFORMER OR SECONDARY BOX INSTALL ON RIGHT SIDE OF PROPERTY LINE PHONE & CABLE TV PEDISTALS ON THE LEFT SIDE OF PROPERTY LINE
3. POWER BOXES WILL BE WITHIN 6" OF SIDEWALK.
4. POWER BOXES AND PHONE/CABLE TV BOX WILL BE WITHIIN 1'-0' OF PROPERTY LINE.
5. POWER BOXES WILL BE ON ONE PROPERTY. PHONE/CABLE TV WILL BE PLACED ON ADJACENT PROPERTY.
6. UTILITY TRENCH WILL BE ON THE NORTH AND WEST SIDE OF THE STREET EXCEPT FOR CROSSINGS.
7. CROSSINGS SHALL RUN AT A 90° ANGLE WITH THE ROAD.
8. WATER METERS WILL BE LOCATED ON ALTERNATE LOT LINES FROM POWER, PHONE AND CABLE TV WHERE POSSIBLE.
9. ALLOWABLE WIRE SIZE AND CONNECTION:

SIZE	CONNECTIONS (MAX)
4/0	1
350	2
500	4

HURRICANE POWER PLACEMENT
N.T.S.

CITY OF HURRICANE ENGINEERING

REVISIONS			HURRICANE POWER DETAIL	STANDARD DWG. NO.	
DATE	DESCRIPTION	BY		POW 100	1 OF 1
				APPROVED:	
				DATE: APRIL 2020 BY:	H.C.E.

Date: 11-30-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

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NORTH DAKOTA
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CORAL JUNCTION PUBLIC INFRASTRUCTURE DETAILS

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLB&M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

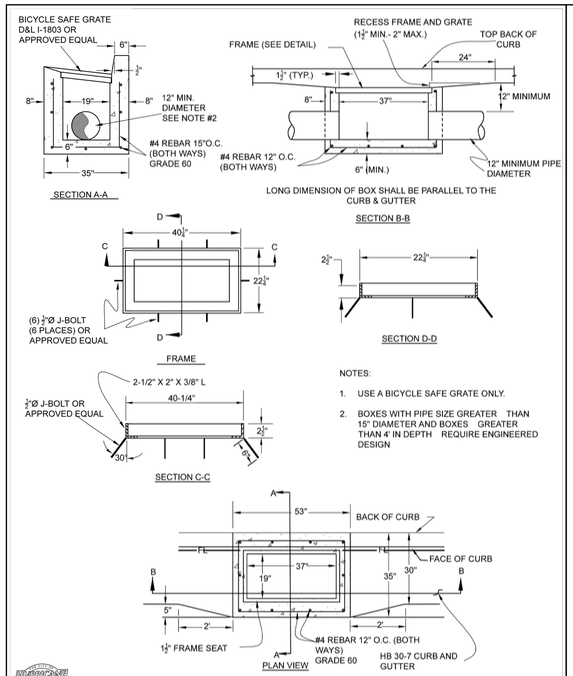
Drawn By: ARL	Scale: NTS
Client No. 4499	Project No. 4499

Drawing Sheet
C6.2

Sheet 33 of 36 Sheets

JAN 0 5 2022

A / C6.3 SINGLE INLET CATCH BASIN
SCALE: NONE

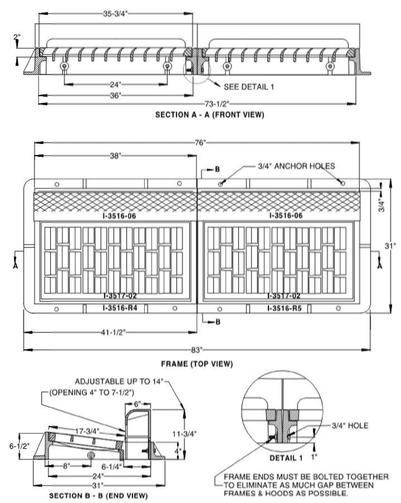


NOTES:
1. USE A BICYCLE SAFE GRATE ONLY.
2. BOXES WITH PIPE SIZE GREATER THAN 15" DIAMETER AND BOXES GREATER THAN 4' IN DEPTH REQUIRE ENGINEERED DESIGN

STANDARD CATCH BASIN
N.T.S.

CITY OF HURRICANE ENGINEERING			
REVISIONS DATE / DESCRIPTION / BY	STANDARD CATCH BASIN BOX AND FRAME	STANDARD DWG. NO. SD 100	1 OF 1
		APPROVED:	
		DATE: APRIL 2020	BY: H.C.E.

B / C6.3 DOUBLE INLET FRAME
SCALE: NONE



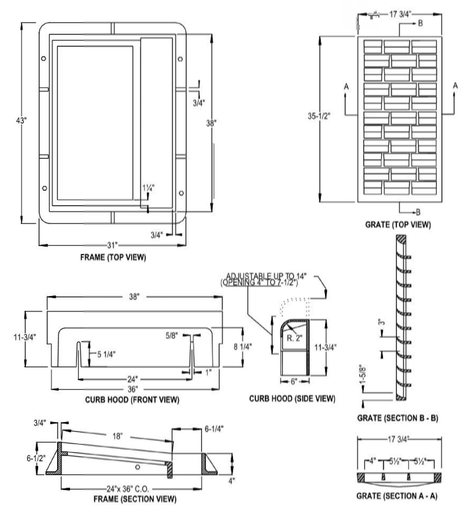
PARTS SHOWN ARE AS FOLLOWS...
2 each I-3517-02 TYPE "L" GRATE
1 each I-3516-R4 LEFT FRAME
1 each I-3516-R5 RIGHT FRAME
2 each I-3516-06 REINFORCED CURB HOOD

IF REQUESTED, FRAMES MAY BE CUT TO MAKE MULTIPLE UNITS. (TRIPLE, QUAD, ETC...)

DOUBLE CURB INLET FRAMES, "L" GRATES, & CURB HOODS
N.T.S.

CITY OF HURRICANE ENGINEERING			
REVISIONS DATE / DESCRIPTION / BY	DOUBLE CURB INLET (BICYCLE SAFE)	STANDARD DWG. NO. SD 103	3 OF 3
		APPROVED:	
		DATE: APRIL 2020	BY: H.C.E.

C / C6.3 SINGLE INLET FRAME
SCALE: NONE



PARTS SHOWN ARE AS FOLLOWS...
I-3517-02 TYPE "L" GRATE
I-3516-R2 FRAME
I-3516-06 REINFORCED CURB HOOD

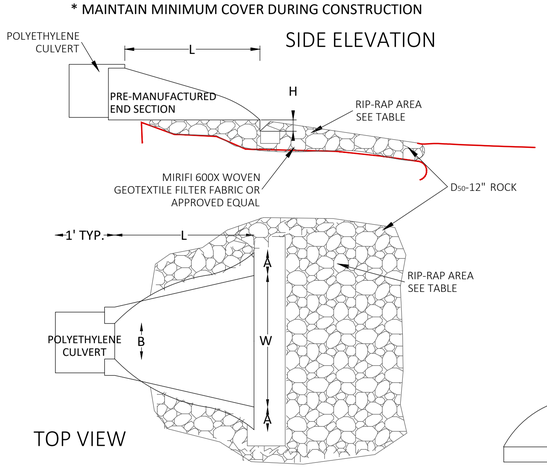
IF REQUESTED, FRAMES MAY BE CUT TO MAKE MULTIPLE UNITS. (DOUBLE, TRIPLE, ETC...)

SINGLE CURB INLET FRAMES, "L" GRATES, & CURB HOODS
N.T.S.

CITY OF HURRICANE ENGINEERING			
REVISIONS DATE / DESCRIPTION / BY	SINGLE CURB INLET (BICYCLE SAFE)	STANDARD DWG. NO. SD 102	2 OF 3
		APPROVED:	
		DATE: APRIL 2020	BY: H.C.E.

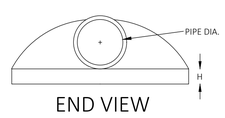
D / C6.3 OUTLET STRUCTURE WITH RIP-RAP
SCALE: NONE

* MAINTAIN MINIMUM COVER DURING CONSTRUCTION



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

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



FILL HEIGHT TABLE

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

Date: 11-30-2021

REVISIONS

No.	Date	by	Description
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1	11-30-21	CJA	CITY REVISIONS

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CORAL JUNCTION PUBLIC INFRASTRUCTURE DETAILS

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLB&M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

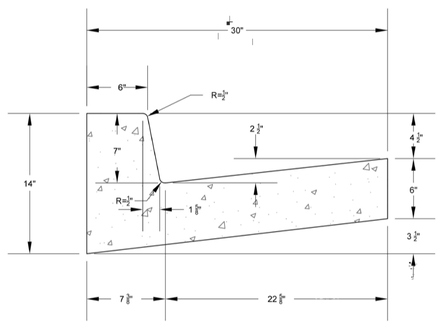
Drawn By: ARL	Scale: NTS
Client No. 4499	Project No. 4499

Drawing Sheet
C6.3

Sheet 34 of 36 Sheets

JAN 0 5 2022

A / C6.4 CURB & GUTTER
SCALE: NONE



STANDARD CURB & GUTTER (TYPE HB30-7)

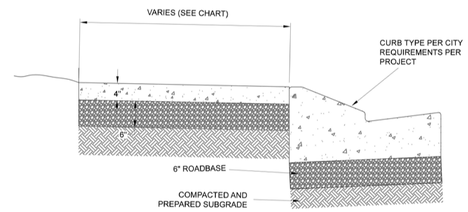
N.T.S.

CONCRETE SHALL BE COMPOSED OF COARSE AGGREGATE, FINE AGGREGATE, PORTLAND CEMENT AND WATER, AS PER SECTION 4.8.1.1 OF THE HURRICANE CITY STANDARDS FOR DESIGN AND CONSTRUCTION.

CITY OF HURRICANE ENGINEERING

REVISIONS			STANDARD CURB & GUTTER DETAILS	STANDARD DWG. NO.	
DATE	DESCRIPTION	BY		CC 101	1 OF 1
				APPROVED:	
				DATE: APRIL 2020	BY: H.C.E.

B / C6.4 60" SIDEWALK WITH 30" CURB AND GUTTER
SCALE: NONE



- CROSS SLOPE SHALL BE ¼ INCH RISE PER FOOT FROM TOP OF CURB
- USE CLASS "A" CONCRETE ONLY (6 BAG. TYPE V CEMENT)
- WHERE SIDEWALKS CROSS DRIVEWAYS, MINIMUM THICKNESS SHALL BE AS FOLLOWS: RESIDENTIAL: 6" SIDEWALK
  6" ROADBASE
- FIBER EXPANSION JOINTS SHALL BE PLACED AT BOTH ENDS OF DRIVEWAY
- FIBER EXPANSION JOINTS SHALL ALSO BE PLACED BETWEEN DRIVEWAY AND BACK OF SIDEWALK

SIDEWALK	ROAD TYPE				
	LOCAL	COLLECTOR	MAJOR COLLECTOR	ARTERIAL	MAJOR ARTERIAL
WIDTH	5'	5'	5'	5'+	6'+
SCORE JOINT SPACING	5'	5'	5'	5'+	6'+
EXPANSION JOINT SPACING	20'	20'	20'	20'	20'

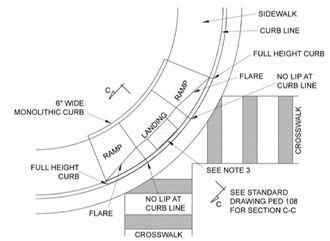
SIDEWALK DETAILS

N.T.S.

CITY OF HURRICANE ENGINEERING

REVISIONS			SIDEWALK DETAILS	STANDARD DWG. NO.	
DATE	DESCRIPTION	BY		CC 105	1 OF 1
				APPROVED:	
				DATE: APRIL 2020	BY: H.C.E.

C / C6.4 ADA RAMP - CORNER
SCALE: NONE



CORNER PEDESTRIAN RAMP

NOTES:

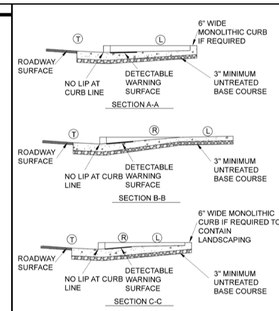
1. REFER TO STANDARD DRAWING NUMBER PED 108 FOR PEDESTRIAN ACCESS RAMP DETAIL AND SLOPE REQUIREMENTS
2. PROVIDE DETECTABLE WARNING SURFACE FOR FULL WIDTH OF RAMP, LANDING, OR CURB CUT. SEE DETAIL A ON STANDARD DRAWING PED 108 FOR DETECTABLE WARNING SURFACE DIMENSIONS
3. LOCATE DETECTABLE WARNING SURFACE SO THAT THE EDGE NEAREST THE STREET IS 6" TO 8" FROM THE CURB LINE
4. WHEN DETECTABLE WARNING SURFACE IS CUT, GRIND REMAINING PORTION OF ANY CUT DOMES. SEAL ALL CUT PANEL EDGES TO PREVENT WATER DAMAGE
5. LOCATE CURB CUT WITHIN CROSSWALK
6. HURRICANE CITY WILL ACCEPT OTHER PEDESTRIAN RAMP DESIGNS AS LONG AS THEY MEET OR EXCEED ADA REQUIREMENTS

STANDARD CORNER PEDESTRIAN RAMP

N.T.S.

CITY OF HURRICANE ENGINEERING

REVISIONS			STANDARD CORNER PEDESTRIAN RAMP	STANDARD DWG. NO.	
DATE	DESCRIPTION	BY		PED 100	1 OF 9
				APPROVED:	
				DATE: APRIL 2020	BY: H.C.E.



NOTES:

1. CONFIGURATION OF RAMPS AND LANDINGS MAY BE CHANGED BUT MUST MEET PEDESTRIAN RAMP DIMENSION AND SLOPE REQUIREMENTS. SPECIFIC SITE CONDITIONS WILL VARY. THE USE OF FLARES, CURB WALLS, ETC. ARE AT THE DISCRETION OF THE ENGINEER
2. PERPENDICULAR AND PARALLEL PEDESTRIAN RAMPS SHOWN ARE ACCEPTABLE FOR USE AT MID BLOCK OR CORNER INSTALLATIONS. REFER TO STANDARD DRAWINGS 121G AND 121H FOR EXAMPLES OF CORNER INSTALLATIONS
3. PROVIDE DETECTABLE WARNING SURFACE FOR FULL WIDTH OF RAMP, LANDING OR CURB CUT. SEE DETAIL A BELOW FOR DETECTABLE WARNING SURFACE DIMENSIONS
4. LOCATE DETECTABLE WARNING SURFACE SO THAT THE EDGE NEAREST THE STREET IS 6" TO 8" FROM THE CURB LINE
5. PROVIDE DETECTABLE WARNING SURFACE THAT CONTRASTS WITH ADJACENT WALKING SURFACE, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT. ACCEPTABLE COLORS INCLUDE: RED, BLACK OR YELLOW
6. USE CLASS "A" CONCRETE
7. USE UNTREATED BASE COURSE UNDER ALL CONCRETE FLATWORK

SLOPE TABLE

	ITEM	MAX. RUNNING SLOPE *		MAX. CROSS SLOPE *
L	LANDING	2%(1:48)	b	2%(1:48) b
R	RAMP	8.33%(1:12)	c	2%(1:48) d
T	TRANSITION SIDEWALK	5%(1:20)	a	2%(1:48) d
	FLARE	10% (1V:10H)		2% (1V:48H)

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

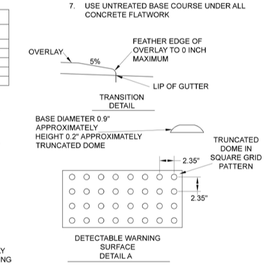
a. TRANSITION RUNNING SLOPE NEEDS TO BE CONSTANT ACROSS ENTIRE CURB CUT. WARP GUTTER PAN TO MEET REQUIRED TRANSITION SLOPE AT CURB CUT

EXCEPTION:

b. SLOPE REQUIREMENTS DO NOT APPLY AT MID-BLOCK CROSSINGS

c. PARALLEL RAMPS ARE NOT REQUIRED TO EXCEED 15 FEET IN LENGTH

d. CROSS SLOPE REQUIREMENT DOES NOT APPLY AT PERPENDICULAR RAMP MID-BLOCK CROSSING



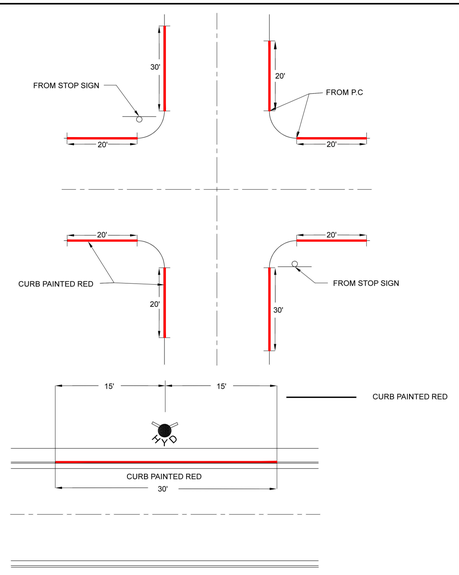
SLOPE AND DETECTABLE WARNING SURFACE DETAILS

N.T.S.

CITY OF HURRICANE ENGINEERING

REVISIONS			SLOPE AND DETECTABLE WARNING SURFACE DETAILS	STANDARD DWG. NO.	
DATE	DESCRIPTION	BY		PED 108	9 OF 9
				APPROVED:	
				DATE: APRIL 2020	BY: H.C.E.

D / C6.4 CURB PAINTING DETAIL
SCALE: NONE



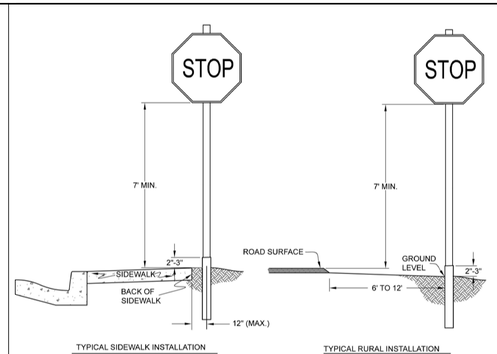
CURB PAINTING DETAIL

N.T.S.

CITY OF HURRICANE ENGINEERING

REVISIONS			CURB PAINTING DETAIL	STANDARD DWG. NO.	
DATE	DESCRIPTION	BY		SS 104	1 OF 1
				APPROVED:	
				DATE: APRIL 2020	BY: H.C.E.

E / 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 SHALL BE PLACED ABOVE STOP SIGN, AS PER CITY STANDARD DRAWING "SIGN POST & MOUNTING DETAILS
5. WHERE PLANTER STRIP LIES BETWEEN SIDEWALK AND CURB, SIGNS SHALL BE INSTALLED IN PLANTER STRIP
6. SIGNS SHALL BE PLACED TO BE CLEARLY VISABLE. ALL OBSTRUCTIONS SUCH AS TREES, POLES, OTHER SIGNS, ETC, SHALL BE AVOIDED

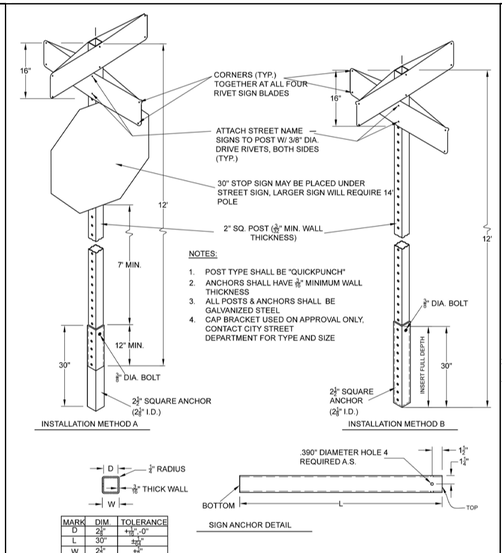
SIGN, POST AND INSTALLATION

N.T.S.

CITY OF HURRICANE ENGINEERING

REVISIONS			SIGN, POST AND INSTALLATION DETAILS	STANDARD DWG. NO.	
DATE	DESCRIPTION	BY		SS 102	1 OF 1
				APPROVED:	
				DATE: APRIL 2020	BY: H.C.E.

F / C6.4 SIGN POST AND MOUNTING DETAILS
SCALE: NONE



NOTES:

1. POST TYPE SHALL BE "QUICKPUNCH"
2. ANCHORS SHALL HAVE .095" MINIMUM WALL THICKNESS
3. ALL POSTS & ANCHORS SHALL BE GALVANIZED STEEL
4. CAP BRACKET USED ON APPROVAL ONLY, CONTACT CITY STREET DEPARTMENT FOR TYPE AND SIZE

MARK	DIM.	TOLERANCE
D	2⅞"	+⅛" -0"
L	30"	±⅛"
W	2⅞"	±⅛"

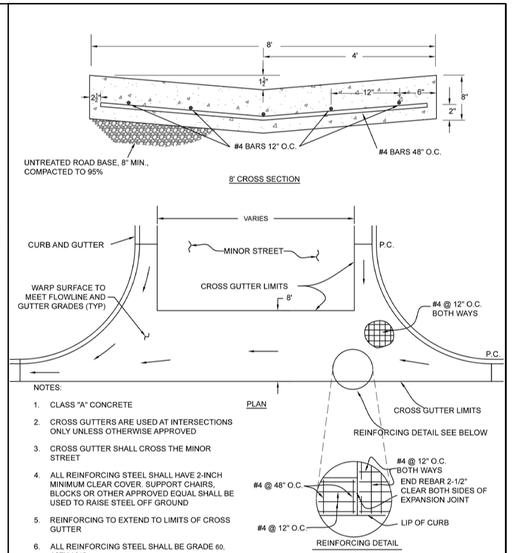
SIGN POST AND MOUNTING DETAILS

N.T.S.

CITY OF HURRICANE ENGINEERING

REVISIONS			SIGN POST AND MOUNTING DETAILS	STANDARD DWG. NO.	
DATE	DESCRIPTION	BY		SS 103	1 OF 1
				APPROVED:	
				DATE: APRIL 2020	BY: H.C.E.

G / C6.4 8' VALLEY GUTTER DETAIL
SCALE: NONE



NOTES:

1. CLASS "A" CONCRETE
2. CROSS GUTTERS ARE USED AT INTERSECTIONS ONLY UNLESS OTHERWISE APPROVED
3. CROSS GUTTER SHALL CROSS THE MINOR STREET
4. ALL REINFORCING STEEL SHALL HAVE 2-INCH MINIMUM CLEAR COVER. SUPPORT CHAIRS, BLOCKS OR OTHER APPROVED EQUAL SHALL BE USED TO RAISE STEEL OFF GROUND
5. REINFORCING TO EXTEND TO LIMITS OF CROSS GUTTER
6. ALL REINFORCING STEEL SHALL BE GRADE 60, ASTM A615.
7. CONTROL JUOINTS MUST NOT BE PLACED GREATER THAN 5' BETWEEN JOINTS.

STANDARD 8' CROSS GUTTER

N.T.S.

CITY OF HURRICANE ENGINEERING

REVISIONS			STANDARD 8' CROSS GUTTER	STANDARD DWG. NO.	
DATE	DESCRIPTION	BY		CG 100	1 OF 1
				APPROVED:	
				DATE: APRIL 2020	BY: H.C.E.

Date: 11-30-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Details.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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

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

CORAL JUNCTION PUBLIC INFRASTRUCTURE DETAILS

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLB&M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: ARL	Scale: NTS
Client No. 4499	Project No. 4499

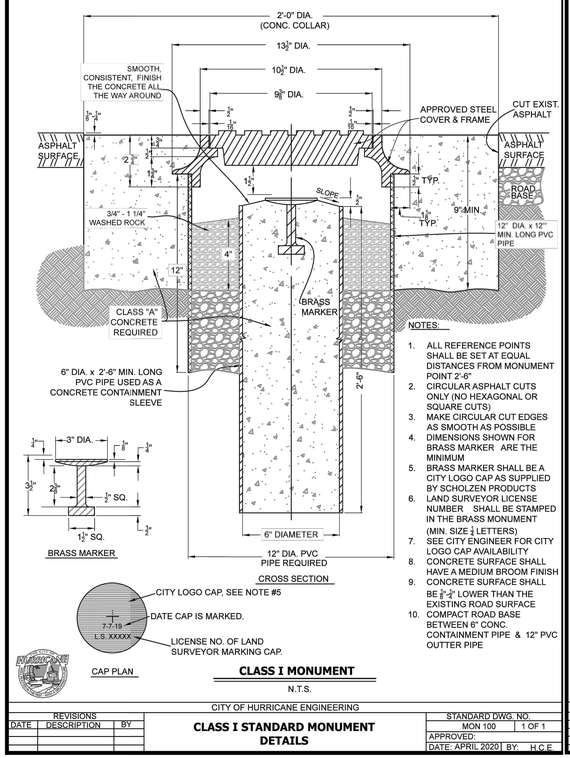
Drawing Sheet
C6.4

Sheet 35 of 36 Sheets

JAN 0 5 2022

A / C6.5 CLASS 1 STANDARD MONUMENT DETAIL

SCALE: NONE



NOTES:

1. ALL REFERENCE POINTS SHALL BE SET AT EQUAL DISTANCES FROM MONUMENT POINT 2'-6"
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 ¼ LETTERS)
7. SEE CITY ENGINEER FOR CITY LOGO CAP AVAILABILITY
8. CONCRETE SURFACE SHALL HAVE A MEDIUM BROOM FINISH
9. CONCRETE SURFACE SHALL BE ¼"-½" LOWER THAN THE EXISTING ROAD SURFACE COMPACT ROAD BASE BETWEEN 6" CONC. CONTAINMENT PIPE & 12" PVC OUTTER PIPE

CLASS I MONUMENT

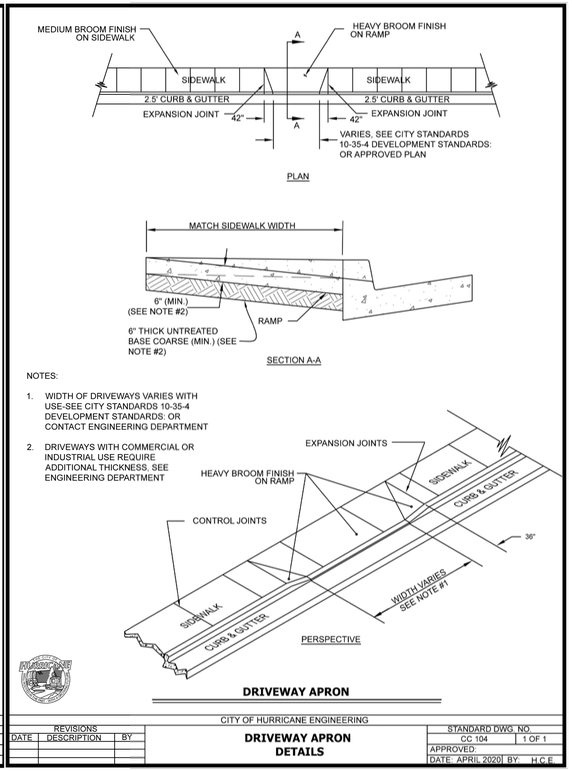
N.T.S.

CITY OF HURRICANE ENGINEERING

REVISIONS				
DATE	DESCRIPTION	BY	**CLASS I STANDARD MONUMENT DETAILS**	STANDARD DWG. NO. MON 100 1 OF 1
				APPROVED:
				DATE: APRIL 2020 BY: H.C.E.

B / C6.5 DRIVEWAY APRON

SCALE: NONE



NOTES:

1. WIDTH OF DRIVEWAYS VARIES WITH USE-SEE CITY STANDARDS 10-35-4 DEVELOPMENT STANDARDS: OR CONTACT ENGINEERING DEPARTMENT
2. DRIVEWAYS WITH COMMERCIAL OR INDUSTRIAL USE REQUIRE ADDITIONAL THICKNESS, SEE ENGINEERING DEPARTMENT

DRIVEWAY APRON

CITY OF HURRICANE ENGINEERING

REVISIONS				
DATE	DESCRIPTION	BY	**DRIVEWAY APRON DETAILS**	STANDARD DWG. NO. CC 104 1 OF 1
				APPROVED:
				DATE: APRIL 2020 BY: H.C.E.

Date: 11-30-2021

REVISIONS

No.	Date	by	Description
0	10-8-21	CJA	FIRST SUBMITTAL
1	11-30-21	CJA	CITY REVISIONS

File Name
CC-Public Infrastructure Details.dwg

ALLIANCE CONSULTING
A PLANNING AND ENGINEERING FIRM

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

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

CORAL JUNCTION PUBLIC INFRASTRUCTURE DETAILS

FOR

PUBLIC INFRASTRUCTURE DIST.

LOCATED IN SEC 5
T 42 SOUTH, R 14 WEST SLB&M
CITY OF HURRICANE, WASHINGTON COUNTY, UT

Drawn By: ARL	Scale: NTS
Client No. 4499	Project No. 4499

Drawing Sheet

C6.5

Sheet 36 of 36 Sheets

JAN 0 5 2022

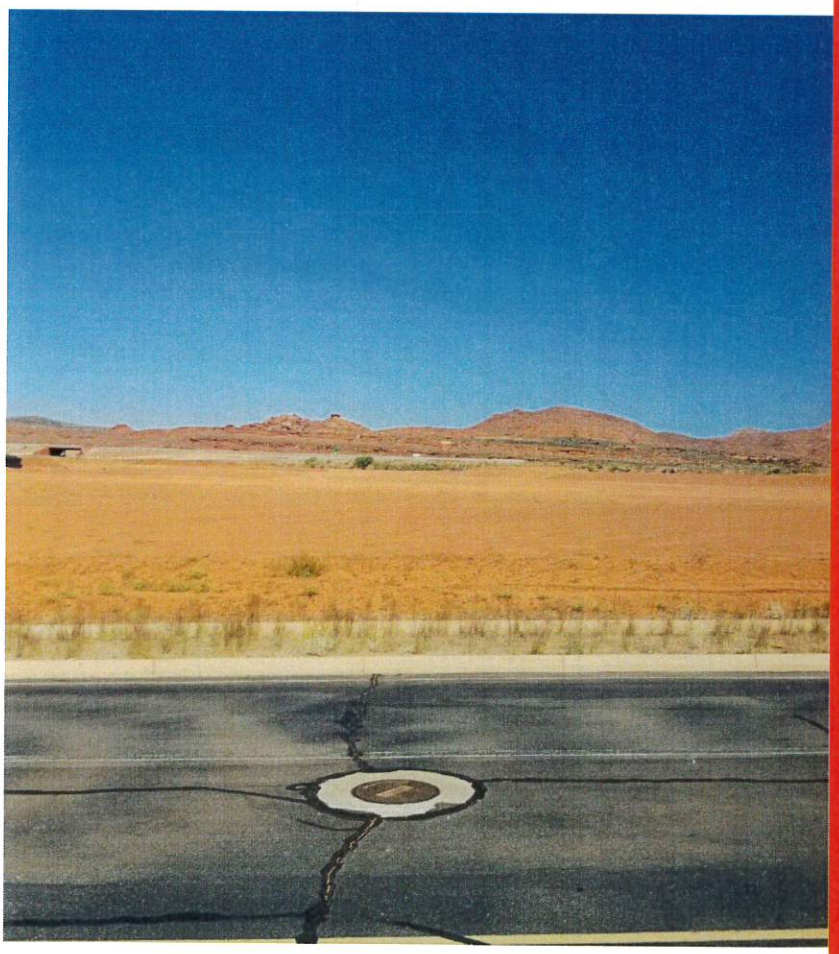
FINAL GRADING REPORT

Prepared for:

ACAD
2303 Coral Canyon Blvd STE 201
Washington, UT 84780

May 14, 2021

Coral Junction Motor Coach Resort



Prepared by:

LANDMARK TESTING & ENGINEERING

795 EAST FACTORY DRIVE
ST. GEORGE, UT 84790

Landmark No. 20834

May 14, 2021

ACAD
2303 Coral Canyon Blvd STE 201
Washington, UT 84780

Subject: **Final Grading Report**
Mass Grading
Coral Junction Motor Coach Resort
Landmark Project No. 20834

Dear Gentlemen,

Landmark Testing & Engineering was requested to provide part time testing and inspection for the Coral Junction Motor Coach Resort. Our services were requested to verify that soil for the project were in compliance with the project specifications and standard specifications of the City of Hurricane.

All testing that was completed on the dates and locations shown herein met or exceeded the project target or specifications. It is our opinion that these materials are in substantial compliance with applicable specifications.

If you have any questions or if we can be of further service, please feel free to contact our office at (435) 986-0566.

Sincerely,

John Anderson, P.E.
Geotechnical Engineer

REGISTERED PROFESSIONAL ENGINEER
John M. Anderson
374818-2202
5/14/2021
CIVIL
STATE OF UTAH

795 EAST FACTORY DRIVE • ST. GEORGE, UTAH 84790 • (435) 986-0566 • FAX (435) 986-0568

FINAL GRADING REPORT

Coral Junction Motor Coach Resort
Hurricane, UT
LANDMARK PROJECT NO. 20834

May 14, 2021

Mass Grading ..... SECTION 01

Underground Utilities ..... SECTION 02

Laboratory ..... SECTION 03

INTERIM GRADING REPORT

Coral Junction Motor Coach Resort
Hurricane, UT
LANDMARK PROJECT NO. 20834

Section 1
Mass Grading

LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 1883/671 Model: 3440 Serial #: 28526 Calibration Date: 4/10/2020

Test No.	Test Date	Station / Location: RV Pads	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	10/29/2020	80' south 40' west of the intersection.	4'BFSG	OS	8.6	119.4	123.9	10.1	96.4%	95%	Pass
2	10/29/2020	120' south 65' west of the intersection.	4'BFSG	OS	9.9	120.8	123.9	10.1	97.5%	95%	Pass
3	10/29/2020	80' south 65' west of the intersection.	4'BFSG	OS	10.9	122.0	123.9	10.1	98.5%	95%	Pass
4	10/29/2020	125' south 10' west of the intersection.	4'BFSG	OS	10.6	117.8	123.9	10.1	95.1%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4785	Red Sand with Gravel	123.9	10.1	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	RV pads southwest of Foothills Canyon Dr and Road B intersection.
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Fred Castagne Reviewed By: Jeff Webb

795 East Factory Drive, St. George, UT 84790 Phone: (435) 986-0566 Fax: (435) 986-0568

LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2488/691 Model: 3440 Serial #: 38468 Calibration Date: 11/21/2019

Test No.	Test Date	Station / Location: mass grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/2/2020	10' south 35' east of Road E and Road C center lines	FG	OS	9.8	108.3	113.6	7.8	95.3%	95%	Pass
2	11/2/2020	25' south 20' east of Road E and Road D center lines	2' BFG	OS	8.7	110.8	113.6	7.8	97.5%	95%	Pass
3	11/2/2020	80' south 30' east of Road E and Road D center lines	2' BFG	OS	10.0	109.9	113.6	7.8	96.7%	95%	Pass
4	11/2/2020	25' south 5' west of Road E and Road C center lines	FG	OS	8.5	109.4	113.6	7.8	96.3%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
20SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

x **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Aaron Ward Reviewed By: Jeff Webb

795 East Factory Drive, St. George, UT 84790 Phone: (435) 986-0566 Fax: (435) 986-0568

LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2530/689 Model: 3440 Serial #: 38468 Calibration Date: 11/21/2019

Test No.	Test Date	Station / Location: mass grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/3/2020	Road C 90' west of Road C and Road E centerlines	FG	OS	10.6	108.3	111.5	11.4	97.1%	95%	Pass
2	11/3/2020	Road D 175' west 30' south of Road D and Road E centerlines	FG	OS	12.7	107.8	111.5	11.4	96.7%	95%	Pass
3	11/3/2020	Road E 500' east 20' north of Road E and Road B center lines	FG	OS	12.1	108.8	111.5	11.4	97.6%	95%	Pass
4	11/3/2020	300' west 150' north of Foothill Canyon Dr. and Coral Springs Dr.	BOX	OS	11.1	106.5	111.5	11.4	95.5%	90%	Pass
5	11/3/2020	400' west 200' north of Foothill Canyon Dr. and Coral Springs Dr.	BOX	OS	10.4	107.2	111.5	11.4	96.1%	90%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange - Yellow Silty Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

x **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Aaron Ward Reviewed By:

795 East Factory Drive, St. George, UT 84790 Phone: (435) 986-0566 Fax: (435) 986-0568

LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 1883/671 Model: 3440 Serial #: 28526 Calibration Date: 4/10/2020

Test No.	Test Date	Station / Location: Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/4/2020	Section 5.1 80' north of Foothills Canyon Dr	1'BFSG	OS	9.0	120.7	123.9	10.1	97.4%	95%	Pass
2	11/4/2020	Section 5.1 130' north of Foothills Canyon Dr	1'BFSG	OS	9.5	119.7	123.9	10.1	96.6%	95%	Pass
3	11/4/2020	Section 5.1 180' north of Foothills Canyon Dr	1'BFSG	OS	8.4	120.4	123.9	10.1	97.2%	95%	Pass
4	11/4/2020	Section 5.0 175' north of Foothills Canyon Dr	1'BFSG	OS	8.9	118.5	123.9	10.1	95.6%	95%	Pass
5	11/4/2020	Section 5.0 100' north of Foothills Canyon Dr	1'BFSG	OS	8.8	120.3	123.9	10.1	97.1%	95%	Pass
6	11/4/2020	Section 5.0 40' north of Foothills Canyon Dr	1'BFSG	OS	8.9	118.6	123.9	10.1	95.7%	95%	Pass
7	11/4/2020	Section 4.9 100' north of Foothils Canyon Dr	3'BFSG	OS	9.4	109.1	111.5	11.4	97.8%	95%	Pass
8	11/4/2020	Section 4.9 150' north of Foothills Canyon Dr	3'BFSG	OS	10.0	109.7	111.5	11.4	98.4%	95%	Pass
9	11/4/2020	Section 4.9 200' north of Foothills Canyon Dr	3'BFSG	OS	9.5	110.6	111.5	11.4	99.2%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4785	Red Sand with Gravel	123.9	10.1	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
19SG4157	Orange-Yellow Sand with Gravel	111.5	11.4	FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	Referenced Sheet C1.5
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Fred Castagne Reviewed By: Jeff Webb

795 East Factory Drive, St. George, UT 84790 Phone: (435) 986-0566 Fax: (435) 986-0568

LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client: ACAD
Address: 2303 Coral Canyon Blvd, Suite 201
Washington, UT 84780

Project : Coral Junction Motor Coach Resort
Project No.: 20834

Nuc. Gauge Make: Troxler Standard Ct. 1883/671 Model: 3440 Serial #: 28526 Calibration Date: 4/10/2020

Test No.	Test Date	Station / Location: Mass grade	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/5/2020	Section 5.3 100' north of Foothills Dr	1'BFSG	OS	9.8	117.8	123.9	10.1	95.1%	95%	Pass
2	11/5/2020	Section 5.3 150' north of Foothills Dr	2'BFSG	OS	8.7	121.0	123.9	10.1	97.7%	95%	Pass
3	11/5/2020	Section 5.3 200' north of Foothills Dr	2'BFSG	OS	10.7	119.5	123.9	10.1	96.4%	95%	Pass
4	11/5/2020	Section 5.4 220' north of Foothills Dr	2'BFSG	OS	8.5	117.9	123.9	10.1	95.2%	95%	Pass
5	11/5/2020	Section 5.4 100' north of Foothills Dr	1'BFSG	OS	8.9	118.5	123.9	10.1	95.6%	95%	Pass
6	11/5/2020	Section 5.4 50' north of Foothills Dr	FSG	OS	9.0	119.1	123.9	10.1	96.1%	95%	Pass
7	11/5/2020	Section 5.5 40' north of Foothills Dr	FSG	OS	11.4	119.2	123.9	10.1	96.2%	95%	Pass
8	11/5/2020	Section 5.5 100' north of Foothills Dr	1'BFSG	OS	10.0	118.1	123.9	10.1	95.3%	95%	Pass
9	11/5/2020	Section 5.5 180' north of Foothills Dr	2'BFSG	OS	8.4	121.0	123.9	10.1	97.7%	95%	Pass
10	11/5/2020	Section 5.6 200' north of Foothills Dr	2'BFSG	OS	9.2	119.8	123.9	10.1	96.7%	95%	Pass
11	11/5/2020	Section 5.6 100' north of Foothills Dr	1'BFSG	OS	8.8	119.0	123.9	10.1	96.0%	95%	Pass
12	11/5/2020	Section 5.6 75' north of Foothills Dr	FSG	OS	11.3	118.1	123.9	10.1	95.3%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4785	Red Sand with Gravel	123.9	10.1	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

X **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Fred Castagne Reviewed By:

795 East Factory Drive, St. George, UT 84790 Phone: (435) 986-0566 Fax: (435) 986-0568

LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 1882/672 Model: 3440 Serial #: 28526 Calibration Date: 4/10/2020

Test No.	Test Date	Station / Location: Mass Grading, Section 5.7+	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/6/2020	Section 5.7, 50' west of foothills drive	FSG	OS	10.4	120.1	123.9	10.1	96.9%	95%	Pass
2	11/6/2020	Section 5.7, 100' west of foothills drive	1' BFSG	OS	8.6	121.4	123.9	10.1	98.0%	95%	Pass
3	11/6/2020	Section 5.7, 150' west of foothills drive	2' BFSG	OS	8.0	119.9	123.9	10.1	96.8%	95%	Pass
4	11/6/2020	Section 5.7, 200' west of foothills drive	3' BFSG	OS	8.8	122.1	123.9	10.1	98.5%	95%	Pass
5	11/6/2020	Section 5.8, 250' west of foothills drive	3' BFSG	OS	8.9	121.3	123.9	10.1	97.9%	95%	Pass
6	11/6/2020	Section 5.8, 200' west of foothills drive	3' BFSG	OS	8.5	120.9	123.9	10.1	97.6%	95%	Pass
7	11/6/2020	Section 5.8, 150' west of foothills drive	2' BFSG	OS	9.6	122.2	123.9	10.1	98.6%	95%	Pass
8	11/6/2020	Section 5.9, 100' west of foothills drive	1' BFSG	OS	9.9	120.6	123.9	10.1	97.3%	95%	Pass
9	11/6/2020	Section 5.9, 150' west of foothills drive	2' BFSG	OS	8.9	121.3	123.9	10.1	97.9%	95%	Pass
10	11/6/2020	Section 5.9, 250' west of foothills drive	3' BFSG	OS	9.9	121.9	123.9	10.1	98.4%	95%	Pass
11	11/6/2020	Section 6, 225' west of foothills drive	3' BFSG	OS	9.7	122.3	123.9	10.1	98.7%	95%	Pass
12	11/6/2020	Section 6, 150' west of foothills drive	2' BFSG	OS	10.0	122.0	123.9	10.1	98.5%	95%	Pass
13	11/6/2020	Section 6, 75' west of foothills drive	FSG	OS	8.9	123.6	123.9	10.1	99.8%	95%	Pass
14	11/6/2020	Section 6.1, 50' west of foothills drive	FSG	OS	9.2	120.5	123.9	10.1	97.3%	95%	Pass
15	11/6/2020	Section 6.1, 100' west of foothills drive	1' BFSG	OS	8.7	119.9	123.9	10.1	96.8%	95%	Pass
16	11/6/2020	Section 6.1, 225' west of foothills drive	3' BFSG	OS	9.5	122.5	123.9	10.1	98.9%	95%	Pass
17	11/6/2020	Section 6.2, 255' west of foothills drive	3' BFSG	OS	9.8	121.9	123.9	10.1	98.4%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4785	Red Sand with Gravel	123.9	10.1	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	No stakes or landmarks to reference for locations. Referenced Section Lines and streets on sheet C1.1 of plans.
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Fred Castagne Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2079/754 Model: 3430 Serial #: 38037 Calibration Date: 1/7/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/10/2020	140' north of Point A*	2' BFSG	OS	8.5	118.2	123.9	10.1	95.4%	95%	Pass
2	11/10/2020	220' north of Point A*	2' BFSG	OS	9.2	117.9	123.9	10.1	95.2%	95%	Pass
3	11/10/2020	300' north of Point A*	2' BFSG	OS	11.0	119.1	123.9	10.1	96.1%	95%	Pass
4	11/10/2020	380' north of Point A*	2' BFSG	OS	9.9	118.7	123.9	10.1	95.8%	95%	Pass
5	11/10/2020	460' north of Point A*	2' BFSG	OS	8.7	119.4	123.9	10.1	96.4%	95%	Pass
6	11/10/2020	540' north of Point A*	2' BFSG	OS	8.9	118.0	123.9	10.1	95.2%	95%	Pass
7	11/10/2020	620' north of Point A*	2' BFSG	OS	10.3	120.2	123.9	10.1	97.0%	95%	Pass
8	11/10/2020	640' north 40' east of Point A*	2' BFSG	OS	10.0	120.6	123.9	10.1	97.3%	95%	Pass
9	11/10/2020	560' north 40' east of Point A*	2' BFSG	OS	9.6	118.8	123.9	10.1	95.9%	95%	Pass
10	11/10/2020	480' north 40' east of Point A*	2' BFSG	OS	9.2	118.0	123.9	10.1	95.2%	95%	Pass
11	11/10/2020	400' north 40' east of Point A*	2' BFSG	OS	11.0	119.5	123.9	10.1	96.4%	95%	Pass
12	11/10/2020	320' north 40' east of Point A*	2' BFSG	OS	10.4	117.9	123.9	10.1	95.2%	95%	Pass
13	11/10/2020	240' north 40' east of Point A *	2' BFSG	OS	9.3	118.2	123.9	10.1	95.4%	95%	Pass
14	11/10/2020	160' north 40' east of Point A*	2' BFSG	OS	9.9	118.7	123.9	10.1	95.8%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4785	Red Sand with Gravel	123.9	10.1	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*Point A = North side of Coral Canyon Blvd, where pavement ends
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Lehi Steed Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2079/754 Model: 3430 Serial #: 38037 Calibration Date: 1/7/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/11/2020	30' west 150' north of Point B*	FSG	OS	9.2	109.3	113.3	7.8	96.5%	95%	Pass
2	11/11/2020	30' west 230' north of Point B*	FSG	OS	7.3	108.5	113.3	7.8	95.8%	95%	Pass
3	11/11/2020	30' west 310' north of Point B*	FSG	OS	9.4	109.8	113.3	7.8	96.9%	95%	Pass
4	11/11/2020	30' west 390' north of Point B*	FSG	OS	8.7	110.5	113.3	7.8	97.5%	95%	Pass
5	11/11/2020	30' west 470' north of Point B*	FSG	OS	5.8	111.7	113.3	7.8	98.6%	95%	Pass
6	11/11/2020	30' west 550' north of Point B*	FSG	OS	6.6	110.2	113.3	7.8	97.3%	95%	Pass
7	11/11/2020	90' west 570' north of Point B*	FSG	OS	8.3	111.9	113.3	7.8	98.8%	95%	Pass
8	11/11/2020	90' west 490' north of Point B*	FSG	OS	8.0	112.0	113.3	7.8	98.9%	95%	Pass
9	11/11/2020	90' west 410' north of Point B*	FSG	OS	9.1	112.8	113.3	7.8	99.6%	95%	Pass
10	11/11/2020	90' west 330' north of Point B*	FSG	OS	7.7	108.9	113.3	7.8	96.1%	95%	Pass
11	11/11/2020	90' west 250' north of Point B*	FSG	OS	7.5	110.6	113.3	7.8	97.6%	95%	Pass
12	11/11/2020	90' west 170' north of Point B*	FSG	OS	6.9	109.7	113.3	7.8	96.8%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.3	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*Point B = Northwest corner of Coral Canyon Blvd and Foothills Canyon Drive
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Lehi Steed Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2044/660 Model: 3430 Serial #: 38124 Calibration Date: 5/28/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/12/2020	Road E, 55' Eeast of intersection with Road B, 5' south of centerline	SBG	OS	9.5	119.9	123.9	10.1	96.8%	95%	Pass
2	11/12/2020	Road E, 200' east of intersection with Road B, 18' south of centerline (between roads E and D)	SBG	OS	9.3	119.3	123.9	10.1	96.3%	95%	Pass
3	11/12/2020	Road D, 180' east of intersection with Road B 10' north of centerline	SBG	OS	10.0	119.7	123.9	10.1	96.6%	95%	Pass
4	11/12/2020	Road C, 220' east of intersection with Road B, 2' south of centerline	SBG	OS	9.5	121.9	123.9	10.1	98.4%	95%	Pass
5	11/12/2020	Road B, 280' west of intersection with Road E, 40' south of centerline (between roads B and C)	SBG	OS	9.7	120.4	123.9	10.1	97.2%	95%	Pass
6	11/12/2020	Road B, 30' west of intersection with Road E, 10' north of centerline	SBG	OS	9.2	120.6	123.9	10.1	97.3%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4785	Red Sand with Gravel	123.9	10.1	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	Referenced sheet C1.5 of plans for locations reference
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech: James Armstrong	Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2074/749 Model: 3430 Serial #: 38037 Calibration Date: 1/7/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/13/2020	60' north of Point A*	FSG	OS	9.8	109.8	111.5	11.4	98.5%	95%	Pass
2	11/13/2020	140' north of Point A*	FSG	OS	10.0	109.8	111.5	11.4	98.5%	95%	Pass
3	11/13/2020	220' north of Point A*	FSG	OS	9.6	110.2	111.5	11.4	98.8%	95%	Pass
4	11/13/2020	300' north of Point A*	FSG	OS	10.8	109.5	111.5	11.4	98.2%	95%	Pass
5	11/13/2020	380' north of Point A*	FSG	OS	10.2	110.3	111.5	11.4	98.9%	95%	Pass
6	11/13/2020	460' north of Point A*	FSG	OS	10.0	109.6	111.5	11.4	98.3%	95%	Pass
7	11/13/2020	540' north of Point A*	FSG	OS	11.6	108.9	111.5	11.4	97.7%	95%	Pass
8	11/13/2020	520' north 80' west of Point A*	1' BFSG	OS	9.5	107.6	111.5	11.4	96.5%	95%	Pass
9	11/13/2020	440' north 80' west of Point A*	1' BFSG	OS	9.9	108.2	111.5	11.4	97.0%	95%	Pass
10	11/13/2020	360' north 80' west of Point A*	1' BFSG	OS	10.4	106.7	111.5	11.4	95.7%	95%	Pass
11	11/13/2020	280' north 80' west of Point A*	1' BFSG	OS	10.9	106.5	111.5	11.4	95.5%	95%	Pass
12	11/13/2020	200' north 80' west of Point A*	1' BFSG	OS	11.3	107.0	111.5	11.4	96.0%	95%	Pass
13	11/13/2020	120' north 80' west of Point A*	1' BFSG	OS	9.8	106.3	111.5	11.4	95.3%	95%	Pass
14	11/13/2020	40' north 80' west of Point A*	1' BFSG	OS	9.8	106.7	111.5	11.4	95.7%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange Yellow Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*Point A = North side of Coral Canyon Blvd where pavement ends
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech: Lehi Steed	Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd., Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2045/755 Model: 3430 Serial #: 38037 Calibration Date: 1/7/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/16/2020	60' north 60' east of *	1' BFSG	OS	9.6	106.9	111.5	11.4	95.9%	95%	Pass
2	11/16/2020	140' north 60' east of *	1' BFSG	OS	10.2	106.3	111.5	11.4	95.3%	95%	Pass
3	11/16/2020	220' north 60' east of *	1' BFSG	OS	10.0	108.1	111.5	11.4	97.0%	95%	Pass
4	11/16/2020	300' north 60' east of *	1' BFSG	OS	9.7	106.7	111.5	11.4	95.7%	95%	Pass
5	11/16/2020	380' north 60' east of *	1' BFSG	OS	9.7	107.3	111.5	11.4	96.2%	95%	Pass
6	11/16/2020	380' north 20' west of *	1' BFSG	OS	11.0	107.9	111.5	11.4	96.8%	95%	Pass
7	11/16/2020	300' north 20' west of *	1' BFSG	OS	11.4	110.3	111.5	11.4	98.9%	95%	Pass
8	11/16/2020	220' north 20' west of *	1' BFSG	OS	9.6	106.9	111.5	11.4	95.9%	95%	Pass
9	11/16/2020	140' north 20' west of *	1' BFSG	OS	10.8	109.8	111.5	11.4	98.5%	95%	Pass
10	11/16/2020	60' north 20' west of *	1' BFSG	OS	9.9	109.9	111.5	11.4	98.6%	95%	Pass
11	11/16/2020	60' north 100' west of *	1' BFSG	OS	9.6	107.7	111.5	11.4	96.6%	95%	Pass
12	11/16/2020	140' north 100' west of *	1' BFSG	OS	9.9	106.5	111.5	11.4	95.5%	95%	Pass
13	11/16/2020	220' north 100' west of *	1' BFSG	OS	10.6	106.3	111.5	11.4	95.3%	95%	Pass
14	11/16/2020	300' north 100' west of *	1' BFSG	OS	10.0	109.6	111.5	11.4	98.3%	95%	Pass
15	11/16/2020	380' north 100' west of *	1' BFSG	OS	11.5	108.3	111.5	11.4	97.1%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange-Yellow Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*north side of Coral Canyon Blvd. where pavement ends
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Lehi Steed Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd., Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2045/755 Model: 3430 Serial #: 38037 Calibration Date: 1/7/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/16/2020	380' north 180' west of *	2' BFSG	OS	9.8	107.3	111.5	11.4	96.2%	95%	Pass
2	11/16/2020	300' north 180' west of *	2' BFSG	OS	10.6	108.6	111.5	11.4	97.4%	95%	Pass
3	11/16/2020	220' north 180' west of *	2' BFSG	OS	10.6	106.7	111.5	11.4	95.7%	95%	Pass
4	11/16/2020	140' north 180' west of *	2' BFSG	OS	11.1	106.9	111.5	11.4	95.9%	95%	Pass
5	11/16/2020	60' north 180' west of *	2' BFSG	OS	11.5	110.3	111.5	11.4	98.9%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange-Yellow Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*north side of Coral Canyon Blvd. where pavement ends
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech: Lehi Steed	Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2088/750 Model: 3430 Serial #: 38037 Calibration Date: 1/7/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/17/2020	60' South 30' East of *	14' BFSG	OS	8.6	117.9	123.9	10.1	95.2%	95%	Pass
2	11/17/2020	140' South 30' East of *	15' BFSG	OS	9.3	118.3	123.9	10.1	95.5%	95%	Pass
3	11/17/2020	220' South 30' East of *	17' BFSG	OS	10.6	106.7	111.5	11.4	95.7%	95%	Pass
4	11/17/2020	300' South 30' East of *	17' BFSG	OS	11.2	106.6	111.5	11.4	95.6%	95%	Pass
5	11/17/2020	380' South 30' East of *	17' BFSG	OS	10.6	107.5	111.5	11.4	96.4%	95%	Pass
6	11/17/2020	460' South 30' East of *	17' BFSG	OS	11.3	107.7	111.5	11.4	96.6%	95%	Pass
7	11/17/2020	540' South 30' East of *	17' BFSG	OS	10.9	108.3	111.5	11.4	97.1%	95%	Pass
8	11/17/2020	540' South 110' East of *	17' BFSG	OS	10.4	106.9	111.5	11.4	95.9%	95%	Pass
9	11/17/2020	460' South 110' East of *	17' BFSG	OS	11.0	109.4	111.5	11.4	98.1%	95%	Pass
10	11/17/2020	380' South 110' East of *	17' BFSG	OS	11.1	108.3	111.5	11.4	97.1%	95%	Pass
11	11/17/2020	300' South 110' East of *	17' BFSG	OS	10.8	106.1	111.5	11.4	95.2%	95%	Pass
12	11/17/2020	220' South 110' East of *	17' BFSG	OS	10.5	108.0	111.5	11.4	96.9%	95%	Pass
13	11/17/2020	140' South 110' East of *	15' BFSG	OS	10.3	118.0	123.9	10.1	95.2%	95%	Pass
14	11/17/2020	60' South 110' East of *	15' BFSG	OS	8.7	119.7	123.9	10.1	96.6%	95%	Pass
15	11/17/2020	540' South 190' East of *	15' BFSG	OS	8.9	120.3	123.9	10.1	97.1%	95%	Pass
16	11/17/2020	460' South 190' East of *	15' BFSG	OS	9.5	118.5	123.9	10.1	95.6%	95%	Pass
17	11/17/2020	380' South 190' East of *	16' BFSG	OS	10.5	118.8	123.9	10.1	95.9%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4785	Red Sand with Gravel	123.9	10.1	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
19SG5147	Orange-Yellow Sand with Gravel	111.5	11.4	FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*west drain on I-15 Freeway
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Lehi Steed Reviewed By: Jeff Webb

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2114/753 Model: 3430 Serial #: 38037 Calibration Date: 1/7/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/18/2020	100' south 40' east of *	16'BFSG	OS	10.1	108.7	111.5	11.4	97.5%	95%	Pass
2	11/18/2020	180' south 120' east of *	16'BFSG	OS	9.9	108.4	111.5	11.4	97.2%	95%	Pass
3	11/18/2020	260' south 120' east of *	16'BFSG	OS	9.7	108.1	111.5	11.4	97.0%	95%	Pass
4	11/18/2020	340' south 120' east of *	16'BFSG	OS	10.0	107.2	111.5	11.4	96.1%	95%	Pass
5	11/18/2020	420' south 120' east of *	16'BFSG	OS	10.2	107.4	111.5	11.4	96.3%	95%	Pass
6	11/18/2020	500' south 120' east of *	16'BFSG	OS	11.5	107.2	111.5	11.4	96.1%	95%	Pass
7	11/18/2020	260' south 200' east of *	16'BFSG	OS	9.8	108.0	111.5	11.4	96.9%	95%	Pass
8	11/18/2020	340' south 200' east of *	16'BFSG	OS	10.2	109.5	111.5	11.4	98.2%	95%	Pass
9	11/18/2020	420' south 200' east of *	16'BFSG	OS	10.0	108.8	111.5	11.4	97.6%	95%	Pass
10	11/18/2020	500' south 200' east of *	16'BFSG	OS	9.9	109.3	111.5	11.4	98.0%	95%	Pass
11	11/18/2020	420' south 280' east of *	16'BFSG	OS	9.5	110.1	111.5	11.4	98.7%	95%	Pass
12	11/18/2020	500' south 280' east of *	16'BFSG	OS	10.7	109.6	111.5	11.4	98.3%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange-Yellow Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	* west storm drain on I-15, north side of project
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech: Lehi Steed	Reviewed By: Jeramy Egan

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2053/75/ Model: 3430 Serial #: 38037 Calibration Date: 1/7/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/19/2020	40' south 40' east of *	15'BFSG	OS	9.9	106.5	111.5	11.4	95.5%	95%	Pass
2	11/19/2020	120' south 40' east of *	15'BFSG	OS	10.4	109.4	111.5	11.4	98.1%	95%	Pass
3	11/19/2020	120' south 120' east of *	15'BFSG	OS	9.6	107.1	111.5	11.4	96.1%	95%	Pass
4	11/19/2020	200' south 120' east of *	15'BFSG	OS	9.6	106.5	111.5	11.4	95.5%	95%	Pass
5	11/19/2020	280' south 120' east of *	15'BFSG	OS	9.1	106.8	111.5	11.4	95.8%	95%	Pass
6	11/19/2020	360' south 120' east of *	15'BFSG	OS	10.2	105.9	111.5	11.4	95.0%	95%	Pass
7	11/19/2020	440' south 120' east of *	15'BFSG	OS	10.1	108.2	111.5	11.4	97.0%	95%	Pass
8	11/19/2020	200' south 200' east of *	15'BFSG	OS	10.3	106.9	111.5	11.4	95.9%	95%	Pass
9	11/19/2020	280' south 200' east of *	15'BFSG	OS	12.0	107.3	111.5	11.4	96.2%	95%	Pass
10	11/19/2020	360' south 200' east of *	15'BFSG	OS	11.6	106.0	111.5	11.4	95.1%	95%	Pass
11	11/19/2020	440' south 200' east of *	15'BFSG	OS	12.1	106.4	111.5	11.4	95.4%	95%	Pass
12	11/19/2020	520' south 200' east of *	15'BFSG	OS	9.5	106.9	111.5	11.4	95.9%	95%	Pass
13	11/19/2020	520' south 280' east of *	15'BFSG	OS	9.8	105.9	111.5	11.4	95.0%	95%	Pass
14	11/19/2020	440' south 280' east of *	15'BFSG	OS	10.2	106.7	111.5	11.4	95.7%	95%	Pass
15	11/19/2020	360' south 280' east of *	15'BFSG	OS	10.7	107.4	111.5	11.4	96.3%	95%	Pass
16	11/19/2020	440' south 360' east of *	15'BFSG	OS	11.4	109.2	111.5	11.4	97.9%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange-Yellow Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*west Storm drain along I-15
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech: Lehi Steed	Reviewed By: Jeramy Egan

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2081/657 Model: 3430 Serial #: 38124 Calibration Date: 5/28/2020

Test No.	Test Date	Station / Location: landscaping area	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/20/2020	80' north 90' east of northeast corner of intersection of Coral Canyon Blvd and Foothills Canyon Dr	2' BFSG	OS	9.8	108.7	111.5	11.4	97.5%	95%	Pass
2	11/20/2020	80' north 160' east of northeast corner of intersection of Coral Canyon Blvd and Foothills Canyon Dr	1' BFSG	OS	9.0	112.6	113.6	7.8	99.1%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange-Yellow Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

X **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: James Armstrong Reviewed By: Jeramy Egan

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2066/750 Model: 3430 Serial #: 38037 Calibration Date: 1/7/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11/23/2020	40' south 40' east of *	12'BFSG	OS	9.8	107.1	111.5	11.4	96.1%	95%	Pass
2	11/23/2020	120' south 40' east of *	12'BFSG	OS	10.1	109.7	111.5	11.4	98.4%	95%	Pass
3	11/23/2020	200' south 40' east of *	12'BFSG	OS	10.4	110.4	111.5	11.4	99.0%	95%	Pass
4	11/23/2020	280' south 40' east of *	12'BFSG	OS	9.7	106.4	111.5	11.4	95.4%	95%	Pass
5	11/23/2020	360' south 40' east of *	12'BFSG	OS	9.8	107.3	111.5	11.4	96.2%	95%	Pass
6	11/23/2020	440' south 40' east of *	12'BFSG	OS	10.6	106.4	111.5	11.4	95.4%	95%	Pass
7	11/23/2020	520' south 40' east of *	12'BFSG	OS	11.2	110.2	111.5	11.4	98.8%	95%	Pass
8	11/23/2020	520' south 120' east of *	12'BFSG	OS	10.3	106.3	111.5	11.4	95.3%	95%	Pass
9	11/23/2020	440' south 120' east of *	12'BFSG	OS	9.9	108.5	111.5	11.4	97.3%	95%	Pass
10	11/23/2020	360' south 120' east of *	12'BFSG	OS	9.8	106.7	111.5	11.4	95.7%	95%	Pass
11	11/23/2020	40' south 120' west of *	12'BFSG	OS	9.8	107.7	111.5	11.4	96.6%	95%	Pass
12	11/23/2020	120' south 120' west of *	12'BFSG	OS	10.5	108.1	111.5	11.4	97.0%	95%	Pass
13	11/23/2020	200' south 120* west of *	12'BFSG	OS	10.2	107.3	111.5	11.4	96.2%	95%	Pass
14	11/23/2020	280' south 120' west of *	12'BFSG	OS	10.0	109.5	111.5	11.4	98.2%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange-Yellow Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*west drain along I-15
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech: Lehi Steed	Reviewed By: Jeramy Egan

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	11/25/2020

Nuc. Gauge Make: Troxler Standard Ct. Model: 3430 Serial #: 26770 Calibration Date: 4/10/2020

Test No.	Station / Location:Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	10' west 40' *	10' BFSG	OS	10.0	106.6	111.5	11.4	95.6%	95%	Pass
2	70' west of 85' *	10' BFSG	OS	9.8	107.1	111.5	11.4	96.1%	95%	Pass
3	10' west 165' *	10' BFSG	OS	10.1	106.9	111.5	11.4	95.9%	95%	Pass
4	10' west 245' south *	10' BFSG	OS	10.0	107.2	111.5	11.4	96.1%	95%	Pass
5	80' east 15' south *	10' BFSG	OS	11.0	106.1	111.5	11.4	95.2%	95%	Pass
6	80' east 95' south *	10' BFSG	OS	9.6	106.1	111.5	11.4	95.2%	95%	Pass
7	80' east 175' south *	10' BFSG	OS	9.9	106.2	111.5	11.4	95.2%	95%	Pass
8	80' east 255' south *	10' BFSG	OS	9.7	106.4	111.5	11.4	95.4%	95%	Pass
9	80' east 335' south *	10' BFSG	OS	10.0	111.4	111.5	11.4	99.9%	95%	Pass
10	80' east 415' south *	10' BFSG	OS	10.0	106.4	111.5	11.4	95.4%	95%	Pass
11	80' east 495' south *	10' BFSG	OS	10.5	109.7	111.5	11.4	98.4%	95%	Pass
12	80' east 575' south *	10' BFSG	OS	9.7	106.4	111.5	11.4	95.4%	95%	Pass
13	160' east 10' south *	10' BFSG	OS	9.7	111.3	111.5	11.4	99.8%	95%	Pass
14	160' east 90' south *	10' BFSG	OS	9.8	109.5	111.5	11.4	98.2%	95%	Pass
15	160' east 170' south *	10' BFSG	OS	10.6	111.4	111.5	11.4	99.9%	95%	Pass
16	160' east 250' south *	10' BFSG	OS	10.6	108.0	111.5	11.4	96.9%	95%	Pass
17	160' east 330' south *	10' BFSG	OS	9.7	110.8	111.5	11.4	99.4%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange Yellow Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments: * = northwest storm drain

Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.

Field Tech: Steven Criss Reviewed By: Jeramy Egan

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	11/25/2020

Nuc. Gauge Make: Troxler Standard Ct. Model: 3430 Serial #: 26770 Calibration Date: 4/10/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	160' east 410' south *	10' BFSG	OS	10.8	111.3	111.5	11.4	99.8%	95%	Pass
2	160 east 490' south *	10' BFSG	OS	10.2	109.3	111.5	11.4	98.0%	95%	Pass
3	265' east 250' south *	10' BFSG	OS	10.5	111.4	111.5	11.4	99.9%	95%	Pass
4	265' east 330' south *	10' BFSG	OS	10.4	110.5	111.5	11.4	99.1%	95%	Pass
5	265' east 415' south *	10' BFSG	OS	9.8	110.8	111.5	11.4	99.4%	95%	Pass
6	265' east 495' south *	10' BFSG	OS	10.9	111.2	111.5	11.4	99.7%	95%	Pass
7	265' east 575' south *	10' BFSG	OS	9.9	108.0	111.5	11.4	96.9%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange Yellow Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments: * = of northwest storm drain

Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.

Field Tech: Reviewed By:

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	11/30/2020

Nuc. Gauge Make: Troxler Standard Ct. 2083/655 Model: 3430 Serial #: 38124 Calibration Date: 5/28/2020

Test No.	Station / Location: Mass grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	480' north 390' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	6.3	110.7	113.6	7.8	97.4%	95%	Pass
2	500' north 410' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	6.9	109.3	113.6	7.8	96.2%	95%	Pass
3	540' north 350' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	7.0	110.8	113.6	7.8	97.5%	95%	Pass
4	560' north 420' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	6.2	109.8	113.6	7.8	96.7%	95%	Pass
5	590' north 360' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	6.8	110.0	113.6	7.8	96.8%	95%	Pass
6	590' north 330' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	7.1	111.1	113.6	7.8	97.8%	95%	Pass
7	610' north 400' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	6.6	108.7	113.6	7.8	95.7%	95%	Pass
8	615' north 370' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	6.4	109.4	113.6	7.8	96.3%	95%	Pass
9	625' north 395' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	6.5	109.6	113.6	7.8	96.5%	95%	Pass
10	640' north 355' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	7.5	110.5	113.6	7.8	97.3%	95%	Pass
11	675' north 410' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	7.3	110.3	113.6	7.8	97.1%	95%	Pass
12	680' north 370' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	7.0	109.3	113.6	7.8	96.2%	95%	Pass
13	730' north 360' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	6.9	108.3	113.6	7.8	95.3%	95%	Pass
14	750' north 385' west of Coral Canyon Blvd. and Foothills Canyon	9' BFSG	OS	7.1	108.7	113.6	7.8	95.7%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4828	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

X **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: James Armstrong Reviewed By: Jeff Webb

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/1/2020

Nuc. Gauge Make: Troxler Standard Ct. 1934/609 Model: 3430 Serial #: 7539 Calibration Date: 4/3/2020

Test No.	Station / Location: Mass grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	78' west 75' north of Point A*	BOX	OS	6.7	107.5	113.6	7.8	94.6%	90%	Pass
2	130' west 90' north of Point A*	BOX	OS	5.8	107.7	113.6	7.8	94.8%	90%	Pass
3	150' west 85' north of Point A*	BOX	OS	8.5	103.6	113.6	7.8	91.2%	90%	Pass
4	180' west 75' north of Point A*	BOX	OS	6.7	106.2	113.6	7.8	93.5%	90%	Pass
5	205' west 65' north of Point A*	BOX	OS	5.9	104.1	113.6	7.8	91.6%	90%	Pass
6	235' west 68' north of Point A*	BOX	OS	6.3	105.9	113.6	7.8	93.2%	90%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4828	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*For location purposes, "Point A" refers to the northwest corner of Coral Canyon Blvd. & Foothills Canyon Drive.
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	David Ward Reviewed By: Jeff Webb

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/2/2020

Nuc. Gauge Make: Troxler Standard Ct. 1936/611 Model: 3430 Serial #: 7539 Calibration Date: 4/3/2020

Test No.	Station / Location: Mass grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	460' north 12' west of Point A*	8' BSG	OS	9.8	110.5	113.6	7.8	97.3%	95%	Pass
2	470' north 90' east of Point A*	8' BSG	OS	8.4	109.9	113.6	7.8	96.7%	95%	Pass
3	530' north 2' west of Point A*	8' BSG	OS	6.7	108.9	113.6	7.8	95.9%	95%	Pass
4	555' north 65' east of Point A*	8' BSG	OS	7.0	108.4	113.6	7.8	95.4%	95%	Pass
5	625' north 10' east of Point A*	8' BSG	OS	7.7	109.3	113.6	7.8	96.2%	95%	Pass
6	628' north 125' east of Point A*	8' BSG	OS	6.2	108.5	113.6	7.8	95.5%	95%	Pass
7	705' north 20' east of Point A*	8' BSG	OS	7.4	108.4	113.6	7.8	95.4%	95%	Pass
8	735' north 100' east of Point A*	8' BSG	OS	7.2	108.9	113.6	7.8	95.9%	95%	Pass
9	800' north 3' west of Point A*	8' BSG	OS	8.0	108.9	113.6	7.8	95.9%	95%	Pass
10	815' north 75' east of Point A*	8' BSG	OS	8.7	109.5	113.6	7.8	96.4%	95%	Pass
11	860' north 85' east of Point A*	8' BSG	OS	7.5	107.9	113.6	7.8	95.0%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4828	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*For location purposes, "Point A" refers to the north end of pavement of Coral Canyon Blvd, at its junction with project site.
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	David Ward Reviewed By: Jeff Webb

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2463/690 Model: 3440 Serial #: 38468 Calibration Date: 11/12/2020

Test No.	Test Date	Station / Location: Mass grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	12/14/2020	500' west, 70' north of Coral Canyon Boulevard and Coral Junction Road	4' BFG	OS	8.4	109.5	113.6	7.8	96.4%	95%	Pass
2	12/14/2020	550' west, 110' north of Coral Canyon Boulevard and Coral Junction Road	4' BFG	OS	6.2	110.2	113.6	7.8	97.0%	95%	Pass
3	12/14/2020	350' west, 95' north of Coral Canyon Boulevard and Coral Junction Road	4' BFG	OS	9.7	109.3	113.6	7.8	96.2%	95%	Pass
4	12/14/2020	275' west, 50' north of Coral Canyon Boulevard and Coral Junction Road	4' BFG	OS	8.8	109.9	113.6	7.8	96.7%	95%	Pass
5	12/14/2020	175' west, 80' north of Coral Canyon Boulevard and Coral Junction Road	4' BFG	OS	8.2	108.8	113.6	7.8	95.8%	95%	Pass
6	12/14/2020	20' east, 40' north of Coral Canyon Boulevard and Coral Junction Road	4' BFG	OS	9.4	110.3	113.6	7.8	97.1%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red poorly graded sand with silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

x **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Aaron Ward Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/15/2020

Nuc. Gauge Make: Troxler Standard Ct. 1712/670 Model: 3430 Serial #: 20220 Calibration Date: 1/16/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	65' west, 5' south of centerline of Intersection 1*	3' BSG	OS	7.9	111.9	113.6	7.8	98.5%	95%	Pass
2	50' west, 75' north of centerline of Intersection 1*	4' BSG	OS	6.6	109.1	113.6	7.8	96.0%	95%	Pass
3	70' west and 150' north of centerline of Intersection 1*	4' BSG	OS	9.7	108.9	113.6	7.8	95.9%	95%	Pass
4	250' north and 100' west of centerline of Intersection 1*	3' BSG	OS	6.4	113.1	113.6	7.8	99.6%	95%	Pass
5	310' north and 125' west of centerline of Intersection 1*	4' BSG	OS	7.5	109.2	113.6	7.8	96.1%	95%	Pass
6	110' north and 75' west of northwest corner of intersection 2**	2' BSG	OS	6.2	107.9	113.6	7.8	95.0%	95%	Pass
7	150' north and 90' west of northwest corner of intersection 2**	2' BSG	OS	6.5	108.1	113.6	7.8	95.2%	95%	Pass
8	350' west and 250' north of northwest corner of intersection 2**	2' BSG	OS	6.5	113.1	113.6	7.8	99.6%	95%	Pass
9	380' west and 280' north of northwest corner of intersection 2**	1' BSG	OS	6.3	113.4	113.6	7.8	99.8%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red poorly graded sand with silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site

Comments: *Intersection 1 = Intersection of Coral Junction Road & Road B, **Intersection 2 = Intersection of Coral Canyon and Foothill Boulevards

X **Portable Gauge is properly blocked & braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Troy Snyder Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/16/2020

Nuc. Gauge Make: Troxler Standard Ct. 1748/667 Model: 3430 Serial #: 20220 Calibration Date: 1/6/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	200' north 30' west of *intersection	3' BSG	OS	6.9	108.1	113.6	7.8	95.2%	95%	Pass
2	290' north 5' east of *intersection	3' BSG	OS	6.3	108.3	113.6	7.8	95.3%	95%	Pass
3	360' north 100' east of *intersection	2' BSG	OS	8.1	112.4	113.6	7.8	98.9%	95%	Pass
4	240' north 150' east of *intersection	2' BSG	OS	6.7	108.8	113.6	7.8	95.8%	95%	Pass
5	70' north 90' east of *intersection	2' BSG	OS	6.8	110.9	113.6	7.8	97.6%	95%	Pass
6	10' north 5' west of *intersection	3' BSG	OS	7.6	111.8	113.6	7.8	98.4%	95%	Pass
7	280' north 95' east of *intersection	3' BSG	OS	6.6	112.1	113.6	7.8	98.7%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red poorly graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*Intersection = Intersection of Coral Junction Road and Road B
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/17/2020

Nuc. Gauge Make: Troxler Standard Ct. 1727/674 Model: 3430 Serial #: 20220 Calibration Date: 1/6/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	75' north center of *Intersection	3' BSG	OS	7.8	110.5	113.6	7.8	97.3%	95%	Pass
2	110' north 75' west of *Intersection	2' BSG	OS	8.6	111.3	113.6	7.8	98.0%	95%	Pass
3	205' north 50' west of *Intersection	2' BSG	OS	8.9	111.1	113.6	7.8	97.8%	95%	Pass
4	280' north 37' east of *Intersection	2' BSG	OS	7.2	110.9	113.6	7.8	97.6%	95%	Pass
5	220' north 108' east of *Intersection	2' BSG	OS	7.1	109.5	113.6	7.8	96.4%	95%	Pass
6	180' north 140' east of *Intersection	2' BSG	OS	9.3	111.4	113.6	7.8	98.1%	95%	Pass
7	90' north 180' east of *Intersection	2' BSG	OS	8.4	111.6	113.6	7.8	98.2%	95%	Pass
8	30' north 80' east of *Intersection	2' BSG	OS	8.1	108.2	113.6	7.8	95.2%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*Intersection = intersection of Coral Junction Road and Road B		
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**		
Field Tech:	Cole James	Reviewed By:	David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/21/2020

Nuc. Gauge Make: Troxler Standard Ct. 2527/726 Model: 3440 Serial #: 75308 Calibration Date: 1/28/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	Section 3.4, 274' west of Foothills Canyon Drive	3'BFG	OS	7.3	109.6	113.6	7.8	96.5%	95%	Pass
2	Section 4.0, 301' west of Foothills Canyon Drive	3'BFG	OS	7.9	108.7	113.6	7.8	95.7%	95%	Pass
3	Section 3.9, 268' west of Foothills Canyon Drive	3'BFG	OS	8.7	108.9	113.6	7.8	95.9%	95%	Pass
4	Section 4.3, 341' west of Foothills Canyon Drive	3'BFG	OS	7.7	109.3	113.6	7.8	96.2%	95%	Pass
5	Section 3.6, 249' west of Foothills Canyon Drive	3'BFG	OS	7.6	109.1	113.6	7.8	96.0%	95%	Pass
6	Section 4.1, 325' west of Foothills Canyon Drive	3'BFG	OS	8.0	108.2	113.6	7.8	95.2%	95%	Pass
7	Section 3.7, 301' west of Foothills Canyon Drive	3'BFG	OS	8.1	108.6	113.6	7.8	95.6%	95%	Pass
8	Section 3.5, 262' west of Foothills Canyon Drive	3'BFG	OS	7.6	108.8	113.6	7.8	95.8%	95%	Pass
9	Section 4.0, 245' west of Foothills Canyon Drive	3'BFG	OS	7.2	109.6	113.6	7.8	96.5%	95%	Pass
10	Section 3.3, 293' west of Foothills Canyon Drive	3'BFG	OS	7.9	109.1	113.6	7.8	96.0%	95%	Pass
11	Section 4.3, 346' west of Foothills Canyon Drive	3'BFG	OS	7.4	108.8	113.6	7.8	95.8%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
20SG4839	Red poorly Graded Sand	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

X **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: S.Poole Reviewed By: Jeramy Egan

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/22/2020

Nuc. Gauge Make: Troxler Standard Ct. 1875/668 Model: 3440 Serial #: 28526 Calibration Date: 4/10/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	275' east 105' north of intersection*	3' BSG	OS	8.4	110.6	113.6	7.8	97.4%	95%	Pass
2	225' east 206' north of intersection*	3' BSG	OS	6.1	108.8	113.6	7.8	95.8%	95%	Pass
3	190' east 310' north of intersection*	3' BSG	OS	6.8	109.5	113.6	7.8	96.4%	95%	Pass
4	175' east 390' north of intersection*	3' BSG	OS	8.6	110.4	113.6	7.8	97.2%	95%	Pass
5	101' east 385' north of intersection*	3' BSG	OS	8.5	108.2	113.6	7.8	95.2%	95%	Pass
6	123' east 258' north of intersection*	3' BSG	OS	9.1	110.7	113.6	7.8	97.4%	95%	Pass
7	115' east 112' north of intersection*	3' BSG	OS	8.2	110.6	113.6	7.8	97.4%	95%	Pass
8	80' east 205' north of intersection*	3' BSG	OS	8.8	109.1	113.6	7.8	96.0%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	Contractor was notified of the results. * = of Coral Canyon Boulevard and Coral Junction Road
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: Jeramy Egan

795 East Factory Drive, St. George, UT 84790 Phone: (435) 986-0566 Fax: (435) 986-0568

LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/23/2020

Nuc. Gauge Make: Troxler Standard Ct. 1839/701 Model: 3440 Serial #: 21769 Calibration Date: 1/16/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	600' north and 350' east of intersection of Coral Canyon Boulevard and Foothills Junction Drive	2' BFG	OS	10.5	113.4	113.6	7.8	99.8%	95%	Pass
2	500' north and 375' east of intersection of Coral Canyon Boulevard and Foothills Junction Drive	2' BFG	OS	11.8	113.1	113.6	7.8	99.6%	95%	Pass
3	400' north and 350' east of intersection of Coral Canyon Boulevard and Foothills Junction Drive	2' BFG	OS	10.4	112.6	113.6	7.8	99.1%	95%	Pass
4	of intersection of Coral Canyon Boulevard and Foothills Junction Drive	2' BFG	OS	12.5	112.1	113.6	7.8	98.7%	95%	Pass
5	300' north and 340' east of intersection of Coral Canyon Boulevard and Foothills Junction Drive	2' BFG	OS	8.7	108.7	113.6	7.8	95.7%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

X **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Troy Snyder Reviewed By: Jeramy Egan

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/28/2020

Nuc. Gauge Make: Troxler Standard Ct. 2276/666 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	260' east 60' north of intersection *	2' BSG	OS	7.9	112.9	113.6	7.8	99.4%	95%	Pass
2	250' east 190' north of intersection *	2' BSG	OS	7.7	111.0	113.6	7.8	97.7%	95%	Pass
3	245' east 285' north of intersection *	2' BSG	OS	6.5	108.0	113.6	7.8	95.1%	95%	Pass
4	240' east 390' north of intersection *	2' BSG	OS	6.2	109.7	113.6	7.8	96.6%	95%	Pass
5	225' east 485' north of intersection *	2' BSG	OS	6.9	109.6	113.6	7.8	96.5%	95%	Pass
6	222' east 595' north of intersection *	2' BSG	OS	5.9	108.0	113.6	7.8	95.1%	95%	Pass
7	172' east 650' north of intersection *	2' BSG	OS	6.1	108.7	113.6	7.8	95.7%	95%	Pass
8	123' east 560' north of intersection *	2' BSG	OS	6.4	109.8	113.6	7.8	96.7%	95%	Pass
9	115' east 465' north of intersection *	2' BSG	OS	6.9	108.3	113.6	7.8	95.3%	95%	Pass
10	90' east 340' north of intersection *	2' BSG	OS	6.4	108.1	113.6	7.8	95.2%	95%	Pass
11	80' east 230' north of intersection *	2' BSG	OS	6.3	108.4	113.6	7.8	95.4%	95%	Pass
12	70' east 120' north of intersection *	2' BSG	OS	6.4	108.1	113.6	7.8	95.2%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	Contractor was notified of the results. *Intersection = intersection of Coral Canyon Boulevard and Coral Junction Road
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/30/2020

Nuc. Gauge Make: Troxler Standard Ct. 2254/665 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	265' north 10' west of intersection *	6' BSG	OS	7.9	108.7	113.6	7.8	95.7%	95%	Pass
2	370' north 12' west of intersection *	4' BSG	OS	8.4	109.5	113.6	7.8	96.4%	95%	Pass
3	446' north 10' west of intersection *	2' BSG	OS	8.7	111.6	113.6	7.8	98.2%	95%	Pass
4	450' north 75' east of intersection *	2' BSG	OS	9.0	111.8	113.6	7.8	98.4%	95%	Pass
5	352' north 80' east of intersection *	4' BSG	OS	8.3	108.3	113.6	7.8	95.3%	95%	Pass
6	270' north 85' east of intersection *	6' BSG	OS	8.1	108.2	113.6	7.8	95.2%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4839	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	Contractor was notified of the results. *Intersection = intersection of Coral Canyon Boulevard and Coral Junction Road.
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	12/29/2020

Nuc. Gauge Make: Troxler Standard Ct. 2250/666 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	500' east 60' north of intersection*	1' BSG	OS	9.1	111.2	113.6	7.8	97.9%	95%	Pass
2	590' east 65' north of intersection*	1' BSG	OS	9.3	112.7	113.6	7.8	99.2%	95%	Pass
3	580' east 170' north of intersection*	1' BSG	OS	8.5	108.7	113.6	7.8	95.7%	95%	Pass
4	530' east 240' north of intersection*	1' BSG	OS	6.5	108.2	113.6	7.8	95.2%	95%	Pass
5	475' east 190' north of intersection*	1' BSG	OS	6.5	108.1	113.6	7.8	95.2%	95%	Pass
6	400' east 140' north of intersection*	1' BSG	OS	6.2	109.7	113.6	7.8	96.6%	95%	Pass
7	350' east 185' north of intersection*	1' BSG	OS	9.1	108.8	113.6	7.8	95.8%	95%	Pass
8	290' east 260' north of intersection*	1' BSG	OS	6.2	108.7	113.6	7.8	95.7%	95%	Pass
9	200' east 230' north of intersection*	1' BSG	OS	9.2	107.9	113.6	7.8	95.0%	95%	Pass
10	175' east 130' north of intersection*	1' BSG	OS	7.3	112.8	113.6	7.8	99.3%	95%	Pass
11	80' east 110' north of intersection*	1' BSG	OS	6.2	110.9	113.6	7.8	97.6%	95%	Pass
12	85' east 215' north of intersection*	1' BSG	OS	6.6	108.8	113.6	7.8	95.8%	95%	Pass
13	10' west 170' north of intersection*	1' BSG	OS	8.2	109.7	113.6	7.8	96.6%	95%	Pass
14	40' east 65' north of intersection*	1' BSG	OS	9.1	109.5	113.6	7.8	96.4%	95%	Pass
15	155' east 500' north of intersection*	1' BSG	OS	6.5	110.3	113.6	7.8	97.1%	95%	Pass
16	140' east 395' north of intersection*	3' BSG	OS	7.3	108.2	113.6	7.8	95.2%	95%	Pass
17	120' east 270' north of intersection*	5' BSG	OS	7.9	110.1	113.6	7.8	96.9%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*"Intersection"= intersection of Coral Junction Road and Coral Canyon Boulevard
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	1/4/2021

Nuc. Gauge Make: Troxler Standard Ct. 1859/663 Model: 3440 Serial #: 26528 Calibration Date: 4/10/2020

Test No.	Station / Location: Mass Grade	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	20' south of road B and E intersection	1'BFSG	OS	9.2	111.4	113.6	7.8	98.1%	95%	Pass
2	70' south of road B and E intersection	2'BFSG	OS	9.8	111.1	113.6	7.8	97.8%	95%	Pass
3	140' south of road B and E intersection	4'BFSG	OS	8.1	108.6	113.6	7.8	95.6%	95%	Pass
4	150' south 40' west of road B and E intersection	4'BFSG	OS	8.8	111.3	113.6	7.8	98.0%	95%	Pass
5	100' south 40' west of road B and E intersection	3'BFSG	OS	8.1	112.3	113.6	7.8	98.9%	95%	Pass
6	50' south 40' west of road B and E intersection	2'BFSG	OS	9.8	112.0	113.6	7.8	98.6%	95%	Pass
7	10' south 40' west of road B and E intersection	1'BFSG	OS	9.4	113.5	113.6	7.8	99.9%	95%	Pass
8	15' south 80' west of road B and E intersection	1'BFSG	OS	9.9	109.3	113.6	7.8	96.2%	95%	Pass
9	75' south 80' west of road B and E intersection	2'BFSG	OS	9.4	111.6	113.6	7.8	98.2%	95%	Pass
10	120' south 80' west of road B and E intersection	3'BFSG	OS	9.6	110.6	113.6	7.8	97.4%	95%	Pass
11	170' south 80' west of road B and E intersection	4'BFSG	OS	9.7	111.1	113.6	7.8	97.8%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

X **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Fred Castagne Reviewed By: Clay Bundy

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	1/5/2021

Nuc. Gauge Make: Troxler Standard Ct. 2273/656 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	220' east 395' north of *	3' BSG	OS	6.2	109.3	113.6	7.8	96.2%	95%	Pass
2	225' east 490' north of *	2' BSG	OS	5.9	108.9	113.6	7.8	95.9%	95%	Pass
3	210' east 585' north of *	1' BSG	OS	6.1	108.7	113.6	7.8	95.7%	95%	Pass
4	110' east 590' north of *	1' BSG	OS	6.5	112.6	113.6	7.8	99.1%	95%	Pass
5	115' east 480' north of *	2' BSG	OS	5.9	111.9	113.6	7.8	98.5%	95%	Pass
6	110' east 400' north of *	3' BSG	OS	7.2	111.7	113.6	7.8	98.3%	95%	Pass
7	20' east 390' north of *	3' BSG	OS	5.9	109.3	113.6	7.8	96.2%	95%	Pass
8	15' east 485' north of *	2' BSG	OS	7.2	111.3	113.6	7.8	98.0%	95%	Pass
9	15' east 575' north of *	1' BSG	OS	6.2	111.5	113.6	7.8	98.2%	95%	Pass
10	250' east 450' north of *	2' BSG	OS	6.3	110.3	113.6	7.8	97.1%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	Contractor was notified of the results. * = intersection of Coral Canyon Boulevard and Coral Junction Road.
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2505/693 Model: 3440 Serial #: 38468 Calibration Date: 11/12/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	1/6/2021	75' east 120' north of Coral Junction Road & Roab B	1' BFG	OS	8.3	110.6	113.6	7.8	97.4%	95%	Pass
2	1/6/2021	90' east 250' north of Coral Junction Rd and Roab B	1' BFG	OS	9.6	111.3	113.6	7.8	98.0%	95%	Pass
3	1/6/2021	40' east 100' north of Road E and Roab B center lines	2' BFG	OS	8.8	109.5	113.6	7.8	96.4%	95%	Pass
4	1/6/2021	15' east 300' north of Road E and Roab B center lines	2' BFG	OS	9.4	110.8	113.6	7.8	97.5%	95%	Pass
5	1/6/2021	45' west 200' north of Road C and Roab B center lines	2' BFG	OS	9.0	109.6	113.6	7.8	96.5%	95%	Pass
6	1/6/2021	35' west 250' north of Road C and Roab B center lines	2' BFG	OS	8.2	111.0	113.6	7.8	97.7%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

x **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Aaron Ward Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834

Nuc. Gauge Make: Troxler Standard Ct. 2496/688 Model: 3440 Serial #: 38468 Calibration Date: 11/12/2020

Test No.	Test Date	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	1/7/2021	20' east 110' north of Road B and Road C centerlines	FG	OS	8.3	110.3	113.6	7.8	97.1%	95%	Pass
2	1/7/2021	25' west 180' north of Road B and Road D centerlines	FG	OS	7.4	111.6	113.6	7.8	98.2%	95%	Pass
3	1/7/2021	15' east 90' north of Road B and Road C centerlines	FG	OS	8.6	109.9	113.6	7.8	96.7%	95%	Pass
4	1/7/2021	30' west 250' north of Road B and Road C centerlines	FG	OS	7.9	110.4	113.6	7.8	97.2%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

x **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Aaron Ward Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	1/8/2021

Nuc. Gauge Make: Troxler Standard Ct. 2073/760 Model: 3430 Serial #: 38037 Calibration Date: 1/7/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	Intersection*, 4' south of centerlines	FSG	OS	8.6	119.6	123.9	10.1	96.5%	95%	Pass
2	80' south of Intersection*	FSG	OS	8.5	122.2	123.9	10.1	98.6%	95%	Pass
3	160' south of Intersection*	FSG	OS	9.5	109.1	111.5	11.4	97.8%	95%	Pass
4	240' south of Intersection*	FSG	OS	8.2	118.3	123.9	10.1	95.5%	95%	Pass
5	320' south of Intersection*	FSG	OS	10.6	106.9	111.5	11.4	95.9%	95%	Pass
6	320' south 80' west of Intersection*	FSG	OS	9.9	109.1	111.5	11.4	97.8%	95%	Pass
7	240' south 80' west of Intersection*	FSG	OS	10.4	110.8	111.5	11.4	99.4%	95%	Pass
8	160' south 80' west of Intersection*	FSG	OS	10.0	106.4	111.5	11.4	95.4%	95%	Pass
9	80' south 80' west of Intersection*	FSG	OS	9.7	106.3	111.5	11.4	95.3%	95%	Pass
10	80' west of Intersection*	FSG	OS	13.0	106.7	111.5	11.4	95.7%	95%	Pass
11	70' north 80' west of Intersection*	FSG	OS	13.3	109.6	111.5	11.4	98.3%	95%	Pass
12	160' west of Intersection*	FSG	OS	11.2	107.2	111.5	11.4	96.1%	95%	Pass
13	80' north 160* west of Intersection*	FSG	OS	12.6	108.2	111.5	11.4	97.0%	95%	Pass
14	80' south 160' west of Intersection*	FSG	OS	11.6	118.7	123.9	10.1	95.8%	95%	Pass
15	160' south 160' west of Intersection*	FSG	OS	9.7	105.9	111.5	11.4	95.0%	95%	Pass
16	240' south 160' west of Intersection*	FSG	OS	9.6	117.9	123.9	10.1	95.2%	95%	Pass
17	320' south 160' west of Intersection*	FSG	OS	8.4	117.8	123.9	10.1	95.1%	95%	Pass

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4785	Red Sand with Gravel	123.9	10.1	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
19SG5147	Orange Yellow Sand with Gravel	111.5	11.4	FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	*"Intersection" = intersection of Roads B & E
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech: Lehi Steed	Reviewed By: David Ward

795 East Factory Drive, St. George, UT 84790 Phone: (435) 986-0566 Fax: (435) 986-0568

LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	1/11/2021

Nuc. Gauge Make: Troxler Standard Ct. 2322/664 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	*station 1+30 180' west of centerline	3' BSG	OS	6.3	108.2	113.6	7.8	95.2%	95%	Pass
2	*station 1+40 275' west of centerline	3' BSG	OS	5.9	107.9	113.6	7.8	95.0%	95%	Pass
3	*station 1+60 360' west of centerline	4' BSG	OS	6.1	108.3	113.6	7.8	95.3%	95%	Pass
4	*station 1+90 240' west of centerline	5' BSG	OS	7.1	110.9	113.6	7.8	97.6%	95%	Pass
5	*station 1+10 110' west of centerline	4' BSG	OS	6.5	108.1	113.6	7.8	95.2%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	(*) = Stations based on north Coral Canyon Boulevard from intersection of Coral Canyon Boulevard and Foothills Canyon Drive. Sheet C1.1
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: Clay Bundy

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	1/12/2021

Nuc. Gauge Make: Troxler Standard Ct. 2480/690 Model: 3440 Serial #: 38468 Calibration Date: 11/2/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	80' west 175' north of southeast corner of project	2' BFG	OS	9.1	109.6	113.6	7.8	96.5%	95%	Pass
2	120' west 250' north of southeast corner of project	1' BFG	OS	8.4	111.4	113.6	7.8	98.1%	95%	Pass
3	255' west 350' north of southeast corner of project	1' BFG	OS	8.9	110.9	113.6	7.8	97.6%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

x **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Aaron Ward Reviewed By:

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	1/13/2021

Nuc. Gauge Make: Troxler Standard Ct. 2477/695 Model: 3440 Serial #: 38468 Calibration Date: 11/12/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	250' east 50' north of Coral Canyon Boulevard and Coral Junction Road centerlines	SBG	OS	6.2	110.6	113.6	7.8	97.4%	95%	Pass
1	150' east 150' north of Coral Canyon Boulevard and Coral Junction Road centerlines	SBG	OS	7.4	111.7	113.6	7.8	98.3%	95%	Pass
2	100' east 200' north of Coral Canyon Boulevard and Coral Junction Road centerlines	SBG	OS	6.1	110.3	113.6	7.8	97.1%	95%	Pass
3	50' east 300' north of Coral Canyon Boulevard and Coral Junction Road centerlines	SBG	OS	7.6	109.8	113.6	7.8	96.7%	95%	Pass
4	20' east 350' north of Coral Canyon Boulevard and Coral Junction Road centerlines	SBG	OS	6.7	111.8	113.6	7.8	98.4%	95%	Pass
5	150' east 400' north of Coral Canyon Boulevard and Coral Junction Road centerlines	SBG	OS	8.4	112.4	113.6	7.8	98.9%	95%	Pass
6	250' east 450' north of Coral Canyon Boulevard and Coral Junction Road centerlines	SBG	OS	7.3	109.2	113.6	7.8	96.1%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
20SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

x **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Aaron Ward Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	1/14/2021

Nuc. Gauge Make: Troxler Standard Ct. 2471/701 Model: 3440 Serial #: 38468 Calibration Date: 11/12/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	115' east 60' north of southwest corner of project	SBG	OS	6.6	111.5	113.6	7.8	98.2%	95%	Pass
2	250' east 120' north of southwest corner of project	SBG	OS	8.2	109.6	113.6	7.8	96.5%	95%	Pass
3	50' east 220' north of southwest corner of project	SBG	OS	7.7	112.1	113.6	7.8	98.7%	95%	Pass
4	100' east 300' north of southwest corner of project	SBG	OS	8.6	110.9	113.6	7.8	97.6%	95%	Pass
5	200' east 350' north of southwest corner of project	SBG	OS	6.7	111.4	113.6	7.8	98.1%	95%	Pass
6	150' west 100' north of southeast corner of project	SBG	OS	8.1	109.7	113.6	7.8	96.6%	95%	Pass
7	200' west 250' north of southeast corner of project	SBG	OS	8.8	110.3	113.6	7.8	97.1%	95%	Pass
8	250' west 350' north of southeast corner of project	SBG	OS	7.4	111.2	113.6	7.8	97.9%	95%	Pass
9	100' west 300' north of southeast corner of project	SBG	OS	9.3	110.0	113.6	7.8	96.8%	95%	Pass
10	70' west 150' north of southeast corner of project	SBG	OS	7.2	109.2	113.6	7.8	96.1%	95%	Pass
11	50' east 100' north of Road B and Coral Junction Road center lines	1' BFG	OS	8.6	111.6	113.6	7.8	98.2%	95%	Pass
12	20' east 140' north of Road B and Coral Junction Road center lines	3' BFG	OS	7.4	110.9	113.6	7.8	97.6%	95%	Pass
13	20' east 180' north of Road B and Coral Junction Road center lines	4' BFG	OS	9.0	109.8	113.6	7.8	96.7%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

x **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Aaron Ward Reviewed By: Clay Bundy

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	2/1/2021

Nuc. Gauge Make: Troxler Standard Ct. 2259/665 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	350' west 170' north of *	FSG	OS	7.2	110.2	113.6	7.8	97.0%	95%	Pass
2	320' west 100' north of *	FSG	OS	6.9	109.8	113.6	7.8	96.7%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	(*) = center of intersection of Coral Canyon Boulevard and Coral Junction Road.
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	2/1/2021

Nuc. Gauge Make: Troxler Standard Ct. 2259/665 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	230' east 70' north of *	FSG	OS	6.2	109.2	113.6	7.8	96.1%	95%	Pass
2	130' east 70' north of *	FSG	OS	6.6	108.8	113.6	7.8	95.8%	95%	Pass
3	130' east 170' north of *	FSG	OS	6.7	109.4	113.6	7.8	96.3%	95%	Pass
4	130' east 270' north of *	FSG	OS	7.2	108.5	113.6	7.8	95.5%	95%	Pass
5	30' east 270' north of *	FSG	OS	8.0	107.9	113.6	7.8	95.0%	95%	Pass
6	30' east 170' north of *	FSG	OS	8.5	108.8	113.6	7.8	95.8%	95%	Pass
7	30' east 70' north of *	FSG	OS	8.8	109.5	113.6	7.8	96.4%	95%	Pass
8	70' west 70' north of *	FSG	OS	7.7	109.2	113.6	7.8	96.1%	95%	Pass
9	70' west 170' north of *	FSG	OS	6.2	110.1	113.6	7.8	96.9%	95%	Pass
10	70' west 270' north of *	FSG	OS	6.6	110.2	113.6	7.8	97.0%	95%	Pass
11	170' west 270' north of *	FSG	OS	7.7	109.9	113.6	7.8	96.7%	95%	Pass
12	170' west 170' north of *	FSG	OS	7.9	109.0	113.6	7.8	96.0%	95%	Pass
13	170' west 70' north of *	FSG	OS	6.3	108.4	113.6	7.8	95.4%	95%	Pass
14	270' west 70' north of *	FSG	OS	6.5	108.3	113.6	7.8	95.3%	95%	Pass
15	270' west 170' north of *	FSG	OS	7.2	109.3	113.6	7.8	96.2%	95%	Pass
16	270' west 270' north of *	FSG	OS	8.9	109.2	113.6	7.8	96.1%	95%	Pass
17	350' west 270' north of *	FSG	OS	7.1	108.1	113.6	7.8	95.2%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	(*) = center of intersection of Coral Canyon Boulevard and Coral Junction Road.
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	2/1/2021

Nuc. Gauge Make: Troxler Standard Ct. 2259/665 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	730' east 70' north of *	FSG	OS	8.4	108.9	113.6	7.8	95.9%	95%	Pass
2	730' east 170' north of *	FSG	OS	9.7	110.1	113.6	7.8	96.9%	95%	Pass
3	730' east 270' north of *	FSG	OS	9.1	109.3	113.6	7.8	96.2%	95%	Pass
4	630' east 270' north of *	FSG	OS	9.2	110.0	113.6	7.8	96.8%	95%	Pass
5	630' east 170' north of *	FSG	OS	8.2	110.2	113.6	7.8	97.0%	95%	Pass
6	630' east 70' north of *	FSG	OS	8.0	109.2	113.6	7.8	96.1%	95%	Pass
7	530' east 70' north of *	FSG	OS	7.7	107.9	113.6	7.8	95.0%	95%	Pass
8	530' east 170' north of *	FSG	OS	7.4	108.2	113.6	7.8	95.2%	95%	Pass
9	530' east 270' north of *	FSG	OS	8.6	109.3	113.6	7.8	96.2%	95%	Pass
10	430' east 270' north of *	FSG	OS	9.4	110.1	113.6	7.8	96.9%	95%	Pass
11	430' east 170' north of *	FSG	OS	8.4	108.7	113.6	7.8	95.7%	95%	Pass
12	430' east 70' north of *	FSG	OS	7.2	109.4	113.6	7.8	96.3%	95%	Pass
13	330' east 70' north of *	FSG	OS	8.9	110.3	113.6	7.8	97.1%	95%	Pass
14	330' east 170' north of *	FSG	OS	9.6	108.7	113.6	7.8	95.7%	95%	Pass
15	330' east 270' north of *	FSG	OS	9.4	108.9	113.6	7.8	95.9%	95%	Pass
16	230' east 270' north of *	FSG	OS	8.0	108.3	113.6	7.8	95.3%	95%	Pass
17	230' east 170' north of *	FSG	OS	7.8	109.2	113.6	7.8	96.1%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	(*) = center of intersection of Coral Canyon Boulevard and Coral Junction Road.
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	2/1/2021

Nuc. Gauge Make: Troxler Standard Ct. 2259/665 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	* station 1+05 2' left of centerline	SBG	OS	5.9	108.7	113.6	7.8	95.7%	95%	Pass
2	* station 2+65 1' right of centerline	SBG	OS	6.6	110.7	113.6	7.8	97.4%	95%	Pass
3	* station 4+15 2' left of centerline	SBG	OS	6.2	109.2	113.6	7.8	96.1%	95%	Pass
4	* station 5+65 1' right of centerline	SBG	OS	6.3	110.1	113.6	7.8	96.9%	95%	Pass
5	* station 7+20 3' right of centerline	SBG	OS	6.7	108.3	113.6	7.8	95.3%	95%	Pass
6	* station 8+70 2' right of centerline	SBG	OS	7.9	108.6	113.6	7.8	95.6%	95%	Pass
7	* station 10+18 4' left of centerline	SBG	OS	7.2	109.2	113.6	7.8	96.1%	95%	Pass
8	* station 11+55 2' right of centerline	SBG	OS	8.3	109.3	113.6	7.8	96.2%	95%	Pass
9	* station 13+30 3' right of centerline	SBG	OS	8.1	110.2	113.6	7.8	97.0%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	Coral Junction Road stations based on plan sheet C1.1 with stations running from east to west end of road. (*) = Coral Junction Road
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By:

795 East Factory Drive, St. George, UT 84790 Phone: (435) 986-0566 Fax: (435) 986-0568

LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	2/2/2021

Nuc. Gauge Make: Troxler Standard Ct. 2259/665 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	5' east 630' north of *	FSG	OS	7.9	109.2	113.6	7.8	96.1%	95%	Pass
2	5' east 480' north of *	FSG	OS	8.1	108.1	113.6	7.8	95.2%	95%	Pass
3	5' east 335' north of *	FSG	OS	5.9	109.2	113.6	7.8	96.1%	95%	Pass
4	150' west 330' north of *	FSG	OS	6.6	108.7	113.6	7.8	95.7%	95%	Pass
5	150' west 480' north of *	FSG	OS	6.8	108.9	113.6	7.8	95.9%	95%	Pass
6	150' west 630' north of *	FSG	OS	7.1	110.2	113.6	7.8	97.0%	95%	Pass
7	150' west 820' north of *	FSG	OS	6.8	108.3	113.6	7.8	95.3%	95%	Pass
8	300' west 700' north of *	FSG	OS	6.1	109.2	113.6	7.8	96.1%	95%	Pass
9	300' west 640' north of *	FSG	OS	7.2	108.7	113.6	7.8	95.7%	95%	Pass
10	300' west 370' north of *	FSG	OS	6.4	108.9	113.6	7.8	95.9%	95%	Pass
11	450' west 335' north of *	FSG	OS	6.6	109.3	113.6	7.8	96.2%	95%	Pass
12	450' west 480' north of *	FSG	OS	8.1	108.7	113.6	7.8	95.7%	95%	Pass
13	450' west 630' north of *	FSG	OS	8.4	108.1	113.6	7.8	95.2%	95%	Pass
14	450' west 730' north of *	FSG	OS	6.6	107.9	113.6	7.8	95.0%	95%	Pass
15	550' west 730' north of *	FSG	OS	6.7	108.3	113.6	7.8	95.3%	95%	Pass
16	550' west 580' north of *	FSG	OS	7.2	109.3	113.6	7.8	96.2%	95%	Pass
17	550' west 430' north of *	FSG	OS	7.3	110.1	113.6	7.8	96.9%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	* = intersection of Coral Canyon Boulevard and Coral Junction Road
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech: Cole James	Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	2/2/2021

Nuc. Gauge Make: Troxler Standard Ct. 2259/665 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	450' east 330' north of *	FSG	OS	5.9	108.7	113.6	7.8	95.7%	95%	Pass
2	450' east 480' north of *	FSG	OS	6.7	109.3	113.6	7.8	96.2%	95%	Pass
3	450' east 630' north of *	FSG	OS	6.6	109.2	113.6	7.8	96.1%	95%	Pass
4	450' east 780' north of *	FSG	OS	5.9	108.2	113.6	7.8	95.2%	95%	Pass
5	450' east 880' north of *	FSG	OS	6.9	108.4	113.6	7.8	95.4%	95%	Pass
6	300' east 880' north of *	FSG	OS	7.1	108.7	113.6	7.8	95.7%	95%	Pass
7	300' east 780' north of *	FSG	OS	8.3	108.2	113.6	7.8	95.2%	95%	Pass
8	300' east 630' north of *	FSG	OS	7.7	109.2	113.6	7.8	96.1%	95%	Pass
9	300' east 480' north of *	FSG	OS	6.9	109.0	113.6	7.8	96.0%	95%	Pass
10	300' east 330' north of *	FSG	OS	7.4	108.1	113.6	7.8	95.2%	95%	Pass
11	150' east 330' north of *	FSG	OS	8.9	110.1	113.6	7.8	96.9%	95%	Pass
12	150' east 480' north of *	FSG	OS	8.1	109.3	113.6	7.8	96.2%	95%	Pass
13	150' east 630' north of *	FSG	OS	9.0	108.6	113.6	7.8	95.6%	95%	Pass
14	150' east 780' north of *	FSG	OS	7.1	107.9	113.6	7.8	95.0%	95%	Pass
15	150' east 840' north of *	FSG	OS	6.2	108.4	113.6	7.8	95.4%	95%	Pass
16	5' east 880' north of *	FSG	OS	6.3	110.1	113.6	7.8	96.9%	95%	Pass
17	5' east 780' north of *	FSG	OS	7.1	110.2	113.6	7.8	97.0%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	* = intersection of Coral Canyon Boulevard and Coral Junction Road.
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech:	Cole James Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	2/2/2021

Nuc. Gauge Make: Troxler Standard Ct. 2259/665 Model: 3430 Serial #: 38162 Calibration Date: 7/1/2020

Test No.	Station / Location: Mass Grading	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	550' east 360' north of *	FSG	OS	6.8	110.2	113.6	7.8	97.0%	95%	Pass
2	700' east 360' north of *	FSG	OS	7.1	109.5	113.6	7.8	96.4%	95%	Pass
3	700' east 525' north of *	FSG	OS	7.2	108.5	113.6	7.8	95.5%	95%	Pass
4	800' east 360' north of *	FSG	OS	6.6	109.1	113.6	7.8	96.0%	95%	Pass
5	900' east 340' north of *	FSG	OS	6.3	108.3	113.6	7.8	95.3%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG4829	Red Poorly Graded Sand with Silt	113.6	7.8	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:	* = center of intersection of Coral Canyon Boulevard and Coral Junction Road
X	**Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**
Field Tech: Cole James	Reviewed By: David Ward

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FINAL GRADING REPORT

Coral Junction Motor Coach Resort
Hurricane, UT
LANDMARK PROJECT NO. 20834

Section 2
Underground Utilities

LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	4/19/2021

Nuc. Gauge Make: Troxler Standard Ct. 1966/656 Model: 3440 Serial #: 36296 Calibration Date: 1/21/2021

Test No.	Station / Location: Storm Drain	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	11' west from manhole 10	PZ	OS	10.5	112.0	123.8	11.5	90.5%	90%	Pass
2	5' west from manhole 8	PZ	OS	10.6	112.8	123.8	11.5	91.1%	90%	Pass
3	7' east from manhole 7	PZ	OS	10.6	112.5	123.8	11.5	90.9%	90%	Pass
4	26' west from manhole 10	2' BFG	OS	10.4	119.9	123.8	11.5	96.8%	95%	Pass
5	32' west from manhole 8	2' BFG	OS	10.3	118.2	123.8	11.5	95.5%	95%	Pass
6	35' west from manhole 7	2' BFG	OS	10.5	118.4	123.8	11.5	95.6%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
20SG5255	Red Silty Sand with Clay and Gravel	123.8	11.5	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

X **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Tristain Tisdale Reviewed By: David Ward

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	5/3/2021

Nuc. Gauge Make: Troxler Standard Ct. 2442/692 Model: 3440 Serial #: 38468 Calibration Date: 11/12/2020

Test No.	Station / Location: Storm Drain	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
	Coral Junction Road									
1	175' north of Coral Junction Rd and Coral Canyon Blvd	PZ	OS	10.6	119.6	123.8	11.5	96.6%	90%	Pass
2	80' south of Coral Junction Rd and Coral Canyon Blvd	PZ	OS	11.3	120.3	123.8	11.5	97.2%	90%	Pass
3	70' east of Coral Junction Rd and Road B	PZ	OS	10.9	121.4	123.8	11.5	98.1%	90%	Pass
4	30' east of Coral Junction Rd and Road B	PZ	OS	11.0	121.5	123.8	11.5	98.1%	90%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
20SG5255	Red Silty Sand with Clay and Gravel	123.8	11.5	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

x **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Aaron Ward Reviewed By: Jeff Webb

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	5/4/2021

Nuc. Gauge Make: Troxler Standard Ct. 2282/663 Model: 3440 Serial #: 36296 Calibration Date: 12/21/2020

Test No.	Station / Location: Storm Drain	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
1	32' north from manhole 7	FG	OS	11.2	117.6	123.8	11.5	95.0%	95%	Pass
2	49' east from manhole 5	FG	OS	11.3	117.9	123.8	11.5	95.2%	95%	Pass
3	38' east from manhole 4	FG	OS	11.5	117.7	123.8	11.5	95.1%	95%	Pass
4	62' east from manhole 3	FG	OS	11.0	118.3	123.8	11.5	95.6%	95%	Pass
5	22' east from manhole 2	FG	OS	11.4	118.2	123.8	11.5	95.5%	95%	Pass
6	41' east from manhole 7	FG	OS	11.4	118.7	123.8	11.5	95.9%	95%	Pass
7	27' north from manhole 20	PZ	OS	11.4	113.2	123.8	11.5	91.4%	90%	Pass
8	49' north from manhole 20	PZ	OS	11.3	112.9	123.8	11.5	91.2%	90%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
20SG5255	Red Silty Sand with Clay and Gravel	123.8	11.5	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

X **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Tristain Tisdale Reviewed By:

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LANDMARK TESTING & ENGINEERING

FIELD DENSITY REPORT

Client:	ACAD	**Project :**	Coral Junction Motor Coach Resort
Address:	2303 Coral Canyon Blvd, Suite 201 Washington, UT 84780	**Project No.:**	20834
		Date Tested:	5/7/2021

Nuc. Gauge Make: Troxler Standard Ct. 2468/689 Model: 3440 Serial #: 38468 Calibration Date: 11/12/2020

Test No.	Station / Location: Storm Drain	Elevation	Material Type	Moisture Content %	Dry Density PCF	Max. Density PCF	Optimum Moisture %	Relative Comp. %	Spec. Comp. %	Remarks P/F
	Coral Junction Rd									
1	120' west of Coral Canyon Rd and Coral Junction Rd	SBG	OS	10.2	106.4	111.5	11.4	95.4%	95%	Pass
2	175' west of Coral Canyon Rd and Coral Junction Rd	SBG	OS	11.8	107.1	111.5	11.4	96.1%	95%	Pass

NOTE: Compaction test results reflect the density of the strata only at this location on this test date.

Ref. Curve	Description	Max Density PCF	Optimum Moisture %	Location Key		Elevation Key		Material Type
19SG5147	Orange-Yellow Sand with Gravel	111.5	11.4	BF Backfill	BP Building Pad	BFG Below Finish Grade	FG Finish Grade	ABC Aggregate Base Course
				FTG Footing	UT Utility Trench	BSG Below Subgrade	AP Above Pipe	EMB Embankment
				WTL Waterline	SS Sanitary Sewer	FTG Footing Grade	BOX Bottom of OX	GB Granular Borrow
				RD Roadway		SBG Sub Grade	BFSG Below Finish Subgrade	ISF Imported Structural Fill
				SD Storm Drain		PZ Pipe Zone		OS On Site
				MS Mass Grading		FSG Finish Subgrade		

Comments:

x **Portable Gauge is properly blocked and braced. All required locks are in place and secure. Tailgate is tightly shut.**

Field Tech: Aaron Ward Reviewed By:

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FINAL GRADING REPORT

Coral Junction Motor Coach Resort
Hurricane, UT
LANDMARK PROJECT NO. 20834

Section 3
Laboratory

LANDMARK TESTING & ENGINEERING

SOIL CLASS. / PROCTOR REPORT

Client: ACAD
2303 Coral Canyon Blvd, Suite 201
Washington, UT 84780

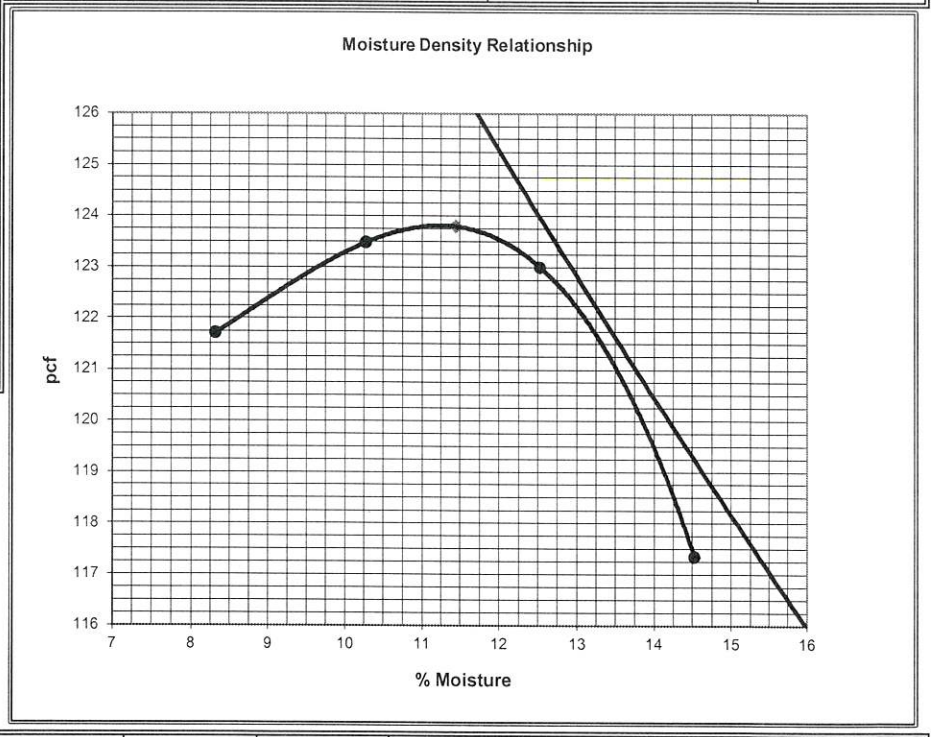
Date of Report: 10/30/2020
Reviewed By: Z. Girsberger
Lab#: 20SG5255

Project: Coral Junction Motor Coach Resort **Project #:** 20834
Location: Washington **Sampled By:** F. Castagne **Date:** 10/29/2020
Type of Sample: Red Silty Sand with Clay and Gravel **Tested By:** J. Wells **Date:** 10/30/2020
Location of Sample: Native Soil on Lot **Authorized By:** Client **Date:** 10/29/2020

Sieve Analysis, ASTM C136 & C117

Sieve Size		% Passing Cumulative	Specification
150 mm	6"		
75 mm	3"		
50 mm	2"		
37.5 mm	1-1/2"		
25 mm	1"		
19 mm	3/4"		
12.5 mm	1/2"		
9.5 mm	3/8"		
4.75 mm	#4		
2.36 mm	#8		
2.00 mm	#10		
1.18 mm	#16		
600 µm	#30		
425 µm	#40		
300 µm	#50		
150 µm	#100		
75 µm	#200		

Test		Result	Specification	Test Standard
Liquid Limit				ASTM D 4318
Plasticity Index				ASTM D 4318
Unified Classification System				ASTM D 2487
AASHTO Classification System				AASHTO M145
Moisture Density Relationship	Maximum Dry Density	123.8 Lbs/ft^3		ASTM D 1557
	Optimum Moisture	11.5 %		Method C



Proctor Data	
Hammer Weight:	10 pounds
Hammer Drop:	18 inches
Number of Layers:	5 layers
Blows per Layer:	56 blows
Mold Size (cu. Ft.):	0.075
% Oversized:	0.4
Oversize Sp. G.:	N/A
ZAV Sp. G.:	2.65
Test Performed on Material Passing:	3/4 in.Sieve

Point	1	2	3	4	5	6
% Moisture	8.3	10.3	12.5	14.5		
Dry Density	121.7	123.5	123.0	117.3		

PROCTOR REPORT

Client: ACAD
2303 Coral Canyon Blvd, Suite 201
Washington, UT 84780

Date of Report: 4/20/2021
Reviewed By: Z. Girsberger
Lab#: 21SG1857

Project: Coral Junction Motor Coach Resort **Project #:** 20834
Location: Washington **Sampled By:** T. Tisdale **Date:** 4/19/2021
Type of Sample: Red Silty Sand **Tested By:** Z. Girsberger **Date:** 4/19/2021
Location of Sample: 52' West of Manhole 10 **Authorized By:** Client **Date:** 4/19/2021

Proctor Data	
Hammer Weight:	10 pounds
Hammer Drop:	18 inches
Number of Layers:	5 layers
Blows per Layer:	25 blows
Mold Size (cu. Ft.):	0.033333
% Oversized:	0.7
Oversize Sp. G.:	N/A
ZAV Sp. G.:	2.55
Test Performed on Material Passing:	3/8 in. Sieve

Point	1	2	3	4	5	6
% Moisture	5.3	7.2	8.8	11.0		
Dry Density	119.3	125.9	127.2	123.2		

Test Results	
Maximum Dry Density, Lbs/ft^3	127.3
Optimum Moisture, %	8.6
Test Standard	ASTM D 1557
Method	Method B

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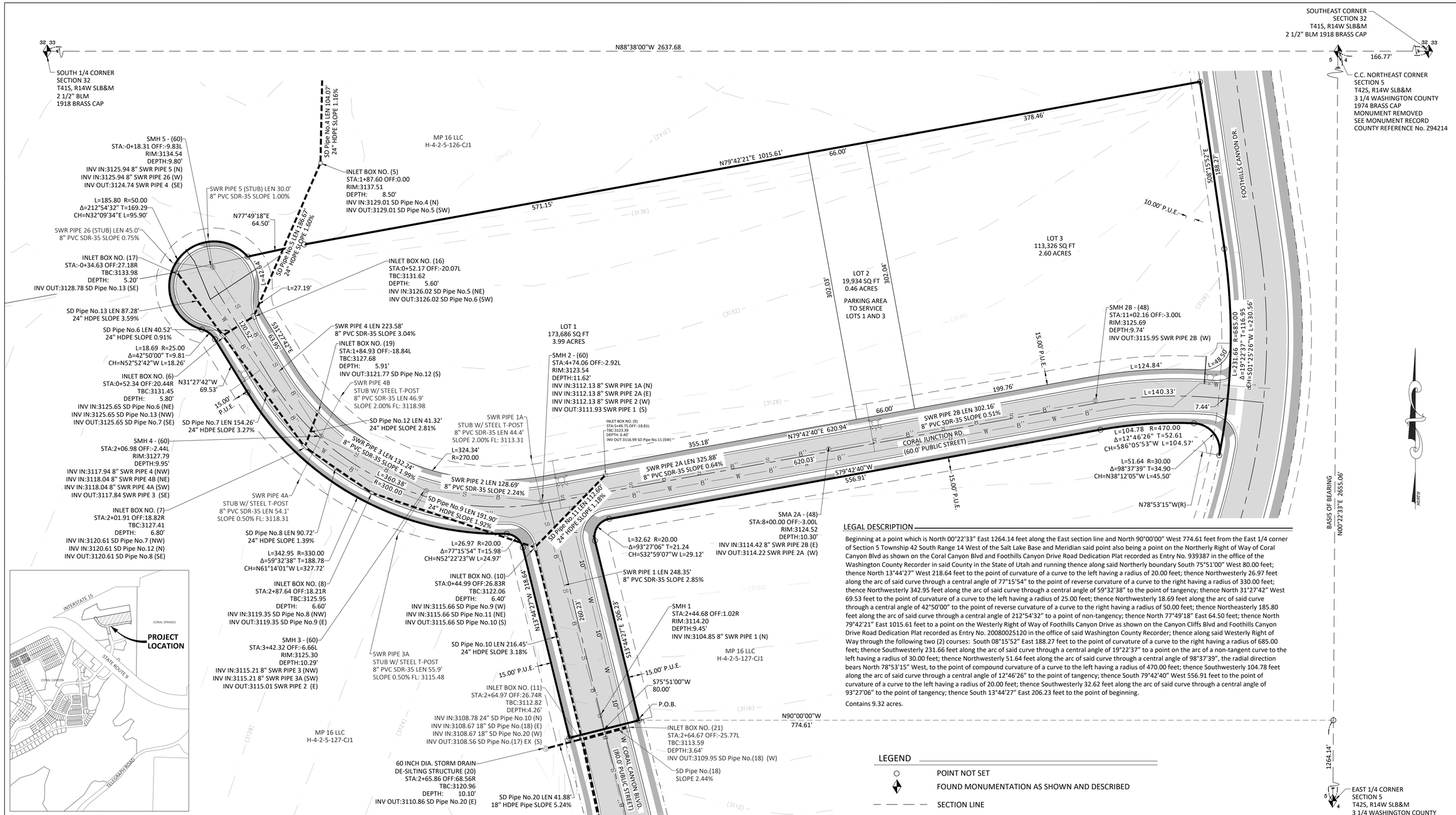


LEGAL DESCRIPTION

Beginning at a point which is North 00°22'33" East 1264.14 feet along the East section line and North 90°00'00" West 774.61 feet from the East 1/4 corner of Section 5 Township 42 South Range 14 West of the Salt Lake Base and Meridian said point also being a point on the Northerly Right of Way of Coral Canyon Blvd as shown on the Coral Canyon Blvd and Foothills Canyon Drive Road Dedication Plat recorded as Entry No. 939387 in the office of the Washington County Recorder in said County in the State of Utah and running thence along said Northerly boundary South 75°51'00" West 80.00 feet; thence North 13°44'27" West 218.64 feet to the point of curvature of a curve to the left having a radius of 20.00 feet; thence Northwesterly 26.97 feet along the arc of said curve through a central angle of 77°15'54" to the point of reverse curvature of a curve to the right having a radius of 330.00 feet; thence Northwesterly 342.95 feet along the arc of said curve through a central angle of 59°32'38" to the point of tangency; thence North 31°27'42" West 69.53 feet to the point of curvature of a curve to the left having a radius of 25.00 feet; thence Northwesterly 18.69 feet along the arc of said curve through a central angle of 42°50'00" to the point of reverse curvature of a curve to the right having a radius of 50.00 feet; thence Northeasterly 185.80 feet along the arc of said curve through a central angle of 212°54'32" to a point of non-tangency; thence North 77°49'18" East 64.50 feet; thence North 79°42'21" East 1015.61 feet to a point on the Westerly Right of Way of Foothills Canyon Drive as shown on the Canyon Cliffs Blvd and Foothills Canyon Drive Road Dedication Plat recorded as Entry No. 20080025120 in the office of said Washington County Recorder; thence along said Westerly Right of Way through the following two (2) courses: South 08°15'52" East 188.27 feet to the point of curvature of a curve to the right having a radius of 685.00 feet; thence Southwesterly 231.66 feet along the arc of said curve through a central angle of 19°22'37" to a point on the arc of a non-tangent curve to the left having a radius of 30.00 feet; thence Northwesterly 51.64 feet along the arc of said curve through a central angle of 98°37'39", the radial direction bears North 78°53'15" West, to the point of compound curvature of a curve to the left having a radius of 470.00 feet; thence Southwesterly 104.78 feet along the arc of said curve through a central angle of 12°46'26" to the point of tangency; thence South 79°42'40" West 556.91 feet to the point of curvature of a curve to the left having a radius of 20.00 feet; thence Southwesterly 32.62 feet along the arc of said curve through a central angle of 93°27'06" to the point of tangency; thence South 13°44'27" East 206.23 feet to the point of beginning.

Contains 9.32 acres.

VICINITY MAP

LEGEND

- POINT NOT SET
- FOUND MONUMENTATION AS SHOWN AND DESCRIBED
- SECTION LINE
- SUBDIVISION BOUNDARY
- EASEMENT AS NOTED
- EXISTING RIGHT OF WAY
- EXISTING ASPHALT
- EXISTING HYDRANT
- EXISTING SEWER MANHOLE
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING STORM DRAIN

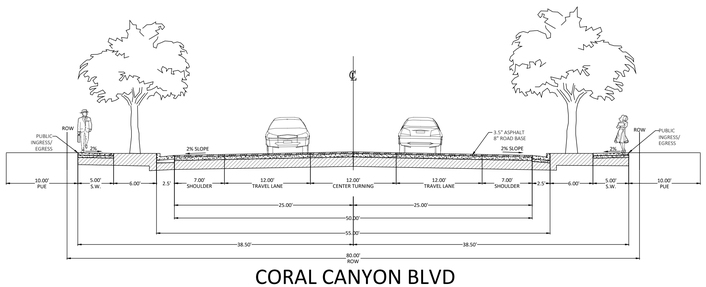
NOTES:

1. THIS AREA IS SHOWN TO HAVE NO KNOWN NATURAL HAZARDS OR SOIL CONCERNS PER UGS 2008 STUDIES.
2. NO STREETS EXCEED 5% SLOPES.

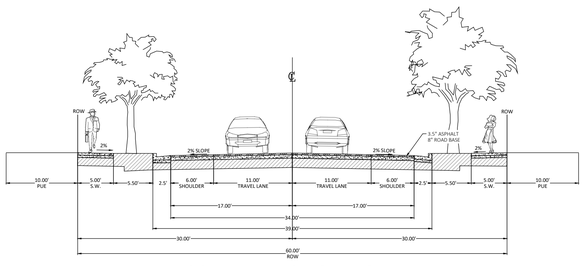
OWNER / DEVELOPER:
MP 16 LLC
604 CHURCHILL DR.
ST. GEORGE, UT 84790

PRELIMINARY PLAT
FOR
CORAL JUNCTION SUBDIVISION PHASE 1

HURRICANE CITY, WASHINGTON COUNTY, UTAH
SECTIONS 5
TOWNSHIP 42 SOUTH , RANGE 14 WEST, SALT LAKE BASE & MERIDIAN



CORAL CANYON BLVD
80' ROW



CORAL JUNCTION ROAD
60' ROW

ALLIANCE CONSULTING
A Planning and Engineering Firm
2303 N Coral Canyon Blvd Suite 201 Washington, Utah 84780-0577 Tel (435) 673-8060 Fax (435) 673-8065

DATE:	1-24-24
JOB NUMBER:	4499
SCALE:	1" = 50'
DRAWN BY:	JHC
CHECKED BY:	MWB
REVISIONS	DATE
FILE NAME:	Coral Junction Ph 1 Plat

CORAL JUNCTION SUBDIVISION PHASE 1
FOR
CORAL JUNCTION ROAD
LOCATED IN SECTION 5
TOWNSHIP 42 SOUTH, RANGE 14 WEST SLB&M,
CITY OF HURRICANE, WASH. CO., UTAH

GEOTECHNICAL INVESTIGATION REPORT

for

Coral Canyon Development

Washington, Utah

Submitted to:

Tech Ridge, LLC.
Attn: David Nilsson
446 South Mall Dr.
St. George, Utah 84790

January 30, 2019

Landmark Testing & Engineering
Landmark Project No. 18646
795 East Factory Drive
St. George, Utah 84790

1.0 INTRODUCTION

This report presents the results of Landmark Testing & Engineering's geotechnical investigation for a proposed 40-acre parcel bounded by Foothills Canyon Drive and I-15 in Washington, Utah. Figure 1 is a Vicinity Map showing the project location relative to surrounding features. Figure 2 is a Site Map showing the approximate locations of the investigations completed for this investigation.

This investigation was completed to assist in developing opinions and recommendations concerning site earthwork, foundation, and pavement design.

2.0 PROPOSED CONSTRUCTION

We understand initial development will include an RV park with pads, clubhouse, and access roads. Expansion may include hotels and cabin sites with commercial sites along Foothills Canyon Drive. There will be asphalt paved roads in the RV park, and between commercial, cabin, and hotel areas.

Any significant changes to the anticipated development should be reviewed by Landmark to evaluate the continued applicability of the recommendations contained in this report.

3.0 SITE SETTING

3.1 SURFACE CONDITIONS

The site is a 40-acre parcel bounded by Foothills Canyon Drive and I-15 in Washington, Utah. The RV park will be located on the northeast side of the site as shown on Figure 3. The site is currently unused desert area with moderate vegetation consisting of creosote bushes, sage brush, grasses, and cacti.

The site has a general slope down to the south. The southeast portion of the site has previously been cleared and grubbed. Minor vegetation has since grown in the area. The site has large hills and depressions located throughout as shown on Figure 3. The hills are up to 40 to 50 feet higher than the depressions and there are slopes of steeper than 1 vertical to 1 horizontal (1V:1H) down to the depressions. The northwest portion of the site slopes down approximately 80 to 100 feet to a wash at a slope of 70 to 80%.

3.2 SUBSURFACE CONDITIONS

Previous geologic mapping by Robert F. Biek[1], 2003, classifies the site as straddling two soil types. The southeastern portion of the site is mapped as alluvial and eolian deposits consisting of poorly to moderately sorted, clay to boulder-size sediments, with well-sorted eolian sand and

[1] Biek, R.F., 2003, Geologic Map of the Hurricane Quadrangle, Washington County, Utah; Utah Geological Survey, Map 187.

reworked eolian sand. The northern portion of the site is mapped as part of the Kayenta Formation consisting of interbedded, thin to medium-bedded, moderate-reddish-brown to moderate-reddish-orange siltstone, fine-grained sandstone, and mudstone.

To investigate subsurface conditions 19 test pits were completed with a CAT 308E mini excavator. Approximate test pit locations are shown on the Site Map on Figure 2. The investigation logs are shown on Figures 4 through 13. A key to the soil descriptions used on the logs is presented on Figure 14.

Subsurface soil conditions generally consisted of 2 and 13 feet of reddish-brown silty sand underlain by bedrock. Most of the bedrock consisted of red siltstone and sandstone.

3.3 SEISMICITY AND FAULTING

Seismicity at the site was determined using the Applied Technology Council website. The following values are presented to assist with seismic design:

- Latitude = 37.166797°N, Longitude = 113.445156°W
- Site Class = C – Very Dense Soil and Soft Rock, based on ASCE 7 (Table 20.3.1) as referenced in 2012 IBC 1613.3.2

Period (sec)	Sa (g)	Site Class
0.2	0.581 S_S	B
1.0	0.188 S_1	B
0.2	0.491 S_{DS}	C
1.0	0.188 S_{D1}	C

(2010 ASCE-7, ATC Applied Technology Council, Beta Version)

The site ranges between 7.9 and 8.2 miles west of the projected trace of the Hurricane Fault and 2.2 to 2.5 miles east of the projected trace of the Washington Fault. Biek (2003)[1] indicates that the Washington and Hurricane faults displace late Quaternary deposits and are considered active. Strong ground motion associated with movement along the Washington, Hurricane, or other faults associated with the Intermountain Seismic Belt is possible, however, the potential for surface fault rupture is considered low.

Groundwater was not encountered in any of the test pits. Bedrock was encountered in all of the test pits at depths between 2 and 13 feet. Therefore, the liquefaction potential for the site is considered low.

4.0 LABORATORY TESTING

Samples from the test pits were brought back to our St. George laboratory for soils testing. Laboratory tests consisted of moisture content and unit weight tests, soluble sulfates, mechanical gradations and Atterberg Limits tests to aid in soil classification, consolidation tests, and California Bearing Ratio (CBR) tests to aid in pavement design. Laboratory results are shown on the investigation logs on Figures 4 through 13.

CBR tests were performed on samples of silty sand from test pits TP-9 and TP-11. The results from the tests show CBR values of 27 and 24, respectively.

A total of 6 consolidation tests were performed on samples of silty sand. Of the 6 samples, 4 collapsed less than 1%, one collapsed 2.4%, and one collapsed 10.9% when wetted under a load of 1,000 psf. The two samples with the highest collapse were located in the northeast portion of the site. Results from the consolidation tests are shown on the test pit logs and on Figures 15 through 20.

5.0 SITE GRADING AND EARTHWORK

5.1 GENERAL GRADING

Site preparation should initially consist of grubbing and removal of vegetation. Grubbing is expected to extend from 6 inches to 1 foot.

A grading plan has not been developed, however, significant cutting and filling will be required to level the site sufficiently for construction. Cuts and fills on the order of 20 feet are anticipated.

In cut areas, we anticipate that bedrock will be encountered. The use of specialized construction equipment such as a single tooth ripper or a hammer hoe will be required. If there are large areas of cuts, blasting may be a more feasible solution.

On-site soils consisted of loose to medium dense silty sand with a low anticipated collapse potential. In fill areas and areas with no cut or fill, we recommend that the upper 12-inches of sand be scarified, moisture conditioned to within 2% of the optimum moisture content and compacted to a minimum of 90% of the maximum dry density as determined by ASTM D-1557.

Fragments of siltstone and sandstone bedrock, up to 2 feet in dimension, taken from the cut areas may be blended with the silty sand in the lower portion of fill areas. The upper 1 foot of fill should not contain rocks larger than 6-inches in dimension. Rocks should be spread out in the fill so as to avoid nesting. Fill areas should be compacted to structural fill specifications as subsequently outlined.

5.1.1 RV PARK

The RV park encompasses the northeast 14.8 acres of the site and will have an estimated 113 RV pads 30 feet by 65 to 75 feet. We understand that there will be asphalt paved roads though the area and that the pads will have concrete slabs.

The western portion of the RV park is located in an anticipated fill area. There is a slope approximately 1V:1H leading up to the central and eastern portions of the RV park. Along the western edge of the RV park area is a slope approximately 40 feet up to the west, steeper that 1V:1H. The central and eastern portions of the RV park slope down to the east at an approximately slope of 3 to 5%. We anticipate that the central and eastern portions of the RV park will be cut to fill the western portion of the RV park. Due to the high collapse potential, if the central and eastern portions are not cut, the upper 5 feet of soil beneath structurally loaded elements that cannot tolerate some differential movement should be excavated and replaced according to structural fill standards as subsequently outlined.

Overall, for general site gradation of the RV park area, we recommend scarification, moisture conditioning, and compaction to a minimum of 90% of the upper 12-inches. If heavily loaded structures are anticipated, site specific investigations should be completed once the layout has been determined.

5.1.2 COMMERCIAL AREAS

There are three commercial areas on the southern portion of the site, encompassing 4.3, 5.5, and 1.5 acres. Area 1 is located on the southwest portion of the site. The area generally slopes down to the southwest between 3 and 5%. There is a steeper slope of approximately 1V:2H along the eastern side of the area. We anticipate that the eastern portion of the area will be cut.

Area 2 is located in the southeast portion of the site. The area has previously been roughly graded. We do not anticipate significant grading in this area. Area 3 is located on the eastern portion of the site and has a general slope of 3 to 5% down to the east. We anticipate cuts and fills on the order of 5 feet.

In the commercial areas we recommend, at a minimum, the upper 2 feet of soil under structural loads should consist of structurally placed soil. Recommendations for individual structures will be provided on a case by case basis once additional soils investigations have been completed at structure specific locations.

5.1.3 HOTELS

There are 2 hotel locations on the site encompassing 5.7 and 1.9 acres. Area 1 consists of 5.7 acres on the western portion of the site. The western portion of the area has a general slope of 3 to 5% down to the southwest. The southern portion of the area has a similar slope down to the

south. The northeastern portion of the area is an anticipated fill area between 10 and 20 feet below the western and southern portions of the area. Surficial bedrock was observed in part of the anticipated fill area.

Area 2 is located in the central portion of the site and encompasses 1.9 acres. The central and eastern portions of the area are approximately 20 to 30 feet higher than the western portion of the site. We anticipate cuts from the eastern portion on the order of 10 feet.

We recommend, at a minimum, the upper 3 feet of soil in the building pad areas should consist of structurally placed soil. Recommendations for the individual hotels will be provided on a case by case basis once additional soils investigations have been completed at structure specific locations.

5.1.4 CABINS

The northwest 3.5 acres of the site are designated for cabins. The area for the cabins has a general slope of 3 to 5% down to the south. On the northern side of the cabin area is a slope up to 80% down to a wash approximately 80 feet lower in elevation. The southeastern portion of the area is expected to be a fill area and approximately 10 to 20 feet below the northern portion of the area.

We anticipate that cuts and fills on the order of 10 to 15 feet will be required in the cabin area. The upper 2 feet of soil in the cabin areas should consist of structurally placed soils. Site specific recommendations will be provided on a case by case basis after additional soils investigations have been completed.

The slope on the northern edge of the area is steeper than 1V:1H. We recommend that either the slope be retained or that all structures be set back from the exposed face of the slope a minimum distance equal to the height of the slope.

5.1.5 EVENT SPACE

There will be a 1.2-acre event space in the center of the site. The area is predominantly located in an anticipated fill area. Structural loads are not provided and fill recommendations will be provided once loads are given and additional soils investigations are completed.

5.2 FILL PLACEMENT AND COMPACTION

All fill to be placed for support of footings and slabs-on-grade should be considered structural fill. On-site soils are suitable for use as structural fill at depth. However, the depth of structural fill will be dependent on eventual structural loads.

Imported, granular fill, if required, should be well-graded, non-expansive, and free of organics and all deleterious materials. Soils used for granular, imported, structural fill should meet the following specifications and preferably would classify as gravel.

Any on-site soils used as structural fill or imported structural fill should be compacted to the following specifications.

Maximum lift thickness	8-inch (loose)
Minimum compaction	95% ASTM D-1557
Compacted Moisture Content	within 2% of optimum

Imported structural fill should meet the following specifications.

GRADATION	PERCENT PASSING
6- inch	100
3-inch	80-100
No. 200 sieve	10-25
Liquid Limit	30 or less
Plasticity Index	9 or less

Material not meeting the above requirements may be suitable for use as structural fill at the discretion of the geotechnical engineer. Samples of structural fill should be submitted for testing prior to transporting to the site.

Compaction of structural fill should be completed with equipment suitable for the conditions encountered in the field such that compaction requirements are met, including those areas that may be inaccessible to large rolling compactors. All structural fill should be evenly spread on a horizontal plane in eight-inch loose lifts. Each eight-inch lift of structural fill material placed at the site should be tested for compliance with the required relative compaction and moisture content prior to proceeding with additional lifts.

5.3 LIGHTLY LOADED ELEMENTS

Exterior concrete slabs on grade (sidewalks, curbs, gutters, and misc.) should be established on a minimum of 12-inches of structurally placed soils with a maximum particle size of 6-inches.

Structural fill, including road base, should be compacted to a minimum of 95% of the maximum dry density as determined by ASTM D-1557.

5.4 CUT AND FILL SLOPES

It is recommended that permanent cut or fill slopes in silty sand soil be maintained at a slope of one vertical to two horizontal (1V:2H) or flatter, unless structurally retained. Permanent slopes in siltstone/sandstone bedrock may be maintained at slopes of 2 vertical to 1/2 horizontal (2V:0.5H).

Grading of both cut and fill slopes should be such that surface water is directed away from the slopes and not concentrated on slopes or in unprotected channels. Construction procedures should ensure adequate compaction of slope faces. All excavations should conform to OSHA standards.

6.0 FOUNDATION AND CONSTRUCTION CONSIDERATIONS

The proposed structures may be supported on conventional spread or continuous footings established on structural fill as previously indicated. Foundations should not transition from bedrock to structural fill. Foundation excavations should be visually observed and tested by qualified personnel prior to placement of reinforcing steel or concrete. Additional foundation recommendations are subsequently presented.

DESCRIPTION	VALUE
Foundation Type	Continuous or spread footings
Bearing Material	Dependent on structure location and eventual loads
Allowable Bearing Capacity	1,800 psf on structural fill, 4,000 psf on siltstone/sandstone bedrock
Minimum embedment depth below finished grade	12 inches (for frost and confinement)
Minimum footing width	12 inches (continuous) for single-story, 18-inches for two stories, 24-inches (isolated spread)

The allowable bearing capacity is based upon dead load plus long-term live load. A one-third increase in allowable bearing capacity for short duration loads such as wind or seismic loads is permitted with the alternative load combinations given in Section 1605.3.2 of the IBC.

7.0 FLOOR SLABS

It is recommended that concrete floor slabs be constructed on a pad that has been prepared as previously indicated. A minimum of 4-inches of relatively free-draining material should be used beneath the slab in order to help distribute floor loads, break the rise of capillary water, and aid in the concrete curing process. Alternatively, 6 inches of road base may be used in place of the free draining-material. The thickness of the free-draining material may be included in the structural fill.

Concrete slabs should be designed using rebar reinforcement and frequent crack control joints to help control normal shrinkage and stress cracking. Concrete placement and curing should meet ACI[2] requirements including following hot or cold weather placement recommendations, when appropriate. If a moisture-sensitive floor covering will be installed, we recommend that a vapor barrier be installed beneath the concrete slab. The moisture sensitivity of floor finishes, anticipated project conditions, and the potential effects of slab curling and cracking should be considered in determining if the barrier should be placed directly beneath the slab or beneath the free-draining gravel (see ACI 302.IR-96 for more information regarding vapor barrier location). If the vapor barrier is installed directly beneath the slab, measures should be taken to minimize excessive slab curl such as reduced joint spacing and use of a low shrinkage (low water-cement ratio) mix.

8.0 LATERAL EARTH PRESSURES

Lateral loads imposed on footings may be resisted by the development of passive earth pressures against the sides of footings and friction between the base of the footing and the supporting soils. Lateral earth pressure values are presented in the following table.

Case Evaluated	Soil Type	Value
Active	Granular, Structural Fill	37 psf/ft
		57 psf/ft (with seismic)
At-Rest	Granular, Structural Fill	56 psf/ft
Passive	Granular, Structural Fill	390 psf/ft
		335 psf/ft (with seismic)

[2] American Concrete Institute

Case Evaluated	Soil Type	Value
Coefficient of friction tan(φ*0.6) where φ = 34°	Granular, Structural Fill	0.37

The lateral earth pressures presented do not include any safety factors except where the friction angle (φ) used to determine the coefficient of friction has been multiplied by 0.6 to account for smooth contact conditions. The pressures also assume horizontal backfill and that the backfill is in a drained condition with no build-up of hydrostatic pressure. The additional effects of sloping backfill, surcharge, structural loads and groundwater conditions should be included in calculating lateral earth pressures. Backfill should be placed in accordance with the requirements of structural fill except that backfill in landscape and areas that will not be subject to structural loadings may be reduced to 90% of the maximum dry density as determined by ASTM D-1557.

9.0 PAVEMENT DESIGN

Design of the access road pavement section is based on the procedures outlined in the 1993 Guidelines for Design of Pavement Structures by the American Association of State Highway and Transportation Officials (AASHTO).

We anticipate that Washington City will classify the roads in the RV Park as “residential”. A minimum Traffic Index of 5.0 is required. The paving between sections of the 40-acre parcel will likely experience heavier traffic and it is anticipated that a traffic index of 6.0 will be required.

For pavement design, the following design parameters have been assumed:

- Pavement Design Life - 20 years
- Structural Layer Coefficients
  - Asphalt = 0.42
  - Type II = 0.12

Based on design parameters, the following pavement sections are provided.

Pavement Section	Asphalt Thickness (inches)	Type II Base Course (inches)	Compacted Native Soil (inches)
Residential Minimum (TI = 5.0)	2.5	6.0	6.0
Commercial (TI = 6.0)	3.5	8.0	12.0

On-site soils should be compacted to a minimum of 95% of the maximum dry density as determined by ASTM D-1557 and base course soils should be compacted to a minimum of 95% of the maximum dry density (ASTM D-1557). Asphalt should be compacted to at least 96% of the Marshall maximum density. Asphaltic concrete and base should be tested prior to site delivery and during placement for conformance with project specifications.

10.0 MOISTURE CONTROL

This soils report provides recommendations for site preparation and foundation design. However, inadequate surface drainage or failure to control moisture may result in excessive differential movement and structural damage. The following moisture control measures are recommended:

(1) The ground surface should be graded to drain surface water away from the buildings in all directions. A minimum grade of 5% (IBC 1803.3) in the first 10 feet is recommended. Impervious surfaces such as concrete walkways or asphalt pavement adjacent to structures are effective in reducing the potential for water migration beneath foundations and slabs and should be considered in design. Impervious surfaces such as asphalt or concrete within 10 feet of the building foundation should be sloped a minimum of 2% away from the structures.

(2) Unless roof runoff falls on impervious surfaces such as asphalt or concrete that are sloped away from the building for a distance of 10 feet, roof runoff should be collected and discharged well outside of the foundation backfill limits. We recommend that runoff be piped to the adjacent access road.

(3) Xeriscape (landscaping that eliminates the need for supplemental irrigation of plants) is recommended within 10 feet of the building foundation.

(4) Grass should not be placed within 10 feet of the foundations. Grass, if planted, should have a minimum slope of 5% away from the foundation.

(5) Inadequate compaction of foundation backfill and utility trench backfill provides a conduit for water migration. All utility trenches within the building footprint and extending 5 feet beyond the footprint should be backfilled with structural fill similar to that approved for the foundations. Backfill adjacent to structures should be compacted to at least 90 percent of the maximum dry density as determined by ASTM D-1557 and the minimum slope requirements should be followed. Backfill beneath structures and pavements should be compacted to at least 95% of the maximum dry density.

(6) Grading should be such that surface water is directed away from all cut and fill slopes and collected only in channels protected against erosion. Water should not be allowed to pond on-site.

It should be emphasized that final grading and landscaping generally occurs after construction of the structure and observation of these features is outside of normal geotechnical inspection and observation. The developer/owner is responsible to ensure that these surface drainage and moisture control recommendations are followed throughout the life of the structures.

11.0 SOIL CORROSIVITY

A water-soluble sulfate test was completed on a silty sand sample from test pit TP-4 at 2.5 feet. The sample had a water-soluble sulfate of 0.28 percent. As such, site soils would classify as having severe corrosive potential to concrete structures. Therefore, it is recommended that concrete mixes be designed in accordance with ACI 318, Section 4.3 for “severe” sulfate exposure. This includes 4,500 psi concrete and a low water to cement ratio. It is recommended that all concrete be designed in accordance with ACI 318, Section 4.3. Buried pipes should be plastic (PVC or HDPE) instead of metal, where possible.

12.0 FOUNDATION REVIEW AND TESTING

This report has been prepared to assist in project design and construction. Variations from the conditions portrayed in the exploratory investigations may occur which are sometimes sufficient to require modifications to the design. In order to incorporate recommendations provided into actual field conditions and to confirm that the project specifications are implemented, we recommend that observation and testing be performed during construction to monitor over-excavation, grading, and preparation of soils upon which foundations elements or structural loads may be established.

Since the location and loads of the potentially heavily loaded structures is not known, we recommend that site specific investigations be completed once the layout is determined.

13.0 LIMITATIONS

The exploratory data presented in this report were collected to provide geotechnical design recommendations for this project and subsurface site descriptions represent conditions observed at the time and at the locations explored. The investigations may not be indicative of subsurface conditions beyond the investigation location and conditions may change with passage of time. If subsurface conditions are encountered that are significantly different than those reported herein, Landmark should be contacted immediately for the continued applicability of the recommendations. In the event changes to the project are made that differ from those presented in this report, Landmark should be made aware of the changes. Landmark will provide written verification that the recommendations and conclusions remain valid or that modifications are required.

This report has been prepared to assist in project design and construction. We respectfully request the opportunity to review the final design drawings and specifications in order to determine whether the assumptions and recommendations presented herein are applicable to the anticipated designs.

This report is not intended to be used as a bid document. Any information concerning the environmental conditions of the site is beyond the scope of this geotechnical study. This geotechnical report has been prepared to meet the specific needs of our client and may not be appropriate to satisfy the needs of other users.

Respectfully,

LANDMARK TESTING & ENGINEERING

Kent Nelson, P.E.
Project Engineer

Reviewed by:

Russell Owens, P.E.
Geotechnical Manager

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CORAL CANYON DEVELOPMENT
Washington, Utah

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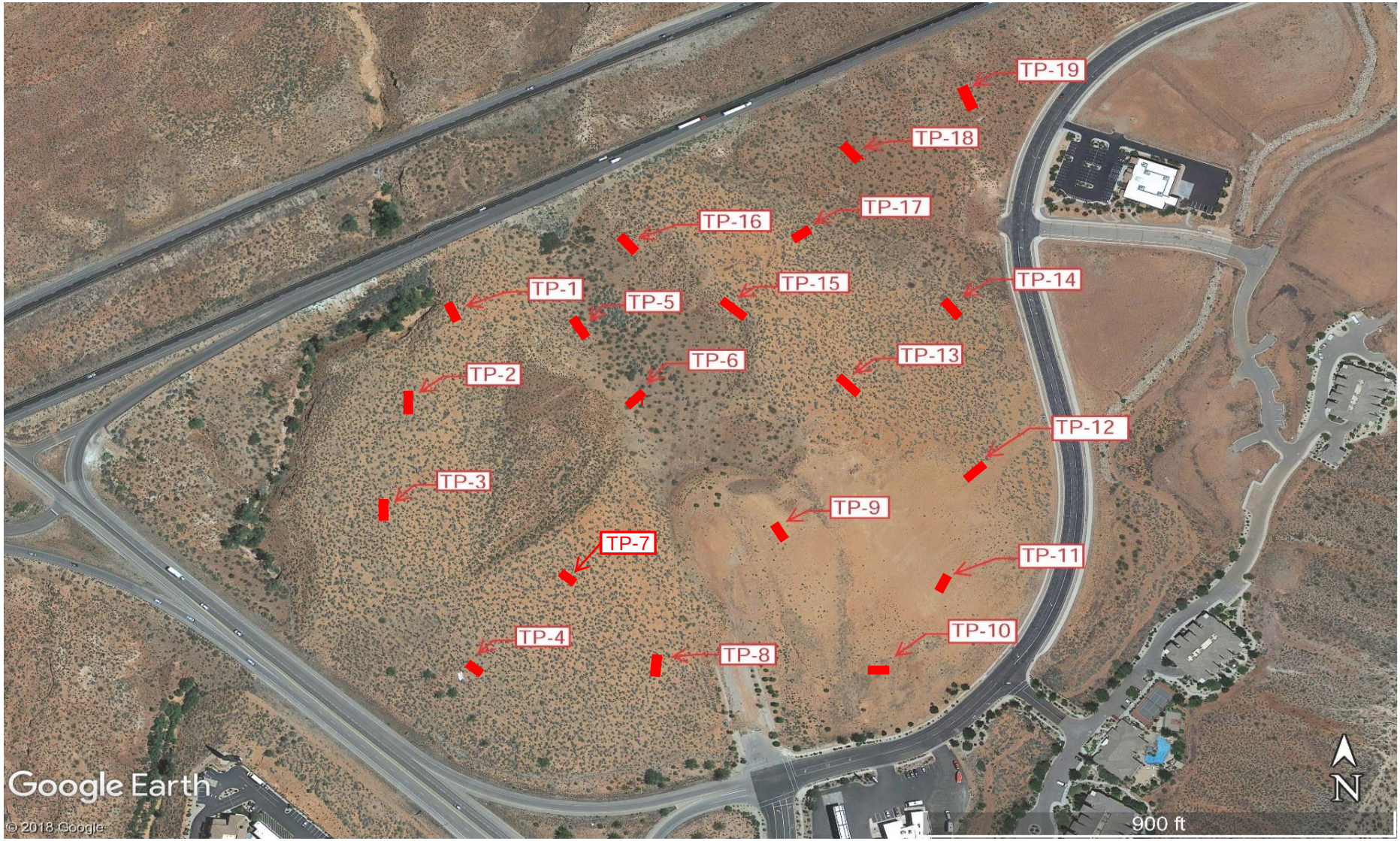
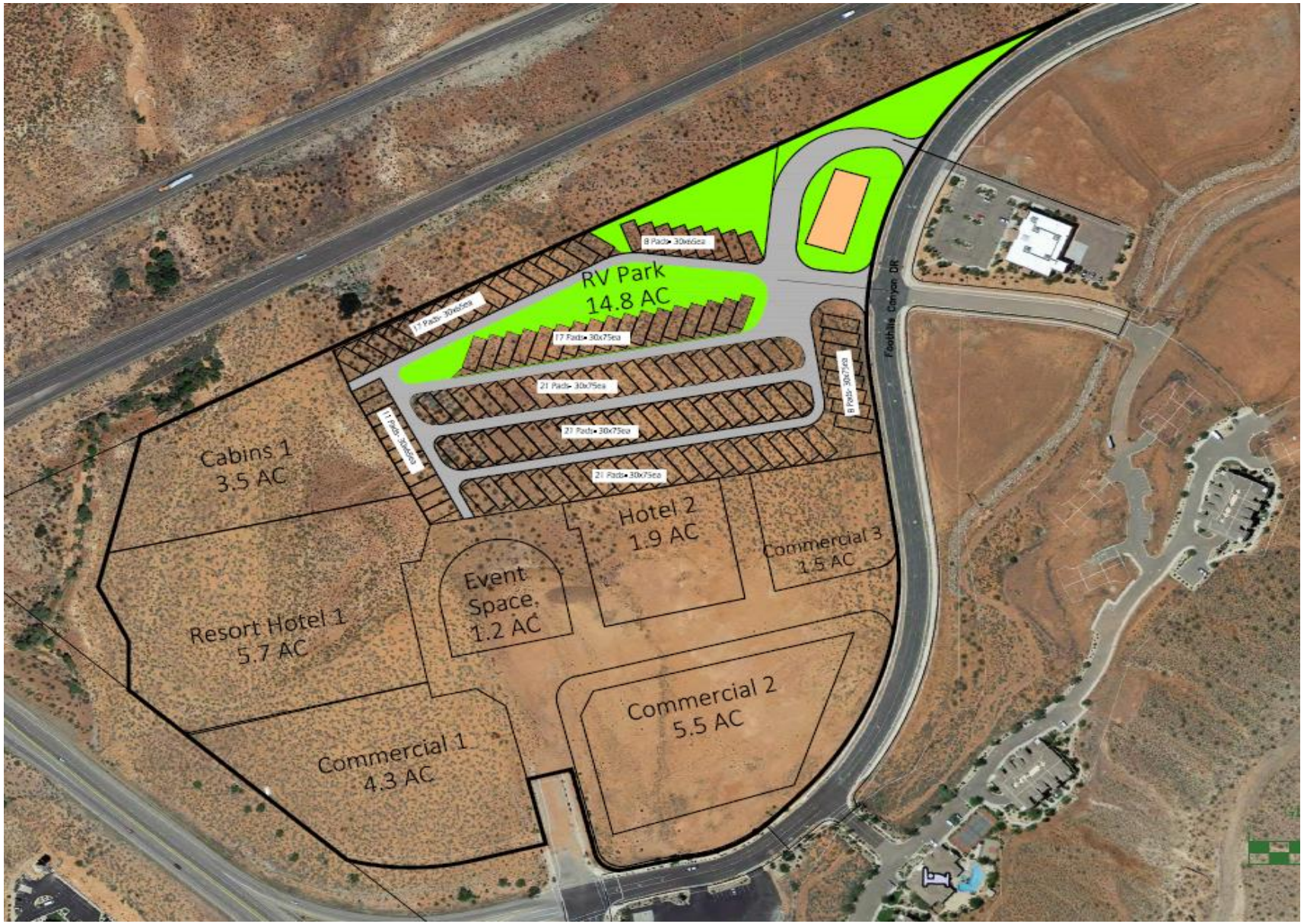
The following are attached and complete this report:

FIGURE 1:	VICINITY MAP
FIGURE 2:	SITE MAP
FIGURE 3:	SITE MAP WITH CONCEPTUAL LAND PLAN
FIGURES 4-13:	TEST PIT LOGS
FIGURE 14:	UNIFIED SOIL CLASSIFICATION SYSTEM
FIGURES 15-20:	CONSOLIDATION CURVES

LANDMARK TESTING & ENGINEERING	VICINITY MAP LANDMARK PROJECT 18646	Figure 1



LANDMARK TESTING & ENGINEERING	SITE MAP PROJECT NUMBER 18646	Figure 2



LANDMARK TESTING & ENGINEERING

SITE MAP - CONCEPTUALIZED LAND PLAN
PROJECT NUMBER 18646

Figure 3

TEST PIT NUMBER TP-1

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, dry to moist, fine grained, red.								
5			Grading dense.								
10			Grading lower fines content.								

Refusal at 13.0 feet.
Bottom of test pit at 13.0 feet.

TEST PIT NUMBER TP-2

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, dry to moist, fine grained, red.								
5		1	Grading dense.	101.9	1.0						Soluble Sulfate = 0.28%
		2	Silty SAND (SM), dense, dry, with pinhole voids, weakly to moderately cemented with depth, pale yellow.	100.1	1.4						0.7% Collapse @ 1000 psf

Refusal at 9.0 feet.
Bottom of test pit at 9.0 feet.

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PROJECT NAME Coral Canyon Development
CLIENT Tech Ridge, LLC
PROJECT NUMBER 18646
PROJECT LOCATION Hurricane, Utah

Figure No. 4

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/30/19 17:04 - P:\2004 LIBRARY\GEOTECHNICAL REPORTS - 2018\18646 CORAL CANYON DEVELOPMENT\TEST PITS.GPJ

TEST PIT NUMBER TP-3

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, dry to moist, fine grained, red.								
5											
10			Grading dense, lower fines conent.								

Refusal at 11.0 feet.
Bottom of test pit at 11.0 feet.

TEST PIT NUMBER TP-4

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, dry to moist, fine grained, with fine roots inupper 2 feet, red.								
		1		103.8	0.9						Soluble Sulfate = 0.28%
5			Grading dense.								
10			Silty SAND (SM), dense, dry, with pinhole voids, weakly to moderately cemented with depth, pale yellow.								

Refusal at 10.0 feet.
Bottom of test pit at 10.0 feet.

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PROJECT NAME Coral Canyon Development
CLIENT Tech Ridge, LLC
PROJECT NUMBER 18646
PROJECT LOCATION Hurricane, Utah

Figure No. 5

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/30/19 17:04 - P:\2004 LIBRARY\GEOTECHNICAL REPORTS - 2018\18646 CORAL CANYON DEVELOPMENT\TEST PITS.GPJ

TEST PIT NUMBER TP-5

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, dry to moist, fine grained, red.								
5		1	Silty SAND with gravel (SM), dense, moist, fine grained sand, up to 1/4-inch gravel, red.		3.3			2	61	37	
			MUDSTONE, fissile, red.								

Refusal at 8.0 feet.
Bottom of test pit at 8.0 feet.

TEST PIT NUMBER TP-6

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, moist, fine grained, red.								
			Grading dry.								
5			Occasional 1/8" gravel clasts.								
		1			3.2			3	67	30	
10											

Refusal at 11.5 feet.
Bottom of test pit at 11.5 feet.

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PROJECT NAME Coral Canyon Development
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PROJECT LOCATION Hurricane, Utah

Figure No. 6

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/30/19 17:04 - P:\2004 LIBRARY\GEOTECHNICAL REPORTS - 2018\18646 CORAL CANYON DEVELOPMENT\TEST PITS.GPJ

TEST PIT NUMBER TP-7

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, dry to moist, fine grained, with fine roots inupper 2 feet, red.								
5			Grading dense.								
10			Silty SAND (SM), dense, dry, with pinhole voids, weakly to moderately cemented with depth, pale yellow.								

Refusal at 10.0 feet.
Bottom of test pit at 10.0 feet.

TEST PIT NUMBER TP-8

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, moist, fine grained, fine roots in upper 3 feet, red								
5		1		100.2	0.5						

Refusal at 8.0 feet.
Bottom of test pit at 8.0 feet.

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PROJECT NAME Coral Canyon Development
CLIENT Tech Ridge, LLC
PROJECT NUMBER 18646
PROJECT LOCATION Hurricane, Utah

Figure No. 7

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/30/19 17:04 - P:\2004 LIBRARY\GEOTECHNICAL REPORTS - 2018\18646 CORAL CANYON DEVELOPMENT\TEST PITS.GPJ

TEST PIT NUMBER TP-9

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Previously graded/grubbed **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, moist, fine grained, red.								
			Silty SAND with gravel (SM), occasional cobbles up to 8 inches, occassional clay seams, dense, moist, reddish yellow.								
5		1		101.9	7.4	NP	NP	10	71	19	0.9% Collapse @ 1000 psf
		B 2	Silty SAND with gravel (SM), occasional cobbles up to 8 inches, occassional clay seams, dense, moist, reddish yellow.								CBR = 24 Modified Proctor 118.6 pcf @ 9.7%
10											

Refusal at 13.0 feet.
Bottom of test pit at 13.0 feet.

TEST PIT NUMBER TP-10

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Previously graded/grubbed **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			MUDSTONE, moderately hard rock, dry to moist, purple.								
		1		92.8	11.7	NP	NP				0.5% Collapse @ 1000 psf

Refusal at 3.0 feet.
Bottom of test pit at 3.0 feet.

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PROJECT LOCATION Hurricane, Utah

Figure No. 8

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TEST PIT NUMBER TP-11

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Previously graded/grubbed **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Sily SAND (SM), medium dense, dry, fine grained, red.								
5		B 1									CBR = 27 Modified Proctor 111.2 pcf @ 10.3%
		2	Silty SAND (SM), dense, moist, purple.	109.7	4.0	NP	NP				
			MUDSTONE, fissile, purple.								

Refusal at 8.0 feet.
Bottom of test pit at 8.0 feet.

TEST PIT NUMBER TP-12

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Test Pit in an old road cut **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, dry to moist, fine to medium grained, red.								
5			Grading dry.								
			MUDSTONE, purple.								

Refusal at 5.0 feet.
Bottom of test pit at 5.0 feet.

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PROJECT NAME Coral Canyon Development
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PROJECT NUMBER 18646
PROJECT LOCATION Hurricane, Utah

Figure No. 9

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/30/19 17:04 - P:\2004 LIBRARY\GEOTECHNICAL REPORTS - 2018\18646 CORAL CANYON DEVELOPMENT\TEST PITS.GPJ

TEST PIT NUMBER TP-13

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, moist, fine grained, red.								
5			Grading dense.								
10			Grading reddish yellow, dry.								

Bottom of test pit at 12.0 feet.

TEST PIT NUMBER TP-14

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, moist, red.								
			Grading dense, dry.								
5			Grading with pinhole voids.								
		1		105.6	3.1						0.2% Collapse @ 1000 psf

Refusal at 7.5 feet.
Bottom of test pit at 7.5 feet.

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PROJECT NAME Coral Canyon Development
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PROJECT LOCATION Hurricane, Utah

Figure No. 10

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/30/19 17:04 - P:\2004 LIBRARY\GEOTECHNICAL REPORTS - 2018\18646 CORAL CANYON DEVELOPMENT\TEST PITS.GPJ

TEST PIT NUMBER TP-15

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** ____ **ELEVATION** ____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** ____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), medium dense, moist, red.								
5			MUDSTONE, purple.								

Refusal at 5.0 feet.
Bottom of test pit at 5.0 feet.

TEST PIT NUMBER TP-16

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** ____ **ELEVATION** ____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** ____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Red silty sand, dry and medium dense.								
5		1			0.8			0	93	7	
			Density increases								
			Some clods with pinholes								

Bottom of test pit at 8.0 feet.

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PROJECT NAME Coral Canyon Development
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PROJECT NUMBER 18646
PROJECT LOCATION Hurricane, Utah

Figure No. 11

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/30/19 17:04 - P:\2004 LIBRARY\GEOTECHNICAL REPORTS - 2018\18646 CORAL CANYON DEVELOPMENT\TEST PITS.GPJ

TEST PIT NUMBER TP-17

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Red silty sand, dampand medium dense.								
5			Increasing density with some clods. More yellow in color								
		1	Pinholes in the clods	97.0	2.8						2.4% Collapse @ 1000 psf

Bottom of test pit at 6.0 feet.

TEST PIT NUMBER TP-18

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			Silty SAND (SM), dark red silty sand, moist and medium dense, fine grained								
			Light red/white silty sand. Moderately cemented with pinholes.								
		1		88.8	3.2						10.9% Collapse @ 1000 psf

Bottom of test pit at 4.5 feet.

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PROJECT NAME Coral Canyon Development

CLIENT Tech Ridge, LLC

PROJECT NUMBER 18646

PROJECT LOCATION Hurricane, Utah

Figure No. 12

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/30/19 17:04 - P:\2004 LIBRARY\GEOTECHNICAL REPORTS - 2018\18646 CORAL CANYON DEVELOPMENT\TEST PITS.GPJ

TEST PIT NUMBER TP-19

DATE STARTED 12/21/18 **COMPLETED** 12/21/18 **EXCAVATION COMPANY** _____ **ELEVATION** _____

LOGGED BY Bybee, Zac **CHECKED BY** John Anderson **EXCAVATION METHOD** _____

NOTES Brush on surface **AT TIME OF EXCAVATION** ---

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS		MECHANICAL GRADATION			Other Tests
						LIQUID LIMIT	PLASTICITY INDEX	GRAVEL (%)	SAND (%)	FINES (%)	
0			Silty SAND (SM), red, significant gravel (1/4" and rough), damp and medium dense.								
			Well cemented white mudstone.								

Bottom of test pit at 2.0 feet.

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PROJECT NUMBER 18646

PROJECT LOCATION Hurricane, Utah

Figure No. 13

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/30/19 17:04 - P:\2004 LIBRARY\GEOTECHNICAL REPORTS - 2018\18646 CORAL CANYON DEVELOPMENT\TEST PITS.GPJ

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS (More than 50% of soil Retained on No. 200 sieve size)	**GRAVELS** More than 1/2 of coarse fraction > No.4 sieve size	**GW**	Well graded gravels or gravel-sand mixtures little or no fines.
		GP	Poorly graded gravels or gravel-sand mixtures little or no fines.
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS More than 1/2 of coarse fraction < No.4 sieve size	**SW**	Well graded sands or gravelly sand mixtures little or no fines.
		SP	Poorly graded sands or gravelly sand mixtures little or no fines.
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (Less than 50% of soil Retained on No. 200 sieve size)	**SILTS & CLAYS** Liquid Limit < 50	**ML**	Inorganic silts and very fine sands, rock flour, silty fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		OL	Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS Liquid Limit > 50	**MH**	Inorganic silts, micaceous of diatomaceous fine sand or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS		**PT**	Peat and other highly organic soils

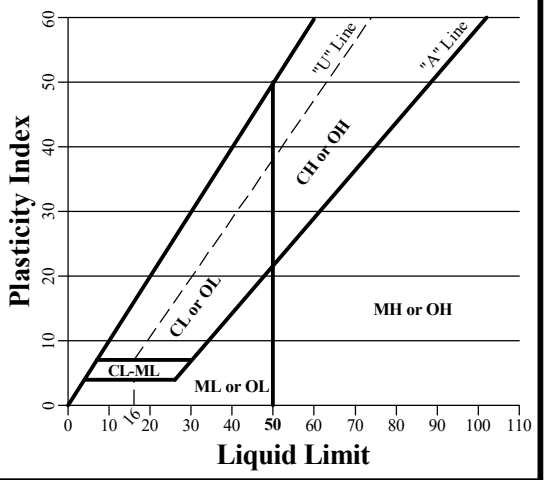
GRAIN SIZE CHART

CLASSIFICATION	Range of Grain Size: U.S. Standard Sieve Size	Range of Grain Size: Grain Size in Millimeters
BOULDERS	**Above 12"**	**Above 305**
COBBLES	**12" to 3"**	**305 to 76.2**
GRAVEL	**3" to No. 4**	**76.2 to 4.76**
Coarse	3" to 3/4"	76.2 to 19.1
Fine	3/4" to No. 4	19.1 to 4.76
SAND	**No. 4 to No. 200**	**4.76 to 0.074**
Coarse	No. 4 to No. 10	4.76 to 2.00
Medium	No. 10 to No. 40	2.00 to 0.42
Fine	No. 40 to No. 200	0.420 to 0.074
SILT & CLAY	Below No. 200	Below 0.074

SAMPLES

- Relatively Undisturbed Sample
- Block Sample
- Bag Sample
- Auger Cuttings
- Bucket Sample
- Core
- No Recovery

PLASTICITY CURVE



LANDMARK TESTING & ENGINEERING

Landmark Testing and Engineering
795 East Factory Drive
St. George, UT 84790
Telephone: 435-986-0566
Fax: 435-986-0668

PROJECT NAME Coral Canyon Development
CLIENT Tech Ridge, LLC
PROJECT NUMBER 18646
PROJECT LOCATION Hurricane, Utah

Figure No. 14

USCS SUMMARY - LANDMARK NEW.GDT - 1/30/19 17:05 - P:\2004 LIBRARY\GEOTECHNICAL REPORTS - 2018\18646 CORAL CANYON DEVELOPMENT\TEST PITS.GPJ

CONSOLIDATION REPORT

Client: Tech Ridge, LLC
446 South Mall Drive
St. George, UT 84790

Date of Report: 1/9/2019
Reviewed By:
Lab#: 18SG5696

Project: Coral Canyon Development **Project #:** 18646
Location: Washington **Sampled By:** Z. Bybee **Date:** 12/21/2018
Type of Sample: SM **Tested By:** C. Lantz **Date:** 12/26/2018
Location of Sample: Test Pit 2 at 8.5' **Authorized By:** Client **Date:** 12/21/2018

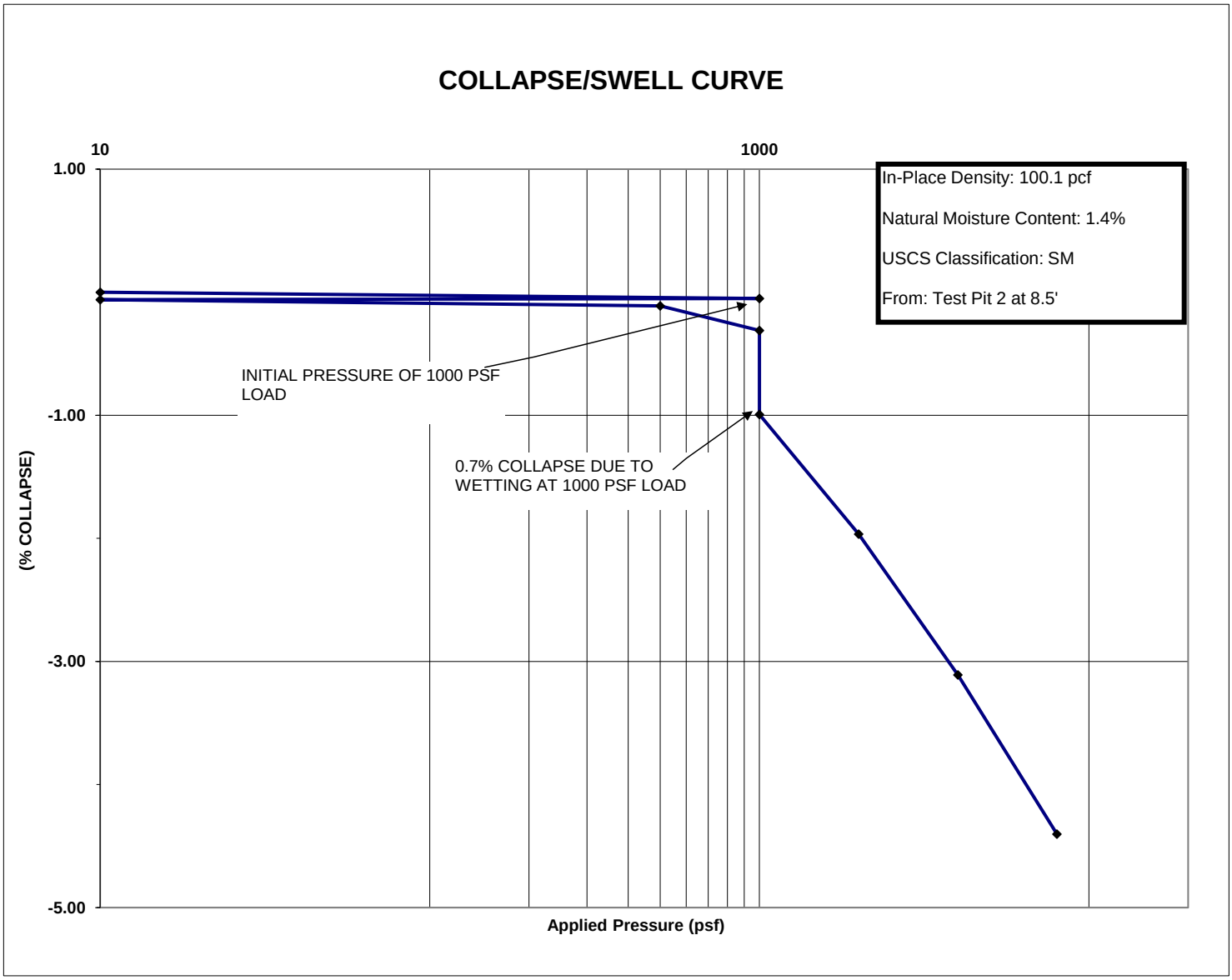


Figure 15

CONSOLIDATION REPORT

Client: Tech Ridge, LLC
446 South Mall Drive
St. George, UT 84790

Date of Report: 1/9/2019
Reviewed By:
Lab#: 18SG5701

Project: Coral Canyon Development **Project #:** 18646
Location: Washington **Sampled By:** Z. Bybee **Date:** 12/21/2018
Type of Sample: SM **Tested By:** C. Lantz **Date:** 12/26/2018
Location of Sample: Test Pit 9 at 5' **Authorized By:** Client **Date:** 12/21/2018

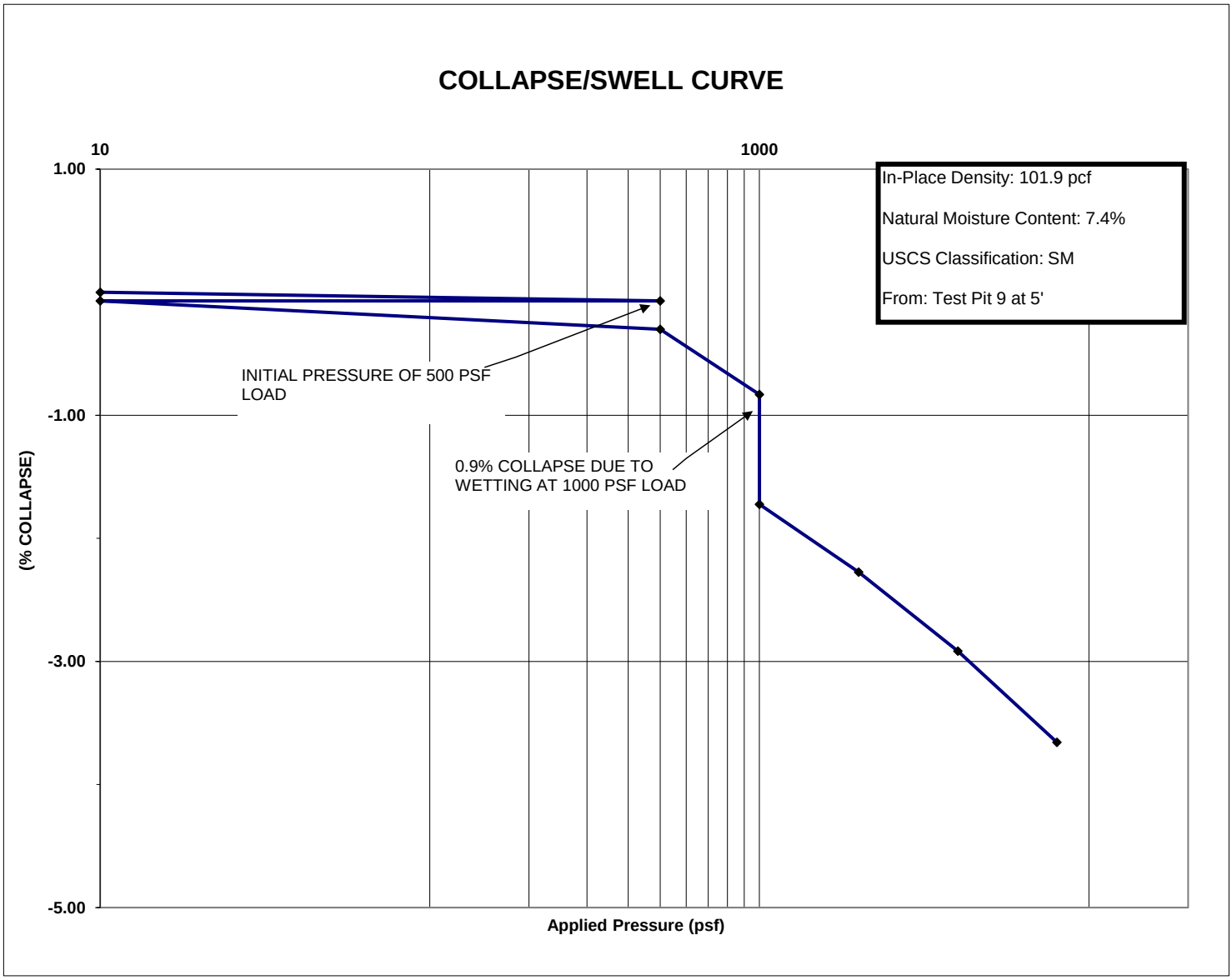


Figure 16

CONSOLIDATION REPORT

Client: Tech Ridge, LLC
446 South Mall Drive
St. George, UT 84790

Date of Report: 1/9/2019
Reviewed By:
Lab#: 18SG5702

Project: Coral Canyon Development **Project #:** 18646
Location: Washington **Sampled By:** Z. Bybee **Date:** 12/21/2018
Type of Sample: SM **Tested By:** C. Lantz **Date:** 12/26/2018
Location of Sample: Test Pit 10 at 1.5 **Authorized By:** Client **Date:** 12/21/2018

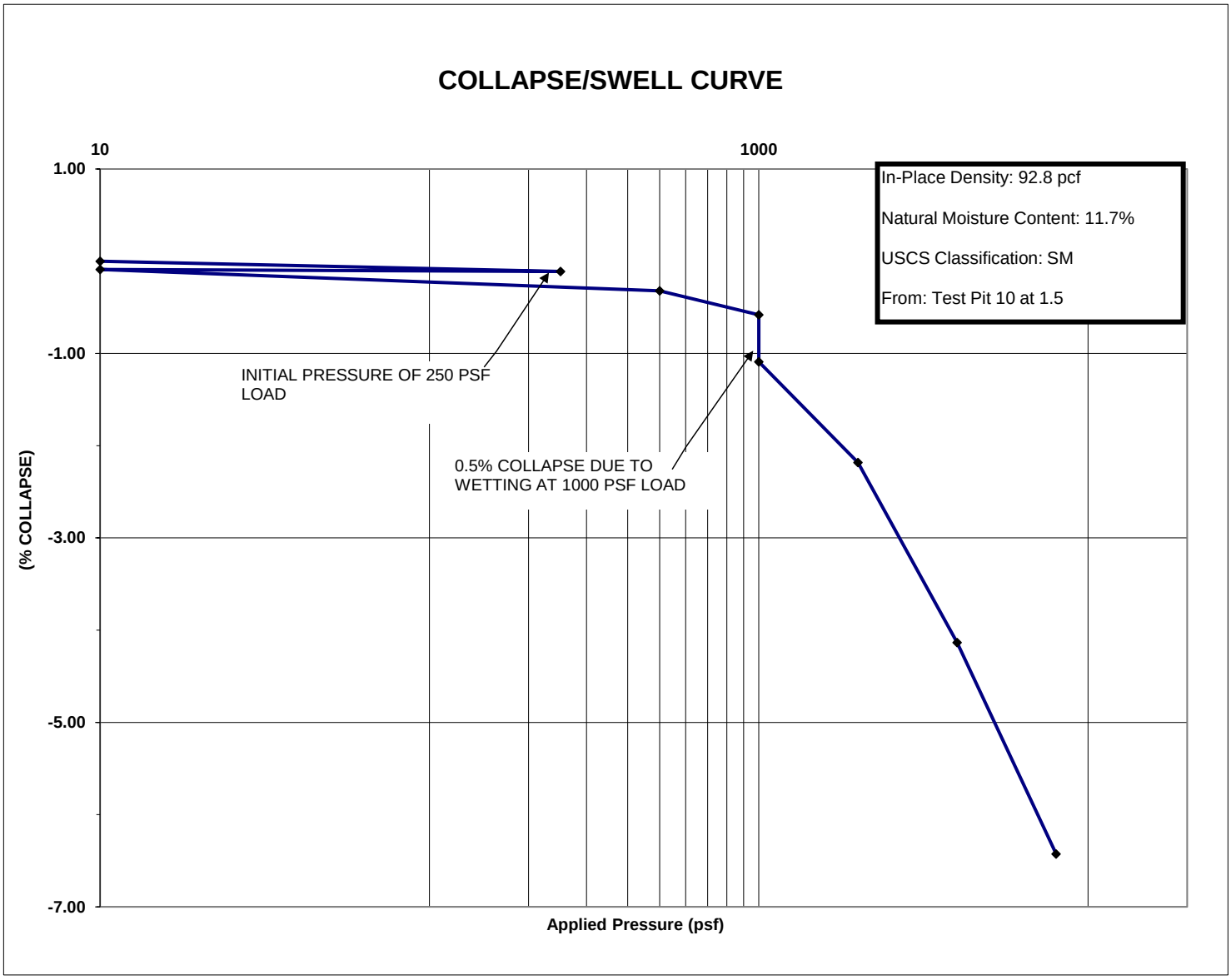


Figure 17

CONSOLIDATION REPORT

Client: Tech Ridge, LLC
446 South Mall Drive
St. George, UT 84790

Date of Report: 1/14/2019
Reviewed By:
Lab#: 18SG5704

Project: Coral Canyon Development **Project #:** 18646
Location: Washington **Sampled By:** Z. Bybee **Date:** 12/21/2018
Type of Sample: SM **Tested By:** C. Lantz **Date:** 1/8/2019
Location of Sample: Test Pit 14 at 7' **Authorized By:** Client **Date:** 12/21/2018

COLLAPSE/SWELL CURVE

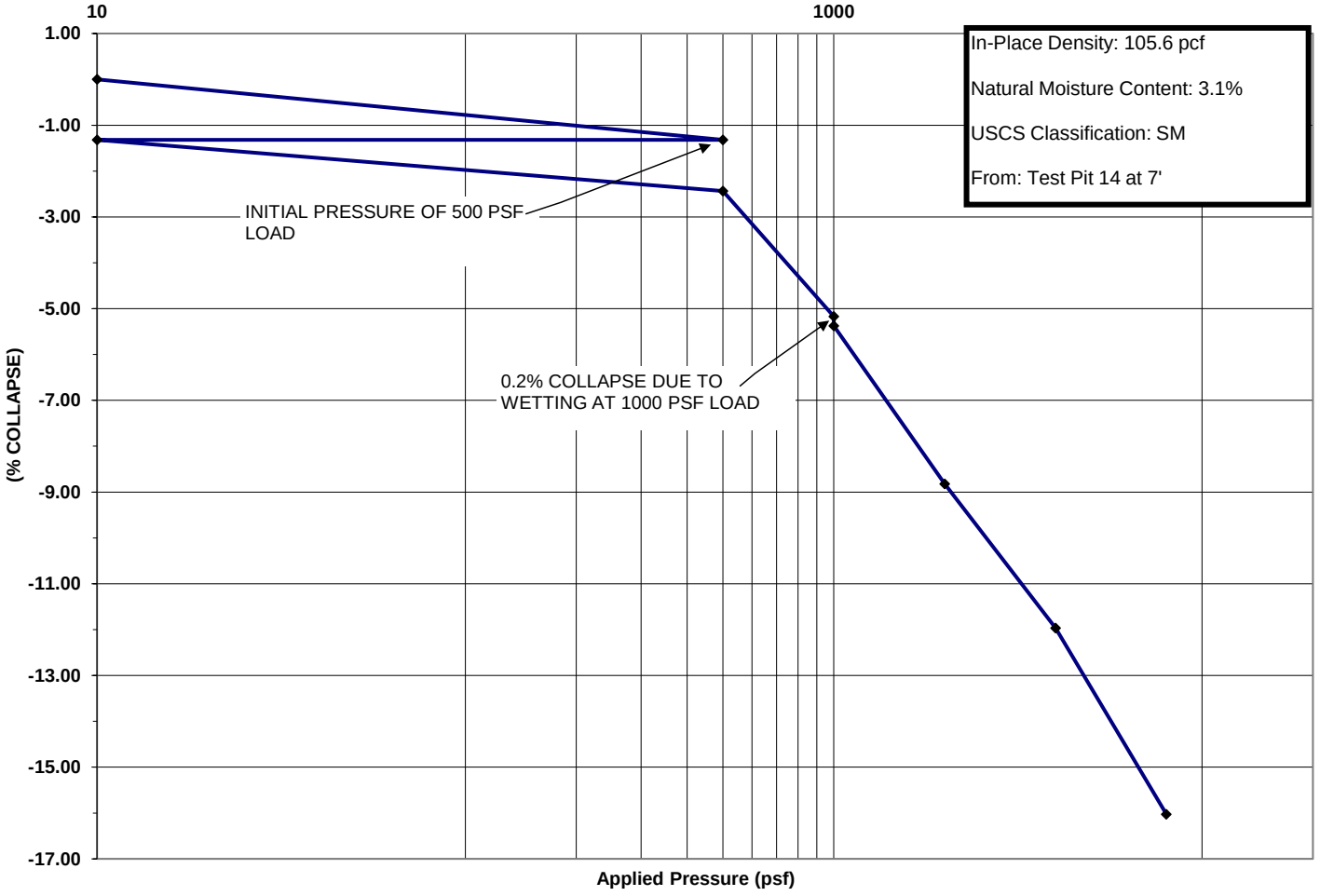


Figure 18

CONSOLIDATION REPORT

Client: Tech Ridge, LLC
446 South Mall Drive
St. George, UT 84790

Date of Report: 1/14/2019
Reviewed By:
Lab#: 18SG5706

Project: Coral Canyon Development **Project #:** 18646
Location: Washington **Sampled By:** Z. Bybee **Date:** 12/21/2018
Type of Sample: SM **Tested By:** C. Lantz **Date:** 1/11/2019
Location of Sample: Test Pit 17 at 5' **Authorized By:** Client **Date:** 12/21/2018

COLLAPSE/SWELL CURVE

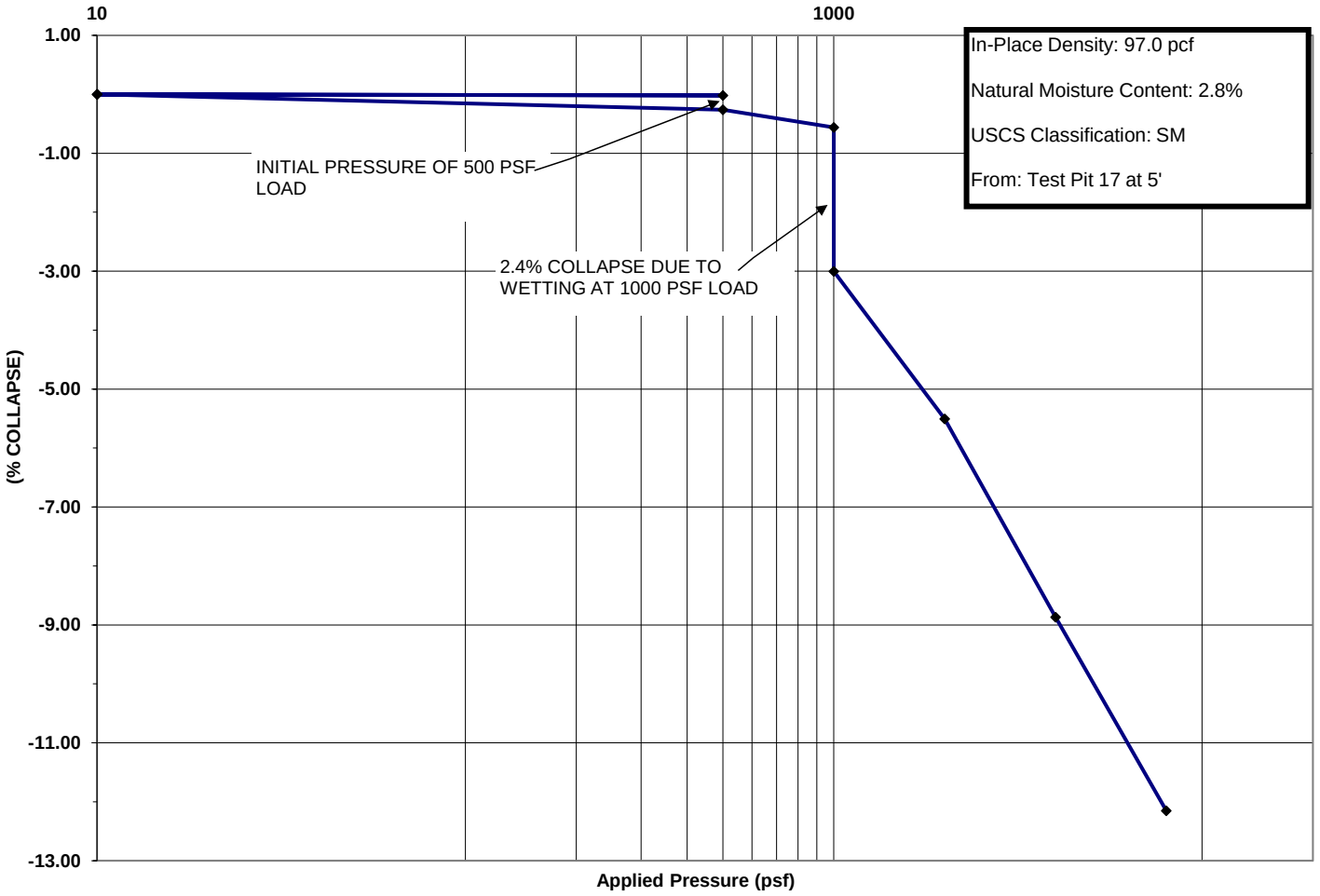


Figure 19

CONSOLIDATION REPORT

Client: Tech Ridge, LLC
446 South Mall Drive
St. George, UT 84790

Date of Report: 1/14/2019
Reviewed By:
Lab#: 18SG5707

Project: Coral Canyon Development **Project #:** 18646
Location: Washington **Sampled By:** Z. Bybee **Date:** 12/21/2018
Type of Sample: SM **Tested By:** C. Lantz **Date:** 1/7/2019
Location of Sample: Test Pit 18 at 4.5 **Authorized By:** Client **Date:** 12/21/2018

COLLAPSE/SWELL CURVE

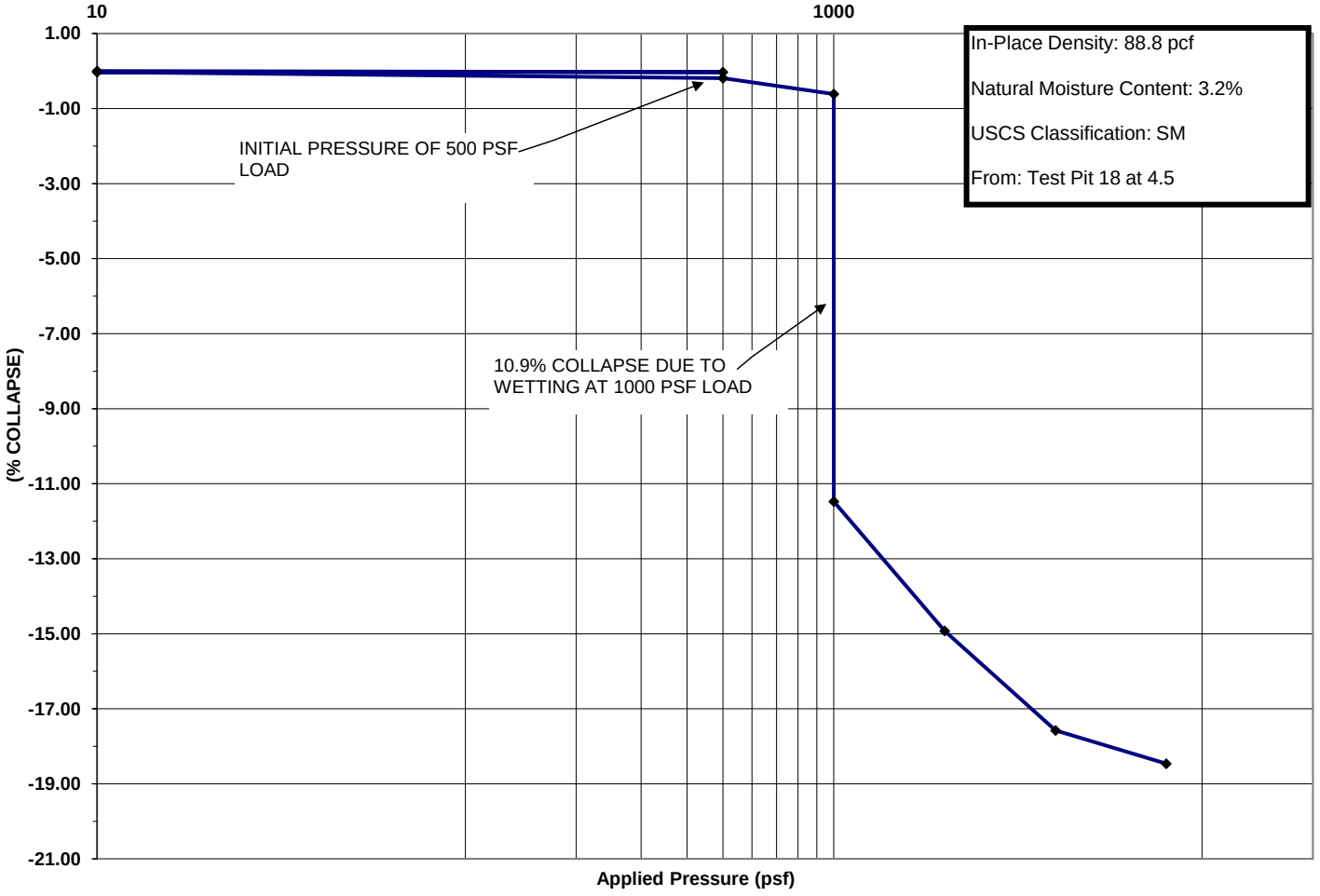


Figure 20

PLANNING & ZONING
HURRICANE CITY
UTAH
147 N 870 W Hurricane UT
PHONE: 435.635.2811 FAX: 435.635.2184

PRELIMINARY SITE PLAN APPLICATION

For office use only: $200.00 Fee
File No. _____
Receipt No. _____

Name: Brad Brown Telephone: O 8015900980 M 8013090399

Address: 1708 E. 5550 S. STE 18 Ogden, UT 84403 Fax No. _____

Email: Brad@stewardland.com Agent Email: _____

Agent (If Applicable): _____ Telephone: _____

Address/Location of Subject Property: 3000 W State Street, Hurricane, UT 84737

Tax ID of Subject Property: H-3-1-31-3009 Zone District: PC

Proposed Use: (Describe, use extra sheet if necessary. Include total number of lots) _____
Proposed uses include residential (single-family, townhouses, and apartments) and commercial (see site plan for more info).

This application shall be accompanied by the following:

x 1. A vicinity map showing the general location of the project.
x 2. Three (3) copies of a site plan showing:
- x Topography showing 2' contours, identification of 30% or greater slopes:
- x The layout of proposed uses.
- x Location of open space when applicable.
- x Proposed access to the property and traffic circulation patterns.
- x Adjoining properties and uses:
- x Proposed reservations for parks, playgrounds, school, and any other public facility sites, if any.

x 3. Preliminary utility plan, including water, sewer, and storm drainage plans, and including access points to utilities.
x 4. Tables showing the number of acres in the proposed development and a land use summary; and
x 5. A phased development plan if applicable.
x 6. Warranty deed or preliminary title report or other document (see attached Affidavit) showing evidence that the applicant has control of the property
x 7. Signed and notarized Acknowledgment Water Supply (see attached)

NOTE: It is important that all applicable information noted above is submitted with the application. An incomplete application will not be scheduled for Planning Commission consideration. Planning Commission meetings are held on the second Thursday and the fourth Wednesday of each month at 6:00 p.m. Contact the Planning Department for the deadline date for submissions. Once your application is deemed complete, it will be put on the agenda for the next Planning Commission meeting. A deadline missed due to an incomplete application could result in a month's delay.

(Office Use Only)

Date Received: _____ Received by: _____

Date application deemed to be complete: _____ Completion determination made by: _____

PLANNING & ZONING
HURRICANE CITY
UTAH

STAFF COMMENTS

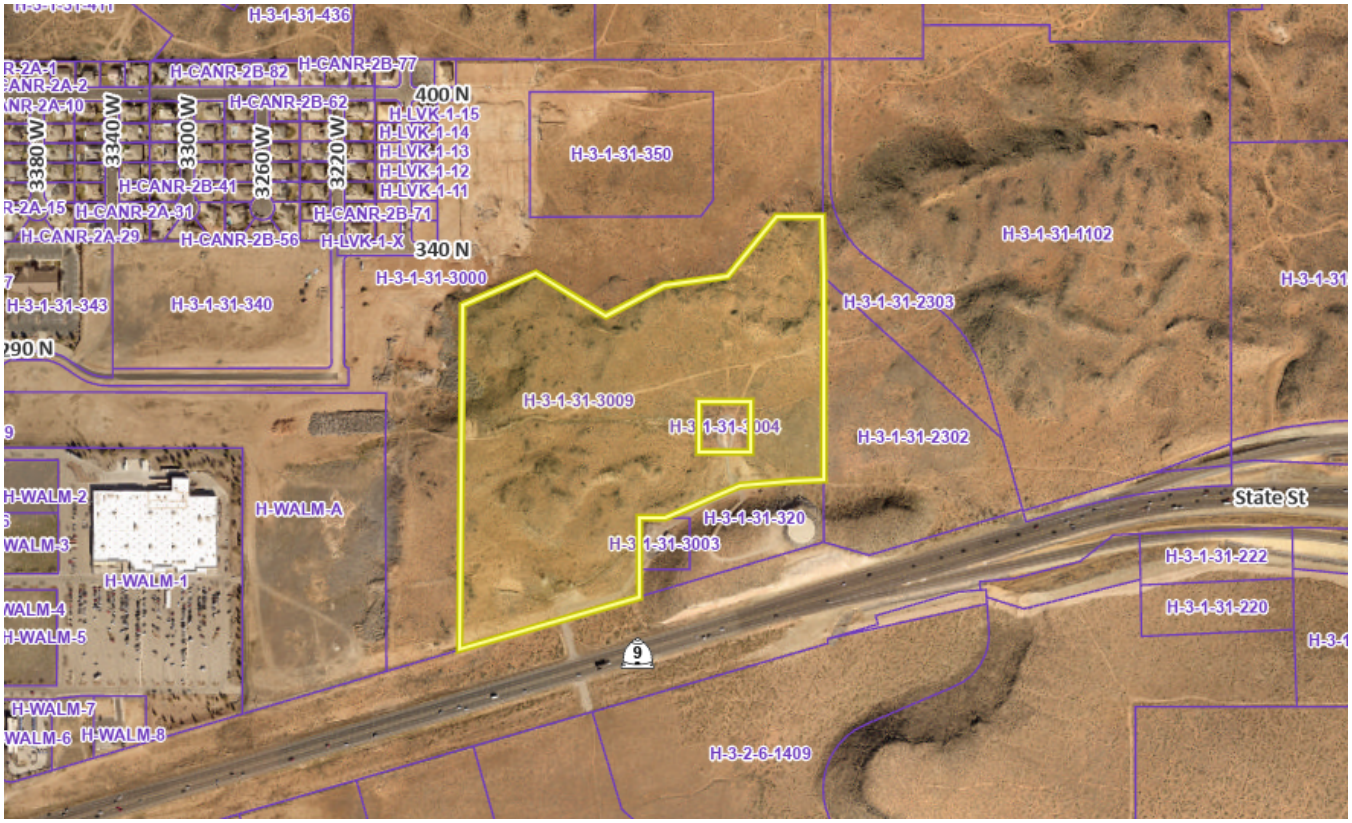
Agenda Date:	**04/11/2024**
Application Number:	2023-PP-09 2023-PSP-07
Type of Application:	Preliminary Plat and Site Plan Application
Action Type:	Administrative
Applicant:	Brad Brown
Agent:	
Request:	Approval of a Preliminary Plat
Location:	3000 W State St
Zoning:	Planned Commercial
General Plan Map:	Commercial, Mixed Use, Single Family,

Update for 04/11/2024: The applicant is requesting an extension of the final plat deadline for this project. Pursuant to city ordinance, a final plat must be submitted within one year of approval of a preliminary plat; however, the applicant can request a 1-year extension from the Planning Commission.

Construction drawings for the main roadways through the project have been approved by the JUC and other issues are being worked through between the applicant and city staff.

Staff recommends approval of the extension of this preliminary plat approval. Below is the original Planning Commission 2023 staff report. The project was approved by the City Council on April 6, 2023.

3/23/2023 Discussion:
The applicant has filed a preliminary plat for SkyRim, a mixed use community located east of Walmart. A zone change for this property to Planned Commercial was approved by the City Council late last year with a development agreement in place. The applicant is proposing 15 single family homes, 129 townhomes, 372 apartments, and six commercial buildings. Per the development agreement with the City 10% of the units will have to be affordable for someone making 80% area median income. The City has a well in the middle of the property that they are proposing be made into a public park. There are some off-site utilities that need to be provided and the applicant has told staff they are currently preparing off-site utility construction plans.



JUC Comments

The following items will need to be addressed:

1. **Public Works:** Will need to show off-site plans for utilities and bond for installation
2. **Power:** Power line currently in 90 N will have to be placed underground by the developer. Power to Phase 1A, 2A, 1B will be supplied from 290 N. Phase 6 to be fed from 90 N. Phase 3, 4, 5, 2B from the east subdivision and will be subject to that development. Maintain Pacificorp/RMP overhead line easement. Power availability is limited until the line on 2800 W is completed. Power department needs to know power needs.
3. **Sewer:** Sewer is not readily available to this piece of property. Connection to existing sewer is near Walmart. Off-site sewer requiring easements through adjacent properties will be needed to service this project. Off-site sewer will need to be approved. Main lines will need to be constructed in future roadways and an all-weather road conforming to Ash Creek standards will need to be constructed. Based on preliminary flow information, it appears a 10" sewer main will be needed.
4. **Street:** Public vs private streets? Are retention/detention areas going to be maintained by HOA?
5. **Water:** The Water Department needs to have a discussion with the developer on this project.
6. **Engineering:** Project will require a traffic impact study, said study should comment on the minimum roadway network design. The proposed layout doesn't appear to meet Hurricane standard 3.2.2, 3.2.4.2 (F), or 3.2.4.2(K). Another public street connection to the property east of here is highly encouraged. Engineering would suggest completing the study and revisiting the preliminary plat before proceeding. Private streets are discouraged. Most roadway design

standards apply to private streets too. Offsite improvements and roadway dedication requires neighbors participation. All public water mains shall be installed in the public right of way. Master planned 30" storm drain pipe along SR-9. 26' minimum pavement width. 290 N/100 N/SkyRim Parkway is a 77' ROW. Relocation of water lines and easements must be coordinated with the water department. If it is possible , said relocation will likely be on a tight schedule. Midblock pedestrian crossings are troublesome. It's unclear if the master planned major collector with 12' trails on both sides impacts the proposed plat. It appears phases 3 and 4 are dependent on a water main being installed in 3100 W. Nearest existing water main in 290 N

7. **Fire:** Single access 90 N will be put in and tied to the Walmart parking lot. SkyRim Parkway does not currently attach to a real road.
8. **Cable:** Add Centurylink fiber optic notes for construction drawings
9. **Phone:** No comments
10. **Gas**: No comments.
11. **Water Conservancy:** No comments
12. **Parks:** Will park be public or private? If public park design will need to be coordinated with the Parks Department and designed to Hurricane City Park standards.

Staff Comments: Preliminary Site Plan and Plat

1. The zoning for this property is Planned Commercial. Per the development agreement with the City they are allowed a maximum of 519 residential units which is shown.
    a. The development agreement also stipulates that only single family homes and townhomes are allowed north of "SkyRim Parkway" which is shown on the plat.
2. The development agreement for this property stipulates that, *"Ten Percent (10%) of the total units in residential areas shall be designated as Affordable housing as defined in Hurricane City Code section 10-15-8(E)(2)(a) and shall satisfy all of the requirements for Affordable housing as set forth in Hurricane City Code section 10-15-8(E)(2).* " Their site plan calls out 48 affordable housing units in one building. 10% of the units would be 51 affordable units.
3. This development is proposing a number of private streets within the development. HCC 10-37-13 states, *"The Zoning Administrator shall not authorize a building permit for a dwelling located on a lot accessed only by a private right-of-way"* Staff has generally interpreted this code to not apply to accessways and parking lot aisles within multifamily developments.
    a. Staff recommends the streets marked as "Private St B" "Private St C" and their connections to SkyRim Parkway be public streets.
    b. The street in Phase 5 should be a public street as it will be used to access City property
4. **Parking:** Per HCC 10-34 the following parking spaces are required for multifamily developments:

Dwelling, multiple-family:		
Studio and 1 bedroom units	*1.5 spaces per dwelling unit*	

2 or more bedroom units	*2 spaces per dwelling unit*	

Per their site data they are providing garages and driveways for the single family homes and the townhomes. They are providing 699 parking stalls for the 372 apartment units for a total of 1.8 stalls per unit. The applicant has not provided a breakdown in bedroom types within the apartment units but for this parking plan approximately 25% of these units will have to be single bedroom or studio.

For the commercial area they are showing 309 parking stalls for 36,419 sq ft of commercial space. The exact calculations of required parking will depend on the use but this is most likely sufficient.

5. The applicant is proposing building a park on a mixture of their property and City property surrounding an existing well site. The applicant has presented a letter explaining their intentions for the park space. The applicant is proposing installing the park themselves at their cost and then coming into some arrangement with the City for long-term maintenance. Planning staff believe this is the best use for the property however the Parks Department and the Water Department will need to agree. As laid out below approval of their amenity and open space plan may depend heavily on approval of the proposed park.
6. **Amenities and Open Space:** Per HCC 10-33-5: "*In multiple-family residential zones and multi-family areas of planned developments, open landscaped space shall be at least 20 percent of the total land space of the development.*" There is no note on the plan indicating that this standard is met.
    a. Whether or not this plan meets this standard may depend on whether the proposed park surrounding the City's well site is considered part of the open space for the development. City code states: "*The Planning Commission, in its discretion, may lower the amount of open landscaped space or amenities required for a development under 50 units if the development is within a one-quarter mile of a City park.*"
    b. For a project with 500 multifamily units nine amenities must be provided. The proposed plan provides for: two clubhouses, three pools, and an integrated trail system. If amenities within the proposed park are included then pickleball courts, and a playground are included.
    c. Generally, planning staff does not have any concern about using the City property to count towards their park space and amenities, since the applicant has committed to complete all improvements. It is likely that the City will need to issue a license to allow the long term use of City property for a private park.
7. **Sensitive Lands:** As can be seen in the slope map below most of the more intense sloping in this area is located just off this property. When Planning staff went and walked the property most of it was seen to be fairly plateau-like. The standards for requiring a sensitive lands application are:
    a. *Sec. 10-24-2. Sensitive lands defined.*

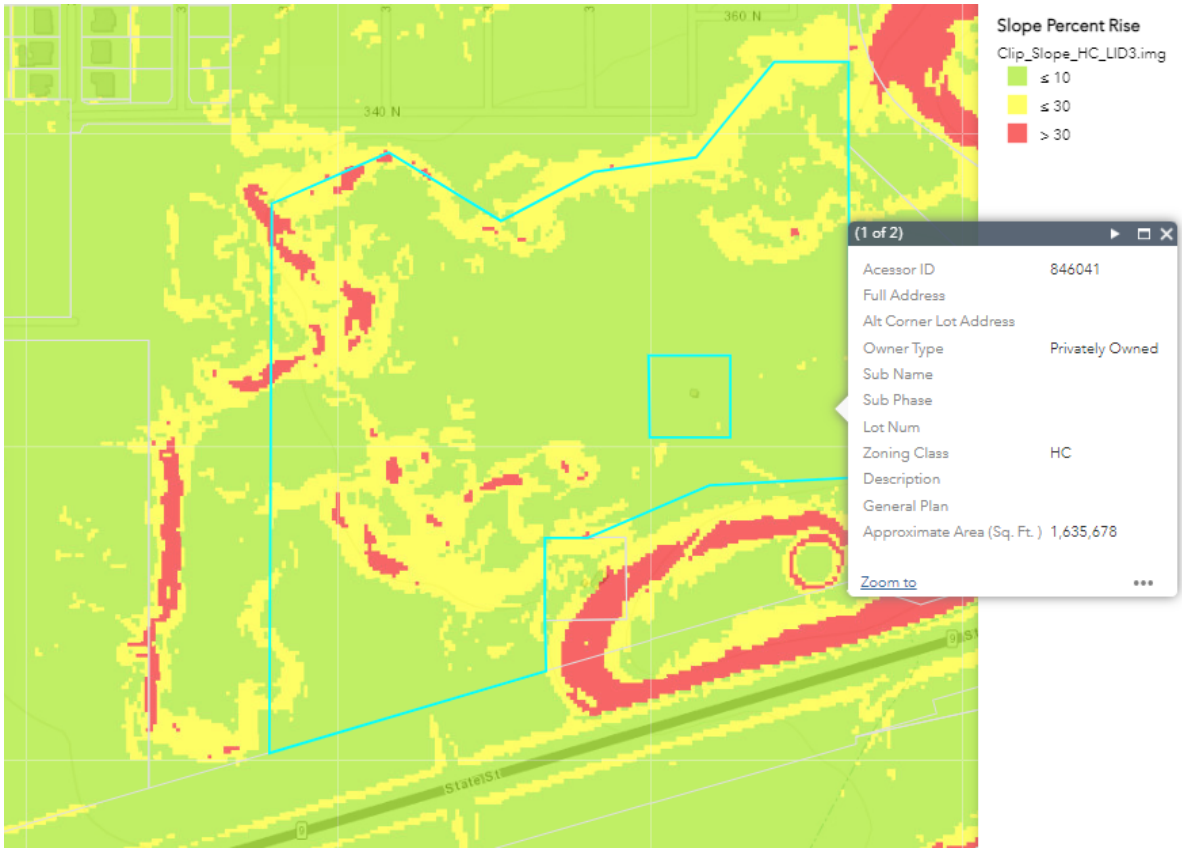
    b. *For the purposes of this chapter, the following lands are "sensitive lands" and shall be subject to the requirements of this chapter:*

c. *A. Any area where there is a change in elevation which is equal to or greater than ten percent (one foot of vertical grade change for every ten feet of horizontal run) for a distance of 100 feet or more, and where said grade change covers an area of at least two contiguous acres, or an entire parcel if said parcel is less than two acres (see section 10-24-9, appendix diagram A of this chapter).*

d. *B. Any area within 100 feet of the edge of a bluff. The "edge of a bluff" means an area where there is a substantial abrupt change in slope along the edge of a predominantly flat area of land. The slope of the land below the abrupt edge typically has a grade that is near or exceeds 30 percent or greater, and has a vertical elevation change of at least 100 feet or greater, and lies within sensitive lands described in subsection A of this section (see section 10-24-9, appendix diagram B of this chapter).*

e. *C. The boundaries of all areas within one hundred (100) vertical feet of a ridgeline. A "ridgeline" means the junction of a rising steep slope on one side and a descending slope that may be gentle or steep on the opposite side (see section 10-24-9, appendix diagram C of this chapter).*

f. HCC 10-24-3 (C) states: *Zoning Administrator determination. If additional information is provided by an applicant, the Zoning Administrator shall review the information and make a final determination whether or not the project is subject to this chapter. The Zoning Administrator may also review the project on site and may determine the project is not located on sensitive lands and therefore not subject to this chapter. The decision of the Zoning Administrator may be appealed to the Planning Commission*.
g. Staff has expressed these concerns to the applicant and they have said they would provide a letter stating that the property does not meet the sensitive lands code.
h. The provided site plan does show the development clustering away from the slopes on the north side but the slope on the southwest corner between the residential and commercial area is not accounted for as much. As seen in the pictures below most of the sloping is just rock outcroppings but there is an elevation change between the two sections of the property

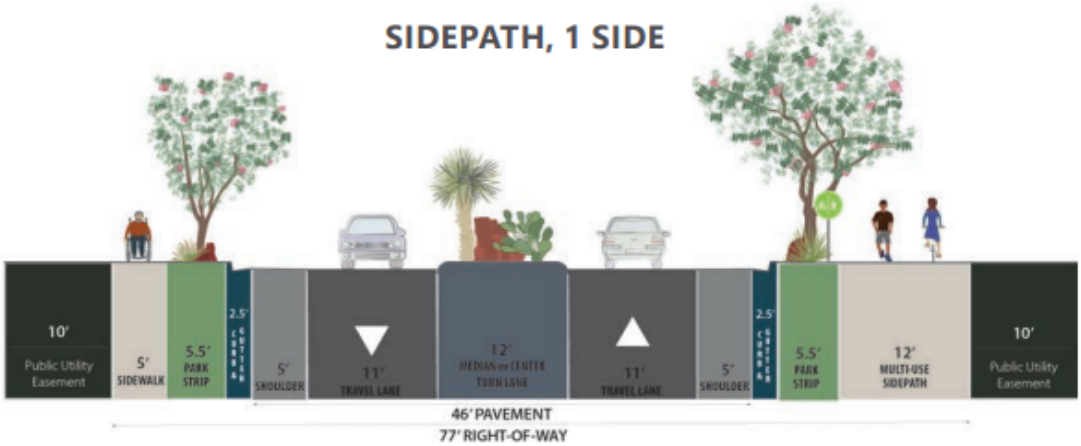


Property is generally flat on top, with a few rock outcroppings on the top, and some hillside along the northwest and a small hill between the residential and the commercial areas.

Hillside on the property facing toward the highway

Picture of the property taken from the water tank. As the picture shows the property is generally flat with the exception of some hills by the highway and to the northwest boundary.

8. The road cross sections shown on their plans do not match the Active Transportation Master Plan for SkyRim Parkway



9. All park strips will need to be landscaped and have the proper improvements
10. On the preliminary plat: remove the Planning Commission Chair signature box and update Mayor's signature line.
11. The City has received a water acknowledgement waiver and a will serve letter from Hurricane City Water. We have not received a will serve letter from Ash Creek Sewer District.
12. A note indicating whether or not the property is in a tortoise take area has been provided
13. Hurricane City Code 10-37-4 states:
    a. *Land shall be developed only where existing infrastructure is in place or will be timely provided to service proposed development. The City may require an analysis to be completed to determine whether adequate public facilities are available to service a development and whether such development will change existing levels of service or will create a demand which exceeds acceptable levels of service for roadways, intersections, bridges, storm drainage facilities, water lines, water pressure, sewer lines, fire and emergency response times, and other similar public services. The City may disapprove a proposed development if demand for public services exceeds accepted levels of service. No subsequent approval of such development shall be given until either the developer or the City installs improvements calculated to raise service levels to the standard adopted by the City.*
    b. This is a different situation than what we have seen in other parts of the City. While there is significant off-site infrastructure that is needed there is no issue of regional capacity requiring major infrastructure improvements. Some items, like a sewer line plan, have already been submitted to the JUC. The phase plan presented is designed to access utilities and provide a good flow of service to the development. Staff generally believes that the concerns raised by the JUC can be resolved through the construction drawings process. The applicant has told staff they are currently preparing off-site improvement plans.

Recommendation 3/23/2023: Staff recommends the Planning Commission review this application based on standards with Hurricane City Code. Staff has some concerns with this plat as currently presented and has reached out to the applicant to set up a meeting to address them, however none of the concerns are insurmountable. Staff does not recommend approving this item until concerns with off-site utilities, private roadways, open space, amenities, sensitive lands, and overall layout are addressed.

COMMITMENT FOR TITLE INSURANCE
ISSUED BY

REAL ADVANTAGE
TITLE INSURANCE COMPANY

NOTICE

IMPORTANT—READ CAREFULLY: THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACONTRACTUAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY'S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON.

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I—Requirements; Schedule B, Part II—Exceptions; and the Commitment Conditions, *Real Advantage Title Insurance Company, a California Corporation* (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured.

If all of the Schedule B, Part I—Requirements have not been met within 30 days after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

REAL ADVANTAGE TITLE INSURANCE COMPANY

BY:_____
William D. Burding, Jr.,
Executive Vice President & General Counsel

Countersigned By:

BY: _____
Ken Higley, Title Officer
Real Advantage Title Insurance Company

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Real Advantage Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I—Requirements; [and] Schedule B, Part II—Exceptions[; and a counter-signature by the Company or its issuing agent that may be in electronic form].

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AMERICAN LAND TITLE ASSOCIATION

COMMITMENT CONDITIONS

1. DEFINITIONS

(a) "Knowledge" or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.

(b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.

(c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.

(d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.

(e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.

(f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.

(g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.

(h) "Title": The estate or interest described in Schedule A.

2. If all of the Schedule B, Part I—Requirements have not been met within the time period specified in the Commitment to Issue Policy, this Commitment terminates and the Company's liability and obligation end.

3. The Company's liability and obligation is limited by and this Commitment is not valid without:

(a) the Notice;
(b) the Commitment to Issue Policy;
(c) the Commitment Conditions;
(d) Schedule A;
(e) Schedule B, Part I—Requirements; [and]
(f) Schedule B, Part II—Exceptions[; and
(g) a counter-signature by the Company or its issuing agent that may be in electronic form].

4. COMPANY'S RIGHT TO AMEND

The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

5. LIMITATIONS OF LIABILITY

(a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:

(i) comply with the Schedule B, Part I—Requirements;
(ii) eliminate, with the Company's written consent, any Schedule B, Part II—Exceptions; or
(iii) acquire the Title or create the Mortgage covered by this Commitment.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Real Advantage Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I—Requirements; [and] Schedule B, Part II—Exceptions[; and a counter-signature by the Company or its issuing agent that may be in electronic form].

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(b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.

(c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.

(d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.

(e) The Company shall not be liable for the content of the Transaction Identification Data, if any.

(f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I—Requirements have been met to the satisfaction of the Company.

(g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

6. LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT

(a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.

(b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.

(c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.

(d) The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.

(e) Any amendment or endorsement to this Commitment must be in writing [and authenticated by a person authorized by the Company].

(f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT

The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. PRO-FORMA POLICY

The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

[9. ARBITRATION

The Policy contains an arbitration clause. All arbitrable matters when the Proposed Policy Amount is $2,000,000 or less shall be arbitrated at the option of either the Company or the Proposed Insured as the exclusive remedy of the parties. A Proposed Insured may review a copy of the arbitration rules at <http://www.alta.org/arbitration>.]

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AMERICAN LAND TITLE ASSOCIATION

[***Transaction Identification Data for reference only:***
Issuing Agent: Real Advantage Title Insurance Agency
Issuing Office: 5926 S. Fashion Point Drive, Suite 220, South Ogden, UT 84403
Issuing Office's ALTA® Registry ID: 0007598
Loan ID Number:
Commitment Number: 22-13655-RM
Issuing Office File Number: 22-13655-RM
Property Address:] Not Available, Hurricane, UT 84737
[Revision Number:] 1

SCHEDULE A

1. Commitment Date: 07/25/2022 at 8:00 AM
2. Policy to be issued:

   (a) ALTA Owner's Policy
   Proposed Insured: Steward Land Holdings LLC and/or Assigns LLC, a Limited Liability Company
   Proposed Policy Amount: $6,900,000.00
   Proposed Premium Amount: $12,661.00

   (b) ALTA Loan Policy
   Proposed Insured: TBD
   Proposed Policy Amount: $1,000.00
   Proposed Premium Amount: $200.00
   Endorsements:

3. The estate or interest in the Land described or referred to in this Commitment is fee simple
4. The Title is, at the Commitment date, vested in: Mitchell J. Olsen
5. The Land is described as follows:
   See attached Exhibit A.

REAL ADVANTAGE TITLE INSURANCE COMPANY

BY: _____
Authorized Countersignature
Ken Higley, Title Officer

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SCHEDULE B, PART I
Requirements

All of the following Requirements must be met:

1. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

2. Pay the agreed amount for the estate or interest to be insured.

3. Pay the premiums, fees, and charges for the Policy to the Company.

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AMERICAN LAND TITLE ASSOCIATION

SCHEDULE B, PART II
Exceptions

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company:

1. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession, or claiming to be in possession, thereof.

2. Easements, liens, encumbrances, or claims thereof, which are not shown by public records.

3. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey of the land would disclose, and which are not shown by the public records.

4. Any lien, or right to a lien, imposed by the law for services, labor, or material heretofore or hereafter furnished, which lien, or right to a lien, is not shown by the public record.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) Indian treaty or aboriginal rights, including, but not limited to, easements or equitable servitudes; or, (d) water rights, claims or title to water, whether or not the matters excepted under (a), (b), (c), or (d) as shown by the public records.

6. Taxes or assessments which are not no payable or which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the record of such agency or by the public records.

7. Any service, installation, connection, maintenance or construction charges for sewer, water, electricity, or garbage collection or disposal or other utilities unless shown as an existing lien by the public records.

8. Defects, liens, encumbrances, adverse claims or other matters, if any created, first appearing in the public records or attaching subsequent to the effective date hereof but prior to the date the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this commitment.

NOTE: EXCEPTIONS 1-8 HEREIN WILL BE OMITTED FROM AN ALTA EXTENDED OWNERS POLICY AND ALTA EXTENDED LENDERS POLICY.

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9. General Property Taxes for the year 2021 have been paid in the amount of $5,825.18.
   Tax Parcel # H-3-1-31-3009

10. Said property is within the boundaries of Hurricane and Tax District 3, and is subject to any charges and assessments levied thereunder.

11. Subject to all existing roads, streets, alleys, ditches, reservoirs, utilities, canals, pipe lines, power, telephone, sewer, gas or water lines, and right of way and easements thereof.

12. Grant of Easement and/or Right-of-Way and the terms, conditions and limitations contained therein:
    In favor of: Hurricane City, a Utah Municipal Corporation
    Recorded: 7/10/2019
    Entry No.: 20190027165

13. Claim, right, title or interest to water or water rights, whether or not shown by the public records.

14. Any and all outstanding oil and gas, mining and mineral rights, minerals and ores situated in, upon or under the above described tract of land, together with the right of the proprietor of a vein or lode to extract his ore therefrom should the same be found to penetrate or intersect the premises and the right of ingress and egress for the use of said rights, along with any other rights in connection with or relative to the mining, removal or sale of the same (but not including the right to enter upon the surface of the premises).

15. Subject to the following matters referenced on that certain survey prepared as Job No. 5533-09, by Scott P. Woolsey, License No. 174919

16. NOTE: No existing Deed of Trust appears of record under the current owner(s). If this information is not correct, please notify the Company as soon as possible to provide information regarding the existing loan.

17. The transaction contemplated in connection with this Report is subject to the review and approval of the Company's Corporate Underwriting Department. The Company reserves the right to add additional items or make further requirements after such review.

18. The rights of parties in possession of the subject property under unrecorded leases, contracts, rental or occupancy agreements and any claims, rights or interests arising thereunder.

19. Obtain a copy of the Articles of Incorporation for Steward Land Holdings, LLC.

    NOTE: A search of the Federal and State judgment records revealed no unpaid judgments, tax liens or open bankruptcies in the past eight years (except as noted) against:

    Mitchell J. Olsen

    Steward Land Holdings, LLC.

    NOTE: According to the Official Records, there have been no documents conveying the land described herein within a period of 24 months prior to the date of this commitment,

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except as follows:

NONE.

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EXHIBIT A

The Land referred to herein below is situated in the County of Washington, State of Utah, and is described as follows:

Commencing at the South Quarter Corner of Section 31, Township 41 South, Range 13 West, Salt Lake Base and Meridian; thence North 88°52'58" West along the Section line a distance of 751.16 feet; thence North, a distance of 452.94 feet to the Point of Beginning, said point being on the Northerly right of way line of Highway SR-9; thence South 74°50'08" West, along said right of way line a distance of 765.51 feet; thence North 01°42'49" East, a distance of 1399.98 feet; thence North 67°32'27" East a distance of 327.32 feet; thence South 57°30'11" East, a distance of 335.71, feet; thence North 63°09'32" East, a distance of 269.71 feet; thence North 83°12'08" East, a distance of 265.91 feet; thence North 40°40'01" East, a distance of 312.94 feet; thence South 88°58'18" East, a distance of 189.64 feet, to a point on the Center Section line of said Section 31; thence South 01°01'42" West, along said line a distance of 1070.46 feet; thence South 89°46'38" West, a distance of 131.69 feet; thence South 85°13'16" West, a distance of 211.19 feet: thence South 68°02'47" West, a distance of 332.30 feet; thence North 88°52'58" West a distance of 111.09 feet; thence South 01°07'02" West a distance of 320.61 feet to the Point of Beginning.

LESS and EXCEPTING the following described Parcel:

Commencing at the South Quarter Corner of Section 31, Township 41 South, Range 13 West, Salt Lake Base and Meridian; thence South 89°58'47" West a distance of 511.39 feet; thence North 00°01'13" West a distance of 1040.89 feet to the Southwest Corner of an existing 1 acre well site Parcel, and the Point of Beginning; thence North 00°01'13" West a distance of 208.71 feet; thence North 89°58'47" East a distance of 208.81 feet; thence South 00°01'13" East a distance of 208.71 feet; thence South 89°58'47" West a distance of 208.71 feet to the Point of Beginning.

Tax Parcel #: H-3-1-31-3009

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AMERICAN LAND TITLE ASSOCIATION

LANGUAGE FOR WILL SERVE LETTERS WHEN INFRASTRUCTURE IS IN THE AREA

[Date] March 8, 2023

To Whom It May Concern:

Steward Land Holdings and/or Assigns (the "Developer") has requested a culinary water will serve letter for the subdivision known as Skyrim, located at approximately 3000 W State Street (Parcel/lot # H-3-1-31-3009) in Hurricane, Utah (the "Project").

Infrastructure

The City currently has infrastructure to supply culinary water in the general area of the Project. However, Developer will be responsible to connect the Project to the existing water infrastructure, including the installation of infrastructure in dedicated public streets and as otherwise required to meet City standards. In addition, Developer may be required to obtain and supply a hydraulic water study to ensure the waterline will deliver required fire flows. A looped water system may be required.

Water Supply

As of the date of this letter, the City has adequate water to supply water to 536 residential connections within the Project. However, water within the City is a finite resource with limited supply. The ability of the City to supply water to previously approved projects, as well as continue to serve additional water customers, is contingent on water supplies being available from the Washington County Water Conservancy District (the "Conservancy District"). Therefore, the City's statements in this letter regarding the adequacy of water supply is (1) contingent on water being available from the Conservancy District and (2) shall expire one year from the date of this letter, after which a renewed will serve letter will be required for any property or lot that has not obtained a metered connection to the City's culinary water system. Developer is encouraged to obtain a guarantee of water from the Conservancy District.

General Requirements

In addition to the requirements and limitations described above, Developer shall be required to comply with all applicable laws, ordinances, policies, and construction and design standards. These requirements include, but are not limited to, secondary water system requirements and any obligations described in an applicable development agreement.

Sincerely,

Ken Richins
Water Department Superintendent

Sky Rim Development

Water ERC & Daily Demand Calculations

3/9/2023 KHH

Residence Type	Count	ERC	GPD
Single Family Lot[1]	15	15	12000
Town Homes[1]	132	132	105600
Apartments[1]	372	372	297600
7 Building Commercial (sf)[2]	76,419	5.4	4347
Clubhouse w/Pool[3]	3	11.8	9470

Indoor Water Total	429017 gpd
Total ERC	536.3 ERC

1) Residential water indoor daily demands are calculated at 800 gpd/connection per Utah R309-510 Table 1. Single family lots, town homes, and apartments are each considered as 1 ERC. (1 ERC=800 gpd)

2) Commercial water indoor daily demands are calculated according to Utah R309-510 Table 2 for retail (store) use, with an assumed 1 employee per 1,000 s.f. of commercial space and 1 public bathroom per commercial building. Flows are 11 gpd per employee and 500 gpd per public restroom.

3) Clubhouse and pool water daily demands are calculated according to Utah R309-510 Table 2 for swimming pool use with the formula: *Peak Day Demand = 20 x (water area/30)+ deck area, Water area = 2640, deck area = 7710*

From: Steward Land Company
Brad Brown, Managing Partner
1708 E. 5550 S. STE 18 Ogden, UT 84403
O: 801.590.0980 M: 801.309.0399
StewardLand.com

To: Hurricane City
147 N 870 W
Hurricane, UT 84737

March 1, 2023

Dear Hurricane City,

We recently submitted an application for a development project called SkyRim which is located approximately 3000 W State Street, Hurricane (about 1,000 feet northeast of Walmart). The proposed development is within the Planned Commercial zone and includes a combination of single-family homes, townhomes, apartments, and commercial.

Within the boundary of the development is a one-acre property owned by the City (see Site Plan). The one-acre property is used for a well and pump house. As we have discussed several times with the City, we would like to propose to the City that part of the one-acre property be used as a public park that would be combined with the adjacent property from the SkyRim development.

The proposed development would pay for the construction of the following public facilities (see concept included in site plan):

- Pickleball courts
- Grass or play area
- Playground
- Pavilion
- Landscaping
- Parking
- Bathroom

We're anticipating that the total cost of the amenities could be in the range of $200,000, which would be a direct benefit to the City residents and contributeto the park system.

A secure fence around the pump house would be installed to provide security, access, and protection of valuable water infrastructure.

The park would be open to public access and use on both private and City land. We're open to discussing how the maintenance of the park would be handled either entirely by the development/HOA, by the City, or in some other partnership. As we have discussed, we believe this would be a great resource for both current and future residents of Hurricane City. We expect that as we work through the logistics of this proposal that it would be finalized in a development agreement.

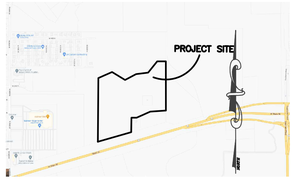
Thank you for your consideration.

Sincerely, Brad Brown

Reeve & Associates, Inc. - Solutions You Can Build On

SkyRim

PART OF THE SOUTHWEST QUARTER OF SECTION 31, TOWNSHIP 41 SOUTH, RANGE 13 WEST, SALT LAKE BASE & MERIDIAN, U.S. SURVEY
HURRICANE CITY, WASHINGTON COUNTY, UTAH
FEBRUARY, 2023



VICINITY MAP
NOT TO SCALE

LEGEND

- = SECTION CORNER
- = RIGHT-OF-WAY MONUMENT
- = SET 5/8" REBAR AND CAP STAMPED "REEVE AND ASSOCIATES"
- = FOUND AS SHOWN
- = BOUNDARY LINE
- = ADJOINING PROPERTY
- = TIE LINE
- = LESS AND EXCEPTING RECORD TIE LINE
- = ROAD CENTERLINE
- = EASEMENT
- = EXISTING FENCE
- WL = WATER LINE
- PL = POWER LINE
- BPL = BURIED POWER LINE
- = EXISTING BUILDING
- = >30% SLOPE
- WV = WATER VALVE
- FH = FIRE HYDRANT
- PTFB = POWER TRANSFORMER BOX
- GW = GUY WIRE
- PP = POWER POLE

100 0 100 200 300
Scale: 1" = 100'

SURVEYOR'S NARRATIVE

THIS SURVEY WAS REQUESTED BY STEWARD LAND HOLDINGS FOR TITLE PURPOSES.

BRASS CAP MONUMENT WAS FOUND FOR THE SOUTH QUARTER CORNER; A PIN WITH 'X' WAS FOUND FOR THE SOUTHWEST CORNER; A REBAR AND CAP WAS FOUND AT THE CENTER; AND AN ALUMINUM CAP WAS FOUND FOR THE WEST QUARTER CORNER OF SECTION 31, TOWNSHIP 41 SOUTH, RANGE 13 WEST, SALT LAKE BASE AND MERIDIAN, U.S. SURVEY.

A LINE BEARING NORTH 88°52'58" WEST BETWEEN SAID SOUTH QUARTER CORNER AND SOUTHWEST CORNER OF SECTION 31 WAS USED AS THE BASIS OF BEARINGS FOR THIS SURVEY.

A PLAT FOR HURRICANE WAL-MART SUBDIVISION PREPARED BY CLC ASSOCIATES, DATED JUNE 21, 2007, AND RECORDED JULY 3, 2007; A SURVEY PREPARED BY ALPHA ENGINEERING CO. FOR HURRICANE CITY (STRATTON WELLS), DATED FEBRUARY 16, 2000; AND AND ALTA/ACSM LAND TITLE SURVEY PREPARED BY ALPHA ENGINEERING COMPANY, DATED NOVEMBER 30, 2009, AND FILED DECEMBER 31, 2008 WERE USED AS REFERENCE FOR THIS SURVEY.

BOUNDARIES OF THE PARCELS WERE ESTABLISHED BY INFORMATION OF RECORD AND FOUND EVIDENCE OF OCCUPATION ON THE GROUND. SEVERAL REBARS WITH CAPS SET BY ALPHA ENGINEERING WERE RECOVERED DURING THE FIELD OBSERVATION PORTION OF THIS SURVEY AND WERE HONORED.

PROPERTY CORNERS NOT FOUND ARE SET WITH A ⅝" REBAR AND PLASTIC CAP STAMPED "REEVE & ASSOCIATES". ALL FRONT LOT CORNERS WERE SET WITH A LEAD PLUG IN THE TOP BACK OF CURB AT THE EXTENSION OF THE SIDE LOT LINES.

EXCEPTIONS TO COVERAGE

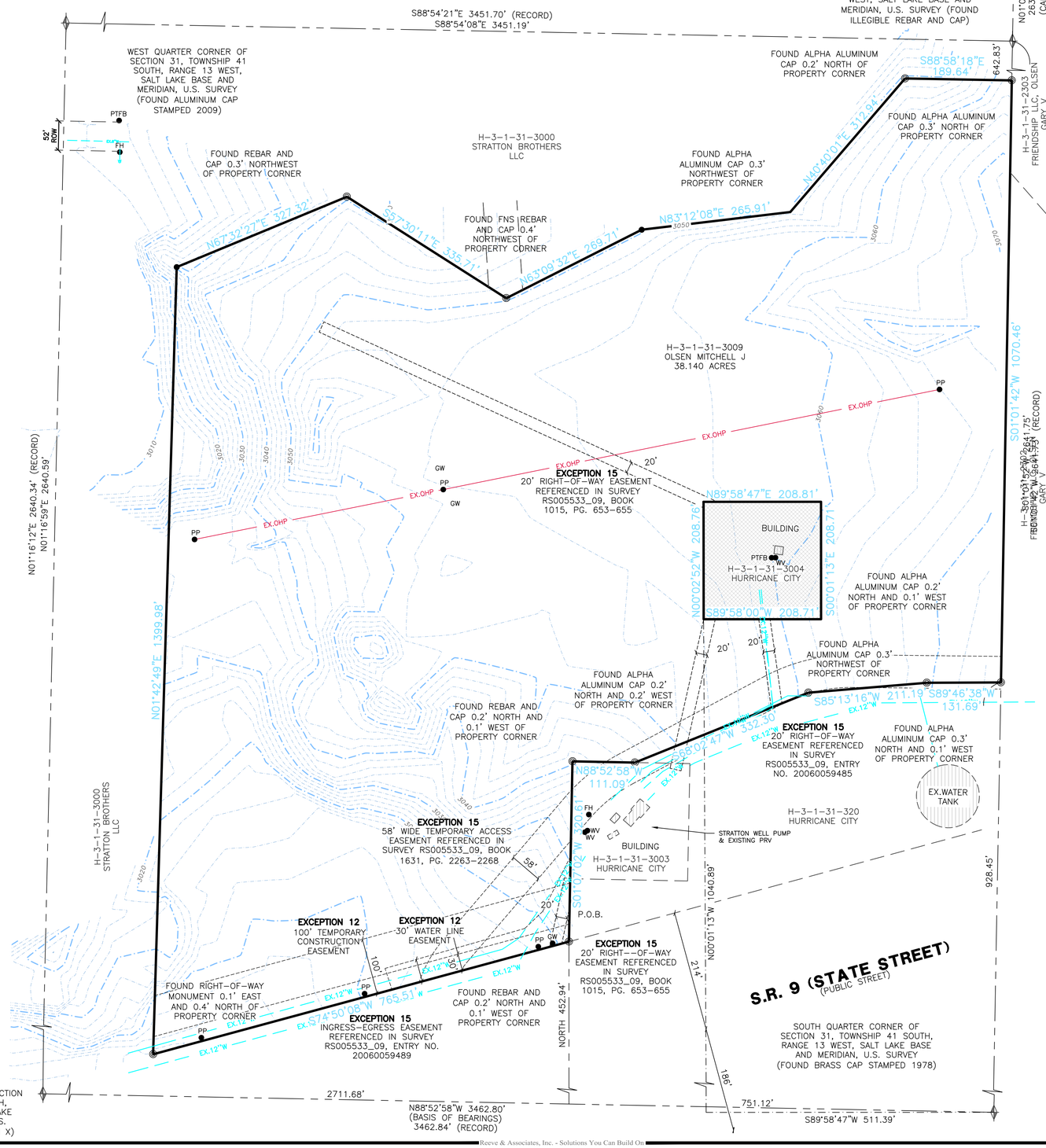
ISSUED BY REAL ADVANTAGE TITLE INSURANCE COMPANY: COMMITMENT NO. 22-13655-RM, SCHEDULE B, PART II, DATED JULY 25, 2022:

EXCEPTIONS #1-11 AND #13, 14, AND 16-19 ARE NOT SURVEY ITEMS AND CANNOT BE PLOTTED GRAPHICALLY.

11. SUBJECT TO ALL EXISTING ROADS, STREETS, ALLEYS, DITCHES, RESERVOIRS, UTILITIES, CANALS, PIPE LINES, POWER, TELEPHONE, SEWER, GAS OR WATER LINES, AND RIGHT OF WAY AND EASEMENTS THEREOF.
(SURVEYOR'S NOTE: ALL VISIBLE UTILITIES SHOWN ON SURVEY)

12. GRANT OF EASEMENT AND/OR RIGHT-OF-WAY AND THE TERMS, CONDITIONS AND LIMITATIONS CONTAINED THEREIN:
IN FAVOR OF: HURRICANE CITY, A UTAH MUNICIPAL CORPORATION
RECORDED: 7/10/2019
ENTRY NO.: 20190027165
(SURVEYOR'S NOTE: 30' WATER LINE EASEMENT AND 100' TEMPORARY CONSTRUCTION EASEMENT SHOWN ON SURVEY)

15. SUBJECT TO THE FOLLOWING MATTERS REFERENCED ON THAT CERTAIN SURVEY PREPARED AS JOB NO. 5533-09, BY SCOTT P. WOOLSEY, LICENSE NO. 174919
(SURVEYOR'S NOTE: A 58' TEMPORARY ACCESS EASEMENT, AN INGRESS-EGRESS EASEMENT, AND FOUR (4) 20' RIGHT-OF-WAY EASEMENTS SHOWN ON SURVEY)



DESCRIPTION FROM TITLE REPORT

ISSUED BY REAL ADVANTAGE TITLE INSURANCE COMPANY: COMMITMENT NO. 22-13655-RM, DATED JULY 25, 2022:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF WASHINGTON, STATE OF UTAH, AND IS DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTH QUARTER CORNER OF SECTION 31, TOWNSHIP 41 SOUTH, RANGE 13 WEST, SALT LAKE BASE AND MERIDIAN; THENCE NORTH 88°52'58" WEST ALONG THE SECTION LINE A DISTANCE OF 751.16 FEET; THENCE NORTH, A DISTANCE OF 452.94 FEET TO THE POINT OF BEGINNING, SAID POINT BEING ON THE NORTHERLY RIGHT OF WAY LINE OF HIGHWAY SR-9; THENCE SOUTH 74°50'08" WEST, ALONG SAID RIGHT OF WAY LINE A DISTANCE OF 765.51 FEET; THENCE NORTH 01°42'49" EAST, A DISTANCE OF 1399.98 FEET; THENCE NORTH 67°32'27" EAST A DISTANCE OF 327.32 FEET; THENCE SOUTH 57°30'11" EAST, A DISTANCE OF 335.71, FEET; THENCE NORTH 63°09'32" EAST, A DISTANCE OF 269.71 FEET; THENCE NORTH 83°12'08" EAST, A DISTANCE OF 265.91 FEET; THENCE NORTH 40°40'01" EAST, A DISTANCE OF 312.94 FEET; THENCE SOUTH 88°58'18" EAST, A DISTANCE OF 189.64 FEET, TO A POINT ON THE CENTER SECTION LINE OF SAID SECTION 31; THENCE SOUTH 01°01'42" WEST, ALONG SAID LINE A DISTANCE OF 1070.46 FEET; THENCE SOUTH 89°46'38" WEST, A DISTANCE OF 131.69 FEET; THENCE SOUTH 85°13'16" WEST, A DISTANCE OF 211.19 FEET: THENCE SOUTH 68°02'47" WEST, A DISTANCE OF 332.30 FEET; THENCE NORTH 88°52'58" WEST A DISTANCE OF 111.09 FEET; THENCE SOUTH 01°07'02" WEST A DISTANCE OF 320.61 FEET TO THE POINT OF BEGINNING.

LESS AND EXCEPTING THE FOLLOWING DESCRIBED PARCEL:

COMMENCING AT THE SOUTH QUARTER CORNER OF SECTION 31, TOWNSHIP 41 SOUTH, RANGE 13 WEST, SALT LAKE BASE AND MERIDIAN; THENCE SOUTH 89°58'47" WEST A DISTANCE OF 511.39 FEET; THENCE NORTH 00°01'13" WEST A DISTANCE OF 1040.89 FEET TO THE SOUTHWEST CORNER OF AN EXISTING 1 ACRE WELL SITE PARCEL, AND THE POINT OF BEGINNING; THENCE NORTH 00°01'13" WEST A DISTANCE OF 208.71 FEET; THENCE NORTH 89°58'47" EAST A DISTANCE OF 208.81 FEET; THENCE SOUTH 00°01'13" EAST A DISTANCE OF 208.71 FEET; THENCE SOUTH 89°58'47" WEST A DISTANCE OF 208.71 FEET TO THE POINT OF BEGINNING.

FLOOD ZONE CLASSIFICATION

THE SUBJECT PROPERTY IS LOCATED WITHIN ZONE X (UNSHADED) PER FEMA FLOOD INSURANCE RATE MAP FOR WASHINGTON COUNTY, UTAH, AND INCORPORATED AREAS MAP NO. 49053C0840G, EFFECTIVE DATE 04-02-2009. ZONE X (UNSHADED) IS DEFINED AS "AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD."

BENCHMARK

TOP OF BRASS CAP FOR THE SOUTHWEST CORNER OF SECTION 31, TOWNSHIP 41 SOUTH, RANGE 13 WEST, SALT LAKE BASE AND MERIDIAN, U.S. SURVEY
VERTICAL DATUM 2974.23' (SURVEYED ELEVATION, STATIC GPS)

NOTES

NO ADDRESS OF SUBJECT PROPERTY PROVIDED TO THE SURVEYOR BY THE CLIENT. (SEE TABLE A, ITEM 2)

NO ZONING REPORT OR LETTER WAS PROVIDED TO THE SURVEYOR BY THE CLIENT. (SEE TABLE A, ITEM 6)

NO STRUCTURES ARE FOUND WITHIN THE BOUNDARIES OF SUBJECT PROPERTY. (SEE TABLE A, ITEM 7)

NO PARKING LOTS, SIGNS, BILLBOARDS, SWIMMING POOLS, LANDSCAPE AREAS, OR SUBSTANTIAL AREAS OF REFUSE ARE FOUND WITHIN THE BOUNDARIES OF SUBJECT PROPERTY. (SEE TABLE A, ITEM 8)

THERE WERE 0 MARKED PARKING STALLS OBSERVED AND 0 MARKED ADA PARKING STALLS ON SITE AT TIME OF SURVEY. (SEE TABLE A, ITEM 9)

UTILITIES SHOWN ON THIS SURVEY ARE BASED ON PLANS AND/OR REPORTS PROVIDED BY THE CLIENT OR FROM THE VARIOUS UTILITY AGENCIES, OR MARKINGS COORDINATED BY THE SURVEYOR PURSUANT TO A PRIVATE UTILITY LOCATE REQUEST. THIS INFORMATION IS NOT TO BE RELIED ON AS ACCURATE OR EXACT. THE LOCAL UTILITY LOCATION COMPANY SHOULD BE CONTACTED PRIOR TO ANY CONSTRUCTION OR EXCAVATION. INFORMATION FROM THE SOURCES INDICATED ABOVE WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.E.IV. OF THE MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DEPICTED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION MAY BE NECESSARY. (SEE TABLE A, ITEM 11)

NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK. (SEE TABLE A, ITEM 16)

THERE IS NO EVIDENCE OF ANY CHANGE OF RIGHT-OF-WAY OR EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS OBSERVED IN THE PROCESS OF CONDUCTING THIS SURVEY. (SEE TABLE A, ITEM 17)

Developer Contact:
Sky Hazlehurst
Steward Development
1708 East 5550 South
South Ogden, UT. 74405
PH: (801) 837-2020

Project Contact:
Nate Reeve
Reeve & Associates, Inc.
5160 South 1500 West
Riverdale, Utah, 84405
PH:(801) 621-3100

Reeve & Associates, Inc.
5160 SOUTH 1500 WEST, RIVERDALE, UTAH, 84405
TEL: (801) 621-3100 FAX: (801) 621-2666 www.reeve-assoc.com
LAND SURVEYORS • CIVIL ENGINEERS • WATER RIGHTS
TRAFFIC ENGINEERS • STRUCTURAL ENGINEERS • LANDSCAPE ARCHITECTS

REVISIONS

DATE	DESCRIPTION

SkyRim
PART OF THE SOUTHWEST QUARTER OF SECTION 31, TOWNSHIP 41 NORTH, RANGE 13 WEST, SALT LAKE BASE & MERIDIAN, U.S. SURVEY
HURRICANE CITY, WASHINGTON COUNTY, UTAH

Preliminary Plat
Existing Conditions

Project Info.
PLANNER: C.CAVE
Designer: J.MEYERS
Begin Date: 2-6-2023
Name: SKYRIM PRELIMINARY PLAT
Scale: 1"=100'
Checked:
Number: 7152-26

Sheet 1 of 3 Sheets

Reeve & Associates, Inc. - Solutions You Can Build On
Reeve & Associates, Inc. - Solutions You Can Build On
Reeve & Associates, Inc. - Solutions You Can Build On

Reeve & Associates, Inc. - Submitted Plan Check Build On

ASH CREEK SPECIAL SERVICE DISTRICT APPROVAL

THE HEREON SUBDIVISION HAS BEEN REVIEWED AND IS APPROVED IN ACCORDANCE WITH INFORMATION IN THIS OFFICE THIS _____ DAY OF _____, 20__.

ASH CREEK SPECIAL SERVICE DISTRICT

APPROVAL OF PLANNING COMMISSION

ON THIS _____ DAY OF _____, 20__, THE PLANNING COMMISSION CHAIRMAN OF HURRICANE, REVIEWED THE ABOVE SUBDIVISION AND RECOMMENDED SAME FOR ACCEPTANCE BY THE CITY.

HURRICANE CITY PLANNING COMMISSION CHAIRPERSON

APPROVAL AND ACCEPTANCE BY HURRICANE CITY

WE THE CITY OF HURRICANE, HAVE REVIEWED THE ABOVE PLAT AND HEREBY ACCEPT SAID PLAT WITH ALL COMMITMENTS AND ALL OBLIGATIONS PERTAINING THERETO, THIS _____ DAY OF _____, 20__.

ATTEST: CITY RECORDER
HURRICANE, UTAH

JOHN W. BRAMALL, MAYOR
HURRICANE, UTAH

WASHINGTON COUNTY RECORDER

TREASURER APPROVAL

I, WASHINGTON COUNTY TREASURER, CERTIFY ON THIS _____ DAY OF _____, 20___, THAT ALL TAXES, SPECIAL ASSESSMENTS, AND FEES DUE AND OWING ON THIS SUBDIVISION FINAL PLAT HAVE BEEN PAID IN FULL.

WASHINGTON COUNTY TREASURER

ENGINEER'S APPROVAL

THE ABOVE SUBDIVISION HAS BEEN REVIEWED AND IS APPROVED IN ACCORDANCE WITH INFORMATION ON FILE IN THIS OFFICE THIS _____ DAY OF _____, 20__.

HURRICANE CITY ENGINEER

APPROVAL AS TO FORM

APPROVED AS TO FORM THIS _____ DAY OF _____, 20__.

HURRICANE CITY ATTORNEY

100 0 100 200 300
Scale: 1" = 100'

Developer Contact:
Sky Hazlehurst
Steward Development
1708 East 5550 South
South Ogden, UT. 74405
PH: (801) 837-2020

Project Contact:
Nate Reeve
Reeve & Associates, Inc.
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LAND SURVEYORS • CIVIL ENGINEERS • LAND PLANNERS
TRAFFIC ENGINEERS • STRUCTURAL ENGINEERS • LANDSCAPE ARCHITECTS

REVISIONS

DATE	DESCRIPTION

SkyRim

PART OF THE SOUTHWEST QUARTER OF SECTION 31, TOWNSHIP 41 NORTH, RANGE 13 WEST, SALT LAKE BASE & MERIDIAN, U.S. SURVEY
HURRICANE CITY, WASHINGTON COUNTY, UTAH

Preliminary Plat Subdivision

Project Info.
PLANNER: C.CAVE
Designer: J.MEYERS
Begin Date: 2-6-2023
Name: SKYRIM PRELIMINARY PLAT
Scale: 1"=100'
Checked:
Number: 7152-26

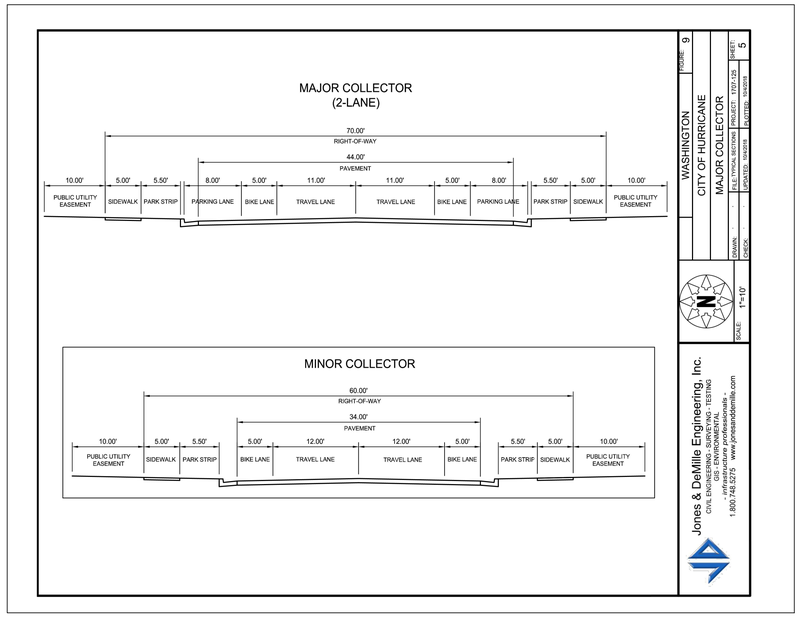
Sheet 2 of 3 Sheets

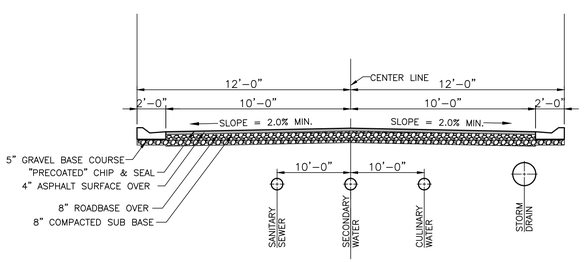
Reeve & Associates, Inc. - Submitted Plan Check Build On

Reeve & Associates, Inc. - Solutions You Can Build On

SITE DATA

OVERALL PARCEL AREA:	1,661,360 S.F. (38.15 ACRES)
ROW AREA	214,588
TOTAL RESIDENTIAL	519 DWELLINGS
SINGLE FAMILY LOTS	15 LOTS
TOWN HOMES	129 DWELLINGS 2 CAR GARAGE PER UNIT 2 CAR DRIVEWAY PER UNIT 33 VISITOR STALLS
APARTMENT EAST UNITS PARKING	 144 UNITS 290 STALLS (1 COVERED/UNIT) (24 GARAGE) (4 EV CHARGING) 1.8 PER UNIT 33 PARKING STALLS FOR PARK 61 – 10x10 STORAGE
APARTMENT WEST UNITS PARKING	 228 UNITS 409 STALLS (1 COVERED/UNIT) (35 GARAGE) (4 EV CHARGING) 1.8 PER UNIT 38 – 10x10 STORAGE
COMMERCIAL BUILDINGS	4– 10,000 S.F. 1– 6,419 1– 20,000 S.F.
309 PARKING STALLS	





Street Section (Private)
SCALE: NONE

100 0 100 200 300
Scale: 1" = 100'

Developer Contact:
Sky Hazlehurst
Steward Development
1708 East 5550 South
South Ogden, UT. 74405
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REVISIONS

DATE	DESCRIPTION

SkyRim
PART OF THE SOUTHWEST QUARTER OF SECTION 31,
TOWNSHIP 41 NORTH, RANGE 13 WEST, SALT LAKE BASE & MERIDIAN, U.S. SURVEY
HURRICANE CITY, WASHINGTON COUNTY, UTAH

Preliminary Plat
Proposed Plan

Project Info.
PLANNER: C.CAVE
Designer: J.MEYERS
Begin Date: 2–6–2023
Name: SKYRIM PRELIMINARY PLAT
Scale: 1"=100'
Checked:
Number: 7152–26

Sheet	3
3	Sheets

Reeve & Associates, Inc. - Solutions You Can Build On

PLANNING & ZONING
HURRICANE CITY
UTAH
147 N 870 W Hurricane UT
PHONE: 435.635.2811 FAX: 435.635.2184

PRELIMINARY PLAT APPLICATION

For office use only: $150.00 Fee
File No. _____
Receipt No. _____

Name: Brad Brown Telephone: O 8015900980 M 8013090399

Address: 1708 E. 5550 S. STE 18 Ogden, UT 84403 Fax No. _____

Email: Brad@stewardland.com Agent Email: _____

Agent (If Applicable): _____ Telephone: _____

Address/Location of Subject Property: 3000 W State Street, Hurricane, UT 84737 (east of Walmart)

Tax ID of Subject Property: H-3-1-31-3009 Zone District: PC

Proposed Use: (Describe, use extra sheet if necessary. Include total number of lots) _____
Proposed uses include residential (single-family, townhouses, and apartments) and commercial (see pre plat for more info).

Submittal Requirements: The preliminary plat application shall provide the following:

_x_ 1. Description: In a title block located in the lower right-hand corner of the sheet the following is required:
- _x_ a. The proposed name of the subdivision.
- _x_ b. The location of the subdivision, including the address and section, township and range.
- _x_ c. The names and addresses of the owner or subdivider, if other than the owner.
- _x_ d. Date of preparation, and north point.
- _x_ e. Scale shall be of sufficient size to adequately describe in legible form, all required conditions of Chapter 39, City Subdivision regulations.

_x_ 2. Existing Conditions: The preliminary plat shall show:
- _x_ a. The location of the nearest monument.
- _x_ b. The boundary of the proposed subdivision and the acreage included.
- _x_ c. All property under the control of the subdivider, even though only a portion is being subdivided. (Where the plat submitted covers only a part of the subdivider's tract, a sketch of the prospective street system of the unplatted parts of the subdivider's land shall be submitted, and the street system of the part submitted shall be considered in light of existing Master Street Plan or other Commission studies.)
- _x_ d. The location, width, and names/numbers of all existing streets within two hundred (200) feet of the subdivision and of all prior streets or other public ways, utility rights of way, parks and other public open spaces, within and adjacent to the tract.
- _x_ e. The location of all wells and springs or seeps, proposed, active and abandoned, and of all reservoirs or ponds within the tract and at a distance of at least one hundred feet (100') beyond the tract boundaries.
- _x_ f. Existing sewers, water mains, culverts, or other underground facilities within the tract, indicating the pipe sizes, grades, manholes and the exact locations.
- _x_ g. Existing Hurricane Canal Company facilities; other ditches, canals, natural drainage channels and open waterways and any proposed realignments.

__x__ h. Contours at vertical intervals not greater than five (5) feet.
__x__ i. Identification of potential geotechnical constraints on the project site (such as expansive rock and soil, collapsible soil, shallow bedrock, and caliche, gypsiferous rock and soil, potentially unstable rock or soil units including fault lines, shallow groundwater, and windblown sand) and recommendations for their mitigation.
__x__ j. Information on whether property is located in desert tortoise take area

__x__3. Proposed Plan: The subdivision plans shall show:
____ a. The layout of streets, showing location, widths, and other dimensions of proposed streets, crosswalks, alleys, and easements.
__x__ b. The layout, numbers, and typical dimensions of lots.
__x__ c. Parcels of land intended to be dedicated or temporarily reserved for public use or set aside for use of property owners in the subdivision.
__x__ d. Easements for water, sewers, drainage, utilities, lines and other purposes.
__x__ e. Typical street cross sections and street grades where required by the Planning Commission. (All street grades over 5% should be noted on the preliminary plat)
__x__ f. A tentative plan or method by which the subdivider proposes to handle the storm water drainage for the subdivision.
__x__ g. Approximate radius of all center line curves on highways or streets.
__x__ h. Each lot shall abut a street shown on the subdivision plat or on an existing publicly dedicated street. (Double frontage or flag lots shall be prohibited except where conditions make other design undesirable)
__x__ i. In general, all remnants of lots below minimum size left over after subdividing of a larger tract must be added to adjacent lots, rather than allow to remain as unusable parcels.
__x__ j. Where necessary, copies of any agreements with adjacent property owners relevant to the proposed subdivision shall be presented to the Planning Commission.
__x__ k. A letter from both the local sanitary sewer provider and culinary water provider indicating availability of service.
__Yes__ l. Will this subdivision be phased? If yes show possible phasing lines.
__x__ m. A tentative plan or method for providing non-discriminatory access to the subdivision for purposes of placement of communications infrastructure, and for purposes of placement of utility infrastructure.

__x__4. Required copies of plans:
__x__ a. Three copies of all full-scale drawings
__x__ b. One copy of each drawing on a 11 x 17-inch sheets. (8 ½ x 11 is acceptable if the project is small and the plans are readable at that size).

__x__ 5. Warranty deed or preliminary title report or other document (see attached Affidavit) showing evidence that the applicant has control of the property

__x__ 6. Signed and notarized Acknowledgement Water Supply (see attached)

NOTE: It is important that all applicable information noted above is submitted with the application. An incomplete application will not be scheduled for Planning Commission consideration. A deadline missed due to an incomplete application, could result in a month's delay. Planning Commission meetings are held on the second Thursday and fourth Wednesday of each month at 6:00 p.m. The deadline to submit an application to be placed on an agenda is no later than 12:00 (noon) 20 full calendar days before the Planning Commission meeting at which you plan for your application to be heard.

(Office Use Only)

Date Received: _____ Application Complete: YES _____ NO _____

Date application deemed to be complete: _____ Completion determination made by: _____

Stratton Brothers LLC

42 S 850 W - Hurricane, UT 84737
Phone (435) 635-2628

11/03/2022

To whom it may concern.

Steward Land Company - Hurricane Project at 3100 W SR-9

~~Interstate Rock~~ Stratton Brothers has been in discussions with Steward Land Company with regards to their project at 3100 W SR-9. We own, and are in the process of developing, the property to the North and to the West of their property. We are aware of their plans and we are supportive of the plan they are currently designing. We feel that their development and our development will be synergistic and will be a positive addition to the community.

As our properties are contiguous, and both are mostly undeveloped, there will be coordination and cooperation between Stratton Brothers and Steward, in terms of site planning, access points, and infrastructure.

We have agreed to coordinate cross access as needed between our property and Steward's property at a minimum, three locations, namely, 290 North as already defined, a frontage road connection across our property to the Walmart Parcel, and at least one connection to the North connecting our projects. These accesses will be formalized when appropriate – when site plans are coordinated and road locations are finalized.

Sincerely,

Craig Stratton

Craig Stratton

HURRICANE CITY
UTAH

ACKNOWLEDGEMENT OF WATER SUPPLY

I/We, Brad Brown am/are the applicant(s) of the application known as Skyrim located on parcel(s) H-3-1-31-3009 within the City of Hurricane, Washington County, Utah.

By my/our signature(s) below I/we do hereby acknowledge and agree to the following:

1. Neither acceptance nor approval of a development application by Hurricane City shall constitute a guarantee that sufficient water will be available to serve the zone designation, project, or permit for which this application is being submitted; and
2. Prior to receiving final approval for the application, the applicant may be required by Hurricane City to provide a guarantee of water availability which verifies that there is a sufficient water supply; and
3. For any application which may be approved without a guarantee of water availability, the applicant knowingly assumes the entire risk of water availability for the project and/or application; and
4. I/we waive any and all claims against Hurricane City that are in any way related to water availability for any project, permit, or use for which the land use application has been approved.

Dated this_____day of_____, 20___.

Applicant Name: Brad Brown

Name of Signer (if different from Applicant Name): _____

Title of Signer: Managing Partner

Signature: _____

STATE OF Utah)

COUNTY OF Weber)

On the 28th day of February, 2023, personally appeared before me Brad Brown, the signer of the above instrument, who duly acknowledged to me that he/she executed the same in the capacity indicated on behalf of the Applicant.

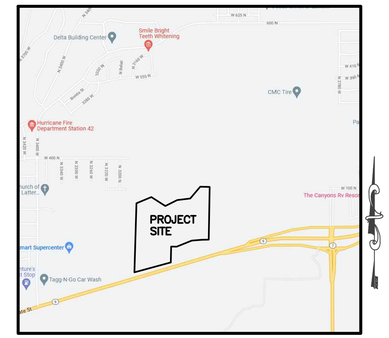
Notary Public: _____

My Commission Expires: 3-15-2026

LARA KRISTINE ATTENTO
Notary Public - State of Utah
Commission Number: 723592
My Commission Expires on
March 15, 2026

All signatures to this Acknowledgment, other than for Applicants signing in an individual capacity, shall be accompanied by documentation acceptable to the City attesting to the fact that the signer hereof is authorized to execute the Acknowledgment on behalf of the Applicant (e.g. a copy of a corporate resolution, copy of a partnership agreement, etc.). (Ord. No. 2022-37 , 6-16-2022)

Reeve & Associates, Inc. - Solutions You Can Build On



Vicinity Map

NOT TO SCALE

SITE DATA

OVERALL PARCEL AREA:	1,661,360 S.F. (38.15 ACRES)
ROW AREA	214,588
TOTAL RESIDENTIAL	519 DWELLINGS
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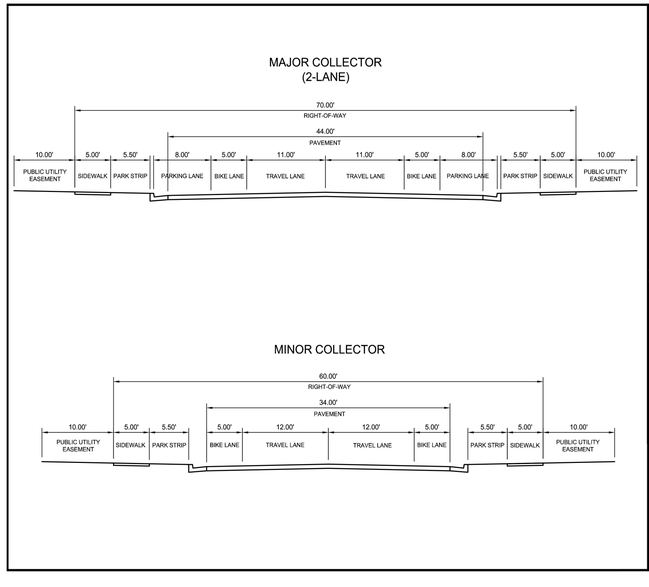

Street Section (Private)

SCALE: NONE

Project Contact:
Nate Reeve
Reeve & Associates, Inc.
5160 South 1500 West
Riverdale, Utah, 84405
PH:(801) 621-3100

THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF REEVE & ASSOCIATES, INC., 5160 SOUTH 1500 WEST, RIVERDALE, UTAH 84405, AND SHALL NOT BE PHOTOCOPIED, RE-DRAWN, OR USED ON ANY PROJECT OTHER THAN THE PROJECT SPECIFICALLY DESIGNED FOR, WITHOUT THEIR WRITTEN PERMISSION. THE OWNERS AND ENGINEERS OF REEVE & ASSOCIATES, INC. DISCLAIM ANY LIABILITY FOR ANY CHANGES OR MODIFICATIONS MADE TO THESE PLANS OR THE DESIGN THEREON WITHOUT THEIR CONSENT.

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LAND PLANNERS • CIVIL ENGINEERS • LAND SURVEYORS
TRAFFIC ENGINEERS • STRUCTURAL ENGINEERS • LANDSCAPE ARCHITECTS

REVISIONS

DATE	DESCRIPTION

SkyRim Development SR-9

HURRICANE CITY, WASHINGTON COUNTY, UTAH

Preliminary Site Plan

REGISTERED PROFESSIONAL ENGINEER
375328
J. NATE REEVE
STATE OF UTAH

Project Info.

Engineer: J. NATE REEVE, P.E.
Drafter: J. MEYERS
Begin Date: JAN 2023
Name: HURRICANE SR-9
Number: 7152-26

WASHINGTON
CITY OF HURRICANE
MAJOR COLLECTOR

DESIGN	JDM	PROJECT NO.	7152-26
DRAWN	JDM	DATE	10/07/25
CHECKED	NRR	SHEET	5
APPROVED	NRR	SCALE	1"=10'

Jones & DeMille Engineering, Inc.
CIVIL ENGINEERING - SURVEYING - TESTING
infrastructure professionals
1.800.748.5279 www.jonesanddemille.com

1
2 Total Sheets

Reeve & Associates, Inc. - Solutions You Can Build On

Reeve & Associates, Inc. - Solutions You Can Build On

20 0 20 40 60

Scale: 1" = 20'

Project Contact:
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Reeve & Associates, Inc.
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Riverdale, Utah, 84405
PH:(801) 621-3100

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REVISIONS

DATE	DESCRIPTION

SkyRim Development SR-9

HURRICANE CITY, WASHINGTON COUNTY, UTAH

PARK CONCEPT

REGISTERED PROFESSIONAL ENGINEER
375328
J. NATE REEVE
STATE OF UTAH

Project Info.

Engineer: J. NATE REEVE, P.E.
Drafter: J. MEYERS
Begin Date: JAN 2023
Name: HURRICANE SR-9
Number: 7152-26

2

2 Total Sheets

Reeve & Associates, Inc. - Solutions You Can Build On

Reeve & Associates, Inc. - Solutions You Can Build On

Solutions you can build on™

Water Network Distribution Study

Sky Rim Development– Hurricane City, UT

Submitted to:

Hurricane City Public Works
Water & Irrigation Department
147 N 870 W
Hurricane, UT 84737

REGISTERED PROFESSIONAL ENGINEER
375328
J. NATE REEVE
03/09/2023
STATE OF UTAH

Prepared by:

Reeve & Associates, Inc.
5160 South 1500 West
Riverdale, UT 84405
801.621.3100
www.reeve.co

Prepared: March 2023

Reeve Job No.: 7152-26

March 9, 2023

Hurricane City Public Works
Water & Irrigation Department
147 N 870 W
Hurricane, UT 84737

Sky Rim Development

As per city requirements, Reeve and Associates is submitting this report of the pressure water network study and results for the proposed Sky Rim Development along the north side of SR-9 west of the Southern Parkway interchange in Hurricane, Utah.

A hydraulic analysis for the proposed site layout using design requirements as determined by the Hurricane City Standards for Design Construction was performed. From this information a suitable culinary water distribution system design has been completed. Information has been obtained from the city providing the available pressure zones and approximate connection locations to the existing system.

The following report outlines the objectives and procedures followed to determine the performance of the pressure network as designed. This report also demonstrates the proposed design has the required capacity for the fire flow event.

If you have any questions, or we can be of further assistance, please let us know.
Sincerely,

Nate Reeve, P.E.
Principal Engineer
Reeve & Associates, Inc.
nate@reeve.co

Kenneth Hunter, P.E.
Project Engineer
Reeve & Associates, Inc.
ken@reeve.co

Solutions you can build on™

Table of Contents

Water Network Distribution Study
Sky Rim Development– Hurricane, UT

Item	Section
Introduction and Property Description	1
Pressure System Description	2
Hydraulic Analysis	3
Summary and Conclusion	4

1.0 Introduction

1.1 Project Background and Location

Per city requirements, Reeve & Associates has prepared the following Water Network Distribution Study Report for the proposed Sky Rim Development. This report has been prepared for the full buildout of the project.

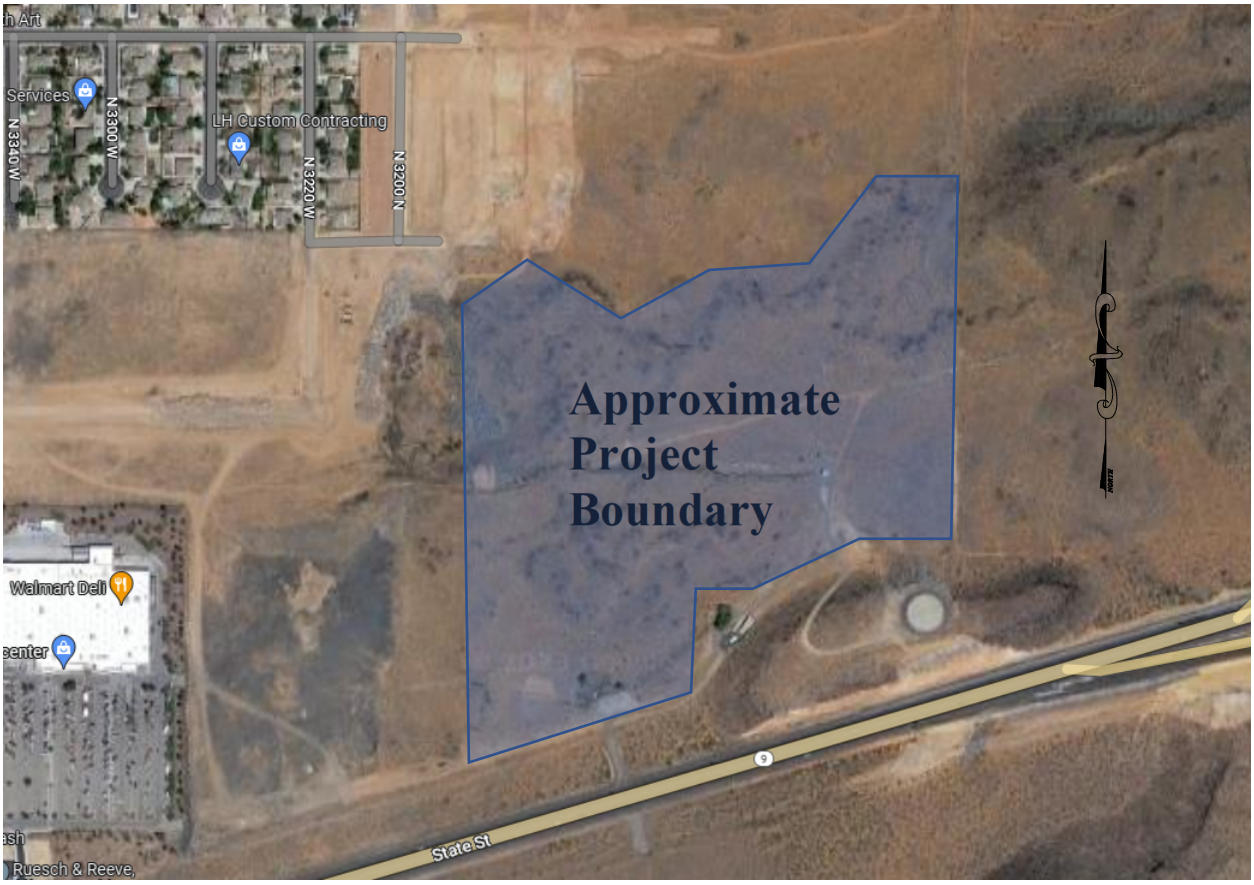
The project site is located on the north side of SR-9 near the existing water well and water storage tank in Township 41 south, Range 13 west, Section 31, Salt Lake Base and Meridian in Hurricane Utah. The site is bordered to the south by SR-9, and the city property containing water system facilities, and on the west, north and east by currently undeveloped property. The property to the north and along part of the west are currently being developed as part of the Villas at Lava Knolls development. Figure #1 contains a general location map showing the proposed location and surrounding properties.

1.2 Property Description

The existing site is currently an undeveloped lot consisting of 39.15 acres. An area of 4.93 acres will be taken from this total for ROW dedication. The proposed site improvements consist of 15 single family lots, 132 townhomes, 372 apartment units across 9 apartment complex buildings, 3 clubhouse buildings with pools, and seven commercial buildings with a total of 76,419 s.f. There is a total of 519 residential dwellings planned. Paved parking, roads, drive aisles, driveways and sidewalks are included throughout the project. A number of storage units and garages are also proposed to serve the apartments, that have no utility connections. The existing well house area will be maintained and fenced, with maintenance access provided.

The water system is designed to connect to the existing system and loop through the property. Further discussion on the design of the system is contained in section 2.2.

Figure #1
Vicinity Map – Sky Rim Development



2.0 Pressure System Description

2.1 Existing Conditions

As the site is currently undeveloped, there is not currently culinary water service improvements on the site, however various water system facilities are located nearby on the city parcel and within the project site itself. This includes the well house, storage tank, and treatment building. An existing 12” culinary water main line is located within a water easement across the south commercial area. This water main is located on a higher pressure zone than the site-adjacent tank. Two additional water connections are/will be available for the project due to the Villas at Lava Knolls improvements. These are from 290 North to the west and to 340 North to the north. Both of these lines are 8” are will be located on the same pressure zone as the 12” line.

2.2 Proposed Distribution System Description

To serve the property, it is proposed that a loop connection be made from the 12” line on the south to the 8” lines to the north and west. A water line will also be extended to the

property boundary along additional roads to allow for future connections. Service connections and fire hydrants will connect directly to the mains throughout the project. A water model has been prepared for the site with the water layout and demands. Valves, fittings, meters, etc. as required will be installed on-site per the approved construction plans and are not included in this model.

3.0 Hydraulic Analysis

3.1 Hydraulic Criteria

In order for the water design to be considered adequate, minimum pressures for the water network design have been applied to the model. Under fire flow and peak instantaneous flow conditions, a minimum 20 psi static pressure is required to be maintained. A minimum of 40 psi is required to be maintained under normal peak hour conditions without fire flow. The existing pressure zone connection is at 3200'.

3.2 Equivalent Residential Connections (ERC)

Calculations for the total development ERC have been completed. Single family lots, town homes and apartments all count as 1 ERC each. The clubhouse and commercial buildings have been calculated according to Utah Rule 309-510 Table 2. While the commercial building tenants have yet to be determined, the uses are expected to be retail. The development has a total of 536.3 ERC. A table with the ERC and gallons per day requirements is included in the appendix, with flow demands for use in the water model discussed in section 3.3.

3.3 Flow Demands

Flow demands for the project were determined utilizing Table 510-1 of Utah Rule 309-510. The average daily flow per equivalent residential connection is listed as 400 gal/day corresponding to a flow rate of 0.28 gpm. The peak day demand is 800 gal/day or 0.56 gpm, also used as the peak instantaneous demand. These flows apply to the individual single-family lots and the townhome units. The site contains three sizes of apartment building of 24, 36, and 48 units. These represent rates of 6.67 gpm, 10.00 gpm, and 13.33 gpm for average flows, and 13.33 gpm, 20.00 gpm, and 26.67 gpm for peak instantaneous demand per building respectively. The club house demands have been calculated using Utah Rule 309-510 Table 2, Note 4 and are included in the ERC table. The daily demands translate to an average flow rate of 1.10 gpm and peak flows of 2.19 gpm per clubhouse, which includes pool demands. Commercial demands are calculated per Utah Rule 309-510 Table 2 and included in the ERC table with an assumed 1 employee per 1,000 s.f. of commercial area, and one public restroom each. Flows translate to 0.20 gpm average flow and 0.40 gpm peak flow per 10,000 s.f. of commercial area. Irrigation is anticipated to be used in limited capacity across the development with predominately desert landscaping. As such, a peak irrigation flow of 50 gpm was applied centrally in the model near the planned pickleball court area.

3.4 Fire Flows

Fire flow demands were determined per IFC Table B105.1(1) & B105.1(2). The largest building type is the 48-unit 3 story apartment building at 51,660 s.f. The apartment buildings will be constructed as type V-A construction and sprinkled allowing half of the flow value given in the table for a requirement of 2,000 gpm. The townhomes and single family lots have a fire flow requirement of 1,000 gpm.

3.5 Results

Pipe flows and junction pressures were modeled under three conditions: average daily, peak instantaneous, and peak instantaneous with fire flow. The analysis was completed using Bentley WaterCAD CONNECT Edition.

The analysis uses the pressure zone elevation of 3200' at the connection per the information received from the city water department. Hydrant locations have not been included on the model. Instead, fire flows have been applied at all the junctions in the model during the fire flow model run. This allows the lowest pressures at each junction to be shown regardless of where hydrants are placed with the final design. Junction elevations have been set based on a consistent vertical offset from the existing ground surface elevation. The final grading design will involve mass grading of the site, which will lower the highest junction elevations that result in the lowest modeled pressures. As such, the pressures at the highest elevation junctions are conservative.

A diagram provided in the appendix provides a schematic view of the system with labels for ease in identifying the various system components. A reservoir component was used at the common connection point of the system loop to simulate the connection to the system. It is assumed adequate water storage is provided by the existing 12" pipe system and tank to supply the property and the fire flow, and that any potential issues with the system overall volume capacity will be identified by the city.

Results are presented in the appendix. Pressures are maintained above the design limits required.

4.0 Summary and Conclusion

As laid out within this report the pressure water network and available pressure at the site are sufficient for the required demands. In addition, pressures in the system are maintained above the 20 psi required during fire flow conditions and 40 psi for average conditions. Hydrants placed as required will not significantly impact the results as the fire flow has been applied throughout all the model junctions.

Therefore, it is concluded the proposed design should be permitted per the information contained in this report.

Appendix

Sky Rim Development

Water ERC & Daily Demand Calculations

3/9/2023 KHH

Residence Type	Count	ERC	GPD
Single Family Lot[1]	15	15	12000
Town Homes[1]	132	132	105600
Apartments[1]	372	372	297600
7 Building Commercial (sf)[2]	76,419	5.4	4347
Clubhouse w/Pool[3]	3	11.8	9470

Indoor Water Total	429017	gpd
Total ERC	536.3	ERC

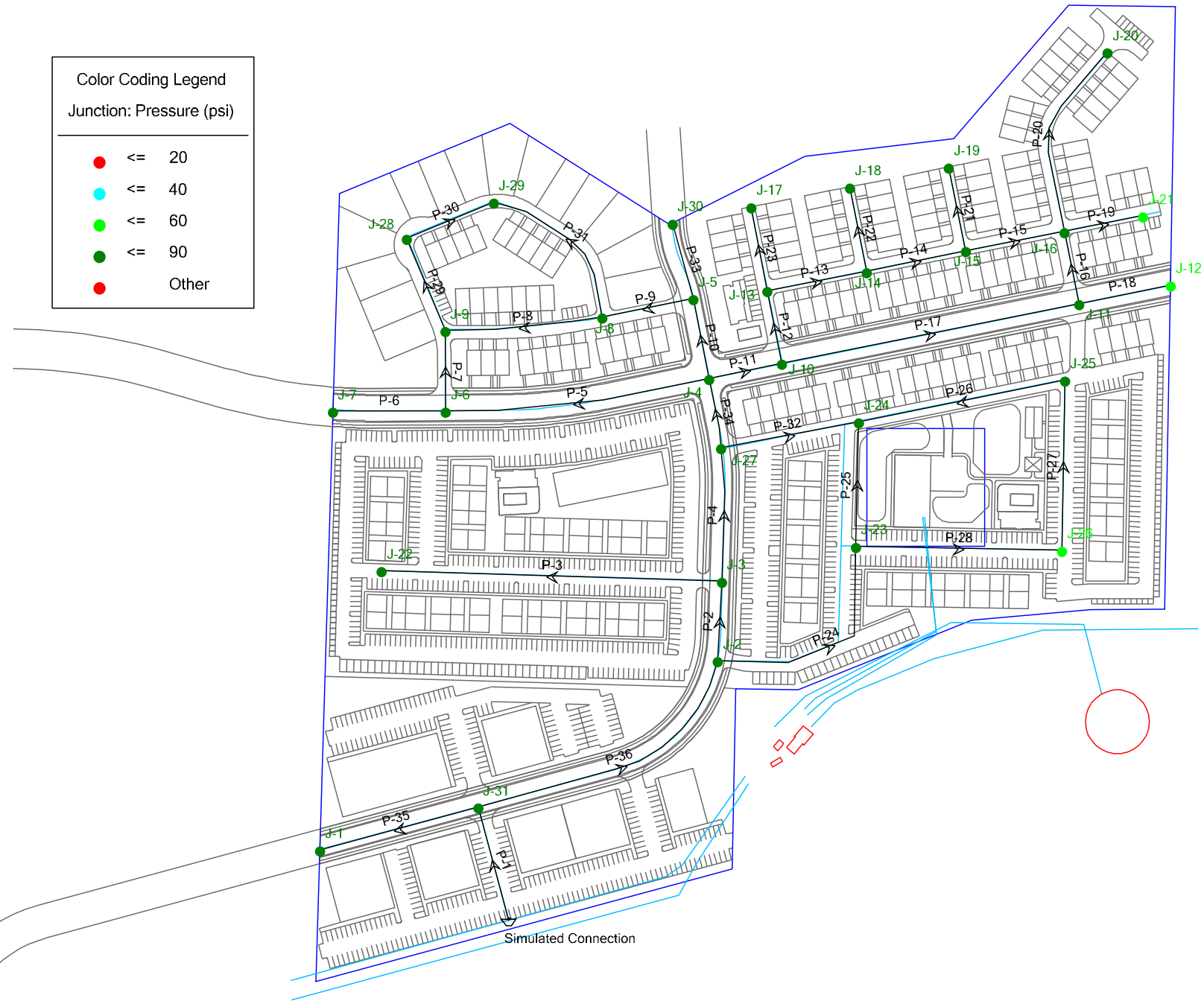
1) Residential water indoor daily demands are calculated at 800 gpd/connection per Utah R309-510 Table 1. Single family lots, town homes, and apartments are each considered as 1 ERC. (1 ERC=800 gpd)

2) Commercial water indoor daily demands are calculated according to Utah R309-510 Table 2 for retail (store) use, with an assumed 1 employee per 1,000 s.f. of commercial space and 1 public bathroom per commercial building. Flows are 11 gpd per employee and 500 gpd per public restroom.

3) Clubhouse and pool water daily demands are calculated according to Utah R309-510 Table 2 for swimming pool use with the formula: *Peak Day Demand = 20 x (water area/30)+ deck area, Water area = 2640, deck area = 7710*

	Average Demands	Peak Demands
Single Family Lot	0.28	0.56
3 Unit Townhome	0.84	1.68
4 Unit Townhome	1.12	2.24
5 Unit Townhome	1.40	2.80
6 Unit Townhome	1.68	3.36
7 Unit Townhome	1.96	3.92
Clubhouse w/Pool	1.10	2.19
24 Unit Apartment	6.67	13.33
36 Unit Apartment	10.00	20.00
48 Unit Apartment	13.33	26.67
Commercial 6,419 s.f.	0.13	0.26
Commercial 10,000 s.f.	0.20	0.40
Commercial 20,000 s.f.	0.40	0.80

Scenario: Average Daily Flow



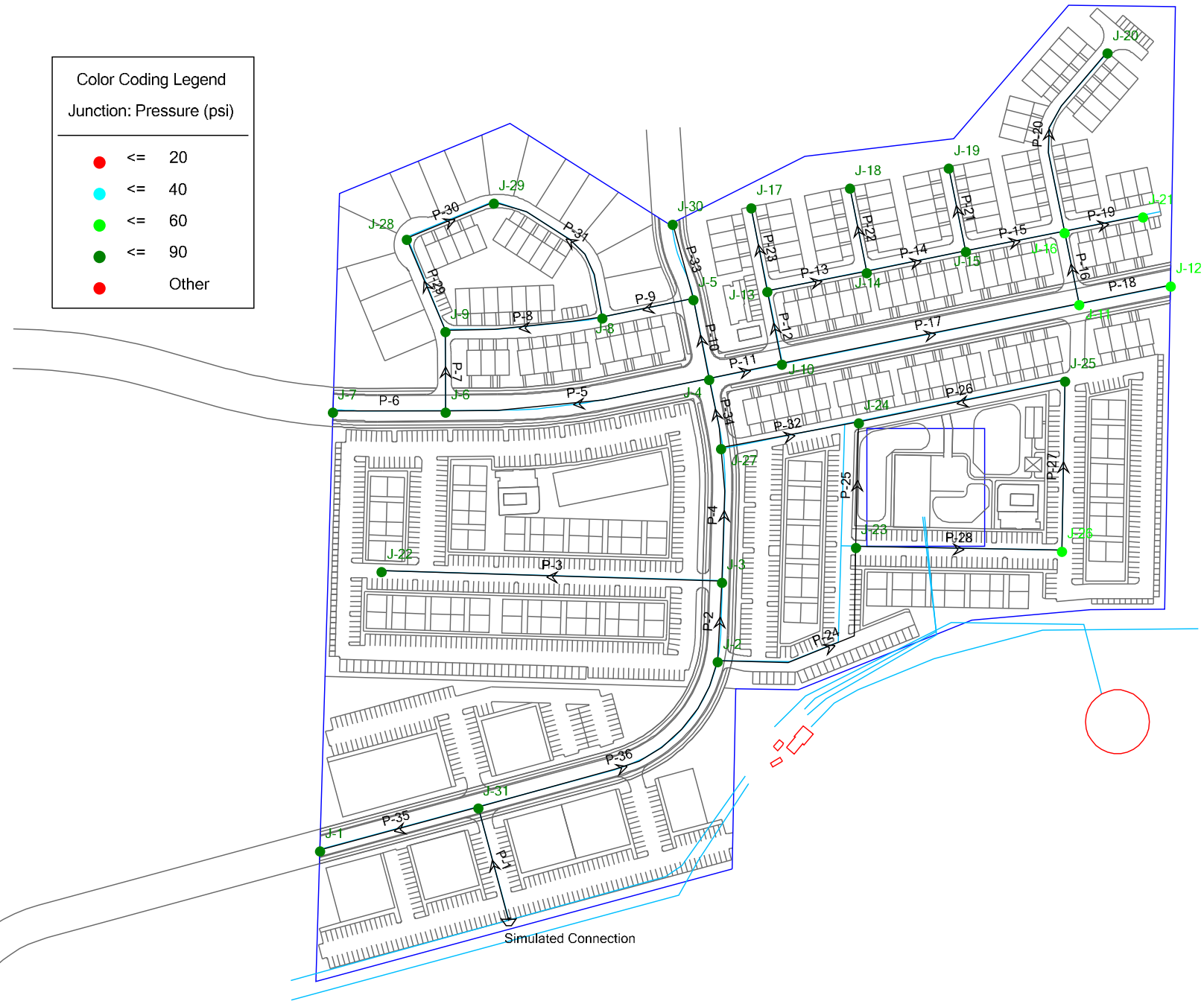
FlexTable: Junction Table Average Flow

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	3,016.00	0	3,199.85	80
J-2	3,040.50	0	3,199.48	69
J-3	3,046.50	27	3,199.45	66
J-4	3,050.00	13	3,199.42	65
J-5	3,050.50	0	3,199.42	64
J-6	3,042.50	1	3,199.42	68
J-7	3,009.50	0	3,199.42	82
J-8	3,049.00	4	3,199.42	65
J-9	3,044.00	3	3,199.42	67
J-10	3,052.00	0	3,199.41	64
J-11	3,060.00	1	3,199.41	60
J-12	3,063.00	0	3,199.41	59
J-13	3,051.50	1	3,199.41	64
J-14	3,053.00	3	3,199.41	63
J-15	3,056.00	2	3,199.41	62
J-16	3,060.50	3	3,199.41	60
J-17	3,047.50	3	3,199.41	66
J-18	3,052.50	3	3,199.41	64
J-19	3,053.00	3	3,199.41	63
J-20	3,057.00	4	3,199.41	62
J-21	3,063.50	2	3,199.41	59
J-22	3,027.50	23	3,199.44	74
J-23	3,049.00	27	3,199.43	65
J-24	3,052.50	54	3,199.42	64
J-25	3,058.00	1	3,199.42	61
J-26	3,063.00	14	3,199.42	59
J-27	3,048.50	0	3,199.42	65
J-28	3,038.50	2	3,199.42	70
J-29	3,042.00	3	3,199.42	68
J-30	3,044.50	0	3,199.42	67
J-31	3,008.00	1	3,199.85	83

FlexTable: Pipe Table Average Flow

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-1	208	Simulated Connection	J-31	8.0	PVC	150.0	199	1.27
P-2	142	J-2	J-3	8.0	PVC	150.0	117	0.74
P-3	605	J-3	J-22	8.0	PVC	150.0	23	0.15
P-4	238	J-3	J-27	8.0	PVC	150.0	67	0.42
P-5	473	J-4	J-6	8.0	PVC	150.0	6	0.04
P-6	200	J-6	J-7	8.0	PVC	150.0	0	0.00
P-7	142	J-6	J-9	8.0	PVC	150.0	5	0.03
P-8	280	J-9	J-8	8.0	PVC	150.0	-1	0.01
P-9	165	J-8	J-5	8.0	PVC	150.0	-8	0.05
P-10	145	J-5	J-4	8.0	PVC	150.0	-8	0.05
P-11	132	J-4	J-10	8.0	PVC	150.0	24	0.15
P-12	131	J-10	J-13	8.0	PVC	150.0	15	0.09
P-13	180	J-13	J-14	8.0	PVC	150.0	11	0.07
P-14	180	J-14	J-15	8.0	PVC	150.0	5	0.03
P-15	179	J-15	J-16	8.0	PVC	150.0	1	0.00
P-16	131	J-16	J-11	8.0	PVC	150.0	-8	0.05
P-17	538	J-11	J-10	8.0	PVC	150.0	-9	0.06
P-18	166	J-11	J-12	8.0	PVC	150.0	0	0.00
P-19	142	J-16	J-21	8.0	PVC	150.0	2	0.01
P-20	357	J-16	J-20	8.0	PVC	150.0	4	0.02
P-21	151	J-15	J-19	8.0	PVC	150.0	3	0.02
P-22	152	J-14	J-18	8.0	PVC	150.0	3	0.02
P-23	152	J-13	J-17	8.0	PVC	150.0	3	0.02
P-24	412	J-2	J-23	8.0	PVC	150.0	81	0.52
P-25	221	J-23	J-24	8.0	PVC	150.0	32	0.21
P-26	373	J-24	J-25	8.0	PVC	150.0	-6	0.04
P-27	301	J-25	J-26	8.0	PVC	150.0	-8	0.05
P-28	366	J-26	J-23	8.0	PVC	150.0	-22	0.14
P-29	178	J-9	J-28	8.0	PVC	150.0	3	0.02
P-30	167	J-28	J-29	8.0	PVC	150.0	0	0.00
P-31	305	J-29	J-8	8.0	PVC	150.0	-3	0.02
P-32	249	J-24	J-27	8.0	PVC	150.0	-16	0.10
P-33	139	J-5	J-30	8.0	PVC	150.0	0	0.00
P-34	125	J-27	J-4	8.0	PVC	150.0	51	0.32
P-35	291	J-1	J-31	8.0	PVC	150.0	0	0.00
P-36	531	J-31	J-2	8.0	PVC	150.0	198	1.26

Scenario: Peak Instantaneous Flow



FlexTable: Junction Table Peak Flow

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	3,016.00	0	3,199.58	79
J-2	3,040.50	0	3,198.54	68
J-3	3,046.50	53	3,198.44	66
J-4	3,050.00	27	3,198.36	64
J-5	3,050.50	0	3,198.36	64
J-6	3,042.50	2	3,198.36	67
J-7	3,009.50	0	3,198.36	82
J-8	3,049.00	7	3,198.36	65
J-9	3,044.00	7	3,198.36	67
J-10	3,052.00	0	3,198.35	63
J-11	3,060.00	2	3,198.35	60
J-12	3,063.00	0	3,198.35	59
J-13	3,051.50	2	3,198.35	64
J-14	3,053.00	7	3,198.35	63
J-15	3,056.00	3	3,198.35	62
J-16	3,060.50	6	3,198.35	60
J-17	3,047.50	5	3,198.35	65
J-18	3,052.50	6	3,198.35	63
J-19	3,053.00	6	3,198.35	63
J-20	3,057.00	7	3,198.35	61
J-21	3,063.50	4	3,198.35	58
J-22	3,027.50	47	3,198.41	74
J-23	3,049.00	53	3,198.40	65
J-24	3,052.50	59	3,198.38	63
J-25	3,058.00	3	3,198.38	61
J-26	3,063.00	29	3,198.38	59
J-27	3,048.50	0	3,198.38	65
J-28	3,038.50	4	3,198.36	69
J-29	3,042.00	6	3,198.36	68
J-30	3,044.50	0	3,198.36	67
J-31	3,008.00	2	3,199.58	83

FlexTable: Pipe Table Peak Flow

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-1	208	Simulated Connection	J-31	8.0	PVC	150.0	349	2.23
P-2	142	J-2	J-3	8.0	PVC	150.0	207	1.32
P-3	605	J-3	J-22	8.0	PVC	150.0	47	0.30
P-4	238	J-3	J-27	8.0	PVC	150.0	107	0.68
P-5	473	J-4	J-6	8.0	PVC	150.0	11	0.07
P-6	200	J-6	J-7	8.0	PVC	150.0	0	0.00
P-7	142	J-6	J-9	8.0	PVC	150.0	9	0.06
P-8	280	J-9	J-8	8.0	PVC	150.0	-3	0.02
P-9	165	J-8	J-5	8.0	PVC	150.0	-15	0.10
P-10	145	J-5	J-4	8.0	PVC	150.0	-15	0.10
P-11	132	J-4	J-10	8.0	PVC	150.0	48	0.31
P-12	131	J-10	J-13	8.0	PVC	150.0	30	0.19
P-13	180	J-13	J-14	8.0	PVC	150.0	22	0.14
P-14	180	J-14	J-15	8.0	PVC	150.0	10	0.06
P-15	179	J-15	J-16	8.0	PVC	150.0	1	0.01
P-16	131	J-16	J-11	8.0	PVC	150.0	-16	0.10
P-17	538	J-11	J-10	8.0	PVC	150.0	-18	0.12
P-18	166	J-11	J-12	8.0	PVC	150.0	0	0.00
P-19	142	J-16	J-21	8.0	PVC	150.0	4	0.03
P-20	357	J-16	J-20	8.0	PVC	150.0	7	0.05
P-21	151	J-15	J-19	8.0	PVC	150.0	6	0.04
P-22	152	J-14	J-18	8.0	PVC	150.0	6	0.04
P-23	152	J-13	J-17	8.0	PVC	150.0	5	0.03
P-24	412	J-2	J-23	8.0	PVC	150.0	139	0.89
P-25	221	J-23	J-24	8.0	PVC	150.0	49	0.31
P-26	373	J-24	J-25	8.0	PVC	150.0	-5	0.03
P-27	301	J-25	J-26	8.0	PVC	150.0	-7	0.05
P-28	366	J-26	J-23	8.0	PVC	150.0	-36	0.23
P-29	178	J-9	J-28	8.0	PVC	150.0	5	0.03
P-30	167	J-28	J-29	8.0	PVC	150.0	1	0.01
P-31	305	J-29	J-8	8.0	PVC	150.0	-5	0.03
P-32	249	J-24	J-27	8.0	PVC	150.0	-5	0.03
P-33	139	J-5	J-30	8.0	PVC	150.0	0	0.00
P-34	125	J-27	J-4	8.0	PVC	150.0	102	0.65
P-35	291	J-1	J-31	8.0	PVC	150.0	0	0.00
P-36	531	J-31	J-2	8.0	PVC	150.0	346	2.21

Fire Flow Node FlexTable: Fire Flow Report

Label	Fire Flow Status	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity	Fire Flow (Available) (gpm)	Fire Flow (Needed) (gpm)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (System)
J-1	Passed	21.37	P-1	3,000	2,000	54	J-21
J-31	Passed	21.37	P-1	3,000	2,000	71	J-21
J-2	Passed	20.53	P-1	2,868	2,000	30	J-21
J-3	Passed	19.64	P-1	2,728	2,000	27	J-21
J-24	Passed	18.92	P-1	2,615	2,000	24	J-26
J-23	Passed	18.87	P-1	2,608	2,000	26	J-26
J-27	Passed	18.78	P-1	2,594	2,000	27	J-21
J-25	Passed	18.24	P-1	2,508	2,000	20	J-26
J-22	Passed	18.11	P-1	2,489	2,000	20	J-21
J-26	Passed	17.75	P-1	2,433	2,000	20	J-25
J-4	Passed	14.99	P-1	2,000	1,000	36	J-21
J-5	Passed	14.99	P-1	2,000	1,000	34	J-21
J-6	Passed	14.99	P-1	2,000	1,000	36	J-21
J-7	Passed	14.99	P-1	2,000	1,000	46	J-21
J-8	Passed	14.99	P-1	2,000	1,000	34	J-21
J-9	Passed	14.99	P-1	2,000	1,000	36	J-21
J-10	Passed	14.99	P-1	2,000	1,000	32	J-21
J-11	Passed	14.99	P-1	2,000	1,000	25	J-12
J-13	Passed	14.99	P-1	2,000	1,000	31	J-21
J-14	Passed	14.99	P-1	2,000	1,000	29	J-21
J-15	Passed	14.99	P-1	2,000	1,000	27	J-21
J-16	Passed	14.99	P-1	2,000	1,000	25	J-21
J-17	Passed	14.99	P-1	2,000	1,000	29	J-21
J-18	Passed	14.99	P-1	2,000	1,000	26	J-21
J-19	Passed	14.99	P-1	2,000	1,000	25	J-21
J-28	Passed	14.99	P-1	2,000	1,000	37	J-21
J-29	Passed	14.99	P-1	2,000	1,000	35	J-21
J-30	Passed	14.99	P-1	2,000	1,000	34	J-21
J-21	Passed	14.99	P-1	2,000	1,000	20	J-12
J-12	Passed	14.98	P-1	1,999	1,000	20	J-21
J-20	Passed	14.67	P-1	1,950	1,000	20	J-21

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AFFIDAVIT
PROPERTY OWNER

STATE OF UTAH)
:ss
COUNTY OF SLC

I (we), Mitchell S. Olsen being duly sworn, depose and say that I (we) am (are) the owner(s) of the property identified in the attached application and that the statements herein contained and the information provided identified in the attached plans and other exhibits are in all respects true and correct to the best of my (our) knowledge. I (we) also acknowledge that I have received written instructions regarding the process for which I am applying and the Hurricane City Planning staff have indicated they are available to assist me in making this application.

Mitchell J. Olsen
(Property Owner)

(Property Owner)

Subscribed and sworn to me this 31 day of August 2022

(Notary Public)

KRISTAL STEPHENSEN
Notary Public, State of Utah
Commission # 704319
My Commission Expires On
February 03, 2023

Residing in: Salt lake County.

My Commission Expires: 2/3/2023

Agent Authorization

I (we), Mitchell J Olsen, the owner(s) of the real property described in the attached application, do authorize as my (our) agent(s) Steward Land Holdings, LLC to represent me (us) regarding the attached application and to appear on my (our) behalf before any administrative or legislative body in the City considering this application and to act in all respects as our agent in matters pertaining to the attached application.

Mitchell J. Olsen
(Property Owner)

(Property Owner)

Subscribed and sworn to me this 15 day of September 2022

(Notary Public)

KRISTAL STEPHENSEN
Notary Public, State of Utah
Commission # 704319
My Commission Expires On
February 03, 2023

Residing in: Salt lake County

My Commission Expires: 2/3/2023

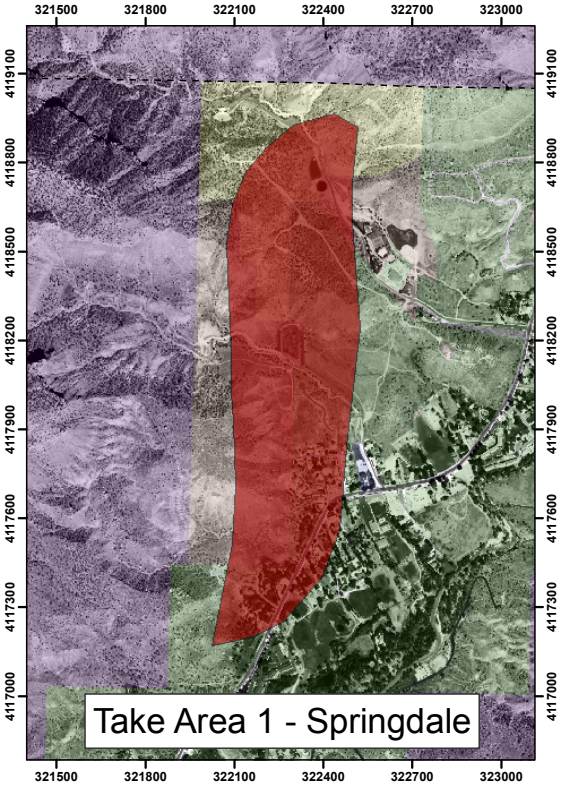
The Skyrim project (near Walmart) is not included in the Desert Tortise Take Area

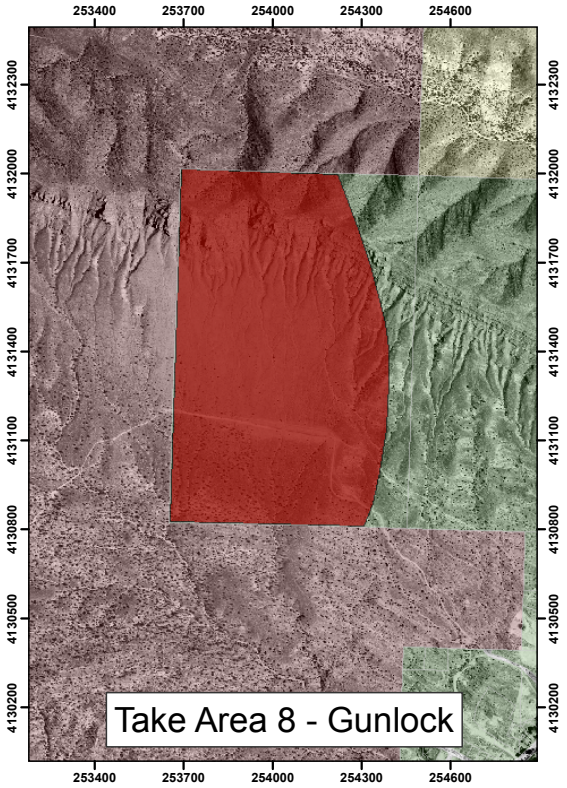
REDCLIFFS DESERT RESERVE

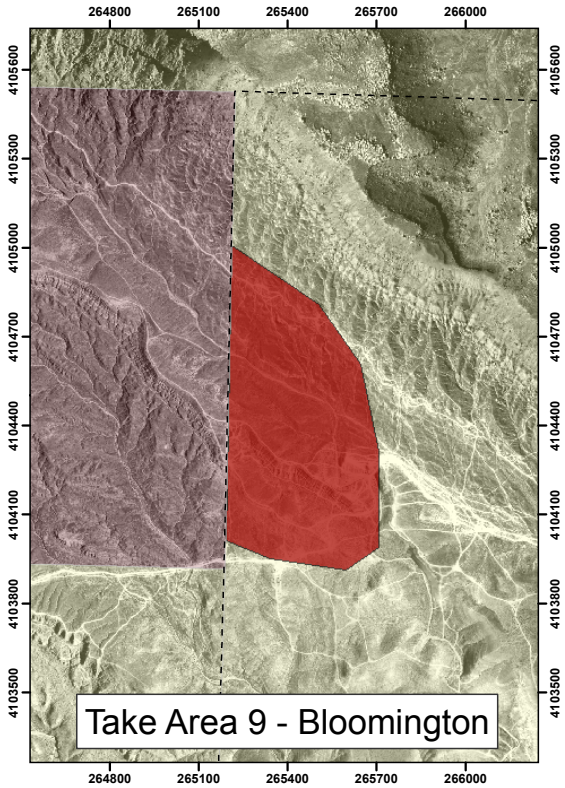
N

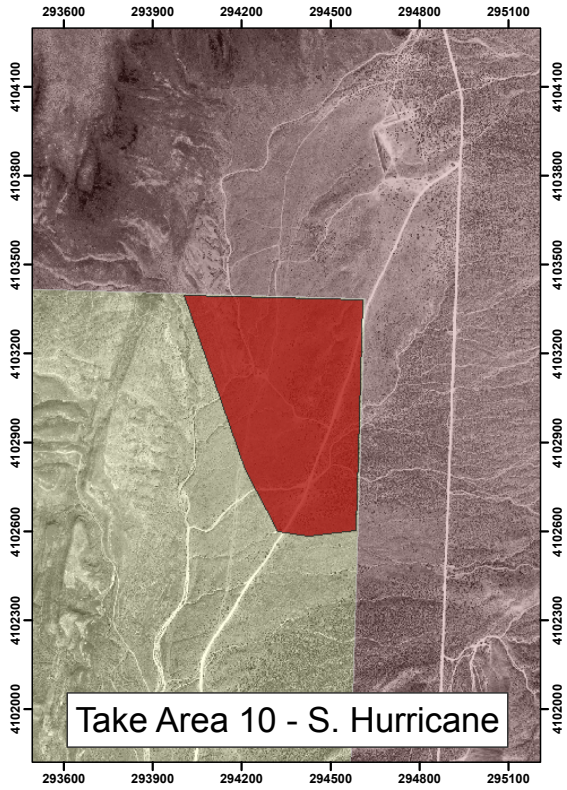
0 0.15 0.3 Miles

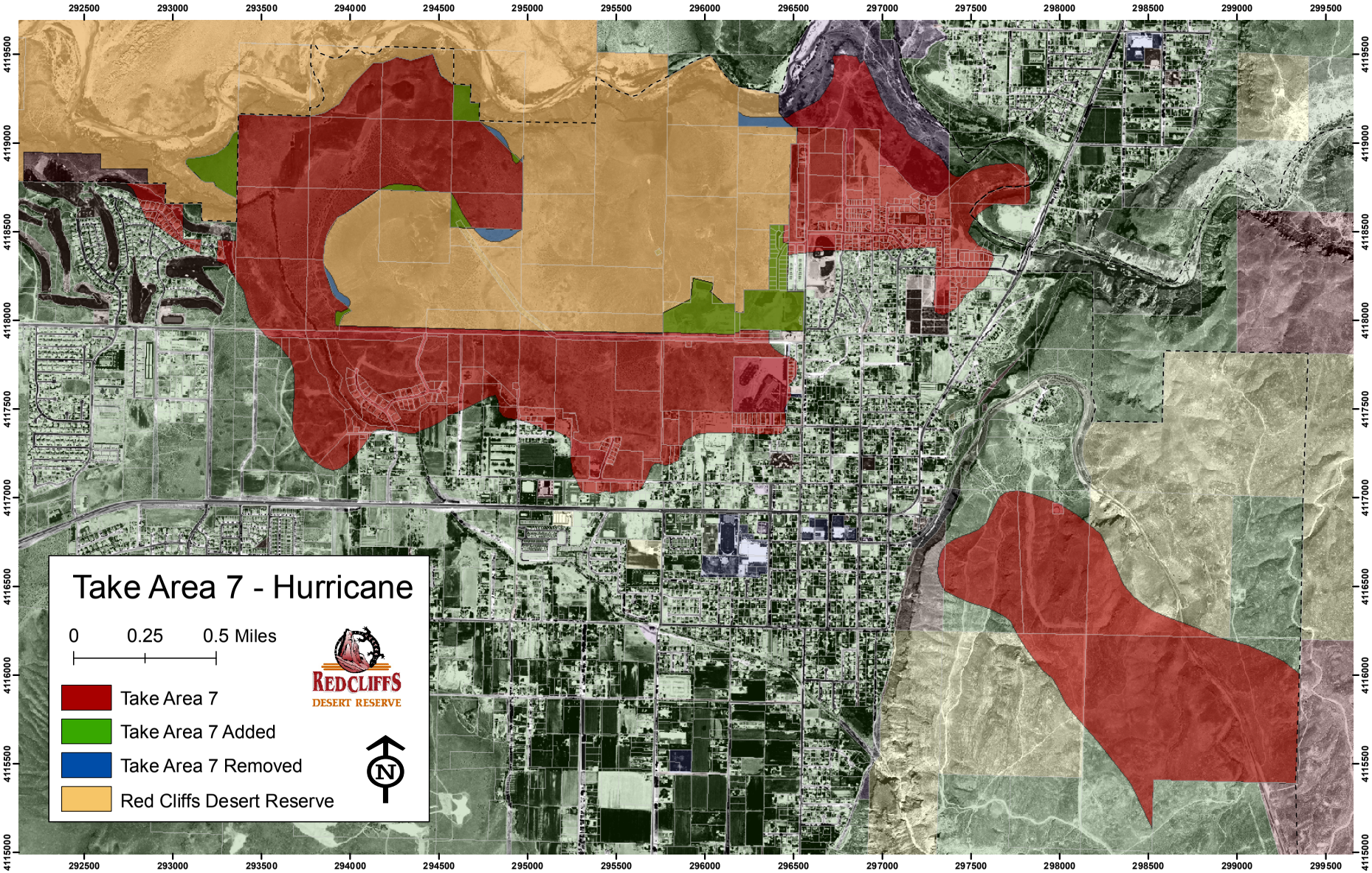
Take Areas 1 & 8 - 10










Take Area 7 - Hurricane
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When Recorded Return To:
Hurricane City
147 N. 870 W.
Hurricane, UT. 84737

DEVELOPMENT AGREEMENT
FOR
STEWARD LAND HOLDINGS

THIS DEVELOPMENT AGREEMENT ("Agreement") is made and entered into as of the 2nd day of December, 2022 (the "Effective Date"), by and between HURRICANE CITY, a Utah municipal corporation, hereinafter referred to as "City," and Steward Land Holdings LLC, a Utah Limited Liability Company, hereinafter referred to as "Developer." The City and Developer are hereinafter collectively referred to as "Parties."

RECITALS

A. Developer is the owner of approximately 38.14 acres of land located within the City of Hurricane as is more particularly described on EXHIBIT A, attached hereto and incorporated herein by reference (the "Property").

B. On Dec. 1 2022, the City Council approved a zone change of the entire property to the Planned Commercial (PC) Zone subject to and conditioned upon the terms and conditions of the Development Agreement. *See* City Council Minutes, attached as Exhibit B.

C. Developer has proposed, and City has approved, a Preliminary Site Plan attached hereto and incorporated herein as EXHIBIT C.

D. Developer is willing to design and construct the Project in accordance with the preliminary site plan and in a manner that is in harmony with and intended to promote the long-range policies, goals, and objectives of the City's general plan, zoning and development regulations in order to receive the benefit of vesting for certain uses and zoning designations under the terms of this Agreement as more fully set forth below.

E. The City Council have further authorized the Mayor of the City to execute and deliver this Agreement on behalf of the City.

F. The City has the authority to enter into this Agreement pursuant to Utah Code Section 10-9a-102(2) and relevant municipal ordinances, and desires to enter into this Agreement with the Developer for the purpose of guiding the development of the Property in accordance with the terms and conditions of this Agreement and in accordance with applicable City Ordinances.

G. This Agreement is generally consistent with, and all preliminary and final plats within the Property are subject to and shall conform with, the City's General Plan, Zoning Ordinances, and Subdivision Ordinances, and any permits issued by the City pursuant to City Ordinances and regulations.

H. The Parties desire to enter into this Agreement to specify the rights and responsibilities of the Developer to develop the Property as expressed in this Agreement and the rights and responsibilities of the City to allow and regulate such development pursuant to the requirements of this Agreement.

I. The Parties understand and intend that this Agreement is a "development agreement" within the meaning of, and entered into pursuant to, the terms of Utah Code Ann., §10-9a-102.

J. The Parties intend to be bound by the terms of this Agreement as set forth herein.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the City and the Developer hereby agree as follows:

1. Incorporation of Recitals. The foregoing Recitals are hereby incorporated into this Agreement, as a substantive part hereof.

2. Development Terms:

   a. Ten Percent (10%) of the total units in residential areas shall be designated as Affordable housing as defined in Hurricane City Code section 10-15-8(E)(2)(a) and shall satisfy all of the requirements for Affordable housing as set forth in Hurricane City Code section 10-15-8(E)(2). A copy of the applicable sections of the Hurricane City Code is attached as Exhibit D.

   b. The total residential area shall not exceed 17 units per residential acre, which equates to approximately 519 units. If the project is developed in phases, Developer shall place a note on the preliminary plat or site plan of each phase showing the total number of units approved out of the total unit allowed.

   c. The applicant shall provide a mixture of townhomes and single-family homes within the "Medium Density" Area.

   d. The height of buildings shall not exceed three stories in height above grade.

3. Except as expressly stated herein, nothing in this Agreement shall amend or replace any requirements by City, State, Federal, Fire, other local development agreements or restrictions, or other applicable regulations.

4. Notices. Any notices, requests and demands required or desired to be given hereunder shall be in writing and shall be served personally upon the party for whom intended, or if mailed, by certified mail, return receipt requested, postage prepaid, to such party at its address shown below:

To the Developer: Steward Land Company
Attention: Brad Brown, Managing Partner
1708 E. 5550 S. Ste. 18
Ogden, UT 84403

To the City: City of Hurricane
Attention: Dayton Hall, City Attorney
147 N 870 W.
Hurricane, UT 84737

5. General Term and Conditions.

a. Adequate Public Facilities.

i. Developer understands, acknowledges and specifically agrees that: (a) power, water, and other utility services to the Property may not be currently available in sufficient capacity to serve some or all of the Property, and may not have been extended to the Property; (b) the granting of this zone change, approval of a preliminary plat, or review of construction drawings, does not in any way guarantee or warrant the availability and extension of power, water, or other utility services to the Property; (c) no application for any building permit requiring the availability and extension of power, water, or other utility service for the specific property identified in the permit application, shall be filed, made, or approved until such time that such utilities or services are available and have been extended to the applicable property, as determined by City staff; and (d) Developer assumes all risk and liability associated with any development activity on the Property, including but not limited to all costs incurred for engineering, feasibility studies, etc., in the event that such services do not become available and are not extended to the Property.

~~ii.~~ As part of any preliminary plat or site plan application, Developer shall identify needed utilities and roadways and provide a plan on how the Developer shall provide each of the required services to the site, including plans on providing off-site improvements.

iii. Developer understands offsite improvements will likely be necessary for development and will be responsible for any required offsite improvements. These improvements may require the property owner to install utility lines and secure rights-of-way or easements for needed infrastructure. All offsite improvement plans and construction will be subject to review and approval by the Hurricane City Joint Utility Committee.

b. Headings. The headings contained in this Agreement are intended for convenience only and are in no way to be used to construe or limit the text herein.

c. Binding Effect. This Agreement shall inure to the benefit of, and be binding upon, the parties hereto and their respective heirs, representatives, officers, agents, employees, members, successors and assigns (to the extent that assignment is permitted). Without limiting the generality of the foregoing, a "successor" includes a party that succeeds to the rights and interests of the Developer as evidenced by, among

other things, such party's submission of land use applications to the City relating to the Property or the Project.

d. Non-Liability of City Officials and Employees. No officer, representative, consultant, attorney, agent, or employee of the City shall be personally liable to the Developer, or any successor in interest or assignee of the Developer, for any default or breach by the City, or for any amount which may become due to the Developer, or its successors or assignees, or for any obligation arising under the terms of this Agreement. Nothing herein will release any person from personal liability for their own individual acts or omissions.

e. Third Party Rights. Except for the Developer, the City and other parties that may succeed the Developer on title to any portion of the Property, all of whom are express intended beneficiaries of this Agreement, this Agreement shall not create any rights in and/or obligations to any other persons or parties. The Parties acknowledge that this Agreement refers to a private development and that the City has no interest in, responsibility for, or duty to any third parties concerning any improvements to the Property unless the City has accepted the dedication of such improvements

f. Further Documentation. This Agreement is entered into by the Parties with the recognition and anticipation that subsequent agreements, plans, profiles, engineering and other documentation implementing and carrying out the provisions of this Agreement may be necessary. The Parties agree to negotiate and act in good faith with respect to all such future items.

g. Relationship of Parties. This Agreement does not create any joint venture, partnership, undertaking, business arrangement or fiduciary relationship between the City and the Developer.

h. Agreement to Run With the Land. This Agreement shall be recorded in the Office of the Washington County Recorder against the Property and is intended to and shall be deemed to run with the land, and shall be binding on and shall benefit all successors in the ownership of any portion of the Property.

i. Applicable Law. This Agreement is entered into under and pursuant to, and is to be construed and enforceable in accordance with, the laws of the State of Utah.

j. Construction. This Agreement has been reviewed and revised by legal counsel for both the City and the Developer, and no presumption or rule that ambiguities shall be construed against the drafting party shall apply to the interpretation or enforcement of this Agreement.

k. Consents and Approvals. Except as expressly stated in this Agreement, the consent, approval, permit, license or other authorization of any party under this Agreement shall be given in a prompt and timely manner and shall not be unreasonably withheld, conditioned or delayed. Any consent, approval, permit, license or other authorization required hereunder from the City shall be given or withheld by the City in compliance with this Agreement and the City Ordinances.

1. Approval and Authority to Execute. Each of the Parties represents and warrants as of the Effective Date this Agreement, it/he/she has all requisite power and authority to execute and deliver this Agreement, being fully authorized so to do and that this Agreement constitutes a valid and binding agreement.

6. Amendment. This Agreement may be amended only in writing signed by the Parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement by and through their respective, duly authorized representatives as of the day and year first hereinabove written.

HURRICANE CITY CORPORATE SEAL WASHINGTON COUNTY UTAH

CITY:

CITY OF HURRICANE

ATTEST:

By: Cindy Boteng
City Recorder

By: Nanette Billings
Mayor

DEVELOPER:

By:
Name: Bradley John Brown
Title: Managing Partner

STATE OF UTAH)
:ss
COUNTY OF UTAH)

On the 2nd day of December, 2023, personally appeared before me Bradley John Brown, who being by me duly sworn, did say that he is the Managing Partner of Steward Land, a Utah limited liability company, and that the within and foregoing instrument was signed on behalf of said limited liability company with proper authority and duly acknowledged to me that he executed the same.

LARA KRISTINE ATTENTO
Notary Public - State of Utah
Commission Number: 723592
My Commission Expires on
March 15, 2026

Notary Public
Residing at:

EXHIBIT A

Legal Description Parcel:

Reeve & Associates, Inc.

Parcel #H-3-1-31-3009

Zoning Boundary Description

PART OF THE SOUTHWEST QUARTER OF SECTION 31 TOWNSHIP 41 SOUTH, RANGE 13 WEST, SALT LAKE BASE AND MERIDIAN, U.S. SURVEY. MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT, SAID POINT BEING N88°52'58"W 751.16 FEET AND NORTH 452.94 FEET FROM THE SOUTH QUARTER CORNER OF SAID SECTION 31; THENCE S74°50'08"W 765.51 FEET; THENCE N01°42'49"E 1399.98 FEET; THENCE N67°32'27"E 327.32 FEET; THENCE S57°30'11"E 335.71 FEET; THENCE N63°09'32"E 269.71 FEET; THENCE N83°12'08"E 265.91 FEET; THENCE N40°40'01"E 312.94 FEET; THENCE S88°58'18"E 189.64 FEET TO A POINT ON THE CENTER SECTION LINE OF SAID SECTION 31; THENCE S01°01'42"W 1070.46 FEET; THENCE S89°46'38"W 131.69 FEET; THENCE S85°13'16"W 211.19 FEET; THENCE S68°02'47"W 332.30 FEET; THENCE N88°52'58"W 111.09 FEET; THENCE S01°07'02"W 320.61 FEET TO THE POINT OF BEGINNING.

LESS AND EXCEPTING THE FOLLOWING DESCRIBED PARCEL:

COMMENCING AT THE SOUTH QUARTER CORNER OF SECTION 31, TOWNSHIP 41 SOUTH, RANGE 13 WEST, SALT LAKE BASE AND MERIDIAN: THENCE S89°58'47"W 511.39 FEET; THENCE N00°01'13"W 1040.89 FEET TO THE SOUTHWEST CORNER OF AN EXISTING 1 ACRE WELL SITE PARCEL AND TO THE POINT OF BEGINNING; THENCE N00°01'13"W 208.71 FEET; THENCE N89°58'47"E 208.81 FEET; THENCE S00°01'13"E 208.71 FEET; THENCE S89°58'47"W 208.71 FEET TO THE POINT OF BEGINNING.

CONTAINING A REMAINDER OF 38.14 ACRES, MORE OR LESS.

Exhibit B

Minutes of the Hurricane City Council meeting held on December 1, 2022, in the Council Chambers at 147 North 870 West, Hurricane, Utah, at 4:00 p.m.

Members Present: Mayor Nanette Billings and **Council Members:** Joseph Prete, Dave Sanders, David Hirschi, Doug Heideman, and Kevin Thomas

Also Present: City Manager Kaden DeMille, City Attorney Dayton Hall, Police Chief Lynn Excell, Power Superintendent Scott Hughes, Public Works Director Mike Vercimack, Planning Director Stephen Nelson, City Recorder Cindy Beteag, Water Superintendent Ken Richins, and Ash Creek Sewer District Superintendent Mike Chandler

AGENDA

4:00 p.m. Work Meeting – Discussion on getting information out to the public

Mayor Billings explained that she feels it is vital to find a way to notify the public about public events. Many challenges have arisen while searching for the best way to accomplish this. Mike Vercimack suggested utilizing the Hurricane Valley Chamber of Commerce; however, the Chamber can only support businesses that are signed up with them, and the City cannot promote business. Mayor Billings asked if the private sector is the best way to push information to the public. She noted the various avenues that the City currently uses. Chief Excell reported that the radio station could be a good resource. Kaden DeMille stated Kendra Rich has a degree in communication and is doing a fantastic job. He does agree that more can be done; however, staff needs direction from City Council. The biggest limit right now is software. He would rather utilize city funds to purchase software as opposed to paying a private company.

Mayor Billings asked if it is best to have a separate platform to address events that the City is not sponsoring. Selwin Lovell reported that he thinks it is inappropriate for the City to promote private events. Cindy Beteag does upload approved event permits to the event calendar. Councilman Sanders does not think the City should advertise events for private companies. Mayor Billings explained that she would like to utilize a private company to promote City events. Councilman Heideman reported that the main complaint he hears is that people have trouble finding the website. Mr. DeMille reviewed the website and how to access the community calendar under the community tab.

Mr. DeMille explained that the City's official name is "Hurricane City" however, "City of Hurricane" is used on the website, logo, and many other documents. This can be very confusing for citizens. He feels it is a great idea to update everything to Hurricane City but it is a time-consuming process. He asked the City Council if they would like to go in that direction.

Councilman Sanders feels there is no way to convince everyone in the community to follow events. Mayor Billings would like to see a more frequent newsletter in digital format. Mr. Lovell

noted that the number one form of communication is radio. He feels it is important to utilize the sources that the City has. Chief Excell explained that the radio station is the City's most unused resource. He notes that improvements must be made before the radio station can be fully utilized. Mayor Billings directed Ms. Rich to research the radio station and an option for citizens to sign up for electronic notifications. Councilman Prete thinks the communication gap is bigger than one person. He suggested creating a task force to brainstorm what would work. He agrees the radio could be more used. He would like to see school programs and events advertised on the radio.

Ms. Rich explained that getting content for the quarterly newsletter is already difficult. Most department heads are not providing content for the newsletter. She is concerned that obtaining information for a monthly newsletter will be even more difficult. Mayor Billings suggested continuing the quarterly newsletter and creating a monthly flyer on current events. Councilman Prete reiterated the necessity of creating a task force to establish a vision and how to achieve it. Mayor Billings will meet with Ms. Rich once a week to review upcoming events.

5:00 p.m. Pre-meeting - Discussion of Agenda Items, Department Reports

Stephen Nelson reported that Utah State accepted the moderate-income housing plan, and the City was approved for priority funding. Mr. Nelson will work with his point of contact at the State to discuss their concerns. Councilman Thomas suggested a legal agreement between developers to ensure they offer affordable housing. Mr. Nelson reported that by State law, the City could not require developers to build affordable housing; however, the City can offer incentives. Dayton Hall mentioned that impact fee waivers must be added to the impact fee ordinance. Mr. Nelson reported that the online building permits system is now live. The department is actively working to promote the Downtown Master Plan survey. The thank you dinner for board members is on December 14th at the Community Center. Ron Hill accepted the Hearing Officer position.

Fred Resch III reported that short-term rentals will be discussed multiple times tonight.

Mike Vercimack reported that the City is getting ready to advertise the 700 West project. The project will connect 600 N to 100 N. Staff meets weekly to monitor the 2800 West project. Development within the City is slowing down, and there were only two pre-construction meetings this week.

Chief Excell provided the Police Departments October stats and read through the data included in the report. Councilman Prete would like to see something put in place to make recommendations on fixing the problems included in the report. Chief Excell will provide this moving forward. He reported an unprecedented number of children participating in Shop with a Cop on December 10th. Two officers are graduating from the Police Academy on December 8th. He thanked the Mayor and Council for helping with the Preparedness Fair. He reported that

Dan Raddatz is acting as the Sargent for animal control. In January, he will come in with a proposal to define what he would like to do with the money raised by auctioning off the unclaimed items.

Scott Hughes reported that the crews are busy working on the Three Falls Substation. The line crew is spending a lot of time working on 600 North. The Christmas decorations were successfully installed on November 27th, and the tree is set up for the lighting ceremony.

Mike Chandler reported that the Sewer District is wrapping up the pipeline project along Sand Hollow Road. The belly in the line on 700 West has been repaired. They have postponed putting in the sewer line on 300 West so they can work with the Water Department to simultaneously put in the irrigation line. Apple Valley was annexed into the District, and they are in discussion with Virgin and Rockville to also annex. The Confluence Park treatment plant project will start next year, and the project will shave off thirty percent of the current flow levels. They have acquired some land to expand more basins to accommodate storage.

Ken Richins reported that the water department received good bids for the irrigation project. He thanked staff for researching the documents needed for the grant. The well in Dixie Springs is not within spec and must be straightened out. The Water District is adding a water conservation surcharge fee for customers that exceed 36,000 gallons per month.

6:00 p.m. - Call to Order –

Mayor Nanette Billings welcomed everyone to the meeting.

Prayer: Kevin Thomas

Thought: Mayor Nanette Billings

Pledge: Doug Heideman

Declaration of any conflicts of interest

Dave Sanders declared a possible conflict of interest on New Business item 7.

Councilman Prete declared a conflict of interest on New Business item 9.

Approval of Minutes: October 20, 2022

Joseph Prete motioned to approve the minutes of the October 20, 2022, City Council meeting. Seconded by David Hirschi. Motion carried unanimously.

Public Forum – Comments From Public

No comments

OLD BUSINESS

1. Ordinance 2022-53 Consideration and possible approval of a **Land Use Code Amendment request to Title 10 Chapter 14: Residential Agriculture Zoning Standards to allow smaller lot sizes within Residential Agriculture Zones for limited subdivisions with master plan roadways.**

Stephen Nelson explained that this was reviewed last month. The three combined units have been separated. The City Council did not support the proposed changes to the agriculture protection overlay. The items on the agenda pertain to the master planned roadways and how they affect lot sizes within RA zones. Mr. Nelson read through the proposed changes.

Councilman Prete suggested counting the amount of dedicated roadway against the size of the lot. Mr. Nelson feels that the proposed change provides more flexibility. The Council members discussed modifying the rear setback.

Joseph Prete motioned to approve the Land Use Code Amendment request to Title 10 Chapter 14: Residential Agriculture Zoning Standards to allow smaller lot sizes within Residential Agriculture Zones for limited subdivisions with master plan roadways as presented. Seconded by Kevin Thomas. Doug Heideman, Dave Sanders, David Hirschi, Kevin Thomas, and Joseph Prete, aye. Motion carried unanimously.

2. Consideration and possible approval to **fund an additional $2,000 for Wreaths Across America to put in their fund for next year**

David Hirschi motioned to table consideration and possible approval to fund an additional $2,000 for Wreaths Across America to put in their fund for next year. Motion dies for lack of a second.

Mayor Billings reported that Wreaths Across America received $3,000 from the City and $1,000 from John Bramall. United We Pledge matched all the contribution. They have enough to pay for the wreaths this year. Wreaths of America is requesting additional funding that will go towards next year. Mayor Billings stated that the money raised at the Veterans Golf Tournament will go to Veterans' families for Christmas. Councilman Prete expressed his frustration with the insinuations that the Council is not patriotic if they do not fund the wreaths yearly. He would like to explore other options to honor the Veterans. He feels there are more significant and non-monetary ways to promote and honor veterans. Councilman Thomas

reiterated that the wreaths are funded this year, and he sees no need to put more funds in their account.

Mayor Billings suggested adding funds to honor the veterans in the annual budget moving forward. Councilman Hirschi feels the funding should go towards Veterans Memorial Park. Councilman Thomas also feels it was insulting when it was insinuated that the Council loves Veterans less because they wanted to use artificial wreaths.

David Hirschi motioned to deny funding an additional $2,000 for Wreaths Across America to put in their fund for next year for the reasons discussed. Seconded by Kevin Thomas. Joseph Prete, David Hirschi, and Kevin Thomas, aye. Dave Sanders, nay. Doug Heideman abstained. Motion carried.

Mayor Billings reported that the public is invited to attend the Wreaths Across America event at the cemetery on December 17th at 8:00 a.m.

3. Ordinance 2022-54 Consideration and possible approval of **A Zone Change Amendment request for Steward Land Holdings located at approx. 3112 West State Street from HC, highway commercial, to planned commercial.** Parcel number H-3-1-31-3009. Steward Land Holdings Applicant. Brad Brown Agent.

Stephen Nelson explained the City Council directed staff to prepare a development agreement that obligated affordable housing, limited the height, and clarified that the medium-density area is mixed-use. They did include an adequate public facilities clause. The City Attorney and applicant have reviewed the development agreement. Brad Brown is comfortable with the terms and thanked the staff for all their work.

Councilman Prete voiced appreciation for the proposed plan. He asked if there was any way to safeguard this area from becoming dilapidated. Mr. Nelson stated that good management is the best way to prevent the deterioration of the property. Mr. Brown explained that the applicant sees this as a legacy project. He reviewed the amenities within the project. Mr. Nelson reported that having an active HOA helps maintain properties. Having a variety of housing options in each building will also help. Mr. Brown reported that they are contemplating having affordable units in each building. They will have CCRs and onsite management. Mayor Billings struggles with the reduction of highway commercial. Councilman Hirschi is concerned that this will set a precedent for high density. Councilman Sanders pointed out it would be difficult to access commercial in this area due to topography. He asked if the project is strictly rentals. Mr. Brown reported that the project is a mix of rentals and units available to purchase.

Kevin Thomas motioned to approve the Zone Change Amendment request for Steward Land Holdings located at approx. 3112 West State Street from HC, highway commercial, to planned commercial based on topography and proximity to commercial, this project is the best-suited

project for the property, there are adequate facilities, this matches the General Plan Map, and there is a need for affordable housing. Approval is subject to the development agreement. Seconded by Dave Sanders. Joseph Prete, Kevin Thomas, and Dave Sanders, aye. David Hirschi and Doug Heideman nay. Motion carried.

4. Ordinance 2022-61 Consideration and possible approval of an **amendment to Hurricane City Code Title 10 Chapter 7 Section 9 Conditional Use Permit Standards, Title 10 Chapter 12 Agriculture Zoning Standards and Title 10 Chapter 14 Residential Agriculture Standards to amend the code to allow Reception Centers as a conditional use within Agriculture and Residential Agriculture Zones.**

Stephen Nelson reported that the City Council expressed hesitancy to this amendment at the last meeting. The Council was concerned about the parking and fire code requirements. This change will allow reception centers as a conditional use in RA zones. Per State law, the conditions for conditional use must be listed in the code. Mr. Nelson contacted the fire district for code requirements, but he does not have a clear answer yet. The Planning Commission recommended keeping the parking requirements vague to ensure a property owner can utilize a field for parking. Mayor Billings reported that there are no reception venues in Hurricane City. Chief Excell does not think wedding receptions will greatly impact their department.

Councilman Prete stated that ordinances already exist that allow this use in residential areas. He feels that reception centers have a larger impact and thinks there are more implications for public safety. He is also concerned about the definition of reception centers as a secondary use. He prefers that this is not allowed on properties that are less than five acres. Mr. Nelson explained that the minimum acreage could be set in the conditional use. He cited the code's definition of a reception center. Chief Excell requested to continue the item to allow him time to review the public safety component.

Doug Heideman motioned to continue Consideration and possible approval of an amendment to Hurricane City Code Title 10 Chapter 7 Section 9 Conditional Use Permit Standards, Title 10 Chapter 12 Agriculture Zoning Standards, and Title 10 Chapter 14 Residential Agriculture Standards to amend the code to allow Reception Centers as a conditional use within Agriculture and Residential Agriculture Zones to the next meeting. Seconded by Joseph Prete. Kevin Thomas, Dave Sanders, Doug Heideman, David Hirschi, and Joseph Prete voting aye. Motion carried unanimously.

NEW BUSINESS

1. Ordinance 2022-62 Consideration and possible approval on a **Land Use Code Amendment Request to Title 10-Chapter 3-Subsection 4 and 10, Title 10-Chapter 15-Subsection 3, Title 10-Chapter 41, and Title 10-Chapter 51; and Title 3 Chapter 10 to make changes regarding short-term rental standards within residential areas,**

residential hosting standards, and short-term rental standards in commercial zones. Hurricane City Applicant.

Stephen Nelson presented the proposed changes. The City Council directed staff to make the code for residential hosting easier to read. The first goal is to provide a better definition of accessory dwelling units and link ADU standards with residential hosting.

Staff is proposing to eliminate the guest house and casita definition and change the ADU definition to focus on use rather than facilities. The home bed and breakfast definition was removed from the residential hosting code. A short-term rental complex definition was created for commercial use. This definition clarifies the difference between a hotel, motel, and short-term rental complex. Mr. Nelson discussed potential changes to the parking standards for residential hosting. Councilman Thomas is in favor of continuing the item to the next meeting. He directed Mr. Nelson to combine residential hosting and transient lodging and provide a clean version of the recommended changes to the City Council. Councilman Prete would like more simplicity and an introduction of each use consolidated in one place.

Doug Heideman motioned to continue Consideration and possible approval of a Land Use Code Amendment Request to Title 10-Chapter 3-Subsection 4 and 10, Title 10-Chapter 15-Subsection 3, Title 10-Chapter 41, and Title 10-Chapter 51; and Title 3 Chapter 10 to make changes regarding short-term rental standards within residential areas, residential hosting standards, and short-term rental standards in commercial zones to the next meeting. Seconded by Kevin Thomas. Dave Sanders, David Hirschi, Joseph Prete, Doug Heideman, and Kevin Thomas, voting aye. Motion carried unanimously.

2. Ordinance 2022-63 Consideration and possible approval on a **Land Use Code Amendment Request to Title 10-Chapter 25 to consider requiring a note be placed on new subdivision plats within a designated area around an airport.**

Dayton Hall reported that the packet includes the new requirement. The Airport Board recommended changing the ordinance to add the required language on new plats. Mr. Hall has no issues with the form. Councilman Prete feels it is important to put people on notice; however, this is more than a notice. This limits the property rights of everyone around the airport. Essentially preventing property owners from raising issues if they have problems. Mayor Billings reported that this pertains to normal aviation, which is already in the ordinance. Mr. Hall clarified this amendment request requires a new subdivision within a half mile of the two airports to have this notice recorded on the plat and puts future owners in the subdivision on legal notice that they are building in an area of an airport. Councilman Prete expressed that he is obligated to look out for the residents rather than the small number of pilots. He does not favor changing the balance of power in a way that is detrimental to the residents. Councilman Thomas pointed out this is the same as supporting agriculture protection zones. Councilman Heideman feels this protects potential property owners by giving them notice of the airport.

Mr. Hall reported that this ordinance goes further than that. He explained that the language states that they accept the nuisances as a condition of purchasing the property. He noted that this proposal could be amended only to give notice that the property is near an airport. Mr. Nelson deleted everything except the first sentence giving notice of the airport.

Joseph Prete motioned to approve the Land Use Code Amendment Request to Title 10-Chapter 25 to consider requiring a note be placed on new subdivision plats within a designated area around an airport as amended. Seconded by Kevin Thomas. Doug Heideman, David Hirschi, Dave Sanders, Kevin Thomas, and Joseph Prete, aye. Motion carried **unanimously**.

3. Consideration and possible approval of **revoking the residential hosting license for Cris LLC** - Cindy Beteag

Dayton Hall explains this is a hearing for revocation of a residential hosting license. The owner will be able to talk on their behalf, and Cindy Beteag will provide a summary of events.

Tom Ballard lives next door to the property in question. Upon moving in, he immediately noticed that the home was constantly being rented to different tenants. The home is being rented through VRBO and evolved.com. Mr. Ballard noted that the owner has a residential hosting license which does not allow entire home short-term rentals. Mr. Ballard asked the City Council to enforce the ordinance and revoke the license.

Cindy Beteag explained the property located at 5189 W 2040 South has been the subject of multiple complaints from neighbors. The most frequent have been parking issues and the owner not living on site. The property has a residential hosting license, which is permitted in that zoning. Per city code to have a residential hosting license the owner must live on the property in the primary part of the dwelling. In July of 2022, staff was made aware that the property was registered with the county to an address in Lehi, an inspection by Ms. Beteag and Fred Resch III was performed and the owner insisted that he lived in one of the bedrooms within the main home. Staff does not entirely believe this and neighbors have reported to us that the owner, Chris Hanks, is almost never at the property.

Councilman Prete noted that there have been complaints by the neighbors, and the City did send notice to the homeowner. He asked if the owner had responded to the notices. Mrs. Beteag reported that the homeowner did respond to the notices. She reported that the homeowner was present during her inspection, and the home did not appear to be a primary residence; however, the license was granted after the inspection because they felt they needed adequate evidence that he did not reside in the home. Due to the parking violations and complaints from the neighbors, they feel it is prudent to revoke the license.

Cristopher Hanks reported that this is his primary residence. He works remotely and is not home every day. He does want to be a good neighbor. After communicating with staff, he

understands that he has to be in the home when he has guests. He reported that they only have guests a few times a month. His mother lives in the casita. Councilman Prete asked if his mother lives in the casita full-time. Mr. Hanks reported that his mother lives on the property full-time, and they both receive mail at the address. He explained that they only rent out one portion of the home to one party at a time. He expressed that they are trying extremely hard to comply.

Councilman Thomas asked if Mr. Hanks knew that an owner could not live in the casita and rent the house. Mr. Hank reported that his property management company advised him that he is allowed to live in the casita and rent out the home. He reiterated that he wants to be a good neighbor and comply with the City. Councilman Prete asked Mr. Hank how he defined this as his primary residence. Mr. Hank estimated that he resides on the property thirty percent of the time.

Kevin Thomas motioned to approve revoking the residential hosting license for Cris LLC based on the owner's admission that he does not live in the main portion of the home and that this is not his primary residence and the evidence that a guest violated the parking ordinance. Seconded by David Hirschi. Joseph Prete, Doug Heideman, Dave Sanders, Kevin Thomas, and David Hirschi, aye. Motion carried unanimously.

4. Consideration and possible approval of a **revision to the Airport Policy and Procedures for Aircraft Noise Abatement**

Dayton Hall explained that this clarifies that helicopters are subject to the policy.

Kevin Thomas motioned to approve the revision to the Airport Policy and Procedures for Aircraft Noise Abatement. Seconded by Dave Sanders. Joseph Prete, David Hirschi, Doug Heideman, Dave Sanders, and Kevin Thomas voting aye. Motion carried unanimously.

5. Consideration and possible approval of a **road dedication for Abbey Road** -Arthur LeBaron

Stephen Nelson stated the City has approved some subdivisions and commercial projects near Abbey Road. To make the projects work, they need the dedication of the roadway.

Dave Sanders motioned to approve a road dedication for Abbey Road. Seconded by Doug Heideman. Joseph Prete, David Hirschi, Doug Heideman, Dave Sanders, and Kevin Thomas voting aye. Motion carried unanimously.

6. Consideration and possible approval of **awarding the irrigation metering project bid** - Ken Richins

Ken Richins presented the bid tabulations. There were four bids; Feller Enterprises is the lowest bid at $1,802,875.84. Mr. Richins noted that grant money from the State will cover seventy percent.

Dave Sanders motioned to approve awarding the irrigation metering project bid in the amount of $1,802,875.84 to Feller Enterprises. Seconded by Doug Heideman. Joseph Prete, Kevin Thomas, David Hirschi, Dave Sanders, and Doug Heideman voting aye. Motion carried unanimously.

7. Consideration and possible approval of a **preliminary plat for Hurricane Heights Hobby Garages, a 33 lot storage unit development located at 400 N 700 W.** CSB Dev HH LLC (Max Stokes) Applicant. Civil Science - Brandee Walker Agent.

Stephen Nelson reported that the will-serve letters have been received, and he has no further concerns. The Planning Commission recommended approval. He noted that the applicant is proposing to change the dedication of the stormwater pond to align their access more closely to the intersection. Brandee Walker explained that the units are on the property line with twenty feet of parking in front, and the private drive is thirty-nine feet. The height of the building will not exceed twenty-five feet. The units are all attached; however, they will have vertical relief due to the proximity to Scholzens.

Doug Heideman motioned to approve the preliminary plat for Hurricane Heights Hobby Garages, a 33-lot storage unit development located at 400 N 700 subject to staff and JUC comments which are 1. Zoning is M-1, light industrial, and storage units are an approved use in M-1. No residential uses are permitted in M-1 zoning. A. There are no setbacks between lots zoned M-1. 2. Parking: No office space is provided on site so no parking spaces are required. Seven visitor spaces are provided and each unit will have two spaces in front of it. 3. Staff recommends an HOA or CC&Rs to enforce the zoning prohibitions within this zone. 4. The applicant is proposing a land swap with the city. The applicant had previously dedicated a chunk of land (pictured below) to the City for a regional detention basin and is now proposing the boundaries of this piece of property be adjusted to reflect the exact placement of the detention basin. Staff finds this generally acceptable but that will need to be approved by the City Council. 5. All park strips will need to be landscaped and have the proper improvements. 6. A will serve letter from the culinary and sanitary water providers has not been provided. A water acknowledgement form has been provided. 7. A note indicating whether or not the property is in a tortoise take area has been provided. 8. Public Works: No comments
9. Power: Developer must fill out construction application for the power department. Developer must provide info as to power needs per unit. Developer must meet with power before proceeding with this project. Power is developed to the north side of 400 N.
10. Sewer: Provide easements of 25' over existing sewer line and an all weather road. 11. Street: Consider a larger visitor parking area. Would like to see 400 N as a "No Parking" area to minimize clutter from garages. 12. Water: No comments. 13. Engineering: Legal description

needs some corrections. How does stormwater currently get in and out of the existing retention basin? 400 N is an existing 56' Public ROW, should continue as a public street. What is the proposed cross-section? It appears this development is dependent on the completion of the rest of Hurricane Heights Townhomes. Where is the proposed inlet and outlet to the eastern detention pond? Additional grading detail should be requested. It's difficult to negotiate elevation differences at property lines without a building setback. Property swap may require a plat amendment to Hurricane Heights Phase 3. Improvements for 700 W, a planned 70' ROW, will be required at this phase. 14. Fire: Need hydrants. Turnaround is okay. Must have secondary access functional. 15. Cable: No comments. 16. Gas: No comments. 17. Water Conservancy: No comments. 18. GIS: No street name needed on private drive. Seconded by Kevin Thomas. Joseph Prete, David Hirschi, Dave Sanders, Doug Heideman, and Kevin Thomas, voting aye. Motion carried unanimously.

8. Consideration and possible approval of a **Technical Planning Assistance Program Funds Cooperative Agreement, a funding agreement between Hurricane City and the Utah Department of Transportation for the Hurricane Downtown Master Plan.**

Stephen Nelson explained that the City was awarded a grant from the Utah Department of Transportation (UDOT) to fund the downtown master plan. He reported that UDOT has approved the scope of the work. Councilman Prete is concerned about the strings attached. Will the City be obligated to do things that the residents may not want? Mr. Nelson explained that the City is only obligated to do the plan. Councilman Hirschi reiterated that this does not mean that the City fully supports a downtown plan. This indicates that the City is willing to look at the downtown plan. Mr. Nelson reported that this is a City plan, not a UDOT plan. UDOT will have a representative on the Steering committee. Councilman Kevin Thomas, Planning Commissioner Rebecca Bronneman, Stephen Nelson, Fred Resch III, Kaden DeMille, a member of the Chamber of Commerce, UDOT, and a consultant are on the Steering Committee. Dayton Hall reported that paragraph five requires the City Council to adopt the project upon completion or be in the process of adopting the project. Councilman Hirschi would like more residents living in the downtown area on the Steering Committee. Councilman Prete feels there are disadvantages in having too many people living downtown on the committee. The master plan is intended to bless the entire City.

Kevin Thomas motioned to approve the Technical Planning Assistance Program Funds Cooperative Agreement, a funding agreement between Hurricane City and the Utah Department of Transportation for the Hurricane Downtown Master Plan. Seconded by Joseph Prete. Doug Heideman, David Hirschi, Dave Sanders, Kevin Thomas, and Joseph Prete, aye. Motion carried unanimously.

9. Consideration and possible approval of **local consent for a Limited Restaurant license for Mountain Mike's Pizza** - Nicholas Lauritzen

Councilman Prete noted that he would not vote on the matter; however, he does feel that Nick is a pillar of the community. Nicholas Lauritzen is excited to bring this restaurant to Hurricane City.

Kevin Thomas motioned to approve local consent for a Limited Restaurant license for Mountain Mike's Pizza. Seconded by Dave Sanders. David Hirschi, Dave Sanders, and Kevin Thomas, aye. Joseph Prete and Doug Heideman abstained. Motion carried.

Councilman Prete confirmed that the beer and wine license was approved.

10. Consideration and possible approval of **allocating funds to get information out to the public** - Nanette Billings

Doug Heideman motioned to table Consideration and possible approval of allocating funds to get information out to the public. Seconded by Kevin Thomas. Joseph Prete, David Hirschi, Doug Heideman, Dave Sanders, and Kevin Thomas, voting aye. Motion carried unanimously.

11. Consideration and possible approval of the **renewal of beer licenses** - Cindy Beteag

Councilman Prete reported that three of the applicants have an underaged sell violation. He asked if there were consequences for these violations. Mr. Excell that the person who sold the beer is issued a criminal citation, and the violations are reported to Beverage Control.

Joseph Prete motioned to approve the renewal of beer licenses. Seconded by Dave Sanders. David Hirschi, Doug Heideman, Dave Sanders, Kevin Thomas, and Joseph Prete voting aye. Motion carried unanimously.

12. Consideration and possible approval of the **annual meeting schedule**

David Hirschi motioned to approve the annual meeting schedule. Seconded by Doug Heideman. Kevin Thomas, Joseph Prete, Dave Sanders, David Hirschi, Doug Heideman, voting aye. Motion carried unanimously.

13. Consideration and possible approval of **Ordinance 2022- amending Title 7, Chapter 7 Events**

Dayton Hall explained that staff discussed opening the events ordinance permitting process several weeks ago. He recognizes that this deserves a more in-depth conversation. He suggested continuing the item to allow staff time to prepare a good product.

Doug Heideman motioned to continue Ordinance 2022- amending Title 7, Chapter 7 Events to January 5th. Seconded by Kevin Thomas. Joseph Prete, Dave Sanders, David Hirschi, Doug Heideman, and Kevin Thomas voting aye. Motion carried unanimously.

Closed Meeting held pursuant to Utah Code section 52-4-205

Joseph Prete motioned to go into a closed meeting. Seconded by Kevin Thomas. Motion carried.

Mayor and Council reports

Kaden DeMille explained that the Building Inspector, Stewart Joseph, did not properly place his vehicle in park and consequently ran over his leg and foot. Selwin Lovell reported that Mr. Joseph will be on light duty for at least two weeks.

Doug Heideman motioned to adjourn the meeting. Seconded by Joseph Prete. Motion carried unanimously.

Adjournment: 9:40 p.m.

EXHIBIT C
Site Plan

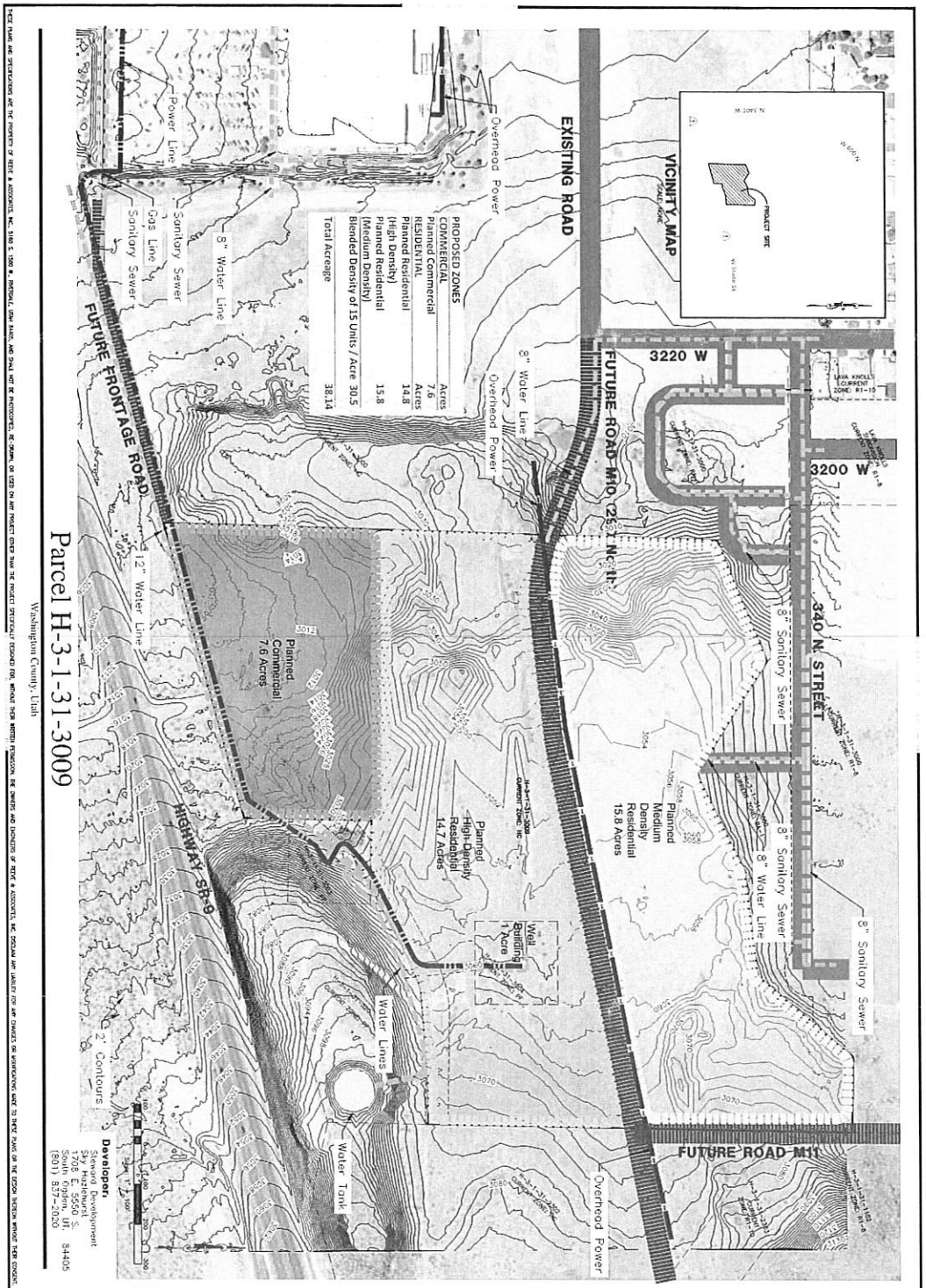

EXHIBIT D

Affordable Housing Requirements

HCC 10-15-8 (E)

2. *Affordable housing.* Projects shall not exceed 17 units an acre for residential areas that reserve ten percent of given units as affordable housing.

a. *Defined.* "Affordable housing" means housing occupied or reserved for occupancy by households with a gross household income equal to or less than 80 percent of the median gross income for households in the county. Housing costs must be affordable based on housing and urban development standards.

b. *Duration and requirements of affordability.*

(1) *Affordable rental unit.* An affordable rental unit shall remain affordable for a period of 25 years from the time a certificate of occupancy is issued. Prior to or as a condition of approval of a final site plan, a deed restriction requiring compliance with this section shall be recorded with the county recorder, which deed restriction shall run with the land and bind all assigns, heirs, and successors of the applicant.

(2) *Affordable ownership unit.* An affordable ownership unit shall be sold only to income-qualified households for a period of 25 years from the time a certificate of occupancy is issued. Prior to or as a condition of approval of a final site plan, a deed restriction requiring compliance with this section shall be recorded with the county recorder, which deed restriction shall run with the land and bind all assigns, heirs, and successors of the applicant.

GEOTECHNICAL INVESTIGATION REPORT

Prepared for:

Steward Land Company
Brad Brown
1708 East 5550 South, Suite 18
Ogden, UT 84403

January 24, 2023

Hurricane Mixed-Use Development

Prepared by:

LANDMARK TESTING & ENGINEERING

795 East Factory Drive
St. George, UT 84790

Landmark Project No: 220849

January 24, 2023

Steward Land Company
Brad Brown
1708 East 5550 South, Suite 18
Ogden, UT 84403

Subject: Geotechnical Investigation Report
Hurricane Mixed-Use Development
Hurricane, Utah
Landmark Project No.: 220849

Brad,

As requested, we have completed our Geotechnical Investigation for the above noted project. Our geotechnical recommendations, along with our field and laboratory data are presented in this report.

Our field investigation consisted of twenty (20) test pits across the site. Test pits extended to depths ranging from 1.0 to 5.5 feet below the ground surface, where refusal was met in all of the test pits in cemented basalt cobbles and boulders. Spread footings established on structurally placed soils are recommended for structural support of the proposed structures. Over-excavation and recompaction, as detailed in Section 5.0 of this report, will be required. The existing soils, free from organics and other debris are suitable for use as structural fill, however, due to the expected amount of shrinkage, imported granular fill will be required.

Landmark has great interest in providing materials testing and special inspection services during the construction phase of this project. If you advise us of the appropriate time to discuss these engineering services, we will be pleased to meet with you at your convenience.

Please feel free to contact our office at (435) 986-0566 if you have any questions.

Sincerely,
LANDMARK TESTING AND ENGINEERING

Steven Wells, P.E.
Geotechnical Manager

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HURRICANE, UTAH

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APPENDIX A – Field Investigation

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FIGURE A-2:	**Site Map**
FIGURES A-3 through A-12:	**Test Pit Logs**
FIGURE A-13:	**Unified Soil Classification System**

APPENDIX B – Laboratory Test Results

TABLE B-1:	**Summary of Laboratory Test Results**
FIGURE B-1:	**Modified Proctor Curve**
FIGURE B-2:	**CBR Curve**
FIGURE B-3 through B-9:	**Soil Classification Reports**
FIGURE B-10:	**Water-Soluble Sulfate Report**

APPENDIX B – Rockery Wall Details

1.0 INTRODUCTION

This report presents the results of Landmark Testing & Engineering's geotechnical investigation for the proposed commercial and residential developments on Parcel H-3-1-31-3009 in Hurricane, Utah. Figure A-1 is a Vicinity Map showing the project location relative to surrounding features. Figure A-2 is a Site Map showing the proposed project layout and the approximate locations of the test pits completed for this investigation.

This investigation was completed to assist in developing opinions and recommendations concerning site earthwork and foundation design.

2.0 PROPOSED CONSTRUCTION

We understand that the proposed construction will consist of single and multi-story commercial store fronts with asphalt paved driveways and parking lots, single to multi-story townhomes, single-family residences, and high-density housing with associated roadways, utilities, and other improvements.

Building Loads

Structural loads have not been provided. Based on typical practices, we expect the residential buildings to be wood-framed with concrete slab-on-grade floors and concrete tile roofs. We anticipate that structural loads for single-story to three-story residential buildings to be on the order of 1,500 to 3,000 pounds per lineal foot. We anticipate that column loads will not exceed 80 kips.

For the commercial storefronts, we anticipate single-story masonry block, or light-gauge metal framed buildings with concrete slab-on-grade floors and membrane roofs. Footing loads are expected to be less than 3,000 psf with isolated column loads of up to 50 kips.

For multi-story office buildings, we anticipate steel-framed buildings. Footings loads may exceed 100 kips with this type of construction.

Traffic Loads

Hurricane City Standards define the streets as Residential, however, the commercial portions of the development may warrant higher classification Pavement was designed based on a T.I of 5.5.

Grading

Due to the elevation changes across the site, we anticipate that cuts and fills of up to 20 feet will be required. A large portion of these cuts will be in basalt flows.

Any significant changes to the anticipated development should be reviewed by Landmark to evaluate the continued applicability of the recommendations contained in this report.

3.0 SITE SETTING

3.1 SURFACE CONDITIONS

The site is located on undeveloped desert land. The 38.14-acre parcel varies significantly in elevation throughout the site, but generally consists of naturally forming terraces shaped by ancient

basalt flows. The upper terrace is south of the lower terrace. Multiple basalt ridges run east to west across the site and are as much as twenty feet high. The terrain is generally rocky and uneven, with moderate vegetation consisting of desert shrubs and cacti growing in loose, sandy soil. During our investigation, large piles of dirt were observed near the west side of the property.

The site is bounded by vacant land to the west, State Street to the south, and undeveloped desert land to the east and north. A water tank currently sits on top of the hill at the southeast corner of the parcel, with an unpaved road and monitoring station at the bottom of the hill, south of the site.

3.2 GEOLOGIC SETTING

According to the Utah Geological Survey,[1] the project site is mapped as located on:

Qbv: Volcano Mountain lava flow (middle Pleistocene) – Medium- to dark-gray to grayish-black, fine- to medium-grained alkali basalt (Qbv) with sparse olivine phenocrysts; erupted from a vent at Volcano Mountain (Qbvc) southwest of Hurricane.

Qae: Alluvial and eolian deposits (Holocene to upper Pleistocene) – Moderately sorted gravel, sand, and silt deposited in small channels and on alluvial flats, and well-sorted, fine- to medium-grained, reddish brown eolian sand locally reworked by alluvial processes.

The basalt flows are underlain by the reddish orange Navajo Sandstone, however, the sandstone was not exposed on the site. The sandstone is exposed in the roadcut located to the southeast of the site.

The soils encountered in our test pits generally agreed with geologic mapping.

3.3 GEOLOGIC HAZARDS

The St. George basin lies within the transitional zone between the Colorado Plateau to the east and the Basin and Range Province to the west. Southwestern Utah is located on a structural block proximate to the southern segment of the Intermountain Seismic belt, which is characterized by high-angle normal faults that tend to step down to the west. The Hurricane fault with an offset of 6,000 to 8,000 feet forms the eastern edge of the transition zone. The Grand Wash-Reef Reservoir-Gunlock fault system with displacement of about 1,500 to 3,000 feet forms the western edge.

Fault Rupture

The trace of the Hurricane fault is located approximately 4 miles east of the site, at the base of the Hurricane Cliff. The Utah Geologic Survey indicates that the Hurricane fault displaces late Quaternary sediments and is considered active. Strong ground motion associated with movement along the Hurricane or other faults associated with the Intermountain Seismic Belt is possible, however, the potential for surface fault rupture is considered low.

1 Beik, R.F., 2003, Geologic Map of the Hurricane 7.5-minute Quadrangle, Washington County, Utah; Utah Geological Survey Map M-187

Liquefaction

Liquefaction is the sudden loss of shear strength in the soil due to the build-up of excess pore water pressure.[2] This can occur when the soil is subjected to intense shaking such as during a seismic event. The soils that are most susceptible to liquefaction are loose, saturated sandy soils with a low fines content (material passing the #200 sieve).

According to the Utah Geological Survey,[3] the portions of the project area are mapped as being in a high liquefaction-susceptibility zone. Soils encountered in the test pits are silty sands underlain by basalt bedrock. Groundwater was not encountered in our borings during our investigation and therefore liquefaction potential may be considered low. A liquefaction study is beyond the scope of this report.

Rockfall

The proposed site is shown on the UGS geologic hazards map (Plate 5) as being partially located within a medium to high rockfall hazard area. The hillside on the southeast side of the property consists of large boulders up to approximately 10 feet in size and there is potential for these boulders to become dislodged and come in contact with future buildings constructed in the vicinity. A specific rockfall hazard analysis is beyond the scope of this report.

Collapsible Soils

The site is shown on the UGS geologic hazards map (Plate 7) as being located in a collapsible soil hazard area. Collapsible soils have considerable strength when in a dry, natural state, but significantly settle due to hydro compaction when wetted. Typically, they are associated with young alluvial fans, debris flows, and loess (wind-blown silts), where soil structure creates a significant amount of air space within the soil and includes certain rock units that weather in-place to soil. Shallow collapsible soils were encountered in our test pits. Recommendations to mitigate collapsible soils are provide in this report.

Flood

The site is shown on the UGS geologic hazards map (Plate 1) as being partially located in a moderate flood hazard area. The flood hazard due to active pediments and sloping depositional surfaces flanking ridges and other upland areas that are chiefly inundated by sheetfloods, but possibly by flash floods and debris flows during cloudburst storms, older alluvial-fan deposits, and lagoon fill deposits located in closed depression. Civil design for the project should address intermittent flood events.

Caliche

The site is shown on the UGS geologic hazards map as being located in a caliche hazard zone. Caliche is a hard layer within soils formed from the accumulation of calcium from past groundwater flow and can be extremely difficult or impossible to excavate without blasting in

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2 Coduto, Donald P. (1999), Geotechnical Engineering: Principles and Practices, Prentice Hall, Upper Saddle River, NJ

3 St. George-Hurricane Metropolitan Area Geologic-Hazard Study, Knudsen, Tyler R., Utah Geologic Survey Special Study 127.

some cases. Dense caliche layers may approach the hardness of bedrock and greatly reduce soil permeability, causing shallow groundwater from excess landscape irrigation and septic waste disposal systems. Cemented materials were encountered at the transition between the sands and the underlying basalt flow.

Shallow Bedrock

The site is shown on the UGS geologic hazards map as being located in a shallow bedrock zone. Bedrock at shallow depths may cause difficulties in construction and excavations. Basalt flows are exposed on the site, and we met refusal in the upper portion of the basalt. It has been our experience that blasting will likely be required.

Piping and Erosion

The site is shown on the UGS geologic hazards map as being located in a piping and erosion susceptible zone. Piping and erosion can cause significant damage to roads, canals, earth-fill dams, buildings, bridges, culverts, and farmland. Piping, also referred to as tunnel erosion, is the subsurface erosion of soil by groundwater that moves through permeable, non-clay layers in soils and exits at a slope. Fine-grained sand, silt, and clay particles are removed by the subsurface flow of water, creating void space. An exit point at a slope may not always be obvious. Silt and clay carried in water can travel with the subsurface groundwater flow for long distances, enter the regional groundwater regime, and exit as seeps and springs or into streams and rivers. Rapid erosion may occur when susceptible materials are exposed to running water or wind. Monsoonal storms typically bring intense rainfall and high winds. Heavy rain can quickly erode silts and clays. Slope runoff that becomes channelized can form gullies and erode steep banks of streams and rivers. Erosional gullies can also contribute to the piping hazard.

The upper sand layers encountered in our investigation are susceptible to piping and erosion. Earthwork and grading recommendations provided in this report will help mitigate this hazard. Slopes and channels should be protected against erosion. Civil design for the project should address erosion control measures.

Wind-Blown Sand

The site is shown on the UGS geologic hazards map as being located in a wind-blown sand susceptible zone. Wind-blown sand can cause damage to infrastructure by burial, sandblasting effects, and by creating unsafe driving conditions. Dust storms commonly occur due to wind associated with the monsoonal season that affects southern Utah and northern Arizona. Even a few inches of sand on a road can be very dangerous. Wind-blown sand hazards are often reduced by armoring deposits with appropriately sized and graded gravel, cobbles, and boulders, where adequate irrigation water is not available for vegetation planting.

Wind-blown sands were encountered in our investigation. Along with armoring deposits, as described above, dust control measures should be implemented during construction.

3.4 SEISMICITY

Seismicity at the site was determined using the Seismic Maps Tool from seismicmaps.org website. The following values are presented to assist with seismic design:

- Latitude = 37.17367° North, Longitude = 113.35762° West
- Site Class = C, based on ASCE 7 as referenced in 2018 IBC

Period (sec)	Sa (g)	Site Class
0.2	$S_S = 0.617$	B/C
1.0	$S_1 = 0.201$	B/C
0.2	$S_{DS} = 0.516$	C
1.0	$S_{D1} = 0.201$	C

As per Section 20.1 of ASCE 7-16, "The soil shall be classified in accordance with Table 20.3-1 and Section 20.3 based on the upper 100 feet of the site profile." However, Section 20.1 continues, "Where site specific data are not available to a depth of 100 feet, appropriate soil properties are permitted to be estimated by the registered design professional preparing the soil investigation report based on known geologic conditions." Based on our engineering experience in the area, mapped geology and the soils encountered in the test pits, it is the opinion of Landmark Testing and Engineering that the soils on site classify as Site Class C.

4.0 INVESTIGATION

4.1 FIELD INVESTIGATION

To investigate subsurface conditions a total of twenty test pits, designated as TP-1 through TP-20, were completed. Test pits were excavated using a Bobcat 341 mini ex with a 24-inch bucket. Depending on subsurface conditions, bag or block samples of soil were obtained from the test pit excavations. Approximate test pit locations are shown on Figure A-2.

A Landmark geologist, Mr. Michael Meyers, supervised the excavation. A log of the subsurface conditions was prepared, samples collected sealed for transport, and relevant site photographs taken. Approximate test pit locations are shown on Figure A-2.

The soils encountered in the test pits consisted of loose to medium dense silty sand with varying amounts of gavel underlain shallow basalt bedrock. The silty sand typically contained roots ¼-inch in diameter or smaller. Refusal was encountered in all test pits between 1 and 5 feet below the existing ground surface. Test Pits TP-3, TP-12, TP-13, and TP-16 encountered weakly- to moderately-cemented caliche.

Groundwater was not encountered in the test pits at the time of investigation.

The Logs of Test Pits TP-1 through TP-20 are presented on Figures A-3 through A-12. A key to the soil classifications used on the logs is presented on Figure A-13.

4.2 LABORATORY TESTING

Soil samples from the test pits were taken to our St. George, Utah laboratory for testing. Tests performed on the samples included:

- Sieve analysis and Atterberg Limits for soil classification
- Modified Proctor for construction testing
- CBR for pavement section design
- Soluble Sulfate Content for concrete mix design selection

Due to the shallow thickness of the sand layers, and the projected amounts of cut and fill, consolidation testing was not conducted. The sands were in a relatively dry state, and therefore loose and non-cohesive.

A bulk sample of the silty sand and basalt gravel was collected from Test Pit 18. The modified Proctor dry density of the sample was 127.3 at an optimum moisture content of 9.5 percent. These values include a rock correction due to 9.8 percent of the sample being larger than ¾-inch. The CBR value of this material when compacted to 100 percent of the modified Proctor value was 72, which is high.

The mechanical sieve analysis performed on samples classified samples from the test pits as silty sand with gravel (SM). The sample from Test Pit 20 at 4 feet, which was from the upper portion of the cemented basalt classified as silty, clayey gravel with sand (GC-GM).

The soluble sulfate content of the sands was 0.55 percent, which is classified as severely corrosive according to ACI 318.

The results of the laboratory tests are shown on the Test Pit Logs on Figures A-3 through A-12 and on the Summary of Laboratory Test Results on Table B-1. Individual test results are also included in Appendix B.

4.3 ANALYSIS AND CONCLUSIONS

Our field and laboratory tests results indicate the soils on site consisted of predominately loose silty sand overlying fractured basalt bedrock. The sands are potentially collapsible, however, due to the amount of grading which will be required, over-excavation will only be required to provide a uniform pad for each of the proposed structures.

The onsite soils and basalt gravel are suitable for structural fill, however, imported granular fill may be required to provide protection for the concrete from the corrosive nature of the onsite soils. Alternatively, concrete mix designs may be selected which are sulfate resistant.

Basalt on the site consists of fractured gravel to boulder-sized pieces which are partially cemented together. Excavation in these materials can be accomplished with typical heavy-duty excavation equipment. However, this method can be costly in terms of equipment and maintenance requirements. Therefore, the basalt is generally blasted to fracture the material for easier excavation, especially where deeper excavation and cuts are required.

Rockfall was only present as loose surface rocks on the hills present on the site. Site grading should be aware of these risks and mitigate any hazardous rocks during grading.

General recommendations for the earthwork and the foundation system are outlined in Sections 5.0 and 6.0 of the report.

5.0 SITE GRADING AND EARTHWORK

5.1 GENERAL GRADING

Site preparation should initially consist of grubbing and removal of vegetation. Grubbing is expected to be minimal, and typically consist of removing the larger brush. A grading plan has not been developed; however, we anticipate that overall grades will be relatively level. Significant cuts and fill, cuts up to 20 feet, may be required to achieve a level grade.

Due to the relative lack of "soil" on the site, we anticipate that soils will be collected for use as pipe bedding and other purposes.

On-site soils consisted of loose sand over basalt flows, these soils have a low collapse potential. In fill areas and areas with no cut or fill, we recommend that the upper 12-inches of the sands be scarified, moisture conditioned to within 2 percent of the optimum moisture content and compacted to a firm, non-yielding surface.

In cut areas, we recommend that the pads cut below the proposed finished pad grade to allow for excavation for under slab utilities and footings.

Landmark does not determine the location of the over-excavation or the location of the structures to be constructed. The builder is responsible to ensure that the building and pavement footprints are entirely within the over-excavated and recompacted building pads.

Following over-excavation, a Landmark engineer or geologist should observe the excavation to document the depth of over-excavation, and determine if subsurface conditions match those found in our field investigation. Alterations to our recommendations may be required if substantially different conditions are encountered.

5.2 FILL PLACEMENT AND COMPACTION

All fill to be placed for support of footings and slabs-on-grade should be considered structural fill. On-site soils are suitable for use as structural fill. However, we recommend that the floor slabs and footings be established on a minimum of 6 inches of imported structural fill if concrete mixes are not sulfate resistant.

Imported, granular fill, if required, should be well-graded, non-expansive, and free of organics and all deleterious materials. Soils used for imported, granular fill should meet the following specifications and preferably would classify as gravel.

GRADATION	PERCENT PASSING
3- inch	100
1.5-inch	80-100
No. 200 sieve	10-25
ATTERBERG LIMITS	
Liquid Limit	30 or less
Plasticity Index	9 or less

Material not meeting the above requirements may be suitable for use as structural fill at the discretion of the geotechnical engineer. Samples of structural fill should be submitted for testing prior to transporting to the site.

Any on-site soils used as structural fill or imported, granular fill should be compacted to the following specifications.

FILL PLACEMENT AND COMPACTION	
Maximum lift thickness	8-inch (loose)
Minimum compaction	95% ASTM D-1557
Compacted Moisture Content	within 2% of optimum

Compaction of structural fill should be completed with equipment suitable for the conditions encountered in the field such that compaction requirements are met, including those areas that may be inaccessible to large rolling compactors. All structural fill should be evenly spread on a horizontal plane in eight-inch loose lifts. Each eight-inch lift of structural fill material placed at the site should be tested for compliance with the required relative compaction and moisture content prior to proceeding with additional lifts.

5.3 LIGHTLY LOADED ELEMENTS

Exterior concrete slabs on grade (sidewalks, curbs, gutters, and misc.) should be established on a minimum of 6-inches of structurally placed soils with a maximum particle size of 3-inches. Sidewalks adjacent to public streets will need to be underlain by approved road base as per Hurricane City Standards.

Structural fill, including road base, should be compacted to a minimum of 95 percent of the maximum dry density as determined by ASTM D-1557.

5.4 CUT AND FILL SLOPES

It is recommended that permanent cut or fill slopes in silty sand soil be maintained at a slope of two horizontal to one vertical (2H:1V) or flatter unless structurally retained. Permanent slopes in basalt bedrock may be maintained at slopes of one horizontal to four vertical (1H:4V).

Grading of both cut and fill slopes should be such that surface water is directed away from the slopes and not concentrated on slopes or in unprotected channels. Construction procedures should ensure adequate compaction of slope faces. All excavations should conform to OSHA standards.

6.0 FOUNDATION & CONSTRUCTION CONSIDERATIONS

The proposed structures may be supported on conventional spread or continuous footings established on onsite or imported structural fill. Foundation excavations should be visually observed and tested by qualified personnel prior to placement of reinforcing steel or concrete. Additional foundation recommendations are subsequently presented.

DESCRIPTION	VALUE
Foundation Type	Continuous or spread footings
Bearing Material	Onsite or imported structural fill
Allowable Bearing Capacity	3,000 psf on onsite or imported structural fill 3,000 psf + 250 psf for each foot of embedment
Minimum embedment depth below finished grade	12 inches (for frost and confinement)
Minimum footing width	12 inches (continuous) for single-story

	18-inches for two stories 24-inches (isolated spread)
Total estimated settlement	1-inch
Total differential settlement	less than 3/4 inch

The allowable bearing capacity is based upon dead load plus long-term live load. A one-third increase in allowable bearing capacity for short duration loads such as wind or seismic loads is permitted with the alternative load combinations given in Section 1605.3.2 of the IBC.

7.0 FLOOR SLABS

It is recommended that concrete floor slabs be constructed on a pad that has been prepared as previously indicated. A minimum of 4-inches of relatively free-draining material should be used beneath the slab in order to help distribute floor loads, break the rise of capillary water, and aid in the concrete curing process. Alternatively, 6 inches of road base may be used in place of the free draining-material.

Concrete slabs should be designed using rebar reinforcement and frequent crack control joints to help control normal shrinkage and stress cracking. Concrete placement and curing should meet ACI[4] requirements including following hot or cold weather placement recommendations, when appropriate. If a moisture-sensitive floor covering will be installed, we recommend that a vapor barrier be installed beneath the concrete slab. The moisture sensitivity of floor finishes, anticipated project conditions, and the potential effects of slab curling and cracking should be considered in determining if the barrier should be placed directly beneath the slab or beneath the free-draining gravel (see ACI 302.IR-96 for more information regarding vapor barrier location). If the vapor barrier is installed directly beneath the slab, measures should be taken to minimize excessive slab curl such as reduced joint spacing and use of a low shrinkage (low water-cement ratio) mix.

8.0 BELOW GRADE WALLS

8.1 LATERAL EARTH PRESSURES

Lateral loads imposed on footings may be resisted by the development of passive earth pressures against the sides of footings and friction between the base of the footing and the supporting soils. Lateral earth pressure values are presented in the following table.

Case Evaluated	Soil Type	Value
Active	Onsite or imported structural fill	37 psf/ft
		53 psf/ft (with seismic)
At-Rest	Onsite or imported structural fill	57 psf/ft

[4] American Concrete Institute

Case Evaluated	Soil Type	Value
Passive	Onsite or imported structural fill	460 psf/ft
		408 psf/ft (with seismic)
Seismic Coefficient	IBC 1610.1.1	0.175
Coefficient of friction tan(φ*0.6) where φ = 34°	Onsite or imported structural fill	0.37

The lateral earth pressures presented do not include any safety factors except where the friction angle (φ) used to determine the coefficient of friction has been multiplied by 0.6 to account for smooth contact conditions. The pressures also assume horizontal backfill and that the backfill is in a drained condition with no build-up of hydrostatic pressure. The additional effects of sloping backfill, surcharge, structural loads and groundwater conditions should be included in calculating lateral earth pressures. Backfill should be placed in accordance with the requirements of structural fill except that backfill in landscape and areas that will not be subject to structural loadings may be reduced to 90 percent of the maximum dry density as determined by ASTM D-1557.

8.2 SWIMMING POOLS

The site is suitable for the construction of below ground swimming pools.

We recommend that the pool excavation extend a minimum of 6-inches to 1 foot beyond the depth of the pool to allow for easier installation of utility lines. Our experience with bedrock in the area shows that specialized equipment, such as a single tooth ripper or hammer hoe, may be required to excavate any basalt encountered shallower than the bottom of the pool. Once pool is excavated, we recommend that the bottom of the pool be compacted to a firm and unyielding surface.

The owner should be informed of the risks involved in construction and ownership of a swimming pool. Settlement may occur to the pool or structures proximate to the pool if soils become wet. Potential means of mitigating damage due to moisture include but are not limited to the following:

- The pool should be located as far as possible from existing structures.
- Plumbing is a significant source of leaks. All plumbing should be fully leak tested and approved prior to filling of the pool.
- The water level in the pool should be strictly monitored and consideration should be given for installing a leak monitoring system. Any leaks should be repaired immediately.
- Consideration should be given to installing an impermeable membrane beneath and extending up the sides of the pool.
- We recommend concrete flatwork with drains surrounding the pool to drain surface water away from the pool and other structures.

Standard moisture control recommendations for construction should be followed. The ground surface should be graded away from the buildings and swimming pool such that ponding does not occur on the site. Roof runoff should be directed away from the buildings and pools.

It should be noted that even if all these mitigation actions are followed, there is still a possibility of subsurface soils becoming saturated, causing differential movement in the pool and other nearby structures.

8.3 ROCKERY WALLS

Based on the grades seen on the site, we anticipate that retaining walls will be required. Design and construction details are listed below. Cross-sections for the walls are included in Appendix C.

1. Prior to the placement of the fill, the existing embankment should be excavated to create benches to allow level lifts to key into the existing embankment. Benching is required for all slopes steeper than 6 horizontal to 1 vertical (6H:1V). Benches should be constructed as an incidental part of the placement and compaction of the fills. The maximum bench height should be limited to 3 feet, or less as dictated by conditions encountered during construction. Benching should include both soils and bedrock is encountered.
2. The existing soils should be removed from below the base of the rock facing and replaced with structural fill. The removal should extend 1 foot below and to the front of the first level of facing rock.
3. All fill should be considered structural fill. Imported fill, if required for wall backfill, should be granular and consist of USCS classifications GC (clayey gravel), GM (silty gravel), or GW (well-graded gravel). Granular fill should be well-graded, non-expansive, and free of organics and all deleterious materials. Soils used for granular, imported, structural fill should meet the following specifications:

GRADATION	PERCENT PASSING
6- inch	100
3-inch	70 – 100
No. 200 sieve	5 – 20
PLASTICITY	LIMIT
Liquid Limit	30 or less
Plasticity Index	10 or less
COMPACTION	SPECIFICATION
Maximum lift thickness	8-inch (loose)
Minimum compaction	95% ASTM D-1557
Compacted Moisture Content	within 2% of optimum

4. All structural fill should be evenly spread on a horizontal plane in eight-inch loose lifts. Each eight-inch lift of structural fill material placed at the site should be tested for compliance with the required relative compaction and moisture content prior to proceeding with additional lifts. The type, length, location, and placement of geogrid should also be observed.
5. Geogrid reinforcement should be placed as shown on the detail to the right. Geogrid should be placed with the strong direction perpendicular to the face of the wall. Geogrid should be placed flat and level, with a minimum 1-foot overlap between sections of grid.
6. The onsite silty sand with gravel (SM) and silty gravel (GM) is suitable for use as structural fill if the material contains the required gravel/cobble fraction. In no case shall material containing less than 25 percent gravel be used as structural fill.
7. Geogrid should consist of Mirafi Miragrid 5XT and 7XT, or equivalent. Filter fabric should be Mirafi 140N or equivalent.

8. In areas where strongly cemented or bedrock conditions are encountered which limit the length of the geogrid, particularly for the lowest layers of grid, the geotechnical engineer should be notified to allow us to observe the conditions and allowable lengths.
9. Facing rock used for the project should be approved prior to its importation to the site. Facing rock should consist of hard, angular, and durable rock that consists of intact blocks without open fractures, foliation, or other planes of weakness. It should have a maximum loss of 10 percent at the end of a 5-cycle sodium soundness test (AASHTO T104). Hard basalt boulders found in the area are generally suitable for use as facing rock. Red sandstone boulders should be tested and approved prior to its use as facing rock as suitable and unsuitable rock is difficult to distinguish.
10. The rockery face should be carefully placed to satisfy the following criteria:
    - Base rock should have a minimum dimension of 3 feet, and other facing rock should have a minimum dimension of 2 feet.
    - Base rocks are larger than upper rocks.
    - Rock should be placed with the long dimension into the fill.
    - Each rock is in contact with at least two rocks below it.
    - The first contact point between an upper rock and a lower rock is located within 6 inches of the face of the rock.
    - There are no "columns" of rocks, i.e., no continuous vertical seams exist.
    - There are no continuous horizontal planes in the rockery.
    - Rocks are inclined back into the slope at a 1 horizontal to 5 vertical grade.
    - Rocks are free of obvious signs of distress, including significant weathering, fracturing, or disintegration.
    - All voids greater than 150 mm (6 in) are chinked.
    - Chink rocks, where present, cannot be removed by hand.
    - There are no loose cap rocks or rocks that can otherwise be moved by hand.
    - There is no soil spalling or piping through the voids in the facing rock.
    - The construction should be observed once per week by the geotechnical engineer to confirm design and construction details are being implemented as specified.

9.0 PAVEMENT DESIGN RECOMMENDATIONS

9.1 ASPHALT PAVEMENT

Design of the pavement sections are based on the procedures outlined in the 1993 Guidelines for Design of Pavement Structures by the American Association of State Highway and Transportation Officials (AASHTO). Traffic Indices of 5.5 and 7.0 was used for design of the public streets and parking areas planned for the development. A CBR value of 20 was used based on the soil encountered in our investigation.

For pavement design, the following design parameters have been assumed:

Pavement Design Life	20 years
Subgrade CBR	20 – design limit
Structural Layer Coefficients	Asphalt = 0.42
	Road Base = 0.12

Based on design parameters, the following pavement sections are provided.

Location	Asphalt Thickness (inches)	Base Course (inches)	Scarified and Compacted Subgrade (inches)
Public Street / Drive Areas (T.I = 7.0)	3.0	8.0	8.0
Parking Areas (T.I = 5.5)	2.5	6.0	8.0

Recompacted on-site soils should be compacted to a minimum of 95 percent of the maximum dry density as determined by ASTM D-1557 and base course soils should be compacted to a minimum of 95 percent of the maximum dry density (ASTM D-1557). Asphalt should be compacted to at least 96 percent of the Marshall maximum density. Asphaltic concrete and base should be tested prior to site delivery and during placement for conformance with project specifications.

9.2 CONCRETE PAVEMENT

We anticipate that concrete pads may be installed by the dumpsters or other areas with heavy truck traffic. Procedures outlined in the Portland Cement Association's guide "Thickness Design for Concrete Highway and Street Pavements" were utilized for concrete pavement design.

The following design parameters were used:

Average daily truck traffic = 0.5 (Axle -load category 1)
Subgrade-subbase support = high (based on site soils)
Concrete modulus of rupture = 600 psi

Based on input parameters, a minimum of 5.5 inches of concrete and 6 inches of base over a properly prepared subgrade will be adequate. The design recommendations are based on the following assumptions:

Subgrade soils should be compacted to a minimum of 95 percent of the maximum dry density (ASTM D-1557). Concrete and base coarse materials and construction should meet the Hurricane City specifications.

As a rough guide, the joint spacing in feet for plain concrete pavement should not generally exceed twice the slab thickness in inches. Thus, for a 5.5-inch-thick slab, joint spacing would be on the order of 11.0 feet as a maximum. Also, as a general guideline, the ratio of slab width to length should not exceed 1.25. Joint depth should be 1/4 of the slab thickness and continuous across the slab. If sawn joints are used, the joints should be sawn as soon as possible following concrete set.

10.0 MOISTURE CONTROL

This soils report provides recommendations for site preparation and foundation design. Inadequate surface drainage or failure to control moisture will result in excessive differential movement of slabs, walkways, porches, or patios and structural damage, regardless of the site preparation. The following moisture control measures are recommended:

(1) Once the finish floor elevation has been established, the site grades should be constructed and maintained to drain surface and roof runoff away from the building foundation at a slope of 5 percent for at least ten feet beyond the structure. The ground surface should be graded to drain away from the building in all directions. Water should not be allowed to pond adjacent to foundations or on-site.

(2) Grass should not be placed within 5 feet of the foundation. Grass, if planted, should have a minimum slope of 5% away from the foundation.

(3) Xeriscape (landscaping that eliminates the need for supplemental irrigation of plants) is recommended within 10 feet of the building foundation. Bubblers, although more efficient than sprinkler irrigation, still have a significant potential of introducing excessive water into the ground and saturating foundation soils. Bubblers are not recommended in the 10 feet buffer zone area. As an alternative, sealed bottom planter boxes may be used.

(4) Inadequate compaction of utility trench backfill provides a conduit for water migration. All utility trenches within the building footprint and extending 5 feet beyond the footprint should be backfilled with structural fill similar to that approved for the foundations. Backfill adjacent to structures should be compacted to at least 90 percent of the maximum dry density as determined by ASTM D-1557 and the minimum slope requirements should be followed. Backfill beneath structures should be compacted to at least 95 percent of the maximum dry density.

(5) Grading should be such that surface water is directed away from all cut and fill slopes and collected only in channels protected against erosion. Water should not be allowed to pond on-site.

(6) Unless roof runoff falls on impervious surfaces such as asphalt or concrete that are sloped away from the building for a distance of 10 feet, roof runoff should be collected and discharged well outside of the foundation backfill limits.

It should be emphasized that final grading and landscaping generally occurs after construction of the structure and observation of these features is outside of normal geotechnical inspection and observation. The owner/contractor is responsible to ensure that these surface drainage and moisture control recommendations are followed throughout the life of the structure.

12.0 SOIL CORROSIVITY

Soils from the project site were tested for water-soluble sulfates content. The percent of water-soluble sulfates in the soil is 0.55 which is considered “severe” according to ACI 318. We recommend that concrete mixes used on the project be designed in accordance with ACI 318 Table 19.3.1.1 for Sulfate Exposure Class S2. We recommend that buried pipes be plastic (PVC or HDPE) instead of metal, where possible.

13.0 FOUNDATION REVIEW AND TESTING

This report has been prepared to assist in project design and construction. Variations from the conditions portrayed in the exploratory investigations may occur which are sometimes sufficient to require modifications to the design. In order to incorporate recommendations provided into actual field conditions and to confirm that the project specifications are implemented, we recommend that observation and testing be performed during construction to monitor over-

excavation, grading, and preparation of soils upon which foundations elements or structural loads may be established.

14.0 LIMITATIONS

The exploratory data presented in this report were collected to provide geotechnical design recommendations for this project and subsurface site descriptions represent conditions observed at the time and at the locations explored. The investigations may not be indicative of subsurface conditions beyond the investigation location and conditions may change with passage of time. If subsurface conditions are encountered that are significantly different than those reported herein, Landmark should be contacted immediately for the continued applicability of the recommendations. In the event changes to the project are made that differ from those presented in this report, Landmark should be made aware of the changes. Landmark will provide written verification that the recommendations and conclusions remain valid or that modifications are required.

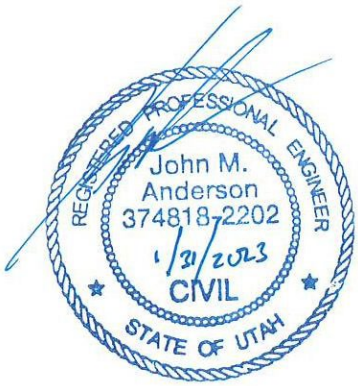
This report has been prepared to assist in project design and construction. We respectfully request the opportunity to review the final design drawings and specifications in order to determine whether the assumptions and recommendations presented herein are applicable to the anticipated designs.

This report is not intended to be used as the sole bid document. Any information concerning the environmental conditions of the site is beyond the scope of this geotechnical study. This geotechnical report has been prepared to meet the specific needs of our client and may not be appropriate to satisfy the needs of other users.

Site conditions and standards of practice change, therefore, we should be notified to review and update the report and its recommendations if construction is not commenced within 3 years of the date it was issued.

LANDMARK TESTING & ENGINEERING

Reviewed by:



John M. Anderson, P.E.
Project Engineer

Kent Nelson, P.E.
Project Engineer

APPENDIX A

Field Investigation

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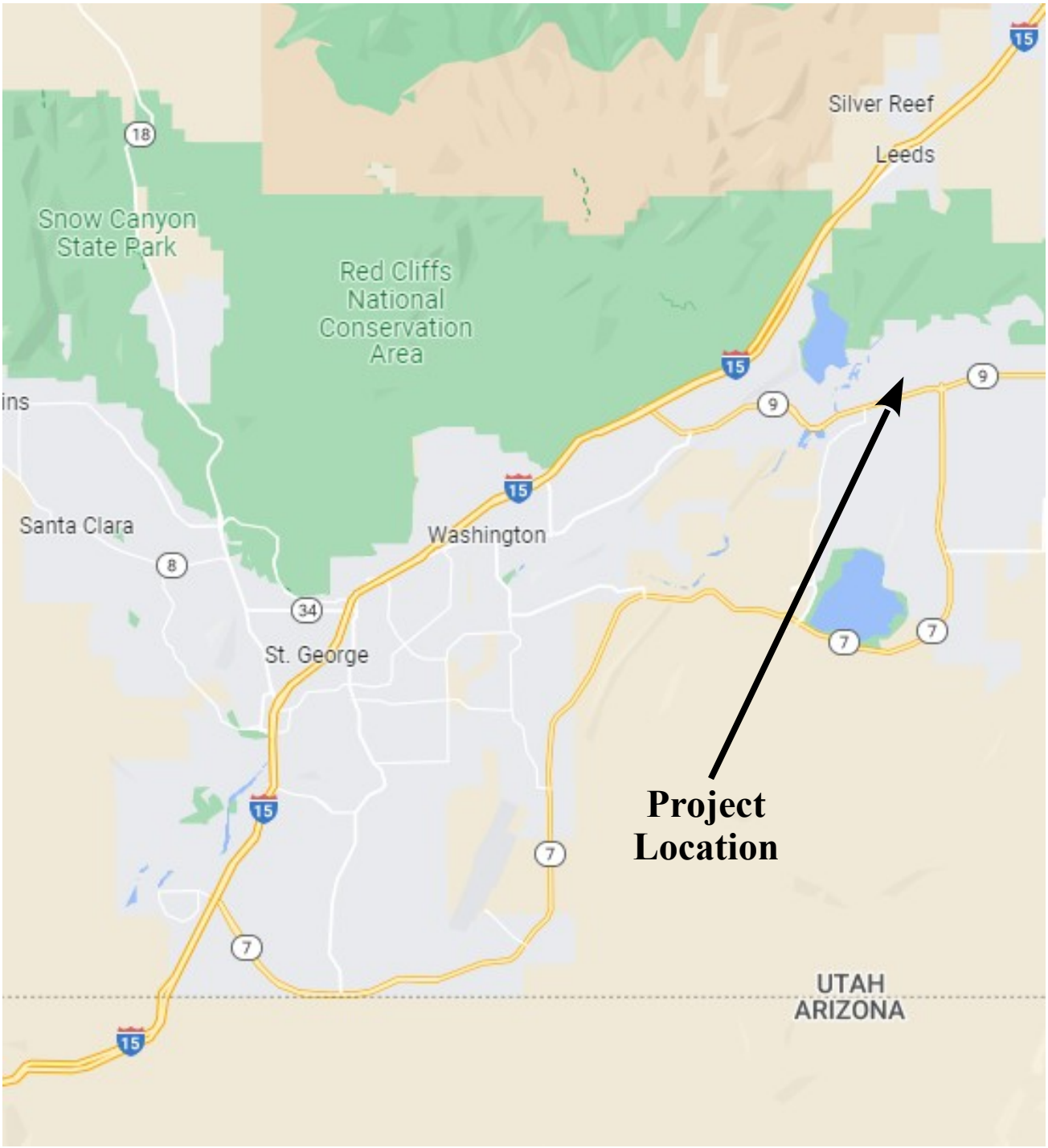

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Vicinity Map

Landmark Project No 220849

Figure A-1

LANDMARK TESTING & ENGINEERING

Site Plan

Landmark Project No 220849

Figure A-2

TEST PIT NUMBER TP-1

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), medium dense, slightly moist to moist, fine to medium grained sand with gravel, cobble, and boulders, fine roots to a depth of at least 1.5 feet, brown.								

Refusal on Basalt boulders.
Bottom of test pit at 1.5 feet.

TEST PIT NUMBER TP-2

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), medium dense, moist, fine to medium grained sand with subangular to subround gravel, fine roots to a depth of at least 4 feet, brown.								
		1	SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist, fine to coarse grained sand with gravel, cobble, and boulders, light brown.		3.5			32	49	19	

Refusal on Basalt boulders.
Bottom of test pit at 4.0 feet.

LANDMARK TESTING & ENGINEERING
Landmark Testing & Engineering
795 Factory Drive
St. Geoge, UT 84790
Telephone: 435-986-0566

PROJECT NAME Hurricane Mixed-Use Development
CLIENT Steward Land Company
PROJECT NUMBER 220849
PROJECT LOCATION Hurricane, Utah

Figure No. A-3

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

TEST PIT NUMBER TP-3

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION** _____

LOGGED BY Michael Meyers **CHECKED BY** _____ **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND (SM), loose, slightly moist, fine to medium grained sand, with roots up to 1/2-inch diameter to a depth of 2 feet, brown to red brown.								
			CALICHE: SILTY SAND WITH GRAVEL (SM), dense, slightly moist, fine to coarse with gravel, cobble, and boulders, weakly cemented Caliche, light brown to white.								

Refusal on Caliche and Basalt boulders.
Bottom of test pit at 3.0 feet.

TEST PIT NUMBER TP-4

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION** _____

LOGGED BY Michael Meyers **CHECKED BY** _____ **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND (SM), loose, slightly moist to moist, fine to medium grained sand with subangular to subround gravel, with 1/2-inch diameter roots to a depth of 1.5 feet, brown to red brown.								
			SILTY SAND WITH GRAVEL (SM), dense, slightly moist, fine to medium grained sand with gravel, cobble, and boulders, brown to light brown.								

Refusal on Basalt bedrock.
Bottom of test pit at 3.0 feet.

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Telephone: 435-986-0566

PROJECT NAME Hurricane Mixed-Use Development
CLIENT Steward Land Company
PROJECT NUMBER 220849
PROJECT LOCATION Hurricane, Utah

Figure No. A-4

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

TEST PIT NUMBER TP-5

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist to moist, fine to medium grained sand with gravel, cobble, and boulders, with roots 1/4-inch in diameter to a depth of 2 feet, brown to red brown.								

Refusal on Basalt boulders.
Bottom of test pit at 3.0 feet.

TEST PIT NUMBER TP-6

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), loose, slightly moist to moist, fine to medium grained sand with gravel, cobble, and boulders, with fine roots to a depth of at least one foot, brown to red brown.								

Refusal on Basalt bedrock.
Bottom of test pit at 1.0 feet.

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Telephone: 435-986-0566

PROJECT NAME Hurricane Mixed-Use Development
CLIENT Steward Land Company
PROJECT NUMBER 220849
PROJECT LOCATION Hurricane, Utah

Figure No. A-5

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

TEST PIT NUMBER TP-7

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND (SM), loose to medium dense, slightly moist to moist, fine to medium grained sand with gravel and cobble, with fine roots to a depth of 2 feet, brown to red brown.								
			SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist, fine to medium grained sand with gravel, cobble, and boulders, brown to light brown.								

Refusal on Basalt bedrock.
Bottom of test pit at 2.5 feet.

TEST PIT NUMBER TP-8

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), loose, slightly moist to moist, fine to medium grained sand with gravel, cobble, and boulders, with roots up to 1/4-inch in diameter to a depth of 2 feet, brown to red brown.								

Refusal on Basalt boulders.
Bottom of test pit at 3.0 feet.

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Landmark Testing & Engineering
795 Factory Drive
St. Geoge, UT 84790
Telephone: 435-986-0566

PROJECT NAME Hurricane Mixed-Use Development
CLIENT Steward Land Company
PROJECT NUMBER 220849
PROJECT LOCATION Hurricane, Utah

Figure No. A-6

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

TEST PIT NUMBER TP-9

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), loose, moist, fine to medium grained sand with gravel, cobble, and boulders, with fine roots to a depth of at least 1 foot, brown.								

Refusal on Basalt bedrock.
Bottom of test pit at 1.0 feet.

TEST PIT NUMBER TP-10

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist to moist, fine to medium grained sand with gravel, cobble, and boulders, with roots up to 1/4-inch in diameter to a depth of 1 feet, brown to red brown.								

Refusal on Basalt boulders.
Bottom of test pit at 2.0 feet.

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PROJECT NAME Hurricane Mixed-Use Development
CLIENT Steward Land Company
PROJECT NUMBER 220849
PROJECT LOCATION Hurricane, Utah

Figure No. A-7

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

TEST PIT NUMBER TP-11

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND (SM), loose to medium dense, slightly moist to moist, fine to medium grained sand, with fine roots to a depth of 5 feet, brown to red brown.								
		1	SILTY SAND (SM), medium dense, slightly moist, fine to medium grained sand, with pea-sized, subround cobble, with pinhole voids up to 1/4-inch in diameter to a depth of 5 feet, brown to light brown.		2.3			5	69	26	
5			SILTY SAND WITH GRAVEL (SM), dense, slightly moist, fine to coarse grained sand, light brown.								

Refusal on Basalt bedrock.

Bottom of test pit at 5.5 feet.

TEST PIT NUMBER TP-12

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND (SM), loose to medium dense, slightly moist to moist, fine to medium grained sand with gravel, with roots up to 1/4-inch in diameter to a depth of 2 feet, brown to light brown.								
		1			9.2			3	74	23	
			CALICHE: SILTY SAND WITH GRAVEL (SM), weak to moderately cemented, slightly moist, fine to medium grained sand with gravel, cobble, and boulders, light brown.								

Refusal on Basalt bedrock.

Bottom of test pit at 3.0 feet.

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PROJECT NAME Hurricane Mixed-Use Development

CLIENT Steward Land Company

PROJECT NUMBER 220849

PROJECT LOCATION Hurricane, Utah

Figure No. A-8

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

TEST PIT NUMBER TP-13

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION** _____

LOGGED BY Michael Meyers **CHECKED BY** _____ **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist to moist, fine to medium grained sand with gravel, cobble, and boulders, with fine roots to a depth of 1 foot, brown to red brown.								
			CALICHE: SILTY SAND (SM), weakly cemented, slightly moist, fine to medium grained sand with gravel, cobble, and boulders, light brown.								

Refusal on Caliche and Basalt boulders.
Bottom of test pit at 2.5 feet.

TEST PIT NUMBER TP-14

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION** _____

LOGGED BY Michael Meyers **CHECKED BY** _____ **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES _____

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND (SM), loose to medium dense, slightly moist, fine to medium grained sand, with roots up to 1/4-inch in diameter to a depth of 1.5 feet, brown to red brown.								
		1									Soluble Sulfate = 0.55%
			SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist, fine to medium grained sand with subangular to subround gravel, cobble, and boulders, with fine roots to at least 4.5 feet, light brown.								
		2			4.3			24	56	20	

Refusal on Basalt bedrock.
Bottom of test pit at 4.5 feet.

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Telephone: 435-986-0566

PROJECT NAME Hurricane Mixed-Use Development
CLIENT Steward Land Company
PROJECT NUMBER 220849
PROJECT LOCATION Hurricane, Utah

Figure No. A-9

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

TEST PIT NUMBER TP-15

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND (SM), loose to medium dense, slightly moist to moist, fine to medium grained sand with gravel, roots up to 1/4-inch in diameter to a depth of 3 feet, brown to red brown.								
		1	SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist, fine to coarse grained sand with subangular to subround gravel, with fine roots to a depth of 4 feet, light brown.								
			with cobble and boulders.								

Refusal on Basalt bedrock.
Bottom of test pit at 4.5 feet.

TEST PIT NUMBER TP-16

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist to moist, fine to medium grained sand, with roots up to 1/4-inch in diameter to a depth of 1 foot, brown to red brown.								
			CALICHE: SILTY SAND WITH GRAVEL (SM), moderately cemented, slightly moist, fine to medium grained sand, white.								

Refusal on Caliche and Basalt boulders.
Bottom of test pit at 2.5 feet.

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PROJECT NAME Hurricane Mixed-Use Development
CLIENT Steward Land Company
PROJECT NUMBER 220849
PROJECT LOCATION Hurricane, Utah

Figure No. A-10

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

TEST PIT NUMBER TP-17

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist to moist, fine to medium grained sand with gravel, cobble, and boulders, with roots up to 1/4-inch in diameter to a depth of at least 2 feet, brown to red brown.								

Refusal on Basalt boulders.
Bottom of test pit at 2.0 feet.

TEST PIT NUMBER TP-18

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0		B 1	SILTY SAND (SM), loose, slightly moist, fine to medium grained sand, with fine roots to a depth of 3.5 feet, brown to light brown.								CBR = 72 Modified Proctor 127.3 pcf @ 9.5%
		2	SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist, fine to medium grained sand with gravel, cobble, and boulders, light brown.		2.2			12	63	25	

Refusal on Basalt bedrock.
Bottom of test pit at 4.5 feet.

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St. Geoge, UT 84790
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PROJECT NAME Hurricane Mixed-Use Development
CLIENT Steward Land Company
PROJECT NUMBER 220849
PROJECT LOCATION Hurricane, Utah

Figure No. A-11

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

TEST PIT NUMBER TP-19

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND WITH GRAVEL (SM), medium dense, slightly moist to moist, fine to medium grained sand with subangular to subround gravel, cobble, and boulders, brown to red brown. Gravel, cobble, and boulder population increases with depth.								

Refusal on Basalt boulders.
Bottom of test pit at 2.5 feet.

TEST PIT NUMBER TP-20

DATE STARTED 1/5/23 **COMPLETED** 1/5/23 **EXCAVATION COMPANY** Trever Jensen **ELEVATION**

LOGGED BY Michael Meyers **CHECKED BY** **EXCAVATION METHOD** Bobcat 341 Mini-ex

NOTES

DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE NUMBER	MATERIAL DESCRIPTION	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	MECHANICAL GRADATION: GRAVEL (%)	MECHANICAL GRADATION: SAND (%)	MECHANICAL GRADATION: FINES (%)	Other Tests
0			SILTY SAND (SM), loose, slightly moist o moist, fine to medium grained sand, with roots up to 1/2-inch in diameter to a depth of 2 feet, brown to red brown.								
		1			8.9			3	74	23	
		2	SILTY SAND WITH GRAVEL (SM), medium dense to dense, slightly moist to moist, fine to medium grained sand with gravel, cobble, and boulders, weakly plastic, brown to light brown.		11.5	20	7	42	38	20	

Refusal on Basalt bedrock.
Bottom of test pit at 4.5 feet.

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PROJECT NAME Hurricane Mixed-Use Development
CLIENT Steward Land Company
PROJECT NUMBER 220849
PROJECT LOCATION Hurricane, Utah

Figure No. A-12

LANDMARK 2 TEST PITS - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS (More than 50% of soil Retained on No. 200 sieve size)	**GRAVELS** More than 1/2 of coarse fraction > No.4 sieve size	**GW**	Well graded gravels or gravel-sand mixtures little or no fines.
		GP	Poorly graded gravels or gravel-sand mixtures little or no fines.
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS More than 1/2 of coarse fraction < No.4 sieve size	**SW**	Well graded sands or gravelly sand mixtures little or no fines.
		SP	Poorly graded sands or gravelly sand mixtures little or no fines.
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (Less than 50% of soil Retained on No. 200 sieve size)	**SILTS & CLAYS** Liquid Limit < 50	**ML**	Inorganic silts and very fine sands, rock flour, silty fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		OL	Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS Liquid Limit > 50	**MH**	Inorganic silts, micaceous of diatomaceous fine sand or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS		**PT**	Peat and other highly organic soils

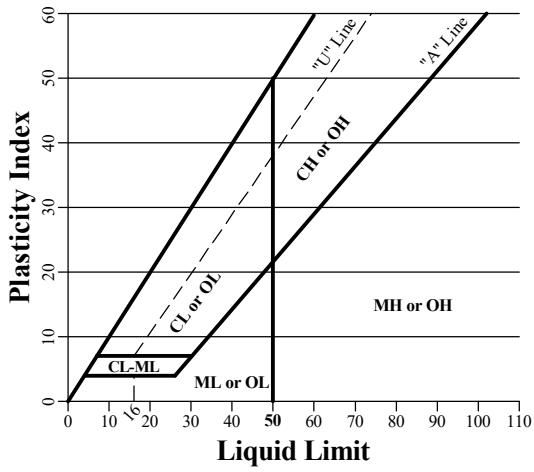
GRAIN SIZE CHART

CLASSIFICATION	Range of Grain Size: U.S. Standard Sieve Size	Range of Grain Size: Grain Size in Millimeters
BOULDERS	**Above 12"**	**Above 305**
COBBLES	**12" to 3"**	**305 to 76.2**
GRAVEL	**3" to No. 4**	**76.2 to 4.76**
Coarse	3" to 3/4"	76.2 to 19.1
Fine	3/4" to No. 4	19.1 to 4.76
SAND	**No. 4 to No. 200**	**4.76 to 0.074**
Coarse	No. 4 to No. 10	4.76 to 2.00
Medium	No. 10 to No. 40	2.00 to 0.42
Fine	No. 40 to No. 200	0.420 to 0.074
SILT & CLAY	Below No. 200	Below 0.074

SAMPLES

- Relatively Undisturbed Sample
- Block Sample
- Bag Sample
- Auger Cuttings
- Bucket Sample
- Core
- No Recovery

PLASTICITY CURVE



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PROJECT NAME Hurricane Mixed-Use Development
CLIENT Steward Land Company
PROJECT NUMBER 220849
PROJECT LOCATION Hurricane, Utah

Figure No. A-13

USCS SUMMARY - LANDMARK NEW.GDT - 1/24/23 10:15 - P:\PROJECTS\22 PROJECTS\220849\GEOTECH\REPORT\220849 - HURRICANE MIXED-USE.GPJ

APPENDIX B

Laboratory Test Results

SUMMARY OF LABORATORY TEST RESULTS

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 1/20/2023

Project: Hurricane Mixed-Use

Project #: 220849

Location: St George, Utah

Boring / Test Pit Number	Depth Below Ground Surface (ft)	Moisture Content (%)	In-Place Dry Desnity (pcf)	Mechanical Gradation			Atterberg Limits		Swell-Consolidation Swell/Collapse @ Wetting Load (S/C @ psf)	Modified Proctor / CBR			Percent Finer Than 0.02 mm (%)	Unconfined Compressive Strength (psf)	Sooluble Sulfate Content (%)	USCS Group Symbol	AASHTO Soil Classification
				Gravel (%)	Sand (%)	Fines (%)	Liquid Limit	Plasticity Index		Maximum Dry Density (pcf)	Optimum Moisture Content (%)	CBR Value					
TP2	2.5'	3.5		32.0	48.6	19.4										SM	A-2-4(0)
TP11	3.0'	2.3		5.0	69.3	25.7										SM	A-2-4(0)
TP12	1.5'	9.2		3.0	73.6	23.4										SM	A-2-4(0)
TP14	1.0'														0.55	SM	A-2-4(0)
	3.0'	4.3		24.0	55.5	20.5										SM	A-2-4(0)
TP18	Bulk									127.3	9.5	72				GM	A-1-b
	3.5'	2.2		12.0	62.6	25.4										SM	A-2-4(0)
TP20	2.0'	8.9		3.0	73.6	23.4										SM	A-2-4(0)
	4.0'	11.5		42.0	37.9	20.1	20	7								GC-GM	A-2-4(0)

TABLE B-1

PROCTOR REPORT

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 1/9/2023
Reviewed By:
Lab#: 23SG0097

Project: Hurricane Mixed-Use **Project #:** 220849
Location: Hurricane **Sampled By:** M. Meyers **Date:** 1/5/2023
Type of Sample: Red SIlty Sand with Clay and Gravel **Tested By:** M. Wells **Date:** 1/7/2023
Location of Sample: Test Pit 18 at 2-4' **Authorized By:** Client **Date:** 1/5/2023

Proctor Data	
Hammer Weight:	10 pounds
Hammer Drop:	18 inches
Number of Layers:	5 layers
Blows per Layer:	56 blows
Mold Size (cu. Ft.):	0.075
% Oversized:	9.8
Oversize Sp. G.:	2.26
ZAV Sp. G.:	2.59
Test Performed on Material Passing:	3/4 in.Sieve

Point	1	2	3	4	5	6
% Moisture	6.0	7.9	9.7	11.9		
Dry Density	122.4	125.9	127.2	121.7		

Correction applied to each point.

Test Results	
Maximum Dry Density, Lbs/ft^3	**127.3**
Optimum Moisture, %	**9.5**
Test Standard	**ASTM D 1557**
Method	**Method C**

FIGURE B-1

795 East Factory Drive, St. George, UT 84790 • Phone: (435) 986-0566 • Fax: (435) 986-0568

CALIFORNIA BEARING RATIO

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 1/16/2023
Reviewed By: Z. Girsberger
Lab#: 23SG0097

Project: Hurricane Mixed-Use **Project #:** 220849
Location: Hurricane **Sampled By:** M. Meyers **Date:** 1/5/2023
Type of Sample: Red Brown Silty Sand with Clay and Gravel **Tested By:** J. Wells **Date:** 1/9/2023
Location of Sample: Test Pit 18 at 2-4' **Authorized By:** Client **Date:** 1/5/2023

SOIL DATA		
Max. Dry Density:	127.3	<
Optimum Moisture:	9.5	<
Test Standard	ASTM D 1557	
% +3/4" Replaced	9.8	<

CBR RESULTS	
0.10 in. penetration:	68.9
0.20 in. penetration:	73.8
0.30 in. penetration:	71.6
0.40 in penetration:	Not Tested
0.50 in penetration:	Not Tested

CALIFORNIA BEARING RATIO, ASTM D 1883			
MOLDED		SOAKED	
% Moisture Before:	9.3	Average % Moisture:	9.4
% Moisture After:	9.2	Top 1" % Moisture:	9.4
Dry Density:	126.7	Dry Density:	126.6
% of Max. Density:	99.5	% of Max. Density:	99.5
# Blows / Lift:	56 / 5	Percent Swell:	0.1
Surcharge, lbs:	10	Linearity Correction:	0.008

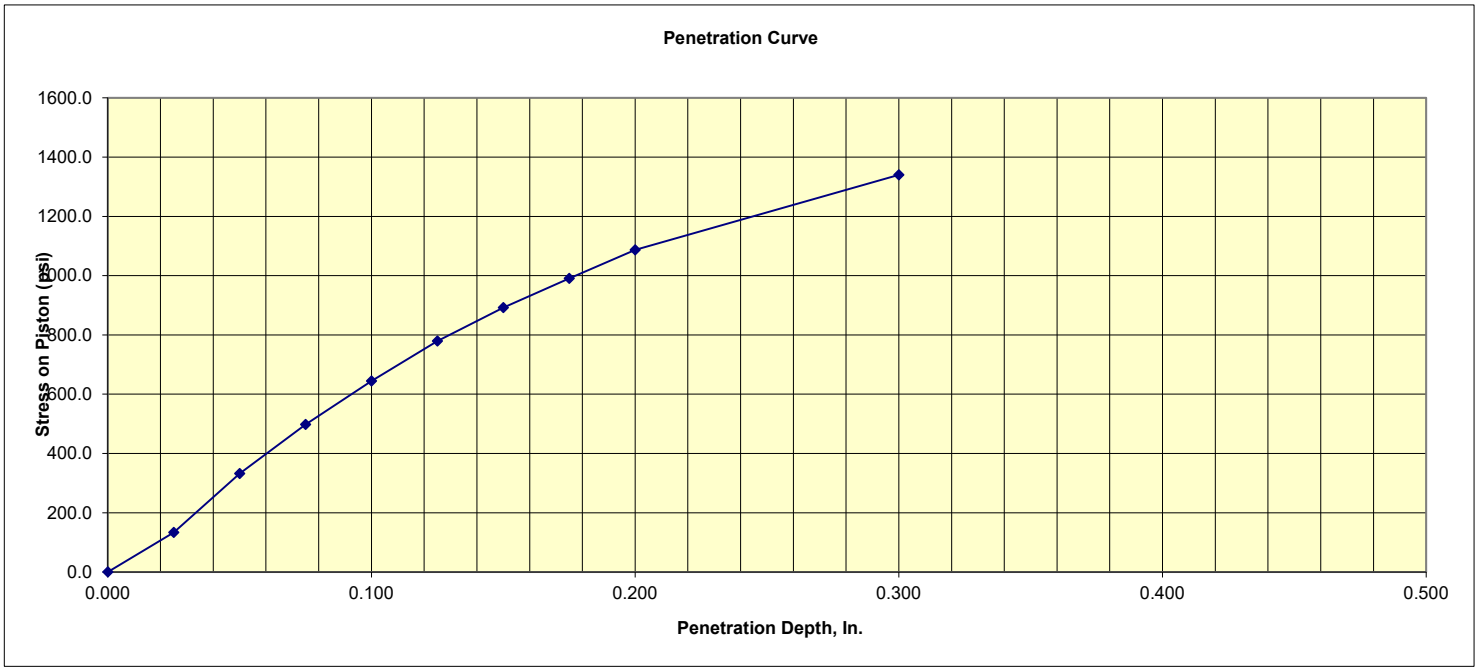


FIGURE B-2

SOIL CLASSIFICATION REPORT

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 1/13/2023
Reviewed By: Z. Girsberger
Lab#: 23SG0091

Project: Hurricane Mixed-Use **Project #:** 220849
Location: Hurricane **Sampled By:** M. Meyers **Date:** 1/5/2023
Type of Sample: Brown Silty Sand with Gravel **Tested By:** A. Pay **Date:** 1/11/2023
Location of Sample: Test Pit 2 at 2.5' **Authorized By:** Client **Date:** 1/5/2023

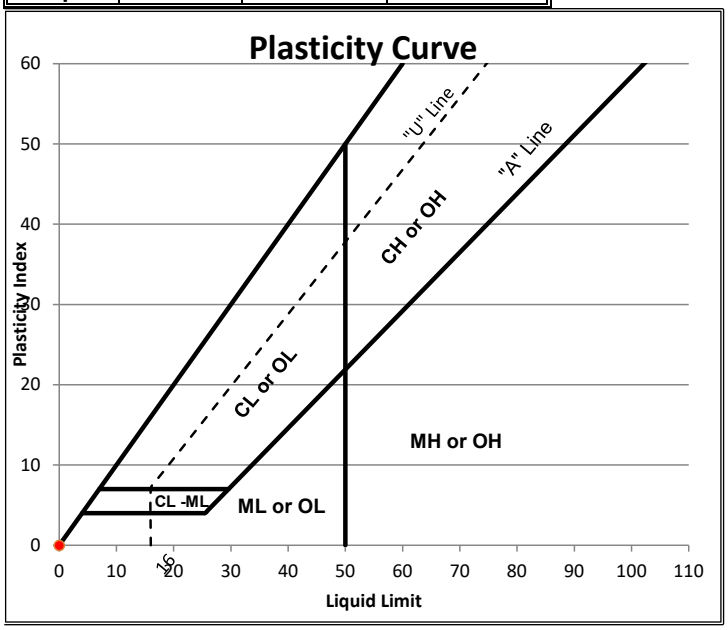
Sieve Analysis , ASTM C136 and C117

Sieve Size		% Passing Cumulative	Specification
150 mm	6"		
75 mm	3"		
50 mm	2"		
37.5 mm	1-1/2"	100	
25 mm	1"	93	
19 mm	3/4"	91	
12.5 mm	1/2"	77	
9.5 mm	3/8"	73	
4.75 mm	#4	68	
2.00 mm	#10	64	
1.18 mm	#16	63	
425 µm	#40	62	
300 µm	#50	59	
75 µm	#200	19.4	

Test	Result	Specification	Test Standard
Natural Moisture Content, %	3.5		ASTM D 2216
Liquid Limit			ASTM D 4318
Plasticity Index			ASTM D 4318
Unified Classification System			ASTM D 2487
AASHTO Classification System			AASHTO M145

% Cobble > 3"	% Gravel < 3" - #4	% Sand < #4 - #200	% Silt-Clay < #200
0.0	32.0	48.6	19.4

Diameter D_{60}	Diameter D_{30}	Diameter D_{10}	Coefficient of Uniformity, C_U	Coefficient of Concavity, C_C



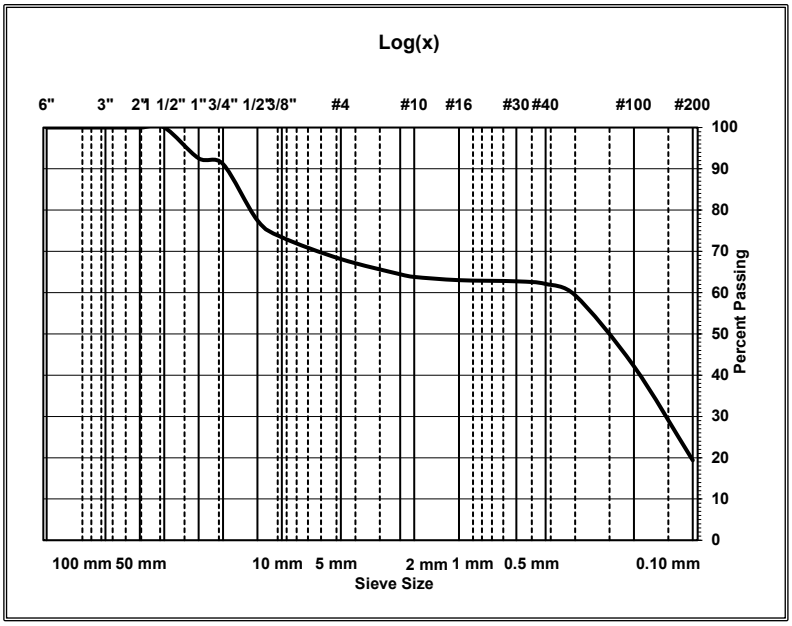


FIGURE B-3

SOIL CLASSIFICATION REPORT

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 1/16/2023
Reviewed By: Z. Girsberger
Lab#: 23SG0092

Project: Hurricane Mixed-Use **Project #:** 220849
Location: Hurricane **Sampled By:** M. Meyers **Date:** 1/5/2023
Type of Sample: Brown Silty Sand **Tested By:** B. Ingram **Date:** 1/13/2023
Location of Sample: Test Pit 11 at 3' **Authorized By:** Client **Date:** 1/5/2023

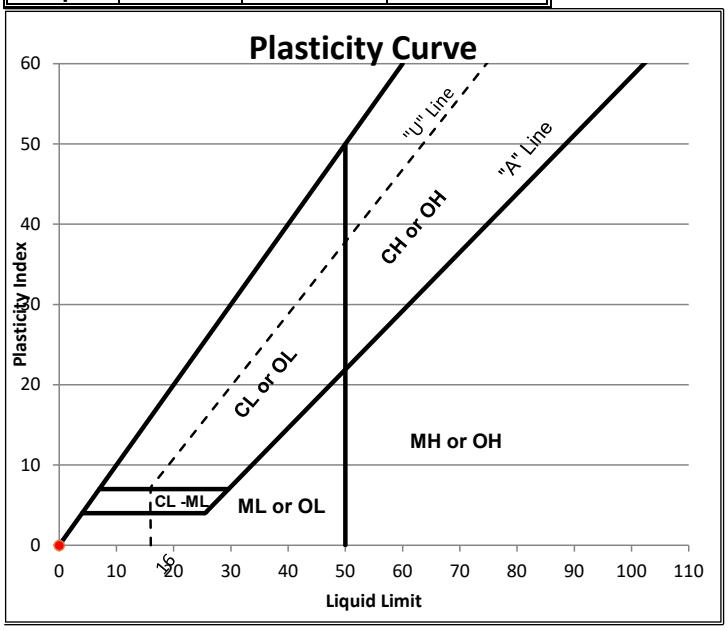
Sieve Analysis , ASTM C136 and C117

Sieve Size		% Passing Cumulative	Specification
150 mm	6"		
75 mm	3"		
50 mm	2"		
37.5 mm	1-1/2"		
25 mm	1"	100	
19 mm	3/4"	97	
12.5 mm	1/2"	96	
9.5 mm	3/8"	95	
4.75 mm	#4	95	
2.00 mm	#10	94	
1.18 mm	#16	94	
425 µm	#40	93	
300 µm	#50	92	
75 µm	#200	25.7	

Test	Result	Specification	Test Standard
Natural Moisture Content, %	2.3		ASTM D 2216
Liquid Limit			ASTM D 4318
Plasticity Index			ASTM D 4318
Unified Classification System			ASTM D 2487
AASHTO Classification System			AASHTO M145

% Cobble > 3"	% Gravel < 3" - #4	% Sand < #4 - #200	% Silt-Clay < #200
0.0	5.0	69.3	25.7

Diameter D_{60}	Diameter D_{30}	Diameter D_{10}	Coefficient of Uniformity, C_U	Coefficient of Concavity, C_C



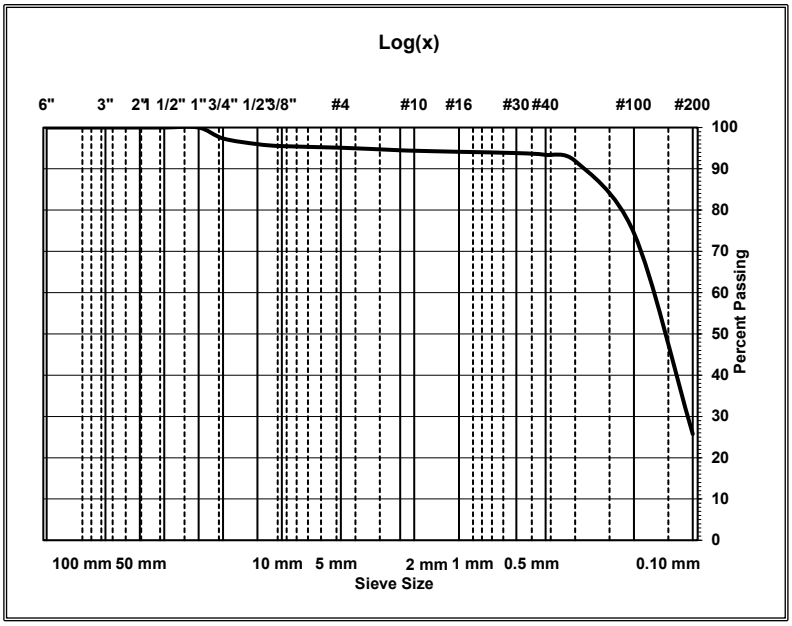


FIGURE B-4

SOIL CLASSIFICATION REPORT

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 1/16/2023
Reviewed By: Z. Girsberger
Lab#: 23SG0093

Project: Hurricane Mixed-Use **Project #:** 220849
Location: Hurricane **Sampled By:** M Meyers **Date:** 1/5/2023
Type of Sample: Brown Silty Sand **Tested By:** B. Ingram **Date:** 1/13/2023
Location of Sample: Test Pit 12 at 1.5' **Authorized By:** Client **Date:** 1/5/2023

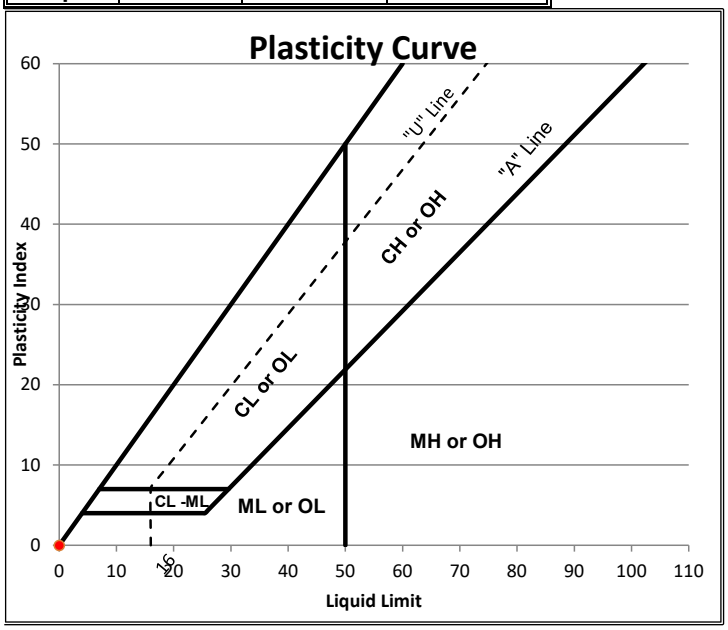
Sieve Analysis , ASTM C136 and C117

Sieve Size		% Passing Cumulative	Specification
150 mm	6"		
75 mm	3"		
50 mm	2"		
37.5 mm	1-1/2"		
25 mm	1"	100	
19 mm	3/4"	98	
12.5 mm	1/2"	98	
9.5 mm	3/8"	98	
4.75 mm	#4	97	
2.00 mm	#10	96	
1.18 mm	#16	96	
425 µm	#40	95	
300 µm	#50	94	
75 µm	#200	23.4	

Test	Result	Specification	Test Standard
Natural Moisture Content, %	9.2		ASTM D 2216
Liquid Limit			ASTM D 4318
Plasticity Index			ASTM D 4318
Unified Classification System			ASTM D 2487
AASHTO Classification System			AASHTO M145

% Cobble > 3"	% Gravel < 3" - #4	% Sand < #4 - #200	% Silt-Clay < #200
0.0	3.0	73.6	23.4

Diameter D_{60}	Diameter D_{30}	Diameter D_{10}	Coefficient of Uniformity, C_U	Coefficient of Concavity, C_C



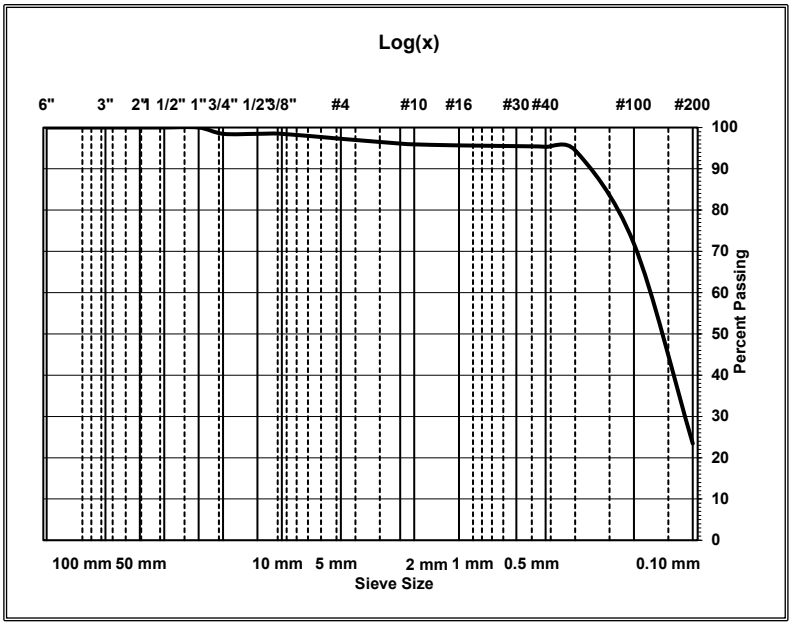


FIGURE B-5

SOIL CLASSIFICATION REPORT

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 11/16/2023
Reviewed By: Z. Girsberger
Lab#: 23SG0095

Project: Hurricane Mixed-Use **Project #:** 220849
Location: Hurricane **Sampled By:** M. Meyers **Date:** 1/5/2023
Type of Sample: Brown Silty Sand with Gravel **Tested By:** A. Pay **Date:** 1/11/2023
Location of Sample: Test Pit 14 at 3' **Authorized By:** Client **Date:** 1/5/2023

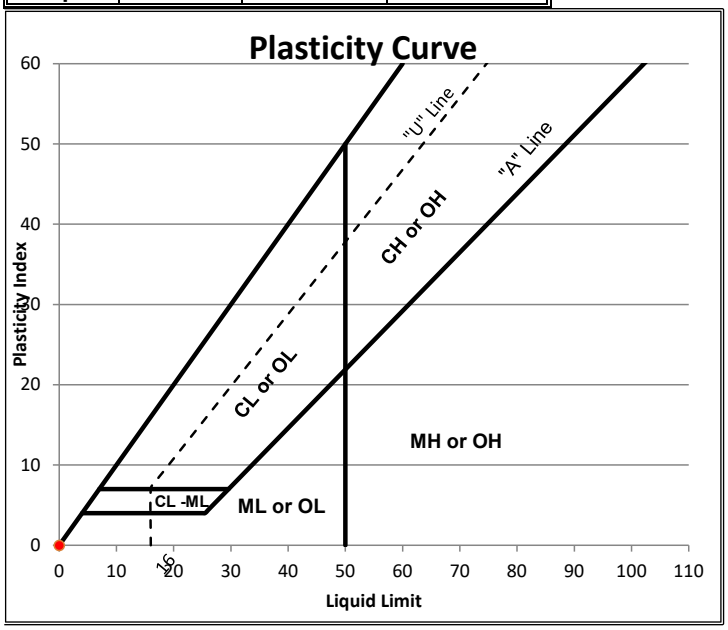
Sieve Analysis , ASTM C136 and C117

Sieve Size		% Passing Cumulative	Specification
150 mm	6"		
75 mm	3"		
50 mm	2"	100	
37.5 mm	1-1/2"	88	
25 mm	1"	85	
19 mm	3/4"	84	
12.5 mm	1/2"	80	
9.5 mm	3/8"	79	
4.75 mm	#4	76	
2.00 mm	#10	73	
1.18 mm	#16	72	
425 µm	#40	72	
300 µm	#50	70	
75 µm	#200	20.5	

Test	Result	Specification	Test Standard
Natural Moisture Content, %	4.3		ASTM D 2216
Liquid Limit			ASTM D 4318
Plasticity Index			ASTM D 4318
Unified Classification System	SM		ASTM D 2487
AASHTO Classification System	A-2-4		AASHTO M145

% Cobble > 3"	% Gravel < 3" - #4	% Sand < #4 - #200	% Silt-Clay < #200
0.0	24.0	55.5	20.5

Diameter D_{60}	Diameter D_{30}	Diameter D_{10}	Coefficient of Uniformity, C_U	Coefficient of Concavity, C_C



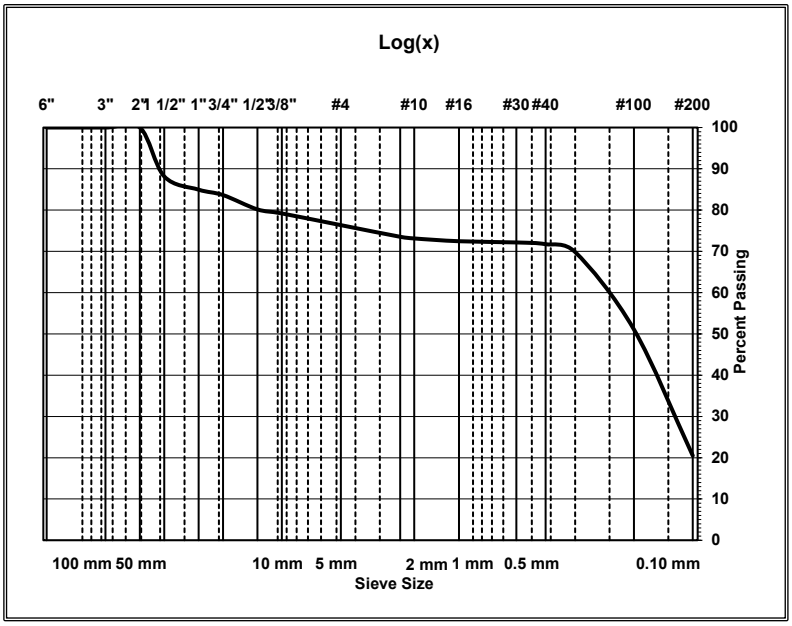


FIGURE B-6

SOIL CLASSIFICATION REPORT

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 1/19/2023
Reviewed By: Z. Girsberger
Lab#: 23SG0098

Project: Hurricane Mixed-Use **Project #:** 220849
Location: Hurricane **Sampled By:** M. Meyers **Date:** 1/5/2023
Type of Sample: Brown Silty Sand **Tested By:** C. Cox **Date:** 1/18/2023
Location of Sample: Test Pit 18 at 3.5' **Authorized By:** Client **Date:** 1/5/2023

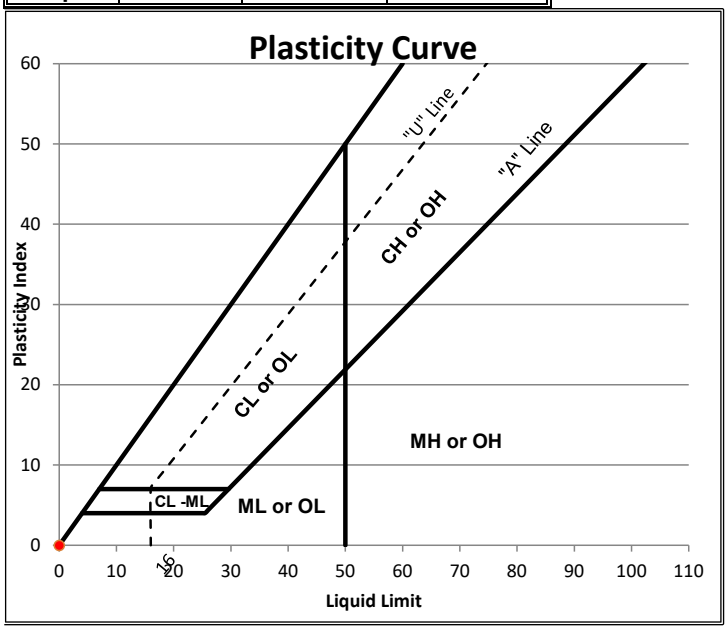
Sieve Analysis , ASTM C136 and C117

Sieve Size		% Passing Cumulative	Specification
150 mm	6"		
75 mm	3"		
50 mm	2"		
37.5 mm	1-1/2"	100	
25 mm	1"	96	
19 mm	3/4"	93	
12.5 mm	1/2"	91	
9.5 mm	3/8"	90	
4.75 mm	#4	88	
2.00 mm	#10	88	
1.18 mm	#16	87	
425 µm	#40	86	
300 µm	#50	85	
75 µm	#200	25.4	

Test	Result	Specification	Test Standard
Natural Moisture Content, %	2.2		ASTM D 2216
Liquid Limit			ASTM D 4318
Plasticity Index			ASTM D 4318
Unified Classification System	SM		ASTM D 2487
AASHTO Classification System	A-2-4		AASHTO M145

% Cobble > 3"	% Gravel < 3" - #4	% Sand < #4 - #200	% Silt-Clay < #200
0.0	12.0	62.6	25.4

Diameter D_{60}	Diameter D_{30}	Diameter D_{10}	Coefficient of Uniformity, C_U	Coefficient of Concavity, C_C



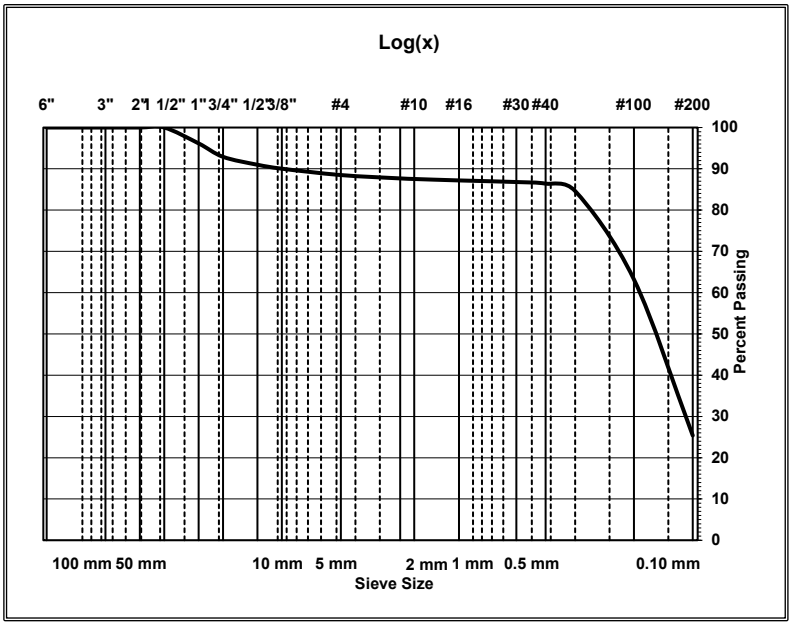


FIGURE B-7

SOIL CLASSIFICATION REPORT

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 1/16/2023
Reviewed By: Z. Girsberger
Lab#: 23SG0099

Project: Hurricane Mixed-Use **Project #:** 220849
Location: Hurricane **Sampled By:** M. Meyers **Date:** 1/5/2023
Type of Sample: Brown Silty Sand **Tested By:** B. Ingram **Date:** 1/13/2023
Location of Sample: Test Pit 20 at 2' **Authorized By:** Client **Date:** 1/5/2023

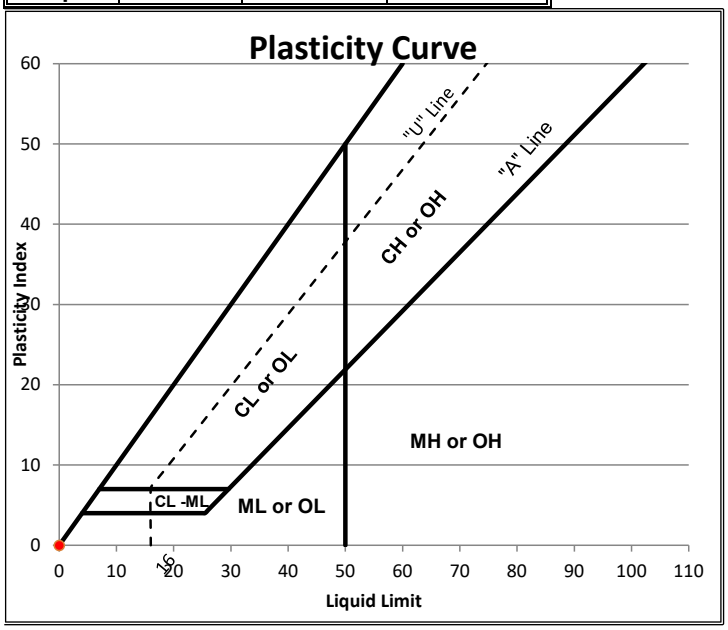
Sieve Analysis , ASTM C136 and C117

Sieve Size		% Passing Cumulative	Specification
150 mm	6"		
75 mm	3"		
50 mm	2"		
37.5 mm	1-1/2"		
25 mm	1"		
19 mm	3/4"	100	
12.5 mm	1/2"	100	
9.5 mm	3/8"	98	
4.75 mm	#4	97	
2.00 mm	#10	97	
1.18 mm	#16	97	
425 µm	#40	96	
300 µm	#50	95	
75 µm	#200	23.4	

Test	Result	Specification	Test Standard
Natural Moisture Content, %	8.9		ASTM D 2216
Liquid Limit			ASTM D 4318
Plasticity Index			ASTM D 4318
Unified Classification System	SM		ASTM D 2487
AASHTO Classification System	A-2-4		AASHTO M145

% Cobble > 3"	% Gravel < 3" - #4	% Sand < #4 - #200	% Silt-Clay < #200
0.0	3.0	73.6	23.4

Diameter D_{60}	Diameter D_{30}	Diameter D_{10}	Coefficient of Uniformity, C_U	Coefficient of Concavity, C_C



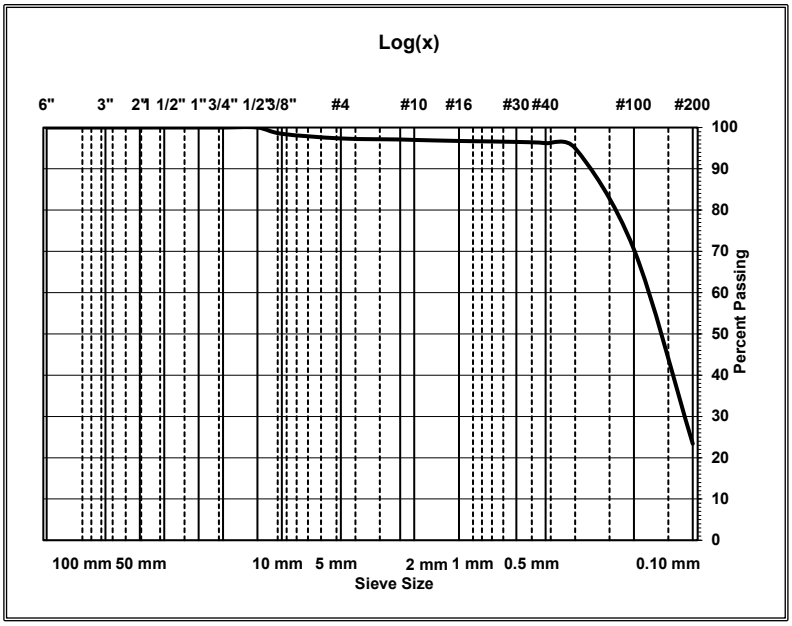


FIGURE B-8

SOIL CLASSIFICATION REPORT

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 1/11/2023
Reviewed By:
Lab#: 23SG0100

Project: Hurricane Mixed-Use **Project #:** 220849
Location: Hurricane **Sampled By:** M. Meyers **Date:** 1/5/2023
Type of Sample: Brown Silty, Clayey Gravel with Sand **Tested By:** P. Twitchell **Date:** 1/6/2023
Location of Sample: Test Pit 20 at 4' **Authorized By:** Client **Date:** 1/5/2023

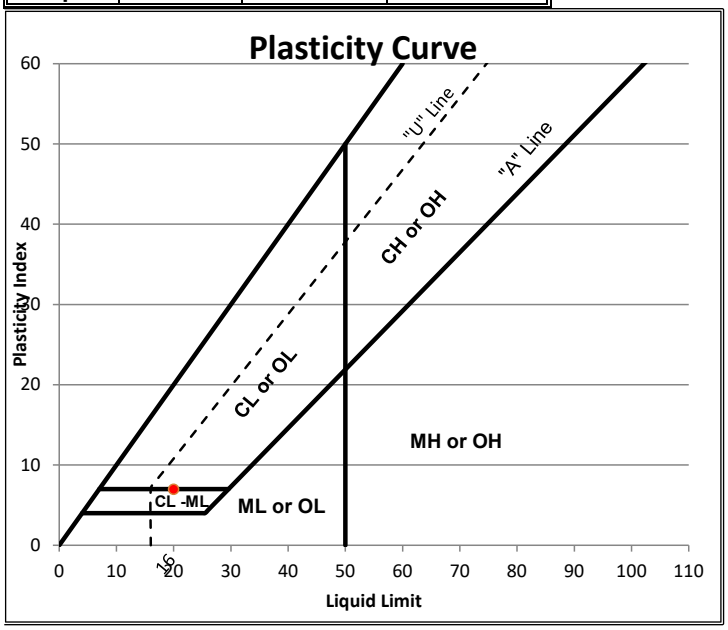
Sieve Analysis , ASTM C136 and C117

Sieve Size		% Passing Cumulative	Specification
150 mm	6"		
75 mm	3"		
50 mm	2"		
37.5 mm	1-1/2"	100	
25 mm	1"	95	
19 mm	3/4"	74	
12.5 mm	1/2"	63	
9.5 mm	3/8"	63	
4.75 mm	#4	58	
2.00 mm	#10	56	
1.18 mm	#16	55	
425 µm	#40	55	
300 µm	#50	54	
75 µm	#200	20.1	

Test	Result	Specification	Test Standard
Natural Moisture Content, %	11.5		ASTM D 2216
Liquid Limit	20		ASTM D 4318
Plasticity Index	7		ASTM D 4318
Unified Classification System	GC-GM		ASTM D 2487
AASHTO Classification System	A-2-4(0)		AASHTO M145

% Cobble > 3"	% Gravel < 3" - #4	% Sand < #4 - #200	% Silt-Clay < #200
0.0	42.0	37.9	20.1

Diameter D_{60}	Diameter D_{30}	Diameter D_{10}	Coefficient of Uniformity, C_U	Coefficient of Concavity, C_C



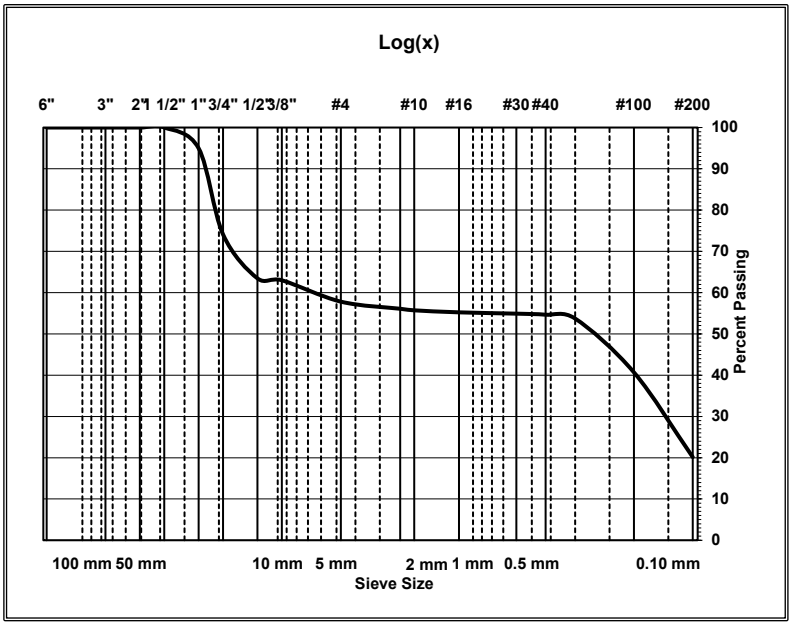


FIGURE B-9

WATER-SOLUBLE SULFATE IN SOIL

Client: Steward Land Company
1708 East 5550 South STE 18
Ogden, UT 84403

Date of Report: 1/19/2023
Reviewed By: Z. Girsberger
Lab#: 23SG0094

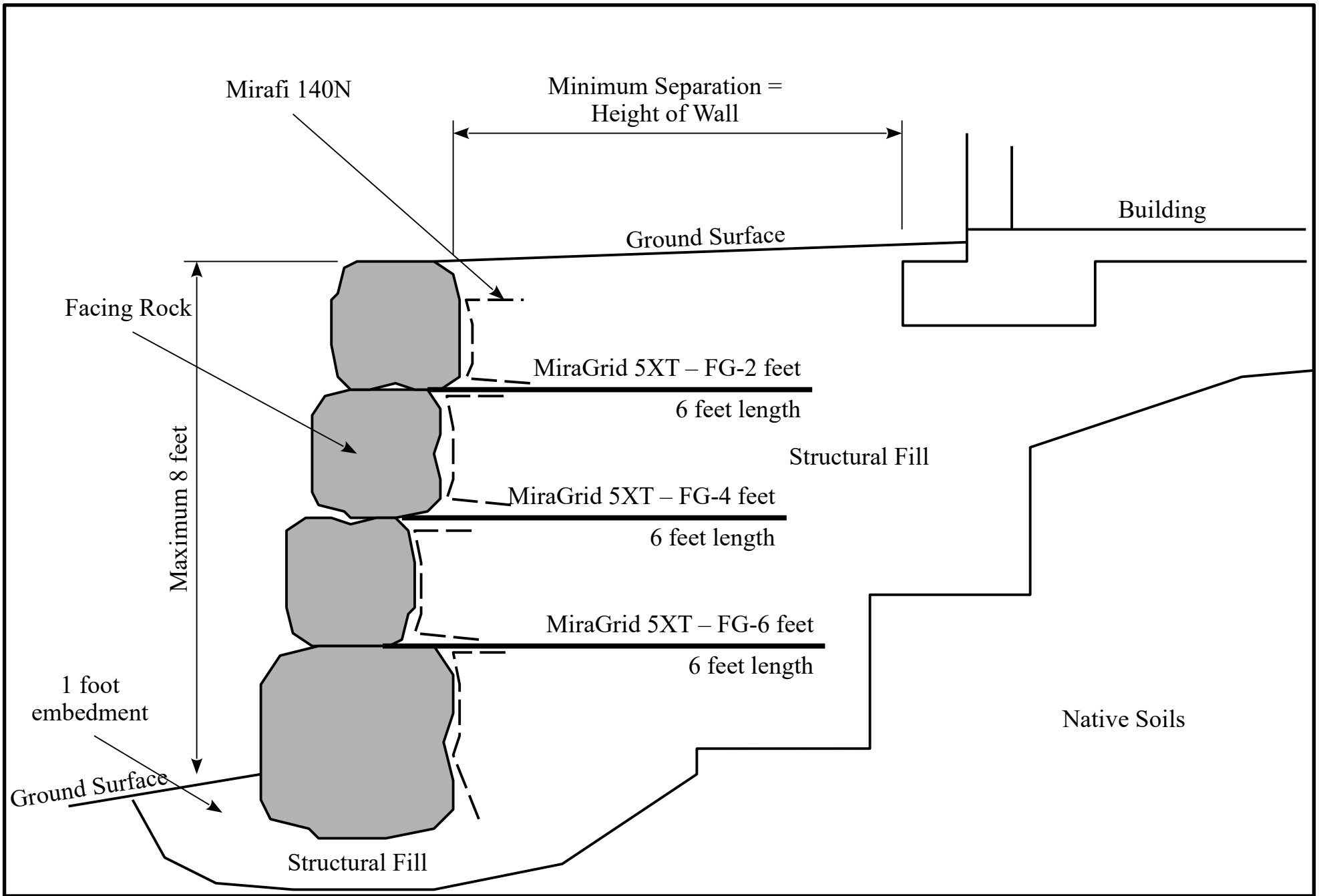
Project: Hurricane Mixed-Use **Project #:** 220849
Location: Hurricane **Sampled By:** M. Meyers **Date:** 1/5/2023
Type of Sample: Brown Silty Sand **Tested By:** A. Pay **Date:** 1/17/2023
Location of Sample: Test Pit 14 at 1' **Authorized By:** Client **Date:** 1/5/2023

Test	Result %	Exposure Class	Test Standard
Percent Water-Soluble Sulfate in Soil	0.55	S2	ASTM C1580

FIGURE B-10

APPENDIX C

Details



LANDMARK TESTING & ENGINEERING

Rockery Wall Detail

Landmark Project No 220849

Figure C-1

PLANNING & ZONING
HURRICANE CITY
UTAH

STAFF COMMENTS

Agenda Date:	**04/11/2024**
Application Number:	
Type of Application:	Land Use Code Amendment
Action Type:	Legislative
Applicant:	Hurricane City
Agent:	
Request:	Amend Title 10 with regards to animal control and kennel standards
Recommendation:	Discussion item
Report Prepared By:	Fred Resch III

Discussion: The Animal Control department is proposing to update provisions within Title 5 of the city ordinance with regards to animal control and related issues. These code amendments will require corresponding land use code updates in Title 10 that will require review and action by the Planning Commission. The proposed changes include increasing the number of dogs allowed without a kennel license to four dogs, which eliminates the need for "residential kennel" licenses that are currently required for a third or fourth dog on residential properties. In effect, four dogs will still be the maximum allowed on residential properties, but now by right without additional licenses or permits.
Currently in our code, commercial kennels are a conditional use in the Neighborhood Commercial, Highway Commercial, and Planned Commercial zones, but there are no corresponding conditions listed in the code to be imposed upon approval of a conditional use permit. Staff is therefore proposing to develop appropriate conditions of approval for commercial kennels, and seeks input from the Planning Commission. Some possible conditions to consider might include: distance of kennels from residential properties, limitations on noise, lighting, climate control, animal waste collection and treatment, maximum allowed number of animals, etc.

Another option would be to eliminate the requirement for a use permit for commercial kennels in commercial zones altogether and allow them as a permitted use.

Recommendation: Staff recommends the Planning Commission consider the revised ordinance. This item is scheduled for public hearing on April 25th, 2024.

CHAPTER 2. ANIMAL CONTROL

Sec. 5-2-1. Division of Animal Control.

A. *Created*. There is hereby created within the Police Department a Division of Animal Control with power to apprehend, take, and impound any animal found in violation of this chapter, including licensable dogs for which no license has been procured in accordance with this chapter, and otherwise carry out and enforce the provisions hereof under the direction and supervision of the Chief of Police. The Director of the Division shall be the Chief of Police, and he may be assisted in his duties by an Animal Control Supervisor and any~~ny~~ peace officer or Animal Control Officers as the Chief may designate.

B. *Duties of officials.*

1. The Chief of Police shall:

   a. Enforce this chapter and perform other responsibilities pursuant thereto.

   b. Supervise the City Animal Control Officers and Animal Shelter under his jurisdiction.

   c. Keep adequate records of all animals Impounded and all monies collected.

   d. Implement and enforce the provisions hereof requiring dogs to be licensed and commercial establishments to have obtained a ~~conditional use permit~~business license as provided by this chapter.

   e. Establish, in cooperation with other interested governmental agencies, adequate measures for rabies immunization and control.

2. Each Animal Control Officer shall:

   a. Enforce this chapter in all respects pertaining to animal control within the jurisdiction, including the care and impounding of animals and prevention of cruelty to animals.

   b. Carry out all duties prescribed or delegated by the Chief of Police.

Sec. 5-2-2. Definitions.

As used in this chapter, unless the context otherwise indicates, the following words shall mean:

~~Abandoned or s~~Strayed means an animal whose Owner cannot be immediately identified through reasonable diligence.

Abandoned means placing an animal in an environment where the animal is denied basic needs such as food, water, necessary shelter, or necessary medical attention, for a period of time exceeding twenty-four (24) hours. Abandoning an animal includes failure to reclaim an animal for seventy-two (72) hours beyond the time agreed upon with any kennel, Groomery, or other similar facility. Abandoning an animal also includes failure to reclaim a pet from an Animal Shelter, or refusal of the animal's Custodian to sign a relinquishment authorization, after seventy-two (72) hours following the shelter's attempt to notify the animal's Custodian of the animal's location.

Animal Control Officer means any person: (1) designated by the State of Utah as a 'law enforcement officer,' as defined in Utah Code Title 53, Chapter 13, as amended or (2) designated by Hurricane City, through the Hurricane Police Department, as an officer who is authorized by law to perform the duties specified by this chapter.~~the custodian selected by the City Council to be responsible for the operation of the dog pound.~~

Animal Shelter means a facility owned and/or operated by ~~a governmental entity or any society incorporated in the state~~ the City for the confinement or care of animals ~~purpose of preventing cruelty to animals and used for the care and custody of~~ seized, Strayed, homeless, Quarantined, or Abandoned. ~~or unwanted dogs, cats, or other small domestic animals.~~

At Large means any Domesticated Animal off the premises of the Owner or Custodian of the animal, and not under immediate control of the Owner or Custodian. In the case of a Dog, immediate control shall mean on a leash, cord, chain, confined within a vehicle or within the direct command of the Owner or Custodian.

Attack means any attempt on the part of an animal, whether successful or not, to Bite or act in any other way that places a person or another animal in danger of or fear of immediate bodily harm. Actual physical contact shall not be required to constitute an Attack.

Bite means an actual puncture, tear or abrasion of the skin inflicted by the teeth of an animal.

~~*Cattery* means an establishment for boarding, breeding, buying, grooming or selling cats for profit.~~

Custodian means any person harboring, keeping, possessing, maintaining, or having charge, care, custody, or control of an animal. Any person permitting any such animal to habitually be on or remain, or be lodged or fed within such person's house, yard, or premises, shall be presumed to be a Custodian of such animal.

Dog means any member of the sub species Canis Lupus Familiaris four (4) months of age or older. Any Canis Lupus Familiaris under four (4) months of ages is a Puppy.~~male, female or spayed female or neutered male dog of any age.~~

Domesticated Animals means animals accustomed to living in or about the habitation of man.

Groomery means any establishment maintained for the purpose of offering cosmetic services for animals for profit.

Impounded means having been received into the custody of the City ~~pound~~ Animal Shelter or into the custody of any authorized agent or representative of the City.

~~*Kennel, c*~~*Commercial* Kennel means a commercial establishment or other facility having three or more dogs for the purpose of boarding, breeding, keeping, buying, selling, grooming, letting for hire or training for a fee.

~~*Kennel, residential* means the keeping or maintaining of more than two but no more than four dogs in connection with the occupation of any dwelling for residential purposes.~~

Owner~~, when applied to the proprietorship of a dog, shall~~ means any person or persons, firm, association, or corporation owning, keeping, or harboring an animal ~~dog~~.

~~*Pet Shop* means any establishment containing cages or exhibition pens, not part of a kennel or cattery, wherein dogs, cats, birds, or other pets for sale are kept or displayed.~~

~~*Pound* means an animal shelter, lot, premises or building maintained by or authorized or employed by the City for confinement or care of dogs seized either under the provision of this chapter or otherwise.~~

Quarantine means the isolation of an animal in a substantial enclosure so that the animal is not subject to contact with other animals or unauthorized persons.

~~*Riding School* or *stable* means an establishment which offers boarding and/or riding instruction for any horse, pony, donkey, mule or burro, or which offers such animals for hire.~~

~~*Unlicensed Dog* means a dog for which a license for the current year has not been paid, or for which the tag provided for in this chapter is not attached.~~

Vicious Animal means any animal, including dogs, which has bitten without provocation or has a known propensity to Attack or Bite.

Wild Animal means any animal of a species that in its natural habitat is wild. Wild Animals, regardless of domestication, include, but are not limited to:

(1) Alligators and crocodiles;

(2) Bears (Ursidae), including Grizzly Bears, Brown Bears, and Black Bears;

(3) Feline family (Felidae), including cheetahs, cougars, leopards, lions, lynx, panthers, mountain lions, tigers, wildcats, etc., but excluding the commonly accepted domesticated house cats;

(4) Dog family (Canidae), including wolves, foxes, coyotes, dingos, etc, but excluding domesticated dogs (Canis Lupus Familiaris);

(5) Porcupine (Erethizontidae);

(6) Primates (Hominidae), including all subhuman primates;

(7) Raccoon (Prosynnidae), including the Eastern Raccoon, Desert Raccoon, and Ringtailed Cat;

(8) Skunks;

(9) Venomous fish and piranhas;

(10) Venomous snakes and lizards; and

~~(1)~~(11) Weasels (Mustelidae), including weasels, martens, wolverines, badgers, otters, mongoose.

Sec. 5-2-3. Dogs; Cats; Rabies Control.

A. *Licensing requirements.*

1. *Limitation on number of dogs allowed.* Except for licensed Commercial Kennels in permitted zones, no person or persons shall, at any one time, own, harbor, board, keep, or license more than four (4) Dogs at any one residence, property, or premises unless otherwise permitted by this Chapter.~~Except for commercial kennels which have been granted a conditional use permit by the Planning Commission, no person or entity shall own, possess, keep or maintain more than four dogs in one location within the City limits. Further, in agricultural, residential-agricultural, single-family residential, multiple-family residential, neighborhood commercial and mobile home zones, no person or entity shall own, possess, keep or maintain more than two dogs unless approved in writing by the animal control officer and the Zoning Administrator.~~

2. *Age of Owner.* Except as provided herein, all Dogs must be licensed each year to a person 18 years of age or older.

3. *Time within which to obtain license.* Any person or entity owning, possessing or harboring any Dog shall obtain a license for such animal within 30 days after the Dog reaches the age of four months, or, in the case of a Dog over four months, within ten days after acquisition of the Dog.

4. *Application for license.*

   a. *General requirements.* New or renewal license applications for all Dogs must be submitted annually to the Division of Animal Control, utilizing a standard form which contains the name, address and telephone number of the applicant; the breed, sex, color and age of the ~~animal~~Dog; ~~the number of animals for which a license is sought; a description of the facilities for the care of the dogs;~~ rabies information; and any other information deemed relevant. The application shall be accompanied by the prescribed license fee and by a current rabies vaccination certificate. Rabies vaccination certificates must be obtained from a licensed veterinarian. First-time rabies vaccinations are valid for one year. After the first rabies vaccination, subsequent vaccinations are valid for ~~every two~~ three years.

Commented [DH1]: Fred is working on revisions to the zoning ordinances to present to Planning Commission for a recommendation to the City Council. References to conditional uses and residential kennels need to be removed. For zones where conditional uses are conditional, need to decide if commercial kennels are permitted or not permitted. Generic references in zoning code to "kennels" need to be changed to "Commercial Kennels." *See* sections 10-12-3; 10-13-3; 10-14-3; 10-15-3; 10-16-3.

b. ~~*More than two in specific zones.* In addition to the requirements of subsection A4a of this section, applications for a license for a third or fourth dog in any area zoned agricultural, residential-agricultural, single-family residential, multiple-family residential, neighborhood commercial or mobile home shall not be approved until such time that a residential kennel license has been approved in writing by the animal control officer and the Zoning Administrator.~~

5. *Fees for license.* Fees shall be as established by resolution of the City Council.

6. *Effective date of license.* All licenses shall be effective from the date of purchase through the end of February of the following year, after which a late fee may be imposed. Licenses for the following year may be purchased within 90 days prior to the end of February.

B. *Tag.*

1. Upon payment of the license fee, the Division of Animal Control shall issue to the Owner a certificate and a tag for each Dog licensed. The tag shall have stamped thereon the license number corresponding with the tag number on the certificate. The Owner shall attach the tag to the collar or harness of the ~~animal~~ Dog and see that the collar and the tag are constantly worn. Failure to attach the tag as provided shall be in violation of this chapter, except that Dogs which are kept primarily for show purposes are exempt from wearing the tag.

2. Dog tags are not transferable from one Dog to another. No refunds shall be made on any dog license fee for any reason whatsoever. Replacements for lost or destroyed tags shall be issued upon proof of prior receipt and payment ~~of $2.00~~ to the Division of Animal Control in the amount established by resolution of the City Council.

3. Any person removing or causing to be removed the collar, harness or tag from any licensed dog without the consent of the Owner or Custodian thereof, except a licensed veterinarian or Animal Control Officer who removes such for medical ~~and~~ or other reasons, shall be in violation of this Chapter.

C. *Exemptions to licensing requirements.*

1. The provisions of subsections A and B of this section shall not apply to:

a. Dogs ~~which~~ that have a current, valid license from another city/town and whose Owners are not residents of the City ~~but~~ and who are in the City for less than 30 days. Dogs licensed elsewhere and whose Owners remain in the City for more than 30 days may transfer the license for up to ~~two~~ four Dogs to a City license upon submission of proof of current rabies vaccination and payment of a ~~$5.00~~ fee in the amount established by resolution of the City Council.~~and submission of proof of current rabies vaccination. However, no transfer shall be allowed for a third or fourth dog, and a license for any such dog shall be obtained pursuant to the provisions of this chapter.~~

b. ~~Individual dogs held for sale in a commercial kennel or other establishment which has been granted a conditional use permit by the Planning Commission.~~

2. The fee provisions of subsection A5 of this section shall not apply to:

a. Dogs qualifying as service animals under Utah law and under the Americans with Disabilities Act, provided that the Owner provides adequate documentation as determined by the Division of Animal Control. ~~Seeing eye dogs properly trained to assist blind persons if such dogs are actually being used by blind persons to assist them in moving from place to place (proof is required; state certification);.~~

b. ~~Hearing dogs properly trained to assist deaf persons if such dogs are actually used by deaf persons to aid them in responding to sounds (proof is required)~~Dogs specifically trained to assist law enforcement agencies that are owned by such agencies.

3. Nothing in this section shall be construed so as to exempt any Dog from having a current rabies vaccination.

D. *Unlawful acts.*

1. *Harboring stray Dogs.* It shall be unlawful for any person, except an animal shelter, to harbor or keep any lost, Abandoned or Strayed Dog. Whenever any Dog shall be found which appears to be lost or Strayed, it shall be the duty of the finder to notify the ~~Animal Control Division~~Division of Animal Control within 24 hours, and the Division shall impound the Dog as herein provided.

2. *Female Dogs in heat.* It shall be unlawful for the Custodian of any female Dog in heat to fail to confine such Dog in a secure enclosure so as to prevent it from coming into contact with other Dogs and creating a nuisance, except for planned breeding.

3. *Attacking Dogs.*

a. It shall be unlawful for the Owner or Custodian of any Dog to allow the Dog to Attack, chase, or worry any person, any Domesticated Animal having a commercial value, or any domestic fowl. "Worry," as used in this subsection, shall mean to harass by tearing, biting, or shaking with the teeth. Killing of a Dog by any person while the Dog is engaged in any act prohibited by this subsection, which is reasonably necessary to stop the Dog's actions, shall not be violation of any other provision of this chapter, provided such killing in no way endangers another's safety or property.

b. Upon three (3) Attacks by the same Dog, two of which must be Bites, as confirmed by sworn witness statements submitted to the Division of Animal Control, an Animal Control Officer shall impound the animal to be euthanized pursuant to Section 5-2-6 of this Chapter. Prior to the euthanization of such Dog, the Division of Animal Control shall provide written notice of the intent to euthanize the Dog to the last known address of the Dog's Owner. The written notice shall be deemed provided on the date that the notice is mailed. If the Dog's Owner is unknown, or if the Division of Animal Control has no address on file for the Owner, the Division of Animal Control shall hold the Dog for fifteen (15) calendar days before proceeding with euthanization of the Dog, during which period the Dog's Owner may file a written opposition to the euthanization of the Dog with the City Attorney's Office. If the Dog's Owner and address is known, the Owner may oppose the Dog's euthanization by filing a written opposition with the City Attorney's Office within fifteen (15) calendar days of the mailing of the notice of intent to euthanize the Dog. A written opposition to the Dog's euthanization shall not be valid or effective unless it is accompanied by payment of $750, or a different amount set by the City Council by resolution, to cover the administrative costs for a hearing on the matter. If a written opposition to the intent to euthanize the Dog and payment is received, the euthanization shall be stayed pending a hearing. The hearing shall be conducted as soon as reasonably possible by a hearing officer appointed by the City Manager. The sole determination to be made by the hearing officer shall be whether the subject Dog has committed three Attacks, as that term is defined in this Chapter. At the hearing, the hearing officer shall allow the City and the Owner to present relevant evidence, including reliable hearsay evidence, call witnesses, and make oral arguments. The burden shall be on the City to show by a preponderance of the evidence that the Dog has committed three Attacks. If the hearing officer finds that the Dog has committed three Attacks, the Dog shall be euthanized as soon as possible. If the hearing officer finds that the City has not met its burden to prove the three Attacks, the Dog shall not be subject to euthanization, but shall otherwise be subject to the requirements and fines of this Chapter

E. *Rabies control.*

1. *Vaccination required; certificate.* Rabies vaccination is required for Dogs and cats over the age of four (4) months. The Owner and Custodian of any Dog or cat is responsible to have the animal vaccinated within thirty (30) days after it reaches the age of four months by a duly licensed veterinarian. The Owner of any Dog shall attached to the collar or harness of the Dog, which such person is hereby required to place upon the Dog, a tag showing that such vaccination has been completed. Unvaccinated Dogs or cats over four months of age acquired by the owner or brought into the jurisdiction must be vaccinated within thirty (30) days. Every Dog or cat shall be revaccinated thereafter every three (3) years. ~~This provision~~These rabies vaccination requirements shall not apply to veterinarian or kennel operators temporarily maintaining on their premises animals owned by others. Each veterinarian, when vaccinating any animal for rabies, shall complete a certificate of rabies vaccination (in duplicate) which includes the following information:

   a. Owner's name and address;

   b. Description of animal (breed, sex, marking, age, name);

   c. Date of vaccination;

   d. Rabies vaccination tag number;

   e. Type of rabies vaccine administered;

   f. Manufacturer's serial number of vaccine;

   and a copy of the certificate shall be distributed to the Owner and original retained by the issuing veterinarian. Any unvaccinated animal shall be impounded but may be reclaimed prior to disposal by payment of impound fees and ~~by obtaining a rabies vaccination within 72 hours of release.~~vaccination, with the vaccine being administered by the Animal Shelter prior to the animal's release. If the Owner claims that the rabies vaccine was previously administered, but records cannot be provided, the animal may be released subject to the Owner provide the requisite records to the Animal Shelter within seventy-two (72) hours of release. Any animal not reclaimed prior to the five-day period may be disposed of pursuant to provisions of subsection 5-2-6~~H~~ of this chapter. ~~Every owner of any Dog over the age of four months within the City shall have the Dog vaccinated against rabies by a duly licensed veterinarian, shall secure from the veterinarian a certificate thereof, and shall attach to the collar or harness, which such person is hereby required to place upon the Dog, a tag showing that such vaccination has been done; provided, that the City Council may, by resolution, provide that owners of any dog may themselves purchase serum and vaccinate their own dogs. The resolution shall also prescribe the condition with which the owner must comply to obtain the tag hereinafter required.~~

2. *Public places; vaccination; tag required.* It shall be unlawful for the Owner of any Dog to suffer, allow, or permit such Dog to be or go upon any sidewalk, street, alley, public place, or ~~square~~ public property within the City without first having had such Dog vaccinated ~~every two years against rabies as above provided within the past two years~~as required by this Chapter, and without there being on such Dog a collar or harness with a license tag thereon showing that such Dog has been so vaccinated.

3. *Duty to report Bites.* Any person having knowledge of any individual or animal having been bitten by an animal of a species subject to rabies shall report the incident immediately to the Division of Animal Control, giving the name and address of the person bitten and of the Owner or Custodian of the biting animal, if available. Failure to provide such information or otherwise assist the division to provide such information or otherwise assist the division in discovering possible exposure to rabies or in ascertaining the immunization of an animal shall be in violation of this Chapter.

4. RESERVED.~~*Vaccination; certificate.* Rabies vaccination is required for Dogs and cats over the age of four months. The owner or custodian of a dog or cat shall have said animal vaccinated within 30 days after it reaches the age of four months. Unvaccinated dogs or cats over four months of age acquired by the owner or brought into the jurisdiction must be vaccinated within 30 days. Every dog shall be~~

~~revaccinated thereafter every 24 months, and every cat shall be revaccinated thereafter every 12 months with a modified rabies virus vaccine approved by the division. This provision shall not apply to veterinarian or kennel operators temporarily maintaining on their premises animals owned by others. Each veterinarian, when vaccinating any animal for rabies, shall complete a certificate of rabies vaccination (in duplicate) which includes the following information:~~

~~a. Owner's name and address;~~

~~b. Description of animal (breed, sex, marking, age, name);~~

~~c. Date of vaccination;~~

~~d. Rabies vaccination tag number;~~

~~e. Type of rabies vaccine administered;~~

~~f. Manufacturer's serial number of vaccine;~~

~~and a copy of the certificate shall be distributed to the owner and original retained by the issuing veterinarian. Any unvaccinated animal shall be impounded but may be reclaimed prior to disposal by payment of impound fees and by obtaining a rabies vaccination within 72 hours of release. Any animal not reclaimed prior to the five-day period may be disposed of pursuant to provisions of subsection 5-2-6H of this chapter.~~

5. *Quarantine.*

a. An animal that has rabies or shows signs of having rabies, and every animal bitten by another animal affected with rabies or that has been exposed to rabies shall be reported by the Owner to the Division of Animal Control~~, as set forth above,~~ and shall immediately be confined in a secure place by the Owner. The Owner shall turn over the animal to the Division of Animal Control upon demand. The Division shall Quarantine the animal for observation for a period of not less than ten days. The Owner of the animal shall bear the cost of confinement. The Animal Shelter or a veterinary kennel shall be the normal place for Quarantine, but other arrangements, including confinement by the Owner, may be made by an Animal Control Officer if the animal has a current rabies vaccination at the time the Bite was inflicted or if there are other special circumstances justifying an exception. A person who has custody of an animal under Quarantine shall immediately notify the Division of Animal Control if the animal shows any signs of sickness or abnormal behavior, or if the animal escapes confinement. It shall be unlawful for any person who has custody of a Quarantined animal to fail or refuse to allow a health or Animal Control Officer to make an inspection or examination during the period of Quarantine. If the animal dies within ten days from the date of the Bite, the person having custody shall immediately notify the Division of Animal Control or immediately remove and deliver the head of such animal to the state health laboratory to be examined for rabies. If, at the end of the ten-day period, the ~~Director of~~ Animal Control Supervisor or Animal Control Officer examines the animal and finds no sign of rabies, the animal may be released to the Owner, or in the case of a stray, it shall be disposed of as provided in subsection 5-2-6H of this Chapter.

b. In the case of an unvaccinated animal species subject to rabies which is known to have been bitten by a known rabid animal, said bitten or exposed animal should be immediately ~~destroyed~~euthanized. If the Owner is unwilling to ~~destroy~~ euthanize the bitten or exposed animal, the animal shall be immediately isolated and Quarantined for six months under veterinary supervision, the cost of such confinement to be paid in advance by the Owner. The animal shall be ~~destroyed~~ euthanized if the Owner does not comply herewith.

c. If the bitten or exposed animal has been vaccinated, the animal shall be revaccinated within 24 hours and Quarantined for a period of 30 days following revaccination; if the animal is not

revaccinated within 24 hours, the animal shall be isolated and Quarantined under veterinary supervision for six months. The animal shall be ~~destroyed~~ euthanized if the Owner does not comply herewith.

d. If Quarantine by the animal's Owner or Custodian is permitted by this section, the animal shall not leave the Owner's or Custodian's premises or leave City limits at any point during the Quarantine process.

Sec. 5-2-4. Care and keeping of animals; prohibitions.

A. *Animals At Large.*

1. It shall be unlawful for the Owner or Custodian of any animal, other than domestic cats, to allow such animals at any time to run At Large. The Owner or Person charged with responsibility for an animal found running At Large shall be strictly liable for a violation of this subsection, regardless of the precautions taken to prevent the escape of the animal and regardless of whether or not he knows that the animal is running At Large.

2. No cattle, horses, mules, sheep, goats or swine shall be allowed to run At Large, or to be picketed or staked out upon any street, sidewalk or other public place within the limits of this City, and all such animals so found may be Impounded.

B. *Animals on unenclosed premises.* It shall be unlawful for any person to chain, stake out or tether any animal on any unenclosed premises in such a manner that the animal may go beyond the property line unless such person has permission of the owner of the affected property.

C. *Places prohibited to animals.*

1. Places of Business. It shall be unlawful for any person to take or permit any animal in or about any establishment or place of business where food or food products are sold or displayed, regardless of how the animal may be restrained, except for ~~seeing eye dogs~~Disability Service Dogs.

2. Dogs in City Parks. Dogs are permitted in certain designated City dog parks. Where Dogs are permitted, all park rules must be observed.

3. Dogs on Paved Trails. Dogs are permitted on paved City trails. Dogs on paved City trails shall be leashed and the Dog's Owner or Custodian shall properly clean up after the dog, removing any waste to a trash receptacle.

D. *Vicious Animals.* It shall be unlawful for the Owner of a Vicious Animal to permit such animal to go or be off the premises of the Owner or Custodian unless such animal is under control and properly muzzled so as to prevent it from injuring any person or property. Every animal so vicious and dangerous that it cannot be reasonably controlled, shall be considered a hazard to the public safety, and an Animal Control Officer may impound the animal.

E. *Waste disposal.* It shall be unlawful for the Owner or Custodian of ~~an animal~~a Dog to permit the animal to defecate upon a public street, sidewalk, or park~~, or other area, or upon the property of another~~ unless the Owner or Custodian removes and properly disposes of all animal waste that results. It shall also be unlawful for the Owner or Custodian of an animal to permit the animal to defecate upon the private property of another.

F. *Abandonment.* It shall be unlawful for any person to Aabandon an animal. ~~or turn out At Large any sick, diseased, or disabled animal, but such animal shall, when rendered useless by reason of sickness or other disability, be killed by the Owner thereof and its carcass disposed of in such manner as to create no nuisance or hazard to health.~~

G. *Trespassing animals and fowl.* It shall be unlawful for any Owner or ~~caretaker~~ Custodian of any domestic fowl or animal to permit such fowl or animal to trespass upon the premises of another person.

H. *Killing or poisoning.* It shall be unlawful for any person willfully to kill any Domesticated Animal, or to administer poison to any such animal or to expose any poisonous substance with the intent that it shall be taken by any such animal.

I. *Dead animals; disposal.* The Owner of any animal or fowl that has died or been killed shall remove or bury the carcass of such animal with ten hours after its death; provided, that no horse, cow, ox, or other animal shall be buried within the closely-inhabited portions of this City. A violation of this subsection is an infraction.

J. *Diseased animals.*

1. It is an infraction for any person to bring into the City for sale or have in his possession with intent to sell or offer for sale, any animal which has a communicable disease or which has been exposed to or which is liable to carry infection from a communicable disease.

2. It is an infraction for any person to bring into the City for sale or to sell, or offer for sale any cattle, sheep, swine, fish, game, fowl, or poultry which is diseased, unsound, ~~and unwholesome~~ or which for any other reason is unfit for human food.

K. *Specific unlawful acts.* It shall be unlawful for any person to:

1. Overdrive, overload, drive when overloaded, overwork, torture, cruelly beat, mutilate, or needlessly kill any animal or cause any of these acts to be done.

2. ~~, or c~~Carry or transport in any vehicle or other conveyance in a cruel ~~and~~ or inhuman manner, any animal or cause any of these acts to be done.

~~2~~3. Fail to provide any animal in his charge or custody with necessary sustenance, drink and protection from the elements, or cause any of these acts to be done.

4. Leave or confine an animal in an unattended motor vehicle under conditions that endanger the health or well-being of an animal due to heat, cold, lack of adequate ventilation, lack of food or water, or other circumstances that could reasonably be expected to cause suffering, disability, or death to the animal. An Animal Control Officer or law enforcement officer, as defined in Utah Code Title 53, Chapter 13, as amended, is authorized to take all steps reasonably necessary for the removal of the animal from the vehicle, following appropriate Division of Animal Control procedures.

~~3~~5. Maintain any place where Dogs, fowl, or any other animals are suffered to fight upon exhibition or for sport or upon any wager:

a. It shall be unlawful for any person to raise, keep or use any animal, fowl or bird for the purpose of fighting or baiting; and for any person to be a party to or to be present as a spectator at any such fighting or baiting of any animal or fowl; and for any person to knowingly rent any building or shed, room, yard, ground or premises for any such purpose as aforesaid, or to knowingly suffer or permit the use of building, shed, room, yard or grounds or premises for the purposes aforesaid.

b. Law enforcement officers or Animal Control Officers may enter any building or place where there is an exhibition of the fighting or baiting of live animals, or where preparations are being made for such an exhibition. The law enforcement officers may arrest persons there present and take possession of all animals engaged in fighting, along with all implements or applications used in such an exhibition. This provision shall not be interpreted to authorize search or arrest without a warrant when such is required by law.

46. Intentionally exhibit any stud, horse, or bull or other animal indecently, or let any male animal to any female animal for the purpose of providing entertainment or viewing to any person.

Sec. 5-2-5. Nuisance animals.

A. *Specified.* Any Owner or Custodian or an animal causing a "nuisance," as defined below, shall be in violation of this chapter and subject to the penalties provided herein. An animal creates a "nuisance" if it:

1. Causes damage to the property of anyone other than its Owner;
2. Is a Vicious Animal not in compliance with subsection 5-2-4D of this chapter;
3. Causes unreasonable fouling of the air by odors;
4. Causes continuous unsanitary conditions in enclosures or surroundings;
5. Barks, whines, howls or makes other disturbing noises in excessive, continuous, or untimely fashion;
6. Molests passersby or chases passing vehicles;
7. Attacks other Domesticated Animals;
8. Is otherwise determined by the Division of Animal Control to be a public nuisance for any reason designated elsewhere in the this Code.

B. *Dogs disturbing neighborhood.* No person shall own, keep, or harbor any Dog which by loud, continued, or frequent barking, howling, yelping or by noxious or offensive odors shall annoy, disturb or endanger the health and welfare of any person or neighborhood. Upon the complaint of two (2) or more neighbors, or a neighbor and an Animal Control Officer responding to the complaint of the neighbor, that the Dog or Dogs are creating a nuisance in violation of this subsection by frequent barking or howling, the Owner or Custodian shall be issued one verbal warning of the violation. Upon subsequent violations of this subsection at the same address and by the same Dog(s), the Owner shall be cited. A violation of this subsection shall be an infraction and such is hereby declared to be nuisance, and each day the violation is permitted to exist or continue shall constitute a separate offense. This subsection shall not apply to the following: (1) City ~~dog pound~~Animal Shelter~~,~~; (2) veterinary hospitals, ~~or~~ medical laboratories, ~~.~~ animal boarding facilities, grooming facilities, or training facilities with a valid business license and located in a non-residential zones; and (3) puppy stores or animal adoption centers with a valid business license and located in commercial zones.

Sec. 5-2-6. Impounding.

A. *Shelter.* The Division of Animal Control shall provide suitable premises and facilities to be used as an Animal Shelter where Impounded animals can be adequately kept and supplied with food and humane care. It shall provide for the ~~painless and humane destruction~~euthanization of animals ~~where~~ when necessary, or it may furnish medical treatment for Impounded animals.

B. *Conditions necessitating impounding without complaint.* The Animal Control ~~Director~~ Supervisor or an Animal Control Officer shall place all animals ~~which he takes~~taken into custody into a designated animal impound facility. The following animals may be taken into custody by the Animal Control ~~Director~~ Supervisor or an Animal Control Officer and Impounded without the filing of a complaint:

1. Any animal being kept or maintained contrary to the provisions of this Chapter;
2. Any animal running At Large contrary to the provisions of this Chapter;
3. Any animal which is by this Chapter required to be licensed and is not licensed. An animal not wearing a tag shall be presumed to be unlicensed for purposes of this subsection;

4. Any Abandoned animal;

5. Animals which are not vaccinated for rabies in accordance with the requirements of this Chapter; or

6. Any Vicious Animal not in compliance with section 5-2-7 of this chapter.

C. *Information maintained.* The impounding of any animal in this chapter shall require the following information to be kept by the ~~animal control director~~~~Director of the Division of~~ Animal Control Supervisor or an Animal Control Officer:

1. Complete description of the animal, including tag numbers if any;

2. The manner and date of impound;

3. The location of the pick up and name of the officer picking up the animal;

4. The manner and date of disposal;

5. The name and address of the redeemer or purchaser;

6. The name and address of any person relinquishing an animal to the impound facility;

7. All fees received; and

8. All expenses accruing during impoundment.

D. *Disposition.* ~~Animals shall be Impounded for a minimum of five days before further disposition, unless relinquished by the Owner or Custodian for the express purpose of destruction~~euthanization. Reasonable effort shall be made to notify the Owner of any Impounded animal wearing a license or other identification ~~during that time~~. ~~Notice shall be deemed given when sent to the last known address of the listed Owner.~~ All Impounded Dogs not redeemed within five days of the date of impounding may be adopted, rescued, or euthanized. In the case of animals that are severely injured or having contagious disease and which in the judgment of two animal control employees (animal control officer, shelter attendant, or supervisor) are suffering and recovery is doubtful, the animal may be euthanized without waiting the five-day period.

E. ~~*Destruction*~~*Euthanasia*. All Dogs and cats, except for those Quarantined or confined by court order, held longer than the minimum impound period, and all Dogs and cats voluntarily relinquished to the impound facility, may be ~~destroyed~~ adopted, rescued, or euthanized ~~or sold~~ as the ~~animal control division~~Division of Animal Control or an Animal Control Officer shall direct. Any licensed animal Impounded and having or suspected of having serious physical injury or contagious disease requiring medical attention, may, without waiting the minimum impound period, in the discretion of the ~~animal control division~~Division of Animal Control or an Animal Control Officer, be released to the care of a veterinarian or euthanized for humane reasons, provided consent be obtained in advance from the Owner or Custodian, if known and available.

F. *Redemption.* The Owner of any Impounded animal or ~~his~~ the Owner's authorized representative may redeem such animal before disposition as provided in subsection E of this section, provided ~~he~~ the Owner or the authorized representative pays:

1. The impound fee;

2. The daily board charges;

3. Veterinary costs incurred during the impound period, including rabies vaccination; and

4. License fee, if required.

G. *Fees for impound.* Impound fees shall be as established by resolution of the City Council.

H. ~~*Disposition of unclaimed and infected Dogs.* All Impounded Dogs not redeemed within five days of the date of impounding may be euthanized, rescued, or adopted. In the case of Dogs severely injured or having contagious disease other than rabies and which in the Director of the Division of Animal Control's judgment~~

are suffering and recovery is doubtful, the Director may euthanize the Dog without waiting the five-day period.

~~I~~H. *Interference with impounding prohibited.* It shall be unlawful for any person to hinder, delay, interfere with, or obstruct the animal control director or any of his assistantsan Animal Control Officer while engaging in capturing, securing, or taking to the dog poundAnimal Shelter any Dog animal liable to be Impounded, or to break open or in any manner directly or indirectly aid, counsel, or advise the breaking open of any the Animal Shelterdog pound or ambulance, wagon or other any vehicle used for the collecting or conveying of Dogs animals to the dog poundAnimal Shelter.

~~J~~I. *Adoption of Impounded animals.* Impounded animals may be adopted by responsible persons, provided that such person shall be required to: (1) execute an adoption/sterilization agreement in the form attached to Ordinance 09-19-02-1 as exhibit Aa form approved by the City Attorney; and (2) pay an adoption fee of $20.00 for dogs and $10.00 for catsin an amount established by resolution of the City Council, which shall be nonrefundable except when a health problem in the animal is detected by a veterinarian within five working days of the date of execution of the adoption/sterilization agreement. All adopted animals shall be spayed or neutered within the time specified on the adoption/sterilization agreement. Any person violating the provisions of this subsection shall be guilty of an infraction and shall be required to forfeit the adopted animal to the Division of Animal Control.

Sec. 5-2-7. Vicious Animals.

A. *Prohibited.* It shall be unlawful for any person to own and possess a vicious Dog within the City not in compliance with subsection 5-2-4(D) of this chapter. Whenever a prosecution for this offense is commenced under this section, the Dog so involved may not be redeemed, pursuant to the provisions of this chapter, while awaiting final decision of the court as to the disposition to be made of such Dog.

B. *Disposition.* Upon the trial of any offense under this section, the court may, upon conviction and in addition to the usual judgment of conviction, order the animal control officer or other authorized personnel of the CityDivision of Animal Control to put the dog to deatheuthanize the Dog or may order such other disposition of the Dog as will protect the inhabitants of the City.

Sec. 5-2-8. Cruelty prohibited.

A. *Prohibited.* Cruelty to animals is prohibited. Cruelty shall consist of those acts designated in Utah Code Annotated section 76-9-301, as amended, together with injurious hobbling and malicious impounding.

B. *Striking with motor vehicle.*

1. The operator of a motor vehicle or other self-propelled vehicle being operated on a City street that strikes and injures or kills any Domesticated Animal shall safely stop at the scene. immediately stop and give such aid as can reasonably be rendered give reasonable aid and assistance to said animal, without placing him/herself at unreasonable risk. In the absence of theIf the animal's Owner is not at the scene, the operator shall immediately notify one of the following authorities:

a. 911 dispatch;

b. Police dispatch;

c. The Division of Animal Control.

2. After reporting the incident as required by subsection B.1. (if the Owner is not at the scene), the vehicle operator shall comply with the instructions given by the agency contacted and shall, if instructed, remain at the scene until appropriate police or animal control authorities arrive. After the arrival of the appropriate authority, the operator shall cooperate with said authority in the investigation and reporting of the incident.

~~3. As an alternative to complying with the requirements set forth in subsection B.1. and B.2. of this section, if the animal's Owner is not at the scene, the operator may, but is not required to, transport the struck animal to the Animal Shelter or to a veterinarian.~~ If the operator chooses to transport the animal to a veterinarian, the operator does so at his or her own risk and shall be responsible for the cost of treatment.~~, if required by the veterinarian. , he shall also immediately notify the Animal Control Division, furnishing requested facts relative to the incident.~~

4. Emergency vehicles are exempt~~ed~~ from the requirements of this provision.

C. *Birds.* It shall be unlawful for any person to take or kill any bird or to rob or destroy any nest, eggs, or young of any bird.

Sec. 5-2-9. ~~Sale of animals.~~RESERVED.

~~It shall be unlawful for any person to sell, offer for sale, barter, or give away any baby rabbits or fowl under two months of age in any quantity less than six. Such animals shall not be artificially dyed or colored. It shall be unlawful for any person to offer a live animal as a premium, prize, award, novelty, or incentive to purchase merchandise. This section does not apply to the selling of small animals by permitted agricultural operations or businesses.~~

Sec. 5-2-10. Wild Animals.

It shall be unlawful for any person to sell, offer for sale, barter, give away, keep, or purchase any Wild Animal which is not domesticated, or an animal belonging to an endangered species, except for the Animal Shelter, a zoological park, veterinary hospital, circus, sideshow, amusement show, or facility for education or scientific purposes if protective devices adequate to prevent such animal from escaping or injuring the public are provided.

Sec. 5-2-11. RESERVED.~~Estrays.~~

~~A. *Trespassing animals; damaging; impounding.* If any cattle, horses, asses, mules, sheep, goats or swine shall trespass or do damage upon the premises of any person, the party aggrieved, whether he be the owner or the occupant of such premises, may recover damages by a civil action against the owner of the trespassing animals or by distraining and impounding the animals in the manner provided.~~

~~B. *Owner notified.* The person distraining the animals must, if the owner of the same be known to him and if he resides within ten miles of the place of the trespass, immediately deliver to such owner, or leave at his place of residence if he cannot be found, a copy of such certificate of appraisement; but if the owner does not live within ten miles of the place of trespass, the party distraining the animals may at his option deliver a copy of such certificate to the owner in person, or deposit the same in the nearest post office in a registered letter addressed to said owner. He shall be entitled to charge $0.29 a mile one way for the first ten miles necessarily traveled in delivering such certificate, and $0.29 for each additional mile, to be taxed as costs against the animals.~~

~~C. *Failure to notify waives damages.* If the party distraining any animals shall fail to deliver them within 48 hours, or shall fail to deliver to the owner of the animal, if known, a copy of the certificate of appraisement within 24 hours after he receives the same or to deposit the same in a post office as herein provided, he shall not be entitled to recover damages under the provisions of this section.~~

D. ***Notice of sale of distrained animals.*** As soon as any such animals are delivered to the animal control officer, he shall immediately proceed to advertise the same as hereinafter provided, except when the owner is known and has been notified, in which case he shall hold said animals 48 hours before advertising the same. He shall advertise in a newspaper published in and having general circulation in the county, by publishing a notice in at least one issue of said paper, by posting notices in three public places in the City, one of which shall be at or near the post office, and he shall deliver a copy of the same to the county clerk or send the same by deputy or by registered mail. The county clerk should preserve such notice and post a copy thereof. The notice herein provided for shall state the time when the damage was done and the amount thereof, the name of the party damaged, a description of the animals, including all visible marks and brands, and the day, hour, and place at which such animals will be sold, which shall be not less than ten nor more than 20 days from the time of posting such notice.

E. ***Fee for impound.*** A $25.00 impound fee will be charged per animal per impound and $40.00 thereafter, with an additional $5.00 per day for boarding charges per animal.

F. ***Owner may pay and take animals; disputed appraisal.*** The owner of any trespassing animals taken up under the provisions of this section may at any time before the sale thereof claim and take such animals away upon paying the accrued costs, and if such animals are included in a lot or group of animals belonging to other parties against which the costs are assessed as a whole, he shall pay his proportion of the total amount of costs assessed against such animals, according to the number of animals he owns when compared with the number of the entire lot or group.

G. ***Bill of sale.*** If such animals are not claimed and taken away by the owner, the animal control officer shall, at the time and place set forth in the notice of sale, proceed to sell such animals, one at a time, to the highest cash bidder. If the owner of any lot of animals to be sold is known, the animal control officer shall sell only enough of said animals to pay the costs, the remainder may be turned over to the owner at any time thereafter; but if the owner be unknown, the animal control officer shall proceed to sell all of said animals so advertised for sale. He shall execute and deliver a bill of sale therefor, and file a copy with the county clerk as hereinbefore provided.

~~H. *Redemption within 90 days.* The owner of any trespassing animals sold under the provisions of this section may, at any time within 90 days of the date of such sale, redeem such animals from the purchaser or assignee having the same in his possession, upon paying to such purchaser or assignee the sum for which such animals were originally sold, together with an additional ten percent and reasonable compensation for care and keeping of the same. If such purchaser or assignee refuses to give up such animals upon the owner proving his title to the same and upon his tendering the amount due as herein provided, such owner may maintain an action at law to recover the same; provided, that the purchaser or any assignee who has disposed of such animals shall not be liable to such owner in any amount. If redemption of such animals is not made within 90 days after the date of such sale, such sale shall be absolute and shall vest the title to such animals in the purchaser or assignee. Any person selling or disposing of any such animal within 90 days of its sale under the provision of this section shall notify the purchaser of the same of the date of the original sale and the amount paid for such animal at that time, if he fails to do so, he shall be liable for any loss that may accrue to such purchaser by reason of such animal being redeemed for an amount less than he paid therefor.~~

~~I. *Owner entitled to residue of proceeds.* If any estrays or trespassing animals sold under the provisions of this section shall, within a period of six months following the date of sale, be claimed and proved to be the property of any person, it shall be the duty of the City Treasurer at the expiration of such time to pay the money received for such animals to the owner thereof, less the expense of taking, keeping and selling the same. In the event such animals are not claimed as aforesaid, such money shall become the property of the City; provided, that in case there is a contest between two or more persons claiming to be the owners of any such animals, the City Treasurer shall pay the residue to the party who shall establish by action his right to the same.~~

~~J. *Record of trespassing animals.* The animal control officer shall keep an accurate record of all trespassing animals received by him, which record shall contain all the items required by this section, together with the names of the injured party and the owner of the animals, and all other matters necessary to a complete account of the transaction.~~

~~K. *Retaking animal unlawfully.* It shall be unlawful for anyone to take any animal out of the possession of anyone lawfully holding the same under the provision of this section, either by stealth, force, fraud or to intercept or hinder any person lawfully taking or attempting to take up such animals.~~

Sec. 5-2-12. Penalty.

A. *Violations.* Any person violating the provisions of this Chapter, either by failing to do those acts required herein or by doing any act prohibited herein, shall be guilty of an infraction, punishable as follows:

1. By a fine as provided in section 1-4-1 of this Code for each offense, as determined by a court of competent jurisdiction; or

2. When there are three (3) or more violations of this Chapter during any twelve (12) month period by the same Owner or Custodian in relation to the same Dog, the Dog may be Impounded and may be adopted, rescued, or euthanized, with the Owner and Custodian having no right to redeem the Dog.;

2. By order of removal, requiring any Dog to be removed from the City; or

3. Any combination of fine, restitution or removal, as determined by any court of competent jurisdiction.

B. *Separate offense each day.* Each day such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such.

Sec. 5-2-13. Exemption.

Dogs specially trained to assist officers of law enforcement agencies in the performance of their duties, and officers of such law enforcement agencies, are hereby exempt from the provisions of this Chapter.

HURRICANE CITY

PARKS, TRAILS, AND RECREATION MASTER PLAN

2024

DRAFT REPORT

PREPARED BY

CivilScience

HURRICANE CITY
UTAH

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SECTION 1

EXECUTIVE SUMMARY

User Analysis

The primary objective of this study is to establish plans to guide the development of future Hurricane City parks, trails, and recreation facility improvements through analyzing the existing conditions and 10-year conditions, as well as addressing longer term (20-year) conditions. The outcomes of the study include recommended improvements, estimated project costs, maximum allowable impact fee, and projected cash flow for Hurricane's recreation services.

Inventory

Hurricane City has a historic annual growth rates of 5%-16%. Projected annual growth rates for this study are shown in Table 3 as 4% per year for 8 years then 3.3% per year thereafter.

2023 estimated population – 24,000

2033 estimated population – 34,813

2043 estimated population – 48,167

Existing Facilities Inventory

Hurricane City currently operates and maintains 21 existing parks and three recreational facilities (the community center, fine arts center, and swimming pool).

- Existing LOS for Parks is 4.35 ac/1,000 people
- Existing LOS for Trails is 0.05 miles/1,000 people
- Existing LOS for Recreation Facilities is 2,528 sq-ft/1,000 people

System Analysis

The LOS demands (in acres/1,000 people, miles/1,000 people, and square feet/1,000 people) for the 10-year and 20-year planning horizon are shown in the table below. It shows the eligible park area, recreation facility area, trail miles, and impact fee facilities plan updates, as well as estimated costs for each.

Financial Viability

The estimated costs of recommended improvements based on park area, recreation facility area, trail length, and impact fee facilities plan updates came to $29,997,788.78 for 10 years and $81,680,397.40 for 20 years. An equivalent residential connection (ERC) conversion of 1.865 was used, based on the lastest water impact fee analysis. The maximum allowable impact fee for an equivalent residential connection is $5,173.95.

Average Costs	
Per Acre of Park	$393,644
Per Mile of Trail	$695,420
Per SF of Rec Facility	$300

Population	
2023 population	24,000
2033 population	34,813
2043 population	48,167

	Developed Park [ac]	Recreation Facility [sf]	Paved Trails [mi]	IFFPA Update (every 5 years)	Total Costs
Level of Service[ac, sf, or mi/1000 ppl]	4.35	2,528	0.05		
10-yr Pop. Increase: **10,813**					
10-yr Demand Increase	47.08	27,336	0.51	2 (at $40,000 ea.)	
Est. 10-yr Cost (at 3% for 5 yr)	**$20,460,410.21**	**$9,054,251.30**	**$390,204.27**	**$92,923.01**	**$29,997,788.78**
20-yr Pop. Increase: **24,167**					
20-yr Demand Increase	105.22	61,095	1.14	2 (at $40,000 ea.)	
Est. 20-yr Cost (at 3% for 15 yr)	**$55,743,289.47**	**$24,667,821.71**	**$1,063,090.58**	**$206,195.64**	**$81,680,397.40**

New ERCs	5,798
Maximum Allowable Impact Fee	**$5,173.95**

Impact Fee Calculation

Section 2

INTRODUCTION

Purpose and Scope

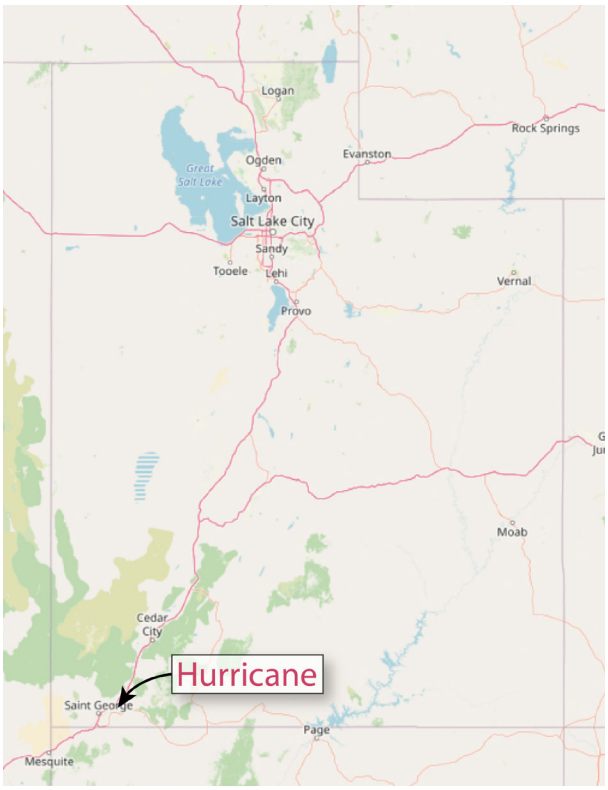
In August of 2023, the Hurricane City engaged the services of Civil Science, Inc. for the purpose of undertaking a comprehensive evaluation of the master plan and impact fees associated with parks, trails, and recreational facilities and programs. Recognizing the vital role of an early planning process, the city aims to ensure the effective fulfillment of both present and future recreational requirements for its residents through the development of an inclusive park and trail system spanning the entire community.

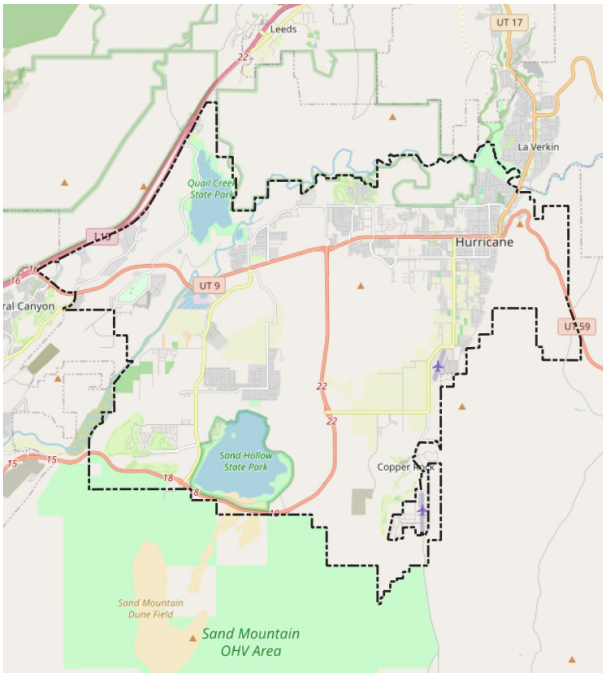
Parks, trail, and recreational facilities constitute a fundamental component of any community. Their strategic placement and characteristics can have a significant impact on the trajectory and nature of development within a community. These amenities also play a pivotal role in enhancing the overall quality of life and contributing significantly to the aesthetic appeal of a neighborhood.

As directed by the city, the specific objectives of this plan are to:

- Analyze population growth rates and projections
- Identify existing parks and trails facilities
- Establish a facilities plan and master plan to accommodate future growth
- Perform a financial and impact fee analysis

The overall goal of this plan is to provide a general guide to the City for making decisions pertaining to future park and trails development and recreation development for City sponsored programs.





Vicinity and Location of Hurricane City

Background Information

Hurricane City is in Washington County in southern Utah, to the east of Washington City and to the south of La Verkin and Toquerville. The terrain around Hurricane consists of a diverse array of buttes, canyons, and other geological features. The City borders Quail Creek State Park to the north and Sand Hollow State Park to the south. The Virgin River runs along the north edge of the city, flanked by dramatic cliffs and sweeping views of Red Cliffs Desert Reserve.

Hurricane has an arid climate that is typically hot and dry in the summer months and mild in the winter months, with an annual average high temperature of 77°F, an annual average low temperature of 48°F, and annual average precipitation of 16.19 inches (https://www.usclimatedata.com/climate/hurricane/utah/united-states/usut0343).

Analysis Area

The master plan area is generally contained within the existing Hurricane City limits and addresses level of service and impacts for 10- and 20-year horizons, as well as planning for full buildout.

Hurricane abuts Quail Creek State Park, the Virgin River and Red Cliffs Desert Reserve to the north, Washington City to the west, Sand Hollow State Park to the south, and BLM land to the east, and La Verkin to the north-east. Considerations were made in this plan to connect to their trail facilities wherever it seemed appropriate. While outward geographical growth of the city is not expected or planned for in this report, there are significant areas of agricultural and undeveloped land within current Hurricane City limits that are likely to be developed.

BENEFITS OF PARKS, TRAILS, AND RECREATION

Parks and trails have numerous benefits to communities. Many needs that cities and communities are facing can be addressed through parks. These include:

Economic development

Parks create local job opportunities and can increase municipal revenues. A healthy network of parks and trails also helps to attract homebuyers and affluent retirees and positively affects home values.

Creating safer neighborhoods

Parks can offer a sense of belonging and have been linked with decreased rates of aggression. Parks can function as community gathering places that help build community ties and produce stronger, safer neighborhoods.

Green infrastructure

Green infrastructure in parks can be a cost-effective way to manage stormwater and other forms of public infrastructure. Cities can use parks to protect ecological functions and biodiversity through interconnected natural areas.

Helping children learn

City parks offer places for children to learn and explore in healthy, safe ways, and can even help children to begin to engage with their wider community through programs like community art installations.

Cultural and sports programs

Parks can act as venues for cultural activities and sports tournaments. In addition to providing recreation opportunities for residents and visitors, these types of events can be a major economic benefit to cities.

Heat and air quality management

Urban areas experience the urban heat island effect, where hard surfaces create artificially higher temperatures. Parks can help cool temperatures through shading and evapotranspiration. Parks and green spaces can also help sequester carbon and other air pollutants.

Improving property values

Parks tend to improve the property values of nearby homes. This is especially true for multifamily development or homes on smaller lots, where residents without their own yards and recreation amenities are willing to pay a higher premium for proximity to parks.

Improving Public Health with Parks and Trails

One of the biggest benefits from public parks and trails is improvements to public health. The CDC states:

"Having access to places for physical activity, such as parks and trails, encourages community residents to participate in physical activity and do so more often. The closer you live to a park, the more likely you are to walk or bike to those places, and use the park for exercise."

Physical activity can help to:

- Control your weight,
- Reduce your risk of cardiovascular disease,
- Reduce your risk of type 2 diabetes,
- Reduce your risk for some cancers,
- Strengthen your bones and muscles,
- Improve your mental health and mood,
- Improve your ability to do daily activities and prevent falls, if you're an older adult,
- Increase your chances of living longer.

SECTION 3

USER ANALYSIS

An important element in any community plan is a user analysis or a projection of the City's population growth rate. This projection gives the planner an idea of the future demands the City should plan for throughout the planning period. This section summarizes how the growth rate, planning period, population projections and capacity were calculated or obtained.

Planning Horizon

This analysis considers three planning horizons: existing conditions, 10-year, and 20-year scenarios. The existing condition scenario evaluates the facilities based on the number of Equivalent Residential Connections (ERCs) the City currently serves. The 10-year and 20-year planning horizons evaluate potential deficiencies and plan for improvements needed to resolve any of those deficiencies.

Growth Rate

Projecting the City's population and growth rate are essential to the development of a facilities plan. Projecting the number of future connections, or population, is a subjective process. This study uses\ several resources for this projection including: Census figures, sewer and water connections to evaluate growth trends and provide a projection of how growth occurs. Census data and annual growth rates from 1980 to 2020 are included in the table of historic growth rates. The table of historic growth rates also shows the historic 10-year, 20-year, 30-year, and 40-year average annual growth rates for the dates specified. These historic rates serve as a comparison with projected growth rates.

Description	Year Period	Population	Growth
10-year Historic	1980	2,660	-
10-year Historic	1990	3,915	4.7%
10-year Historic	2000	8,250	11.1%
10-year Historic	2010	13,748	6.7%
10-year Historic	2020	20,036	4.6%
20-year Historic	1980-2000	-	10.5%
20-year Historic	1990-2010	-	12.6%
20-year Historic	2000-2020	-	7.1%
30-year Historic	1980-2010	-	13.9%
30-year Historic	1990-2020	-	13.7%
40-year Historic	1980-2020	-	16.3%

Historic Growth Rates

Housing Occupancy	
Occupied Housing Units	68%
Person per Household	2.74
Households	6817

Housing Occupancy

Equivalent Residential Connections

Calculating an ERC provides a way to compare residential to non-residential users. ERC values are based on water use and are shown in this plan as building area. See the latest Hurricane Water Impact Fee Facilities Plan and Analysis for more information on how this is calculated. It was calculated that 1 ERC equals 1.865 people. Annual population, ERC, and growth rate projections for the 20-year planning horizon are available in the table of projected growth and ERCs.

Year	Source	Population	Growth	ERCs
2010	Census	13,748	-	7,372
2011	Estimate	14,017	2.0%	7,516
2012	Estimate	14,311	2.1%	7,673
2013	Estimate	14,571	1.8%	7,813
2014	Estimate	15,006	3.0%	8,046
2015	Estimate	15,485	3.2%	8,303
2016	Estimate	16,163	4.4%	8,666
2017	Estimate	17,150	6.1%	9,196
2018	Estimate	18,184	6.0%	9,750
2019	Estimate	19,074	4.9%	10,227
2020	Census	20,036	5.0%	10,743
2021	Estimate	21,822	8.9%	11,701
2022	Estimate	23,077	5.8%	12,374
2023	Projected	24,000	4.0%	12,869
2024	Projected	24,960	4.0%	13,383
2025	Projected	25,958	4.0%	13,918
2026	Projected	26,996	4.0%	14,475
2027	Projected	28,076	4.0%	15,054
2028	Projected	29,199	4.0%	15,656
2029	Projected	30,367	4.0%	16,283
2030	Projected	31,582	4.0%	16,934
2031	Projected	32,624	3.3%	17,493
2032	Projected	33,701	3.3%	18,070
2033	Projected	34,813	3.3%	18,666
2034	Projected	35,962	3.3%	19,283
2035	Projected	37,149	3.3%	19,919

Equivalent Residential Connections (Continued on following page)

Year	Source	Population	Growth	ERCs
2036	Projected	38,375	3.3%	20,576
2037	Projected	39,641	3.3%	21,255
2038	Projected	40,949	3.3%	21,957
2039	Projected	42,300	3.3%	22,681
2040	Projected	43,696	3.3%	23,429
2041	Projected	45,138	3.3%	24,203
2042	Projected	46,628	3.3%	25,002
2043	Projected	48,167	3.3%	25,827

Equivalent Residential Connections (Continued from previous page)

SECTION 4

COMMUNITY ENGAGEMENT

Community engagement was a critical component in the development of the Parks, Trails, and Recreation Master Plan. Several methods of engagement were used to ensure that all Hurricane residents had the opportunity to contribute their thoughts, concerns, and insight to the future of parks, trails, and recreation in their community. The three primary methods of community involvement were the community survey, partnering meetings, and public open houses. The survey had the widest reach, being sent to all Hurricane residents, and any residents that wished to have more active involvement in the process or had specific questions had the opportunity to attend the public open house. The partnering meetings provided a venue to receive focused input from community group representatives and other important partners.

Partnering Meeting #1

The first partnering meeting was attended by representatives from several community groups and government agencies including the Southern Utah Bicycle Alliance, Southern Utah Baseball, and Red Cliffs Desert Reserve, Washington County and local skatepark and bike park advocates. A presentation was given that reviewed the master planning process and the current distribution and level of service of parks, trails, and recreation facilities in Hurricane. The presentation included maps of the location of existing facilities in Hurricane, and of what areas of the city are serviced by those facilities.

The main outcomes from the partnering meeting are provided below:

- More trail connectivity and safer trails throughout the city. The highest priorities are connecting the Zion Corridor through to Southern Parkway and tying into the trail connection that the County will be building at Legacy Park (the fairgrounds).
- More skateparks throughout the city, possibly as small "skate dots" integrated into other parks.

Open House #1

The first open house was well attended, with about 20 attendees, most of whom were Hurricane residents. After viewing a short presentation similar to the one presented at Partnering Meeting #1 attendees were able to voice their concerns and questions in small groups. Maps were provided at each table, and many attendees expressed desires for particular facilities in certain parts of Hurricane, which were noted on the maps.

Overall, the attendees at the open house wanted:

- More paved, shared-use trails. Priorities were east-west connection across the city, linking Dixie Springs and Pecan Valley areas into the rest of the city, and continuing the 400 S trail. There was also some interest in equestrian trails that connect to the equestrian park (rim trail).
- A community park somewhere in the vicinity of State St and 2260 W.
- More parks in the Pecan Valley area.
- Reducing conflict with ATVs on roads and trails around Sand Hollow.
- More pickleball courts.
- Current parks to be maintained.

Community Survey

In addition to being distributed through the mail, the community survey was distributed at the first open house. In total, there were 228 responses to the survey, which is about 1% of the population of Hurricane. Below is a summary of survey results, organized by category. The full survey results are available in Appendix B.

Parks

Residents want more parks overall. In questions where residents selected which types of parks they believe are most important to develop, they focused on large, natural open spaces/community parks and linear parks along rivers and washes. There were many written responses that requested more sports facilities, including softball, tennis, and pickleball. Several requests were also made for more skateparks. Residents in less central parts of town would like to see parks more evenly distributed, and there is a general concern with the maintenance/condition of the current parks.

Trails

Residents are very concerned about the lack of safe routes for biking and walking. Many respondents cited safety

concerns with riding bikes along roads, and asked for more dedicated, paved trails. Several people wanted to see a trail system more like what is available in St George or Washington.

Recreation Facilities

Overall, residents are not satisfied with the current state of recreation facilities in Hurricane and would like to see them improved, expanded, or replaced. People felt that the current facilities do not meet the needs of the community. The state of the pool and the recreation center were specific items of concern, and there were several requests for a new recreation center and an indoor pool.

Dogs and Dog Parks

Residents disagreed about whether dogs should be allowed/encouraged in parks and trails in Hurricane, with some residents sharing that they wished dogs would be banned from all parks and trails and others expressing a desire to have more dog friendly areas. The biggest point that most people agreed on is that the current dog park is not in good condition, and some people shared that they wished there was a dog park in Hurricane more like the Dog Town Park in Washington.

Managing Growth

Many people were concerned about rapid growth in Hurricane and emphasized the importance of maintaining recreation and open space and keeping a small-town feel. Outdoor recreation is important to many Hurricane residents, and people wanted to make sure that they didn't lose access to open recreation areas as more development happens.

Partnering Meeting #2

The second partnering meeting was attended by representatives from community groups and government agencies including Washington County and local skatepark and bike park advocates.

A presentation was given that reviewed the results from the public survey and the proposed parks and trails plans. This included maps or the proposed systems. The attendees maintained similar priorities to those shared at the first partnering meeting, especially about increasing trail connectivity and skate/bike parks.

Open House #2

The second open house had more attendees than the first, with about 30 people. A presentation was given similar to the one given at Partnering Meeting #2. The emphasis was on presenting the proposed parks and trail system to the public. Attendees had the opportunity to ask questions and voice concerns.

The main topics of discussion were:

- There were several questions about how impact fees work – what they can and cannot be used for under state law, and how Hurricane is planning to use them.
- Several attendees were concerned that the city is putting too much funding towards increasing the amount of parks, trails, and recreation facilities, rather than on maintaining what the city already has.
- There was also significant concern about how the public can be involved in the detailed planning of parks, trails, and recreation facilities. Some attendees were frustrated that they had not been consulted about the construction of the new sports building at American Legion Park. There was discussion about how residents can attend city council meetings to influence these decisions, however, it became clear that residents desire more ways to be involved in the design of facilities that they will be funding through their tax dollars.
- Attendees wanted to make sure that bike trails would be separated from the road, rather than just being a bike lane attached to the road.
- Attendees representing the skating community emphasized the benefits of skateparks and skate features to the community, especially to the youth and to families.

Open House #2

SECTION 5

CLASSIFICATIONS AND INVENTORY

This section seeks to inventory the existing parks and recreation facilities within Hurricane City, establish guidelines, standards, classifications, and existing LOS to be used throughout the facilities plan and in future parks and recreation planning. Information was gathered from the City's GIS department along with various site investigations and with information provided by City personnel.

Parks, Trails, and Recreation Facilities Classification

Hurricane City has various recreational demands and several types of facilities to meet these demands. The following park and trail classifications have been identified as types of recreational facilities that help meet the recreational demand of the community. The following is a description of each type of classification, general parameters that apply to the classification, specific examples of the classification, and if the classification is applicable to the overall LOS used in the impact fee analysis.

Public Involvement Process

While the classifications below provide guidelines and minimum requirements, Civil Science recommends that the city provide opportunities for public involvement in the design of parks, trails, and recreation facilities. It is critical for residents to be able to influence how public money is spent on facilities that they will be using. While public input about the distribution and quantity of facilities was incorporated into this plan, many of the concerns that residents expressed in the community survey and the public meetings will be important to address at the site scale. This includes desires such as having certain sports facilities, crime prevention through environmental design, and park character.

Dixie Springs Park

	CITY-OWNED FACILITIES		
	Description	Typical Size	Area Served
Neighborhood Park	Remains the basic unit of the park system and serves as the recreational and social focus of the neighborhood.	4-10 acres	0.5-mile radius
Community Park	Serves broader purpose than neighborhood park. Focus is on meeting a wide range of recreational activities (passive, active, programmed sports, league play, tournaments, etc.) for the several neighborhoods or the entire community.	10-40+ acres	2-mile radius
Special Use Park	Covers a broad range of parks and recreation facilities oriented toward a specific use.	<1 acre	Hurricane and surrounding region
Paved Trail	Serves as paved transportation corridors for non-motorized modes of transportation. Used to interconnect parks, neighborhoods, downtown, and bordering cities and sites.	10' or 12' width, length varies	Hurricane and surrounding region
Unimproved Trail	Nature trails for pedestrians or cyclists, typically unpaved. Does not count towards trails level of service.	Width varies, length varies	Hurricane and surrounding region
Recreation Facility	Facilities for recreation opportunities not commonly available in parks or trail, such as swimming pools and indoor fitness areas.	Area varies	Hurricane and surrounding region

	NON-CITY-OWNED FACILITIES		
	Description	Typical Size	Area Served
Private Park/Facility	Used to address limited or isolated recreational needs for private communities.	0.25-1 acre	0.15-mile radius
School Park	Often complement open space and could possibly serve in number of capacities such as a neighborhood park or youth athletic field.	Dependent upon school district	1 mile radius or boundary of school
Regional Park	Large recreation area, such as a state or national park, that serves an entire region. Often includes multiple special use facilities and accommodates large numbers of people for a variety of activities.	Variable, large scale	Hurricane and surrounding region

Classification Summary

City Owned Parks

Neighborhood Park

Description: The neighborhood park remains the basic unit of the park system and serves as the recreational and social focus of the neighborhood. This type of park provides activities for all age groups and addresses the specific recreational needs of the nearby neighborhood it serves. Facilities may include play structures, picnic areas, shaded seating, soft and hard surface courts, restrooms, trails, and large informal open areas for unprogrammed play activities. Typically, parks in this classification have no lighted athletic fields for formal team competition, and no schedule for organized programs. These parks are intended for use by local neighborhood residents and are not intended to draw large numbers of residents to the area, unlike parks that have sports fields, splash pads, or large sports court amenities.

Location: Centrally located within its service area and uninterrupted by non-residential roads and other physical barriers.

Access: By way of interconnecting trails, sidewalks, or low volume residential streets.

Desirable Size: 4 – 10 acres

Area Served: 0.5 mile radius

Examples: Stout Park, Zions Gate Park, Sky Ridge Park, Santa Fe Park

Application of LOS: Yes

Required Elements for New Neighborhood Parks:

- Restroom
- Picnic Shelter
- Playground Structure
- Open Grass Areas
- Shaded Areas
- 8-10 Parking Spaces
- Park Furniture
- At least one of the following:
    - Basketball standard
    - Tennis court
    - Volleyball court
    - Sport court (multi-use)
    - Paved walking trail
    - Climbing wall
    - Other neighborhood-desired facility

Santa Fe Park

Community Park

Description: Community parks are larger in size and serve a broader purpose than neighborhood parks. Their focus is on meeting a wide range of recreational activities for several neighborhoods or sections of the community. They allow for group activities and offer other recreational opportunities not feasible – nor perhaps desirable – at the neighborhood level. Community parks can accommodate special events and gatherings and can provide for a broad variety of activities and recreation opportunities. Community parks may be highly developed with amenities such as playgrounds, lighted athletic fields, programmed sports which accommodate specific needs of user groups and athletic associations based on demand and program offering, or they may include large open spaces with sensitive environments such as wildlife habitat, river corridors, and flood plains, greenways, and other protected open space and sensitive lands.

Location: Community parks should be viewed as a strategically located community-wide facility rather than serving a defined neighborhood or area. They should not be adjacent to residential areas unless buffering (topographic breaks, vegetation, walls, etc.) is used, but more importantly the quality of the natural resource base should play a significant role in site selection. Identifying the location of these facilities is critical to avoid long term conflicts and negative impacts to the community.

Access: Community parks should be serviced by a collector level street and not through a residential road. Given that a community park will likely be used for league sports and tournaments, access routes from outside the community should also be considered. Multiple access points in and out of parking areas should be provided to facilitate vehicular movements during events. The site should be easily accessible by way of interconnecting trails, as well.

Desirable Size: 10 – 40+ acres

Area Served: 2-mile radius

Examples: Grandpa's Pond Park, Spilsbury/American Legion Sports Complex, Dixie Springs Park, Hurricane Equestrian Park

Application of LOS: Yes

Required Elements for New Community Parks:

- Restrooms
- Picnic Shelters
- Shaded Areas
- Appropriate Number of Parking Spaces (off-street parking to handle events)
- Sports Fields/Courts
- Walking Paths
- Playground

Spilsbury/American Legion Sports Complex

Special Use Park

Description: Special use parks are usually implemented to serve specific needs, such as access to trails or for a historical marker. Improved trailheads, linear parks, and small picnic areas are included in the special use park classification. They are sometimes located within public easements.

Location: Dependent on use, often adjacent to trails

Access: By way of interconnecting trails, sidewalks, and streets.

Desirable Size: Varies, usually <1 acre

Area Served: Hurricane City and surrounding region

Examples: Hurricane Heritage Wayside Park, Main Street trailhead, Vlassek Park, Cherry Heights Linear Park

Application of LOS: Yes

Cherry Heights Linear Park

Paved Trail

Description: Paved trails or trail systems are generally transportation corridors for non-motorized modes of transportation such as walking, jogging, running, and cycling and provide valuable recreation and transportation opportunities for residents and visitors. They are used to interconnect parks, neighborhoods, downtown, and bordering cities and sites.

Location: Generally located in natural corridors such as along streams and riverbanks and along washes. Paved trails are also often located in utility corridors. Care should be taken to ensure preservation and enhancement of these natural corridors and habitat to maintain the fragile ecosystem in which they are placed.

Access: These trails should be serviced mainly by other park classifications to capitalize on existing facilities or features. Some trails may require controlled access to preserve environmental features. All trails should interconnect and have access points to parks, residential roads, local connectors, and main thoroughfares.

Desirable Size: 12 feet in width for connector trails shown on active transportation plan, 10 feet in width for internal neighborhood trails, length varies.

Area Served: Hurricane City and surrounding region

Examples: 400 S Trail

Application of LOS: Yes

400 South Trail

Unimproved Trail

Description: Unimproved trails emphasize a relationship with the natural environment. These are most often located within natural resource areas and greenways. Since regional and state parks often develop and maintain these types of trails, the need for them at the local level is often limited. They can provide a different opportunity for interconnectivity between other parts of the park system more oriented on the natural environment rather than parks.

Location: Generally located in natural corridors or in large natural recreation areas. Care should be taken to ensure preservation and enhancement of these natural corridors and habitat to maintain the fragile ecosystem in which they are placed.

Access: These trails should be serviced mainly by other park classifications to capitalize on existing facilities or features. Some trails may require controlled access to preserve environmental features. Trails could interconnect and have access points to parks and residential roads.

Desirable Size: Width varies from 3' wide single-track trails to larger 10' wide trails. The width of the trail should match the environment and the intended use (mountain bike, hiking, etc.). The length of unimproved trails varies.

Area Served: Hurricane City and surrounding region

Examples: Red Rock Walking Trail, Quail Lake Bike Trails

Application of LOS: No

Recreation Facility

Description: Recreation facilities provide additional recreational opportunities to the community not available in parks or trails. Amenities available in a recreation center can be as follows: aquatic facilities including swimming pools, lap pools, water features, splash pads, slides, etc., health and fitness areas including weight rooms, aerobics rooms, tracks, court facilities including tennis, racquetball, basketball, gymnastics, pickleball, rock climbing, etc.

Location: Centrally located within the community and should be identified prior to development to avoid conflicts.

Access: The site should be serviced by a collector level street and not through a residential road. It should be easily accessible from throughout its service area by way of interconnecting trails and sidewalks.

Desirable Size: 25,000 - 50,000 square feet

Area Served: 4+ mile radius

Examples: Hurricane Community Center, Hurricane City Pool

Application of LOS: Yes

Quail Creek Hiking and Mountain Bike Trails

Non-City Owned Parks

Private Park/Facility

Description: The private park/facility is the smallest park classification and is used to address limited or isolated recreational needs for private communities. They are generally developed within a residential area for the exclusive use of residents and are maintained through a neighborhood association. Even though all parks within this classification are private they still serve the recreational needs of the local neighborhoods, however, they are not a complete substitute for public recreation space.

Location: Central to a neighborhood or servicing a specific recreational need or taking advantage of a unique opportunity. Often the location of these private parks/facilities will be determined by the developer with the city negotiating the final location.

Access: By way of interconnecting trails, sidewalks, or low-volume residential streets.

Desirable Size: 0.25 – 1 acre

Area Served: 0.15-mile radius

Examples: Private parks, private clubhouses

Application of LOS: No

School-Park

Description: The school-park combines the resources of two public agencies and provides a range of recreational services and facilities to several neighborhoods that are served by a school. Depending on circumstances, school-park sites often complement open space and could possibly serve in several capacities, such as a neighborhood park or youth athletic field. Even though all parks within this classification are determined by the school district and location of schools, it is important to understand these schools serve the recreational needs of surrounding neighborhoods. This classification also includes private and charter schools. Some communities have agreements with local school districts for shared use of fields and courts and supporting amenities.

Location: Adjacent to a school facility.

Access: By way of interconnecting trails, sidewalks, and streets. Should have direct access from a collector level (larger) street.

Desirable Size: Dependent upon school district

Area Served: 1 mile or boundary of school

Examples: Elementary, Middle, and High Schools

Application of LOS: No

View Over Hurricane City

Regional Park

Description: Regional parks are large recreation areas that serve an entire city or region. The classification of regional parks includes special use facilities such as golf courses, lakes, nature centers, campgrounds, state parks, national parks and other broad expanses of natural scenery or open space. Regional parks are designed to accommodate large numbers of people for a variety of day use activities.

Location: Often developed around a unique or significant resource or to emphasize a regional recreational interest. They also serve as a buffer and separation between communities or other areas.

Access: Typically, regional parks are serviced by a main arterial

Desirable Size: Variable, large scale

Area Served: Hurricane City and Washington County, Southern Utah

Examples: Sky Mountain Golf Course, Sand Hollow Resort Golf Courses, Red Cliffs Desert Reserve, Quail Creek State Park, Sand Hollow State Park, Zion National Park

Sand Hollow State Park

Zion National Park

Section 6

EXISTING FACILITIES

This section seeks provides an inventory of all existing City of Hurricane parks, trails, and recreation facilities, including what amenities are at each facility, and the condition of each facility.

Park Name	Acres	Classification
American Legion Park	13.01	Community Park
Bowery Canal Trailhead	0.03	Special Use Park
Cherry Heights Linear Park	1.63	Special Use Park
Community Center Park	5.93	Community Park
Dixie Springs Park	15.04	Community Park
Grandpa's Pond Park	36.61	Community Park
Hall Park	0.78	Neighborhood Park
Hurricane Bike Park	2.63	Community Park
Hurricane Dog Park	1.51	Neighborhood Park
Hurricane Equestrian Park	6.82	Community Park
Hurricane Heritage Wayside Park	0.35	Special Use Park
Main Street Trailhead	0.23	Special Use Park
Pioneer Park	1.26	Neighborhood Park
Santa Fe Park	0.66	Neighborhood Park
Sky Ridge Park	1.26	Neighborhood Park
Spilsbury Sports Complex	8.80	Community Park
Stout Park	2.85	Neighborhood Park
Three Falls Park	4.44	Neighborhood Park
Three Falls Trailhead	0.01	Special Use Park
Vlassek Park	0.13	Special Use Park
Zion's Gate Park	0.51	Neighborhood Park

Existing Park Acreage and Classification

Trail Name	Trail Area	User	Miles	Paved
2800 W Trail	Hurricane	Hike/Bike	0.7	Yes
400 S Trail	Hurricane	Hike/Bike	0.5	No
Bowery Canal Trail	Hurricane Cliffs	Hike	0.8	No
Ivy Wood Trail	Hurricane	Hike/Bike	0.2	No
Red Rock Walking Trail	Dixie Springs	Hike	0.5	No
Rock n Roll	Quail Lake	Hike/Bike	2.2	No
Rythm Blues	Quail Lake	Hike/Bike	2.2	No
Rythm Blues Upper	Quail Lake	Hike/Bike	1.9	No

Existing Trails Lengths and Information

Recreation Facility Name	Square Feet
Hurricane Community Center	30,103
Hurricane Fine Arts Center	20,000
Hurricane City Pool	10,570

Existing Recreation Facility Square Footage

	Parking (# of stalls)	Covered Pavilion	Picnic Tables	Barbecues	Park Benches	Electrical Outlets	Restrooms	Drinking Fountains	Playground	Sand Volleyball Courts	Basketball Courts	Pickleball Courts	Tennis Courts	Horseshoe Pits	Softball Fields	Baseball Fields
American Legion Park	100	0	0	0	0	6	0	1	0	0	0	0	0	0	1	1
Bowery Canal Trailhead	5	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
Cherry Heights Linear Park	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
Community Center Park	277	2	42	0	15	115	6	4	2	0	1	6	0	0	0	0
Dixie Springs Park	93	4	22	0	15	8	3	1	3	0	1	2	0	0	0	0
Grandpa's Pond Park	62	3	29	2	12	8	4	2	1	0	0	0	0	0	0	0
Hall Park	6	1	4	1	3	6	2	1	1	0	0	0	0	0	0	0
Hurricane Bike Park	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hurricane Dog Park	8	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0
Hurricane Equestrian Park	496	1	12	0	0	8	2	2	1	0	0	0	0	0	0	0
Hurricane Heritage Wayside Park	12	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Main Street Trailhead	7	0	0	0	2	0	1	1	0	0	0	0	0	0	0	0
Pioneer Park	20	1	12	3	2	8	2	1	1	0	0	0	0	0	0	0
Santa Fe Park	10	1	7	1	2	2	0	1	1	0	1	0	0	2	0	0
Sky Ridge Park	29	1	10	0	9	2	2	2	1	0	0	2	0	0	0	0
Spilsbury Sports Complex	250	0	4	0	0	5	2	3	0	0	0	0	0	12	1	2
Stout Park	15	1	2	0	8	4	0	1	1	1	0	0	0	0	0	0
Three Falls Park	55	0	4	0	4	2	3	1	0	0	0	0	0	0	0	0
Three Falls Trailhead	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Vlassek Park	4	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Zion's Gate Park	5	1	5	1	1	2	0	1	1	0	0	0	0	0	0	0

Existing Park Amenities *(continued on following page)*

	Soccer Fields	Open Grass Area	Concessions Stand	Walking Path	Hiking Trail	Trailhead	Urban Fishing	Splash Pad	Corn Hole	Dog Park	Disk Golf	Pond	Skate Park	Pump Track/Bike Area	Amphitheater	ADA Compliance
American Legion Park	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bowery Canal Trailhead	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Cherry Heights Linear Park	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Community Center Park	0	4	0	0	0	0	0	1	5	0	0	0	0	0	0	1
Dixie Springs Park	0	2	0	1	0	0	0	1	0	2	0	0	0	0	0	1
Grandpa's Pond Park	0	3	0	1	0	0	1	0	0	0	1	1	0	0	0	1
Hall Park	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Hurricane Bike Park	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Hurricane Dog Park	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Hurricane Equestrian Park	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Hurricane Heritage Wayside Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Main Street Trailhead	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Pioneer Park	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Fe Park	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Sky Ridge Park	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Spilsbury Sports Complex	0	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Stout Park	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Three Falls Park	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Three Falls Trailhead	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Vlassek Park	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zion's Gate Park	0	1	0	1	0	0	0	0	0	2	0	0	0	0	0	1

Existing Park Amenities (continued from previous page)

	Restroom(s)	Pavilion(s)	Playground(s)	General/Landscape Areas/Grass
American Legion Park	NA	NA	NA	2
Bowery Canal Trailhead	NA	NA	NA	2
Cherry Heights Linear Park	NA	NA	NA	2
Community Center Park	3	2	3	2
Dixie Springs Park	1	1	1	2
Grandpa's Pond Park	2	2	1	2
Hall Park	3	2	1	2
Hurricane Bike Park	NA	NA	NA	NA
Hurricane Dog Park	NA	1	NA	3
Hurricane Equestrian Park	1	1	1	2
Hurricane Heritage Wayside Park	NA	1	NA	2
Main Street Trailhead	2	NA	NA	2
Pioneer Park	3	1	2	2
Santa Fe Park	NA	2	2	2
Sky Ridge Park	2	2	2	2
Spilsbury Sports Complex	3	NA	NA	2
Stout Park	NA	3	3	2
Three Falls Park	2	NA	NA	2
Three Falls Trailhead	NA	NA	NA	2
Vlassek Park	NA	3	NA	2
Zion's Gate Park	NA	3	1	2

Existing Parks Condition

Key:

1. Pristine, like new
2. Mild wear
3. Heavy wear/damage/weathering

SECTION 7

LEVEL OF SERVICE ANALYSIS

Establishing an existing LOS is a fundamental part of an impact fee facilities plan and analysis. Specific terms used in this plan to characterize a level of service are defined as follows:

Existing LOS: the current level of service of parks, trails, and recreational facilities

Target LOS: the level of service the city desires to attain

The existing LOS calculations only count developed park acreage and do not include undeveloped city-owned property. Impact fees may be used to fund future development of any undeveloped acreage. For example, if the city owns a parcel of land and half of that parcel is developed as a park, only the developed half will be counted towards the current level of service and impact fees may be used to expand the park and develop the other half of the parcel.

Based on the inventory, guidelines, and classifications, the existing LOS for Hurricane City will be divided into three major classifications: Parks, Trails, and Recreation Facilities

Parks

The existing LOS for parks will be based upon an acreage per thousand people (acres/1,000 people). To calculate the existing LOS the area of each park is summed up then the total developed acreage is divided by the estimated 2023 population and then multiplied by 1,000 as illustrated is the following equation:

$$\frac{area\ of parks}{population\ of\ Hurricane}(1{,}000) = existing\ LOS$$

This yields level of service of **4.35** acres/1,000 people:

$$\frac{104.5\ acres\ of\ park}{24{,}000\ people}(1{,}000) = 4.35\ acres\ per\ 1{,}000\ people$$

Trails

The existing LOS for trails will be based upon miles per thousand people (miles/1,000 people). To calculate the existing LOS the mileage of trails is divided by the estimated 2023 population and then multiplied by 1,000 as illustrated is the following equation:

$$\frac{miles\ of trail}{population\ of\ Hurricane}(1{,}000) = existing\ LOS$$

This yields a level of service of **0.05** miles/1,000 people:

$$\frac{1.1\ miles\ of\ trail}{24{,}000\ people}(1{,}000) = 0.05\ miles\ per\ 1{,}000\ people$$

Recreation Facilities

The existing LOS for recreation facilities will be based upon square footage per thousand people (sf/1,000 people). This was calculated as interior square footage for the Community Center and the Fine Arts Center and as the interior area and swimming area of the pool. To calculate the existing LOS the total square footage is divided by the estimated 2023 population and then multiplied by 1,000 as illustrated is the following equation:

$$\frac{SF\ of\ recreation\ facility}{population\ of\ Hurricane}(1{,}000) = existing\ LOS$$

This yields a level of service of **2,528.04** sf/1,000 people:

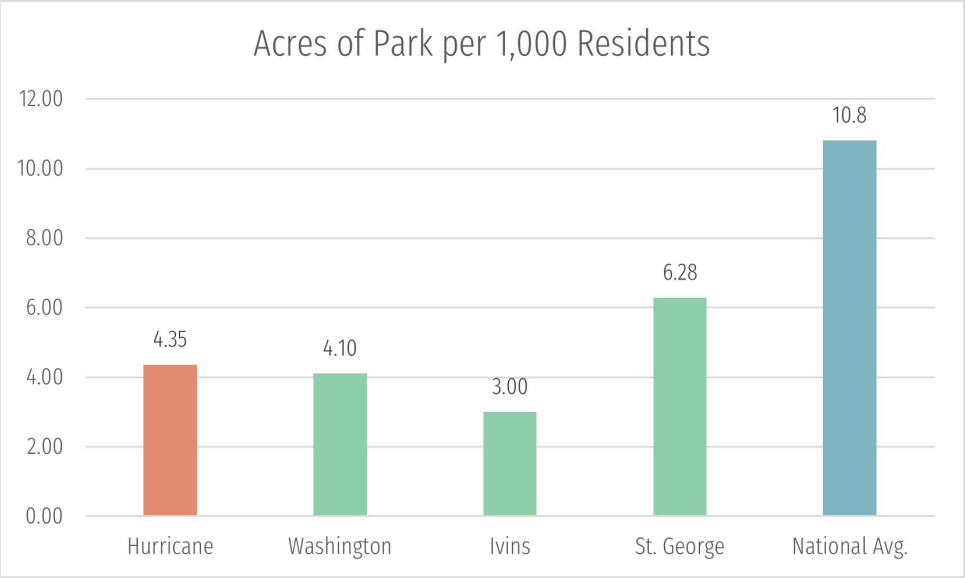
$$\frac{60{,}673\ SF\ of\ recreation\ facility}{24{,}000\ people}(1{,}000) = 2{,}528{,}04\ SF\ per\ 1{,}000\ people$$

Comparative Performance Review

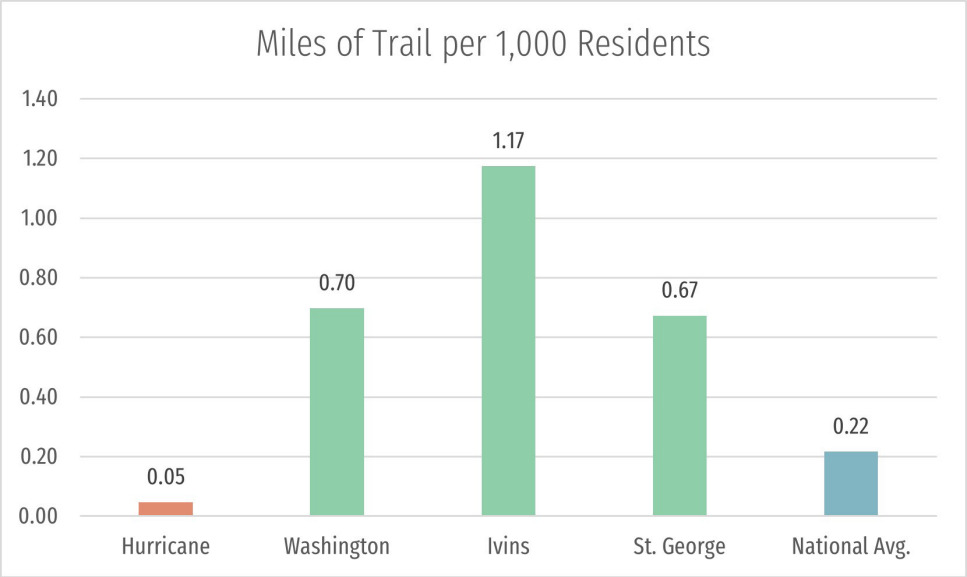
Comparing metrics with similar cities can be a useful way to see where improvements are most needed. This report compares the level of service provided for parks and trails in Hurricane with both adjacent communities and national averages. National average data was taken from the National Recreation and Parks Association (NRPA) 2023 Agency Performance Review.

Although historically, many parks and recreation master plans have relied on standards from the NRPA to set target levels of service and guide future parks and trails development, the NRPA currently advises against this approach, stating the following:

"The 2023 NRPA Agency Performance Review does not present park and recreation "standards," nor do the benchmarks represent any standards against which every individual park and recreation agency should measure itself. In fact, NRPA does not have a set of specific standards. The reason for this is simple: there is not one single set of standards for parks and recreation because different agencies serve different communities that have unique needs, desires and challenges."



In comparison to other surrounding cities, Hurricane has a high LOS for parks, in large part due to its well-developed system of large community parks. Hurricane has a lower LOS than the national average for similar sized cities, but this comparison can be misleading because of Hurricane's unique surroundings. Nearby regional parks such as Sand Hollow State Park, Quail Creek State Park, and Zion National Park provide many opportunities for recreation and are not accounted for in the level of service, so the availability of outdoor recreation in Hurricane is potentially higher than or equal to many other cities with higher levels of service.



Hurricane has substantially less miles of trail per capita than neighboring cities. Although Hurricane's LOS is nearly a quarter of the national average for similar size cities, the LOS of surrounding cities as well as the feedback received in public meetings and the public survey show that trails are a high priority for southern Utah residents. This data suggests that developing more miles of trail should be considered an important priority when evaluating future parks, trails, and recreation projects in Hurricane.

Target Level of Service

After presenting the existing LOS data to Hurricane City Staff, they made the decision to make the target LOS equal to the existing LOS for parks and recreation facilities. However, public sentiment and city staff decision is to increase the target LOS for trail miles to 0.75 miles per thousand people (0.75 mi/1000 ppl). This increase in trail miles would being the paved trail level of service for Hurricane within an average range for other southern Utah cities such as St. George, Washington, and Ivins. Bear in mind, the City will need to take into account that any increase from the existing LOS to a higher target LOS will require funding from other fees besides impact fees (i.e. user fees, grants, general fund).

Section 8

RECREATION PROGRAMS

Hurricane City currently offers the following recreation programs:

Group Fitness Classes
Senior Group Fitness Classes
Esports
Youth Esports
Youth Flag Football
Youth Golf
Youth Tennis
Youth Cross Country
Youth Soccer
Youth Soccer - Adaptive
Youth Volleyball
Youth Volleyball - Adaptive
Youth Basketball
Youth Basketball - Adaptive
Youth Baseball/Softball
Girl's Softball Tournament
Youth Club Volleyball
Girl's Competitive Basketball
Youth Tackle Football
Adaptive Kid Zone
Slow Pitch Men's Softball
Adult Pickleball
Adult Kickball
Women's Volleyball
Tumbling
Jiu Jitsu
Karate
Art Classes
Swim Lessons
Adaptive Swim Lessons
Aquatic Day Camp
Scout Swimming
Tiger Sharks Swim Team
Water Fitness Classes
Hurricane Theatrical

The public survey was informative about what kind of recreation programs residents would like to see, as well as changes that they would like to the way recreation programs are run (For full survey results, please see Appendix B.) Some common requests included:

- **Yoga Classes**
- **More adult classes/programs**
- **Water fitness**
- **More class availability for youth classes**
- **More programs in the evenings**

SECTION 9

IMPACT FEE FACILITIES PLAN

Growth Demands

The impact that development has on recreation facilities is two-fold: space and access. To achieve the target access to all areas of the City, parks and trails should be regularly spaced throughout the City and be incorporated into neighborhoods. Buffer maps in Appendix A show current spacing and accessibility of the recreation facilities.

Parks, Trails, and Recreation Facilities Plan

This recreation impact fee facilities plan provides Hurricane City with direction in terms of park, trail, and recreation facility development to meet future demands and satisfy the recreational needs of the community.

These recommendations reflect the current needs of the City and projected needs in the near future. It may be necessary to revise these priorities to accommodate new development or unforeseen issues or demands. However, all parks, trails, and recreation facilities built should contribute to Hurricane's long-range planning goals and to the overall proposed systems outlined in this document.

Parks

To meet future demand, locations for a total of approximately 36 new parks have been identified. A map of all proposed parks is shown in Appendix A. The table below shows the top priorities for parks to develop in the next six years.

PARKS			
Priority #	Name	Est. Acres	Projected Cost
1	N-13 (placeholder name - see map)	5	$1,968,220.68
2	N-08 (placeholder name - see map)	5	$1,968,220.68
3	N-12 (placeholder name - see map)	5	$1,968,220.68
4	N-27 (placeholder name - see map)	5	$1,968,220.68
5	Thrill Park	6	$2,361,864.82

Proposed Parks Priorities

In certain instances, neighborhood parks are the responsibility of new development, to match the demand created by the development. These parks are sometimes built by the developer and then turned over to the City. When this is the case, the City may require a minimum park acreage and standard be built based on typical neighborhood park requirements. In exchange for the park built to City standards, the City may give an impact fee credit for the facility to the developer. This process benefits both parties given that the new development is more appealing to potential buyers with a neighborhood park and the City acquires the park acreage required to be constructed by this plan and new development.

There are several development agreements in place with the City, and it will be important to ensure that the required parks and trails are installed as part of those developments.

These developments include:

- Sand Cove
- Black Ridge

- Sand Hollow Gateway
- Marla Phase 2
- Copper Rock

In the case of community parks, the City will generally be responsible for the development and construction of these types of facilities, since they typically serve multiple neighborhoods and often require a great deal of planning to be strategically located to serve the entire community.

Trails

The trail facilities plan provides Hurricane City with direction in terms of trail development to meet future demands and emphasizes safe travel for pedestrians and cyclists to and from parks and around the community. The focus is as much on transportation as it is on recreation.

To meet the future demand, approximately 159.3 miles of proposed trails, including paved and unpaved trails, have been located throughout Hurricane. A map of all proposed parks is shown in Appendix A. The table below shows the top priorities for trails to develop in the next six years.

TRAILS			
Priority #	Name	Miles	Projected Cost
1	Three Rivers Trail, 700 W to 2800 W	2.5	$1,738,549.67
2	400 S ROW Trail	0.7	$486,793.91
3	Three Rivers Trail, 200 W to Hwy 9	0.6	$417,251.92
4	Three Rivers/Sand Hollow Road Trail, 2800 W to State St	2.3	$1,599,465.69
5	Three Rivers/Sand Hollow Road Trail, State St to Dixie Springs Rd	2.9	$2,016,717.61
6	Southern Pkwy ROW Trail, State St to 3000 S	3.2	$2,225,343.57

Proposed Trails Priorities

In many instances, these trails will come with the arrival of new development. These trails are sometimes built by the developer and then turned over to the City. When this is the case, the City will require the trail material to be asphalt, which complies with their standard specifications, and the trail must be 12 feet in width for connector trails shown on active transportation plan or 10 feet in width for internal neighborhood trails. In exchange for a length of trail constructed to City standards, the City may give an impact fee credit for the trail length to the developer or assist with the added cost if the trail is provided in place of a required concrete sidewalk.

This process benefits both parties given that the new development is more appealing with a network of trails and ties into the City trail system and the City obtains the constructed trail mileage needed by this plan and new development.

Recreation Facilities

The City's current efforts to provide increased recreation facility access to residents are focused on the American Legion/ Spilsbury Sports building, where two new indoor sports building are planned to be constructed.

RECREATION FACILITIES			
Priority #	Name	Sq. Ft	Projected Cost
1	2-Gym Building at American Legion Park	-	-
2	4-Gym Building at American Legion Park	-	-
3	Pool Expansion Project	-	-

Proposed Recreation Facility Priorities

Recommendations

It is recommended that Hurricane City maintain the existing LOS in regard to all parks, trails, and recreation facilities. In the 10-year planning horizon this means spending $X,XXX,XXX on recreation facilities including parks, trails, trailheads, and recreation facilities. The table of costs of improvements shows expanded calculations for the 10-year and 20-year planning horizons total impact fee eligible costs.

Additional Considerations

Constructing facilities larger than the calculated LOS means that they would be partially impact fee eligible and not have all costs covered by impact fees. All parts of the community will have different levels of service. For example, commercial and industrial areas might reasonably be expected to have lower levels of service for parks and trails opportunities than residential areas.

It is important to recognize that adopting the full maximum allowable impact fee is necessary to maintain the current level of service using impact fees. If a lower than maximum allowable impact fee is adopted, this will mean that either the level of service will drop as the population grows, or other funding will need to be used to maintain the level of service.

Section 10

FINANCIAL VIABILITY

The costs of recommended improvements are based on park area, recreation facility area, trail length, and impact fee facilities plan updates and are presented in table of costs of improvements.

Average Costs	
Per Acre of Park	$393,644
Per Mile of Trail	$695,420
Per SF of Rec Facility	$300

Population	
2023 population	24,000
2033 population	34,813
2043 population	48,167

	Developed Park [ac]	Recreation Facility [sf]	Paved Trails [mi]	IFFPA Update (every 5 years)	Total Costs
Level of Service[ac, sf, or mi/1000 ppl]	4.35	2,528	0.05		
10-yr Pop. Increase: **10,813**					
10-yr Demand Increase	47.08	27,336	0.51	2 (at $40,000 ea.)	
Est. 10-yr Cost (at 3% for 5 yr)	**$20,460,410.21**	**$9,054,251.30**	**$390,204.27**	**$92,923.01**	**$29,997,788.78**
20-yr Pop. Increase: **24,167**					
20-yr Demand Increase	105.22	61,095	1.14	2 (at $40,000 ea.)	
Est. 20-yr Cost (at 3% for 15 yr)	**$55,743,289.47**	**$24,667,821.71**	**$1,063,090.58**	**$206,195.64**	**$81,680,397.40**

New ERCs	5,798
Maximum Allowable Impact Fee	**$5,173.95**

Impact Fee Calculation

These costs capture anticipated construction costs including mobilization, construction layout, demolition, material and labor costs, surface restoration, professional services, incidentals, engineering, and contingency.

Project Phasing

It is assumed that Hurricane City will construct improvements as impact fee funds are collected. This assumes that parks and trails and recreation facilities will be constructed at a pace that best suits Hurricane City staff and the recreation needs of the City. It should be noted that growth in the study area may occur at a rate faster or slower than that predicted in the cash flow analysis. If growth occurs at a faster rate, more funds will be available to construct projects at an expedited schedule. On the other hand, if growth is slower than expected, implementation of the projects should be delayed until the population base can fund the improvements.

Impact Fee Analysis

The proposed recreation impact fee was calculated based on the estimated costs, existing LOS, inflation, and impact fee eligibility. Project impact fee eligibility is based on whether the project exceeds or maintains the established LOS. For the purpose of this study, all proposed project costs are impact fee eligible because they maintain the existing LOS.

Equivalent residential connection (ERC) values were taken from the latest water impact fee analysis. The conversion presented therein and used here is **1.865 people per ERC.**

The maximum allowable impact fee for an equivalent residential connection is **$5,173.95.**

As required by the Utah Impact Fees Act, an Impact Fee Certification is included in Appendix E. It states that this analysis was done in accordance with the Impact Fees Act and its requirements.

Rules regarding the use of impact fees are covered by the Impact Fees Act. Generally, impact fees may only be used for facility improvements that are required to service new development within the existing level of service or expected service requirements and are included in this Impact Fee Facilities Plan. Impact fees must be used within six years of payment, or they must be paid back.

Comparable Impact Fees

For comparison, the recreation impact fees of several nearby and/or similar cities are provided in the table below.

City	Currently Adopted	Maximum Allowable
Cedar City	$1,350.00	$3,392.00
Kanab	$2,081.46	$4,162.92
Logan	$1,292.00	$1,292.00
Spanish Fork	$4,795.00	$8,946.04
St George	$4,525.00	$4,763.00
Washington	$4,800.00	$6,050.00

Comparable Impact Fees

Cash Flow Analysis

A recreation system cash flow analysis for a 20-year planning horizon was completed to show how the 10-year planning horizon improvement projects could be implemented, to analyze the continued viability of proposed user rates, and to show possible trends in impact fee and cash fund balances. Initial data for the cash flow analysis was taken from fiscal years 2021-2023 Hurricane City budget reports. Values projected through the analysis are based on growth, interest, and inflation trends determined during the process of the study. It should be noted that the analysis is a general forecast only and will vary with the speed and pattern of development in the City. The entire cash flow analysis printout is given in Appendix C.

The upper section of the cash flow printout, entitled “Revenue”, contains the basic data upon which many of the values in the cash flow spreadsheet are generated. Of note are the projected growth trends, the assumed inflation rates, impact fees, general fund cash allocations, and the projected ERC quantities for the coming fiscal years. Most of the revenue in later parts of the cash flow spreadsheet is generated from the impact fees and general fund allocations.

The next section is the expenses section which seeks to quantify all the expenses incurred by the recreation department. Included in the expenses section are the operation and maintenance costs, recreation program costs, and staff salary and benefits. The difference between the total revenues and total expenses is the net cash flow for the department.

Total revenues and total expenses are then broken down into impact fee and cash fund categories. This was done to help show adequate funds would be available over the course of the projection period.

Included at the end of the cash flow analysis is a system improvement implementation schedule for the next twenty years which shows how the impact fee facilities plan improvement projects were incorporated into the cash flow analysis.

Other Financing Options

Within the state of Utah, there are a variety of funding sources available to communities developing their parks, trails, and recreational facilities. There are specific requirements that apply to each of these that should be considered when using them as funding sources. Some of the grants require matching funds and others require substantial commitments related to tracking, monitoring, and reporting that involve staff oversite and involvement. The following list is a summary of potential funding sources in addition to Park Impact Funds (PIF).

- Capital Improvement Funds (CIF)
- Recreations, Arts, Parks Taxes (RAP Tax)
- Park and Recreational Infrastructure Bonding
- Community Development Block Grants (CDBG)
- Alternative Transportation Grants
    - UDOT
    - TIGER
    - RAISE
- Federal Highways
- Safe Schools (last mile program)

Working with developers as they provide required infrastructure based on development agreements is also another key consideration when developing parks, trails, and recreational infrastructure. Agreements can include development of infrastructure, land acquisitions and donations, and easements for trails and amenity connections between residential zones and park facilities. Often, a 12' wide paved shared use trail can be installed in place of a 6' wide sidewalk for the similar cost where the masterplan indicates that the trail is required. These park, trails, and recreational amenities are considered an added benefit to those living in these newly developed communities and a positive by developers when attracting prospective home buyers to their residential and commercial developments projects.

Section 11

PUBLIC SIGNAGE

It is recommended that Hurricane establish a standard design for each type of sign below. Examples from other cities of each type of sign are shown, along with guidance on best practices for signage design.

Wayfinding

Wayfinding signage is usually the first type of signage that residents or visitors will encounter when navigating to parks or recreation facilities, or simply to other parts of the city. Wayfinding signage is typically located along roads and is intended to provide guidance and direction for drivers navigating to various destinations. This type of signage may direct to places within the city, such as key community infrastructure, city offices, hospitals, airports, libraries, parks and trails, as well as to regional destinations like national parks.

Wayfinding signage may also be used to reinforce the character of certain neighborhoods or historic areas.

Examples of Wayfinding Signage

Trails

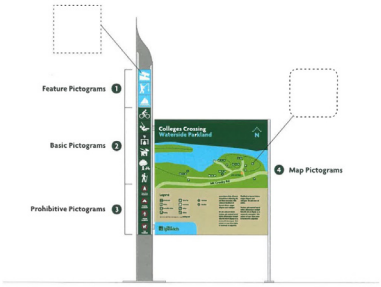
Trail signs are often similar to wayfinding signs, but are intended primarily for trail users (pedestrians, bicyclists, etc.), rather than being primarily for guiding vehicular traffic. Trail signage will often indicate how many miles away various destinations and trail connections are. Trail signage will also often include signs for trail rules and etiquette.

Examples of Trail Signage

Parks and Recreation Facilities

Parks and recreation facilities usually have the largest signs. These large, monument-type signs reinforce the city identity and help users know what park or facility they are at. These types of signs are a great opportunity to show the character of the city and build continuity across diverse types of facilities.

Parks will usually also include a small sign(s) with park rules.



Examples of Parks and Recreation Facility Signage

Interpretive Signs

Interpretive signage may be included as a part of parks, trails, or other facilities. Interpretive signs provide additional information about specific topics, including history, cultural significance, wildlife, plants, geology, hazards. Interpretive signs may be incorporated into kiosks or other structures or be freestanding. As shown here, there are many options for incorporating art and city branding and identity into interpretive signs.

Examples of Interpretive Signage

Section 12

WATER CONSERVATION

As development in the West and especially in Southern Utah continues to put strain on our limited water resources, it is important to conserve water whenever possible. While parks and other public facilities are a crucial part of building a healthy, vibrant community, they also use significant amounts of water. Fortunately, there are many measures that can be taken to reduce the amount of water used at public parks and other facilities while still providing an exemplary experience for residents.

Hurricane City passed a water conservation ordinance February 16, 2023. It outlines the importance of water conservation in Southern Utah and places several requirements on water use in Hurricane. Some notable requirements from that ordinance related to this report are:

- Requires all plants used to be drought tolerant.
- Does not permit grass outside of active recreation areas.
- Secondary water must be used for landscape irrigation in commercial development if available.
- Prohibits the development of new golf courses that use water from the city, Washington County Water Conservancy District, or a canal or irrigation company.
- Prohibits the creation of artificial lakes or water parks as part of new private development using water from the city, Washington County Water Conservancy District, or a canal or irrigation company.

Please see the full text of the ordinance for full requirements, exceptions, and other important content (https://www.cityofhurricane.com/DocumentCenter/View/1617/Ordinance-2023-04-Water-Conservation-Ordinance?bidId=)

The list below is a compilation of best practices that may be used to reduce water use on city properties, especially public parks. These recommended practices would be in addition to the requirements from the 2023 water conservation ordinance. Please note that some practices may only be feasible to apply to new facilities, while others may be applied to existing park infrastructure.

- The use of rain sensors to prevent unnecessary running of irrigation systems during or after rain events.
- When lawn is used, use drought tolerant grass species.
- Require all landscape and irrigation designers and installers employed on city projects to hold state and local licenses, ensuring competency in the design and construction of landscapes and irrigation systems.
- Group plants with similar water needs together into hydrozones to avoid overwatering low-water plants or underwatering higher-water plants. Different hydrozones should be irrigated through separate control valves.
- Do not include lawn in landscaping of detention basins unless the basin will also function as an active recreation area.
- Use drip irrigation for plants in non-grass areas.
- Use high-efficiency spray nozzles for sprinkler applications.
- Use rigid lateral lines with flexible material (swing joints) to reduce potential for breakage and leaks.
- Only water 2-3 days per week. More water will be required in the summer than in the winter. In December and January it is often not necessary to water at all.
- Water during the early hours of the morning, when evapotranspiration rates are lowest and wind impacts are typically reduced.

Section 13

TRAIL RULES

The following are recommendations for possible trail rules to be posted on a sign at each trail and/or trailhead.

- No motorized vehicles, except for e-bikes, electric scooters, and similar vehicles. All trail users shall observe a speed limit of 15 miles per hour.
- Bicyclists or people riding scooters or other vehicles shall yield to pedestrians.
- Pets must be on a leash no longer than 8 feet.
- Owners are responsible for removing all pet waste from the trail.
- No littering – dispose of trash properly.
- Announce intention to pass. Keep right and pass on left.
- Move off the trail when stopped to avoid blocking the trail.
- No artificially amplified sound systems or speakers are permitted without prior approval.
- Respect private property – remain on the trail.
- Lights are recommended for safety if using the trails before dawn or after dark.
- The sale, consumption, or possession of alcoholic beverages, tobacco, or drugs and gambling of any kind is prohibited in all parks, trails, and other recreational facilities.
- No unauthorized weapons of any kind are permitted in all parks, trails, and other recreational facilities.
- No vending or sales of any kind are permitted without prior approval.
- No glassware of any kind is permitted.
- In case of emergency, call 911.

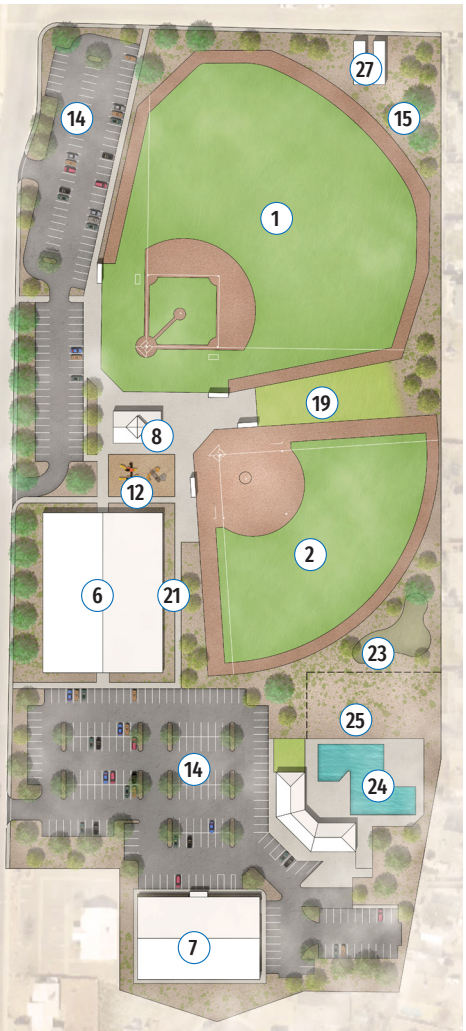
Please note that other governing agencies may have additional or different rules that they require to be posted at trailheads adjacent to lands that they manage.

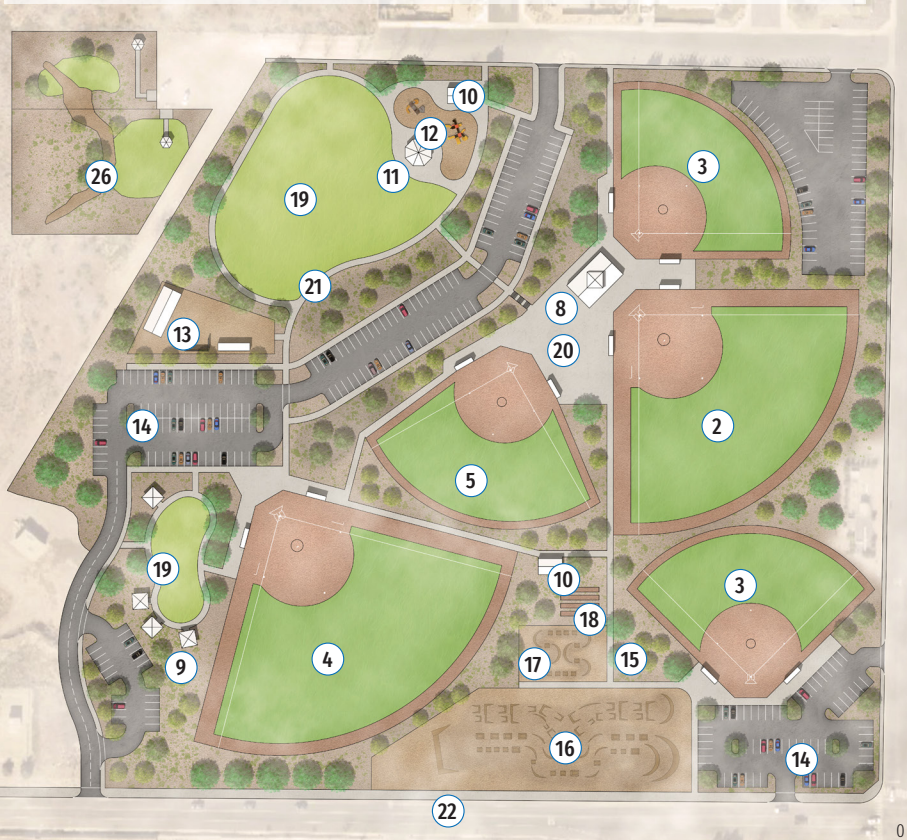
Section 14

Spilsbury / American Legion Concept Plan

LEGEND

1. Existing Baseball Field
2. Existing Softball Field
3. Existing Little League Field
4. Proposed Softball Field
5. Proposed Little League Field
6. New Sports Building A
7. New Sports Building B
8. Restrooms, Concessions, and Press Box
9. Picnic Pavilions
10. Restrooms
11. Relocated Stout Park Pavilion
12. Playground
13. Storage Area with Office/Storage Building
14. Parking Lot
15. Landscape Area, Typ.
16. Bike Park
17. Bike Park Pump Track
18. Relocated Horseshoe Pits
19. Open Grass Area
20. Paved Plaza
21. Concrete Paths w/ Seating Areas, Typ.
22. 12' Paved Trail
23. Retention Basin
24. Existing Hurricane City Pool
25. Area for Future Pool Expansion
26. Existing Hurricane Dog Park
27. Batting Cages





The concept plan for the Spilsbury/American Legion Park Sports Complex is primarily designed to meet the growing needs of the community for organized sports fields and facilities. Adding more sports fields will make it possible to offer more recreation programs for youth and adults. The concept plan also includes two sports buildings to allow space for basketball and other indoor sports. In addition to added fields and facilities for organized sports, the plan includes open grass areas, picnic pavilions, an improved bike park, additional parking, and restroom facilities.

City parks and recreation staff were involved throughout the concept planning process to ensure that the amenities included in the plan meet Hurricane's needs and will bring the maximum value possible to the community.

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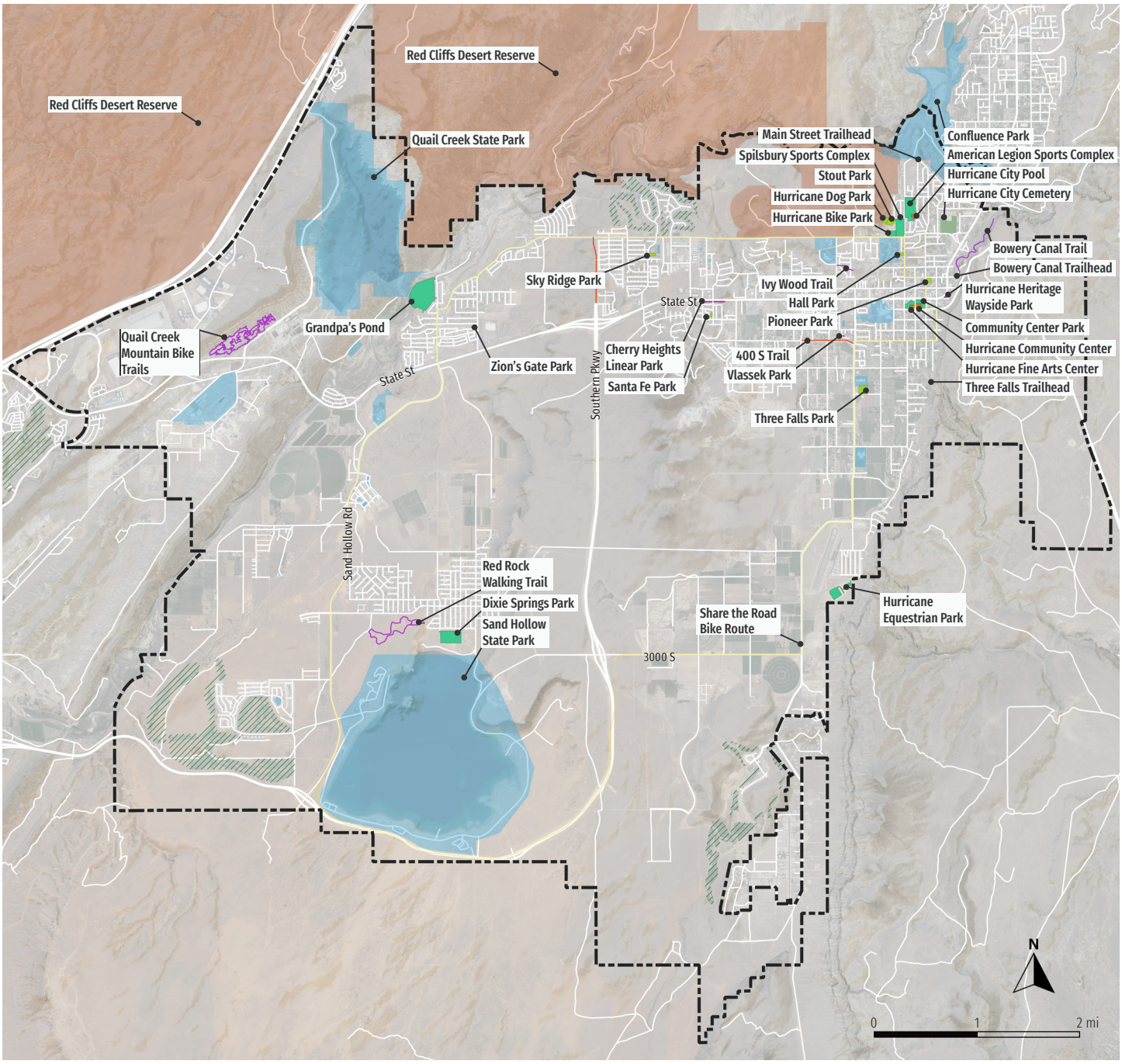
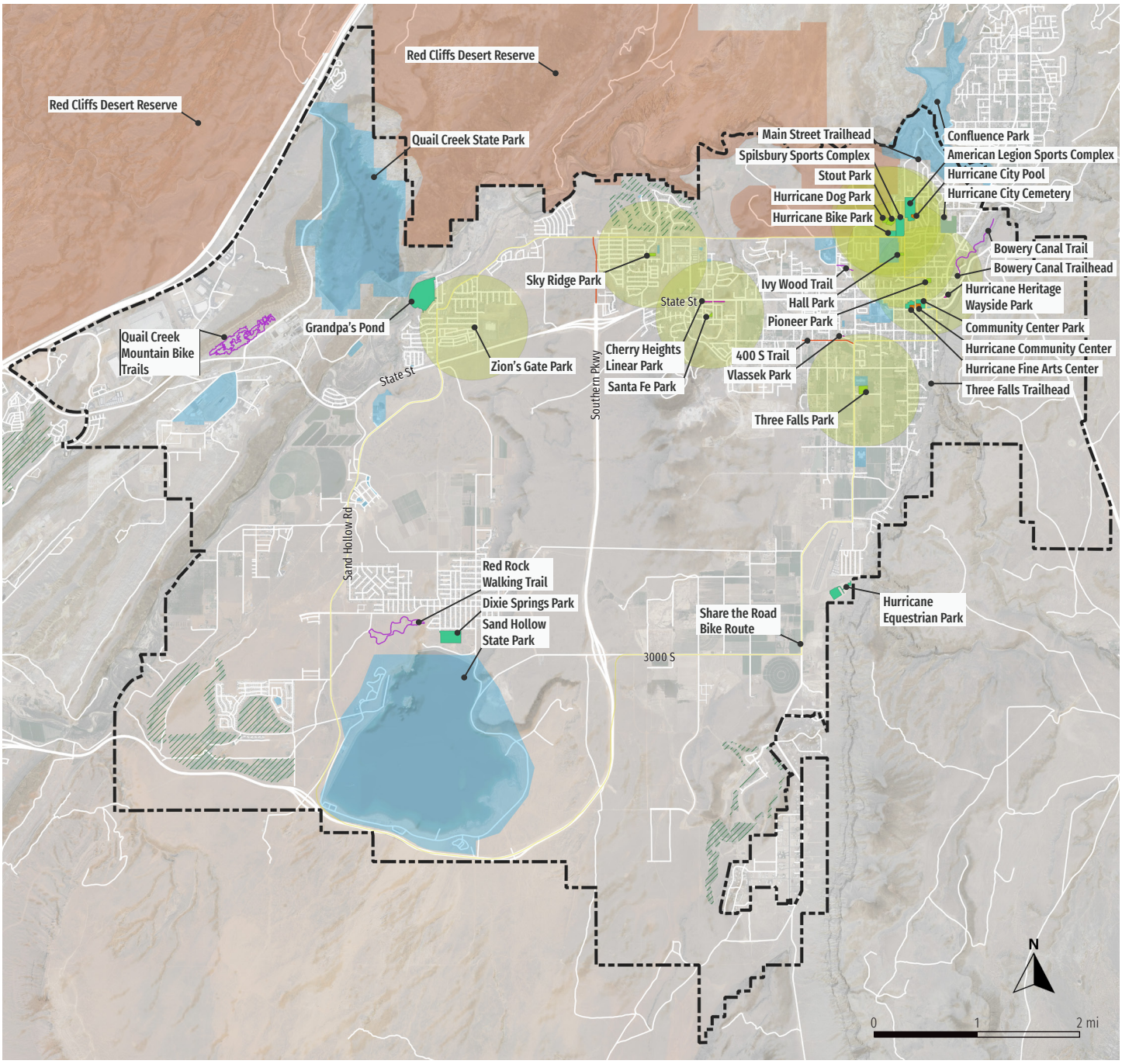
APPENDIX A

MAPS



Existing Parks, Trails, and Recreation Facilities

- City Boundary
- Community Park
- Neighborhood Park
- Special Use Park
- Red Cliffs Desert Reserve
- Recreation Facility
- Non-City Park
- Golf Course
- Paved Trail
- Unpaved Trail
- Bike route



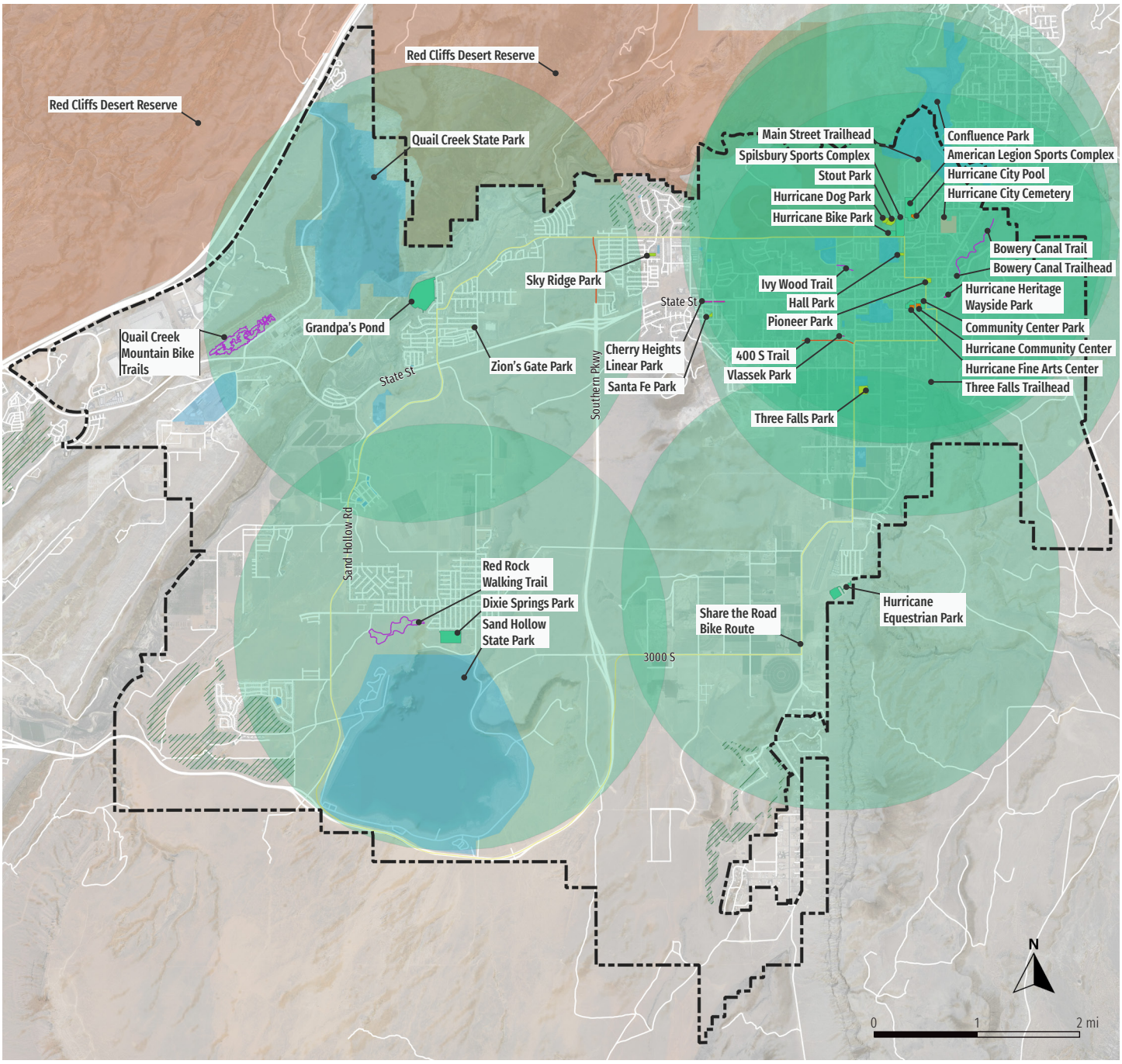
Existing Neighborhood Park Buffers

Neighborhood Park Buffer

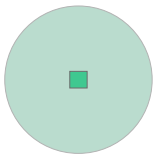
City Boundary
Community Park
Neighborhood Park
Special Use Park

Red Cliffs Desert Reserve
Recreation Facility
Non-City Park
Golf Course

Paved Trail
Unpaved Trail
Bike route



Existing Community Park Buffers



Community Park Buffer

- City Boundary
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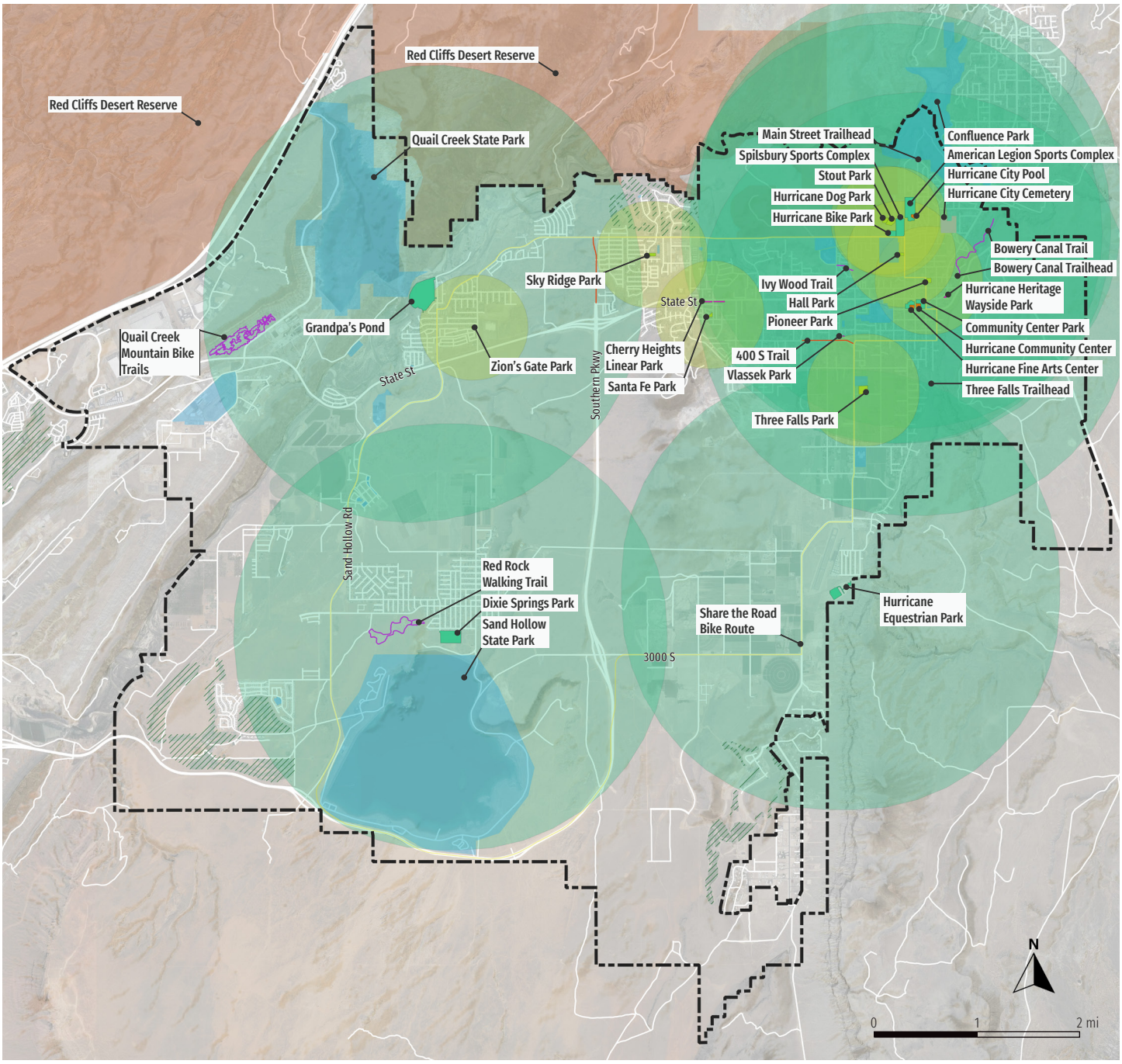


Existing Park Buffers

Neighborhood Park Buffer

Community Park Buffer

City Boundary

Community Park

Neighborhood Park

Special Use Park

Red Cliffs Desert Reserve

Recreation Facility

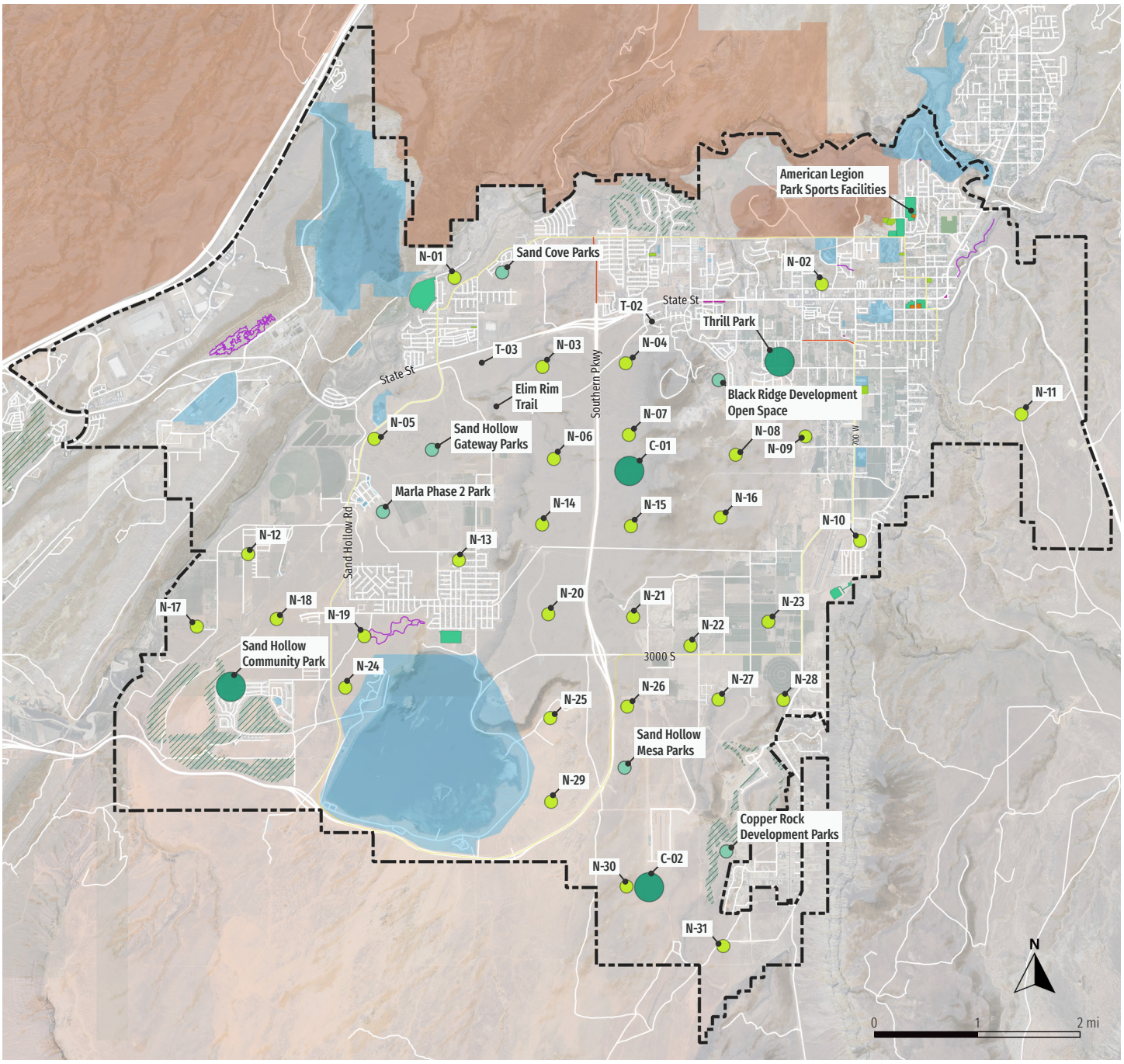
Non-City Park

Golf Course

Paved Trail

Unpaved Trail

Bike route



Proposed Parks

Proposed

- Community Park
- Neighborhood Park
- Development Agreement Park
- Paved Trail
- Unpaved Trail

Existing

- City Boundary
- Community Park
- Neighborhood Park
- Special Use Park
- Red Cliffs Desert Reserve
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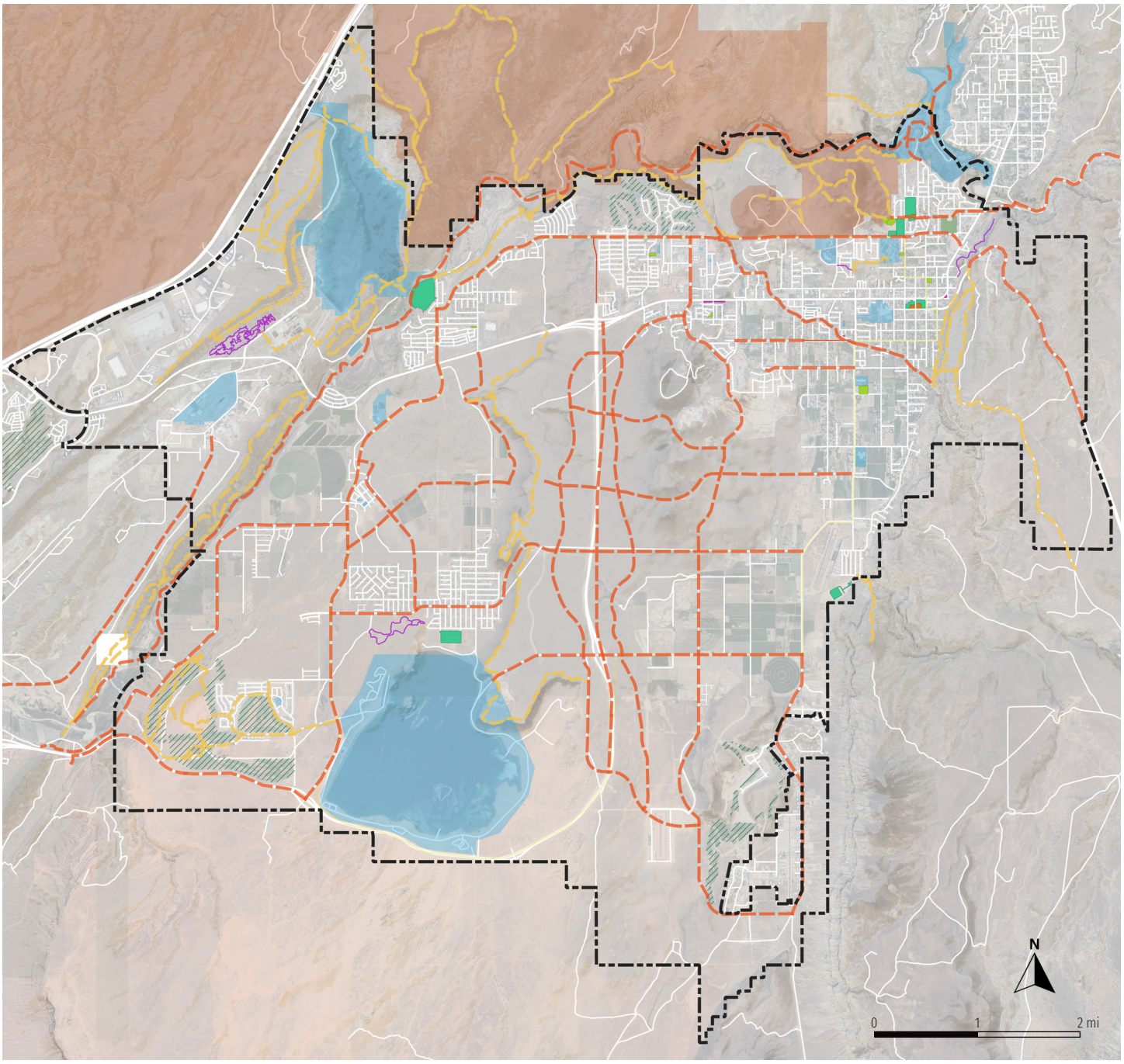


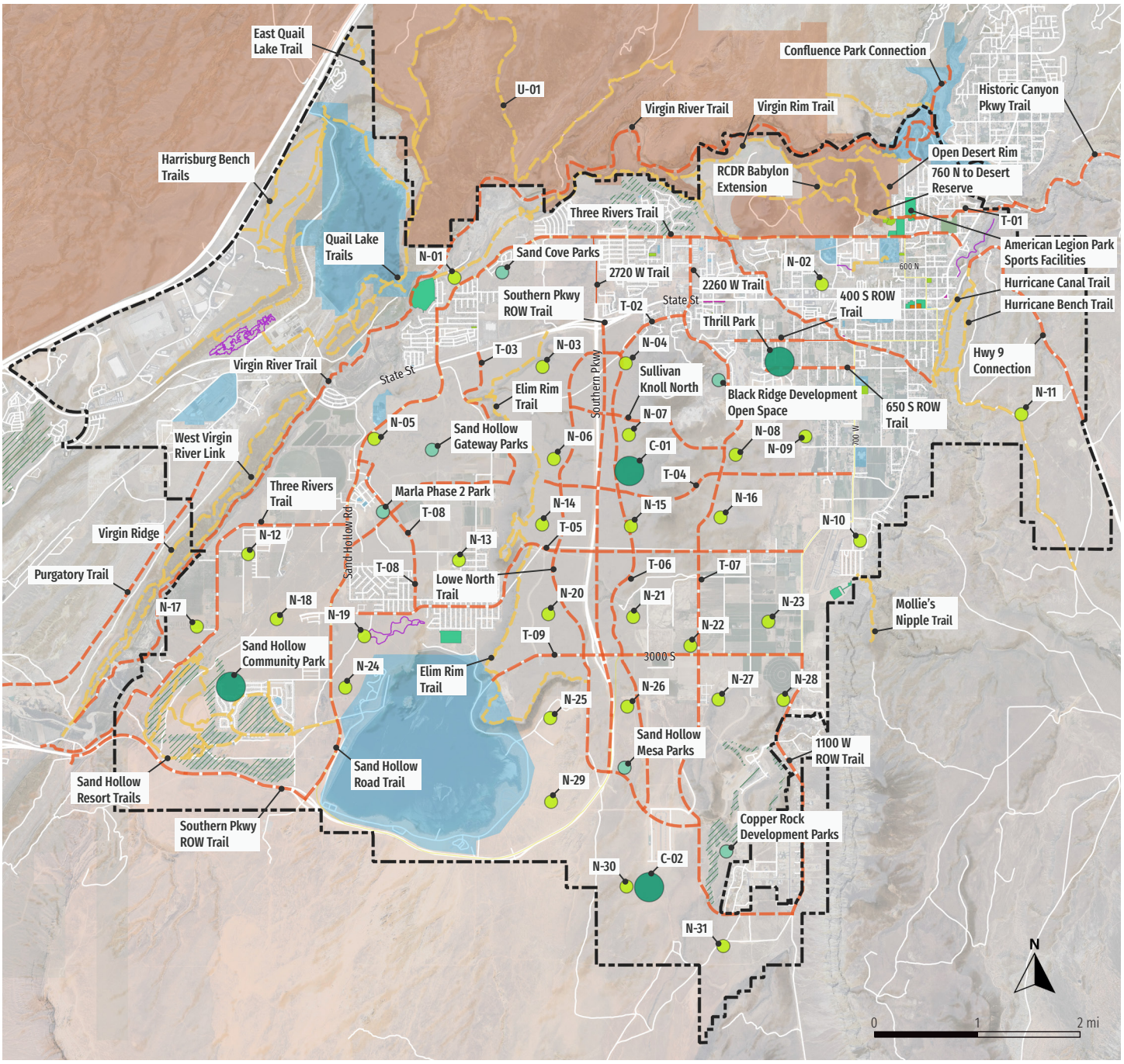
Proposed Trails

Proposed

- Community Park
- Neighborhood Park
- Development Agreement Park
- Paved Trail
- Unpaved Trail

Existing

- City Boundary
- Community Park
- Neighborhood Park
- Special Use Park
- Red Cliffs Desert Reserve
- Recreation Facility
- Non-City Park
- Golf Course
- Paved Trail
- Unpaved Trail
- Bike route



Proposed Parks and Trails Map

Proposed

- Community Park
- Neighborhood Park
- Development Agreement Park
- Paved Trail
- Unpaved Trail

Existing

- City Boundary
- Community Park
- Neighborhood Park
- Special Use Park
- Red Cliffs Desert Reserve
- Recreation Facility
- Non-City Park
- Golf Course
- Paved Trail
- Unpaved Trail
- Bike route

APPENDIX B

UNIT COST CALCULATIONS

PARKS

Park Name	Year	Owner	Project Type	Construction Cost	Incidentals	Project Total Cost	Acres	Cost per Acre
Green Springs Park	2007	Washington City	New Facility	$ 834,300.00	$ 146,256.46	$ 980,556.46	8.6	$ 114,018.19
Dixon Park	2008	City of Caliente	New Facility	$ 2,180,900.00	$ 287,000.00	$ 2,467,900.00	5.3	$ 465,641.51
Super Park	2008	City of Caliente	New Facility	$ 784,900.00	$ 181,000.00	$ 965,900.00	3	$ 321,966.67
Rose Park	2008	City of Caliente	Upgrade	$ 394,900.00	$ 85,000.00	$ 479,900.00	1.3	$ 369,153.85
Sullivan Virgin River Phase I	2011	Washington City	New Facility	$ 1,497,200.00	$ 262,465.74	$ 1,759,665.74	10.6	$ 166,006.20
Rachel Park	2011	Lincoln County	Upgrade	$ 239,600.00	$ 52,600.00	$ 292,200.00	1.5	$ 194,800.00
Little Valley Pickleball	2012	St. George City	New Facility	$ 813,800.00	$ 90,500.00	$ 904,300.00	2.5	$ 361,720.00
Pioche Park Phase II	2012	Lincoln County	Upgrade	$ 758,000.00	$ 167,500.00	$ 925,500.00	2.7	$ 342,777.78
Sky Ridge Park	2012	Hurricane City	New Facility	$ 274,043.15	$ 41,106.47	$ 315,149.62	1.3	$ 250,118.75
White Pine County	2013	White Pine County	New Facility	$ 155,400.00	$ 36,500.00	$ 191,900.00	0.7	$ 274,142.86
North Ely Park	2013	White Pine County	New Facility	$ 162,400.00	$ 44,100.00	$ 206,500.00	1.0	$ 206,500.00
Bianchi Park	2013	White Pine County	Upgrade	$ 153,600.00	$ 22,100.00	$ 175,700.00	0.6	$ 292,833.33
McGill Park	2013	White Pine County	Upgrade	$ 255,100.00	$ 36,800.00	$ 291,900.00	1.3	$ 224,538.46
Steptoe Park	2013	White Pine County	Upgrade	$ 103,200.00	$ 14,900.00	$ 118,100.00	0.4	$ 295,250.00
Courthouse Park	2013	White Pine County	Upgrade	$ 229,500.00	$ 48,100.00	$ 277,600.00	1.3	$ 213,538.46
Pioneer Park Phase I & II	2014	Lincoln County	Upgrade	$ 749,700.00	$ 749,700.00	$ 1,499,400.00	3.2	$ 468,562.50
Royal Oaks Park	2014	St. George City	New Facility	$ 412,000.00	$ 72,225.41	$ 484,225.41	1.0	$ 484,225.41
Silkwood Park	2014	St. George City	New Facility	$ 385,300.00	$ 67,544.78	$ 452,844.78	1.5	$ 301,896.52
Sunset Park	2014	St. George City	Upgrade	$ 560,900.00	$ 98,328.24	$ 659,228.24	2.4	$ 274,678.43
Grandpa's Pond Park	2015	Hurricane City	New Facility	$ 1,465,661.60	$ 219,849.24	$ 1,685,510.84	15.3	$ 110,164.11
Crimson Ridge Park	2018	St George City	New Facility	$ 1,145,893.70	$ 171,884.06	$ 1,317,777.76	4.3	$ 306,459.94
Snake Hollow Bicycle Skills Park Phase 1	2018	St George City	New Facility	$ 2,337,520.60	$ 350,628.09	$ 2,688,148.69	10.4	$ 259,223.60
Atkinville Wash Park	2019	St George City	New Facility	$ 1,224,001.00	$ 183,600.15	$ 1,407,601.15	2.9	$ 485,379.71
Boilers Park	2020	Washington City	New Facility	$ 1,523,000.00	$ 228,450.00	$ 1,751,450.00	2.7	$ 643,915.44
Fish Rock Park	2021	St George City	New Facility	$ 1,522,311.70	$ 228,346.76	$ 1,750,658.46	2.8	$ 625,235.16
Hurricane Equestrian Park	2021	Hurricane City	New Facility	$ 1,804,900.00	$ 123,900.00	$ 1,928,800.00	6.8	$ 283,647.06
Fossil Falls Park	2022	St George City	New Facility	$ 2,585,362.55	$ 387,804.38	$ 2,973,166.93	4.5	$ 660,703.76
Washington City Dog Park Exp	2023	Washington City	Upgrade	$ 873,182.00	$ 130,977.30	$ 1,004,159.30	1.6	$ 643,691.86
			Subtotal	$ 25,426,576.30	$ 4,529,167.08	$ 29,955,743.38	101.41	$ 9,640,789.56
			Cost / Acre	$ 295,392.40	$ 44,661.94	$ 295,392.40		
			Avg. Construction Year	2014				
		Cost / Acre Including Inflation	3.0%	**$ 393,644.14**				

TRAILS

Trail Name	Year	Owner	Project Type	Construction Cost	Incidentals	Total Project Cost	Miles	Cost Per Mile
Three Rivers Trail Connection	2014	Washington City	New Facility	$ 1,200,000.00	$ 210,365.28	$ 1,410,365.28	2.32	$ 607,916.07
Three Rivers Trail Reconstruction	2011	Washington City	New Facility	$ 220,800.00	$ 38,707.21	$ 259,507.21	0.38	$ 685,099.04
Mill Creek Trail	2011	Washington City	New Facility	$ 38,560.00	$ 6,759.74	$ 45,319.74	0.10	$ 453,197.38
Virgin River Trail	2010	Washington City	New Facility	$ 101,200.00	$ 17,740.81	$ 118,940.81	0.50	$ 237,881.61
Virgin River Trail, South C	2013	St. George City	New Facility	$ 121,500.00	$ 21,299.48	$ 142,799.48	0.50	$ 285,598.97
Virgin River Gap Trail	2019	St. George City	New Facility	$ 835,713.40	$ 125,357.01	$ 961,070.41	1.07	$ 898,196.64
600 N Trail	2023	Hurricane City	New Facility	$ 484,179.00	$ 72,626.85	$ 556,805.85	1.80	$ 309,336.58
			Subtotal	$ 3,001,952.40	$ 492,856.38	$ 3,494,808.78	6.67	$ 3,477,226.29
			Cost / Mile	$ 524,054.57	$ 73,904.94	$ 524,054.57		
			Avg. Construction Year	2014				
		Cost / Mile Including Inflation	3.0%	**$ 695,419.87**				

APPENDIX C

CASH FLOW SPREADSHEET

Title	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Revenue										
Total ERCs	11,701	12,374	12,869	13,383	13,918	14,475	15,054	15,656	16,283	16,934
New ERCs		673	495	515	535	557	579	602	626	651
Impact Fees Collected	$ 2,279,987	$ 1,795,254	$ 945,980	$ 2,664,584	$ 2,768,063	$ 2,881,890	$ 2,995,717	$ 3,114,718	$ 3,238,893	$ 3,368,241
Service Fees	$ 512,378	$ 511,271	$ 619,460	$ 638,044	$ 657,185	$ 676,901	$ 697,208	$ 718,124	$ 739,668	$ 761,858
General Fund Allocations	$ 5,875,036	$ 5,100,058	$ 4,866,661	$ 5,012,661	$ 5,163,040	$ 5,317,932	$ 5,477,470	$ 5,641,794	$ 5,811,048	$ 5,985,379
Other Revenues	$ 18,598	$ 332,451	$ 170,984	$ 176,113	$ 181,396	$ 186,838	$ 192,444	$ 198,217	$ 204,163	$ 210,288
Total Operating Revenue	$ 6,406,012	$ 5,943,780	$ 5,657,104	$ 5,826,818	$ 6,001,622	$ 6,181,671	$ 6,367,121	$ 6,558,135	$ 6,754,879	$ 6,957,525
Expenses										
General	$ 1,134,219	$ 1,209,928	$ 1,485,987	$ 1,530,566	$ 1,576,483	$ 1,623,778	$ 1,672,491	$ 1,722,666	$ 1,774,346	$ 1,827,576
Capital Projects	$ -	$ -	$ 766,253		$ -	$ -	$ -	$ -	$ -	$ -
Total Operating Expenses	$ 1,134,219	$ 1,209,928	$ 2,252,240	$ 1,530,566	$ 1,576,483	$ 1,623,778	$ 1,672,491	$ 1,722,666	$ 1,774,346	$ 1,827,576
Accounts										
Net Cash	$ 5,271,793	$ 4,733,851	$ 3,404,865	$ 4,296,251	$ 4,425,139	$ 4,557,893	$ 4,694,630	$ 4,835,469	$ 4,980,533	$ 5,129,949
Operating Account Balance	$ -	$ 4,733,851	$ 8,138,716	$ 12,486,659	$ 16,911,798	$ 21,469,691	$ 26,164,321	$ 30,999,790	$ 35,980,322	$ 41,110,271
Impact Fee Balance	$ 4,713,783	$ 5,569,047	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198
Project Costs										
Project Cost	$ -	$ -	$ -	$ 894,288	$ 2,664,584	$ 2,768,063	$ 2,881,890	$ 2,995,717	$ 3,114,718	$ 3,238,893
Non-Impact Fee Eligible Cost	$ -	$ -	$ -	$ (51,692)	$ -	$ -	$ -	$ -	$ -	$ -
Impact Fee Eligible Cost	$ 2,067,350	$ 3,135,250	$ 1,121,405	$ 945,980	$ 2,664,584	$ 2,768,063	$ 2,881,890	$ 2,995,717	$ 3,114,718	$ 3,238,893
Project Name(s)										

2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
17,493	18,070	18,666	19,283	19,919	20,576	21,255	21,957	22,681	23,429	24,203	25,002	25,827
559	577	596	616	636	657	679	701	724	749	773	799	825
$ 2,892,238	$ 2,985,369	$ 3,083,674	$ 3,187,153	$ 3,290,632	$ 3,399,285	$ 3,513,112	$ 3,626,939	$ 3,745,940	$ 3,875,289	$ 3,999,463	$ 4,133,986	$ 4,268,509
$ 784,713	$ 808,255	$ 832,503	$ 857,478	$ 883,202	$ 909,698	$ 936,989	$ 965,099	$ 994,052	$ 1,023,873	$ 1,054,589	$ 1,086,227	$ 1,118,814
$ 6,164,940	$ 6,349,889	$ 6,540,385	$ 6,736,597	$ 6,938,695	$ 7,146,856	$ 7,361,261	$ 7,582,099	$ 7,809,562	$ 8,043,849	$ 8,285,164	$ 8,533,719	$ 8,789,731
$ 216,597	$ 223,095	$ 229,788	$ 236,681	$ 243,782	$ 251,095	$ 258,628	$ 266,387	$ 274,378	$ 282,610	$ 291,088	$ 299,821	$ 308,815
$ 7,166,251	$ 7,381,238	$ 7,602,675	$ 7,830,756	$ 8,065,678	$ 8,307,649	$ 8,556,878	$ 8,813,584	$ 9,077,992	$ 9,350,332	$ 9,630,842	$ 9,919,767	$ 10,217,360
$ 1,882,404	$ 1,938,876	$ 1,997,042	$ 2,056,953	$ 2,118,662	$ 2,182,222	$ 2,247,688	$ 2,315,119	$ 2,384,572	$ 2,456,110	$ 2,529,793	$ 2,605,687	$ 2,683,857
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ 1,882,404	$ 1,938,876	$ 1,997,042	$ 2,056,953	$ 2,118,662	$ 2,182,222	$ 2,247,688	$ 2,315,119	$ 2,384,572	$ 2,456,110	$ 2,529,793	$ 2,605,687	$ 2,683,857
$ 5,283,847	$ 5,442,363	$ 5,605,633	$ 5,773,802	$ 5,947,017	$ 6,125,427	$ 6,309,190	$ 6,498,466	$ 6,693,419	$ 6,894,222	$ 7,101,049	$ 7,314,080	$ 7,533,503
$ 46,394,118	$ 51,836,481	$ 57,442,114	$ 63,215,917	$ 69,162,933	$ 75,288,360	$ 81,597,550	$ 88,096,015	$ 94,789,435	$ 101,683,657	$ 108,784,706	$ 116,098,786	$ 123,632,288
$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198	$ 4,895,198
$ 3,368,241	$ 2,892,238	$ 2,985,369	$ 3,083,674	$ 3,187,153	$ 3,290,632	$ 3,399,285	$ 3,513,112	$ 3,626,939	$ 3,745,940	$ 3,875,289	$ 3,999,463	$ 4,133,986
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ 3,368,241	$ 2,892,238	$ 2,985,369	$ 3,083,674	$ 3,187,153	$ 3,290,632	$ 3,399,285	$ 3,513,112	$ 3,626,939	$ 3,745,940	$ 3,875,289	$ 3,999,463	$ 4,133,986

APPENDIX D

SURVEY METHODS AND FULL RESULTS

Methods

Survey Format

The survey included 13 questions about respondents' use of parks, trails, and recreation facilities and their preferences for future development of such facilities, as well as 14 questions about the demographics of survey respondents. There was also a final question for respondents to leave any additional comments. Instructions on how to return the survey were available at the top of the form.

Survey Distribution and Collection

The community survey was distributed to residents through several channels. Surveys were made available on the city website on October 16, 2023 and paper copies were mailed out with utility bills to all residents shortly thereafter. Paper surveys were also handed out at the first partnering meeting and open house on November 7. There was a final effort to distribute surveys at the city Christmas tree lighting on November 27 before the deadline to submit surveys on November 30, 2023.

Paper surveys were able to be returned at the first public open house, to the city planning office, and at the Christmas tree lighting. If residents opted for the online option, they could fill out the survey in PDF form. The survey could then be emailed to the city.

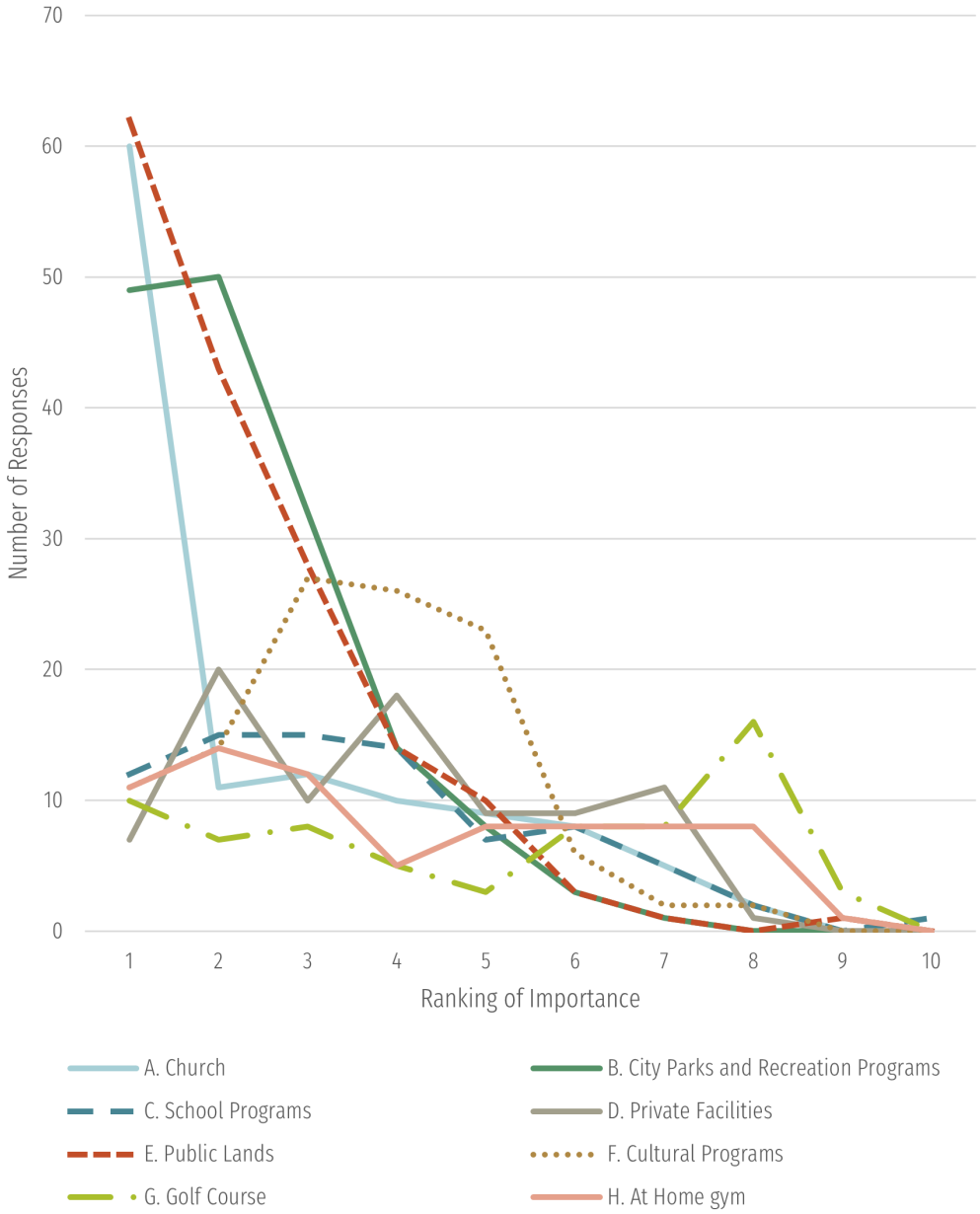
Data Processing and Representation

On questions that allowed for multiple boxes to be checked, such as selecting which facilities and programs that respondents participate in or visit, graphs display a total number of boxes checked for each item. For questions that should only have one response, such as where the options are "Yes", "No", and "Don't Know", the figures show the percentage of respondents who checked each option as a portion of the whole. On Question 12, where respondents were asked to rank which types of parks are most important to develop in Hurricane, a higher response (meaning more important to develop) was given a higher weight in influencing the response score shown on the figure, with the highest response giving seven points to the score of that category and the lowest response giving one point.

In several places on the survey, respondents were given the opportunity to enter text responses. Where this was available, all responses given are listed below the results for that question. Responses are included exactly as they were entered or written. If a portion of a handwritten response was illegible, that is indicated by [illegible].

Survey Results

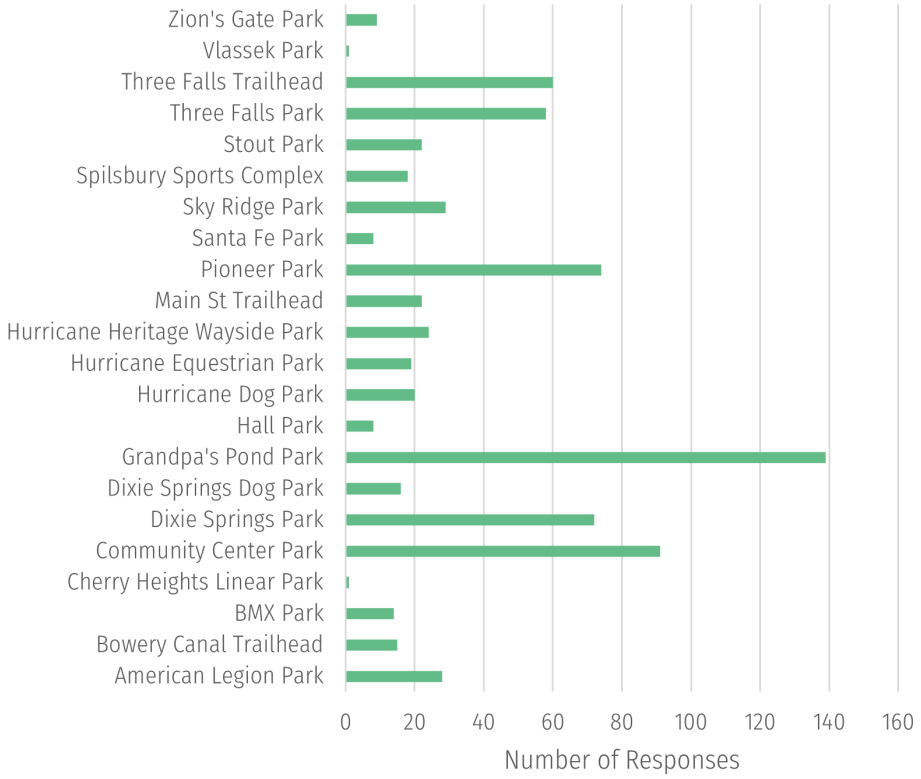
1. Please rank, in order of importance, how your household leisure and recreational needs are met (1 = 1st choice, 2 = 2nd choice, etc.)



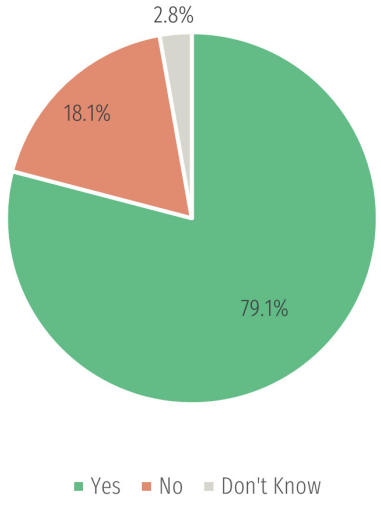
Responses to "Other" (For *1. Please rank, in order of importance, how your household leisure and recreational needs are met)*

Equestrian Park	Skate Parks	Zion NP
UYSA Soccer Club	PB Courts	Bike Paths
Skate Parks	Pickleball Courts	Dog Park @ Dixie Springs
Neighborhood walks	Events at Community Center (like Peach Days)	My own Land
Indoor Pool	Dog Walking	Dog Parks
Park/Pickleball/ Dog Park	Library	Do what we do

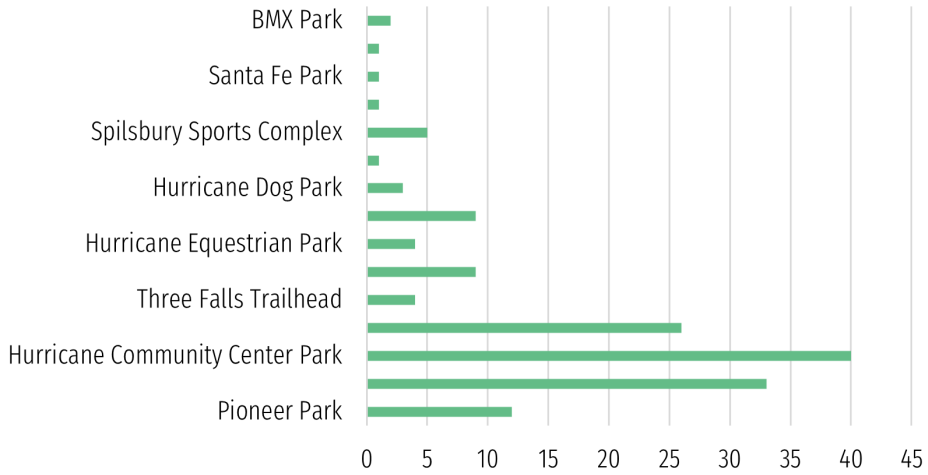
2. Which of the following parks are used most by your household? (Please check all that apply)



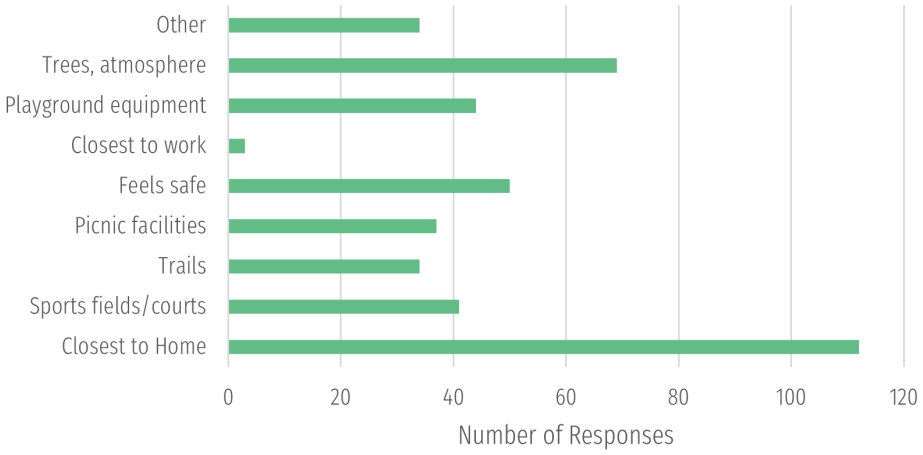
3. From your perspective, is it important to have public parks within walking distance of your neighborhood (within 1/2 mile or 10 minutes)?



4. Which Hurricane City Park do you use most often?



Why do you use this park most often?



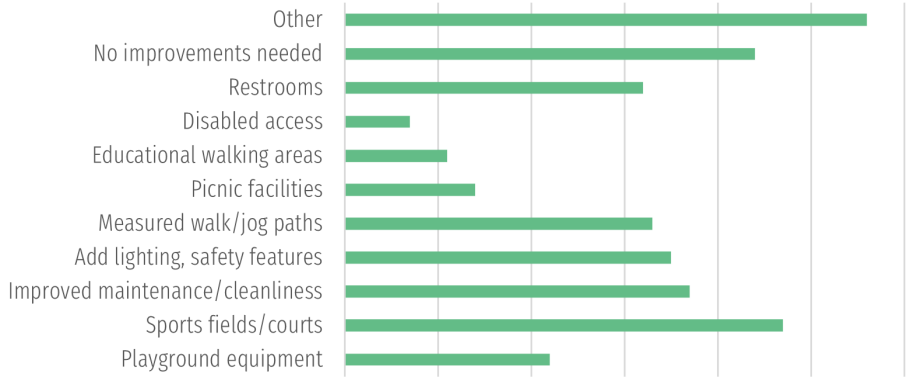
Responses to "Other" (For *Why do you use this park most often?*)

Park Chosen	Response to "Other"
Grandpa's Pond	Photography
Community Center Park	all other courts are being used
Grandpa's Pond	Water, Ducks & Path
Grandpa's Pond	Wildlife there
Hurricane Equestrian Park	Functional
Grandpa's Pond	Can walk my Dog
Sky Ridge Park	Pickleball
Dixie Springs	Has dog Park, pickleball & walking trails
none	Forest Service BLM
Community Center Park	community center

(Continued) Responses to "Other" (For *Why do you use this park most often?*)

Park Chosen	Response to "Other"
Grandpa's Pond	Nice walking trails
Community Center Park	Splash Pond
Dixie Springs Park	Splash Pad
Hurricane Dog Park	It's a dog park
Hurricane Dog Park	Need more Dog Parks
Community Center Park	Pickleball
Grandpa's Pond	Love it!
Grandpa's Pond	Water
none	Fitness
Grandpa's Pond	Walking Trail
Grandpa's Pond	Water
none	Municiple & Rec Center
Grandpa's Pond	Rest Rooms
none	Dixie springs
Grandpa's Pond	Dogs Allowed
none	Hurricane Trailhead
Dog Park in Washington	I have to go to Washington
none	rec center - waiting for classes
Community Center Park	Activities
none	Hiking/Walking
Dixie Springs Park	Pickleball Court
Community Center Park	Close to other activities
Grandpa's Pond	Don't use naymore - Too many dogs
Community Center Park	Festivals
Community Center Park	Community Activites
Pioneer Park	Dog Walks
Community Center	Quilt guild meets there

5. What improvements should be made to the park you use most often?



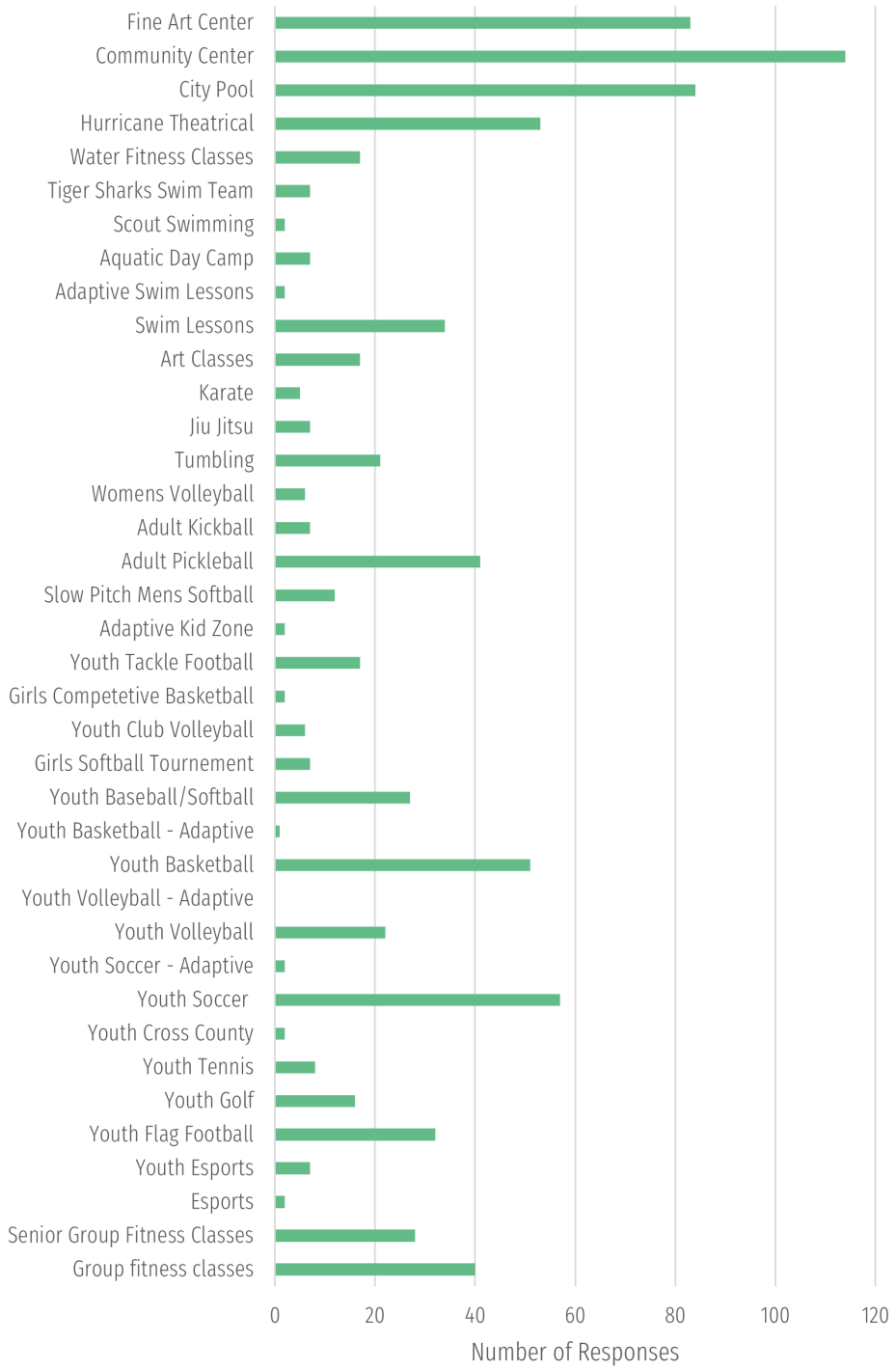
Responses to "Other" (For *5. What improvements should be made to the park you use most often?*)

Park Chosen	Response to "Other"
Community Center Park	please fix the cracks in the pickleball courts someone is going to get hurt restrooms need to be cleaned regularly
Dixie Springs Park	I use natural BLM parks most
none	Bike & Walking Paths increased
Equestrian Park	Expand Participant Trailer Parking
Dixie Springs Park	Trail Access
[illegible]	Broken in mutiple places
Dixie Springs Park	Skate Parks
Grandpa's Pond	Control of goatherds (sticker plants)
Dixie Springs Park	Don't water dog park so often when it's cold- muddy
Sky Ridge Park	Pickleball Courts-cracked need repaired
none	Parking @ Community Center
none	Parking
Dixie Springs Park	Skatepark
Community Center Park	Trails not road connecting
Community Center Park	Child Safety Fence
Community Center Park	Fitness Equipment
Hurricane Dog Park	More Dog Parks
Hurricane Dog Park	Prettier Dog Parks
none	A sidewalk to get there
Pioneer Park	Shade cover on entire playground equipment
Community Center Park	Clean Restrooms
none	Don't Use
none	Less People
Grandpa's Pond	Bike paths along Virgin River
Pioneer Park	Frontage on Pioneer Blvd. between 1800 W & 2000 W - Pine trees should not have been cut down w/o local input
none	Adult 50+ Fitness Park
Community Center Park	Spray for bugs
Grandpa's Pond	Pioneer Park
Grandpa's Pond	Another platform near water
Grandpa's Pond	Pickleball
American Legion Sports Complex	Concession Added to Legion
Grandpa's Pond	Wider fencing at the water bridge
Grandpa's Pond	Some trees were infested (with moth sacks?) & died on the N/W side. Spraying them annually would help.
none	Sky Mtn GC is very nice
Grandpa's Pond	Cleaner Pond
none	Gym & Workout Facilities
Dixie Springs Park	At Dog Parks
none	More Hiking& Bike Trails
Hurricane Equestrian Park	Re-route mollies nipple trail so it is longer & not so steep
none	Dog Park Hurriocane - Improve
Dixie Springs Park	Fitness Course
none	More Trees, Green spaces
	More appealing main street

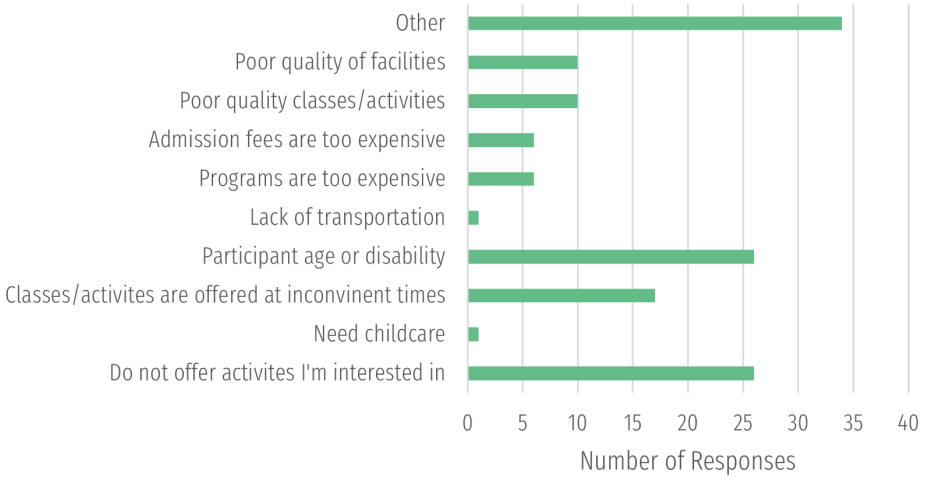
(Continued) Responses to "Other" (For *5. What improvements should be made to the park you use most often?*)

Park Chosen	Response to "Other"
Grandpa's Pond	It's fine just the way it is
none	More Trails/more paths &Shade trees
Grandpa's Pond	Some Parks missing infant seat swings
Santa Fe Park	Enforce no dogs to eliminate dog poop.
none	Allow Dogs
Stout Park	Trails & Better Parking
none	The verbally abusive chubby guy walking his pitbull didn't have a leash on the dog - He carried it. Keep dogs off trails
Grandpa's Pond	Add'l Trails along river
Grandpa's Pond	Trail Markee at 3 Falls
Community Center Park	Pickelball Courts
Pioneer Park	Walking Trails
none	Shade Trees
none	Closer to JK Ranch & Airport
none	Fitness equipment
American Legion Sports Complex	Bike/Walk paths from parks
Community Center Park	The path around the perimeter is broken up
Three Falls Park	Skate Parks
Dixie Springs Park	Better sanctioned/fencing
BMX Park	Ga Ga Ball Court
Three Falls Park	

6a. The Hurricane Leisure and Recreation Department offers the following programs and facilities. Please check the facilities that you and your family participate in or visit.



6b. If you do not participate in any of the above activities or use any of the facilities, why not?



Responses to "Other" (For *6b. If you do not participate in any of the above activities or use any of the facilities, why not?*)

Times don't work for me
At this time, not interested in classes.
Work long hours; hike on BLM or State Parks when avbailable
Personal Time Constraints
Not Interested
Part time Resident
Not aware of much of what is listed as avaialable - better marketing?
Not in habit
I live in Zion's Gate (Too Far)
Like to bike & hike
Pleae reset clocks, smells, old, falling apart
No park close enough
OHV @ Sand Hollow
Too lazy
I have other things I do. Single Adult /no children
No Interest
Pool closed in Winter - Need year round
I watch the grandkids
Too many people
Time
Not enough time as paretns
Update & enlarge facility
Membership at [illegible]
Travel time from home to city center is 10 minutes
Other Activities
Don't use any
Pool too crowded & don't offer classes
Not here often enough
not full time resident
Sr.
Most likely to hike & bike
Don't know enough about the programs
Need Adult Coed Volleyball
Need Indoor Pool
Not Needed
Don't need them
Dog Parks are not safe, the signs do not make sense.
Distance to Rec Center
My work &play schedule
Another Pickelball Court
Horse Areana gone! :(
Always sharing fields with schools
Lack of Awareness of what is offered.
Too far away from where I live

7. Please choose up to five activities and facilities (parks, recreation, and trails) not currently offered by the city that you feel are most needed in Hurricane

New Activities Needed

More adult activities
More evening activities
Knitting Classes
Photography Classes
Tech/Stem Classes
Gardening Classes
Language Classes
Adult Education
Classes that combine young & old
Bouldering
Flexibility for Adults
Skate Park
Paved Trails
Mountain Bike Trails
Less Kids per swim class
Handicap Trails
Amature Golf League
More Biking Paths
Bowling Leagues
Year round swimming
Cheer Team
Toddler/Parent classes in evening
Paved Walking
Biking Trail System-Separated from Roadways
Skate Boarding Camp
Pickle Ball Courts
Soccer Fields
Bigger City Pool
More Asphalt Trails
Women's Softball
biking routes without traffic
Trails
Trails
Finish 5k trail
Walking Trails
Paved Bike Paths
Pickleball courts lighted
Dog Park
outdoor workout equip.
more live music
open mic
Indoor Swimming
Raquetball Courts
Boccee Ball
Cycling
Bocce Ball/Horsehoes
Classes after work hours
Not enough Dog Parks
Cycling
Walking
Pilates
More Yoga
Evening Sr. Exercise
Eric Dodge Line Dancing
Winter Water Aerobics
More Hiking
Rock Walls
Walking Paths
A variety of exercise machines
More baseball tournaments
Larger & Modern Community Center w/ gym, art, dance, cooking classes
More Parks
Yoga
Women's mtb club
Organized Hiking Groups
Youth Mountain Biking
Year round Indoor Pool
More Paved Trails
Bingo
Photography
Bird Watching
Bocce Ball
Year round Pool
Adult Gym
Adult Pool w/ Classes
Rec Center
Pool
Trails
Water Fitness
more bike trails
more hike trails
paved hiking
paved biking
Self Defense
Mountain Trails
Make more trails
preserve open space
Workout facility
Adult Volleyball
Indoor Pool
Year round pool
Rec Center
Toddler Programs

New Activities Needed (continued)

Yoga
Spanish Programs
Shooting
Archery
Bingo
Offroad Racing
Hikes
Spiritual Classes
Walking Paths
Bicycle Paths
Park w/ an interiror dog park & no dogs allowed outside it.
Paved Bike Trails
Bike & Walking Trails
Gymnastics
Horse Trails
Basketball
More Golf
Upgrade Softball
LeCross
Water Slide
Step Class
Water Fitness
Yoga Inside
Mountain Bike Trail
Walking Trail
Kindergarten Football
Skate Park/Events
BMX Events
Bike paths
Ga Ga Ball
Mountain Biking
Biking
More Trails
Hockey
Bowling
Bowling
Adult Balet
More Hiking Trails
Indoor Pool
Running Trails
Bike Trails

New Facilities Needed

walking and bike paths needed in the Dixie Springs area
Soccer Fields w/ Lights
Football Fields w/ Lights
Baseball Fields w/ Lights
Indoor swimming Pool
A garden Park/Trail
Trails that lead to lakes
Bridge Trailheads
Parkour Playgrounds
Indoor Pool
Weight Room
Fix Pickleball Courts at Community Center
Large Trailhad sign at Hurricane Canal Trailhead
More Trails
Rec Center
Indoor Pool
Tennis Courts
Paved Bike Paths
would love an informational sign about wildlife that inhabit
Grandpa's Pond
6+ Basketball Gyms
2nd Access to Equestrian Park
Handicap Trails
We have 2 courses
Safer Paths on Streets
Bowling Alley
Covered Swimming Pool
Indoor Pool
Bike park w/ trails for kids
Continue 600 N Path
Skate Parks
Skate Sports
Skate??
trails, trails trails!
More childcare
Pool
Community Center
Community Center
Pool
Bathrooms
New Pool
New Pool
600 N Trail
Skatepark
Bike Park
Pump Track
Paved Trails
Trail from Sky
Ridge area to main city
Separate Bike Trails
Non street walk/bike
Pickle ball Courts
More Bike Trails
New Pickleball Courts
Connected Trails System
Trees along Trails
Connected Trails System
Paved Bike Trails

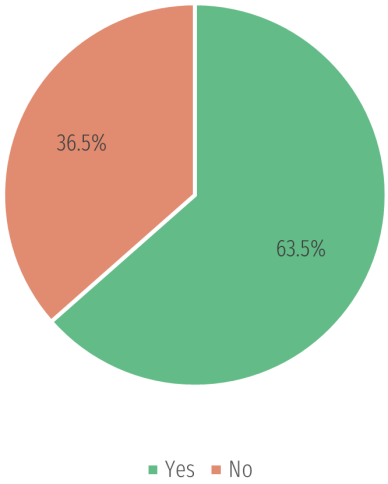
New Facilities Needed (continued)

Safety at Existing Parks
Improvements at existing rec center
Deicated Skate park
More bike lane/walking paths
Better parking
Paved Trails
Bocce Ball
Urban Bike Paths
Mountain Bike Park
Courts in Park
Paved City Trails
Skate Park
Connected Bike Paths
Connected Walk Paths
Covered/Indoor Pool
Weight Room
Gyms
Indoor Swimming Pool
Indoor Courts
Jump House
Bike Trail
4 Seasons Pool/Lazy River
Pickleball Courts
Pickleball Courts
Enclosed Pool
More complete bike trails
More Vegetation
new baseball complex
new basketball facility
New Rec Center
Bocce Ball Court
Something for active seniors
Pickle ball
Indoor basketball
football fields
Comprehensive Recreation Center
Bike Trails
Swimming Pool
Sandbox
Meditation Garden
Hiking trails
pickleball courts
better mtb park (like St. George)
Lined Virgin River Trails system
More Ball Fields
Year round swimming
Climbing wall (Changeable)
Batting Cage (Rentable)
More paved bike trails
Trail off 1380 W to BLM for Trail Riders
More Bike Paths (asphalt)
Community Rec/Pool
Inddor Pool/Indoor Walking
Municiple Center
Indoor Pool
Fitness Center
Rec Center
New Pool
Connecting
Indoor Pool
Water Park
Indoor Swimming
Rec Center
Hiking/Walking Paved
Improve Dog park
Gym
Indoor Pool
New Rec Center
Indoor Pool
Walking Paths
Hiking Trails
biking paths
Toddler Safe Playground
Walking Trail
Bowling Alley
Motorcycle Park
Skate/BMX Park
Gym
More Trails, Less Dogs
Shooting Pen
More walking Paths
Swimming Pool - Indoor
Paved Bike Trails
New Horse Arena
Bike Trails
Walking Trails
Parks
Rec Center
Walking Trails
Basketball
Softball
Gym
Water Slides
Indoor Pool
Parkour
More Parks
Softball Fields
Walk/bike Paths from Toquerville to DMV
More Fields
Walking Path on 400 S (West of 700W)
Sidewalks
Skate Park
Skate Park
BMX Park (better)

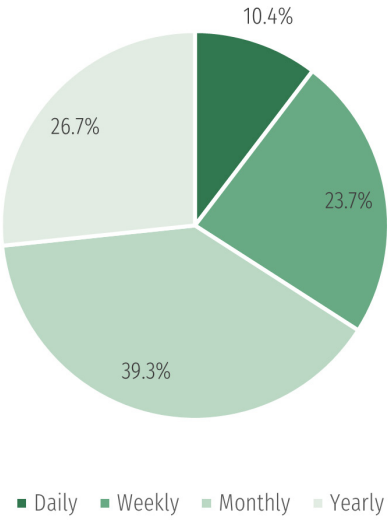
New Facilities Needed (continued)

more pickelball coutrts
bike paths
Court
Trails
Bike Path
Paved Track
Skate Park
More Baseball Fields
More Soccer Field
More Sports Courts
batting cages
wlk/jog paths
Batting Cages
more pickelball
Indoor Soccer Court
Indoor Pool
More Bike Paths

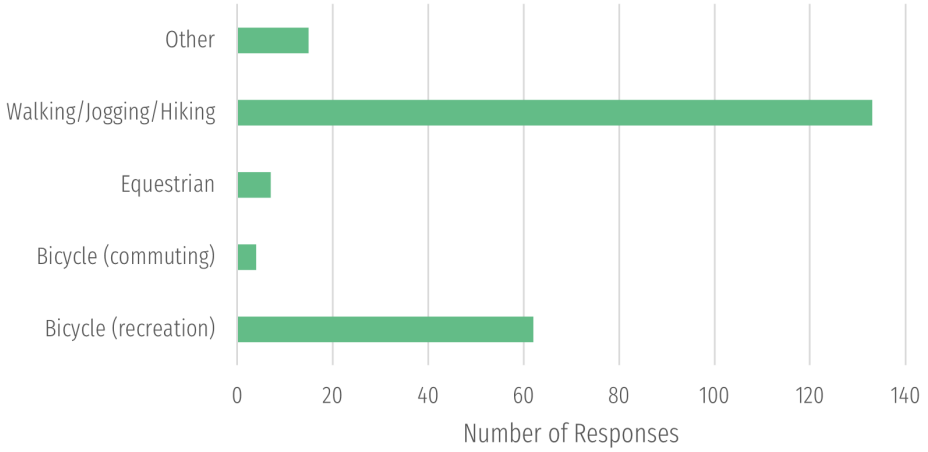
8. Does you family use the City's trail system?



If yes, how often?



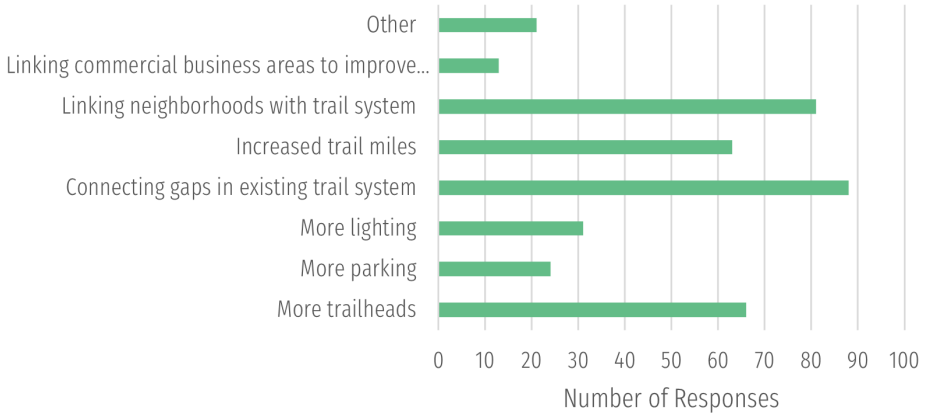
Please check the reasons why you use the trails (please check all that apply):



Responses to "Other" (For *Please check the reasons why you use the trails*)

Photography
Bike Trail from Dixie Springs to State St.
Only use when family comes to town
Wouldn't consider it a trail
The Trails System needs more publicity. I woujld love to use it but I don't know anything about it
None Complete
The trails systems do not connect throughout the town.
Dog exercise
I would use bike trails mopre often if there were more paved trails safe from road.
Dog exercise
Dog Accessible
Trails are subpar
Didn't know there was a Trail System
We use Virgin River Trails Weekly.
Can't really use bike trails because there aren't any.
Dog
So many horse owners on 1380 W & we have to trotter out to ride so sad! Help us out
Wheelchair
Wheelchair
Scooters
Dog Walks
Trail Running
I hope somebody looks at this
Rec Activities should cover their own cost. It shjould not be a tax to the community
Running
Quarterly
Dog Walks
We go to St. George & Use their bike trails because we don't have any
Don't know of them
Education

9. What improvements should be made to the trails system? (Please pick up to two (2) choices.)

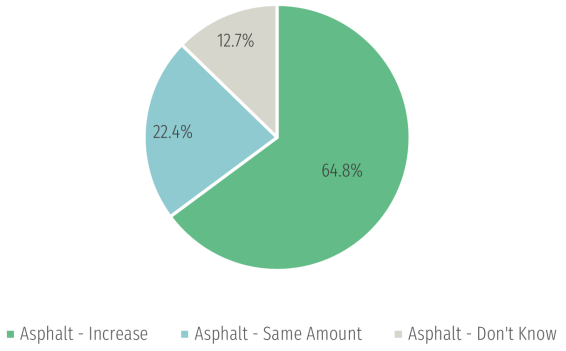


Responses to "Other" (For *Please check the reasons why you use the trails*)

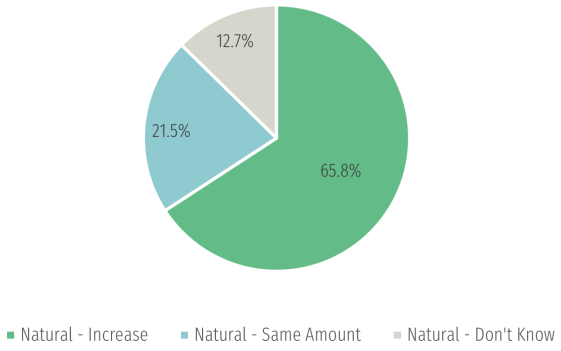
make walking trails near Dixie Springs
I usually use BLM or State Parkspreferring natural open spaces
need more maps info on existing trails
Better trail from town to Gould System
More walking trails in town
Paved Trials
Lighting
Separate from Traffic
PB Courts
Go biking w/ kids ww/o getting ran over
Make Hurricane walkable city
I don't walk or Hike naymore
More Dog Friendly Trails
parking lot patrolled by Police to prevent crime
Connect to St. George
Dog Park
More trees & Grass
Advertise it where it is.
Less Pavement
Need more neighborhood trails that connect throughout city
If there is a well at 3 falls trail head, they should close the wash entrance
Don't do anything
Increase out awareness
Connect Bike paths
Real Trails in the turtle reserve

10. Should Hurricane City increase or keep the same amount of trails of each type?

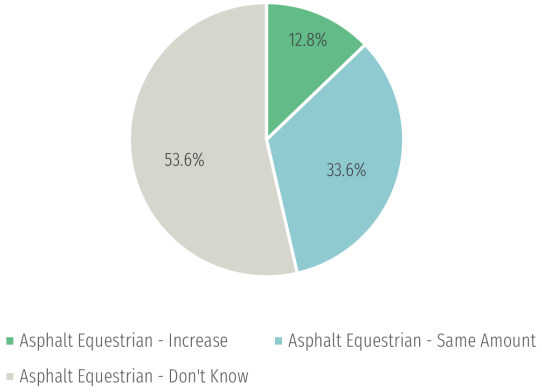
Asphalt Trails - Increase or Keep Same Amount



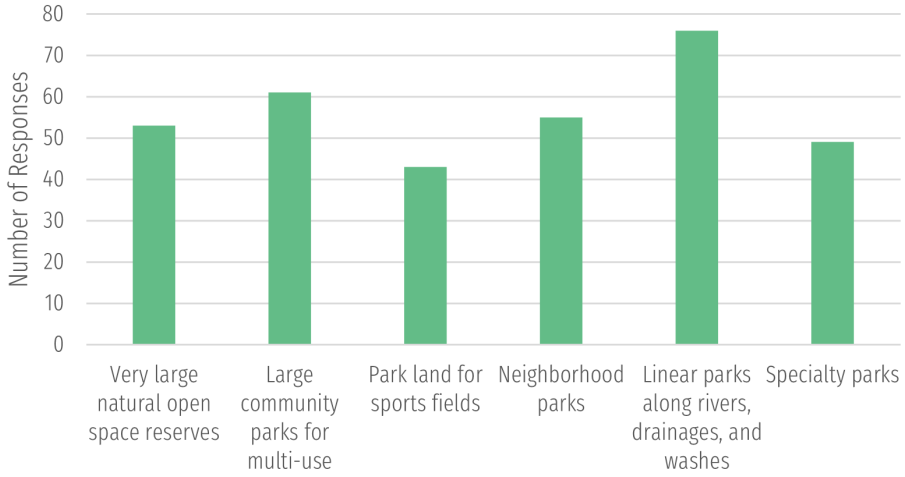
Natural Trails - Increase or Keep Same Amount



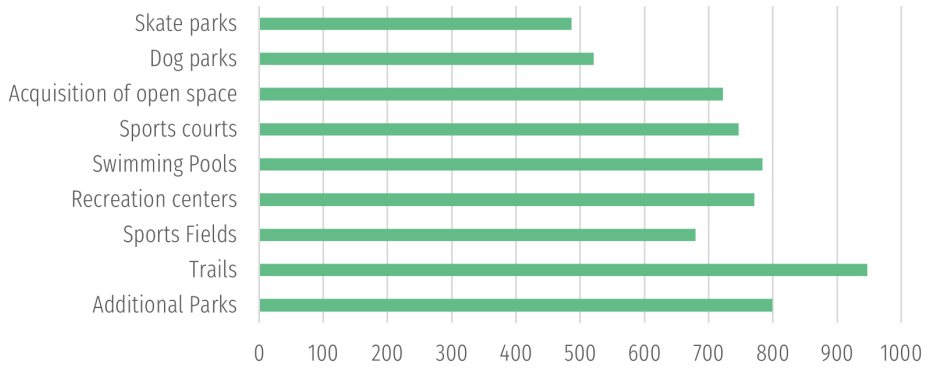
Equestrian Trails - Increase or Keep Same Amount



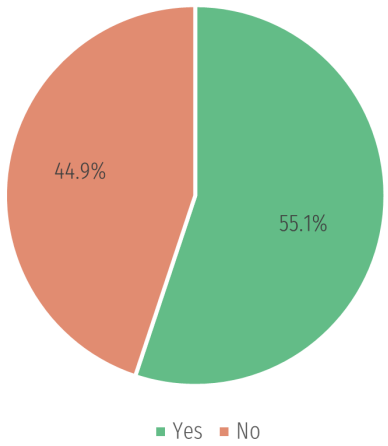
11. What type of park land is most needed in Hurricane? (Please pick up to two (2) choices.)



12. Please tell us how important it is for Hurricane City to develop the following (please circle the number that best describes your feelings, using a scale with "1" meaning unimportant and "7" meaning very important)



13. Do you feel that the Leisure & Recreation Department meets the demands of the community for programming and facilities?



If no, please explain how they can better meet your expectations and wants.

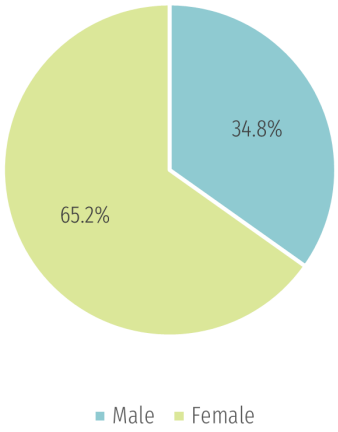
more adult evening activities, like dancing, arts, a ceramics class would be awesome
there's not enough pickleball courts to meet the need now that pickleball has become so popular
Need more times for clasess . The classes fill up to fast , so a lot of kids can't attend.
The Pickleball courts at the Rec Center are really cracked badly. Repairs and/or replacement is needed
Hurricane really needs tennis courts!!! Please! High school no longer option as they posted no trespassing signs.
Finish the landscaping around Dixie Springs Park
We need a concrete Skate Park & smaller skate park w/ camps for kids. It's an olympic sport now.
More Pickle ball courts-at least 4 at a park
Indoor Pool & Pickleball
Existing facilities are run down
No parks available out in pecan valley
A Rec Center would be great but we the people have spoke. We can't afford it!
More after hours bars

(Continued) If no, please explain how they can better meet your expectations and wants.

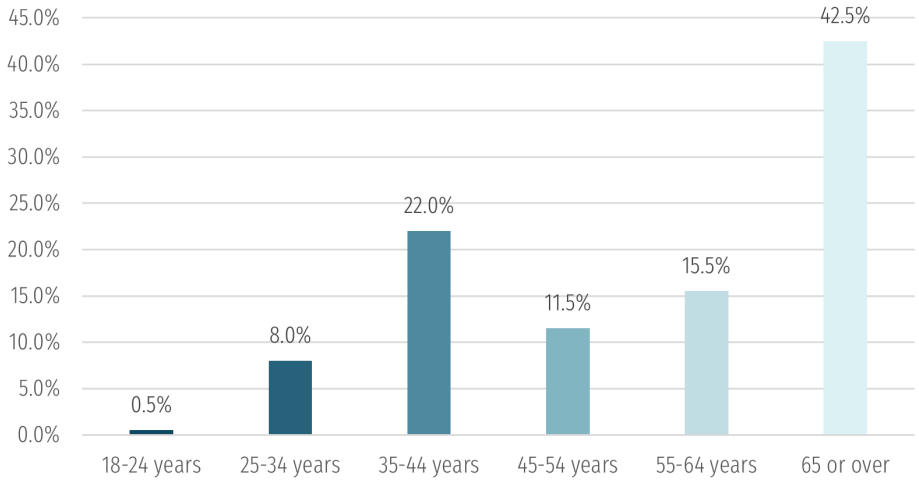
can't use Silver Sneakers at Rec Center Classes
More bike trails needed, safe from vehickle traffic, more walking trails needed.
We need New & Better Pickleball Courts
An Indoor swimming facility should be part of the plan.
Better parking near community center for events
Better trails. More music/festivals. Farmers market w/ not just crafts
Better trail maintenacew needed. More off road cycling trails needed. Need paved didciated cycling paths along 600 & Hwy 9
There are no classes available for people that work
It obviously must increase as we continue to grow
Unavailable for Family functions
Earlier group classes
Earlier classes for working adults
Continuous bike & walk paths please! A patch here & there is not a trails system.
The growth does not meet the amount of classes that are available to the kids. also need more advetising or word of mouth to let people know what is coming up.
Have to go to Washington Rec
If Hurricane is going to continue to allow so much building then we need adequate facilities so travel to surrounding cities not ness.
Not Seniors
Pools needed &exercise gym classes in municiple center
The pool is in bad condition, we need a nice Rec Center
Limited amount of money based on current economy
The Department is Great, the facilites are dated & in vast need of improvements
Increase open space
More Adult Sports Programs Needed
Need a real Rec Center
Clean the Weeds off sidewalks
Year round pool larger rec center w/ better classes general to demographics of city population
As Indicated
Include Seniors
More Sports fields would ultimately bring more revenuw to our town
More available time
Red Center: Not everyone wants to drive into town & deal w/ traffic & parking
More needed with current growth
Larger selection of classes & gyms for adults
They do well with the facilities they have
different - non-[illegible] Classes. I want to teach a class but I an not an employee of the City so I can't
St. George offers so much more than we do.
Growing quickly, need to prepare for the growth
Better & more maintained facilities, better run sports programs
Our needs - yes
Does not have own inside courts, pool is too small. Gym does not exist
The ball fields are always given a priority to other sports. We need to ba able to play softball on our fields
connect existing trail systems & maintain pickelball courts
Not enough fields
A local Skate Park would help meet more needs
Need a Skate Park & BMX Park
There is no where safe to ride bikes
Could use more fields/complexes
I think it does a great job with given resources, always room to improve.
Needs better soccer fields

Demographics Questions Results

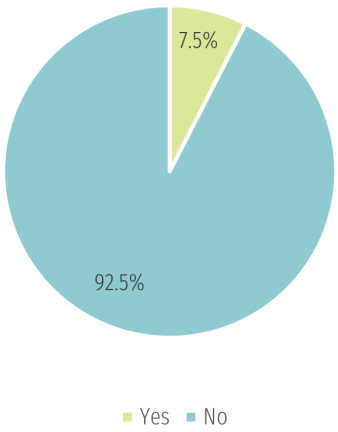
1. Please indicate your gender:



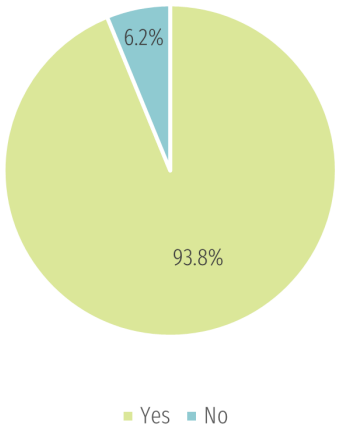
2. Please indicate your age:



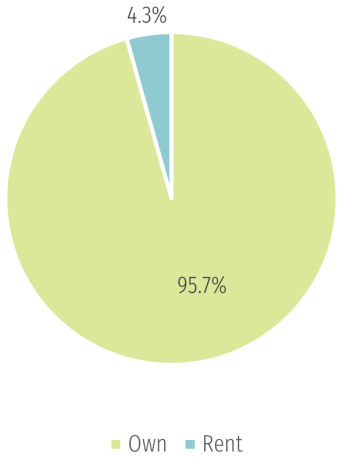
3. Are you a college student?



4. Do you live in Hurricane year round?



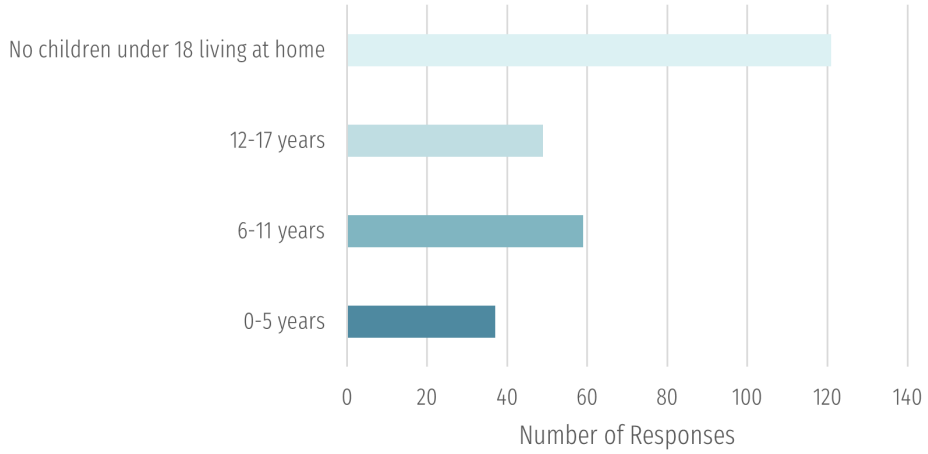
5. Do you own or rent?



6. How long have you lived in Hurricane?

Average years lived in Hurricane: **12**

7. Please check the categories for which you have children at home:

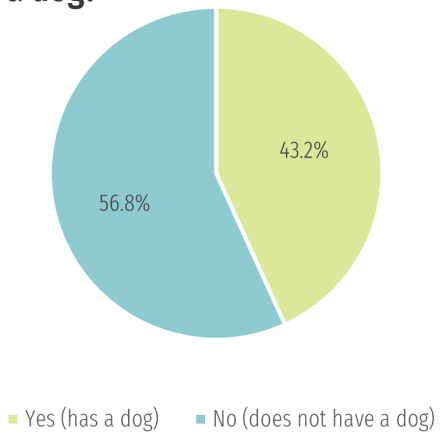


8. How do you learn about leisure & recreation events and activities?

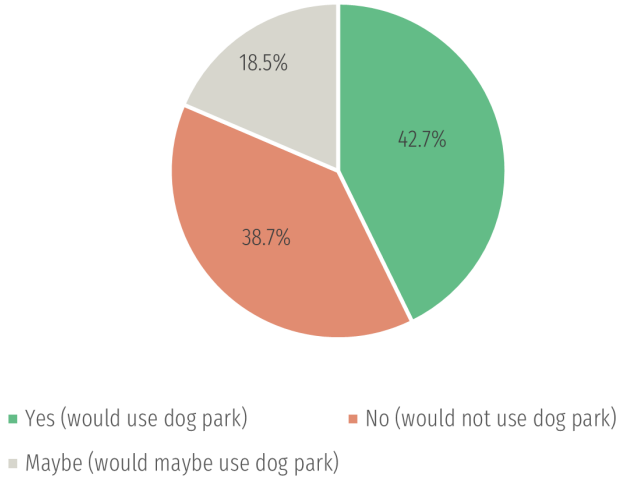
Responses to "Other" (*8. How do you learn about leisure & recreation events and activities?*)

Social Media
Facebook
Social Media
Facebook
City Employee
Social Media
Facebook
Social Media
Daughter & Son in law are educators here in town
Social Media
Annual book with all activties listed
HPD / Facebook
Neighbors
Digistal Billboard at Community Center
St. George News Online
City Mailer
Facebook, City News
Need better communication
Text
Hurricane Texts
Web Search
Utility Bill
Facebook
Social Media
Accidental
Senior Center
Facebook
I think communication could improve
Hurricane Rec Website
Friends

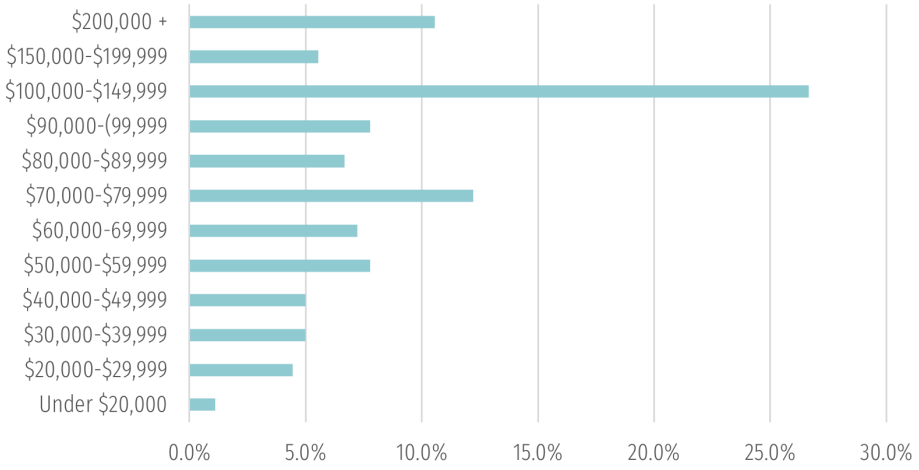
9. Does your household have a dog?



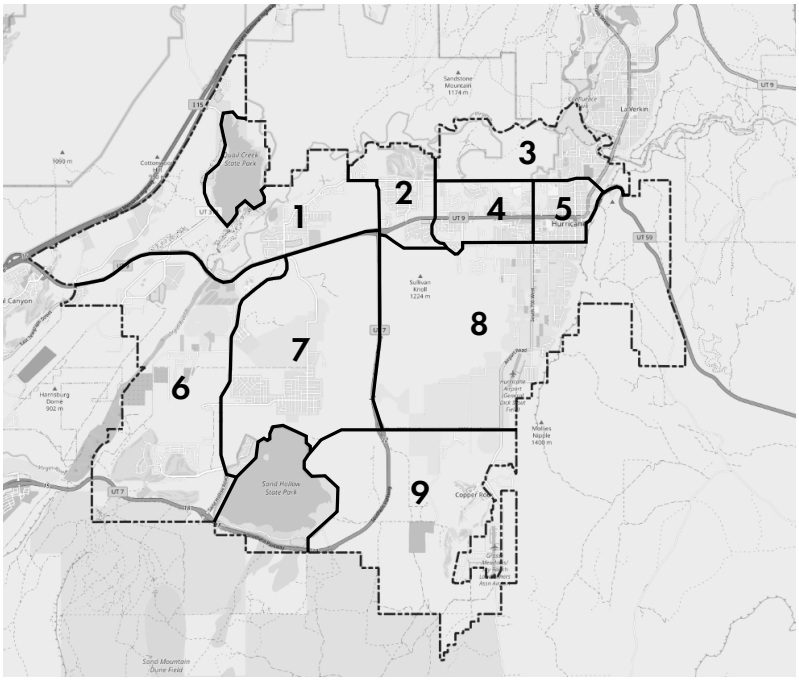
If yes, would you use a city dog park if one were available near you?

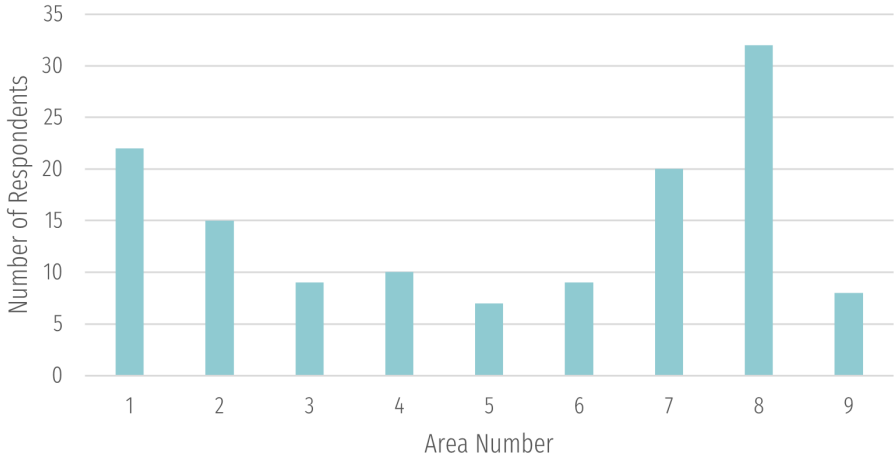


13. What is your approximate annual household income?



14. Please select from the areas below, the region in which you reside (1–9):





15. Any additional comments related to parks, recreation, open space, trails, etc. ?

I havent been to the dog park in a few years because it was horrible. There is an amazing dog park in Washington off the damn road. Wish we had one like that.

please consider older age groups not just chicldren when adding new activities or programs please build more public pickleball courts

The city & schools need work more togetherto use what we have. The School facilities & Fields could be better utilized if the

I'd like to see near Hurricane an Aquarium, a small zoo, and a childrens museum. Mostly because I want children to learn more about animals and not only desert animals but from other habitats. I'd like to see parks and trails full of trees and have access to bathrooms and parking. A train park would be nice to have near by.

(Continued) 15. Any additional comments related to parks, recreation, open space, trails, etc. ?

Working full time now so have limited time for Parks & Rec activities but plan to retire soon & participate. Interest in art, Music I would bike a lot more if there were a dedicated bike trail from Dixie Springs to the Virgin River Trail in Long Valley or to Wal-Mart area. I feel that the lanes are unsafe/ too narrow and the traffic to fast or unpredictable on Sand Hollow or Flora Tech. The Dixie Springs park is a wonderful neighborhood park, particularly for families. I normally hike (daily) in nature: West Cinder Knoll, Red Cliffs; Zion's Gate; Sand Hollow. Also hike often at Confluence Park, Main St. trailhead. No improvements desired--want just the natural environment.

Thank you for posting this survey

I love participating in community recreation. I love the affordability. I love that my kids can learn to be good citizens through involvement in city program. I think it's great that so many more kids are participating. The struggle has been with actually enrolling them in programs. For dance and tumbling, if you don't do it ASAP you won't get in. I don't like that I can't sign them up for their tumbling/jiu jitsu online. I have to call which is a pain. I would love to see more outdoor recreation. My kids have to go to St. George for things like bouldering. I would LOVE to see an indoor pool with a baby/toddler friendly area. I would also like it for swim lessons. Several of our lessons were cancelled last summer because of rain.

Please fix the pickle ball courts at the rec center

There is a retention pond behind our subdivision that is owned by the city. It's over 6 acres and would be a great area to develop into a soccer field or some other kind of recreational area other than what it is currently being used as. Counsel Heideman and Fred Ruesch has more information on the property.

Please consider those residents that don't participate in traditional sports programs. Please add more mountain bike trails and a skate park

We need tennis courts!!! The high school posted no trespassing signs on their courts. We would love some city tennis courts since there are zero options in Hurricane now. We would also like more paved bike paths to use in Hurricane. We utilize the St George and Washingtion paths. Hurricane needs some! We would like a lined paved bike path all along 600N.

Connect Grandpa's Pond Trail to Quail! Build a bridge to carry hikers over the river to the trails at Quail. Open pit mining has no place in residential neighborhoods. Putting an end to blasting in these areas would be the single best upgrade to our retirement experience!

More Bike Trails

You would get a much better response & save time by using qualtrics or google forms to collect this information but thanks for doing it.

Map is so small I can't tell but I live behind Tractor supply to the north,. Iwould love the walking path on 600 N to continue to give safer options for walking/biking to school

Pleae build skate parks. [illegible]

The Zions gate park near my house, the lights are always off. I Know how to turn them on and off so whenever I go by and see a Family there I ask them if they'd like me to turn them on. There should be an easier way to turn those lights on because no One ever knows how.

We don't hear about any City programs or events unless we search the City website, which we don't often think to do. Maybe a city newsletter would be nice to announce events & promote resources & programs.

Would dearly love bicycle routes. The current bike routes are on busy roads w/ sporadic shoulders. If you want a long bike ride, options are dangerous. Wish we had a bike path along the river like St. George/Washington.

Thank for all you do!

Keep up the good Work! We appreciate your efforts

Pleae complete trails & clean up piles of dirt etc.

Pecan Valley is in dire need of trails (paved) parks to include bathrooms, dog parks, etc. Something like dixie springs walking trails

(Continued) 15. Any additional comments related to parks, recreation, open space, trails, etc. ?

Parking needed at community center. No commercial by the community center or near it

Parking around community center needs to be increased.

Wheels parks will get my kids & many other kids out of the house & doing something active. Many kids need this for their mental health & development.

More Parking at community Center. No commercial development at community center.

600 N State Street & other streets are too dangerous to ride bikes on so we have to take bikes to places like sullivan soccer park, santa clara, virgin park.

More paved bike paths needed safe from vehicle traffic. More walking paths, both paved & unpaved. Year round pool would be a great thing.

We need more & Better Pickleball Courts.

Maintenance of trails & trails standards need to be addressed from policy perspective. Is this something that parks should be in charge of? In other jurisdictions they have staff that are soely responsible for planning & building trails.

Love living in Hurricane & not in favor of what seems to be uncontrolled growth.

*Pedestrian /Vehicle sepaaration @ parks (i.e fenced play areas w/ access management) *Clear lines of sight (i.e border planting & silting areas between attractions) *Dense low level lighting (avoid harsh shadows & light pollution)

Improve Existing - Safety at Parks/Traffic

Key to longevity os an active lifestyle. - A walkable city, parks w/ fitness equipment & regular instruction on how to use rquipment. - this can help the aging community, keep the young actibe & reduce health issues by making th community healthy "Watch Blue Zones on Netflix"

I wish that Hurricane would look at what Ivins & St. George have sone to make cycling a safe way to travel around the city. We need more paved cycling paths so our community can reach the downtown area by bucyc;e from outlying neighborhoods. Having this available would improve the overall health of out residence. Many of our hikin/cycling paths have erroded & are not safe for begining cyclist.

When my grandkids visit we use the Sky Ridge Park

Hurricane is huge; remembering ther are many residents outside of downtown hurricane would be great.

Need classes after 5pm, need more dog parks as they are not convenient for everyone. One by the equestreian park would be amazing.

More dog friendly areas. Hurricane City does not love dogs.

We applaud the good job the employees do on keeping the parks common areas & cemetery looking so good, neat, weeded & mowed. Remove non-functional grass areas - suchas areas between sidewwalk & roads - Use re-use water on areas when & where possible

Tiffany & Jennifer Rock! - Debbie Garrett is amazing

A year round pool should be available in a community this size. It isn't a money maker - it's a gift to our children & grand children - Seniors

I think the parks should be made available to families who wish to use them for family gatherings, reuinions, etc...

We don't need anymore parks for ?? For people to muck up. We don't have enough water to water grass in another park. - This town needsa regular grocery store. Supermarket.

Can't figure out map. I border Washington on Telegraph.

A single page newsletter would be great - Noting forthcoming events & general park & rec info. You need a PR Manager that's connected with the community.

Where are the existing trails?

(Continued) 15. Any additional comments related to parks, recreation, open space, trails, etc. ?

Create paved Virgin River Trailsfrom Washington to LaVerkin. Paved trails to & around sand hollow lake.

Please connect Trails. Pleae fix pickleball courts

We need safe bike trails & walking. Asphalt trails to walk & bike would be like heaven. See St. George for example ramp funds could surely help

The recreation staff in Hurricane are wonderful. - We really need an improved baseball complex/ hosting regulara tournaments would pay for itself.

People need breathing room, don't over build - Add restaurants - no more convenient or drive throughs

There are open spaces that attract a lot of trash. Access not easy but doable.

The area between SR 9 & SR7 seemsas though it should be a safety concern based on all the activities that are going on at any given time. The growth is moving at a rapid pace adding even more concern. Need paved trails all along that route.

I feel that a bike trail is needed out in my area. many peole ride out here and a trail would allow safety and access to town. I like that we as a comminuity are asked what is or needs. When I take my grandchildren to the water park or swimming pool it is standing room only. another and/or a covered year round pool would be awesome. i would like to see some sort of activities for or youth 13-16 those that cannot drive, but need to have a place to hang out and be safe.

It would be awsome to connect a trails system to the Virgin River Trail System. It would be nice to be able to have a path for an ebike to safely communte into Washington & St. George. It would also be great to have a mountin bike park (maybe use system by Quail) to build a great mtb bike park w/ beginner-expert runs. With well designed drops to practive on. Like Snake Hollow in St. George.

I know there is a lot of maintenance, but also a pretty steady revenue stream from tournament weekend baseball/softball tournament use of fields and sales of concessions. We live in an area where the lease of the fields themselves to tournaments being hosted is an option year-round almost. The new Sport Court addition is FANTASTIC! Thank you for working hard to do the best you can with the money you have. It's not unnoticed.

Would love to have more asphalt trails for biking with my kids. We go to washington/st. george to have safe asphalt trails that are a good distrance away from cars - Some of our favorite trails are Washington Canyon Park & Hell Hole Trailhead and Snowcanyon trails

Thanks!

My property taxes have gone up 30% in 6 years. Spend our money wisely.

We have needed a trail to 1380 W for so many years , we need it now. Not later. We are all local people with horses and want to ride out from where we live. Thank you!

Keep BLM & Open Space available for Rec use. We don't move here because we want City life.

More accesible paved trails for wheelchair access. Free state park entrance for wheelchairs.

More lighting in parking lots

Sand Hollow

I have been using the pool progrem for years. We have a problem getting life guards & one of the doors has been broken forever & soap dispenser in showers.

Just more or betterup keep of said areas. Maintenance is average to poor in many places that are community based. Overall - pretty good - we love Hurricane and will be full time resident's soon.

Can't be in the sun at outdoor pool - Skin Cancer

Thanks for adding lighting at Dixie springs Pickleball Courts

All of Hurricane not just my area

I love climbing mollies nipple but it is so steep I frequesntly fall coming down. Decrease the grade. You've got the nice parking area now make ir alittle easier to access.

Just keep dogs & chioldren in mind and activities for seniors.

(Continued) 15. Any additional comments related to parks, recreation, open space, trails, etc. ?

Provided it is kept clean & free of dog poop. The current dog park is usually a mess, covered in poop because prople don't clean up after their dogs.

We would like to see more open spaces & Less mass housing projects

It would be really awesome to get adult coed volleyball or mens and/or women's as well and a trail race in Hurricane

The L & R Dept. is adequate for those that need public support, facilities. Additional facilities would only serve the few & burden the many

The city has plenty of parks and recreation areas. We need to just maintian what we have. We want to keep the current atmosphere of this city. Spend money on streets and not parks.

Walking/Biking Paths please!! Make the canal into a walking /running path

The dog park should indicate small dogs under 25lbs - Large dogs -(Dog Town Park)

Consider building a park on Rlington Parkway just south of S. Valley View Dr. Curretnly its just a plot of cement. Would love a park with Shade/infant toddler swings & gazebos.

Baseball Field needs safer parking, could be done easily & cheaply why has it not been?

We did not choose to live here when its being turned into one big RV Park. The Traffic, congestion etc, along with the rude people make us want to sell and move the hell out. Wish we had not built here.

No More dogs on trails, Dog Owners do not follow rules. No more dog parks - Shit smells and flies and Barking

Need Shooting Range (Over 200 yds)

We need lots of asphalt/concrete walk trails that connect all parts of the city. Especially need them along sand hollow road and Highway 9

After the pitbull event last spring, I tried walking on the dirt roads near the new water park, but they were often muddy. Pleae provide a walking trail west of the Walmart where dogs are barred or bar them from the Grandpa's Pond Trail, there is plenty of grassy area for them. Little dogs are slow & people give them too much leash or son't use one.

The parks dept. does a great job keeping our parks clean & well supplied. Thank you!

As far as comments, I think it would be so so nice t ohave aq paved biking/walking trail like St. George has. We have a beautiful area with lots of areas tghat would be fun to ride on a biking trail around. Sand Hollow would be a great lace to have a paved bike trail around so you don't get hit by a car when riding. There is hardly any shoulder to ride on there.

Too many dogs

60 East is not a dog park, people use the road for their dogs and don't have a leash or picl up the poop!

I can't read that map. We are near 400 South.

A clip board for this survey.

[illegible] A good survey would allow electronic response from many more residents.

Main Street

I am a fitness person and did not find the programs a good fit. I appreciate the effort though. Good ideas but not implicated well.

Build a Skate Park & BMX Park

Need abigger recreation Center. Using an old school does not meet our City.

Sky Ranch Airport Area

Open the road between community center at least on weekends

Put a nice softball /sports complex in. Host tournament & Provide more space for various spots. Easy access form SR 7.

Maybe we could vote to use some of the recreatrion tax for sidewalks

The City of Hurricane desperately needs a skate/bmx park and better fenced (keep dirt bikes off) bmx jumps

(Continued) 15. Any additional comments related to parks, recreation, open space, trails, etc. ?

I wish Hurricane would hook into the Virgin River Trail for walking & biking. Also, more areas to ride bikes. With the amount of people hit, it is dangerous to ride around here. Very little room on the ledft side of the road & most streets have high speed limits. We have to put our bikes in oujr vehicles to get to the bike paths. We use the trails system to hike & get exercise. Not enough near us & we have to travel several miles to get there. Grandp's Pond needs to be monitored better. There are drinking parties down by the river with loud music & trash. we have seen homeless people there too so I don't feel safe to send grandkids.

Courts, Pickelball courts, walking paths

I walk every morning and crossingstate street can be scary. I would love long state trails to walk on

Our family loves the sports complex and fields. We would love t osee more & see more local events/activites because we have the facilities & we would like our sports programs to grow in the community

More Trails, More Parks Please!

I enjoy biking so a more connected bike trail system would be nice. Also, more pickel ball courts. Thank you! I think you're doing a great job!

APPENDIX E

IMPACT FEE CERTIFICATION