



CITY OF OREM
PLANNING COMMISSION MEETING
56 North State Street, Orem, Utah
June 18, 2025

*This meeting may be held electronically
to allow a Commission member to participate.*

4:30 PM PRE-MEETING – AGENDA REVIEW, CITY COUNCIL CONFERENCE ROOM, 56
NORTH STATE STREET, OREM, UT

1 Land Use Element Continued

2 Redevelopment - Concept Discussion

5:30 PM REGULAR SESSION – CITY COUNCIL CHAMBERS

1. CALL TO ORDER
2. INVOCATION/INSPIRATIONAL THOUGHT: BY INVITATION
3. CONSENT AGENDA ITEMS
 - 3.1 **Approval of Minutes for 06-04-2025 Planning Commission Meeting**
 - 3.2 **Site Plan - Center for Change - Located generally at 1748 N. State Street**
 - 3.3 **Preliminary Plat - Rand's Subdivision - Located generally at 470 W 165 South**
4. ACTION ITEMS AND PUBLIC HEARINGS
 - 4.1 **Preliminary Plat - Canyon Park - 79 lot subdivision located generally at 1203 N 630 East**
 - 4.2 **Site Plan - Ken Garff - Expansion of dealership parking located generally at 134 E. 1200 South**
5. ADJOURN

THE PUBLIC IS INVITED TO PARTICIPATE IN ALL PLANNING COMMISSION MEETINGS.
If you need a special accommodation to participate in the Planning Commission Meetings and Study Sessions,
please call the Development Services Office at least 3 working days prior to the meeting.
(Voice 801-229-7183)

This agenda is also available on the City's webpage at orem.org

DRAFT Planning Commission minutes for June 4, 2025
CITY OF OREM
DRAFT PLANNING COMMISSION MEETING MINUTES
June 4, 2025

The following items are discussed in these minutes:

- **WORK SESSION** – Discussion of allowable height of primary buildings in residential zones and General Plan: Land Use Element (Cont.)
- **CONSENT AGENDA ITEMS:**
 - **3.1 Approval of Minutes for 5-7-2025** – Approved
 - **3.2 Approval of Minutes for 5-21-2025** – Approved
 - **3.3 Cherapple Farms Plat Q - Plat Amendment** – Approved
- **PUBLIC HEARING:**
 - **4.1 Text Amendment: Special Exception for Multi-Family Dwellings** – Continued

A recording of this meeting can be accessed at <https://www.youtube.com/live/mdwUD6NBXKU?feature=shared>

WORK SESSION

Place: Orem City Council Chambers

At **4:39 p.m.** Chair Komen called the Work Session to order.

Those present: Mike Carpenter, Gerald Crismon, Rod Erickson, James (Jim) Hawkes, Madeline Komen, and Haysam Sakar, Planning Commission Members; Gary McGinn, Development Services Director/Legal Counsel; Jared Hall, Planning Division Manager; Grace Bjarnson Associate Planner; Grant Allen, Matthew Taylor Senior Planners.

Those excused: Britton Runolfson, Planning Commission member.

1. Discussion – Allowable Height of Primary Buildings in Residential Zones

The Commission discussed concerns regarding residential structures that meet code but visually clash with neighborhood character due to massing and height. Staff presented examples and noted that state law limits regulation of certain aesthetic features. Ideas discussed included tiered height/setback relationships, architectural plane variation, and required entry features. Commissioners debated whether staff should recommend against code-compliant but incompatible designs.

2. General Plan Update – Land Use Element

Commissioner Erickson reflected on a prior meeting and commented that many residents might not realize how much land is designated for public use in Orem. He expressed support for making this data more publicly visible.

The Work Session was adjourned at **5:29 p.m.** for the Regular Meeting

REGULAR MEETING

Place: Orem City Council Chambers

At **5:31 p.m.** Chair Komen called the Planning Commission meeting to order. Gerald Crismon offered the invocation.

Those present: Mike Carpenter, Gerald Crismon, Rod Erickson, James (Jim) Hawkes, Madeline Komen, and Haysam Sakar, Planning Commission Members; Gary McGinn, Development Services Director/Legal Counsel; Jared Hall, Planning Division Manager; Grace Bjarnson Associate Planner; Grant Allen, Matthew Taylor Senior Planners.

Those excused: Britton Runolfson, Planning Commission member.

A complete video of the meeting can be found at www.orem.org/meetings

DRAFT Planning Commission minutes for June 4, 2025

Agenda Item 3, Consent Agenda: Chair Komen introduced the Consent Agenda. Commissioner Hawkes moved to approve the Consent Agenda. Commissioner Erickson seconded. The motion passed unanimously. Approved items:

- 3.1 Approval of Minutes for 5-7-2025
- 3.2 Approval of Minutes for 5-21-2025
- 3.3 Cherapple Farms Plat Q - Plat Amendment - Located generally at 1788 North High Country Drive - Proposed Vacation of Easement on a Residential Lot

Agenda Item 4, PUBLIC HEARING: Text Amendment: Special Exception for Multi-Family Dwellings

Staff presented a proposed text amendment to Section 22-2-1 to modify the special exception allowing single-family zoned lots to be developed as multi-family when surrounded by existing multi-family development.

Proposed changes include:

- Expanding eligible lot size from 8,000–20,000 sq. ft. to 8,000–48,000 sq. ft.
- Allowing temporary retention of existing structures during construction
- Redefining qualifying "blocks" as 75% surrounded by multi-family, with adjusted block definitions
- Adding density allowances (1 unit per 2,950 sq. ft.) for larger lots, plus a 5% bonus for construction standards
- Expanding allowable exterior materials to include wood and fiber cement board
- Modifying façade offset requirements to a 20-inch average for street-facing façades

Staff noted that under current ordinance, zero lots qualify; the amendment could increase that number to 3–6 citywide.

Applicant Remarks: The applicant explained the property history, stated intent to phase development, and emphasized efforts to comply with city recommendations. He confirmed plans to relocate a long-term tenant into a new unit before demolishing the existing 1925 home.

Public Comment: Kris Marshall, a neighboring resident, expressed strong support, highlighting the need to improve the area and care for long-term residents.

Commissioners expressed mixed views. Several praised the applicant's approach and the project's potential to improve the neighborhood and add affordable housing. Others raised concerns about tailoring city code to a single applicant, ambiguous block definitions, and precedent-setting implications. Legal counsel noted the phrase "or equivalent" in the revised block definition as problematic due to enforceability.

Motion: Commissioner Erickson moved to continue the item to the first Planning Commission meeting in July for additional legal review. Commissioner Crismon seconded.

Vote: The motion passed unanimously.

Adjournment: Motion to adjourn by Commissioner Hawkes, seconded by Commissioner Crimson. Motion passed unanimously. The Regular Session adjourned at **6:30 p.m.**

Reviewed and Approved: Draft



PLANNING COMMISSION

June 18, 2025

Item 3.2

Center for Change
1748 North State Street

Site Plan Approval, expansion of the existing building
and parking facilities

Prepared By:
Jared Hall

Applicant:
Chris Bick

Notices:

Posted in 2 public places.

Posted on City Webpage
and City hotline.

Posted at Utah.gov/pmn.

Site Information:

General Plan Designation:
Community Commercial

Zoning: **C2**

Total Acreage: **3.01 acres**

Action:

The Planning Commission
is the Land Use Authority
and the approving body for
this item.

REQUEST: The applicant requests site plan approval for the development of a 20,810 ft² addition to their existing facility, and an additional 66 parking spaces.

BACKGROUND: The subject property, 1748 North State Street, is a 3.03-acre site which is directly adjacent to the existing Center for Change building, located on a 1.91-acre property at 1790 North State Street. The Planning Commission recently approved the Preliminary Subdivision plan for the Center for Change to combine the two properties in preparation for this site plan and addition. The Final Plat is being prepared for recording, which will see the two properties combined into one.



REVIEW:

Zoning: The subject property is zoned C2, and the proposed use for a medical and behavioral treatment facility is a permitted use in the zone.

Public Improvements: The property is located within the State Street Corridor Area, which includes specific requirements for right-of-way improvements (sidewalk, park strip, curb + gutter.) The State Street frontage will require the installation of

a 15' wide landscape park strips, and 8' wide sidewalks. The park strip landscaping must include one tree per 40 linear feet of frontage. The proposed improvements meet the standards and include six required trees in the park strip.

Access: No direct access from State Street is planned for the expansion site. Instead, vehicles will connect to the parking area on the subject property from the north, directly from the existing site. The interior connection and access is 26' wide for emergency service requirements and continues around the west and south of the building. It provides access to the building itself as well as to the parking, which is located between the Building and State Street. A hammerhead style turnaround is included at the southeast corner.

Parking: Parking for the addition will be integrated with the existing parking. The expansion provides an additional 66 parking spaces. Parking requirements in the C2 Zone for buildings over 10,000 ft² are 1 space per 250 ft² of the gross leasable floor area (GLFA). GLFA refers to those areas of the building not including elevator shafts, mechanical rooms, lobbies, etc. GLFA in most cases represents about 80% of the total floor area. The requirement for the building addition calculated for the GLFA is 66 spaces. A parking study was provided by the applicants to allow for a slight reduction in overall parking on the combined site, which can be granted by the Planning Commission if a study is provided. The existing facility was granted a parking reduction when that site plan was approved. Staff recommends that the parking provided for the addition meets the parking requirements.

Landscaping & Setbacks: Landscape setbacks of at least 15' from the back of sidewalk are required along the State Street frontage before buildings or parking can begin. The building addition is located to the rear of the parking area. The parking area includes the required landscape islands as endcaps for parking aisles, and those endcaps include several trees. There are also landscaping areas around the building, and a large, landscaped stormwater retention area to the east of the new addition. Landscaping plans are included in the plan set for your review.

Elevations: The proposed building elevations are attached to this report for review. The State Street Corridor Area requires some elements for building facades facing public streets, including the use of windows on first floors, stone or brick, and vertical breaks in the architecture. The required elements have been met by the proposed elevations.

DEVELOPMENT REVIEW COMMITTEE: The Development Review Committee (DRC) reviewed the site plan application on Monday, May 12, 2025. The DRC voted to approve, and did not forward any specific conditions to the Planning Commission.

ACTIONS: The Planning Commission is the designated Land Use Authority for preliminary subdivisions. The Commission may approve or deny the request for site plan approval or may choose to continue their consideration of the request and ask for additional information or analysis.

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Orem Center For Change – 1748 N State Street



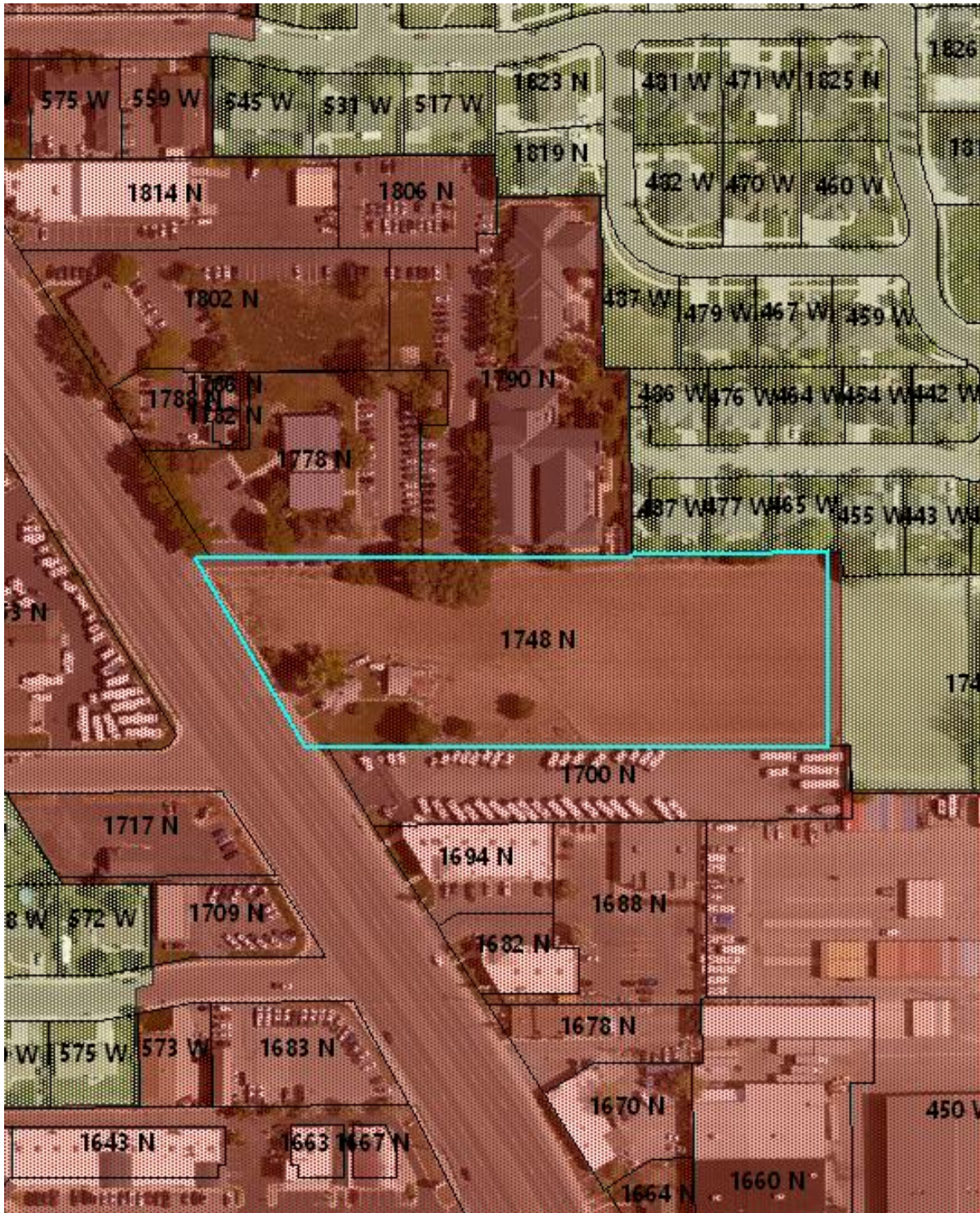
Vicinity Map

Zone: C2

Acres: 3.03 Acres



Orem Center For Change – 1748 N State Street



Zone Map

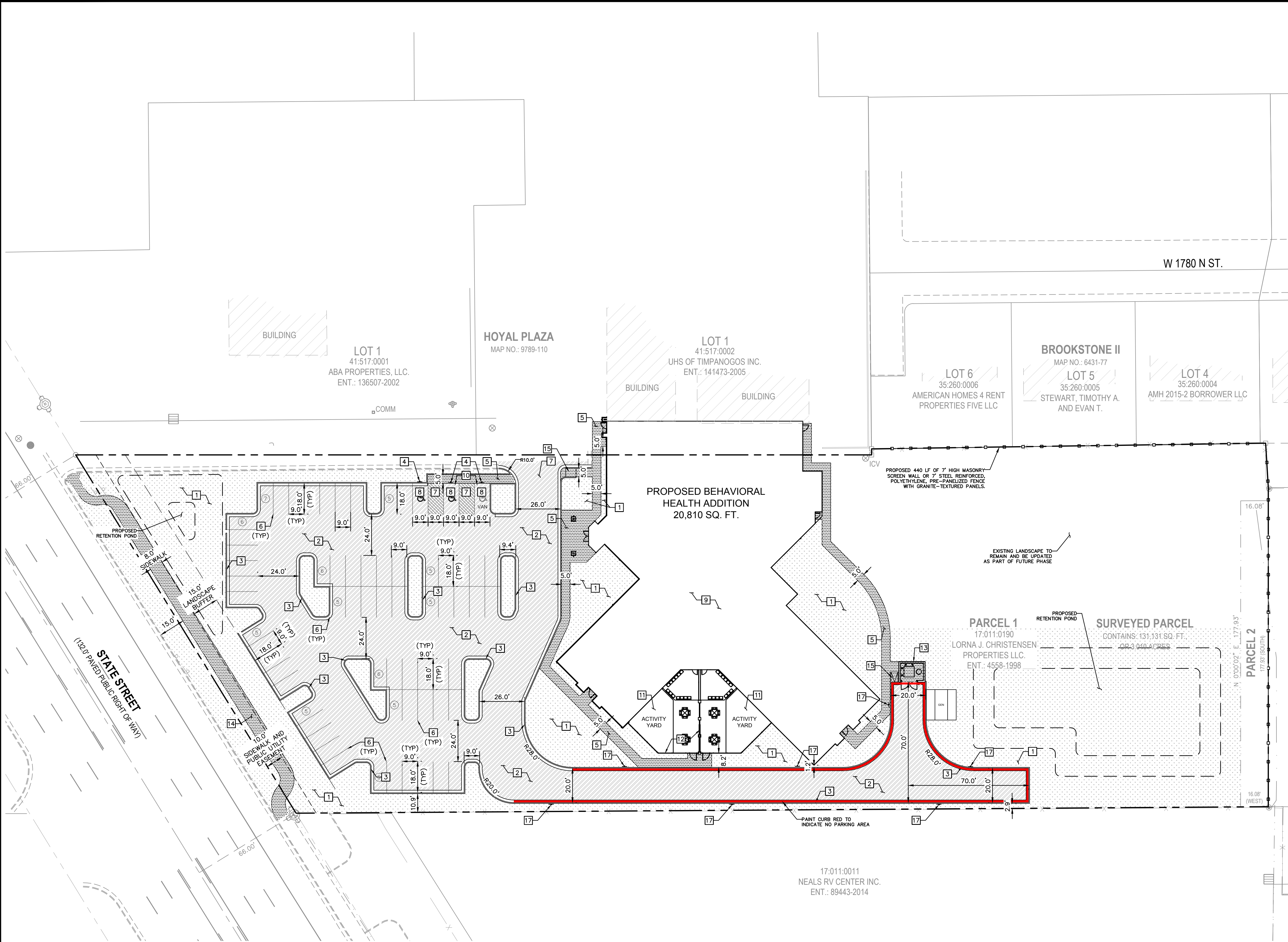
Zone: C2

Acres: 3.03 Acres



Orem Center for Change – 1748 N. State Street, Orem Utah
Current Street View





SITE INFORMATION

	SQUARE FOOTAGE	ACREAGE	PERCENT OF TOTAL AREA
TOTAL SITE AREA	131,131 S.F.	3.01 AC	100%
EXISTING BUILDING S.F.	27,600 S.F.	0.63 AC	21%
PROPOSED BUILDING ADDITION S.F.	20,810 S.F.	0.48 AC	14%
REQUIRED PARKING FOR BUILDING ADDITION	83 STALLS	-	-
TOTAL PROPOSED ADDITIONAL PARKING	66 STALLS	-	-
REQUESTED PARKING REDUCTION	17 STALLS	-	-
TOTAL EXISTING ADA PARKING	5 STALLS	-	-
TOTAL PROPOSED ADA PARKING	8 STALLS	-	-

GENERAL NOTES

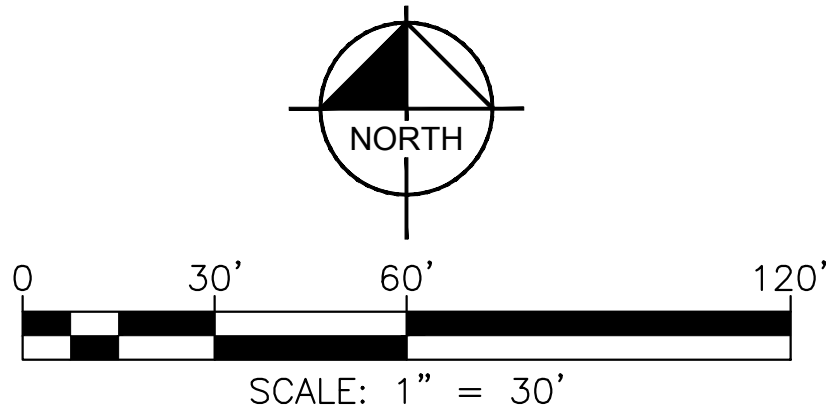
1. CONTRACTOR TO VERIFY EXISTING IMPROVEMENTS SHOWN ON THE PLAN.
2. CONTRACTOR TO PROTECT IN PLACE, DURING DEMOLITION AND CONSTRUCTION, ALL EXISTING IMPROVEMENTS THAT ARE TO REMAIN AS NOTED ON THE PLAN.
3. ANY EXISTING STRUCTURE, IMPROVEMENT OR APPURTENANCE TO REMAIN THAT IS DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE IMMEDIATELY REPAIRED OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
4. ALL RADII 3' UNLESS OTHERWISE NOTED ON PLAN.
5. CONTRACTOR SHALL ENSURE A SMOOTH TIE-IN TO EXISTING PAVEMENT AND SURFACE.
6. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR ADDITIONAL SITE INFORMATION.

CONSTRUCTION NOTES

- 1 LANDSCAPE AREA (TYP), REFER TO LANDSCAPE PLANS FOR DETAILS.
- 2 CONSTRUCT ASPHALT PAVEMENT PER DETAIL ON SHEET C6.10.
- 3 CONSTRUCT 6" TYPICAL VERTICAL CURB AND GUTTER PER OREM CITY STANDARDS AND SPECIFICATIONS. REFER TO DETAIL ON SHEET C6.00.
- 4 FURNISH AND INSTALL VAN ACCESSIBLE ADA SIGN AND POST. PER DETAIL ON SHEET C6.10.
- 5 CONSTRUCT CONCRETE SIDEWALK. PER DETAIL ON SHEET C6.00.
- 6 PAINT 4" WIDE WHITE PARKING STRIPING.
- 7 PAINT 4" WHITE STRIPES AT 45' AT 2' O.C. PER DETAIL ON SHEET C6.10.
- 8 ADA PARKING STALL. REFER TO DETAIL ON SHEET C6.10.
- 9 PROPOSED BUILDING ADDITION.
- 10 FURNISH AND INSTALL CONCRETE WHEEL STOP PER DETAIL ON SHEET C6.10.
- 11 ACTIVITY YARD. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
- 12 ACTIVITY YARD FENCE. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
- 13 FURNISH AND INSTALL TRASH ENCLOSURE. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
- 14 CONSTRUCT AND REPLACE CONCRETE SIDEWALK PER UDOT STANDARDS AND SPECIFICATIONS. MATCH EXISTING SIDEWALK PAVEMENT SECTION.
- 15 CONSTRUCT ADA RAMP PER DETAIL ON SHEET C6.00.
- 16 PROPOSED 7' HIGH STEEL REINFORCED, POLYETHYLENE, PRE-PANELIZED FENCE. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
- 17 PROPOSED NO PARKING SIGN.
- 18 PAINT CURB RED TO INDICATE NO PARKING AREA.

LEGEND

---	PROPERTY LINE
---	PROPERTY SETBACK
---	PROPOSED CONCRETE SIDEWALK PAVEMENT. REFER TO DETAIL ON SHEET C6.00.
---	PROPOSED ASPHALT PAVEMENT. REFER TO PAVEMENT SECTION DETAILS ON SHEET C6.10.
---	PROPOSED LANDSCAPE. REFER TO LANDSCAPE PLANS FOR DETAILS AND SPECIFICATIONS.
---	EXISTING BUILDING TO REMAIN.



CAUTION: NOTICE TO CONTRACTOR
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

DATE	DESCRIPTION
10/31/2024	1ST CITY SITE PLAN SUBMITTAL
01/13/2025	2ND CITY SITE PLAN SUBMITTAL
02/13/2025	3RD CITY SITE PLAN SUBMITTAL
03/17/2025	4TH CITY SITE PLAN SUBMITTAL

DRAWN BY:	BSA	3/14/2025
DESIGNED BY:	BSA	3/14/2025
CHECKED BY:	CPB	3/14/2025
PROJECT No.:	193062001	SCALE: AS SHOWN

SHEET
C3.00

Kimley»Horn

1850 Ashton Boulevard, Suite 150 | Lehi, UT 84043 | Tel. No. (888) 212-3776

SITE PLAN

CENTER FOR CHANGE
BEHAVIORAL HEALTH ADDITION
1748 N STATE ST, OREM, UT 84057

SEAL

REGISTERED PROFESSIONAL ENGINEER

Christopher Paul Bick

2/13/2025

STATE OF UTAH

PREPARED UNDER THE DIRECTION
SUPERVISION OF CHRISTOPHER BICK,
P.E. UTAH REGISTRATION NO.
10844212-2202 FOR AND ON BEHALF OF
KIMLEY-HORN AND ASSOCIATES, INC.

STENGEL-HILL

- ARCHITECT

STENGEL HILL
613 WEST MAIN STREET
LOUISVILLE, KENTUCKY 40202
502.893.1875

CIVIL ENGINEERING

KIMLEY-HORN AND ASSOCIATES, INC.
111 EAST BROADWAY, SUITE 600
SALT LAKE CITY, UTAH 84111
385.212.3176

STRUCTURAL ENGINEERING

SKYHOOK STRUCTURAL ENGINEERING, P.C.
229 WARD CIRCLE
BRENTWOOD, TENNESSEE 37027
615.777.0097

MEP ENGINEERING

CMTA, INC.
10411 MEETING STREET
PROSPECT, KENTUCKY 40059
502.326.3085

INTERIOR DESIGN

STENGEL HILL
611 WEST MAIN STREET
LOUISVILLE, KENTUCKY 40202
502.893.1875

047020.01	CAST STONE MASONRY CAST (TYPE 1).
047020.01	CULTURED STONE MASONRY VENEER.
072431.01	MECHANICAL AND FINISH SYSTEM. PROVIDE REVEALS (RV) AND TERMINATIONS (TM) AS INDICATED ON EXTERIOR ELEVATIONS.
073101.01	STANDING SEAM CORRUGATED METAL ROOFING.
076201.01	PREFINISHED ALUMINUM CORNER, COLOR TO BE SELECTED BY ARCHITECT.
076201.01	PREFINISHED 4" x 4" ALUMINUM DOWNPOUT, COLOR TO BE SELECTED BY ARCHITECT.
076201.01	PREFINISHED 6" x 6" ALUMINUM DOWNPOUT, COLOR TO BE SELECTED BY ARCHITECT.
076201.01	PREFINISHED 8" x 8" ALUMINUM DOWNPOUT, COLOR TO BE SELECTED BY ARCHITECT.
076201.01	PREFINISHED 4" x 4" ALUMINUM DOWNPOUT FOR INSTALLATION IN PATEK CALATRAVA AREA. COORDINATE CONNECTION METHOD WITH ARCHITECT AND INSTALL PER PROF. SECURTY CONTRACTOR. PROVIDE EXTERIOR CORNER AND WALL TERMINATION DOWNPOUTS TO BE SCHEDULED REFERENCE TO EXISTING DRAWINGS BELOW FINISH GRADE. COLOR TO BE SELECTED BY ARCHITECT.
079501.01	4" EXTERIOR WALL. TO WALL EXPANSION JOINT. COORD ASSEMBLY TYPE 2A. PROVIDE ANCHOR BOLTS AS REQUIRED FOR INSTALLATION.
084111.01	ALUMINUM STOREFRONT SYSTEM.
085611.01	ALUMINUM FRAME PLASTIC GLAZED CHANGING ROOM.
085611.01	ROOFTOP MECHANICAL UNIT SCREEN.
085611.01	ROOFTOP MECHANICAL UNIT. PROVIDE 1" MIN. R-VALUE AT 12" O.C. F.F. TO BOTTOM OF VERTICAL. CENTER BETWEEN VERTICALS OF BRACING AND WALL VERTICALS. REFERENCE EXISTING DRAWINGS.
085611.01	DECK OUTLET FUTURE. REFERENCE EXISTING DRAWINGS.
085611.01	SCAFFOLD OUTLET FUTURE. PROVIDE 12" MINIMUM ANCHOR GRADE. REFERENCE PLUMBING DRAWINGS.



05
A7.1

$$1/8'' = 1'-0''$$


04
A7.1

A7.1



03
A7.1

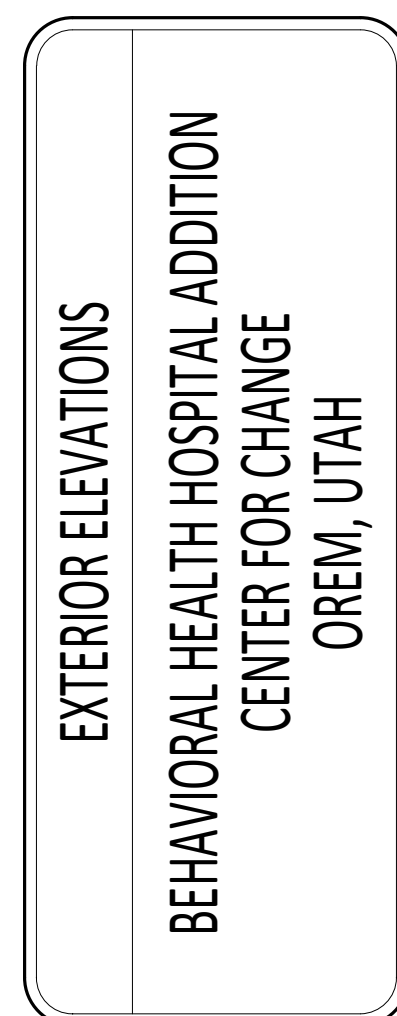
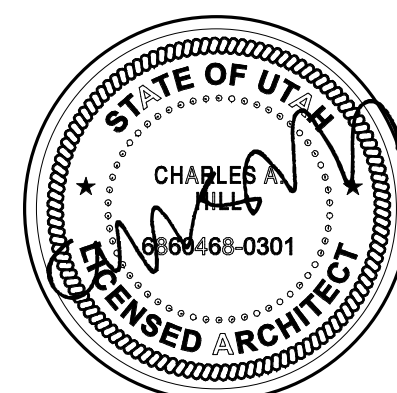
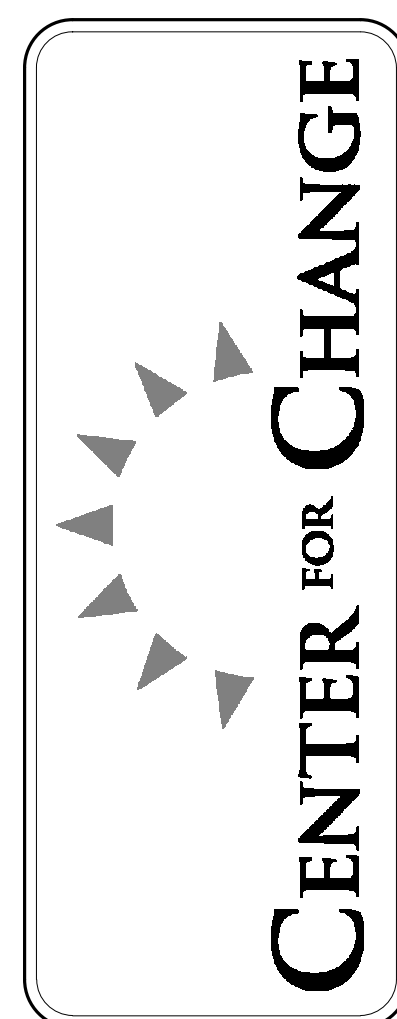
$$1/8'' = 1'-0''$$


02
A7.1

A7.3



01
A7.1

$$1/8'' = 1'-0''$$


ADD-01	02.14.2025
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22 JANUARY 2025
UHS2313

A7.1



PLANNING COMMISSION

June 18, 2025

Item 3.3

Rands Subdivision
470 West 165 South

Preliminary Approval, single-family lot 2-lot
subdivision (deep lot) in the R7.5 Zone.

Prepared By:
Jared Hall

Applicant:
Jeff Rands

Notices:

Posted in 2 public places.

Posted on City Webpage
and City hotline.

Posted at Utah.gov/pmn.

Site Information:

General Plan Designation:

**Medium Density
Residential**

Zoning: **R7.5**

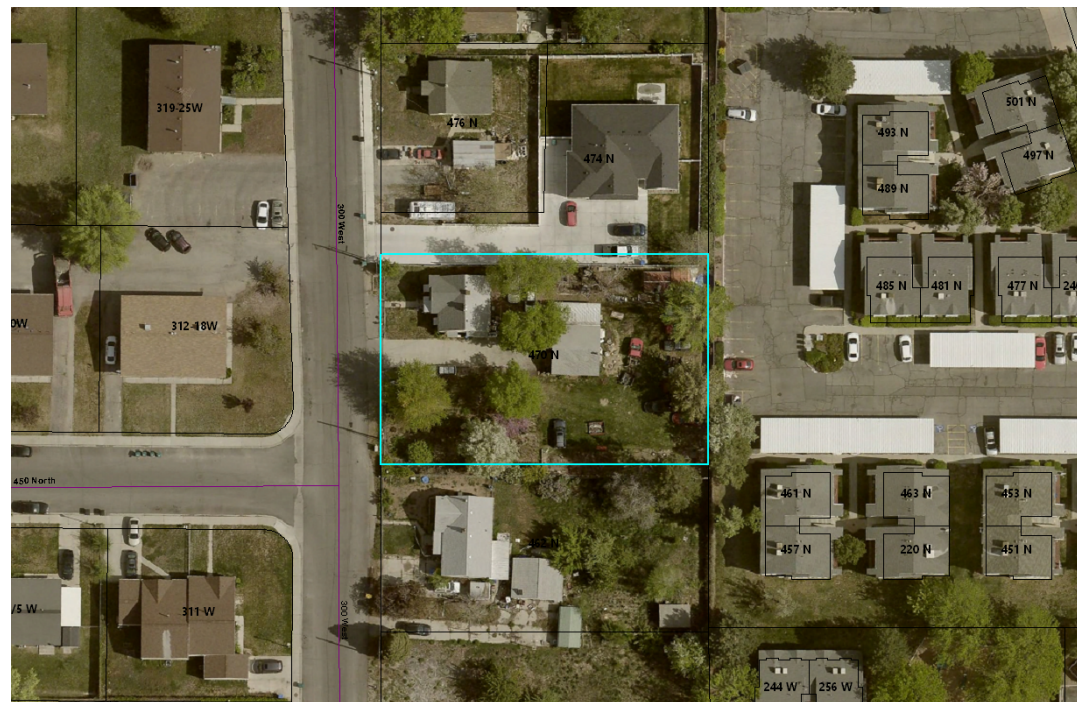
Total Acreage: **.43 acres**

Action:

The Planning Commission
is the Land Use Authority
and the approving body for
this item.

REQUEST: The applicant requests preliminary subdivision approval to split the subject property using deep lot regulations from Article 17-8-1. The new lot will be located behind the existing home, with access to the new “deep” lot provided along the south side of the front lot from 470 West.

BACKGROUND: The subject property is an existing residential lot in the R7.5 Zone. A single-family home sits on the property toward the north side and would remain as a part of proposed Lot 1 of this subdivision. Proposed Lot 2, the deep lot, will be located to the rear of proposed Lot 1, and a new home could be built there.

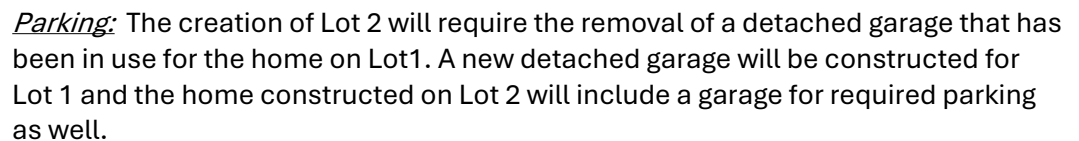


REVIEW:

Zoning: The subject property is zoned R7.5, and the proposed preliminary subdivision under Article 17-8-1 is permitted with approval by the Planning Commission.

Public Improvements: Right-of-way improvements will be installed to the frontage of 470 West as a part of the subdivision. The improvements will match and extend the existing improvements to the north including curb, gutter, and sidewalk.

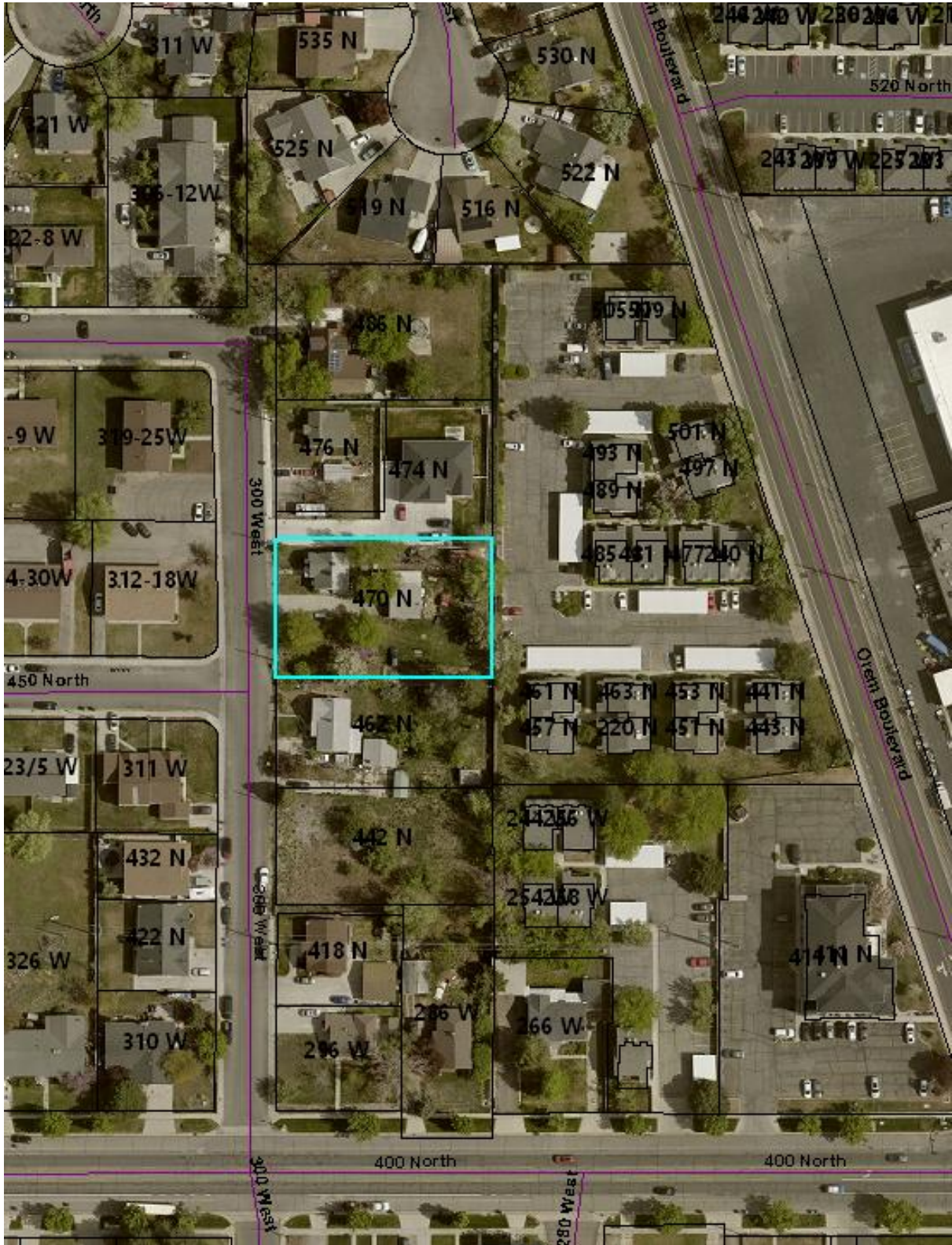
Access: Both lots will have access to 470 West. The access to Lot 2 will be a 22' wide easement across the south side of Lot 1. The access easement will be wider on the street to allow movement around a utility pole.



ACTIONS: The Planning Commission is the designated Land Use Authority for preliminary subdivisions. The Commission may approve or deny the request for preliminary subdivision or may choose to continue their consideration of the request and ask for additional information or analysis.

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Rands Subdivision – 470 N 300 West



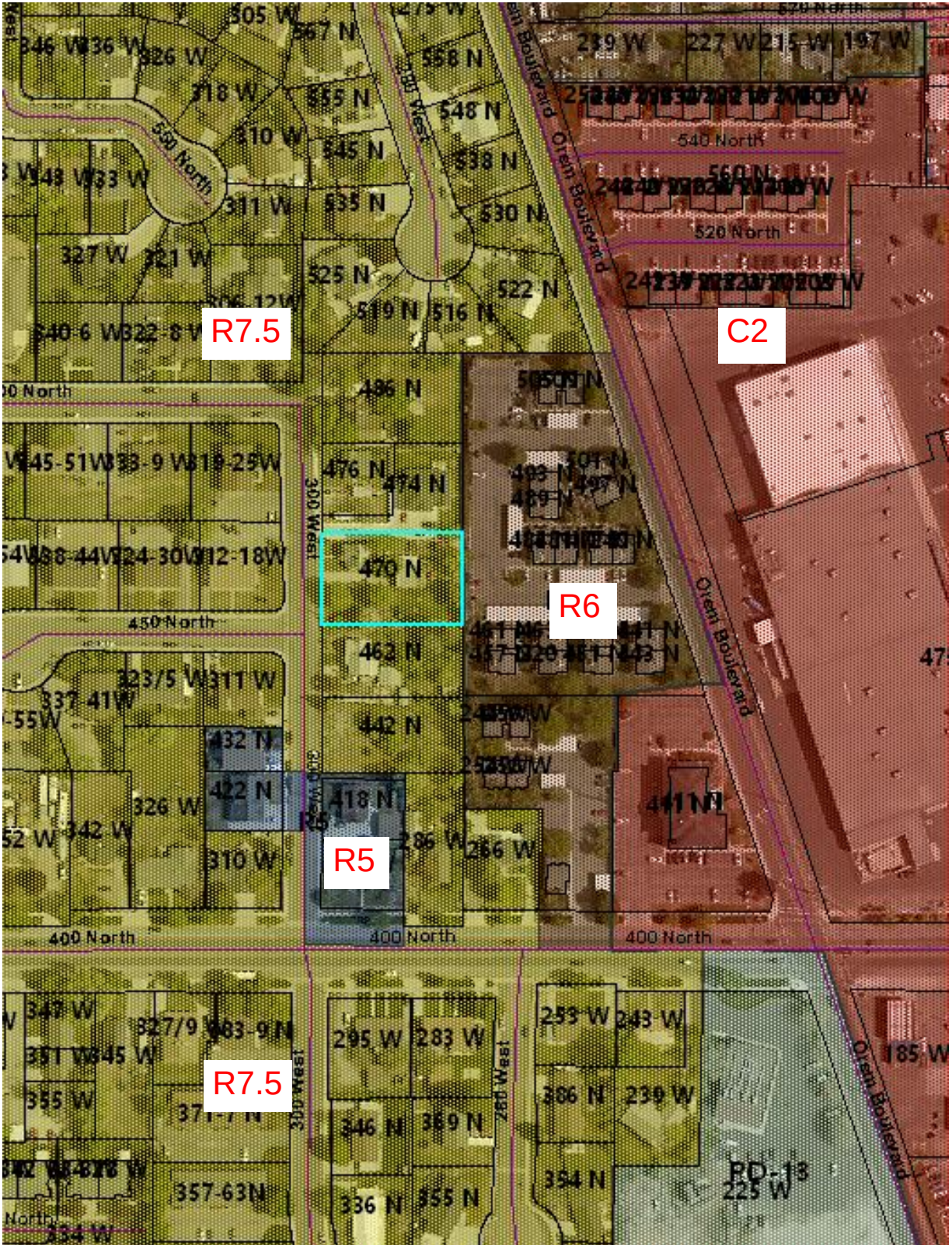
Vicinity Map

Zone: R7.5

Acres: .43



Rands Subdivision – 470 N 300 West



Zoning Map

Zone: R7.5

Acres: .43

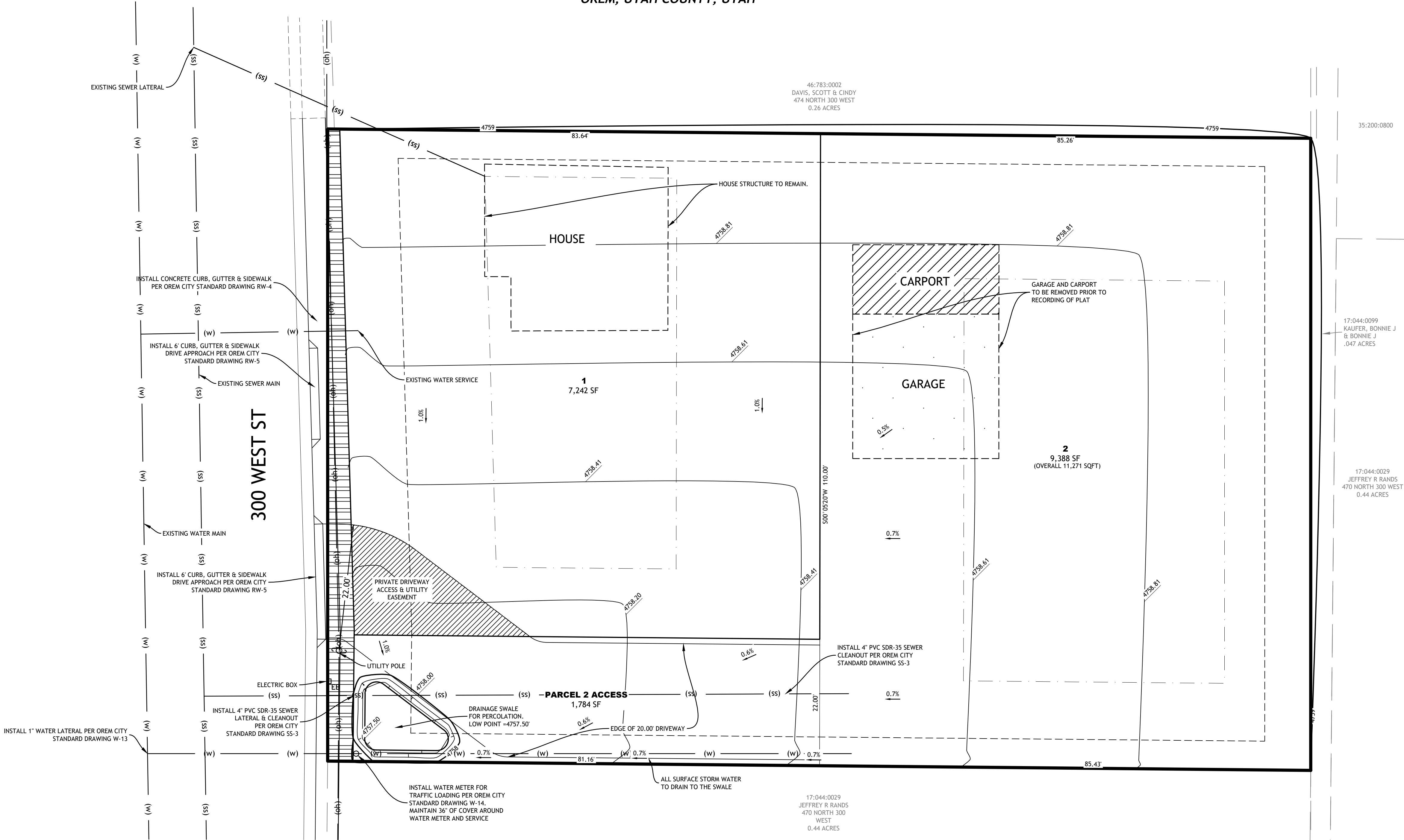
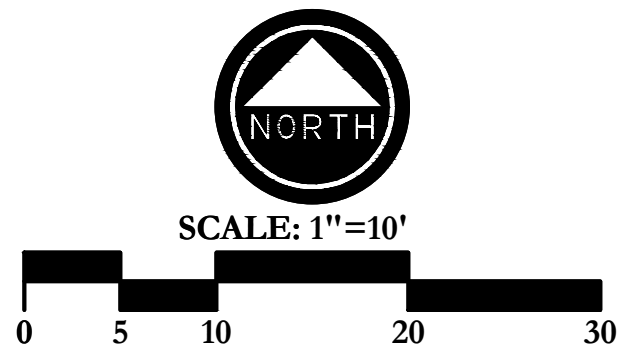


470 N 300 West – Rand’s Subdivision - Current Street View

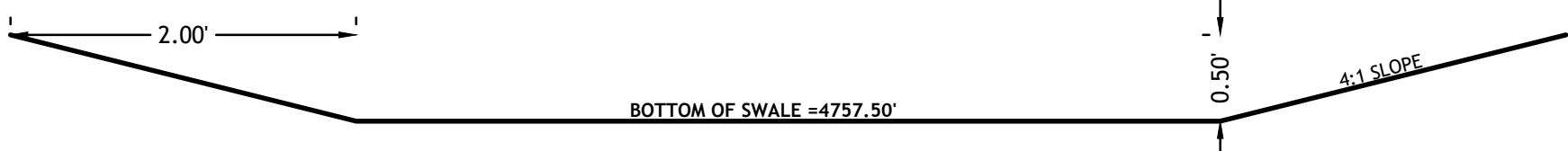


PLAT "A" RANDS SUBDIVISION
PRELIMINARY SITE PLAN

PARCEL 17:044:0029
LOCATED WITHIN THE SOUTHEAST QUARTER (SE 1/4) OF
SECTION 10, TOWNSHIP 6 SOUTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN,
OREM, UTAH COUNTY, UTAH



DRAINAGE SWALE DETAIL



LEGEND	
	BOUNDARY LINE
	SECTION LINE
	CENTERLINE / MONUMENT LINE
	EXISTING ADJACENT PROPERTY LINE
	EXISTING OVERHEAD UTILITY LINE
	EXISTING SEWER LINE
	EXISTING WATER LINE
	TIE LINE
	LOT LINE
	EASEMENT LINE
	EXISTING EASEMENT
	FOUND SECTION MONUMENT
	STREET MONUMENT TO BE SET PER UTAH COUNTY SURVEYOR'S STANDARD
3/4" REBAR & CAP MARKED "EDM PARTNERS, LLC" WILL BE SET AT ALL EXTERIOR BOUNDARY AND REAR LOT CORNERS UNLESS OTHERWISE NOTED ON THIS PLAT	

OWNER / DEVELOPER

JEFFERY RANDS
282 W 4100 N
PROVO, UT 84604



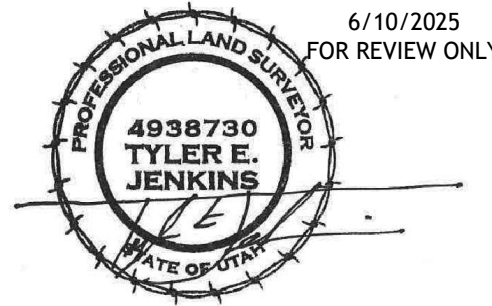
2815 East 3300 South, Salt Lake City, UT 84109
(801) 305-4670 www.edmpartners.com

SURVEYOR'S CERTIFICATE

I, TYLER E. JENKINS, DO HEREBY CERTIFY THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF UTAH AND THAT I HOLD LICENSE NO. 4938730 IN ACCORDANCE WITH TITLE 58, CHAPTER 22, OF THE PROFESSIONAL ENGINEERS AND LAND SURVEYORS ACT; I FURTHER CERTIFY THAT BY AUTHORITY OF THE OWNERS I HAVE COMPLETED A SURVEY OF THE PROPERTY DESCRIBED ON THIS SUBDIVISION PLAT IN ACCORDANCE WITH SECTION 17-23-17 AND HAVE VERIFIED ALL MEASUREMENTS; THAT THE REFERENCE MONUMENTS SHOWN ON THIS PLAT ARE LOCATED AS INDICATED AND ARE SUFFICIENT TO RETRACE OR REESTABLISH THIS PLAT; AND THAT THE INFORMATION SHOWN HEREIN IS SUFFICIENT TO ACCURATELY ESTABLISH THE LATERAL BOUNDARIES OF THE HEREIN DESCRIBED TRACT OF REAL PROPERTY; AND HAVE SUBDIVIDED SAID TRACT OF LAND INTO LOTS AND STREETS, HEREAFTER TO BE KNOWN AS:

PLAT "A" RANDS SUBDIVISION

AND THAT THE SAME HAS BEEN CORRECTLY SURVEYED AND STAKED ON THE GROUND.



BOUNDARY DESCRIPTION

A PARCEL OF LAND LOCATED IN THE SOUTHEAST QUARTER OF SECTION 10, TOWNSHIP 6 SOUTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT S89°27'32"E 684.04 FEET ALONG THE EAST-WEST QUARTER LINE AND N00°00'00"E 365.02 FEET FROM THE SOUTH QUARTER CORNER OF SECTION 10, TOWNSHIP 6 SOUTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN; AND RUNNING THENCE N00°00'00"W 110.00 FEET; THENCE S89°27'32"E 171.00 FEET; THENCE S00°00'00"E 110.01 FEET; THENCE N89°27'31"W 171.00 FEET TO THE POINT OF BEGINNING.

CONTAINS 18,810.05 SQUARE FEET, 0.43 ACRES AND 2 LOTS

BASIS OF BEARING

SOUTH 89°27'32" EAST, BEING THE BEARING BETWEEN TWO FOUND MONUMENTS AT THE SOUTH QUARTER (1/4) CORNER AND THE SOUTHEAST CORNER (1/4) OF SECTION 10, TOWNSHIP 6 SOUTH, RANGE 2 EAST, SLB&M.

OWNER'S DEDICATION

KNOWN ALL BY THESE PRESENTS THAT WE/I THE UNDERSIGNED OWNER(S) OF THE DESCRIBED TRACT OF LAND ABOVE, HAVING CAUSE THE SAME TO BE SUBDIVIDED INTO LOTS, AND STREETS TO HEREAFTER BE KNOWN AS:

PLAT "A" RANDS SUBDIVISION

DO HEREBY DEDICATE FOR PERPETUAL USE OF THE PUBLIC ALL PARCELS OF LAND SHOWN ON THIS PLAT AS INTENDED FOR PUBLIC USE, AND WARRANT, DEFEND, AND SAVE THE CITY HARMLESS AGAINST ANY EASEMENTS OR OTHER ENCUMBRANCES ON THE DEDICATED STREETS WHICH WILL INTERFERE WITH THE CITY'S USE, OPERATION, AND MAINTENANCE OF THE STREETS AND DO FURTHER DEDICATE THE EASEMENTS AS SHOWN FOR THE USE BY ALL SUPPLIERS OF UTILITY OR OTHER NECESSARY SERVICES,

IN WITNESS WHEREOF, WE HAVE HEREUNTO SET ASIDE OUR HANDS THIS ____ DAY OF ____, 20__.

NAME: JEFFERY RANDS
TITLE: OWNER

ACKNOWLEDGMENT

ON THE ____ DAY OF ____, 20__, PEGGY GRACE AYERS PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR SAID COUNTY OF SALT LAKE IN THE STATE OF UTAH, WHO AFTER BEING DULY SWORN, ACKNOWLEDGED TO ME THAT SHE IS THE OWNER AND THAT HE SIGNED THE OWNER'S DEDICATION FREELY AND VOLUNTARILY FOR THE PURPOSES THEREIN MENTIONED.

NOTARY PUBLIC COMMISSION NUMBER SIGNATURE

A NOTARY PUBLIC COMMISSIONED IN THE STATE OF UTAH. COMMISSION EXPIRES ____

PLAT "A" RANDS SUBDIVISION
LOCATED WITHIN THE SOUTHEAST QUARTER (SE 1/4) OF
SECTION 10, TOWNSHIP 6 SOUTH, RANGE 2 EAST, SALT
LAKE BASE AND MERIDIAN, OREM,
UTAH COUNTY, UTAH

SHEET 1 OF 1

UTAH COUNTY RECORDER

RECORDED #
STATE OF UTAH, COUNTY OF UTAH, RECORDED AND FILED AT THE REQUEST
OF:
DATE: TIME: BOOK: PAGE:
FEE UTAH COUNTY RECORDER

CANYON PARK

06/12/25

Prepared for:

Tri Pointe Homes

Prepared by:

FOCUS ENGINEERING



6949 S. High Tech Drive Suite 200
Midvale, UT 84047
Phone: 801-352-0075
Web: www.focusutah.com

Table of Contents

I.	General Location and Description	1
II.	Assessment for Upstream Properties	1
III.	Drainage Basin	1
IV.	Proposed Drainage Plan.....	2
V.	Stormwater Quality	2
VI.	Analysis	2
VII.	Conclusion	4
APPENDIX		1

APPENDICES

Grading and drainage plans
Off-site berm and storm drain exhibit
Calculations and model input/output
 Rational method
 Detailed calculations
 Inlet capacity and gutter spread
 Rainfall data
 Stormwater quality
Maps
 FEMA FIRM
 Vicinity Map
Geotech report/perc test

I. GENERAL LOCATION AND DESCRIPTION

The proposed project is located at approximately 1200 North and Research Way and is 23.41 acres, with approximately 100% being disturbed with construction. The current use is a commercial research park and the proposed use will be single family homes. The property slopes from north-east to south-west at approximately 1.5%. There is an existing low point in the middle of the existing parking lot that is near the center of the property.

The existing site has catch basins, buried pipes, and sumps. All paved areas drain to curb and gutter that has inlets at the low points.

A soils report has been prepared by Gordon Geotechnical Engineering, Inc dated April 19, 2024 and the soil consists of granular fill and natural silty sand and gravel.

II. ASSESSMENT FOR UPSTREAM PROPERTIES

The proposed subdivision is altering an existing swale along the west side of the project. To address this an additional sump will be installed at the new low point and a berm installed to force the water to enter the sump and not impact the new downstream lots. A new main trunk line has also been provided to connect the north mainline of the existing development to 1200 N through the proposed subdivision.

III. DRAINAGE BASIN

The existing site has underground pipes running from the north to the low spot of the site. The existing pipes do connect to the existing city system in 1200 North on the south side of the project, but only a minor portion of the site will flow out to the city system currently. It consists of inlets and sumps. It is assumed this site was part of a master planned development for the storm water.

The property resides in flood zone X per FEMA FIRM panel number 49049C0333F.

IV. PROPOSED DRAINAGE PLAN

A drainage plan has been developed per Orem City standards. The onsite system will consist of buried pipes, perforated pipes, catch basins, and underground sumps sized to hold the 10-year event for pipes and the 25-year storm event for sumps. A new trunkline storm drain pipe will connect into the city system in 1200 North and where possible, sumps have been connected to this line.

The site was calculated by using the rational method ($Q=CiA$) and NOAA Atlas 14 data. The existing site was calculated to have a C value of 0.62 and has 5 existing sumps, based on field data. The proposed site will have a C value of 0.49. The proposed will have 33 sumps. The infiltration rate of the site was tested to be between 12 to 60 in/hr. The Geotech has recommended 6 in/hr and that is the value that is being used. The required LID volume for the site is 18,422 CF.

V. STORMWATER QUALITY

A storm water pollution prevention plan will be developed for the construction of the project and submitted for review.

The city standard detail for inlets includes a snout for water quality control.

VI. ANALYSIS

Hydrology

The design storm required is the 25-year event for detention/retention and the rainfall intensity information was obtained from the NOAA Atlas 14 website for the state of Utah. The site will include retention and detention with the city maximum of 60 gpm/acre leaving the site.

*The rational method ($Q=CiA$) was used to determine storm drain runoff flows. A weighted "C" value of 0.49, a variable rainfall intensity (from NOAA Atlas 14 data), and the project area of 23.41 acres, were used to size the detention volume. The runoff calculations resulted in a maximum detention volume of 28,079 cubic feet. See the appendix for detention facilities sizing calculations.

The water on the site will be detained/retained in the sumps, inlets, and perforated pipes and gravel and percolate into the ground or pass through the new main trunkline and discharge into the existing system in 1200 North. The trunkline pipes have been designed to allow water to flow down toward 1200 N at a minimum slope of 0.33% and the invert out of the sumps has been designed to allow the sump to be filled as much as possible before water will pass down to the next sump. There are several sumps along the north portion of the trunkline that the pipes were required to be lower to provide flow of the water from the north existing commercial development. To show this three different sump calculations were performed. 1) Single Individual Sump – this type of sump is not connected to the trunkline and can be filled completely. 2) Single Trunk Line Sump – this type of sump is connected to the trunkline and the invert out has been set to 4.0' below the rim and the volume of the sump and gravel calculated to reflect that. 3) Single Reduced Trunk Line Sump – this type of sump is the type of sump in the norther section of the trunkline that the invert needs to be lower than 4' from the rim to provide flow out to 1200 N. The average depth of these sumps was calculated to be 6.0', which is reflected in the detailed calculations.

Hydraulics:

The design storm required is the 10-Year event for pipe capacity. The pipes were sized using Manning's equation for uniform flow $Q = VA = \left(\frac{1.49}{n}\right) AR^{\frac{2}{3}} S^{\frac{1}{2}}$ with a Manning's n value of 0.013. See the appendix for pipe sizing calculations.

Storm drain inlets have been placed as needed to minimize the amount of storm water runoff that bypasses catch basins. Inlets have also been spaced no more than 400 feet apart for ease of maintenance. See the appendix for inlet capacity and gutter spread calculations.

In the event of a 100-year storm event, the water will flow in the ROW and out to 1200 North. A small amount of the site would drain into Research Way. The home sites along the western boundary will drain to the rear of those lots and will pond in the rear yards and if the volume is large enough, will flow south to 1200 North. Several sumps have been designed in the rear yards of the lots along the western boundary at existing local low points.

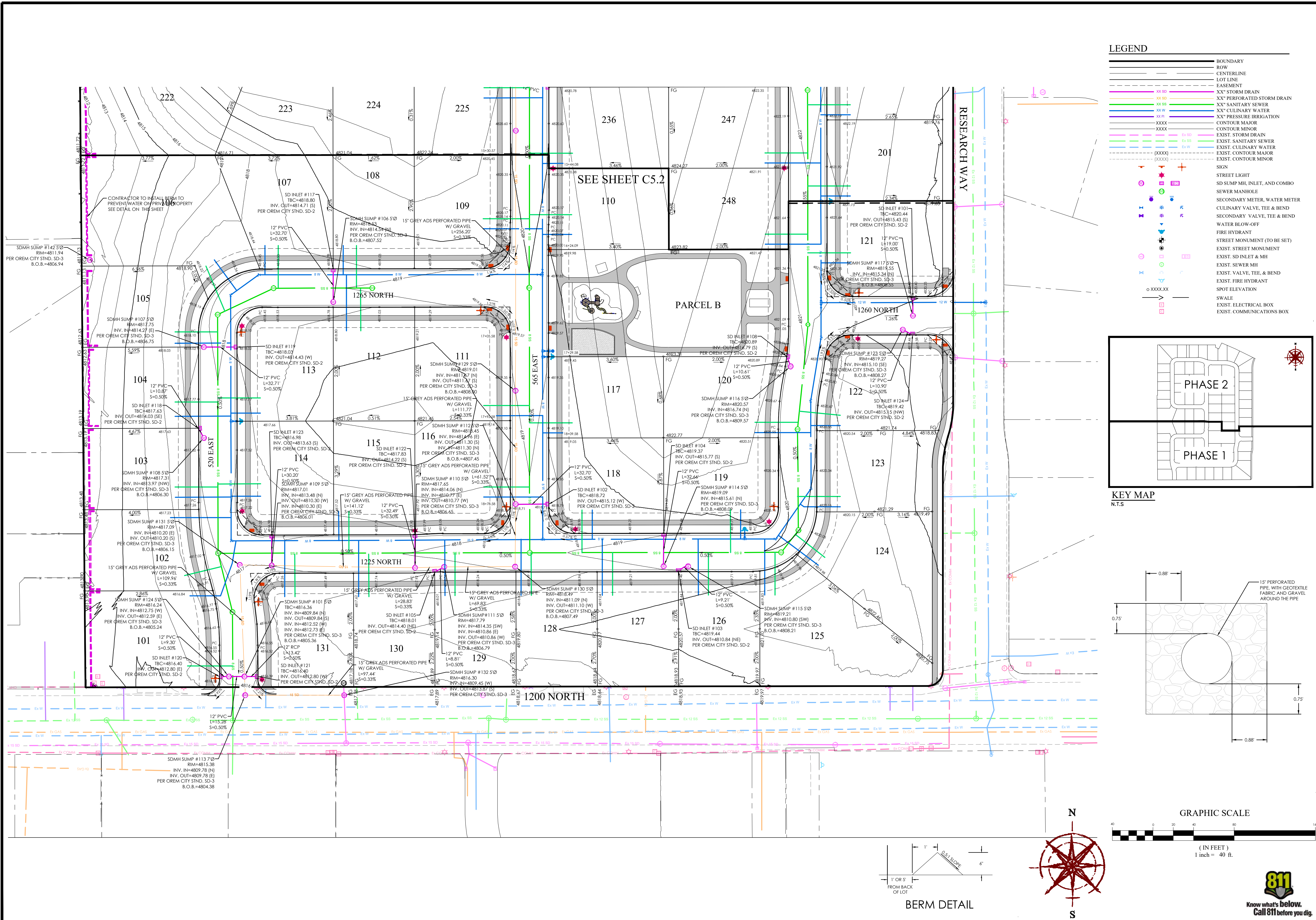
VII. CONCLUSION

It is concluded that the project is in compliance with city standards and design guidelines.

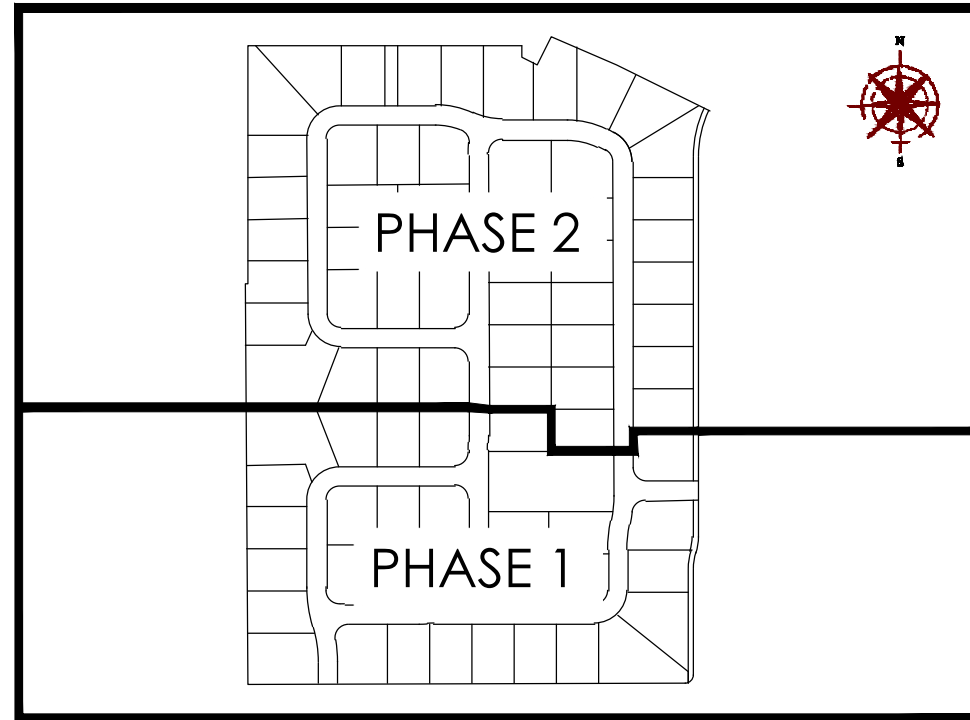
Sincerely,

Mathew Wangsgaard, PE
Project Manager
FOCUS Engineering & Surveying

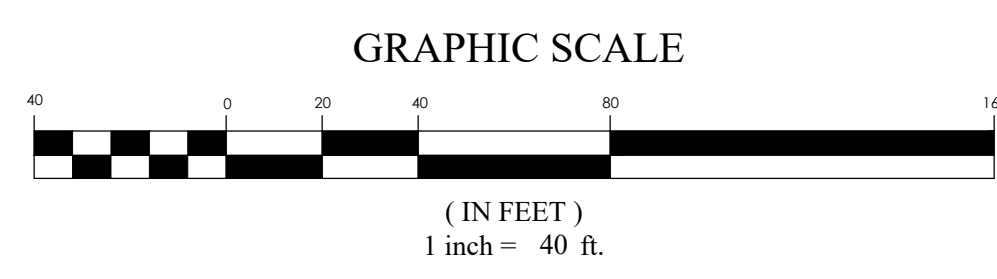
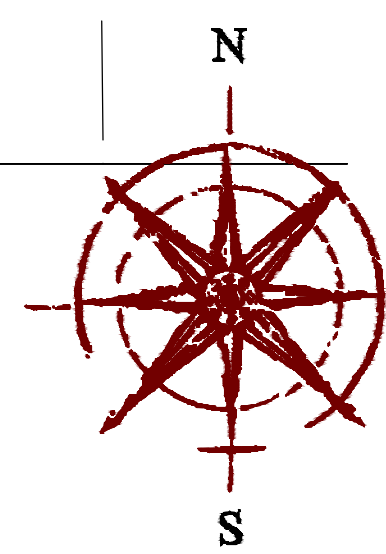
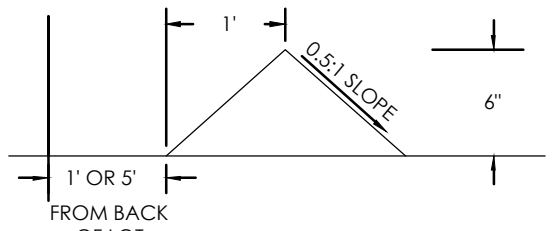
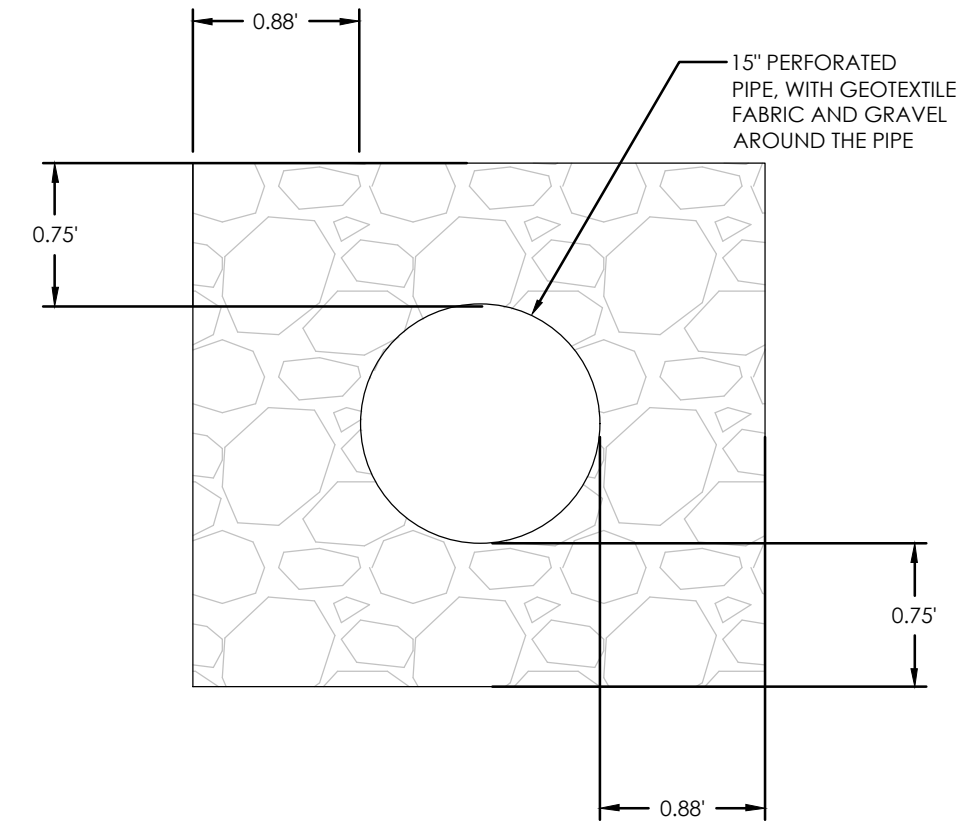
APPENDIX



- LEGEND**
- BOUNDARY
 - ROW
 - CENTERLINE
 - LOT LINE
 - EASEMENT
 - XX" STORM DRAIN
 - XX" PERFORATED STORM DRAIN
 - XX" SANITARY SEWER
 - XX" CULINARY WATER
 - XX" PRESSURE IRRIGATION
 - CONTOUR MAJOR
 - CONTOUR MINOR
 - EXIST. STORM DRAIN
 - EXIST. SANITARY SEWER
 - EXIST. CULINARY WATER
 - EXIST. CONTOUR MAJOR
 - EXIST. CONTOUR MINOR
 - SIGN
 - STREET LIGHT
 - SD SUMP MH, INLET, AND COMBO
 - SEWER MANHOLE
 - SECONDARY METER, WATER METER
 - CULINARY VALVE, TEE & BEND
 - SECONDARY VALVE, TEE & BEND
 - WATER BLOW-OFF
 - FIRE HYDRANT
 - STREET MONUMENT (TO BE SET)
 - EXIST. STREET MONUMENT
 - EXIST. SD INLET & MH
 - EXIST. SEWER MH
 - EXIST. VALVE, TEE, & BEND
 - EXIST. FIRE HYDRANT
 - SPOT ELEVATION
 - SWALE
 - EXIST. ELECTRICAL BOX
 - EXIST. COMMUNICATIONS BOX



KEY MAP
N.T.S.



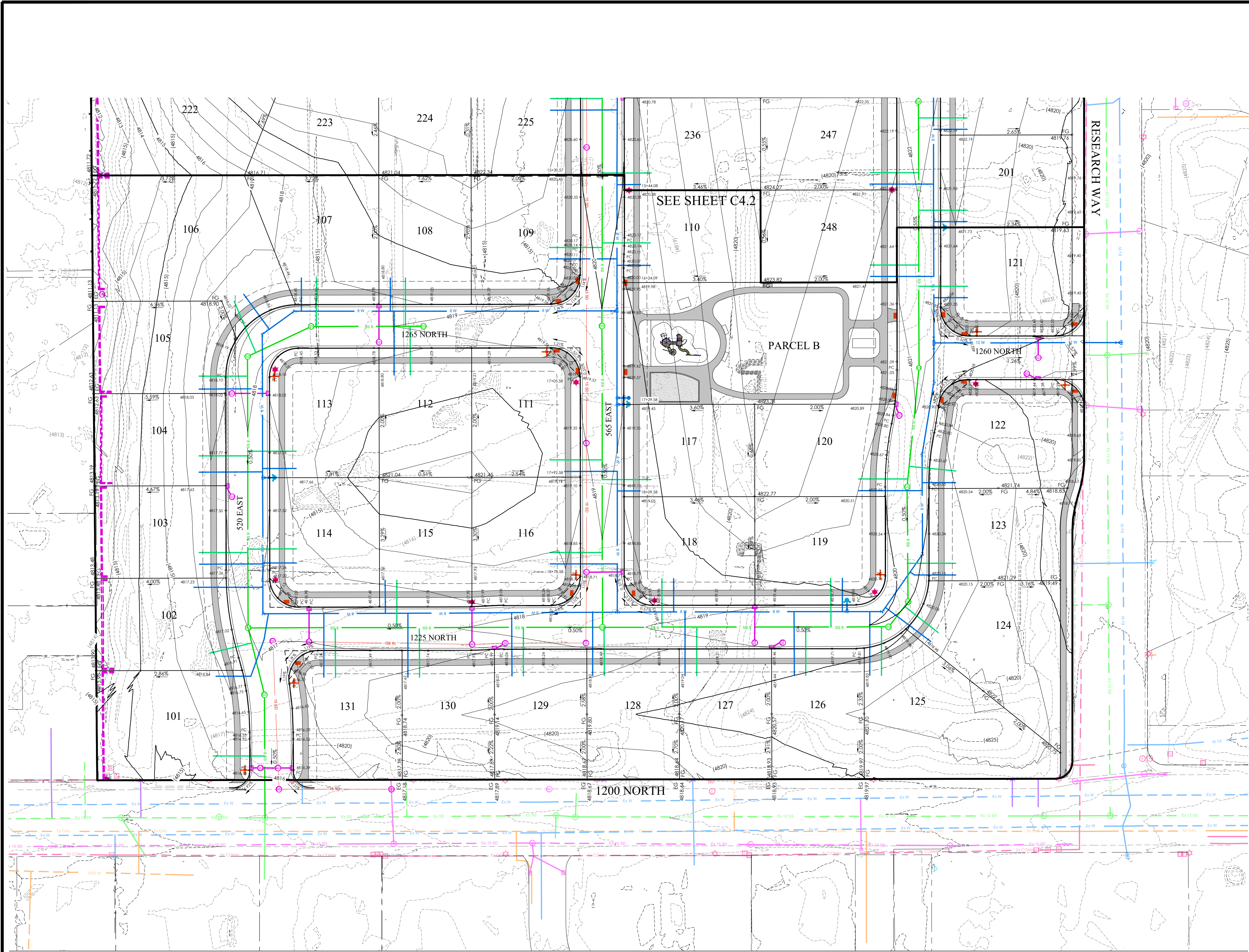
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CANYON PARK
OREM CITY, UTAH COUNTY, UTAH
DRAINAGE PLAN

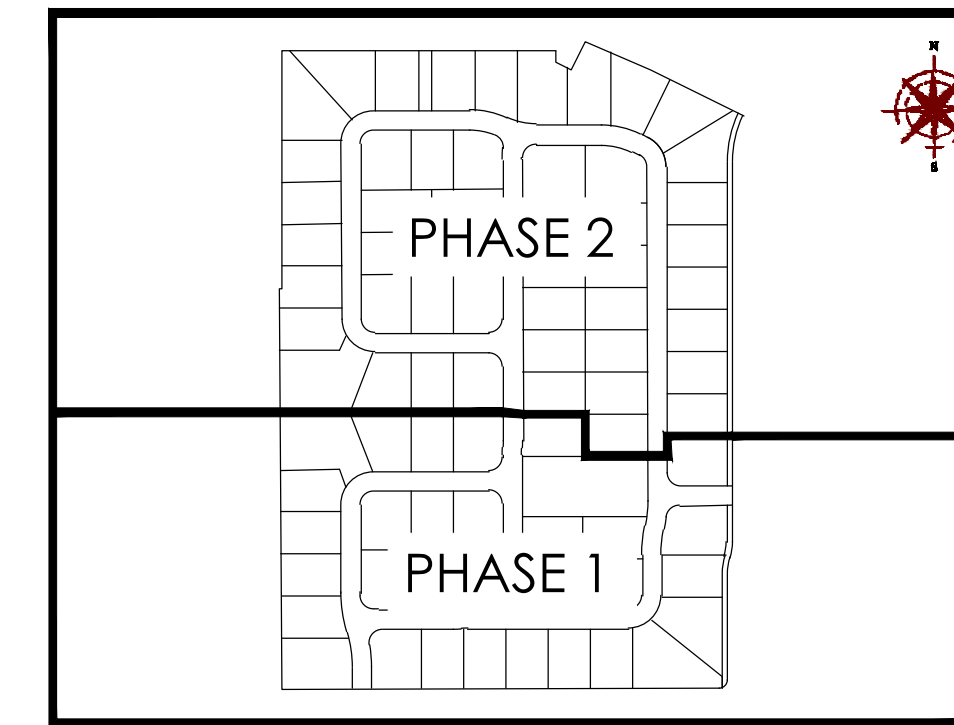
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DRAINAGE PLAN

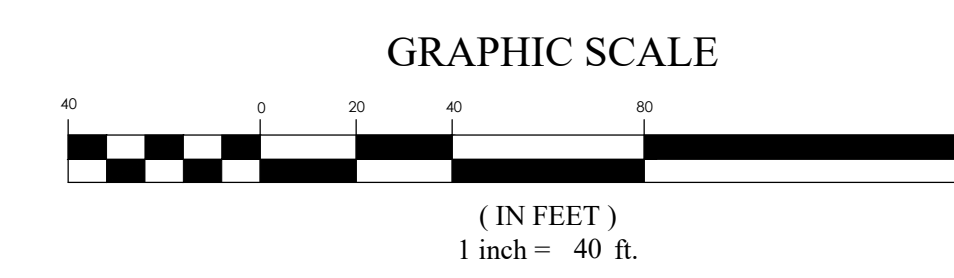
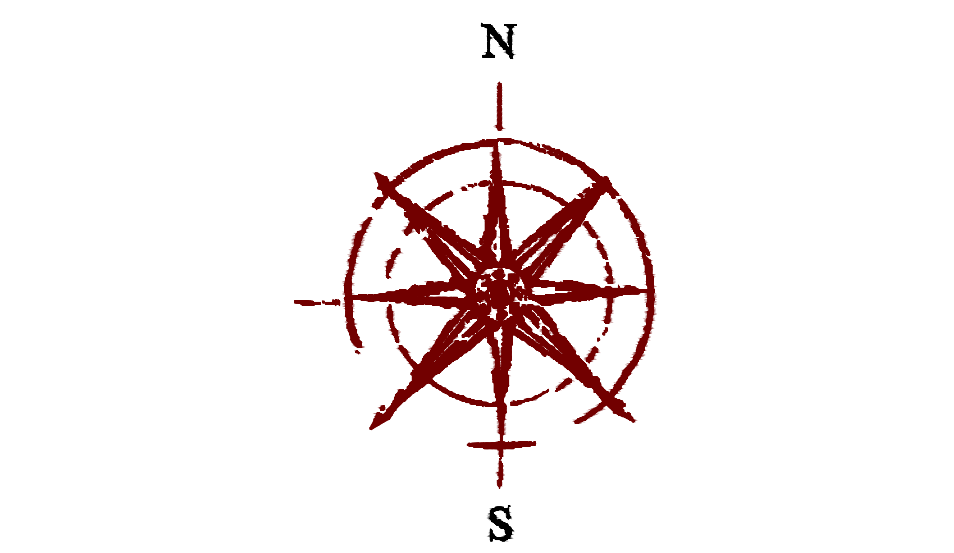
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- LEGEND**
- BOUNDARY
 - ROW
 - LOT LINE
 - EASEMENT
 - XX SD STORM DRAIN
 - XX SS PERFORATED STORM DRAIN
 - XX SW SANITARY SEWER
 - XX CW CULINARY WATER
 - XX PI PRESSURE IRRIGATION
 - XXXX CONTOUR MAJOR
 - XXXX CONTOUR MINOR
 - Ex SD EXIST. STORM DRAIN
 - Ex SS EXIST. SANITARY SEWER
 - Ex CW EXIST. CULINARY WATER
 - Ex PI EXIST. CONTOUR MAJOR
 - Ex SW EXIST. CONTOUR MINOR
 - Ex SW EXIST. NATURAL GAS
 - Sign
 - STREET LIGHT
 - SD SUMP MH, INLET, AND COMBO
 - SEWER MANHOLE
 - SECONDARY METER, WATER METER
 - CULINARY VALVE, TEE & BEND
 - SECONDARY VALVE, TEE & BEND
 - WATER BLOW-OFF
 - FIRE HYDRANT
 - STREET MONUMENT (TO BE SET)
 - EXIST. STREET MONUMENT
 - EXIST. SD INLET & MH
 - EXIST. SEWER MH
 - EXIST. VALVE, TEE, & BEND
 - EXIST. FIRE HYDRANT
 - SPOT ELEVATION
 - SWALE



KEY MAP
N.T.S.



FOR
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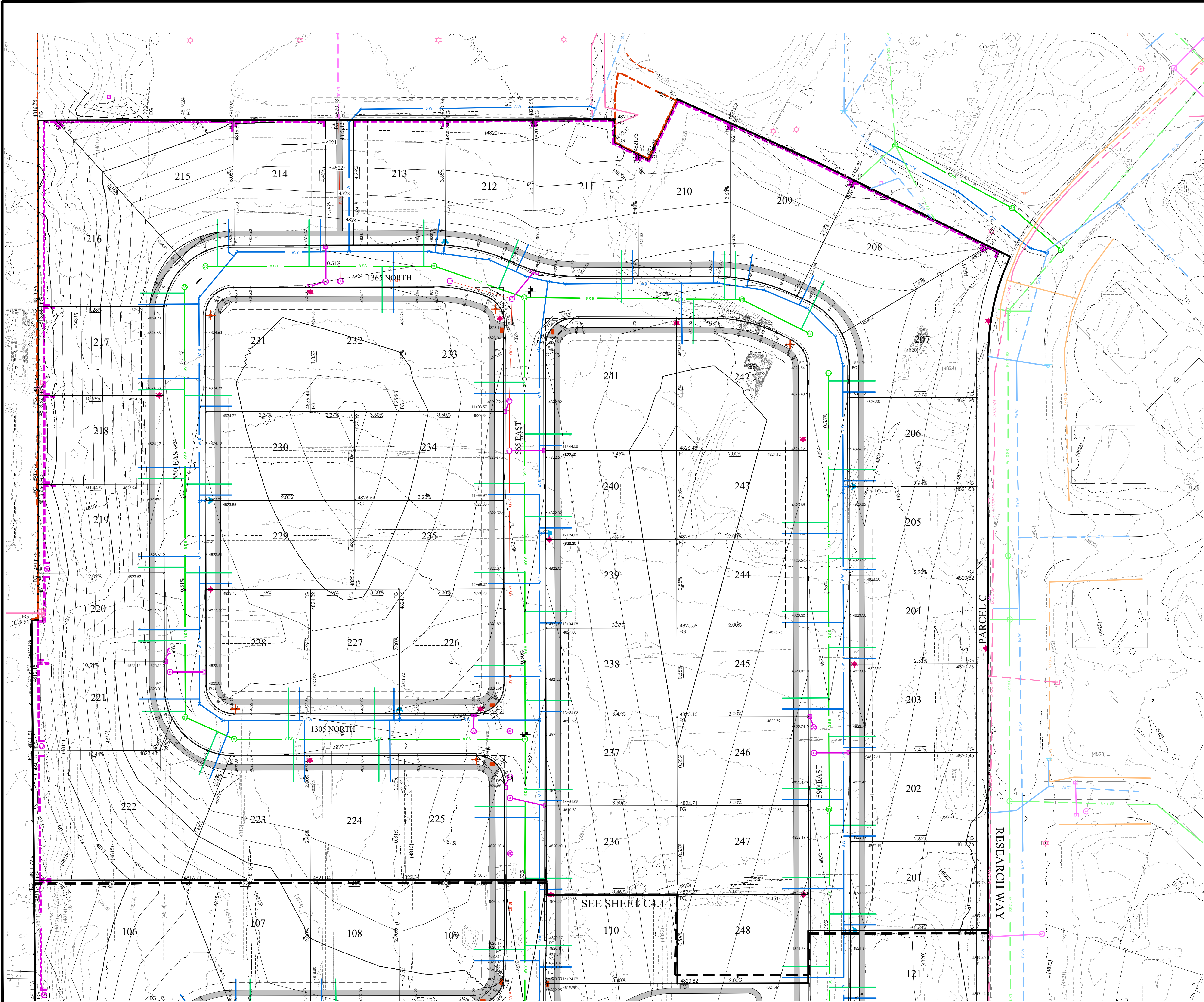
CANYON PARK
OREM CITY, UTAH COUNTY, UTAH
GRADING PLAN

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GRADING PLAN

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Job #: 24-0074



LEGEND

—	BOUNDARY
—	ROW
—	CENTERLINE
—	LOT LINE
—	EASEMENT
XX SD	XX" STORM DRAIN
XX SS	XX" PERFORATED STORM DRAIN
XX SW	XX" SANITARY SEWER
XX PL	XX" CULINARY WATER
XXXX	XXXX" PRESSURE IRRIGATION
—	CONTOUR MAJOR
—	CONTOUR MINOR
—	EXIST. STORM DRAIN
—	EXIST. SANITARY SEWER
—	EXIST. CULINARY WATER
—	EXIST. CONTOUR MAJOR
—	EXIST. CONTOUR MINOR
—	EXIST. NATURAL GAS
—	SIGN
—	STREET LIGHT
—	SD SUMP MH, INLET, AND COMBO
—	SEWER MANHOLE
—	SECONDARY METER, WATER METER
—	CULINARY VALVE, TEE & BEND
—	SECONDARY VALVE, TEE & BEND
—	WATER BLOW-OFF
—	FIRE HYDRANT
—	STREET MONUMENT (TO BE SET)
—	EXIST. STREET MONUMENT
—	EXIST. SD INLET & MH
—	EXIST. SEWER MH
—	EXIST. VALVE, TEE, & BEND
—	EXIST. FIRE HYDRANT
—	SPOT ELEVATION
—	SWALE

KEY MAP
N.T.S.

GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

FOCUS
ENGINEERING AND SURVEYING, LLC
6949 S. HIGH TECH DRIVE, SUITE 200
MIDVALE, UTAH 84047 PH: (801) 352-0075
www.focus-es.com

FOR REVIEW ONLY

CANYON PARK
OREM CITY, UTAH COUNTY, UTAH
GRADING PLAN

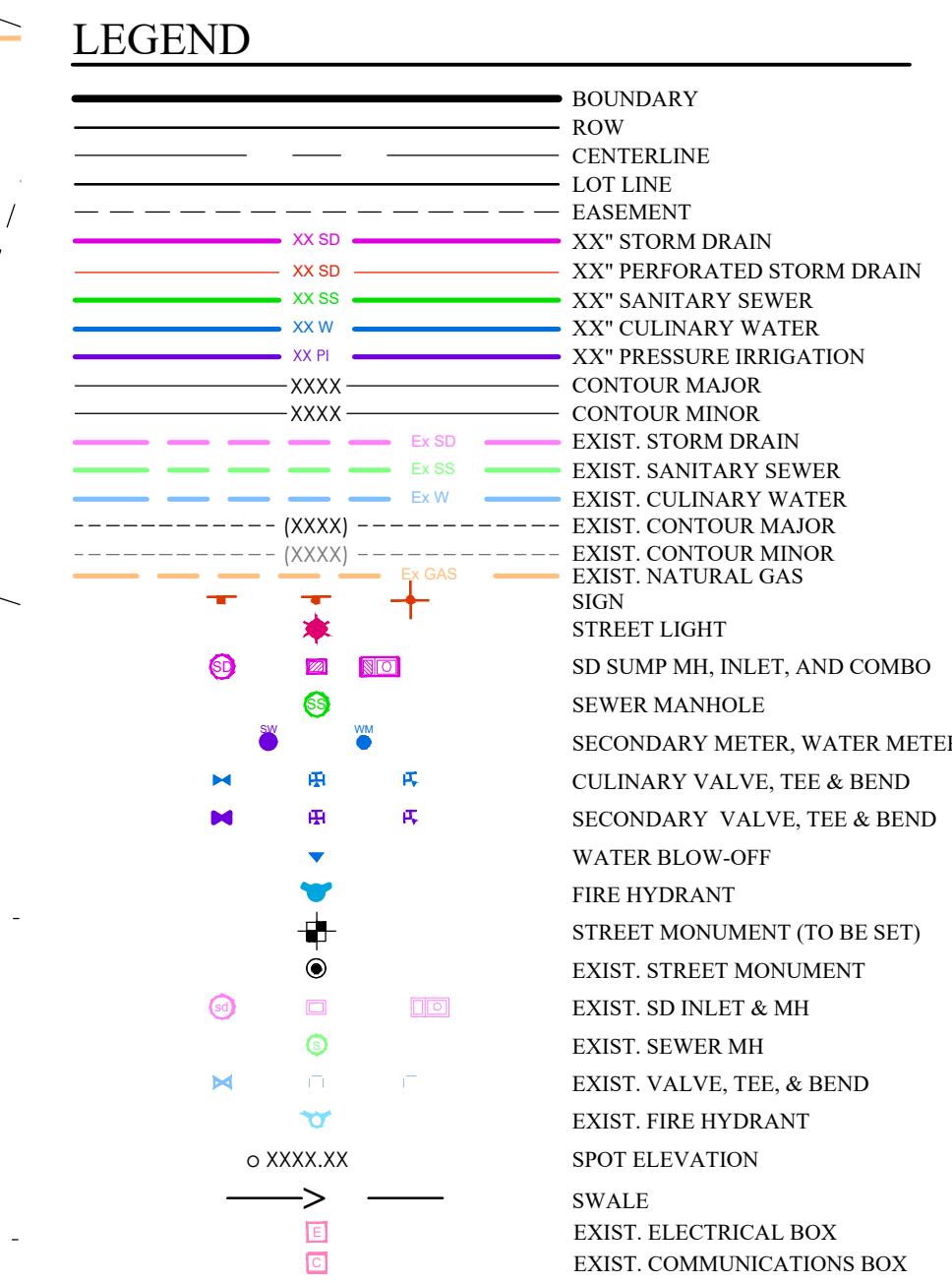
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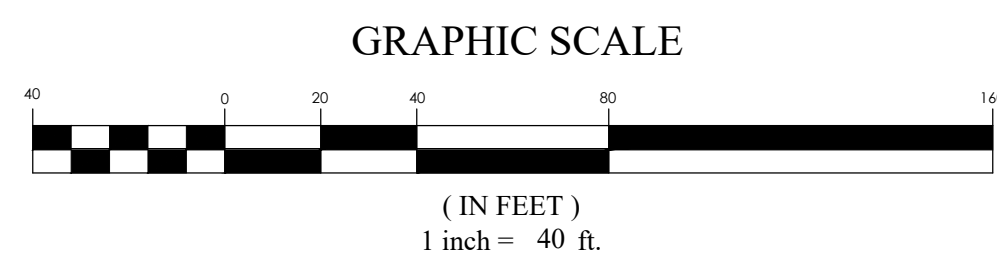
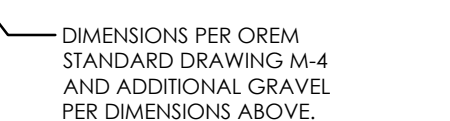
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811
Know what's below.
Call 811 before you dig.



- NOTES:
1. ALL LOTS TO MAINTAIN THEIR OWN STORM WATER ON EACH LOT.
 2. SUMP(S) ON PRIVATE PROPERTY MUST BE REGISTERED WITH THE UTAH DEQ UIC PROGRAM. NOTE THAT THE PROPERTY OWNER WILL OWN/OPERATE THE SUMP LOCATED ON THEIR PROPERTY.
[HTTPS://DEQ.UTAH.GOV/WATER-QUALITY/FORMS-AND-APPLICATIONS-UTAH-UNDERGROUND-INJECTION-CONTROL-UIC-PROGRAM](https://deq.utah.gov/water-quality/forms-and-applications-utah-underground-injection-control-uic-program)

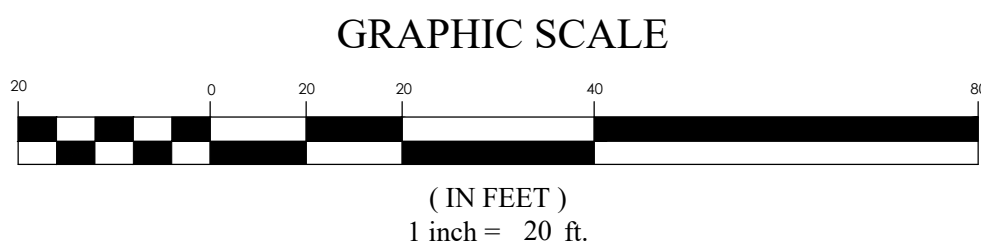
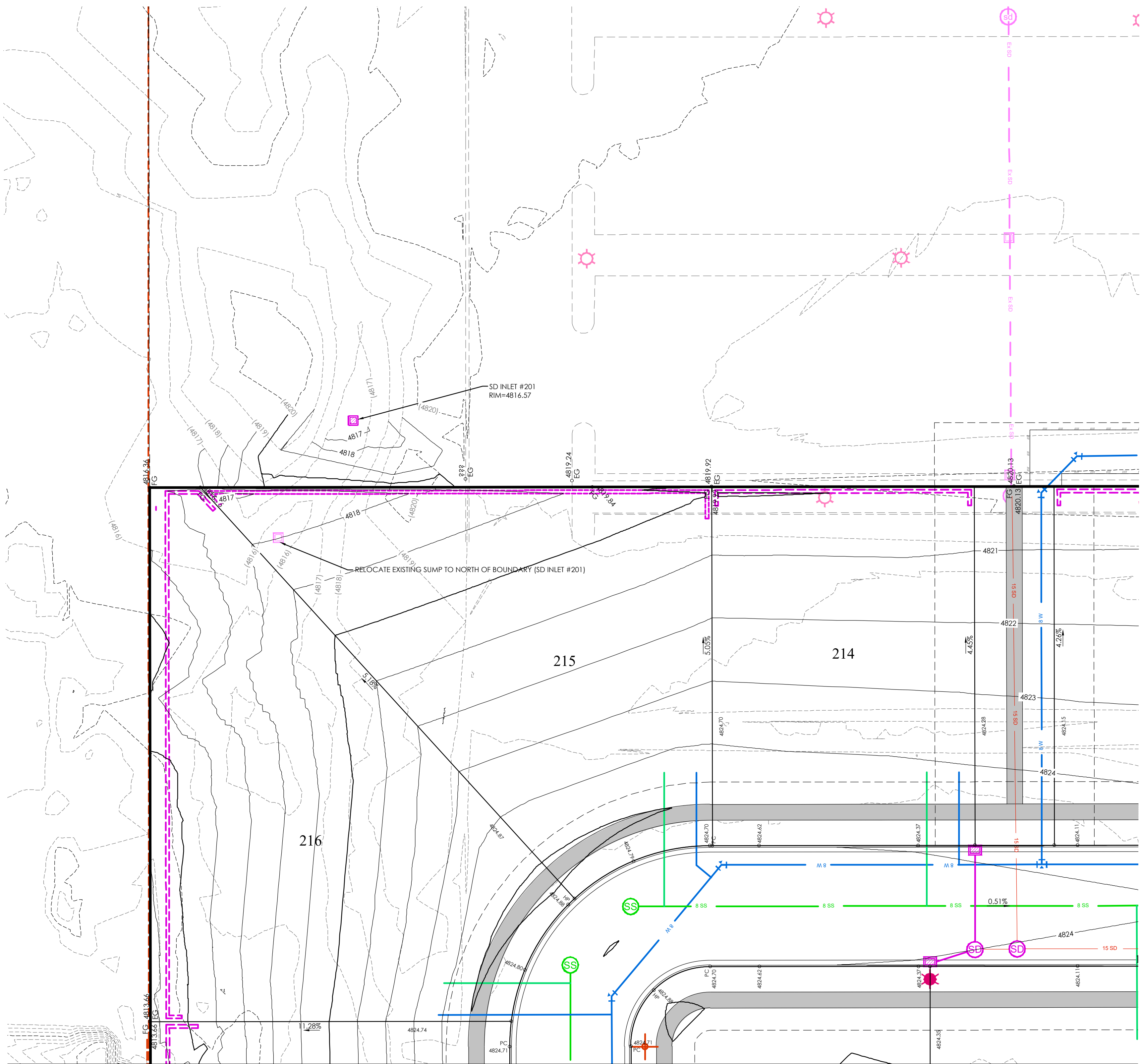


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OFFSITE
BERM AND
STORM DRAIN

Scale: 1"=20'
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CANYON PARK
OREM CITY, UTAH COUNTY, UTAH
OFFSITE BERM AND STORM DRAIN

FOR
REVIEW
ONLY

Existing Site C Value

Project: Canyon Park
Location: Orem City, Utah
Date: 3/30/2025
Designer: Mat W.



Weighted "C" Value

<i>Surface Type</i>	<i>Area (sf)</i>	<i>"C" Value</i>	<i>C*A</i>
Existing Buildings	86,454	0.85	73,486
Existing Asphalt	536,546	0.85	456,064
Existing Sidewalk	35,174	0.85	29,898
Landscape	361,742	0.20	72,348
Totals	1,019,917		631,797

Weighted "C" Value

0.62

Detention Pond

Project: Canyon Park
 Location: Orem City, Utah
 Date: 6/12/2025
 Designer: Mat W.



25-Year Detention Sizing

Design Criteria

Intensity Table: Per NOAA Atlas 14
 Return Period: **25 year**
 Allowable Discharge: **0.13 cfs/acre** Per Orem City Standards

Allowable Discharges

Storm Drain Discharge: 3.04 cfs
 Other Discharge 1: 1.12 cfs Source: 6 in/hr for surface area of gravel around individual sumps
 Other Discharge 2: 1.10 cfs Source: 6 in/hr for surface area of gravel around trunk line sumps
 Other Discharge 3: 0.28 cfs Source: 6 in/hr for surface area of gravel around reduced trunk line sumps
 Other Discharge 4: 0.77 cfs Source: 6 in/hr for area of perforated pipe
Total Discharge: 6.310 cfs

Weighted "C" Value

Surface Type	Area (sf)	"C" Value	C*A
Building	260,700	0.83	216,381
Drives	31,600	0.80	25,280
Roadway and Sidewalk	216,429	0.85	183,965
Landscape	511,188	0.15	76,678
Totals	1,019,917		502,304
Weighted "C" Value		0.49	

Drainage Calculations

Duration	Intensity	Runoff C	Area	Rainfall	Accumulated	Allowable	Discharge	Required
					Flow	Discharge		Storage
min	in/hr		Ac	cfs	cf	cfs	cf	cf
15.0	2.82	0.49	23.41	32.52	29,266	6.31	5,679	23,587
30.0	1.90	0.49	23.41	21.91	39,437	6.31	11,358	28,079
60.0	1.17	0.49	23.41	13.49	48,570	6.31	22,716	25,854
120.0	0.66	0.49	23.41	7.62	54,880	6.31	45,432	9,448
180.0	0.48	0.49	23.41	5.48	59,156	6.31	68,148	-8,993
360.0	0.28	0.49	23.41	3.21	69,243	6.31	136,297	-67,053
720.0	0.17	0.49	23.41	1.98	85,682	6.31	272,593	-186,911
1440.0	0.10	0.49	23.41	1.16	100,627	6.31	545,186	-444,560

Maximum Storage Requirement: 28,079
 Maximum Storage Requirement (ac-ft): 0.64

Detention Basin Design

Storage Requirement: 28,079 cf
 Single Individual Sump Storage: 513.65 cf (see detailed calculations)
 Total Individual Sumps Storage: 7,704.8 cf # of sumps = 15
 Single Trunk Line Sump Storage: 414.06 cf (see detailed calculations)
 Total Trunk Line Sumps Storage: 7039.1 cf # of sumps = 17
 Single Reduced Trunk Line Sump Storage: 314.47 cf (see detailed calculations)
 Total Reduced Trunk Line Sumps Storage: 1572.4 cf # of sumps = 5
 Single Inlet Storage: 48 cf D*W*h D= 3 W= 4 h= 4
 Total Single Inlet Storage: 1248 cf # of inlets = 26
 Perforated Pipe Storage: 2100.9 cf $\pi r^2 L$ r= 0.625 L= 1712
 Perforated Pipe Gravel Storage: 8902.4 cf (see detailed calculations)

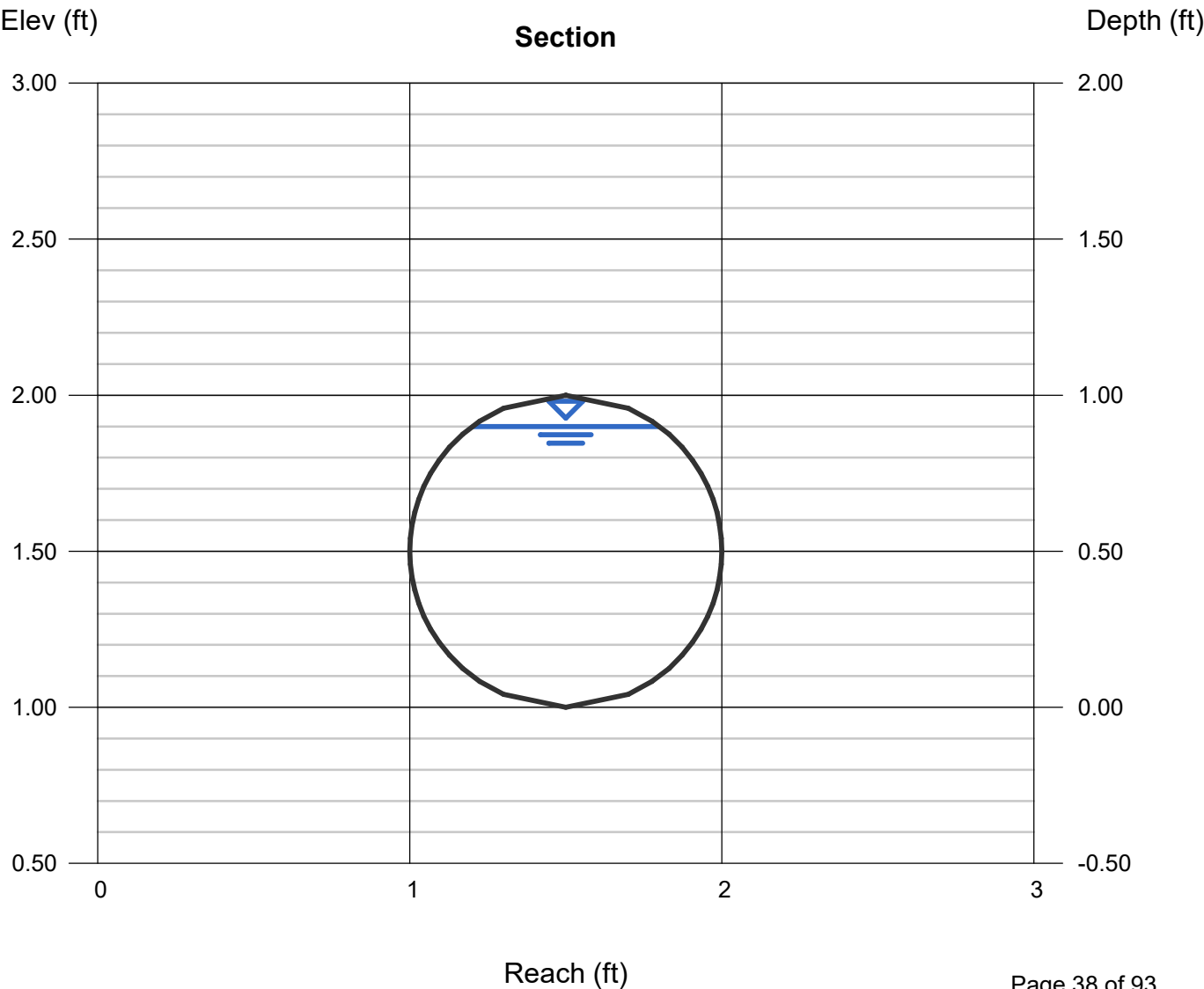
Total Storage 28,568 DETENTION ADEQUATE

Canyon Park Sump and Pipe Detailed Calculations		
Individual Sumps	Trunk Line Sumps	Reduced Trunk Line Sumps
10 min/in 6 in/hr iR= 0.00014 ft/sec B= 0.07439 cfs (iR*A) Single C= 15 # of sumps Discharge 1.12 total cfs (B*C) Surface Area of Sump Gravel A= 535.64 SF (2*pi*r*h+2*pi*r^2) r= 5.50 ft h= 10.00 ft Volume of Sump V1= 196.35 cf (pi*r^2*h) r= 2.5 ft h= 10 ft Volume of Sump Gravel V2= 950 cf (pi*r1^2*h1) r1= 5.5 ft h1= 10.00 ft V3= 157 cf (pi*r2^2*h2) r2= 2.50 ft h2= 8.00 ft V4= 317 cf (V2-V3*0.4) Total Volume of Sump V5= 513.65 cf (V1+V4)	10 min/in 6 in/hr iR= 0.00014 ft/sec B= 0.0648 cfs (iR*A) Single C= 17 # of sumps Discharge 1.10 total cfs (B*C) Surface Area of Sump Gravel A= 466.53 SF (2*pi*r*h+2*pi*r^2) r= 5.50 ft h= 8.00 ft Volume of Sump V1= 157.08 CF (pi*r^2*h) r= 2.5 ft h= 8 ft Volume of Sump Gravel V2= 760 cf (pi*r1^2*h1) r1= 5.5 ft h1= 8.00 ft V3= 118 cf (pi*r2^2*h2) r2= 2.50 ft h2= 6.00 ft V4= 257 cf (V2-V3*0.4) Total Volume of Sump V5= 414.06 cf (V1+V4)	10 min/in 6 in/hr iR= 0.00014 ft/sec B= 0.0552 cfs (iR*A) Single C= 5 # of sumps Discharge 0.28 total cfs (B*C) Surface Area of Sump Gravel A= 397.41 SF (2*pi*r*h+2*pi*r^2) r= 5.50 ft h= 6.00 ft Volume of sump V1= 117.81 CF (pi*r^2*h) r= 2.5 ft h= 6 ft Volume of Sump Gravel V2= 570 cf (pi*r1^2*h1) r1= 5.5 ft h1= 6.00 ft V3= 79 cf (pi*r2^2*h2) r2= 2.50 ft h2= 4.00 ft V4= 197 cf (V2-V3*0.4) Total Volume of Sump V5= 314.47 cf (V1+V4)
Perforated Pipe Gravel Volume		
w= 3.25 ft A= 5564 sf (W*L) D= 4 ft V6= 22256 cf total (A*D) V7= 8902.4 cf void (V3*0.4)		
Perforated Pipe Volume		
L= 1712 ft r= 0.625 ft V8= 2100.94 cf (pi*r^2*L)		

Channel Report

CANYON PARK 12-INCH PIPE @ 1.0% CAPACITY

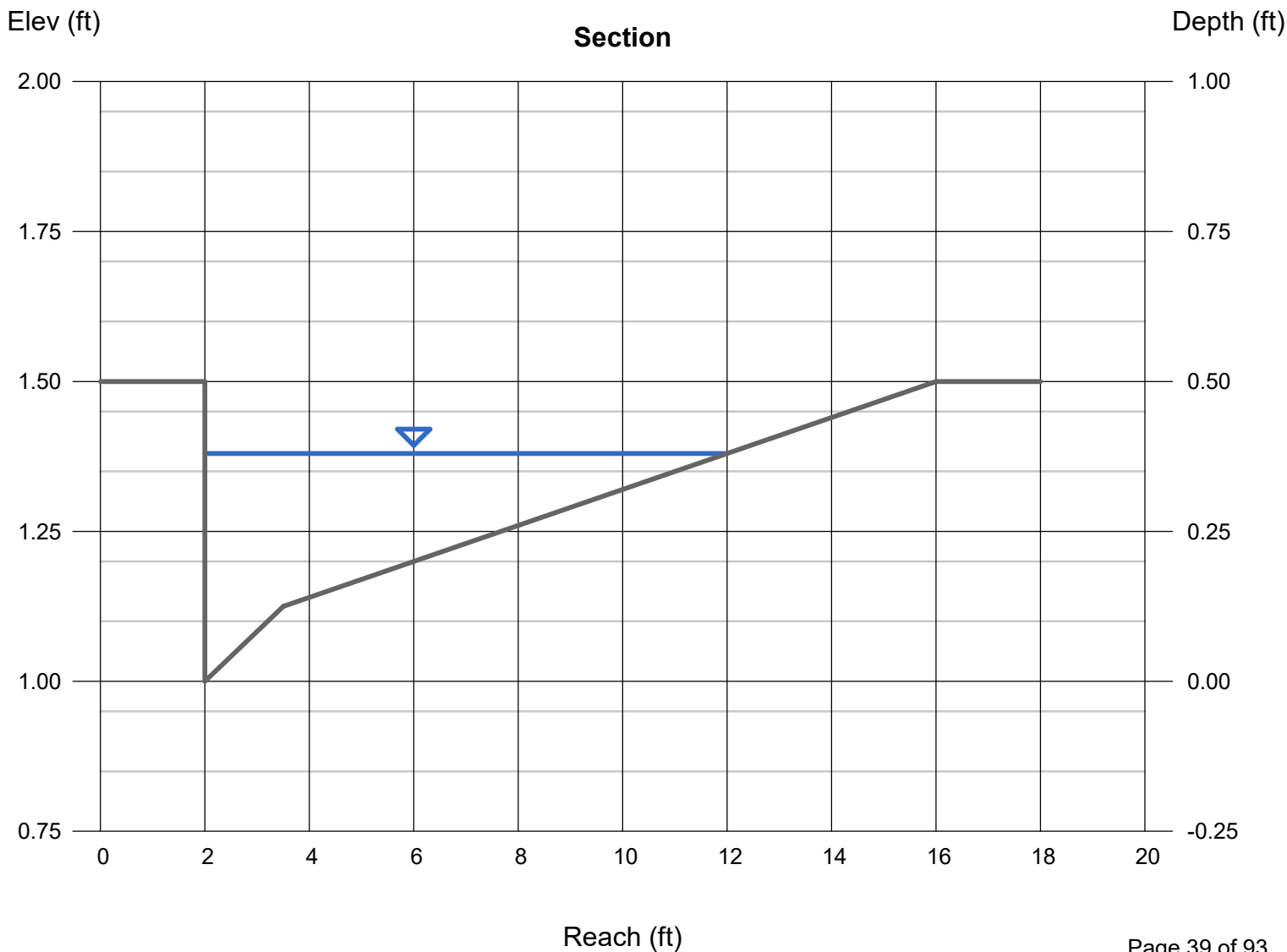
Circular		Highlighted	
Diameter (ft)	= 1.00	Depth (ft)	= 0.90
		Q (cfs)	= 3.797
		Area (sqft)	= 0.74
Invert Elev (ft)	= 1.00	Velocity (ft/s)	= 5.10
Slope (%)	= 1.00	Wetted Perim (ft)	= 2.50
N-Value	= 0.013	Crit Depth, Yc (ft)	= 0.83
		Top Width (ft)	= 0.60
		EGL (ft)	= 1.30
Calculations			
Compute by:	Q vs Depth		
No. Increments	= 10		



Channel Report

CANYON PARK MAX GUTTER SPREAD FLOW WITH 0.5% ROAD SLOPE

Gutter		Highlighted	
Cross SI, Sx (ft/ft)	= 0.030	Depth (ft)	= 0.38
Cross SI, Sw (ft/ft)	= 0.083	Q (cfs)	= 4.453
Gutter Width (ft)	= 1.50	Area (sqft)	= 1.56
Invert Elev (ft)	= 1.00	Velocity (ft/s)	= 2.85
Slope (%)	= 0.50	Wetted Perim (ft)	= 10.39
N-Value	= 0.013	Crit Depth, Yc (ft)	= 0.42
Calculations		Spread Width (ft)	= 10.00
Compute by:		EGL (ft)	= 0.51
No. Increments		Q vs Depth	
		= 50	



Inlet Report

CANYON PARK MAX GUTTER SPREAD Q WITH INLET @ 0.5% ROAD SLOPE

Combination Inlet

Location	= On grade
Curb Length (ft)	= 3.00
Throat Height (in)	= 6.00
Grate Area (sqft)	= -0-
Grate Width (ft)	= 1.50
Grate Length (ft)	= 3.00

Gutter

Slope, Sw (ft/ft)	= 0.083
Slope, Sx (ft/ft)	= 0.030
Local Depr (in)	= -0-
Gutter Width (ft)	= 1.50
Gutter Slope (%)	= 0.50
Gutter n-value	= 0.013

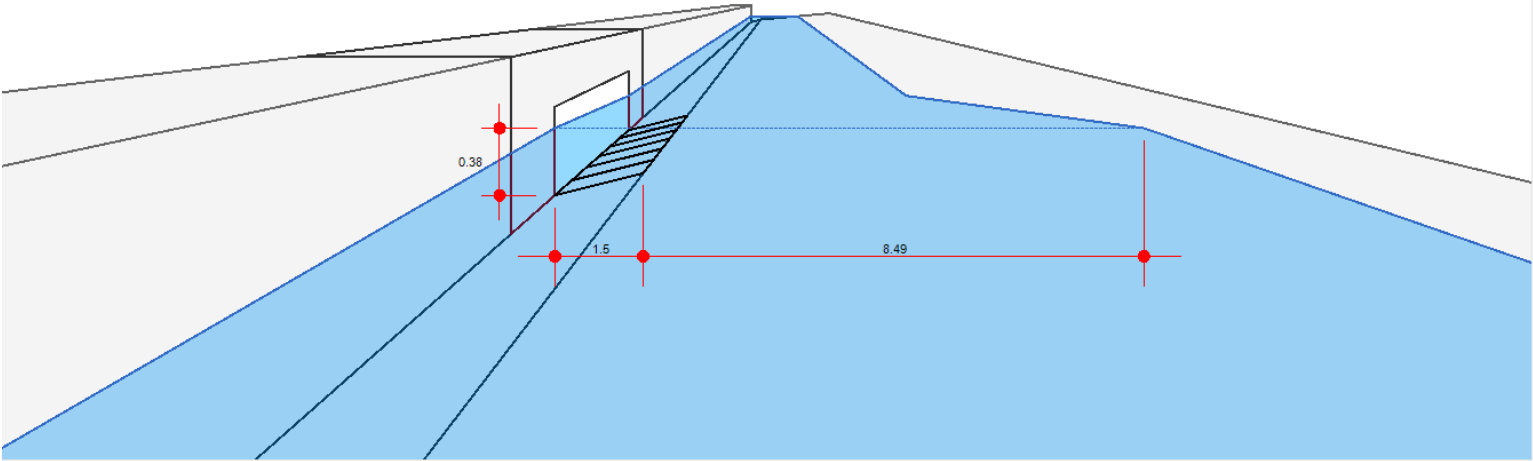
Calculations

Compute by:	Known Q
Q (cfs)	= 4.45

Highlighted

Q Total (cfs)	= 4.45
Q Capt (cfs)	= 2.53
Q Bypass (cfs)	= 1.92
Depth at Inlet (in)	= 4.55
Efficiency (%)	= 57
Gutter Spread (ft)	= 9.99
Gutter Vel (ft/s)	= 2.86
Bypass Spread (ft)	= 7.07
Bypass Depth (in)	= 3.50

All dimensions in feet



Point precipitation frequency estimates (inches/hour)

NOAA Atlas 14 Volume 1 Version 5

Data type: Precipitation intensity

Time series type: Partial duration

Project area: Southwest

Location na Utah USA

Station Name: -

Latitude: 40.3213 Degree

Longitude: -111.6824 Degree

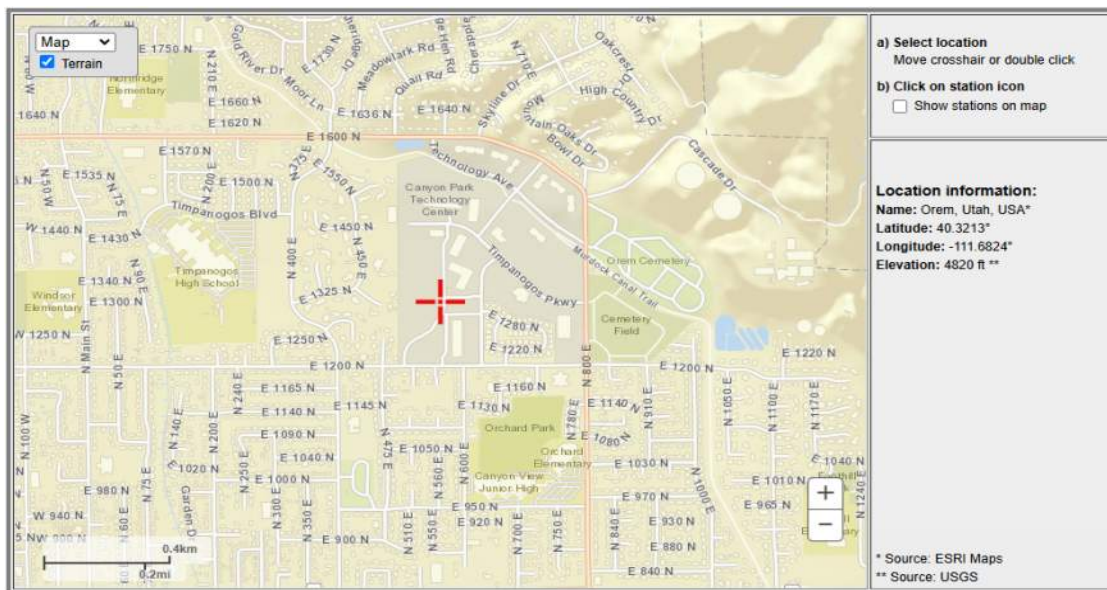
Elevation (USGS): 4820 ft

PRECIPITATION FREQUENCY ESTIMATES

by duration	1	2	5	10	25	50	100	200	500	1000
5-min:	1.56	1.99	2.75	3.42	4.48	5.44	6.55	7.84	9.9	11.7
10-min:	1.19	1.51	2.09	2.6	3.41	4.13	4.99	5.96	7.53	8.93
15-min:	0.98	1.25	1.73	2.15	2.82	3.42	4.12	4.93	6.22	7.38
30-min:	0.66	0.842	1.16	1.45	1.9	2.3	2.77	3.32	4.19	4.97
60-min:	0.409	0.521	0.719	0.897	1.17	1.42	1.72	2.05	2.59	3.08
2-hr:	0.254	0.319	0.421	0.513	0.661	0.795	0.95	1.13	1.42	1.68
3-hr:	0.199	0.248	0.316	0.378	0.475	0.558	0.657	0.773	0.964	1.14
6-hr:	0.132	0.163	0.199	0.231	0.278	0.317	0.362	0.413	0.505	0.587
12-hr:	0.085	0.105	0.127	0.145	0.172	0.193	0.216	0.241	0.279	0.311
24-hr:	0.051	0.063	0.076	0.087	0.101	0.112	0.123	0.135	0.15	0.161
2-day:	0.031	0.038	0.045	0.052	0.061	0.068	0.075	0.082	0.092	0.099
3-day:	0.023	0.028	0.034	0.039	0.046	0.052	0.057	0.063	0.071	0.077
4-day:	0.019	0.024	0.029	0.033	0.039	0.044	0.048	0.054	0.061	0.066
7-day:	0.013	0.016	0.019	0.022	0.026	0.029	0.032	0.035	0.039	0.043
10-day:	0.01	0.013	0.015	0.017	0.02	0.022	0.024	0.027	0.029	0.031
20-day:	0.007	0.008	0.01	0.011	0.013	0.014	0.015	0.017	0.018	0.019
30-day:	0.006	0.007	0.008	0.009	0.011	0.012	0.013	0.013	0.015	0.016
45-day:	0.005	0.006	0.007	0.007	0.009	0.009	0.01	0.011	0.012	0.012
60-day:	0.004	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.01	0.011

Date/time (GMT): Sat Mar 29 21:41:07 2025

pyRunTime: 0.01673746109008789



POINT PRECIPITATION FREQUENCY (PF) ESTIMATES
WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION
NOAA Atlas 14, Volume 1, Version 5

LID Calculations

Project: Canyon Park
Location: Orem City, Utah
Date: 5/5/2025
Designer: Mat W.



BMP 80th Percentile Storm Calculations

Step 1: Determine 80th Percentile Rainfall Depth

Location: Orem
Rainfall Table: 0.50 inches

Step 2: Determine Percent Impervious

Project Imperviousness (i): 0.50
BMP Imperviousness (i):

Step 3: Determine Volumetric Runoff Coefficient

Method 1 - Reese Method: 0.43

Method 2 - Hydrologic Soil Groups:

A	B	C/D
0.34	0.37	0.38

Method 3 - Granato Method: 0.16

R_v : 0.16

Step 4: Determine 80th Percentile Volume

$$V_{goal} = R_v d A \quad \text{OR} \quad WQV = R_v d A$$

Where:

V_{goal} & WQV = 80th Percentile Volume, cf
 R_v = Volumetric Runoff coefficient, unitless
 d = 80th Percentile Storm Depth, ft
 A = Project Area or BMP Drainage Area, sf

$$V_{goal} = 18422 \text{ cf}$$

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

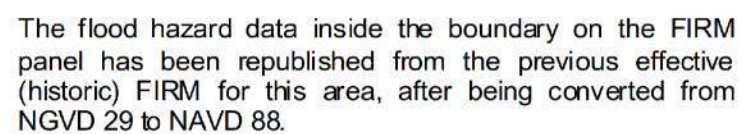
Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <https://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit their website at <https://www.ngs.noaa.gov/>.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at <https://www.fema.gov/business/nfip>.



The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

 FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

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.

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

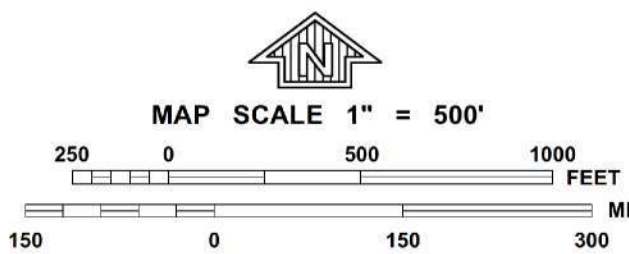
*Referenced to the North American Vertical Datum of 1988

MAP REPOSITORIES
Refer to Map Repositories list on Map Index.

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP PANEL
June 19, 2020

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.



NEIP PANEL 0333F

FIRM

**UTAH COUNTY,
UTAH
AND INCORPORATED AREAS**

PANEL 333 OF 1450

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

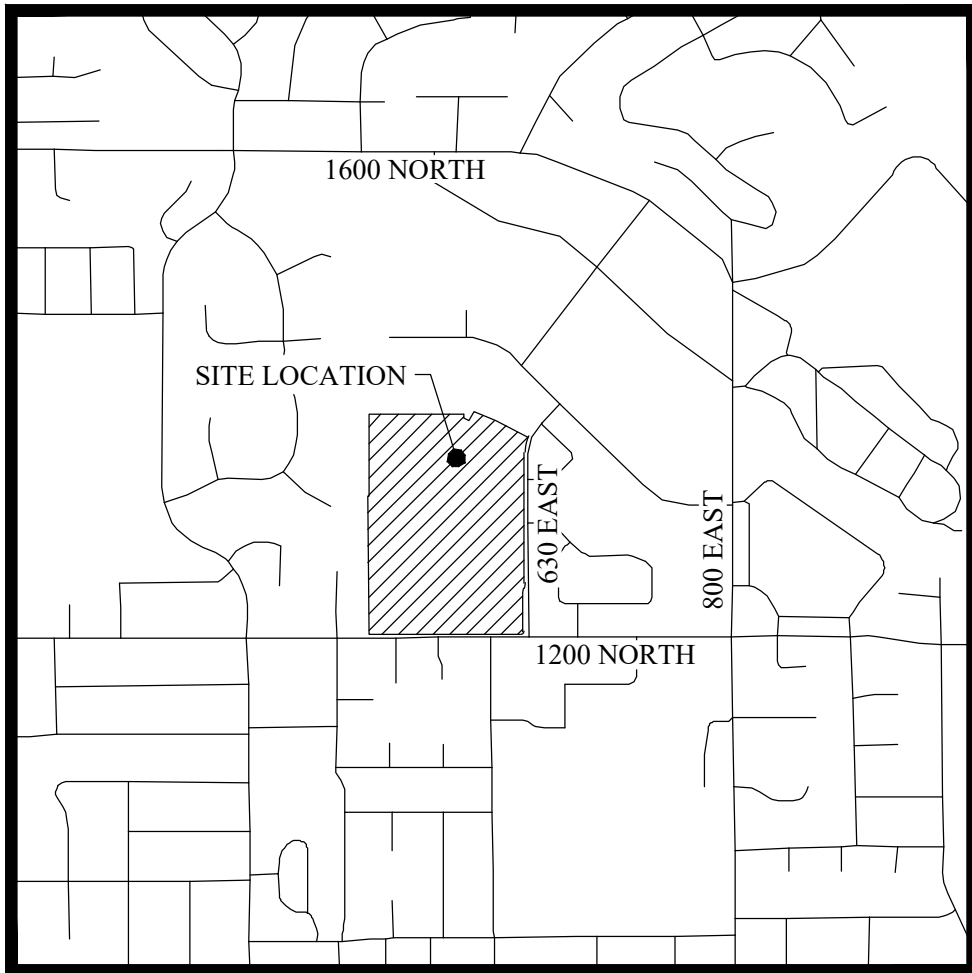
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
49049C0333

EFFECTIVE DATE
JUNE 19, 202

Federal Emergency Management Agency



VICINITY MAP
N.T.S



GORDON
ENGINEERING, INC.

**REPORT
DUE DILIGENCE GEOTECHNICAL STUDY
PROPOSED OREM CANYON
PARK DEVELOPMENT
1201 NORTH 630 EAST
OREM, UTAH**

April 19, 2024

Job No. 1258-001-24

Prepared for:

TriPointe Homes
15900 SE Eastgate Way
Bellevue, Washington 98008

Prepared by:

Gordon Geotechnical Engineering, Inc.
4426 South Century Drive, Suite 100
Salt Lake City, Utah 84123
Tel: 801-327-9600
Fax: 801-327-9601
www.gordongeotech.com

April 19, 2024
Job No. 1258-001-24

TriPointe Homes
15900 SE Eastgate Way
Bellevue, Washington 98008

Attention: Mr. Bryon Prince

Ladies and Gentlemen:

Re: Report
Due Diligence Geotechnical Study
Proposed Orem Canyon Park Development
1201 North 630 East
Orem, Utah

1. INTRODUCTION

1.1 GENERAL

This report presents the results of our due diligence geotechnical study performed at the site of the proposed Orem Canyon Park Development, which is located at 1201 North 630 East in Orem, Utah. The general location of the site with respect to major topographic features and existing facilities, as of 1994, is presented on Figure 1, Vicinity Map. A detailed location of the site showing existing roadways and surrounding facilities, on an air photograph base, is presented on Figure 2, Area Map. The locations and alignments of photographs taken of the site during the field portion of study are also shown on Figure 2. The boring locations drilled in conjunction with this study are also presented on Figure 2.

1.2 OBJECTIVES AND SCOPE

The objectives and scope of our study were planned in discussions between Mr. Bryon Prince of TriPointe Homes and Mr. Patrick Emery of Gordon Geotechnical Engineering, Inc. (G²).

In general, the objectives of this study were to:

1. Accurately define and evaluate the subsurface soil and groundwater conditions across the site.

2. Provide appropriate foundation, earthwork, pavement, and geoseismic recommendations to be utilized in the design and construction of the proposed development.

In accomplishing these objectives, our scope has included the following:

1. A field program consisting of the drilling, logging, and sampling of five borings.
2. A laboratory testing program.
3. An office program consisting of the correlation of available data, engineering analyses, and the preparation of this summary report.

It should be noted this study is for due diligence purposes. Additional investigations may be required once further design details are developed.

1.3 AUTHORIZATION

Authorization was provided for our Professional Services Agreement No. 24-0306 dated March 5, 2024 and authorized on March 8, 2024.

1.4 PROFESSIONAL STATEMENTS

Supporting data upon which our recommendations are based are presented in subsequent sections of this report. Recommendations presented herein are governed by the physical properties of the soils encountered in the exploration borings, measured and projected groundwater conditions, and the layout and design data discussed in Section 2., Proposed Construction, of this report. If subsurface conditions other than those described in this report are encountered and/or if design and layout changes are implemented, G² must be informed so that our recommendations can be reviewed and amended, if necessary.

Our professional services have been performed, our findings developed, and our recommendations prepared in accordance with generally accepted engineering principles and practices in this area at this time.

2. PROPOSED CONSTRUCTION

Plans are very preliminary at this stage: however, a residential development is planned for the approximately 23-acre site containing two buildings within the Canyon Park Tech Center. The proposed structures are anticipated to be two to three levels in height and of wood-frame construction established slab-on-grade or potentially with a basement level.

Maximum column and wall loads are anticipated to be on the order of 40 to 60 kips and 2 to 3 kips per lineal foot, respectively. Real loads are defined as the total of all dead plus frequently applied (reduced) live loads. Floor slab loads will be relatively light on the order of 200 pounds per square foot or less.

Site development will require a minor amount of earthwork in the form of site grading. It is estimated that maximum cuts and fills to achieve design grades will be on the order of two to three feet.

Paved surface parking areas will also be part of the overall development. Traffic over the pavements will consist of a light to moderately light volume of automobiles and light trucks, and some medium-weight trucks. In roadway areas, the traffic will be somewhat higher.

3. INVESTIGATIONS

3.1 FIELD PROGRAM

In order to define and evaluate the subsurface soil and groundwater conditions across the site, 8 borings were drilled to depths ranging from 3.5 to 10.5 feet below existing grade. The borings were drilled using a rubber tire truck-mounted drill rig equipped with hollow-stem augers. It should be noted that drilling refusal was encountered on dense gravels at depths of 3.5 to 10.5 feet at Borings B-1 through B-8. Locations of the borings are presented on Figure 2.

The field portion of our study was under the direct control and continual supervision of an experienced member of our geotechnical staff. During the course of the drilling operations, a continuous log of the subsurface conditions encountered was maintained. In addition, relatively undisturbed and small disturbed samples of the typical soils encountered were obtained for subsequent laboratory testing and examination. The soils were classified in the field based upon visual and textural examination. These classifications have been supplemented by subsequent inspection and testing in our laboratory. Detailed graphical representation of the subsurface conditions encountered is presented on Figures 3A through 3H, Log of Borings. Soils were classified in accordance with the nomenclature described on Figure 4, Unified Soil Classification System.

A 3.25-inch outside diameter, 2.42-inch inside diameter drive sampler (Dames & Moore) was utilized in the majority of the subsurface sampling at the site. Additionally, a 2.0-inch outside diameter, 1.38-inch inside diameter drive sampler (SPT) was utilized at select locations and depths. The blow counts recorded on the boring logs were those required to drive the sampler 12 inches with a 140-pound hammer dropping 30 inches.

3.2 LABORATORY TESTING

3.2.1 General

In order to provide data necessary for our engineering analyses, a laboratory testing program was performed. The program included moisture and density and partial gradation tests. The following paragraphs describe the tests and summarize the test data.

3.2.2 Moisture and Density Tests

To aid in classifying the soils and to help correlate other test data, moisture and density tests were performed on selected undisturbed samples. The results of these tests are presented on the boring logs, Figures 3A through 3H.

3.2.3 Partial Gradation Tests

To aid in classifying the granular soils, four partial gradation tests were performed. Results of the test are tabulated below:

Boring No.	Depth (feet)	Percent Passing No. 4 Sieve	Percent Passing No. 200 Sieve	Soil Classification
B-1	5.0	51.1	12.4	SM/GM
B-2	4.0	60.8	16.2	SM/GM
B-3	2.5	55.5	21.9	SC/GC – FILL
B-5	5.0	93.4	79.0	CL
B-6	2.5	45.4	13.4	SM/GM
B-7	3.0	44.3	12.3	SM/GM
B-7	5.0	67.6	18.1	SM/GM
B-8	2.5	77.8	25.6	SM-FILL

4. SITE CONDITIONS

4.1 SURFACE

The site consists of mostly developed land covered by existing structures and associated asphalt concrete parking areas. The remainder of the site is covered by landscaping areas.

The site is bordered by existing commercial and residential structures to the west, north and east, and 1200 North Street to the south.

The topography of the site slopes gently to the southwest with an overall relief on the order of two to three feet across the site. The site grade is at approximately the same elevation as the grade of the adjacent streets.

Representative photographs of the site area are shown on Figure 5, Photographs.

4.2 SUBSURFACE SOIL

The soil conditions encountered in each of the borings, to the depths penetrated, were relatively similar. In Borings B-1 through B-8, 2.0 to 4.0 inches of asphalt concrete was encountered. The asphalt concrete was, in turn, underlain by granular fill which was encountered to depths of 0.8 to 5.0 feet. The fills were likely placed in a somewhat controlled manner during construction of the area; however, unless compaction testing reports can be provided, they must be considered a non-engineered fill. Non-engineered fill will exhibit variable and, in most cases, poor engineering characteristics.

In general, underlying the fills, the soils consisted primarily of natural silty sand and gravel that extend to depths explored of 3.5 to 10.5 feet. The sand and gravel are very loose to very dense, slightly moist, brown, and will exhibit relatively high strength and low compressibility characteristics under the anticipated loading range.

As previously stated, it should be noted that drilling refusal was encountered on dense gravels at depths of 3.5 to 10.5 feet at Borings B-1 through B-8.

The lines designating the interface between soil types on the boring logs generally represent approximate boundaries. In-situ, the transition between soil types may be gradual.

4.3 GROUNDWATER

Groundwater was not encountered in the borings to the depths explored, 3.5 to 10.5 feet, during drilling operations. Groundwater is anticipated to be at a depth greater than 15 feet at the site. It has, however, been our experience in the area that near-surface “perched” groundwater

conditions can occur during the year, most typically during the late spring and early summer months.

Seasonal and longer-term groundwater fluctuations of one to two feet should be anticipated. The highest seasonal levels will generally occur during the late spring and summer months.

5. DISCUSSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

The proposed structures can be supported upon conventional spread and continuous wall foundations established on suitable natural soils and/or granular structural fill extending to suitable natural soils.

The most significant geotechnical aspects of the site are:

1. Non-engineered fills were encountered to depths of 0.8 to 5.0 feet in each of the borings. Non-engineered fills must be completely removed from beneath the building footprint and rigid pavement areas.
2. The existing structures and any associated fills and debris.

Due to the non-engineered fills encountered, a qualified geotechnical engineer from our staff must aid in verifying that all non-engineered fills have been completely removed prior to the placement of structural site grading fills, footings, or foundations.

As stated previously, it should be noted this study is for due diligence purposes. Additional investigations will be required once further design details or a finalized building layout are developed.

Detailed discussions pertaining to earthwork, foundations, floor slabs, lateral resistance and pressures, pavement, and the geoseismic setting of the site are discussed in the following sections.

5.2 EARTHWORK

5.2.1 Site Preparation

Initial preparation of the site must consist of the removal of the existing structures and pavements, debris, and any associated non-engineered fills. In proposed flexible pavement areas, the existing asphalt concrete and fills may remain provided that they do not interfere with the final grade. The asphalt concrete should be perforated to facilitate drainage and proofrolled.

Further preparation of the site must consist of the removal of all non-engineered fills, loose surficial soils, topsoil, debris, and other deleterious materials from beneath an area extending at least three feet beyond the perimeter of the proposed building, rigid pavement, and exterior flatwork areas.

The non-engineered fills may remain in flexible pavement areas as long as they are properly prepared. Proper preparation will consist of scarifying and moisture conditioning the upper eight inches and recompacting to the requirements of structural fill. However, it should be noted that compaction of fine-grained soils (clays and silts) as structural site grading fill will be very difficult, if not impossible, during wet and cold periods of the year. As an option for proper preparation and recompaction, the upper eight inches of the non-engineered fills may be removed and replaced with granular subbase over proofrolled subgrade. Even with proper preparation, flexible pavements established on non-engineered fills may experience some long-term movements. If the possibility of these movements is not acceptable, these non-engineered fills must be completely removed.

Subsequent to the above operations and prior to the placement of footings, structural site grading fill, or floor slabs, the exposed natural subgrade must be proofrolled by passing moderate-weight rubber tire-mounted construction equipment over the surface at least twice. If any loose, soft, or disturbed zones are encountered, they must be completely removed in footing and floor slab areas and replaced with granular structural fill. If removal depth required is greater than two feet, G² must be notified to provide further recommendations. In pavement areas, unsuitable soils encountered during recompaction and proofrolling must be removed to a maximum depth of two feet and replaced with compacted granular structural fill.

5.2.2 Excavations

Temporary construction excavations in cohesive soil, above or below the water table, not exceeding four feet in depth, may be constructed with near-vertical sideslopes. Temporary excavations up to eight feet deep in fine-grained cohesive soils (clays) may be constructed with sideslopes no steeper than one-half horizontal to one vertical (0.5H:1.0V). Temporary excavations up to eight feet deep in granular soils may be constructed with sideslopes no steeper than one horizontal to one vertical (1.0 H:1.0V).

Utility trench excavations must conform within Occupational Safety and Health (OSHA) guidelines for trench safety.

To minimize disturbance to the underlying soils, it is our recommendation that footings be excavated with a backhoe equipped with a smooth-lip bucket.

All excavations must be inspected periodically by qualified personnel. If any signs of instability or excessive sloughing are noted, immediate remedial action must be initiated.



5.2.3 Structural Fill

Structural fill is defined as all fill which will ultimately be subjected to structural loadings, such as imposed by footings, floor slabs, pavements, etc. Structural fill will be required as backfill over foundations and utilities, as site grading fill, and in some areas, as replacement fill below footings. All structural fill must be free of sod, rubbish, topsoil, frozen soil, and other deleterious materials. Structural site grading fill is defined as fill placed over fairly large open areas to raise the overall site grade. For structural site grading fill, the maximum particle size should generally not exceed four inches; although, occasional larger particles, not exceeding six inches in diameter may be incorporated if placed randomly in a manner such that “honeycombing” does not occur, and the desired degree of compaction can be achieved. The maximum particle size within structural fill placed within confined areas should generally be restricted to two inches.

The on-site soils may be utilized as structural site grading fill. It should be noted that unless moisture control is maintained, utilization of natural on-site clayey soils as structural site grading fill will be very difficult, if not impossible, during wet and cold periods of the year. Only granular soils are recommended as structural fill in confined areas, such as around foundations and within utility trenches.

To stabilize soft subgrade conditions or where structural fill is required to be placed below a level one foot above the water table at the time of construction, a mixture of coarse gravels and cobbles and/or one and one-half- to two-inch gravel (stabilizing fill) should be utilized.

Non-structural site grading fill is defined as all fill material not designated as structural fill and may consist of any cohesive or granular soils not containing excessive amounts of degradable material.

5.2.4 Fill Placement and Compaction

Structural fill shall be placed in lifts not exceeding eight inches in loose thickness. Structural fills shall be compacted in accordance with the percent of the maximum dry density as determined by the AASHTO¹ T-180 (ASTM² D-1557) compaction criteria in accordance with the table on the following page:

¹ American Association of State Highway and Transportation Officials
² American Society for Testing and Materials

Location	Total Fill Thickness (feet)	Minimum Percentage of Maximum Dry Density
Beneath an area extending at least 3 feet beyond the perimeter of the structure	0 to 8	95
Outside area defined above	0 to 6	90
Outside area defined above	6 to 8	92
Road base	-	96

Structural fills greater than eight feet thick are not anticipated at the site.

Subsequent to stripping and prior to the placement of structural site grading fill, the subgrade must be prepared as discussed in Section 5.2.1, Site Preparation, of this report. In confined areas, subgrade preparation should consist of the removal of all loose or disturbed soils.

Non-structural fill may be placed in lifts not exceeding 12 inches in loose thickness and compacted by passing construction, spreading, or hauling equipment over the surface at least twice.

Coarse gravel and cobble mixtures (stabilizing fill), if utilized, shall be end-dumped, spread to a maximum loose lift thickness of 15 inches, and compacted by dropping a backhoe bucket onto the surface continuously at least twice. As an alternative, the fill may be compacted by passing moderately heavy construction equipment or large self-propelled compaction equipment over the surface at least twice. Subsequent fill material placed over the coarse gravels and cobbles shall be adequately placed so that the “fines” are “worked into” the voids in the underlying coarser gravels and cobbles.

5.2.5 Utility Trenches

All utility trench backfill material below structurally loaded facilities (flatwork, floor slabs, roads, etc.) should be placed at the same density requirements established for structural fill. If the surface of the backfill becomes disturbed during the course of construction, the backfill should be proofrolled and/or properly compacted prior to the construction of any exterior flatwork over a backfilled trench. Proofrolling may be performed by passing moderately loaded rubber tire-mounted construction equipment uniformly over the surface at least twice. If excessively loose or soft areas are encountered during proofrolling, they should be removed to a maximum depth of two feet below design finish grade and replaced with structural fill.

Most utility companies and City-County governments are now requiring that Type A-1 or A-1-a (AASHTO Designation – basically granular soils with limited fines) soils be used as backfill over utilities. These organizations are also requiring that in public roadways the backfill over major



utilities be compacted over the full depth of fill to at least 96 percent of the maximum dry density as determined by the AASHTO T-180 (ASTM D-1557) method of compaction. We recommend that as the major utilities continue onto the site that these compaction specifications are followed.

The natural fine-grained cohesive soils are not recommended for use as trench backfill. Some of the natural sand soils (and surficial granular fills) may be suitable for use as trench backfill.

5.2.6 Areal Settlements

Areal settlements resulting from site grading fills as much as two to three feet should be less than one-half of an inch. These settlements are in addition to settlements induced by foundation and floor slab loads. To reduce the total settlement that the structures will realize, site grading fill must be placed as far in advance of other construction as possible. The majority of this settlement will occur during placement.

5.3 SPREAD AND CONTINUOUS WALL FOUNDATIONS

5.3.1 Design Data

The results of this study indicate that the proposed structures may be supported upon conventional spread and continuous wall foundations. Under no circumstances shall footings be placed overlying non-engineered fills.

For design, the following parameters are provided with respect to the projected loading discussed in Section 2., Proposed Construction, of this report:

Minimum Recommended Depth of Embedment for Frost Protection	- 30 inches
Minimum Recommended Depth of Embedment for Non-frost Conditions	- 15 inches
Recommended Minimum Width for Continuous Wall Footings	- 18 inches
Minimum Recommended Width for Isolated Spread Footings	- 24 inches
Recommended Net Bearing Pressure for Real Load Conditions	
For footings on suitable natural soils and/or structural fill extending to suitable natural soils	- 2,500 pounds per square foot
Bearing Pressure Increase for Seismic Loading	- 50 percent

The term “net bearing pressure” refers to the pressure imposed by the portion of the structure located above lowest adjacent final grade. Therefore, the weight of the footing and backfill to the lowest adjacent final grade need not be considered. Real loads are defined as the total of all dead plus frequently applied live loads. Total load includes all dead and live loads, including seismic and wind.

5.3.2 Installation

Under no circumstances shall the footings be established upon non-engineered fills, loose or disturbed soils, rubbish, construction debris, other deleterious materials, frozen soils, or within ponded water. If unsuitable soils are encountered, they must be completely removed and replaced with compacted structural fill.

The width of structural replacement fill, as required below footings, should be extended laterally at least six inches beyond the edges of the footings in all directions for each foot of fill thickness beneath the footings. For example, if the width of the footing is two feet and the thickness of the structural fill beneath the footing is one foot, the width of the structural fill at the base of the footing excavation would be a total of three feet.

5.3.3 Settlements

Settlements of foundations designed and installed in accordance with the above recommendations and supporting maximum anticipated loads should generally be less than one inch. Settlements will occur fairly rapidly with approximately 50 to 60 percent of the quoted settlement occurring during construction.

5.4 LATERAL RESISTANCE

Lateral loads imposed upon foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the footings and the supporting soils. In determining frictional resistance on fine-grained soils, a coefficient of 0.40 should be utilized. In determining frictional resistance on granular soils, a coefficient of 0.45 should be utilized. Passive resistance provided by properly placed and compacted granular structural fill above the water table may be considered equivalent to a fluid with a density of 300 pounds per cubic foot. Below the water table, this granular soil should be considered equivalent to a fluid with a density of 150 pounds per cubic foot.

A combination of passive earth resistance and friction may be utilized provided that the friction component of the total is divided by 1.5.

5.5 LATERAL PRESSURES

The lateral pressure parameters, as presented within this section, assume that the backfill extending at least five feet from the back of the wall be properly placed and compacted granular soil. The lateral pressures imposed upon subgrade facilities will, therefore, be basically dependent upon the relative rigidity and movement of the backfilled structure. For active walls, such as retaining walls which can move outward (away from the backfill), granular backfill may be considered equivalent to a fluid with a density of 35 pounds per cubic foot in computing lateral pressures. For more rigid basement walls, granular backfill may be considered equivalent to a fluid with a density of 45 pounds per cubic foot. For very rigid non-yielding walls, granular backfill should be considered equivalent to a fluid with a density with at least 55 pounds per cubic foot. The above values assume that the surface of the soils slope behind the wall is horizontal, that the granular fill has been placed and lightly compacted, not as structural fill. If the fill is placed as a structural fill the values should be increased to 45 pounds per cubic foot, 60 pounds per cubic foot, and 120 pounds per cubic foot, respectively.

Recommended average lateral uniform pressure for various height walls are tabulated on the following page and assume a granular wall backfill with a horizontal grade above the wall. It should be noted that the lateral pressures as quoted assume that the backfill materials will not become saturated. If the backfill becomes saturated, the above values may be decreased by one-half; however, full hydrostatic water pressures will have to be included.

Wall Height (feet)	Uniform Seismic Lateral Pressure* (psf)
4	77

* Maximum short-term pressures, they are not sustained loads.

Note that the pressures presented in this section do not include surcharge loadings, such as floor slabs, adjacent footings, etc.

5.6 FLOOR SLABS

Floor slabs may be established upon suitable undisturbed natural soils, and/or upon structural fill extending to suitable natural soils or properly prepared existing surface soils. Non-engineered fills and topsoil are not considered suitable. To provide a capillary break, it is recommended that floor slabs be directly underlain by at least four inches of “free-draining” fill, such as “pea” gravel or three-quarters- to one-inch minus clean gap-graded gravel. Settlements of lightly to moderately loaded floor slabs are anticipated to be minor.

5.7 PAVEMENTS

The properly prepared non-engineered fills will exhibit poor engineering characteristics when saturated or nearly saturated. Non-engineered fills may remain in flexible pavement areas if properly prepared, as stated previously in this report. Rigid pavements shall not be placed overlying non-engineered fills, even if properly prepared. Considering the existing non-engineered fills as the subgrade soils and the projected traffic, the pavement sections on the following pages are recommended.

Parking Areas

(Light Volume of Automobiles and Light Trucks,
Occasional Medium-Weight Trucks,
and No Heavy-Weight Trucks)
[1 equivalent 18-kip axle load per day]

Flexible:

2.5 inches	Asphalt concrete
8.0 inches	Aggregate base
Over	Properly prepared natural soils, properly prepared existing non-engineered fill, and/or structural site grading fill extending to suitable stabilized natural soils.

Rigid:

5.0 inches	Portland cement concrete (non-reinforced)
4.0 inches	Aggregate base
Over	Properly prepared natural soils, and/or structural site grading fill extending to suitable stabilized natural soils.*

- * Rigid pavements shall not be placed over non-engineered fills, even if properly prepared.



Primary Roadway Areas

(Moderate Volume of Automobiles and Light Trucks,
Light Volume of Medium-Weight Trucks,
and Occasional Heavy-Weight Trucks)
[5 equivalent 18-kip axle loads per day]

Flexible:

3.0 inches	Asphalt concrete
8.0 inches	Aggregate base
Over	Properly prepared natural soils, properly prepared existing non-engineered fill, and/or structural site grading fill extending to suitable stabilized natural soils.

Rigid:

5.5 inches	Portland cement concrete (non-reinforced)
5.0 inches	Aggregate base
Over	Properly prepared natural soils, and/or structural site grading fill extending to suitable stabilized natural soils.*

- * Rigid pavements shall not be placed over non-engineered fills, even if properly prepared.

For dumpster pads, we recommend a pavement section consisting of six and one-half inches of Portland cement concrete, four inches of aggregate base, over properly prepared natural stabilized subgrade or site grading structural fills.

These above rigid pavement sections are for non-reinforced Portland cement concrete. Concrete should be designed in accordance with the American Concrete Institute (ACI) and joint details should conform to the Portland Cement Association (PCA) guidelines. The concrete should have a minimum 28-day unconfined compressive strength of 4,000 pounds per square inch and contain 6 percent $\pm$ 1 percent air-entrainment.



5.8 GEOSEISMIC SETTING

5.8.1 General

In July 2023, the State of Utah adopted the 2021 International Building Code (IBC). The IBC 2021 code determines the seismic hazard for a site based upon 2014 mapping of bedrock accelerations prepared by the United States Geologic Survey (USGS) and the soil site class. The USGS values are presented on maps incorporated into the IBC code and are also available based on latitude and longitude coordinates (grid points).

The structures must be designed in accordance with the procedure presented in Section 1613, Earthquake Loads, of the IBC 2021 edition.

5.8.2 Faulting

Based on our review of available literature, no active faults pass through or immediately adjacent to the site.

5.8.3 Soil Class

Based on the soils encountered to a depth of 10.5 feet and our knowledge of the underlying geology, we recommend that Site Class D - Stiff Soil Profile as defined in Table 20.3-1, Site Classification, of ASCE 7-16 be utilized for dynamic structural analysis.

5.8.4 Ground Motions

The IBC 2021 code is based on 2014 USGS mapping, which provides values of short and long period accelerations for the Site Class B boundary for the Maximum Considered Earthquake (MCE). This Site Class B boundary represents a hypothetical sandstone bedrock surface and must be corrected for local soil conditions. The following table summarizes the peak ground and short and long period accelerations for a MCE event and incorporates a soil amplification factor for a Site Class D soil profile in the second column. Based on the site latitude and longitude (40.3213 degrees north and -111.6823 degrees west, respectively), the values for this site are tabulated on the following page.



Spectral Acceleration Value, T Seconds	Site Class B-C Boundary [mapped values] (% g)	Site Class D [adjusted for site class effects] (% g)
Peak Ground Acceleration (Geo-Mean)	61.3	67.4
0.2 Seconds (Short Period Acceleration)	$S_S = 133.4$	$S_{MS} = 133.4$
1.0 Seconds (Long Period Acceleration)	$S_1 = 49.6$	$S_{M1} = *$

* See Section 11.4.8 for requirements on site-specific ground motion studies. Please contact us for a proposal, if needed.

5.8.5 Liquefaction

The site is located in an area that has been identified by the Utah Geological Survey as having “very low” liquefaction potential. Liquefaction is defined as the condition when saturated, loose, finer-grained sand-type soils lose their support capabilities because of excessive pore water pressure which develops during a seismic event.

Due to the absence of saturated soils to the depths explored, our analysis indicates liquefaction is not anticipated during the design seismic event.

5.9 SITE OBSERVATIONS

As stated previously, due to the potential for encountering non-engineered fills at foundation depth, a qualified geotechnical engineer from our staff must aid in verifying that all non-engineered fills have been completely removed prior to the placement of structural site grading fills, footings, or foundations.

Job No. 1258-001-24
Due Diligence Geotechnical Study
April 19, 2024



We appreciate the opportunity of providing this service for you. If you have any questions or require additional information, please do not hesitate to contact us.

Respectfully submitted,

Gordon Geotechnical Engineering, Inc.

Reviewed by:

A handwritten signature in black ink, appearing to read 'J. Whitney'.

Joshua M. Whitney, State of Utah No. 6252902
Senior Engineer

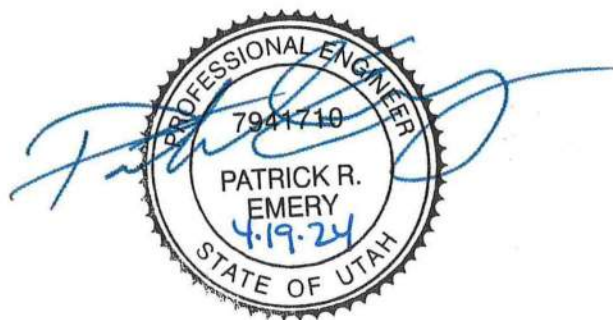
A handwritten signature in blue ink, appearing to read 'Patrick R. Emery'.

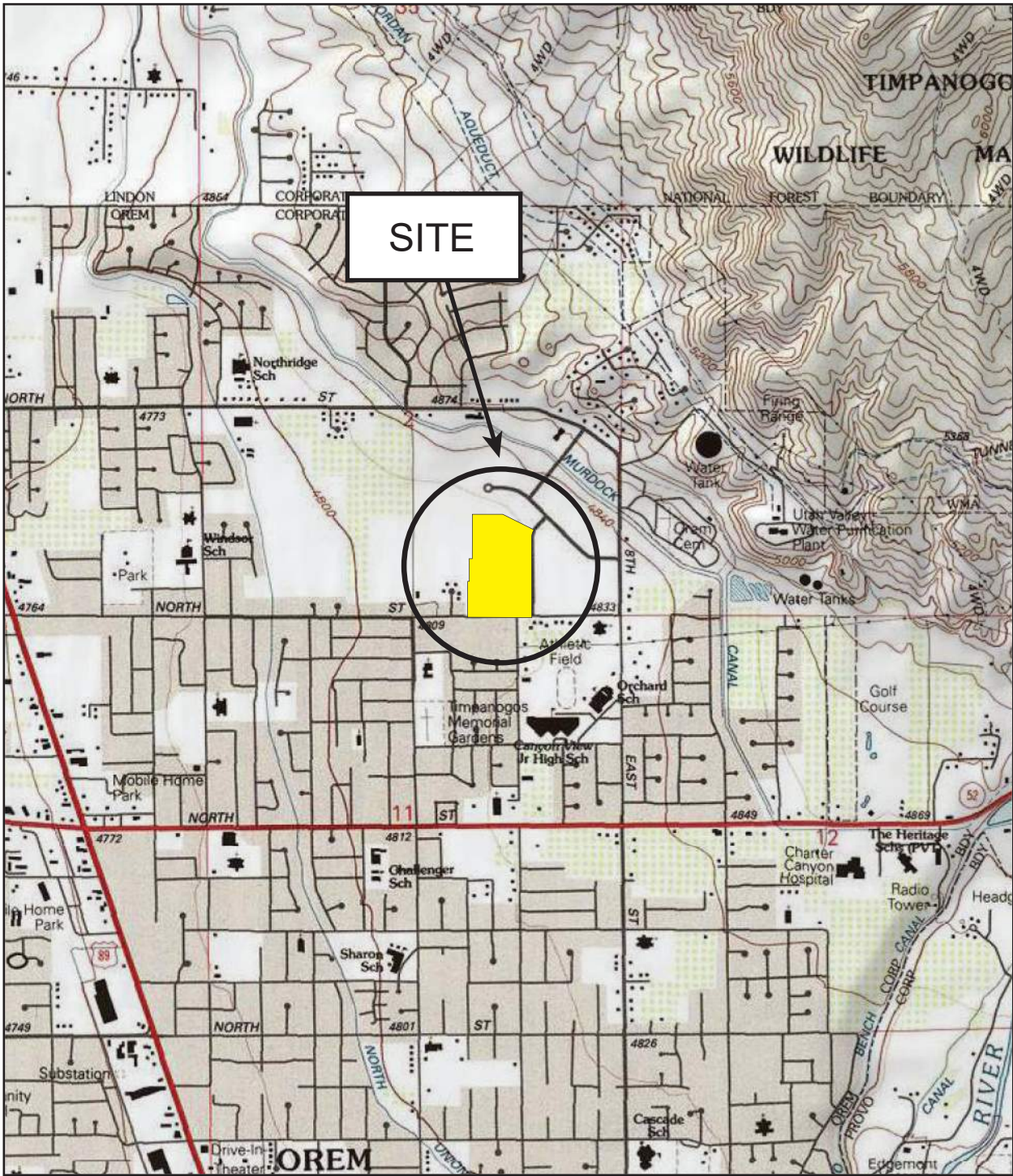
Patrick R. Emery, State of Utah No. 7941710
Senior Engineer

JMW/PRE:LE

- Encl. Figure 1, Vicinity Map
Figure 2, Area Map
Figures 3A through 3H, Log of Borings
Figure 4, Unified Soil Classification System
Figure 5, Photographs

Addressee (3 + email)





SCALE IN FEET
1000 0 1000 2000

REFERENCE:
USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAP
TITLED "OREM, UTAH", DATED 1994

FIGURE 1 
VICINITY MAP



Project Name: Proposed Orem Canyon Park Development
 Location: 1201 North 630 East, Orem, Utah
 Drilling Method: 3.75" ID Hollow-Stem Auger
 Elevation: ---
 Remarks: ---

Project No.: 1258-001-24
 Client: TriPointe Homes
 Date Drilled: 03-21-24
 Water Level: No groundwater encountered.

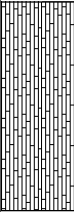
DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	%PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
Ground Surface			0									
2.0" ASPHALT CONCRETE												
FINE TO COARSE SAND, ROAD BASE FILL with fine and coarse gravel and silt; dark brown (SP-FILL)												slightly moist very loose
					SPT	6						
SILTY FINE AND COARSE GRAVELLY FINE TO COARSE SAND light brown (SM/GM)												slightly moist very dense
			5		SPT	50 5"	4.7		12.4			
Drilling refusal at 6.5'.												
Stopped sampling at 6.5'.												
No groundwater encountered at time of drilling.			10									
			15									
			20									
			25									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for proper understanding of the nature of the subsurface material.

FIGURE 3A

Project Name: Proposed Orem Canyon Park Development
 Location: 1201 North 630 East, Orem, Utah
 Drilling Method: 3.75" ID Hollow-Stem Auger
 Elevation: ---
 Remarks: ---

Project No.: 1258-001-24
 Client: TriPointe Homes
 Date Drilled: 03-21-24
 Water Level: No groundwater encountered.

DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	%PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
Ground Surface			0									
3.5" ASPHALT CONCRETE												
6.0" ROAD BASE, FILL												slightly moist very dense
SILTY FINE AND COARSE GRAVEL / SAND brown (SM/GM)					SPT	50 4"						
			5		SPT	50 3"	4.9		16.2			
Drilling refusal at 5.5'. Stopped sampling at 5.5'. No groundwater encountered at time of drilling.			10									
			15									
			20									
			25									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for proper understanding of the nature of the subsurface material.

FIGURE 3B

Project Name: Proposed Orem Canyon Park Development
 Location: 1201 North 630 East, Orem, Utah
 Drilling Method: 3.75" ID Hollow-Stem Auger
 Elevation: ---
 Remarks: ---

Project No.: 1258-001-24
 Client: TriPointe Homes
 Date Drilled: 03-21-24
 Water Level: No groundwater encountered.

DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	%PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
Ground Surface			0									
3.5" ASPHALT CONCRETE												
CLAYEY FINE TO COARSE SAND AND GRAVEL, FILL brown (SC/GC-FILL)												slightly moist hard
grades to fine to coarse sand with fine and coarse gravel												
					SPT	63	11.0		21.9			
			5		SPT	50 5"						sl. moist/very dense
FINE AND COARSE GRAVELLY FINE TO COARSE SAND with some silt; brown (SP)												
Drilling refusal at 5.5'.												
Stopped sampling at 5.5'.												
No groundwater encountered at time of drilling.												
			10									
			15									
			20									
			25									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for proper understanding of the nature of the subsurface material.

FIGURE 3C

Project Name: Proposed Orem Canyon Park Development
 Location: 1201 North 630 East, Orem, Utah
 Drilling Method: 3.75" ID Hollow-Stem Auger
 Elevation: ---
 Remarks: ---

Project No.: 1258-001-24
 Client: TriPointe Homes
 Date Drilled: 03-21-24
 Water Level: No groundwater encountered.

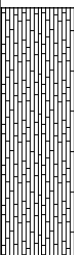
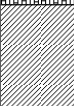
DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	%PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
Ground Surface			0									
3.5" ASPHALT CONCRETE												
CLAYEY FINE AND COARSE GRAVEL, FILL with fine to coarse sand; brown (GC-FILL)												
FINE TO COARSE SANDY FINE AND COARSE GRAVEL with silt; light brown (GM)					SPT	50 5"						slightly moist very dense
Drilling refusal at 3.5'.			5									
Stopped sampling at 3.5'.												
No groundwater encountered at time of drilling.												
			10									
			15									
			20									
			25									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for proper understanding of the nature of the subsurface material.

FIGURE 3D

Project Name: Proposed Orem Canyon Park Development
 Location: 1201 North 630 East, Orem, Utah
 Drilling Method: 3.75" ID Hollow-Stem Auger
 Elevation: ---
 Remarks: ---

Project No.: 1258-001-24
 Client: TriPointe Homes
 Date Drilled: 03-21-24
 Water Level: No groundwater encountered.

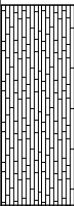
DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	%PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
Ground Surface			0									
3.5" ASPHALT CONCRETE												
FINE AND COARSE GRAVELLY FINE TO COARSE SAND, FILL with some clay; brown (SM-FILL)												slightly moist medium dense
					SPT	12						
			5									
FINE TO COARSE SANDY CLAY with some fine gravel; brown (CL)												slightly moist medium stiff
					SPT	7	21.7		79.0			
FINE AND COARSE GRAVELLY FINE TO COARSE SAND with some silt; brown (SP/SM)												slightly moist very dense
					SPT	59						
			10									
					SPT	50 5"						
Drilling refusal at 10.5'. Stopped sampling at 10.5'. No groundwater encountered at time of drilling.												
			15									
			20									
			25									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for proper understanding of the nature of the subsurface material.

FIGURE 3E

Project Name: Proposed Orem Canyon Park Development
 Location: 1201 North 630 East, Orem, Utah
 Drilling Method: 3.75" ID Hollow-Stem Auger
 Elevation: ---
 Remarks: ---

Project No.: 1258-001-24
 Client: TriPointe Homes
 Date Drilled: 04-12-24
 Water Level: No groundwater encountered.

DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	%PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
Ground Surface			0									
3.5" ASPHALT CONCRETE												
8" ROADBASE												
SILTY FINE TO COARSE SAND / FINE AND COARSE GRAVEL with cobbles; light brown (SM/GM)												slightly moist very dense
					SPT	53	4.5		13.4			
					SPT	50 6"						
Drilling refusal at 4.0'.			5									
Stopped sampling at 4.5'.												
No groundwater encountered at time of drilling.												
			10									
			15									
			20									
			25									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for proper understanding of the nature of the subsurface material.

FIGURE 3F



Project No.: 1258-001-24

Client: TriPointe Homes

Date Drilled: 04-12-24

Water Level: No groundwater encountered.

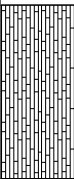
Remarks:

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for proper understanding of the nature of the subsurface material.

FIGURE 3G

Project Name: Proposed Orem Canyon Park Development
 Location: 1201 North 630 East, Orem, Utah
 Drilling Method: 3.75" ID Hollow-Stem Auger
 Elevation: ---
 Remarks: ---

Project No.: 1258-001-24
 Client: TriPointe Homes
 Date Drilled: 04-12-24
 Water Level: No groundwater encountered.

DESCRIPTION	GRAPHIC LOG	WATER LEVEL	DEPTH (FT.)	SAMPLE SYMBOL	SAMPLE TYPE	BLOWS/FT.	MOISTURE (%)	DRY DENSITY (PCF)	%PASSING 200	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	REMARKS
Ground Surface			0									
4.0" ASPHALT CONCRETE												
6-8" ROADBASE												
SILTY FINE TO COARSE SAND - FILL with fine gravel and some clay; dark brown (SM-FILL)												slightly moist medium dense
					SPT	17	10.3		25.6			
FINE AND COARSE GRAVELY FINE TO COARSE SAND with silt and cobbles; dark brown (SP/SM)			5									slightly moist very dense
					SPT	83 2"						
Drilling refusal at 5.0'.												
Stopped sampling at 6.5'.												
No groundwater encountered at time of drilling.												
			10									
			15									
			20									
			25									

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary for proper understanding of the nature of the subsurface material.

FIGURE 3H

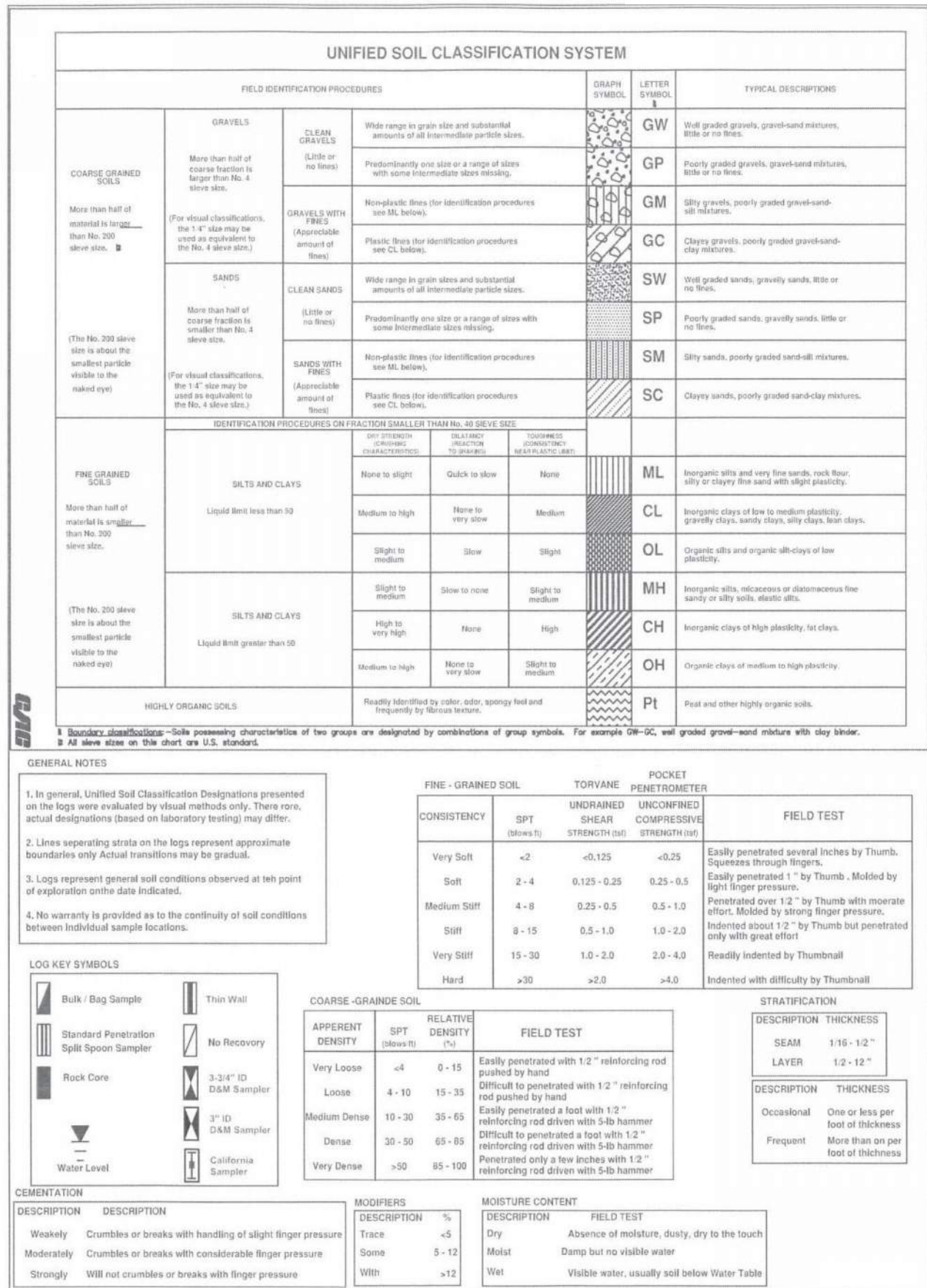


FIGURE 4



#1 Looking north.



#2 Looking east.



#3 Looking south.

Locations and direction, see Figure 2, Area Map

FIGURE 5 PHOTOGRAPHS

May 5, 2025
Job No. 1258-006-25

TriPointe Homes
1260 East Stringham Avenue, Suite 350
Salt Lake City, Utah 84106

Attention: Mr. Colton Chronister

Ladies and Gentlemen:

Re: Letter Report
Soil Infiltration Tests
Proposed Canyon Park Development
1201 North 630 East
Orem, Utah

1. INTRODUCTION

This letter report presents the results of our soil infiltration tests performed at the site of the proposed Canyon Park Development, which is located at 1201 North 630 East in Orem, Utah. Gordon Geotechnical Engineering, Inc. (G²) previously completed a geotechnical study of the site dated November 14, 2023¹. The locations of the test pits excavated in conjunction with this study and the borings drilled for the geotechnical report are presented on Figure 1, Site Plan.

The infiltration testing was requested to aid in the design of a stormwater detention system for the proposed development.

2. INVESTIGATIONS

2.1 FIELD PROGRAM

In order to define and evaluate the subsurface soil and groundwater conditions at the proposed basin locations, 6 test pits were excavated to depths ranging from 6.5 to 12.2 feet below existing grade.

¹ "Report, Due Diligence Geotechnical Study, Proposed Orem Canyon Park Development, 1201 North 630 East, Orem, Utah", G² Job No. 1258-001-24, Dated April 19, 2024.

2.2 SUBSURFACE SOIL AND GROUNDWATER

The subsurface profile at the test pit locations generally consisted of one to three feet of fill overlying natural fine and coarse gravel with numerous cobbles and occasional boulders. The gravels are dense, slightly moist, and light brown in color

Groundwater was not encountered in the exploration test pits during testing.

2.3 INFILTRATION TEST

The results of the infiltration test are summarized in the following table:

Test No.	Test Pit	Depth (feet)	USCS Soil Classification	Measured Infiltration Rate (min/in)	Recommend Design Infiltration Rate (min/in)
I-1	TP-1	7.0	GP	1.0 minute/inch	10 minutes/inch
I-2	TP-2	12.2	GP	1.7 minutes/inch	10 minutes/inch
I-3	TP-3	6.5	GP	5.0 minutes/inch	10 minutes/inch
I-4	TP-4	8.9	GP	1.0 minute/inch	10 minutes/inch
I-5	TP-5	11.4	GP	1.0 minute/inch	10 minutes/inch
I-6	TP-6	11.5	GP	1.25 minutes/inch	10 minutes/inch

3. CONCLUSIONS AND RECOMMENDATIONS

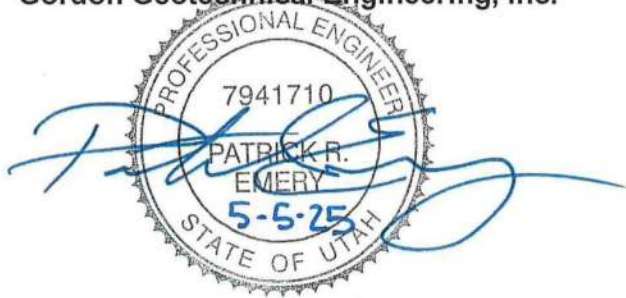
The measured infiltration rates reflect current natural site conditions at the test locations. It is our experience that infiltration rate will decrease over the lifetime of the system due to siltation and the introduction of other materials. Accordingly, we recommend a reduced design infiltration rate of at least 10 minutes per inch be used for the design of the proposed stormwater system.

Job No. 1258-006-25
Soil Infiltration Tests
May 5, 2025

We appreciate the opportunity of providing this service for you. If you have any questions or require additional information, please do not hesitate to contact us.

Respectfully submitted,

Gordon Geotechnical Engineering, Inc.



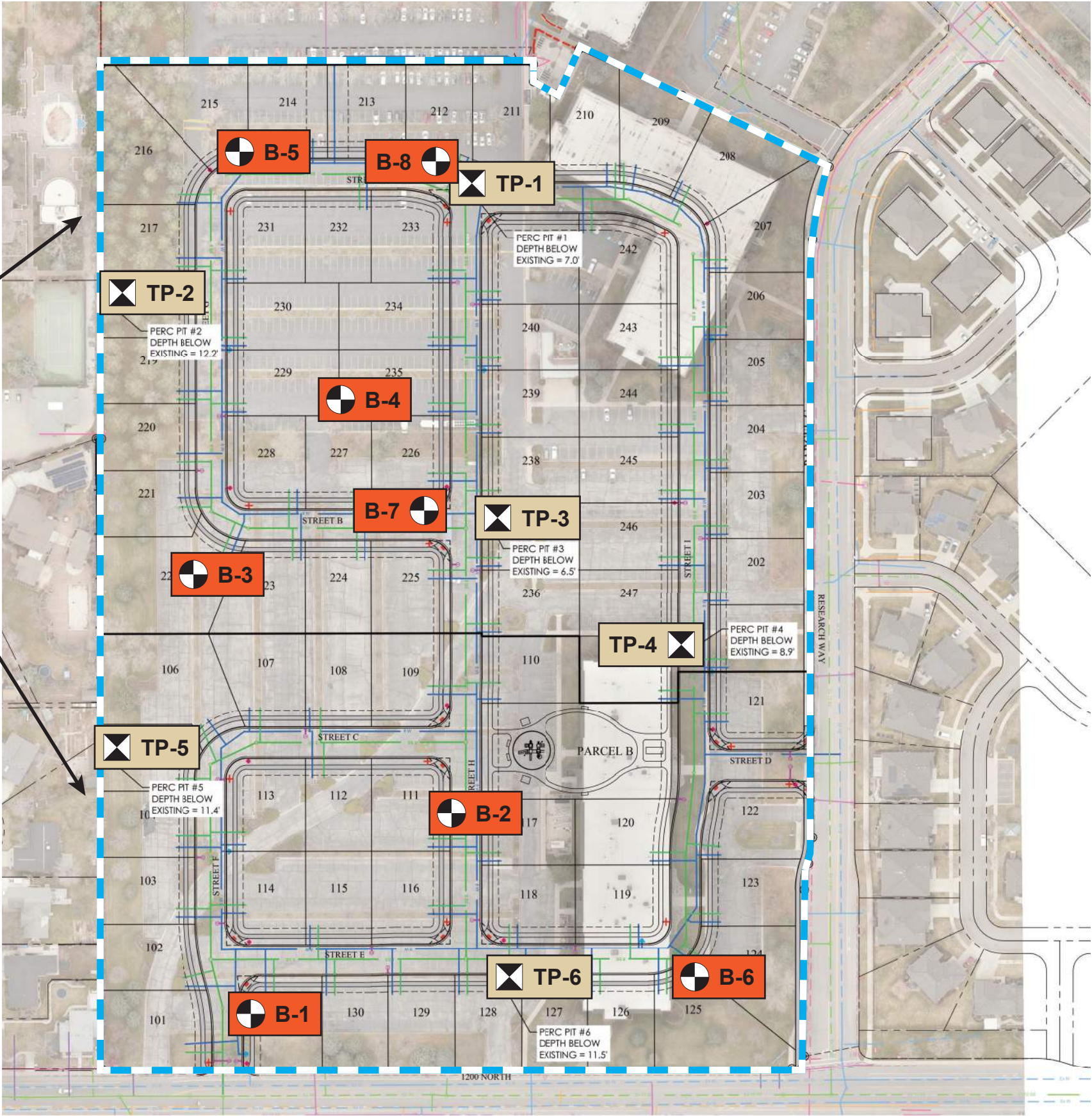
Patrick R. Emery, State of Utah No. 7941710
Professional Engineer

PRE:sn

Encl: Figure 1, Site Plan

Addressee (email only)

SITE



KEY



Boring Locations from
April 19, 2024 Study



Test Pit Locations from
this Study

REFERENCE:
ADAPTED FROM DRAWING ENTITLED
"CANYON PARK - PERC TEST PIT EXHIBIT"
BY FOCUS ENGINEERING AND SURVEYING, DATED APRIL 23, 2025

NOT TO SCALE

↑ **FIGURE 1
SITE PLAN**

subdivision range between 8,960 ft2 (.21-acre) and 18,700 ft2. (.43-acre). All proposed lots will allow the placement of homes meeting the setbacks required by the R8 Zone. For reference, those standards are included below:

22-6 Residential Zones							
Interior Lot Setbacks (minimum)							
	R20	R12	R8	R7.5	R6.5	R6	R5
Front:	30'	30'	25'	25'	25'	25'	22.5'
Rear:	25'	25'	25'	25'	25'	25'	22.5'
Side Yard with Attached Garage:	*24/10	*20/8	*20/8	*20/8	*16/6	*16/6	*15/5
Side Yard without Attached Garage:	*30/14	*24/10	*24/10	*24/10	*16/6	*16/6	*15/5
*This figure indicates the minimum total of both side yard setbacks followed by the minimum amount required on each side of the structure. For example, in the R8 zone, the combination of both side yard setbacks for a structure with an attached garage must be at least 20 feet and the setback on each side must be at least 8 feet.							

22-6 Residential Zones							
Corner Lot Setbacks (minimum)							
	R20	R12	R8	R7.5	R6.5	R6	R5
Front:	30'	30'	25'	25'	25'	25'	22.5'
Rear:	15'	10'	10'	10'	10'	10'	10'
Side Yard with Attached Garage:	15'	10'	10'	10'	10'	10'	10'
Side Yard without Attached Garage:	30'	30'	30'	30'	25'	25'	10'
Side Yard abutting the Side Street:	20'	20'	20'	20'	20'	20'	20'

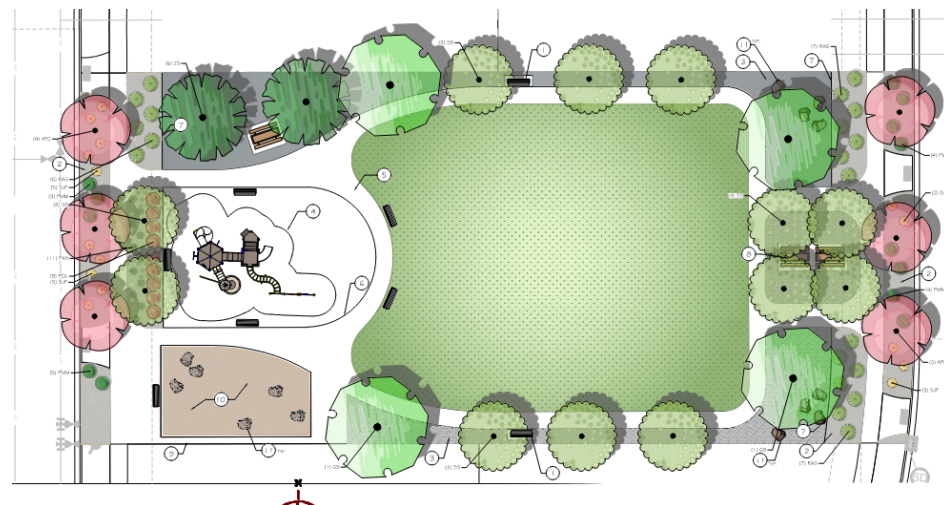
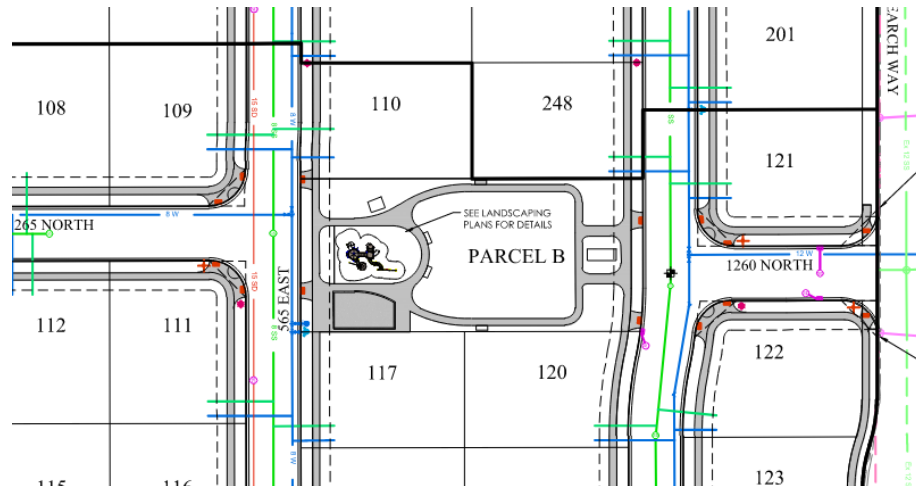
Phasing: The preliminary plan considers the entire subdivision, but if approved the applicant plans to record the plat and subsequently develop the property in two phases. Phase 1 will remove the entirety of the subject property from the larger parcel that it has been part of in research park and will create the first 31 lots – proposed Lots 101 – 131. These lots and associated improvements are located on the southern portion of the property. Phase 2 will provide the improvements and platting for the remaining 48 lots – proposed Lots 201-248.

Access: The property is bounded on the east by Research Way and on the south by 1200 North, but all proposed lots will be accessed from new interior public roads. Access to the new interior subdivision roads will be provided between Lots 101 and 131 near the southwest corner of the property along 1200 North, and between Lots 121 and 122 along Research Way. The proposed rights-of-way (ROWs) are 38' wide street designs and meet the standards required by Articles 16 and 17 (Streets and Subdivision Ordinances.)

Public Improvements: New interior ROW improvements include 34' widths of asphalt for vehicle travel, curb + gutter, 5' wide sidewalks, and 8' wide park strips. Street signs, lights, and street trees will be included in the park strips.

Utilities, Grading, and Drainage: Civil plans for utilities, grading, and drainage have been provided by the applicant for the development of the property in conjunction with the subdivision. Orem City development staff have reviewed and approved the civil plans and preliminary subdivision plan for the Planning Commission’s consideration.

Open Space: There is no requirement for amenities or common open space in the R8 Zone, but the applicants have proposed installing a small neighborhood park connected to the subdivision by interior sidewalks. The park will be platted as “Parcel B”. A homeowners’ association will be created to maintain the park.



DEVELOPMENT REVIEW COMMITTEE: The technical review has been approved and forwarded to the Development Review Committee (DRC), where the preliminary subdivision will be reviewed on Monday June 16, 2025.

ACTIONS: The Planning Commission is the designated Land Use Authority for preliminary subdivisions. The Commission may approve or deny the request for preliminary subdivision or may choose to continue their consideration of the request and ask for additional information or analysis.

|



PLANNING COMMISSION

June 18, 2025

Item 4.2

Ken Garff of Orem
134 East 1200 South

Site Plan Approval, expansion of parking for the
existing dealership property, C2 Zone

Prepared By:
Jared Hall

Applicant:
Chris Bick

Notices:

Posted in 2 public places.
Posted on City Webpage
and City hotline.
Posted at Utah.gov/pmn.

Site Information:

General Plan Designation:
**Medium Density
Residential**

Zoning: **C2**

Total Acreage: **0.33**

Action:

The Planning Commission
is the Land Use Authority
and the approving body for
this item.

REQUEST: The applicant requests site plan approval to use the subject property for parking and access in conjunction with the adjacent auto dealership property. The site plan does not include new structures.

BACKGROUND: The subject property is in the C2 Zone, which was changed from the R8 Zone recently. There is an existing single-family home that will be removed as the site is developed. The proposed site plan will integrate the properties into the dealership, using the additional acreage to expand parking for employees and for inventory vehicles.



REVIEW:

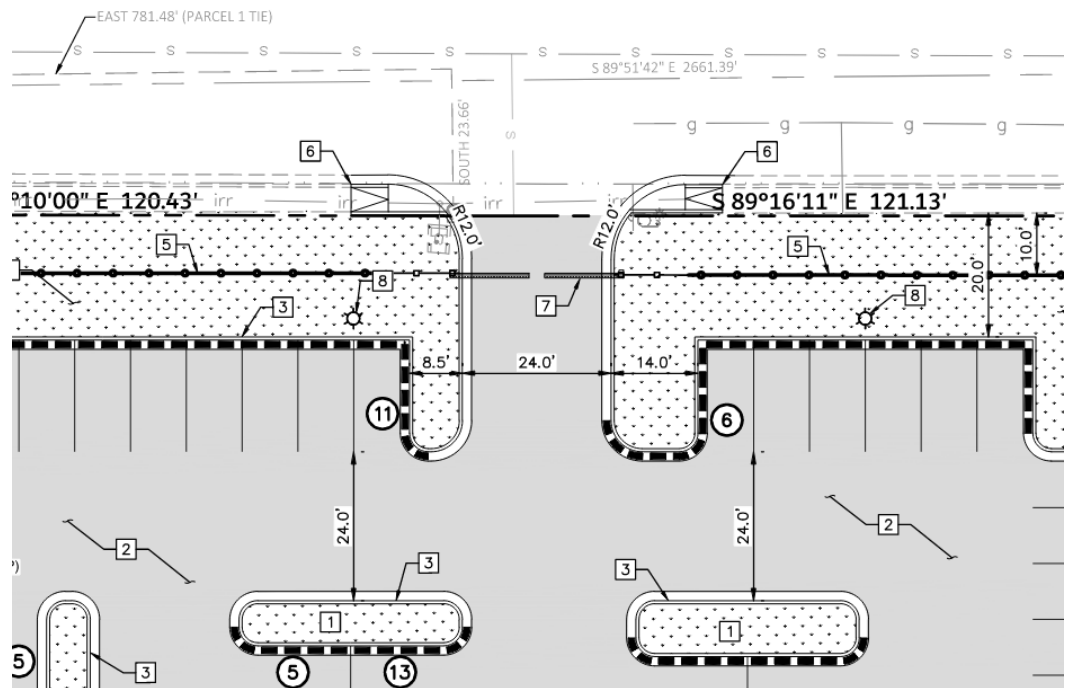
Zoning: The subject property is zoned C2. The City Council voted to approve the change of zoning on May 13, 2025. The change of zoning included a development agreement assuring the following:

- The installation of a gate at the access on 1200 South to control and minimize traffic at that location.

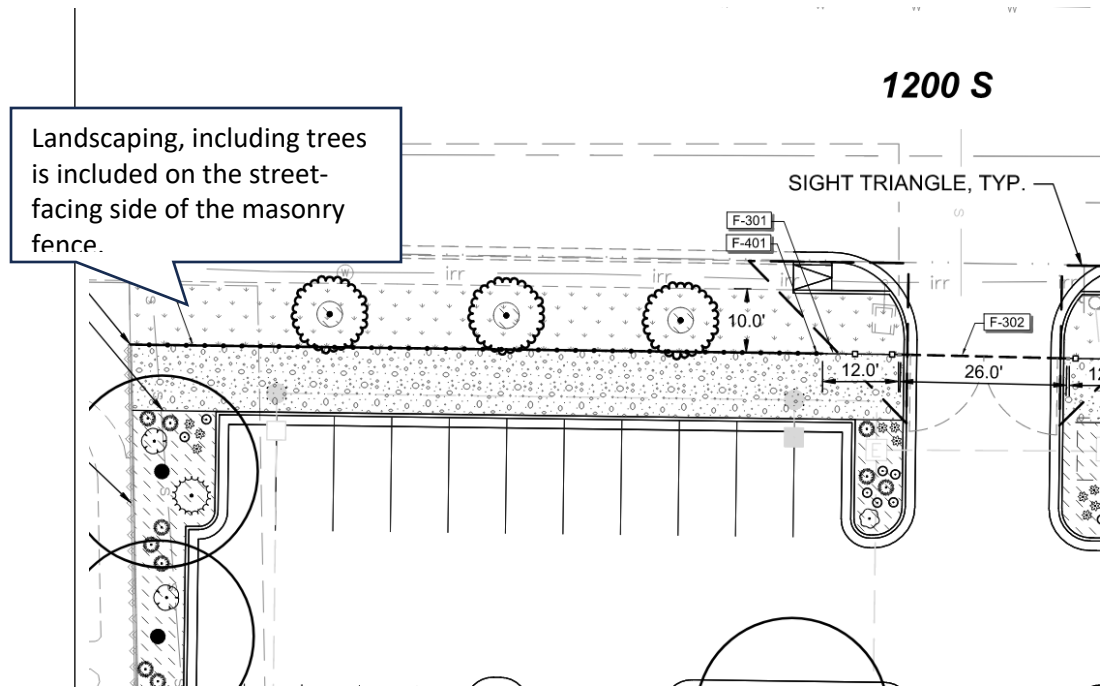
- A masonry fence and landscaped improvements along the frontage of 1200 South, with landscaping on the street-facing side of the fence to soften the visual impacts.

Public Improvements: Existing right-of-way (ROW) improvements will be maintained along the 1200 South frontage, including curb, gutter, and sidewalk.

Parking & Access: The concept plans include 79 new parking spaces and a new 26' wide access on 1200 South. The proposed parking expansion is integrated into the existing dealership parking lots. The development agreement requires the inclusion of a gate to minimize the impact of traffic to and from that point and mitigate the impact to the 1200 South neighborhood.



Landscaping: The plan includes landscaped islands capping new parking rows, landscaped buffers along the east and west property boundaries, and a 20' deep landscaped setback along the frontage of 1200 South. The development agreement proscribes a minimum 6' high masonry fence along 1200 South, with landscaping in front of the fence on the 1200 South side to provide additional buffering and beautification. The landscaping plans comply with the requirements of the proposed C2 Zone and the terms of the Development Agreement.



DEVELOPMENT REVIEW COMMITTEE: The Development Review Committee (DRC) reviewed the site plan application on Monday, May 29, 2025. The DRC voted to approve, and did not forward any specific conditions to the Planning Commission.

ACTIONS: The Planning Commission is the designated Land Use Authority for preliminary subdivisions. The Commission may approve or deny the request for preliminary subdivision or may choose to continue their consideration of the request and ask for additional information or analysis.

Ken Garff Rezone Lots – 134 East 1200 South, 110 East 1200 South

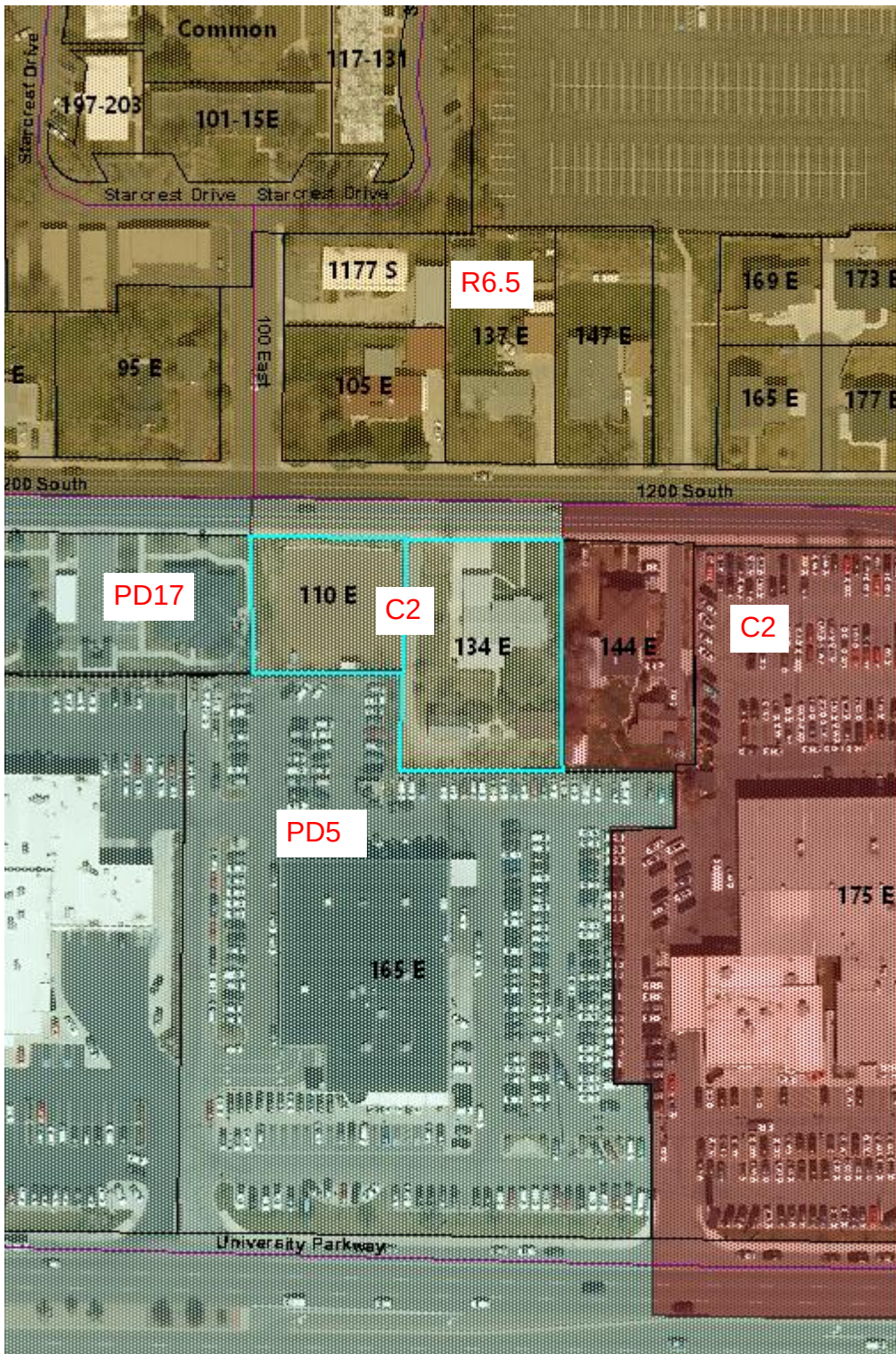


Zone: R8 (Current)
Acres: .79 Combined

NEIGHBORHOOD
Lakeridge

Legend
 Project Area

Ken Garff – 110 & 134 E 1200 South



Zone Map

Zone: C2

Acres: Approximately .51



134 East 1200 South – Ken Garff New Property - Current Street View



110 East 1200 South – Ken Garff New Property - Current Street View



Current Properties

ALTA /NSPS LAND TITLE SURVEY
134 AND 110 EAST 1200 SOUTH
OREM, UT 84058

Boxing Office File Number: 154087-NIC7
Consentment Date: October 7, 2024 at 7:20 AM

To: BNY Mellon Trusts, LLC, a Utah limited liability company
V. David Cliff and John H. Cliff, and their successors in interest, Trustees of the V & J Cliff Trust, dated the 30th day of February, 1980
Cottonwood Trust Insurance Agency, Inc.
STEWART TITLE GUARANTEE COMPANY

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA and ASPS Land Title Surveys, jointly established and adopted by ALTA and ASPS, and Indiana Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, and 12 of Table A thereof. The final work was completed on October 25, 2024.

Date of Writ or Map: November 12, 2024

Professional Land Surveyor
Archie R. Wilton, PLS
License No. 12803794

Legal Description:

PARCEL 1:
Commencing at a point located East 781.47 feet and South 25.965 feet from the Northwest corner of Section 26, Township 5 South, Range 2 East, Salt Lake Base and a Meridian (bearing is South 89°24'18" East along the section line from said section corner); thence South 89°14'00" East 121.121 feet along the South boundary of 12001 South Street; thence South 90°03'02" East 373.513 feet along a fence line; thence East 67.05 feet; thence South 89°03'46" West 25.75 feet; along the line of Rm. Auto Sales Inc. (Warranty Department) 48144 in Book 3000 of Page 889; thence West 214.677 feet; thence North 01°46'48" East 200.912 feet to the point of beginning.

LESS AND EXCEPTING THEREFROM the following:

Beginning at a point East 752.25 feet and South 01°48'48" West 224.58 feet from the Northwest corner of Section 26, Township 6 South, Range 2 East, Salt Lake Base and Meridian, and running thence East 214.68 feet; thence North 21.00 feet; thence West 234.47 feet; thence South 01°58'58" West 23.01 feet to the point of beginning.

Beginning at a point 600.00 feet East and South 21.91 feet from the Northwest corner of Section 26, Township 6 South, Range 2 East, Salt Lake Base and Meridian, and running thence South 89°52'00" West 120.48 feet; thence South 21°46'48" West 303.35 feet; thence South 89°15'52" West 115.21 feet; thence North 00°02'02" West 306.46 feet to the point of beginning.

Schreiben 2. PART:

13. Easement Agreement in favor of U.S. West Communications, Inc., a Colorado corporation to construct, reconstruct, modify, change, add to, operate, maintain and remove telecommunications facilities, electrical facilities and gas facilities, and appurtenances, and incidental purposes, by instrument recorded September 11, 1997, as Entry No. 70762, in Book 4374, at Page 625.

Survey Findings: The easement lies in the western portion of Parcel 2 as shown herein.

14. Cross Easement Agreement by and between MPT Transportation, Inc., a Utah corporation and Granite Furniture, Inc., a Utah corporation recorded March 2, 1995 as Entry No. 12019 in Book 3530 at Page 542.

46. *Experiments for a course in statistics for students of the physical sciences.*

Survey Findings: The easement lies in the western portion of Parcel 2 as shown here in:

any other facts which an ALTA/ACSM Survey, made in accordance with the current Minimum Standard Detail Requirements for Land Title Surveys jointly established and adopted by (ALTA) American Land Title Association and (NSPS) National Society of Professional Surveyors may disclose.

Survey Findings: A complete ALTA survey has been conducted on the property.

NOTES:
1. The basis of bearing is South 0°44'00" East between the fixed brass cap monuments at the Northwest corner and the West Quarter Corner of Section 26, Township 6 South, Range 2 East, Salt Lake Base and Meridian. The survey control was established with GNSS from the Utah State NRS system.

2. The purpose of this survey is to retrace and monument the boundary of the described property according to the official records and the location of pertinent existing improvements located on the ground.

4. The location of underground utilities as shown hereon are based on above ground structures. Locations of underground

Utilities/structures may vary from locations shown herein. Additional buried utilities/structures may be encountered. No excavations were made during the progress of this survey to locate buried utilities/structures. Before excavations are begun, please contact blue-stakes and appropriate agencies.

5. Parcel 1 contains 22,630 sq. ft. or 0.529 acres, Parcel 2 contains 12,349 sq. ft. or 0.283 acres.

B. The Purported address of the dice is 134 and 130 East 1200 South, Orem, UT.

7. The Property lies within Flood Zone X, Per the Flood Insurance Rate Map, Fema Panel 09019C0612F, effective 6/19/2020.

5. There are no dedicated parking spaces located on the property at the time of conducting fieldwork.

3. The property is within an established Residential Zone with an RCR Affordable Senior Housing Overlay with the following setbacks:
O.L. 2. Front Setback: 25'

9.1.4 Max Skidding Height-15'

Referenced Documents

1. GarV Green Y88/Honda Subdivision as recorded in the office of the Utah County recorder as Entry No. 15803.
2. GarVee Elderly Subdivision as recorded in the office of the Utah County Recorder as Entry No. 8395-98.
3. Record of Survey performed by Dumrad Land Surveying as filed with the Utah County as Survey No. 23-306

LOCATED IN THE NORTHWEST QUARTER
OF SECTION 26,
TOWNSHIP 6 SOUTH, RANGE 2 EAST,
SALT LAKE BASIN AND MERIDIAN



REGIS LAND SURVEYING

12764 PONY
EXPRESS RD
DRAPER, UT
AMOS@AEGISLAND
SURVEYING.COM

copyright
ALL REPORTS, BUSINESS FIELDWORK, FIELD
NOTES, CHARTS, AND CORRESPONDENCE
ORIGINALLY SUBMITTED TO THE
FEDERAL BUREAU OF INVESTIGATION
BY OR UNDER THE AUTHORITY OF
THE DIRECTOR, FBI, ARE UNCLASSIFIED
DATE 01-11-2001 BY 60322 UCBAW/STP

ALTA/NSPS LAND TITLE SURVEY
134 AND 110 EAST 1200 SOUTH
OREM, UT

KIMLEY HORN

SURVEY DATE: 10/25/24

CLAIM BY: HGO

DATE PLOTTED 11/23/08

JOB No.	24-018
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1 2 3

1	0	1
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Proposed Site Plan

GENERAL NOTES

1. CONTRACTOR TO VERIFY EXISTING IMPROVEMENTS SHOWN ON THE PLAN.
2. CONTRACTOR TO PROTECT IN PLACE, DURING DEMOLITION AND CONSTRUCTION, ALL EXISTING IMPROVEMENTS THAT ARE TO REMAIN AS NOTED ON THE PLAN.
3. ANY EXISTING STRUCTURE, IMPROVEMENT OR APPURTENANCE TO REMAIN THAT IS DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE IMMEDIATELY REPAIRED OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
4. ALL RADIUS 3' UNLESS OTHERWISE NOTED ON PLAN.
5. CONTRACTOR SHALL ENSURE A SMOOTH TIE-IN TO EXISTING PAVEMENT AND SURFACE.

CONSTRUCTION NOTES

1. LANDSCAPE AREA (TYP), REFER TO LANDSCAPE PLANS FOR DETAILS.
2. CONSTRUCT ASPHALT PAVEMENT PER DETAIL ON SHEET 05.10.
3. CONSTRUCT 4" FURNISH VERTICAL CURB AND GUTTER PER OPEN CITY STANDARDS AND SPECIFICATIONS, REFER TO DETAIL ON SHEET 05.10.
4. PAINT 4" WIDE WHITE PARKING STRIPING.
5. FURNISH AND INSTALL DRAIN TYPICAL, REFER TO LANDSCAPE PLANS FOR DETAILS.
6. FURNISH AND INSTALL ADA RAMP PER DETAIL ON SHEET 05.10.
7. FURNISH AND INSTALL PRIVATE ACCESS GATE, REFER TO LANDSCAPE PLANS FOR DETAILS.
8. PROPOSED LIGHT POLE, REFER TO LIGHTING PLANS FOR DETAILS.

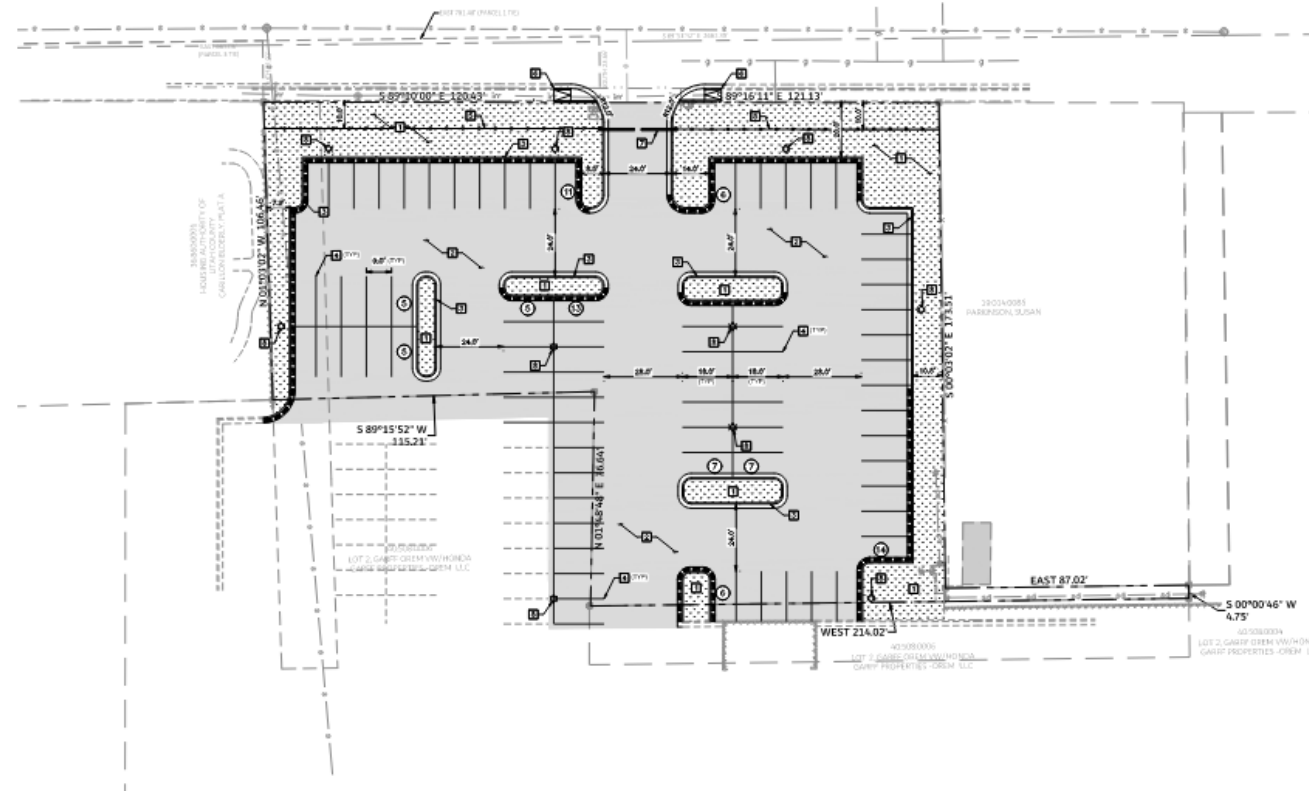
LEGEND

- PROPERTY LINE
- PROPOSED ASPHALT PAVEMENT, REFER TO PAVEMENT SECTION DETAILS ON SHEET 05.10.
- PROPOSED LANDSCAPE, REFER TO LANDSCAPE PLANS FOR DETAILS AND SPECIFICATIONS.
- CAUTION CURB AND GUTTER PER DETAIL ON SHEET 05.10.
- ADVERSE CURB AND GUTTER PER DETAIL ON SHEET 05.10.



0 20' 40' 80'

SCALE: 1" = 20'



SITE INFORMATION

	SQUARE FOOTAGE	ACREAGE	PERCENT OF TOTAL AREA
TOTAL SITE AREA	34,479 S.F.	0.80 AC	100%
EXISTING BUILDING S.F.	N/A	N/A	N/A
TOTAL PROPOSED ADDITIONAL PARKING	79 STALLS	-	-



CAUTION NOTICE TO CONTRACTOR

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO THESE PLANS.

Kimley-Horn

134 1200 S. OREH, UT 84058

SITE PLAN

KEN GARFF HONDA

PARKING ADDITION

134 1200 S. OREH, UT 84058

DESIGNED BY: [Signature]

CHECKED BY: [Signature]

PROJECT NO.: 1341200058

DATE: 08/01/2024

SCALE: 1" = 20'

DATE: 08/01/2024

BY: [Signature]