REQUEST FOR PROPOSALS

UTAH DEPARTMENT OF TRANSPORTATION

4 Interchanges on Bangerter HWY (SR-154)

Project No. S-0154(12)11

Salt Lake County

INSTRUCTIONS TO PROPOSERS

APPENDIX A:
TECHNICAL PROPOSAL INSTRUCTIONS

Addendum ~~1~~ 2 - ~~September 29~~October 6, 2016

TABLE ITP-A-1
OUTLINE FOR SUBMITTAL OF TECHNICAL PROPOSAL

Proposal Volume Section	*Volume and Section Titles and Required Information*
	EXECUTIVE SUMMARY
VOL. 1	**LEGAL AND FINANCIAL INFORMATION (PASS/FAIL)**
Sec. 1	Proposal Letter Form; Form BC (Claim of Business Confidentiality) Form C (Single Point of Contact) Form NC (Noncollusion Affidavit) Form IC (Ineligible Contractors) Form LC (Lobbying Certificate) Form OC (Opinion of Counsel) Form NS (Named Subcontractors); and Licensing information. Form IS (Ineligible Subcontractors) Form SR (Statement of Representations) Form CR (Commitment Resources) Relevant Professional Licenses
VOL. 2	**TECHNICAL PROPOSAL INFORMATION**
Sec. 1	**Maintenance of Traffic** Description of the proposed maintenance of traffic and construction phasing including a summary of proposed innovations. Focus on an approach that is designed to minimize disruption and maximize safety for the Project Traffic impact and mitigation plan for maintenance of traffic for each construction stage. Include descriptions of detours and plans for full or partial roadway closures. Description of maintaining access to properties and a description of an approach that minimizes impacts to business accesses, residences, pedestrians, and schools.
Sec. 2	**Technical Approach** Description that minimizes or eliminates schedule risks to the Department; include any commitments to provide Project schedule float on critical parcels. Provide milestones in the schedule for all right-of-way limitation dates. Provide a description of any design exceptions that have been eliminated. ~~Description of the proposed design enhancements and reduction in risk, including a summary of proposed innovations~~ ~~Provide a description of design exceptions that have been eliminated.~~ Description of the proposed Project elements that promote improved system functionality, improved quality and safety, increased life of Project elements, and reduced long-term maintenance. Description of the proposed design enhancements and reduction in risk, including a summary of proposed innovations Description to mitigate risks for the Bingham Creek culvert ~~Description that minimizes or eliminates schedule risks to the Department; include any commitments to provide Project schedule float on critical parcels. Provide milestones in the schedule for all right-of-way limitation dates.~~

TABLE ITP-A-1
OUTLINE FOR SUBMITTAL OF TECHNICAL PROPOSAL

Proposal Volume Section	*Volume and Section Titles and Required Information*
Sec. 3	**Third Party ~~coordination and minimization of risk~~** Description of the potential impacts to existing Third Party facilities and the proposed Third Party mitigation and relocation strategies including a summary of proposed innovations to avoid, or mitigate impacts to the Third Party facilities. Include a description of methods to mitigate risk to the Project from Third Party facility and utility relocations An approach to coordinating with the Jordan Valley Water Conservancy District (JVWCD) and USBOR for design and construction of Project elements within the USBOR aqueduct easement. 1. Include a description of the communication and construction strategies with JVWCD and the USBOR to obtain approvals for design and construction affecting the USBOR aqueduct Easement, including other impacts affecting the USBOR aqueduct Easement. ~~Description of the potential impacts to existing Third Party facilities and the proposed Third Party mitigation and relocation strategies including a summary of proposed innovations to avoid, or mitigate impacts to the Third Party facilities. Include a description of methods to mitigate risk to the Project from Third Party facility and utility relocations~~ Description of Third Party, Department, and Design-Builder communication and coordination that will facilitate scheduling of the Third Party Utility Work, coordinate the design and construction, and expedite the preparation of Supplemental Agreements.
VOL. 3	**Plan Sheets***
Sec. 1	**Maintenance of Traffic** MOT and construction sequencing and phasing Plan Pedestrian access plan
Sec. 2	**Design** Plan sheets, profiles, typical sections, situation and layout drawings strategy, and other details as necessary
Sec. 3	**Third Party** Matrix identifying Third Party impacts, relocations, and mitigation strategies Plans identifying potential impacts to Third Parties
VOL. 4	**ATC AND BUILD ALTERNATIVE INFORMATION**
Sec. 1	**Alternative Technical Concepts (ATC's)** Form ATC-S (Alternative Technical Concept Submittal) Department Approval letter with each Form ATC-S
Sec. 2	**Build Alternative** Summary of the Build Alternative
APP. A	**LEGAL AND FINANCIAL CONFIDENTIAL INFORMATION (PASS/FAIL)**
Sec. A.1	**Legal Confidential Information for Appendix A** Notarized Powers of Attorney; (if required) If consortium or joint venture, evidence of joint and severable liability; (if required) Organizational Documents (if Required)
Sec. A.2	**Financial Confidential Information for Appendix A** Financial Statements; CFO or Treasurer Letter Additional Financial Documents;
APP. B	**PASS/FAIL ELEMENTS**

REQUEST FOR PROPOSALS

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INSTRUCTIONS TO PROPOSERS
APPENDIX B:
PRICE PROPOSAL INSTRUCTIONS

Addendum ~~1~~2- ~~September~~ October ~~29~~6, 2016

Project Component	Start Milestone	Finish Milestone	Time Related Cost Rate (Dollars per Calendar Day)	Minimum Calendar Days	Maximum Calendar Days	Proposed Calendar Days
Project (Note 2)	March 6, 2017	Substantial Completion Deadline (See Note 1)	5,000	365	606	
5400 S Interchange	5400 South Interchange Start Date	5400 South Interchange Completion Date (See Note 1)	5,000	~~0~~115	606	
7000 S Interchange	7000 South Interchange Start Date	7000 South Interchange Completion Date (See Note 1)	10,000	~~0~~115	256	
9000 S Interchange	9000 South Interchange Start Date	9000 South Interchange Completion Date (See Note 1)	5,000	~~0~~115	606	
11400 S Interchange	11400 South Interchange Start Date	11400 South Interchange Completion Date (See Note 1)	7,500	~~0~~115	606	

Note 1: Refer to Part 2, Section 20 (Incentives, Disincentives, and Damages)
Note 2: Project Component includes all Work as defined in Part 1, Appendix A (Acronyms and Definitions List)

FORM KP: KEY PERSONNEL INFORMATION

Proposer: _____ **Sheet No.** ____ **of** ____ **Sheets**

Position	*Name*	*Education and Professional Registration*	*Parent Firm Name*
Project Manager			
Design Manager			
~~Utilities/Third-Party Manager~~			
Structures Design Manager			
Construction Manager			
Traffic Operations Manager			
Traffic Control Maintainer			
Third Party Manager			
Construction Quality Manager			

REQUEST FOR PROPOSALS

UTAH DEPARTMENT OF TRANSPORTATION

4 Interchanges on Bangerter HWY (SR-154)

Project No. S-0154(12)11

Salt Lake County

CONTRACT DOCUMENTS
PART 1—AGREEMENT

~~Final Issued~~Addendum 2 - ~~September~~ October ~~15~~6, 2016

B. 7000 South Interchange Start Date

This is defined in Part 1 Appendix A (Acronyms and Definitions List).

C. 9000 South Interchange Start Date

This is defined in Part 1 Appendix A (Acronyms and Definitions List).

D. 11400 South Interchange Start Date

This is defined in Part 1 Appendix A (Acronyms and Definitions List).

4.5.2 Completion Milestones

A. 5400 South Interchange Completion Date

The Design-Builder shall achieve 5400 South Interchange Completion Date within ____ consecutive Calendar Days from the 5400 South Interchange Start Date. This is defined in Part 1 Appendix A (Acronyms and Definitions List). 5400 South Interchange Completion Date must be achieved no later than the Substantial Completion Deadline.

B. 7000 South ~~S~~ Interchange Completion Date

The Design-Builder shall achieve 7000 South Interchange Completion Date within ____ consecutive Calendar Days from the 7000 South Interchange Start Date. 7000 South Interchange Completion must be achieved no later than November 17, 2017. This is defined in Part 1 Appendix A (Acronyms and Definitions List).

C. 9000 South Interchange Completion Date

The Design-Builder shall achieve 9000 South Interchange Completion Date within ____ consecutive Calendar Days from the 9000 South Interchange Start Date. This is defined in Part 1 Appendix A (Acronyms and Definitions List). 9000 South Interchange Completion Date must be achieved no later than the Substantial Completion Deadline.

D. 11400 South Interchange Completion Date

The Design-Builder shall achieve 11400 South Interchange Date within ____ consecutive Calendar Days from the 11400 South Interchange Start Date. This is defined in Part 1 Appendix A (Acronyms and Definitions List). 11400 South Interchange Completion Date must be achieved no later than the Substantial Completion Deadline.

5) COMPENSATION AND PAYMENT LIMITATION

5.1 Contract Amount

As full compensation for the Work and all other obligations to be performed by the Design-Builder under the Contract Documents, the Department will pay to the Design-Builder the lump sum amount of $_____ *[to be inserted from Design-Builder's Proposal]*. Such amount, as it may be adjusted from time to time to account for Change Orders, is referred to in the Contract Documents as the "Contract Amount." The Contract Amount may be increased or decreased only by a Change Order issued in accordance with Part 2, Sections 15 (Change Order Risk Allocation) and 16 (Changes in the Work) or by a Contract amendment. The Contract Amount includes the *[Base Build or the Base Build and the Build Alternative based on Project funding.]*

2. Definition of Terms and Phrases

Interpret the following phrases and capitalized terms used in the Contract as follows:

Term	*Meaning*
5400 South Interchange Start Date	The date Interchange Work begins on the 5400 South and Bangerter Interchange, excluding the Build Alternative (if exercised), demolition of homes identified in Part 4-14 (Right-of-Way), potholing, and geotechnical investigation. Also excluded is clearing, grubbing, and traffic control associated with the Rocky Mountain Power Utility Work. Work may not begin any earlier than March 6, 2017.
5400 South Interchange Completion Date	The date the 5400 South and Bangerter Highway Interchange is complete in accordance with the requirements defined in Part 2, Section 13.1.1.1 (Interchange Completion), excluding the Build Alternative (if exercised).
7000 South Interchange Start Date	The date Interchange Work begins on the 7000 South and Bangerter Interchange, excluding demolition of homes identified in Part 4-14 (Right-of-Way), potholing, and geotechnical investigation. Work may not begin any earlier than March 6, 2017.
7000 South Interchange Completion Date	The date the 7000 South and Bangerter Highway Interchange is complete in accordance with the requirements defined in Part 2, Section 13.1.1.1 (Interchange Completion)
9000 South Interchange Start Date	The date Interchange Work begins on the 9000 South and Bangerter Interchange, excluding demolition of homes identified in Part 4-14 (Right-of-Way), potholing, and geotechnical investigation. Also excluded is clearing, grubbing, and traffic control associated with the Rocky Mountain Power Utility Work. Work may not begin any earlier than March 6, 2017.
9000 South Interchange Completion Date	The date the 9000 South and Bangerter Highway Interchange is complete in accordance with the requirements defined in Part 2, Section 13.1.1.1 (Interchange Completion).
11400 South Interchange Start Date	The date Interchange Work begins on the 11400 South and Bangerter Interchange, excluding demolition of homes identified in Part 4-14 (Right-of-Way), potholing, and geotechnical investigation. Also excluded is clearing, grubbing, and traffic control associated with the Rocky Mountain Power Utility Work. Work may not begin any earlier than March 6, 2017.
11400 South Interchange Completion Date	The date the 11400 South and Bangerter Highway Interchange is complete in accordance with the requirements defined in Part 2, Section 13.1.1.1 (Interchange Completion).
Abandonment	After a Utility Company has decommissioned a Utility, the Work necessary for each Utility (including appurtenances) for a Utility that is not removed, using proper Utility Company and/or industry procedures (e.g., flushing, capping, filling with grout or sand) or other procedures Approved by the Department. Design-Builder is responsible to coordinate with the Utility Company when it is necessary for the Utility Company to be involved in the decommissioning of a Utility (including appurtenances).
Acceleration Cost	The meaning set forth in Part 2, Section 16.6.2 (Limitation on Acceleration Costs and Delay Damages).
Actual Cost	Design-Builder's direct Cost to provide labor, material, equipment (owned or invoiced rental), and administrative overhead necessary for the Work; excludes

Term	*Meaning*
Inspector	An authorized representative of the Department assigned to inspect Work and materials.
Instructions to Proposers (ITP)	The RFP Document identified as Instructions to Proposers.
Interchange Completion	As defined in Part 2, Section 13.1.1.1 (Interchange Completion)
Interchange Work	All duties and services to be furnished and provided by Design-Builder as required by the Contract Documents to construct an interchange, including construction Quality Control, Quality Assurance, Relocation, installation, supervision, testing, verification, labor, materials, equipment, documentation and other efforts necessary or appropriate to achieve Interchange Completion except for those efforts which the Contract Documents specify will be performed by the Department or other Persons. Interchange Work includes alterations, amendments, or extensions made by Change Order or other written orders of the Department.
Items of Archeological or Biological Significance	Historical, archaeological or paleontological objects, features, sites, human remains, or migratory avian species.
Key Personnel	The persons listed in Part 2, Section 8.8 (Key Personnel), subject to revision in accordance with Part 2 (General Provisions).
Law or Laws	Any statute, law, regulation, ordinance, rule, judgment, order, decree, permit, concession, grant, franchise, license, agreement, directive, guideline, policy requirement or other governmental restriction or any similar form of decision of or determination by, or any interpretation or administration of any of the foregoing by, any Governmental Body, which is applicable to or has jurisdiction over the Project or the Work, whether now or hereafter in effect. Herein, "Laws" does not include Governmental Approvals.
Lead Principal Participant	The person who is designated by the Design-Builder as having the lead responsibility for managing the Design-Builder's organization.
Lien	Any pledge, lien, security interest, mortgage, deed of trust or other charge or encumbrance of any kind, or any other type of preferential arrangement (including any agreement to give any of the foregoing, any conditional sale or other title retention agreement, any lease in the nature of a security instrument, and the filing of or agreement to file any financing statement or other instrument intended to perfect a security interest).
Liquidated Damages	As defined in Part 2, Section 20.3 (Liquidated Damages and Closure Disincentives).
Major Contractor	A principal participant, designer, subconsultant, or subcontractor responsible for performing more than 15 percent of the design, or subcontractor responsible for performing more than 20 percent of the Project or contract Work.
Master Utility Agreement	An initial agreement between the Department and any Utility Company that is affected by the Project, under which the parties set forth (1) scope and framework for accomplishing Utility relocations necessary for the Project; (2) allocation and responsibility for the design and construction work between the Design-Builder and the Utility Company; and (3) Utility Company's requirements, including, but not limited to, time frames and commitments for design, material acquisition, engineering review, and construction activities with respect to relocation work. Each Master Utility Agreement has specific terms that provide how the relocation work is paid for and by whom.
Necessary Project	A change to the Project Configuration that is necessary to meet the requirements

Term	*Meaning*
Standard Specifications	The Utah Department of Transportation 2012 Standard Specification for Road and Bridge Construction, including the 2012 Supplemental Specifications, as amended and as modified by Part 5 (Special Provisions and Exceptions).
Standards of the Industry	Practices, procedures, methods and standards that: (i) are consistent with current industry practices established for, or employed by, leading participants in the design, construction, operation, and maintenance industries; (ii) comply with applicable laws and applicable industry underwriters' and the fire and life safety codes and standards; and (iii) promote reliability, efficiency, safety and security. Standards of the Industry include taking reasonable steps to assure that sufficient personnel are employed and available to perform the work and that such personnel are adequately skilled, experienced, and trained to design, construct, install, operate, and maintain the work properly and efficiently, and that appropriate coordination, monitoring, and testing is performed to assure that all elements of the work are designed, constructed, and installed so as to function as required by the Contract Documents.
State	The State of Utah.
Statement of Qualifications (SOQ)	The Design-Builder's response to the Department's Request for Qualifications issued on September 17, 2015, as amended.
Structural Design Criteria Deviation Request	Structural Design Criteria Deviation Request template as defined in the SDDM.
Structural Design Criteria Deviation Acceptance	Structural Design Criteria Deviation Acceptance form as defined in the SDDM.
Subcontract	Any agreement entered into by the Design-Builder and one or more third parties providing for such third-party to perform any part of the Work or provide any materials, equipment, or supplies for any part of the Work, or any such agreement between a Subcontractor and its lower tier Subcontractor or a Supplier and its lower tier Supplier, at any tier.
Subcontractor	An individual or legal entity with whom the Design-Builder has entered into any Subcontract and any other Person with whom any Subcontractor has further subcontracted any part of the Work, at any tier.
Substantial Completion	As defined in Part 2, Section 13.2 (Substantial Completion)
Substantial Completion Deadline	The date set forth in Part 1, Section 4.4 (Completion Deadlines)
Substructure	All of the structure below the girders or main load carrying members of simple and continuous span bridges, including abutments, bent caps, columns, bents, footings, wingwalls, and skewbacks of arches.
Superintendent	The Design-Builder's authorized employee responsible for the construction field Work related to the Project.
Supplemental Agreement (or Supplemental Utility Agreement)	The vehicle for supplementing a Master Utility Agreement between the Department and a Utility Company to provide details for specific Utility relocations, including plans, cost estimates, schedules, and any other elements necessary to define the scope of work for a relocation.
Supplier	Any Person other than employees of the Design-Builder not performing Work at the site that supplies machinery, equipment, materials or systems to the

6.1.2. Changes in Utility Work

Increase in Work: Subject to the requirements of Section 15 (Change Order Risk Allocation) and Section 16 (Changes in the Work), the Department shall be responsible for additional costs, excluding Delay Damages, of Relocations of underground Utilities located within the ROW to be Relocated by the Design-Builder that are not indicated in Part ~~8~~ 7 (~~Engineering Data~~Contract Drawings) or are not indicated with Reasonable Accuracy in Part ~~8~~ 7 (~~Engineering Data~~Contract Drawings). The amount of any such Change Order shall be determined in accordance with Section 15 (Change Order Risk Allocation) and Section 16 (Changes in the Work).

Subject to the requirements of Section 15 (Change Order Risk Allocation) and Section 16 (Changes in the Work), the Design-Builder shall be entitled to an extension of any Completion Deadline on account of such lacking or inaccurate information regarding underground Utilities to be Relocated by the Design-Builder.

Notwithstanding the foregoing, the Design-Builder shall be responsible for the cost of Relocations of underground Utilities located within the ROW and shall not be entitled to an extension of a Completion Deadline whether or not they are identified by the Department in Part ~~8~~ 7 (~~Engineering Data~~Contract Drawings) if any one or more of the following applies:

A. A surface inspection of the area would have shown the existence or the likelihood of existence of such Utility (or portion thereof) in the correct location and/or size, as applicable, by reason of above-ground facilities such as buildings, meters or junction boxes or identifying markers;

B. Such Utility is a Service Line (or the portions of a Utility that are Service Lines); or

C. Any costs or delays incurred due to performance of Incidental Utility Work by the Design-Builder.

Partial Inaccuracies: If only a portion of an existing underground Utility to be Relocated by the Design-Builder is shown on the Utility drawing in Part ~~8~~ 7 (~~Engineering Data~~Contract Drawings), then a Change Order shall be allowed only for the resulting increased costs and extension of the Completion Deadlines associated with that portion of the Utility Work to be furnished or performed by the Design-Builder. If an existing underground Utility to be Relocated by the Design-Builder is not indicated at all in Part ~~8~~ 7 (~~Engineering Data~~Contract Drawings), then a Change Order shall be allowed only for the resulting increased costs of the additional Utility Work to be furnished or performed by the Design-Builder.

6.1.3. Change in Allocation of Responsibility Decreasing the Work

Any Utility Work initially included in the Work may be deleted from the Work pursuant to:

A. A Supplemental Agreement providing for the Utility Company to perform Utility Work otherwise assigned to the Design-Builder; or

B. Upon Approval or direction by the Department, Utility Work may be removed from the Work by Change Order without or prior to execution of a Supplemental Agreement.

The Department shall be entitled to a reduction in the Contract Amount to reflect any reduction in the Work pursuant to this Section 6.1.3. Any reduction in the scope of the Work pursuant to this Section 6.1.3 shall not be considered a Department-Directed Change.

REQUEST FOR PROPOSALS

UTAH DEPARTMENT OF TRANSPORTATION

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Project No. S-0154(12)11

Salt Lake County

CONTRACT DOCUMENTS

PART 4:
PROJECT DESIGN AND CONSTRUCTION REQUIREMENTS

Addendum ~~1~~ 2 - ~~September~~ October ~~29~~6, 2016

TABLE OF CONTENTS

Part 4 Sections

Submit for review a Conceptual Aesthetics and Landscape Design Package that addresses the items on the Conceptual Aesthetics and Landscape Design Checklist found in the Aesthetics Guidelines.

Incorporate any revisions or changes to the plan required by the Department and the UDOT Aesthetics Committee. Submit for Approval a Final Aesthetics and Landscape Design Package that includes all the interchanges and addresses the items on the Final Aesthetics and Landscape Design Checklist found in the Aesthetics Guidelines (Appendix D).

Allow a minimum of 30 Calendar Days for an Approval process involving the UDOT Aesthetics Committee. See Part 3 (Quality Program) for review times.

7C-2 Structures Aesthetics Criteria

Provide aesthetic treatments on bridge components, retaining walls, and noise walls. Provide structural aesthetic treatments as follows:

A. When designing the structures on the Project, the Department will require that the design priorities listed in Table 7C-2 (Design Guidelines for Structures Aesthetics Criteria) be followed when incorporating aesthetics into structural elements.

TABLE 7C - 2
DESIGN GUIDELINES FOR STRUCTURES AESTHETICS CRITERIA

Design Priority	*Structural Design Element or Feature*
1	Horizontal and Vertical Geometry
2	Superstructure Type and Shape
3	Bent Placement and Span Arrangement
4	Abutment Placement and Height
5	Bent, Girder, and Parapet Shape and Construction Material
6	Color and Texture of various Structural Elements
7	Ornamentation and Details

B. MSE Panel and Cast-in-Place Wall Treatments:

1. Use basalt texture form liners with a minimum 2” textural relief.

2. Apply Concrete Coating: FS 36492 tinted concrete sealer to all exposed surfaces. See Standard Specification 09981 (Concrete Coating).

C. Coping, Abutment and Wingwall Treatments:

1. Provide smooth concrete finish.

2. Apply Concrete Coating: FS 36492 tinted concrete sealer to all exposed surfaces. See Standard Specification 09981 (Concrete Coating).

D. Parapet Treatments:

1. Construct recessed windows with paired (top and bottom) concrete architectural dowel holes (maximum three foot on center spacing in recessed window insets). Provide smooth concrete finish on window frames and insets.

2. Apply Concrete Coating: FS 36492 tinted concrete sealer to all exposed surfaces. See Standard Specification 09981 (Concrete Coating).

~~2.~~3. If City Betterment Agreements specify to include city and/or street names on

parapets, see Part 4-17 (structures) for sign details.

E. Bridge Column Treatments:

1. If square, form columns with vertical recessed windows (one on each side of the column). Provide paired concrete architectural dowel holes in the recessed windows at a maximum four feet on center). Provide smooth textural finish.

2. If round, no recessed windows are required. Provide smooth concrete finish.

3. Apply Concrete Coating: FS 36492 tinted concrete sealer to all exposed surfaces. See Standard Specification 09981 (Concrete Coating).

F. Girder Color Treatments:

1. Concrete Girders: Apply FS 30109 tinted concrete sealer to exterior side of exterior girders and the bottom flange of all girders.

2. Steel Girders: Apply paint using FS 30109. See Standard Specification 09972 (Painting for Structural Steel).

G. Noise Wall Treatments:

1. Bangerter Highway Facing Side: Provide single panel with exposed aggregate treatment and one-foot wide smooth finish top cap (Refer to UDOT Standard Drawing SW 6).

2. Non-Bangerter Highway Facing Side: Provide single panel with 'Ashlar' texture pattern (one-inch relief) and one-foot wide smooth finish top cap (Refer to UDOT Standard Drawing SW 6). Where tying into existing panels continue exposed aggregate wall to the property boundary. Use a single texture within the limits of a parcel.

H. Pedestrian Bridge Treatments:

1. Steel Truss Girders: Apply paint using FS 30109. See Standard Specification 09972 (Painting for Structural Steel).

2. Concrete Columns:

a) If square, form columns with vertical recessed windows (one on each side of the column). Provide paired concrete architectural dowel holes in the recessed windows at a maximum 3-foot on center spacing). Provide smooth textural finish.

b) If round, no recessed windows are required. Provide smooth concrete finish.

c) Apply Concrete Coating: FS 36492 tinted concrete sealer to all exposed surfaces. See Standard Specification 09981 (Concrete Coating).

7C-3 Monument Features and City Logos

Any proposal or request by local municipalities to incorporate a city monument feature or logo into the Project will be required to follow UDOT Placement of Monument Features and City Logo Panels on State Highways Policy (08A-02) and the Monument Feature and City Logo Panel Design Guidelines.

component is working. Take whatever actions are necessary to protect the public from any nonfunctioning component of Work until the corrections are completed. Within 24 hours of any safety-related issue, provide the Department with correspondence detailing the safety issue(s) and the resolution.

Non-Safety-Related: Respond to a reported nonfunctioning component of Work that is not safety-related (for example, signal interconnect outage to an intersection or an inoperable video camera) within 24 hours of notification of the problem. Return the component to working condition within 48 hours of such notification.

When a problem affects an entire subsystem (e.g., all detection, all video, or all devices in a specific area), respond within four hours of problem notification and work continuously until the problem has been corrected.

9C-13 Maintenance of N/A Line

In locations where the existing N/A fence is temporarily removed, maintain a temporary N/A fence at all times. The temporary N/A fence shall be chain link and a minimum of six feet in height.

9C-14 Documentation

Maintain an electronic log of all maintenance and repair response activities performed during the Project and include, at a minimum, the following information:

A. Date and time the problem was reported

B. Entity reporting the problem

C. Description of the reported problem

D. Arrival time of maintenance or repair worker(s) at the problem site

E. Technician(s) performing repair or replacement

F. Corrective action(s) taken

G. Model and serial number of component(s) repaired or replaced

H. Date and time problem was rectified

For ATMS, signs, and signals, keep the log on the Department's TOC-supplied work order management system. For maintenance and repair activities at ATMS cabinets, update the maintenance log book at each cabinet.

and during the closure

D. A detailed description of the closure including duration, date(s), need for the closure, construction activities to occur, etc.
E. Lane and shoulder widths modifications, if applicable
F. Locations, and limits of varying cross section, if applicable

~~For each request for a Storage Length Reduction during MOT Peak Periods, submit a traffic analysis to demonstrate the level of impact anticipated during peak hours.~~

The Department may revoke Approval of any closure due to significant weather events or other unanticipated civic events at the Department's sole discretion.

10C-12.2 Notifications

Provide notification of each closure or modification to the Traveled Way as follows:

A. Once a Request for Closure has been Approved, notify the Department a minimum of:
   1. 21 Calendar Days in advance of implementing a Full Closure,
   2. 14 Calendar Days in advance of implementing a Partial Closure, or Storage Length Reduction during MOT Peak Periods,
   3. 5 Calendar Days in advance of implementing a Partial Closure or Storage Length Reduction during MOT Off-Peak Periods, or
   4. Sooner if otherwise required by permit.
B. Notify the Department 7 Calendar Days prior to implementing lane shifts.
C. Notify ports of entry (Troy Richins at troyrichins@utah.gov; carbon copy the Design-Builder's Public Involvement Manager) of any lane restrictions (including reduced lane widths) for oversized loads and of any closures associated with this Project at least 14 Calendar Days in advance of the closure or lane restrictions.
D. Provide advanced notification to the Department of any upcoming lane closure cancelation at least 24 hours prior to the original start date of the closure.
E. Provide real-time notification of every lane closure and subsequent lane opening on Bangerter Highway (SR-154) to the Department's TOC at 801-887-3700.
   1. Lane Closure: Notify the TOC within 10 minutes before placing the first traffic control device in the travel lane.
   2. Lane Opening: Notify the TOC within 10 minutes after removing the last traffic control device in the lane.
F. Provide five Calendar Days notice before starting night work.
G. Each Closure Notification shall include:
   1. The specific location and limits of the closure (route number, street name, the beginning and ending mile point, inside vs. outside lanes, direction of closure, etc.)
   2. The number of lanes to be closed
   3. The date and time of the beginning of the closure

Movement in each direction is permitted for up to 60 consecutive days. Full Closures of 4015 West are not permitted. Provide a minimum storage length measured from the taper to the stop bar (not including the required taper length) for the following turn lanes associated with the 5400 South and 4015 West intersection:

A. Southbound right: 150 feet

B. Southbound left (at thru-turn intersection to the south): 300 feet

C. Eastbound right: 180 feet

D. Northbound right: Maintain the continuous auxiliary lane between the thru-turn intersection to the south of 5400 South

E. Northbound left (at thru-turn intersection to the north): 250 feet

F. Westbound right: 180 feet

G. Westbound left (at thru-turn intersection to the west): 250 feet

10C-12.9 11700 South

Full Closures on 11700 South will not be permitted during MOT Peak Periods as defined in Table 10C-5 or from 9:00 PM Friday night through 1:00 AM Sunday morning.

10C-13 MOT Inspection & Quality

Perform daily MOT inspection reports in accordance with UDOT Standard Specification Section 01554 and submit these reports to the Department on a weekly basis.

Correct all traffic control deficiencies upon notification or observance of the deficiency within 1 hour of notice or observation.

10C-14 MOT Disincentives

Price reductions for nonconformance of traffic control on Bangerter Highway (SR-154) and Cross Streets are assessed according to Part 5 (Special Provisions and Exceptions) Table 5-1 (Unit Prices For Determining Pay Adjustments For Nonconforming Work).

The Design-Builder is responsible for ensuring that the traffic control and the number of lanes provided for the traveling public are returned to the required state in accordance with the timeframes defined in Tables 10C-1 through 10C-5. If not, a disincentive in the amount as shown in Table 10C-11 (MOT Closure Summary and Associated Disincentive) will be assessed for non-compliance with the time periods above. The disincentives will be assessed in the amount of twenty-five percent of the hourly disincentive shown in Table 10C-11 (MOT Closure Summary and Associated Disincentive) for every 15 minute period in which the closure is in place beyond the timeframe that is allowed or Approved. If the closure is in place for any portion of a 15 minute period that has not been allowed or Approved, the disincentive will be assessed in full for that 15 minute period.

For nonconformance regarding flagging or Rolling Slowdowns such nonconformance will be deemed as a Partial Closure of the Movement where the nonconformance occurred and a Disincentive will be assessed in the amount as shown in Table 10C-11 (MOT Closure Summary and Associated Disincentives).

These Disincentives are separate from the non-conformance traffic control pay adjustment in Part 5 (Special Provisions and Exceptions) Table 5-1 (Unit Prices For Determining Pay Adjustments for

Attachment 14-A: Right-of-Way Schedule

5400 South Interchange

Parcel No.	*Owner Name*	*Property Address*	*Demolition*	*Committed Clearance Date*
716	CHAVEZ, KRIS S	3661 W 5695 S	N/A	April 1, 2017
718	SONG, DOOHYUN K	3676 W 5695 S	N/A	April 16, 2017
720	LUNA, JORGE	3670 W 5695 S	N/A	April 1, 2017
722	LOVEDAY, CLINT & CARYN; JT	3671 W 5650 S	Department	NTP
724	LOVEDAY, KENNETH L & DARLENE N; JT	3677 W 5650 S	Department	NTP
726	FISHER, GARY & MALISSA; JT	3674 W 5650 S	Department	NTP
728	CRANE, DAVID L & KATHY M (JT)	3687 W WHITEWOOD CT	Department	NTP
728B	Schytler		N/A	NTP
730	SAWYER, ROBERT H; TR (RHS TR)	3688 W WHITEWOOD CT	Department	NTP
732	BLANK, CATHY L	3686 W WHITEWOOD CT	Department	NTP
734	MONTOYA, SONDRA C	3695 W ALVERON DR	Department	NTP
736	ALMEIDA, JESSICA A D S	5580 S ALVERON DR	Department	NTP
738	SMITH, STEWART	5568 S ALVERON DR	Department	NTP
740	WILLIS, KILEY	5556 S ALVERON DR	Department	NTP
743	FPA WEST POINT LLC	3835-3849 W 5400 S		
744	SEARLE, DOUGLAS E & MONA L; JT	5544 S ALVERON DR	Department	NTP
745	STEELE, KENT H & KAREN S (JT)	5532 S ALVERON DR	Department	NTP
746	BEAMON, JAMES E & CHALLI R; JT	5520 S ALVERON DR	Design-Builder	September 8, 2017
747	ROWLEY, RUSSELL J & KATHLEEN L (JT)	5512 S ALVERON DR	Design-Builder	September 5, 2017
748	HEFFRON, HOLLY	5498 S ALVERON DR	Department	NTP
749	HETRICK, MOLLY A	5490 S ALVERON DR	Department	NTP
750	HARRIS, JEREMY T	5480 S ALVERON DR	Department	NTP

751	THIEM, THIEN M & VU, LUAN B; JT	5472 S ALVERON DR	Department	NTP
752	LECHTENBERG, DANNY & ANAST, VALARIE C; JT	5462 S ALVERON DR	Department	NTP
753	GREMAR LLC	3815 W 5400 S	N/A	June 7, 2017
754	SOUKPHOUANGHAM, PATRICIA M	3740 W CHRISTYANN DR	N/A	NTP
754B	PADILLA, LARRY AND JANELLE	3736 W CHRISTYANN DR	Department	NTP
774	SUN DEVELOPMENT LP	3812 W 5400 S		
775	FPA WEST POINT LLC	3855-3879 W 5400 S	N/A	June 7, 2017
776	SJ, LLC	3770 W 5400 S	Design-Builder	May 31, 2017
777	M S C INC	3765 W 5400 S	Department	NTP
777B	COUNTY OF SALT LAKE	3738 W CHRISTYANN DR.	Department	NTP
778	21ST STREET PROPERTIES, LLC	3762 W 5400 S	N/A	July1, 2017
779	GUBLER PROPERTIES, LLC	3725 W 5400 S	N/A	April 14, 2017
~~780~~	~~21ST STREET PROPERTIES, LLC~~	~~3712 W 5400 S~~	~~N/A~~	~~July 1, 2017~~
781	IVERSON FAMILY INVESTMENTS LLC	3705 W 5400 S	N/A	April 14, 2017
783	REDWOOD EQUITY PARTNERS	3685 W 5400 S	N/A	April 14, 2017
~~784~~	~~21ST STREET PROPERTIES LLC~~	~~3692 W 5400 S~~	~~N/A~~	~~July 1, 2017~~
~~785~~	~~HALLE PROPERTIES LLC~~	~~3665 W 5400 S~~	~~N/A~~	~~April 14, 2017~~
~~786~~	~~BURT, BRAD L & CARLEEN D; JT~~	~~3684 W 5400 S~~	~~N/A~~	~~April 14, 2017~~
798	SU CASA MULBERRY, LLC	5287 S DEWBERRY LN	N/A	May 26, 2017
806	MILLER, PAUL	5262 S 3760 W	Department	NTP
808	GRUNDVIG, NICHOLAS C & JUELEE V; JT	5256 S 3760 W	Department	NTP
810	WHITING, ERIC J & VICKIE L; JT	5244 S 3760 W	Department	NTP
812	ROULEAU, WILLIAM F	5238 S 3760 W	Department	NTP

	JR & JEAN M; JT			
814	CHATTERTON PROPERTIES LLC	5228 S 3760 W	Department	NTP
816	HIGBY, LACIE & TROY; JT	5218 S 3760 W	Department	NTP
818	LAM, HOANG M & KIM NGAN S; TC	5208 S 3760 W	Department	NTP
819	WHITTED, DEBORAH L	5198 S 3760 W	Department	NTP
820	PRINSTON PROPERTIES, L.L.C.	5198 S 3760 W	Department	NTP
821	SORENSEN, BEN & JACQUELLE; JT	5178 S 3760 W	Department	NTP
822	HALATOA, KILIFI & BROWN, SALOTE	5168 S 3760 W	Department	NTP
823	BAILEY, KATHLEEN A	5160 S 3760 W	N/A	July 14, 2017
824	CHRISTENSON, BERT	5150 S 3760 W	N/A	July 14, 2017
825	ATTERMANN, SHARON J; TR (SJA REV TR)	5140 S 3760 W	N/A	July 14, 2017
826	GREER, DENNIS J & BLIGHT-GREER,KAREN E;	5128 S 3760 W	N/A	July 14, 2017
828	MALMSTROM, CHARLES & JOHNSON, ERICA H; JT	5116 S 3760 W	N/A	July 14, 2017
829	KOEHLER, DALLAS	5106 S 3760 W	N/A	July 14, 2017
830	STRUM, GREGORY W	5096 S 3760 W	N/A	July 14, 2017
831	JENSEN, MICHAEL R	5086 S 3760 W	N/A	July 14, 2017
832	BRIONES, GABINO H	5074 S 3760 W	N/A	July 14, 2017
833	HUDSON, JOHN G	5064 S 3760 W	N/A	July 14, 2017
834	BUCHANAN	5056 S 3760 W		

~~553~~	~~6D HOLDINGS TRUST; ET AL DANA K; TC~~	~~6977 S DIXIE DR~~	~~N/A~~	~~May 19, 2017~~
554	GOSS, EMILY A; ET AL	6968 S 3535 W	Department	NTP
556	ANDREWS, ROBERT L & TERRIE L; JT	6954 S 3535 W	Department	NTP
558	DUPAIX, JOSEPH H & ALICE S	6944 S 3535 W	N/A	NTP
560	PEARSON, ERIC N & SHALISE L; JT	6932 S 3535 W	N/A	NTP
562	DEARING, RYAN C & KRISTI; JT	6922 S 3535 W	Design-Builder	May 19, 2017
564	ANDREWS, STEVEN D & KATHERINE E; JT	6912 S 3535 W	N/A	May 19, 2017
565	BADER, TERRY	6919 S DIXIE DR	Design-Builder	May 19, 2017
566	PETERSON, MARK W & MEGAN D; JT	6900 S 3535 W	N/A	NTP
568	BLANCO, HEIDDY C	6890 S 3535 W	N/A	NTP
570	MADSEN, JOHN G & SHARILYN; JT	6880 S 3535 W	N/A	NTP
572	DOCKSTADER, MAX L & LISA M; JT	6868 S 3535 W	N/A	NTP
574	FERGUSON, WILLIAM S & SHERRI S	6858 S 3535 W	N/A	NTP
576	BARROWS, STEWART G	6848 S 3535 W	N/A	NTP
578	KLEPACZ, MATTHEW A & NICOLE L; JT	6836 S 3535 W	N/A	NTP
580	GIFFORD, QUINTEN	6826 S 3535 W	N/A	NTP
582	CANNING, DENNIS L & KATHLEEN M	3538 W 6825 S	N/A	NTP
588	CORP OF PB OF CH JC OF LDS	6780 S 3420 W	N/A	NTP
596	CITY OF WEST JORDAN	6778 S 3420 W	N/A	NTP

9000 South Interchange

Parcel No.	*Owner Name*	*Property Address*	*Demolition*	*Committed Clearance Date*
~~330~~	~~AMERICAN HOMES 4 RENT PROPERTIES FIVE, LLC~~	~~9379 S NEW HERITAGE DR~~	~~N/A~~	~~May 1, 2017~~
331	BRUSCH, DUSTIN	9367 S NEW HERITAGE DR	N/A	May 1, 2017
332	NEWMAN, NATHAN L	9351 S NEW HERITAGE DR	N/A	May 1, 2017
333	ERDMANN, KYLE M & AMANDA JEAN; JT	9339 S NEW HERITAGE DR	Department	NTP
334	LEITER, JASON	9327 S NEW HERITAGE DR	N/A	May 1, 2017
335	BLACKMER, BENN W & JANICE L; TC	9313 S NEW HERITAGE DR	N/A	May 1, 2017
~~336~~	~~SALT LAKE COMMUNITY COLLEGE~~	~~9301 S WIGHTS FORT RD~~	~~N/A~~	~~May 1, 2017~~
337	CARTER, WILLIS, TR; ET AL	9301 S NEW HERITAGE DR	N/A	May 1, 2017
338	PEREZ, OLEGARIO	9287 S NEW HERITAGE DR	Department	NTP
339	HUYNH, HOA K	9275 S NEW HERITAGE DR	Design-Builder	March 3, 2017
340	LARSEN, JARED R & JAMIE R; JT	9261 S NEW HERITAGE DR	Department	NTP
341	DENNIS, ADRIAN	9249 S NEW HERITAGE DR	Department	NTP
342	JOHNSON, JEROD G & STEPHANIE J; JT	9235 S NEW HERITAGE DR	Department	NTP
343	HILL, BRIDGER W & BRANDI A; JT	9223 S NEW HERITAGE DR	Department	NTP
344	CRAIG, SCOTT M & AUBREY L; JT	9209 S NEW HERITAGE DR	Department	NTP
345	ROSALES, JAMIE L & MERRILL, MAUREEN W; JT	9197 S NEW HERITAGE DR	Department	NTP
347	PEZELY, FRANCO P & SANDI M; JT	9185 S NEW HERITAGE DR	Department	NTP
348	TOSTADO, HUMBERTO F & MARIA A; JT	9173 S NEW HERITAGE DR	Department	NTP
349	SESE, PATRICIA C	9161 S NEW HERITAGE DR	Department	NTP

350	SPENCER, SUSAN	9149 S NEW HERITAGE DR	Department	NTP
351	RUSSELL, DEANNE T & JEFFERY R; JT	9137 S NEW HERITAGE DR	Department	NTP
352	BENKOVSKIY, ALEKSANDR L & YELENA B; JT	9125 S NEW HERITAGE DR	Department	NTP
353	GARRARD, MICHAEL J & ANGELA S; JT	3642 W VISTA WEST DR	Design-Builder	March 24, 2017
355	CITY OF WEST JORDAN	9098 S WINTHROPE DR	N/A	NTP
356	MILLER, TYLER & ANNE; JT	3657 W WINTHROPE CIR	Department	NTP
358	GEDICKS, CHRISTOPHER W & KELLY L; JT	3659 W WINTHROPE CIR	N/A	May 19, 2017
368	Jordan Health Properties	3706 W 9000 S	N/A	June 23, 1017
370	Baeza, SALVADOR	9012 S WINTHROPE DR	N/A	June 23, 1017
371	Weenig, DAVID R & CYNTHIA B; JT	3680 W 9000 S	N/A	June 23, 1017
373	Baker, JOHN P & CAROLYN; TRS (J&CB TR	9013 S WINTHROPE DR	N/A	June 23, 1017
375	Utah Department of Transportation~~Deniro~~	3660 W 9000 S	N/A	NTP
376	LARSEN, STEVEN L & LINDA L	3666 W WINTHROPE CIR	Department	June 23, 1017
377	WEST JORDAN CITY	3695 W 9035 S		
378	LARSEN, RICHARD J	3655 W WINTHROPE CIR	Department	NTP
380	Utah Department of Transportation ~~DENIRO REICHMAN, DAWNDI~~	3644 W 9000 S	N/A	NTP
381	UNITED STATES OF AMERICA	3596 W 9000 S	N/A	March 17, 2017
385	JORDAN VALLEY MEDICAL CENTER LP	3580 W 9000 S		
386	DEASON, HENRY H & MAYE W; JT	8871 S 3680 W	N/A	March 17, 2017
387	KELLY, JASON P & JESSICA A; JT	3647 W 8850 S	Department	NTP

388	STOLL, CALLIE H	8845 S 3645 W	Department	NTP
389	BESSEY, BARRY M & AUTUMN G; JT	8833 S 3645 W	Department	NTP
390	MARKUS, KURT W & MARILYN J (JT)	8821 S 3645 W	Department	NTP
391	HANSEN, BUDDY & WHITNEY; JT	8809 S 3645 W	Department	NTP
392	RESTORE UTAH PROPERTY I LLC	8795 S 3645 W	Department	NTP
393	BUTTON, TREVA P	8783 S 3645 W	Department	NTP
395	BENTLEY, CLIFFORD & DANA; JT	8769 S 3645 W	Design-Builder	March 31, 2017
396	DANISE, BRETT A & KELLY A; JT	8757 S 3645 W	Design-Builder	March 31, 2017
397	DUARTE, MARCOS	8745 S 3645 W	Department	NTP
~~398~~	~~BEHUNIN, SETH & ANJANETTE; TC~~	~~3638 W VALLEYWEST DR~~	~~N/A~~	~~March 17, 2017~~
~~404~~	~~UTAH TRANSIT AUTHORITY~~	~~8632 S 3320 W~~	~~N/A~~	~~May 1, 2017~~

11400 South Interchange

Parcel No.	*Owner Name*	*Property Address*	*Demolition*	*Committed Clearance Date*
121	South Jordan City		N/A	July 7, 2017
121B	SJ Marketplace LLC		N/A	July 7, 2017
122B	IREIT SOUTH JORDAN OQUIRRH MOUNTAIN LLC	11501 S 4000 W		
123	District	11494 S DISTRICT DR	N/A	July 7, 2017
~~124~~			~~N/A~~	~~July 7, 2017~~
126B	NATIONAL RETAIL PROPERTIES LP	11509 S 4000 W		
128	South Jordan City		N/A	July 7, 2017
138	IREIT SOUTH JORDAN OQUIRRH MOUNTAIN LLC	11501 S 4000 W	N/A	July 7, 2017
138B	IREIT	11501 S 4000 W		
138D	FAIME LLC	11499 S 400 W		
~~140~~	~~DISTRICT LC~~	~~11422 S DISTRICT DR~~	~~N/A~~	~~July 7, 2017~~
~~141~~	~~DISTRICT LC~~	~~11426 S DISTRICT DR~~	~~N/A~~	~~July 7, 2017~~
142	THE DISTRICT-NORTH LC	11364 S RIVER HEIGHTS DR	N/A	July 7, 2017
~~143~~	~~DISTRICT LC~~	~~11428 S DISTRICT DR~~	~~N/A~~	~~July 7, 2017~~
~~144~~	~~THE DISTRICT-NORTH LC~~	~~11374 S RIVER HEIGHTS DR~~	~~N/A~~	~~July 7, 2017~~
~~145~~	~~DISTRICT LC~~	~~11432 S DISTRICT DR~~	~~N/A~~	~~July 7, 2017~~
~~147~~	~~DISTRICT LC~~	~~11426 S PARKWAY PLAZA DR~~	~~N/A~~	~~July 7, 2017~~
151	SOUTH JORDAN W, LLC	3754 W 11400 S	N/A	July 7, 2017
~~152~~	~~DISTRICT LC~~	~~11453 S PARKWAY PLAZA DR~~	~~N/A~~	~~July 7, 2017~~
153	7-11~~DISTRICT PROPERTIES INVESTMENTS, LLC~~	3668 W 11400 S	N/A	July 7, 2017
153B	DISTRICT PROPERTIES INVESTMENTS, LLC	3668 W 11400 S		
153D	UTAH FIRST FEDERAL CREDIT UNION	3642 W 11400 S		
154	JORDAN HEIGHTS HOA, INC	11291 S TIPPECANOE WY	N/A	July 7, 2017

154B	SOUTH JORDAN CITY	3776 W 11400 S		
155	DISTRICT-NORTH II LLC, THE	11332 S RIVER HEIGHTS DR	N/A	July 7, 2017
156	WB II LAND INVESTMENT LC; ET AL	11248 S RIVER HEIGHTS DR	N/A	July 7, 2017
157	BARBER, MELISSA K	11281 S TIPPECANOE WY	Department	NTP
158	COBURN, YUNG	11273 S TIPPECANOE WY	N/A	NTP
159	LUCERO, PATRICK JR.	11263 S TIPPECANOE WY	Design-Builder	May 12, 2017
160	BURTON, CHARLES E & KRISTA A; JT	11253 S TIPPECANOE WY	Department	NTP
161	RICHES, BRADLEY M & ASHLEY R; JT	11243 S TIPPECANOE WY	Department	NTP
162	PECK, NICHOLAS	11233 S TIPPECANOE WY	Department	NTP
162B	NYO INVESTMENTS, LLC	11160 S RIVER HEIGHTS DRIVE		
163	SEENAPPA, CHANDRASHEKAR & VESARAPU, RAMYA; JT	11227 S TIPPECANOE WY	Department	NTP
164	LUNDQUIST, DALLAS & ANGELA; JT	11217 S TIPPECANOE WY	Department	NTP
165	PILLEY, JAMES R & VANESSA L; JT	11209 S TIPPECANOE WY	Department	NTP
166	FOSTER, DENNIS K	11199 S TIPPECANOE WY	Department	NTP
166B	DISTRICT HOTEL PARTNERS, LLC	11220 S RIVER HEIGHTS DRIVE		
167	DUONG, BAO H & DIEU, QUYNH M; TC	11191 S TIPPECANOE WY	N/A	NTP
168	THATCHER, REED & GLORIA; JT	11181 S TIPPECANOE WY	Department	NTP
169	KROGH, ASHLEY	11173 S TIPPECANOE WY	Department	NTP
170	KFJ PARTNERSHIP	11163 S TIPPECANOE WY		NTP
171	YATES, WALTER G & MICHELLE L; JT	11157 S TIPPECANOE WY	Department	NTP
172	MIRANDA, ELVIS R & MELVA R; JT	11147 S TIPPECANOE WY	Department	NTP

173	ISON, JOHN N & KIMBERLY; JT	11141 S TIPPECANOE WY	Department	NTP
174	CARNESECCA, ZACHARY C & NATALIE M; JT	11137 S TIPPECANOE WY	N/A	NTP
175	BECKER, MERCEDES	11123 S TIPPECANOE WY	N/A	NTP
176	PIZZO, STEPHEN G & SMITH-PIZZO, VICTORIA A; JT	11117 S TIPPECANOE WY	N/A	NTP
177	HANSEN, JACOB & BOBBI	11109 S TIPPECANOE WY	N/A	July 7, 2017
~~178~~	~~CONNELL, CHRIS & AMIEE; JT~~	~~11103 S TIPPECANOE WY~~	~~N/A~~	~~July 7, 2017~~
~~179~~	~~DUNCAN, JAMES EDWARD; TR (2011 D REV TR)~~	~~11093 S TIPPECANOE WY~~	~~N/A~~	~~July 7, 2017~~
~~180~~	~~WB II LAND INVESTMENT LC; ET AL~~	~~11164 S RIVER HEIGHTS DR~~	~~N/A~~	~~July 7, 2017~~
~~181~~	~~HUNTER, JACQUELINE~~	~~11087 S TIPPECANOE WY~~	~~N/A~~	~~July 7, 2017~~
193	DISTRICT HEIGHTS VILLAGE	11104 S RIVER HEIGHTS DRIVE	N/A	July 7, 2017

Build Alternative – 4015 West

Parcel No.	*Owner Name*	*Property Address*	*Demolition*	*Committed Clearance Date*
755	KEARNS PROPERTY COMPANY, LLC	4095 W 5415 S	N/A	TBD
755B			N/A	TBD
756	CHINN S U LLC	4040 W 5415 S	N/A	TBD
756B			N/A	TBD
757	EARLY HOLDINGS, LLC	5419 S 4015 W	N/A	TBD
757B			N/A	TBD
758	K-#3, L L C	3988 W 5400 S	N/A	TBD
758B	Parrish	5385 S 4015 W	N/A	TBD
760	K-#3, L L C	3970 W 5400 S	N/A	TBD
762	K ASSOCIATES, ET AL	3940 W 5400 S	N/A	TBD

A. For all single lane turning movements, an AASHTO WB-67 design vehicle must be able to turn from turning lane to receiving lane with its wheels entirely on lane, gutter pan or shoulder pavement.

B. For all multiple lane turning movements, an AASHTO WB-67 design vehicle wheels must stay within the outside lane, gutter pan and shoulder pavement without crossing the inside lane line. For the inside lane, AASHTO WB-50 must be used.

For all other turning movements use an AASHTO WB-50 design vehicle for all lanes of all turning movements.

For the design of a cul-de-sac when existing cul-de-sacs are modified or new ones are created on City streets use an AASHTO City Bus design vehicle and the respective City standard requirements for all turning movements.

15C-7 On-Ramps

Provide pavement to accommodate future ramp meters on all on-ramps. Provide a minimum of three lanes on all on-ramps from the ramp terminal to the stop bar without impacting cross-street traffic or pedestrian movements for 5400 South~~,~~ and 7000 South ~~and 9000 South~~. Provide a minimum of three lanes on the northbound on-ramp from the ramp terminal to the stop bar without impacting the cross-street or pedestrian movements at 9000 South. Provide a minimum of three lanes on the southbound on-ramp at the ramp terminal with two lanes at the stop bar without impacting cross-street traffic or pedestrian movements at 9000 South. Provide a minimum of ~~two~~ three lanes on all on-ramps ~~from~~ at the ramp terminal with two lanes at~~to~~ the stop bar without impacting cross-street traffic or pedestrian movements at 11400 South.

Use a minimum 300-foot taper for each lane drop on each on-ramp except for approved deviations in the appendix to this Section.

Provide the following ramp storage lengths from the cross street curb return to the ramp meter stop bar and ramp lengths between end of taper to beginning of taper (lengths in Table 15C-1 (On-Ramp Lengths) do not include taper lengths):

TABLE 15C-1
ON-RAMP LENGTHS

Ramp	*Required Ramp Meter Storage Length (Lane-Feet)*	*Desired Ramp Meter Storage Length (Lane-Feet)*	*Length of two lane section between tapers (Feet)*	*Length of one lane section between tapers (Feet)*
5400 South				
Southbound	3,000	4,100	300	300
Northbound	1,200	1,200	300	300
7000 South				
Southbound	1,875	1,875	300	300
Northbound	900	900	300	300
9000 South				
Southbound	2,400	2,400	300	300

15C-17 Fencing

Provide new 6-foot chain link fence type III, within the pavement reconstruction limits along Bangerter Highway (SR-154) and at each cross street along the No-Access line. Replace any fence damaged or removed for construction activities with new fence of the same size and type.

For all other roadways, provide new fence along each parcel that currently has fencing with the same type and size. Obtain permission from the property owner(s) for elimination of fencing.

Fencing is not required along the No-Access line where noise walls are required. Install a gate if there is an existing gap for access to the noise wall.

Connect existing fence into the new noise wall locations, match the existing fence type.

15C-18 Maintenance Access Zone

Provide a continuous 10-foot-wide maintenance access zone between the ROW fencing and the face of retaining wall or between the ROW fencing and the toe of any slope greater than 4:1 (H:V). Limit the slope of the maintenance access zone to less than 4:1 (H:V). Limit the slope of the maintenance access zone to less than 4:1 (H:V). Allowable d~~D~~eviations from maintenance access requirements are shown in the Right of Plans in Part 7 (Contract Drawings)~~not permitted at the bottom of walls retaining the roadway~~. During design development, provide a description of areas that deviate from the maintenance access requirement that includes length, width, location, point of access and distance from point of access. Provide 12-foot-wide gates in the ROW fence and a drivable transition between the local street network and each segment of the maintenance access zone. Do not place above-grade appurtenances, including ATMS cabinets, sign structures, lighting supports, trees, shrubs, walls, drainage features or structures, within the maintenance access zone.

9000 South

Provide access from the northbound off ramp to the existing driveways for the USBOR Aqueduct Easement.

15C-19 Snow Storage Area

Provide a minimum 5-foot-wide area that can be used for snow storage between roadway barriers and noise walls. Include drainage of this area in the design and construction of drainage facilities.

15C-20 Walls

Provide noise walls in accordance with Right of Way Drawings in Part 7 (Contract Drawings). Reconstruction of noise walls is limited to the wall that is impacted by the Project.

Provide 1 foot between the face of noise wall, retaining noise wall to the N/A line.

15C-21 Survey

Perform any survey necessary to complete the Work. Survey and confirm the location, accuracy, and datum of all information provided, regardless of the source of the information. Existing horizontal and vertical survey control is provided in Part 7 (Contract Drawings).

Provide a statement before beginning design indicating all Department-provided horizontal and vertical control has been field checked and the control has been determined to be accurate within the tolerances specified in the UDOT Survey & Geomatics Standards which can be found at

support conditions necessitated by the chosen method of moving the bridge. Specify the maximum anticipated and maximum allowable deflections for all stages of construction.

C. **Bridge Movement System:** When transporting the bridge using SPMTs, include a 10 percent contingency factor for loss of support or function of individual axles.

D. **Placement Tolerances:** As shown on the RFC plans.

E. **Utility Agreements and Mitigation Plans:** Obtain and provide written agreements to cross all affected above- and below-ground Utilities. Include in each agreement a plan to mitigate Utility issues via partial shut-down of Utility, complete shut-down of Utility, redistribution of load, etc.

17B-3 Bridges

17B-3.1 Bridge Geometry

A. **Geometric Layout (including Cut-and-Fill Slopes and Retaining Walls):**

1. Modifications from the RFP and the design provided as Reference Documents for the following structure geometrics require Approval:

   a. Horizontal alignment shift greater than five feet;

   b. Increasing structure skew greater than five degrees;

   c. Span configuration (number of spans and/or span length proportions);

   d. Locations of retaining walls relative to the abutments and wingwalls including changes to the abutment type or shape.

   e. Deck Slope:

      a. Evaluate the potential for ponding due to flat profiles and residual camber or long-term deflections. Adjust the profile to prevent ponding.

      b. Do not place the low point of profile on the bridge. See 17B-2.4 (Prestressed Girders) and Part 4-15 (Roadways) for additional requirements.

      c. See Part 4-04 (Drainage) for additional ~~deck~~ bridge drainage system requirements.

      d. Do not use deck drains.

B. **Vertical Clearances:** Provide the following minimum vertical clearances for all new structures whether in a temporary or final location:

1. During Construction: Do not reduce the vertical clearance for a bridge over a road from the minimum existing vertical clearance or 16’-0”, whichever is greater. For vertical clearance less than 16’-6”, provide a mitigation strategy for Approval. The Department approves all submittals to address any impacts to the structure.

2. Bridges over railroads: 23.83 feet.

3. Bridges over water: Meet the requirements of the SDDM 10.6.2.

C. **Horizontal Clearances:** Meet the horizontal clearance requirements of UDOT

Develop Supplemental or Project Agreements on behalf of the Department for signature by the Utility Companies and signature and execution by the Department, for all Utility Work. Perform or coordinate the performance of the Utility Work for design and construction as specified herein. Obtain required permits necessary to perform Utility Work.

Repair any Utility damages caused by the Design-Builder which occur during construction within the Project limits. All repairs associated with such damages are the responsibility of the Design-Builder.

All costs for coordination, design, permits, construction, and coordination of all temporary Utility relocations that are implemented for the convenience of the Design-Builder's construction operation and schedule are the responsibility of the Design-Builder.

The Design-Builder is responsible to contact Blue Stakes at (800) 662-4111 before all Utility Work to have all utilities marked prior to construction.

The existing RMP transmission overhead power lines ~~and~~ poles and appurtenances (~~and~~ including any distribution lines on those transmission poles) located along 11400 South, 9000 South, ~~and~~ 5400 South, and the Build Alternative will be relocated by others within the Project Limits; do not provide a price for these relocates in Form UC. The RMP transmission relocation project is being installed by others, see Part 4-15 (Roadway) for additional requirements. The anticipated completion date of the relocation is December 31, 2017. Coordinate with RMP to assure that the Design-Builder's design does not negatively impact the RMP transmission relocation project. All impacts to the RMP transmission relocation project must be accounted for in the Design-Builder's schedule and Price Proposal. Coordinate the relocation with each Utility Company for utilities located on the existing transmission power poles.

Price all other RMP relocates and the other utility relocates and include in Form UC.

If the Design-Builder's design has additional transmission relocations, it is the Design-Builder's responsibility to price those relocates and include them in Form UC.

19C-1 General Requirements

Coordinate all design and construction activities with the Department and the Utility Company Project Representative identified in each MUA or Statewide Utility Relocation Agreement (regardless of who performs or pays for any proposed Utility Work). Coordinate on finalizing the design, the location of the relocated Utility facility, the potential impacts of Utility Work, costs, and schedule. Design, protect, temporarily relocate, and/or construct the facility as applicable for the Utility type, subject to the requirements of the specific MUA or Statewide Utility Relocation Agreement.

Perform the Utility Work as follows:

A. Comply with all provisions of MUA(s), Statewide Utility Relocation Agreement(s), Supplemental Agreement(s), and other applicable agreements, whether included in Part 6 (Third-Party Agreements) or subsequently provided to the Design-Builder.

B. Minimize the impacts to Utility Companies and Third-Party.

C. Identify the extents of required protect-in-place measures and relocations, if Utility facility conflicts cannot reasonably be avoided. Coordinate with impacted Utility Companies as necessary to accomplish each mutually agreeable proposed protect-in-place measure and relocation solution. Coordinate the proposed Utility Work with other Utility facilities present at the site to ensure that all Utility facilities are accommodated.

D. Prepare Supplemental Agreement(s) as necessary and submit to the Department for review and approval prior to submitting them to the Utility Companies.

E. Perform all obligations indicated as responsibility of the Department, contractors, and subcontractors (if contemplated) set forth in the MUA(s), ~~or~~ Statewide Utility Relocation Agreements, or other Agreements that are included in Part 6 (Third-Party Agreements) and the obligations therein.

F. Provide all coordination, surveying, staking, clearing/grubbing, MOT, and traffic control for all Utility Work, regardless of who is performing the Utility Work. These costs will not be back-charged to the Utility Companies.

G. Provide all Incidental Utility Work.

H. Keep the Department and Utility Companies well informed of Project construction progress and schedules. Notify Utility Companies at least twenty-four (24) hours in advance of any Utility Work in the vicinity of their facilities and forty-eight (48) hours notice of potential impacts on service or as outlined in each specific MUA or Statewide Utility Relocation Agreement, whichever is greater. Invite Utility Companies to Utility-related coordination meetings and keep Utility Companies well informed of Project changes and involved in making the Utility design decisions.

I. Cooperate with the Utility Companies to solve relocation installation issues, allow betterments without causing the Department or Utility Companies to incur any unnecessary expense, and remain consistent with the Design-Builder's scope of Work.

J. Work cooperatively with the Utility Companies identified in this Part 4-19 (Utilities) and in Part 6 (Third-Party Agreements) and establish reasonable schedules to perform Utility Work.

K. Coordinate with those Utility Companies who perform their own Utility Work by scheduling adequate and reasonable time to accomplish their Utility Work.

L. Advise the Utility Company of the approximate time required for Utility relocations performed by the Design-Builder.

M. Develop procedures for addressing Utility facility conflicts discovered during design and/or construction and for notification/coordination/approval from the Department in addressing the Utility conflict.

N. Evaluate and discuss the possible elimination of Utility conflicts with the Utility Companies.

O. Establish the mitigation approach to be implemented at each specific Utility location.

P. Ensure that all relocated Utility facilities are acceptable to the Department and the Utility Company.

Q. Ensure that all relocated Utility facilities shall be functionally equivalent to or better than the existing Utility facilities. All Utility relocations shall meet current Utility Company standards.

R. Coordinate the construction schedule to accommodate all Utility Company Utility Work, including design, Supplemental Agreement review and approval, permitting regulatory approvals, material procurement, and construction.

S. Do not perform any Utility Work on behalf of a Utility Company without prior written approval for said Utility Work. If Design-Builder choses to perform any Utility Work without a written agreement between the Utility Company the and Department, such as excavation in an effort to expedite completion of the Utility Work process, costs for said

Project Agreement in Part 6 (Third Party Agreements) and the USBOR O&M Guidelines are included in Part 7 (Contract Drawings).

Below is a list of the USBOR's Jordan Aqueduct Reach 2 (JA-2) requirements and shutdown information:

1. Aqueduct 2 runs between the Bluffdale Water Treatment Plant and the Terminal Reservoirs on Bangerter Highway near 6000 S.
2. There are two mainline isolation valves that break JA2 into three segments, located at 12600 South and 9000 South.
3. Do not shut down the segment of the aqueduct on the north side of the 9000 South valve at the same time as the south side for operational reasons.
4. Perform all work on north side of 9000 South during the first shutdown period, followed by a separate shutdown to perform work on the south side.
5. The two aqueduct shutdown periods are allowed to be consecutive.
6. Schedule the north side shutdown first, followed by the south side shutdown.
7. Aqueduct shutdown periods must take place in accordance with the Project Agreement.

19C-3 City of West Jordan

Repair the damaged 12-inch sanitary sewer line at along the west side of the intersection approximately 212 feet east of the SSMH located at 7000 South and Dixie Drive if the West Jordan betterment is not performed. Pipe repair method required West Jordan City approval.

19C-4 Daybreak Water Company

Coordinate impacts to the facilities owned by the Daybreak Water Company through Keith Hanson, 801-330-3447 or keith@canyonwater.com. The requirements for Daybreak Water Company are as follows:

1. Submit initial plans to Daybreak Water Company for their review.
2. Obtain approval from Daybreak Water Company including but not limited to, irrigation coverage for the remaining streetscape, adequate water supplies and tailwater drainage.

~~19C-4~~19C-5 Design-Builder Third Party-Manager

Provide a Third-Party Manager to act as the overall Utility coordinator to ensure adequate coordination during Supplemental Agreement development, mobilization activities, and performance reviews of Utility Work. Coordinate, cooperate, and work with the contact person designated in Part 6 (Third-Party Agreements) or as otherwise assigned by the Department. Responsibilities of the Third-Party Manager include coordinating Design-Builder oversight, coordinating and administering the Utility Work within the Project, site administration, standard and specification adherence, and performance reviews of the Design-Builder while working on and off-site, including but not limited to safety, quality, timeliness, and performance.

Coordinate Utility facility relocations until all Utility Work is completed.

Maintain a record of all design and construction activities for all Utility Work that has been performed by the Design-Builder, and all Utility Work that has been designed and Released for Construction after Notice to Proceed.

REQUEST FOR PROPOSALS

UTAH DEPARTMENT OF TRANSPORTATION

4 Interchanges on Bangerter HWY (SR-154)

Project No. S-0154(12)11

Salt Lake County

CONTRACT DOCUMENTS

PART 6:
THIRD-PARTY AGREEMENTS

Addendum ~~1~~ 2 - ~~September~~ October ~~29~~6, 2016

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Project No. S-0154(12)11, Salt Lake County
4 Interchanges on Bangerter Highway
MCI COMMUNICATIONS SERVICES, INC.
Charge ID No. 71939 PIN 12566

25940

MCI COMMUNICATIONS SERVICES, INC.
MASTER UTILITY AGREEMENT

THIS MASTER UTILITY AGREEMENT, made and entered into this 20 day of Sept, 20 16, by and between the **Utah Department of Transportation**, ("UDOT") and **MCI Communications Services, Inc.** a Delaware Corporation, ("Company") (each as "Party" and jointly as "Parties").

RECITALS

WHEREAS, UDOT is preparing to request proposals for and award a design-build contract for the highway project identified as Project Number S-0154(12)11, 4 Interchanges on Bangerter Highway in Salt Lake County, Utah, ("Project"); and

WHEREAS, UDOT's design-build contractor ("Design-Builder") will complete the design and administer construction of the Project; and

WHEREAS, UDOT has identified Company facilities within the limits of the Project which may necessitate the relocation, protection, or adjustment of the facilities, ("Utility Work"); and

WHEREAS, the Company desires for the Design-Builder to design and construct the Company's Utility Work except cable and pedestal procurement, pulling, and splicing necessitated by the Project; and

WHEREAS, the Company will perform the necessary review and approval for the design, cable and pedestal procurement, pulling, and splicing, and construction inspection to accommodate the Project; and

WHEREAS, for the purpose of expediting any required Utility Work and reimbursement the Parties are entering into this Project Master Utility Agreement with the understanding that future supplemental agreements to this Agreement will be entered into covering Utility Work to be accomplished by the Company and UDOT at specific Project locations.

THIS AGREEMENT is made to set out the terms and conditions where under the Utility Work shall be performed.

AGREEMENT

NOW THEREFORE, the Parties agree as follows:

1. CONTACT INFORMATION

UDOT's Project Representative is Alana Spendlove, UDOT Project Utility and Railroad Leader, telephone number (801) 887-3462, and e-mail aspendlove@utah.gov.

UDOT's Resident Engineer for 5400 South and 7000 South interchanges is Bryan Chamberlain, telephone number (801) 887-3405, and e-mail bchamberlain@utah.gov, or their designated representative, as assigned.

UDOT's Resident Engineer for 9000 South and 11400 South interchanges is Ken Talbot, telephone number (801) 360-8750, and e-mail kentalbot@utah.gov, or their designated representative, as assigned.

UDOT's Field Representative contact person will be identified in subsequent supplemental agreements.

Company's contact person is David McAllister, telephone number (303) 214-7115, and e-mail david.mcallister@verizon.com.

After awarding the Project, UDOT will provide the Company with the Design-Builder contact information, hereinafter referred to as "Design-Builder Project Representative".

2. AUTHORIZATION FOR DESIGN WORK

In order to facilitate coordination and obtain technical information about the Company's facilities and requirements for inclusion in this Agreement and the request for proposals, UDOT gave the Company authorization for preliminary design engineering on April 26, 2016.

3. SUBSURFACE UTILITY ENGINEERING

UDOT has performed Subsurface Utility Engineering (SUE) within the limits of the Project. Additional SUE work to determine the precise location of underground facilities at specific, critical locations on the Project will be reviewed with the Company.

4. PROJECT COORDINATION

Company and UDOT agree to have the Design-Builder include in the Project, items of Utility Work for the Company's facilities.

During the development of the Project design, the Company and UDOT, along with its Design-Builder, shall consult as necessary in an effort to determine if conflicts with the Company's facilities can be avoided. If Utility Work is required, UDOT will be responsible to propose and provide a location for the facilities. UDOT will provide the Company with Project design plans as early as possible, and will schedule and meet with the Company to review the design, construction, estimates of cost, and scheduling for the Company's Utility Work at specific locations

on the Project to ensure maximum lead time for advance order of materials and work force scheduling.

The Company shall advise UDOT's Project Representative of the approximate time required for completion of the Utility Work and shall diligently pursue its Utility Work so that completion can be accomplished according to the pre-determined time schedule negotiated by the Company and UDOT in the supplemental agreement issued hereto for a specific Project location. The Company shall immediately notify UDOT's Project Representative by phone call or email, of its discovery of any occurrence or unforeseen circumstances that would prevent the Company from completing its Utility Work according to the time schedule provided. In addition, the Company shall describe the circumstances in writing within 24-hours of the discovery to UDOT's Project Representative.

5. COMPANY REQUIREMENTS

UDOT will comply with the following Company Utility Work requirements:

a. The Project and/or Utility Work shall not impact the operation of Company's facilities from November 15 through January 15 without prior written approval from Company. The Project schedule shall be developed accordingly.

6. UDOT TO DESIGN AND CONSTRUCT A PORTION OF UTILITY WORK

UDOT shall perform the necessary design work, cost estimating, field and office engineering, furnish all materials (except cable and pedestal) and perform the Utility Work (except pulling and splicing) necessitated by the Project.

UDOT will design the Utility Work in accordance with Company's standards regularly followed by the Company in its own work and not considered a betterment. In the event of a conflict between UDOT and Company standards, the higher standard will be applied.

UDOT will secure permits required for Utility Work for Company's facilities.

UDOT will supply as-constructed plans for the Utility Work it performs, in PDF format, upon completion of any required Utility Work.

7. COMPANY TO PERORM INSPECTION AND CONSTRUCT A PORTION OF THE UTILITY WORK

The Company will perform inspection of the Utility Work for the Company's facilities that will be performed by UDOT. UDOT will accomplish the Utility Work on the Company's facilities in accordance with the plans and specifications approved by the Company. Changes or additions to the plans and specifications shall be approved by the Company and UDOT through a supplemental agreement.

The Company will provide all cables, pedestals, pulling and splicing necessary to accommodate the Utility Work of its facilities on the Project. The Company requires 30 days' notice to schedule splicing and fiber pulls and will determine the splicing window based on the circuit.

8. STANDARD SPECIFICATIONS AND REGULATIONS

The Company, while engaged in the preliminary design and Utility Work of its facilities, shall comply with UDOT's 2012 Standard Specifications for Road and Bridge Construction and Utah Administrative Code R930-7.

9. UNDERBUILT AND FACILITY REMOVAL REQUIREMENTS

The Company is responsible to remove all Company-owned underbuilt facilities from utility poles that will be relocated or removed due to the Project.

10. RIGHT-OF-WAY

Any easements or replacement right-of-way required in conjunction with the Utility Work of Company's facilities will be acquired by UDOT in accordance with the requirements of Utah Administrative Code R930-8-7.

11. MAINTENANCE OF TRAFFIC (MOT), TRAFFIC CONTROL, CLEAR/GRUB, AND SURVEYING

UDOT will provide MOT and traffic control for Utility Work at no cost to the Company. The Company is responsible to coordinate Utility Work schedules and traffic control needs with UDOT to facilitate the Project schedule and minimize impacts to the public. Except in the case of emergencies, Company's Utility Work on the Project will be scheduled in compliance with the requirements of the Limitation of Operations contained in UDOT's Design-Builder contract with respect to lane closures, peak hour Utility Work restrictions, holiday and special event limitations, etc.

UDOT will provide, at no cost to the Company, clearing and grubbing for the Utility Work as required by the Company and in accordance with UDOT's Standard Specifications.

Surveying and staking of roadway facilities as required by the Company will be provided by UDOT in accordance with UDOT's Standard Specifications. The cost of the surveying and staking will be at UDOT's expense and the Company will have no obligation for the cost of surveying. Any of UDOT's survey control stakes or bench markers, which are removed or damaged by the Company, shall be reestablished by UDOT at Company's expense.

12. BETTERMENT WORK

If the Company desires to include betterment work in the Project at any specific location, UDOT may agree to the betterment work providing the difference in costs between the functionally equivalent required Utility Work and the Company's desired betterment work, that is not required by the Project, shall be at the sole cost of the Company and the betterment work can reasonably be accommodated without delaying UDOT's Project. The betterment work will be addressed by a separate supplemental agreement between UDOT and the Company.

Once a Design-Builder has been selected by UDOT, any betterment work request will be negotiated directly with the Design-Builder. However, it is at UDOT's sole discretion to approve the betterment work.

13. SUPPLEMENTAL AGREEMENTS

UDOT and the Company shall enter into individual supplemental agreements to cover Utility Work at specific Project locations. Each supplemental agreement will include a description and location of the Utility Work to be performed, design drawings showing the original and proposed locations of the Company's facilities, Utility Work schedules, cost estimates from all Parties, participation shares for UDOT and the Company, any proposed betterment work, and any necessary right-of-way documents. The estimates do not account for increases due to unknown and unforeseen hardships in accomplishing the Utility Work. A copy of the format of the proposed supplemental agreement is marked Exhibit "A" that is incorporated by reference.

The Company will require a 2 week review and approval period for any final supplemental agreement submitted to the Company by UDOT.

In the event there are changes in the scope of the Utility Work, extra Utility Work, or changes in the planned Utility Work covered by a supplemental agreement, a modification to the supplemental agreement approved in writing by the Parties is required prior to the start of Utility Work on the changes or additions.

14. UDOT AUTHORIZATION TO PROCEED WITH UTILITY WORK

The Company shall not perform any Utility Work until the supplemental agreement for the Utility Work is signed by the Company and received by UDOT. UDOT will review and approve the supplemental agreement and will issue an authorization to proceed to the Company for each specific Utility Work location.

15. UDOT TO NOTIFY THE COMPANY BEFORE BEGINNING UTILITY WORK

UDOT will notify the Company at least 2 business days in advance of beginning any Utility Work covered by any supplemental agreements hereto, to allow the Company time to schedule an inspector to be present during the Utility Work. Subsequent notification of when and where Utility Work will be performed will be given on a day-to-day basis. Should UDOT fail to give advance notification and Utility Work is performed without the presence of a Company inspector, UDOT will, at no cost to the Company, facilitate inspection of the Utility Work including, if necessary, uncovering the Utility Work.

16. COMPANY TO NOTIFY UDOT AND THE DESIGN-BUILDER BEFORE BEGINNING UTILITY WORK

The Company will notify UDOT's Project Representative as well as the Design-Builder Project Representative at least 2 business days in advance of beginning any Utility Work covered by any supplemental agreements hereto. The Company will give subsequent notifications of when and where the Company will be performing Utility Work to UDOT's Field Representative and the Design-Builder Project Representative on a day-to-day basis. Such subsequent notifications can be informal. Failure on the part of the Company to give proper notification to UDOT's Field Representative and the Design-Builder Project Representative will be cited to the Company and that portion of the Company's Utility Work performed while not under the surveillance of the UDOT Field Representative may be deducted from the reimbursement at UDOT's discretion for.

17. INSPECTION

The Company shall provide on-call engineering support by the Company's engineer or appropriate representative for design review, schedule coordination, or to correct or clarify issues during the Utility Work, and to perform the necessary inspection for the Company's Utility Work installed by UDOT.

a. The Company engineer and/or inspector shall work with and through UDOT's Project Representative and shall give no orders directly to UDOT's Design-Builder unless authorized in writing to do so. UDOT will accomplish the Utility Work covered herein on Company's facilities in accordance with the plans and specifications provided and/or approved by the Company, including changes or additions to the plans and specifications, which are approved by the Parties hereto.
b. The Company shall immediately notify UDOT's Project Representative and the Design-Builder Project Representative of any deficiencies in the Utility Work on the Company's facilities. The Company shall follow up with written detail to UDOT's Project Representative and the Design-Builder Project Representative of its findings within 24-hours of making its initial notification.
c. UDOT will respond to the Company's concerns within 24-hours of written notification.
d. The Company, through its inspection of the Utility Work, will provide UDOT's Project Representative with information covering any problems or concerns the Company may have with acceptance of the facilities upon completion of the Utility Work.
e. Any periodic plan and specification review or construction inspection performed by UDOT arising out of the performance of the Company's Utility Work does not relieve the Company of its duty in the performance of the Utility Work or to ensure compliance with acceptable standards.

18. DAILY RECORDKEEPING

The Company will keep daily records of the inspection and Utility Work performed by the Company forces. Daily records will be in duplicate on a form to be prepared by the Company or UDOT. The type of form to be used shall be preapproved by UDOT's Contracts, Compliance, and Certification Manager. The daily records shall be signed by UDOT's Field Representative and the Company or its authorized representatives.

19. REIMBURSEMENT FOR COMPANY'S UTILITY WORK

In accordance with Utah Code §72-6-116(3)(a)(ii), UDOT will reimburse the Company 50% of the cost of Utility Work of its facilities on state highways and the Company shall pay the remainder of the cost of the Utility Work. UDOT will reimburse the Company 100% of the cost of Utility Work of its facilities located on a public utility easement, on a Company-owned private easement or fee property. The Company shall provide UDOT with a copy of the public utility easement or subdivision plat, private easement or fee title. The Utility Work and reimbursement for Company's facilities required by the Project will be in conformance with the requirements of Utah Administrative Code R930-8.

The Company shall submit itemized bills covering its actual costs incurred for performing the Utility Work covered by supplemental agreements to UDOT's Contracts and Compliance Specialist:

UDOT Contracts and Compliance Specialist
Utah Department of Transportation
PO Box 141510
SLC UT 84114-1510

Itemized bills shall bear the Project and supplemental agreement numbers, supporting sheets, and a complete billing statement of all actual costs incurred, following the order of the items in the detailed estimates contained in the supplemental agreement, and be submitted to UDOT within 60 days following completion of the Utility Work by the Company on the Project. Otherwise, previous payments to the Company may be considered final, except as agreed to between the Parties in advance. UDOT will reimburse the Company within 60 days after receipt of the billings, but only for those items complying fully with the provisions of Utah Administrative Code R930-8. Failure on the part of the Company to submit final billings within 6 months of the completion of the Utility Work will result in UDOT's disallowance of that portion of Utility Work reimbursement.

If the Company owes a balance to UDOT, the Company will reimburse UDOT within 60 days after receipt of billing from UDOT.

20. SALVAGE CREDIT

In accordance with 23 C.F.R. §645.117 all materials from Company's existing facilities which are recovered by UDOT while performing the Utility Work and not reused on this Project shall become the property of the Design-Builder unless otherwise agreed to in advance by the Parties hereto.

In accordance with 23 C.F.R. §645.117, all materials from the existing facilities, which are recovered in suitable condition for reuse by the Company and not reused on the Project, shall be credited to the cost of the Project at current stock prices. If the materials are not suitable for reuse, they shall be credited at such other prices as agreed upon between the Company and UDOT following inspection of the recovered material.

21. PROJECT DESIGN CHANGES

If UDOT changes the Project design after the Company has completed its design review; or if the Company has completed its portion of the Utility Work of its facilities based on previously approved design plans; the cost of the second design review and/or Utility Work is to be paid in full by UDOT. UDOT will make adjustments for any additional time that may be required for the Company to perform Utility Work on its facilities when required.

22. COMPANY'S COSTS DIFFER BY MORE THAN 10%

If the Company's actual costs incurred for its force account work differs more than 10% plus or minus per line item from the amount contained in the supplemental agreements, the Company is required to submit a letter of explanation with its billings indicating how and why the difference in costs occurred.

23. RIGHT TO AUDIT

UDOT and FHWA shall have the right to audit all cost records and accounts of the Company pertaining to this Project in accordance with the auditing procedure of the Federal Highway Administration and 23 C.F.R. §645, subpart A. Should this audit disclose that the Company has been underpaid, UDOT will reimburse the Company within 60 days upon submission of additional billing to cover the underpayment. Should this audit disclose that the Company has been overpaid, the Company will reimburse UDOT within 60 days of notification of audit findings in the amount of the overpayment. For the purpose of audit the Company is required to keep and maintain its records of Utility Work covered herein for a minimum of 3 years after final payment is received by the Company from UDOT.

The Company shall have the right to review UDOT's cost documentation for the Utility Work performed on behalf of the Company.

24. ACCEPTANCE

UDOT will provide notification to the Company for acceptance of the Utility Work upon completion of the final inspection. Company will have 60 days to respond in writing to UDOT with any additional comments in regards to the Utility Work. In the event that UDOT does not receive a written response within 60 days, UDOT will designate the Utility Work accepted by the Company. Upon acceptance of the Utility Work, the Company will accept, own and maintain its facilities. To the extent it may lawfully do so, Company further agrees to relieve UDOT from any responsibility or liability that may result for its new facilities or the operation thereof.

25. ACCESS & MAINTENANCE

Access for maintenance and servicing of Company's facilities located on the Project right-of-way will be allowed only by permit issued by UDOT. Company will obtain the permit and abide by conditions thereof for policing and other controls in conformance with Utah Administrative Code R930-7.

26. MISCELLANEOUS

a. Each Party agrees to undertake and perform all further acts that are reasonably necessary to carry out the intent and purpose of this Agreement at the request of the other Party.

b. This Agreement in no way creates any type of agency relationship, joint venture, or partnership between UDOT and Company.

c. The failure of either Party to insist upon strict compliance of any of the terms and conditions, or failure or delay by either Party to exercise any rights or remedies provided in this Agreement, or by law, will not release either Party from any obligations arising under this Agreement.

d. This Agreement shall be deemed to be made under and shall be governed by the laws of the State of Utah in all respects. Each person signing this Agreement warrants that the person has full legal capacity, power, and authority to execute this Agreement for

and on behalf of the respective Party and to bind such Party. This Agreement may be executed in one or more counterparts, each of which shall be an original, with the same effect as if the signatures were made upon the same instrument. This Agreement may be delivered by facsimile or electronic mail.

****

IN WITNESS WHEREOF, the Parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first above written.

MCI Communications Services, Inc

Mark Wingate
MARK WINGATE

Title: Sr. Mgr - NTWK Engt OPS

Date: 9/7/16

Recommended For Approval:

Title: Utility and Railroad Leader

Date: 9/20/16

Utah Department of Transportation

Title: Project Director

Date: 9/20/2016

Approved as to Form

Renee Spruner

Title: Assistant Attorney General

Date: 09/26/2016

UDOT Comptroller Office Contract Administrator

Title:

Date: 9/27/16

MCI COMMUNICATIONS SERVICES, INC.
SUPPLEMENTAL AGREEMENT NO. ___

Supplement to UDOT Finance No. _____

THIS SUPPLEMENTAL AGREEMENT, made and entered into this _____ day of _____, 20____, **Utah Department of Transportation**, ("UDOT"), and **MCI Communications Services, Inc.**, a Delaware Corporation, ("Company") each as ("Party") and jointly as ("Parties").

The Parties hereto entered in to a Master Utility Agreement (MUA) dated _____, UDOT Finance No. _____. All the terms of the MUA remain in full force and effect unless otherwise specified herein.

The Parties agree as follows:

1. UDOT and Company will perform the following described Utility Work in accordance with the terms and conditions of the MUA:

a. Description of Utility Work to be performed, including proposed location, described in Exhibit "A" that is incorporated by reference: (Plan Sheets Attached)

b. The Company requirements as shown in the MUA – Company Requirements, are modified as follows:

c. Anticipated duration of Utility Work as shown on Exhibit "B" that is incorporated by reference:

d. Betterments included:

TOTAL ESTIMATED COST OF SUPPLEMENTAL AGREEMENT _____	**$0.00**
TOTAL ESTIMATED COST OF COMPANY PERFORMED UTILITY WORK	$0.00
TOTAL ESTIMATED COST OF UDOT PERFORMED UTILITY WORK	$0.00
COMBINED TOTAL ESTIMATED COST OF UTILITY WORK	**$0.00**
TOTAL ESTIMATED AMOUNT OF COMPANY PARTICIPATION @ 50%	$0.00
TOTAL ESTIMATED AMOUNT OF UDOT PARTICIPATION @ 50%	$0.00

2. UDOT will notify the Company's contact person, David McAllister, Telephone No. (303) 214-7115, email david.mcallister@verizon.com at least 48 hours in advance of beginning the Utility Work covered herein, or in accordance with the specific terms of the MUA, as applicable.

IN WITNESS WHEREOF, the Parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first written above.

MCI Communications Services, Inc.

_____

Title: _____

Date: _____

Recommended For Approval:

_____

Title: Utility and Railroad Leader

Date: _____

Utah Department of Transportation

_____

Title: Project Director

Date: _____

UDOT Comptroller Office Contract Administrator

_____

Title:

Date: _____

178279

BANGERTER

Project No. S-0154(12)11, Salt Lake County
4 Interchanges on Bangerter Highway
TAYLORSVILLE BENNION IMPROVEMENT DISTRICT
Charge ID No. 71939 PIN 12566

25941

TAYLORSVILLE BENNION IMPROVEMENT DISTRICT MASTER UTILITY AGREEMENT

THIS MASTER UTILITY AGREEMENT, made and entered into this 20 day of Sept, 2016, by and between the **Utah Department of Transportation**, ("UDOT"), and **Taylorsville Bennion Improvement District**, a Special Improvement District of the State of Utah, ("District") each as ("Party") and jointly as ("Parties").

RECITALS

WHEREAS, UDOT is preparing to request proposals for and award a design-build contract for the highway project identified as Project Number S-0154(12)11, 4 Interchanges on Bangerter Highway in Salt Lake County, Utah, ("Project"); and

WHEREAS, the design-build contractor will complete the design and administer construction of the Project ("Design-Builder"); and

WHEREAS, UDOT has identified District facilities within the limits of the Project which may necessitate the relocation, protection, or adjustment of the facilities, ("Utility Work"); and

WHEREAS, the District is willing to allow the Design-Builder to design and perform the Utility Work on the District's facilities necessitated by the Project; and

WHEREAS, the District will perform the necessary design review and inspection to accommodate the Project; and

WHEREAS, for the purpose of expediting any required Utility Work and reimbursement, the Parties are entering into this Project Master Utility Agreement with the understanding that future supplemental agreements to this Agreement will be entered into covering the Utility Work to be accomplished by UDOT at specific Project locations.

THIS AGREEMENT is made to set out the terms and conditions where under the Utility Work shall be performed.

AGREEMENT

NOW THEREFORE, the Parties agree as follows:

1. PROJECT RESPONSIBLE FOR COST

In accordance with Utah Code § 72-6-116(3)(a)(ii), UDOT is responsible for 100% of the cost of the Utility Work of District's facilities for those costs that comply with Utah Administrative Code R930-8.

2. CONTACT INFORMATION

UDOT's Project Representative is Alana Spendlove, UDOT Project Utility and Railroad Leader, telephone number (801) 887-3462, and e-mail aspendlove@utah.gov.

UDOT's Resident Engineer for 5400 South and 7000 South interchanges is Bryan Chamberlain, telephone number (801) 887-3405, and e-mail bchamberlain@utah.gov, or their designated representative, as assigned.

UDOT's Resident Engineer for 9000 South and 11400 South interchanges is Ken Talbot, telephone number (801) 360-8750, and e-mail kentalbot@utah.gov, or their designated representative, as assigned.

UDOT's Field Representative contact person will be identified in subsequent supplemental agreements.

District's contact person is Kevin Fenn, telephone number (801) 968-9081, and e-mail kevin@tbid.org.

After awarding the Project, UDOT will provide the District with the Design Builder contact information, hereinafter referred to as "Design-Builder Project Representative".

3. AUTHORIZATION FOR DESIGN WORK

In order to facilitate coordination and obtain technical information about the District's facilities and requirements for inclusion in this Agreement and the Request for Proposals, UDOT gave the District authorization for preliminary design engineering on April 26, 2016.

4. SUBSURFACE UTILITY ENGINEERING

UDOT has performed Subsurface Utility Engineering (SUE) within the limits of the Project. Additional SUE work to determine the precise location of underground facilities at specific, critical locations on the Project will be reviewed with the District.

5. PROJECT COORDINATION

The District requested that UDOT include items of Utility Work for relocating and adjusting District's facilities in the Project.

During the development of the Project design, the District and UDOT, along with its Design-Builder, shall consult as necessary in an effort to determine if conflicts with the District's facilities can be avoided. If Utility Work for the District's facilities is required by the Project, UDOT will be responsible to identify the conflicts and to design and construct the Utility Work of the District's facilities. The District will perform the necessary design reviews prior to the start of Utility Work. UDOT's Project Representative will be responsible for coordinating with other utility companies as it relates to District's facilities.

6. DISTRICT REQUIREMENTS

UDOT will comply with the following District Utility Work requirements:

a. UDOT will supply as-constructed plans, in Auto Cad format, upon completion of any required Utility Work including betterment work.

7. DISTRICT TO DESIGN ITS UTILITY WORK

UDOT will schedule and meet with the District to review the design and scheduling of the Utility Work for the District's facilities at specific locations on the Project to ensure maximum lead time for advance order of materials and work force scheduling.

UDOT will design the Utility Work in accordance with District's standards regularly followed by the District in its own work and not considered a betterment. In the event of a conflict between UDOT and District standards, the higher standard will be applied. A copy of the District's standards can be found at the Districts web site http://www.tbid.org/images/2015-03-17TBIDUpdatedDetails.pdf that is incorporated by reference.

a. UDOT will secure permits required for Utility Work of District's facilities.

8. RIGHT-OF-WAY

Any easements or replacement right-of-way required in conjunction with the Utility Work of District's facilities will be acquired by UDOT in accordance with the requirements of Utah Administrative Code R930-8.

9. BETTERMENT WORK

The District has requested the following betterment work be added to the Project:

a. Replace approximately 160 feet of 18-inch ductile iron pipe and 225 feet of 8-inch PVC water line with 385 feet of 12-inch C-900 PVC.

b. Replace approximately 486 feet of 8-inch sewer ductile iron pipe with CIPP from manhole to manhole crossing the Bangerter Highway and 5400 South intersection.

Details for accommodating the betterment work will be addressed by a separate supplemental agreement.

If the District desires to include betterment work in the Project at any specific location UDOT may agree to the betterment providing the difference in costs between the functionally equivalent required Utility Work and the District's desired betterment work that is not required by the Project shall be at the sole cost of the District and the betterment work can be accommodated without delaying UDOT's Project. The betterment work will be addressed by separate supplemental agreement between UDOT and the District.

Once a Design-Builder has been selected by UDOT, any betterment work request will be negotiated directly with the Design-Builder. However, it is at UDOT's sole discretion to approve the betterment work.

10. SUPPLEMENTAL AGREEMENTS

UDOT and the District shall enter into supplemental agreements to cover Utility Work at specific Project locations. As part of the supplemental agreement, UDOT will provide design plans and Utility Work schedules for review and approval by the District prior to start of the Utility Work. A copy of the format of the proposed supplemental agreement is marked EXHIBIT "A" that is incorporated by reference.

The District will require a 2 week review and approval period for any final supplemental agreement submitted to the District by UDOT.

In the event there are changes in the scope of the Utility Work, extra Utility Work, or changes in the planned Utility Work covered by a supplemental agreement, a modification to the supplemental agreement approved in writing by the Parties is required prior to the start of Utility Work on the changes or additions.

11. UDOT TO NOTIFY DISTRICT BEFORE BEGINNING UTILITY WORK

UDOT will notify the District at least 2 business days in advance of beginning any Utility Work covered by any supplemental agreements hereto, to allow the District time to schedule an inspector to be present during the Utility Work. Subsequent notification of when and where Utility Work will be performed will be given on a day-to-day basis.

12. DISTRICT TO NOTIFY UDOT

District's personnel shall notify UDOT's Field Representative upon arriving and leaving the Project site for verification of inspecting Utility Work. District's personnel will comply with all applicable OSHA and Project safety requirements while within the Project limits.

13. INSPECTION

The District shall provide on-call engineering support by District's engineer or appropriate representative for design review, schedule coordination, or to correct or clarify issues during Utility Work, and to perform the necessary inspection on the District's facilities installed by UDOT.

a. The District's engineer and/or inspector shall work with and through UDOT's Project Representative and shall give no orders directly to UDOT's Design-Builder unless authorized in writing to do so. UDOT will accomplish the Utility Work covered herein on District's facilities in accordance with the plans and specifications provided and/or approved by the District, including changes or additions to the plans and specifications, which are approved by the Parties hereto.

b. The District shall immediately notify UDOT's Project Representative and the Design-Builder Project Representative of any deficiencies in the Utility Work on the District's facilities. The District shall follow up with written detail to UDOT's Project Representative and the Design-Builder Project Representative of its findings within 24-hours of making its initial notification.

c. UDOT will respond to District's concerns within 24-hours of written notification.

d. The District, through its inspection of the Utility Work, will provide UDOT's Project Representative with information covering any problems or concerns the District may have with acceptance of the facilities upon completion of the Utility Work.

e. Any periodic plan and specification review or construction inspection performed by UDOT arising out of the performance of the Utility Work does not relieve the District of its duty in the performance of the Utility Work or to ensure compliance with acceptable standards.

14. DAILY RECORDKEEPING

UDOT's Field Representative will keep daily records of the inspection performed by the District. Daily inspection records will be in duplicate on a form to be prepared by the District or UDOT. The type of form to be used shall be preapproved by UDOT's Contracts, Compliance and Certification Manager. The inspection records shall be signed by UDOT's Field Representative, and the District or its authorized representatives. Copies of the inspection records shall be retained by the parties to this Agreement.

15. REIMBURSEMENT

UDOT will not reimburse the District for costs incurred by District personnel for design review, observation, inspection, and operation of valves performed as part of their regularly assigned duties. Should it become necessary for the District to procure outside services to perform design review, observation, or inspection to accommodate UDOT's Utility Work and Project schedule, the District shall notify UDOT. Upon concurrence by UDOT, a supplemental agreement for the cost of the services will be executed at which time the District may procure outside services through appropriate solicitation.

16. SUBMITTAL OF ITEMIZED BILLS

The District shall submit itemized bills covering the actual costs incurred for outside services to perform design review, oversight, and inspection work covered by supplemental agreements to UDOT's Contracts and Compliance Specialist:

UDOT Contracts and Compliance Specialist
Utah Department of Transportation
PO Box 141510
SLC, UT 84114-1510

Itemized bills shall bear the Project and supplemental agreement numbers, supporting sheets, and a complete billing statement of all actual costs incurred, following the order of the items in the detailed estimates contained in the supplemental agreement and be submitted to UDOT within 60 days following completion of outside services by the District on the Project. Otherwise, previous payments to the District may be considered final, except as agreed to between the Parties in advance.

UDOT will reimburse the District within 60 days after receipt of the billings, but only for items complying fully with the provisions of Utah Administrative Code R930-8. Failure on the part of the District to submit final billings within 6 months of the completion of outside services will result in UDOT's disallowance of that portion of outside services performed by the District.

17. SALVAGED MATERIALS

All materials from District's existing facilities which are recovered by UDOT while performing the Utility Work and not reused on this Project shall become the property of the Design-Builder unless otherwise agreed to in advance by the Parties hereto.

18. RIGHT TO AUDIT

UDOT and the Federal Highway Administration shall have the right to audit all cost records and accounts of the District pertaining to this Project in accordance with the auditing procedure of the Federal Highway Administration and 23 C.F.R. § 645, subpart A. Should this audit disclose that the District has been underpaid, the District will be reimbursed by UDOT within 60 days upon submission of additional billing to cover the underpayment. Should this audit disclose that the District has been overpaid, the District will reimburse UDOT within 60 days of notification of audit findings in the amount of the overpayment. For purpose of audit the District is required to keep and maintain its records of outsides services covered herein for a minimum of 3 years after final payment is received by the District from UDOT.

19. ACCEPTANCE AND MAINTENANCE

Upon completion of the Utility Work of District facilities by UDOT, the District will accept, own, and maintain its own facilities. The District shall be the sole owner of the facilities upon completion of the Project unless otherwise agreed to by the Parties.

20. **ACCESS**

It is understood that access for maintenance and servicing of District's facilities located on the right-of-way of the Project will be allowed only by permit issued by UDOT to the District, and that the District will obtain the permit and abide by conditions thereof for policing and other controls in conformance with Utah Administrative Code R930-7.

21. **INDEMNIFICATION**

UDOT and the District are both governmental entities subject to the Governmental Immunity Act. Each Party agrees to indemnify, defend, and save harmless the other from and against all claims, suits and costs, including attorneys' fees for injury or damage of any kind, arising out of its negligent acts, errors or omissions of its officers, agents, contractors or employees in the performance of this Agreement, and from and against all claims, suits, and costs, including attorneys' fees for injury or damage of any kind. Nothing in this paragraph is intended to create additional rights to third parties or to waive any of the provisions of the Governmental Immunity Act. The obligation to indemnify is limited to the dollar amounts set forth in the Governmental Immunity Act, provided the Act applies to the action or omission giving rise to the protections in this paragraph. The indemnification in this paragraph shall survive the expiration or termination of this Agreement.

22. **MISCELLANEOUS**

a. Each Party agrees to undertake and perform all further acts that are reasonably necessary to carry out the intent and purpose of this Agreement at the request of the other Party.

b. This Agreement in no way creates any type of agency relationship, joint venture, or partnership between UDOT and District.

c. The failure of either Party to insist upon strict compliance of any of the terms and conditions, or failure or delay by either Party to exercise any rights or remedies provided in this Agreement, or by law, will not release either Party from any obligations arising under this Agreement.

d. This Agreement shall be deemed to be made under and shall be governed by the laws of the State of Utah in all respects. Each person signing this Agreement warrants that the person has full legal capacity, power and authority to execute this Agreement for and on behalf of the respective Party and to bind such Party. This Agreement may be executed in one or more counterparts, each of which shall be an original, with the same effect as if the signatures were made upon the same instrument. This Agreement may be delivered by facsimile or electronic mail.

****

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first above written.

ATTEST:

Taylorsville Bennion Improvement District

Title: ASSISTANT GENERAL MANAGER

Title: General Manager

Date: 9/12/16

Date: 9/12/16

(IMPRESS SEAL)

Recommended For Approval:

Title: Utility and Railroad Leader

Date: 9/20/16

Utah Department of Transportation

Title: Project Director

Date: 9/20/2016

Approved as to Form

Title: Assistant Attorney General

Date: 09/26/2016

Comptroller Office

Title: Contract Administrator

Date: 9/27/16

TAYLORSVILLE BENNION IMPROVEMENT DISTRICT SUPPLEMENTAL AGREEMENT NO. ___

Supplement to UDOT Finance No. _____

THIS SUPPLEMENTAL AGREEMENT, made and entered into this _____ day of _____, 20____, **Utah Department of Transportation**, ("UDOT"), and **Taylorsville Bennion Improvement District**, a Special Improvement District of the State of Utah, ("District") each as ("Party") and jointly as ("Parties").

The parties hereto entered in to a Master Utility Agreement (MUA) dated _____, UDOT Finance No. _____. All the terms of the Master Utility Agreement remain in full force and effect unless otherwise specified herein.

The Parties agree as follows:

1. UDOT will perform the following described Utility Work in accordance with the terms and conditions of the MUA:

   a. Description of Utility Work to be performed, including proposed location, described in Exhibit "A" that is incorporated by reference: (Plan Sheets Attached)

   b. The District requirements as shown in the MUA – District Requirements, are modified as follows:
      i.

   c. Anticipated duration of Utility Work:

   d. Total estimated cost of District's (100% reimbursable) outside services: (Detailed Estimate Attached)

2. UDOT will notify the District's Project Representative, Kevin Fenn, telephone number (801) 968-9081, email keven@tbid.org at least 48 hours in advance of beginning the Utility Work covered herein, or in accordance with the specific terms of the MUA, as applicable.

IN WITNESS WHEREOF, the Parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first written above.

Taylorsville-Bennion Improvement District

ATTEST:

_____ _____

Title: _____ **Title:** _____

Date: _____ **Date:** _____

(Impress Seal)

. . . . . .

RECOMMENDED FOR APPROVAL: **UTAH DEPARTMENT OF TRANSPORTATION**

_____ _____

Title: Utility and Railroad Leader **Title:** Project Director

Date: _____ **Date:** _____

_____

UDOT Comptroller Office
Contract Administrator

. . . . . .

178247

S-0154(12)11
4 Interchanges on Bangerter Highway
CID 71939 PIN 12566

United States Contract No. 16-LM-40-050350
UDOT Contract No. _____

E 25873

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

PROJECT AGREEMENT
AMONG THE
UNITED STATES OF AMERICA
AND
UTAH DEPARTMENT OF TRANSPORTATION
AND
JORDAN VALLEY WATER CONSERVANCY DISTRICT

THIS PROJECT AGREEMENT, made this 8th day of September, 2016, pursuant to the Act of Congress of June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all of which acts are commonly known and referred to as Reclamation Laws, and particularly pursuant to Section 10 of the Act of August 4, 1939, (53 Stat. 1187) among the UNITED STATES OF AMERICA, represented by the officer executing this Project Agreement, his duly appointed successor, or his duly authorized representative, hereinafter referred to as the "United States," UTAH DEPARTMENT OF TRANSPORTATION hereinafter referred to as "UDOT," and JORDAN VALLEY WATER CONSERVANCY DISTRICT, hereinafter referred to as "Jordan Valley."

WITNESSETH THAT:

WHEREAS, the United States has constructed and continues to own large projects for the storage and delivery of water; and

WHEREAS, the United States has contracted with various water user organizations to use, care for, operate and maintain its project facilities; and

WHEREAS, as a result, the United States holds real property interests (fee title and easements), hereinafter referred to as "Land Interests of the United States," located throughout the State of Utah which are acquired through the Bureau of Reclamation ("Reclamation"); and

WHEREAS, the United States owns certain project facilities located on the Land Interests of the United States, including the Jordan Aqueduct, and appurtenant structures and improvements, located in the vicinity of SR-154, Bangerter Highway corridor, hereinafter referred to as the "US Facilities"; and

WHEREAS, the Central Utah Project Completion Act (Titles II-VI of P.L. 102-575, as amended) ("CUPCA") was enacted on October 30, 1992; and

WHEREAS, Section 201(e) of CUPCA transferred Federal oversight responsibility for all phases of the Bonneville Unit of the Central Utah Project ("CUP") from Reclamation to the Secretary of the Interior ("Secretary"); and

WHEREAS, the Secretary desires to use Reclamation's engineering and technical services expertise to assist in the actions described herein; and

WHEREAS, UDOT, an agency of the State of Utah, constructed and continues to construct, operate, maintain, reconstruct, and rehabilitate highways throughout the State of Utah for the purpose of providing public transportation; and

WHEREAS, the parties entered into a Memorandum of Agreement 05-LM-40-02720 September 26, 2005, attached as Exhibit A; and

WHEREAS, UDOT will award a design–build contract to a third party, ("Design-Builder"), for the highway project identified as Project No. S-0154(12)11 4 Interchanges on Bangerter Highway (PIN 12566), in Salt Lake County, Utah, hereinafter referred to as the "Highway Project"; and

WHEREAS, UDOT shall require by contract that the Design-Builder administer construction of the Highway Project, including quality control; and

WHEREAS, the Highway Project necessitates expenditures consisting of design engineering and construction for protection of, or encroachment on, or impacts to, or relocation of Land Interests of the United States and/or US Facilities on the Highway Project, hereinafter referred to as "Work"; each encroachment or impact or relocation will be the subject of a separate agreement; and

WHEREAS, it is the desire of UDOT for the Design-Builder to construct the Work within a tightly controlled schedule that includes completion deadlines; and

WHEREAS, Jordan Valley and the Metropolitan Water District of Salt Lake & Sandy ("Metropolitan Water District") are contractors of the United States, and they care for, operate and maintain Jordan Aqueduct Reaches 2 and 3 ("JA-2" and "JA-3"). These water districts have the right to the capacity of JA-2 and JA-3 (5/7ths Jordan Valley and 2/7ths Metropolitan Water District). The day-to-day care, operation and maintenance of JA-2 and JA-3 have been delegated to Jordan Valley for the benefit of both districts; and

WHEREAS, the United States, its contractors, agents, and assigns will inspect and accept the Work as appropriate to accommodate the Highway Project; and

WHEREAS, for the purpose of expediting the Highway Project, any Work that will impact or encroach on Land Interests of the United States and/or US Facilities will require a separate encroachment or license agreement; and

WHEREAS, it is the desire of UDOT, the United States, and Jordan Valley to enter into this Project Agreement with the understanding that future agreements may be entered into covering Work to be accomplished by UDOT at specific Highway Project locations ("Supplemental Agreements"); and

WHEREAS, in accordance with Utah Code § 72-6-116(3)(a)(ii), UDOT will pay the cost of relocation of US Facilities located on Land Interests of the United States in compliance with 23 C.F.R. §645, subpart A; and

WHEREAS, in accordance with 23 C.F.R. § 645, subpart A, the United States has determined, with the concurrence of UDOT, that accrued depreciation credit is not required as a result of the Work; and

WHEREAS, the US Facilities convey drinking water that serves the residents of Salt Lake County.

NOW, THEREFORE, for good and valuable consideration, the sufficiency of which is hereby acknowledged, the parties agree as follows.

1. SEVERABILITY: Each provision of this Project Agreement shall be interpreted in such a manner as to be valid under applicable law, but if any provision of this Project Agreement shall be deemed or determined by competent authority to be invalid or prohibited hereunder, such provision shall be ineffective and void only to the extent of such invalidity or prohibition, but shall not be deemed ineffective or invalid as to the remainder of such provision or any other remaining provisions, or of the Project Agreement as a whole.

2. HOLD HARMLESS:

a. In consideration of the United States agreeing to encroachment upon the Land Interests of the United States by UDOT, UDOT hereby agrees to indemnify and hold the United States, its officers, agents, employees, and assigns harmless from any and all claims whatsoever for personal injuries or damages to property when such injuries or damages directly or indirectly arise out of UDOT or its Design-Builder's Work concerning the Highway Project's construction, maintenance, repair, use or the presence of the Highway Project upon the Land Interests of the United States; provided, however, that nothing in this Project Agreement shall be construed as releasing the United States from responsibility for its own negligence. Nothing herein shall be deemed to increase the liability of the United States beyond the provisions of the Federal Tort Claims Act, Act of June 25, 1948, 62 Stat. 989 (28 U.S.C. §1346(b), 2671 et seq.) or other applicable law. Nothing in this Project Agreement shall be construed as a waiver by UDOT of the provisions of the Governmental Immunity Act of Utah (Utah Code Ann. §§ 63G-7-101 et seq.). UDOT's obligation to indemnify shall be limited to the negligence claims allowed by the Federal Tort Claims Act.

b. In consideration of the United States agreeing to UDOT encroaching upon the Land Interests of the United States, UDOT agrees that the United States shall not be responsible for any damage caused to the Highway Project or related facilities of UDOT, unless such damage is caused by the negligence of the United States or by its contractors, officers, agents, employees or assigns as determined under the provisions of the Federal Tort Claims Act. UDOT hereby releases the United States, its officers, employees, agents, and assigns from liability for any and all loss or damage of every description or kind whatsoever which may result to UDOT from the construction, operation, and maintenance of the Highway Project upon Land Interests of the United States; provided that nothing in this Project Agreement shall be construed as releasing the United States from liability for its own negligence as determined under the provisions of the Federal Tort Claims Act.

c. UDOT and Jordan Valley are both governmental entities subject to the Utah Governmental Immunity Act. Each party agrees to indemnify, defend, and save harmless the other party from and against all claims, suits and costs, including attorneys' fees, for injury or damage of any kind, arising out of its negligent acts, errors or omissions and the negligent acts, errors or omissions of its officers, agents, contractors or employees in the performance of this Project Agreement. Nothing in this Project Agreement is intended to create additional rights for third parties or to waive any of the provisions of the Utah Governmental Immunity Act. The

obligation to indemnify is limited to the dollar amounts set forth in the Utah Governmental Immunity Act, provided the Act applies to the action or omission giving rise to indemnification under this subparagraph. The indemnification in this subparagraph shall survive the expiration or termination of this Agreement.

3. PROTECTION OF UNITED STATES INTERESTS: UDOT shall comply with all applicable laws, ordinances, rules, and regulations enacted or promulgated by any Federal, State, or local governmental body having jurisdiction over an issue applicable to the Highway Project.

4. ACCESS: The United States and Jordan Valley reserve the right of reasonable access for them and their respective contractors, officers, agents, employees, and assigns to make investigations of all kinds, dig test pits and drill test holes, and to survey for and construct, use, operate, and maintain US Facilities and other improvements related to or connected to JA-2 and JA-3. However, the United States and Jordan Valley and their respective contractors, officers, agents, employees, and assigns shall not access or perform any work on UDOT's right-of-way unless a permit is obtained from UDOT and such permit holder and its contractors, officers, agents, employees, and assigns comply with the permit requirements. The United States and Jordan Valley, and their respective contractors, officers, agents, employees, and assigns shall have the right to enter UDOT's right-of-way in the event of any emergency to make repairs required to prevent loss of life or significant damage to property. The party exercising such right of emergency access and its contractors, officers, agents, employees, and assigns must 1) provide notice to UDOT of entry onto the right-of-way via UDOT's right-of-way and permits officers as soon as practicable but in no event more than 24 hours after entering the right-of-way; and 2) follow guidelines for traffic control as outlined in the Manual of Uniform Traffic Control Devices (MUTCD).

5. PROJECT COORDINATION — FOR IMPACTS TO LAND INTERESTS OF THE UNITED STATES AND US FACILITIES:
   a. During the development of the Highway Project design, UDOT will consult with Jordan Valley to determine if conflicts, encroachments, and interference with Land Interests of the United States and US Facilities can be avoided. The United States agrees that Jordan Valley will be the designated point of contact for UDOT and its Contactor to consult and coordinate with during the Highway Project. Jordan Valley will consult and coordinate with the United States and the Metropolitan Water District as necessary during the Highway Project.

   b. If conflicts, encroachments, or interference with Land Interests of the United States and US Facilities are necessary and/or cannot be reasonably avoided, UDOT will

identify the extent of the conflict, encroachment, or interference and propose a solution. In the event of a relocation of US Facilities, the location to which such facilities are to be relocated must be acceptable to the United States and Jordan Valley.

c. The United States, Jordan Valley, and UDOT have determined locations of encroachment on Land Interests of the United States and US Facilities which are shown in attached Exhibit B – Bangerter Interchanges Protect-in-Place.

6. DUTIES TO BE INCORPORATED INTO DESIGN-BUILD CONTRACT

a. UDOT's Responsibilities

i. UDOT may inspect Work items as they pertain to its Highway Project, and UDOT shall be responsible for construction, relocation, or modification of US Facilities.

ii. UDOT will remove certain longitudinal third-party utilities outside of the Land Interests of the United States upon completion of the 5400 South interchange Project Work as shown in Exhibit C – BOR Easement - Utility Relocation.

iii. If Work is required on US Facilities, UDOT shall be responsible to identify the conflicts, encroachments, or interference, provide Jordan Valley with Highway Project design plans as early as possible, and schedule and meet with Jordan Valley to review the details of design, construction, estimates of cost, and scheduling for Work at specific locations within the Highway Project.

iv. UDOT shall advise Jordan Valley of the approximate time required for completion of Work and shall diligently pursue its Work so that completion can be accomplished according to the pre-determined time schedule as negotiated by UDOT and Jordan Valley.

v. UDOT shall provide to Jordan Valley for final approval any design documents addressing any conflict, encroachment, or interference with Land Interests of the United States and US Facilities.

1. Design Preparation and Review Time: Jordan Valley requires up to one (1) week for design review after UDOT submits a relocation request and design documents.
2. Address review documents to JT Cracroft, Property Manager, Jordan Valley.
3. UDOT shall provide facility design documents incorporating Jordan Valley's specifications and drawings, which may be obtained from JT Cracroft.

vi. UDOT shall provide all of the supervision, labor, tools, equipment, and materials for the Work. Jordan Valley shall approve, in advance, Work on Land Interests of the United States and US Facilities. Work by UDOT may include purchasing and hauling materials; cutting asphalt; trenching, equipment installation; backfilling; compacting; clean-up; and completing US Facilities to meet the requirements of this Project Agreement. UDOT shall perform the Highway Project in stages, including facility tie-in and putting US Facilities into service, to minimize disruption to the public and to the United States and its contractors.

vii. Specifications: The specification which is of the higher standard between those of UDOT and Jordan Valley will control where duplication occurs. UDOT will provide to Jordan Valley as-constructed plans in AutoCAD and PDF format upon completion of the Work.

viii. Water Service Disruption: Jordan Valley and the Metropolitan Water District rely upon the operation of JA-2 and JA-3, among other facilities, to provide water service to their respective customers. Uncoordinated or prolonged disruption to the operation of any facility may cause Jordan Valley and the Metropolitan Water District to incur additional expense, including but not limited to the purchase of replacement water, the loss of revenues from water sales, purchase payments made on take-or-pay water contracts although Jordan Valley or the Metropolitan Water District cannot take or use the contract water, additional pumping costs, additional treatment costs, and damages paid by Jordan Valley and the Metropolitan Water District for breach of contract with customers for failure to provide them water. Therefore, United States facilities may be taken out of service by UDOT only pursuant to the following schedule notwithstanding any other provision of this Agreement to the contrary:

Facility*	Maximum time facility may be out of service*	Time period when service disruption is permitted	Minimum prior notice to Jordan Valley to request a service disruption
JA-2	15 days	Nov. 1 thru Nov. 30	30 days
JA-3	20 days	Dec. 1 thru following Jan. 15 Sole exception: Dec. 1, 2017 thru Jan. 31, 2018	30 days

*Note: JA-2 and JA-3 cannot be taken out of service at the same time.

UDOT shall reimburse Jordan Valley and the Metropolitan Water District for their actual respective damages for UDOT's breach of the terms of this subparagraph 6(a)(viii).

ix. Construction Inspection: UDOT shall not bury or conceal any portion of the Work that has not been inspected and accepted by Jordan Valley.

x. Cost Allocations: UDOT shall pay the cost of relocation of US Facilities located on Land Interests of the United States in compliance with 23 C.F.R. §645, subpart A. UDOT is 100% responsible for traffic control and surveying.

xi. Inspection of the Work by Jordan Valley shall not relieve UDOT from the obligation to perform all Work in compliance with Jordan Valley's specifications and any other obligations under this Project Agreement.

xii. UDOT shall accomplish the Work on US Facilities in accordance with the plans and specifications approved by Jordan Valley. Any changes or additions to the plans and specifications shall be approved in writing by Jordan Valley.

b. United States and Jordan Valley Responsibilities

i. The United States and Jordan Valley agree to the allocation of responsibilities, and commitments regarding UDOT specified in this Project Agreement. In case of a discrepancy or conflict between the information contained in this Project Agreement and any subsequently executed agreements, the subsequently executed agreements shall govern.

ii. The United States will allow certain third-party utilities to remain longitudinally within the Land Interests of the United States during the Highway Project as shown in Exhibit C – BOR Easement - Utility Relocation. Such third-party utilities must be relocated outside of the Land Interests of the United States upon completion of the 5400 South interchange.

iii. Jordan Valley will perform the necessary design reviews prior to the start of Work.

iv. The United States and Jordan Valley will inspect UDOT's Design-Builder's Work, and will provide UDOT's Project Representative and the Design-Builder's Project Representative with information covering any problems or concerns the United States and Jordan Valley may have with acceptance of the facilities. The failure of either the United States or Jordan Valley to find a deficiency during inspection of the Work does not relieve UDOT or its Design-Builder from performing Work that complies with the plans and specifications.

v. The United States or Jordan Valley shall notify UDOT's Project Representative of any deficiencies in the Work on US Facilities. UDOT's Project Representative will respond to the concerns within 24 hours of notification.

vi. In the event the United States or Jordan Valley discovers any deficiencies in the Work, including any failure to comply with plans and specifications as required above, Jordan Valley shall make recommendations to UDOT's Project Representative to stop the Work or correct the deficiencies. Jordan Valley and UDOT will immediately thereafter meet to determine a plan to bring the Work into compliance. Any such plans to cure shall be approved by Jordan Valley. Jordan Valley may notify UDOT to stop the Work immediately upon discovery of safety deficiencies during Work in progress.

7. NOTIFICATION BEFORE BEGINNING CONSTRUCTION WORK: The required notification periods as indicated in this section are for the commencing of any Work provided for by Supplemental Agreements to allow sufficient time for Jordan Valley to schedule an inspection during the Work.

   a. Jordan Valley maintains an 8:00 a.m. to 5:00 p.m., Monday through Friday work week, not including observed holidays. All Work schedule notifications shall be given during the identified time period to JT Cracroft, Property Manager, Jordan Valley.
   b. Jordan Valley requires a minimum of 3 working days' notification prior to beginning weekend and/or night Work.
   c. Jordan Valley requires a minimum of 2 working days' notification to schedule an inspection request.
   d. Jordan Valley requires a minimum of 14 calendar days' notification prior to beginning Work on or affecting existing US Facilities (including limitations to access to US Facilities).
   e. Jordan Valley requires a minimum of 30 calendar days' notification before Work is started on any betterments in order to schedule full-time inspection personnel.

8. TRAFFIC CONTROL AND SURVEYING: UDOT will provide all coordination, traffic control per UDOT standards and Manual on Uniform Traffic Control Devices (MUTCD), and required surveying (line and grade), and will verify the proposed location of relocated US Facilities prior to them being placed in their final position. UDOT will coordinate with Jordan Valley for survey staking. The United States and Jordan Valley shall not be responsible for the costs of any coordination, traffic control, or surveying.

9. FORCE MAJEURE: If, as a result of force majeure, either UDOT, Jordan Valley, or the United States is wholly or partially unable to meet its respective obligations under this Project Agreement other than for payment of monies due, the non-performing party shall give the other parties reasonable notice of such situation, describing it in reasonable

detail. Thereupon, the party giving the notice shall be released from its obligations under this Project Agreement to the extent that the force majeure prevents performance of obligations during the continuance of the force majeure. The party having the force majeure shall attempt to cure and mitigate the force majeure as quickly as possible, but if rectification is not possible, the parties shall negotiate an acceptable solution. The term "force majeure" means any cause or condition which is not reasonably within the control of the party claiming the suspension.

10. ACCEPTANCE OF THE WORK: The United States and Jordan Valley, as applicable, agree that upon completion and final inspection of construction, to accept, own (in the case of the United States), and maintain the relocated facilities covered herein at no further cost to UDOT and will notify UDOT of the acceptance.

11. COVENANT AGAINST CONTINGENT FEES: UDOT warrants that no person or agency has been employed or retained to solicit or secure this Project Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established agencies maintained by UDOT for the purpose of securing business. For breach or violation of this warranty, the United States and Jordan Valley shall have the right to annul this Project Agreement without liability or in their discretion to require UDOT to pay the full amount of such commission, percentage, brokerage, or contingent fee.

12. HAZARDOUS MATERIALS: UDOT shall comply with all applicable Federal, State, and local laws and regulations, and United States policies and directives and standards, existing or hereafter enacted or promulgated, concerning any hazardous material that will be used, produced, transported, stored, or disposed of on or in Federal lands, waters or facilities. Additional requirements related to specific impacts to US Facilities may be identified in Supplemental Agreements to this Project Agreement.

13. CONTACTS:
    a. Jordan Valley Water Conservancy District: Jordan Aqueduct Reaches 2 & 3
       JT Cracroft; Property Manager; 8215 South 1300 West, West Jordan, UT 84088; 801-565-4300; jtc@jvwcd.org
    b. United States Representative: Jordan Aqueduct Reaches 2 & 3
        i. Kieth Marvin; Lands Group; 302 East 1860 South, Provo, UT 84606; 801-379-1193; kmarvin@usbr.gov
        ii. Alan Christensen, PE; Civil Engineer; 302 East 1860 South, Provo, UT 84606; 801-379-1098; achristensen@usbr.gov
    c. UDOT Project Representative:

Alana Spendlove; Region 2 Utility and Railroad Leader; 2010 South 2760 West, SLC, UT 84104; 801-887-3462; aspendlove@utah.gov

d. Metropolitan Water District of Salt Lake & Sandy:

Wayne Winsor; Engineering and Maintenance Manager; 3430 East Danish Road, Cottonwood Heights, UT, 84093; 801-942-9631; winsor@mwdsls.org

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed the day and year first written above.

UNITED STATES OF AMERICA

Approved: Regional Solicitor's Office

By: _____
Brent Rhees acting for
Regional Director
Date: 9/8/16

ACKNOWLEDGMENT OF THE UNITED STATES

State of Utah)

) ss.

County of Salt Lake)

On this 8th day of September (Acting), 2016, personally appeared before me K.D. Jacobson, known to me to be the Regional Director of the Upper Colorado Region, Bureau of Reclamation, United States Department of Interior, the signer of the above instrument, who duly acknowledged to me that he executed the same on behalf of the United States of America pursuant to authority delegated to him.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

(NOTARY SEAL)

Notary Public
BETTY J. REED
Commission #664009
My Commission Expires
February 25, 2017
State of Utah

Notary Public

UTAH DEPARTMENT OF
TRANSPORTATION

By: _____
Bryan Adams
Region Two Director
Date: 8/26/16

ACKNOWLEDGMENT OF UTAH DEPARTMENT OF TRANSPORTATION (UDOT)

State of UT)

) ss.

County of Salt Lake)

On this 26 day of August, 2016, personally appeared before me Bryan Adams, known to me to be the Region 2 Director of UDOT, the signer of the above instrument, who duly acknowledged to me that he executed the same on behalf of UDOT pursuant to authority delegated to him/her.

_____
Notary Public

(NOTARY SEAL)

Michael Deryl Davis
Notary Public - State of Utah
Commission #688722
Expires 5/02/2020

Cherise Young 9-8-16
CONTRACT ADMINISTRATOR
COMPTROLLERS OFFICE

S-0154(12)11
4 Interchanges on Bangerter Highway
CID 71939 PIN 12566

JORDAN VALLEY WATER
CONSERVANCY DISTRICT

By: Gary Swensen
Title: Chair, Board of Trustees
Date: August 30, 2016

ACKNOWLEDGMENT OF JORDAN VALLEY WATER CONSERVANCY DISTRICT
(Jordan Valley)

State of UT)

) ss.

County of SaltLake)

On this 30th day of August, 2016, personally appeared before me Gary Swensen, known to me to be the Chair of the Board of Trustees of Jordan Valley Water Conservancy District, the signer of the above instrument, who duly acknowledged to me that he executed the same on behalf of Jordan Valley Water Conservancy District pursuant to authority delegated to him/her.

(NOTARY SEAL)

Beverly M Parry
Notary Public

BEVERLY M PARRY
NOTARY PUBLIC - STATE OF UTAH
COMMISSION# 681765
COMM. EXP. 02-20-2019

CONCUR:

METROPOLITAN WATER DISTRICT OF SALT LAKE & SANDY

By:
Title: General Manager

EXHIBIT A

Memorandum of Agreement 05-LM-40-02720 September 26, 2005

Contract No. 05-LM-40-02720

MEMORANDUM OF AGREEMENT

Between

THE UNITED STATES OF AMERICA,
DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION

And

THE UTAH DEPARTMENT OF TRANSPORTATION

REGARDING USE OF RECLAMATION LANDS FOR HIGHWAY PROJECTS

THIS Memorandum of Agreement (Agreement), dated this 26th day of September, 2005, in pursuance of the Act of June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, particularly Section 10 of the Reclamation Project Act of 1939 (53 Stat. 1196; Act of August 18, 1950; 64 Stat. 463; 43 U.S. C. § 387), between THE UNITED STATES OF AMERICA, and its assigns, hereinafter referred to as the United States, acting through the BUREAU OF RECLAMATION, hereinafter referred to as Reclamation, and the UTAH DEPARTMENT OF TRANSPORTATION, hereinafter referred to as UDOT;

WHEREAS, Reclamation, an agency of the United States Government, has constructed and continues to own large projects for the storage and delivery of water; and

WHEREAS, Reclamation, has contracted with various water user organizations to operate and maintain its project facilities; and

WHEREAS, as a result, the United States holds real property interests (fee title and easements) in real property located throughout the State of Utah which it acquired through Reclamation in connection with Reclamation's projects, and which continue to be administered by Reclamation for authorized project purposes; and

WHEREAS, UDOT, a department of the Utah State Government, constructed and continues to construct, operate, maintain, reconstruct, and rehabilitate highways throughout the State of Utah for the purpose of providing public transportation; and

WHEREAS, as a result, UDOT frequently needs to obtain easements over United States' lands administered by Reclamation for various highway construction projects; and

WHEREAS, Reclamation recognizes that UDOT's highway projects serve a public need and have public support, and such easements, if granted by the United States, would be used by UDOT for public benefit; and

WHEREAS, as a result of UDOT's highway projects, Reclamation frequently receives benefit of improved access to United States' lands and facilities which Reclamation administers; and

WHEREAS, as a result of UDOT's highway projects, Reclamation frequently receives benefit from enhanced safety on highways which are used by Reclamation, its employees and contractors, and the general public for access to United States' lands and facilities, as well as from diminished potential for claims of liability resulting from public use of said lands and facilities.

WHEREAS, as a result of UDOT's highway projects, the general public benefits from improved access and safety; and

WHEREAS, UDOT recognizes and agrees that it will be required to comply with environmental laws, including the National Environmental Policy Act, for each of its highway projects, and that it must obtain approval of said compliance by each and every required agency; and

WHEREAS, Reclamation and UDOT wish to cooperate for the best public good to facilitate each agency's respective missions; and

WHEREAS, Reclamation, acting pursuant to 43 CFR 429.6(c) has authority to waive all or part of administrative costs which may be incurred in issuing easements, as follows:

> *All* [administrative] *fees and costs may be waived or reduced at the discretion of the Regional Director, when . . . (3) the holder provides without charges, or at a reduced charge, a valuable service to the public or to the programs of the Department of the Interior.*

WHEREAS, Reclamation, acting pursuant to 43 CFR 429.4 has authority to waive all or part of fair market value compensation for issuing said easements, as follows:

> *Rights of use requested by other Federal or other governmental agencies will be granted with fair market value reimbursement unless a reasonable opportunity exists for the exchange of rights-of use privileges, and there exists an interagency agreement providing for such exchange.*

WHEREAS, Reclamation, acting pursuant to 43 CFR 429.4 has authority to waive all or part of fair market value compensation for issuing said easements, as follows:

Rights of use requested by nonprofit organizations or nonprofit corporations may be provided with no charge being made for the value of these rights-of-use when it is determined that the use will not interfere with the authorized current or planned use of the land by Reclamation.

NOW THEREFORE, whenever UDOT desires the United States to grant an easement for a UDOT highway project across United States lands administered by Reclamation, UDOT and Reclamation agree to follow the following general procedures:

1. UDOT shall submit all request(s) for grants of easement to Reclamation following the format attached as, Exhibit "A".

2. UDOT shall provide Reclamation with an environmental compliance document covering each request. Reclamation shall review and, if appropriate, approve said environmental compliance document prior to granting any easements to UDOT.

3. Reclamation shall waive reimbursement from UDOT for both administrative costs and compensation for fair market value for the granting easements to UDOT as long as UDOT's highway project meets requirements for such a waiver.

4. UDOT and Reclamation, upon mutual agreement, may enter into a temporary contract to allow UDOT to occupy and use areas it requires immediately, prior to the execution of a final contract and grant of easement.

5. Reclamation may alter the format of said easements prior to approval and signing of final contracts and grants of easement, but the legal descriptions and nature of use (perpetual easement) shall be the responsibility of UDOT and shall remain substantially the same.

6. Both parties agree to complete and execute all final contracts and grants of easement in a timely manner.

7. UDOT will obtain concurrence of any water user organization having contractual responsibility for operation and maintenance of the Reclamation project which is affected by UDOT's highway project on all temporary or final contracts.

8. UDOT agrees to conduct all activities within the any easement to be granted to UDOT by the United States in strict accordance with the Protective Criteria contained in Exhibit B attached hereto and by this reference made a part hereof.

9. UDOT shall not remove, relocate, damage, or destroy any facility or structure of the United States without first having entered into a separate contract with the United States covering such issues as design and specifications, funding, construction, and future operation and maintenance of said facility or structure.

10. UDOT shall notify the affected water user organization by telephone Five (5) days in advance of its intent to commence any construction operations.

11. UDOT agrees to reduce impact to soil, vegetation, wildlife and visual resources within the easement area by limiting the amount of surface disturbance.

12. All United States land areas (except portions presently covered by asphalt surfacing) where soils and surface materials are disturbed through actions incident to construction, operation, and maintenance shall be restored by the UDOT to their natural state insofar as practicable by water barring, scarifying, leveling, reseeding, or other practices as prescribed by the United States and to its satisfaction.

13. Unless authorized in writing by the United States, travel by UDOT, its agents or assigns is limited to the area covered by the easements and existing public roads.

14. Disturbance of any improvements encountered during construction, maintenance, and operation of the easements shall be kept to an absolute minimum. UDOT shall immediately restore any damaged improvements at least to their former state. Functional use of these improvements must be maintained at all times.

15. During construction, operation, and maintenance, UDOT shall be particularly alert to take all reasonable and necessary precautions to protect and preserve historic or prehistoric ruins and artifacts on or adjacent to the easements. Should sites, ruins, or artifacts be discovered during these operations, UDOT will immediately suspend work involving the area in question, and advise the United States of suspected values. UDOT shall promptly have the area inspected to determine significance of values and consult with the United States on appropriate actions to follow (recovery, etc., and resumption of work). Cost of any recovery work shall be borne by the UDOT. UDOT shall provide the United States with a copy of any cultural resources survey reports concerning sites located on the temporary easement and shall develop a mitigation plan acceptable to the State Historic Preservation Officer (SHPO) for those significant sites subject to an adverse impact. All objects of antiquity recovered from public lands are the property of the United States and shall be turned over to Reclamation. UDOT is responsible for obtaining required SHPO clearance for any additional survey and report completed.

16. Within sixty (60) days after conclusion of construction operations, all construction materials and related litter and debris, including vegetative cover accumulated through land clearing, shall be disposed of by UDOT in an appropriate manner (State of Utah approved sanitary landfill).

17. UDOT shall designate a representative for field operations who shall be the sole representative of UDOT and UDOT's contractors in dealings with the United States, and shall provide their name, address, and telephone number to the United States and the the Association prior to commencement of construction.

18. UDOT shall comply with existing County, State, and Federal laws concerning the protection and preservation of game, and non-game wildlife species.

19. UDOT shall comply with all State and Federal regulations and laws pertaining to water quality, public health and public safety.

20. UDOT shall be responsible for prevention and suppression of all uncontrolled fires that are caused by UDOT, its agents or assigns.

21. Subject to applicable Federal and State law, UDOT agrees to indemnify and hold harmless the United States against any and all loss or damage and from any liability on account of personal injury, property damage, or claims for personal injury or death arising from its occupancy or use of United States lands or any other rights covered under any temporary or final contract and grant of easement.

22. It is acknowledged and agreed by the parties hereto that, prior to start of construction by UDOT, the United States will have inspected the land area covered by the easements and found it to be free from contamination by hazardous materials of any kind. Removal and clean-up of future contamination, including broken asphalt, resulting from UDOT's use of the easements shall be the sole responsibility of UDOT. Removal and clean-up of any such future contamination, including broken or damaged asphalt, shall be at UDOT's sole expense and shall be accomplished in compliance with all applicable Federal and State laws and regulations.

23. UDOT agrees that in all operations conducted within the easements, it shall comply with applicable State and Federal laws and regulation concerning the use of poisonous substances, including insecticides, herbicides, fungicides, rodenticides, and other similar substances. Prior to the use of such substances on or near the easements, UDOT shall obtain from the United States, approval of a written plan of such use. The plan shall state the type and quantity of material to be used, the pest to be controlled, the method of application, or such other information as may be required. All use of such substances on or near the easements shall be in accordance with the approved plan. If the use of a poison is prohibited by the Environmental Protection Agency (EPA), it shall not be used. If use of a poison is limited by the EPA, it shall be used only in accordance with that limitation.

24. Any proposed additional or subsequent uses by UDOT or others of lands or facilities not covered by the easements must be authorized in advance, in writing by the United States. Additional construction, relocation, or use of the easements that is not in accordance with temporary or final contracts shall not be initiated without prior written approval of the United States and the affected water user organization. Copies of this and other applicable contracts shall be available to construction, operation, and maintenance personnel, as well as personnel of the United States and the Association, during operations.

25. If UDOT violates the terms and conditions of this or any temporary or final contract, the United States shall provide written notice to UDOT describing the violation. Following receipt of said written notice, UDOT shall have 45 days in which to correct said violation. In the event that UDOT fails to correct said violation to the satisfaction of the United States within that time period, title to the easements shall revert to the United States, following written notice by the United States to UDOT.

26. UDOT warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by UDOT for the purpose of securing business. For breach or violation of this warranty, the United States shall have the right to annul this Contract and grant without liability.

27. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this Agreement or to any benefit that may arise herefrom, but this restriction shall not be construed to extend to this instrument if made with a corporation or company for its general benefit.

28. The provisions of this Agreement shall run in favor of and bind the assigns of the United States and the successors and assigns of UDOT.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed the day and year first written above.

UNITED STATES OF AMERICA

By _____
Regional Director
Upper Colorado Region
Bureau of Reclamation
Department of the Interior

Approved:

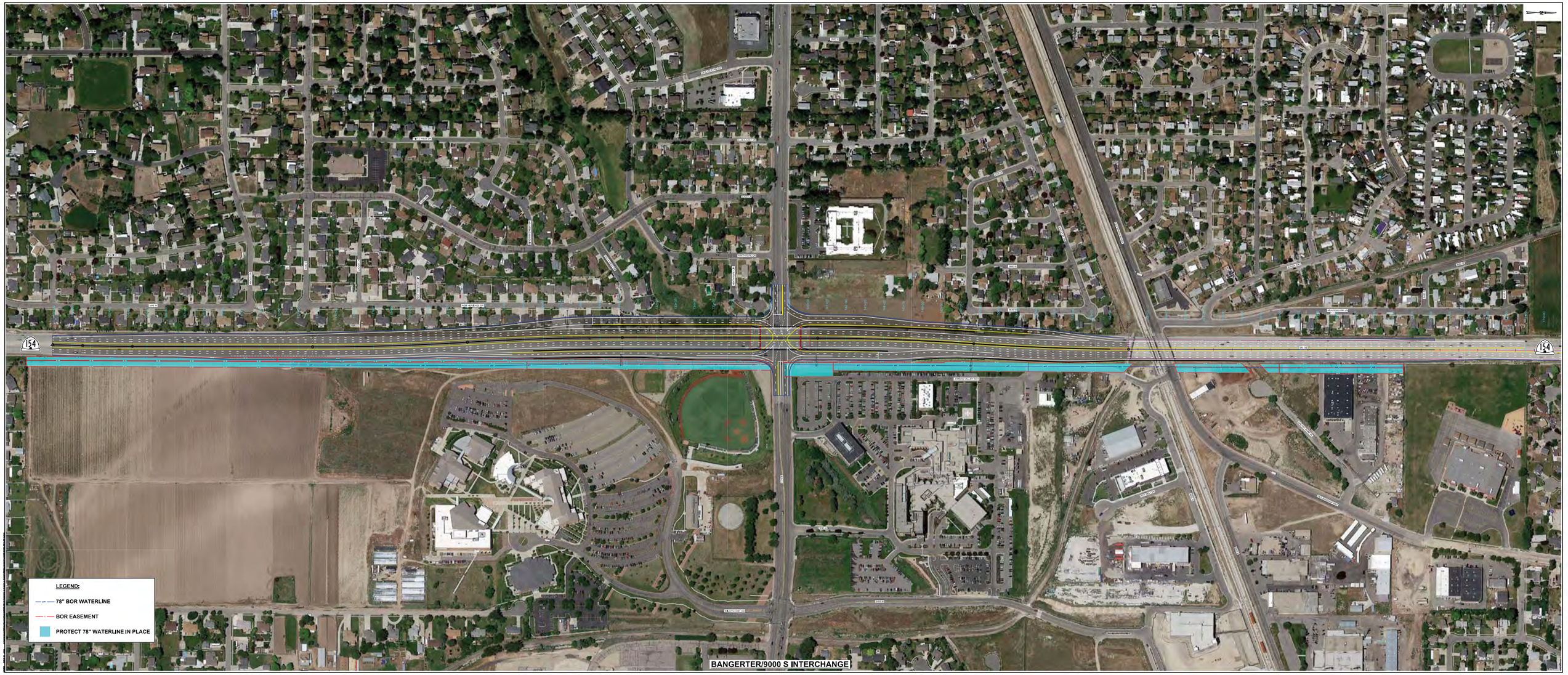
_____
Office of the Regional Solicitor

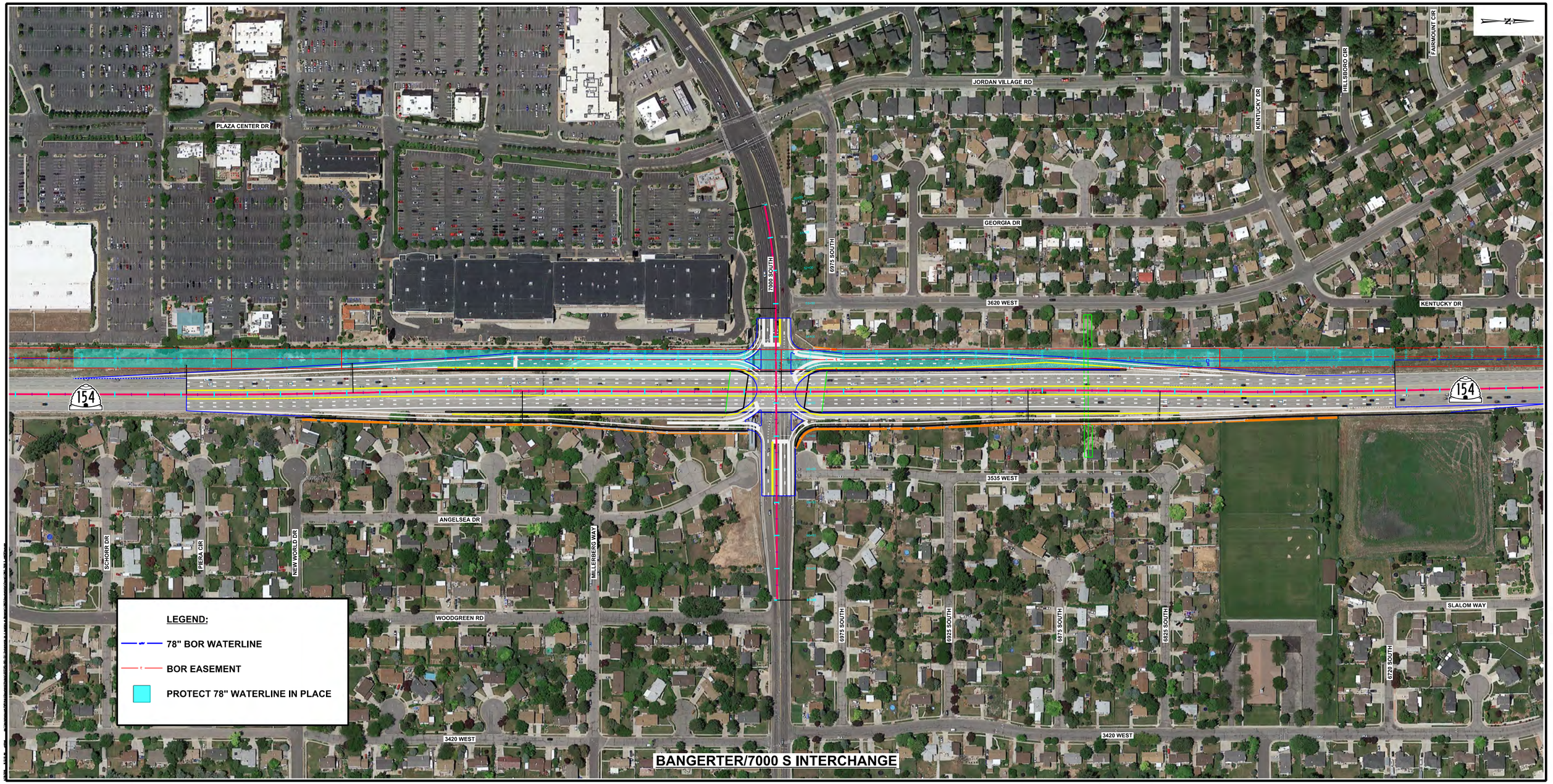
UTAH DEPARTMENT OF TRANSPORTATION

_____
for Lyle McMillan
Director of Right of Way

EXHIBIT B

Bangerter Interchanges Protect-in-Place


154
154
LEGEND:
78" BOR WATERLINE
BOR EASEMENT
PROTECT 78" WATERLINE IN PLACE
BANGERTER/9000 S INTERCHANGE


PLAZA CENTER DR
JORDAN VILLAGE RD
KENTUCKY DR
HILLSBORO CIR
FAIRMOUNT CIR
GEORGIA DR
6975 SOUTH
7000 SOUTH
3620 WEST
KENTUCKY DR
154
154
3535 WEST
ANGELSEA DR
SCHORER DR
PIERA CIR
NEW WORLD DR
MILLERBERG WAY
WOODGREEN RD
6975 SOUTH
6925 SOUTH
6875 SOUTH
6825 SOUTH
6720 SOUTH
SLALOM WAY
3420 WEST
3420 WEST
LEGEND:
78" BOR WATERLINE
BOR EASEMENT
PROTECT 78" WATERLINE IN PLACE
BANGERTER/7000 S INTERCHANGE

Aqueduct Easement Exhibit
BANGERTER HIGHWAY & 5400 S

EXHIBIT C

BOR Easement - Utility Relocation

PROTECT IN PLACE
Buried Electric (UDOT)
Fiber (UDOT SYRINGIA)
Buried Electric (RMP)
Fiber (VERIZON)
12" Waterline (Taylorsville)
Telephone (Century Link)

PROTECT IN PLACE
8" Sewer (Taylorsville)

PROTECT IN PLACE
18" waterline (Taylorsville)

RELOCATE
Buried Electric (RMP)

RELOCATE
Telephone (Century Link)

RELOCATE
Fiber (MBI ATT ZAYO_FIRST DIGITAL)

RELOCATE
Fiber (UDOT SYRINGIA)

5400 S

NOTE:
ANY UTILITIES THAT RUN LONGITUDINALLY WITHIN THE BOR EASMENT ARE TO BE RELOCATED OUTSIDE OF THE EASEMENT.
ANY EXISITNG OR NEW UTILTIES CROSSING THE BOR EASEMENT WILL REQUIRE A NEW CROSSING PERMIT FROM THE BOR

BOR Easement - Utility Relocation

EXISTING BOR EASMENT

PROPOSED BOR EASMENT

178263

BANGERTER

Project No. S-0154(12)11, Salt Lake County
4 Interchanges on Bangerter Highway
CITY OF WEST JORDAN
25915 Charge ID No. 71939 PIN 12566

CITY OF WEST JORDAN
MASTER UTILITY AGREEMENT

THIS MASTER UTILITY AGREEMENT, made and entered into this 12 day of Sept, 2016, by and between the **Utah Department of Transportation**, ("UDOT"), and the **City of West Jordan**, a Municipal Corporation of the State of Utah, ("City") each as ("Party") and jointly as ("Parties").

RECITALS

WHEREAS, UDOT is preparing to request proposals for and award a design-build contract for the highway project identified as Project No. S-0154(12)11, 4 Interchanges on Bangerter Highway in Salt Lake County, Utah, ("Project"); and

WHEREAS, the design-build contractor will complete the design and administer construction of the Project ("Design-Builder"); and

WHEREAS, UDOT has identified City facilities within the limits of the Project which may necessitate the relocation, protection, or adjustment of the facilities, ("Utility Work"); and

WHEREAS, the City desires for the Design-Builder to design and perform the Utility Work on the City's facilities necessitated by the Project; and

WHEREAS, the City will perform the necessary design review and inspection to accommodate the Project; and

WHEREAS, for the purpose of expediting any required Utility Work and reimbursement, the Parties are entering into this Project Master Utility Agreement with the understanding that future supplemental agreements to this Agreement will be entered into covering the Utility Work to be accomplished by UDOT at specific Project locations.

THIS AGREEMENT is made to set out the terms and conditions where under the Utility Work shall be performed.

AGREEMENT

NOW THEREFORE, the Parties agree as follows:

1. PROJECT RESPONSIBLE FOR COST

In accordance with Utah Code § 72-6-116(3)(a)(ii), UDOT is responsible for 100% of the cost of the Utility Work of City's facilities for those costs that comply with Utah Administrative Code R930-8.

2. CONTACT INFORMATION

UDOT's Project Representative is Alana Spendlove, UDOT Project Utility and Railroad Leader, telephone number (801) 887-3462, and e-mail aspendlove@utah.gov.

UDOT's Resident Engineer for 5400 South and 7000 South interchanges is Bryan Chamberlain, telephone number (801) 887-3405, and e-mail bchamberlain@utah.gov, or their designated representative, as assigned.

UDOT's Resident Engineer for 9000 South and 11400 South interchanges is Ken Talbot, telephone number (801) 360-8750, and e-mail kentalbot@utah.gov, or their designated representative, as assigned.

UDOT's Field Representative contact person will be identified in subsequent supplemental agreements.

City's contact person is David Murphy, telephone number (801) 569-5074, and e-mail davidm@wjordan.com.

After awarding the Project, UDOT will provide the City with the Design Builder contact information, hereinafter referred to as "Design-Builder Project Representative".

3. AUTHORIZATION FOR DESIGN WORK

In order to facilitate coordination and obtain technical information about the City's facilities and requirements for inclusion in this Agreement and the Request for Proposals, UDOT gave the City authorization for preliminary design engineering on April 26, 2016.

4. SUBSURFACE UTILITY ENGINEERING

UDOT has performed Subsurface Utility Engineering (SUE) within the limits of the Project. Additional SUE work to determine the precise location of underground facilities at specific, critical locations on the Project will be reviewed with the City.

5. PROJECT COORDINATION

The City requested that UDOT include items of Utility Work for relocating and adjusting City's facilities in the Project.

During the development of the Project design, the City and UDOT, along with its Design-Builder, shall consult as necessary in an effort to determine if conflicts with the City's facilities can be avoided. If Utility Work for the City's facilities is required by the Project, UDOT will be responsible to identify the conflicts and to design and construct the Utility Work of the City's facilities. The City will perform the necessary design reviews prior to the start of Utility Work. UDOT's Project Representative will be responsible for coordinating with other utility companies as it relates to City's facilities.

6. CITY REQUIREMENTS

UDOT will comply with the following City Utility Work requirements:

a. The City will require 14-day advance shut down notification for all water and sewer connections. A copy of the City's Water System Disruption of Service Approval Process is marked Exhibit "A" that is incorporated by reference.
   i. Notifications shall include, but are not limited to the following:
      1. Scope and schedule of work.
      2. City water, storm drain, and sewer system activities.
      3. City 16-inch water feed connection activities as it relates to the BOR Jordan Aqueduct Reach 2 & 3.
      4. Lateral connections to homes, businesses, and service retirements at all property takes and/or incidental work activities.
   ii. Allow 14-days for review and approval from the City.

b. UDOT will supply as-constructed plans, in AutoCAD version 16 format specified by the City, upon completion of any required Utility Work including betterment work.

c. Coordinate Project Work and Maintenance of Traffic activities/requirements for City's independent project for its 2017 Master Plan Sewer Improvements crossing Bangerter Highway at 3200 West.
   i. City shall request a permit from UDOT prior to beginning its 2017 Master Plan Sewer Improvement work.

d. Approval of plans in an executed Storm Drain Agreement(s) prior to contributing temporary and permanent Project storm drain into City system.

7. UDOT TO DESIGN AND CONSTRUCT CITY'S UTILITY WORK

UDOT will schedule and meet with the City to review the design and scheduling of the Utility Work for the City's facilities at specific locations on the Project to ensure maximum lead time for advance order of materials and work force scheduling.

a. UDOT will design the Utility Work in accordance with City's standards regularly followed by the City in its own work and not considered a betterment. In the event of a conflict between UDOT and City standards, the higher standard will be applied.

i. A copy of the City's standards can be found at http://www.wjordan.com/Engineering.aspx?pgID=3.7.1 that is incorporated by reference.

b. UDOT will secure permits required for Utility Work of City's facilities.
   i. A copy of the City's Encroachment Permit is marked Exhibit "B" that is incorporated by reference.
   ii. A copy of the City's Demolition Permit is marked Exhibit "C" that is incorporated by reference.

8. RIGHT-OF-WAY

Any easements or replacement right-of-way required in conjunction with the Utility Work of City's facilities will be acquired by UDOT in accordance with the requirements of Utah Administrative Code R930-8.

9. BETTERMENT WORK

City Betterment Work is described in attached Exhibit "D" that is incorporated by reference.

City Aesthetics and Landscaping Betterment Work is described in attached Exhibit "E" that is incorporated by reference.

If the City desires to include additional betterment work in the Project at any specific location UDOT may agree to the betterment providing the difference in costs between the functionally equivalent required Utility Work and the City's desired betterment work that is not required by the Project shall be at the sole cost of the City and the betterment work can be accommodated without delaying UDOT's Project. The betterment work will be addressed by separate supplemental agreement between UDOT and the City.

Once a Design-Builder has been selected by UDOT, any betterment work request will be negotiated directly with the Design-Builder. However, it is at UDOT's sole discretion to approve the betterment work.

10. SUPPLEMENTAL AGREEMENTS

UDOT and the City shall enter into supplemental agreements to cover Utility Work at specific Project locations. As part of the supplemental agreement, UDOT will provide design plans and Utility Work schedules for review and approval by the City prior to start of the Utility Work. A copy of the format of the proposed supplemental agreement is marked EXHIBIT "F" that is incorporated by reference.

The City will require a 2 week review and approval period for any final supplemental agreement submitted to the City by UDOT. The City does not require council review for supplemental agreement approval.

In the event there are changes in the scope of the Utility Work, extra Utility Work, or changes in the planned Utility Work covered by a supplemental agreement, a modification to the supplemental

agreement approved in writing by the Parties is required prior to the start of Utility Work on the changes or additions.

11. UDOT TO NOTIFY CITY BEFORE BEGINNING UTILITY WORK

UDOT will notify the City at least 2 business days in advance of beginning any Utility Work covered by any supplemental agreements hereto, to allow the City time to schedule an inspector to be present during the Utility Work. Subsequent notification of when and where Utility Work will be performed will be given on a day-to-day basis.

12. CITY TO NOTIFY UDOT

City's personnel shall notify UDOT's Field Representative upon arriving and leaving the Project site for verification of inspecting Utility Work. City's personnel will comply with all applicable OSHA and Project safety requirements while within the Project limits.

13. INSPECTION

The City shall provide on-call engineering support by City's engineer or appropriate representative for design review, schedule coordination, or to correct or clarify issues during Utility Work, and to perform the necessary inspection on the City's facilities installed by UDOT.

a. The City's engineer and/or inspector shall work with and through UDOT's Project Representative and shall give no orders directly to UDOT's Design-Builder unless authorized in writing to do so. UDOT will accomplish the Utility Work covered herein on City's facilities in accordance with the plans and specifications provided and/or approved by the City, including changes or additions to the plans and specifications, which are approved by the Parties hereto.
b. The City shall immediately notify UDOT's Project Representative and the Design-Builder Project Representative of any deficiencies in the Utility Work on the City's facilities. The City shall follow up with written detail to UDOT's Project Representative and the Design-Builder Project Representative of its findings within 24-hours of making its initial notification.
c. UDOT will respond to City's concerns within 24-hours of written notification.
d. The City, through its inspection of the Utility Work, will provide UDOT's Project Representative with information covering any problems or concerns the City may have with acceptance of the facilities upon completion of the Utility Work.
e. Any periodic plan and specification review or construction inspection performed by UDOT arising out of the performance of the Utility Work does not relieve the City of its duty in the performance of the Utility Work or to ensure compliance with acceptable standards.

14. DAILY RECORDKEEPING

UDOT's Resident Engineer will keep daily records of the inspection performed by the City. Daily inspection records will be in duplicate on a form to be prepared by the City or UDOT. The type of form to be used shall be preapproved by UDOT's Contracts, Compliance and Certification Manager. The inspection records shall be signed by UDOT's Field Representative, and the City or its authorized representatives. Copies of the inspection records shall be retained by the parties to this Agreement.

15. REIMBURSEMENT

UDOT will not reimburse the City for costs incurred by City personnel for design review, observation, inspection, and operation of valves performed as part of their regularly assigned duties. Should it become necessary for the City to procure outside services to perform design review, observation, or inspection to accommodate UDOT's Utility Work and Project schedule, the City shall notify UDOT. Upon concurrence by UDOT, a supplemental agreement for the cost of the services will be executed at which time the City may procure outside services through appropriate solicitation.

16. SUBMITTAL OF ITEMIZED BILLS

The City shall submit itemized bills covering the actual costs incurred for outside services to perform design review, oversight, and inspection work covered by supplemental agreements to UDOT's Contracts and Compliance Specialist:

UDOT Contracts and Compliance Specialist
4501 South 2700 West
Construction Office, Box 148220
Salt Lake City, Utah 84114-8220

Itemized bills shall bear the Project and supplemental agreement numbers, supporting sheets, and a complete billing statement of all actual costs incurred, following the order of the items in the detailed estimates contained in the supplemental agreement and be submitted to UDOT within 60 days following completion of outside services by the City on the Project. Otherwise, previous payments to the City may be considered final, except as agreed to between the Parties in advance.

UDOT will reimburse the City within 60 days after receipt of the billings, but only for items complying fully with the provisions of Utah Administrative Code R930-8. Failure on the part of the City to submit final billings within 6 months of the completion of outside services will result in UDOT's disallowance of that portion of outside services performed by the City.

17. SALVAGED MATERIALS

All materials from City's existing facilities which are recovered by UDOT while performing the Utility Work and not reused on this Project shall become the property of the Design-Builder unless otherwise agreed to in advance by the Parties hereto.

18. RIGHT TO AUDIT

UDOT and the Federal Highway Administration shall have the right to audit all cost records and accounts of the City pertaining to this Project in accordance with the auditing procedure of the Federal Highway Administration and 23 C.F.R. § 645, subpart A. Should this audit disclose that the City has been underpaid, the City will be reimbursed by UDOT within 60 days upon submission of additional billing to cover the underpayment. Should this audit disclose that the City has been overpaid, the City will reimburse UDOT within 60 days of notification of audit findings in the amount of the overpayment. For purpose of audit the City is required to keep and maintain its records of outsides services covered herein for a minimum of 3 years after final payment is received by the City from UDOT.

19. ACCEPTANCE AND MAINTENANCE

Upon completion of the Utility Work of City facilities by UDOT, the City will accept, own, and maintain its own facilities. The City shall be the sole owner of the facilities upon completion of the Project unless otherwise agreed to by the Parties. To the extent it may lawfully do so, City further agrees to relieve UDOT from any responsibility or liability that may result from its new facilities or the operation thereof.

20. ACCESS

It is understood that access for maintenance and servicing of City's facilities located on the right-of-way of the Project will be allowed only by permit issued by UDOT to the City, and that the City will obtain the permit and abide by conditions thereof for policing and other controls in conformance with Utah Administrative Code R930-7.

21. INDEMNIFICATION

UDOT and the City are both governmental entities subject to the Governmental Immunity Act. Each Party agrees to indemnify, defend, and save harmless the other from and against all claims, suits and costs, including attorneys' fees for injury or damage of any kind, arising out of its negligent acts, errors or omissions of its officers, agents, contractors or employees in the performance of this Agreement, and from and against all claims, suits, and costs, including attorneys' fees for injury or damage of any kind. Nothing in this paragraph is intended to create additional rights to third parties or to waive any of the provisions of the Governmental Immunity Act. The obligation to indemnify is limited to the dollar amounts set forth in the Governmental Immunity Act, provided the Act applies to the action or omission giving rise to the protections in this paragraph. The indemnification in this paragraph shall survive the expiration or termination of this Agreement.

22. MISCELLANEOUS

a. Each Party agrees to undertake and perform all further acts that are reasonably necessary to carry out the intent and purpose of this Agreement at the request of the other Party.

b. This Agreement in no way creates any type of agency relationship, joint venture, or partnership between UDOT and City.

c. The failure of either Party to insist upon strict compliance of any of the terms and conditions, or failure or delay by either Party to exercise any rights or remedies provided in this Agreement, or by law, will not release either Party from any obligations arising under this Agreement.

d. This Agreement shall be deemed to be made under and shall be governed by the laws of the State of Utah in all respects. Each person signing this Agreement warrants that the person has full legal capacity, power and authority to execute this Agreement for and on behalf of the respective Party and to bind such Party. This Agreement may be executed in one or more counterparts, each of which shall be an original, with the same effect as if the signatures were made upon the same instrument. This Agreement may be delivered by facsimile or electronic mail.

****

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first above written.

CITY OF WEST JORDAN Seal STATE OF UTAH

ATTEST:

The City of West Jordan

Melanie Briggs

Title: City Clerk Melanie Briggs

Date: 8/24/16

Kim V. Rolfe

Title: Mayor Kim V. Rolfe

Date: 8/24/16

(IMPRESS SEAL)

Recommended For Approval:

Alana Spendlove

Title: Utility and Railroad Leader

Date: 9/12/16

Utah Department of Transportation

Title: Project Director

Date: Sept 12, 2016

Approved as to Form

Renee Spurgeon

Title: Assistant Attorney General

Date: 09/19/2016

Comptroller Office

Cherise Young

Title: Contract Administrator

Date: 9-21-16

EXHIBIT A

Department of Public Works

STANDARD OPERATIONAL GUIDELINE

Subject: **Water System, Disruption of Service Approval Process**		SOG No.: **WS002**
Origin Date: May 1, 2010	Revison Date: April 4, 2011	Page(s): 5

1. INTRODUCTION

A. Purpose: To allow for the planning, proper coordination, notifications and approvals required for a safe and timely disruption of water service to City water customers in cases of planned construction, due to either City capital improvement projects or private development projects. Planning for such disruptions must begin during the design phase of the project, and continue through construction and project acceptance phases of the work.

B. Scope: Affects Engineering, Construction Inspections, Water, and Streets divisions of the Public Works Department. Also affect City Capital Improvement Projects and private development projects.

C. Definitions:

D. Precautions/Safety: Trench safety and planning for safe evacuation of staff from areas where pipelines may be under construction.

E. Responsibility: The City's Project Engineer has primary responsibility for this work. Others such as the City's Water Division also have key roles in the work, and the City's or Developer's Contractor has a key role to play in the safe and timely completion of the work.

F. Equipment:

G. Notifications: The Director of Public Works is to be notified at least 24-hours in advance of the actual shut-down by email.

2. PROCEDURE

Water disruptions or outages which are a result of planned construction projects are required to be coordinated from the inception of the project through construction. This means that all of the Department divisions indicated above, will need to be continually coordinated with during all phases of the project. The paragraphs below indicate the various phases of the project, which divisions and positions are involved, and how these activities are to be carried out. Extreme carefulness must be observed in planning and carrying out these activities as

EXHIBIT A

they can significantly affect City water customers and others

A. Design Proces: As part of the design process, the City's Project Engineer and Consultant are to keep all affected parties involved and informed. This is critical to the success, safe, and timely completion of the construction and water service disruption/outage.

1) Adequate System Information: This process assumes reasonable amounts of adequate water system information is available. Existing drawings must be researched, and potholing will be required to fully answer any questions the Project Engineer and Consultant may have. Reasonable amounts of funds spent on potholing are worth the money and this area of project investiation should not be short-changed. It is understood that full information is not possible in many instances, but efforts need to be made to have as much information available if reasonably possible.
2) Existing As-built Drawings: Use existing as-bulit drawings to begin with and improve on them through additional coordination with Field Staff and through potholing. The GIS/Technical Support Division of the Department is responsible for managing the as-builts drawings with assistance for all of the other divisions in the Department.
3) Roadway Intersection Drawings: Use the existing Roadway Intersection Drawings which show all valves, water lines, other utilities, improve these as needed, and then include them in the Released for Construction Drawings. Ensure the drawings are as correct as possible before bidding. If the Project Engineer does not feel comfortable with the accuracy of these drawings, they should be noted as 'schemtic drawings' with indications that locations, sizes, etc. are for general information only and are not to be relied on.
4) Planning/research of Needs and Impacts (Preliminary): All Engineering, Inspection, O&M, and Consultant staff is to participate in this planning work for water outages. The following need to be included:
   - Identify options for providing water service.
   - Field Research of Water System: Water Division is to Identify existing valves, mark, and exercises them to make sure they operate properly.
   - Impacted Customers – Staff is to identify the water customers of the City who will be impacted by any disruption or outage of the Water System.
   - Night outage(s) – If night outages are required, coordinate with the SLVHD for work to be done between the hours of 10 p.m. and 7 a.m. O&M staff will also need to be coordinated with for actual water valve closures and only O&M staff is to open/close these valves.
5) Identification of Possible Water Outages: Project Engineer/Consultant identifies possible/required shut-downs as part of the design process. These are to be noted in the project Contract Documents and conditions indicated for water outages.
6) Engineering Inspector Review of Contract Documents: The Engineering Inspector is to review the 'Released for Construction Drawings', and coordinate with the Project Engineer and remainder of the Project Team on how to address outage(s).
   - Determine proposal for how the work might be done. Suggest or require process to contactor as part of Contract Documents.

7) Constructability Review Meeting: As part of the design process, a meeting or set of meetings as needed, with the design staff, project engineer, O&M staff, and inspection staff to identify potential outages. The Engineer, O&M staff, and Inspector are to then begin working through how to plan for these outages and the impacts of those outages.
7) PW O&M Review of Drawings – Engineering staff are to make sure O&M staff has reviewed the preliminary documents (30-50% review) and their comments have been incorporated into the final documents (80-90%), prior to putting the Documents out for bid.

B. Preconstruction/Construction Meeting Coordination: As part of the process, a mandatory preconstruction/construction meeting is to be held where water distruptions/outages are discussed. City staff is to express their concerns and present the information they have prepared and require the Contractor to develop a written water disruption/outage plan.

1) Scheduling: Schedule the meeting through Outlook at least 2 weeks in advance of the meeting.

2) Persons to Attend: The Project Engineer, Consultant, Engineering Inspector, Water Division staff and Contractor must be invited and must attend. If the Contractor's Superintendent does not show up at the meeting, the meeting is to be cancelled and rescheduled.
3) Communications: Establish City and Contractor chain of command and which persons are the point-to-point contacts on the City's, and the Contractor's sides of the work.
4) Agenda Item: Water service disruptions/outages are to be identified and discussed as part of meeting agenda. The Engineering Inspection Supervisor is responsible for this meeting and this item.
5) Contractor's Proposal and Schedule: The Contractor is to take all of the available information available and propose methods/processes/timelines for distruption/outages. Contractor is to prepare and submit a Contract Schedule for the work to the Project Inspector.
6) Approval Process: Once the Contractor has submitted a proposed plan and schedule for the disruption/outage, City staff is to meet and go over the Plan to make sure it meets all of their requirements. Corrections need to be submitted back to the Contractor in writing and a new Plan prepared. The Plan is not approved until the Water Division, Engineering Inspection, Engineering, and Contractor, signs off on the Plan.

C. Request for Water Disruption/Outage: The Contractor is to make a written request for any water disruption or outage he feels is necessary, as part of the project. The following applies to this process:

1) Request is made by the Contractor to Engineering Inspector and must include:
   - Request indicates answers to the questions of 'what, when, where, why'.
   - The request must be made in writing. A letter or email will suffice as long as it contains the correct information

- The Water Division requires a minimum of 72-hours notice to begin customer notification of outage and implementation of the City's portion of the Plan in the Field.

2) Engineering Inspector begins coordination with Water Division through the Water Superintendent. The Water Superintendent will coordinate with his staff including the Water Operations Supervisor.
3) Notification of Utilities Manager and Public Works Director: Both the Utilities Operations Manager and the Public Works Director are to be kept up-to-date on planning and approval processes and especially as the project moves closer to the actual water service disruption/outage.

D. Planning/Research of Needs and Impacts: The purpose of this section is to take the Plan submitted by the Contractor and make sure that it will actually work. City staff is the most familiar with the Water System, and will have the final approval on whether the Plan is approved. The following steps need to be considered in doing this phase of the work.

1) Engineering inspector schedules meeting with Water Division staff/Contractor to coordinate outage.
2) Staff brings all information developed as part of the desgin process and proposals from the Contractor.
3) Project Team develops reviews the proposed plan and develops an actual written water outage plan and prepares a scope of work, or step by step plan, of what is going to be done. This will include detail such as which pipe will be cut first, which one second, which valves will we closed, how muc h time will it take, etc. Make sure everyone involved in the outage: contractor, contractor's on-site superintendent, workers, City project engineer, city inspector, and O&M staff all have copies and understand the order of the work. Deviations must be coordinated with everyone (Refer to KHP, Mid-Jordan Light Rail, Redwood PNR Waterline Tie-in plan. Includes "Overview", "Safety", "Quality", "Compliance", "Survey", and "Discussion Items").
4) Plan for Contingencies – Look at all drawings, identify the scope of work (work to be done), and identify contingency plans if things should go wrong. For instance, if we cut this pipe, do we understand how to close off all flow to the pipe and have we tried it out before hand.
5) Additional Potholing – If the Contractor feels that additional potholing is required, work out a solution for doing so and pay him, if additional compensation is warranted.
6) Obtain all Permits: Make sure all appropriate permits have been obtained as part of the planning process. This may include:
   - SLVHD Permit - for night work
   - UDOT Permit
   - City of West Jordan Encroachment Permit
   - Others as needed

E. Pre-activity Meeting/Actual Water Disruption/Outage: Just prior to the actual beginning of the outage, and work preliminary to the outage, a pre-activity meeting is to be held to discuss in detail the work to be done as part of the water disruption/outage. The following need to be discussed:

EXHIBIT A

1) Communications - Reaffirm City and Contractor's organizations, who are in charge, and who are the point-to-point contacts on the Contractor's side and who on the City's side. Make sure everyone has the correct phone numbers.
2) Implement final water outage plan – Needs to include priority of construction: which lines to cut first, second, etc. Plan needs to include a flushing plan and safety plan.
3) Contingency Plan(s) - Implement plan(s) for contingencies as required.
4) Schedule – execute work within appropriate time windows.
5) Permits: Make sure all the permits have been obtained.
6) Approval form: *(Do you want an approval form where everyone signs off on the outage, basically a permit?) (1st comment – No – cover page of plan/excavation permit is the form.)*
7) Inspections and Testing: Inspections and sampling are to be accomplished per City and AWWA standards.
8) Documentation of Work: The Engineering Inspector is responsible for taking pictures of the work with excavation open, take measurements and survey of critical points to document what is in the intersection, or other location, for future reference.
9) Questions regarding Unknown Pipelines/Conduits/Strucctures: If there are questions about what pipelines, conduits do, identify them prior to closing the excavation.
10) As-built Drawings: The Contractor is responsible for ensuring as-built drawings are prepared and meet the Engineering Inspector's requirements, and are turned over to the Inspector as the end of the project. The Engineering Inspector is responsible for collecting all as-built information from the Contractor and transferring them to the Project Engineer. The Project Engineer will work with the GIS Division is making the changes to the City's as-built drawings to keep them up-to-date.

F. Post-activity Meeting: Once the work is complete, all City and Contractor are to meet to go over the actual outage. Go over what went right and wrong and improve the process
   1) Process for as-builty drawings – City Engineer/Supervising Inspector need to look at the requirements for as-builting drawings and make sure they are complied with.

3. REFERENCE DOCUMENTS

A City of West Jordan, Water Design & Construction Standards.
B City of West Jordan, Encroachment Ordinance and Permit.

Approved by:

Wendell T. Rigby, P.E.
Director of Public Works

Date 4/4/2011

EXHIBIT B

City of West Jordan Public Works
Engineering Department
8000 South Redwood Road
West Jordan, Utah 84088
801-569-5070

Public Right-of-Way Encroachment Permit Application and Agreement

Company Name:	**Permit No.:**
License No.:	**Date Issued:**
Applicant Name:	**Cost of Permit:**
Title:	**Check No.:**
Address:	**Receipt No.:**
City, State, Zip:	**Work No.:**
Contractor Performing Work:	**Cell No.:**
Nature of Work: Telephone • Electrical • CATV • Gas • Water • Stormdrain • Wastewater • Secondary Water • Other:	**Email:**

FAILURE OF THE PERMITTEE TO FOLLOW THE PROVISIONS OF THIS PERMIT SHALL RESULT IN THE RETRACTION OF THE PERMIT BY THE CITY AND LOSS OF PRIVILEGESTO WORK WITHIN THE CITY 'S RIGHT-OF-WAY.

1. Standards/ Location of Work
The above indicated applicant is hereby granted subject to Title 8, Chapter 8 of the City's Municipal Code, the City's Policies and Design Criteria Manuals, the Construction Specifications Manual, Standard Drawings Manual, State Occupational Safety and Health Laws, Manual on Uniform Traffic Control Devices (MUTCD), Instructions to Flaggers, the approved plans, and any special limitations set herein, permission for the purpose of:

_____within the right of way limits in the

following locations _____

2. Prior to Work
Prior to Work being performed in the public right-of-way, the Permittee will make proper provisions for protecting the public's safety and property. This permit is a binding agreement between the Permittee and the City and shall be only for the location listed on this permit.

3. Permit Fee
The City of West Jordan Encroachment Permit Fee shall apply, for an excavation in public right-of-way, as listed on the Current Uniform Schedule of Fees and Services Charges:

_____ feet long, _____ feet wide, and _____feet deep.

4. Beginning and Ending of Work
The work permitted herewith shall commence on _____ and shall be diligently prosecuted to completion. The work shall be completed and all disturbed surface or objects restored on or before _____. In the event work is commenced under this permit and the permittee fails or refuses to complete the work, the City of West Jordan may, at its election, fill in or otherwise correct any existing deficiencies at the expense of the permittee and subject to immediate payment by the permittee.

5. Performance Bond and Insurance
The Permittee shall supply to the City a Performance Bond for a period of three (3) years after completion of the work to guarantee satisfactory performance. Amount of the bond shall be determined by the encroachment department upon review of this application. The bond shall be in the name of the Permittee.

Insurance
The Permittee shall provide to the City copies of workers compensation insurance and liability insurance that names the City its elected officials, appointed officials, employees, volunteers, and agents as additionally insured (This verbiage must be a part of your Lability Insurance under Special Items.. The Permittee shall be responsible for any liability or personal injury involved through neglect. The Permit Holder agrees to indemnify the City, its elected officials, appointed officials, employees, volunteers, and agents against all claims, demand s, costs, damages, attorney fees or other expenses of any kind by such neglect

EXHIBIT B

6. Notice of Work to Begin
Before work permitted herewith is commenced, the permittee shall call in on the inspection line (801) 569-5051 before 3:00 p.m. Commencement of said work is understood to indicate that the permittee will comply with all instruction and regulations of the City of West Jordan (as listed) with respect to performance of said work and that she/he will properly control and warn the public of said work to prevent accident. The Permittee shall inform all emergency services, school districts, UDOT and UTA two (2) working days in advance of any approved road closures or detours.

7. Restoration of Right-of-Way
This permit is issued with the understanding that the Permittee will restore the right-of-way to its original or better condition. Such restoration shall take place within two (2) working days from the time of completion of the Work. If the Permittee fails to meet this obligation within the time indicated herein, the City may make all the necessary restorations at the Permittee's expense.

8. Limits of Work Area
Permittee shall not perform any work on City of West Jordan right-of-way beyond those areas of operation stipulated on this permit. This permit in no way allows the Permittee access to private properties; the individual property owners must grant access.

9. Suspension of Work
If permittee fails to comply with City of West Jordan regulations, specifications or instructions pertinent to this permit, the City Engineer or his duly authorized representative, may by verbal order, suspend the work until the violation is corrected. If permittee fails or refuses to comply promptly, the City Engineer or his authorized representative may issue a written order stopping all or any part of the work. When satisfactory corrective action is taken, an order permitting resumption of work may be issued.

10. Permit Period/Extensions
This permit is valid forty-five (45) days from issue date. The City may grant an extension of time with a written request from the Permittee to the Engineering Department. Such request must be submitted five (5) working days before the expiration date of the permit.

11. On-Site Permit Requirements
A copy of the City's current trench detail, approved plan of the Work, approved traffic control plan, a signed copy of this Permit, and a copy of the City's Public Improvement Standards, Specifications, and Plans shall be on the work site at all times. The City shall be granted access to these papers at all times.

12. Temporary Asphalt Patching
Asphalt patching to roads between October 15 and March 1 will be considered temporary only and must be replaced after March 1 following APWA standards.

Special Limitations:

- Traffic Control Plans, signs and channelizing devices shall conform to MUTCD Standards as a minimum. Traffic Control Plan to be approved by City's Traffic Engineer.
- Contact the inspection line at (801) 569-5051 48-hours prior to the time of lane or shoulder closure, with route, location and duration. Call again when the job is complete.
- This Agreement and/or permit are for City of West Jordan approval only. You are responsible to obtain clearances from UDOT, UTA, railroads, private property owners and other local jurisdictions that you are working with.
- Call for Blue Stakes and check for other utilities in the area prior to excavation.
- Saw cut and tack coat joints. Replace asphalt to the existing depth plus 1-inch, with a minimum of 4-inches, or as directed by City Engineer.
- Untreated Base Course with 97-percent compaction for the full depth of the trench with 6-inch lifts.
- Licensee is responsible for repairing and/or restoring any portion of the roadway damaged during construction.
- Licensee must restore shoulder of highway to its original or better condition to include reseeding, replacing sidewalk, fencing, pipe, culverts or signs removed or damaged during construction.
- Striping is to be replaced with the same material within 48-hours of completion of the permit. The materials must maintain City of West Jordan standard specifications for 6-months.
- No storage of backfill material or pipe will be allowed within the ASHTO Clear Zone. Excavations to be backfilled daily if possible.
- If excavation is within 350-feet of an intersection, permittee is required to contact the City Traffic Engineer for requirements.
- Permittee will comply with all applicable environmental laws.

EXHIBIT B

- All borings shall show an approved cross section showing all other existing utilities, and clearances from such.
- Steel drum vehicles or steel tracked vehicles or equipment shall use minimum ¾ inch plywood over railroad concrete pavement to protect the concrete while crossing the railroad track area.
- For concrete paved roadways, the permittee is responsible for all panels that have 2-inch holes bored into the panel. If these panels fail in the future due to the bores, the Permittee will be required to replace the affected panels.

Accepted By:
My carrying out the activities allowed by this permit is conclusive evidence that I have accepted all provisions, limitations, and restrictions of the permit and attachments, understand and agree to all penalties for failing to comply with them and understand my ability to review a sample permit and applicable attachments at the City Engineer's office.

Permit Applicant:

Name	Title	Date

Attach the following documents: **All documents and fees must be paid before an Encroachment Permit will be issued.**

- ☐ Bond ($10,000 for one cut / $ 25,000 for multiple cuts)
- ☐ Traffic Control Plan
- ☐ Fees Paid
- ☐ Current copy of Liability Insurance (See #5 for verbiage)
- ☐ Site Plan

Processed and Approved By:

Name	Title	Date
Name	Title	Date

Inspections

Beginning of Work: Phone call received:	Inspection Completed By/Date:
Intermediate Work: Phone call received:	Inspection Completed By/Date:
Intermediate Work: Phone call received:	Inspection Completed By/Date:
Completion of Work: Phone call received:	Inspection Completed By/Date:

Final Inspection and Release

Inspector Approval		Administrative Approval to Release	
Signature	Date	Signature	Date

EXHIBIT C

City of West Jordan
Building & Safety
8000 South Redwood Road
West Jordan, UT 84088
(801) 569-5050
Fax (801) 569-5099

BUILDING DEMOLITION(S)

A Building Permit and fee are required for each building demolition. The fee for a building demolition permit is $126.25 per building.

Follow these steps to expedite your demolition permit:

1. Fill out a building permit application, with the address, type of structure to be demolished, and contractor(s) information.
2. Submit approval letter from the State Division of Air Quality 801-536-4053. Jobs having Asbestos requires an inspection by a Utah Certified Asbestos Inspector prior to disturbing suspected asbestos. 801-536-4451.
3. Submit approval letter from the Salt Lake Valley Health Department. Ph. 801-313-6626, 788 E Woodoak Lane, Murray.
4. Notify and request disconnection from the following utilities and **provide a signature from the West Jordan Engineering department for water and sewer disconnection.**
5. If contractor/company disturbs or removes painted or coated surfaces greater than 6 sq ft in a room on the interior or 20 sq ft on the exterior of target housing or child-occupied facilities built before 1978, the company may be subject to the ***new lead based paint and/or renovation, repair and painting rule.*** 801-536-4018

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a. Rocky Mountain Power - ph. 888-221-7070
b. Questar Gas – ph. 800-323-5517
c. **West Jordan Water & Sewer Engineering Department Ph. 801-831-7172**

_____
Signature (W.J. Representative) Print Name

d. Phone, Cable, and any other service to the building.

The above items must be submitted to this office before a permit will be issued.

CITY OF WEST JORDAN BETTERMENTS

The City has requested the following Betterment Work be included with the Project Work:

7000 Betterment Work

City has provided concept layouts for proposed Betterment Work as shown and described below. Final Betterment Work plans will be memorialized through a separate supplemental agreement between UDOT and the City.

1. Upgrade existing 12-inch sewer to 24-inch sewer from sta. 1+00 to sta. 5+25 +/-.
2. Install new 24-inch secondary water pipeline casing from sta. 1+00 to sta. 6+05 +/.

9000 South Betterments

City has requested Betterment Work as listed below. Final Betterment Work plans will be memorialized through a separate supplemental agreement between UDOT and the City. City shall be responsible for permitting costs associated with Betterment Work.

1. Upgrade existing 12-inch sewer to 24-inch from Winthrope Circle to approximately 3450 West.

2. Water upgrades:
   a. Replace existing 10-inch waterline with new 12-inch DIP waterline or equivalent from Winthrope Circle to hospital connection.
   b. Replace 12-inch waterline with new 12-inch DIP waterline or equivalent from old PRV location to hospital connection.
   c. Place new 16-inch waterline in same approximate alignment as the existing 16-inch water to replace Zone 1 pipe and connect to Zone 2 transmission with 16 inch pipe. Length of pipe installation shall be based on pressure class.

3. PRV upgrades:
   a. Combine two existing PRV's vaults in 9000 South into one vault. It is anticipated that the exiting PRV vault located in 9000 South, within the south park-strip, will be a Project Work conflict resulting in Utility Work at UDOT's cost. City requests the existing PRV within 9000 South, within roadway, be placed into the PRV vault being relocated as Project Utility Work. The Utility Work to abandon the 9000 South PRV, within roadway, and to combine the two PRV vaults is pro-rated Betterment Work. Costs of the Betterment shall include, design, right-of-way, materials, and construction exceeding the Project Work conflict requirements.

CITY OF WEST JORDAN AESTHETIC AND LANDSCAPE BETTERMENTS

The City has requested the following Betterment Work be included with the Project Work:

UDOT will include the following Aesthetics and Landscaping Betterment Work items into the Project Work. UDOT will supplement up to $100,000.00 towards each City intersection at 7000 and 9000 South for Aesthetics and Landscaping Betterment Work. UDOT and the City shall enter into supplemental agreements to cover Aesthetics and Landscaping Betterment Work described below. City will be responsible for paying the actual costs greater than $100,000.00 associated with the Aesthetics and Landscaping Betterment Work items, based on UDOT's actual quantities placed.

Description of Aesthetics and Landscaping Betterment Work:

Element	Desired City Betterment
Parapets:	1. Add the City of West Jordan logo to one or two visible locations on each bridge at 7000 and 9000 South.
Lighting and Traffic Signal Poles:	1. Matching all City affected streetlights to new LED standards, both arterial and local streetlights. Lights must match Section 16500 and current manufacturer specifications. 2. Traffic Signal Poles shall be black powder coated as minimum standard.
Landscaping Remnant Parcels:	1. Sod, trees, plants, and sprinkler systems installed according to City Parks' standards, which will be maintained by the City.

CITY OF WEST JORDAN
SUPPLEMENTAL AGREEMENT NO. ___

Supplement to UDOT Finance No. _____

THIS SUPPLEMENTAL AGREEMENT, made and entered into this _____ day of _____, 20____, **Utah Department of Transportation**, ("UDOT"), and **City of West Jordan** a Municipal Corporation of the State of Utah, ("City") each as ("Party") and jointly as ("Parties").

The parties hereto entered in to a Master Utility Agreement (MUA) dated _____, UDOT Finance No. _____. All the terms of the Master Utility Agreement remain in full force and effect unless otherwise specified herein.

The Parties agree as follows:

1. UDOT will perform the following described Utility Work in accordance with the terms and conditions of the MUA:

   a. Description of Utility Work to be performed, including proposed location, described in Exhibit "A" that is incorporated by reference: (Plan Sheets Attached)

   b. The City requirements as shown in the MUA – City Requirements, are modified as follows:
      i.

   c. Anticipated duration of Utility Work:

   d. Total estimated cost of City's (100% reimbursable) outside services: (Detailed Estimate Attached)

2. UDOT will notify the City's Project Representative, David Murphy, telephone number (801 569-5074, email davidm@wjordan.com at least 48 hours in advance of beginning the Utility Work covered herein, or in accordance with the specific terms of the MUA, as applicable.

IN WITNESS WHEREOF, the Parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first written above.

ATTEST:

City of West Jordan

_____ _____

Title: _____ **Title:** _____

Date: _____ **Date:** _____

(Impress Seal)

. . . . . .

RECOMMENDED FOR APPROVAL:

UTAH DEPARTMENT OF TRANSPORTATION

_____ _____

Title: Utility and Railroad Leader **Title:** Project Director

Date: _____ **Date:** _____

_____

UDOT Comptroller Office
Contract Administrator

. . . . . .

CITY OF WEST JORDAN
AMENDMENT No. 1 TO MASTER UTILITY AGREEMENT
FINANCE NUMBER 178263

THIS MASTER UTILITY AGREEMENT AMENDMENT No. 1, made and entered into this _____day of_____, 20_____, by and between the **Utah Department of Transportation**, ("UDOT"), and the **City of West Jordan**, a Municipal Corporation of the State of Utah, ("City") each as ("Party") and jointly as ("Parties").

RECITALS

WHEREAS, UDOT is preparing to request proposals for and award a design-build contract for the highway project identified as Project No. S-0154(12)11, 4 Interchanges on Bangerter Highway in Salt Lake County, Utah, ("Project"); and

WHEREAS, the Parties hereto entered in to a Master Utility Agreement, finance number 178263, dated the 12 day of September, 2016. All the terms of the Master Utility Agreement remain in full force and effect unless otherwise specified herein.

The parties hereto agree amend the Master Utility Agreement as follows:

1. Replace paragraph 3 of Section 9, Betterment Work with the following:

   If the City desires to include Betterment Work in the Project at any specific location UDOT may agree to the Betterment Work providing the difference in costs between the functionally equivalent required Utility Work and the City's desired Betterment Work that is not required by the Project shall be at the sole cost of the City and the Betterment Work can be accommodated without delaying UDOT's Project. The Betterment Work will be addressed by separate supplemental agreement between UDOT and the City. UDOT shall adhere to requirements in Sections 6 and 7 and requirements identified in Exhibits D and E.

2. Replace Exhibit "D" with new Exhibit "D" that is incorporate by reference.

IN WITNESS WHEREOF, the Parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first written above.

City of West Jordan

ATTEST:

_____ _____

Title: _____ **Title:** _____

Date: _____ **Date:** _____

(Impress Seal)

. . . . . .

RECOMMENDED FOR APPROVAL:

UTAH DEPARTMENT OF TRANSPORTATION

_____ _____

Title: Utility and Railroad Leader **Title:** Project Director

Date: _____ **Date:** _____

_____

UDOT Comptroller Office
Contract Administrator

. . . . . .

EXHIBIT D
CITY OF WEST JORDAN BETTERMENTS
7000 South and 9000 South

7000 Betterment Work

City, through its consultant, has provided concept layouts for proposed Betterment Work as shown and described below.

1. **7000 South 24-in Sewer Betterment**: Upsize existing 12-in diameter sewer to 24-in diameter sewer. Betterment Work shall include, but not limited to, piping, manholes, collars, trenching and/or boring, casing, as shown in concept drawings marked Exhibit "D-1" that is incorporated by reference.
    a. Design the Betterment Work using the Project Manual marked Exhibit "D-1".

2. **7000 South 24-in Steel Casing Betterment**: Work includes, but not limited to, installation of new 24-in steel casing for secondary waterline. See Exhibit "D-1".
    a. Location of Betterment Work is between approximate Sta: 1+00 to Sta: 6+05 within 7000 South. UDOT shall work with the City to define final Betterment Work limits.
    b. Betterment Work requirements:
        i. 24-in Steel Casing
        ii. ASTM A53 Grade B with a minimum yield stress of 42 KSI
        iii. ½-inch wall thickness
        iv. Pump and fill casing with sand, capping each end. Carrier pipe will be installed by others.

9000 South Betterments

City has requested Betterment Work as follows:

1. **9000 South 24-in Sewer Betterment:** Upsize existing 12-in diameter sewer to 24-in diameter sewer. Work shall include but not limited to piping, manholes, collars, trenching and/or boring, casing, road repair, pumping, service laterals, backfill, bedding, dumping, and material disposal.
    a. Work will be performed from Sta, 606+90 to Sta. 614+00 within 9000 South roadway.

2. City shall install sewer from Sta. 614+00 to Sta. 620+00 for sewer system functionality prior to the Betterment Work. In the event the City is unable to install improvements, UDOT will not be obligated to perform the Betterment Work and will be entitled to reimbursement of all Betterment Work Project costs. See Exhibit "D-2" that is incorporated by reference.

3. **9000 South Waterline Replacement Betterments:** UDOT shall design and construct 3 waterline replacements
    a. Work shall include, but not limited to piping, pipe wrap, valves, fittings, service laterals, collars, backfill, bedding, and waterline commissioning.
    b. City requires all waterline replacement pipe be Ductile-Iron CL-52 350psi rated except as noted.
    c. UDOT shall work with City to define final Betterment limits.
    d. Waterline replacements Betterment Work scope and location:

        i. 9000 South 10-in Waterline Replacement Betterment (upsize to 16-in)–
            1. Replace existing 10-in waterline with new 16-in waterline.
            2. Work will be performed from Withrope Circle to existing hospital connection (Sta 608+00 to 614+00). City concept drawings are shown in Exhibit "D-3" that is incorporated by reference.

        ii. 9000 South 12-in Waterline Replacement Betterment –
            1. Replace existing 12-in waterline with new 12-in waterline.
            2. Work will be performed from existing City PRV vault to existing hospital connection (Sta. 608+00 to 614+00). See concept drawings shown in Exhibit "D-3."

        iii. **9000 South 16-in Waterline Extension Betterment –**
            1. Extend existing 16-in waterline with new 16-in waterline.
            2. Replacement shall follow current 16-in alignment.
            3. Work shall be performed from Sta. 609+00 to Sta. 612+25. See concept drawings shown in Exhibit "D-3."

        iv. **9000 South 18-in Waterline Crossing Betterment:** Install 18-in waterline across 9000 South.

            1. Install Ductile-Iron CL- 50 250psi rated.
            2. Install 18-in cap/plugs on each pipe end.
            3. Work will be performed at Sta 611+90as shown in Exhibit "D-3."

4. **9000 South West Jordan Central PRV Vault Betterment –**

    UDOT shall design and construct a central PRV Vault. Work shall include, but not limited to, two (2) separate PRV valves and one (1) flow control valve, piping, isolation valves, meters, gauges, couplings, pipe supports, fittings, vaults, electrical systems and cabinets, power source, vault, hatches, manholes, ladders, ventilation systems, sumps pumps, lifting equipment, backfill, trenching, bedding, existing system connections and water system commissioning.

a. CLA-VAL pressure reducing and flow control valves as follows:
    i. Pressure Zone 3 reduced to 3B; existing pipe size is 12-inch.
        1. Size: 10-in CLA- Val 90-01 (City to identify Pilot System Specifications) with Low-Flow By-Pass.
        2. Flow: Min 700 gpm – Max 4000 gpm.
        3. Downstream Pressure Setting: 70 psi.
        4. Upstream Pressure Range: Min 65 psi – Max 122 psi.
    ii. Pressure Zone 3 reduced to Zone 2 existing pipe size 10-inch:
        1. Size: 8-in CLA- Val 90-01 (City to identify Pilot System Specifications) with Low-Flow By-Pass
        2. Flow: 300 gpm – 1100 gpm
        3. Downstream Pressure Setting: 53 psi
        4. Upstream Pressure Range: Min 95 psi – Max 122 psi
    iii. Flow Control Valve at 9000 South 3200 West:
        1. Size: 16-in CLA- Val 40-25 (City to identify Pilot System Specifications) with Low-Flow By-Pass
        2. Flow: Min 300 gpm – Max 1600 gpm
        3. Pressure Elevation Head (ft) 4729

b. UDOT shall work the City to determine final location of City's Central PRV Vault.
c. UDOT shall have final acceptance authority of City's PRV Betterment Work design that impacts UDOT right-of-way.
d. City shall provide design, construction and equipment for PRV communication SCADA system.
    i. City shall apply for a Project permit, defining scope, schedule and the City's installation contractor's contact information and insurances prior to entering the Project limits to install the PRV communication SCADA system.
e. UDOT shall assist and provide information to City to receive Utah Division of Drinking Water approval.
    i. City is responsible to obtain necessary approval from DEQ and Division of Drinking Water.

See concept drawings shown in Exhibit "D-4" that is incorporated by reference.

EXHIBIT D-1

CITY OF WEST JORDAN, UTAH

PROJECT MANUAL FOR

CITY OF WEST JORDAN
7000 SOUTH AND BANGERTER HIGHWAY
UTILITY BETTERMENTS

SEPTEMBER 2016

CITY OF WEST JORDAN
8000 S. Redwood Road
West Jordan, UT 84088

EXHIBIT D-1

TABLE OF CONTENTS

EXHIBIT D-1

SECTION 01 42 19
REFERENCE STANDARDS

1.01 GENERAL

A. Titles of Sections and Paragraphs: Captions accompanying specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.

B. Applicable Publications: Whenever in these specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the Work is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the drawings shall be waived because of any provision of, or omission from, said standards or requirements.

C. Specialists, Assignments: In certain instances, specifications test requires (or implies) that specific work is to be assigned to specialists or expert entities, who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements over which the Contractor has no choice or option. These requirements shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the Work; also they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of contract requirements remains with the Contractor.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Without limiting the general provisions of other portions of the specifications, all work specified herein shall conform to or exceed the requirements of all applicable codes and the applicable requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of these Specifications nor the applicable codes.

B. References herein to codes shall mean the following listed codes, as adopted by City of West Jordan, including all addenda, modifications, amendments, or other lawful changes thereto:

1. 2012 Manual of Standard Specifications, American Public Works Associations (APWA) Utah Chapter
2. UDOT 2012 Standard and Supplemental Specifications For Road and Bridge Construction and Drawings
3. UDOT Minimum Sampling and Testing Requirements
4. 2012 International Building Code
5. 2015 International Residential Code
6. 2009 International Mechanical Code
7. 2009 International Plumbing Code
8. 2015 International Fire Code
9. National Electric Code, 2014 Edition, as Published by the National Fire Protection Association

(NFPA)

C. In case of conflict between codes, reference standards, drawings and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the Engineer or Architect for clarification and directions prior to ordering or providing any materials or labor. The Contractor shall bid the most stringent requirements.

D. Applicable Standard Specifications: The contractor shall construct the Work specified herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and specifications listed herein; except, that whenever references to "Standard Specifications" are made, the provisions therein for measurement and payment shall not apply.

E. References in the Contract Documents to "Standard Specifications" shall mean the 2012 Manual of Standard Specifications, American Public Works Associations (APWA) Utah Chapter including all current supplements, addenda, and revisions thereof; and UDOT 2012 Standard and Supplemental Specifications For Road and Bridge Construction including all current supplements, addenda, and revisions thereof.

F. Applicable Standard Drawings: References herein to "Standard Drawings" shall mean the Standard Drawings of the City of West Jordan which drawings are hereby incorporated in and made a part of these Contract Documents; and UDOT 2012 Standard and Supplemental Drawings For Road and Bridge Construction.

G. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

*** END OF SECTION ***

SECTION 26 42 10

CORROSION MONITORING

PART 1 GENERAL

1.01 WORK INCLUDED

A. This section covers the work necessary to furnish and install pipe joint bonds to form an electrically continuous pipeline, insulating joints, electrical isolation, and test stations, complete.

1.02 DEFINITIONS

A. Ferrous Metal Pipe: Any pipe made of steel or iron, or pipe containing steel or iron as a principal structural material, except reinforced concrete pipe.

B. Foreign Owned: Any buried pipe or cable not specifically owned or operated by the Owner.

C. Lead, Lead Wire, Joint Bonds, Pipe Connecting Wires, Cable: Insulated copper conductor; the same as wire.

D. Electrically Continuous Pipeline: A pipeline which has a linear electrical resistance equal to or less than the sum of the resistance of the pipe plus the maximum allowable bond resistance for each joint as specified in this section.

E. Electrical Isolation: The condition of being electrically isolated from other metallic structures (including, but not limited to, piping, reinforcement, casings, etc.) and the environment as defined in NACE Standard RP0169.

1.03 SUBMITTALS

A. Shop Drawings: Catalog cuts and other information for products proposed for use.

B. Quality Assurance Submittals:

1. Manufacturers' Certificates of Compliance.
2. Field Test Reports.

PART 2 PRODUCTS

2.01 GENERAL

A. Like items of materials provided hereunder shall be the product of one manufacturer in order to achieve standardization for appearance, maintenance, and replacement.

B. Materials and workmanship as specified in this section shall be installed concurrently with pipe installation. Coordinate all work specified herein with related sections.

C. The use of a manufacturer's name and model or catalog number is for establishing only the standard of quality and general configuration desired. Products of other manufacturers will be considered.

2.02 JOINT BONDS

A. Ductile or Cast Iron Pipe:

1. No. 2 AWG, stranded copper wire, HMWPE insulation, maximum 18-inches long, with formed copper sleeves on each end.
2. Welding of bond to pipe shall be with the thermite weld mold recommended by the bond manufacturer for the specified pipe diameter and wire size.

B. Flexible Coupling, Flanged Coupling Adapter, and Other Non-standard Joints:

1. Ductile Iron Pipe: No. 2 AWG wires, 24 inches long, HMWPE insulation, with two 12-inch long THHN insulated No. 12 AWG wire pigtails, as manufactured by Erico Products Inc. (Cadweld), Cleveland, OH.
2. Steel Pipe:
   a. Solid copper strap, 1-1/4-inch wide by 1/16-inch thick, equivalent to 1/0 AWG wire, with five punched holes for thermite welding to the coupling and pipe. Strap bond shall be fabricated for the length of the coupling with sufficient additional length for 1 inch of joint movement.
   b. Weld bonds to pipe with the thermite weld mold recommended by the bond manufacturer.
   c. Strap bond shall be as manufactured by Erico Products, Continental Industries, or approved equal.

C. Insulated Flexible Coupling Joints:

1. Ductile Iron Pipe: No. 8 AWG HMWPE wire, 18-inch long, with one 12-inch long THHN insulated No. 12 AWG wire pigtail.
2. Steel Pipe:
   a. Solid copper strap, 1-1/4-inch wide by 1/16-inch thick, equivalent to 1/0 AWG wire, with four punched holes for thermite welding to the coupling and pipe. Strap bond shall be fabricated for the length of the coupling with sufficient additional length for 1 inch of joint movement.
   b. Weld bonds to pipe with the thermite weld mold recommended by the bond manufacturer.
   c. Strap bond shall be as manufactured by Erico Products, Continental Industries, or approved equal.

2.03 TEST STATION WIRES

A. General: Conform to applicable requirements of NEMA WC 3-80, WC 5-73, and WC 7-88.

B. Wire: Single-conductor, No. 12 AWG or No. 8 AWG stranded copper with 600-volt TW, THWN, or THHN insulation.

C. Insulation Color:

1.	Pipeline Test Wires:	White
2.	Insulated Joints:	Green and White as shown on Drawings.
3.	Foreign Metallic Pipelines:	Blue (Water) and Red (Gas)
4.	Permanent Reference Cell:	Yellow

2.04 TEST STATION

A. Flush Mounted:

1. Test Box: Concrete body cast with a cast iron ring, with a minimum weight of 55 pounds and minimum dimensions of 8-inch inside diameter and 12 inches long. Furnish extensions as required to penetrate concrete surfaces by 4 inches minimum. Furnish with a 12-pound cast iron lid with the letters "TS" or words "Test Station" cast into the lid.
2. Manufacturer and Products: Brooks; Models 1RT or equal.

B. Flush Mount Test Station Terminal Board:

1. Test boards for terminating pipeline test leads and other test leads inside test boxes: 5-inch by 8-inch by 1/4 inch thick micarta or glass-fiberglass.
2. Furnish terminal block with five stainless steel studs, washers, and lock washers.
3. Shop fabricated as shown on the Drawings with engrave labels on terminal board.

C. Post Mounted (Wood Post):

1. Test Box: Cast aluminum suitable for threaded mounting to a 2-inch or larger rigid galvanized conduit.
2. Terminal Block: Plastic or glass-reinforced laminate, 1/4-inch thick with seven (7) terminals. Terminal heads shall have special heads to keep them from turning or shall be easily accessible from both sides of the terminal block without requiring its removal. Terminal studs, washers, and nuts shall be stainless steel.
3. Mounting Post: 4-inch by 4-inch by 6-foot long AWPB LP-22 preservative-treated wood post.
4. Mounting Hardware: Conduit, straps, and hardware for mounting test station to the post as specified under CONDUIT, LOCKNUTS, AND STRAPS.
5. Manufacturer and Product: Testox 800 series test stations for Type T, C, F and I test stations as manufactured by Gerome Manufacturing.

2.05 PERMANENT REFERENCE ELECTRODES

A. Prepackaged Copper-Copper Sulfate Reference Electrodes:

1. Material: High impact ABS, ceramic with Moisture Retention Membrane.
2. Dimensions: 1.5” by 10.5” or 1” by 8”.
3. Wire: Minimum 14 AWG stranded copper wire with yellow, 600-volt TW, THWN, or THHN insulation. The wire shall be attached to the electrode and insulated with the manufacturer's standard connection. Connection shall be stronger than the wire.

4. Packaging: Furnish electrode packaged in a plastic or heavy paper bag of sufficient thickness to protect the electrode, backfill, and cloth bag during normal shipping and handling.
5. Manufacturers:
   a. Borin Manufacturing, Stelth Series
   b. MC Miller, IonX Permanent Reference Electrode

2.06 CONDUIT, LOCKNUTS, AND STRAPS

A. Conduit shall be rigid galvanized steel. Locknuts, two-hole straps, and other miscellaneous hardware shall be galvanized steel.

2.07 THERMITE WELD MATERIALS

A. General:

1. Thermite weld materials consist of wire sleeves, welders, and weld cartridges according to the weld manufacturer's recommendations for each wire size and pipe or fitting size and material.
2. Welding materials and equipment shall be the product of a single manufacturer. Interchanging materials of different manufacturers is not acceptable.

B. Molds: Graphite. Ceramic "One-Shot" molds not acceptable.

C. Adapter Sleeves:

1. For No. 12 AWG and No. 2 AWG wires.
2. Prefabricated factory sleeve joint bonds or bond wires with formed sleeves made in the field are acceptable. Attach field-formed joint bonds sleeves with the appropriate size and type of hammer die furnished by the thermite weld manufacturer.
3. Extend wire conductor 1/8 inch beyond the end of the adapter sleeve.

D. Cartridges:

1. Steel: 32 grams, maximum.
2. Cast and Ductile Iron: 45 grams, maximum, XF-19 Alloy

E. Welders and Cartridges: For attaching copper wire to pipe material:

Pipe Material	Weld Type	Cartridge Size, Max.
No. 4 AWG Wire & Smaller		
Steel	HA, VS, HC	25 gm
Ductile or Cast Iron	HB, VH, HE	32 gm
Wire Joint Bonds		
Steel	FS	32 gm
Ductile or Cast Iron	FC	45 gm

F. Welding Materials Manufacturers:

1. Erico Products Inc. (Cadweld), Cleveland, OH.
2. Continental Industries, Inc. (Thermo-Weld), Tulsa, OK.

2.08 COATING REPAIR MATERIAL FOR PIPE AND FITTINGS

A. General:

1. Complete coating repairs in accordance with recommendations of the pipe or fitting manufacturer.
2. Coat thermite weld connections to ductile iron pipe with fast cure epoxy or thermite weld cap.

B. Thermite Weld Caps: Prefabricated weld cap with coating and primer, if required, such as Handy Cap IP as manufactured by Royston Laboratories, Inc.

C. Epoxy Coating:

1. 100 percent solids, fast curing epoxy suitable for submerged or buried conditions.
2. Acceptable products and manufacturers or equal:
   a. Aquata-poxy, American Chemical Corp., East Lake, OH.
   b. Protal 7125 (low temperature) or Protal 7300, Denso North American, Houston, TX.
   c. TC 7010, Tapecoat, Evanston, IL.

2.09 ANCILLARY MATERIALS

A. Wire Connectors: One-piece, tin-plated crimp-on ring tongue connector as manufactured by Burndy Co. or Thomas and Betts.

B. Compression Connectors:

1. For in-line, tap, and multi-splice, furnish "C" taps made of conductive wrought copper, sized to fit the wires being spliced.

2. Provide crimp tool and dies as recommended by the manufacturer for the wire and connector size.
3. Manufacturer and Product: Burndy; Type YC, or equal.

C. Electrical Tape:
1. Linerless rubber high-voltage splicing tape and vinyl electrical tape suitable for moist and wet environments.
2. Use Scotch 130 C and Scotch 88 as manufactured by 3M Products.

D. Silver Brazing Alloy: Fifteen percent silver content, 1185 degrees F to 1300 degrees F melting range, ASTM B 260.

2.10 INSULATING JOINTS

A. General: Insulating joints shall be dielectric unions, flanges, or couplings. The complete assembly shall have an ANSI rating equal to or higher than that of the joint and pipeline. All materials shall be resistant for the intended exposure, operating temperatures, and products in the pipeline.

B. Insulating Flange Joints:

1. Complete assembly shall have an ANSI rating of 150 pounds, minimum, or equal to or higher than that of the joint and pipeline.
2. Gasket materials shall be resistant to intended chemical exposure, operating temperatures, and pressures in the pipeline.
3. Gaskets: Full-face Type E with O-ring seal.
4. Insulating Sleeves: Full-length fiberglass reinforced epoxy (NEMA G-10 grade).
5. Insulating Washers: Fiberglass reinforced epoxy (NEMA G-10 grade).]
6. Steel Washers: Plated, hot-rolled steel, 1/8-inch thick.
7. Manufacturers:
   a. Pacific Seal, Inc., Burbank, CA.
   b. Central Plastics Co., Shawnee, OK.

PART 3 EXECUTION

3.01 GENERAL

A. All materials and equipment associated with joint bonding, test stations, insulating joints, and corrosion monitoring sensors as shown on the Drawings and specified herein shall be furnished and installed by the Contractor. Any changes in design or method of installation of an item as specified shall be reviewed by the Engineer.

B. The Contractor shall coordinate the installation of the specified items with the General Contractor or other subcontractors on the project such that installation of the items herein specified can be completed concurrently with pipeline installation. Items not installed before backfilling of the pipe shall be installed at the Contractor's sole expense.

C. Whenever the requirements of the Specifications or Drawings exceed those of the codes or manufacturer's instructions, the requirements of the Specifications or Drawings shall

prevail. Where a larger size or better grade of material or a higher standard of workmanship is required, the most stringent requirement shall apply.

3.02 PIPE JOINT BONDING

A. To form an electrically continuous pipeline and associated appurtenances, the joints of all buried steel and iron pipe, including vault and manhole piping and all fittings, and including all restrained joints and follower rings, shall be electrically bonded, except joints specified to be threaded, welded, or insulated.

B. Mechanical pipe connections are not considered to provide electrical continuity. All metallic components associated with appurtenances and fittings, including follower rings and retainer glands shall be electrically bonded to the piping system.

C. Install two (2) joint bond wires at ductile iron pipe joint that requires bonding.

D. Electrical connection of all wires to pipe and fittings shall be by the thermite weld process.

E. Each bonded joint shall be tested as specified under ELECTRICAL CONTINUITY TESTING, this section.

3.03 TEST STATION INSTALLATION

A. Location
   1. Location of test stations shall be as shown on the Drawings. CONTRACTOR shall determine the location of the test stations based on actual site conditions and as approved by the ENGINEER.
   2. Test stations types shall be generally located as follows, unless otherwise specified or shown on the Drawings:
      a. Install Type T test stations or other type test stations as required or at 1,200-foot intervals, but shall not exceed 1,500 feet.
      b. Install a Type F test station where any metallic pipe crosses a foreign-owned metallic pipeline under cathodic protection.
      c. Install a Type C test station at each end of cased crossings, including irrigation canals, rivers, railroad, or interstate highway, unless otherwise indicated on the Drawings.
      d. Install a Type I test station at all insulated joints.
   3. Locate post-mounted test stations directly over the pipe and, where possible, at protected locations such as fences, manholes, power poles, or edges of cultivated land.
   4. Locate flush mounted test stations directly over the pipeline, except in areas of heavy traffic conditions. When heavy traffic conditions exist, offset the test stations to the side of the street.

B. Style:
   1. Test station style shall be either flush or post mounted as shown on the Drawings and as follows:
   2. Post mount style test stations shall be wood, plastic, steel, or condulet style as shown on the Drawings.

a. Wood, plastic, or steel post style test stations shall be used for Type C, F, or I test stations or any other test station type which has four or more wires and for type T test stations where self support is required.
b. Condulet post style test station shall be used for Type T test stations where support is available in the form of fence posts, pipe marker posts, or aboveground manholes.

3. Flush mount style test stations shall be used for all type test stations in traffic, landscaped, or areas where aesthetic requirements restrict use of aboveground facilities.

C. Installation:
1. Post mounted test station:
a. Height shall be 30 to 36-inches above finish grade.
b. In areas with livestock, test station height shall be between 12 and 18-inches.
2. Flush Mounted Test Stations
a. Place in concrete pad or sidewalk with cast iron cover as shown on Drawings.
b. Place concrete box on top of 3-inch base of compacted sand.
c. In unimproved areas provide blue "Carsonite" utility marker with yellow reflector on each side 1 foot from test box or as directed by the ENGINEER.

D. Test Wires:
1. Wires shall be attached to the pipe as specified under WIRE CONNECTIONS, this section.
2. Wires to foreign-owned pipelines shall be connected to the pipe by the CONTRACTOR unless the foreign pipeline owner has indicated otherwise in writing. The CONTRACTOR shall coordinate this work with the owner of the foreign pipeline.
3. Wires shall be buried a minimum of 30 inches below finished grade. Wires shall be direct buried except when station is required to be offset to the side of a road. Offset wires shall be installed in PVC coated rigid steel conduit from the centerline of the pipeline to the back of curb or test station, whichever is least.
4. Provide 12-inch diameter loop in wires at the pipeline connection, at each end of rigid conduit when required, and below post mounted test stations to prevent wires from being stressed or broken.
5. Maintain sufficient slack in flush mount test wires to permit extension of terminal block 18-inches from station.
6. Make wire connections to test station terminals with crimp-on ring tongue terminals, except where solid wire is specified.

3.04 REFERENCE ELECTRODE INSTALLATION

A. Remove plastic or paper wrapper and place reference electrode within the pipeline trench excavation 6 inches below the centerline of the pipe in a vertical position or as required by manufacturer.

B. Install reference cell as required by manufacturer at the locations indicated on the Drawings.

1. Do not use lead wire in lowering reference cell.
2. Backfill hole with select native material in 6-inch layers and hand tamp each layer around anode.

3. Use only native soil for backfill; do not use sand.
4. Exercise care not to strike reference cell or lead wire with tamper.

C. Terminate reference electrode wire in test station.

3.05 WIRE CONNECTIONS

A. Thermite Weld:

1. Use thermite weld method for electrical connection of copper wire to steel, ductile, and cast iron surfaces. Observe proper safety precautions, welding procedures, thermite weld material selection, and surface preparation recommended by the welder manufacturer. Assure that the pipe or fitting wall thickness is of sufficient thickness that the thermite weld process will not damage the integrity of the pipe or fitting wall or protective lining.
2. After the weld connection has cooled, remove slag, visually inspect, and physically test wire connection by tapping with a hammer; remove and replace any defective connections.
3. On pipe and fittings with dielectric linings, make the weld connection on the shop tab provided or on a thick metal section to minimize damage to the lining and coating. After the weld is made, coat the weld with coating repair material.
4. Coat all welds and exposed wire or copper on each connection as specified, this section. If the lining is damaged by the welding, repair in accordance with the lining applicator's recommendations.

3.06 WIRE INSULATION REPAIR

A. Splicing of wire will not be permitted except where specifically shown on the drawings and approved by the Engineer.

B. Splices or damage to the wire insulation shall be required by spirally wrapping with two coats of high-voltage rubber splicing tap and two layers of vinyl electrical tape.

C. Make wire splices with suitable sized compression connectors or mechanically secure and solder with rosin cored 50/50 solder.

3.07 INSULATED JOINTS

A. Install insulated joints to electrically isolate the pipeline as shown on the Drawings.

B. Align and install insulating joints according to the manufacturer's recommendations to avoid damaging insulating materials.

C. After assembly of insulated flanges, prepare cement-mortar surface in accordance with paint manufacturer's instructions and apply a 20-mil minimum thickness of EPA potable water approved, 100 percent solids water or air curing epoxy coating to the interior of the pipeline. Apply coating for a minimum of two pipe diameter lengths from the insulating flange in both directions. Apply and cure coating in accordance with the manufacturer's recommendations. Do not apply coating where it will interfere with operation of pipeline valves or other pipeline assemblies.

D. Install a Type I test station at each insulated joint.

E. The CONTRACTOR shall test each insulated joint for electrical insulation as specified this section. Defective insulating joints shall be repaired by the CONTRACTOR at his sole expense. All damaged or defective insulation parts shall be replaced.

3.08 TESTS AND INSPECTIONS

A. Electrical Continuity Testing:

1. General
   a. Furnish all necessary equipment and materials and make all electrical connections to the pipe as required to test continuity of bonded joints.
   b. Conduct a continuity test on all buried joints that are required to be bonded. Test the electrical continuity of joint bonds after the bonds are installed but before backfilling of the pipe.
   c. The Contractor shall test completed joint bonds for electrical continuity using digital low resistance ohmmeter or by the Calculated Resistance Test Method at the Contractor's option. The equipment and test procedures for the two methods are described herein.

2. Digital Low Resistance Ohmmeter Method:

   a. Required Equipment and Materials:
      (1) One Biddle Model 247001 digital low resistance ohmmeter.
      (2) One set of duplex helical current and potential handspikes, Biddle Model No. 241001, cable length as required.
   b. Test Procedure: Measure the resistance of joint bonds with the low resistance ohmmeter in accordance with the manufacturer's written instructions. Use the helical handspikes to contact the pipe on each side of the joint, without touching the thermite weld or the bond. The contact area shall be cleaned to bright metal by filing or grinding and without any surface rusting or oxidation. Record the measured joint bond resistance on the test form described herein. Repair any damaged pipe coating in accordance with WIRE CONNECTIONS, this section.

3. Calculated Resistance Method:

   a. Required Equipment and Materials:
      (1) One dc ammeter (meter or clamp-on) with full-scale reading of 100 amperes and a minimum resolution of 1 ampere or a 100-ampere shunt with a voltmeter as specified herein.
      (2) One high-resistance electronic voltmeter with a dc low range of 200 millivolts full scale to a dc high range of 20 volts full scale and capable of a minimum resolution of 1 millivolt (two voltmeters are required if a shunt is used).
      (3) One knife switch, safety switch, or time controlled relay suitable for test current.
      (4) Two electrical probes for the voltmeter.
         (a) Insulated wire suitable for carrying the test current, length as required.

(b) One dc power supply with a steady capacity of 50 amperes minimum; storage batteries are not an acceptable power supply.

b. Test Procedure:

(1) Current wire connections shall be either tightly clamped or thermite welded to the pipe at the Contractor's option. Wire size shall be determined by the Contractor and shall be sized for the test current, and shall not exceed 1,000 feet in length.

(2) Apply a minimum direct current of 50 amperes.

(3) Measure the voltage drop across each joint with a voltmeter by contacting the pipe on each side of the joint. Voltmeter connections to the bond wire or thermite welds will not be acceptable.

(4) Measure the current applied to the test span and the voltage drop across the joint simultaneously.

(5) Record the measured voltage drop and current for each joint of the test form described herein and calculate the bond resistance in accordance with the following formula:

$$R = \frac{E}{I}$$

Where:

R = Resistance of the joint bond.
E = Measured voltage drop across the joint, in volts.
I = Test current applied to the pipe test span, in amperes.

4. Joint Bond Acceptance:

a. Joint bond resistance shall be less than or equal to the maximum allowable bond resistance values shown in Table 1.

Table 1

Joint Type	Max. Allowable Resistance (Ohms)		
	One bond/Joint	Two Bonds/Joint	Three Bonds/Joint
No. 2 AWG wire Bonds	0.000325	0.000162	0.000081
Flexible Coupling	0.000425	0.000212	0.000115

b. The Contractor shall replace any joint bond that exceeds the allowable resistance. Replacement joint bonds shall be retested for compliance with the specified bond resistance.

c. Any defective joint bond discovered during energizing and testing shall be located, excavated, repaired, and backfilled by the Contractor.

5. Test Records: Records shall be made of each bonded pipeline during the test and submitted to the Engineer. These records shall include:

a. Description and location of the pipeline tested.

b. Starting location and direction of test.
c. Date of test.
d. Joint type.
e. Test current and voltage drop across each joint and calculated bond resistance (Calculated Resistance Method only).
f. Measured joint bond resistance (Digital Low Resistance Ohmmeter method only).

B. Final Electrical Continuity Test:

1. After the pipeline construction is completed and test stations have been installed, the Engineer shall test the completed pipeline for electrical continuity using the four-wire lineal pipe resistance test method.
2. Test will be conducted with a minimum test current of 10 amperes using a portable rectifier or dc welder.
3. An electrically continuous pipeline will be defined as a pipe or section of pipe that has a linear electrical resistance equal to or less than the sum of the lineal resistance of the pipe plus the maximum allowable joint bond resistance for each joint within the test section as specified this section.
4. Each discontinuous section of pipe shall be retested after all continuity repairs are completed to demonstrate that the pipeline is electrically continuous.

C. Electrical Discontinuity Location:

1. If electrically discontinuous sections of pipe are detected during final continuity testing, the Contractor to locate and repair electrically discontinuous joint bonds.
2. Location of discontinuous joints bonds may be performed using a test method determined by the Contractor. Regardless of test method used to locate discontinuous joints, final acceptance of discontinuous sections shall be determined by the lineal pipe resistance method.
3. After all discontinuous joints are repaired, the repaired section shall have a resistance less than or equal to the calculated allowable lineal pipe resistance as determined by the initial final continuity testing.
4. Existing joint bonds damaged during excavation of the pipe for repairs or temporary wire connection shall be repaired by the Contractor.
5. Existing test stations shall be protected from damage. When damage occurs CONTRACTOR shall complete repairs while the excavation is open. Undisclosed test station damage that requires repairs to be made after backfilling the excavation will be repaired at the Contractor sole expense.

D. Insulated Joint Testing:

1. Test each insulating joint after assembly with a GAS Electronics Model 601 insulator tester or equivalent instrument in accordance with the manufacturer's written instructions. Conduct test before burial and coating of buried insulating flanges.
2. Contractor to replace damaged or defective insulation parts identified during testing.
3. Electrical Isolation is defined as a condition of being electrically isolated from other metallic structures (including, but not limited to, other piping, concrete reinforcement, casings, and other structures not intended to be cathodically protected) and the environment as defined in NACE Recommended Practice RP0169-83.

4. Engineer shall conduct additional insulating joint tests as required to ensure that insulating flanges are not electrically shorted by other equipment or incidental contact with concrete reinforcement or other equipment during energizing and testing.

END OF SECTION

EXHIBIT D-1

SECTION 33 05 05

DUCTILE IRON PIPE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Ductile iron pipe, couplings, fittings, and joint materials.

1.02 REFERENCES

A. American Water Works Association (AWWA)

1. C104 Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
2. C105 Polyethylene Encasement for Ductile-Iron Pipe
3. C110 Ductile-Iron and Gray Iron Fittings, 3 In. Through 48 In., for Water and Other Liquids.
4. C111 Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
5. C115 Flanged Ductile-Iron and Gray Iron Pipe with Threaded Flanges.
6. C150 Standard for the Thickness Design of Ductile-Iron Pipe.
7. C151 Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids.
8. C600 Installation of Ductile-Iron Water Mains and Their Appurtenances.

1.03 SUBMITTALS

A. Product Data: Manufacturer's catalog data for pipe, and pipe joints.

B. Quality Control

1. Certificates from manufacturer evidencing compliance with AWWA standards listed herein for pipe, pipe joints, valves, valve boxes, and hydrants.
2. Certification by nationally recognized, independent organization that components, materials, and treatment chemicals in contact with potable water conform to ANSI/NSF Standard 60 or 61, as applicable.

PART 2 PRODUCTS

2.01 CEMENT-LINED DUCTILE IRON PIPE

A. Pipe:

1. Design: AWWA C150.
2. Manufacture: AWWA C151.
3. Minimum thickness:
   a. Buried: 24-inch Pressure Class 250.
   b. Exposed, flanged: Class 53.

B. Fittings:

1. Buried: Mechanical, push-on joints, or TR Flex Restrained Joint.
   a. AWWA C153.
   b. AWWA C110; rated working pressure, 250 psi.
2. Exposed: Flanged joints.
   a. AWWA C110; rated working pressure, 250 psi.

C. Joints:

1. Buried: Mechanical, push-on, or TR Flex Restrained Joint Pipe, AWWA C111.
2. Exposed: Flanged, AWWA C111.
3. Gasket: Styrene butadiene rubber.
4. Fitting joints: Type similar to that used for pipe; AWWA C110, C111, C115, or C153.
5. Restrained joints:
    a. Use pipe manufacturer's standard restrained joints or Series 1700 restraint harness, EBAA Iron Sales, Inc., or approved equal rated at specified test pressure for buried piping lengths shown on Drawings.
    b. Fittings: Series 1100 bell restraints, EBAA Iron Sales, Inc., or approved equal rated at specified test pressure for buried piping lengths shown on Drawings.
    c. Restrained joint pipe and fittings (McWane TR Flex or approved equal) may be used in lieu of mechanical restraint harness.

D. Standard cement lining for pipe and fittings; AWWA C104.

1. Thickness: Standard thickness.
2. Seal coat: Asphaltic material.

E. Include gaskets, glands, bolts, and nuts required for complete installation.

F. Mark each length of pipe with manufacturer's name and class.

G. Exterior coating for pipe and fittings: Asphaltic coating; AWWA C151.

H. Polyethylene encasement:

1. Linear, low-density with 8-mil thickness or high-density, cross-laminated with 4-mil thickness, tube-type, polyethylene film; AWWA C105.
2. Color: Purple.
3. All fittings shall be completely coated with Chevron FM Grease and shall be completely encased with 8 mil, Class C polyethylene in those areas designated by the ENGINEER, conforming to AWWA C105. All seams in the polyethylene encasement shall be taped with Polycan #900 Adhesive Tape to completely seal the seam.

I. Buried Mechanical Joints:

1. Grease and 8-mil vinyl wrap plastic cover.
2. Color: Purple.

2.02 UNDERGROUND WARNING TAPES

A. Type: Purple; 6" wide, polyethylene by 5 mil thickness with no less than a 50 gauge solid aluminum foil core, for ease of locating buried pipe. Printed wording shall read "Caution - Water Line Buried Below."

B. Bury approximately 12" directly above water main.

C. Location: Entire length of water main except for canal crossings. Warning tape shall be as manufactured by Magnatec or approved equal.

2.03 DUCTILE IRON PIPE JOINTS

A. Ductile iron pipe shall be furnished with mechanical joints, push on, flanged joints, or TR Flex Restrained Joint as required and shall conform to the "American National Standard for Rubber-Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings" (ANSI A21.11 AWWA C111) and the "American National Standard for Flanged Cast Iron and Ductile Iron Pipe with Threaded Flanges" (ANSI A21.15 AWWA C115).

2.04 MECHANICAL-TYPE COUPLINGS

A. Mechanical-type couplings shall be designed for a water working pressure not less than the design pressure of the pipe on which they are to be installed. Restraints shall be provided as required.

2.05 SLEEVE-TYPE COUPLINGS

A. Sleeve-type couplings shall be provided where shown. Couplings shall be of ductile iron, without pipe stop, and shall be of sizes to fit the pipe and fittings shown. Couplings shall be the CLOW F-1014 or approved equal. Where sleeves are utilized proper anchoring shall be provided.

2.06 GASKETS AND BOLTS

A. Except as otherwise provided, gaskets for flanged joints shall be 1/8-inch thick rubber fabric. Wherever blind flanges are shown, the gaskets shall consist of 1/8-inch thick cloth-inserted rubber sheet which shall cover the entire inside surface of the blind flange and shall be cemented to the surface of the blind flange. All buried fittings using steel bolts shall be coated with no-oxide wax and wrapped with polyethylene or as otherwise approved by the ENGINEER.

2.07 CEMENT MORTAR LINING

A. Ductile iron pipe and fittings shall be lined with cement mortar in accordance with the requirements of the "American National Standard for Cement Mortar Lining for Cast Iron and Ductile Iron Pipe and Fittings for Water" (ANSI A21.4 AWWA C104) except that the lining thickness shall be not less than 1/8 of an inch.

2.08 THRUST RESTRAINTS

A. All fittings shall have proper thrust restraints as noted for the type of installation required. Restraints shall be tie-rods, Megalug or approved equal, or Engineer approved anchoring devices.

PART 3 EXECUTION

3.01 INSTALLATION

A. Store, handle, join, lay, and otherwise install in accordance with pipe manufacturer's recommendations.

B. Trench excavation and backfill: Conform to requirements of UDOT 2012 Standard and Supplemental Specifications For Road and Bridge Construction.

C. Minimum earth cover: 4'.

D. Clean pipe interior of foreign material before lowering into trench; keep clean at all times by securely closing open ends of pipe and fittings.

E. Lay pipe in dry soil conditions.

F. Handle pipe and accessories in manner to ensure delivery to trench in sound, undamaged condition; take particular care not to injure pipe coating or cement lining.

G. Cut pipe in neat and workmanlike manner without damage to pipe.

H. Carefully protect joint material from injury while handling and storing pipe; keep weight off joint material on spigot; use no pipe with joints deformed, gouged, or otherwise impaired.

I. Pipe which is damaged or unsound will be rejected; before installation of ductile iron pipe, tap with light hammer to detect cracks.

J. Use suitable fittings where grade or alignment requires offsets greater than manufacturer's recommended joint deflections. Do not exceed 50% of manufacturer's recommended joint deflection.

K. Plug or cap and block pipe ends or fittings left for future connections. The pipe shall be plugged at the end of each work day or period of suspension.

L. Uncover existing mains, to which connections are to be made, a sufficient time ahead of pipe laying operations to determine fittings required.

M. Make connections between existing and new water mains with specials and fittings to suit actual conditions.

N. Install polyethylene encasement of ductile iron pipe in accordance with AWWA C105.

3.02 PRELIMINARY CLEANING AND FLUSHING

A. CONTRACTOR shall flush the pipeline as the work progresses by a means in accordance with good practice to insure that sand, rocks, or other foreign material are not left in any of the pipeline. If possible the flushing shall be made with an open pipe end.

3.03 TESTS FOR WATER MAINS

A. Test piping after installation in accordance with AWWA Specification C600.

B. Test piping with relatively clean water, free from organic debris and sand or silt.

C. Pressure test for water main:

1. Pressure test: 200 psi at lowest point in test section.
2. Duration of pressure test: 2 hours.
3. Flush out main before test to remove air; insert taps if necessary to blow off trapped air.
4. Maximum allowable pressure variation during test period: 5 psi.

D. Leakage test for water main:

1. Conduct concurrently with pressure test.
2. Measure water supplied to maintain test pressure within 5 psi of test pressure by pumping from calibrated container.
3. Maximum allowable leakage (L) in gallons per hour:

$$L = \frac{SD\sqrt{P}}{133{,}200}$$

S = length of pipe tested in feet
D = nominal pipe diameter in inches
P = average test pressure, psig

4. When testing against closed metal seated gate valves, an additional leakage of 0.0078 gallons per hour per inch of nominal valve size shall be allowed.

E. Provide test pumps, test plugs, pipe, calibrated container, and gages, and make required piping connections.

F. Carefully examine visible joints during the time pressure is on pipe.

G. Refit piping as needed to minimize or eliminate leakage.

H. Locate and repair or replace defective pipe or fittings until leakage is within specified allowance.

I. A satisfactory shutdown is one which allows the work to be accomplished (i.e. pipe installation) using drainage pumps to dewater if needed.

J. Furnish labor, material and equipment associated with construction dewatering at no additional cost to Owner.

K. In the case of pipelines that fail to pass the leakage test, CONTRACTOR shall determine the cause of the excessive leakage, shall take corrective measures necessary to repair the leaks, and shall again test the pipelines, all at no additional cost to OWNER.

L. The ENGINEER shall be notified at least 48 hours before the pipeline is to be tested so that he may be present during the test.

END OF SECTION

EXHIBIT D-1

SECTION 33 08 00
COMMISSIONING OF WATER UTILITIES

This specification changes a portion of APWA Standard Specification Section 33 08 00. All other provisions of the Section remain in full force and effect.

Delete articles 3.3.B, 3.8.G in Part 3.

END OF SECTION

EXHIBIT D-1

SECTION 33 11 00
WATER DISTRIBUTION AND TRANSMISSION

This specification changes a portion of APWA Standard Specification Section 33 11 00. All other provisions of the Section remain in full force and effect.

change the following articles in part 1.

1.5 **SITE CONDITIONS**

D. The Contractor is to coordinate water shutdowns with City Water Department. Water valves shall only be operated by City personnel.

change the following articles in part 2.

2.3 **CONCRETE**

A. Refer to UDOT Standard Specification Section 03055 Portland Cement Concrete and UDOT Supplemental Specification 03055M Portland Cement Concrete.

2.6 **TAPPING SADDLES**

A. As specified in West Jordan Standard Drawing CW-105.

2.7 **SERVICE CONNECTION**

A. As specified in West Jordan Standard Drawing CW-105.

2.8 **ACCESSORIES**

A. Service Pipe: Provide pipe as specified in the most current edition of the City of West Jordan Water Policies, Design and Criteria Manual. See Standard Drawings CW-105 and CW-120 for more information.
B. Service Valves and Fittings: As specified in Standard Drawing CW-105 and CW-120.
C. Meter Settings: As specified in Standard Drawing CW-120.
D. Corporation Stops and Angle Valves: As specified in Standard Drawing CW-105.
E. Bypasses: Not allowed on any service installation without approval of the Engineer.

change the following articles in part 3.

3.8 **INSTALLATION – SERVICE LINES**

A. Replace Existing Service Line:
   1. Follow AWWA C800, Utah public drinking water regulations and Utah plumbing code requirements.
   2. When replacing water service lines, replace lines copper lines with Type K copper pipe, and non-copper pipe with polyethylene IPS 200 PSI SIDR-7 “Blue NSF approved unless otherwise stated on the plans.

3.12 **BACKFILLING**

B. Trenches:
   1. Pipe zone backfill: Refer to detail drawings.
   2. Trench backfill: Refer to detail drawings.

Delete article 3.13 in Part 3.

END OF SECTION

EXHIBIT D-1

SECTION 33 31 00
SANITARY SEWERAGE SYSTEMS

This specification changes a portion of APWA Standard Specification Section 33 31 00. All other provisions of the Section remain in full force and effect.

Replace the following articles to Part 2.

2.2 MORTAR, GROUT AND CONCRETE

A. Portland cement mortar, stiff mortar composed of one part portland cement to two parts sand.
B. Non-shrink grout, use non-shrink grout according to ASTM C 1107.
C. Concrete:
    1. Cast-in-place: 4,000 psi, UDOT Standard Specification Section 03055 Portland Cement Concrete and UDOT Supplemental Specification Section 03055M Portland Cement Concrete.
    2. Precast concrete: 5,000 psi, UDOT Standard Specification Section 03055 Portland Cement Concrete and UDOT Supplemental Specification Section 03055M Portland Cement Concrete.

2.3 MANHOLES

D. Frame and Cover: Scoriated, asphalt coated, heavy duty, ductile iron UDOT Standard Specification Section 02635, with flat top and appropriate utility lettering. Shape, size and lifting device as necessary.

E. Pipe Connectors:
    2. Cast in Place or Connections to Existing Fixture with Plastic Pipe: Use rubber adapter gasket for precast sections. Grout, use non-shrink grout according to ASTM C 1107 for cast in place sections.

Replace the following articles to Part 3.

3.1 PREPARATION

B. Hand trim excavations to required elevations. Backfill over excavations and compact, UDOT Standard Specification Section 02056 Embankment, Borrow, and Backfill; and UDOT Supplemental Specification Section 02056M Embankment, Borrow, and Backfill.

END OF SECTION

EXHIBIT D-1

VICINITY MAP

N.T.S

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR RFP	AKF	GST	DWJ	09/08/16
A	ISSUED FOR REVIEW	AKF	GST	DWJ	07/07/16

Stanley Consultants INC.
383 West Vine Street, Suite 400, Murray, Utah 84123
www.stanleyconsultants.com

PRELIMINARY
NOT FOR
CONSTRUCTION

CITY OF WEST JORDAN
7000 SOUTH UTILITY BETTERMENTS

PROJECT LOCATION AND SHEET INDEX

DESIGNED	AKF/JDU
DRAWN	IL
CHECKED	GST
APPROVED	GST
APPROVED	DWJ
DATE	7/5/16

SCALE: AS SHOWN

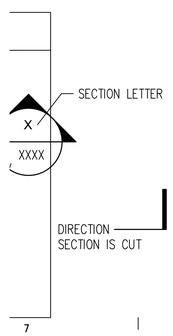
NO. G-001 REV. B

EXHIBIT D-1

	ROFILE START
	OTH WAYS
	HANNEL (STRUCTURAL)
	ONTROL JOINT
	ENTER LINE
	LEARANCE
	ORRUGATED METAL PIPE
	LEANOUT
	ONCRETE
	ONTINUOUS
	OUPLING
	URVE-SPIRAL INTERSECT
	OMPOUND SPIRAL LARGE ADIUS AT BEGINNING
	OMPOUND SPIRAL LARGE ADIUS AT END
	OMPOUND SPIRAL SMALL ADIUS AT BEGINNING
	OMPOUND SPIRAL SMALL ADIUS AT END
	ENTER
	UBIC FEET
	UBIC YARD
	EGREE
	ETAIL
	AMETER
	UCTILE IRON PIPE

FL	FLOW LINE
FLG	FLANGE
FT OR '	FEET
FTG	FOOTING
GALV	GALVANIZED
GB	GRADE BREAK
GV	GATE VALVE
HORIZ	HORIZONTAL
HP	HIGH POINT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN. OR "	INCH
INV.	INVERT
K	CURVE COEFFICIENT
L	LEFT
LB	LINE BEGINNING
LB OR #	POUND
LC	LEVEL CROWN
LE	LINE END
LF	LINEAL FEET
LN	LINEAL
LP	LOW POINT
LSM	LOW SHOULDER MATCH
MAN	MANUAL
MAX	MAXIMUM
MIN	MINIMUM
NO. OR #	NUMBER

R/W	RIGHT-OF-WAY
S	SLOPE
SBO	SHOULDER BREAKOVER
SC	SPIRAL-CURVE INTERSECT
SPI	REVERSE SPIRAL INTERSECT
SPEC	SPECIFICATION
SS_LRB	SIMPLE SPIRAL LARGE RADIUS AT BEGINNING
SS_LRE	SIMPLE SPIRAL LARGE RADIUS AT END
SS_SRB	SIMPLE SPIRAL SMALL RADIUS AT BEGINNING
SS_SRE	SIMPLE SPIRAL SMALL RADIUS AT END
ST	SPIRAL-TANGENT INTERSECT
STA	STATION
STD	STANDARD
STL	STEEL
ST STL	STAINLESS STEEL
SS	SPIRAL-SPIRAL INTERSECT
TBC	TOP BACK OF CURB



NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR RFP	AKF	GST	DWJ	09/08/16
A	ISSUED FOR REVIEW	AKF	GST	DWJ	07/07/16

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CITY OF WEST JORDAN
7000 SOUTH UTILITY BETTERMENTS

LEGEND SHEET

DESIGNED	AKF/JDU
DRAWN	IL
CHECKED	GST
APPROVED	GST
APPROVED	DWJ
DATE	7/5/16

SCALE: AS SHOWN

NO. G-002 REV. B

EXHIBIT D-1

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR RFP	AKF	GST	DWJ	09/08/16
A	ISSUED FOR REVIEW	AKF	GST	DWJ	07/07/16

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CONSTRUCTION

CITY OF WEST JORDAN
7000 SOUTH UTILITY BETTERMENTS

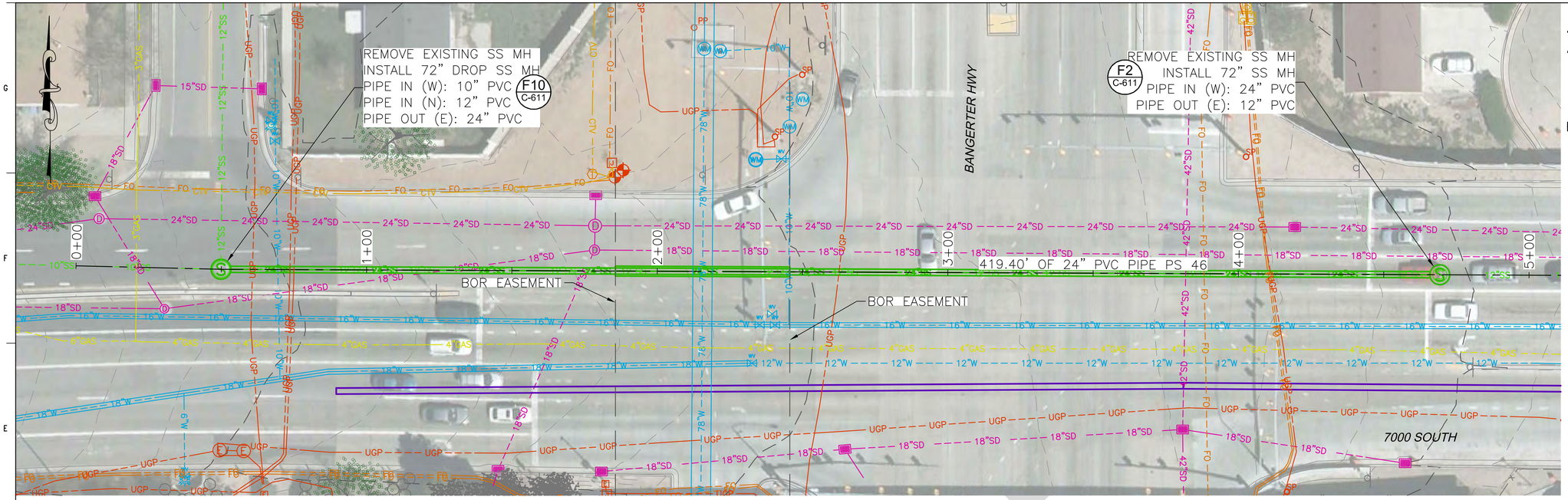
GENERAL NOTES

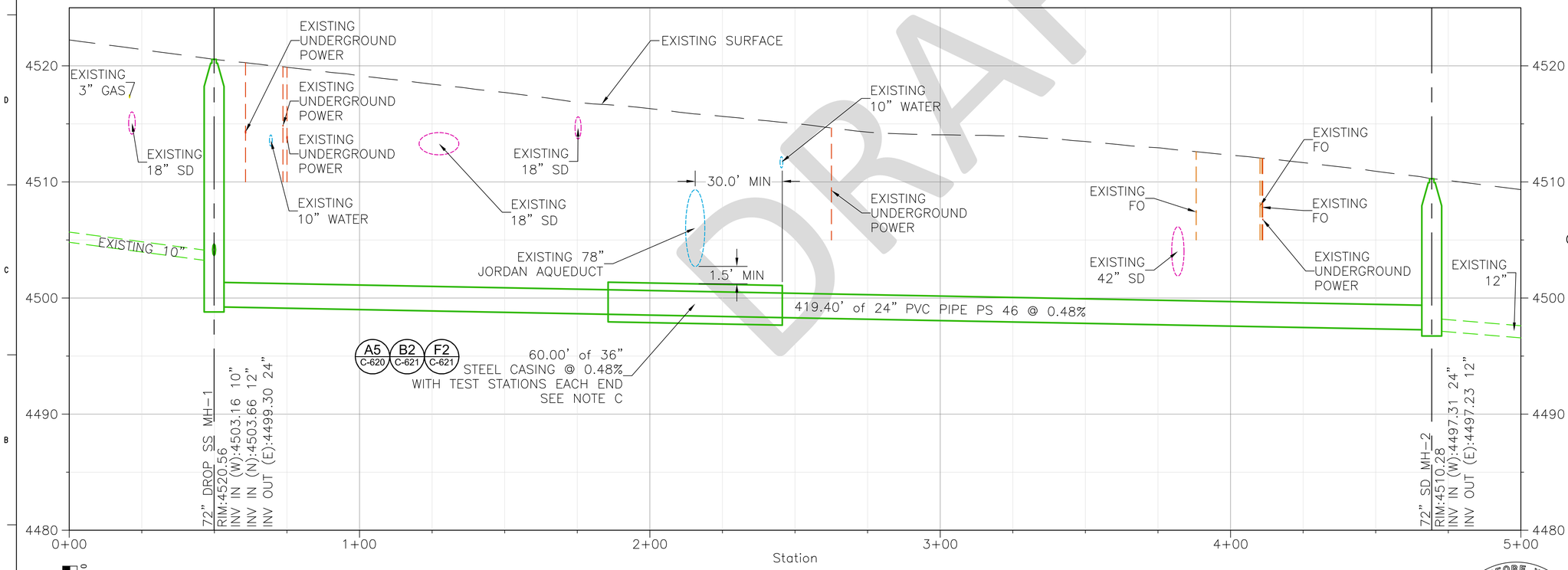
DESIGNED	AKF/JDU
DRAWN	IL
CHECKED	GST
APPROVED	GST
APPROVED	DWJ
DATE	7/5/16

SCALE: AS SHOWN

NO. G-003 REV. B

EXHIBIT D-1





SCALE: 1" =5'

SCALE: 1" = 20'
ON 22x34 SHEET

NOTES:

A. ESTIMATED MAXIMUM SANITARY SEWER FLOW WITHIN THE EXISTING 12" SEWER PIPE AT BANGERTER HIGHWAY AND 7000 SOUTH IS 0.55 CFS. CONTRACTOR TO FIELD VERIFY.

B. FLOW CONTROL:
   a. CONTRACTOR SHALL PROVIDE BYPASS OF FLOW OF SEWAGE AROUND SECTIONS OF PIPE TO BE INSTALLED AND OR REMOVED.
   b. CONTRACTOR SHALL PROVIDE MEANS AND EQUIPMENT FOR FLOW CONTROL OR PUMPING DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO PROPERTY DUE TO SEWER BACKUP WHILE CONTROLLING SEWAGE FLOW.
   c. CONTRACTOR SHALL FURNISH PUMPING EQUIPMENT, CONDUITS, ETC. UNDER NO CIRCUMSTANCES SHALL BYPASSING OF UNTREATED WASTEWATER TO STORM DRAINAGE FACILITY OR SURFACE WATER COURSE BE ALLOWED.
   d. SEWER FLOW CONTROL OPERATIONS SHALL NOT CAUSE FLOODING OR DAMAGE TO PUBLIC OR PRIVATE PROPERTY. SEWAGE FLOW DIVERTED SHALL BE DISCHARGED BACK INTO SANITARY SEWER SYSTEM.
   e. CONTRACTOR SHALL PROVIDE BYPASS PUMPING PLAN FOR FLOW DIVERSION TO CITY OF WEST JORDAN FOR REVIEW PRIOR TO CONSTRUCTION OF SANITARY SEWER IMPROVEMENTS. INDICATE SEQUENCE OF DIVERSION OPERATIONS, TEMPORARY PLUGS, SILENCED BYPASS PUMPING SYSTEMS, TEMPORARY VEHICLE AND PEDESTRIAN BYPASS, AND SITE REINSTATEMENT AFTER DIVERSION.
   f. CONTRACTOR SHALL PROVIDE FOR BYPASSING PIPE FLOWS AND LATERAL FLOWS. STANDBY PUMPING CAPACITY FOR 125 PERCENT FLOW IS REQUIRED AT ALL TIMES.

C. PROVIDE TEST STATIONS AT EACH END OF SEWER CASING AS PER DETAIL F2 ON SHEET C–621. DESIGN BUILD CONTRACTOR TO FIELD LOCATE TEST STATION AND VERIFY WITH CITY OF WEST JORDAN.

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR RFP	AKF	GST	DWJ	09/08/16
A	ISSUED FOR REVIEW	AKF	GST	DWJ	07/07/16

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CONSTRUCTION

CITY OF WEST JORDAN
7000 SOUTH UTILITY BETTERMENTS

PLAN AND PROFILE
SANITARY SEWER SHEET 1

DESIGNED	AKF
DRAWN	AKF
CHECKED	GST
APPROVED	GST
APPROVED	DWJ
DATE	6/16/16

SCALE: AS SHOWN

NO. C–100 REV. B

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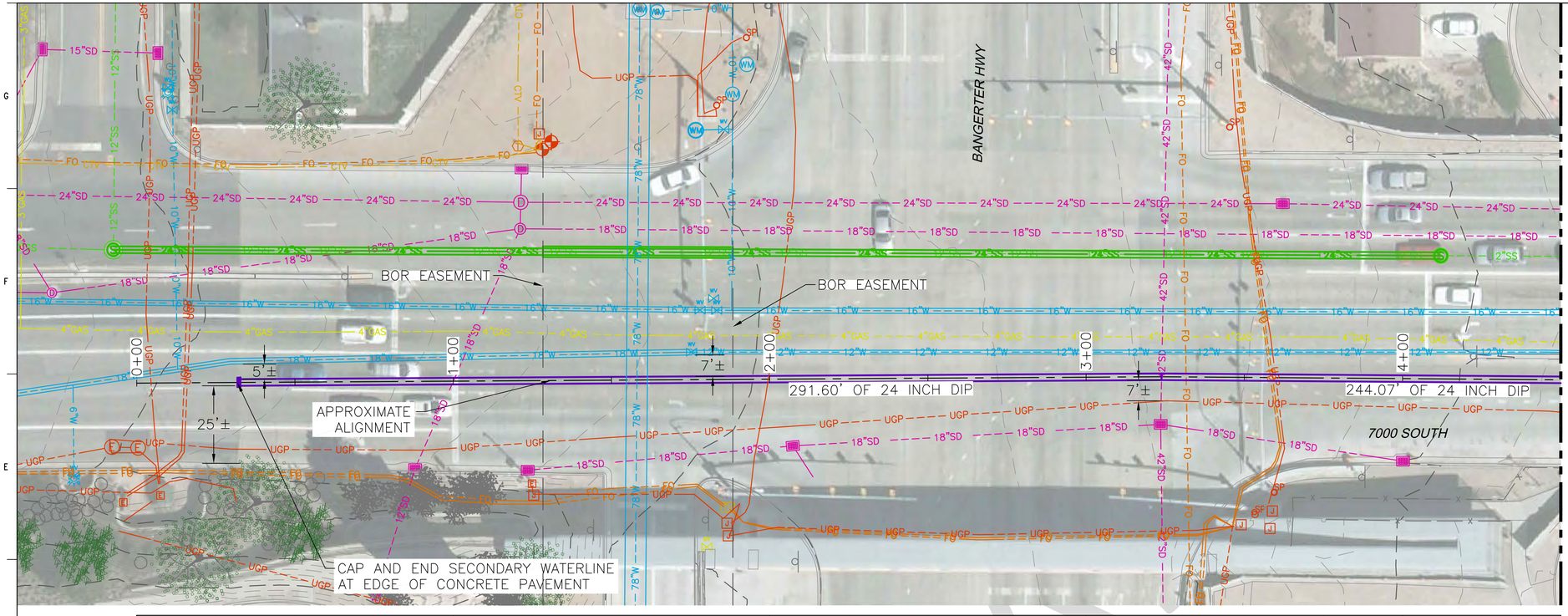
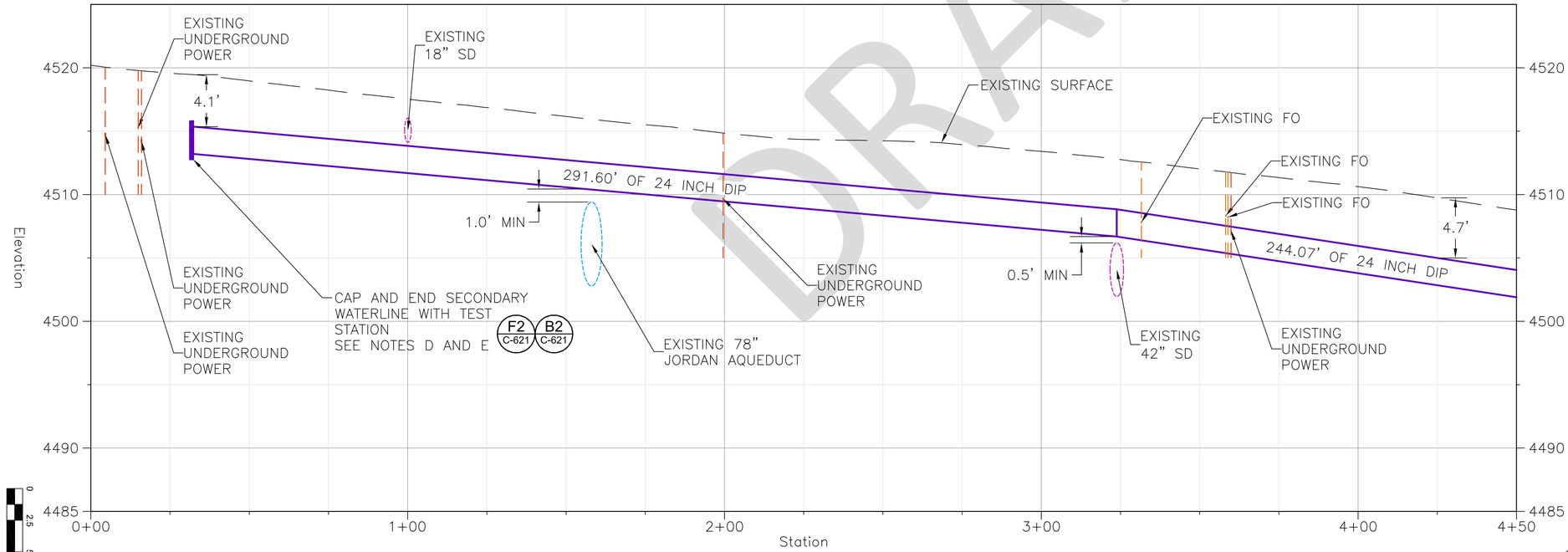
S:\25931 – 7000 South Utility Design\25931.05 – Secondary Water Transmission Pipeline\11–CAD\C–100.dwg
CADD D3–R4

EXHIBIT D-1





SCALE: 1" =5'
0 2.5 5 10

SCALE: 1" = 20'
ON 22x34 SHEET
20 0 20 40

NOTES:

A. SECONDARY WATER PIPE SHALL BE DUCTILE IRON PIPE PC250. REFER TO SPECIFICATION SECTION 33 05 05.
B. ALL FITTING, VALVES AND APPURTENANCES SHALL BE MECHANICALLY RESTRAINED AS PER DETAIL F8 ON SHEET C-620. RESTRAINED JOINT PIPE (MCWANE TR FLEX OR APPROVED EQUAL) MAY BE USED IN LIEU OF MECHANICAL RESTRAINTS (E.G. MEGA-LUGS).
C. PROVIDE JOINT BONDS AT ALL JOINTS AS PER DETAIL F10 ON SHEET C-621.
D. PROVIDE TEST STATIONS AT EACH END OF SECONDARY WATER LINE AS PER DETAIL F2 ON SHEET C-621. DESIGN BUILD CONTRACTOR TO FIELD LOCATE TEST STATION AND VERIFY WITH CITY OF WEST JORDAN.
E. DESIGN BUILD CONTRACTOR SHALL CONDUCT HYDROSTATIC PRESSURE TESTING OF 24" SECONDARY WATERLINE AFTER CONCRETE PAVEMENT IS INSTALLED. PROVIDE 2" GALVANIZED PIPING AND APPURTENANCES NECESSARY TO FACILITATE HYDROSTATIC PRESSURE TESTING THAT TERMINATE OUTSIDE THE ROADWAY. 2" GALVANIZED PIPING AND APPURTENANCES SHALL BE REMOVED AND TERMINATED WITH CAP 2' BELOW GRADE OUTSIDE ROADWAY AND ABANDONED WITHIN THE ROADWAY.

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR RFP	AKF	GST	DWJ	09/08/16
A	ISSUED FOR REVIEW	AKF	GST	DWJ	07/07/16

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CITY OF WEST JORDAN
7000 SOUTH UTILITY BETTERMENTS

PLAN AND PROFILE
SECONDARY WATER SHEET 1

DESIGNED	AKF
DRAWN	AKF
CHECKED	GST
APPROVED	GST
APPROVED	DWJ
DATE	7/5/16

SCALE: AS SHOWN
NO. C-200
REV. B

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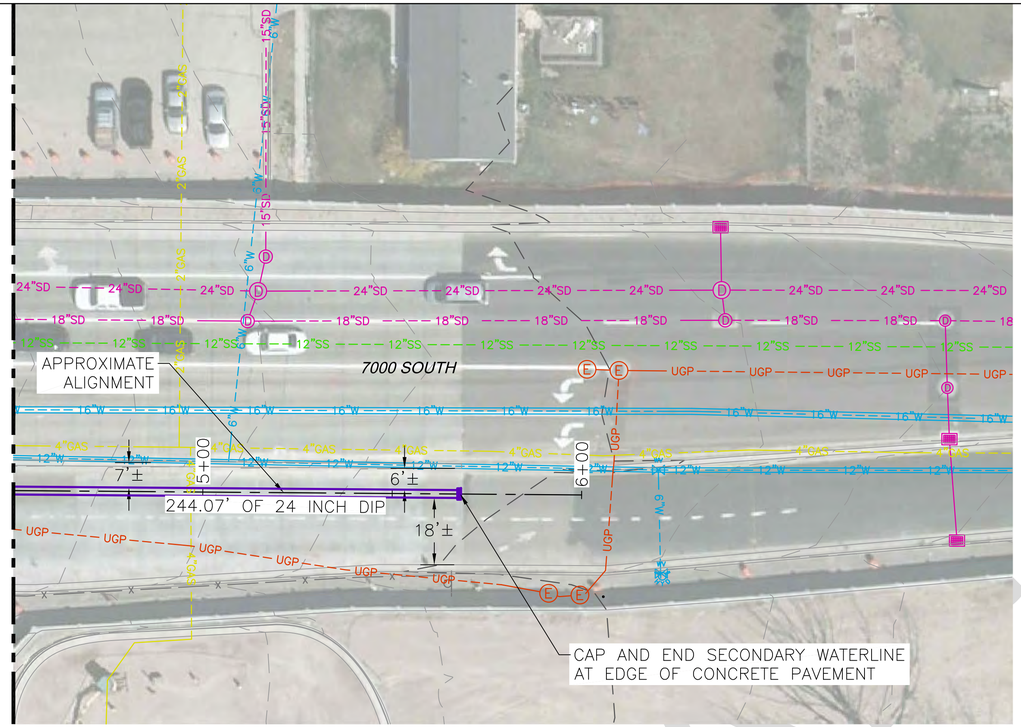
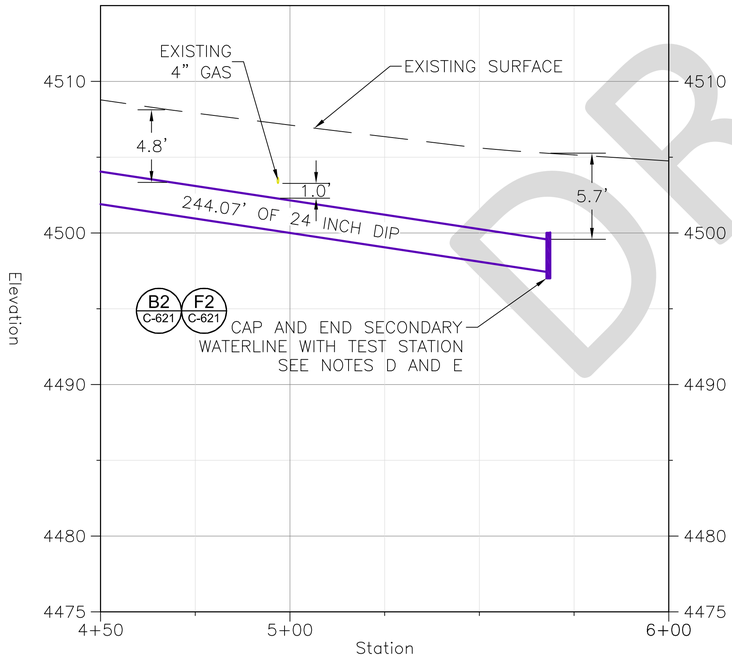
S:\25931 - 7000 South Utility Design\25931.05 - Secondary Water Transmission Pipeline\11-CAD\C-200.dwg
CADD D3-R4

EXHIBIT D-1





NOTES:

A. SECONDARY WATER PIPE SHALL BE DUCTILE IRON PIPE PC250. REFER TO SPECIFICATION SECTION 33 05 05.

B. ALL FITTING, VALVES AND APPURTENANCES SHALL BE MECHANICALLY RESTRAINED AS PER DETAIL F8 ON SHEET C–620. RESTRAINED JOINT PIPE (MCWANE TR FLEX OR APPROVED EQUAL) MAY BE USED IN LIEU OF MECHANICAL RESTRAINTS (E.G. MEGA–LUGS).

C. PROVIDE JOINT BONDS AT ALL JOINTS AS PER DETAIL F10 ON SHEET C–621.

D. PROVIDE TEST STATIONS AT EACH END OF SECONDARY WATER LINE AS PER DETAIL F2 ON SHEET C–621. DESIGN BUILD CONTRACTOR TO FIELD LOCATE TEST STATION AND VERIFY WITH CITY OF WEST JORDAN.

E. DESIGN BUILD CONTRACTOR SHALL CONDUCT HYDROSTATIC PRESSURE TESTING OF 24" SECONDARY WATERLINE AFTER CONCRETE PAVEMENT IS INSTALLED. PROVIDE 2" GALVANIZED PIPING AND APPURTENANCES NECESSARY TO FACILITATE HYDROSTATIC PRESSURE TESTING THAT TERMINATE OUTSIDE THE ROADWAY. 2" GALVANIZED PIPING AND APPURTENANCES SHALL BE REMOVED AND TERMINATED WITH CAP 2' BELOW GRADE OUTSIDE ROADWAY AND ABANDONED WITHIN THE ROADWAY.

SCALE: 1" =5'
0 2.5 5 10

SCALE: 1" = 20'
ON 22x34 SHEET
20 0 20 40

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR FRP	AKF	GST	DWJ	09/08/16
A	ISSUED FOR REVIEW	AKF	GST	DWJ	07/07/16

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7000 SOUTH UTILITY BETTERMENTS

PLAN AND PROFILE
SECONDARY WATER SHEET 2

DESIGNED	AKF
DRAWN	AKF
CHECKED	GST
APPROVED	GST
APPROVED	DWJ
DATE	7/5/16

SCALE: AS SHOWN
NO. C–201
REV. B

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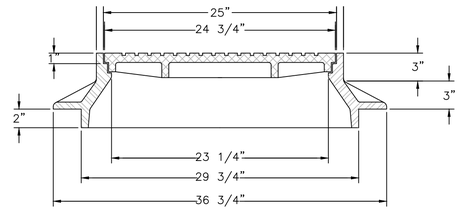
EXHIBIT D-1

AS PER UDOT STANDARD SPECIFICATION 02056 EMBANKMENT, BORROW, AND BACKFILL: AND UDOT SUPPLEMENTAL SPECIFICATION SECTION 02056M EMBANKMENT, BORROW, AND BACKFILL.

WATERSTOP: SHALL BE 1/2" 300 SERIES NONMAGNETIC STAINLESS STEEL CONFORMING TO ASTM A167 AND RUBBER GASKET MEETING ASTM C-443. JOINTS: PLACE FLEXIBLE GASKET TYPE SEALANT IN MANHOLE JOINTS.

BASE OF MANHOLE:

A. THIS MANHOLE BASE IS TO BE USED FOR A CONNECTION TO AN EXISTING LINE OR AS AN ALTERNATE TO A PRECAST MANHOLE BASE.
B. INVERT SHALL BE SMOOTH AND "U' SHAPED AND MATCH THE SPRING LINE OF THE PIPE.
C. THE FIRST PRECAST MANHOLE SECTION SHALL BE CAST INTO THE BASE. THE REMAINDER OF THE MANHOLE CONSTRUCTION SHALL CONFORM TO PLAN SS-030.



8. VENTILATION: STANDARD IS FOR VENTED MANHOLE EXCEPT AS NEEDED FOR PROBLEMS.

F/9 FRAME AND COVER
NTS CITY OF WEST JORDAN STD. PLAN SS-055

NOTES:

1. ADJUST TO GRADE: ADJUST INCIDENTAL STRUCTURE TO GRADE PER APWA SECTION 33 05 14
2. BACKFILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER UDOT STANDARD SPECIFICATION 02056 EMBANKMENT, BORROW, AND BACKFILL: AND UDOT SUPPLEMENTAL SPECIFICATION SECTION 02056M EMBANKMENT, BORROW, AND BACKFILL.
3. JOINTS: PROVIDE A NEAT STRAIGHT JOINT BETWEEN EXISTING AND NEW ASPHALT CONCRETE SURFACES. PROVIDE CONCENTRIC CIRCLE OR STRAIGHT EDGE CUT. CLEAN EDGES OF ALL DIRT, OIL AND LOOSE DEBRIS.

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR RFP	AKF	GST	DWJ	09/08/16
A	ISSUED FOR REVIEW	AKF	GST	DWJ	07/07/16

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CITY OF WEST JORDAN
7000 SOUTH UTILITY BETTERMENTS

SANITARY SEWER
DETAIL SHEET 1

DESIGNED	AKF
DRAWN	IL
CHECKED	GST
APPROVED	GST
APPROVED	DWJ
DATE	7/5/16

SCALE: AS SHOWN
NO. C-610
REV. B

EXHIBIT D-1

DANCE WITH OSHA AND
STRUCTURAL EXCAVATION
STATE AND FEDERAL

N SECTION 02056
CTION 02056M

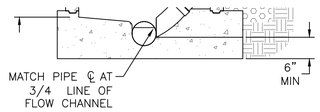
ILL BORROW
COURSE
ILL BORROW
ION

DARD SPECIFICATION
SPECIFICATION SECTION
TEST RESULT DATA MAY
TEST IMMEDIATELY

ERAGE SYSTEMS".

TRENCH COMPACTION

-020
ISED)



STEEL STRAP
PRESSURE TREATED
FORMED WOOD BLOCK

ANCHOR STRAP DETAIL

NOTES:

1. SELECT FILL: USE CLASS A UNTREATED BASE COURSE GRADE 1 OR GRADE 3/4 PER UDOT STANDARD SPECIFICATION 02721. USE OF SEWER ROCK OR RECYCLED AGGREGATE REQUIRES ENGINEER'S WRITTEN APPROVAL.
2. BACKFILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER UDOT STANDARD SPECIFICATION 02056
3. CONCRETE: CLASS 4,000 PER UDOT STANDARD SPECIFICATION 03055 PORTLAND CEMENT CONCRETE AND UDOT. SUPPLEMENTAL SPECIFICATION SECTION 03055M PORTLAND CEMENT CONCRETE CAST IN PLACE APPLICATIONS AND 5,000 PSI FOR PRECAST APPLICATIONS. APPLY A SEALING/CURING COMPOUND UDOT STANDARD SPECIFICATION 03390 CONCRETE CURING AND UDOT SUPPLEMENTAL SPECIFICATION 03390 CONCRETE CURING.
4. FOUNDATION: FOUNDATION TO REST ON 6" OF FREE DRAINING GRANULAR BACKFILL AS PER UDOT STANDARD SPECIFICATION 02056 EMBANKMENT, BORROW, AND BACKFILL: AND UDOT SUPPLEMENTAL SPECIFICATION SECTION 02056M EMBANKMENT, BORROW, AND BACKFILL.
5. JOINTS: PLACE FLEXIBLE GASKET TYPE SEALANT IN MANHOLE JOINTS.
6. FINISH: PROVIDE SMOOTH AND NEAT FINISHES ON THE INTERIOR OF CONES, SHAFTS, AND RINGS. IMPERFECT MOLDING OR HONEYCOMBS WILL NOT BE ACCEPTED.

F 10 DROP MANHOLE
NTS CITY OF WEST JORDAN STD. PLAN SS-045 (REVISED)

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR RFP	AKF	GST	DWJ	09/08/16
A	ISSUED FOR REVIEW	AKF	GST	DWJ	07/07/16

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CITY OF WEST JORDAN
7000 SOUTH UTILITY BETTERMENTS

SANITARY SEWER
DETAIL SHEET 2

DESIGNED	AKF
DRAWN	IL
CHECKED	GST
APPROVED	GST
APPROVED	DWJ
DATE	7/5/16

SCALE: AS SHOWN

NO.	REV.
C-611	B

EXHIBIT D-1

11	14	5	72
15	20	7	102
19	26	9	133
23	32	11	159
27	37	13	187
31	42	15	214
34	48	16	241
38	53	18	266
41	58	20	292
47	68	22	340

VERTICAL UP END

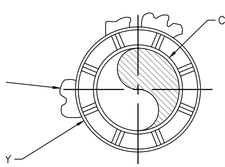
VERTICAL DOWN END

NOTES:

1. ALL JOINTS WITHIN THE SPECIFIED LENGTH LR MUST BE RESTRAINED. ALL LENGTHS ARE GIVEN IN FEET.
2. THE MAXIMUM TEST PRESSURE SHALL NOT EXCEED 200 PSI.
3. THE MINIMUM DEPTH OF BURY SHALL BE 3' TO TOP OF PIPE.
4. RESTRAINED LENGTHS MAY BE REDUCED WHEN SUPPORTED BY ENGINEERING CALCULATIONS.

F 8 JOINT RESTRAINT – DUCTILE IRON

NTS CITY OF WEST JORDAN STD. PLAN CW-90&95



SECTION

MINIMUM WALL THICKNESS OF CASINGS	
DIAMETER	WALL THICKNESS
12" AND UNDER	0.188"
14"-18"	0.312"
20"-22"	0.375"
24"-26"	0.438"
28"-32"	0.500"
34"-42"	0.562"

LARGER CASINGS AS DIRECTED BY THE CITY ENGINEER.

EVISED)

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR RFP	AKF	GST	DWJ	09/08/16
A	ISSUED FOR REVIEW	AKF	GST	DWJ	07/07/16

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CITY OF WEST JORDAN
7000 SOUTH UTILITY BETTERMENTS

SECONDARY WATER
DETAIL SHEET 1

DESIGNED	AKF
DRAWN	IL
CHECKED	GST
APPROVED	GST
APPROVED	DWJ
DATE	7/5/16

SCALE: AS SHOWN

NO. C-620 REV. B

EXHIBIT D-1

LESS.
OR
DING
RIDGE
200

NOTES:
1. PUSH ON DUCTILE IRON BOND SHOWN, SIMILAR FOR DUCTILE MECHANICAL AND RESTRAINED JOINTS, AND STEEL CARNEGIE JOINTS.
2. INSTALL 2 BOND WIRES AT EACH PIPE JOINT, UNLESS SPECIFIED OTHERWISE.
3. COAT THERMITE WELDS WITH DENSO PROTAL 7200 EPOXY.

F/10 DUCTILE IRON JOINT BOND
NTS

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR RFP	AKF	GST	DWJ	09/08/16
A	ISSUED FOR REVIEW	AKF	GST	DWJ	07/07/16

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CONSTRUCTION

CITY OF WEST JORDAN
7000 SOUTH UTILITY BETTERMENTS

SECONDARY WATER
DETAIL SHEET 2

DESIGNED	AKF
DRAWN	IL
CHECKED	GST
APPROVED	GST
APPROVED	DWJ
DATE	7/5/16

SCALE: AS SHOWN

NO. C-621 REV. B

606+00
608+00
610+00
SR-154 (BANGERTER HWY)
612+00
614+00
616+00
618+00
620+00
N
WEST JORDAN CITY TO SET NEW MANHOLE. 614+00
9000 SOUTH
24" SWR
12" swr
8" SWR
UDOT TO MAKE SEWER TIE-IN. TIE-IN TO BE COORDINATED WITH WEST JORDAN CITY. 606+90
9000 SOUTH 24-IN SEWER BETTERMENT 606+90 TO 614+00
WEST JORDAN CITY TO INSTALL 24-INCH SEWER LINE

9000 SOUTH 24-IN SEWER BETTERMENT
EXHIBIT D-2

606+00
608+00
610+00
612+00
614+00
SR-154 (BANGERTER HWY)
78" JORDAN AQUEDUCT
9000 SOUTH 16-IN WATERLINE EXTENSION BETTERMENT. 609+00 TO 612+25
9000 SOUTH 18-IN WATERLINE CROSSING BETTERMENT 611+90
9000 SOUTH
9000 SOUTH 12-IN WATERLINE REPLACEMENT BETTERMENT. CITY PRV VAULT TO HOSPITAL CONNECTION (608+00 TO 614+00)
9000 SOUTH 10-IN WATERLINE REPLACEMENT BETTERMENT (UPSIZE TO 16-IN) WINTHROPE CIRCLE TO HOSPITAL CONNECTION (608+00 TO 614+00)
N

9000 SOUTH WATERLINE REPLACEMENT BETTERMENTS
EXHIBIT D-3

606+00
608+00
610+00
612+00
614+00
SR-154 (BANGERTER HWY)
78" JORDAN AQUEDUCT
9000 SOUTH
9000 SOUTH WEST JORDAN
CENTRAL PRV VAULT
BETTERMENT
16" wtr
12" wtr
10" wtr
8" wtr
6" wtr
78" wtr
16" WTR
12" WTR
10" WTR
8" WTR
6" WTR
18" WTR
N

9000 SOUTH WEST JORDAN CENTRAL PRV VAULT BETTERMENT
EXHIBIT D-4

9/27/2016 10:48:51 AM pw:\\pw.hornocks.com:PWPrimary\Documents\Projects\2016\PG-858-1604 Bangerter 4 Interchanges PM\12666\Documentation\Figures\9000 South\12666_90WTR03.dgn

REQUEST FOR PROPOSALS

UTAH DEPARTMENT OF TRANSPORTATION

4 Interchanges on Bangerter HWY (SR-154)

Project No. S-0154(12)11

Salt Lake County

CONTRACT DOCUMENTS

PART 7:
CONTRACT DRAWINGS

~~Final Issued~~Addendum 2 - ~~September~~ October ~~15~~6, 2016

TABLE OF CONTENTS

4000+00

4002+00

4004+00

4006+00

4000+00.00
BEGIN CONSTRUCTION
S-0154(12)11
MP 15.35
N 405719.137
E 508126.676

4003+59.57
LT 151.39

4003+34.67
LT 75.00

CONSTRUCTION LIMIT

Existing Jordan Aqueduct Easement

ROW CONTROL LINE
N17°51'09"W

54BH-1

PC 4005+63.45

75.00

SEE 54RW-02

0 30 60 120
FEET

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
54BH-1	ROW CONTROL LINE	3°24'42" RT	12649.00	753.18	376.70	4009+40.15	406614.017	507838.459

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	UPDATED CURVE DATA TABLE

DRAWN BY KKH
CHECKED BY QC CSB

MM/DD/YY
DATE

APPROVED

PROFESSIONAL LAND SURVEYOR

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 5400 SOUTH

PROJECT NUMBER: S-0154(12)11

PIN: 12566

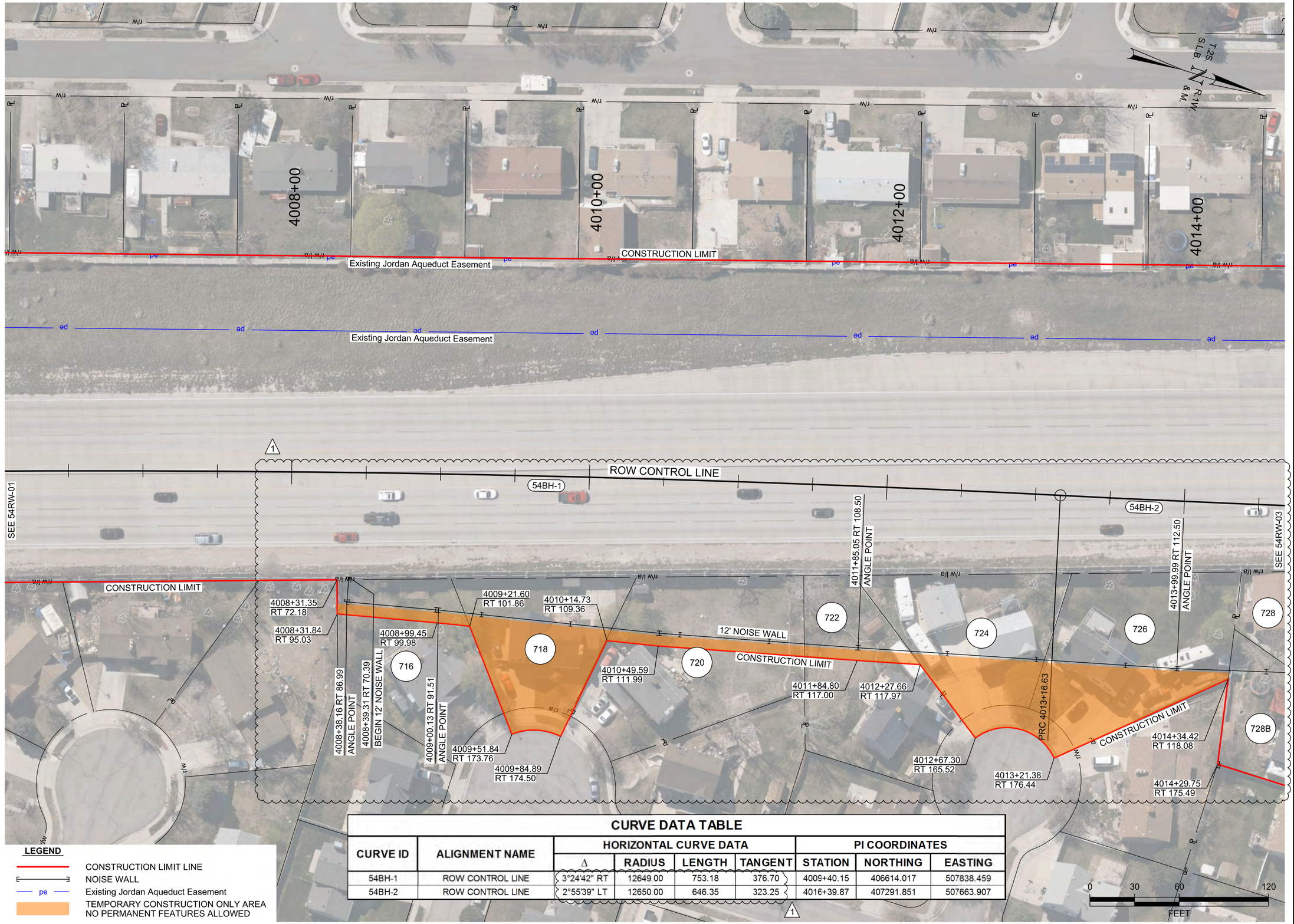
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 54RW-01

10/4/2016 11:17:42 AM

pw:\\gw.horrocks.com:PWP\Primary Documents\Projects\2016\PC-858-1604 Bangerter 4 Interchanges PM\12566\Sheet Files\Right_of_Way\12566_CR_54RW-01.dgn



LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
54BH-1	ROW CONTROL LINE	3°24'42" RT	12649.00	753.18	376.70	4009+40.15	406614.017	507838.459
54BH-2	ROW CONTROL LINE	2°55'39" LT	12650.00	646.35	323.25	4016+39.87	407291.851	507663.907

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	UPDATED CURVE DATA, LIMITS & NOISE WALL

DRAWN BY: KKH
CHECKED BY: CSB
QC
DATE: MM/DD/YY

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS
APPROVED
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 5400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 54RW-02

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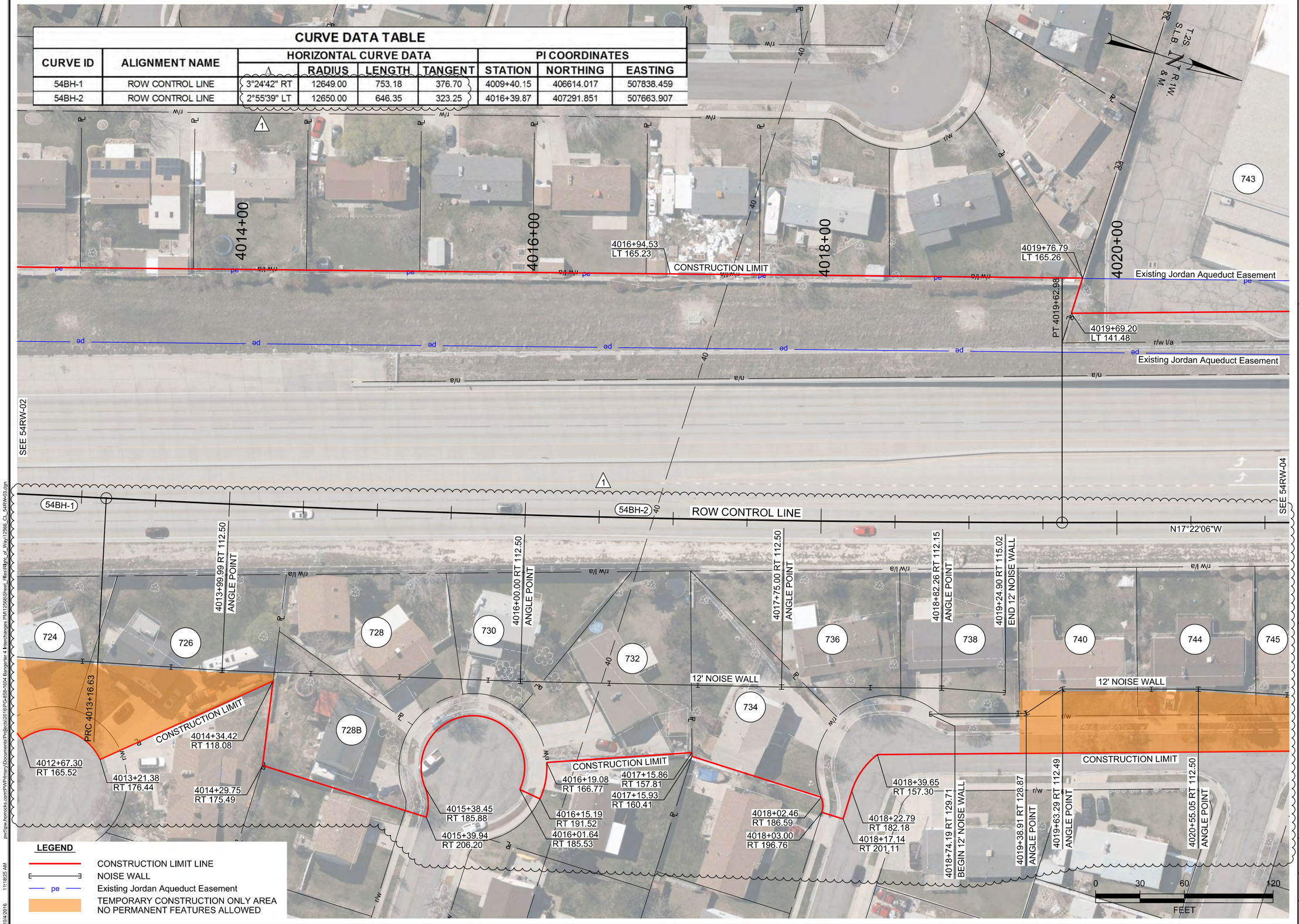
10/4/2016 11:18:03 AM

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
54BH-1	ROW CONTROL LINE	3°24'42" RT	12649.00	753.18	376.70	4009+40.15	406614.017	507838.459
54BH-2	ROW CONTROL LINE	2°55'39" LT	12650.00	646.35	323.25	4016+39.87	407291.851	507663.907



LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	UPDATED CURVE DATA, LIMITS & NOISE WALL.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB
APPROVED MM/DD/YY
DATE
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 5400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566

SALT LAKE COUNTY

CONTRACT RIGHT-OF-WAY

SHEET NO. 54RW-03

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
54BH-2	ROW CONTROL LINE	2°55'39" LT	12650.00	646.35	323.25	4016+39.87	407291.851	507663.907

4019+76.79
LT 165.26

4019+69.20
LT 141.48

PT 4019+62.98

4020+00

4022+00

4024+00

4026+00

Existing Jordan Aqueduct Easement

CONSTRUCTION LIMIT

4026+25.60
LT 147.03

4026+86.65
LT 143.50

4026+85.22
LT 139.08

743

753

SEE 54RW-03

SEE 54RW-05

54BH-2

ROW CONTROL LINE
N17°22'06"W

4019+24.90 RT 115.02
END 12' NOISE WALL

740 744 745 746 747 748 749 750 751 752 754 754B

12' NOISE WALL

4019+38.91 RT 128.87
ANGLE POINT

4019+63.29 RT 112.49
ANGLE POINT

4020+55.05 RT 112.50
ANGLE POINT

4022+29.13
RT 153.40

4023+00.10 RT 128.50
ANGLE POINT

4024+15.05 RT 132.50
ANGLE POINT

4024+80.00 RT 132.50
ANGLE POINT

4026+27.11
RT 150.06

4026+48.82
RT 204.14

4026+74.03
RT 201.48

4026+67.49
RT 209.80

4026+90.88
RT 184.67

4027+60.71
RT 206.71

4027+65.23
RT 192.41

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

0 30 60 120
FEET

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	UPDATED CURVE DATA, LIMITS & NOISE WALL.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB
MM/DD/YY DATE
APPROVED
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 5400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 54RW-04

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CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
54BH-3	ROW CONTROL LINE	22°06'02" RT	2400.00	925.74	468.70	4038+38.16	409390.038	507007.652

4026+00 4028+00 4030+00 4032+00 4034+00

743 753 775 774 752 751 754 777B 754B 777 779 776 778 798

4026+86.65 LT 143.50
4026+25.60 LT 147.03
4026+85.24 LT 139.08
4028+79.78 LT 132.32
4030+04.63 LT 239.44
4029+93.77 LT 205.11
4030+60.89 LT 218.49
4029+90.00 LT 147.00
4029+73.00 LT 146.00
4029+73.00 LT 136.41
4030+34.77 LT 192.14
4030+31.10 LT 183.87
4031+93.93 LT 188.00
4032+21.78 LT 150.00
4033+48.00 LT 150.00
4033+70.00 LT 144.00
4033+70.00 LT 130.58
4028+25.77 RT 139.52 END 12' NOISE WALL
4026+27.11 RT 150.06
4026+48.82 RT 204.14
4026+74.03 RT 201.48
4026+67.49 RT 209.80
4026+90.88 RT 184.67
4027+73.66 RT 195.08
4027+65.23 RT 192.41
4027+60.71 RT 206.71
4029+45.83 RT 193.62
4029+17.47 RT 292.03
4029+08.70 RT 289.25
4030+73.30 RT 185.04
4031+21.10 RT 147.40
4032+35.18 RT 152.56
4032+26.29 RT 180.68
PC 4033+69.46
4033+70.13 RT 150.00

Existing Jordan Aqueduct Easement
CONSTRUCTION LIMIT
MAINTENANCE ACCESS DEVIATION
12' NOISE WALL
SEE 54RW-04
SEE 54RW-06
ROW CONTROL LINE
N17°22'06"W
54BH-3
SEC
T.2S. R.1W. S.L.B. & M.

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

0 30 60 120
FEET

REVISIONS				
NO.	DATE	APPROVED BY	REMARKS	
2	09/16	BGA	MAINTENANCE ACCESS DEVIATION	
1	08/16	CSB	UPDATED CURVE DATA, LIMITS & NOISE WALL.	

DRAWN BY KKH
QC CHECKED BY CSB
MM/DD/YY DATE

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL LAND SURVEYOR

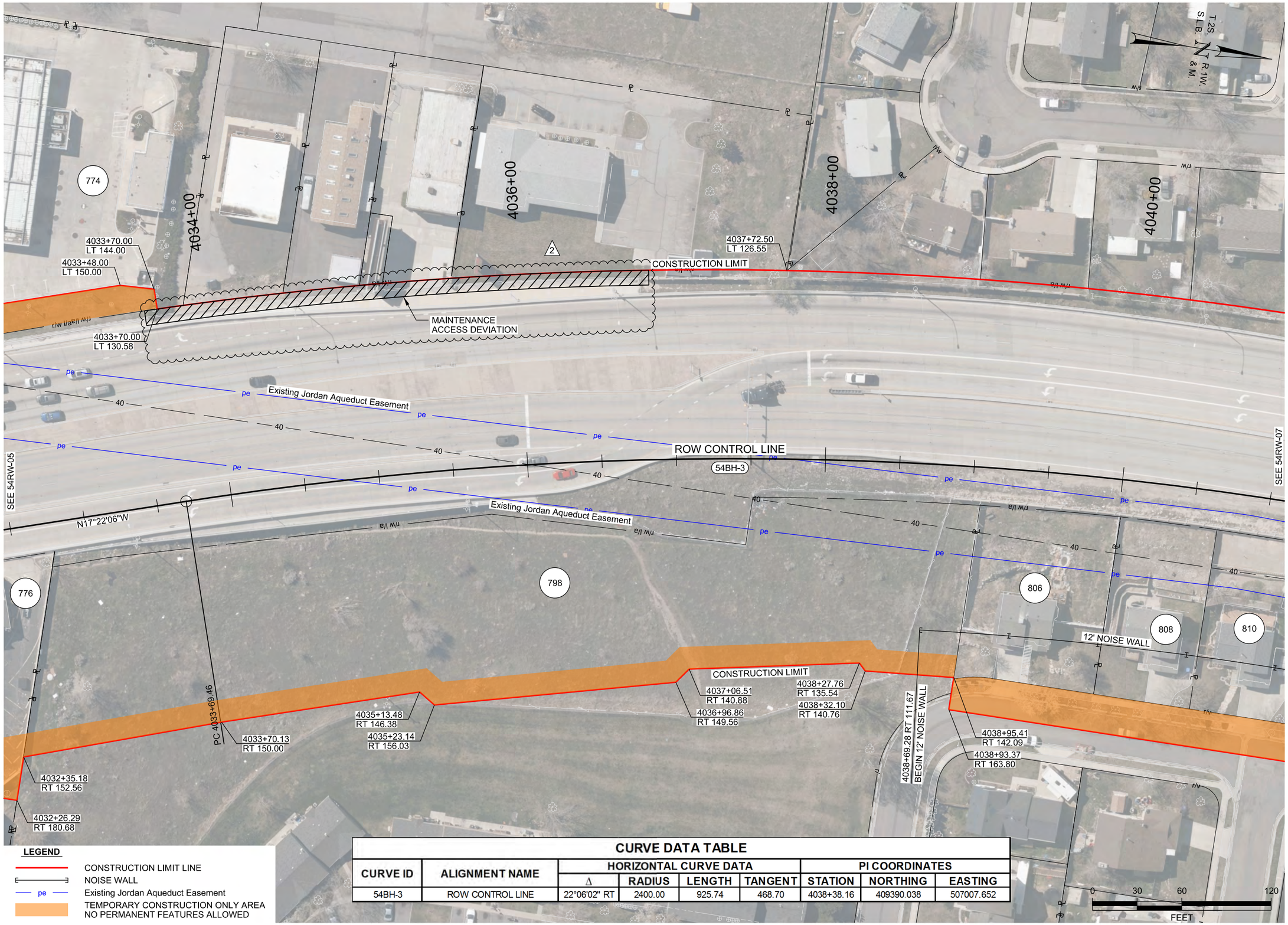
4 INTERCHANGES ON
BANGERTER HIGHWAY - 5400 SOUTH

PROJECT
PROJECT NUMBER S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 54RW-05



LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
54BH-3	ROW CONTROL LINE	22°06'02" RT	2400.00	925.74	468.70	4038+38.16	409390.038	507007.652

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
2	09/16	BGA	MAINTENANCE ACCESS DEVIATION
1	08/16	CSB	UPDATED CURVE DATA, LIMITS & NOISE WALL.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB

APPROVED

MM/DD/YY
DATE

PROFESSIONAL LAND SURVEYOR

4 INTERCHANGES ON
BANGERTER HIGHWAY - 5400 SOUTH

PROJECT

PROJECT NUMBER S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE
COUNTY

SHEET NO. 54RW-06

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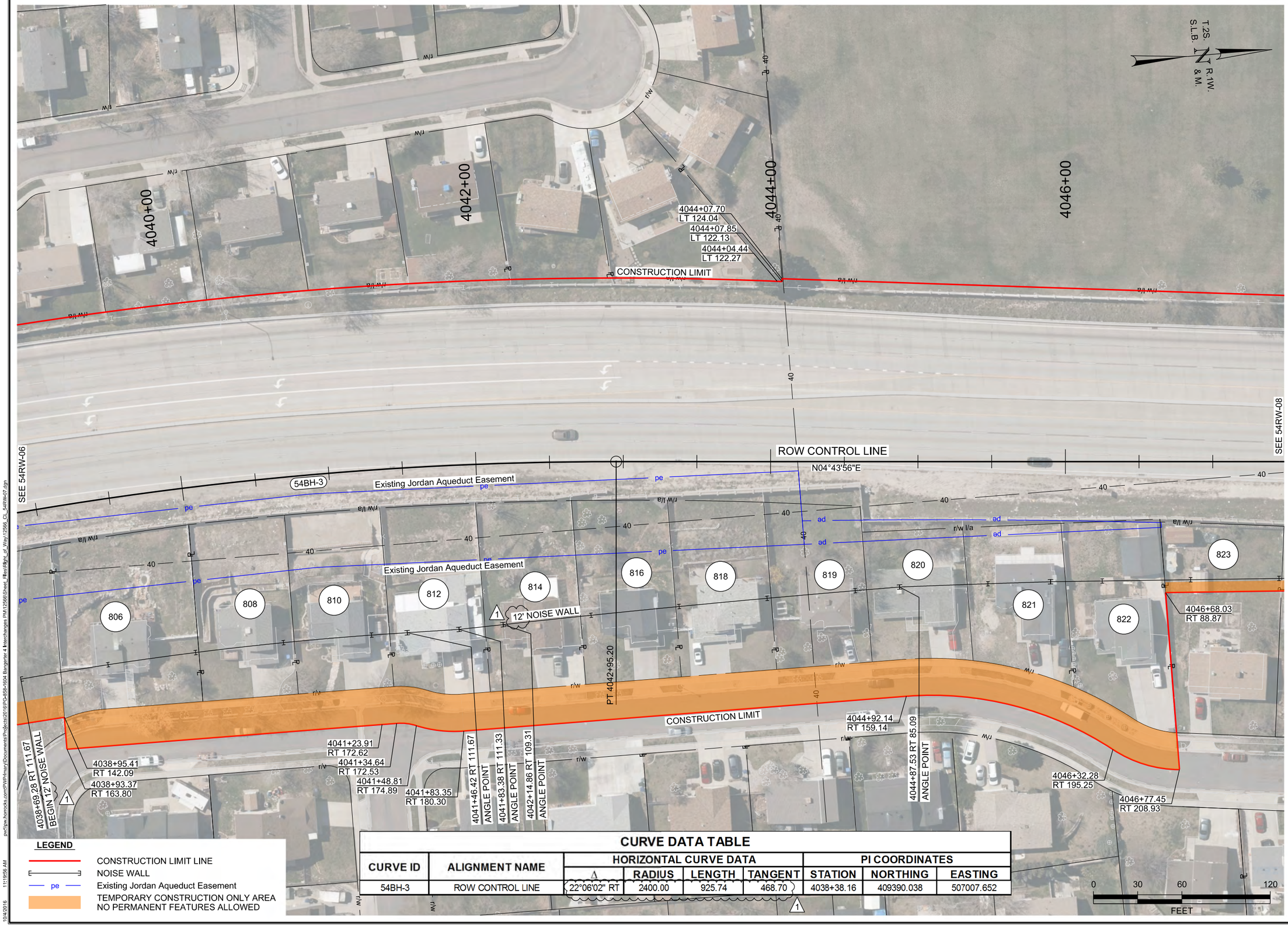


LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
54BH-3	ROW CONTROL LINE	22°06'02" RT	2400.00	925.74	468.70	4038+38.16	409390.038	507007.652

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	UPDATED CURVE DATA & NOISE WALL.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB
MM/DD/YY
DATE

APPROVED

PROFESSIONAL LAND SURVEYOR

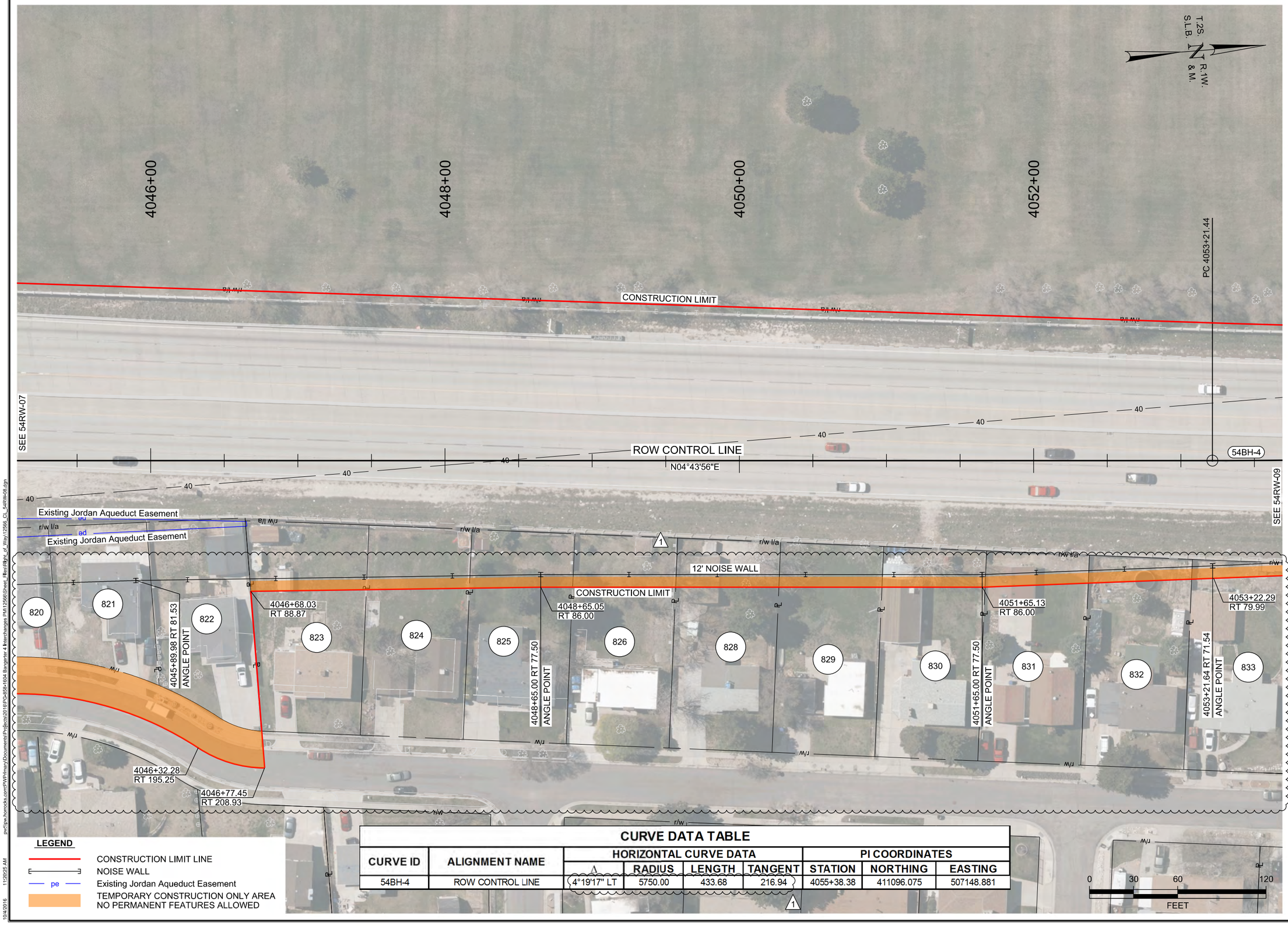
4 INTERCHANGES ON
BANGERTER HIGHWAY - 5400 SOUTH

PROJECT
PROJECT NUMBER S-0154(12)11
PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE
COUNTY

SHEET NO. 54RW-07



LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
54BH-4	ROW CONTROL LINE	4°19'17" LT	5750.00	433.68	216.94	4055+38.38	411096.075	507148.881

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	UPDATED CURVE DATA, LIMITS & NOISE WALL.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB

APPROVED
MM/DD/YY
DATE

PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 5400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 54RW-08

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
54BH-4	ROW CONTROL LINE	4°19'17" LT	5750.00	433.68	216.94	4055+38.38	411096.075	507148.881

1

4052+00
4054+00
4056+00
4058+00
4060+00

PC 4053+21.44

4053+34.28
LT 93.21

CONSTRUCTION LIMIT

4059+54.74
LT 75.00

SEE 54RW-08

40 40 40 40 40 40 40 40

N04°43'56"E

54BH-4

ROW CONTROL LINE

N00°24'39"E

PT 4057+55.11

4060+00.00
END PROJECT
S-0154(12)11

MP 16.49
N 411557.892
E 507152.193

T.2S. R.1W.
S.L.B. & M.

1/4

r/w l/a

r/w

P

1

12' NOISE WALL

4053+95.00
RT 70.54

4053+95.00
RT 77.55

4053+22.29
RT 79.99

4053+21.64 RT 71.54
ANGLE POINT

4054+03.22 RT 68.09
END 12' NOISE WALL

4059+89.31
RT 88.25

832

833

834

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

0 30 60 120
FEET

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REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	UPDATED CURVE DATA & NOISE WALL.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY: KKH
QC CHECKED BY: CSB
APPROVED: MM/DD/YY
DATE
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 5400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 54RW-09

1 MAINTENANCE ACCESS DEVIATION

805+00.00
BEGIN CONSTRUCTION
S-0154(12)11
MP 4.84
N 408660.528
E 506261.392

CONSTRUCTION LIMIT
805+50.00
LT 53.00

806+00
808+00
810+00
812+00

809+24.95
LT 53.00

CONSTRUCTION LIMIT

811+98.95
LT 60.31

812+58.95
LT 61.00

812+24.95
LT 61.00

812+60.58
LT 246.22

812+47.78
LT 242.17

812+48.71
LT 219.36

CONSTRUCTION LIMIT

812+86.78
LT 99.02

774

T.2S. S.L.B. & M. R.1W.

Existing Jordan Aqueduct Easement

53.00

5400 SOUTH ROW CONTROL LINE
S89°48'50"E

SEE 54RW-11

805+50.00
RT 62.19
CONSTRUCTION LIMIT

807+79.97
RT 64.09

CONSTRUCTION LIMIT

809+79.72
RT 64.15

811+18.95
RT 73.00

812+37.82
RT 73.00

812+70.00
RT 75.04

813+12.00
RT 93.00

813+03.00
RT 92.00

775

812+67.00
RT 135.00

813+03.00
RT 135.00

0 30 60 120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	09/16	BGA	MAINTENANCE ACCESS DEVIATION

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB
APPROVED MM/DD/YY
DATE
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 5400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 54RW-10

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1 MAINTENANCE ACCESS DEVIATION

812+60.58
LT 246.22

812+47.78
LT 242.17

812+48.71
LT 219.36

CONSTRUCTION LIMIT

r/w l/a

Existing Jordan Aqueduct Easement

pe

ad

40

774

812+00

812+86.78
LT 99.02

811+98.95
LT 60.31

812+58.95
LT 61.00

CONSTRUCTION LIMIT

812+24.95
LT 61.00

814+00

798

CONSTRUCTION LIMIT

815+71.21
LT 203.05

816+00.69
LT 203,05

776

816+00

816+00.69
LT 92.73

778

818+00

816+51.00
LT 58.50

CONSTRUCTION LIMIT

818+85.95
LT 58.50

T.2S.
S.L.B.
R.1W.
& M.

5400 SOUTH ROW CONTROL LINE

S89°48'50"E

SEE 54RW-10

SEE 54RW-12

813+12.00
RT 93.00

813+03.00
RT 92.00

CONSTRUCTION LIMIT

812+37.82
RT 73.00

812+70.00
RT 75.04

775

812+67.00
RT 135.00

813+03.00
RT 135.00

813+59.54
RT 121.07

813+65.62
RT 136.97

753

CONSTRUCTION LIMIT

814+06.78
RT 221.73

777

816+97.63
RT 60.44

CONSTRUCTION LIMIT

818+00.00
RT 57.80

818+00.00
RT 67.00

779

781

777B

12' NOISE WALL

817+50.94
RT 224.15

817+50.94
RT 232.98

817+65.94
RT 233.00

754B

754

817+65.98
RT 306.22

0 30 60 120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	09/16	BGA	MAINTENANCE ACCESS DEVIATION

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB
MM/DD/YY DATE

APPROVED

PROFESSIONAL LAND SURVEYOR

4 INTERCHANGES ON
BANGERTER HIGHWAY - 5400 SOUTH

PROJECT

PROJECT NUMBER S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 54RW-11

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS				
NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	UPDATED END CONSTRUCTION EASTING.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY: KKH
QC CHECKED BY: CSB
DATE: MM/DD/YY

APPROVED

PROFESSIONAL LAND SURVEYOR

4 INTERCHANGES ON
BANGERTER HIGHWAY - 5400 SOUTH

PROJECT

PROJECT NUMBER: S-0154(12)11
PIN: 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 54RW-12

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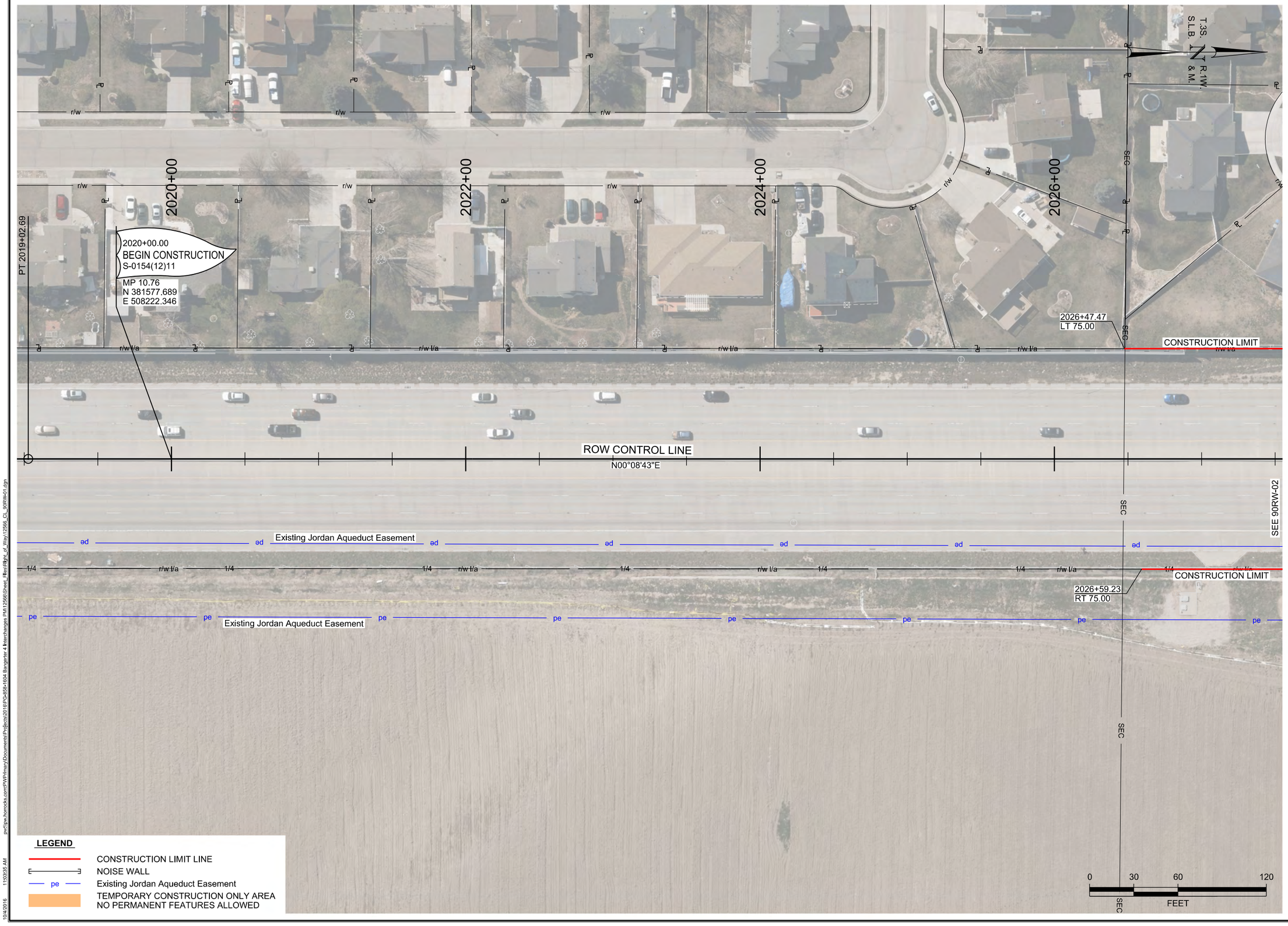


LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS			
NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED MM/DD/YY
PROFESSIONAL LAND SURVEYOR — DATE

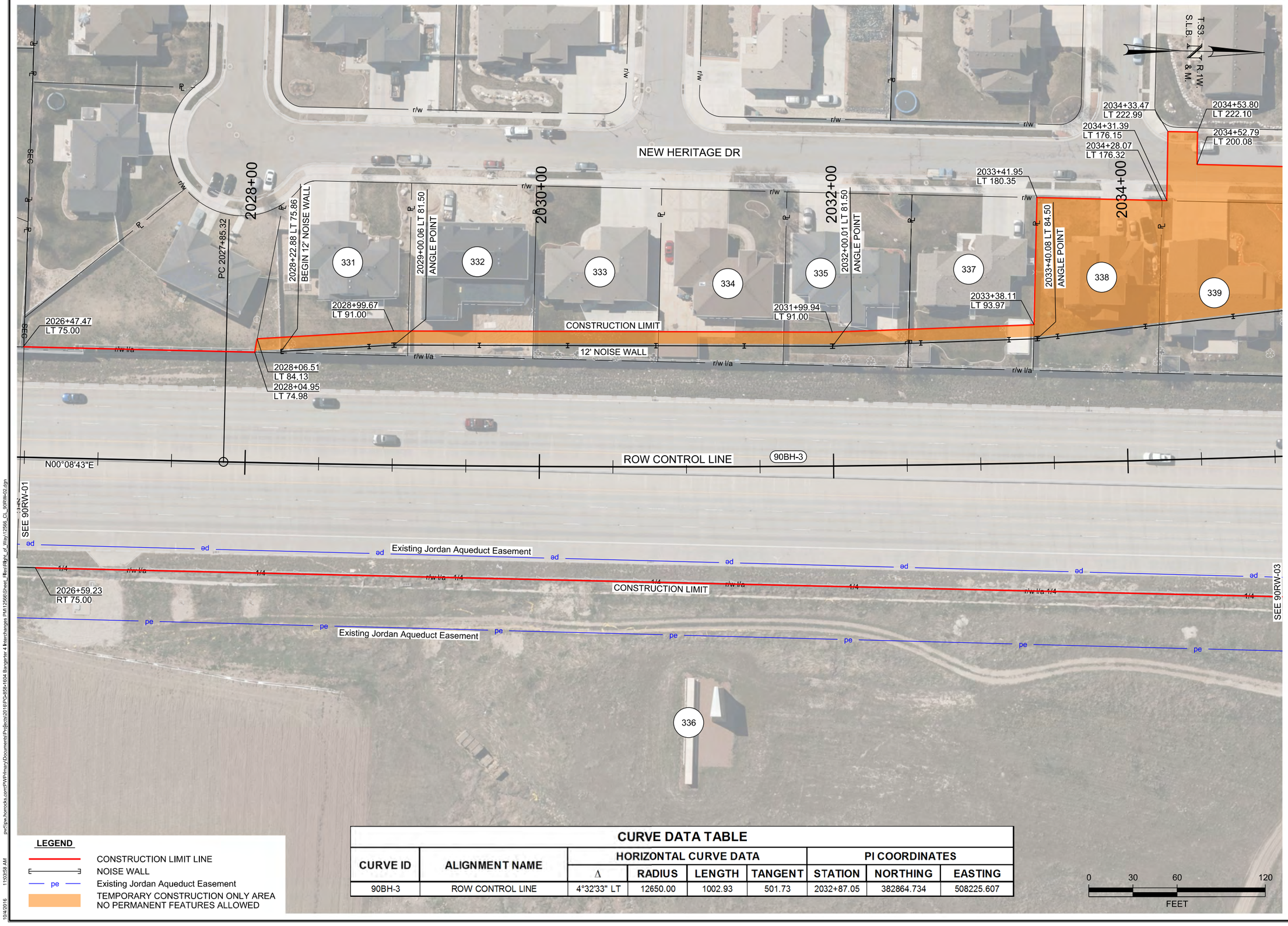
DRAWN BY KKH
QC CHECKED BY CSB

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 9000 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 90RW-01



LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
90BH-3	ROW CONTROL LINE	4°32'33" LT	12650.00	1002.93	501.73	2032+87.05	382864.734	508225.607

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL LAND SURVEYOR

DRAWN BY	CHECKED BY	QC	DATE
KKH	CSB		MM/DD/YY

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 9000 SOUTH

PROJECT NUMBER: S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 90RW-02

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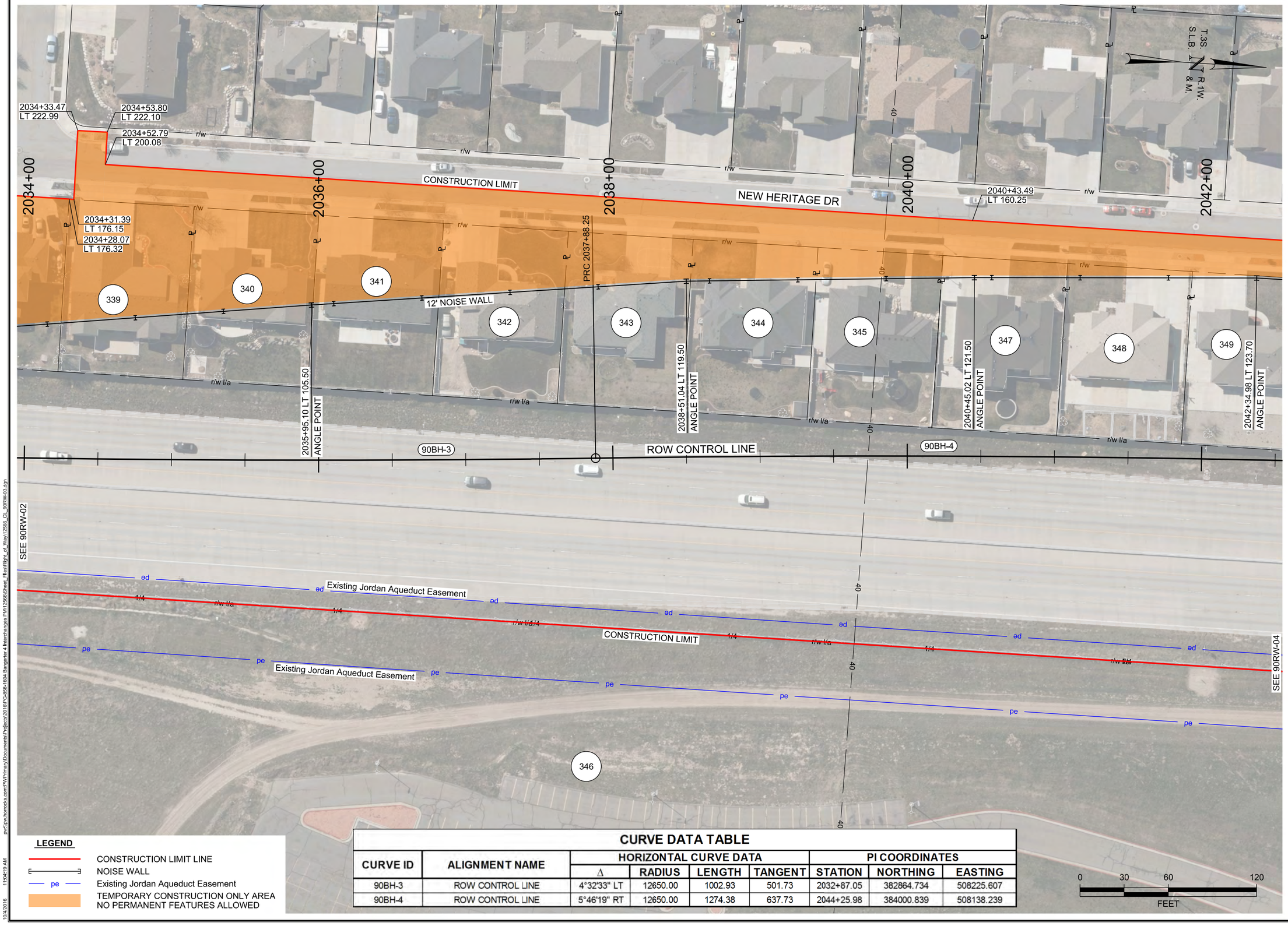

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
90BH-3	ROW CONTROL LINE	4°32'33" LT	12650.00	1002.93	501.73	2032+87.05	382864.734	508225.607
90BH-4	ROW CONTROL LINE	5°46'19" RT	12650.00	1274.38	637.73	2044+25.98	384000.839	508138.239

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL LAND SURVEYOR

DRAWN BY KKH
QC CHECKED BY CSB
DATE MM/DD/YY

4 INTERCHANGES ON
BANGERTER HIGHWAY - 9000 SOUTH

PROJECT
PROJECT NUMBER
PIN S-0154(12)11 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE
COUNTY

SHEET NO. 90RW-03

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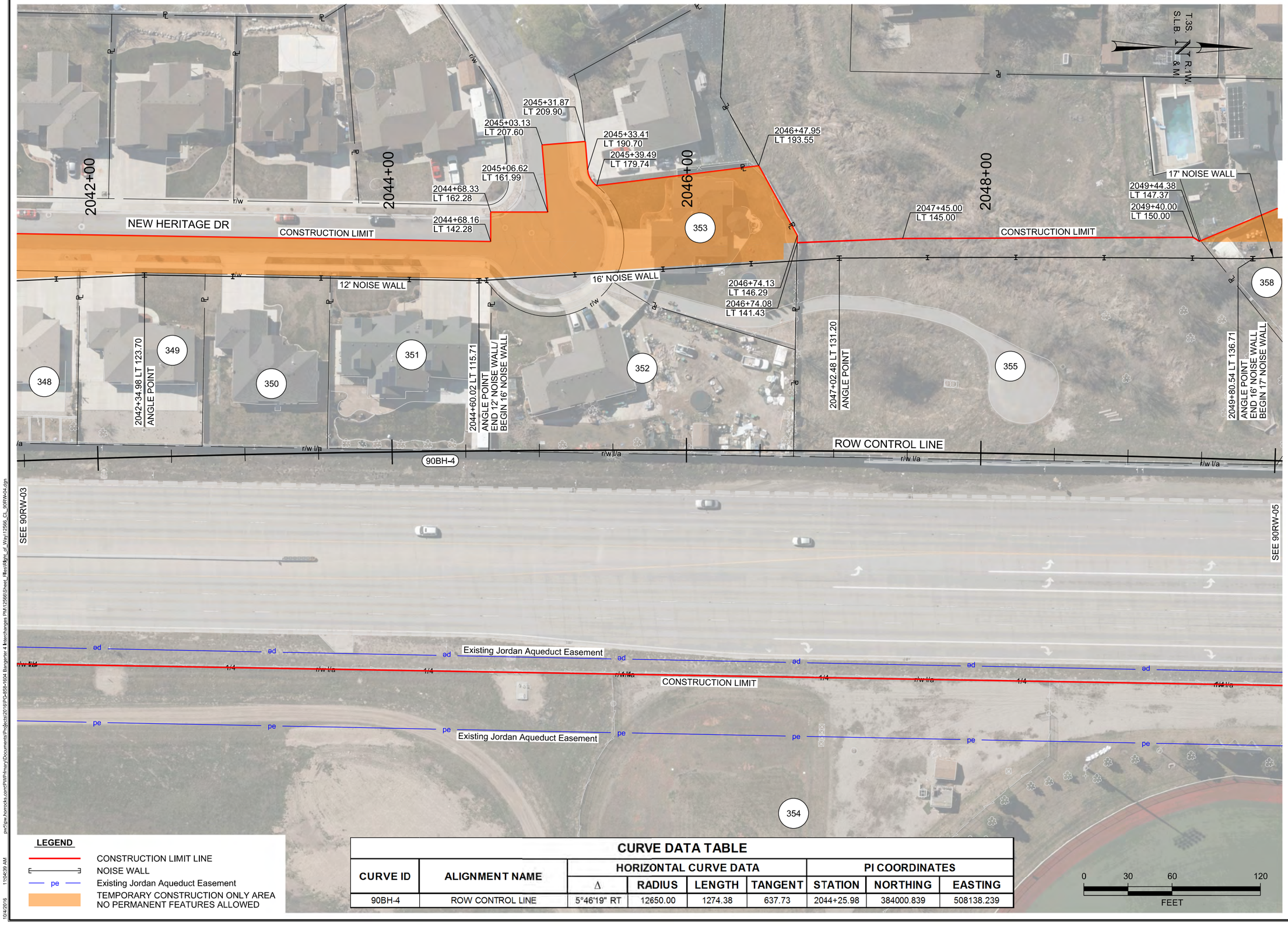


LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
90BH-4	ROW CONTROL LINE	5°46'19" RT	12650.00	1274.38	637.73	2044+25.98	384000.839	508138.239

REVISIONS				
NO.	DATE	APPROVED BY	REMARKS	

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY	KKH
QC CHECKED BY	CSB
DATE	MM/DD/YY

APPROVED

PROFESSIONAL LAND SURVEYOR

4 INTERCHANGES ON
BANGERTER HIGHWAY - 9000 SOUTH

PROJECT

PROJECT NUMBER: S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 90RW-04

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
90BH-4	ROW CONTROL LINE	5°46'19" RT	12650.00	1274.38	637.73	2044+25.98	384000.839	508138.239
90BH-5	ROW CONTROL LINE	3°00'14" RT	12650.00	663.18	331.67	2058+94.45	385469.959	508173.493

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

0 30 60 120 FEET

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	09/16	BGA	MAINTENANCE ACCESS DEVIATION

DRAWN BY KKH
QC CHECKED BY CSB
MM/DD/YY DATE

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL LAND SURVEYOR

4 INTERCHANGES ON BANGERTER HIGHWAY - 9000 SOUTH

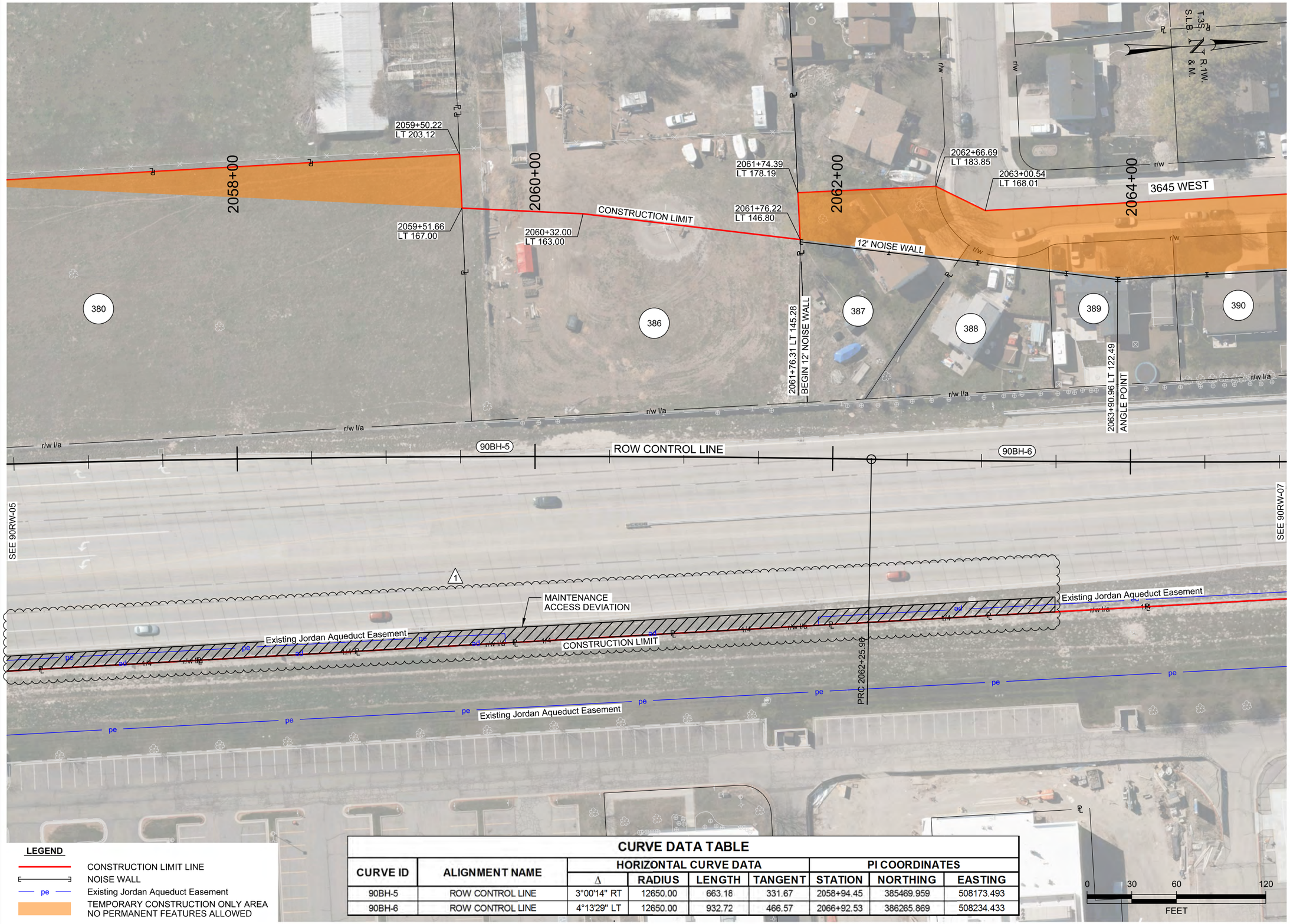
PROJECT

PROJECT NUMBER S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 90RW-05



LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
90BH-5	ROW CONTROL LINE	3°00'14" RT	12650.00	663.18	331.67	2058+94.45	385469.959	508173.493
90BH-6	ROW CONTROL LINE	4°13'29" LT	12650.00	932.72	466.57	2066+92.53	386265.869	508234.433

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	09/16	BGA	MAINTENANCE ACCESS DEVIATION

DRAWN BY KKH
CHECKED BY QC CSB
DATE MM/DD/YY

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL LAND SURVEYOR

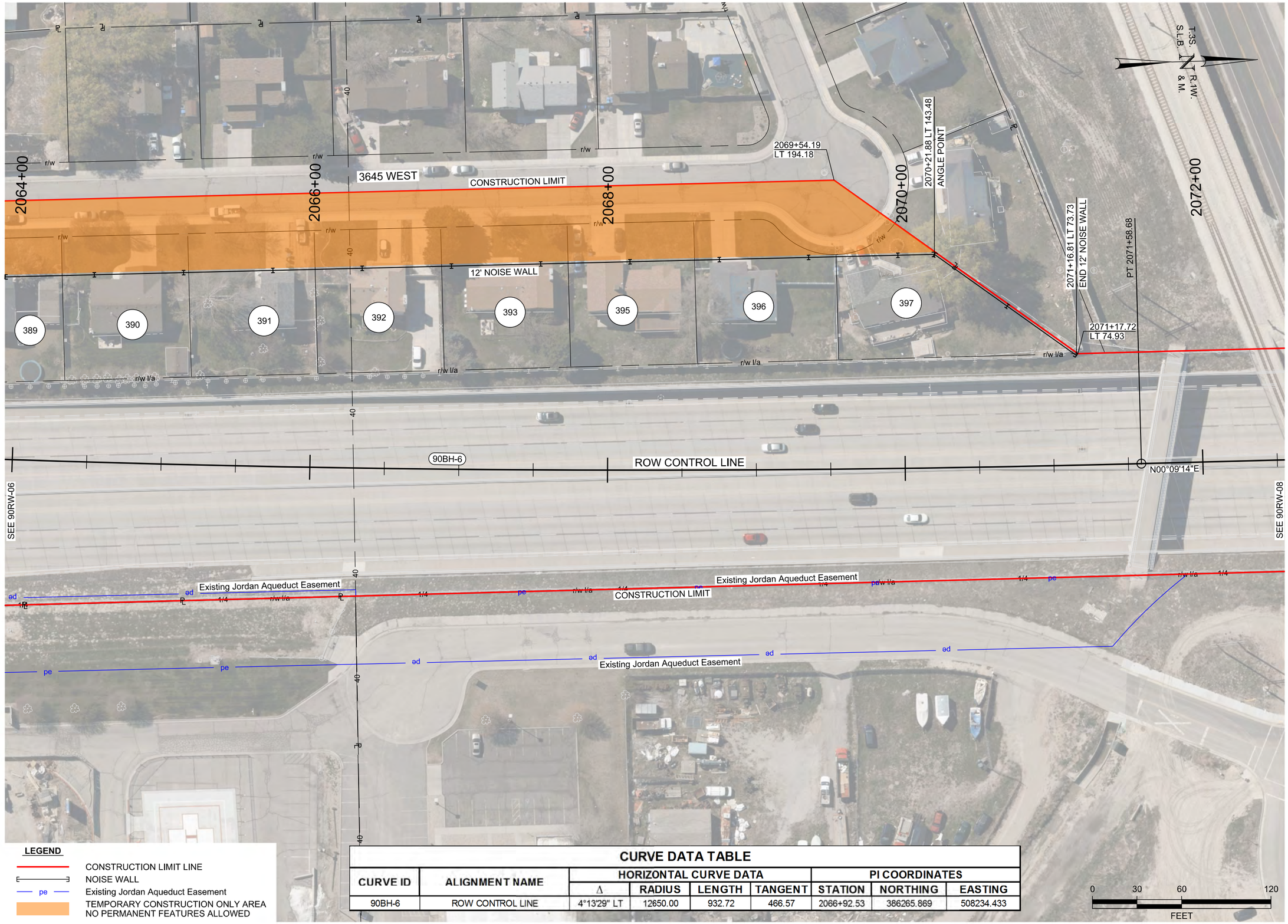
PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 9000 SOUTH

PROJECT NUMBER: S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 90RW-06



LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
90BH-6	ROW CONTROL LINE	4°13'29" LT	12650.00	932.72	466.57	2066+92.53	386265.869	508234.433

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY: KKH
QC CHECKED BY: CSB
APPROVED
MM/DD/YY
DATE
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 9000 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE
COUNTY

SHEET NO. 90RW-07

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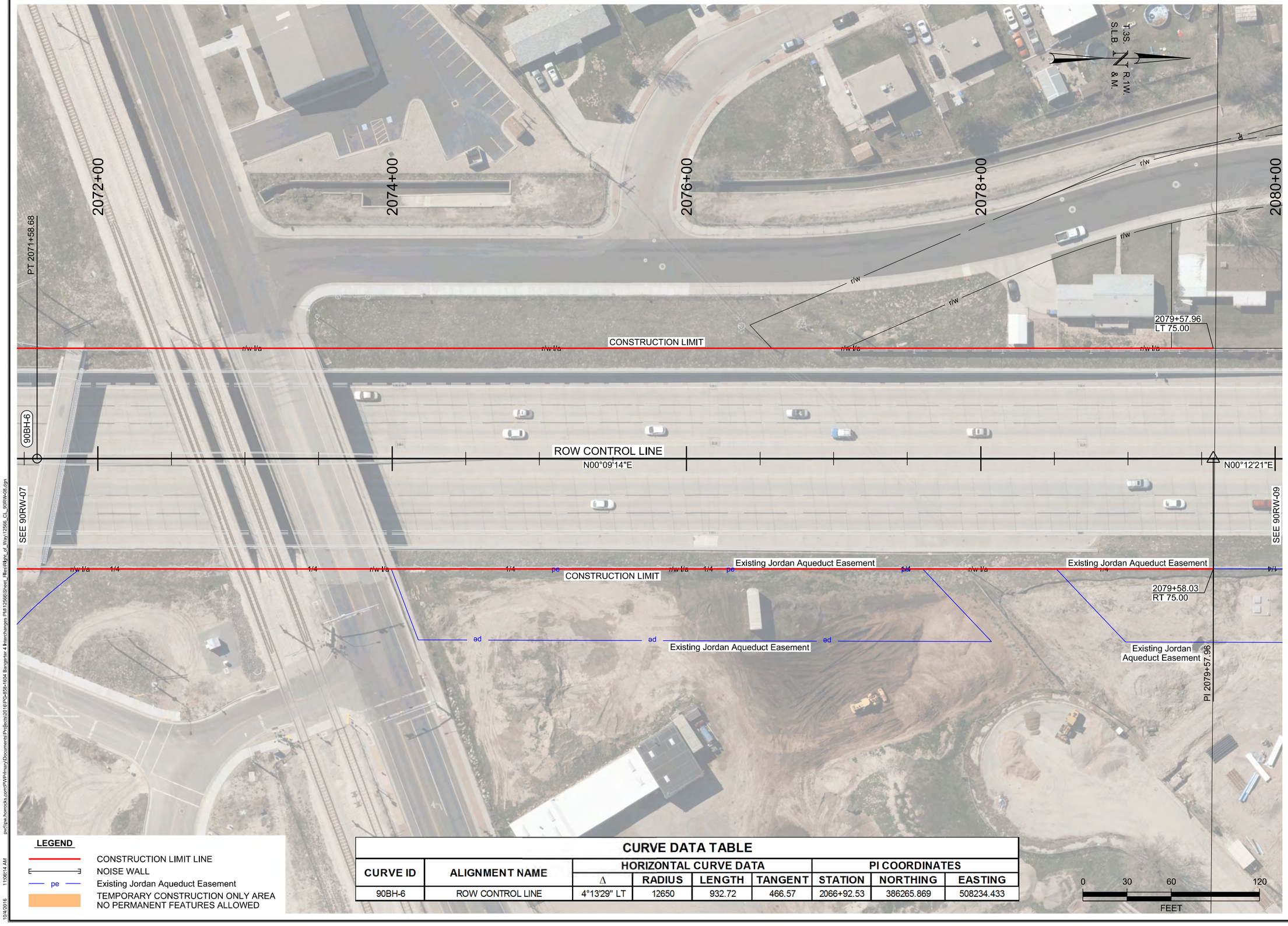

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
90BH-6	ROW CONTROL LINE	4°13'29" LT	12650	932.72	466.57	2066+92.53	386265.869	508234.433

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB

APPROVED

MM/DD/YY
DATE

PROFESSIONAL LAND SURVEYOR

4 INTERCHANGES ON
BANGERTER HIGHWAY - 9000 SOUTH

PROJECT NUMBER S-0154(12)11
PIN 12566

CONTRACT RIGHT-OF-WAY

PROJECT

SALT LAKE
COUNTY

SHEET NO. 90RW-08

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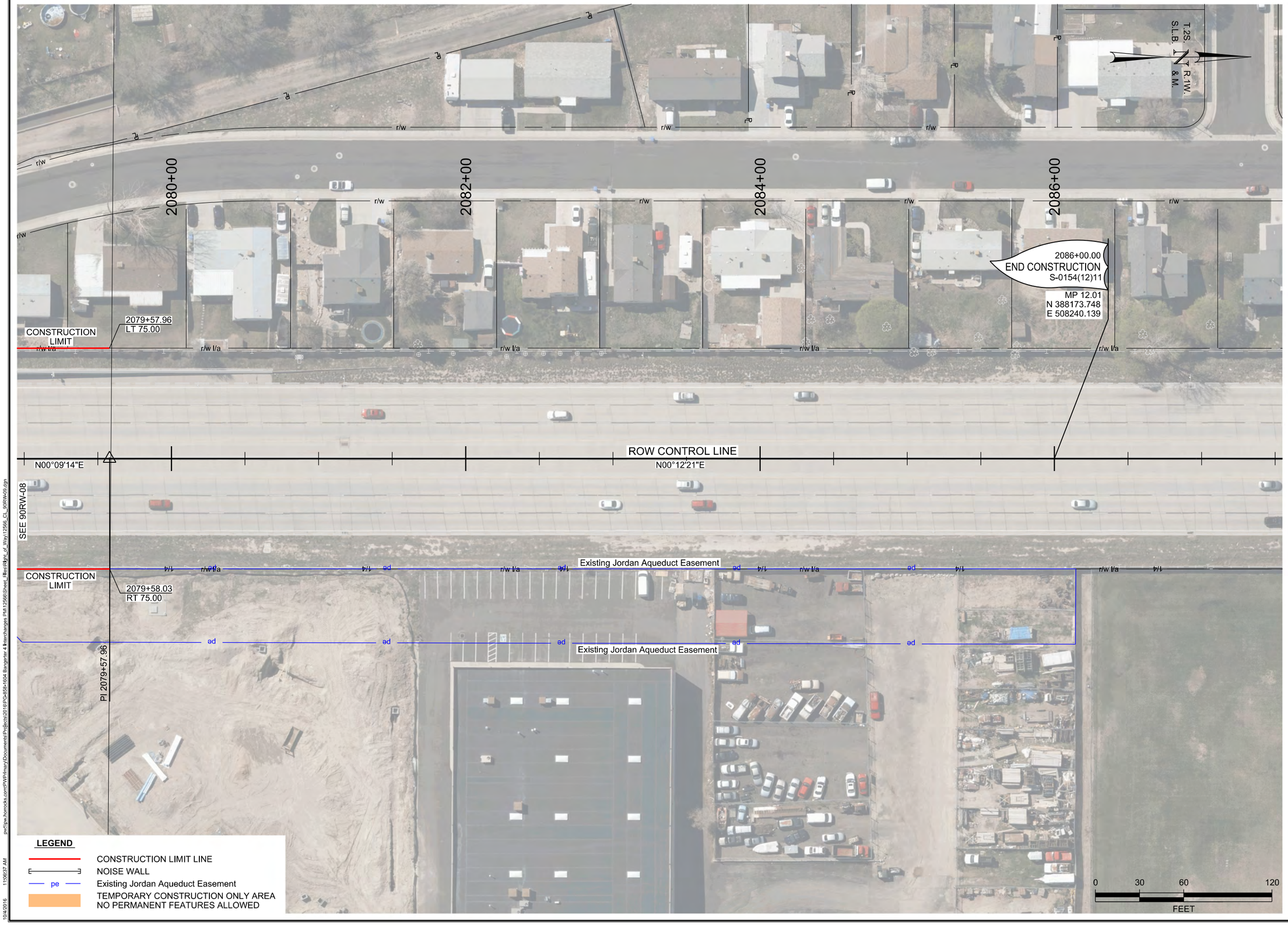

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL LAND SURVEYOR

MM/DD/YY
DATE

DRAWN BY KKH
QC CHECKED BY CSB

PROJECT
4 INTERCHANGES ON
BANGERTER HIGHWAY - 9000 SOUTH

PROJECT NUMBER
PIN 12566
S-0154(12)11

CONTRACT RIGHT-OF-WAY

SALT LAKE
COUNTY

SHEET NO. 90RW-09

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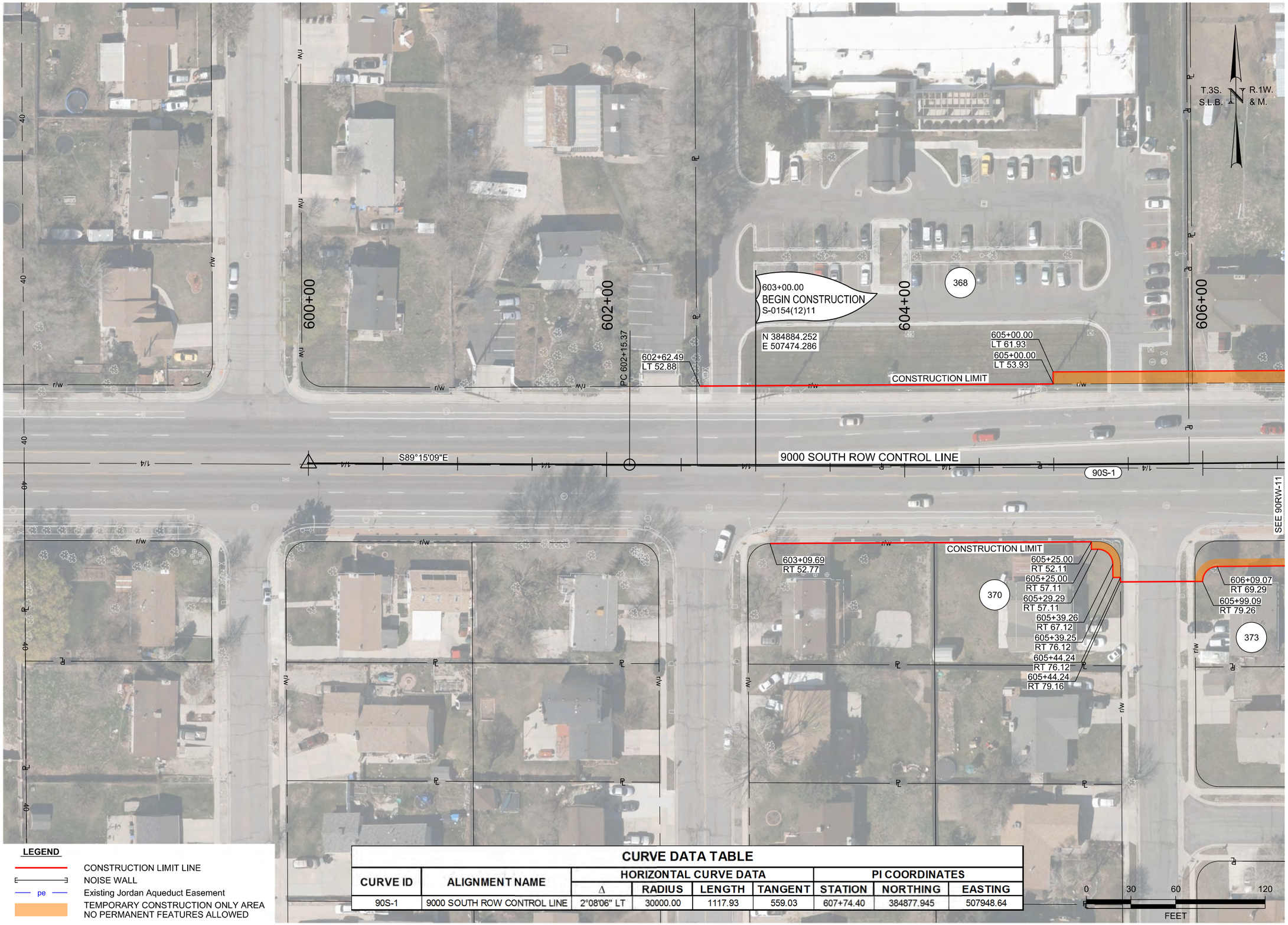

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
90S-1	9000 SOUTH ROW CONTROL LINE	2°08'06" LT	30000.00	1117.93	559.03	607+74.40	384877.945	507948.64

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY: KKH
QC CHECKED BY: CSB
APPROVED: MM/DD/YY (DATE)
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 9000 SOUTH
PROJECT NUMBER: S-0154(12)11 | PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 90RW-10

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
90S-1	9000 SOUTH ROW CONTROL LINE	2°08'06" LT	30000.00	1117.93	559.03	607+74.40	384877.945	507948.640

606+00
608+00
610+00
612+00
614+00
607+83.28 LT 107.37
607+54.63 LT 60.97
CONSTRUCTION LIMIT
r/w
r/w l/a
9000 SOUTH ROW CONTROL LINE
N88°36'44"E
90S-1
T.3S. S.L.B. & M. R.1W.
N
1
MAINTENANCE ACCESS DEVIATION
Existing Jordan Aqueduct Easement
381
611+33.52 LT 100.88
611+34.61 LT 93.80
611+41.75 LT 82.07
611+74.84 LT 74.18
612+06.45 LT 72.23
CONSTRUCTION LIMIT
PT 613+33.29
614+03.52 LT 72.50
SEE 90RW-10
WINTHROPE DR
WINTHROPE CIR
CONSTRUCTION LIMIT
606+09.07 RT 69.29
605+99.09 RT 79.26
607+18.83 RT 69.50
607+18.38 RT 137.74
607+17.84 RT 218.73
607+83.19 RT 258.78
607+77.12 RT 64.50
END 17' NOISE WALL
608+26.03 RT 113.38
ANGLE POINT
17' NOISE WALL
373
376
377
378
356
358
354
611+27.60 RT 194.77
613+12.60 RT 53.00
613+56.58 RT 53.00
SEE 90RW-12
Existing Jordan Aqueduct Easement
CONSTRUCTION LIMIT
0 30 60 120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	09/16	BGA	MAINTENANCE ACCESS DEVIATION

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB
APPROVED
MM/DD/YY
DATE
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 9000 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 90RW-11

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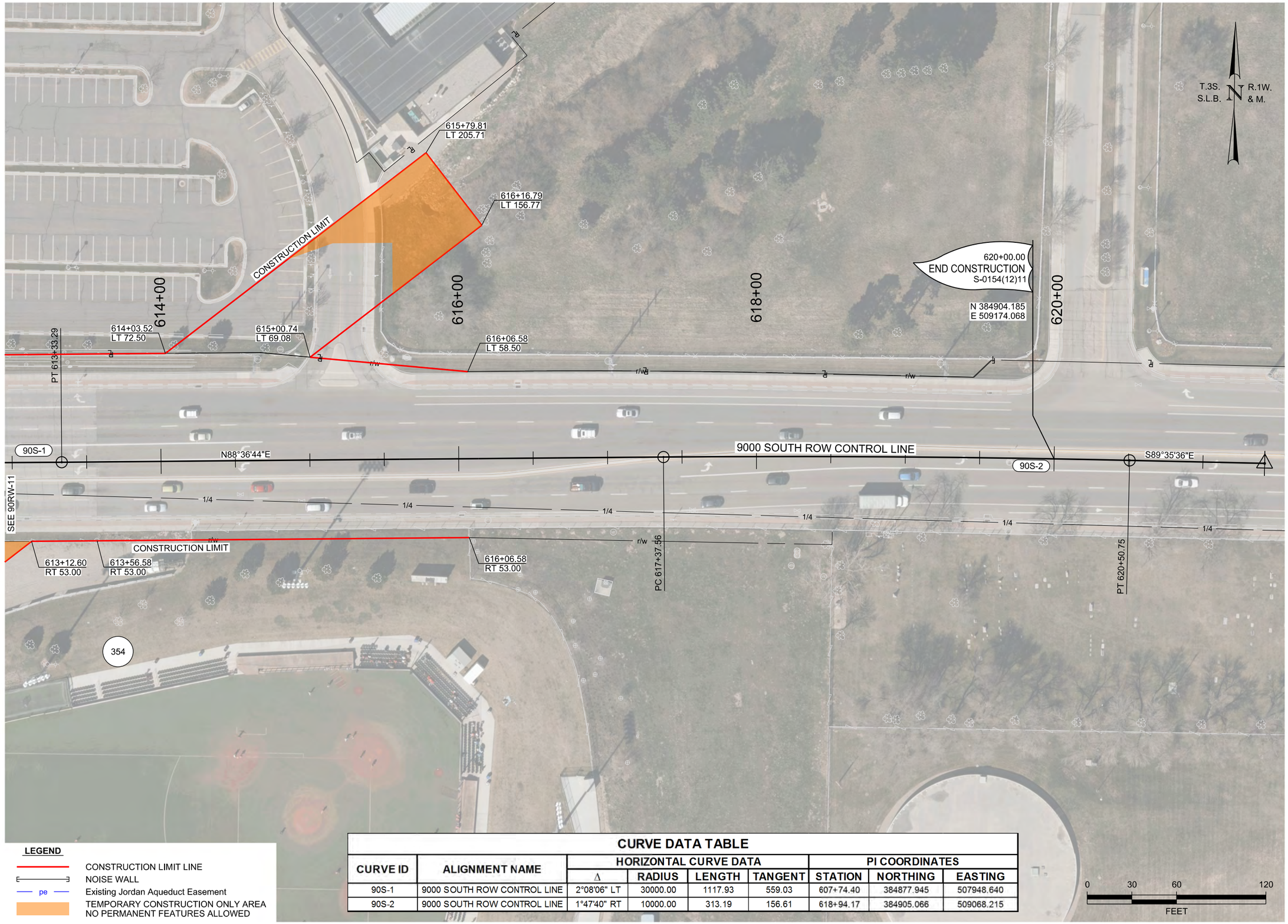


LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
90S-1	9000 SOUTH ROW CONTROL LINE	2°08'06" LT	30000.00	1117.93	559.03	607+74.40	384877.945	507948.640
90S-2	9000 SOUTH ROW CONTROL LINE	1°47'40" RT	10000.00	313.19	156.61	618+94.17	384905.066	509068.215

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY: KKH
QC CHECKED BY: CSB
APPROVED: MM/DD/YY
DATE

PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 9000 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 90RW-12

T.3S. R.1W. S.L.B. & M.

1000+00

1002+00

1004+00

1006+00

1000+00.00
BEGIN PROJECT
S-0154(12)11
MP 7.71
N 366034.334
E 506177.889

POB 1000+00.00

1000+00.00
LT 118.95

1002+99.89
LT 130.00

CONSTRUCTION LIMIT

ROW CONTROL LINE

N00°17'45"E

SEE 114 RW-02

1000+00.00
RT 118.95

1002+99.89
RT 130.00

CONSTRUCTION LIMIT

11800 SOUTH ST.

0 30 60 120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY: KKH
QC CHECKED BY: CSB
DATE: MM/DD/YY

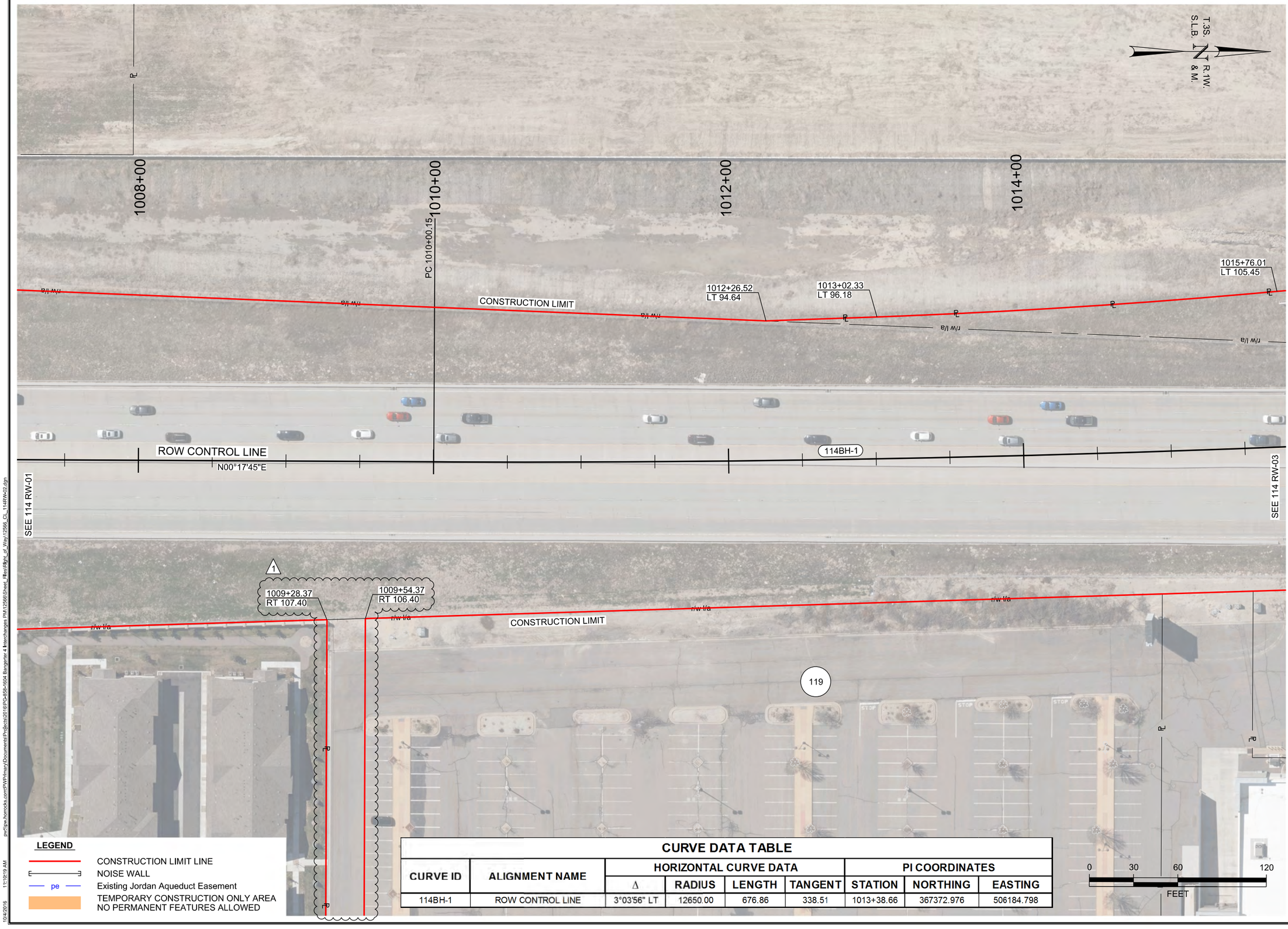
APPROVED
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-01



LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
114BH-1	ROW CONTROL LINE	3°03'56" LT	12650.00	676.86	338.51	1013+38.66	367372.976	506184.798

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	WIDENED FOR TCE.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

MM/DD/YY
DATE

PROFESSIONAL LAND SURVEYOR

DRAWN BY KKH
QC CHECKED BY CSB

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-02

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1016+00
1018+00
1020+00
1022+00
PRC 1016+77.01
1015+76.01
LT 105.45
1017+40.75
LT 109.66
1019+94.26
LT 115.99
1022+44.07
LT 111.32
1023+53.25
LT 110.84
CONSTRUCTION LIMIT
MAINTENANCE
ACCESS DEVIATION
1
40
r/w l/a
114BH-1
ROW CONTROL LINE
114BH-2
T.3S.
S.L.B. & M.
N
R.1W.
SEE 114 RW-02
SEE 114 RW-04
1017+57.22
RT 99.55
PT 1023+42.99
0
30
60
120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
114BH-1	ROW CONTROL LINE	3°03'56" LT	12650.00	676.86	338.51	1013+38.66	367372.976	506184.798
114BH-2	ROW CONTROL LINE	3°00'59" RT	12650.00	665.98	333.07	1020+10.07	368043.767	506152.343

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	09/16	BGA	MAINTENANCE ACCESS DEVIATION

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB
APPROVED MM/DD/YY
DATE
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-03

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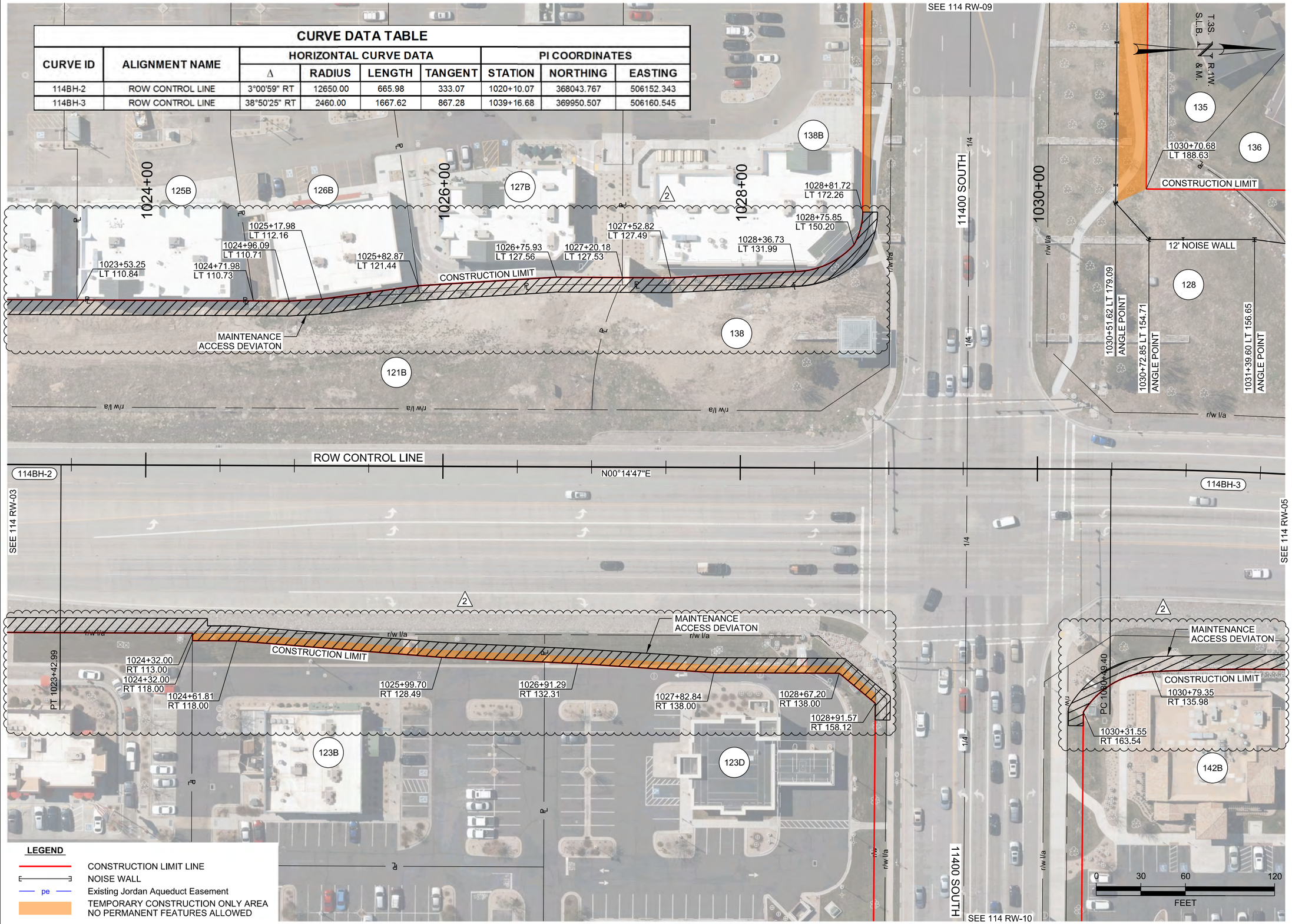
CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
114BH-2	ROW CONTROL LINE	3°00'59" RT	12650.00	665.98	333.07	1020+10.07	368043.767	506152.343
114BH-3	ROW CONTROL LINE	38°50'25" RT	2460.00	1667.62	867.28	1039+16.68	369950.507	506160.545



LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS			
NO.	DATE	APPROVED BY	REMARKS
2	09/16	BGA	MAINTENANCE ACCESS DEVIATION
1	08/16	CSB	UPDATED NOISE WALL ANGLE POINT.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

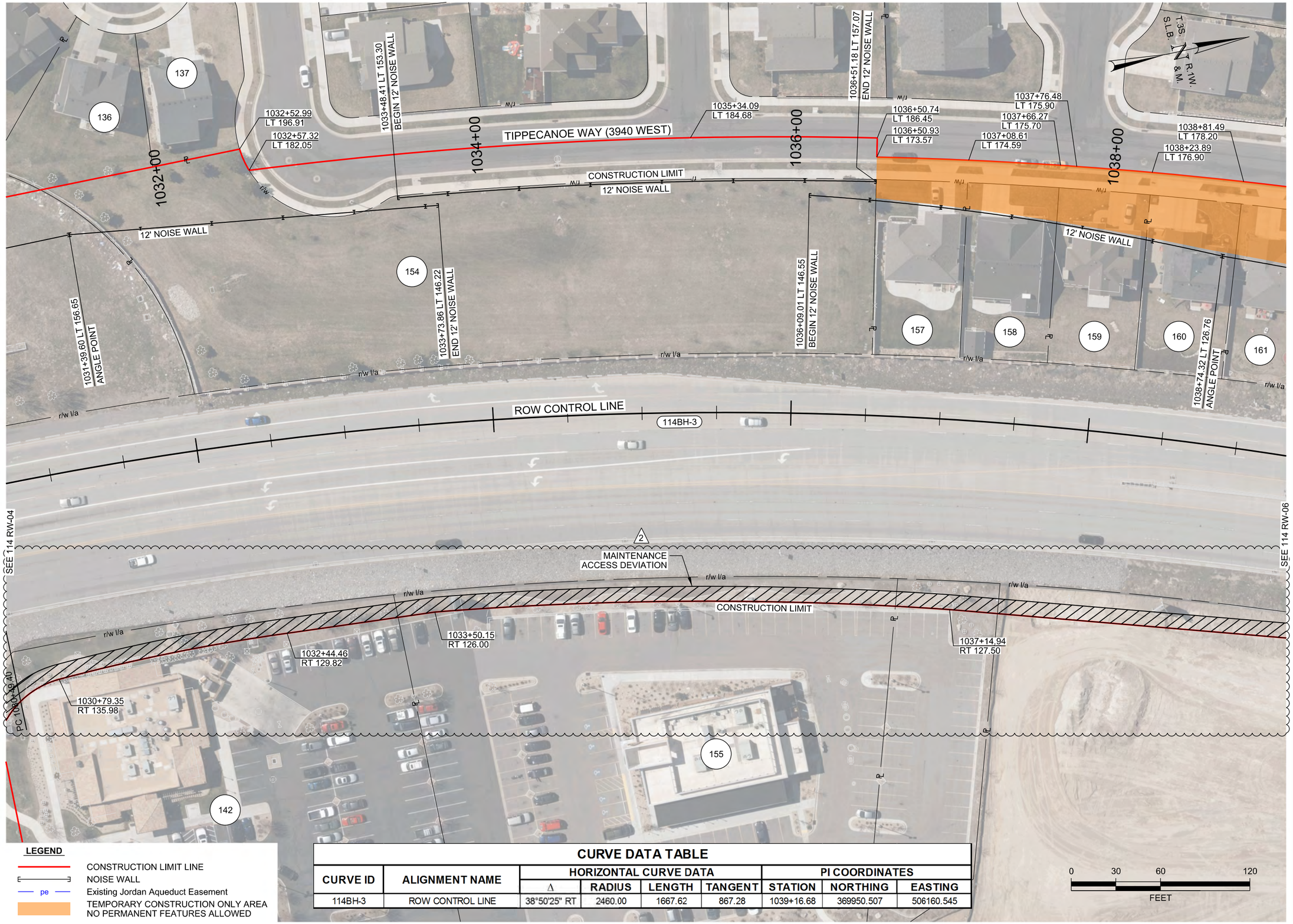
DRAWN BY: KKH
QC CHECKED BY: CSB
APPROVED: MM/DD/YY
DATE

PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-04



LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
114BH-3	ROW CONTROL LINE	38°50'25" RT	2460.00	1667.62	867.28	1039+16.68	369950.507	506160.545

REVISIONS			
NO.	DATE	APPROVED BY	REMARKS
2	09/16	BGA	MAINTENANCE ACCESS DEVIATION
1	08/16	CSB	UPDATED NOISE WALL ANGLE POINTS.

DRAWN BY: KKH
CHECKED BY: CSB
QC: MM/DD/YY
DATE

PROFESSIONAL LAND SURVEYOR

APPROVED

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-05

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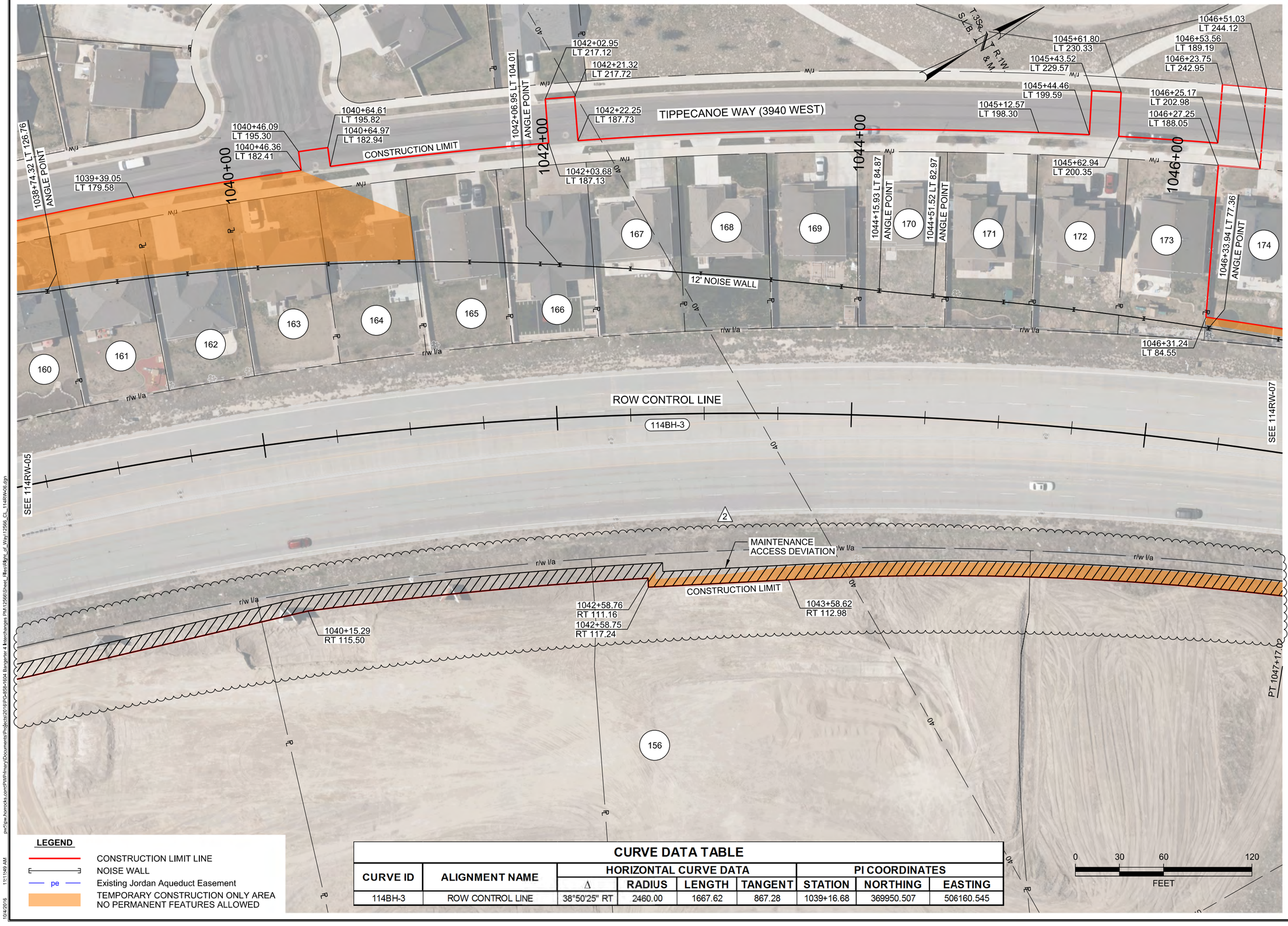

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
114BH-3	ROW CONTROL LINE	38°50'25" RT	2460.00	1667.62	867.28	1039+16.68	369950.507	506160.545

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
2	09/16	BGA	MAINTENANCE ACCESS DEVIATION
1	08/16	CSB	UPDATED CONSTRUCTION LIMITS AND SHADING.

DRAWN BY KKH
QC CHECKED BY CSB
MM/DD/YY
DATE

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

TEMP 14P
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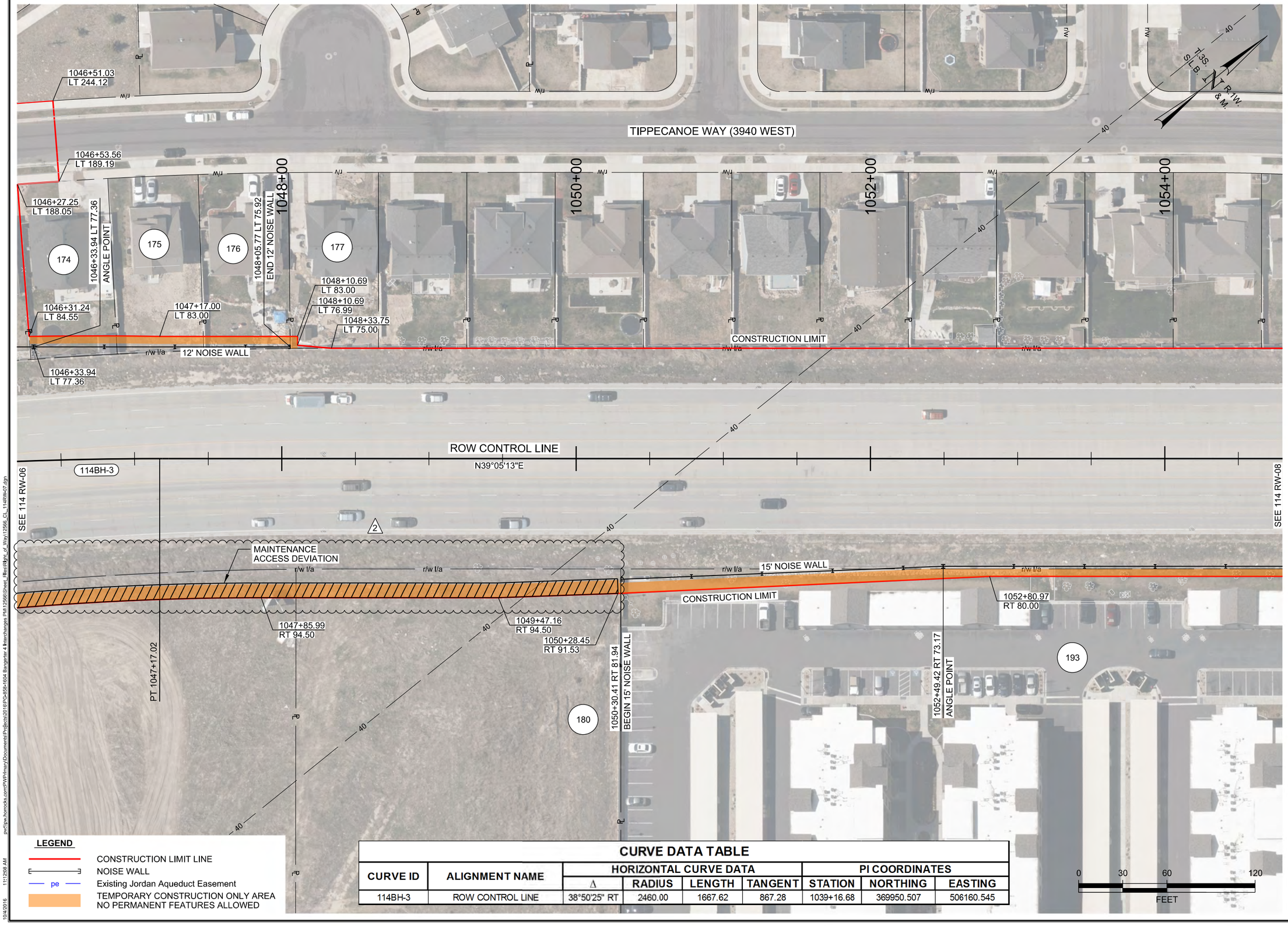

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
114BH-3	ROW CONTROL LINE	38°50'25" RT	2460.00	1667.62	867.28	1039+16.68	369950.507	506160.545

0 30 60 120
FEET

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	UPDATED NOISE WALL ANGLE POINTS.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY: KKH
QC CHECKED BY: CSB
APPROVED: MM/DD/YY
DATE
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-07

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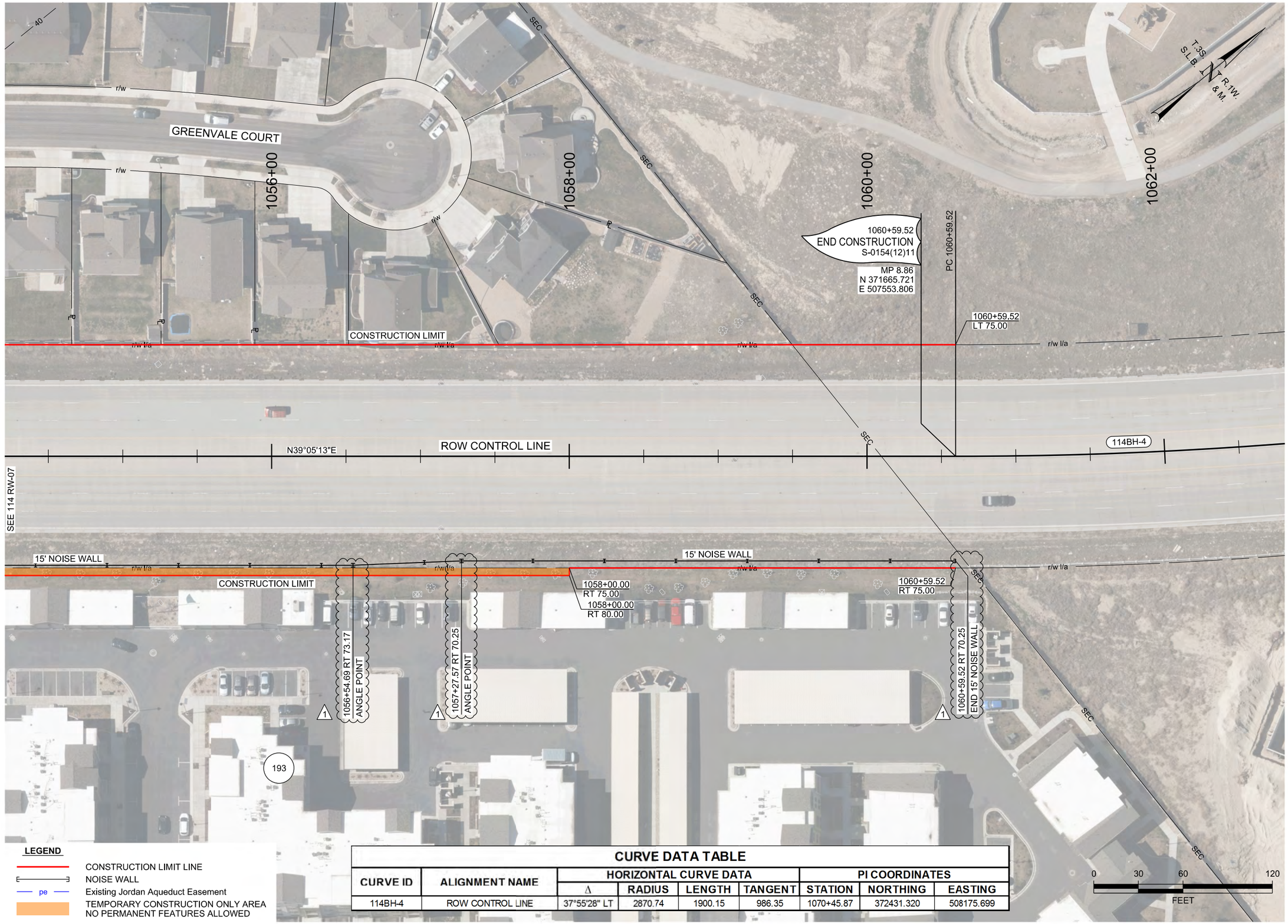

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

CURVE DATA TABLE

CURVE ID	ALIGNMENT NAME	HORIZONTAL CURVE DATA				PI COORDINATES		
		Δ	RADIUS	LENGTH	TANGENT	STATION	NORTHING	EASTING
114BH-4	ROW CONTROL LINE	37°55'28" LT	2870.74	1900.15	986.35	1070+45.87	372431.320	508175.699

REVISIONS				
NO.	DATE	APPROVED BY	REMARKS	
1	08/16	CSB	UPDATED NOISE WALL ANGLE/END POINTS.	

DRAWN BY KKH
CHECKED BY CSB
QC
DATE MM/DD/YY

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL LAND SURVEYOR

4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH

PROJECT

PROJECT NUMBER S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-08

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500+00.00
BEGIN CONSTRUCTION
S-0154(12)11

N 368990.811
E 505606.285

POB 500+00.00

500+00

500+41.72
LT 119.00

500+70.69 LT 98.50
1030+52.29 LT 479.09
BEGIN 12' NOISE WALL

CONSTRUCTION LIMIT

502+00

503+61.17
LT 119.00

12' NOISE WALL

11400 SOUTH ROW CONTROL LINE
S89°32'53"E

SEE 114 RW-10

T.3S.
S.L.B.
R.1W.
& M.

500+42.61
RT 90.78

500+64.93
RT 71.54

500+42.64
RT 98.60

CONSTRUCTION LIMIT

137
136
135
128
138B
138D

SEC

r/w

1/4

0 30 60 120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY: KKH
QC CHECKED BY: CSB
DATE: MM/DD/YY
APPROVED
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566
CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-09

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SEE 114 RW-05

137

136

CONSTRUCTION LIMIT

NOISE WALL

503+61.17
LT 119.00

504+00

506+00

508+00

510+00

r/w l/a

MAINTENANCE
ACCESS DEVIATION

1

142

144

506+85.84
LT 125.55

507+13.38
LT 79.50

509+40.00
LT 104.00

509+77.00
LT 104.00

509+40.00
LT 79.50

CONSTRUCTION LIMIT

509+84.00
LT 78.72

r/w

T.3S.
S.L.B.

R.1W.
& M.

11400 SOUTH ROW CONTROL LINE

S89°32'53"E

SEE 114 RW-09

SEE 114 RW-11

503+78.12
RT 71.53

CONSTRUCTION LIMIT

504+00.20
RT 77.32

138B

504+18.55
RT 116.38

MAINTENANCE
ACCESS DEVIATION

138

504+23.35
RT 200.30

SR-154 (BANGERTER HWY)

507+08.49
RT 60.50

506+88.44
RT 84.93

506+88.74
RT 169.30

509+12.26
RT 57.33

508+86.89
RT 60.50

510+64.83
RT 67.50

140

141

143

145

SEE 114 RW-04

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

0 30 60 120

FEET

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	09/16	BGA	MAINTENANCE ACCESS DEVIATION

UTAH DEPARTMENT OF TRANSPORTATION

REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH

QC CHECKED BY CSB

APPROVED

MM/DD/YY
DATE

PROFESSIONAL LAND SURVEYOR

PROJECT

4 INTERCHANGES ON
BANGERTER HIGHWAY - 11400 SOUTH

PROJECT NUMBER

S-0154(12)11

PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE
COUNTY

SHEET NO. 114RW-10

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SEE 114 RW-14

512+33.60 LT 288.03
512+65.54 LT 292.60
512+52.91 LT 288.18
512+34.07 LT 228.82
512+65.49 LT 229.07
512+80.46 LT 216.18
512+87.75 LT 93.85
512+27.72 LT 72.34
512+68.97 LT 83.22

RIVER HEIGHTS DRIVE

513+62.80 LT 288.09
513+98.01 LT 161.11
514+36.03 LT 136.60
515+06.70 LT 145.07
515+85.20 LT 136.55
515+97.18 LT 136.54
516+04.92 LT 136.45
517+45.65 LT 124.22
517+90.89 LT 137.95
518+29.24 LT 285.65
518+25.79 LT 278.58
518+20.33 LT 266.75
518+05.37 LT 272.78
517+92.31 LT 252.49
518+02.79 LT 232.96

SEE 114 RW-15

SUMMER HEIGHTS DRIVE

519+00.41 LT 244.50
519+02.97 LT 233.41
518+96.41 LT 236.06
519+05.44 LT 208.93
518+88.70 LT 198.20
518+82.71 LT 149.49
518+82.53 LT 114.58
519+08.45 LT 96.53
519+63.34 LT 78.86

T.3S. R.1W. S.L.B. & M.

150 151 153 144

CONSTRUCTION LIMIT

512+00 514+00 516+00 518+00

11400 SOUTH ROW CONTROL LINE
S89°32'53"E

SEE 114 RW-10

511+95.70 RT 67.50
512+44.93 RT 83.23
512+98.71 RT 129.04
512+98.42 RT 188.28
512+85.52 RT 253.89
513+89.15 RT 241.86
514+40.05 RT 123.70
514+02.37 RT 141.51
513+89.65 RT 140.78
515+54.74 RT 133.94
516+80.44 RT 137.79
517+47.72 RT 128.94
517+87.74 RT 144.98
518+01.32 RT 142.46
518+03.63 RT 202.19
518+22.22 RT 258.10
518+68.21 RT 271.09
518+30.26 RT 282.29
519+69.00 RT 67.50
518+94.93 RT 97.88
518+83.43 RT 107.09
518+83.06 RT 182.41
518+93.76 RT 255.09
519+08.18 RT 274.44

145 147 152

SEE 114 RW-13

SEE 114 RW-15

SEE 114 RW-12

0 30 60 120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL LAND SURVEYOR

DRAWN BY KKH
QC CHECKED BY CSB
MM/DD/YY DATE

PROJECT
4 INTERCHANGES ON
BANGERTER HIGHWAY - 11400 SOUTH

PROJECT NUMBER
S-0154(12)11
PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-11

T.3S. S.L.B. & M. R.1W.

153 153B 153D 152

520+00 522+00 524+00 526+00 526+47

519+90.69 LT 71.17
520+52.04 LT 71.17
519+63.34 LT 78.86
522+72.00 LT 80.50
522+46.61 LT 80.50
522+42.54 LT 60.50
522+12.00 LT 60.50
522+93.61 LT 80.50
522+97.67 LT 60.50
CONSTRUCTION LIMIT
526+46.49 LT 60.50
POB 526+46.69

526+46.69
END CONSTRUCTION
S-0154(12)11
N 368969.938
E 508252.896

11400 SOUTH ROW CONTROL LINE
S89°32'53"E

SEE 114 RW-11

519+69.00 RT 67.50
522+43.59 RT 67.50
522+46.53 RT 82.50
522+99.45 RT 67.50
522+96.53 RT 82.50
CONSTRUCTION LIMIT
525+94.72 RT 67.50

r/w ℄ 1/4

0 30 60 120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe Existing Jordan Aqueduct Easement
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REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB
MM/DD/YY DATE

APPROVED
PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-12

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SEE 114 RW-10

143

510+64.83
RT 67.50

CONSTRUCTION LIMIT

511+95.70
RT 67.50

145

512+44.93
RT 83.23

512+68.31
RT 291.89

512+85.52
RT 253.89

512+98.42
RT 188.28

512+98.71
RT 129.04

513+36.60
RT 321.59

513+89.15
RT 241.86

513+89.65
RT 140.78

514+02.37
RT 141.51

514+40.05
RT 123.70

147

515+54.74
RT 133.94

11400 SOUTH ROW CONTROL LINE
S89°32'53"E

SEE 114 RW-14

SEE 114 RW-10

T.3S. R.1W.
S.L.B. & M.

N

0 30 60 120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
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REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY: KKH
QC CHECKED BY: CSB
APPROVED: MM/DD/YY
DATE

PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN: 12566

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SALT LAKE COUNTY

SHEET NO. 114RW-13

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T.3S. S.L.B. & M. N R.1W.

144

156

150

512+00

512+34.07
LT 228.82

512+65.49
LT 229.07

512+80.46
LT 216.18

512+33.60
LT 288.03

512+52.91
LT 288.18

512+65.54
LT 292.60

512+63.59
LT 300.24

CONSTRUCTION LIMIT

512+48.77
LT 372.03

512+38.14
LT 449.71

512+42.83
LT 450.68

512+14.59
LT 588.91

RIVER HEIGHTS DRIVE

SEE 114 RW-11

513+98.01
LT 161.11

513+62.80
LT 288.09

CONSTRUCTION LIMIT

512+97.86
LT 605.93

40

0 30 60 120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
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REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
CHECKED BY CSB
QC
APPROVED
MM/DD/YY
DATE

PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH

PROJECT NUMBER: S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-14

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SEE 114 RW-11

SEE 114 RW-12

11400 SOUTH ROW CONTROL LINE

S89°32'53"E

CONSTRUCTION LIMIT

CONSTRUCTION LIMIT

CONSTRUCTION LIMIT

SUMMER HEIGHTS DRIVE

T.3S. R.1W. S.L.B. & M.

147

150

151

152

153

153B

153D

516+00

518+00

520+00

516+80.44
RT 137.79

517+47.72
RT 128.94

517+87.74
RT 144.98

518+03.63
RT 202.19

518+01.32
RT 142.46

518+22.22
RT 258.10

518+30.26
RT 282.29

518+68.21
RT 271.09

518+76.94
RT 345.44

519+07.80
RT 345.61

519+08.18
RT 274.44

518+93.76
RT 255.09

518+83.06
RT 182.41

518+83.43
RT 107.09

518+94.93
RT 97.88

519+69.00
RT 67.50

515+85.20
LT 136.55

515+97.18
LT 136.54

516+04.92
LT 136.45

517+45.65
LT 124.22

517+90.89
LT 137.95

518+02.79
LT 232.96

517+92.31
LT 252.49

518+05.37
LT 272.78

518+20.33
LT 266.75

518+25.79
LT 278.58

518+29.24
LT 285.65

518+82.71
LT 149.49

518+82.53
LT 114.58

518+88.70
LT 198.20

519+05.44
LT 208.93

519+08.45
LT 96.53

519+00.41
LT 244.50

518+96.41
LT 236.06

519+02.97
LT 233.41

519+63.34
LT 78.86

519+90.69
LT 71.17

520+52.04
LT 71.17

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

0 30 60 120
FEET

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
QC CHECKED BY CSB
DATE MM/DD/YY

APPROVED

PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH
PROJECT NUMBER: S-0154(12)11
PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-15

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T._. R._.
S.L.B. & M.

119

118

1

1009+54.81
RT 726.16

1009+47.87
RT 806.40

CONSTRUCTION LIMIT

CONSTRUCTION LIMIT

1009+28.81
RT 725.04

1009+21.87
RT 805.28

SEE 114 RW-02

SEE 114 RW-17

40

0 30 60 120
FEET

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
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REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	WIDENED FOR TCE.

DRAWN BY KKH
QC CHECKED BY CSB
DATE MM/DD/YY

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL LAND SURVEYOR

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH

PROJECT NUMBER: S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-16

T._. R._.
S.L.B. & M.

CONSTRUCTION LIMIT

CONSTRUCTION LIMIT

SEE 114 RW-16

SEE 114 RW-18

LEGEND

- CONSTRUCTION LIMIT LINE
- NOISE WALL
- pe — Existing Jordan Aqueduct Easement
- TEMPORARY CONSTRUCTION ONLY AREA NO PERMANENT FEATURES ALLOWED

0 30 60 120
FEET

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	08/16	CSB	WIDENED FOR TCE.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
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PROFESSIONAL LAND SURVEYOR

MM/DD/YY
DATE

PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH

PROJECT NUMBER: S-0154(12)11 PIN 12566

CONTRACT RIGHT-OF-WAY

SALT LAKE COUNTY

SHEET NO. 114RW-17

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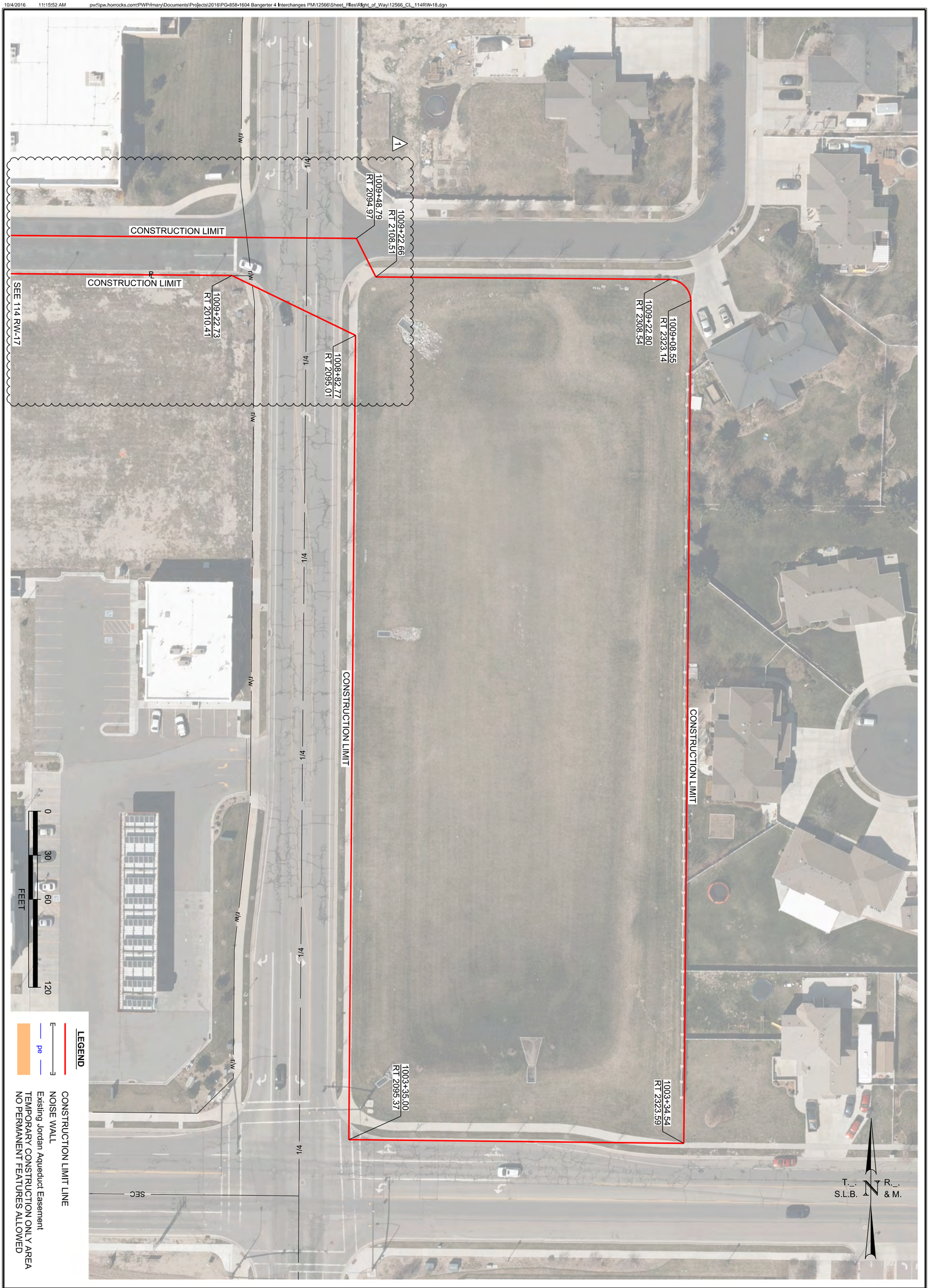

SHEET NO. 114RW-18	SALT LAKE COUNTY	PROJECT: 4 INTERCHANGES ON BANGERTER HIGHWAY - 11400 SOUTH	**UTAH DEPARTMENT OF TRANSPORTATION** REGION 2 - HORROCKS ENGINEERS	REVISIONS	
		PROJECT NUMBER: S-0154(12)11 PIN 12566	APPROVED	DRAWN BY: KKH	1 08/16 CSB WIDENED FOR TCE.
		CONTRACT RIGHT-OF-WAY	PROFESSIONAL LAND SURVEYOR MM/DD/YY DATE	QC CHECKED BY: CSB	NO. DATE APPROVED BY REMARKS

	TEST HOLE	DATE	STREET	UTILITY TYPE	STATION	OFFSET	GROUND ELEVATION	DEPTH TOP OF UTILITY	TOP OF UTILITY ELEVATION	BOTTOM OF UTILITY ELEVATION	OWNER	SIZE (IN.)	MATERIAL	NOTES
	TH-3	2/3/2016	Bangerter Hwy	Water	3023+46.19	96.4 LT	4517.599	6.98	4510.619	4510.619	JVWA	78 inches	RCP	Offset facing north
	TH-4	2/2/2016	Bangerter Hwy	Water	3031+48.43	98.4 LT	4517.665	8.59	4509.075	2 ~~4509.075~~ 4502.575	JVWA	78 inches	RCP	Offset facing north
	TH 70-01	6/6/2016	Bangerter Hwy	Comm	3016+15.54	68.8 RT	4515.974	8.12	4507.854	N/A	AT&T/MBI	Duct	Poly	Offset facing North
1	TH 70-02	6/14/2016	Bangerter Hwy	Comm	3029+43.90	204.8 LT	4518.909	1.18	4517.729	4517.146	UDOT/Syringa	(1) 1 Inch (4) 1 1/2 Inches	Plastic/PVC	Offset facing East
	TH 70-03	7/17/2016	Bangerter Hwy	Power	3029+51.37	229.4 LT	4518.992	2.96	4516.032	4515.532	West Jordan	6 IN	PVC	Offset facing East
	TH 70-04	7/18/2016	Bangerter Hwy	Water	3029+68.57	227.4 LT	4519.504	N/A	N/A	N/A	West Jordan	N/A	N/A	Offset facing East Dry Hole Dug 2 1/2' Deep X 4' Wide Big Rocks
	TH 70-04A	7/19/2016	Bangerter Hwy	Water	3029+62.98	227.4 LT	4519.293	N/A	N/A	N/A	West Jordan	N/A	N/A	Offset facing East No water line - dug 8'x4' - Found 3, 2" Plastic- No blue stakes Hand Mesure 3.40
	TH 70-05	7/7/2016	7000 South	Water	3029+74.40	226.0 LT	4519.671	N/A	N/A	N/A	West Jordan	N/A	N/A	Offset facing East
	TH 70-05A	7/8/2016	7000 South	Water	3029+79.56	226.0 LT	4519.769	3.45	4516.319	4514.986	West Jordan	16 Inches	Ductile Iron	Offset facing East
1	TH 70-06	7/8/2016	7000 South	Gas	3029+88.83	224.8 LT	4519.927	3.50	4516.427	4516.094	Questar	4 Inches	Steel	Offset facing East
	TH 70-07	7/18/2016	Bangerter Hwy	Comm	3029+53.65	106.8 RT	4511.600	4.70	4506.900	N/A	UDOT	Duct Bark	Poly	Offset facing East
	TH 70-08	7/18/2016	Bangerter Hwy	Power	3029+69.69	123.2 RT	4511.212	5.14	4506.072	4505.572	Rocky Mountain Power	6 Inches	PVC	Offset facing East
	TH 70-09	7/7/2016	7000 South	Water	3029+79.25	188.9 RT	4509.036	N/A	N/A	N/A	West Jordan	N/A	N/A	Offset facing East. Dug on Blue Stakes, Dug 9' deep 4' wide dry hole. Found 2 - 1' steel cables at 3.0, HM
1	TH 70-09A	7/8/2016	7000 South	Water	3029+86.47	189.6 RT	4509.094	6.14	4502.954	4501.954	West Jordan	12 Inches	Ductile Iron	Offset facing East
	TH 70-10	7/17/2016	Bangerter Hwy	Water	3029+99.10	194.0 RT	4509.066	3.82	4505.246	4503.913	West Jordan	16 Inches	Ductile Iron	Offset facing East
1	TH 70-11	7/8/2016	7000 South	Gas	3029+89.60	196.9 RT	4508.878	3.92	4504.958	4504.625	Questar	4 Inches	Steel	Offset facing East
	TH 70-12	7/17/2016	Bangerter Hwy	Comm	3032+66.86	80.3 RT	4511.553	3.71	4507.843	N/A	UDOT/Syringa	Duct Bark	PVC/ Poly	Offset facing North
1	TH 70-13	6/14/2016	Bangerter Hwy	Comm	3041+11.34	73.0 LT	4511.887	N/A	N/A	N/A	Century Link	N/A	N/A	Dug 10' deep x 4' wide dry hole
	TH 70-14	7/19/2016	Bangerter Hwy	Comm	3041+25.15	67.1 RT	4511.855	N/A	N/A	N/A	AT&T	N/A	N/A	Offset Facing North- No Crossing- Found Comm lines running North/South - Hand Mesure 10.51
	TH 70-15	6/6/2016	Bangerter Hwy	Comm	3044+16.85	64.7 RT	4510.491	7.70	4502.791	N/A	AT&T/MBI	Duct	Poly	Offset facing North
	TH 70-16	6/6/2016	Bangerter Hwy	Comm	3020+31.43	68.5 RT	4516.736	4.33	4512.406	4512.281	UDOT/Syringa	(3) .5 Inches	Poly	Offset facing North
	TH 70-17	7/27/2016	Bangerter Hwy	Fiber	3030+74.09	132.1 LT	4518.522	2.77	4515.752	4515.335	Comcast	(2) 2.5 Inches	PVC/Plastic	Offset Facing East
	TH 70-18	7/27/2016	Bangerter Hwy	Cable TV	3030+74.38	136.0 LT	4518.445	2.86	4515.585	4515.543	Comcast	1/2 Inch	Direct Buried Cable	Offset Facing East

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
2	10/06/16	BDW	ADDENDUM 2 - CORRECTED ELEVATION
1	09/16	DCO	ADDED TESTHOLES

DRAWN BY KKH
QC CHECKED BY WLS
MM/DD/YY DATE

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL ENGINEER

4 INTERCHANGES ON
BANGERTER HIGHWAY - 7000 SOUTH

PROJECT
PROJECT NUMBER S-0154(12)11
PIN 12566

UTILITY DETAILS

SHEET NO. 70UTDT-02

9/6/2016 1:40:29 PM pw:\\pw.horrocks.com:PWPrimary\Documents\Projects\2016\PG-858-1604 Bangerter 4 Interchanges PM\12566\Sheet_Files\UtilSht\12566_70UTDT_02.dgn

TEST HOLE	DATE	STREET	UTILITY TYPE	STATION	OFFSET	GROUND ELEVATION	DEPTH TOP OF UTILITY	TOP OF UTILITY ELEVATION	BOTTOM OF UTILITY ELEVATION	OWNER	SIZE (IN.)	MATERIAL	NOTES
TH-5	2/8/2016	Bangerter Hwy	Water	2043+76.98	156.0 RT	4606.064	4.26	4601.804	4601.804	JVWA	66 inches	Concrete lined steel pipe	
TH-6	2/3/2016	Bangerter Hwy	Water	2054+85.47	154.9 RT	4596.206	5.19	4591.016	2 ~~4591.016~~ 4584.516	JVWA	78 inches	RCP	Offset facing north
TH 90-01	6/8/2016	Bangerter Hwy	Comm	2030+75.65	63.4 LT	4600.535	5.33	4595.205	N/A	AT&T/MBI	Duct	Poly	Offset facing North
TH 90-02	6/8/2016	Bangerter Hwy	Comm	2036+70.01	36.2 LT	4605.519	5.28	4600.239	N/A	AT&T/MBI	Duct	Poly	Offset facing North
TH 90-03	6/8/2016	Bangerter Hwy	Comm	2036+69.32	23.3 LT	4603.444	3.04	4600.404	4600.154	UDOT/Syringa	3 Inches	Concrete cap PVC	Offset facing North
1 TH 90-04	6/7/2016	Bangerter Hwy	Comm	2050+64.43	11.7 RT	4598.294	8.35	4589.944	N/A	AT&T/MBI	Duct	Poly	Offset facing North
TH 90-06	8/10/2016	9000 South	Fiber	2052+67.10	251.7 LT	4603.215	3.25	4599.965	N/A	Century Link	24 In x 24 In	Concretee duct bank	Offset facing East
TH 90-07	8/2/2016	9000 South	Water	2052+58.52	230.8 LT	4602.775	3.75	4599.025	4598.942	West Jordan	1 Inches	Plastic	Offset facing East
1 TH 90-08	8/10/2016	9000 South	Gas	2052+77.37	255.9 LT	4603.423	3.76	4599.663	4599.163	Questar	6 Inches	Plastic	Offset facing East
TH 90-09	8/9/2016	9000 South	Fiber	2052+50.84	277.9 LT	4604.069	7.26	4596.809	4596.142	UDOT/Syringa	(4) 2 Inches	Poly	Offset facing East
TH 90-10	8/15/2016	9000 South	Water	2052+95.66	308.8 LT	4604.518	4.45	4600.068	4599.068	West Jordan	12 Inches	Ductile Iron	Offset facing East
TH 90-11	8/15/2016	9000 South	Gas	2053+18.00	311.3 LT	4604.375	3.35	4601.025	4600.692	Questar	4 Inches	Poly	Offset facing East
TH 90-12	8/9/2016	9000 South	Fiber/CATV	2053+58.77	72.4 LT	4600.090	3.29	4596.800	4596.467	Comcast	(3) 2 In (1) 4 In	PVC	Offset facing East
TH 90-13	6/13/2016	Bangerter Hwy	Comm	2055+65.92	3.3 LT	4596.946	N/A	N/A	N/A	AT&T/MBI	N/A	N/A	Offset facing North. Dug 11' x 4' wide, dry hole. Found unknown 1 "2" PVC HM 1'. Had utility located, he said +20' in this location
TH 90-14	6/13/2016	Bangerter Hwy	Comm	2062+52.13	32.7 LT	4579.703	5.19	4574.513	N/A	AT&T/MBI	Duct	Poly	Offset facing North
TH 90-15	8/2/2016	9000 South	Gas	2052+51.82	172.6 RT	4596.458	4.41	4592.048	4590.715	Questar	10 In Casing 6 In Gas	Steel	Offset facing NorthOffset facing North. Concrete side wall 1st measure down is 1.90', 2nd measure down is 3.80', 3rd measure down is 4.90',
1 TH 90-16	8/16/2016	9000 South	Water	2052+84.22	342.5 RT	4593.146	N/A	N/A	N/A	West Jordan	N/A	N/A	offset facing NorthOffset facing North. Concrete side wall 1st measure down is 2.0', 2nd measure down is 3.95', 3rd measure down is 4.70'.
TH 90-16A	8/17/2016	9000 South	Water	2052+88.84	341.1 RT	4593.032	6.15	4586.882	4585.632	West Jordan	15 Inches	Ductile Iron	Offset facing NorthOffset facing North. Concrete side wall 1st measure down is 2.10', 2nd measure down is 4.10', 3rd measure down is 5.0'.
TH 90-17	8/16/2016	9000 South	Water	2053+03.78	377.6 RT	4593.042	5.27	4587.772	4586.772	West Jordan	12 Inches	Ductile Iron	Offset facing North. Lots of debris and garbageOffset facing North. Lots of debris and garbage. Concrete side wall 1st measure down is 2.70', 2nd measure down is 4.70', 3rd measure down is 5.50'.
TH 90-18	6/28/2016	Bangerter Hwy	Wall Footing	2066+77.51	66.8 RT	4557.244	N/A	N/A	N/A	N/A	N/A	Concrete	Offset facing North
TH 90-19	6/28/2016	Bangerter Hwy	Wall Footing	2067+97.69	62.3 RT	4551.274	N/A	N/A	N/A	N/A	N/A	Concrete	offset facing North
TH 90-20	6/29/2016	Bangerter Hwy	Wall Footing	2069+15.86	59.2 RT	4545.519	N/A	N/A	N/A	N/A	N/A	Concrete	Offset facing North
TH 90-21	6/21/2016	Bangerter Hwy	Wall Footing	2069+96.61	57.8 RT	4542.104	N/A	N/A	N/A	N/A	N/A	Concrete	Offset facing North. Lots of debris and garbage
TH 90-22	6/29/2016	Bangerter Hwy	Wall Footing	2070+67.40	56.2 RT	4539.455	N/A	N/A	N/A	N/A	N/A	Concrete	Offset facing North
TH 90-23	6/30/2016	Bangerter Hwy	Wall Footing	2071+64.99	56.8 RT	4536.700	N/A	N/A	N/A	N/A	N/A	Concrete	Offset facing North. 3 - 1" poly lines, HM 2.55
TH 90-24	6/30/2016	Bangerter Hwy	Wall Footing	2072+21.38	55.7 RT	4535.406	N/A	N/A	N/A	N/A	N/A	Concrete	Offset facing North
1 TH 90-25	8/15/2016	9000 South	Gas	2053+35.63	371.8 RT	4593.551	N/A	N/A	N/A	Questar	18 Inches	N/A	Offset facing East. Dry Hole - dug 8' deep x 4' wide. Dug on Blue Stakes
TH 90-26	8/15/2016	9000 South	Water	2053+38.55	371.7 RT	4593.495	N/A	N/A	N/A	West Jordan	N/A	N/A	Offset facing East. Dry Hole - dug 8' deep x 4' wide. Dug on Blue Stakes
TH 90-26A	8/17/2016	9000 South	Water	2053+60.47	374.0 RT	4593.087	N/A	N/A	N/A	West Jordan	N/A	N/A	Offset facing East. Dry Hole - dug 8' deep x 4.5' wide.
TH 90-27	6/13/2016	Bangerter Hwy	Comm	2057+92.51	125.0 RT	4592.719	4.98	4587.739	4587.239	UDOT/Syringa	(4) 1 1/2 Inches	PVC	Offset facing North
TH 90-28	7/29/2016	Bangerter Hwy	Water	2051+43.15	164.1 RT	4597.025	19.26	4577.765	4571.265	Bureau of Reclamation	78 inches	MLSP	Offset Facing North
TH 90-29	8/1/2016	Bangerter Hwy	Storm Drain	2051+52.51	164.3 RT	4596.876	N/A	N/A	N/A	Salt Lake County Flood Control	84 Inches	Metal	Offset facing North. No water line. Found 84" storm drain. Hand Measure - 7.60' running east-west
TH 90-29A	8/1/2016	Bangerter Hwy	Water	2051+58.20	163.1 RT	4596.752	19.63	4577.127	4570.622	Bureau of Reclamation	78 inches	CMP	Offset facing North

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
2	10/06/16	BDW	ADDENDUM 2 - CORRECTED ELEVATION
1	09/16	DCO	ADDED TESTHOLES.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

DRAWN BY KKH
CHECKED BY WLS
QC
DATE MM/DD/YY

APPROVED

PROFESSIONAL ENGINEER

4 INTERCHANGES ON
BANGERTER HIGHWAY - 9000 SOUTH

PROJECT
PROJECT NUMBER S-0154(12)11
PIN 12566

UTILITY DETAILS

SHEET NO. 90UTDT-02

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Utility ID Number	Plan Sheet	Owner	Utility Type	Size	Material	Quality Level	Aerial Buried	Test Hole Number	Comments
be-1087-12	4, 5, 10	RMP	POWER			D	BURIED		
be-1088-12	4, 10	RMP	POWER			D	BURIED		
be-1089-12	4, 5, 10	RMP	POWER			D	BURIED		
be-1090-12	4, 5, 10	RMP	POWER			D	BURIED		
be-1092-12	4, 9, 10	RMP	POWER			D	BURIED		
bfo-1013-05	4	FIRST DIGITAL	FIBER			B	BURIED		
bfo-1014-05	4, 10	FIRST DIGITAL	FIBER			B	BURIED		
bfo-1028-17	4, 10, 11, 12, 13, 15	UDOT	FIBER			B	BURIED		
bfo-1029-15	4, 10, 11, 12, 13, 15	SYRINGA	FIBER			B	BURIED		
bfo-1030-02	4, 10	CENTURY LINK	FIBER			B	BURIED		
bfo-1034-15	4, 10	SYRINGA	FIBER			B	BURIED		
bfo-1040-17	4, 9, 10	UDOT	FIBER			B	BURIED		
bfo-1044-17	4, 5, 6, 7, 8, 10	UDOT	FIBER			B	BURIED	TH 114-10, -11, -12, -13, -15	
~~bfo-1045-18~~	~~4, 5, 6, 7, 8, 10~~	~~VERIZON~~	~~FIBER~~			~~B~~	~~BURIED~~		
btel-1008-05	4	FIRST DIGITAL	TELEPHONE			B	BURIED		
btel-1009-05	4, 10	FIRST DIGITAL	TELEPHONE			B	BURIED		
btel-1015-05	4, 10	FIRST DIGITAL	TELEPHONE			B	BURIED		
btel-1016-02	4, 10	CENTURY LINK	TELEPHONE			B	BURIED		
btel-1023-05	4, 5, 10, 11, 14	FIRST DIGITAL	TELEPHONE			B	BURIED		
btel-1024-02	4, 5, 10	CENTURY LINK	TELEPHONE			B	BURIED		
e-1003-12	4, 9, 10, 11, 12, 15	RMP	POWER			D	AERIAL		
g-1012-11	4, 13	QUESTAR	GAS	2 IN		D			
g-1013-11	4	QUESTAR	GAS	2 IN		D			
g-1015-11	4	QUESTAR	GAS	2 IN		D			
g-1016-11	4	QUESTAR	GAS	2 IN		D			
g-1020-11	4, 9, 10	QUESTAR	GAS	2 IN		D			
g-1030-11	4, 5, 10	QUESTAR	GAS	4 IN		B			
irr-1000-04	4, 9, 10	DAYBREAK	IRRIGATION PRESSURIZED	6 IN		D			
irr-1001-04	4, 9	DAYBREAK	IRRIGATION PRESSURIZED	6 IN		D			
irr-1003-10	4, 10, 11, 12, 13, 15	PRIVATE	IRRIGATION			D			
irr-1006-10	4, 9, 10	PRIVATE	IRRIGATION	18 IN		D			
irr-1007-10	4, 9, 10	PRIVATE	IRRIGATION	18 IN		C			
irr-1013-13	4, 5, 10	SOUTH JORDAN	IRRIGATION	24 IN		C			
irr-1014-13	4, 5, 10	SOUTH JORDAN	IRRIGATION	18 IN		C			
irr-1015-13	4, 5, 10, 11, 14	SOUTH JORDAN	IRRIGATION	18 IN		C			
irr-1016-13	4, 5, 10	SOUTH JORDAN	IRRIGATION	18 IN		C			
irr-1017-13	4, 10	SOUTH JORDAN	IRRIGATION	18 IN		C			
irr-1020-13	4, 9, 10	SOUTH JORDAN	IRRIGATION	24 IN		C			
irr-1022-13	4, 5, 9, 10	SOUTH JORDAN	IRRIGATION	24 IN		C			
ms-0515-14	4, 10	SVSD	SANITARY SEWER			B			
ms-0517-99	4, 10	UNKNOWN	SANITARY SEWER			B			
ms-0518-99	4, 10	UNKNOWN	SANITARY SEWER			B			
ms-0519-06	4	KEARNS	SANITARY SEWER			B			
ms-0520-06	4	KEARNS	SANITARY SEWER			B			
msd-0040-13	4, 10	SOUTH JORDAN	STORM DRAIN			B			
msd-0058-13	4, 10	SOUTH JORDAN	STORM DRAIN			B			
msd-0059-17	4, 9	UDOT	STORM DRAIN			B			
sd-1041-17	4	UDOT	STORM DRAIN	18 IN		C			
sd-1042-17	4, 10	UDOT	STORM DRAIN	30 IN		C			
sd-1044-13	4, 9, 10	SOUTH JORDAN	STORM DRAIN	24 IN		D			
sd-1048-13	4, 9	SOUTH JORDAN	STORM DRAIN	24 IN		D			
sd-1049-17	4, 10	UDOT	STORM DRAIN	12 IN		C			
sd-1052-17	4, 10	UDOT	STORM DRAIN	30 IN		C			
sd-1053-17	4, 5, 10	UDOT	STORM DRAIN	30 IN		C			
sd-1055-17	4, 9	UDOT	STORM DRAIN	8 IN		C			
sd-1078-17	4, 10	UDOT	STORM DRAIN	48 IN		C			
sd-1080-17	4, 9, 10	UDOT	STORM DRAIN	48 IN		C			
sd-1081-13	4, 10	SOUTH JORDAN	STORM DRAIN	18 IN		C			
sd-1093-17	4, 5, 10	UDOT	STORM DRAIN	18 IN		C			

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REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	10/06/16	BDW	Addendum 2

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HDR

DRAWN BY GS
QC CHECKED BY BDW
DATE 9/15/2016

APPROVED
PROFESSIONAL ENGINEER

4 INTERCHANGES ON
BANGERTER HIGHWAY - 11400 SOUTH

PROJECT
PROJECT NUMBER S-0154(12)11
PIN 12566

UTILITIES

SHEET NO. 114UTSM-04

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Utility ID Number	Plan Sheet	Owner	Utility Type	Size	Material	Quality Level	Aerial Buried	Test Hole Number	Comments
g-9035-11	10	QUESTAR	GAS	2 IN	PAL Plastic	D			
ms-0015-19	10	WEST JORDAN	SANITARY SEWER			B			
ms-0017-19	10	WEST JORDAN	SANITARY SEWER			B			
ms-0019-19	10	WEST JORDAN	SANITARY SEWER			B			
ms-0020-19	10	WEST JORDAN	SANITARY SEWER			B			
ms-0567-19	10	WEST JORDAN	SANITARY SEWER			D			
msd-0068-19	10	WEST JORDAN	STORM DRAIN			B			
msd-0069-19	10	WEST JORDAN	STORM DRAIN			B			
msd-0070-19	10	WEST JORDAN	STORM DRAIN			B			
msd-0071-19	10	WEST JORDAN	STORM DRAIN			B			
msd-0072-19	10	WEST JORDAN	STORM DRAIN			B			
msd-0079-19	10	WEST JORDAN	STORM DRAIN			B			
msd-0080-19	10	WEST JORDAN	STORM DRAIN			B			
sd-9010-19	10	WEST JORDAN	STORM DRAIN	12 IN	RCP	C			
sd-9011-19	10	WEST JORDAN	STORM DRAIN	15 IN	RCP	C			
sd-9012-19	10	WEST JORDAN	STORM DRAIN	15 IN	RCP	C			
sd-9013-19	10	WEST JORDAN	STORM DRAIN	36 IN	RCP	C			
sd-9014-19	10	WEST JORDAN	STORM DRAIN	36 IN	RCP	C			
sd-9015-19	10	WEST JORDAN	STORM DRAIN	36 IN	RCP	C			
sd-9016-19	10	WEST JORDAN	STORM DRAIN	36 IN	RCP	C			
sd-9038-19	10, 11	WEST JORDAN	STORM DRAIN	18 IN	CPP	C			
sd-9061-19	10	WEST JORDAN	STORM DRAIN	18 IN	RCP	C			
sd-9078-19	10	WEST JORDAN	STORM DRAIN	36 IN	RCP	C			
sdi-0521-19	10	WEST JORDAN	STORM DRAIN			B			
sdi-0522-19	10	WEST JORDAN	STORM DRAIN			B			
sdi-0523-19	10	WEST JORDAN	STORM DRAIN			B			
sdi-0524-19	10	WEST JORDAN	STORM DRAIN			B			
ss-9002-19	10	WEST JORDAN	SANITARY SEWER	12 IN	PVC	C			
ss-9003-19	10	WEST JORDAN	SANITARY SEWER	12 IN	PVC	C			
ss-9004-19	10	WEST JORDAN	SANITARY SEWER	12 IN	PVC	C			
ss-9005-19	10	WEST JORDAN	SANITARY SEWER	12 IN	PVC	C			
ss-9006-19	10	WEST JORDAN	SANITARY SEWER	12 IN	PVC	C			
ss-9012-19	10	WEST JORDAN	SANITARY SEWER	8 IN	PVC	C			
ss-9013-19	10	WEST JORDAN	SANITARY SEWER	8 IN	PVC	C			
ss-9028-19	10	WEST JORDAN	SANITARY SEWER	8 IN	PVC	C			
ss-9029-19	10	WEST JORDAN	SANITARY SEWER	8 IN		D			
wtr-9010-19	10	WEST JORDAN	WATER	12 IN		D			
wtr-9014-19	10	WEST JORDAN	WATER	6 IN		D			
wtr-9015-19	10	WEST JORDAN	WATER	6 IN		D			
wtr-9016-19	10	WEST JORDAN	WATER	8 IN		D			
wtr-9017-19	10	WEST JORDAN	WATER	1 IN		D			
wtr-9018-19	10	WEST JORDAN	WATER	6 IN		D			
wtr-9019-19	10	WEST JORDAN	WATER	6 IN		D			
wtr-9020-19	10	WEST JORDAN	WATER	6 IN		D			
wtr-9052-19	10	WEST JORDAN	WATER	8 IN		D			
e-9036-12	11	RMP	POWER		AS	D	AERIAL		
g-9000-11	11	QUESTAR	GAS			D			
msd-0505-19	11	WEST JORDAN	STORM DRAIN			B			
1 mw-0001-19	11	WEST JORDAN	WATER	10.25 FT X 13.00 FT		B			PRV Vault
sd-9026-17	11, 12	UDOT	STORM DRAIN	84 IN	CMP	C			
sdi-0262-17	11	UDOT	STORM DRAIN			B			
wtr-9013-19	11	WEST JORDAN	WATER	1 IN		D			
be-9007-12	12	RMP	POWER			D	BURIED		
be-9008-12	12	RMP	POWER			D	BURIED		
be-9009-12	12	RMP	POWER		AL	D	BURIED		
be-9010-12	12	RMP	POWER		PVC -AL	D	BURIED		
be-9034-12	12	RMP	POWER		AL	D	BURIED		
2 ~~bfo-9006-18~~	~~12~~	~~VERIZON~~	~~FIBER~~			~~B~~	~~BURIED~~		
bfo-9007-02	12	CENTURY LINK	FIBER			B	BURIED		
bfo-9008-02	12	CENTURY LINK	FIBER			B	BURIED		

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
2	10/06/16	BDW	Addendum 2
1	09/16	DCO	UPDATE UTILITY SUMMARY

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - HORROCKS ENGINEERS

APPROVED

PROFESSIONAL ENGINEER

MM/DD/YY
DATE

DRAWN BY KKH
CHECKED BY VR
QC

4 INTERCHANGES ON
BANGERTER HIGHWAY - 9000 SOUTH

PROJECT

PROJECT NUMBER S-0154(12)11 PIN 12566

UTILITY SUMMARY

SHEET NO. 90UTSM-09

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Utility ID Number	Plan Sheet	Owner	Utility Type	Size	Material	Quality Level	Aerial Buried	Test Hole Number	Comments
wtr-5215-06	21, 22	KEARNS	WATER	8 IN		D			
wtr-5223-06	21	KEARNS	WATER	6 IN		D			
wtr-5224-06	21	KEARNS	WATER	6 IN		D			
wtr-5225-06	21	KEARNS	WATER	6 IN		D			
wtr-5226-06	21	KEARNS	WATER	6 IN		D			
wtr-5227-06	21	KEARNS	WATER	6 IN		D			
bctv-5209-03	22	COMCAST	CABLE TV			D	BURIED		
bctv-5210-03	22	COMCAST	CABLE TV			D	BURIED		
bctv-5212-03	22, 26	COMCAST	CABLE TV			D	BURIED		
be-5202-12	22, 25	RMP	POWER			D	BURIED		
be-5208-12	22, 25	RMP	POWER			D	BURIED		
be-5209-12	22, 25	RMP	POWER			D	BURIED		
be-5210-12	22	RMP	POWER			D	BURIED		
be-5216-12	22, 26	RMP	POWER			D	BURIED		
be-5223-17	22, 25	UDOT	POWER			D	BURIED		
be-5225-17	22	UDOT	POWER			D	BURIED		
be-5237-12	22	RMP	POWER			D	BURIED		
be-5241-12	22	RMP	POWER			D	BURIED		
bfo-5005-17	22, 26	UDOT	FIBER			B	BURIED		
bfo-5006-15	22, 26	SYRINGA	FIBER			B	BURIED		
bfo-5202-18	22, 25	VERIZON	FIBER			B	BURIED		
bfo-5205-15	22, 25	SYRINGA	FIBER			B	BURIED		
bfo-5206-17	22, 25	UDOT	FIBER			B	BURIED		
bfo-5207-15	22, 23	SYRINGA	FIBER			B	BURIED		
bfo-5208-02	22, 25	CENTURY LINK	FIBER			B	BURIED		
bfo-5217-03	22	COMCAST	FIBER			D	BURIED		
bfo-5218-02	22, 23, 24	CENTURY LINK	FIBER			B	BURIED		
bfo-5222-02	22	CENTURY LINK	FIBER			B	BURIED		
bfo-5223-02	22	CENTURY LINK	FIBER			B	BURIED		
bfo-5224-02	22	CENTURY LINK	FIBER			B	BURIED		
bfo-5226-02	22	CENTURY LINK	FIBER			B	BURIED		
bfo-5227-02	22, 23	CENTURY LINK	FIBER			B	BURIED		
bfo-5230-02	22	CENTURY LINK	FIBER			B	BURIED		
bfo-5231-02	22	CENTURY LINK	FIBER			B	BURIED		
~~bfo-5232-09~~	~~22, 23~~	~~UNKNOWN~~	~~FIBER~~			~~D~~	~~BURIED~~		
bfo-5235-09	22, 23, 25	MBI, ATT, ZAYO, FIRST DIGITAL	FIBER			B	BURIED		
btel-5202-02	22, 26	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5206-02	22	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5207-02	22	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5208-02	22	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5210-02	22, 23	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5215-02	22, 23	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5221-02	22	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5222-02	22, 25	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5223-02	22, 23	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5224-02	22, 23	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5227-02	22	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5228-02	22	CENTURY LINK	TELEPHONE			B	BURIED		
e-5201-12	22, 23	RMP	POWER			D	AERIAL		
e-5235-12	22	RMP	POWER			D	AERIAL		
g-5201-11	22, 25	QUESTAR	GAS	2 IN		B			
g-5202-11	22	QUESTAR	GAS	2 IN		D			
g-5204-11	22	QUESTAR	GAS	2 IN		D			
g-5205-11	22	QUESTAR	GAS	3 IN		D			
g-5212-11	22, 23, 24	QUESTAR	GAS	6 IN		B			
g-5214-11	22, 25	QUESTAR	GAS	6 IN		B			
g-5219-11	22	QUESTAR	GAS	6 IN		D			
ms-0028-06	22	KEARNS	SANITARY SEWER			B			
ms-0051-06	22	KEARNS	SANITARY SEWER			B			

1

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	10/06/16	BDW	Addendum 2

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - AVENUE CONSULTANTS

DRAWN BY GS
QC CHECKED BY BDW
DATE

APPROVED

PROFESSIONAL ENGINEER

4 INTERCHANGES ON
BANGERTER HIGHWAY - 5400 SOUTH

PIN 12566
S-0154(12)11

PROJECT
PROJECT NUMBER

UTILITY

SHEET NO. 54UTSM-13

$$pentblis$$
$$username$$
c:\pw_work\brigham.westover@hdr-inc.com\dms78928\12566_54UTSM-13.dgn
9/8/2016

Utility ID Number	Plan Sheet	Owner	Utility Type	Size	Material	Quality Level	Aerial Buried	Test Hole Number	Comments
ss-5206-06	22	KEARNS	SANITARY SEWER	8 IN		D			
ss-5218-06	22, 23	KEARNS	SANITARY SEWER	8 IN		C			
ss-5219-06	22	KEARNS	SANITARY SEWER	8 IN		C			
ss-5220-06	22	KEARNS	SANITARY SEWER	8 IN		C			
ss-5230-06	22, 23	KEARNS	SANITARY SEWER	8 IN		C			
ss-5231-06	22	KEARNS	SANITARY SEWER	8 IN		C			
ss-5232-06	22	KEARNS	SANITARY SEWER	8 IN		C			
ss-5233-06	22, 26	KEARNS	SANITARY SEWER	8 IN		C			
wtr-5200-06	22	KEARNS	WATER	6 IN		D			
wtr-5201-06	22	KEARNS	WATER	6 IN		D			
wtr-5202-06	22	KEARNS	WATER	6 IN		D			
wtr-5203-06	22, 26	KEARNS	WATER	3 QUARTERS IN		D			
wtr-5204-06	22, 26	KEARNS	WATER	3 QUARTERS IN		D			
wtr-5209-06	22, 23	KEARNS	WATER	1 IN		D			
wtr-5214-06	22, 25	KEARNS	WATER	10 IN		D			
wtr-5221-06	22	KEARNS	WATER	6 IN		D			
wtr-5222-06	22	KEARNS	WATER	6 IN		D			
wtr-5230-06	22, 23	KEARNS	WATER	6 IN		D			
wtr-5231-06	22, 23, 25	KEARNS	WATER	6 IN		D			
wtr-5232-06	22, 26	KEARNS	WATER	6 IN		D			
wtr-5233-06	22	KEARNS	WATER	6 IN		D			
wtr-5234-06	22, 23, 24	KEARNS	WATER	8 IN		D			
bctv-5204-03	23	COMCAST	CABLE TV			D	BURIED		
bctv-5206-03	23	COMCAST	CABLE TV			D	BURIED		
bctv-5207-03	23	COMCAST	CABLE TV			D	BURIED		
be-5211-12	23	RMP	POWER			D	BURIED		
be-5212-12	23	RMP	POWER			D	BURIED		
be-5213-17	23	UDOT	POWER			D	BURIED		
be-5214-17	23	UDOT	POWER			D	BURIED		
be-5215-12	23	RMP	POWER			D	BURIED		
be-5217-17	23	UDOT	POWER			D	BURIED		
be-5219-12	23	RMP	POWER			D	BURIED		
be-5220-12	23	RMP	POWER			D	BURIED		
bfo-5213-02	23	CENTURY LINK	FIBER			D	BURIED		
bfo-5219-02	23, 24	CENTURY LINK	FIBER			B	BURIED		
bfo-5220-02	23	CENTURY LINK	FIBER			B	BURIED		
bfo-5225-02	23	CENTURY LINK	FIBER			B	BURIED		
bfo-5228-02	23, 24	CENTURY LINK	FIBER			B	BURIED		
bfo-5233-09	23, 24	MBI, ATT, ZAYO, FIRST DIGITAL	FIBER			B	BURIED		
bfo-5234-09	23	MBI, ATT, ZAYO, FIRST DIGITAL	FIBER			B	BURIED		
btel-5200-02	23	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5201-02	23	CENTURY LINK	TELEPHONE			B	BURIED		
~~btel-5204-03~~	~~23, 24~~	~~UNKNOWN~~	~~TELEPHONE~~			~~D~~	~~BURIED~~		
btel-5211-02	23	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5212-02	23	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5213-02	23	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5214-02	23	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5220-02	23, 24	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5225-02	23, 24	CENTURY LINK	TELEPHONE			B	BURIED		
btel-5226-02	23	CENTURY LINK	TELEPHONE			B	BURIED		
e-5232-12	23, 24	RMP	POWER			D	AERIAL		
g-5215-11	23	QUESTAR	GAS	2 IN		D			
ms-0052-06	23	KEARNS	SANITARY SEWER			B			
ms-0053-06	23	KEARNS	SANITARY SEWER			B			
ms-0054-06	23	KEARNS	SANITARY SEWER			B			
ms-0058-19	23	WEST JORDAN	SANITARY SEWER			B			
ms-0095-06	23	KEARNS	SANITARY SEWER			B			
sd-5207-17	23	UDOT	STORM DRAIN	12 IN		C			
sd-5214-17	23	UDOT	STORM DRAIN	15 IN		C			

1

REVISIONS

NO.	DATE	APPROVED BY	REMARKS
1	10/06/16	BDW	Addendum 2

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 - AVENUE CONSULTANTS

DRAWN BY GS
QC CHECKED BY BDW
DATE

APPROVED

PROFESSIONAL ENGINEER

4 INTERCHANGES ON
BANGERTER HIGHWAY - 5400 SOUTH

PROJECT
PROJECT NUMBER S-0154(12)11
PIN 12566

UTILITY

SHEET NO. 54UTSM-15

$$pentblis$$
$$username$$
c:\pw_work\brigan_westover@hdr-inc.com\dms78928\12566_54UTSM-15.dgn
9/8/2016

REQUEST FOR PROPOSALS

UTAH DEPARTMENT OF TRANSPORTATION

4 Interchanges on Bangerter HWY (SR-154)

Project No. S-0154(12)11

Salt Lake County

CONTRACT DOCUMENTS

PART 8:

ENGINEERING DATA

~~Final Issued~~Addendum 2 ~~-~~ ~~September~~ October ~~15~~6, 2016

TABLE OF CONTENTS

PART 8 DOCUMENTATION NOT INCLUDED IN MAIN PDF DOCUMENT; INCLUDED AS SEPARATE DOCUMENTS/ELECTRONIC FILES

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-01	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	5/26/2016	**HE Project #:**	PG-858-1604
Project City:	Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

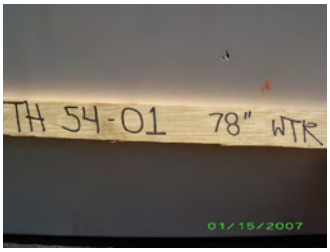
Utility Type:	Water	**Utility Size:**	66 Inches	**Utility Material:**	MLSP
Utility Company:	Bureau of Reclamation	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	6.72	**Top Ref. Level:**	12.60	**Hand Meas. Top:**	6.80
Depth to Bottom:	12.22	**Bot. Ref. Level:**	18.10	**Hand Meas. Bot:**	N/A
Top Elevation:	4565.609	**Mkr. Ref. Level:**	5.88	**Ref. Elevation:**	4572.329
Bottom Elevation:	4560.109	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 46.4

N

Overall Location of Test Hole

TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	25.90
B	Manhole Vault	28.20
C	Waterline Marker	165.40

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-02	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	5/26/2016	**HE Project #:**	PG-858-1604
Project City:	Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

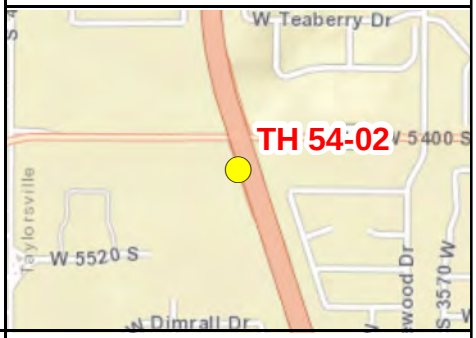
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

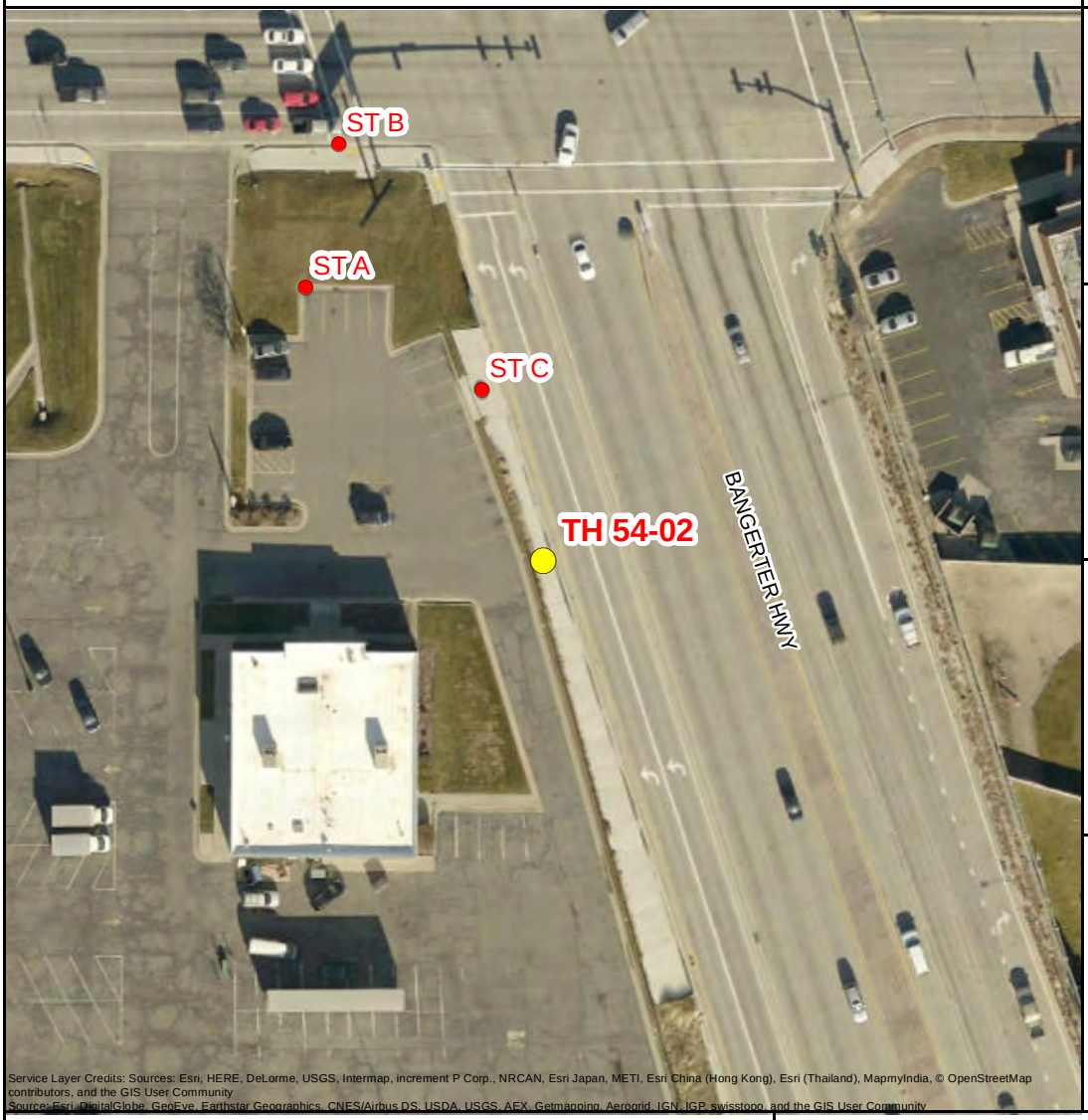
Utility Type:	Water	**Utility Size:**	66 Inches	**Utility Material:**	MLSP
Utility Company:	Bureau of Reclamation	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Saw Cut
Depth to Top:	8.30	**Top Ref. Level:**	13.83	**Hand Meas. Top:**	8.30
Depth to Bottom:	13.80	**Bot. Ref. Level:**	19.33	**Hand Meas. Bot:**	N/A
Top Elevation:	4549.111	**Mkr. Ref. Level:**	5.53	**Ref. Elevation:**	4557.411
Bottom Elevation:	4543.611	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 9.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	138.40
B	Catch Basin	178.80
C	Manhole Vault	67.30

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-03	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	5/25/2016	**HE Project #:**	PG-858-1604
Project City:	Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

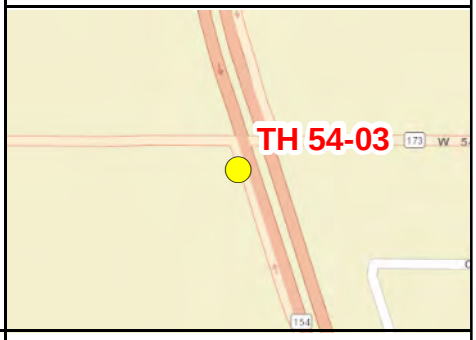
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

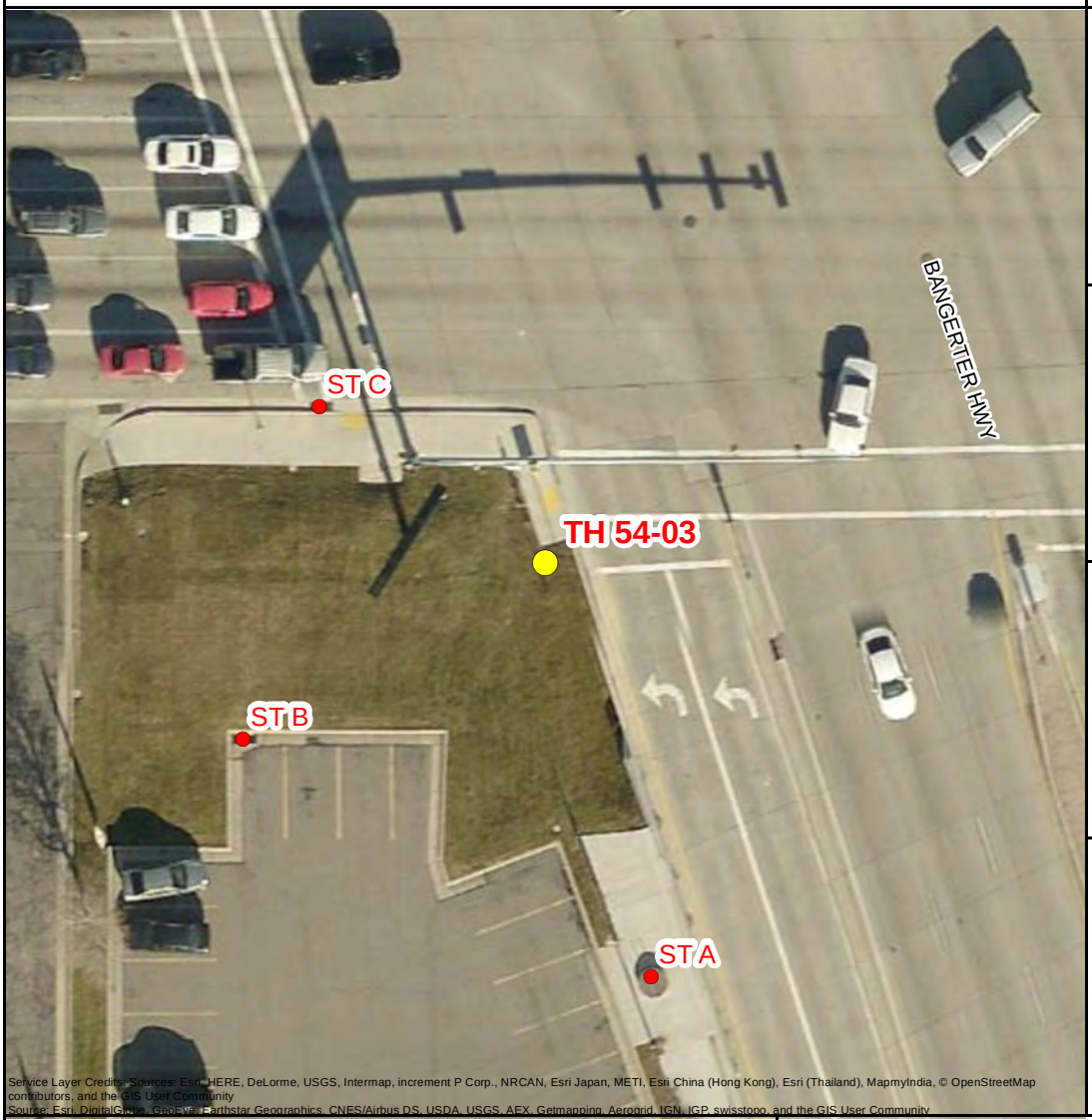
Utility Type:	Water	**Utility Size:**	66 Inches	**Utility Material:**	MLSP
Utility Company:	Bureau of Reclamation	**English/Metric:**	English	**Soil Conditions:**	Rock
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	9.11	**Top Ref. Level:**	13.53	**Hand Meas. Top:**	9.18
Depth to Bottom:	14.61	**Bot. Ref. Level:**	19.03	**Hand Meas. Bot:**	N/A
Top Elevation:	4543.711	**Mkr. Ref. Level:**	4.42	**Ref. Elevation:**	4552.821
Bottom Elevation:	4538.211	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 9.6

N

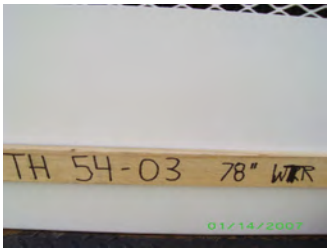
Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Manhole Vault	77.30
B	Catch Basin	55.70
C	Catch Basin	42.50

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-04	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	5/26/2016	**HE Project #:**	PG-858-1604
Project City:	Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

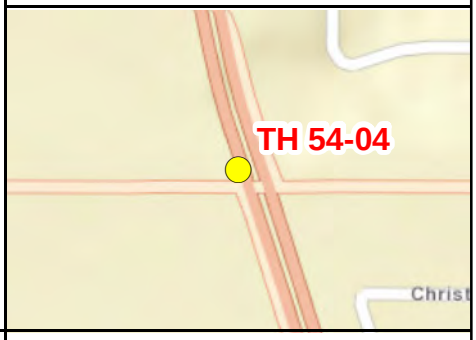
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

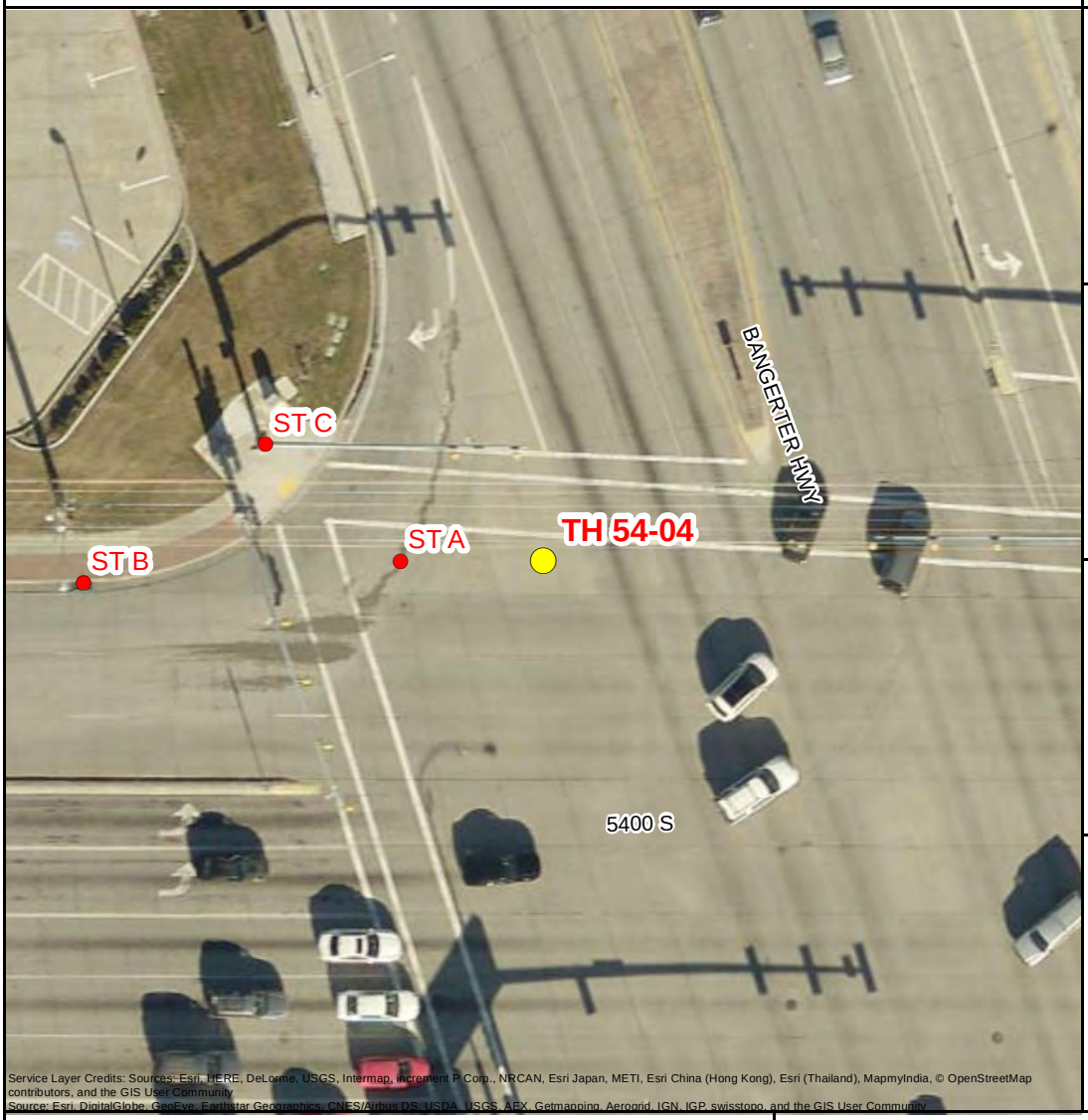
Utility Type:	Water	**Utility Size:**	66 Inches	**Utility Material:**	MLSP
Utility Company:	Bureau of Reclamation	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	18 Inches	**Marker Type:**	Saw Cut
Depth to Top:	8.09	**Top Ref. Level:**	13.04	**Hand Meas. Top:**	8.15
Depth to Bottom:	13.59	**Bot. Ref. Level:**	18.54	**Hand Meas. Bot:**	N/A
Top Elevation:	4543.131	**Mkr. Ref. Level:**	4.95	**Ref. Elevation:**	4551.221
Bottom Elevation:	4537.631	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 49.6

N

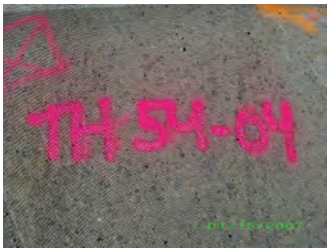
Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Water Valve	27.40
B	Catch Basin	88.90
C	Traffic Light Pole	57.00

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-05	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	5/25/2016	**HE Project #:**	PG-858-1604
Project City:	West Valley City/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

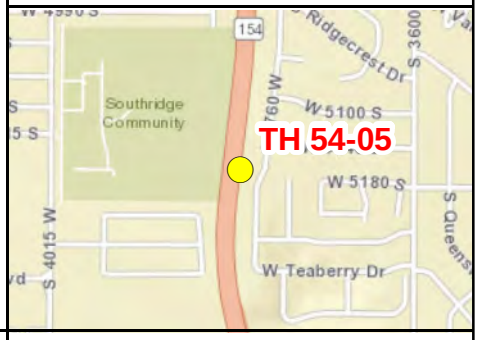
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

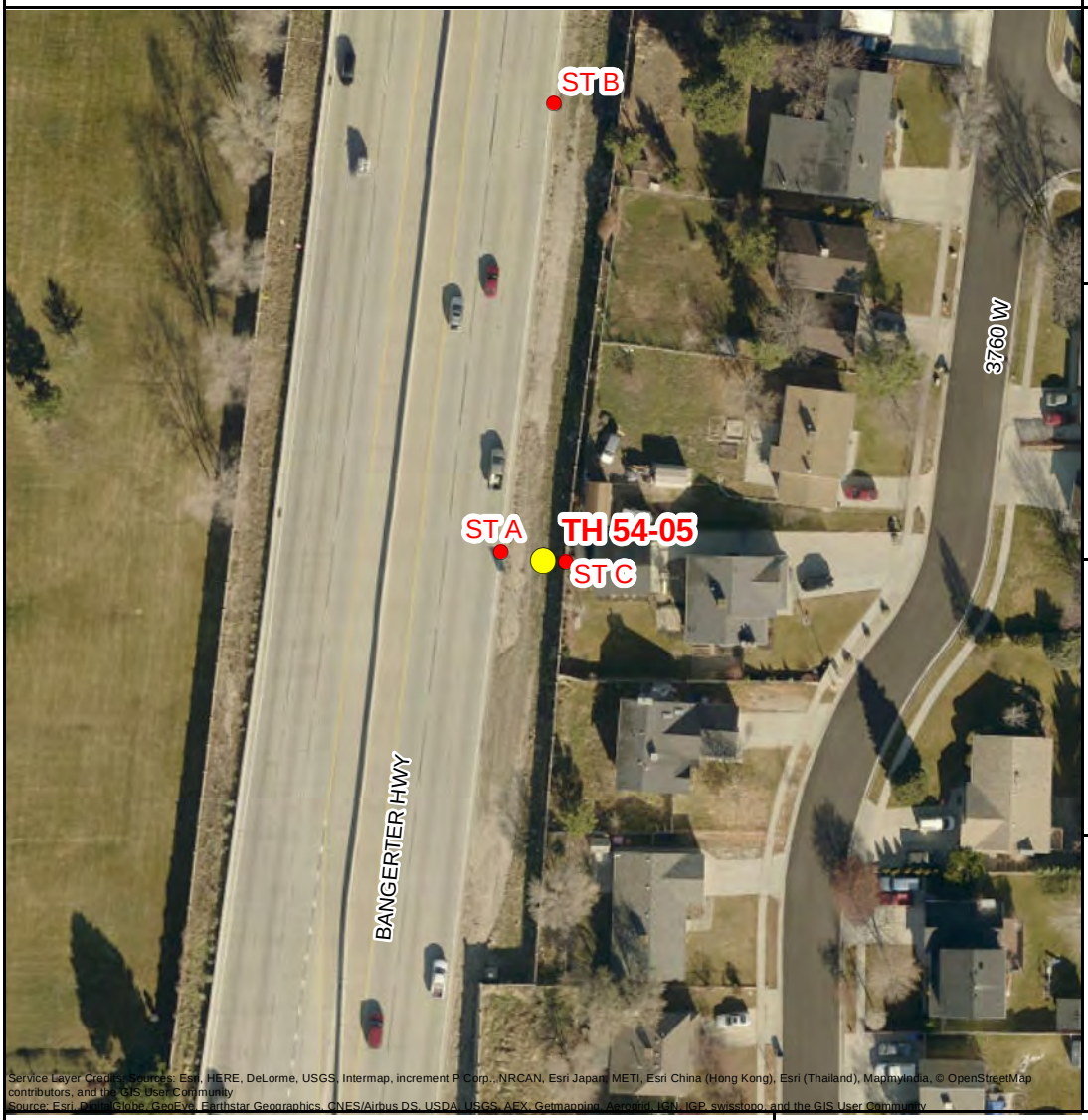
Utility Type:	Water	**Utility Size:**	66 Inches	**Utility Material:**	MLSP
Utility Company:	Bureau of Reclamation	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	4.57	**Top Ref. Level:**	9.01	**Hand Meas. Top:**	4.60
Depth to Bottom:	10.07	**Bot. Ref. Level:**	14.51	**Hand Meas. Bot:**	N/A
Top Elevation:	4502.314	**Mkr. Ref. Level:**	4.44	**Ref. Elevation:**	4506.884
Bottom Elevation:	4496.814	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 15.5

N

Overall Location of Test Hole

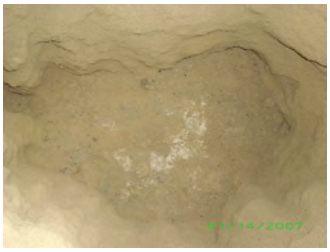


TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1



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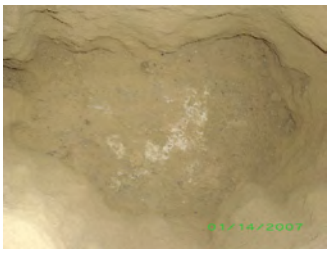


Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	14.60
B	Catch Basin	202.90
C	Retaining Wall	13.40

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-06	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	5/25/2016	**HE Project #:**	PG-858-1604
Project City:	West Valley City/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

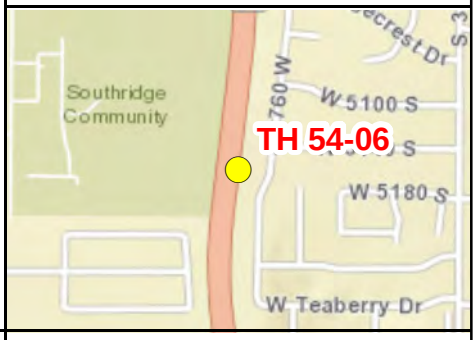
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

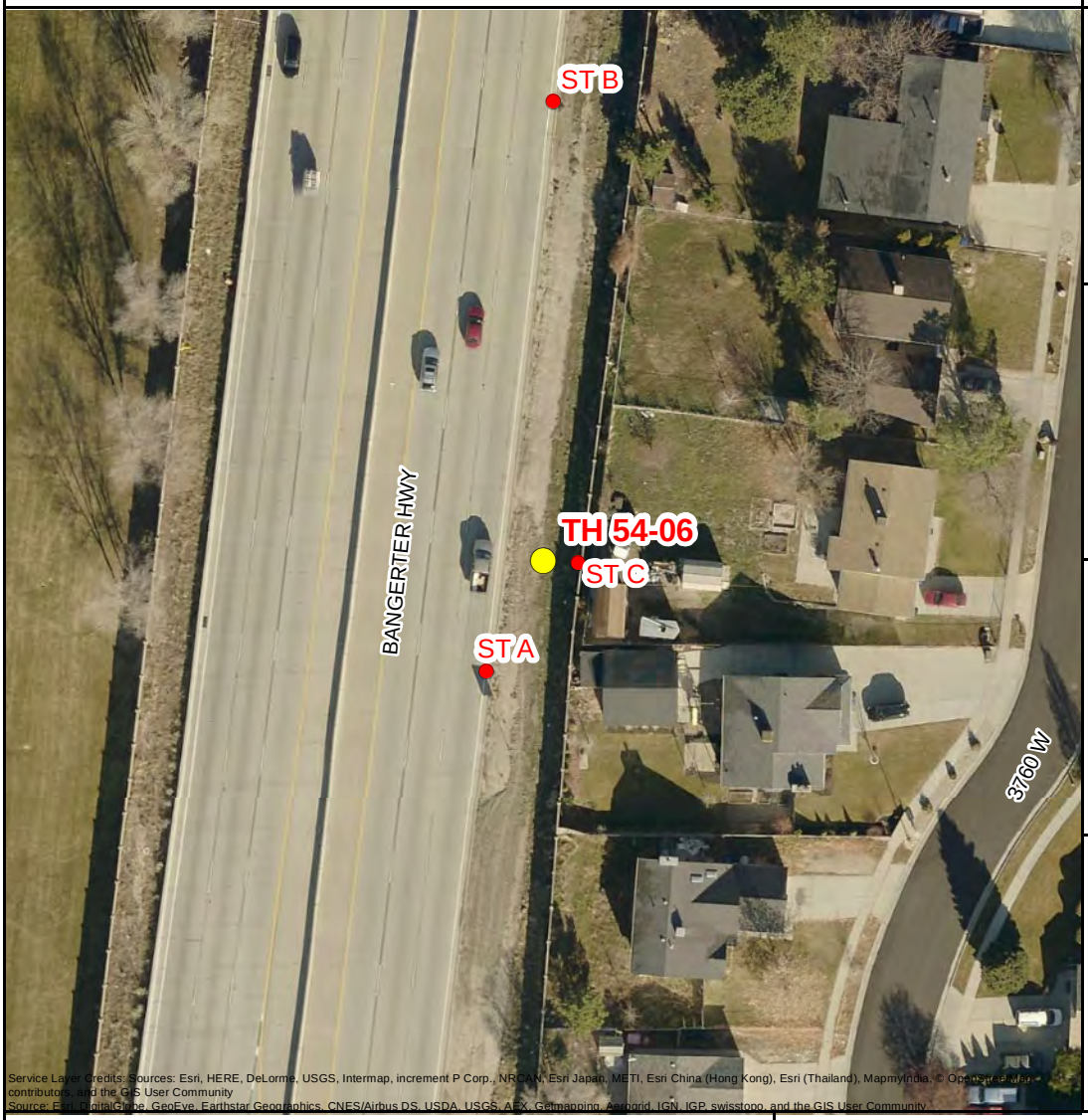
Utility Type:	Water	**Utility Size:**	66 Inches	**Utility Material:**	MLSP
Utility Company:	Bureau of Reclamation	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	4.76	**Top Ref. Level:**	10.30	**Hand Meas. Top:**	4.80
Depth to Bottom:	10.26	**Bot. Ref. Level:**	15.80	**Hand Meas. Bot:**	N/A
Top Elevation:	4501.081	**Mkr. Ref. Level:**	5.54	**Ref. Elevation:**	4505.841
Bottom Elevation:	4495.581	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 11.4

N

Overall Location of Test Hole

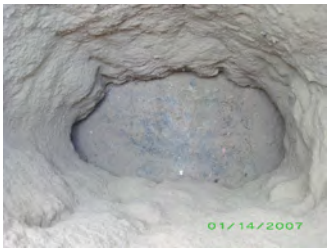


TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	44.00
B	Catch Basin	159.50
C	Retaining Wall	16.60

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-07	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/15/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

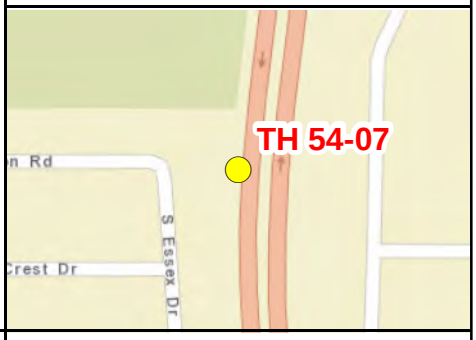
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	TBID	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Lalth
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4520.253
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 3.6

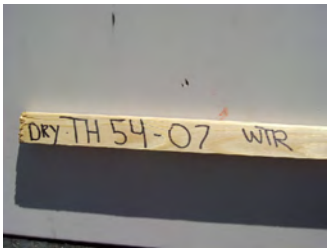
N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	8.30
B	Catch Basin	55.20
C	Retaining Wall	9.50

General Notes About This Test Hole

Offset facing North, Dug 18' x 6' wide were probiing to 12'. Dug on blue stakes,

Hand Measure on Comm 6.90

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-08	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/7/2016	**HE Project #:**	PG-858-1604
Project City:	West Valley City/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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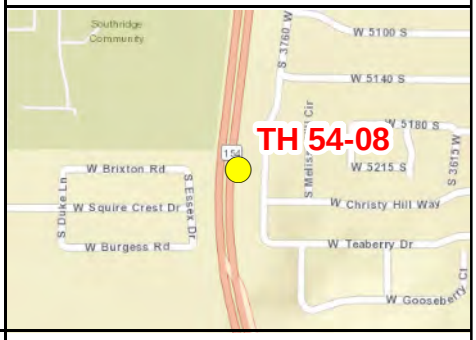
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	TBID	**English/Metric:**	English	**Soil Conditions:**	Hard Dirt/Rock
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Lalth
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4515.498
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 16.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	9.00
B	Catch Basin	39.40
C	Catch Basin	152.40

General Notes About This Test Hole

Offset facing North Dug 10' x 8' wide on cities Blue Stake. Will need to re-evaluate and dig again

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-08A	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/9/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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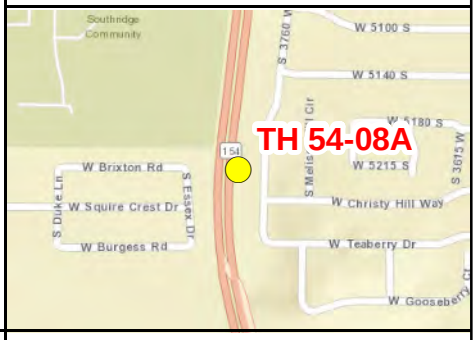
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

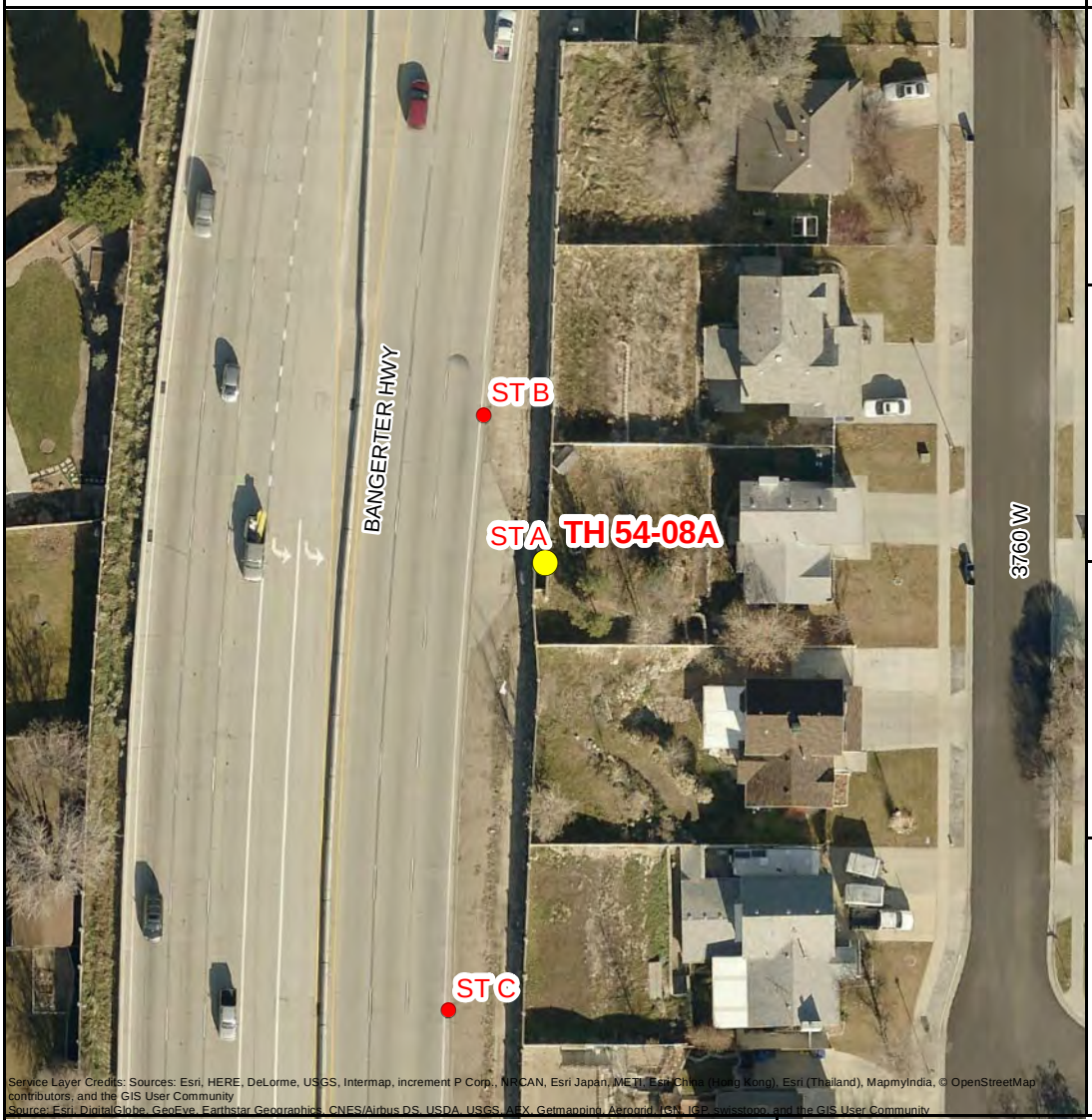
Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	TBID	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Lalth
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4514.037
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 21.7

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	3.10
B	Catch Basin	46.40
C	Catch Basin	149.20

General Notes About This Test Hole

Offset facing North. Dug 10.5' deep x 5' wide Dry hole.

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-08B	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/9/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

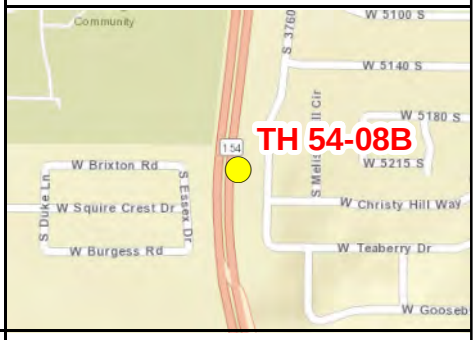
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	TBID	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Paint to dry hole
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4515.836
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 14.8

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	6.60
B	Catch Basin	57.40
C	Catch Basin	138.20

General Notes About This Test Hole

Offset facing North. Dug 10 ft deep and 4ft wide.

Dry hole.

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-09	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/15/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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Pleasant Grove, UT 84062
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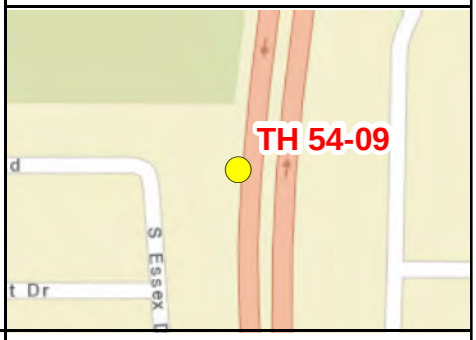
Test Hole Data

Utility Type:	Sewer	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Lalth
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4519.937
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 3.3

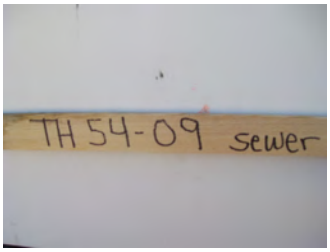
N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	4.10
B	Catch Basin	47.30
C	Retaining Wall	9.50

General Notes About This Test Hole

Offset facing North, Dug on cities blue stakes 11' deep x 6' wide, probing 15'. Found storm drain pipe 18" CMP. Hand Measure - 5', filled vac tank

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-10	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/22/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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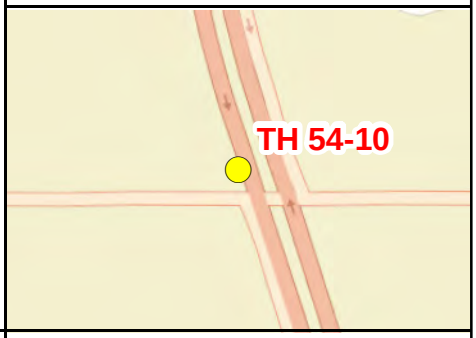
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

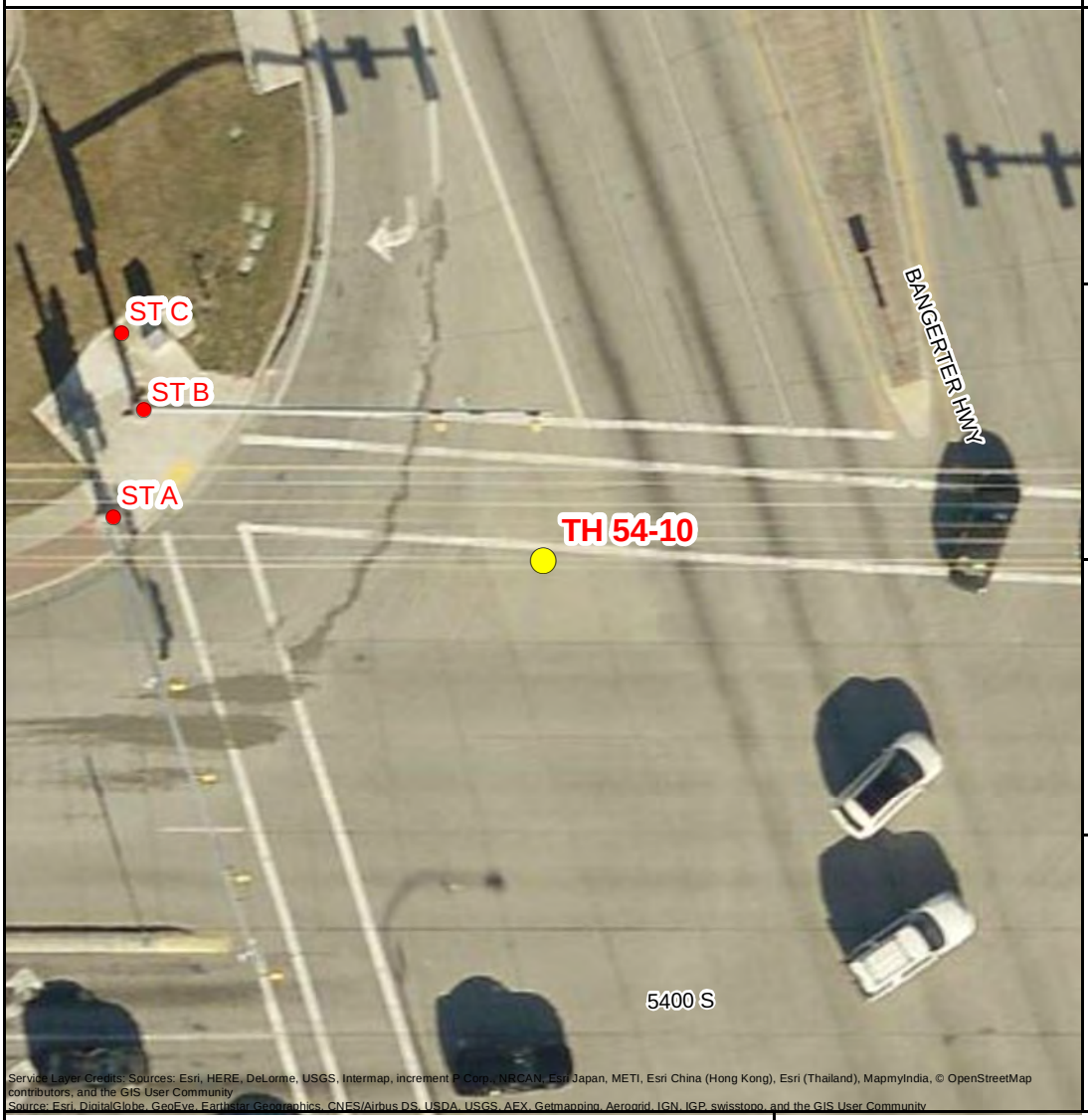
Utility Type:	Comm	**Utility Size:**	(4) 1.5 Inches	**Utility Material:**	Poly
Utility Company:	Verizon	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	15 Inches	**Marker Type:**	Saw Cut
Depth to Top:	3.67	**Top Ref. Level:**	8.7	**Hand Meas. Top:**	3.65
Depth to Bottom:	4.17	**Bot. Ref. Level:**	9.20	**Hand Meas. Bot:**	N/A
Top Elevation:	4547.536	**Mkr. Ref. Level:**	5.03	**Ref. Elevation:**	4551.206
Bottom Elevation:	4547.036	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 42.2

N

Overall Location of Test Hole

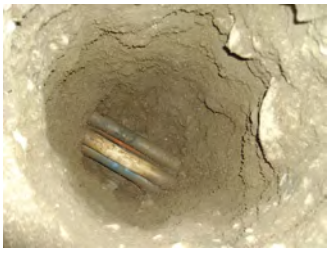


TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Traffic Light Pole	52.30
B	Traffic Light Pole	51.60
C	Comm Vault	57.20

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-11	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/22/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

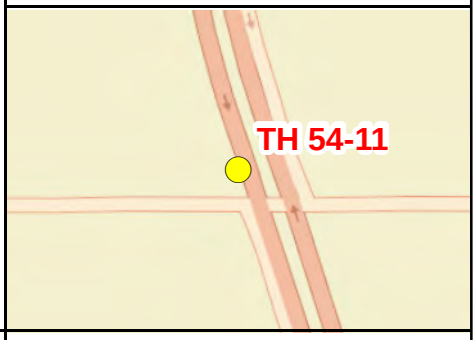
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

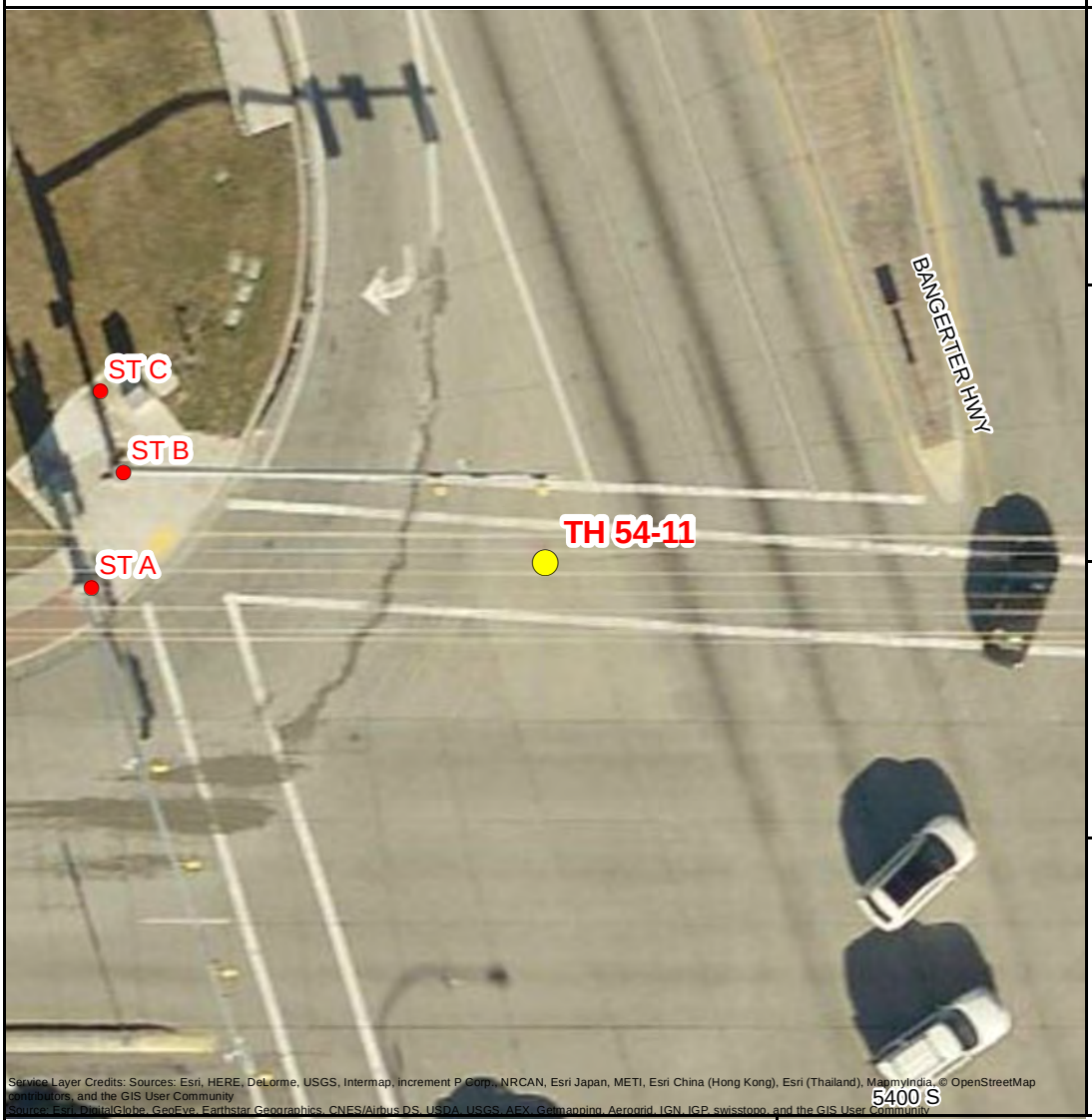
Utility Type:	Comm	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Dry Hole
Surface Type:	Concrete	**Thickness:**	15 Inches	**Marker Type:**	Core Cut TH 54:11-Dirt
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4551.167
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 37.9

N

Overall Location of Test Hole

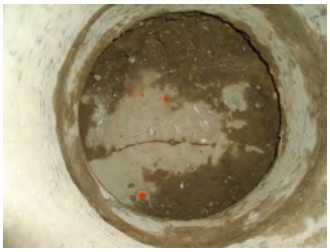


TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Traffic Light Pole	52.50
B	Traffic Light Pole	48.90
C	Comm Vault	53.80

General Notes About This Test Hole

Found storm drain (top) HM 1.7' in the way (18" storm drain)

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-11A	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/23/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

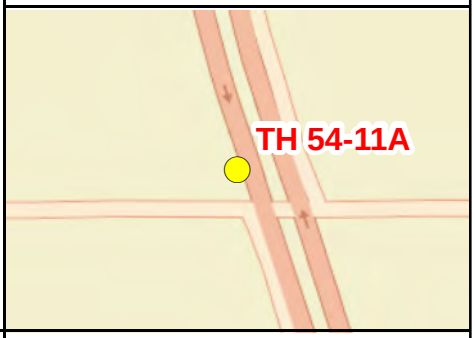
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

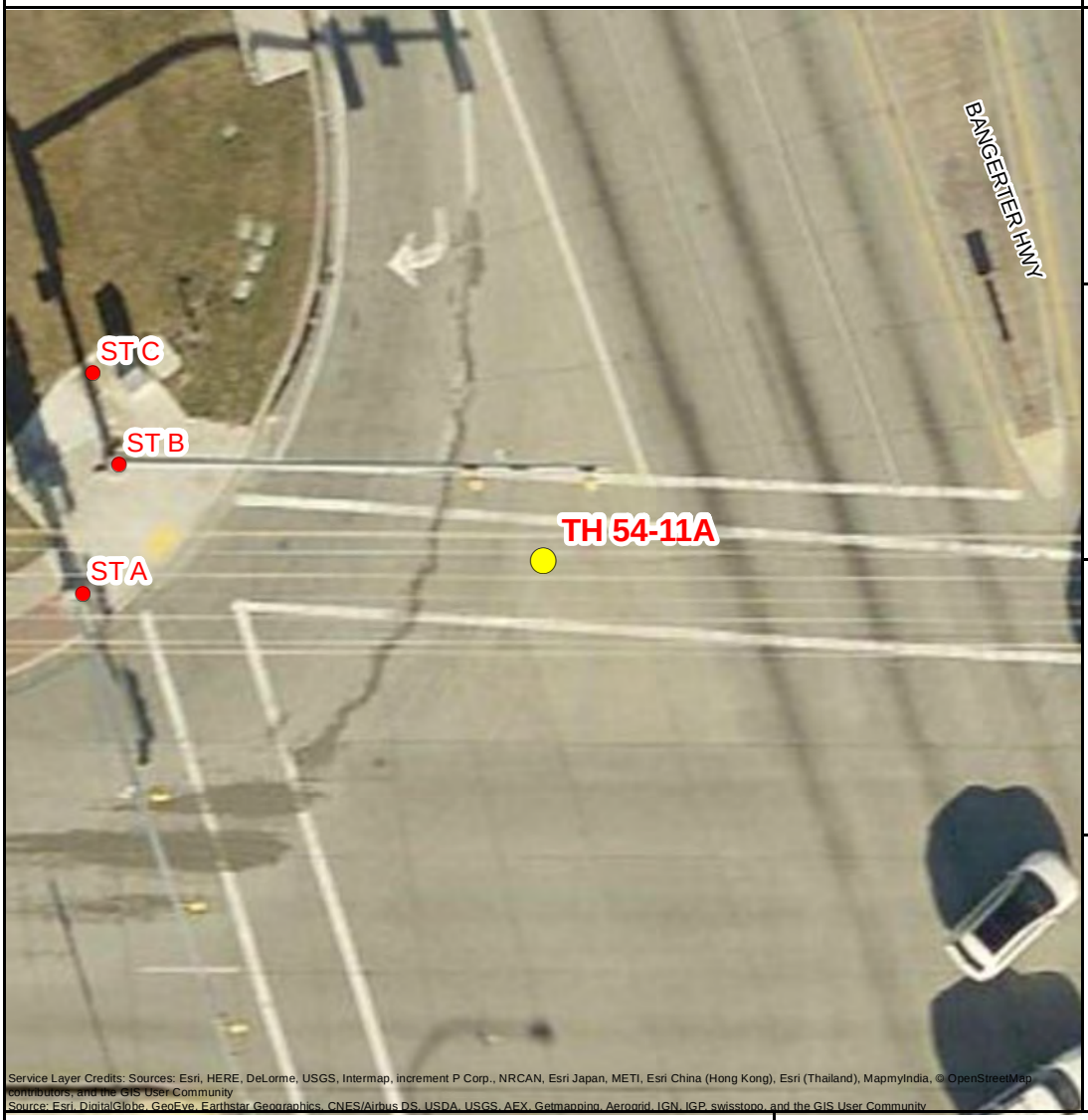
Utility Type:	Comm	**Utility Size:**	(1) 3 (4) 1.5 Inches	**Utility Material:**	Poly/PVC
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	15 Inches	**Marker Type:**	Saw Cut
Depth to Top:	3.55	**Top Ref. Level:**	8.5	**Hand Meas. Top:**	3.58
Depth to Bottom:	4.30	**Bot. Ref. Level:**	9.25	**Hand Meas. Bot:**	N/A
Top Elevation:	4547.633	**Mkr. Ref. Level:**	4.95	**Ref. Elevation:**	4551.183
Bottom Elevation:	4546.883	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 34.2

N

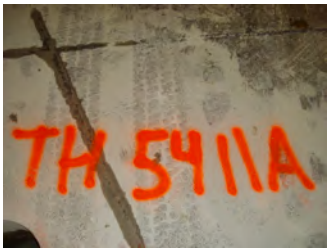
Overall Location of Test Hole



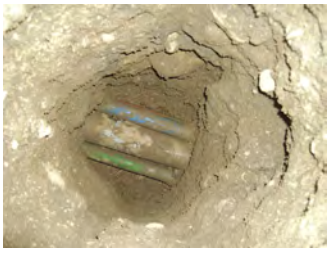
TEST HOLE LOCATION PLAN



TEST HOLE PICTURES



Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Traffic Light Pole	47.00
B	Traffic Light Pole	42.80
C	Comm Vault	47.50

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-12	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/23/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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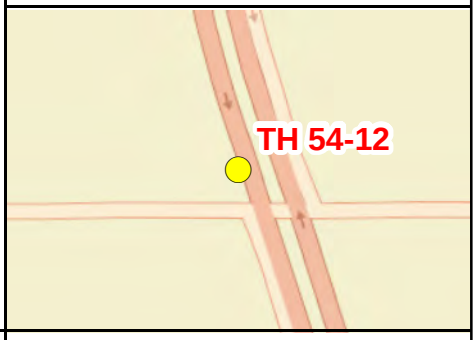
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

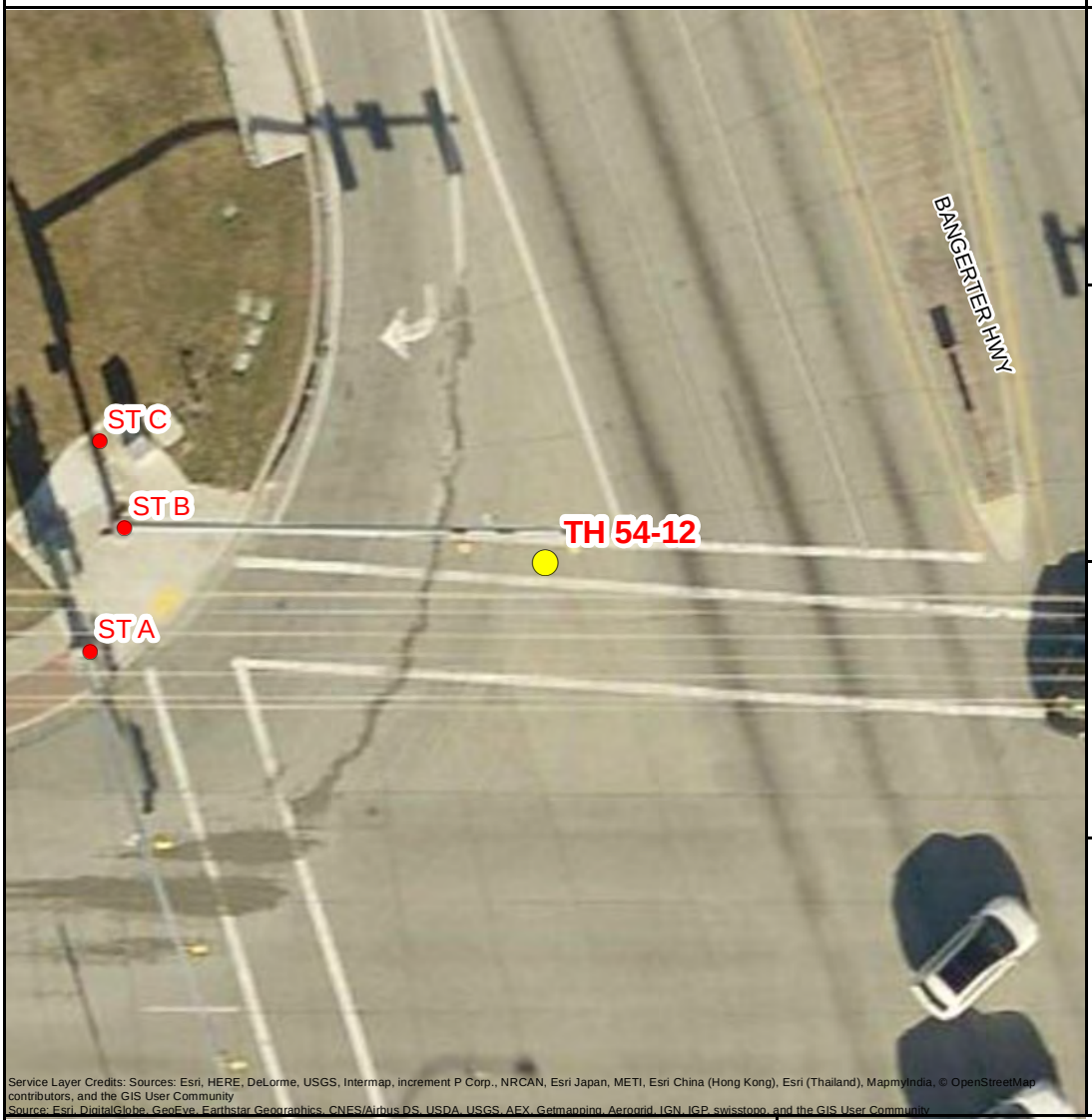
Utility Type:	Power	**Utility Size:**	(3) 1.5 (3) 2 Inches	**Utility Material:**	PVC
Utility Company:	UDOT	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	15 Inches	**Marker Type:**	Saw Cut
Depth to Top:	2.44	**Top Ref. Level:**	7.46	**Hand Meas. Top:**	2.45
Depth to Bottom:	3.32	**Bot. Ref. Level:**	8.34	**Hand Meas. Bot:**	N/A
Top Elevation:	4548.693	**Mkr. Ref. Level:**	5.02	**Ref. Elevation:**	4551.133
Bottom Elevation:	4547.818	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 29.4

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Traffic Light Pole	50.10
B	Traffic Light Pole	43.90
C	Comm Vault	48.50

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-13	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/23/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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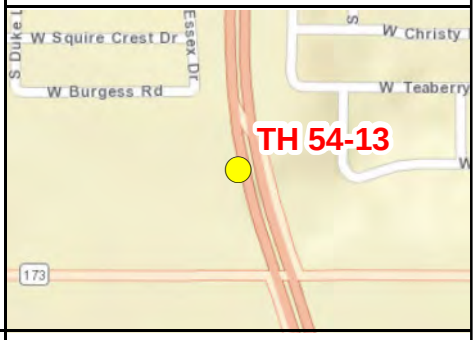
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	(4) 1.5 Inches	**Utility Material:**	Poly
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	5 Inches	**Marker Type:**	Saw Cut
Depth to Top:	5.63	**Top Ref. Level:**	9.82	**Hand Meas. Top:**	5.70
Depth to Bottom:	6.13	**Bot. Ref. Level:**	10.32	**Hand Meas. Bot:**	N/A
Top Elevation:	4538.789	**Mkr. Ref. Level:**	4.19	**Ref. Elevation:**	4544.419
Bottom Elevation:	4538.289	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 6.7

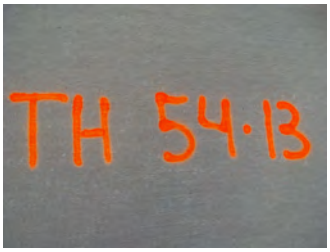
N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Street Light Pole	111.40
B	Street Light Pole	104.10
C	Catch Basin	49.00

General Notes About This Test Hole

Offseet facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-14	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/21/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

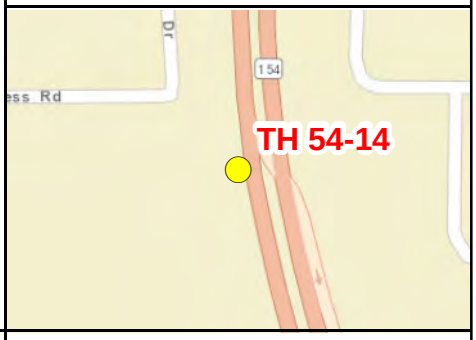
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	(3) 2 Inches	**Utility Material:**	Slurry Casing Poly
Utility Company:	UDOT	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap/Keith
Depth to Top:	4.38	**Top Ref. Level:**	9.35	**Hand Meas. Top:**	4.45
Depth to Bottom:	4.88	**Bot. Ref. Level:**	9.85	**Hand Meas. Bot:**	N/A
Top Elevation:	4535.855	**Mkr. Ref. Level:**	4.97	**Ref. Elevation:**	4540.235
Bottom Elevation:	4535.355	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 6.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	34.80
B	Street Light Pole	58.40
C	Retaining Wall	3.10

General Notes About This Test Hole

Offset facing North, Slurry casing

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-15	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/21/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

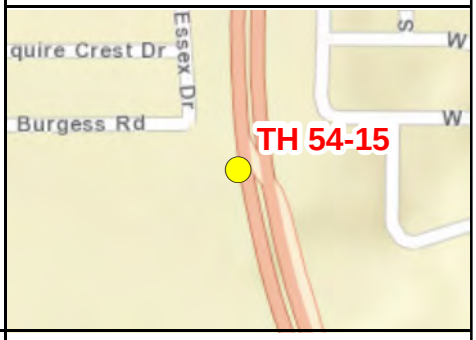
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	(4) 2 Inches	**Utility Material:**	Poly
Utility Company:	AT&T	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap/Kaith
Depth to Top:	7.76	**Top Ref. Level:**	12.39	**Hand Meas. Top:**	7.70
Depth to Bottom:	8.43	**Bot. Ref. Level:**	13.06	**Hand Meas. Bot:**	N/A
Top Elevation:	4532.405	**Mkr. Ref. Level:**	4.63	**Ref. Elevation:**	4540.165
Bottom Elevation:	4531.738	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 0.8

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	11.30
B	Street Light Pole	81.20
C	Retaining Wall	8.10

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-16	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/21/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

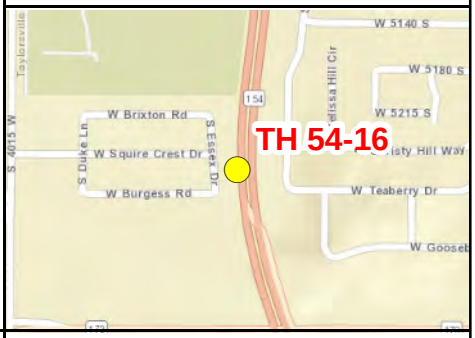
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	Century Link	**English/Metric:**	English	**Soil Conditions:**	Rock
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Lalth - Dry Hole
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4530.316
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 2.1

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Street Light Pole	45.60
B	Street Light Pole	150.70
C	Retaining Wall	7.70

General Notes About This Test Hole

Offset facing North. Found the duct running north to south HM 6'. Dug 11' deep x 4' wide

no Century Link - Dry Hole

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-17	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/22/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

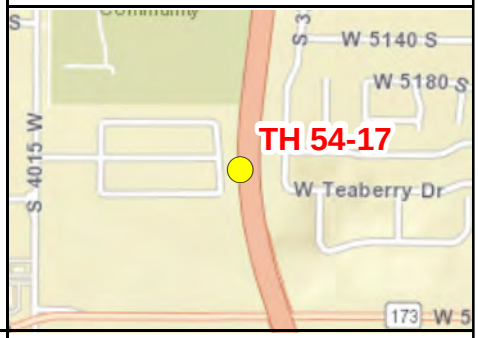
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

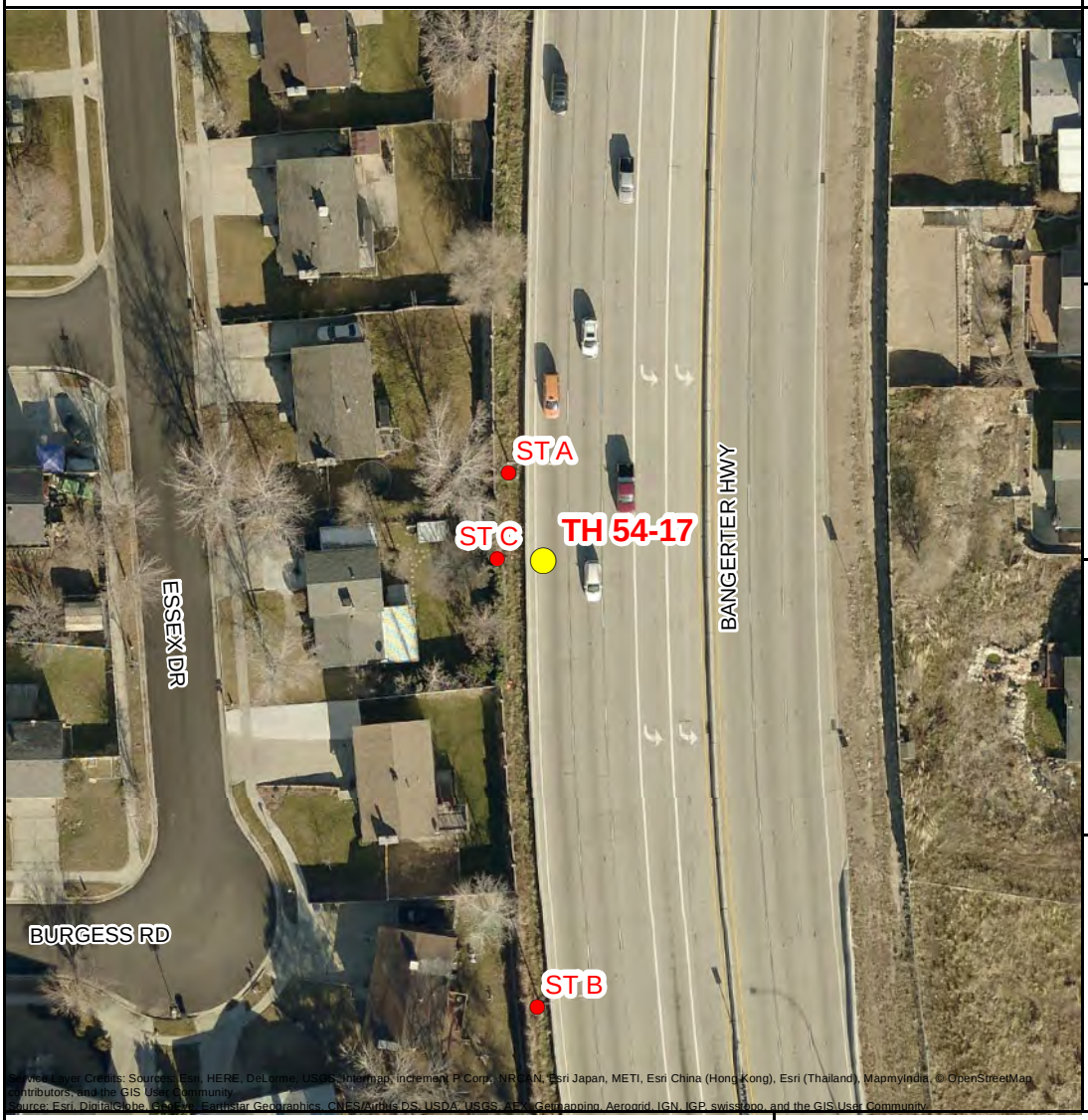
Utility Type:	Comm	**Utility Size:**	(4) 1.5 Inches	**Utility Material:**	Poly
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	15 Inches	**Marker Type:**	Saw Cut
Depth to Top:	4.95	**Top Ref. Level:**	9.09	**Hand Meas. Top:**	4.95
Depth to Bottom:	5.45	**Bot. Ref. Level:**	9.59	**Hand Meas. Bot:**	N/A
Top Elevation:	4524.444	**Mkr. Ref. Level:**	4.14	**Ref. Elevation:**	4529.394
Bottom Elevation:	4523.944	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 101.2

N

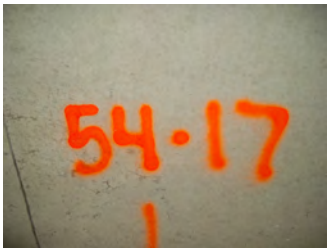
Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Street Light Pole	33.00
B	Street Light Pole	166.60
C	Retaining Wall	12.20

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-18	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/15/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

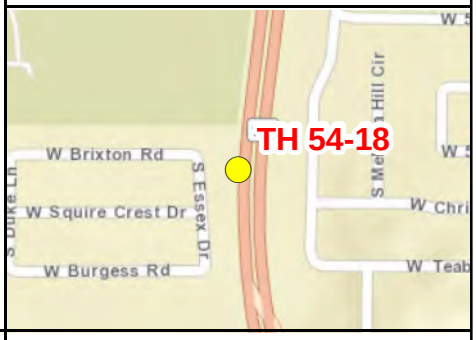
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	7.85	**Top Ref. Level:**	11.12	**Hand Meas. Top:**	7.80
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4513.151	**Mkr. Ref. Level:**	3.27	**Ref. Elevation:**	4521.001
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 5.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

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TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	52.80
B	Catch Basin	102.00
C	Retaining Wall	7.00

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-18A	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/20/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

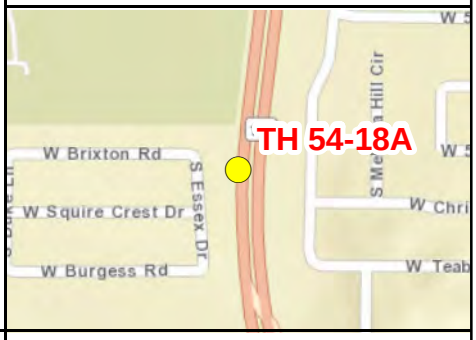
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	(4) 2 Inch	**Utility Material:**	Poly
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Saw Cut
Depth to Top:	4.03	**Top Ref. Level:**	8.93	**Hand Meas. Top:**	4.10
Depth to Bottom:	4.70	**Bot. Ref. Level:**	9.60	**Hand Meas. Bot:**	N/A
Top Elevation:	4517.210	**Mkr. Ref. Level:**	4.90	**Ref. Elevation:**	4521.240
Bottom Elevation:	4516.543	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 0.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

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TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	52.20
B	Catch Basin	101.40
C	Retaining Wall	13.50

General Notes About This Test Hole

Offset facing North. Slurry casing, 1' storm drain. Hand Measure - 13", 3 layers of gomat (1st gomat - 12", 2nd - 24", 3rd - 3.60')

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-19	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/20/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

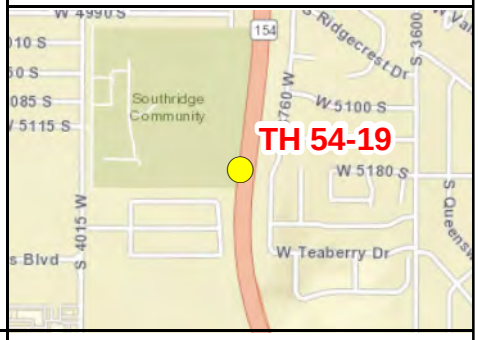
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

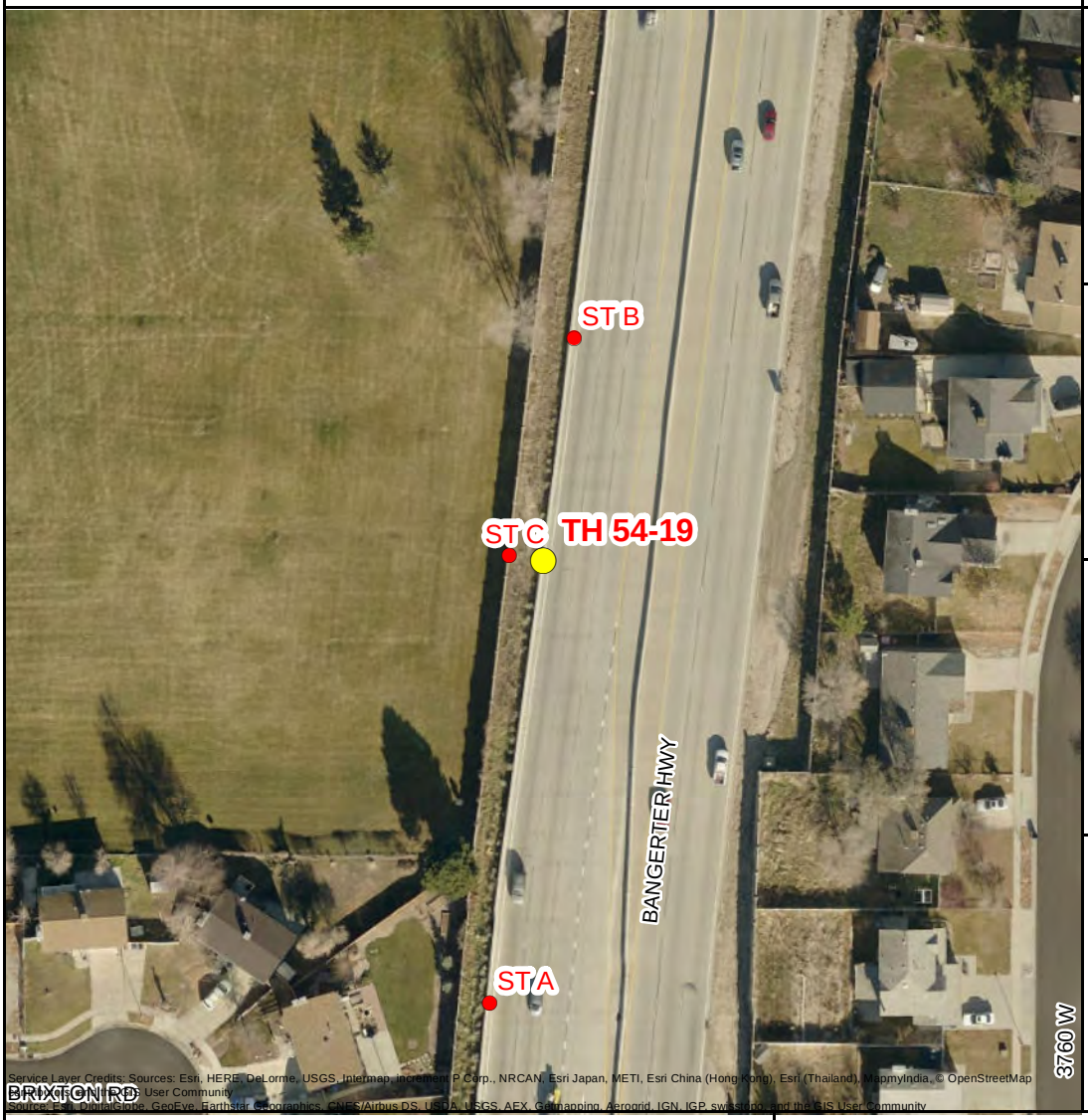
Utility Type:	Comm	**Utility Size:**	(4) 2 Inch	**Utility Material:**	Poly
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	4.29	**Top Ref. Level:**	9.17	**Hand Meas. Top:**	4.30
Depth to Bottom:	4.96	**Bot. Ref. Level:**	9.84	**Hand Meas. Bot:**	N/A
Top Elevation:	4506.338	**Mkr. Ref. Level:**	4.88	**Ref. Elevation:**	4510.628
Bottom Elevation:	4505.671	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 3.4

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	220.60
B	Catch Basin	109.50
C	Retaining Wall	12.70

General Notes About This Test Hole

Offset facing North. Slurry casing.

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-20	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/17/2016	**HE Project #:**	PG-858-1604
Project City:	Taylorville/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

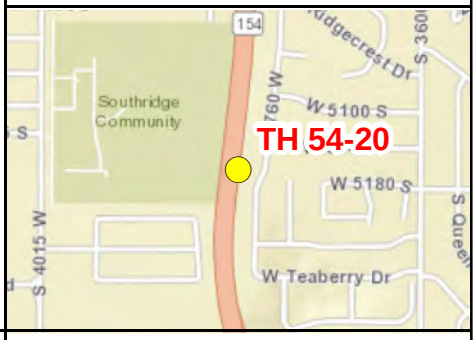
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

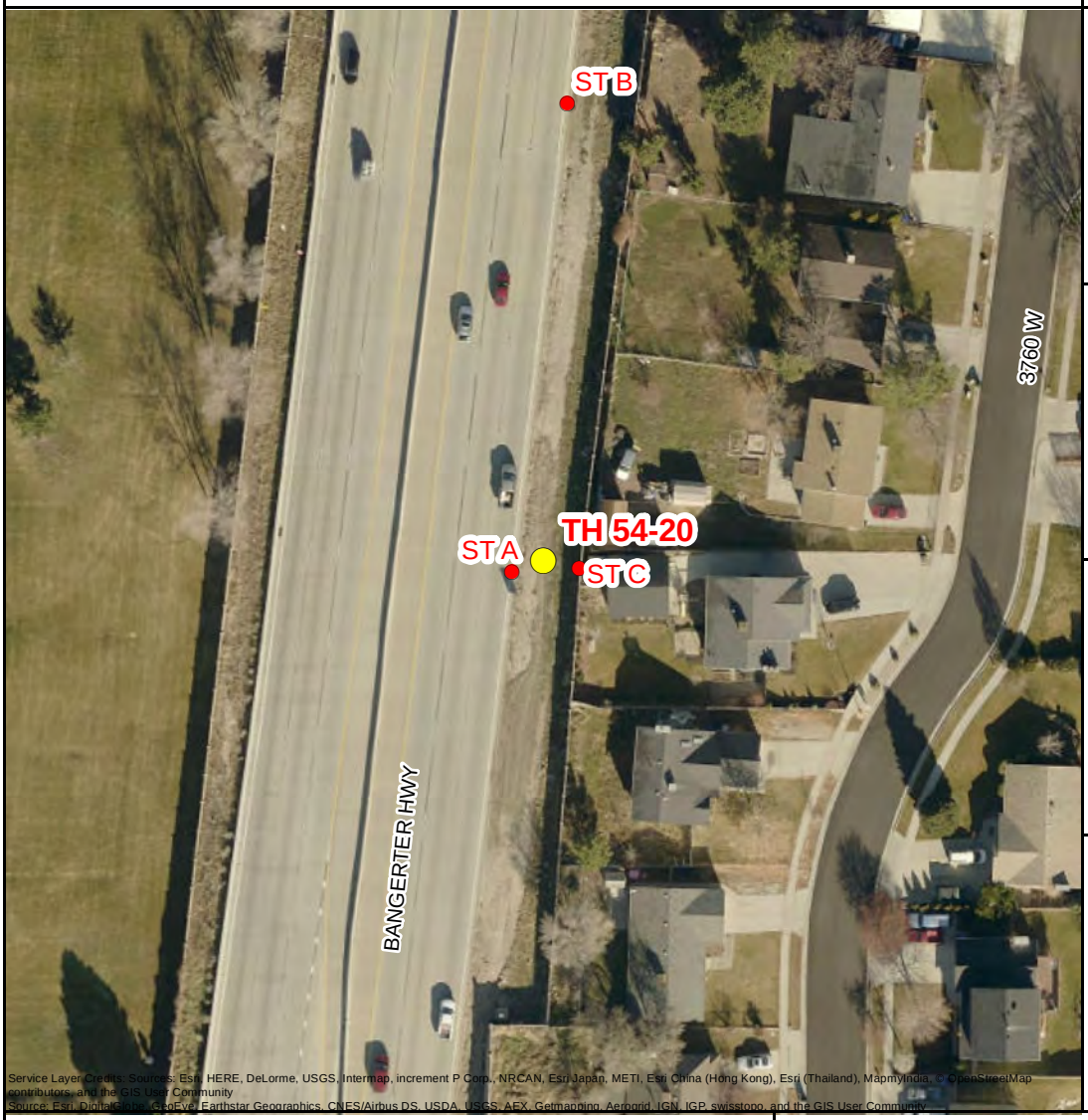
Utility Type:	Comm	**Utility Size:**	(1) 1 inch (1) 4 Inch	**Utility Material:**	Plastic/PVC
Utility Company:	Century Link	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	4.39	**Top Ref. Level:**	9.77	**Hand Meas. Top:**	4.45
Depth to Bottom:	4.81	**Bot. Ref. Level:**	10.19	**Hand Meas. Bot:**	N/A
Top Elevation:	4501.963	**Mkr. Ref. Level:**	5.38	**Ref. Elevation:**	4506.353
Bottom Elevation:	4501.546	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 9.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



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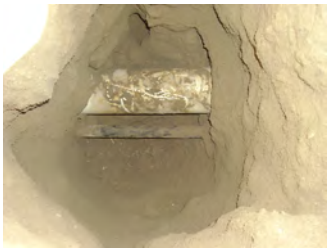
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	11.60
B	Catch Basin	193.90
C	Retaining Wall	19.30

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-21	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/28/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

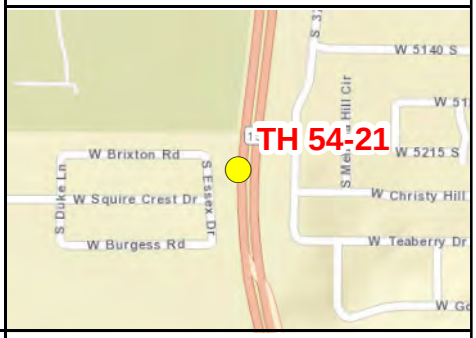
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Power	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Test Hole Lathe
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4521.760
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 3.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

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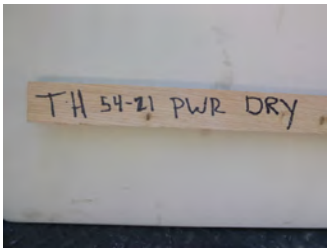
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	117.00
B	Catch Basin	68.50
C	Catch Basin	131.50

General Notes About This Test Hole

Offset facing North dry hole. No blue stakes. Dug 9.5 ft depth x 4 ft wide

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-22	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/19/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

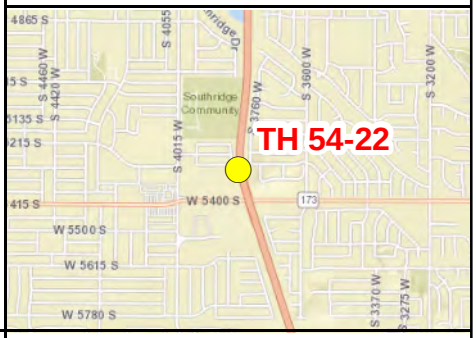
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	(3) 2 Inch (1) 1.5 Inch	**Utility Material:**	POIX
Utility Company:	Manul Bro	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	7.52	**Top Ref. Level:**	12.24	**Hand Meas. Top:**	7.65
Depth to Bottom:	8.15	**Bot. Ref. Level:**	12.87	**Hand Meas. Bot:**	N/A
Top Elevation:	4532.381	**Mkr. Ref. Level:**	4.72	**Ref. Elevation:**	4539.901
Bottom Elevation:	4531.756	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 3.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	8.20
B	Catch Basin	574.00
C	Traffic Signal	110.50

General Notes About This Test Hole

Offset facing North. Utilities are flat across with the 1 1/2 on top - Hand Measure on top is 7.65', Hand Measure on bottom is 7.85'

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-23	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/19/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

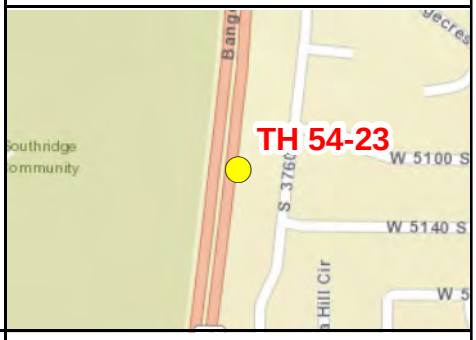
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	78 inches	**Utility Material:**	Concrete
Utility Company:	Bureau of Reclamation	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	5.73	**Top Ref. Level:**	10.55	**Hand Meas. Top:**	5.80
Depth to Bottom:	12.23	**Bot. Ref. Level:**	17.05	**Hand Meas. Bot:**	N/A
Top Elevation:	4490.357	**Mkr. Ref. Level:**	4.82	**Ref. Elevation:**	4496.087
Bottom Elevation:	4483.857	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 4.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	3.80
B	Catch Basin	102.50
C	Retaining Wall	27.50

General Notes About This Test Hole

Offest facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 54-24	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/28/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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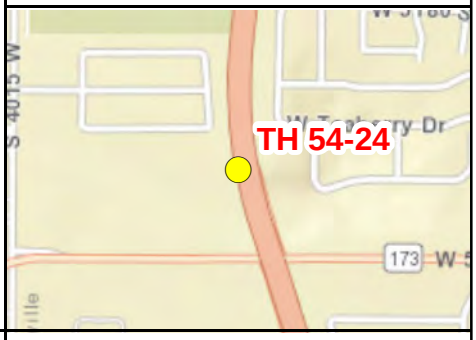
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

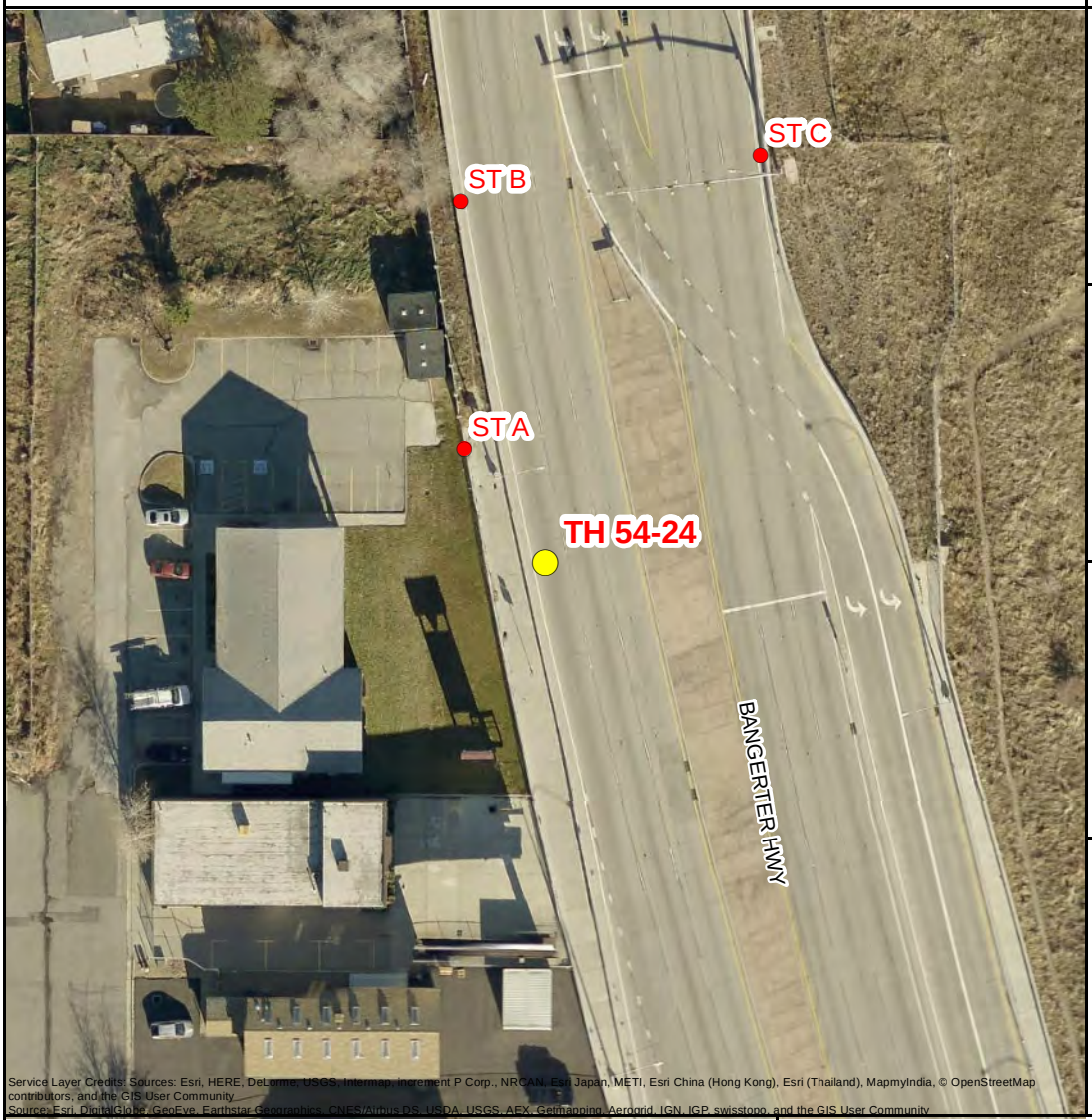
Utility Type:	Fiber	**Utility Size:**	(3) 2 Inches	**Utility Material:**	Poly
Utility Company:	Manul Bro	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	16 Inches	**Marker Type:**	Saw Cut
Depth to Top:	13.92	**Top Ref. Level:**	18.46	**Hand Meas. Top:**	14.00
Depth to Bottom:	14.42	**Bot. Ref. Level:**	18.96	**Hand Meas. Bot:**	N/A
Top Elevation:	4529.983	**Mkr. Ref. Level:**	4.54	**Ref. Elevation:**	4543.903
Bottom Elevation:	4529.483	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 4.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	49.00
B	Catch Basin	124.50
C	Catch Basin	157.00

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-01	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/6/2016	**HE Project #:**	PG-858-1604
Project City:	West Valley City/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

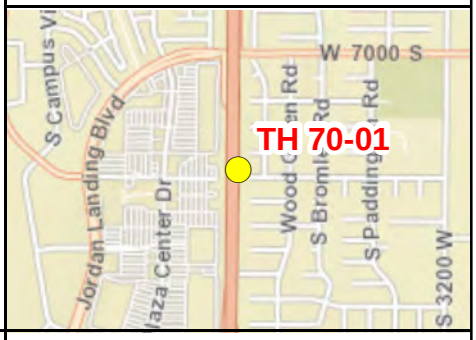
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	AT&T/MBI	**English/Metric:**	English	**Soil Conditions:**	Hard Dirt/Rock
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	8.12	**Top Ref. Level:**	13.09	**Hand Meas. Top:**	8.10
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4507.854	**Mkr. Ref. Level:**	4.97	**Ref. Elevation:**	4515.974
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 15.0

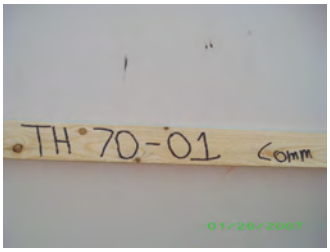
N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	7.70
B	Catch Basin	14.50
C	Catch Basin	314.40

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-02	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/14/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

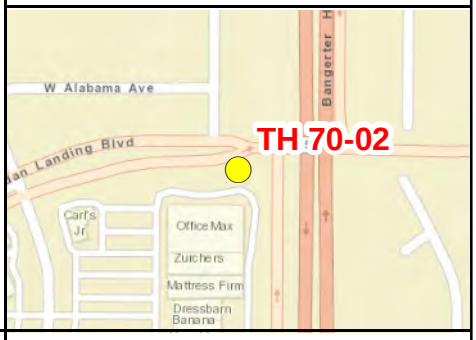
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	(1) 1 Inch (4) 1 1/2 Inches	**Utility Material:**	Plastic/PVC
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	1.18	**Top Ref. Level:**	6.11	**Hand Meas. Top:**	1.20
Depth to Bottom:	1.76	**Bot. Ref. Level:**	6.69	**Hand Meas. Bot:**	N/A
Top Elevation:	4517.729	**Mkr. Ref. Level:**	4.93	**Ref. Elevation:**	4518.909
Bottom Elevation:	4517.146	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 3.9

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Fire Hydrant	71.60
B	Electric Pacific Corp Manhole	51.50
C	Electric Box	41.80

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-03	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/17/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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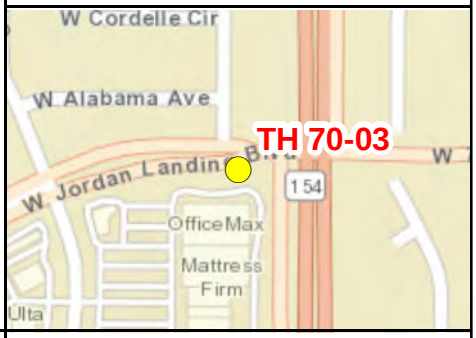
Test Hole Data

Utility Type:	Power	**Utility Size:**	6 Inches	**Utility Material:**	PVC
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Dirt
Surface Type:	Asphalt	**Thickness:**	8 Inches	**Marker Type:**	PK Nail
Depth to Top:	2.96	**Top Ref. Level:**	8.35	**Hand Meas. Top:**	2.95
Depth to Bottom:	3.46	**Bot. Ref. Level:**	8.85	**Hand Meas. Bot:**	N/A
Top Elevation:	4516.032	**Mkr. Ref. Level:**	5.39	**Ref. Elevation:**	4518.992
Bottom Elevation:	4515.532	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 3.6

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Water Valve	47.30
B	Water Valve	33.00
C	Storm Drain	74.40

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-04	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/18/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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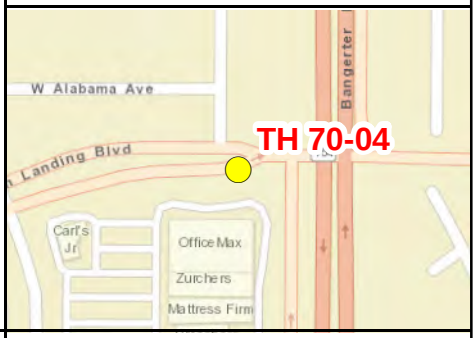
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/ Dirt
Surface Type:	Asphalt	**Thickness:**	9 Inches	**Marker Type:**	Core Cut 54:11-Dirt
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4519.504
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT-21.5

N

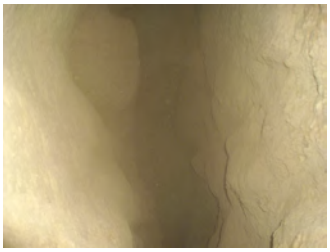
Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Storm Drain Man Hole	64.20
B	Water Valve	19.00
C	Water Valve	54.50

General Notes About This Test Hole

Offset facing East Dry Hole Dug 2 1/2' Deep X 4' Wide Big Rocks

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-04A	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/19/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

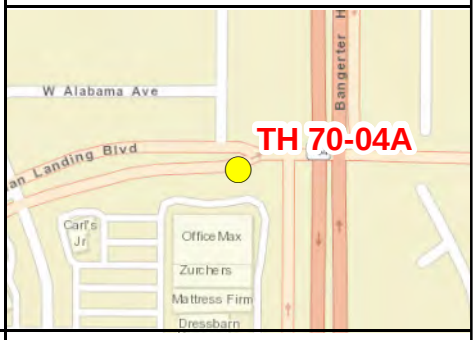
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Asphalt	**Thickness:**	9 Inches	**Marker Type:**	Test Hole-Core
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4519.293
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT-15.4

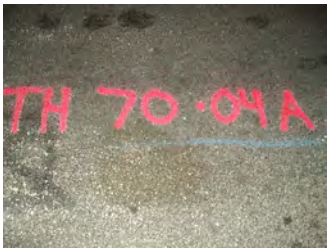
N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Storm Drain	68.00
B	Water Valve	23.50
C	Water Valve	51.80

General Notes About This Test Hole

Offset facing East No water line - dug 8'x4' - Found 3, 2" Plastic- No blue stakse-

Hand Mesure 3.40

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-05	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/7/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

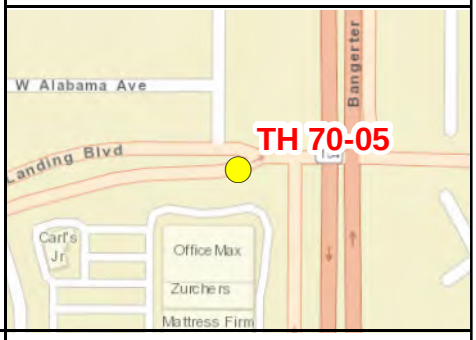
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

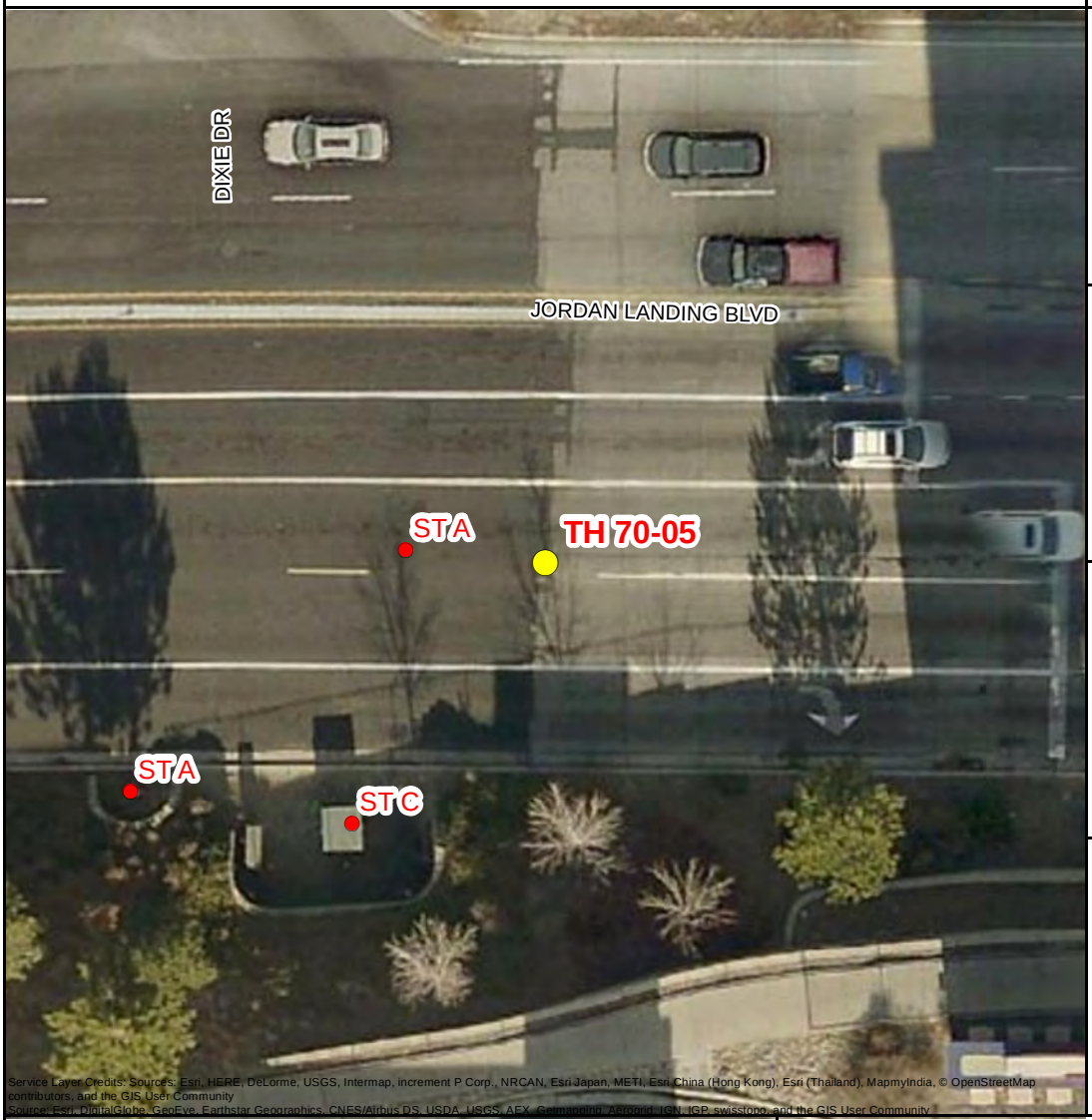
Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Asphalt	**Thickness:**	8 Inches	**Marker Type:**	Test Hole-Core
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4519.671
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 27.36

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



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TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Water Valve	18.00
B	Fire Hydrant	59.70
C	Power Box	43.00

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-05A	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/8/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

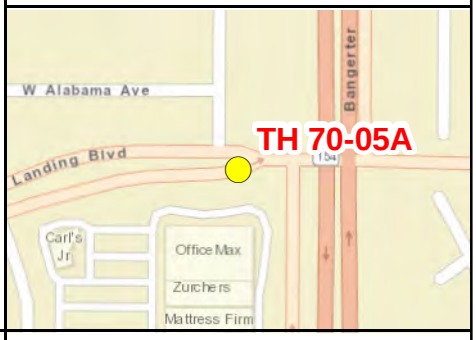
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	16 Inches	**Utility Material:**	Ductile Iron
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Dirt
Surface Type:	Asphalt	**Thickness:**	8 Inches	**Marker Type:**	PK Nail
Depth to Top:	3.45	**Top Ref. Level:**	8.65	**Hand Meas. Top:**	3.50
Depth to Bottom:	4.78	**Bot. Ref. Level:**	9.98	**Hand Meas. Bot:**	N/A
Top Elevation:	4516.319	**Mkr. Ref. Level:**	5.20	**Ref. Elevation:**	4519.769
Bottom Elevation:	4514.986	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 32.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Water Valve	16.69
B	Water Valve	61.70
C	Power Box	45.70

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-06	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/8/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

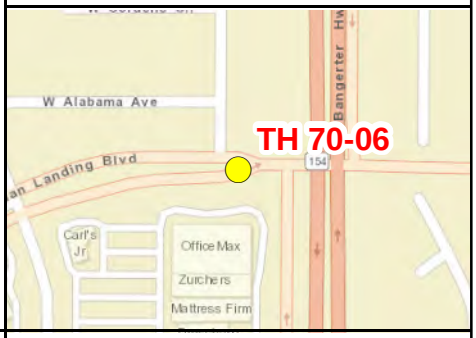
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Gas	**Utility Size:**	4 Inches	**Utility Material:**	Steel
Utility Company:	Questar	**English/Metric:**	English	**Soil Conditions:**	Dirt
Surface Type:	Asphalt	**Thickness:**	8 Inches	**Marker Type:**	PK Nail
Depth to Top:	3.50	**Top Ref. Level:**	8.5	**Hand Meas. Top:**	3.55
Depth to Bottom:	3.83	**Bot. Ref. Level:**	8.83	**Hand Meas. Bot:**	N/A
Top Elevation:	4516.427	**Mkr. Ref. Level:**	5.00	**Ref. Elevation:**	4519.927
Bottom Elevation:	4516.094	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 41.6

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Sewer Manhole	47.50
B	Water Valve	19.70
C	Water Valve	68.30

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-07	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/18/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

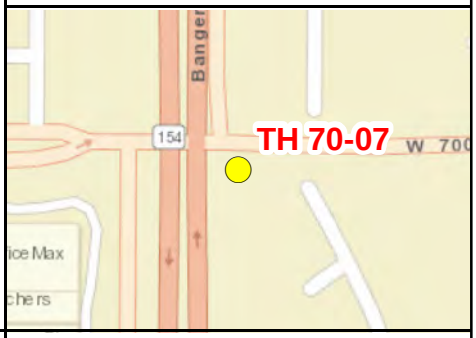
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	Duct Bank	**Utility Material:**	Poly
Utility Company:	UDOT	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	16 Inches	**Marker Type:**	Saw Cut
Depth to Top:	4.70	**Top Ref. Level:**	9.94	**Hand Meas. Top:**	4.24
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4506.900	**Mkr. Ref. Level:**	5.24	**Ref. Elevation:**	4511.600
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT-2.7

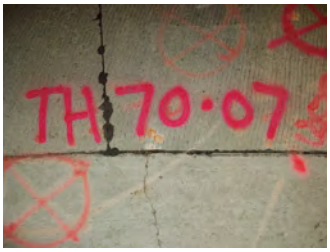
N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Traffic Light Pole	10.00
B	Storm Drain Manhole	39.80
C	Catch Basin	38.50

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-08	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/18/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

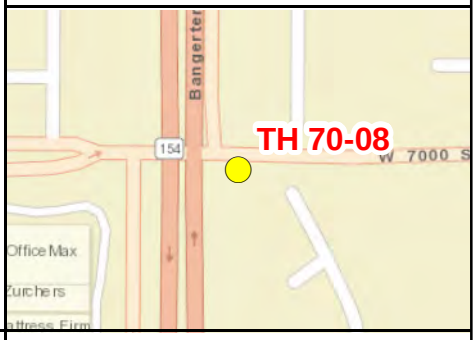
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Power	**Utility Size:**	6 Inches	**Utility Material:**	PVC
Utility Company:	Rocky Mountain Power	**English/Metric:**	English	**Soil Conditions:**	Rock/ Dirt
Surface Type:	Concrete	**Thickness:**	16 Inches	**Marker Type:**	Saw Cut
Depth to Top:	5.14	**Top Ref. Level:**	10.7	**Hand Meas. Top:**	5.10
Depth to Bottom:	5.64	**Bot. Ref. Level:**	11.20	**Hand Meas. Bot:**	N/A
Top Elevation:	4506.072	**Mkr. Ref. Level:**	5.56	**Ref. Elevation:**	4511.212
Bottom Elevation:	4505.572	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT-17.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Traffic Light Pole	32.50
B	Storm Drain Manhole	56.70
C	Catch Basin	28.40

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-09	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/7/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

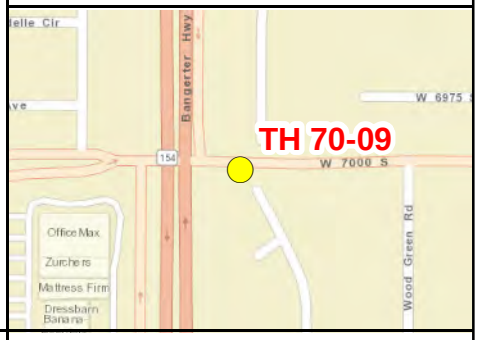
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

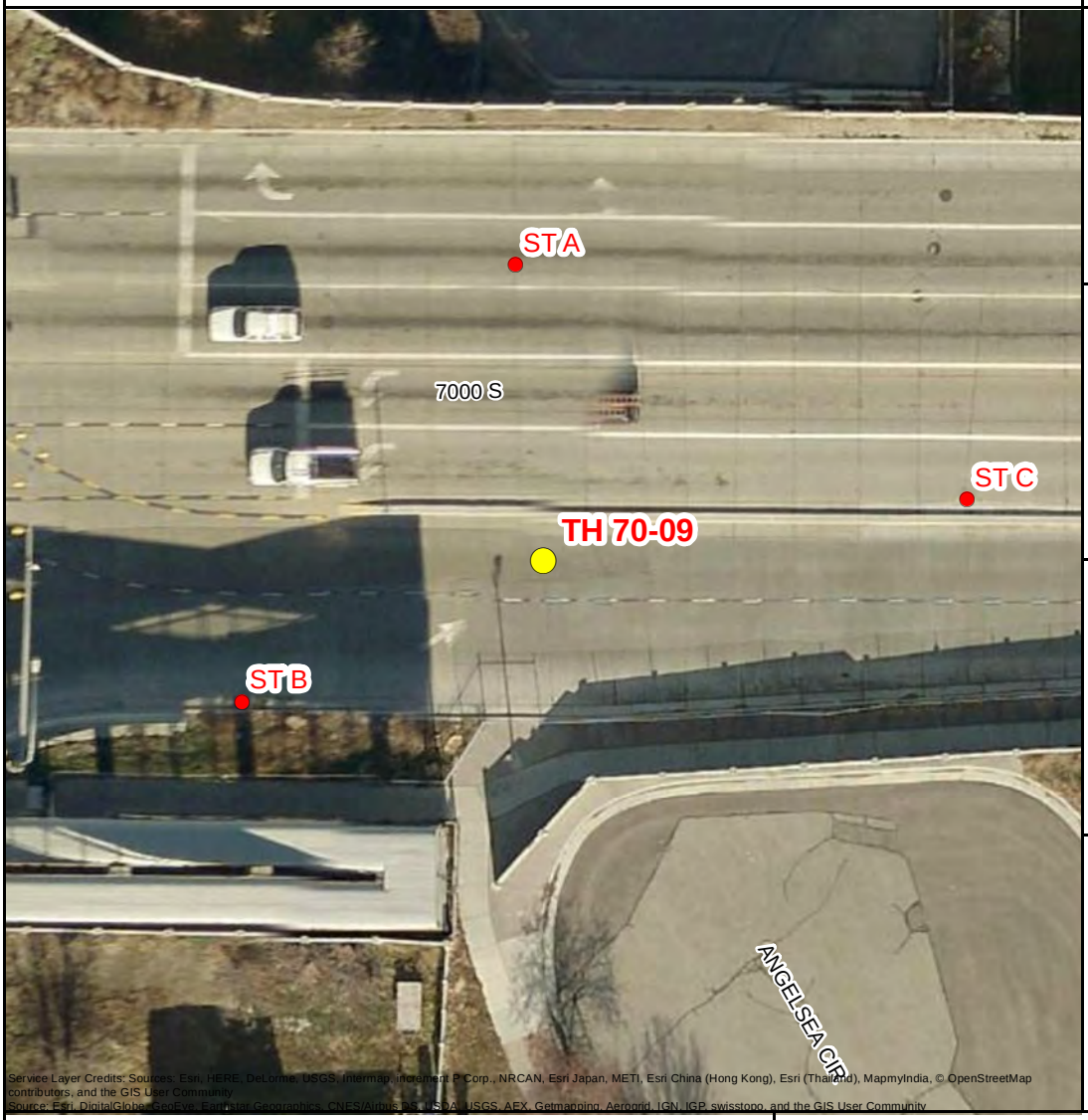
Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Dirt/Clay
Surface Type:	Concrete	**Thickness:**	16 Inches	**Marker Type:**	Test Hole-Core
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	9' x 4'
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4509.036
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 28.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Sewer Lid	51.00
B	Catch Basin	52.00
C	Water Valve	77.50

General Notes About This Test Hole

Offset facing East. Dug on Blue Stakes, Dug 9' deep 4' wide dry hole. Found 2 - 1' steel cables at 3.0, HM

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-09A	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/8/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

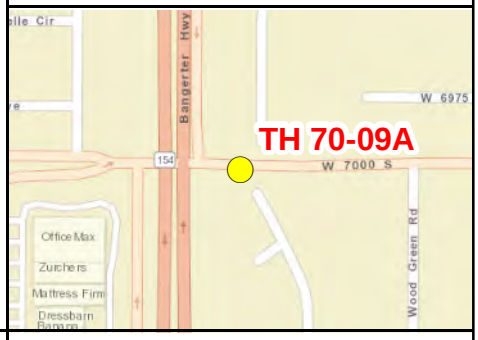
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	12 Inches	**Utility Material:**	Ductile Iron
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Dirt
Surface Type:	Concrete	**Thickness:**	16 Inches	**Marker Type:**	Saw Cut
Depth to Top:	6.14	**Top Ref. Level:**	10.54	**Hand Meas. Top:**	6.20
Depth to Bottom:	7.14	**Bot. Ref. Level:**	11.54	**Hand Meas. Bot:**	N/A
Top Elevation:	4502.954	**Mkr. Ref. Level:**	4.40	**Ref. Elevation:**	4509.094
Bottom Elevation:	4501.954	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 33.8

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Sewer Lid	45.00
B	Catch Basin	57.20
C	Water Valve	75.30

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-10	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/17/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

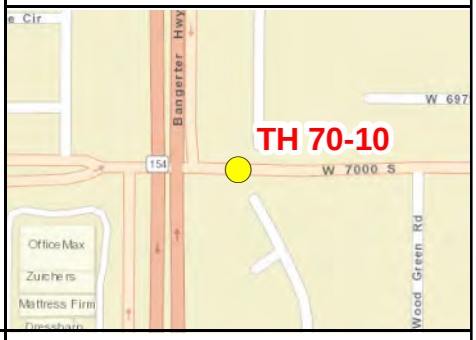
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

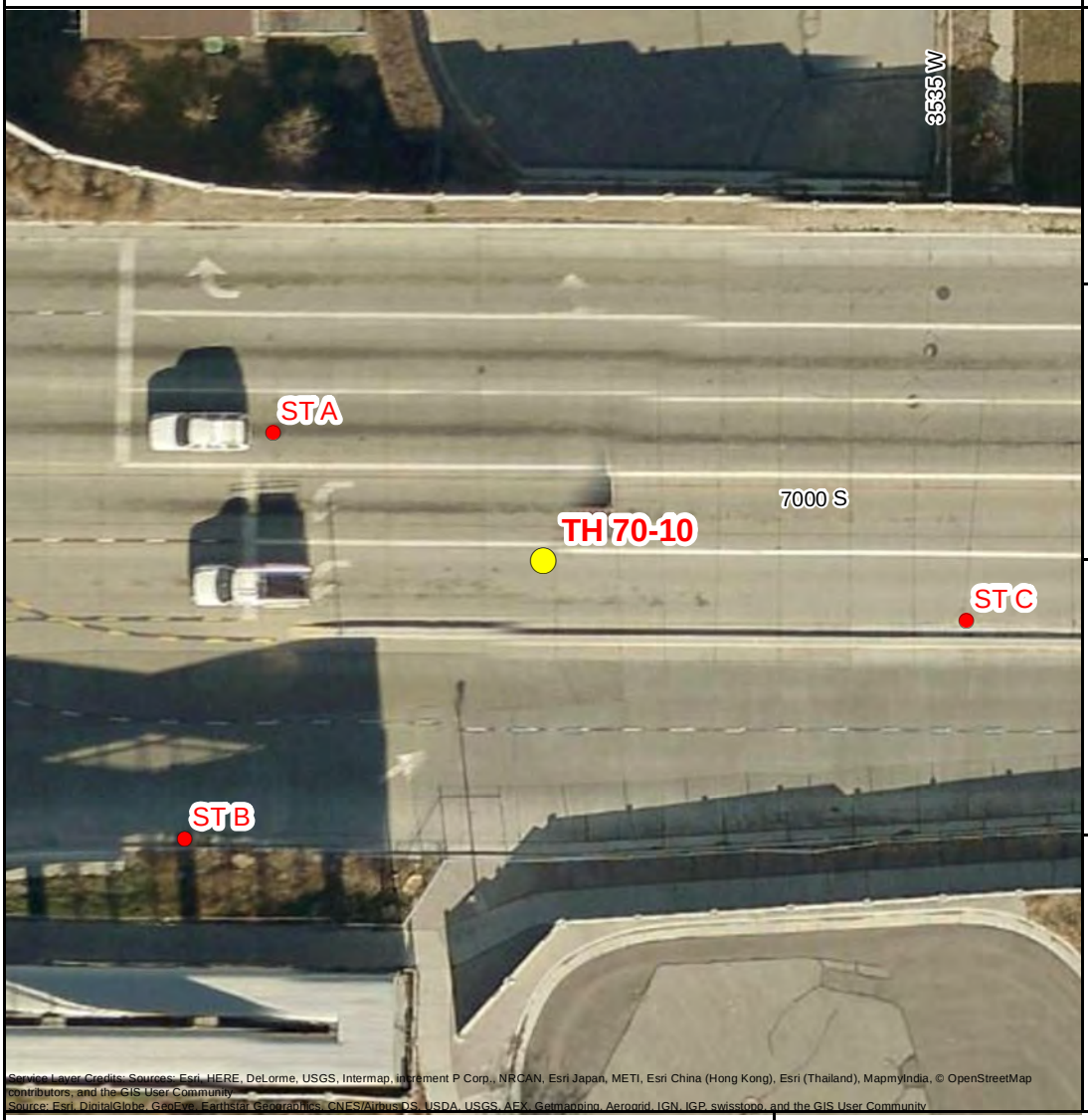
Utility Type:	Water	**Utility Size:**	16 Inches	**Utility Material:**	Ductile Iron
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	15 Inches	**Marker Type:**	Saw Cut
Depth to Top:	3.82	**Top Ref. Level:**	8.32	**Hand Meas. Top:**	3.75
Depth to Bottom:	5.15	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4505.246	**Mkr. Ref. Level:**	4.50	**Ref. Elevation:**	4509.066
Bottom Elevation:	4503.913	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT-48.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Sewer Manhole	42.50
B	Catch Basin	69.70
C	Water Valve	72.00

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-11	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/8/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

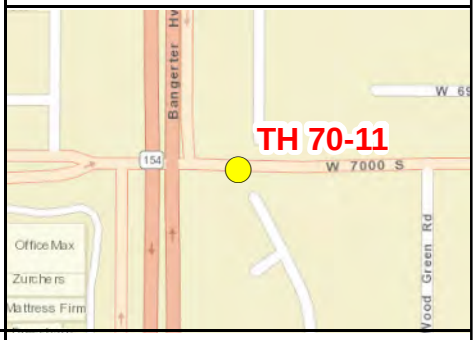
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Gas	**Utility Size:**	4 Inches	**Utility Material:**	Steel
Utility Company:	Questar	**English/Metric:**	English	**Soil Conditions:**	Dirt
Surface Type:	Concrete	**Thickness:**	16 Inches	**Marker Type:**	Saw Cut
Depth to Top:	3.92	**Top Ref. Level:**	8.56	**Hand Meas. Top:**	3.95
Depth to Bottom:	4.25	**Bot. Ref. Level:**	8.89	**Hand Meas. Bot:**	N/A
Top Elevation:	4504.958	**Mkr. Ref. Level:**	4.64	**Ref. Elevation:**	4508.878
Bottom Elevation:	4504.625	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 37.4

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Sewer Manhole	49.40
B	Catch Basin	65.50
C	Water Valve	68.00

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-12	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/17/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

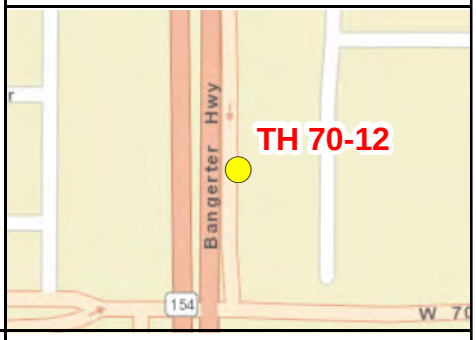
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	Duct Bank	**Utility Material:**	PVC/ Poly
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/ Dirt
Surface Type:	Concrete	**Thickness:**	16 Inches	**Marker Type:**	Saw Cut
Depth to Top:	3.71	**Top Ref. Level:**	8.83	**Hand Meas. Top:**	3.75
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4507.843	**Mkr. Ref. Level:**	5.12	**Ref. Elevation:**	4511.553
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT-3.8

N

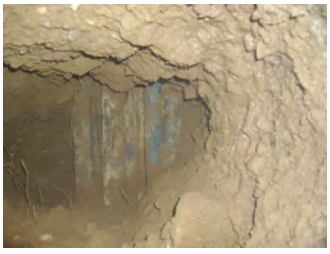
Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Storm Drain Man Hole	12.20
B	Catch Basin	7.70
C	Catch Basin	32.70

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-13	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/14/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

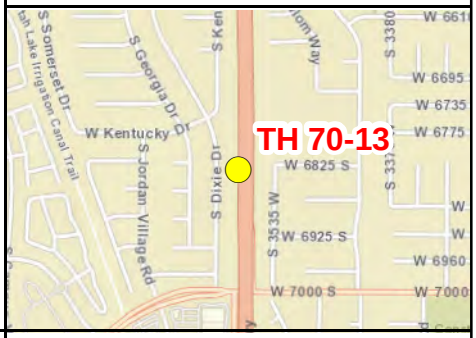
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

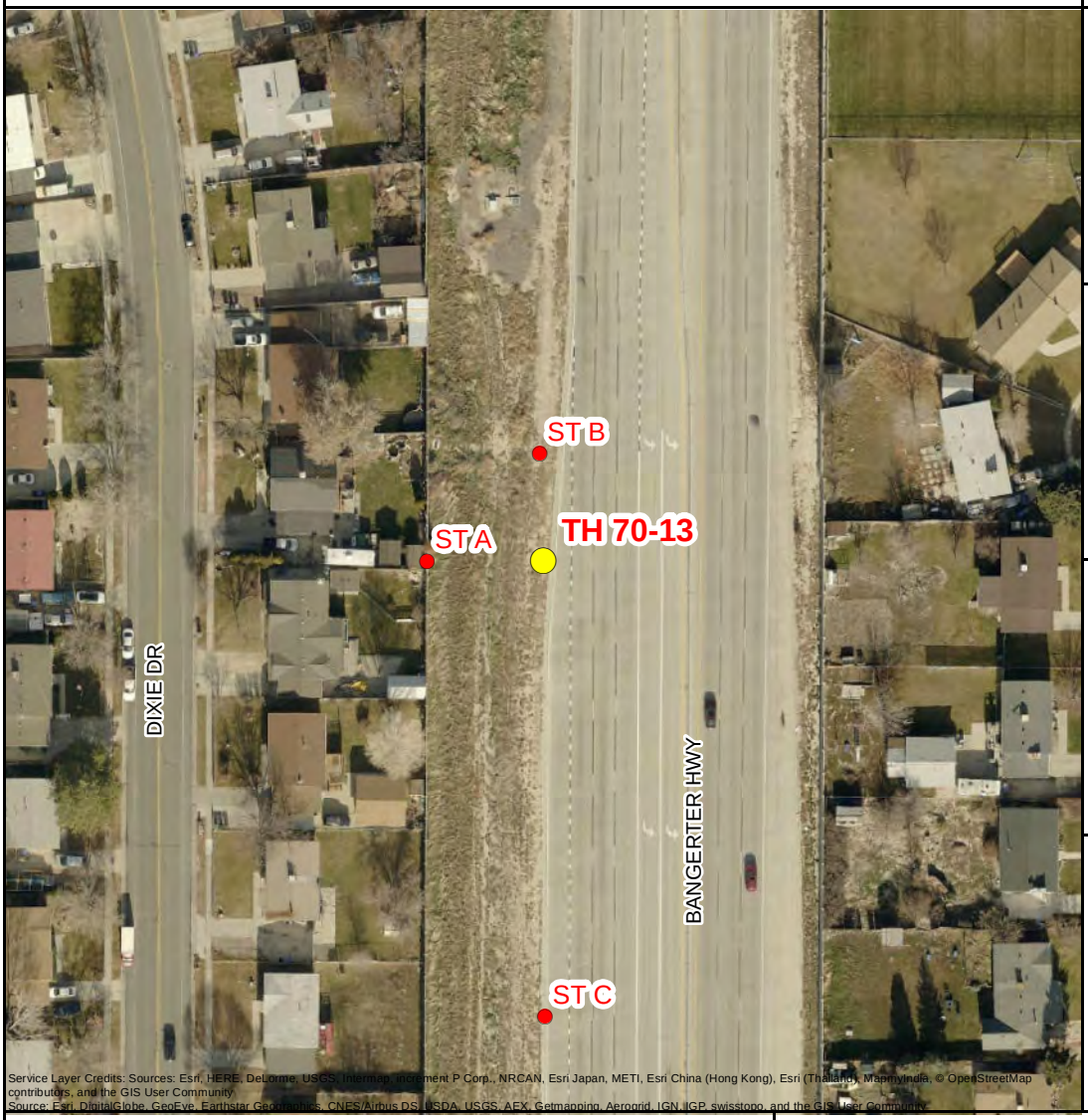
Utility Type:	Comm	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	Century Link	**English/Metric:**	English	**Soil Conditions:**	Clay/Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Lalth
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4511.887
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 8.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



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TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	59.40
B	Storm Drain Manhole	56.60
C	Catch Basin	243.90

General Notes About This Test Hole

Dug 10' deep x 4' wide dry hole

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-14	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/19/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

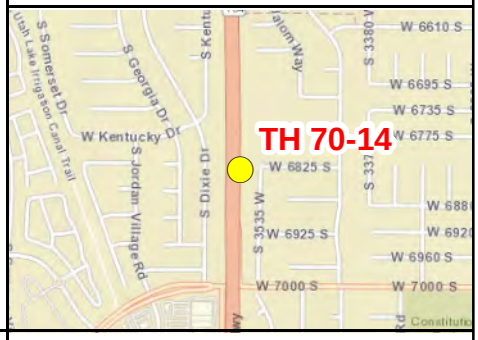
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	AT&T	**English/Metric:**	English	**Soil Conditions:**	Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Lalth
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4511.855
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT-6.2

N

Overall Location of Test Hole



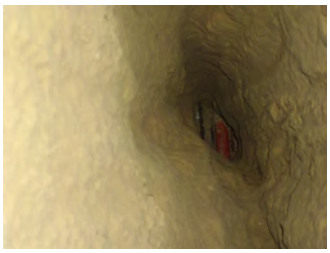
TEST HOLE LOCATION PLAN

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2



Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Comm Box	58.20
B	Retaing wall	12.50
C	Catch Basin	258.50

General Notes About This Test Hole

Offset Facing North- No Crossing- Found Comm lines running North/South -

Hand Measure 10.51

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-15	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/6/2016	**HE Project #:**	PG-858-1604
Project City:	West Valley City/Kearns	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

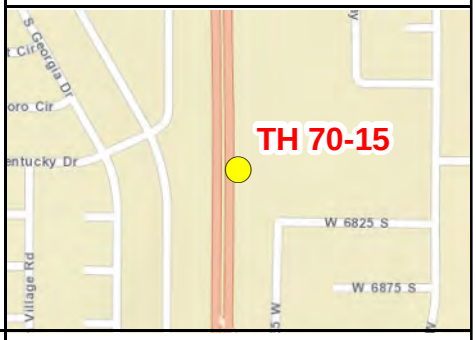
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

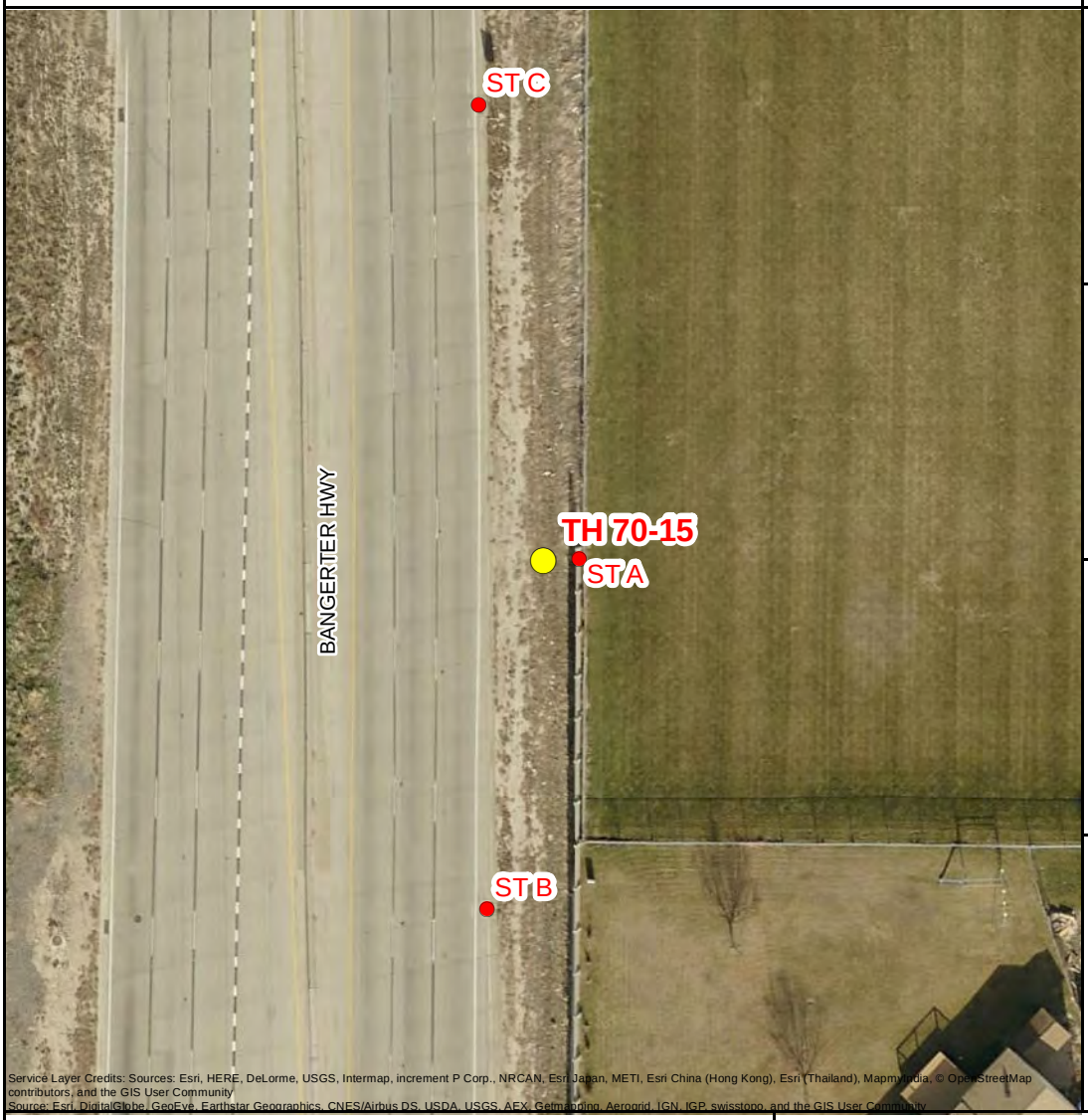
Utility Type:	Comm	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	AT&T/MBI	**English/Metric:**	English	**Soil Conditions:**	Hard Dirt/Rock
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	7.70	**Top Ref. Level:**	12.51	**Hand Meas. Top:**	7.75
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4502.791	**Mkr. Ref. Level:**	4.81	**Ref. Elevation:**	4510.491
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 13.1

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	14.40
B	Catch Basin	102.40
C	Catch Basin	129.70

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-16	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/6/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

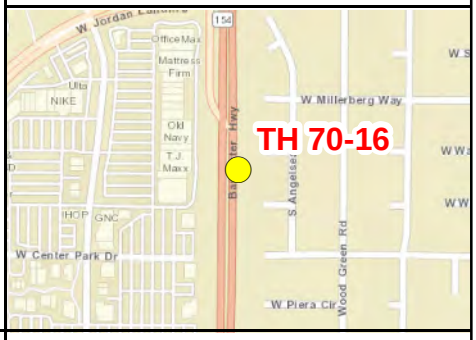
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	(3) .5 Inches	**Utility Material:**	Poly
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Hard Dirt/Rock
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	4.33	**Top Ref. Level:**	9.41	**Hand Meas. Top:**	4.35
Depth to Bottom:	4.46	**Bot. Ref. Level:**	9.54	**Hand Meas. Bot:**	N/A
Top Elevation:	4512.406	**Mkr. Ref. Level:**	5.08	**Ref. Elevation:**	4516.736
Bottom Elevation:	4512.281	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 7.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	16.30
B	Comm Vault	95.60
C	Catch Basin	154.60

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-17	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/27/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

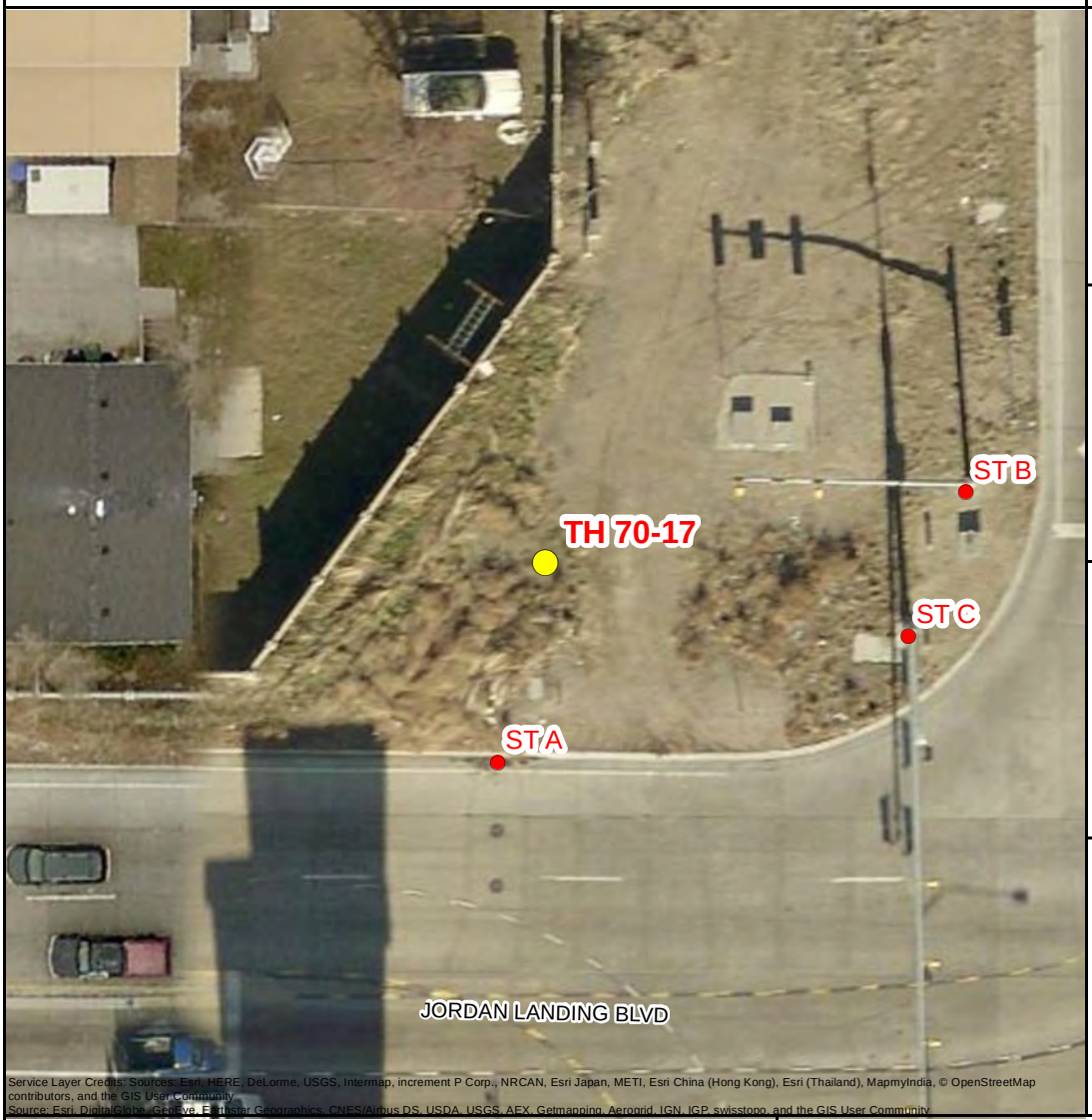
Test Hole Data

Utility Type:	Fiber	**Utility Size:**	(2) 2.5 Inches	**Utility Material:**	PVC/Plastic
Utility Company:	Comcast	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	2.77	**Top Ref. Level:**	7.52	**Hand Meas. Top:**	2.75
Depth to Bottom:	3.19	**Bot. Ref. Level:**	7.94	**Hand Meas. Bot:**	N/A
Top Elevation:	4515.752	**Mkr. Ref. Level:**	4.75	**Ref. Elevation:**	4518.522
Bottom Elevation:	4515.335	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 35.5

N

Overall Location of Test Hole

TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	34.00
B	Traffic Signal	69.50
C	Traffic Signal	60.50

General Notes About This Test Hole

Offset Facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 70-18	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/27/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

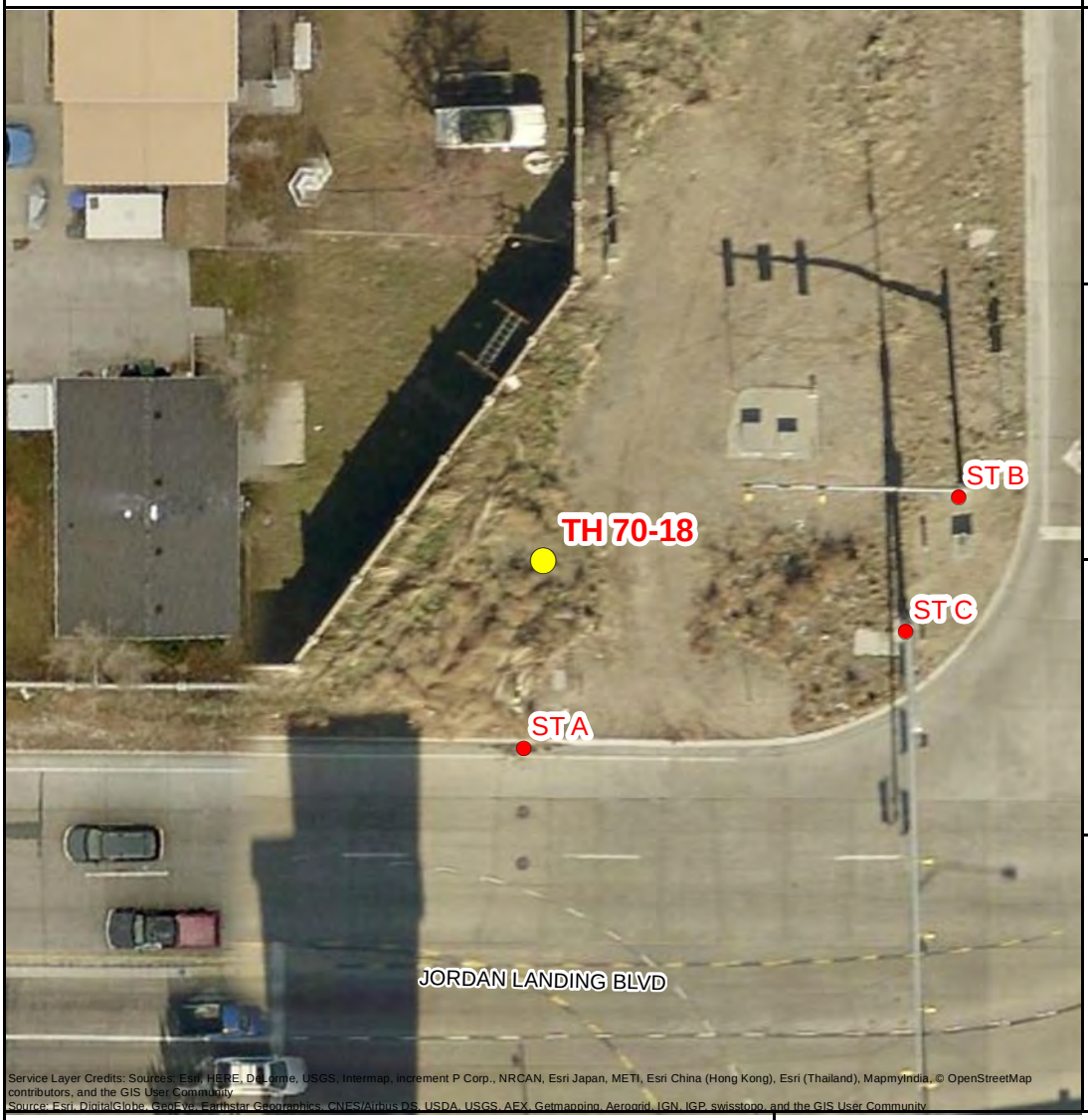
Test Hole Data

Utility Type:	Cable TV	**Utility Size:**	1/2 Inch	**Utility Material:**	Direct Buried Cable
Utility Company:	Comcast	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	2.86	**Top Ref. Level:**	7.68	**Hand Meas. Top:**	2.90
Depth to Bottom:	2.90	**Bot. Ref. Level:**	7.72	**Hand Meas. Bot:**	N/A
Top Elevation:	4515.585	**Mkr. Ref. Level:**	4.82	**Ref. Elevation:**	4518.445
Bottom Elevation:	4515.543	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 35.0

N

Overall Location of Test Hole

TEST HOLE LOCATION PLAN



Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	33.50
B	Traffic Signal	74.50
C	Traffic Signal	64.60

General Notes About This Test Hole

Offset Facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-01	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/8/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

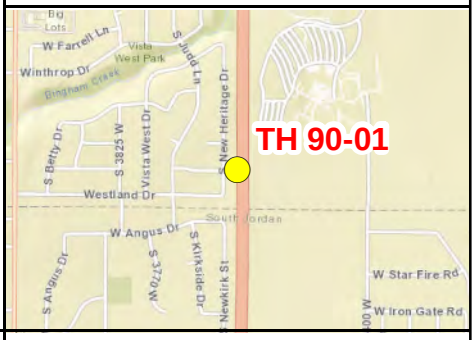
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	AT&T/MBI	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	5.33	**Top Ref. Level:**	10.31	**Hand Meas. Top:**	5.30
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4595.205	**Mkr. Ref. Level:**	4.98	**Ref. Elevation:**	4600.535
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 18.8

N

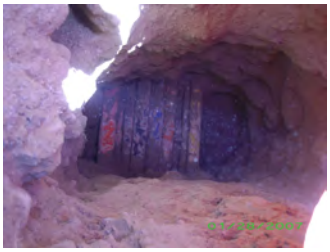
Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	18.40
B	Catch Basin	301.80
C	Retaining Wall	8.60

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-02	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/8/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

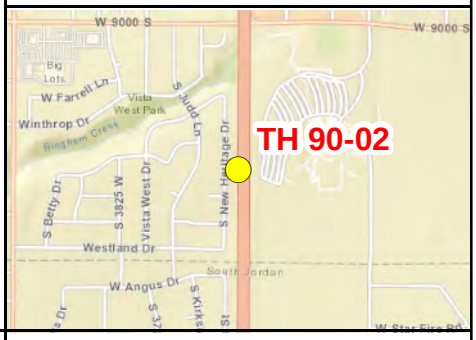
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	AT&T/MBI	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	5.28	**Top Ref. Level:**	8.59	**Hand Meas. Top:**	5.25
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4600.239	**Mkr. Ref. Level:**	3.31	**Ref. Elevation:**	4605.519
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 19.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	18.40
B	Catch Basin	298.30
C	Retaining Wall	8.60

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-03	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/8/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

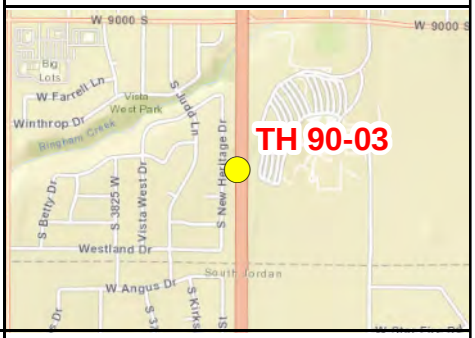
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

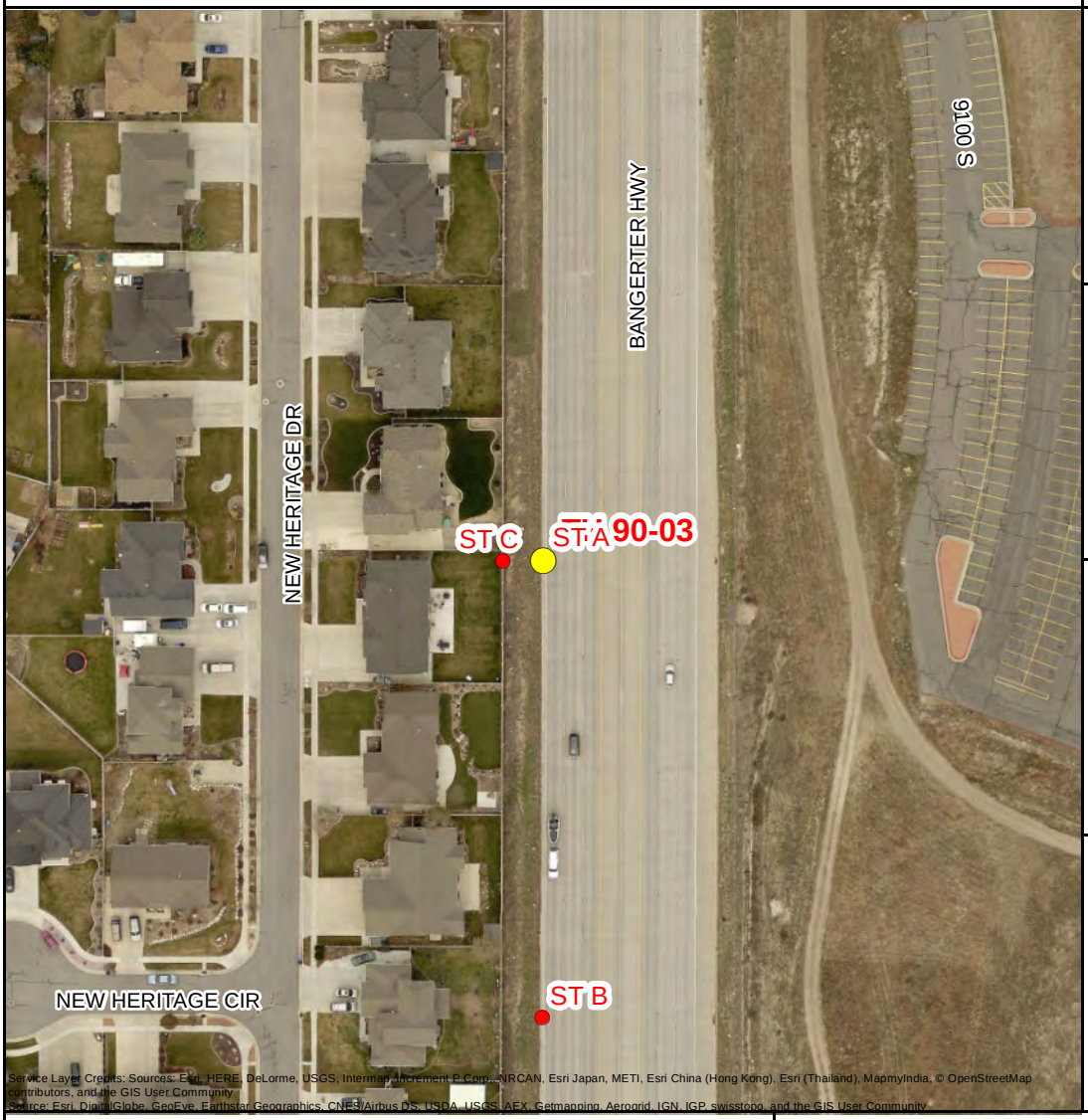
Utility Type:	Comm	**Utility Size:**	3 Inches	**Utility Material:**	Concrete cap PVC
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	3.04	**Top Ref. Level:**	8.52	**Hand Meas. Top:**	3.10
Depth to Bottom:	3.29	**Bot. Ref. Level:**	8.77	**Hand Meas. Bot:**	N/A
Top Elevation:	4600.404	**Mkr. Ref. Level:**	5.48	**Ref. Elevation:**	4603.444
Bottom Elevation:	4600.154	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 5.9

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	5.10
B	Catch Basin	294.30
C	Retaining Wall	21.80

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-04	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/7/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

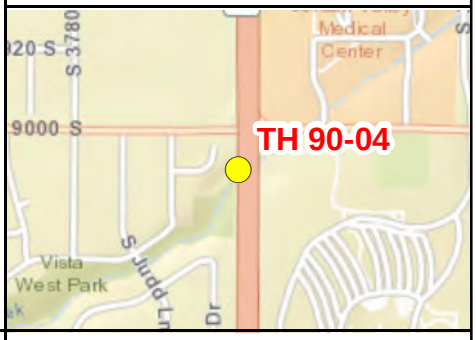
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

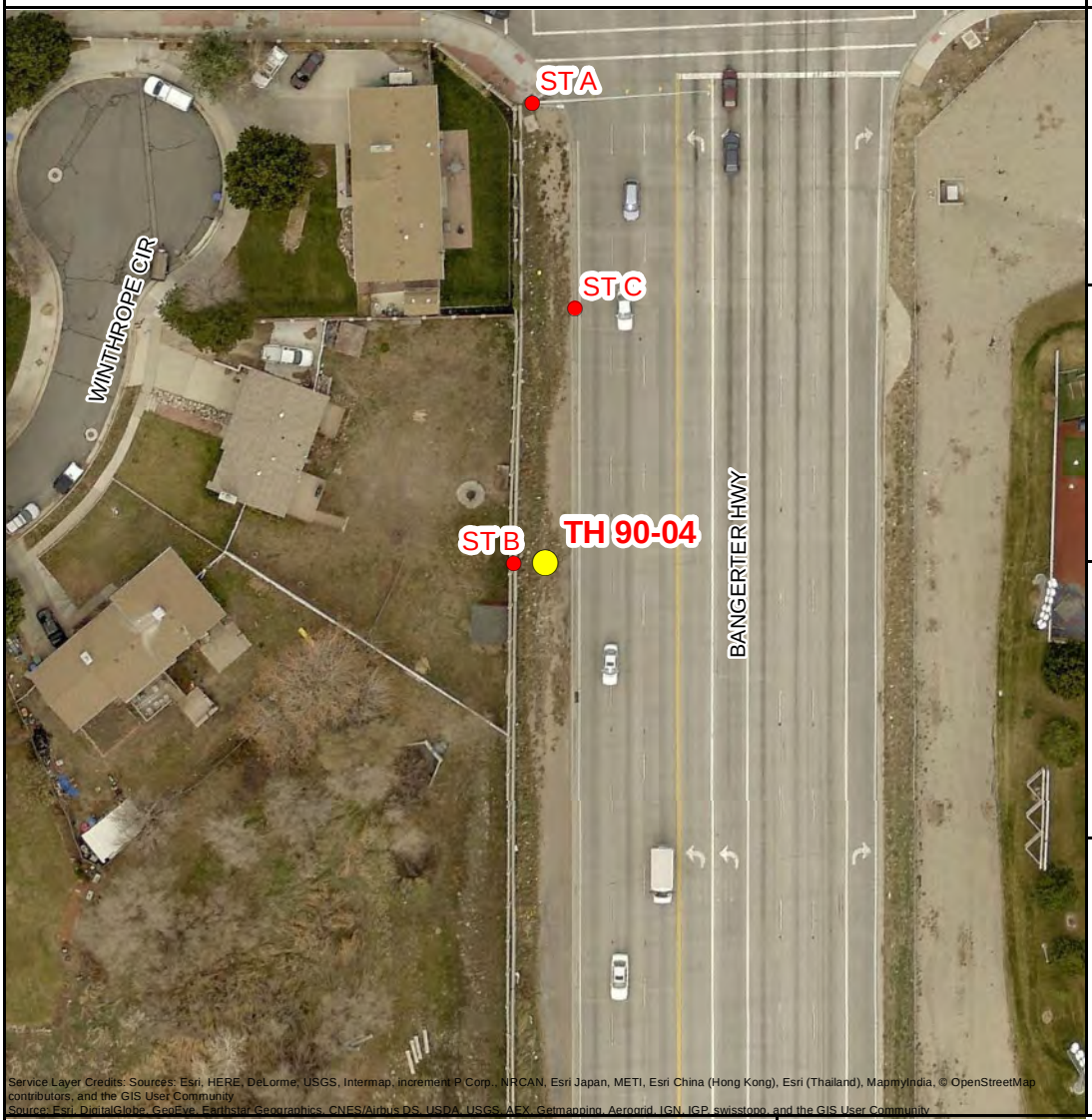
Utility Type:	Comm	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	AT&T/MBI	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	8.35	**Top Ref. Level:**	13.38	**Hand Meas. Top:**	8.40
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4589.944	**Mkr. Ref. Level:**	5.03	**Ref. Elevation:**	4598.294
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 16.1

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Street Light Pole	167.00
B	Retaining Wall	6.00
C	Catch Basin	92.90

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-06	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/10/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

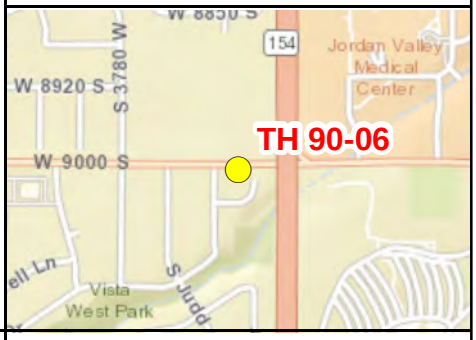
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Fiber	**Utility Size:**	24 In x 24 In	**Utility Material:**	Concretee duct bank
Utility Company:	Century Link	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Asphalt	**Thickness:**	10 Inches	**Marker Type:**	PK Nail
Depth to Top:	3.25	**Top Ref. Level:**	8.19	**Hand Meas. Top:**	3.25
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4599.965	**Mkr. Ref. Level:**	4.94	**Ref. Elevation:**	4603.215
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 6.9

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Water Valve	127.50
B	Water Valve	175.50
C	Storm Drain Manhole	13.10

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-07	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/2/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

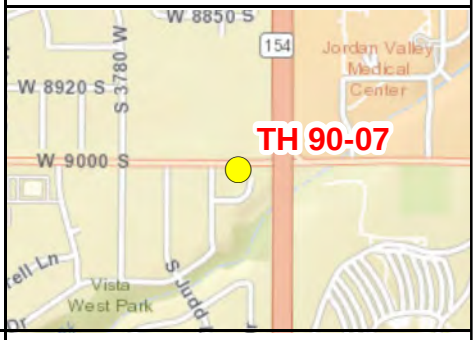
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	1 Inches	**Utility Material:**	Plastic
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	6 Inches	**Marker Type:**	Saw Cut
Depth to Top:	3.75	**Top Ref. Level:**	8.98	**Hand Meas. Top:**	3.75
Depth to Bottom:	3.83	**Bot. Ref. Level:**	9.06	**Hand Meas. Bot:**	N/A
Top Elevation:	4599.025	**Mkr. Ref. Level:**	5.23	**Ref. Elevation:**	4602.775
Bottom Elevation:	4598.942	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 2.7

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Storm Drain Manhole	10.00
B	Sewer Manhole	181.00
C	Sewer Manhole	127.80

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-08	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/10/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

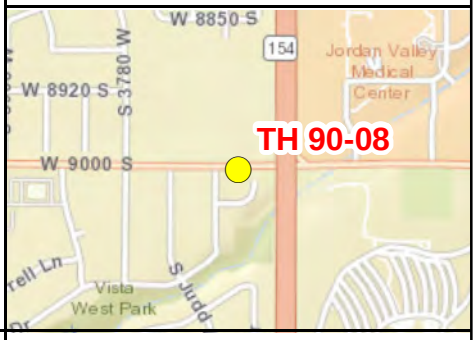
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Gas	**Utility Size:**	6 Inches	**Utility Material:**	Plastic
Utility Company:	Questar	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Asphalt	**Thickness:**	8 Inches	**Marker Type:**	PK Nail
Depth to Top:	3.76	**Top Ref. Level:**	8.46	**Hand Meas. Top:**	3.75
Depth to Bottom:	4.26	**Bot. Ref. Level:**	8.96	**Hand Meas. Bot:**	N/A
Top Elevation:	4599.663	**Mkr. Ref. Level:**	4.70	**Ref. Elevation:**	4603.423
Bottom Elevation:	4599.163	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 17.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Water Valve	125.50
B	Water Valve	180.50
C	Storm Drain Manhole	22.00

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-09	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/9/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

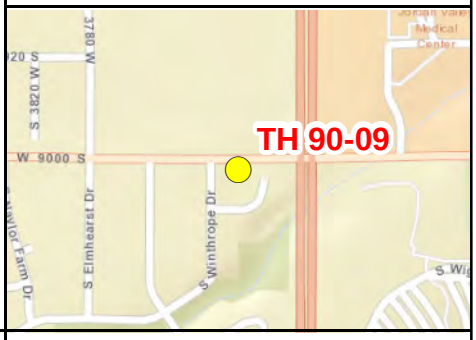
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Fiber	**Utility Size:**	(4) 2 Inches	**Utility Material:**	Poly
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	4 Inches	**Marker Type:**	Saw Cut
Depth to Top:	7.26	**Top Ref. Level:**	11.78	**Hand Meas. Top:**	7.25
Depth to Bottom:	7.93	**Bot. Ref. Level:**	12.45	**Hand Meas. Bot:**	N/A
Top Elevation:	4596.809	**Mkr. Ref. Level:**	4.52	**Ref. Elevation:**	4604.069
Bottom Elevation:	4596.142	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 9.7

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Sewer Manhole	133.70
B	Water Valve	99.00
C	Storm Drain Manhole	42.30

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-10	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/15/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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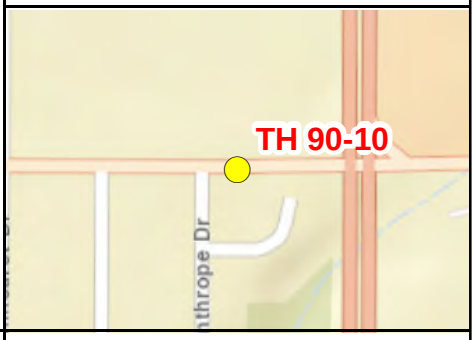
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

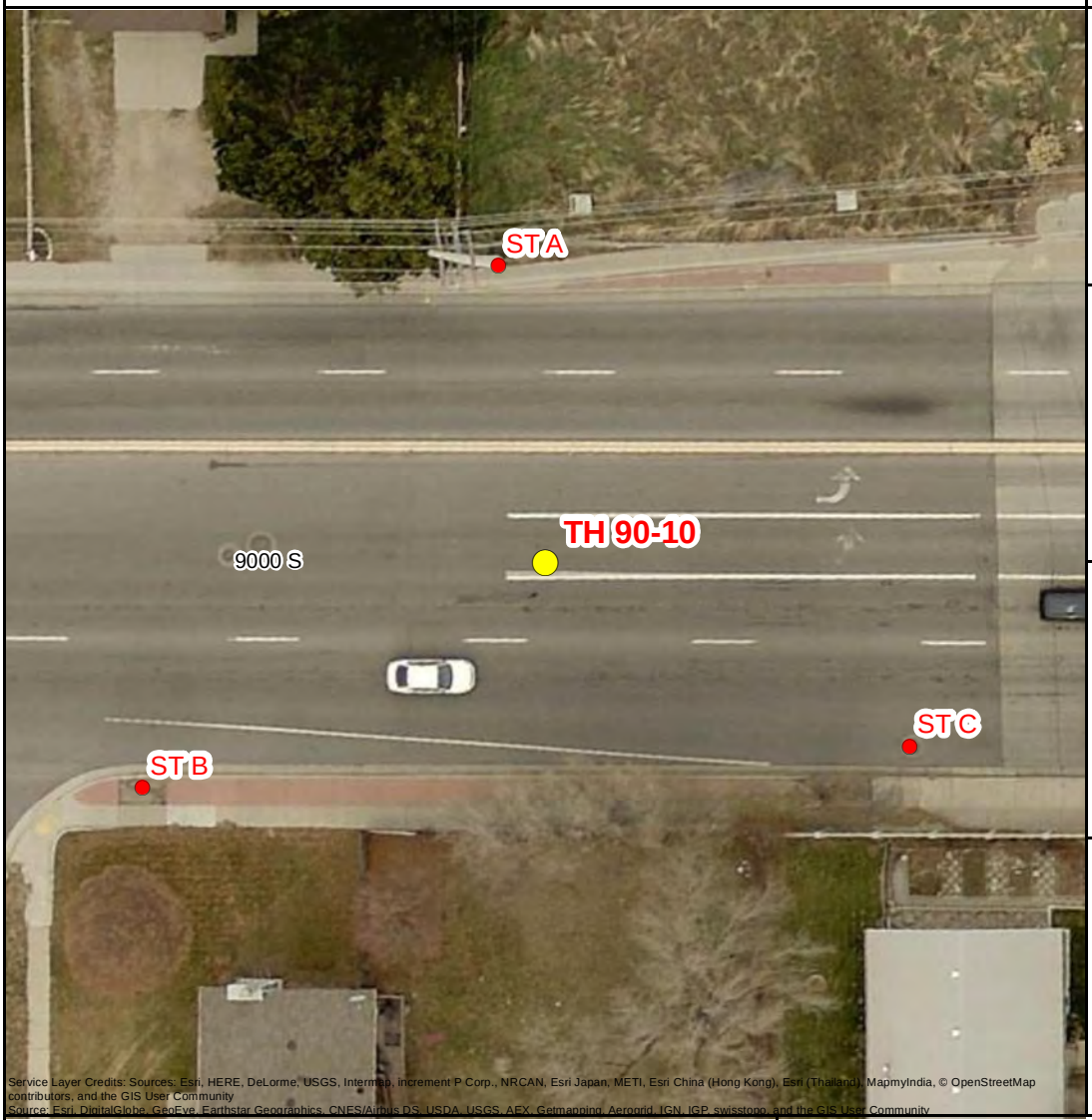
Utility Type:	Water	**Utility Size:**	12 Inches	**Utility Material:**	Ductile Iron
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Dirt
Surface Type:	Asphalt	**Thickness:**	10 Inches	**Marker Type:**	PK Nail
Depth to Top:	4.45	**Top Ref. Level:**	9.63	**Hand Meas. Top:**	4.50
Depth to Bottom:	5.45	**Bot. Ref. Level:**	10.63	**Hand Meas. Bot:**	N/A
Top Elevation:	4600.068	**Mkr. Ref. Level:**	5.18	**Ref. Elevation:**	4604.518
Bottom Elevation:	4599.068	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 46.1

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Power Pole	53.70
B	Water Valve	81.20
C	Storm Drain Manhole	77.00

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-11	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/15/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

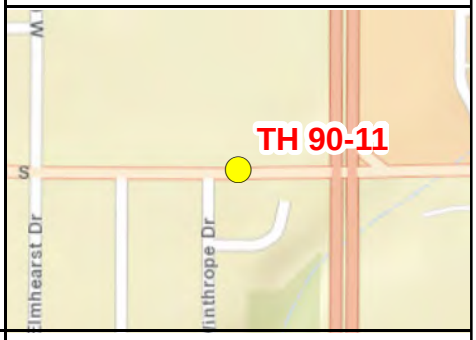
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Gas	**Utility Size:**	4 Inches	**Utility Material:**	Poly
Utility Company:	Questar	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Asphalt	**Thickness:**	12 Inches	**Marker Type:**	PK Nail
Depth to Top:	3.35	**Top Ref. Level:**	8.12	**Hand Meas. Top:**	3.40
Depth to Bottom:	3.68	**Bot. Ref. Level:**	8.45	**Hand Meas. Bot:**	N/A
Top Elevation:	4601.025	**Mkr. Ref. Level:**	4.77	**Ref. Elevation:**	4604.375
Bottom Elevation:	4600.692	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 23.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Power Pole	31.00
B	Water Valve	94.00
C	Storm Drain Manhole	91.50

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-12	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/9/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

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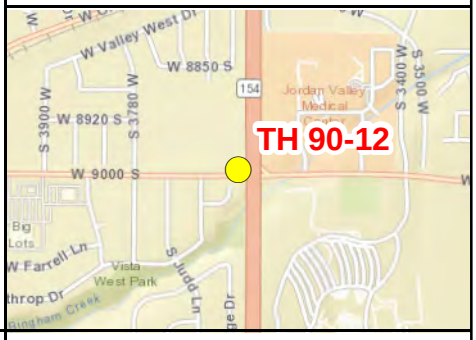
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

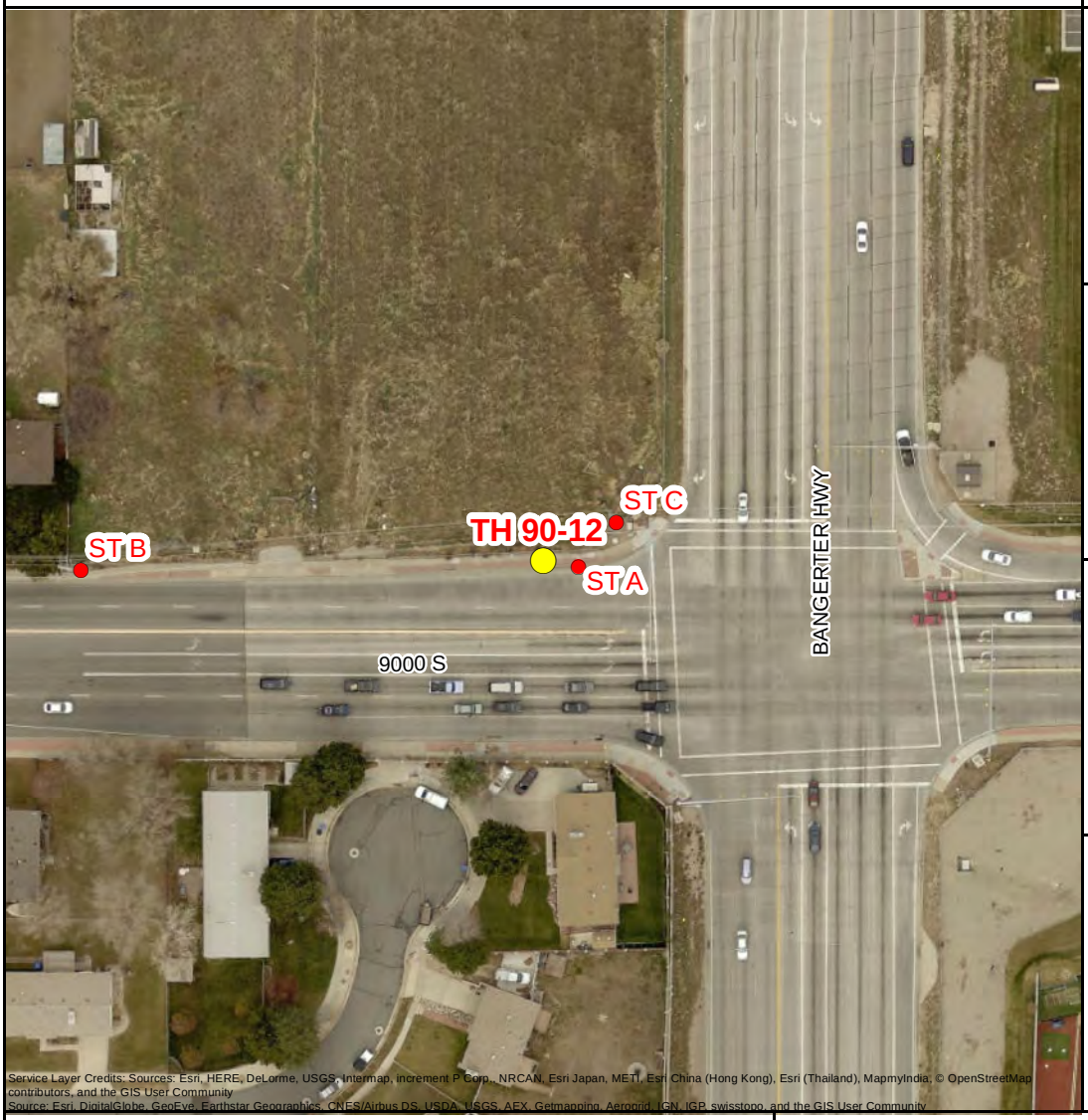
Utility Type:	Fiber/CATV	**Utility Size:**	(3) 2 In (1) 4 In	**Utility Material:**	PVC
Utility Company:	Comcast	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	6 Inches	**Marker Type:**	Saw Cut
Depth to Top:	3.29	**Top Ref. Level:**	8.09	**Hand Meas. Top:**	3.30
Depth to Bottom:	3.62	**Bot. Ref. Level:**	8.42	**Hand Meas. Bot:**	N/A
Top Elevation:	4596.800	**Mkr. Ref. Level:**	4.80	**Ref. Elevation:**	4600.090
Bottom Elevation:	4596.467	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 6.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	24.40
B	Power Pole	244.00
C	Powe Pole	45.00

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-13	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/13/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

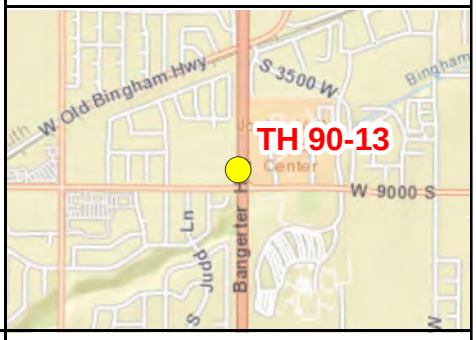
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

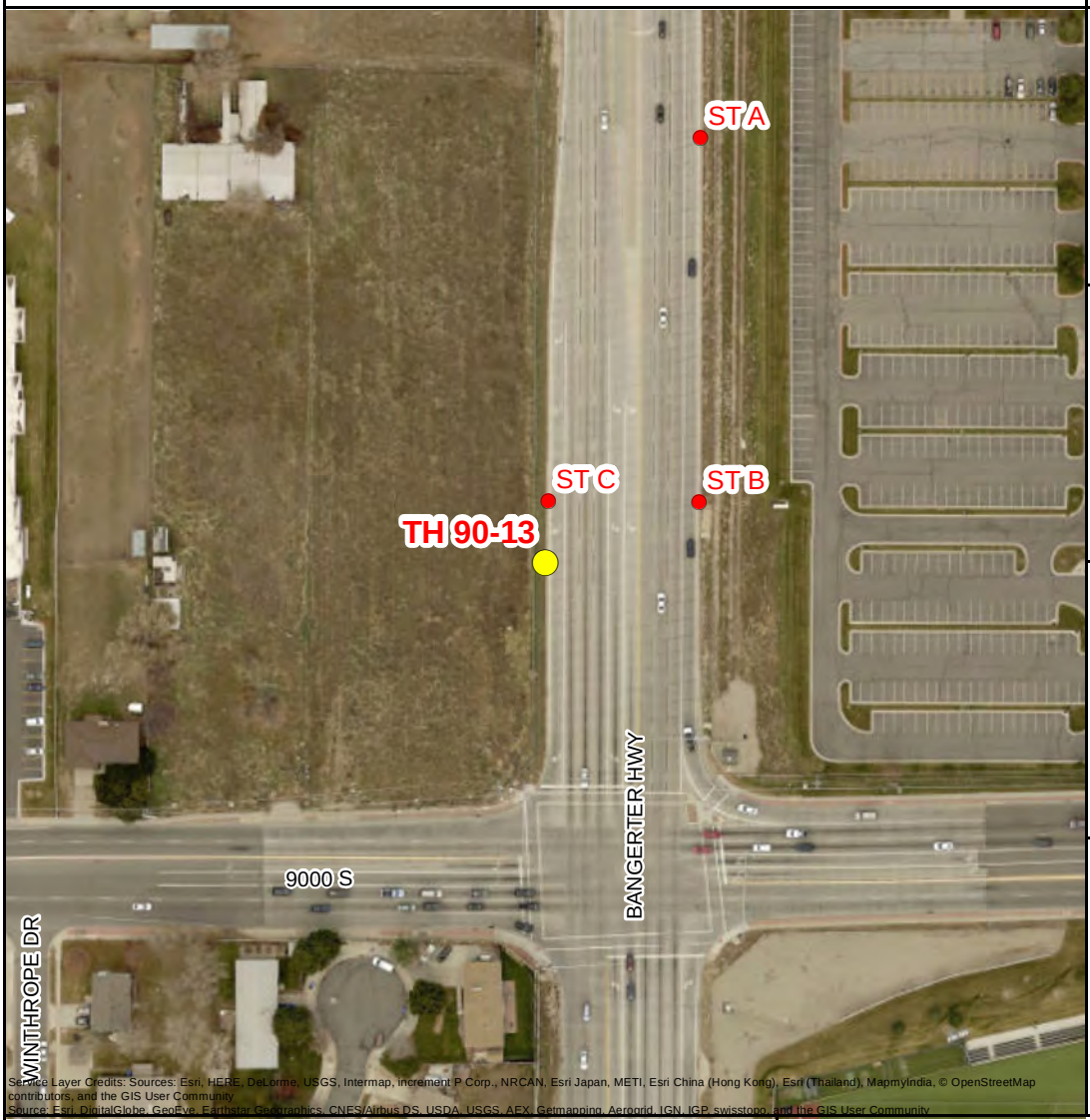
Utility Type:	Comm	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	AT&T/MBI	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Lalth
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4596.946
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 8.8

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	379.10
B	Catch Basin	143.40
C	Catch Basin	51.10

General Notes About This Test Hole

Offset facing North. Dug 11' x 4' wide, dry hole. Found unknown 1 "2" PVC HM 1'. Had utility located, he said +20' in this location

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-14	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/13/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

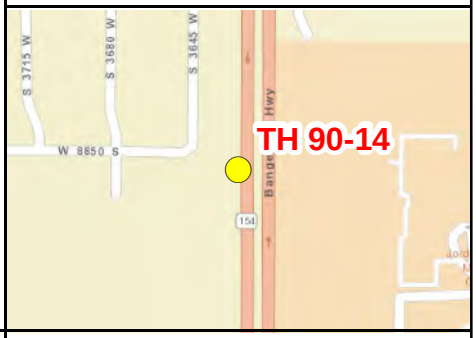
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Comm	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	AT&T/MBI	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	5.19	**Top Ref. Level:**	8.83	**Hand Meas. Top:**	5.15
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4574.513	**Mkr. Ref. Level:**	3.64	**Ref. Elevation:**	4579.703
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT .165

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	7.50
B	Catch Basin	77.10
C	End of Sidewalk	62.80

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-15	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/2/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

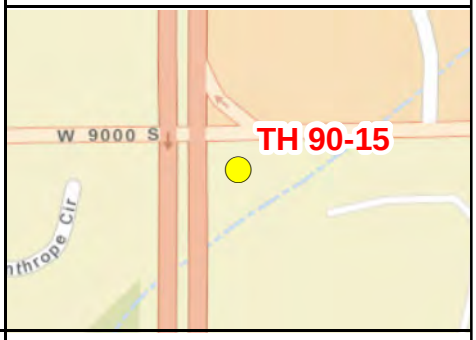
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

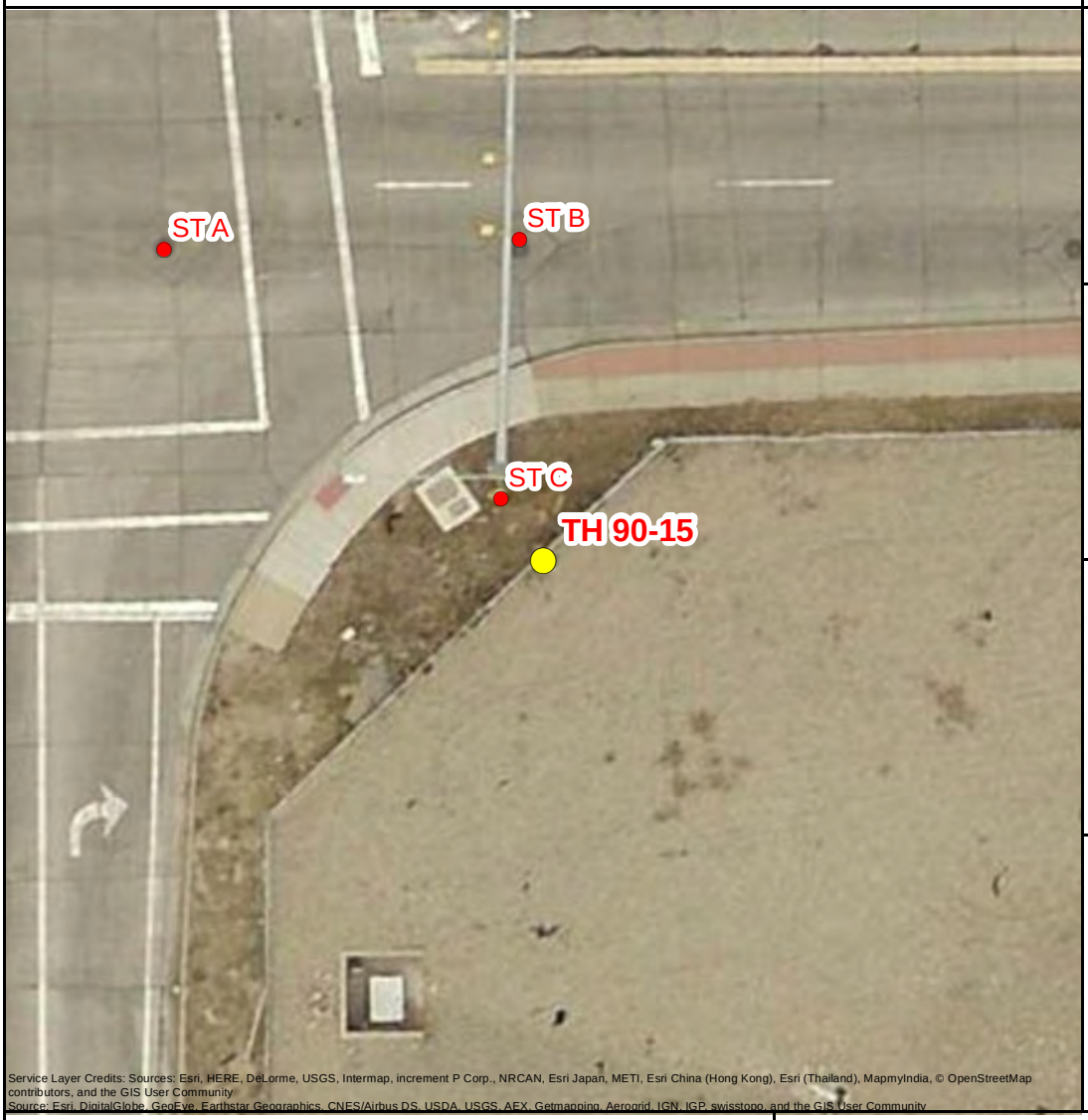
Utility Type:	Gas	**Utility Size:**	10 In Casing 6 In Gas	**Utility Material:**	Steel
Utility Company:	Questar	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	4.41	**Top Ref. Level:**	9.14	**Hand Meas. Top:**	4.50
Depth to Bottom:	5.74	**Bot. Ref. Level:**	10.47	**Hand Meas. Bot:**	N/A
Top Elevation:	4592.048	**Mkr. Ref. Level:**	4.73	**Ref. Elevation:**	4596.458
Bottom Elevation:	4590.715	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 24.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Sewer Manhole	51.00
B	Sewer Manhole	34.50
C	Traffic Signal	8.50

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-16	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/16/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

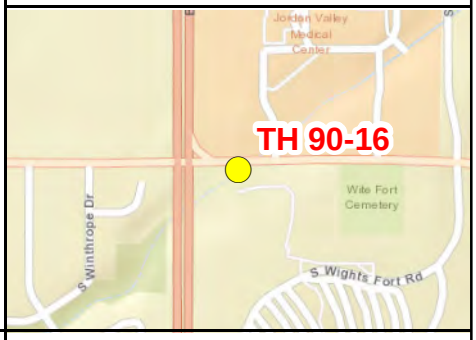
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	6 Inches	**Marker Type:**	Test Hole
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4593.146
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 2.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	17.00
B	Catch Basin	136.00
C	Water Valve	96.70

General Notes About This Test Hole

Offset facing East. City does not know, dug 8' deep x 3.5' wide dry hole

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-16A	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/17/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

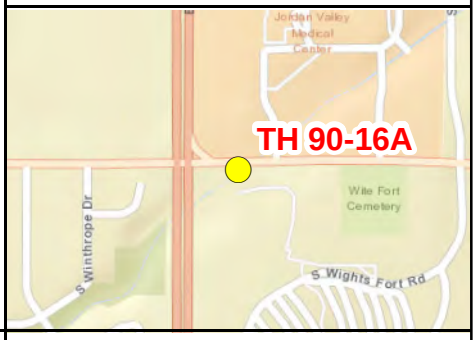
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	15 Inches	**Utility Material:**	Ductile Iron
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	18 Inches	**Marker Type:**	Saw Cut
Depth to Top:	6.15	**Top Ref. Level:**	11.35	**Hand Meas. Top:**	6.15
Depth to Bottom:	7.40	**Bot. Ref. Level:**	12.60	**Hand Meas. Bot:**	N/A
Top Elevation:	4586.882	**Mkr. Ref. Level:**	5.20	**Ref. Elevation:**	4593.032
Bottom Elevation:	4585.632	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 3.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	16.00
B	Catch Basin	134.20
C	Water Valve	99.00

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-17	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/16/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

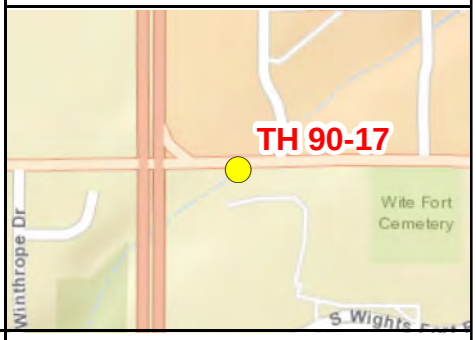
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	12 Inches	**Utility Material:**	Ductile Iron
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt/Gravel
Surface Type:	Asphalt	**Thickness:**	8 Inches	**Marker Type:**	PK Nail
Depth to Top:	5.27	**Top Ref. Level:**	10.31	**Hand Meas. Top:**	5.25
Depth to Bottom:	6.27	**Bot. Ref. Level:**	11.31	**Hand Meas. Bot:**	N/A
Top Elevation:	4587.772	**Mkr. Ref. Level:**	5.04	**Ref. Elevation:**	4593.042
Bottom Elevation:	4586.772	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 15.0

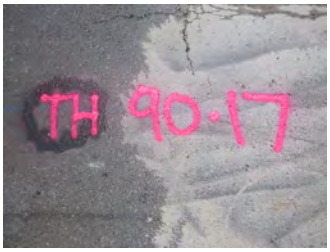
N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	55.00
B	Catch Basin	96.70
C	Water Valve	63.20

General Notes About This Test Hole

Offset facing East

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-18	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/28/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

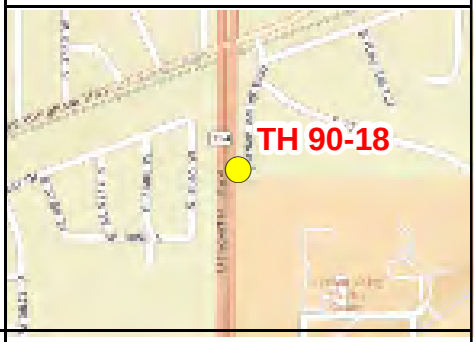
1349 Galleria Drive, Suite 110
Henderson, NV 89014
Phone: 702-966-4063

Test Hole Data

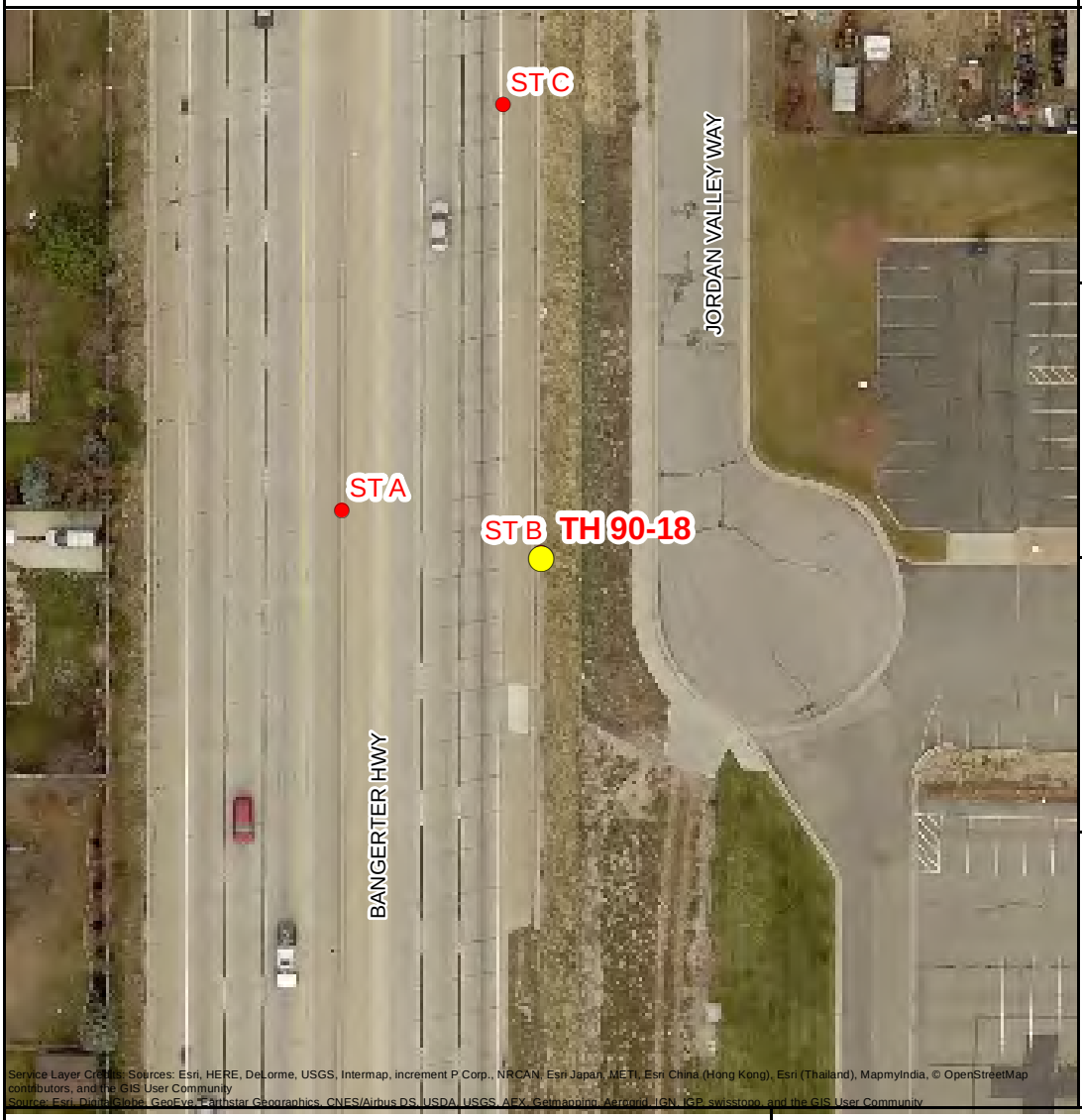
Utility Type:	Wall Footing	**Utility Size:**	N/A	**Utility Material:**	Concrete
Utility Company:	N/A	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	6 Inches	**Marker Type:**	Saw Cut
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4557.244
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 8.5

N

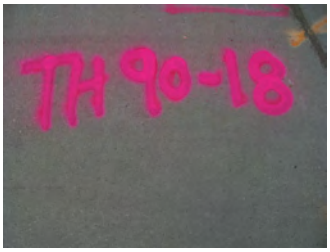
Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Center Wall	56.70
B	Retaining Wall	2.00
C	Catch Basin	142.50

General Notes About This Test Hole

Offset facing North. Concrete side wall 1st measure down is 1.90', 2nd measure down is 3.80', 3rd measure down is 4.90'

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-19	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/28/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

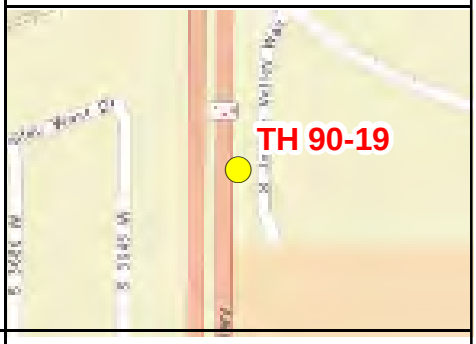
1349 Galleria Drive, Suite 110
Henderson, NV 89014
Phone: 702-966-4063

Test Hole Data

Utility Type:	Wall Footing	**Utility Size:**	N/A	**Utility Material:**	Concrete
Utility Company:	N/A	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	6 Inches	**Marker Type:**	Saw Cut
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4551.274
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 8.3

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Center Wall	58.60
B	Retaining Wall	2.20
C	Catch Basin	22.00

General Notes About This Test Hole

offset facing North. Concrete side wall 1st measure down is 2.0', 2nd measure down is 3.95', 3rd measure down is 4.70'

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-20	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/29/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

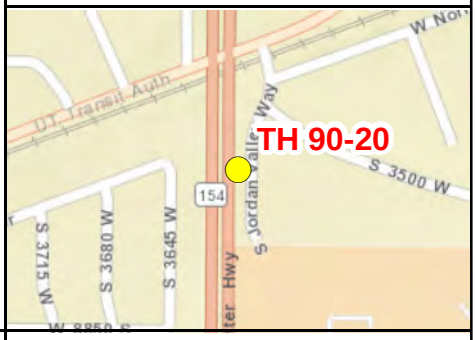
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

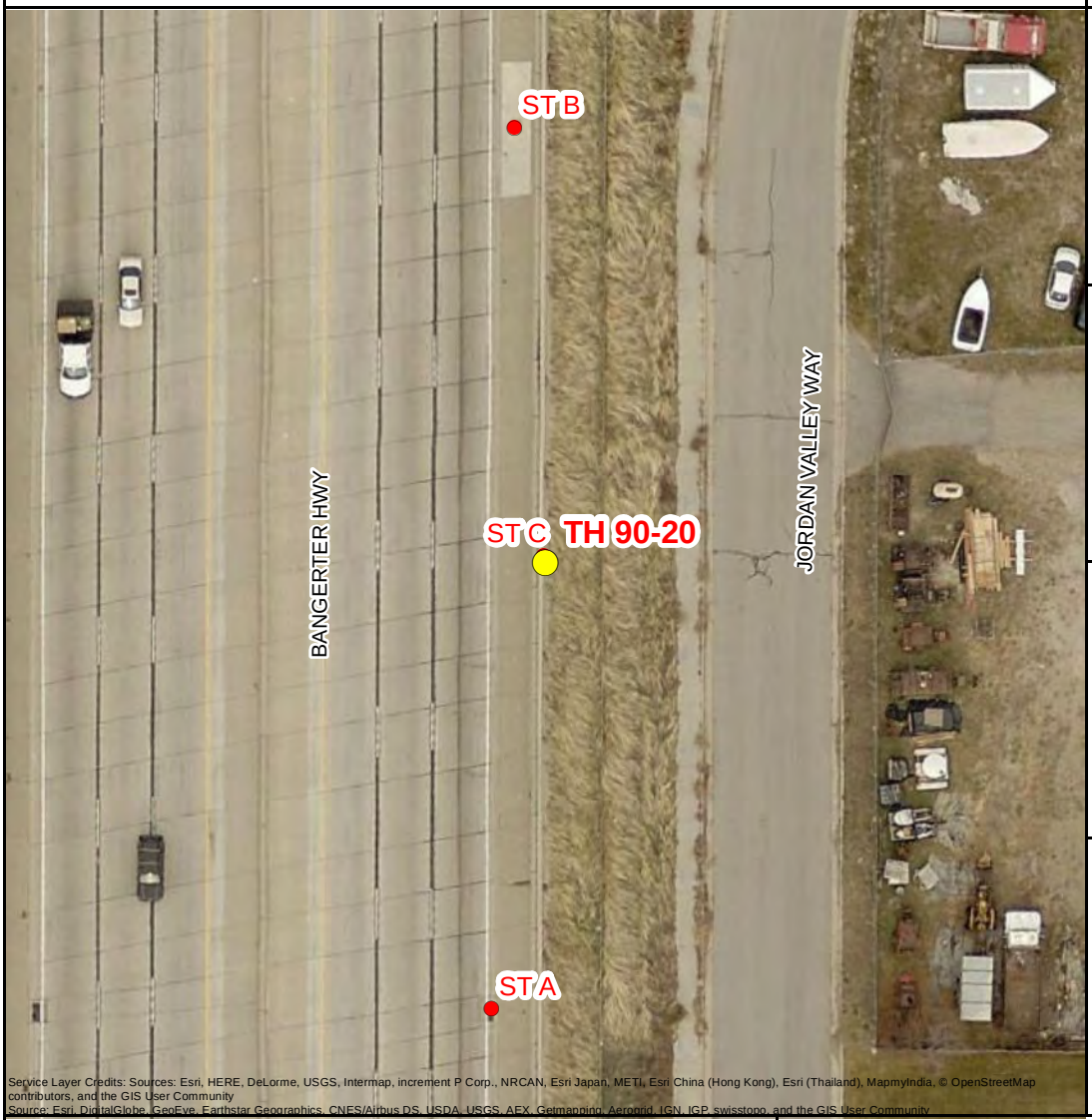
Utility Type:	Wall Footing	**Utility Size:**	N/A	**Utility Material:**	Concrete
Utility Company:	N/A	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	6 Inches	**Marker Type:**	Saw Cut
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4545.519
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 8.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



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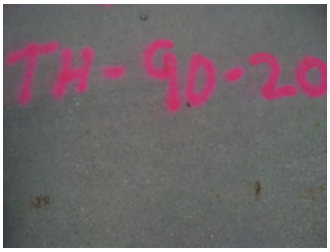
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	100.70
B	Comm Box	95.70
C	Retaining Wall	2.00

General Notes About This Test Hole

Offset facing North. Concrete side wall 1st measure down is 2.10' 2nd measure down is 4.10', 3rd measure down is 5.0'

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-21	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/21/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

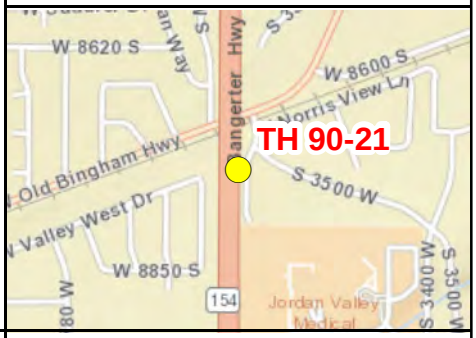
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

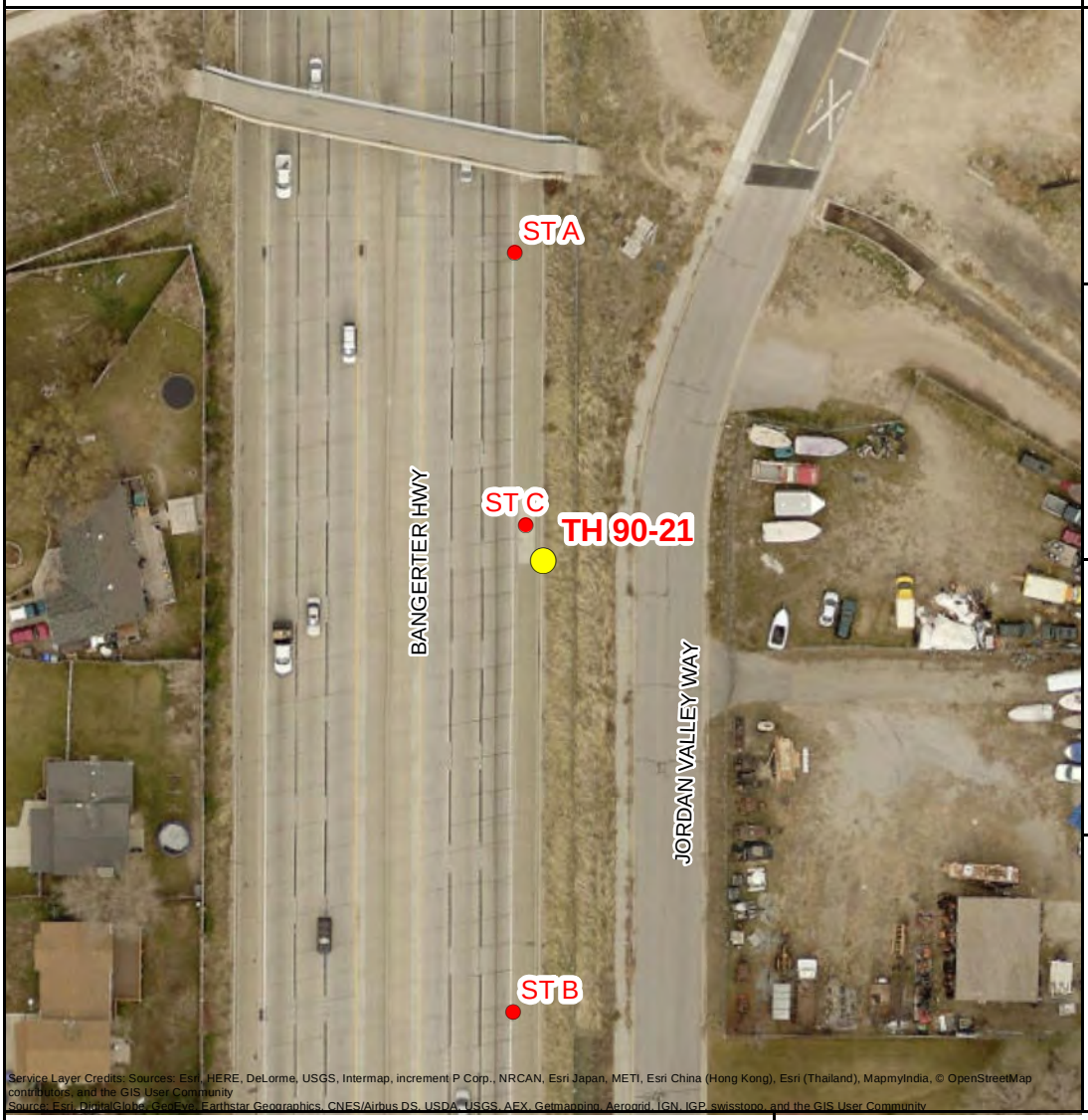
Utility Type:	Wall Footing	**Utility Size:**	N/A	**Utility Material:**	Concrete
Utility Company:	N/A	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	6 Inches	**Marker Type:**	Saw Cut
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4542.104
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 8.0

N

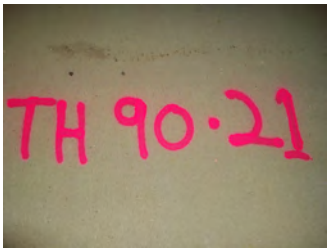
Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	122.70
B	Catch Basin	181.50
C	Comm Box	15.00

General Notes About This Test Hole

Offset facing North. Lots of debris and garbage. Concrete side wall 1st measure down is 2.70', 2nd measure down is 4.70', 3rd measure down is 5.50'

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-22	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/29/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

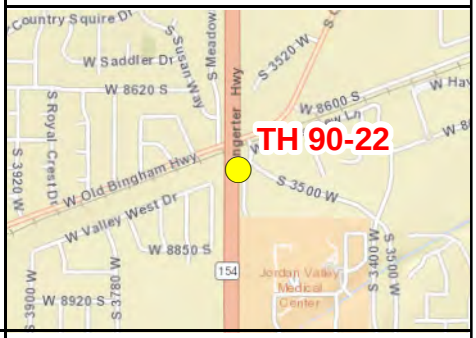
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Wall Footing	**Utility Size:**	N/A	**Utility Material:**	Concrete
Utility Company:	N/A	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	6 Inches	**Marker Type:**	Saw Cut
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4539.455
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 7.0

N

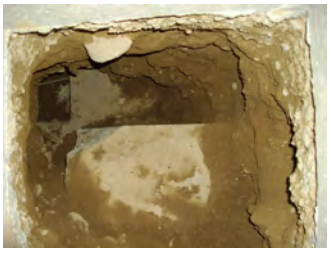
Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	52.40
B	Catch Basin	253.50
C	Comm Box	56.50

General Notes About This Test Hole

Offset facing North. Concrete side wall 1st measure down is 2.20', 2nd measure down is 4.10', 3rd measure down is 5.20'

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-23	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/30/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

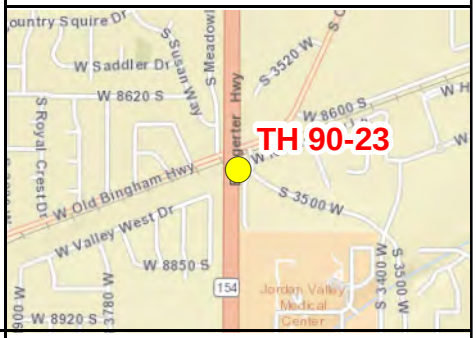
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

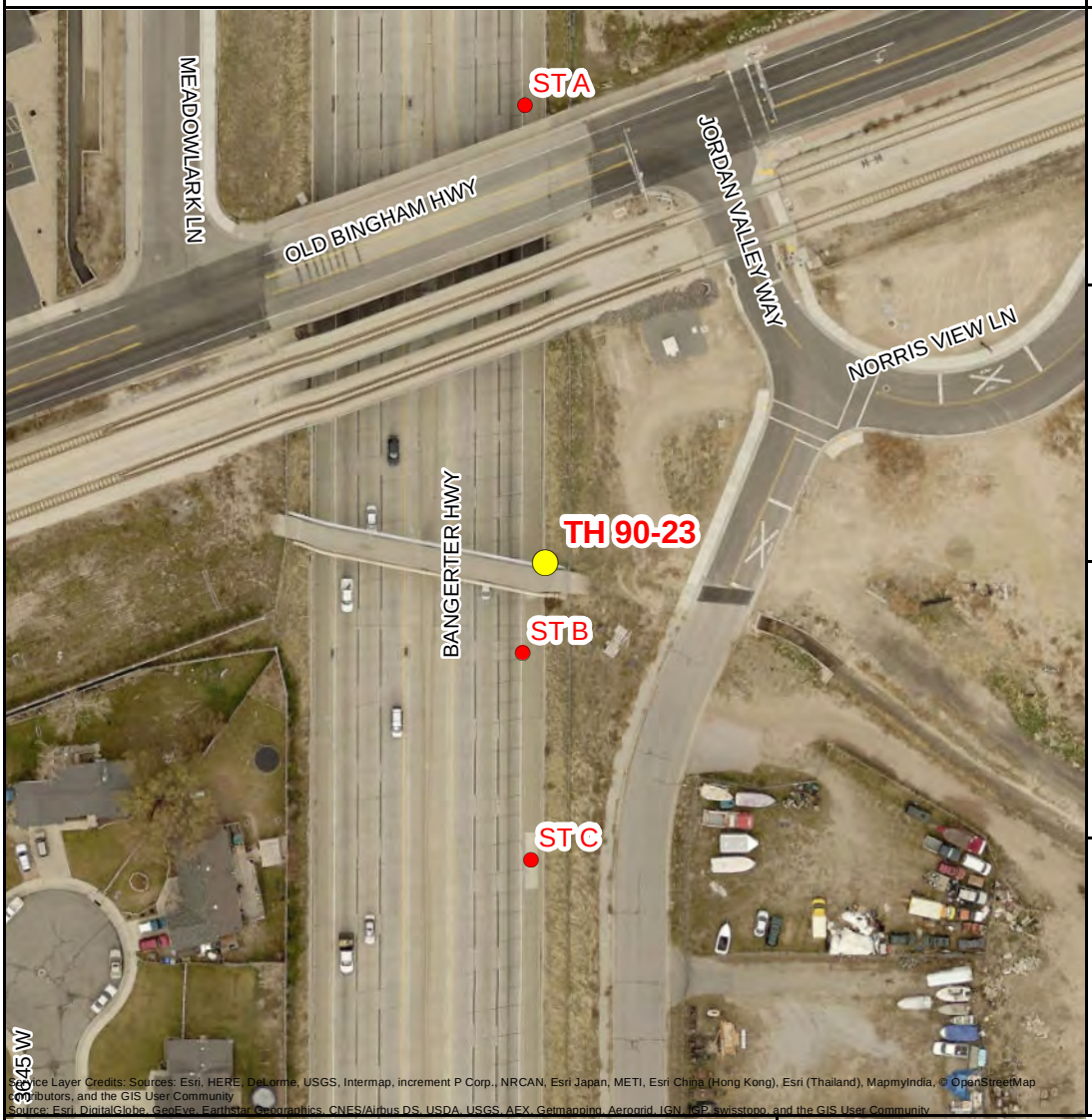
Utility Type:	Wall Footing	**Utility Size:**	N/A	**Utility Material:**	Concrete
Utility Company:	N/A	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	6 Inches	**Marker Type:**	Saw Cut
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4536.700
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 8.0

N

Overall Location of Test Hole



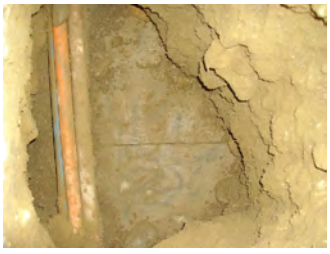
TEST HOLE LOCATION PLAN



Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	240.00
B	Catch Basin	47.80
C	Comm Box	155.30

General Notes About This Test Hole

Offset facing North. Concrete side wall appear to be flat at this point measure down is 3.90'

2nd measure down is 5.40', (3) 1 inch poly lines, Hand Measure 2.55'

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-24	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/30/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

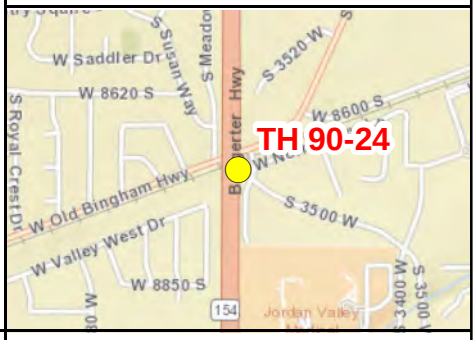
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

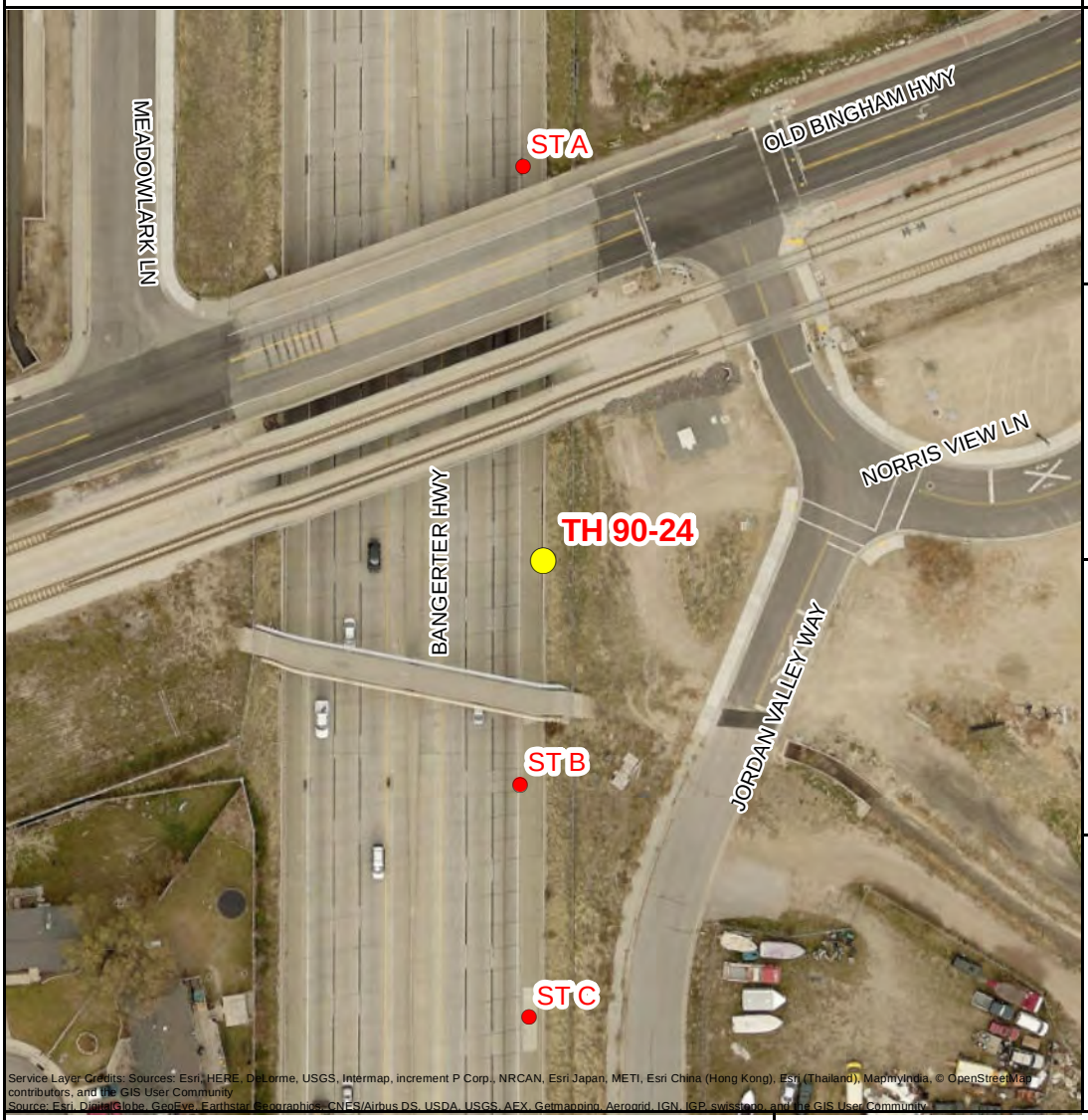
Utility Type:	Wall Footing	**Utility Size:**	N/A	**Utility Material:**	Concrete
Utility Company:	N/A	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Concrete	**Thickness:**	6 Inches	**Marker Type:**	Saw Cut
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4535.406
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 6.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	183.00
B	Catch Basin	104.50
C	Comm Box	212.00

General Notes About This Test Hole

Offset facing North. Concrete side wall 1st measure down is 2.60'. 2nd measure down is is 3.25', 3rd measure down is 4.60

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-25	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/15/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

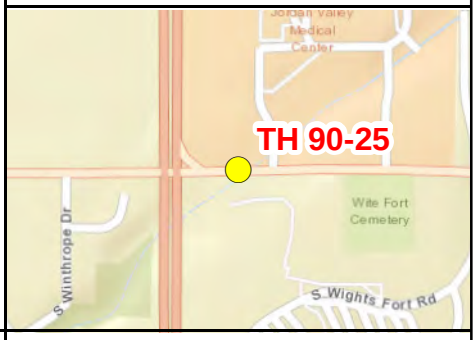
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Gas	**Utility Size:**	18 Inches	**Utility Material:**	N/A
Utility Company:	Questar	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Asphalt	**Thickness:**	N/A	**Marker Type:**	Test Hole
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4593.551
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 40.0

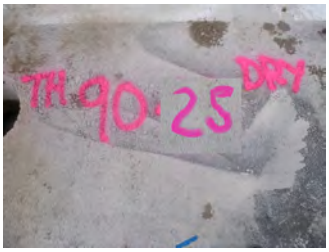
N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Power Pole	122.50
B	Catch Basin	68.30
C	Fire Hydrant	83.50

General Notes About This Test Hole

Offset facing East. Dry Hole - dug 8' deep x 4' wide. Dug on Blue Stakes

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-26	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/15/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

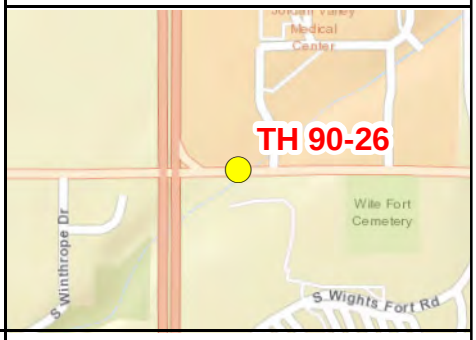
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

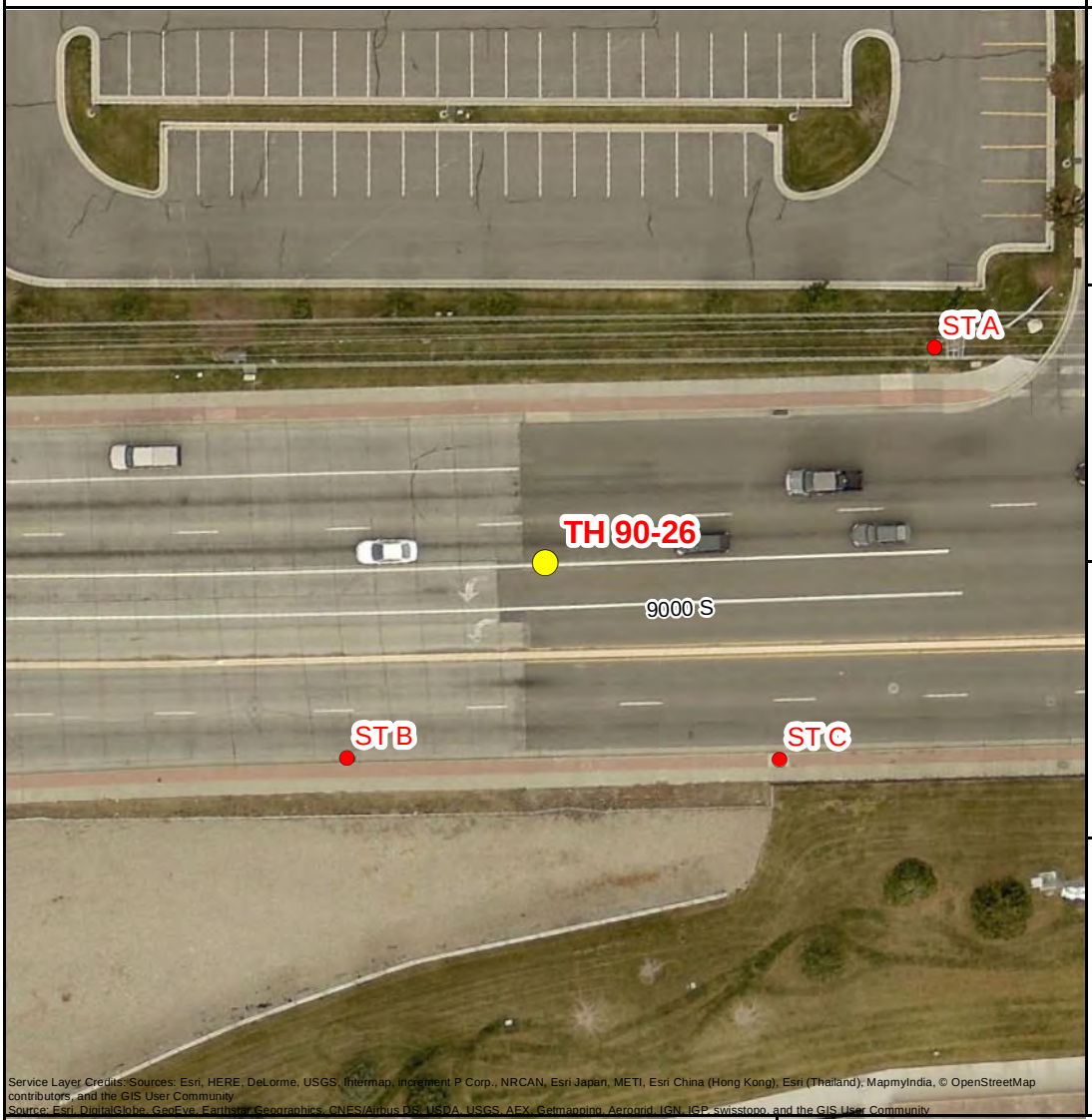
Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Asphalt	**Thickness:**	N/A	**Marker Type:**	Test Hole
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4593.495
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 36.8

N

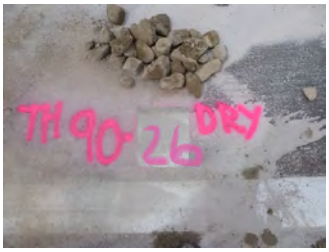
Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Power Pole	120.50
B	Catch Basin	73.00
C	Fire Hydrant	86.00

General Notes About This Test Hole

Offset facing East. Dry Hole - dug 8' deep x 4' wide. Dug on Blue Stakes

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-26A	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/17/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

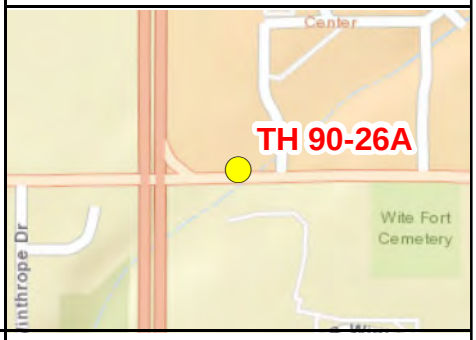
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	West Jordan	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Asphalt	**Thickness:**	8 Inches	**Marker Type:**	Test Hole
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4593.087
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 15.0

N

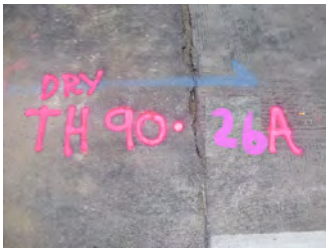
Overall Location of Test Hole



TEST HOLE LOCATION PLAN

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	91.00
B	Catch Basin	67.00
C	Water Valve	97.50

General Notes About This Test Hole

Offset facing East. Dry Hole - dug 8' deep x 4.5' wide.

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-27	**Completed By:**	Jordan Ujhely
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	6/13/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

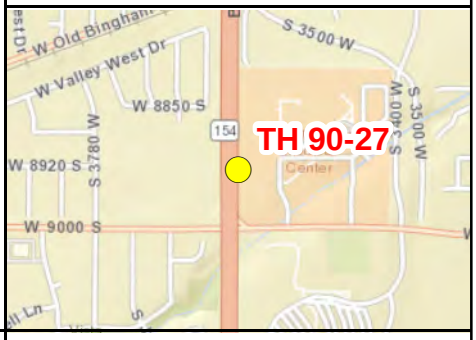
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

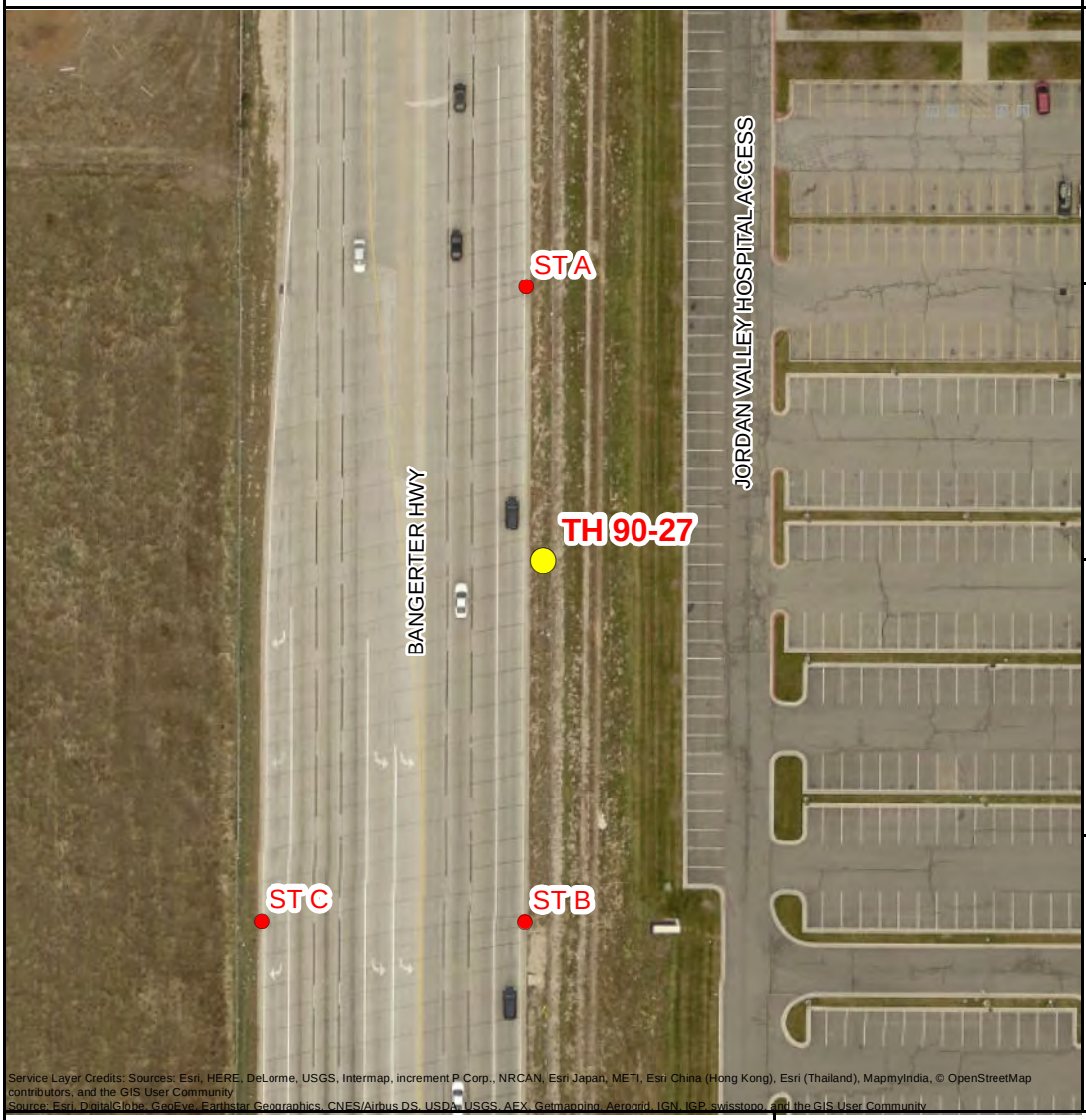
Utility Type:	Comm	**Utility Size:**	(4) 1 1/2 Inches	**Utility Material:**	PVC
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	4.98	**Top Ref. Level:**	8.79	**Hand Meas. Top:**	5.00
Depth to Bottom:	5.48	**Bot. Ref. Level:**	9.29	**Hand Meas. Bot:**	N/A
Top Elevation:	4587.739	**Mkr. Ref. Level:**	3.81	**Ref. Elevation:**	4592.719
Bottom Elevation:	4587.239	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 5.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	129.10
B	Catch Basin	170.60
C	Catch Basin	216.50

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-28	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	7/29/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

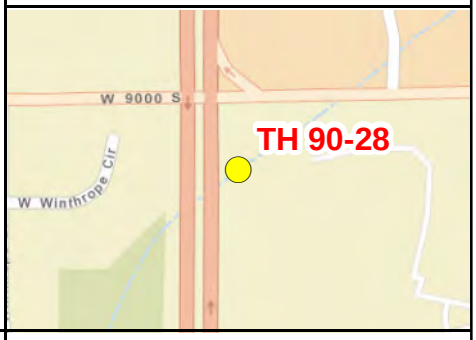
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	78 inches	**Utility Material:**	MLSP
Utility Company:	Bureau of Reclamation	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	19.26	**Top Ref. Level:**	24.05	**Hand Meas. Top:**	19.20
Depth to Bottom:	25.76	**Bot. Ref. Level:**	30.55	**Hand Meas. Bot:**	N/A
Top Elevation:	4577.765	**Mkr. Ref. Level:**	4.79	**Ref. Elevation:**	4597.025
Bottom Elevation:	4571.265	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 28.2

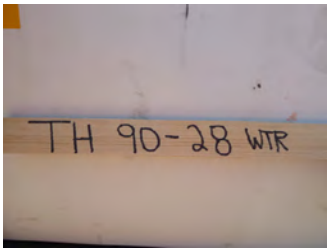
N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	31.00
B	Catch Basin	65.00
C	Aqueduct Vault	58.50

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-29	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/1/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

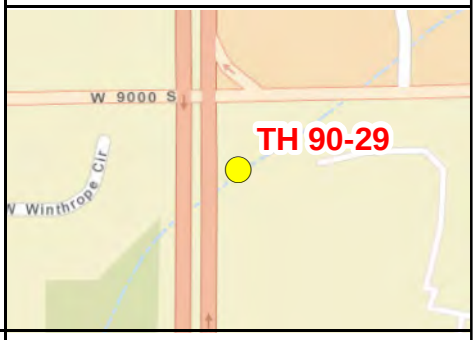
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

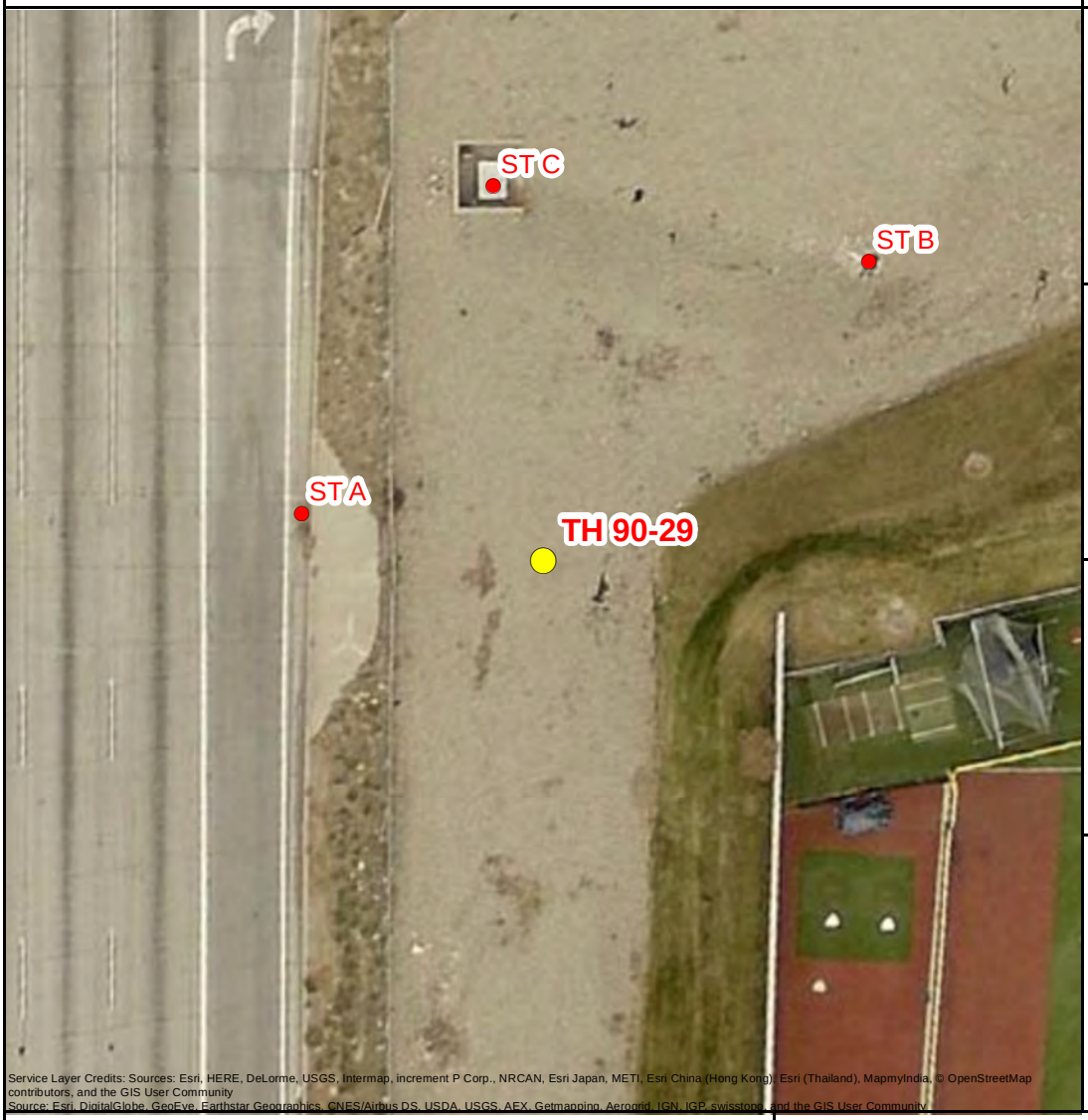
Utility Type:	Storm Drain	**Utility Size:**	84 Inches	**Utility Material:**	Metal
Utility Company:	SL County Flood Control	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Lalth - Testhole
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4596.876
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 28.8

N

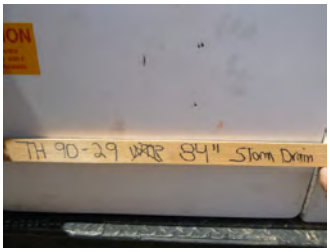
Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	27.80
B	Catch Basin	60.50
C	Aqueduct Vault	48.50

General Notes About This Test Hole

Offset facing North. No water line. Found 84" storm drain.

Hand Measure - 7.60' running east-west

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 90-29A	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/1/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

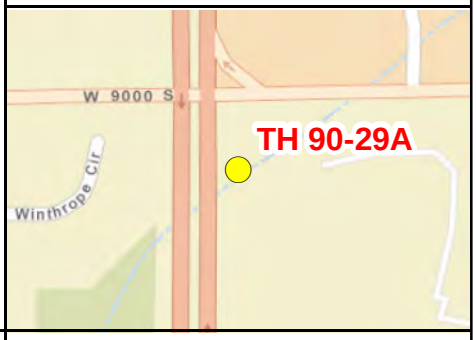
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Water	**Utility Size:**	78 inches	**Utility Material:**	CMP
Utility Company:	Bureau of Reclamation	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	19.63	**Top Ref. Level:**	24.74	**Hand Meas. Top:**	19.65
Depth to Bottom:	26.13	**Bot. Ref. Level:**	31.24	**Hand Meas. Bot:**	N/A
Top Elevation:	4577.122	**Mkr. Ref. Level:**	5.11	**Ref. Elevation:**	4596.752
Bottom Elevation:	4570.622	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 26.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	27.50
B	Catch Basin	57.50
C	Aqueduct Vault	44.00

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-01	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/16/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

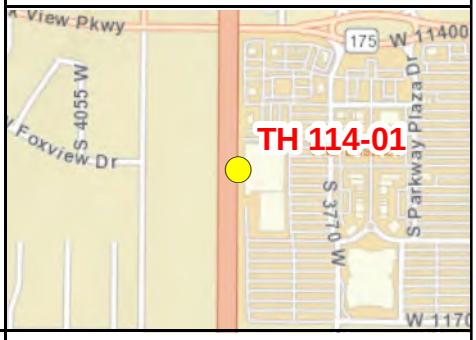
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

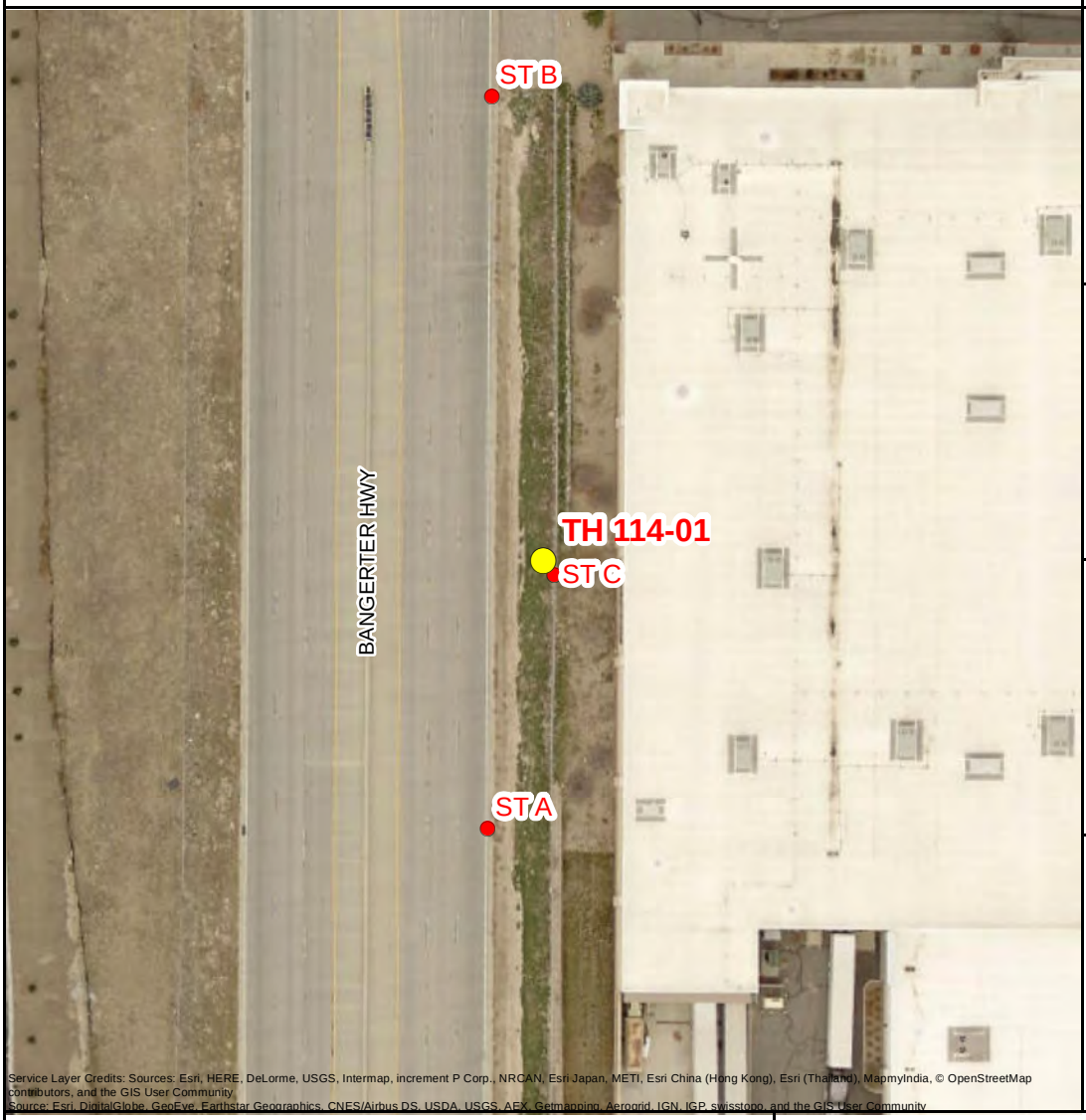
Utility Type:	Fiber	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	MBI, ATT, Zayo, First Digital	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	5.26	**Top Ref. Level:**	10.42	**Hand Meas. Top:**	5.25
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4636.748	**Mkr. Ref. Level:**	5.16	**Ref. Elevation:**	4642.008
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 17.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



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TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	115.50
B	Catch Basin	184.00
C	Fence	7.20

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-02	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/12/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

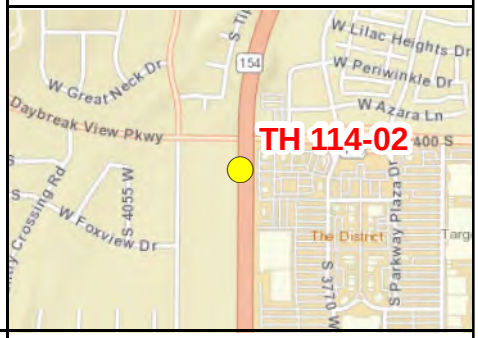
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

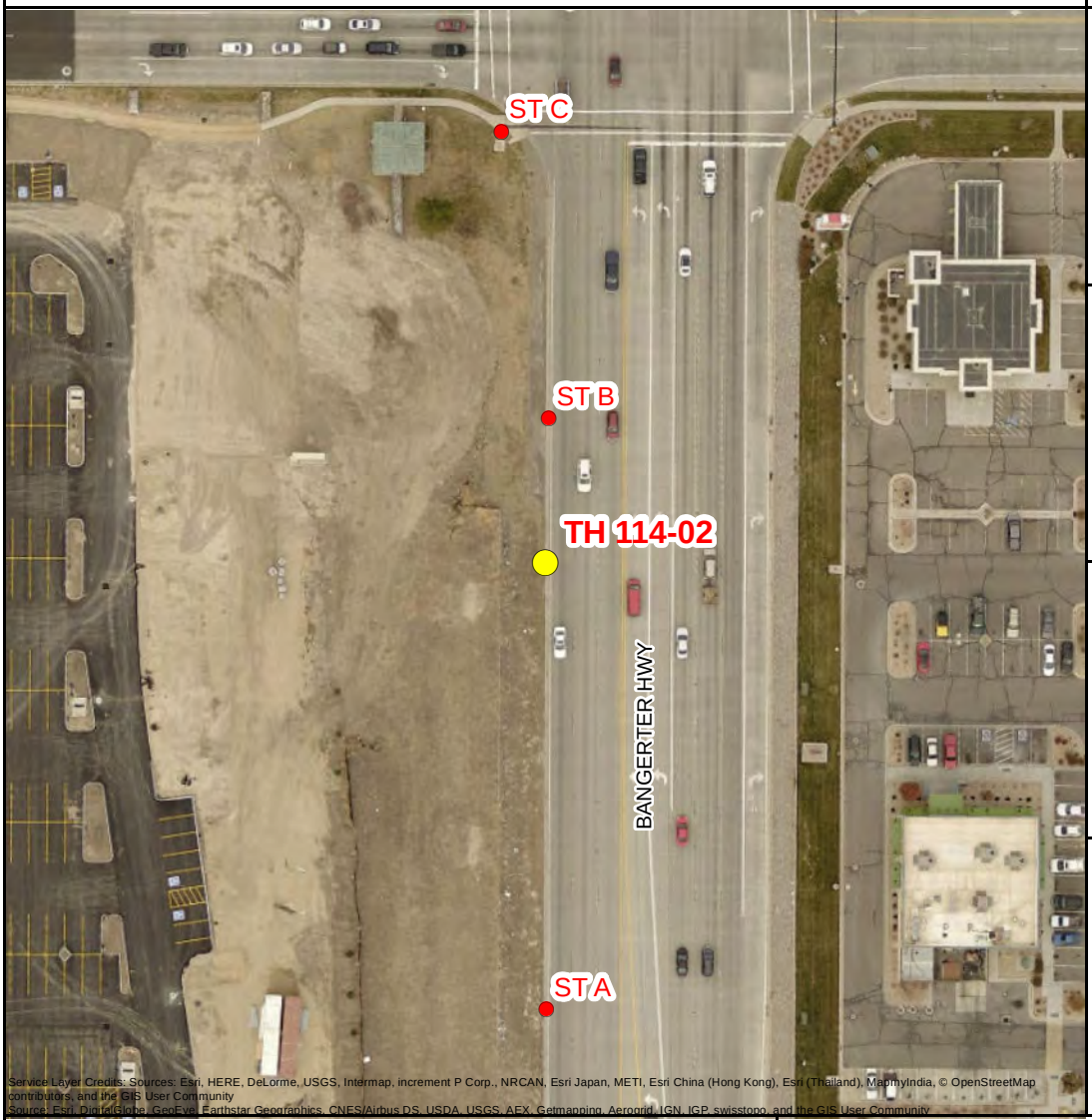
Utility Type:	Fiber	**Utility Size:**	(1) 2 In (1) 3 In	**Utility Material:**	PVC
Utility Company:	UDOT	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	2.71	**Top Ref. Level:**	8.28	**Hand Meas. Top:**	2.70
Depth to Bottom:	2.96	**Bot. Ref. Level:**	8.53	**Hand Meas. Bot:**	N/A
Top Elevation:	4647.629	**Mkr. Ref. Level:**	5.57	**Ref. Elevation:**	4650.339
Bottom Elevation:	4647.379	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 4.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	229.50
B	Catch Basin	69.30
C	Traffic Signal	212.50

General Notes About This Test Hole

Offset facing North. Had to locate no blue stakes, location of dig site said "no power and no fiber"

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-03	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/12/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

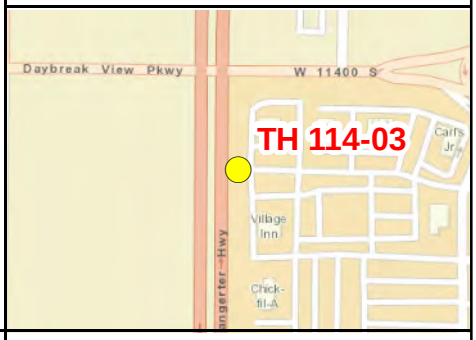
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

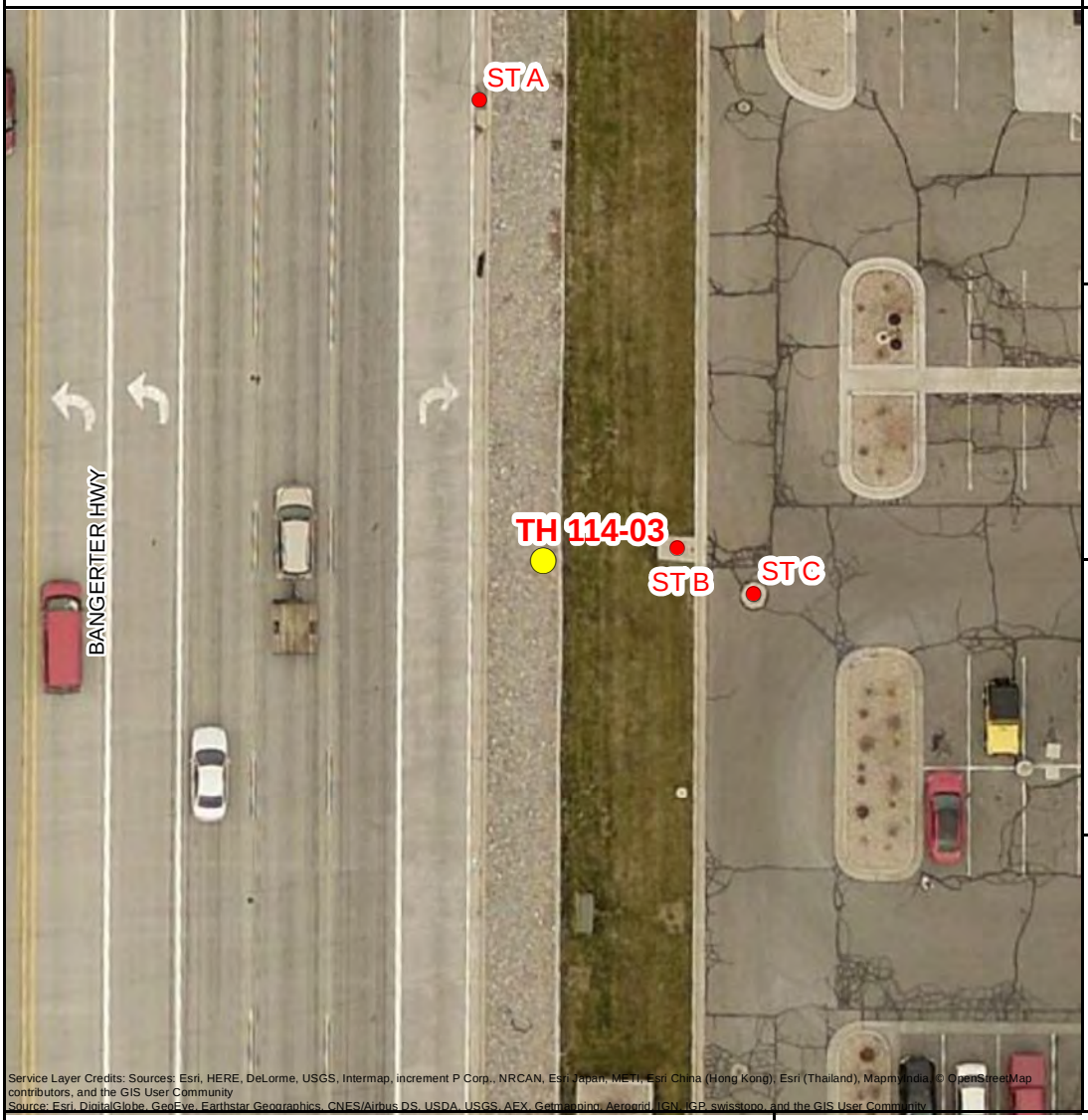
Utility Type:	Fiber	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	First Digital	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Rock	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	5.63	**Top Ref. Level:**	10.48	**Hand Meas. Top:**	5.55
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4643.830	**Mkr. Ref. Level:**	4.85	**Ref. Elevation:**	4649.460
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 10.2

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	75.00
B	Fire Hydrant	23.00
C	Sewer Manhole	38.00

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-04	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/12/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

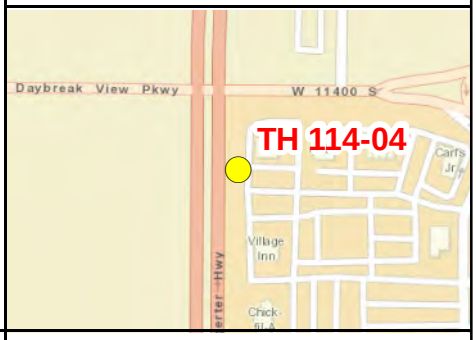
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

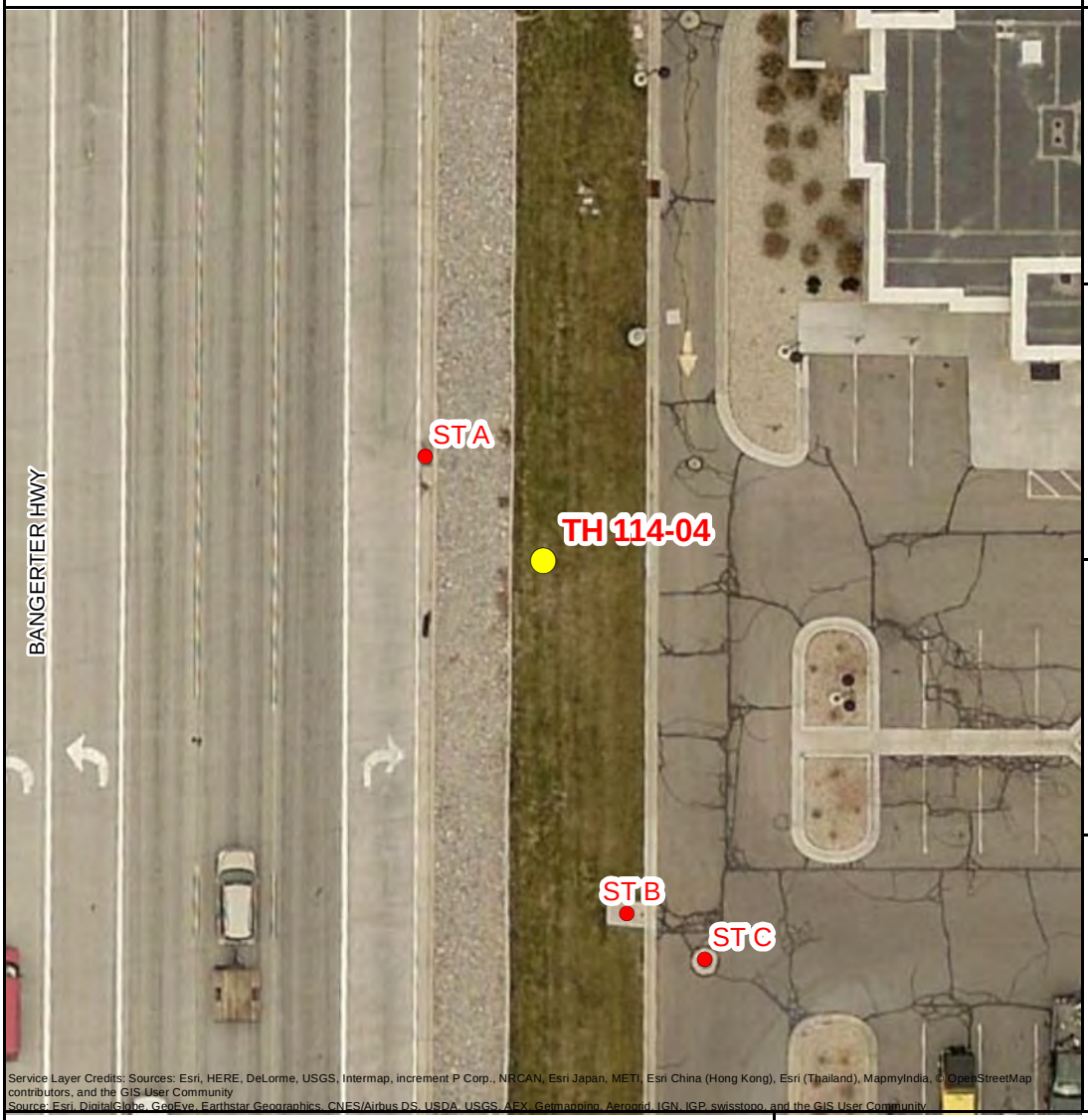
Utility Type:	Power / Fiber	**Utility Size:**	(1) 6 In (1) 4 In	**Utility Material:**	PVC
Utility Company:	RMP / First Digital	**English/Metric:**	English	**Soil Conditions:**	Clay/Rock
Surface Type:	Grass	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	3.78	**Top Ref. Level:**	8.24	**Hand Meas. Top:**	3.75
Depth to Bottom:	4.61	**Bot. Ref. Level:**	9.07	**Hand Meas. Bot:**	N/A
Top Elevation:	4645.783	**Mkr. Ref. Level:**	4.46	**Ref. Elevation:**	4649.563
Bottom Elevation:	4644.950	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 18.4

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	21.80
B	Water Valve	62.00
C	Sewer Manhole	73.50

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-10	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/10/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

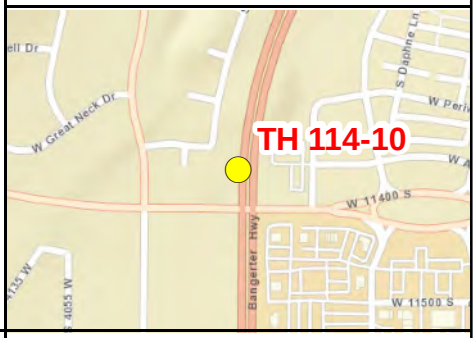
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

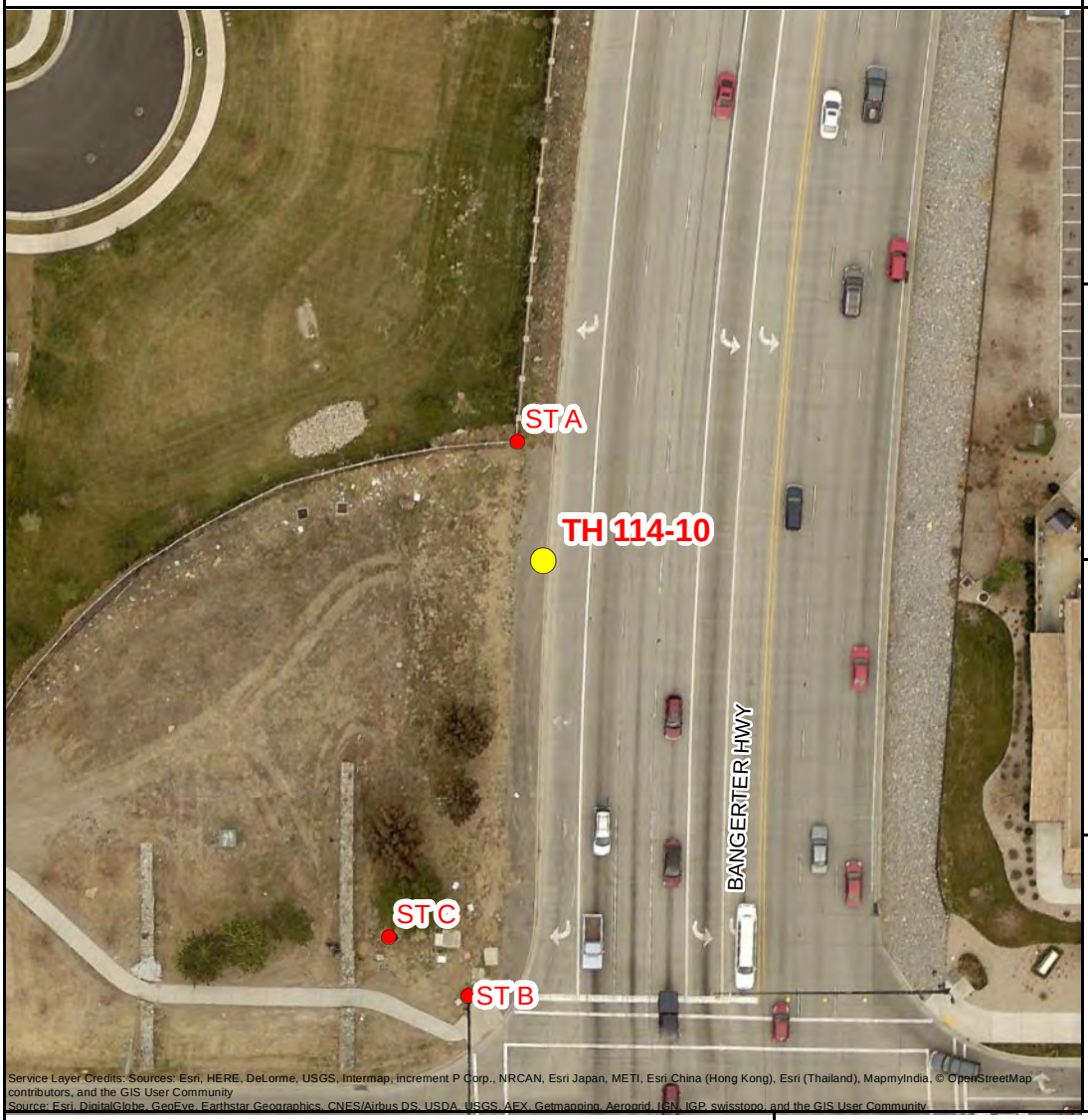
Utility Type:	Fiber	**Utility Size:**	(1) 3 In, (1) 2 In	**Utility Material:**	PVC
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	3.70	**Top Ref. Level:**	8.67	**Hand Meas. Top:**	3.70
Depth to Bottom:	3.95	**Bot. Ref. Level:**	8.92	**Hand Meas. Bot:**	N/A
Top Elevation:	4656.019	**Mkr. Ref. Level:**	4.97	**Ref. Elevation:**	4659.719
Bottom Elevation:	4655.769	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 4.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	End of Retaining Wall	43.00
B	Traffic Signal	151.20
C	Catch Basin	137.00

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-11	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/10/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

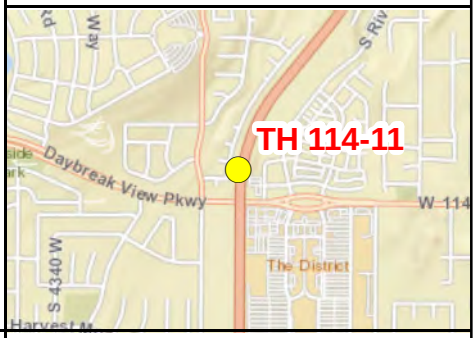
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Fiber	**Utility Size:**	(1) 3 In, (1) 2 In	**Utility Material:**	PVC
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	3.62	**Top Ref. Level:**	8.85	**Hand Meas. Top:**	3.60
Depth to Bottom:	3.87	**Bot. Ref. Level:**	9.10	**Hand Meas. Bot:**	N/A
Top Elevation:	4659.438	**Mkr. Ref. Level:**	5.23	**Ref. Elevation:**	4663.058
Bottom Elevation:	4659.188	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 2.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	9.90
B	Traffic Signal	406.50
C	Edge of Oil	115.00

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-12	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/18/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

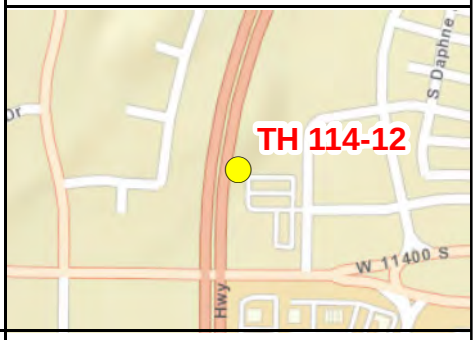
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Fiber	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	MBI, ATT, Zayo, First Digital	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Rock	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	5.62	**Top Ref. Level:**	10.00	**Hand Meas. Top:**	5.70
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4651.872	**Mkr. Ref. Level:**	4.38	**Ref. Elevation:**	4657.492
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 17.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	104.20
B	Catch Basin	104.50
C	Fence	6.50

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-13	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/10/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

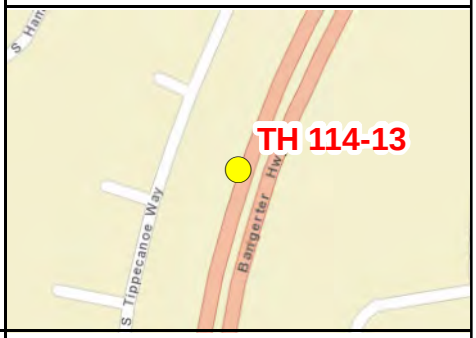
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Fiber	**Utility Size:**	3 Inches	**Utility Material:**	PVC
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	2.71	**Top Ref. Level:**	8.27	**Hand Meas. Top:**	2.70
Depth to Bottom:	2.96	**Bot. Ref. Level:**	8.52	**Hand Meas. Bot:**	N/A
Top Elevation:	4663.302	**Mkr. Ref. Level:**	5.56	**Ref. Elevation:**	4666.012
Bottom Elevation:	4663.052	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 3.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	64.00
B	Catch Basin	60.50
C	Retaining Wall	22.50

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-14	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/17/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

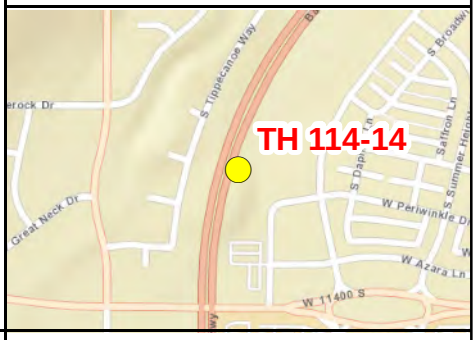
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

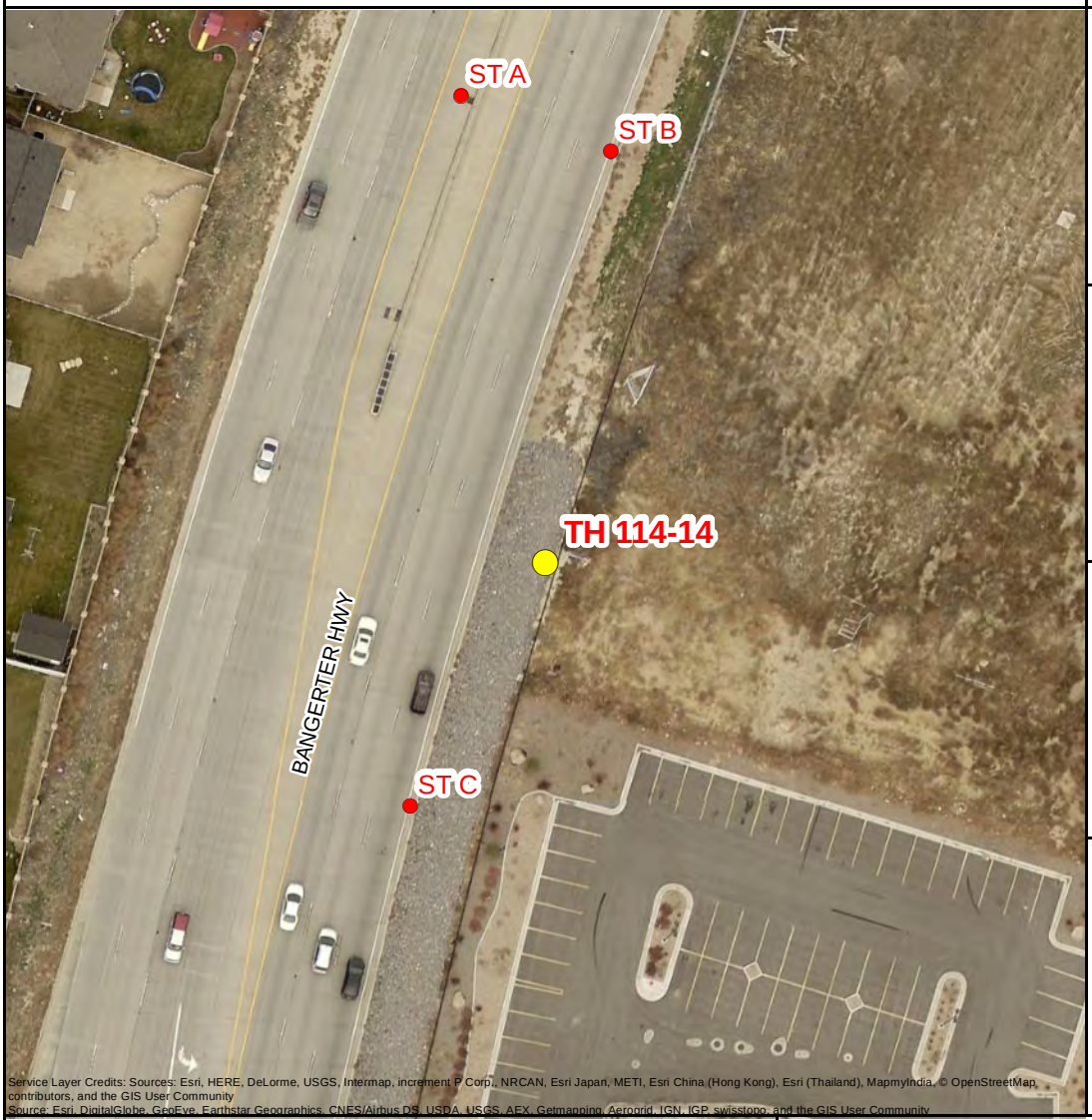
Utility Type:	Fiber	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	MBI, ATT, Zayo, First Digital	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Rock	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	3.85	**Top Ref. Level:**	8.45	**Hand Meas. Top:**	3.85
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4657.475	**Mkr. Ref. Level:**	4.60	**Ref. Elevation:**	4661.325
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 16.5

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	156.00
B	Catch Basin	139.00
C	Catch Basin	97.50

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-15	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/10/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

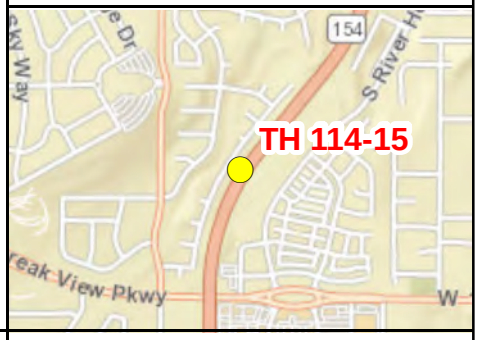
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

Utility Type:	Fiber	**Utility Size:**	3 Inches	**Utility Material:**	PVC
Utility Company:	UDOT/Syringa	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	2.37	**Top Ref. Level:**	6.59	**Hand Meas. Top:**	2.40
Depth to Bottom:	2.62	**Bot. Ref. Level:**	6.84	**Hand Meas. Bot:**	N/A
Top Elevation:	4665.354	**Mkr. Ref. Level:**	4.22	**Ref. Elevation:**	4667.724
Bottom Elevation:	4665.104	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 5.2

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	53.50
B	Catch Basin	317.70
C	Catch Basin	295.00

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH 114-16	**Completed By:**	Jeremy Tangren
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	8/16/2016	**HE Project #:**	PG-858-1604
Project City:	West Jordan	**Client Project #:**	
Project County:	Salt Lake	**Sheet:**	

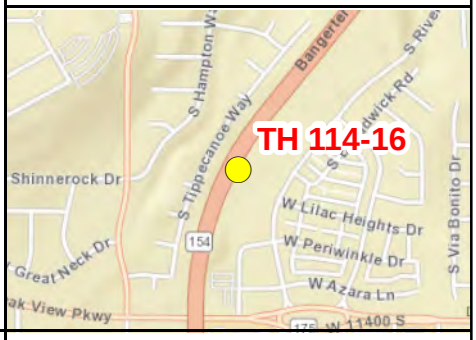
2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062
Phone: (801) 763-5100 Fax: (801) 763-5101

Test Hole Data

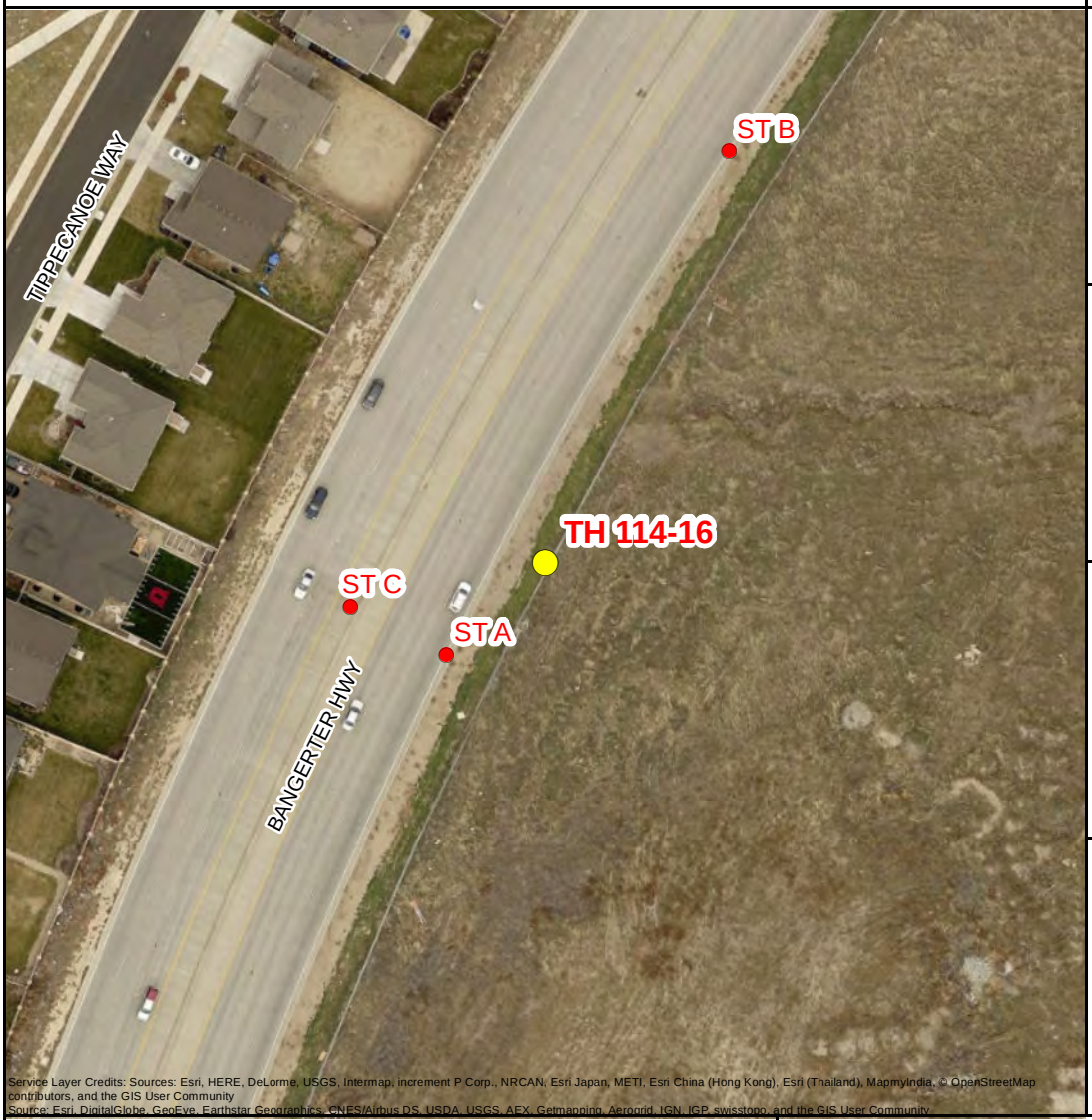
Utility Type:	Fiber	**Utility Size:**	Duct	**Utility Material:**	Poly
Utility Company:	MBI, ATT, Zayo, First Digital	**English/Metric:**	English	**Soil Conditions:**	Rock/Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8 Rebar & Cap
Depth to Top:	5.12	**Top Ref. Level:**	12.15	**Hand Meas. Top:**	5.15
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	4654.949	**Mkr. Ref. Level:**	7.03	**Ref. Elevation:**	4660.069
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 19.0

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN



TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Catch Basin	68.40
B	Catch Basin	227.00
C	Catch Basin	96.00

General Notes About This Test Hole

Offset facing North

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH-1	**Completed By:**	Jordan Utley
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	2/2/2016	**HE Project #:**	PG-095-1511
Project City:	West Valley City	**Client Project #:**	SR-299 (210)
Project County:	Salt Lake	**Sheet:**	

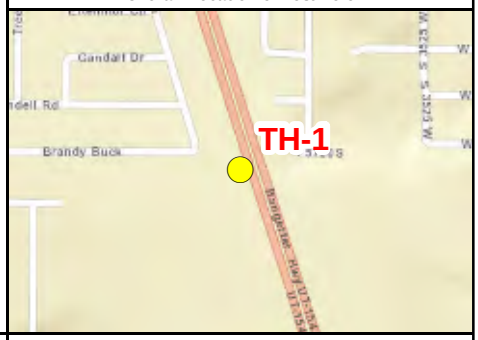
1349 Galleria Drive, Suite 110
Henderson, NV 89014
Phone: 702-966-4063

Test Hole Data

Utility Type:	Water	**Utility Size:**	N/A	**Utility Material:**	N/A
Utility Company:	JVWA	**English/Metric:**	English	**Soil Conditions:**	Rock Gravel Dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Lacth
Depth to Top:	N/A	**Top Ref. Level:**	N/A	**Hand Meas. Top:**	N/A
Depth to Bottom:	N/A	**Bot. Ref. Level:**	N/A	**Hand Meas. Bot:**	N/A
Top Elevation:	N/A	**Mkr. Ref. Level:**	N/A	**Ref. Elevation:**	4581.401
Bottom Elevation:	N/A	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 41.7

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	48.30
B	Storm Drain Catch Basin	71.00
C	Center Wall	89.70

General Notes About This Test Hole

Offset facing north. Dug on blue stakes 9x5" dryhole (undermnng).

Locator said 17"deep a lot of gravel and rock. Kept caving in.

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH-2	**Completed By:**	Jordan Utley
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	2/2/2016	**HE Project #:**	PG-095-1511
Project City:	West Valley City	**Client Project #:**	SR-299 (210)
Project County:	Salt Lake	**Sheet:**	

1349 Galleria Drive, Suite 110
Henderson, NV 89014
Phone: 702-966-4063

Test Hole Data

Utility Type:	Water	**Utility Size:**	66 inches	**Utility Material:**	Concrete lined steel pipe
Utility Company:	JVWA	**English/Metric:**	English	**Soil Conditions:**	Rock and dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Rebar and cap
Depth to Top:	4.78	**Top Ref. Level:**	9.96	**Hand Meas. Top:**	4.80
Depth to Bottom:	10.28	**Bot. Ref. Level:**	15.46	**Hand Meas. Bot:**	N/A
Top Elevation:	4505.755	**Mkr. Ref. Level:**	5.18	**Ref. Elevation:**	4510.535
Bottom Elevation:	4500.255	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 28.5

N

Overall Location of Test Hole

TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	6.80
B	Retro Fire	18.60
C	Center Wall	76.10

General Notes About This Test Hole

Offset facing north

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH-3	**Completed By:**	Jordan Utley
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	2/3/2016	**HE Project #:**	PG-095-1511
Project City:	West Jordan	**Client Project #:**	SR-299 (210)
Project County:	Salt Lake	**Sheet:**	

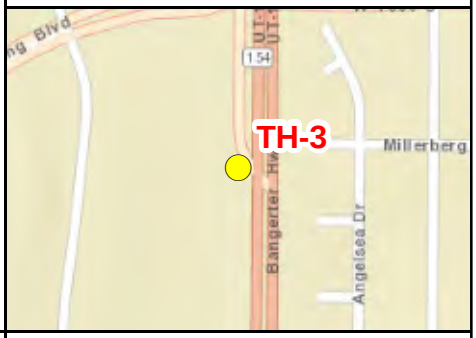
1349 Galleria Drive, Suite 110
Henderson, NV 89014
Phone: 702-966-4063

Test Hole Data

Utility Type:	Water	**Utility Size:**	66 inches	**Utility Material:**	Concrete lined steel pipe
Utility Company:	JVWA	**English/Metric:**	English	**Soil Conditions:**	Dirt and rock
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Rebar and cap
Depth to Top:	6.98	**Top Ref. Level:**	12.08	**Hand Meas. Top:**	6.95
Depth to Bottom:	12.48	**Bot. Ref. Level:**	17.58	**Hand Meas. Bot:**	N/A
Top Elevation:	4510.619	**Mkr. Ref. Level:**	5.10	**Ref. Elevation:**	4517.599
Bottom Elevation:	4505.119	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 40.8

N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	27.60
B	Storm Drain Catch Basin	32.10
C	Street Light Pole	66.80

General Notes About This Test Hole

Offset facing north

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH-4	**Completed By:**	Jordan Utley
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	2/2/2016	**HE Project #:**	PG-095-1511
Project City:	West Jordan	**Client Project #:**	SR-299 (210)
Project County:	Salt Lake	**Sheet:**	

1349 Galleria Drive, Suite 110
Henderson, NV 89014
Phone: 702-966-4063

Test Hole Data

Utility Type:	Water	**Utility Size:**	78 inches ~~66 inches~~	**Utility Material:**	Concrete lined steel pipe
Utility Company:	JVWA	**English/Metric:**	English	**Soil Conditions:**	Hard dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Rebar and cap
Depth to Top:	~~8.59~~	**Top Ref. Level:**	13.04	**Hand Meas. Top:**	8.6
Depth to Bottom:	15.09 ~~14.09~~	**Bot. Ref. Level:**	19.54 ~~18.54~~	**Hand Meas. Bot:**	N/A
Top Elevation:	~~4509.075~~	**Mkr. Ref. Level:**	4.45	**Ref. Elevation:**	4517.665
Bottom Elevation:	4502.575 ~~4503.575~~	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	LT 41.5

N

Overall Location of Test Hole

TEST HOLE LOCATION PLAN

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

TEST HOLE PICTURES

Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Retaining Wall	25.20
B	Street Light	79.10
C	Valve Vault	48.80

General Notes About This Test Hole

Offset facing north

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH-5	**Completed By:**	Garrett Todd
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	2/8/2016	**HE Project #:**	PG-095-1511
Project City:	West Jordan	**Client Project #:**	SR-299 (210)
Project County:	Salt Lake	**Sheet:**	

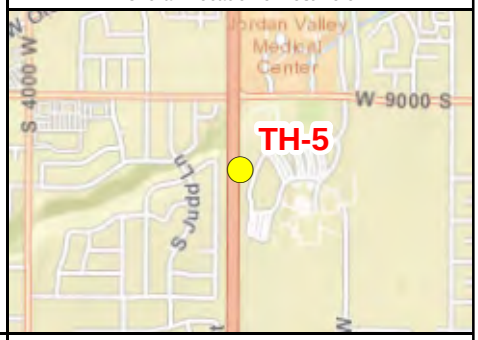
1349 Galleria Drive, Suite 110
Henderson, NV 89014
Phone: 702-966-4063

Test Hole Data

Utility Type:	Water	**Utility Size:**	66 inches	**Utility Material:**	Concrete lined steel pipe
Utility Company:	JVWA	**English/Metric:**	English	**Soil Conditions:**	Dirt and rock
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	5/8" rebar and cap
Depth to Top:	4.26	**Top Ref. Level:**	9.58	**Hand Meas. Top:**	4.20
Depth to Bottom:	9.76	**Bot. Ref. Level:**	15.08	**Hand Meas. Bot:**	N/A
Top Elevation:	4601.804	**Mkr. Ref. Level:**	5.32	**Ref. Elevation:**	4606.064
Bottom Elevation:	4596.304	**Mkr. Offset From:**	Fence	**Marker Offset (ft):**	RT 8.70

N

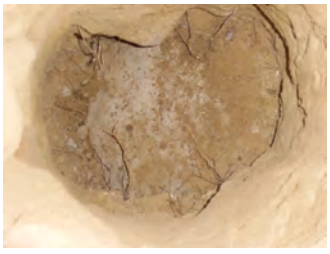
Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES

Picture #1



Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Vault	102.00
B	Water Meter	162.50
C	Street Light Pole	209.30

General Notes About This Test Hole

Offset facing north

Test Hole Summary Sheet

HORROCKS ENGINEERS

TH #:	TH-6	**Completed By:**	Jordan Utley
Utility ID #:		**QA/QC By:**	Shawn Conlin
Date:	2/3/2016	**HE Project #:**	PG-095-1511
Project City:	West Jordan	**Client Project #:**	SR-299 (210)
Project County:	Salt Lake	**Sheet:**	

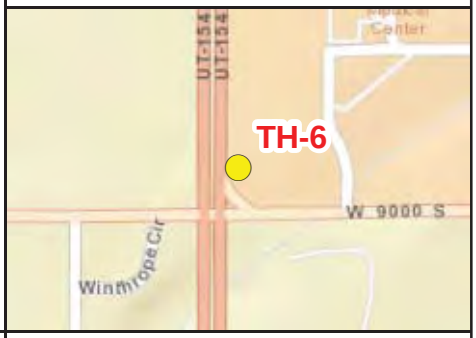
1349 Galleria Drive, Suite 110
Henderson, NV 89014
Phone: 702-966-4063

Test Hole Data

Utility Type:	Water	**Utility Size:**	78 inches ~~66 inches~~	**Utility Material:**	Concrete lined steel pipe
Utility Company:	JVWA	**English/Metric:**	English	**Soil Conditions:**	Rock and dirt
Surface Type:	Natural	**Thickness:**	N/A	**Marker Type:**	Rebar and cap
Depth to Top:	~~5.19~~	**Top Ref. Level:**	10.48	**Hand Meas. Top:**	5.23
Depth to Bottom:	11.69 ~~10.69~~	**Bot. Ref. Level:**	16.98 ~~15.98~~	**Hand Meas. Bot:**	N/A
Top Elevation:	~~4591.016~~	**Mkr. Ref. Level:**	5.29	**Ref. Elevation:**	4596.206
Bottom Elevation:	4584.516 ~~4585.516~~	**Mkr. Offset From:**	Edge of Oil	**Marker Offset (ft):**	RT 22.9

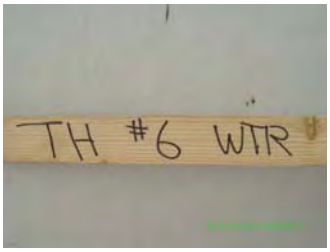
N

Overall Location of Test Hole



TEST HOLE LOCATION PLAN

TEST HOLE PICTURES



Picture #1

Picture #2

Picture #3

Picture #4

Swing Ties - 3 per Test Hole

Swing Tie	Structure Pulled From	Distance (ft)
A	Storm Drain Manhole	57.50
B	Vavle Vault	58.40
C	Street Light Pole	57.40

General Notes About This Test Hole

Offset facing north

REQUEST FOR PROPOSALS

UTAH DEPARTMENT OF TRANSPORTATION

4 Interchanges on Bangerter HWY (SR-154)

Project No. S-0154(12)11

Salt Lake County

REFERENCE DOCUMENTS

(RD)

Addendum ~~1~~ 2 - ~~September~~ October ~~29~~6, 2016

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b) Bangerter Hwy (SR-154) at 4700 & 5400 South (SR-173) Flex Lanes CFI
c) 5400 South (SR-173) from Bangerter Hwy (SR-154) to 4800 West
d) 7000 South & WVH Pedestrian Bridge
e) Original Bangerter
    1. SR-154 WVH 4100 South to 5400 South
f) USBOR Aqueduct As-Builts

10. ~~West Jordan Betterment~~Moved to Part 6

11. Draft Aesthetics Plan

a) Bangerter Highway Aesthetics Treatment
b) Aesthetics Land Form

12. Right-of-Way Plans

13. Utility General Estimated Costs

a) Estimated Costs for AT&T
b) Estimated Costs for First Digital and Questar
c) Estimated Costs for Syringa

14. Miscellaneous Agreements

a) MOA UDOT and SJ Marketplace
b) SLCC RIRO Letter
c) UTA-UDOT Partnering Agreement June 2015

15. Utility Structure Sheets

a) Water Vaults
b) Storm Drain
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16. Traffic Models

a) 5400 South
b) 7000 South
c) 9000 South
d) 11400 South

17. Splice Details

a) First Digital Splicing
b) AT&T Box Splice Maps
c) AT&T Sheets 64-103