



## **ADDENDUM #1**

### **NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1**

**BID #13/14-007 – PWP# WA-2014-011**

**BIDS DUE NO LATER THAN: 1:45 PM ON NOVEMBER 20, 2013**

**PUBLIC BID OPENING: 2:00 PM ON NOVEMBER 20, 2013**

This addendum is to notify all potential proposers of clarifications made to the Bid documents as stated below.

#### **Bid Item Schedule**

A revised Bid Item Schedule is included as an attachment to this addendum and should replace the Bid Item Schedule provided in the original Bid Book on Pages 4-10. Specific changes within this document include:

1. Bid Item 55 - Construct TMWA Water Main (16" DIP): Bid Item quantity changed from 131 LF to 149 LF.
2. Bid Item 63 - NVE Electrical Excavate and Backfill Electrical Trench for 1-4" Conduit: Bid Item quantity changed from 1,255 LF to 1,355 LF.
3. Bid Item 66 - NVE Electrical Install 1-4" Conduit: Bid Item quantity changed from 1,255 LF to 1,355 LF.
4. Bid Item 69 - NVE Electrical Dig Pole Hole 7' Deep and Backfill: Bid Item changed from 2 EA to 3 EA.
5. Bid Item 71 - NVE Electrical Install Riser with 1-4" Conduit: Bid Item quantity changed from 1 EA to 2 EA.

#### **General Conditions Section 28 (Page 27) – Insurance (Minimum Limits)**

The following language shall be added:

Contractors Pollution Liability Insurance. Pollution coverage is required if any exposure exists from Contractor's Work performed under this Agreement. If required, coverage shall be \$1,000,000 per occurrence and \$2,000,000 aggregate for any exposure to "hazardous materials" as this term is defined in applicable law, including but not limited to waste, asbestos, fungi, bacterial or mold.

#### **Bid Item Clarifications**

The following are changes made to the Bid Item Clarifications:

1. Bid Item 39 – Portland Cement Concrete Pavement - Greg St (10.5" PCC on 6" Aggregate Base)
  - a. To the 4<sup>th</sup> paragraph was added: sawcutting, expansion felt, dowel bars and tie bars
  - b. From the 5<sup>th</sup> paragraph was deleted: including tie bars and dowel bars.
2. Bid Item 54, 55, 56, 57 – Construct TMWA Water Main (12" DIP), Construct TMWA Water Main (16" DIP), Relocate Existing Meters and Construct Small TMWA Water Lines (1.25" & 2" HDPE), Construct TMWA Sleeves and Couplings (12" DIP)
  - a. 2<sup>nd</sup> paragraph was changed to be: The amount bid for these items shall include all associated pipe, excavation, pipe bedding, pipe wrapping, backfill, flushing, testing, disinfecting, temporary flush valve assemblies, piping, fittings and elbows, gate valves,

flange adapters, couplings, joint restraints, thrust blocks, relocation of water meters, meter pits, lids and insulation, air/vacuum valves, tapping devices, tapping saddles, corp stops, valves and valve boxes or valve can riser with ductile iron lid, and ductile iron sleeve coupling.

- b. To the 4<sup>th</sup> paragraph was added: Sleeves and couplings shall be measured by each location.

### **Specifications**

1. Section 314 CONCRETE ROADWAY PAVEMENTS – Section 314 was added in its entirety and is attached to this addendum.

### **TMWA Special Conditions**

Special Conditions specific to work on TMWA equipment/facilities are included within this addendum and shall be incorporated within the Special Conditions of the bid document.

### **Drawings**

Plan sheets associated with TMWA equipment and facilities have been replaced by those attached to this addendum. Specific modifications to those sheets include:

1. Sheet C2: TMWA work order number added to General Comments. Note regarding discrepancies between plans and actual field conditions added.
2. Sheet P1: The word “after” has been replaced with “prior” in the notes for utility conflict items 4, 5, and 8.
3. Sheet P2: Thrust blocks added to all elbows on new 12” water line. All joint on 12” water line to be restrained. Temporary flush valve added on west end of 12” water line and on 16” waterline relocation. Restrained flange adapter added to eastern terminus of 12” water line. Combination air valve assembly added to 16” waterline relocation. Note added regarding the disposal of AC (Transite) pipe added. The length of the 16” DI water line on either side of the relocation over the NTD RCB has been increased to coincide with full pipe joint lengths.
4. Sheet P3: Plan and Profile on the far left side of the page – note revised to reflect removal and relocation of 8” fire stand and back flow assemblies.

Plan and Profile second from the left side of the sheet – Size of northernmost relocated service lateral changed to 1.25” on plan view. New 8” gate valve changed to 8” tapping tee with thrust block. All joints on 8” DI relocation to be restrained MJ with thrust blocks.

Plan and Profile on the right side of the sheet – 12” gate valve (MJ) added to waterline on the north side of Larkin Circle. Size of removal of existing waterline changed from 8” to 12”. Flush valve assembly added at new terminus of existing waterline in Madison Note added regarding the disposal of AC (Transite) pipe added.

5. Sheet P4: End of Phase 1 RCB and future phase of RCB added. Note added regarding the disposal of AC (Transite) pipe added.

6. Sheet D2: Notes added referencing restraint lengths added to restrained joint details.
7. Sheet D3: TMWA Drawing 10F-2 revised to indicate a MJ x FL tee for fire hydrant. Couplings on Detail for "Existing AC Pipe to DIP Section Replacement" revised to Hymax 2000 Coupling.
8. Sheet D4: Vacuum Air Valve Detail replaced.

Please note and adjust your bid according to the revisions, additions, deletions, clarifications or modifications as presented on this Addendum #1, which are made a part of this bid. NOTE: To avoid disqualification, this Addendum 1 (and any other addenda) must be signed by an authorized representative of the bidding firm in the space provided and must be submitted with your firm's sealed proposal (not later than 1:45 pm on November 20, 2013). Failure to return this addendum, duly signed, may be cause for rejection of the bid. ALL ADDENDA SHOULD BE SIGNED AND PLACED IN SEQUENTIAL ORDER AND ATTACHED TO THE FRONT OF THE BID PACKAGE, COMPLETE WITH ALL REQUIRED DOCUMENTS.

\_\_\_\_\_  
CONTRACTOR BUSINESS NAME

X \_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Printed Name of Person Signing

\_\_\_\_\_  
Dan Marran, C.P.M., CPPO  
Contracts and Risk Manager

November 8, 2013

**CITY OF SPARKS**  
**BID ITEM SCHEDULE – REVISED BY ADDENDUM #1**

**BID #** 13/14-007

**BID TITLE:** North Truckee Drain Realignment Project – Phase 1

**PRICES** must be valid for 90 calendar days after the bid opening.

**COMPLETION** of this project is expected **PURSUANT TO CONTRACT DOCUMENTS.**

**BIDDER** acknowledges receipt of \_\_\_\_\_ Addenda.

\_\_\_\_\_  
Bidder Name (signature)

Item No.	Quantity	Unit	Description	Unit Price	Total Price
<b>BASE BID ITEMS</b>					
1	1	LS	Mobilization / Demobilization / Insurance / Bonds / Surveying & Staking	\$ _____ /LS	\$ _____
2	1	LS	Clear and Grubbing	\$ _____ /LS	\$ _____
3	1	LS	Traffic Control	\$ _____ /LS	\$ _____
4	1	LS	Dewatering	\$ _____ /LS	\$ _____
5	19,556	SY	Removal of Plantmix Bituminous Surface	\$ _____ /SY	\$ _____
6	1	LS	Removal of Portland Cement Concrete (PCC) Items	\$ _____ /LS	\$ _____
7	1,498	LF	Removal of Small Diameter Pipe (<13")	\$ _____ /LF	\$ _____
8	906	LF	Removal of Large Diameter Pipe (>13")	\$ _____ /LF	\$ _____
9	10	EA	Removal of Small Concrete Structures (Manholes or Drop Inlets)	\$ _____ /EA	\$ _____
10	80	LF	Removal of Private Asbestos (Transite) Water Main (6")	\$ _____ /LF	\$ _____

Item No.	Quantity	Unit	Description	Unit Price	Total Price
11	160	LF	Remove Small Diameter Water Line (1.25 & 2" PVC)	\$ _____ /LF	\$ _____
12	320	LF	Remove Water Lines (6" & 8" PVC)	\$ _____ /LF	\$ _____
13	4	EA	Remove and Salvage Fire Hydrant	\$ _____ /EA	\$ _____
14	1	LS	Construct Sanitary Sewer Lift Station	\$ _____ /LS	\$ _____
15	10	EA	Construct Precast 48" Type 1-A Manhole	\$ _____ /EA	\$ _____
16	2	EA	Cast in Place or Precast Reinforced Concrete Manhole and Riser for RCB (2x48")	\$ _____ /EA	\$ _____
17	14	EA	Lockable Hinged 24" Manhole Covers	\$ _____ /EA	\$ _____
18	8	EA	Construct Type 3R Drop Inlet	\$ _____ /EA	\$ _____
19	1,551	LF	Construct Small Diameter (<13") Gravity & Force Mains for Sanitary Sewer & Storm Drains	\$ _____ /LF	\$ _____
20	775	LF	Construct Large Diameter (>13") Gravity Mains for Storm Drains	\$ _____ /LF	\$ _____
21	106	LF	Construct 18" RCP Storm Drain with Concrete Pipe Anchors	\$ _____ /LF	\$ _____
22	708	LF	Construct Small Diameter Water Lines (1.25" & 2" HDPE)	\$ _____ /LF	\$ _____
23	429	LF	Construct 8" DIP Water Line	\$ _____ /LF	\$ _____
24	1	EA	Construct Small Backflow Preventer (1.25")	\$ _____ /EA	\$ _____
25	1	EA	Construct Large Backflow Preventer (8")	\$ _____ /EA	\$ _____
26	3	EA	Install Fire Hydrant	\$ _____ /EA	\$ _____

Item No.	Quantity	Unit	Description	Unit Price	Total Price
27	484	LF	Remove and Replace Permanent Concrete Barrier Rail	\$ _____ /LF	\$ _____
28	114	LF	Remove and Replace Chain Link Fence	\$ _____ /LF	\$ _____
29			NOT USED		
30	1,403	LF	Construct and Install Reinforced Concrete Box (2-14'x10')	\$ _____ /LF	\$ _____
31	206	LF	Construct and Install Reinforced Concrete Box (2-14'x10') - Greg Street	\$ _____ /LF	\$ _____
32	3	EA	Cast In Place Access Vaults for 2-14'x10' RCB	\$ _____ /EA	\$ _____
33	70	LF	Type A PCC Curb	\$ _____ /LF	\$ _____
34	46	LF	24" Type 1 PCC Curb and Gutter	\$ _____ /LF	\$ _____
35	111	LF	Type 3 PCC Curb and Gutter	\$ _____ /LF	\$ _____
36	1,237	SF	3' & 6' Reinforced PCC Valley Gutter and Driveway	\$ _____ /SF	\$ _____
37	7,280	SY	Plantmix Bituminous Pavement – Larkin Circle (5" AC on 8" Aggregate Base)	\$ _____ /SY	\$ _____
38	8,220	SY	Plantmix Bituminous Pavement – Misc (3" AC on 6" Aggregate Base)	\$ _____ /SY	\$ _____
39	8,007	SY	Portland Cement Concrete Pavement - Greg St (10.5" PCC on 6" Aggregate Base)	\$ _____ /SY	\$ _____
40	1,650	LF	Place 4" Dashed White Pavement Markings (Type II Paint)	\$ _____ /LF	\$ _____
41	3,001	LF	Place 4" Solid White Pavement Markings (Type II Paint)	\$ _____ /LF	\$ _____
42	2,478	LF	Place 4" Double Solid Yellow Pavement Markings (Type II Paint)	\$ _____ /LF	\$ _____

Item No.	Quantity	Unit	Description	Unit Price	Total Price
43	100	LF	Place 8" Solid White Pavement Markings (Type II Paint)	\$ _____ /LF	\$ _____
44	313	LF	Place Red Curb Markings (Type II Paint)	\$ _____ /LF	\$ _____
45	90	LF	Place 24" Solid White Stop Bar Stripe (Preformed Thermoplastic)	\$ _____ /LF	\$ _____
46	5	EA	Install Fire Hydrant Marker (Blue Reflector)	\$ _____ /EA	\$ _____
47	1	EA	Place 8' High White Directional Arrow (Preformed Thermoplastic)	\$ _____ /EA	\$ _____
48	1	LS	Landscaping and Irrigation Repair/Restoration	\$ _____ /LS	\$ _____
49	2	EA	Remove & Replace Concrete Masonry Unit (CMU) Trash Enclosure (CONTINGENT ITEM)	\$ _____ /EA	\$ _____
50	1,000	CY	Overexcavate Unsuitable Material and Backfill with Class C Fill (CONTINGENT ITEM)	\$ _____ /CY	\$ _____
51	1,000	CY	Overexcavate Unsuitable Material & Backfill with Structural Fill (CONTINGENT ITEM)	\$ _____ /CY	\$ _____
52	FA	FA	Force Account – General (CONTINGENT ITEM)	\$ <u>500,000</u>	\$ <u>500,000</u>
53	FA	FA	Force Account – Hazardous Materials (Soils) (CONTINGENT ITEM)	\$ <u>50,000</u>	\$ <u>50,000</u>
<b>Total Base Bid Price</b> _____ <b>dollars</b> <b>(written total base bid price including items 1 through 53)</b>					\$ _____

Item No.	Quantity	Unit	Description	Unit Price	Total Price
<b>ALTERNATE A BID ITEMS</b>					
54	458	LF	Construct TMWA Water Main (12" DIP)	\$ _____ /LF	\$ _____
55	<u>149</u>	LF	Construct TMWA Water Main (16" DIP)	\$ _____ /LF	\$ _____
56	146	LF	Relocate Existing Meters and Construct Small TMWA Water Lines (1.25" & 2" HDPE)	\$ _____ /LF	\$ _____
57	6	EA	Construct TMWA Sleeves and Couplings (12" DIP)	\$ _____ /EA	\$ _____
58	1	EA	Install TMWA 4" Flush Valve Assembly on 12" Transite Water Main	\$ _____ /EA	\$ _____
59	216	LF	Remove TMWA Asbestos Concrete (Transite) Water Main (8"-16")	\$ _____ /LF	\$ _____
<b>Total Alternate A Bid Price _____ dollars</b> <b>(written total Alternate A bid price items 54 through 59)</b>					\$ _____

<b>ALTERNATE B BID ITEMS</b>					
60	1	LS	NVE Electrical Mobilization, Bonds and Insurance	\$ _____ /LS	\$ _____
61	1	LS	NVE Electrical Demobilization and Cleanup	\$ _____ /LS	\$ _____
62	1	LS	NVE Electrical Traffic Control	\$ _____ /LS	\$ _____
63	<u>1,355</u>	LF	NVE Electrical Excavate and Backfill Electrical Trench for 1-4" Conduit	\$ _____ /LF	\$ _____



Item No.	Quantity	Unit	Description	Unit Price	Total Price
64	20	LF	NVE Electrical Excavate and Backfill Electrical Trench for 1-3" Conduit	\$ _____ /LF	\$ _____
65	2,550	SF	NVE Electrical Remove and Replace AC	\$ _____ /SF	\$ _____
66	<u>1,355</u>	LF	NVE Electrical Install 1-4" Condit	\$ _____ /LF	\$ _____
67	20	LF	NVE Electrical Install 1-3" Condit	\$ _____ /LF	\$ _____
68	1	EA	NVE Electrical Install Concrete Vault with Lid	\$ _____ /EA	\$ _____
69	<u>3</u>	EA	NVE Electrical Dig Pole Hole 7' Deep and Backfill	\$ _____ /EA	\$ _____
70	1	EA	NVE Electrical Dig Anchor Hole 6' Deep and Backfill	\$ _____ /EA	\$ _____
71	<u>2</u>	EA	NVE Electrical Install Riser with 1-4" Conduit	\$ _____ /EA	\$ _____
72	1	EA	NVE Electrical Install Riser with 1-3" Conduit	\$ _____ /EA	\$ _____
<b>Total Alternate B Bid Price _____ dollars</b> <b>(written total Alternate B bid price items 60 through 72)</b>					\$ _____

<b>ALTERNATE C BID ITEMS</b>					
73	100	LF	NVE Gas Support Relocation of Gas Main (8" Steel)	\$ _____ /LF	\$ _____
74	460	LF	NVE Gas Construct and Install Gas Main (4" PE)	\$ _____ /LF	\$ _____
75	405	LF	NVE Gas Construct and Install Gas Service (2" PE)	\$ _____ /LF	\$ _____

Item No.	Quantity	Unit	Description	Unit Price	Total Price
76	3	EA	NVE Gas Additional Excavation Support	\$ _____ /EA	\$ _____
<b>Total Alternate C Bid Price</b> _____ <b>dollars</b> <b>(written total Alternate C bid price items 73 through 76)</b>					\$ _____

<b>Total Bid Price</b> _____ <b>dollars</b> <b>(written total bid price of all items)</b>	\$ _____
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The quantity of the above contingent item(s) of work, as set forth on the quote schedules represent no actual estimate, are nominal only and may be greatly increased or decreased or reduced to zero. The increase or reduction of these quantity as compared with that set forth on the informal quote schedule shall not constitute a basis for claim by the Contractor for extra payment or damages.

City of Sparks reserves the right and privilege to accept or reject any or all quotes or parts thereof, based solely on the judgment of representatives of the City of Sparks.

**PLEASE NOTE:** Bid ranking, evaluation and award recommendation will be made using the “Total Base Bid Price.” Determination of use of any or all of the bid alternates in the final contract to be awarded will only be determined after the apparent low bidder is identified using the “Total Base Bid Price.”

## **314.00 CONCRETE ROADWAY PAVEMENTS**

**Modify the following section:**

### **314.03.09 c. – Weakened Plane Joints:**

Weakened plane joints shall be formed by cutting a groove in the pavement with a power driven saw at the locations shown on the Plans. The grooves shall be cut to a minimum depth of 0.17 foot and the width shall be the minimum width possible with the type of saw being used, but in no case shall the width exceed 0.02 foot. The sawed joint shall go through the pavement edge at full depth of cut. Every fourth planned transverse weakened plane joint in the initial lane of concrete and also the first joint immediately after the transverse contact joint shall be sawed as soon as possible (as defined as: as soon as personnel and saw cutting equipment can be placed on the pavement without causing damage, but no later than 24 hours after the concrete has been placed, unless otherwise permitted by the Engineer, the exact time to be determined by the Engineer). Every second planned transverse weakened plane joint shall be sawed within 48 hours after placing the concrete, unless otherwise permitted by the Engineer, the exact time to be determined by the Engineer. The remaining longitudinal and transverse weakened plane joints may be sawed at such time, after 24 hours, as the Contractor may elect, except they shall be completed before placing concrete in succeeding adjacent lanes and before permitting the Contractor's traffic or public traffic to use the pavement.

In succeeding lanes of the concrete pavement, transverse joints opposite those which have opened in the initial lane shall be sawed as soon as possible (as defined above) but no later than 24 hours after the concrete has been placed, the exact time to be determined by the Engineer, but in all cases not more than three consecutive planned transverse weakened plane joints shall be omitted. The remaining longitudinal and transverse weakened plane joints may be sawed at such time after 24 hours as the Contractor may elect, except they shall be completed before placing concrete in the succeeding adjacent lane and before permitting the Contractor's traffic or public traffic to use the pavement.

No sawing shall be done where volunteer transverse cracks exist. If a volunteer transverse crack falls within 5 feet of the location of a proposed sawed joint, the sawed joint shall be omitted. Joints sawed in violation of the provisions in this paragraph will not be paid for.

When the pavement is cured by means of a curing seal, all portions of the seal which have been disturbed by sawing operations shall be restored by spraying the areas with additional curing seal.

The Contractor shall keep a standby power saw on the project at all times when concrete paving operations are under way.

When indicated on the Plans, sawed transverse weakened plane

## **TMWA Specific General Conditions**

### **Portions of: Article 4 Physical Conditions, Lands, Reference Points**

#### **4.02 Site Investigation and Conditions Affecting the Work**

- A. By submitting a Bid Proposal and executing the Agreement, Contractor agrees it has taken all steps reasonably necessary to ascertain the nature and location of the Work, and it has fully investigated and satisfied itself as to the general and local conditions which can affect the Work or its cost, including but not limited to:
1. Conditions bearing upon transportation, disposal, handling, and storage of materials.
  2. Availability of labor, water, electric power, and roads.
  3. Uncertainties of weather, river stages, groundwater quantity and quality, or similar physical conditions at the site.
  4. Conformation and conditions of the ground.
  5. Character of equipment and facilities needed preliminary to and during work performance.
- B. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including from the Drawings and Specifications made a part of the Contract Documents. Contractor acknowledges that the primary geologic formation underlying the surface of the Truckee Meadows is the Tahoe Outwash consisting primarily of cohesionless soils, cobbles and boulders typically classified as OSHA Type C soils. As such, the Contractor should anticipate significant sloughing of trench walls and acknowledges it has included in the Contract Sum all costs to complete the Work in this environment, including without limitation possibilities of substantial shoring requirements, slower production rates, increased bedding and backfill quantities, increased trench width and increased pavement patching requirements inherent to trenching and excavating under these soil conditions. Any failure of the Contractor to take actions described and acknowledged in this clause will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to TMWA.
- C. TMWA assumes no responsibility for any conclusions, assumptions or interpretations made by the Contractor based on the information made available by TMWA.
- D. TMWA assumes no responsibility for any understanding reached or representations made concerning conditions, which can affect the work by any of its officers or agents before the execution of the Agreement, unless the understanding or representation is expressly stated in the Contract Documents.
- E. Reports or other information associated with geotechnical investigations or other subsurface exploratory work made available to the Contractor by TMWA are not a part of the Contract Documents and are made available for information only. Contractor acknowledges the information provided by TMWA is provided for informational purposes only, without representation or warranty of any kind with respect to its accuracy or completeness, and is not intended to and shall not be relied upon as a substitute for, or a supplement to, the independent investigation by the Contractor of site conditions. The Contractor is cautioned that soils information from test pit logs may not represent homogenous subsurface conditions throughout the site of the work. Refer to the Supplementary Conditions for additional information on any geotechnical reports that may have been prepared for the Project.

#### **4.03 Differing Conditions**

- A. For responsibility relating to locating and repairing existing underground facilities or utilities, see Section 6.04. Submittal of a Bid Proposal is prima facie evidence that the Contractor has sufficient specific experience of a similar nature to the Project to recognize conditions inherent to, or normally encountered in, the performance of such work, including providing sufficient costs in its Bid Proposal price to account for those conditions in order to complete the work as intended. For installation of underground facilities, such inherent conditions may include, but are not limited to:
1. Existing underground utility lines.
  2. Groundwater depth, quality, and seasonal variation of these items.
  3. Where underground facilities are installed parallel to existing facilities, normally encountered conditions may include excavation through unstable select granular or rock backfill, accompanied by resultant trench sloughing, increased trench width and additional paving.
  4. The presence of rock and boulders in the vicinity of the Truckee River. Refer to Article 4.06 "Rock Excavation" of the General Conditions for additional details.
- B. During the progress of the Work, if unknown subsurface or latent physical conditions are encountered at the site which differ materially from those indicated in the Contract Documents or inherent in the Work described in the Contract Documents are encountered at the site, or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered or generally recognized as inherent in the Work provided for in the Contract Documents, are encountered at the site, Contractor shall immediately notify the Project Representative in writing of the specific differing conditions before the conditions are disturbed and before the affected portion of the Work is performed. Following receipt of written notification, TMWA will investigate the site conditions promptly after receiving the notice. Contractor waives and shall have no claim for additional compensation for standby time while such investigation is conducted. If TMWA determines in its sole discretion that the conditions materially differ from those identified in the Contract Documents, those inherent in the Work, or those ordinarily encountered, and such differences cause an increase or decrease in the Contractor's cost or the time required for the performance of any part of the Work under the Contract Documents, an adjustment (excluding loss of anticipated profits) shall be made by TMWA and the Contract Documents modified in writing accordingly. No request for contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice. No request for an adjustment will be allowed after final payment under the Contract Documents.

No Contractor claims of "lost production", or "delay" will be considered, unless Contractor and Project Representative agree, at the job site at the time of the investigation by Project Representative, upon the number, type and hours of labor and equipment actually delayed by the unforeseen or unknown condition. Said agreement must be documented by Project Representative's and Contractor's signature on Contractor's Daily Extra Work Report as required by Article 7.03 "Extra Work – Request for Approval" and Article 7.04 "Extra Work – Payment for Time and Material Work" of the General Conditions.

#### **4.05 Hazardous Environmental Conditions**

- A. In the event the Contractor encounters on the site material reasonably believed to be asbestos, petroleum products, or any other material subject to regulation by laws or regulations (hereinafter "Hazardous Materials") which has not been rendered harmless, the Contractor shall immediately
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stop work in the area affected and report the condition to TMWA in writing. The work in the affected area shall not be resumed until the hazardous material is removed or rendered harmless.

- B. The Contractor will not be required to perform any work relating to hazardous materials. In proportion to its negligence, but in no event exceeding liability limitations created pursuant to NRS Chapter 41, TMWA will indemnify and hold harmless the Contractor and its employees, from and against claims, damages, losses, and reasonable expenses, including but not limited to reasonable attorney's fees, directly resulting from TMWA's negligence in discharging or knowingly failing to disclose the presence of Hazardous Materials in the Contractor's work area.
- C. The Contractor shall not knowingly incorporate into the site or into any building, building component or structure, or otherwise leave on site any Hazardous Materials.
  - 1. If the Contractor discovers any such Hazardous Materials either on site or incorporated in the Work, it shall in writing immediately notify TMWA who shall take appropriate action to alleviate the problem.
  - 2. TMWA may require the Contractor to furnish, from time to time, a certification that to the best of the Contractor's knowledge and belief it has not incorporated into the site or building any hazardous materials.
- D. To the fullest extent permitted by law, the Contractor shall indemnify, defend, protect, and hold harmless TMWA, its agents and employees from and against claims, damages, losses, liabilities, and expenses, including but not limited to attorneys' fees, arising out of or resulting from the Contractor, its agents, employees, or anyone for whose acts Contractor may be liable, knowingly or negligently incorporating into the site or the work or leaving on the site any Hazardous Materials. Such indemnity obligation shall not negate, abridge, or reduce any other rights or obligations of indemnity, which would otherwise exist.
- E. A Material Safety Data Sheet (MSDS) must accompany all chemicals to be used on the project site. No chemical shall be off-loaded on the project site until the appropriate MSDS has been delivered to the Project Representative.
- F. It is the Contractor's responsibility to:
  - 1. Dispose of all chemicals and their by-products per State and Federal regulations.
  - 2. Remove all unused chemicals and products from the site at the completion of the Work.
  - 3. Ensure that all containers are labeled in accordance with DOT, NFPA and OSHA standards.
  - 4. Ensure that all potential hazards are appropriately marked or placarded in compliance with OSHA and TMWA standards.
  - 5. Adhere to all posted warning signs.
- G. Contractor may be required to handle, disturb or remove certain water pipes constructed of transite and asbestos containing materials regulated as a potentially hazardous material as part of the Work. Asbestos or transite pipe which has not been cut or damaged or which is not tapped, cut, damaged or removed during performance of the Work, shall not be deemed "Hazardous Materials" for purposes of these General Conditions. If the Contractor is required to cut, remove or tap transite or asbestos pipe as part of the Work, or if the Contractor otherwise damages or cuts transite or asbestos pipe during the Work, Contractor must utilize the services of personnel or a subcontractor that has received specialized OSHA training in the handling and disposal of asbestos to perform any work on such pipe, including cutting, tapping, repairing or removing. TMWA must be provided with chain of custody forms for all transite or asbestos pipe disposed of by Contractor or its subcontractors. Any disturbance, removal, disposal, handling or work activity on transite pipe must be done in strict compliance with applicable laws and regulations governing the safe handling practices for disturbance, removal, handling and disposal of asbestos-containing material, and Contractor shall be solely responsible for all costs and actions necessary to comply

with such laws and regulations. Contractor shall provide the disposal manifest to the TMWA inspector showing all transite pipe material has been disposed of in accordance with all applicable laws and regulations. Contractor shall indemnify and hold TMWA harmless from any claims, injuries, demands or liabilities arising from Contractor's handling, removal, disposal or work on or about transite pipe.

#### **4.06 Rock Excavation**

A. The term "Rock excavation" is defined as:

1. For trench excavation, rock excavation is excavation of all solid rock in place that cannot be removed by power equipment equivalent, or larger, in weight, engine power, and bucket force to a Caterpillar 345C L Hydraulic Excavator equipped as follows.
  - i. Caterpillar 1.8 cubic yard heavy duty rock bucket with 4 teeth.
  - ii. 22'-8" reach boom with a 12'-10" stick and 16,780 lb. counterweight.
2. For mass grading, rock excavation is excavation of all solid rock in place that cannot be removed by power equipment equivalent, or larger, in weight, engine power, vertical shank penetration force, and pry out force to a Caterpillar D8T Track-type Tractor equipped with a single shank, standard depth, ripper tooth.
3. For all excavations, rock excavation is excavation of boulders or detached pieces of rock greater than 54 cubic feet in volume.

The term "rock excavation" does not include or apply to any trenchless installation, including but not limited to, jack and bore installation, auger boring, tunneling, directional drilling, and similar types of construction methods. Due to the obvious presence of rock and boulders in the vicinity of the Truckee River, which Contractor acknowledges, the term "rock excavation" also does not include or apply to, nor will any associated unit adjusting price apply to, excavation and trenching performed within two hundred feet either side of the approximate centerline of the Truckee river channel.

B. If rock is encountered such that Contractor believes rock excavation, as defined above, is required, the Contractor shall notify the Project Representative in writing. If the Project Representative agrees that rock excavation is required, rock excavation will be paid for at the price per cubic yard for rock excavation (trench excavation) and/or rock excavation (mass grading) submitted in the Bid Proposal, as applicable.

1. Payment for any category of rock excavation will be in addition to the lump sum or unit prices for the Work submitted in the Bid Proposal.
2. Payment for rock excavation of boulders or detached pieces of rock greater than 54 cubic feet in volume will be paid for at the price per cubic yard for rock excavation (trench excavation) submitted in the Bid Proposal.
3. The Contractor will not be eligible for any additional payment for rock excavation associated with the Work wherever solid rock can be seen from the surface, or where indicated from geotechnical test pit investigations.

If there are no bid items covering rock excavation of the type encountered, payment for approved rock excavation will be made in accordance with Article 7.03 "Extra Work – Request for Approval" and Article 7.04 "Extra Work – Payment for Time and Material Work" of the General Conditions.

C. Blasting will be permitted when the Contractor and the Project Representative agree that it is more cost effective and/or more practical than other methods of rock excavation.

1. The entire cost associated with rock excavation by blasting shall be paid for in accordance with Article 7.03 “Extra Work – Request for Approval” and Article 7.04 “Extra Work – Payment for Time and Material Work” of the General Conditions. No additional payment for blasting will be made for any category of rock excavation listed in the Bid Proposal, and no adjustment will be made in lump sum or unit prices for the Work submitted in the Bid Proposal.
2. Blasting operations shall be carried out by person’s duly licensed and insured, including but not limited to workers’ compensation, general liability, and business automobile liability with limits no less than those set forth in Article 5.02 “Contractor’s Insurance” of the General Conditions, to work with explosives and shall be in compliance with all applicable laws and ordinances.
3. Blasting will be permitted only when proper precautions are taken for protection of persons, work, and structures.
4. The Contractor shall be strictly liable, and shall defend, protect, indemnify, and hold harmless TMWA for any damage to persons, property, the Work, or structures arising or in connection with blasting activities, even if such damage is caused in whole or in part by its Subcontractor(s).
5. The Contractor shall be responsible for obtaining all permits required for blasting and shall furnish copies of the permits and current copies of the blaster’s license and insurance, including any and all endorsements reflecting valid and collectible insurance coverage is in place to protect the interests of TMWA and Contractor as an additional insured in accordance with Article 5.02 “Contractor’s Insurance” of the General Conditions and any other applicable requirement specified hereunder. The Contractor shall provide this complete evidence of insurance to the Project Representative at least 24 hours prior to commencement of blasting.



# IMPROVEMENT PLANS FOR NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1 TMWA WATER MAIN REPLACEMENTS

RENO

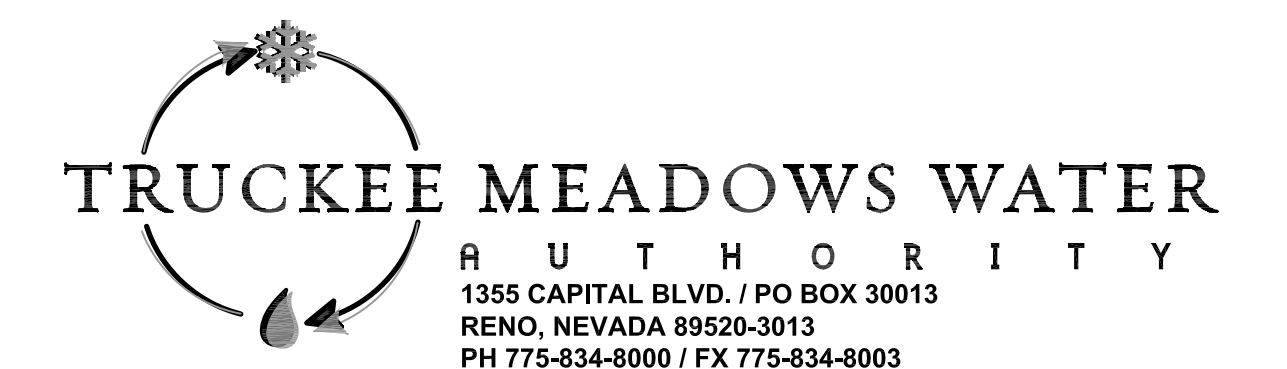
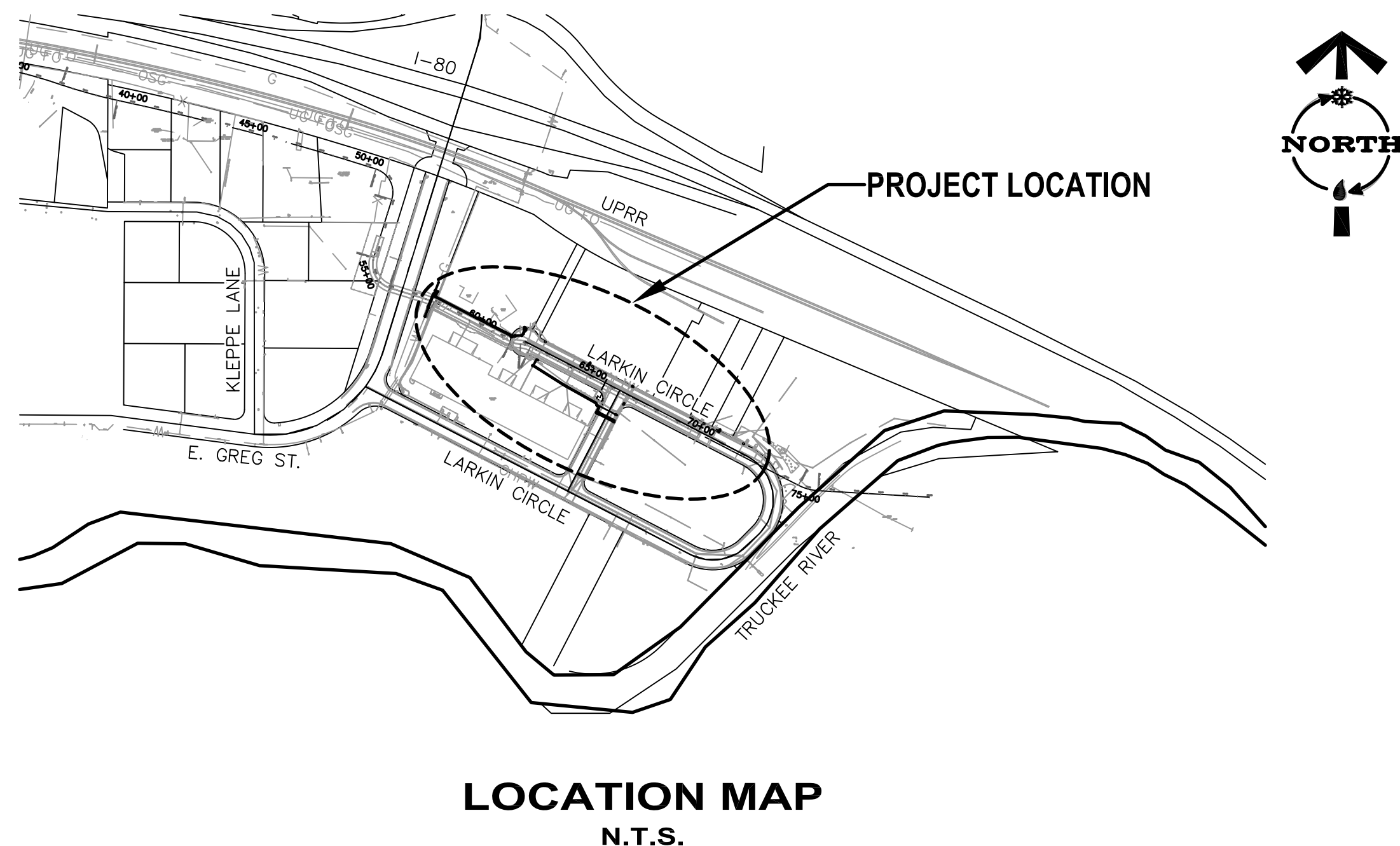
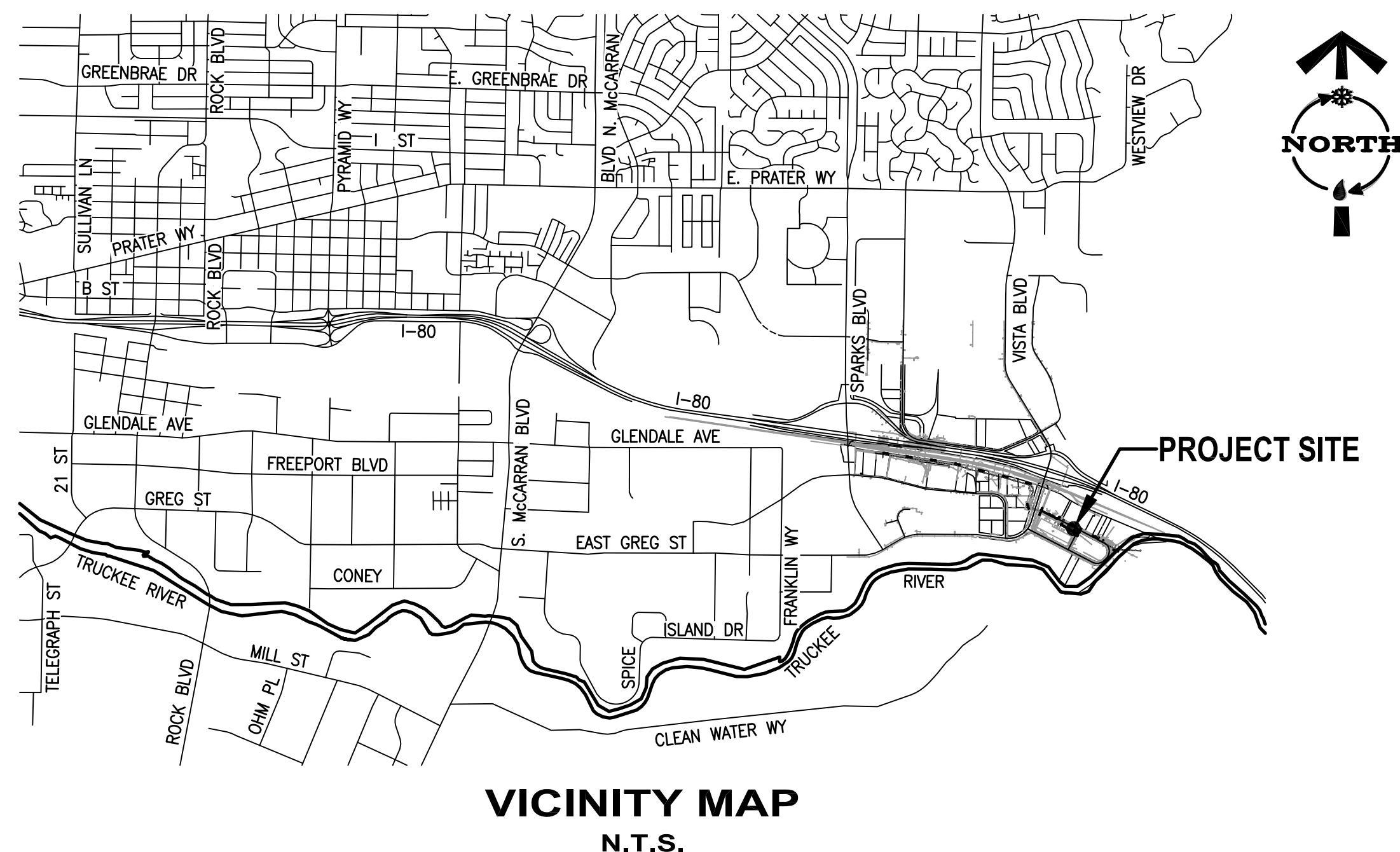
WASHOE

NEVADA

TMWA PROJECT NO.: 10.0001.19

## INDEX OF SHEETS

SHEET NO.	DRAWING NO.	DESCRIPTION
1	C0	COVER SHEET
2	C1	GENERAL NOTES, MATERIAL SPECIFICATIONS, ABBREVIATIONS & LEGEND
3	C2	GENERAL NOTES, MATERIAL SPECIFICATIONS, ABBREVIATIONS & LEGEND
4	P1	KEY MAP
5	P2	PLAN AND PROFILE
6	P3	PLAN AND PROFILE
7	P4	PLAN AND PROFILE
8	D1	CONSTRUCTION DETAILS 1
9	D2	CONSTRUCTION DETAILS 2
10	D3	CONSTRUCTION DETAILS 3
11	D4	CONSTRUCTION DETAILS 4



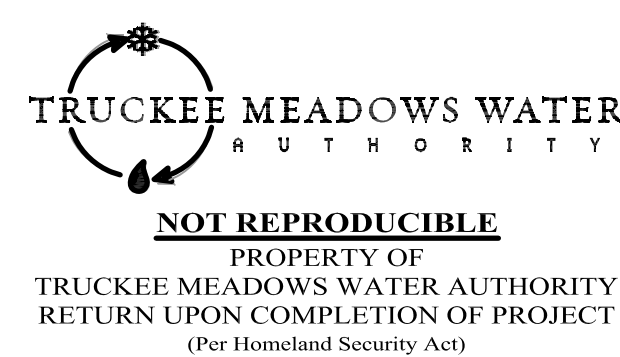
**TRUCKEE MEADOWS  
WATER AUTHORITY**

**MARK FOREE**  
GENERAL MANAGER



**CONSTRUCTION MANAGEMENT  
ADMINISTRATOR**

**STEVE VOLK**  
1355 CAPITAL BLVD.  
RENO, NV 89502-3013  
PHONE: 775-834-8024



Know what's below.  
Call before you dig.



**C0**  
SHEET 1 OF 11



PROPOSED FEATURES LEGEND

- TEE WITH GATE VALVE
- CHECK VALVE (SHADED IF EXISTING)
- FIRE HYDRANT ASSEMBLY
- 45° ELBOW, FLANGED
- 90° FLANGED ELBOW
- AIR/VAC
- THRUST BLOCK
- CAP/PLUG
- BACKFLOW PREVENTER
- WATER METER
- SLEEVE COUPLING
- MANHOLE
- CONSTRUCTION EASEMENT
- PERMANENT EASEMENT
- CENTERLINE
- CHANNEL/SLOPE
- MAJOR CONTOUR
- MINOR CONTOUR
- STORM DRAIN RCP
- STORM DRAIN RCB
- GRADE LINE
- FENCE LINE
- SAWCUT LINE
- CURB AND GUTTER
- ACCESS ROAD
- DAYLIGHT LINE
- EDGE OF PAVEMENT
- PROPERTY/RIGHT-OF-WAY LINE
- VAULT

EXISTING FEATURES LEGEND

- INDEX CONTOUR
- APPROXIMATE INDEX
- INDEX DEPRESSION
- INTERMEDIATE CONTOUR
- APPROXIMATE INTERMEDIATE
- INTERMEDIATE DEPRESSION
- EDGE OF PAVEMENT
- DIRT ROAD
- JEEP/FOOT TRAIL
- CURB LINE
- GUTTER/CONCRETE EDGE
- GUARD-RAIL
- RAILROAD
- FENCE
- RETAINING WALL
- FENCE ON RW
- BLOCK WALL
- MEDIAN WALL
- STONE WALL
- TRENCH/SLOPE
- TAILINGS/TOE
- WATER EDGE
- INTERMITTENT DRAINAGE
- DITCH
- MISCELLANEOUS BOUNDARIES
- TREELINE
- BRUSHLINE
- SANITARY SEWER
- STORM DRAIN
- WATER
- IRRIGATION WATER
- UNDERGROUND ELECTRIC
- OVERHEAD UTILITY
- OVERHEAD SIGNAL
- OVERHEAD POWER/TV CABLE
- UNDERGROUND FIBER OPTICS
- GAS
- UNDERGROUND ELECTRIC ABANDONED
- N,E,Z CONTROL POINT
- Z ONLY CONTROL POINT
- SURVEY MONUMENT
- POWER POLES
- POLE ANCHOR
- TRANSMISSION TOWER
- LIGHT POLE
- POST/POLE
- SIGN
- FIRE HYDRANT
- MANHOLE
- SANITARY SEWER MANHOLE
- STORM DRAIN MANHOLE
- TELEPHONE MANHOLE
- VALVE COVER
- VALVE
- TRAFFIC SIGNAL
- R,R./CROSSWALK SIGNAL
- MAIL BOX
- MISC. OBJECT
- METER
- MARSH
- PROSPECT/EXCAVATION
- SHAFT
- UTIL. VAULT/BOX
- METER BOX
- STORM DRAIN CATCH BASIN
- BUILDING
- COVERED AREA
- EX. TREE

ABBREVIATIONS

- AC = ASPHALTIC CONCRETE
- ACI = AMERICAN CONCRETE INSTITUTE
- ACP = ASBESTOS CEMENT PIPE
- A/E = ARCHITECT / ENGINEER
- ABAN = ABANDON
- ANSI = AMERICAN NATIONAL STANDARDS INSTITUTE
- APN = ASSESSOR'S PARCEL NUMBER
- APRX. = APPROXIMATELY
- ASSY = ASSEMBLY
- AVAR = AIR VACUUM AIR RELIEF (VALVE)
- AGGR = AGGREGATE
- AGG. = AGGREGATE
- APPROX = APPROXIMATE
- APPD = APPROVED
- ASTM = AMERICAN SOCIETY FOR TESTING AND STANDARDS
- ASSHTO = AMERICAN ASSOC. OF STATE HIGHWAY & TRANS. OFFICIALS
- AWWA = AMERICAN WATER WORKS ASSOCIATION
- BC = BACK OF CURB
- BCR = BEGIN CURB RETURN
- BF = BOTH FACES, BOTTOM FACE
- BFC = BACK FACE OF CURB
- BFV = BUTTERFLY VALVE
- BM = BENCHMARK
- BR = BRIDGE
- BRW = BOTTOM ROCKERY WALL
- BW = BACK OF WALK
- BVC = BEGIN VERTICAL CURVE
- BW = BACK WALL
- CATV = CABLE TELEVISION
- C-C = CENTER TO CENTER
- C&G = CURB AND GUTTER
- C = CHANNEL
- CB = CATCH BASIN
- CFS = CUBIC FEET PER SECOND
- CF or CU.FT. = CUBIC FEET
- C.I. = CAST IRON
- CL/Q = CENTERLINE
- CLSM = CONTROLLED LOW STRENGTH MATERIAL
- CLR. or CI. = CLEARANCE
- CML&C = CONCRETE MORTAR LINED AND COATED
- CMP = CORRUGATED METAL PIPE
- CMU = CONCRETE MASONRY UNIT
- CONC. = CONCRETE
- CONST.JT. = CONSTRUCTION JOINT
- CO = CLEANOUT
- COL = COLUMN
- COMP = COMPACT
- CONSTR = CONSTRUCTION
- COR = CITY OF RENO
- CORP. = CORPORATION
- CPLG. = COUPLING
- CTB = CEMENT TREATED BASE
- CTR = CENTER
- CU.YD. = CUBIC YARD
- CTRS. = CENTERS
- D = DEPTH
- DI = DROP INLET
- D.I. = DUCTILE IRON
- DIP = DUCTILE IRON PIPE
- DIST = DISTRICT
- DEMO = DEMOLISH OR DEMOLITION
- DR = DRIVE OR DRAIN
- Ø or DIA. = DIAMETER
- DOC = DOCUMENT
- DOM. = DOMESTIC
- EA. = EACH
- E.C. = END OF CURVE
- EFF = EFFLUENT
- EG = EXISTING GRADE/GROUND
- E.F. = EACH OF FACE
- EGL = ENERGY GRADE LINE
- ELEC. = ELECTRICAL
- ELEV./ EL = ELEVATION
- ELL = ELBOW
- ENGR. = ENGINEER
- EP = EDGE OF PAVEMENT
- ERW = EFFLUENT REUSE WATER
- EXIST./ EX = EXISTING
- (E) = EXISTING
- EQ = EQUAL
- ETC = ET CETERA
- EVC = END VERTICAL CURVE
- EW = EACH WAY
- EFWF = EACH WAY EACH FACE
- F.F./ FF = FINISH FLOOR
- FCA = FLANGE COUPLING ADAPTER
- FG = FINISH GRADE
- F.L./ FL = FLOW LINE
- FDTN = FOUNDATION
- FH = FIRE HYDRANT
- FLG = FLANGE
- FO = FINISHED OPENING
- FOC = FACE OF CURB
- FTG = FOOTING
- FO = FIBER OPTIC CABLE
- FS = FINISH SURFACE
- FT. = FEET
- FTG = FOOTING
- F.V. = FLUSH VALVE
- FUT = FUTURE
- G = GAS
- GA = GAUGE
- GAL. = GALLON
- GALV = GALVANIZED
- GB = GRADE BREAK
- GIS = GEOGRAPHIC INFORMATION SYSTEM
- G.V. = GATE VALVE
- GRTG = GRATING
- HERCP = HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE
- HGL = HYDRAULIC GRADE LINE
- HP = HIGH POINT
- HPG = HIGH PRESSURE GAS
- HW = HIGH WATER
- INC. = INCORPORATED
- I.D. = INSIDE DIAMETER
- INV = INVERT
- IE = INVERT ELEVATION
- IRR. = IRRIGATION
- KO = KNOCKOUT
- K = KIPS
- L = LONG/ LENGTH
- L / LT = LEFT OF
- L.F./ LF = LINEAR FEET
- LP = LOW POINT
- LBS/LF = POUNDS PER LINEAR FEET
- LLC = LIMITED LIABILITY COMPANY
- MAX./ (MAX) = MAXIMUM
- MC = MANHOLE COVER
- MIN. = MINIMUM
- MISC = MISCELLANEOUS
- M.J. = MECHANICAL JOINT
- ML = MAINLINE
- (N) = NEW
- N = NORTH OR NEUTRAL
- NA = NOT APPLICABLE
- NC = NORMALLY CLOSED
- NDOT = NEVADA DEPARTMENT OF TRANSPORTATION
- N.F. = NEAR FACE
- NG = NATURAL GRADE
- NO = NORMALLY OPEN
- NTD = NORTH TRUCKEE DRAIN
- NTS/ N.T.S. = NOT TO SCALE
- O.C. = ON CENTER
- O.E. = OR EQUAL
- OHP = OVERHEAD POWER
- O.D./ OD = OUTSIDE DIAMETER
- OF/CI = OWNER FURNISHED CONTRACTOR INSTALLED
- OGL = ORIGINAL GRADE LINE
- OVFL = OVERFLOW
- OSHA = OCCUPATIONAL SAFETY & HEALTH ADMIN.
- PAVE = PAVEMENT
- PBS = PLANTMIX BITUMINOUS SURFACE
- (P) = PROPOSED
- P.C./ PC = POINT OF CURVE
- PCC = POINT OF COMPOUND CURVE
- P.C.C. = PORTLAND CEMENT CONC.
- PE = POLYETHYLENE
- PEN = PENETRATE
- PERP = PERPENDICULAR
- P/L = PROPERTY LINE
- PL = PLATE
- PO = PUSH-ON
- ± = PLUS or MINUS
- PPCBR = PORTABLE PRECAST BARRIER RAIL
- PRELIM = PRELIMINARY
- PRC = POINT REVERSE CURVE
- PROP = PROPOSED
- PRV = PRESSURE REDUCING VALVE
- PSF = POUNDS PER SQUARE FOOT
- PSI = POUNDS PER SQUARE INCH
- PVG = PAVING
- PT = POINT OF TANGENT
- PVC = POLYVINYL CHLORIDE PIPE
- PVI = POINT OF VERTICAL INTERSECTION
- Quit100 = 100 YEAR ULTIMATE CONDITION DESIGN FLOW
- QTY = QUANTITY
- R / (R) = RADIUS OR RADIAL
- R / RT = RIGHT OF
- R & D = REMOVE AND DISPOSE
- RCB = REINFORCED CONCRETE BOX
- RCP = REINFORCED CONCRETE PIPE
- RED = REDUCER
- REF = REFERENCE
- REINF = REINFORCEMENT
- RES = RESTRAINED
- RGRCP = RUBBER GASKET REINFORCED CONCRETE PIPE
- RTC = REGIONAL TRANSPORTATION COMMISSION
- RR = RAILROAD
- R/W / ROW = RIGHT-OF-WAY
- REQ'D = REQUIRED 23
- ROS = RECORD OF SURVEY
- R-O-W = RIGHT OF WAY
- SAN = SQUARE FOOT
- SD = STORM DRAIN
- SDMH = STORM DRAIN MANHOLE
- SDPWC = STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION
- SDR / DR = STANDARD DIMENSION RATIO
- SF = SQUARE FEET
- SHT = SHEET
- SIM = SIMILAR
- SLV = SLEEVE
- SPEC = SPECIFICATION
- SQ = SQUARE
- SQ.FT. = SQUARE FEET
- SS = SANITARY SEWER
- SSMH = SANITARY SEWER MANHOLE
- SSPC = SOCIETY FOR PROTECTIVE COATINGS
- SSPWC = STANDARDS SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
- STA = STATION
- STD.DWG.NO. = STANDARD DRAWING NUMBER
- STL = STEEL
- ST = STAINLESS STEEL
- SST = STAINLESS STEEL
- S/W / SW = SIDEWALK
- SPA. = SPACING
- STD. = STANDARD
- TB = THRUST BLOCK
- T&B = TOP AND BOTTOM
- TC = TOP OF BACK OF CURB
- TECS = TMWA ENGINEERING & CONSTRUCTION SPECS TRANSPORTATION
- TEMP = TEMPORARY
- TEL / TEL = TELEPHONE
- THK = THICK
- TM = TRACT MAP
- TMH = TOP OF MANHOLE
- TMWA = TRUCKEE MEADOWS WATER AUTHORITY
- THW = THERMO PLASTIC HEAT AND WATER RESISTANT
- TOE = TOE OF CHANNEL
- TOP = TOP OF CHANNEL
- TOC = TOP OF CURB
- TOF = TOP OF FOOTING
- TP = TELEPHONE POLE
- TR = TRANSITE
- TRANS = TRANSITION
- TRW = TOP ROCKERY WALL
- TW = TOP OF WALL
- (TYP) / (TYP.) = TYPICAL
- UL = UNDER GROUND ELECTRICAL
- UL = UNDERWRITERS LABORATORY
- UNO = UNLESS NOTED OTHERWISE
- U.O.N. = UNLESS OTHERWISE NOTED
- UPRR = UNION PACIFIC RAILROAD
- U.S. = UNITED STATES
- USGS = UNITED STATES GEOLOGICAL SURVEY
- USACE = UNITED STATES ARMY CORP OF ENGINEERS
- VA = VALVE
- V.C. = VERTICAL CURVE
- VCP = VITRIFIED CLAY PIPE
- V.G. = VALLEY GUTTER
- VC = VERTICAL CURVE
- VERT = VERTICAL
- W = WATER
- W/ = WITH
- WWF = WELDED WIRE FABRIC
- W.O. = WORK ORDER
- WM = WATER METER
- XTC = X-TRU COAT PIPE

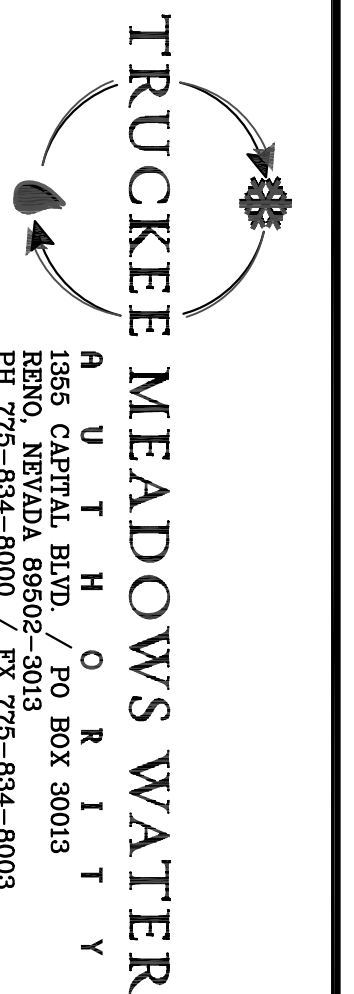
DISCLAIMER NOTE

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2 working days  
Call before you Dig.  
1-800-227-2600



WORK ORDER NO. 10,000,119  
DESIGNED - JRS  
DRAWN - KOS  
DATE 10/18/13  
CHECKED 10/21/13  
SUBMITTED 10/21/13  
RECOMMENDED  
APPROVED



**NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1**  
**CITY OF SPARKS, WASHOE COUNTY, NEVADA**  
**GENERAL NOTES, MATERIAL SPECIFICATIONS, ABBREVIATIONS & LEGEND**

SHEET NUMBER

01

2 OF 11



WORK ORDER NO. 10.0001.19  
 DESIGNED JRS  
 DRAWN KOS  
 DATE 10/18/13  
 CHECKED 10/21/13  
 SUBMITTED 10/21/13  
 RECOMMENDED  
 APPROVED

**TRUCKEE MEADOWS WATER**  
 A U T H O R I T Y  
 1885 CAPITAL BLVD. / PO BOX 30013  
 RENO, NEVADA 89502-3013  
 PH 775-834-8000 / FX 775-834-8003

**NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1**  
**CITY OF SPARKS, WASHOE COUNTY, NEVADA**  
**GENERAL NOTES, MATERIAL SPECIFICATIONS,**  
**ABBREVIATIONS & LEGEND**

SHEET NUMBER  
**02**  
 3 OF 11

GENERAL COMMENTS:

CONTRACTOR TO CALL PROJECT COORDINATOR STEVE VOLK AT (775) 834-8024 48-HOURS PRIOR TO START OF CONSTRUCTION TO SCHEDULE ON-SITE INSPECTION. (INCLUDE WORK ORDER NUMBER 10.0001.19)

MAINTAIN POTABLE WATER AND SS/SD/NON-POTABLE HORIZONTAL AND VERTICAL CLEARANCES AS SPECIFIED IN NEVADA ADMINISTRATIVE CODE (NAC) SECTION 445A AND TMWA ENGINEERING & CONSTRUCTION STANDARDS SECTION 8.

AT ALL CROSSINGS, UNDERGROUND ELECTRIC FACILITIES SHALL BE LOCATED BELOW WATER MAINS AND/OR WATER SERVICES WITH A MINIMUM OF 2- FEET VERTICAL CLEARANCE.

ALL WORK SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE SPECIFICATIONS SET FORTH IN THE TMWA ENGINEERING & CONSTRUCTION STANDARDS. THE CONTRACTOR SHALL SECURE COPIES OF THE AFOREMENTIONED CONSTRUCTION SPECIFICATIONS ON HIS/HER OWN BEHALF. THE ENGINEERING & CONSTRUCTION STANDARDS MAY BE DOWNLOADED FROM: [www.tmwa.com/standards](http://www.tmwa.com/standards)

SYMBOLS ARE NOT TO SCALE AND DO NOT NECESSARILY REPRESENT ACTUAL LOCATIONS OF FACILITIES.

THIS MAP ILLUSTRATES DATA COLLECTED FROM VARIOUS SOURCES AND MAY NOT REPRESENT A SURVEY OF THE PREMISES. NO RESPONSIBILITY IS ASSUMED AS TO THE SUFFICIENCY OR ACCURACY OF THE DATA DISPLAYED HEREON.

CAUTION: CONTRACTOR IS RESPONSIBLE FOR LOCATING AND COORDINATING WORK AROUND ALL EXISTING UTILITIES. PRIOR TO EXCAVATION, CHECK TO ENSURE ADDITIONAL DEPTH IS NOT REQUIRED TO ACCOMMODATE INSTALLATION OF GAS FACILITIES.

SOILS RETENTION MAY BE REQUIRED AROUND WATER METER BOXES, FIRE HYDRANTS, AND OTHER FACILITIES IF SLOPES EXCEED 15%.

WATER METERS SHALL BE LOCATED WITHIN A PUBLIC UTILITY EASEMENT (PUE).

TOP OF WATER METER ENCLOSURE SHALL BE SET 0.2 FEET ABOVE HIGHEST FINISHED GRADE SURROUNDING ENCLOSURE WITHIN LANDSCAPED AREAS. FOR INSTALLATIONS IN CONCRETE OR OTHER PAVED AREAS, SET TOP OF LID FLUSH WITH SURROUNDING SURFACE.

APPLICANT TO ADVISE PLUMBING CONTRACTOR OF HIS/HER RESPONSIBILITY TO VERIFY WATER PRESSURE DURING STATIC CONDITIONS AT ALL SERVICE LOCATIONS. THE PLUMBING CONTRACTOR IS REQUIRED TO CONFORM TO THE MOST CURRENT EDITION OF THE UNIFORM PLUMBING CODE WHICH HAS BEEN ADOPTED BY THE GOVERNMENTAL ENTITY HAVING JURISDICTION OVER THE PROJECT. SPECIAL ATTENTION SHOULD BE GIVEN TO THE SECTION OF THE CODE CONCERNING STATIC WATER PRESSURE IN EXCESS OF 80 PSI.

UNUSED SERVICE LATERALS SHALL BE RETIRED BACK TO TMWA'S WATER MAIN.

ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE FIELD INSPECTOR.

BACKFLOW PREVENTION:

BACKFLOW PREVENTION IS REQUIRED BY NEVADA ADMINISTRATIVE CODE (NAC) SECTION 445A.67185.

1. DOMESTIC AND IRRIGATION BACKFLOW PREVENTION ASSEMBLIES SHALL BE INSTALLED IMMEDIATELY DOWNSTREAM OF THE METER.
2. FOR FIRE SERVICE BACKFLOW ASSEMBLY(IES): CONTACT BACKFLOW PREVENTION GROUP FOR TYPE AND REQUIRED LOCATION.

BACKFLOW PREVENTION GROUP WILL APPROVE WATER METER SET AND PERMANENT WATER SERVICE AFTER:

1. THE ASSEMBLY IS INSTALLED PER TMWA INSTALLATION STANDARDS AND INSPECTED BY THE BACKFLOW PREVENTION GROUP.
2. OPEN TRENCH, DITCH, AND/OR SLURRY INSPECTIONS COMPLETED BY THE BACKFLOW PREVENTION GROUP.
3. FINAL INSTALLATION AND FREEZE PROTECTION INSPECTED BY THE BACKFLOW PREVENTION GROUP.
4. CALL (775) 834-8288 FOR INSPECTIONS OR QUESTIONS.

THE CONTRACTOR IS RESPONSIBLE TO CONTACT TMWA BACKFLOW PREVENTION GROUP FOR CURRENT BACKFLOW INSTALLATION STANDARDS.

COMPLETE SHUT-DOWN OF EXISTING ISOLATION VALVES:

TMWA DOES NOT IMPLY OR GUARANTEE THE FULL AND COMPLETE SHUT-DOWN OF EXISTING ISOLATION VALVES. CONTRACTOR SHALL BE RESPONSIBLE FOR MITIGATING ANY WATER THAT MAY LEAK THROUGH AN EXISTING CLOSED ISOLATION VALVE DURING WATER MAIN, WATER SERVICE, AND/OR FIRE HYDRANT/SERVICE RECONNECTIONS; CUT AND CAPPING OF EXISTING WATER MAINS; ETC., WITH NO DIRECT PAYMENT TO THE CONTRACTOR.

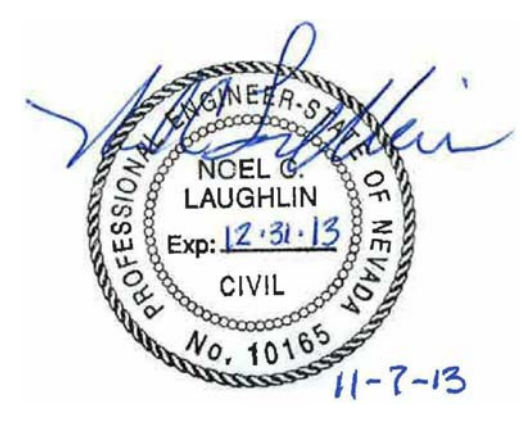
GENERAL CONSTRUCTION REQUIREMENTS:

AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION ON ANY TMWA RELATED FACILITIES, CONTRACTOR SHALL CONTACT TMWA SO THAT A FIELD REPRESENTATIVE MAY BE DISPATCHED TO OVERSEE INSTALLATION OF FACILITIES THAT TMWA WILL TAKE POSSESSION OF. REFER TO TMWA ENGINEERING AND CONSTRUCTION STANDARDS SECTION 2.05 FOR AUTHORITY AND RESPONSIBILITY OF TMWA INSPECTOR.

**DISCLAIMER NOTE**

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2 working days  
**Call before you Dig.**  
 1-800-227-2600



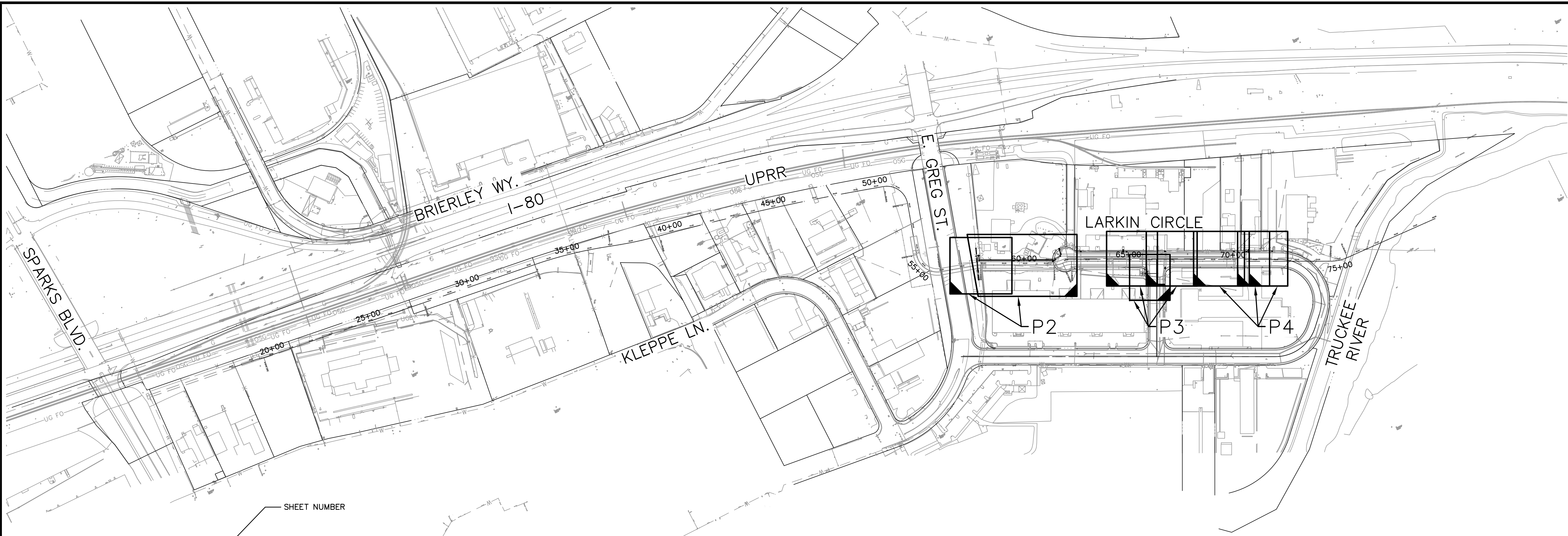


WORK ORDER NO. 10.0001.19  
 DESIGNED JAB  
 DRAWN FEJ  
 DATE 10/18/13  
 CHECKED 10/21/13  
 SUBMITTED 10/21/13  
 RECOMMENDED  
 APPROVED

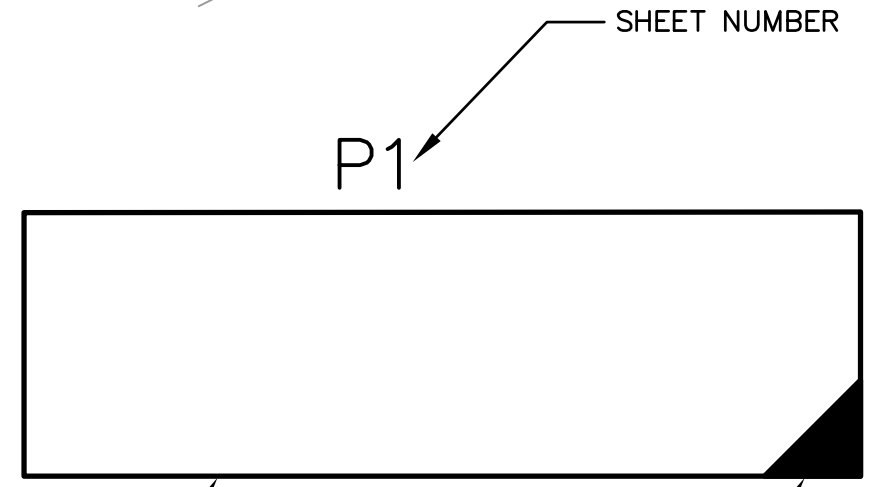
TRUCKEE MEADOWS WATER  
 CITY OF SPARKS, WASHOE COUNTY, NEVADA  
 1500 CAPITAL BLVD., PO BOX 3003  
 SPARKS, NEVADA 89402-3003  
 TEL 775-834-9000 / FAX 775-834-9008

**NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1**  
**CITY OF SPARKS, WASHOE COUNTY, NEVADA**  
**KEY MAP**

SHEET NUMBER  
**P1**  
 4 OF 11



KEY MAP  
NTS



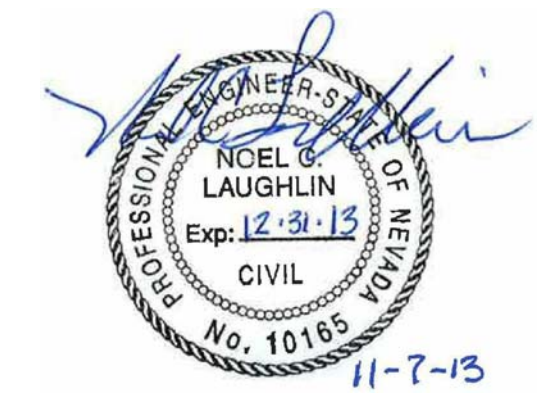
PLAN WINDOW ON PLAN AND PROFILE SHEETS  
 INDICATES LOWER RIGHT CORNER OF PLAN WINDOW

CONSTRUCTION SEQUENCING AND UTILITY RELOCATIONS

UTILITY CONFLICT	NTD STATION (APPROX)	UTILITY TYPE	UTILITY SIZE	SHEET	POTHOLE NUMBER	NOTES
1	57+73	W	16" TMWA	P-2	PH-5	REMOVE AND RELOCATE WATER SERVICE MAY BE SHUT OFF FOR ONE TWO WEEK PERIOD TO ALLOW STAGED CONSTRUCTION. COORDINATE WITH TMWA. INSTALL, TEST, AND DISINFECT RELOCATED PIPELINE PRIOR TO FINAL CONNECTIONS. ALSO SEE SHEET P2.
2	60+57	W	PVT FH	P-2		CAP W DURING CONSTRUCTION AND REPLACE 6" WATER LINE AND RELOCATE FIRE HYDRANT AFTER RCB CONSTRUCTION. SEE NOTE 4.
3	62+69	W	PVT FIRE 8" SERVICE	P-3	PH-22	RELOCATE AND COMMISSION NEW 12" PRIOR TO RCB CONSTRUCTION, STA:62+44 TO 62+94. MAINTAIN WATER LINE SERVICE EXCEPT FOR ONE TEMPORARY SHUTDOWN. SERVICE IS PRIVATE. COORDINATE WITH OWNER. INSTALL, TEST, AND DISINFECT RELOCATED PIPELINE PRIOR TO FINAL CONNECTIONS.
4	62+69	W	TMWA 1.25", 2"	P-3	PH-8	RELOCATE 1.25" AND 2" W TO MADISON AVE. PRIOR RCB CONSTRUCTION: PROVIDE TEMPORARY W BYPASS PIPING AS NEEDED FOR UNINTERRUPTED POTABLE W SERVICE.
5	64+87	W	COS FH 6"	P-3	PH-9	REMOVE 6" WATER LINE AND RELOCATE FIRE HYDRANT PRIOR RCB CONSTRUCTION, STA:64+62 TO 65+12. COORDINATE WITH TMWA TO MAINTAIN WATER SERVICE IN NORTH MAIN LINE EXCEPT FOR ONE SHUT DOWN.
6	66+71	W	TMWA 12"	P-3	PH-12	RELOCATE AND COMMISSION WATER LINE PRIOR TO RCB CONSTRUCTION, STA:66+46 TO 66+96. MAINTAIN WATER LINE SERVICE EXCEPT FOR ONE SHUTDOWN. SERVICE IS PUBLIC. COORDINATE WITH TMWA. INSTALL, TEST, AND DISINFECT RELOCATED PIPELINE PRIOR TO FINAL CONNECTIONS.
7	69+99	W	PVT X-ING 8"	P-4	PH-16	RELOCATE AND COMMISSION WATER LINE PRIOR TO RCB CONSTRUCTION, STA:69+74 TO 70+24. MAINTAIN WATER LINE SERVICE EXCEPT FOR ONE TEMPORARY SHUTDOWN. SERVICE IS PRIVATE. COORDINATE WITH OWNER. INSTALL, TEST, AND DISINFECT SECTION REPLACEMENT PRIOR TO FINAL CONNECTIONS.
8	70+57	W	COS FH 6"	P-4	PH-17	REMOVE 6" WATER LINE AND RELOCATE FIRE HYDRANT PRIOR RCB CONSTRUCTION, STA:70+32 TO 70+82. COORDINATE WITH TMWA TO MAINTAIN WATER SERVICE IN NORTH MAIN LINE EXCEPT FOR ONE SHUT DOWN.
9	71+78	W	PVT 8" X-ING	P-4	PH-18	RELOCATE AND COMMISSION WATER LINE PRIOR TO RCB CONSTRUCTION, STA:71+53 TO 72+03. MAINTAIN WATER LINE SERVICE EXCEPT FOR ONE SHUTDOWN. SERVICE IS RETIRED. COORDINATE WITH TMWA. INSTALL, TEST, AND DISINFECT SECTION REPLACEMENT PRIOR TO FINAL CONNECTIONS.

- NOTES:
- ADDITIONAL INFORMATION ON EXISTING UTILITIES AND POTHOLE INFORMATION CAN BE FOUND IN THE PLAN AND PROFILES (SHEETS P2, P3 AND P4).
  - FOR REMOVAL OF UTILITIES FOLLOW SPECIAL REQUIREMENTS IN DEMOLITION SPECIFICATIONS.
  - IF CONFLICTS WITH TMWA STANDARDS AND THESE PLANS OCCUR, THE MORE STRINGENT STANDARD SHALL APPLY.
  - ALL CAPS SHALL BE RESTRAINED WITH THRUST BLOCK BEARING AREAS LOCATED A MINIMUM OF 10 FEET FROM EDGE OF ANY EXCAVATION CUT LIMITS.

POTHOLE NUMBER	NORTHING	EASTING
PH04/PH05	14866283.0125	2309844.2628
PH06	14866089.0594	2310261.1016
PH07/PH08	14866077.1454	2310291.5677
PH09	14865975.5270	2310484.4156
PH10	14865930.0294	2310568.3645
PH11/PH12	14865884.8869	2310645.2186
PH13	14865881.6016	2310650.2392
PH14	14865759.6007	2310911.1975
PH15/PH16	14865742.0194	2310940.3625
PH17	14865715.2255	2310992.0632
PH18	14865659.1933	2311099.0817
PH21	14866254.9522	2309855.7750
PH22	14866077.6046	2310290.6793



2 working days  
**Call before you Dig.**  
 1-800-227-2600

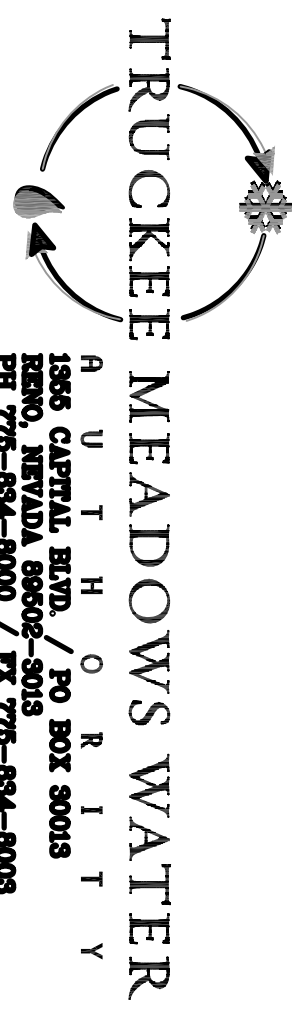


SCALE: 1"=250'  
 250 0 125 250 500

FOR TMWA USE ONLY NEW BUSINESS WATER			
WO#	Map #		
New Main			
Date Installed:	Depth:		
Pressure Test Date:	Hours Tested:		
Inspector:			
Contractor:			
Feet Laid	Size	Type	Main/Svc
Retired/ Abandoned/Removed			
Feet Ref.	Size	Type	Main/Svc
# of Meter boxes Inst./Size:			
# of Seters Inst./Size:			



WORK ORDER NO. 10.0001.19  
 DESIGNED JRS  
 DRAWN FEO  
 DATE 10/18/13  
 CHECKED 10/21/13  
 SUBMITTED 10/21/13  
 RECOMMENDED  
 APPROVED



**NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1**  
**CITY OF SPARKS, WASHOE COUNTY, NEVADA**  
**PLAN AND PROFILE**

SHEET NUMBER  
**P2**  
 5 OF 11

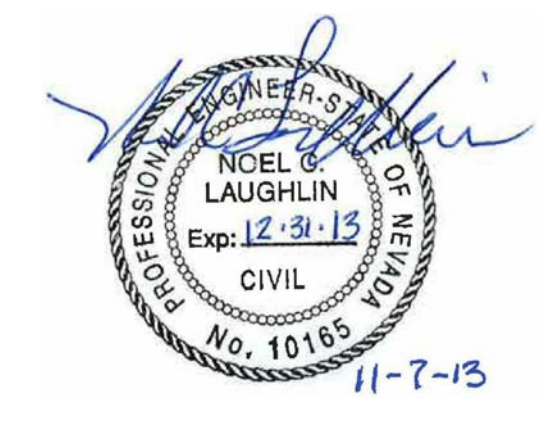
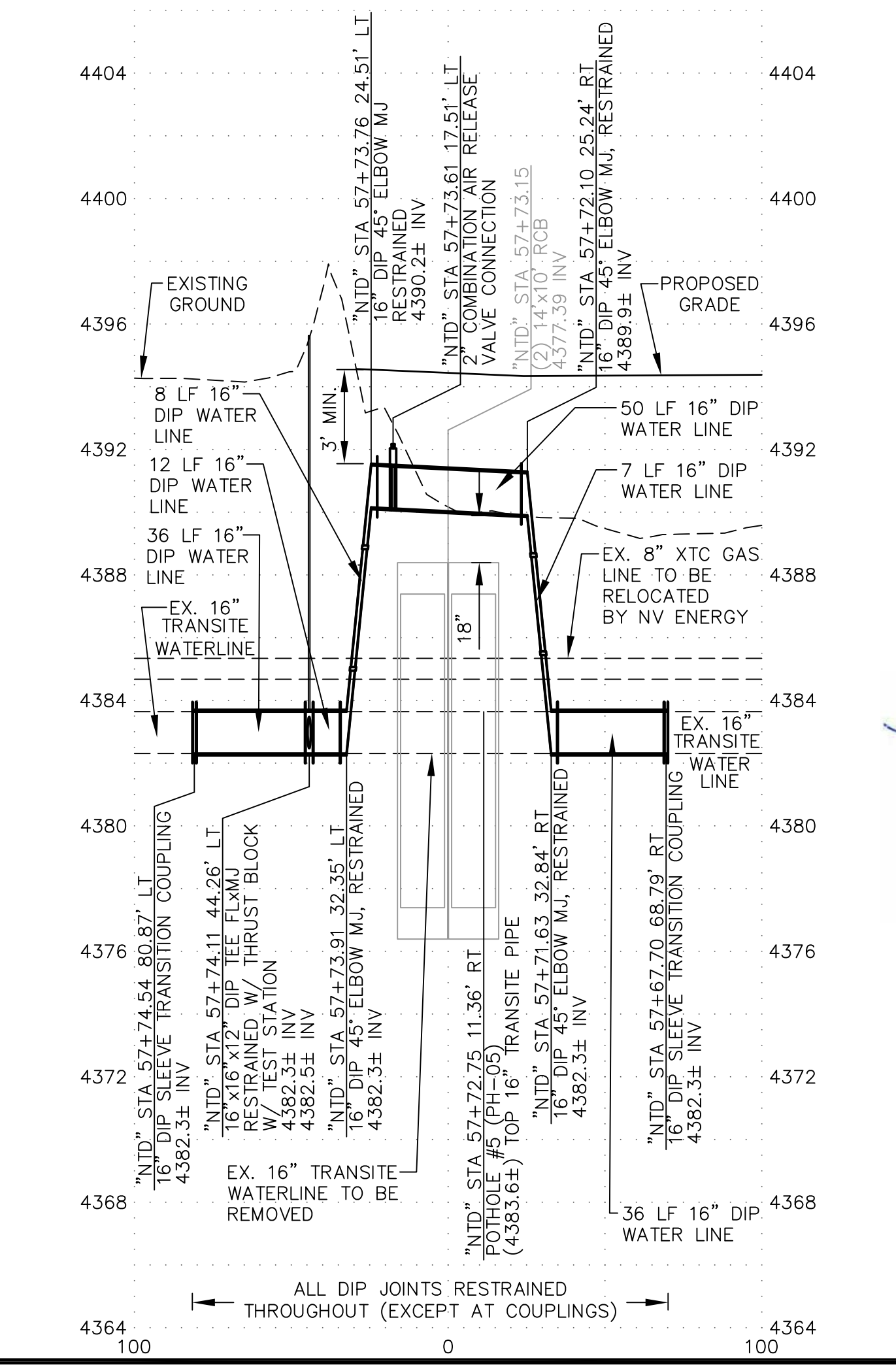
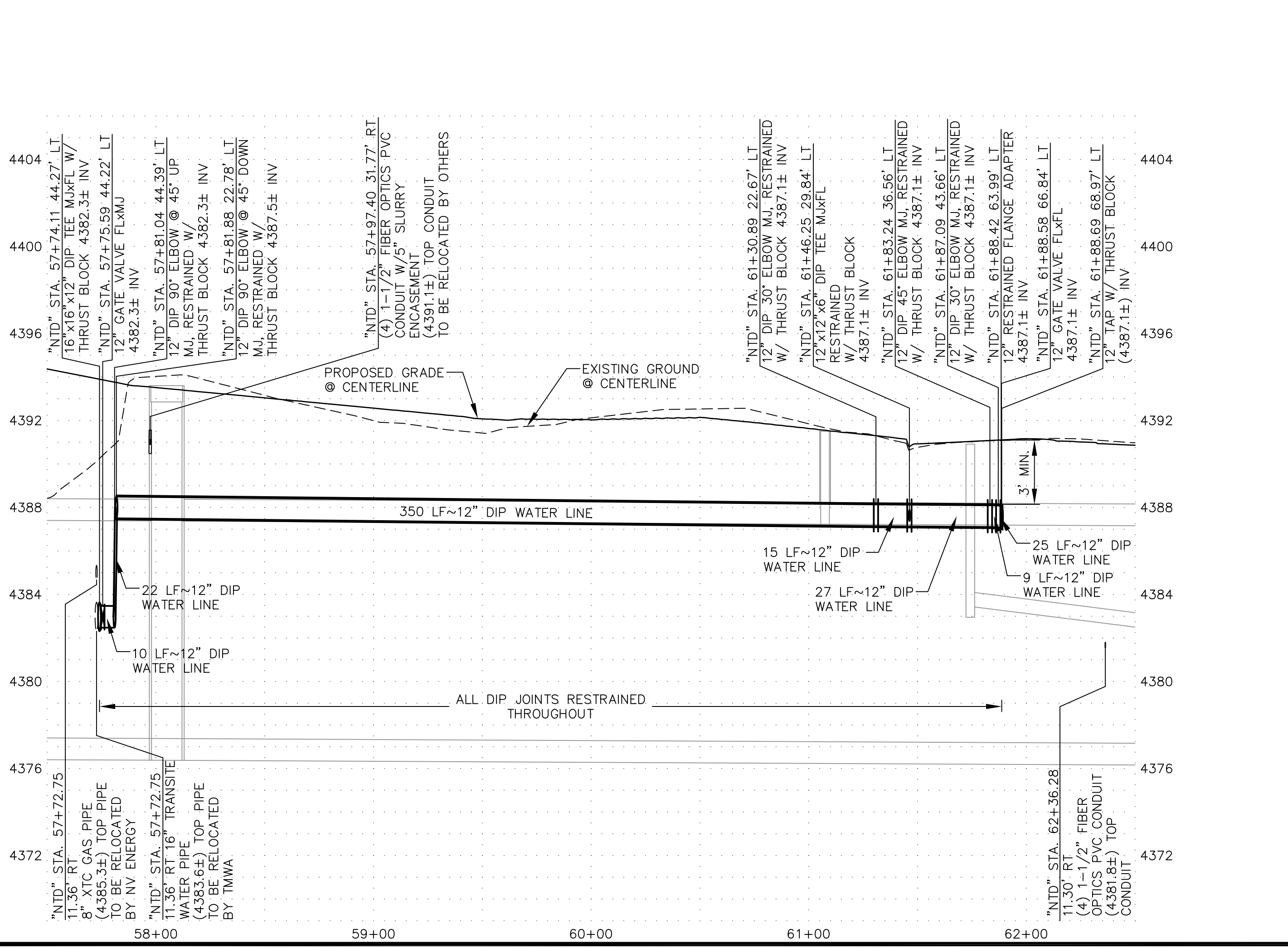
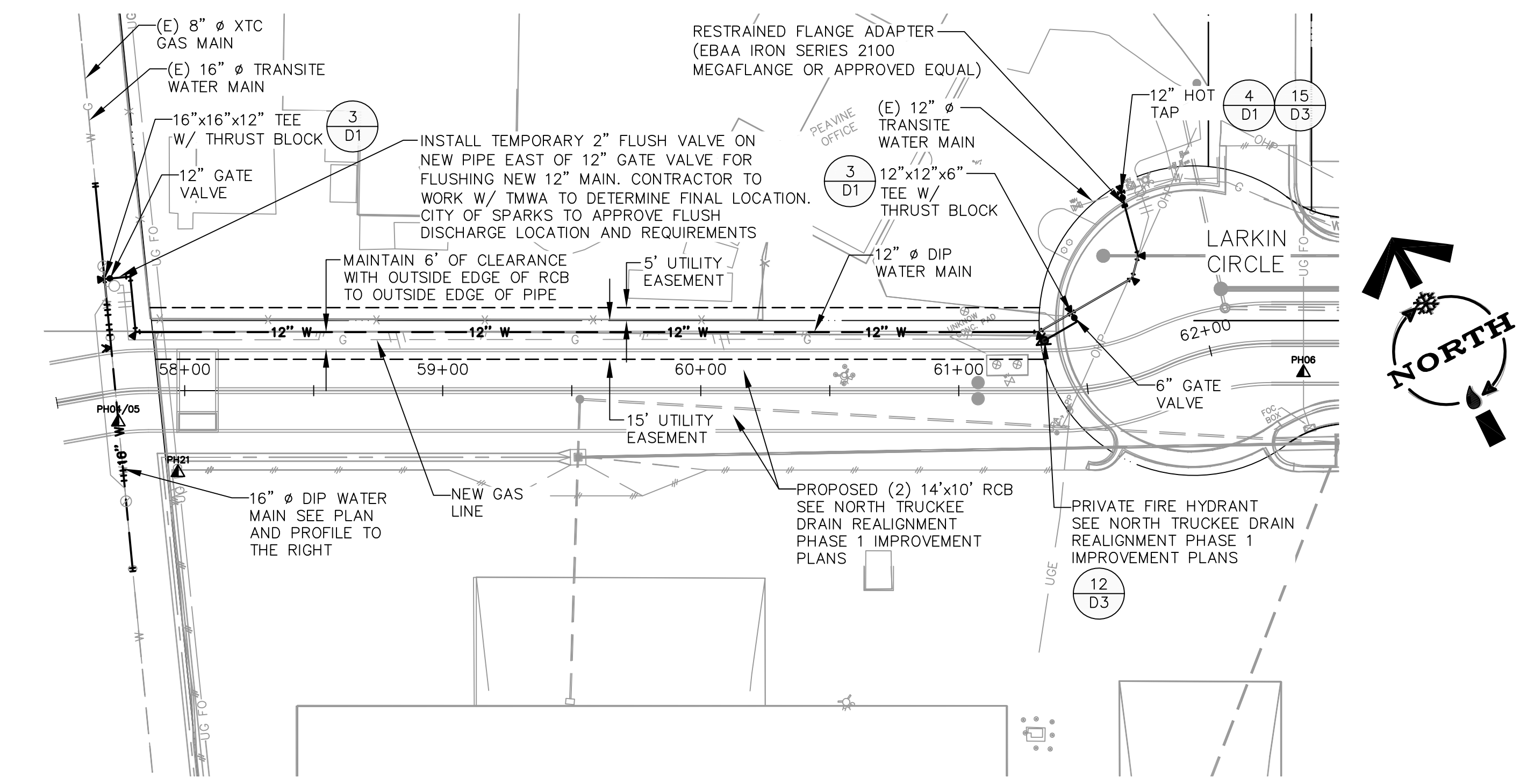
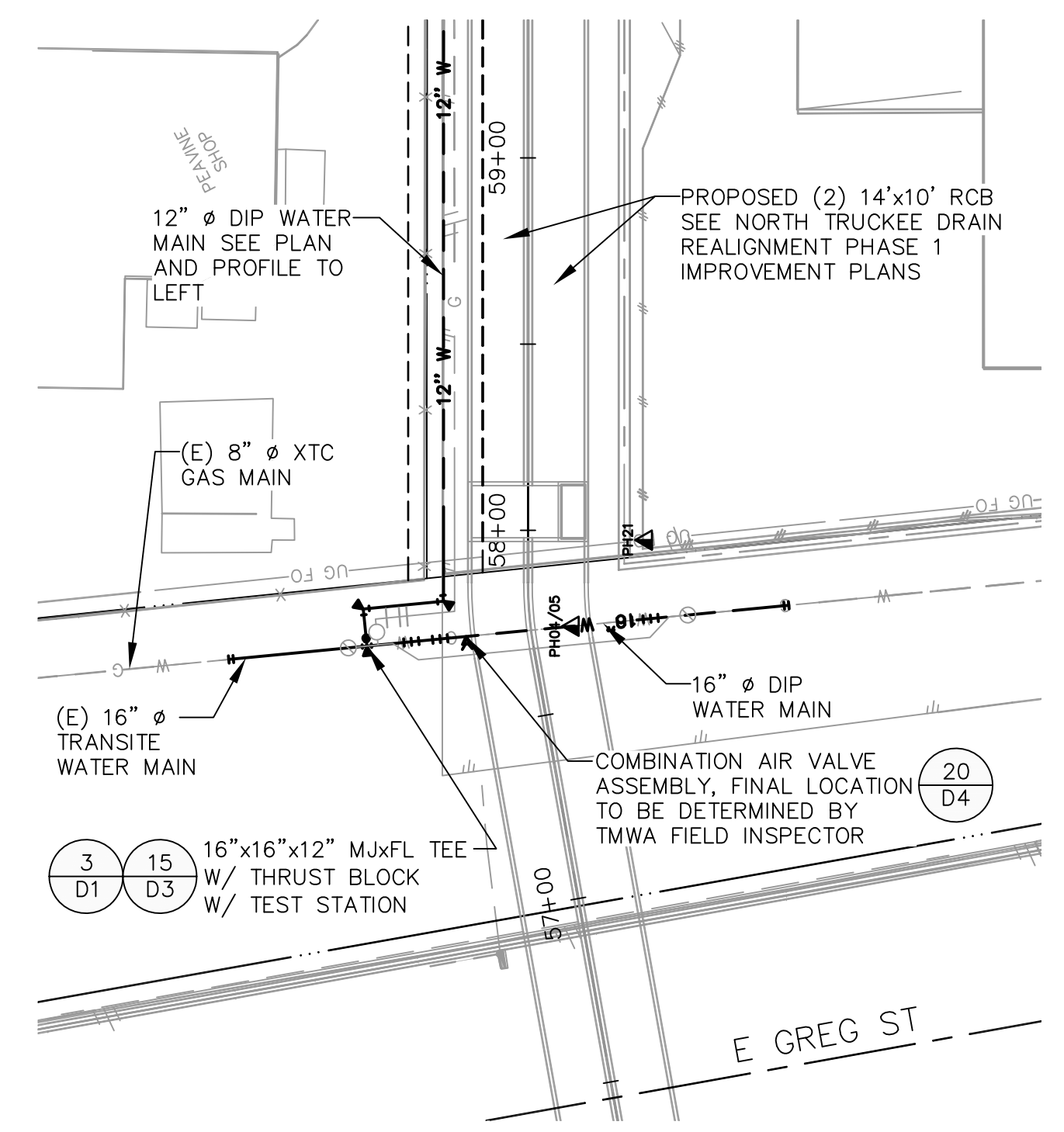
VALVE ISOLATION NOTE:  
 IN ORDER TO ISOLATE THIS SECTION OF 16" MAIN, MAINLINE VALVES AT VISTA BLVD./I-80 NORTH OFFRAMP AND E. GREG ST./LARKIN CIR.

IN ORDER TO ISOLATE THIS SECTION OF 12" MAIN, MAINLINE VALVES AT NORTH AND SOUTH LARKIN CIR./MADISON AVE.

MUST BE CLOSED AS WELL AS ALL LATERAL MAINS IN BETWEEN THE TWO IN-LINE VALVES. THE TMWA INSPECTOR AND CONTRACTOR TO COORDINATE ALL VALVE CLOSINGS AND SERVICE DISRUPTIONS. THIS MAY REQUIRE WEEKEND OR NIGHT WORK.

INSTALL 2" TEMP FLUSH ON 16" MAIN AT GREG - LARKIN STREET. CONTRACTOR TO WORK W/ TMWA TO DETERMINE FINAL LOCATION. CITY OF SPARKS TO APPROVE FLUSH DISCHARGE LOCATION AND REQUIREMENTS.

ACP (TRANSITE) SHOWN TO BE CUT OR REMOVED SHALL BE HANDLED AND DISPOSED OF PER SECTION 12 OF THE GENERAL CONDITIONS, AND SECTION 301.02.06 OF THE TECHNICAL SPECIFICATIONS.

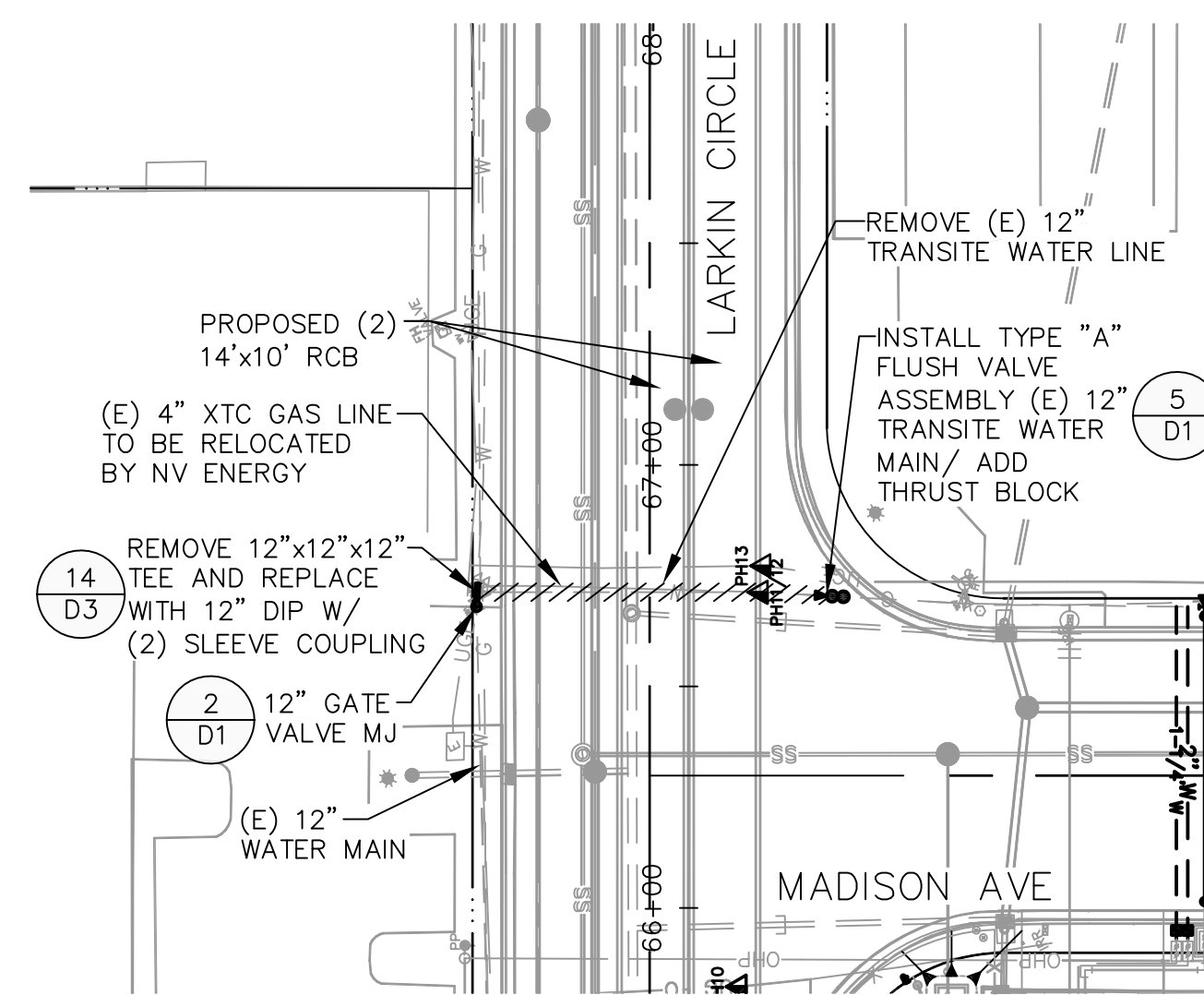
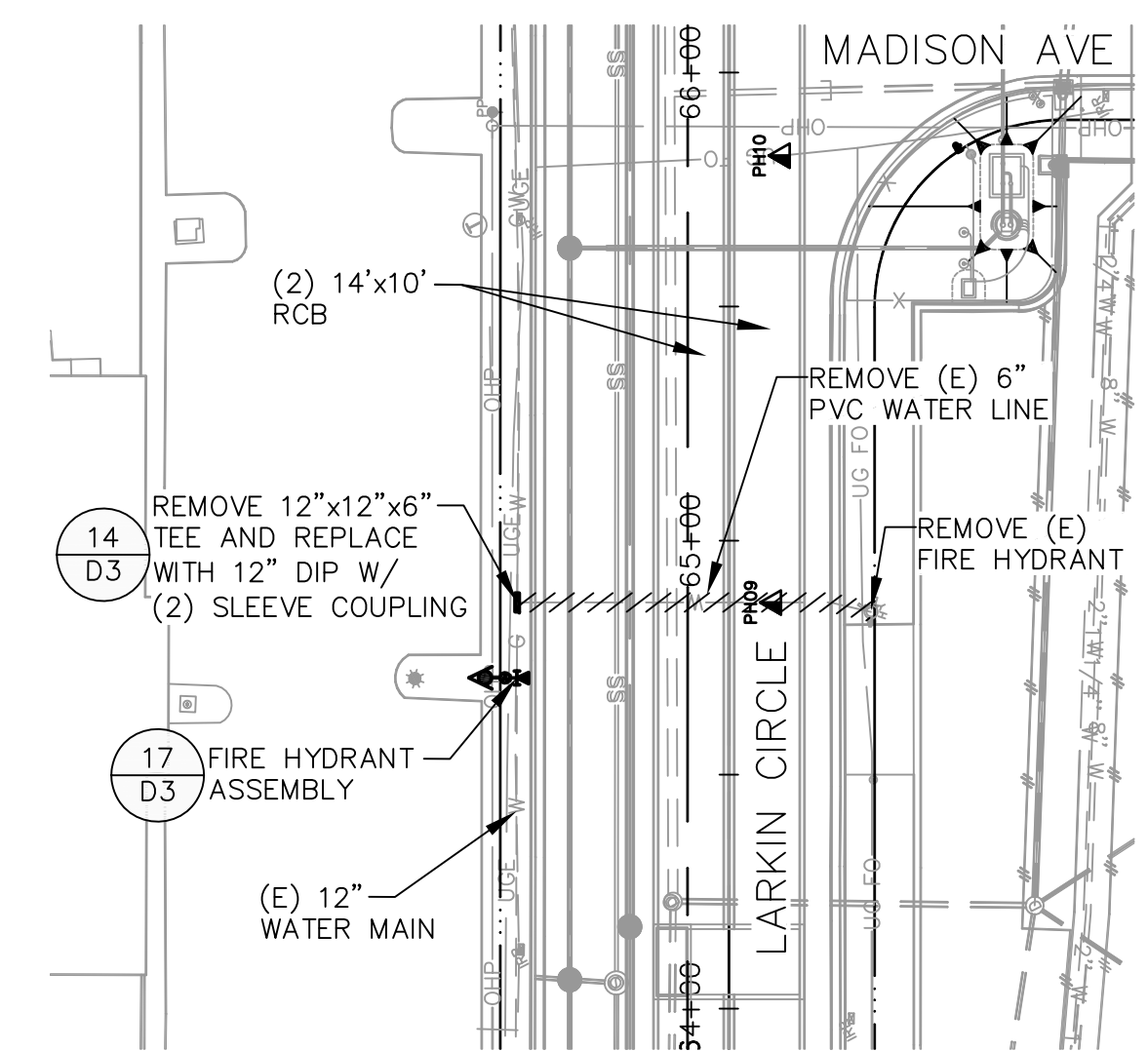
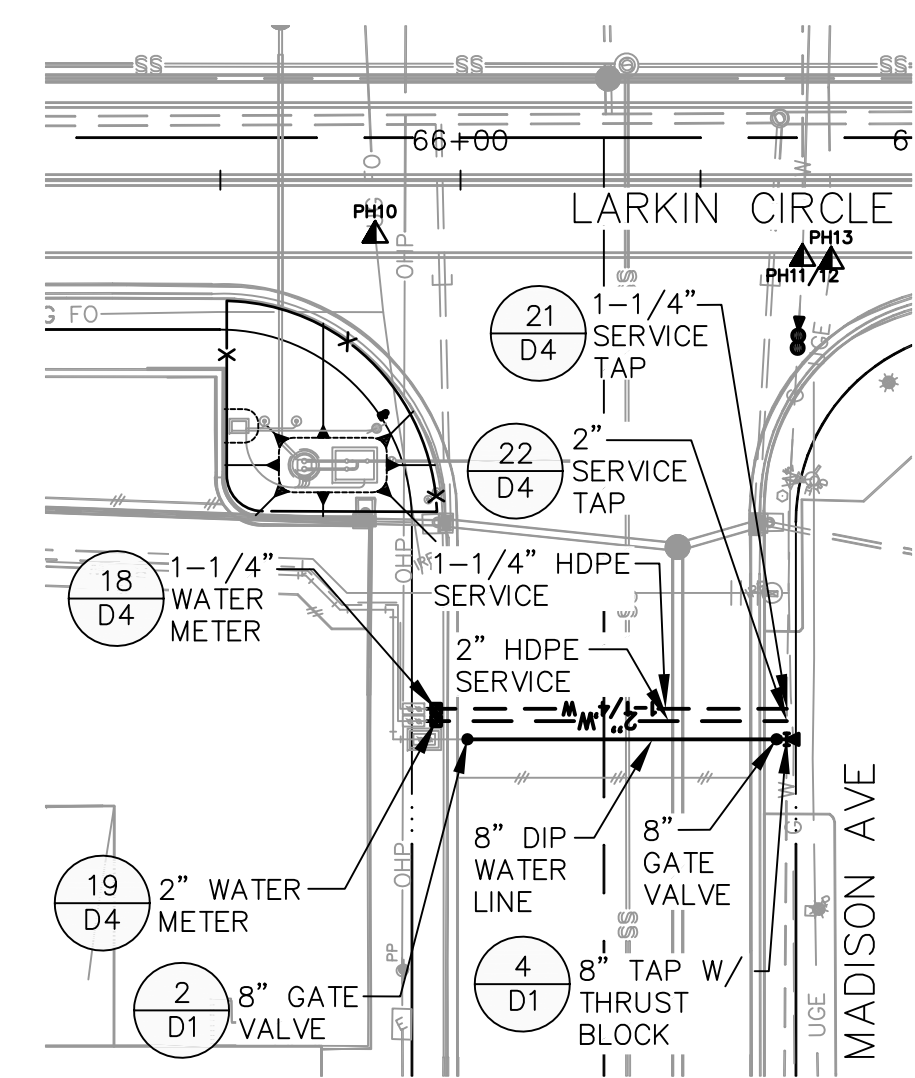
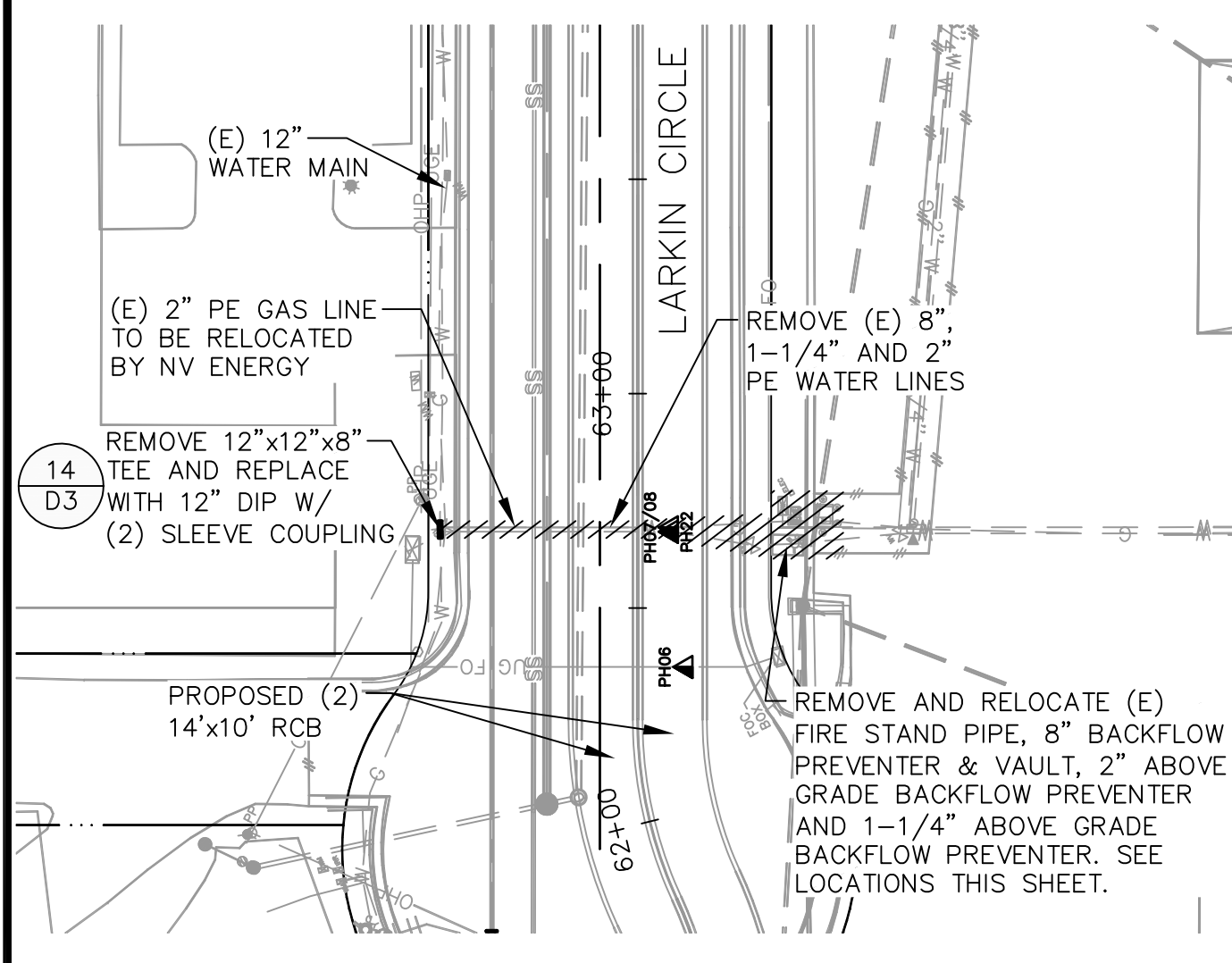


2 working days  
**Call before you Dig.**  
 1-800-227-2600

**HORIZ. SCALE: 1" = 40'**  
**VERT. SCALE: 1" = 4'**

FOR TMWA USE ONLY NEW BUSINESS WATER			
WO#	Map #		
	New Main		
Date Installed:	Pressure Test Date:	Depth:	Hours Tested:
PSI			
Inspector:	Contractor:		
	Feet Laid	Size	Type
			Main/Svc
Retired/ Abandoned/Removed			
Feet Ref.	Size	Type	Main/Svc
# of Meter boxes Inst./Size:			
# of Seters Inst./Size:			

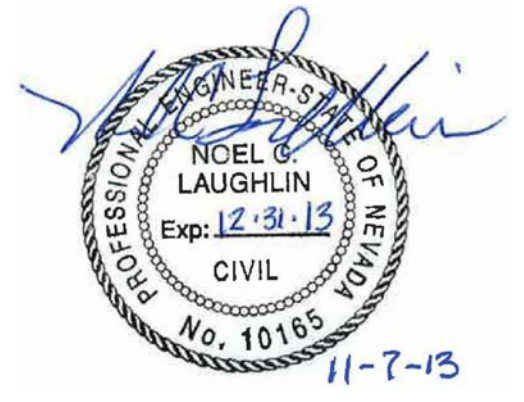




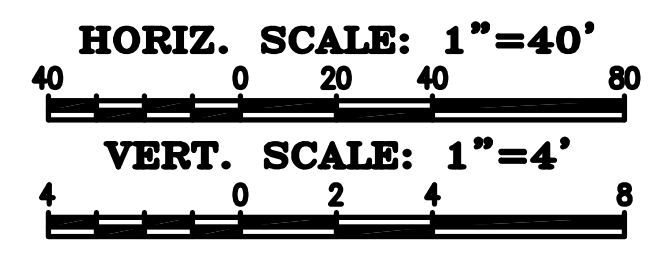
**VALVE ISOLATION NOTE:**  
 IN ORDER TO ISOLATE THIS SECTION OF 16" MAIN, MAINLINE VALVES AT VISTA BLVD./I-80 NORTH OFFRAMP AND E. GREG ST./LARKIN CIR.  
 IN ORDER TO ISOLATE THIS SECTION OF 12" MAIN, MAINLINE VALVES AT SOUTH LARKIN CIR./MADISON AVE.  
 MUST BE CLOSED AS WELL AS ALL LATERAL MAINS IN BETWEEN THE TWO IN-LINE VALVES. THE TMWA INSPECTOR AND CONTRACTOR TO COORDINATE ALL VALVE CLOSINGS AND SERVICE DISRUPTIONS. THIS MAY REQUIRE WEEKEND OR NIGHT WORK.  
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WORK ORDER NO. 10.0001.19  
 DESIGNED JRS  
 DRAWN FEO  
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 SUBMITTED 10/21/13  
 RECOMMENDED  
 APPROVED

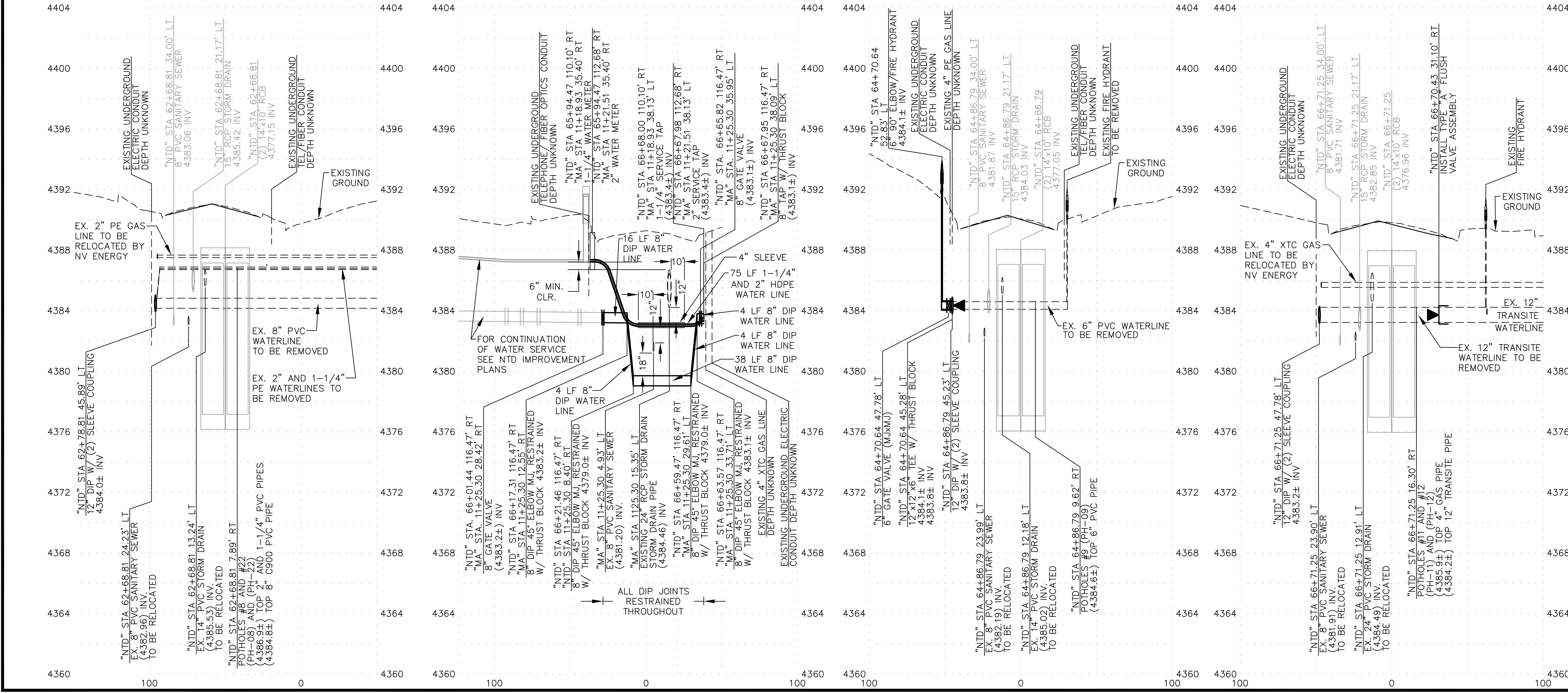
**TRUCKEE MEADOWS WATER**  
 1805 CAPITAL BLVD., PO BOX 3003  
 RENO, NEVADA 89505-3003  
 TEL 775-854-9000 / FAX 775-854-9008



2 working days  
**Call before you Dig.**  
 1-800-227-2600



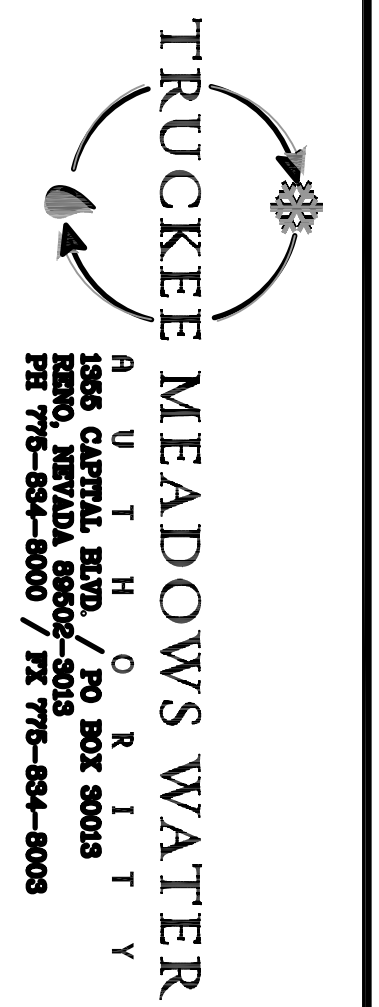
FOR TMWA USE ONLY NEW BUSINESS WATER			
WO#	Map #	Date Installed:	Depth:
	New Main	Pressure Test Date:	
		PSI	Hours Tested:
		Inspector:	
		Contractor:	
Feet Laid	Size	Type	Main/Svc
Retired/ Abandoned/Removed			
Feet Ref.	Size	Type	Main/Svc
# of Meter boxes Inst./Size:			
# of Seters Inst./Size:			



**NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1**  
**CITY OF SPARKS, WASHOE COUNTY, NEVADA**  
**PLAN AND PROFILE**



WORK ORDER NO. 10.0001.19  
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 SUBMITTED 10/21/13  
 RECOMMENDED  
 APPROVED



**NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1**  
**CITY OF SPARKS, WASHOE COUNTY, NEVADA**  
**PLAN AND PROFILE**

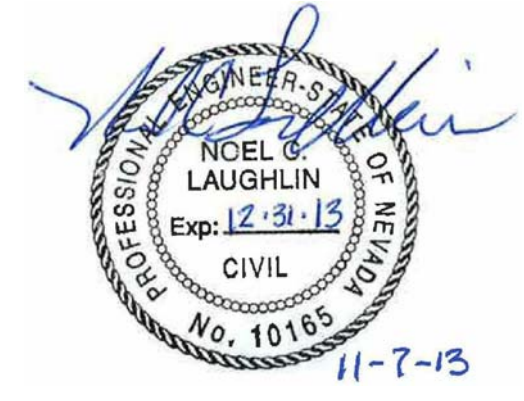
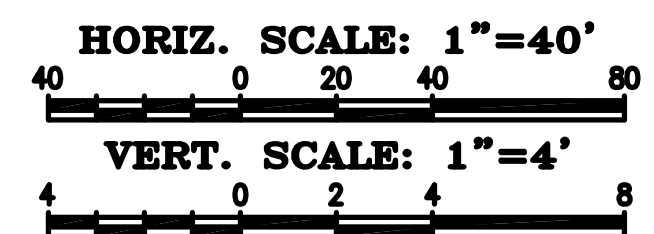
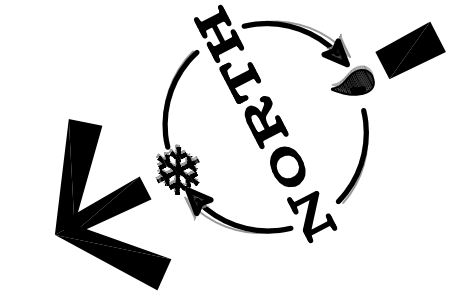
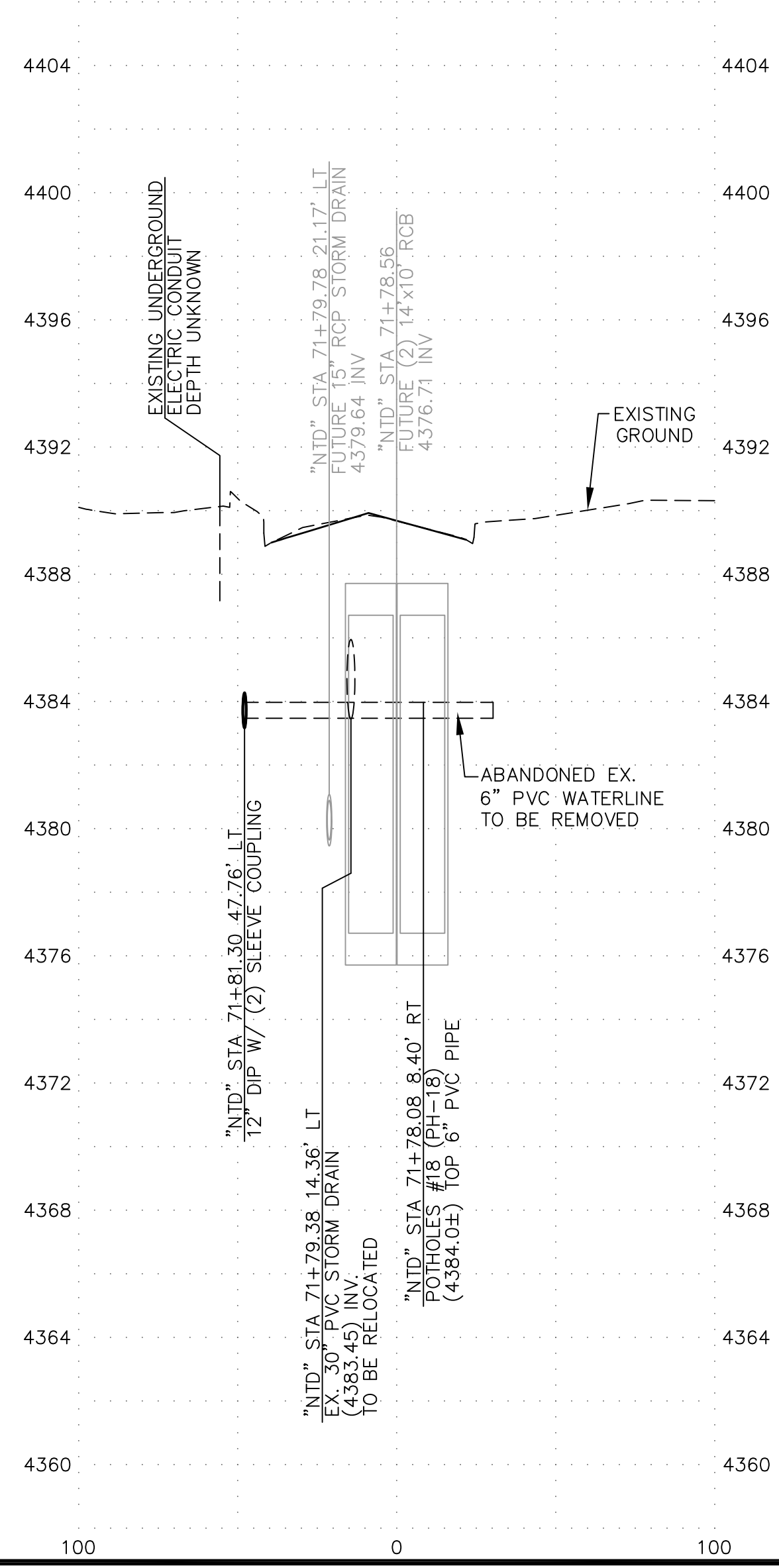
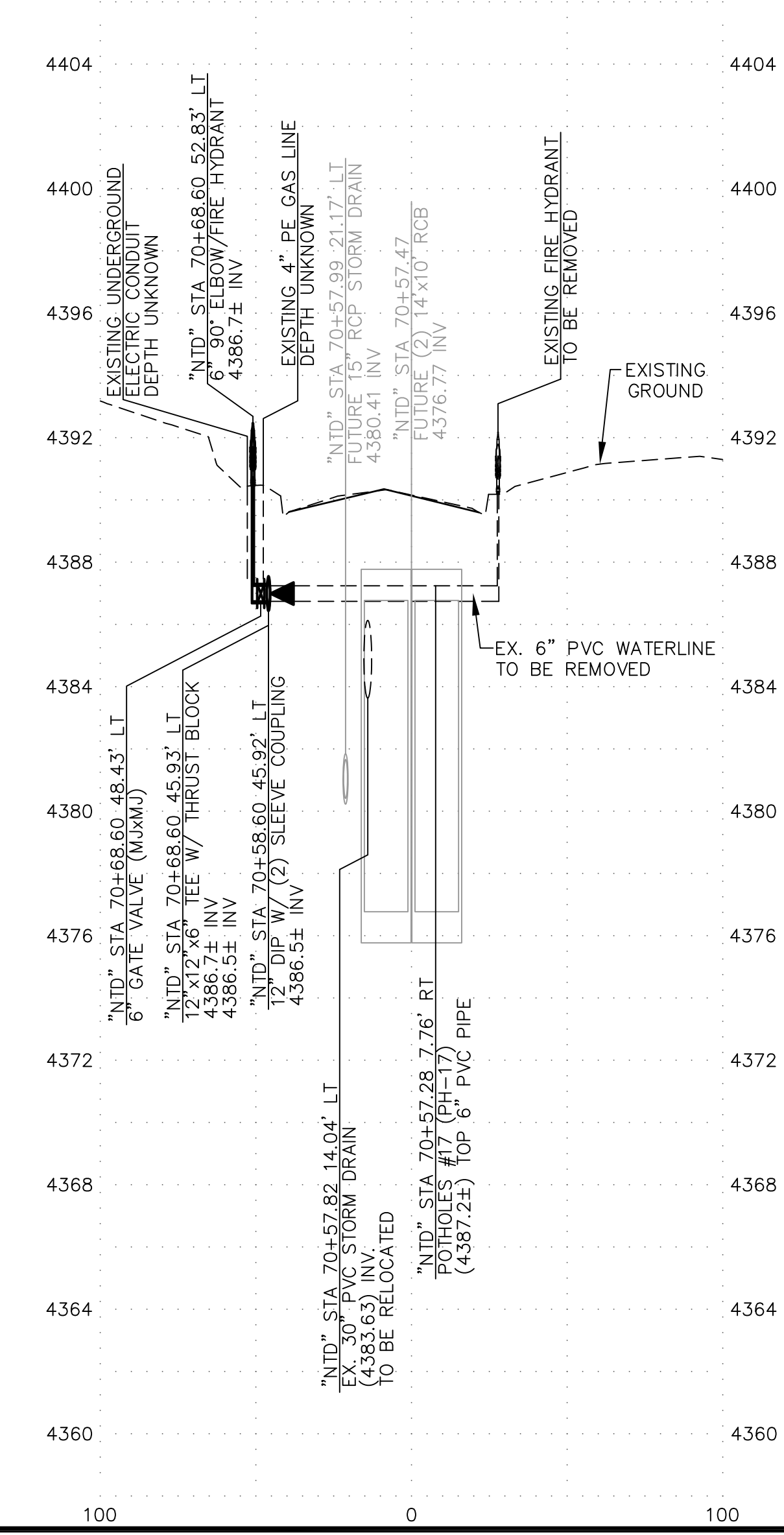
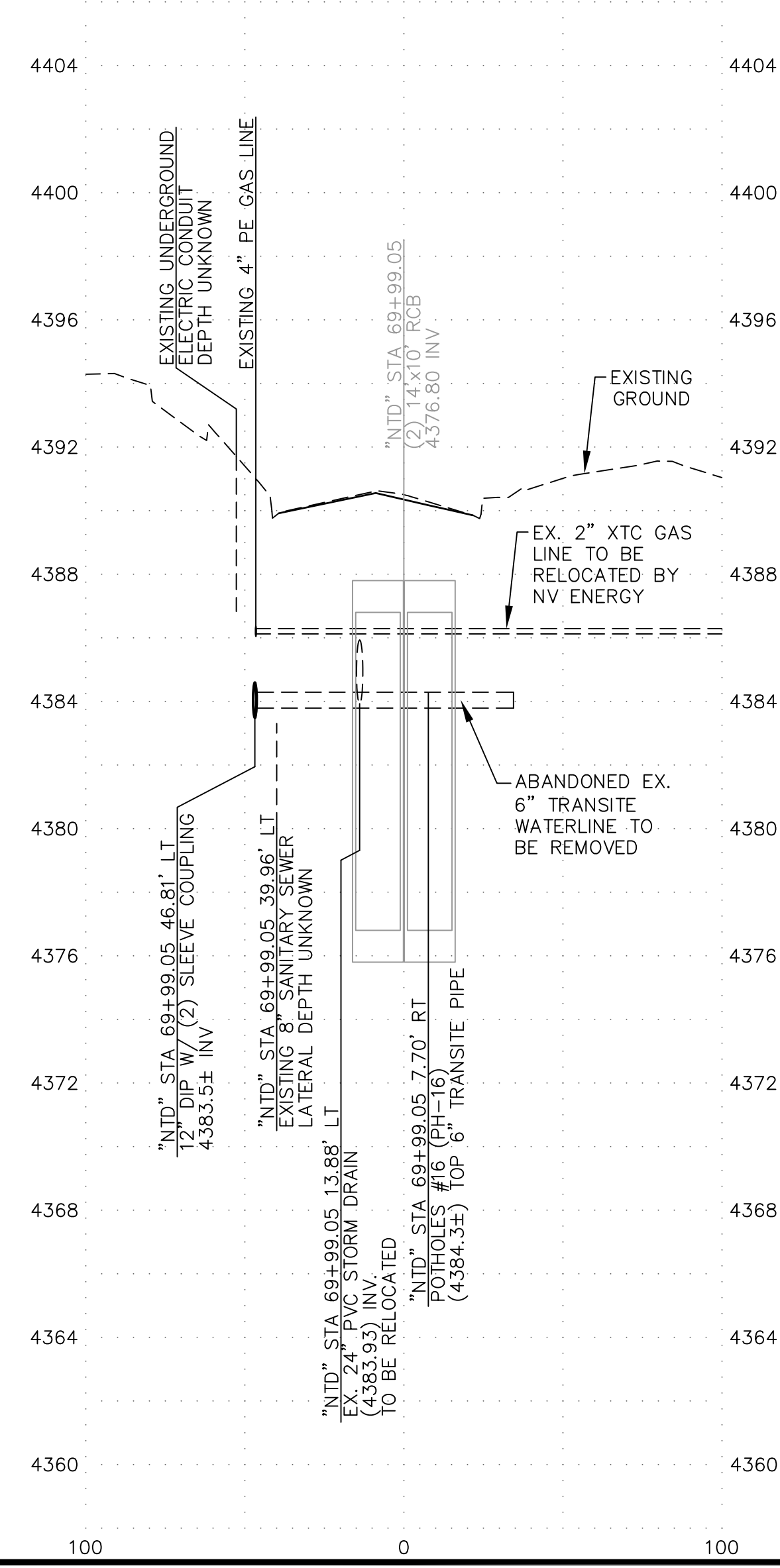
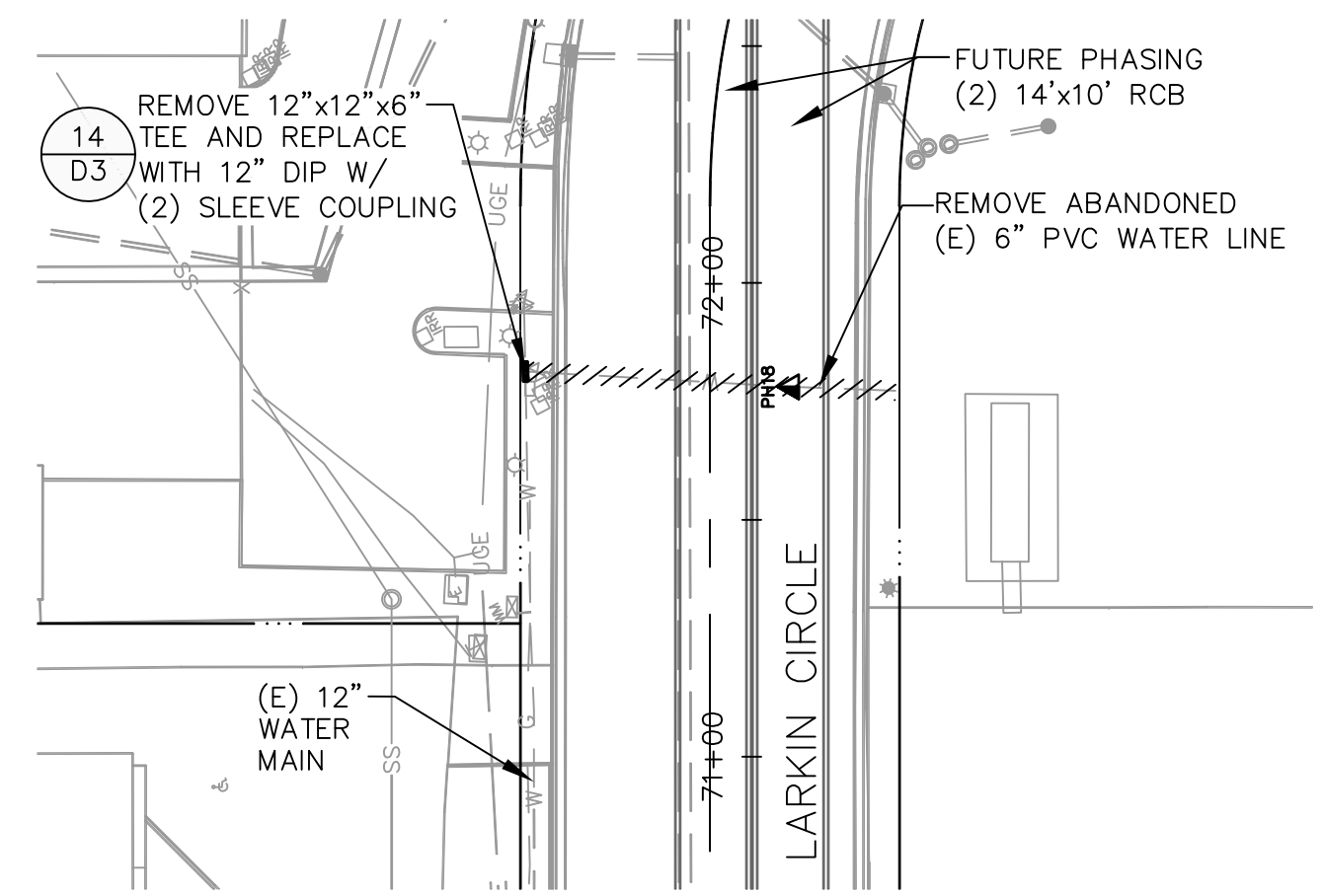
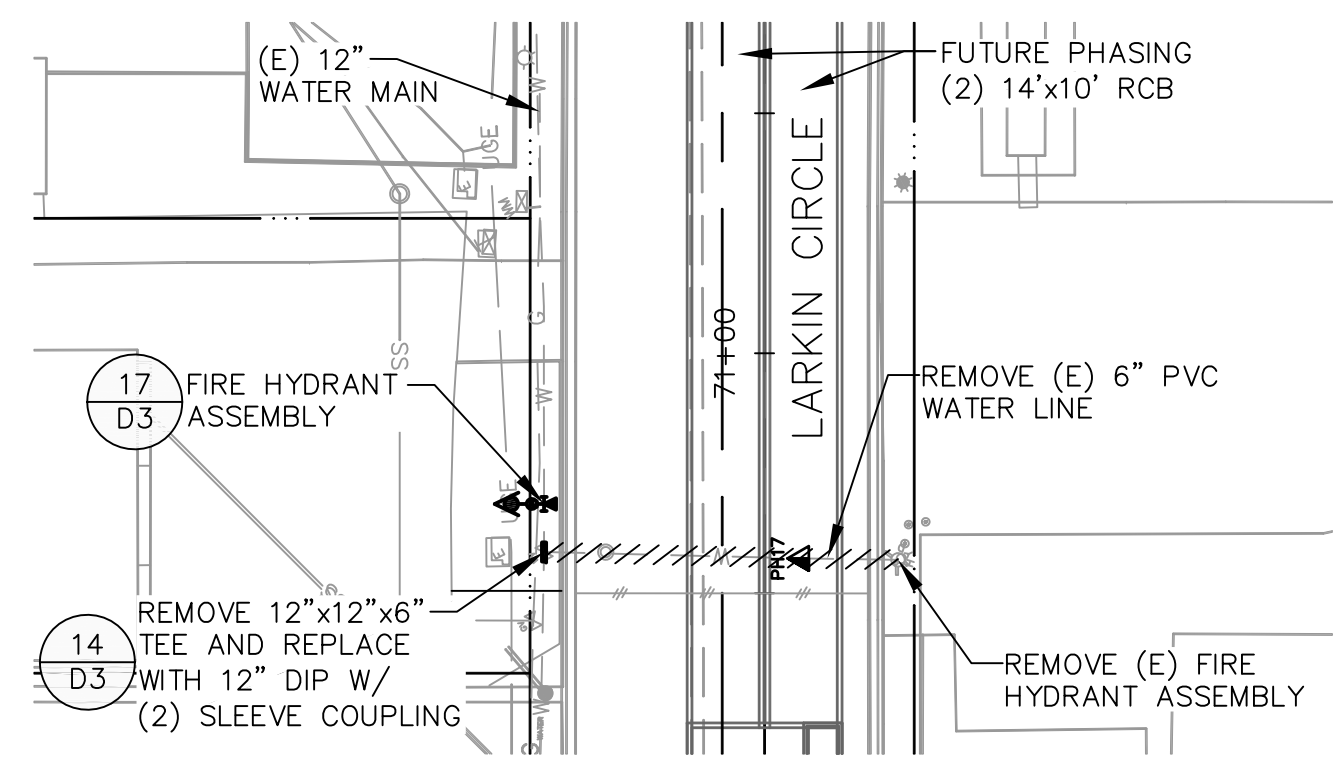
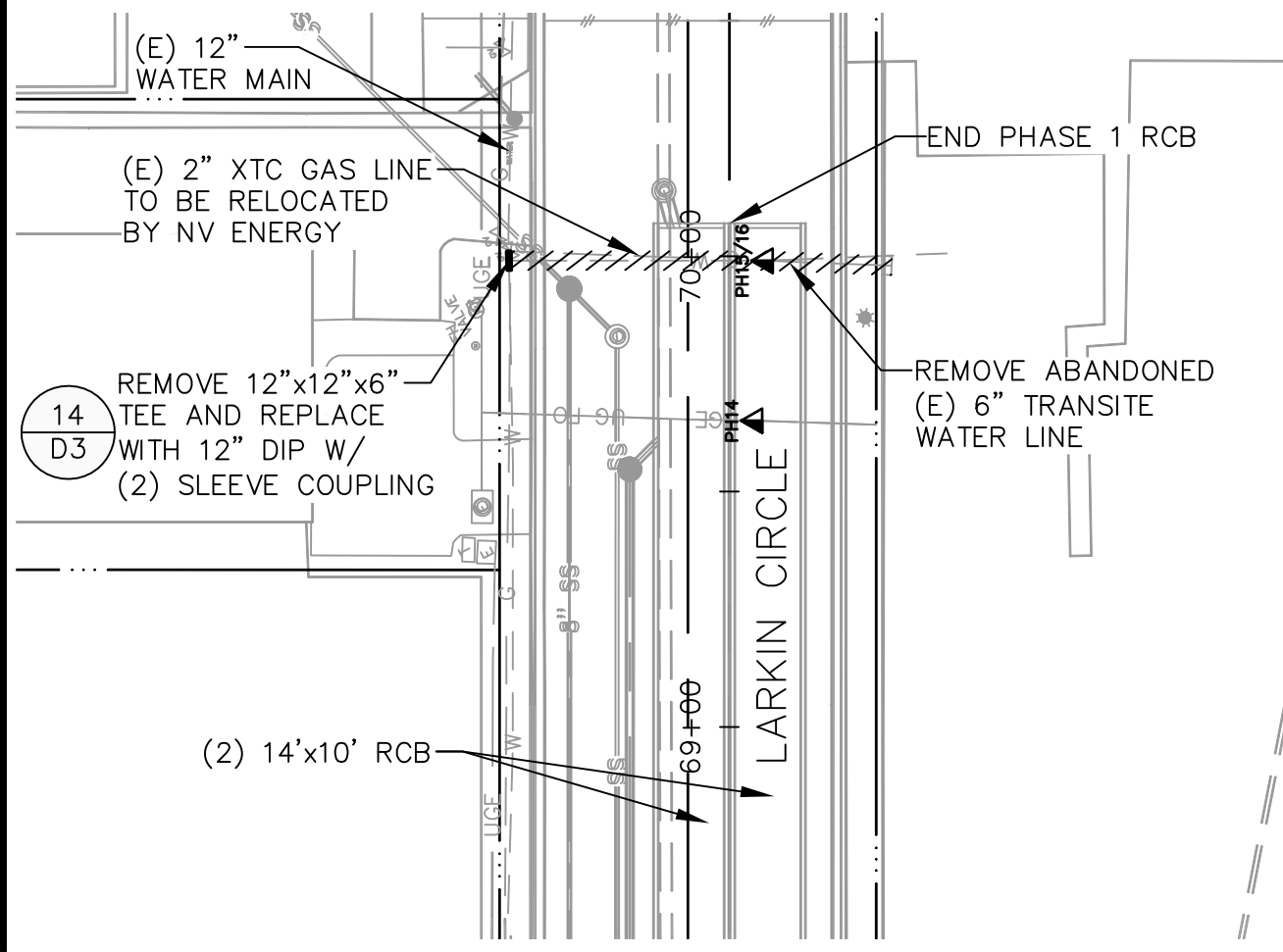
SHEET NUMBER  
**P4**  
 7 of 11

**VALVE ISOLATION NOTE:**  
 IN ORDER TO ISOLATE THIS SECTION OF 16" MAIN,  
 MAINLINE VALVES AT VISTA BLVD./1-80 NORTH OFFRAMP AND E.  
 GREG ST./LARKIN CIR.

IN ORDER TO ISOLATE THIS SECTION OF 12" MAIN,  
 MAINLINE VALVES AT SOUTH LARKIN CIR./MADISON AVE.

MUST BE CLOSED AS WELL AS ALL LATERAL MAINS IN BETWEEN  
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 TO COORDINATE ALL VALVE CLOSINGS AND SERVICE DISRUPTIONS.  
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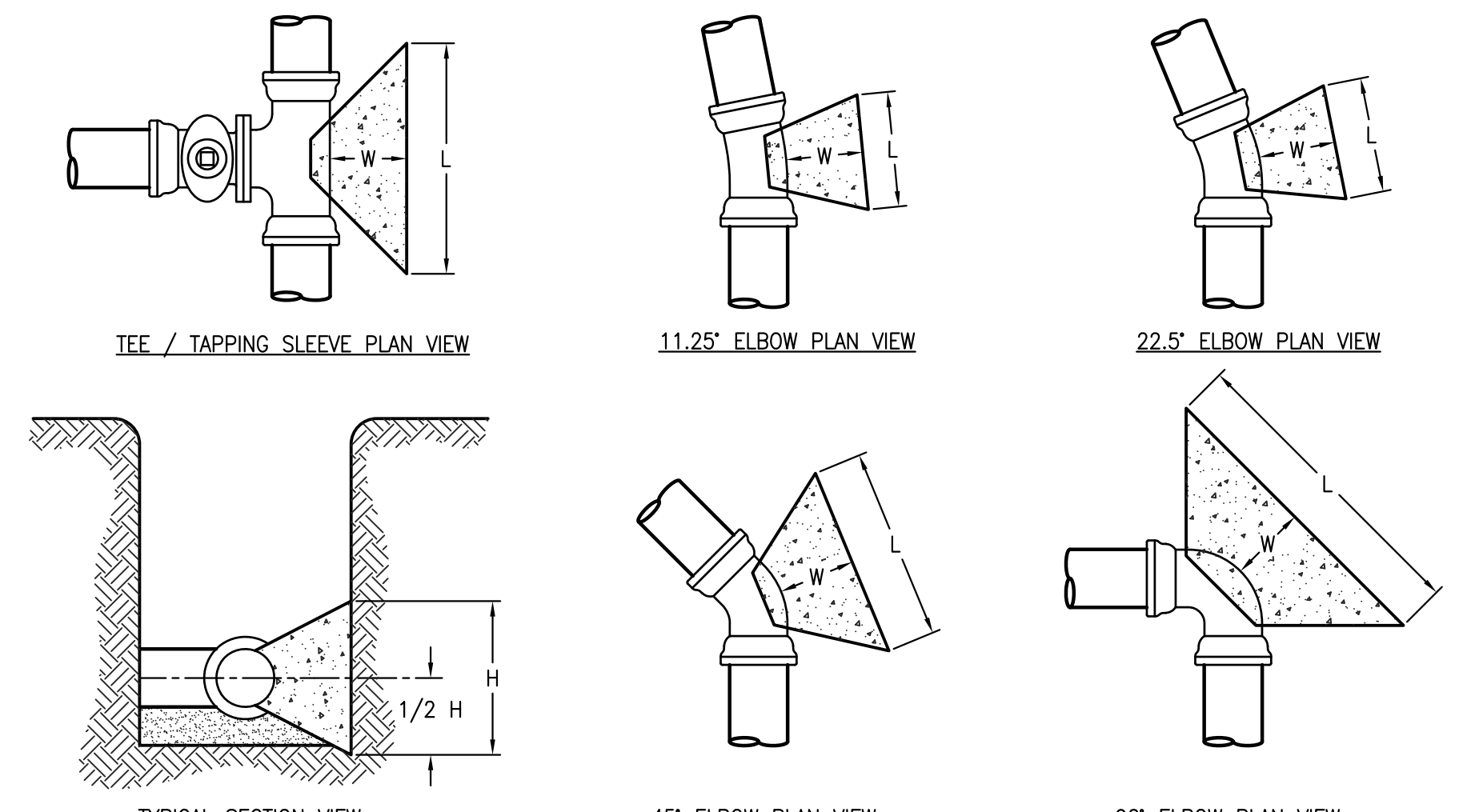


2 working days  
 Call before you Dig.  
 1-800-227-2600

FOR TMWA USE ONLY  
 NEW BUSINESS WATER

WO#	Map #		
New Main			
Date Installed:	Depth:		
Pressure Test Date:	Hours Tested:		
Inspector:			
Contractor:			
Feet Laid	Size	Type	Main/Svc
Retired/ Abandoned/Removed			
Feet Ref.	Size	Type	Main/Svc
# of Meter boxes Inst./Size:			
# of Seters Inst./Size:			





THRUST BLOCK DIMENSIONS

BRANCH SIZE (INCHES)	TEE, TAP, OR DEAD END			11.25' ELBOW			22.5' ELBOW			45' ELBOW			90' ELBOW		
	L (FEET)	H (FEET)	W MIN. (FEET)	L (FEET)	H (FEET)	W MIN. (FEET)	L (FEET)	H (FEET)	W MIN. (FEET)	L (FEET)	H (FEET)	W MIN. (FEET)	L (FEET)	H (FEET)	W MIN. (FEET)
4	1.5	1	1	1	1	1	1	1	1	1.5	1	1	2	1	1
6	2	2	1	1	1	1	1.5	1	1	2	1.5	1	2.5	2	1
8	3	2	1	1	1.5	1	1.5	1.5	1	2.5	2	1	4	2	1
10	3.5	2.5	1	1	2	1	2	2	1	3	2.5	1	5	2.5	1
12	4.5	3	1	1	2.5	2	2	2	1	4	2.5	1	6	3	1

**THRUST BLOCK DESIGN CRITERIA:**  
 THRUST BLOCK SIZES HAVE BEEN CALCULATED USING THE METHOD AND EQUATIONS PUBLISHED IN *THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE, SIXTH EDITION 2006* BY THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) UTILIZING THE FOLLOWING DESIGN PARAMETERS: DESIGN PRESSURE = 150 PSI (SEE NOTE #4 BELOW), SOIL BEARING CAPACITY = 2,000 PSF (SEE NOTE #4 BELOW), SAFETY FACTOR = 1.5, AND NOMINAL PIPE DIAMETER

**THRUST BLOCK NOTES:**

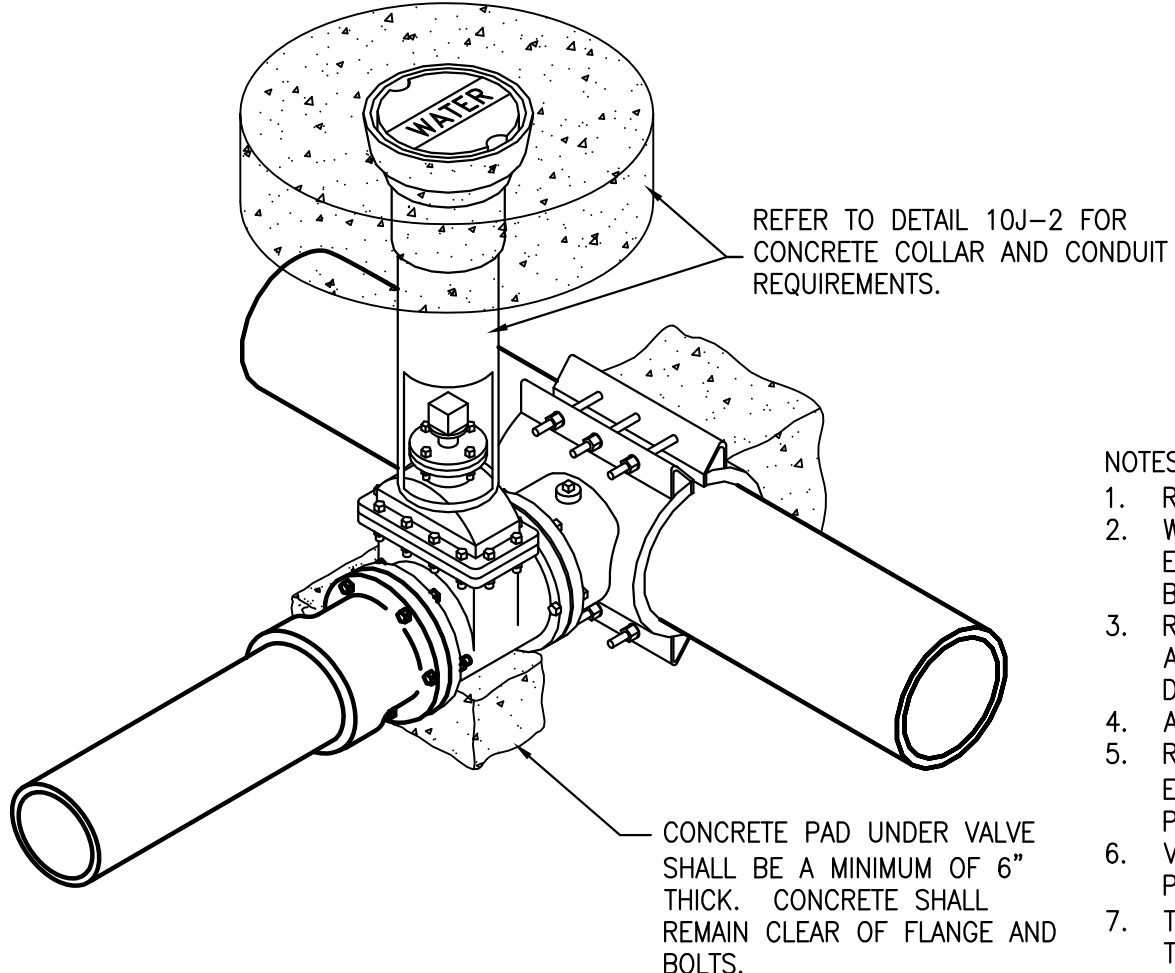
- CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI. REFERENCE SECTION 1.1.13 OF THE TRUCKEE MEADOWS WATER AUTHORITY ENGINEERING & CONSTRUCTION STANDARDS FOR ADDITIONAL REQUIREMENTS. BAG CONCRETE MIX IS NOT ACCEPTABLE.
- ALL FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE WRAP PER AWWA C105. MASTIC (BRUSH-ON) SHALL BE APPLIED TO ALL BOLTS, ETC.
- THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL. IN CASES WHERE THIS IS NOT PRACTICAL, BACKFILL AREA BEHIND WHERE THRUST BLOCK WILL BE POURED WITH TYPE 2, CLASS B AGGREGATE BASE (PER SECTION 200.01.03 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION - ORANGE BOOK) COMPACTED TO 95% MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY PROCEDURES SET FORTH IN ASTM D 1557, CUT-BACK COMPACTED AGGREGATE BASE TO EXPOSE A FIRM SURFACE, THEN POUR THRUST BLOCK.
- FOR SOIL BEARING CAPACITY LESS THAN 2,000 PSF AND/OR DESIGN PRESSURE IN EXCESS OF 150 PSI, INCREASE THRUST BLOCK BEARING AREAS ACCORDINGLY. REVISED THRUST BLOCK SCHEDULE FOR SPECIFIC CONDITIONS SHALL BE SUBMITTED BY THE DESIGN ENGINEER.

**THRUST BLOCKS - TMWA DRAWING 10L-2**

N.T.S.

MATERIAL LIST

QTY	DESCRIPTION
1	FL x FL RESILIENT WEDGE GATE VALVE WITH 2" OPERATING NUT (SIZE TO MATCH TAP DIAMETER)
1	TAPPING SLEEVE (STAINLESS STEEL FLANGE)
1	FL x PO ADAPTER
1	6" SDR-35 PVC CONDUIT PIPE SECTION
1	6" CAST IRON VALVE BOX WITH COVER MARKED "WATER"
1	FULL FACE GASKET
1	CONCRETE BULK
1	MASTIC (1 GALLON CAN - BRUSH ON)



**NOTES:**

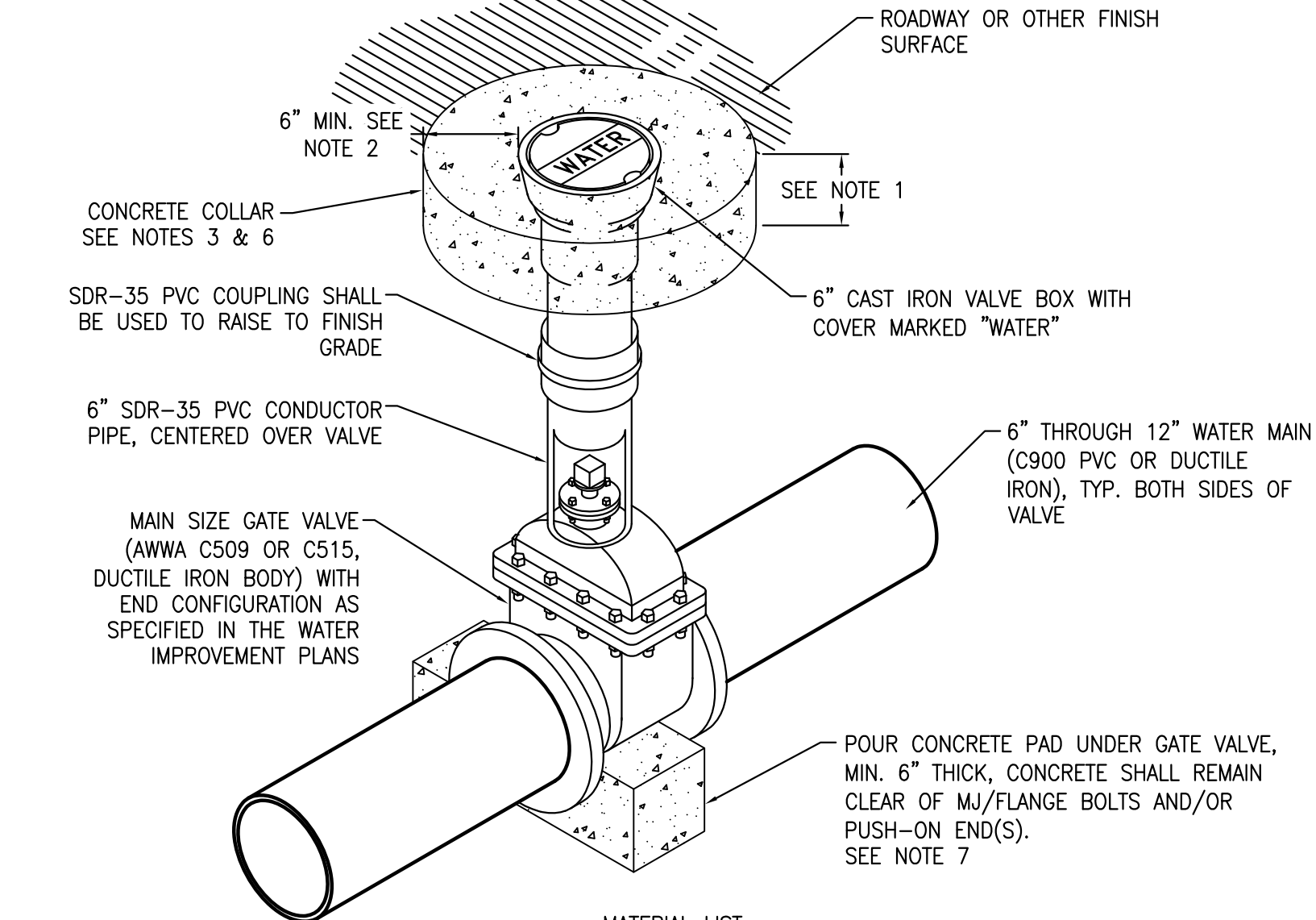
- REQUIRES ONE (1) TAPPING SLEEVE. REFER TO 10D-2.
- WHEN TAPPING STEEL OR OD STEEL BACKING PLATE MUST BE DESIGNED BY ENGINEER. WHEN TAPPING OD STEEL SIZE ON SIZE, REDUCE TAP ONE SIZE THEN BELL UP AFTER TAP.
- REFER TO DETAIL 10L-2 FOR THRUST BLOCK SIZING. BAG CONCRETE IS NOT ACCEPTABLE FOR PAD OR THRUST BLOCK. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
- ALL EXPOSED METAL MUST BE COATED WITH BRUSH ON MASTIC.
- REMOVE TEST PLUG AND HYDROSTATICALLY PRESSURE TEST TAPPING SLEEVE NOT TO EXCEED MANUFACTURER'S PRESSURE RATING, APPLY PIPE COMPOUND, AND REINSERT PLUG.
- VALVE SHALL BE BLIND FLANGED AND PRESSURE TESTED AT TIME OF TAPPING SLEEVE PRESSURE TEST.
- TAP SHALL BE A MINIMUM OF 24" FROM THE CUT OR SPIGOT END OF THE PIPE TO THE BELL TRANSITION.

**STANDARD TAP 4" TO 12"**  
**TMWA DRAWING 10D-3**

N.T.S.

**NOTES:**

- CONCRETE COLLAR SHALL BE MINIMUM 6-INCHES THICK OR MATCH PAVEMENT THICKNESS, WHICHEVER IS GREATER, UNLESS OTHERWISE SPECIFIED BY THE JURISDICTIONAL AGENCY RESPONSIBLE FOR THE ROADWAY.
- FOR MULTIPLE VALVE/RISER BOXES IN CLOSE PROXIMITY, A MONOLITHIC CONCRETE COLLAR MAY BE POURED.
- CONTRACTOR AND/OR DESIGN ENGINEER SHALL CONSULT WITH THE JURISDICTIONAL AGENCY RESPONSIBLE FOR THE ROADWAY FOR REQUIREMENTS THAT MAY VARY FROM THIS STANDARD PRIOR TO CONSTRUCTION.
- ALL BOLTS AND EXPOSED METAL SHALL BE COATED WITH BRUSH-ON MASTIC.
- GATE VALVE, DUCTILE IRON PIPE, AND OTHER METAL PARTS SHALL BE ENCASED WITH POLYETHYLENE WRAP PER AWWA C105.
- UNLESS OTHERWISE SPECIFIED BY THE JURISDICTIONAL AGENCY RESPONSIBLE FOR THE ROADWAY, PORTLAND CEMENT CONCRETE (P.C.C.) FOR CONCRETE COLLAR SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAXIMUM WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. BAG CONCRETE MIX IS NOT ACCEPTABLE.
- CONCRETE FOR PAD SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 3,000 PSI AFTER 28 DAYS. BAG CONCRETE MIX IS NOT ACCEPTABLE.



MATERIAL LIST

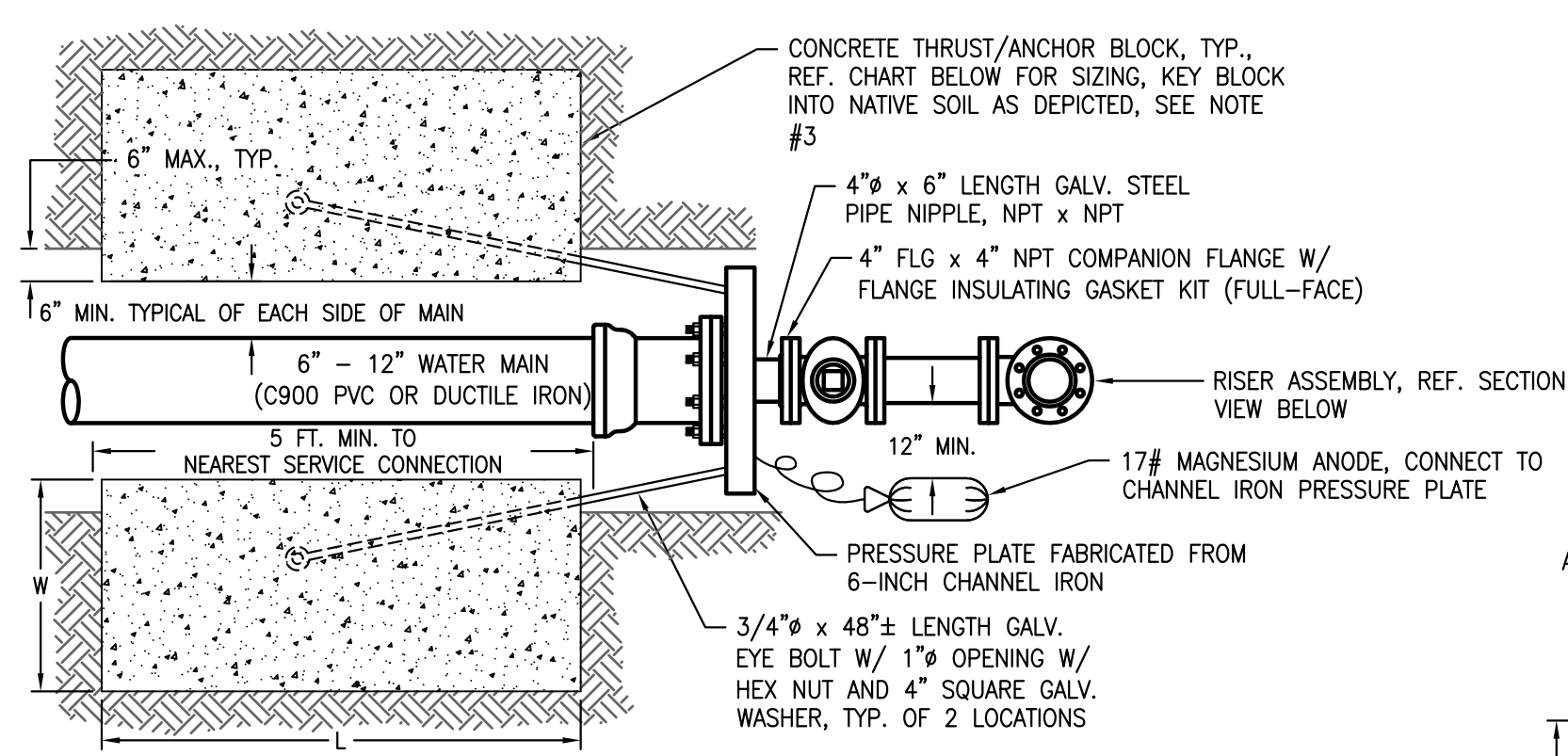
QTY	DESCRIPTION
1	MAIN SIZE GATE VALVE (AWWA C509 OR C515, DUCTILE IRON BODY) WITH END CONFIGURATION AS SPECIFIED IN THE WATER IMPROVEMENT PLANS
1	MASTIC (1 GALLON CAN - BRUSH ON)
1	6" SDR-35 PVC CONDUCTOR PIPE SECTION
1	6" CAST IRON VALVE BOX WITH COVER MARKED "WATER"
1	FULL FACE GASKET
1	CONCRETE BULK - PAD AND COLLAR

**IN-LINE GATE VALVE TMWA DRAWING 10J-2**

N.T.S.

**NOTES:**

- ALL BOLTS, EXPOSED METAL, AND STEEL PIPING SHALL BE COATED WITH BRUSH-ON MASTIC.
- VALVE, FITTINGS, DUCTILE IRON PIPE, AND OTHER METAL PARTS SHALL BE ENCASED WITH POLYETHYLENE WRAP PER AWWA C105.
- CONCRETE FOR PADS AND THRUST/ANCHOR BLOCKS SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 3,000 PSI AFTER 28 DAYS. BAG CONCRETE MIX IS NOT ACCEPTABLE.



THRUST/ANCHOR BLOCK SIZING

MAIN SIZE	LENGTH (L)	WIDTH (W)	HEIGHT (H)
6"	2 FEET	2 FEET	1 FOOT
8"	3 FEET	2 FEET	1-1/2 FEET
10"	3 FEET	2-1/2 FEET	2 FEET
12"	3 FEET	3 FEET	2-1/2 FEET

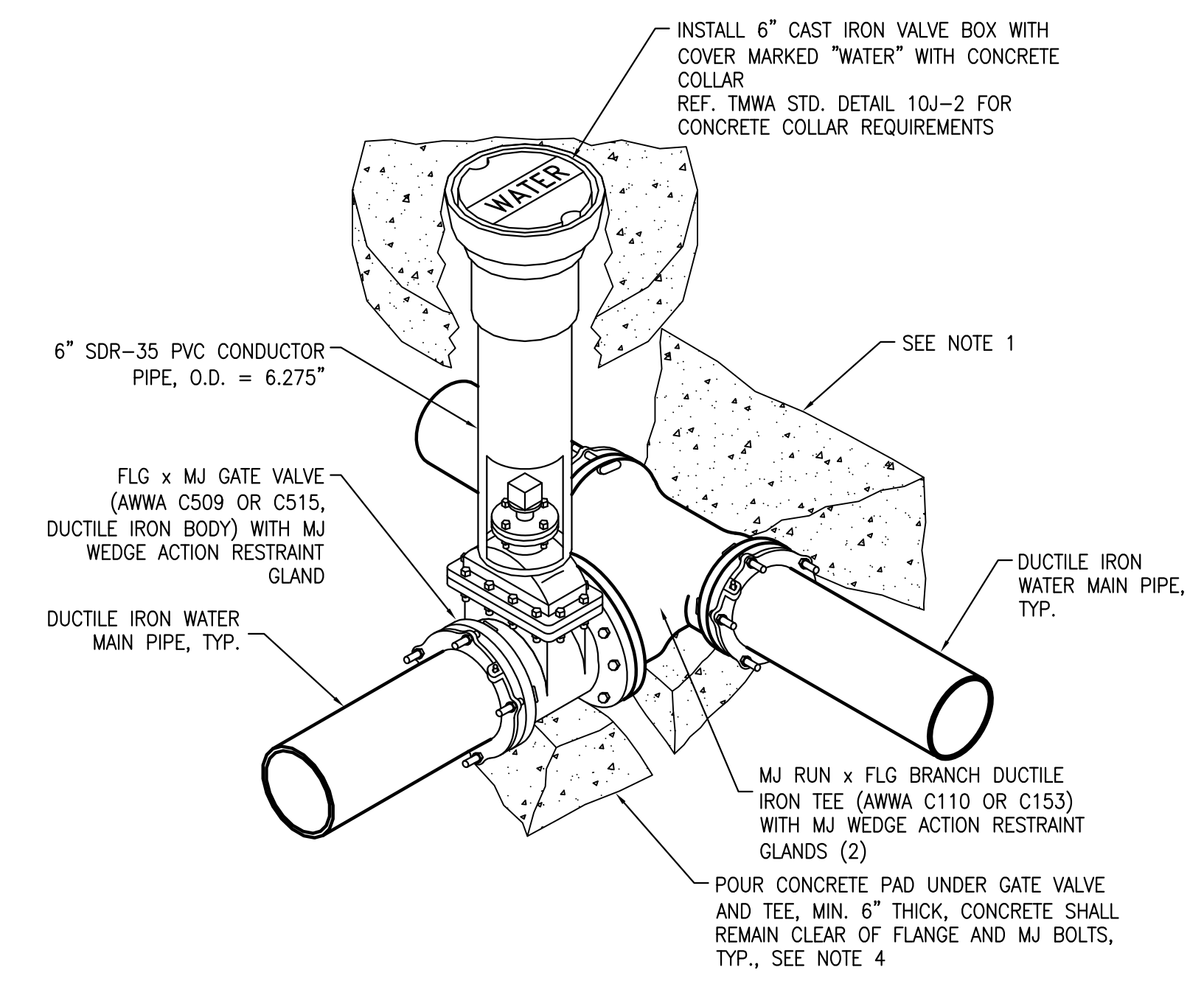
REF. TMWA STD. DETAIL 10L-2 FOR THRUST/ANCHOR BLOCK SIZING DESIGN CRITERIA

**TYPE "A" FLUSH ASSEMBLY FOR MAIN SIZES 6" TO 12"**  
**TMWA DRAWING 10E-2**

N.T.S.

**NOTES:**

- REFERENCE TMWA STANDARD DETAIL 10L-2 FOR THRUST BLOCK SIZING AND REQUIREMENTS.
- ALL BOLTS AND EXPOSED METAL SHALL BE COATED WITH BRUSH-ON MASTIC.
- TEE, VALVES, FITTINGS, DUCTILE IRON PIPE AND OTHER METAL PARTS SHALL BE ENCASED WITH POLYETHYLENE WRAP PER AWWA C105.
- CONCRETE FOR PADS SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 3,000 PSI AFTER 28 DAYS. BAG CONCRETE MIX IS NOT ACCEPTABLE.

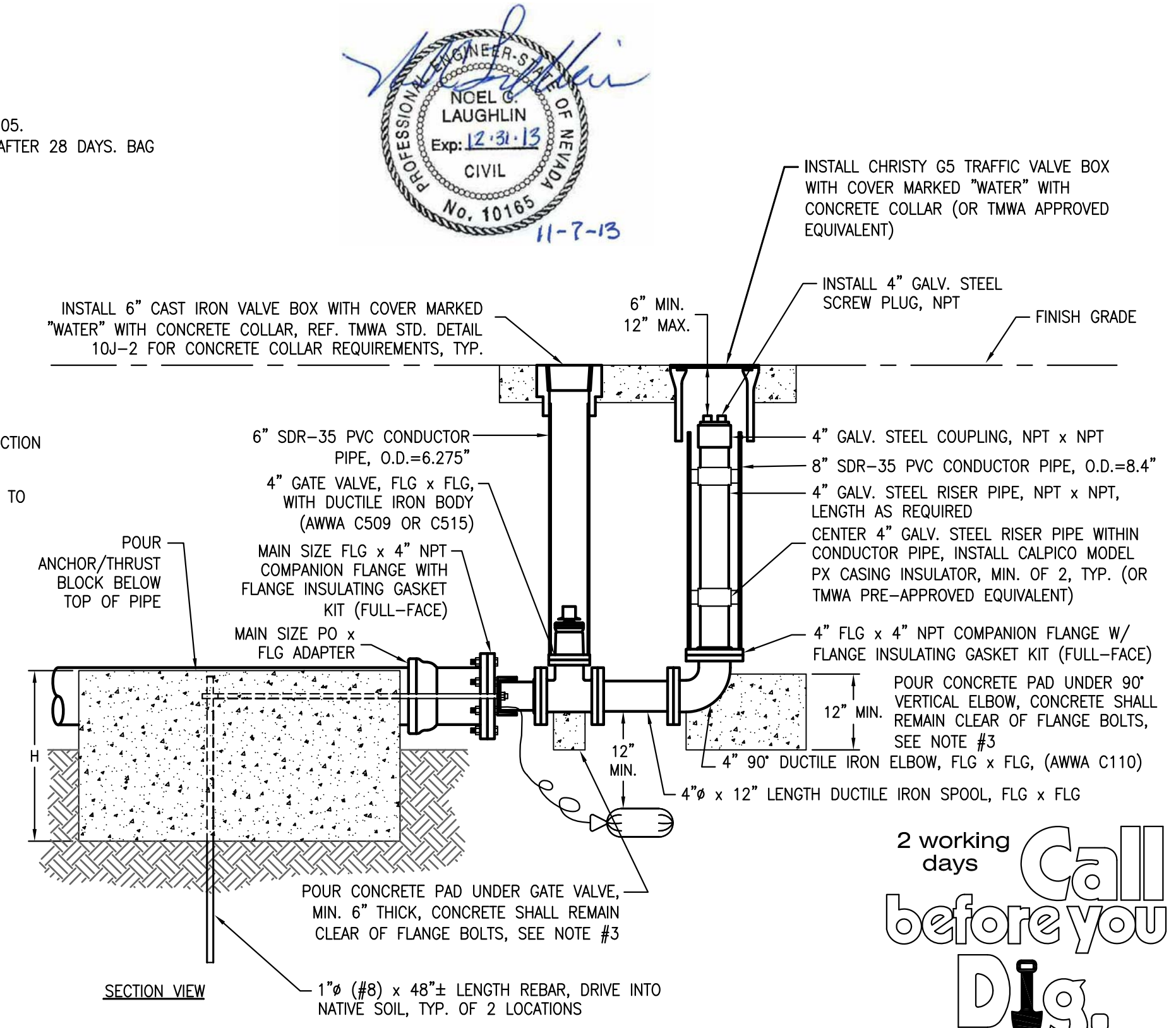


MATERIAL LIST

QTY	DESCRIPTION
1	MJ RUN x FLG BRANCH DUCTILE IRON TEE (AWWA C110 OR C153)
1	FLG x MJ GATE VALVE WITH DUCTILE IRON BODY (AWWA C509 OR C515)
3	MJ WEDGE ACTION RESTRAINT GLAND
1	6" CAST IRON VALVE BOX WITH COVER MARKED "WATER"
1	6" SDR-35 PVC CONDUCTOR PIPE SECTION, O.D. = 6.275"
-	CONCRETE BULK - THRUST BLOCKS, PADS, COLLARS

**DISTRIBUTION BRANCH INSTALLATIONS - TMWA DRAWING 10B-4**

N.T.S.



2 working days  
 Call before you Dig.  
 1-800-227-2600



TAP SIZE - FLANGED BRANCH							
MAIN SIZE	VENDOR	MAIN TYPE	4"	6"	8"	10"	12"
4"	SM ROM	DI/CI PVC	663-04800400-200 SST-4.90 x 4" FL				
6"	SM ROM	DI/CI PVC	663-06630400-000 SST-7.00 x 4" FL	663*06630600-200 SST-7.00 x 6" FL			
	SM ROM	TR	663-(OD)0400-000 SST-(OD) x 4" FL	663-(OD)0600-200 SST-(OD) x 6" FL			
8"	SM ROM	DI/CI PVC	663-09050400-000 SST-9.06 x 4" FL	663-09050600-000 SST-9.06 x 6" FL	663-09050800-200 SST-9.06 x 8" FL		
	SM ROM	TR	663-(OD)0400-000 SST-(OD) x 4" FL	663-(OD)0600-000 SST-(OD) x 6" FL	663-(OD)0800-200 SST-(OD) x 8" FL		
	SM ROM	SCH 40 STEEL	663-08630400-000 SST-8.63 x 4" FL	663-08630600-000 SST-8.63 x 6" FL	663-08630800-200 SST-8.63 x 8" FL		
10"	SM ROM	DI/CI PVC	663-11100400-000 SST-11.45 x 4" FL	663-11100600-000 SST-11.45 x 6" FL	663-11100800-000 SST-11.45 x 8" FL	663-11101000-200 SST-11.45 x 10" FL	
	SM ROM	TR	663-(OD)0400-000 SST-(OD) x 4" FL	663-(OD)0600-000 SST-(OD) x 6" FL	663-(OD)0800-000 SST-(OD) x 8" FL	66-(OD)1000-200 SST-(OD) x 10" FL	
	SM ROM	SCH 40 STEEL	663-10750400-000 SST-11.13 x 4" FL	663-10750600-000 SST-11.13 x 6" FL	663-10750800-000 SST-11.13 x 8" FL	663-10751000-200 SST-11.13 x 10" FL	
12"	SM ROM	DI/CI PVC	663-10750400-000 SST-13.30 x 4" FL	663-13200600-000 SST-13.30 x 6" FL	663-13200800-000 SST-13.30 x 8" FL	663-13201000-000 SST-13.30 x 10" FL	663-13201200-200 SST-13.30 x 12" FL
	SM ROM	TR	663-(OD)0400-000 SST-(OD) x 4" FL	663-(OD)0600-000 SST-(OD) x 6" FL	663-(OD)0800-000 SST-(OD) x 8" FL	663-(OD)1000-000 SST-(OD) x 10" FL	663-(OD)1200-200 SST-(OD) x 12" FL
	SM ROM	SCH 40 STEEL	663-12750400-000 SST-12.85 x 4" FL	663-12750600-000 SST-12.85 x 6" FL	663-12750800-000 SST-12.85 x 8" FL	663-12751000-000 SST-12.85 x 10" FL	663-12751200-200 SST-12.85 x 12" FL

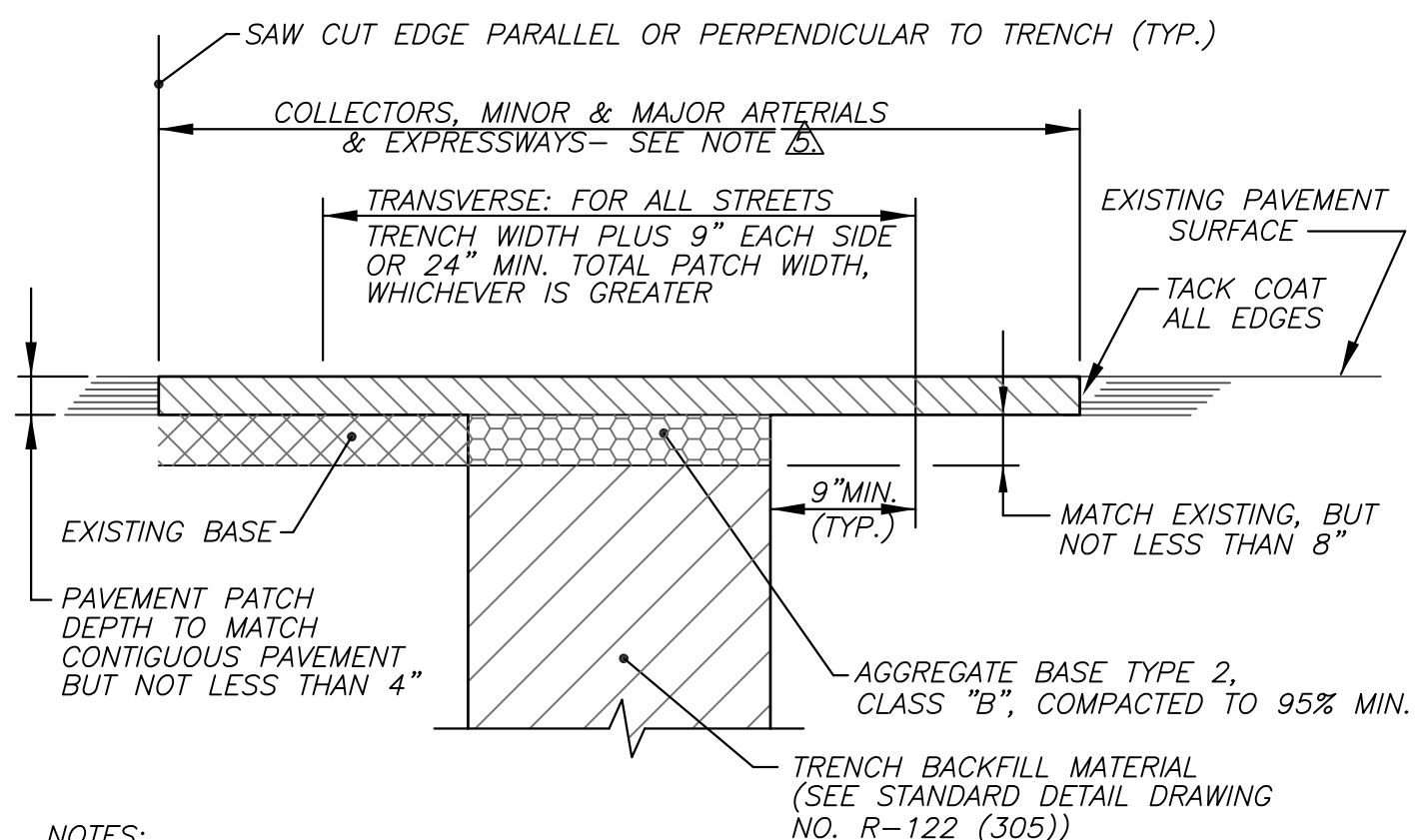
- NOTES:
- MAXIMUM TEST PRESSURE IS 300 PSI FOR LISTED MANUFACTURERS.
  - FLANGES (FL) SHALL BE STAINLESS STEEL ASTM A 240, TYPE 304.
  - VENDOR (MANUFACTURER): SM = SMITH-BLAIR, ROM = ROMAC INDUSTRIES
  - (OD) = PIPE OUTSIDE DIAMETER. CHECK WITH MANUFACTURER FOR CATALOG NUMBER FOR OTHER SIZES.
  - FOR TAPS ON TRANSITE MAINS OD MUST BE FIELD MEASURED PRIOR TO ORDERING PARTS.

### DISTRIBUTION TAP INSTALLATION WATER TAPPING SLEEVES

TMWA DRAWING 10D-2

N.T.S.

6



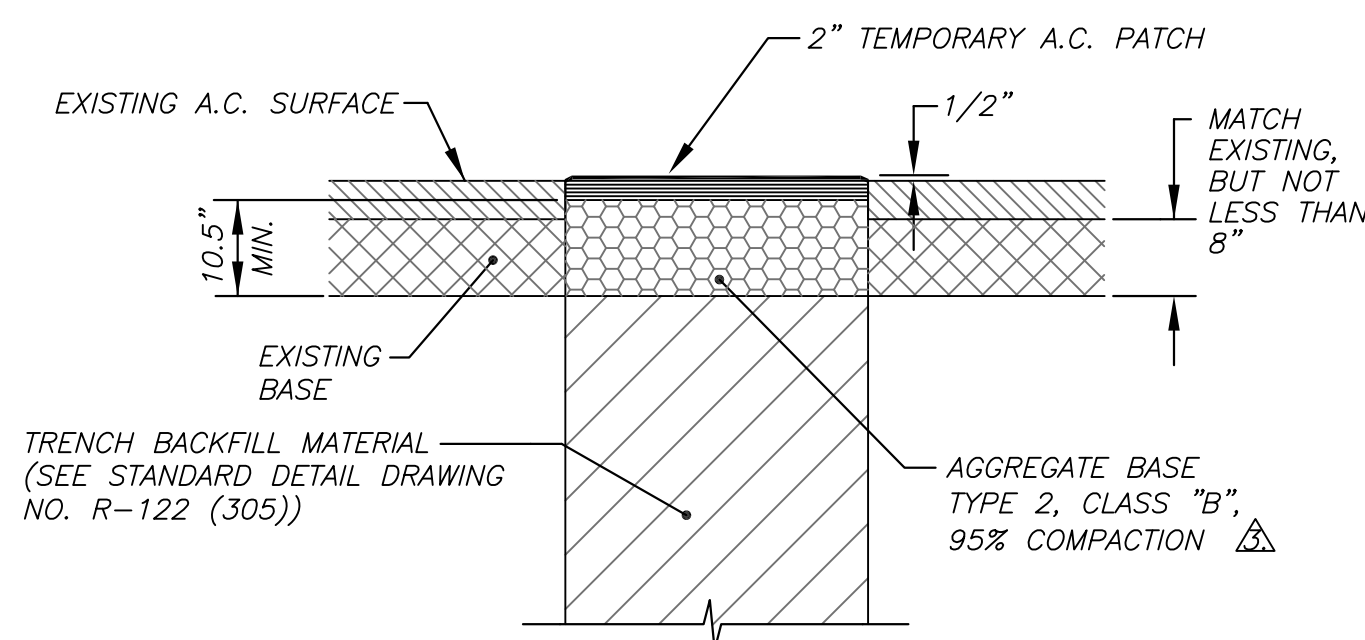
#### NOTES:

- A PERMIT MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO CUTTING ANY PUBLIC RIGHT-OF-WAY. 24 HOURS PRIOR TO TRENCH EXCAVATION, THE PERMITTEE MUST NOTIFY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.
- ALL PERMANENT PATCH WORK SHALL BE THE RESPONSIBILITY OF THE CITY OF RENO, UNLESS OTHERWISE AUTHORIZED BY THE CITY.
- IF SAW CUT IS WITHIN 2 FEET OF AN EXISTING PAVEMENT EDGE OR EXISTING PAVEMENT PATCH, REMOVE EXISTING PAVEMENT TO THAT EDGE AND REPLACE ENTIRE SECTION.
- ALL A.C. REPLACEMENT REQUIREMENTS ARE MINIMUM WIDTHS ONLY. THE CITY ENGINEER MAY REQUIRE WIDER PATCH SECTIONS OR OTHERWISE ALTER THESE REQUIREMENTS.
- LONGITUDINAL TRENCH PATCH WIDTH: FOR COLLECTORS, MINOR AND MAJOR ARTERIALS AND EXPRESSWAYS: IF SAW CUT EDGES FOR LONGITUDINAL OR TRANSVERSE EXCAVATIONS FALL WITHIN A TRAVEL LANE, SAW CUT SHALL BE EXTENDED TO, AND REMOVAL MADE TO, EDGE OF THE TRAVEL LANE, OR THE FULL DEPTH PATCH SHALL BE MADE PER THE SPECIFICATIONS FOR TRANSVERSE PATCHES AND THE ENTIRE TRAVEL LANE ROTOMILLED TO A DEPTH OF TWO INCHES AND OVERLAYED WITH TWO INCHES OF BITUMINOUS PLANTMIX AS DIRECTED BY THE ENGINEER.
- EDGE OF 4" ROCK WHEEL TRENCHES FOR CONDUIT SHALL BE LOCATED A MINIMUM OF 9" FROM GUTTER LIP AND SHALL BE PATCHED AS PER THE ABOVE DETAIL.
- AGGREGATE BASE AND BITUMINOUS PAVEMENT SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST REVISION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF LOOP DETECTORS, ADJUSTMENT OF UTILITIES AND SURVEY MONUMENTS TO GRADE AND INSTALLATION OF TEMPORARY PAVEMENT MARKERS.
- FOR P.C.C. CURB REPLACEMENT, SAW CUT EXISTING PAVEMENT 18 INCHES MIN. FROM GUTTER LIP LINE, REMOVE AND REPLACE PAVEMENT TO SAW CUT EDGES. CONCRETE MAY BE POURED NEAT AGAINST EXISTING EDGE OF ASPHALT IF APPROVED BY CITY ENGINEER.

### PERMANENT BITUMINOUS PAVEMENT PATCH DETAIL

N.T.S.

7



#### NOTES:

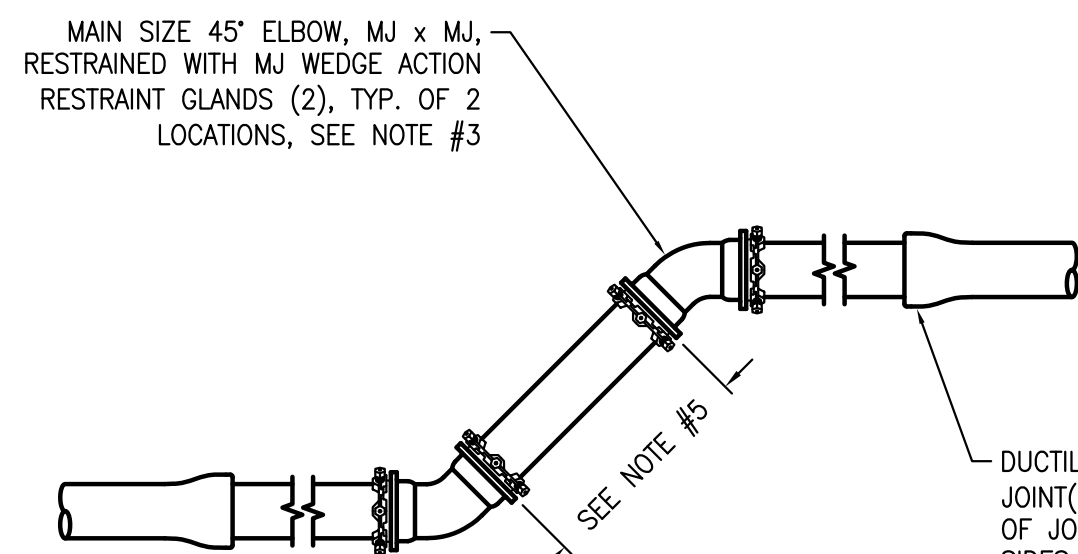
- PRIOR TO EXCAVATION, THE OUTLINE OF THE TRENCH SHALL BE VERTICALLY CUT FULL DEPTH THROUGH THE EXISTING ASPHALT SURFACE WITH A SAW, OR AN ASPHALT SPADE OR EQUIPMENT APPROVED BY THE CITY ENGINEER.
- CARE SHALL BE EXERCISED TO PREVENT SLOUGHING AND OVERBREAK. IF THE TRENCH SLOUGHS, THE SURFACE SHALL BE WIDENED TO ELIMINATE THE UNDERMINED SECTION OF ASPHALT.
- TYPE 2, CLASS "B", AGGREGATE BASE SHALL BE COMPACTED TO A THICKNESS OF AT LEAST 10 1/2" OR A DEPTH OF 8" BELOW THE BOTTOM OF THE EXISTING PAVEMENT, WHICHEVER IS GREATER.
- A TEMPORARY PATCH OF COLD MIX ASPHALT CONCRETE SHALL BE PLACED AND COMPACTED. THE COMPACTED PATCH SHALL BE APPROXIMATELY 1/8" TO 1/4" ABOVE THE LEVEL OF THE ADJACENT PAVEMENT. IF NOT PATCHED WITHIN 24 HOURS AFTER BACKFILLING, THE CITY MAY PATCH AND BACK-CHARGE THE PERMITTEE FOR ALL COSTS.
- COMPACTION OF BACKFILL, BASE AND A.C. TEMPORARY PATCH SHALL BE PERFORMED WITH APPROVED MECHANICAL TAMPERS. EQUIPMENT WHEEL ROLLING IS NOT PERMITTED.
- ENTIRE AREA SHALL BE CLEANED OF ALL DIRT, DUST, DEBRIS, ETC. BEFORE LEAVING SITE. ANY SITE LEFT UNCLEANED WILL BE CLEANED BY THE CITY AND ALL COSTS BACK-CHARGED TO THE PERMITTEE.
- A PERMIT MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO CUTTING ANY PUBLIC RIGHT-OF-WAY. 24 HOURS PRIOR TO TRENCH EXCAVATION, THE PERMITTEE MUST NOTIFY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.
- ALL EXCAVATIONS SHALL BE COMPLETE OR BACKFILLED AT THE END OF THE DAY OR COVERED WITH PLATING AS APPROVED BY THE EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.
- TEMPORARY PATCH WORK AND PATCH MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE PERMITTEE.

### TEMPORARY A.C. PATCH DETAIL

N.T.S.

10

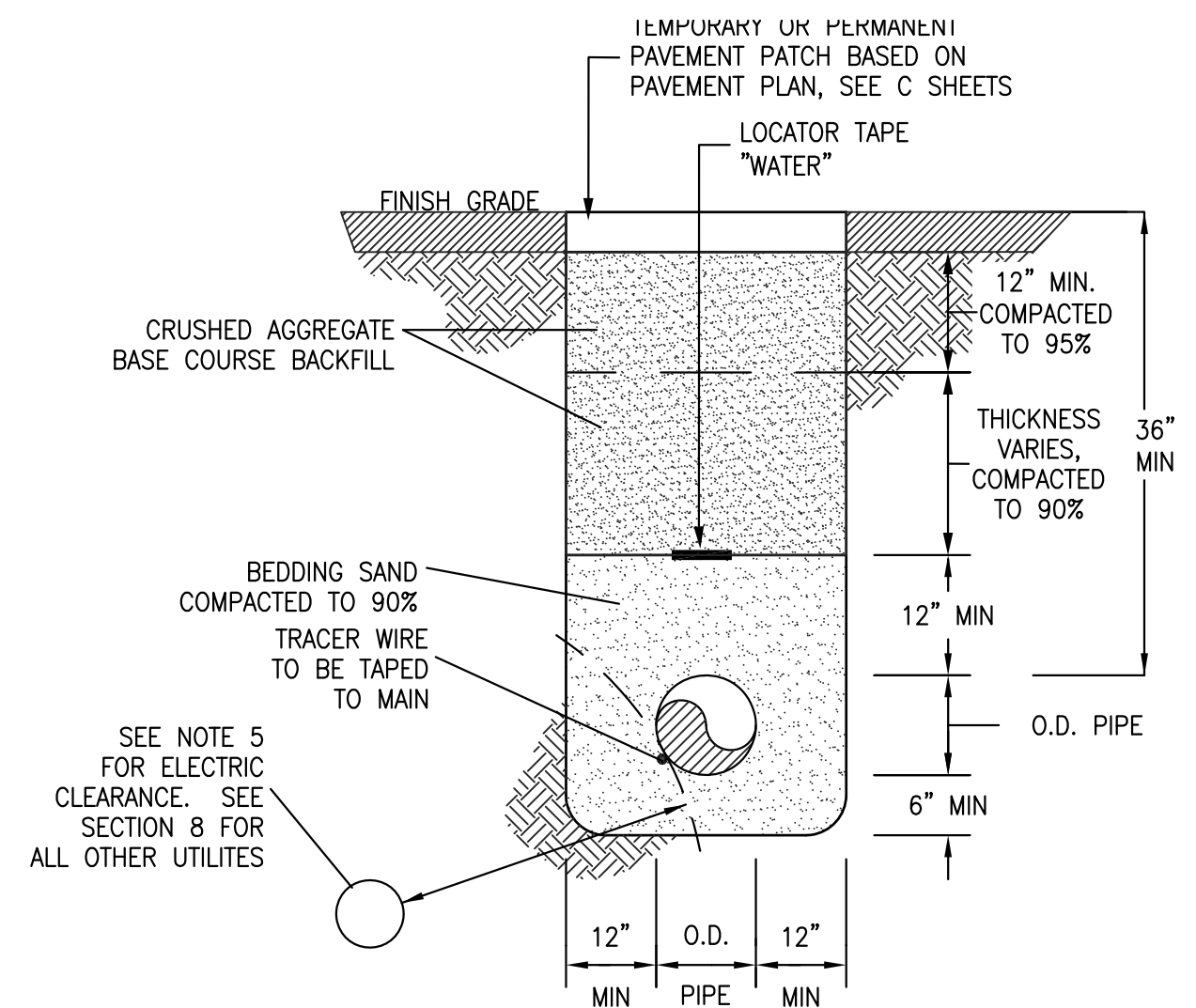
- NOTES:
- REFERENCE TMWA ENGINEERING & CONSTRUCTION STANDARDS SECTIONS 7, 8, AND/OR 8A FOR UTILITY SEPARATION REQUIREMENTS.
  - ALL RESTRAINED JOINT PIPING SHALL BE DUCTILE IRON PIPE (RJ-DIP).
  - RESTRAINED JOINT FITTINGS SHALL BE MECHANICAL JOINT (MJ) DUCTILE IRON RESTRAINED WITH MECHANICAL JOINT WEDGE ACTION RESTRAINT GLANDS.
  - BELL AND SPIGOT PUSH-ON JOINTS SHALL BE RESTRAINED USING RUBBER GASKETS WITH STAINLESS STEEL LOCKING SEGMENTS VULCANIZED INTO THE RUBBER GASKET.
  - PIPING BETWEEN ELBOWS MUST ALSO BE RESTRAINED.
  - ALL BOLTS AND EXPOSED METAL SHALL BE COATED WITH BRUSHED-ON MASTIC.
  - FITTINGS, DUCTILE IRON PIPE, AND OTHER METAL PARTS SHALL BE ENCASED WITH POLYETHYLENE WRAP PER AWWA C105.
  - SEE PLANS FOR PIPE JOINT RESTRAINT LENGTH PAST UPPER AND LOWER ELBOW.



### RESTRAINED JOINT SINGLE OFFSET FOR MAINS 6" TO 12" - TMWA DRAWING 10I-4

N.T.S.

9



#### NOTES:

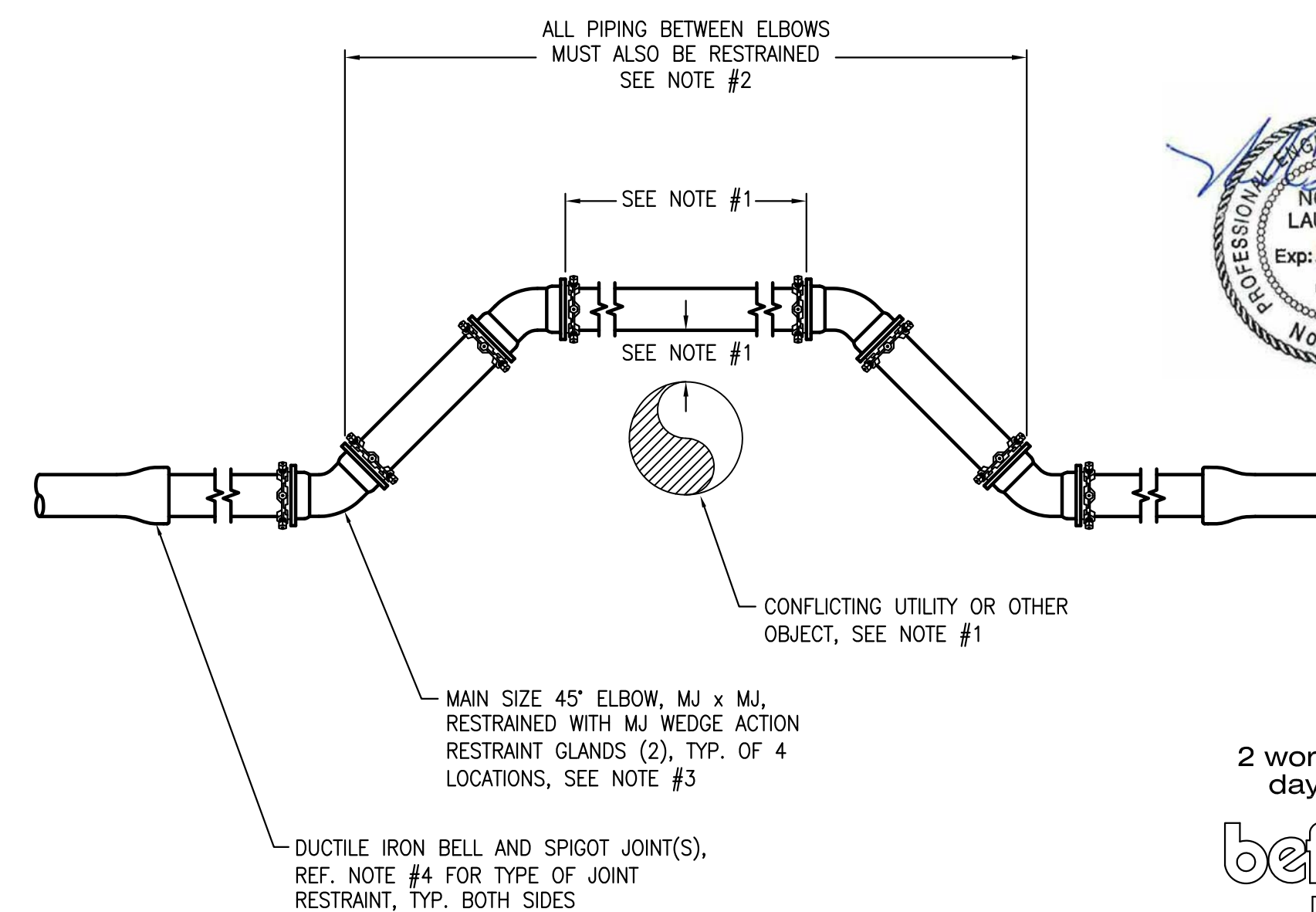
- ALL TRENCHES MUST CONFORM TO APPLICABLE TMWA, CITY, STATE, COUNTY, AND OSHA SPECIFICATIONS AND REQUIREMENTS. IN THE CASE OF CONFLICT, THE MORE RIGID SPECIFICATION OR STANDARD SHALL APPLY.
- BEDDING SAND SHALL BE COMPACTED TO 90% MAXIMUM DENSITY PER SECTION 5.05.03 AND SHALL BE A MINIMUM OF 12" ABOVE AND 6" BELOW THE MAIN. PER SECTION 5 OF TMWA STANDARDS.
- CRUSHED AGGREGATE BASE COURSE BACKFILL SHALL BE PLACED IN 12" MAXIMUM LOOSE LIFTS. THE TOP 12" SHALL BE COMPACTED TO 95% MAXIMUM DENSITY. THE AREA ABOVE THE BEDDING SAND & BELOW 12" FROM FINISH GRADE SHALL BE COMPACTED TO 90% MAXIMUM DENSITY, PER SECTION 5 OF TMWA STANDARDS.
- NON-METALLIC BLUE WARNING TAPE SHALL BE PLACED IN ALL TRENCHES AT LEAST 12" ABOVE THE WATER MAIN. METALLIC WARNING TAPE MUST BE UTILIZED WITH WATER FACILITIES WHEN THERE IS NO OTHER DETECTABLE MEANS AVAILABLE.
- ELECTRIC UTILITIES MUST BE LOCATED BELOW WATER & MAINTAIN 2' MINIMUM RADIAL CLEARANCE FROM TMWA WATER FACILITIES. IF 2' RADIAL CLEARANCE CAN NOT BE MET ELECTRIC CONDUIT MUST BE CONCRETE ENCASED AT LEAST 18" EACH SIDE OF WATER CROSSING. FIBER OPTIC AND/OR COMMUNICATION CONDUITS SHALL NOT BE PLACED IN THE SAME TRENCH AS WATER. COORDINATE LOCATIONS WITH NV ENERGY.
- ALL CHANGES MUST BE APPROVED BY THE TMWA INSPECTOR AND/OR THE TMWA ENGINEER.
- SEPARATION FOR PIPES IN A JOINT TRENCH SHALL BE A MINIMUM OF 12".

### TRENCH DETAIL - WATER ONLY - TMWA DRAWING 10L-6

N.T.S.

8

- NOTES:
- REFERENCE TMWA ENGINEERING & CONSTRUCTION STANDARDS SECTIONS 7, 8, AND/OR 8A FOR UTILITY SEPARATION REQUIREMENTS.
  - ALL RESTRAINED JOINT PIPING SHALL BE DUCTILE IRON PIPE (RJ-DIP).
  - RESTRAINED JOINT FITTINGS SHALL BE MECHANICAL JOINT (MJ) DUCTILE IRON RESTRAINED WITH MECHANICAL JOINT WEDGE ACTION RESTRAINT GLANDS.
  - BELL AND SPIGOT PUSH-ON JOINTS SHALL BE RESTRAINED USING RUBBER GASKETS WITH STAINLESS STEEL LOCKING SEGMENTS VULCANIZED INTO THE RUBBER GASKET.
  - ALL BOLTS AND EXPOSED METAL SHALL BE COATED WITH BRUSHED-ON MASTIC.
  - FITTINGS, DUCTILE IRON PIPE, AND OTHER METAL PARTS SHALL BE ENCASED WITH POLYETHYLENE WRAP PER AWWA C105.
  - SEE PLANS FOR PIPE JOINT RESTRAINT LENGTH PAST LOWER ELBOW (BOTH SIDES).



### RESTRAINED JOINT VERTICAL OFFSET OVER UTILITY/OBJECT - TMWA DRAWING 10I-3

N.T.S.

11

WORK ORDER NO. 10.0001.19  
DESIGNED JAB  
DRAWN KOS  
DATE 10/18/13  
CHECKED 10/21/13  
SUBMITTED 10/21/13  
RECOMMENDED  
APPROVED

TRUCKEE MEADOWS WATER  
A U T H O R I T Y  
1865 CAPITAL BLVD. / PO BOX 30013  
RENO, NEVADA 89502-3013  
PH 775-834-8000 / FX 775-834-8003

NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1  
CITY OF SPARKS, WASHOE COUNTY, NEVADA  
CONSTRUCTION DETAILS 2

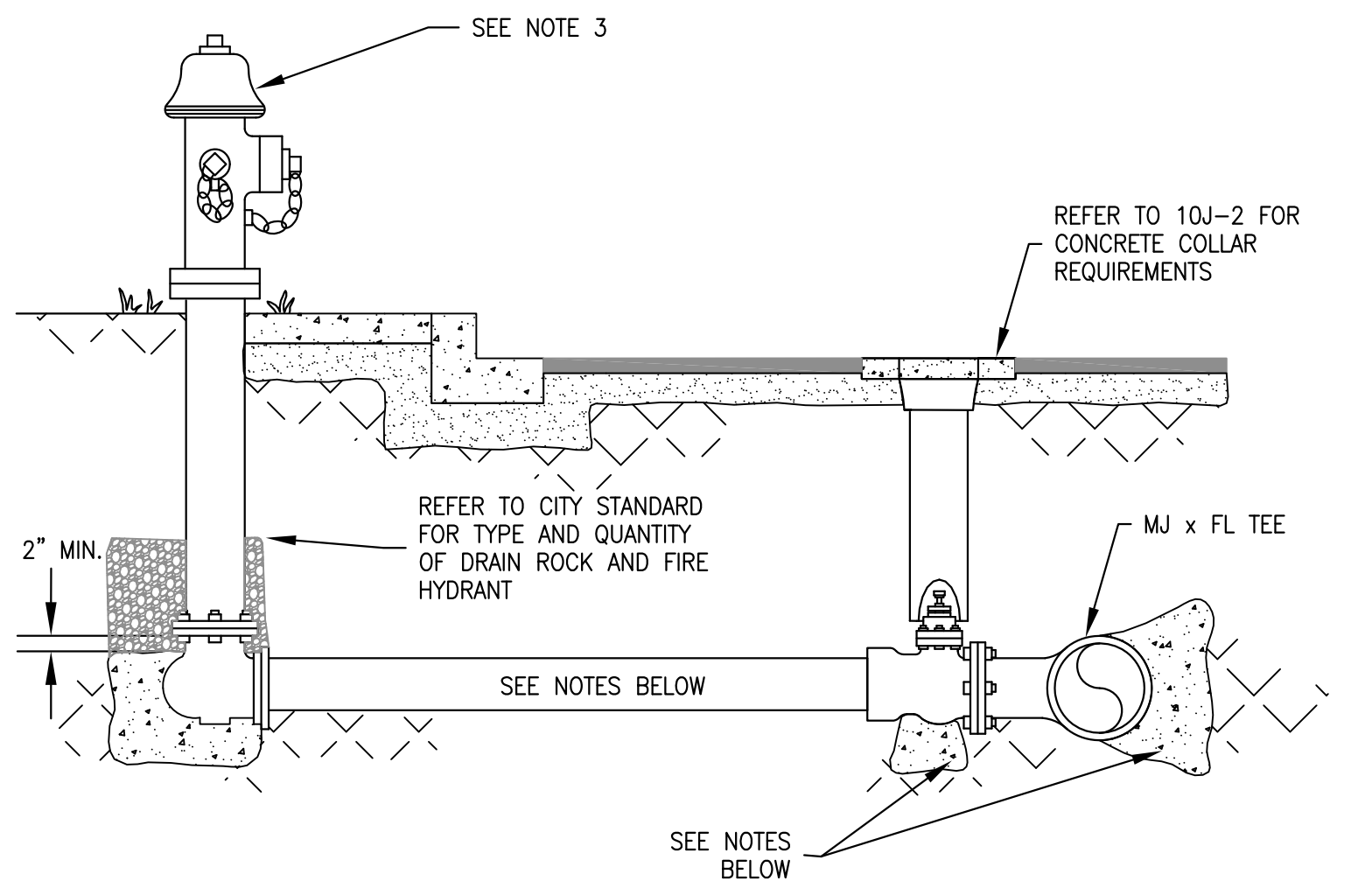
SHEET NUMBER

D2

9 OF 11

2 working days  
Call before you Dig.  
1-800-227-2600





- NOTES:
- 6" DUCTILE IRON OR PVC PIPE (CLASS 235 MIN.) LENGTH TO BE DETERMINED BY ENGINEER. REFER TO JURISDICTIONAL AGENCY'S ADOPTED FIRE CODE FOR MATERIAL TYPE. POLYETHYLENE WRAP TO BE USED ON ALL DUCTILE IRON PIPE AND FITTINGS PER AWWA C105.
  - KEEP A MINIMUM OF 2" CLEARANCE BETWEEN FLANGES/BOLTS AND CONCRETE.
  - LOCATION OF FIRE HYDRANT TO BE DETERMINED BY APPROPRIATE GOVERNMENTAL FIRE AGENCY. FIRE HYDRANT AND BARREL EXTENSION TO BE SUPPLIED BY OTHERS.
  - FOR FIRE HYDRANT LATERALS THAT TERMINATE WITHIN 150' OF WATER MAIN.
  - REFER TO JURISDICTIONAL AGENCY'S ADOPTED FIRE CODE FOR PIPE MATERIAL AND TYPE OF FIRE HYDRANT.
  - ALL EXPOSED METAL MUST BE COATED AND WRAPPED.
  - REFER TO CITY STANDARDS OR APPENDIX 10L FOR THRUST BLOCK REQUIREMENTS. USE THE MOST CONSERVATIVE.

QTY	DESCRIPTION
1	6" FL X PO RESILIENT WEDGE GATE VALVE WITH 2" OPERATING NUT.
1	6" Ø VALVE BOX, RISER AND COVER MARKED "WATER"
1	DUCTILE IRON TEE, PO X FL SIZE BASED ON MAIN SIZE.

**6" FIRE HYDRANT SERVICE OFF NEW MAINS FOR LATERALS LESS THAN 150'**  
**TMWA DRAWING 10F-2**  
 N.T.S.

12

- NOTES:
- COUPLINGS SHALL BE HYMAX 2000 SERIES COUPLINGS AS MANUFACTURED BY TOTAL PIPING SOLUTIONS, INC. OR TMWA APPROVED EQUIVALENT.
  - SNAP MACHINED END OFF TRANSITE (AC) PIPE TO EXPOSE ROUGH BARREL. INSTALL COUPLING ON ROUGH BARREL SECTION OF TRANSITE PIPE.
  - FIELD MEASURE ACTUAL PIPE O.D. PRIOR TO ORDERING COUPLING. FOR OTHER TYPES OF PIPE NOT LISTED IN THE CHARTS BELOW AND/OR PIPE O.D.'S WHICH MAY DIFFER FROM THOSE LISTED BELOW, CONSULT MANUFACTURER'S SIZING CHART.

TYPE OF PIPE	6" C900 PVC (C900) 6" DUCTILE IRON (DI)		6" TRANSITE (AC) ROUGH BARREL CLASS 100/150/200	
6" C900 PVC (C900) 6" DUCTILE IRON (DI)	HYMAX COUPLING PART NO. 2000-0768-260	LOW RANGE (C900, DI) 6.42 - 7.05 HIGH RANGE (C900, DI) 6.42 - 7.05	HYMAX COUPLING PART NO. 2000-0768-260	HIGH RANGE (AC) 7.01 - 7.68 LOW RANGE (C900, DI) 6.42 - 7.05
6" TRANSITE (AC) ROUGH BARREL CLASS 100/150/200	HYMAX COUPLING PART NO. 2000-0768-260	LOW RANGE (C900, DI) 6.42 - 7.05 HIGH RANGE (AC) 7.01 - 7.68	HYMAX COUPLING PART NO. 2000-0768-260	HIGH RANGE (AC) 7.01 - 7.68 HIGH RANGE (AC) 7.01 - 7.68

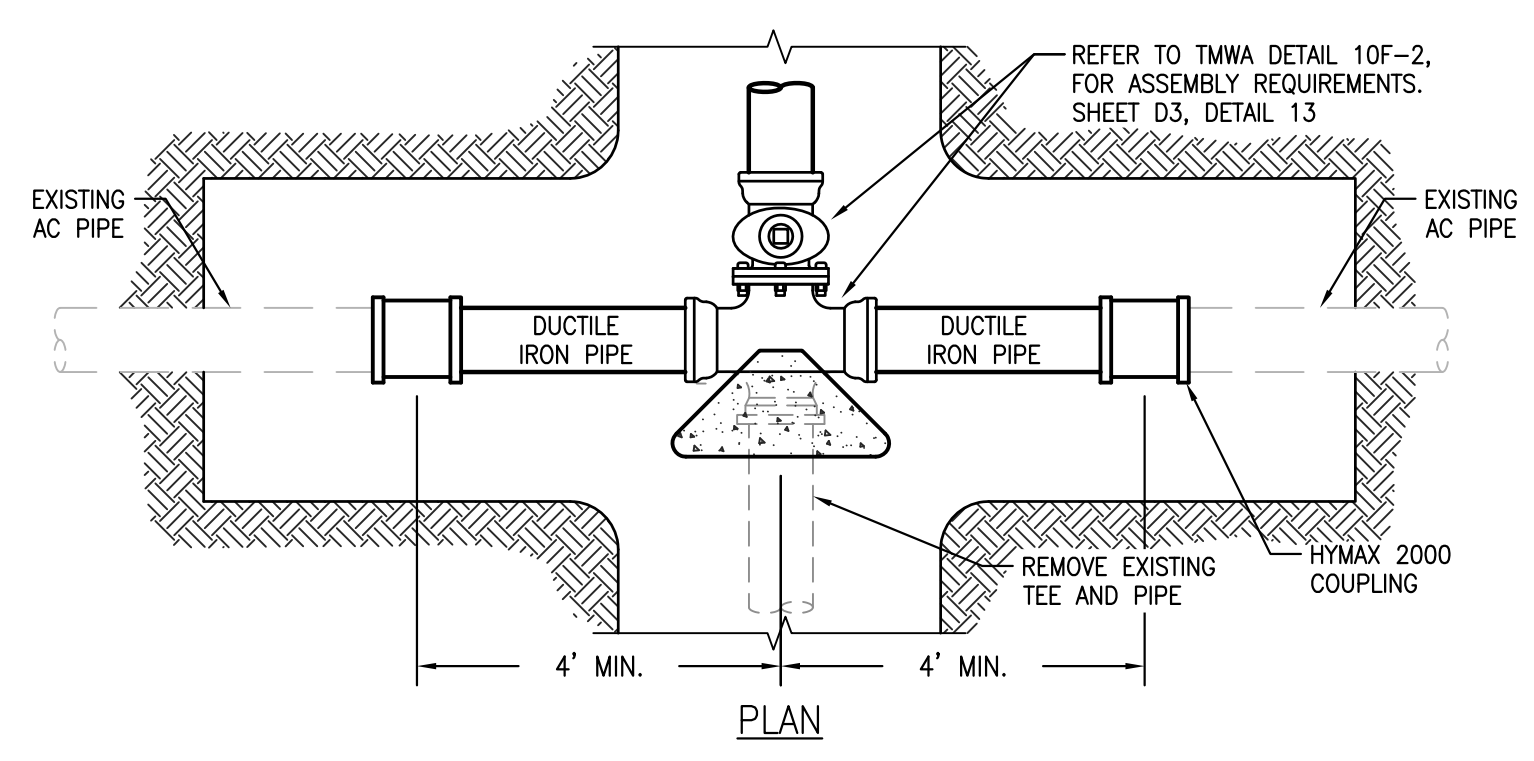
TYPE OF PIPE	8" C900 PVC (C900) 8" DUCTILE IRON (DI)		8" TRANSITE (AC) ROUGH BARREL CLASS 100/150/200	
8" C900 PVC (C900) 8" DUCTILE IRON (DI)	HYMAX COUPLING PART NO. 2000-0984-260	LOW RANGE (C900, DI) 8.54 - 9.17 HIGH RANGE (C900, DI) 8.54 - 9.17	HYMAX COUPLING PART NO. 2000-0984-260	HIGH RANGE (AC) 9.13 - 9.84 LOW RANGE (C900, DI) 8.54 - 9.17
8" TRANSITE (AC) ROUGH BARREL CLASS 100/150/200	HYMAX COUPLING PART NO. 2000-0984-260	LOW RANGE (C900, DI) 8.54 - 9.17 HIGH RANGE (AC) 9.13 - 9.84	HYMAX COUPLING PART NO. 2000-0984-260	HIGH RANGE (AC) 9.13 - 9.84 HIGH RANGE (AC) 9.13 - 9.84

TYPE OF PIPE	10" C900 PVC (C900) 10" DUCTILE IRON (DI)		10" TRANSITE (AC) ROUGH BARREL CLASS 100/150		10" TRANSITE (AC 200) ROUGH BARREL - CLASS 200	
10" C900 PVC (C900) 10" DUCTILE IRON (DI)	HYMAX COUPLING PART NO. 2000-1226-260	LOW RANGE (C900, DI) 10.96 - 11.63 HIGH RANGE (C900, DI) 10.96 - 11.63	HYMAX COUPLING PART NO. 2000-1226-260	LOW RANGE (C900, DI) 10.96 - 11.63	HYMAX COUPLING PART NO. 2000-1226-260	HIGH RANGE (AC 200) 11.59 - 12.26 LOW RANGE (C900, DI) 10.96 - 11.63
10" TRANSITE (AC) ROUGH BARREL CLASS 100/150	HYMAX COUPLING PART NO. 2000-1226-260	LOW RANGE (C900, DI) 10.96 - 11.63 HIGH RANGE (AC) 10.96 - 11.63	HYMAX COUPLING PART NO. 2000-1226-260	LOW RANGE (AC) 10.96 - 11.63 HIGH RANGE (AC) 10.96 - 11.63	HYMAX COUPLING PART NO. 2000-1226-260	HIGH RANGE (AC 200) 11.59 - 12.26 LOW RANGE (AC) 10.96 - 11.63
10" TRANSITE (AC 200) ROUGH BARREL CLASS 200	HYMAX COUPLING PART NO. 2000-1226-260	LOW RANGE (C900, DI) 10.96 - 11.63 HIGH RANGE (AC 200) 11.59 - 12.26	HYMAX COUPLING PART NO. 2000-1226-260	LOW RANGE (AC) 10.96 - 11.63 HIGH RANGE (AC 200) 11.59 - 12.26	HYMAX COUPLING PART NO. 2000-1226-260	HIGH RANGE (AC 200) 11.59 - 12.26 HIGH RANGE (AC 200) 11.59 - 12.26

TYPE OF PIPE	12" C900 PVC (C900) 12" DUCTILE IRON (DI)		12" TRANSITE (AC) ROUGH BARREL CLASS 100/150/200	
12" C900 PVC (C900) 12" DUCTILE IRON (DI)	HYMAX COUPLING PART NO. 2000-1441-260	LOW RANGE (C900, DI) 13.15 - 13.78 HIGH RANGE (C900, DI) 13.15 - 13.78	HYMAX COUPLING PART NO. 2000-1441-260	HIGH RANGE (AC) 13.74 - 14.41 LOW RANGE (C900, DI) 13.15 - 13.78
12" TRANSITE (AC) ROUGH BARREL CLASS 100/150/200	HYMAX COUPLING PART NO. 2000-1441-260	LOW RANGE (C900, DI) 13.15 - 13.78 HIGH RANGE (AC) 13.74 - 14.41	HYMAX COUPLING PART NO. 2000-1441-260	HIGH RANGE (AC) 13.74 - 14.41 HIGH RANGE (AC) 13.74 - 14.41

**HYMAX 2000 SERIES COUPLING CHART TRANSITE, C900 PVC, DUCTILE IRON PIPE FOR MAIN SIZES 6" TO 12" - TMWA DRAWING 10C-2**  
 N.T.S.

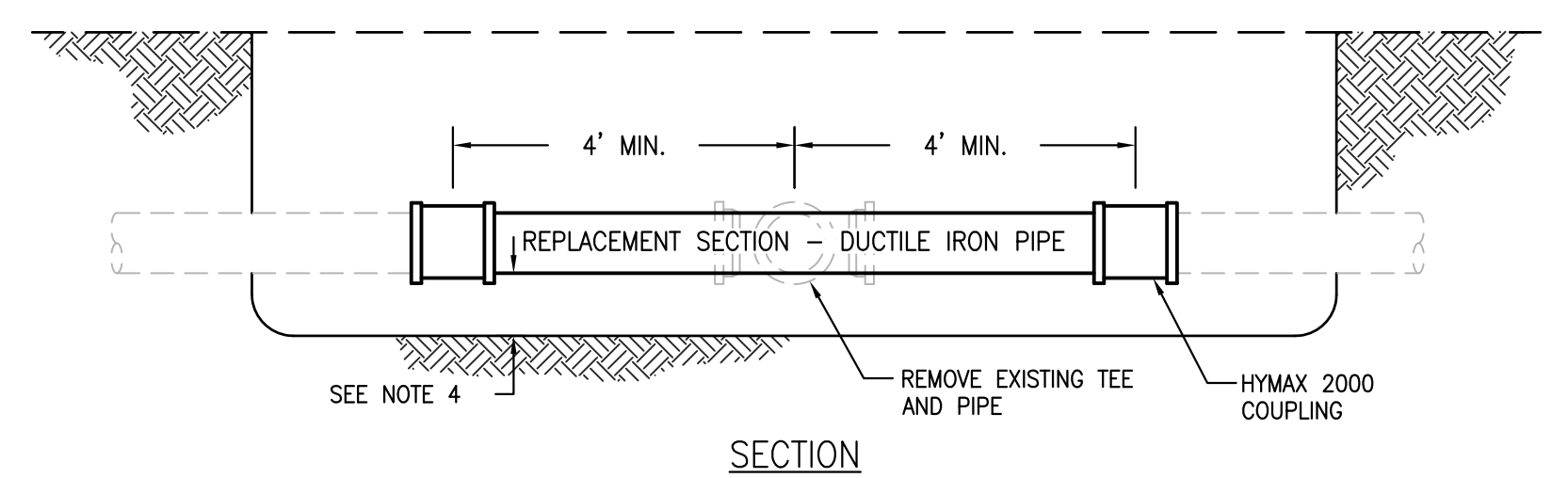
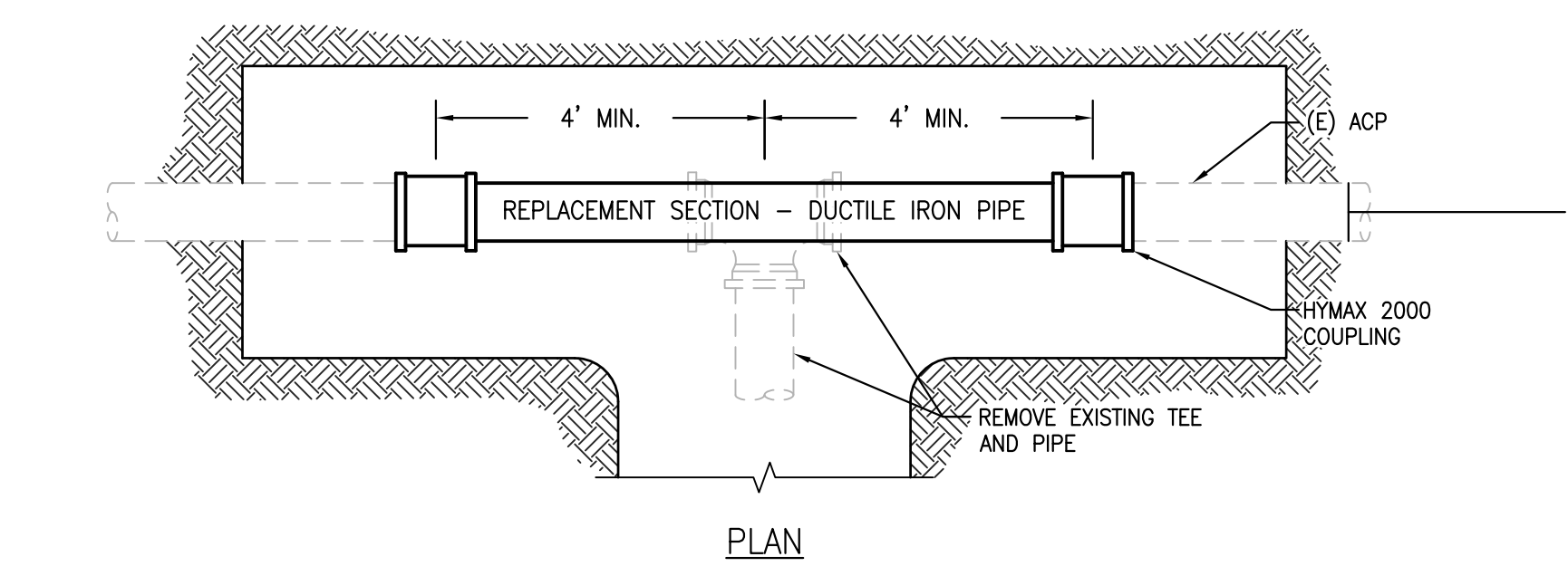
13



- NOTES:
- PROVIDE RESTRAINED PIPE, FITTINGS AND VALVE IN ACCORDANCE WITH TMWA ENGINEERING AND CONSTRUCTION STANDARDS.
  - REFER TO PLAN SHEETS FOR PIPE SIZES.

**EXISTING AC PIPE TO DIP SECTION REPLACEMENT**  
 N.T.S.

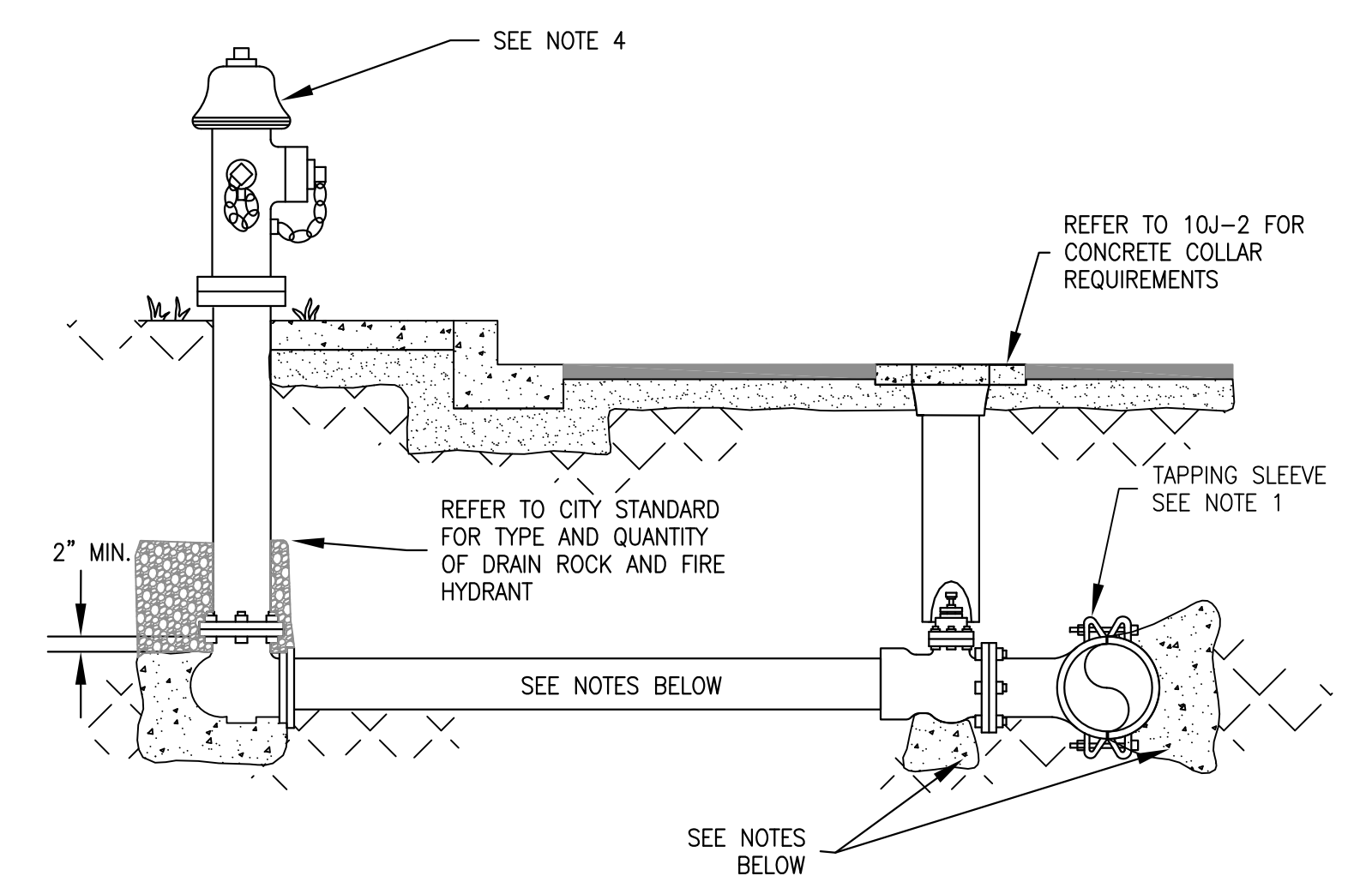
16



- NOTES:
- COUPLINGS SHALL BE HYMAX 2000 SERIES, FUSION EPOXY COATING.
  - BACKFILL AND COMPACTION REQUIREMENTS SHALL COMPLY WITH, TRENCH BEDDING, BACKFILL & EXCAVATION SPECIFICATIONS.
  - REPLACEMENT SECTION OF PIPE SHALL BE DUCTILE IRON.
  - REFER TO TMWA CONSTRUCTION AND DESIGN STANDARDS FOR MINIMUM CLEARANCE REQUIREMENTS.

**EXISTING AC PIPE TO DIP SECTION REPLACEMENT**  
 N.T.S.

14



- NOTES:
- REFER TO APPENDIX 10D FOR TAPPING SLEEVE DETAILS.
  - 6" DUCTILE IRON OR PVC PIPE (CLASS 235 MIN.) LENGTH TO BE DETERMINED BY ENGINEER. REFER TO JURISDICTIONAL AGENCY FOR MATERIAL. POLYETHYLENE WRAP TO BE USED ON ALL DUCTILE IRON PIPE AND FITTINGS PER AWWA C105.
  - KEEP A MINIMUM OF 2" CLEARANCE BETWEEN FLANGES/BOLTS AND CONCRETE.
  - LOCATION OF FIRE HYDRANT TO BE DETERMINED BY APPROPRIATE GOVERNMENTAL FIRE AGENCY. FIRE HYDRANT AND BARREL EXTENSION TO BE SUPPLIED BY OTHERS.
  - FOR FIRE HYDRANT LATERALS THAT TERMINATE WITHIN 150' OF WATER MAIN.
  - REFER TO JURISDICTIONAL AGENCY'S ADOPTED FIRE CODE FOR PIPE MATERIAL AND TYPE OF FIRE HYDRANT.
  - ALL EXPOSED METAL MUST BE COATED AND WRAPPED.
  - REFER TO CITY STANDARDS OR APPENDIX 10L FOR THRUST BLOCK REQUIREMENTS. USE THE MOST CONSERVATIVE.
  - PRESSURE TEST TAPPING SLEEVE AND VALVE TO MANUFACTURER'S RECOMMENDATION.

QTY	DESCRIPTION
1	6" FL X FL RESILIENT WEDGE GATE VALVE WITH 2" OPERATING NUT.
1	6" Ø VALVE BOX, RISER AND COVER MARKED "WATER"
1	6" FL X PO ADAPTER

**6" FIRE HYDRANT SERVICE OFF EXISTING MAIN FOR LATERALS LESS THAN 150'**  
**TMWA DRAWING 10F-9**  
 N.T.S.

17

2 working days  
**Call before you Dig.**  
 1-800-227-2600

WORK ORDER NO. 10.0001.19  
 DESIGNED JRS  
 DRAWN KOS  
 DATE 10/18/13  
 CHECKED 10/21/13  
 SUBMITTED 10/21/13  
 RECOMMENDED  
 APPROVED

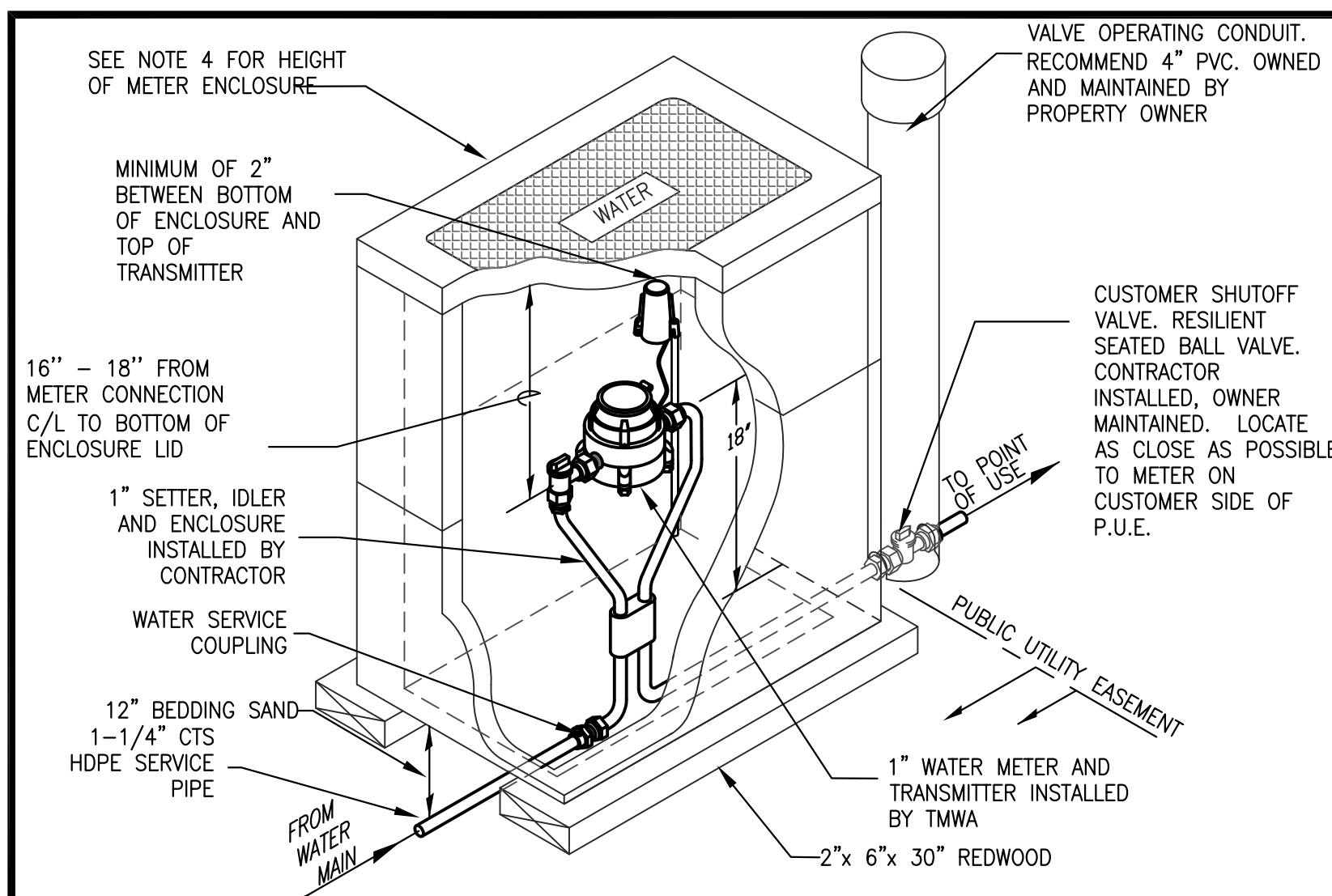
**TRUCKEE MEADOWS WATER**  
 CITY OF SPARKS, WASHOE COUNTY, NEVADA  
 1865 CAPITAL BLVD., PO BOX 30013  
 RENO, NEVADA 89502-3013  
 PH 775-834-8000 / FX 775-834-8003

**NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1**  
**CITY OF SPARKS, WASHOE COUNTY, NEVADA**  
**CONSTRUCTION DETAILS 3**

SHEET NUMBER  
**D3**  
 10 OF 11

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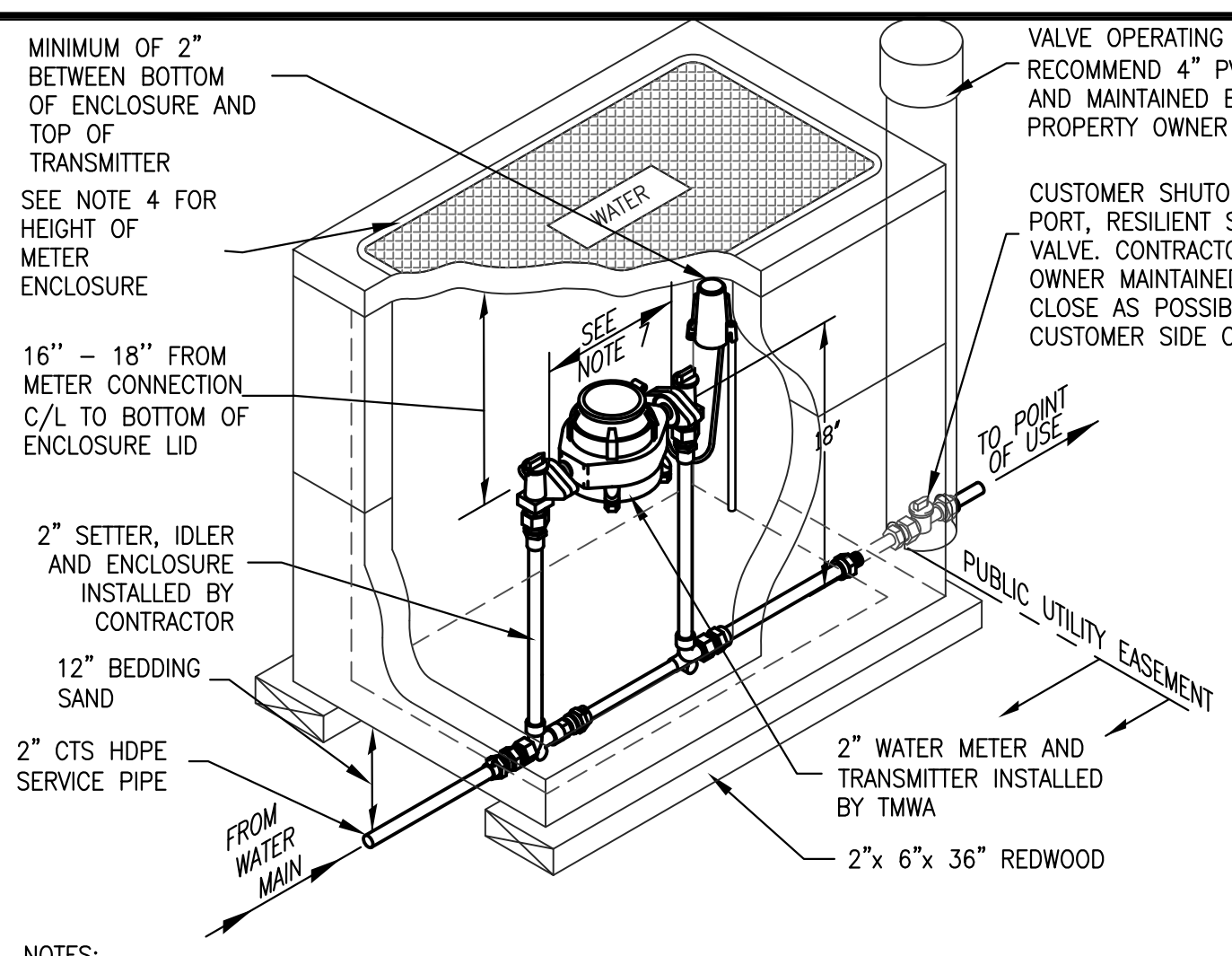
- NOTES:**
1. THERMAL EXPANSION PROTECTION IS REQUIRED IN ANY DOMESTIC WATER SUPPLY SYSTEM THAT IS DOWNSTREAM FROM A BACKFLOW PREVENTION DEVICE. REFERENCE: UNIFORM PLUMBING CODE.
  2. METER AND TRANSMITTER SUPPLIED AND INSTALLED BY TMWA.
  3. FOR DRIVEWAY OR TRAFFIC AREAS USE 13x24 ENCLOSURE APPROVED FOR TRAFFIC RATED H/20 LOADING. SEE DETAIL 10K-17.
  4. TOP OF METER ENCLOSURE SHALL BE SET 0.2 FEET ABOVE HIGHEST FINISHED GRADE SURROUNDING ENCLOSURE WITHIN LANDSCAPED AREAS, AND SHALL BE SET FLUSH WITH SURROUNDING FINISH GRADE IN TRAFFIC AREAS.
  5. ENCLOSURE TO BE BACKFILLED WITH WATER PIPE BEDDING SAND ONLY, SEE SECTION 5, TRENCH BEDDING & BACKFILL. BLANKET TO BE INSTALLED ABOVE METER AND BELOW TRANSMITTER.
  6. BLANKET TO BE INSTALLED ABOVE METER AND BELOW TRANSMITTER.

**MATERIAL LIST**

ITEM ID	QTY.	DESCRIPTION
MS-1.00	1.0	SETTER WATER METER, NEW 1" MIP ENDS
WSC-1.25x1.00-CTSxFIP	1.0	COUPLING SERVICE 1-1/4" CTS COMPRESSION X 1" FIP
SSL-1.25	1.0	LINER RIGID STAINLESS STEEL FOR 1-1/4" CTS HDPE TUBING
GSKT-1.00	2.0	GASKET-1" FOR WATER METER
WM-DISC-1.00	1.0	1" WATER METER - SUPPLIED AND INSTALLED BY TMWA
ENCL-13x24-NT	1.0	ENCLOSURE NON-TRAFFIC 13 X 24 WATER METERS, SEE NOTE 3
ENCL-13x24-LID-NT	1.0	COVER NON-TRAFFIC 13 X 24, SEE NOTE 3
ENCL-13x24-EXT-NT	1.0	EXTENSION BOX NON-TRAFFIC 13 X 24, SEE NOTE 3
INSL-BLKT-4x4	1.0	BLANKET INSULATION 4' X 4' FOR WATER METERS
RWD-BRD-2x6x30	2.0	BOARD - REDWOOD 2" X 6" X 30"
IDLR-1.00	1.0	IDLER WATER METER 1" SETTER
ERT	1.0	REMOTE TRANSMITTER - SUPPLIED AND INSTALLED BY TMWA

**WATER METER - 1-1/4" SINGLE SERVICE FOR 1" SETTER, METER AND TRANSMITTER (IRRIGATION) - TMWA DRAWING 10K-8**

18



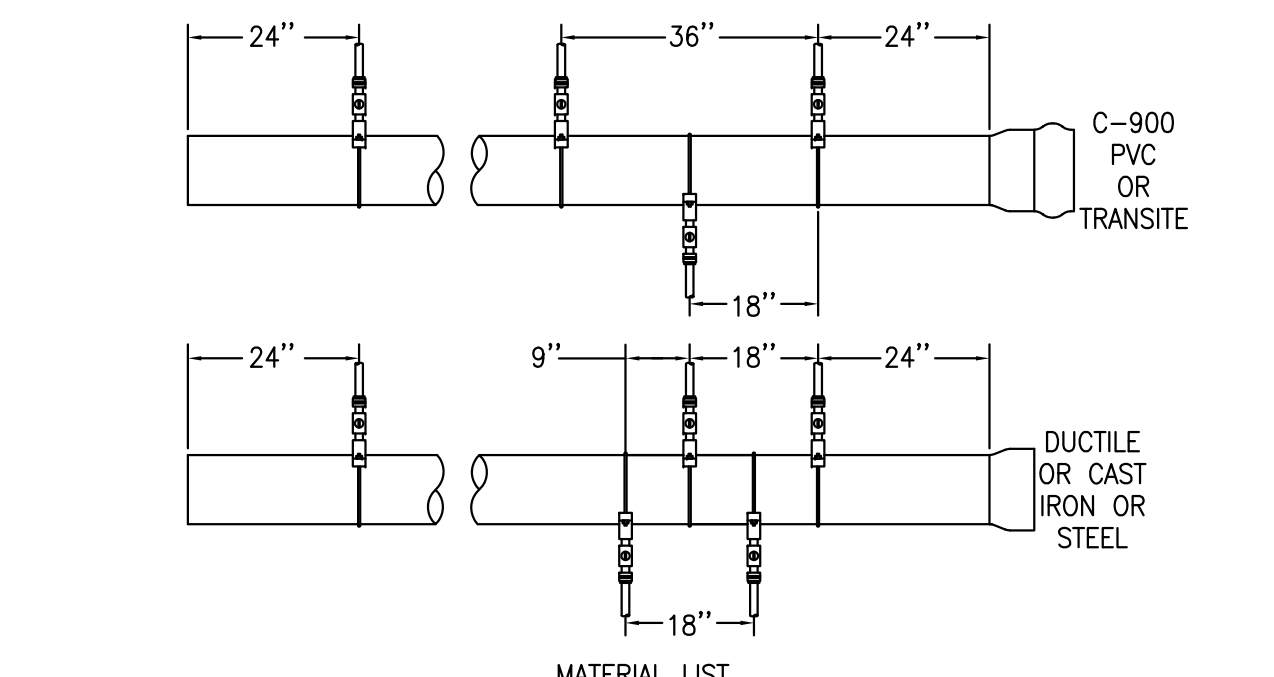
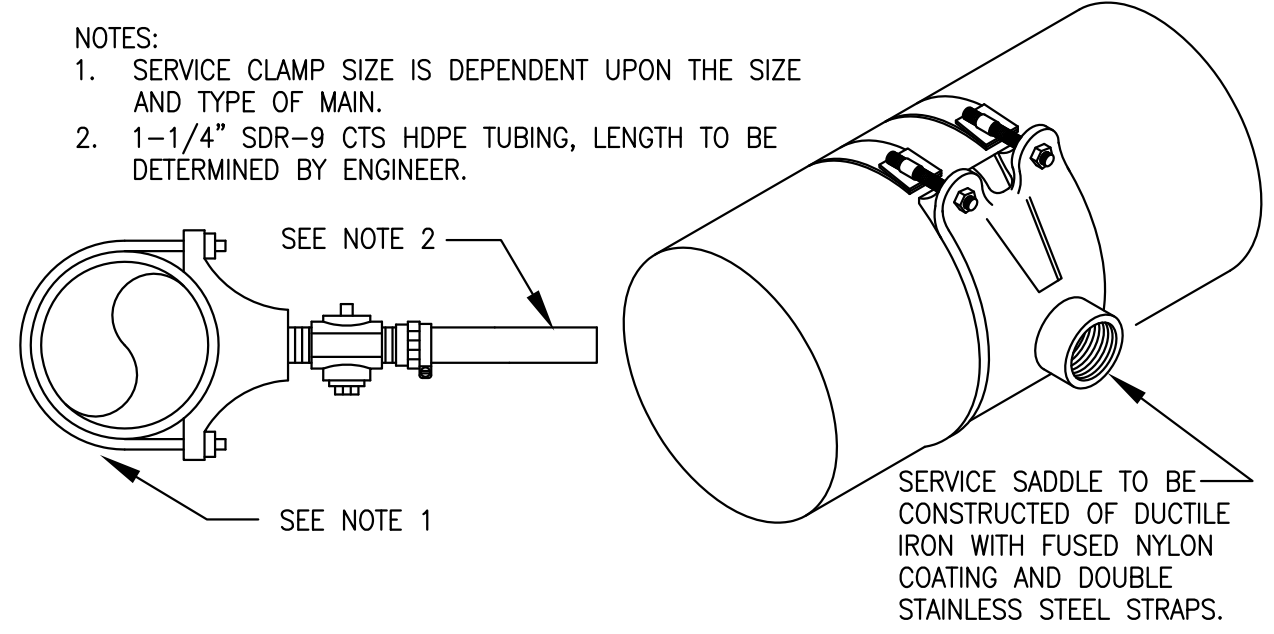
- NOTES:**
1. THERMAL EXPANSION PROTECTION IS REQUIRED IN ANY DOMESTIC WATER SUPPLY SYSTEM THAT IS DOWNSTREAM FROM A BACKFLOW PREVENTION DEVICE. REFERENCE: UNIFORM PLUMBING CODE.
  2. METER AND TRANSMITTER SUPPLIED AND INSTALLED BY TMWA.
  3. FOR DRIVEWAY OR TRAFFIC AREAS USE 17x30 ENCLOSURE APPROVED FOR TRAFFIC RATED H/20 LOADING. SEE DETAIL 10K-18.
  4. TOP OF METER ENCLOSURE SHALL BE SET 0.2 FEET ABOVE HIGHEST FINISHED GRADE SURROUNDING ENCLOSURE WITHIN LANDSCAPED AREAS, AND SHALL BE SET FLUSH WITH SURROUNDING FINISH GRADE IN TRAFFIC AREAS.
  5. ENCLOSURE TO BE BACKFILLED WITH WATER PIPE BEDDING SAND ONLY, SEE SECTION 5, TRENCH BEDDING & BACKFILL. BLANKET TO BE INSTALLED ABOVE METER AND BELOW TRANSMITTER.
  6. BLANKET TO BE INSTALLED ABOVE METER AND BELOW TRANSMITTER.
  7. DISTANCE BETWEEN FLANGES SHALL BE 17.25".

**MATERIAL LIST**

ITEM ID	QTY.	DESCRIPTION
MS-2.00	1.0	SETTER WATER METER, NEW 2" FIP ENDS
WSC-2.00x2.00-CTSxMIP	1.0	COUPLING SERVICE 2" CTS COMPRESSION X 2" MIP
SSL-2.00	1.0	LINER RIGID STAINLESS STEEL FOR 2" CTS HDPE TUBING
GSKT-2.00	2.0	GASKET-2" FOR WATER METER
WM-DISC-2.00	1.0	2" WATER METER - SUPPLIED AND INSTALLED BY TMWA
ENCL-17x30-NT	1.0	ENCLOSURE NON-TRAFFIC 17 X 30 WATER METERS, SEE NOTE 3
ENCL-17x30-LID-NT	1.0	COVER NON-TRAFFIC 17 X 30, NON CONCRETE FIBRELYTE LID, SEE NOTE 3
ENCL-17x30-EXT-NT	1.0	EXTENSION BOX NON-TRAFFIC 17 X 30, SEE NOTE 3
INSL-BLKT-4x4	1.0	BLANKET INSULATION 4' X 4' FOR WATER METERS
RWD-BRD-2x6x36	2.0	BOARD - REDWOOD 2" X 6" X 36"
IDLR-2.00	1.0	IDLER WATER METER 2" SETTER
BOLTS	4.0	BOLT COPPER #651 SILICONE BRONZE 5/8" X 2-1/2" WITH 2 FLAT WASHERS & NUTS
ERT	1.0	REMOTE TRANSMITTER - SUPPLIED AND INSTALLED BY TMWA

**WATER METER - 2" SINGLE SERVICE FOR 2" SETTER, METER AND TRANSMITTER (DOMESTIC) - TMWA DRAWING 10K-10**

19

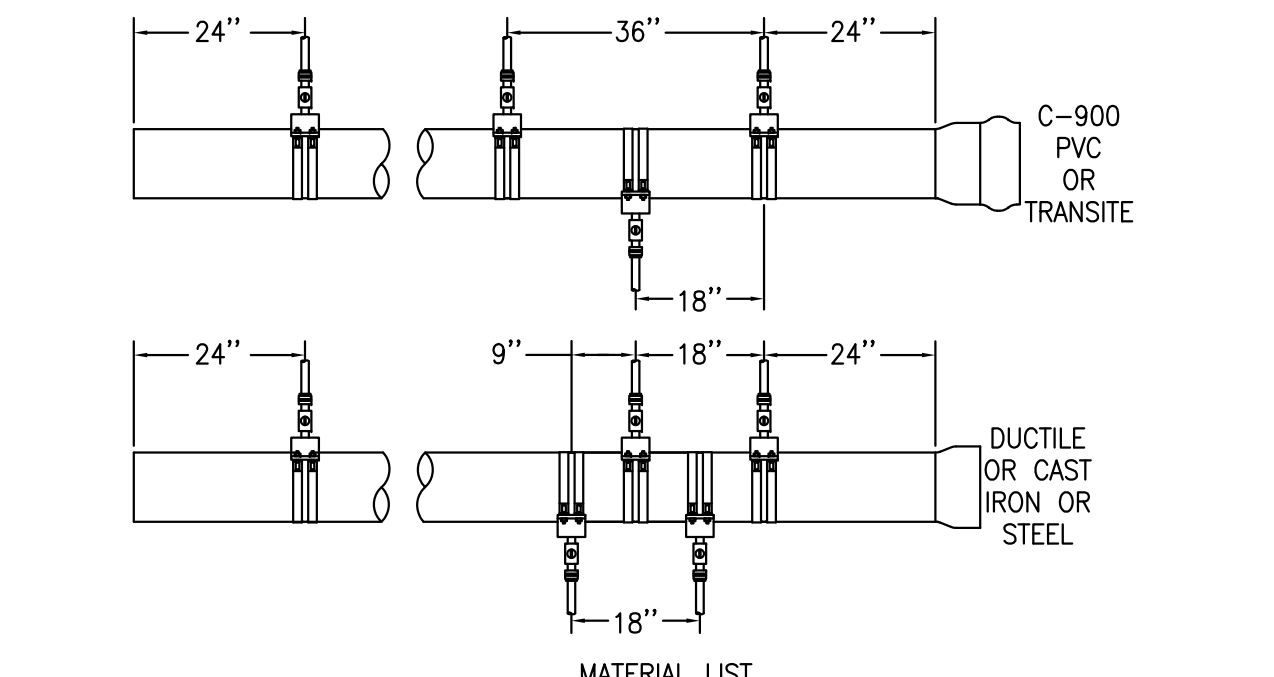
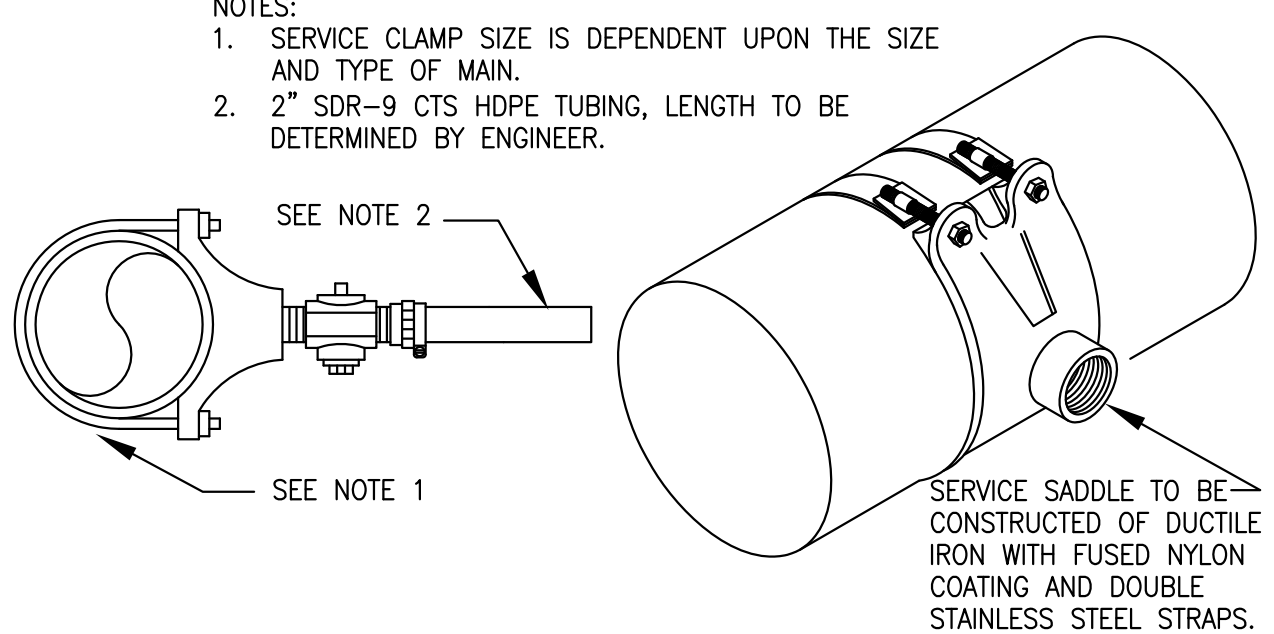


**MATERIAL LIST**

QTY.	DESCRIPTION
1.0	STOP CORP 1-1/4" IP THREAD INLET, COMPRESSION OUTLET
1.0	LINER RIGID STAINLESS STEEL FOR 1-1/4" SDR-9 CTS HDPE TUBING

**SERVICE TAP INSTALLATION 1-1/4" SERVICE TAP - TMWA DRAWING 10H-3**

21



**MATERIAL LIST**

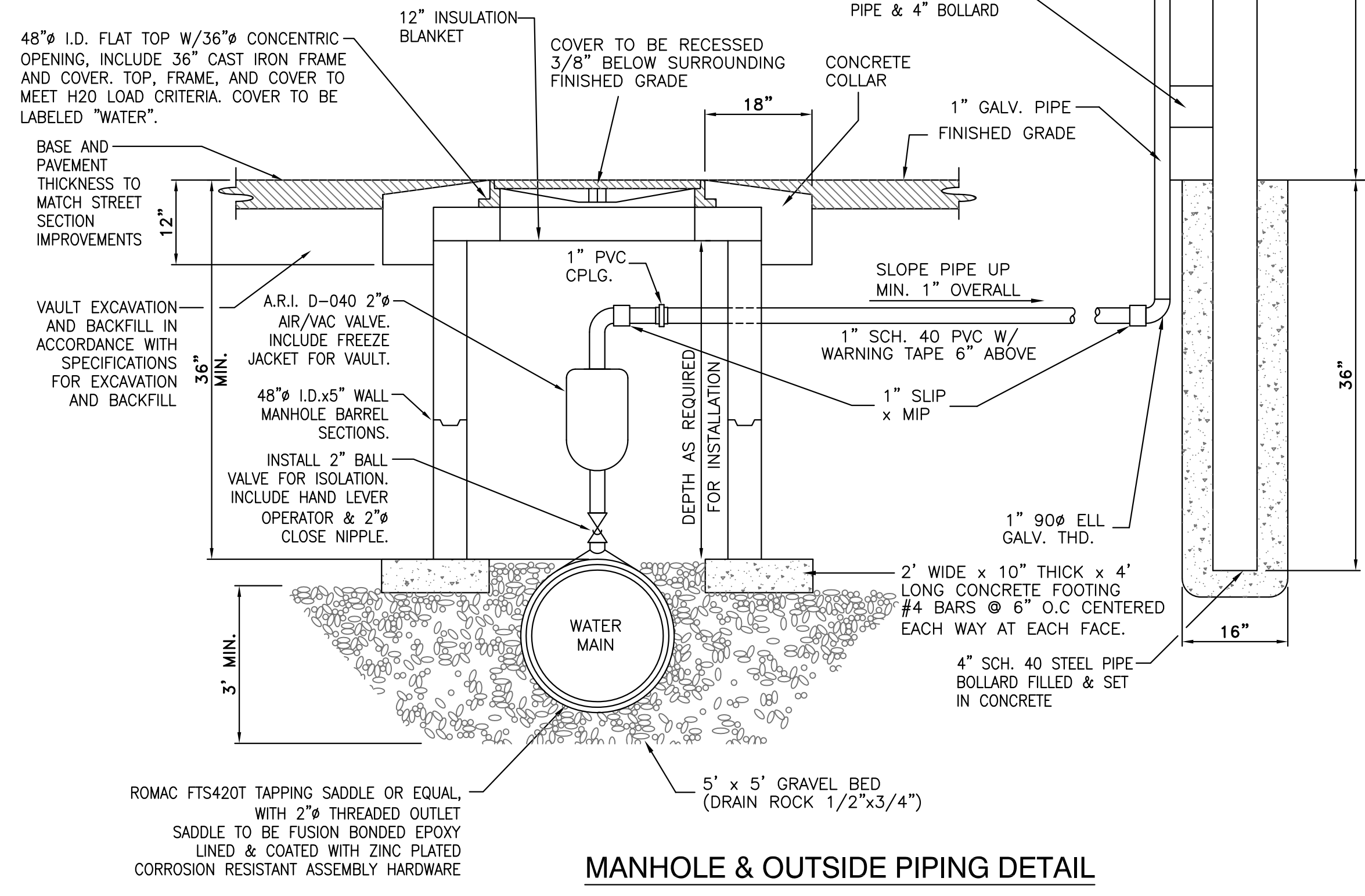
QTY.	DESCRIPTION
1.0	STOP CORP 2" IP THREAD INLET, COMPRESSION OUTLET
1.0	LINER RIGID STAINLESS STEEL FOR 2" SDR-9 CTS HDPE TUBING

**SERVICE TAP INSTALLATION 2" SERVICE TAP - TMWA DRAWING 10H-5**

22

**NOTES:**

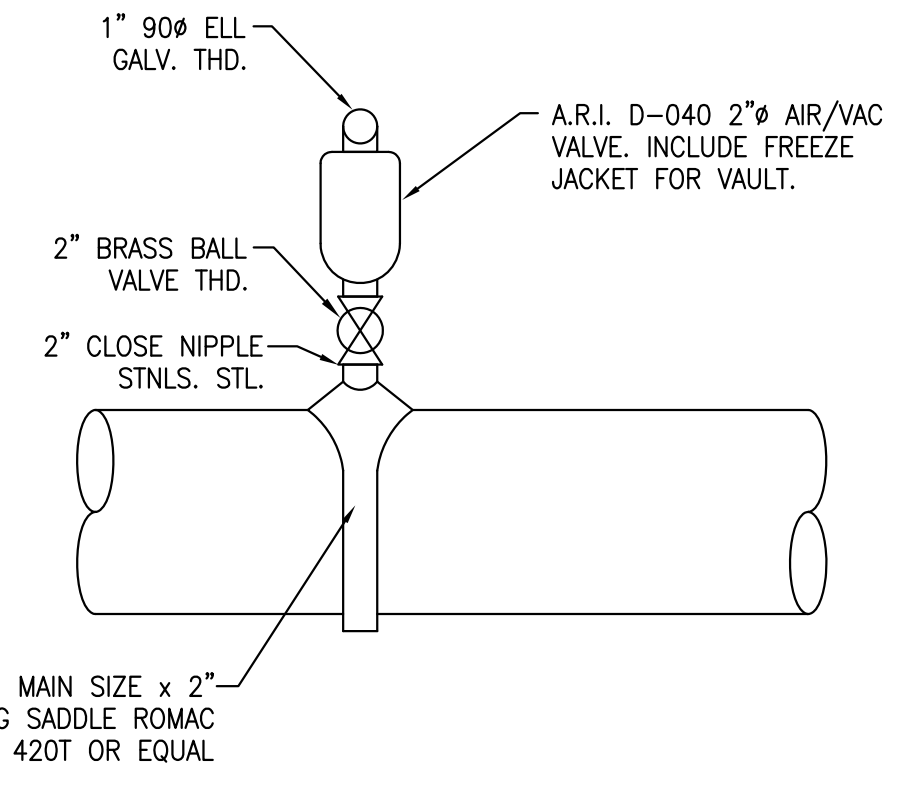
1. TYPICAL TYPE I PRE-CAST MANHOLE PER SECTION 204 OF THE ORANGE BOOK W/ REINFORCED CONCRETE FOUNDATION.
2. ALL DIRECT BURIED GALV. PIPE SHALL BE COATED W/ PROTECTO WRAP CO. #1170 PRIMER & #320 COLD APPLIED TAPE.
3. IN CHIP PORTIONS OF PORTIONS OF LOWEST BARREL SECTION CONFORM TO O.D. OF PIPE. BARREL SECTION SHALL NOT BARE DIRECTLY ON PIPE AT ANY POINT.
4. SCH. 40 STEEL BOLLARD TO BE COATED WITH A 6 MIL DFT SELF-PRIMING EPOXY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. COATING TO BE CARBOLINE 801 OR SHERWIN WILLIAMS 858, NO OTHER EQUAL. COLOR SELECTED BY TMWA PROJECT COORDINATOR.



**MANHOLE & OUTSIDE PIPING DETAIL**

**MANHOLE NOTES:**

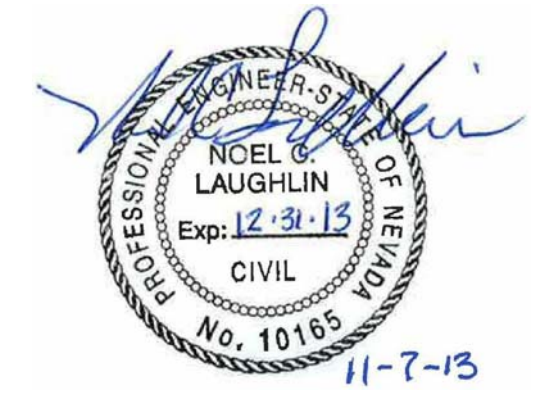
1. MANHOLE SECTION LENGTHS ARRANGED TO FIT DEPTH.
2. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE "STANDARD SPECIFICATIONS".
3. CONCRETE SHALL BE CLASS AA OR DA.
4. ALL MANHOLES SHALL INCLUDE NEENAH R-1753 FRAME AND SOLID COVER ASSEMBLY, OR EQUAL, WITH IDENTIFICATION OF "WATER" CLEARLY DISPLAYED ON THE COVER.
5. EXCAVATION AND BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION AND BACKFILL".
6. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE, (SHEET AND SHORE IF SOIL CONDITIONS REQUIRE), IN EXISTING STREET SECTIONS, AND CONFINED AREAS SUCH AS LIMITED EASEMENTS OR ADJACENT TO STRUCTURES. NATURAL ANGLE OF REPOSE WILL BE ALLOWED IN OTHER AREAS.
7. STEPS ("MA" MANHOLE STEPS BY MA INDUSTRIES OR EQUIVALENT) WILL BE REQUIRED IN ALL MANHOLES 5 FEET OR MORE IN DEPTH.
8. PRE-CAST MANHOLE SECTIONS, OTHER THAN GRADE RINGS, SHALL BE JOINED WITH FLEXIBLE PLASTIC GASKET MATERIAL SUCH AS "RAM-NECK" OR EQUAL AS PER MANUFACTURE'S RECOMMENDATIONS.



**PIPING DETAIL INSIDE MANHOLE**

**2" AIR/VACUUM RELIEF VALVE ASSEMBLY**

20



2 working days  
Call before you Dig.  
1-800-227-2600

WORK ORDER NO. 10.0001.19  
DESIGNED JWS  
DRAWN KOS  
DATE 10/18/13  
CHECKED 10/21/13  
SUBMITTED 10/21/13  
RECOMMENDED  
APPROVED

**TRUCKEE MEADOWS WATER**  
CITY OF SPARKS, WASHOE COUNTY, NEVADA  
1885 CAPITAL BLVD. / PO BOX 30013  
RENO, NEVADA 89502-3013  
PH 775-834-8000 / FX 775-834-8003

**NORTH TRUCKEE DRAIN REALIGNMENT PHASE 1**  
**CITY OF SPARKS, WASHOE COUNTY, NEVADA**  
**CONSTRUCTION DETAILS 4**

SHEET NUMBER  
**D4**  
11 OF 11