



ADDENDUM NO. 3

DATE: February 11, 2016
FROM: City of Grand Junction Purchasing Division
TO: All Offerors
RE: 2016 Waterline Replacement Project IFB-4158-16-NJ

Offerors responding to the above referenced solicitation are hereby instructed that the requirements have been clarified, modified, superseded and supplemented as to this date as hereinafter described.

Please make note of the following clarifications and updates:

1. What's City's knowledge on the existing 24" steel and ductile iron pipe being calcified on the inside reducing the inside diameter of the pipe?

According to the City's Water Dept., both the 24" steel pipe and the 24" ductile iron pipe have a cement mortar lining protecting the pipes inside surface.

2. Clarification on Construction Note #20 – Abandon Pipe.

It is estimated that each Abandon Pipe section will require about 1/2 to 2/3 Cubic Yards of concrete to seal around each cut section of the 24" pipe.

3. Does Underground Solutions inspect and certify their PVC pipe butt welds before installation of pipe begins?

Yes, Underground Solutions technicians are trained to inspect each joint and will be using a Data Logger to record all pertinent information (heating pressure, fusion pressure, drag, time duration of fuse), as well as, recording everything by hand in a log book. Electronic records from the data logger are sent to Underground Solutions QA/QC manager in Cranberry, Pennsylvania at the end of every shift.

4. If a PVC pipe weld comes apart during the pulling operations, who is liable for this?

Assuming no gross negligence during the pulling of pipe or over bending of the pipe, Underground Solutions takes responsibility for their fused joints. If it truly is a cold joint (butt welded joint) that pulls apart, which is easily identified, Underground Solutions will make all necessary corrections.

5. Replace Section 3.3.16 – Traffic Control with the following:

The Contractor shall provide and maintain traffic control in accordance with the approved Traffic Control Plan and the *Manual on Uniform Traffic Control Devices (MUTCD)*. The traffic control plan shall be presented to the Project Engineer at or prior to the pre-construction meeting for review and approval. The following requirements and limitations shall apply to the traffic control:

The City proposes this project be divided into two sections. The first section of work is installing the new waterline in 28 Road. The second section is installing the new waterline in Orchard Avenue.

The City anticipates that each section will require the full closure of each street section.

Anticipated local streets needing closure:

- 28 Road (Bunting Ave. to Orchard Ave.)
- Orchard Avenue (21st Street to 28 Road)

The traffic control plan shall allow for local residents adjacent to the construction site access to their properties at all times. If the Contractor has to block a resident's driveway for a period of time, the Contractor shall notify the resident at least 48-hours prior to blocking driveway.

For North Avenue the City is going to obtain a Special-Use Permit from CDOT for this section of work within CDOT right-of-way. North Avenue traffic control shall consist of shifting all traffic to the two westbound lanes and provide one travel lane for each direction of travel. The City anticipates that CDOT will require the Contractor to work nights within North Avenue right-of-way per the Special-Use Permit requirements.

6. What's the typical man power the contractor needs to provide for helping out with the fusion process?

Per Underground Solutions, one worker and one machine is typically sufficient. One worker running a front-end loader is typical. He or she can load a stick onto the fusion machine, then drive to the end of the pipe string and wait for the joint to cool before advancing the pipe string of fused pipe; then drive back to the fusion machine to load another stick of pipe.

7. Clarification on equipment and services provided by Underground Solutions, Inc. and the Contractor during fusing operations:

Equipment/Services Provided by Underground Solutions, Inc.:

- a. Pipe supply and freight to project site
- b. Fusion services are estimated at 12 consecutive, 10-hour work days. The actual duration of fusion services may vary based on site conditions and contractor support
- c. Mobilization/demobilization event to the site
- d. Fusion machine with inserts, heater, data-logger, and two (2) rollers

Equipment/Services Provided by Contractor:

- a. All labor, equipment, and material required to unload and stage pipe and fusion equipment at site (and restage as necessary)
- b. All labor, equipment, and materials for loading and unloading pipe onto the fusion machine, positioning fused pipe, pipe reconnections, pipe ballasting, pipe handling, pipe debanding (if required), required testing, and pipe installation
- c. Any additional labor, equipment, and materials required to fuse based on actual weather condition (contact Underground Solutions for guidance)
- d. Pipe rollers required for installation and any intermediate fusion (contact Underground Solutions for guidance)
- e. All excavation, traffic control, permits, bonds, repair, etc.
- f. All utilities at the job site including power and fuel for Underground Solutions equipment (~1.5 gal/machine/hour)
- g. All temporary bypass pumping (if necessary)
- h. Installation hardware and equipment for fittings, valves or additional accessories not identified in Underground Solutions Scope of Work

8. What is the safe pulling force that can be exerted on the fused pipe?

- a. Tensile Strength = 7,000 PSIG
- b. Safe Pulling Force = 128,400 lbs
- c. Safe Pulling Stress = 2,800 PSIG
- d. Bend Radius = 406 LF

The Fusible Pipe Technical Data sheet is provided in Appendix B in the Bid Documents.

9. Correction to the Pre-bid Agenda:

- a. Delete Section 5.a and 5.b from the Pre-bid Agenda. Please refer to the solicitation documents for proper electronic bid submittal procedures.

10. Does Underground Solutions provide an 18” pull-head and what is the outside diameter of the pull-head?

An 18” pull-head is available for rental from Underground Solutions. The rental costs are shown in the table below. If the Bidder plans to rent a pull-head from Underground Solutions, the Bidder shall include all rental costs associated with the pull-head into their Bid Amount. The 18” pull-head will not be paid for separately, but shall be included in the cost of the project. Attached to Addendum #3 is a pull-head dimension chart provided by Underground Solutions.

	Initial Rental Fee	Weekly Rental Rate (After 1st Week)	Estimated Freight (each way)	Purchase Price
18” Pull-head	\$503	\$75	\$345	\$3,724

11. What is the average length of 18" PVC pipe Underground Solution is capable of fusing in one 10-hour day?

Average production rate for 18-inch pipe is seven (7) joints per day. Assume stick length is 45-feet, so eight (8) sticks are fused together for a total of 360 LF per day.

12. Contact information for Steve Austin, Underground Solutions Regional Sales Manager for Rocky Mountain Region is:

Steve Austin
303-563-9467 (cell)
858-218-1992 (fax)
saustin@undergroundsolutions.com

13. Replace the original Bid Schedule in the Bid Documents with the updated Bid Schedule that is attached to Addendum #3.

14. Replace the original Construction Plans with the updated Construction Plans that are attached to Addendum #3.

On sheet #6, two existing 15" dia. RCP storm pipes were added to the drawing. The proposed launching pit at Texas Avenue can be moved south to help avoid interfering with the two storm drain pipes.

In addition, the Annular Space Grouting construction has been removed from the construction plans.

The original solicitation for the project noted above is amended as noted.

All other conditions of subject remain the same.

Respectfully,



Nicholas C Jones, Buyer
City of Grand Junction, Colorado

Bid Schedule: 2016 Waterline Replacement Project

ADDENDUM #3

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
1	108.2	Water Main (2") (HDPE) (Service Line) (If lead service line is encounter, water service shall be replaced to meter) (Includes cost of connection to existing pipe)	10.	Lin. Ft.	\$ _____	\$ _____
2	108.2	Water Main (6") (C-900 PVC, DR-18) (Includes cost of connection to existing waterline / valve / fitting)	285.	Lin. Ft.	\$ _____	\$ _____
3	108.2	Water Main (8") (C-900 PVC, DR-18) (Includes cost of connection to existing waterline / valve / fitting)	85.	Lin. Ft.	\$ _____	\$ _____
4	108.2	Water Main (10") (C-900 PVC, DR-18) (Includes cost of connection to existing waterline / valve / fitting)	15.	Lin. Ft.	\$ _____	\$ _____
5	108.2	Water Main (18") (C-905 PVC, DR-25) (Includes cost of connection to existing waterline / valve / fitting)	140.	Lin. Ft.	\$ _____	\$ _____
6	108.2	Water Main (18") (Fusible C-905 PVC, DR-25) (Install Only) (Includes all equipment, labor, fuel, and materials for fusing pipe and pulling pipe through existing 24" steel pipe) (The City has already purchased the 18" Fusible pipe from Underground Solutions) The Bidder shall not include pipe material costs for this Bid Item.	3,650.	Lin. Ft.	\$ _____	\$ _____
7	108.2	Imported Trench Backfill (Class 3) (Includes haul and disposal of unsuitable excavated material) (Assumed Unit Weight = 133 lbs/ft ³)	300.	Ton	\$ _____	\$ _____
8	108.3	Gate Valve (6")	1.	Each	\$ _____	\$ _____
9	108.3	8" Blind Flange	1.	Each	\$ _____	\$ _____
10	108.3	18" x 6" Tee (MJ x FL)	1.	Each	\$ _____	\$ _____
11	108.3	Butterfly Valve (18")	4.	Each	\$ _____	\$ _____
12	108.3	Elbow (6" x 22.5 deg) (MJ)	2.	Each	\$ _____	\$ _____
13	108.3	Elbow (6" x 45 deg) (MJ)	8.	Each	\$ _____	\$ _____
14	108.3	Elbow (8" x 45 deg) (MJ)	6.	Each	\$ _____	\$ _____
15	108.3	Elbow (18" x 22.5 deg) (MJ)	4.	Each	\$ _____	\$ _____

Bid Schedule: 2016 Waterline Replacement Project

ADDENDUM #3

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
16	108.3	Elbow (18" x 45 deg) (MJ)	6.	Each	\$ _____	\$ _____
17	108.3	Reducer (20" x 18") (MJ)	1.	Each	\$ _____	\$ _____
18	108.3	18" Solid Sleeve Coupling (MJ)	7.	Each	\$ _____	\$ _____
19	108.3	Fire Hydrant Assembly	6.	Each	\$ _____	\$ _____
20	108.4	3/4" Water Service Line (Type K Copper) (If Lead or Poly service line is encountered, water service shall be replaced to meter) (Includes cost of connection to existing pipe)	160.	Lin. Ft.	\$ _____	\$ _____
21	108.4	Tapping Saddle (18" x 3/4")	19.	Each	\$ _____	\$ _____
22	108.4	Tapping Saddle (18" x 2")	1.	Each	\$ _____	\$ _____
23	108.4	Corporation Stop (3/4")	19.	Each	\$ _____	\$ _____
24	108.4	Corporation Stop (2")	1.	Each	\$ _____	\$ _____
25	108.7	Granular Stabilization Material (Type B) (Crushed Rock) (Includes haul and disposal of unsuitable excavated material) (Assumed material unit weight = 138 lbs/ft ³)	200.	Ton	\$ _____	\$ _____
26	202	Removal of Bush	1.	Each	\$ _____	\$ _____
27	202	Removal of Tree	2.	Each	\$ _____	\$ _____
28	202	Abandon Pipe (Abandon pipe by plugging ends with concrete)	70.	Each	\$ _____	\$ _____
29	202	Abandon Existing Water Valve (Close valve, remove top half of existing valve box, fill cavity to finished subgrade with flow-fill material)	9.	Each	\$ _____	\$ _____
30	202	Remove Existing Fire Hydrant (Return Hydrant to City Shops)	6.	Each	\$ _____	\$ _____
31	202	Remove Existing Pipe (Various sizes and material type)	400.	Lin. Ft.	\$ _____	\$ _____
32	202	Remove Existing Water Valve	7.	Each	\$ _____	\$ _____

Bid Schedule: 2016 Waterline Replacement Project

ADDENDUM #3

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
33	202	Removal of Asphalt Mat (Planing) (T-Top Section) (2" Depth) (North Ave., 28 Road, Orchard Ave.) (Per City Standard Detail GU-03)	430.	Sq. Yd.	\$ _____	\$ _____
34	202	Removal of Asphalt Mat (Full-Depth) (Per City Standard Detail GU-03)	520.	Sq. Yd.	\$ _____	\$ _____
35	202	Removal of Concrete (Saw cut and remove concrete as shown) (Includes but not limited to curb, gutter, sidewalk, driveway, slabs, V-pan, curb ramps, intersection corners, aprons, and concrete walls.)	210.	Sq. Ft.	\$ _____	\$ _____
36	203	Disposal of Radioactive Material (City Shops Location)	100.	Cu. Yd.	\$ _____	\$ _____
37	206	Structure Backfill (Flow-Fill)	27.	Cu. Yd.	\$ _____	\$ _____
38	208	Storm Drain Inlet Protection (Silt-Sack) (Includes Maintenance & Removal of Inlet Protection)	10.	Each	\$ _____	\$ _____
39	208	Concrete Washout Facility	1.	Lump Sum	\$ _____	\$ _____
40	210	Repair damage to unlocated irrigation lines, various sizes and materials (1" to 12" dia.)	3.	Each	\$ _____	\$ _____
41	210	Reset Guardrail	50.	Lin. Ft.	\$ _____	\$ _____
42	210	Reset Sprinkler System (Complete in Place)	6.	Each	\$ _____	\$ _____
43	212	Sod (Includes 6" Thick Imported Topsoil placed prior to sod placement)	100.	Sq. Ft.	\$ _____	\$ _____
44	304	Aggregate Base Course (Class 6) (15" Thick) (4' wide +/-)	520.	Sq. Yd.	\$ _____	\$ _____
45	401	Hot Bituminous Pavement (Patching) (4" Thick) (Grading SX, PG 64-22, GYR=75) (Two 2" Lifts) (Bottom Two Mats) (See City Standard Detail GU-03)	520.	Sq. Yd.	\$ _____	\$ _____
46	401	Hot Bituminous Pavement (Patching) (2" Thick) (Grading SX, PG 64-22, GYR=75) (T-Top) (See City Standard Detail GU-03) (Top Mat)	430.	Sq. Yd.	\$ _____	\$ _____
47	407	Emulsified Asphalt (Tack Coat)	95.	Gallon	\$ _____	\$ _____

Bid Schedule: 2016 Waterline Replacement Project ADDENDUM #3

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
48	608	Concrete Curb and Gutter (Match in Kind)	100.	Lin. Ft.	\$ _____	\$ _____
49	608	Concrete Curb, Gutter and Sidewalk (Match in Kind)	3.	Sq. Yd.	\$ _____	\$ _____
50	608	Concrete Drainage Pan (Match in Kind)	6.	Sq. Yd.	\$ _____	\$ _____
51	608	Cap Top Half of Sewer Pipe in concrete per Std. Detail GU-04 (20' long)	2.	Each	\$ _____	\$ _____
52	620	Portable Sanitary Facility	1.	Each	\$ _____	\$ _____
53	625	Construction Surveying	1.	Lump Sum	\$ _____	\$ _____
54	626	Mobilization	1.	Lump Sum	\$ _____	\$ _____
55	630	Traffic Control Plan	1.	Lump Sum	\$ _____	\$ _____
56	630	Traffic Control (Complete in Place)	1.	Lump Sum	\$ _____	\$ _____
57	630	Flagging	100.	Hour	\$ _____	\$ _____
MCR		Minor Contract Revisions	---	---	---	\$ 50,000.00
Bid Amount:						\$ _____

Bid Amount:

dollars

Contractor's Name:

Contractor's Address:

Contractor's Phone #:

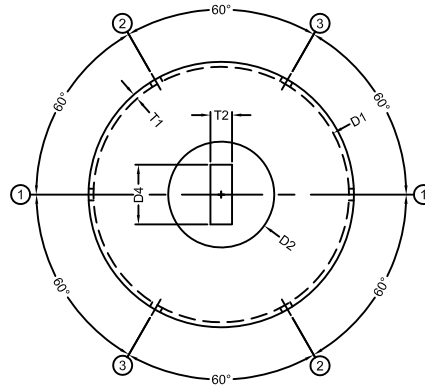
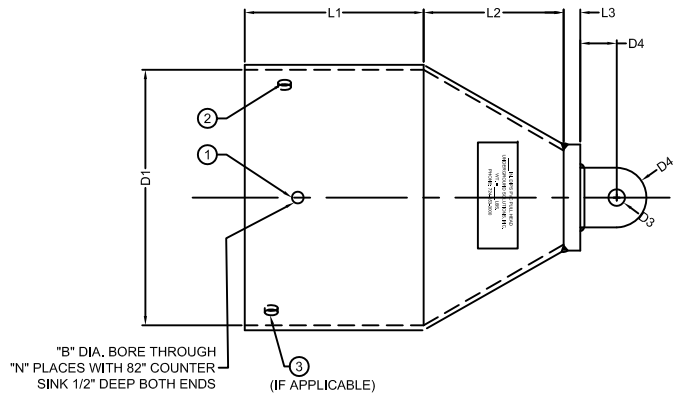


DIAGRAM 1
3 BOLT HOLE PATTERN

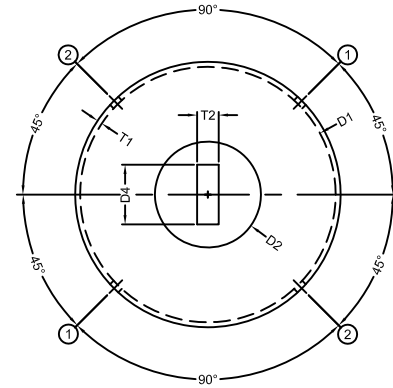


DIAGRAM 2
2 BOLT HOLE PATTERN

PULL HEAD INFORMATION (ALL DIMENSIONS ARE PROVIDED IN INCHES)

SIZE, IN	D1	D3	D4	L1	L2	L3	T1	T2	N	B	WT (lbs)	DIAGRAM
4	4.90	1.25	4.75	27.750	2.000	0.500	1/4	1 1/2	6	13/16	53	1
6	7.00	1.25	4.75	22.875	6.000	0.500	3/8	1 1/2	6	13/16	90	1
8	9.18	1.25	4.75	24.875	10.000	1.000	3/8	1 1/2	6	13/16	130	1
10	11.23	2.25	6.00	22.875	12.000	1.000	3/8	1 1/2	6	13/16	165	1
12	13.33	2.25	6.00	24.875	16.000	1.500	3/8	1 1/2	4	1 13/16	216	2
14	15.55	2.25	6.00	27.000	20.000	1.750	1/2	1 3/4	4	1 13/16	342	2
16	17.65	3.00	8.00	29.000	10.000	1.750	1/2	1 3/4	4	1 13/16	380	2
18	19.75	3.00	8.00	34.000	12.000	2.000	1/2	2	4	1 13/16	494	2
20	21.85	3.00	10.00	37.000	13.000	2.250	1/2	2	4	1 13/16	630	2
24	26.05	3.00	10.00	42.000	14.000	2.250	1/2	2 1/2	4	1 13/16	839	2
30	32.25	3.00	10.00	58.125	21.000	2.500	5/8	2 1/2	6	1 13/16	1680	1
36	38.55	3.00	12.00	30.250	21.000	2.500	3/4	3	6	1 13/16	1473	1
42												
48												

underground SOLUTIONS™

PULL HEAD FABRICATION DETAILS

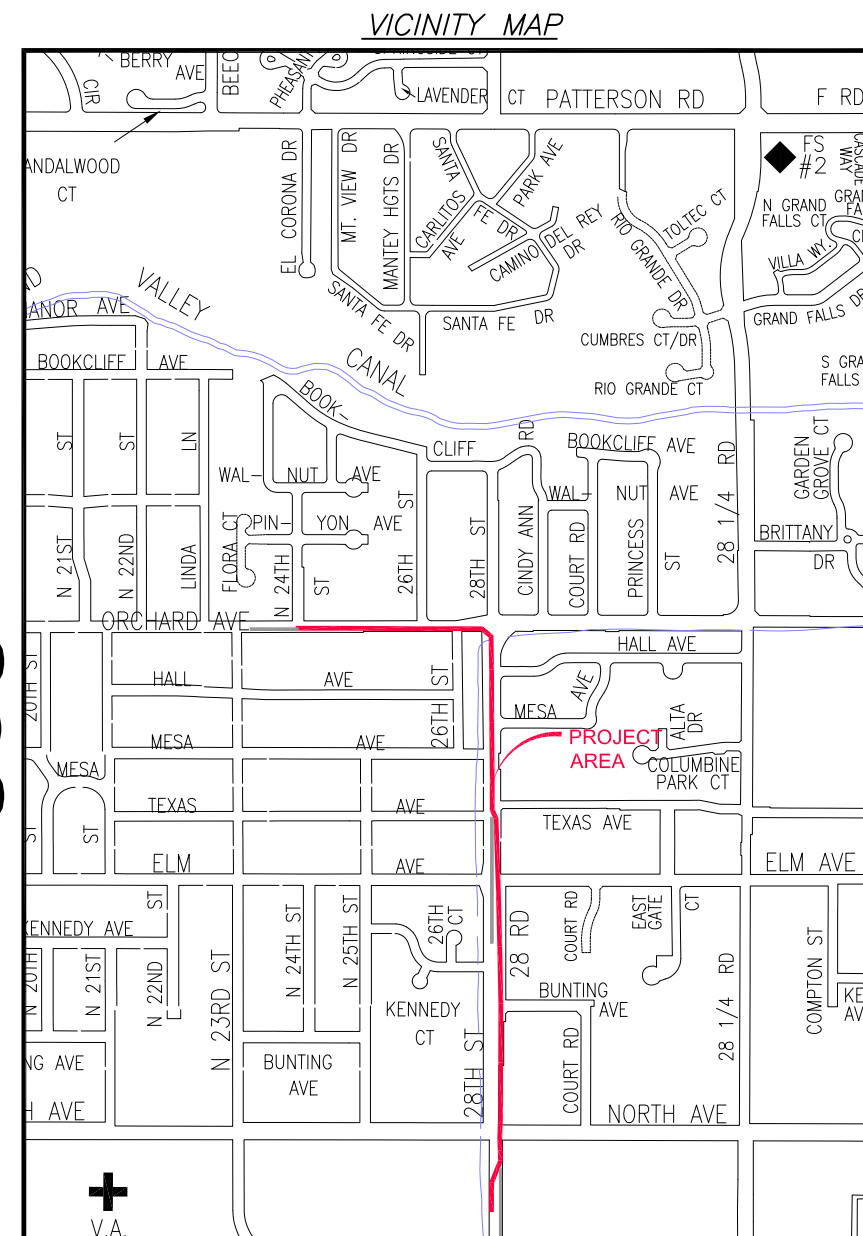
DATE 11/27/07	DWN BY: ED/ALW	DWG NO. EN-0002-PULL HEAD-01	REV 0
SCALE NTS	REV. BY -	SHEET 1 OF 1	

2016 WATERLINE REPLACEMENT PROJECT

28 ROAD & ORCHARD AVENUE

JANUARY, 2016

- 1 ————— Cover Sheet
- 2 ————— Standard Abbreviations, Legend, and Symbols
- 3 ————— Summary of Approximate Quantities
- 4 ————— Project Control Map
- 5 ————— Orchard Ave. to 28 Road – Sta: 0+00 – 10+00
- 6 ————— 28 Road (Orchard Ave. to Texas Ave.) – Sta: 10+00 – 20+00
- 7 ————— 28 Road (Texas Ave. to Bunting Ave.) – Sta: 20+00 – 30+00
- 8 ————— 28 Road (Bunting Ave. to North Ave.) – Sta: 30+00 – 40+00
- 9 ————— As-Built of Indian Wash Crossing at Orchard Ave. & 28 Rd.
- 10 ————— As-Built of Indian Wash Crossing at Orchard Ave. & 28 Rd.



SCALE 1"=1000'

UTILITIES AND AGENCIES								
AGENCY	NAME	POSITION	ROLE	MAILING ADDRESS	STREET ADDRESS	CITY, STATE	VOICE-WK	FAX
GRAND JUNCTION, CITY OF	LEE COOPER	PROJECT ENGINEER	PROJECT ENGINEER	250 N. 5th STREET	250 N. 5th STREET	GRAND JCT., CO 81501	(970) 256-4155	(970) 256-4022
GRAND JUNCTION, CITY OF	BRET GUILLORY	UTILITY ENGINEER		250 N. 5th STREET	250 N. 5th STREET	GRAND JCT., CO 81501	(970) 244-1590	(970) 256-4022
GRAND JUNCTION, CITY OF	RON KEY	WATERLINE SUPERVISOR		250 N. 5th STREET	250 N. 5th STREET	GRAND JCT., CO 81501	(970) 270-6446	
CHARTER	JEFF VALDEZ	CONST. SUPERVISOR	CABLE TV	2502 FORESIGHT CIRCLE	2502 FORESIGHT CIRCLE	GRAND JCT., CO 81504	(970) 263-2314	
CENTURY LINK	CHRIS JOHNSON	ENGINEER	TELEPHONE/FIBER	2524 BLICHMANN AVE	2524 BLICHMANN AVE	GRAND JCT., CO 81504	(970) 244-4311	(970) 240-4349
XCEL ENERGY	JON PRICE	PLANNER	GAS, ELECTRIC	2538 BLICHMANN AVE	2538 BLICHMANN AVE	GRAND JCT., CO 81506	(970) 244-2693	



Public Works & Utilities Engineering Division



Know what's below.
Call before you dig.

DRAWING STATUS:	
<input type="radio"/>	PROGRESS
<input type="radio"/>	FINAL CONSTRUCTION DRAWINGS
<input type="radio"/>	ASBUILT
DESIGNED BY:	
LEE COOPER, PROJECT ENGINEER	DATE
REVIEWED BY:	
BRET GUILLORY, UTILITY ENGINEER	DATE
AUTHORIZED FOR CONSTRUCTION	
TRENTON C. PRALL, CITY ENGINEER	DATE
ACCEPTED AS CONSTRUCTED	
LEE COOPER, PROJECT ENGINEER	DATE

Project: Waterline Replacement; Date: 2/10/2016 12:00:34 PM
 Revision: ADDENDUM #3 - 2/10/16
 Revision: -
 Revision: -
 Revision: -

NOTE: NOTIFY AFFECTED UTILITY VENDOR 48 HOURS PRIOR TO EXCAVATIONS THAT WILL EXPOSE UTILITY LINES. THE COVER SHEET WILL HAVE A LISTING OF UTILITY VENDORS AND TELEPHONE NUMBERS.

ABBREVIATIONS

AA-SHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
ABC	AGGREGATE BASE COURSE
AC	ASBESTOS CEMENT
AP	ANGLE POINT
ASB	ANCHORED STRAW BALES
ASP	ALUMINIZED STEEL PIPE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BACK OF CURB
BF	BUTTERFLY VALVE
BOW	BACK OF WALK
BCR	BEGIN CURB RETURN
BOT	BOTTOM
BSWMP	BETTER STORM WATER MANAGEMENT PRACTICES
CH	CHORD
CAP	CORRUGATED ALUMINUM PIPE
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CI	CAST IRON
C.G.& SW	CURB, GUTTER & SIDEWALK
CL	CENTER LINE
CL	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COMB	COMBINATION (AS IN STORM SEWER AND SANITARY SEWER)
CONC	CONCRETE
CSM	CITY SURVEY MONUMENT
CSP	CORRUGATED STEEL PIPE
CU	COPPER
DJ	DUCTILE IRON
DWY	DRIVEWAY
E	ELECTRIC
ECR	END CURB RETURN
EG	EDGE OF GUTTER
EL	ELEVATION
EP	EDGE OF PAVEMENT
EX	EXISTING
FB	FULL BODY
FC	FACE OF CURB
FG	FINISHED GRADE
FL	FLOW LINE
FL	FLANGE
FM	FORCE MAIN
FO	FIBER OPTICS
FS	FAR SIDE
FTG	FOOTING
G	GAS
GB	GRADE BREAK
GM	GAS METER
GV	GATE VALVE
HBP	HOT BITUMINOUS PAVEMENT
HDPE	HIGH DENSITY POLYETHYLENE
INV	INVERT
IRR	IRRIGATION
L	LENGTH OF ARC
LC	LONG CHORD
LF	LINEAR FEET
LL	LONG ARC
LS	SHORT ARC
LT	LEFT
MB	MAILBOX
MCSM	MESA COUNTY SURVEY MONUMENT
MH	MANHOLE
MJ	MECHANICAL JOINT
MW	MILL WRAP
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOP	NO ONE PERSON
NRCP	NON-REINFORCED CONCRETE PIPE
NS	NEAR SIDE
NTS	NOT TO SCALE
OHP	OVERHEAD POWER
OHT	OVERHEAD TELEPHONE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PE	POLYETHYLENE
PERF	PERFORATED
PI	POINT OF INTERSECTION
PIP	PLASTIC IRRIGATION PIPE
POC	POINT ON CURVE
POT	POINT ON TANGENT
PR	PROPOSED
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
RG	RESTRAINED GLANDS
RL	LONG RADIUS
ROW	RIGHT OF WAY
RP	RADIUS POINT
RR	RAIL ROAD
RS	SHORT RADIUS
RT	RIGHT
S	SLOPE
SAN	SANITARY
SC	SHORT CHORD
SCD	STANDARD CONTRACT DOCUMENTS
SCH	SCHEDULE
SF	SILT FENCE
SL	SECTION LINE
SSRB	STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION
SSUU	STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UNDERGROUND UTILITIES
STA	STATION
STL	STEEL
STM	STORM
T	TELEPHONE
TAN	LENGTH OF TANGENT
TC	TOP OF CURB
TH	TEST HOLE
TV	TELEVISION
(TYP)	TYPICAL
UU	UNDERGROUND UTILITIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VPC	VERTICAL POINT OF CURVATURE
VPCC	VERTICAL POINT OF COMPOUND CURVATURE
VPRC	VERTICAL POINT OF REVERSE CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
W	WATER
Δ	DELTA ANGLE

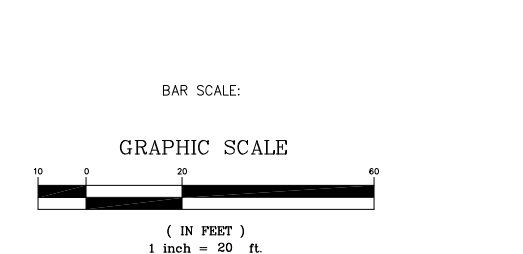
LEGEND

BSWMP DRAINAGE BASIN BOUNDARY	
BSWMP ANCHORED STRAW BALES	
BSWMP SILT FENCE	
BUILDING	
CONCRETE CURB AND GUTTER	
CONCRETE CURB, GUTTER, & SIDEWALK	
CONCRETE DITCH	
CONCRETE SIDEWALK	
CULVERT	
EARTH DITCH	
EDGE OF GRAVEL	
EDGE OF PAVEMENT	
FENCE (BARBED WIRE)	
FENCE (CHAIN LINK)	
FENCE (IRON)	
FENCE (PLASTIC)	
FENCE (WOOD)	
FENCE (WOVEN WIRE)	
GUARD RAIL	
HATCHING: INDICATES ASPHALT REMOVAL	
HATCHING: INDICATES CONCRETE REMOVAL	
HATCHING: INDICATES STAGING AREA	
LINE (CENTER OF IMPROVEMENTS)	
LINE (CITY LIMITS)	
LINE (CONTROL)	
LINE (EASEMENT)	
LINE (MONUMENT/SECTION)	
LINE (PROPERTY)	
LINE (RIGHT OF WAY)	
MATCH LINE	
PIPE (IRRIGATION)	
PIPE (SIPHON)	

PROPOSED CONCRETE CURB AND GUTTER	
PROPOSED CONCRETE CURB, GUTTER, & SIDEWALK	
PROPOSED CONCRETE SIDEWALK	
PROPOSED "WET" UTILITIES (CONSTRUCTION NOTE WILL INDICATE TYPE, SIZE, AND MATERIAL OF NEW MAIN)	
ALL PROPOSED FEATURES NOT SHOWN IN LEGEND WILL BE SHOWN THE SAME AS THEIR EXISTING COUNTERPART, BUT INDICATED BY BOLDER LINETYPE	
RAIL ROAD	
RETAINING WALL	
STRIPING (CONTINUOUS WHITE)	
STRIPING (DASHED WHITE)	
STRIPING (CONTINUOUS YELLOW)	
STRIPING (DASHED YELLOW)	
TOP OF SLOPE	
CONTOUR LINES (SHOWN BETWEEN TOP & TOE)	
TOE OF SLOPE	
TRAFFIC DETECTOR LOOP	
UTILITY LINE (ABANDON) (THIS CASE A WATER LINE)	
UTILITY LINE (CABLE TV)	
UTILITY LINE (ELECTRIC)	
UTILITY LINE (FIBER OPTIC)	
UTILITY LINE (GAS)	
UTILITY LINE (HIGH VOLTAGE OVERHEAD POWER)	
UTILITY LINE (OVERHEAD POWER)	
UTILITY LINE (OVERHEAD TELEPHONE)	
UTILITY LINE (SANITARY SEWER)	
UTILITY LINE (SANITARY SEWER FORCE MAIN)	
UTILITY LINE (SANITARY SEWER SERVICE)	
UTILITY LINE (STORM SEWER)	
UTILITY LINE (STORM SEWER, PERFORATED)	
UTILITY LINE (STORM/SANITARY SEWER SEWER COMBINATION)	
UTILITY LINE (TELEPHONE)	
UTILITY LINE (WATER)	

SYMBOLS

BENCH MARK	
CATCH BASIN	
CLEAN OUT	
CURB STOP	
FIRE HYDRANT	
GUY WIRE ANCHOR	
HEADGATE	
IRRIGATION PUMP	
MAILBOX	
MANHOLE (ELECTRIC)	
MANHOLE (GAS)	
MANHOLE (SANITARY/STORM)	
MANHOLE (TELEPHONE)	
MANHOLE (TV)	
MANHOLE (WATER)	
METER (GAS)	
METER (WATER)	
PEDESTAL (TELEPHONE)	
PEDESTAL (TV)	
PROPERTY PIN	
PULL BOX	
REDUCER FITTING	
SIGN OR POST (SIGN TYPE NOTED)	
SPRINKLER HEAD	
STREET LIGHT	
SURVEY MONUMENT (CITY)	
SURVEY MONUMENT (TYPE NOTED)	
TEST HOLE	
TRAFFIC PAINT MARKING	
TRAFFIC SIGNAL POLE AND MAST ARM	
UTILITY POLE	
VALVE (GAS)	
VALVE (IRRIGATION)	
VALVE (WATER)	
VEGETATION (HEDGE OR BUSH)	
VEGETATION (TREE STUMP)	
VEGETATION (TREE) (CALIPER SIZE NOTED)	
WATER HYDRANT	
WEIR	
YARD LIGHT	



NORTH ARROW:



REVISION Δ	DESCRIPTION	DATE	DRAWN BY	JCS	DATE	4-02
REVISION Δ			DESIGNED BY		DATE	
REVISION Δ			CHECKED BY		DATE	
REVISION Δ			APPROVED BY		DATE	

SCALE	
PLAN	PROFILE
HORIZ. 1"=20'	HORIZ. _____
VERT. _____	VERT. _____



PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

CITY OF GRAND JUNCTION STANDARD ABBREVIATIONS, LEGEND, AND SYMBOLS SHEET

Item No.	CDOT, City Ref.	Description	Quantity	Units	Item No.	CDOT, City Ref.	Description	Quantity	Units	Item No.	CDOT, City Ref.	Description	Quantity	Units
1	108.2	Water Main (2") (HDPE) (Service Line) (If lead service line is encounter, water service shall be replaced to meter) (Includes cost of connection to existing pipe)	10	Lin. Ft.	21	108.4	Tapping Saddle (18" x 3/4")	19	Each	40	210	Repair damage to unlocated irrigation lines, various sizes and materials (1" to 12" dia.)	3	Each
2	108.2	Water Main (6") (C-900 PVC, DR-18) (Includes cost of connection to existing waterline / valve / fitting)	285	Lin. Ft.	22	108.4	Tapping Saddle (18" x 2")	1	Each	41	210	Reset Guardrail	50	Lin. Ft.
3	108.2	Water Main (8") (C-900 PVC, DR-18) (Includes cost of connection to existing waterline / valve / fitting)	85	Lin. Ft.	23	108.4	Corporation Stop (3/4")	19	Each	42	210	Reset Sprinkler System (Complete in Place)	6	Each
4	108.2	Water Main (10") (C-900 PVC, DR-18) (Includes cost of connection to existing waterline / valve / fitting)	15	Lin. Ft.	24	108.4	Corporation Stop (2")	1	Each	43	212	Sod (Includes 6" Thick Imported Topsoil placed prior to sod placement)	100	Sq. Ft.
5	108.2	Water Main (18") (C-905 PVC, DR-25) (Includes cost of connection to existing waterline / valve / fitting)	140	Lin. Ft.	25	108.7	Granular Stabilization Material (Type B) (Crushed Rock) (Includes haul and disposal of unsuitable excavated material) (Assumed material unit weight = 138 lbs/ft ³)	200	Ton	44	304	Aggregate Base Course (Class 6) (15" Thick) (4' wide +/-)	520	Sq. Yd.
6	108.2	Water Main (18") (Fusible C-905 PVC, DR-25) (Install Only) (Includes all equipment, labor, fuel, and materials for fusing pipe and pulling pipe through existing 24" steel pipe) (The City has already purchased the 18" Fusible pipe from Underground Solutions) The Bidder shall not include pipe material costs for this Bid Item.	3,650	Lin. Ft.	26	202	Removal of Bush	1	Each	45	401	Hot Bituminous Pavement (Patching) (4" Thick) (Grading SX, PG 64-22, GYR=75) (Two 2" Lifts) (Bottom Two Mats) (See City Standard Detail GU-03)	520	Sq. Yd.
7	108.2	Imported Trench Backfill (Class 3) (Includes haul and disposal of unsuitable excavated material) (Assumed Unit Weight = 133 lbs/ft ³)	300	Ton	27	202	Removal of Tree	2	Each	46	401	Hot Bituminous Pavement (Patching) (2" Thick) (Grading SX, PG 64-22, GYR=75) (T-Top) (See City Standard Detail GU-03) (Top Mat)	430	Sq. Yd.
8	108.3	Gate Valve (6")	1	Each	28	202	Abandon Pipe (Abandon pipe by plugging ends with concrete)	70	Each	47	407	Emulsified Asphalt (Tack Coat)	95	Gallon
9	108.3	8" Blind Flange	1	Each	29	202	Abandon Existing Water Valve (Close valve, remove top half of existing valve box, fill cavity to finished subgrade with flow-fill material)	9	Each	48	608	Concrete Curb and Gutter (Match in Kind)	100	Lin. Ft.
10	108.3	18" x 6" Tee (MJ x FL)	1	Each	30	202	Remove Existing Fire Hydrant (Return Hydrant to City Shops)	6	Each	49	608	Concrete Curb, Gutter and Sidewalk (Match in Kind)	3	Sq. Yd.
11	108.3	Butterfly Valve (18")	4	Each	31	202	Remove Existing Pipe (Various sizes and material type)	400	Lin. Ft.	50	608	Concrete Drainage Pan (Match in Kind)	6	Sq. Yd.
12	108.3	Elbow (6" x 22.5 deg) (MJ)	2	Each	32	202	Remove Existing Water Valve	7	Each	51	608	Cap Top Half of Sewer Pipe in concrete per Std. Detail GU-04 (20' long)	2	Each
13	108.3	Elbow (6" x 45 deg) (MJ)	8	Each	33	202	Removal of Asphalt Mat (Planing) (T-Top Section) (2" Depth) (North Ave., 28 Road, Orchard Ave.) (Per City Standard Detail GU-03)	430	Sq. Yd.	52	620	Portable Sanitary Facility	1	Each
14	108.3	Elbow (8" x 45 deg) (MJ)	6	Each	34	202	Removal of Asphalt Mat (Full-Depth) (Per City Standard Detail GU-03)	520	Sq. Yd.	53	625	Construction Surveying	1	Lump Sum
15	108.3	Elbow (18" x 22.5 deg) (MJ)	4	Each	35	202	Removal of Concrete (Saw cut and remove concrete as shown) (Includes but not limited to curb, gutter, sidewalk, driveway, slabs, V-pan, curb ramps, intersection corners, aprons, and concrete walls.)	210	Sq. Ft.	54	626	Mobilization	1	Lump Sum
16	108.3	Elbow (18" x 45 deg) (MJ)	6	Each	36	203	Disposal of Radioactive Material (City Shops Location)	100	Cu. Yd.	55	630	Traffic Control Plan	1	Lump Sum
17	108.3	Reducer (20" x 18") (MJ)	1	Each	37	206	Structure Backfill (Flow-Fill)	27	Cu. Yd.	56	630	Traffic Control (Complete in Place)	1	Lump Sum
18	108.3	18" Solid Sleeve Coupling (MJ)	7	Each	38	208	Storm Drain Inlet Protection (Silt-Sack) (Includes Maintenance & Removal of Inlet Protection)	10	Each	57	630	Flagging	100	Hour
19	108.3	Fire Hydrant Assembly	6	Each	39	208	Concrete Washout Facility	1	Lump Sum					
20	108.4	3/4" Water Service Line (Type K Copper) (If Lead or Poly service line is encountered, water service shall be replaced to meter) (Includes cost of connection to existing pipe)	160	Lin. Ft.										

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REVISION	DESCRIPTION	DATE	DRAWN BY	DATE
REVISION	ADDENDUM #3	2/10/16		
REVISION			DESIGNED BY	DATE
REVISION			CHECKED BY	DATE
REVISION			APPROVED BY	DATE

SCALE
N.T.S.

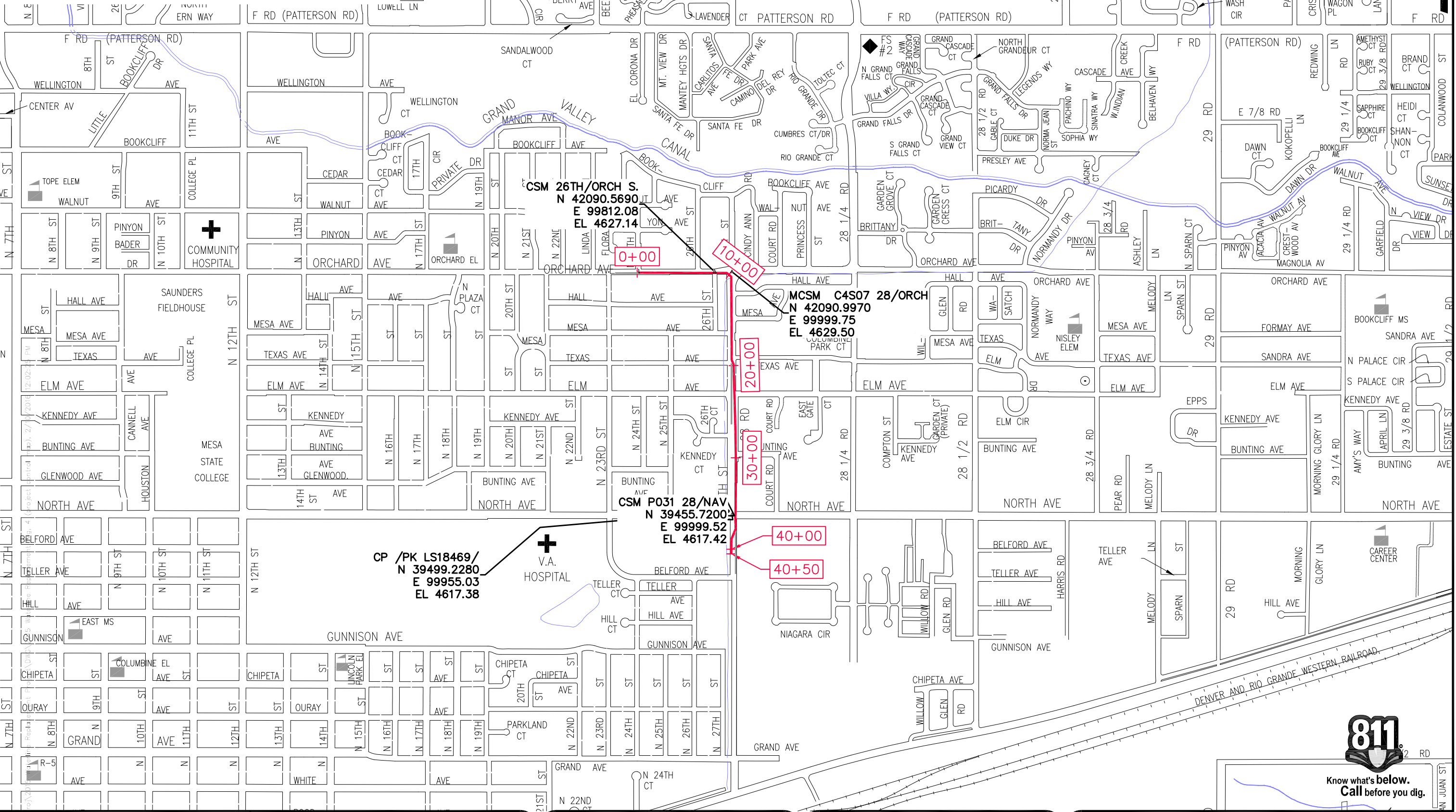


PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

2016 WATERLINE REPLACEMENT PROJECT SUMMARY OF APPROXIMATE QUANTITIES

COORDINATE SYSTEM:

The coordinate system used for this Project is the Mesa County LCS (Local Coordinate System) zone "GVALCS" being a Transverse Mercator Coordinate Projection where as the Point of Origin (N50,000/E100,000) and Central Meridian being the SIMS point SN01 and GLO6 (initial Point - Ute Meridian). The Geodetic Coordinates of said SIMS point SN01 being Lat. 39°06'22.72746 N and Long. -108°32'01.43552" W. Basis of Bearings is True Geodetic North at the Central Meridian.



REVISION	DESCRIPTION	DATE	DRAWN BY	DATE
REVISION			DESIGNED BY	DATE
REVISION			CHECKED BY	DATE
REVISION			APPROVED BY	DATE

SCALE
0 10 20 40



PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

2016 WATERLINE REPLACEMENT PROJECT PROJECT CONTROL MAP



Know what's below. Call before you dig.

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PROJECT NO. 301-F000522

CONSTRUCTION NOTES

- 1 202 - REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)
- 3 202 - REMOVAL OF CONCRETE. SAW CUT AND REMOVE CONCRETE AS SHOWN. (INDICATED BY CROSS HATCH PATTERN) INCLUDES BUT NOT LIMITED TO CURB, GUTTER, SIDEWALK, DRIVEWAY, SLABS, V-PAN, CURB RAMPS, INTERSECTION CORNERS, APRONS, AND LANDSCAPE BORDERS.
- 5 202 - REMOVAL OF BUSH
- 15 202 - REMOVAL OF PIPE (SIZE & TYPE AS SHOWN ON PLAN) (INCLUDES REMOVAL OF THRUST BLOCKS)
- 20 202 - ABANDON PIPE. ABANDON BY PLUGGING REMAINING ENDS WITH CONCRETE.
- 21 202 - REMOVE EXISTING WATER VALVE
- 22 202 - REMOVE EXISTING FIRE HYDRANT AND RETURN TO CITY SHOPS
- 25 202 - ABANDON EXISTING WATER VALVE. CLOSE VALVE, REMOVE TOP HALF OF EXISTING VALVE BOX, FILL CAVITY TO FINISHED SUBGRADE WITH FLOW FILL MATERIAL.
- 252 208 - STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF INLET PROTECTION)
- 397 102.7/108.2 - 10" WATER MAIN PIPE (C-900 PVC, DR 18). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 400 102.7/108.2 - 18" WATER MAIN PIPE (C-905 FUSIBLE PVC, DR-25) INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS FOR FUSING PIPE AND PULLING NEW PIPE THROUGH EXISTING 24" STEEL PIPE.
- 401 102.7/108.2 - 6" WATER MAIN PIPE (C-900 PVC, DR 18). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 402 6" HOT TAP & 6" GATE VALVE (PROVIDED AND INSTALLED BY THE CITY'S WATER DEPT.)
- 404 102.8e/108.3 - BUTTERFLY VALVE (18")
- 405 102.8/108.3 - 20" x 18" REDUCER (MJ) RESTRAINED
- 409 102.8/108.3 - 18", 45° ELBOW (MJ) RESTRAINED
- 410 102.8/108.3 - 8" BLIND FLANGE
- 411 102.8/108.3 - 18" SOLID SLEEVE COUPLING (MJ)
- 412 102.8A/108.3 - FIRE HYDRANT ASSEMBLY
- 413 102.7C/108.4 - WATER SERVICE LINE (TYPE K COPPER) (SIZE AS SHOWN ON PLAN) IF LEAD OR POLY SERVICE LINE IS ENCOUNTERED, WATER SERVICE LINE SHALL BE REPLACED TO METER.
- 415 102.8K/108.4 - TAPPING SADDLE (SIZE AS SHOWN ON PLAN)
- 416 102.8J/108.4 - CORPORATION STOP (SIZE AS SHOWN ON PLAN)
- 426 CONNECT TO EXISTING WATER PIPE/VALVE/FITTING. THE CONTRACT UNIT PRICE FOR WATER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE
- 429 102.8/108.3 - 6", 45° ELBOW (MJ) RESTRAINED
- 431 10" HOT TAP & 10" GATE VALVE (PROVIDED AND INSTALLED BY THE CITY'S WATER DEPT.)
- 433 102.7/108.2 - 18" WATER MAIN PIPE (C-905 PVC, DR 25). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 602 608.06 - CONCRETE CURB AND GUTTER (2' WIDE)
- 664 304 - AGGREGATE BASE COURSE (CLASS 6) (15" THICK)
- 679 401.08 - HOT BITUMINOUS PAVEMENT (4" THICK) (GRADING SX, BINDER GRADE PG 64-22) (TWO 2" LIFTS) (BOTTOM TWO MATS) (5' WIDE MAX.)
- 683 401.08 - HOT BITUMINOUS PAVEMENT (2" THICK) (GRADING SX, BINDER GRADE PG 64-22) (ONE 2" LIFT) (TOP MAT) (T-TOP PATCH, 6'-7" WIDE)
- 846 POTHOLE EXISTING UTILITY AHEAD OF CONSTRUCTION. TRANSITION WATER PIPE AS NEEDED TO MAINTAIN 18" CLEARANCE MINIMUM ABOVE SEWER PIPES AND 6" CLEARANCE MINIMUM ABOVE OR BELOW OTHER UTILITY LINES. POTHOLING SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE PROJECT.

ENGINEER'S RECOMMENDED SEQUENCE OF OPERATIONS:

1. EXCAVATE LAUNCHING AND RECEIVING PITS.
2. LOCATE AND EXCAVATE AREAS FOR WATER SERVICES, LATERALS, AND FIRE HYDRANTS.
3. WORK WITH CITY WATER DEPT. ON ISOLATING EXISTING 24" STEEL PIPE. DRAIN/PUMP WATER OUT OF SECTION OF 24" STEEL PIPE RECEIVING THE NEW 18" PVC PIPE.
5. CITY CREWS TV EXISTING 24" LINE TO SEE IF THERE'S ANY RESTRICTIONS WITHIN THE EXISTING PIPE.
6. REMOVE SECTIONS OF EXISTING 24" STEEL PIPE (36" WIDE, MIN.) AT WATER SERVICES, LATERALS, AND FIRE HYDRANTS LOCATIONS.
7. PULL NEW 18" PVC PIPE THROUGH EXISTING 24" STEEL PIPE. PRESSURE TEST, DISINFECT AND FLUSH.

GENERAL PROJECT NOTE:

1. WHEREVER THE EXISTING 24" DIA. WATERLINE NEEDS TO BE CUT OPEN FOR INSTALLING NEW WATER SERVICES, LATERALS, AND VALVES; THE CONTRACTOR SHALL PLUG THE CUT ENDS OF THE 24" PIPE WITH CONCRETE PER CONSTRUCTION NOTE #20.

2945-121-00-951

2430 ORCHARD AVE
GRAND JUNCTION, CO 81501
WESTERN COLORADO CHRISTIAN CAMPUS

2945-121-00-024

2460 ORCHARD AVE
GRAND JUNCTION, CO 81501
STUCKMAN TANYA D
STUCKMAN MARC

PIPE FUSING ZONE. CONTRACTOR SHALL FUSE PIPE WITHIN THE AREA OF 24TH STREET AND 21ST STREET

PROPOSED LAUNCHING PIT FOR NEW 18" FUSIBLE PVC PIPE
APPROX. DIMENSIONS: 47' L x 6' W

EX. 20" BUTTERFLY VALVE
INSTALLED IN FALL 2012

REMOVE EX. 8" GATE VALVE AND
INSTALL EPOXY COATED BLIND
FLANGE ON EXISTING FITTING.
CONCRETE THRUST BLOCK
REQUIRED PER CITY DETAIL W-07
& W-08.

EXISTING 8" D.I. WATER PIPE
TO BE ABANDONED

PROPOSED RECEIVING PIT
AREA FOR NEW 18" PVC PIPE
LOCATED IN LANDSCAPE AREA

EXISTING 24" STEEL WATER PIPE
FROM ORCHARD AVE. (0+34) TO
TEXAS AVE. (19+50).
CONTRACTOR SHALL VERIFY
EXISTING PIPE MATERIAL.

REMOVE EXISTING 24" STEEL
PIPE AND INSTALL NEW 18" PVC
C-905 IN SAME LOCATION.

FROM ABUTMENT WALL TO ABUTMENT WALL
EXISTING 24" STEEL PIPE CROSSING INDIAN WASH
SHALL BE LEFT IN PLACE AND PROTECTED.
EXISTING 24" STEEL PIPE WILL
BECOME SLEEVE FOR NEW 18" PVC PIPE.

GENERAL PROJECT NOTE:

1. WHEREVER THE EXISTING 24" DIA. WATERLINE NEEDS TO BE CUT OPEN FOR INSTALLING NEW WATER SERVICES, LATERALS, AND VALVES; THE CONTRACTOR SHALL PLUG THE CUT ENDS OF THE 24" PIPE WITH CONCRETE PER CONSTRUCTION NOTE #20.



Know what's below.
Call before you dig.

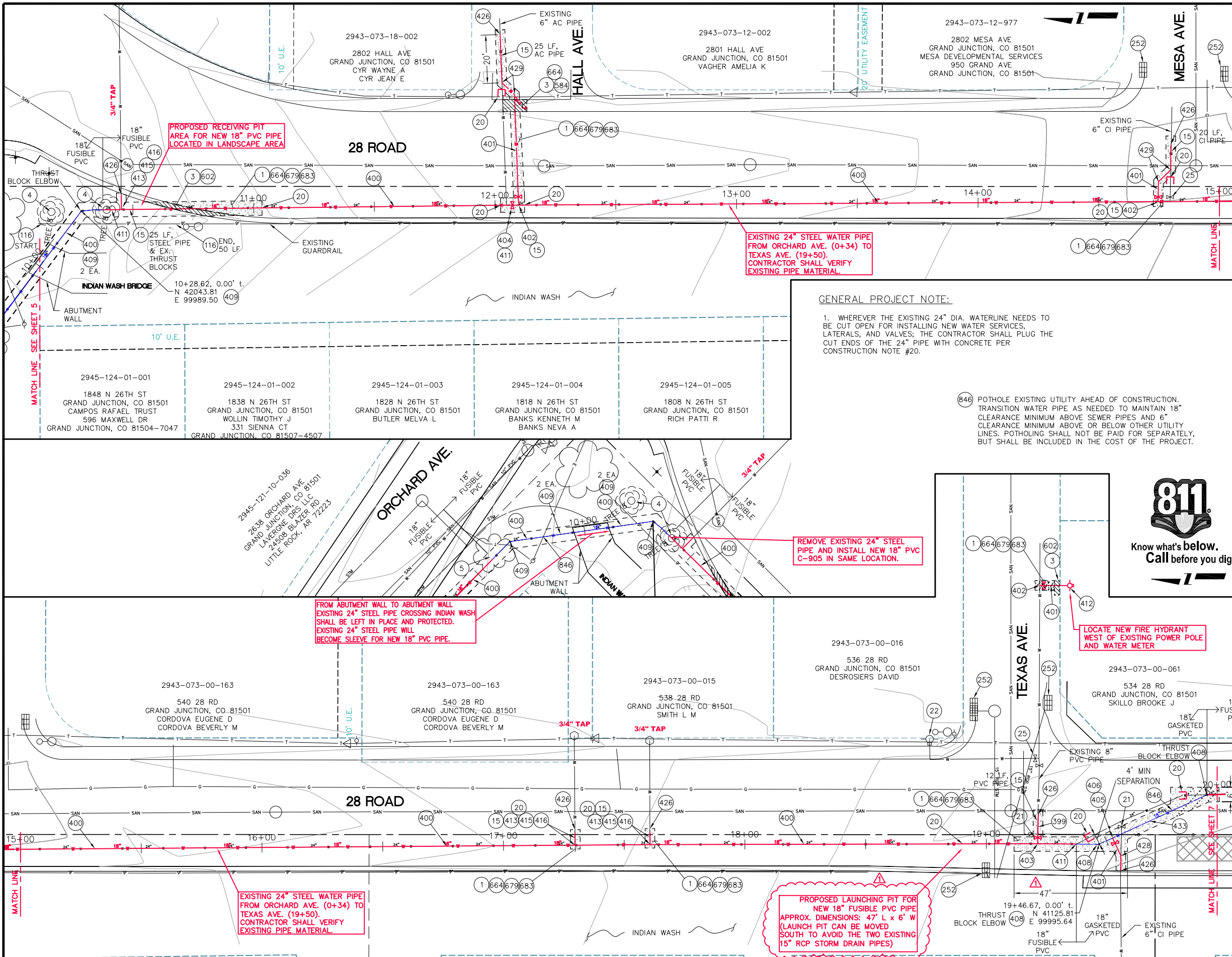
DESCRIPTION	DATE	DRAWN BY	HC	DATE
REVISION A ADDENDUM #3	2/10/16			JULY, 2015
REVISION B		DESIGNED BY	ALC	DATE JULY, 2015
REVISION C		CHECKED BY		DATE
REVISION D		APPROVED BY		DATE

SCALES:
 PLAN: 1" = 40'
 PROFILE: HORIZONTAL 1" = 40', VERTICAL 1" = 5'

PUBLIC WORKS
AND UTILITIES
ENGINEERING DIVISION

2016 WATERLINE REPLACEMENT PROJECT
ORCHARD AVENUE TO 28 ROAD
STA 0+00 TO STA 10+00

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PROJECT NO. 301-F000522
CONSTRUCTION NOTES

- 1 202 - REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)
- 3 202 - REMOVAL OF CONCRETE. SAW CUT AND REMOVE CONCRETE AS SHOWN. (INDICATED BY CROSS HATCH PATTERN) INCLUDES BUT NOT LIMITED TO CURB, GUTTER, SIDEWALK, DRIVEWAY, SLABS, V-PAN, CURB RAMPS, INTERSECTION CORNERS, APRONS, AND LANDSCAPE BORDERS.
- 4 202 - REMOVAL OF TREE
- 5 202 - REMOVAL OF BUSH
- 15 202 - REMOVAL OF PIPE (SIZE AND TYPE AS SHOWN ON PLAN) (INCLUDES REMOVAL OF THRUST BLOCKS)
- 20 202 - ABANDON PIPE. ABANDON BY PLUGGING REMAINING ENDS WITH CONCRETE.
- 21 202 - REMOVE EXISTING WATER VALVE
- 22 202 - REMOVE EXISTING FIRE HYDRANT AND RETURN TO CITY SHOPS
- 25 202 - ABANDON EXISTING WATER VALVE. CLOSE VALVE, REMOVE TOP HALF OF EXISTING WATER VALVE BOX, FILL CAVITY TO FINISHED SUBGRADE WITH FLOW FILL MATERIAL.
- 116 210 - RESET GUARDRAIL
- 252 208 - STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF INLET PROTECTION)
- 399 102.7/108.2 - 8" WATER MAIN PIPE (C-900 PVC, DR 18). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 400 102.7/108.2 - 18" WATER MAIN PIPE (C-905 FUSIBLE PVC, DR-25) INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS FOR FUSING PIPE AND PULLING NEW PIPE THROUGH EXISTING 24" STEEL PIPE.
- 401 102.7/108.2 - 6" WATER MAIN PIPE (C-900 PVC, DR 18). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 402 6" HOT TAP & 6" GATE VALVE (PROVIDED AND INSTALLED BY THE CITY'S WATER DEPT.)
- 403 8" HOT TAP & 8" GATE VALVE (PROVIDED AND INSTALLED BY THE CITY'S WATER DEPT.)
- 404 102.8e/108.3 - BUTTERFLY VALVE (18")
- 405 102.8b/108.3 - 6" GATE VALVE
- 406 102.8/108.3 - 18" x 6" TEE
- 408 102.8/108.3 - 18", 22.5' ELBOW (MJ) RESTRAINED
- 409 102.8/108.3 - 18", 45' ELBOW (MJ) RESTRAINED
- 411 102.8/108.3 - 18" SOLID SLEEVE COUPLING (MJ)
- 412 102.8A/108.3 - FIRE HYDRANT ASSEMBLY
- 413 102.7C/108.4 - WATER SERVICE LINE (TYPE K COPPER) (SIZE AS SHOWN ON PLAN) IF LEAD OR POLY SERVICE LINE IS ENCOUNTERED, WATER SERVICE LINE SHALL BE REPLACED TO METER.
- 415 102.8K/108.4 - TAPPING SADDLE (SIZE AS SHOWN ON PLAN)
- 416 102.8J/108.4 - CORPORATION STOP (SIZE AS SHOWN ON PLAN)
- 426 CONNECT TO EXISTING WATER PIPE/VALVE/FITTING. THE CONTRACT UNIT PRICE FOR WATER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE
- 428 102.8/108.3 - 6", 22.5' ELBOW (MJ) RESTRAINED
- 429 102.8/108.3 - 6", 45' ELBOW (MJ) RESTRAINED
- 433 102.7/108.2 - 18" WATER MAIN PIPE (C-905 PVC, DR 25). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 584 608.06 - CONCRETE DRAINAGE PAN (MATCH IN KIND)
- 602 608.06 - CONCRETE CURB AND GUTTER (2' WIDE)
- 664 304 - AGGREGATE BASE COURSE (CLASS 6) (15" THICK)
- 679 401.08 - HOT BITUMINOUS PAVEMENT (4" THICK) (GRADING SX, BINDER GRADE PG 64-22) (TWO 2" LIFTS) (BOTTOM TWO MATS) (5' WIDE MAX.)
- 683 401.08 - HOT BITUMINOUS PAVEMENT (2" THICK) (GRADING SX, BINDER GRADE PG 64-22) (ONE 2" LIFT) (TOP MAT) (T-TOP PATCH, 6'-7" WIDE)

GENERAL PROJECT NOTE:

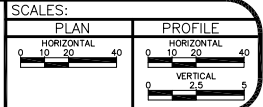
1. WHEREVER THE EXISTING 24" DIA. WATERLINE NEEDS TO BE CUT OPEN FOR INSTALLING NEW WATER SERVICES, LATERALS, AND VALVES, THE CONTRACTOR SHALL PLUG THE CUT ENDS OF THE 24" PIPE WITH CONCRETE PER CONSTRUCTION NOTE #20.

846 POTHOLE EXISTING UTILITY AHEAD OF CONSTRUCTION. TRANSITION WATER PIPE AS NEEDED TO MAINTAIN 18" CLEARANCE MINIMUM ABOVE SEWER PIPES AND 6" CLEARANCE MINIMUM ABOVE OR BELOW OTHER UTILITY LINES. POTHOLING SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE PROJECT.



REVISION	DESCRIPTION	DATE	DRAWN BY	HC	DATE
REVISION	ADDENDUM #3	2/10/16	DESIGNED BY	ALC	DATE
REVISION			CHECKED BY		DATE
REVISION			APPROVED BY		DATE

DATE	DATE
JULY, 2015	JULY, 2015



PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

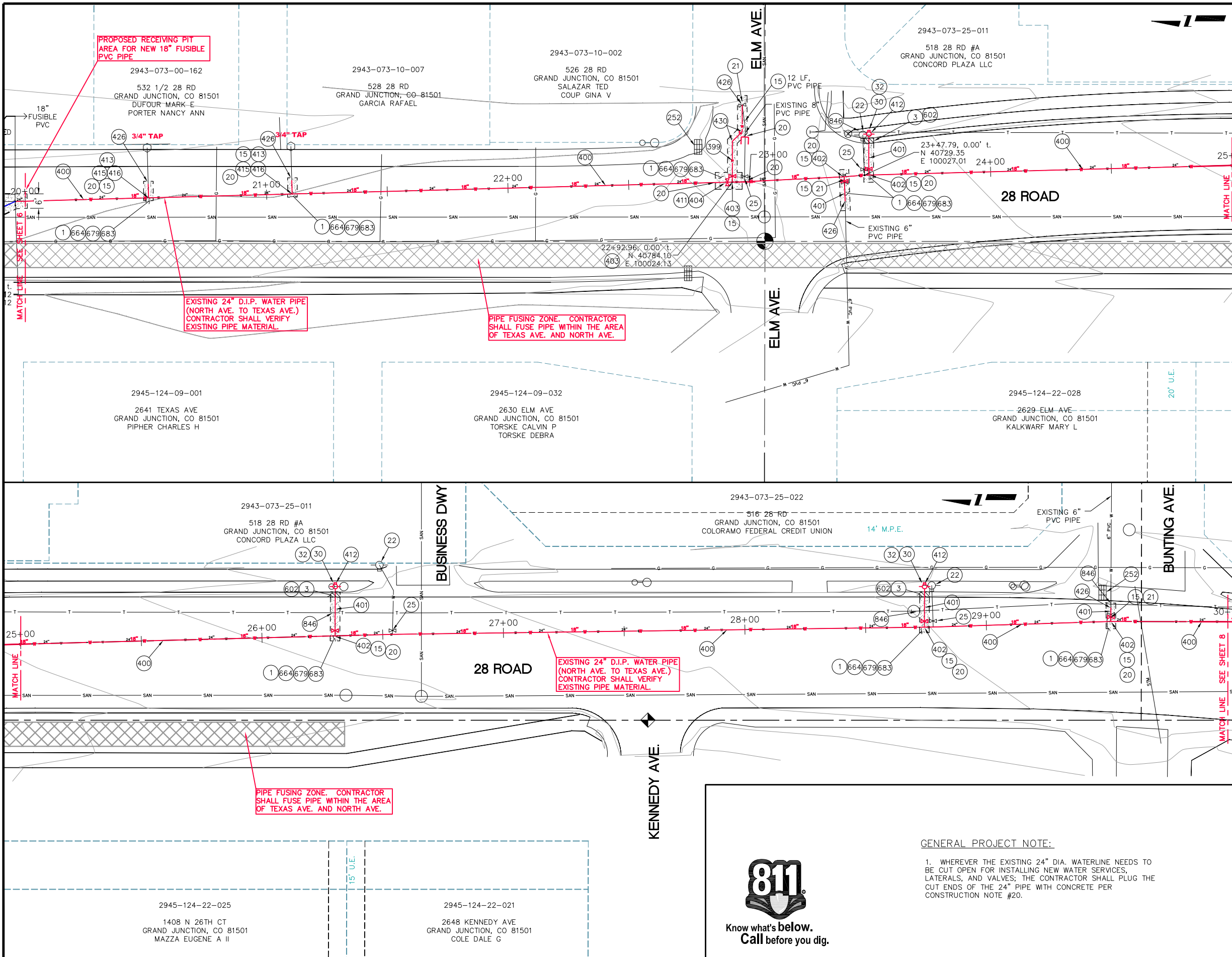
**2016 WATERLINE REPLACEMENT PROJECT
28 ROAD (ORCHARD AVE. TO TEXAS AVE.)
STA 10+00 TO STA 20+00**

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PROJECT NO. 301-F000522

CONSTRUCTION NOTES

- 1 202 - REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)
- 3 202 - REMOVAL OF CONCRETE. SAW CUT AND REMOVE CONCRETE AS SHOWN. (INDICATED BY CROSS HATCH PATTERN) INCLUDES BUT NOT LIMITED TO CURB, GUTTER, SIDEWALK, DRIVEWAY, SLABS, V-PAN, CURB RAMPS, INTERSECTION CORNERS, APRONS, AND LANDSCAPE BORDERS.
- 15 202 - REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)
- 20 202 - ABANDON PIPE. ABANDON BY PLUGGING REMAINING ENDS WITH CONCRETE.
- 21 202 - REMOVE EXISTING WATER VALVE
- 22 202 - REMOVE EXISTING FIRE HYDRANT AND RETURN TO CITY SHOPS
- 25 202 - ABANDON EXISTING WATER VALVE. CLOSE VALVE, REMOVE TOP HALF OF EXISTING VALVE BOX, FILL CAVITY TO FINISHED SUBGRADE WITH FLOW FILL MATERIAL.
- 30 210 - RESET SPRINKLER SYSTEM (COMPLETE IN PLACE)
- 32 212 - SOD (INCLUDES 6" THICK IMPORTED TOPSOIL PLACED PRIOR TO SOD PLACEMENT)
- 252 208 - STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF INLET PROTECTION)
- 399 102.7/108.2 - 8" WATER MAIN PIPE (C-900 PVC, DR 18). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 400 102.7/108.2 - 18" WATER MAIN PIPE (C-905 FUSIBLE PVC, DR-25) INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS FOR FUSING PIPE AND PULLING NEW PIPE THROUGH EXISTING 24" STEEL PIPE.
- 401 102.7/108.2 - 6" WATER MAIN PIPE (C-900 PVC, DR 18). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 402 6" HOT TAP & 6" GATE VALVE (PROVIDED AND INSTALLED BY THE CITY'S WATER DEPT.)
- 403 8" HOT TAP & 8" GATE VALVE (PROVIDED AND INSTALLED BY THE CITY'S WATER DEPT.)
- 404 102.8e/108.3 - BUTTERFLY VALVE (18")
- 411 102.8/108.3 - 18" SOLID SLEEVE COUPLING (MJ)
- 412 102.8A/108.3 - FIRE HYDRANT ASSEMBLY
- 413 102.7C/108.4 - WATER SERVICE LINE (TYPE K COPPER) (SIZE AS SHOWN ON PLAN) IF LEAD OR POLY SERVICE LINE IS ENCOUNTERED, WATER SERVICE LINE SHALL BE REPLACED TO METER.
- 415 102.8K/108.4 - TAPPING SADDLE (SIZE AS SHOWN ON PLAN)
- 416 102.8J/108.4 - CORPORATION STOP (SIZE AS SHOWN ON PLAN)
- 426 CONNECT TO EXISTING WATER PIPE/VALVE/FITTING. THE CONTRACT UNIT PRICE FOR WATER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE
- 430 102.8/108.3 - 8", 45' ELBOW (MJ) RESTRAINED
- 433 102.7/108.2 - 18" WATER MAIN PIPE (C-905 PVC, DR 25). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 584 608.06 - CONCRETE DRAINAGE PAN (MATCH IN KIND)
- 602 608.06 - CONCRETE CURB AND GUTTER (2' WIDE)
- 664 304 - AGGREGATE BASE COURSE (CLASS 6) (15" THICK)
- 679 401.08 - HOT BITUMINOUS PAVEMENT (4" THICK) (GRADING SX, BINDER GRADE PG 64-22) (TWO 2" LIFTS) (BOTTOM TWO MATS) (5' WIDE MAX.)
- 683 401.08 - HOT BITUMINOUS PAVEMENT (2" THICK) (GRADING SX, BINDER GRADE PG 64-22) (ONE 2" LIFT) (TOP MAT) (T-TOP PATCH, 6'-7' WIDE)
- 846 POT HOLE EXISTING UTILITY AHEAD OF CONSTRUCTION. TRANSITION WATER PIPE AS NEEDED TO MAINTAIN 18" CLEARANCE MINIMUM ABOVE SEWER PIPES AND 6" CLEARANCE MINIMUM ABOVE OR BELOW OTHER UTILITY LINES. POT HOLE SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE PROJECT.



GENERAL PROJECT NOTE:

1. WHEREVER THE EXISTING 24" DIA. WATERLINE NEEDS TO BE CUT OPEN FOR INSTALLING NEW WATER SERVICES, LATERALS, AND VALVES; THE CONTRACTOR SHALL PLUG THE CUT ENDS OF THE 24" PIPE WITH CONCRETE PER CONSTRUCTION NOTE #20.

REVISION	DESCRIPTION	DATE	DRAWN BY	DATE
REVISION #3	ADDENDUM #3	2/10/16	HC	JULY, 2015
REVISION #2			ALC	JULY, 2015
REVISION #1				
REVISION #0				

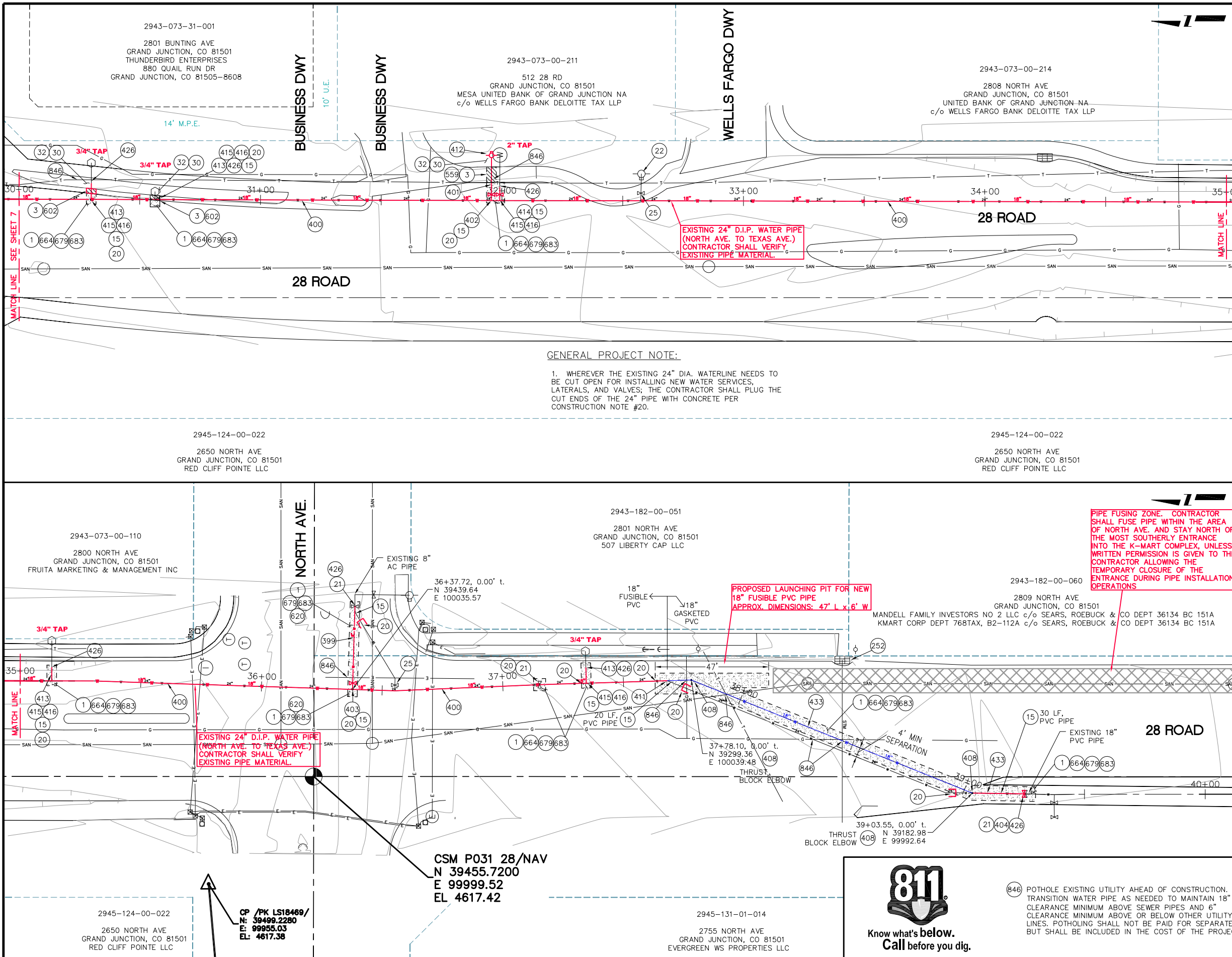
SCALE	PLAN	PROFILE
HORIZONTAL	1" = 40'	1" = 20'
VERTICAL		1" = 2'-6"



PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

**2016 WATERLINE REPLACEMENT PROJECT
28 ROAD (TEXAS AVE. TO BUNTING AVE.)
STA 20+00 TO STA 30+00**

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PROJECT NO. 301-F000522

CONSTRUCTION NOTES

- 1 202 - REMOVAL OF ASPHALT MAT. CUT AND REMOVE ASPHALT AS SHOWN. (INDICATED BY DOT HATCH PATTERN)
- 3 202 - REMOVAL OF CONCRETE. SAW CUT AND REMOVE CONCRETE AS SHOWN. (INDICATED BY CROSS HATCH PATTERN) INCLUDES BUT NOT LIMITED TO CURB, GUTTER, SIDEWALK, DRIVEWAY, SLABS, V-PAN, CURB RAMPS, INTERSECTION CORNERS, APRONS, AND LANDSCAPE BORDERS.
- 15 202 - REMOVAL OF PIPE AS SHOWN. (SIZE AND TYPE AS SHOWN ON PLAN)
- 20 202 - ABANDON PIPE. ABANDON BY PLUGGING REMAINING ENDS WITH CONCRETE.
- 21 202 - REMOVE EXISTING WATER VALVE
- 22 202 - REMOVE EXISTING FIRE HYDRANT AND RETURN TO CITY SHOPS
- 25 202 - ABANDON EXISTING WATER VALVE. CLOSE VALVE, REMOVE TOP HALF OF EXISTING VALVE BOX, FILL CAVITY TO FINISHED SUBGRADE WITH FLOW FILL MATERIAL.
- 30 210 - RESET SPRINKLER SYSTEM (COMPLETE IN PLACE)
- 32 212 - SOD (INCLUDES 6" THICK IMPORTED TOPSOIL PLACED PRIOR TO SOD PLACEMENT)
- 252 252 208 - STORM DRAIN INLET PROTECTION (SILT-SACK) (INCLUDES MAINTENANCE AND REMOVAL OF INLET PROTECTION)
- 399 102.7/108.2 - 8" WATER MAIN PIPE (C-900 PVC, DR 18). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 400 102.7/108.2 - 18" WATER MAIN PIPE (C-905 FUSIBLE PVC, DR-25) INCLUDES ALL EQUIPMENT, LABOR, AND MATERIALS FOR FUSING PIPE AND PULLING NEW PIPE THROUGH EXISTING 24" STEEL PIPE.
- 401 102.7/108.2 - 6" WATER MAIN PIPE (C-900 PVC, DR 18). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 402 6" HOT TAP & 6" GATE VALVE (PROVIDED AND INSTALLED BY THE CITY'S WATER DEPT.)
- 403 8" HOT TAP & 8" GATE VALVE (PROVIDED AND INSTALLED BY THE CITY'S WATER DEPT.)
- 404 102.8e/108.3 - BUTTERFLY VALVE (18")
- 408 102.8/108.3 - 18", 22.5' ELBOW (MJ) RESTRAINED
- 411 102.8/108.3 - 18" SOLID SLEEVE COUPLING (MJ)
- 412 102.8A/108.3 - FIRE HYDRANT ASSEMBLY
- 413 102.7C/108.4 - WATER SERVICE LINE (TYPE K COPPER) (SIZE AS SHOWN ON PLAN) IF LEAD OR POLY SERVICE LINE IS ENCOUNTERED, WATER SERVICE LINE SHALL BE REPLACED TO METER.
- 414 102.7C/108.4 - WATER MAIN (2") (HDPE) (SERVICE LINE) IF LEAD OR POLY SERVICE LINE IS ENCOUNTERED, WATER SERVICE LINE SHALL BE REPLACED TO METER.
- 415 102.8K/108.4 - TAPPING SADDLE (SIZE AS SHOWN ON PLAN)
- 416 102.8J/108.4 - CORPORATION STOP (SIZE AS SHOWN ON PLAN)
- 426 CONNECT TO EXISTING WATER PIPE/VALVE/FITTING. THE CONTRACT UNIT PRICE FOR WATER PIPE SHALL INCLUDE THE COST OF CONNECTION TO EXISTING PIPELINE
- 430 102.8/108.3 - 8", 45' ELBOW (MJ) RESTRAINED
- 433 102.7/108.2 - 18" WATER MAIN PIPE (C-905 PVC, DR 25). INCLUDES TYPE A BEDDING AND HAUNCHING MATERIAL AND BACKFILL OF TRENCH WITH NATIVE MATERIALS MEETING 103.16 EARTH BACKFILL MATERIAL.
- 559 608.06 - MONOLITHIC VERTICAL CURB, GUTTER AND SIDEWALK (MATCH IN KIND) (CONCRETE)
- 602 608.06 - CONCRETE CURB AND GUTTER (2' WIDE)
- 620 206 - STRUCTURAL BACKFILL (FLOW-FILL)
- 664 304 - AGGREGATE BASE COURSE (CLASS 6) (15" THICK)
- 679 401.08 - HOT BITUMINOUS PAVEMENT (4" THICK) (GRADING SX, BINDER GRADE PG 64-22) (TWO 2" LIFTS) (BOTTOM TWO MATS) (5' WIDE MAX.)
- 683 401.08 - HOT BITUMINOUS PAVEMENT (2" THICK) (GRADING SX, BINDER GRADE PG 64-22) (ONE 2" LIFT) (TOP MAT) (T-TOP PATCH, 6'-7" WIDE)

GENERAL PROJECT NOTE:

1. WHEREVER THE EXISTING 24" DIA. WATERLINE NEEDS TO BE CUT OPEN FOR INSTALLING NEW WATER SERVICES, LATERALS, AND VALVES; THE CONTRACTOR SHALL PLUG THE CUT ENDS OF THE 24" PIPE WITH CONCRETE PER CONSTRUCTION NOTE #20.

PIPE FUSING ZONE. CONTRACTOR SHALL FUSE PIPE WITHIN THE AREA OF NORTH AVE. AND STAY NORTH OF THE MOST SOUTHERLY ENTRANCE INTO THE K-MART COMPLEX, UNLESS WRITTEN PERMISSION IS GIVEN TO THE CONTRACTOR ALLOWING THE TEMPORARY CLOSURE OF THE ENTRANCE DURING PIPE INSTALLATION OPERATIONS

PROPOSED LAUNCHING PIT FOR NEW 18" FUSIBLE PVC PIPE APPROX. DIMENSIONS: 47' L x 6' W

EXISTING 24" D.I.P. WATER PIPE (NORTH AVE. TO TEXAS AVE.) CONTRACTOR SHALL VERIFY EXISTING PIPE MATERIAL.

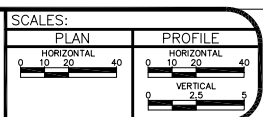
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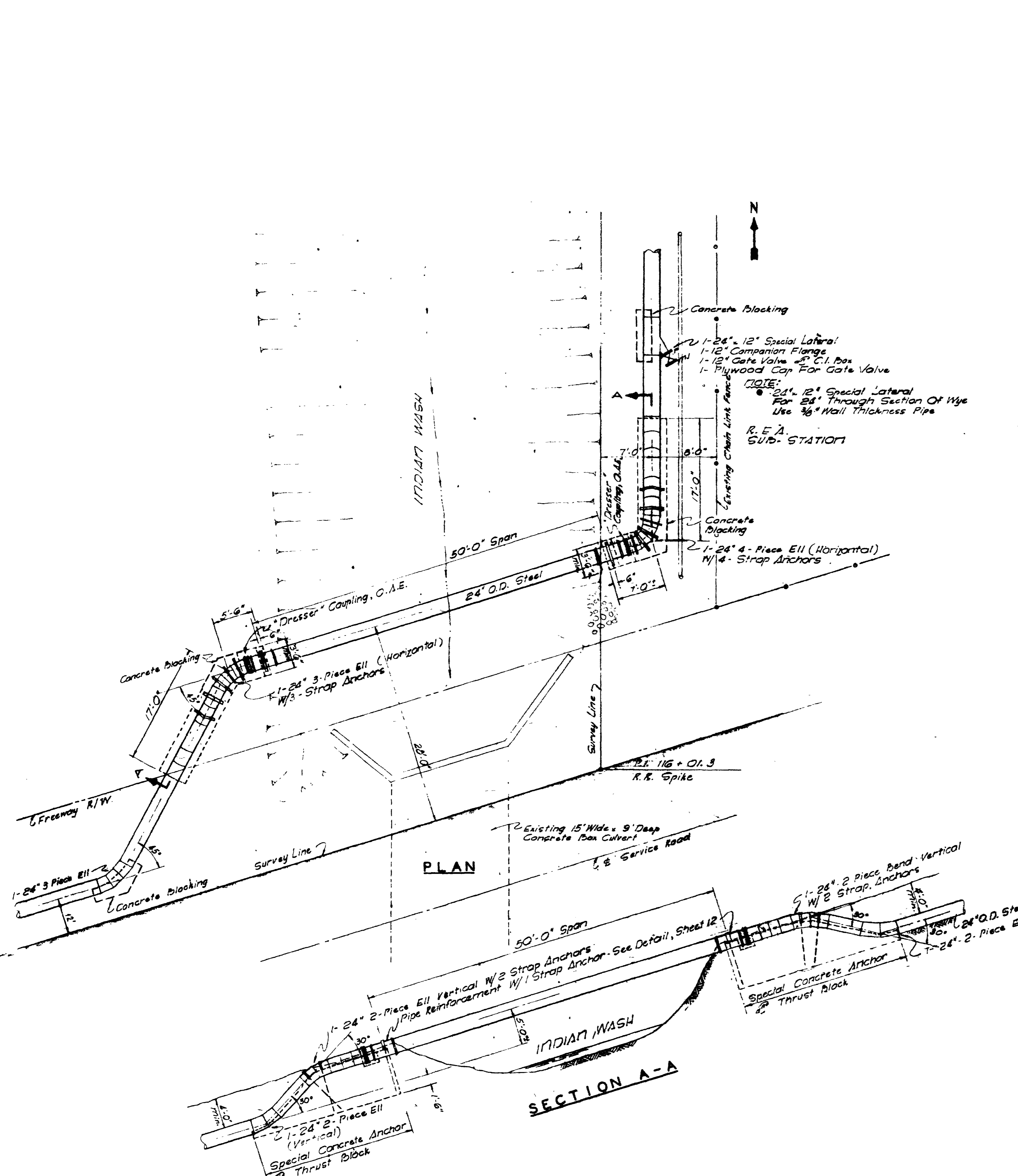
646 POT HOLE EXISTING UTILITY AHEAD OF CONSTRUCTION. TRANSITION WATER PIPE AS NEEDED TO MAINTAIN 18" CLEARANCE MINIMUM ABOVE SEWER PIPES AND 6" CLEARANCE MINIMUM ABOVE OR BELOW OTHER UTILITY LINES. POT HOLE SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE PROJECT.

REVISION	DESCRIPTION	DATE	DRAWN BY	HC	DATE
REVISION A	ADDENDUM #3	2/10/16	DESIGNED BY	ALC	DATE JULY, 2015
REVISION B			CHECKED BY		DATE
REVISION C			APPROVED BY		DATE

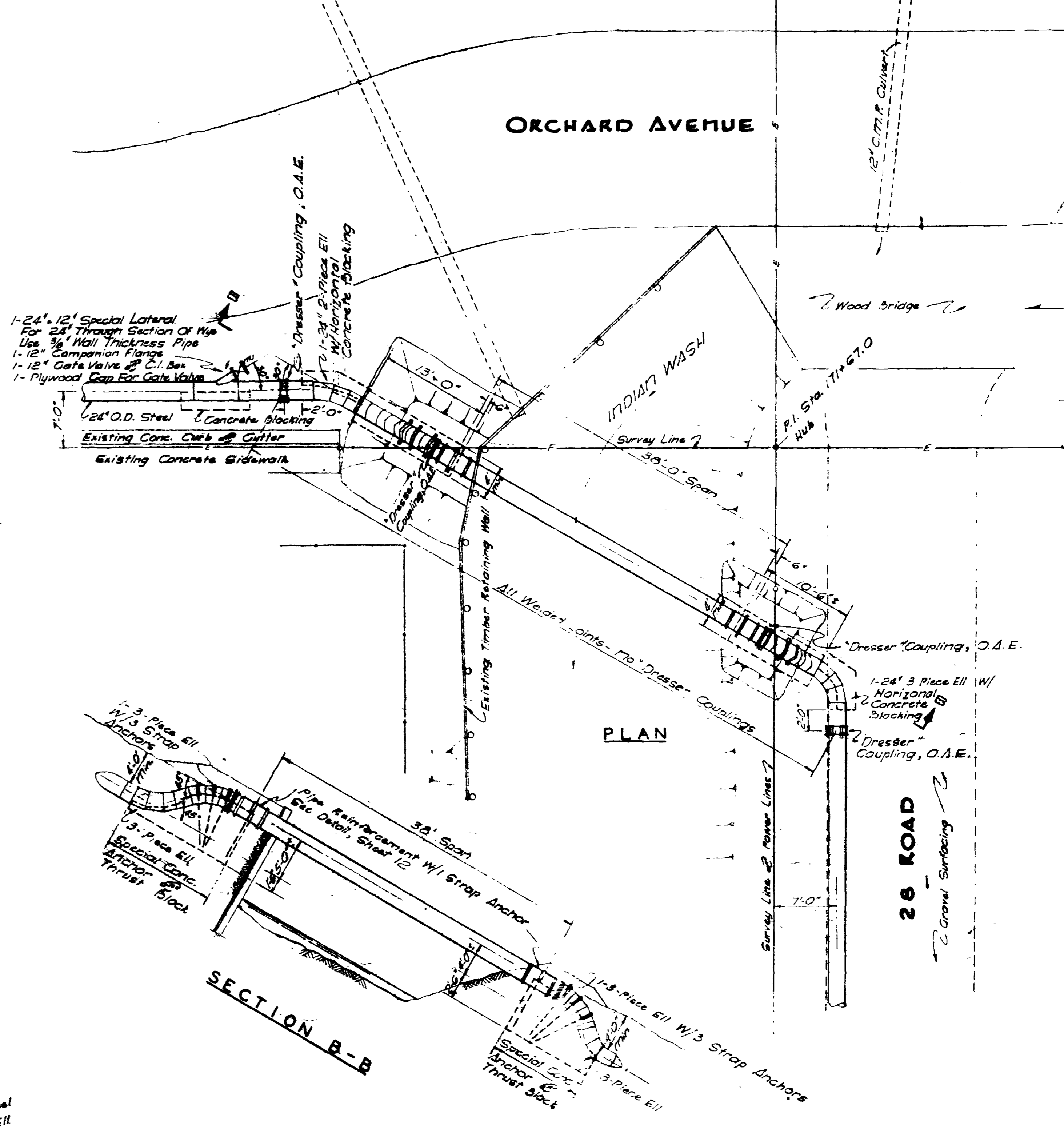


PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

**2016 WATERLINE REPLACEMENT PROJECT
28 ROAD (BUNTING AVE. TO NORTH AVE.)
STA 30+00 TO STA 40+00**



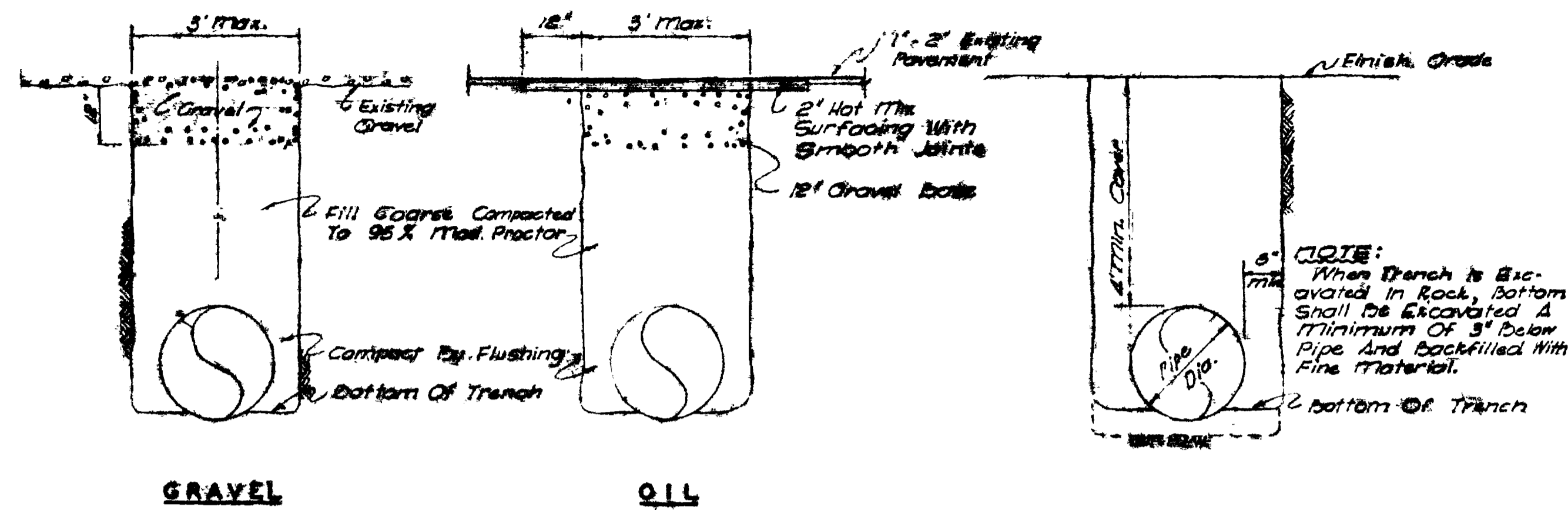
CROSSING AT FREEWAY AND 28 ROAD-STA. 116+01.3
SCALE: 1/8" = 1 FT.



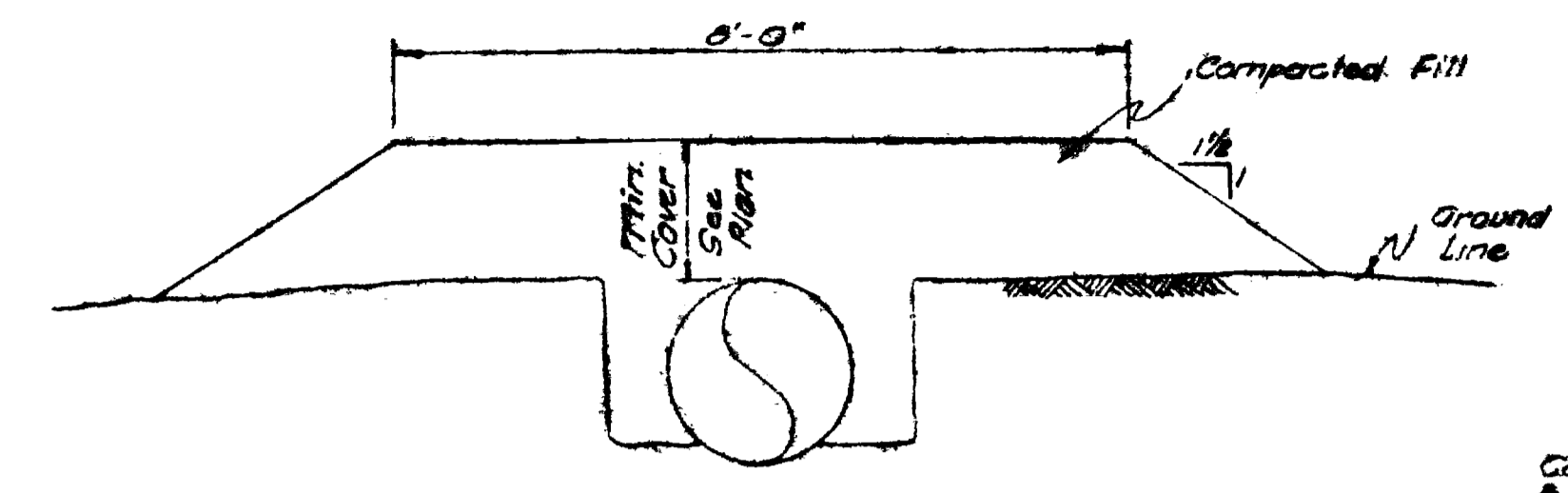
CROSSING AT 28 ROAD AND ORCHARD AVENUE-STA. 171+67.00
SCALE: 1/8" = 1 FT.

AS CONSTRUCTED

W. F. TURNEY AND ASSOCIATES CONSULTING ENGINEERS, SANTA FE, NEW MEXICO		GRAND JUNCTION, COLO. INDIAN WASH WATER MAIN INDIAN WASH CROSSINGS	
BY: [Signature]	DATE: [Blank]	PROJECT NO.: 59-12	SCALE: 1/8" = 1 FT.
CHECKED: [Signature]	DATE: [Blank]	DATE: JAN '60	SHEET 11 OF 13

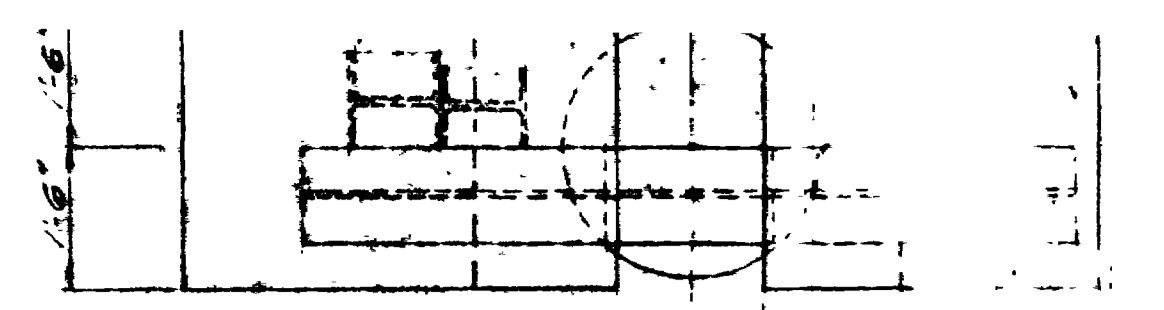


GRAVEL
OIL
PAVING REPLACEMENT
SCALE: 1/2" = 1 FT

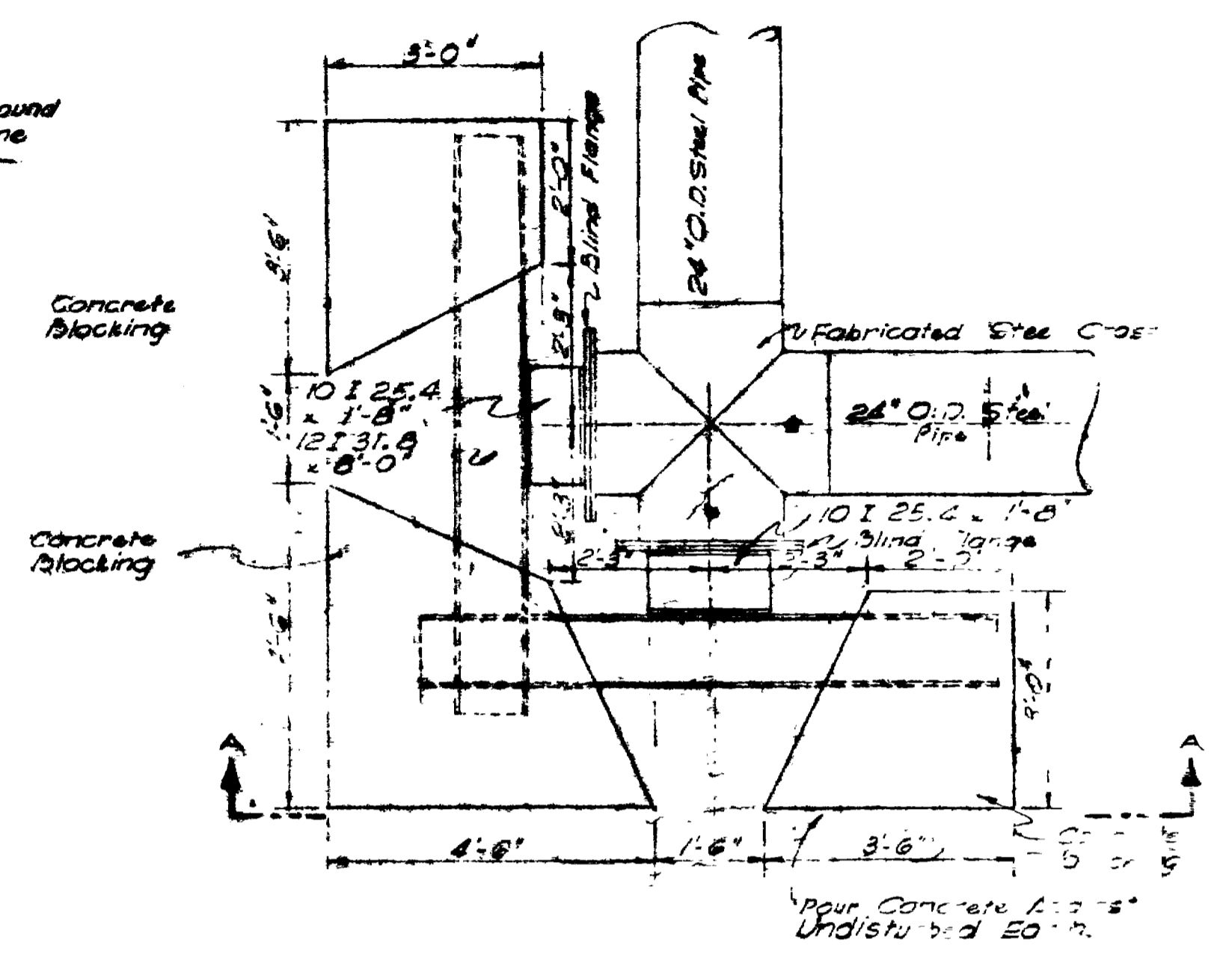


EMBANKMENT
SCALE: 1/2" = 1 FT.
For Location of Embankment - See Sheet 11.

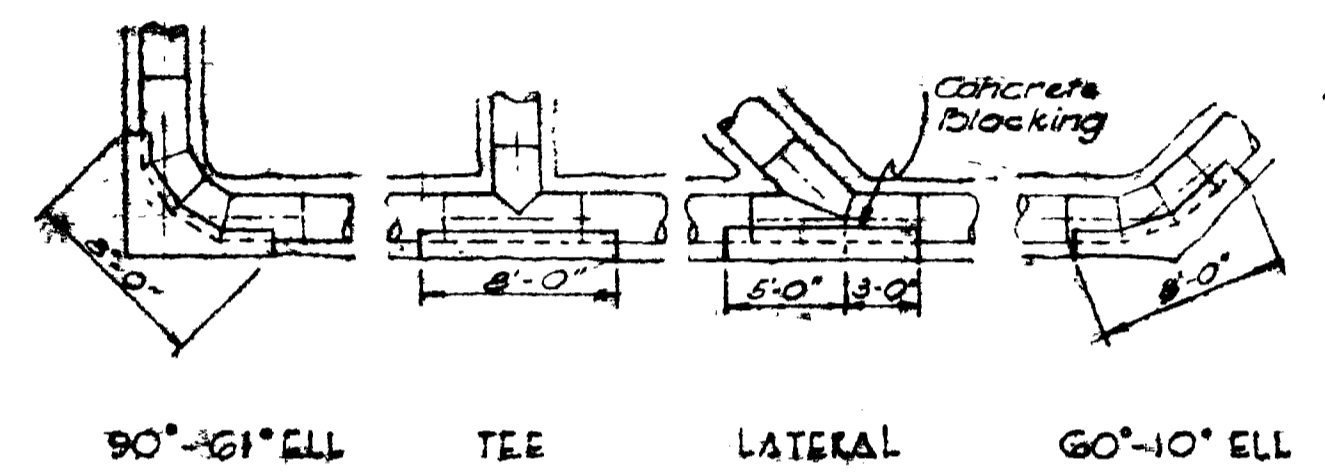
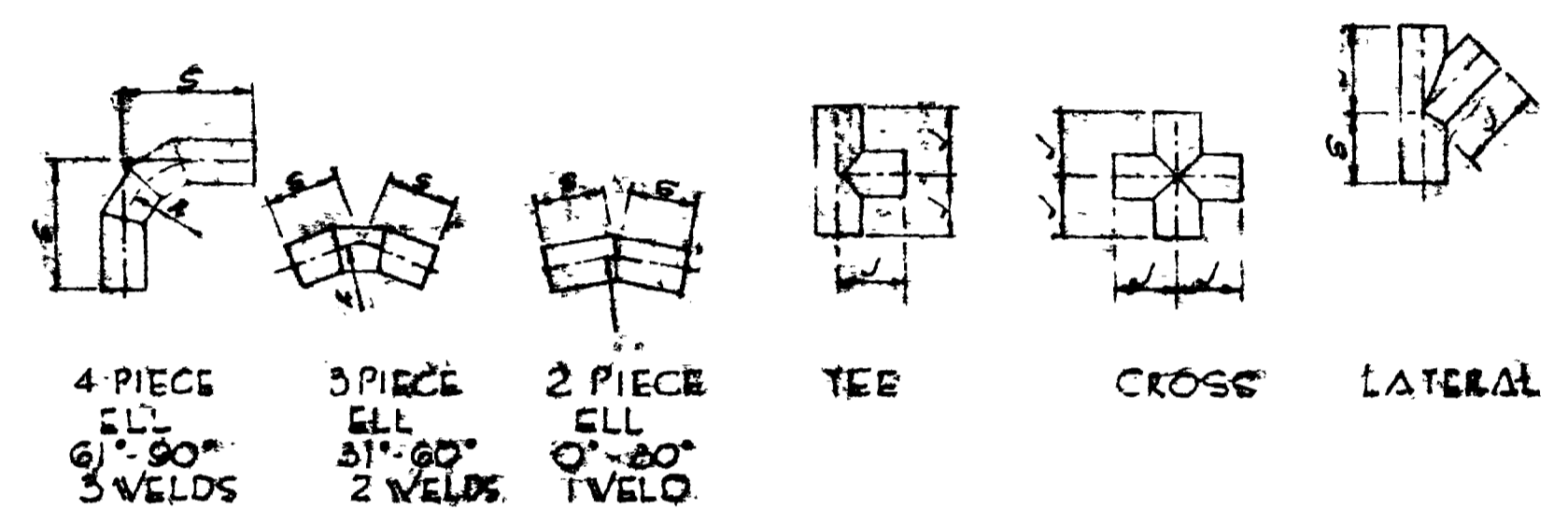
TRENCH SECTION
SCALE: 1/2" = 1 FT.



SECTION A-A



CROSS WITH BLIND FLANGES
SCALE:

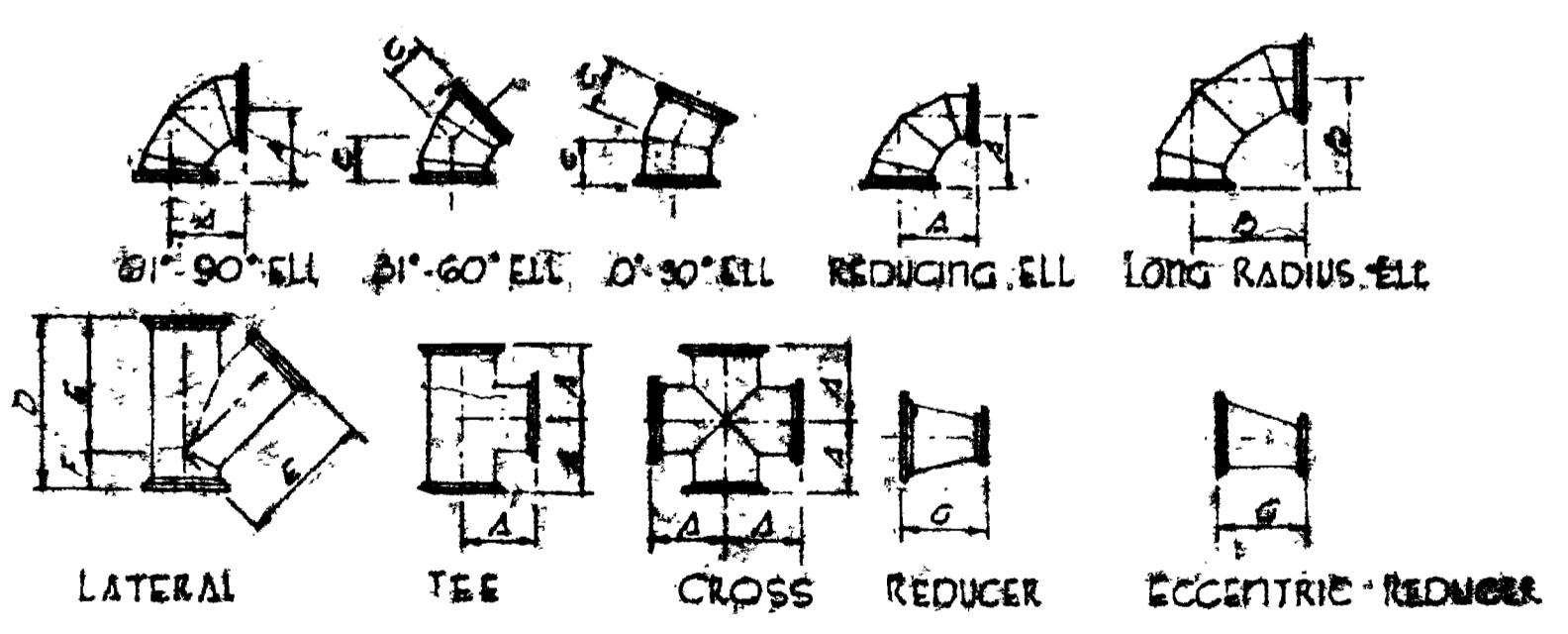


HORIZONTAL BLOCKING

FITTINGS FOR WELDED STEEL PIPE

OUTSIDE DIAMETER OF PIPE	4-PIECE ELLS		3-PIECE ELLS		2-PIECE ELLS		REDUCERS			TEES		CROSSES		LATERALS	
	A	B	A	B	A	B	L	V	S	J	V	S	J	S	V
12"	25	16	18	24	15 1/2	14	34	10	8	27	27	15 1/2			
20"	36	24	26	40	18	16	42	12	10	33	33	18 1/2	14	10	14
24"	48	30	34	60	24	20	42	12	10	33	33	18 1/2	14	10	14

Fabricate All Fittings To Above Dimensions



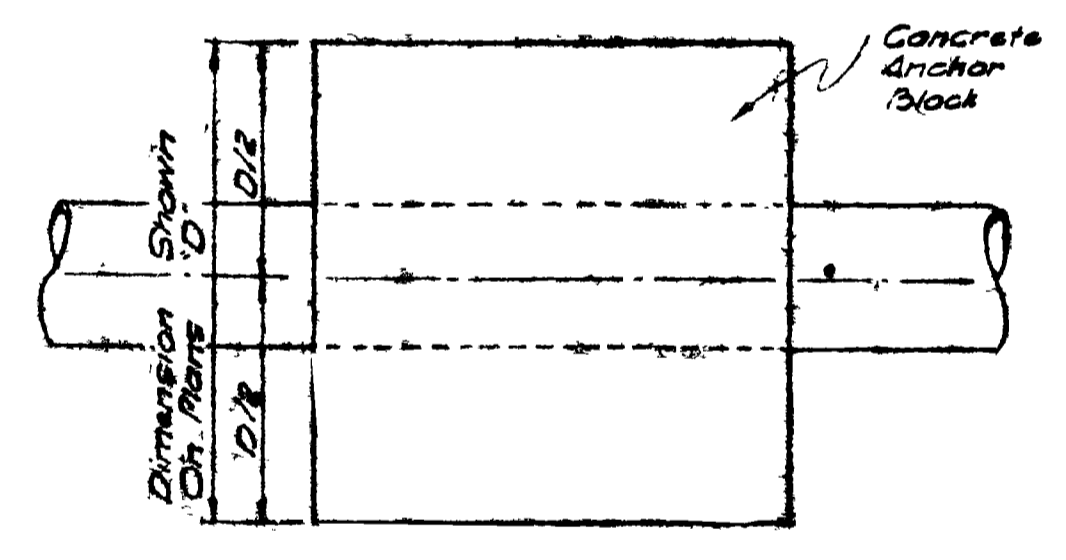
FLANGED FITTINGS FOR WELDED STEEL PIPE

O.D. OF PIPE	DIMENSIONS IN INCHES						
	A	B	C	D	E	F	G
12"	12	19	7 1/2	30	24 1/2	5 1/2	14
20"	18	29	9 1/2	43	35	9	20
24"	22	34	11	49 1/2	40 1/2	9	24

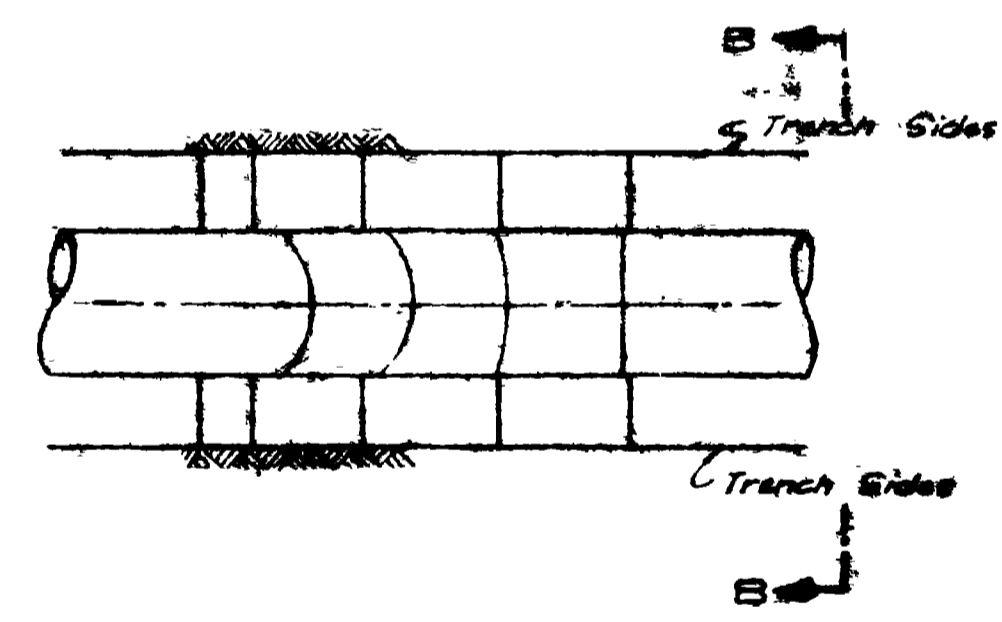
Fabricate All Fittings To Above Dimensions Unless Otherwise Shown On Drawings.

ANCHOR BLOCK DIMENSIONS

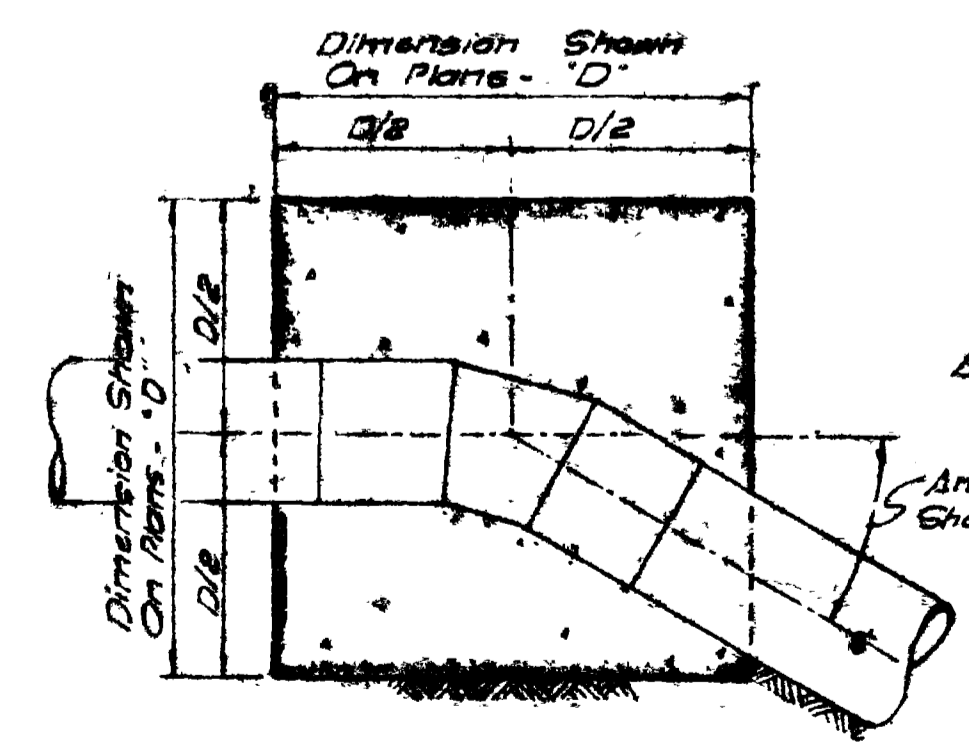
ANGLE DOWN	DIMENSION "D"
0°-10° No Anchor	
11°-20°	4'-9"
21°-30°	5'-6"
31°-40°	6'-6"
41°-50°	7'-0"



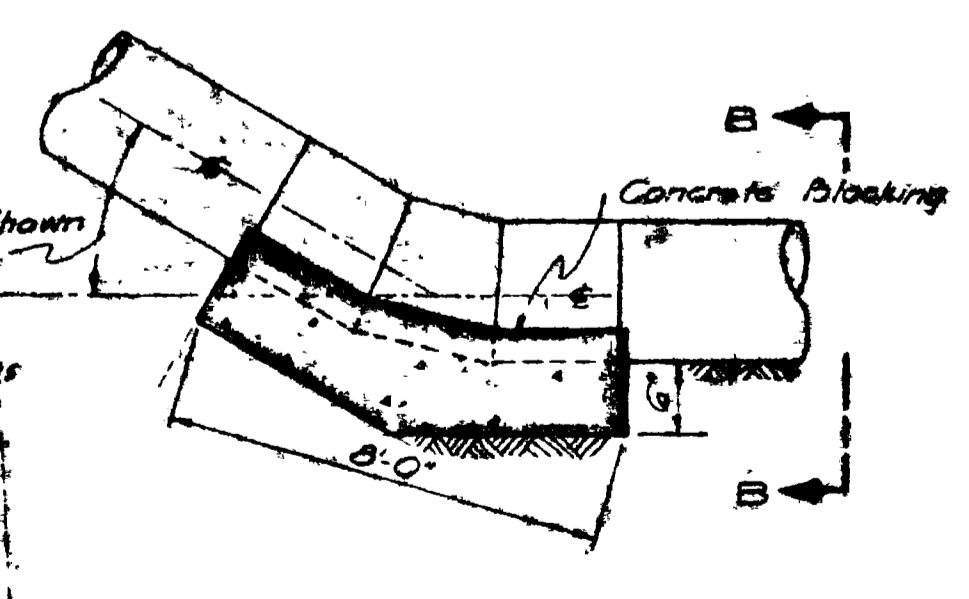
PLAN



PLAN



SECTION

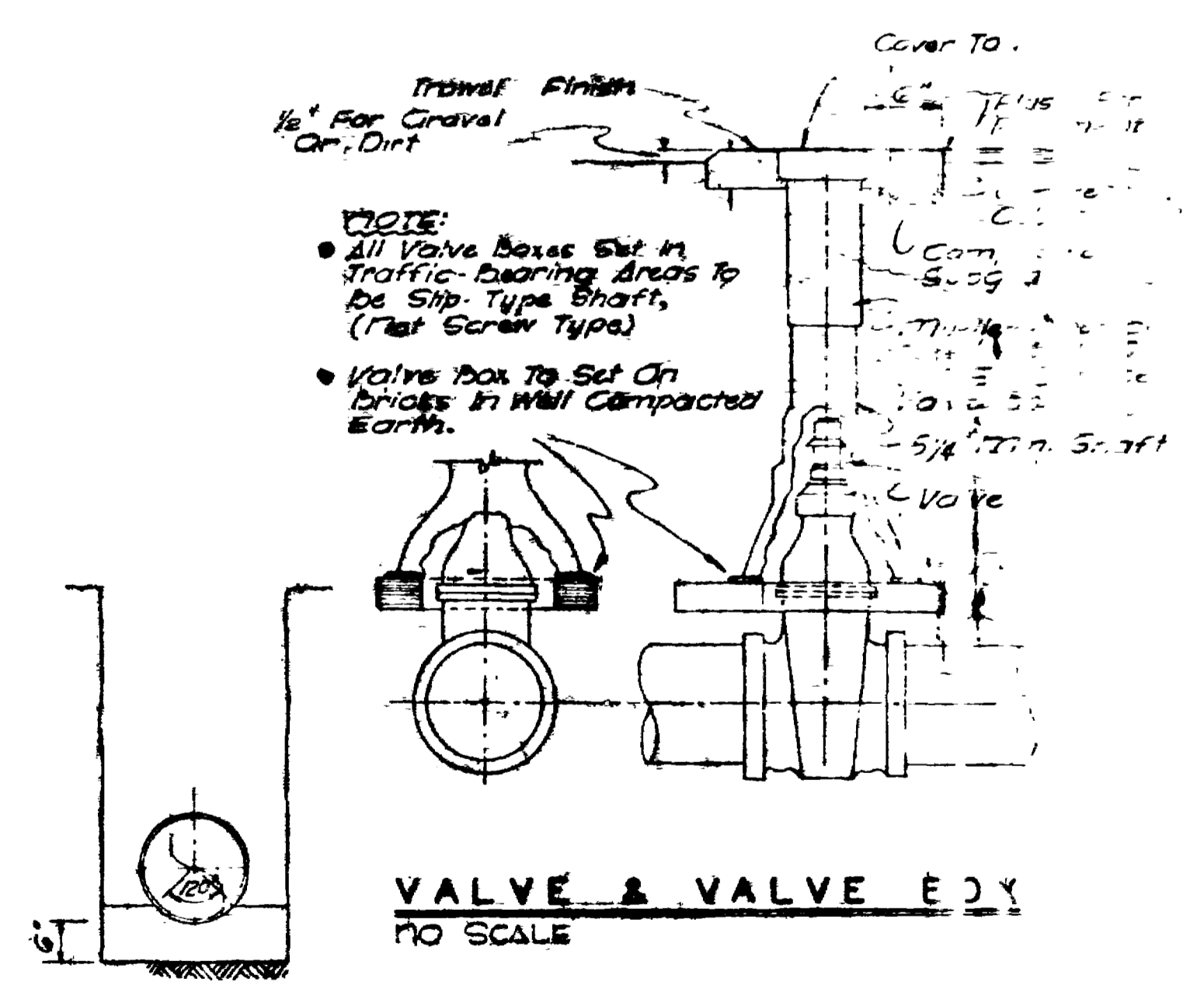


SECTION

ANCHOR FOR BENDS DOWN BLOCKING FOR BENDS UP

VERTICAL ANCHORS AND BLOCKING
NO SCALE

SECTION B-B



VALVE & VALVE END
NO SCALE

W. F. TURNEY AND ASSOCIATES
CONSULTING ENGINEERS
SANTA FE, NEW MEXICO

GHANDI

PIPE LINE

BY	REVISION	DATE

D. A. S. DESIGNED BY: D. A. S. DATE: 11/25/50