

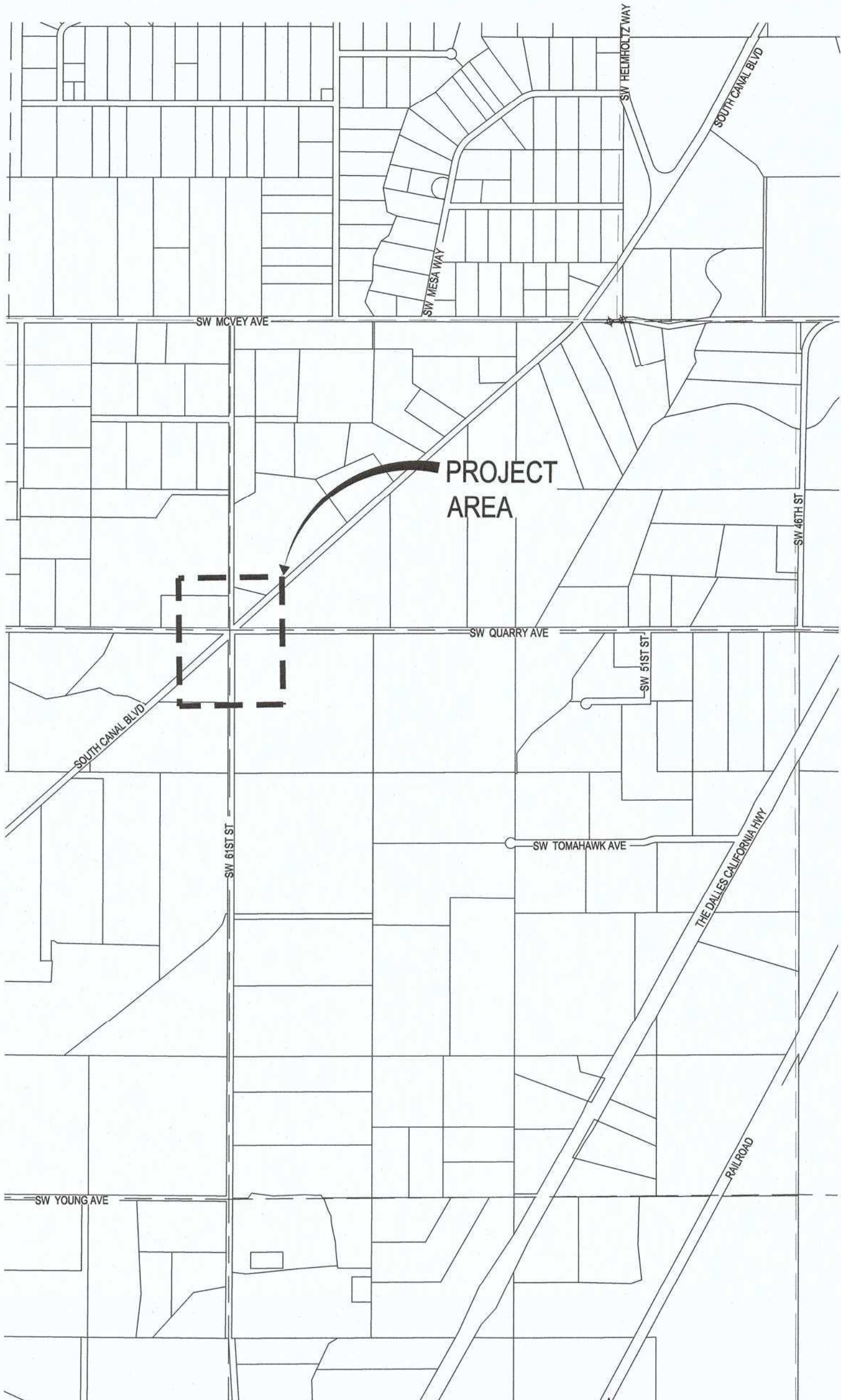
# DESCHUTES COUNTY ROAD DEPARTMENT OLD BEND REDMOND HIGHWAY - 6 CORNERS IRRIGATION PIPING IMPROVEMENTS

DESCHUTES COUNTY  
SEPTEMBER 2018

**OWNER**  
DESCHUTES COUNTY ROAD DEPARTMENT  
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BEND, OR 97702  
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PARAMETRIX  
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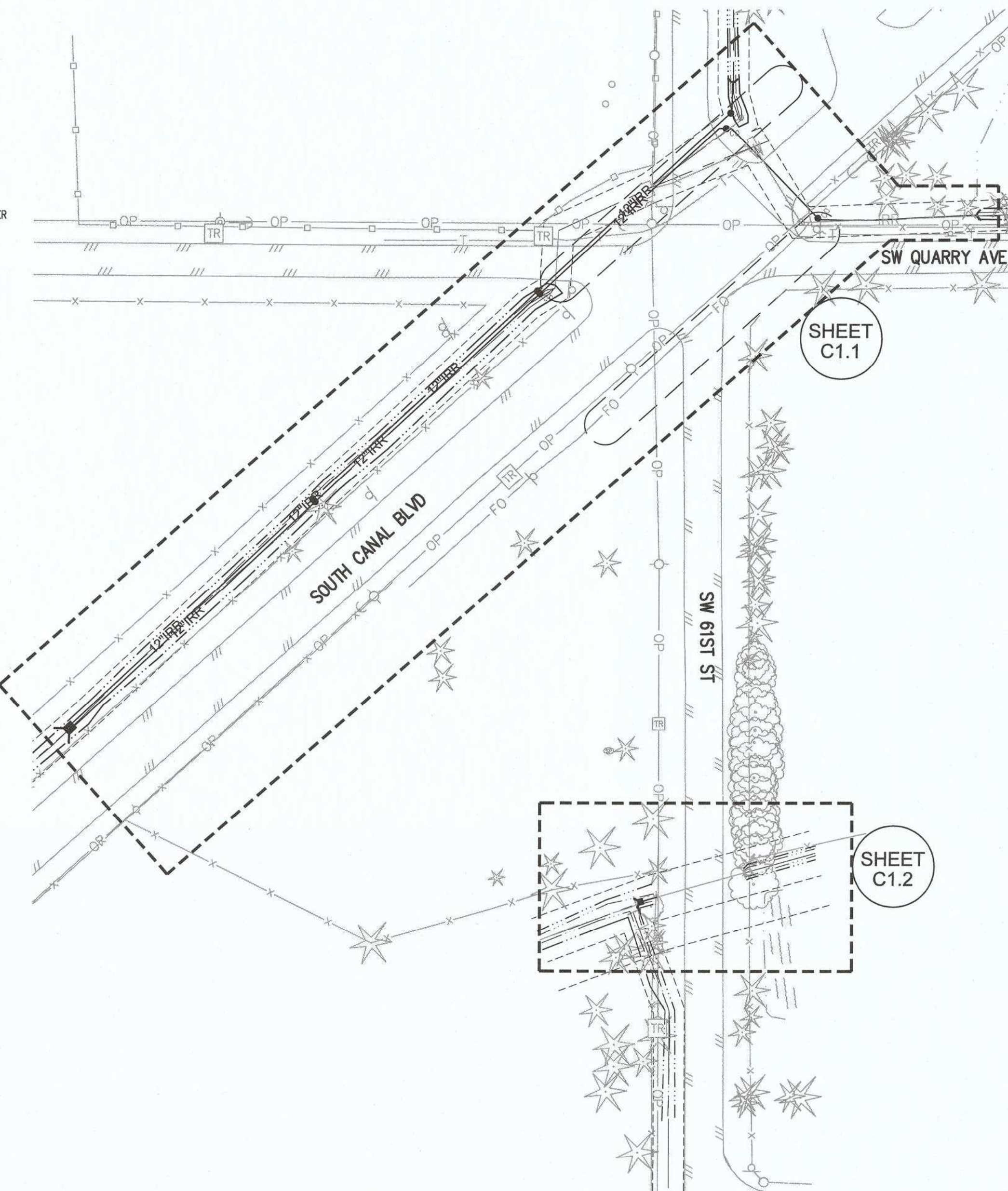
**SURVEYOR**  
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**VICINITY MAP**  
SCALE: 1" = 1000'

**EXISTING LEGEND:**

●	FOUND MONUMENT
○	FOUND REBAR, NO CAP
○	FOUND REBAR WITH CAP
○	FOUND IRON PIPE
○	SET CONTROL POINT (SEE CONTROL TABLE)
○	CABLE TV RISER
○	TELEPHONE POLE
○	POWER POLE WITH DROP LINE
○	POWER POLE WITH DROP LINE & TRANSFORMER
○	POWER POLE GUY ANCHOR
○	TELEPHONE JUNCTION BOX
○	TELEPHONE RISER
○	WATER METER
○	WATER VALVE
○	WATER IRRIGATION VALVE
○	WATER WELL
○	SIGN, AS NOTED
○	JUNIPER TREE (TRUNK AND DRIFLINE DIAMETER NOTED)
○	DECIDUOUS TREE (TRUNK AND DRIFLINE DIAMETER NOTED)
—	FOG LINE STRIPING
—	DOUBLE YELLOW STRIPING
—	EDGE OF PAVEMENT
—	EDGE OF CONCRETE
—	EDGE OF GRAVEL
—	ROCKERY
—	CENTERLINE IRRIGATION DITCH
—	WOOD FENCE
—	BARB WIRE FENCE
P	POWER LOCATE MARKING
OP	POWER OVERHEAD
FO	FIBER OPTIC LOCATE MARKING
T	TELEPHONE LOCATE MARKING
IRR	IRRIGATION LOCATE MARKING
—	RIGHT-OF-WAY LINE
—	CENTER LINE RIGHT-OF-WAY
—	LOT LINE
—	TOP OF BANK
—	TOE OF SLOPE



**BASIS OF BEARING**  
BASED ON GPS DERIVED CENTRAL OREGON COORDINATE SYSTEM (COCS) VALUES

**DATUM**  
HORIZONTAL: NAD83 (2011) BASED ON OREGON REAL-TIME GPS NETWORK (ORGN)  
VERTICAL: NGVD 29

PROJECTION IS CENTRAL OREGON COORDINATE SYSTEM (C.O.C.S.), INTERNATIONAL FEET

**BENCHMARK**  
BENCHMARK FOR THIS PROJECT IS POINT 1050: 5/8 INCH IRON ROD WITH RED PLASTIC CAP MARKED PARAMETRIX CONTROL

PARAMETRIX CONTROL TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1036	441857.17	331045.33	3146.27	5/8 INCH IRON ROD WITH 1-1/2 INCH ALUMINUM CAP MARKED PARAMETRIX CNTL
1037	440656.66	3309708.42	3154.61	5/8 INCH IRON ROD WITH 1-1/2 INCH ALUMINUM CAP MARKED PARAMETRIX CNTL
1038	440644.27	3310466.09	3152.00	5/8 INCH IRON ROD WITH 1-1/2 INCH ALUMINUM CAP MARKED PARAMETRIX CNTL
1039	440751.99	3309815.18	3154.46	5/8 INCH IRON ROD WITH 1-1/2 INCH ALUMINUM CAP MARKED PARAMETRIX CNTL
1050	441027.89	3310043.33	3151.97	5/8 INCH IRON ROD WITH RED PLASTIC CAP MARKED PARAMETRIX CONTROL
1051	441353.22	3310133.86	3152.06	5/8 INCH IRON ROD WITH RED PLASTIC CAP MARKED PARAMETRIX CONTROL
1052	441781.82	3310419.24	3149.97	5/8 INCH IRON ROD WITH RED PLASTIC CAP MARKED PARAMETRIX CONTROL
1053	441322.78	3310590.83	3151.28	5/8 INCH IRON ROD WITH RED PLASTIC CAP MARKED PARAMETRIX CONTROL
1054	441260.08	3310412.84	3150.60	5/8 INCH IRON ROD WITH RED PLASTIC CAP MARKED PARAMETRIX CONTROL
1055	441614.25	3310704.75	3149.15	5/8 INCH IRON ROD WITH RED PLASTIC CAP MARKED PARAMETRIX CONTROL

SHEET LIST TABLE

SHEET #	SHEET TITLE
C1.0	COVER SHEET
C1.1	IRRIGATION PIPING AND PROFILE
C1.2	IRRIGATION EXTENSION 61ST STREET
C1.3	TYPICAL DETAILS

**GENERAL NOTES:**

ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED ON THESE PLANS, BE CONSTRUCTED IN ACCORDANCE WITH THE OREGON STATE "OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION," REVISED 2018

EXISTING UNDERGROUND UTILITIES ARE SHOWN AS PER FIELD LOCATION AND OR AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION AND ELEVATION IN THE FIELD PRIOR TO BEGINNING CONSTRUCTION. LOCATES CAN BE REQUESTED THRU THE ONE CALL CENTER AT 811

IT IS THE CONTRACTORS RESPONSIBILITY TO RE-ESTABLISH, PER OREGON REVISED STATUES, ALL SURVEY MONUMENTS DISTURBED OR DESTROYED BY THIS WORK. THIS INCLUDES MONUMENTS NOT SHOWN IN THESE PLANS, WHICH ARE DISCOVERED DURING THE COURSE OF CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ELEVATIONS OF SIDE SHOT MONUMENTS FOR USE AS TEMPORARY BENCH MARKS AND SET TEMPORARY BENCH MARKS OR ADDITIONAL HORIZONTAL CONTROL AS NEEDED.

UPON AWARD OF THE CONTRACT, PARAMETRIX WILL PROVIDE THE CONTRACTOR WITH AN "ASCII" POINT FILE CONTAINING ALL CONTROL POINTS IN PROJECT WORK ZONE.

REFERENCE CENTRAL OREGON IRRIGATION DISTRICT PIPE SPECIFICATIONS ON SHEET C1.2

ATTENTION: OREGON LAW REQUIRES THAT YOU FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN O.A.R 952-001-0010 THROUGH 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER AT 503-232-1987

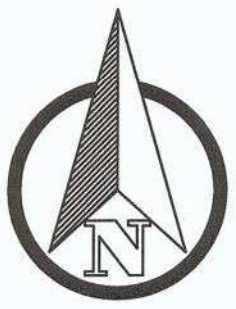
**APPROVALS:**

DESCHUTES COUNTY ROAD DEPARTMENT: *[Signature]* 10/30/18  
NOTE: SIGNATURE DOES NOT GRANT APPROVAL TO COMMENCE CONSTRUCTION.

CENTRAL OREGON IRRIGATION DISTRICT: *[Signature]* 10/11/18  
C.S.M.H.

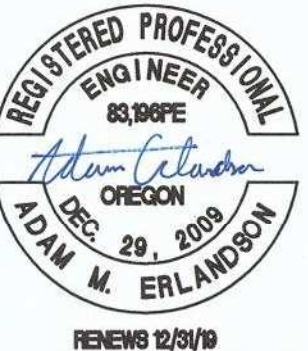
CENTRAL ELECTRIC COOPERATIVE: *[Signature]* PER EMAIL AUTHORIZATION 10/24/18

QUANTUM: *[Signature]* PER EMAIL AUTHORIZATION R. RAPPE 10/16/18



**INTERSECTION IMPROVEMENTS**

AREA MAP  
1" = 60'



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PROJECT NAME  
**IRRIGATION IMPROVEMENTS**

**COVER SHEET**

DRAWING NO.  
1 OF 4  
  
**1.0**

REVISIONS	DATE	BY	DESIGNED AE/DR	DRAWN AE/DR/LF	CHECKED	APPROVED

ONE INCH AT FULL SCALE.  
IF NOT, SCALE ACCORDINGLY

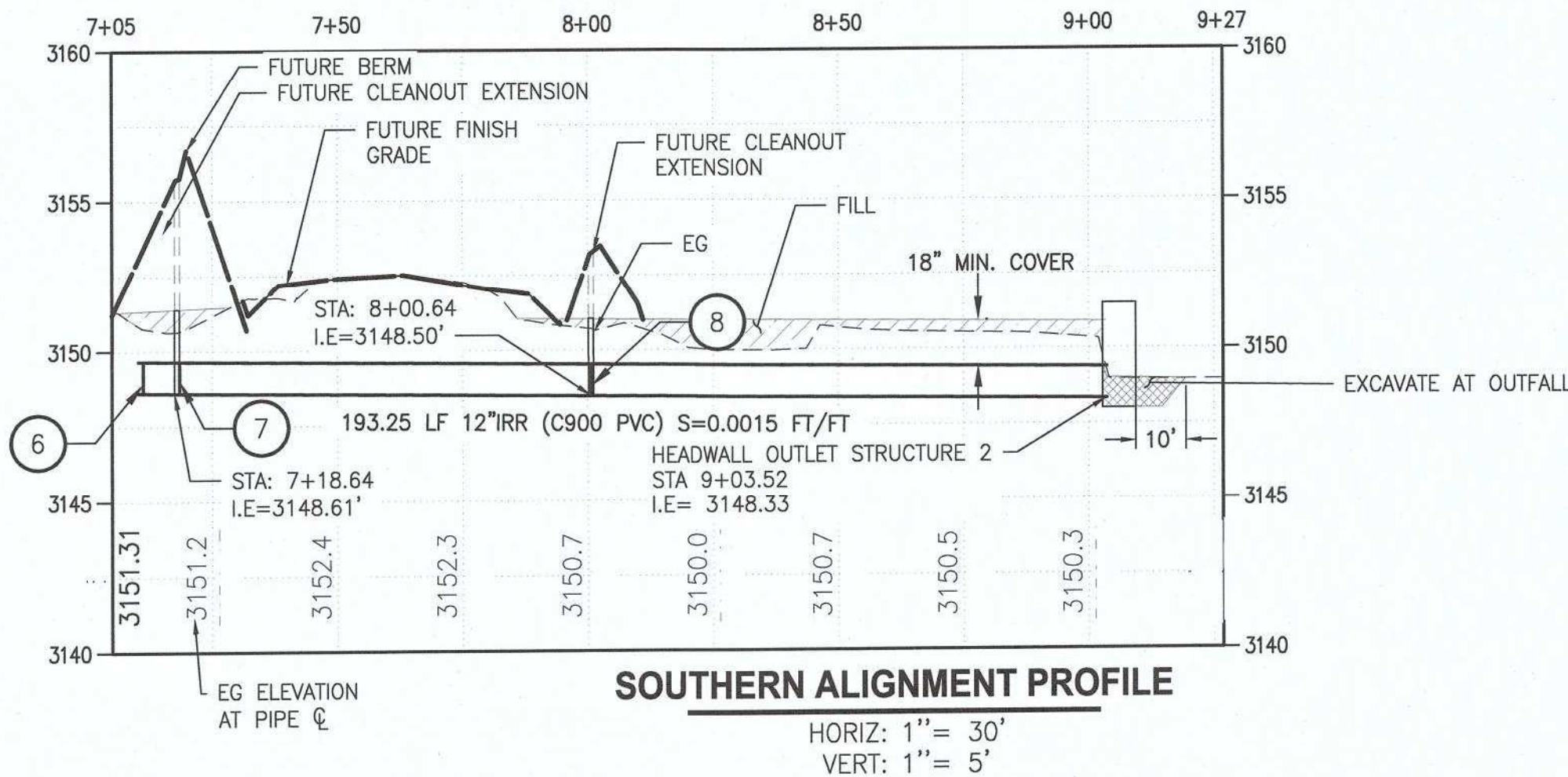
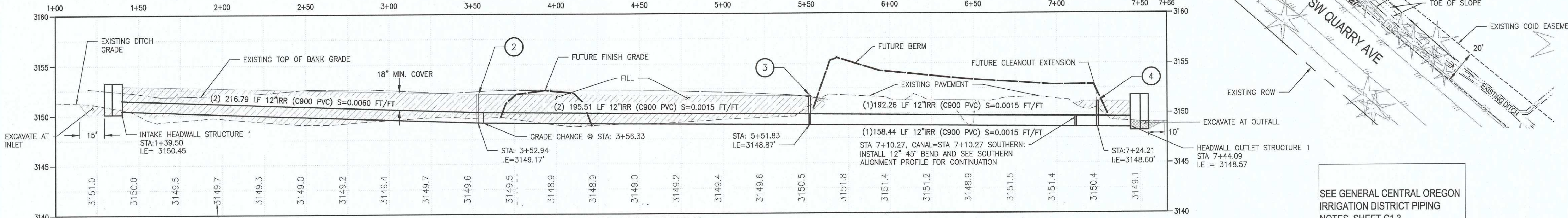
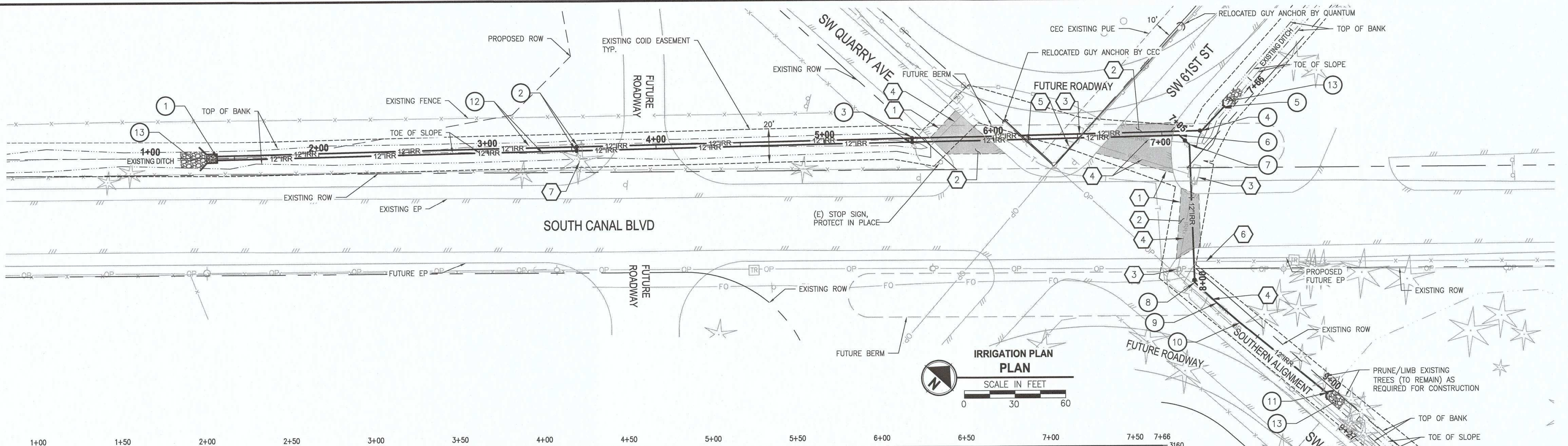
FILE NAME  
BE-2509-005.3-C1.0-CS00-IRR

JOB No.  
DATE 10/5/2018

REVISED 12/24/18

LAYOUT: COVER SHEET PATH: U:\Bend\Projects\Clients\2509-005 OBH Design Phase\985\es\CAD\DWG\18\18-CORNERS\CO'S PLOTTED BY: fcidav DATE: Thursday, September 27, 2018 4:13:21 PM

DATE: Saturday, September 29, 2018 12:54:48 PM  
PLOTTED BY: rfcovad  
PATH: U:\Bent\Projects\Clients\2509-005-005-08RH-Design Phase\96\Sec\CAD\DWG\SIX-CORNERS\CD'S  
LAYOUT: COVER SHEET



CANAL BLVD IRRIGATION PROFILE

HORIZ: 1" = 30'  
VERT: 1" = 5'

SOUTHERN ALIGNMENT PROFILE

HORIZ: 1" = 30'  
VERT: 1" = 5'

GENERAL CONSTRUCTION NOTES: #

- 1.) SAWCUT FULL DEPTH OF EXISTING ASPHALT PAVEMENT FOR TRENCH EXCAVATION, REMOVE AND DISPOSE OF EXISTING ASPHALT PAVEMENT
- 2.) MATCH EXISTING PAVEMENT AT JOIN LOCATIONS AND CONSTRUCT NEW ASPHALT PAVEMENT SECTION PER TYPICAL TRENCH REPAIR DETAILS, SEE SHEET C1.3
- 3.) REMOVE AND DISPOSE OF EXISTING CONCRETE IRRIGATION STRUCTURE, BACKFILL EXCAVATION WITH CLASS B MATERIAL IN ACCORDANCE WITH SPECIFICATIONS 00310
- 4.) REMOVE AND DISPOSE OF EXISTING IRRIGATION PIPE
- 5.) THE CONTRACTOR SHALL COORDINATE W/ FRANCHISE UTILITY REPRESENTATIVES TO RELOCATE GUY ANCHOR ASSEMBLIES TO ACCOMMODATE IRRIGATION PIPE INSTALLATION AND FUTURE ROADWAY IMPROVEMENTS
- 6.) REMOVE AND REPLACE EXISTING WIRE FENCE AS REQUIRED FOR IRRIGATION PIPE CONSTRUCTION
- 7.) REMOVE AND DISPOSE OF EXISTING TREES PER CLEAR AND GRUB SPECIFICATION 00320

IRRIGATION CONSTRUCTION NOTES: #

- \* ALL HORIZONTAL BENDS SHALL BE MECHANICALLY RESTRAINED. SEE JOINT RESTRAINT TABLE, SHEET C1.3
- 1.) STA 1+39.5, CANAL: CONSTRUCT INLET HEADWALL STRUCTURE PER DETAIL 1, SHEET C1.3
- 2.) STA 3+52.94, CANAL: INSTALL CLEANOUT ASSEMBLY PER DETAIL 2/C1.3
- 3.) STA 5+51.83, CANAL: INSTALL CLEANOUT ASSEMBLY PER DETAIL 2/C1.3
- 4.) STA 7+24.21, CANAL: INSTALL 12" 45° HORIZONTAL BEND & CLEANOUT ASSEMBLY PER DETAIL 2/C1.3
- 5.) STA 7+44.09, CANAL: CONSTRUCT OUTLET STRUCTURE PER DETAIL 1/C1.3
- 6.) STA 7+10.27, CANAL = STA 7+10.27, SOUTHERN: INSTALL 12" 45° HORIZONTAL BEND & CLEANOUT ASSEMBLY PER DETAIL 2/C1.3
- 7.) STA 7+18.46, SOUTHERN: INSTALL 12" 45° HORIZONTAL BEND & CLEANOUT ASSEMBLY PER DETAIL 2/C1.3
- 8.) STA 8+00.64, SOUTHERN: INSTALL 12" 45° HORIZONTAL BEND & CLEANOUT ASSEMBLY PER DETAIL 2/C1.3
- 9.) STA 8+18.64, SOUTHERN: DEFLECT PIPE 2' TO THE NORTH
- 10.) STA 8+36.64, SOUTHERN: DEFLECT PIPE 2' TO THE NORTH
- 11.) STA 9+03.52, SOUTHERN: CONSTRUCT OUTLET STRUCTURE PER DETAIL 1/C1.3
- 12.) INSTALL 12" C900 PVC PIPE
- 13.) PLACE CLASS 50 RIPRAP AT INLET/OUTLET OF STRUCTURES, CHANNEL WIDTH TO EXCAVATION EXTENTS. SEE OUTLET/INLET DETAIL 1/C1.3

SEE GENERAL CENTRAL OREGON IRRIGATION DISTRICT PIPING NOTES, SHEET C1.3

REVISIONS	DATE	BY	DESIGNED AE/DR

ONE INCH AT FULL SCALE.  
IF NOT, SCALE ACCORDINGLY

FILE NAME: BE-2509-005.3-C1.1-PP00-IRR  
JOB No.  
DATE: 10/5/2018



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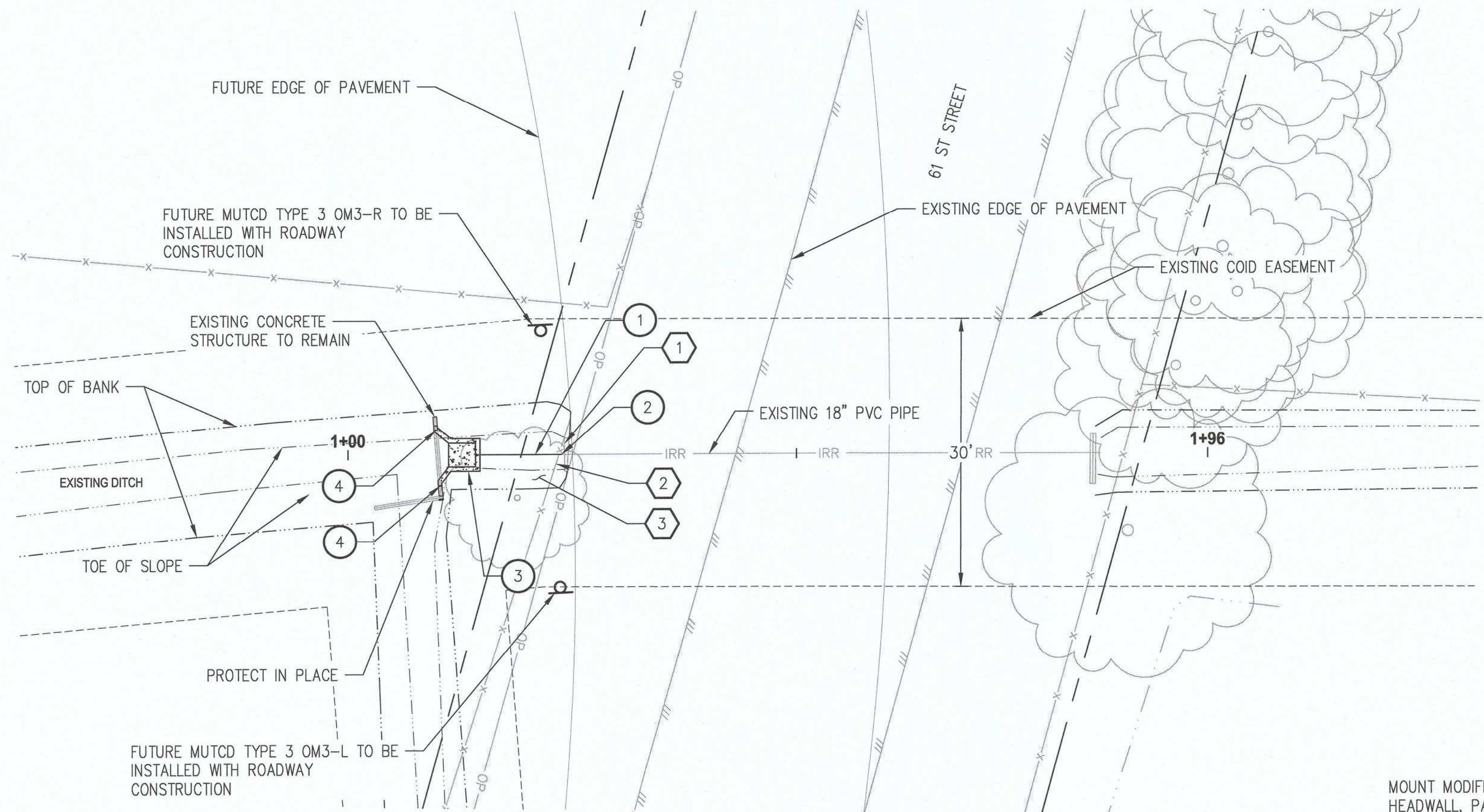
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PROJECT NAME  
**IRRIGATION IMPROVEMENTS**

**IRRIGATION PIPING PLAN AND PROFILE**

DRAWING NO.  
2 OF 4  
**1.1**

LAYOUT: PP  
 PATH: U:\Bend\Projects\Clients\2509-Deschutes County\297-2509-05 OBRH Design Phase\995vca\CAAD\DWG\61ST-CORNERS\CD'S  
 PLOTTED BY: ricodov DATE: Saturday, September 29, 2018 12:54:24 PM



**PLAN**  
SCALE IN FEET  
0 10 20

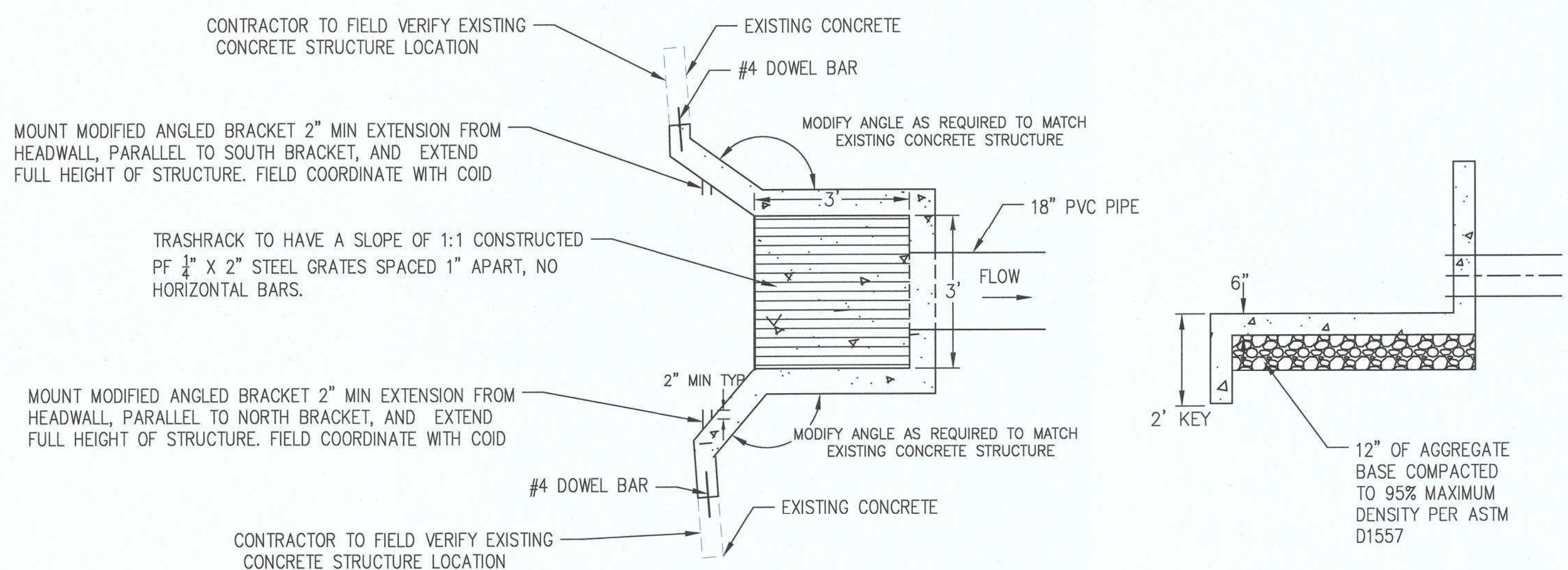
**IRRIGATION CONSTRUCTION NOTES:** ○

- 1.) INSTALL 18" DR 32.5 C900 PVC PIPE
- 2.) STA:1+23.80, 61ST; TIE INTO EXISTING 18" PVC PIPE WITH COUPLING ADAPTER
- 3.) STA: 1+14.20, 61ST; CONSTRUCT INLET STRUCTURE PER DETAIL 1/C1.2
- 4.) DRILL & INSTALL #4 DOWEL BARS @ ±12" OC TO TIE THE EXISTING CONCRETE STRUCTURE TO PROPOSED INLET STRUCTURE, SEE DETAIL 1 ON THIS SHEET

**GENERAL CONSTRUCTION NOTES:** ⊗

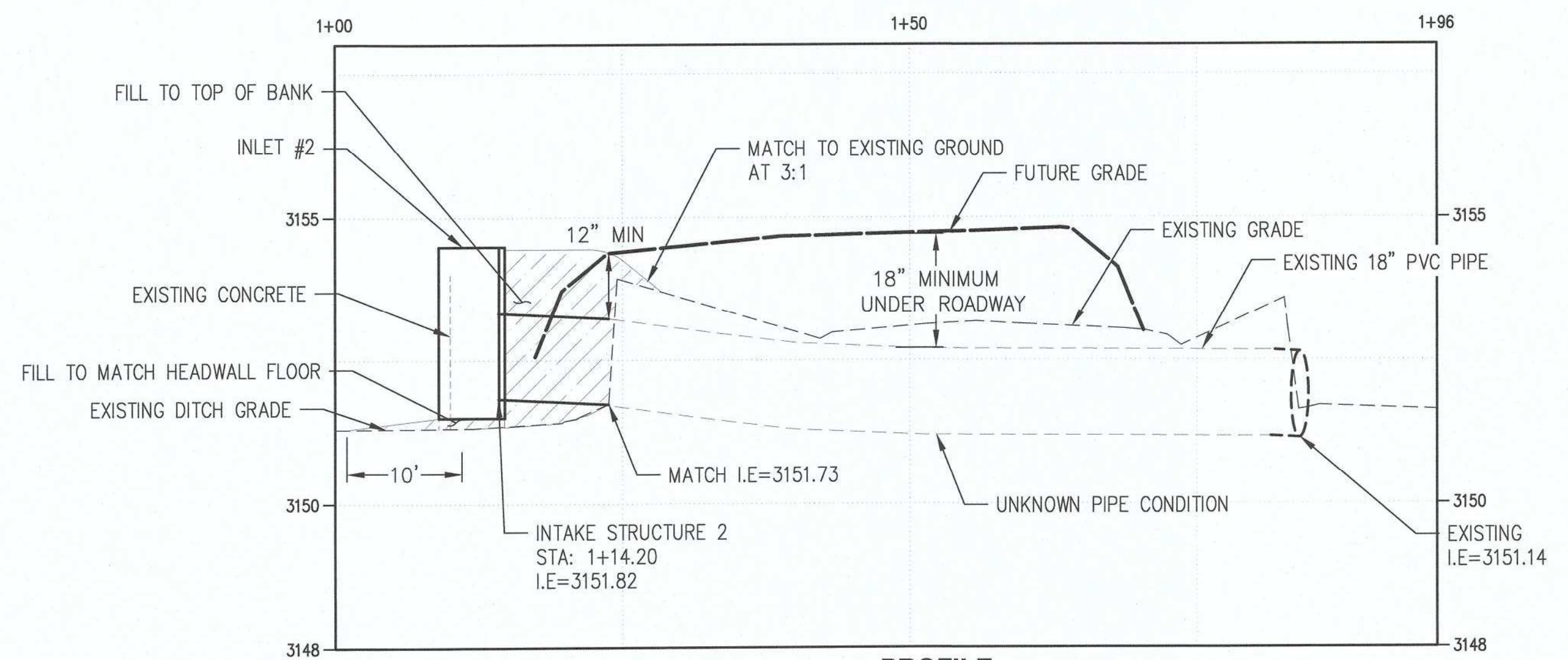
- 1.) REMOVE AND DISPOSE OF EXISTING CONCRETE IRRIGATION STRUCTURE, BACKFILL EXCAVATION WITH CLASS B MATERIAL IN ACCORDANCE WITH SPECIFICATIONS 00310
- 2.) REMOVE AND REPLACE EXISTING WIRE FENCE AS REQUIRED FOR IRRIGATION PIPE CONSTRUCTION
- 3.) REMOVE AND DISPOSE OF EXISTING TREES PER CLEAR AND GRUB SPECIFICATION 00320

SEE GENERAL CENTRAL OREGON IRRIGATION DISTRICT PIPING NOTES, SHEET C1.3

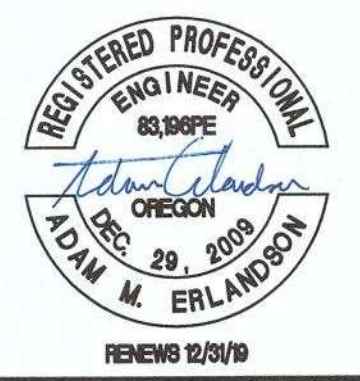


**EXISTING STRUCTURE CONNECTION**  
SCALE: N.T.S. 1 C1.2

NOTE:  
1. ALL BACKFILL SHALL BE COMPACTED AND TESTED TO 95% MAXIMUM DENSITY PER ASTM D1557



**PROFILE**  
HORIZ: 1"=10'  
VERT: 1"=2'



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PROJECT NAME  
**IRRIGATION IMPROVEMENTS**

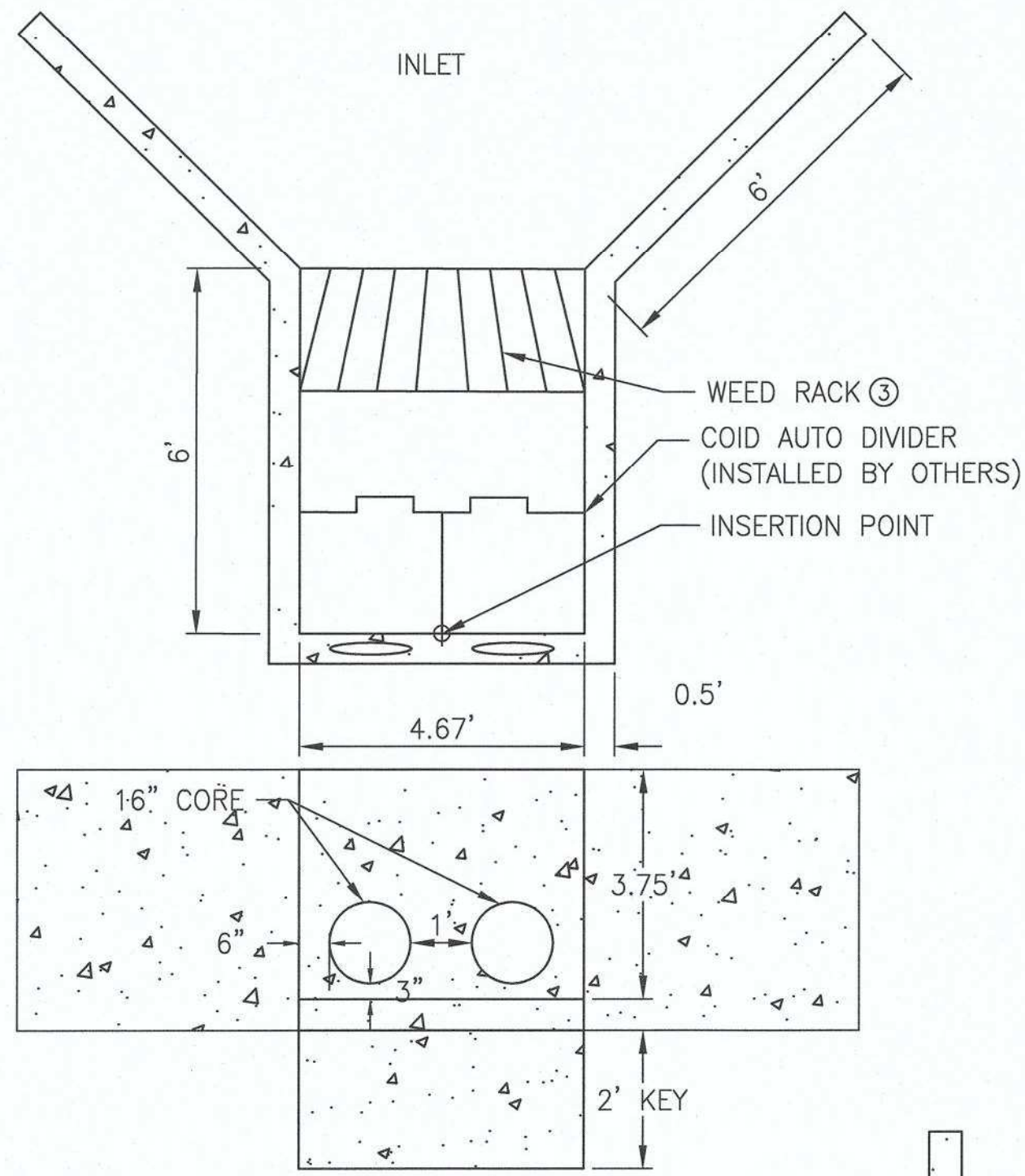
**PLAN AND PROFILE  
61ST STREET CROSSING**

DRAWING NO.  
3 OF 4  
**C1.2**

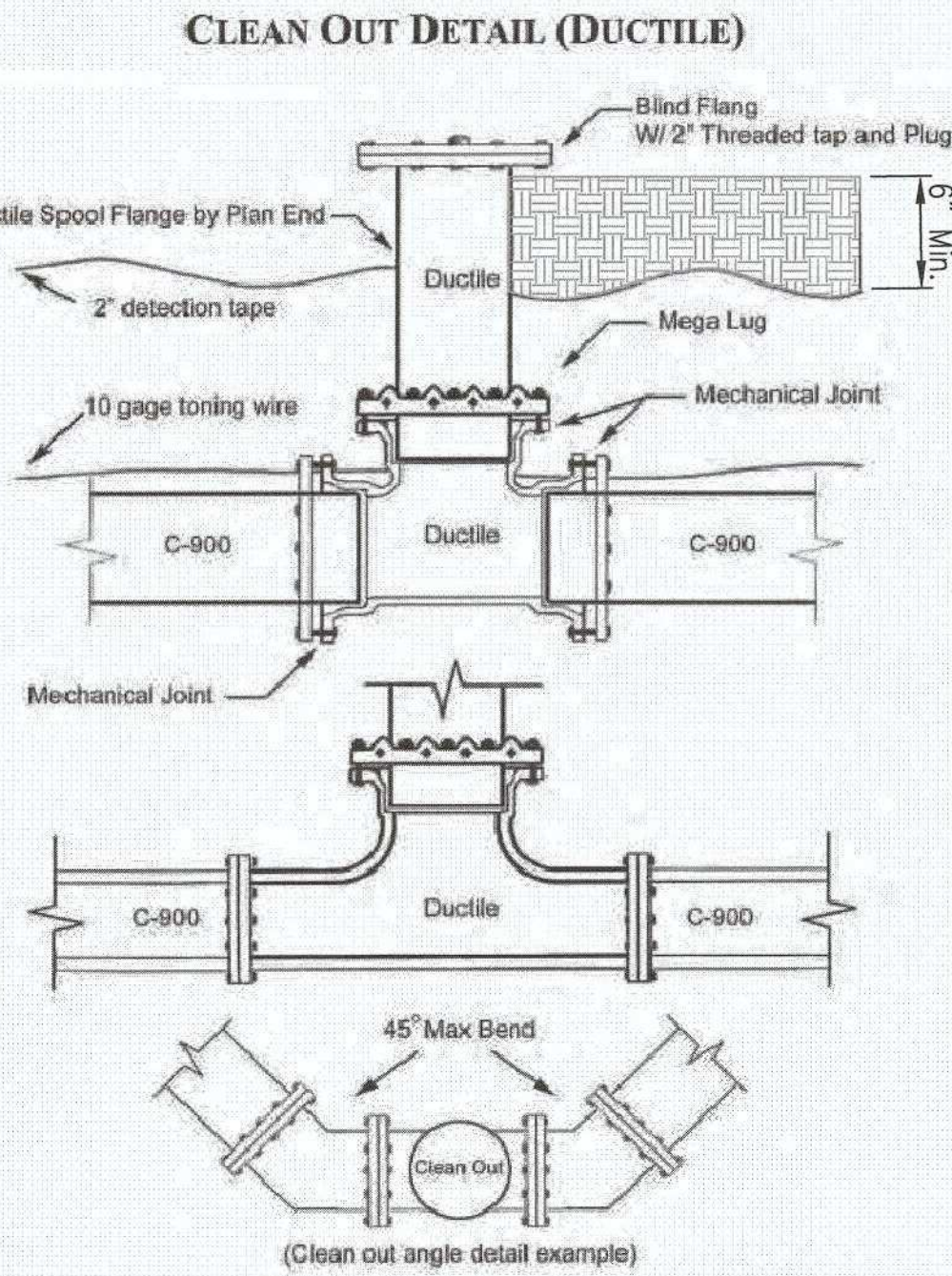
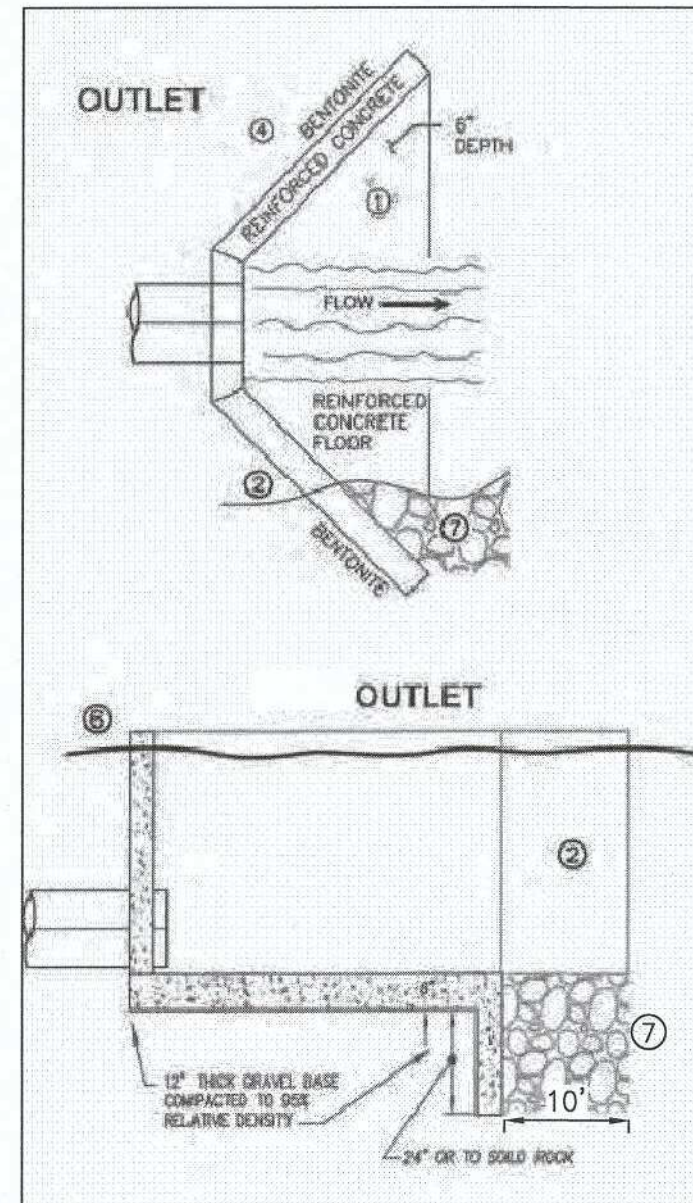
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			AE/DR/LF		
				VALUE	
					VALUE

**ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY**  
FILE NAME  
BF-2509-005.3-C1.2-PP00-IRR  
JOB No.  
DATE 10/5/2018

LAYOUT: DETAILS  
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 PLOTTED BY: ricodov DATE: Monday, October 8, 2018 4:41:56 PM

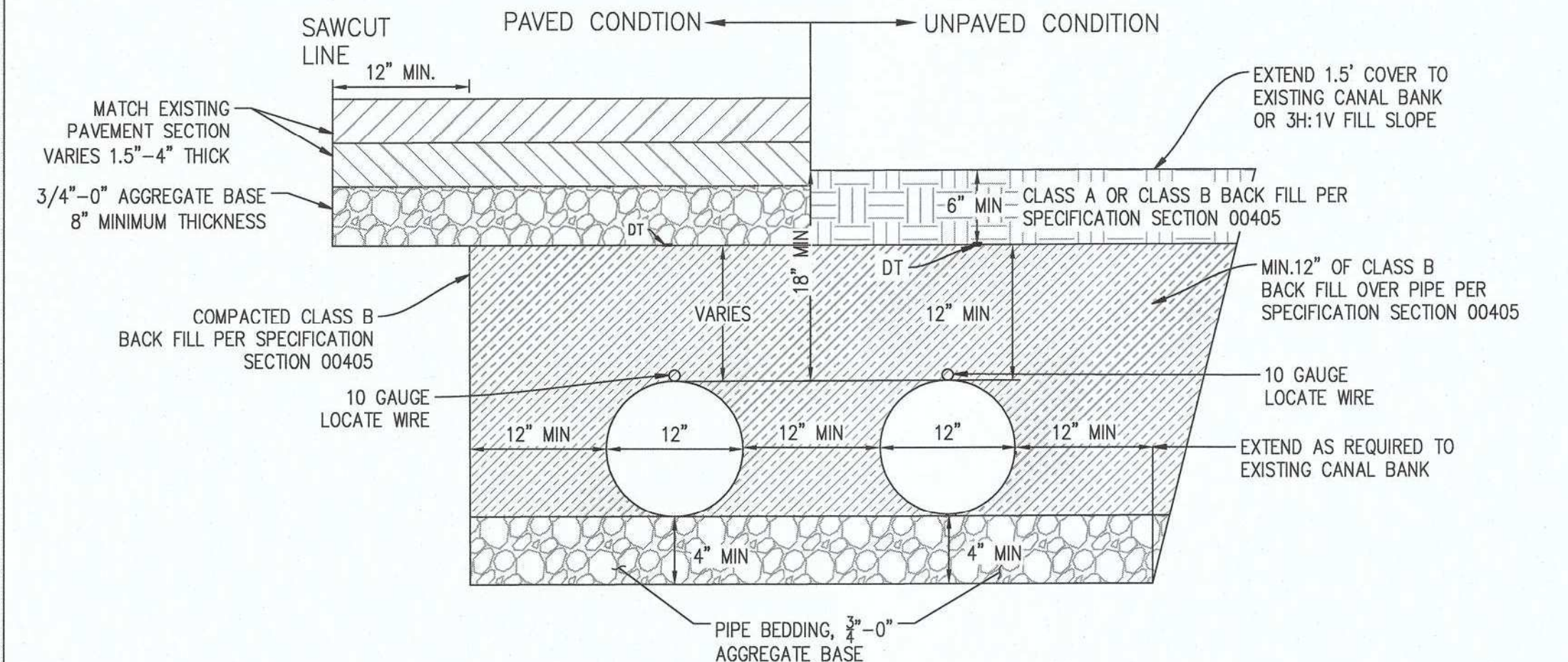


**TYPICAL INLET AND OUTLET HEADWALL DETAIL**  
SCALE: N.T.S. 1  
C1.3

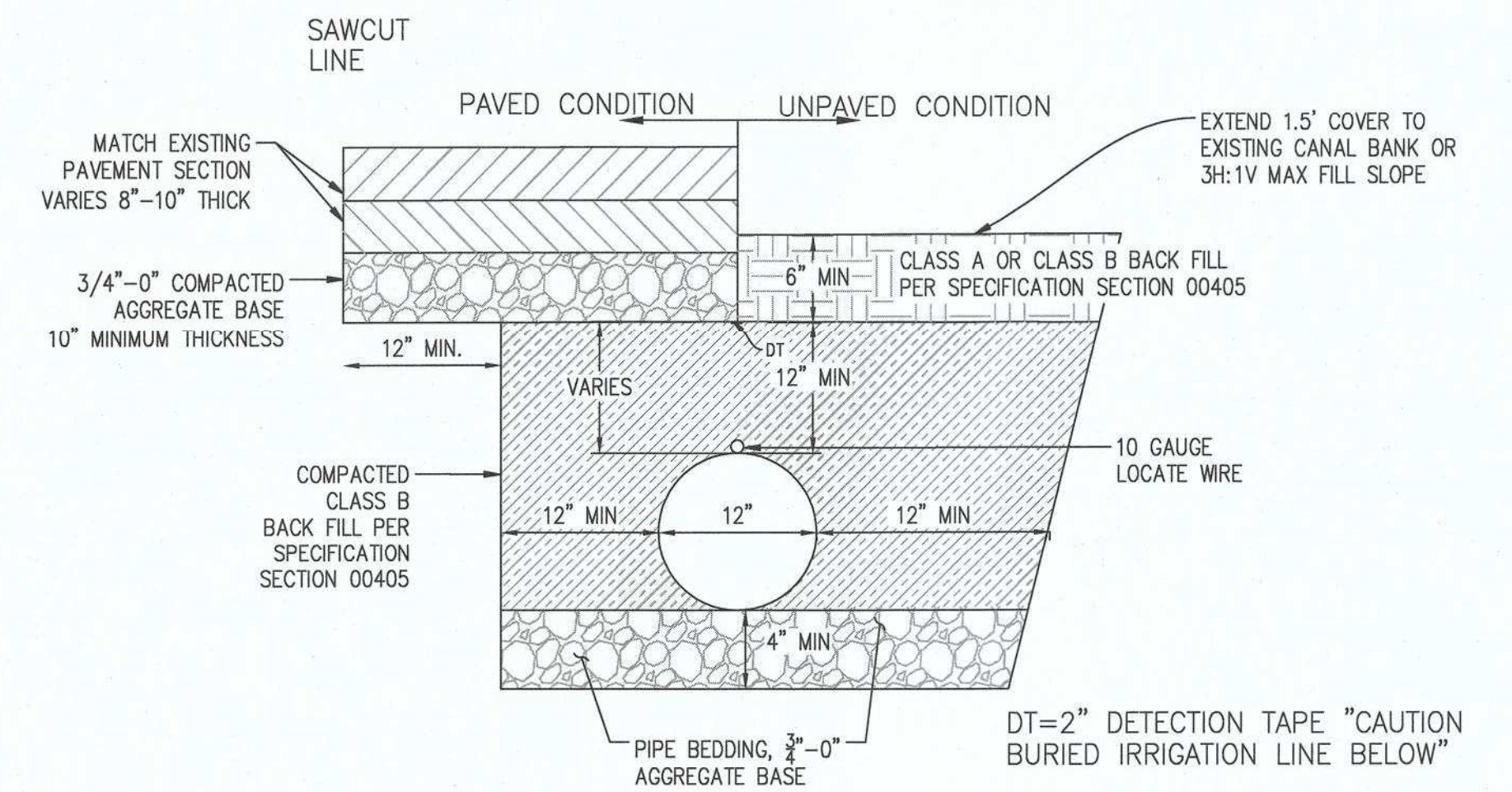


- 1) Bolts need to be Plated
- 2) Thrust Calculations need to be provided with restraint details. Thrust blocks shall not be permitted.
- 3) 90° bends must be comprised of two 45° max degree segments with central cleanout.
- 4) Clean out leg must be the same diameter as main line pipe upto 24".
- 5) Mega Lugs may be needed based on thrust calculations.
- 6) Clean Outs must be pressure rated to 100PSI (Tested at 125 PSI)
- 7) 2" Detection tape shall be placed at a minimum of 18 below grade. Two layers may be needed depending on pipe depth.
- 8) 10 Gauge Toning wire shall be placed on the pipe for the full run.

**TYPICAL CLEAN OUT DETAIL**  
SCALE: N.T.S. 2  
C1.3



**DOUBLE PIPE TRENCH DETAIL**  
SCALE: N.T.S. 3  
C1.3



**SINGLE PIPE TRENCH DETAIL**  
SCALE: N.T.S. 4  
C1.3

- NOTE ①: CONCRETE FLOOR TIED TO WALL. TOP OF FLOOR TO BE FLUSH WITH CANAL FLOWLINE.  
 NOTE ②: WINGWALLS SHALL BE A MINIMUM OF 2 FEET INTO CANAL BANK  
 NOTE ③: TRASHRACK TO HAVE A SLOPE OF 1:1 CONSTRUCTED OF 1/4" X 2" STEEL GRATES SPACED 2" APART-NO HORIZONTAL BARS- (UP TP 25" PIPE) INSTALL ON INLET ONLY.  
 NOTE ④: ALL BACKFILL SHALL BE COMPACTED AND TESTED TO 95% MAXIMUM DENSITY  
 NOTE ⑤: INSIDE WIDTH OF WALL TO BE MINIMUM OF (2 X PIPE DIAMETER)  
 NOTE ⑥: TOP OF WALL TO EXTEND A MINIMUM OF 3" ABOVE CANAL BANK HIGH POINT  
 NOTE ⑦: ALL SIDE TO BE RIPRAPPED -SIZE TO BE DETERMINED BY FACILITY SIZE--

**CENTRAL OREGON IRRIGATION DISTRICT PIPING SPECIFICATIONS GENERAL NOTES:**

1. ALL IRRIGATION PIPING SHALL BE CONSTRUCTED OF AWWA C900 PVC DR 32.5
2. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PERSONEL, EQUIPMENT, AND MATERIALS TO CONDUCT AN AIR TEST FOR ALL IRRIGATION PIPING IN ACCORDANCE WITH SECTION 00445.72 (C) OF THE PROJECT SPECIFICATIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO CONDUCTING THE PRESSURE TESTING.
3. CLEANOUTS SHALL BE THE SAME DIAMETER AS THE MAIN LINE AND CONSTRUCTED IN GENERAL ACCORDANCE WITH THE CLEANOUT DETAIL ON THIS SHEET.
4. ALL TRENCH EXCAVATION AND BACKFILL SHALL BE CONSTRUCTED IN ACCORDANCE TO 00330.41 (6) OREGON STD SPECIFICATIONS FOR CONSTRUCTION 2018
5. THE CONTRACTOR SHALL INSTALL 10 GAUGE TONING WIRE ALONG ALL IRRIGATION PIPE.
6. THE CONTRACTOR SHALL INSTALL 2 INCH WIDE "IRRIGATION" DETECTION TAPE AS SHOWN ON THE TYPICAL TRENCH DETAILS.
7. THE CONTRACTOR SHALL COORDINATE WITH COID TO SCHEDULE CONSTRUCTION ACTIVITY SO AS NOT TO INTERFERE WITH THE ANY OFF SEASON STOCK WATER RUNS.
8. ALL BENDS SHALL BE MECHANICALLY RESTRAINED. SEE JOINT RESTRAINT TABLE, THIS SHEET.

RESTRAINED LENGTH TABLE	
HORIZONTAL BEND	MIN. RESTRAINED LENGTH FROM END OF BEND
12"- 45°	20'

TO DEVELOP MINIMUM RESTRAINED LENGTH, THE EBAA IRON RESTRAINT LENGTH CALCULATOR WAS USED WITH THE FOLLOWING ASSUMPTIONS:

THE MAINS ARE TO BE BACKFILLED AND COMPACTED PER SPECIFICATIONS, PIPE MATERIAL USED IS PVC, SOIL TYPE IS SM (SILTY SANDS, SAND SILT MIXTURES), A FACTOR OF SAFETY OF 1.5, TRENCH TYPE 5, AND DEPTH OF BURY 1.5 FT. DESIGN PRESSURE OF 100 PSI. IF THE DISTANCE BETWEEN FITTINGS IS LESS THAN OR EQUAL TO THE CALCULATED RESTRAINT LENGTH, RESTRAIN ALL JOINTS BETWEEN THOSE FITTINGS. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THE SYSTEM IS FULLY RESTRAINED IN AREA OF WORK.

**RESTRAINED LENGTH TABLE**  
SCALE: N.T.S. 5  
C1.3



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PROJECT NAME  
**IRRIGATION IMPROVEMENTS**

**TYPICAL DETAILS**

DRAWING NO.  
4 OF 4  
**C1.3**

REVISIONS	DATE	BY	DESIGNED	CHECKED	APPROVED
			AE/DR		
			AE/DR/LF		

ONE INCH AT FULL SCALE, IF NOT, SCALE ACCORDINGLY  
 FILE NAME: BE-2509-005.3-C1.3-D100-IRR  
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