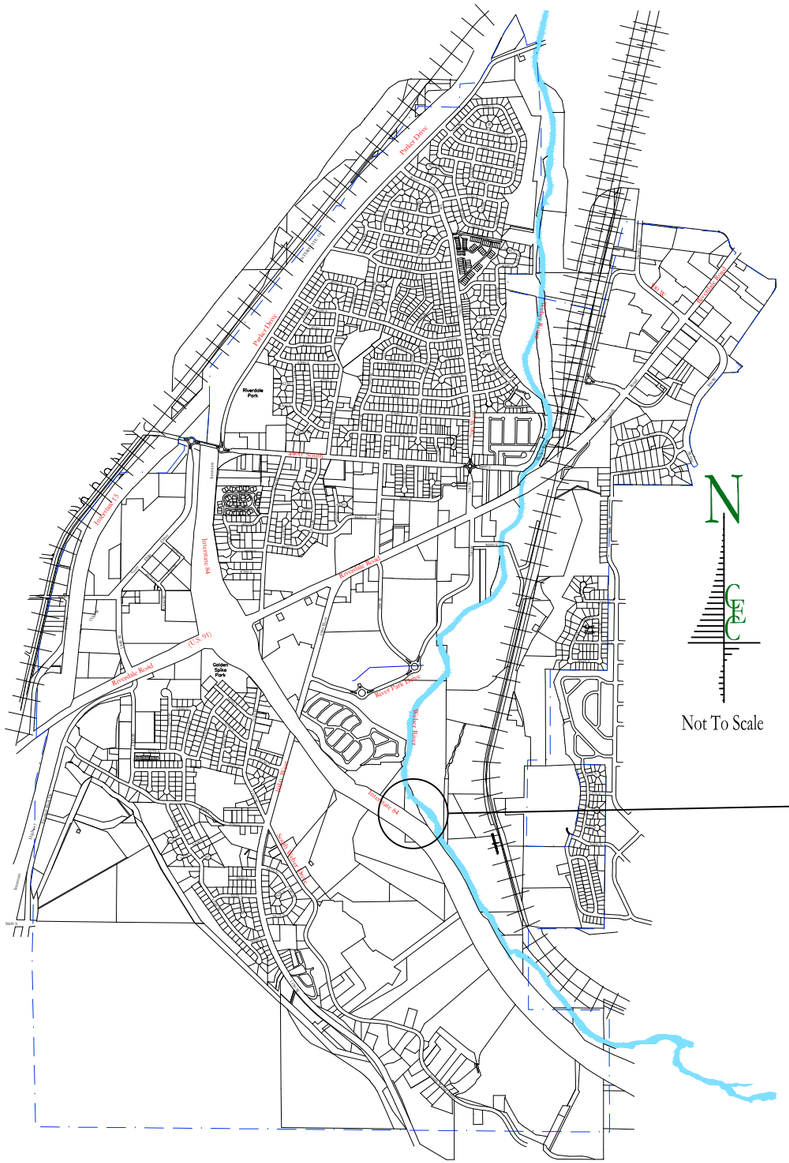
WATERLINE IMPROVEMENT PROJECT
CROSSING I-84, WEBER RIVER, AND RAILROAD
RIVERDALE, WEBER COUNTY, UTAH

PUBLIC WORKS DIRECTOR
SHAWN DOUGLAS

LEGEND AND SYMBOLS

- Centerline of road
- Contour line (1234)
- Curb & gutter
- Easement line
- Fence
- Lot line
- Phase/boundary line
- Right of way line
- Section corner & line
- Culinary water manhole & pipe (CW)
- Fiber optic box & line (FO)
- Gas manhole & line (G)
- Irrigation manhole and pipe (IRR)
- Land drain manhole & pipe (LD)
- Power pole and line (P)
- Sanitary sewer manhole & pipe (S)
- Storm water manhole & pipe (SW)
- Telephone pedestal & line (T)
- Fire hydrant
- Storm water catch basin
- Street sign
- Street light
- Water meter
- Water valve

*Note:
All existing features
will be in a shaded line



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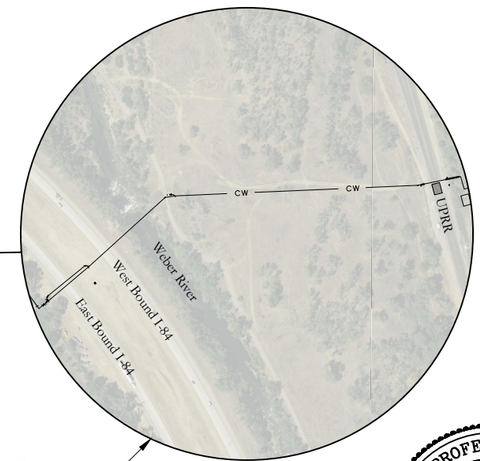
STORM WATER POLLUTION PREVENTION PLAN	
SWPPP 1	SWPPP NOTES & SITE PLAN
SWPPP 2	SWPPP DETAILS



Project Location

LICENSED PROFESSIONAL ENGINEER
22 AUG 23
No. 97-
341144-2202
R. TODD FREEMAN
STATE OF UTAH

CIVIL ENGINEERING CONSULTANTS, PLLC.
5141 SOUTH 1500 WEST
RIVERDALE, UT 84405
801.866.0550

NO.	DATE	BY	REVISIONS

DATE: AUGUST 2023
DRAWN: PCA
CHECKED: RTF

PROJECT / LOCATION: WATERLINE IMPROVEMENT PROJECT CROSSING I-84, WEBER RIVER, AND RAILROAD RIVERDALE, UTAH

TITLE: COVER

CLIENT: RIVERDALE CITY
PROJECT NUMBER: RC.22001
FILE: ~RC22001 01-02 Cover.dwg
SHEET: 1 of 9

LOCATION: Z:\CEC Clients\Riverdale City\Projects\RC.22001 Waterline Crossing I-84\CADD\Planset\~CADD C3D 2022 DATE: 8/22/2023 1:05 PM

EROSION CONTROL NOTES

1. During construction, the contractor shall be responsible for preventing and controlling soil erosion due to wind and water runoff. The contractor shall be solely responsible for constructing and maintaining the erosion control facilities. All surrounding streets shall be kept clean of debris from the project site including vehicle track out.
2. The contractor shall comply with the requirements of the "best management practices" for storm water protection. This requirement includes protecting all inlet boxes, catch basins, drainage ditches, etc. during construction. The contractor shall protect all surrounding properties and streets from site runoff as required. Approved storm water protection methods and drainage provisions must be used to protect adjoining properties during construction.
3. The contractor shall use vehicle tracking control best management practices at all locations where vehicles will enter or exit the site. Control facilities must be maintained while construction work is in progress, adjusted when necessary, and removed from the site when the project is completed.
4. The contractor shall install storm water inlet protection devices immediately upon all individual storm water inlets becoming functional.
5. All wash water from construction vehicles (concrete trucks, vehicle cleaning, etc.) shall be disposed in a manner that prevents contact with natural storm water discharges from the site.
6. All construction materials spilled, dropped, washed or tracked from vehicles onto City roadways or into storm drainage facilities must be removed immediately.
7. No rubbish, trash, garbage or other such materials shall be discharged into drainage ditches or storm water runoff channels.
8. The contractor shall adhere to all conditions of the "Utah State Storm Water Pollution and Prevention Plan" adopted for this project. The contractor shall be responsible for adjusting the erosion control measures (silt fences, straw bales, etc.) due to grade changes or other unforeseen conditions during development of the project.

GENERAL CONSTRUCTION NOTES

1. The utilities shown on the drawings are for informational purposes only. The contractor shall locate all underground utilities, contact blue stakes and other applicable utilities prior to laying pipe within 200 feet of said utilities which may be exposed, damaged or crossed as shown on the drawings or as "blue staked". The contractor shall coordinate with the utility company to move the utility if necessary. The contractor shall not modify grade of project lines in order to go over and around existing utilities. The contractor shall pothole for the location of utilities prior to excavation.
2. The contractor shall review and verify all dimensions shown on the drawings. The contractor must bring to the attention of the Engineer of any errors, discrepancy or conflicts found on any drawings of items that are located on the site.
3. The contractor shall be responsible to provide appropriate signing and barricading. All flagging, signage and barricades and all traffic control required shall be in compliance with the current "manual on uniform traffic control devices".
4. All public and private roadways must be cleaned daily, or as often as required, of all loose dirt, mud, gravel and all debris as a result of the construction work. This requirement shall apply continuously throughout the duration of the project and shall not be limited to normal construction working hours.
5. All dust on project site shall be controlled by sweeping and watering the construction area.
6. The contractor shall be completely responsible for the job site conditions during the course of construction, including safety of all persons and adjoining property. This requirement shall apply continuously throughout the duration of the project and not be limited to normal construction working hours.
7. Verify depth and location of all existing utilities prior to constructing any new utility lines. Notify project engineer of any discrepancies or conflicts prior to any connections being made.
8. The contractor shall be responsible for meeting all of the requirements established for safe trenching. (See OSHA and UOSHA requirements, latest editions).
9. Specific information provided in the contract documents shall supersede items covered in these drawings.
10. The contractor shall contact and coordinate all utility connections with the utility owner.
11. All construction to comply with specifications contained and with Riverdale City and UDOT standards and specifications.

UDOT NOTES

1. All construction within the UDOT right-of-way shall conform to the most current UDOT standard (including supplemental) drawings and specifications.
2. The contractor is to obtain an encroachment permit from the applicable UDOT Region Permit office prior to commencing work within UDOT right-of-way. Working hour limitations will be listed in the limitations section of the encroachment permit.
3. UDOT reserves the right, at its option, to install a raised median island or restrict the access to a right-in or right-out at any time.
4. Owner, developer, and contractor are responsible for any damages directly or indirectly within the UDOT right-of-way as a result of development activities.
5. Owner, developer, and/or contractor is required to hire an independent company for all testing within the UDOT right-of-way.
6. All signs installed on the UDOT right-of-way must be high intensity grade (Type XI sheeting) with a B3 slip base. Install all signs per UDOT SN series Standard Drawings.
7. Comply with the requirements of Utah Code 17-23-14 (Disturbed Corners – County surveyor to be notified – Coordination with certain state agencies).

CAUTION NOTICE TO CONTRACTOR

The contractor is herewith instructed that the location and/or elevation of existing utilities as shown on these plans are based on records of the various utility companies and, where possible, measurements taken in the field. The information shown is not to be relied on as being exact or complete. The contractor is required to call the appropriate utility company at least 48 hours before any excavation to request exact field location of utilities. Is the sole responsibility of the contractor to relocate all existing utilities which conflict with the proposed improvements shown on the drawings.

The contractor shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property. This requirement shall apply continuously and not be limited to the normal working hours; and the contractor shall defend, indemnify, and hold the owner and the engineer harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting for liability arising from sole negligence of the owner or the engineer.

ABBREVIATIONS USED IN DRAWINGS

adj	adjust	ea	each	hyd	hydrant	pi	point of intersection	std	standard
ac	asbestos-cement pipe	elec	electrical	in	inch	pl	property line	sw	storm water
arv	air release valve	eg	existing grade/ground	inv	invert	pp	power pole	swmh	storm water manhole
bw	back of walk	elev	elevation	irr	irrigation	pr	proposed	sy	square yard
bvce	beginning vertical curve elev.	eoc	edge of concrete	l	length	prc	point of reverse curve	tc	top of concrete
bvcs	beginning vertical curve station	ep	edge of pavement	ld	land drain	prv	pressure reducing valve	tbc	top back of curb
bw	both ways	evce	end vertical curve elev.	lf	linear foot	pt	point of tangency	tele	telephone
cb	catch basin	evcs	end vertical curve station	lip	lip of curb	pue	public utility easement	toa	top of asphalt
chord	chord bearing	ew	each way	lp	low point	pvc	polyvinyl chloride pipe	toe	toe of slope
cl	centerline	exist	existing	ls	lump sum	r	radius	top	top of slope
cmp	corrugated metal pipe	ff	finished floor elevation	lt	left	rc	rebar & cap	tow	top of wall
co	clean out	fg	finished grade	max	maximum	row	right of way	tow	top of walk
conc	concrete	fh	fire hydrant	mh	manhole	rt	right	typ	typical
cw	culinary water	fl	flow line	min	minimum	sec cor	section corner	w	water
da	delta angle	fo	fiber optic	mon	monument	ser	south end radius	wm	water meter
det	detail	ft	foot	nts	not to scale	sf	square foot	wmh	water manhole
dia	diameter	gb	grade break	oc	on center	ss	sanitary sewer	wv	water valve
dip	ductile iron pipe	hdpe	high density poly ethylene	ohp	over head power	smh	sanitary sewer manhole		
dwg	drawing	hp	high point	pc	point of curvature	sta	station		

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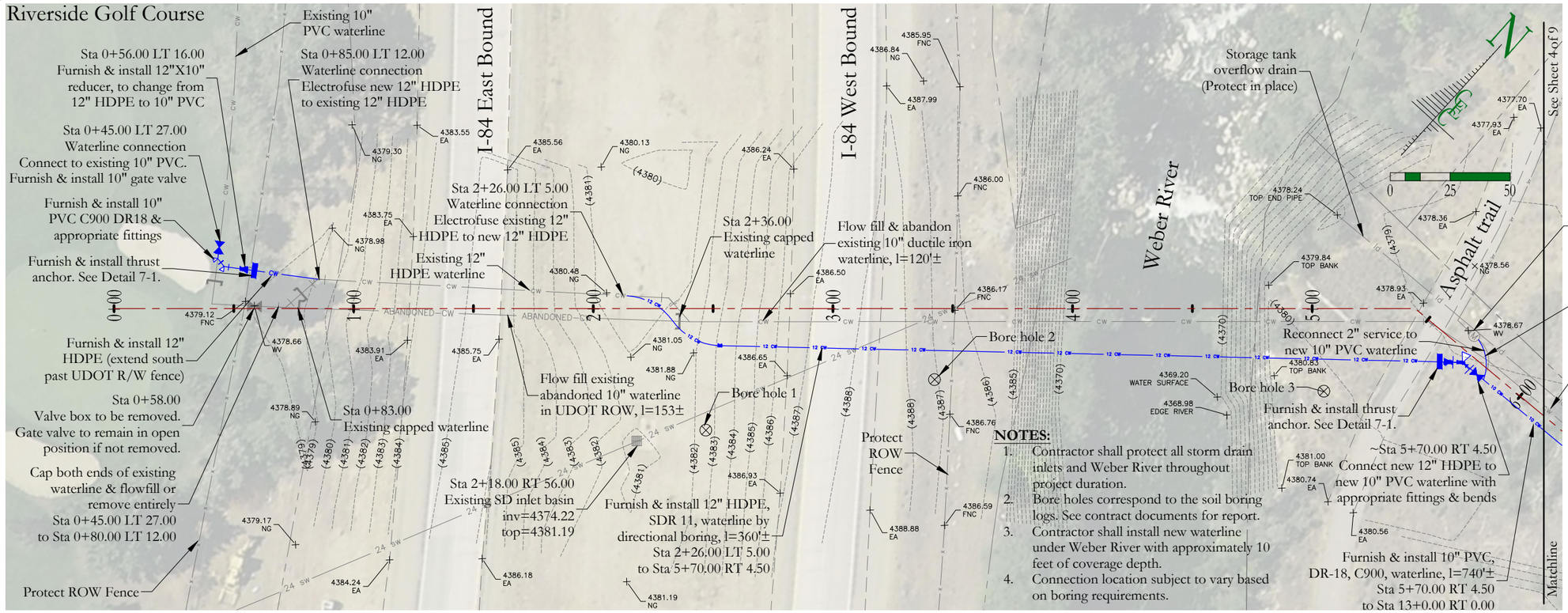
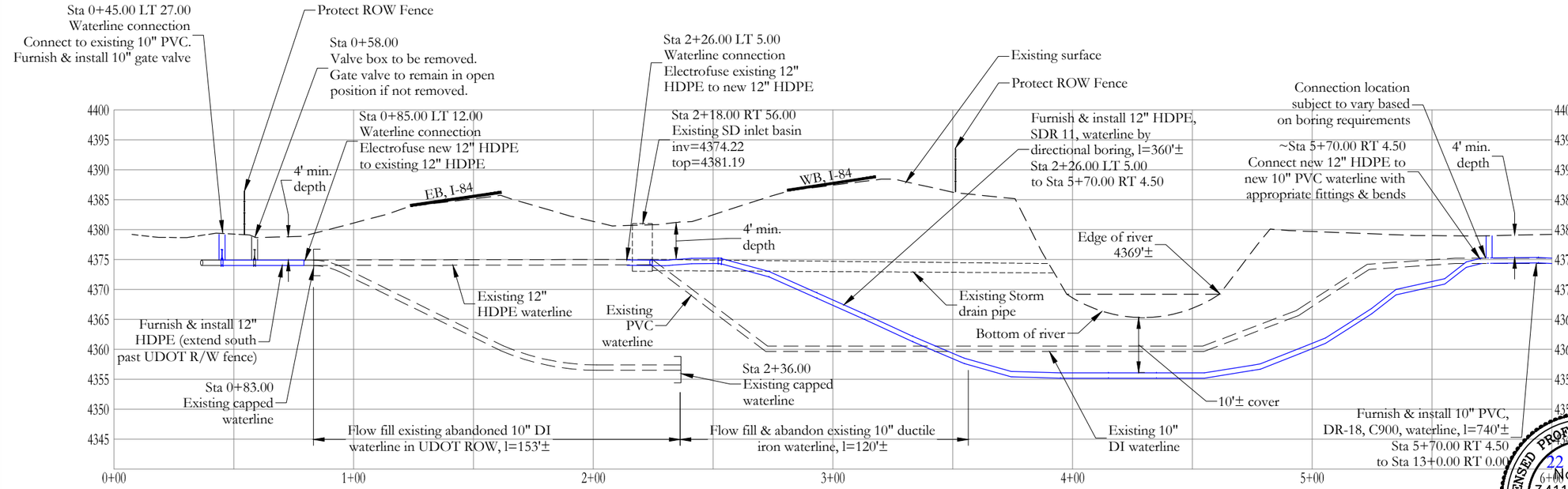
TITLE: NOTES

CLIENT: RIVERDALE CITY
PROJECT NUMBER: RC.22001
FILE: ~RC22001 01-02 Cover.dwg
SHEET: 2 of 9

LOCATION: Z:\CEC Clients\Riverdale City\Projects\RC.22001 Waterline Crossing I-84\CADD\Planset\~CADD C3D 2022 DATE: 8/22/2023 1:05 PM





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RIVERDALE, UTAH

TITLE:
PLAN & PROFILE: STA 0+00 - 6+00

CLIENT: RIVERDALE CITY
PROJECT NUMBER: RC.22001
FILE: ~RC22001 03-05 Site.dwg
SHEET: 3 of 9

LICENSED PROFESSIONAL ENGINEER
No. 97-341144-2202
R. TODD FREEMAN
STATE OF UTAH
22 AUG 23

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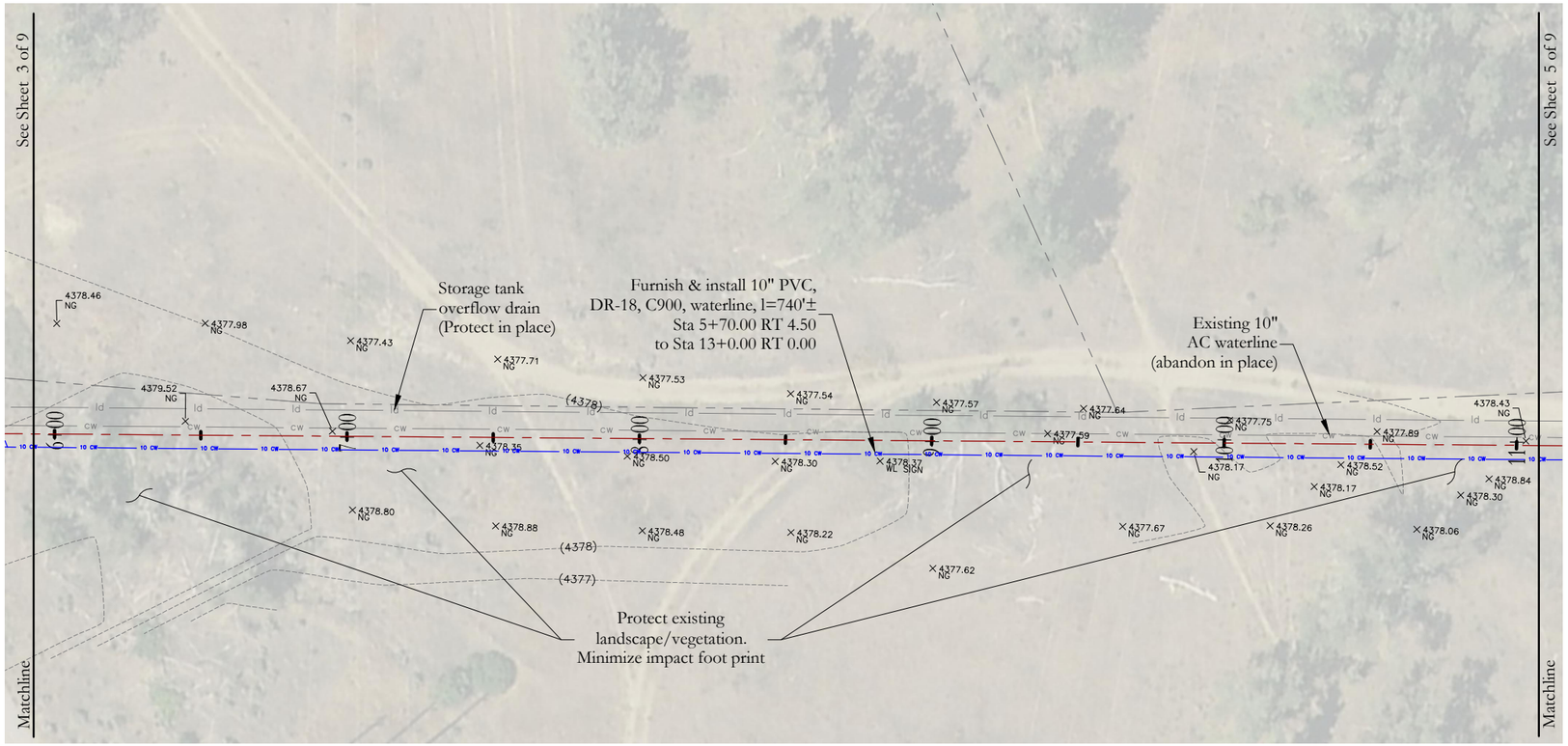

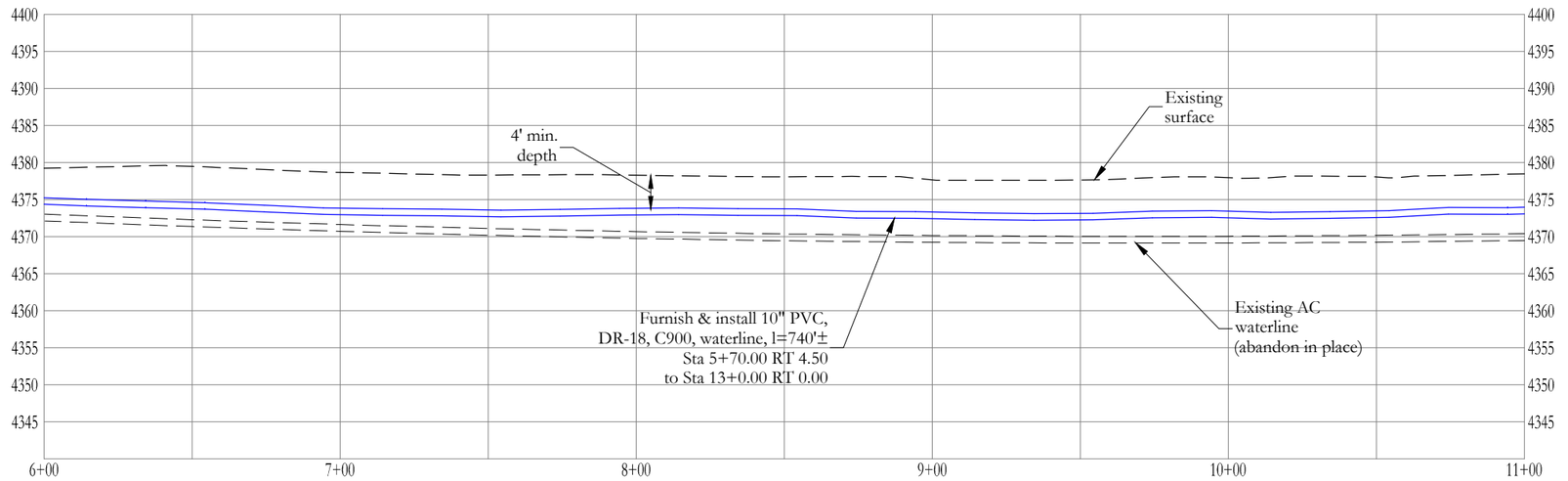

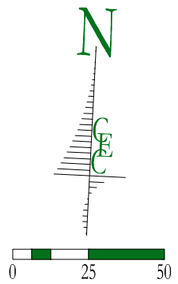

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PLAN & PROFILE: STA 6+00 - 11+00

CLIENT: RIVERDALE CITY
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FILE: ~RC22001 03-05 Site.dwg
SHEET: 4 of 9

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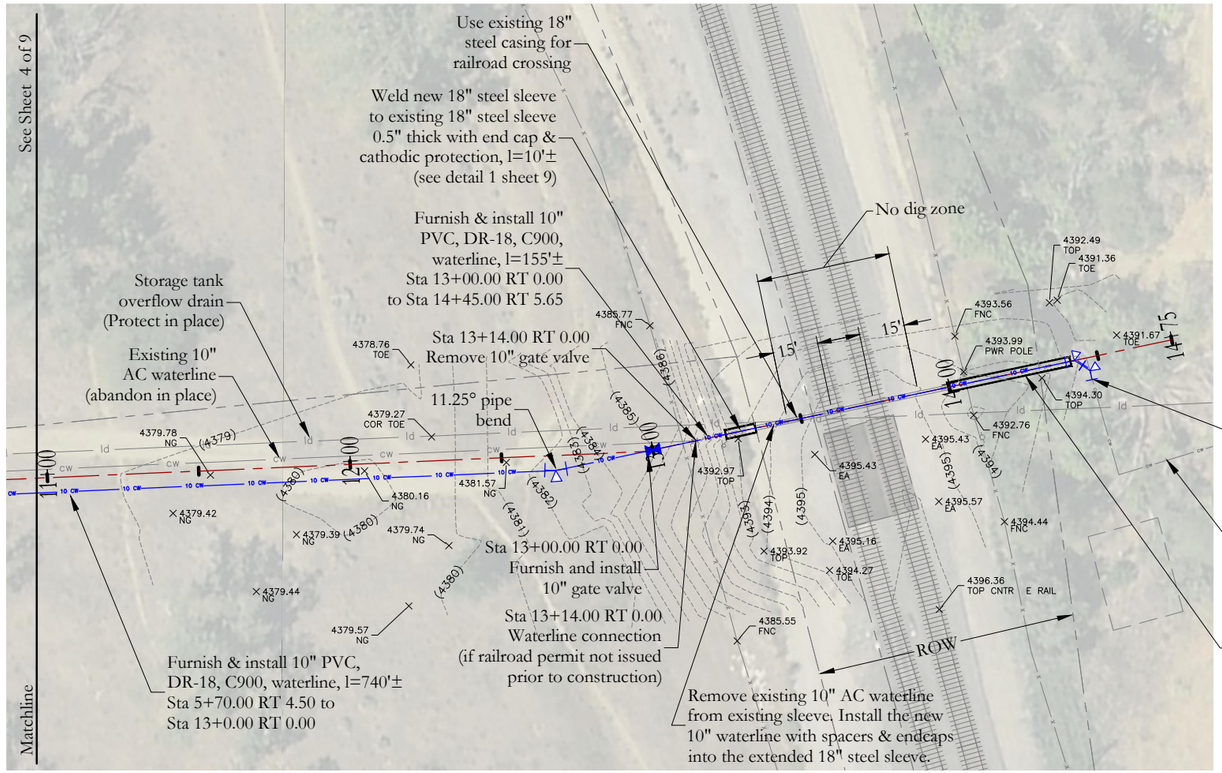
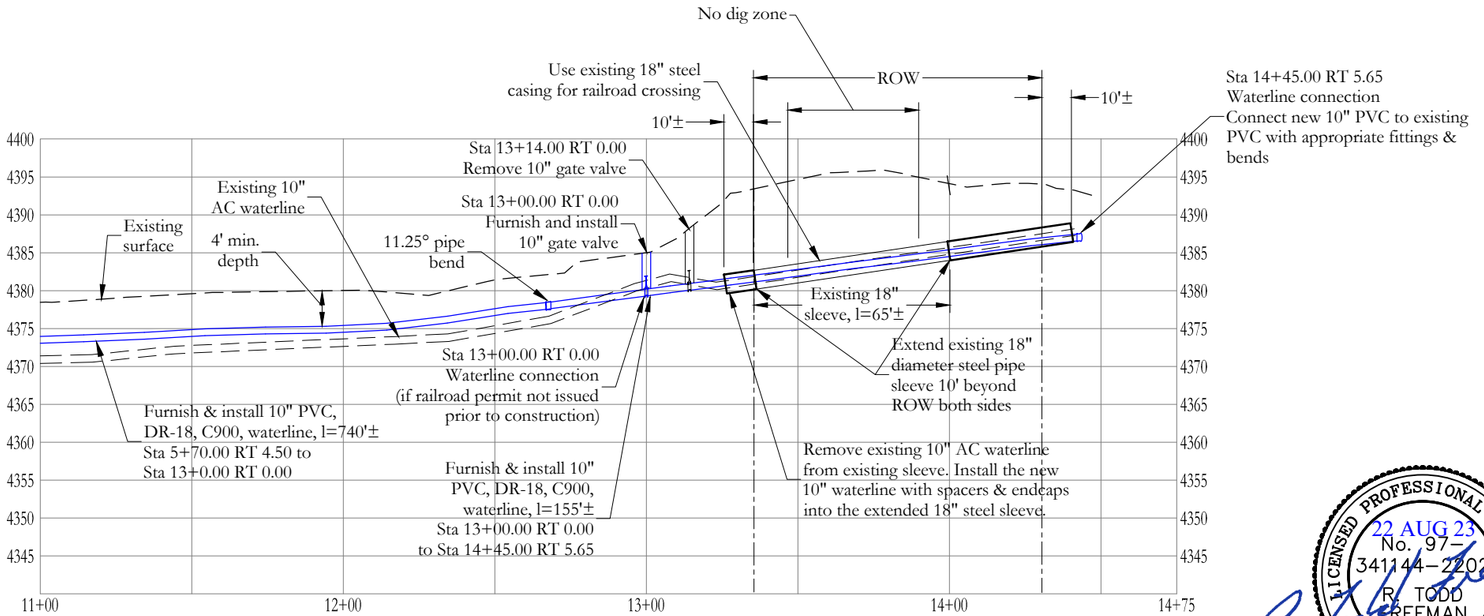
NOTE:

1. Contractor to verify existing sleeve size.
2. If UPRR Permit is issued continue waterline installation under UPRR tracks.





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TITLE: PLAN & PROFILE: STA 11+00 - 14+75

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PROJECT NUMBER: RC.22001
FILE: ~RC22001 03-05 Site.dwg
SHEET: 5 of 9

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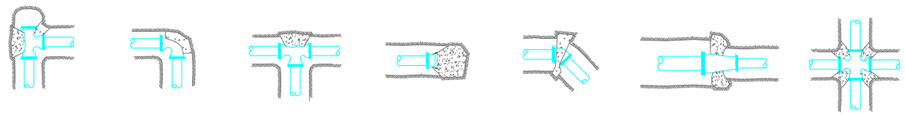


All utility trenching within road right-of-ways which are 66' wide or wider shall have flowable backfill material

Safe bearing loads	
Soil type	Safe bearing load (lb/ft²)
Sand	1000
Sand & gravel	1500
Sand & gravel cemented with clay	2000
Shale	5000

Thrust block area against trench wall (square feet) = Thrust on fitting / Safe bearing load of soil

All trenching for service connections shall have 100% roadbase backfill material above the pipe zone within any road right-of-way

Thrust on fittings in pounds @ 1 pound per square inch of water pressure *				
Pipe size	Tees	90° bends	45° bends	22.5° bends
8"	65.8	93	50.4	25.5
10"	107.5	152	82.4	41.7
12"	153.1	216.4	117.2	59.4

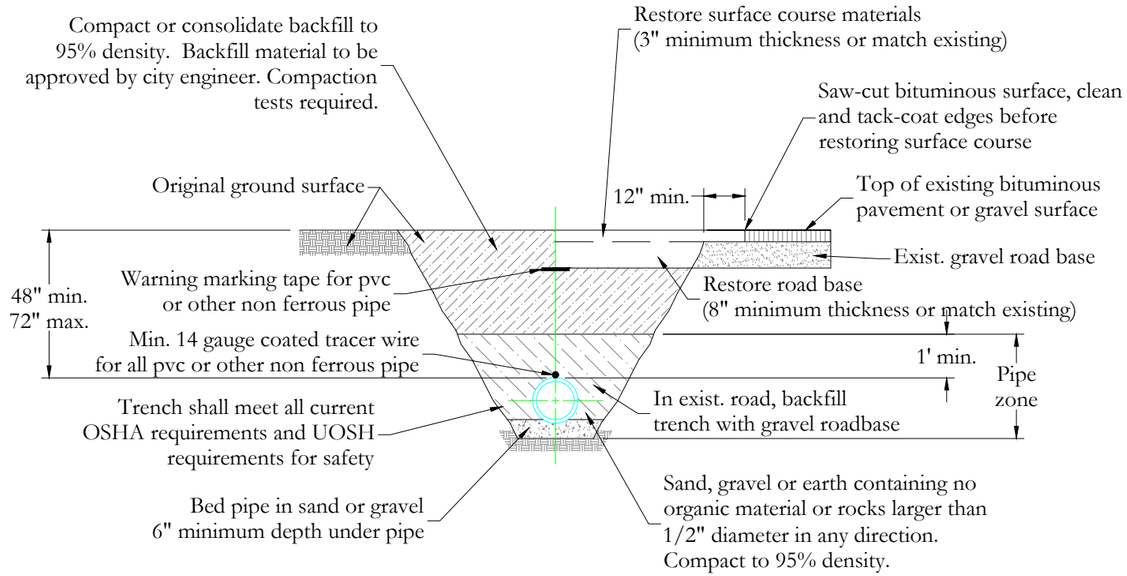
* multiply thrust by maximum water pressure

CONCRETE THRUST BLOCK DETAILS*

1
-

SCALE: NONE

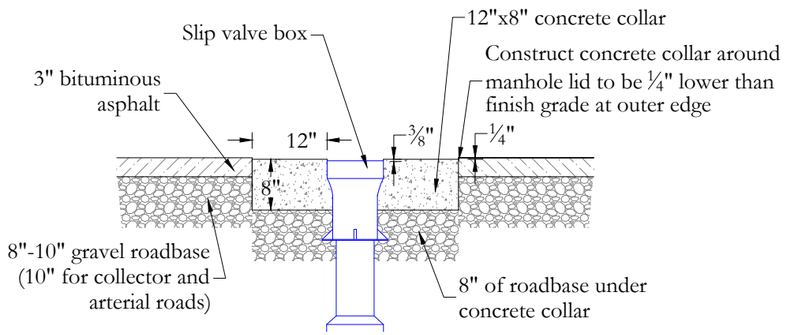
*All bolts on pipe fittings to be kept clear of concrete mega-lugs may be used in place of thrust blocks



CULINARY WATER TRENCH CROSS-SECTION

2
-

SCALE: NONE



WATER VALVE COLLAR DETAIL

3
-

SCALE: NONE

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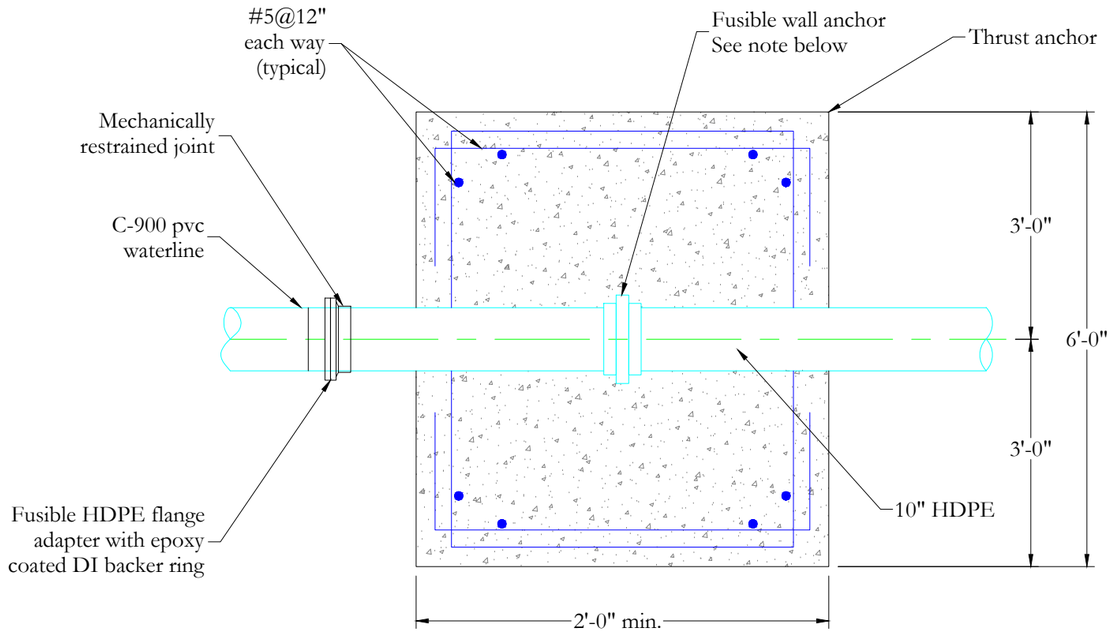
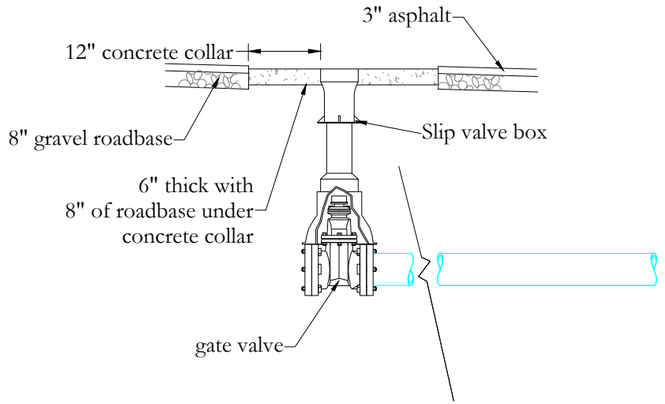


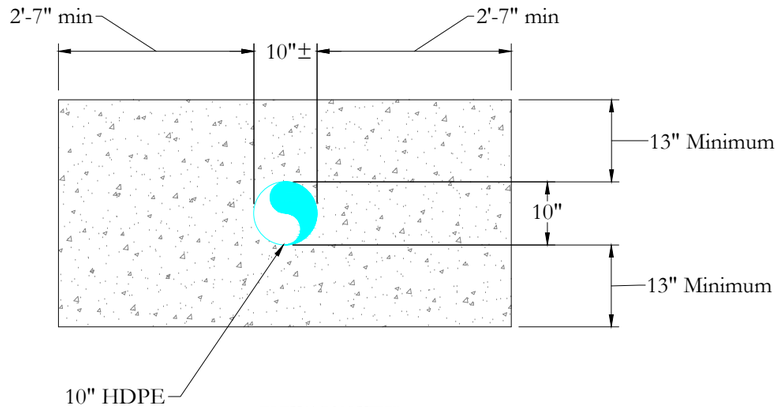
SECTION VIEW



GATE VALVE WITH CONCRETE COLLAR

SCALE: NONE

2 / -



ELEVATION VIEW

NOTE:
Wall anchor shall be the same DR rating and from same resin as pipe.

THRUST ANCHOR DETAIL

SCALE: 1/2"=1'

1 / -

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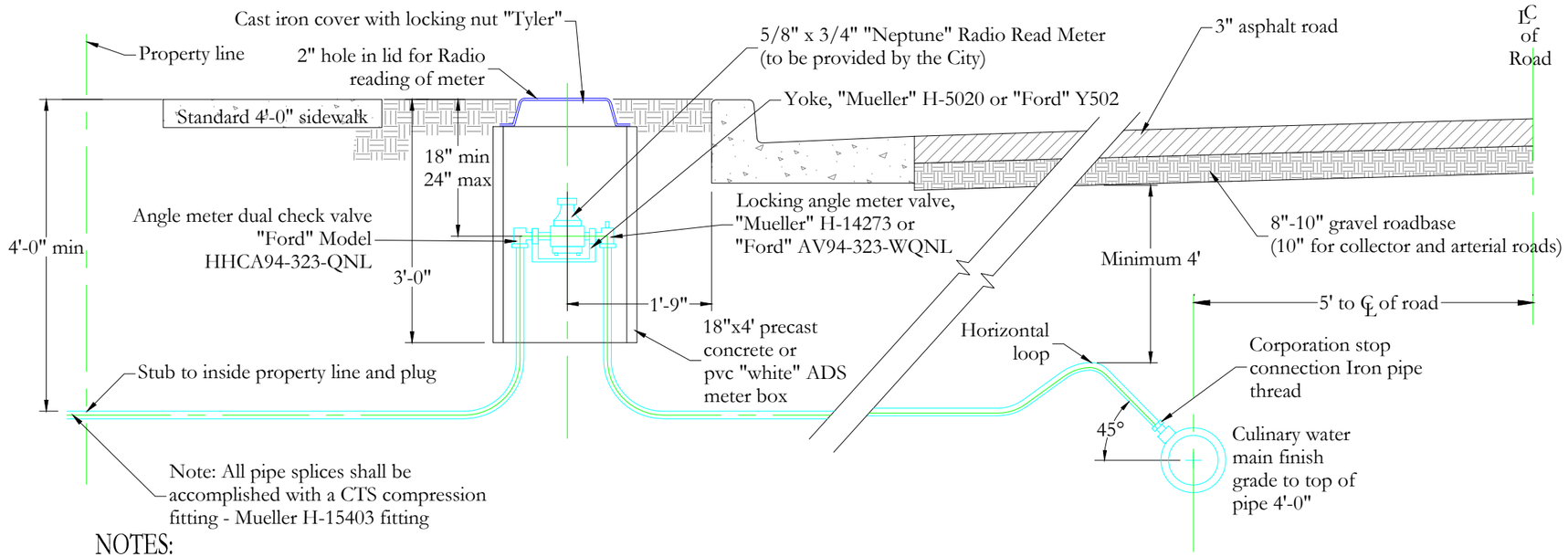

NOTES:

1. Backfill: Install backfill in lifts not exceeding 8" after compaction. Compact each lift to an average dry density of 95% with no density test result less than 92%.

2. Residential water meters provided by City. Commercial and industrial water meters to be approved by City.

3. Pipe: Type K copper pipe.

4. Placement: All meters are to be centered in the park strip and must be placed near midpoint of the lot. Meters must not be located in a driveway, or in a sidewalk, and must be 24" away from driveway approaches.

5. Property owner is responsible for service line from property side of meter.

6. Taps to PVC C900 require brass double strap saddles. Direct taps not allowed to PVC. Direct taps to ductile iron are allowed.

7. Back flow prevention devices not required.

8. 1-1/2" and 2" meters require a meter setter Mueller H1423 with Mueller H15428 fittings or approved equal.

9. All meters over 1" is required to have a bypass.

10. Water meter size shall be the same size as the supply line into site.

11. Any standards and specifications not shown shall follow all APWA specifications.

Meter Size	Meter Box Size
3/4"	18"
1"	24" box
1-1/2"	30"
2"	36" box with 30" lid and grade ring

TYPICAL WATER CONNECTION

1

-

SCALE: NONE

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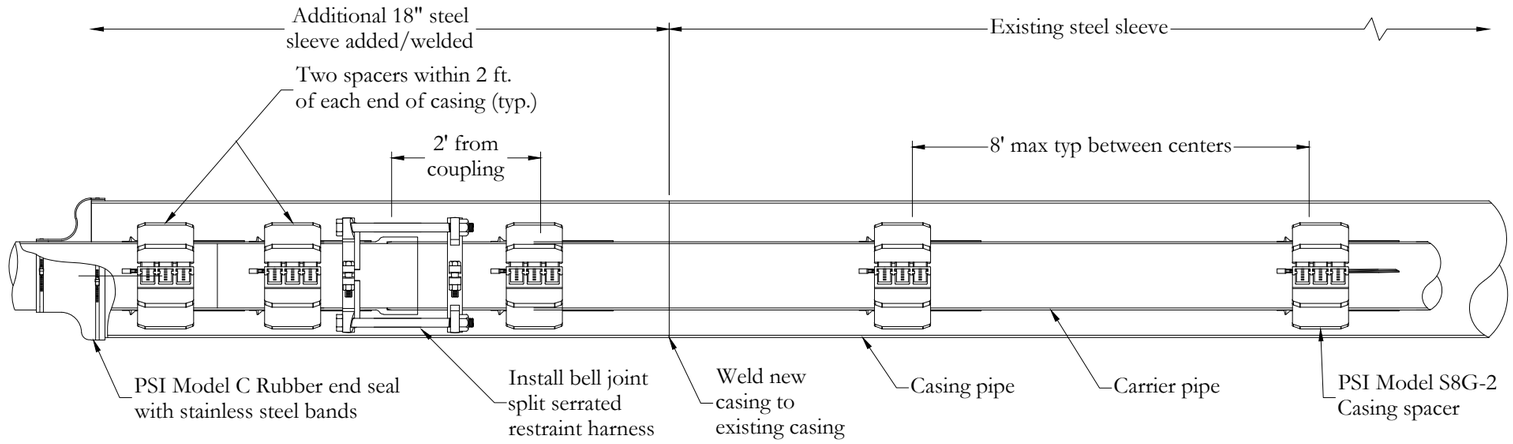

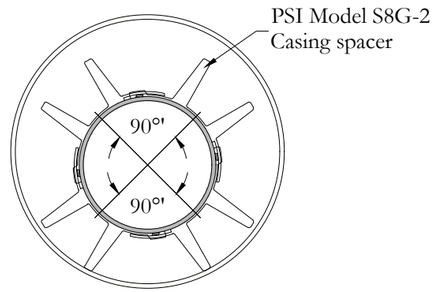

END VIEW

Non-Metalic Casing Spacer & End Seal Specification for Carrier Pipe.

A. Casing Spacers
Upon completion of the installation of the steel pipe encasement, the contractor shall furnish and install a Model S8G-2 or equal casing spacer on the carrier pipe as described below. Casing spacers shall be spaced a maximum of eight (8) feet apart along the length of the carrier pipe with one casing spacer within two (2) feet of each side of a pipe joint and the rest evenly spaced. Wood skids are not an acceptable method of supporting the carrier pipe.

1. The casing spacers shall be as manufactured by Pipeline Seal and Insulator, Inc., Houston, Texas, or equal.

B. End Seals
After insertion of the carrier pipe into the casing, the ends of the casing shall be closed by installing 1/8" thick synthetic rubber end seals equal to the PSI Model "C" end seal as manufactured by Pipeline Seal and Insulator, Inc., Houston, Texas.

ISO 9000 Registration
Each casing spacer and end seal shall be manufactured at a facility that has a Registered ISO 9001:2000 Quality Management System. Copy of current ISO 9001:2000 Registration shall be provided with material submittal.

CASING SPACER DETAIL & END SEAL SPECIFICATION

1
-

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DRAWN: PCA
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PROJECT / LOCATION: WATERLINE IMPROVEMENT PROJECT CROSSING I-84, WEBER RIVER, AND RAILROAD RIVERDALE, UTAH

TITLE: DETAILS

CLIENT: RIVERDALE CITY
PROJECT NUMBER: RC.22001
FILE: ~RC22001 06-09 Details.dwg
SHEET: 9 of 9

LOCATION: Z:\CEC Clients\Riverdale City\Projects\RC.22001 Waterline Crossing I-84\CADD\Planset\~CADD C3D 2022 DATE: 8/22/2023 1:06 PM