

# City of Chehalis Riverside Forcemain Chehalis, Washington

## Project Directory

### Owner

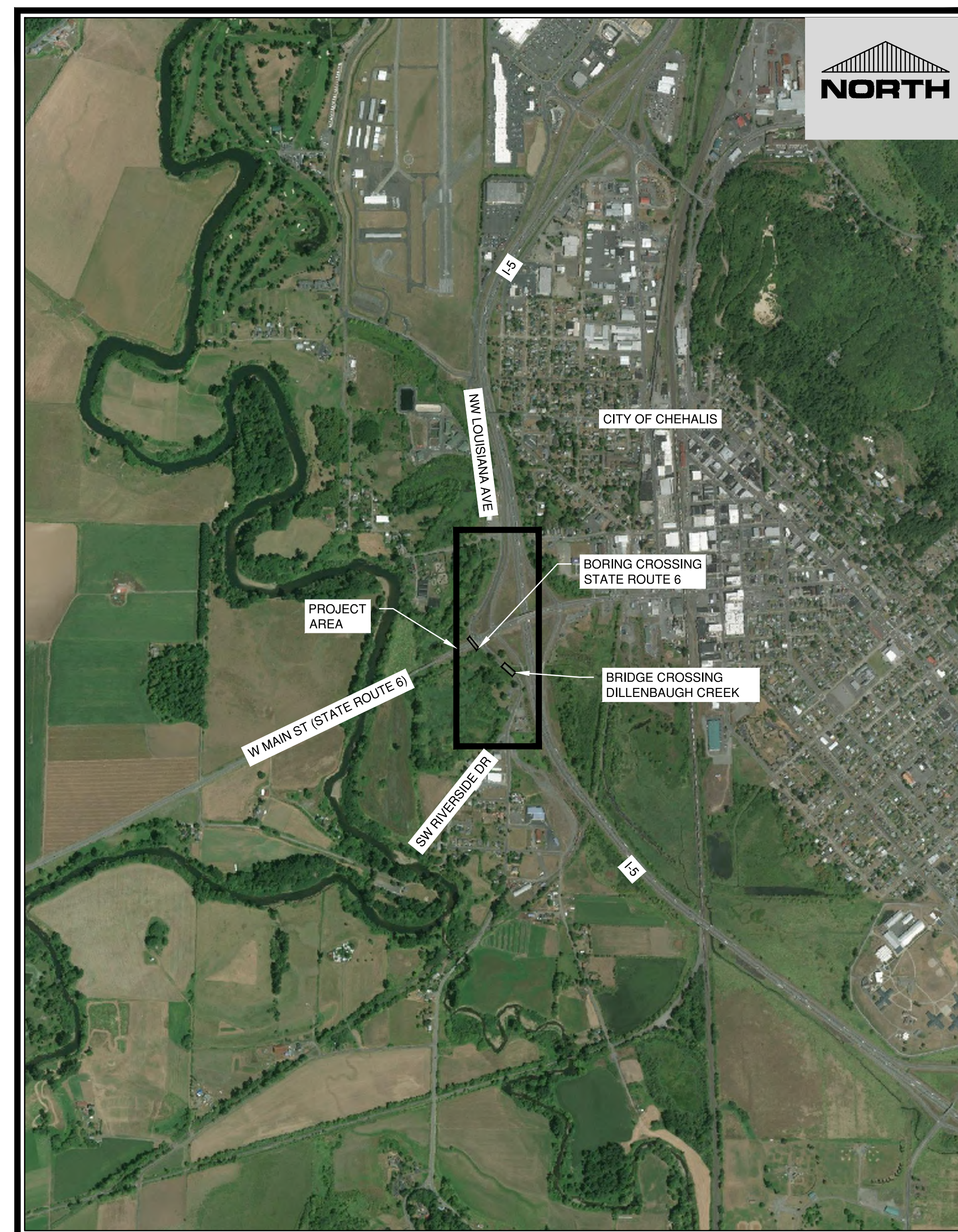
**City of Chehalis**  
350 N. Market Blvd.  
Chehalis, WA 98532  
Phone: (360) 345-1042  
Public Works Director: Rick Sahlin

### Civil Engineers

**Gibbs & Olson, Inc.**  
Mike Marshall, P.E.  
1157 3rd Avenue, Suite 219  
Longview, Washington 98632  
Phone: (360) 425-0991

### Geotechnical Engineers

**Pacific Testing & Inspection LLC**  
Michael Staten, P.E.  
2417 Harrison Avenue  
Centralia, WA 98531  
Phone: (360) 736-3922



**Vicinity Map**  
Scale: 1" = 1000'

### City Of Chehalis

#### Mayor

**Dennis Dawes**

#### Mayor Pro-tem

**Terry Harris**

#### City Council

**Tony Ketchum**

**Daryl Lund**

**Dr. Isaac Pope**

**Robert Spahr**

**Chad Taylor**

#### City Manager

**T. Jill Anderson**

#### Public Works Director

**Rick Sahlin**

#### Project Manager / Wastewater Superintendent

**Patrick Wiltzius**

General  
Cover Sheet

City of Chehalis  
Riverside Forcemain  
Chehalis, Washington

Horizontal Scale: 1"=1000'  
Vertical Scale: ---  
Datum: NAD83/91 NAVD 88  
Survey Book: ---  
Project Phase: ---

Project Milestone:  
**100%**  
Revision Date:  
**04/02/2019**



**GIBBS & OLSON**  
www.gibbs-olson.com  
Project Manager: MEM

Designed by: SB  
CAD by: KAR  
Checked by: SB  
Approved by: MEM

Project Number:  
**0155.1077**

Drawing Number:  
**G1**

Sheet Number:  
**1 of 8**

DRAWING: T:\CIVIL\_3D\PROJECTS\01551077\_ACT\CONTRACT DRAWINGS\GENERAL\DWG\_LAYOUT TAB: G2, PLOT DATE: 4/2/2019 4:24:15 PM, DRAWING SAVE DATE: 3/20/2019 11:41:34 AM, PLOTTED BY: KROGERS, PROFILE: GIBBS & OLSON STANDARD, STANDARD MONOCHROME.CTB, PAPER SIZE: GIBBS & OLSON - PLANSHEET, D SIZE (34.00 X 22.00 INCHES) - CAD USERS, PLOT DEVICE: GIBBS & OLSON STANDARD

### Abbreviations

ADJ	Adjust	MIN	Minimum
AC	Asphalt Concrete	MH	Manhole
ASPH	Asphalt	MJ	Mechanical Joint
ASSY	Assembly	NAVD	North American Vertical Datum
AVE	Avenue	(N)	North
BC	Back of Curb	(NE)	Northeast
BFV	Butterfly Valve	(NW)	Northwest
BLKG	Blocking	NTS	Not to Scale
BLDG	Building	OD	Outside Diameter
BOT	Bottom	O/S	Offset
BVC	Begin Vertical Curve	PC	Point of Curvature
BVCE	Begin Vertical Curve Elevation	PE	Professional Engineer
BVCS	Begin Vertical Curve Station	PERF	Perforated
CARV	Combination Air Release Valve	PERM	Permanent
CB	Catch Basin	PL	Property Line
CD	Control Density Fill	PT	Point of Tangency
CI	Cast Iron	PVC	Polyvinyl Chloride
CL	Centerline	PVMT	Pavement
CL	Class	PKG	Parking
CMP	Corrugated Metal Pipe	PRV	Pressure Reducing Valve
CO	Clean Out	PT	Point of Tangency
CONC	Concrete	PVI	Point of Vertical Intersection
CONST	Construction	PVIE	Point of Vertical Intersection Elevation
CONTR	Contractor	PVIS	Point of Vertical Intersection Station
CPEP	Corrugated Polyethylene Pipe	R	Radius
CPLG	Coupling	RBC	Rebar and Cap
CSBC	Crushed Surfacing Base Course	REQ'D	Required
CSTC	Crushed Surfacing Top Course	RPBA	Reduced Pressure Backflow Assembly
DCDA	Double Check Detector Assembly	RT	Right
DCVA	Double Check Valve Assembly	ROW	Right-of-Way
DI	Ductile Iron	S	Slope
DIA	Diameter	(S)	South
DL	Daylight Earthwork	SD	Storm Drain
DS	Downspout	SDCB	Storm Drain Catch Basin
DWG	Drawing	SDCO	Storm Drain Cleanout
DWY	Driveway	SDMH	Storm Drain Manhole
(E)	East	SDR	Sidewall Dimension Ratio
EC	Erosion Control	(SE)	Southeast
EG	Existing Grade	SHT	Sheet
EGC	Existing Grade at Centerline	SS	Sanitary Sewer
ELEV	Elevation	SSCO	Sanitary Sewer Clean Out
EP	Edge of Pavement	SSMH	Sanitary Sewer Manhole
EVC	End Vertical Curve	SST	Stainless Steel
EVCE	End Vertical Curve Elevation	ST	Street
EVCS	End Vertical Curve Station	STA	Station
EX	Existing	STD	Standard
FCA	Flange Coupling Adapter	STRUCT	Structure
FDC	Fire Department Connection	SW	Sidewalk
FG	Finish Grade	(SW)	Southwest
FGC	Finish Grade at Centerline	TC	Top of Curb
FH	Fire Hydrant	TELE	Telephone
FL	Flow Line	TEMP	Temporary
FLG	Flange	TESC	Temporary Erosion and Sediment Control
FND	Found	THRU	Through
FOC	Face of Curb	TP	Top of Pipe
GV	Gate Valve	TRANS	Transition
HDPE	High Density Polyethylene	TYP	Typical
HMA	Hot Mix Asphalt	UNO	Unless Noted Otherwise
HORIZ	Horizontal	V	Vertical
HYD	Hydrant	VC	Vertical Curve
ILLUM	Illumination	VERT	Vertical
INV	Invert	W/	With
IE	Invert Elevation	(W)	West
INT	Intersection	WSE	Water Surface Elevation
IP	Iron Pipe		
JUNCT	Junction	SYMBOLS	
LT	Left	Δ	Delta
LF	Lineal Feet	#	Number
LS	Landsaped Surface	&	And
MAX	Maximum	@	At
MD	Measure Down	Ø	Diameter
MGL	Milligrams per Liter		

### Legends

#### Existing Line Types

	Existing Building
	Existing Cable TV - Buried
	Existing Centerline Road
	Existing Concrete, Curb, Gutter and Sidewalk
	Existing Creek/Ditch
	Existing Fence
	Existing Gas
	Existing Guardrail
	Existing Gravel
	Existing Pavement Edge
	Existing Power - Aerial
	Existing Power - Buried
	Existing Right-Of-Way
	Existing Sanitary Sewer
	Existing Storm Drain
	Existing Telephone - Buried
	Existing Traffic Signal
	Existing Toe of Slope
	Existing Top of Slope
	Existing Telephone Pole
	Existing Telephone Pole Anchor
	Existing Telephone Riser
	Existing Street Light
	Existing Traffic Signal
	Existing Junction Box
	Existing Gas Valve
	Existing Traffic Signal Cabinet

#### Existing Symbols

	Existing Yard Light
	Existing Hydrant
	Existing Water Meter
	Existing Gate Valve
	Existing Water Vault
	Existing Mail Box
	Existing Sign
	Existing Conifer Tree
	Existing Deciduous Tree
	Existing Shrub
	Existing Power Pole
	Existing Power Pole Anchor
	Existing Power Transformer
	Existing Power Vault
	Existing Sewer Cleanout
	Existing Sewer Manhole
	Existing Storm Culvert
	Existing SDCB
	Existing SDMH
	Existing Telephone Pole
	Existing Telephone Pole Anchor
	Existing Telephone Riser
	Existing Street Light
	Existing Traffic Signal
	Existing Junction Box
	Existing Gas Valve
	Existing Traffic Signal Cabinet

#### Proposed Line Types

	Proposed Sanitary Sewer Line
	Proposed Saw Cut Line
	Proposed Silt Fencing
	Utility to be Removed/Abandoned

#### Proposed Symbols

	Proposed SSMH
	Proposed SSCO
	Proposed Air Relief
	Proposed Plug Valve
	Proposed MJ
	Proposed Reducer
	Proposed Ball Valve
	Proposed Thrust Block

### Sanitary Sewer Main Installation

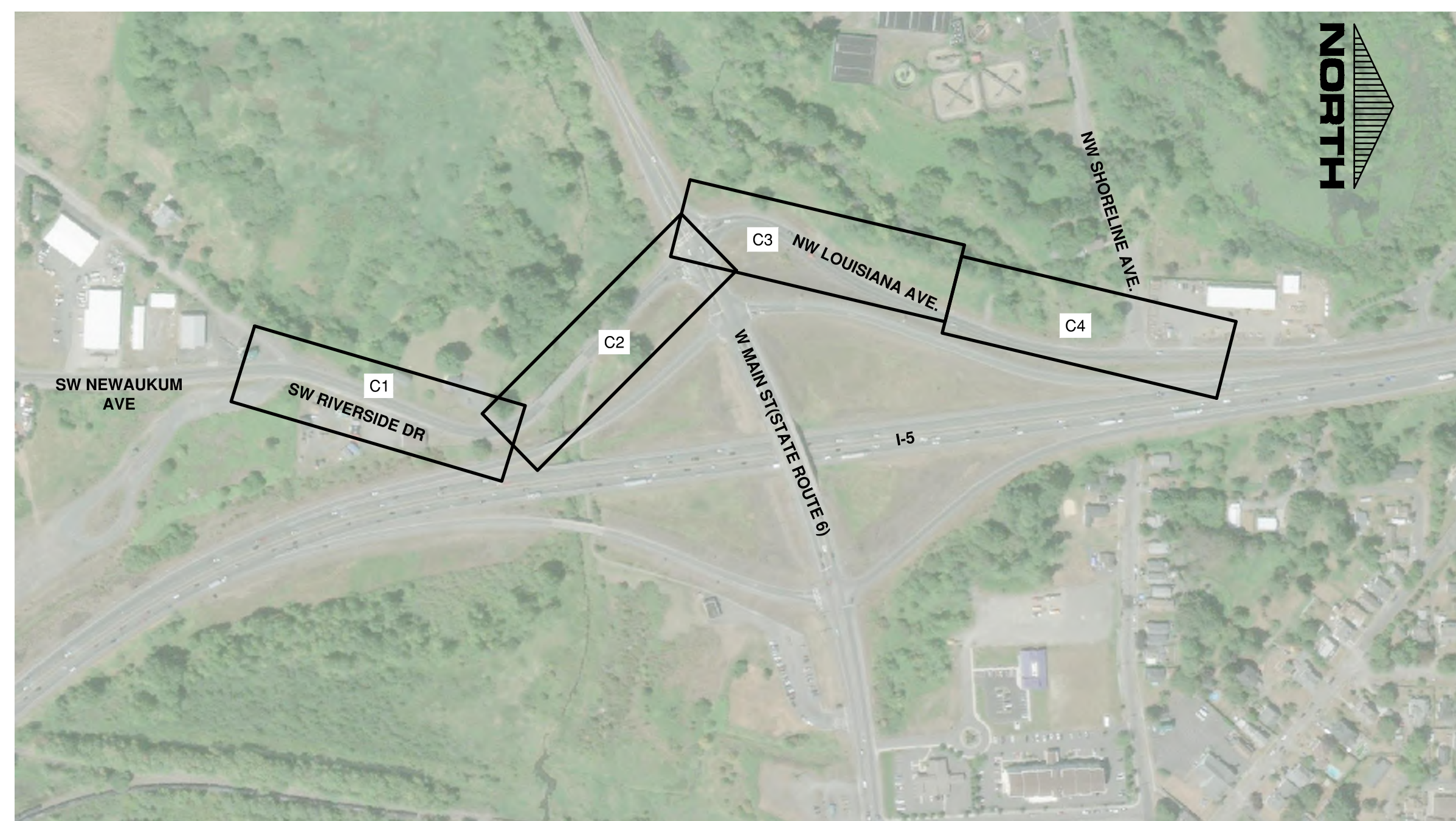
- ALL WORKMANSHIP AND MATERIALS WILL BE IN ACCORDANCE WITH CITY OF CHEHALIS STANDARDS AND THE MOST RECENT COPY OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION (WSDOT/APWA).
- CITY OF CHEHALIS DATUM WILL BE USED FOR ALL VERTICAL CONTROL. A LIST OF BENCHMARKS IS AVAILABLE AT THE PUBLIC WORKS DEPARTMENT.
- ALL APPROVALS AND PERMITS REQUIRED BY THE CITY OF CHEHALIS AND WSDOT WILL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
- IF CONSTRUCTION IS TO TAKE PLACE IN THE COUNTY RIGHT-OF-WAY, THE CONTRACTOR WILL NOTIFY THE COUNTY AND OBTAIN ALL THE REQUIRED APPROVALS AND PERMITS.
- A PRE-CONSTRUCTION MEETING WILL BE HELD WITH THE PUBLIC WORKS DEPARTMENT AND THE ENGINEERING DIVISION PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR WILL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR WILL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UTILITIES UNDERGROUND LOCATION CENTER AT 811 A MINIMUM OF TWO BUSINESS DAYS PRIOR TO ANY EXCAVATION.
- ALL SEWER MAINS WILL BE FIELD STAKED FOR GRADES AND ALIGNMENT BY A LICENSED ENGINEERING OR SURVEYING FIRM QUALIFIED TO PERFORM SUCH WORK. STAKING WILL BE MAINTAINED THROUGHOUT CONSTRUCTION.
- ALL PIPE AND SERVICES WILL BE INSTALLED WITH CONTINUOUS TRACER TAPE PLACED 12 TO 18 INCHES UNDER THE PROPOSED FINISHED SUBGRADE. THE MARKER WILL BE OF PLASTIC, NONBIODEGRADABLE, METAL CORE OR BACKING MARKED "SEWER" THAT CAN BE DETECTED BY A STANDARD METAL DETECTOR. IF VISIBILITY CANNOT BE MAINTAINED BETWEEN STRUCTURES ALONG THE STRAIGHT ALIGNMENT OF A SEWER, TONING WIRE WILL BE INSTALLED ABOVE THE SEWER LINE AT A DEPTH NO GREATER THAN 48 INCHES. TAPE WILL BE TERRA TAPE "D" OR AN APPROVED EQUAL. IN ADDITION, STEP MAINS, FORCE MAINS, AND CURVILINEAR SEWERS WILL BE INSTALLED WITH TONING WIRE TAPED TO THE TOP OF THE PIPE TO PREVENT MOVEMENT DURING BACKFILL.
- TONING WIRE IS REQUIRED, IT WILL BE UL LISTED, TYPE UF, 14-GAUGE COPPER. THE WIRE WILL BE LAID LOOSELY ENOUGH TO PREVENT STRETCHING AND DAMAGE.
- BEDDING OF THE SEWER MAIN AND COMPACTION OF THE BACKFILL MATERIAL WILL BE REQUIRED IN ACCORDANCE WITH THE ABOVE SPECIFICATION (SEE GENERAL NOTE 1).
- WHEN TEMPORARY STREET PATCHING IS ALLOWED BY THE CITY, COLD MIX ASPHALT WILL BE PLACED TO A MAXIMUM DEPTH OF ONE INCH. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE AS REQUIRED BY THE CITY.
- EROSION CONTROL MEASURES CONFORMING TO THE MOST RECENT VERSION OF THE CITY OF CHEHALIS STORM WATER MANAGEMENT PLAN AND ARTICLE IV OF THIS CHAPTER WILL BE TAKEN BY THE CONTRACTOR DURING CONSTRUCTION TO PREVENT INFILTRATION OF EXISTING AND PROPOSED STORM DRAINAGE FACILITIES AND ROADWAYS.
- PROVIDE TRAFFIC CONTROL PLAN(S) IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS REQUIRED.
- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE A COPY OF THE APPROVED CONSTRUCTION PLANS ON SITE AT ALL TIMES. APPROVED PLANS ARE TYPICALLY SIGNIFIED BY THE SIGNATURE OF THE DIRECTOR OF PUBLIC WORKS OR DESIGNATED CONSULTANT.
- PRIOR TO BACKFILL, ALL MAINS AND APPURTENANCES WILL BE INSPECTED AND APPROVED BY A CITY INSPECTOR. APPROVAL DOES NOT CONSTITUTE FINAL ACCEPTANCE OF THE SEWER LINE. THE CONTRACTOR WILL RETAIN RESPONSIBILITY TO REPAIR ALL DEFICIENCIES AND FAILURES REVEALED DURING ALL REQUIRED TESTING FOR ACCEPTANCE AND THROUGHOUT THE DURATION OF THE WARRANTY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEERING DIVISION IN ADVANCE OF ALL REQUIRED INSPECTIONS. ANY MAIN OR APPURTENANCE BACKFILLED PRIOR TO INSPECTION WILL BE RE-EXCAVATED FOR INSPECTION AT NO COST TO THE CITY.
- PARCEL, COUNTY, CITY AND WSDOT RIGHT OF WAY LINE AS SHOWN ON THIS DRAWING SET ARE APPROXIMATE.
- CONTRACTOR IS RESPONSIBLE FOR POTHOLE AND EXPOSURE OF EXISTING SEWER FORCE MAINS AT TIE-INS, CONNECTIONS AT BRIDGE, AND UTILITY CROSSINGS REQUIRED ON THE PLANS TO VERIFY ELEVATIONS OF EXISTING UTILITIES.
- SEWER FORCE MAINS SHALL HAVE A MINIMUM OF 36- INCHES OF COVER.
- ALL EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE AND REPLACED WITH IMPORTED BAKCFILL IN ACCORDANCE WITH NOTE 1 ABOVE.
- ALL MECHANICAL JOINTS SHALL BE RESTRAINED ON FORCE MAIN.

### Survey Control Notes

- IN ACCORDANCE WITH THE PROVISIONS OF WASHINGTON ADMINISTRATIVE CODE (WAC) CHAPTER 332-120 AND THE REVISED CODE OF WASHINGTON (RCW) TITLE 58; ANY MONUMENT SHOWN ON THIS PLAN SET OR FOUND IN THE FIELD WHICH CANNOT BE PROTECTED AND WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION, SHALL BE REFERENCED BY A LICENSED SURVEYOR, AND AN APPLICATION FILED WITH THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES (DNR), PER WAC 322-120-050 PRIOR TO THE MONUMENT BEING DISTURBED OR DESTROYED.
- THE CONTRACTOR SHALL NOTIFY THE CITY AND A COPY OF EACH DNR APPLICATION SUBMITTED SHALL BE PROVIDED TO THE CITY ENGINEER.
- WHEN CONSTRUCTION WORK IS COMPLETE, THE CONTRACTOR'S CONSTRUCTION SURVEYOR SHALL VERIFY THE MONUMENTS SHOWN ON THIS PLAN SET ARE STILL IN PLACE AND SUBMIT A STAMPED AND SIGNED REPORT TO THE CITY DOCUMENTING THEIR CONDITION. ANY MONUMENTS DISTURBED OR DESTROYED SHALL BE REPLACED BY THE CONTRACTOR'S SURVEYOR IN ACCORDANCE WITH WAC CHAPTER 332-120.
- NO PART OF THIS STATEMENT SHALL RELIEVE THE CONTRACTOR OR THEIR SURVEYOR OF ANY OTHER PROVISIONS OF THE WAC OR RCW WITH REGARDS TO DUTIES AND RESPONSIBILITIES RELATED TO SURVEY MONUMENTATION AND ITS PRESERVATION OR REPLACEMENT.


Survey Control Data				
Point No.	Northing	Easting	Elevation	Description
1	493194.41	1017979.00	185.07	MONUMENT NW OF SW RIVERSIDE DR BRIDGE
2	493538.55	1017626.26	190.85	MAG NAIL AT NW CORNER AT W MAIN ST & NW LOUISIANA AVE
3	494224.45	1017907.04	185.59	MAG NAIL WEST OF NW LOUISIANA AVE

Sheet Index		
Sheet No.	Drawing No.	Sheet Title
General		
1	G1	Cover Sheet
2	G2	Legend, Sheet Index, & Abbreviations
Civil		
3	C1	Sewer Plan & Profile
4	C2	Sewer Plan & Profile
5	C3	Sewer Plan & Profile
6	C4	Sewer Plan & Profile
Details		
7	D1	Standard Details
8	D2	Standard Details



### Drawing Index

Scale: 1" = 300'



**Know what's below.  
Call 811 before you dig.**

CAUTION: LOCATION OF EXISTING UTILITIES SHOWN IS APPROXIMATE AND MAY NOT BE ACCURATE OR ALL INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY LOCATION AND DEPTH OF UTILITIES PRIOR TO PROCEEDING WITH CONSTRUCTION.

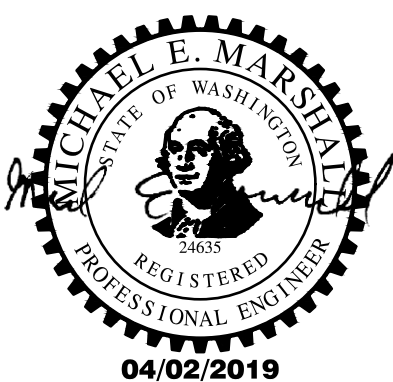
**General**

**City of Chehalis**

**Riverside Foremain**

**Chehalis, Washington**

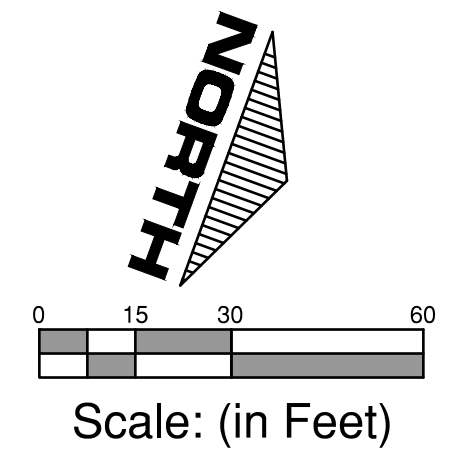
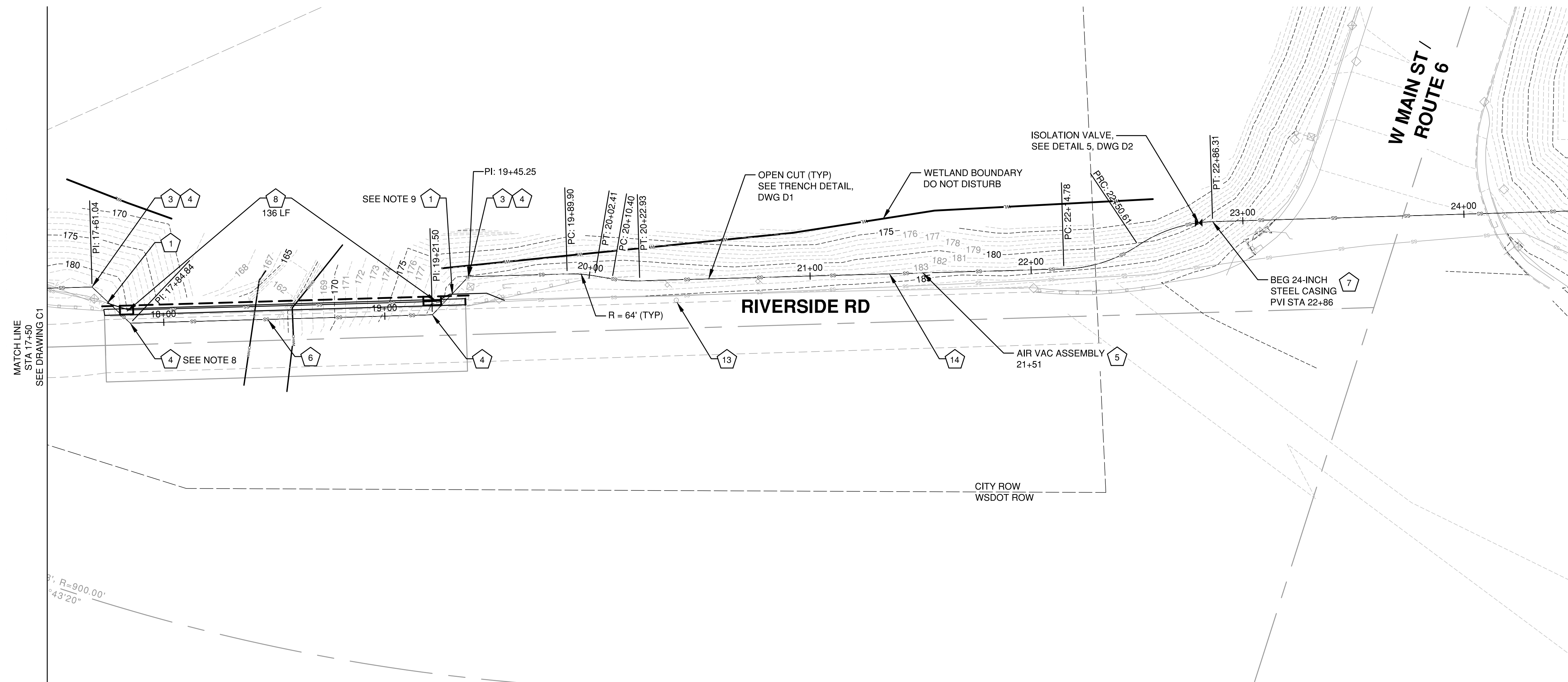
Horizontal Scale: 1"=300'  
Vertical Scale: ---  
Datum: NAD83/91 NAVD 88  
Survey Book: ---  
Project Phase: ---  
Project Milestone: **100%**  
Revision Date: **04/02/2019**



**GIBBS & OLSON**  
www.gibbs-olson.com  
Project Manager: MEM  
Designed by: SB  
CAD by: KAR  
Checked by: SB  
Approved by: MEM  
Project Number: **0155.1077**  
Drawing Number: **G2**  
Sheet Number: **2 of 8**

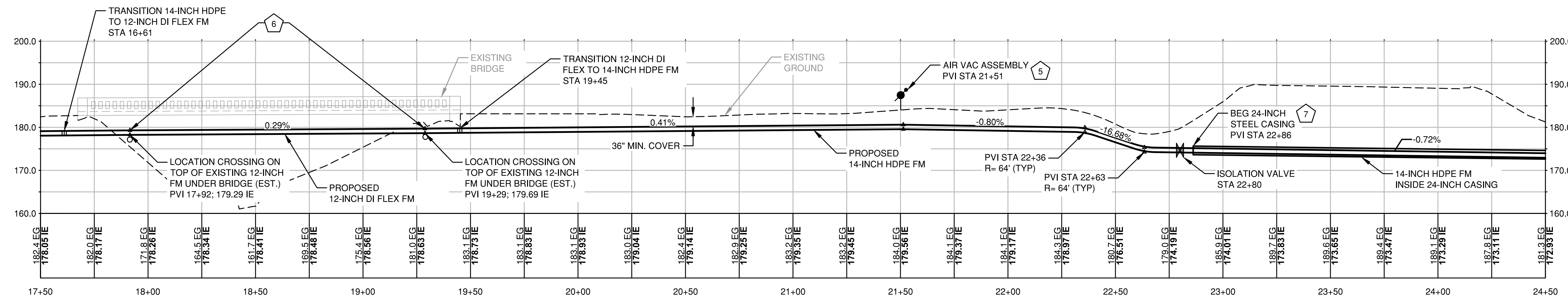


DRAWING: T:\CIVIL\_3D\PROJECTS\0151077\ACT\CONTRACT DRAWINGS\SANITARY SEWER CONTRACT DRAWINGS.DWG, LAYOUT TAB: C2, PLOT DATE: 4/2/2019 4:24:31 PM, DRAWING SAVE DATE: 4/2/2019 3:41:18 PM, PLOTTED BY: KROGERS  
 PROFILE: GIBBS & OLSON STANDARD, DWG TO PLOT: PLOT DEVICE: GIBBS-OLSON STANDARD MONOCHROME.CTB, PAPER SIZE: GIBBS & OLSON - PLANSHEET, D SIZE (34.00 X 22.00 INCHES)



- SEWER FORCEMAIN CONSTRUCTION NOTES**
- 1 POT HOLE UTILITY CROSSING
  - 2 PROTECT MAIL BOXES
  - 3 INSTALL RESTRAIN TRANSITION FROM HDPE TO DI FLEX PIPE
  - 4 INSTALL RESTRAINED DI FLEX 45° BEND FITTING
  - 5 INSTALL AIR VAC ASSEMBLY PER DETAIL 1, DWG D2
  - 6 INSTALL PIPE HANGERS ON BRIDGE PER DETAIL 2, DWG D2
  - 7 INSTALL 24-INCH STEEL CASING WITH SPACERS AND END CAPS PER DETAIL DWG D1
  - 8 REMOVE EXISTING 10-INCH DUCTILE IRON PIPE, FITTINGS, COVER, AND HANGERS FROM BRIDGE. SEE NOTE 7.
  - 9 CONNECT NEW 14-INCH FM TO EXISTING 10-INCH PER DETAIL 3, DWG D2
  - 10 REMOVE EXISTING 12-INCH FM AND PLUG REMAINING PIPE END
  - 11 OPEN CUT STREET AND INSTALL FULL LANE PATCH. REMOVE AND REPLACE EXISTING CURB PER DETAIL DWG D1
  - 12 INSTALL NEW CONCRETE DRIVEWAY PER DETAIL DWG D2
  - 13 REMOVE EXISTING AIR VAC ASSEMBLY
  - 14 TRACER WIRE LOCATOR BOX AND POST PER DETAIL DWG D1

- GENERAL CONSTRUCTION NOTES:**
1. PROPERTY LINES ARE SHOWN AS APPROXIMATE AND ARE DISPLAYED FOR CONVENIENCE ONLY.
  2. HDPE 14-INCH FORCE MAIN (FM) SHALL BE SDR-11.
  3. EXISTING UTILITY CROSSING FM SHALL BE POTHOLED 150 FEET AHEAD OF INSTALLATION. ALL UTILITIES FOUND TO BE IN CONFLICT SHALL BE REPORTED TO THE ENGINEER AND GRADE SHALL BE MODIFIED PER ENGINEER'S DIRECTION.
  4. ALL REMAINING ABANDONED-IN-PLACE PIPES ARE TO BE PLUGGED WITH 2 FEET OF CONCRETE AS INDICATED ON PLANS.
  5. REMOVE EXISTING AIR VACS AFTER NEW LINE IS IN SERVICE AND ACCEPTED.
  6. WSDOT REQUIRES CONTRACTOR TO SUBMIT SHORING PLAN FOR BORING 170 FOOT CASING ACROSS STATE ROUTE.
  7. REMOVE EXISTING 10-INCH DI PIPE AND SET UP TEMPORARY BYPASS PER SPECIFICATIONS.
  8. CONTRACTOR TO POSITION AS NEEDED TO PARALLEL EXISTING FM. DEMO EXISTING FM AND LAY TEMP PIPE FOR BRIDGE CROSSING
  9. AT BRIDGE ENDS POTHOLE EXISTING FM TO IDENTIFY CLEARANCE FOR NEW FM LIMITED EQUIPMENT ACCESS (TYP)



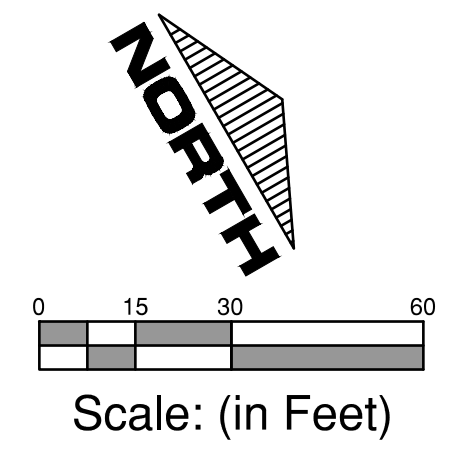
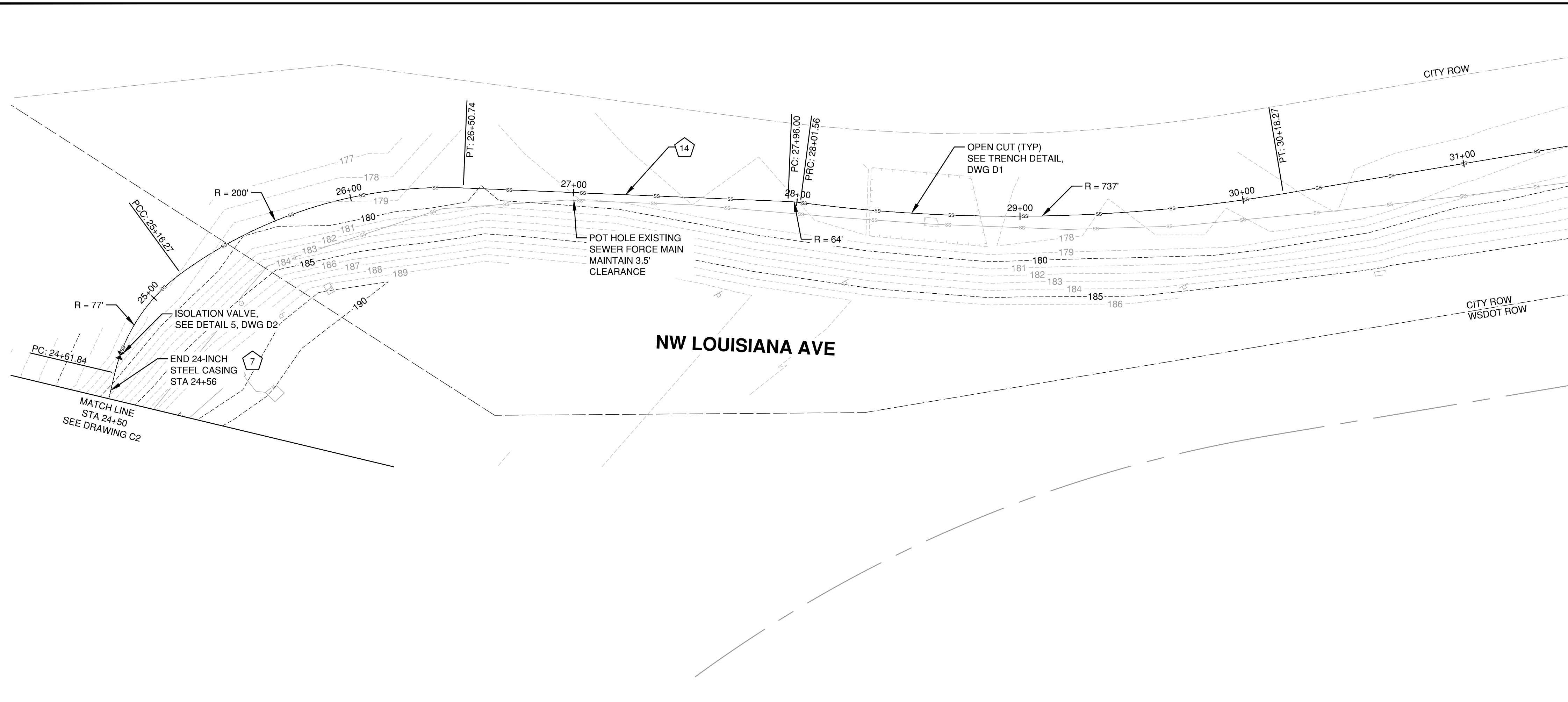
**Profile**  
 Horiz Scale: 1" = 30'  
 Vert Scale: 1" = 2'

City of Chehalis	Civil	Sewer Plan & Profile
Riverside Forcemain		Sta 17+50 to 24+50
Chehalis, Washington		

Horizontal Scale: 1" = 30'  
 Vertical Scale: 1" = 2'  
 Datum: NAD83/91 NAVD 88  
 Survey Book: ---  
 Project Phase: ---  
 Project Milestone: **100%**  
 Revision Date: **04/02/2019**

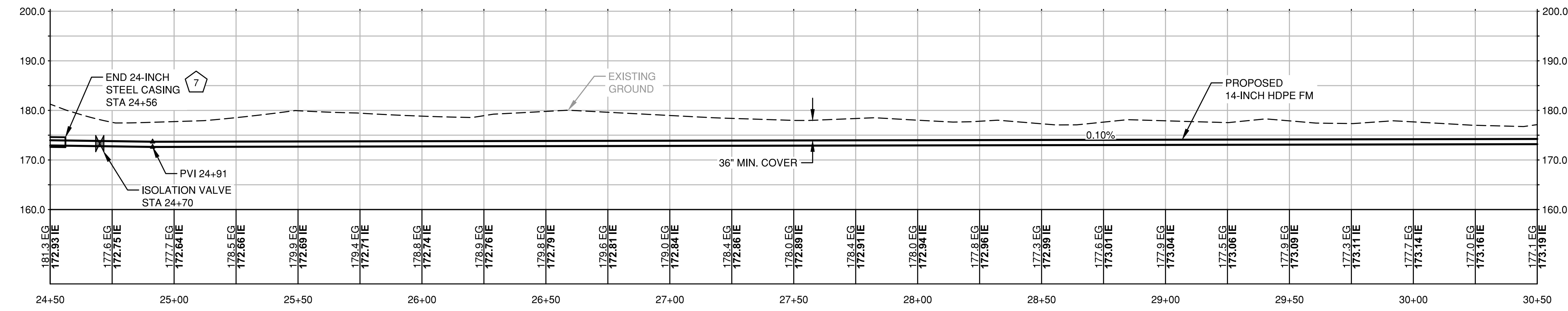
**GIBBS & OLSON**  
 www.gibbs-olson.com  
 Project Manager: MEM  
 Designed by: SB  
 CAD by: KAR  
 Checked by: SB  
 Approved by: MEM  
 Project Number: **0155.1077**  
 Drawing Number:  
**C2**  
 Sheet Number:  
**4 of 8**

DRAWING: T:\CIVIL\_3D\PROJECTS\01551077\ACT\CONTRACT DRAWINGS\SANITARY SEWER CONTRACT DRAWINGS.DWG, LAYOUT TAB: C3, PLOT DATE: 4/2/2019 4:24:36 PM, PLOTTED BY: KROGERS  
 PROFILE: GIBBS & OLSON STANDARD, 2018 - CSD, IMPERIAL, 2018 - CAD, USERS: GIBBS & OLSON - DWG TO PDF.PC3, PLOT STYLE TABLE: GIBBS-OLSON.STANDARD MONOCHROME.CTB, PAPER SIZE: GIBBS & OLSON - PLANSHEET, D SIZE (34.00 X 22.00 INCHES)



- SEWER FORCEMAIN CONSTRUCTION NOTES**
- 1 POT HOLE UTILITY CROSSING
  - 2 PROTECT MAIL BOXES
  - 3 INSTALL RESTRAIN TRANSITION FROM HDPE TO DI FLEX PIPE
  - 4 INSTALL RESTRAINED DI FLEX 45° BEND FITTING
  - 5 INSTALL AIR VAC ASSEMBLY PER DETAIL 1, DWG D2
  - 6 INSTALL PIPE HANGERS ON BRIDGE PER DETAIL 2, DWG D2
  - 7 INSTALL 24-INCH STEEL CASING WITH SPACERS AND END CAPS PER DETAIL DWG D1
  - 8 REMOVE EXISTING 10-INCH DUCTILE IRON PIPE, FITTINGS, COVER, AND HANGERS FROM BRIDGE. SEE NOTE 7.
  - 9 CONNECT NEW 14-INCH FM TO EXISTING 10-INCH PER DETAIL 3, DWG D2
  - 10 REMOVE EXISTING 12-INCH FM AND PLUG REMAINING PIPE END
  - 11 OPEN CUT STREET AND INSTALL FULL LANE PATCH. REMOVE AND REPLACE EXISTING CURB PER DETAIL DWG D1
  - 12 INSTALL NEW CONCRETE DRIVEWAY PER DETAIL DWG D2
  - 13 REMOVE EXISTING AIR VAC ASSEMBLY
  - 14 TRACER WIRE LOCATOR BOX AND POST PER DETAIL DWG D1

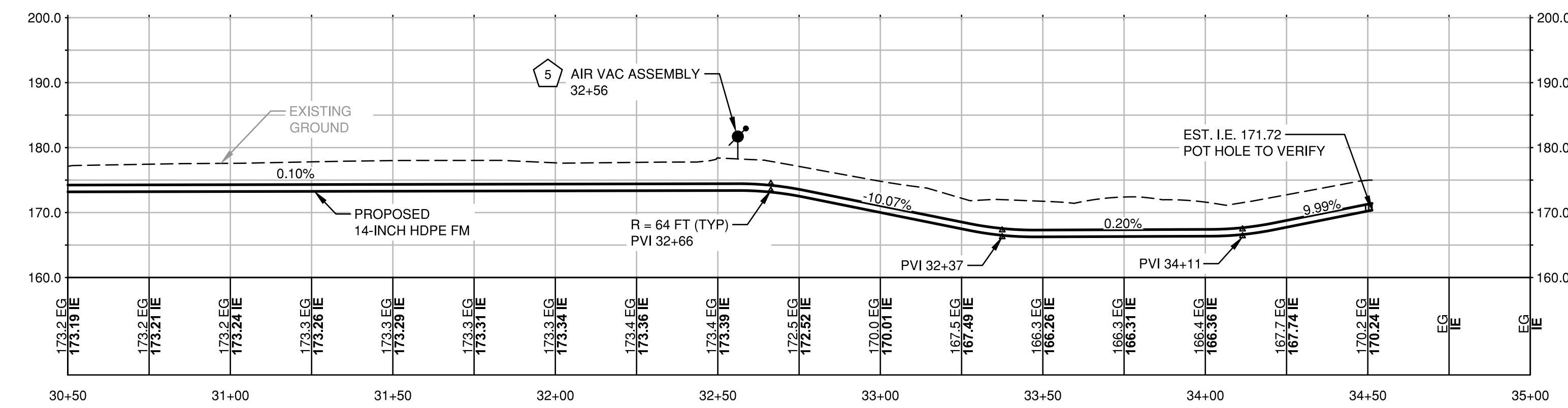
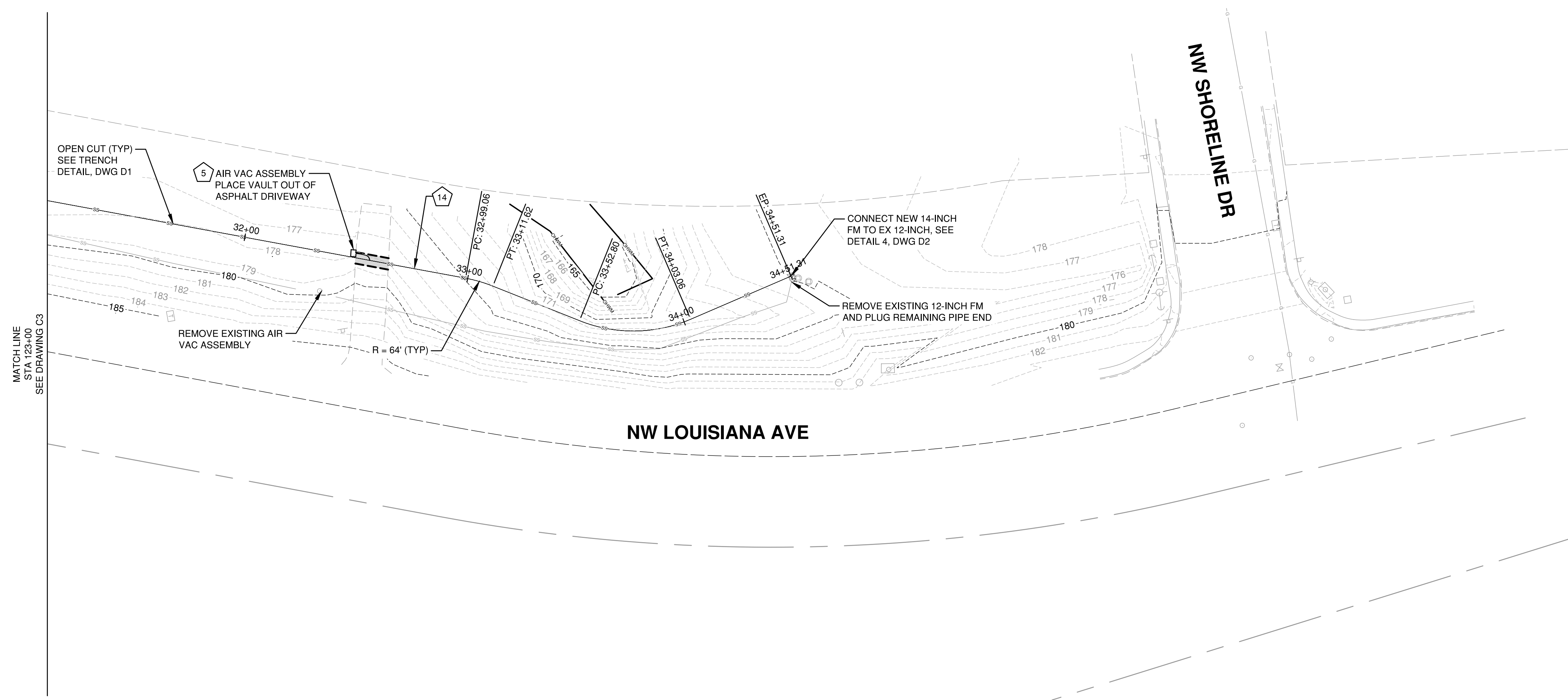
- GENERAL CONSTRUCTION NOTES:**
1. PROPERTY LINES ARE SHOWN AS APPROXIMATE AND ARE DISPLAYED FOR CONVENIENCE ONLY.
  2. HDPE 14-INCH FORCE MAIN (FM) SHALL BE SDR-11.
  3. EXISTING UTILITY CROSSING FM SHALL BE POTHOLED 150 FEET AHEAD OF INSTALLATION. ALL UTILITIES FOUND TO BE IN CONFLICT SHALL BE REPORTED TO THE ENGINEER AND GRADE SHALL BE MODIFIED PER ENGINEER'S DIRECTION.
  4. ALL REMAINING ABANDONED-IN-PLACE PIPES ARE TO BE PLUGGED WITH 2 FEET OF CONCRETE AS INDICATED ON PLANS.
  5. REMOVE EXISTING AIR VACS AFTER NEW LINE IS IN SERVICE AND ACCEPTED.
  6. WSDOT REQUIRES CONTRACTOR TO SUBMIT SHORING PLAN FOR BORING 170 FOOT CASING ACROSS STATE ROUTE.
  7. REMOVE EXISTING 10-INCH DI PIPE AND SET UP TEMPORARY BYPASS PER SPECIFICATIONS.
  8. CONTRACTOR TO POSITION AS NEEDED TO PARALLEL EXISTING FM. DEMO EXISTING FM AND LAY TEMP PIPE FOR BRIDGE CROSSING
  9. AT BRIDGE ENDS POTHOLE EXISTING FM TO IDENTIFY CLEARANCE FOR NEW FM LIMITED EQUIPMENT ACCESS (TYP)



**Profile**  
 Horiz Scale: 1" = 30'  
 Vert Scale: 1" = 2'

City of Chehalis	Civil	Riverside Forcemain	Sewer Plan & Profile	Sta 24+50 to 31+50
<p>Horizontal Scale: 1" = 30'          Vertical Scale: 1" = 2'</p> <p>Datum: NAD83/91 NAVD 88          Survey Book: ---          Project Phase: ---</p> <p>Project Milestone:  <span style="font-size: 1.2em; font-weight: bold;">100%</span></p> <p>Revision Date:  <span style="font-size: 1.2em; font-weight: bold;">04/02/2019</span></p>				
<p><b>GIBBS &amp; OLSON</b>          www.gibbs-olson.com          Project Manager: MEM          Designed by: SB          CAD by: KAR          Checked by: SB          Approved by: MEM          Project Number:  <span style="font-size: 1.2em; font-weight: bold;">0155.1077</span>          Drawing Number:  <span style="font-size: 1.2em; font-weight: bold;">C3</span>          Sheet Number:  <span style="font-size: 1.2em; font-weight: bold;">5 of 8</span></p>				

DRAWING: T:\CIVIL\_3D\PROJECTS\01551077\CONTRACT DRAWINGS\SANITARY SEWER CONTRACT DRAWINGS.DWG, LAYOUT TAB: C4, PLOT DATE: 4/2/2019 4:24:41 PM, PLOTTED BY: KROGERS  
 PROFILE: GIBBS & OLSON STANDARD, 2018 - CAD USERS, PLOT DEVICE: GIBBS-OLSON, STANDARD MONOCHROME.CTB, PAPER SIZE: GIBBS & OLSON - PLANSHEET, D SIZE (34.00 X 22.00 INCHES)



**Profile**  
 Horiz Scale: 1" = 30'  
 Vert Scale: 1" = 2'

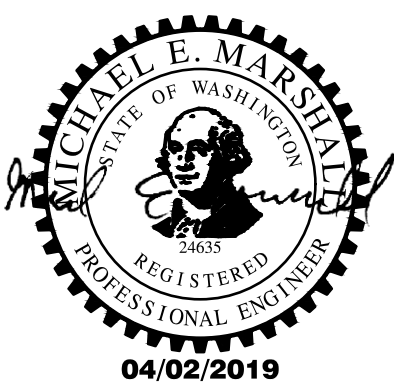
- SEWER FORCEMAIN CONSTRUCTION NOTES**
- 1 POT HOLE UTILITY CROSSING
  - 2 PROTECT MAIL BOXES
  - 3 INSTALL RESTRAIN TRANSITION FROM HDPE TO DI FLEX PIPE
  - 4 INSTALL RESTRAINED DI FLEX 45° BEND FITTING
  - 5 INSTALL AIR VAC ASSEMBLY PER DETAIL 1, DWG D2
  - 6 INSTALL PIPE HANGERS ON BRIDGE PER DETAIL 2, DWG D2
  - 7 INSTALL 24-INCH STEEL CASING WITH SPACERS AND END CAPS PER DETAIL DWG D1
  - 8 REMOVE EXISTING 10-INCH DUCTILE IRON PIPE, FITTINGS, COVER, AND HANGERS FROM BRIDGE. SEE NOTE 7.
  - 9 CONNECT NEW 14-INCH FM TO EXISTING 10-INCH PER DETAIL 3, DWG D2
  - 10 REMOVE EXISTING 12-INCH FM AND PLUG REMAINING PIPE END
  - 11 OPEN CUT STREET AND INSTALL FULL LANE PATCH. REMOVE AND REPLACE EXISTING CURB PER DETAIL DWG D1
  - 12 INSTALL NEW CONCRETE DRIVEWAY PER DETAIL DWG D2
  - 13 REMOVE EXISTING AIR VAC ASSEMBLY
  - 14 TRACER WIRE LOCATOR BOX AND POST PER DETAIL DWG D1

- GENERAL CONSTRUCTION NOTES:**
1. PROPERTY LINES ARE SHOWN AS APPROXIMATE AND ARE DISPLAYED FOR CONVENIENCE ONLY.
  2. HDPE 14-INCH FORCE MAIN (FM) SHALL BE SDR-11.
  3. EXISTING UTILITY CROSSING FM SHALL BE POTHOLED 150 FEET AHEAD OF INSTALLATION. ALL UTILITIES FOUND TO BE IN CONFLICT SHALL BE REPORTED TO THE ENGINEER AND GRADE SHALL BE MODIFIED PER ENGINEER'S DIRECTION.
  4. ALL REMAINING ABANDONED-IN-PLACE PIPES ARE TO BE PLUGGED WITH 2 FEET OF CONCRETE AS INDICATED ON PLANS.
  5. REMOVE EXISTING AIR VACS AFTER NEW LINE IS IN SERVICE AND ACCEPTED.
  6. WSDOT REQUIRES CONTRACTOR TO SUBMIT SHORING PLAN FOR BORING 170 FOOT CASING ACROSS STATE ROUTE.
  7. REMOVE EXISTING 10-INCH DI PIPE AND SET UP TEMPORARY BYPASS PER SPECIFICATIONS.
  8. CONTRACTOR TO POSITION AS NEEDED TO PARALLEL EXISTING FM. DEMO EXISTING FM AND LAY TEMP PIPE FOR BRIDGE CROSSING
  9. AT BRIDGE ENDS POTHOLE EXISTING FM TO IDENTIFY CLEARANCE FOR NEW FM LIMITED EQUIPMENT ACCESS (TYP)

City of Chehalis	Civil
Riverside Forcemain	Sewer Plan & Profile
Chehalis, Washington	Sta 31+50 to 34+51

Horizontal Scale: 1" = 30'  
 Vertical Scale: 1" = 2'  
 Datum: NAD83/91 NAVD 88  
 Survey Book: ---  
 Project Phase: ---

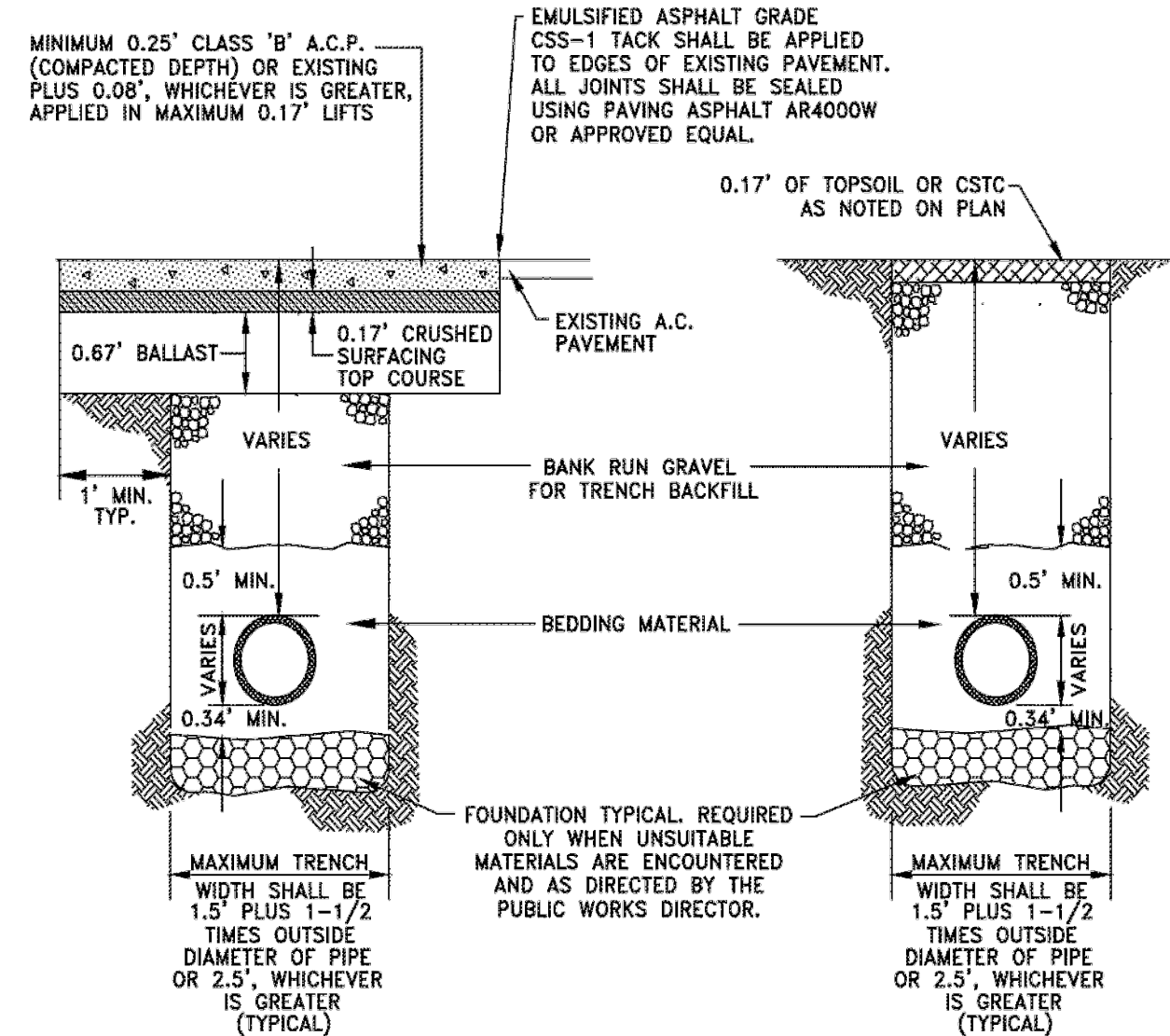
Project Milestone:  
**100%**  
 Revision Date:  
**04/02/2019**



**GIBBS & OLSON**  
 www.gibbs-olson.com  
 Project Manager: MEM  
 Designed by: SB  
 CAD by: KAR  
 Checked by: SB  
 Approved by: MEM

Project Number:  
**0155.1077**  
 Drawing Number:  
**C4**  
 Sheet Number:  
**6 of 8**

DRAWING: T:\CIVIL\_3D\PROJECTS\0151077.ACT\CONTRACT DRAWINGS\DETAILS\DWG. LAYOUT TAB: 01, PLOT DATE: 4/2/2019 4:24:47 PM, DRAWING SAVE DATE: 4/2/2019 4:22:21 PM, PLOTTED BY: KROGERS PROFILE: GIBBS & OLSON STANDARD --- CAD USERS: PLOT DEVICE: GIBBS & OLSON --- DWG TO PDF.PC3, PLOT STYLE TABLE: GIBBS-OLSON STANDARD MONOCHROME.CTB, PAPER SIZE: GIBBS & OLSON --- PANSHEET D SIZE (34.00 X 22.00 INCHES)



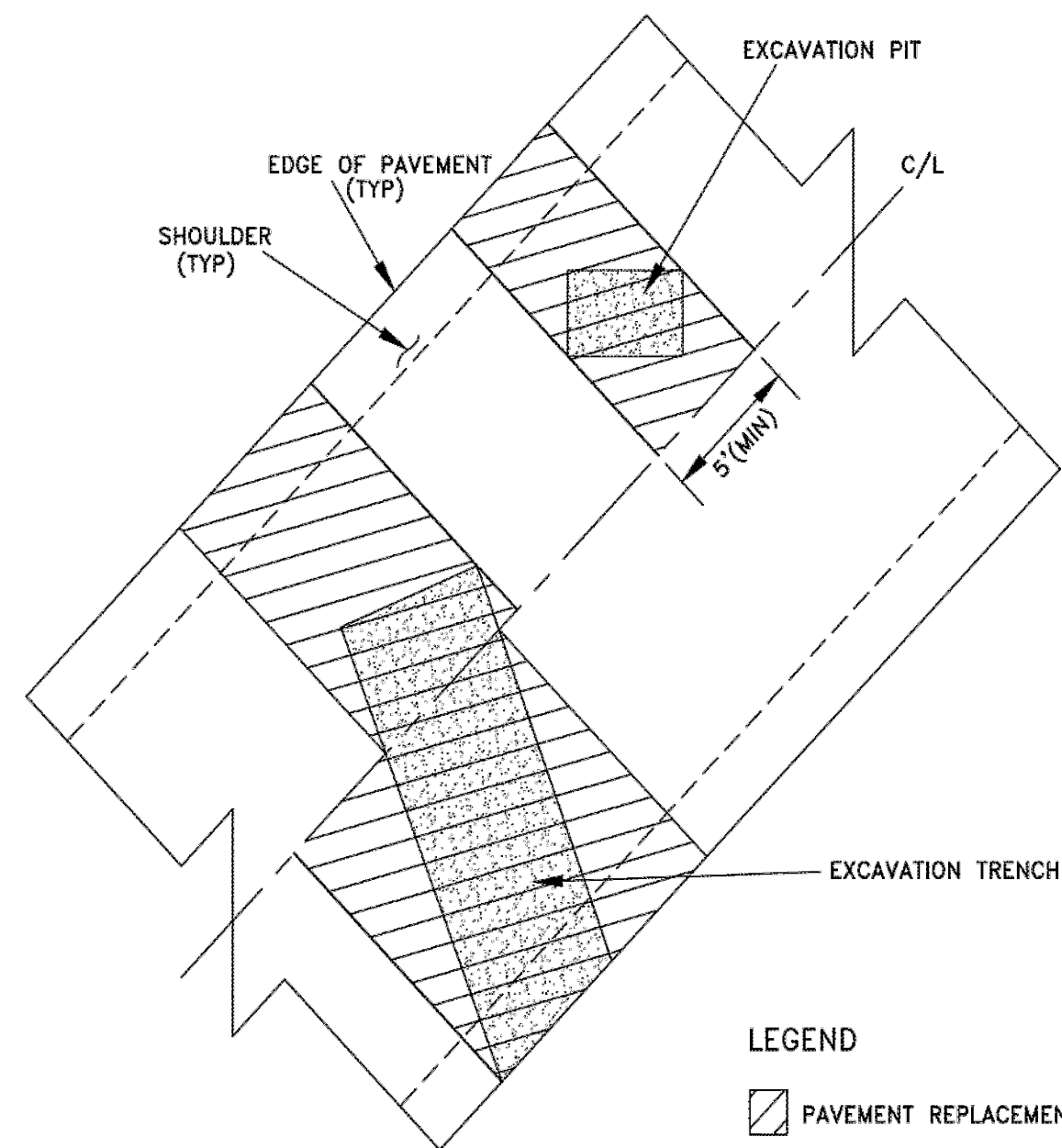
- NOTES:
1. ALL MATERIALS EXCEPT A.C.P. AND BEDDING MATERIAL SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY.
  2. BEDDING SHALL CONFORM TO SECTION 9-03.16 OF STANDARD SPECIFICATIONS AS AMENDED BY CITY OF CHEHALIS STANDARDS.
  3. COMPACTION: BEDDING SHALL BE COMPACTED TO 95% MAX. AS DETERMINED BY ASTM D1557. BACKFILL SHALL BE COMPACTED TO 85% IN UNPAVED AREA AND 95% IN PAVED OR SHOULDER AREAS AS DETERMINED BY ASTM D1557.
  4. ALL MATERIALS, WORKMANSHIP, AND INSTALLATION SHALL BE IN CONFORMANCE WITH THE MOST RECENT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AS AMENDED BY CITY OF CHEHALIS PUBLIC WORKS STANDARDS.
  5. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. A BELL JOINT SHALL BE REQUIRED AT EACH JOINT FOR PROPER SUPPORT. NO TEMPORARY SUPPORTS, I.E. BLOCKS, WILL BE ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.

*City of Chehalis*

**TRENCH PAVEMENT RESTORATION DETAIL**

APPROVED BY	DWG. NO.
<i>James R Nichols</i>	2-4
CITY ENGINEER	REVISOR DATE
	1/02/2003

Drawing Not to Scale



- LEGEND
- [Hatched Box] PAVEMENT REPLACEMENT
  - [Dotted Box] EXCAVATION

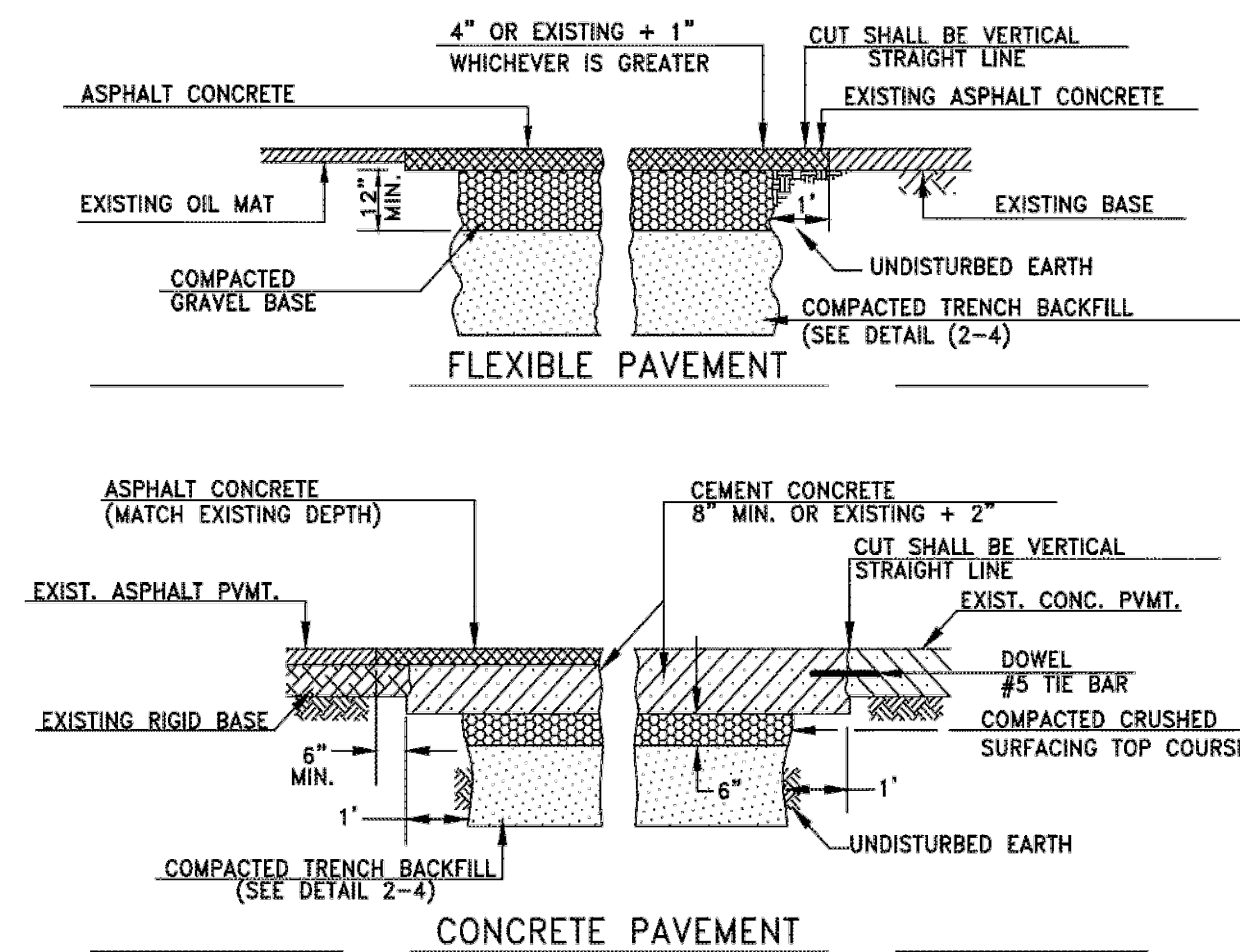
- NOTE:
1. MINIMUM RESTORATION WIDTH = 5 FEET

*City of Chehalis*

**PAVEMENT RESTORATION**

APPROVED BY	DWG. NO.
<i>James R Nichols</i>	2-5
CITY ENGINEER	REVISOR DATE
	1/02/2003

Drawing Not to Scale



CEMENT CONCRETE REPLACEMENT WIDTH	DOWEL BAR LENGTH	SPACING
LESS THAN 4'	16"	18" O.C.
4' - 6'	24"	18" O.C.
GREATER THAN 6'	30"	18" O.C.

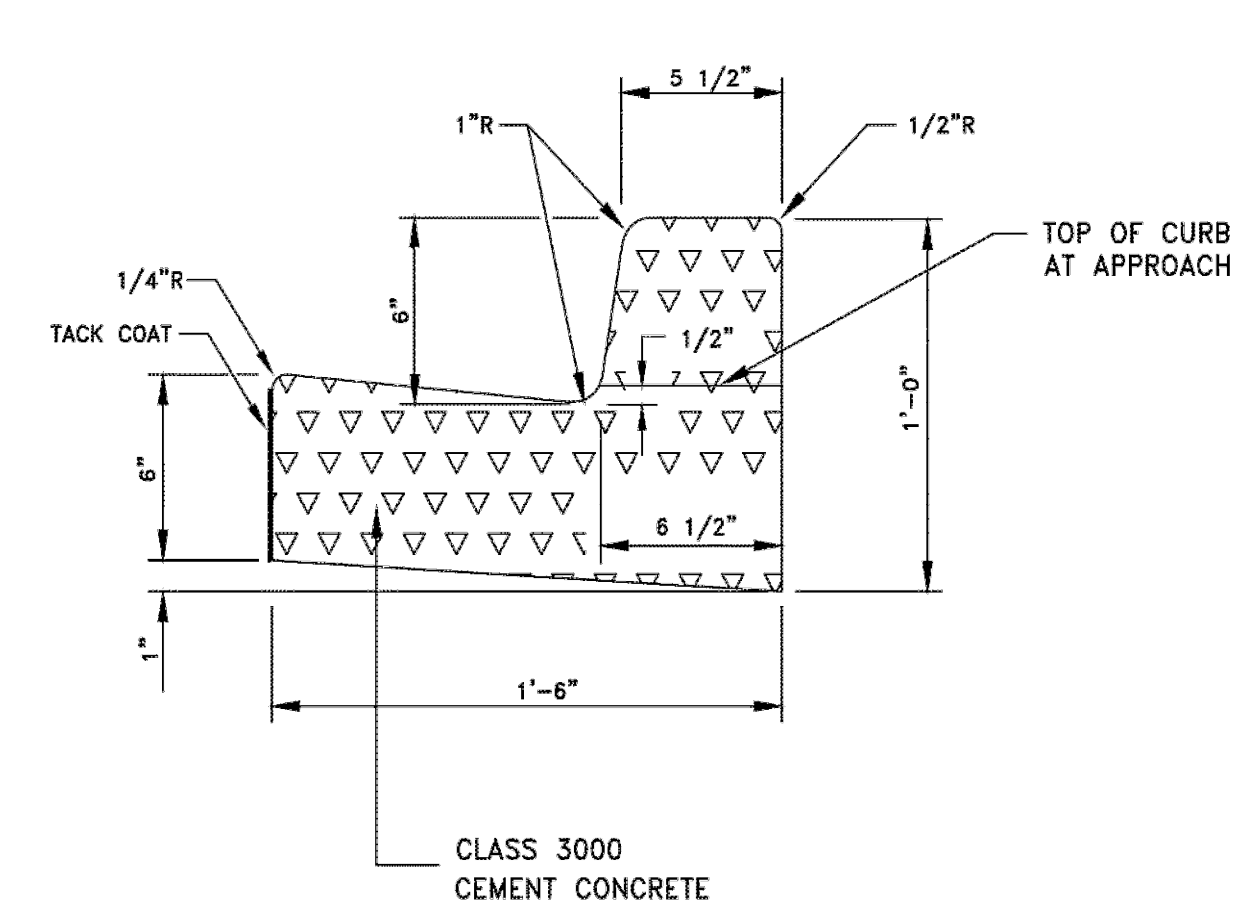
- NOTES:
1. CONCRETE MIX SHALL BE CLASS 3000 CEMENT CONCRETE.
  2. WHEN CUT LINE IS LESS THAN 3' FROM ANOTHER CUTLINE, CURB, OR PAVEMENT EDGE, THE EXISTING PAVEMENT SHALL BE REMOVED TO THE CUTLINES, CURB, OR EDGE.
  3. DOWELS ARE NOT REQUIRED ON THE SIDE BORDERING CURBS, LONGITUDINAL EXPANSION JOINTS, OR TRANSVERSE CONSTRUCTION JOINTS.
  4. DOWELS ARE TO BE INSTALLED A MINIMUM OF 6" INTO EXISTING CONCRETE PAVEMENT.
  5. ALL EXISTING PAVEMENT & CONCRETE LOOSENED DURING CONSTRUCTION SHALL BE REMOVED BEFORE PATCH IS INSTALLED.

*City of Chehalis*

**PAVEMENT PATCH**

APPROVED BY	DWG. NO.
<i>James R Nichols</i>	2-6
CITY ENGINEER	REVISOR DATE
	1/02/2003

Drawing Not to Scale



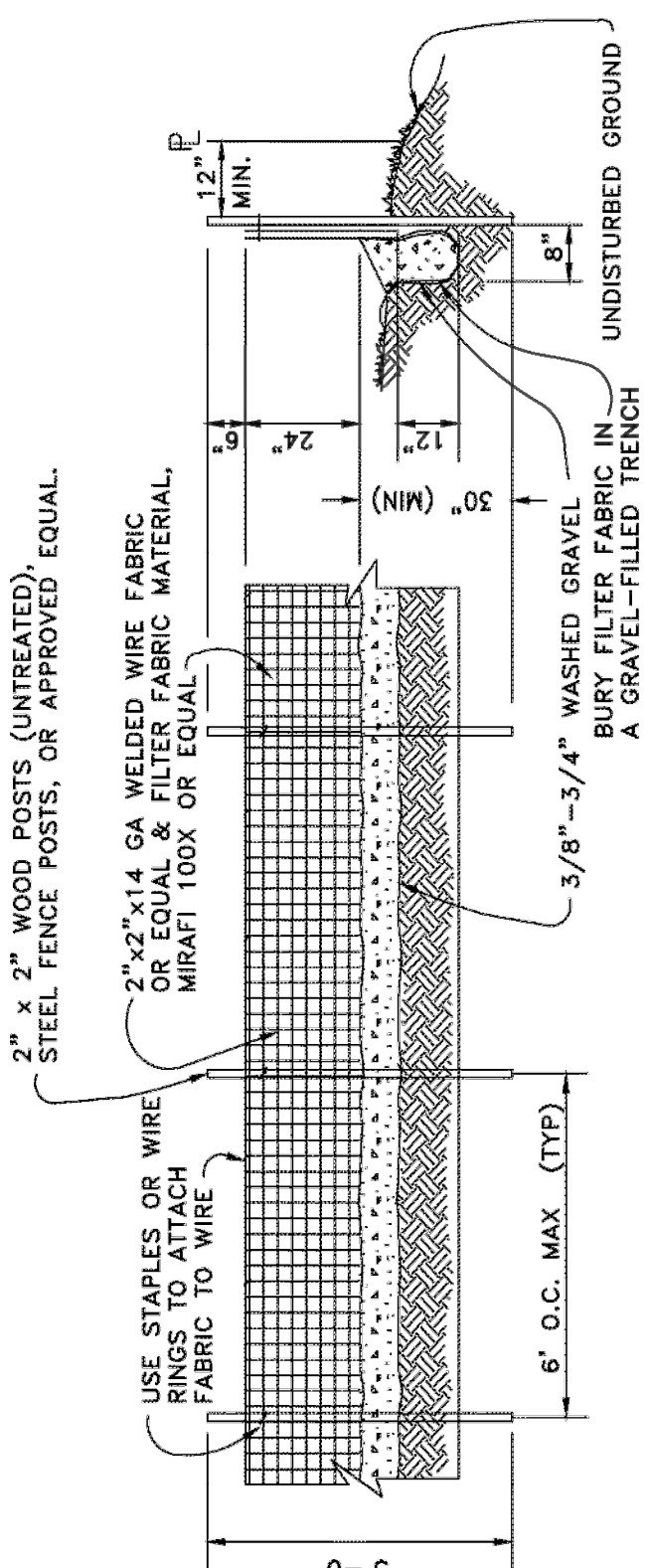
- GENERAL NOTES:
1. EXPANSION JOINT MATERIAL TO BE 3/8" THICK PREMOLDED JOINT FILLER FULL THICKNESS OF CONCRETE.
  2. FORM AND SUBGRADE INSPECTION REQUIRED BEFORE POURING CONCRETE.
  3. SUBGRADE AND BASE REQUIREMENTS SHALL BE THE SAME AS FOR PAVEMENT RESTORATION.

*City of Chehalis*

**CEMENT CONCRETE CURB & GUTTER**

APPROVED BY	DWG. NO.
<i>James R Nichols</i>	2-7
CITY ENGINEER	REVISOR DATE
	1/02/2003

Drawing Not to Scale



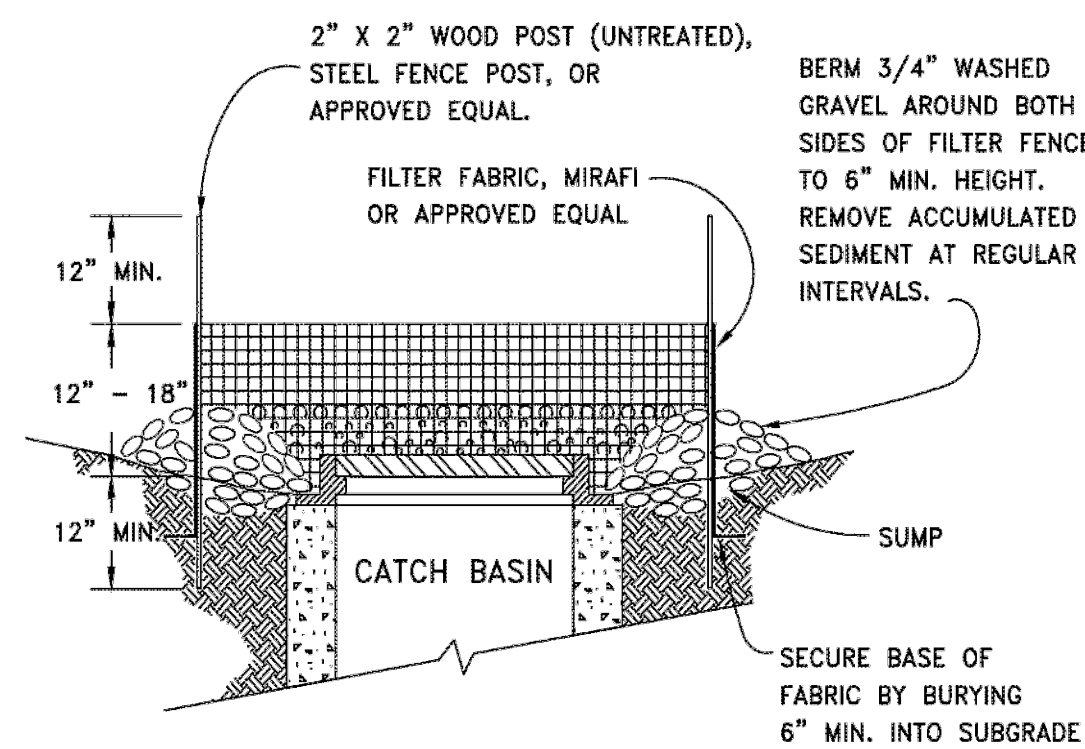
- NOTES:
1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST, WITH MINIMUM 6-INCH OVERLAP, AND SECURELY FASTENED @ BOTH ENDS.
  2. A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1-INCH LONG. THE WIRE, OR HOG RINGS, SHALL NOT EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES & SHALL NOT EXTEND MORE THAN 24 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
  3. WHEN EXTRA-STRENGTH FILTER FABRIC & 4-FOOT MAXIMUM POST SPACING IS USED, THE WIRE MESH FENCE MAY BE ELIMINATED. IN SUCH CASES, THE FILTER FABRIC SHALL BE STAPLED OR WIRED DIRECTLY TO THE POSTS W/ ALL OTHER PROVISIONS STILL APPLYING.
  4. SILT FENCE SHALL NOT BE MOVED BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
  5. SILT FENCING SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL & AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

*City of Chehalis*

**TEMPORARY SILT FENCE**

APPROVED BY	DWG. NO.
<i>James R Nichols</i>	3-4
CITY ENGINEER	REVISOR DATE
	1/02/2003

DRAWING NOT TO SCALE

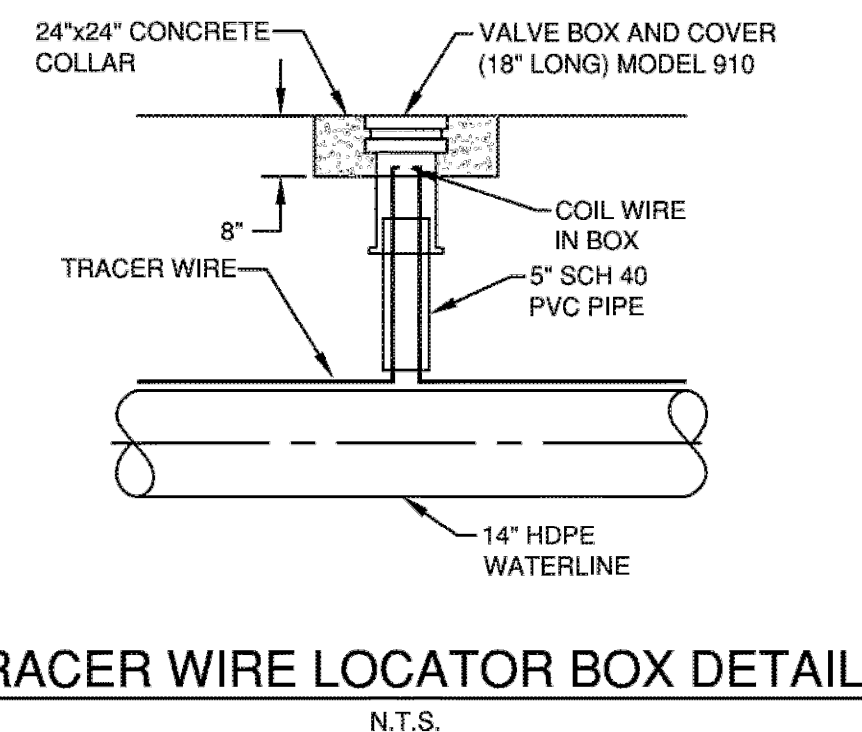


*City of Chehalis*

**FILTER FABRIC CATCH BASIN PROTECTION**

APPROVED BY	DWG. NO.
<i>James R Nichols</i>	3-5
CITY ENGINEER	REVISOR DATE
	1/02/2003

DRAWING NOT TO SCALE



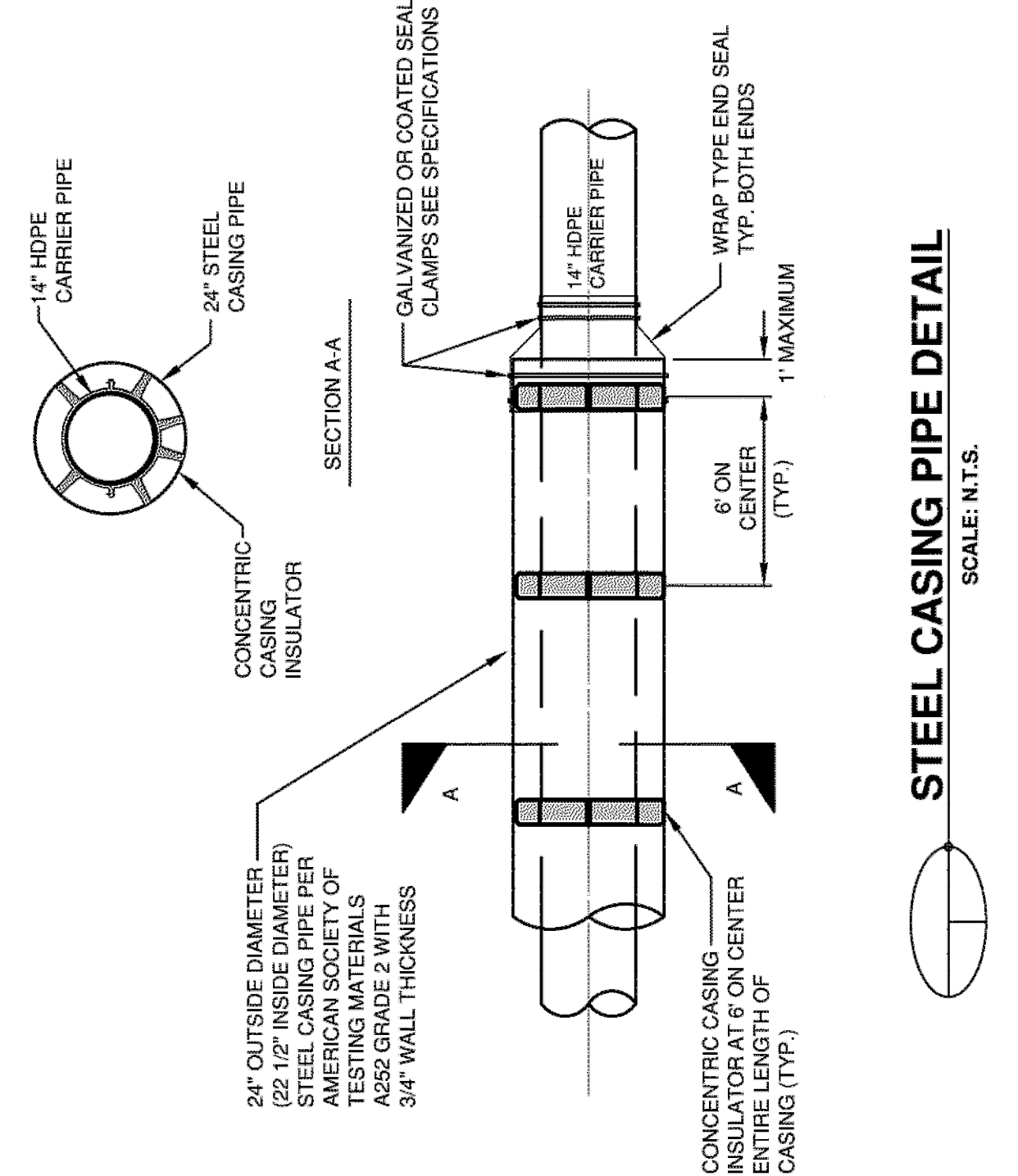
**TRACER WIRE LOCATOR BOX DETAIL**  
N.T.S.

**GIBBS & OLSON**  
CIVIL ENGINEERS & LAND SURVEYORS  
www.gibbs-olson.com

Gibbs & Olson  
WA-031  
Water  
Tracer Wire Locator Box Detail

**GIBBS & OLSON**  
CIVIL ENGINEERS & LAND SURVEYORS  
www.gibbs-olson.com

Gibbs & Olson  
SS-022  
Sanitary Sewer  
Steel Casing Pipe Detail

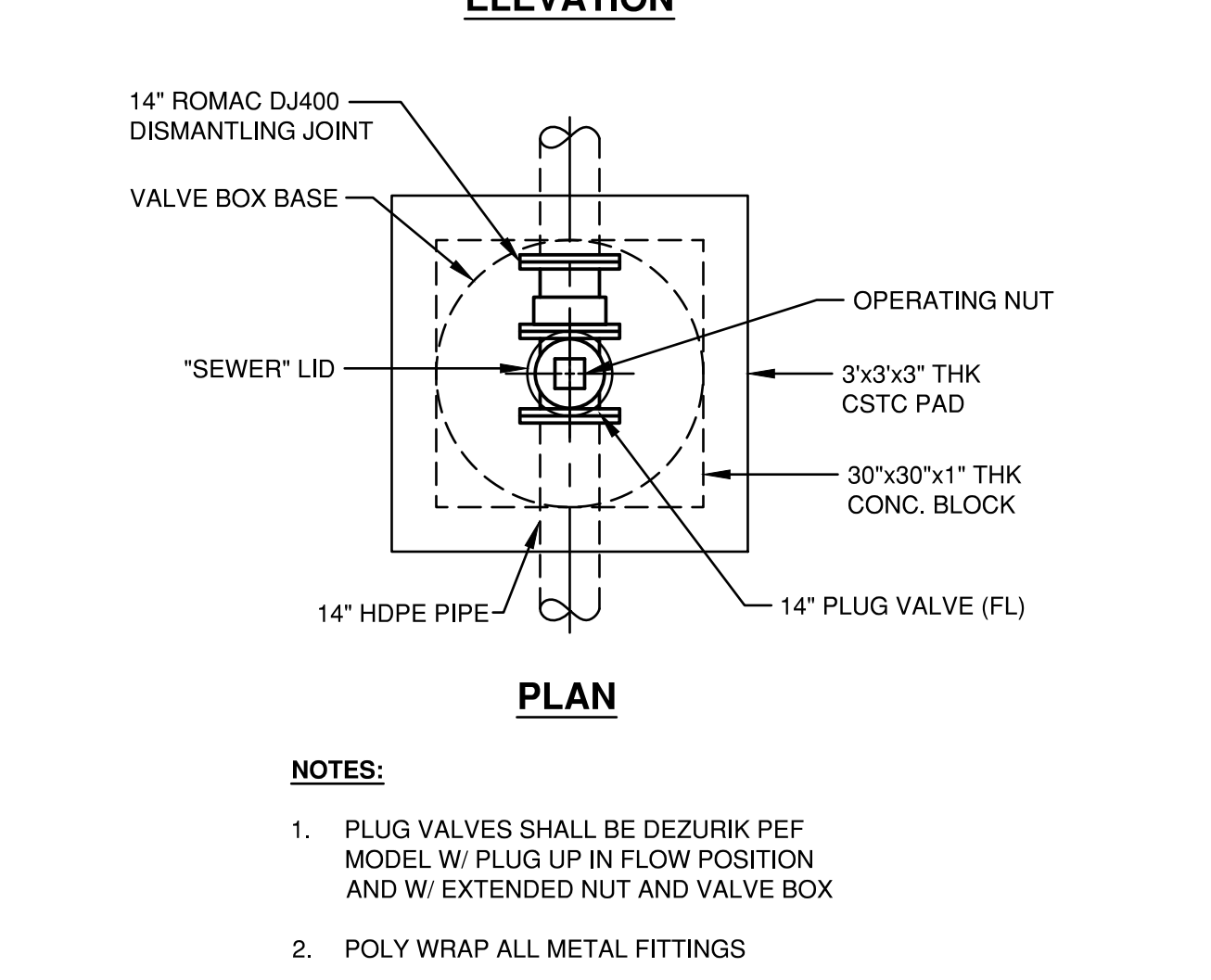
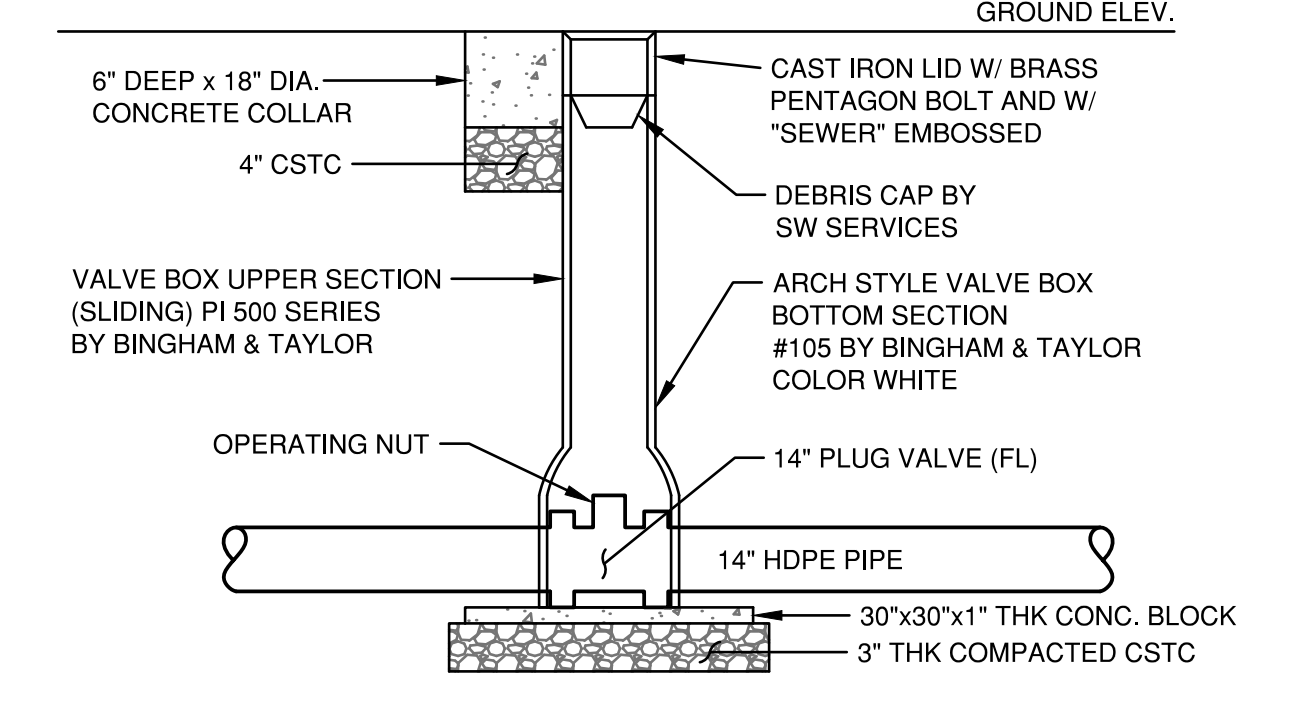
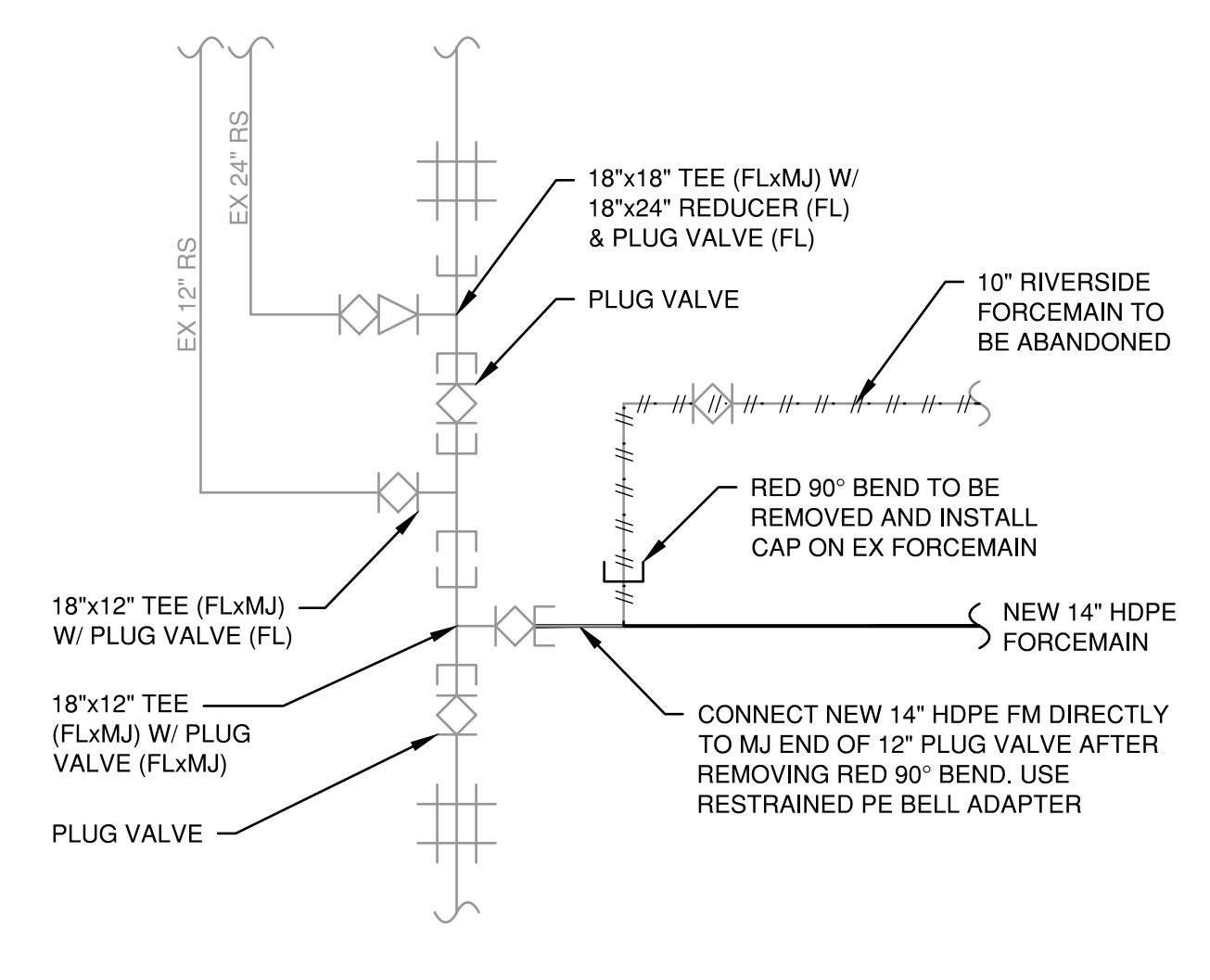
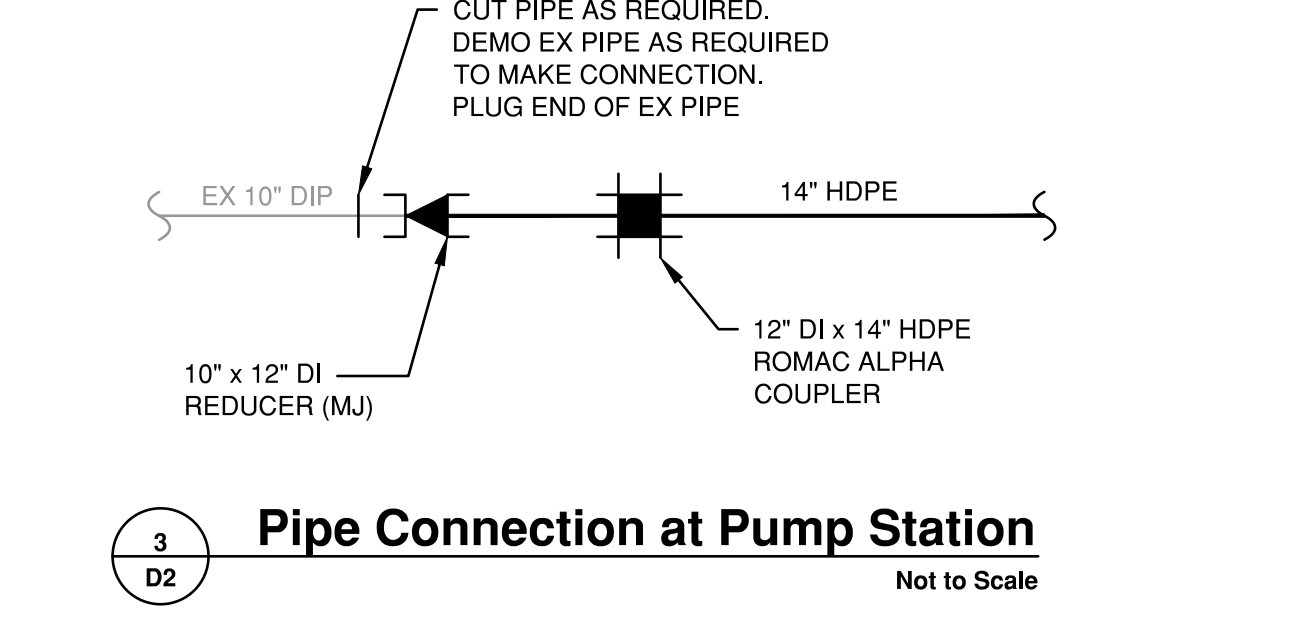
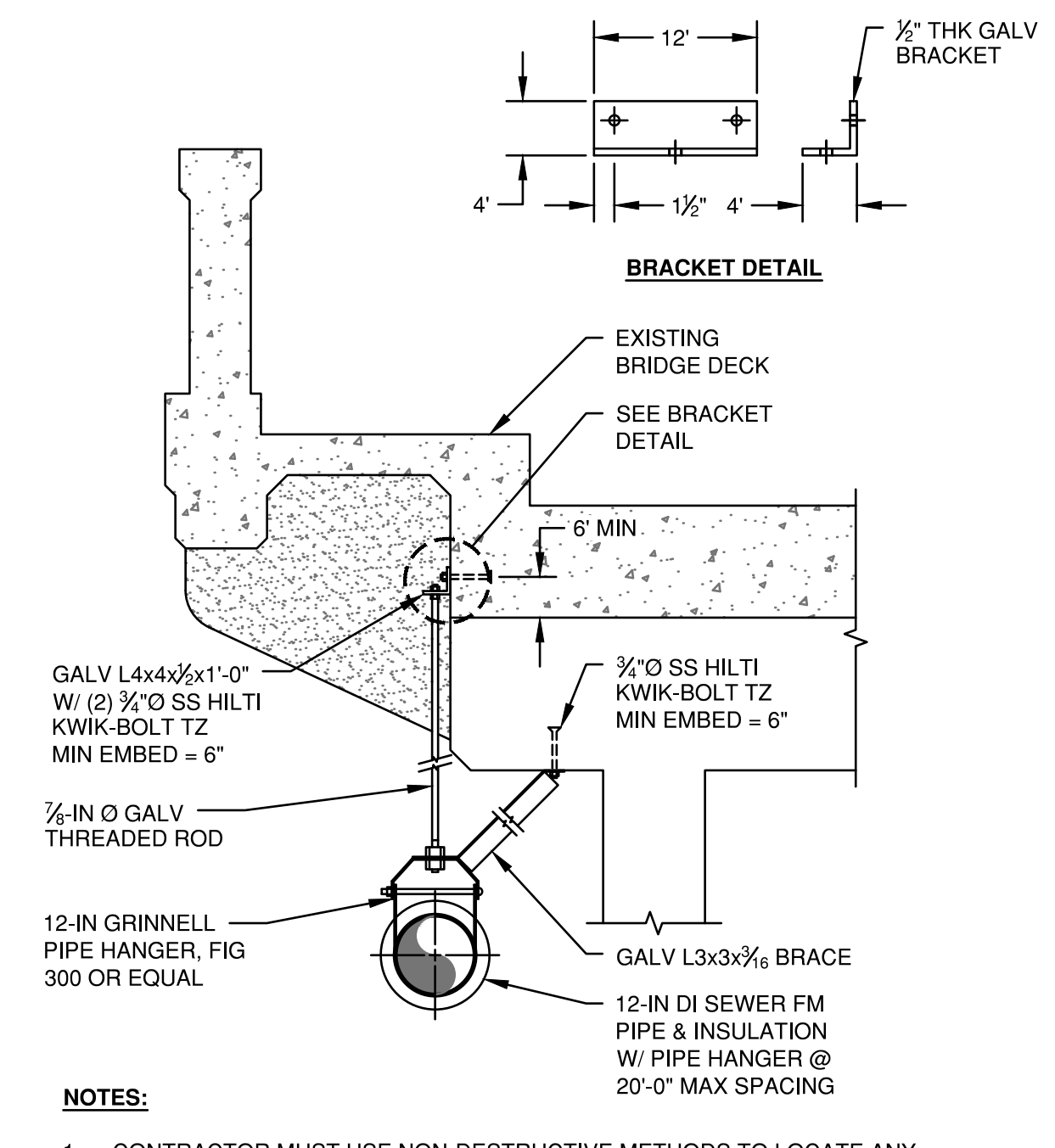
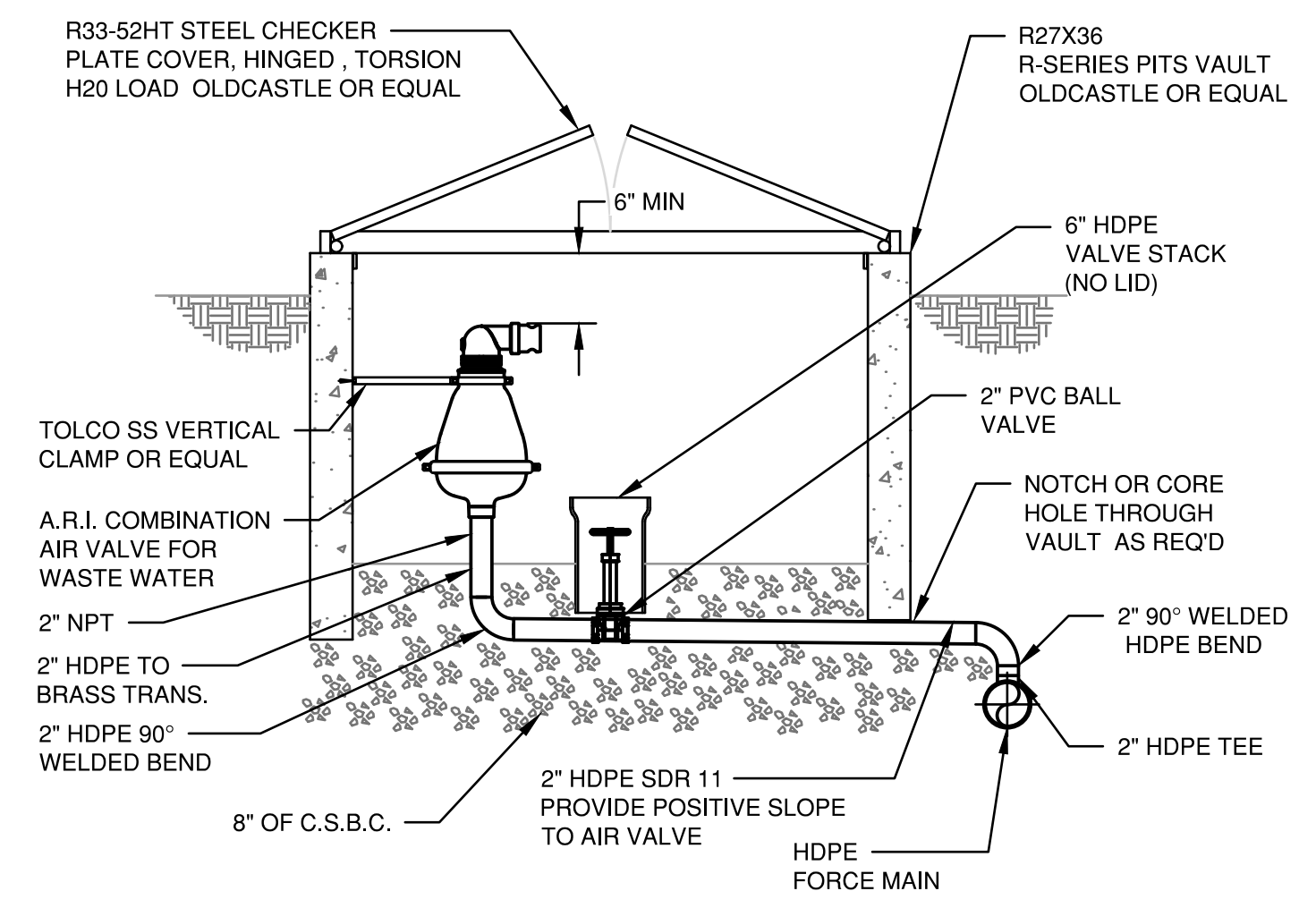
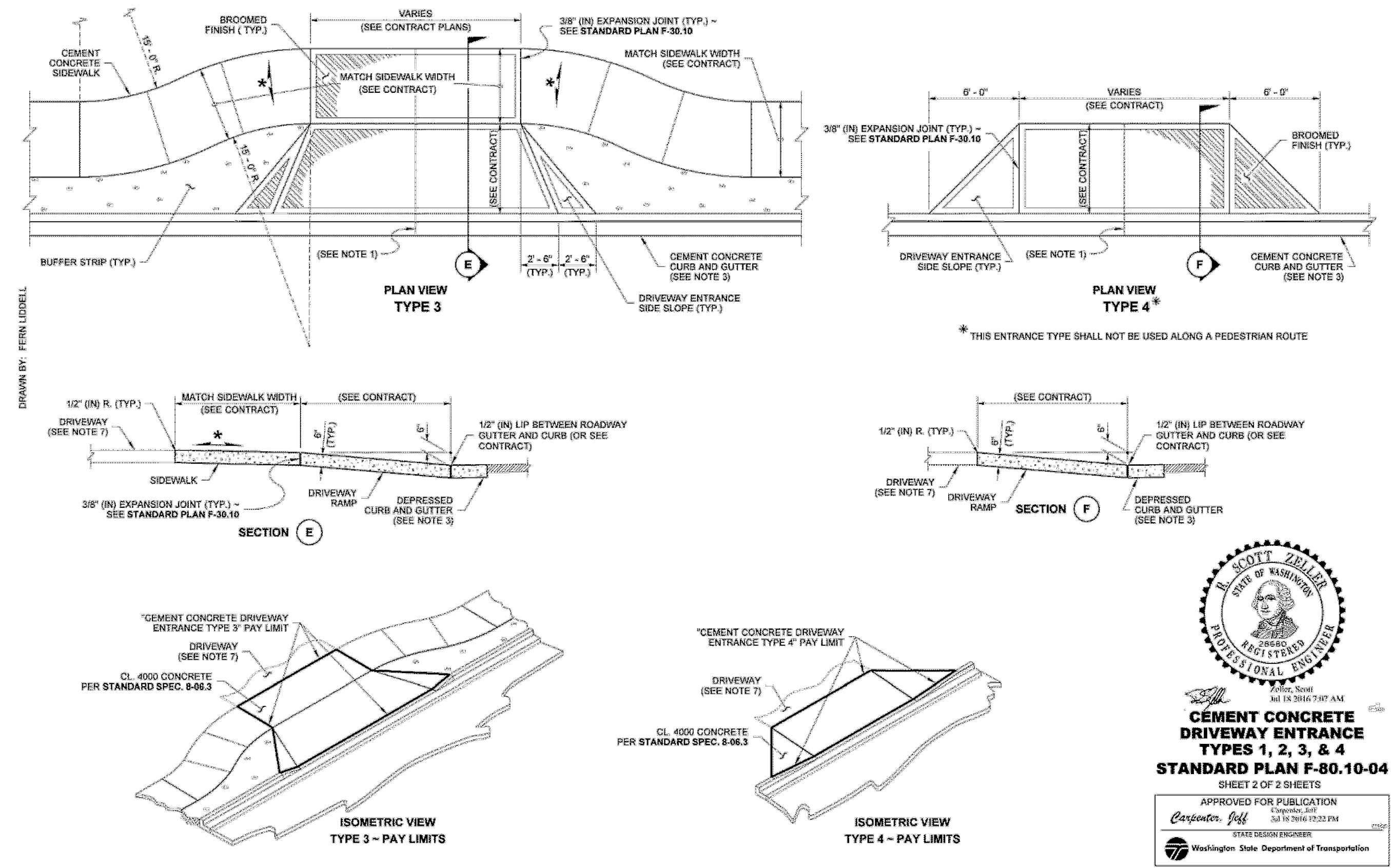
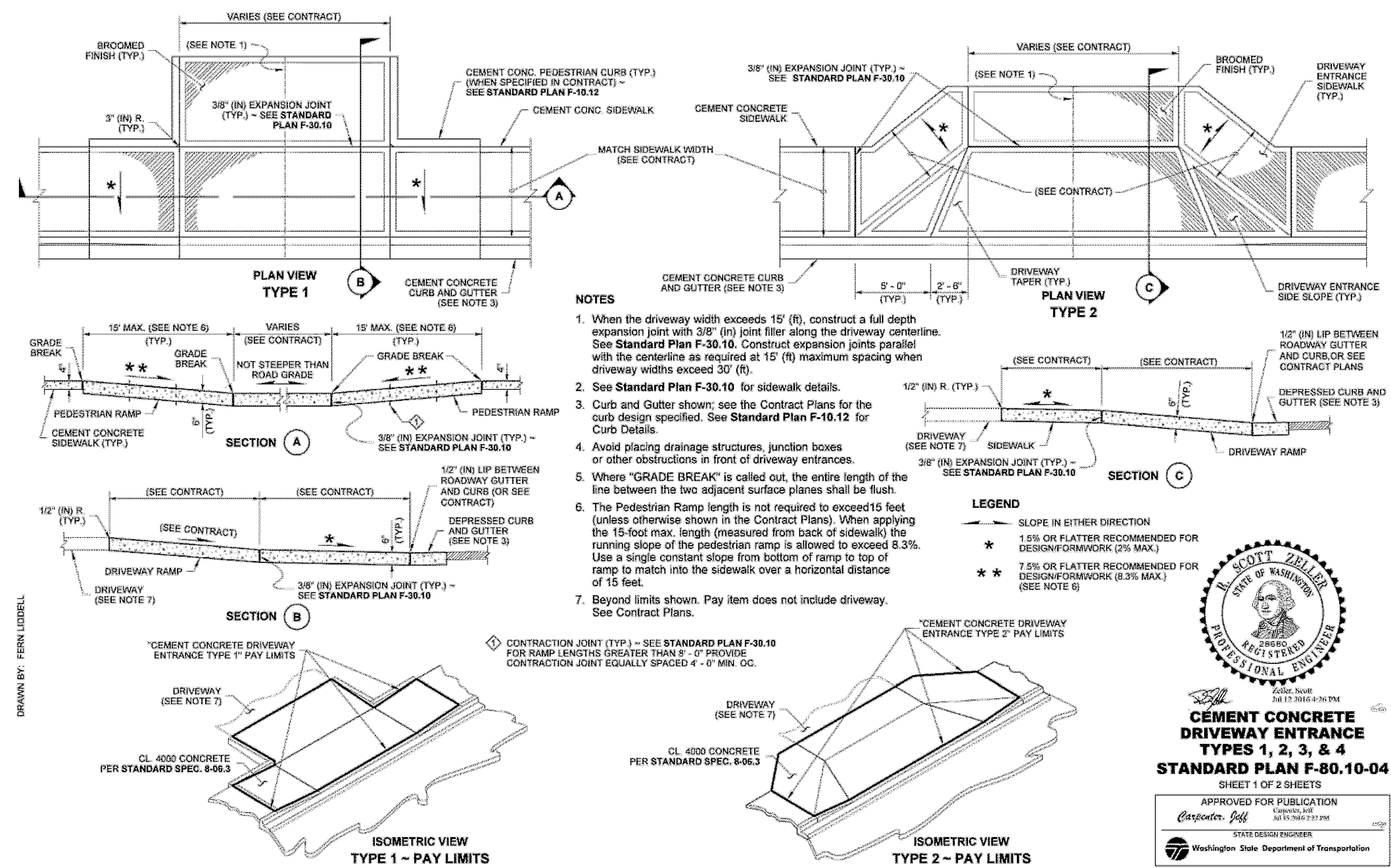


**STEEL CASING PIPE DETAIL**  
SCALE: N.T.S.

Horizontal Scale: ---  
Vertical Scale: ---  
Datum: NAD83/91 NAVD 88  
Survey Book: ---  
Project Phase: ---  
Project Milestone: **100%**  
Revision Date: **04/02/2019**

**GIBBS & OLSON**  
www.gibbs-olson.com  
Project Manager: MEM  
Designed by: SB  
CAD by: KAR  
Checked by: SB  
Approved by: MEM  
Project Number: **0155.1077**  
Drawing Number: **D1**  
Sheet Number: **7 of 8**

DRAWING: T:\CIVIL\_3D\PROJECTS\0151077\ACT\CONTRACT DRAWINGS\DETAILS\DETAILS.DWG, LAYOUT TAB: D2, PLOT DATE: 4/2/2019 4:24:55 PM, DRAWING SAVE DATE: 4/2/2019 4:22:21 PM, PLOTTED BY: KROGERS, PROFILE: GIBBS & OLSON STANDARD, DWG TO PDF.PC3, PLOT STYLE TABLE: GIBBS-OLSON-STANDARD-MONochrome.ctb, PAPER SIZE: GIBBS & OLSON - PLANSHEET D, SIZE (34.00 X 22.00 INCHES)



**Details**  
**Standard Details**

**City of Chehalis**  
**Riverside Foremain**  
**Chehalis, Washington**

Horizontal Scale: ---  
Vertical Scale: ---  
Datum: NAD83/91 NAVD 88  
Survey Book: ---  
Project Phase: ---  
Project Milestone: **100%**  
Revision Date: **04/02/2019**

**MICHAEL E. MARKSTAD**  
STATE OF WASHINGTON  
REGISTERED  
PROFESSIONAL ENGINEER  
04/02/2019

**GIBBS & OLSON**  
www.gibbs-olson.com  
Project Manager: MEM  
Designed by: SB  
CAD by: KAR  
Checked by: SB  
Approved by: MEM  
Project Number: **0155.1077**  
Drawing Number: **D2**  
Sheet Number: **8 of 8**