

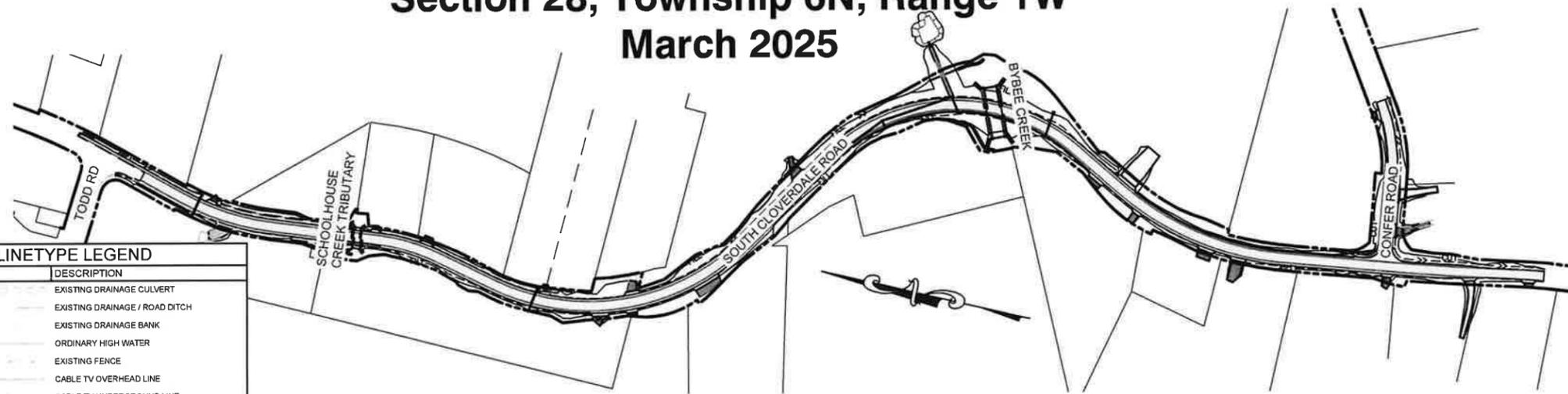
# SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT AND SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT

**SOUTH CLOVERDALE RD (M.P. 0.13 TO M.P. 0.76)**

ROAD # 31510, PROJECT # 1235 - FEDERAL AID PROJECT NO. STPR-08AM(003), FED. AID CONTRACT NO. TA 6740  
**SOUTH CLOVERDALE RD (M.P. 0.76 TO M.P. 0.87) & CONFER ROAD (M.P. 0.00 TO M.P. 0.08)**  
 ROAD # 31880, PROJECT # 1301 - FEDERAL AID PROJECT NO. STBGR-08AM(004), FED. AID CONTRACT NO. TA 8104

**Section 28, Township 6N, Range 1W**

**March 2025**



SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	MANHOLE - EXISTING
	MANHOLE - NEW
	SANITARY SEWER CLEANOUT - EXISTING
	SANITARY SEWER CLEANOUT - NEW
	GRATE INLET - TYPE 1L - NEW
	CURB INLET - TYPE 1L - NEW
	CURB INLET - TYPE 2 - NEW
	FENCE GATE POST - EXISTING
	FENCE GATE POST - NEW
	MAIL BOX
	SHRUB
	CONIFER TREE
	DECIDUOUS TREE
	WATER WELL
	ROAD SIGN
	BORE HOLE
	INCLINOMETER
	MONITOR WELL
	PIEZOMETER
	MARKER
	CABLE TV PEDESTAL
	NATURAL GAS METER
	NATURAL GAS VENT
	NATURAL GAS VALVE
	PETROLEUM VENT
	GUY ANCHOR
	GUY POLE
	LIGHT STANDARD
	LIGHT POLE
	ELECTRICAL POWER METER
	UTILITY / POWER / TELEPHONE POLE
	SERVICE POLE
	TELEPHONE PEDESTAL
	FIRE HYDRANT
	WATER METER
	WATER VALVE

LINETYPE LEGEND	
LINETYPE	DESCRIPTION
	EXISTING DRAINAGE CULVERT
	EXISTING DRAINAGE / ROAD DITCH
	EXISTING DRAINAGE BANK
	ORDINARY HIGH WATER
	EXISTING FENCE
	CABLE TV OVERHEAD LINE
	CABLE TV UNDERGROUND LINE
	NATURAL GAS LINE
	PETROLEUM LINE
	ELECTRICAL POWER OVERHEAD LINE
	ELECTRICAL POWER UNDERGROUND LINE
	EXISTING SANITARY SEWER LINE
	TELEPHONE OVERHEAD LINE
	TELEPHONE UNDERGROUND LINE
	EXISTING WATER LINE
	WETLANDS DELINEATION
	EXISTING ROAD / DRIVEWAY GRAVEL
	EXISTING ROAD / DRIVEWAY PAVEMENT
	EXISTING GUARD RAIL
	DESIGN ALIGNMENT CENTERLINE
	DESIGN EDGE OF PAVEMENT
	DESIGN SHOULDER
	DESIGN ROAD / DRAINAGE DITCH
	DESIGN FENCE
	DESIGN SILO FENCE
	DESIGN GUARD RAIL
	DESIGN STORM SEWER / ROAD CULVERT PIPE
	DESIGN PERF / UNDERDRAIN LINE
	DESIGN DAYLIGHT - CUT
	DESIGN DAYLIGHT - FILL
	EXISTING GROUND CENTERLINE PROFILE
	DESIGN CENTERLINE PROFILE
	RIGHT OF WAY LINE
	CONTOUR - EXISTING - INDEX
	CONTOUR - EXISTING - NORMAL
	CONTOUR - DESIGN - INDEX
	CONTOUR - DESIGN - NORMAL

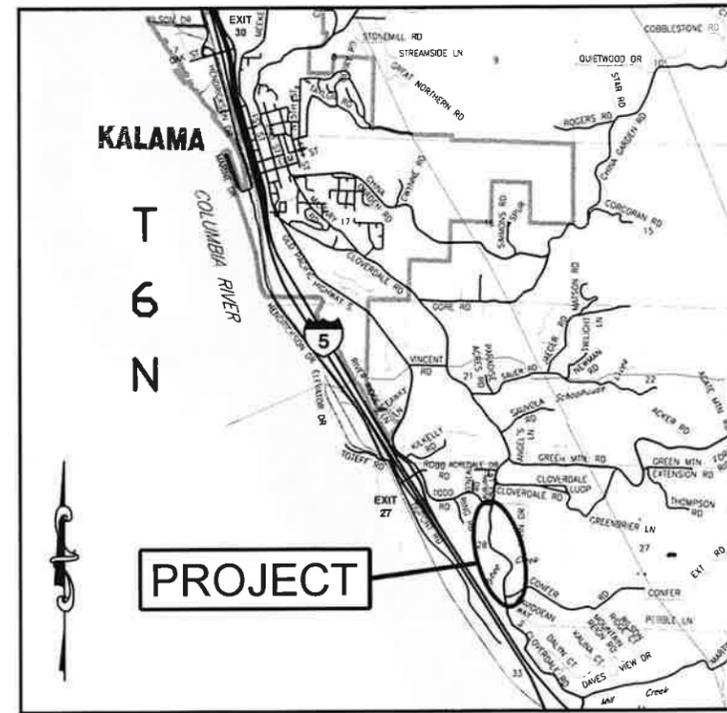
**BASIS OF BEARINGS:**

BASIS OF BEARINGS IS NAD83(2011)(EPOCH:2010.0000) WASHINGTON SOUTH ZONE, PER NATIONAL GEODETIC SURVEY (NGS) ONLINE POSITIONING USER SERVICE (OPUS) SOLUTION ON FEBRUARY 27, 2015, UTILIZING STATIONS DG8344 P420, DN2111 JIME, DK4151 P446. COMBINED SCALE FACTOR (PROJECT) = 0.9999620194. ALL DISTANCES SHOWN HEREON ARE GROUND DISTANCES IN US SURVEY FEET.

**BASIS OF ELEVATIONS:**

COWLITZ COUNTY GPS CONTROL POINT NO. 224 ELEVATION=185.491 (NAVD 88).

STANDARD DRAWINGS	
DRAWING	DESCRIPTION
<b>WSDOT:</b>	
B-5 20-00	CATCH BASIN - TYPE 1 (18" MAX.)
B-5 40-00	CATCH BASIN - TYPE 1L (48" - 96")
B-10 20-00	CATCH BASIN - TYPE 2 (24" MAX.)
B-30 90-00	MISC. DETAILS FOR MANHOLES & CATCH BASINS
B-30 10-00	METAL FRAME AND GRATE FOR CATCH BASIN & INLET
B-30 30-00	VANED GRATE FOR CATCH BASIN & INLET
B-55 20-00	PIPE ZONE BEDDING AND BACKFILL
C-1	BEAM GUARDRAIL (W-BEAM)
C-1B	BEAM GUARDRAIL POSTS AND BLOCKS
C-2	GUARDRAIL PLACEMENT (CASES 1, 2, AND 3)
C-2P	GUARDRAIL PLACEMENT - STRONG POST INTERSECTION DESIGN (CASE 2)
C-4B	BEAM GUARDRAIL FLARED TERMINAL
C-8	CONCRETE BARRIER - TYPE 2
F-10 12-00	EXTRUDED CURB
L-30 10-00	CHAIN LINK FENCE
<b>COUNTY:</b>	
CC-1201	CEMENT CONCRETE CURB AND GUTTER
CC-1202	GUARDRAIL LOCATION
CC-1602	UNDERDRAIN
CC-1610	CURB INLET TYPE 1L
CC-1611	CURB INLET TYPE 2



VICINITY MAP

ABBREVIATIONS	
ABBREV	DESCRIPTION
Δ	DELTA
BOC	BACK OF CURB
BVCS	POINT OF VERTICAL CURVATURE - STATION
BVCE	POINT OF VERTICAL CURVATURE - ELEVATION
CDF	CONTROLLED DENSITY FILL
CONC	CONCRETE
CPE	CORRUGATED POLYETHYLENE PIPE
CRP	COUNTY ROAD PROJECT
DIA	DIAMETER
E	EAST
EG	EXISTING GROUND
EL	ELEVATION
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EVCS	POINT OF VERTICAL TANGENCY - STATION
EVCE	POINT OF VERTICAL TANGENCY - ELEVATION
EXIST	EXISTING
FD	FOUND
FG	FINISH GRADE
FL	FLOW LINE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HMA	ASPHALT CONCRETE
HORIZ	HORIZONTAL
HP	HIGH POINT
I E	INVERT ELEVATION
INV	INVERT
IP	IRON PIPE
IR	IRON ROD
L	LENGTH
LF	LINEAR FEET
LT	LEFT
M.P	MILE POST
MAX	MAXIMUM
MIN	MINIMUM
N	NORTH
NTS	NOT TO SCALE
PC	POINT OF HORIZONTAL CURVATURE
PI	POINT OF HORIZONTAL INTERSECTION
PSI	POUNDS PER SQUARE INCH
PT	POINT OF HORIZONTAL TANGENCY
PVI	POINT OF VERTICAL INTERSECTION
R	RANGE, RADIUS
RAW	RIGHT OF WAY
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RT	RIGHT
S	SOUTH
SEC	SECTION
SHT	SHEET
SR	STATE ROUTE
STA	STATION
STD	STANDARD
T	TOWNSHIP, TANGENT
TYP	TYPICAL
VC	VERTICAL CURVE
VERT	VERTICAL
W	WEST
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
W	WITH

C.P.A. PROJECT MANAGER DATE: 3/11/2025 D.J.B. DRAWN BY DATE: 3/11/2025 S.E.E. CHECKED BY DATE: 3/11/2025	HORIZ. SCALE: - VERT. SCALE: - PROJECT ID: 1235 ROAD NO. : 31510 & 31880 COMPUTER FILE: 1235 COVER 1.dwg	DEPARTMENT OF PUBLIC WORKS 1600-13th AVENUE SOUTH KELSO, WASHINGTON 98626	APPROVED BY:  COUNTY ENGINEER DATE: 3/27/25	 CHRISTOPHER P. ANDREWS REGISTERED PROFESSIONAL ENGINEER	C.R.P. NO. 125 RAP Contract No. 0815-01	SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT AND SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT	SHEET <b>1</b> OF <b>62</b>
						<b>COVER SHEET</b>	

SCHEDULE A & SCHEDULE B

INDEX OF DRAWINGS	
SHEET	DESCRIPTION
1	COVER SHEET
2	ADDITIONAL PLAN SHEET INDEX
3	PLAN AND PROFILE STA 9+30 TO STA 15+25
4	PLAN AND PROFILE STA 15+25 TO STA 21+20
5	PLAN AND PROFILE STA 21+20 TO STA 27+20
6	PLAN AND PROFILE STA 27+20 TO STA 33+20
7	PLAN AND PROFILE STA 33+20 TO STA 39+20
8	PLAN AND PROFILE STA 39+20 TO STA 45+20
9	PLAN AND PROFILE STA 45+20 TO STA 49+00
10	CONFER ROAD PLAN AND PROFILE STA 99+50 TO STA 104+50
11	INFILTRATION POND PLAN AND PROFILE & CROSS-SECTION
12	DRIVEWAYS
13	DRIVEWAYS
14	DRIVEWAYS
15	DRIVEWAYS
16	DRIVEWAYS
17	DRIVEWAYS
18	DRIVEWAYS
19	DRIVEWAYS
20	DRIVEWAYS
21	DRIVEWAYS
22	TYPICAL ROADWAY SECTIONS
23	TYPICAL ROADWAY SECTIONS
24	TYPICAL ROADWAY SECTIONS
25	TYPICAL ROADWAY SECTIONS
26	TYPICAL ROADWAY SECTIONS
27	ROADWAY SCHEDULE
28	DETAILS
29	STORM PROFILES
30	STORM PROFILES
31	PAVEMENT REMOVAL AND PAVING PLAN STA 9+30 TO STA 21+20
32	PAVEMENT REMOVAL AND PAVING PLAN STA 21+20 TO STA 33+20
33	PAVEMENT REMOVAL AND PAVING PLAN STA 33+20 TO STA 45+20
34	PAVEMENT REMOVAL AND PAVING PLAN STA 45+20 TO STA 49+50
35	PAVEMENT REMOVAL AND PAVING PLAN STA 100+00 TO STA 104+50
36	STRIPING PLAN STA 9+30 TO STA 21+20
37	STRIPING PLAN STA 21+20 TO STA 33+20
38	STRIPING PLAN STA 33+20 TO STA 39+20
39	STRIPING PLAN (SOUTH CLOVERDALE ROAD STA 42+73± TO 48+50) AND CONFER ROAD STA 100+00 TO STA 104+32)

SCHEDULE A

INDEX OF DRAWINGS	
SHEET	DESCRIPTION
S-1	STRUCTURAL GENERAL NOTES
S-2	SCHOOLHOUSE CREEK TRIBUTARY PLAN AND PROFILE
S-3	BYBEE CREEK PLAN AND PROFILE
S-4	SCHOOLHOUSE CREEK TRIBUTARY FOOTING FOUNDATION PLAN
S-5	BYBEE CREEK FOOTING FOUNDATION PLAN
S-6	CULVERT INLET AND OUTLET ELEVATIONS
S-7	SCHOOLHOUSE CREEK TRIBUTARY DETAILS HEADWALL AND WING WALL
S-8	BYBEE CREEK DETAILS HEADWALL AND WINGWALL (1 OF 2)
S-9	BYBEE CREEK DETAILS HEADWALL AND WINGWALL (2 OF 2)
S-10	TEMPORARY RETAINING WALL DETAILS
S-11	FIRE HOUSE RETAINING WALL PLAN AND PROFILE
EN-1	SCHOOLHOUSE CREEK TRIBUTARY TESC PLAN
EN-2	BYBEE CREEK TESC PLAN
EN-3	TESC DETAILS AND NOTES
EN-4	SCHOOLHOUSE CREEK TRIBUTARY GRADING PLAN & PROFILE
EN-5	SCHOOLHOUSE CREEK TRIBUTARY GRADING SECTIONS
EN-6	BYBEE CREEK GRADING PLAN & PROFILE
EN-7	BYBEE CREEK GRADING SECTIONS
EN-8	STREAM DETAILS (1 OF 2)
EN-9	STREAM DETAILS (2 OF 2)
EN-10	SCHOOLHOUSE CREEK TRIBUTARY PLANTING PLAN
EN-11	BYBEE CREEK PLANTING PLAN
EN-12	PLANTING SCHEDULE & DETAILS

SCHEDULE C & SCHEDULE D  
NUMBERED SEPARATELY

INDEX OF DRAWINGS	
SHEET	DESCRIPTION
W-1	TEMPORARY WATER MAIN STA 16+00 TO 19+00
W-2	PROPOSED WATER MAIN STA 16+00 TO 19+00
W-3	PROPOSED WATER MAIN STA 22+00 TO 26+00
W-4	PROPOSED WATER MAIN STA 26+00 TO 30+00
W-5	TEMPORARY WATER MAIN STA 33+00 TO 36+25
W-6	PROPOSED WATER MAIN STA 30+00 TO 34+00
W-7	PROPOSED WATER MAIN STA 34+00 TO 38+00
W-8	TEMPORARY WATER MAIN INTERSECTION CLOVERDALE & CONFER ROAD
W-9	PROPOSED WATER MAIN INTERSECTION CLOVERDALE & CONFER ROAD
WD-1	WATER DETAILS
WD-2	WATER DETAIL

C.P.A. 3/11/2025  
PROJECT MANAGER DATE

D.J.B. 3/11/2025  
DRAWN BY DATE

S.E.E. 3/11/2025  
CHECKED BY DATE

HORIZ. SCALE: -  
VERT. SCALE: -

PROJECT ID: 1235  
ROAD NO. : 31510 & 31880

COMPUTER FILE: 1235 COVER 1.dwg



DEPARTMENT OF PUBLIC WORKS

1600-13th AVENUE SOUTH  
KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.

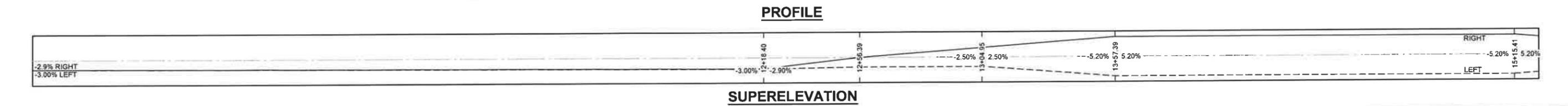
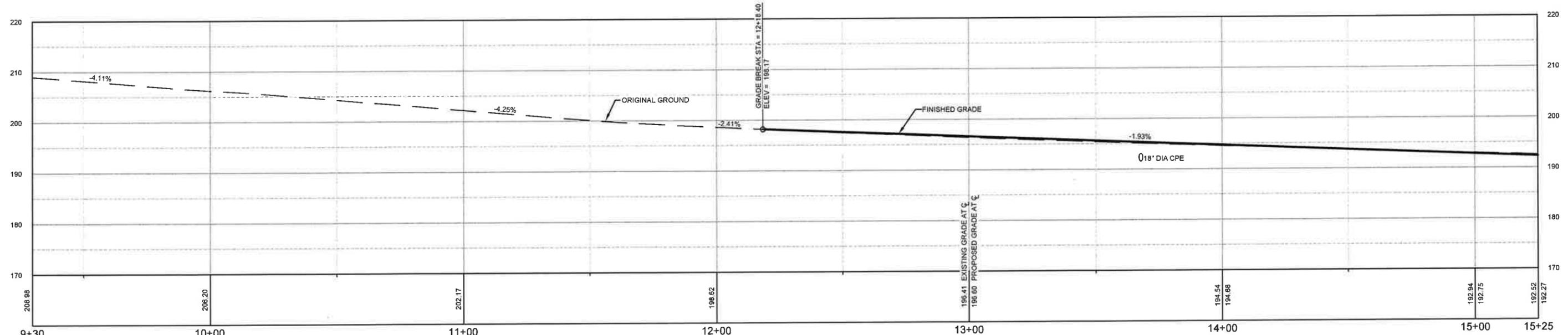
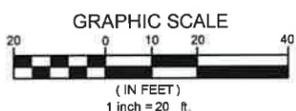
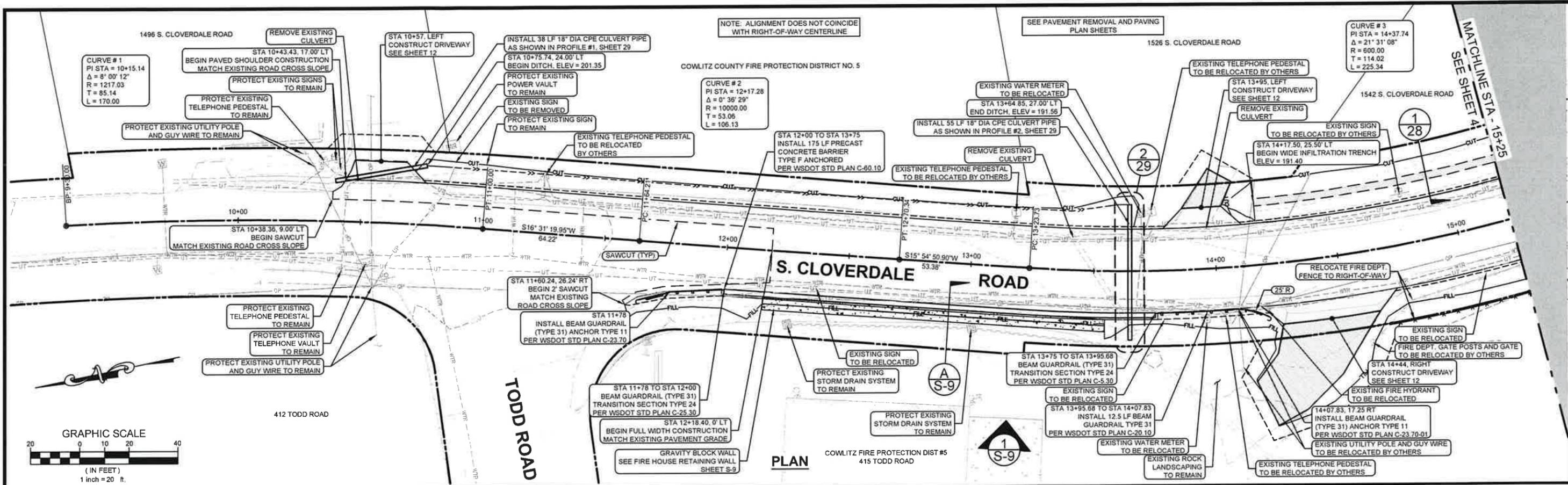


Sec. 28, T 6N, R 1W

SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT  
AND SOUTH CLOVERDALE - CONFER ROAD  
INTERSECTION IMPROVEMENT PROJECT

INDEX OF DRAWINGS

SHEET 2 OF 62



C.P.A. PROJECT MANAGER 3/11/2025 DATE  
 D.J.B. DRAWN BY 3/11/2025 DATE  
 S.E.E. CHECKED BY 3/11/2025 DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: 1" = 10'  
 PROJECT ID: 1235  
 ROAD NO. : 31510 & 31880  
 COMPUTER FILE: 1235 DESIGN 3-11.dwg

**COWLITZ COUNTY WASHINGTON**  
 DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

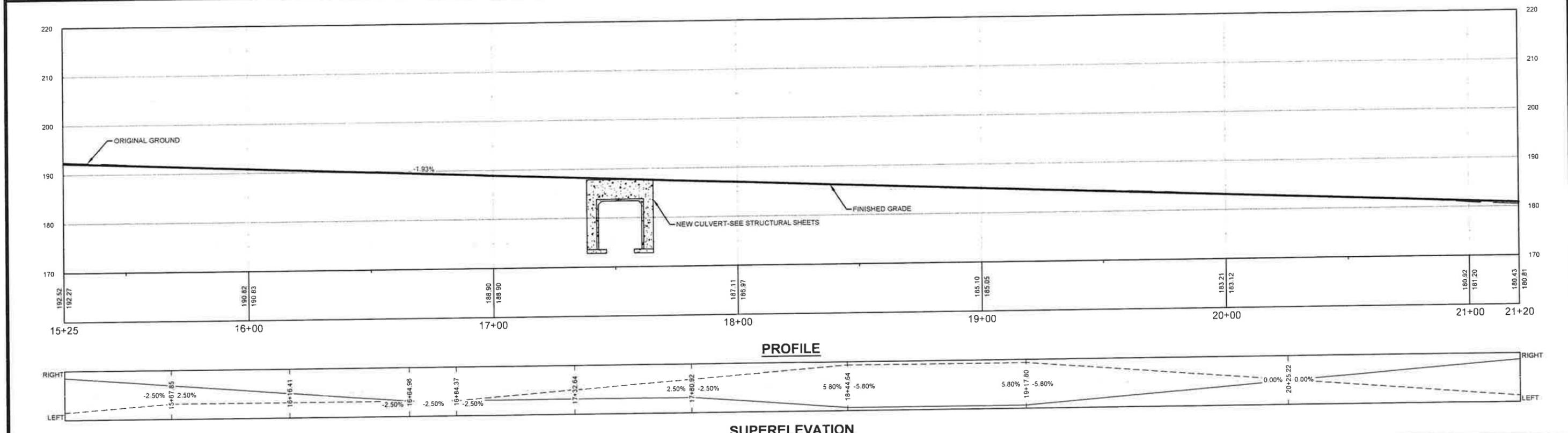
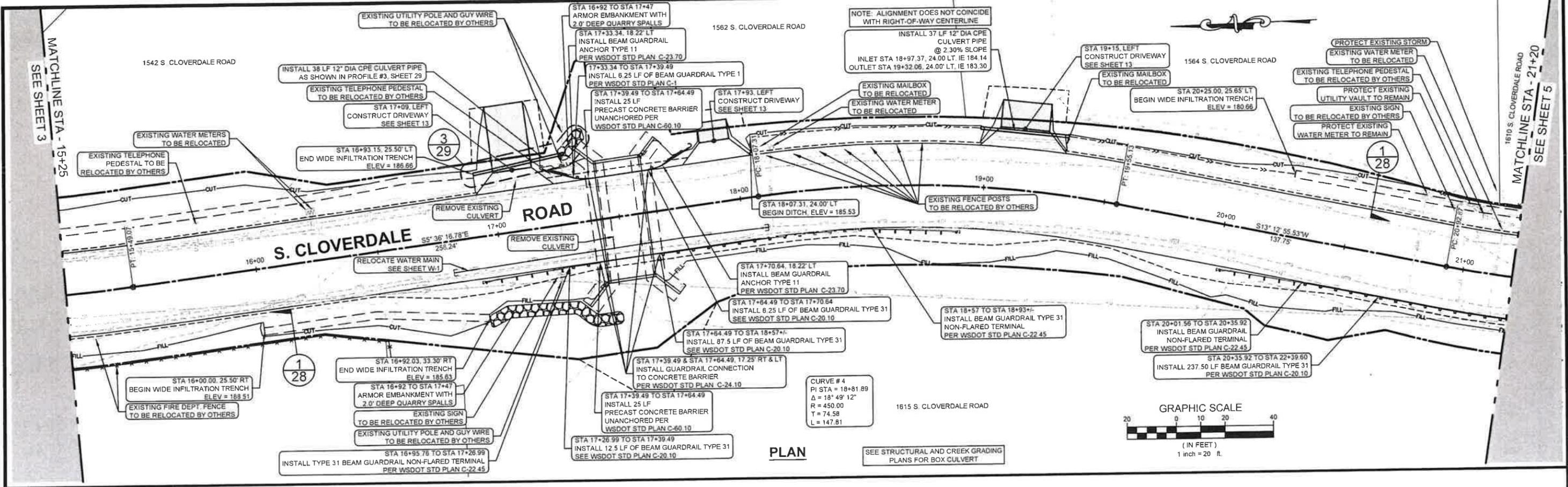
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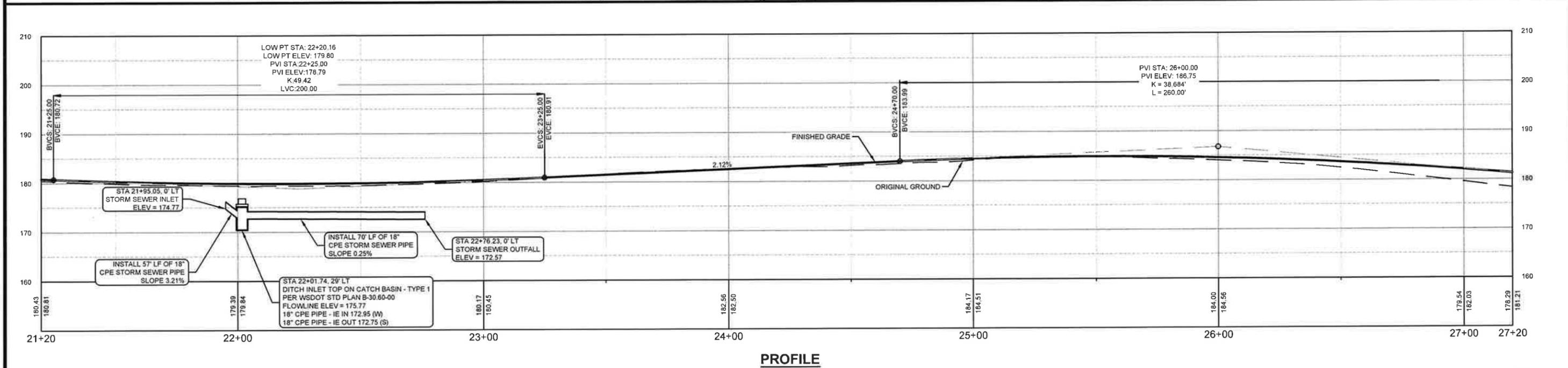
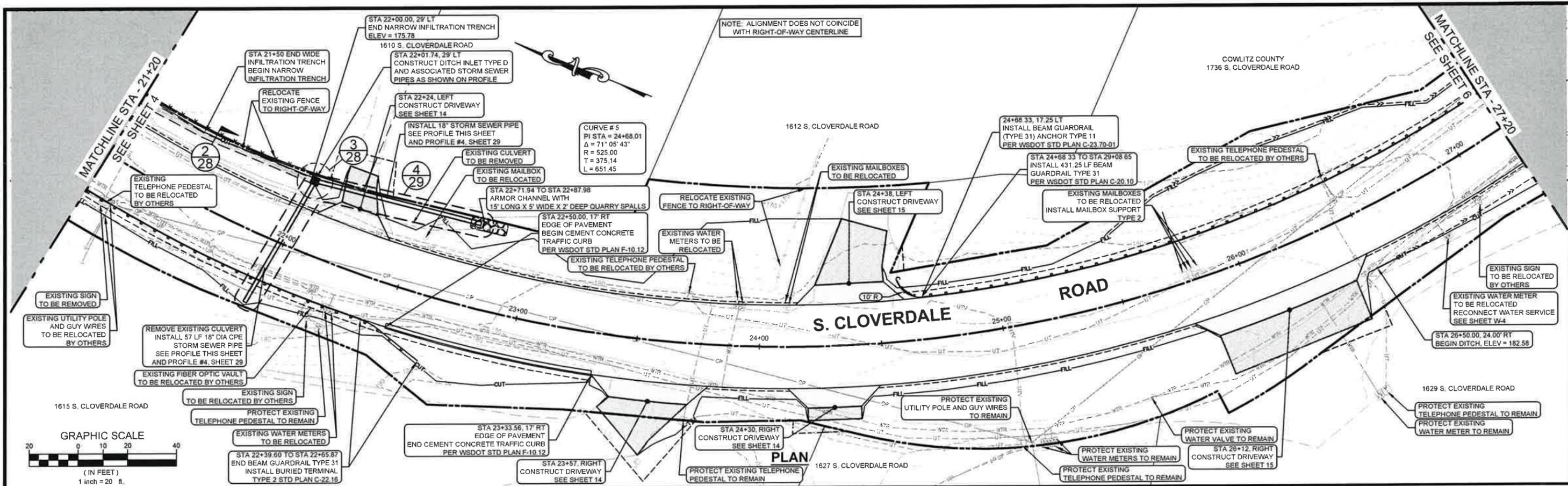
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**  
**PLAN AND PROFILE**  
**STA 9+30 TO STA 15+25**

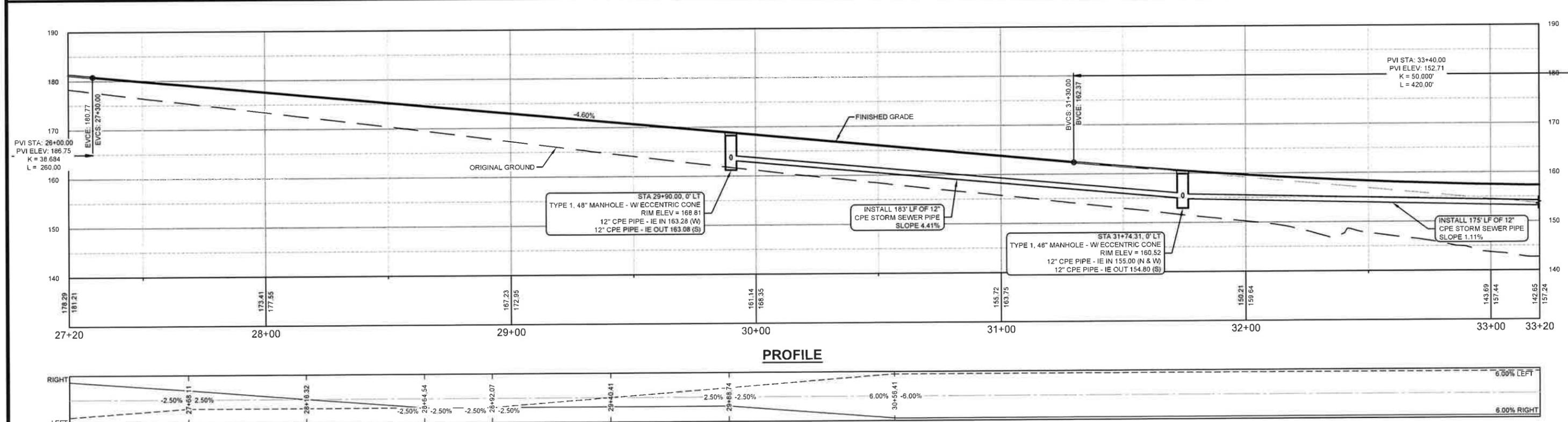
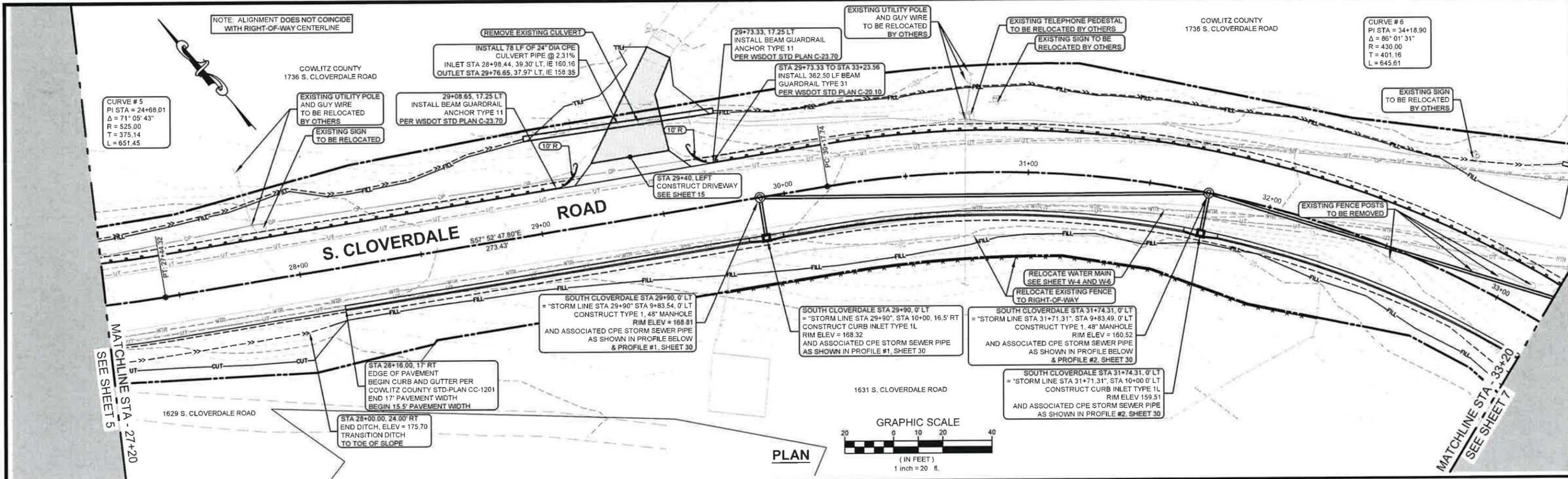
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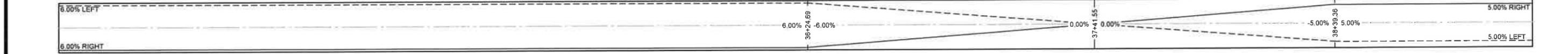
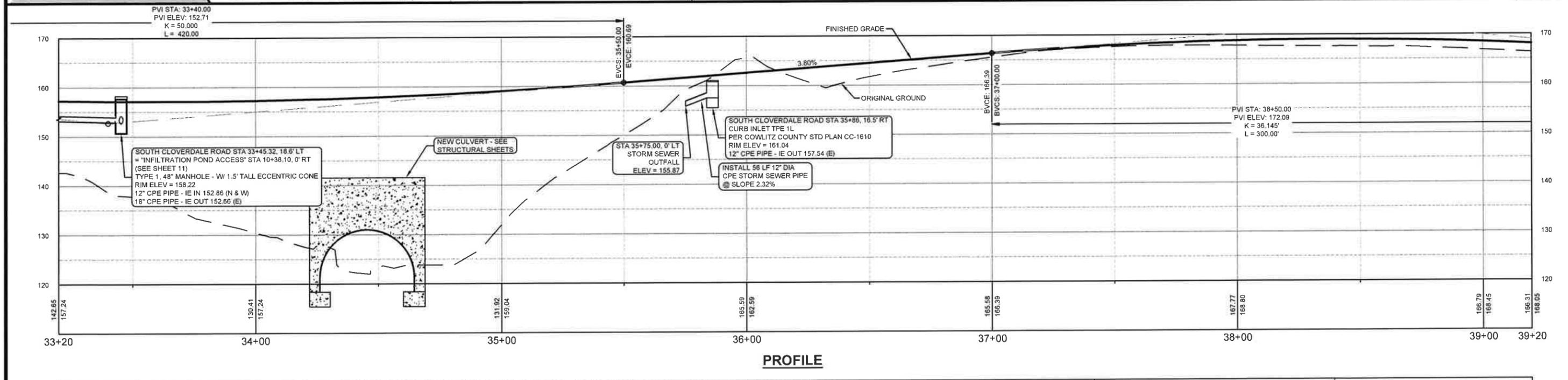
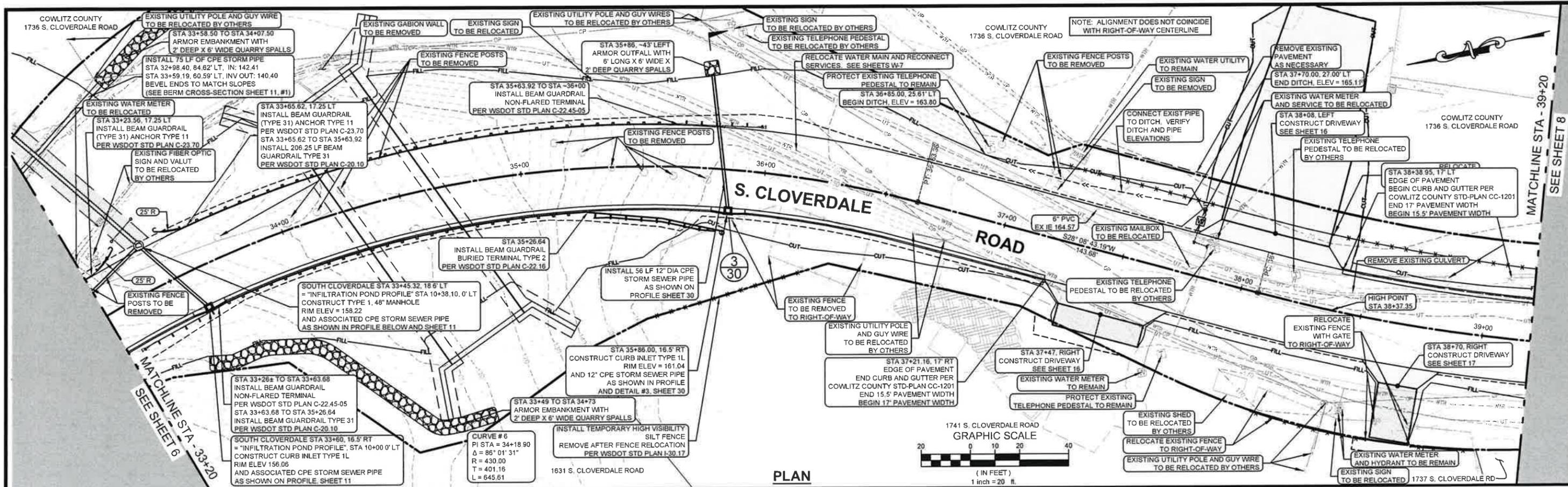


C.P.A. PROJECT MANAGER DATE 3/11/2025 D.J.B. DRAWN BY DATE 3/11/2025 S.E.E. CHECKED BY DATE 3/11/2025	HORIZ SCALE 1" = 20' VERT. SCALE 1" = 10' PROJECT ID: 1235 ROAD NO. : 31510 & 31880 COMPUTER FILE: 1235 DESIGN 3-11.dwg	 DEPARTMENT OF PUBLIC WORKS 1600 13TH AVENUE SOUTH KELSO, WASHINGTON 98626	NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.		Sec. 28, T 6N, R 1W	<b>SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT</b> <b>PLAN AND PROFILE</b> <b>STA 15+25 TO STA 21+20</b>	SHEET 4 OF 62
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C.P.A. PROJECT MANAGER DATE D.J.B. DRAWN BY DATE S.E.E. CHECKED BY DATE	HORIZ. SCALE: 1" = 20' VERT. SCALE: 1" = 10' PROJECT ID: 1235 ROAD NO.: 31510 & 31880 COMPUTER FILE: 1235 DESIGN 3-11.dwg	 DEPARTMENT OF PUBLIC WORKS 1600 13TH AVENUE SOUTH KELSO, WASHINGTON 98626	NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.	 Sec. 28, T 6N, R 1W	<b>SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT</b> <b>PLAN AND PROFILE</b> <b>STA 21+20 TO STA 27+20</b>	SHEET <b>5</b> OF <b>62</b>
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C.P.A. PROJECT MANAGER  
 3/11/2025 DATE  
 3/11/2025 DATE  
 DRAWN BY  
 S.E.E. 3/11/2025 DATE  
 CHECKED BY

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: 1" = 10'  
 PROJECT ID: 1235  
 ROAD NO.: 13150 & 31880  
 COMPUTER FILE: 1235 DESIGN 3-11.dwg

**COWLITZ COUNTY**  
 DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

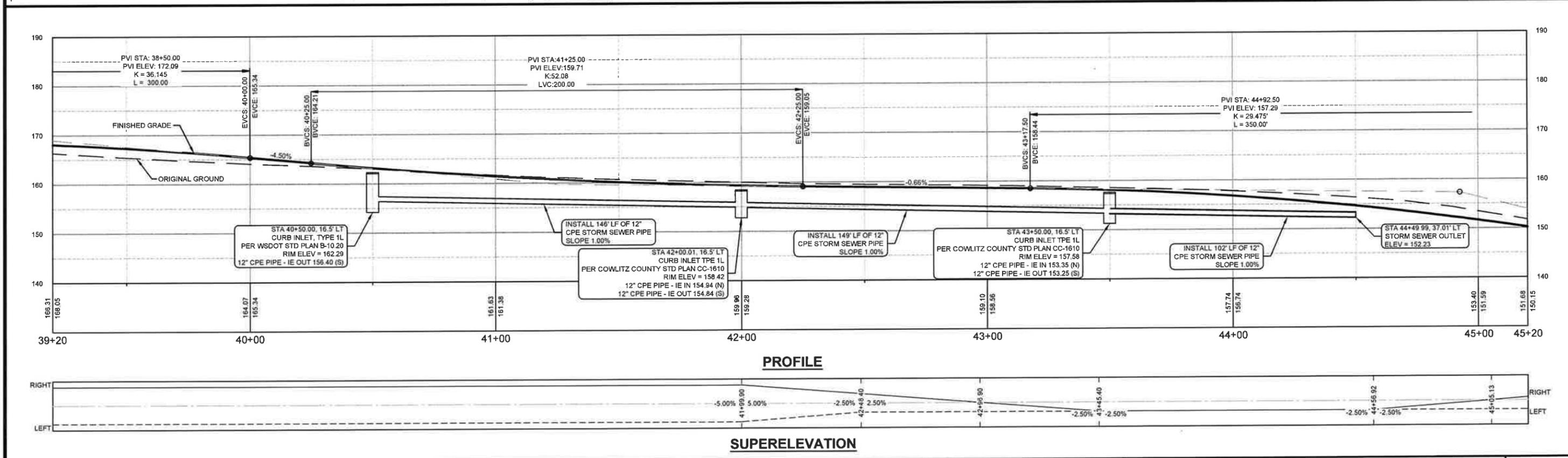
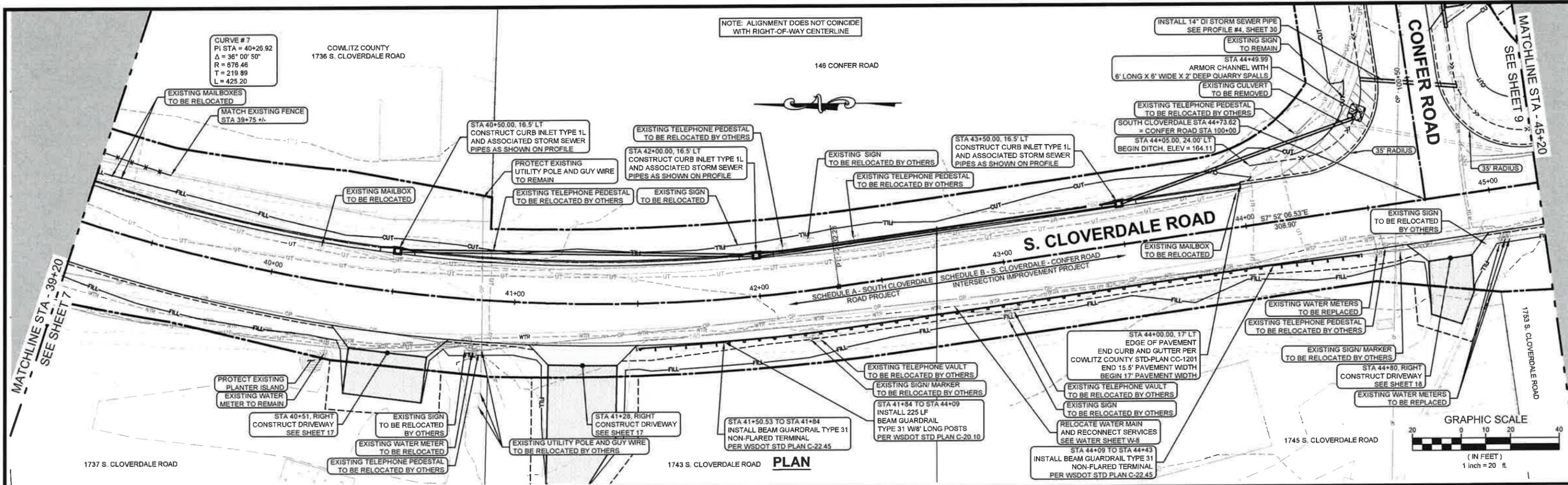
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Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**  
**PLAN AND PROFILE**  
**STA 33+20 TO STA 39+20**

SHEET 7 OF 62



C.P.A. PROJECT MANAGER  
 D.J.B. DRAWN BY  
 S.E.E. CHECKED BY  
 3/11/2025  
 DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: 1" = 10'  
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**COWLITZ COUNTY**  
 WASHINGTON  
 DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

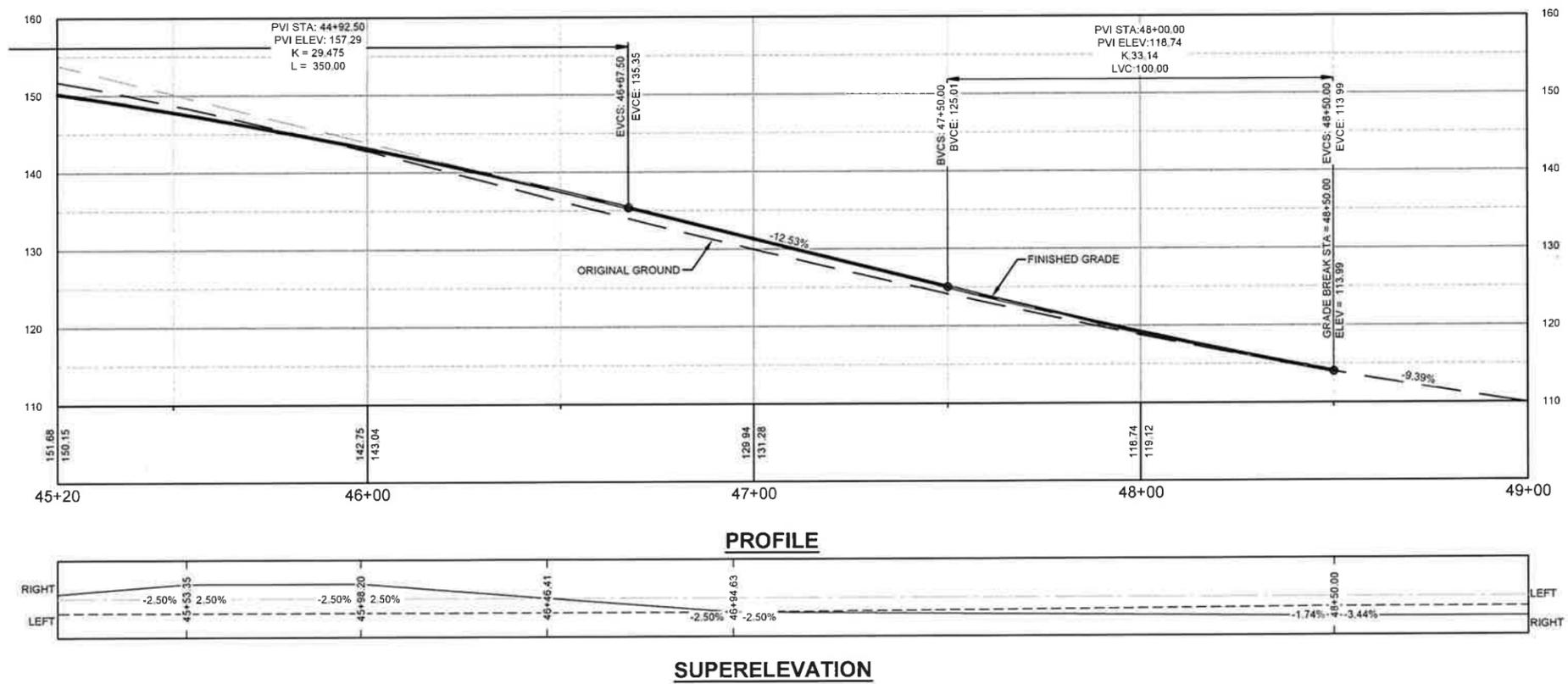
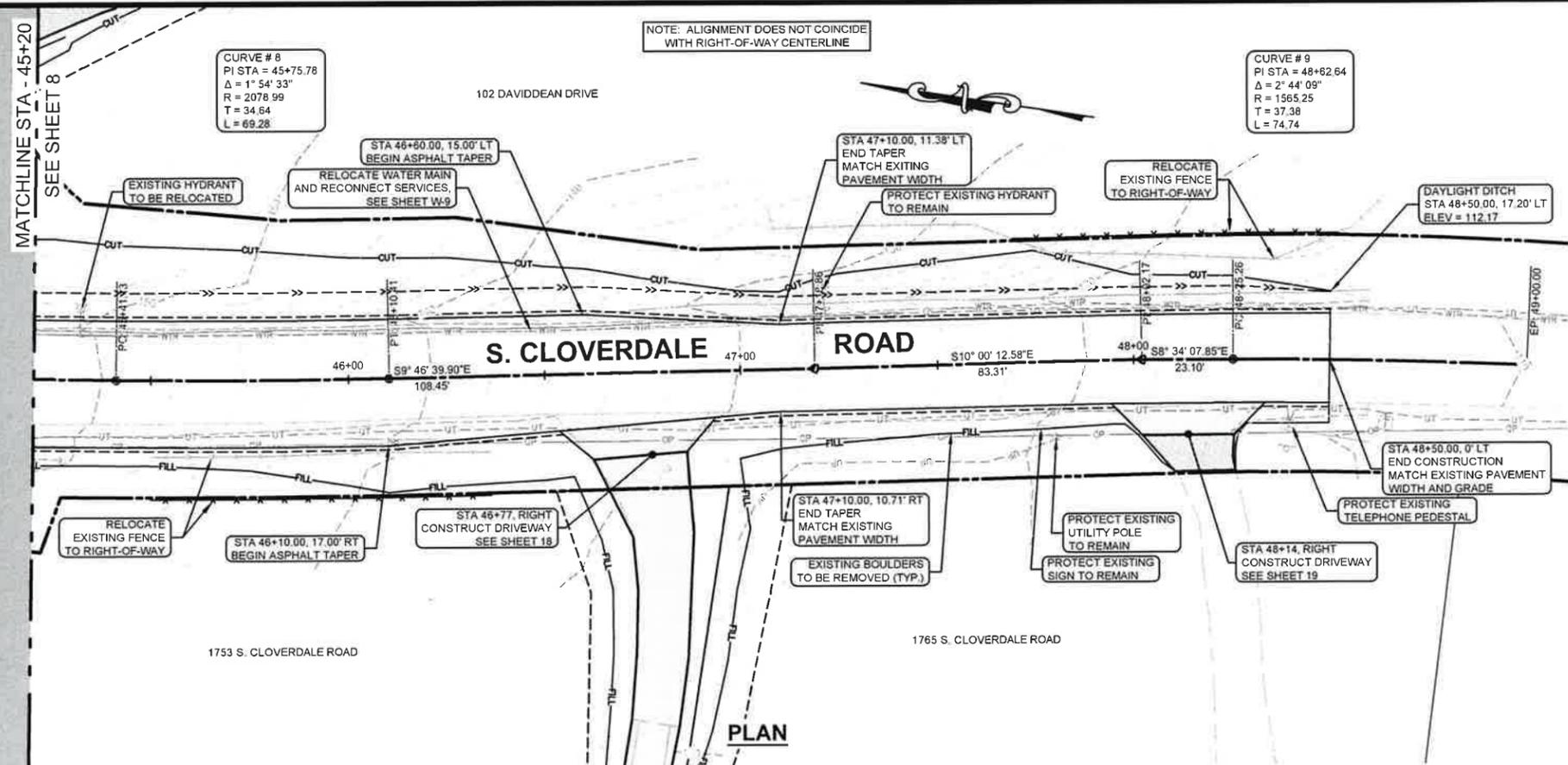
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Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT AND SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT**  
**PLAN AND PROFILE**  
**STA 39+20 TO STA 45+20**

SHEET 8 OF 62



C.P.A.  
 PROJECT MANAGER  
 DATE: 3/1/2025

D.J.B.  
 DRAWN BY  
 DATE: 3/1/2025

S.E.E.  
 CHECKED BY  
 DATE: 3/1/2025

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: 1" = 10'

PROJECT ID: 1235  
 ROAD NO.: 31510 & 31880

COMPUTER FILE: 1235 DESIGN 3-11.dwg

**COWLITZ COUNTY**  
 WASHINGTON

DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

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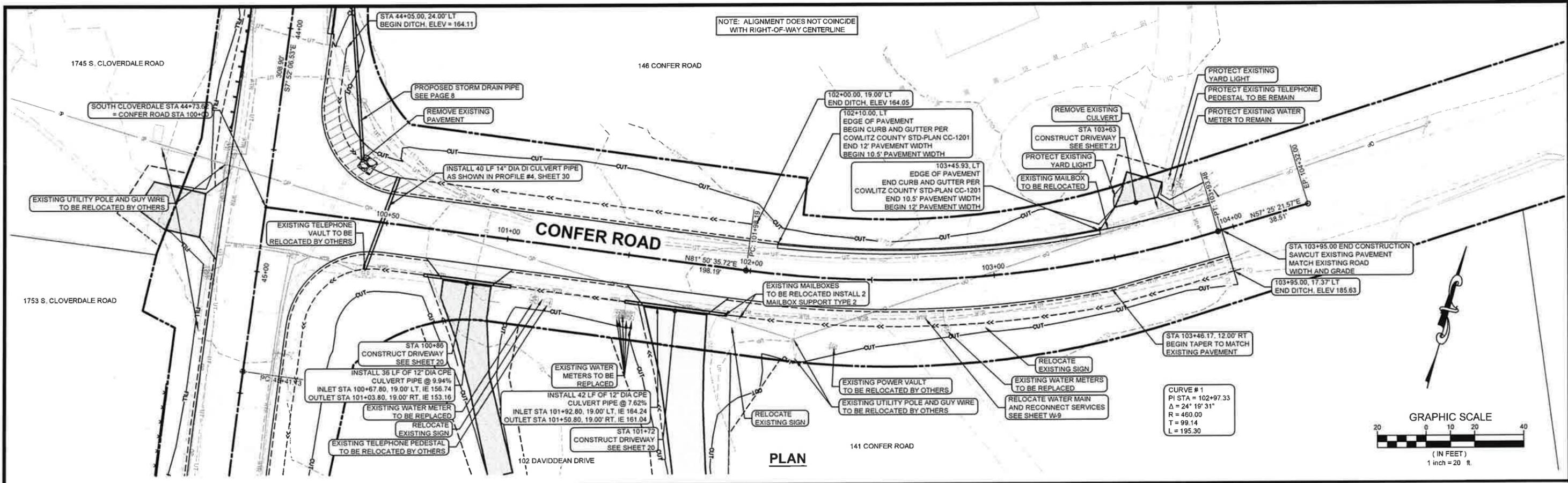


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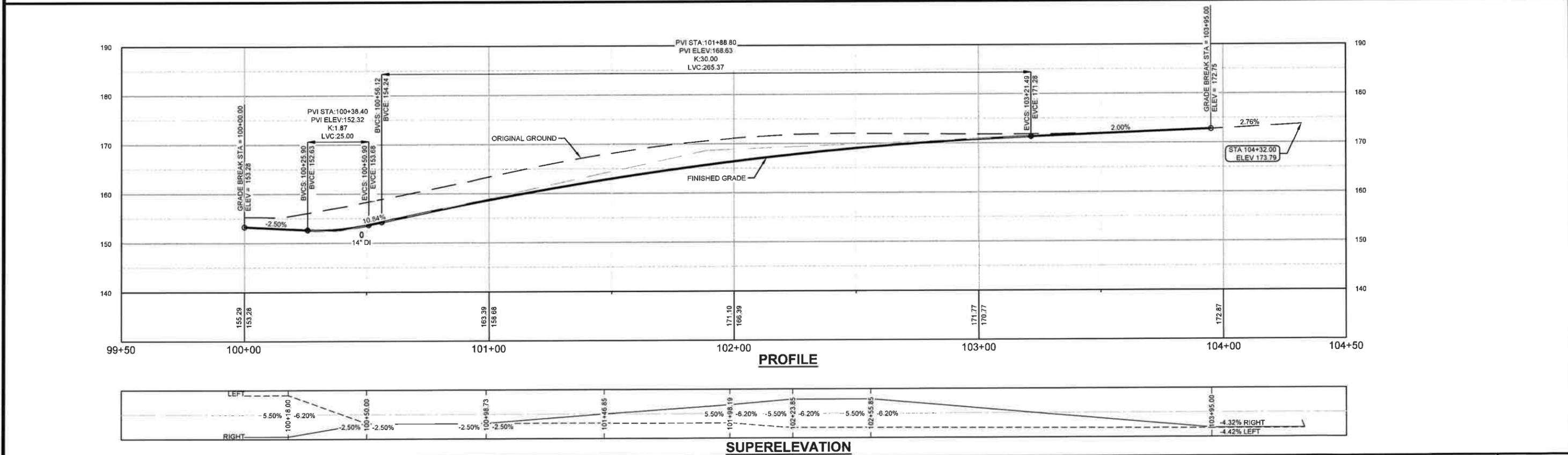
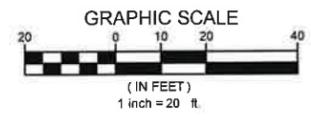
**SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT**

**PLAN AND PROFILE**  
 STA 45+20 TO STA 49+00

SHEET 9 OF 62



PLAN



PROFILE

SUPERELEVATION

C.P.A. PROJECT MANAGER  
 DATE 3/11/2025  
 D.J.B. DRAWN BY  
 DATE 3/11/2025  
 S.E.E. CHECKED BY  
 DATE 3/11/2025

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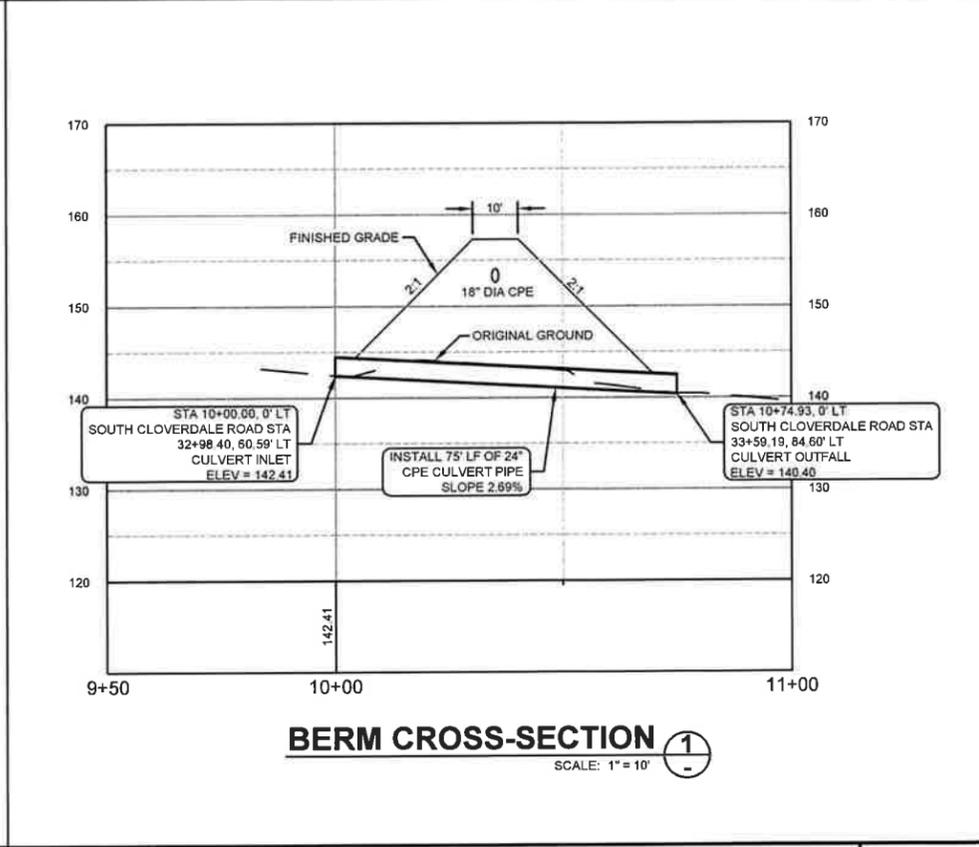
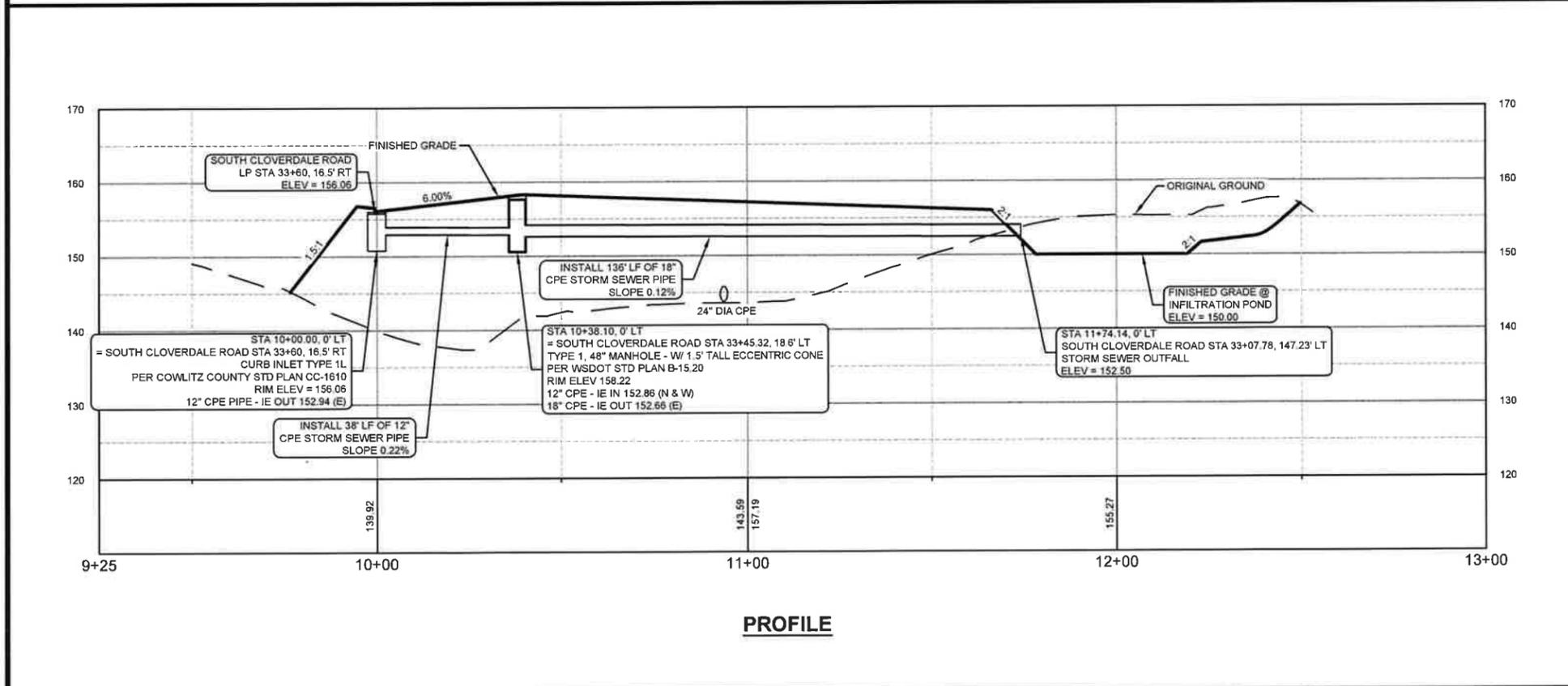
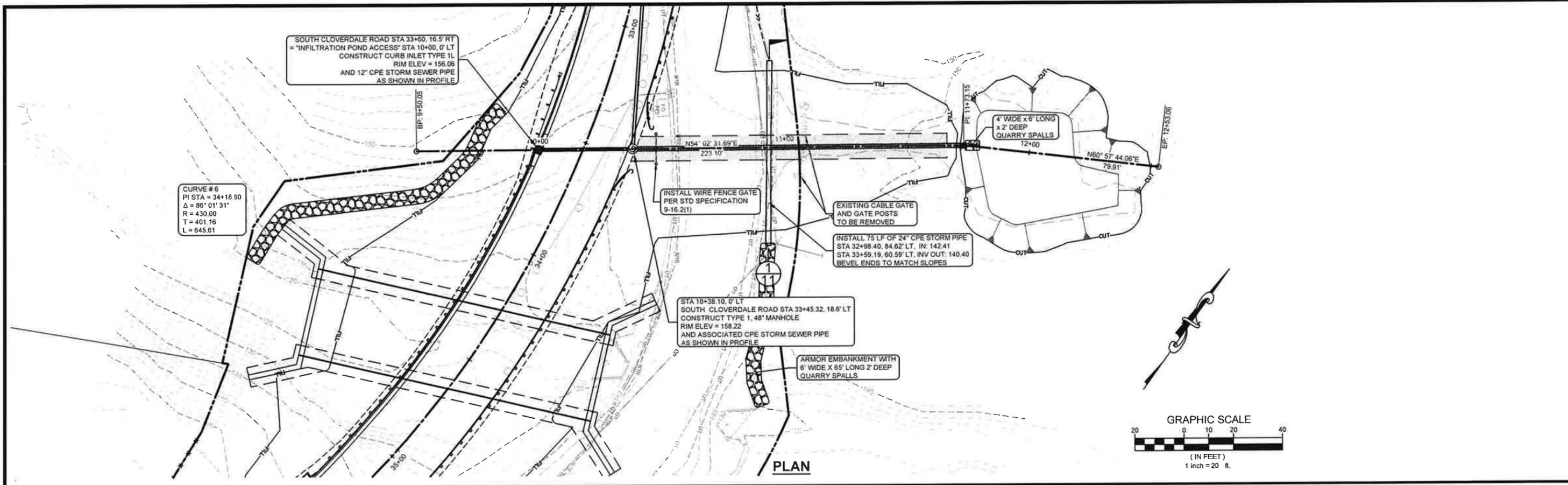
NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT**  
**CONFER ROAD PLAN AND PROFILE**  
**STA 100+00 TO STA 104+32**

SHEET 10 OF 62



C.P.A. PROJECT MANAGER  
 DATE: 3/11/2025  
 DRAWN BY: DATE: 3/11/2025  
 CHECKED BY: DATE: 3/11/2025

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: 1" = 10'  
 PROJECT ID: 1235  
 ROAD NO.: 31510 & 31880  
 COMPUTER FILE: 1235 DESIGN 3-11.dwg

**COWLITZ COUNTY WASHINGTON**  
 DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

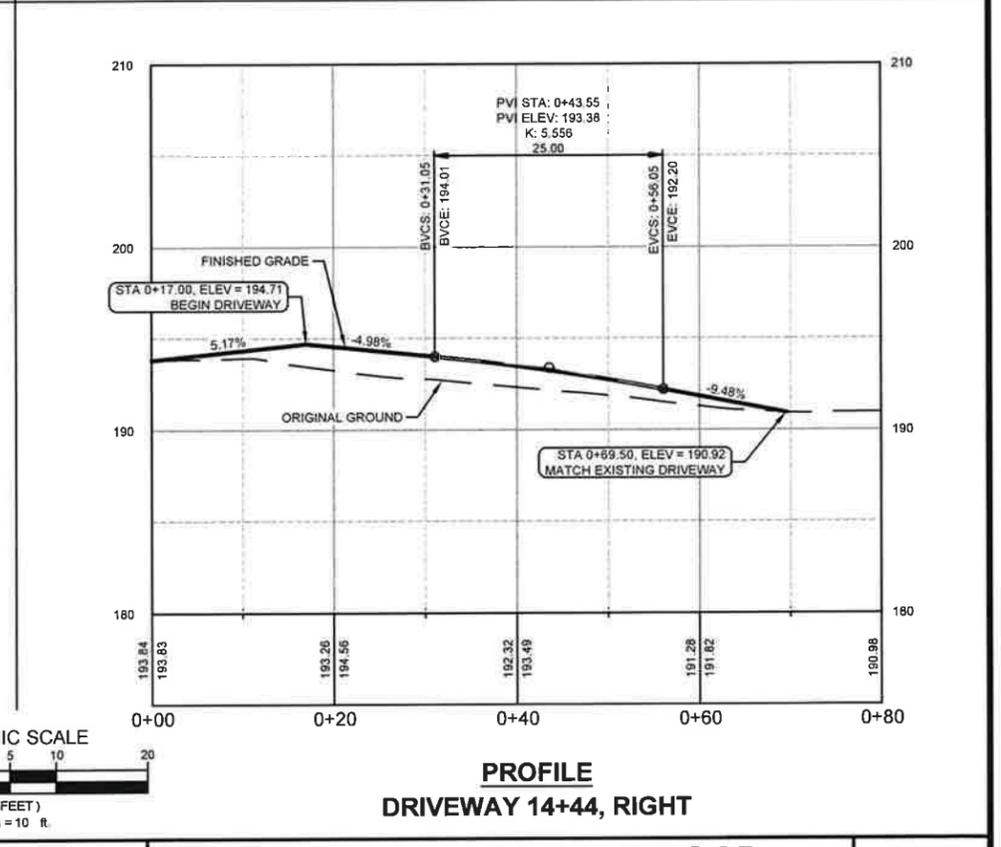
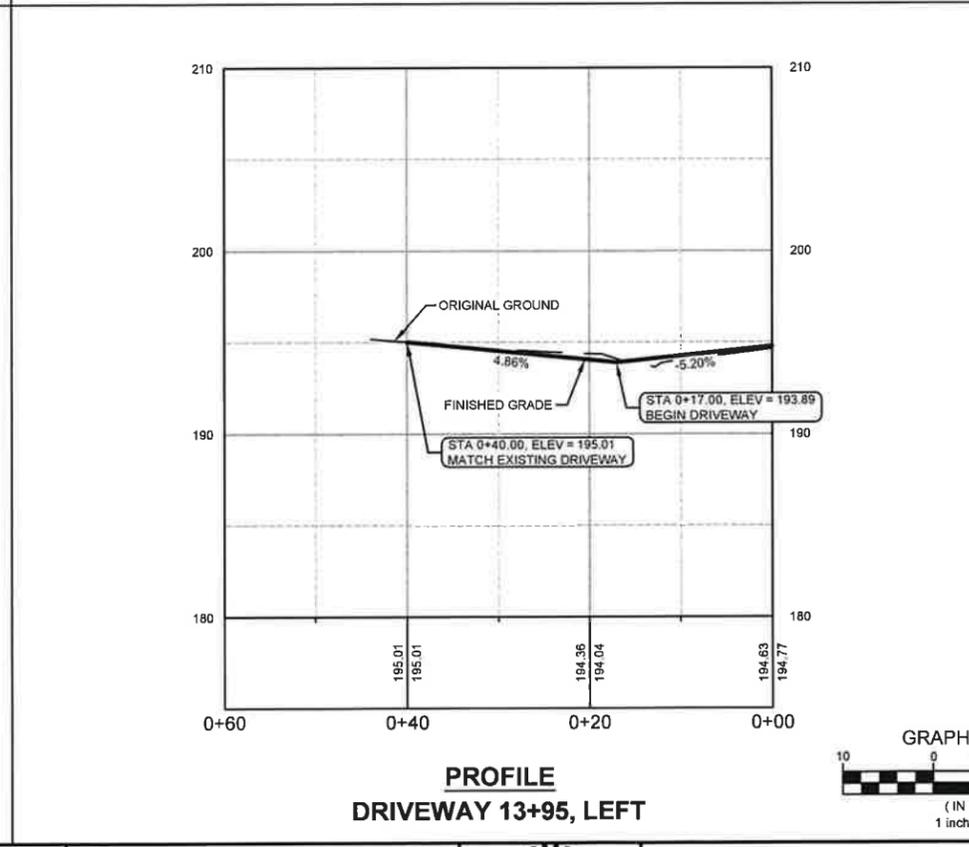
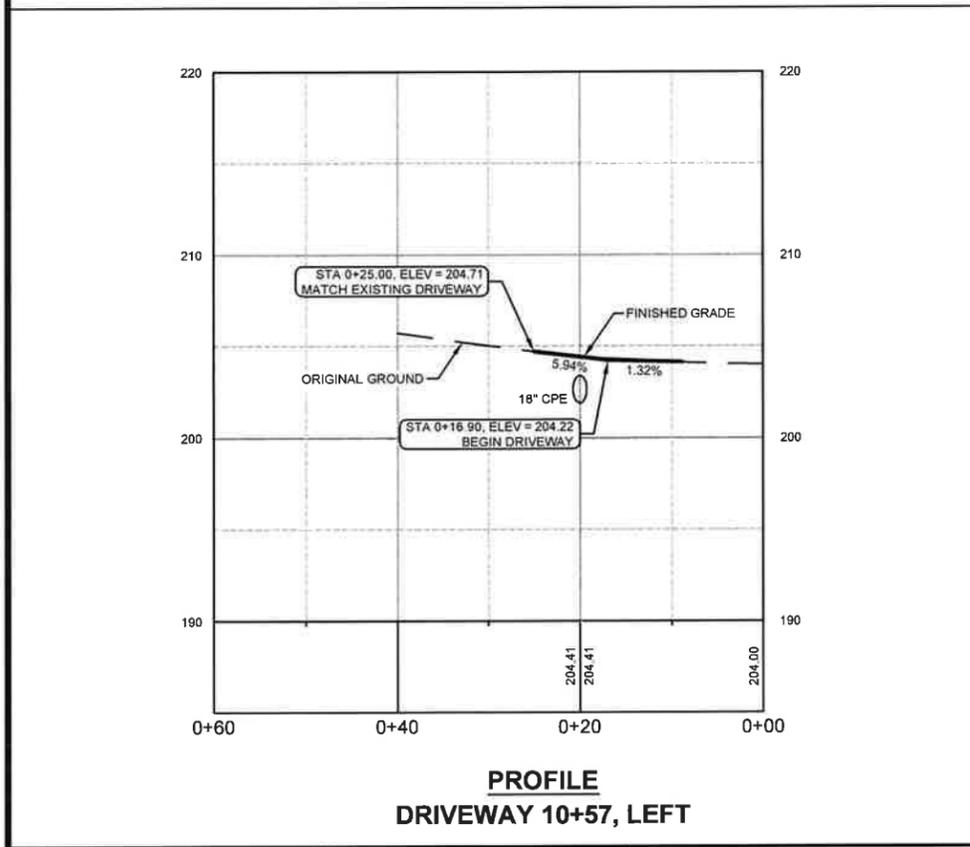
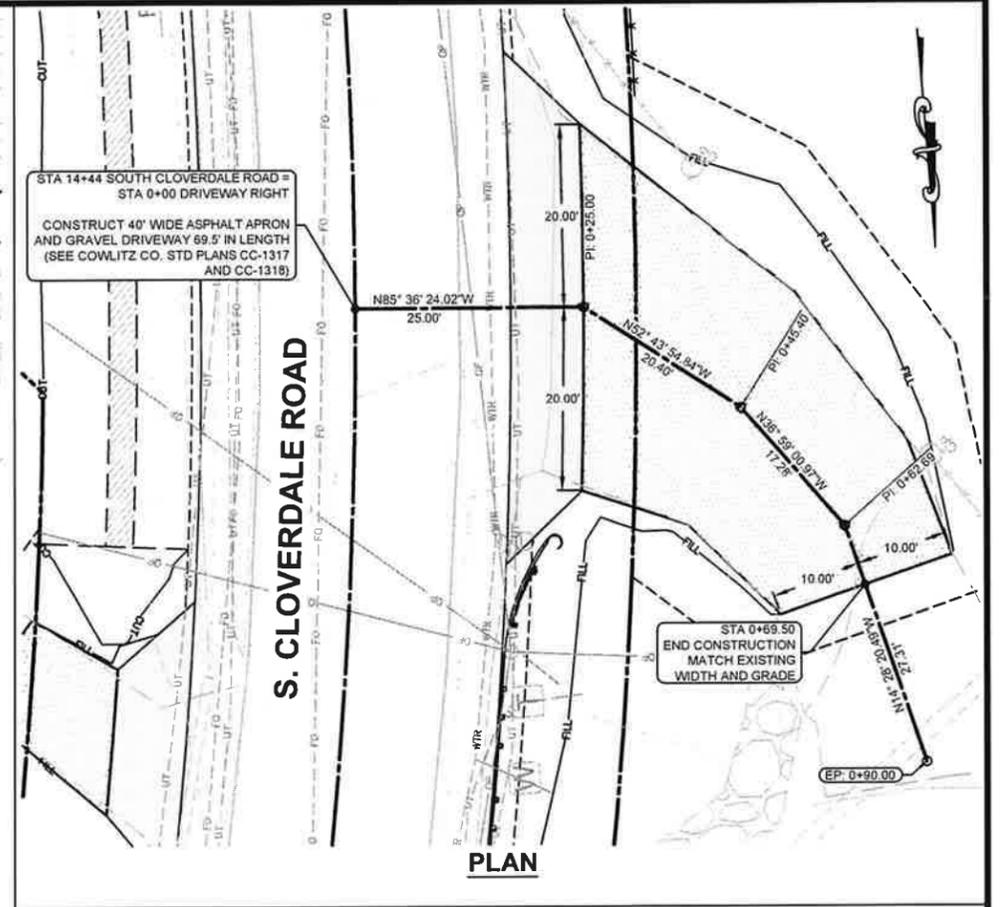
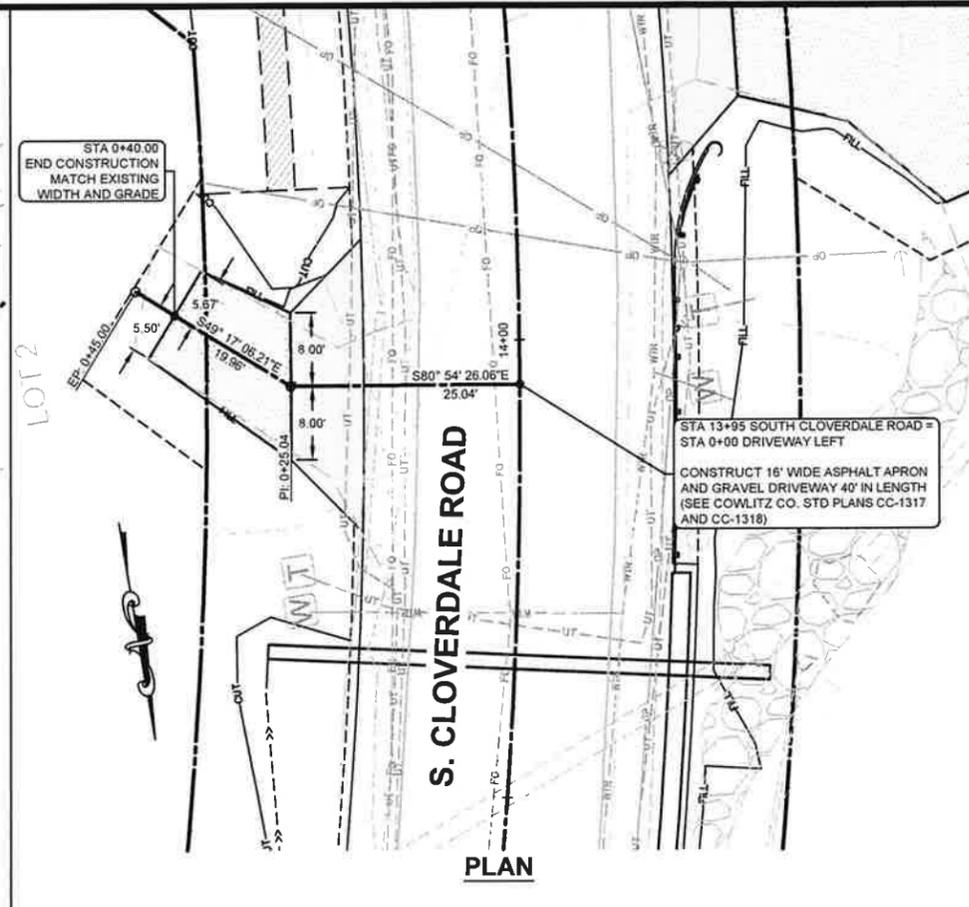
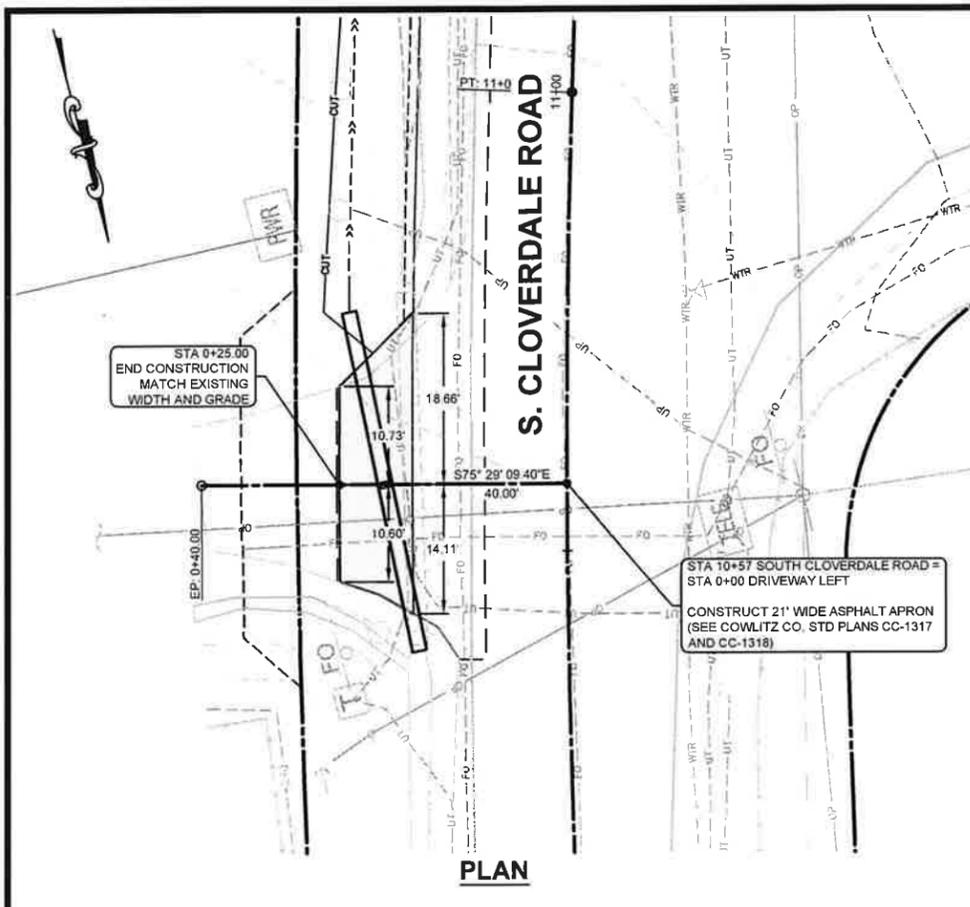
NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**  
**INFILTRATION POND PLAN AND PROFILE & CROSS-SECTION**

SHEET 11 OF 62



C.P.A. PROJECT MANAGER 3/11/2025 DATE  
 D.J.B. DRAWN BY 3/11/2025 DATE  
 S.E.E. CHECKED BY 3/11/2025 DATE

HORIZ. SCALE: 1" = 10'  
 VERT. SCALE: 1" = 5'  
 PROJECT ID: 1235  
 ROAD NO. : 31510 & 31880  
 COMPUTER FILE: 1235 DRIVEWAYS 12-21.dwg

**COWLITZ COUNTY**  
 WASHINGTON  
 DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

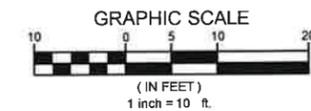
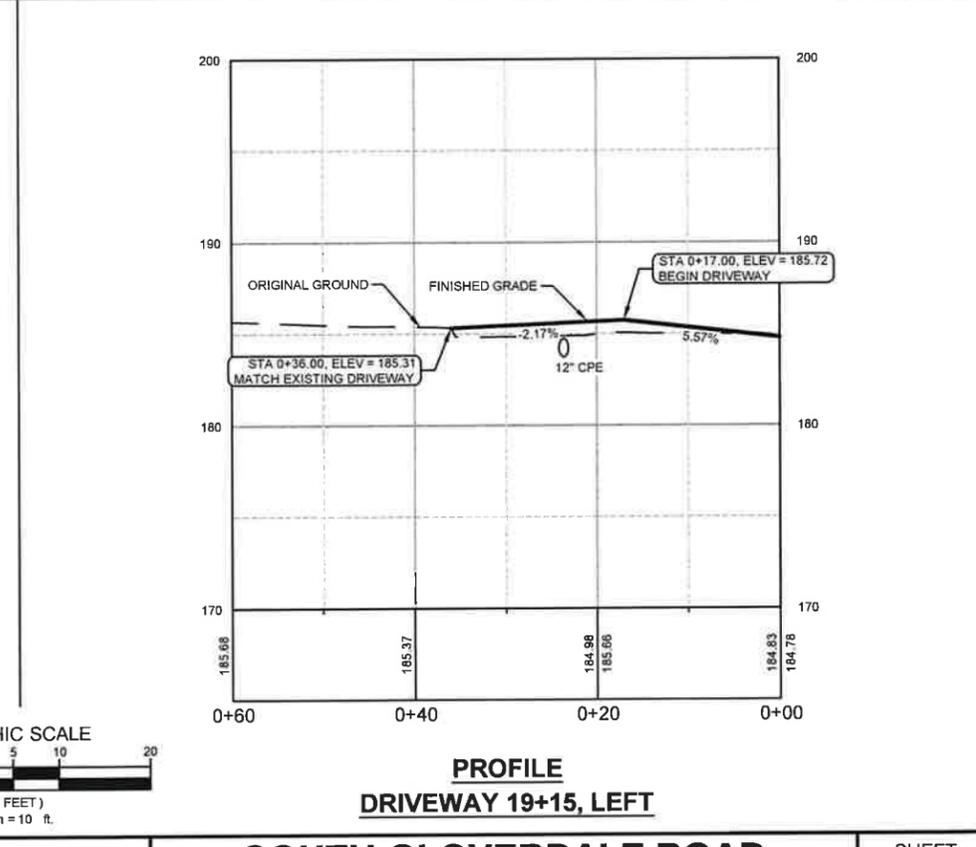
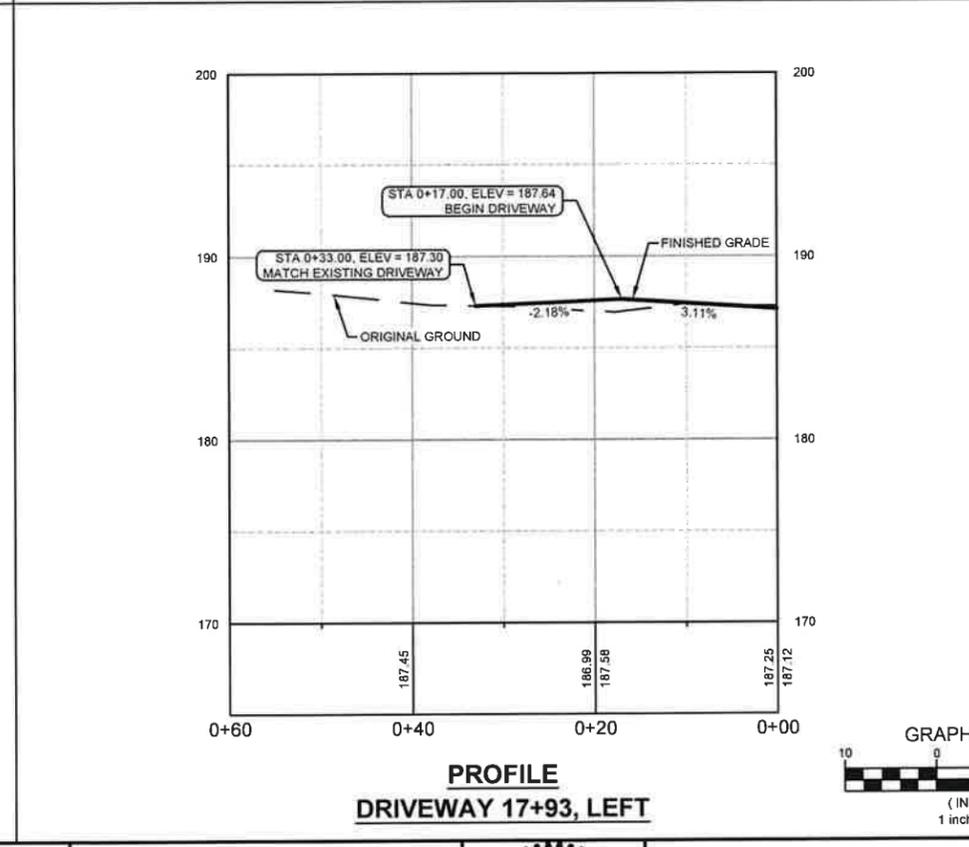
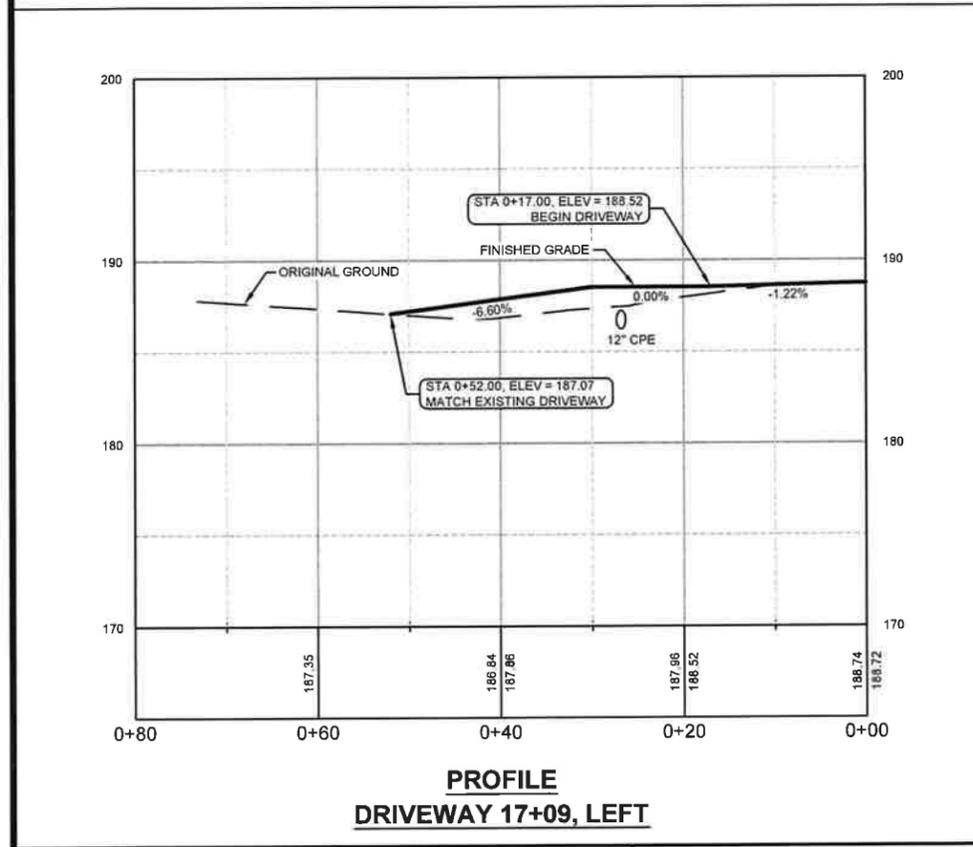
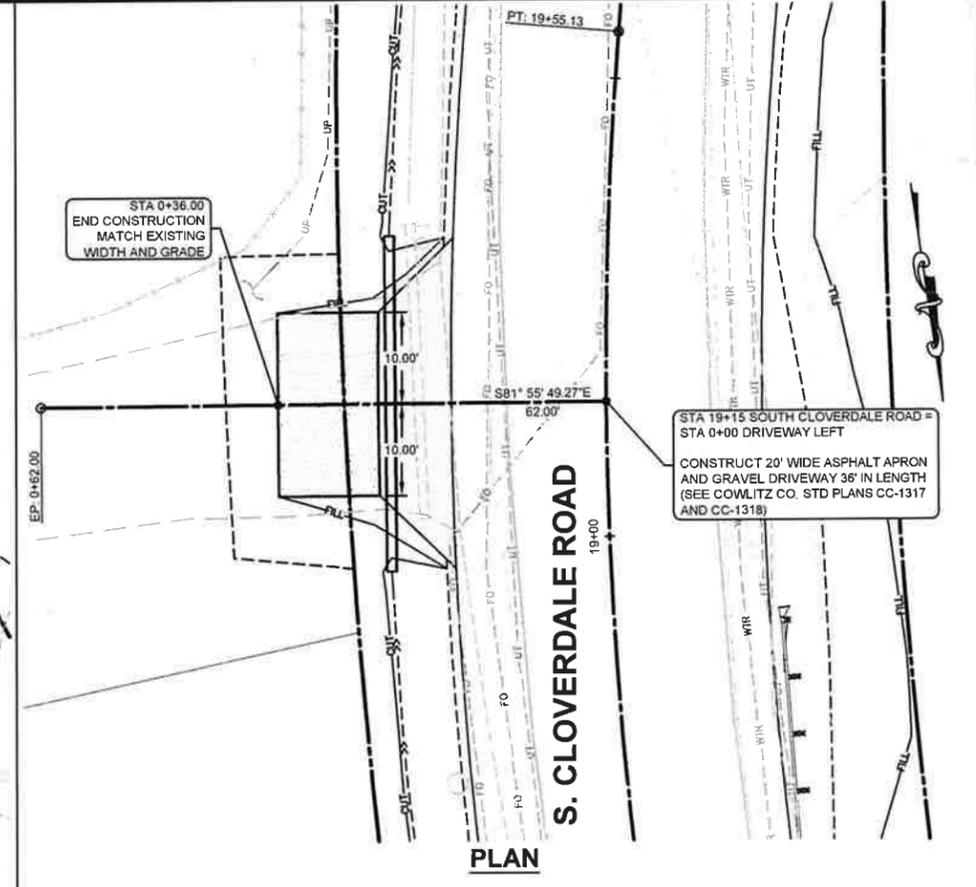
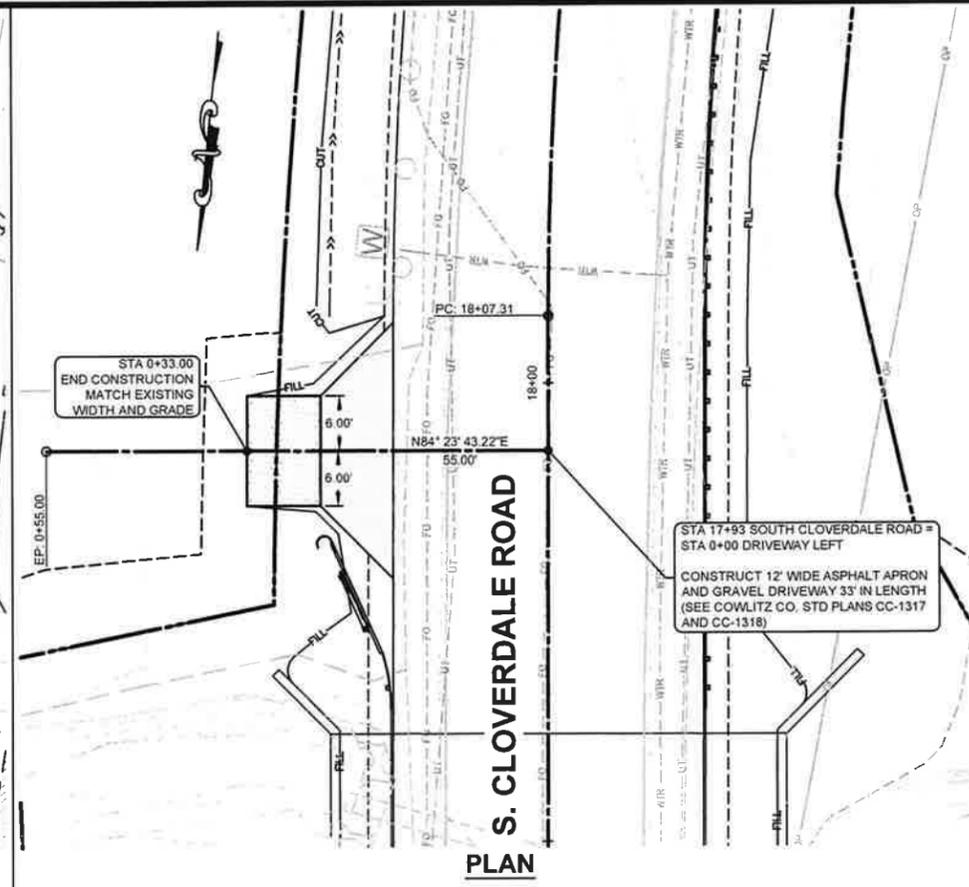
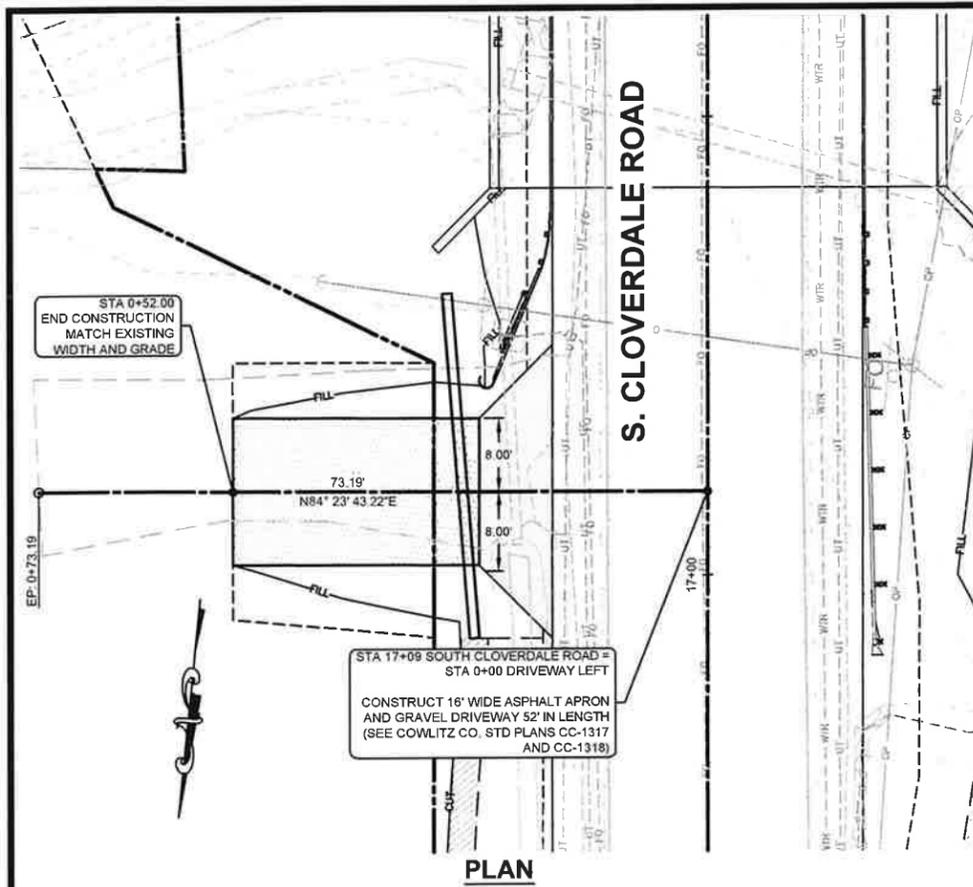
NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**  
**DRIVEWAYS**

SHEET 12 OF 62



C.P.A. PROJECT MANAGER DATE 3/11/2025  
 D.J.B. DRAWN BY DATE 3/11/2025  
 S.E.E. CHECKED BY DATE 3/11/2025

HORIZ. SCALE: 1" = 10'  
 VERT. SCALE: 1" = 5'  
 PROJECT ID: 1235  
 ROAD NO.: 31510 & 31880  
 COMPUTER FILE: 1235 DRIVEWAYS 12-21.dwg



DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

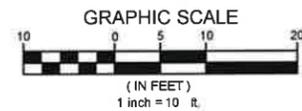
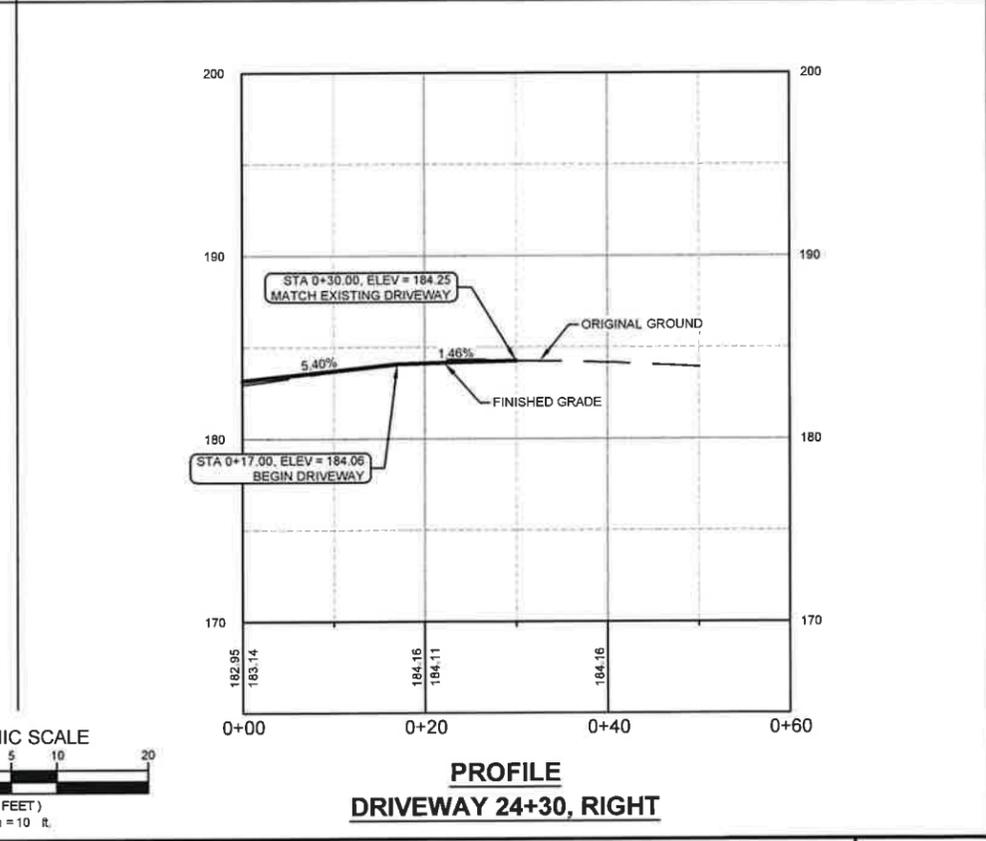
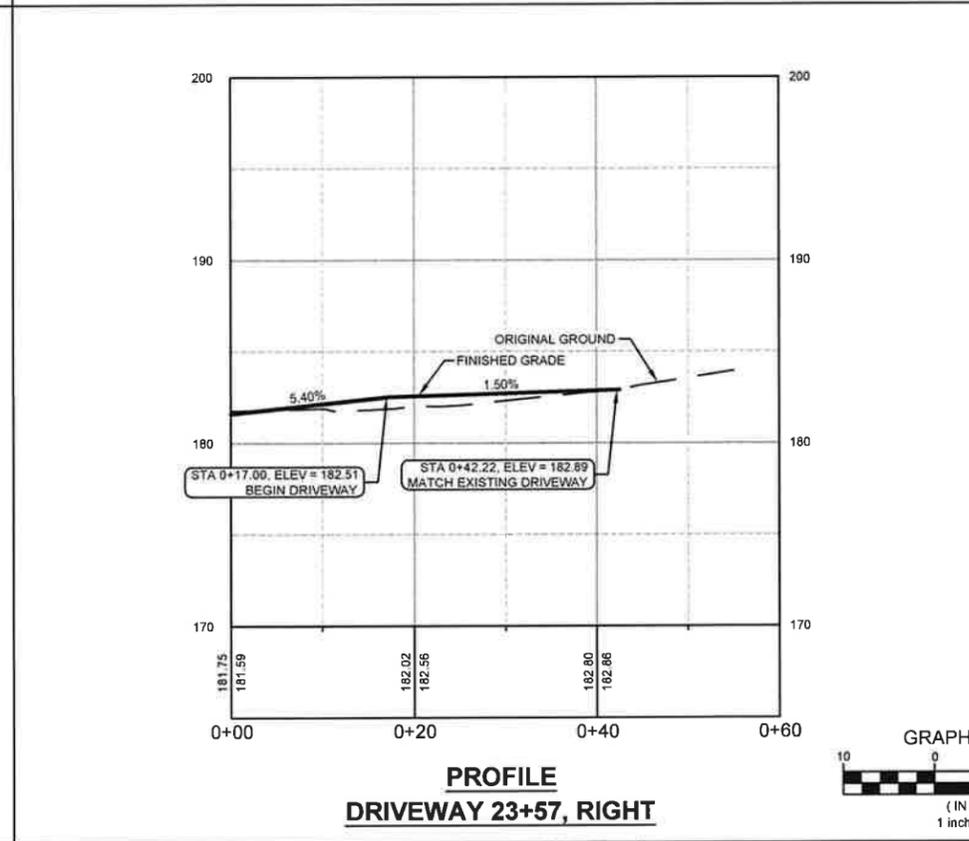
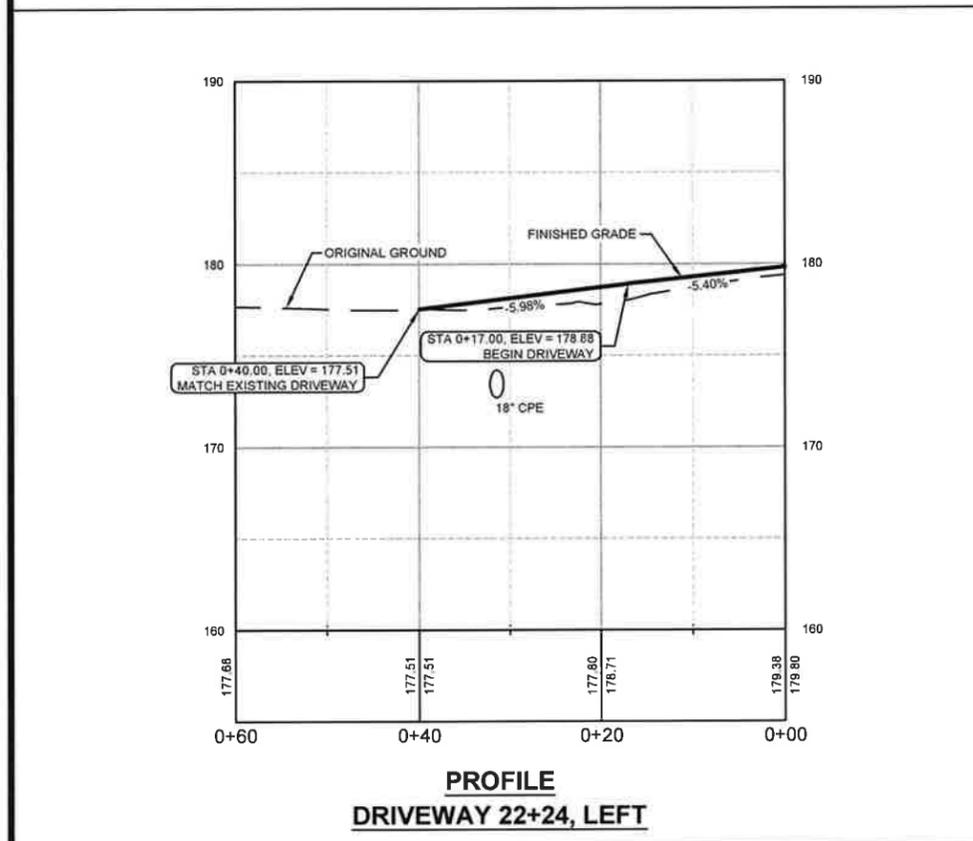
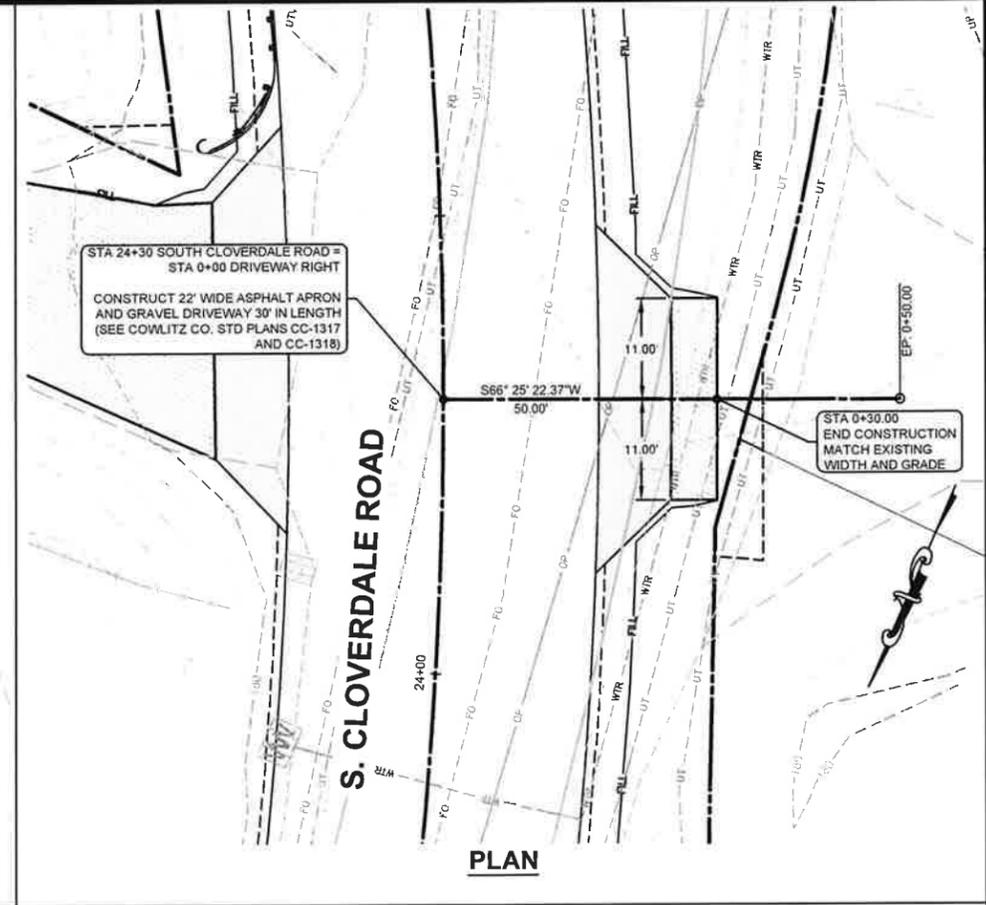
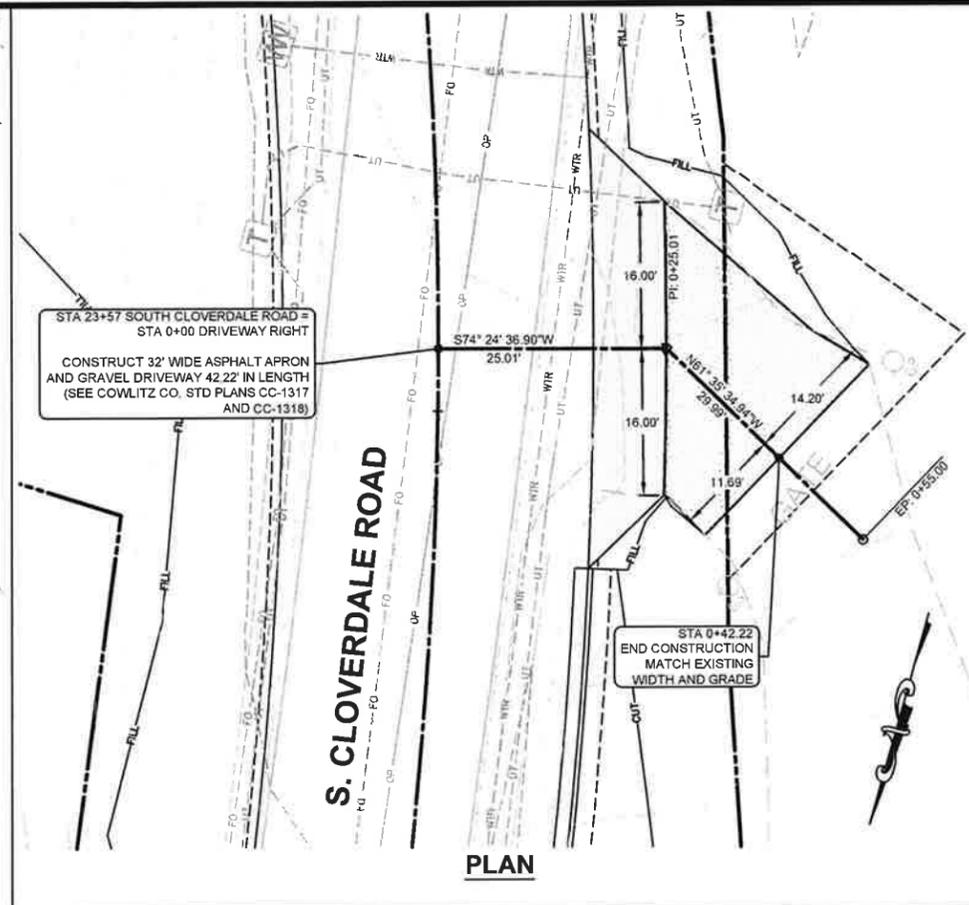
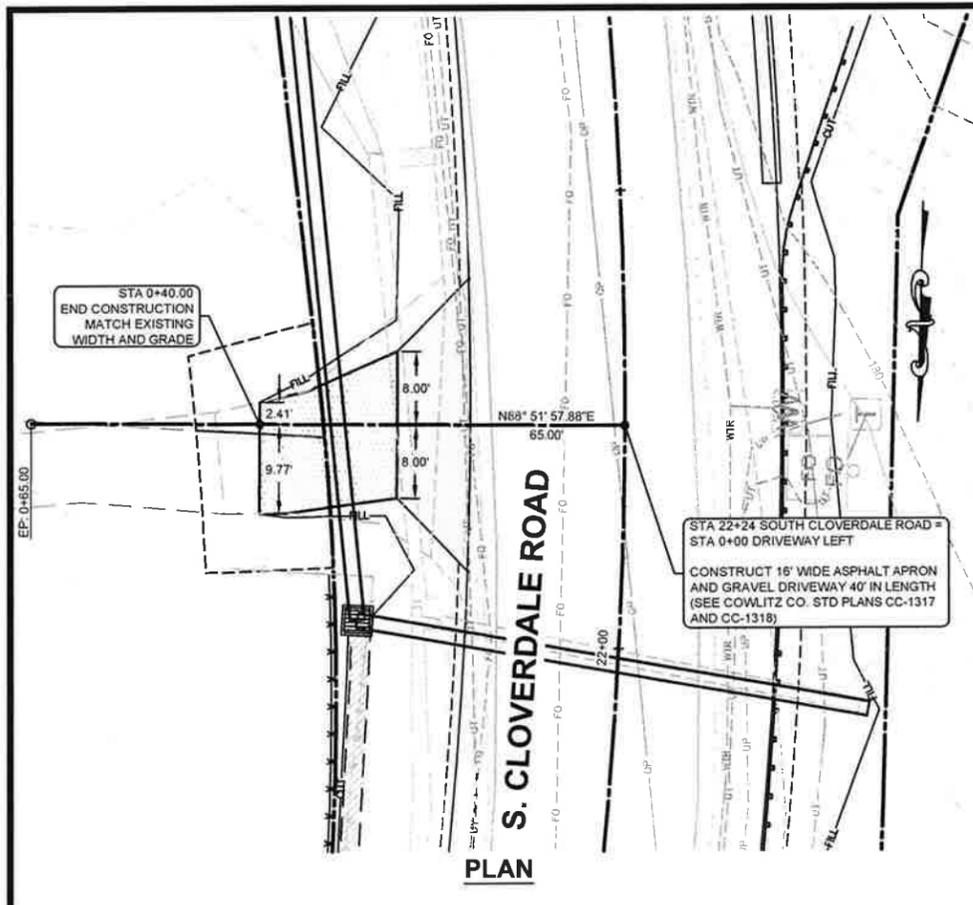
NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT DRIVEWAYS**

SHEET 13 OF 62



C.P.A. PROJECT MANAGER 3/11/2025 DATE  
 D.J.B. DRAWN BY 3/11/2025 DATE  
 S.E.E. CHECKED BY 3/11/2025 DATE

HORIZ. SCALE: 1" = 10'  
 VERT. SCALE: 1" = 5'  
 PROJECT ID: 1235  
 ROAD NO.: 31510 & 31880  
 COMPUTER FILE: 1235 DRIVEWAYS 12-21.dwg

**COWLITZ COUNTY**  
 WASHINGTON  
 DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

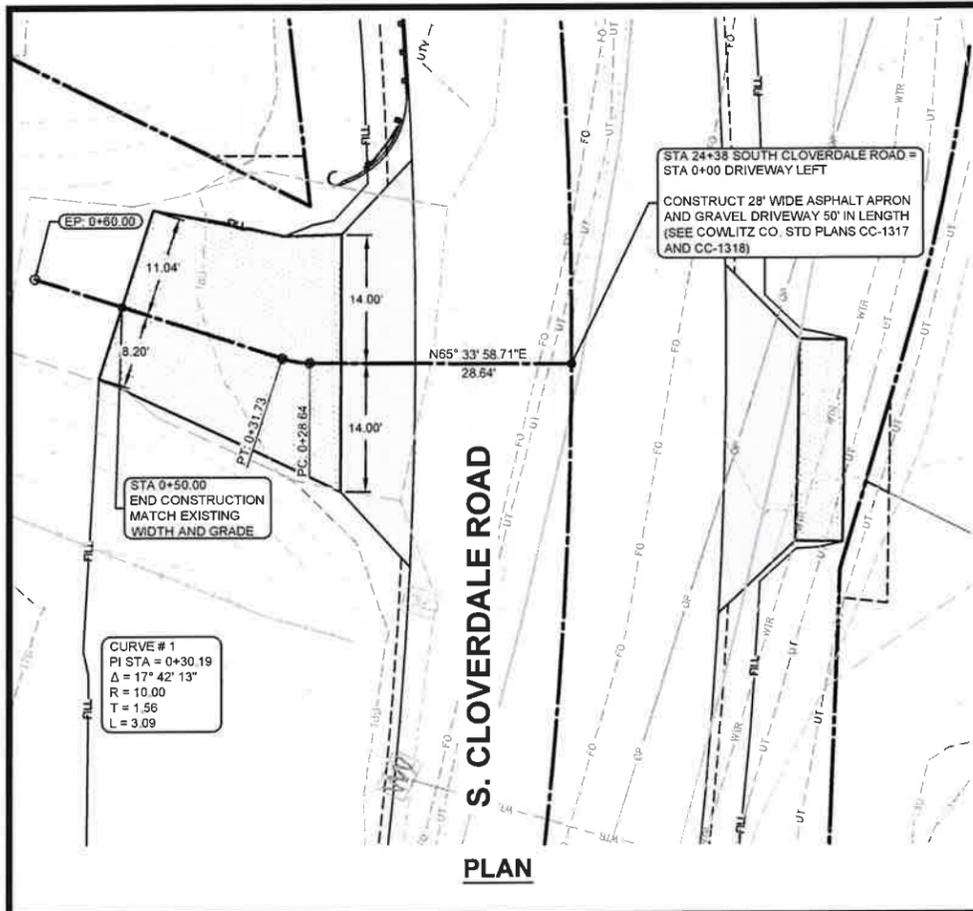
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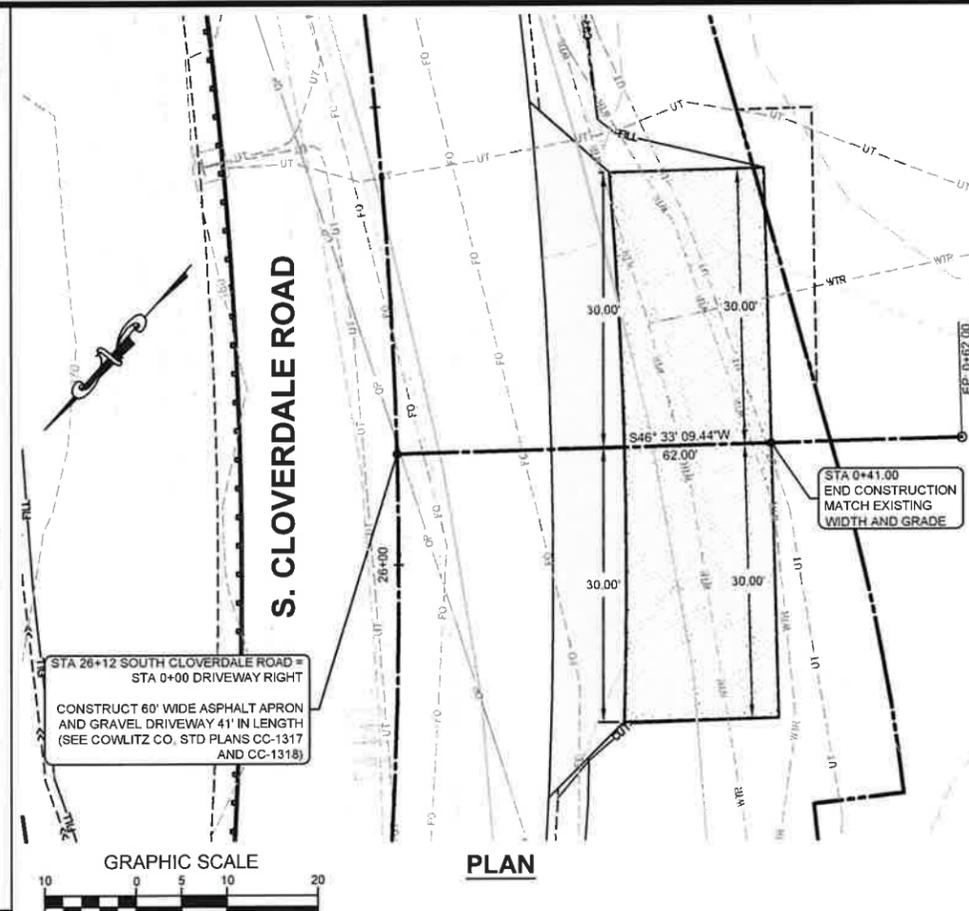
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD  
 IMPROVEMENT PROJECT  
 DRIVEWAYS**

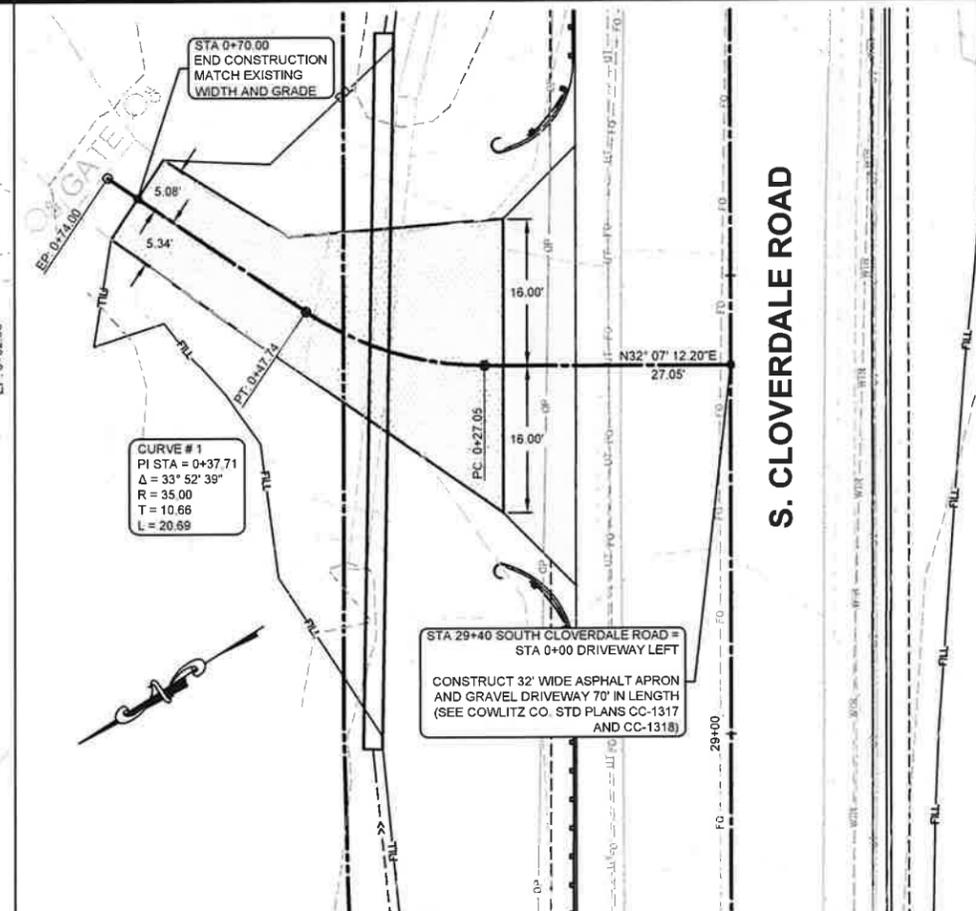
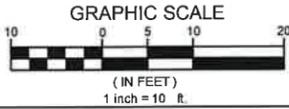
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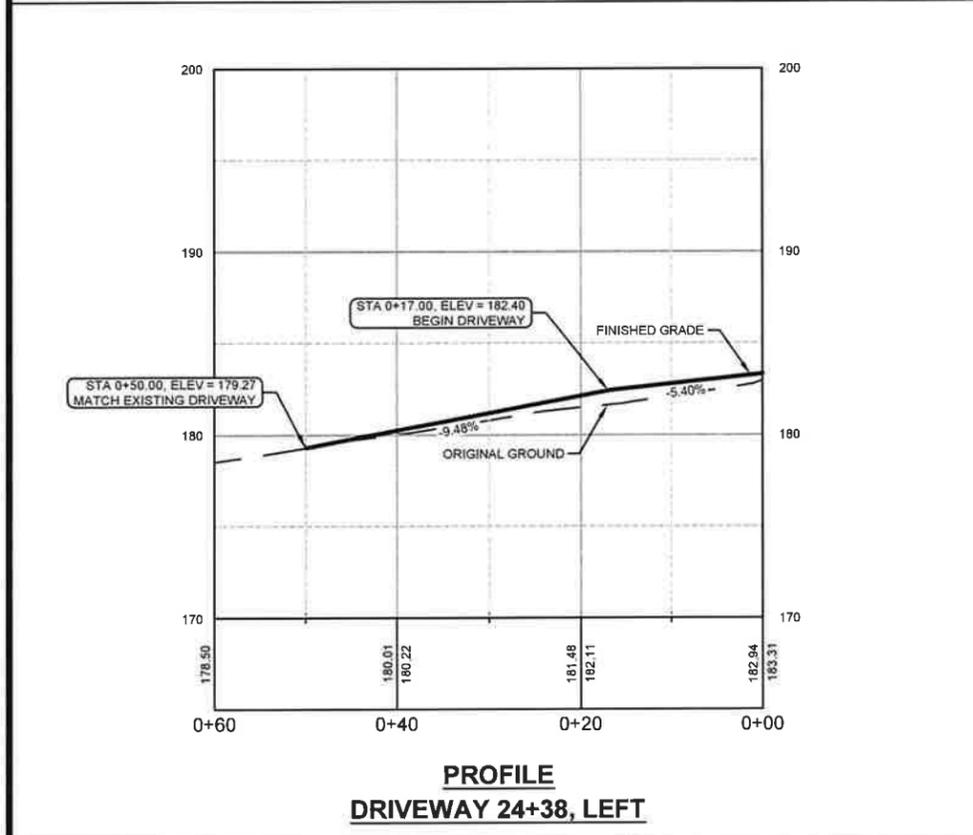
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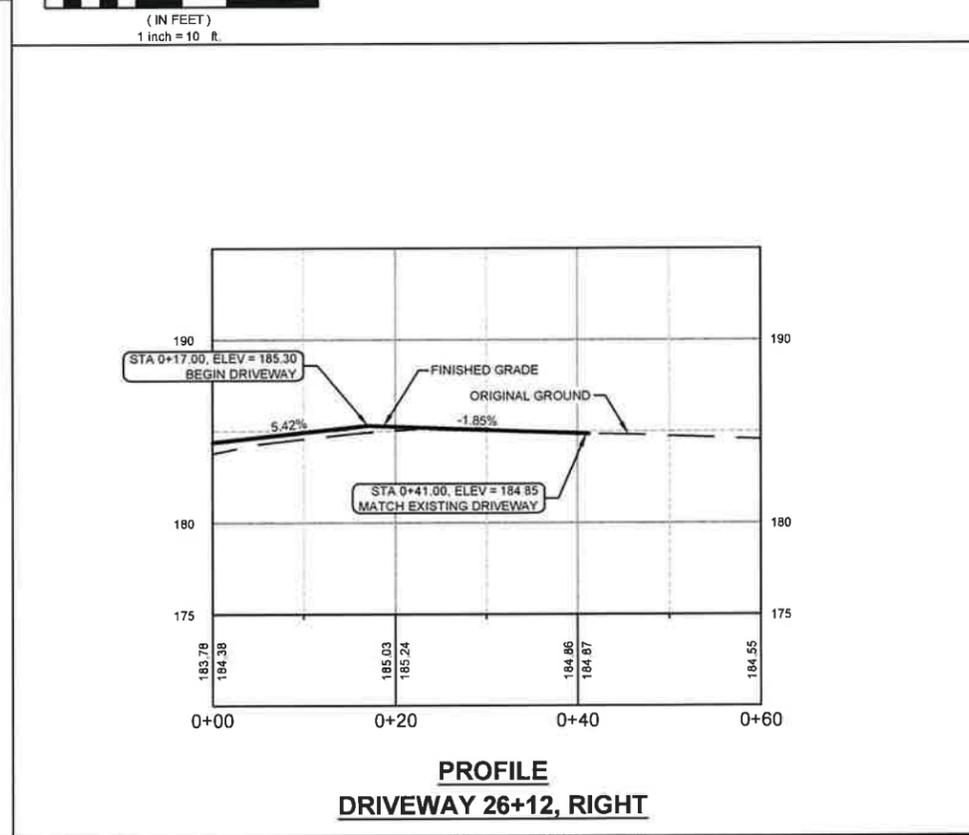
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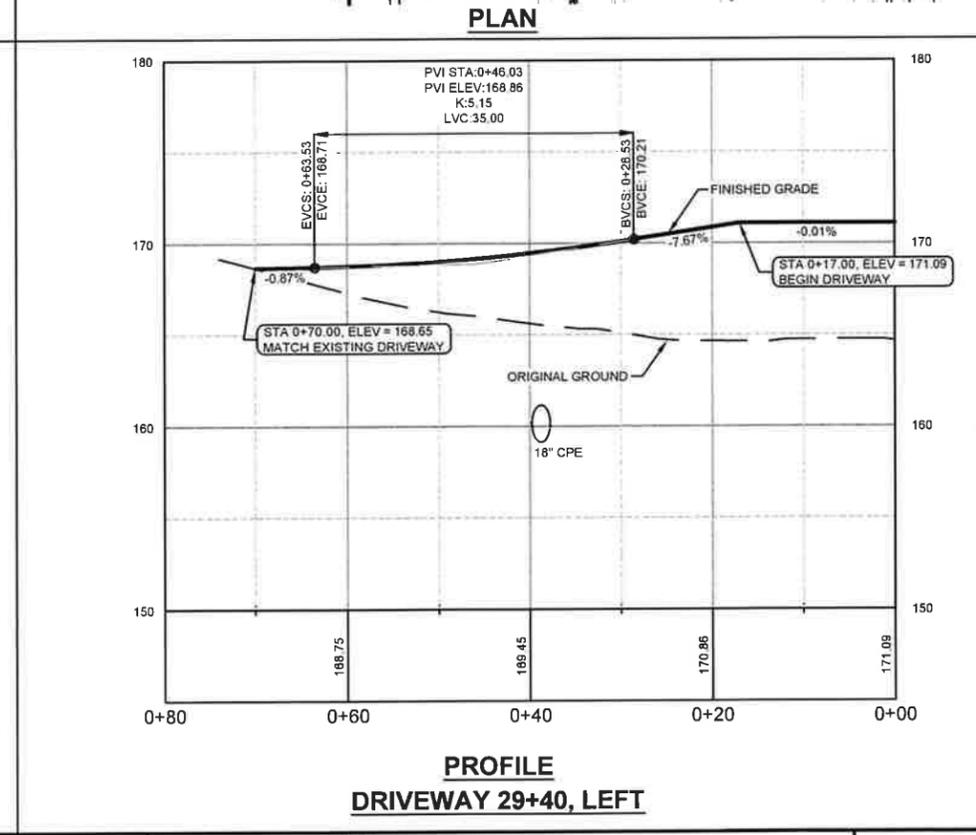
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PROFILE DRIVEWAY 24+38, LEFT



PROFILE DRIVEWAY 26+12, RIGHT



PROFILE DRIVEWAY 29+40, LEFT

C.P.A. 3/11/2025  
PROJECT MANAGER DATE  
D.J.B. 3/11/2025  
DRAWN BY DATE  
S.E.E. 3/11/2025  
CHECKED BY DATE

HORIZ. SCALE: 1" = 10'  
VERT. SCALE: 1" = 5'  
PROJECT ID: 1235  
ROAD NO. : 31510 & 31880  
COMPUTER FILE: 1235 DRIVEWAYS 12-21.dwg

COWLITZ COUNTY WASHINGTON  
DEPARTMENT OF PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

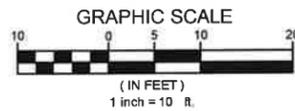
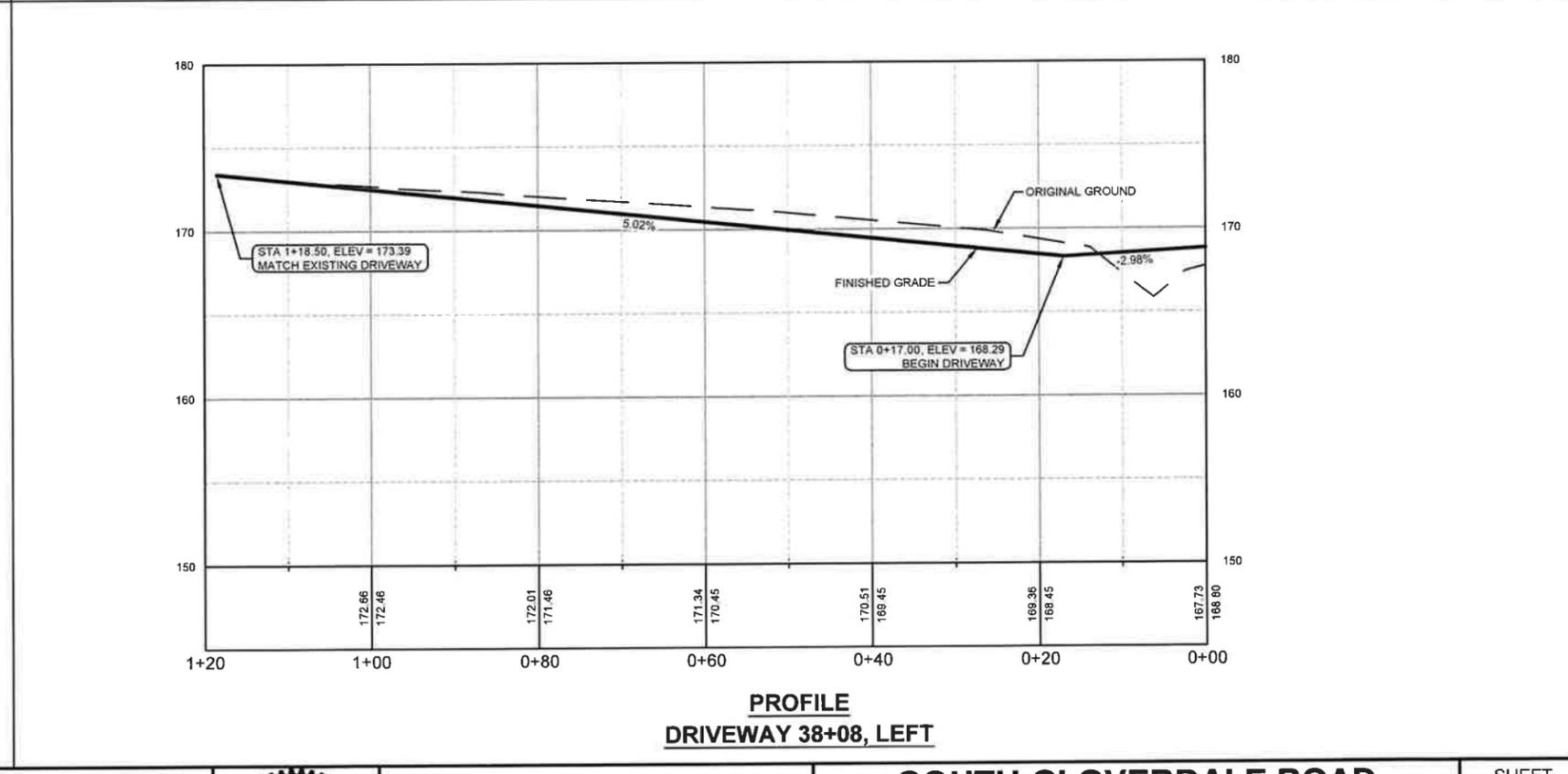
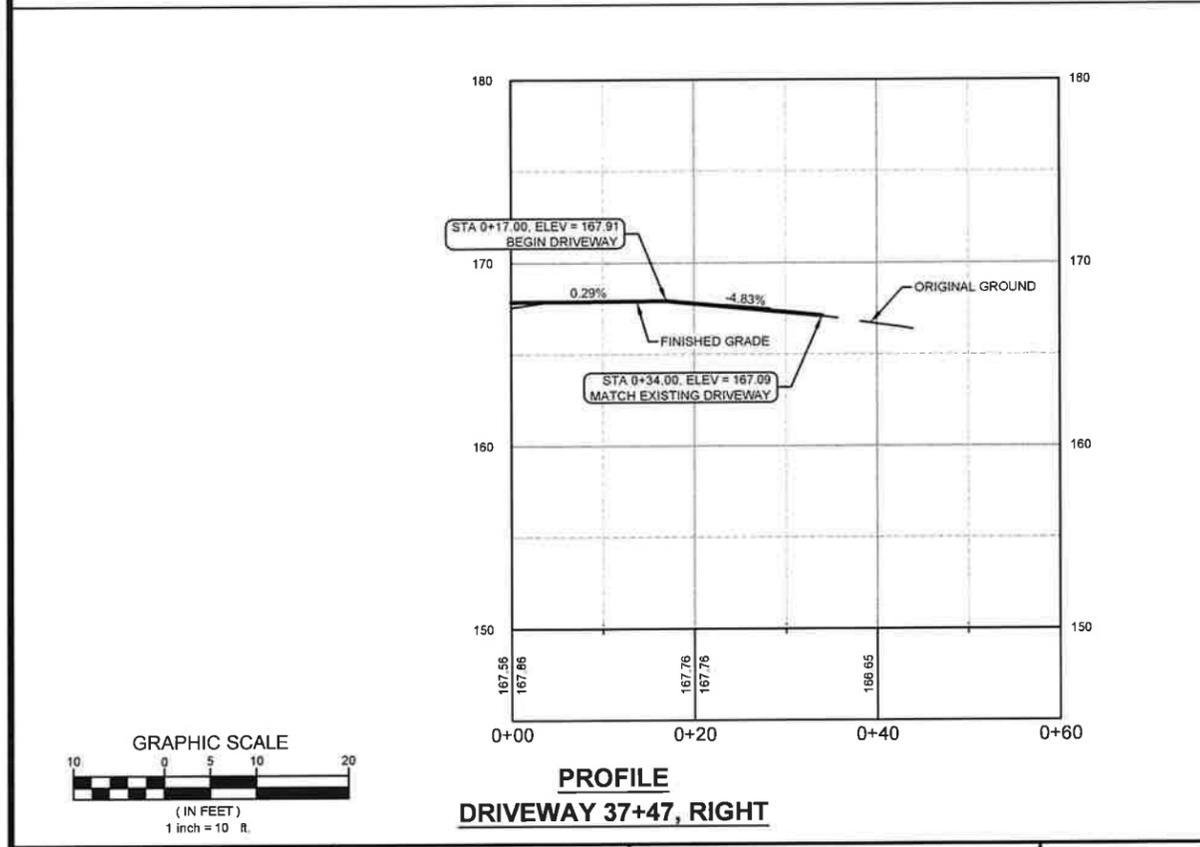
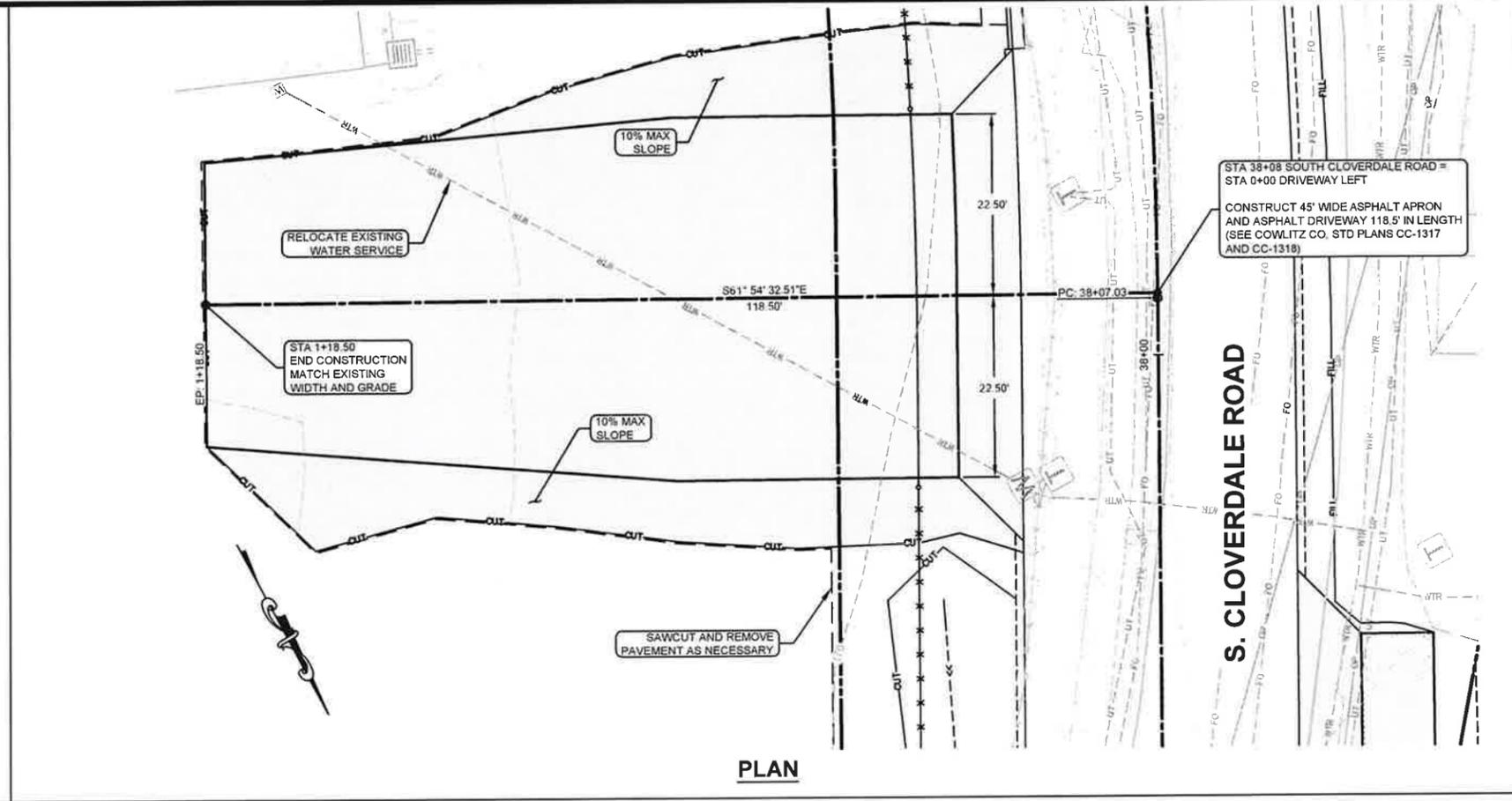
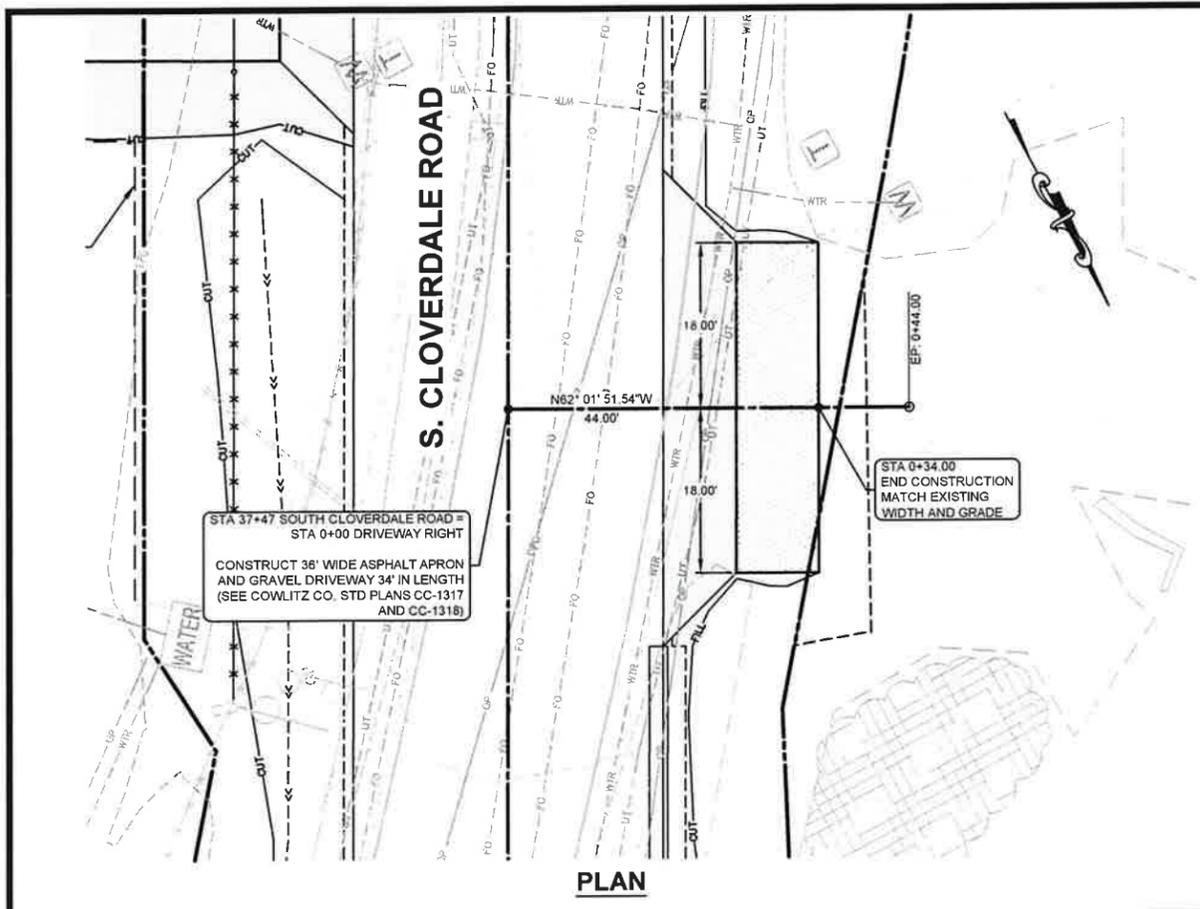
NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**  
**DRIVEWAYS**

SHEET 15 OF 62



C.P.A. PROJECT MANAGER 3/11/2025 DATE  
D.J.B. DRAWN BY 3/11/2025 DATE  
S.E.E. CHECKED BY 3/11/2025 DATE

HORIZ. SCALE: 1" = 10'  
VERT. SCALE: 1" = 5'  
PROJECT ID: 1235  
ROAD NO.: 31510 & 31880  
COMPUTER FILE: 1235 DRIVEWAYS 12-21.dwg

**COWLITZ COUNTY**  
WASHINGTON

DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

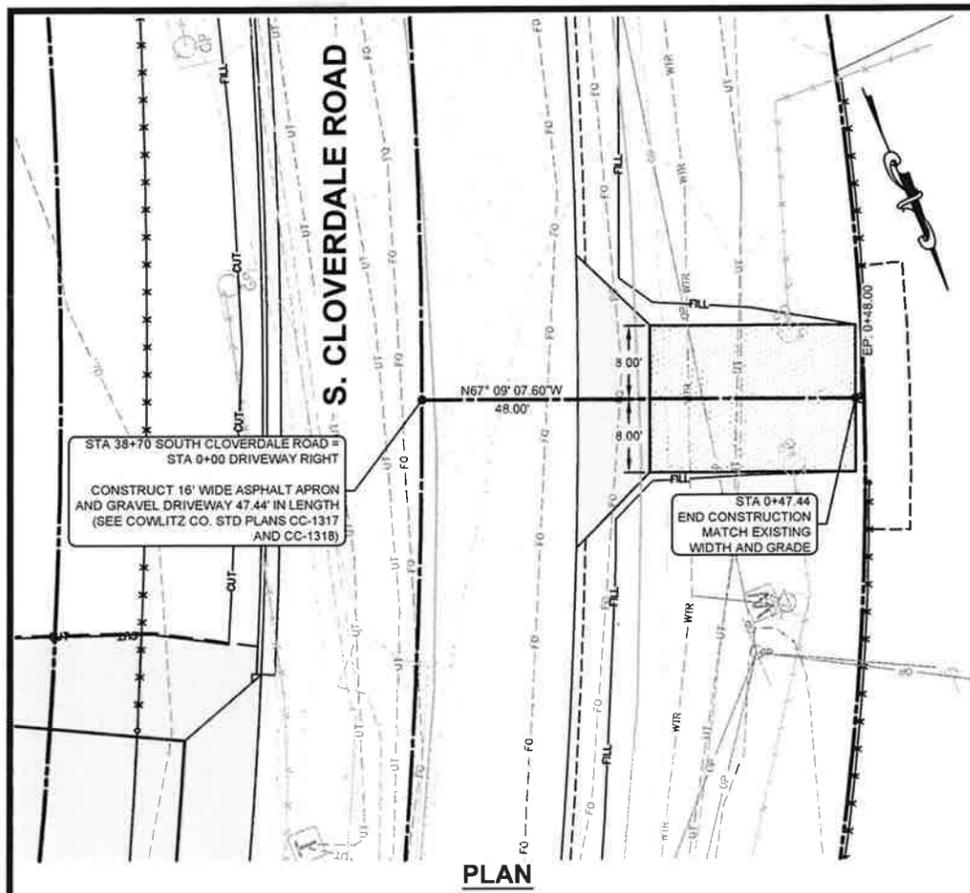
NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



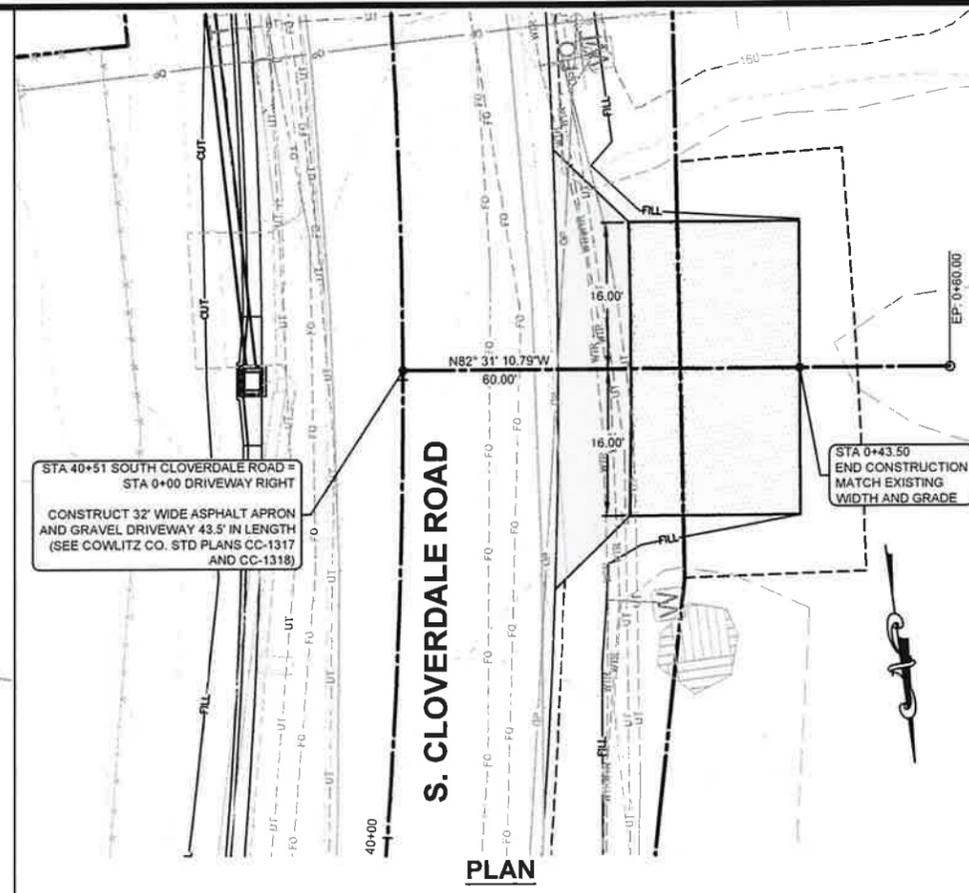
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD**  
**IMPROVEMENT PROJECT**  
**DRIVEWAYS**

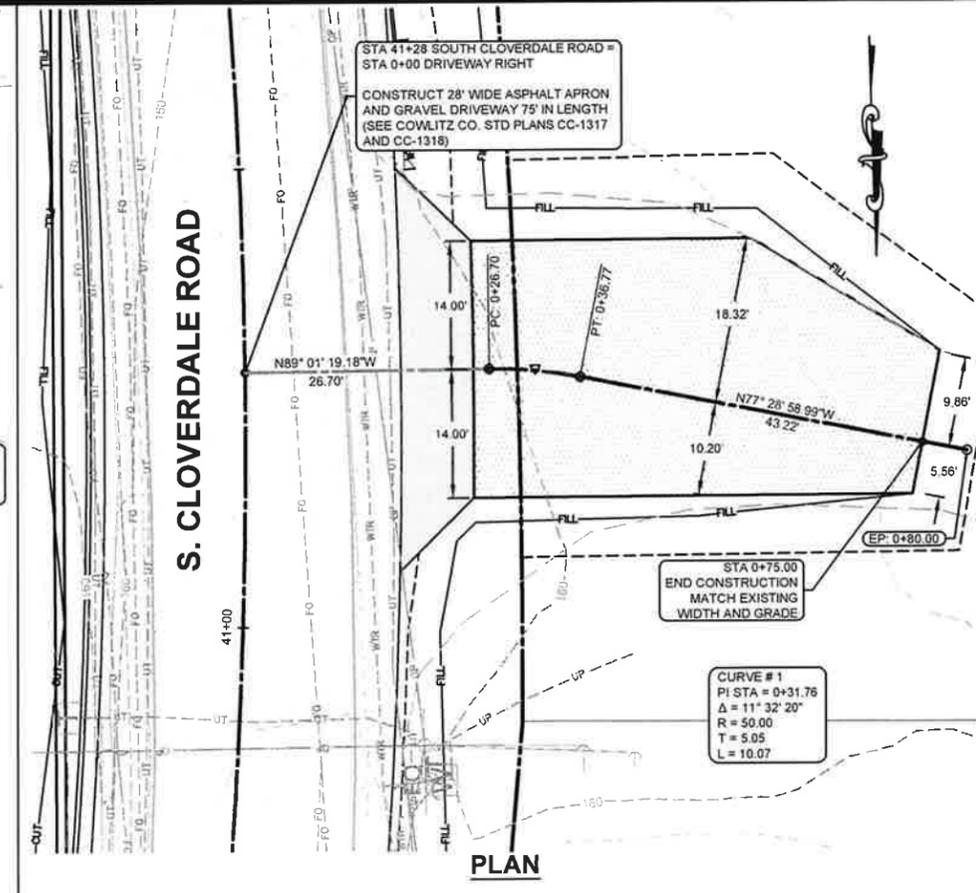
SHEET  
**16**  
OF  
**62**



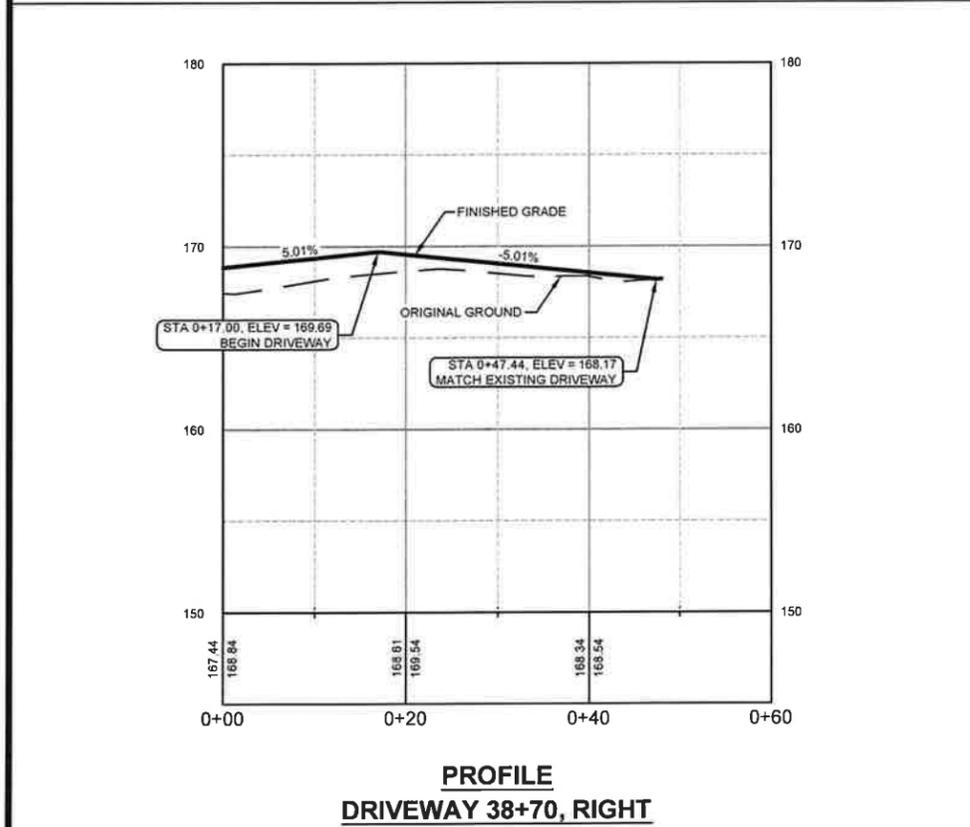
PLAN



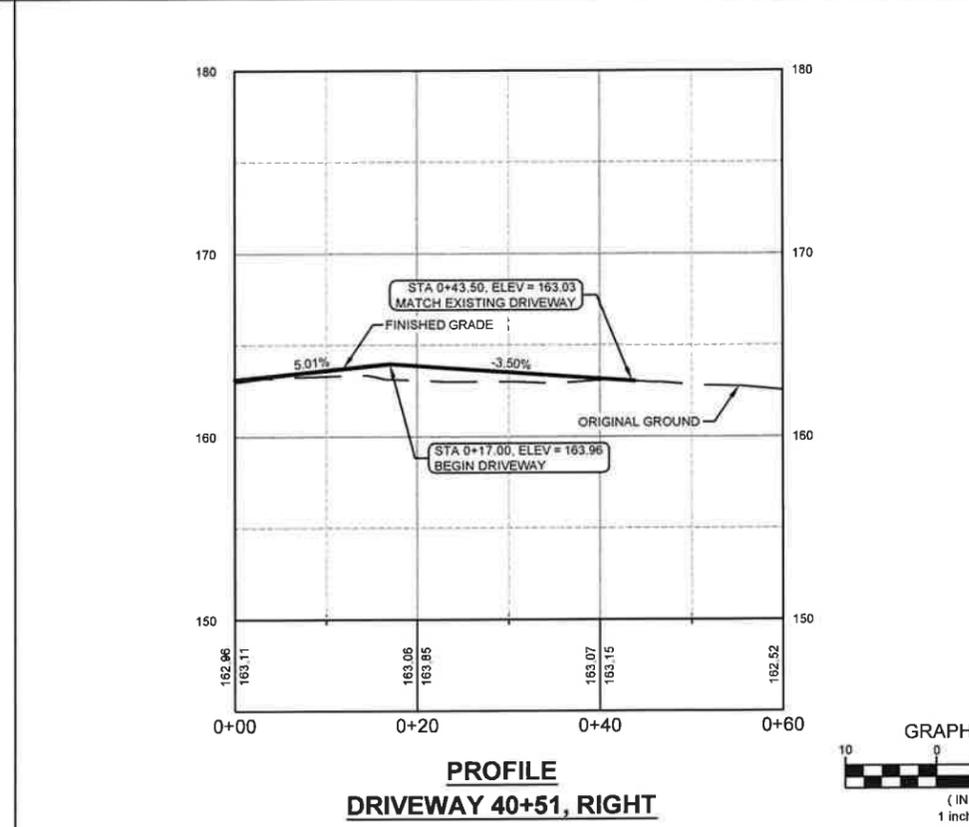
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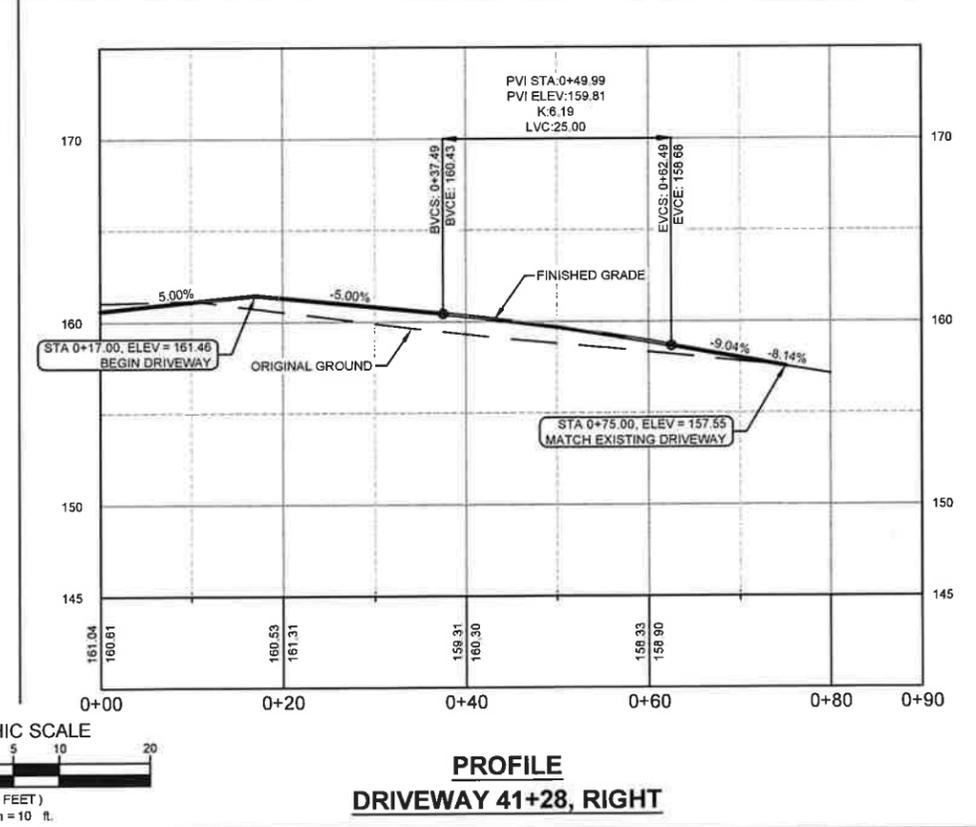
PLAN



PROFILE  
DRIVEWAY 38+70, RIGHT



PROFILE  
DRIVEWAY 40+51, RIGHT



PROFILE  
DRIVEWAY 41+28, RIGHT

C.P.A. PROJECT MANAGER  
DATE: 3/11/2025  
D.J.B. DRAWN BY  
DATE: 3/11/2025  
S.E.E. CHECKED BY  
DATE: 3/11/2025

HORIZ. SCALE: 1" = 10'  
VERT. SCALE: 1" = 5'  
PROJECT ID: 1235  
ROAD NO.: 31510 & 31880  
COMPUTER FILE: 1235 DRIVEWAYS 12-21.dwg

COWLITZ COUNTY WASHINGTON  
DEPARTMENT OF PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

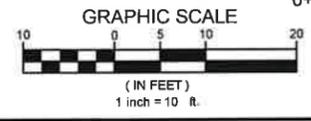
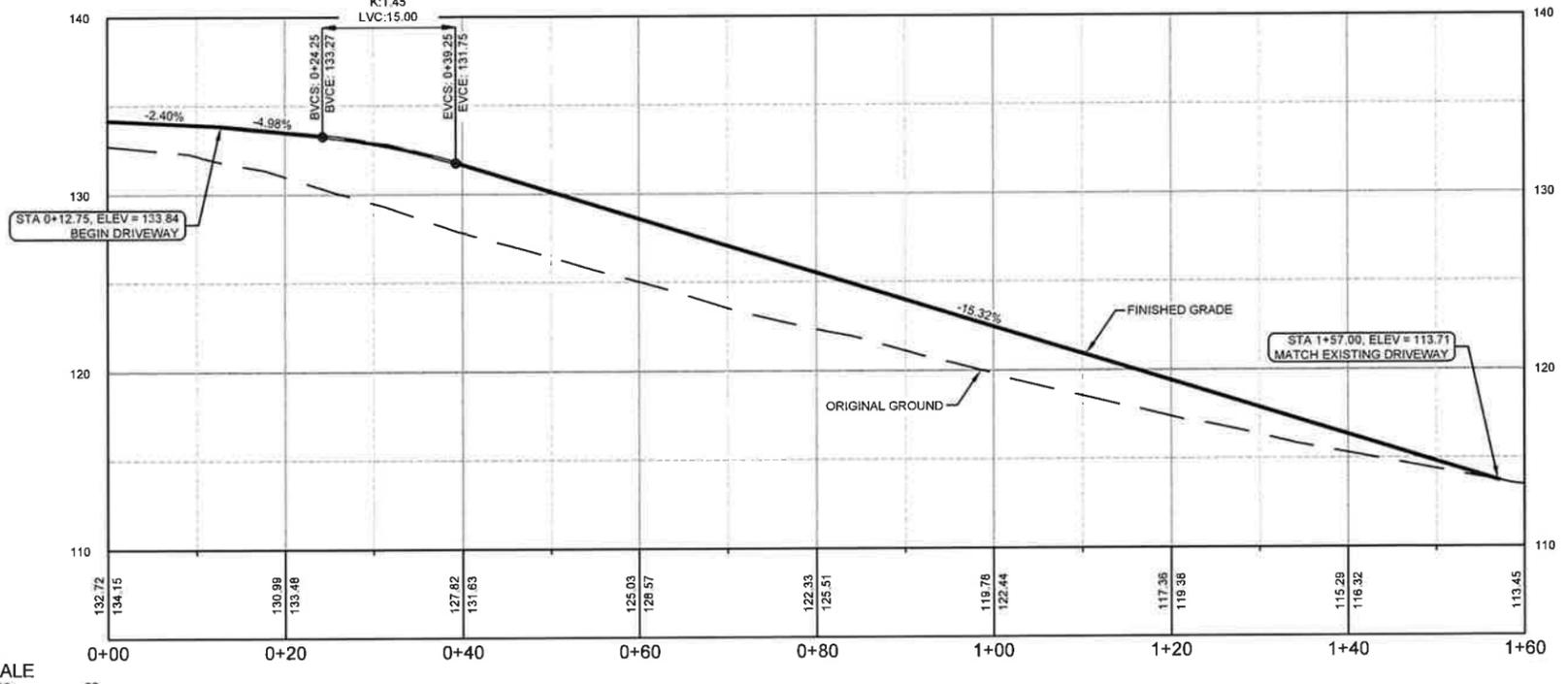
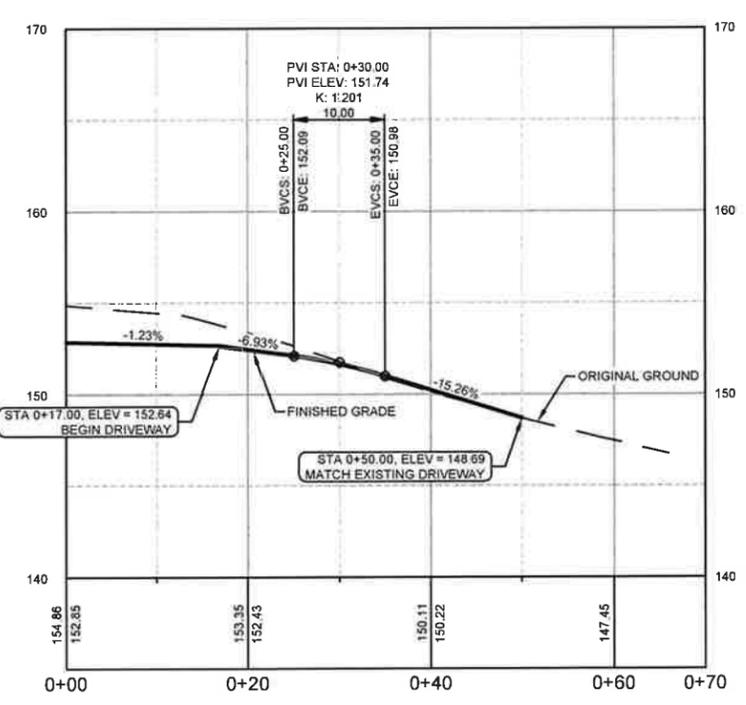
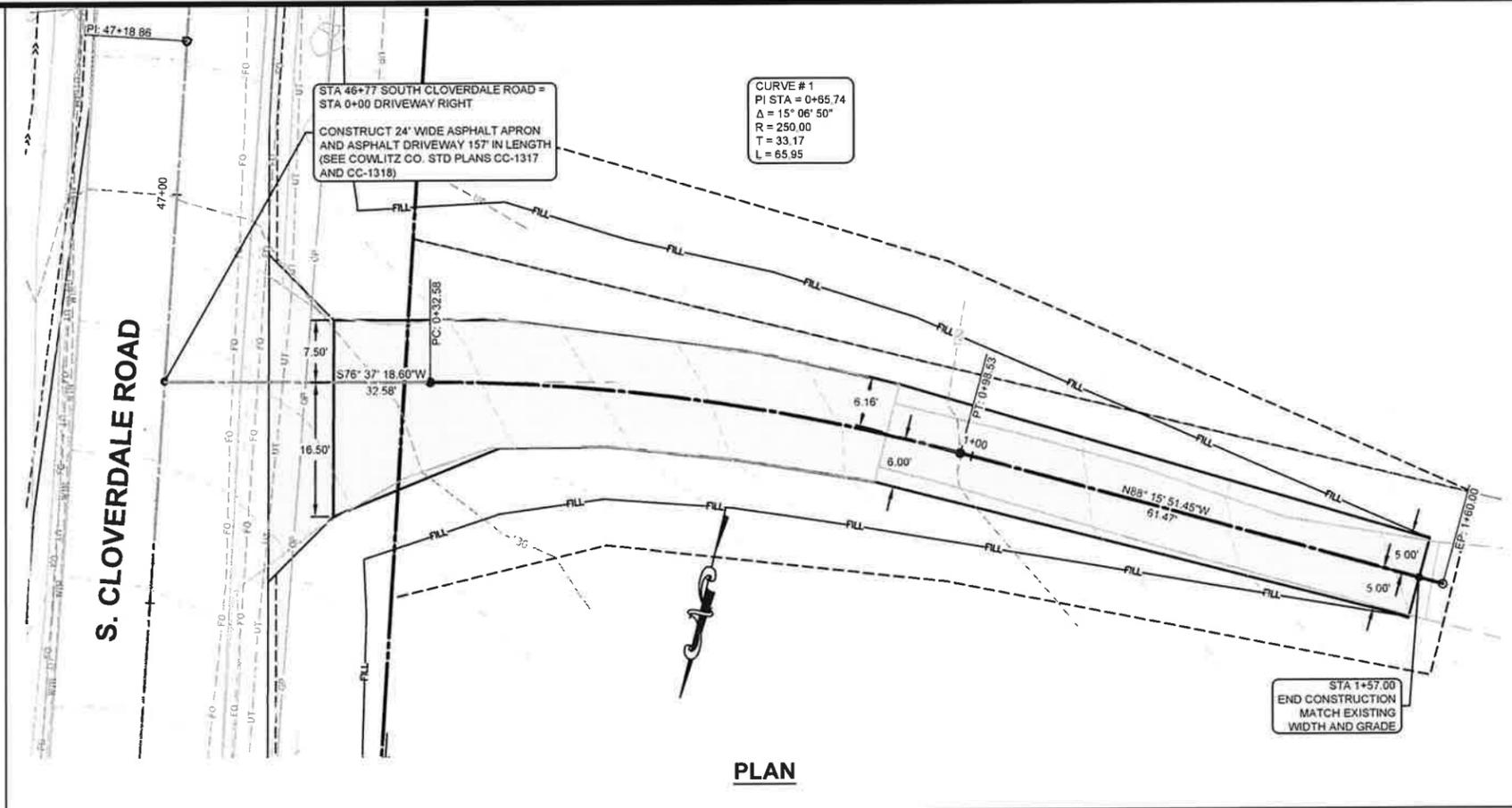
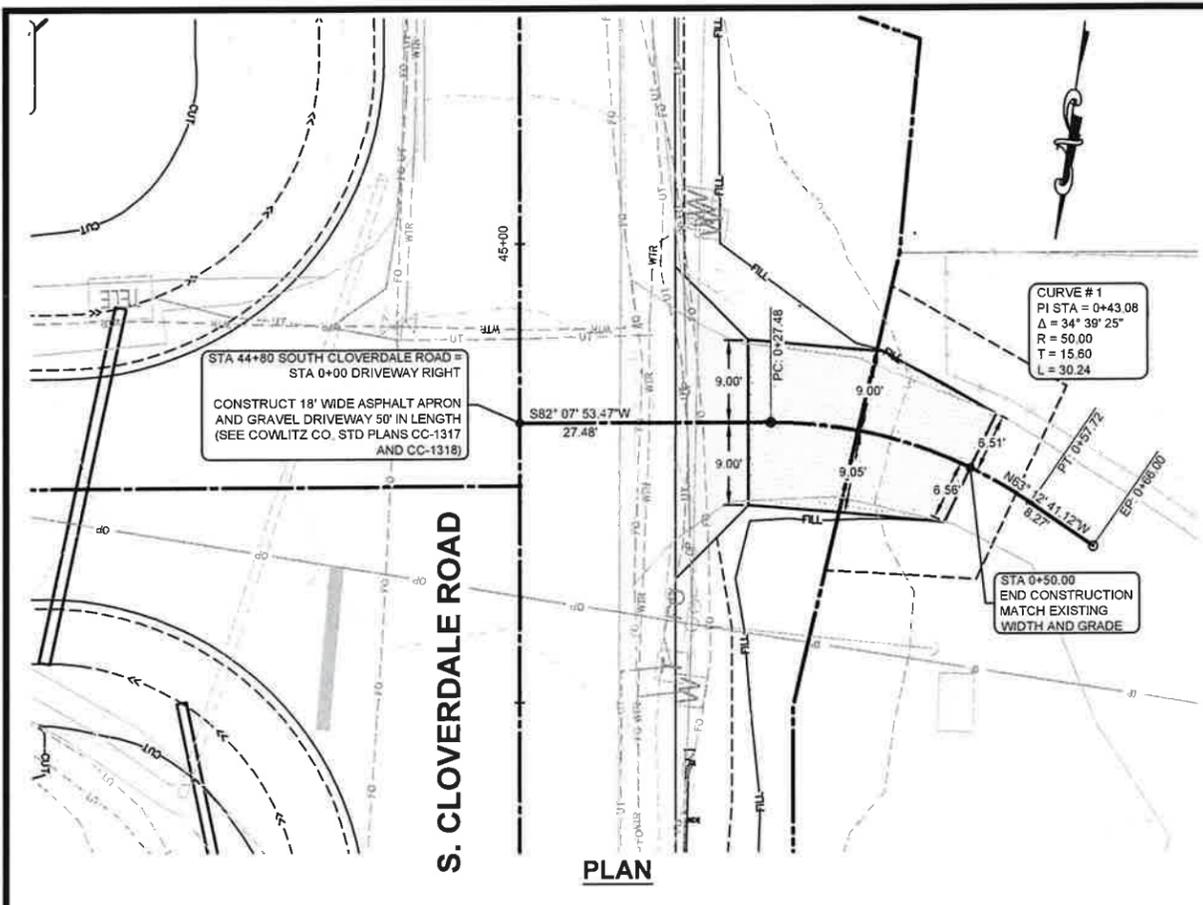
NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT  
DRIVEWAYS**

SHEET  
**17**  
OF  
**62**



**PROFILE DRIVEWAY 44+80, RIGHT**

**PROFILE DRIVEWAY 46+77, RIGHT**

C.P.A. PROJECT MANAGER 3/11/2025 DATE  
 D.J.B. DRAWN BY 3/11/2025 DATE  
 S.E.E. CHECKED BY 3/11/2025 DATE

HORIZ. SCALE: 1" = 10'  
 VERT. SCALE: 1" = 5'  
 PROJECT ID: 1235  
 ROAD NO.: 31510 & 31880  
 COMPUTER FILE: 1235 DRIVEWAYS 12-21.dwg

**COWLITZ COUNTY WASHINGTON**  
 DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

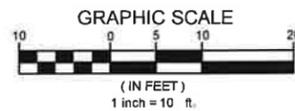
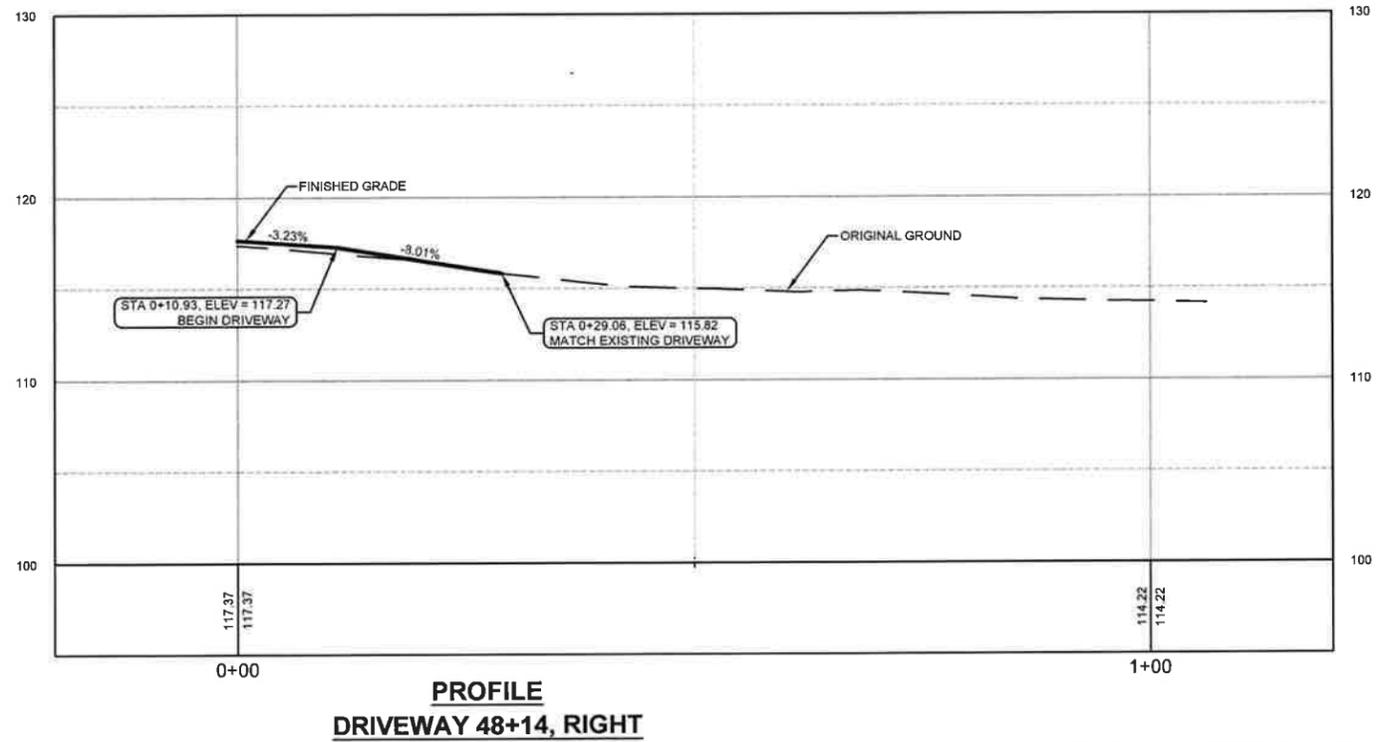
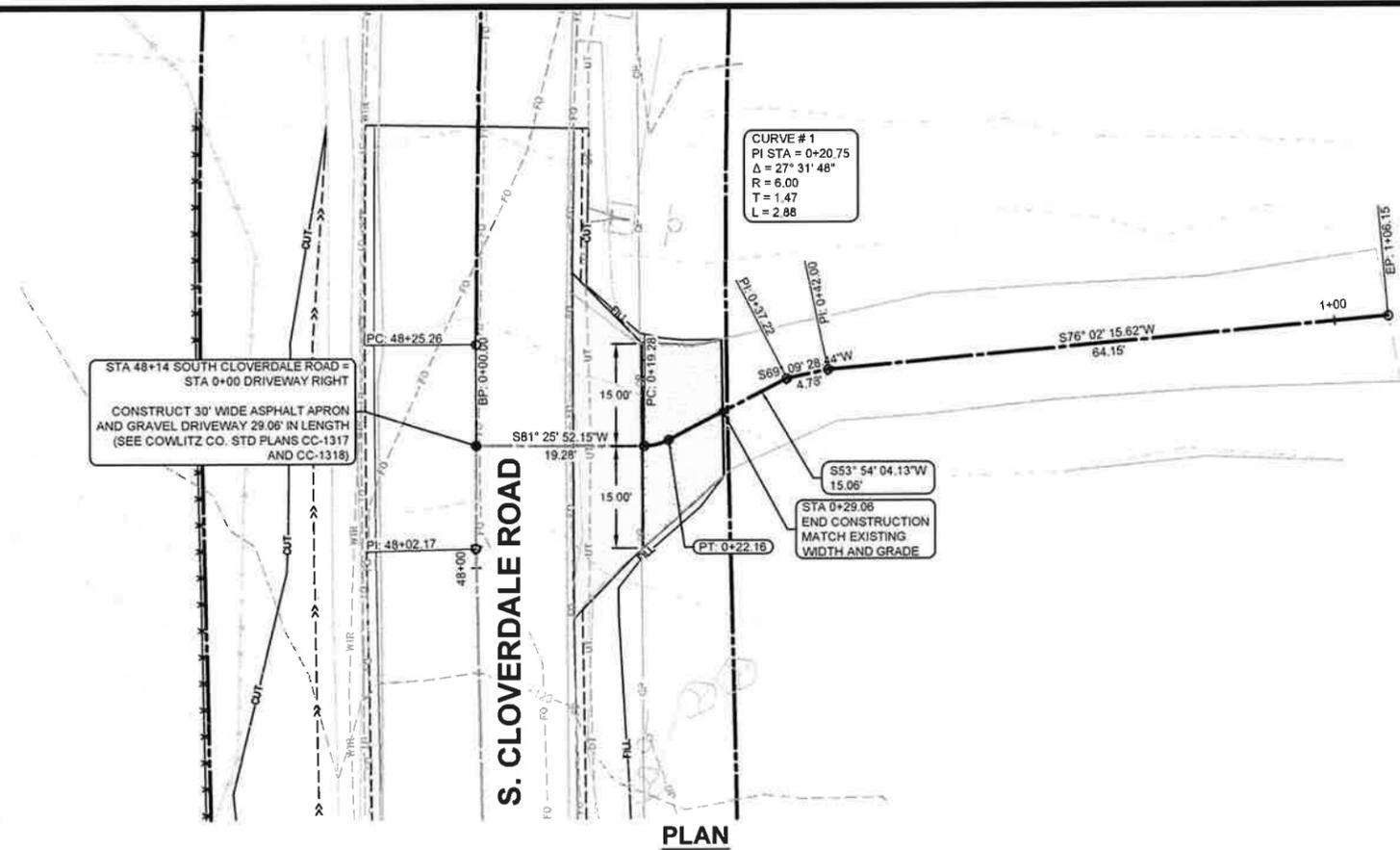
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Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT**  
**DRIVEWAYS**

SHEET 18 OF 62



C.P.A. 3/11/2025  
PROJECT MANAGER DATE  
D.J.B. 3/11/2025  
DRAWN BY DATE  
S.E.E. 3/11/2025  
CHECKED BY DATE

HORIZ. SCALE: 1" = 10'  
VERT. SCALE: 1" = 5'  
PROJECT ID: 1235  
ROAD NO.: 31510 & 31880  
COMPUTER FILE: 1235 DRIVEWAYS 12-21.dwg



DEPARTMENT OF PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

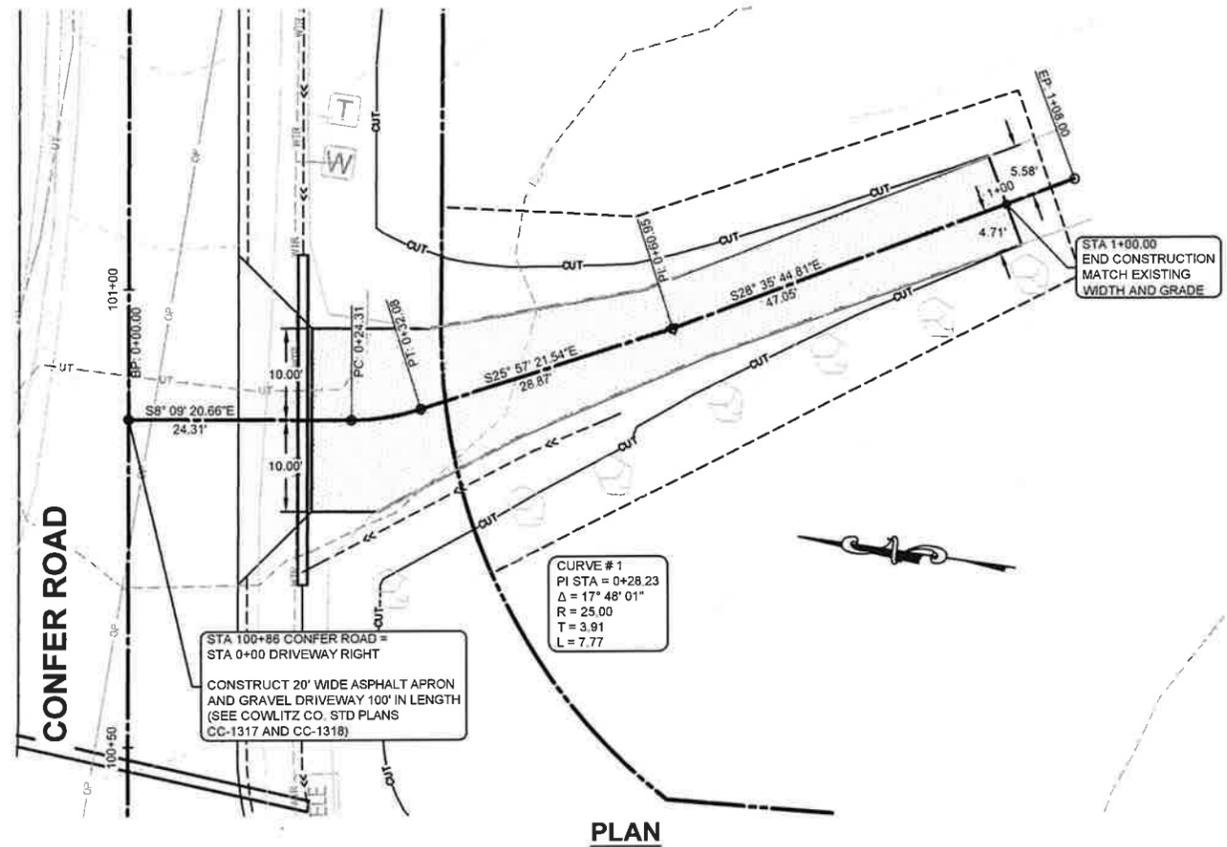
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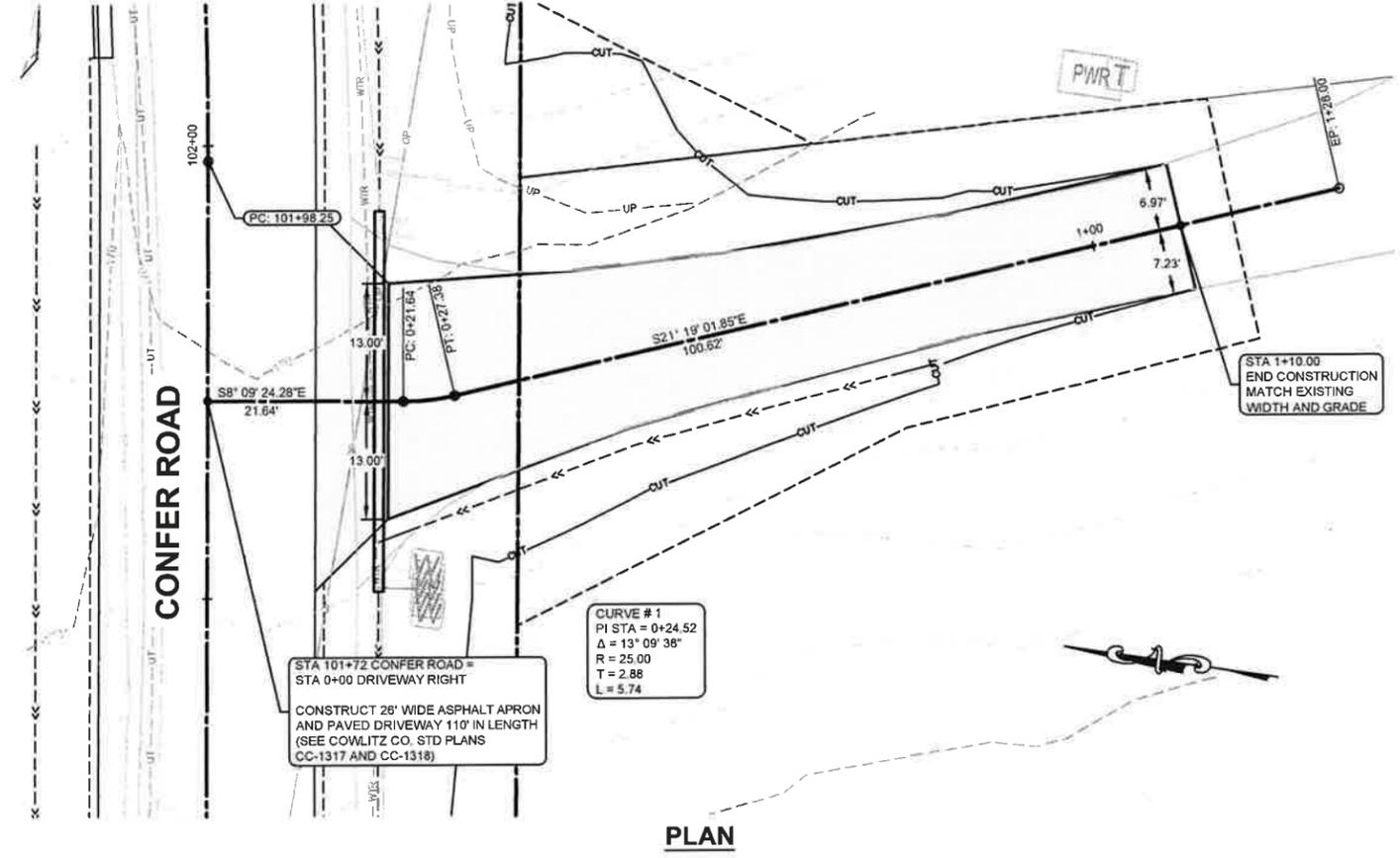
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT**  
**DRIVEWAYS**

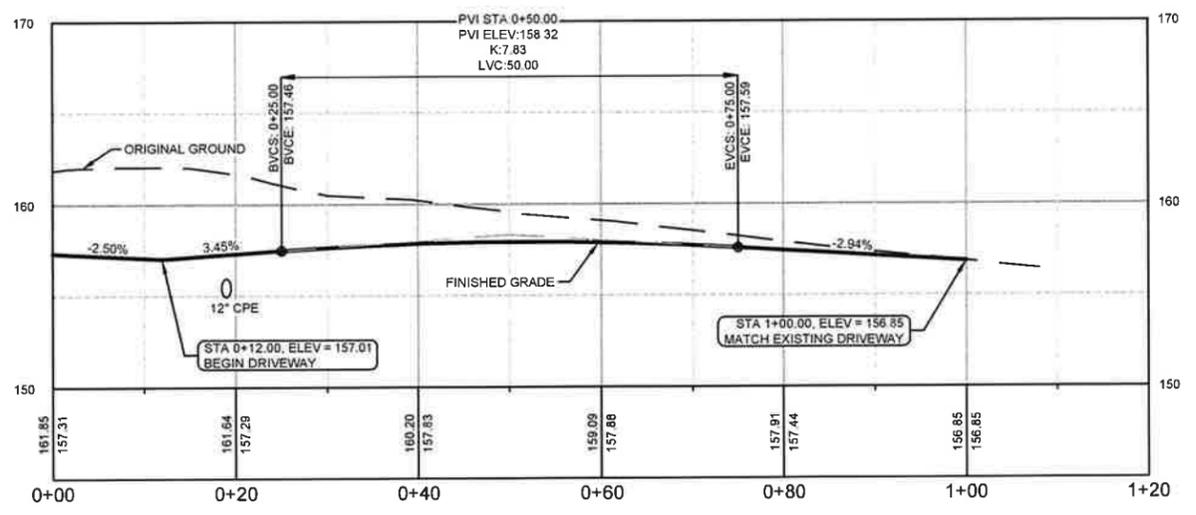
SHEET 19 OF 62



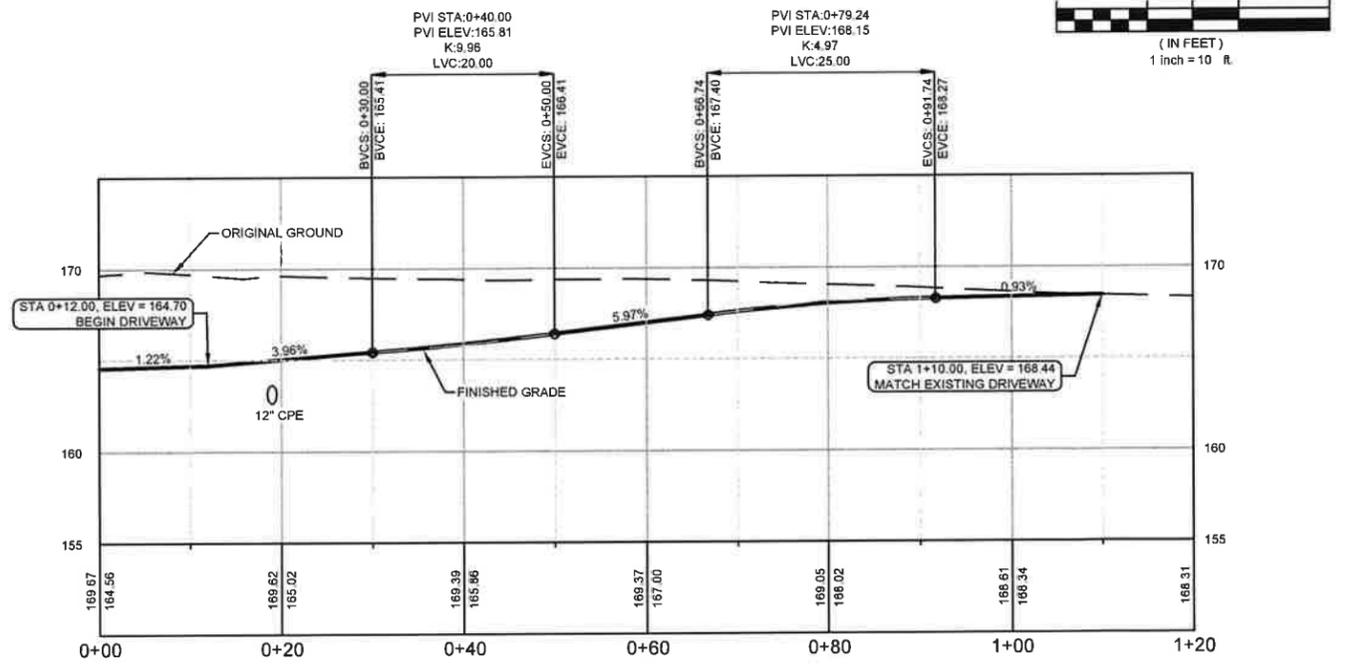
PLAN



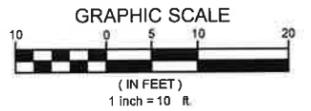
PLAN



PROFILE  
DRIVEWAY 100+86, RIGHT



PROFILE  
DRIVEWAY 101+72, RIGHT



C.P.A. PROJECT MANAGER 3/19/2025 DATE  
D.J.B. DRAWN BY 3/19/2025 DATE  
S.E.E. CHECKED BY 3/19/2025 DATE

HORIZ. SCALE: 1" = 10'  
VERT. SCALE: 1" = 5'  
PROJECT ID: 1235  
ROAD NO.: 31510 & 31880  
COMPUTER FILE: 1235 DRIVEWAYS 12-21.dwg

COWLITZ COUNTY WASHINGTON  
DEPARTMENT OF PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

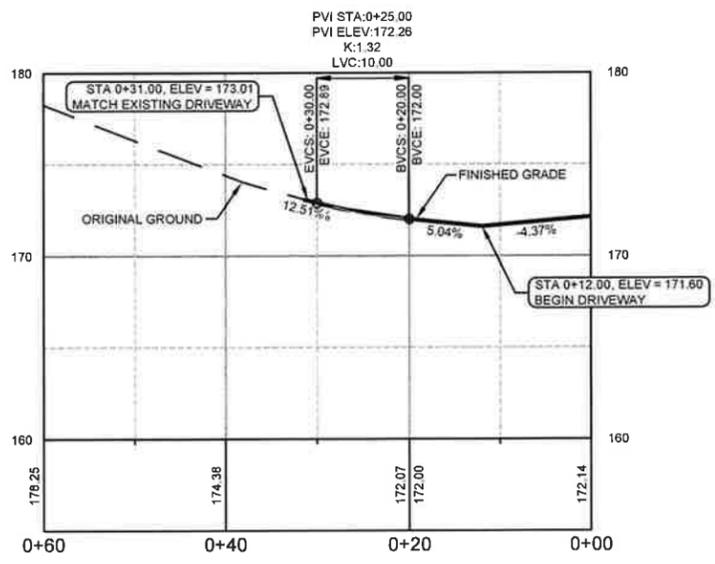
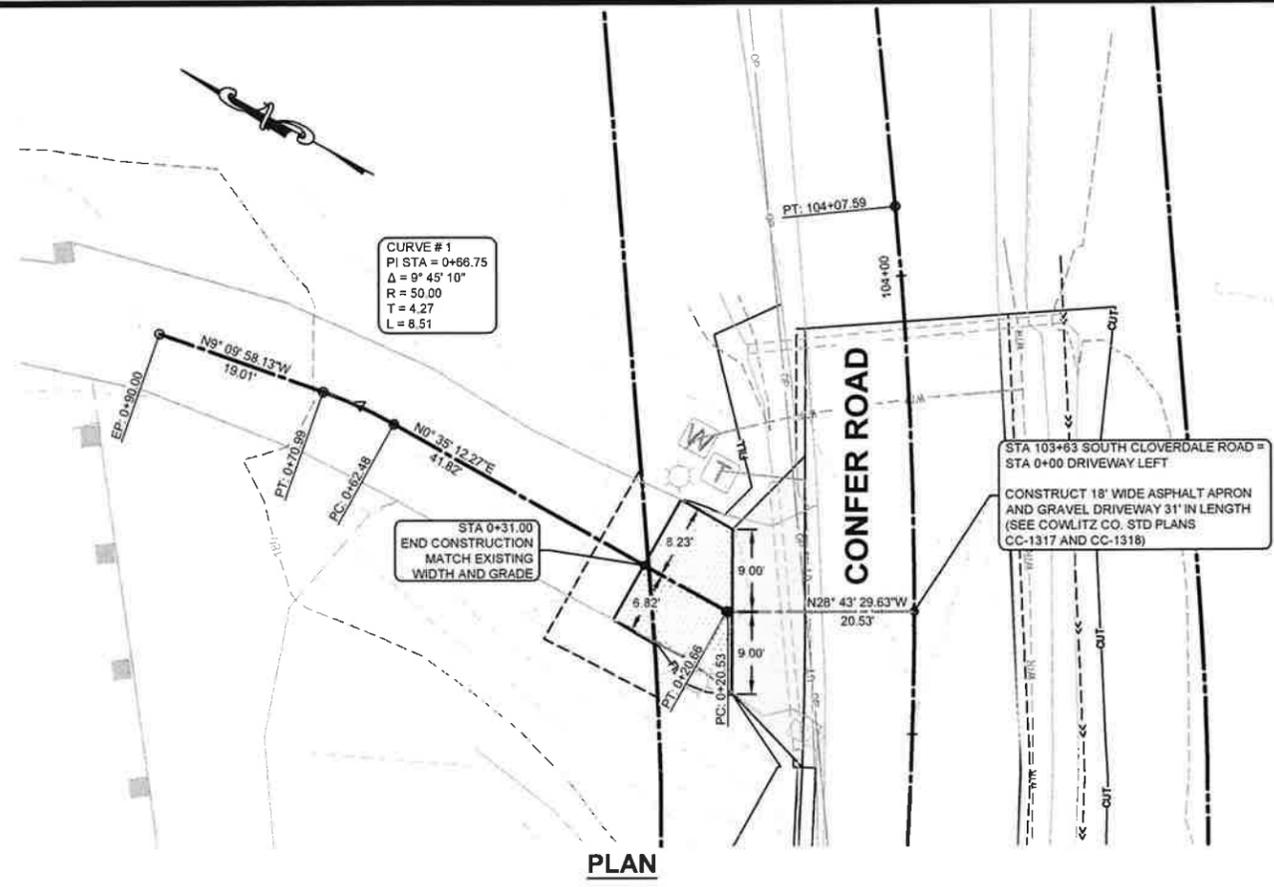
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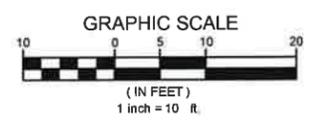
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE - CONFER ROAD  
INTERSECTION IMPROVEMENT PROJECT**  
**DRIVEWAYS**

SHEET  
**20**  
OF  
**62**



**PROFILE  
DRIVEWAY 103+63, LEFT**



C.P.A. \_\_\_\_\_ 3/17/2025  
PROJECT MANAGER DATE  
D.J.B. \_\_\_\_\_ 3/17/2025  
DRAWN BY DATE  
S.E.E. \_\_\_\_\_ 3/17/2025  
CHECKED BY DATE

HORIZ. SCALE: 1" = 10'  
VERT. SCALE: 1" = 5'  
PROJECT ID: 1235  
ROAD NO. : 31510 & 31880  
COMPUTER FILE: 1235 DRIVEWAYS 12-21.dwg



DEPARTMENT  
OF  
PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.

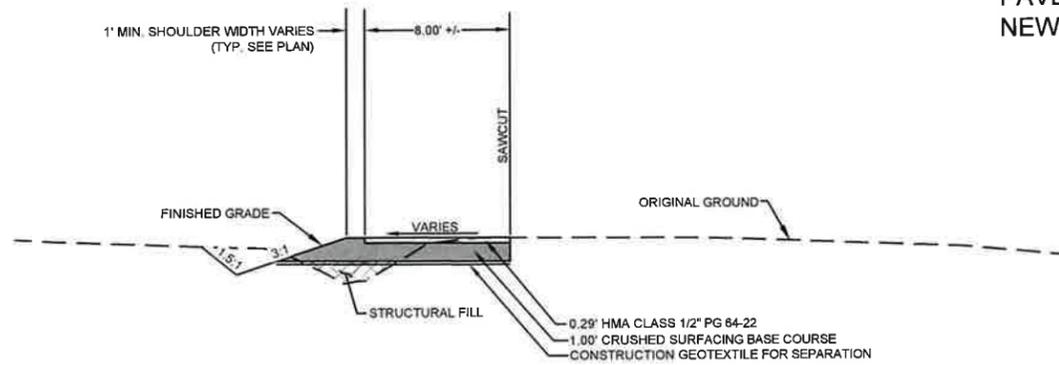


Sec. 28, T 6N, R 1W

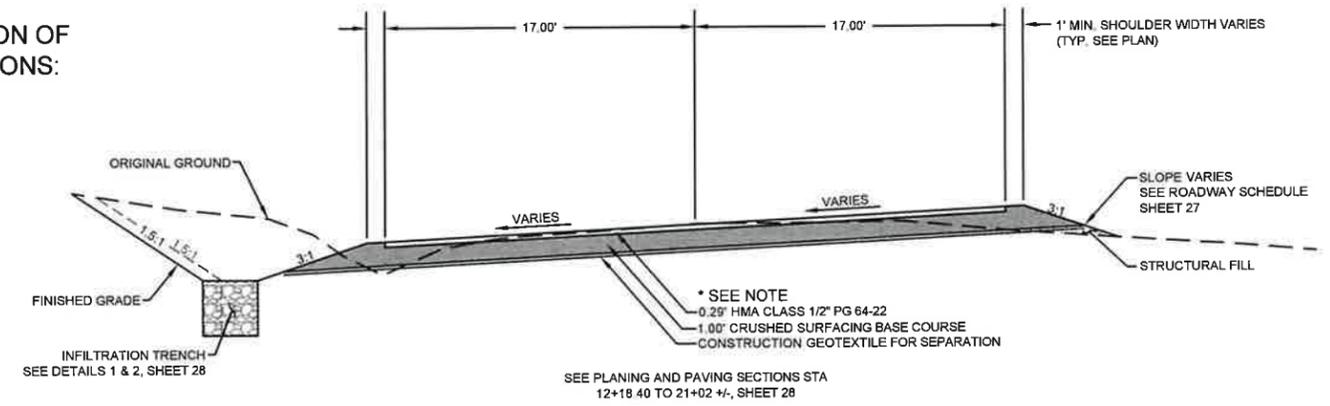
**SOUTH CLOVERDALE - CONFER ROAD  
INTERSECTION IMPROVEMENT PROJECT**  
**DRIVEWAYS**

SHEET  
**21**  
OF  
**62**

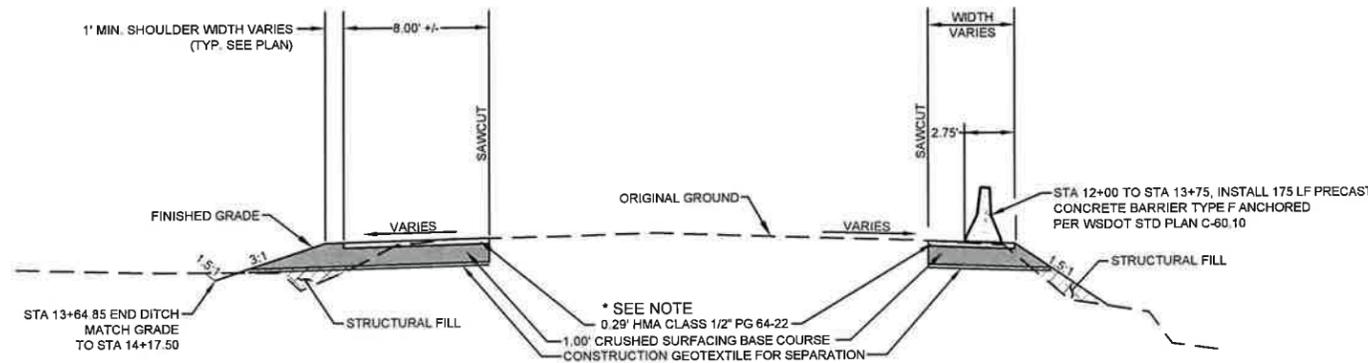
**\*NOTE: REMOVE ONLY EXISTING PAVEMENT TO BOTTOM ELEVATION OF NEW PAVEMENT BETWEEN STATIONS:**  
 12+18.40 TO 17+18  
 17+85 TO 24+00  
 37+43 TO 43+50  
 46+00 TO 48+50  
 103+55 TO 103+95



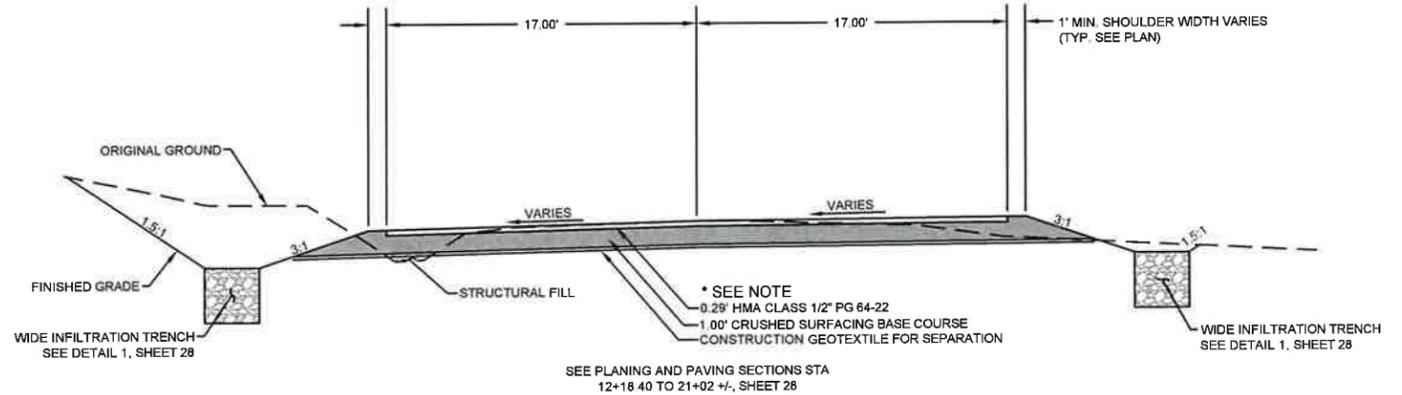
**TYPICAL SECTION - SAWCUT & DITCH LEFT 3:1  
 STA 10+38.36 TO STA 11+60 +/-**



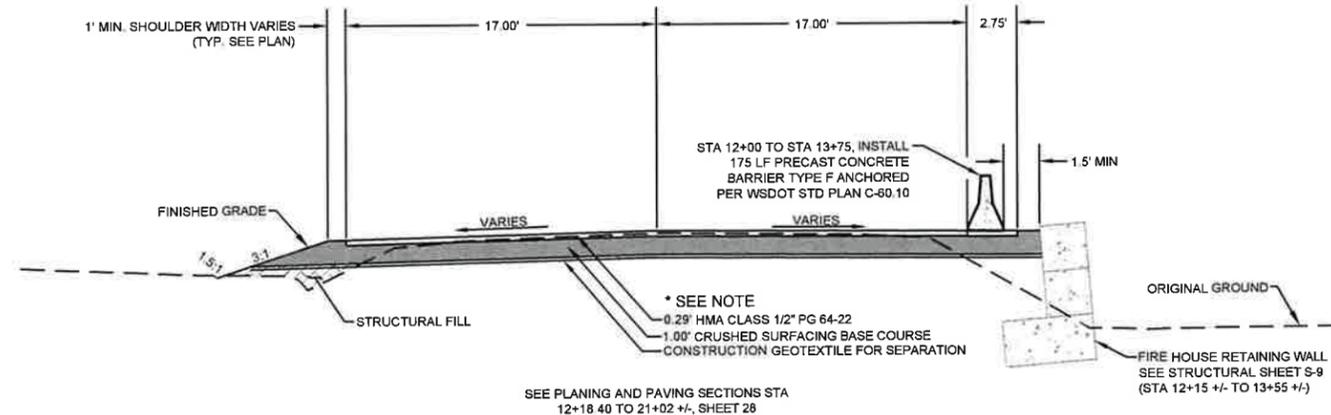
**TYPICAL SECTION - WIDE TRENCH LEFT, 3:1 RIGHT  
 STA 14+17.50 TO STA 16+00  
 STA 20+25 TO STA 21+50 - WIDE TRENCH LEFT, 1.5:1 RIGHT  
 STA 21+50 TO STA 22+00 - NARROW TRENCH LEFT 1.5:1 RIGHT**



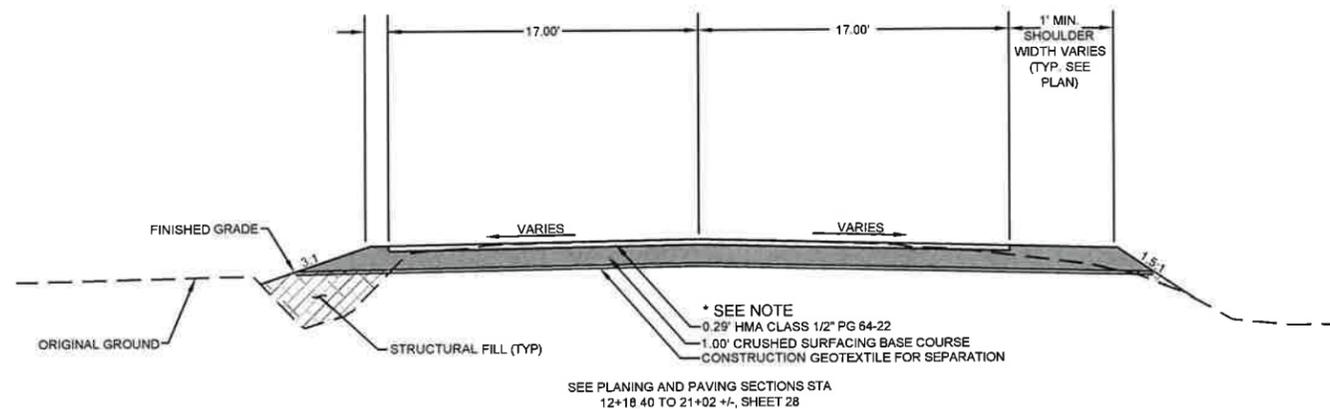
**TYPICAL SECTION - DITCH LEFT, 1.5:1 RIGHT  
 STA 11+60 +/- TO STA 12+00 NO BARRIER  
 STA 12+00 TO STA 12+18.40 W/ BARRIER  
 STA 13+55 TO STA 13+75 W/ BARRIER**



**TYPICAL SECTION - WIDE TRENCH LEFT, WIDE TRENCH RIGHT  
 STA 16+00 TO STA 16+93 +/-**



**TYPICAL SECTION - DITCH LEFT, 1.5:1 RIGHT, BARRIER & WALL  
 STA 12+15 +/- TO STA 13+55 +/-**



**TYPICAL SECTION - 3:1 LEFT, 1.5:1 RIGHT  
 STA 16+93 +/- TO STA 17+25  
 STA 17+25 TO STA 18+07.31 - 1.5:1 LEFT, 1.5:1 RIGHT  
 STA 22+25 TO STA 22+50 - 3:1 LEFT, 3:1 RIGHT**

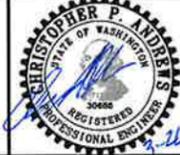
C.P.A. 3/11/2025  
 PROJECT MANAGER DATE  
 D.J.B. 3/11/2025  
 DRAWN BY DATE  
 S.E.E. 3/11/2025  
 CHECKED BY DATE

HORIZ. SCALE: 1" = 5'  
 VERT. SCALE:  
 PROJECT ID: 1235  
 ROAD NO. : 31510 & 31880  
 COMPUTER FILE: 1235 DETAILS 22-30.dwg



DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (24"x36") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.

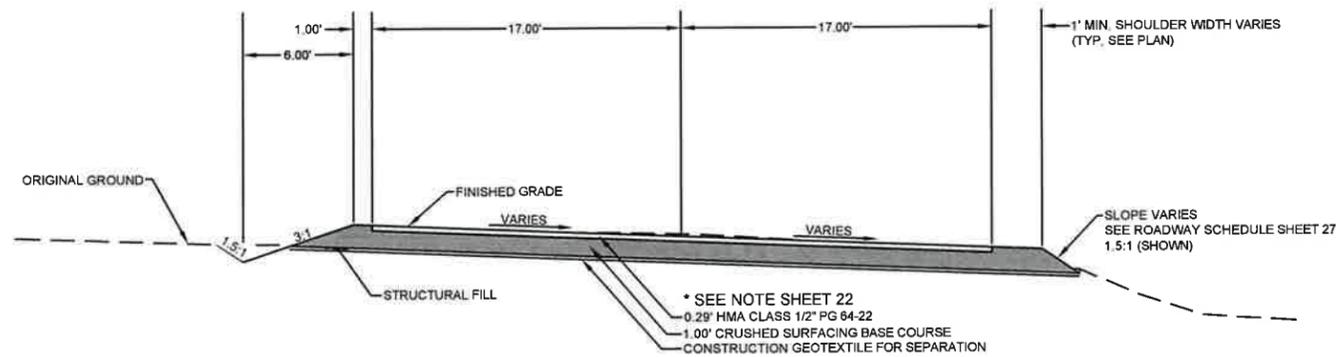


Sec. 28, T 6N, R 1W

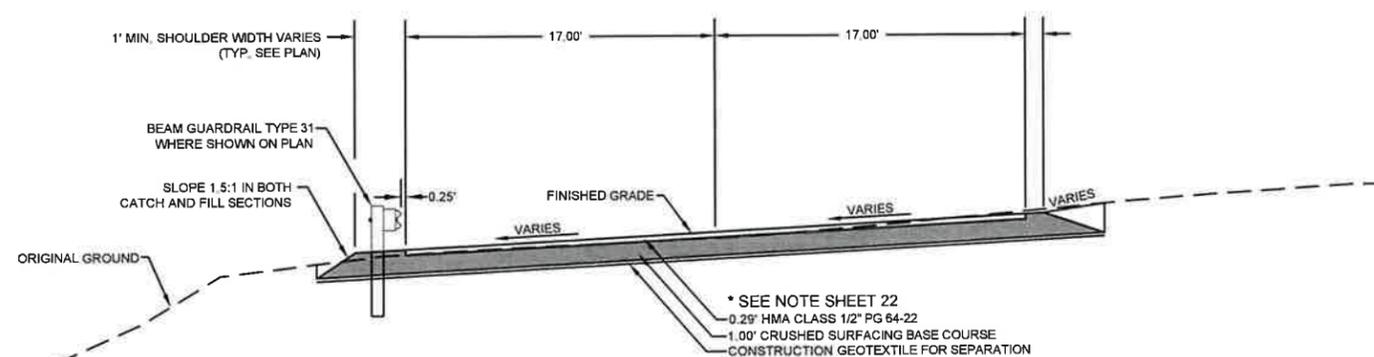
SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT  
 AND SOUTH CLOVERDALE - CONFER ROAD  
 INTERSECTION IMPROVEMENT PROJECT

TYPICAL ROADWAY SECTIONS

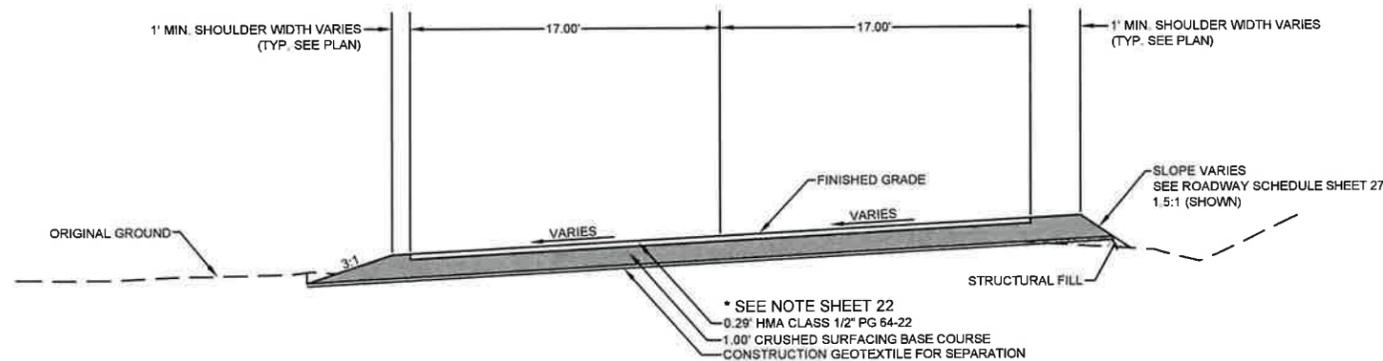
SHEET 22 OF 62



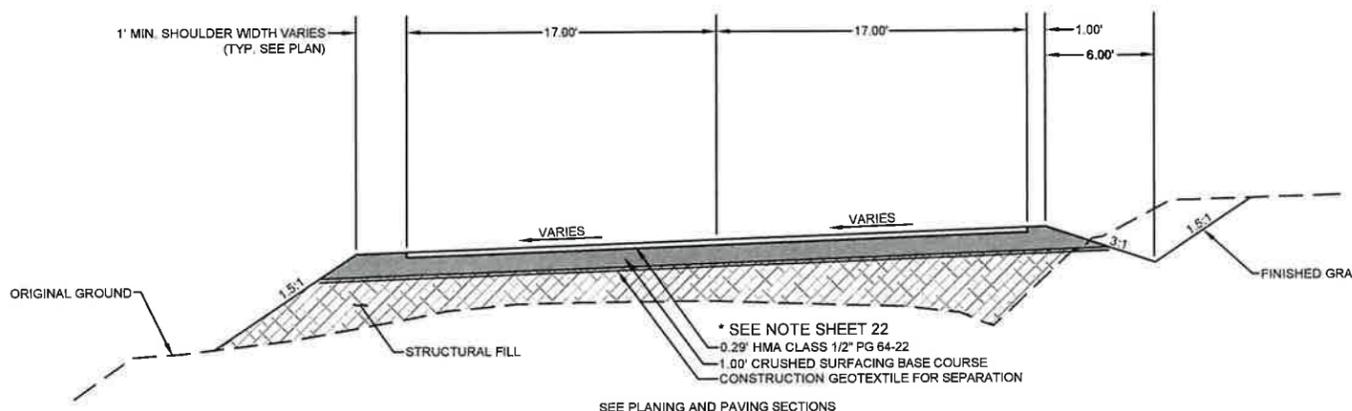
**TYPICAL SECTION - DITCH LEFT, 1.5:1 RIGHT**  
**STA 18+07.31 TO STA 18+59.62**  
**STA 18+75 TO 20+20 - DITCH LEFT, 3:1 RIGHT**  
**STA 44+10 TO STA 44+26.36 - DITCH LEFT, 1:1 FILL RIGHT**  
**STA 44+26.36 INTERSECTION LEFT, 1:1 FILL RIGHT**



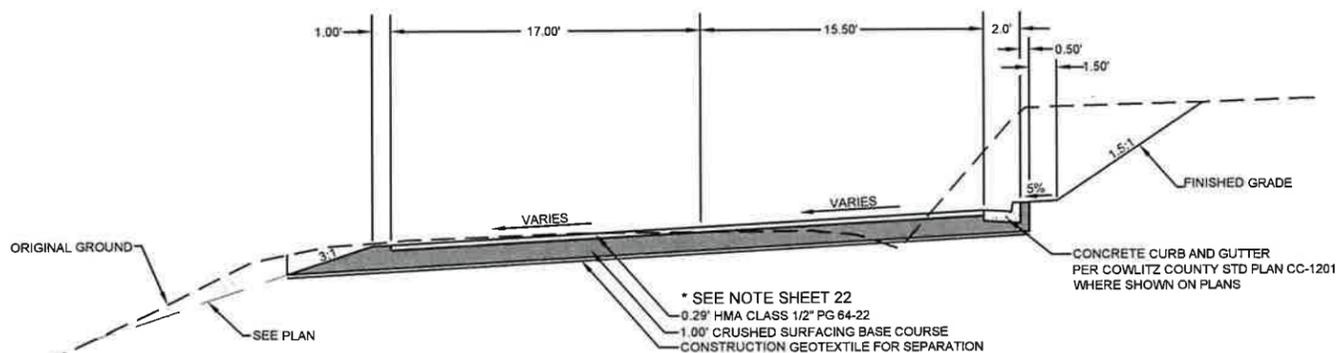
**TYPICAL SECTION - 1.5:1 LEFT CUT, MATCH GRADE RIGHT**  
**STA 24+75 TO STA 26+50 - 1.5:1 LEFT, 3:1 RIGHT**  
**STA 37+70 TO 38+23.40 - 3:1 BOTH SIDES / MATCH GRADE**



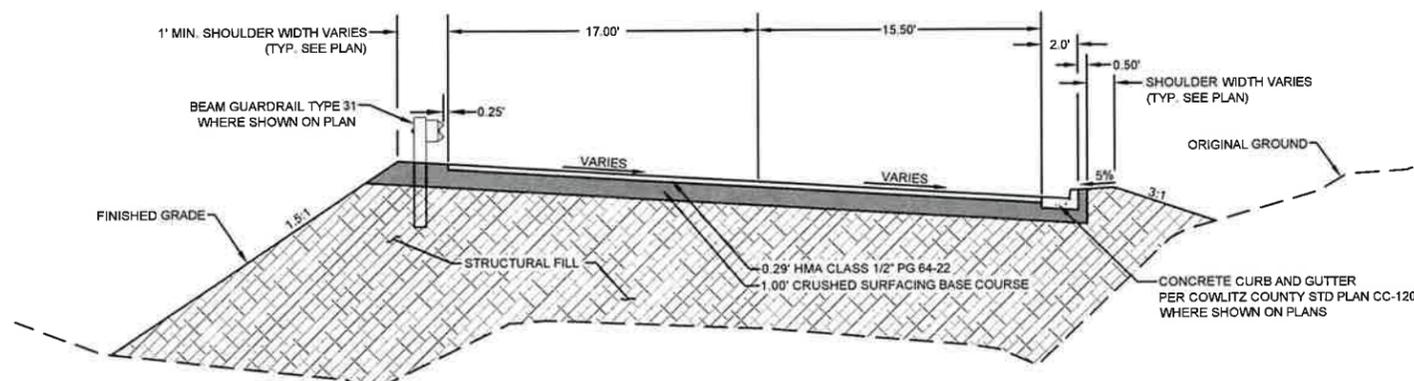
**TYPICAL SECTION - 3:1 LEFT, 1.5:1 RIGHT**  
**STA 22+00 TO STA 22+38**  
**STA 23+33.56 TO STA 24+75 - 3:1 LEFT, 3:1 RIGHT**



**TYPICAL SECTION - 1.5:1 LEFT, DITCH RIGHT**  
**STA 26+50 TO STA 28+00**

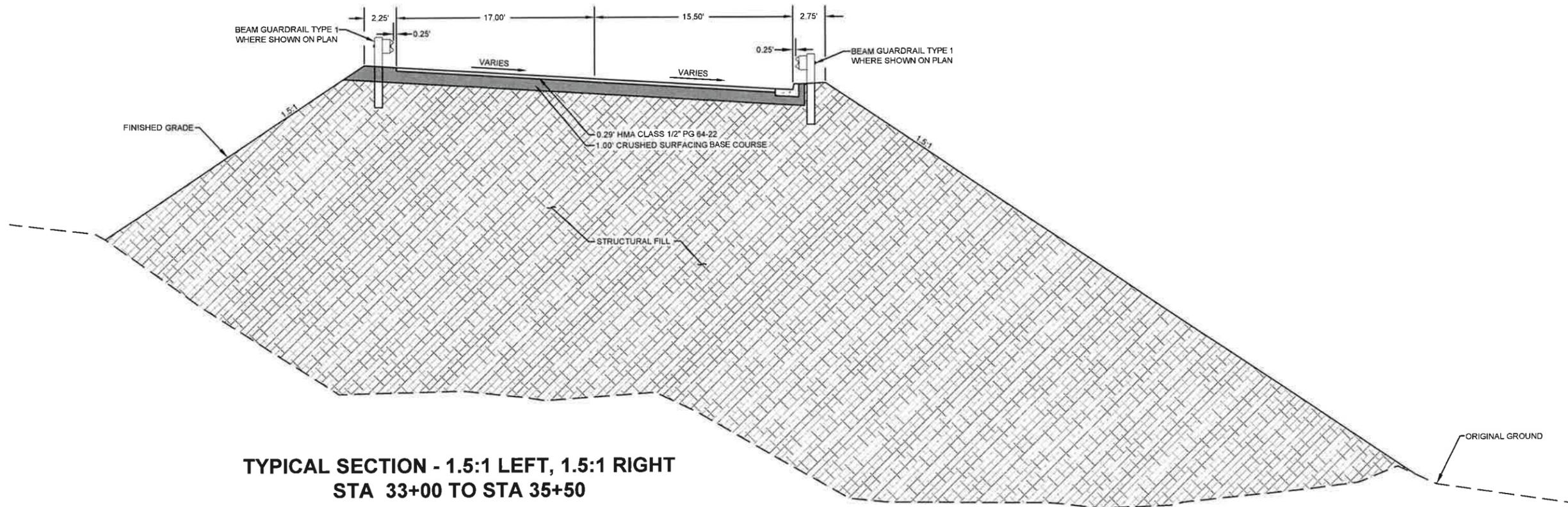


**TYPICAL SECTION - 3:1 LEFT, CURB & GUTTER RIGHT**  
**35+78.74 TO STA 37+21.16**

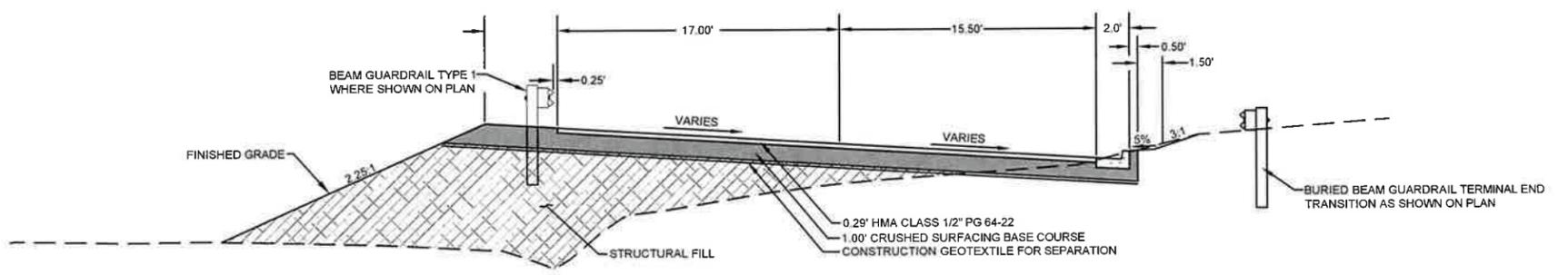


**TYPICAL SECTION - 1.5:1 LEFT, 3:1 W/ CURB AND GUTTER RIGHT**  
**STA 28+16 TO STA 33+00**  
**& STA 35+50**  
**STA 35+75 2.25:1 LEFT, 3:1 W/ CURB AND GUTTER RIGHT**

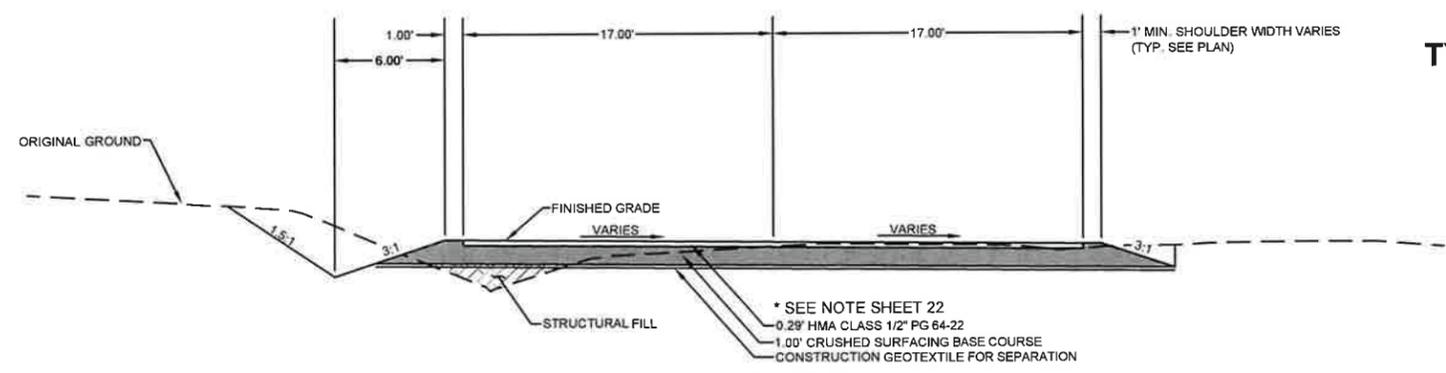
C.P.A. PROJECT MANAGER 3/11/2025 DATE D.J.B. DRAWN BY 3/11/2025 DATE S.E.E. CHECKED BY 3/11/2025 DATE	HORIZ. SCALE: 1" = 5' VERT. SCALE: PROJECT ID: 1235 ROAD NO.: 31510 & 31880 COMPUTER FILE: 1235 DETAILS 22-30.dwg	DEPARTMENT OF PUBLIC WORKS 1600 13TH AVENUE SOUTH KELSO, WASHINGTON 98626	NOTE: SCALES SHOWN ARE FOR FULL SIZE (24"x36") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.		Sec. 28, T 6N, R 1W	SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT AND SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT	SHEET <b>23</b> OF <b>62</b>
						<b>TYPICAL ROADWAY SECTIONS</b>	



**TYPICAL SECTION - 1.5:1 LEFT, 1.5:1 RIGHT  
STA 33+00 TO STA 35+50**



**TYPICAL SECTION - 2.25:1 LEFT, 3:1 W/ CURB AND GUTTER RIGHT  
STA 35+75 ONLY**



**TYPICAL SECTION - 3:1 LEFT, 3:1 RIGHT  
STA 37+21.16 TO STA 37+70**

SEE PLANING AND PAVING SECTIONS  
STA 37+16 +/- TO 39+41 +/-, SHEET 33

C.P.A. 3/11/2025  
PROJECT MANAGER DATE  
D.J.B. 3/11/2025  
DRAWN BY DATE  
S.E.E. 3/11/2025  
CHECKED BY DATE

HORIZ. SCALE: 1" = 20'  
VERT. SCALE:  
PROJECT ID: 1235  
ROAD NO. : 31510 & 31880  
COMPUTER FILE: 1235 DETAILS 22-30.dwg



DEPARTMENT OF PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

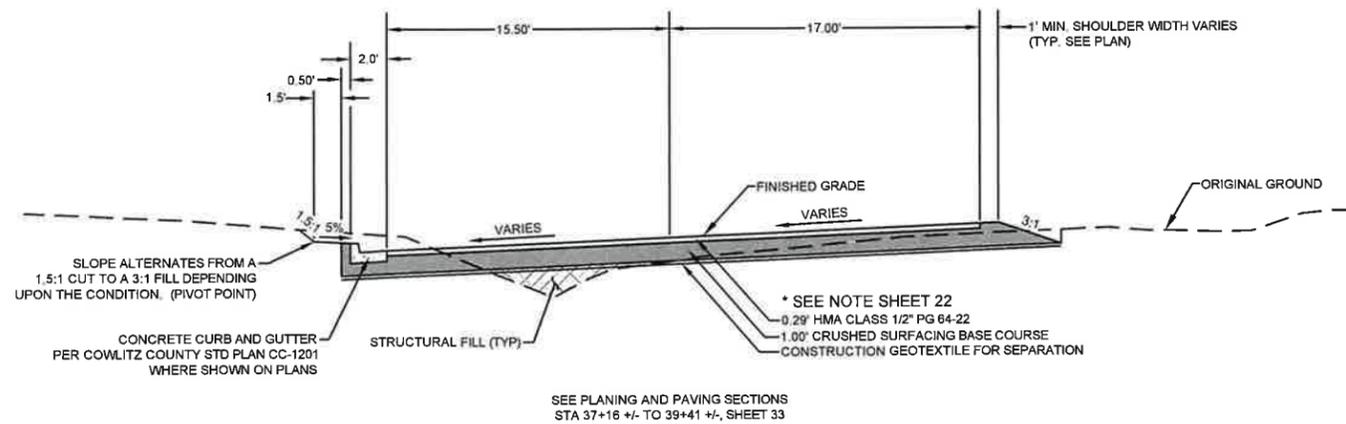
NOTE: SCALES SHOWN ARE FOR FULL SIZE (24"x36") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



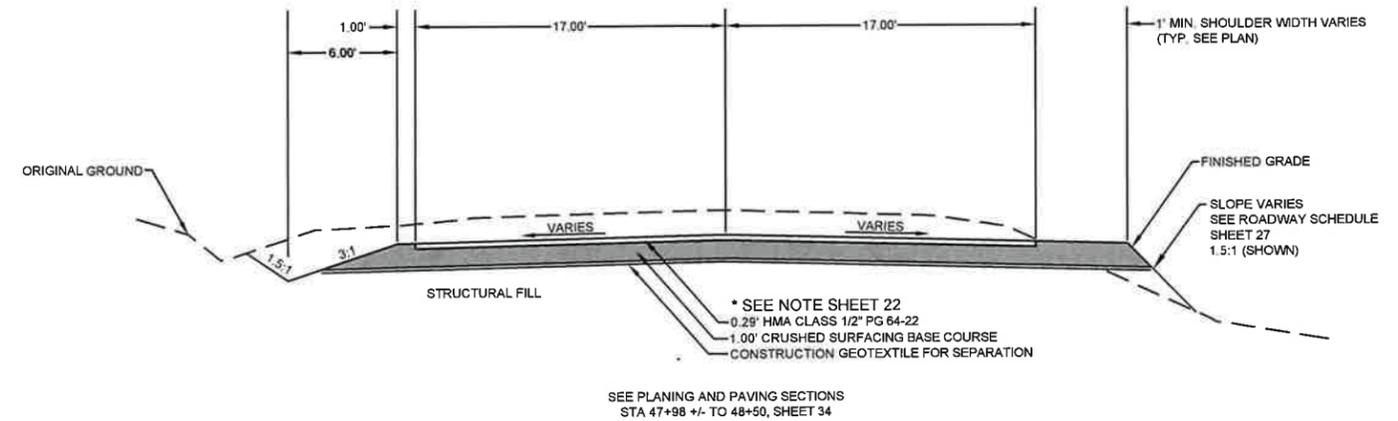
Sec. 28, T 6N, R 1W

SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT  
AND SOUTH CLOVERDALE - CONFER ROAD  
INTERSECTION IMPROVEMENT PROJECT  
**TYPICAL ROADWAY SECTIONS**

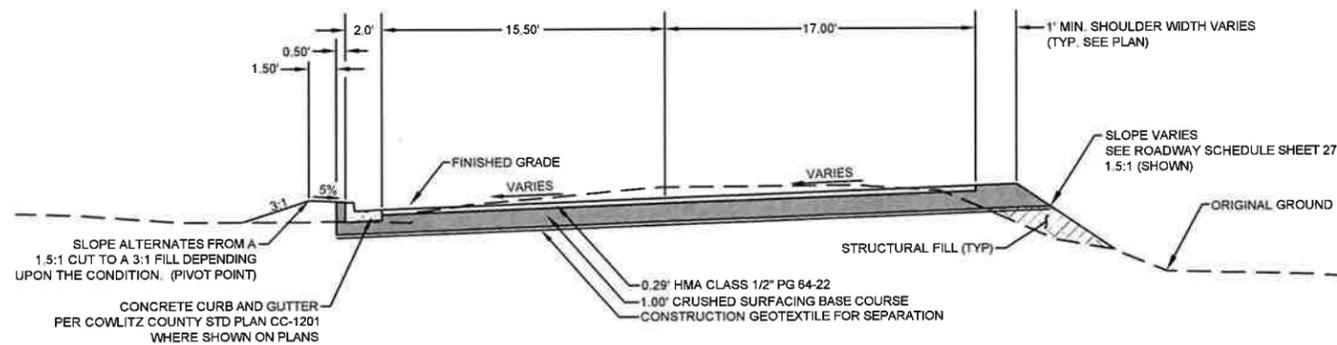
SHEET 24 OF 62



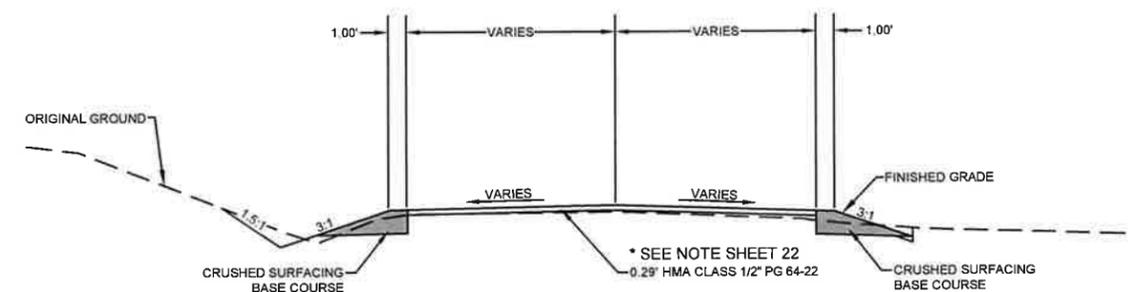
**TYPICAL SECTION - CURB AND GUTTER LEFT - 3:1 RIGHT / MATCH GRADE**  
**STA 38+38.95 TO STA 38+50**  
**STA 38+50 TO 41+25 - CURB AND GUTTER LEFT, 3:1 RIGHT**  
**STA 42+75 TO STA 43+25 - CURB AND GUTTER LEFT - 1:1 RIGHT**



**TYPICAL SECTION - DITCH LEFT, 1:1 RIGHT**  
**STA 44+10 TO STA 44+26.36**  
**STA 44+26.36 TO STA 44+63.48 - INTERSECTION, LEFT, 1:1 RIGHT**  
**STA 44+63.48 TO STA 45+20.37 - INTERSECTION, LEFT 3:1 RIGHT**  
**STA 45+20.36 TO STA 48+00 - DITCH LEFT, 3:1 RIGHT**

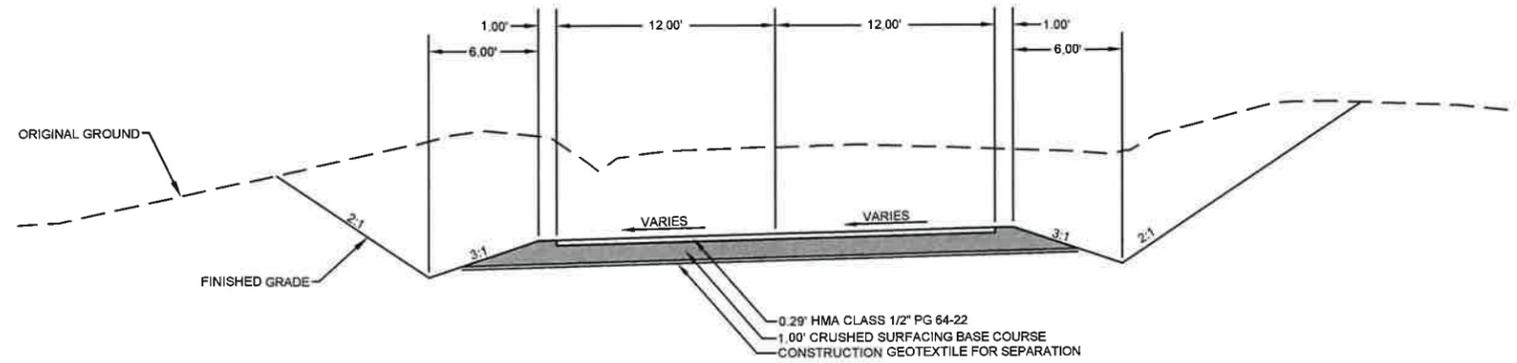


**TYPICAL SECTION - 3:1 W/ CURB AND GUTTER LEFT, 1.5:1 RIGHT**  
**STA 41+50 TO STA 42+75**  
**STA 42+75 TO STA 43+50 - 1.5:1 CUT LEFT, 2:1 RIGHT**  
**STA 43+50 TO STA 44+00 - 1.5:1 CUT LEFT, 1:1 RIGHT**

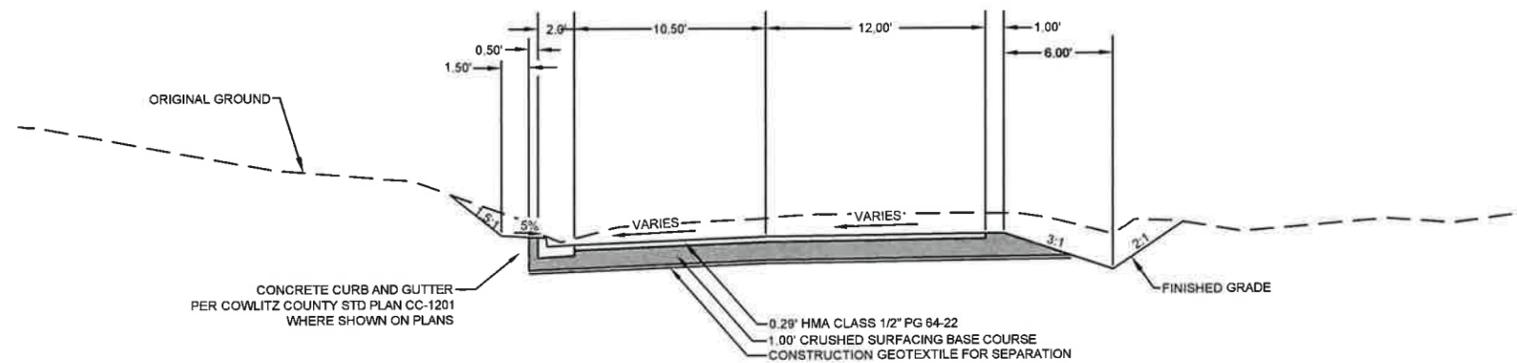


**TYPICAL SECTION - TAPER TO MATCH GRADE**  
**STA 48+00 TO STA 48+50**

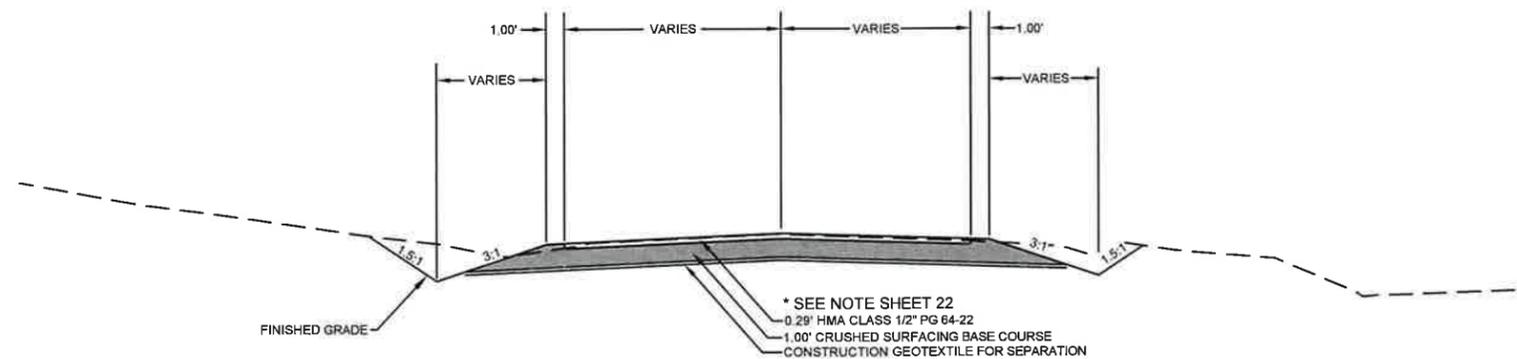
C.P.A. PROJECT MANAGER DATE 3/11/2025 D.J.B. DRAWN BY DATE 3/11/2025 S.E.E. CHECKED BY DATE 3/11/2025	HORIZ. SCALE: 1" = 20' VERT. SCALE: PROJECT ID: 1235 ROAD NO. : 31510 & 31880 COMPUTER FILE: 1235 DETAILS 22-30.dwg	DEPARTMENT OF PUBLIC WORKS 1600 13TH AVENUE SOUTH KELSO, WASHINGTON 98626	NOTE: SCALES SHOWN ARE FOR FULL SIZE (24"x36") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.	Sec. 28, T 6N, R 1W	SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT AND SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT	SHEET <b>25</b> OF <b>62</b>
					<b>TYPICAL ROADWAY SECTIONS</b>	



**TYPICAL SECTION - 3:1 LEFT, 3:1 RIGHT**  
**STA 100+50.24 TO STA 102+10**  
**& 103+45.93 TO STA 103+46.17**



**TYPICAL SECTION - CURB & GUTTER LEFT, 3:1 RIGHT**  
**STA 102+10 TO STA 103+45.93**



**TYPICAL SECTION - TRANSITION TO MATCH EXISTING**  
**STA 103+46.17 TO STA 103+95**

C.P.A. PROJECT MANAGER 3/11/2025  
 DATE  
 D.J.B. DRAWN BY 3/11/2025  
 DATE  
 S.E.E. CHECKED BY 3/11/2025  
 DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE:  
 PROJECT ID: 1235  
 ROAD NO. : 31510 & 31880  
 COMPUTER FILE: 1235 DETAILS 22-30.dwg

**COWLITZ COUNTY**  
 WASHINGTON  
 DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (24"x36") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



**Sec. 28, T 6N, R 1W**

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**  
**AND SOUTH CLOVERDALE - CONFER ROAD**  
**INTERSECTION IMPROVEMENT PROJECT**  
**TYPICAL ROADWAY SECTIONS**

SHEET **26**  
 OF  
**62**

**SOUTH CLOVERDALE ROAD**

Full Roadway Sections and Ranges	From	To	Fill Slope Left	Cut Slope Left	Notes:	Fill Slope Right	Cut Slope Right	Notes:
Station Range	10+06.04	11+60 +/-		3:1	1.5:1			
	11+60 +/-	12+00		3:1	1.5:1		1.5:1	Sawcut, Match Grade with Shoulder Improvement
	12+00	12+15.75		3:1	1.5:1		1.5:1	Precast Concrete Barrier/ Fill
	12+16 +/-	12+18.40		3:1	1.5:1		1.5:1	Precast Concrete Barrier/ Fill Over Wall
Begin Full Width Construction	12+18.40	13+55 +/-		3:1	1.5:1		1.5:1	Precast Concrete Barrier/ Fill Over Wall
	13+55 +/-	13+64.85		3:1	1.5:1		1.5:1	Precast Concrete Barrier
	13+70	13+78.69 +/-		3:1	-		1.5:1	Precast Concrete Barrier - End Barrier
	14+00	14+15		3:1	-		1.5:1	Fill Slope
	14+17.50	16+00		3:1	1.5:1		3:1	Fill Slope
	16+00	16+93 +/-		3:1	1.5:1		3:1 1.5:1	Fill Slope w/ Wide Trench
	16+93 +/-	17+25		3:1	-		1.5:1	Fill Slope
	17+27 +/-	17+75		1.5:1	-		1.5:1 1.5:1	Fill Slope
	18+07 +/-	18+59.62		3:1	1.5:1		1.5:1	Fill Slope
	18+75	20+00		3:1	1.5:1		3:1	Cut/ Fill as Shown on Plan
	20+00	21+50		3:1	1.5:1		1.5:1	Fill Slope
	21+50	22+00		3:1	1.5:1		1.5:1	Fill Slope
	22+00	22+38		3:1	1.5:1		1.5:1	Fill Slope
	22+38	22+50		3:1	-		3:1	Fill Slope
	22+50	23+33.56		3:1	-		1.5:1	Curb and Gutter slope 2' @ 5% from Back of Curb
	23+33.56	24+60.82		3:1	-		3:1	Match Grade
	24+75	26+25		1.5:1	-		3:1	Match Grade
	26+50	28+00		1.5:1	-		3:1 1.5:1	Fill Slope w/ Ditch
	28+16	32+75		1.5:1	-		3:1	Curb and Gutter slope 2' @ 5% from Back of Curb (Begin Curb)
	32+75	32+87.82		1.5:1	-		3:1	Curb and Gutter slope 2' @ 5% from Back of Curb
	33+00	35+25		1.5:1	-		1.5:1	Curb and Gutter slope 2.25' min @ 5% from Back of Curb
	35+50	35+50		1.5:1	-		3:1	Curb and Gutter slope 2.25' min @ 5% from Back of Curb
	35+75	35+75		2.25:1	-		1.5:1 1.5:1	Curb and Gutter slope 2' @ 5% from Back of Curb
	35+78.74	35+78.74		-	-		1.5:1	Curb and Gutter slope 2' @ 5% from Back of Curb
	36+00	36+85		3:1	-		1.5:1	Curb and Gutter slope 2' @ 5% from Back of Curb
	36+85	37+21.16		3:1	1.5		3:1 (Last Station) 1.5:1	Curb and Gutter slope 2' @ 5% from Back of Curb (End Curb)
	37+25	37+70		3:1	1.5		3:1	Fill / Match Grade
	37+70	38+00		3:1	-		3:1	Fill / Match Grade
	38+38.95	38+25		-	3.0:1		3:1	Match Grade
	38+50	41+25		-	1.5:1		3:1	Fill Slope
	41+50	42+50		3:1	-		1.5:1	Fill Slope
	42+75	43+25		-	1.5:1		2:1	Fill Slope
	43+50	44+00		-	1.5:1		1:1	Fill Slope
	44+10	44+26.36		3:1	1.5		1:1	Fill Slope
	44+26.36	44+63.48		-	-		1:1	Fill Slope
	44+75	45+20.37		-	-		3:1	Fill Slope
	45+20.37	48+25		3:1	1.5		3:1	Fill Slope
	48+50							Match Existing Road Width and Slope

C.P.A. PROJECT MANAGER 3/11/2025 DATE  
 D.J.B. DRAWN BY 3/11/2025 DATE  
 S.E.E. CHECKED BY 3/11/2025 DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE:  
 PROJECT ID: 1235  
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NOTE: SCALES SHOWN ARE FOR FULL SIZE (24"x36") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.

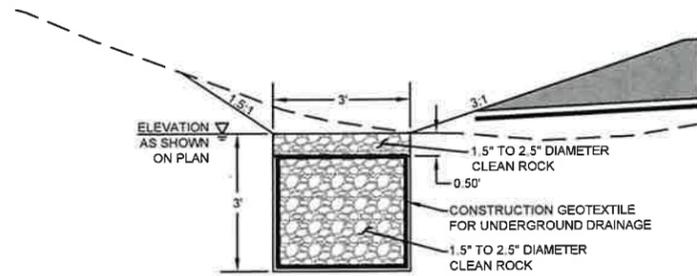


Sec. 28, T 6N, R 1W

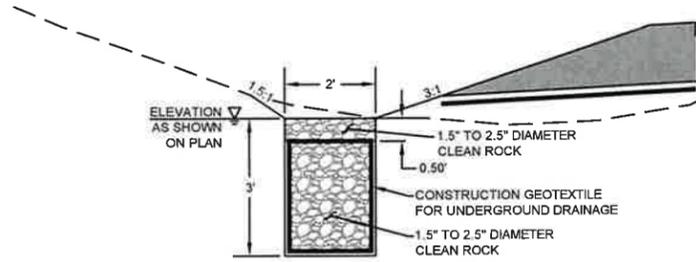
SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT AND SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT

ROADWAY SCHEDULE

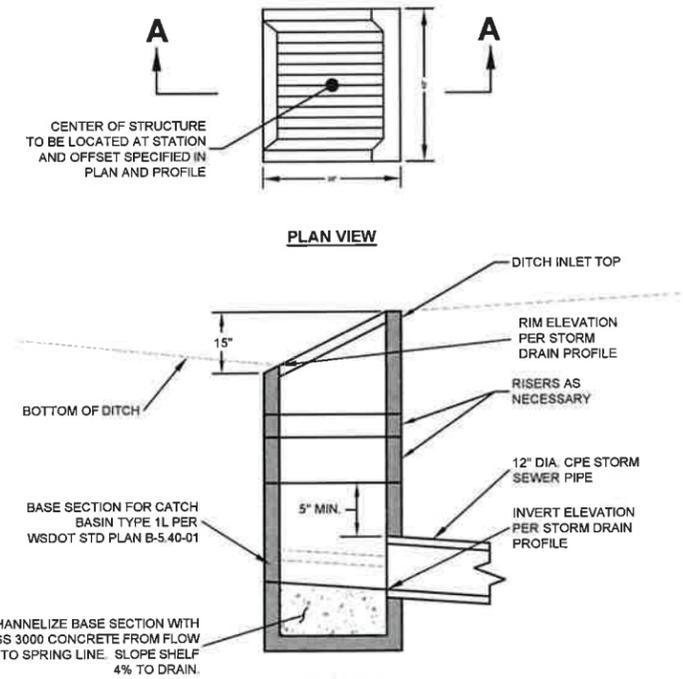
SHEET 27 OF 62



**WIDE INFILTRATION TRENCH** ①  
SCALE: 1" = 2'



**NARROW INFILTRATION TRENCH** ②  
SCALE: 1" = 2'



**DITCH INLET, TYPE 1L DETAIL** ③  
SCALE: 1" = 2'

C.P.A. 3/11/2025  
PROJECT MANAGER DATE  
D.J.B. 3/11/2025  
DRAWN BY DATE  
S.E.E. 3/11/2025  
CHECKED BY DATE

HORIZ. SCALE: AS NOTED  
VERT. SCALE:  
PROJECT ID: 1235  
ROAD NO. : 31510 & 31880  
COMPUTER FILE: 1235 DETAILS 22-30.dwg

**COWLITZ COUNTY**  
WASHINGTON  
DEPARTMENT OF PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
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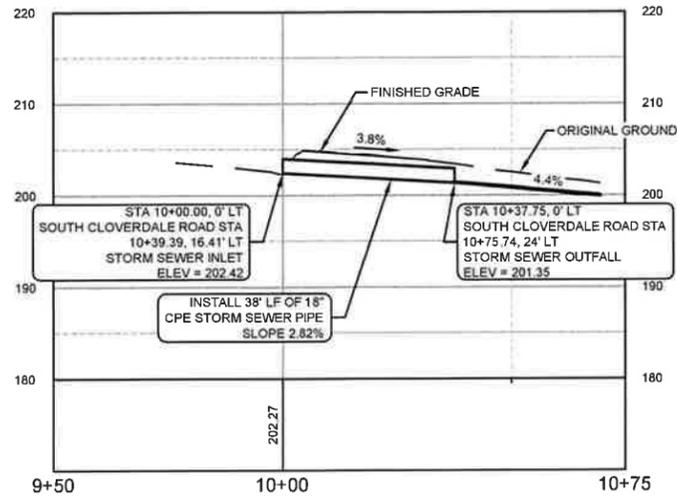
NOTE: SCALES SHOWN ARE FOR FULL SIZE (24"x36") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



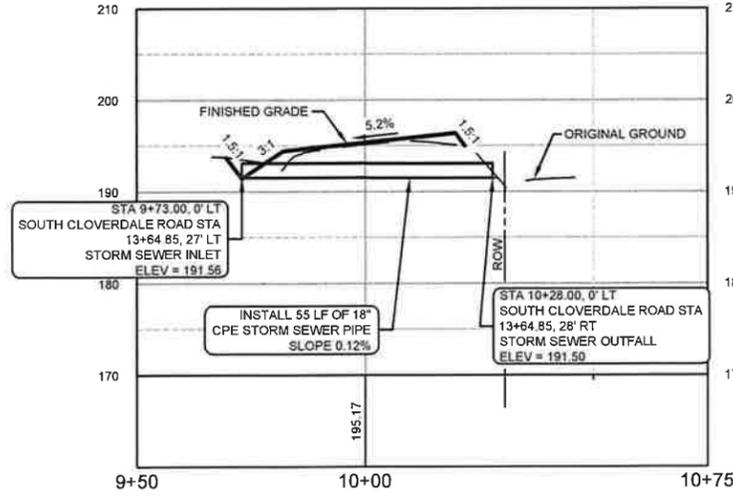
**Sec. 28, T 6N, R 1W**

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT AND SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT**  
**DETAILS**

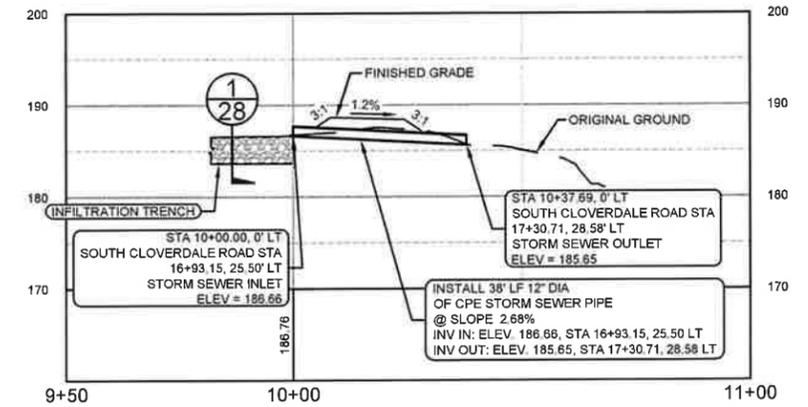
SHEET **28** OF **62**



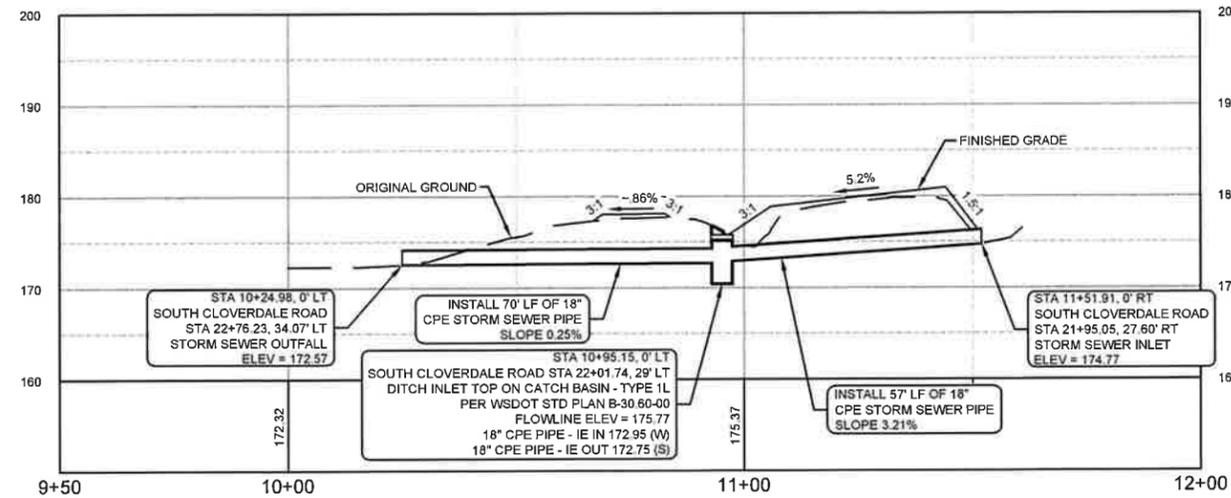
**STA 10+57 LT DRIVEWAY CULVERT PROFILE ①**



**STA 13+65 CROSSING CULVERT PROFILE ②**



**STA 17+09 DRIVEWAY CULVERT PROFILE ③**



**STA 22+00 CROSSING CULVERT PROFILE ④**

C.P.A. \_\_\_\_\_ 3/11/2025  
 PROJECT MANAGER DATE  
 D.J.B. \_\_\_\_\_ 3/11/2025  
 DRAWN BY DATE  
 S.E.E. \_\_\_\_\_ 3/11/2025  
 CHECKED BY DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: 1" = 10'  
 PROJECT ID: 1235  
 ROAD NO. : 31510 & 31880  
 COMPUTER FILE: 1235 DETAILS 22-30.dwg



DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (24"x36") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.

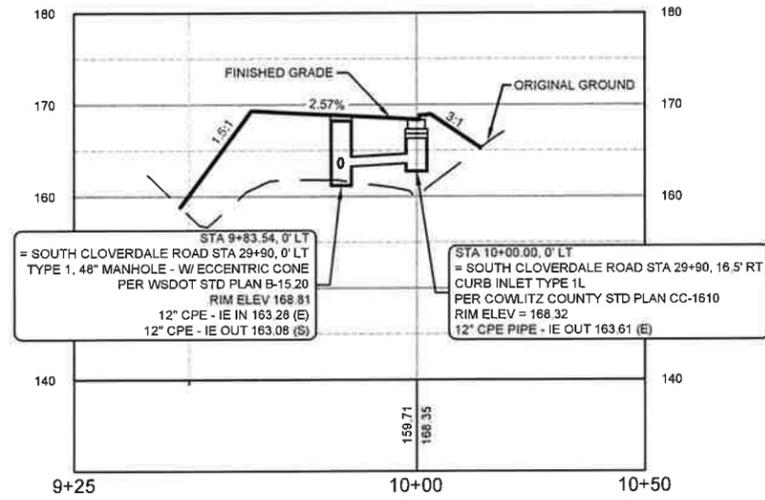


Sec. 28, T 6N, R 1W

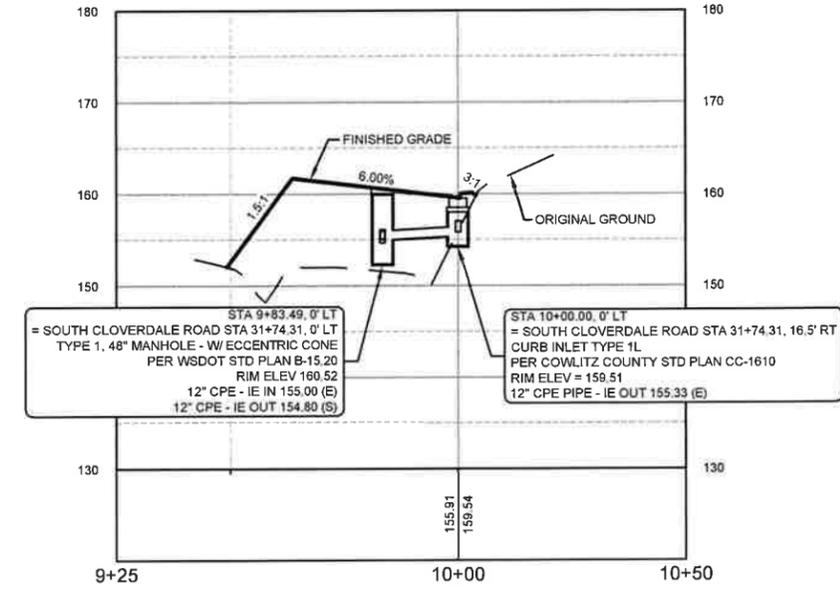
SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT  
 AND SOUTH CLOVERDALE - CONFER ROAD  
 INTERSECTION IMPROVEMENT PROJECT

**STORM PROFILES**

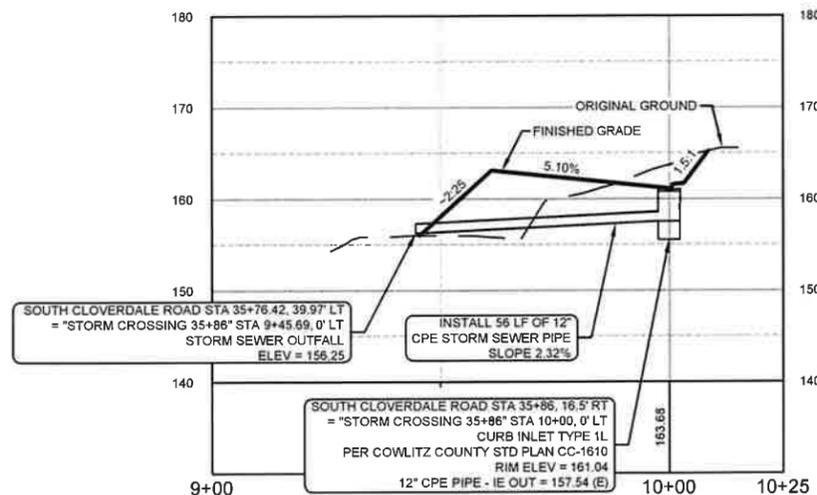
SHEET  
**29**  
 OF  
**62**



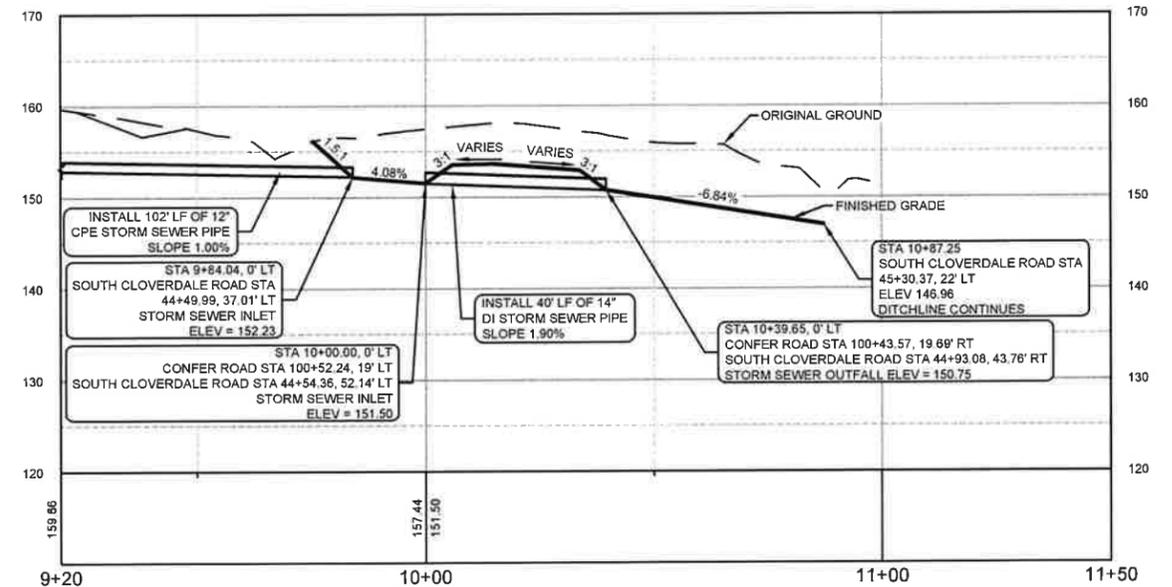
**STORM LINE STA 29+90** ①  
SCALE: 1" = 10'



**STORM LINE STA 31+74.31** ②  
SCALE: 1" = 10'



**STORM CROSSING 35+86** ③  
SCALE: 1" = 10'



**STA 100+48 CROSSING CULVERT PROFILE (CONFER ROAD)** ④  
SCALE: 1" = 10'

C.P.A. PROJECT MANAGER 3/11/2025 DATE  
D.J.B. DRAWN BY 3/11/2025 DATE  
S.E.E. CHECKED BY 3/11/2025 DATE

HORIZ. SCALE: AS NOTED  
VERT. SCALE:  
PROJECT ID: 1235  
ROAD NO. : 31510 & 31880  
COMPUTER FILE: 1235 DETAILS 22-30.dwg



DEPARTMENT OF PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

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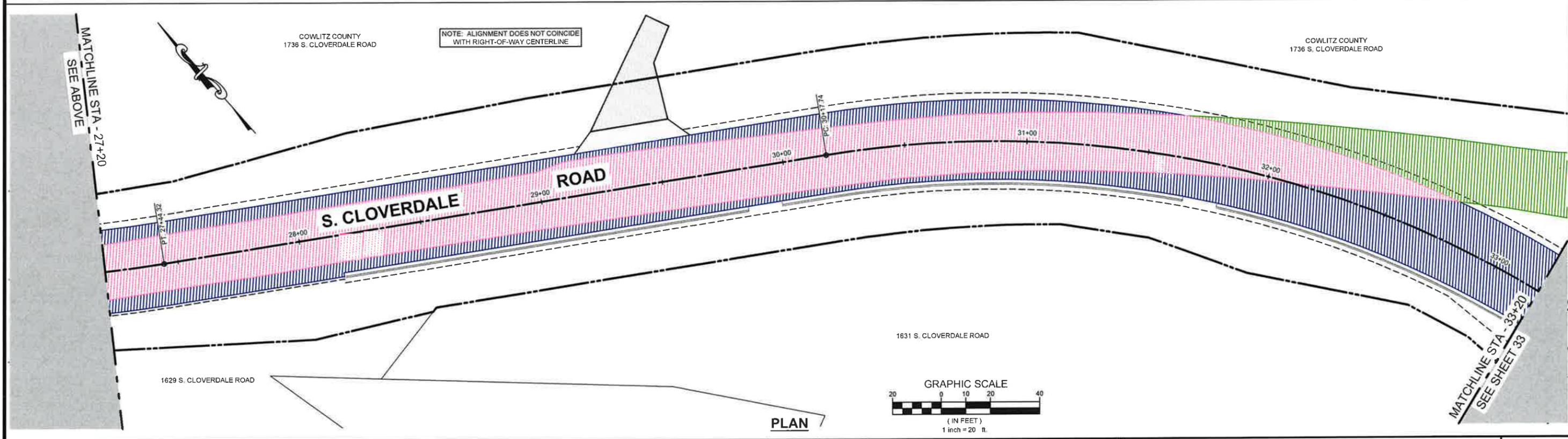
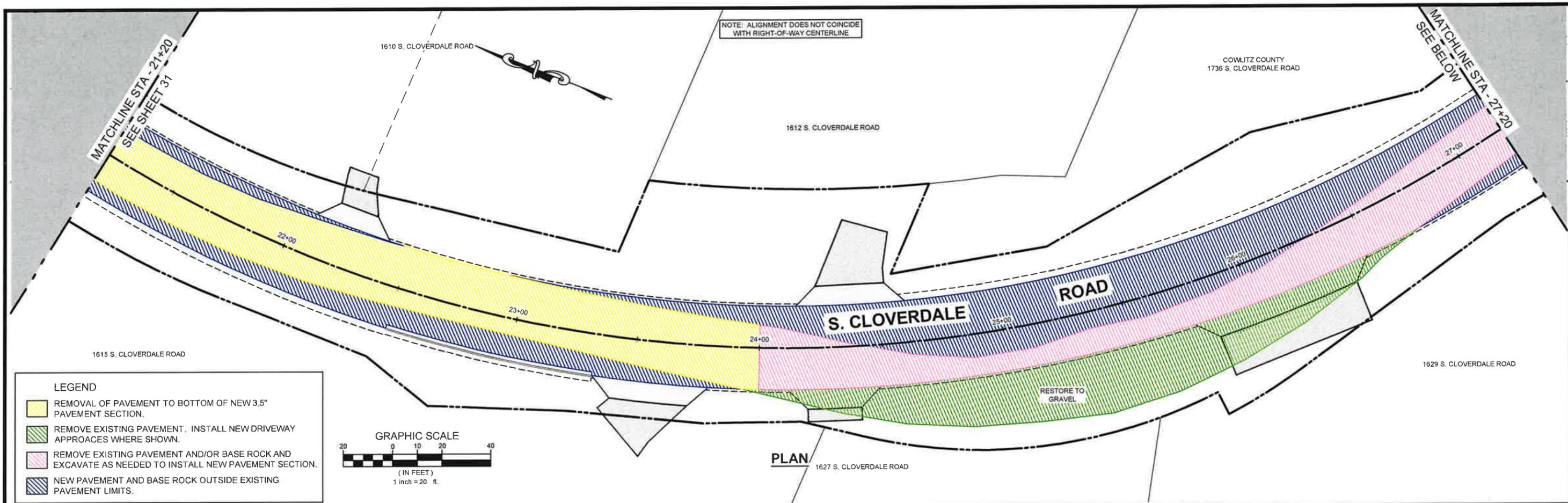
Sec. 28, T 6N, R 1W

SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT  
AND SOUTH CLOVERDALE - CONFER ROAD  
INTERSECTION IMPROVEMENT PROJECT

**STORM PROFILES**

SHEET  
**30**  
OF  
**62**





C.P.A. PROJECT MANAGER 3/11/2025 DATE  
 D.J.B. DRAWN BY 3/11/2025 DATE  
 S.E.E. CHECKED BY 3/11/2025 DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: -  
 PROJECT ID: 1235  
 ROAD NO.: 31510 & 31880  
 COMPUTER FILE: 1235 PAVING 31-35.dwg

**COWLITZ COUNTY**  
 WASHINGTON

DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

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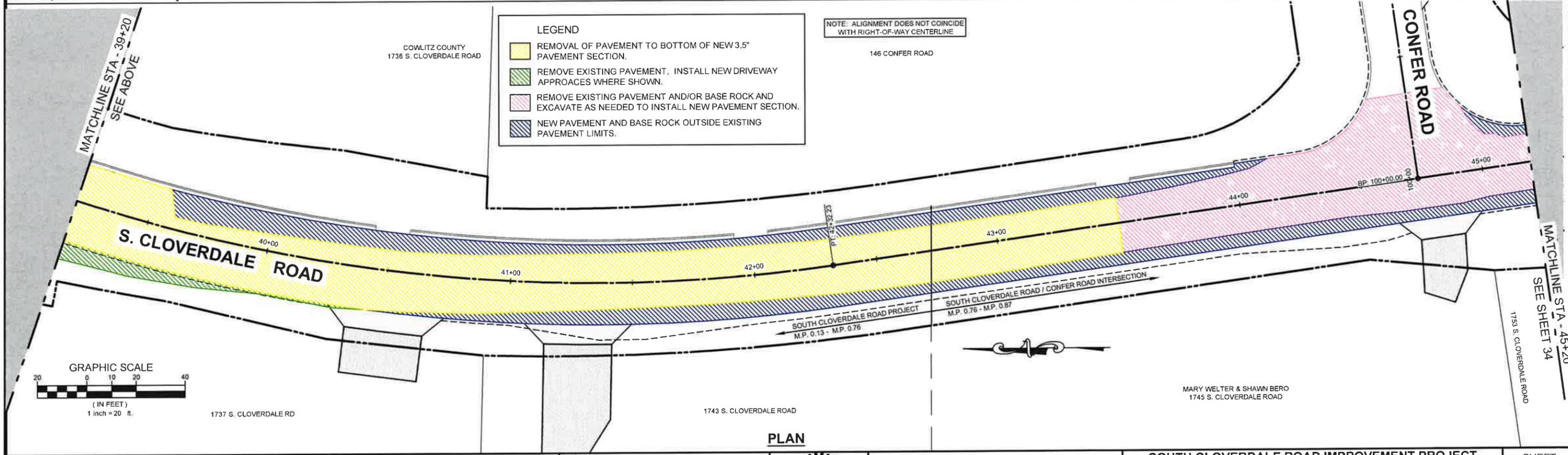
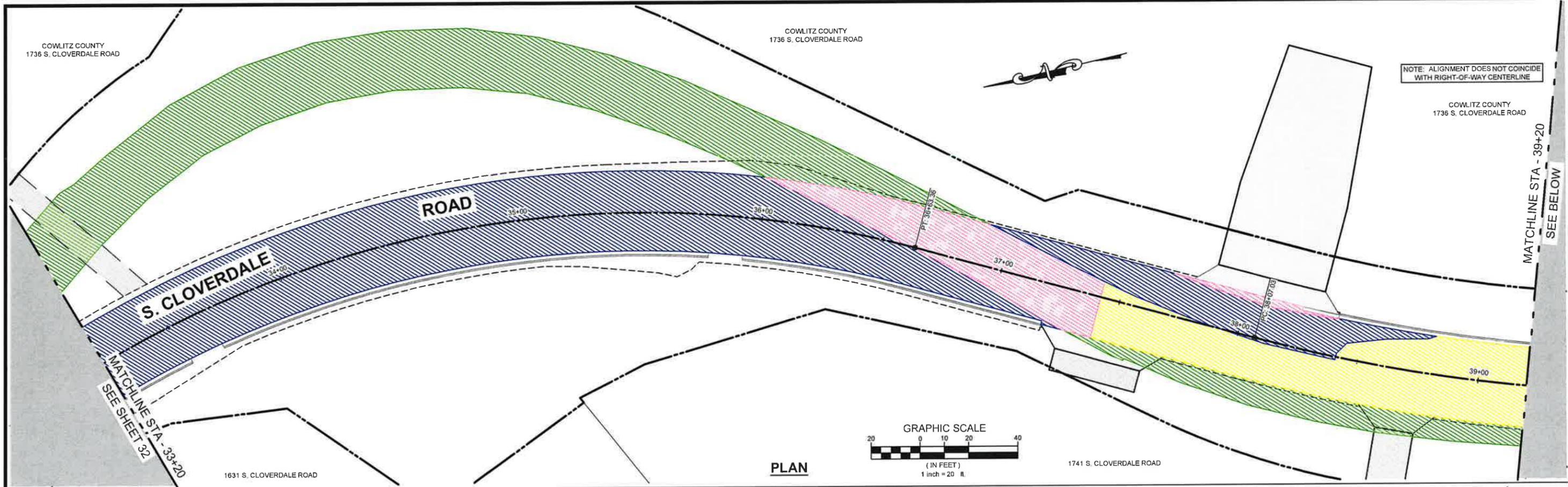


Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT  
 PAVEMENT REMOVAL AND PAVING PLAN**

STA 21+20 TO STA 33+20

SHEET 32 OF 62



- LEGEND**
- REMOVAL OF PAVEMENT TO BOTTOM OF NEW 3.5" PAVEMENT SECTION.
  - REMOVE EXISTING PAVEMENT, INSTALL NEW DRIVEWAY APPROACHES WHERE SHOWN.
  - REMOVE EXISTING PAVEMENT AND/OR BASE ROCK AND EXCAVATE AS NEEDED TO INSTALL NEW PAVEMENT SECTION.
  - NEW PAVEMENT AND BASE ROCK OUTSIDE EXISTING PAVEMENT LIMITS.

C.P.A. \_\_\_\_\_ 3/11/2025  
 PROJECT MANAGER DATE

D.J.B. \_\_\_\_\_ 3/11/2025  
 DRAWN BY DATE

S.E.E. \_\_\_\_\_ 3/11/2025  
 CHECKED BY DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: -

PROJECT ID: 1235  
 ROAD NO. : 31510 & 31880

COMPUTER FILE: 1235 PAVING 31-35.dwg



DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.

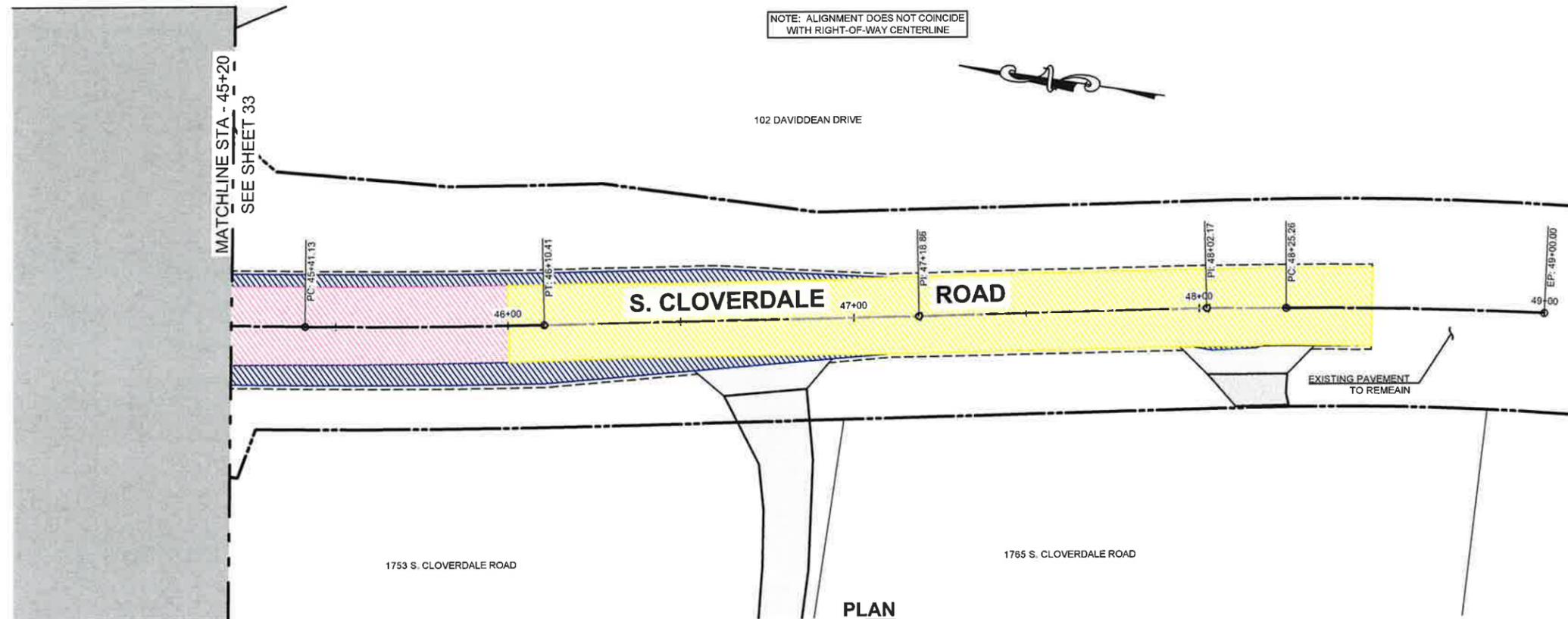


Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT AND SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT**

**PAVEMENT REMOVAL AND PAVING PLAN**  
 STA 33+20 TO STA 45+20

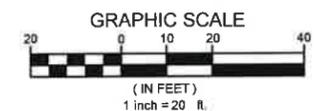
SHEET **33** OF **62**



NOTE: ALIGNMENT DOES NOT COINCIDE WITH RIGHT-OF-WAY CENTERLINE

MATCHLINE STA - 45+20  
SEE SHEET 33

LEGEND	
	REMOVAL OF PAVEMENT TO BOTTOM OF NEW 3.5" PAVEMENT SECTION.
	REMOVE EXISTING PAVEMENT. INSTALL NEW DRIVEWAY APPROACHES WHERE SHOWN.
	REMOVE EXISTING PAVEMENT AND/OR BASE ROCK AND EXCAVATE AS NEEDED TO INSTALL NEW PAVEMENT SECTION.
	NEW PAVEMENT AND BASE ROCK OUTSIDE EXISTING PAVEMENT LIMITS.



C.P.A. \_\_\_\_\_ 3/11/2025  
PROJECT MANAGER DATE

D.J.B. \_\_\_\_\_ 3/11/2025  
DRAWN BY DATE

S.E.E. \_\_\_\_\_ 3/11/2025  
CHECKED BY DATE

HORIZ. SCALE: 1" = 20'  
VERT. SCALE: -

PROJECT ID: 1235  
ROAD NO. : 31510 & 31880

COMPUTER FILE: 1235 PAVING 31-35.dwg



DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

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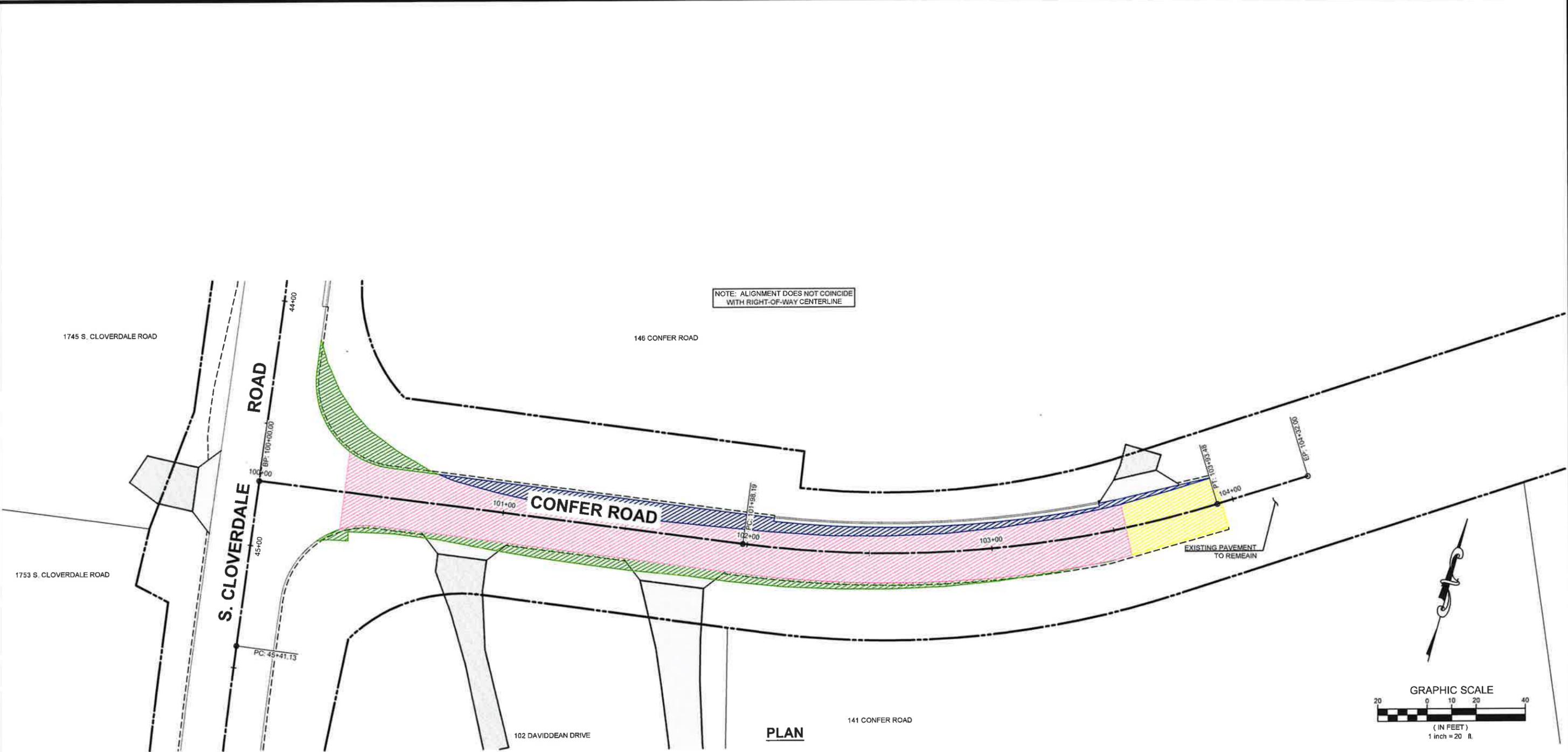


Sec. 28, T 6N, R 1W

SOUTH CLOVERDALE - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT

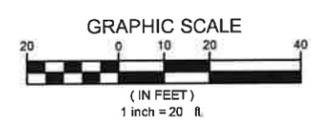
PAVEMENT REMOVAL AND PAVING PLAN  
STA 45+20 TO STA 49+00

SHEET 34 OF 62



**LEGEND**

- REMOVAL OF PAVEMENT TO BOTTOM OF NEW 3.5" PAVEMENT SECTION.
- REMOVE EXISTING PAVEMENT, INSTALL NEW DRIVEWAY APPROACHES WHERE SHOWN.
- REMOVE EXISTING PAVEMENT AND/OR BASE ROCK AND EXCAVATE AS NEEDED TO INSTALL NEW PAVEMENT SECTION.
- NEW PAVEMENT AND BASE ROCK OUTSIDE EXISTING PAVEMENT LIMITS.



C.P.A. \_\_\_\_\_ 3/11/2025  
 PROJECT MANAGER DATE

D.J.B. \_\_\_\_\_ 3/11/2025  
 DRAWN BY DATE

S.E.E. \_\_\_\_\_ 3/11/2025  
 CHECKED BY DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: -

PROJECT ID: 1235  
 ROAD NO. : 31510 & 31880  
 COMPUTER FILE: 1235 PAVING 31-35.dwg

DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.

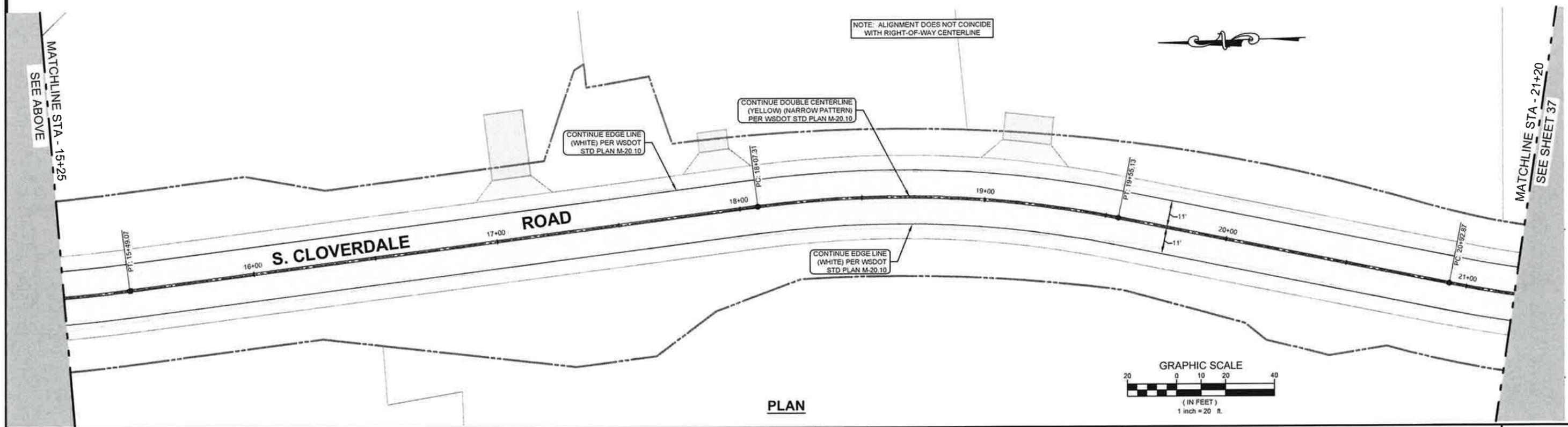
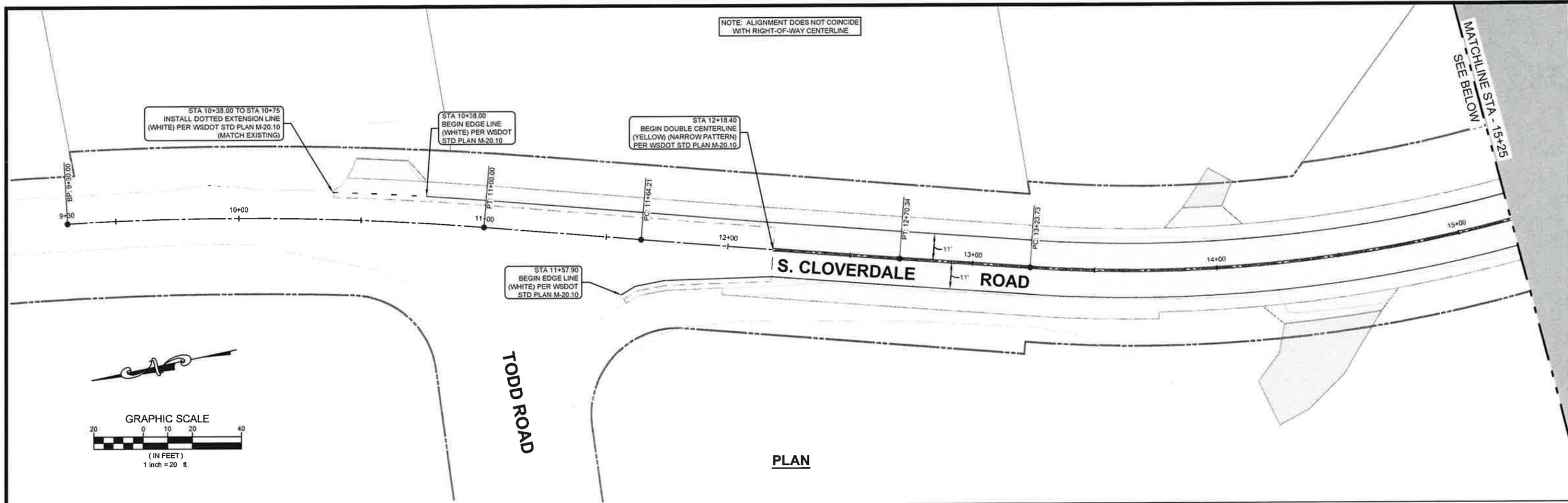


Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD - CONFER ROAD INTERSECTION IMPROVEMENT PROJECT**

**PAVEMENT REMOVAL AND PAVING PLAN**  
 STA 9+50 TO STA 104+32

SHEET **35** OF **62**



C.P.A. PROJECT MANAGER 3/11/2025 DATE  
 D.J.B. DRAWN BY 3/11/2025 DATE  
 S.E.E. CHECKED BY 3/11/2025 DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: -  
 PROJECT ID: 1235  
 ROAD NO.: 31510 & 31880  
 COMPUTER FILE: 1235 Utility Relocation.dwg

**COWLITZ COUNTY**  
 WASHINGTON

DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



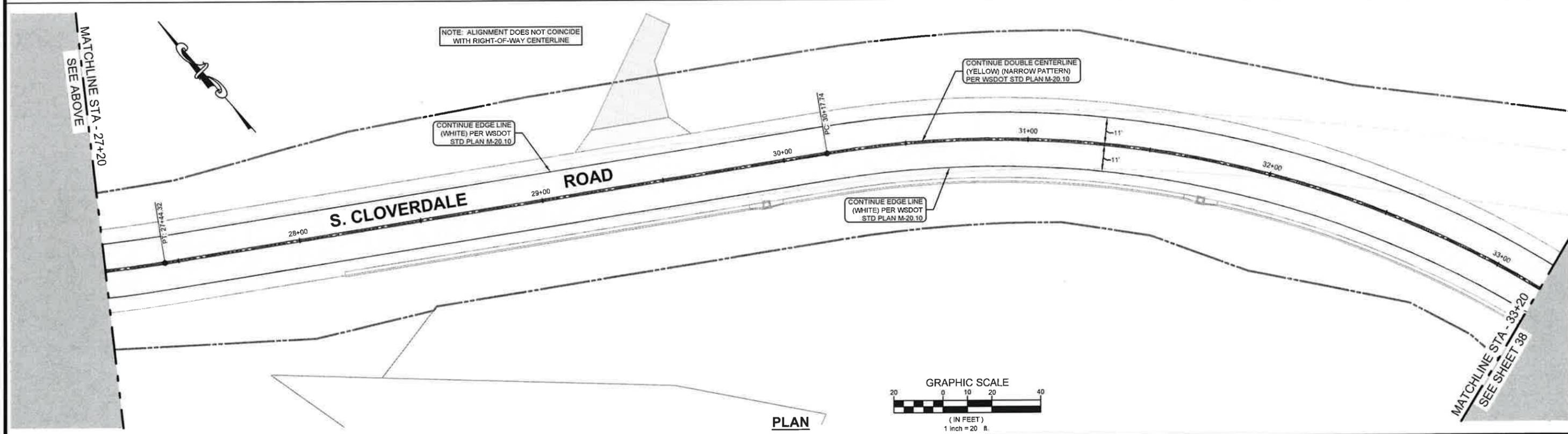
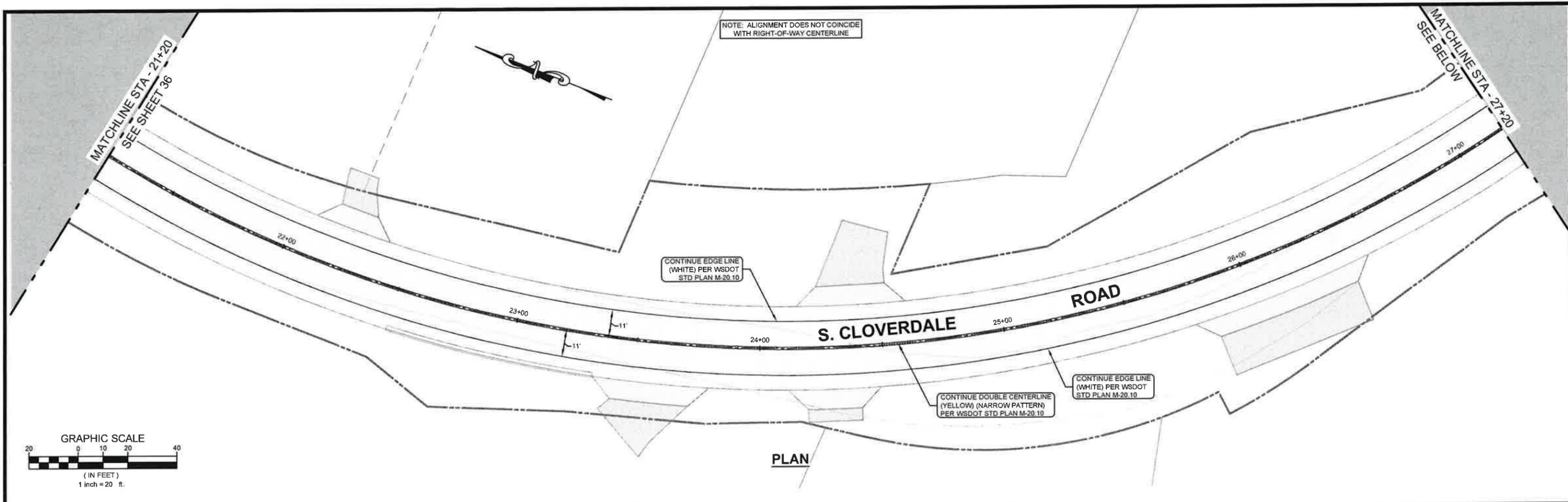
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**

**STRIPING PLAN**

**STA 9+30 TO STA 21+20**

SHEET 36 OF 62



C.P.A. 3/11/2025  
PROJECT MANAGER DATE

D.J.B. 3/11/2025  
DRAWN BY DATE

S.E.E. 3/11/2025  
CHECKED BY DATE

HORIZ. SCALE: 1" = 20'  
VERT. SCALE: -

PROJECT ID: 1235  
ROAD NO. : 31510 & 31880

COMPUTER FILE: 1235 STRIPING 36-39.dwg



DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (22"x34") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.



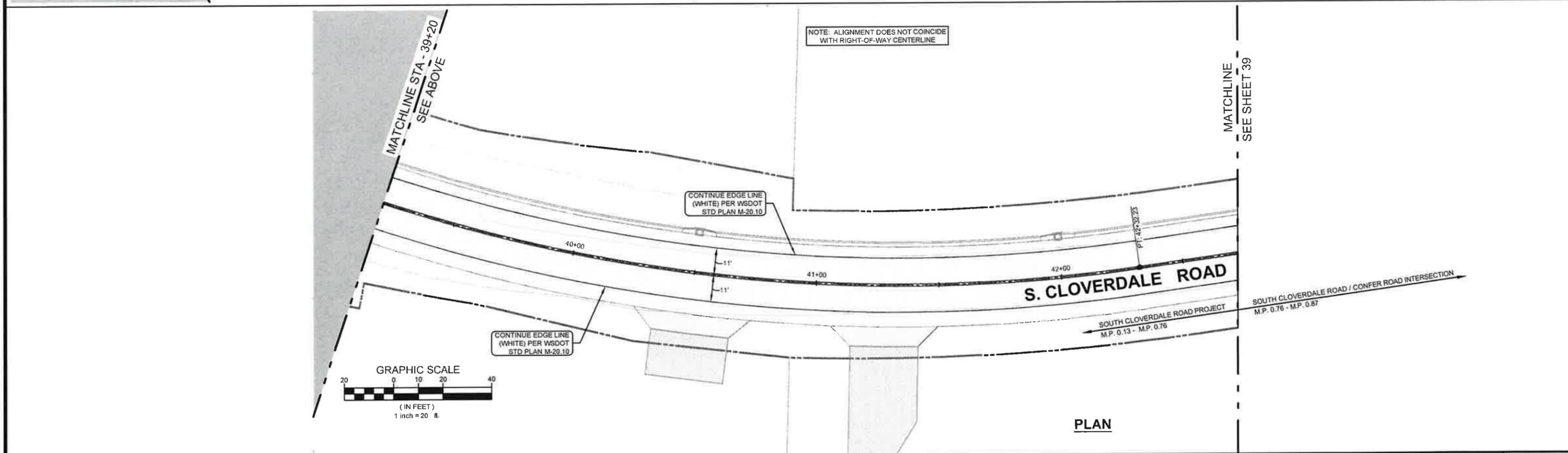
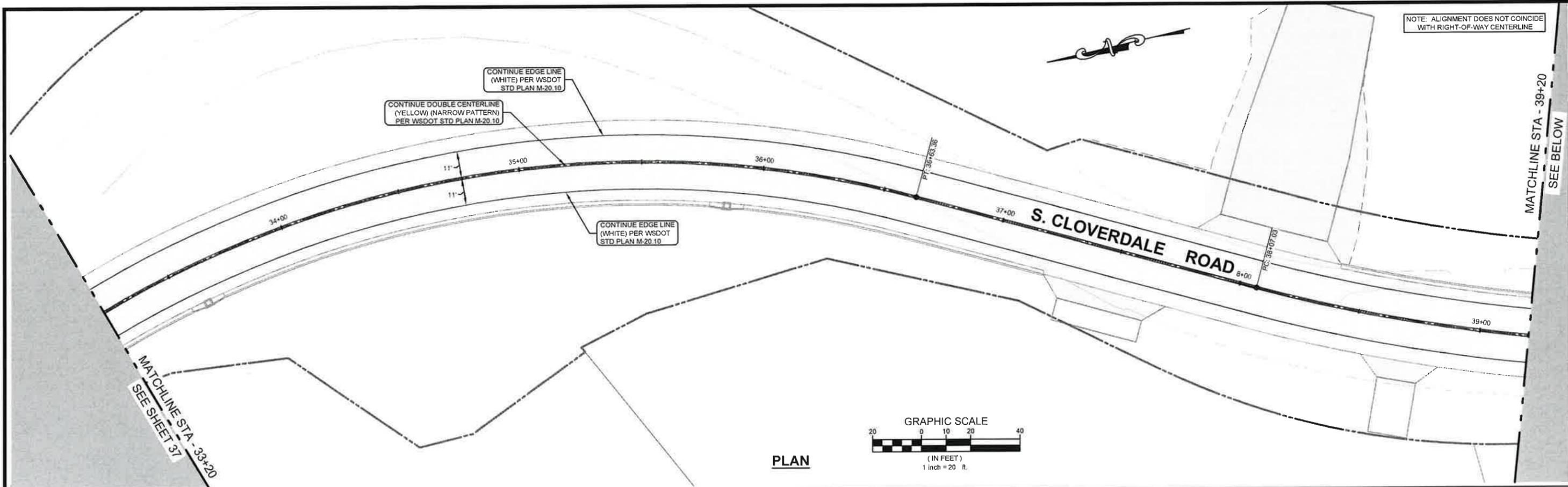
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**

**STRIPING PLAN**

**STA 21+20 TO STA 33+20**

SHEET 37 OF 62



C.P.A. 3/11/2025  
PROJECT MANAGER DATE  
D.J.B. 3/11/2025  
DRAWN BY DATE  
S.E.E. 3/11/2025  
CHECKED BY DATE

HORIZ. SCALE: 1" = 20'  
VERT. SCALE: 1" = 20'  
PROJECT ID: 1235  
ROAD NO.: 31510 & 31880  
COMPUTER FILE: 1235 STRIPING 36-39.dwg

**COWLITZ COUNTY**  
WASHINGTON  
DEPARTMENT OF PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

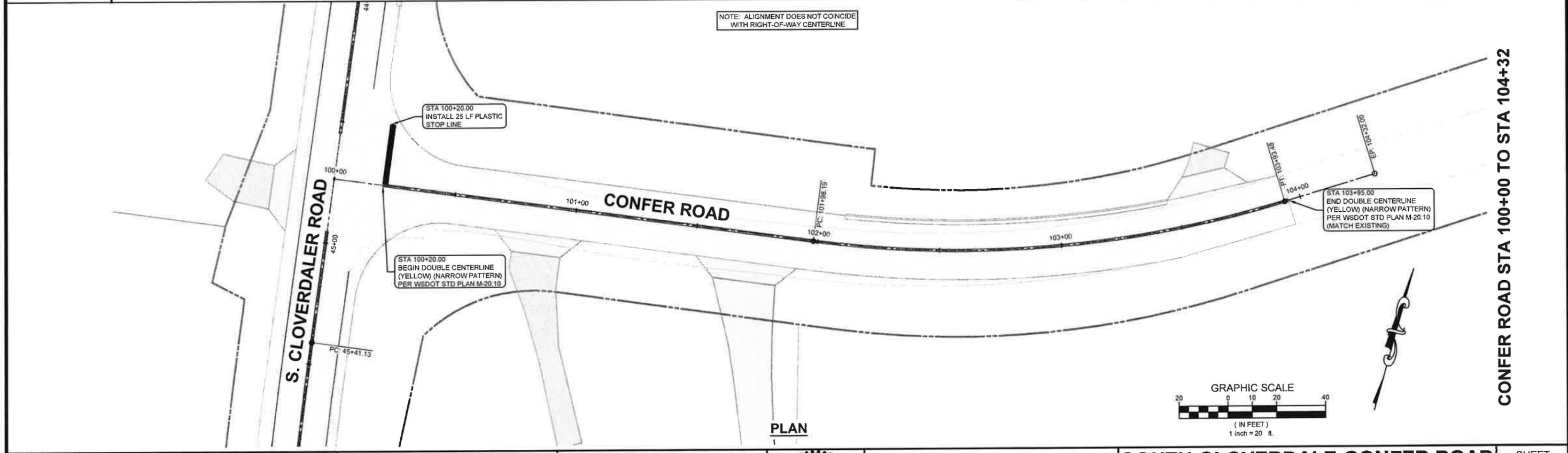
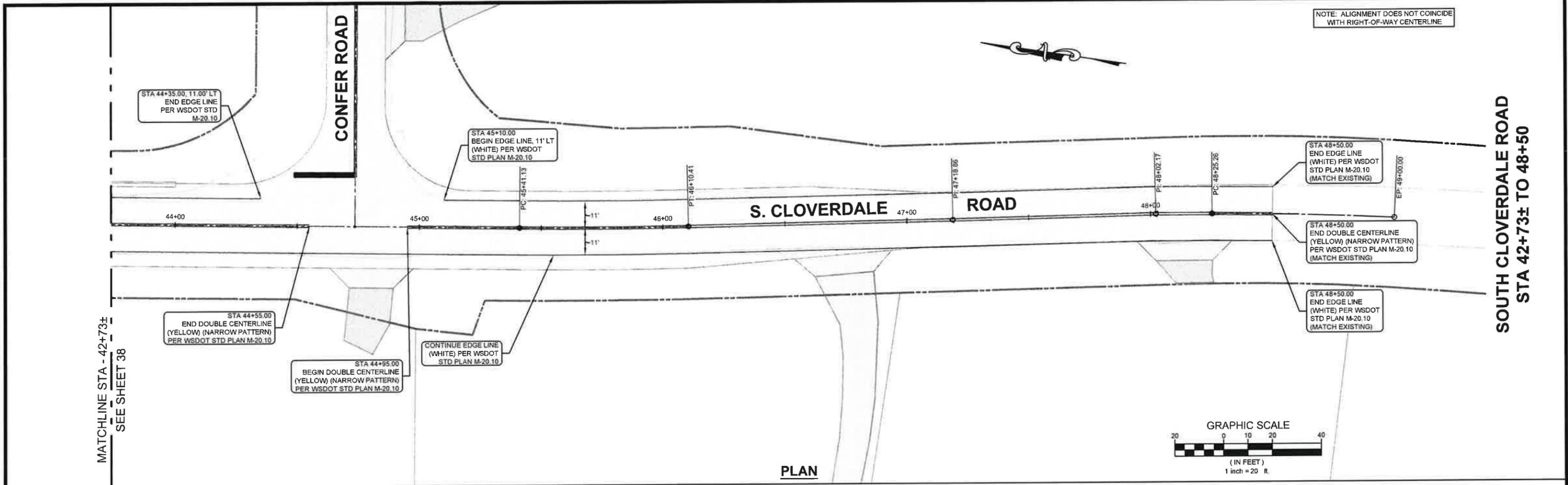
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Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE-CONFER ROAD INTERSECTION IMPROVEMENT PROJECT**  
**STRIPING PLAN**  
**STA 33+20 TO STA 42+73±**

SHEET 38 OF 62



C.P.A. PROJECT MANAGER 3/11/2025 DATE  
 D.J.B. DRAWN BY 3/11/2025 DATE  
 S.E.E. CHECKED BY 3/11/2025 DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: -  
 PROJECT ID: 1235  
 ROAD NO.: 31510 & 31880  
 COMPUTER FILE: 1235 STRIPING 36-39.dwg

**COWLITZ COUNTY**  
 WASHINGTON

DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
 KELSO, WASHINGTON 98626

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Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE-CONFER ROAD INTERSECTION IMPROVEMENT PROJECT**  
**STRIPING PLAN (STATIONING SHOWN ABOVE)**

SHEET 39 OF 62

# STRUCTURAL NOTES:

## GENERAL REQUIREMENTS:

1. THE CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS, EXISTING CONDITIONS, AND NOTED ASSUMPTIONS. ANY DEVIATIONS SHALL BE COORDINATED WITH THE ENGINEER OF RECORD PRIOR TO PROCEEDING WITH THE RELATED WORK CONCERNING THE DEVIATION.
2. THE 2025 WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND MUNICIPAL CONSTRUCTION WAS USED IN PREPARING THESE DESIGN DOCUMENTS. ALL CONSTRUCTION SHALL CONFORM TO THIS CODE.
3. LOADING:
  - A. HL-93 LOADING
4. ALL DIMENSIONS TO TAKE PRECEDENCE OVER THE SCALE SHOWN ON THE PLANS, ELEVATIONS, SECTIONS, AND DETAILS.
5. THE CONTRACT STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL BRACING, SHORING, AND ALL OTHER NECESSARY METHODS REQUIRED TO COMPLETE CONSTRUCTION.

## CODES AND REFERENCES:

AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN SPECIFICATIONS, 9<sup>TH</sup> EDITION.

## SUBMITTALS

1. SHOP DRAWINGS FOR ALL STRUCTURAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND CONSTRUCTION. SUCH ITEMS INCLUDE BUT ARE NOT LIMITED TO:
  - A. CONCRETE MIX DESIGNS
  - B. CONCRETE REINFORCEMENT (INCLUDING MILL TEST REPORTS)
  - C. EMBEDDED STEEL ITEMS
  - D. STRUCTURAL PLATE ARCH CULVERT (INCLUDING MILL TEST REPORTS)
  - E. 3-SIDED PRECAST CONCRETE CULVERT
  - F. GRAVITY BLOCK WALL
  - G. CONTRACTOR DESIGNED TEMPORARY SHORING

## CONSTRUCTION NOTES

1. WINGWALLS SHALL BE CAST-IN-PLACE CONCRETE. CONTRACTOR TO SUBMIT SHOP DRAWINGS PRIOR TO CONSTRUCTION.
2. GEOTECHNICAL REPORT, PREPARED BY FOUNDATION ENGINEERING INC. DATED DECEMBER 29, 2020, PROJECT NO. 2201064, IS AVAILABLE FOR INFORMATIONAL PURPOSES.
3. ALL CONCRETE FOOTINGS SHALL BEAR ON AND BE NEATLY CUT INTO BEDROCK PER GEOTECHNICAL REPORT.
4. THE GEOTECHNICAL ENGINEER SHALL REVIEW THE EXCAVATION PRIOR TO THE PLACEMENT OF STRUCTURAL CONCRETE.
5. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" UNLESS NOTED OTHERWISE.
6. CONTRACTOR TO COORDINATE STAGING OF CULVERT CONSTRUCTION WITH CONSTRUCTION JOINT OF HEADWALLS WITH MANUFACTURER AND SHORING PLAN.

## CONCRETE AND REINFORCING STEEL

1. CONCRETE STRENGTH (28 DAY): 4,000 PSI
  - A. REINFORCING INSPECTION ALONG WITH CYLINDER TESTS ARE REQUIRED PER 6-02 OF WSDOT SPECIFICATIONS.
  - B. THE CONTRACTOR SHALL PROVIDE A MIX DESIGN PER 6-02.3(2)A OF WSDOT SPECIFICATIONS.
2. REINFORCING STEEL
  - A. #3 AND SMALLER (ASTM A615, GRADE 40) FY=40,000 PSI
  - B. #4 AND LARGER (ASTM A615, GRADE 60) FY=60,000 PSI
3. MAKE HORIZONTAL BARS CONTINUOUS AROUND CORNERS OR PROVIDE CORNER BARS.
4. CEMENT SHALL BE TYPE I
5. PROVIDE COVER FOR REINFORCING AS SPECIFIED IN AASHTO TABLE 5.10.1-1 AS FOLLOWS:
  - A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3 IN.
  - B. CONCRETE EXPOSED TO EARTH AND WEATHER UP TO #11 BAR 2 IN.
6. WHERE SPLICES IN REINFORCING ARE REQUIRED, THEY SHALL BE LAPPED AND STAGGERED SUCH THAT NO MORE THAN ONE-HALF OF THE BARS ARE LAP SPICED WITHIN A REQUIRED LAP LENGTH. THESE SHALL MEET THE REQUIREMENTS OF A CLASS "B" SPLICE, GRADE 60 AND BE AS FOLLOWS:

BAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10
TOP BARS (IN)	46	61	76	91	106	122	137	155
OTHER BARS (IN)	35	47	59	70	82	94	106	119

\* TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.

## 3-SIDED CONCRETE CULVERT

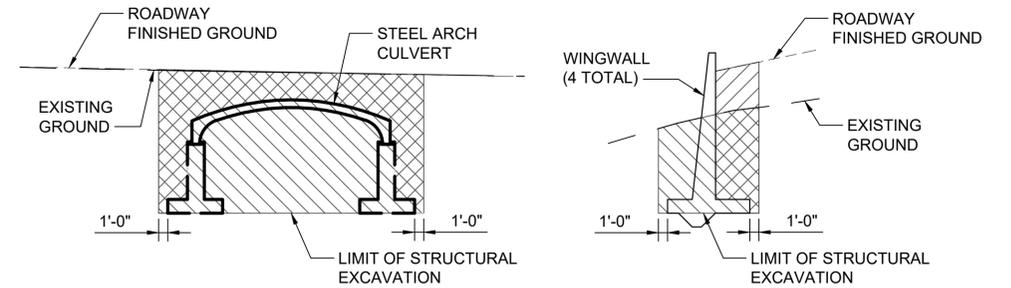
1. CONTRACTOR SHALL SUBMIT 3-SIDED CONCRETE CULVERT SHOP DRAWINGS AND DESIGN CALCULATIONS FOR REVIEW. STRUCTURAL 3-SIDED CONCRETE CULVERT SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF WASHINGTON, PERTAINING TO THE 3-SIDED CONCRETE CULVERT STRUCTURE AND ITS CONNECTIONS. CONTRACTOR TO COORDINATE STAGING OF CULVERT CONSTRUCTION WITH CONSTRUCTION JOINT OF HEADWALLS WITH MANUFACTURER AND SHORING PLAN.
2. DRAWINGS SHALL CLEARLY SHOW THE DIMENSIONS OF ALL COMPONENTS, MATERIALS, THICKNESS AND SPECIAL DETAILS. DRAWINGS SHALL ALSO DETAIL THE ASSEMBLY PROCEDURE, BACKFILL SPECIFICATIONS AND BACKFILL PROCEDURES TO BE FOLLOWED. PLATE ARCH MANUFACTURER SHALL PROVIDE THEIR CORRUGATED STANDARD LENGTH TO OBTAIN MINIMUM CULVERT LENGTH.
3. CONCRETE CULVERT SHALL HAVE A 20'-0" SPAN, AND A VERTICAL RISE OF 10'-0".
4. DESIGN CALCULATIONS SHALL BE BASED ON HL-93 TRUCK LOADING, 2.5 FEET OF COVER AT SCHOOLHOUSE TRIBUTARY, AND CONFORMING TO WSDOT SPECIFICATIONS AND PROJECT SPECIAL PROVISIONS.
5. DESIGN UNIT WEIGHT OF STRUCTURAL FILL SHALL BE 135 PCF.

## STRUCTURAL PLATE ARCH CULVERT

1. CONTRACTOR SHALL SUBMIT PLATE ARCH SHOP DRAWINGS AND DESIGN CALCULATIONS FOR REVIEW. STRUCTURAL PLATE ARCH SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF WASHINGTON, PERTAINING TO THE PLATE ARCH STRUCTURE AND ITS CONNECTIONS. CONTRACTOR TO COORDINATE STAGING OF CULVERT CONSTRUCTION WITH CONSTRUCTION JOINT OF HEADWALLS WITH MANUFACTURER AND SHORING PLAN.
2. DRAWINGS SHALL CLEARLY SHOW THE DIMENSIONS OF ALL COMPONENTS, MATERIALS, THICKNESS AND SPECIAL DETAILS. DRAWINGS SHALL ALSO DETAIL THE ASSEMBLY PROCEDURE, BACKFILL SPECIFICATIONS AND BACKFILL PROCEDURES TO BE FOLLOWED. PLATE ARCH MANUFACTURER SHALL PROVIDE THEIR CORRUGATED STANDARD LENGTH TO OBTAIN MINIMUM CULVERT LENGTH.
3. PLATE ARCH SHALL HAVE A 35'-8" SPAN, AND A VERTICAL RISE OF 17'-10".
4. DESIGN CALCULATIONS SHALL BE BASED ON HL-93 TRUCK LOADING, 19 FEET OF COVER AT BYBEE CREEK, AND CONFORMING TO WSDOT SPECIFICATIONS AND PROJECT SPECIAL PROVISIONS.
5. GAUGE OF STEEL SHALL BE AT LEAST ONE STANDARD GAUGE THICKER THAN THE MINIMUM THICKNESS REQUIRED BY DESIGN.
6. DESIGN UNIT WEIGHT OF STRUCTURAL FILL SHALL BE 135 PCF.
7. ALL STRUCTURAL PLATE SHALL BE ZINC COATED AFTER FABRICATION.

## STRUCTURAL OBSERVATION

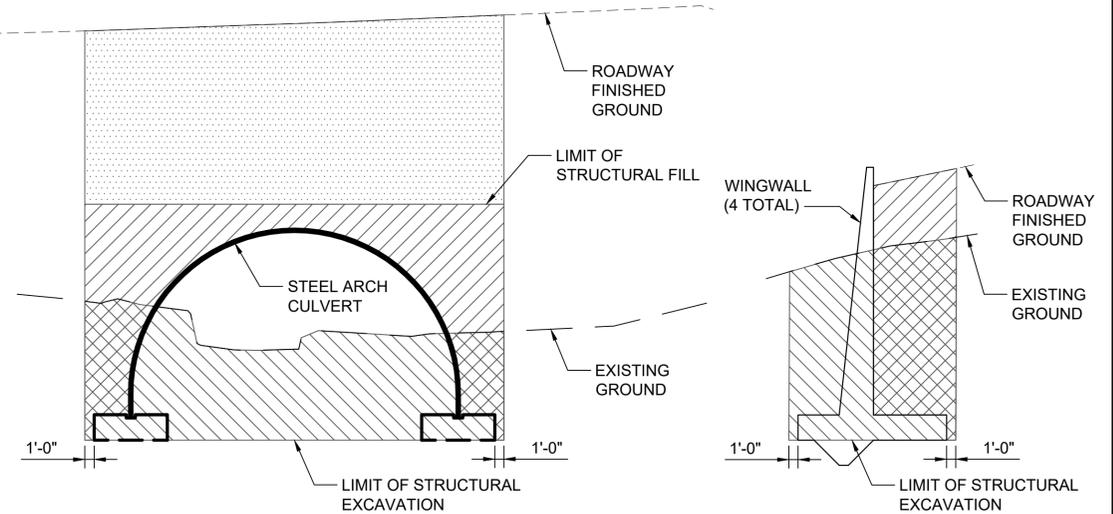
1. THE ENGINEER OF RECORD WILL PERFORM STRUCTURAL OBSERVATION AT THE FOLLOWING CRITICAL STAGES OF CONSTRUCTION:
  - A. PRIOR TO FOUNDATION CONCRETE PLACEMENT
  - B. DURING INSTALLATION OF THE PLATE ARCH CULVERT
  - C. DURING PLACEMENT OF 3-SIDED CULVERT
2. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ENGINEER IN ADVANCE OF THE STAGES LISTED ABOVE. COPIES OF SITE OBSERVATION REPORTS AND FINAL OBSERVATION REPORT WILL BE SUBMITTED TO THE CONTRACTOR AND OWNER.



**SCHOOLHOUSE CREEK TRIBUTARY CULVERT EXCAVATION AND FILL DIAGRAMS**

## LEGEND:

- AREA OF STRUCTURE EXCAVATION
- AREA OF STRUCTURAL FILL
- AREA OF ROADWAY FILL



**BYBEE CREEK EXCAVATION AND FILL DIAGRAM**

**FINAL SUBMITTAL**

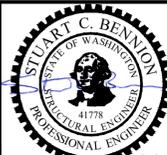
T.A.D.  
PROJECT MANAGER  
03/04/2024  
DATE  
J.T.H.  
DRAWN BY  
03/04/2024  
DATE  
S.C.B.  
CHECKED BY  
03/04/2024  
DATE

HORIZ. SCALE: 1" = 10'  
VERT. SCALE:  
PROJECT ID: 1235  
ROAD NO. : 31510 & 31880  
COMPUTER FILE: 1235 WSP Structural.dwg



DEPARTMENT  
OF  
PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (24"x36") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.

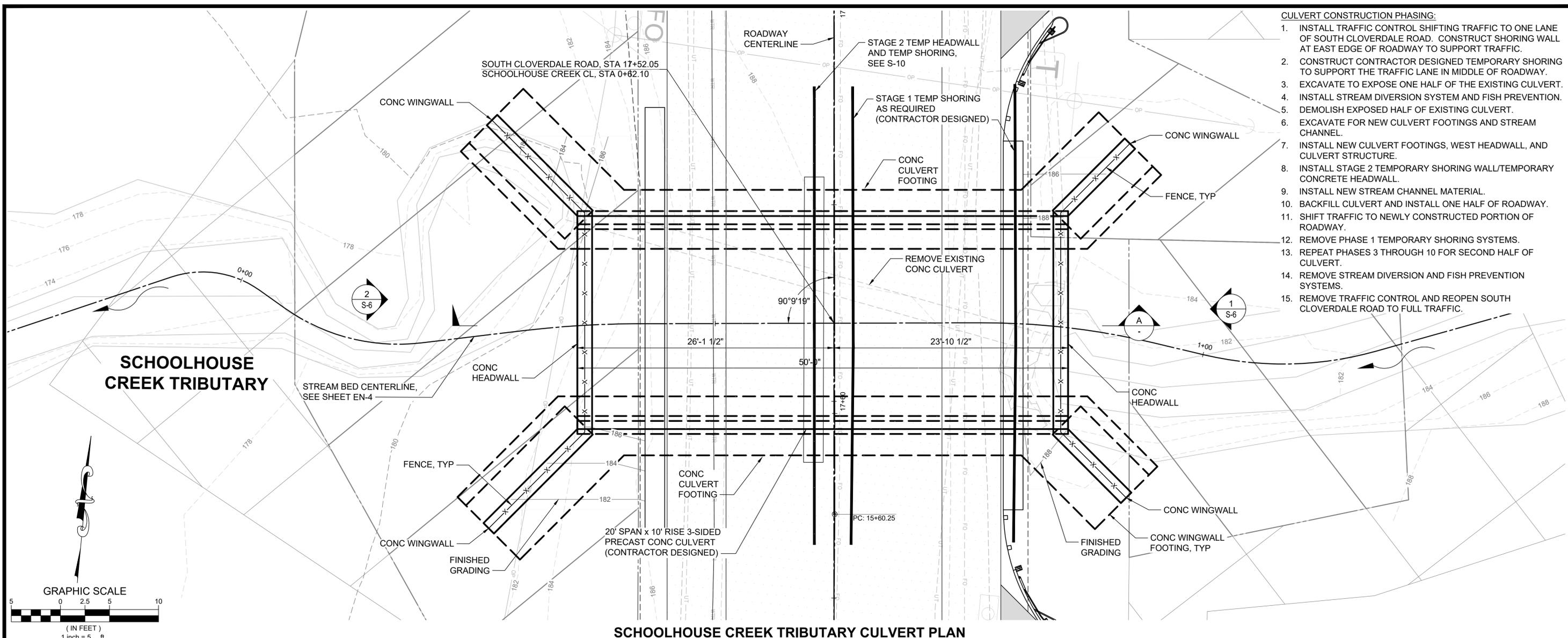


Sec. 28, T 6N, R 1W

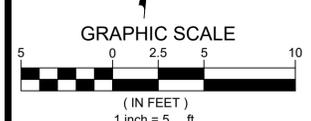
**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**  
**STRUCTURAL  
GENERAL NOTES**

SHEET  
**S-1**  
OF  
**62**

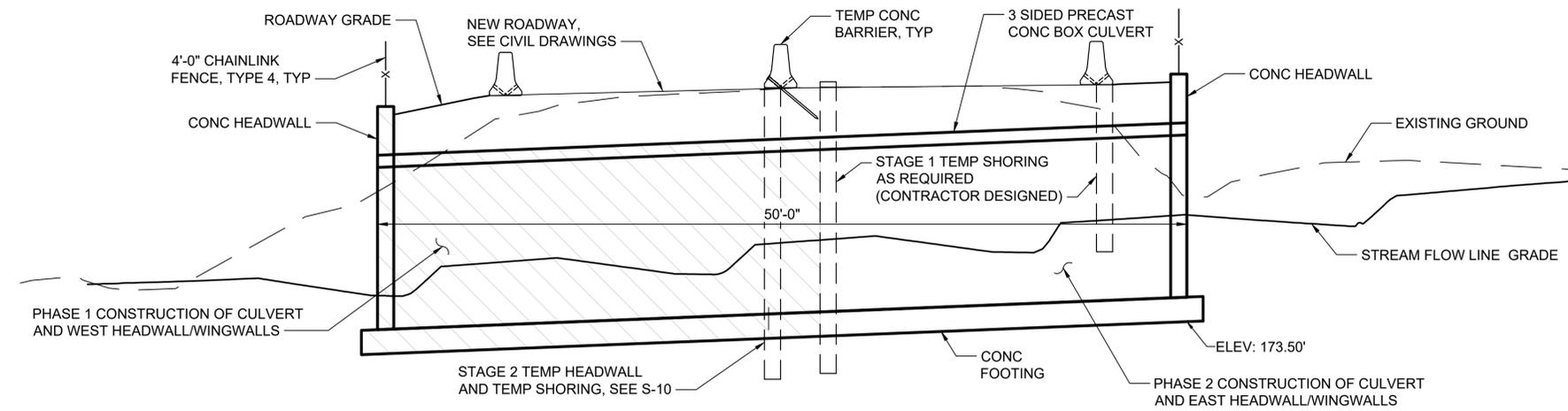
R:\USPD\4000\PROJECT\2020\30900281\_SOUTH CLOVERDALE\1000\CADD\DWGS\1235 WSP STRUCTURAL.DWG 3/3/2025 HAMMOND, JEFF



- CULVERT CONSTRUCTION PHASING:**
1. INSTALL TRAFFIC CONTROL SHIFTING TRAFFIC TO ONE LANE OF SOUTH CLOVERDALE ROAD. CONSTRUCT SHORING WALL AT EAST EDGE OF ROADWAY TO SUPPORT TRAFFIC.
  2. CONSTRUCT CONTRACTOR DESIGNED TEMPORARY SHORING TO SUPPORT THE TRAFFIC LANE IN MIDDLE OF ROADWAY.
  3. EXCAVATE TO EXPOSE ONE HALF OF THE EXISTING CULVERT.
  4. INSTALL STREAM DIVERSION SYSTEM AND FISH PREVENTION.
  5. DEMOLISH EXPOSED HALF OF EXISTING CULVERT.
  6. EXCAVATE FOR NEW CULVERT FOOTINGS AND STREAM CHANNEL.
  7. INSTALL NEW CULVERT FOOTINGS, WEST HEADWALL, AND CULVERT STRUCTURE.
  8. INSTALL STAGE 2 TEMPORARY SHORING WALL/TEMPORARY CONCRETE HEADWALL.
  9. INSTALL NEW STREAM CHANNEL MATERIAL.
  10. BACKFILL CULVERT AND INSTALL ONE HALF OF ROADWAY.
  11. SHIFT TRAFFIC TO NEWLY CONSTRUCTED PORTION OF ROADWAY.
  12. REMOVE PHASE 1 TEMPORARY SHORING SYSTEMS.
  13. REPEAT PHASES 3 THROUGH 10 FOR SECOND HALF OF CULVERT.
  14. REMOVE STREAM DIVERSION AND FISH PREVENTION SYSTEMS.
  15. REMOVE TRAFFIC CONTROL AND REOPEN SOUTH CLOVERDALE ROAD TO FULL TRAFFIC.



**SCHOOLHOUSE CREEK TRIBUTARY CULVERT PLAN**



**SCHOOLHOUSE CREEK TRIBUTARY CULVERT SECTION**  
SCALE: 1" = 5'

- NOTES:**
1. WINGWALLS NOT SHOWN FOR CLARITY.

T.A.D. PROJECT MANAGER	03/04/2024 DATE
J.T.H. DRAWN BY	03/04/2024 DATE
S.C.B. CHECKED BY	03/04/2024 DATE

HORIZ. SCALE: 1" = 5'  
VERT. SCALE: 1" = 5'

PROJECT ID: 1235  
ROAD NO. : 31510 & 31880

COMPUTER FILE: 1235 WSP Structural.dwg

**COWLITZ COUNTY WASHINGTON**

DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

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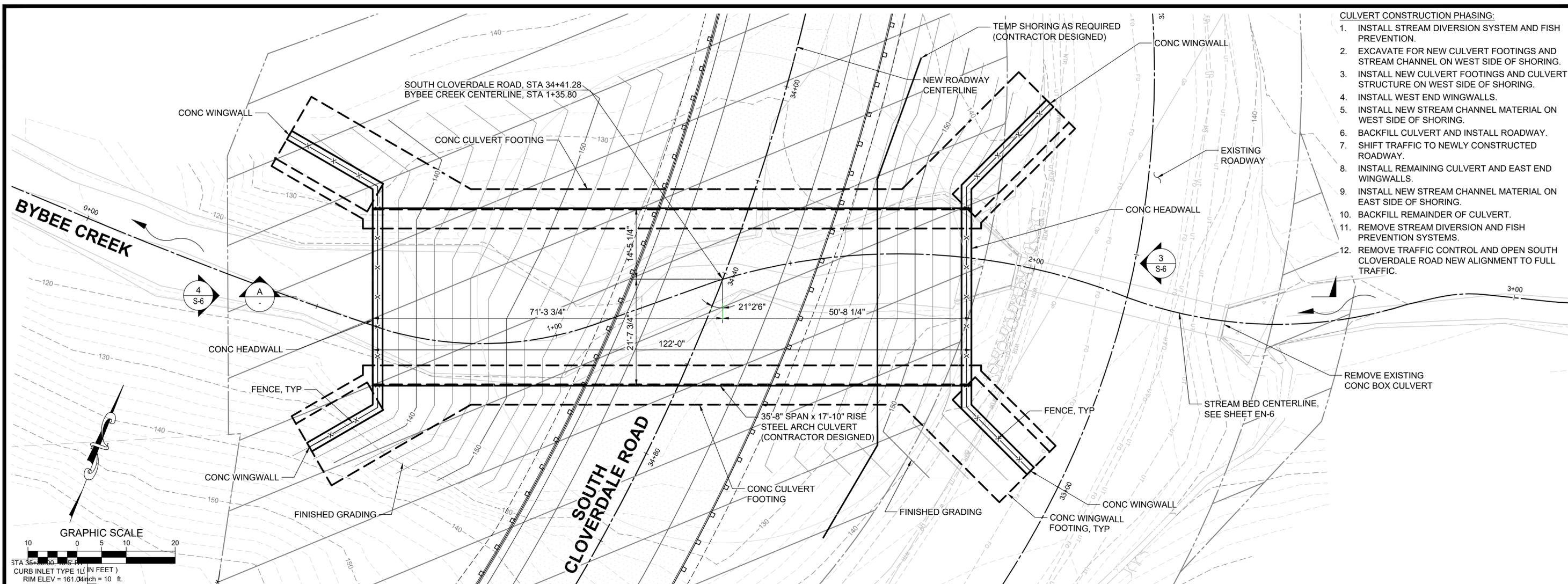
**Sec. 28, T 6N, R 1W**

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**

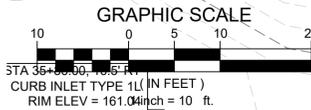
**SCHOOLHOUSE CREEK TRIBUTARY PLAN AND SECTION**

SHEET **S-2** OF **62**

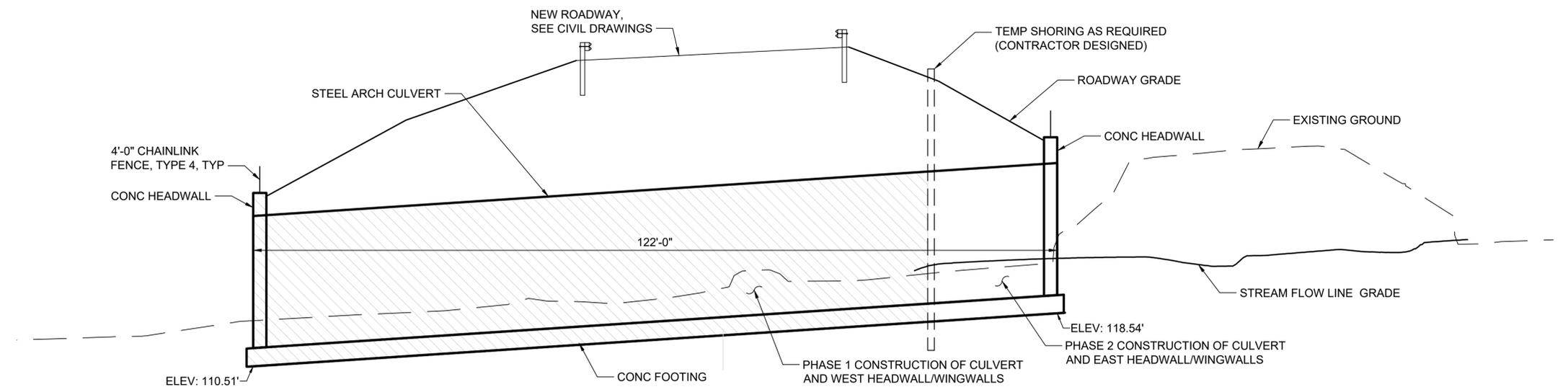
**FINAL SUBMITTAL**



- CULVERT CONSTRUCTION PHASING:**
1. INSTALL STREAM DIVERSION SYSTEM AND FISH PREVENTION.
  2. EXCAVATE FOR NEW CULVERT FOOTINGS AND STREAM CHANNEL ON WEST SIDE OF SHORING.
  3. INSTALL NEW CULVERT FOOTINGS AND CULVERT STRUCTURE ON WEST SIDE OF SHORING.
  4. INSTALL WEST END WINGWALLS.
  5. INSTALL NEW STREAM CHANNEL MATERIAL ON WEST SIDE OF SHORING.
  6. BACKFILL CULVERT AND INSTALL ROADWAY.
  7. SHIFT TRAFFIC TO NEWLY CONSTRUCTED ROADWAY.
  8. INSTALL REMAINING CULVERT AND EAST END WINGWALLS.
  9. INSTALL NEW STREAM CHANNEL MATERIAL ON EAST SIDE OF SHORING.
  10. BACKFILL REMAINDER OF CULVERT.
  11. REMOVE STREAM DIVERSION AND FISH PREVENTION SYSTEMS.
  12. REMOVE TRAFFIC CONTROL AND OPEN SOUTH CLOVERDALE ROAD NEW ALIGNMENT TO FULL TRAFFIC.



**BYBEE CREEK CULVERT PLAN**



**BYBEE CREEK CULVERT SECTION**  
SCALE: 1" = 10'

- NOTES:**
1. WINGWALLS NOT SHOWN FOR CLARITY.

R:\USPD\4000\PROJECT\2020\30900281\_SOUTH CLOVERDALE\1000\CADD\DWGS\1235 WSP STRUCTURAL.DWG 3/3/2025-HAMMOND, JEFF

T.A.D. PROJECT MANAGER 03/04/2024 DATE  
 J.T.H. DRAWN BY 03/04/2024 DATE  
 S.C.B. CHECKED BY 03/04/2024 DATE

HORIZ. SCALE: 1" = 20'  
 VERT. SCALE: 1" = 10'  
 PROJECT ID: 1235  
 ROAD NO. : 31510 & 31880  
 COMPUTER FILE: 1235 WSP Structural.dwg



DEPARTMENT OF PUBLIC WORKS  
 1600 13TH AVENUE SOUTH  
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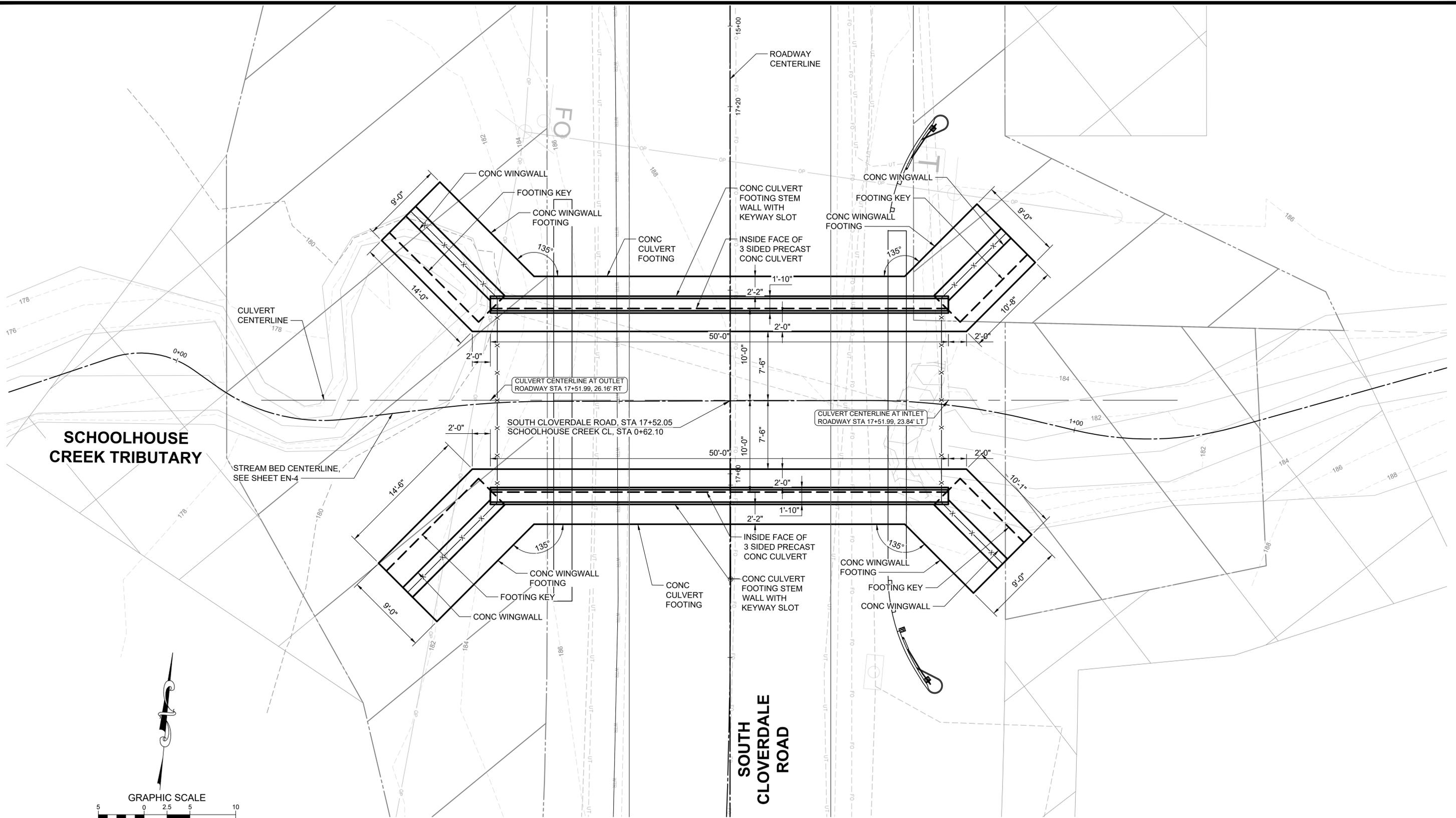
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**  
**BYBEE CREEK PLAN AND SECTION**

SHEET **S-3** OF **62**

**FINAL SUBMITTAL**

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**SCHOOLHOUSE CREEK TRIBUTARY CULVERT FOUNDATION PLAN**

**FINAL SUBMITTAL**

T.A.D.  
PROJECT MANAGER  
DATE 03/04/2024

J.T.H.  
DRAWN BY  
DATE 03/04/2024

S.C.B.  
CHECKED BY  
DATE 03/04/2024

HORIZ. SCALE: 1" = 5'  
VERT. SCALE:

PROJECT ID: 1235  
ROAD NO. : 31510 & 31880

COMPUTER FILE: 1235 WSP Structural.dwg



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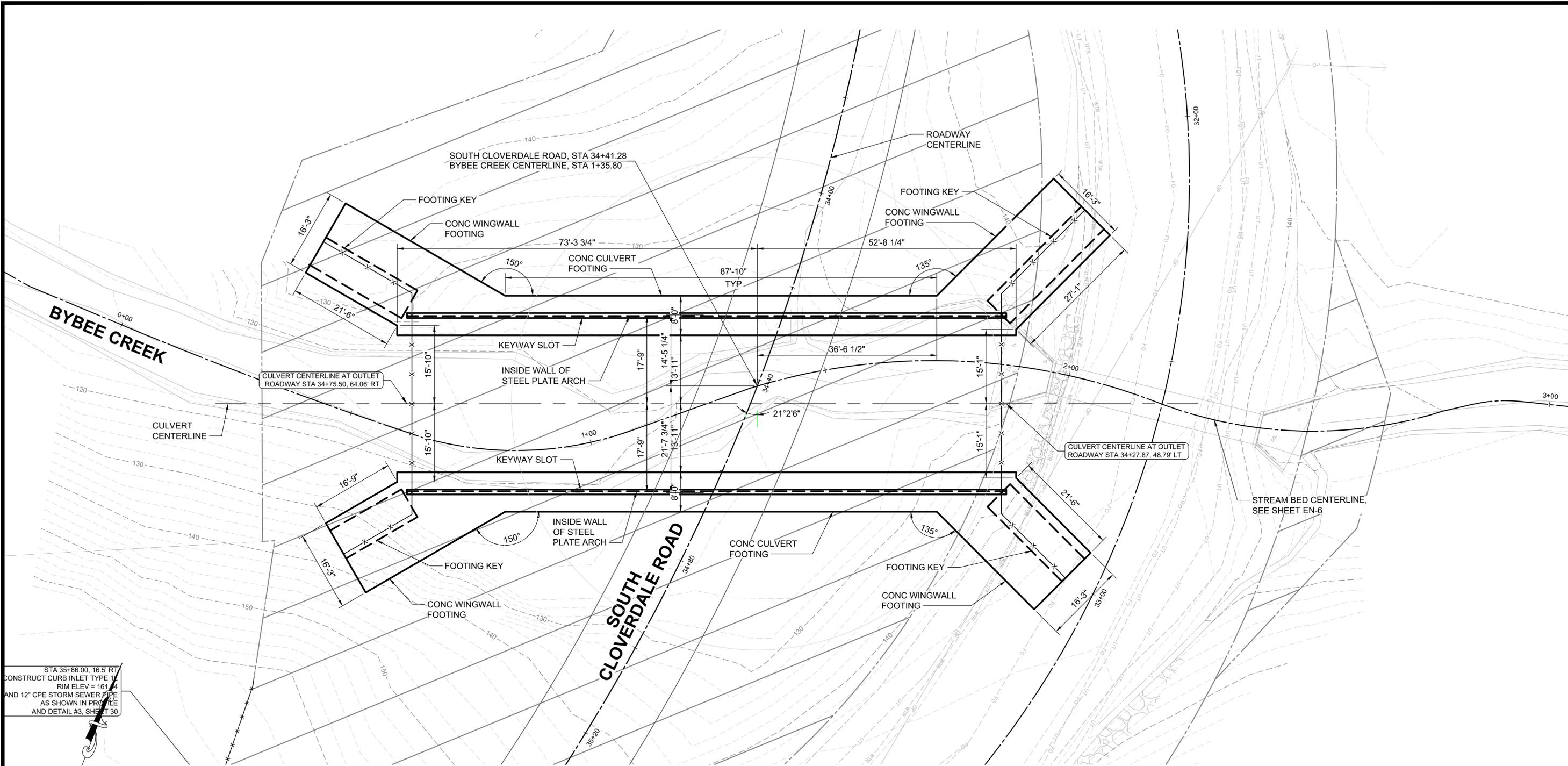
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**

**SCHOOLHOUSE CREEK TRIBUTARY FOOTING FOUNDATION PLAN**

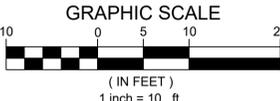
SHEET **S-4** OF **62**

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**BYBEE CREEK CULVERT FOUNDATION PLAN**

STA 35+86.00, 16.5' RT  
 CONSTRUCT CURB INLET TYPE 1  
 RIM ELEV = 161.44  
 AND 12" CPE STORM SEWER PIPE  
 AS SHOWN IN PROFILE  
 AND DETAIL #3, SHEET 30



**FINAL SUBMITTAL**

T.A.D. PROJECT MANAGER 03/04/2024 DATE  
 J.T.H. DRAWN BY 03/04/2024 DATE  
 S.C.B. CHECKED BY 03/04/2024 DATE

HORIZ. SCALE: 1" = 10'  
 VERT. SCALE:  
 PROJECT ID: 1235  
 ROAD NO. : 31510 & 31880  
 COMPUTER FILE: 1235 WSP Structural.dwg

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 1600 13TH AVENUE SOUTH  
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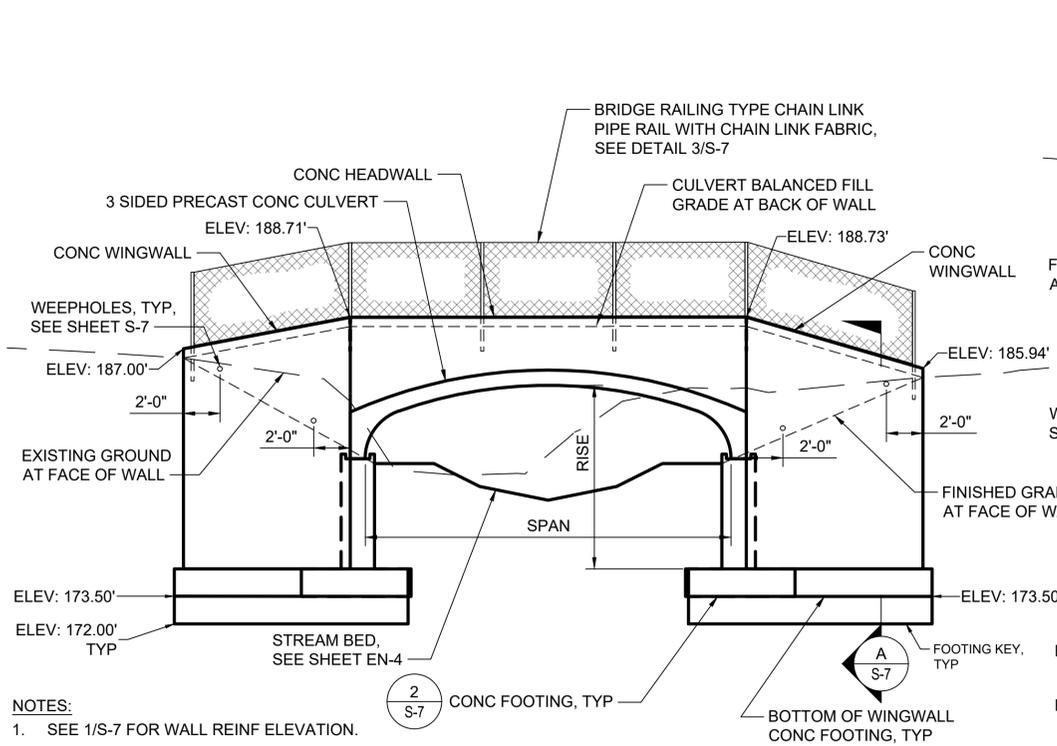


**Sec. 28, T 6N, R 1W**

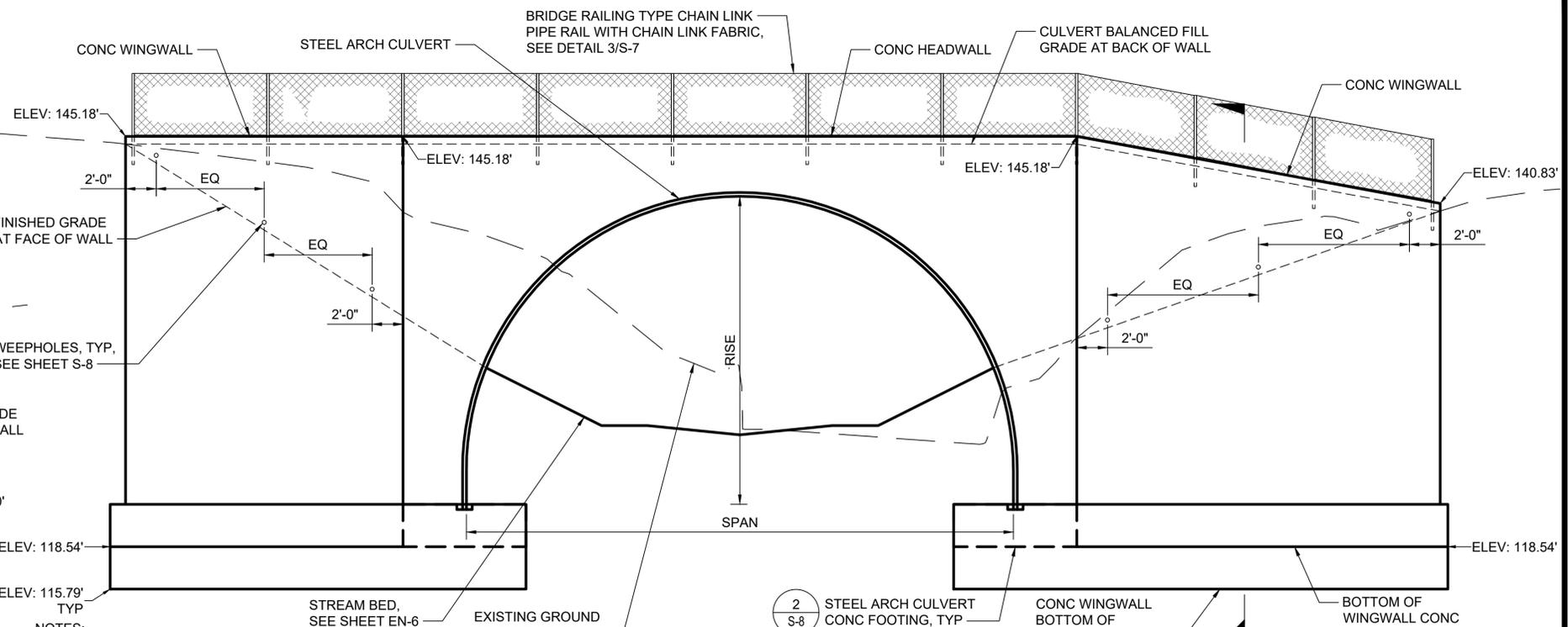
**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**  
**BYBEE CREEK FOOTING FOUNDATION PLAN**

SHEET **S-5** OF **62**

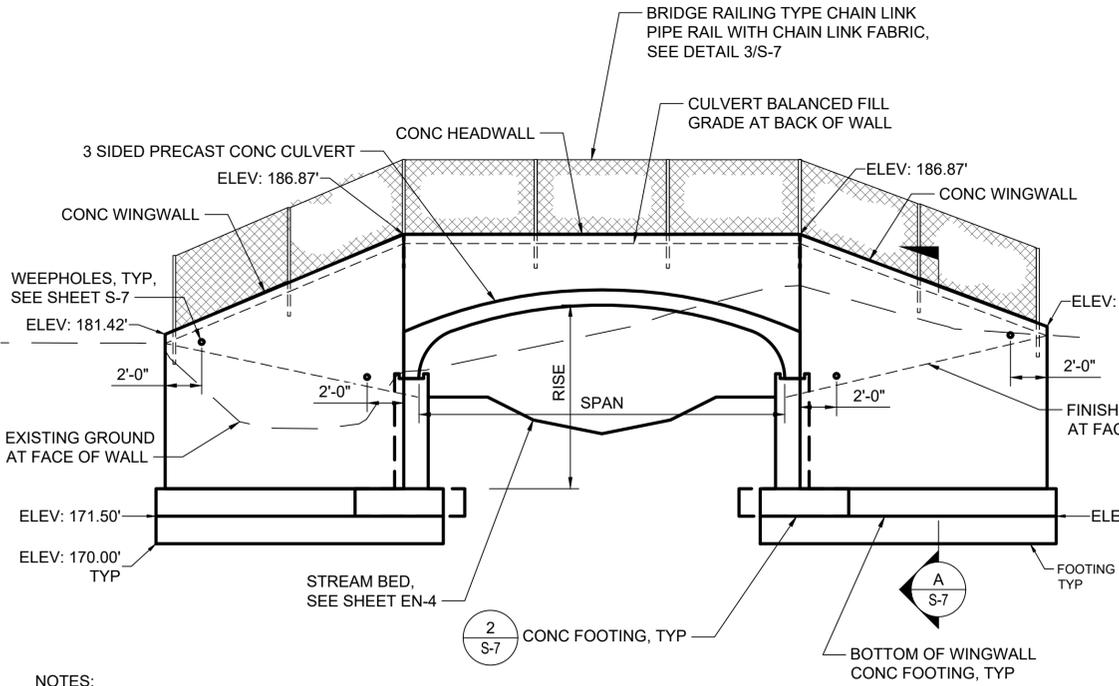
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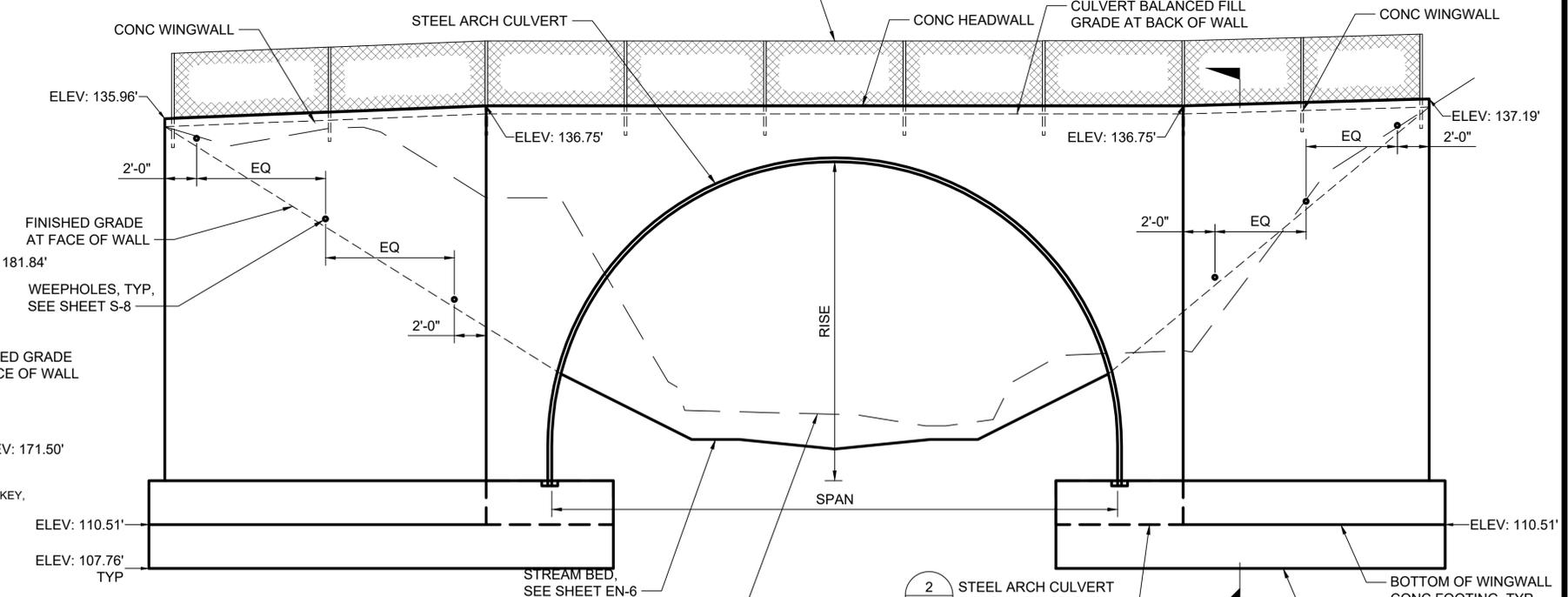
**1 SCHOOLHOUSE CREEK TRIBUTARY INLET DEVELOPED ELEVATION**  
SCALE: 1" = 5'



**3 BYBEE CREEK INLET DEVELOPED ELEVATION**  
SCALE: 1" = 5'



**2 SCHOOLHOUSE CREEK TRIBUTARY OUTLET DEVELOPED ELEVATION**  
SCALE: 1" = 5'



**4 BYBEE CREEK OUTLET DEVELOPED ELEVATION**  
SCALE: 1" = 5'

T.A.D. PROJECT MANAGER	03/04/2024 DATE
J.T.H. DRAWN BY	03/04/2024 DATE
S.C.B. CHECKED BY	03/04/2024 DATE

HORIZ. SCALE: 1" = 5'  
VERT. SCALE:  
PROJECT ID: 1235  
ROAD NO. : 31510 & 31880  
COMPUTER FILE: 1235 WSP Structural.dwg

**COWLITZ COUNTY WASHINGTON**

DEPARTMENT OF PUBLIC WORKS

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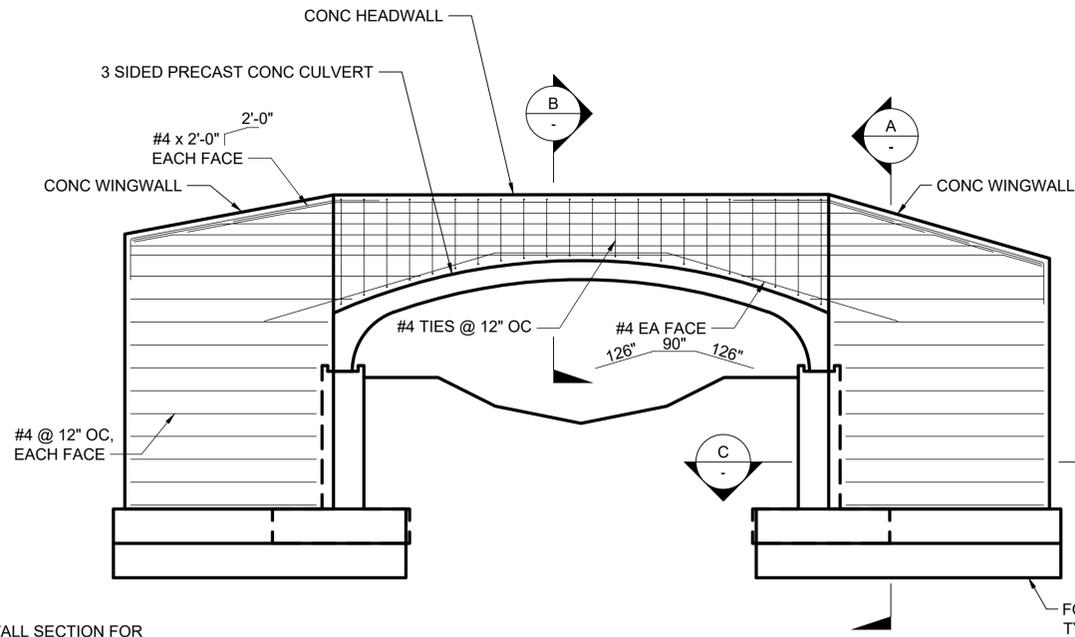
**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**

**CULVERT INLET AND OUTLET ELEVATIONS**

SHEET **S-6** OF **62**

**FINAL SUBMITTAL**

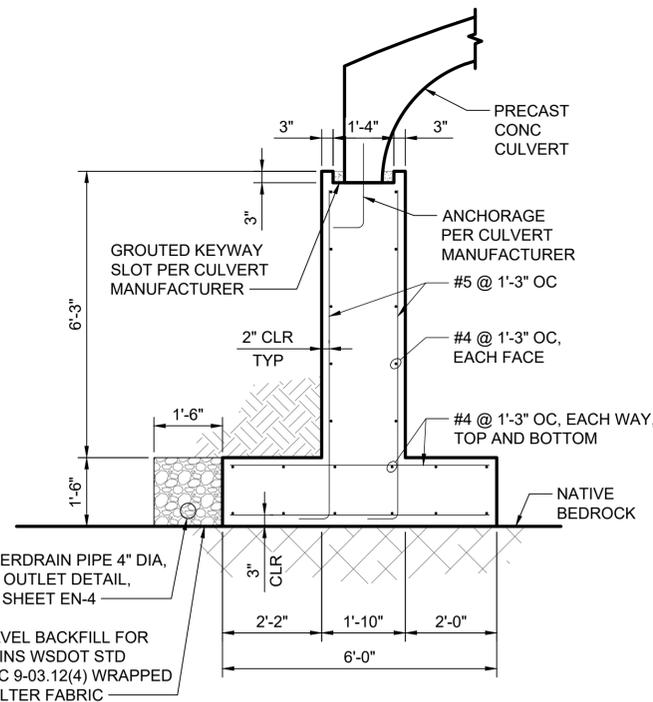
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- NOTES:**
1. SEE WINGWALL SECTION FOR VERTICAL REINFORCING NOT SHOWN.
  2. OUTLET PROFILE IS SIMILAR.
  3. CHAINLINK FENCE NOT SHOWN FOR CLARITY.

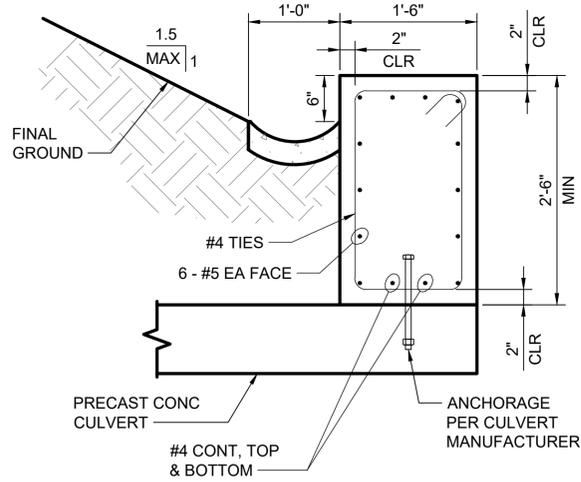
**SCHOOLHOUSE CREEK TRIBUTARY INLET HORIZONTAL REINFORCEMENT DEVELOPED ELEVATION**

1  
SCALE: 1/4" = 1'-0"



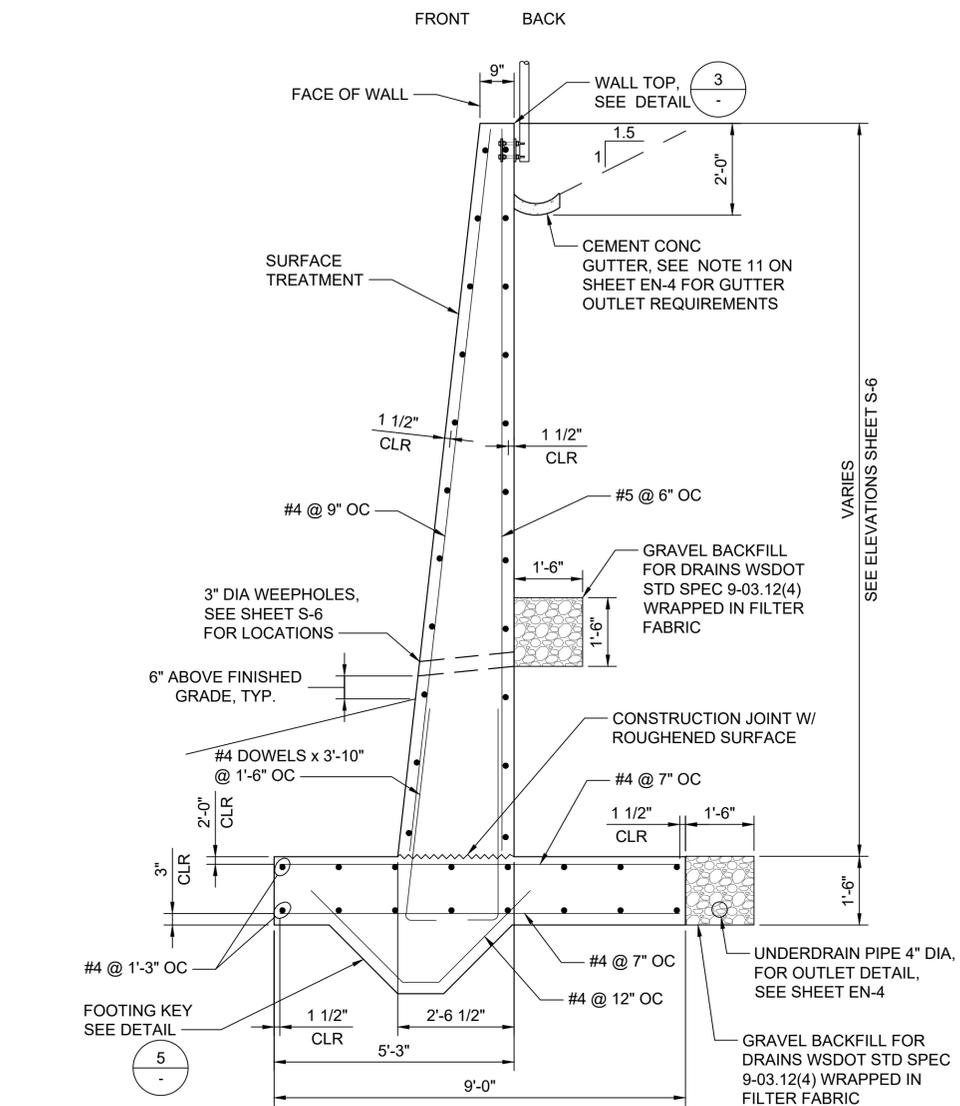
**CONC CULVERT FOOTING DETAIL**

2  
S-6  
SCALE: 1/2" = 1'-0"



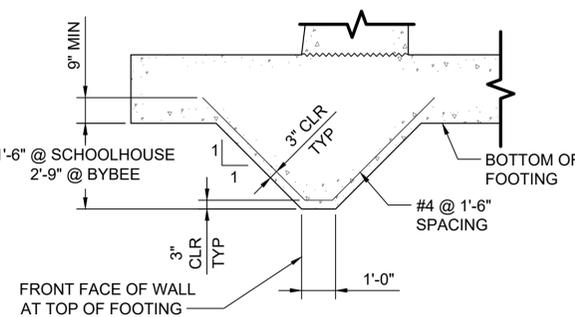
**CONC CULVERT HEADWALL SECTION**

B  
SCALE: 1/2" = 1'-0"



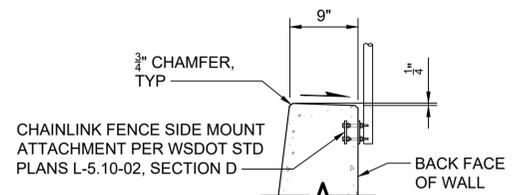
**SCHOOLHOUSE CREEK TRIBUTARY WINGWALL TYPICAL SECTION**

A  
S-6  
SCALE: 1/2" = 1'-0"



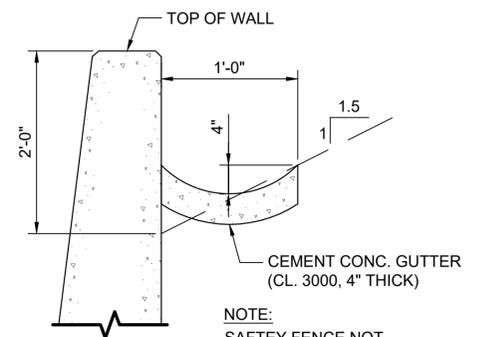
**FOOTING KEY DETAIL**

5  
S-8  
SCALE: NTS



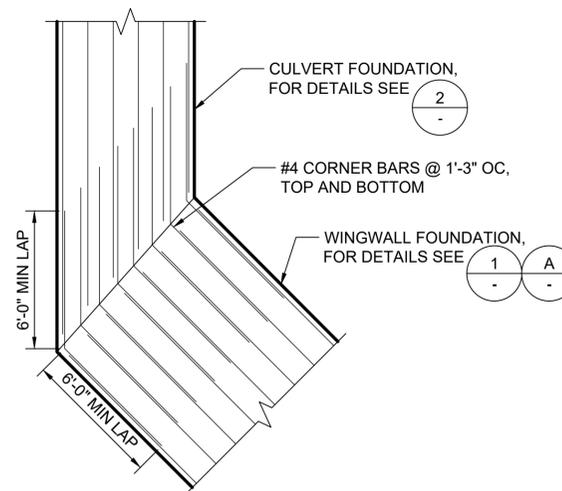
**WALL TOP DETAIL**

3  
S-8  
SCALE: NTS



**CEMENT CONC GUTTER DETAIL**

4  
S-8  
SCALE: NTS



**SCHOOLHOUSE CREEK TRIBUTARY FOOTING CONNECTION DETAIL**

C  
SCALE: 1/4" = 1'-0"

**FINAL SUBMITTAL**

T.A.D.  
PROJECT MANAGER  
DATE  
03/04/2024

J.T.H.  
DRAWN BY  
DATE  
03/04/2024

S.C.B.  
CHECKED BY  
DATE  
03/04/2024

HORIZ. SCALE: AS SHOWN  
VERT. SCALE: AS SHOWN

PROJECT ID: 1235  
ROAD NO. : 31510 & 31880

COMPUTER FILE: 1235 WSP Structural.dwg



DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

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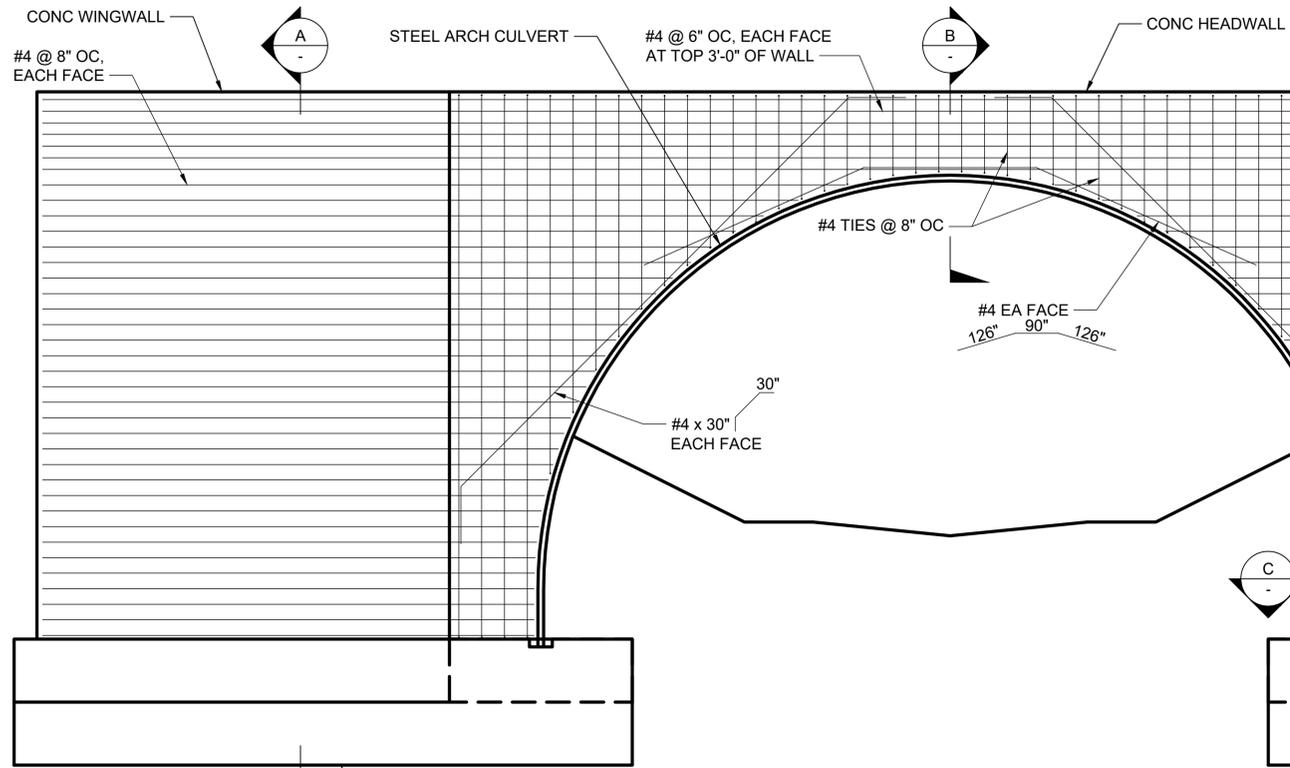
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**

**SCHOOLHOUSE CREEK TRIBUTARY DETAILS HEADWALL AND WINGWALL**

SHEET **S-7** OF **62**

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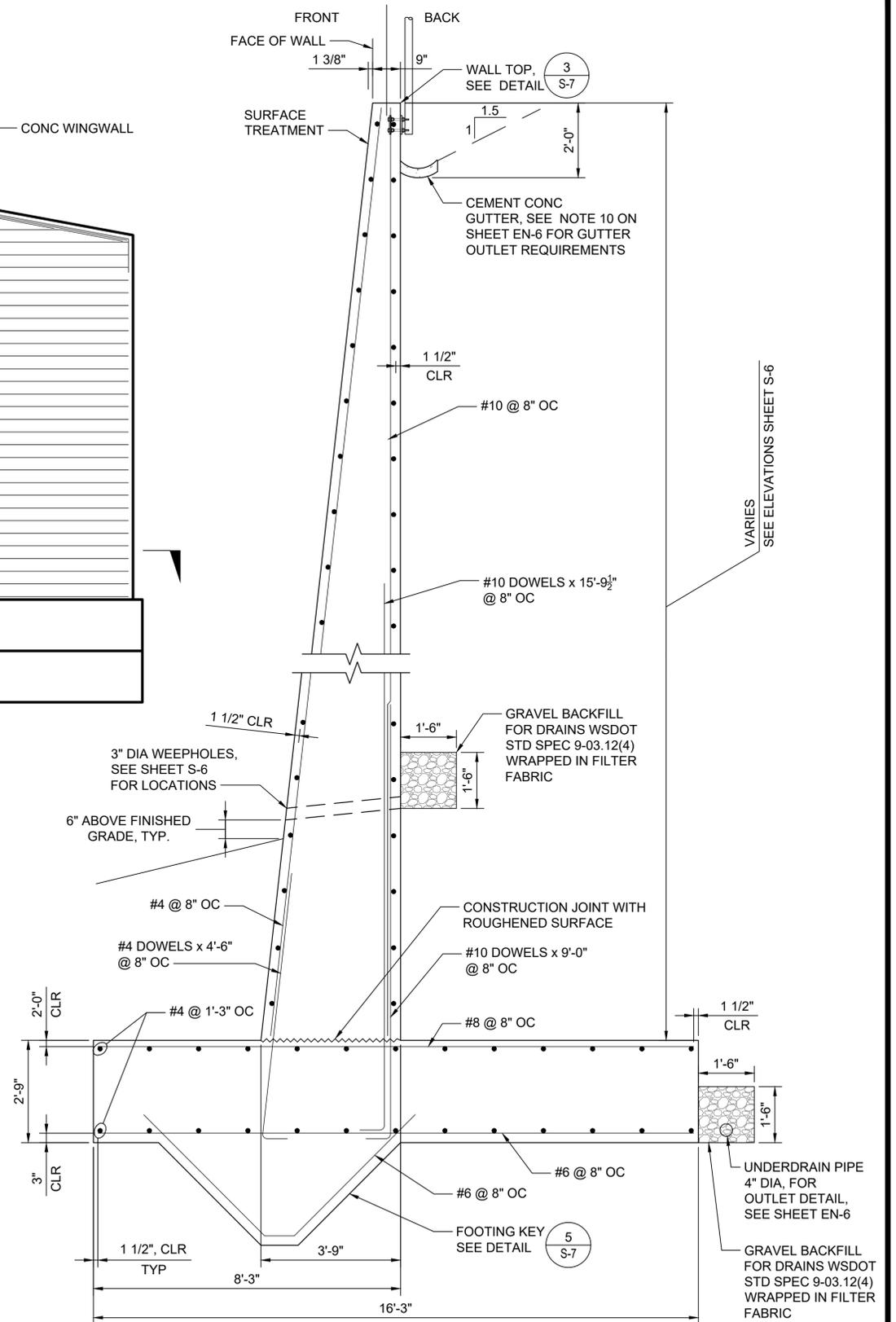


FOOTING KEY, TYP

**BYBEE CREEK INLET HORIZONTAL REINFORCEMENT DEVELOPED ELEVATION**  
SCALE: 1/4" = 1'-0"

**NOTES:**

1. SEE WINGWALL SECTION FOR VERTICAL REINFORCING NOT SHOWN.
2. OUTLET PROFILE IS SIMILAR.
3. CHAINLINK FENCE NOT SHOWN FOR CLARITY.



**BYBEE CREEK WINGWALL TYPICAL SECTION**  
SCALE: 1/2" = 1'-0"

VARIES SEE ELEVATIONS SHEET S-6

T.A.D. PROJECT MANAGER	03/04/2024 DATE
J.T.H. DRAWN BY	03/04/2024 DATE
S.C.B. CHECKED BY	03/04/2024 DATE

HORIZ. SCALE: AS SHOWN	VERT. SCALE:
PROJECT ID: 1235	ROAD NO. : 31510 & 31880
COMPUTER FILE: 1235 WSP Structural.dwg	

**COWLITZ COUNTY WASHINGTON**

DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

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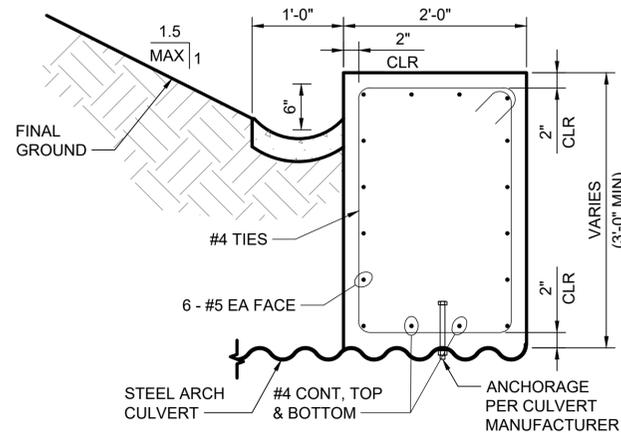
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**

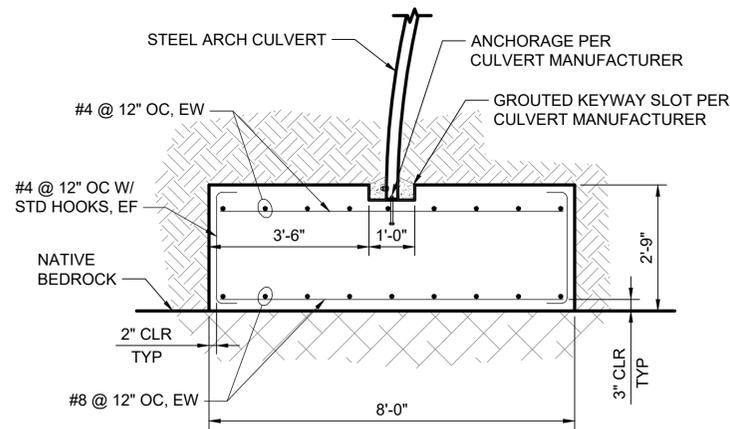
**BYBEE CREEK DETAILS HEADWALL AND WINGWALL (1 OF 2)**

SHEET **S-8** OF **62**

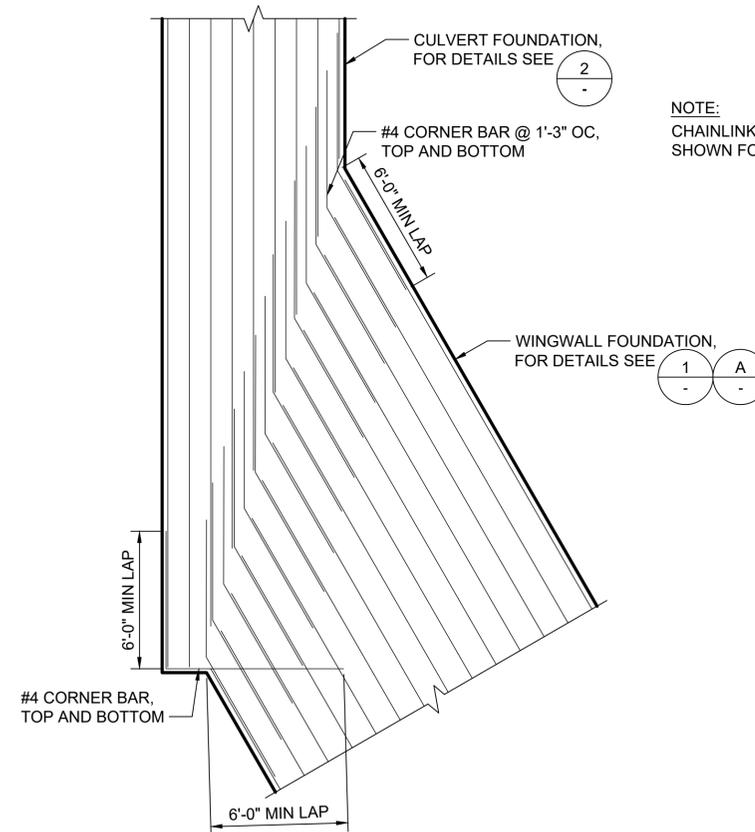
**FINAL SUBMITTAL**



**B**  
-  
**CONC CULVERT HEADWALL SECTION**  
SCALE: 1" = 1'-0"



**2**  
S-6  
**STEEL ARCH CULVERT FOOTING DETAIL**  
SCALE: 1/2" = 1'-0"



**C**  
-  
**BYBEE CREEK FOOTING CONNECTION DETAIL**  
SCALE: 1/4" = 1'-0"

NOTE:  
CHAINLINK FENCE NOT  
SHOWN FOR CLARITY.

R:\USPDX400\PROJECT\2020\30900281\_SOUTH CLOVERDALE\1000\CADD\DWGS\1235 WSP STRUCTURAL.DWG 3/3/2025 HAMMOND, JEFF

FINAL SUBMITTAL

T.A.D.  
PROJECT MANAGER  
DATE  
03/04/2024

J.T.H.  
DRAWN BY  
DATE  
03/04/2024

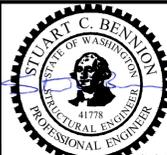
S.C.B.  
CHECKED BY  
DATE  
03/04/2024

HORIZ. SCALE: AS SHOWN  
VERT. SCALE:  
PROJECT ID: 1235  
ROAD NO. : 31510 & 31880  
COMPUTER FILE: 1235 WSP Structural.dwg



DEPARTMENT  
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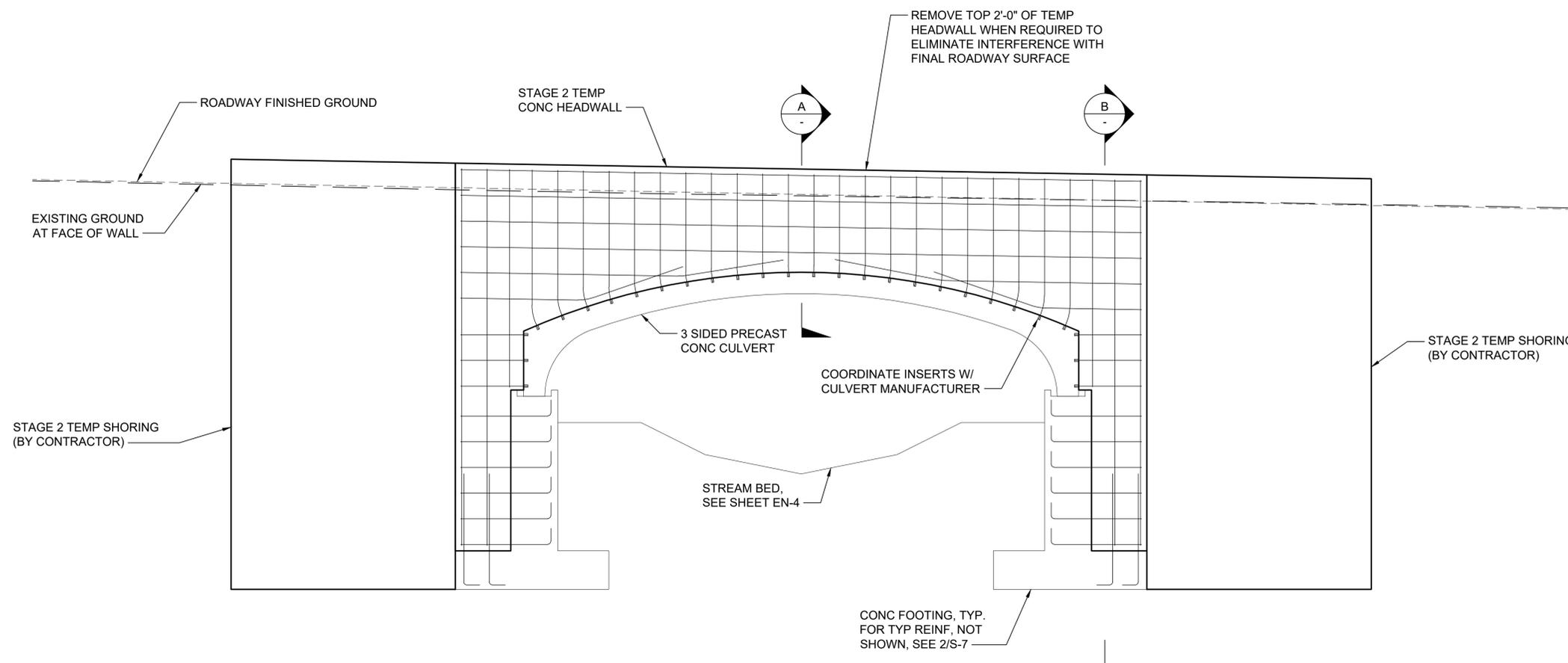


Sec. 28, T 6N, R 1W

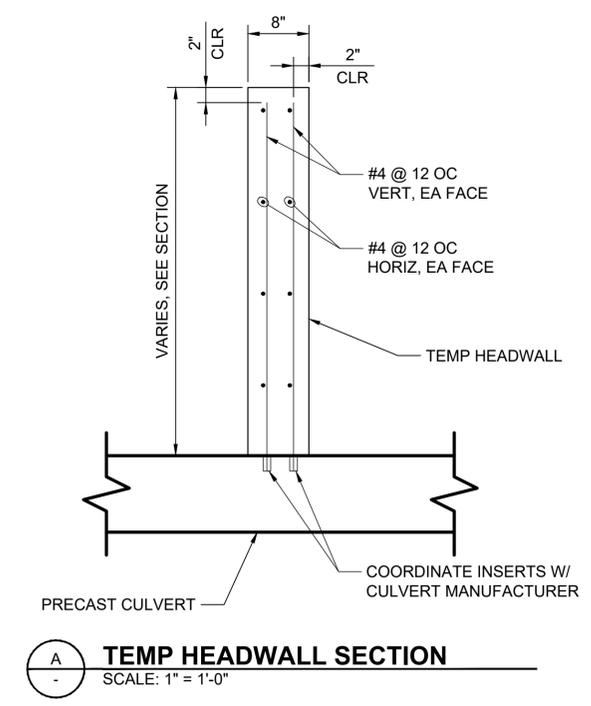
**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**  
**BYBEE CREEK DETAILS  
HEADWALL AND WINGWALL (2 OF 2)**

SHEET  
**S-9**  
OF  
**62**

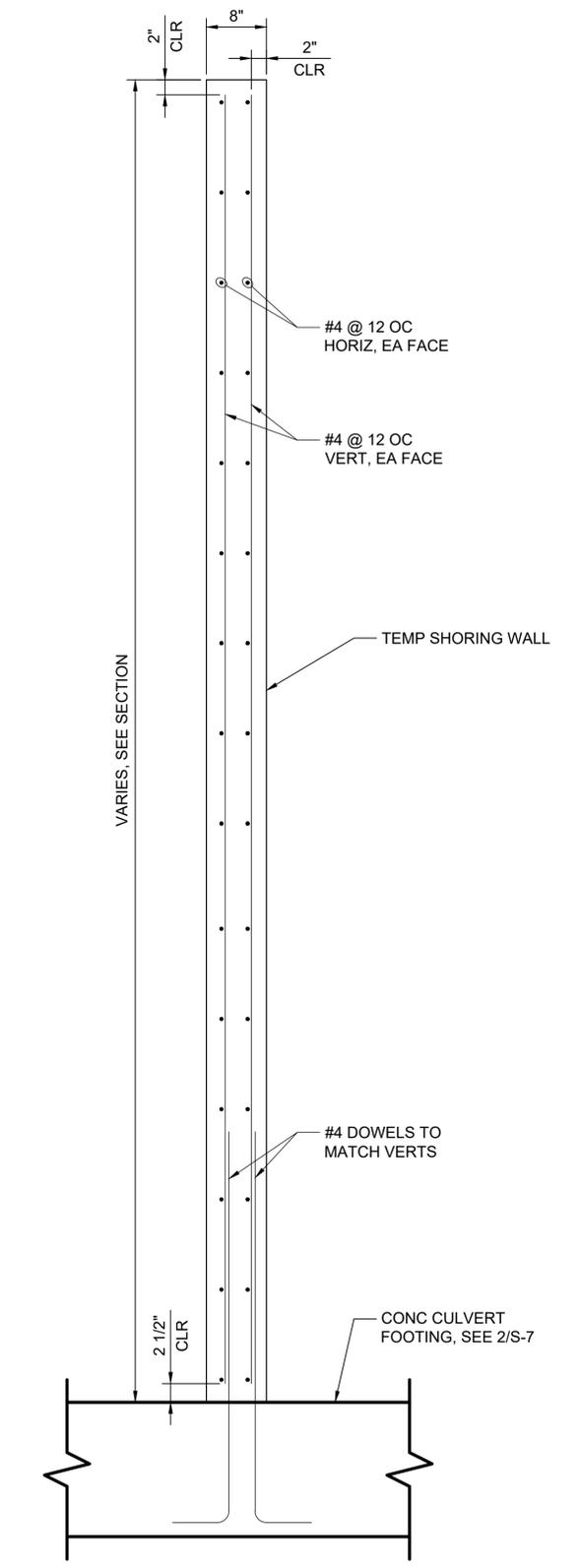
R:\USPD\X400\PROJECT\2020\30900281\_SOUTH CLOVERDALE\1000\CADD\DWGS\1235 WSP STRUCTURAL.DWG 3/3/2025-HAMMOND, JEFF



**SCHOOLHOUSE CREEK TRIBUTARY  
TEMPORARY HEADWALL SECTION**  
SCALE: 3/8" = 1'-0"



**A TEMP HEADWALL SECTION**  
SCALE: 1" = 1'-0"



**B TEMP SHORING WALL SECTION**  
SCALE: 1" = 1'-0"

**FINAL SUBMITTAL**

T.A.D. 03/04/2024  
PROJECT MANAGER DATE

J.T.H. 03/04/2024  
DRAWN BY DATE

S.C.B. 03/04/2024  
CHECKED BY DATE

HORIZ. SCALE: AS SHOWN  
VERT. SCALE:

PROJECT ID: 1235  
ROAD NO. : 31510 & 31880

COMPUTER FILE: 1235 WSP Structural.dwg



DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
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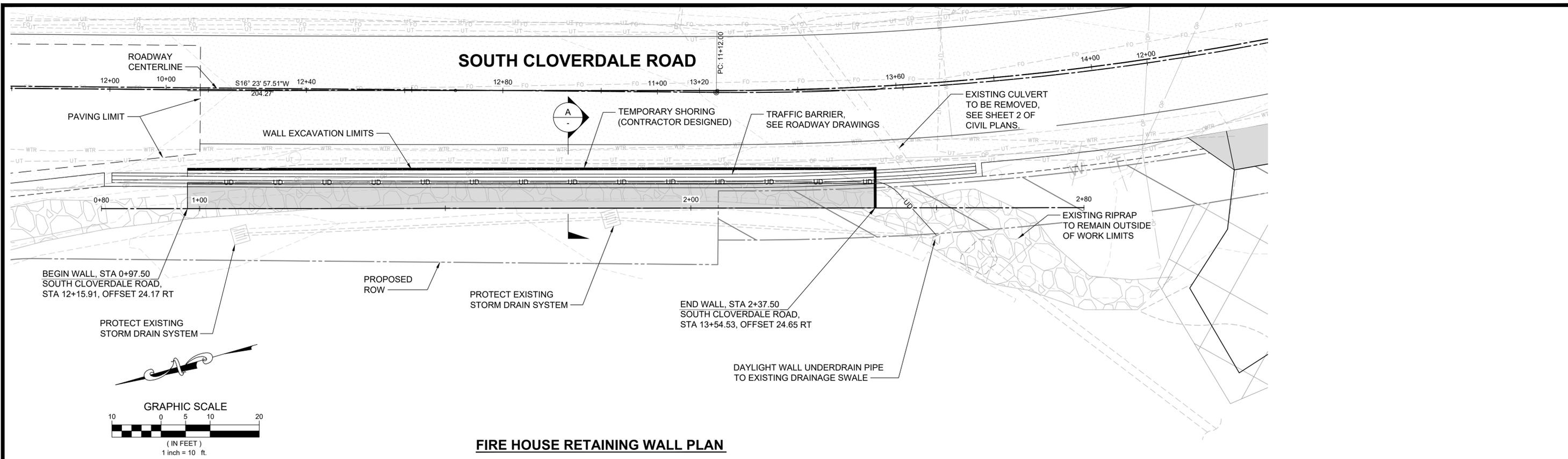


Sec. 28, T 6N, R 1W

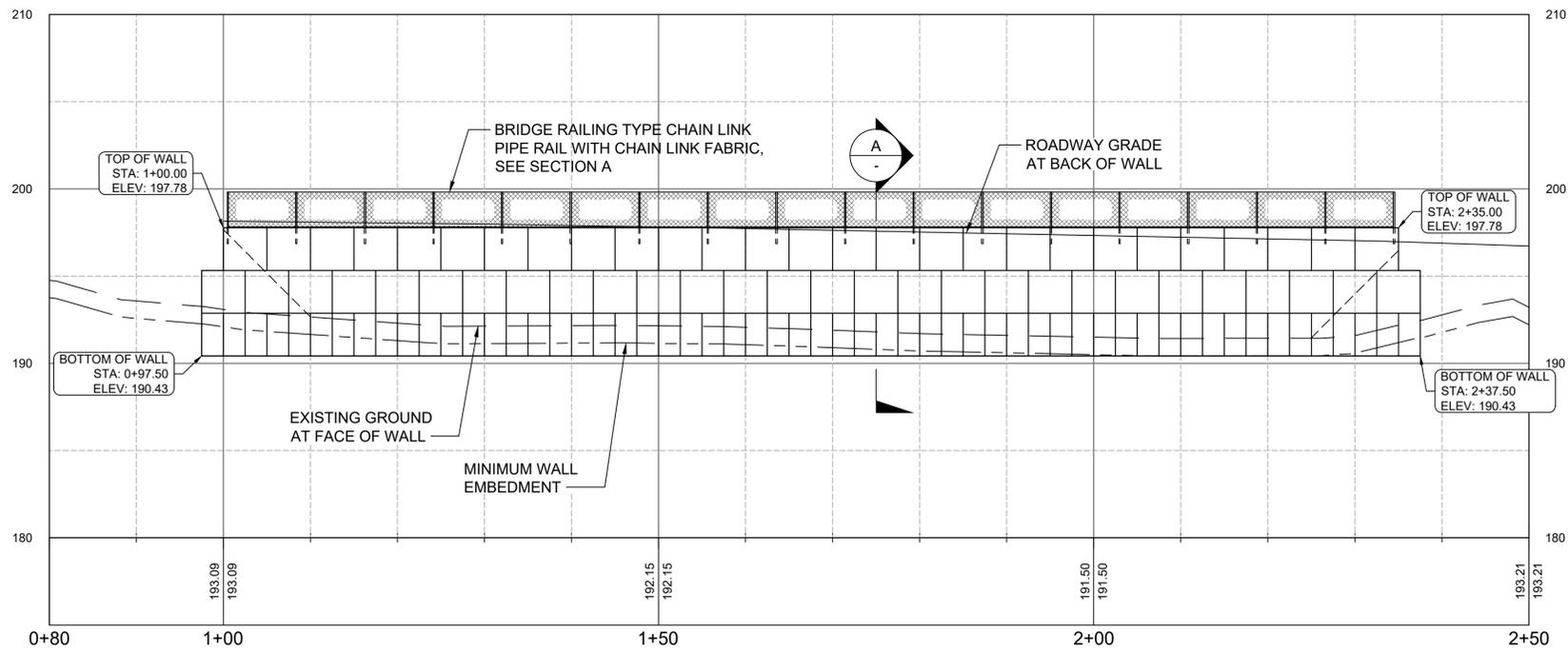
**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

**SCHOOLHOUSE CREEK TRIBUTARY DETAILS  
SHORING DETAILS**

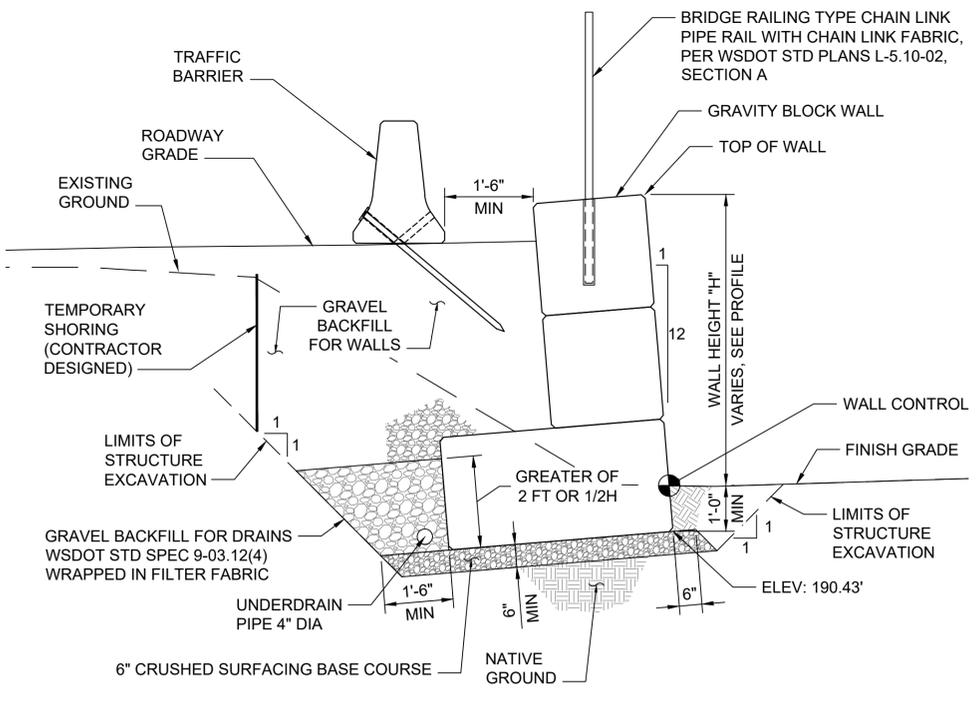
SHEET **S-10**  
OF  
**62**



**FIRE HOUSE RETAINING WALL PLAN**



**1 FIRE HOUSE RETAINING WALL PROFILE**  
SCALE: 1" = 10'



**A TYPICAL GRAVITY BLOCK WALL SECTION**  
SCALE: 1/2" = 1'-0"

**FINAL SUBMITTAL**

R:\USPD\4000\PROJECT\2020\30900281\_SOUTH CLOVERDALE\1000\CADD\DWGS\1235 WSP STRUCTURAL.DWG 3/3/2025-HAMMOND, JEFF

T.A.D. PROJECT MANAGER 03/04/2024 DATE  
J.T.H. DRAWN BY 03/04/2024 DATE  
S.C.B. CHECKED BY 03/04/2024 DATE

HORIZ. SCALE: 1" = 10'  
VERT. SCALE: 1" = 5'  
PROJECT ID: 1235  
ROAD NO. : 31510 & 31880  
COMPUTER FILE: 1235 WSP Structural.dwg



DEPARTMENT OF PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

NOTE: SCALES SHOWN ARE FOR FULL SIZE (24"x36") PLAN SHEETS ONLY. SCALES FOR HALF SIZE PLAN SHEETS ARE APPROXIMATELY ONE HALF SCALE.

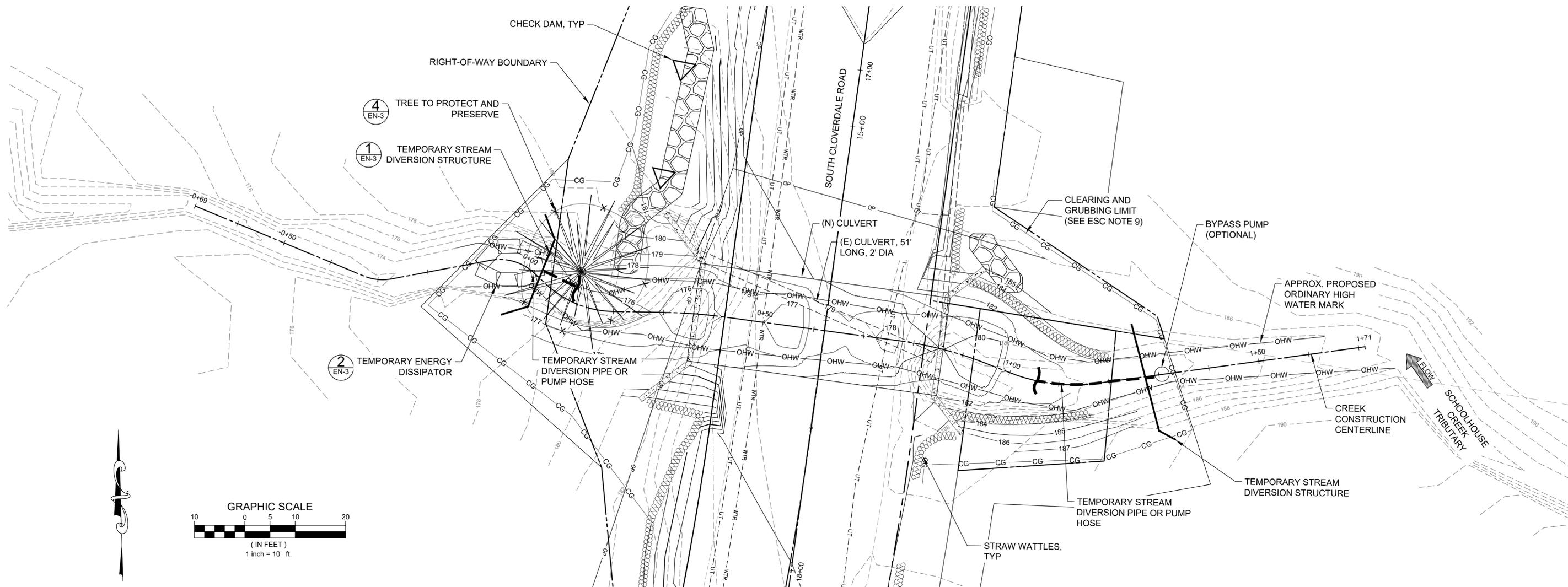


Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT**  
**FIRE HOUSE RETAINING WALL PLAN AND PROFILE**

SHEET **S-11** OF **62**

P:\01 CAD\18XXXX\1201901347.00 SOUTH CLOVERDALE ROAD\08 CAD\DWG\EN-1 SH TESC PLAN.DWG - PLOTTED BY GREG WOLOVEKE - PLOT DATE: 3/3/2025 12:11 PM



**1 TESC PLAN**  
Scale: 1"=10'

**EROSION AND SEDIMENT CONTROL (ESC) NOTES**

- THIS DRAWING IS FOR GENERAL GUIDANCE ONLY. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DOES NOT LEAVE THE SITE. THE CONTRACTOR SHALL USE ALL AVAILABLE MEANS TO ACHIEVE THAT RESULT.
- THE CONTRACTOR SHALL SUBMIT TO THE OWNER'S REPRESENTATIVE A TESC PLAN FOR APPROVAL. APPROVAL OF TESC PLAN DOES NOT CONSTITUTE APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN.
- THE TESC FACILITIES AND LIMITS SHOWN PERTAIN TO THE NEW CULVERT INSTALLATION AND THE IMMEDIATE AREA ADJACENT. THE CONTRACTOR SHALL IMPLEMENT ESC FOR OTHER PARTS OF THE PROJECT IN ACCORDANCE WITH NPDES PERMIT AND REQUIREMENTS.
- THE IMPLEMENTATION OF THE TESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THE TESC PLAN FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION AND LANDSCAPING IS ESTABLISHED.
- THE TESC PLAN FACILITIES SHOWN ON THIS SHEET MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS OR VIOLATE APPLICABLE WATER STANDARDS.
- THE TESC PLAN FACILITIES SHOWN ON THIS SHEET ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE TESC PLAN FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
- THE TESC PLAN FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
- AS NEEDED, PLACE STRAW WATTLES WITHIN EXCAVATED CHANNEL AREAS TO STABILIZE SLOPES. THE EXTENT OF WHICH IS NOT SHOWN ON THESE PLANS FOR CLARITY.
- SEE SHEET EN-12 FOR EROSION CONTROL SEED MIX (MIX 2).

**LEGEND**

- CHECK DAM
- STRAW WATTLES
- TREE PROTECTION FENCING
- CLEARING AND GRUBBING LIMIT
- PROPOSED ORDINARY HIGH WATER

**CONSTRUCTION NOTES**

- SEE SHEET EN-3 FOR TEMPORARY STREAM DIVERSION AND DEWATERING REQUIREMENTS.
- INSTALL TREE PROTECTION PER NOTES ON SHEET EN-3.
- INSTALL WATTLES PER WSDOT STANDARD PLAN I-30.30-02.
- INSTALL CHECK DAMS PER WSDOT STANDARD PLAN I-50.20-01.

**FINAL SUBMITTAL**

GREG WOLOVEKE PROJECT MANAGER	3/4/2025 DATE
AMF & MFN DRAWN BY	3/4/2025 DATE
GLW CHECKED BY	3/4/2025 DATE

HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" CONTOURS
PROJECT ID: 1235
ROAD NO. : 31510
COMPUTER FILE:
FIELD BOOK(S):

**COWLITZ COUNTY**  
WASHINGTON

DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

**ESA**

2801 ALASKAN WAY  
SUITE 200  
SEATTLE, WA 98121  
OFFICE - 206.789.9558  
WWW.ESASSOC.COM

**GREGORY WOLOVEKE**  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
36345

**Sec. 28, T 6N, R 1W**

**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

**SCHOOLHOUSE CREEK TRIBUTARY  
TESC PLAN**

SHEET **EN-1**  
OF **62**

**LEGEND**

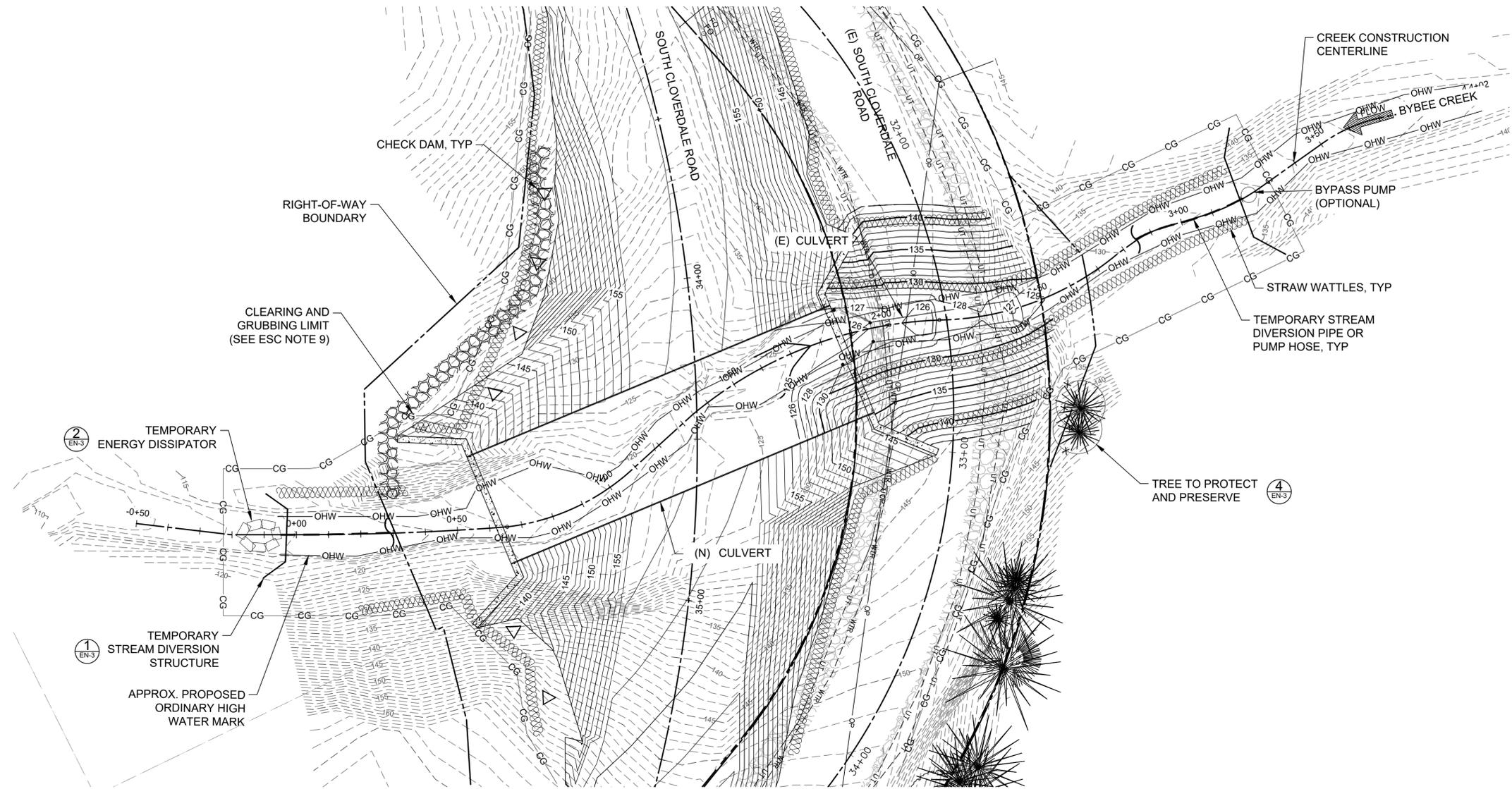
-  CHECK DAM
-  STRAW WATTLES OR COMPOST BERM
-  TREE PROTECTION FENCING
-  CLEARING AND GRUBBING LIMIT
-  APPROX. PROPOSED ORDINARY HIGHWATER MARK

**CONSTRUCTION NOTES**

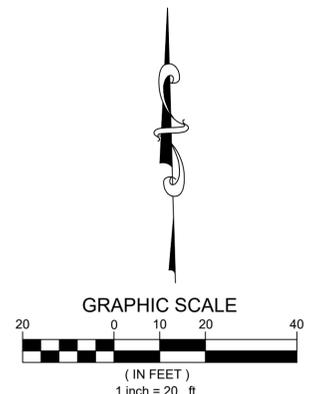
1. SEE SHEET EN-3 FOR TEMPORARY STREAM DIVERSION AND DEWATERING REQUIREMENTS.
2. INSTALL TREE PROTECTION PER NOTES ON SHEET EN-3.
3. INSTALL WATTLES PER WSDOT STANDARD PLAN I-30.30-02.
4. INSTALL CHECK DAMS PER WSDOT STANDARD PLAN I-50.20-01.

**EROSION AND SEDIMENT CONTROL (ESC) NOTES**

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8. AS NEEDED, PLACE STRAW WATTLES WITHIN EXCAVATED CHANNEL AREAS TO STABILIZE SLOPES, THE EXTENT OF WHICH IS NOT SHOWN ON THESE PLANS FOR CLARITY.
9. SEE SHEET EN-12 FOR EROSION CONTROL SEED MIX (MIX 2).

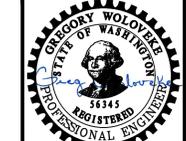


**1 TESC PLAN**  
Scale: 1"=20'



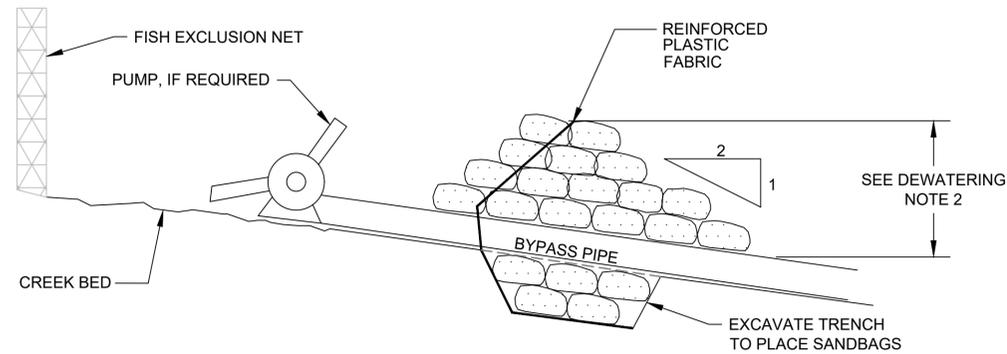
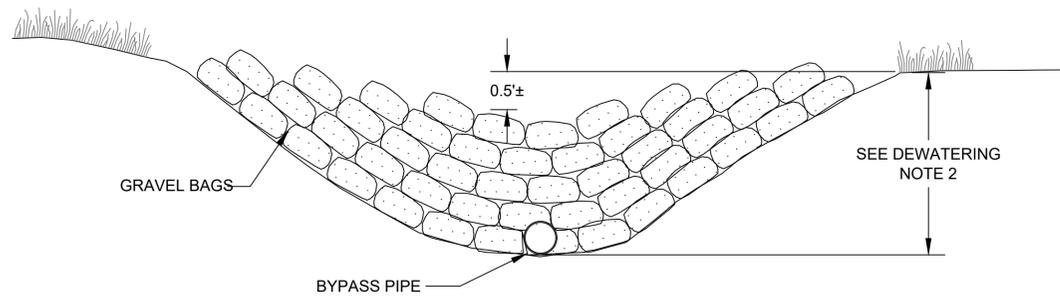
**FINAL SUBMITTAL**

P:\01 CAD\18XXXX\201901347.00 SOUTH CLOVERDALE ROAD\08 CAD\DWG\EN-2.BYBEE.TESC.PLAN.DWG - PLOTTED BY GREG WOLOVEKE - PLOT DATE: 3/3/2025 12:12 PM

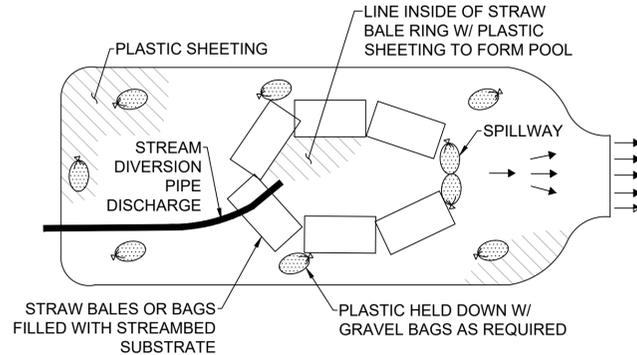
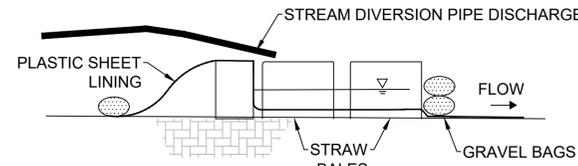
<p>GREG WOLOVEKE PROJECT MANAGER DATE: 3/4/2025</p> <p>AMF &amp; MFN DRAWN BY DATE: 3/4/2025</p> <p>HLW CHECKED BY DATE: 3/4/2025</p>	<p>HORIZ. SCALE: 1" = 15' VERT. SCALE: 1" CONTOURS</p> <p>PROJECT ID: 1235 ROAD NO. : 31510 COMPUTER FILE:</p> <p>FIELD BOOK(S):</p>	 <p><b>COWLITZ COUNTY</b> WASHINGTON</p>	<p>DEPARTMENT OF PUBLIC WORKS</p> <p>1600 13TH AVENUE SOUTH KELSO, WASHINGTON 98626</p>	 <p><b>ESA</b></p> <p>2801 ALASKAN WAY SUITE 200 SEATTLE, WA 98121 OFFICE - 206.789.9558 WWW.ESASSOC.COM</p>	 <p><b>GREGORY WOLOVEKE</b> STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER 58345</p>	<p><b>Sec. 28, T 6N, R 1W</b></p>	<p><b>SOUTH CLOVERDALE ROAD IMPROVEMENT PROJECT</b></p> <p><b>BYBEE CREEK TESC PLAN</b></p>	<p>SHEET <b>EN-2</b> OF <b>62</b></p>
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# STREAM DIVERSION AND DEWATERING NOTES

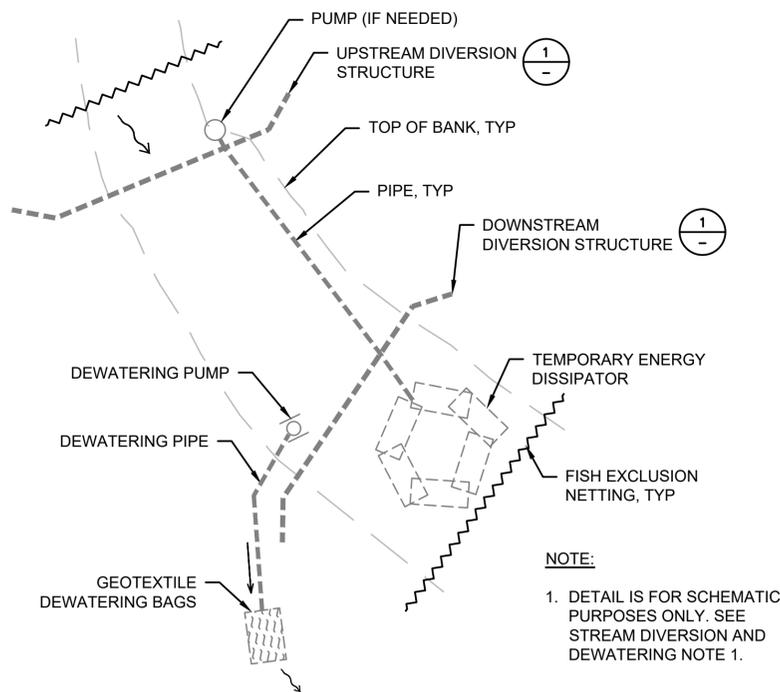
1. THE STREAM DIVERSION AND DEWATERING PLAN SHOWN IS SUGGESTED ONLY. THE CONTRACTOR SHALL PREPARE AND SUBMIT A TEMPORARY STREAM DIVERSION PLAN PER THE CONTRACT SPECIFICATIONS FOR REVIEW BY THE ENGINEER. THE CONTRACTOR SHALL NOT WORK WITHIN THE OHW OF BYBEE CREEK OR THE SCHOOLHOUSE CREEK TRIBUTARY WITHOUT AN APPROVED TEMPORARY STREAM DIVERSION PLAN.
2. THE DIVERSION STRUCTURES SHALL BE HIGH ENOUGH TO PREVENT OVERTOPPING AND ALLOW ENOUGH FREEBOARD FOR INCLEMENT WATER CONDITIONS. STRUCTURE HEIGHTS AND MATERIALS SHALL BE INCLUDED IN THE CONTRACTORS TEMPORARY STREAM DIVERSION PLAN. GRAVEL BAGS USED IN DIVERSION STRUCTURES SHALL BE FILLED WITH ROUNDED AGGREGATE INSTEAD OF SAND.
3. THE DIVERSION SYSTEM SHALL BE CAPABLE OF HANDLING THE 2-YEAR RETURN PERIOD FLOW IN BYBEE CREEK OR THE SCHOOLHOUSE CREEK TRIBUTARY DURING THE CONSTRUCTION PERIOD. REFER TO THE FLOW SUMMARY TABLES PROVIDED ON THIS SHEET FOR THE ANTICIPATED 2-YEAR FLOW DURING THE CONSTRUCTION PERIOD AND ACCOMPANYING DAILY FLOW STATISTICS. THE CONTRACTOR SHALL ENSURE THAT THE DIVERSION SYSTEM SIZE CAN HANDLE THE 2-YEAR FLOWS AS A MINIMUM. DISCHARGE VALUES PROVIDED ARE BASED ON BEST AVAILABLE DATA AND ACTUAL CONDITIONS MAY VARY.
4. ALL DEWATERING PUMPS SHALL HAVE WDFW-APPROVED FISH SCREENS INSTALLED AND MAINTAINED PER RCW 77.57.010 AND RCW 77.57.070. ADDITIONALLY, FISH EXCLUSION NETTING SHALL BE INSTALLED UPSTREAM AND DOWNSTREAM OF THE ISOLATED WORK AREA. THE MINIMUM OPEN AREA FOR ALL TYPES OF FISH SCREENS IS 27%. THE SCREENED INTAKE FACILITY MUST HAVE ENOUGH SURFACE AREA TO ENSURE THAT THE VELOCITY THROUGH THE SCREEN IS LESS THAN 0.4 FEET PER SECOND.
5. FISH AND AQUATIC ORGANISM REMOVAL SHALL BE CONDUCTED PRIOR TO DEWATERING THE WORK AREA. FISH AND AQUATIC ORGANISMS WILL BE TEMPORARILY RELOCATED AS DIRECTED BY THE PROJECT REPRESENTATIVE.
6. ALL WORK WITHIN ORDINARY HIGH WATER OF BYBEE CREEK AND THE SCHOOLHOUSE CREEK TRIBUTARY SHALL OCCUR DURING THE APPROVED IN-WATER WORK WINDOW PER PERMIT.
7. TURBIDITY LEVELS AT DISCHARGE MUST MEET ALL APPLICABLE PERMIT REQUIREMENTS. TURBIDITY TREATMENT SHALL BE CONTRACTOR DESIGNED AND DETAILED IN THE CONTRACTOR'S TEMPORARY STREAM DIVERSION PLAN. DEWATERING WATER MAY NOT BE DISCHARGED TO STORM OR SANITARY SEWERS SYSTEMS WITHOUT APPROPRIATE PERMITS. NO AREAS SUITABLE FOR INFILTRATION ARE PRESENT ON SITE.
8. THE CONTRACTOR SHALL GRADUALLY INTRODUCE WATER TO THE NEW STREAM CHANNEL SECTION AND TRAP SEDIMENTS UNTIL THE STREAM SECTION IS FULLY REWATERED. REWATERING SHALL OCCUR AT A RATE TO AVOID LOSS OF SURFACE WATER DOWNSTREAM WHILE THE NEW CHANNEL IS REWATERED.
9. FLOW RATES PROVIDED ON THIS SHEET ARE FROM MGS FLOOD MODELING AND ARE FOR INFORMATIONAL PURPOSE ONLY. FLOW RATES MAY VARY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING FLOW RATES AND BYPASS DESIGN NEEDED.



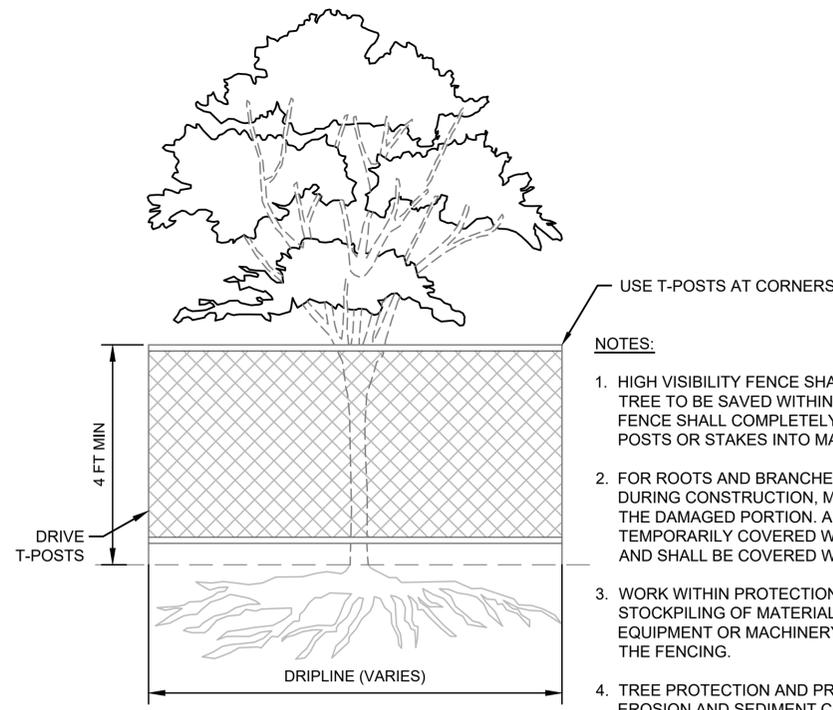
**TEMPORARY STREAM DIVERSION STRUCTURE** 1  
Scale: NTS EN-1&2



**TEMPORARY ENERGY DISSIPATOR** 2  
Scale: NTS EN-1&2



**TYPICAL WORK AREA DEWATERING** 3  
Scale: NTS EN-1&2



**TREE TO PROTECT AND PRESERVE** 4  
Scale: NTS EN-1&2

BYBEE CREEK	
% CHANCE FLOW EXCEEDANCE (JUNE - SEPT. FISH WINDOW)	FLOW (CFS)
2-YEAR STORM (BYPASS)	6.5
AVERAGE PEAK FLOW	10

SCHOOLHOUSE CREEK	
% CHANCE FLOW EXCEEDANCE (JUNE - SEPT. FISH WINDOW)	FLOW (CFS)
2-YEAR STORM (BYPASS)	4.5
AVERAGE PEAK FLOW	8

FINAL SUBMITTAL

GREG WOLOVEKE  
PROJECT MANAGER  
DATE: 3/4/2025

AMF & MFN  
DRAWN BY  
DATE: 3/4/2025

HLW  
CHECKED BY  
DATE: 3/4/2025

HORIZ. SCALE: VARIES  
VERT. SCALE: VARIES

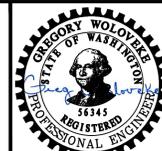
PROJECT ID: 1235  
ROAD NO. : 31510  
COMPUTER FILE:

FIELD BOOK(S):



DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626



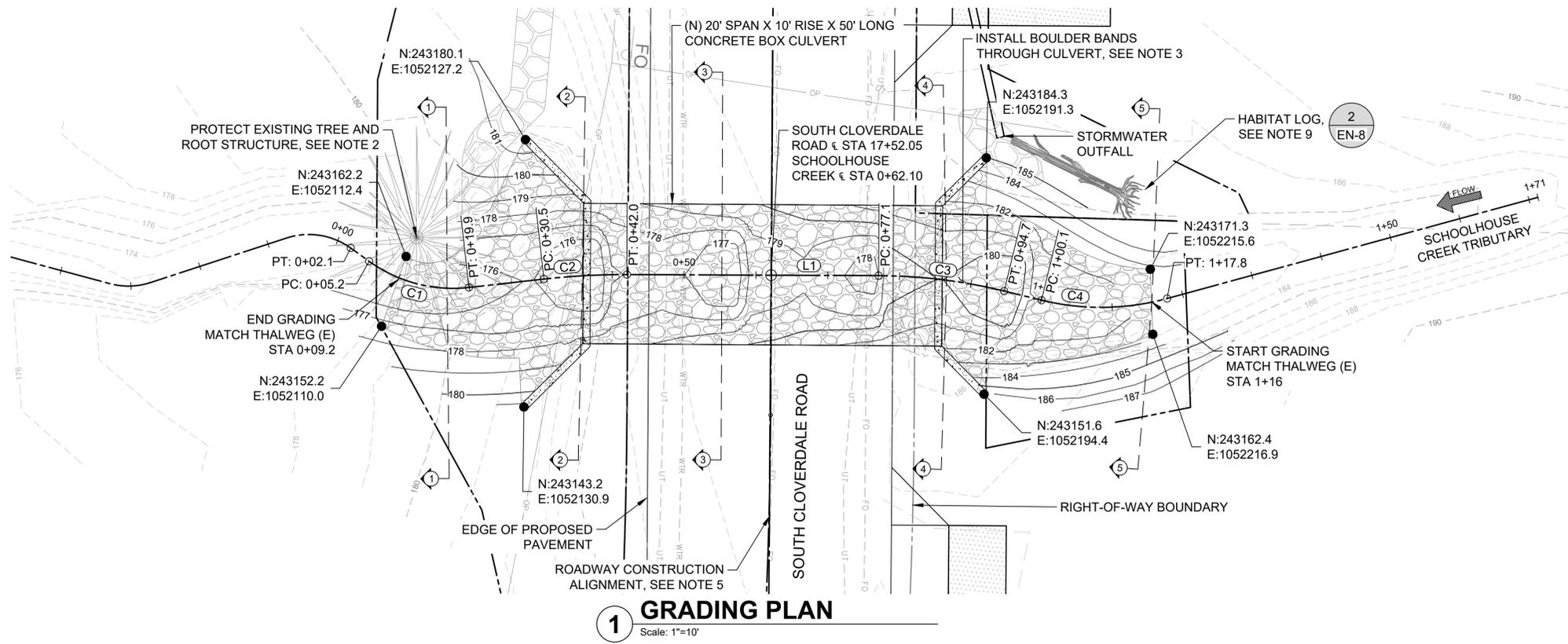
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

**TESC DETAILS AND NOTES**

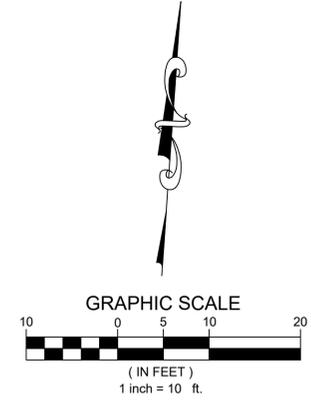
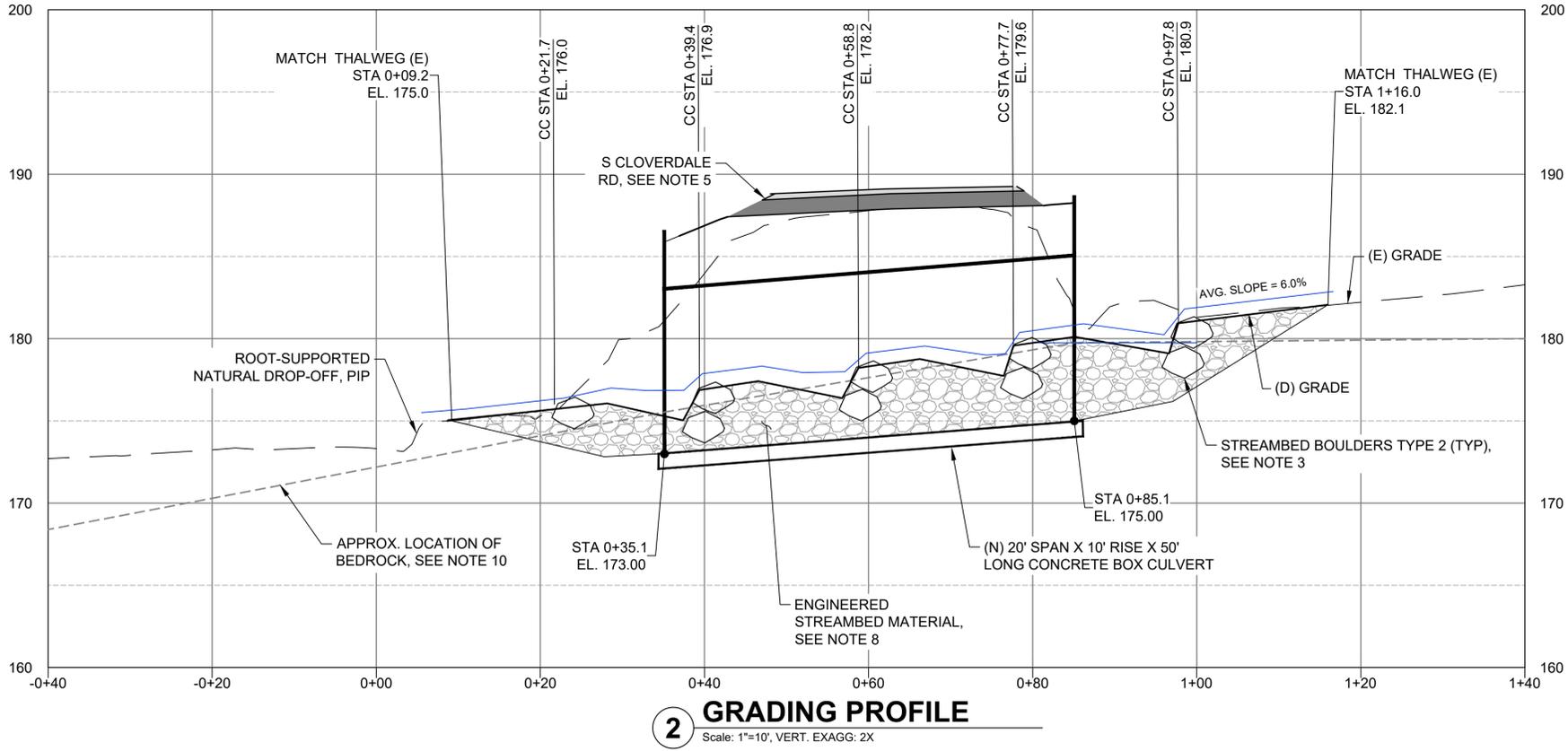
SHEET  
**EN-3**  
OF  
**62**

P:\01 CAD\18XXXX\1201901347.00 SOUTH CLOVERDALE ROAD\08 CAD\DWG\EN-4 SCHOOLHOUSE GRADING PLAN & PROFILE.DWG - PLOTTED BY GREG WOLOVEKE - PLOT DATE: 3/3/2025 12:14 PM



**NOTES**

- SEE SHEET EN-5 FOR TYPICAL STREAM AND CULVERT SECTIONS.
- THE ROOTS OF THE EXISTING LARGE CEDAR TREE SUPPORT A NATURAL DROP IN THE CREEK PROFILE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE TREE AND ITS ROOT FOR THE FULL DURATION OF CONSTRUCTION.
- SEE SHEET EN-8 AND EN-9 FOR STREAMBED INSTALLATION REQUIREMENTS.
- SEE STRUCTURAL SHEETS FOR CULVERT FOOTING, WINGWALL, AND HEADWALL REQUIREMENTS.
- SEE CIVIL SHEETS FOR SOUTH CLOVERDALE ROAD CONSTRUCTION CENTERLINE AND DESIGN REQUIREMENTS.
- CULVERT TO BE CONSTRUCTED USING CAST IN PLACE STEM WALLS WITH A PRECAST CAP TO ALLOW FOR STREAMBED CONSTRUCTION, SEE SHEET S-6.
- EXTEND WINGWALL UNDERDRAINS TO STREAMBED MATERIAL. OUTLET OF UNDERDRAIN WILL NOT BE BURIED TO PREVENT CLOGGING.
- IF BEDROCK IS ENCOUNTERED, TYPE 2 BOULDERS WILL BE KEYED INTO BEDROCK AS REQUIRED BY SHEET EN-9. THE CONTRACTOR SHALL NOT KEY ESM INTO BEDROCK AND THE QUANTITY WILL BE ADJUSTED BASED ON FIELD CONDITIONS. IF BEDROCK IS NOT ENCOUNTERED THAN INSTALL ESM TO BACKFILL THE STRUCTURAL EXCAVATION.
- THE CONTRACTOR SHALL SALVAGE TREE NUMBER 3814 IN THE PROJECT SURVEY (23" DBH FIR TREE) WITHIN THE CLEARING AND GRUBBING LIMIT. THE OWNER'S REPRESENTATIVE SHALL FLAG THE TREE PRIOR TO TREE REMOVAL WORK. IN THE CASE THIS TREE BECOMES DAMAGED DURING REMOVAL, ANOTHER TREE SHALL BE DESIGNATED BY THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER. SEE DETAIL 2 ON SHEET EN-8 FOR CONSTRUCTION DETAILS.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF BEDROCK AND PERFORMING THE WORK DESCRIBED IN THE PLANS. UNEXPECTED BEDROCK CONDITIONS SHALL NOT BE THE BASIS FOR A CHANGE ORDER.
- THE CONTRACTOR SHALL INSTALL QUARRY SPALL SPLASH PAD AT TERMINAL END OF CONCRETE WINGWALL GUTTERS APPROXIMATELY 3' L x 3' W x 1' H. SPLASH PADS AND GUTTERS NOT SHOWN.



STREAM CENTERLINE ALIGNMENT							
LINE/CURVE NUMBER	START STATION	END STATION	LENGTH	DIRECTION	START POINT (N,E)	END POINT (N,E)	RADIUS
C1	0+05	0+20	14.70	S81° 20' 30.79"E	1052107.31,243161.04	1052121.52,243158.87	20.00
C2	0+30	0+42	11.58	N79° 33' 39.38"E	1052131.78,243161.13	1052143.21,243162.95	100.00
L1	0+42	0+77	35.05	N84° 14' 24.00"E	1052143.21,243162.95	1052178.08,243166.47	-
C3	0+77	0+95	17.64	S89° 01' 14.11"E	1052178.08,243166.47	1052195.68,243166.17	75.00
C4	1+00	1+18	17.68	S89° 54' 25.95"E	1052200.98,243165.45	1052218.36,243167.51	35.00

FINAL SUBMITTAL

GREG WOLOVEKE  
PROJECT MANAGER  
DATE: 3/4/2025

AMF & MFN  
DRAWN BY  
DATE: 3/4/2025

HLW  
CHECKED BY  
DATE: 3/4/2025

HORIZ. SCALE: 1" = 10'  
VERT. SCALE: 1" CONTOURS

PROJECT ID: 1235  
ROAD NO. : 31510  
COMPUTER FILE:  
FIELD BOOK(S):

**COWLITZ COUNTY**  
WASHINGTON

DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

**ESA**

2801 ALASKAN WAY  
SUITE 200  
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OFFICE - 206.789.9558  
WWW.ESASOC.COM

**GREGORY WOLOVEKE**  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER

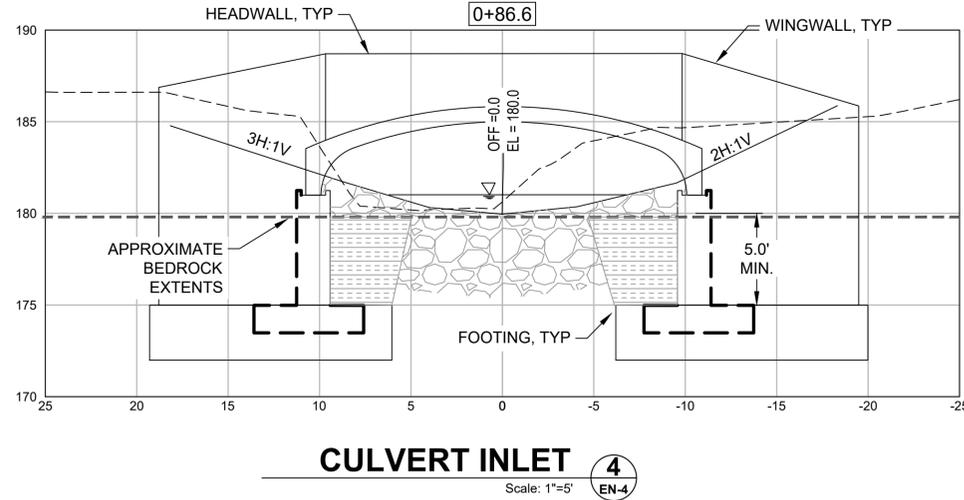
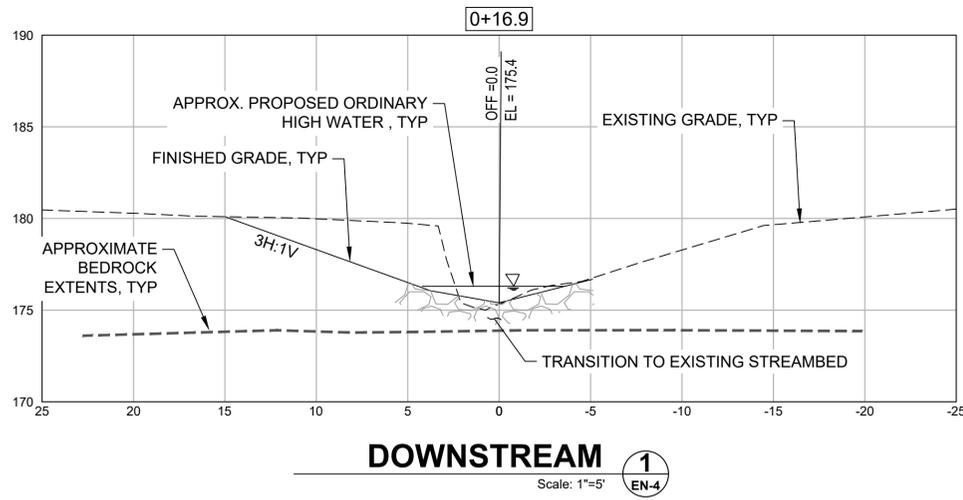
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

**SCHOOLHOUSE CREEK TRIBUTARY  
GRADING PLAN & PROFILE**

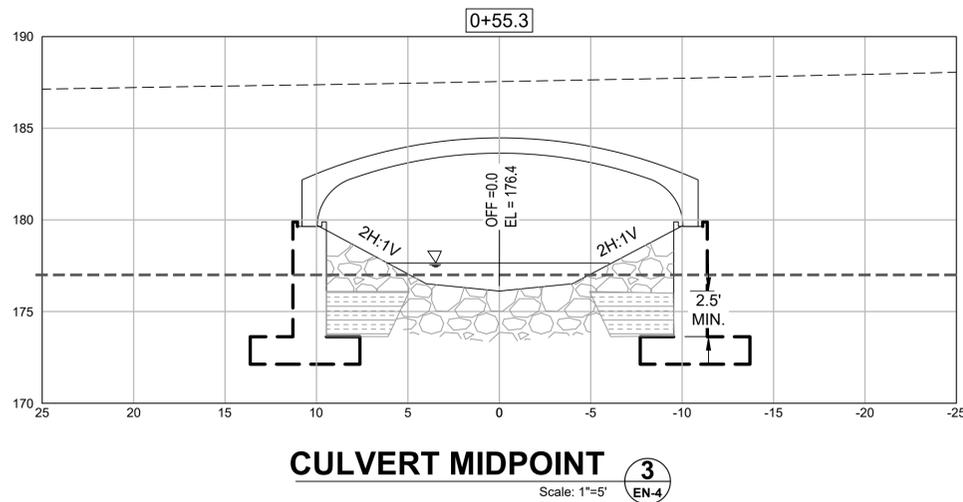
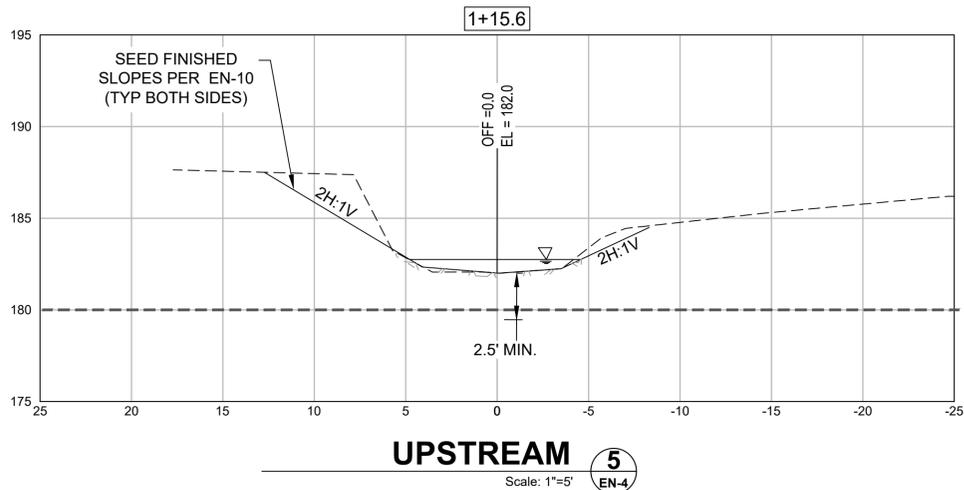
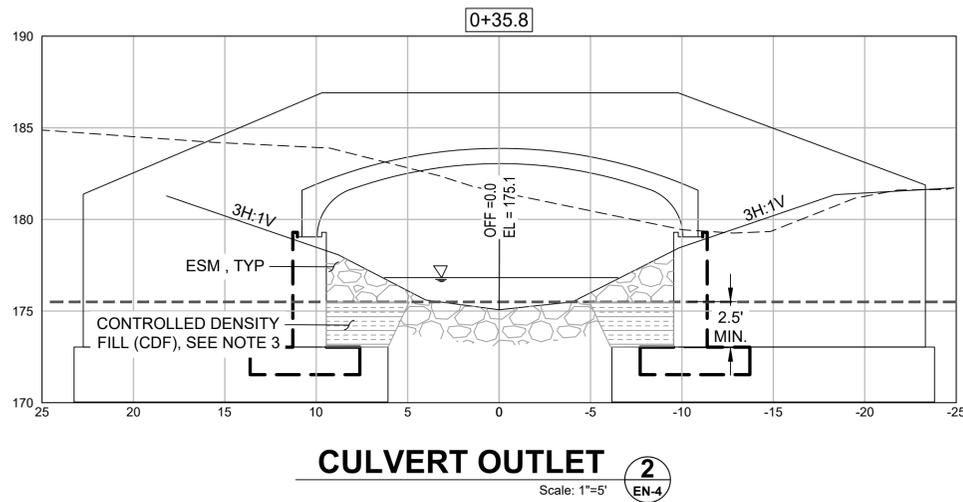
SHEET  
**EN-4**  
OF  
**62**

P:\01 CAD\18XXXX\202101901347.00 SOUTH CLOVERDALE ROAD\08 CAD\DWG\EN-5 SH GRADING SECTIONS.DWG - PLOTTED BY GREG WOLOVEKE - PLOT DATE: 3/3/2025 12:16 PM



**NOTES**

1. SECTION VIEWS ARE ORIENTED FACING DOWNSTREAM, LEFT-TO-RIGHT.
2. THE CONTRACTOR SHALL REFER TO PLAN SHEET EN-4 AND THE STREAM DETAIL SHEET EN-8 FOR CHANNEL GEOMETRY AND MATERIAL REQUIREMENTS.
3. THE CONTRACTOR SHALL BACKFILL THE BEDROCK EXCAVATION TRENCHES REQUIRED TO INSTALL CULVERT FOOTINGS WITH CONTROLLED DENSITY FILL (CDF) TO THE CREEKS THALWEG ELEVATION. ABOVE THE THALWEG ELEVATION, STREAMBED MATERIAL SHALL BE PLACED TO FINISHED GRADE SLOPES AND ELEVATIONS.



**FINAL SUBMITTAL**

GREG WOLOVEKE  
PROJECT MANAGER  
DATE: 3/4/2025

AMF & MFN  
DRAWN BY  
DATE: 3/4/2025

HLW  
CHECKED BY  
DATE: 3/4/2025

HORIZ. SCALE: VARIES  
VERT. SCALE: VARIES

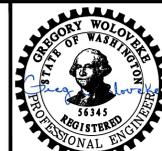
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ROAD NO. : 31510  
COMPUTER FILE:

FIELD BOOK(S):



DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626



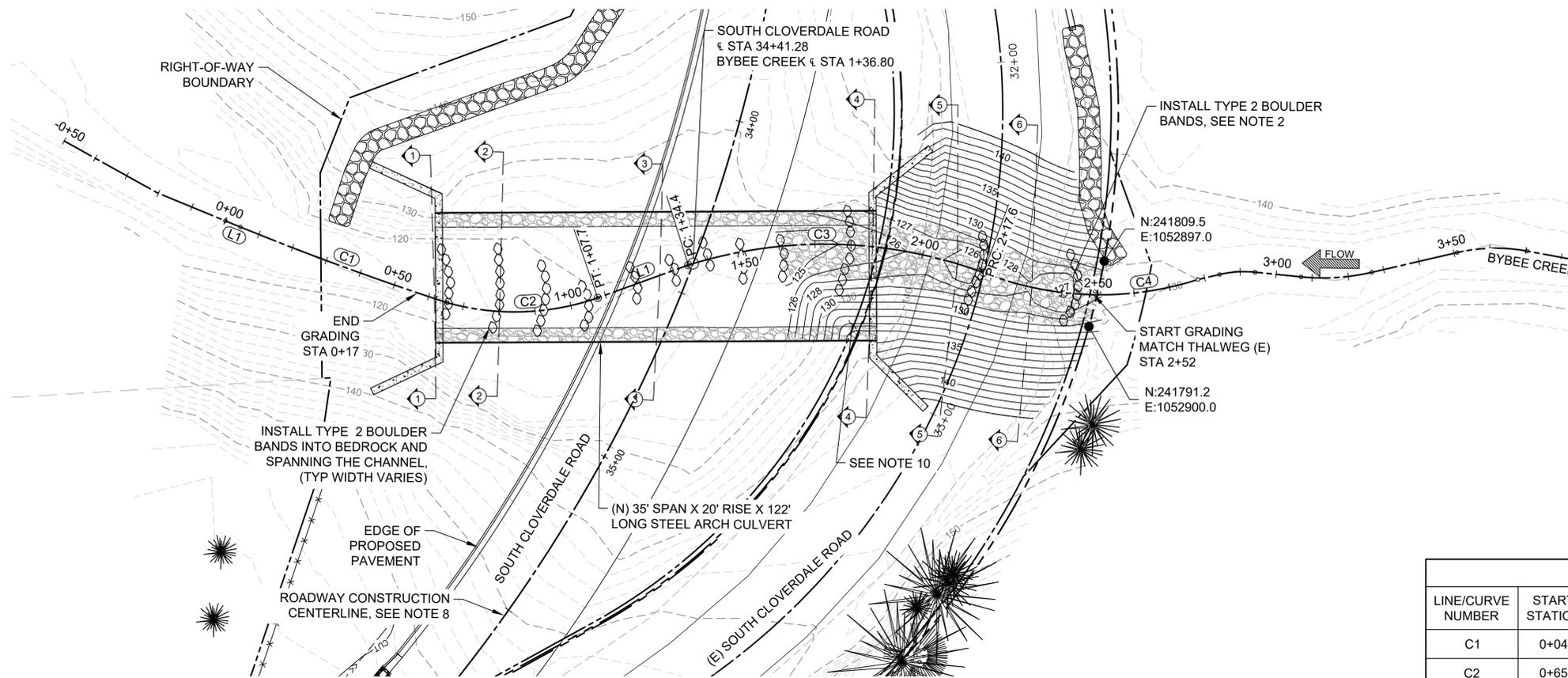
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

**SCHOOLHOUSE CREEK TRIBUTARY  
GRADING SECTIONS**

SHEET  
**EN-5**  
OF  
**62**

P:\01 CAD\18XXXX\202501347.00 SOUTH CLOVERDALE ROAD\08 CAD\DWG\EN-6 BYBEE GRADING PLAN & PROFILE.DWG - PLOTTED BY GREG WOLOVEKE - PLOT DATE: 3/3/2025 12:16 PM

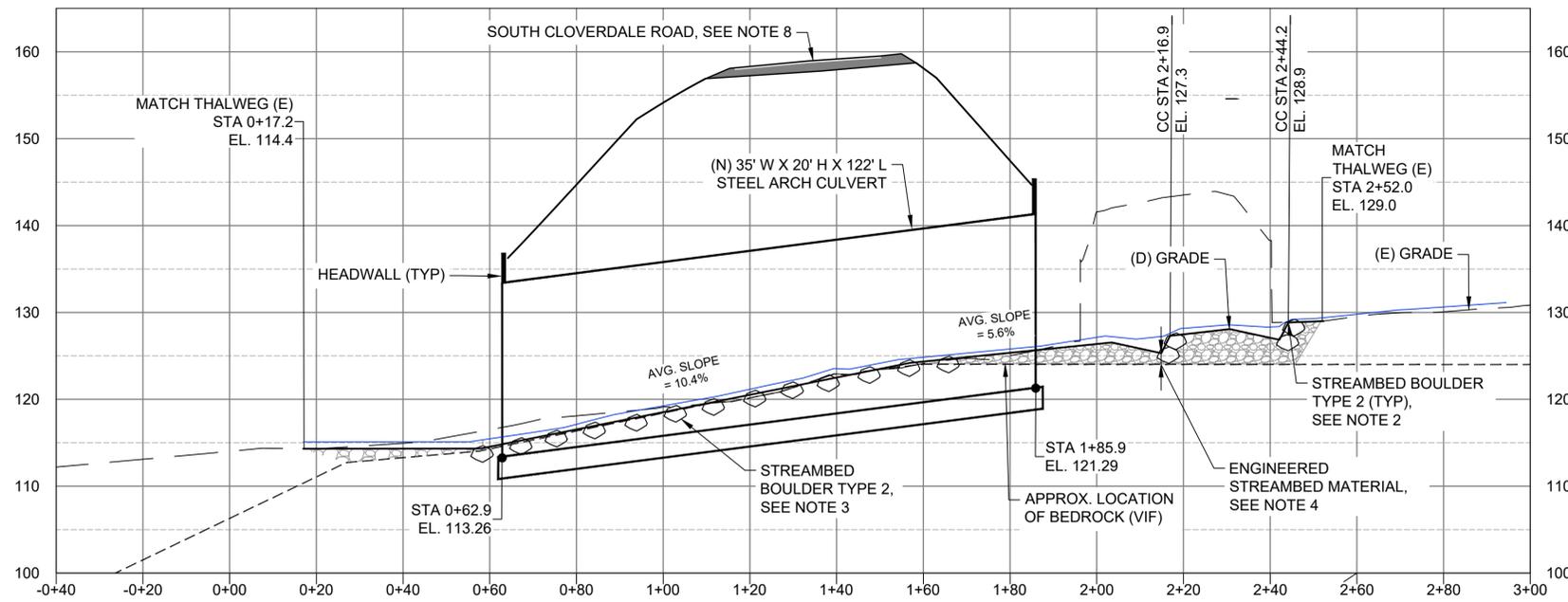


**1 BYBEE CREEK GRADING PLAN**  
Scale: 1"=20'

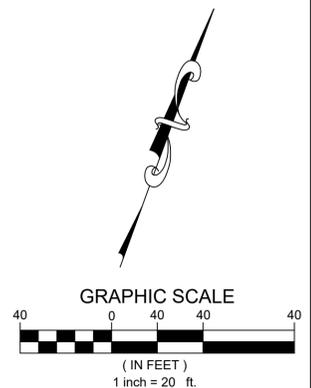
**NOTES**

- SEE SHEET EN-7 FOR TYPICAL STREAM AND CULVERT SECTIONS.
- SEE SHEET EN-8 AND EN-9 FOR STREAMBED MATERIAL INSTALLATION REQUIREMENTS, INCLUDING THE INSTALLATION OF STREAMBED BOULDERS INTO BEDROCK.
- STREAMBED BOULDERS TYPE 2 (BOULDER BANDS) SHALL BE SPACED SUCH THAT THE VERTICAL DISTANCE BETWEEN THE CREST OF BOULDERS IS NO GREATER THAN 0.8 FEET.
- THE CONTRACTOR SHALL PLACE ENGINEERED STREAMBED MATERIAL TO MEET DESIGN GRADE FOR THE STREAM CHANNEL. THICKNESS SHALL EXTEND TO BEDROCK OR TOP OF CULVERT FOOTING, WHICHEVER IS GREATER.
- SEE STRUCTURAL SHEETS FOR CULVERT FOOTING, WINGWALL, AND HEADWALL REQUIREMENTS.
- SEE CIVIL SHEETS FOR S CLOVERDALE ROAD CONSTRUCTION CENTERLINE AND DESIGN REQUIREMENTS.
- EXTEND WINGWALL UNDERDRAINS TO STREAMBED MATERIAL. OUTLET OF UNDERDRAIN WILL NOT BE BURIED WITHIN ESM TO PREVENT CLOGGING.
- FIELD FIT SIDE SLOPES AT END OF CULVERT TO MINIMIZE FILL PLACEMENT WITHIN STRUCTURE.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF BEDROCK AND PERFORMING THE WORK DESCRIBED IN THE PLANS. UNEXPECTED BEDROCK CONDITIONS SHALL NOT BE THE BASIS FOR A CHANGE ORDER.
- THE CONTRACTOR SHALL INSTALL QUARRY SPALL SPLASH PAD AT TERMINAL END OF CONCRETE WINGWALL GUTTERS APPROXIMATELY 3' L x 3' W x 1' H. SPLASH PADS AND GUTTERS NOT SHOWN.

STREAM CENTERLINE ALIGNMENT							
LINE/CURVE NUMBER	START STATION	END STATION	LENGTH	DIRECTION	START POINT (N,E)	END POINT (N,E)	RADIUS
C1	0+04	0+65	60.94	N87° 44' 22.83"E	1052672.35,241727.42	1052733.22,241729.83	842.50
C2	0+65	1+08	42.30	N64° 28' 29.19"E	1052733.22,241729.83	1052771.23,241746.88	70.00
L1	1+08	1+34	26.64	N47° 50' 01.14"E	1052771.23,241746.88	1052790.98,241764.77	-
C3	1+34	2+18	83.19	N67° 19' 27.18"E	1052790.98,241764.77	1052867.33,241793.86	126.75
C4	2+18	2+78	60.51	N59° 34' 50.14"E	1052867.33,241793.86	1052922.92,241814.61	88.50



**2 GRADING PROFILE**  
Scale: 1"=20', VERT EXAGG: 2X



**FINAL SUBMITTAL**

GREG WOLOVEKE  
PROJECT MANAGER  
DATE: 3/4/2025

AMF & MFN  
DRAWN BY  
DATE: 3/4/2025

HLW  
CHECKED BY  
DATE: 3/4/2025

HORIZ. SCALE: 1" = 15'  
VERT. SCALE: 1" = 20' CONTOURS

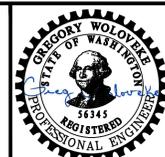
PROJECT ID: 1235  
ROAD NO. : 31510  
COMPUTER FILE:

FIELD BOOK(S):



DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626



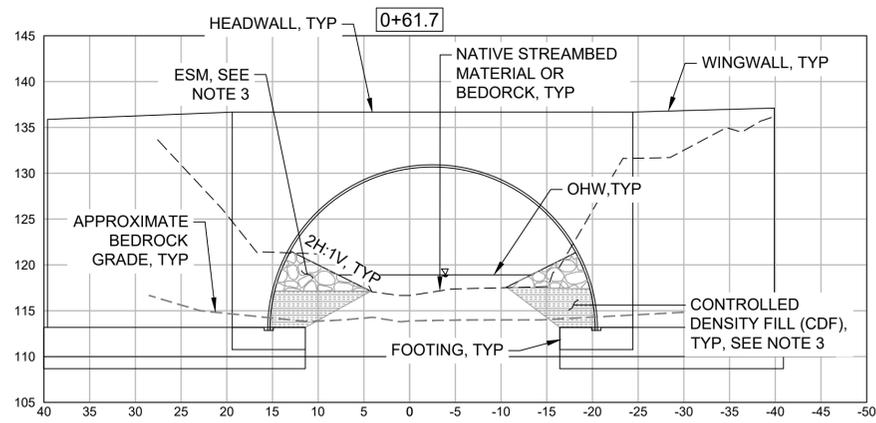
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

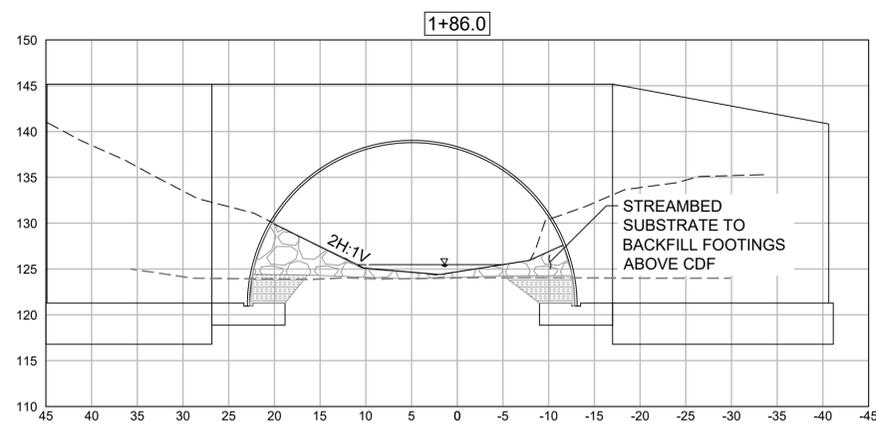
**BYBEE CREEK GRADING PLAN & PROFILE**

SHEET **EN-6**  
OF **62**

P:\01 CAD\18XXXX\201901347.00 SOUTH CLOVERDALE ROAD\08 CAD\DWG\EN-7 BYBEE GRADING SECTIONS.DWG - PLOTTED BY GREG WOLOVEKE - PLOT DATE: 3/3/2025 12:18 PM



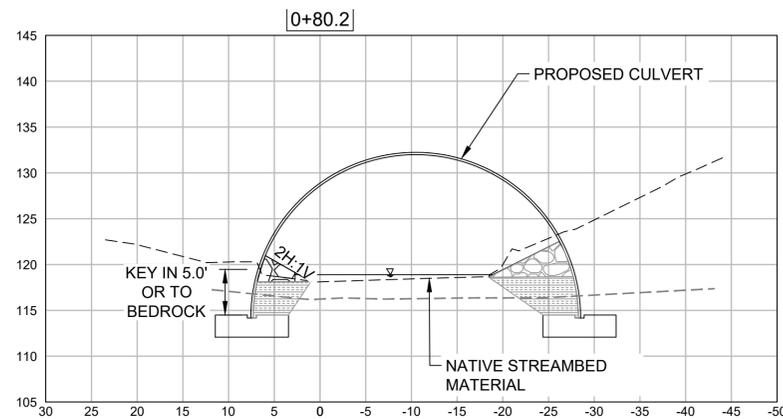
**CULVERT OUTLET** **1**  
Scale: 1"=10'  
EN-6



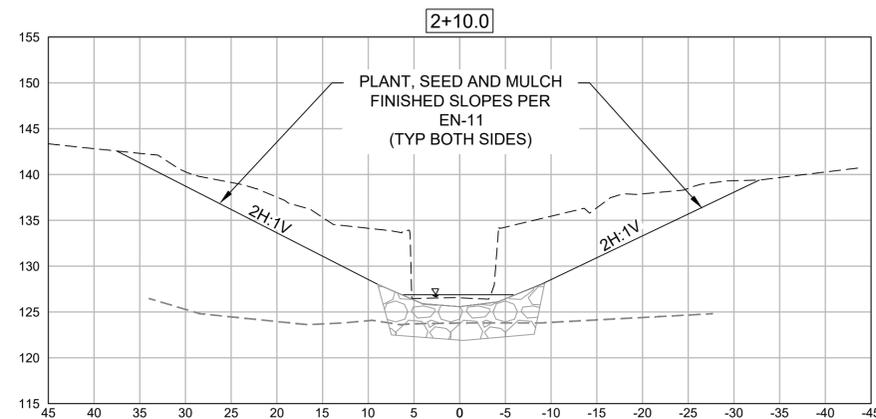
**CULVERT INLET** **4**  
Scale: 1"=10'  
EN-6

**NOTES**

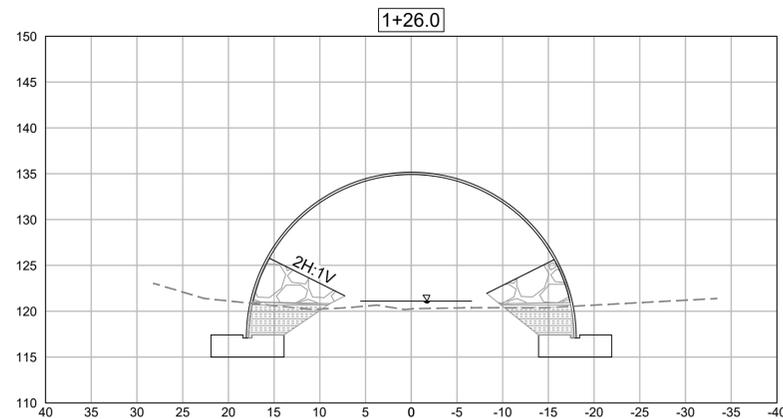
- SECTION VIEWS ARE ORIENTED FACING DOWNSTREAM, LEFT-TO-RIGHT.
- THE CONTRACTOR SHALL REFER TO PLAN SHEETS EN-6 AND DETAIL SHEETS EN-8 AND EN-9 FOR CHANNEL GEOMETRY AND MATERIAL REQUIREMENTS. BOULDER BANDS NOT SHOWN.
- THE CONTRACTOR SHALL BACKFILL THE BEDROCK EXCAVATION TRENCHES REQUIRED TO INSTALL CULVERT FOOTINGS WITH CONTROLLED DENSITY FILL (CDF) TO THE CREEKS THALWEG ELEVATION. ABOVE THE THALWEG ELEVATION, STREAMBED MATERIAL SHALL BE PLACED TO FINISHED GRADE SLOPES AND ELEVATIONS.



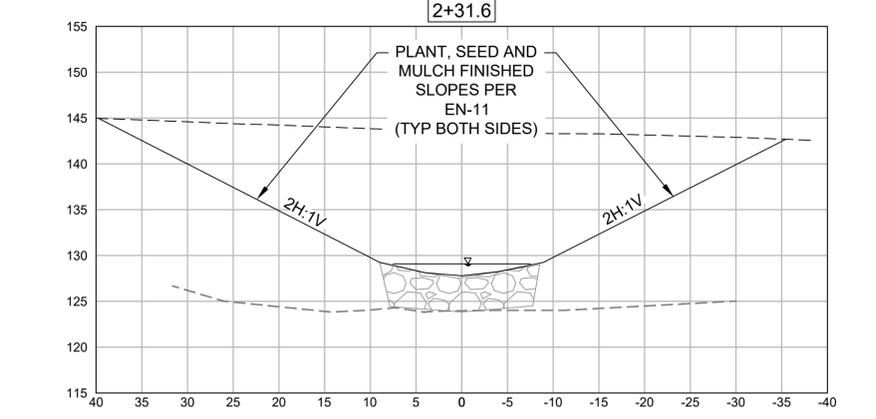
**INSIDE CULVERT** **2**  
Scale: 1"=10'  
EN-6



**UPSTREAM** **5**  
Scale: 1"=10'  
EN-6



**INSIDE CULVERT** **3**  
Scale: 1"=10'  
EN-6



**UPSTREAM** **6**  
Scale: 1"=10'  
EN-6

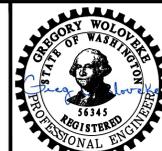
**FINAL SUBMITTAL**

GREG WOLOVEKE 3/4/2025  
PROJECT MANAGER DATE  
AMF & MFN 3/4/2025  
DRAWN BY DATE  
HLW 3/4/2025  
CHECKED BY DATE

HORIZ. SCALE: VARIES  
VERT. SCALE: VARIES  
PROJECT ID: 1235  
ROAD NO. : 31510  
COMPUTER FILE:  
FIELD BOOK(S):



DEPARTMENT OF PUBLIC WORKS  
1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626



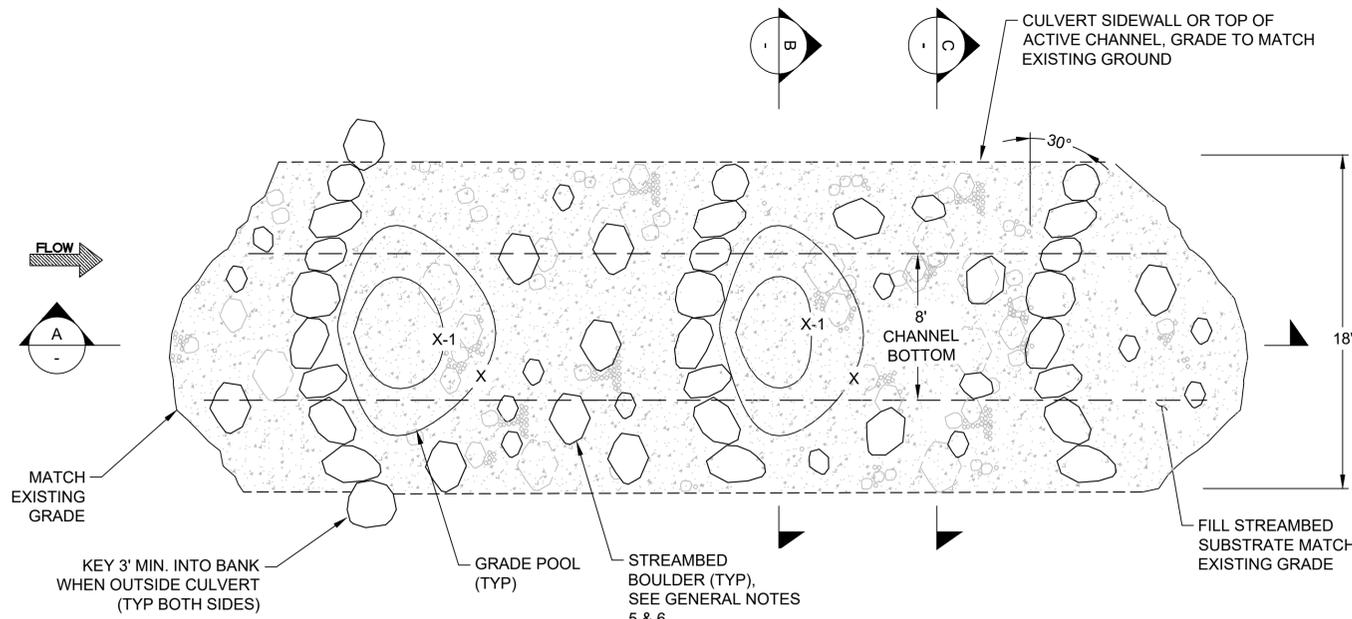
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

**BYBEE CREEK GRADING SECTIONS**

SHEET **EN-7**  
OF **62**

P:\01 CAD\18XXXX\201901347.00 SOUTH CLOVERDALE ROAD\08 CAD\DWG\EN-889 STREAM & CULVERT DETAILS.DWG - PLOTTED BY GREG WOLOVEKE - PLOT DATE: 3/3/2025 12:20 PM



**GENERAL NOTES**

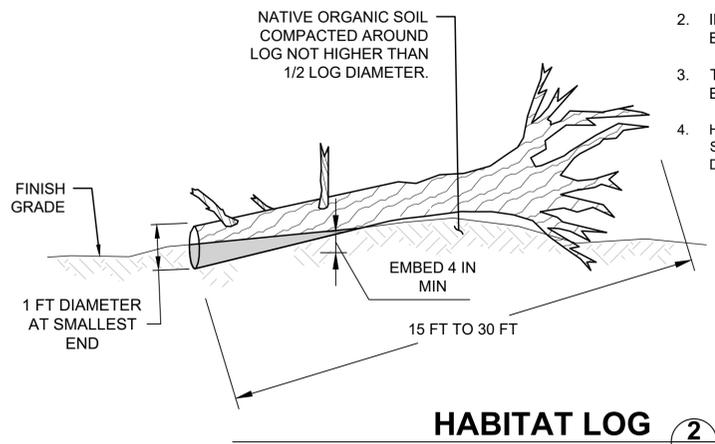
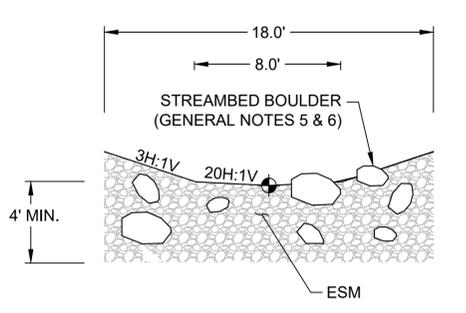
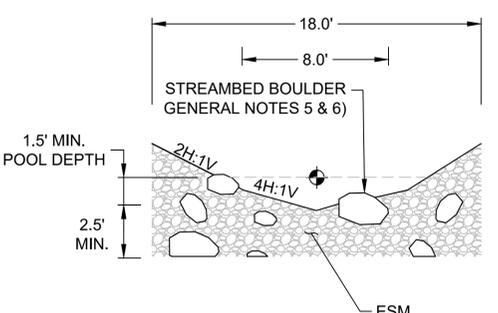
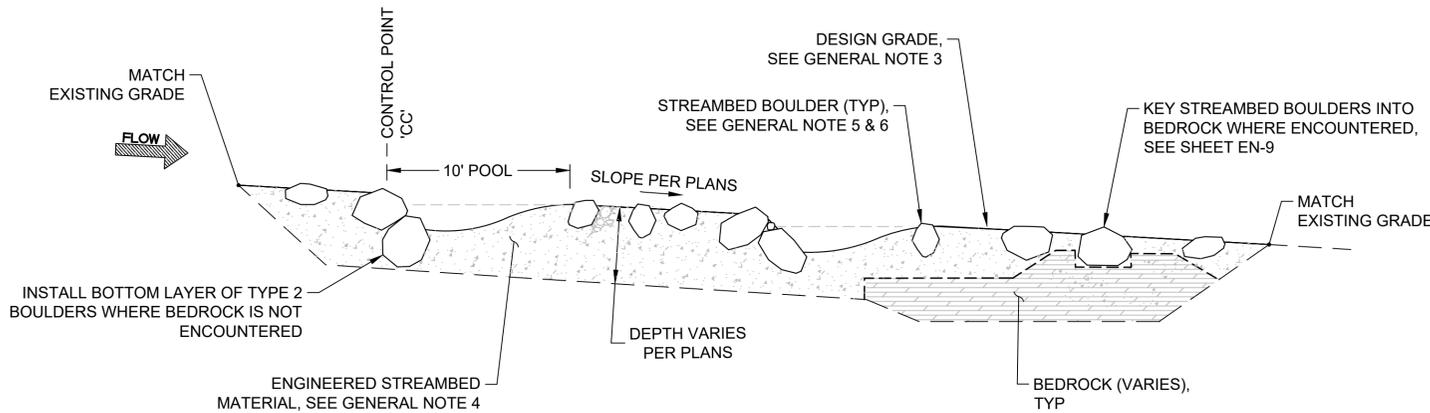
1. THE NUMBER OF BOULDER BANDS VARIES PER CULVERT SITE. SEE PLANS FOR STATIONS AND ELEVATIONS. BANDS WILL BE CONSTRUCTED AT 'CC' STATIONS INDICATED ON PLANS OR FIELD-FIT ON BYBEE CREEK WHERE SHOWN.
2. BEDROCK DEPTH AND EXTENTS VARY. SEE SHEET EN-9 WHEN BEDROCK IS ENCOUNTERED.
3. THE FINISHED CHANNEL SHALL BE GRADED TO THE DIMENSIONS AND SLOPES PROVIDED FOR THE POOL AND RUN CHANNEL GEOMETRIES INDICATED ON THIS SHEET.
4. IF BEDROCK IS NOT ENCOUNTERED, ESM SHALL BE INSTALLED AND POOLS SHALL BE GRADED AS SHOWN. POOLS WILL BE A MINIMUM DEPTH OF 1.5- FEET AND A MAXIMUM DEPTH OF 2- FEET, UNLESS BEDROCK IS ENCOUNTERED.
5. THE LOCATION AND ORIENTATION OF BOULDERS AT GRADE WILL VARY TO MIMIC NATURAL CONDITIONS AND CREATE A COMPLEX AND IRREGULAR GEOMETRY. BOULDERS MAY PROTRUDE ABOVE FINISHED GRADE BETWEEN 20% TO 40% OF THEIR INTERMEDIATE DIAMETER.
6. THE PLACEMENT AND LOCATION OF BOULDERS IS CRITICAL TO FISH PASSAGE PERFORMANCE AND THE ENGINEER MAY REQUEST THE CONTRACTOR TO ADJUST THE POSITION OF BOULDERS TO ENSURE PROPER HYDRAULIC CONDITIONS.
7. ADDITIONAL STREAMBED SEDIMENT WILL BE USED TO FILL ALL VOIDS BETWEEN BOULDERS. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO GENTLY WASH THE MATERIAL INTO THE VOIDS AT NO ADDITIONAL COST IN ORDER TO OBTAIN AN ADEQUATE SEAL.

**STREAMBED INSTALLATION NOTES**

1. ALL IMPORTED STREAMBED MATERIALS SHALL BE INSPECTED AND APPROVED BY THE ENGINEER AT THE OFFSITE SOURCE, BEFORE DELIVERY TO THE PROJECT SITE. THE ENGINEER SHALL VISUALLY INSPECT THE MATERIAL AND MAY REQUIRE THE CONTRACTOR TO DUMP INDIVIDUAL LOADS ONTO A FLAT SURFACE FOR MEASUREMENT AND APPROVAL.
2. STREAMBED MATERIAL SHALL BE INSTALLED IN 12-INCH LIFTS TO THE DIMENSIONS AND THICKNESS INDICATED. THICKNESS IS MEASURED PERPENDICULAR TO FINISHED GRADE.
3. AFTER EACH LIFT IS PLACED, USE WATER TO WASH ADDITIONAL STREAMBED SEDIMENT OR NATIVE FINES INTO THE VOID SPACES TO CREATE A SEALED BED.
4. DO NOT ALLOW STREAMBED SEDIMENT TO ACCUMULATE SUCH THAT A SUBSEQUENT LIFT RESTS ON THE SEDIMENT ACCUMULATION.
5. AFTER FINAL LIFT IS PLACED, STREAM FLOW WILL BE GRADUALLY REINTRODUCED AND OBSERVED SO THAT WATER FLOWS OVER THE TOP OF THE CONSTRUCTED STREAMBED (NOT SUBSURFACE) UPON COMPLETION.
6. IF WATER FLOWS SUBSURFACE, THE ENGINEER MAY REQUIRE ADDITIONAL HAND WORKING OR WASHING OF STREAMBED SEDIMENT INTO VOID SPACES AT NO ADDITIONAL COST TO THE CONTRACTING AGENCY.

ENGINEERED STREAMBED MATERIAL - SCHEDULE	
4 IN. STREAMBED COBBLES	30%
12 IN. STREAMBED COBBLES	30%
STREAMBED SEDIMENT	40%

NOTE: REFER TO WSDOT STANDARD SPECIFICATION SECTION 9-03.11 FOR COBBLE AND SEDIMENT GRADATIONS.



1. PLACE LOG ON CONTOUR. SEE SPECIAL PROVISIONS.
2. INCLUDE MAJOR BRANCHES, BARK, AND ROOT WAD.
3. TAMP LOG WITH MACHINERY TO ENSURE SECURE PLACEMENT.
4. HABITAT LOG SHALL BE TREES SALVAGED ON SITE WITH A MINIMUM DBH OF 18 IN.

FINAL SUBMITTAL

GREG WOLOVEKE  
PROJECT MANAGER  
DATE: 3/4/2025

AMF & MFN  
DRAWN BY  
DATE: 3/4/2025

HLW  
CHECKED BY  
DATE: 3/4/2025

HORIZ. SCALE: VARIES  
VERT. SCALE: VARIES

PROJECT ID: 1235  
ROAD NO. : 31510  
COMPUTER FILE:

FIELD BOOK(S):

**COWLITZ COUNTY**  
WASHINGTON

DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

**ESA**

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SEATTLE, WA 98121  
OFFICE: 206.789.9558  
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**GREGORY WOLOVEKE**  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
58345

Sec. 28, T 6N, R 1W

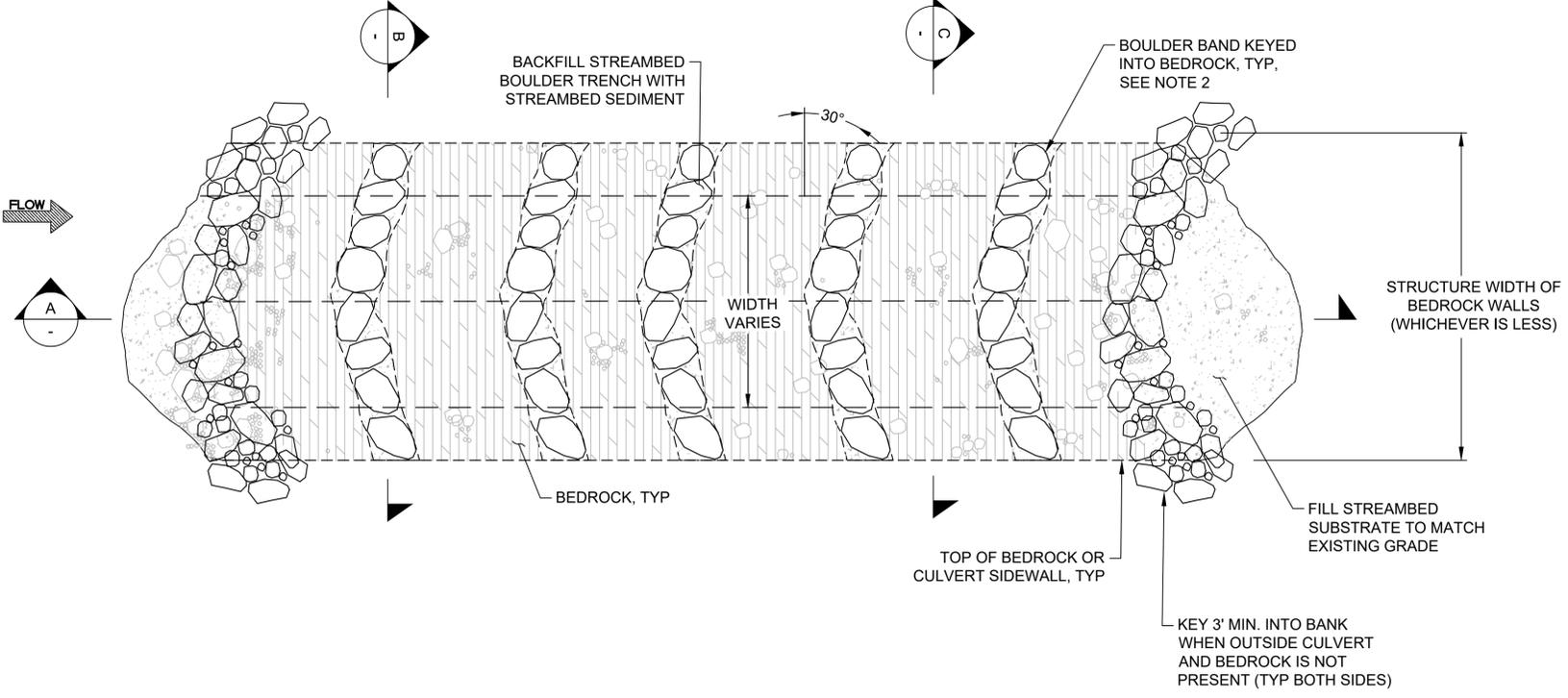
**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

**STREAM DETAILS (1 OF 2)**

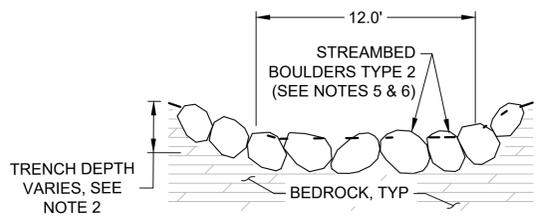
SHEET  
**EN-8**  
OF  
**62**

# BEDROCK BOULDER BAND NOTES

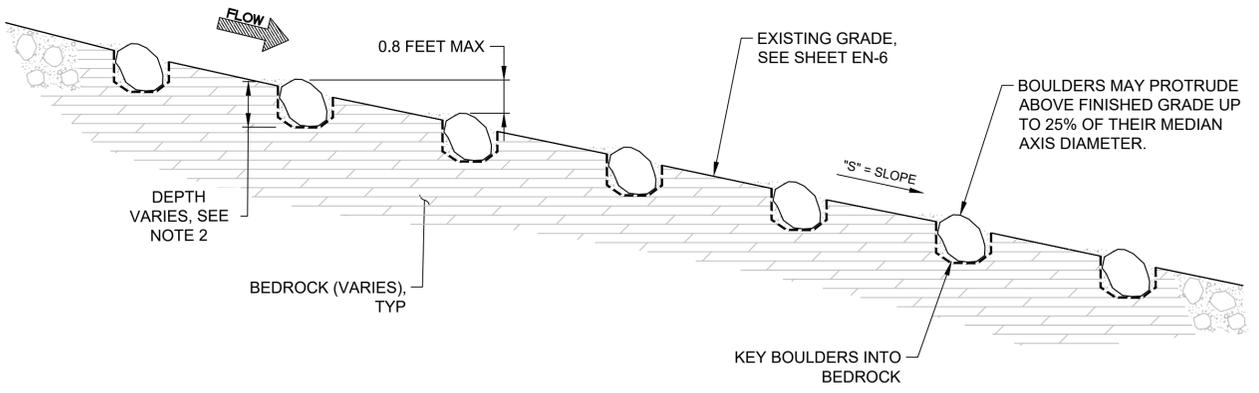
1. BOULDER BANDS SHALL BE FIELD FIT FOLLOWING THE REQUIREMENTS OF THESE PLANS, EXCEPT WHERE CONTROL STATIONS ARE PROVIDED. THE WIDTH OF BANDS ON BYBEE CREEK WILL VARY WITH THE DIMENSIONS OF THE BEDROCK OUTCROPPING.
2. BEDROCK DEPTH AND EXTENTS VARY. WHEN BEDROCK IS ENCOUNTERED, EXCAVATE BEDROCK TO A DEPTH REQUIRED TO KEY IN CASCADE CREST MATERIAL A MINIMUM OF 2/3 OF THE LARGEST BOULDER'S MEDIAN DIAMETER, APPROXIMATELY 28". BOULDERS MAY PROTRUDE BETWEEN A MAXIMUM OF 25% OF THEIR MEDIAN AXIS DIAMETER ABOVE FINISHED GRADE. THE LONGEST AXIS OF EACH BOULDER SHALL BE PLACED RUNNING THE WIDTH OF THE STRUCTURE.
3. EXCAVATION TRENCH SHALL FORM THE ARC SHOWN ON DETAIL 1 WITH APPROXIMATELY 30 DEGREE ANGLE FROM PERPENDICULAR TO THE CHANNEL CENTERLINE.
4. THE ELEVATION DIFFERENCE BETWEEN THE TOP OF BOULDERS SHALL NOT EXCEED 0.8 FEET.
5. THE LOCATION AND ORIENTATION OF BOULDERS AT GRADE WILL VARY TO MIMIC NATURAL CONDITIONS AND CREATE A COMPLEX AND IRREGULAR GEOMETRY.
6. THE PLACEMENT AND LOCATION OF BOULDERS IS CRITICAL TO FISH PASSAGE PERFORMANCE AND THE ENGINEER MAY REQUEST THE CONTRACTOR TO ADJUST THE POSITION OF BOULDERS TO ENSURE PROPER HYDRAULIC CONDITIONS.
7. ADDITIONAL STREAMBED SEDIMENT WILL BE USED TO FILL ALL VOIDS BETWEEN BOULDERS. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO PRESSURE WASH THE MATERIAL INTO THE VOIDS AT NO ADDITIONAL COST IN ORDER TO OBTAIN AN ADEQUATE SEAL.



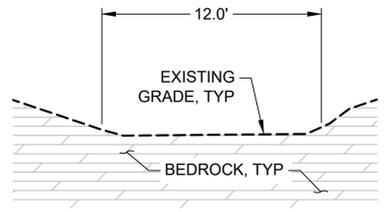
**BEDROCK BOULDER BANDS** 1  
Scale: 1:5 EN-6



**BOULDER BAND SECTION** B  
Scale: 1:5 EN-9



**BEDROCK BOULDER BAND PROFILE** A  
Scale: 1:5 EN-8



**EXISTING BEDROCK SECTION** C  
Scale: 1:5 EN-9

P:\01 CAD\18XXXX\201901347.00 SOUTH CLOVERDALE ROAD\08 CAD\DWG\EN-8&9 STREAM & CULVERT DETAILS.DWG - PLOTTED BY GREG WOLOVEKE - PLOT DATE: 3/3/2025 12:21 PM

GREG WOLOVEKE PROJECT MANAGER	3/4/2025 DATE
AMF & MFN DRAWN BY	3/4/2025 DATE
HLW CHECKED BY	3/4/2025 DATE

HORIZ. SCALE: VARIES VERT. SCALE: VARIES
PROJECT ID: 1235 ROAD NO. : 31510
COMPUTER FILE:
FIELD BOOK(S):

**COWLITZ COUNTY**  
WASHINGTON

DEPARTMENT  
OF  
PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

**ESA**

2801 ALASKAN WAY  
SUITE 200  
SEATTLE, WA 98121  
OFFICE - 206.789.9558  
WWW.ESASSOC.COM

GREGORY WOLOVEKE  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
58345

Sec. 28, T 6N, R 1W

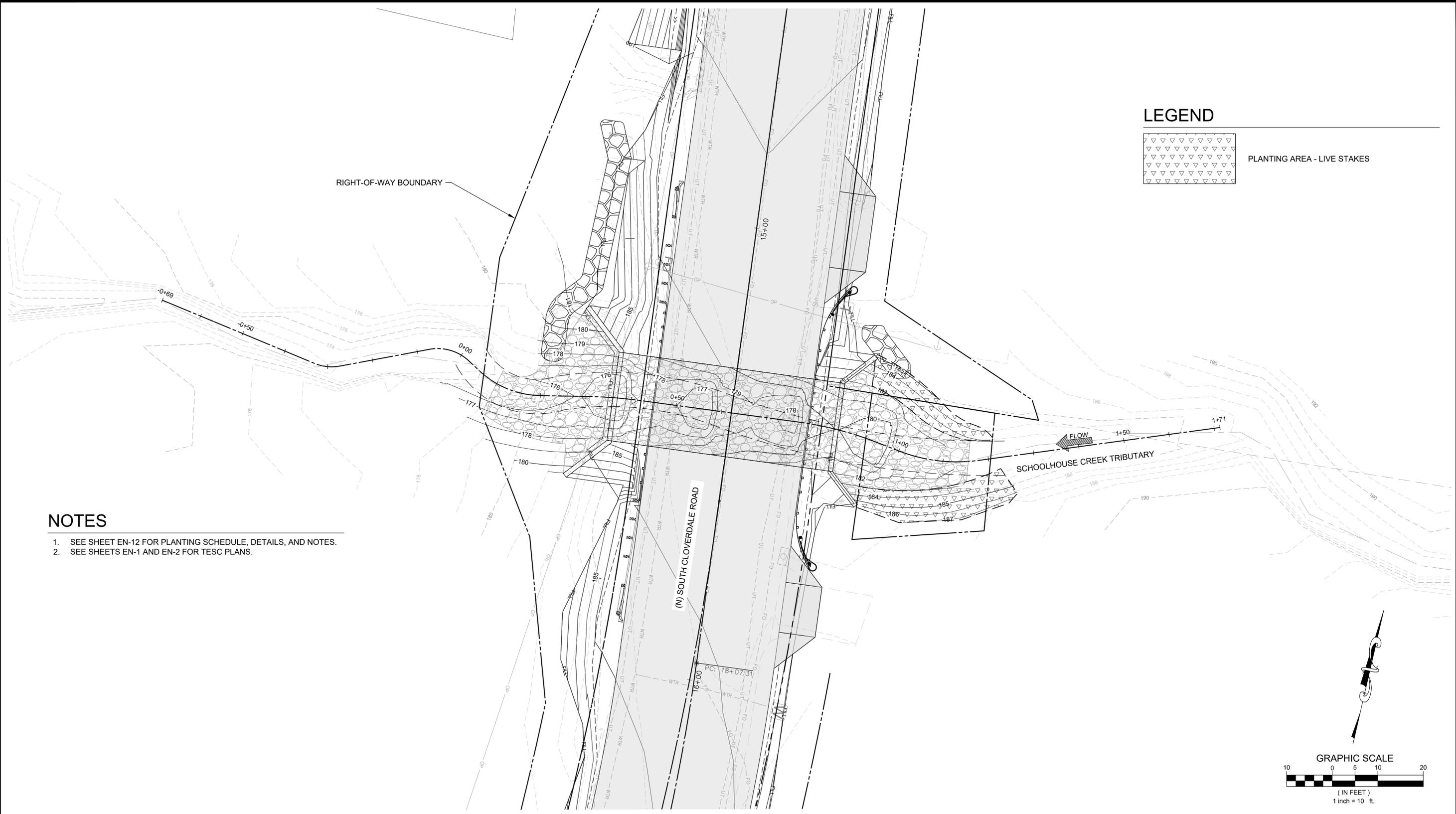
**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

**STREAM DETAILS (2 OF 2)**

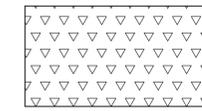
SHEET  
**EN-9**  
OF  
**62**

FINAL SUBMITTAL

P:\01 CAD\18XXXX\201901347.00 SOUTH CLOVERDALE ROAD\08 CAD\DWG\EN-10 SCHOOLHOUSE CREEK TRIBUTARY PLANTING PLAN.DWG - PLOTTED BY GREG WOLOVEKE - PLOT DATE: 3/3/2025 12:22 PM



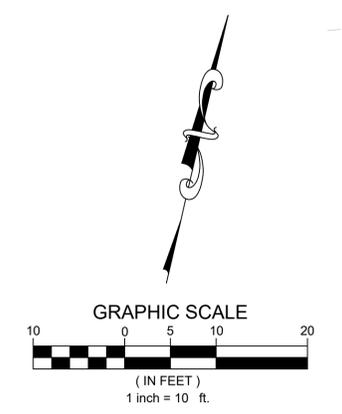
### LEGEND



PLANTING AREA - LIVE STAKES

### NOTES

1. SEE SHEET EN-12 FOR PLANTING SCHEDULE, DETAILS, AND NOTES.
2. SEE SHEETS EN-1 AND EN-2 FOR TESC PLANS.



## 1 PLANTING PLAN

Scale: 1"=10'

GREG WOLOVEKE PROJECT MANAGER	3/4/2025 DATE
ABG DRAWN BY	3/4/2025 DATE
SAR CHECKED BY	3/4/2025 DATE

HORIZ. SCALE: AS SHOWN VERT. SCALE: 1" CONTOURS
PROJECT ID: 1235 ROAD NO. : 31510 COMPUTER FILE:
FIELD BOOK(S):



**COWLITZ COUNTY**  
WASHINGTON

DEPARTMENT  
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SEATTLE, WA 98121  
OFFICE - 206.789.9558  
WWW.ESASOC.COM



STATE OF WASHINGTON  
LAND SURVEYOR  
NO. 1045 EXP. 2/28/2025

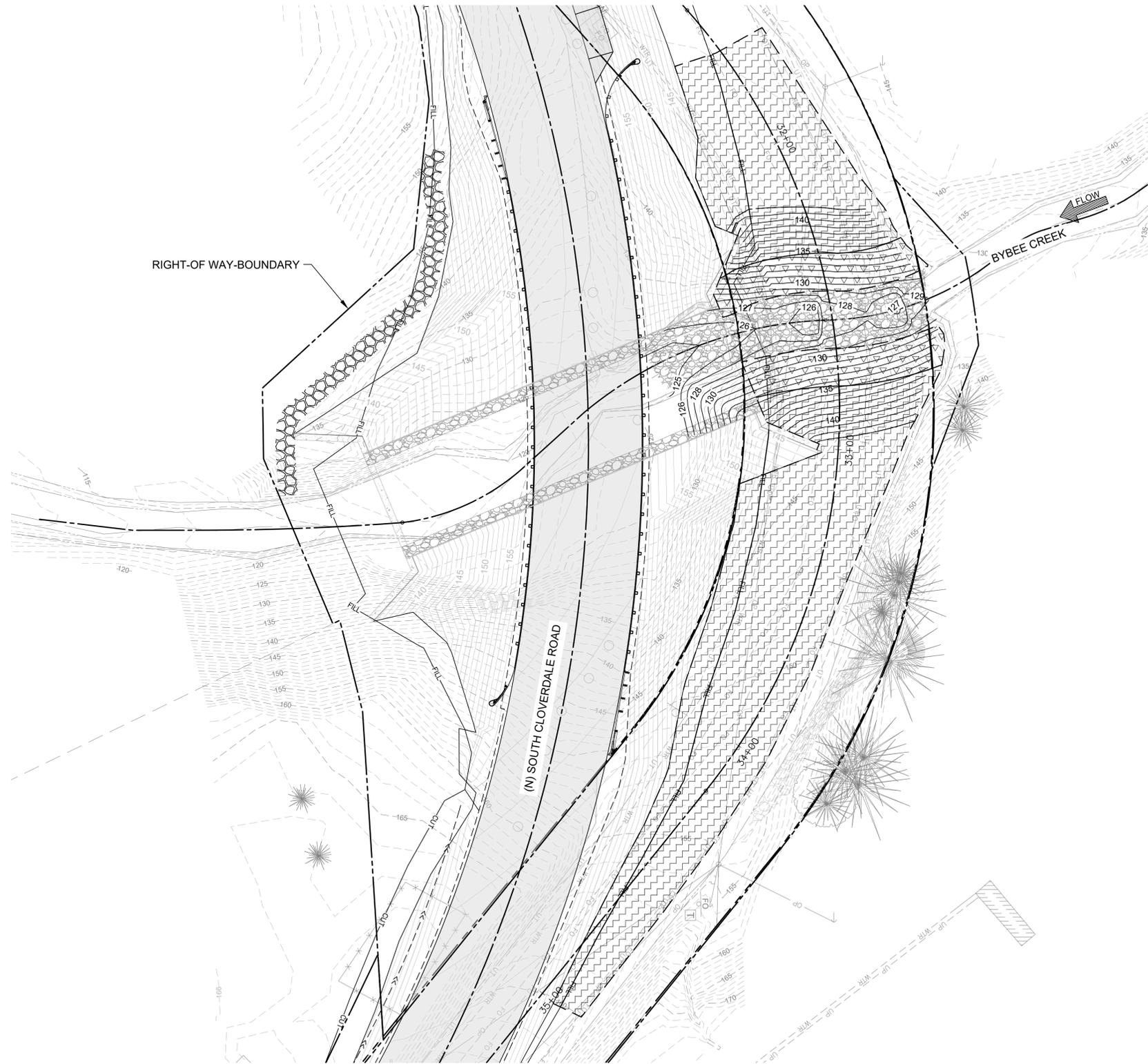
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

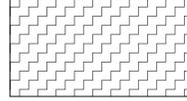
**SCHOOLHOUSE CREEK TRIBUTARY  
PLANTING PLAN**

SHEET  
**EN-10**  
OF  
**62**

P:\01 CAD\18XXXX\201901347.00 SOUTH CLOVERDALE ROAD\08 CAD\DWG\EN-11 BYBEE CREEK PLANTING PLAN.DWG - PLOTTED BY GREG WOLOVEKE - PLOT DATE: 3/3/2025 12:23 PM

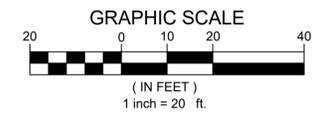


**LEGEND**

-  PLANTING AREA - TREES AND SHRUBS
-  PLANTING AREA - LIVE STAKES

**NOTES**

1. SEE SHEET EN-12 FOR PLANTING SCHEDULE, DETAILS, AND NOTES.
2. SEE SHEETS EN-1 AND EN-2 FOR TESC PLANS.
3. TREES SHALL BE PLANTED A MINIMUM OF 20 HORIZONTAL FEET FROM ALL OVERHEAD AND UNDERGROUND UTILITIES.



**1 PLANTING PLAN**  
Scale: 1"=20'

GREG WOLOVEKE  
PROJECT MANAGER  
DATE 3/4/2025

ABG  
DRAWN BY  
DATE 3/4/2025

SAR  
CHECKED BY  
DATE 3/4/2025

HORIZ. SCALE: AS SHOWN  
VERT. SCALE: 1"=20'

PROJECT ID: 1235  
ROAD NO. : 31510  
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KELSO, WASHINGTON 98626



Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

**BYBEE CREEK PLANTING PLAN**

SHEET  
**EN-11**  
OF  
**62**

# PLANTING SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	TYPE	SIZE	SPACING	QUANTITIES	
						SCHOOLHOUSE CREEK	BYBEE CREEK
<b>TREES:</b>							
[Symbol]	FRANGULA PURSHIANA	CASCARA	CONTAINER	2 GAL	10' O.C.	-	20
[Symbol]	PRUNUS EMARGINATA	BITTER CHERRY	CONTAINER	2 GAL	10' O.C.	-	20
[Symbol]	SALIX SCOULERIANA	SCOULEERS WILLOW	CONTAINER	2 GAL	10' O.C.	-	14
<b>SHRUBS:</b>							
[Symbol]	ACER CIRCINATUM	VINE MAPLE	CONTAINER	1 GAL	5' O.C.	-	64
[Symbol]	CORYLUS CORNUTA	BEAKED HAZELNUT	CONTAINER	1 GAL	5' O.C.	-	64
[Symbol]	LONICERA INVOLUCRATA	BLACK TWINBERRY	CONTAINER	1 GAL	5' O.C.	-	64
[Symbol]	PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK	CONTAINER	1 GAL	5' O.C.	-	64
[Symbol]	POLYSTICHUM MUNITUM	SWORD FERN	CONTAINER	1 GAL	5' O.C.	-	64
[Symbol]	SAMBUCUS RACEMOSA	RED ELDERBERRY	CONTAINER	1 GAL	5' O.C.	-	64
<b>LIVE STAKES:</b>							
[Symbol]	CORNUS SERICEA	RED OSIER DOGWOOD	LIVE STAKE	1" DIA	4' O.C.	7	28
[Symbol]	SALIX HOOKERIANA	HOOKER'S WILLOW	LIVE STAKE	1" DIA	4' O.C.	7	27
[Symbol]	SALIX LASIANDRA	PACIFIC WILLOW	LIVE STAKE	1" DIA	4' O.C.	7	28
[Symbol]	SALIX SITCHENSIS	SITKA WILLOW	LIVE STAKE	1" DIA	4' O.C.	7	27

NOTE: SEED ALL PLANTING AREAS WITH UNDERSEED MIX (MIX 1). SEE SCHEDULE, BELOW.

## UNDERSEED (MIX 1) SEED SCHEDULE

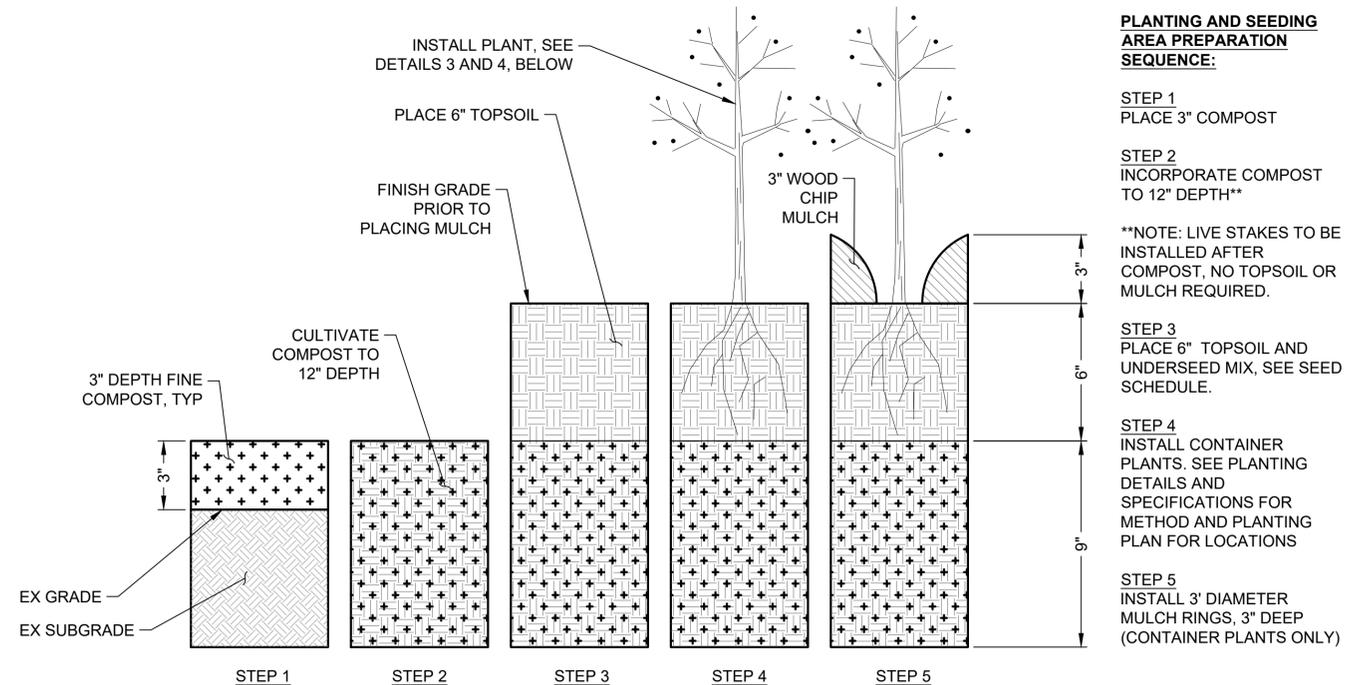
BOTANICAL NAME	COMMON NAME	DISTRIB. BY SEED COUNT	APPLICATION RATE
AGROSTIS EXARATA	SPIKE BENTGRASS	50%	0.34 LBS/ACRE
DESCHAMPSIA ELONGATA	SLENDER HAIRGRASS	50%	0.67 LBS/ACRE

## EROSION CONTROL (MIX 2) SEED SCHEDULE

BOTANICAL NAME	COMMON NAME	DISTRIBUTION BY WEIGHT	APPLICATION RATE
BROMUS CARINATUS	CALIFORNIA BROME	33%	40 LBS. PER ACRE (HAND SEEDING)
ELYMUS GLAUCUS	BLUE WILDRYE	34%	
HORDEUM BRACHYANTHERUM	MEADOW BARLEY	33%	80 LBS. PER ACRE (HYDROSEED)

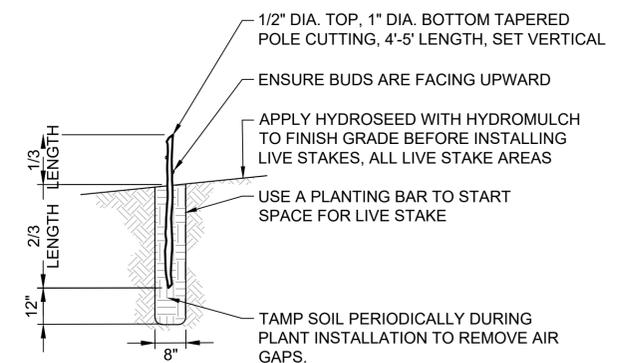
## PLANTING NOTES

- SEE SHEETS EN-1 AND EN-2 FOR TESC PLANS.
- ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDINGS WITH CONSTRUCTION.
- PROVIDE THE ENGINEER A MINIMUM OF 15 DAYS ADVANCE NOTICE WHEN REQUESTING PLANT MATERIAL DELIVERY TO THE PROJECT SITE.
- DO NOT DRIVE OR PARK ANY VEHICLES OR EQUIPMENT, STORE MATERIALS, STOCKPILE SOIL OR GRAVEL, OR DISPOSE OF ANY CONSTRUCTION OR WASTE MATERIAL NEAR NEWLY INSTALLED PLANTS. RESTRICT FOOT TRAFFIC WITHIN PLANTING AREAS.
- DECOMPACT SOILS IN ALL AREAS WHERE SOIL COMPACTION HAS OCCURRED. AT MINIMUM, DECOMPACTION MUST OCCUR WHERE HARD SURFACES HAVE BEEN REMOVED AND STAGING AREAS HAVE BEEN CLEARED. DECOMPACTION WILL BE ACCOMPLISHED BY SCARIFYING THE SOIL SURFACE WITH A BACKHOE, A BOBCAT, OR TRACTOR WITH RIPPING TEETH OR A CULTIVATOR, DISK HARROW, OR OTHER PIECE OF AGRICULTURAL MACHINERY AS APPROVED BY THE ENGINEER. SCARIFY TO A DEPTH OF AT LEAST 12 INCHES SO THAT SOIL IS EASY TO DIG BY HAND.
- NO SOIL SCARIFICATION SHALL OCCUR WITHIN THE DRIP LINE OF VEGETATION TO BE RETAINED UNLESS APPROVED BY THE ENGINEER.
- SOIL DECOMPACTION IN WET SOILS AT ANY TIME OF THE YEAR OR DURING INCLEMENT WEATHER OR DURING PERIODS OF PROLONGED DRY OR HOT WEATHER IS NOT ALLOWED WITHOUT APPROVAL BY THE ENGINEER PRIOR TO EXECUTION IN ORDER THAT SOIL STRUCTURE WILL BE MAINTAINED. SOIL SHOULD BE MOIST ENOUGH THAT DIGGING DOESN'T CREATE DUST, BUT DRY ENOUGH TO DRIVE EQUIPMENT WITHOUT CREATING RUTS.
- PLANTS SHALL BE INSTALLED SO FINISH GRADE IS LEVEL WITH THE TOP OF ROOT BALL. PLANTS SHALL BE BACKFILLED AND WATER-SETTLED. NO COMPACTION OR ADDITIONAL BACKFILL IS TO OCCUR AROUND PLANT. ALL PLANTS SHALL BE WATERED THOROUGHLY IMMEDIATELY FOLLOWING INSTALLATION.
- NO TREES OR SHRUBS SHALL BE PLANTED IN STANDING WATER.
- ENSURE 100% SURVIVAL OF INSTALLED TREES, SHRUBS, AND SEED SPECIES WITHIN ONE YEAR OF INSTALLATION.
- MONITORING OF RESTORATION AREAS WILL OCCUR: ONCE 30 DAYS AFTER PLANTING (STEM COUNT AND AS-BUILT PREPARATION), ONCE EARLY IN THE GROWING SEASON OF THE FIRST FULL GROWING SEASON FOLLOWING PLANTING, AND ONCE AT THE END OF THE FIRST FULL GROWING SEASON.
- IF ANY PORTION OF THE RESTORATION IS NOT SUCCESSFUL, A CONTINGENCY PLAN WILL BE IMPLEMENTED. SUCH PLANS ARE DEVELOPED ON A CASE-BY-CASE BASIS TO REMEDY ASPECTS OF RESTORATION THAT DO NOT MEET STATED SITE GOALS. THE CONTINGENCY PLAN WOULD BE DEVELOPED IN COOPERATION WITH THE ENGINEER.
- APPLY EROSION CONTROL SEED MIX IN RESTORATION AREAS WHERE RESTORATION PLANTING HAS NOT BEEN LOCATED BUT SITE HAS BEEN IMPACTED DURING PLANTING WORK.



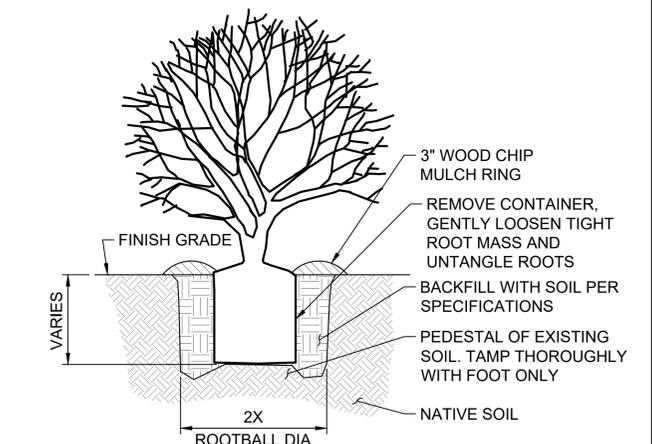
## SOIL PREPARATION

Scale: NTS



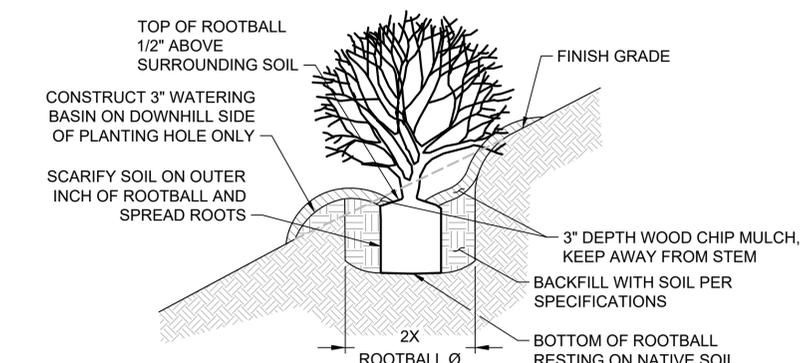
## LIVE STAKE PLANTING

Scale: NTS



## CONTAINER PLANTING

Scale: NTS



## CONTAINER PLANTING ON SLOPE

Scale: NTS

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GREG WOLOVEKE PROJECT MANAGER	3/4/2025 DATE
ABG DRAWN BY	3/4/2025 DATE
SAR CHECKED BY	3/4/2025 DATE

HORIZ. SCALE: AS SHOWN VERT. SCALE: AS SHOWN
PROJECT ID: 1235 ROAD NO. : 31510
COMPUTER FILE:
FIELD BOOK(S):

**COWLITZ COUNTY**  
WASHINGTON

DEPARTMENT OF PUBLIC WORKS

1600 13TH AVENUE SOUTH  
KELSO, WASHINGTON 98626

**ESA**

2801 ALASKAN WAY  
SUITE 200  
SEATTLE, WA 98121  
OFFICE - 206.789.9558  
WWW.ESASOC.COM

STATE OF WASHINGTON  
LANDSCAPE ARCHITECT  
NO. 10447 EXP. 2/28/2025

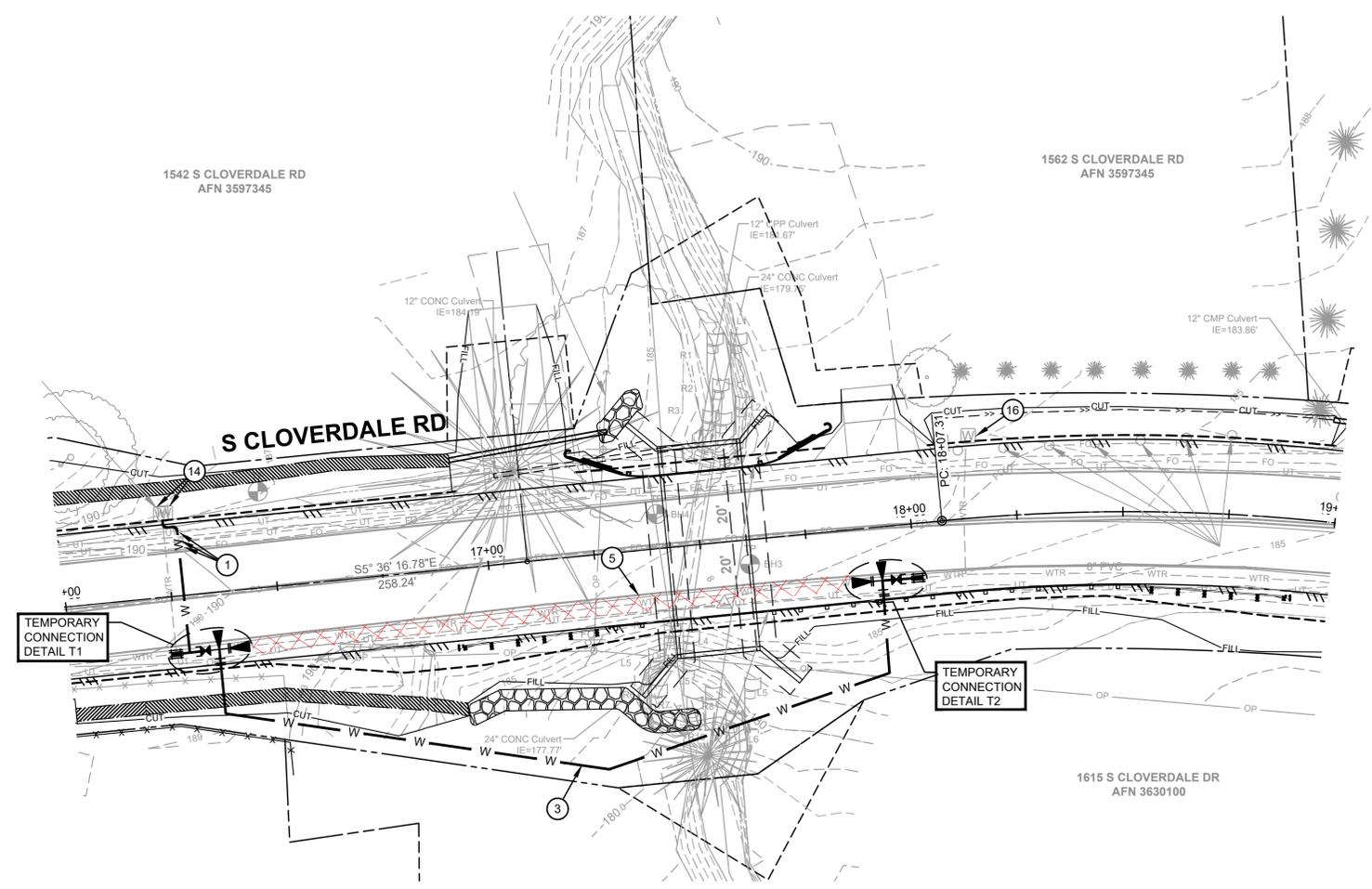
Sec. 28, T 6N, R 1W

**SOUTH CLOVERDALE ROAD  
IMPROVEMENT PROJECT**

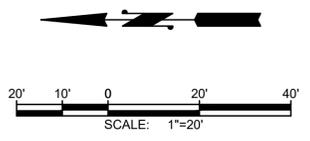
**PLANTING SCHEDULE & DETAILS**

SHEET  
**EN-12**  
OF  
**62**

I:\GIS\SERVER3\data\11\KALAMA\19232.00 cloverdale and confer waterline\Plans\Site\Site.dwg, 1/27/2025 8:39 AM, SHARI GAER



**SCHOOL HOUSE CREEK TRIBUTARY  
TEMPORARY WATER MAIN  
STATION 16+00 TO 19+00**  
SCALE: 1"=20'



**Gray & Osborne, Inc.**  
CONSULTING ENGINEERS  
2102 CARRIAGE DRIVE SW,  
BUILDING 1  
OLYMPIA, WA 98502  
(360) 292-7481



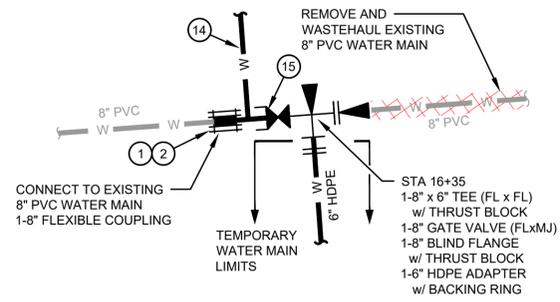
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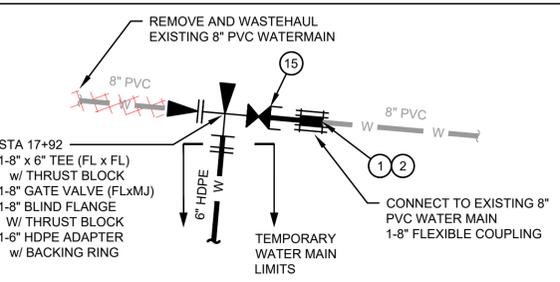
**CITY OF KALAMA**  
**S CLOVERDALE ROAD  
& CONFER ROAD  
WATERLINE**  
COWLITZ COUNTY, WA

**WATER MAIN NOTES:**

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- 13 CONTRACTOR SHALL INSTALL TYPE 1 NEW WATER SERVICE PER DETAIL 1 ON SHEET WD-2.
- 14 CONTRACTOR SHALL RELOCATE/ADJUST EXISTING WATER METER BOX AND INSTALL TYPE 2 NEW WATER SERVICE PER DETAIL 4 ON SHEET WD-2.
- 15 CONTRACTOR SHALL INSTALL VALVE PER DETAIL 2 ON SHEET WD-1.
- 16 CONTRACTOR SHALL RELOCATE / ADJUST EX METER BOX TO FINISH GRADE.
- 17 WATER MAIN SHALL BE INSTALLED UNDER STORM SYSTEM. INSTALL VERTICAL BENDS OR DEFLECT PIPE AS NECESSARY.



**TEMPORARY  
CONNECTION DETAIL T1**  
NOT TO SCALE



**TEMPORARY  
CONNECTION DETAIL T2**  
NOT TO SCALE

No.	DATE	REVISION

ISSUED FOR:

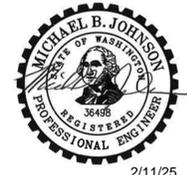
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DRAWN BY:	JPW
DESIGNER:	SLG
G & O JOB NO.:	19232.00
FILE:	P-SITE.DWG



**WATER**

**TEMPORARY WATER  
MAIN STA 16+00 TO  
19+00**

DRAWING: **W-1** OF: **9**



2/11/25



**CITY OF KALAMA**  
**S CLOVERDALE ROAD**  
**& CONFER ROAD**  
**WATERLINE**  
 COWLITZ COUNTY, WA

No.	DATE	REVISION

ISSUED FOR:

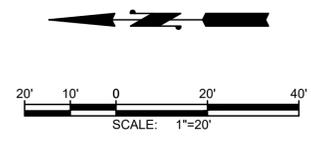
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**WATER**

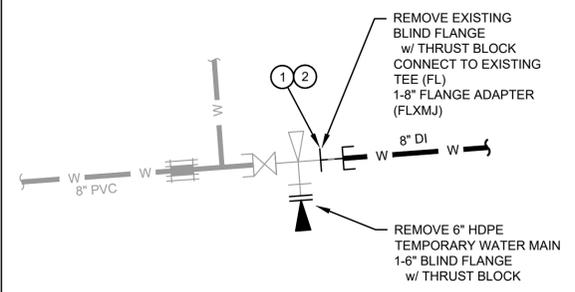
**PROPOSED WATER MAIN STA 16+00 TO 19+00**

DRAWING: **W-2** OF: **9**

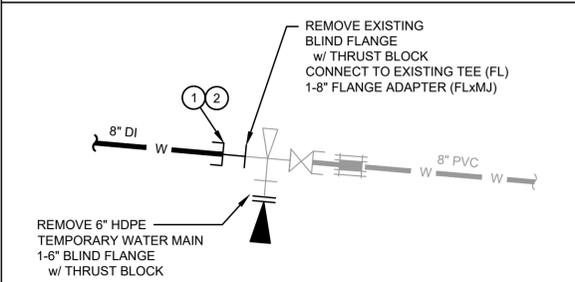


**WATER MAIN NOTES:**

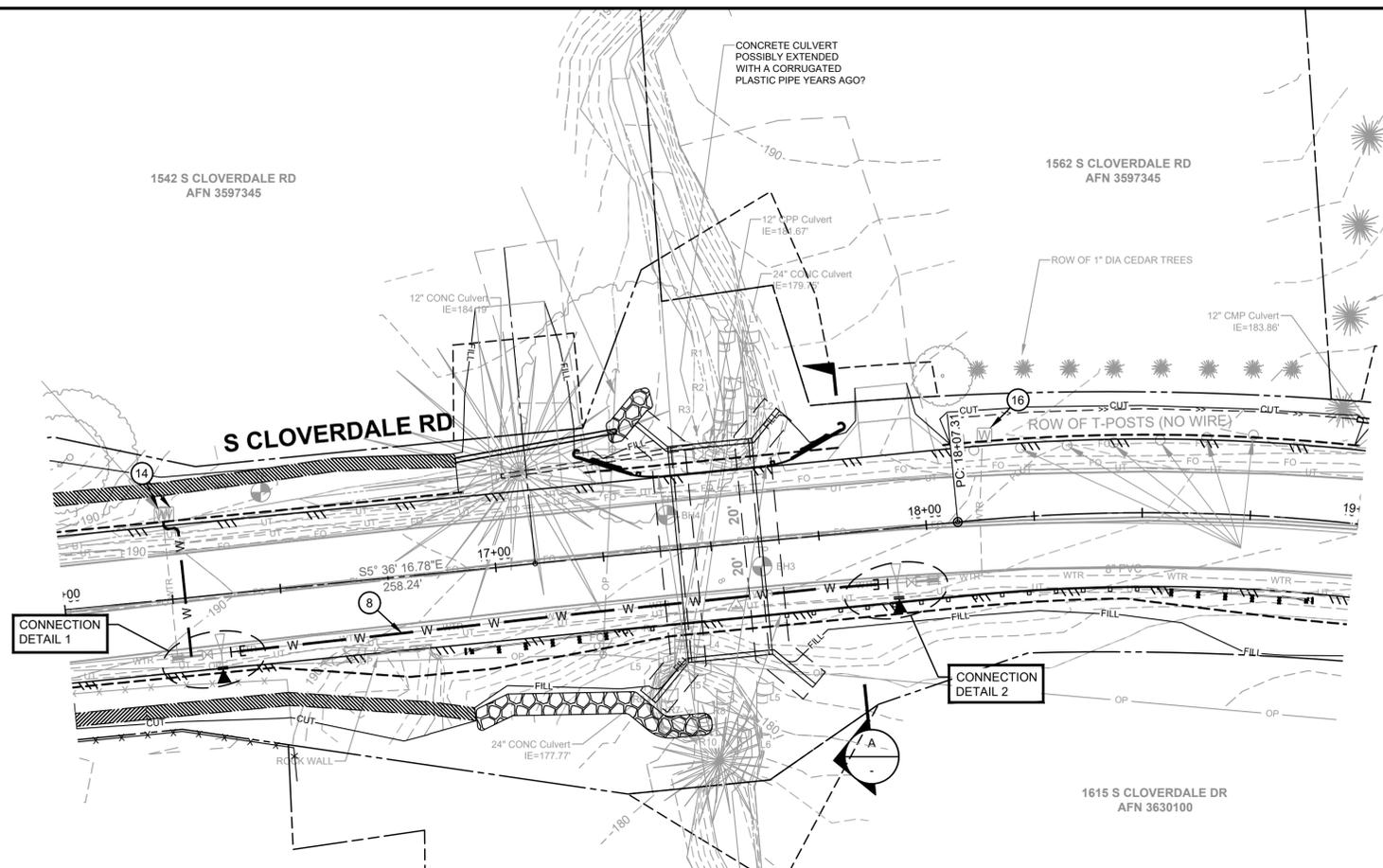
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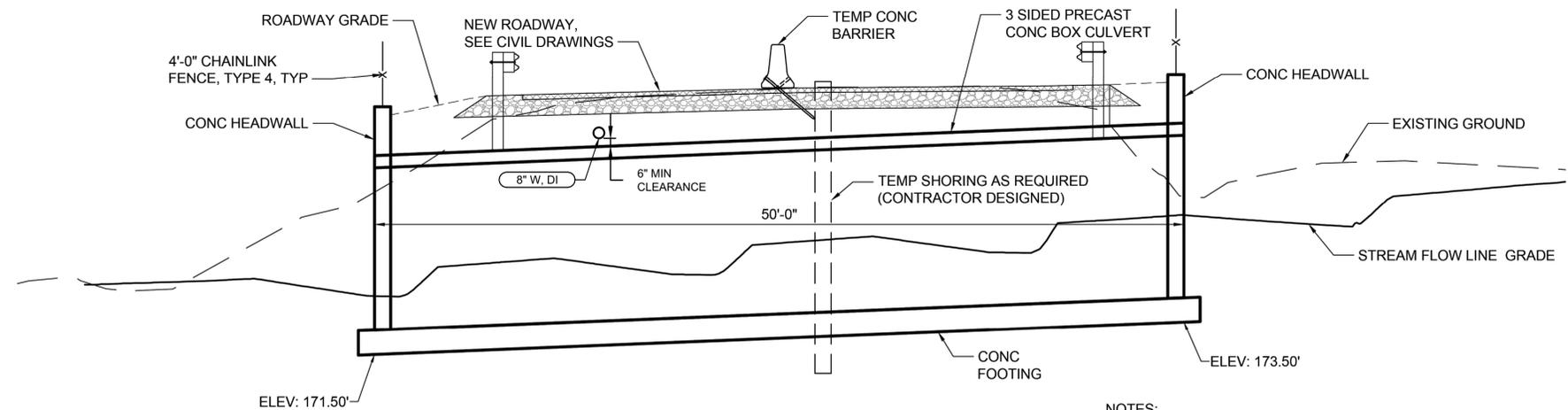
**CONNECTION DETAIL 1**  
 NOT TO SCALE



**CONNECTION DETAIL 2**  
 NOT TO SCALE



**SCHOOLHOUSE CREEK TRIBUTARY**  
**PROPOSED WATER MAIN**  
**STATION 16+00 TO 19+00**  
 SCALE: 1"=20'

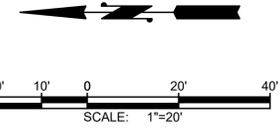
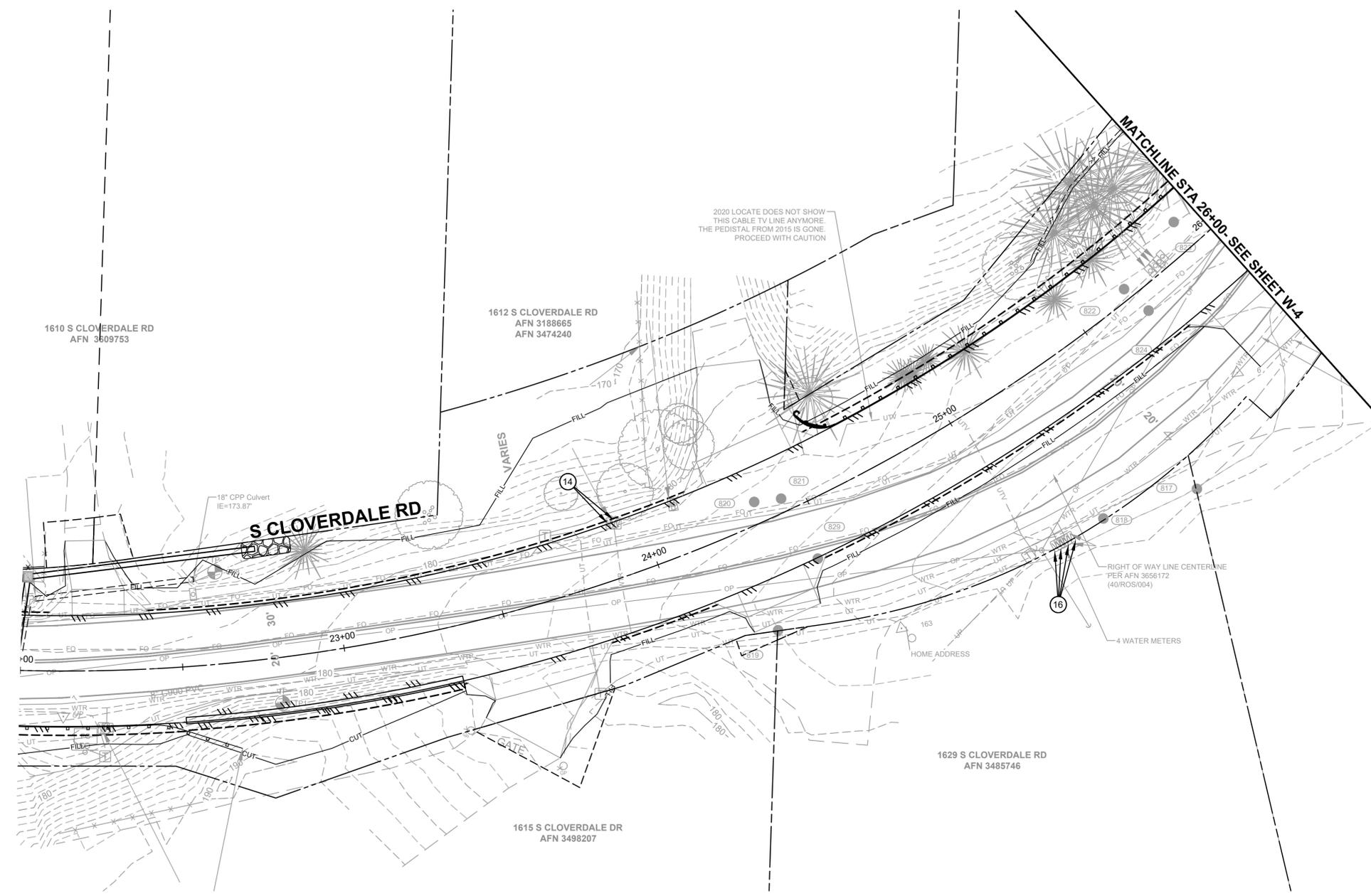


**NOTES:**  
 1. WINGWALLS NOT SHOWN FOR CLARITY.

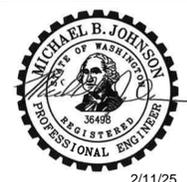
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**Gray & Osborne, Inc.**  
CONSULTING ENGINEERS  
2102 CARRIAGE DRIVE SW,  
BUILDING 1  
OLYMPIA, WA 98502  
(360) 292-7481



**CITY OF KALAMA**  
**S CLOVERDALE ROAD & CONFER ROAD WATERLINE**  
COWLITZ COUNTY, WA

- WATER MAIN NOTES:**
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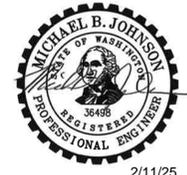
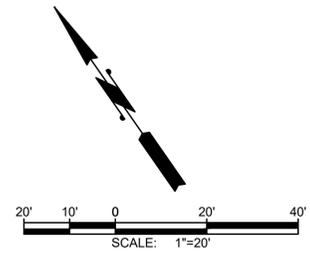
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APPROVED BY:	MBJ	
CHECKED BY:	SLG	
DRAWN BY:	JPW	
DESIGNER:	SLG	
G & O JOB NO.:	19232.00	
FILE:	P-SITE.DWG	



**WATER**

**PROPOSED WATER MAIN STA 22+00 TO 26+00**

DRAWING: **W-3** OF: **9**



**CITY OF KALAMA**  
**S CLOVERDALE ROAD & CONFER ROAD WATERLINE**  
 COWLITZ COUNTY, WA

No.	DATE	REVISION

ISSUED FOR:

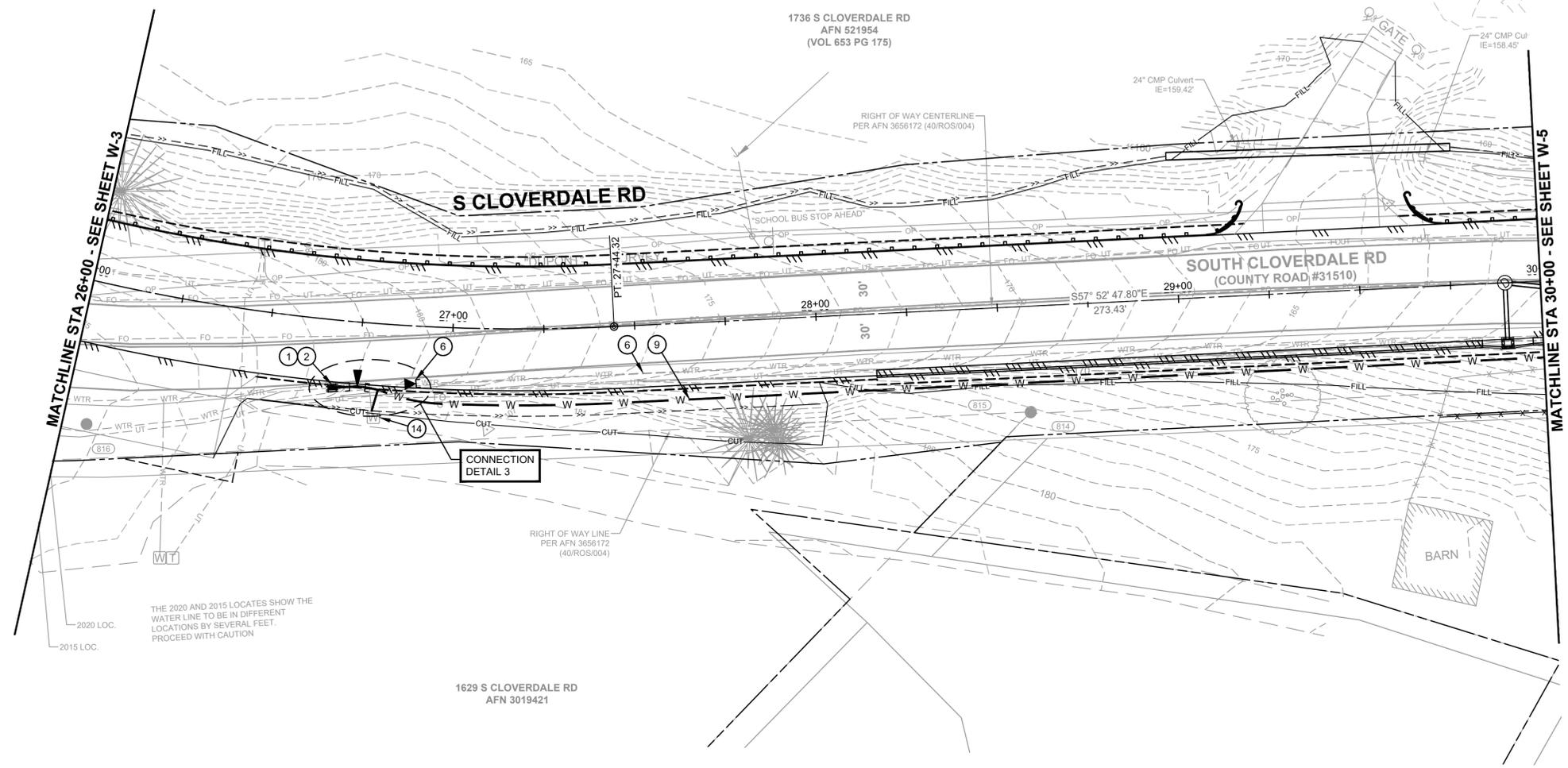
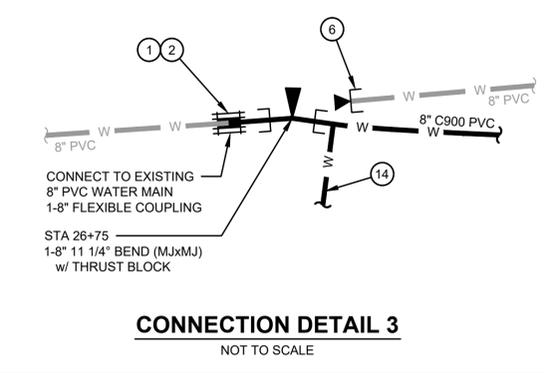
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ISSUE DATE:	JANUARY 2025
APPROVED BY:	MBJ
CHECKED BY:	SLG
DRAWN BY:	JPW
DESIGNER:	SLG
G & O JOB NO.:	19232.00
FILE:	P-SITE.DWG



**WATER**

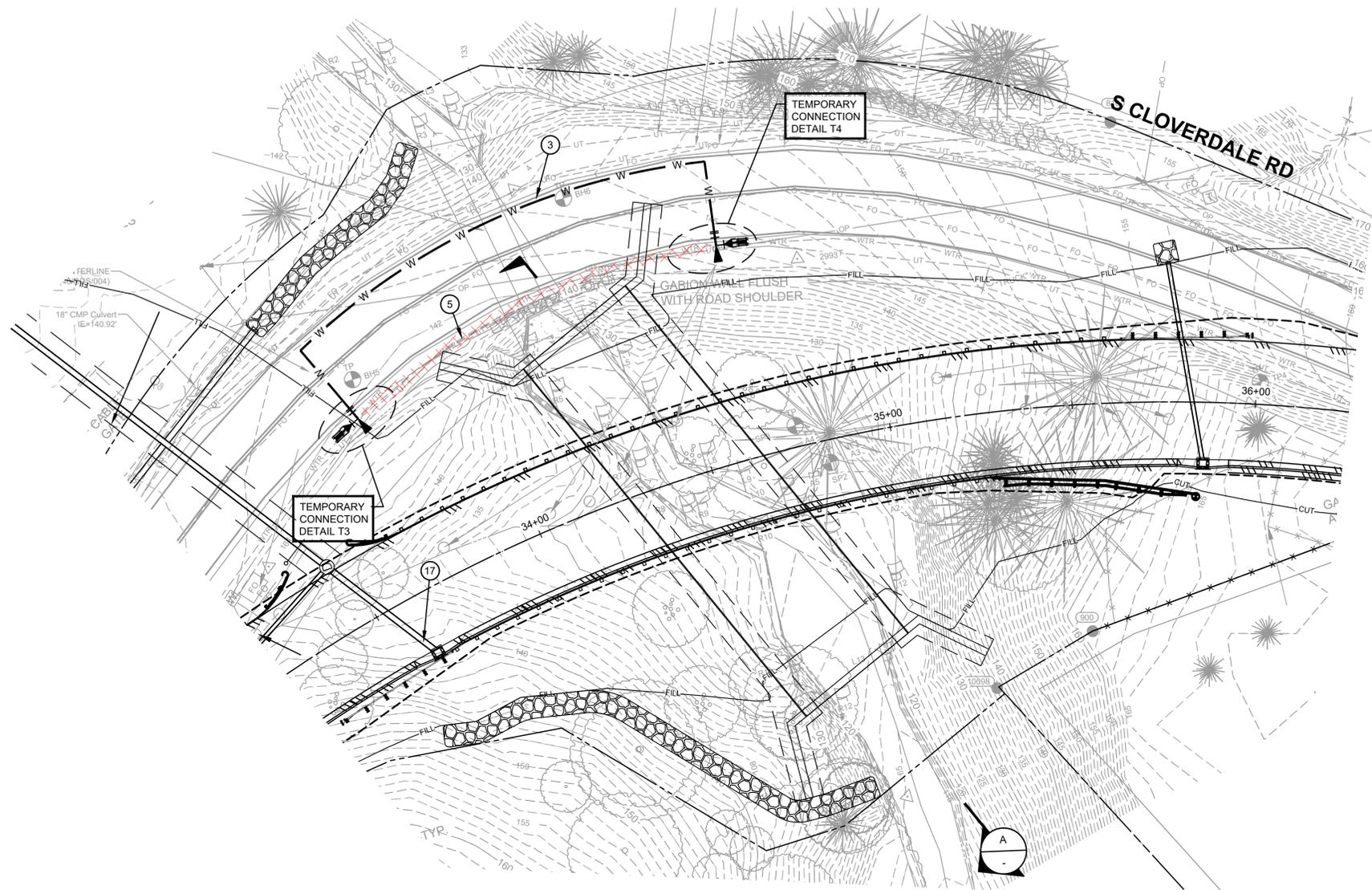
**PROPOSED WATER MAIN STA 26+00-30+00**

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  - CONTRACTOR TO TEMPORARILY CONNECT EXISTING WATER SERVICE TO TEMPORARY WATER MAIN.
  - CONTRACTOR SHALL INSTALL TYPE 1 NEW WATER SERVICE PER DETAIL 1 ON SHEET WD-2.
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  - CONTRACTOR SHALL INSTALL VALVE PER DETAIL 2 ON SHEET WD-1.
  - CONTRACTOR SHALL RELOCATE / ADJUST EX METER BOX TO FINISH GRADE.
  - WATER MAIN SHALL BE INSTALLED UNDER STORM SYSTEM. INSTALL VERTICAL BENDS OR DEFLECT PIPE AS NECESSARY.

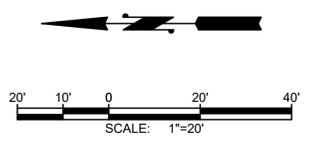


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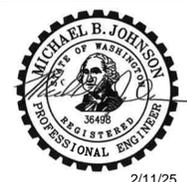
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**BYBEE CREEK  
TEMPORARY WATER MAIN  
STATION 33+00 TO 36+25**  
SCALE: 1"=20'



**Gray & Osborne, Inc.**  
CONSULTING ENGINEERS  
2102 CARRIAGE DRIVE SW,  
BUILDING 1  
OLYMPIA, WA 98502  
(360) 292-7481



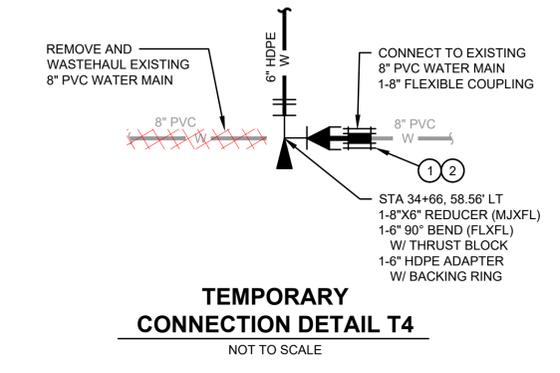
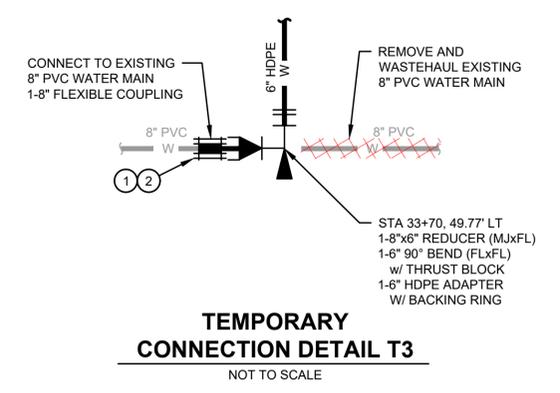
2/11/25



**CITY OF KALAMA**  
**S CLOVERDALE ROAD  
& CONFER ROAD  
WATERLINE**  
COWLITZ COUNTY, WA

**WATER MAIN NOTES:**

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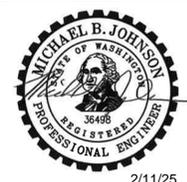
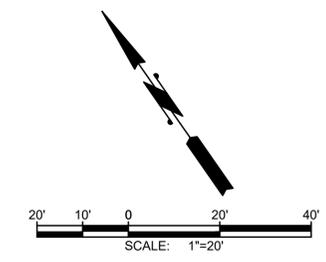


No.	DATE	REVISION

ISSUED FOR:  
  
**BID SET**  
ISSUE DATE: JANUARY 2025  
APPROVED BY: MBJ  
CHECKED BY: SLG  
DRAWN BY: JPW  
DESIGNER: SLG  
G & O JOB NO.: 19232.00  
FILE: P-SITE.DWG



**WATER**  
**TEMPORARY WATER MAIN STA 33+00 TO 36+25**



**CITY OF KALAMA**  
**S CLOVERDALE ROAD & CONFER ROAD WATERLINE**  
 COWLITZ COUNTY, WA

No.	DATE	REVISION

ISSUED FOR:

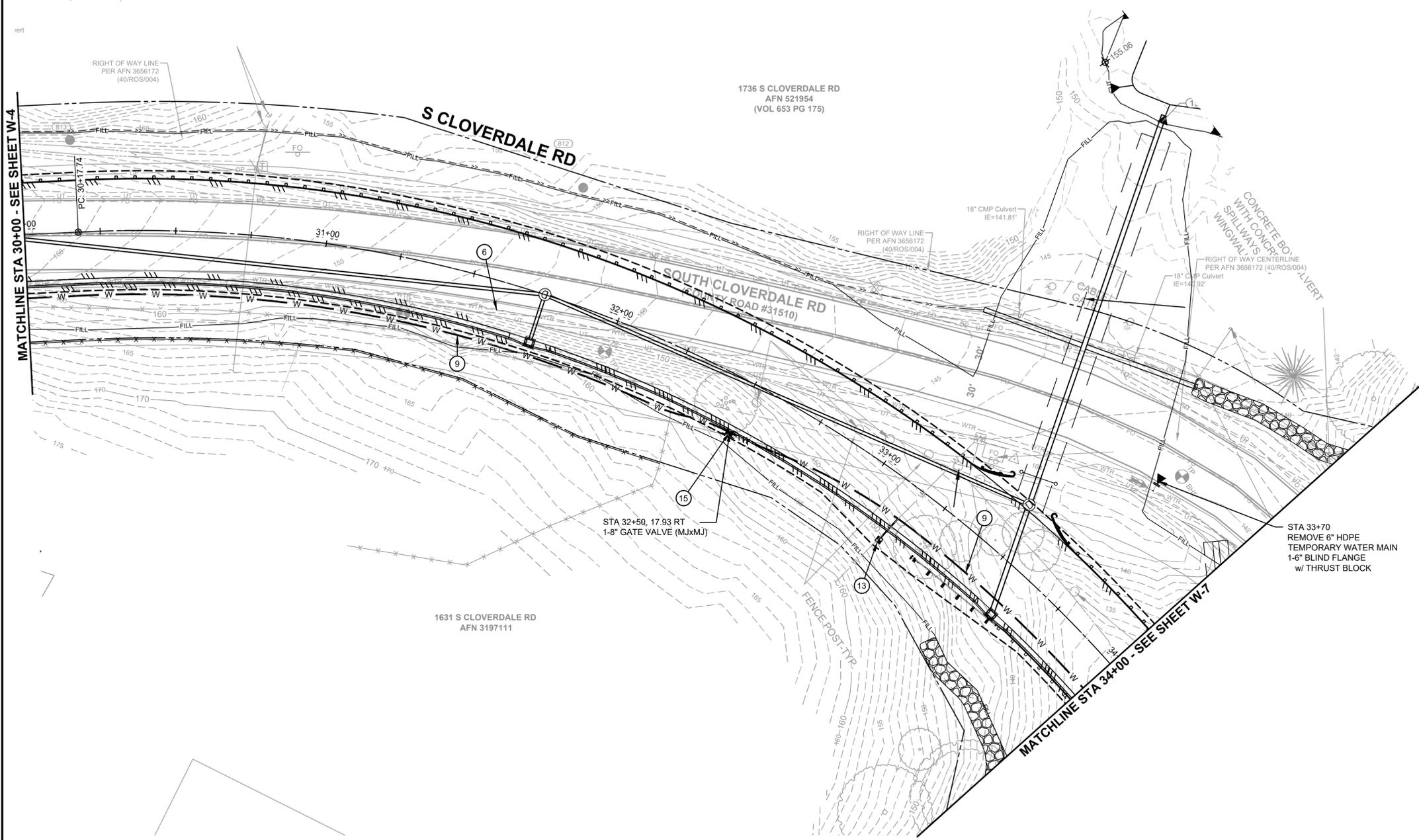
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FILE:	P-SITE.DWG



**WATER**

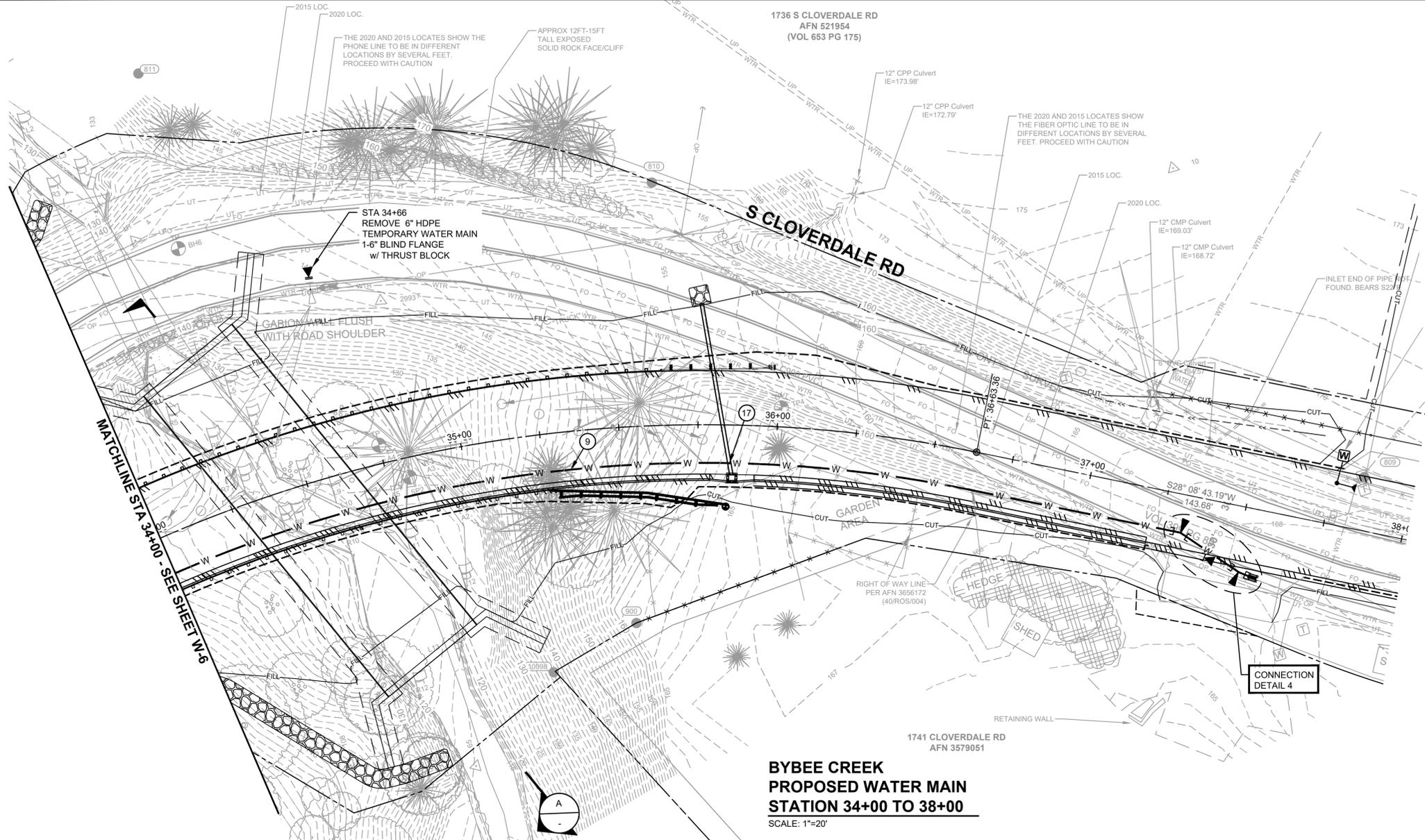
**PROPOSED WATER MAIN STA 30+00-34+00**

DRAWING: **W-6** OF: **9**

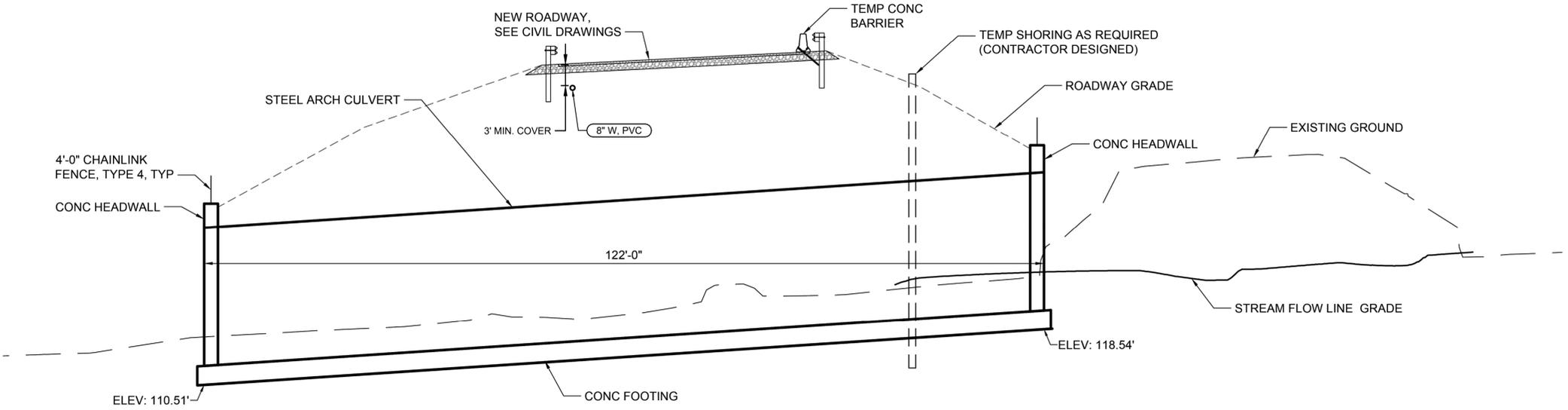


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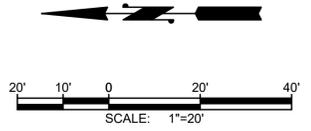


**BYBEE CREEK  
PROPOSED WATER MAIN  
STATION 34+00 TO 38+00**  
SCALE: 1"=20'

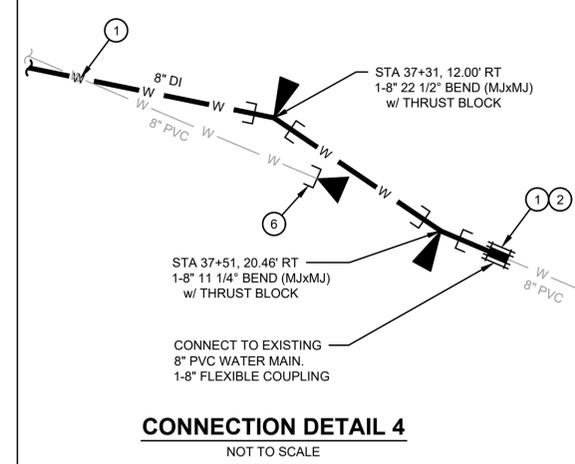


**PROFILE**  
SCALE: 1"=10'

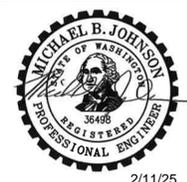
**NOTES:**  
1. WINGWALLS NOT SHOWN FOR CLARITY.



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**Gray & Osborne, Inc.**  
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2102 CARRIAGE DRIVE SW,  
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OLYMPIA, WA 98502  
(360) 292-7481



**CITY OF KALAMA**  
**S CLOVERDALE ROAD  
& CONFER ROAD  
WATERLINE**  
COWLITZ COUNTY, WA

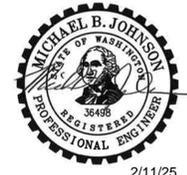
No.	DATE	REVISION

ISSUED FOR:  
**BID SET**  
ISSUE DATE: JANUARY 2025  
APPROVED BY: MBJ  
CHECKED BY: SLG  
DRAWN BY: JPW  
DESIGNER: SLG  
G & O JOB NO.: 19232.00  
FILE: P-SITE.DWG



**WATER**  
**PROPOSED WATER  
MAIN STA 34+00-38+00**

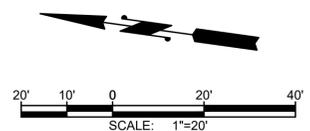
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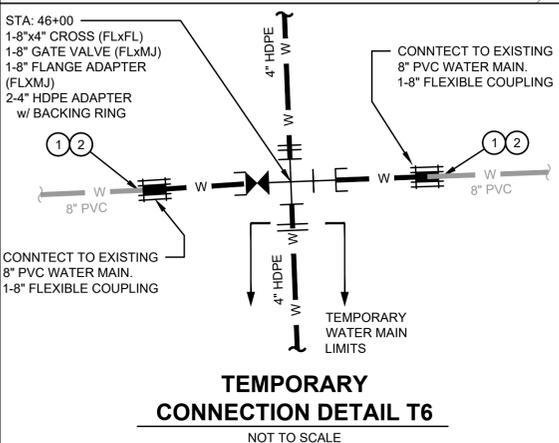
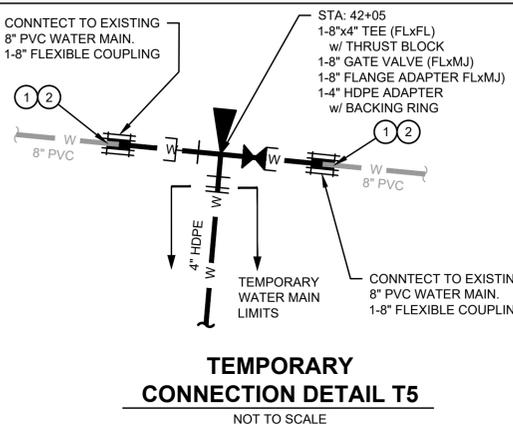
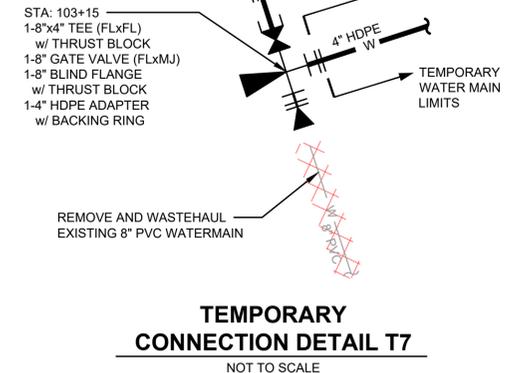
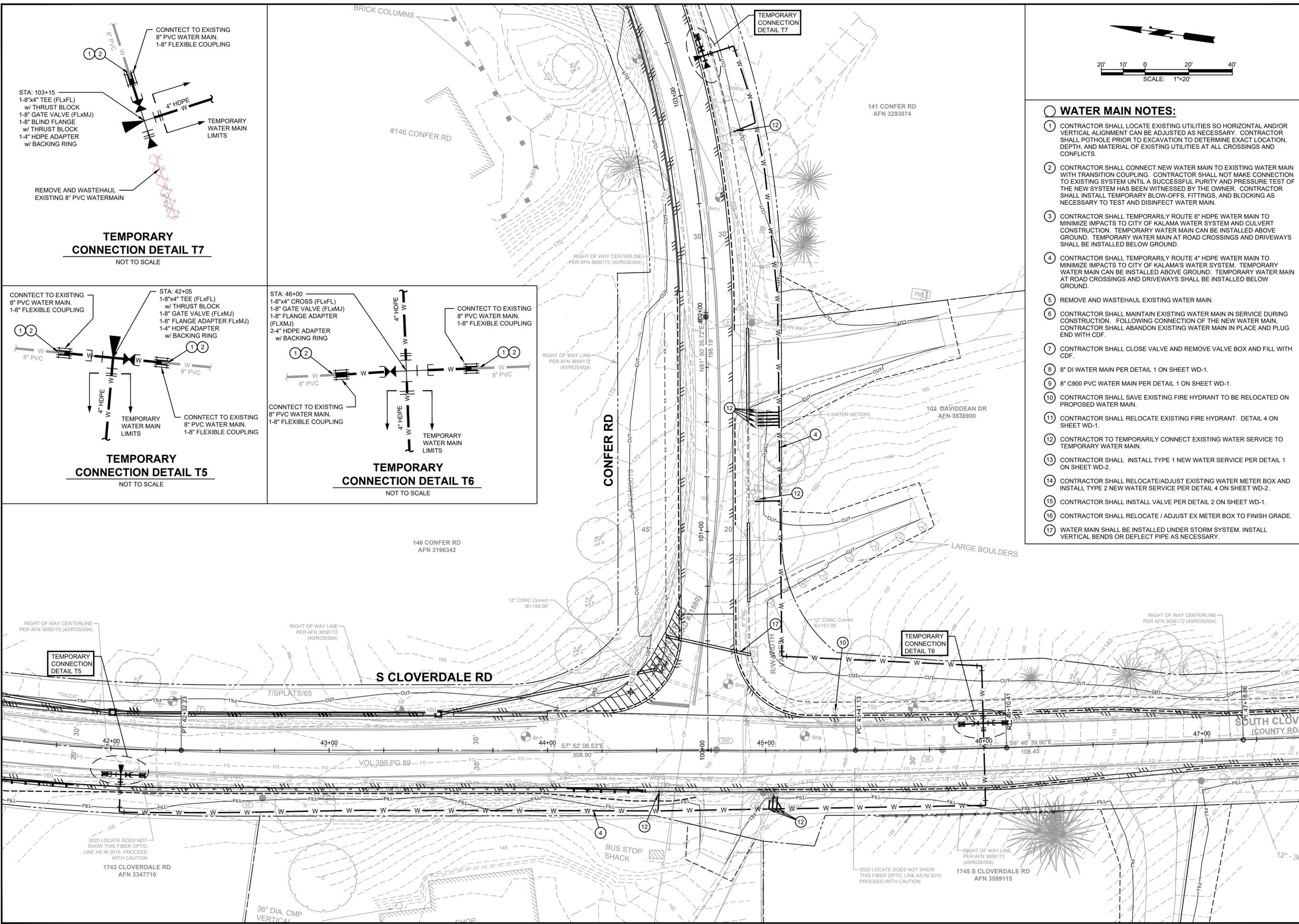


**CITY OF KALAMA**  
**S CLOVERDALE ROAD & CONFER ROAD WATERLINE**  
COWLITZ COUNTY, WA



**WATER MAIN NOTES:**

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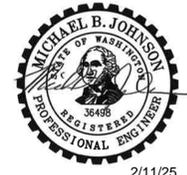
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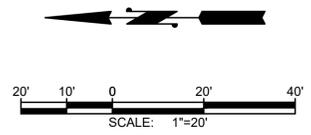
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**WATER**  
**TEMPORARY WATER MAIN INTERSECTION CLOVERDALE & CONFER ROAD**

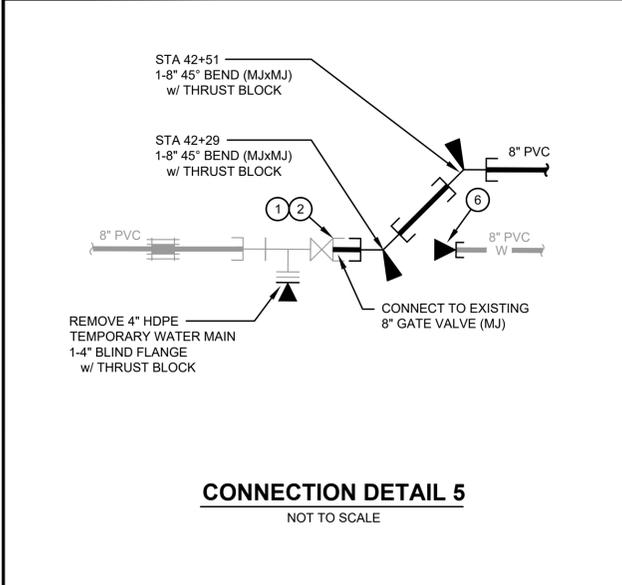


**CITY OF KALAMA**  
**S CLOVERDALE ROAD & CONFER ROAD WATERLINE**  
 COWLITZ COUNTY, WA

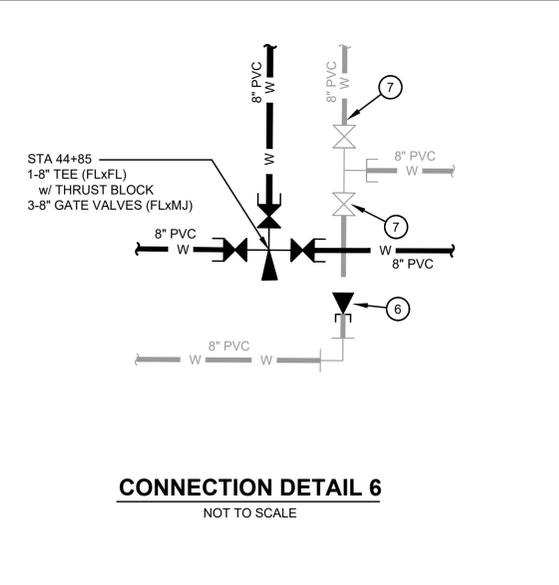


**WATER MAIN NOTES:**

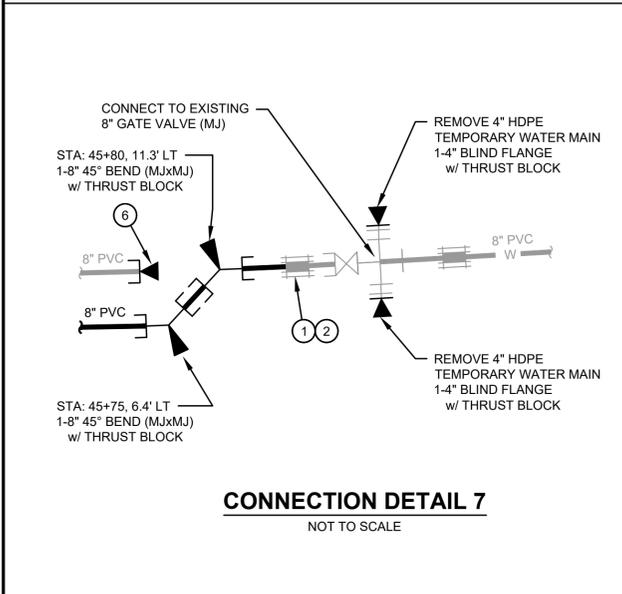
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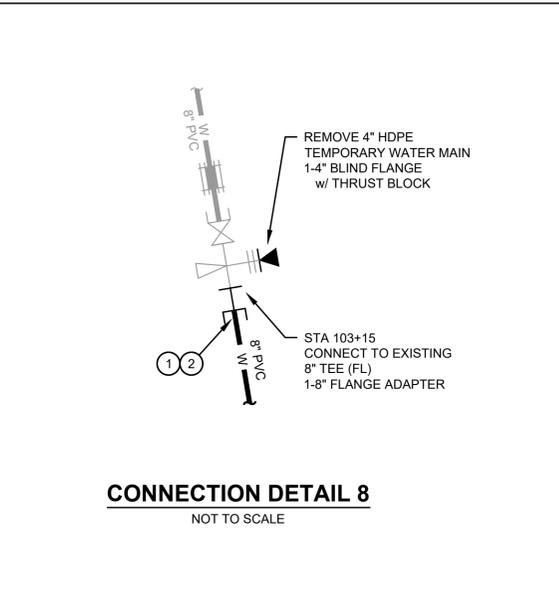
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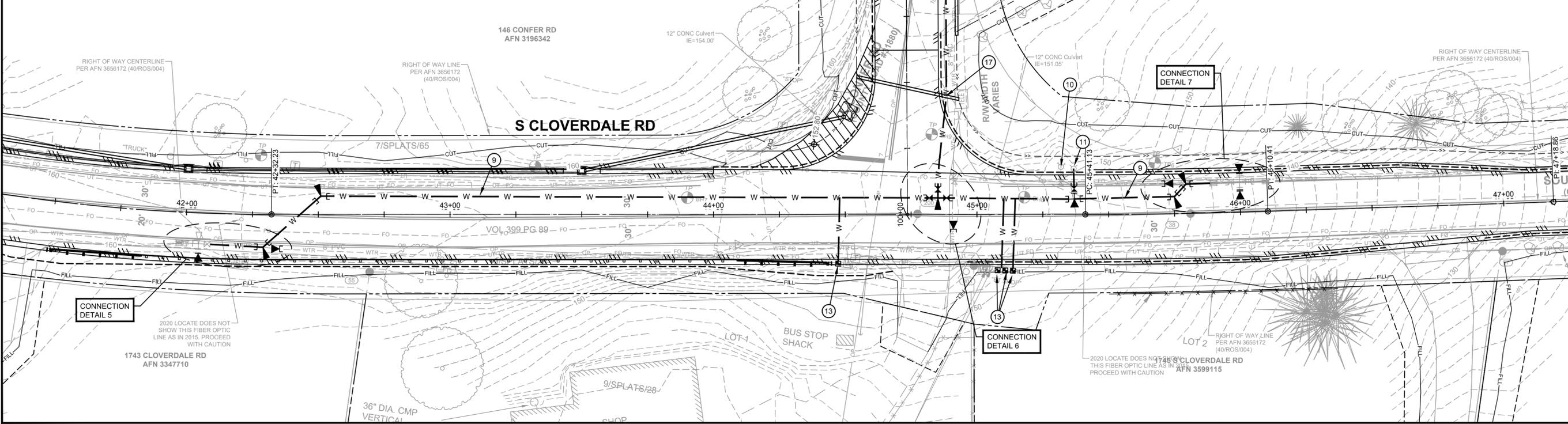
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**CONNECTION DETAIL 7**  
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**CONNECTION DETAIL 8**  
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No.	DATE	REVISION

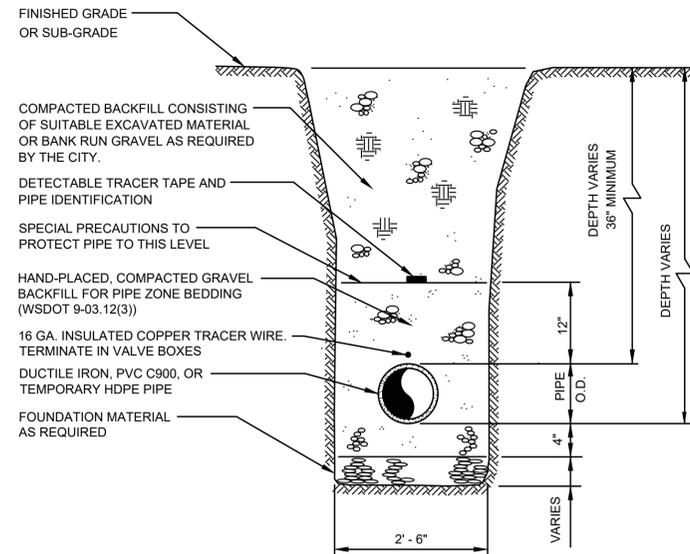
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**WATER**  
**PROPOSED WATER MAIN INTERSECTION CLOVERDALE AND CONFER ROAD**

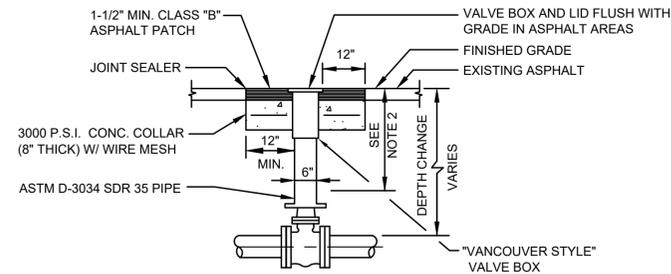
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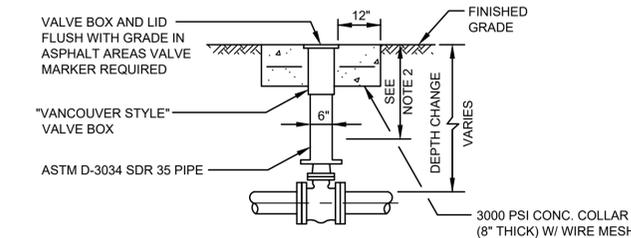
**NOTES:**

- BACKFILL MATERIAL AND COMPACTION SHALL BE IN CONFORMANCE WITH MINIMUM CITY STANDARDS AND/OR THE COWLITZ COUNTY PERMIT REQUIREMENTS, AS MAY BE APPLICABLE.
- PIPE BEDDING FOR DUCTILE IRON PIPE MAYBE SUITABLE NATIVE IF ALLOWED BY THE CITY.

**1 WATER MAIN TRENCH SECTION**  
NOT TO SCALE



**VALVE BOX IN ASPHALT AREA**

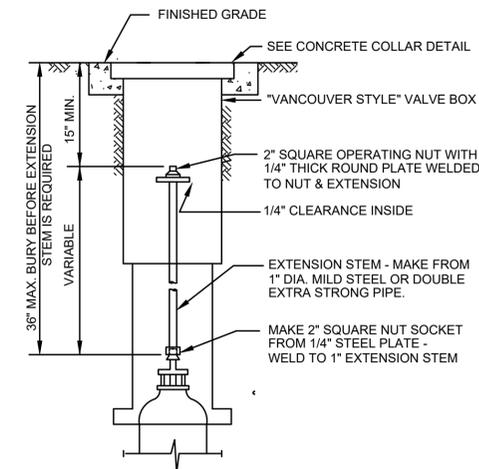


**VALVE BOX IN UNIMPROVED AREA**

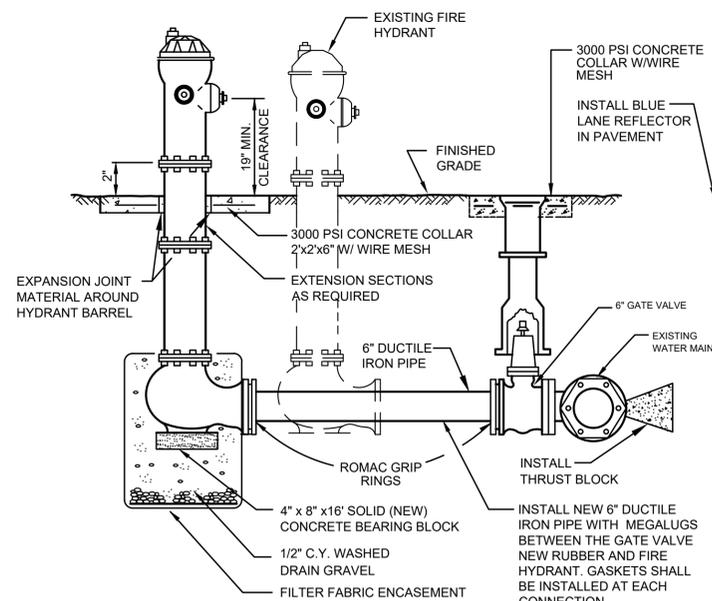
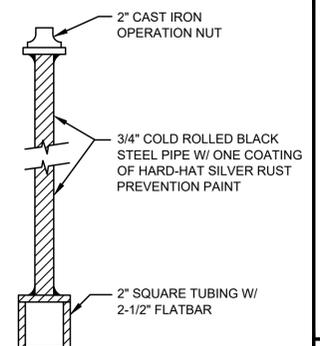
**NOTES:**

- EACH VALVE SHALL BE PROVIDED WITH AN ADJUSTABLE CAST IRON VALVE BOX OF 5 INCHES (5") INSIDE DIAMETER. VALVE BOXES SHALL HAVE A TOP SECTION WITH AN EIGHTEEN INCH (18") MIN. LENGTH. THE VALVE BOX SHALL BE "VANCOUVER STYLE" OR APPROVED EQUAL.
- 15" MINIMUM, 36" MAXIMUM FOR OPERATOR NUT. EXTENSION MAY BE REQUIRED.

**2 VALVE BOX ADJUSTMENT**  
NOT TO SCALE



**3 WATER VALVE STEM EXTENSION**  
NOT TO SCALE



**NOTES:**

- ALL RELOCATED FIRE HYDRANTS SHALL HAVE 4 1/2" PUMPER PORTS
- PROVIDE 15' OF 12" (MIN.) STORM PIPE IN ANY ADJACENT DITCH SECTION. RIP-RAP ENDS AND FILL ABANDONED DITCH SECTION
- REPAINT FIRE HYDRANT SAFETY YELLOW, BASE No. 288-14 COLOR CODE AX-6732, C-24, T-4432
- PROVIDE MIN. 3' - 0" CLEARANCE AND LEVEL AREA AROUND RELOCATED HYDRANT

**4 FIRE HYDRANT RELOCATION**  
NOT TO SCALE



No.	DATE	REVISION

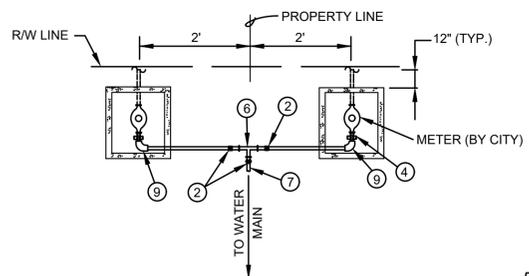
ISSUED FOR:

<b>BID SET</b>	
ISSUE DATE:	JANUARY 2025
APPROVED BY:	MBJ
CHECKED BY:	SLG
DRAWN BY:	JPW
DESIGNER:	SLG
G & O JOB NO.:	19232.00
FILE:	DETAILS.DWG



**WATER DETAILS**

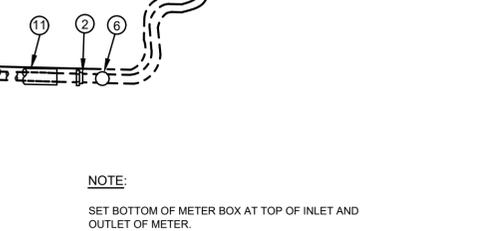
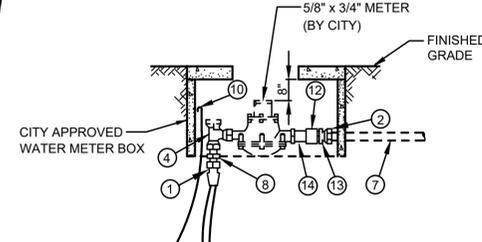
**WATER DETAILS**



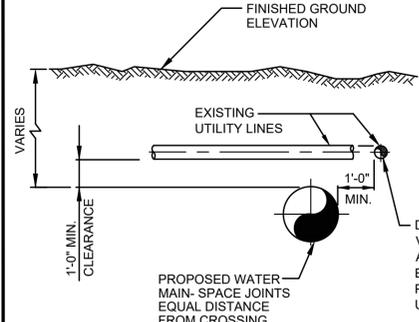
**WATER SERVICE DETAIL 1" AND SMALLER**

**LEGEND**

- ① 1" OR 3/4" FEMALE "INSTA-TITE" FIP X IPS MUELLER H15456
- ② 1" OR 3/4" MALE "INSTA-TITE" FIP X IPS MUELLER H15456
- ③ 1" OR 3/4" MIP X MIP CORP STOP EQUAL TO MUELLER H100713
- ④ 1" OR 3/4" ANGLE OR STRAIGHT METER STOP WITH LOCKING RING
- ⑤ ROMAC SADDLE SINGLE STRAP FOR PIPE DIAMETERS LESS THAN 10" AND DOUBLE STRAP FOR PIPE DIAMETERS 10" AND GREATER.
- ⑥ 1 X 3/4" X 3/4" BRASS TEE (OPTIONAL)
- ⑦ 1" (DOUBLE SERVICE) HIGH MOLECULAR (200 PSI) IPS "POLY" PIPE (LENGTH AS REQUIRED)
- ⑧ 1" OR 3/4" BRASS NIPPLE (LENGTH AS REQUIRED)
- ⑨ 1" OR 3/4" BASS STREET ELL
- ⑩ 14 GAUGE WIRE FROM MAINLINE TAP TO METER BOX AND EXPOSE 6" MINIMUM IN BOX (RUN INSIDE 2" GALVANIZED STEEL GUARD CONDUIT WHERE APPLICABLE)
- ⑪ INSTALL SERVICE LINE IN 2" PVC (SCH-80) SLEEVE CASING WHEN CROSSING ROADWAY (BENEATH PAVEMENT SECTION)
- ⑫ 1" OR 3/4" SWING CHECK
- ⑬ 1" OR 3/4" X 1" BRASS BUSHING (AS NECESSARY)
- ⑭ 1" OR 3/4" X 1" TRAILPIECE (FORD)
- ⑮ CARSON INDUSTRIES 1324-12 METER BOX BODY WITH 1324-5B COVER



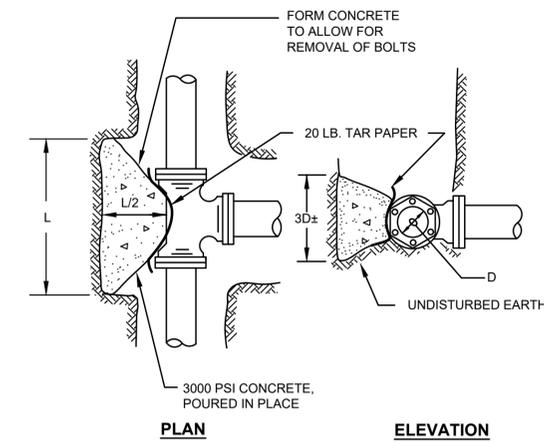
**1 TYPE 1 NEW WATER SERVICE**  
NOT TO SCALE



**NOTE:**  
CONCRETE ENCASEMENT (BEDDING) SHALL BE UTILIZED, IF APPROVED BY THE CITY, AT LOCALIZED UTILITY CROSSING IF MINIMUM PIPE SEPARATION (ELEVATION) CANNOT BE MAINTAINED / ACHIEVED.

**2 TYPICAL UTILITY CROSSING**  
NOT TO SCALE

MINIMUM BEARING AREA TABLE					
FITTING D	TEE	90	45°	22 1/2°	11 1/4°
6"	4 SQ. FT.	6 SQ. FT.	3 SQ. FT.	2 SQ. FT.	2 SQ. FT.
8"	7 SQ. FT.	10 SQ. FT.	6 SQ. FT.	3 SQ. FT.	2 SQ. FT.



**NOTE:**  
1. BEARING AREA TABLE BASED ON 250 PSI PRESSURE AND 2000 PSF SOIL BEARING. IF PRESSURE IS GREATER OR SOIL BEARING IS LESS, THE THRUST BLOCK SIZE SHALL BE INCREASED.  
2. THIS TABLE REPRESENTS THE "MINIMUM" CONSTRUCTION STANDARDS. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE APPROPRIATE SIZE OF ALL THRUST BLOCKS BASED ON EXISTING AND LOCAL CONDITIONS.

**3 CONCRETE THRUST BLOCK**  
NOT TO SCALE

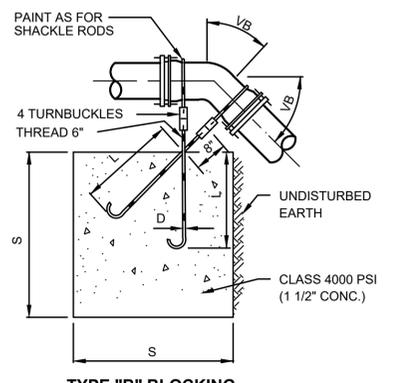
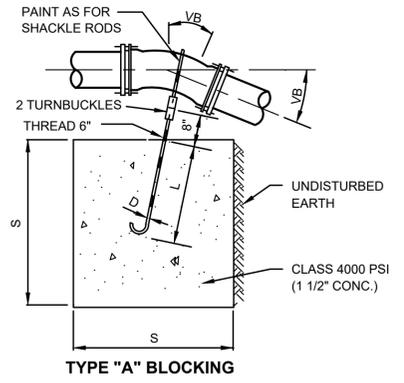
**WATER SERVICE SCHEULDE**

SHEET	STATION	RT/LT	RELOCATE/ ADJUST METER BOX	NEW METER BOX	WATER SERVICE	
2	13+70	LT	RELOCATE/ ADJUST	-	-	-
2	13+96	RT	RELOCATE/ ADJUST	-	-	-
3/W-2	16+25	LT	RELOCATE/ ADJUST	-	NEW	TYPE 2
3/W-2	16+25	LT	RELOCATE/ ADJUST	-	NEW	TYPE 2
3/W-2	18+12	LT	RELOCATE/ ADJUST	-	-	-
3	20+78	LT	RELOCATE/ ADJUST	-	-	-
3	21+13	LT	RELOCATE/ ADJUST	-	-	-
4	22+30	RT	RELOCATE/ ADJUST	-	-	-
4	22+30	RT	RELOCATE/ ADJUST	-	-	-
4/W-3	23+90	LT	RELOCATE/ ADJUST	-	EXTEND	TYPE 2
4/W-3	23+90	LT	RELOCATE/ ADJUST	-	EXTEND	TYPE 2
4/W-3	25+13	RT	RELOCATE/ ADJUST	-	-	-
4/W-3	25+13	RT	RELOCATE/ ADJUST	-	-	-
4/W-3	25+13	RT	RELOCATE/ ADJUST	-	-	-
4/W-3	25+26	RT	RELOCATE/ ADJUST	-	-	-
4/W-3	25+26	RT	RELOCATE/ ADJUST	-	-	-
4/W-4	26+73	RT	RELOCATE/ ADJUST	-	NEW	TYPE 2
6/W-6	33+30	LT	-	NEW	NEW	TYPE 1
6	37+71	RT	RELOCATE/ ADJUST	-	-	-
6	37+82	LT	RELOCATE/ ADJUST	-	-	-
6	38+50	RT	RELOCATE/ ADJUST	-	-	-
7	40+13	RT	RELOCATE/ ADJUST	-	-	-
7	40+83	RT	RELOCATE/ ADJUST	-	-	-
9/W-9	44+58	RT	-	NEW	NEW	TYPE 1
9/W-9	45+15	RT	-	NEW	NEW	TYPE 1
9/W-9	45+15	RT	-	NEW	NEW	TYPE 1
9/W-9	45+15	RT	-	NEW	NEW	TYPE 1
9/W-9	45+15	RT	-	NEW	NEW	TYPE 1
9/W-9	101+50	RT	-	NEW	NEW	TYPE 1
9/W-9	101+50	RT	-	NEW	NEW	TYPE 1
9/W-9	101+50	RT	-	NEW	NEW	TYPE 1
9/W-9	101+50	RT	-	NEW	NEW	TYPE 1
9/W-9	101+50	RT	-	NEW	NEW	TYPE 1
9/W-9	101+50	RT	-	NEW	NEW	TYPE 1
9/W-9	101+50	RT	-	NEW	NEW	TYPE 1
9/W-9	102+80	RT	-	NEW	NEW	TYPE 1

TYPE "A" BLOCKING FOR 11 1/4"-22 1/2"-30° VERTICAL BENDS						
PIPE SIZE NOMINAL DIAMETER-INCHES	TEST PRESSURE PSI	VB DEGREES	No. OF CU. FT. OF CONC. BLOCKING	S SIDE OF CUBE LIN. FT.	D DIAM. OF SHACKLE RODS (2) INCHES	L DEPTH OF RODS IN CONCRETE LIN. FT.
4"	300	11 1/4	8	2	5/8"	1.5
		22 1/2	11	2.2		2.0
		30	17	2.6		
6"	300	11 1/4	11	2.2	5/8"	2.0
		22 1/2	25	2.9		
		30	41	3.5		
8"	300	11 1/4	16	2.5	5/8"	2.0
		22 1/2	47	3.6		
		30	70	4.1	3/4"	2.5

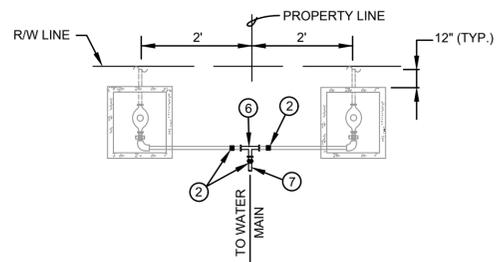
  

TYPE "B" BLOCKING FOR - 45° VERTICAL BENDS						
PIPE SIZE	TEST PRESSURE	VB	S	D	L	
4"	300	45	30	3.1	5/8"	2.0
6"			68	4.1		
8"			123	5.0		



THIS TABLE REPRESENTS THE "MINIMUM" CONSTRUCTION STANDARD. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE APPROPRIATE SIZE OF ALL ANCHOR BLOCKS BASED ON EXISTING AND LOCAL CONDITIONS. FITTINGS SHALL ALSO BE RESTRAINED.

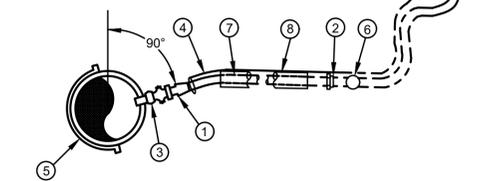
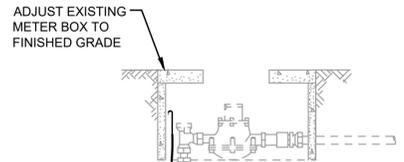
**5 VERTICAL ANCHOR BLOCK**  
NOT TO SCALE



**WATER SERVICE DETAIL 1" AND SMALLER**

**LEGEND**

- ① 1" OR 3/4" FEMALE "INSTA-TITE" FIP X IPS MUELLER H15456
- ② 1" OR 3/4" MALE "INSTA-TITE" FIP X IPS MUELLER H15456
- ③ 1" OR 3/4" MIP X MIP CORP STOP EQUAL TO MUELLER H100713
- ④ 14 GAUGE WIRE FROM MAINLINE TAP TO METER BOX AND EXPOSE 6" MINIMUM IN BOX (RUN INSIDE 2" GALVANIZED STEEL GUARD CONDUIT WHERE APPLICABLE)
- ⑤ ROMAC SADDLE SINGLE STRAP FOR PIPE DIAMETERS LESS THAN 10" AND DOUBLE STRAP FOR PIPE DIAMETERS 10" AND GREATER.
- ⑥ 1 X 3/4" X 3/4" BRASS TEE (OPTIONAL)
- ⑦ 1" (DOUBLE SERVICE) HIGH MOLECULAR (200 PSI) IPS "POLY" PIPE (LENGTH AS REQUIRED)
- ⑧ NSTALL SERVICE LINE IN 2" PVC (SCH-80) SLEEVE CASING WHEN CROSSING ROADWAY (BENEATH PAVEMENT SECTION)



**NOTE:**  
SET BOTTOM OF METER BOX AT TOP OF INLET AND OUTLET OF METER.

**4 TYPE 2 RELOCATE AND ADJUST WATER SERVICE**  
NOT TO SCALE

No.	DATE	REVISION

ISSUED FOR:  
**BID SET**  
ISSUE DATE: JANUARY 2025  
APPROVED BY: MBJ  
CHECKED BY: SLG  
DRAWN BY: JPW  
DESIGNER: SLG  
G & O JOB NO.: 19232.00  
FILE: DETAILS.DWG



**WATER DETAILS**

**WATER DETAILS**

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