

GENERAL NOTES

- 1. THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA.
- 2. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPALITY OR PUBLIC AGENCY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
- 3. ALL ELEVATIONS AND OFFSETS SHOWN IN THE PLAN SHALL BE VERIFIED IN THE FIELD.
- 4. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
- 5. THE COST OF GRADING, CONSTRUCTING, MAINTAINING, AND REMOVING TEMPORARY ACCESS IS INCIDENTAL TO THE CONTRACT.
- 6. HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY-IN
- 7. FINISHED SUPERELEVATIONS TO MATCH EXISTING SUPERELEVATIONS.

EROSION CONTROL GENERAL NOTES

- 1. STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION.
- 2. QUANTITIES FOR EROSION CONTROL ITEMS HAVE BEEN INCLUDED IN THE PROJECT, BUT MAY NOT BE REPRESENTED ON THE PLAN. THE LOCATIONS AND TYPE OF EROSION CONTROL ITEMS WILL BE DETERMINED BY THE CONTRACTOR'S ECIP AND BY THE ENGINEER. EROSION CONTROL ITEMS SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE ITEMS IS NO LONGER REQUIRED.
- 3. DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TOPSOILED AND COVERED WITH EROSION MAT. SEE MISCELLANEOUS QUANTITIES FOR DETAILS.

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANCE (PERCENT)			SLOPE RANCE (PERCENT)			SLOPE RANCE (PERCENT)			SLOPE RANCE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	0.08	0.16	0.22	0.12	0.20	0.27	0.15	0.24	0.33	0.19	0.28	0.38
	0.22	0.30	0.38	0.26	0.34	0.44	0.30	0.37	0.50	0.34	0.41	0.56
MEDIAN STRIP TURF	0.19	0.20	0.24	0.19	0.22	0.26	0.20	0.23	0.30	0.20	0.25	0.30
	0.24	0.26	0.30	0.25	0.28	0.33	0.26	0.30	0.37	0.27	0.32	0.40
SIDE SLOPE TURF	0.25	0.27	0.25	0.30		0.27			0.28			0.30
	0.34	0.36	0.32			0.34			0.36			0.38
PAVEMENT:												
ASPHALT	0.70 - 0.95											
CONCRETE	0.80 - 0.95											
BRICK	0.70 -0.80											
DRIVES, WALKS	0.75 - 0.85											
ROOFS	0.75 - 0.95											
GRAVEL ROADS, SHOULDERS	0.40 - 0.60											

TOTAL PROJECT AREA = 45.17 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.84 ACRES

OTHER AGENCIES

DNR CONTACT

DNR NC REGION
JON SIMONSEN
107 SUTLIFF AVE
RHINELANDER, WI 54501
PHONE: (715) 367-1936
EMAIL: JONATHAN.SIMONSEN@WISCONSIN.GOV

UTILITIES

GAS/PETROLEUM

ANR PIPELINE CO - GAS/PETROLEUM
TODD BRISTER
W3925 PIPELINE LANE
EDEN, WI 53091
PHONE: (920) 477-2235
EMAIL: TODD_BRISTER@TRANSCANADA.COM

COMMUNICATIONS

SPECTRUM - COMMUNICATION LINE
SCOTT BEASTER
385 WOODWARD AVE
IRON MOUNTAIN, MI 498020
PHONE: (906) 630-7795
EMAIL: SCOTT.BEASTER@CHARTER.COM

GAS/PETROLEUM

FLORENCE UTILITY COMMISION - GAS/PETROLEUM
KEVIN INMAN
501 SPRING AVE
FLORENCE, WI 54121
PHONE: (715) 528-3330
EMAIL: KINMAN@FLORWIORG

ELECTRICITY-TRANSMISSION

ATC MANAGEMENT, INC - ELECTRICTY-TRANSMISSION
DOUG VOSBERG
2489 RINDEN RD
COTTAGE GROVE, WI 53527
PHONE: (608) 877-7650
EMAIL: DVOSBERG@ATCLLC.COM

ELECTRICITY

FLORENCE UTILITY COMMISION - ELECTRICITY
KEVIN INMAN
501 SPRING AVE
FLORENCE, WI 54121
PHONE: (715) 528-3330
EMAIL: KINMAN@WPPIENERGY.ORG

COMMUNICATIONS

NSIGHT TELSOURCES - COMMUNICATION LINE
RICK VINCENT
P.O. BOX 19079
GREEN BAY, WI 54307-9079
PHONE: (920) 617-7316
EMAIL: RICK.VINCENT@NSIGHT.COM



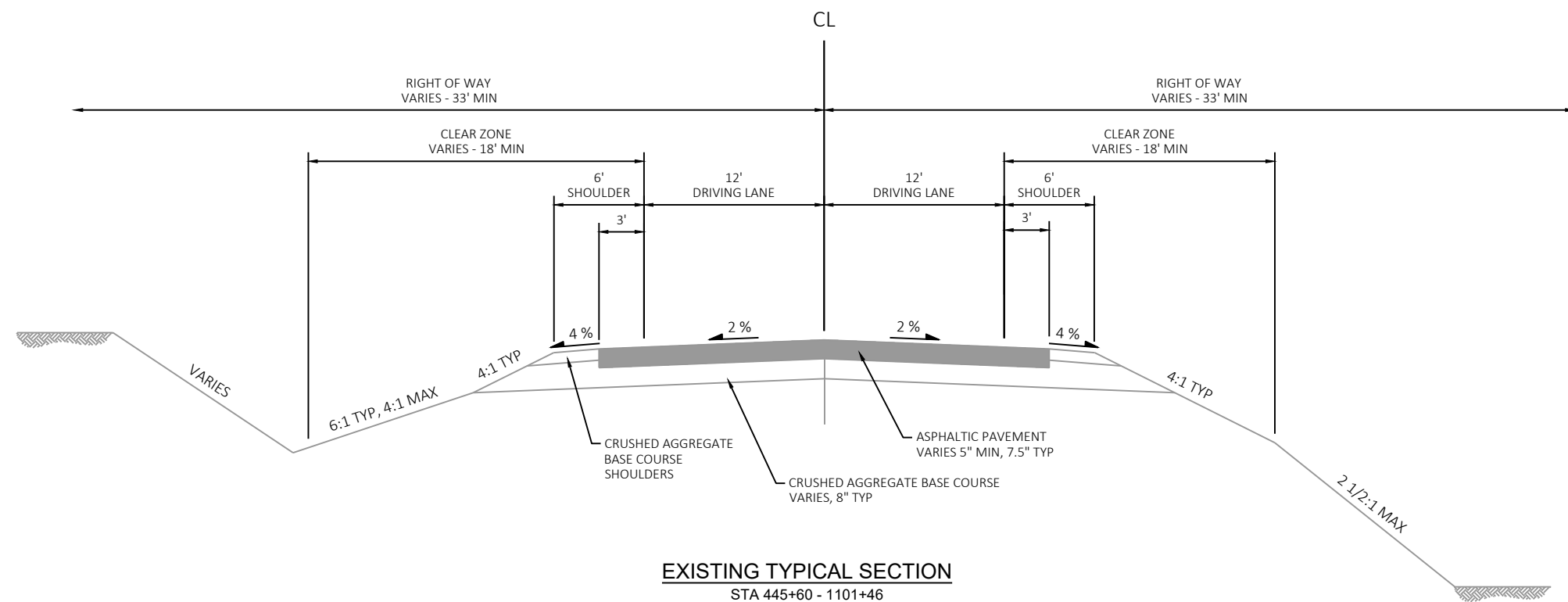
Dial 811 or (800)242-8511
www.DiggersHotline.com

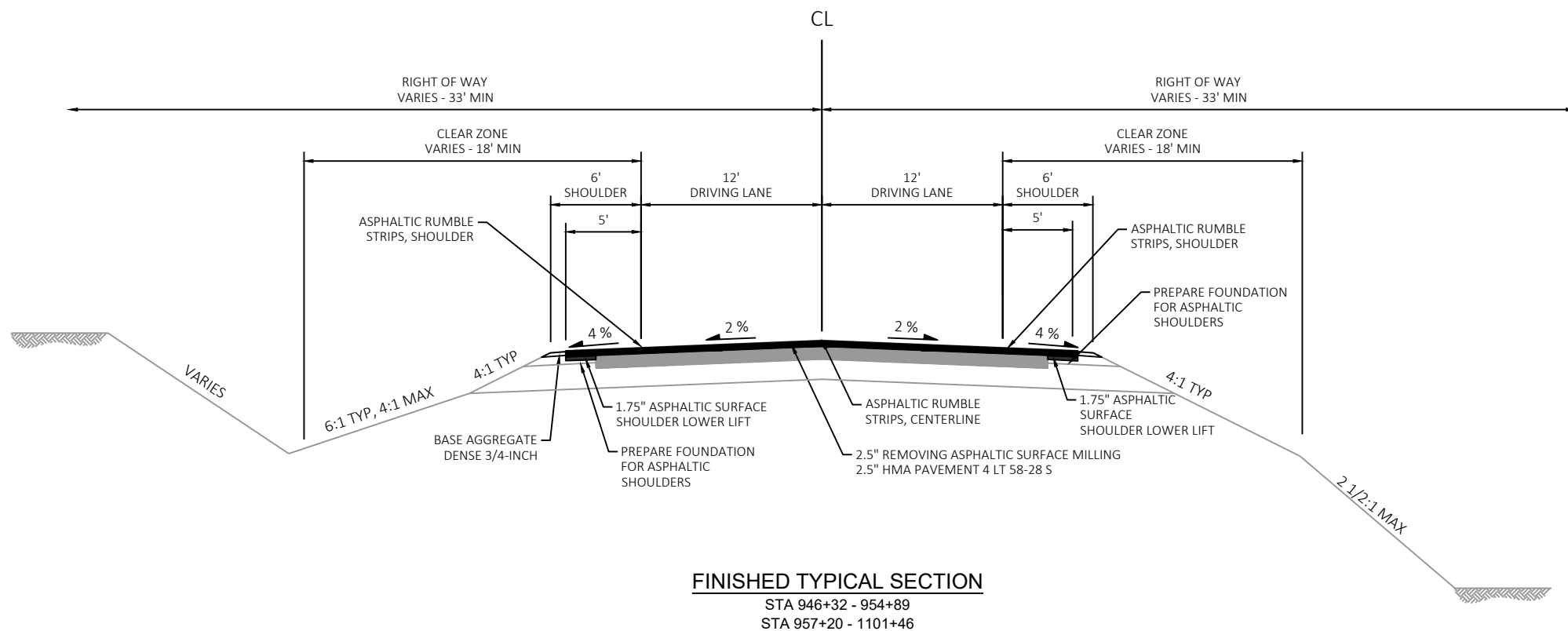
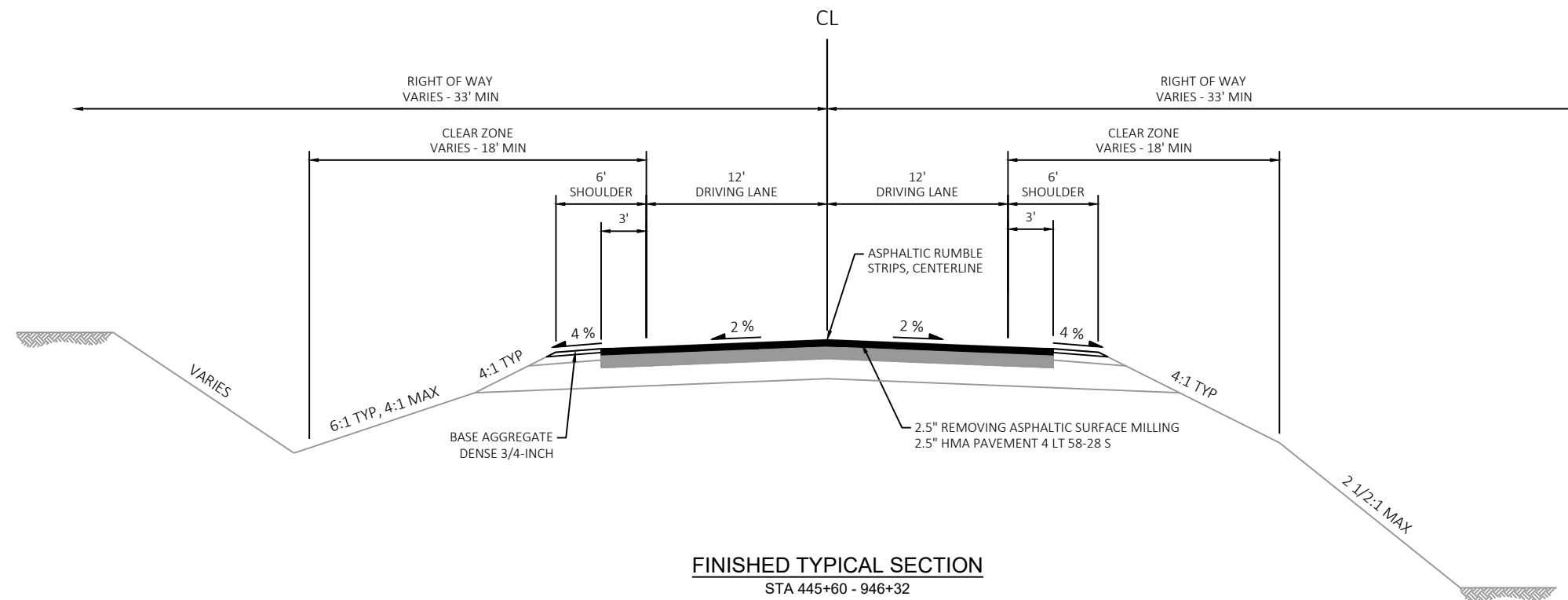
ORDER OF SECTION 2 SHEETS

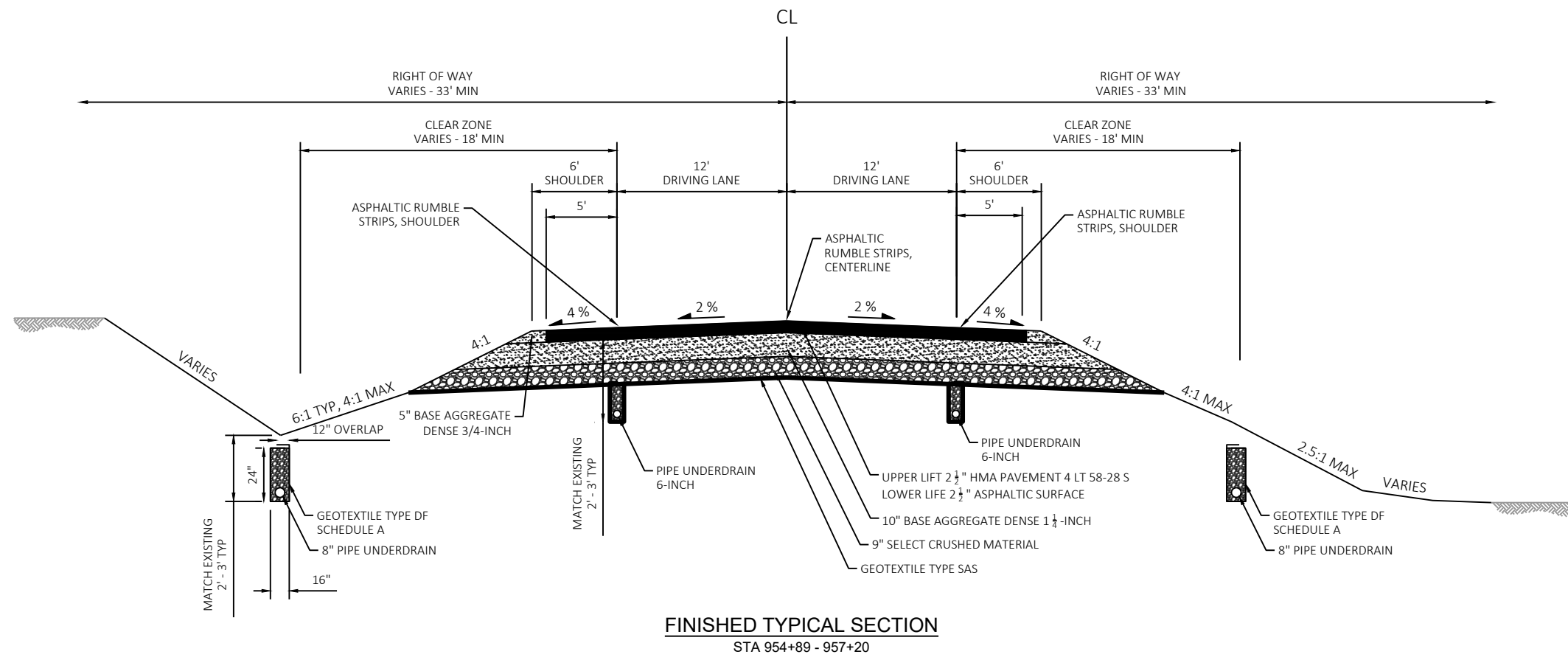
GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
CULVERT DETAIL
MGS DETAIL
ALIGNMENT DETAILS

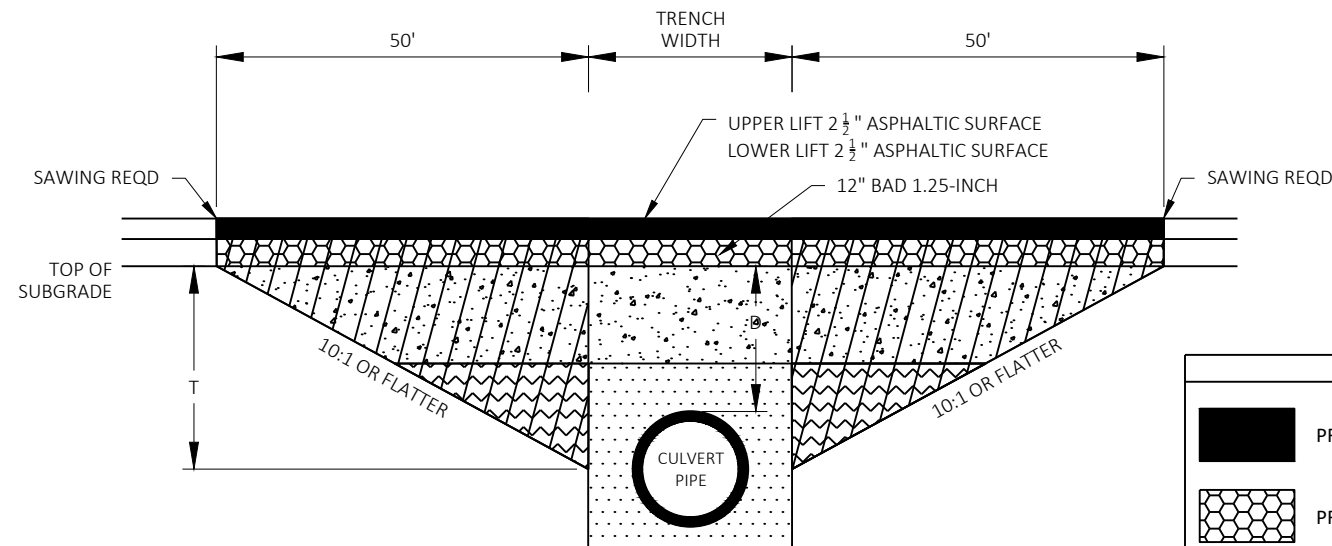


PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	PROJECT OVERVIEW	SHEET	E
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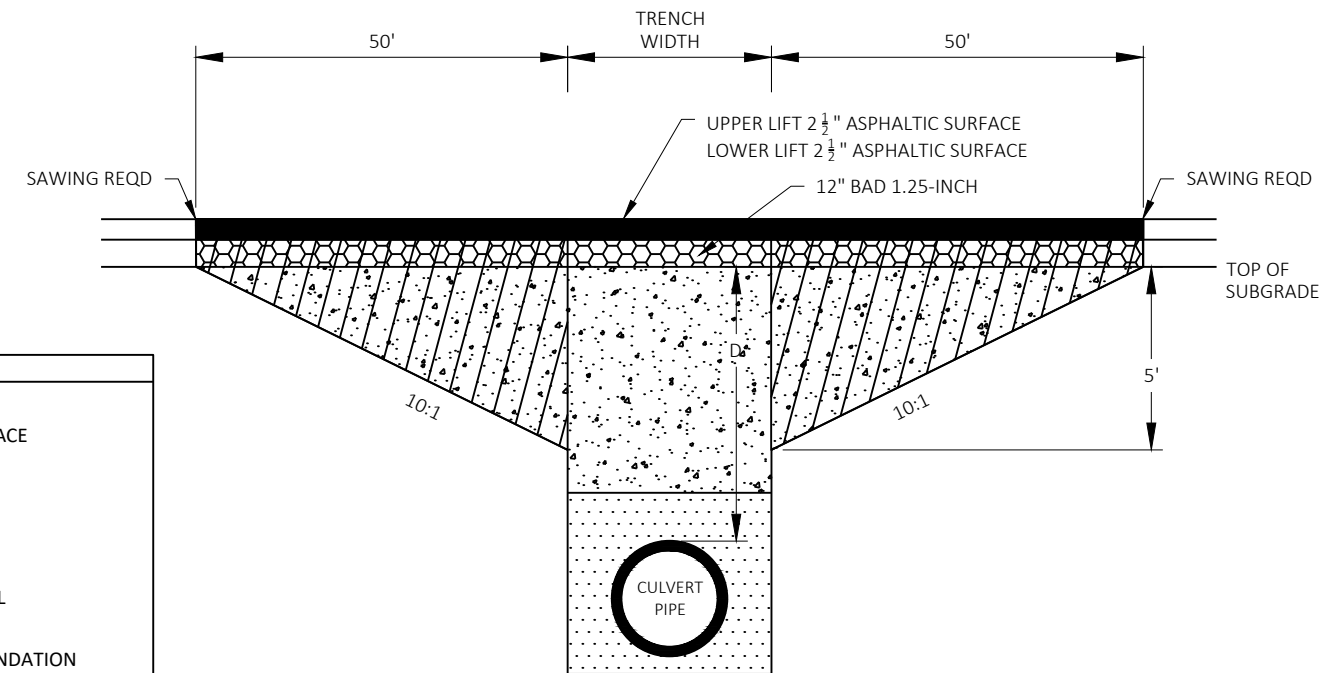
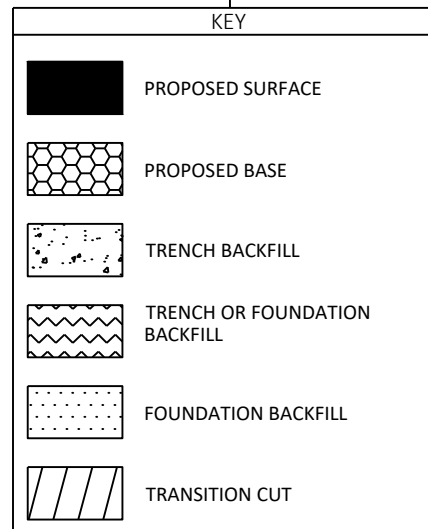






DEPTH D < 6 FT

TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.



DEPTH D ≥ 6 FT

NOTES

TRANSITION CUT IS PAID AS EXCAVATION COMMON.

TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.

BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.

PERFORM CULVERT PIPE INSTALLATION BEFORE MILLING AND PAVING.

CULVERT PIPE TRANSITION

ROUTE	STA (CL)	CULVERT	DEPTH "D" (FT)	PIPE DIA (IN)	EXISTING PAVEMENT DEPTH (IN)
STH 70	605+98	19070000064	4	36	10 1/4
STH 70	631+64	19070000065	3	24	8 1/2
STH 70	682+43	19070000068	8	30	8 1/4
STH 70	707+87	19070000069	4	24	9 1/8
STH 70	748+44	19070000071	4	24	8 5/8
STH 70	798+73	19070000072	3	HE 63x98	9 1/4
STH 70	887+91	19070000076	6	HE 58x91	10 1/4
STH 70	955+42	19070000079	6	42	10 1/4
STH 70	1025+52	19070000083	5	24	7 5/8
STH 70	1088+05	19070000087	2	(2) HE 48x76	12 1/2

REVISED 01/2021

PROJECT NO: 9100-05-72

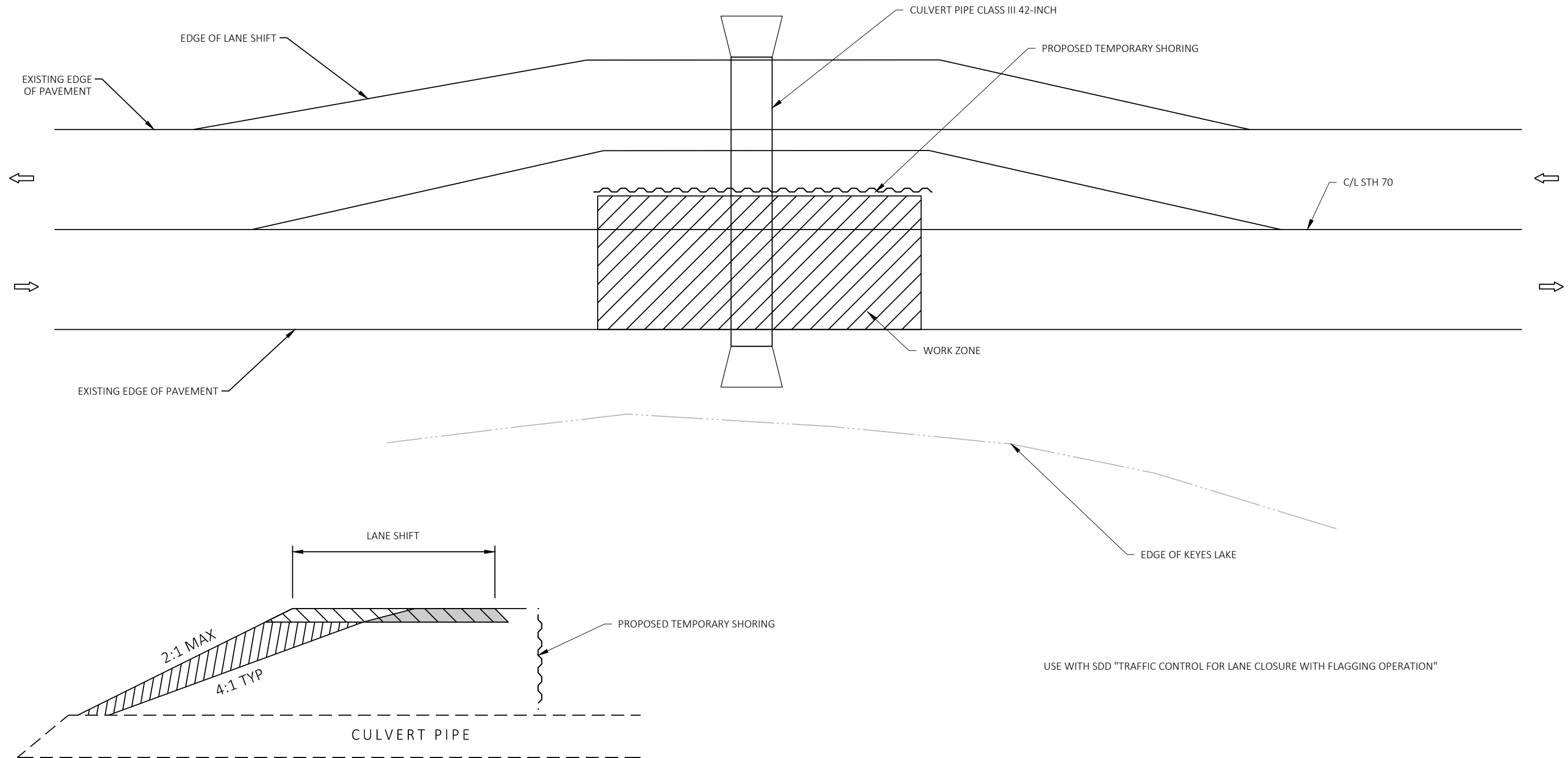
HWY: STH 70

COUNTY: FLORENCE

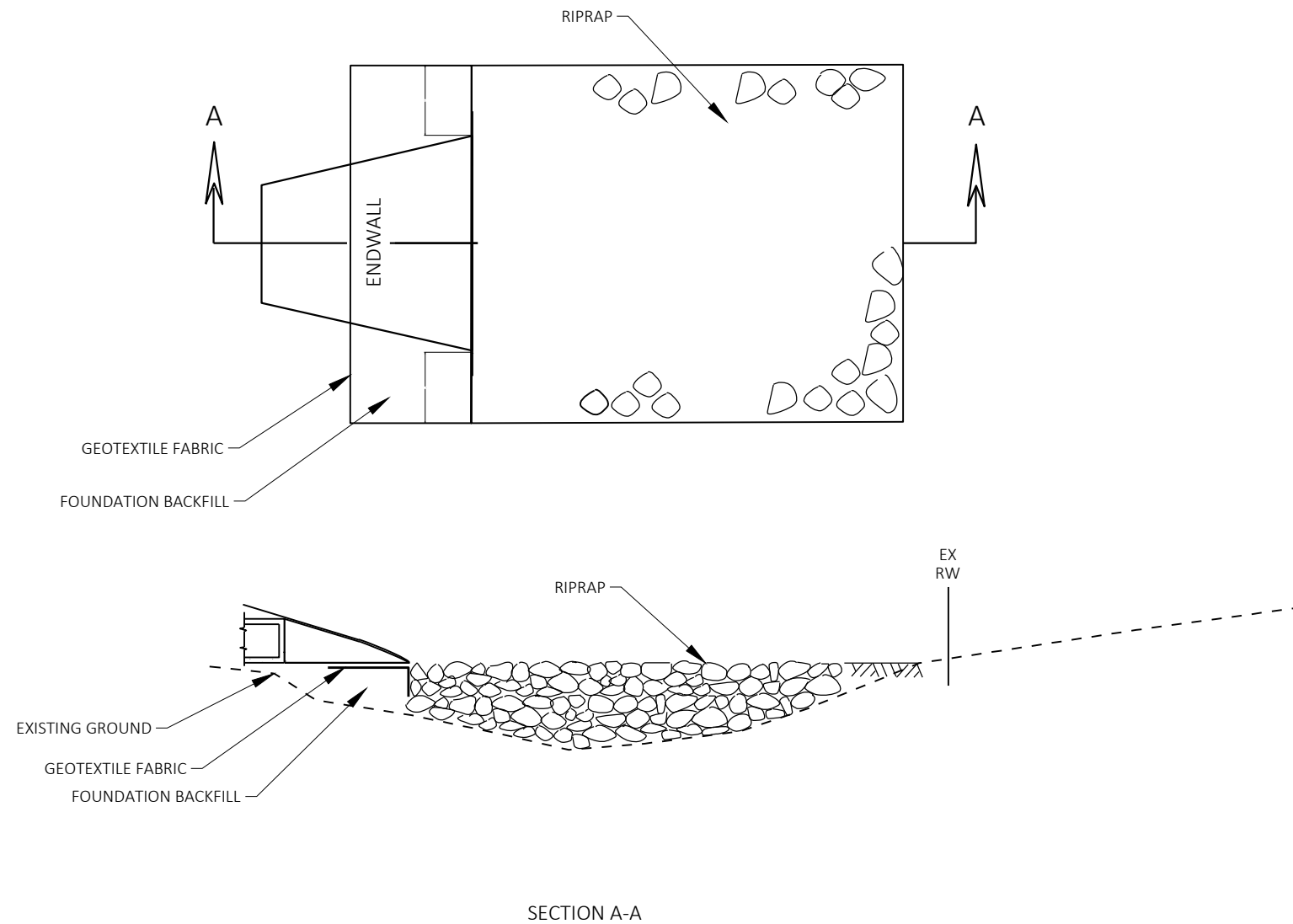
CONSTRUCTION DETAILS

SHEET

E

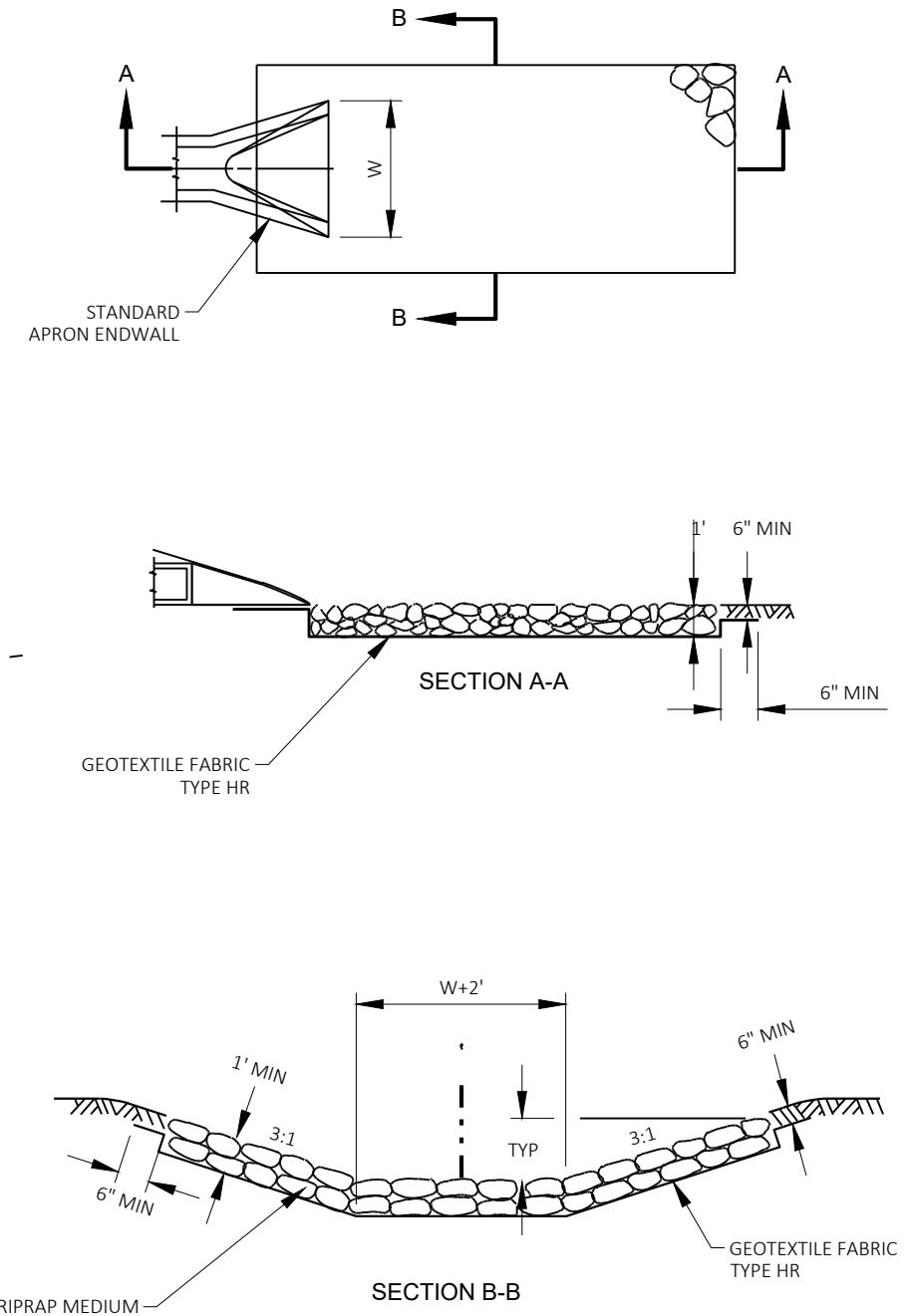


SHORING DETAIL
STA 955+42
CULVERT 79



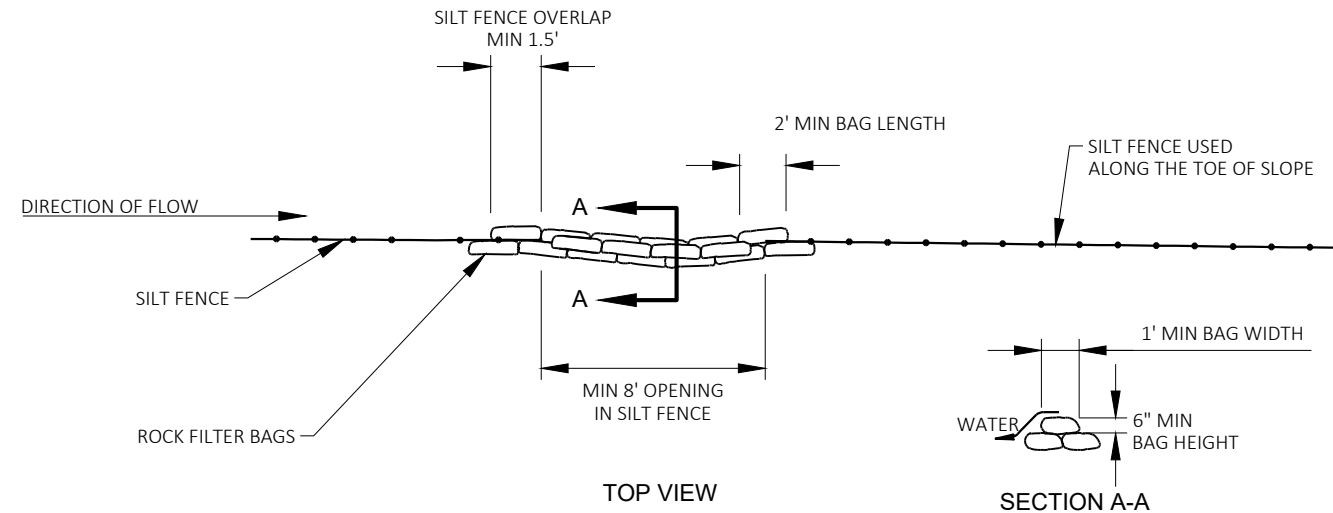
RIPRAP TREATMENT AT CULVERTS 72, 76 AND 87

OUTLET IN-CHANNEL RIPRAP SHALL NOT BE PLACED
HIGHER THAN CULVERT INVERT

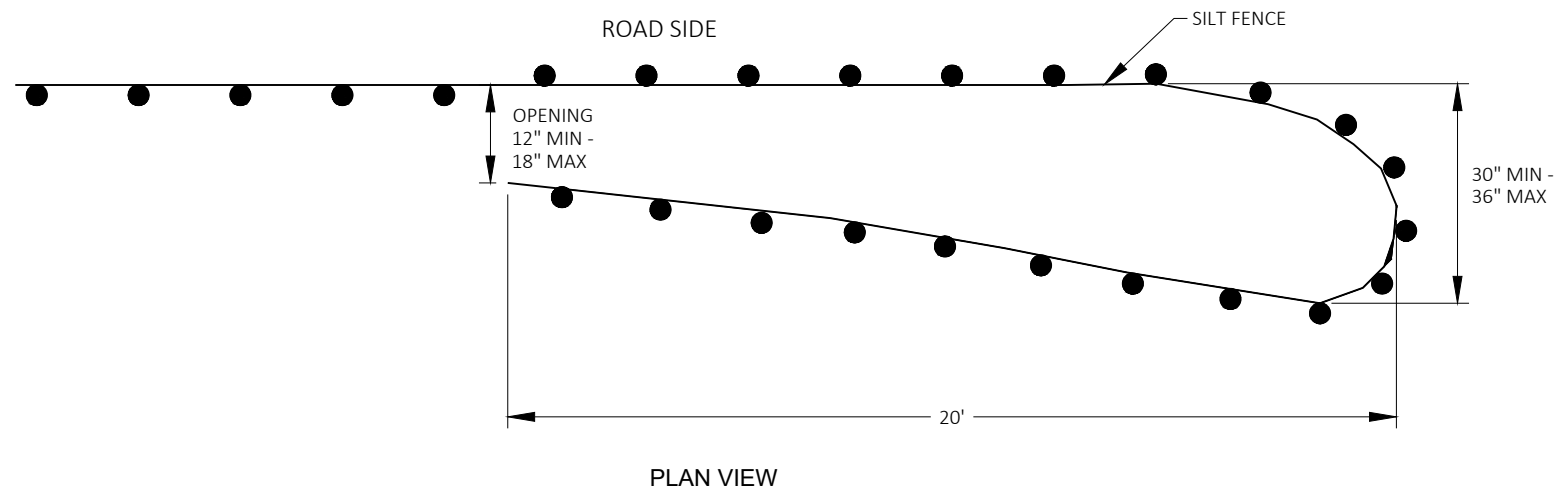


RIP RAP AND GEOTEXTILE

OUTLET IN-CHANNEL RIPRAP SHALL NOT BE
PLACED HIGHER THAN CULVERT INVERT

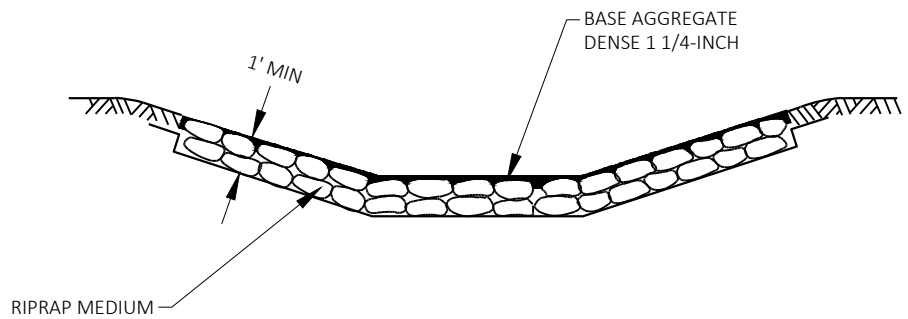


ROCK BAGS USED FOR SILT FENCE RELIEF



TEMPORARY SMALL ANIMAL TURN-AROUND
CULVERT 69, 71 & 72

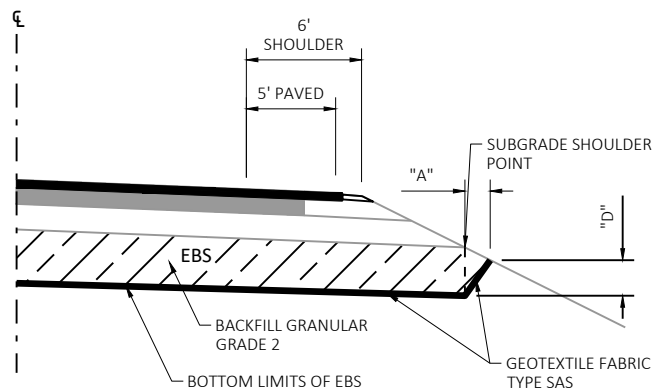
GENERAL NOTES:
TEMPOARY SMALL ANIMAL TURN-AROUND SHALL BE PLACED AT ALL ENDS OF SILT FENCE. SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND. AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.



RIP RAP DETAIL CULVERT 69 & 72

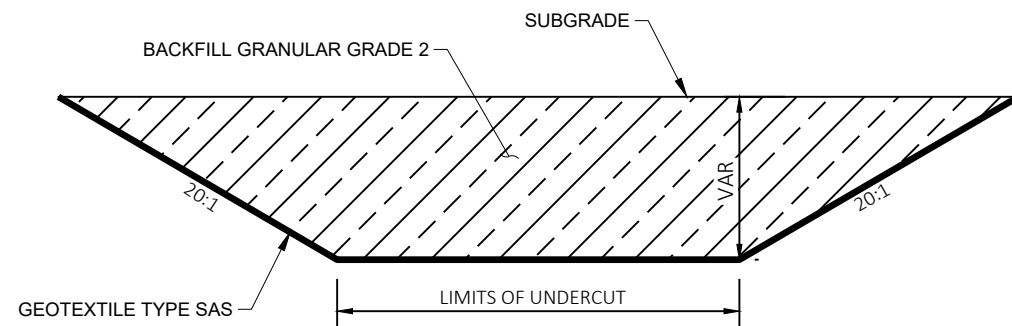
GENERAL NOTES:
FILL VOIDS IN RIPRAP MEDIUM WITH BASE AGGREGATE DENSE 1 1/4-INCH TO FULLY FILL ALL VOIDS. PROVIDE LEVEL SURFACE

"D"	"A"
30'	10'
26'	8'
22'	6'
18'	4'
14'	2'
10'	0'
<10'	0'

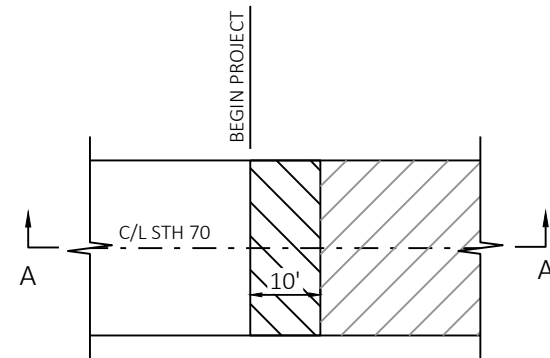


"D" = DEPTH OF EXCAVATION
"A" = DISTANCE OFFSET OUTSIDE SUBGRADE SHOULDER POINT
NOTES:
FOR DEPTHS GREATER THAN 10-FT SEE TABLE FOR DISTANCE OFFSET

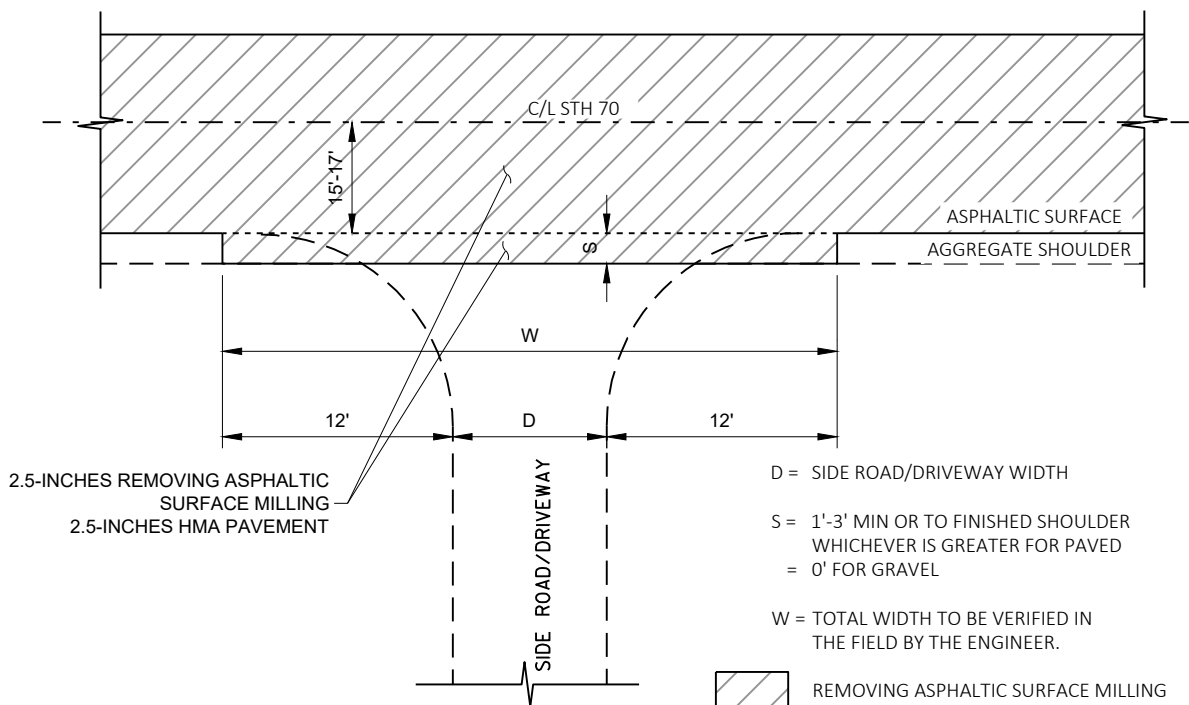
TYPICAL EXCAVATION BELOW SUBGRADE (EBS)



LONGITUDINAL SECTION FOR UNDERCUT AREAS (EBS)

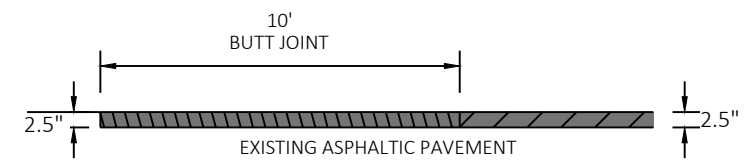


TYPICAL MAINLINE DETAIL



SIDE ROADS & DRIVEWAYS

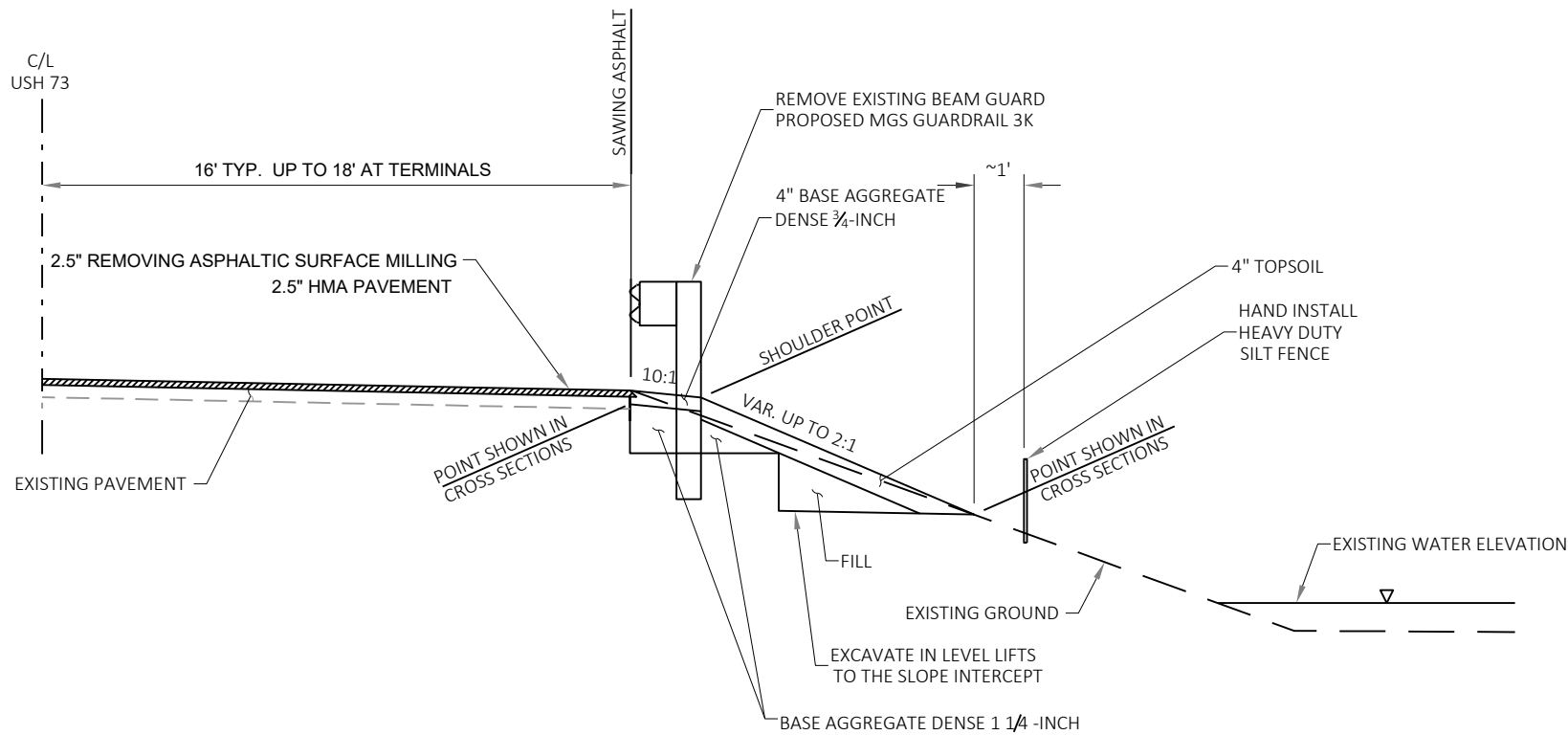
WITHOUT CURB AND GUTTER



- HMA PAVEMENT
- REMOVING ASPHALTIC SURFACE MILLING
- REMOVING ASPHALTIC SURFACE BUTT JOINTS

SECTION A-A

BUTT JOINT
MAINLINE

**NOTES**

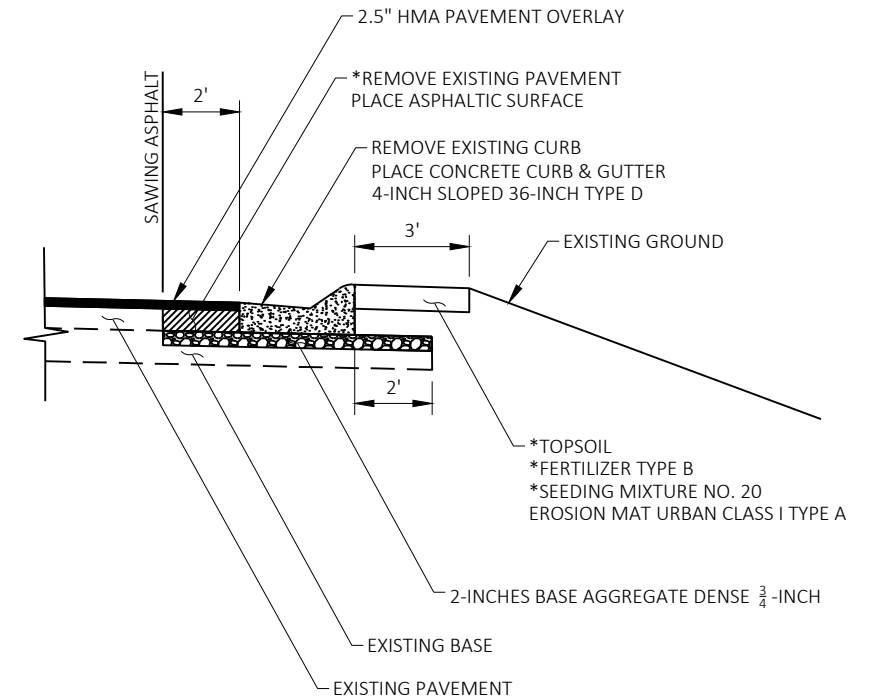
SLOPE FROM BACK OF GUARDRAIL TO SLOPE INTERCEPT TO BE RESTORED USING SEEDING MIXTURE NO. 20, AND EROSION MAT URBAN CLASS I TYPE B.

BARRIER SYSTEM GRADING SHAPING FINISHING WILL BE MEASURED BY THE ENTIRE BARRIER SYSTEM INCLUDING GRADING REQUIRED FOR BOTH TERMINALS AND BEHIND THE GUARDRAIL IN BETWEEN.

SEE STANDARD DETAIL DRAWINGS FOR MORE INFORMATION.

MGS GUARDRAIL GRADING, SHAPING, AND FINISHING

952+31 - 957+25, RT

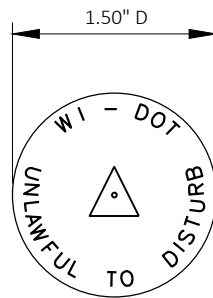
**REPLACING INTERSECTION CURB & GUTTER**

STH 101, STA 974+25

NOTES:

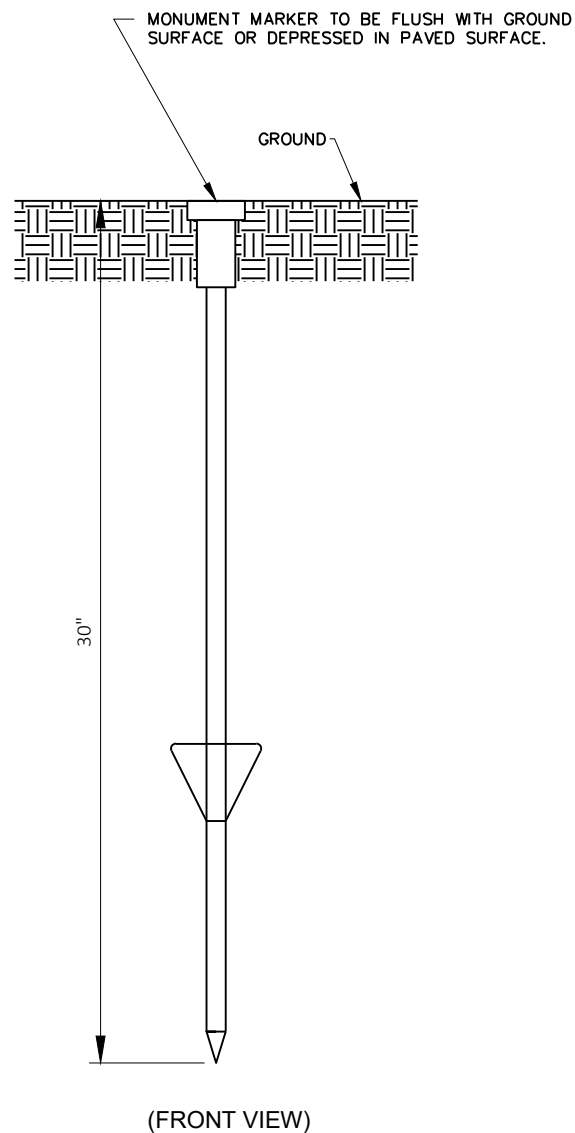
PROPOSED CURB TO BE PLACED TO THE SAME LOCATIONS AND ELEVATIONS AS THE EXISTING CURB AND GUTTER, CONTRACTOR TO OBTAIN CURB FLOW ELEVATIONS PRIOR TO REMOVAL. THIS WORK WILL BE INCIDENTAL TO "GRADING, SHAPING AND FINISHING INTERSECTION".

*PAYMENT FOR EXCAVATION, PAVEMENT REMOVAL, BACKFILL, TOPSOIL, FERTILIZER, AND SEEDING TO BE INCLUDED IN THE ITEM GRADING, SHAPING AND FINISHING INTERSECTION.



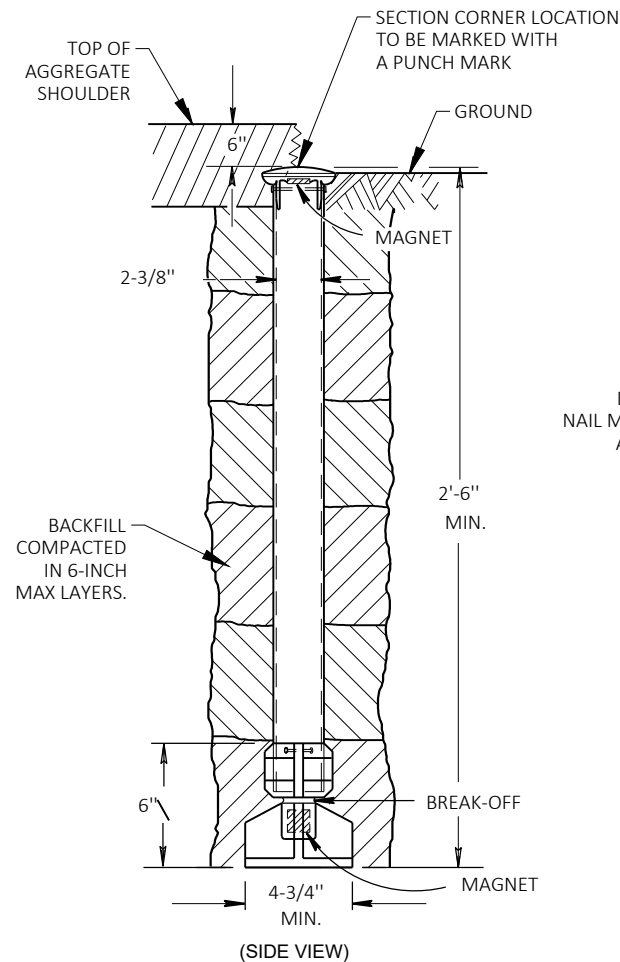
WIS DOT MONUMENT CAP MARKER LOGO (SSDR130)

CONTRACTOR TO ORDER LANDMARK REFERENCE MONUMENTS WITH THE ABOVE STAMPING



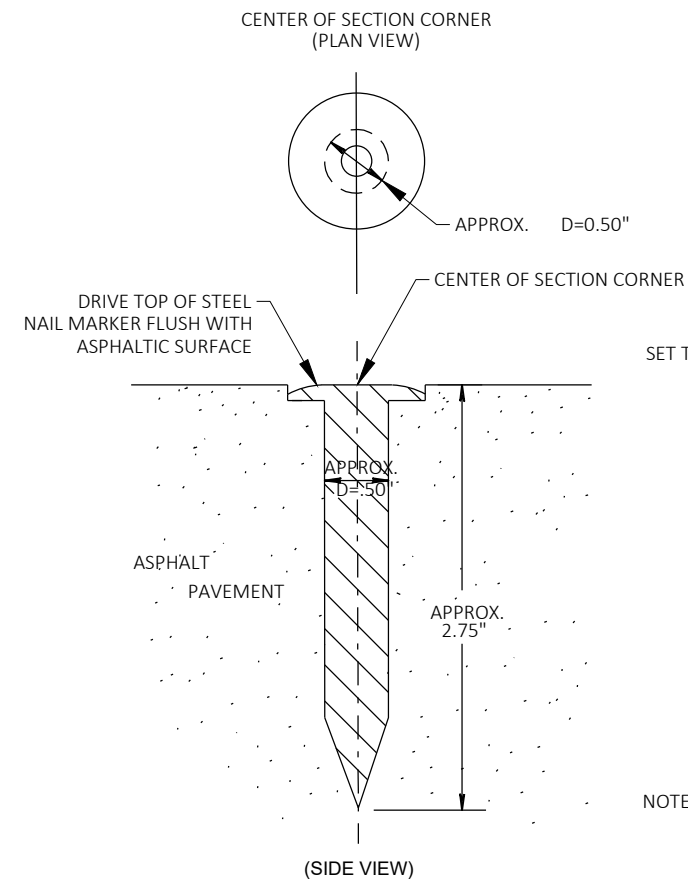
BERNSTEN DRIVABLE MONUMENT SSDR130

LANDMARK REFERENCE MONUMENT (TIES ONLY)



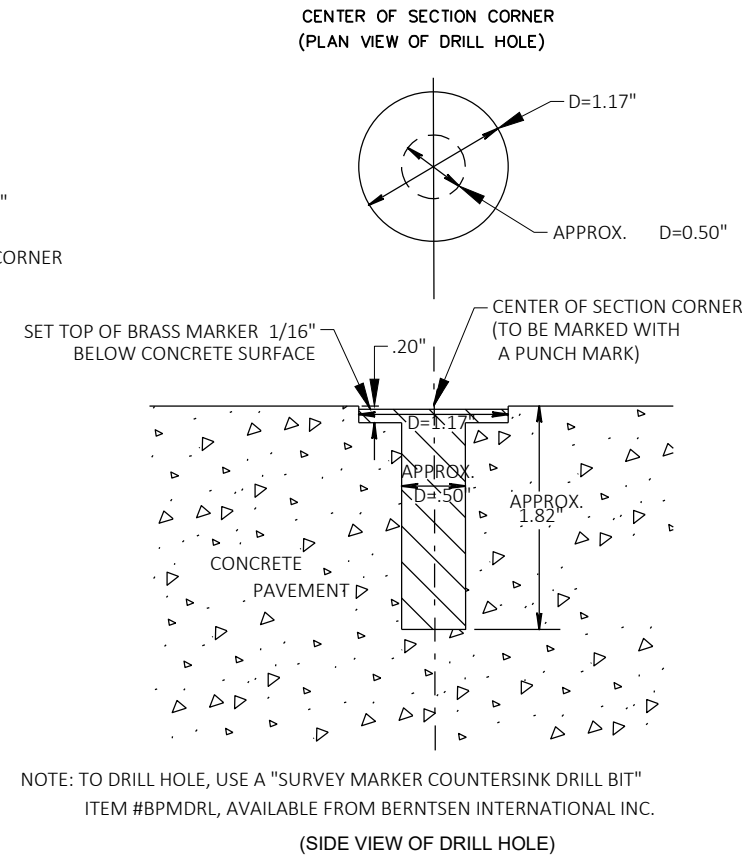
OUTSIDE OF PAVEMENT

BERNTSEN A1BR30 ALUMINUM BREAK-OFF MONUMENT



IN ASPHALTIC PAVEMENT

BERNTSEN SNM1 STEEL NAIL MARKER



IN CONCRETE PAVEMENT

BERNTSEN BP - 1 BRASS MARKER WITH ANCHOR PLUG

SECTION CORNER MONUMENTS

GENERAL NOTES

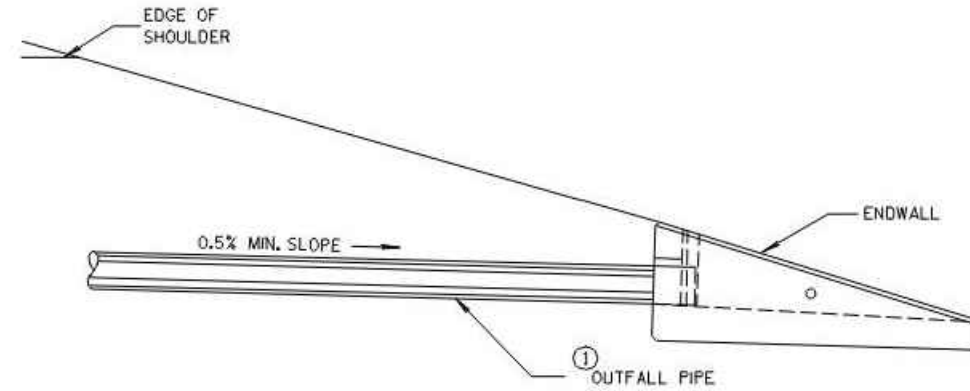
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

LOCATE LANDMARK REFERENCE MONUMENTS OUTSIDE THE CONSTRUCTION LIMITS AND WITHIN WISDOT RIGHT OF WAY. LOCATION TO BE APPROVED BY THE ENGINEER.

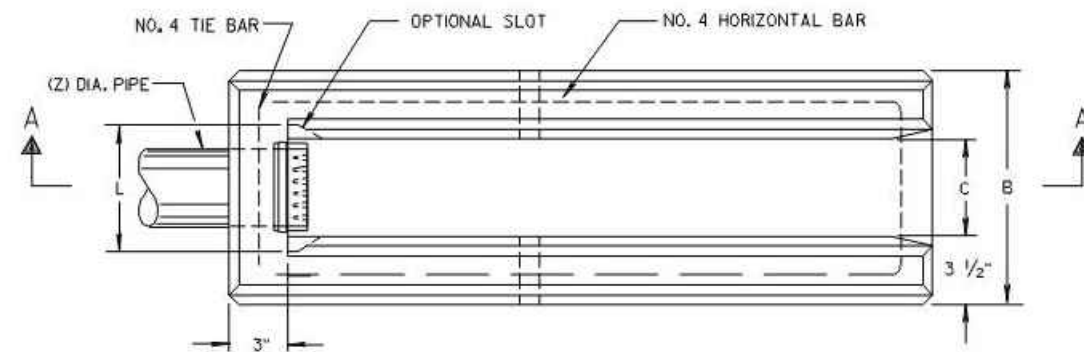
CONTRACTOR WILL SUPPLY ALL REQUIRED SURVEY MONUMENTS.

SECTION CORNER MONUMENT AND LANDMARK REFERENCE MONUMENT DETAIL

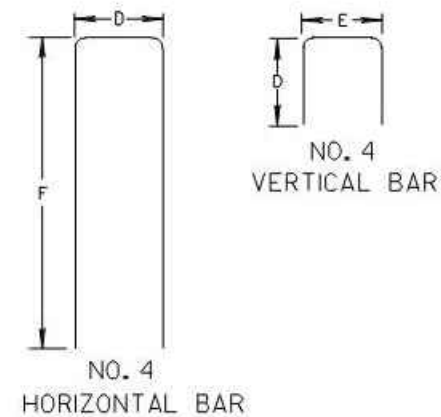
DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
8	10	16	9 1/4	13	12	42	39	15	5 5/8	10 1/2	8



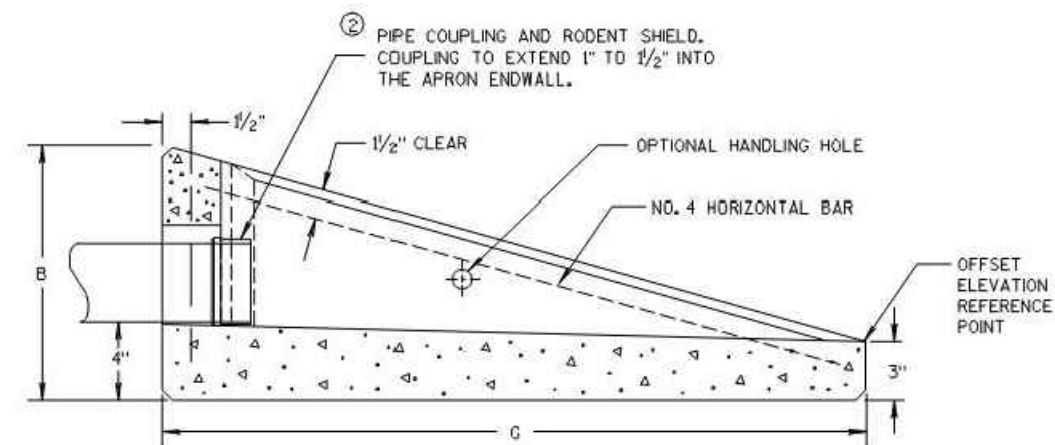
INSTALLATION DETAIL



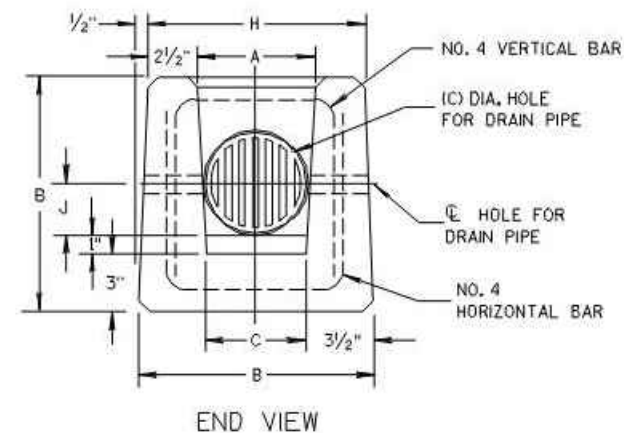
PLAN VIEW



BAR STEEL REINFORCEMENT DETAILS



SECTION A-A



END VIEW

APRON ENDWALL UNDERDRAIN 8-INCH
STA 125+00, 81' LT

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

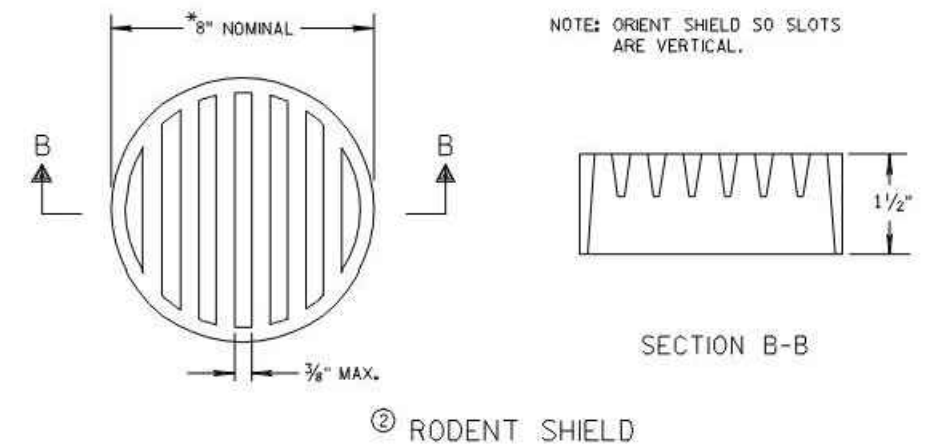
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

- ① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHLORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHLORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE. ALL JOINTS SHALL BE SOLVENT WELDED.

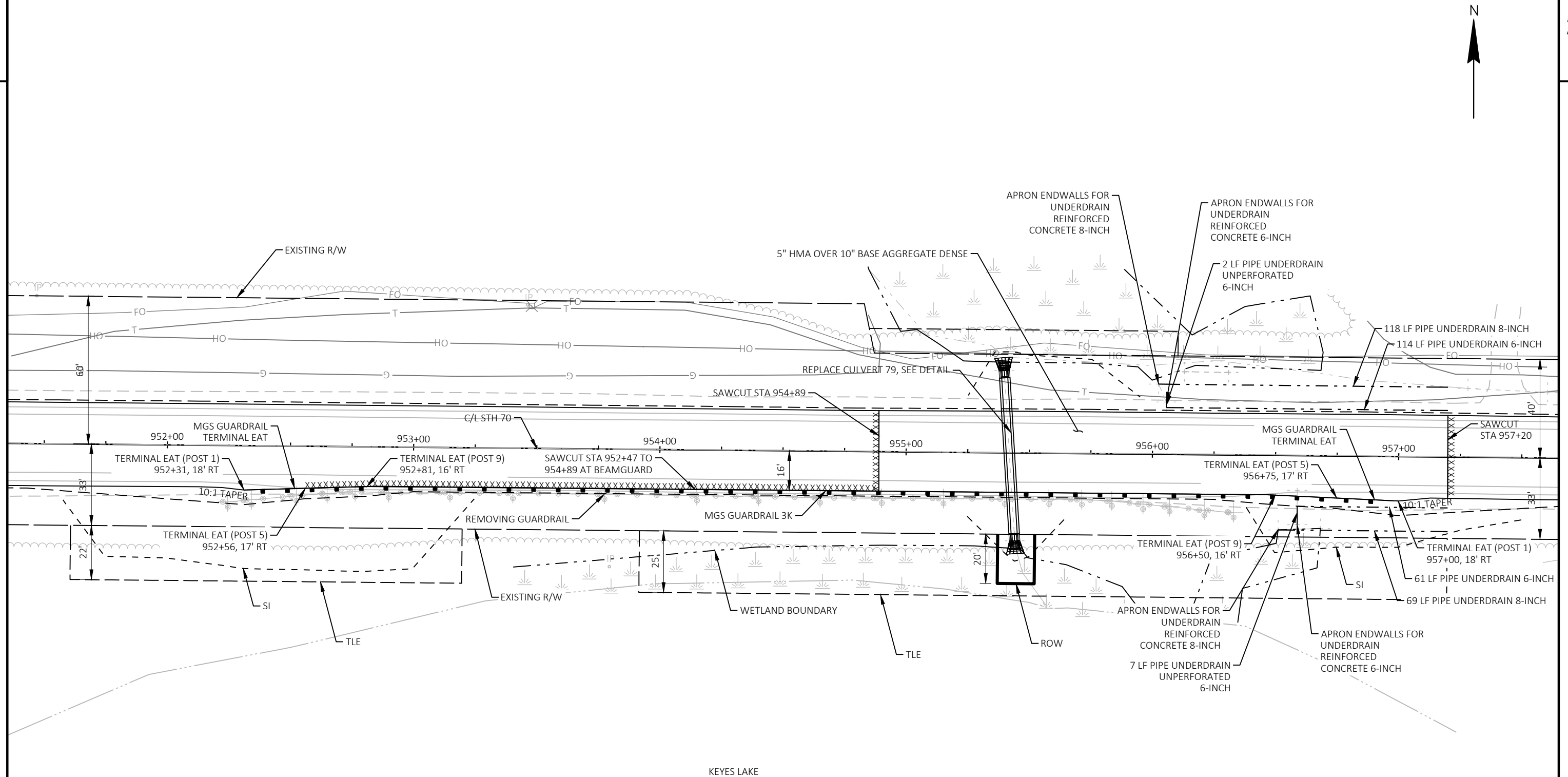
THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

- ② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

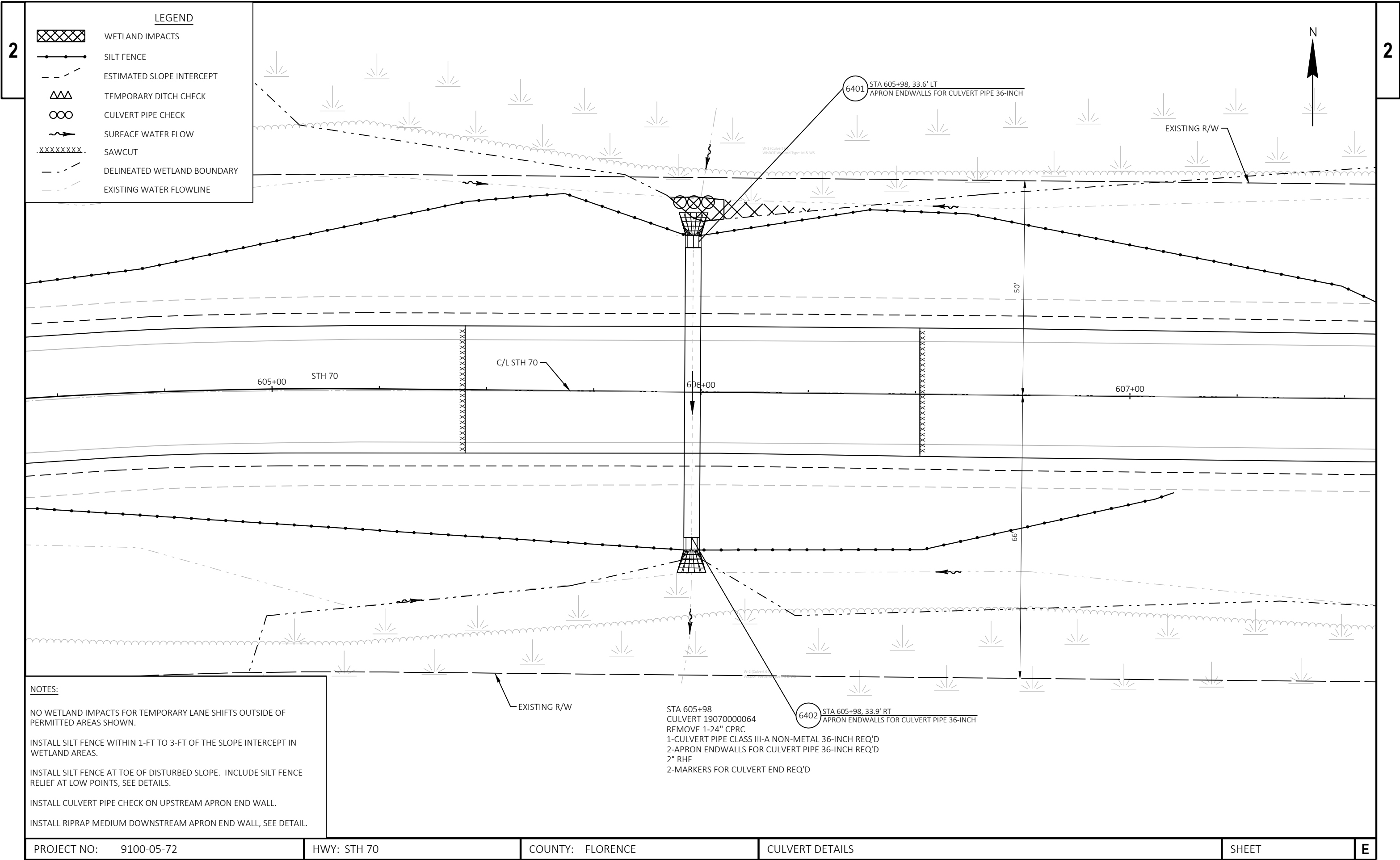


② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.



PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	MGS DETAILS	SHEET	E
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NOTES:

NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.

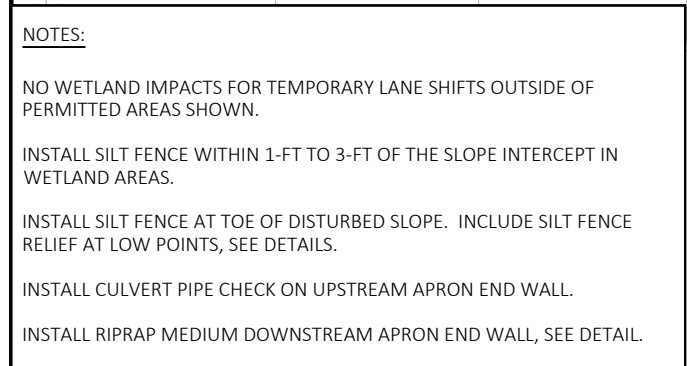
INSTALL SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

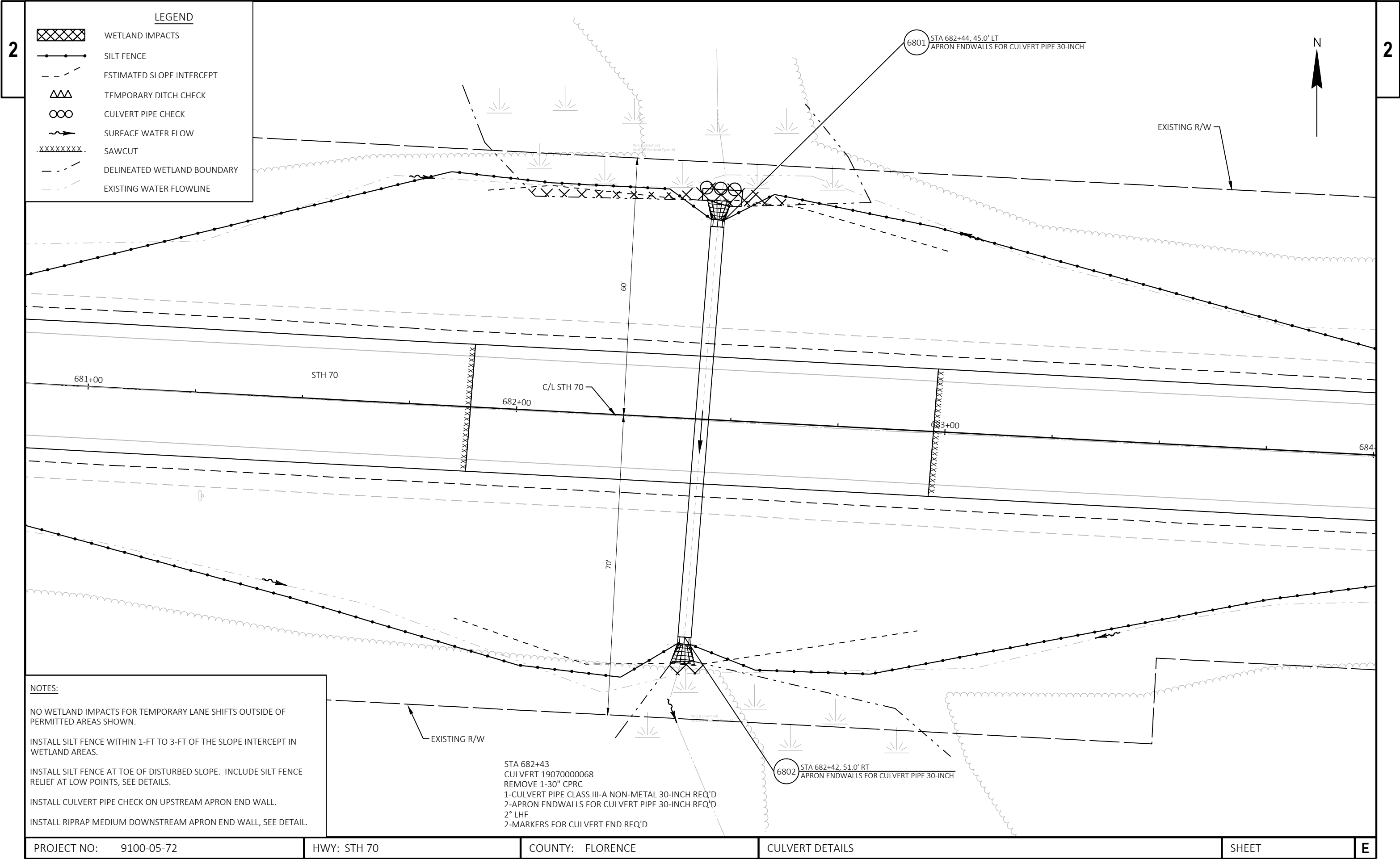
INSTALL SILT FENCE AT TOE OF DISTURBED SLOPE. INCLUDE SILT FENCE RELIEF AT LOW POINTS, SEE DETAILS.

INSTALL CULVERT PIPE CHECK ON UPSTREAM APRON END WALL.

INSTALL RIPRAP MEDIUM DOWNSTREAM APRON END WALL, SEE DETAIL.

STA 605+98
CULVERT 19070000064
REMOVE 1-24" CPRC
1-CULVERT PIPE CLASS III-A NON-METAL 36-INCH REQ'D
2-APRON ENDWALLS FOR CULVERT PIPE 36-INCH REQ'D
2° RHF
2-MARKERS FOR CULVERT END REQ'D





NOTES:

NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.

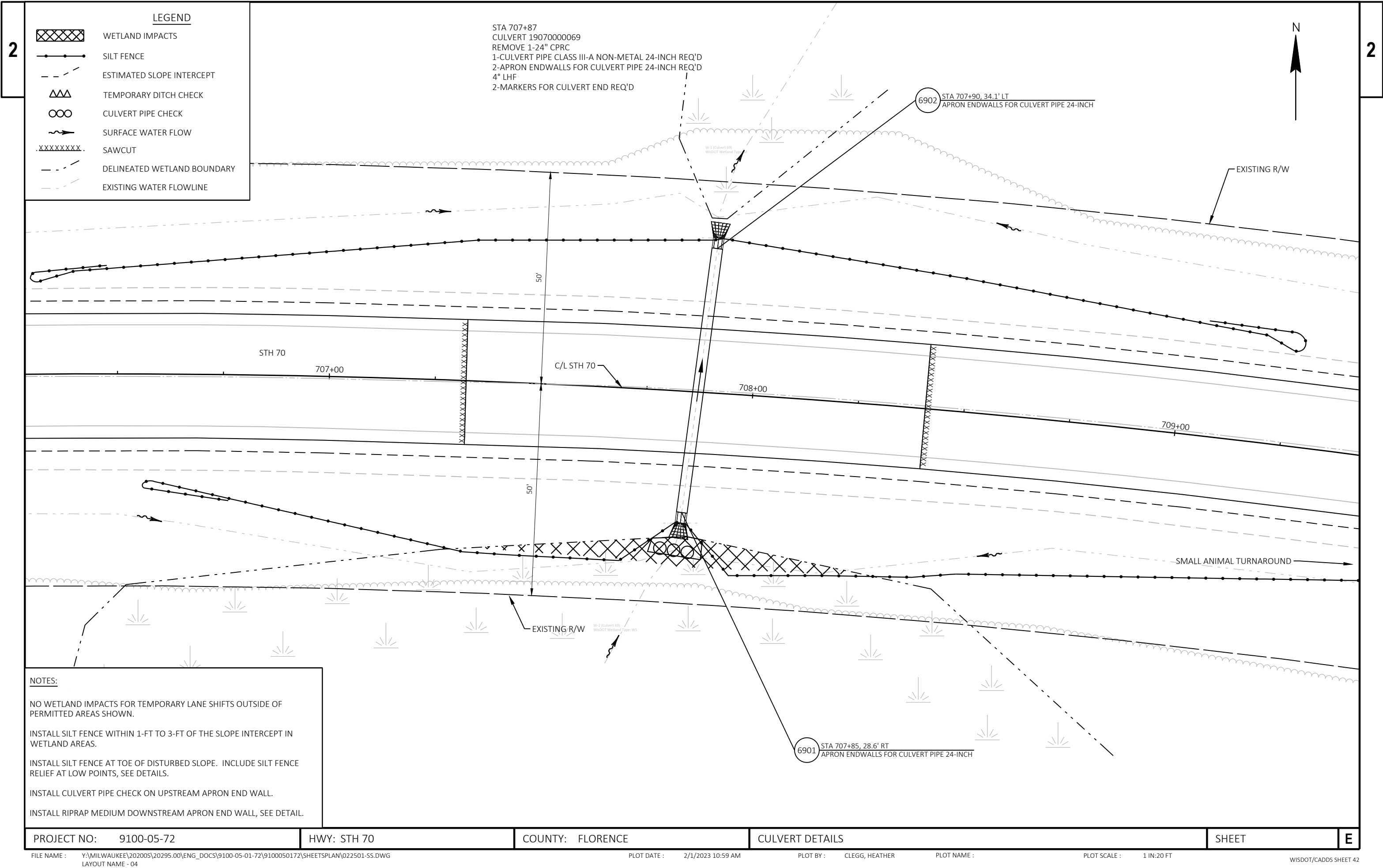
INSTALL SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

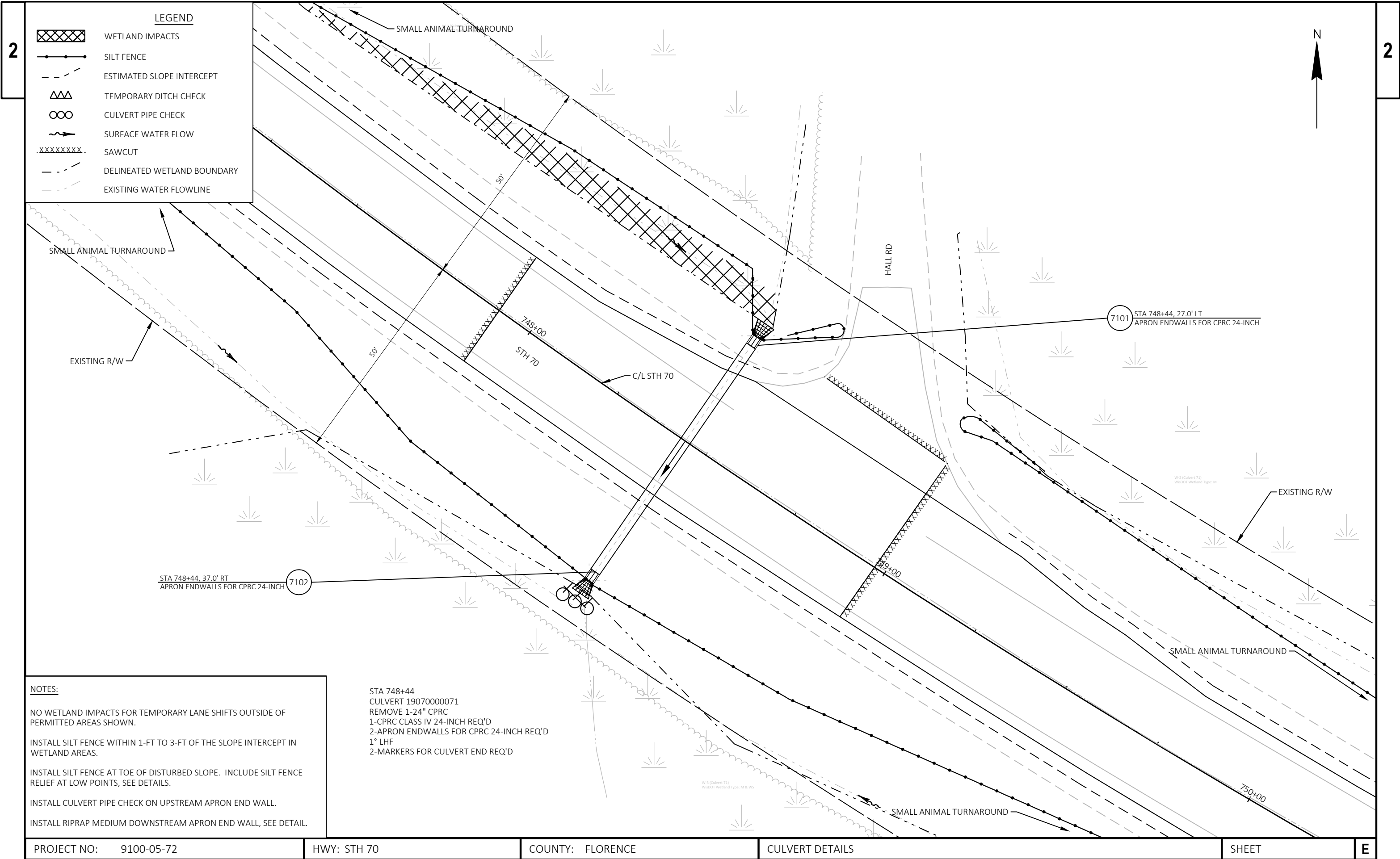
INSTALL SILT FENCE AT TOE OF DISTURBED SLOPE. INCLUDE SILT FENCE RELIEF AT LOW POINTS, SEE DETAILS.

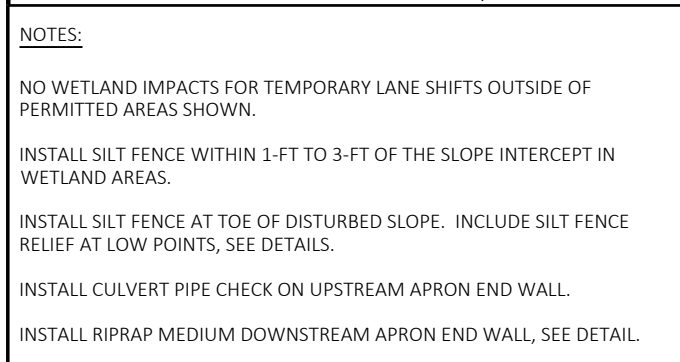
INSTALL CULVERT PIPE CHECK ON UPSTREAM APRON END WALL.

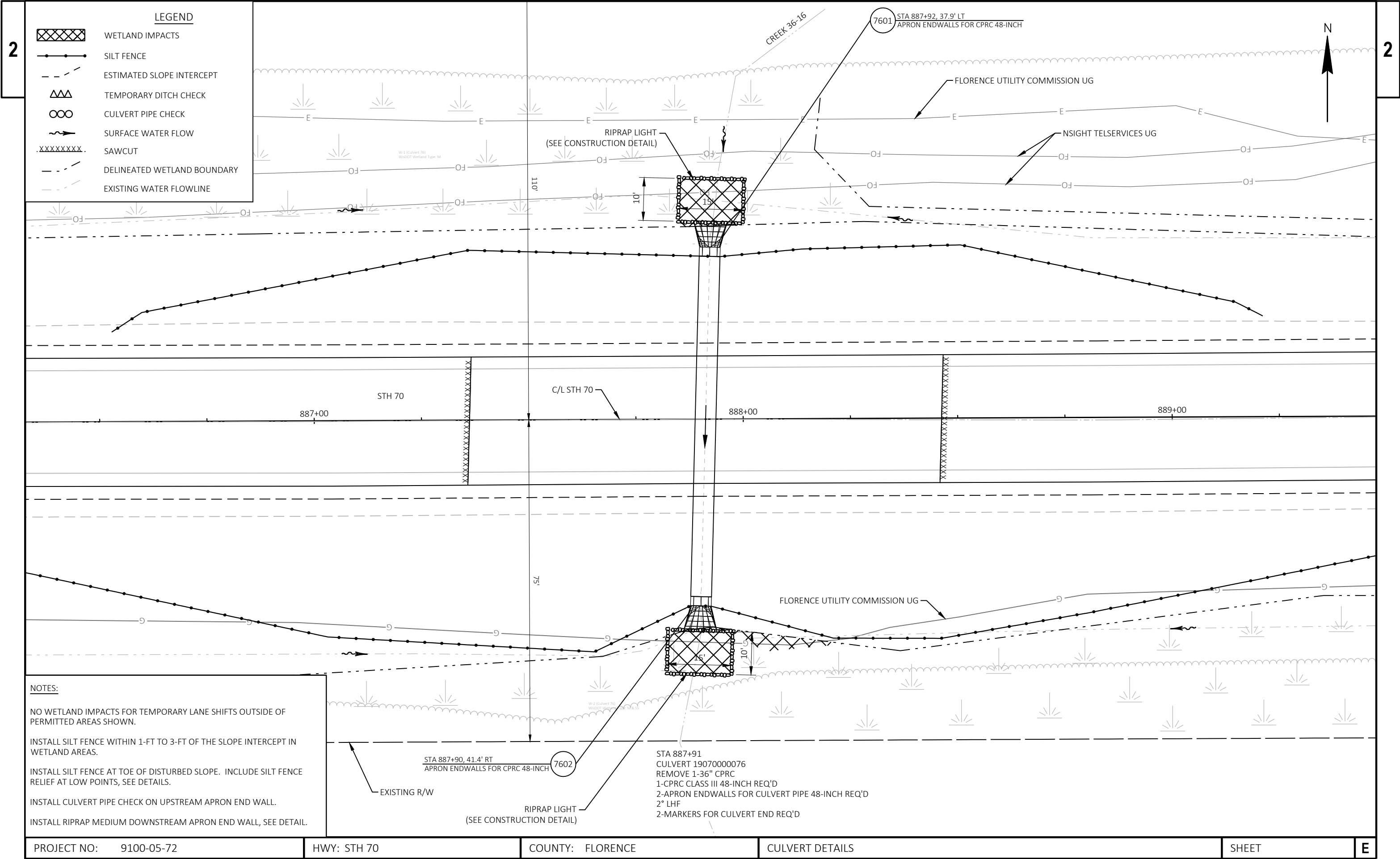
INSTALL RIPRAP MEDIUM DOWNSTREAM APRON END WALL, SEE DETAIL.

STA 682+43
CULVERT 19070000068
REMOVE 1-30" CPRC
1-CULVERT PIPE CLASS III-A NON-METAL 30-INCH REQ'D
2-APRON ENDWALLS FOR CULVERT PIPE 30-INCH REQ'D
2" LHF
2-MARKERS FOR CULVERT END REQ'D









NOTES:

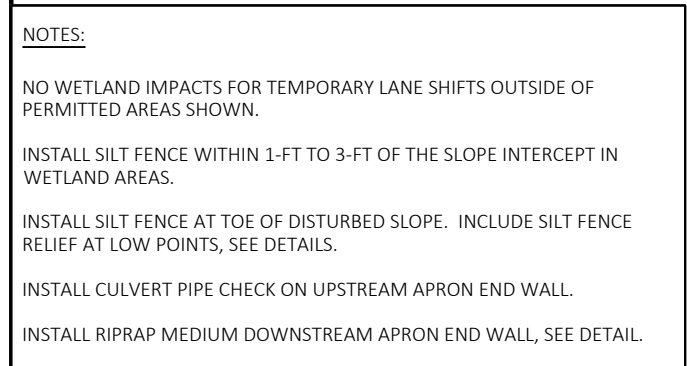
NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.

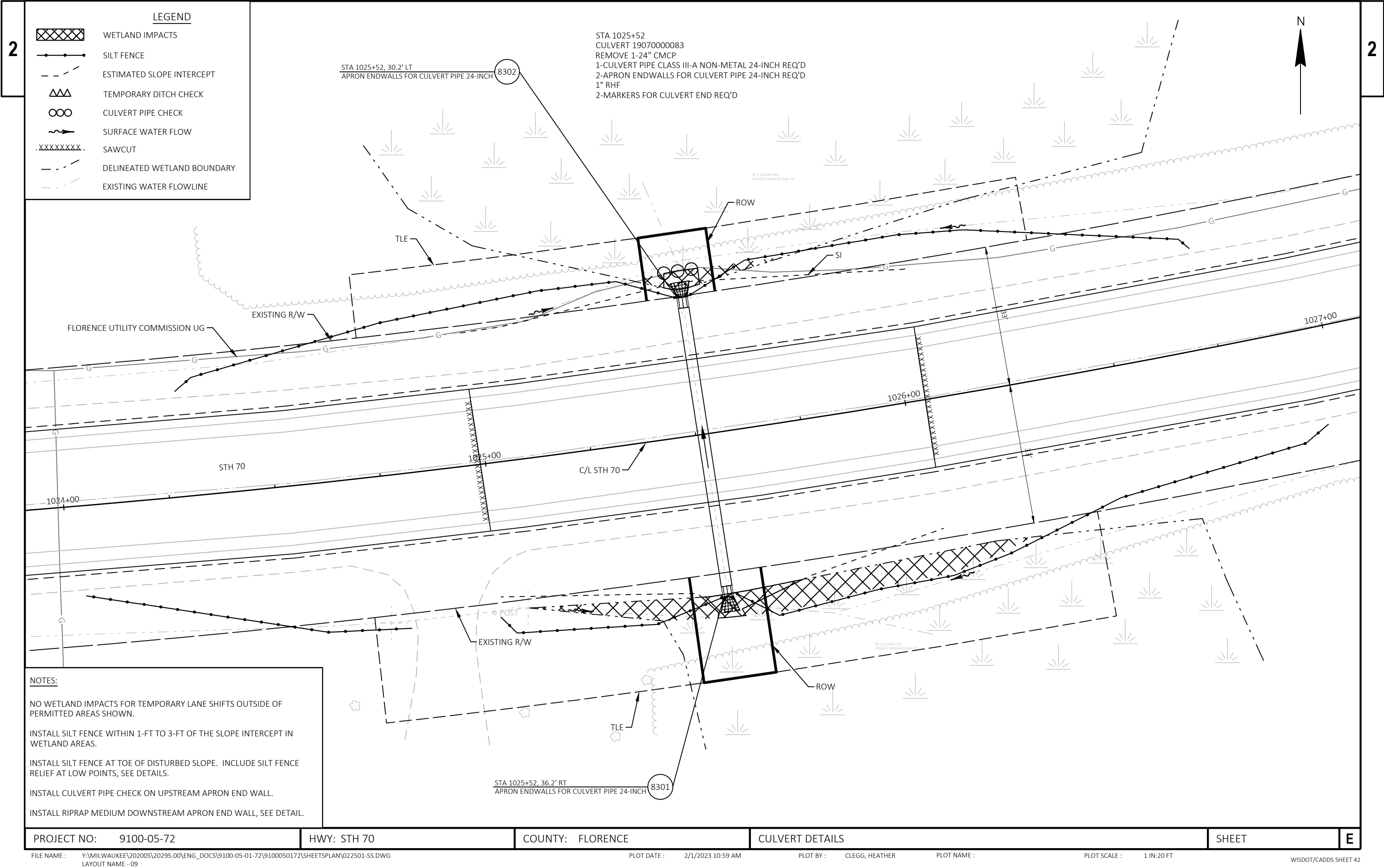
INSTALL SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

INSTALL SILT FENCE AT TOE OF DISTURBED SLOPE. INCLUDE SILT FENCE RELIEF AT LOW POINTS, SEE DETAILS.

INSTALL CULVERT PIPE CHECK ON UPSTREAM APRON END WALL.

INSTALL RIPRAP MEDIUM DOWNSTREAM APRON END WALL, SEE DETAIL.





- LEGEND**
- WETLAND IMPACTS
 - SILT FENCE
 - ESTIMATED SLOPE INTERCEPT
 - TEMPORARY DITCH CHECK
 - CULVERT PIPE CHECK
 - SURFACE WATER FLOW
 - SAWCUT
 - DELINEATED WETLAND BOUNDARY
 - EXISTING WATER FLOWLINE

NOTES:

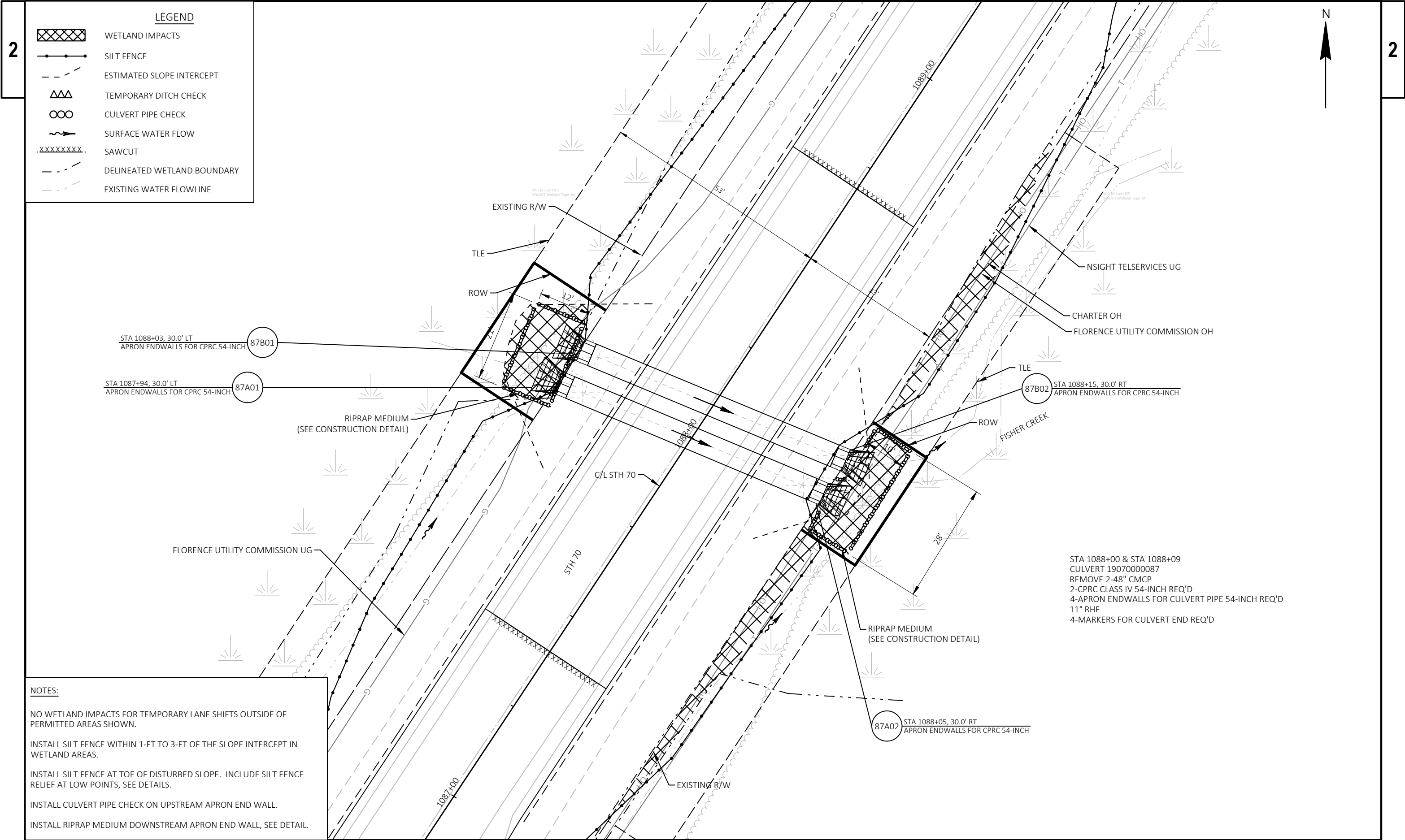
NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.

INSTALL SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

INSTALL SILT FENCE AT TOE OF DISTURBED SLOPE. INCLUDE SILT FENCE RELIEF AT LOW POINTS, SEE DETAILS.

INSTALL CULVERT PIPE CHECK ON UPSTREAM APRON END WALL.

INSTALL RIPRAP MEDIUM DOWNSTREAM APRON END WALL, SEE DETAIL.



LEGEND

- WETLAND IMPACTS
- SILT FENCE
- ESTIMATED SLOPE INTERCEPT
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
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- DELINEATED WETLAND BOUNDARY
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NOTES:

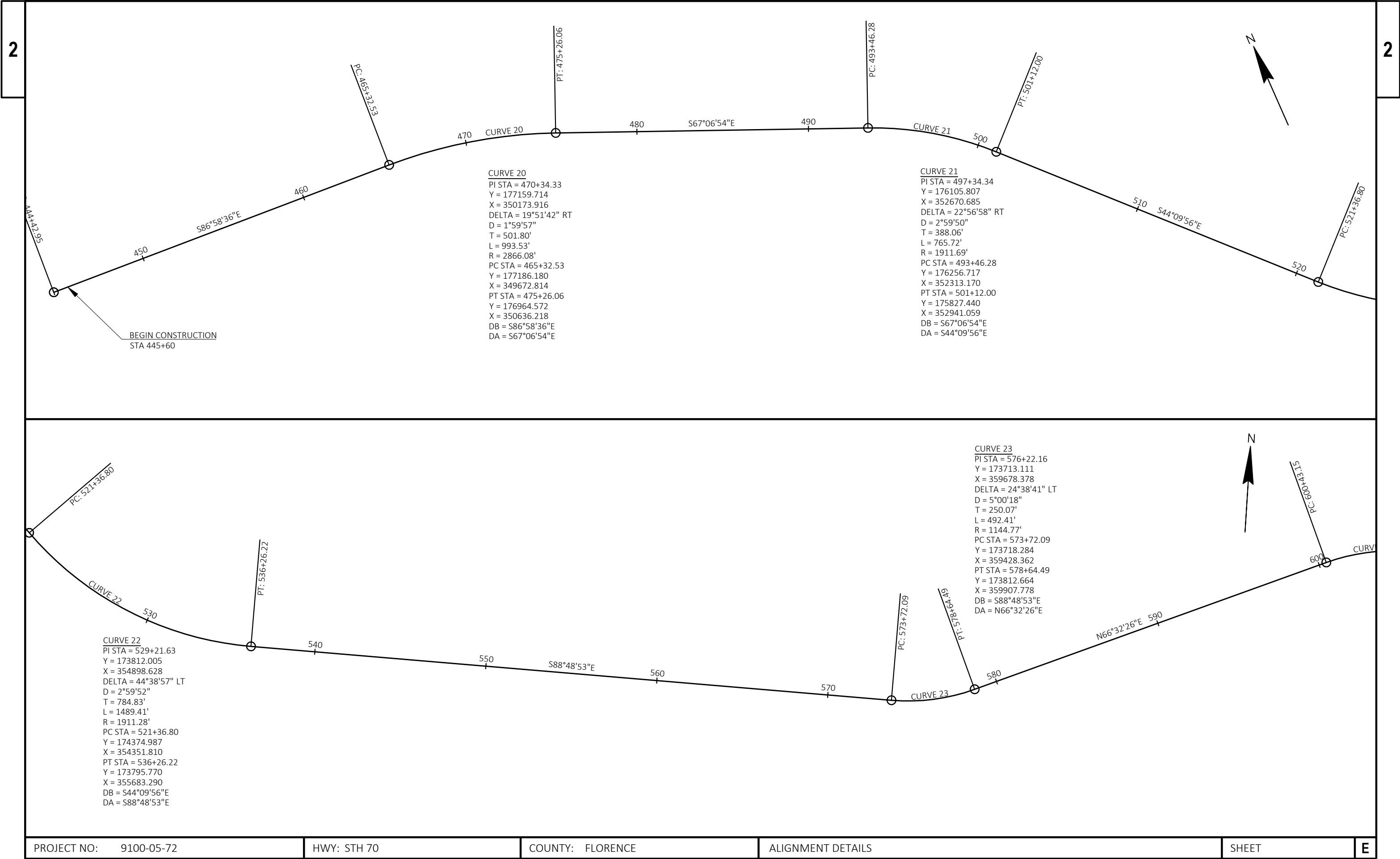
- NO WETLAND IMPACTS FOR TEMPORARY LANE SHIFTS OUTSIDE OF PERMITTED AREAS SHOWN.
- INSTALL SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.
- INSTALL SILT FENCE AT TOE OF DISTURBED SLOPE. INCLUDE SILT FENCE RELIEF AT LOW POINTS, SEE DETAILS.
- INSTALL CULVERT PIPE CHECK ON UPSTREAM APRON END WALL.
- INSTALL RIPRAP MEDIUM DOWNSTREAM APRON END WALL, SEE DETAIL.

PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CULVERT DETAILS	SHEET	E
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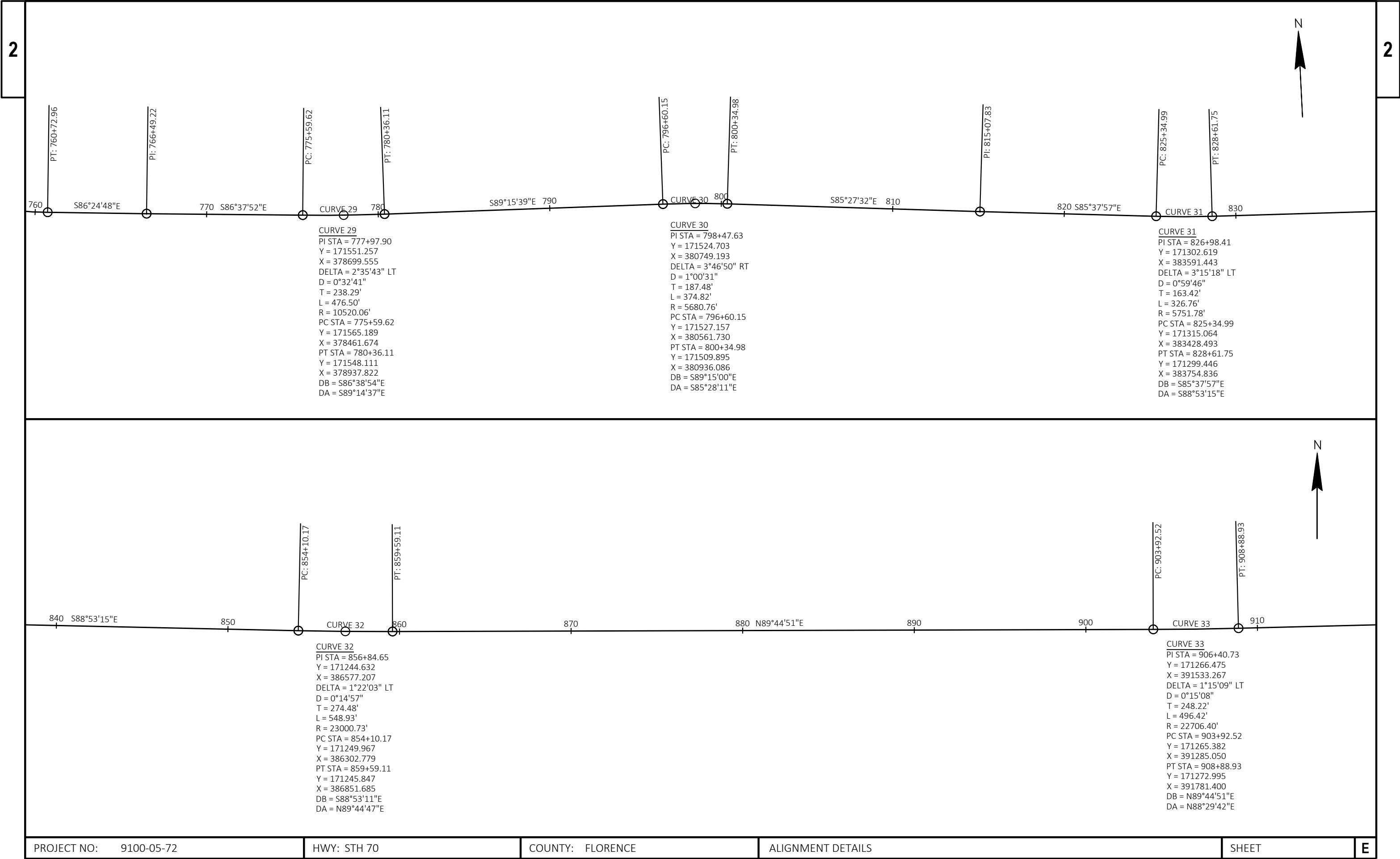
- Notes:
1. ALL PAVING TO BE DONE FOLLOWING THE STANDARD DETAIL DRAWING FOR TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION.
 2. ALL CULVERT WORK TO BE DONE FOLLOWING THE STANDARD DETAIL DRAWING TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION.
 3. GUARDRAIL WORK TO BE DONE FOLLOWING TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY.
 4. G20-57 SIGNS TO BE PLACED AT PROJECT TERMINI 7 DAYS PRIOR TO CONSTRUCTION AND REMOVED WHEN CONSTRUCTION BEGINS.
 5. FOLLOW THE STANDARD DETAIL DRAWING FOR TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES AND TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL WHEN THOSE CONDITION EXIST.

PROJECT NO:	9100-05-72	HWY: STH 70	COUNTY: FLORENCE	TRAFFIC CONTROL OVERVIEW	SHEET	E
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PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	ALIGNMENT DETAILS	SHEET	E
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PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	ALIGNMENT DETAILS	SHEET	E
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Estimate Of Quantities

9100-05-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0120	Clearing	ID	212.000	212.000
0004	201.0220	Grubbing	ID	212.000	212.000
0006	203.0100	Removing Small Pipe Culverts	EACH	11.000	11.000
0008	204.0110	Removing Asphaltic Surface	SY	100.000	100.000
0010	204.0115	Removing Asphaltic Surface Butt Joints	SY	117.000	117.000
0012	204.0120	Removing Asphaltic Surface Milling	SY	225,800.000	225,800.000
0014	204.0150	Removing Curb & Gutter	LF	128.000	128.000
0016	205.0100	Excavation Common	CY	6,417.000	6,417.000
0018	205.9016.S	Grading Shaping and Finishing Intersection (location) 01. STH 101	EACH	1.000	1.000
0020	208.1500.S	Temporary Lane Shift During Culvert Work	EACH	20.000	20.000
0022	209.2100	Backfill Granular Grade 2	CY	760.000	760.000
0024	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 9100-05-72	EACH	1.000	1.000
0026	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	308.000	308.000
0028	213.0100	Finishing Roadway (project) 01. 9100-05-72	EACH	1.000	1.000
0030	305.0110	Base Aggregate Dense 3/4-Inch	TON	4,532.000	4,532.000
0032	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	4,557.000	4,557.000
0034	310.0110	Base Aggregate Open-Graded	TON	75.000	75.000
0036	312.0110	Select Crushed Material	TON	668.000	668.000
0038	450.4000	HMA Cold Weather Paving	TON	7,903.000	7,903.000
0040	455.0605	Tack Coat	GAL	11,506.000	11,506.000
0042	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0044	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0046	460.2005	Incentive Density PWL HMA Pavement	DOL	24,524.000	24,524.000
0048	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	13,118.000	13,118.000
0050	460.2010	Incentive Air Voids HMA Pavement	DOL	31,612.000	31,612.000
0052	460.5224	HMA Pavement 4 LT 58-28 S	TON	31,612.000	31,612.000
0054	465.0105	Asphaltic Surface	TON	1,882.000	1,882.000
0056	465.0110	Asphaltic Surface Patching	TON	100.000	100.000
0058	465.0520	Asphaltic Rumble Strips, Shoulder	LF	31,028.000	31,028.000
0060	465.0560	Asphaltic Rumble Strips, Centerline	LF	65,586.000	65,586.000
0062	511.1100	Temporary Shoring	SF	600.000	600.000
0064	520.1024	Apron Endwalls for Culvert Pipe 24-Inch	EACH	6.000	6.000
0066	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	2.000	2.000
0068	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	2.000	2.000
0070	520.3424	Culvert Pipe Class III-A Non-metal 24-Inch	LF	183.000	183.000
0072	520.3430	Culvert Pipe Class III-A Non-metal 30-Inch	LF	96.000	96.000
0074	520.3436	Culvert Pipe Class III-A Non-metal 36-Inch	LF	68.000	68.000
0076	522.0142	Culvert Pipe Reinforced Concrete Class III 42-Inch	LF	63.000	63.000
0078	522.0148	Culvert Pipe Reinforced Concrete Class III 48-Inch	LF	79.000	79.000
0080	522.0424	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	64.000	64.000
0082	522.0454	Culvert Pipe Reinforced Concrete Class IV 54-Inch	LF	122.000	122.000
0084	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0086	522.1042	Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	EACH	2.000	2.000
0088	522.1048	Apron Endwalls for Culvert Pipe Reinforced Concrete 48-Inch	EACH	2.000	2.000
0090	522.1054	Apron Endwalls for Culvert Pipe Reinforced Concrete 54-Inch	EACH	4.000	4.000
0092	522.2348	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 48x76-Inch	LF	80.000	80.000
0094	522.2648	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 48x76-Inch	EACH	2.000	2.000
0096	601.0553	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	LF	128.000	128.000
0098	606.0100	Riprap Light	CY	29.000	29.000

Estimate Of Quantities

9100-05-72

Line	Item	Item Description	Unit	Total	Qty
0100	606.0200	Riprap Medium	CY	80.000	80.000
0102	612.0106	Pipe Underdrain 6-Inch	LF	175.000	175.000
0104	612.0108	Pipe Underdrain 8-Inch	LF	187.000	187.000
0106	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	9.000	9.000
0108	612.0806	Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	EACH	2.000	2.000
0110	614.0010	Barrier System Grading Shaping Finishing	EACH	1.000	1.000
0112	614.2330	MGS Guardrail 3 K	LF	360.000	360.000
0114	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0116	618.0100	Maintenance and Repair of Haul Roads (project) 01. 9100-05-72	EACH	1.000	1.000
0118	619.1000	Mobilization	EACH	1.000	1.000
0120	621.0100	Landmark Reference Monuments	EACH	28.000	28.000
0122	624.0100	Water	MGAL	196.000	196.000
0124	625.0100	Topsoil	SY	8,276.000	8,276.000
0126	628.1504	Silt Fence	LF	7,210.000	7,210.000
0128	628.1520	Silt Fence Maintenance	LF	7,210.000	7,210.000
0130	628.1905	Mobilizations Erosion Control	EACH	8.000	8.000
0132	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0134	628.2008	Erosion Mat Urban Class I Type B	SY	8,276.000	8,276.000
0136	628.7504	Temporary Ditch Checks	LF	100.000	100.000
0138	628.7555	Culvert Pipe Checks	EACH	195.000	195.000
0140	628.7570	Rock Bags	EACH	100.000	100.000
0142	629.0210	Fertilizer Type B	CWT	5.200	5.200
0144	630.0120	Seeding Mixture No. 20	LB	229.000	229.000
0146	630.0500	Seed Water	MGAL	186.000	186.000
0148	633.5200	Markers Culvert End	EACH	20.000	20.000
0150	642.5001	Field Office Type B	EACH	1.000	1.000
0152	643.0300	Traffic Control Drums	DAY	28,500.000	28,500.000
0154	643.0900	Traffic Control Signs	DAY	2,090.000	2,090.000
0156	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0158	643.3165	Temporary Marking Line Paint 6-Inch	LF	198,537.000	198,537.000
0160	643.5000	Traffic Control	EACH	1.000	1.000
0162	645.0111	Geotextile Type DF Schedule A	SY	257.000	257.000
0164	645.0120	Geotextile Type HR	SY	68.000	68.000
0166	645.0130	Geotextile Type R	SY	18.000	18.000
0168	645.0140	Geotextile Type SAS	SY	2,246.000	2,246.000
0170	646.2020	Marking Line Epoxy 6-Inch	LF	131,189.000	131,189.000
0172	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	101,525.000	101,525.000
0174	646.6120	Marking Stop Line Epoxy 18-Inch	LF	20.000	20.000
0176	646.6466	Cold Weather Marking Epoxy 6-Inch	LF	58,187.000	58,187.000
0178	650.4500	Construction Staking Subgrade	LF	231.000	231.000
0180	650.5000	Construction Staking Base	LF	231.000	231.000
0182	650.6000	Construction Staking Pipe Culverts	EACH	10.000	10.000
0184	650.8000	Construction Staking Resurfacing Reference	LF	65,590.000	65,590.000
0186	650.9911	Construction Staking Supplemental Control (project) 01. 9100-05-72	EACH	1.000	1.000
0188	650.9920	Construction Staking Slope Stakes	LF	2,100.000	2,100.000
0190	690.0150	Sawing Asphalt	LF	854.000	854.000
0192	740.0440	Incentive IRI Ride	DOL	49,690.000	49,690.000
0194	SPV.0060	Special 01. Apron Endwall for Underdrain Reinforced Concrete 8-inch	EACH	2.000	2.000
0196	SPV.0060	Special 02. Reestablish Section Corner Monuments	EACH	7.000	7.000

Estimate Of Quantities

9100-05-72					
Line	Item	Item Description	Unit	Total	Qty
0198	SPV.0060	Special 03. Temporary Water Diversion STA 798+74	EACH	1.000	1.000
0200	SPV.0060	Special 04. Temporary Water Diversion STA 887+90	EACH	1.000	1.000
0202	SPV.0060	Special 05. Temporary Water Diversion STA 955+42	EACH	1.000	1.000
0204	SPV.0060	Special 06. Temporary Water Diversion STA 1087+99	EACH	1.000	1.000

REMOVALS											
201.0120 CLEARING		201.0220 GRUBBING	203.0100 REMOVING SMALL CULVERT PIPE				204.0150 REMOVING CURB & GUTTER	204.0110 REMOVING ASPHALTIC SURFACE	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS	204.0120 REMOVING ASPHALTIC SURFACE MILLING	
LOCATION	(ID)	(ID)	24-INCH (EA)	30-INCH (EA)	36-INCH (EA)	48-INCH (EA)	(LF)	(SY)	(SY)	(SY)	
445+60 to 1101+46	-	-	-	-	-	-	-	-	34	225800	
445+60	-	-	-	-	-	-	-	-	-	-	
605+98	-	-	1	-	-	-	-	-	-	-	
631+64	-	-	1	-	-	-	-	-	-	-	
682+40	43	43	-	1	-	-	-	-	-	-	
707+87	-	-	1	-	-	-	-	-	-	-	
748+44	-	-	1	-	-	-	-	-	-	-	
798+73	-	-	-	-	-	1	-	-	-	-	
887+91	-	-	-	-	1	-	-	-	-	-	
955+42	169	169	1	-	-	-	-	-	-	-	
974+25	-	-	-	-	-	-	128	-	49	-	
1025+52	-	-	1	-	-	-	-	-	-	-	
1088+00	-	-	-	-	-	2	-	-	-	-	
1101+46	-	-	-	-	-	-	-	-	34	-	
Undistributed	-	-	-	-	-	-	-	100	-	-	
TOTALS	212	212		11			128	100	117	225800	

CULVERT PIPE TRANSITION															
CULVERT	LIMITS		LENTH (FT)	"D" DEPTH (FT)	PIPE DIA (IN)	DEPTH TO CENTER OF PIPE (FT)	"T" DEPTH (FT)	TRENCH WIDTH (FT)	SHOULDER POINT TO SHOULDER POINT PERPENDICULAR (FT)	SHOULDER POINT TO SHOULDER POINT ALONG TRENCH (FT)	PAVEMENT AND BASE REMOVAL (CF)	LENGTH OF CUT (FT)	TRANSITION CUT VOLUME W/O PAVEMENT (CF)	205.0100 EXCAVATION COMMON (CY)	
19070000064	605+45	to	606+51	106	4.0	36	5.50	5.00	6	36	36	4650	100	9000	506
19070000065	631+12	to	632+16	104	3.0	24	4.00	4.00	4	36	36	4650	100	7200	439
19070000068	681+88	to	682+93	105	8.0	30	9.25	5.00	5	36	36	4650	100	9000	506
19070000069	707+35	to	708+39	104	4.0	24	5.00	5.00	4	36	36	4650	100	9000	506
19070000071	747+92	to	748+96	104	4.0	24	5.00	5.00	4	36	36	4650	100	9000	506
19070000072	798+15	to	799+31	116	3.0	98	7.08	5.00	16	36	36	4650	100	9000	506
19070000076	887+33	to	888+49	115	6.0	91	9.79	5.00	15	36	36	4650	100	9000	506
19070000079	954+89	to	957+20	231	6.0	42	7.75	5.00	7	36	36	11424	224	20160	1170
19070000083	1025+00	to	1026+04	104	5.0	24	6.00	5.00	4	36	36	4650	100	9000	506
19070000087	1087+37	to	1088+63	125	2.0	152	8.33	5.00	25	36	36	4650	100	9000	506
Undistributed EBS															760
TOTAL														6417	

BASE AGGREGATE DENSE								
			209.2100	305.0110	305.0120	312.0110	624.0100	645.0140
			BACKFILL	BASE	BASE	SELECT	WATER	GEOTEXTILE
			GRANULAR	AGGREGATE	AGGREGATE	CRUSHED		TYPE
			GRADE 2	DENSE	DENSE	MATERIAL		SAS
				3/4-INCH	1 1/4-INCH			
LOCATION			(CY)	(TON)	(TON)	(TON)	(MGAL)	(SY)
445+60 to	946+32	Shoulders	-	4019	-	-	80.4	-
946+32 to	1101+46	Shoulders	-	479	-	-	9.6	-
605+98			-	-	234	-	4.7	-
631+64			-	-	234	-	4.7	-
682+40			-	-	238	-	4.8	-
707+87			-	-	240	-	4.8	-
748+44			-	-	260	-	5.2	-
798+73			-	-	247	-	5.0	-
887+91			-	-	244	-	4.9	-
954+89	TO 957+20		-	22	753	668	28.9	1335
974+25	CURB		-	12	-	-	0.3	-
1025+52			-	-	267	-	5.4	-
1088+00			-	-	322	-	6.5	-
Undistributed EBS			760	-	1518	-	30.4	911
TOTALS			760	4532	4557	668	196	2246

CURB & GUTTER	
	601.0553
	CONCRETE
	CURB & GUTTER
	4-INCH SLOPED
	36-INCH TYPE D
LOCATION	(LF)
STH 101	128
TOTALS	128

PAVEMENT										
		211.0101	211.0400	450.4000	455.0605	460.5224	465.0105	465.0110	465.0520	465.0560
		PREPARE	PREPARE	HMA	TACK	HMA	ASPHALTIC	ASPHALTIC	ASPHALTIC	ASPHALTIC
		FOUNDATION	FOUNDATION	COLD	COAT	PAVEMENT	SURFACE	SURFACE	RUMBLE	RUMBLE STRIPS,
		FOR ASPHALTIC	FOR ASPHALTIC	WEATHER		4 LT 58-28 S		PATCHING	STRIPS,	CENTERLINE
		PAVING	SHOULDERS	PAVING					SHOULDER	
		(9100-05-72)								
LOCATION		(EACH)	(STA)	(TON)	(GAL)	(TON)	(TON)	(TON)	(LF)	(LF)
445+60	TO 946+32	-	-	-	8359	23406	-	-	-	50072
946+32	TO 1101+46	-	-	-	2931	8206	676	-	31028	15514
605+98	Culvert Patch	-	-	-	18	-	99	-	-	-
631+64	Culvert Patch	-	-	-	18	-	99	-	-	-
682+40	Culvert Patch	-	-	-	18	-	100	-	-	-
707+87	Culvert Patch	-	-	-	18	-	100	-	-	-
748+44	Culvert Patch	-	-	-	20	-	109	-	-	-
798+73	Culvert Patch	-	-	-	18	-	103	-	-	-
887+91	Culvert Patch	-	-	-	18	-	103	-	-	-
954+89	TO 957+20	-	-	-	45	-	245	-	-	-
1025+52	Culvert Patch	-	-	-	20	-	112	-	-	-
1088+00	Culvert Patch	-	-	-	24	-	136	-	-	-
946+32	TO 956+00	-	19	-	-	-	-	-	-	-
957+20	TO 1101+46	-	289	-	-	-	-	-	-	-
Undistributed		1	-	7903	-	-	-	100	-	-
TOTALS		1	308	7903	11506	31612	1882	100	31028	65586

PWL MIXTURE USE TABLE									
LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:		
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE	
STH 70 LANES	445+60 to 1101+46	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 LT 58-28 S	24524	2.50	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE PWL HMA PAVEMENT 460.2005	
STH 70 SHOULDERS	445+60 to 1101+46	UPPER LAYER	MILLED EXISTING HMA SURFACE	4 LT 58-28 S	7088	2.50	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT, NOT ELIGIBLE FOR INCENTIVE	

CULVERT PIPE SUMMARY

		520.1024	520.1030	520.1036	520.3424	520.3430	520.3436	522.0142	522.0148	522.0424	522.0454	522.1024	522.1042	522.1048	522.1054	522.2348	522.2648		
		APRON ENDWALLS FOR CULVERT PIPE 24-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE 30-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE 36-INCH EACH	CULVERT PIPE CLASS III-A NON-METAL 24-INCH LF	CULVERT PIPE CLASS III-A NON-METAL 30-INCH LF	CULVERT PIPE CLASS III-A NON-METAL 36-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS III 42-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS III 48-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	CULVERT PIPE REINFORCED CONCRETE CLASS IV 54- INCH LF	ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24- INCH EACH	ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 42- INCH EACH	ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 48- INCH EACH	ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 54- INCH EACH	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 48X76-INCH LF	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 48X76-INCH EACH	INLET** ELEVATION	OUTLET** ELEVATION
605+98.01	19070000064	-	-	2	-	-	68	-	-	-	-	-	-	-	-	-	-	1412.85	1412.06
631+63.50	19070000065	2	-	-	54	-	-	-	-	-	-	-	-	-	-	-	-	1451.94	1450.74
682+43.21	19070000068	-	2	-	-	96	-	-	-	-	-	-	-	-	-	-	-	1435.29	1434.63
707+87.24	19070000069	2	-	-	63	-	-	-	-	-	-	-	-	-	-	-	-	1387.70	1387.49
748+44.23	19070000071	-	-	-	-	-	-	-	-	64	-	2	-	-	-	-	-	1397.05	1396.56
798+72.67	19070000072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	2	1316.92	1316.76
887+91.18	19070000076	-	-	-	-	-	-	-	79	-	-	-	-	2	-	-	-	1354.32	1353.93
955+41.95	19070000079	-	-	-	-	-	-	63	-	-	-	-	2	-	-	-	-	1274.95	1272.22
1025+51.80	19070000083	2	-	-	66	-	-	-	-	-	-	-	-	-	-	-	-	1298.02	1297.96
1087+99.80	19070000087a	-	-	-	-	-	-	-	-	-	61	-	-	-	2	-	-	1285.10	1285.00
1088+09.04	19070000087b	-	-	-	-	-	-	-	-	-	61	-	-	-	2	-	-	1285.10	1285.00
TOTALS		6	2	2	183	96	68	63	79	64	122	2	2	2	4	80	2		

**PIPE INVERT AT END OF PIPE FOR INFORMATION ONLY . FIELD VERIFY

		511.1100	606.0100	606.0200	633.5200	645.0120	645.0130	208.1500.S
		TEMPORARY	RIPRAP	RIPRAP	MARKERS	GEOTEXTILE	GEOTEXTILE	TEMPORARY
		SHORING	LIGHT	MEDIUM	CULVERT	FABRIC	FABRIC	LANE SHIFT
					ENDS	HR	R	DURING
LOCATION	Culvert #	(SF)	(CY)	(CY)	(EACH)	(SY)	(SY)	CULVERT WORK
		(EA)						
605+98	19070000064	-	-	4	2	6	-	2
631+64	19070000065	-	-	4	2	6	-	2
682+40	19070000068	-	-	4	2	6	-	2
707+87	19070000069	-	-	4	2	6	-	2
748+44	19070000071	-	-	4	2	6	-	2
798+73	19070000072	-	6	12	2	6	6	2
887+91	19070000076	-	23	-	2	-	12	2
955+42	19070000079	600	-	4	2	6	-	2
1025+52	19070000083	-	-	4	2	6	-	2
1088+00	19070000087	-	-	40	2	20	-	2
		600	29	80	20	68	18	20

TRAFFIC CONTROL

		643.0300	643.0900	643.1000
		TC	TC	TC
		DRUMS	SIGNS	SIGNS
				FIXED
				MESSAGE
STAGE	DURATION	#	#	(SF)
	CALENDAR DAYS	(DAY)	(DAY)	
Project Wide	95	300	22	2090
				36
TOTALS		28,500	2,090	36

UNDERDRAIN

		310.0110	612.0106	612.0108	612.0206	612.0806	645.0111	SPV.0060
		BASE	PIPE	PIPE	PIPE	APRON ENDWALLS	GEOTEXTILE	01. APRON ENDWALLS
		AGGREGATE	UNDERDRAIN	UNDERDRAIN	UNDERDRAIN	FOR UNDERDRAIN	TYPE DF	FOR UNDERDRAIN
		OPEN-GRADED	6-INCH	8-INCH	UNPERFORATED	REINFORCED	SCHEDULE A	REINFORCED
					6-INCH	CONCRETE 6-INCH		CONCRETE 8-INCH
LOCATION	(TON)	(LF)	(LF)	(LF)	(EA)	(SY)	(EA)	
956+00 LT	47	114	118	2	1	164	1	
956+00 RT	28	61	69	7	1	93	1	
		75	175	187	9	2	257	2

GUARDRAIL

		614.2330	614.2610
		MGS	MGS
		GUARDRAIL	GUARDRAIL
		3K	TERMINAL
			EAT
LOCATION	(LF)	(EACH)	
952+31 TO 957+00 RT	360	2	
		360	2

EROSION CONTROL							
	628.1504 SILT FENCE	628.1520 SILT FENCE MAINTENANCE	628.1905 MOBILIZATIONS EROSION CONTROL	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL	628.7504 TEMPORARY DITCH CHECKS	628.7555 CULVERT PIPE CHECK	628.7570 ROCK BAGS
LOCATION	(LF)	(LF)	(EACH)	(EACH)	(LF)	(EACH)	(EACH)
19070000064	628	628	-	-	-	25	-
19070000065	485	485	-	-	-	20	-
19070000068	743	743	-	-	-	20	-
19070000069	743	743	-	-	-	20	-
19070000071	865	865	-	-	-	20	-
19070000072	716	716	-	-	-	30	-
19070000076	686	686	-	-	-	-	-
19070000079	725	725	-	-	-	30	-
19070000083	526	526	-	-	-	20	-
19070000087	593	593	-	-	-	-	-
UNDISTRIBUTED	500	500	8	3	100	10	100
TOTALS	7210	7210	8	3	100	195	100

RESTORATION

	625.0100 TOPSOIL	628.2008 EROSION MAT URBAN CLASS I TYPE B	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE NO. 20	630.0500 SEED WATER	
LOCATION	SF	(SY)	(SY)	(CWT)	(LB)	(MGAL)
19070000064	5783	643	643	0.4	18	15
19070000065	6509	724	724	0.5	20	16
19070000068	13683	1521	1521	0.9	42	34
19070000069	5378	598	598	0.4	17	14
19070000071	6210	690	690	0.4	19	16
19070000072	8405	934	934	0.6	26	21
19070000076	10834	1204	1204	0.7	33	27
19070000079	4242	472	472	0.3	13	11
19070000083	5914	658	658	0.4	18	15
19070000087	6475	720	720	0.5	20	16
UNDISTRIBUTED	1000	112	112	0.1	3	3
TOTALS	8276	8276	5.2	229	186	

AT CULVERT 19070000079, RESTORATION ONLY PAID AROUND CULVERT. ANY GRADING AND RETORATION AT ENDS OF GUARDRAIL ARE PAID UNDER OTHER ITEM.

SAWING

GRADING SHAPING FINISHING													
			205.9016.S	614.0010					*	*	*		
			GRADING	BARRIER					EROSION MAT				
			SHAPING	SYSTEM					URBAN				
			AND FINISHING	GRADING	EXCAVATION					CLASS I	FERTILIZER	SEEDING	
			INTERSECTION	SHAPING	COMMON					TYPE B	TYPE B	MIXTURE	
				FINISHING	**	FILL	BORROW	TOPSOIL	**	**	**		
LOCATION			SF	(EACH)	(EACH)	(CY)	(CY)	(CY)	(SY)	(SY)	(CWT)	(LB)	
952+31.00	TO	957+00.00	53+11	-	1	28	322	-294	551	551	0.35	10.0	
STH 101		974+25	3+84	1	-	12	-	-	57	57	0.04	1.1	
TOTALS			1	1									
* NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY, ITEMS INCIDENTAL TO GRADING SHAPING FINISHING ITEMS.													
** ADDITIONAL QUANTITY SHOWN ELSEWHERE													

690.0150 SAWING ASPHALT		
LOCATION		(LF)
605+98	19070000064	60
631+64	19070000065	60
682+40	19070000068	60
707+87	19070000069	60
748+44	19070000071	65
798+73	19070000072	60
887+91	19070000076	60
952+57	to 954+89	233
955+42	19070000079	70
1025+52	19070000083	66
1088+00	19070000087	60
TOTALS		854

PAVEMENT MARKING							
LOCATION*		646.2020	646.2040	646.6120	646.6466	643.3165	
		MARKING	MARKING LINE	MARKING	COLD WEATHER	TEMPORARY	
		LINE	GROOVED WET	STOP LINE	MARKING	MARKING	
		EPOXY	REF EPOXY	EPOXY	EPOXY	LINE PAINT	
		6-INCH	6-INCH	18-INCH	6-INCH*	6-INCH	
		WHITE	YELLOW				
		(LF)	(LF)	(LF)	(LF)	(LF)	
445+60	TO 534+78	Solid-Solid	17837	17837	-	8919	35673
534+78	TO 545+82	Solid-Dashed	2208	1380	-	897	2572
545+82	TO 558+91	Dashed	2619	328	-	737	433
558+91	TO 569+89	Solid-Dashed	2197	1373	-	893	2559
569+89	TO 652+58	Solid-Solid	16537	16537	-	8269	33074
652+58	TO 675+92	Solid-Dashed	4668	2918	-	1897	5438
675+92	TO 785+05	Solid-Solid	21828	21828	-	10914	43656
785+05	TO 796+09	Solid-Dashed	2208	1380	-	897	2572
796+09	TO 803+74	Dashed	1532	192	-	431	253
803+74	TO 814+57	Solid-Dashed	2165	1353	-	880	2522
814+57	TO 836+32	Solid-Solid	4351	4351	-	2176	8702
836+32	TO 844+72	Solid-Dashed	1680	1050	-	683	1957
844+72	TO 847+94	Solid-Solid	645	645	-	323	1289
847+94	TO 856+12	Solid-Dashed	1637	1023	-	665	1907
856+12	TO 866+68	Solid-Solid	2112	2112	-	1056	4224
866+68	TO 879+04	Solid-Dashed	2472	1545	-	1005	2879
879+04	TO 890+65	Dashed	2324	291	-	654	384
890+65	TO 901+21	Solid-Dashed	2112	1320	-	858	2461
901+21	TO 902+27	Dashed	212	27	-	60	35
902+27	TO 911+98	Solid-Dashed	1944	1215	-	790	2264
911+98	TO 939+97	Dashed	5597	700	-	1575	924
939+97	TO 950+79	Solid-Dashed	2165	1353	-	880	2522
950+79	TO 990+87	Solid-Solid	8016	8016	20	4008	16031
990+87	TO 1002+43	Solid-Dashed	2313	1446	-	940	2695
1002+43	TO 1015+26	Dashed	2567	321	-	722	424
1015+26	TO 1027+35	Solid-Dashed	2419	1512	-	983	2818
1027+35	TO 1061+72	Solid-Solid	6875	6875	-	3438	13750
1061+72	TO 1072+97	Solid-Dashed	2250	1406	-	914	2621
1072+97	TO 1096+68	Dashed	4742	593	-	1334	783
1096+68	TO 1101+46	Solid-Dashed	957	598	-	389	1115
TOTALS			131189	101525	20	58187	198537

* COLD WEA THER MARKING EPOXY 6-INCH QUANTTTY ESTIMATED TO BE 25% OF REQUIRED PAVEMENT MARKING
IT IS ANTICIPATED THAT THE TEMPORARY PAINT WILL BE APPLIED AFTER THE MILLING OPERATION REMOVES THE EXISTING CENTERLINE. TEMPORARY PAINT WILL BE USED IMMEDIATELY FOLLOWING THE PAVING OPERATION. THE YELLOW GROOVED WET REFLECTIVE EPOXY WILL BE USED FOLLOWING THE MILLING OF THE CENTERLINE RUMBLE STRIPS. THE WHITE EPOXY WILL BE USED FOR EDGELINES.

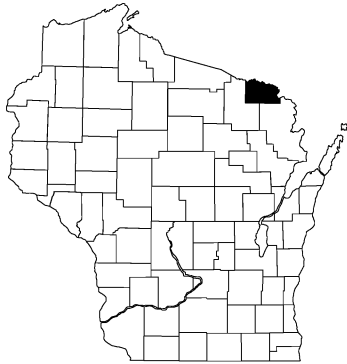
CONSTRUCTION STAKING								
	621.0100	650.4500	650.5000	650.6000	650.8000	650.9911	650.9920	SPV.0060
	LANDMARK	SUBGRADE	BASE	PIPE	RESURFACING	SUPPLEMENTAL	SLOPE	02. REESTABLISH
	REFERENCE			CULVERTS	REFERENCE	CONTROL	STAKES	SECTION CORNER
	MONUMENTS					(9100-05-71)		MONUMENTS
LOCATION	(EACH)	(LF)	(LF)	(EACH)	(LF)	(LS)	(LF)	(EACH)
19070000064	-	-	-	1	-		200	-
19070000065	-	-	-	1	-		200	-
19070000068	-	-	-	1	-		200	-
19070000069	-	-	-	1	-		200	-
19070000071	-	-	-	1	-		200	-
19070000072	-	-	-	1	-		200	-
19070000076	-	-	-	1	-		200	-
19070000079	-	-	-	1	-		300	-
19070000083	-	-	-	1	-		200	-
19070000087	-	-	-	1	-		200	-
954+89 TO 957+20	-	231	231	-	-		-	-
PROJECT	28	-	-	-	65590	1	-	7
TOTALS	28	231	231	10	65590	1	2100	7

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PROJECT PLAT TITLE SHEET

9100-05-22
TIPLER - FLORENCE

STH 139 SOUTH TO USH 2

STH 70
FLORENCE COUNTY



CONVENTIONAL SYMBOLS

SECTION LINE	---	SECTION CORNER SYMBOL		R/W MONUMENT (TO BE SET)	•
QUARTER LINE	---	NON-MONUMENTED R/W POINT	○		
SIXTEENTH LINE	---	FOUND IRON PIN (1-INCH UNLESS NOTED)	IP		
NEW REFERENCE LINE	---				
NEW R/W LINE	---				
EXISTING R/W OR HE LINE	---				
PROPERTY LINE	---				
LOT, TIE & OTHER MINOR LINES	---				
SLOPE INTERCEPT	---				
CORPORATE LIMITS	---				
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)	---				
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)	---				
TEMPORARY LIMITED EASEMENT AREA	---				
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)	---				
TRANSMISSION STRUCTURES	---				
BUILDING	---				
BRIDGE	---				

CONVENTIONAL ABBREVIATIONS

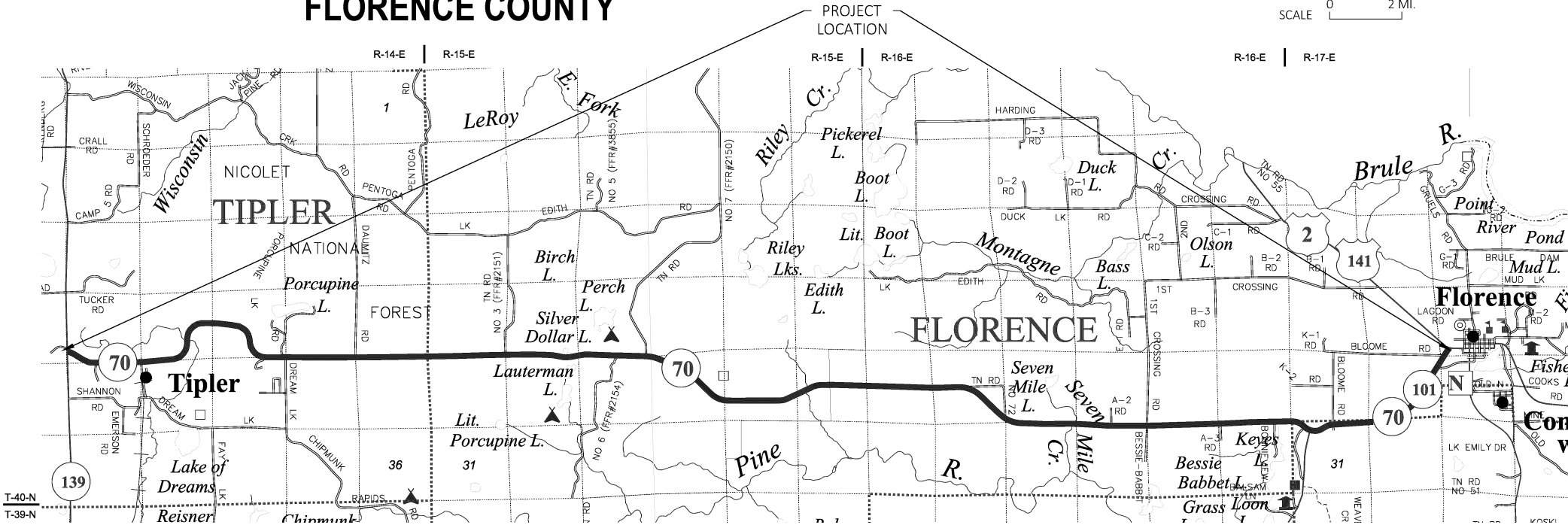
ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS (100')	
AND OTHERS	ET AL	REEL / IMAGE	R/I
BACK	BK	REFERENCE LINE	R/L
BLOCK	BLK	REMAINING	REM
CENTERLINE	C/L	RESTRICTIVE DEVELOPMENT	RDE
CERTIFIED SURVEY MAP	CSM	EASEMENT	
CONCRETE	CONC	RIGHT	RT
COUNTY	CO	RIGHT OF WAY	R/W
COUNTY TRUNK HIGHWAY	CTH	SECTION	SEC
DISTANCE	DIST	SEPTIC VENT	SEPV
CORNER	COR	SQUARE FEET	SF
DOCUMENT NUMBER	DOC	STATE TRUNK HIGHWAY	STH
EASEMENT	EASE	STATION	STA
EXISTING	EX	TELEPHONE PEDESTAL	TP
GAS VALVE	GV	TEMPORARY LIMITED	TLE
GRID NORTH	GN	EASEMENT	
HIGHWAY EASEMENT	HE	TRANSPORTATION PROJECT PLAT	TPP
IDENTIFICATION	ID	UNITED STATES HIGHWAY	USH
LAND CONTRACT	LC	VOLUME	V
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED EASEMENT	PLE		
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		

CURVE DATA ABBREVIATIONS

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ/DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

CONVENTIONAL UTILITY SYMBOLS

WATER	---
GAS	---
TELEPHONE	---
OVERHEAD TRANSMISSION LINES	---
ELECTRIC	---
CABLE TELEVISION	---
FIBER OPTIC	---
SANITARY SEWER	---
STORM SEWER	---
ELECTRIC TOWER	---



THE NOTES, CONVENTIONAL SIGNS, AND ABBREVIATIONS ARE ASSOCIATED WITH EACH TRANSPORTATION PROJECT PLAT FOR PROJECT 9100-05-22.

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), FLORENCE COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE. ALL (TLES) ON THIS PLAT EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN GREEN BAY.

PARCEL AND UTILITY IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE TPP DETAIL PAGES.

INFORMATION FOR THE BASIS OF EXISTING HIGHWAY RIGHT-OF-WAY POINTS OF REFERENCE AND ACCESS CONTROL ARE LISTED ON THE TPP DETAIL PAGES.

PROJECT NUMBER 9100-05-22-4.01
SHEET 2 OF 2

TRANSPORTATION PROJECT PLAT NO: 9100-05-22-4.02

THAT PART OF NORTHEAST ¼ OF THE NORTHEAST ¼ OF SECTION 33, T40N, R17E, TOWN OF FLORENCE, FLORENCE COUNTY, WISCONSIN.

RELOCATION ORDER STH 70 TIPLER-FLORENCE (STH 139 SOUTH TO USH 2) - FLORENCE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

- TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
 - THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NO.	OWNER(S)	INTERESTS REQUIRED	R/W (ACRES)			
			NEW R/W	EXISTING R/W	TOTAL R/W	TLE (ACRES)
3	MICHAEL E. BREMBERGER, PATRICK J. BREMBERGER, JOSEPH D. BREMBERGER, AND JAMES G. BREMBERGER	FEE & TLE	0.007	1.767	1.774	0.056

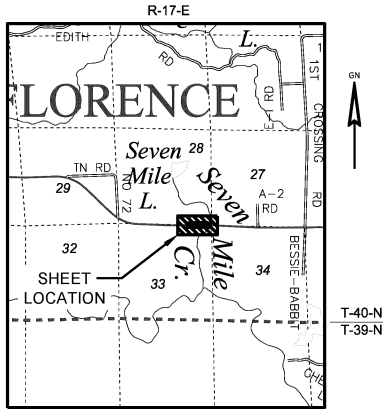
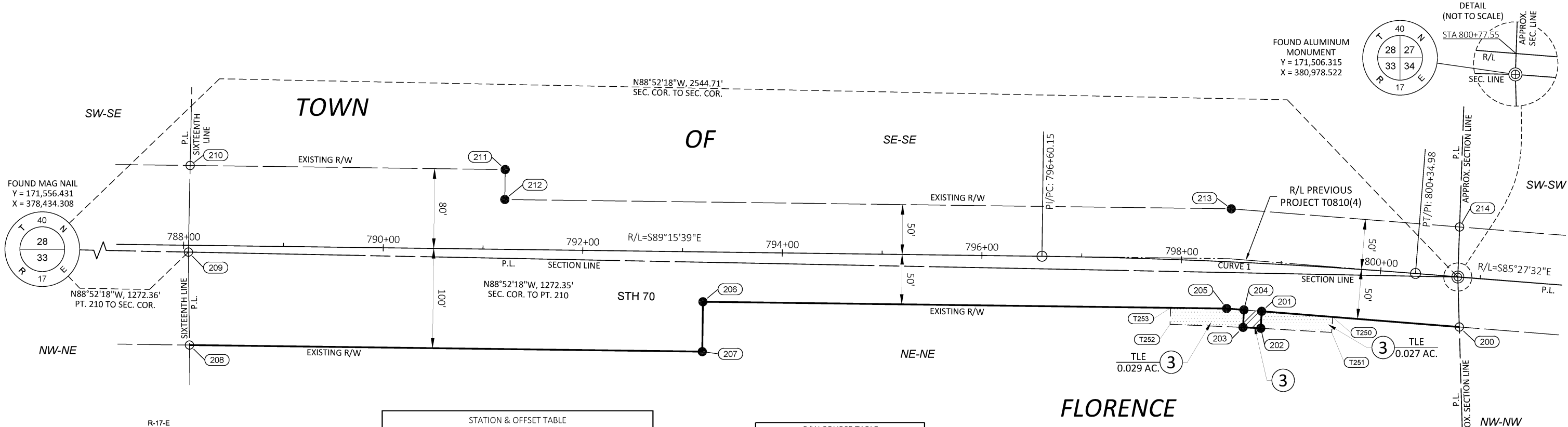
OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT. PURPOSE OF ALL THE TLES IS FOR GRADING, UNLESS NOTED.

DOC # 289772
Recorded March 09, 2022 at 9:50 AM

Laurie J. Boren
LAURIE J. BOREN, REGISTER OF DEEDS
FLORENCE COUNTY, WI
Pages: 1 of 1 Fee Amount: \$25.00

**This document has been electronically recorded

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 9100-05-22-4.02



NOTES:
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), FLORENCE COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY ¾" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
STH 70: PREVIOUS PROJECT T0810(4)

FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN GREEN BAY.

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2 OF DOCUMENT NUMBER 289747.

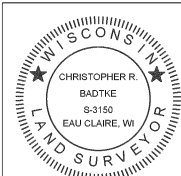
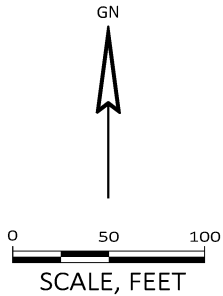
TLE STATION & OFFSET TABLE					
POINT	STATION	OFFSET	POINT	STATION	OFFSET
T250	799+55.05	49.69' RT			
T251	799+55.00	65.00' RT			
T252	797+91.00	65.00' RT			
T253	797+91.00	48.48' RT			

R/W COURSE TABLE		
COURSE	BEARING	DISTANCE
SEC. COR. - 200	S01°39'59"E	50.08'
200 - 201	N85°27'32"W	198.67'
201 - 202	S02°59'51"W	17.04'
202 - 203	N87°05'36"W	17.79'
203 - 204	N02°48'58"E	17.55'
204 - 205	N85°27'32"W	17.30'
205 - 206	N89°15'39"W	524.91'
206 - 207	S00°44'21"W	50.00'
207 - 208	N89°15'39"W	513.94'
208 - 209	N00°39'17"W	93.21'
209 - R/L	N01°09'33"E	6.82'
R/L - 210	N01°09'33"E	80.00'
210 - 211	S89°15'39"E	315.74'
211 - 212	S00°44'21"W	30.00'
212 - 213	S89°15'39"E	728.06'
213 - 214	S85°27'32"E	229.49'
214 - R/L	S01°59'28"W	50.05'
R/L - SEC. COR.	S01°59'28"W	0.21'

CURVE 1
PI STA = 798+47.63
Y = 171524.703
X = 380749.193
DELTA = 3°46'50" RT
D = 1°00'31"
T = 187.48'
L = 374.83'
R = 5680.76'
PC STA = 796+60.15
Y = 171527.157
X = 380561.730
PT STA = 800+34.98
Y = 171509.895
X = 380936.086
DB = S89°15'00"E
DA = S85°28'11"E

PI STA = 796+60.15
Y = 171527.157
X = 380561.730
DELTA = 0°00'39" RT

PI STA = 800+34.98
Y = 171509.895
X = 380936.086
DELTA = 0°00'39" RT



I, CHRISTOPHER R. BADTKE, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION, I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

CHRISTOPHER R. BADTKE
REGISTRATION NUMBER: 5-3150
03/08/2022
DATE



THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION, NORTHEAST REGION.

CURT VAN EREM
3/08/2022
DATE

TRANSPORTATION PROJECT PLAT NO: 9100-05-22-4.03

THAT PART OF SOUTHEAST ¼ OF THE SOUTHEAST ¼ OF SECTION 25, AND THAT PART OF GOVERNMENT LOT 1 OF SECTION 36, ALL IN T40N, R17E, TOWN OF FLORENCE, FLORENCE COUNTY, WISCONSIN.

RELOCATION ORDER STH 70 TIPLER-FLORENCE (STH 139 SOUTH TO USH 2) - FLORENCE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
- THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NO.	OWNER(S)	INTERESTS REQUIRED	R/W (ACRES)			
			NEW R/W	EXISTING R/W	TOTAL R/W	TLE (ACRES)
4	WAYNE FALK	TLE	----	----	----	0.029
6	JOHN E. LEIGHTON	TLE	----	----	----	0.080
7	BENJAMIN C. FAIRWEATHER AND KRISTINA R. FAIRWEATHER	FEE & TLE	0.007	----	0.007	0.181

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT.
PURPOSE OF ALL THE TLES IS FOR GRADING, UNLESS NOTED.

DOC # 289769
Recorded March 09, 2022 at 9:10 AM

Laurie J. Boren
LAURIE J. BOREN, REGISTER OF DEEDS
FLORENCE COUNTY, WI
Pages: 1 of 1 Fee Amount: \$25.00

**This document has been electronically recorded

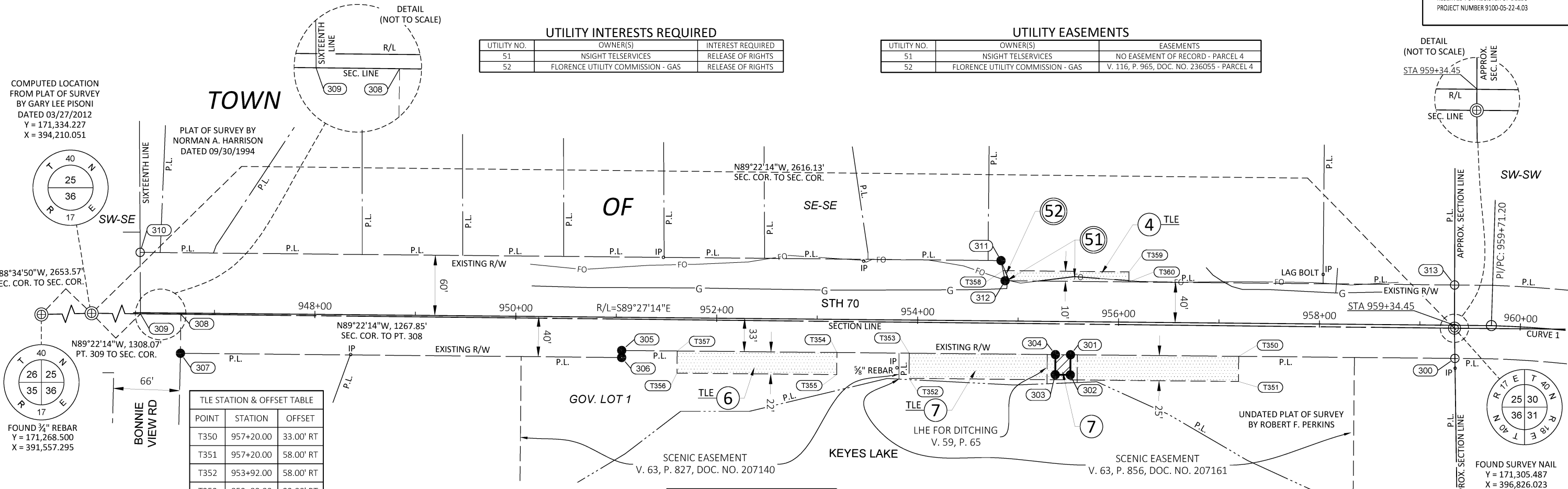
RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 9100-05-22-4.03

UTILITY INTERESTS REQUIRED

UTILITY NO.	OWNER(S)	INTEREST REQUIRED
51	NSIGHT TELSOURCES	RELEASE OF RIGHTS
52	FLORENCE UTILITY COMMISSION - GAS	RELEASE OF RIGHTS

UTILITY EASEMENTS

UTILITY NO.	OWNER(S)	EASEMENTS
51	NSIGHT TELSOURCES	NO EASEMENT OF RECORD - PARCEL 4
52	FLORENCE UTILITY COMMISSION - GAS	V. 116, P. 965, DOC. NO. 236055 - PARCEL 4



NOTES:
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), FLORENCE COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY ¾" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL FOUND IRON PINS AREA 1" IRON PIPES UNLESS NOTED.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
STH 70: PREVIOUS PROJECTS T0810(7) AND T0810(9)
BONNIE VIEW ROAD: PRESUMED TO BE 66 FEET IN WIDTH CENTERED ON THE EXISTING CENTERLINE OF THE TRAVELED WAY PER STATUTE 82.31(2).

FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN GREEN BAY.

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2 OF DOCUMENT NUMBER 289747.

R/W STATION & OFFSET TABLE		
POINT	STATION	OFFSET
T350	957+20.00	33.00' RT
T351	957+20.00	58.00' RT
T352	953+92.00	58.00' RT
T353	953+92.00	33.00' RT
T354	953+20.00	33.00' RT
T355	953+20.00	55.00' RT
T356	951+61.00	55.00' RT
T357	951+61.00	33.00' RT
T358	954+84.58	50.00' LT
T359	956+10.00	50.00' LT
T360	956+10.00	40.00' LT

R/W COURSE TABLE		
COURSE	BEARING	DISTANCE
SEC. COR. - 300	S00°48'58"E	30.01'
300 - 301	N89°27'14"W	382.68'
301 - 302	S00°32'46"W	20.00'
302 - 303	N89°27'14"W	15.00'
303 - 304	N00°32'46"E	20.00'
304 - 305	N89°27'14"W	431.74'
305 - 306	S00°32'46"W	7.00'
306 - 307	N89°27'14"W	439.20'
307 - 308	N00°37'46"E	38.85'
308 - 309	N89°22'14"W	40.21'
309 - R/L	N00°19'28"W	1.10'
R/L - 310	N00°19'28"W	60.01'
310 - 311	S89°27'14"E	856.96'
311 - 312	S11°27'14"E	20.45'
312 - 313	S89°27'14"E	447.50'
313 - R/L	S00°12'06"W	40.00'
R/L - SEC. COR.	S00°12'06"W	3.00'

PLOT DATE : 3/8/2022 11:57 AM

PLOT BY : AYRES ASSOCIATES

PLOT NAME :

PLOT SCALE :

FILE NAME : I:\74\G8\74-0591.00 BENESCH-STH 70 FLORENCE CO\CADD\C3D\RW\91000522_0403.DWG
APPRAISAL PLAT DATE : 03/08/2022

9100-05-22-4.03

TRANSPORTATION PROJECT PLAT NO: 9100-05-22-4.04

THAT PART OF THE NORTHWEST ¼ OF THE NORTHWEST ¼ OF SECTION 32, T40N, R18E, TOWN OF COMMONWEALTH, FLORENCE COUNTY, WISCONSIN.

RELOCATION ORDER STH 70 TIPLER-FLORENCE (STH 139 SOUTH TO USH 2) - FLORENCE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

- TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
 - THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NO.	OWNER(S)	INTERESTS REQUIRED	R/W (ACRES)			
			NEW R/W	EXISTING R/W	TOTAL R/W	TLE (ACRES)
8	JACK D. THOMAS	FEE & TLE	0.006	----	0.006	0.050
9	RICHARD BENNETTS HOLMSTROM	FEE & TLE	0.009	----	0.009	0.043
11	DEBRA A. HICKEY	FEE & TLE	0.001	----	0.001	0.046

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT.
PURPOSE OF ALL THE TLES IS FOR GRADING, UNLESS NOTED.

UTILITY INTERESTS REQUIRED

UTILITY NO.	OWNER(S)	INTEREST REQUIRED
52	FLORENCE UTILITY COMMISSION - GAS	RELEASE OF RIGHTS

UTILITY EASEMENTS

UTILITY NO.	OWNER(S)	EASEMENTS
52	FLORENCE UTILITY COMMISSION - GAS	NO EASEMENT OF RECORD - PARCEL 8

DOC # 289764
Recorded March 07, 2022 at 1:19 PM

Laurie J. Boren
LAURIE J. BOREN, REGISTER OF DEEDS
FLORENCE COUNTY, WI
Pages: 1 of 1 Fee Amount: \$25.00

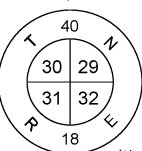
**This document has been electronically recorded

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 9100-05-22-4.04

R/W STATION & OFFSET TABLE					
POINT	STATION	OFFSET	POINT	STATION	OFFSET
400	1029+35.64	33.00' LT	408	1018+37.63	33.00' RT
401	1031+34.43	33.00' RT	409	1018+39.68	33.00' LT
402	1031+09.48	33.00' RT	410	1022+98.48	33.00' LT
403	1025+60.55	33.00' RT	411	1025+43.00	33.00' LT
404	1025+60.55	58.00' RT	412	1025+43.00	48.00' LT
405	1025+43.75	58.00' RT	413	1025+59.50	48.00' LT
406	1025+43.75	33.00' RT	414	1025+59.50	33.00' LT
407	1022+98.48	33.00' RT			

TLE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
T450	1026+40.00	33.00' RT
T451	1026+40.00	58.00' RT
T452	1024+70.00	58.00' RT
T453	1024+70.00	33.00' RT
T454	1024+73.00	33.00' LT
T455	1024+73.00	48.00' LT
T456	1026+35.00	48.00' LT
T457	1026+35.00	33.00' LT

FOUND 2" SQUARE
IRON BAR
Y = 171,259.528
X = 402,434.835



TOWN

OF

COMMONWEALTH

CURVE TABLE				
CURVE #	LENGTH	RADIUS	LONG CHORD BEARING	LONG CHORD
C1	556.24'	2509.02'	S75°10'23"W	555.10'
C2	17.19'	2534.02'	S81°43'07"W	17.19'
C3	248.53'	2509.02'	S84°45'02"W	248.43'
C4	241.26'	2443.02'	N84°45'34"E	241.16'
C5	16.18'	2428.02'	N81°44'22"E	16.18'
C6	371.12'	2443.02'	N77°11'47"E	370.77'

NOTES:
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), FLORENCE COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY ¾" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

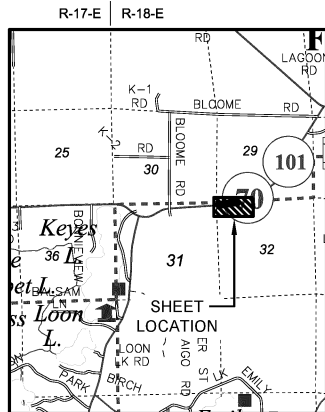
EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
STH 70: PRESUMED TO BE 66 FEET IN WIDTH CENTERED ON THE EXISTING CENTERLINE OF THE TRAVELED WAY PER STATE STATUE 82.31(2).

FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN GREEN BAY.

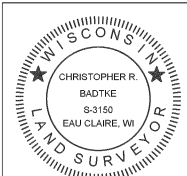
FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2 OF DOCUMENT NUMBER 289747.

R/W COURSE TABLE					
COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE
400 - R/L	N88°57'58"E	110.63'	408 - R/L	N00°37'59"W	33.02'
R/L - 401	N88°57'58"E	98.50'	R/L - 409	N00°37'59"W	33.02'
401 - 402	S68°49'19"W	24.95'	409 - 410	N87°35'18"E	458.81'
402 - 403	SEE CURVE TABLE C1		410 - 411	SEE CURVE TABLE C4	
403 - 404	S08°28'33"E	25.00'	411 - 412	N08°04'11"W	15.00'
404 - 405	SEE CURVE TABLE C2		412 - 413	SEE CURVE TABLE C5	
405 - 406	N08°05'14"W	25.00'	413 - 414	S08°27'06"E	15.00'
406 - 407	SEE CURVE TABLE C3		414 - 400	SEE CURVE TABLE C6	
407 - 408	S87°35'18"W	460.86'			

*** POINT 403 IS NOT INTENDED
TO BE ON THE PROPERTY LINE



0 50 100
SCALE, FEET



I, CHRISTOPHER R. BADTKE, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION, I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

CHRISTOPHER R. BADTKE
REGISTRATION NUMBER: S-3150
DATE 03/01/2022

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION, NORTHEAST REGION.

CURT VAN EREM
DATE 3/06/2022

TRANSPORTATION PROJECT PLAT NO: 9100-05-22-4.05
THAT PART OF THE NORTHEAST ¼ OF THE NORTHEAST ¼ OF SECTION 29, T40N, R18E, TOWN OF
COMMONWEALTH, FLORENCE COUNTY, WISCONSIN.

RELOCATION ORDER STH 70 TIPLER-FLORENCE (STH 139 SOUTH TO USH 2) - FLORENCE COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

- TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
 - THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

R/W STATION & OFFSET TABLE		
POINT	STATION	OFFSET
500	1093+38.30	33.00' LT
501	1092+42.10	33.00' RT
502	1088+26.25	33.00' RT
503	1088+26.25	48.00' RT
504	1087+96.25	48.00' RT
505	1087+96.25	33.00' RT
506	1083+22.81	33.00' RT
507	1082+82.30	33.00' LT
508	1087+83.00	33.00' LT
509	1087+83.00	53.00' LT
510	1088+13.60	53.00' LT
511	1088+13.60	33.00' LT

TLE STATION & OFFSET TABLE		
POINT	STATION	OFFSET
T550	1089+07.00	33.00' RT
T551	1089+07.00	48.00' RT
T552	1087+15.00	48.00' RT
T553	1087+15.00	33.00' RT
T554	1086+93.00	33.00' LT
T555	1086+93.00	53.00' LT
T556	1089+05.00	53.00' LT
T557	1089+05.00	33.00' LT

R/W COURSE TABLE		
COURSE	BEARING	DISTANCE
500 - R/L	S00°54'11"E	58.33'
R/L - 501	S00°54'11"E	58.33'
501 - 502	S33°33'02"W	415.85'
502 - 503	S56°26'58"E	15.00'
503 - 504	S33°33'02"W	30.00'
504 - 505	N56°26'58"W	15.00'
505 - 506	S33°33'02"W	473.44'
506 - R/L	N87°59'36"W	38.72'
R/L - 507	N87°59'36"W	38.72'
507 - 508	N33°33'02"E	500.70'
508 - 509	N56°26'58"W	20.00'
509 - 510	N33°33'02"E	30.60'
510 - 511	S56°26'58"E	20.00'
511 - 500	N33°33'02"E	524.70'

NOTES:
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), FLORENCE COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY ¾" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

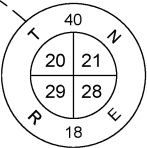
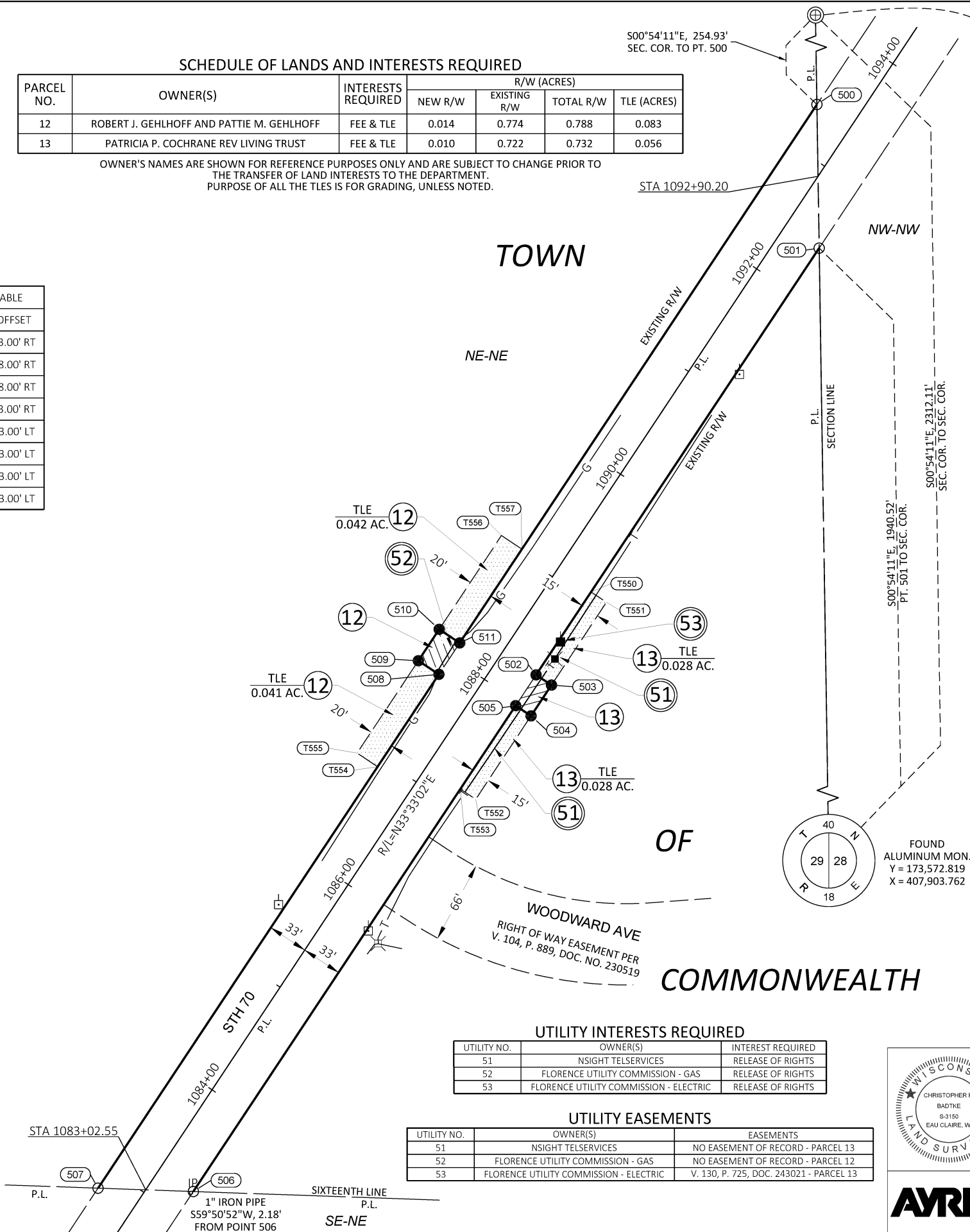
EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
STH 70: PRESUMED TO BE 66 FEET IN WIDTH CENTERED ON THE EXISTING CENTERLINE OF THE TRAVELED WAY PER STATE STATUE 82.31(2).

FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN GREEN BAY.

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2 OF DOCUMENT NUMBER 289747.

SCHEDULE OF LANDS AND INTERESTS REQUIRED						
PARCEL NO.	OWNER(S)	INTERESTS REQUIRED	R/W (ACRES)			
			NEW R/W	EXISTING R/W	TOTAL R/W	TLE (ACRES)
12	ROBERT J. GEHLHOFF AND PATTIE M. GEHLHOFF	FEE & TLE	0.014	0.774	0.788	0.083
13	PATRICIA P. COCHRANE REV LIVING TRUST	FEE & TLE	0.010	0.722	0.732	0.056

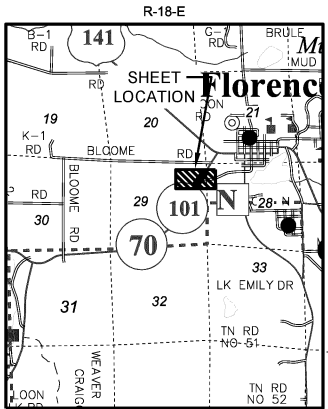
OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT.
PURPOSE OF ALL THE TLES IS FOR GRADING, UNLESS NOTED.



FOUND
ALUMINUM MON.
Y = 175,884.639
X = 407,867.327

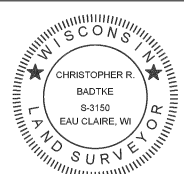
DOC # 289765
Recorded March 07, 2022 at 1:20 PM
LAURIE J. BOREN, REGISTER OF DEEDS
FLORENCE COUNTY, WI
Pages: 1 of 1 Fee Amount: \$25.00
**This document has been electronically recorded

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 9100-05-22-4.05



UTILITY INTERESTS REQUIRED		
UTILITY NO.	OWNER(S)	INTEREST REQUIRED
51	NSIGHT TELSERVICES	RELEASE OF RIGHTS
52	FLORENCE UTILITY COMMISSION - GAS	RELEASE OF RIGHTS
53	FLORENCE UTILITY COMMISSION - ELECTRIC	RELEASE OF RIGHTS

UTILITY EASEMENTS		
UTILITY NO.	OWNER(S)	EASEMENTS
51	NSIGHT TELSERVICES	NO EASEMENT OF RECORD - PARCEL 13
52	FLORENCE UTILITY COMMISSION - GAS	NO EASEMENT OF RECORD - PARCEL 12
53	FLORENCE UTILITY COMMISSION - ELECTRIC	V. 130, P. 725, DOC. 243021 - PARCEL 13

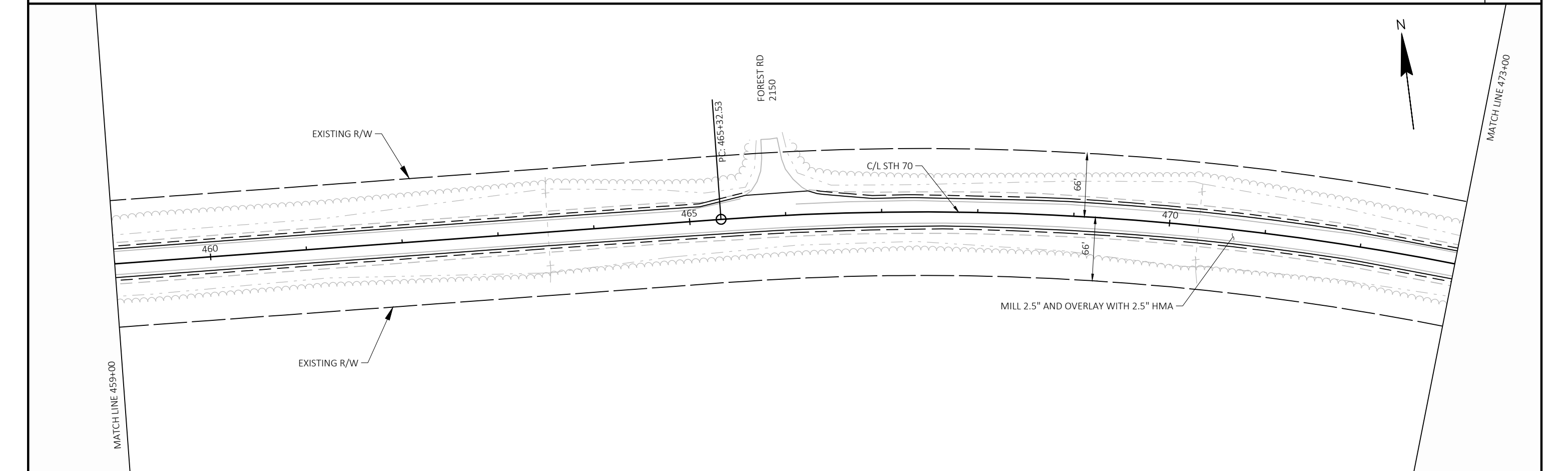
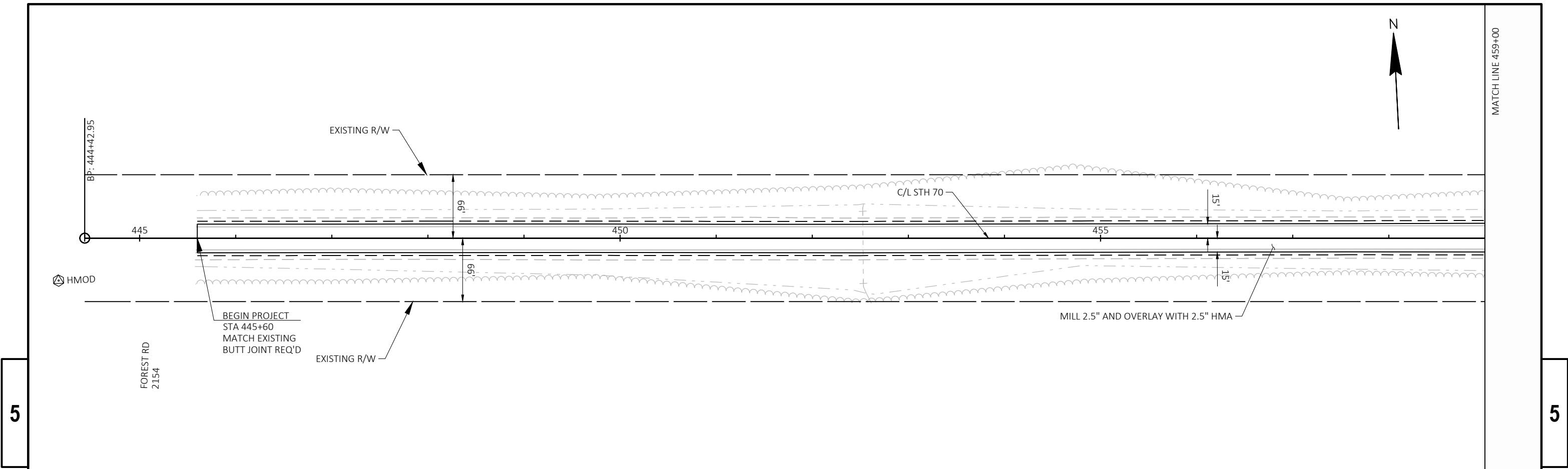


I, CHRISTOPHER R. BADTKE, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION, I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

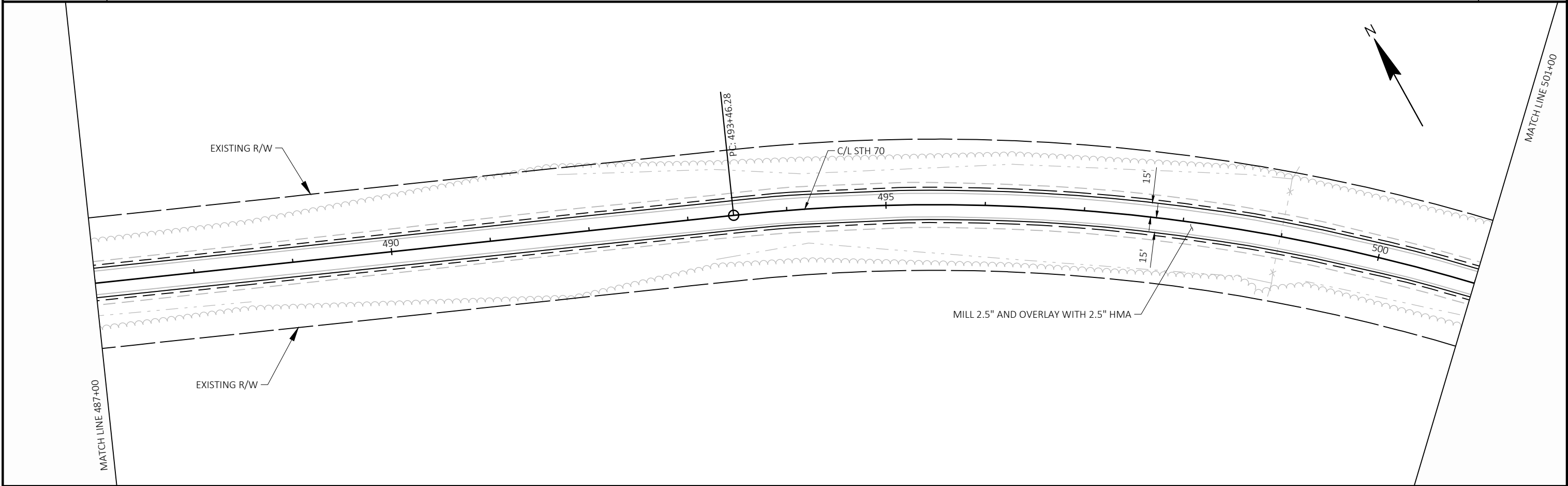
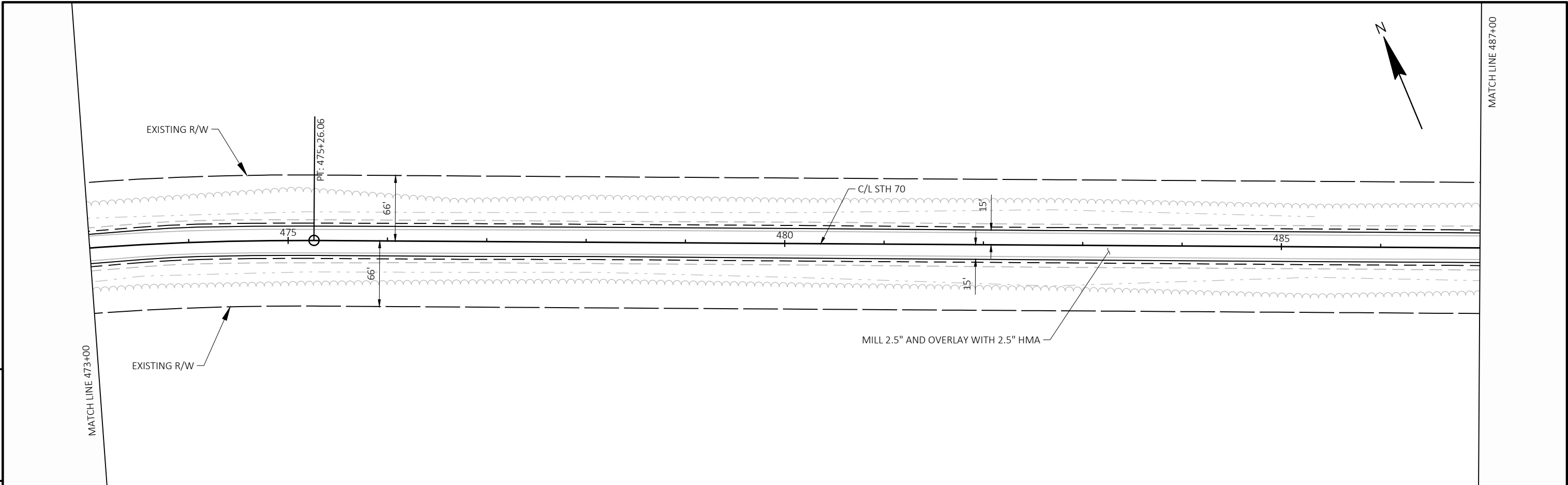
CHRISTOPHER R. BADTKE
REGISTRATION NUMBER: S-3150
DATE: 03/04/2022

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION, NORTHEAST REGION.

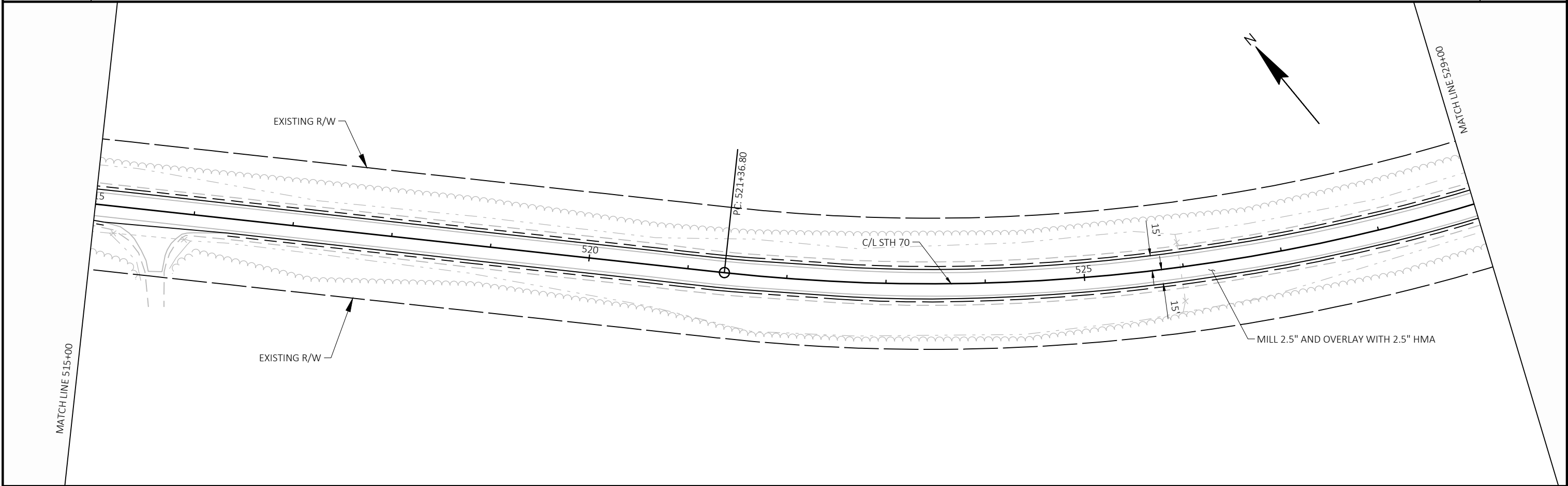
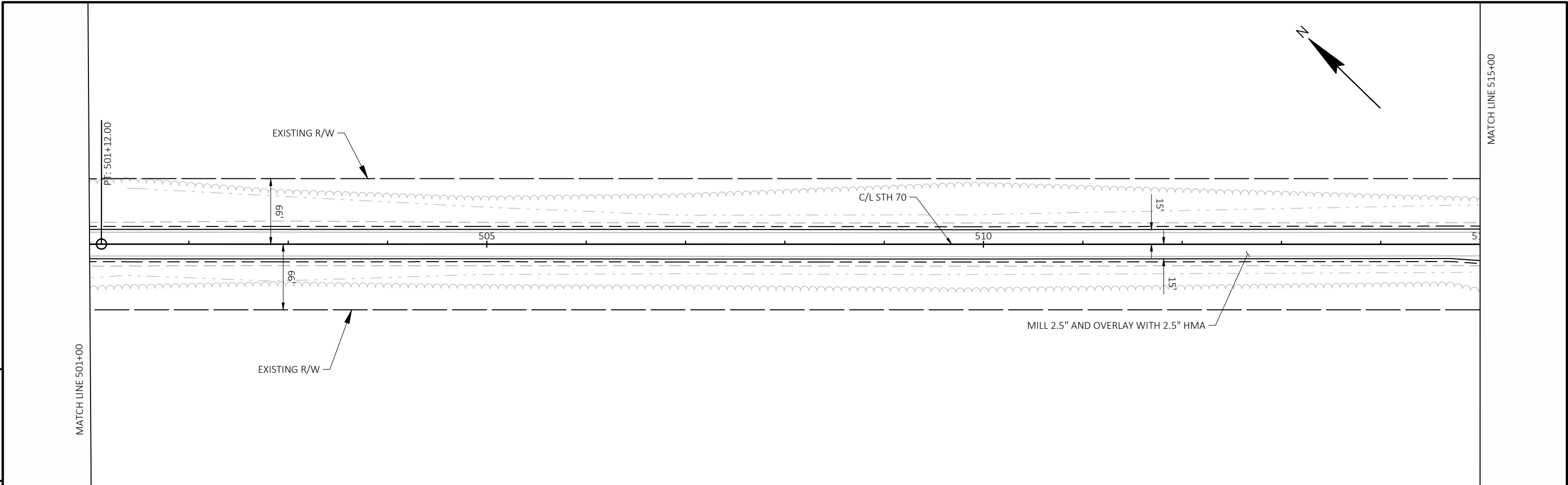
CURT VAN EREM
DATE: 3/06/2022



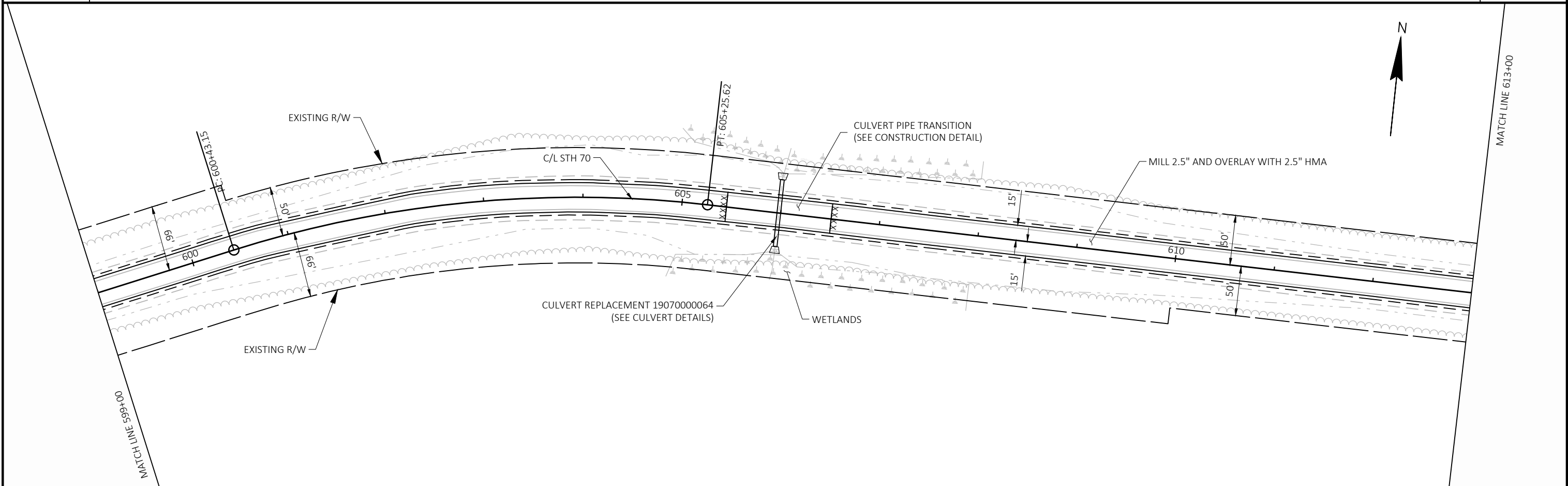
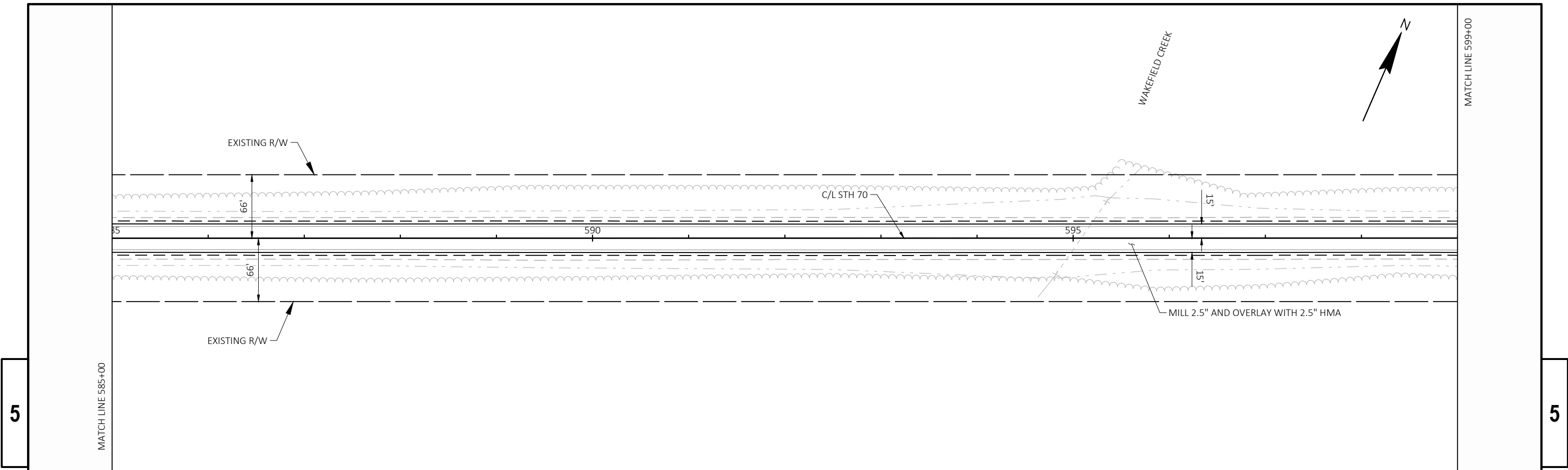
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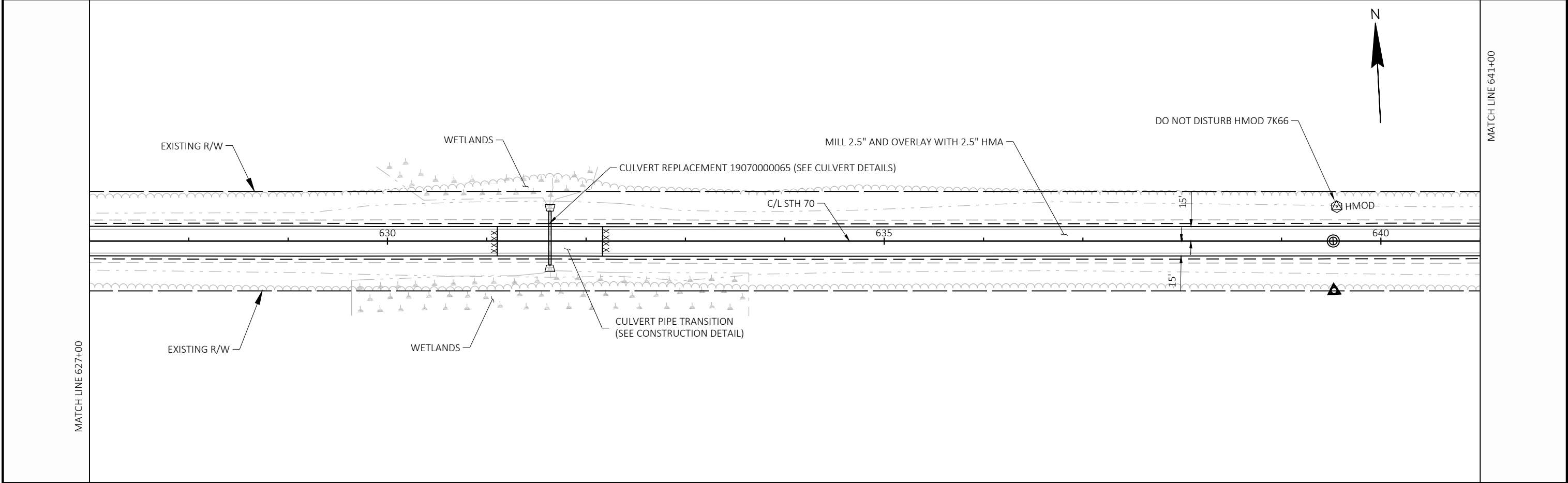
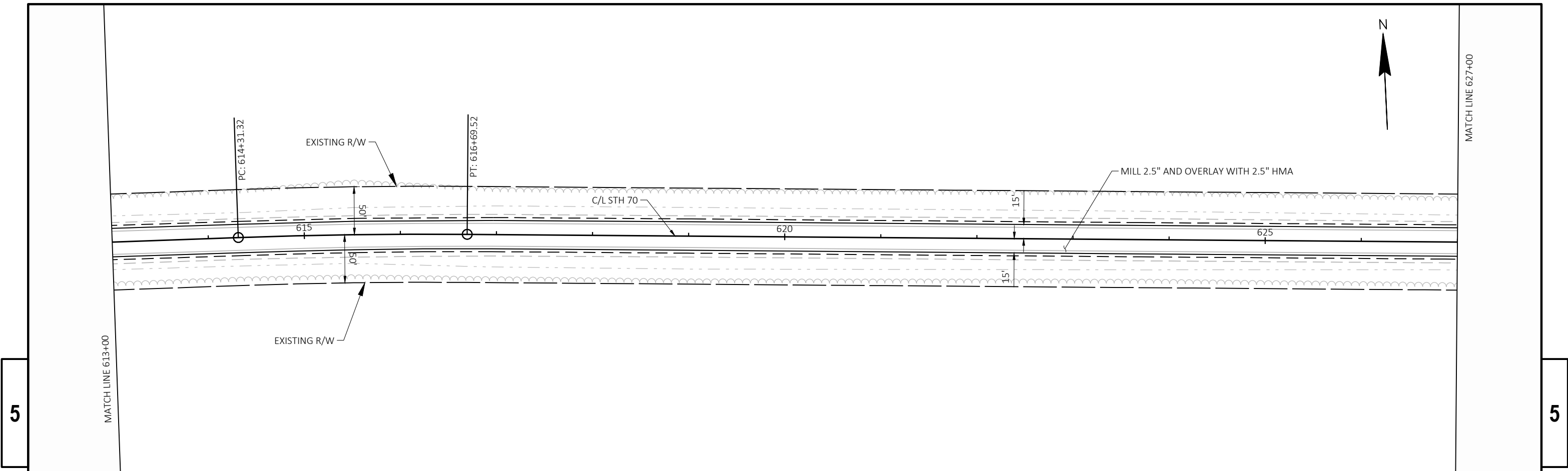
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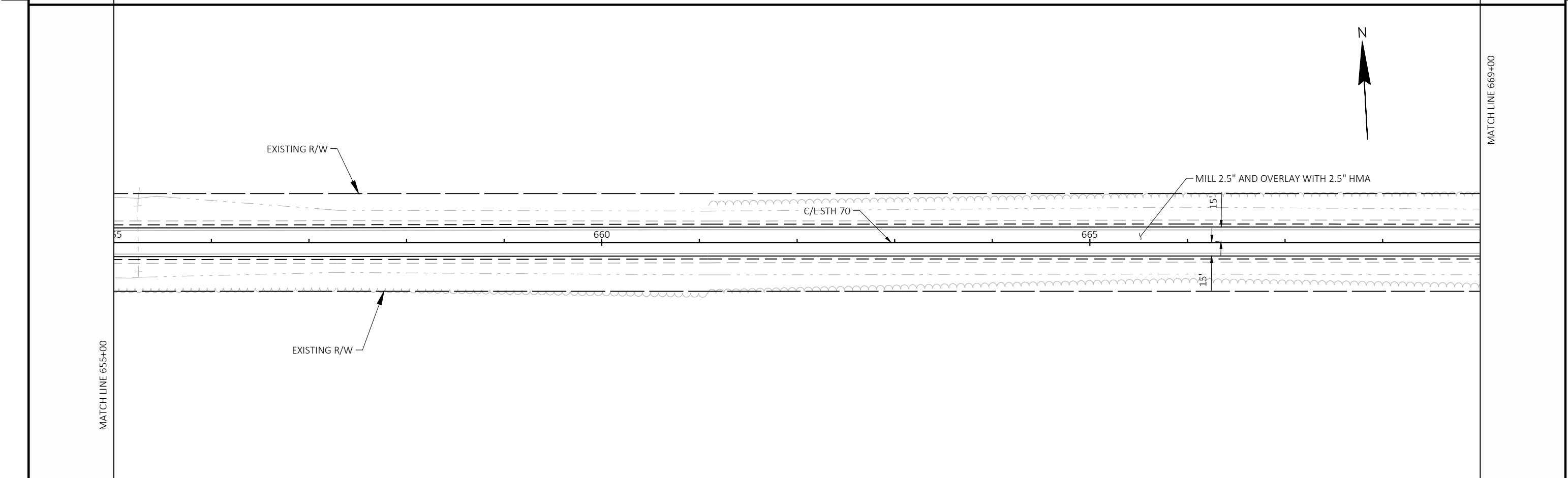
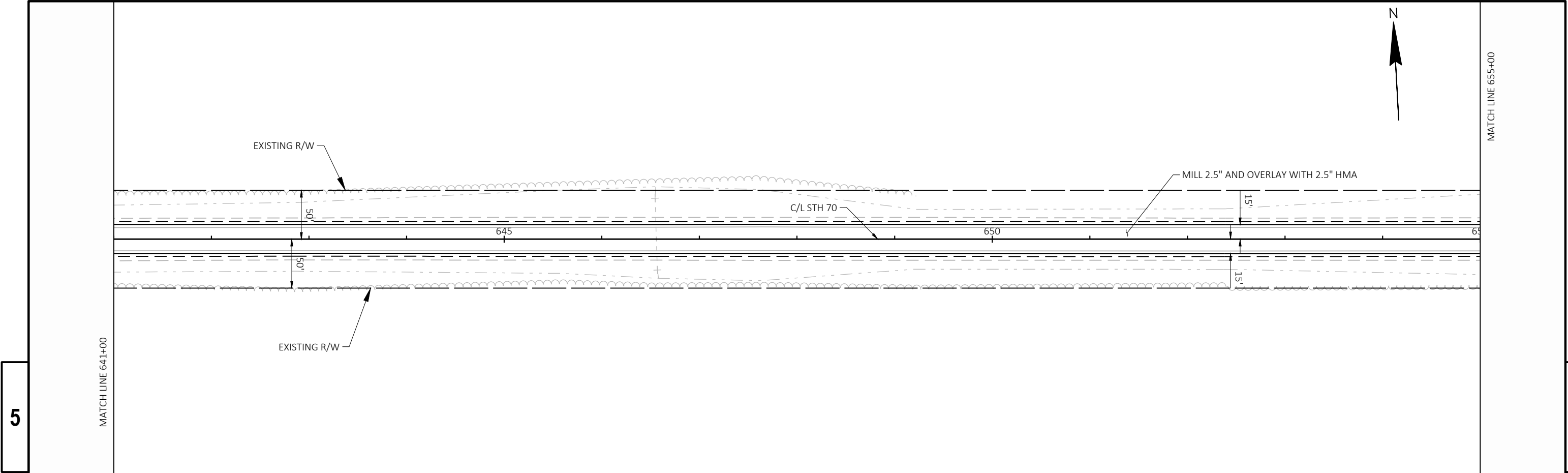
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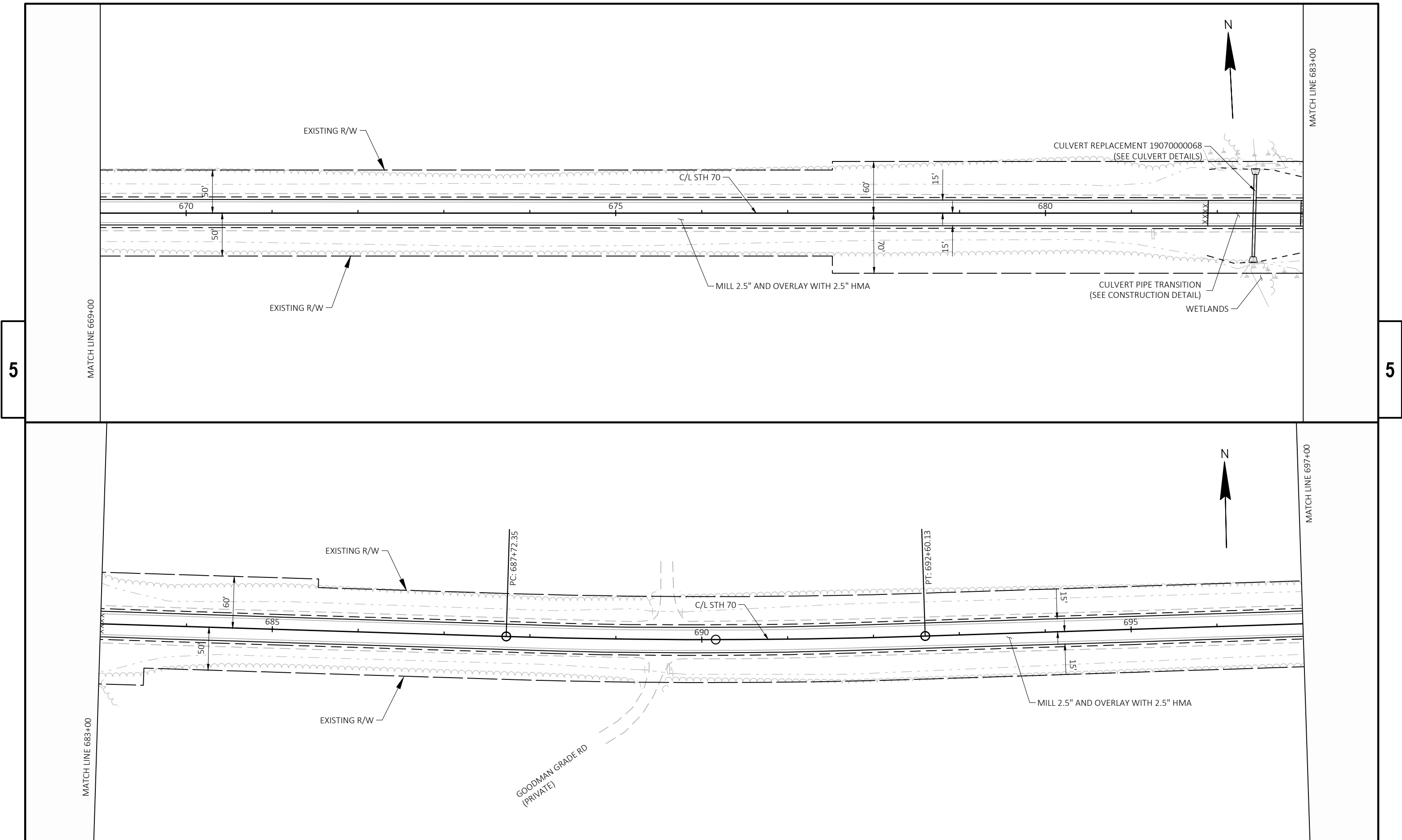
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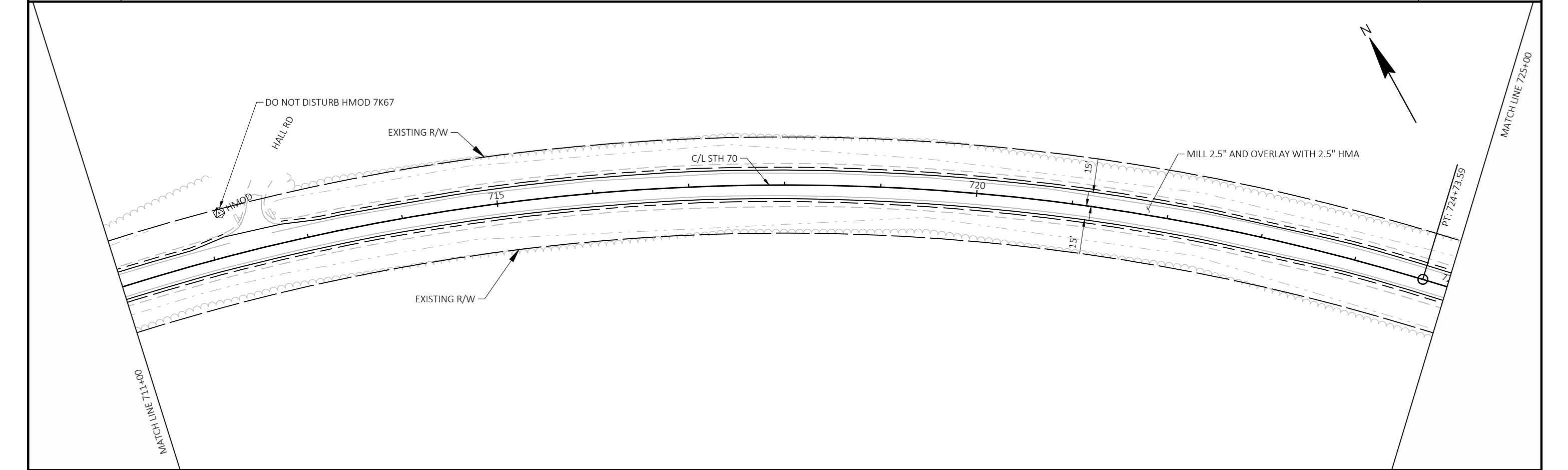
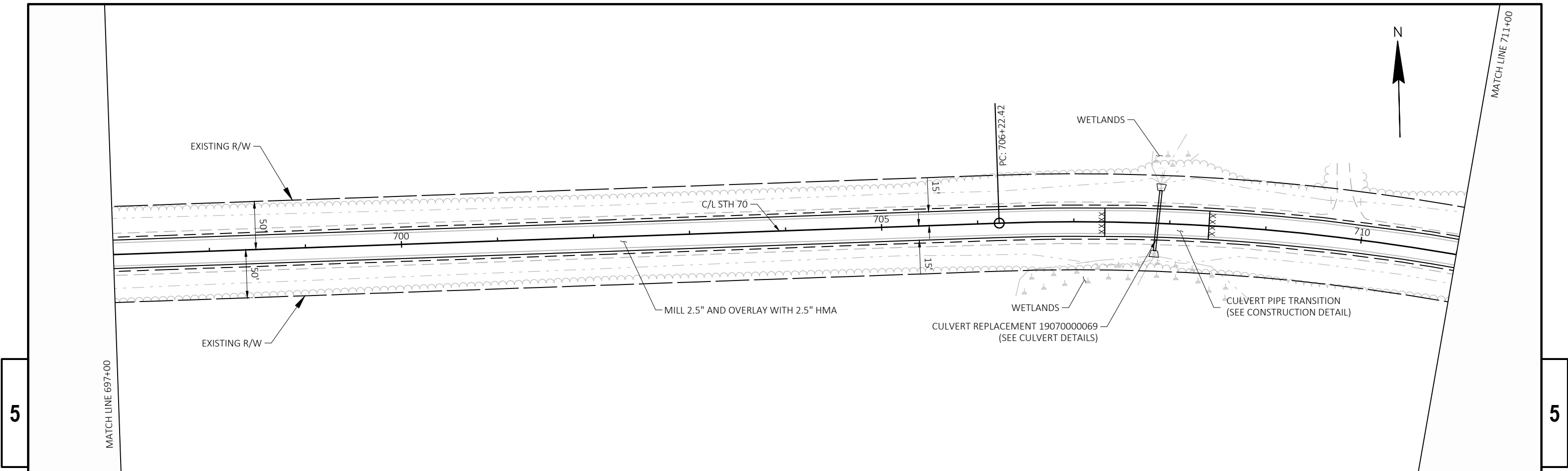
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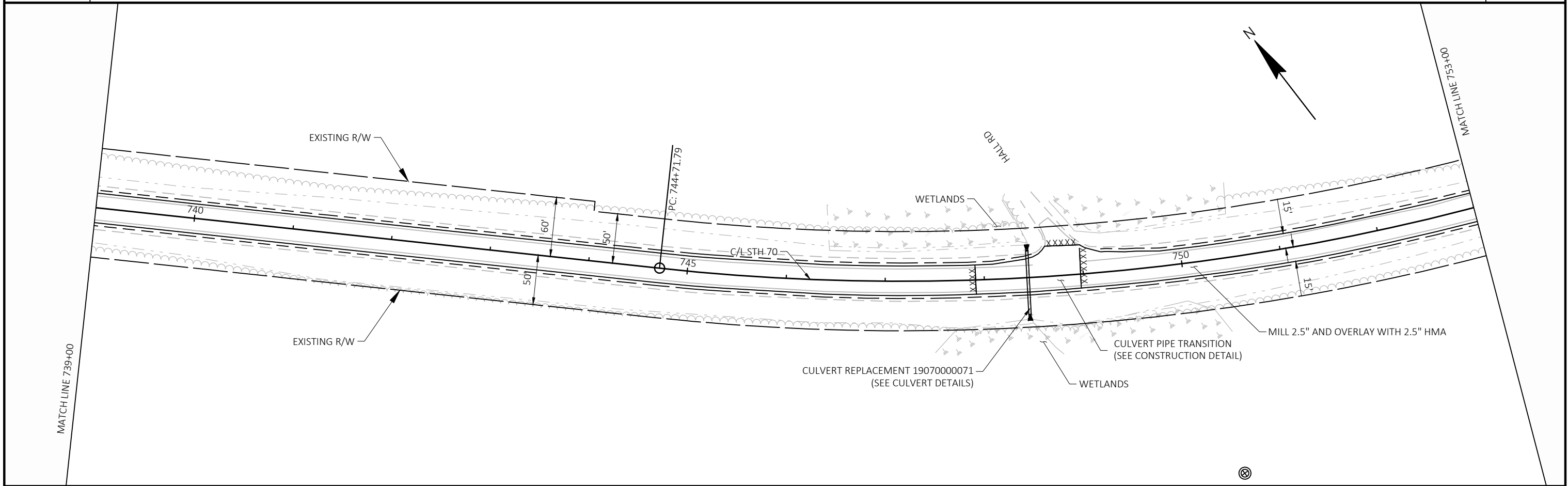
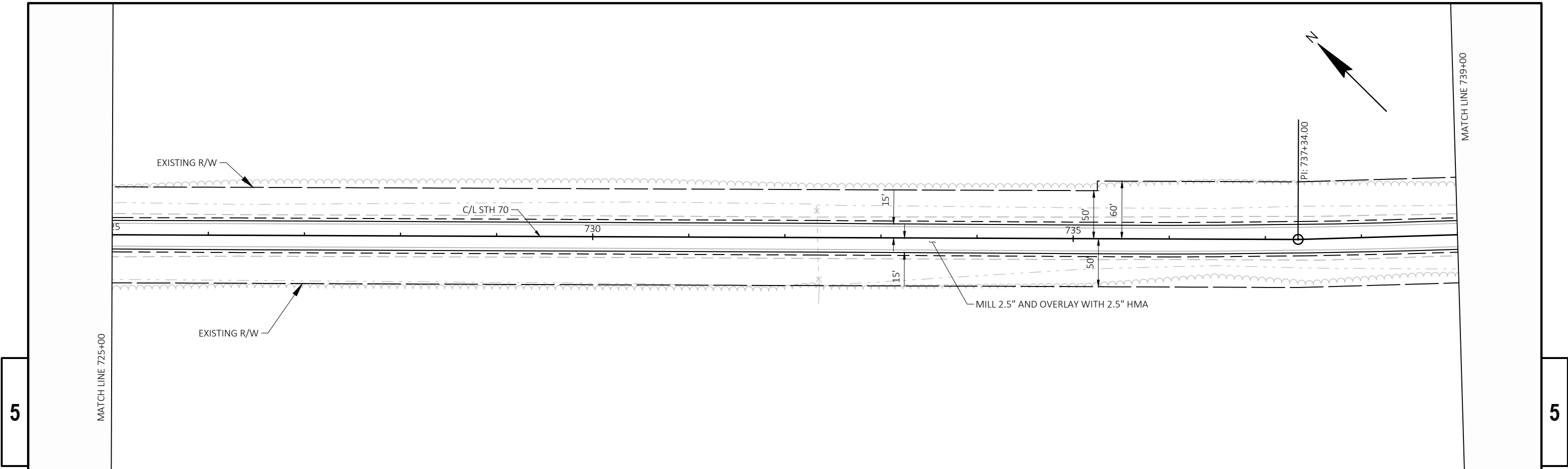
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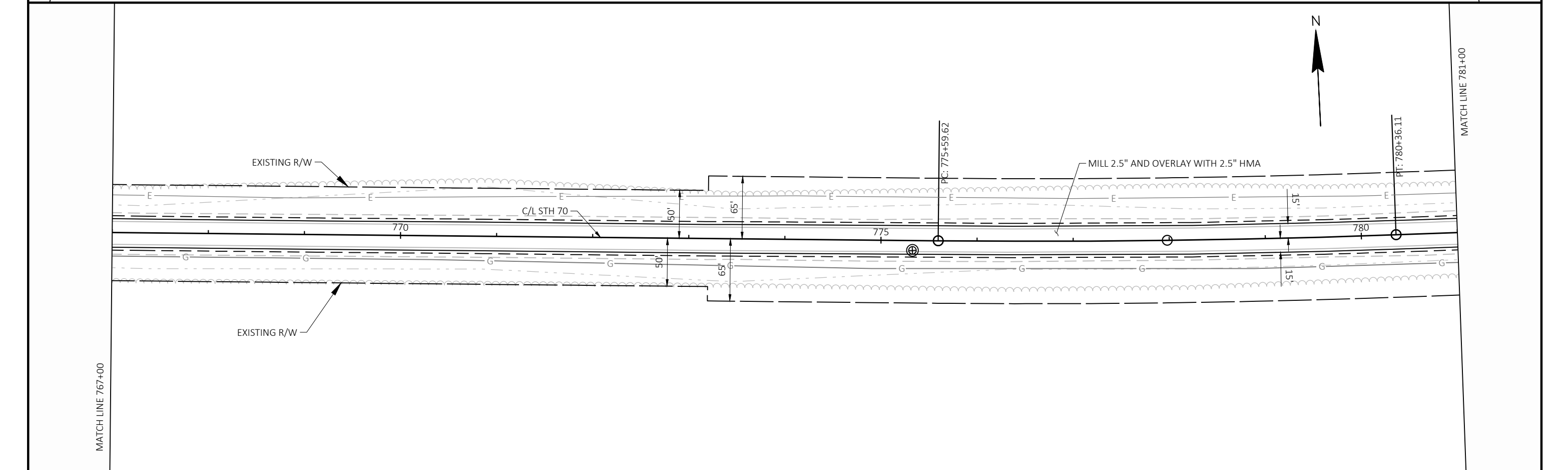
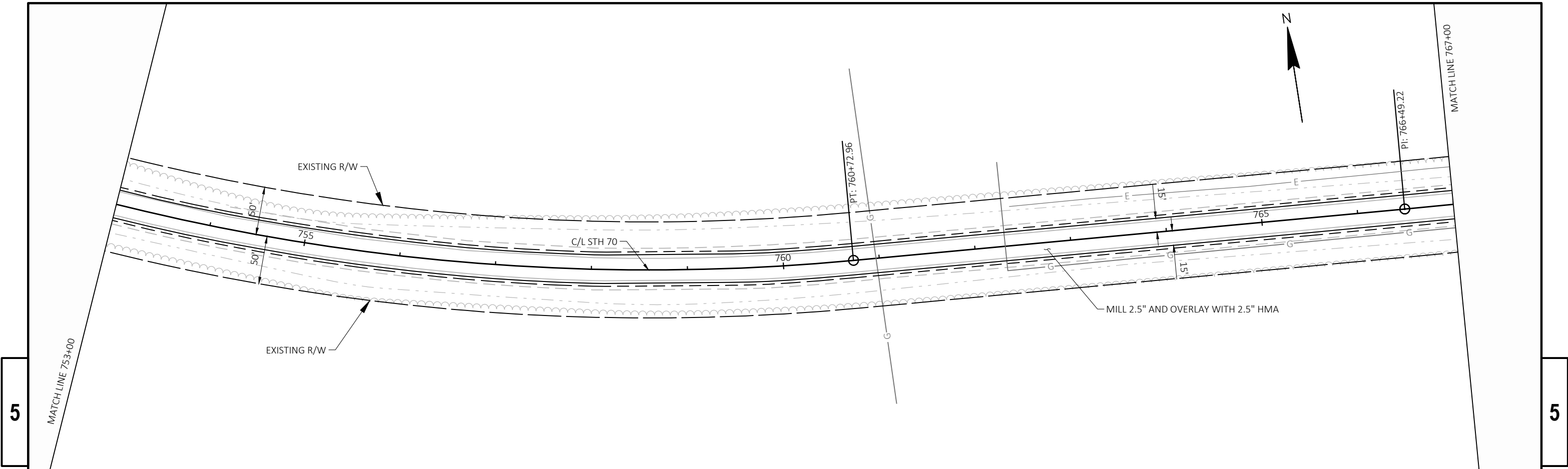
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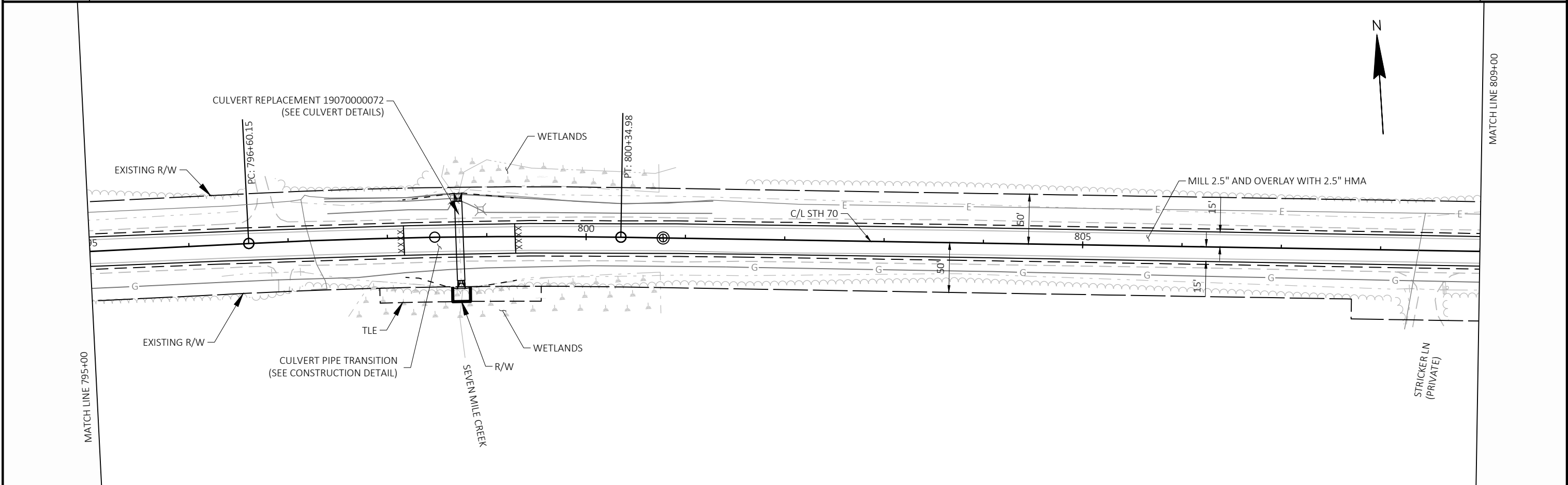
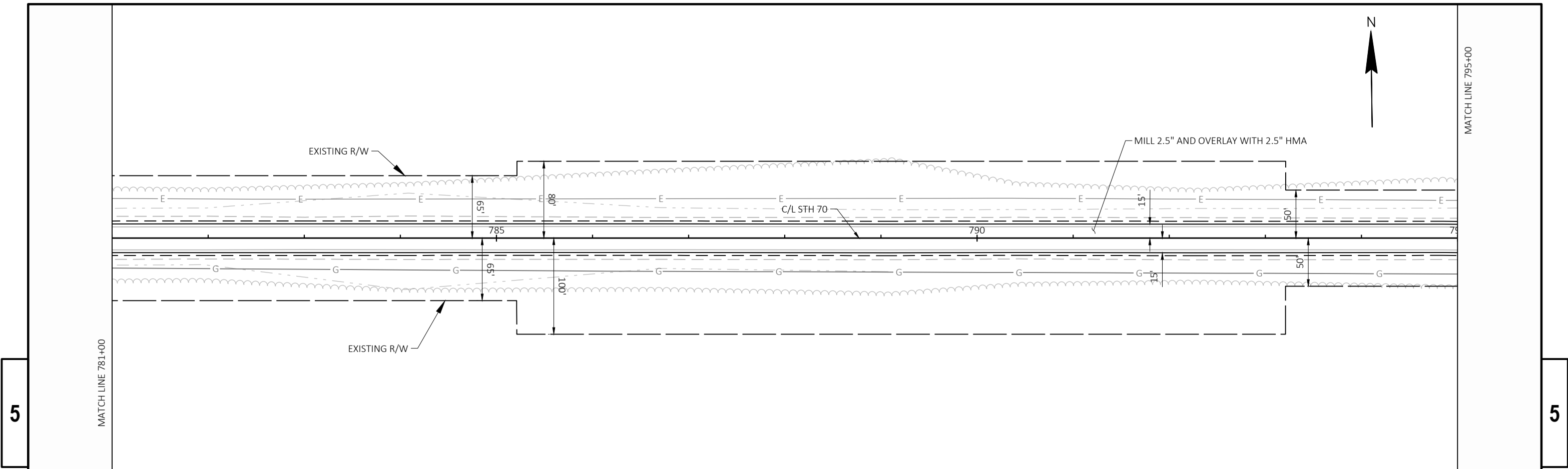
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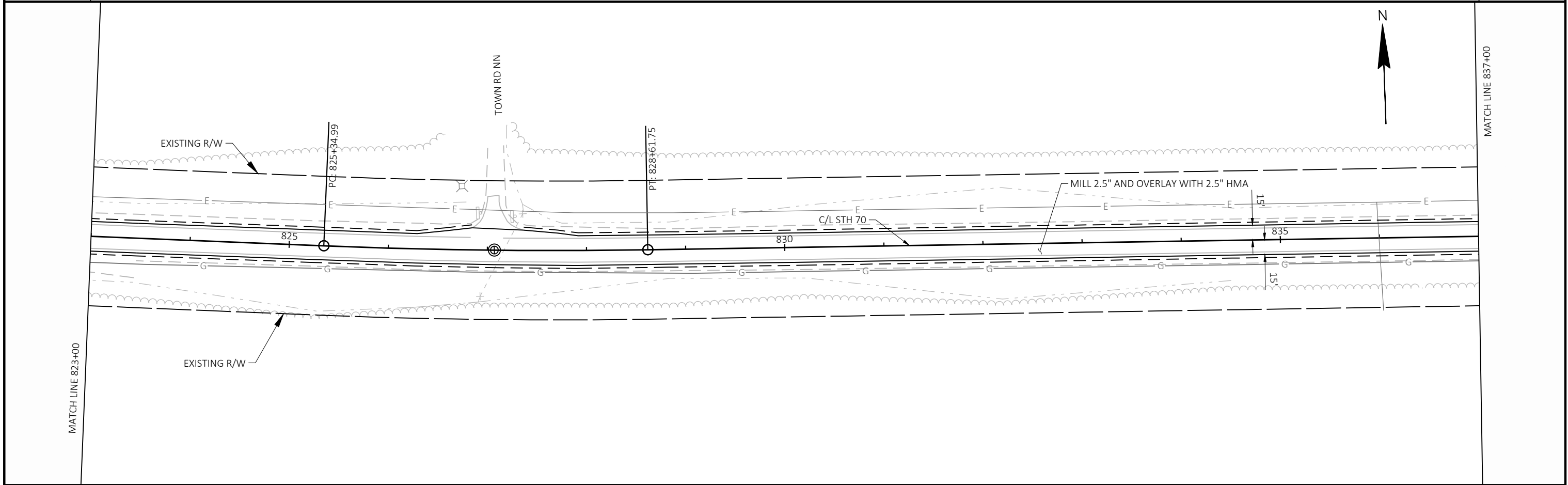
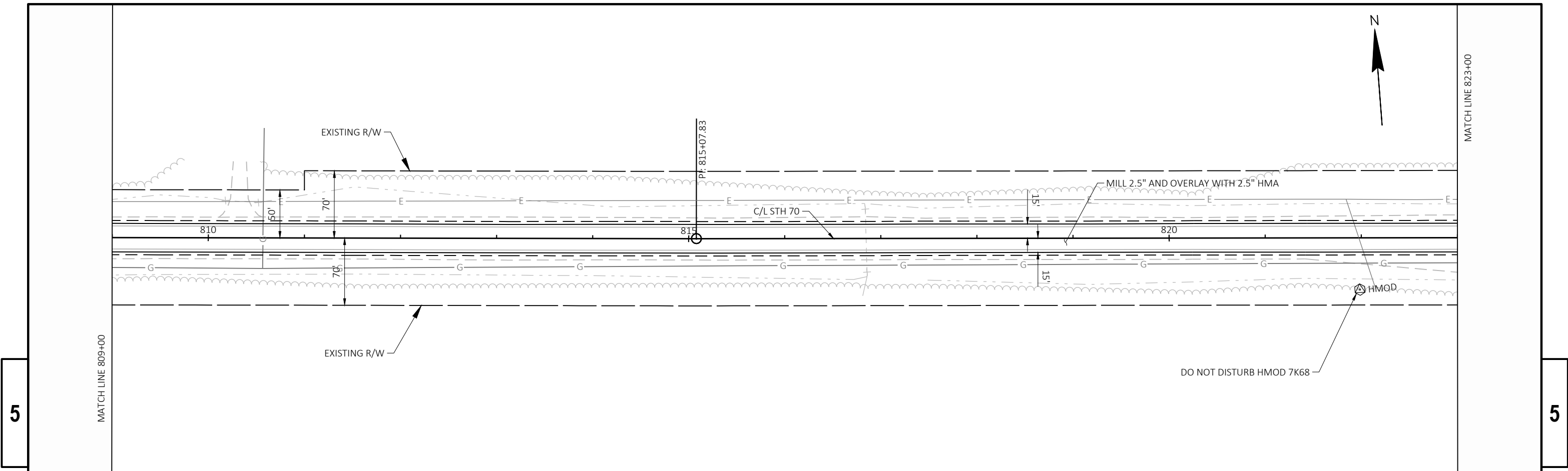
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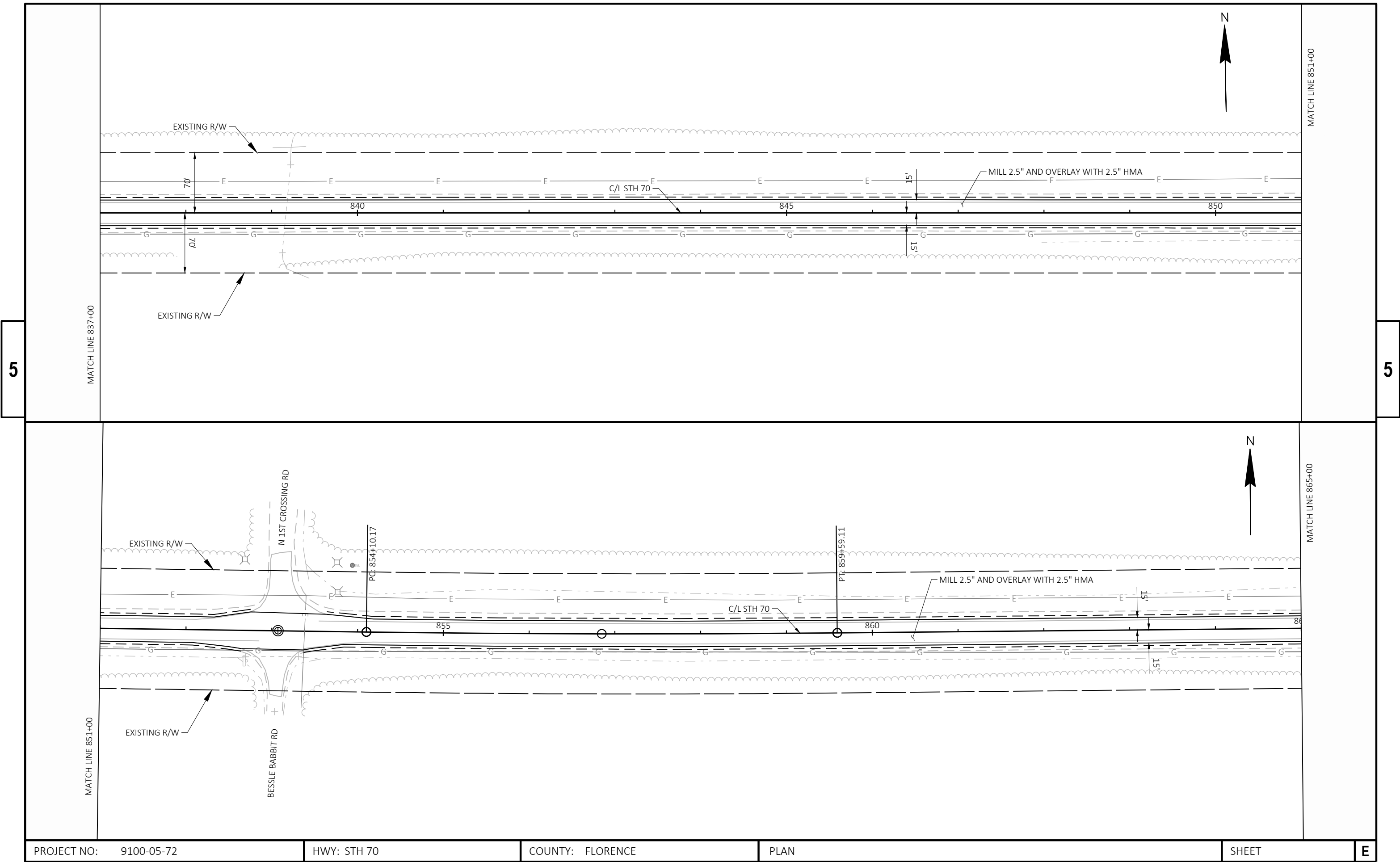
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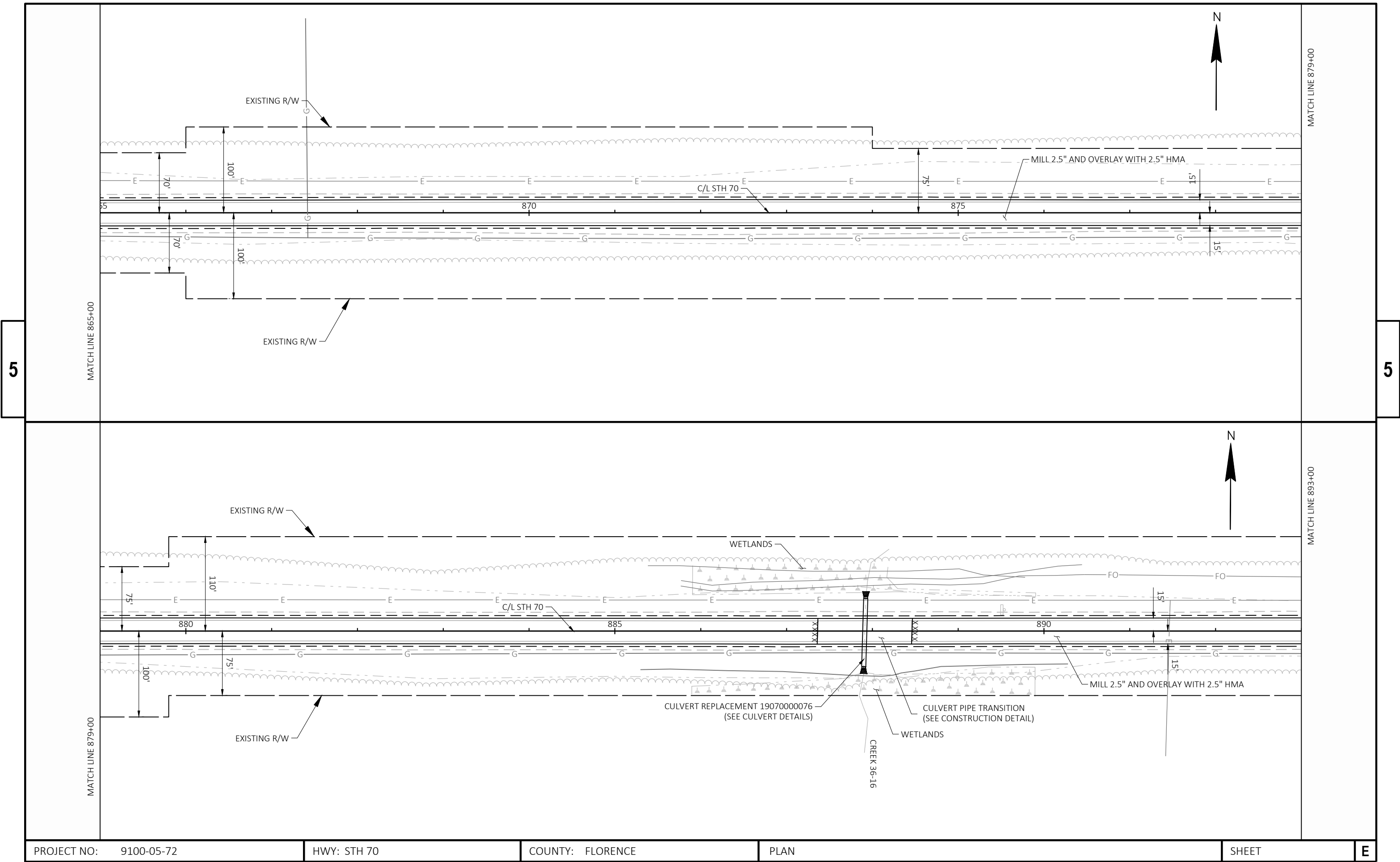
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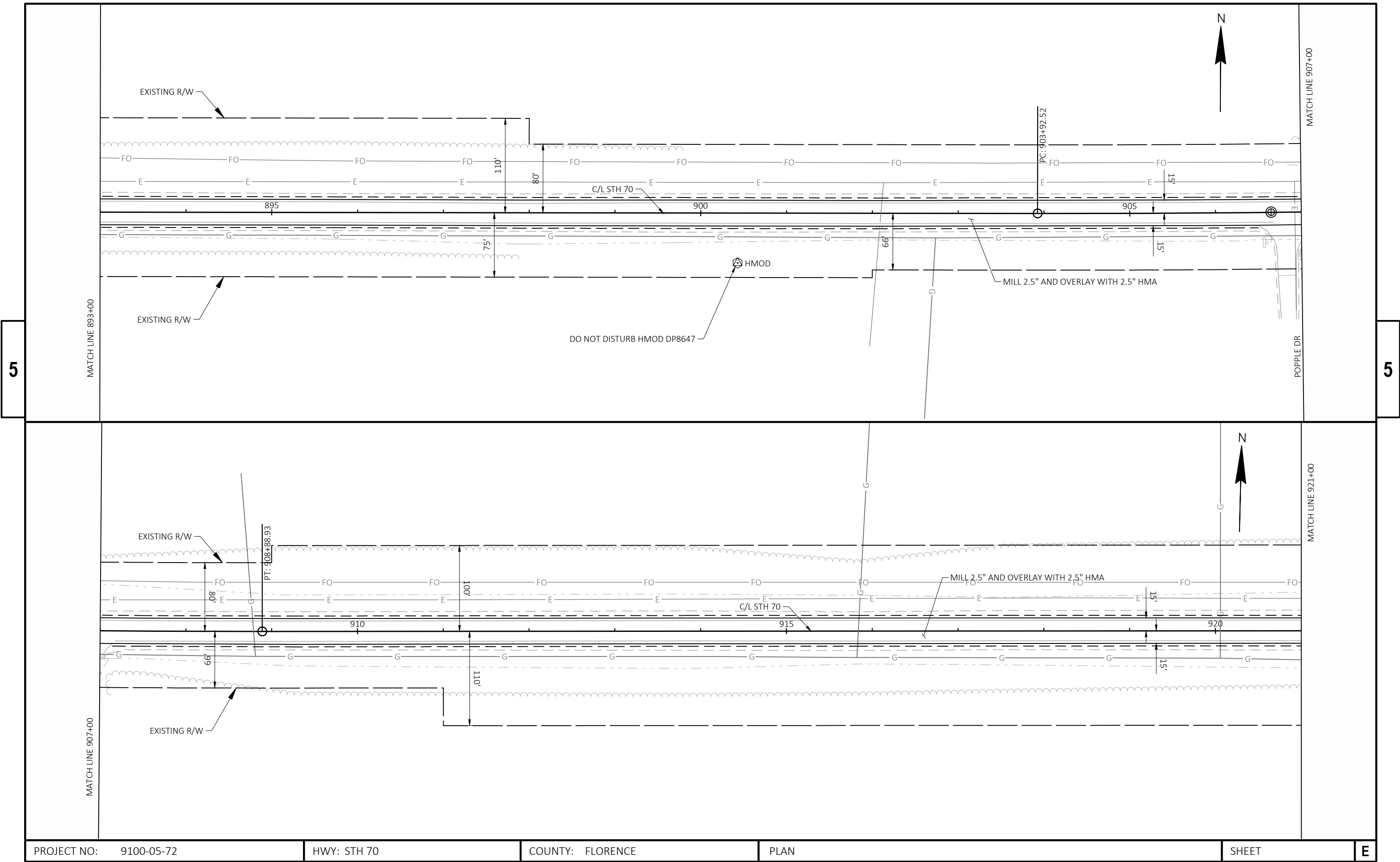
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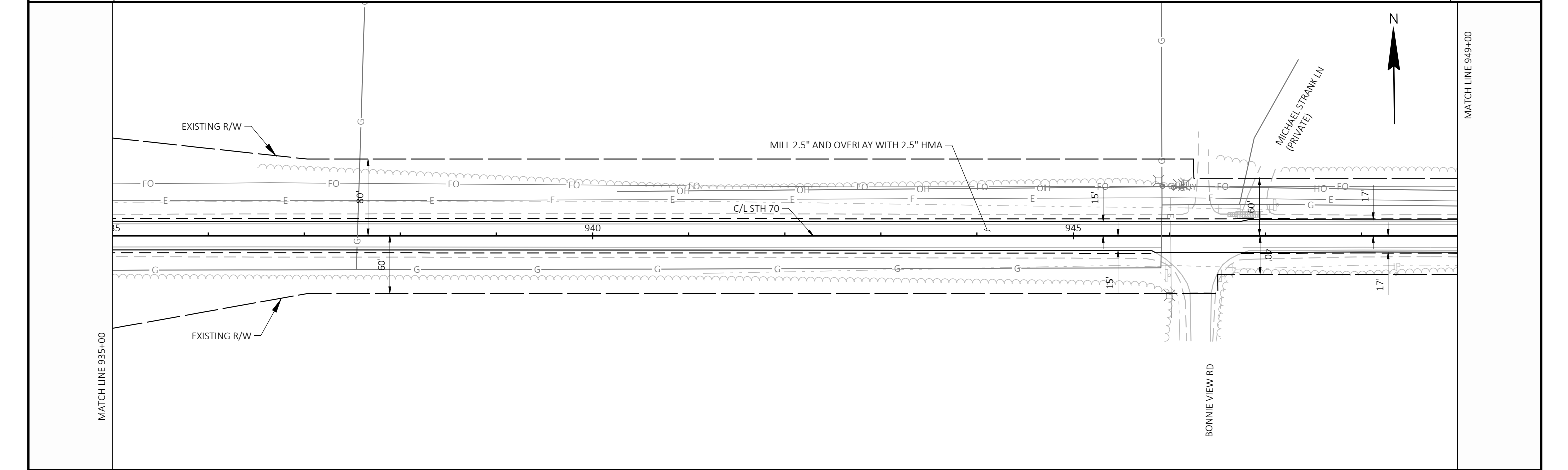
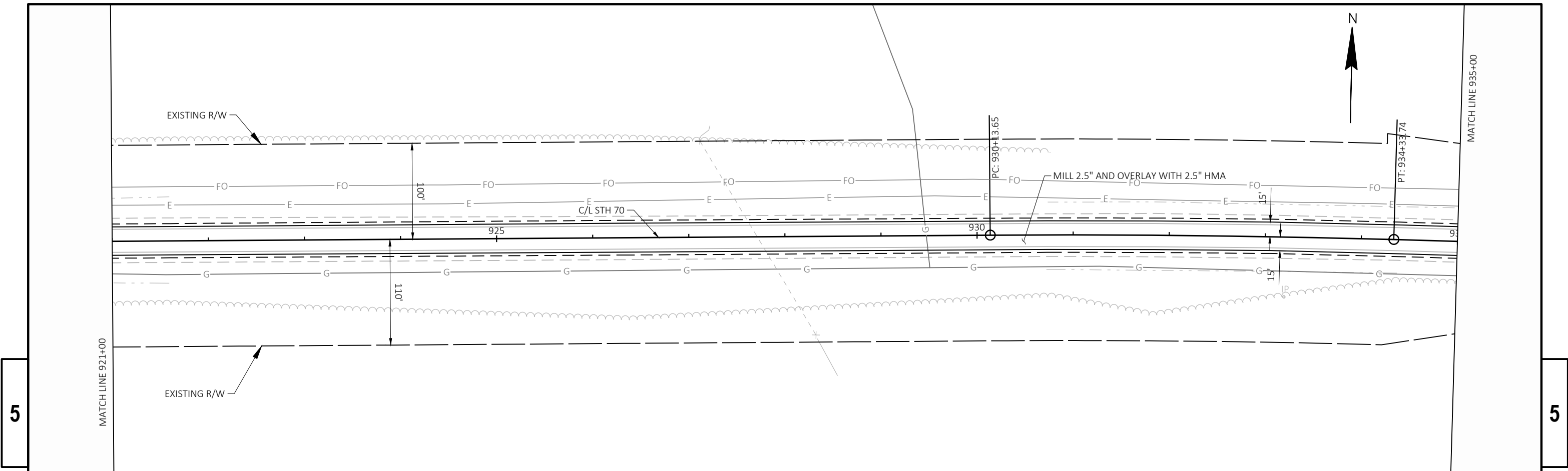
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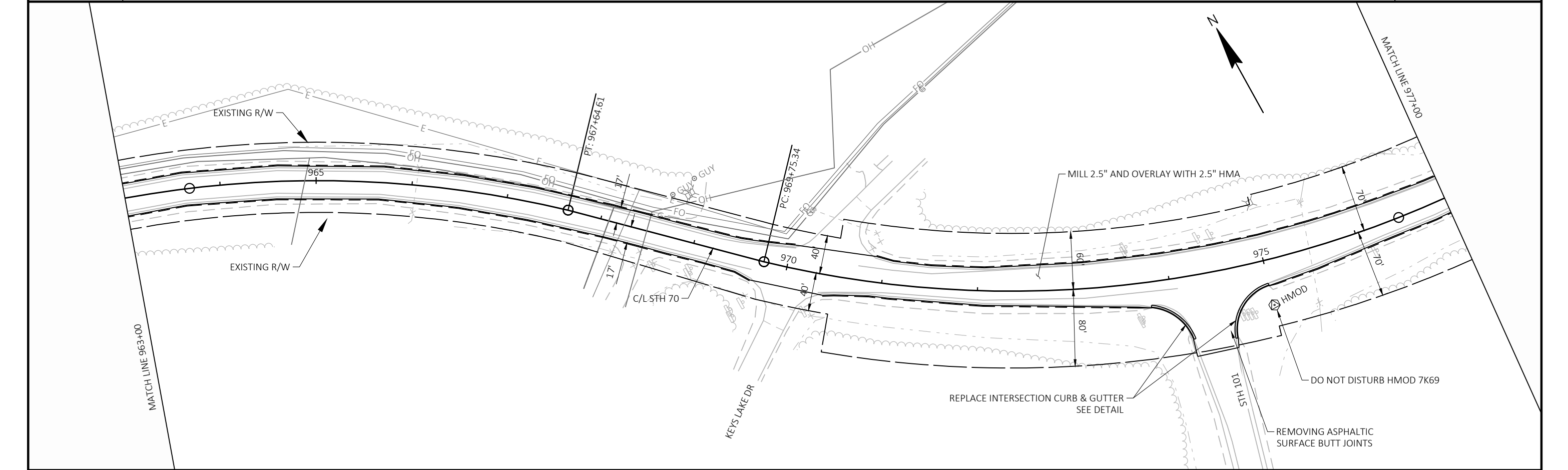
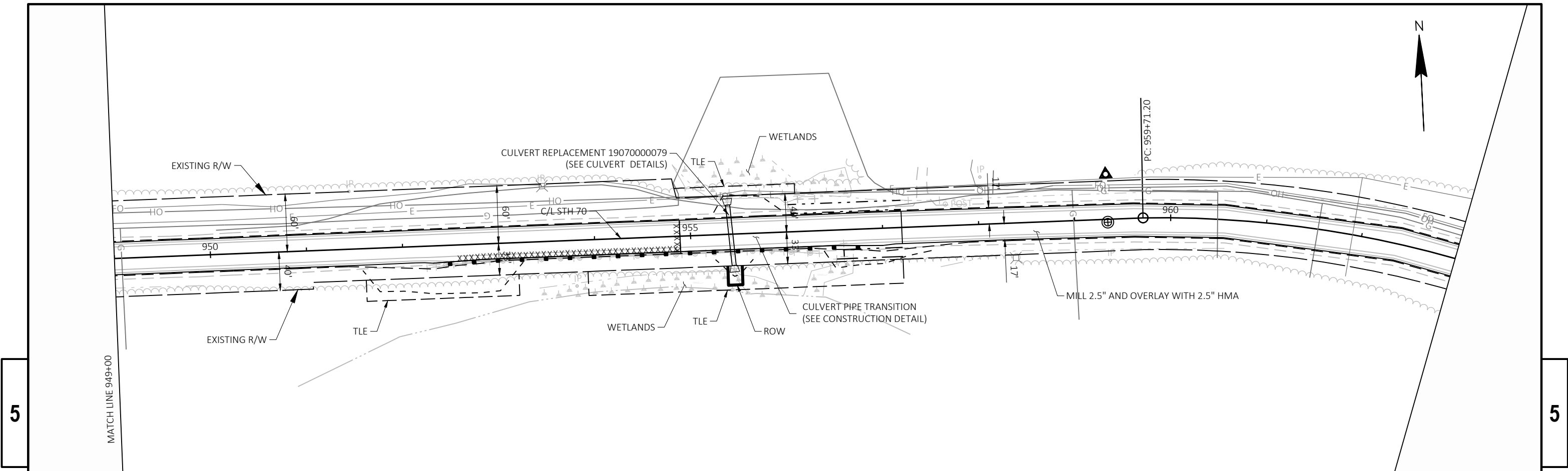
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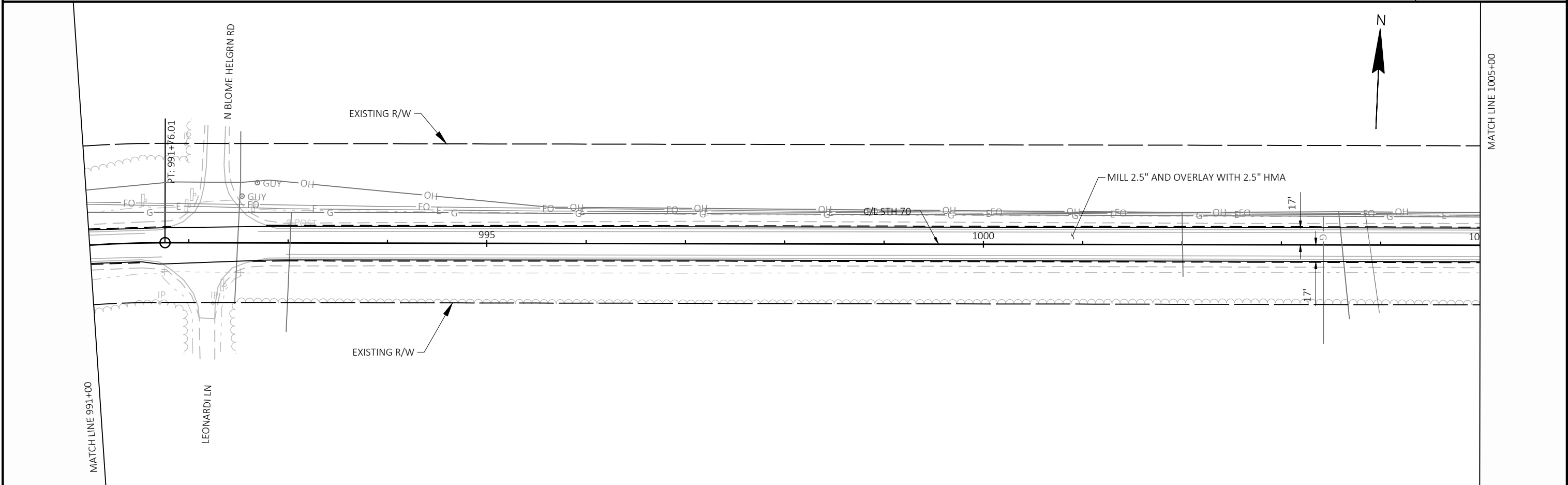
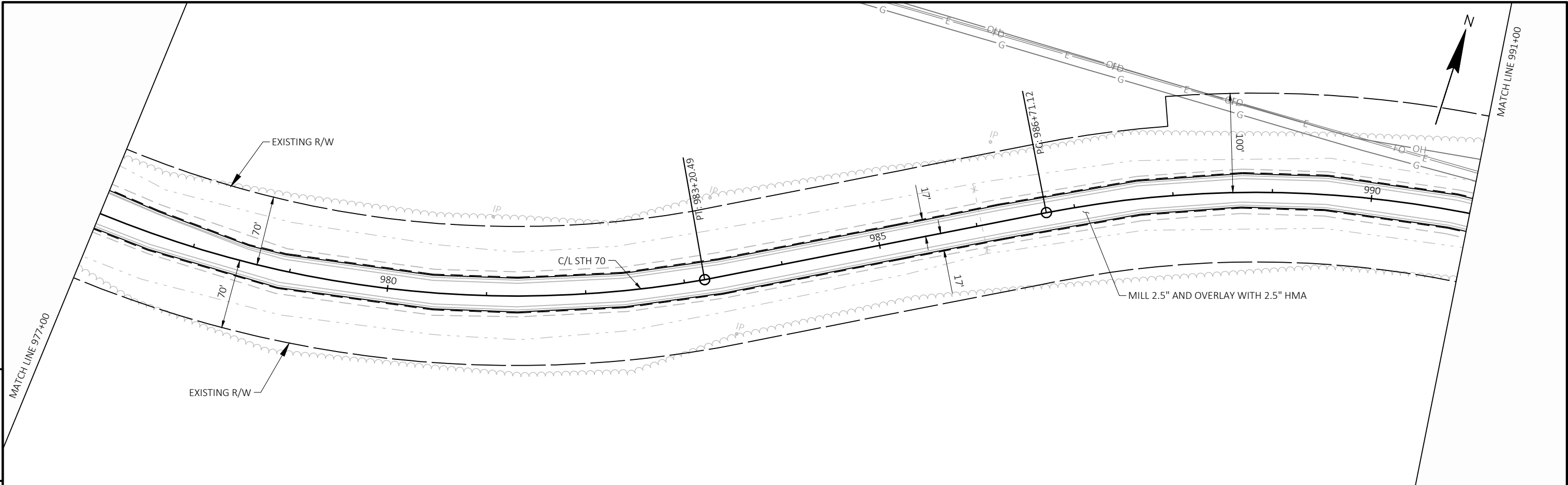
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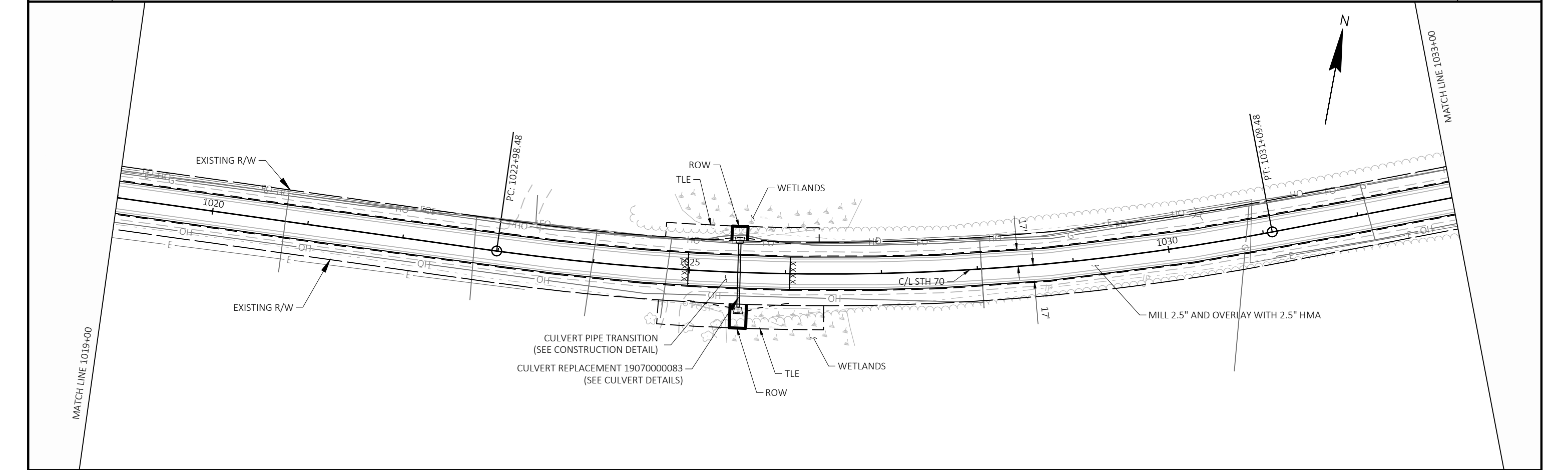
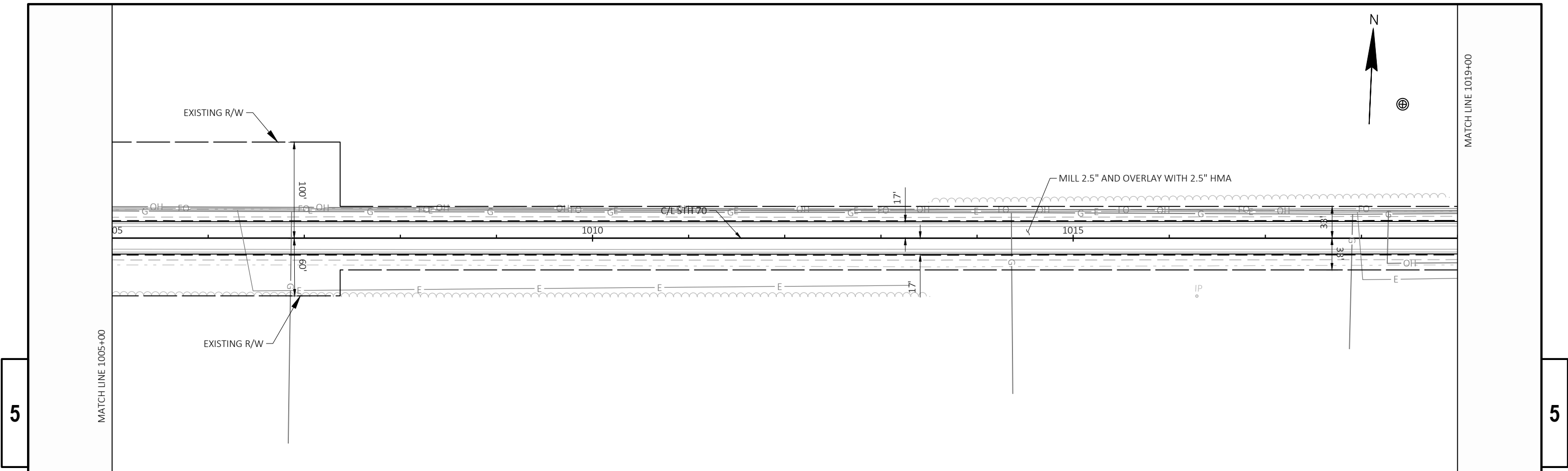
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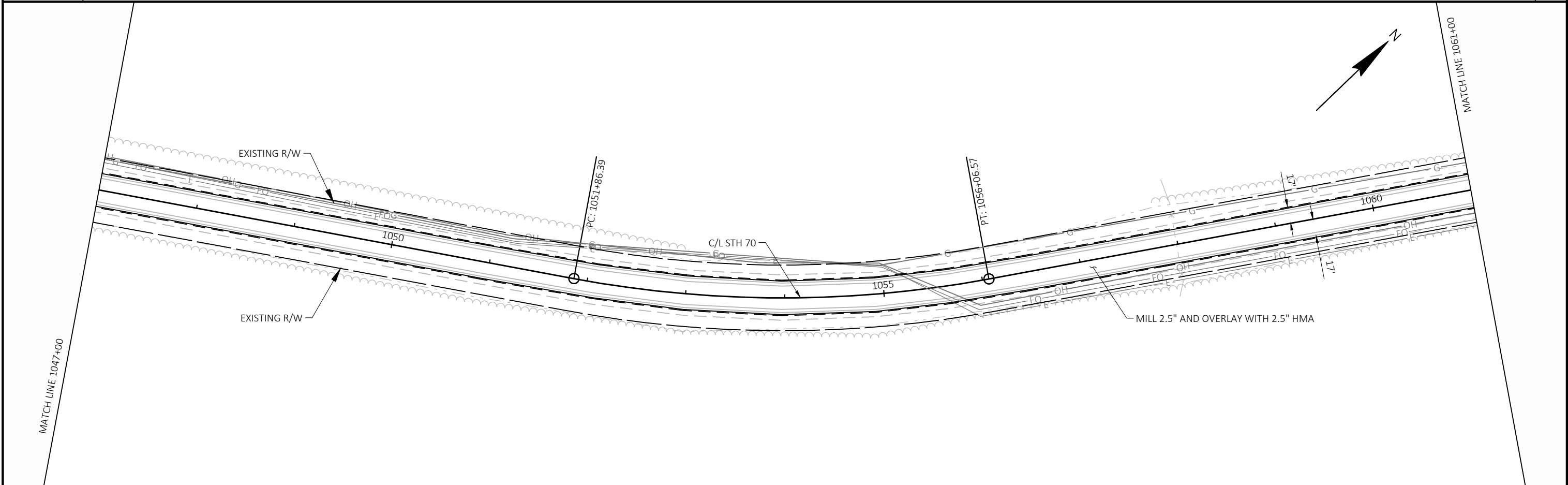
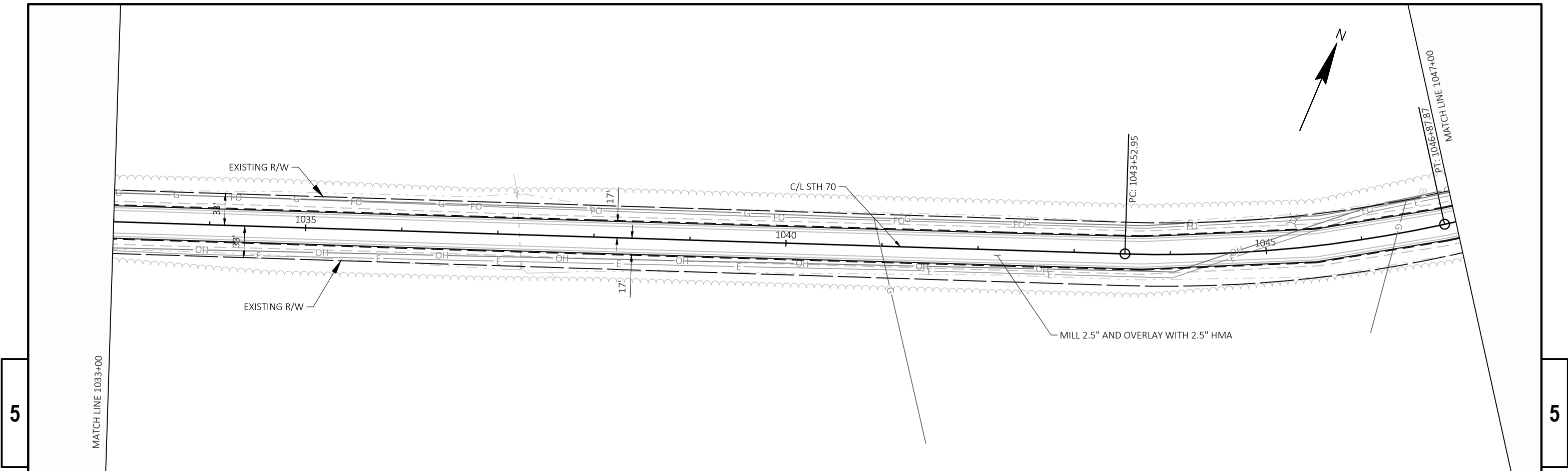
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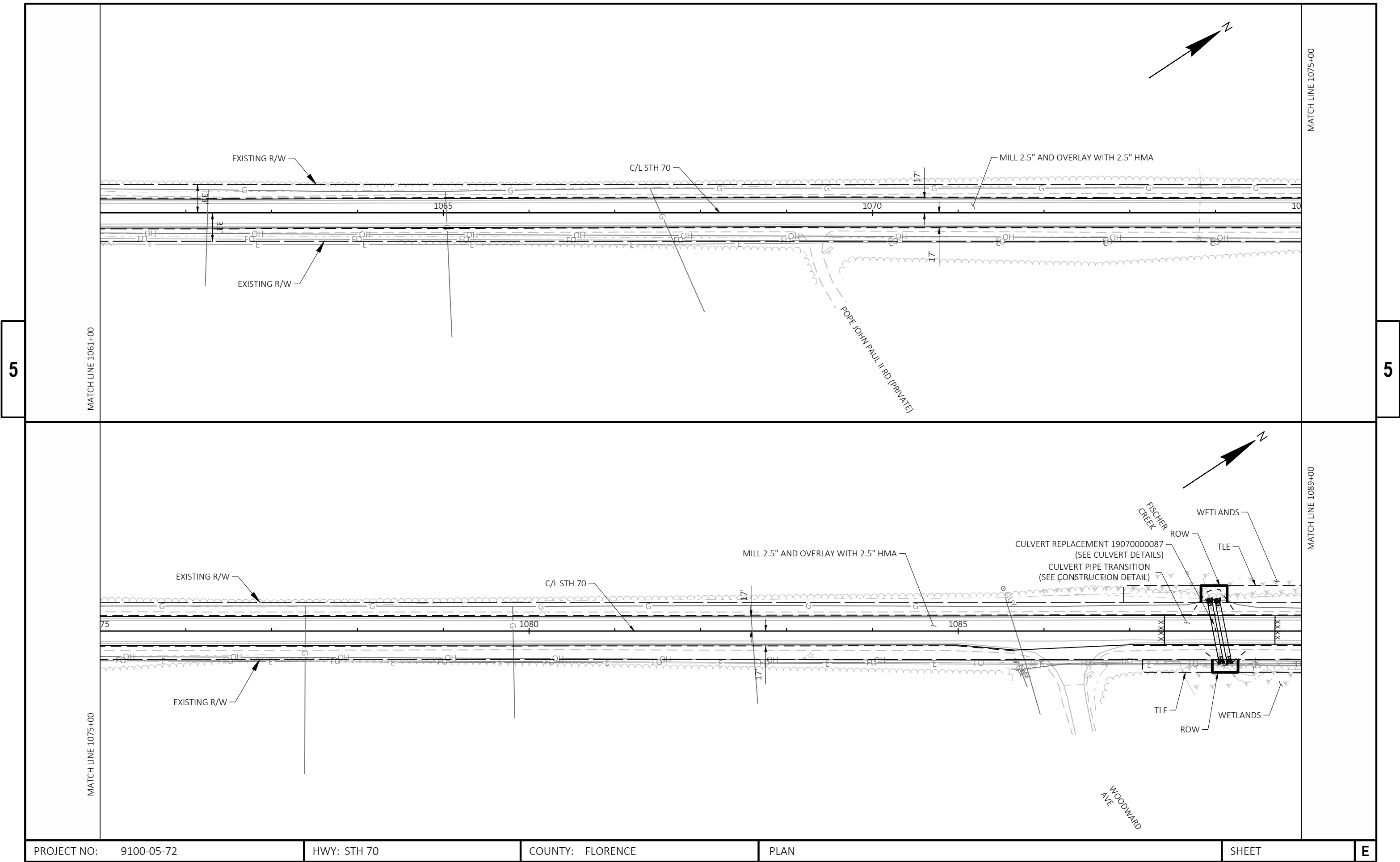
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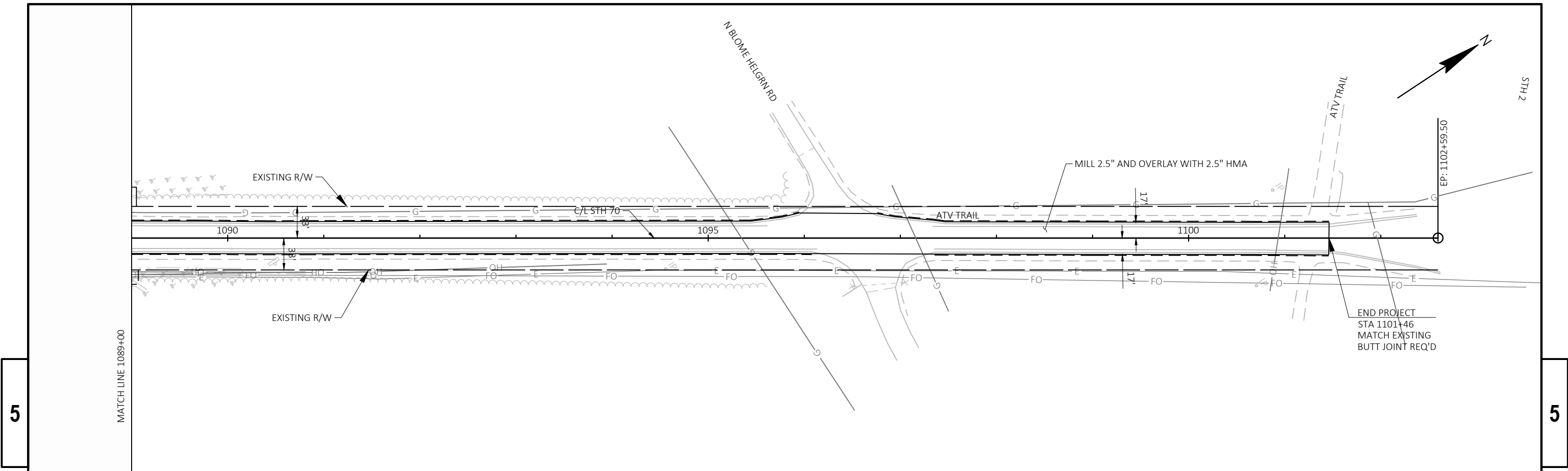
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PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	PLAN	SHEET	E
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PROJECT NO:	9100-05-72	HWY: STH 70	COUNTY: FLORENCE	PLAN	SHEET	E
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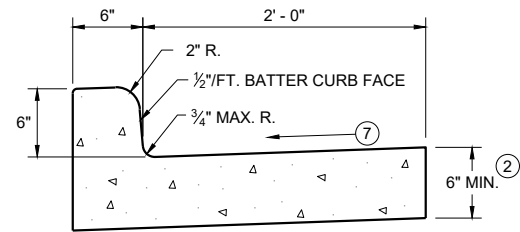


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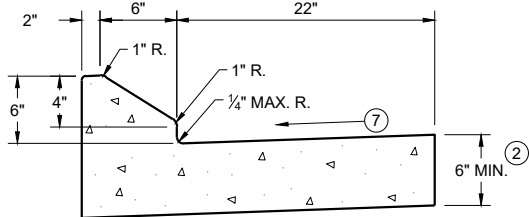
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Standard Detail Drawing List

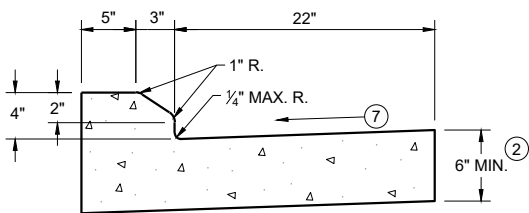
08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D15-05A	EDGEDRAIN OUTLET AND OUTFALL MARKERS
08D15-05B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D15-05C	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
13A10-03A	SHOULDER RUMBLE STRIPS - ASPHALT
13A10-03G	SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A10-03H	SHOULDER AND EDGE LINE RUMBLE STRIPS - RAILROAD, PASSING, CLIMBING AND BYPASS LANES
13A11-04A	CENTERLINE RUMBLE STRIPS - ASPHALT
13A11-04D	CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C12-09B	TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE
15C19-08A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL
15D48-01	TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY



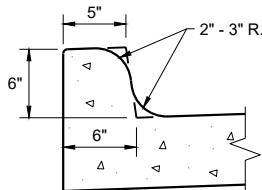
TYPES A^① & D



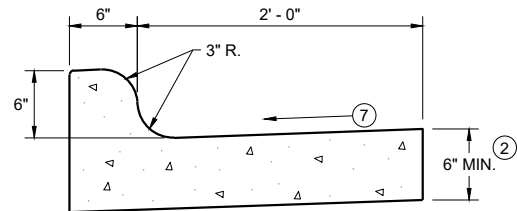
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

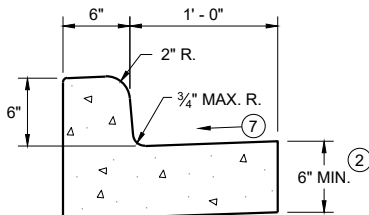


TYPES K^① & L
(OPTIONAL CURB SHAPE)



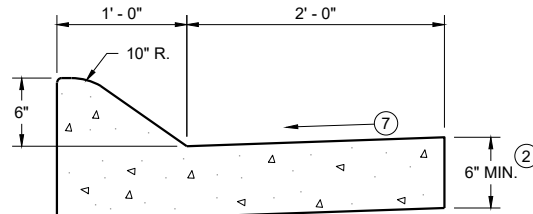
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

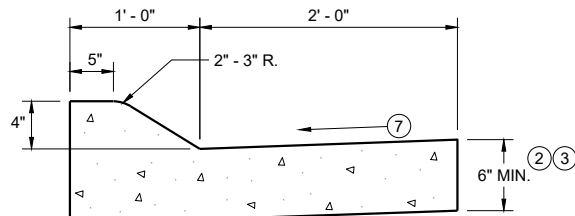


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

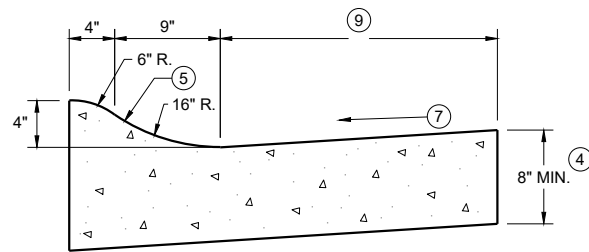


6" SLOPED CURB TYPES A^① & D



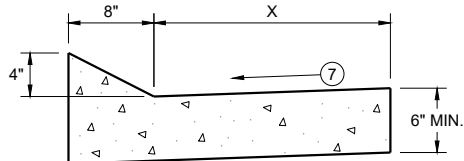
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

TBT & TBTT	X
30"	22"
36"	28"

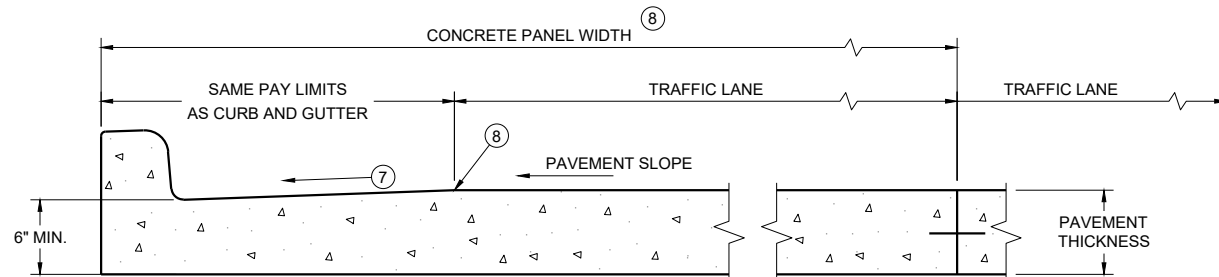


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

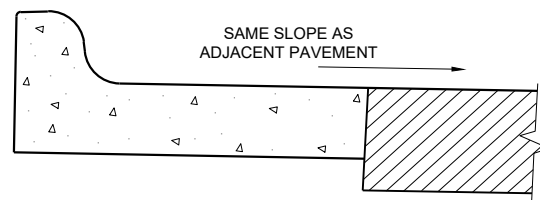
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

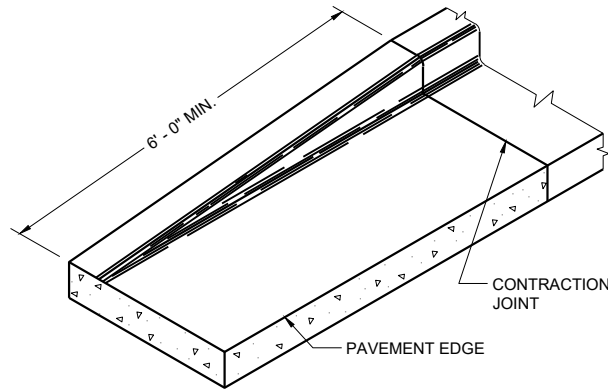
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

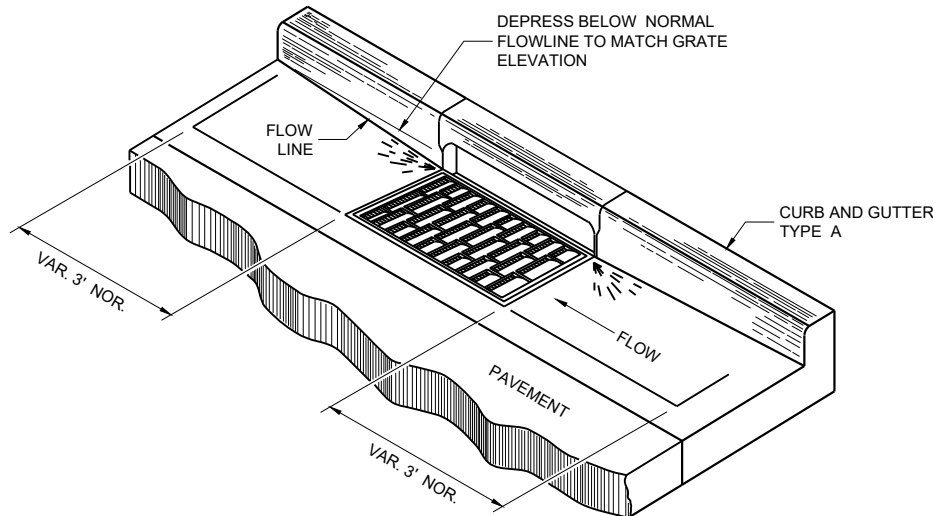
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

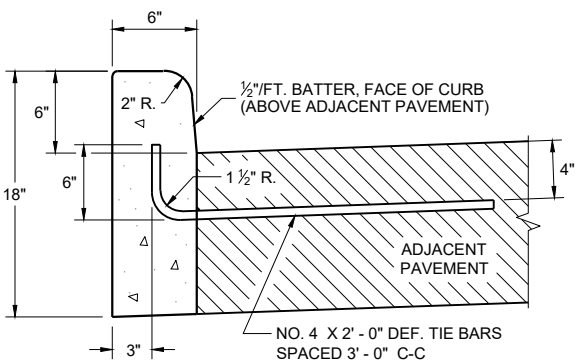


END SECTION CURB AND GUTTER

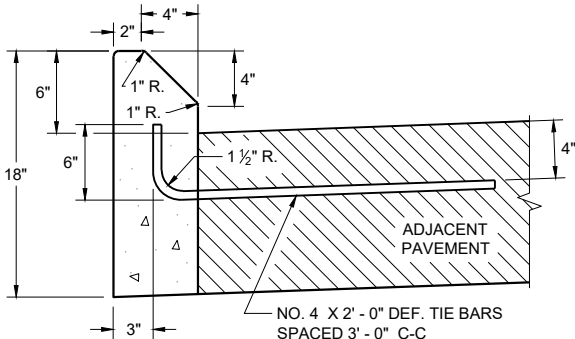


DETAIL OF CURB AND GUTTER AT INLETS

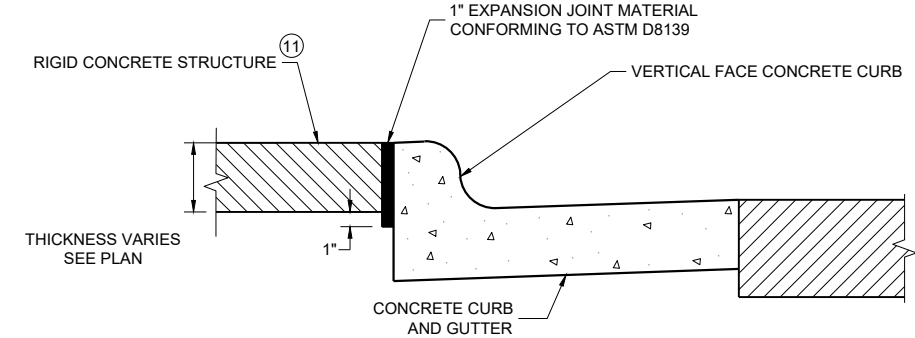
(TYPICAL H INLET COVER SHOWN)



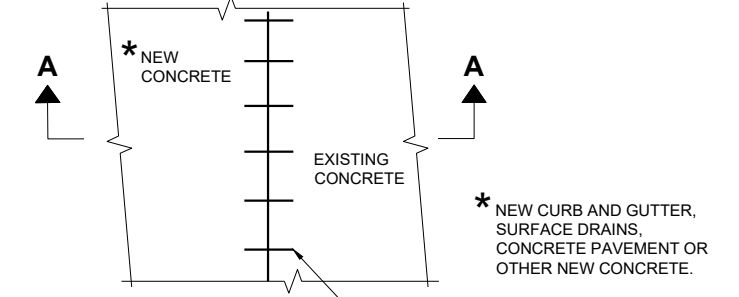
TYPES A^① & D



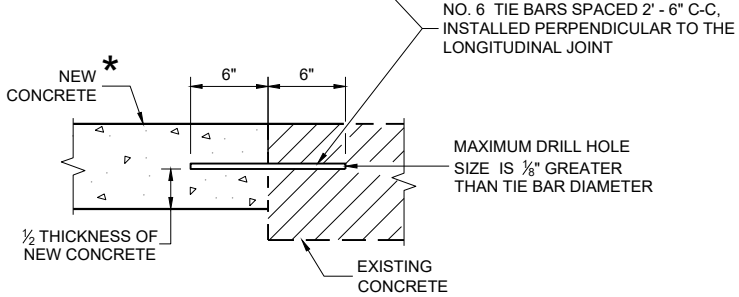
TYPES G^① & J
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE^⑪



PLAN VIEW



SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT

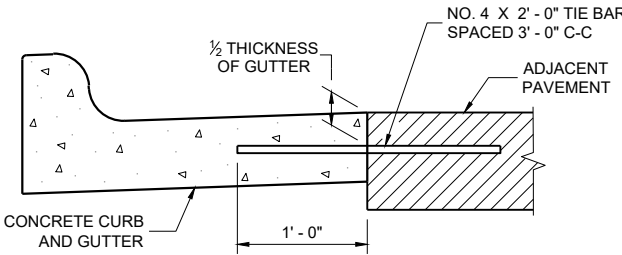
GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

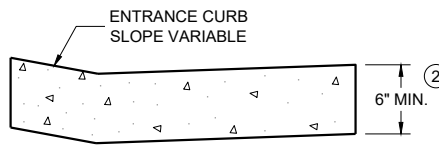
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.



TYPICAL TIE BAR LOCATION^①

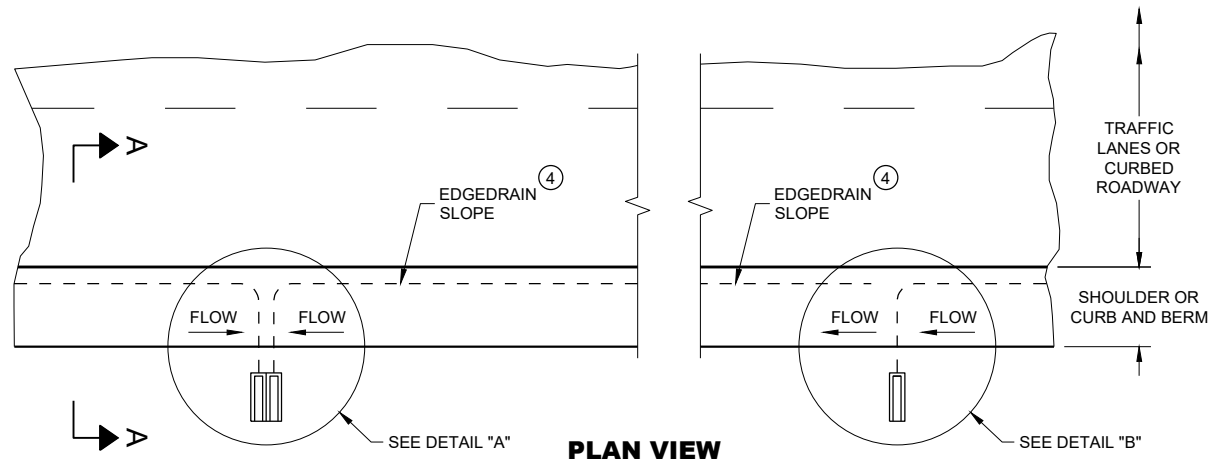


DRIVEWAY ENTRANCE CURB^⑩
(WHEN DIRECTED BY THE ENGINEER)

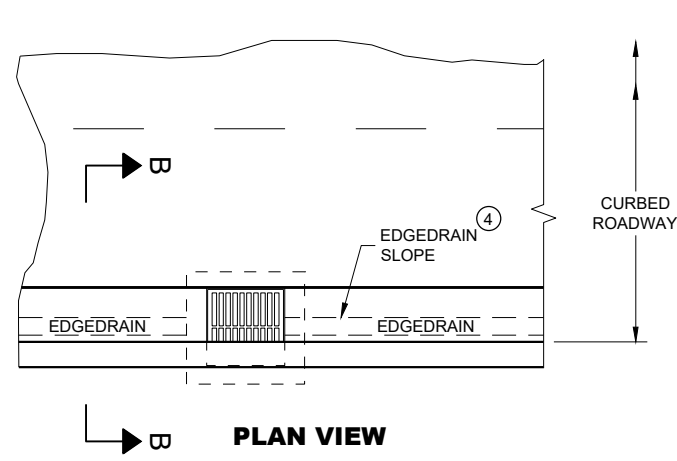
CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

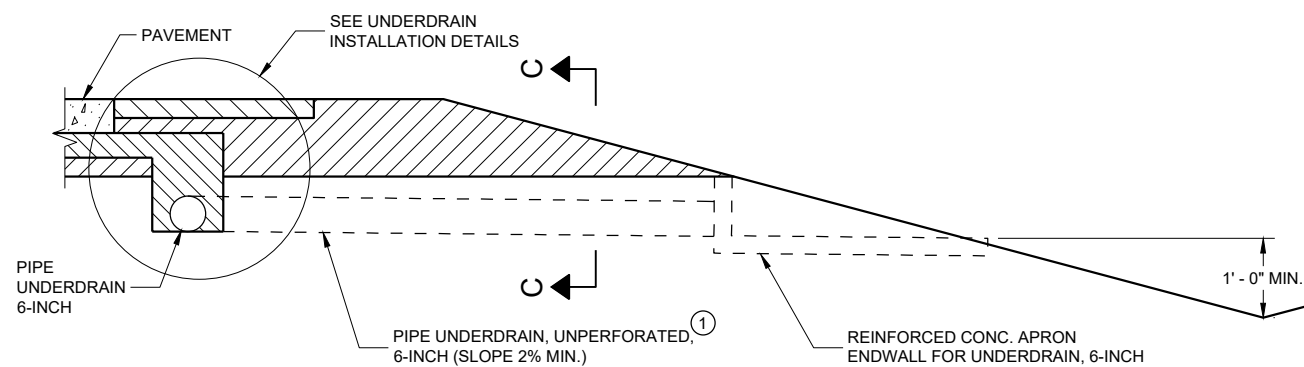
APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



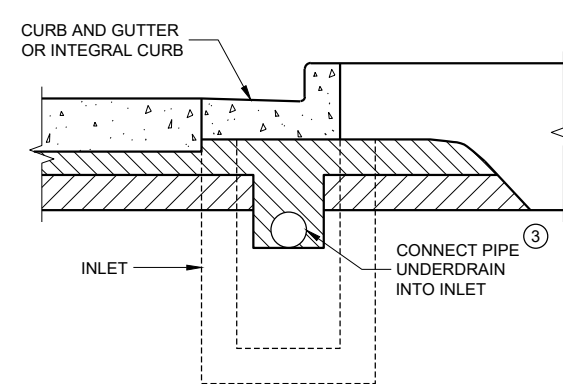
**ROADWAY WITH SHOULDERS OR CURBS
(EDGEDRAIN CONNECTS TO ROADSIDE) ②**



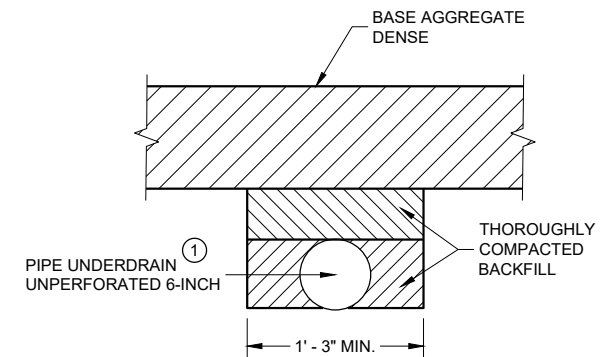
**ROADWAY WITH CURBS
(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)**



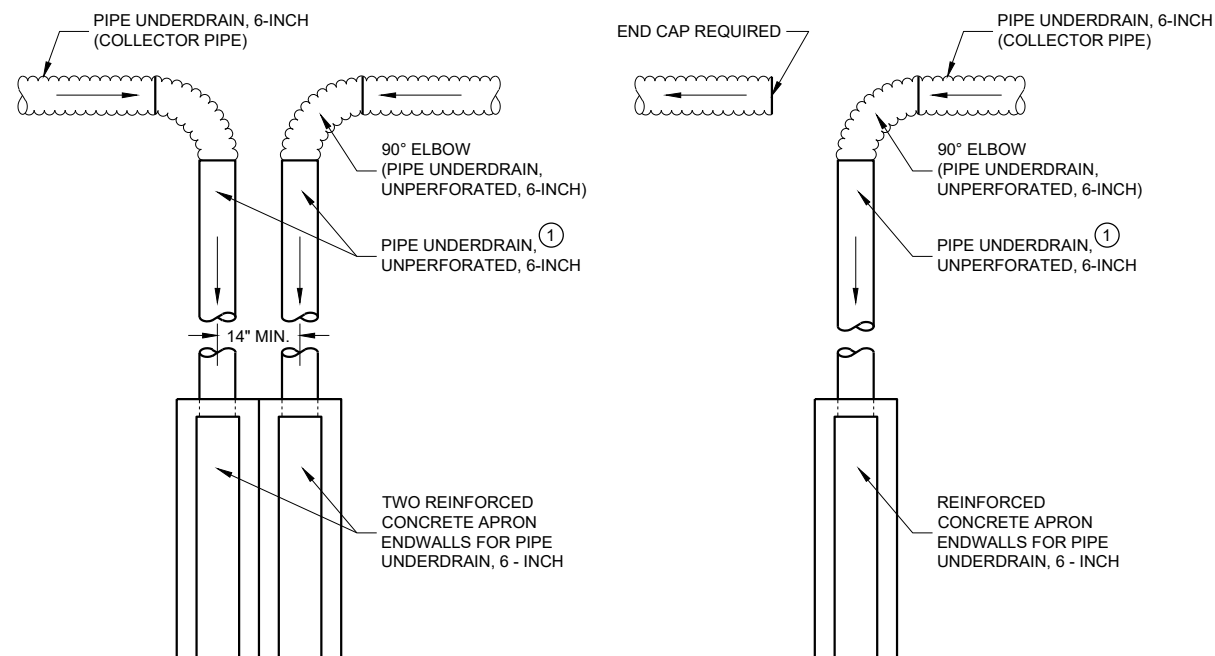
**SECTION A - A
RURAL CROSS SECTION**



**SECTION B - B
URBAN CROSS SECTION**



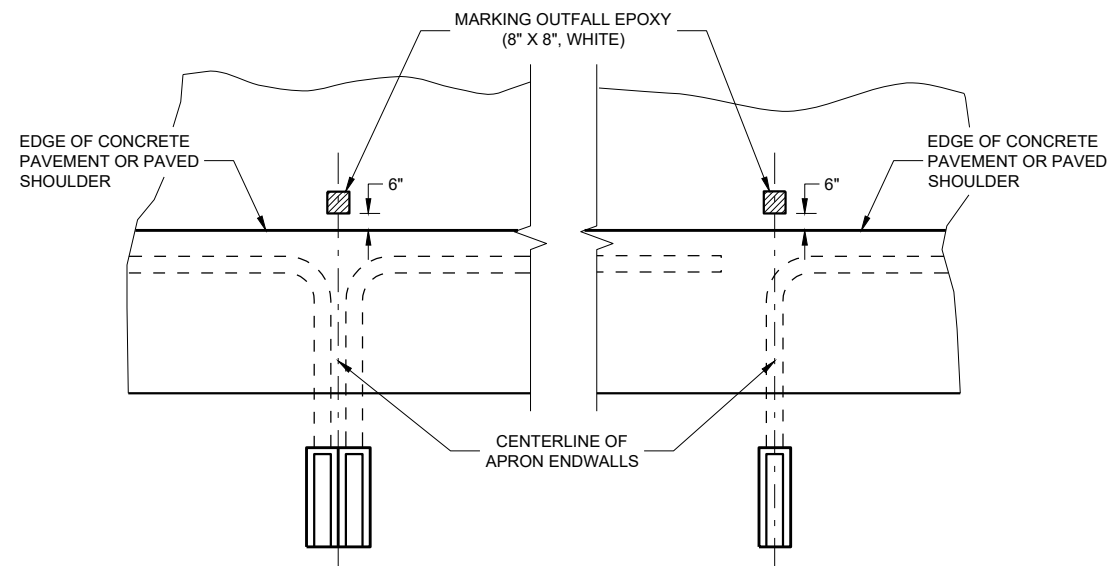
**SECTION C - C
TRENCH FOR OUTFALL PIPE**



DETAIL "A"
TO BE USED AT LOW POINT LOCATIONS

DETAIL "B"
TO BE USED AT INTERMEDIATE LOCATIONS

TYPICAL DRAIN OUT DETAILS



PAVEMENT MARKINGS FOR OUTFALL MARKERS

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

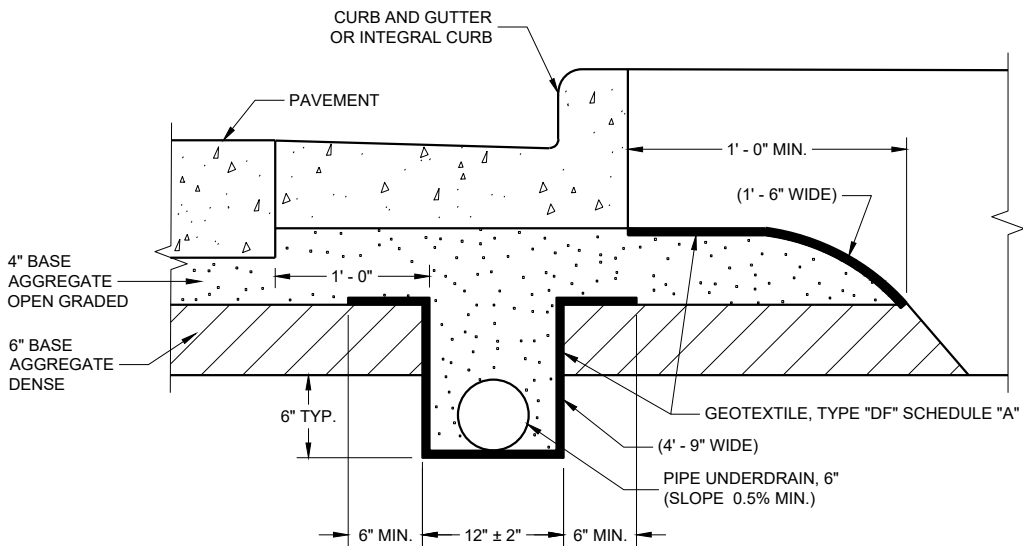
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.

- ② MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.
- ③ EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.
- ④ EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.

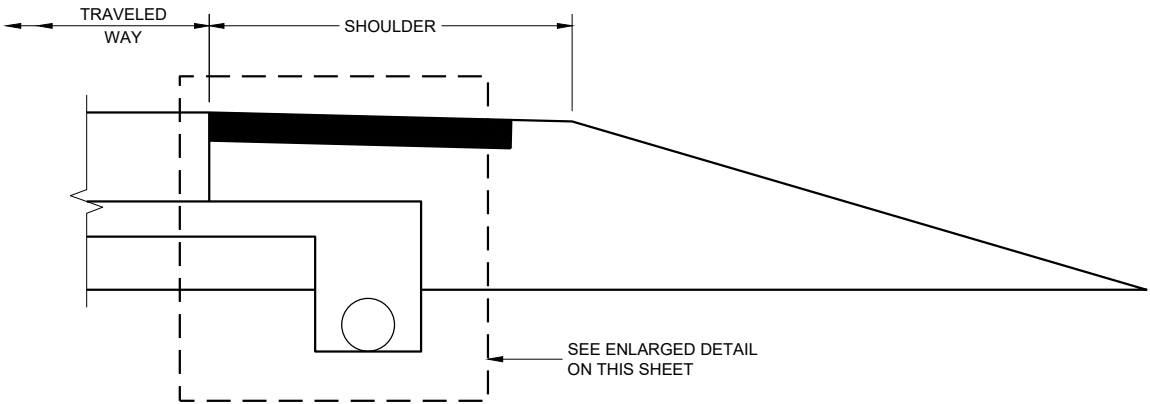
**EDGEDRAIN OUTLET
AND OUTFALL MARKERS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



EDGEDRAIN IN URBAN ROADWAY

②



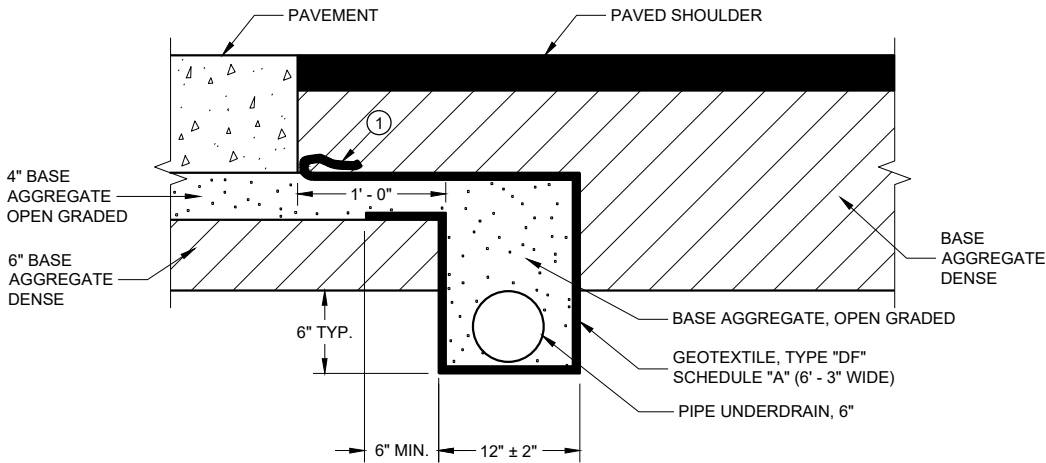
RURAL CROSS SECTION

GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

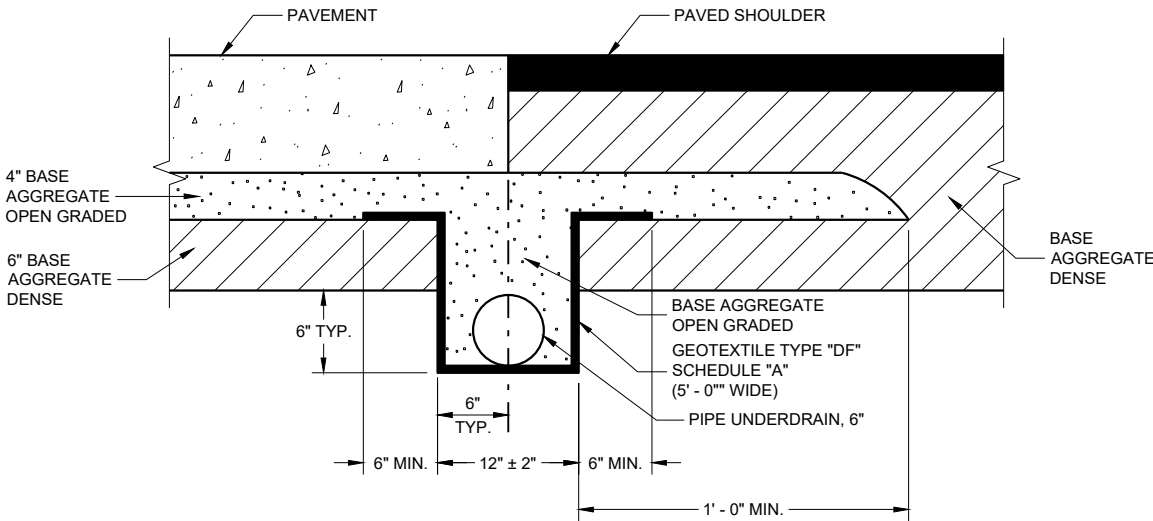
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

- ① FOLD OVER EXCESS GEOTEXTILE AT THIS LOCATION.
- ② TOTAL GEOTEXTILE WIDTH IS 6'-3" FOR PAYMENT.



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)

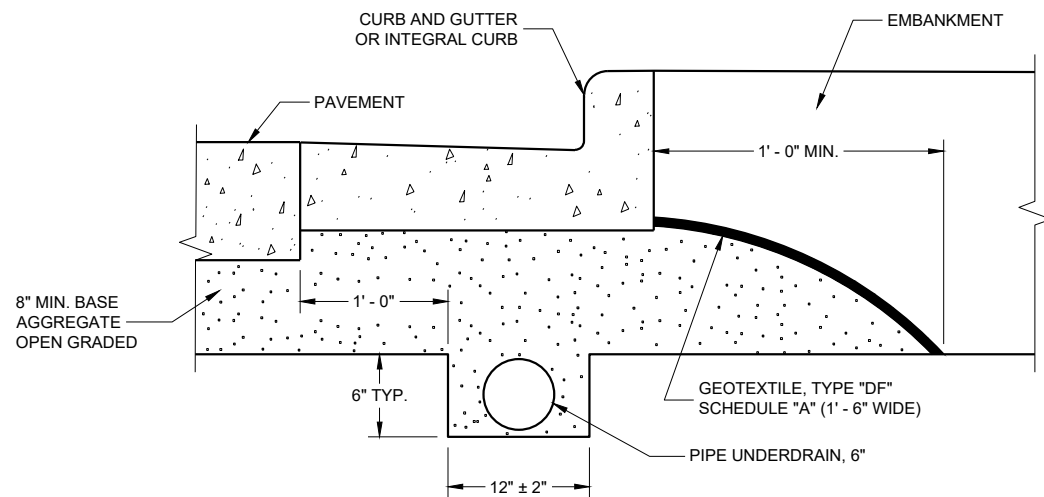
EDGEDRAIN IN RURAL ROADWAY



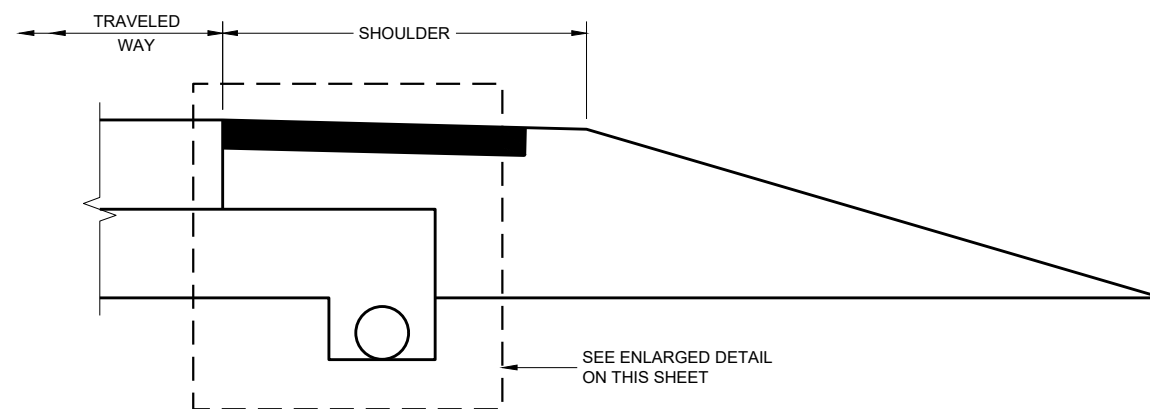
PRE-PAVING INSTALLATION ALTERNATIVE

EGEDRAIN AND BASE
AGGREGATE OPEN GRADED

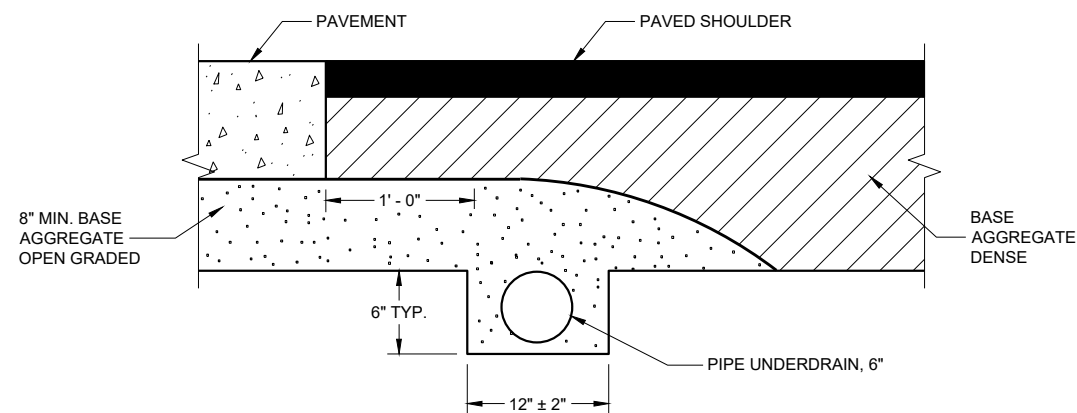
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



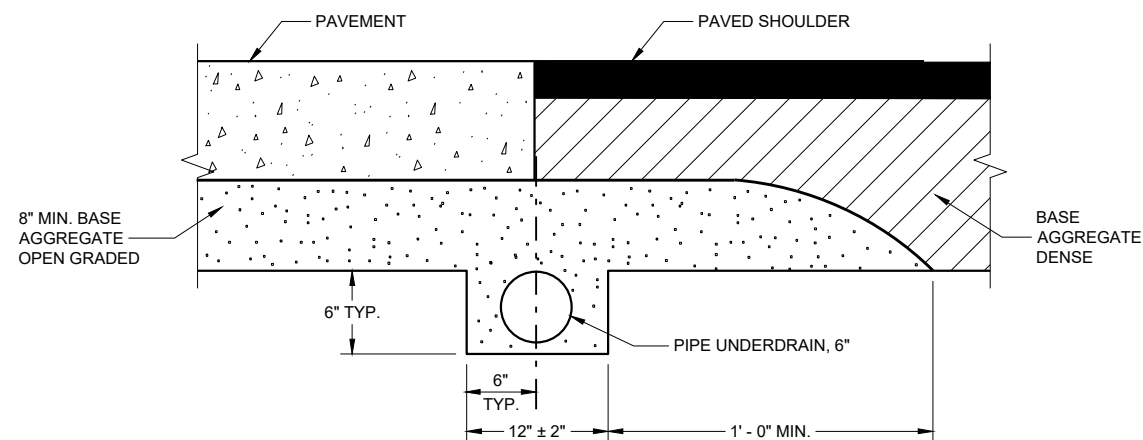
EDGEDRAIN IN URBAN ROADWAY



RURAL CROSS SECTION



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

GENERAL NOTES

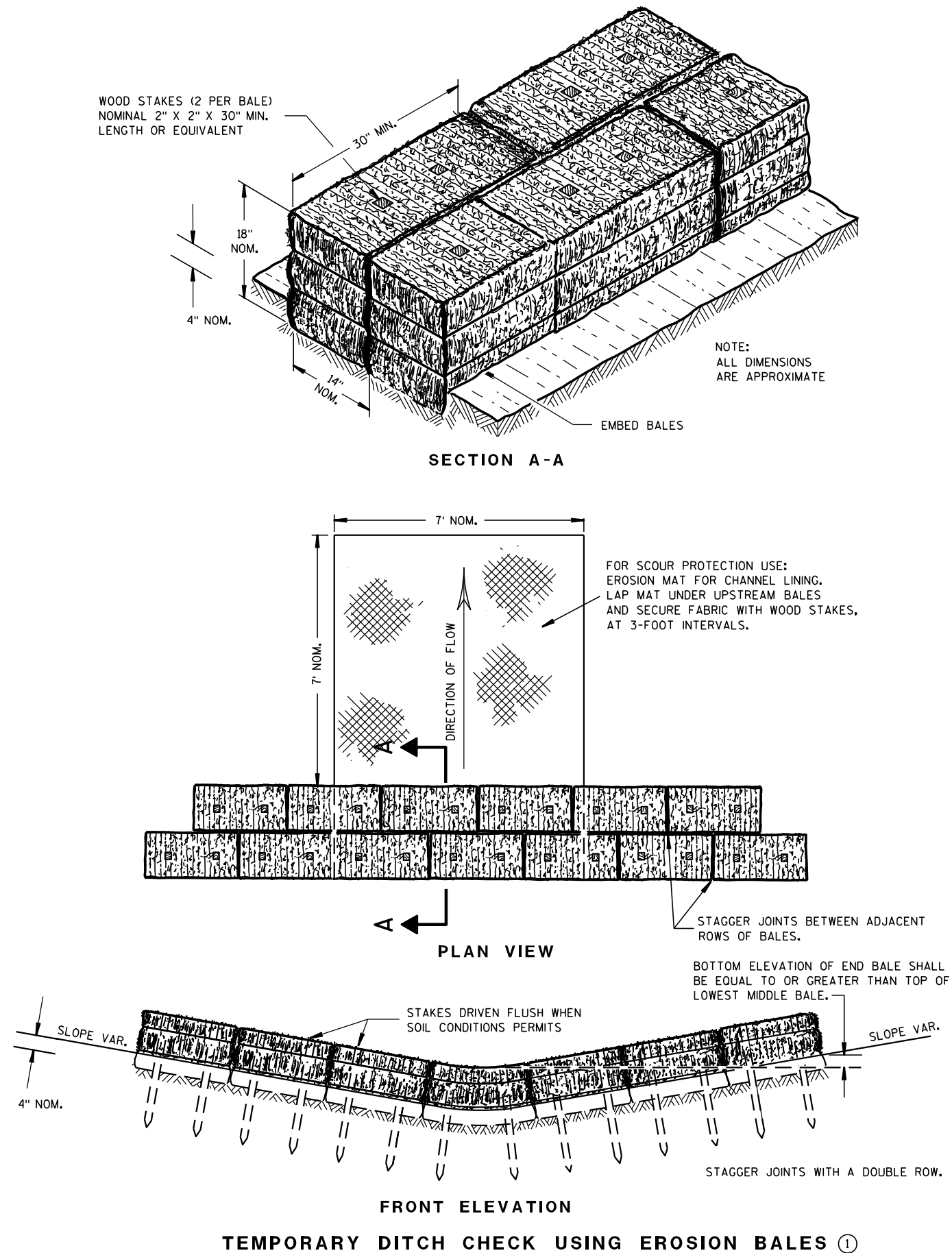
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

**EDGEDRAIN AND BASE
AGGREGATE OPEN GRADED**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

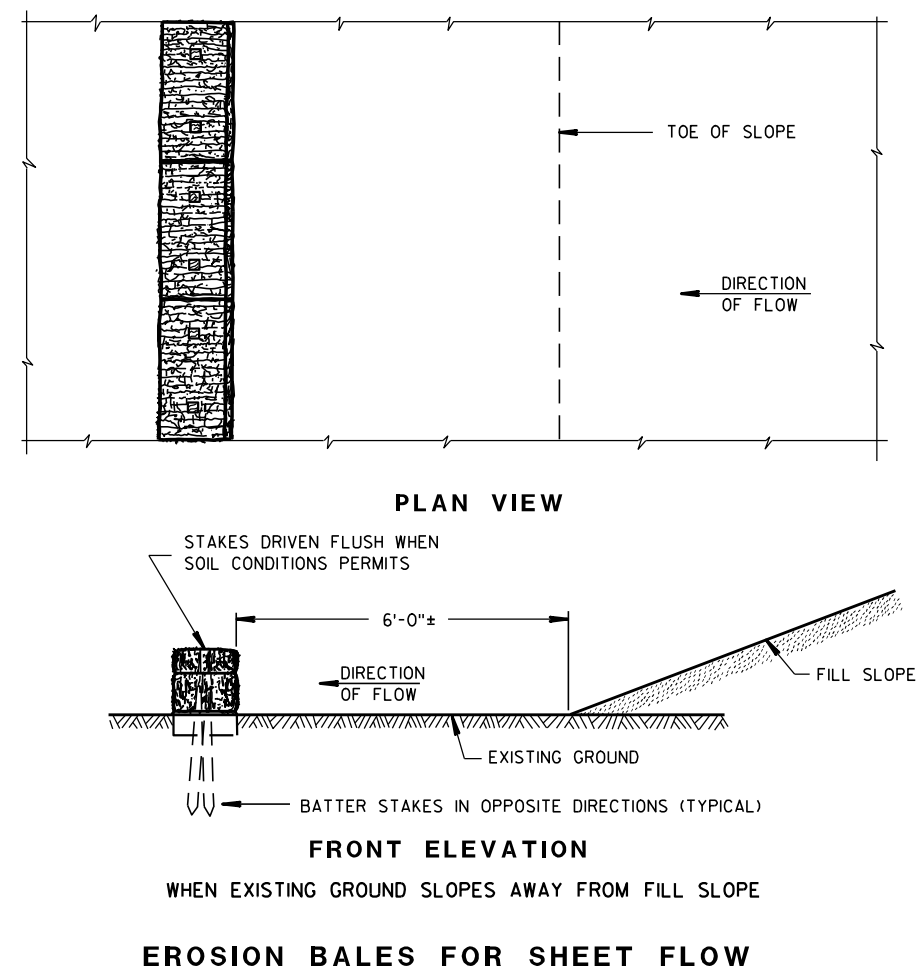
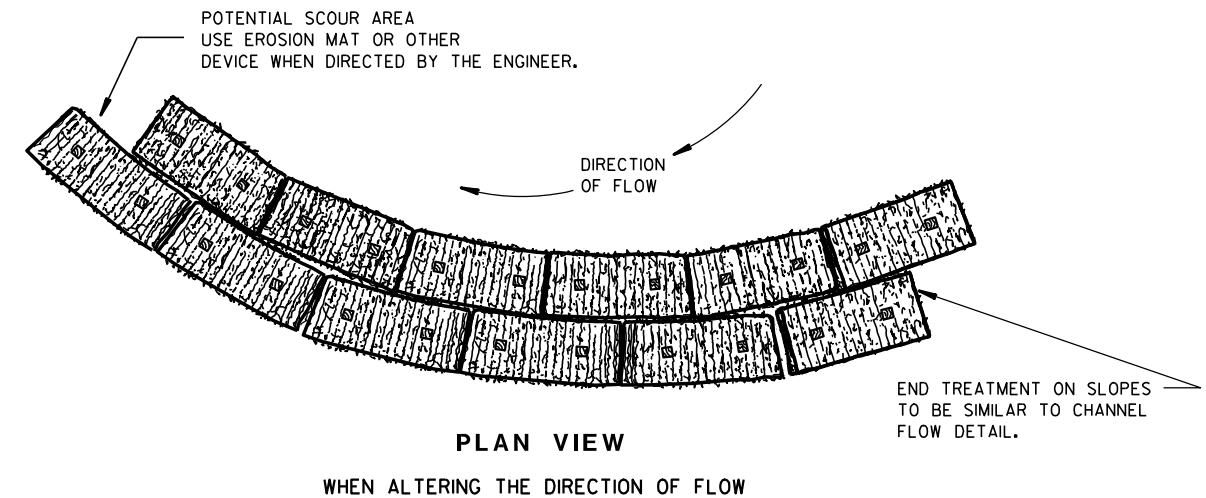
APPROVED
September 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

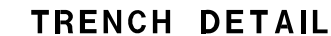
APPROVED

6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

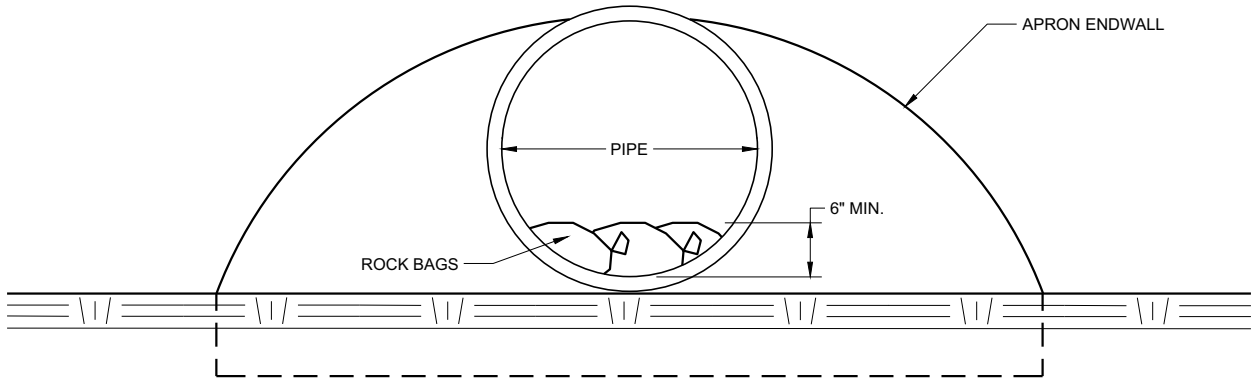
FHWA



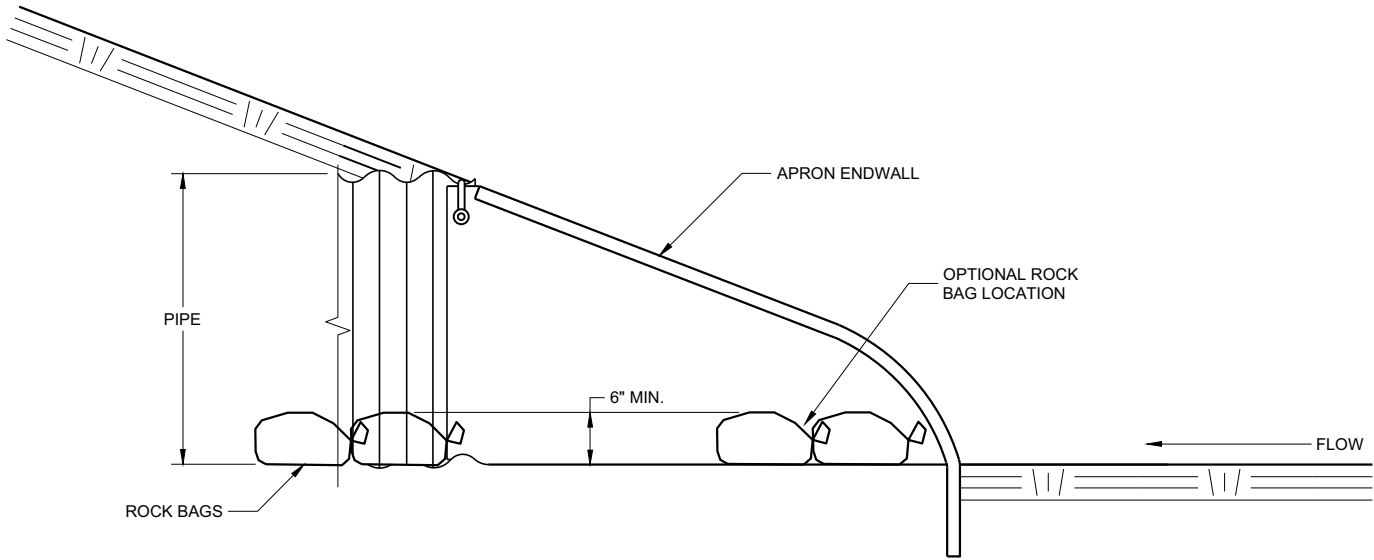
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>4-29-05</u> <u>DATE</u>	<u>/S/ Beth Canestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



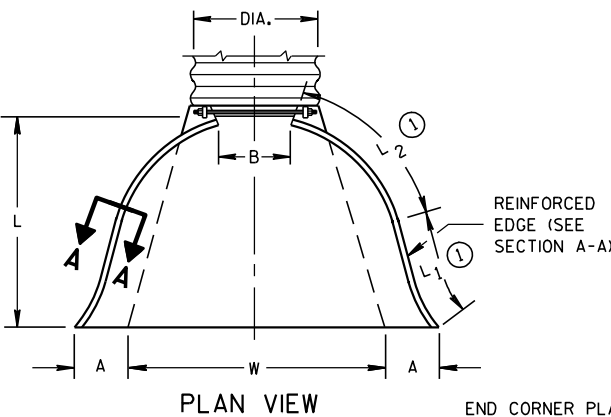
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGINEER
FHWA	

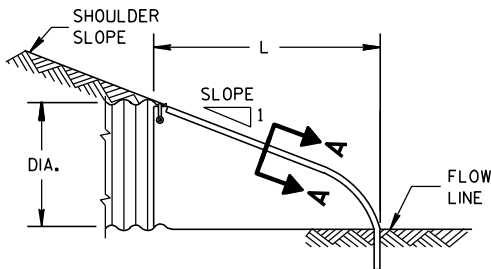
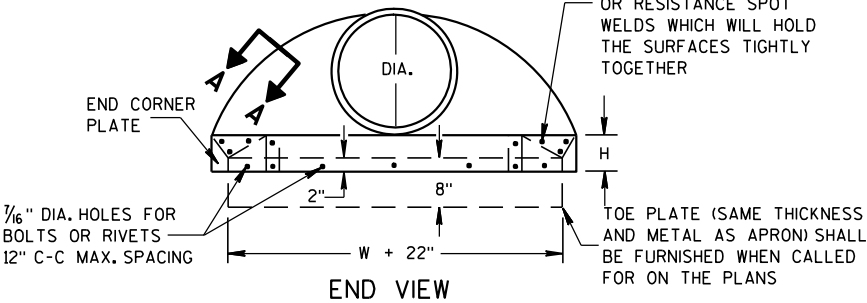
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE		BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2	Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2	Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3	Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3	Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3	Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3	Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3	Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3	Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3	Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3	Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3	Pc.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER

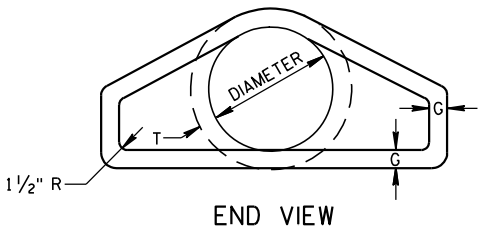
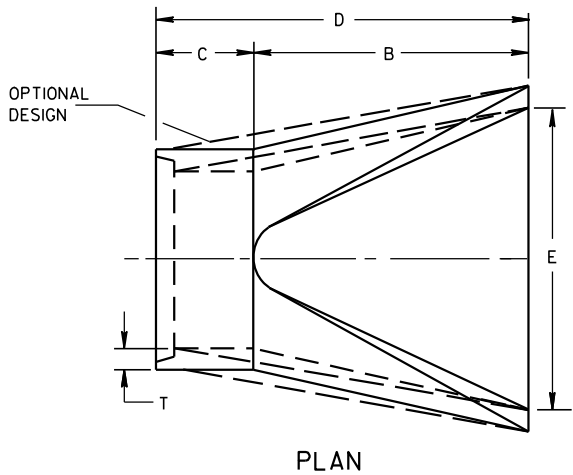
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



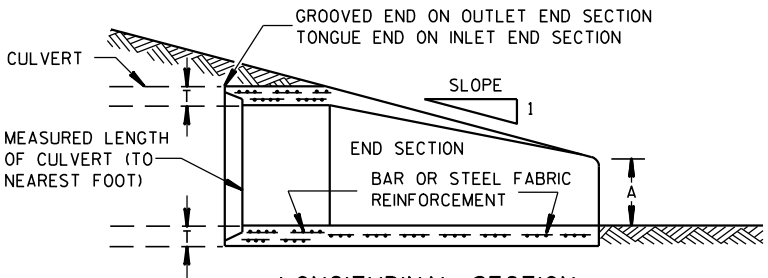
SIDE ELEVATION
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1				
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1				
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1				
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1				
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1				
48	5	24	72	26	98	84	5	3 to 1				
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 to 1				
60	6	30-35	60	39	99	96	5	2 to 1				
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1				
72	7	24-36	78	21	99	108	6	2 to 1				
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1				
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1				
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1				

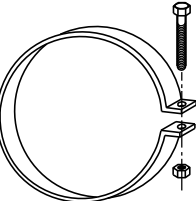
* MINIMUM
** MAXIMUM



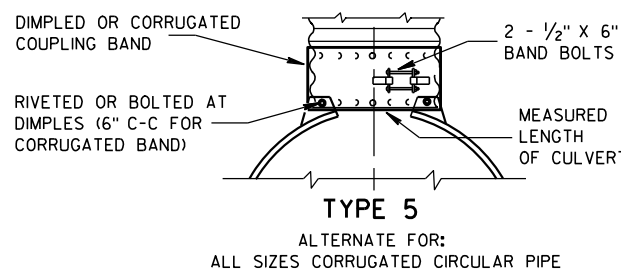
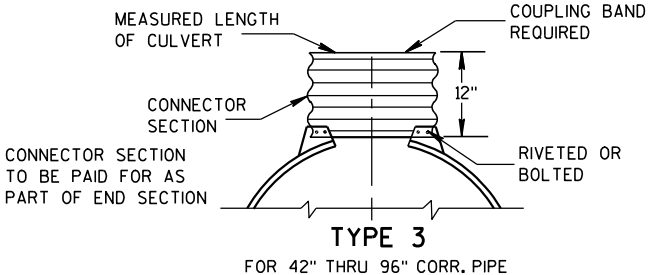
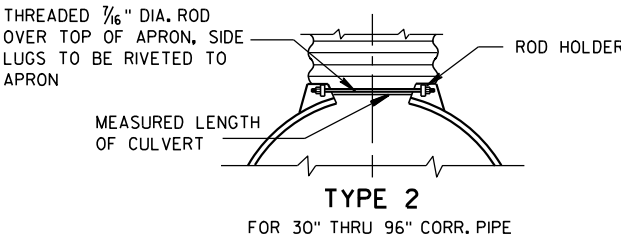
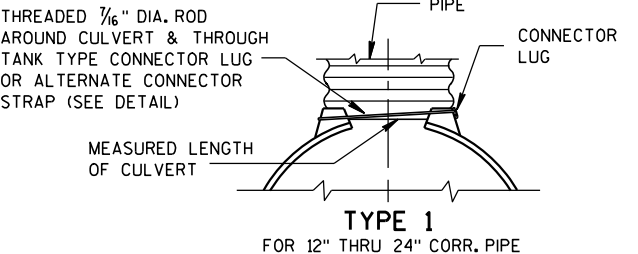
LONGITUDINAL SECTION
CONCRETE ENDWALLS



1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



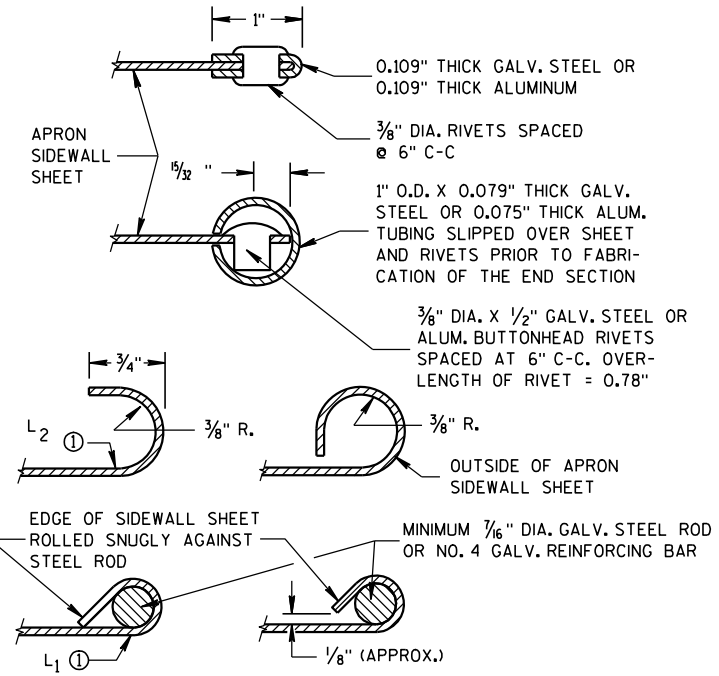
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

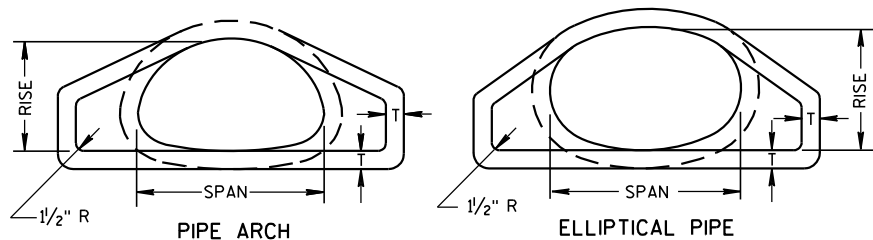
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

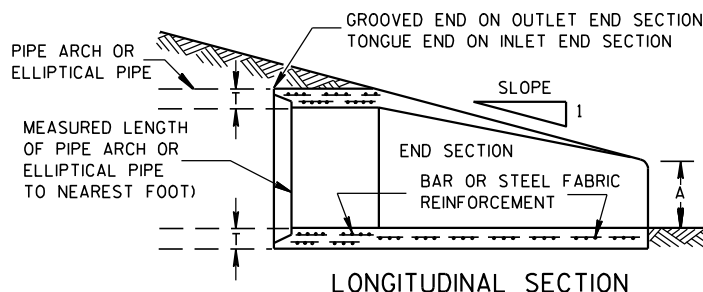
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

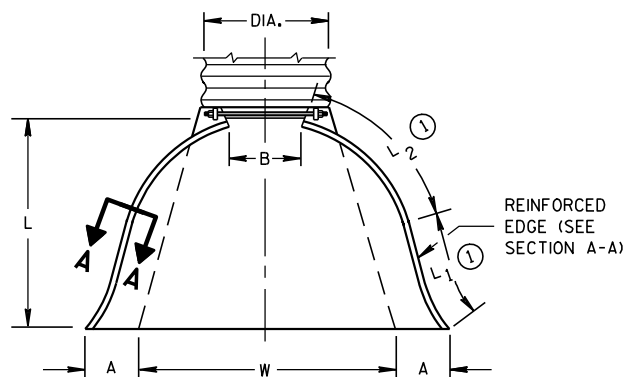


END VIEW

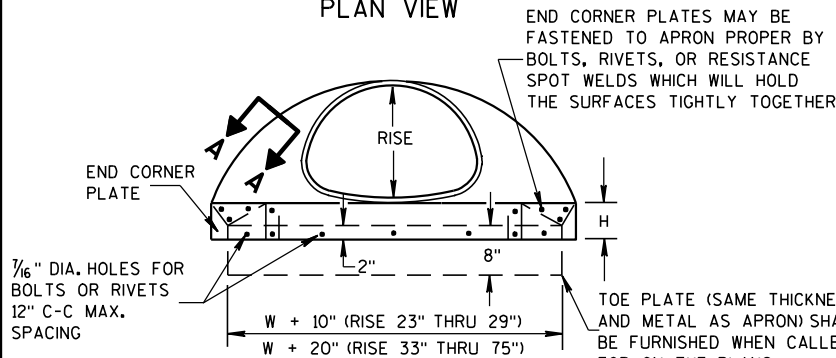


LONGITUDINAL SECTION

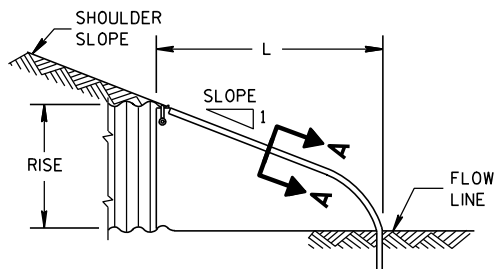
CONCRETE ENDWALLS



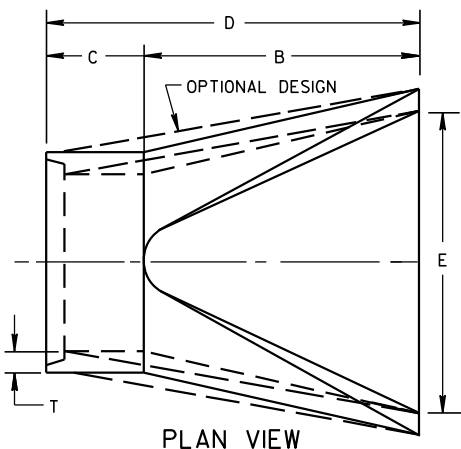
PLAN VIEW



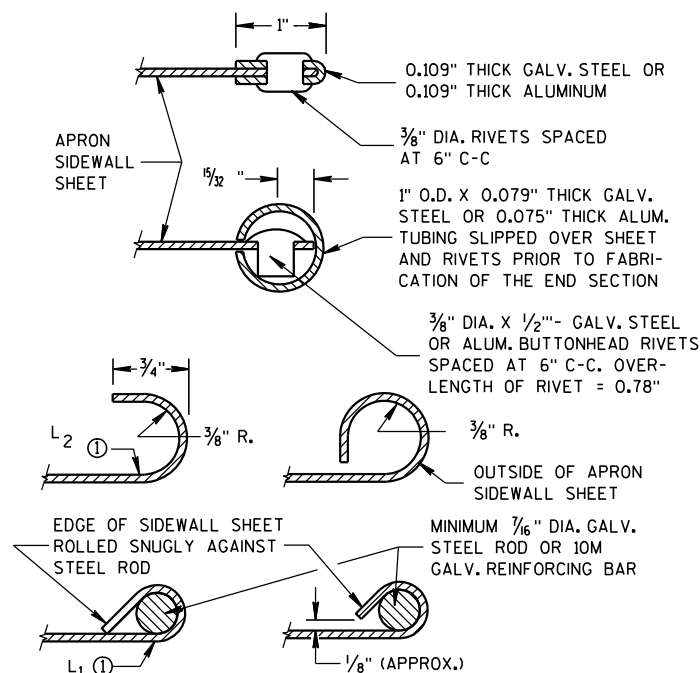
END VIEW



SIDE ELEVATION
METAL ENDWALLS



PLAN VIEW



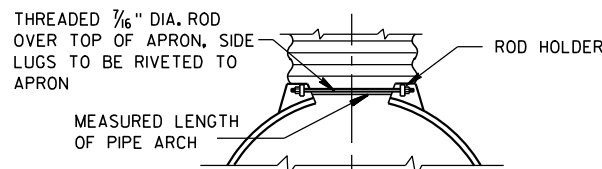
SECTION A-A

2- 2 ² / ₃ " x 1 ¹ / ₂ " CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A	B	H	L	L1	L2	W		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82¼	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1½ to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1½ to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1½ to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1½ to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1½ to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1½ to 1	3 Pc.

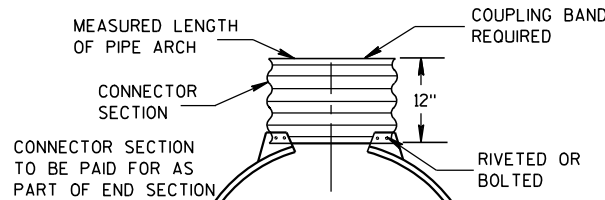
NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



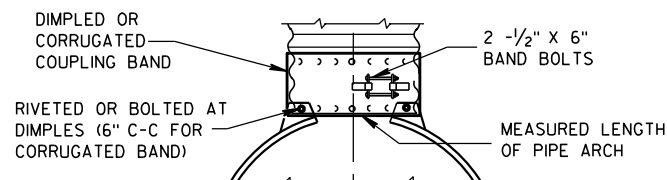
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	29	18	3	8 1/2	39	33	72	48	3 to 1
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1
36	44	27	4	11 1/8	60	36	96	72	3 to 1
42	51	31	4 1/2	15 1/8	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28 1/2	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1

**NOMINAL SIZE

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPE

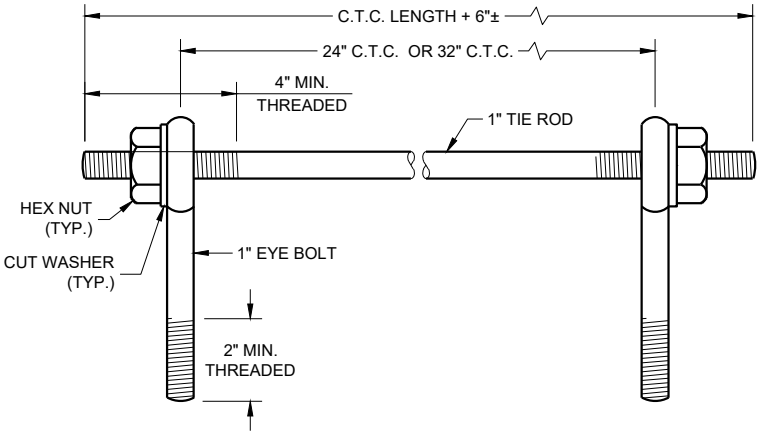
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94
DATE

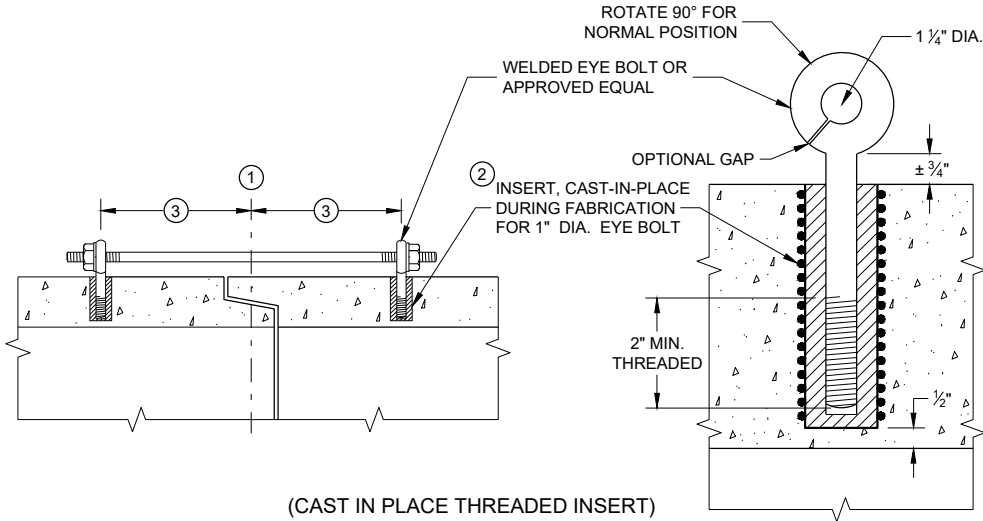
FHWA

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER



EYE BOLTS AND TIE ROD

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

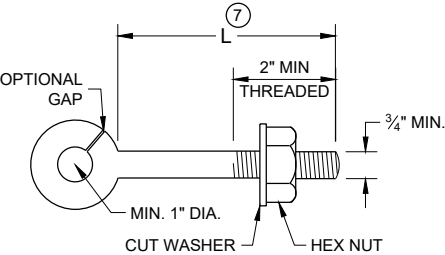
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

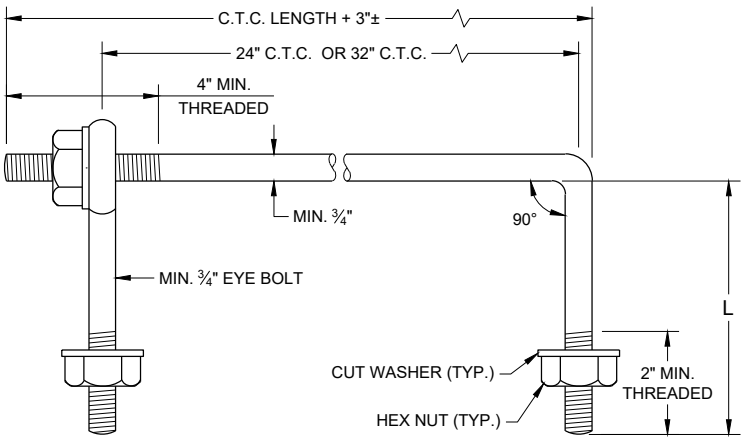
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- ① CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- ⑦ EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

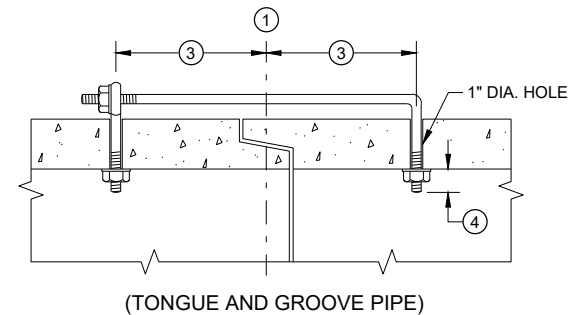


EYE BOLT ⑦

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



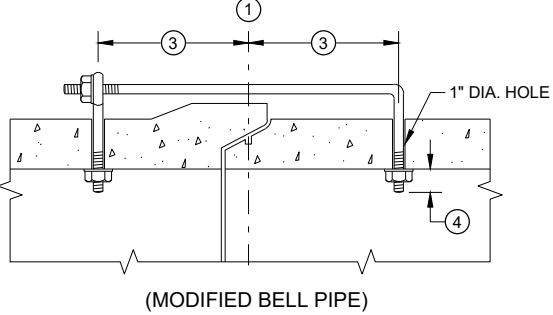
EYE BOLT AND TIE ROD



LONGITUDINAL SECTION

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

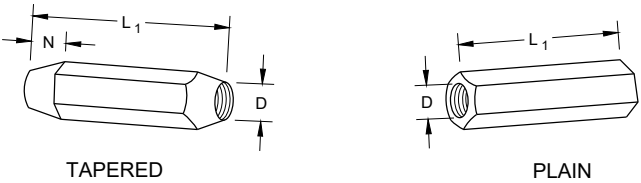


(MODIFIED BELL PIPE)

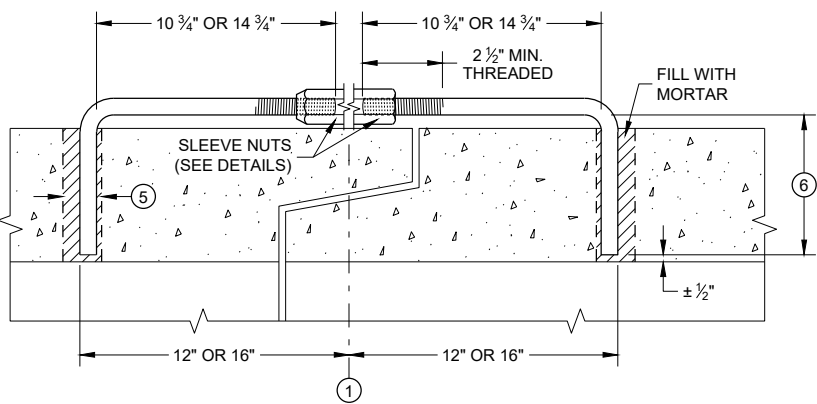
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES

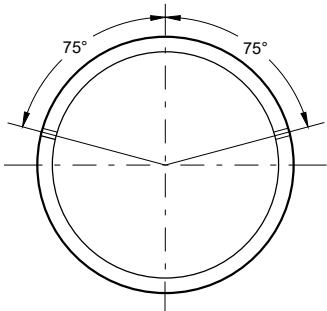


RIGHT AND LEFT THREADS
SLEEVE NUTS



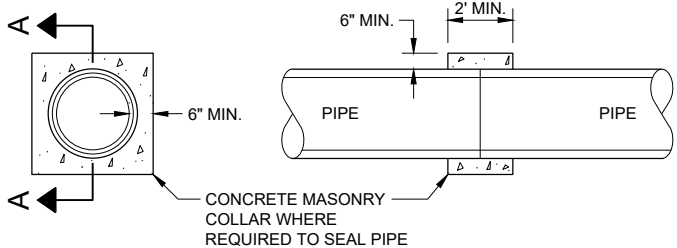
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

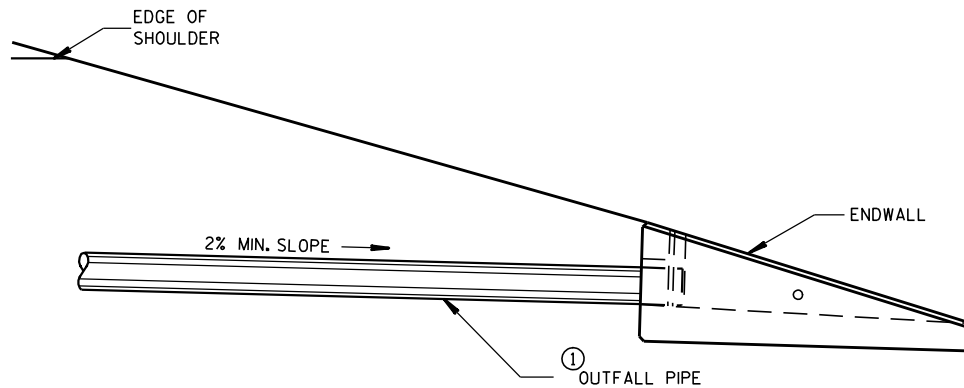
JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

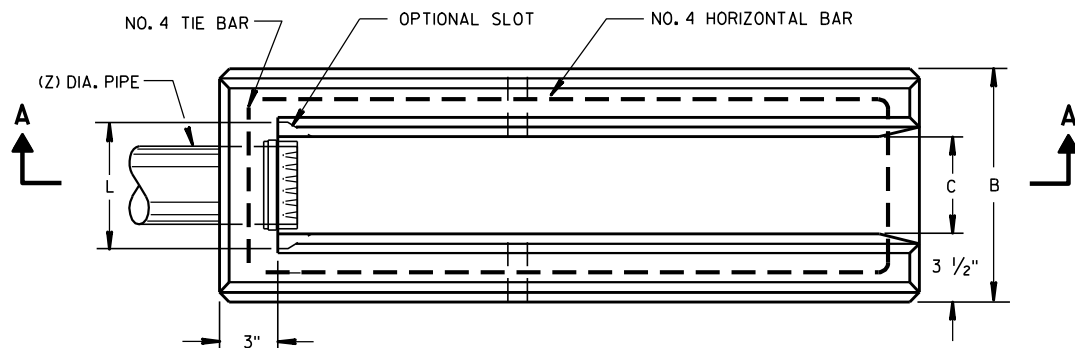
APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

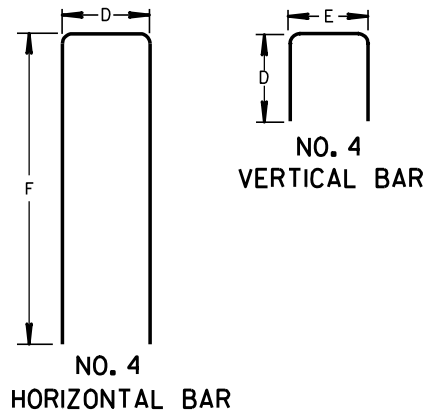
** APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



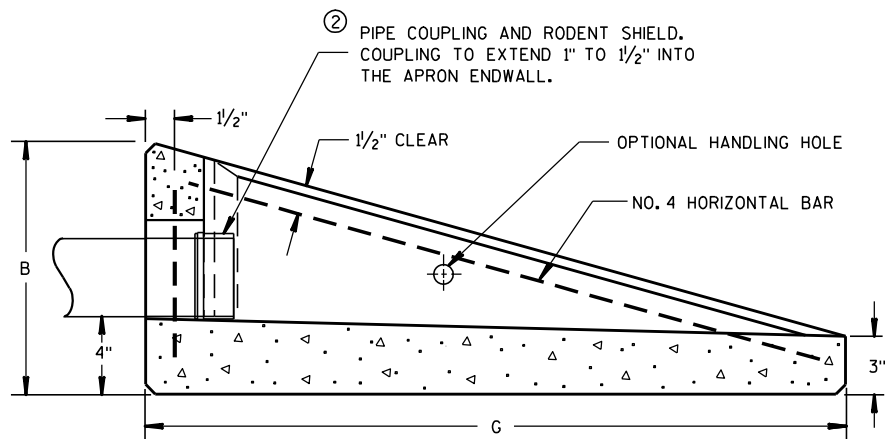
INSTALLATION DETAIL



PLAN VIEW

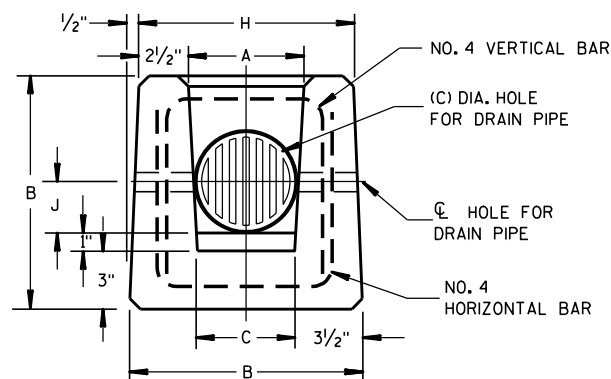


BAR STEEL REINFORCEMENT DETAILS



SECTION A-A

CONCRETE APRON ENDWALL FOR UNDERDRAIN



END VIEW

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

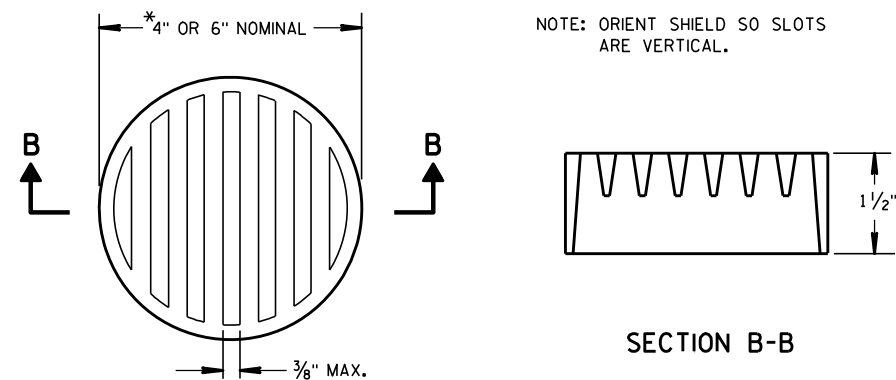
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

- ① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

- ② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

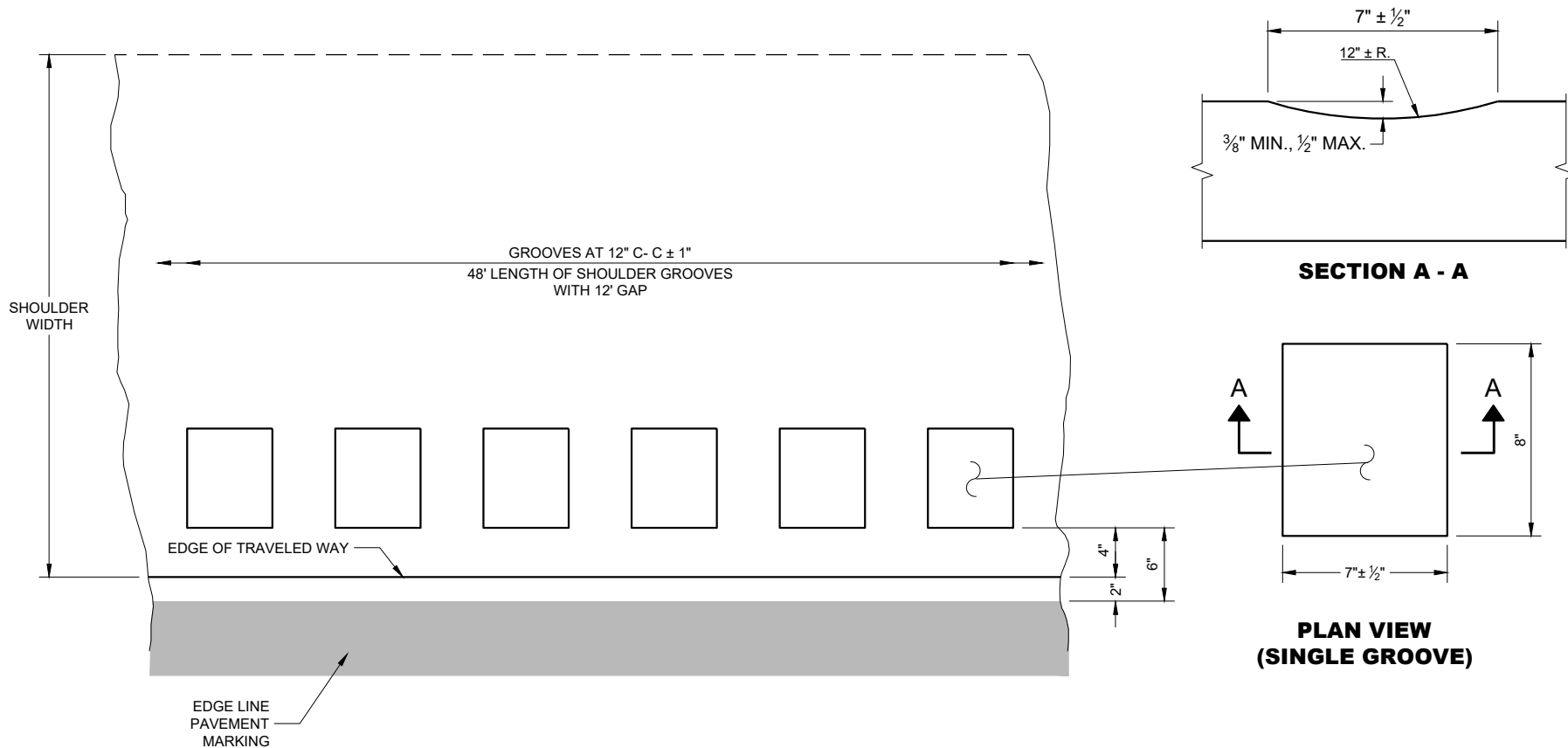
APPROVED

3/10/98

DATE

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

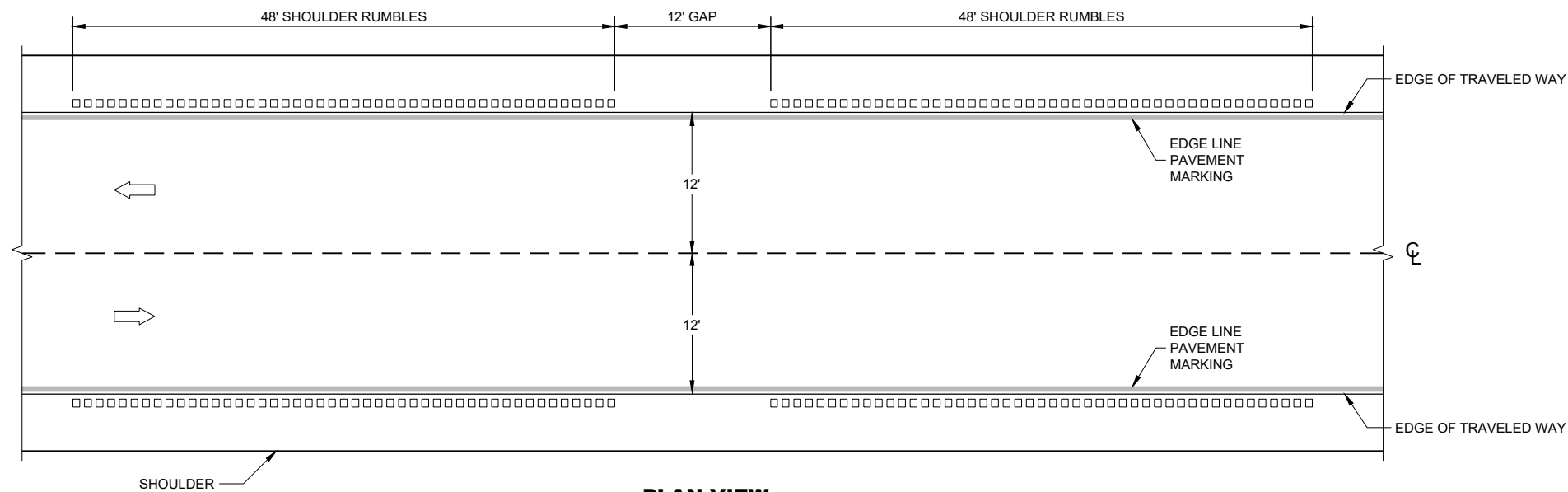
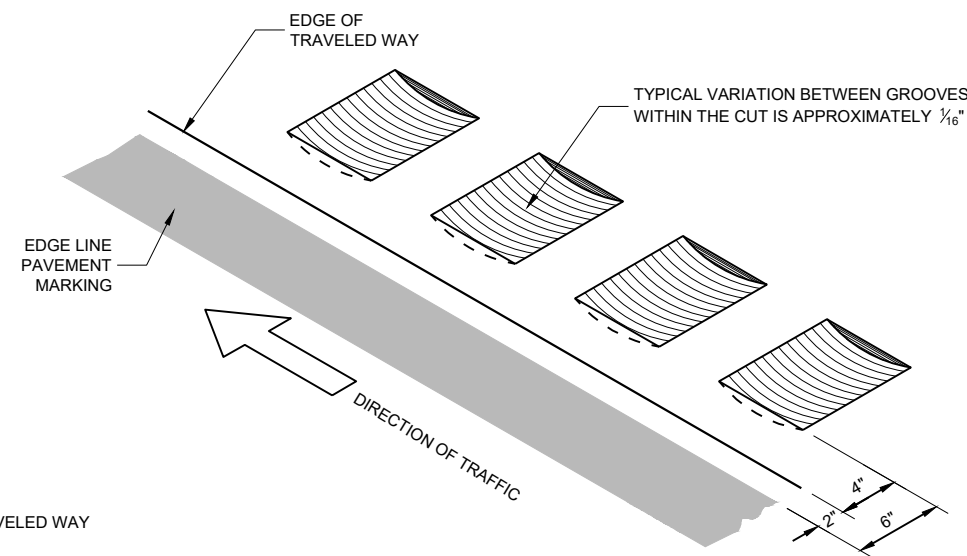


PLAN DETAIL VIEW
SHOULDER WITH GROOVES

GENERAL NOTES

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.

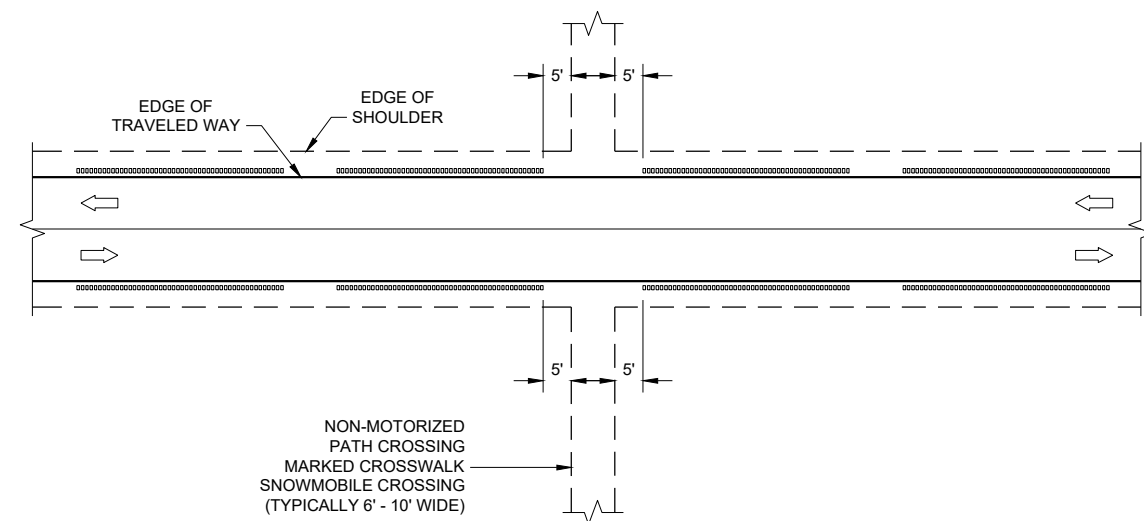


PLAN VIEW

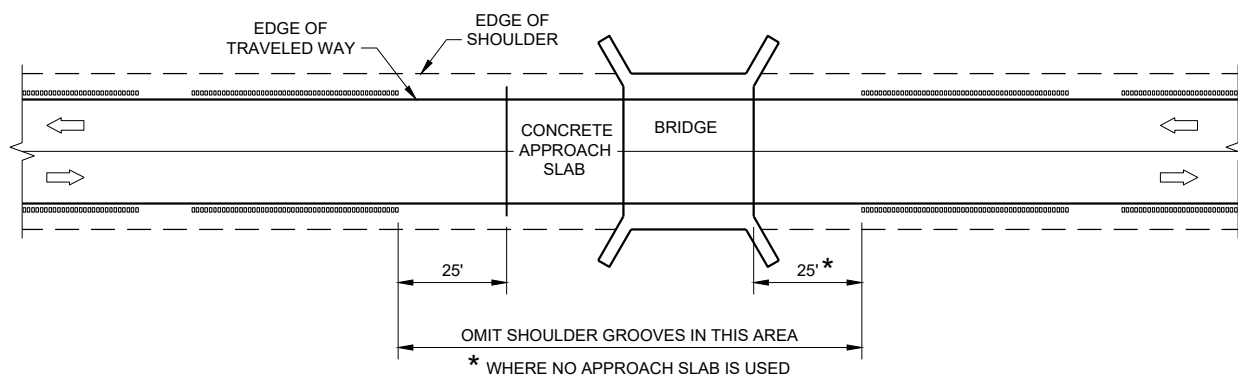
SHOULDER RUMBLE STRIPS - ASPHALT

**SHOULDER RUMBLE
STRIPS ASPHALT**

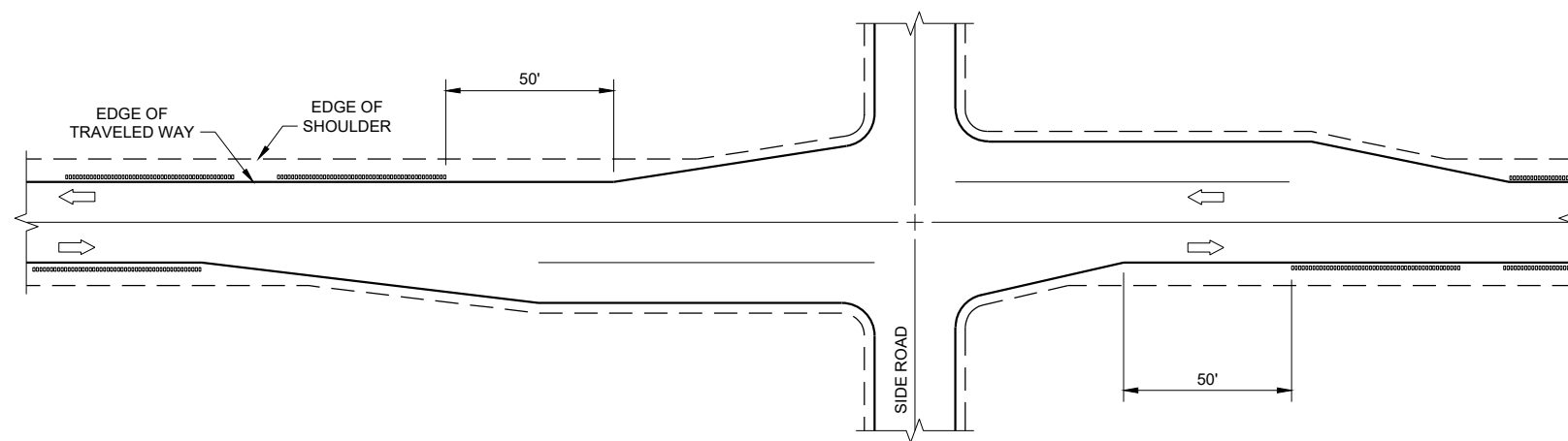
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



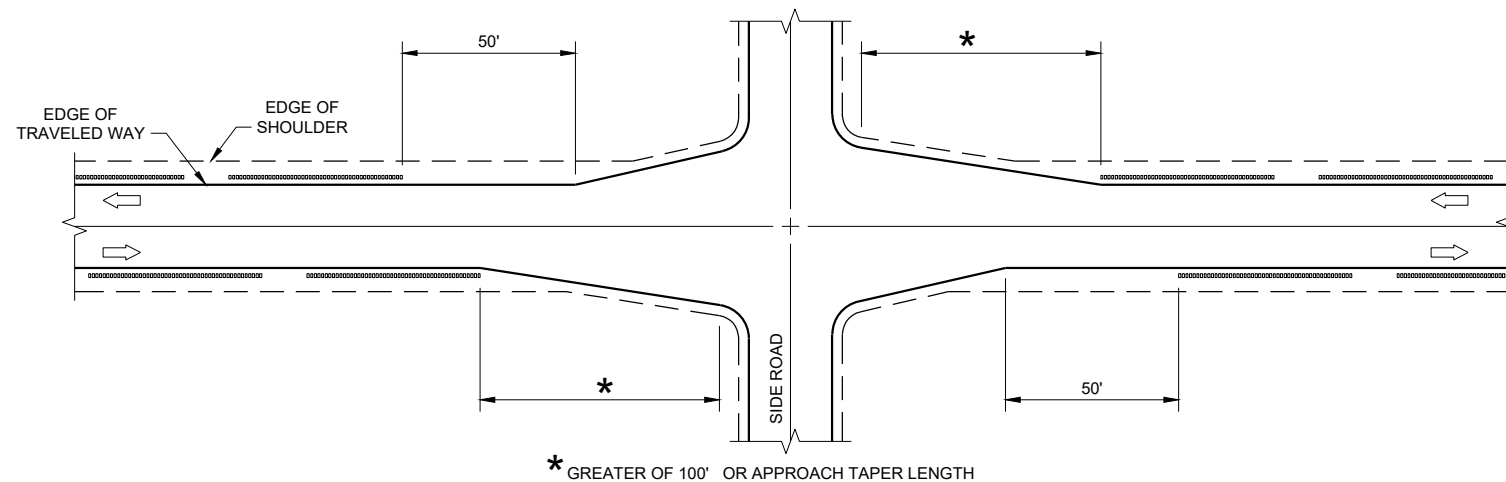
GROOVES AT MISCELLANEOUS CROSSINGS



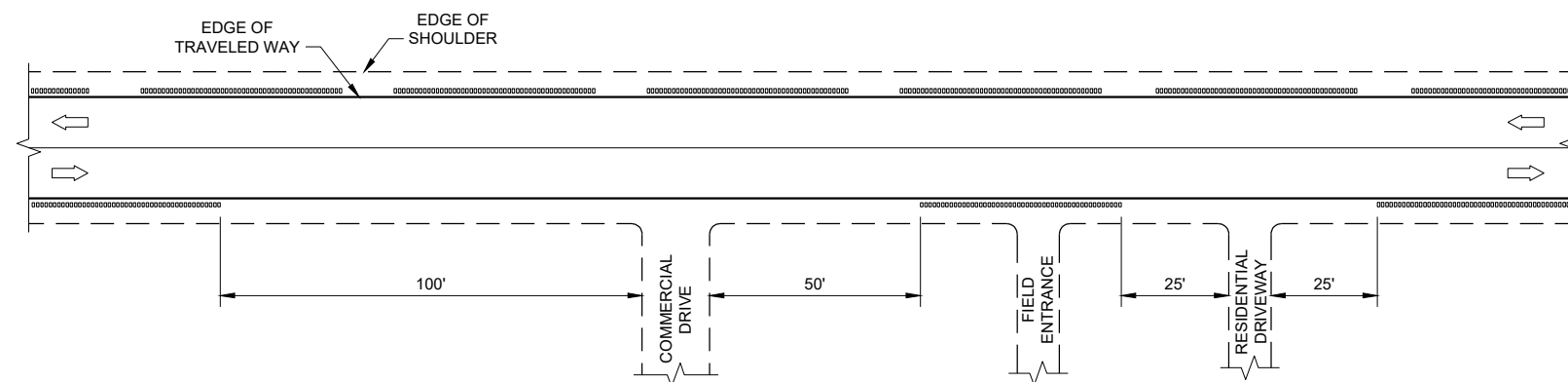
GROOVES AT BRIDGES



GROOVES AT RIGHT TURN LANE



GROOVES AT INTERSECTIONS WITH APPROACH TAPER



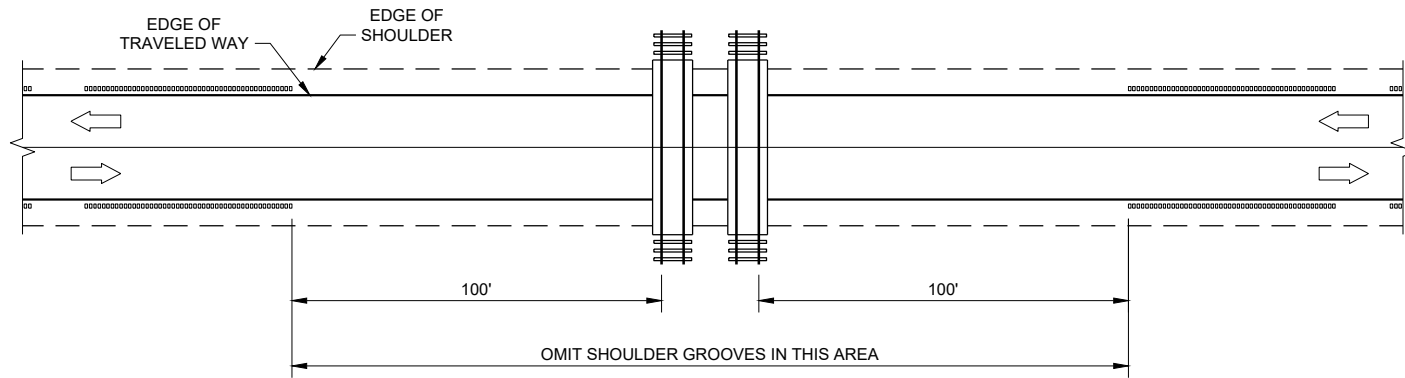
GROOVES AT DRIVEWAYS

GENERAL NOTES

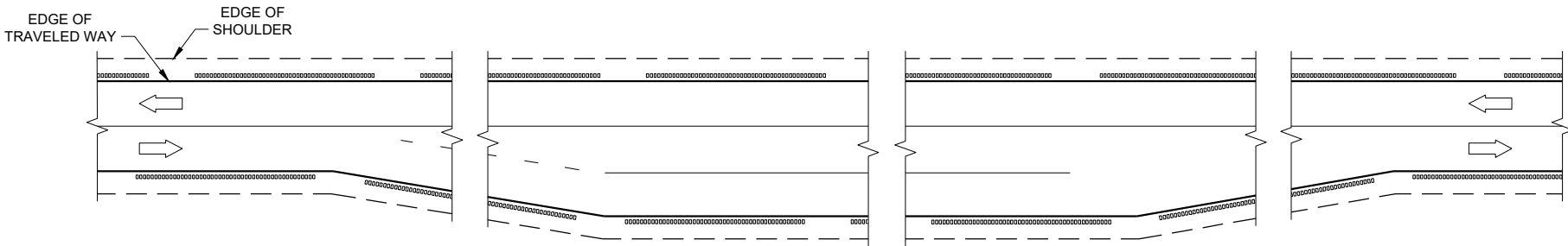
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

**SHOULDER AND EDGE LINE
RUMBLE STRIPS
CROSSINGS, INTERSECTIONS,
BRIDGES, DRIVEWAYS**

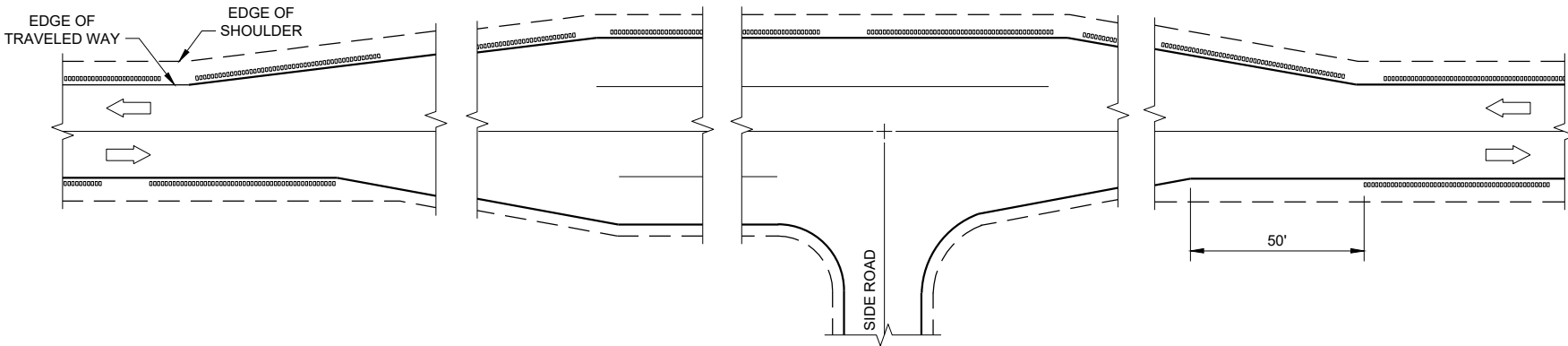
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GROOVES AT RAILROADS



GROOVES AT PASSING AND CLIMBING LANES



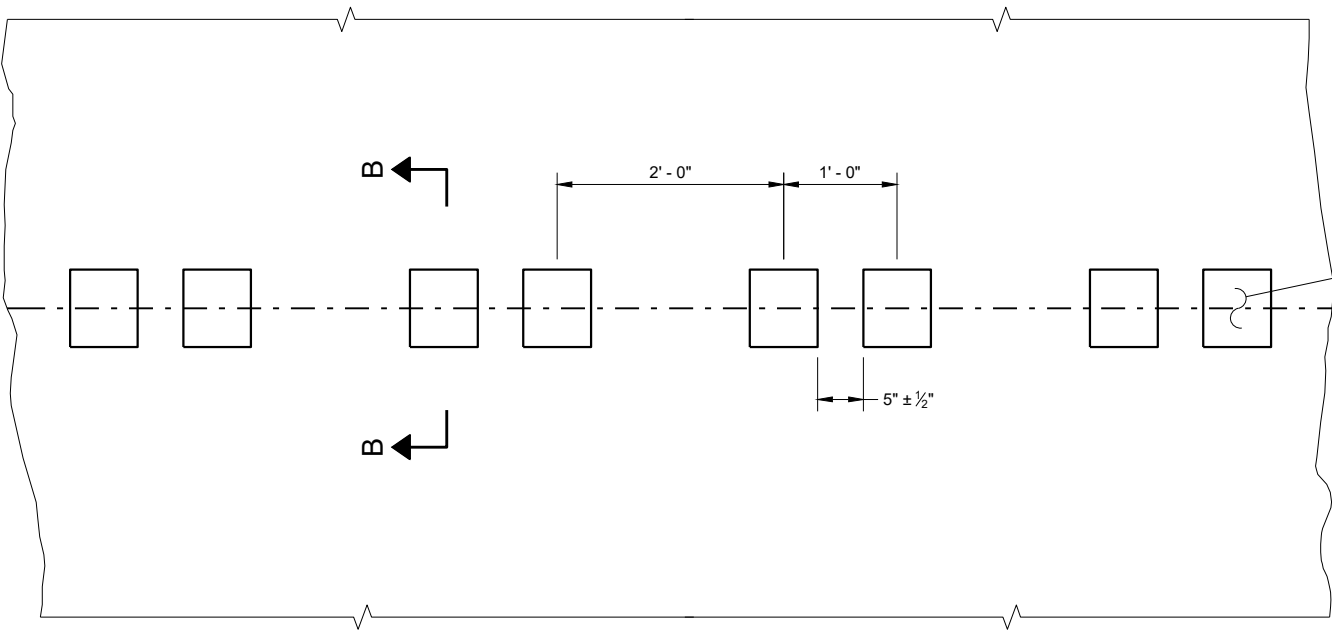
GROOVES AT BYPASS LANES

**SHOULDER AND EDGE LINE
RUMBLE STRIPS -
RAILROAD, PASSING,
CLIMBING AND BYPASS LANES**

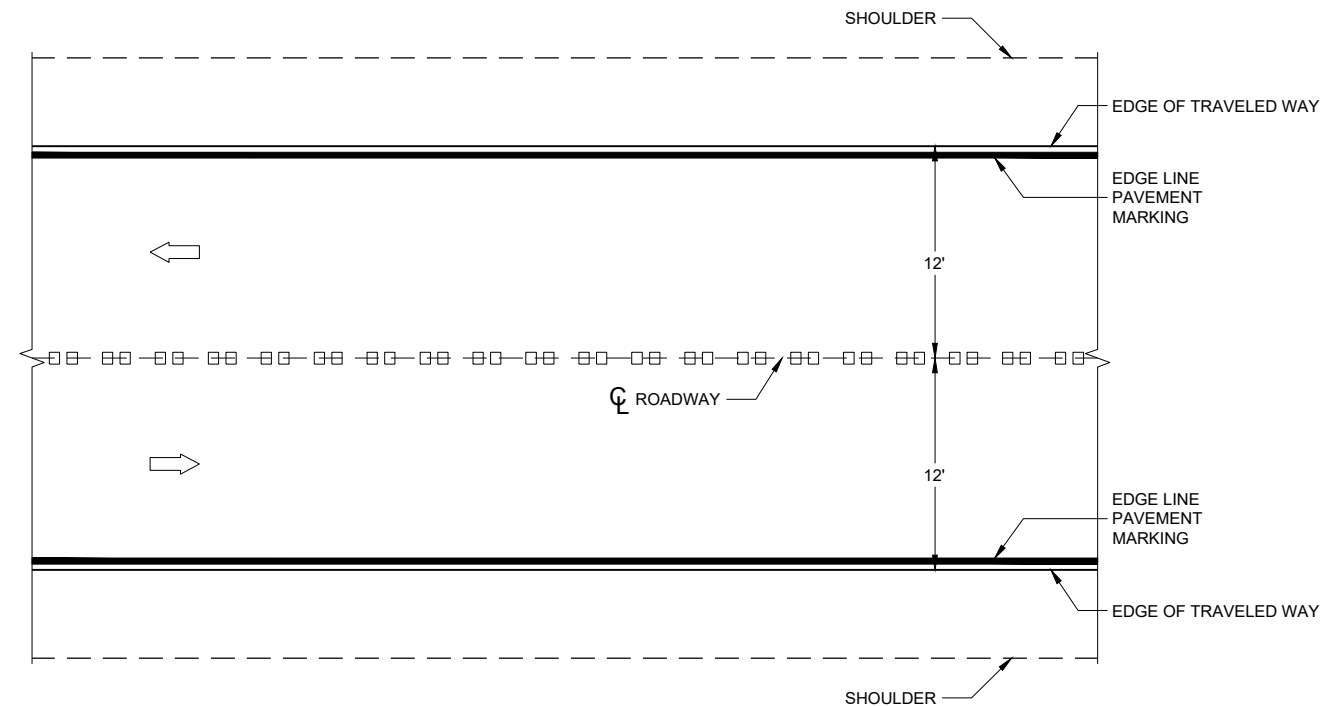
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE /S/ John Jenkins
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

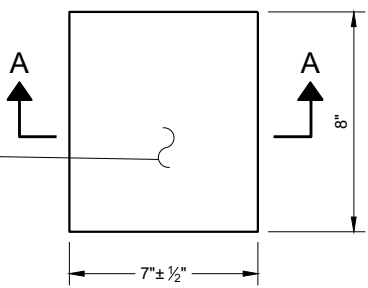


PLAN DETAIL VIEW

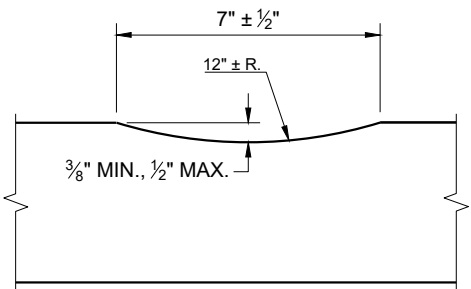


PLAN VIEW

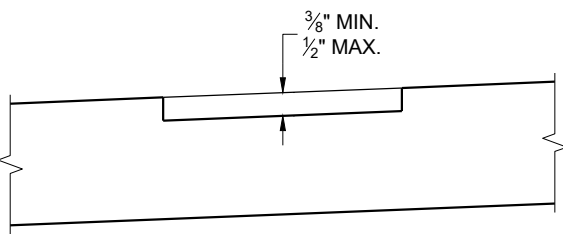
CENTERLINE RUMBLE STRIPS - ASPHALT



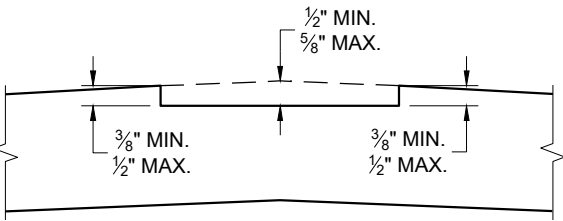
PLAN VIEW
(SINGLE GROOVE)



SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY

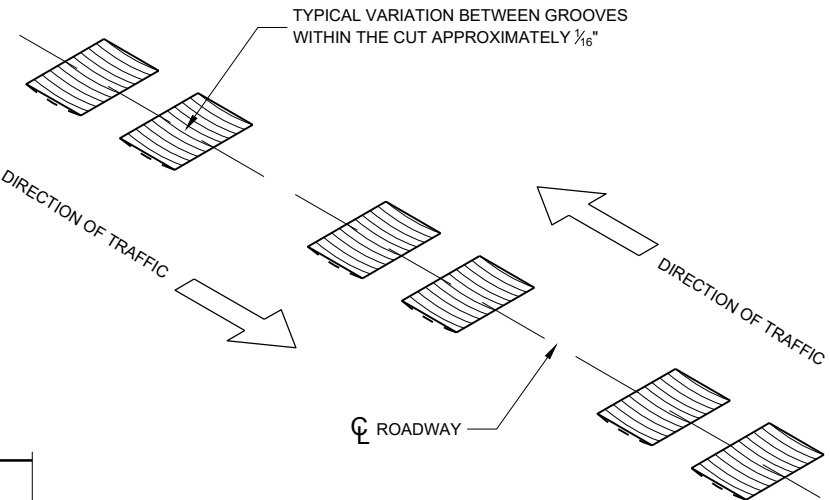


SECTION B - B
CROWNED ROADWAY

GENERAL NOTES

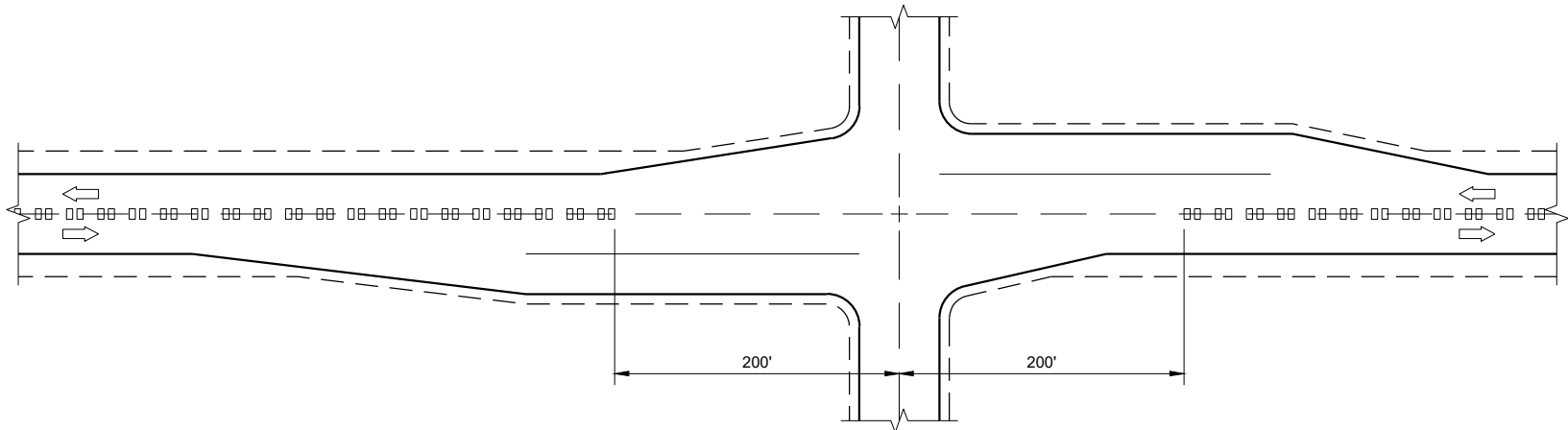
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.

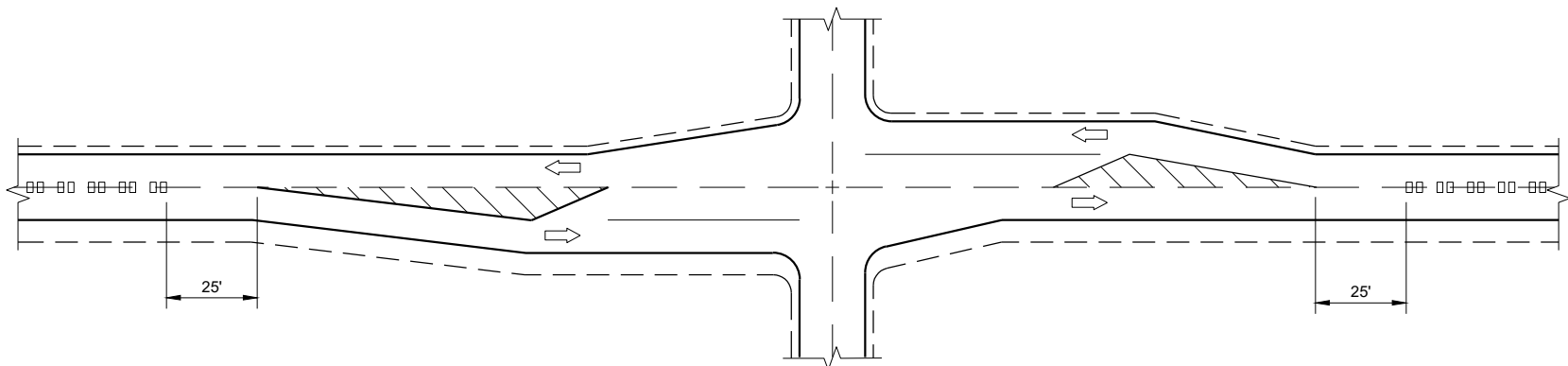


CENTERLINE RUMBLE
STRIPS - ASPHALT

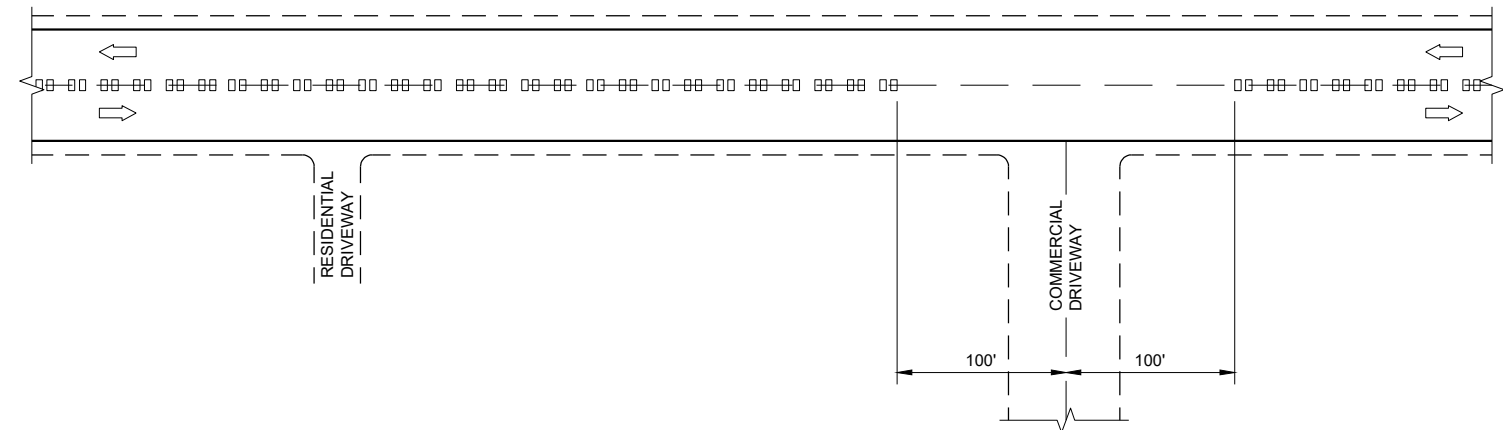
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



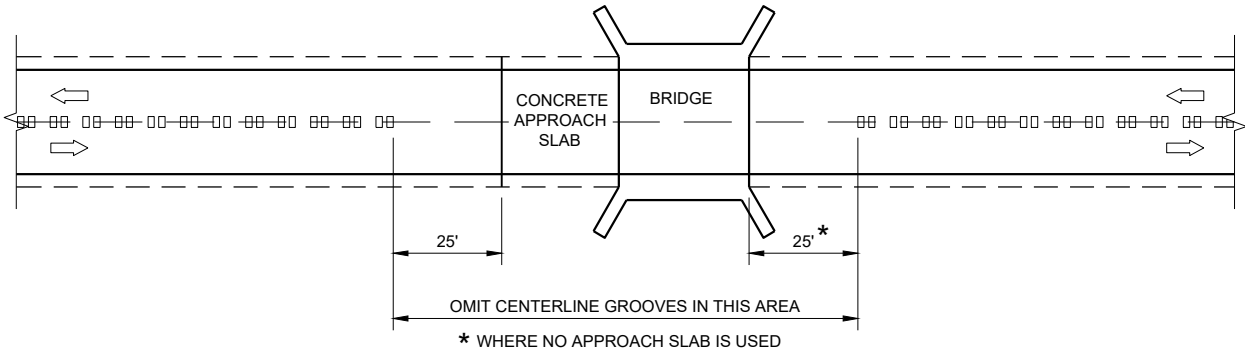
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



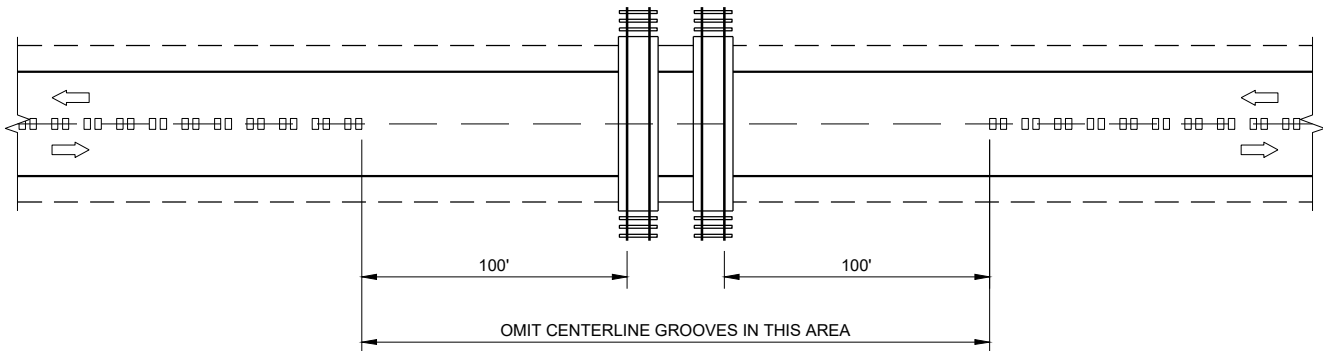
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



CENTERLINE GROOVES AT BRIDGES

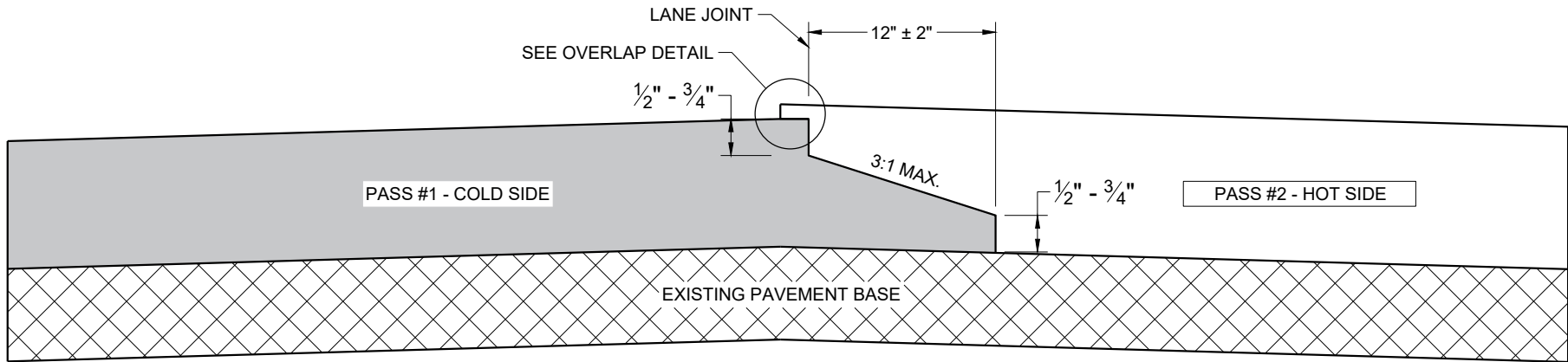


CENTERLINE GROOVES AT RAILROADS

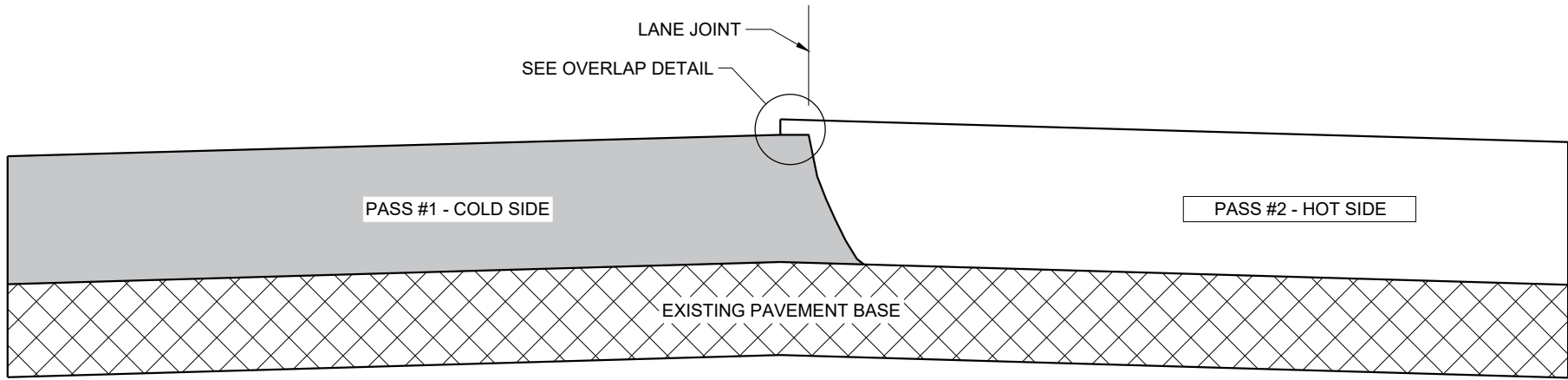
CENTER LINE
RUMBLE STRIPS -
INTERSECTIONS, DRIVEWAYS,
BRIDGES, RAIL ROADS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

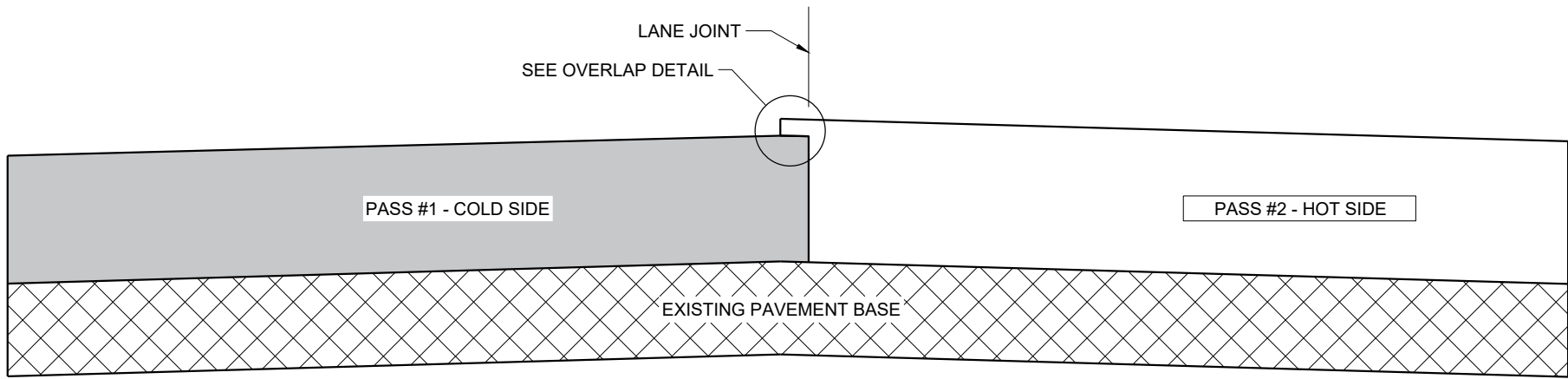
APPROVED
May 2023
DATE
/S/ John Jenkins
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)**

GENERAL NOTES

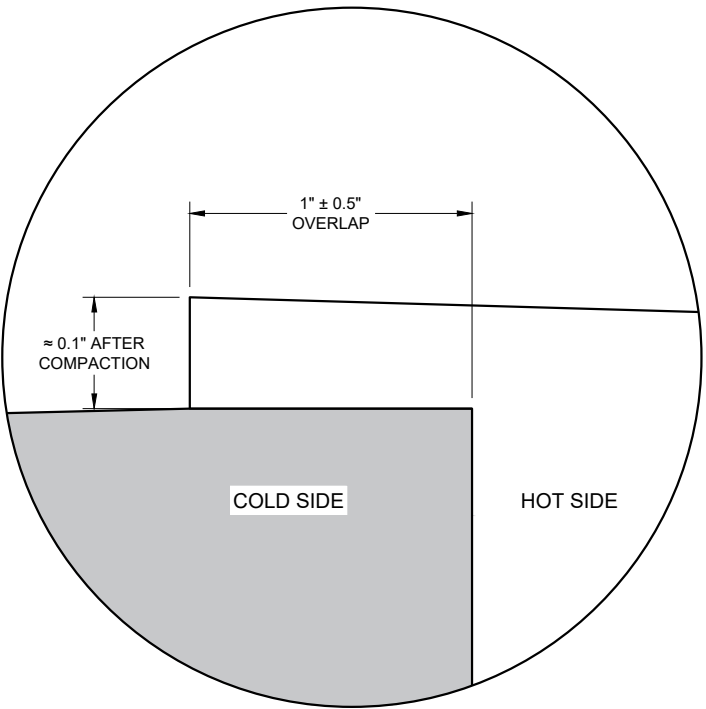
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY $0.1"$ AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO $2"$ FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.

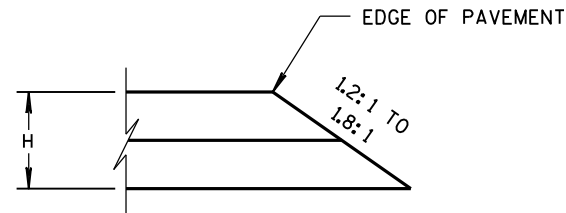


OVERLAP DETAIL (TYPICAL)

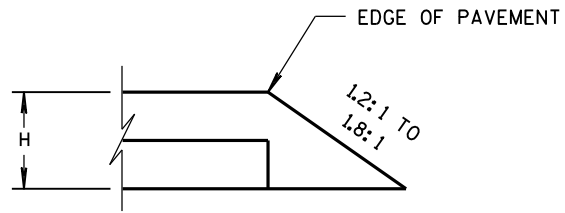
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

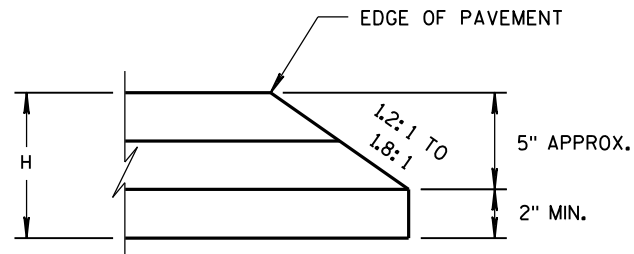
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER
FHWA



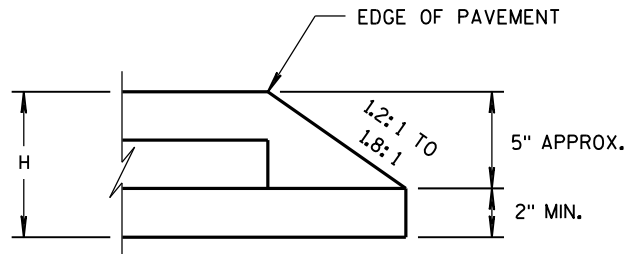
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

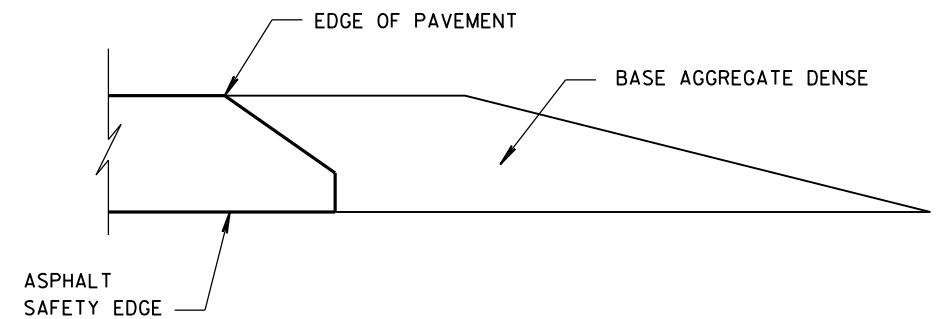


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

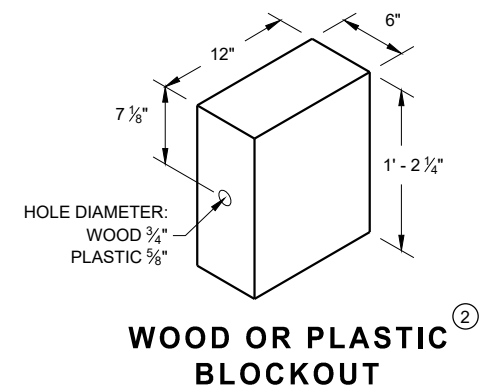
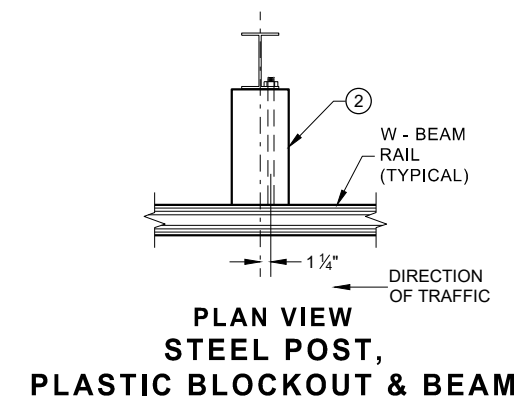
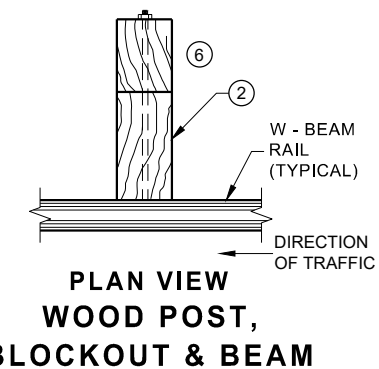
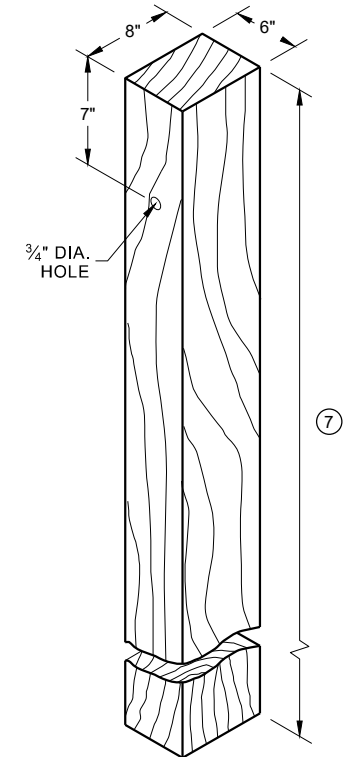
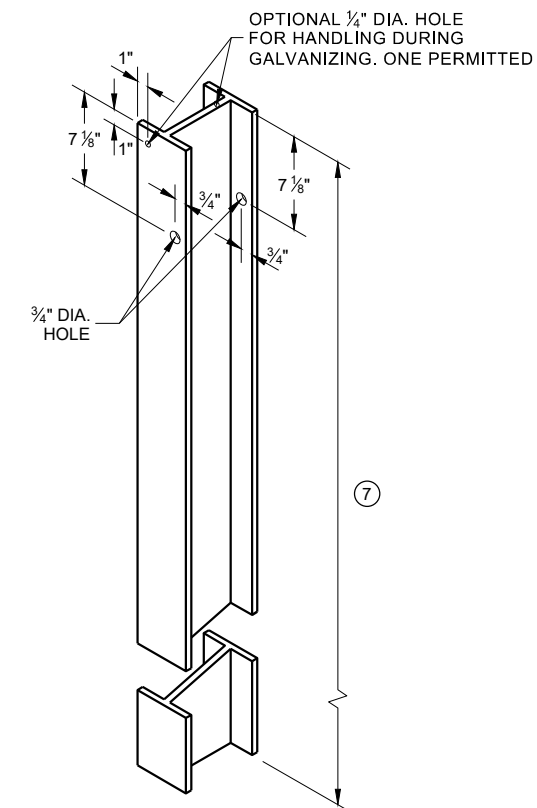
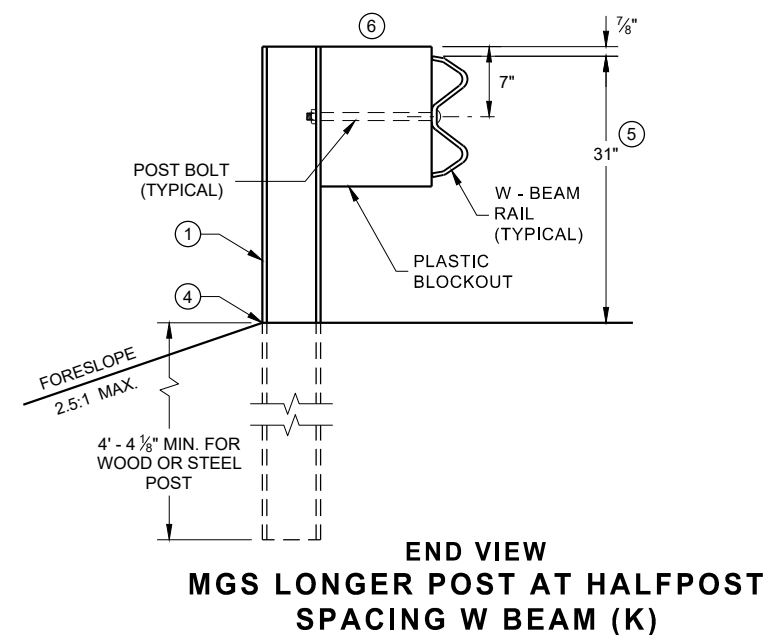
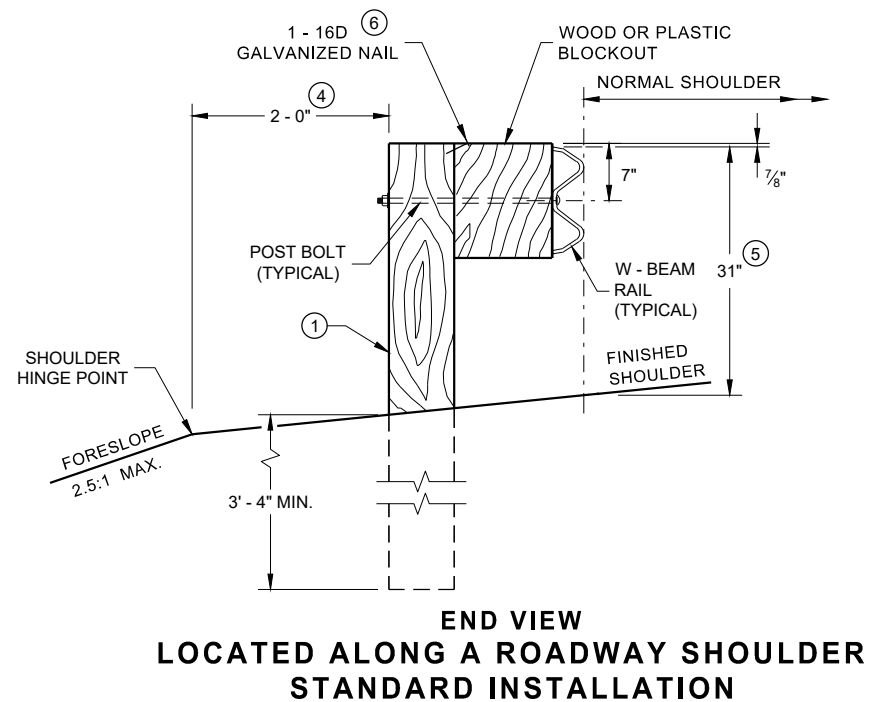
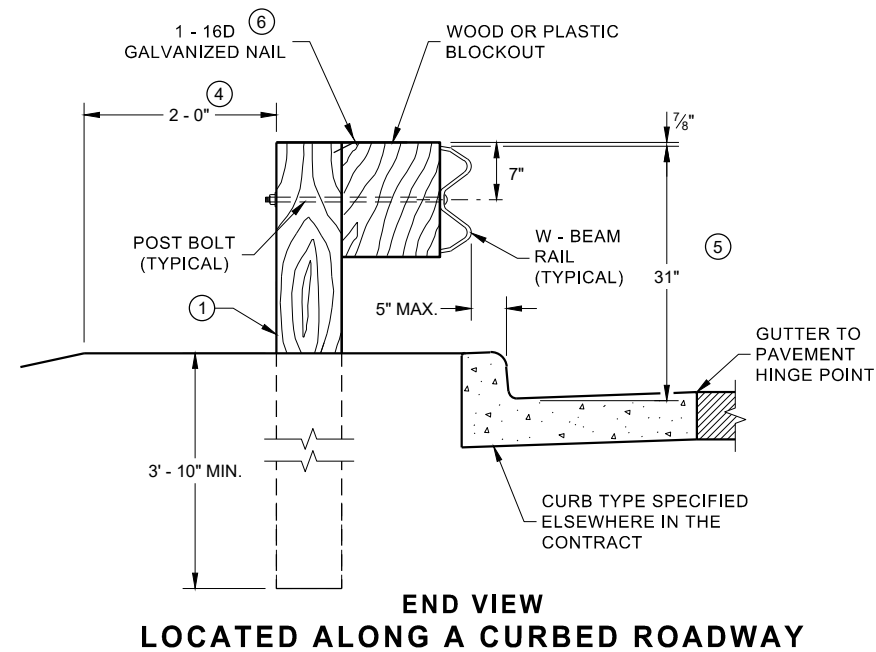
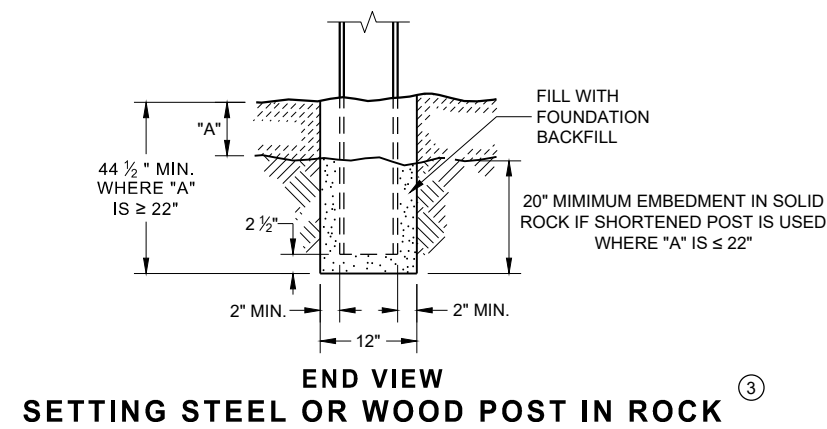
APPROVED

11/30/2012
DATE

FHWA

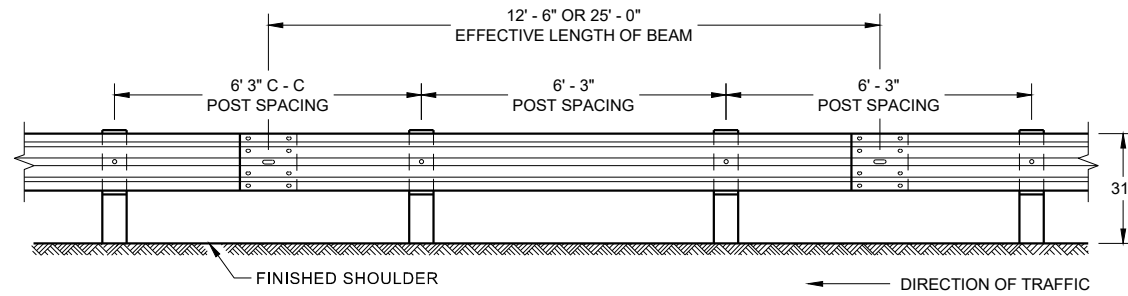
/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

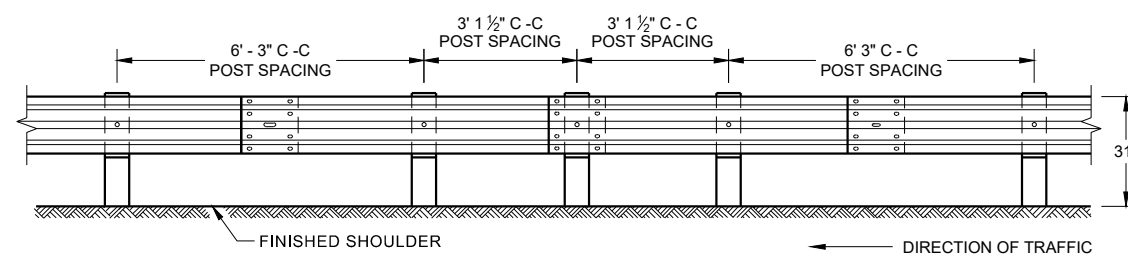


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

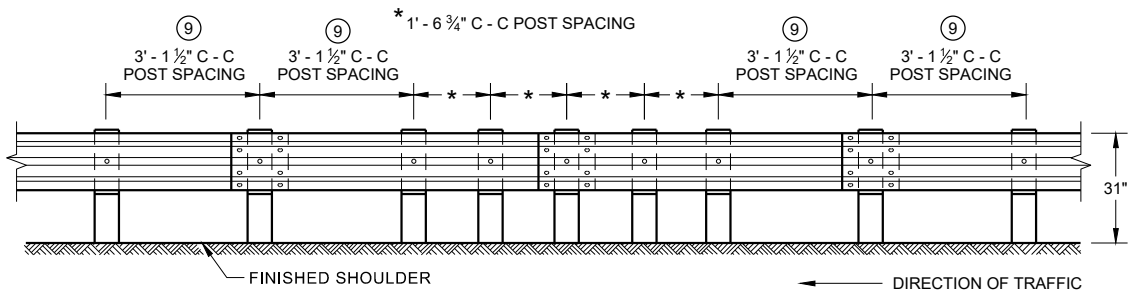
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



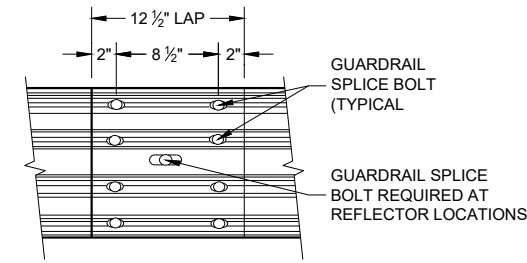
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



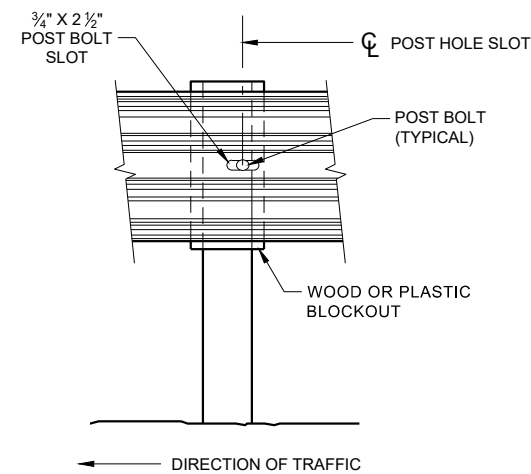
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



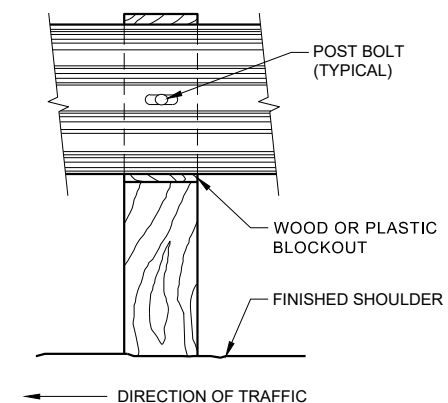
**FRONT VIEW
QUARTER POST SPACING (QS)**



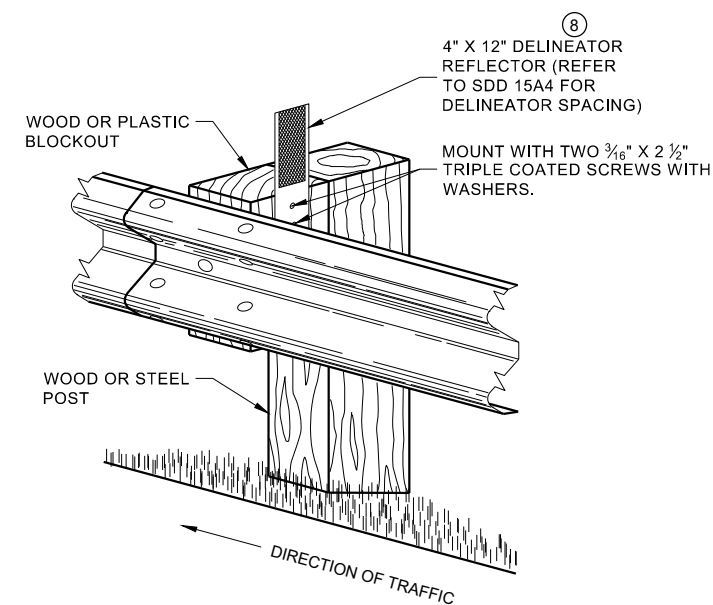
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



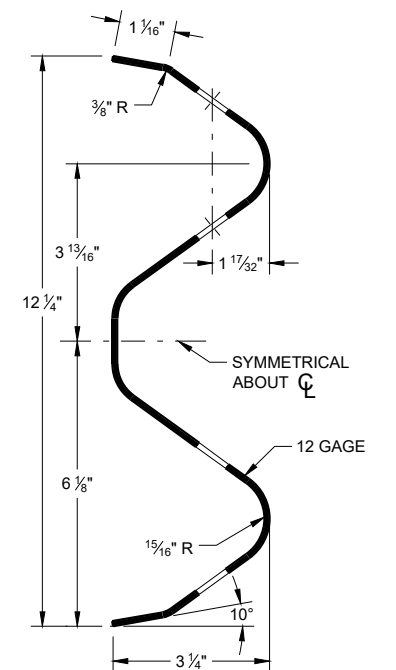
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

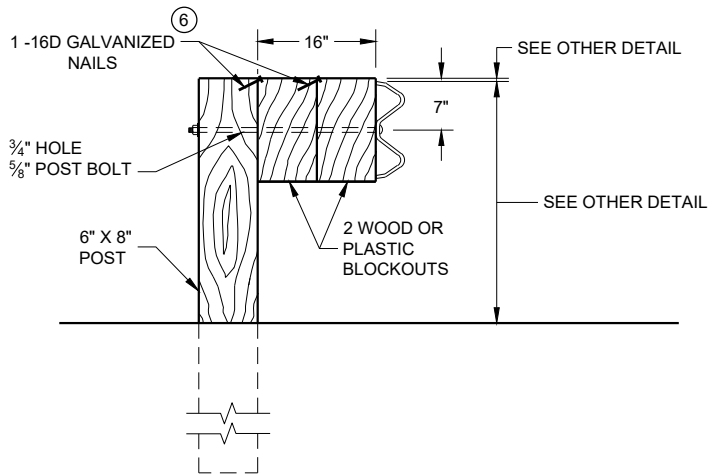
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

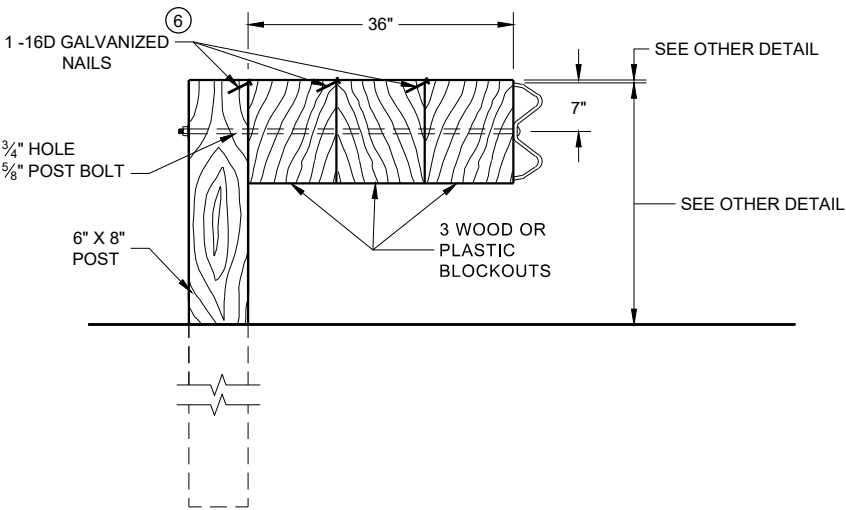
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

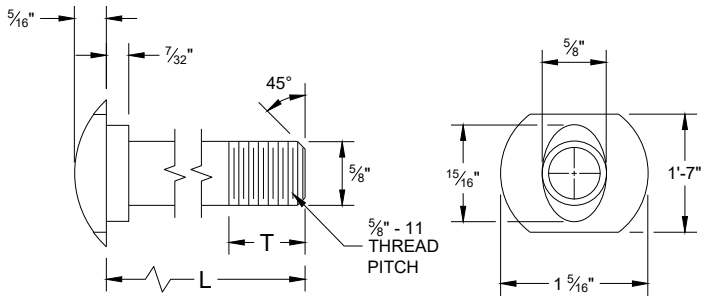
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

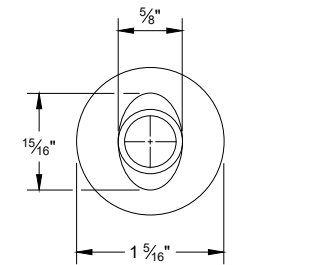
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

- NOTE:
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
 - 2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

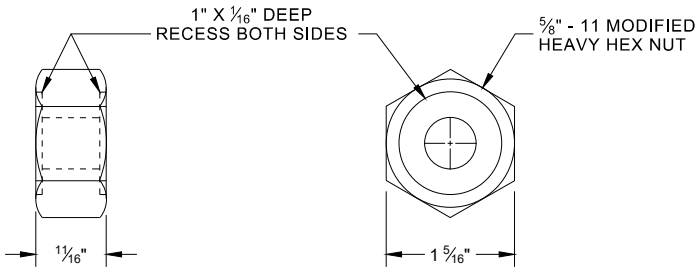


POST BOLT TABLE

L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"

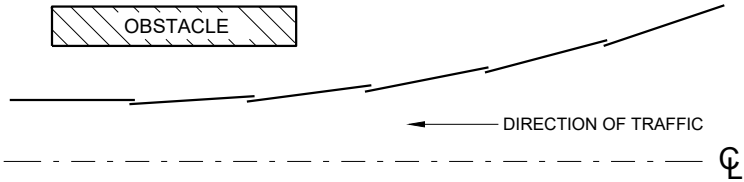


ALTERNATE BOLT HEAD

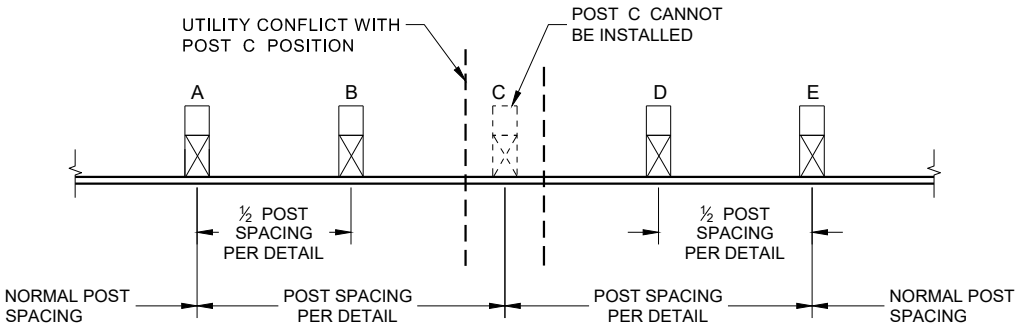


POST BOLT, SPLICE BOLT
AND RECESS NUT

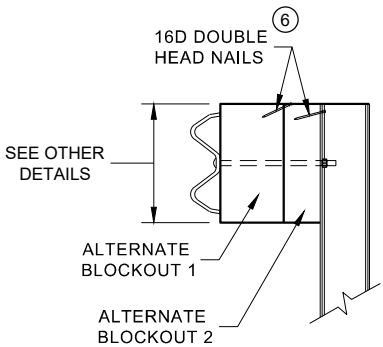
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



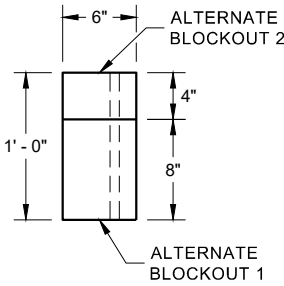
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

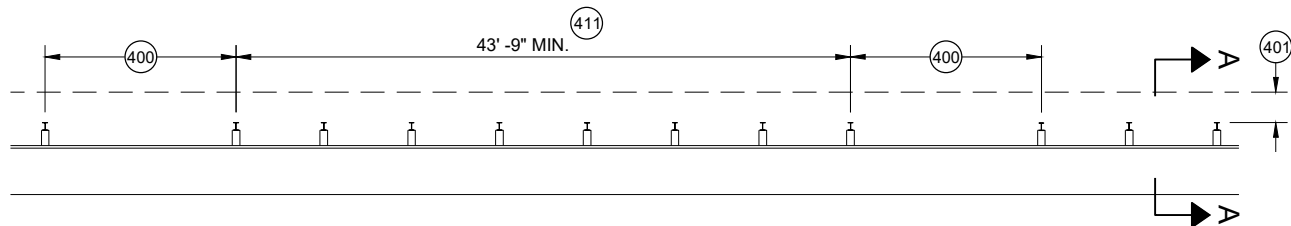


PLAN VIEW

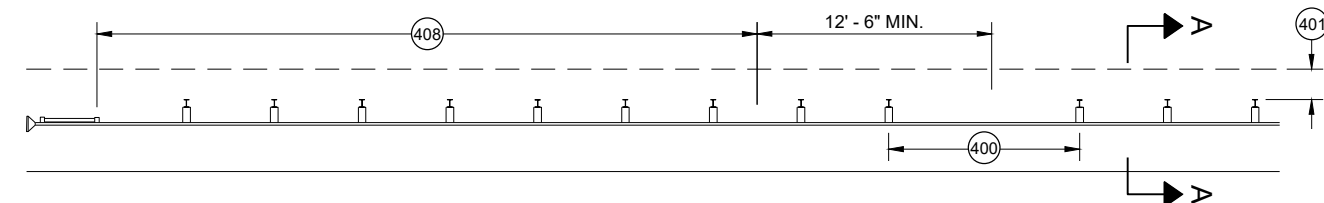
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

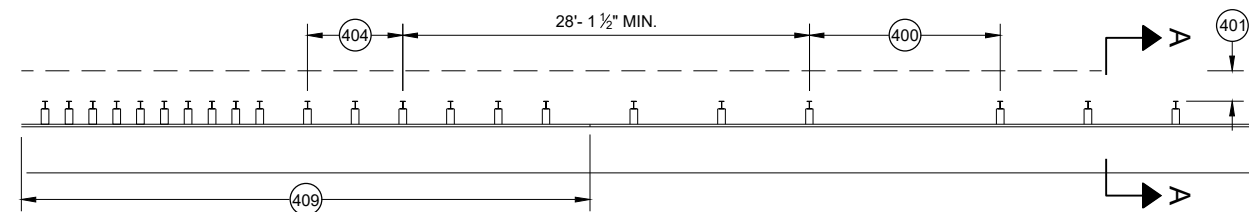
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



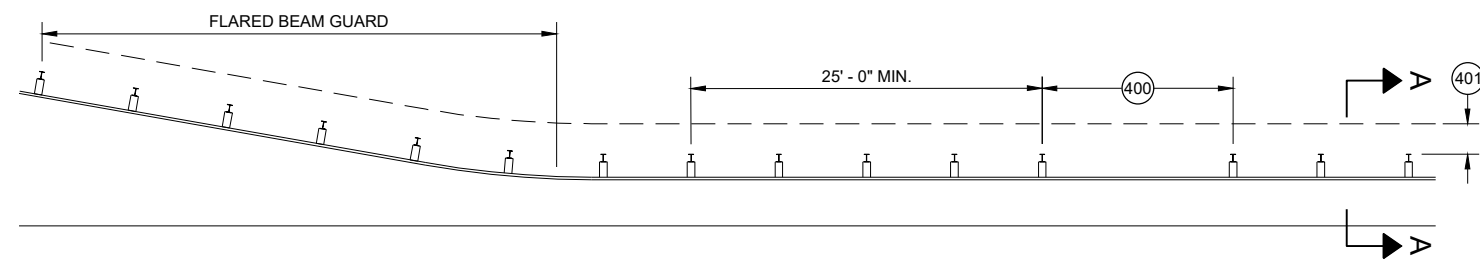
MISSING POST IN MGS GUARDRAIL



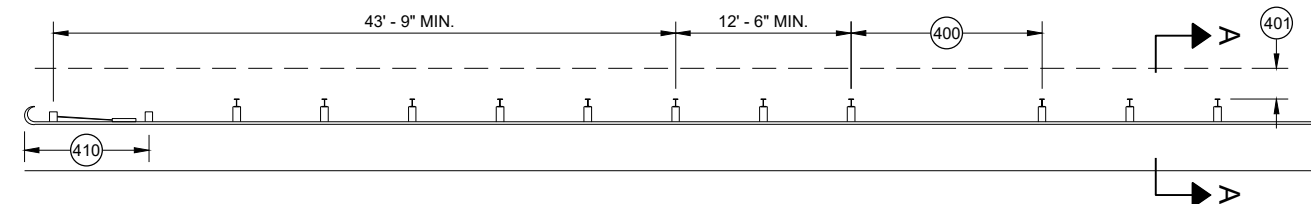
MISSING POST IN MGS GUARDRAIL NEAR EAT



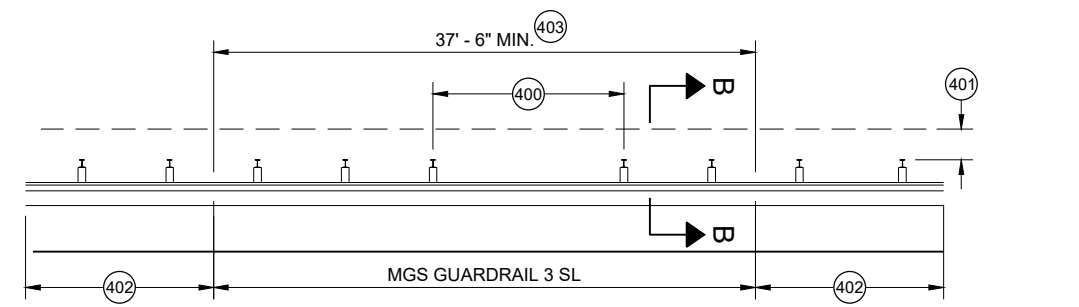
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

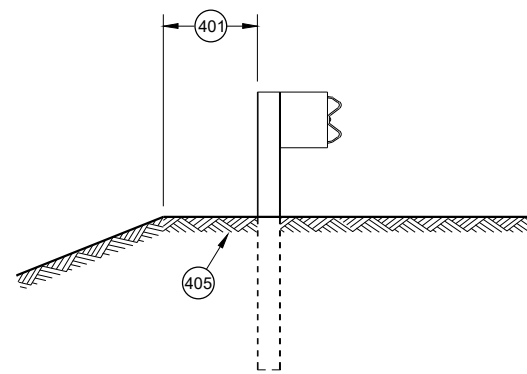


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

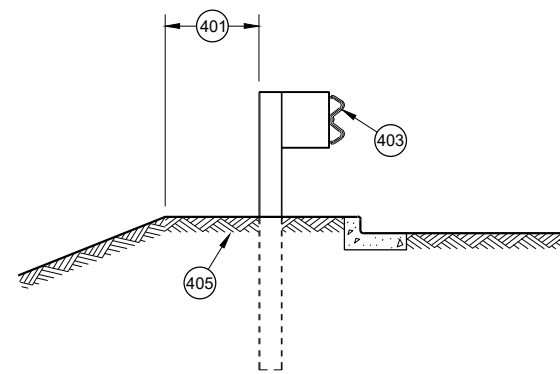


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (400) MAX SPAN 12' - 6"
- (401) 2' MIN.
- (402) MGS GUARDRAIL 3
- (403) NESTING BEAM GUARD
- (404) ASYMMETRIC TRANSITION
- (405) SOIL WELL DRAINED AND COMPACTED
- (406) SEE OTHER DRAWINGS IN THIS SDD
- (407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- (408) SEE SDD 14B44
- (409) SEE SDD 14B45
- (410) SEE SDD 14B47
- (411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

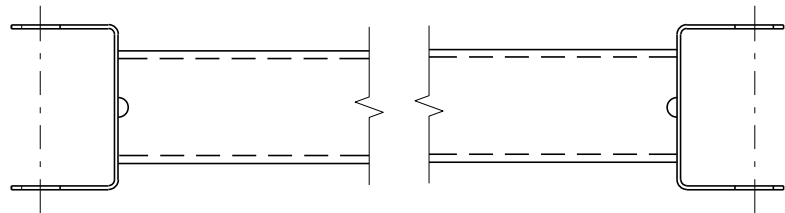
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
- (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

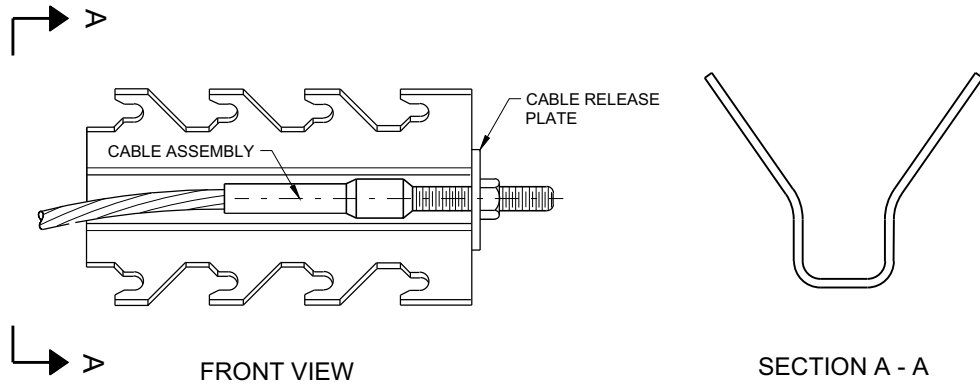


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

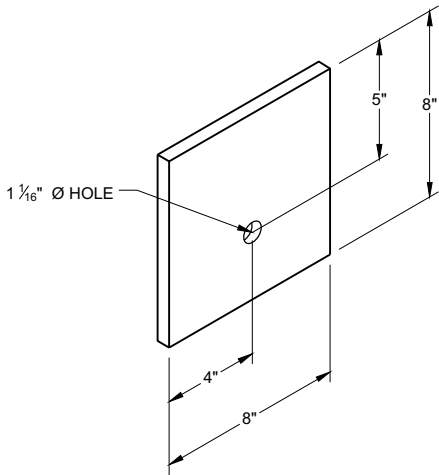


GENERIC GROUND STRUT^⑨ [Ⓔ]

BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



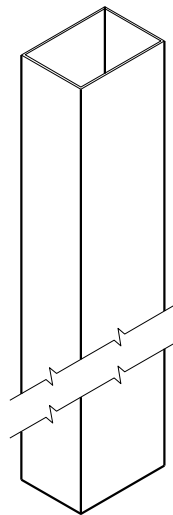
GENERIC ANCHOR CABLE BOX^⑨ [Ⓔ]



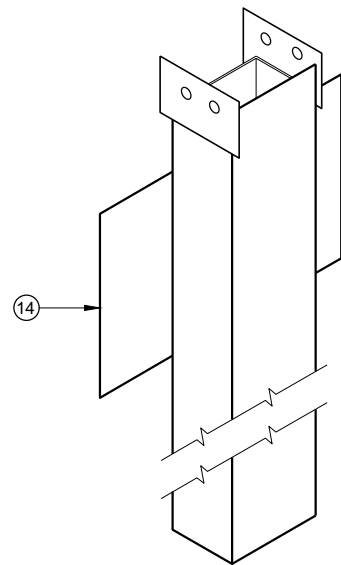
BEARING PLATE^⑥ [Ⓔ]

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

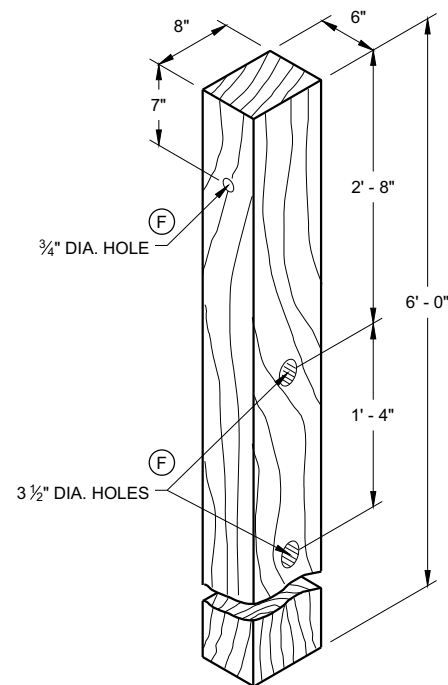
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



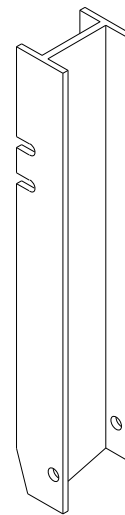
UPPER POST NO. 1 ⁽¹⁾ (E)



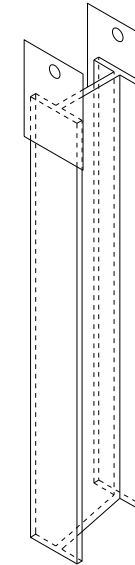
LOWER POST NO. 1 ⁽²⁾ (E)



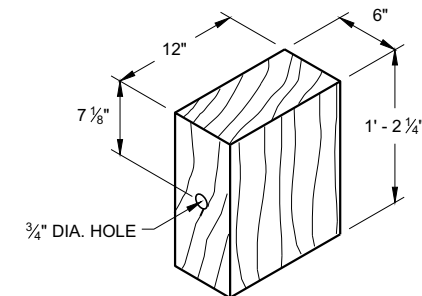
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



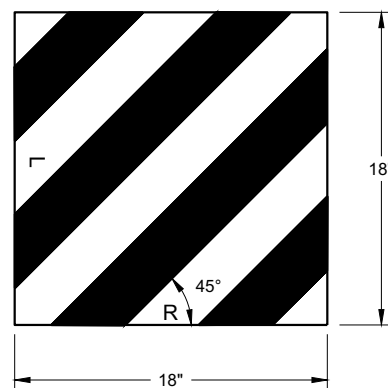
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



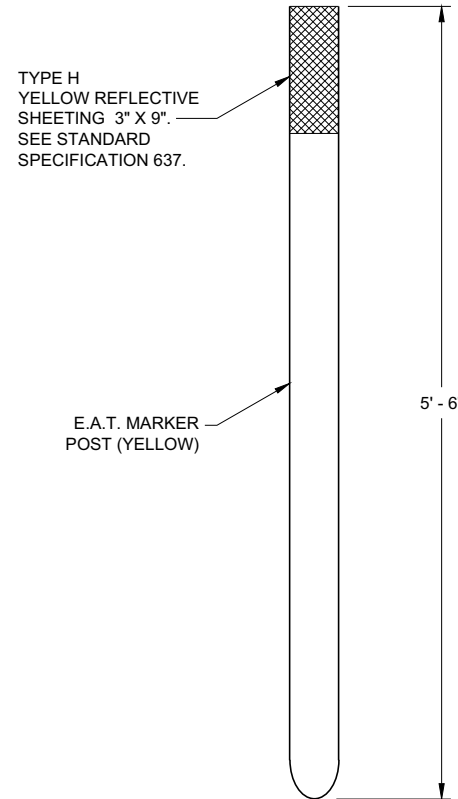
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



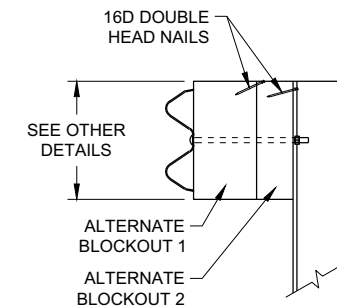
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



REFLECTIVE SHEETING DETAIL ^(E)

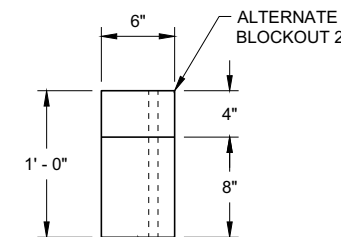


E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

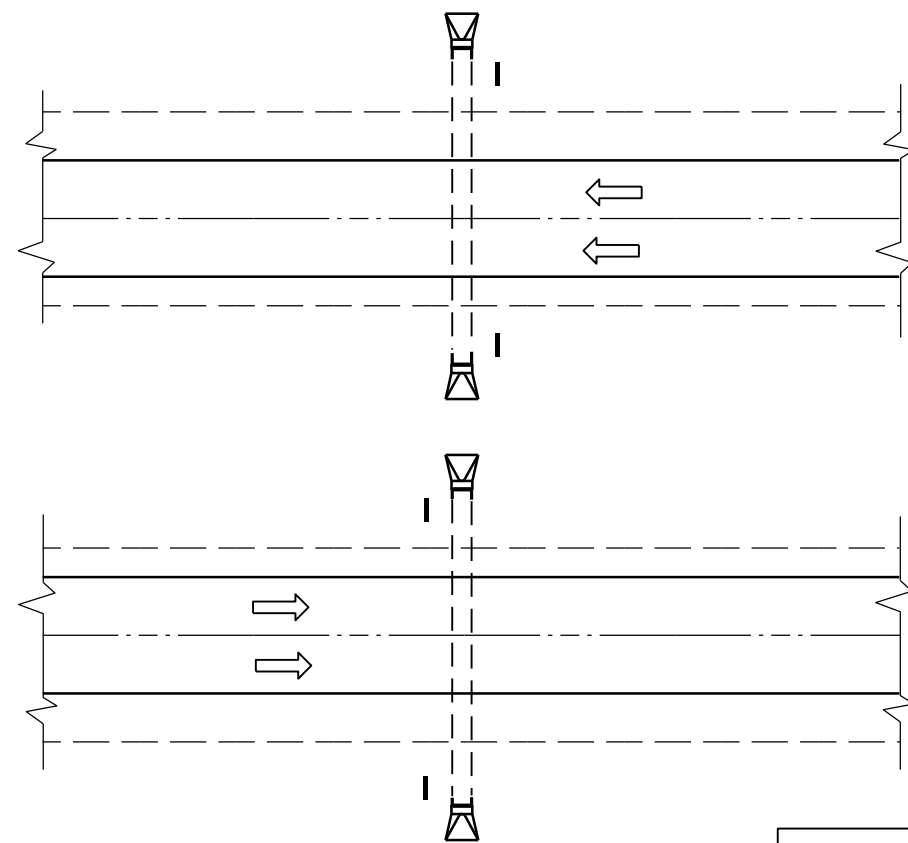


TOP VIEW

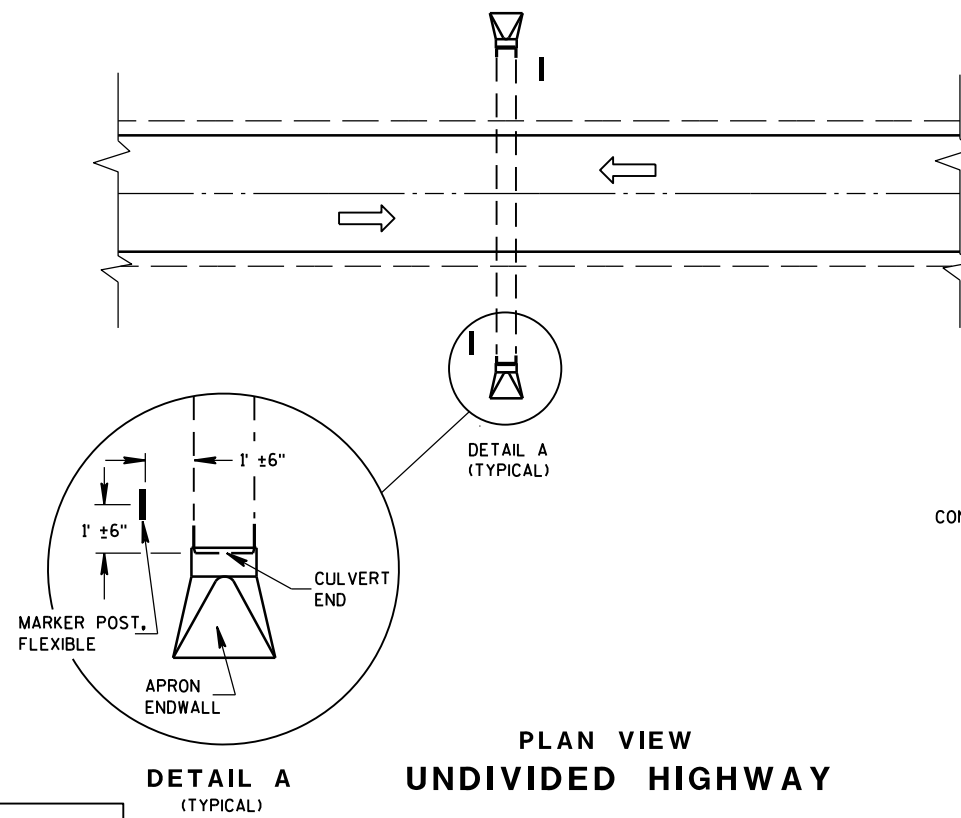
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

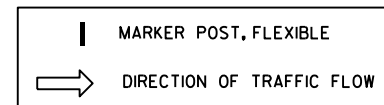
APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



PLAN VIEW
DIVIDED HIGHWAY



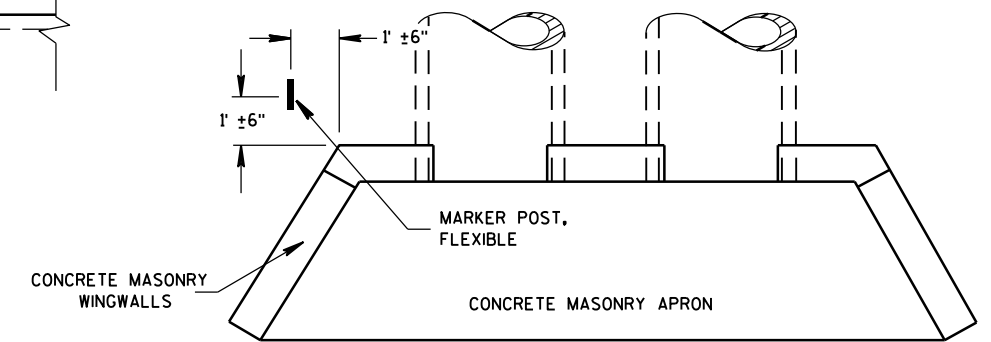
PLAN VIEW
UNDIVIDED HIGHWAY



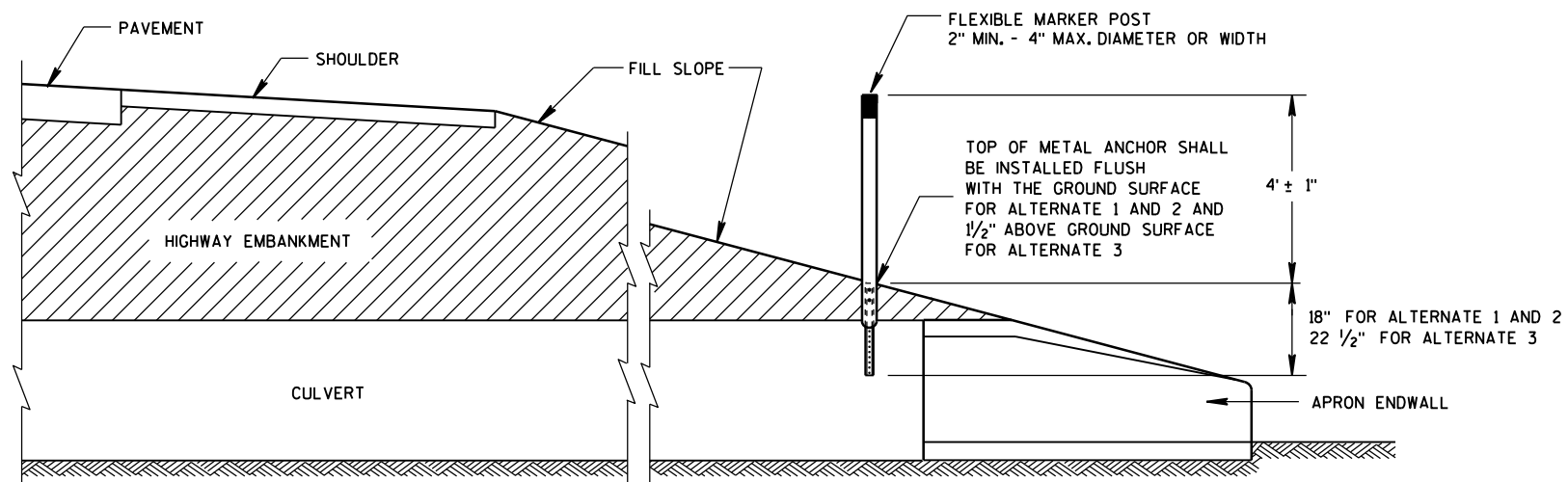
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



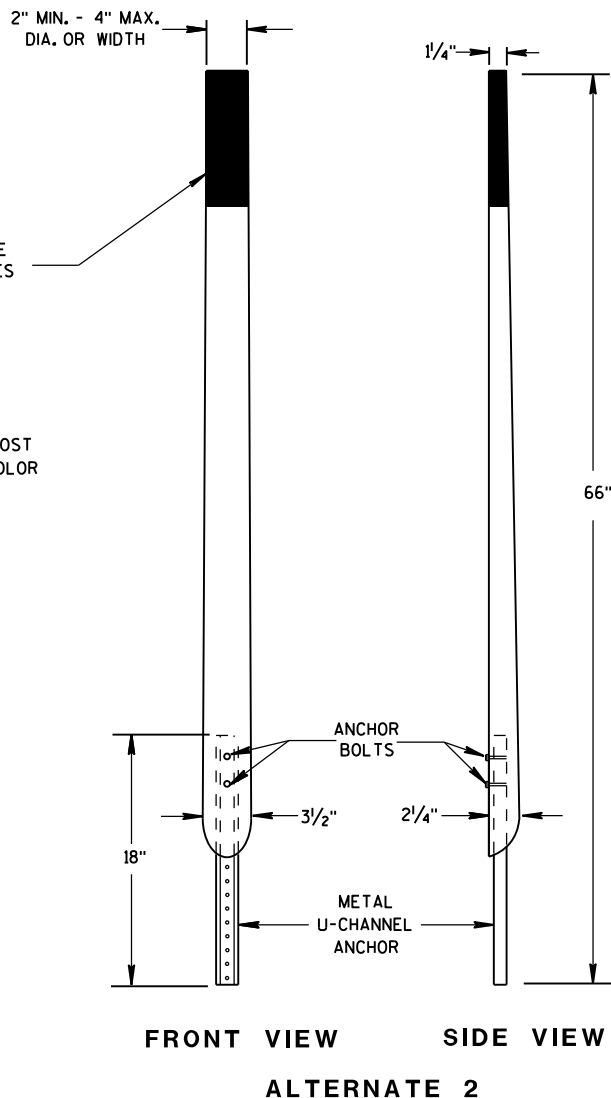
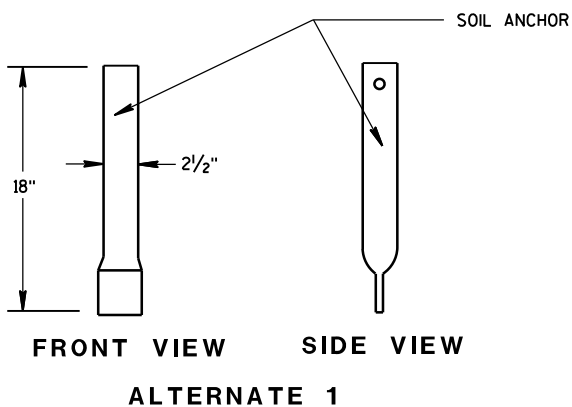
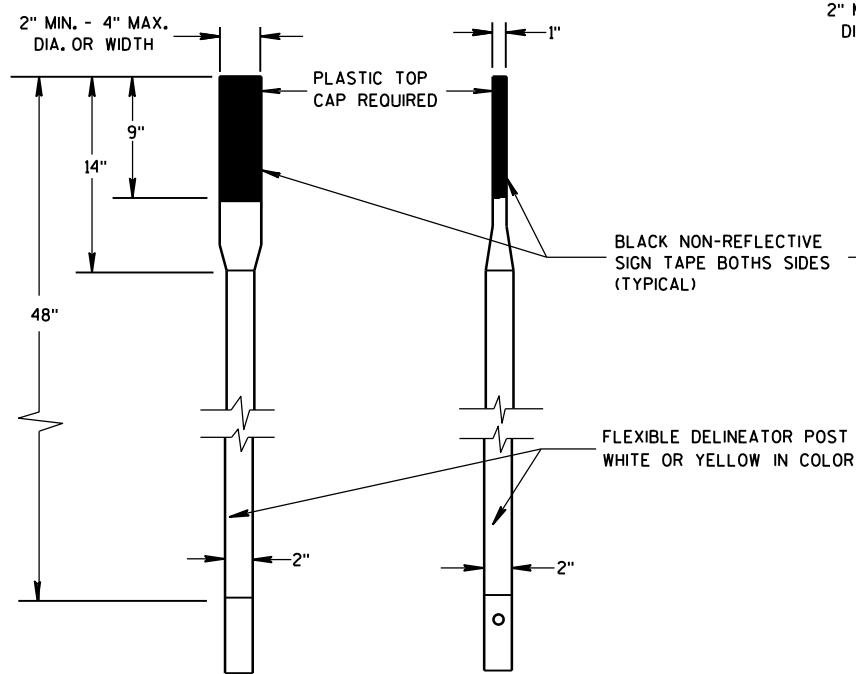
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



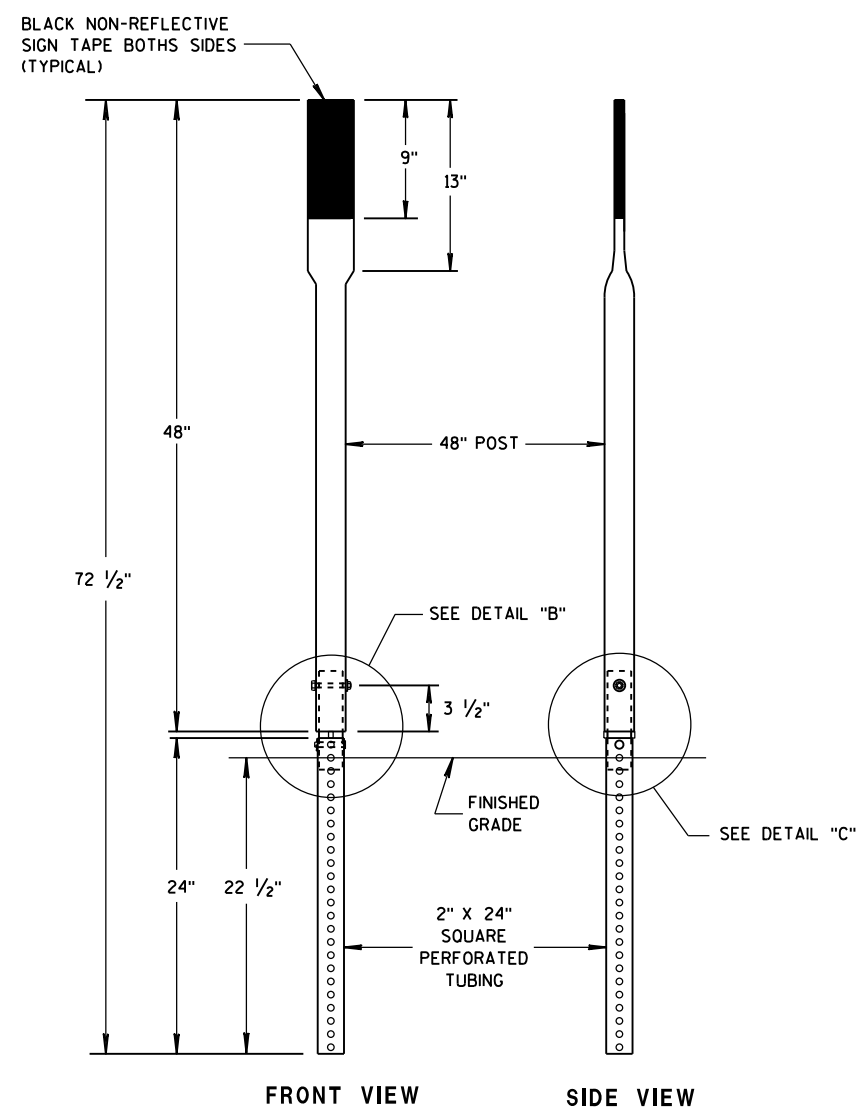
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

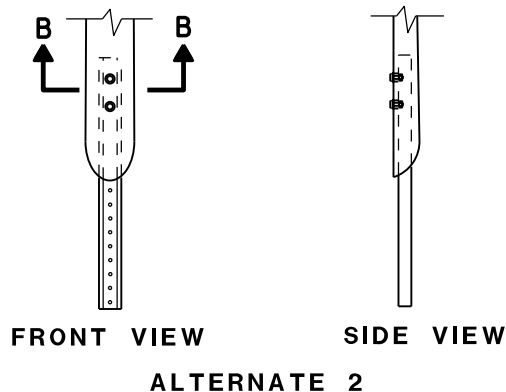
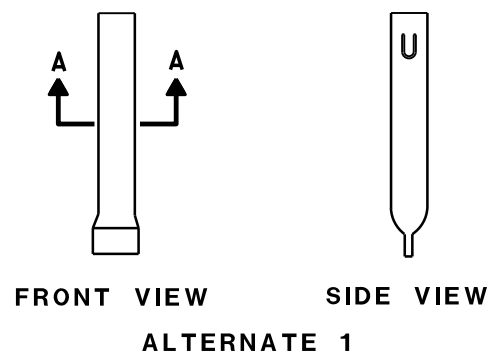
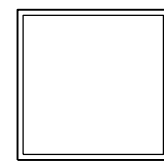
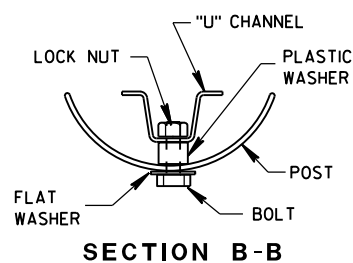
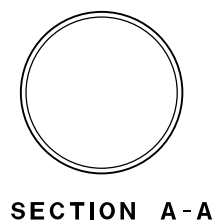
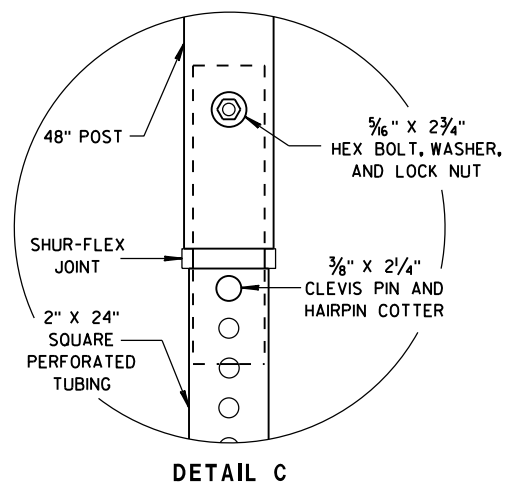
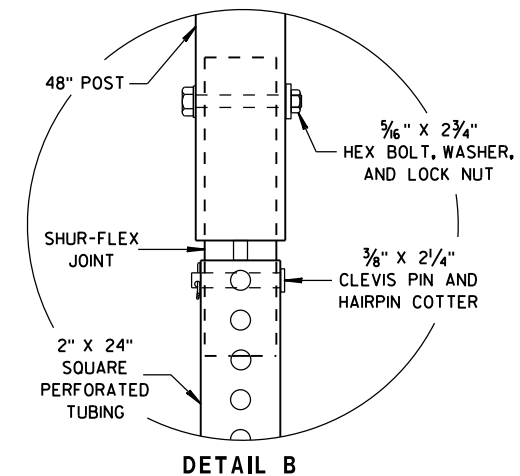
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



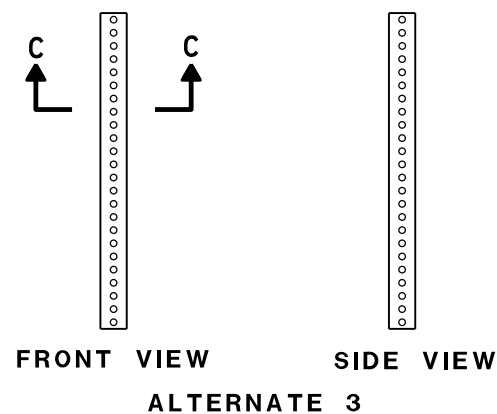
FLEXIBLE MARKER POSTS



SECTION C-C



FLEXIBLE MARKER POST ANCHORS



FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

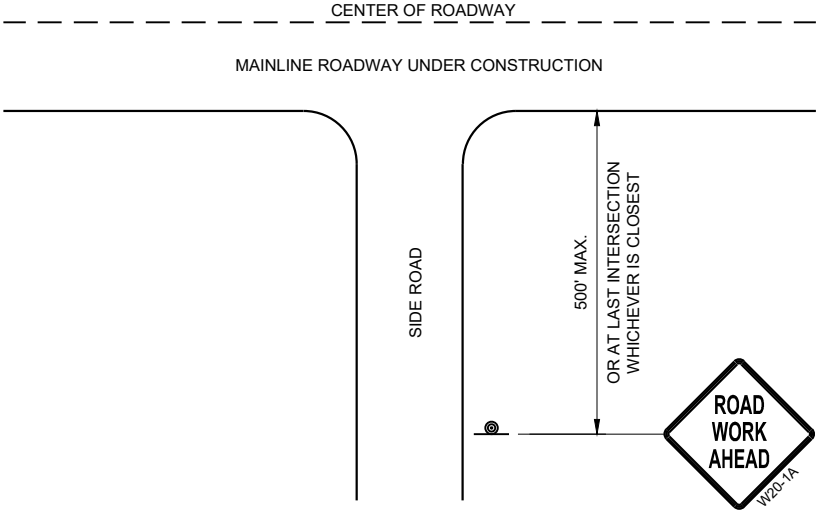
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.

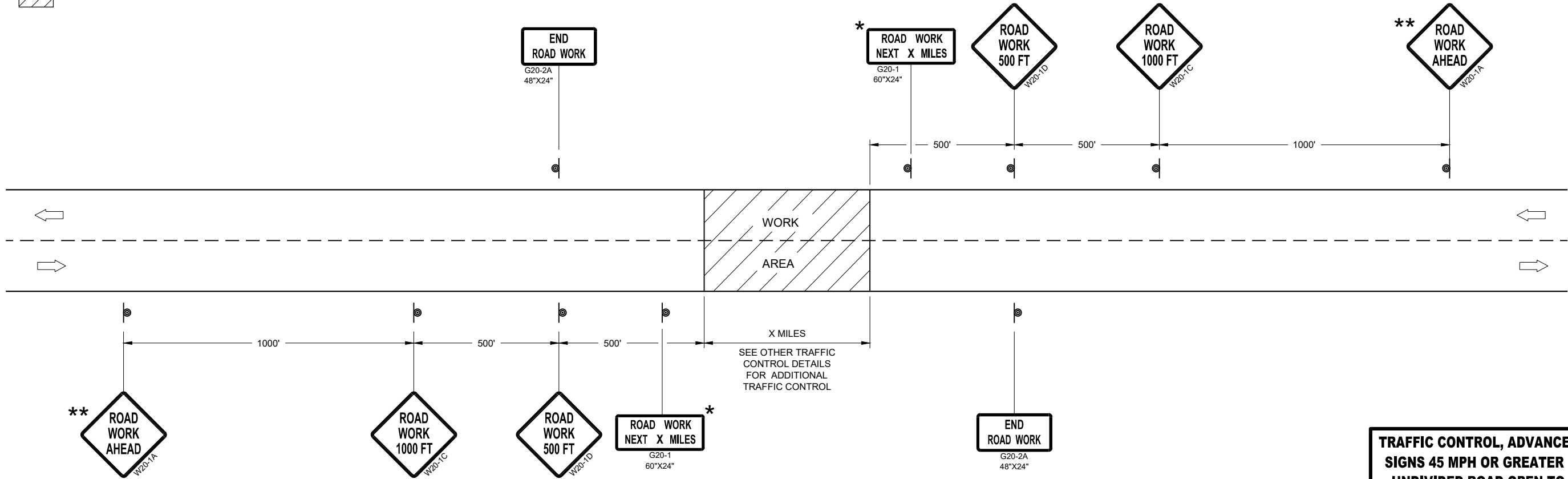
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

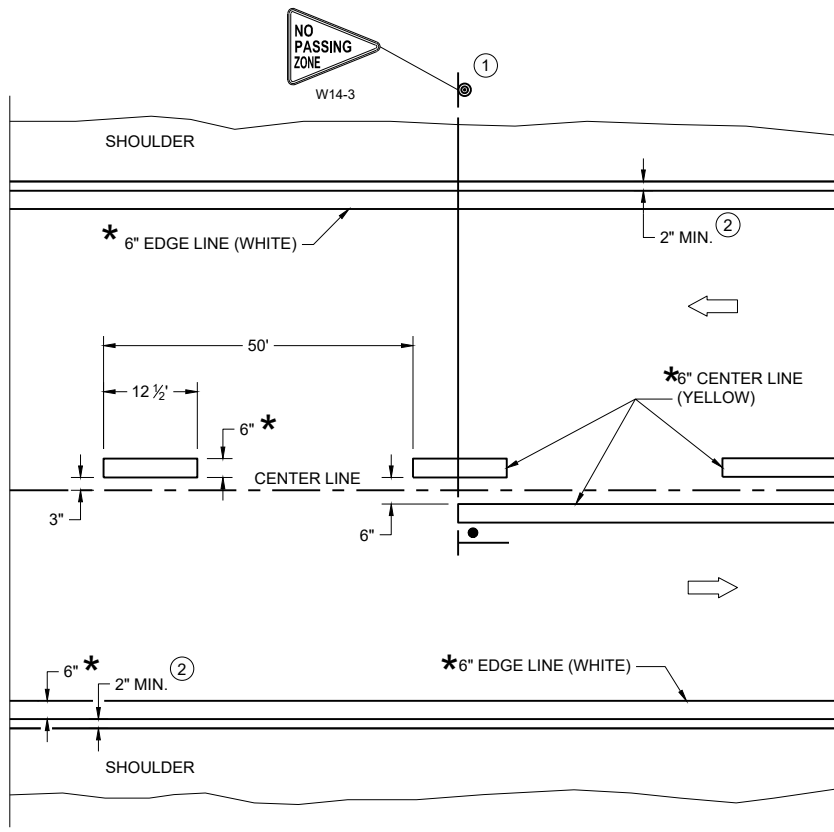


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

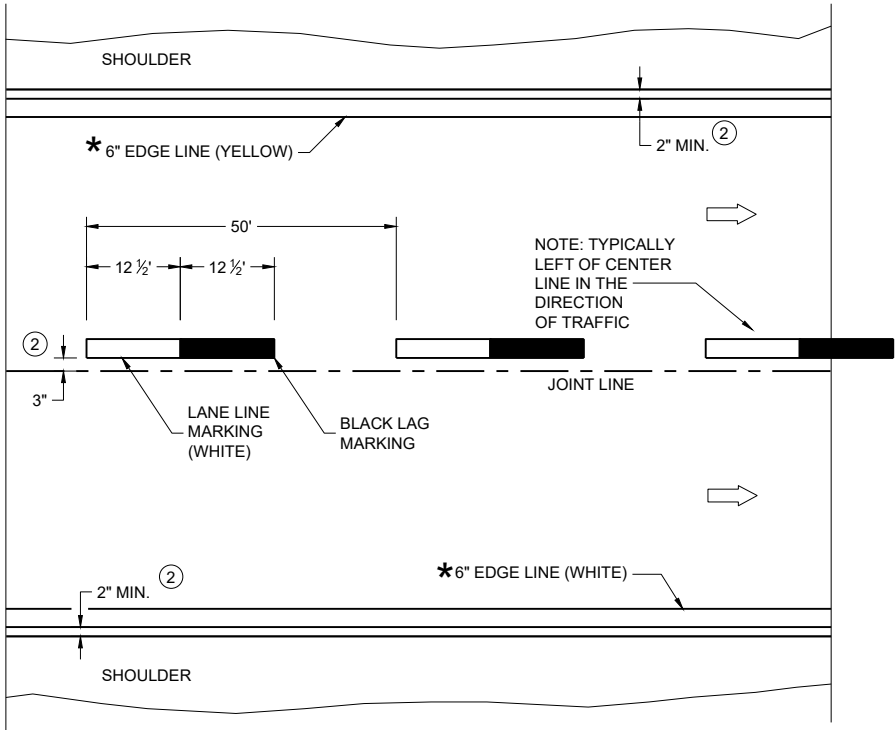
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 45 MPH OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

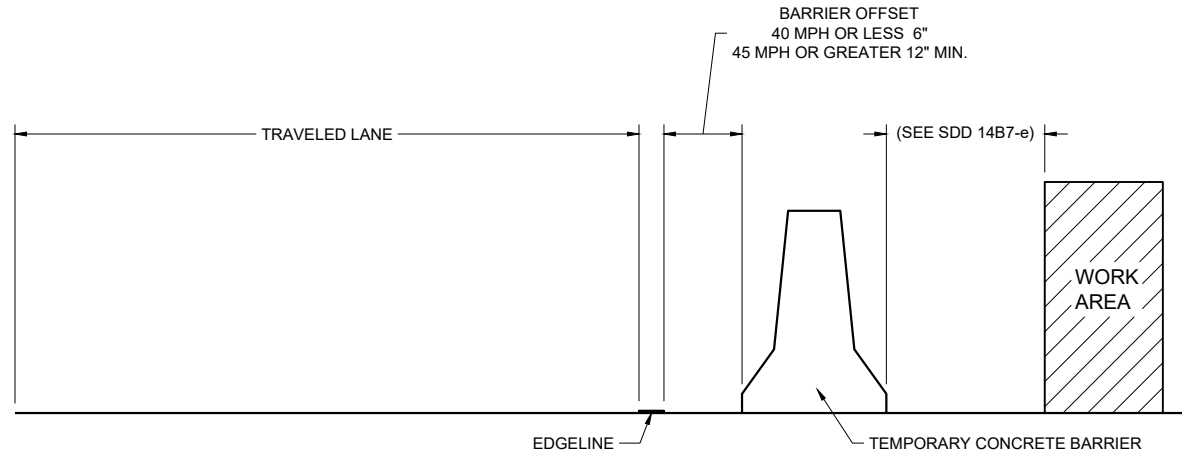
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	



TEMPORARY BARRIER OFFSET FROM EDGE LINE

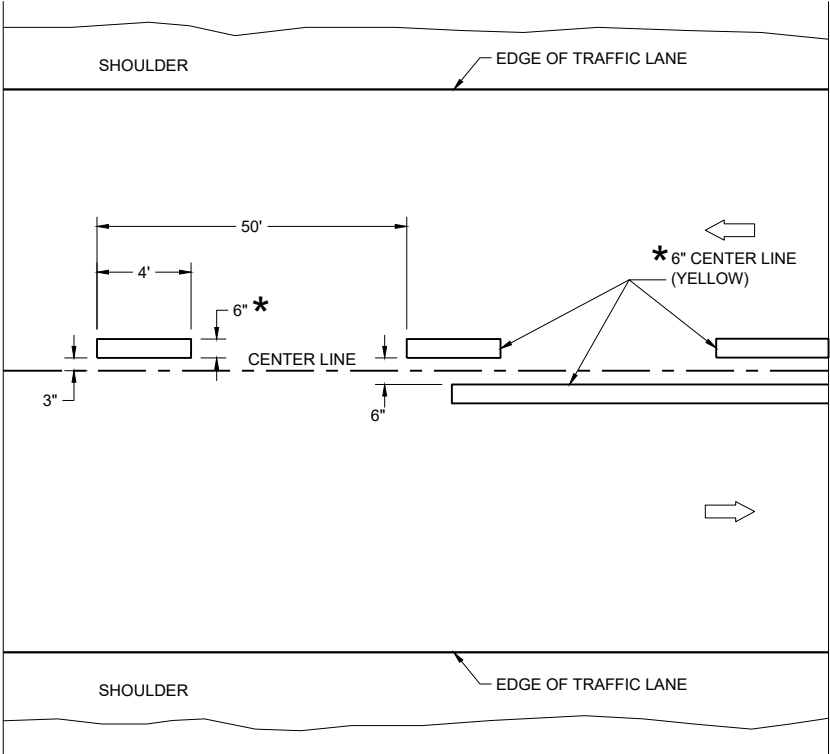
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

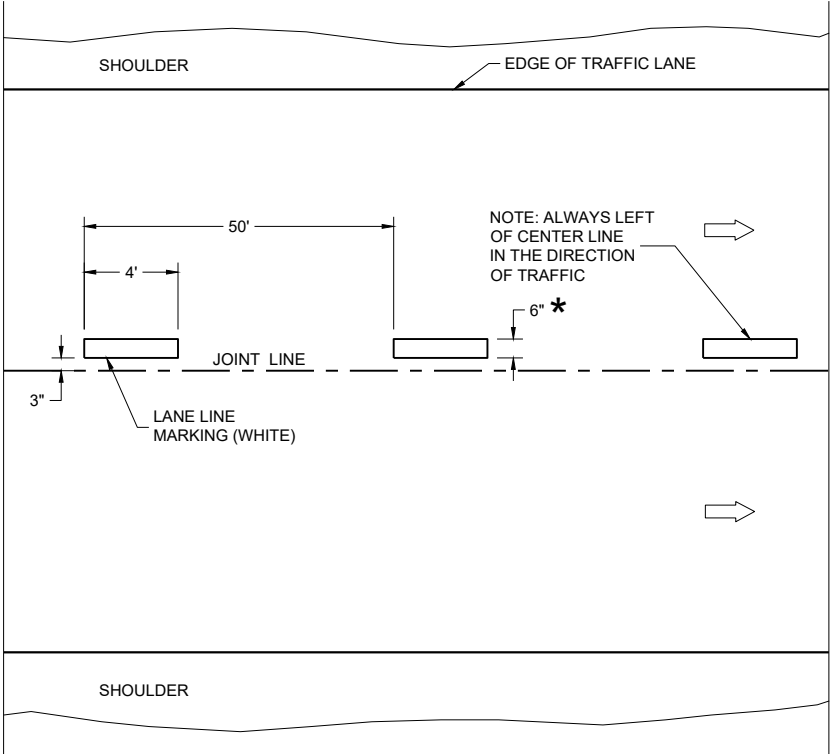
LEGEND

DIRECTION OF TRAFFIC

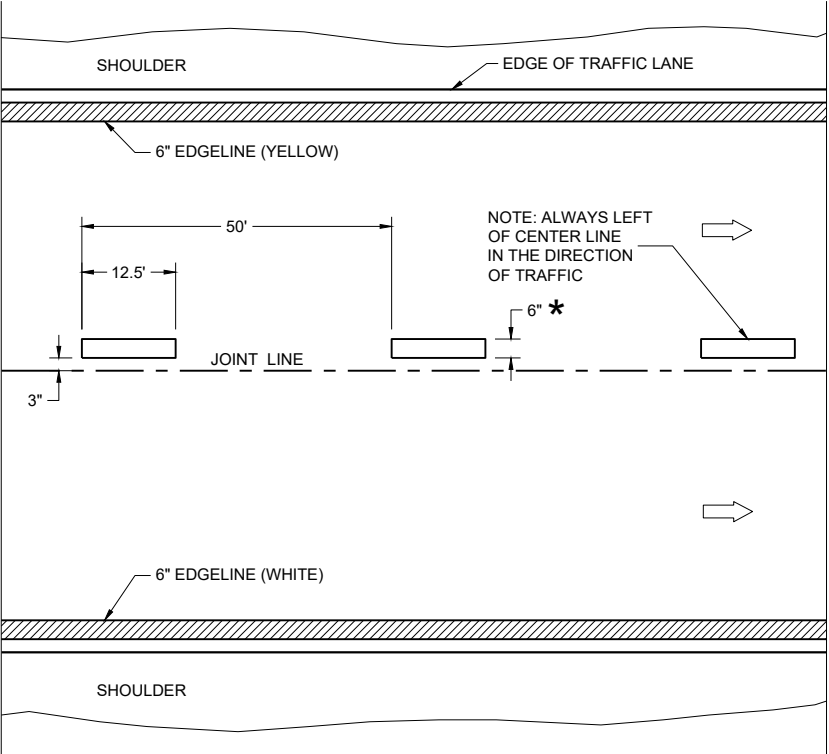
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



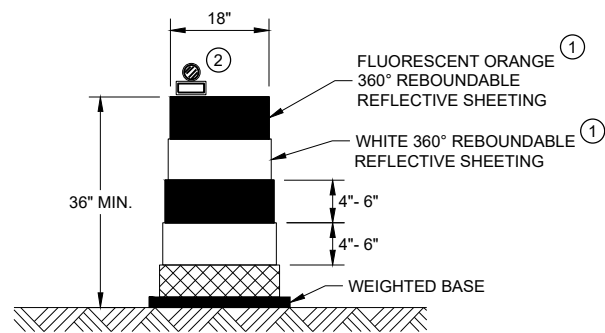
ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

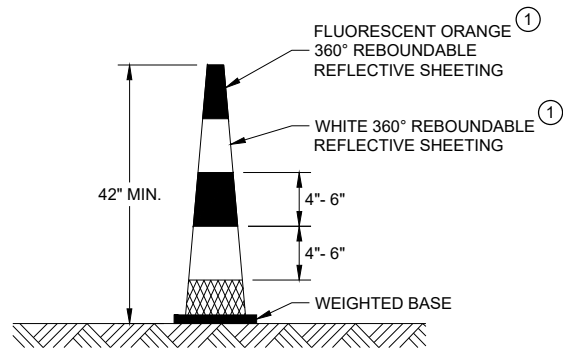
TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer



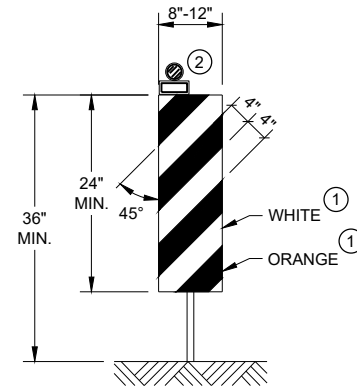
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



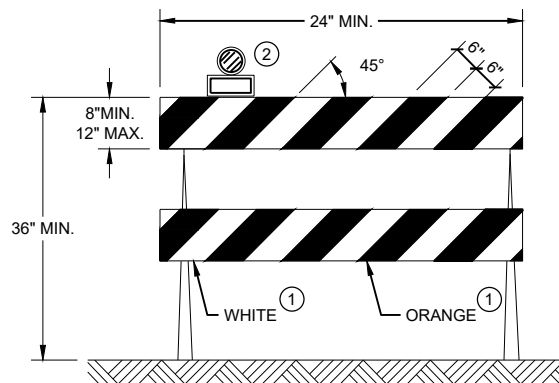
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



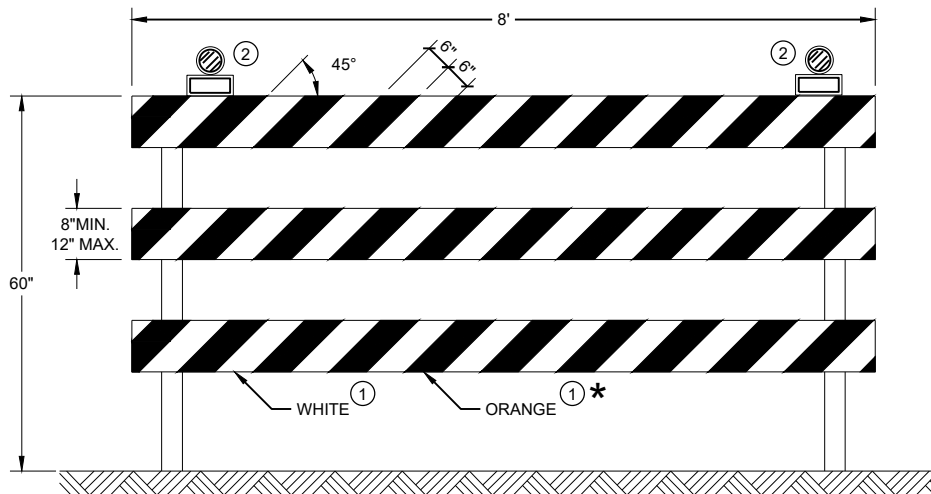
VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND LOCATION OF ALL FLAGGERS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

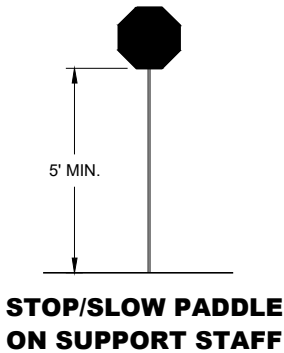
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

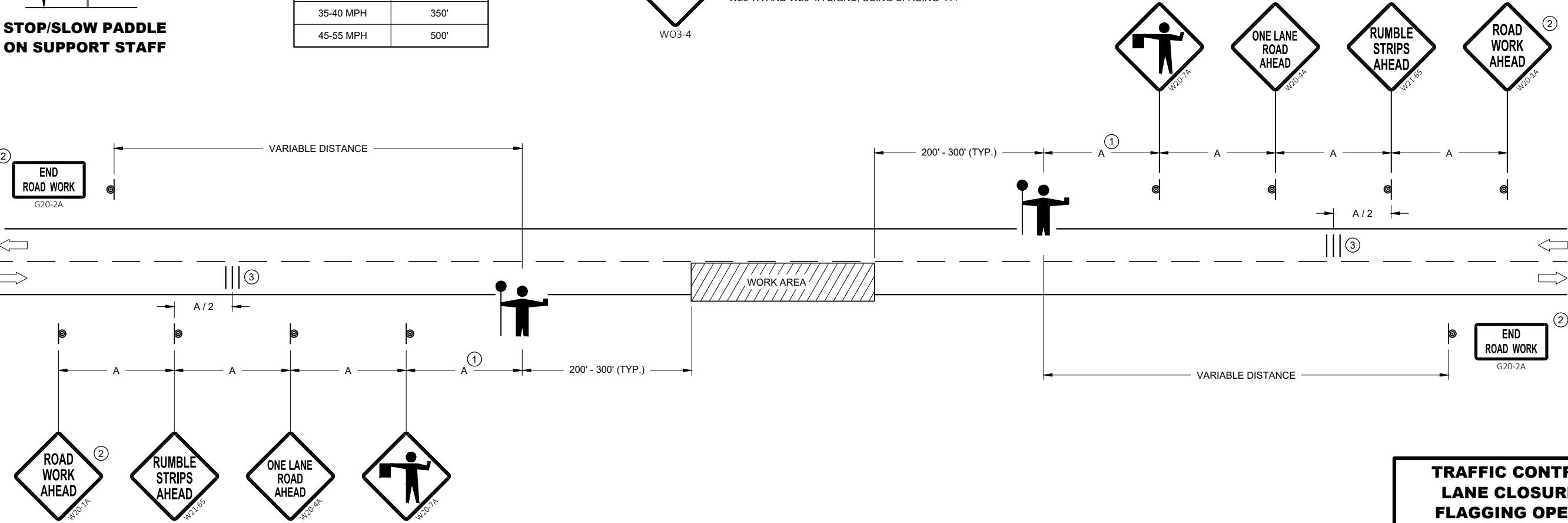


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

GENERAL NOTES

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL CONE 42-INCH
-  TRAFFIC CONTROL DRUM
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND LOCATION OF ALL FLAGGERS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

IF THE AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) STOPS WORKING, FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

- ① SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ② IF FLAGGERS ARE PHYSICALLY NEEDED TO FLAG, REPLACE WO3-4 SIGNS WITH W20-7A SIGNS.

TEMPORARY PORTABLE RUMBLE STRIPS

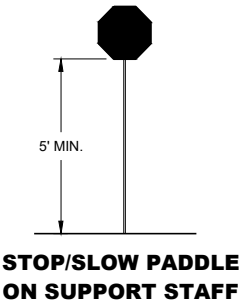
UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

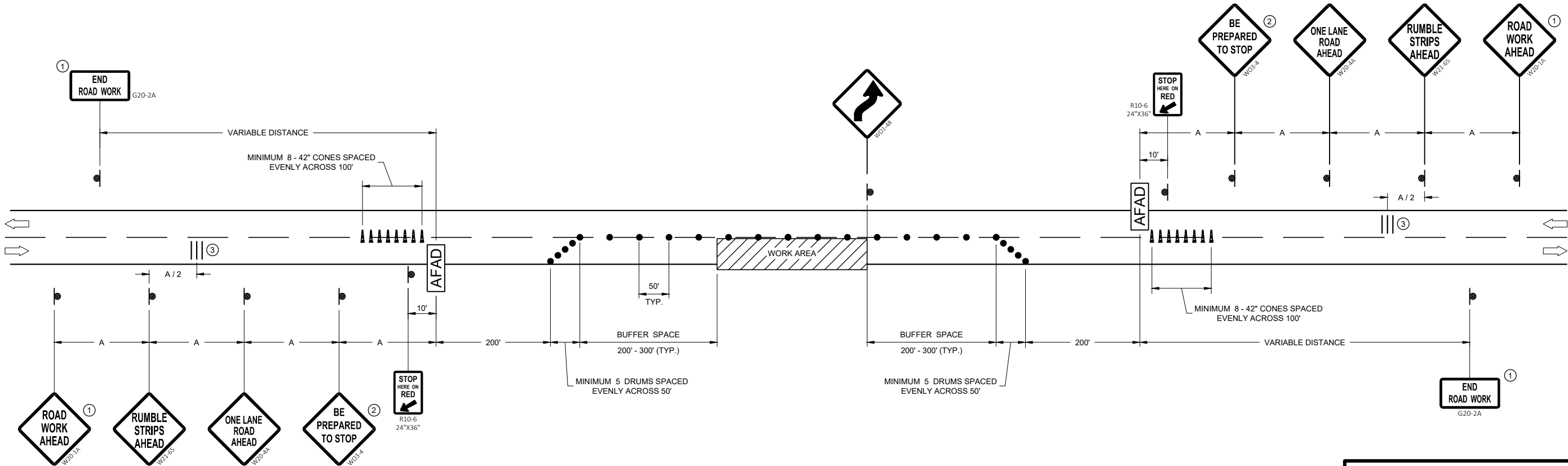
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSELY AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER.



SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



**TRAFFIC CONTROL, LANE
CLOSURE WITH AUTOMATED
FLAGGER ASSISTANCE DEVICE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

V1	LEAD VEHICLE
V2	MARKING VEHICLE
V3	SHADOW VEHICLE

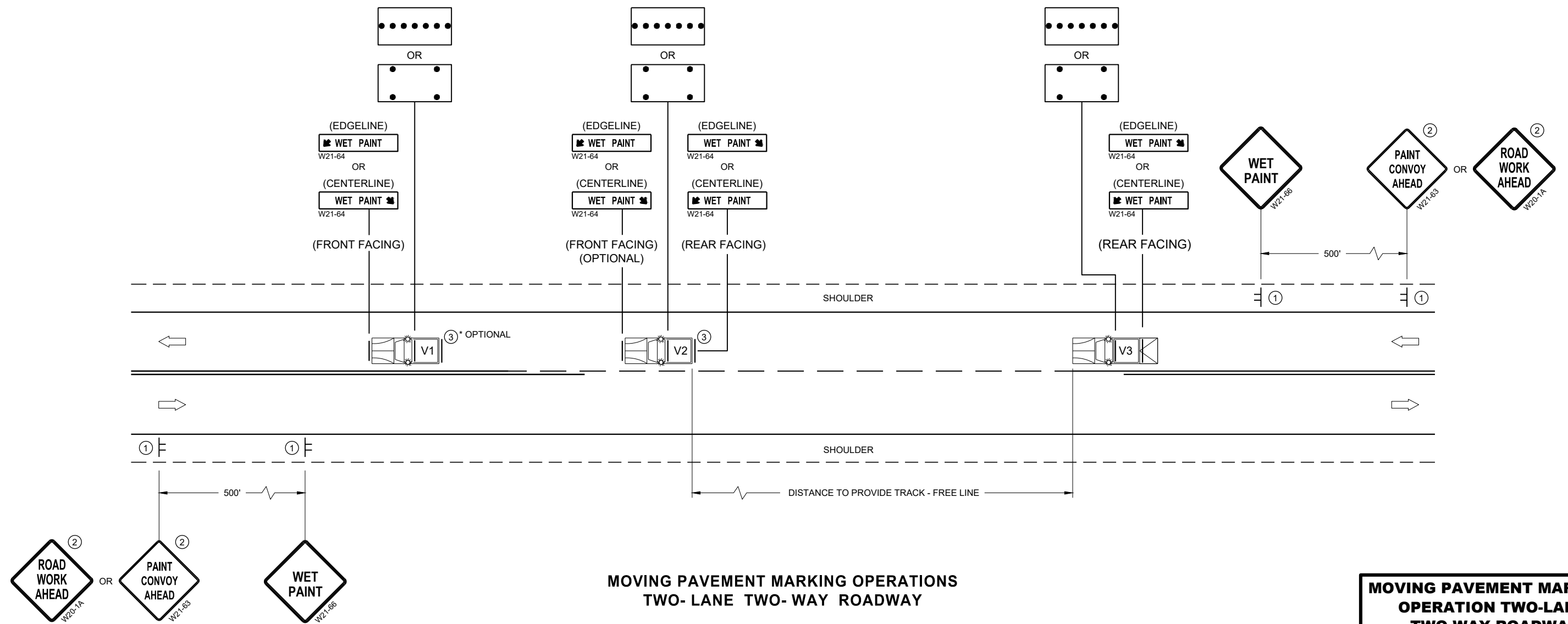


FLASHING ARROW PANEL (CAUTION)

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING .

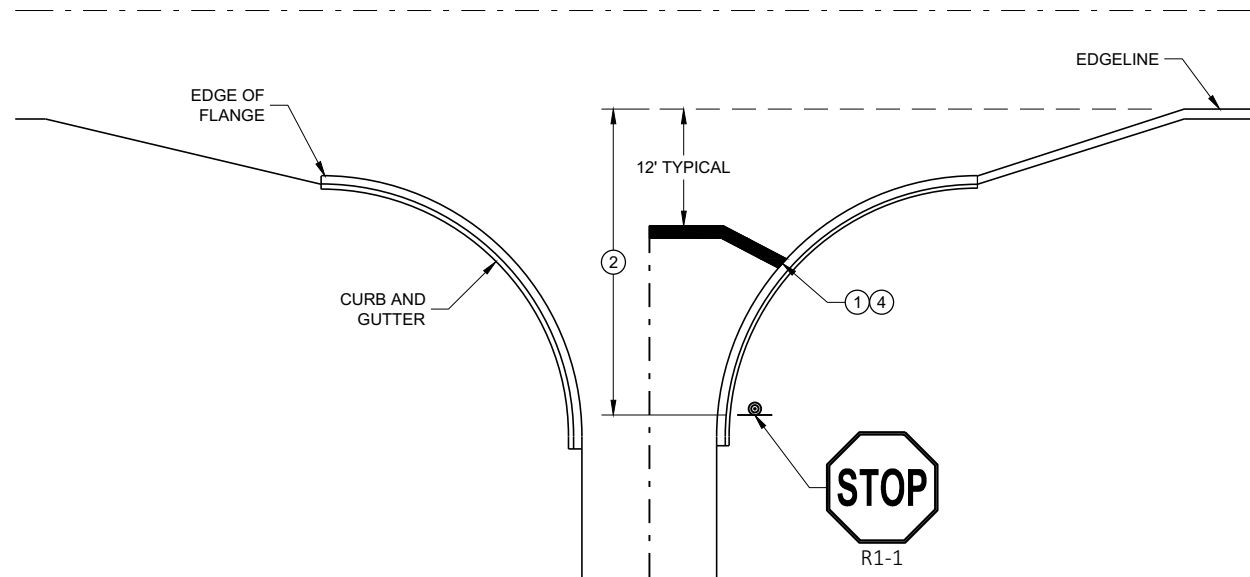
- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.
- ③ V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.



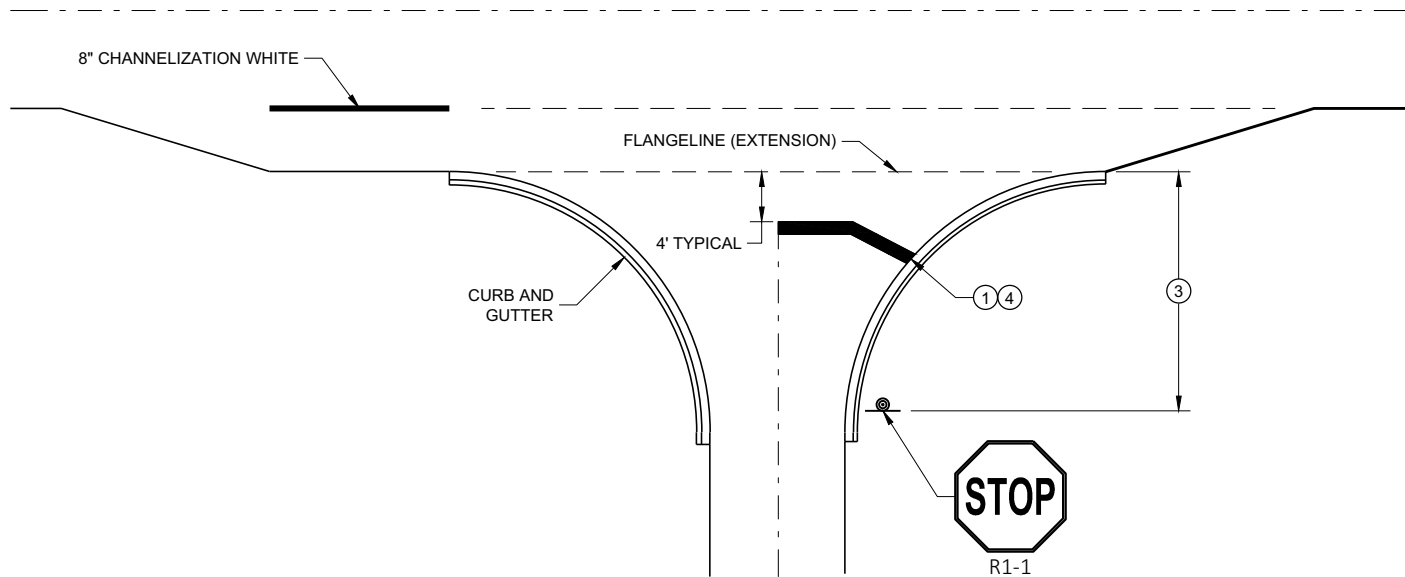
APPROVED
February 2023
DATE

/S/ Andrew Heidtke

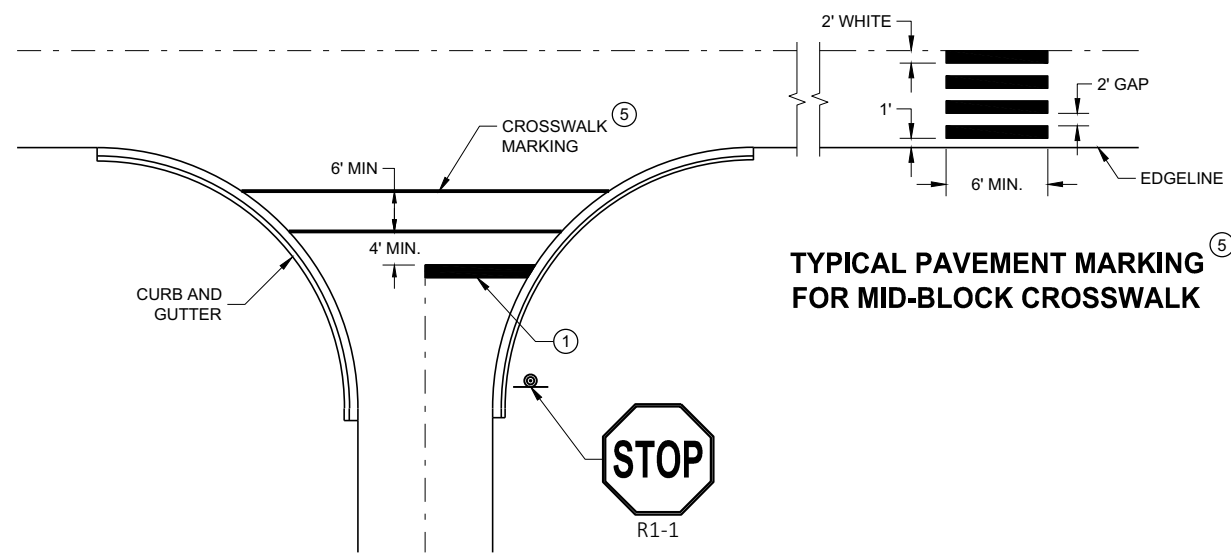
WORK ZONE ENGINEER



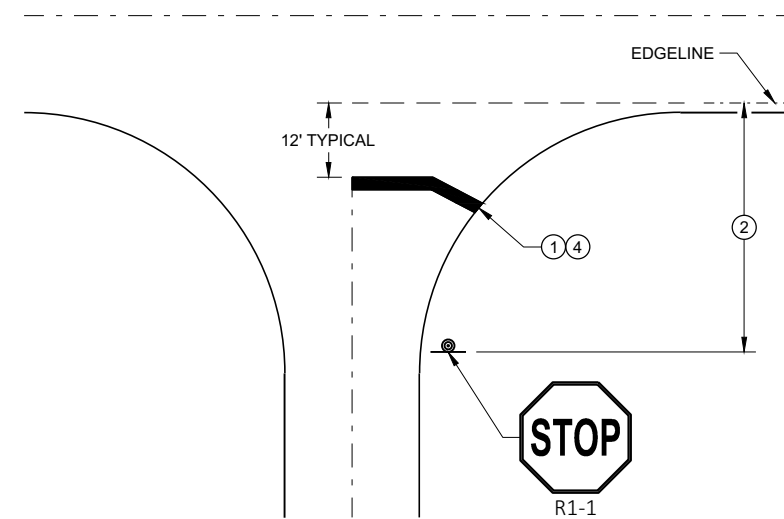
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR
SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

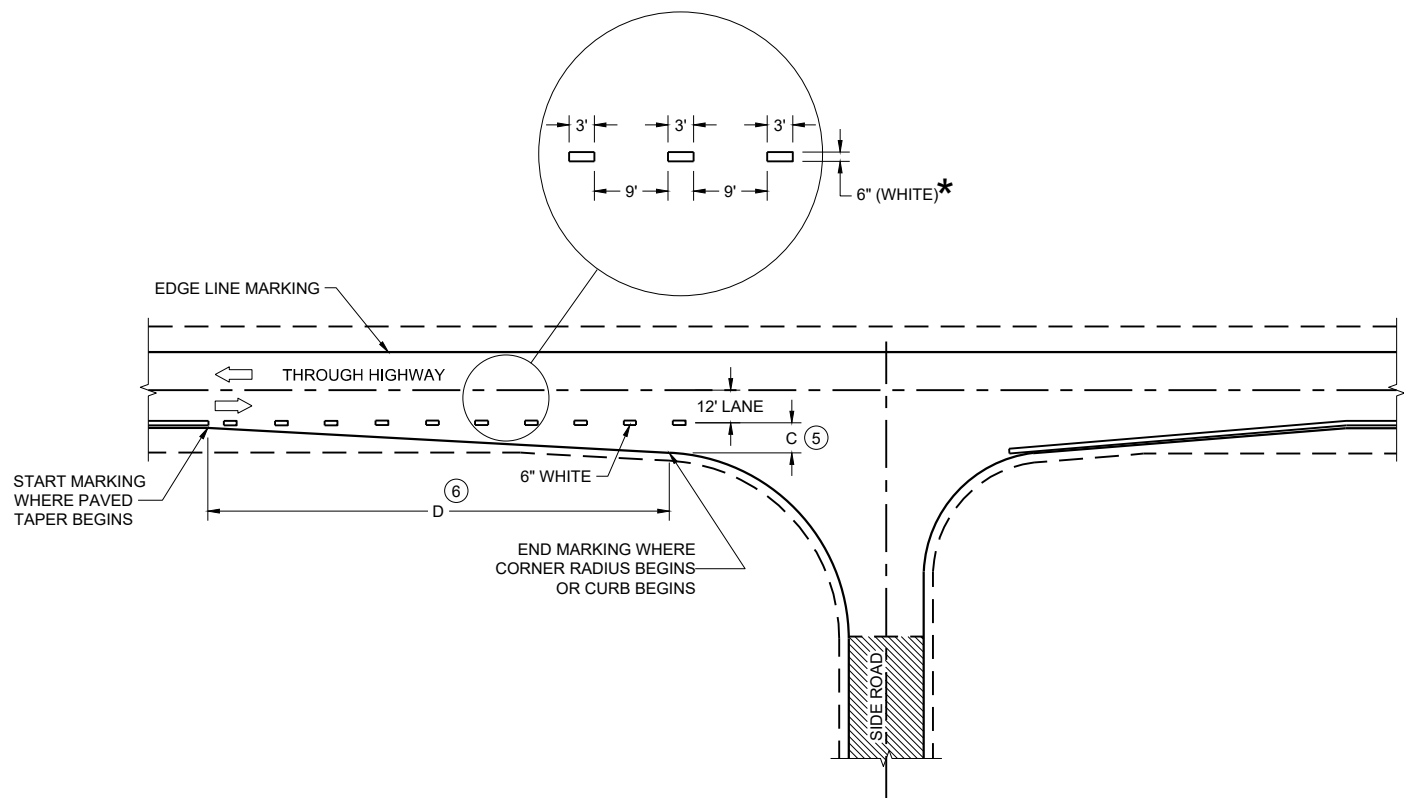
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.

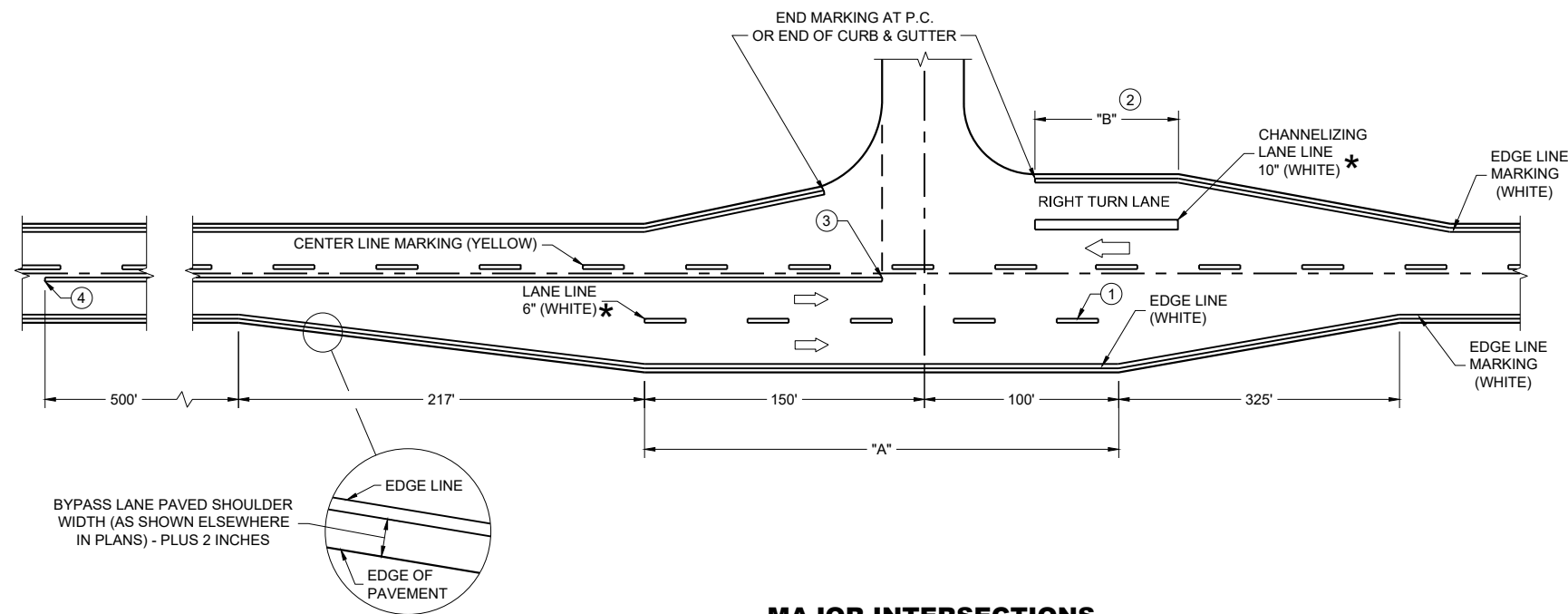
STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING
ENGINEER
FHWA



MINOR INTERSECTION



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

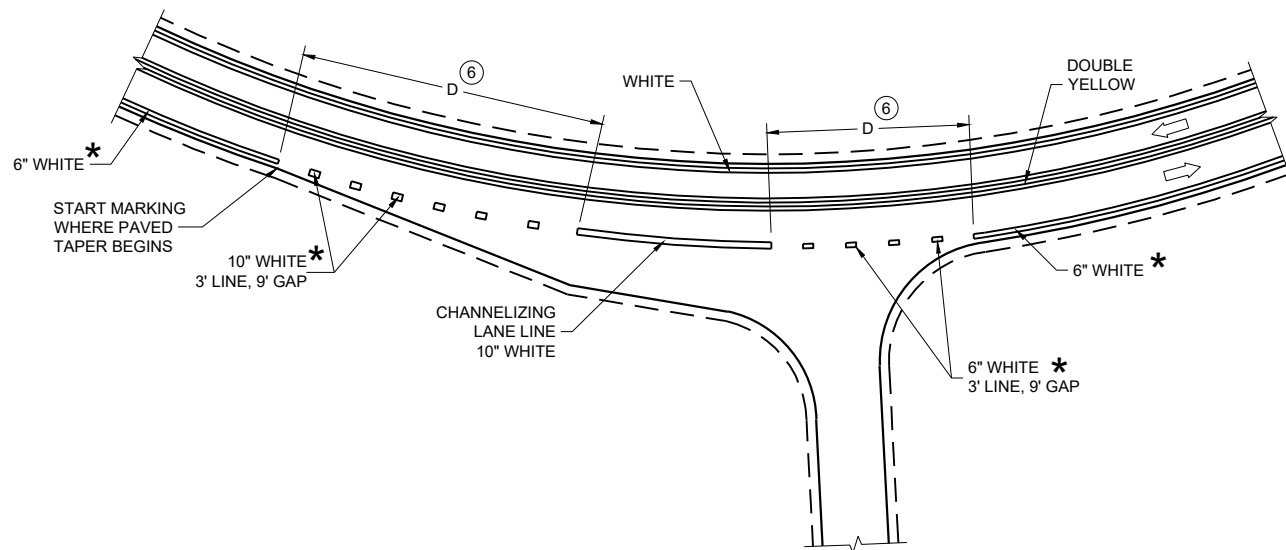
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

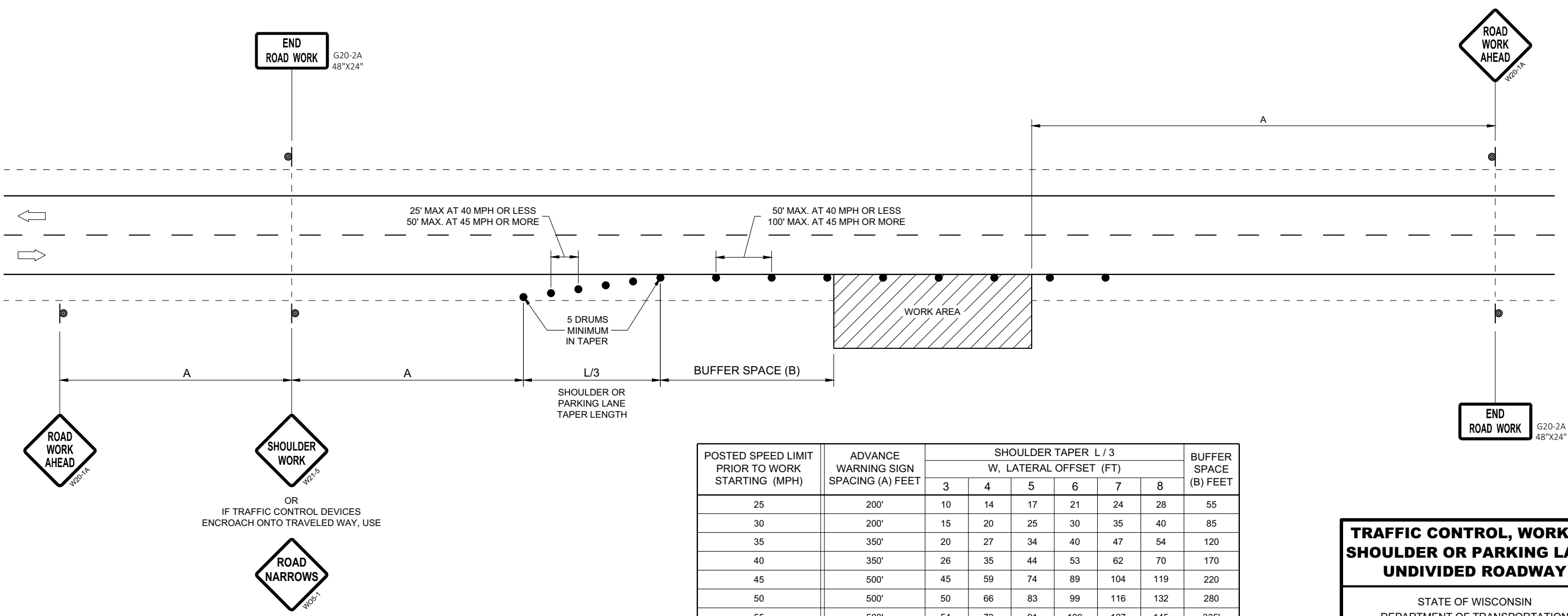
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

6



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3						BUFFER SPACE (B) FEET
		W, LATERAL OFFSET (FT)						
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

TRAFFIC CONTROL, WORK ON
SHOULDER OR PARKING LANE,
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER

FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THAT THE BACKGROUND IS ORANGE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

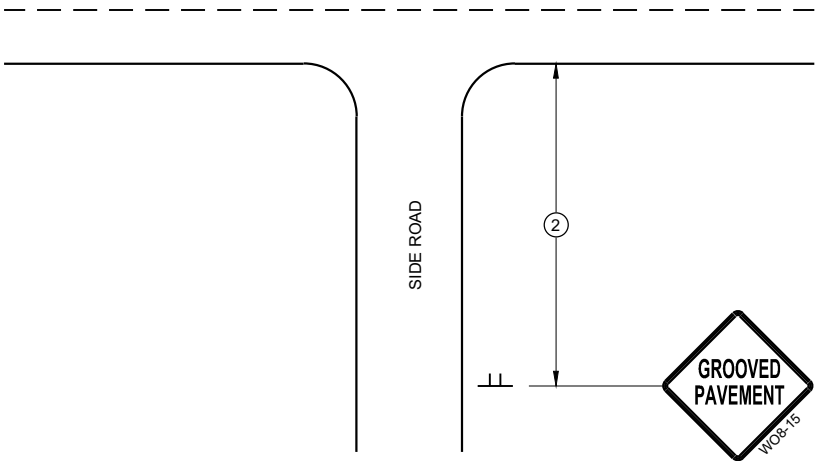
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

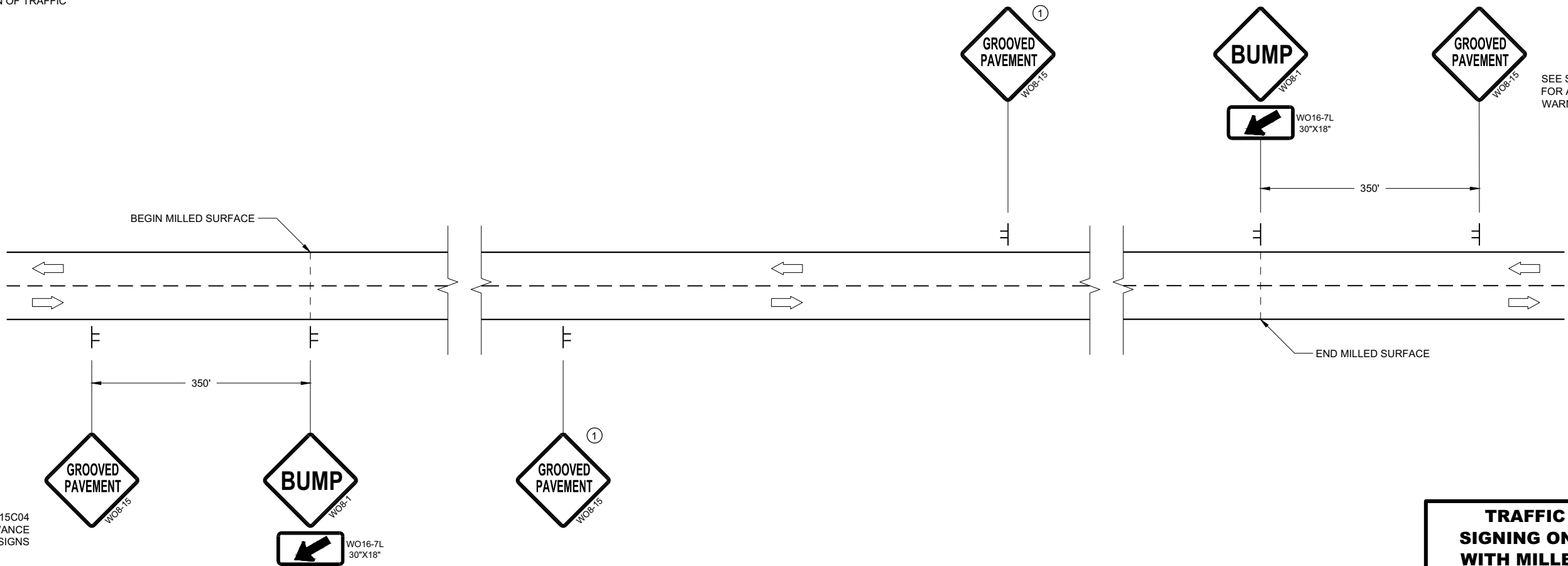
- ① PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

SEE SDD15C04
FOR ADVANCE
WARNING SIGNS

DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL,
SIGNING ON ROADWAYS
WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THAT THE BACKGROUND IS ORANGE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

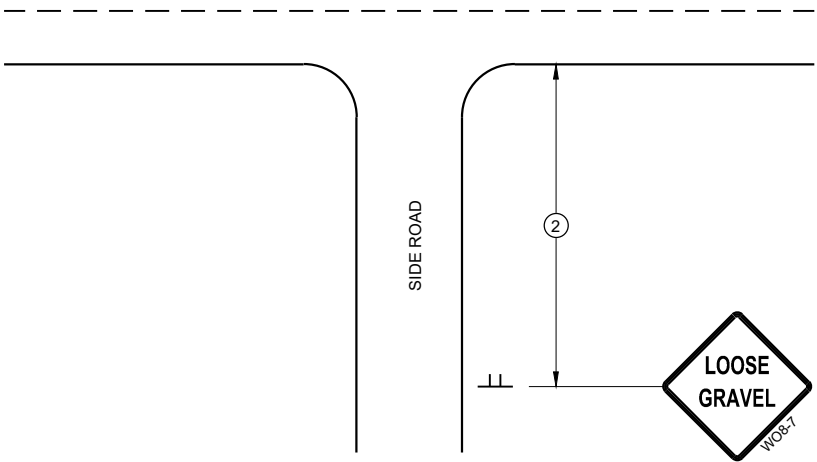
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

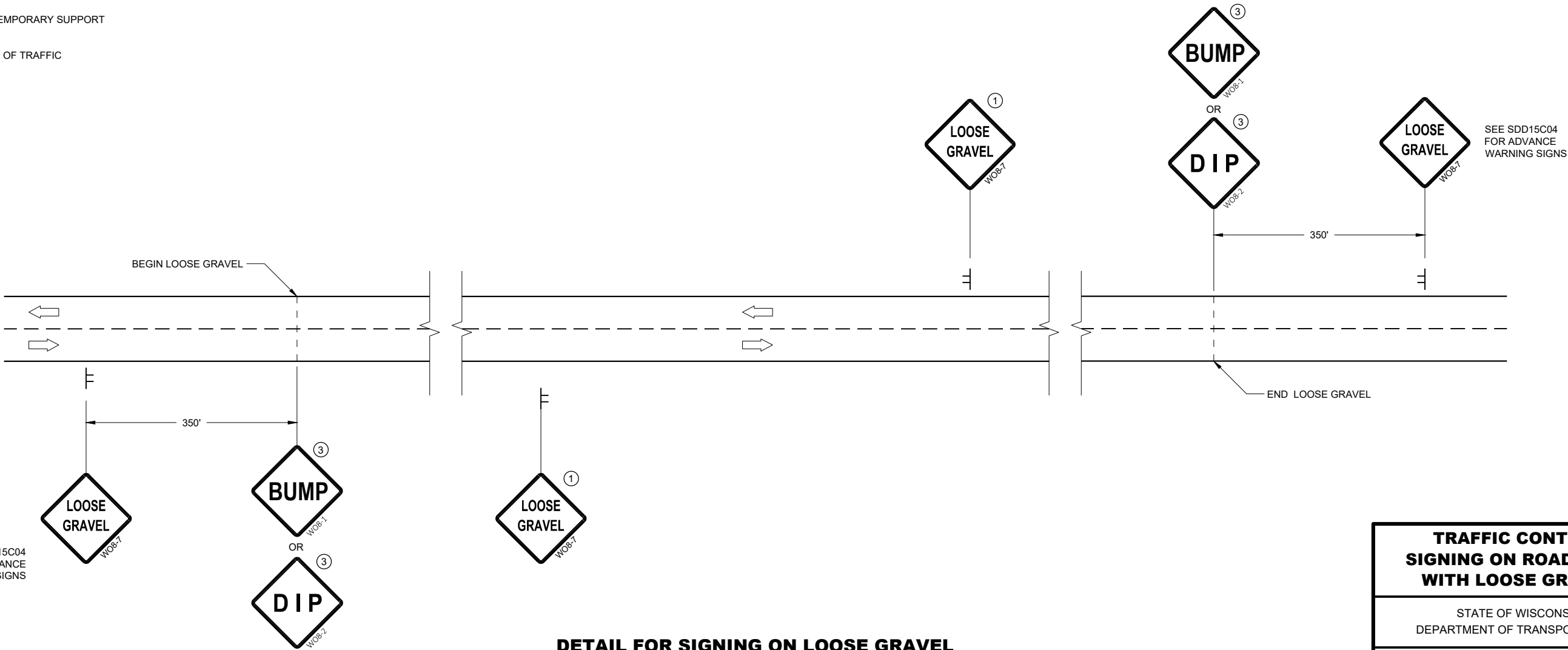
- 1 PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- 2 PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.
- 3 ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



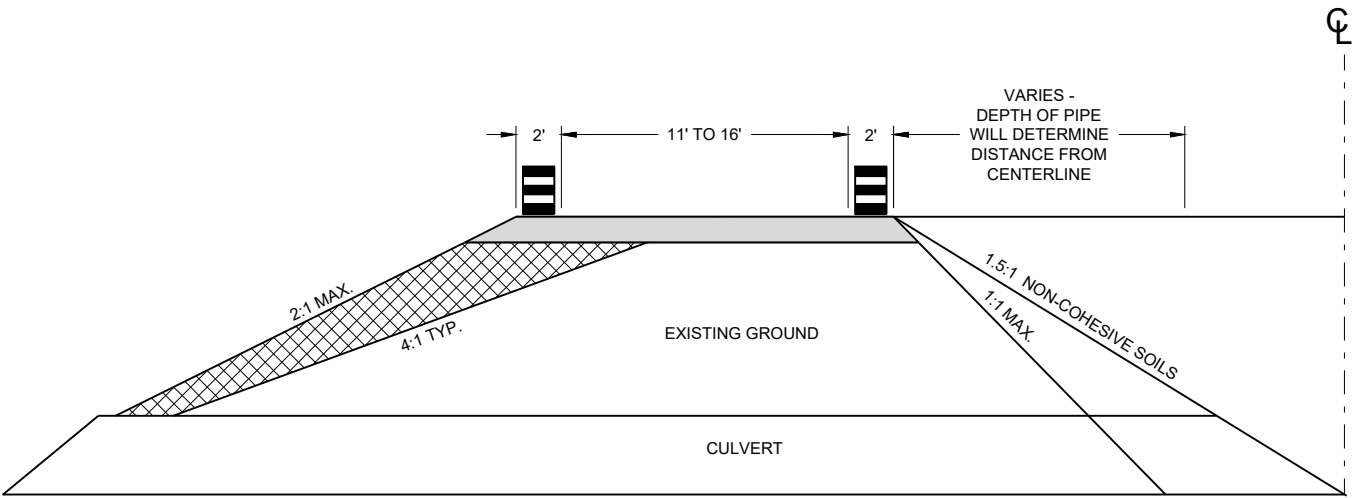
DETAIL FOR SIGNING ON LOOSE GRAVEL
OR CHIP SEALED SURFACES

TRAFFIC CONTROL
SIGNING ON ROADWAYS
WITH LOOSE GRAVEL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



CROSS SECTION

GENERAL NOTES

USE 1:1 FOR COHESIVE CLAYS AND SILTS, LOAMS, SANDY CLAYS AND ANGULAR GRAVEL SOILS.
USE 1.5:1 FOR NON-COHESIVE SOILS.

THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.

ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

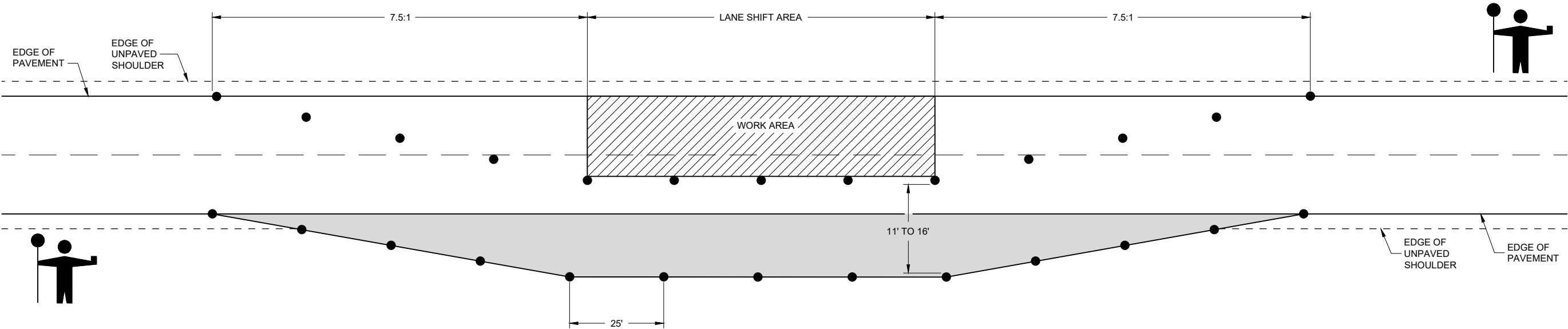
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

USE WITH SDD 15C12 "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATIONS"

USE WITH SDD 15D45 "SIGNING ON ROADWAYS WITH LOOSE GRAVEL"

LEGEND

- DRUM WITHOUT WARNING LIGHT
- 6" BASE AGGREGATE DENSE 1 1/4" - INCIDENTAL TO LANE SHIFT ITEM
- FILL - INCIDENTAL TO LANE SHIFT ITEM
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



LANE SHIFT IN FLAGGING OPERATION

TRAFFIC CONTROL,
TEMPORARY LANE SHIFT
DURING CULVERT WORK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE /S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

LEGEND

- V1

WORK VEHICLE
- V2

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

FLASHING ARROW PANEL (CAUTION)
- 

WORK AREA
- 

DIRECTION OF TRAFFIC

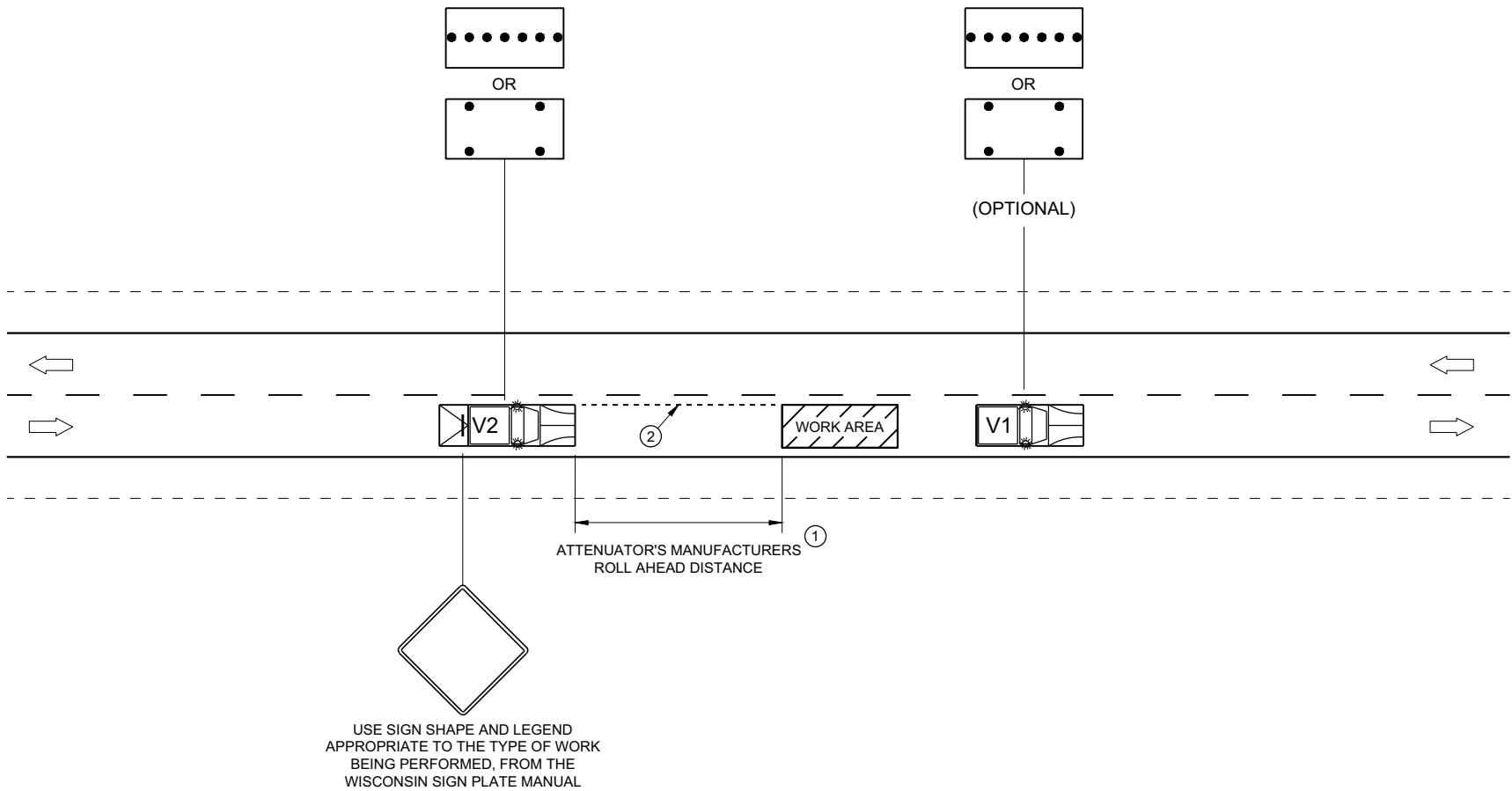
POSTED SPEED PRIOR TO WORK STARTING (MPH)	DECISION SIGHT DISTANCE (D)
0 - 25	550'
30	550'
35	700'
40	700'
45	900'
50	900'
55	1200'

GENERAL NOTES

- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
- MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.
- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.
- ①

DISTANCE BETWEEN VEHICLES MAY INCREASE FROM THE ATTENUATOR'S ROLL AHEAD BASED ON TERRAIN, SIGHT DISTANCE, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- ②

ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.



TRAFFIC CONTROL,
MOBILE OPERATIONS ON
AN UNDIVIDED ROADWAY

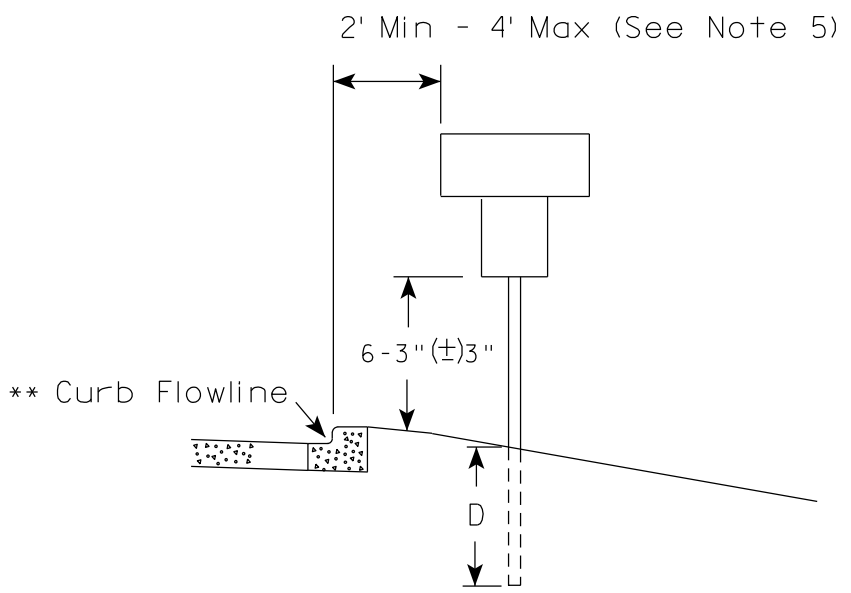
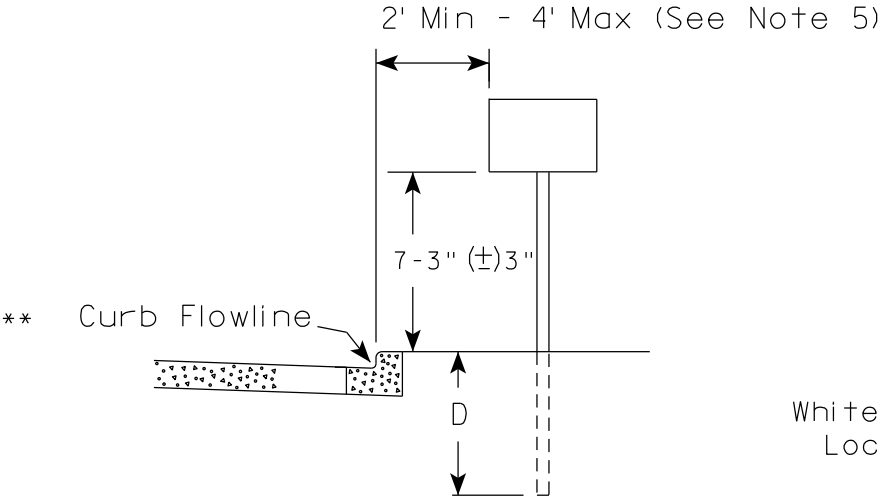
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

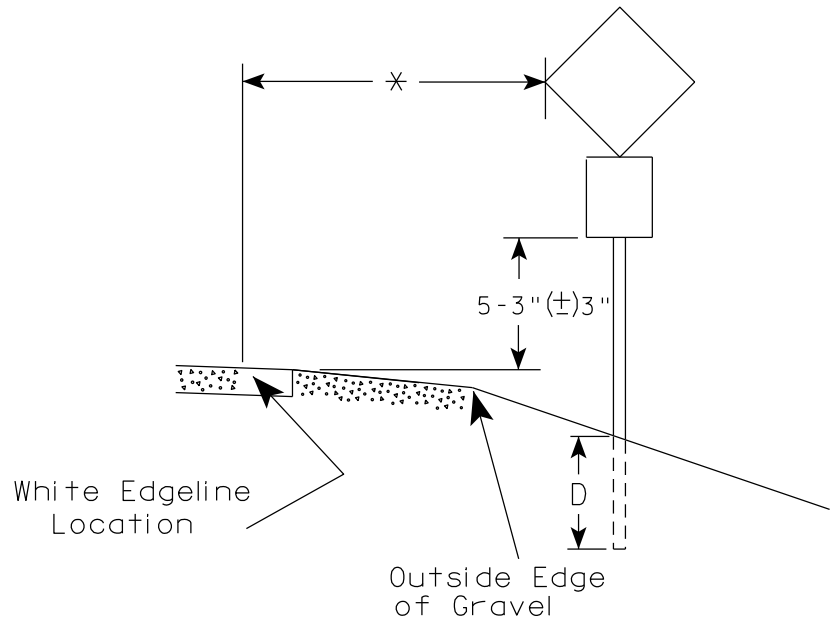
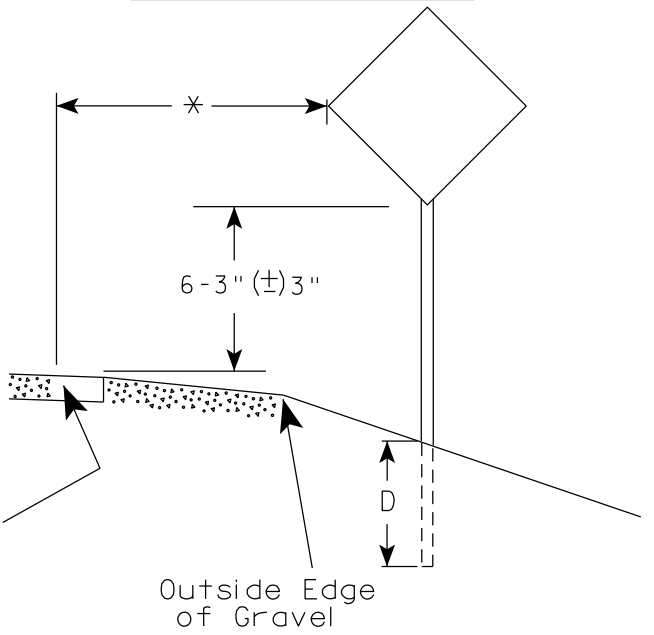
/S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER

FHWA

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

* * The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

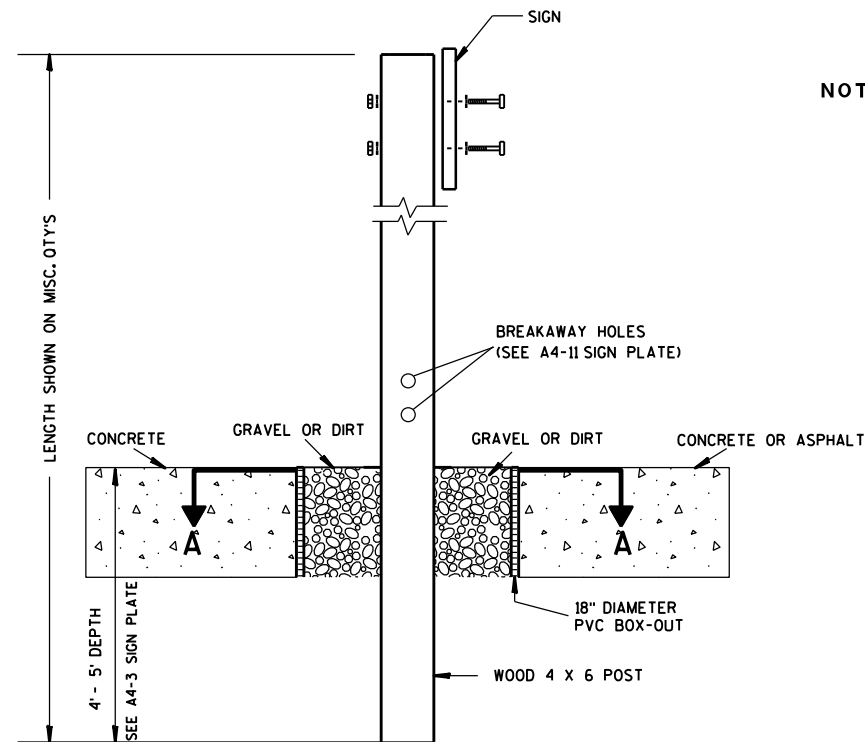
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

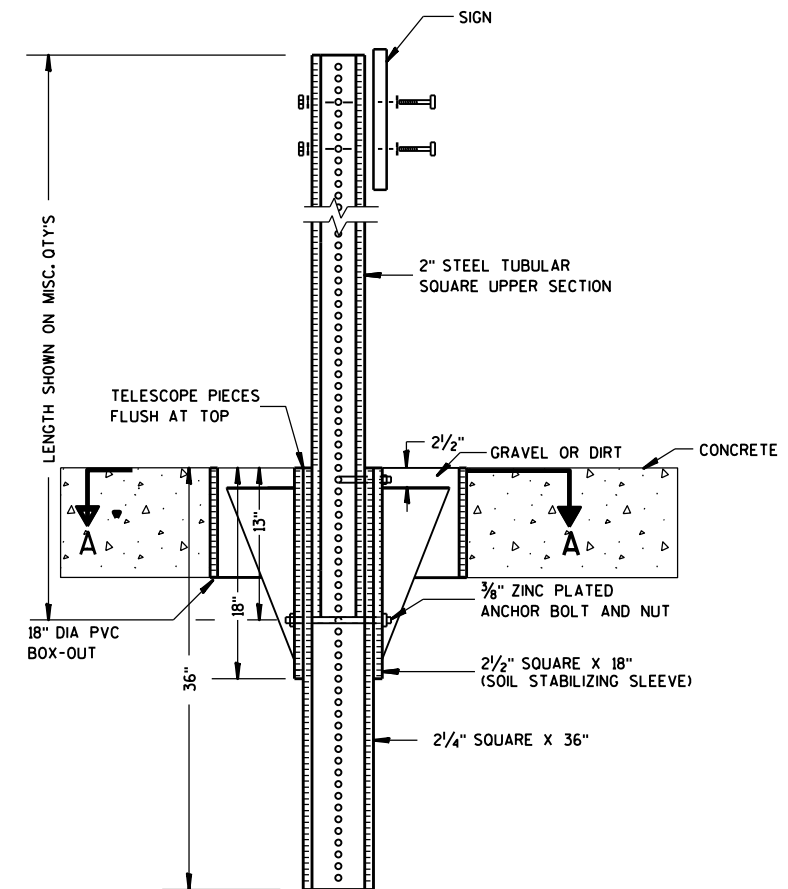
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

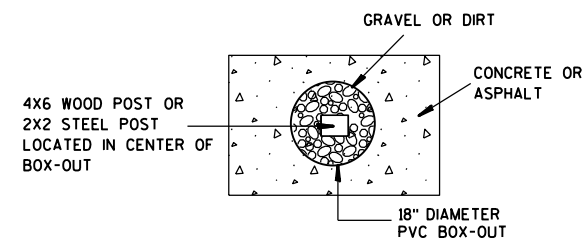
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

PROJECT NO:

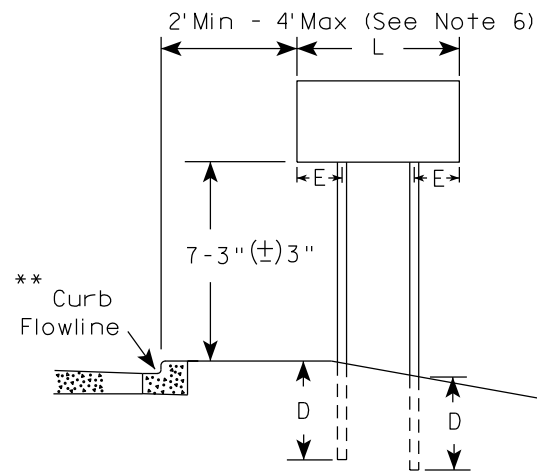
HWY:

COUNTY:

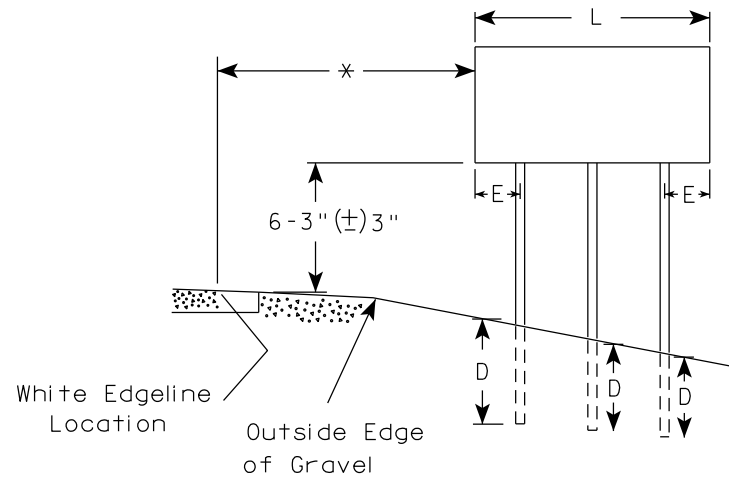
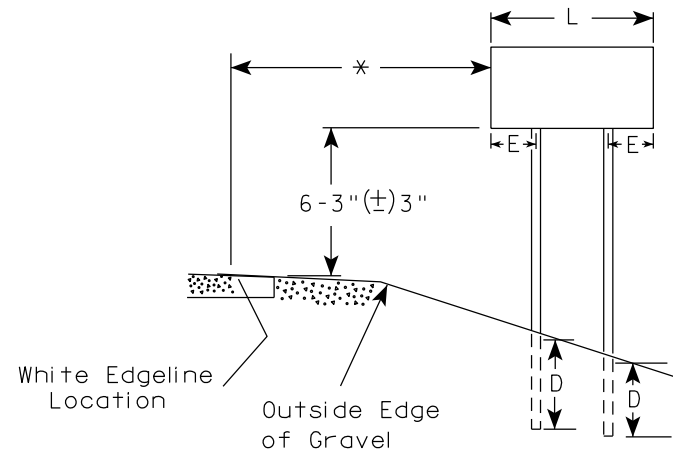
SHEET NO:

E

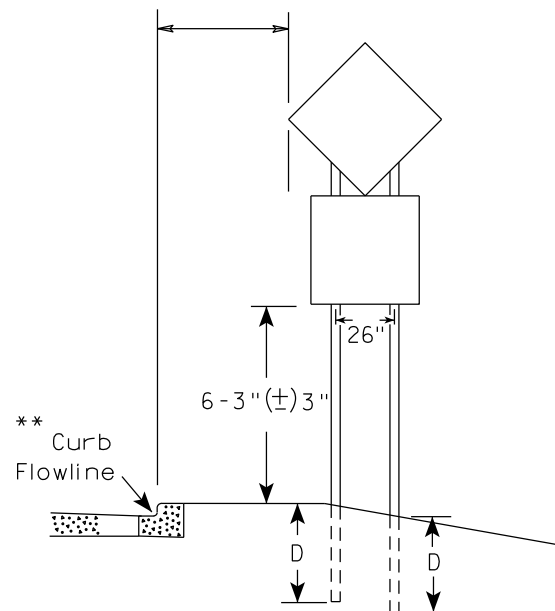
URBAN AREA



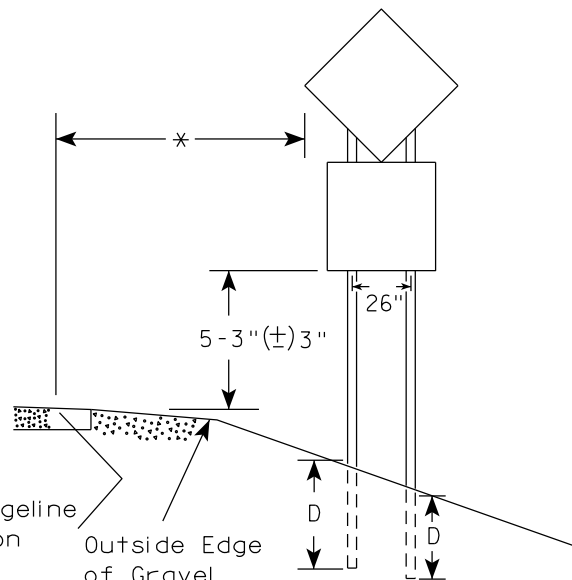
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 12/6/23	PLATE NO. A4-4.16

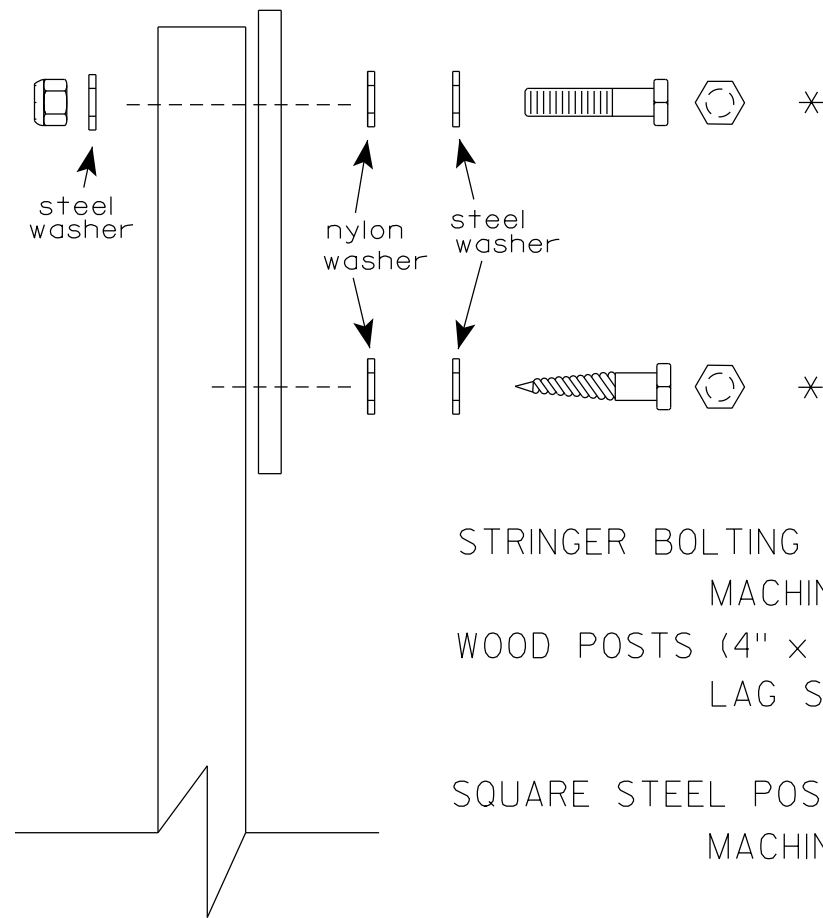
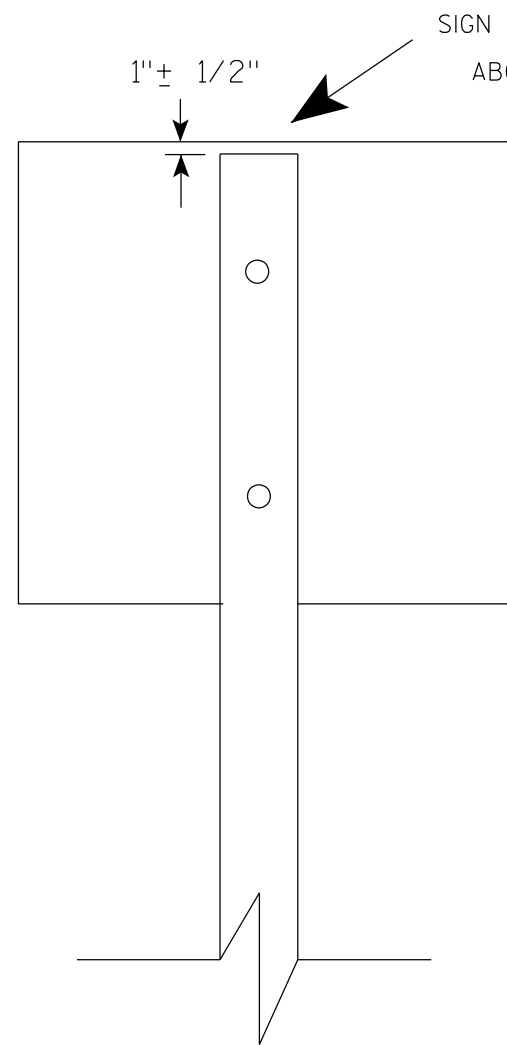
GENERAL NOTES

- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- J-Assemblies are considered to be one sign for mounting height.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

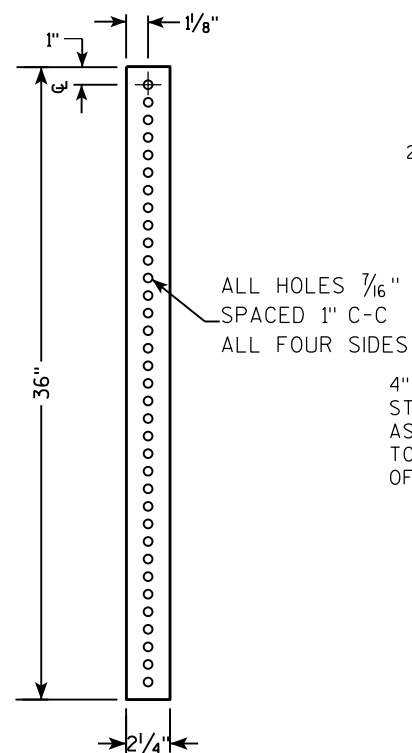
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

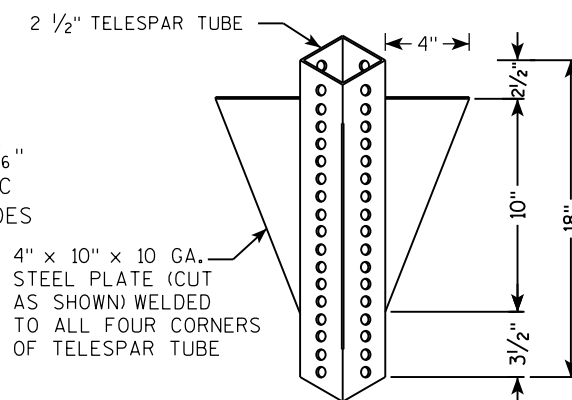
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY.

Side View Dimensions:

- Overall height: 36"
- Section A: 18"
- Section B: 12"

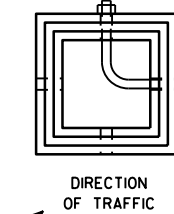
End View Dimensions:

- Overall width: 2 1/4" SQUARE X 36"
- Section A: 1 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- Section B: 3/8" ZINC PLATED ANCHOR BOLT AND NUT

Material and Assembly Specifications:

- 2" STEEL TUBULAR SQUARE UPPER SECTION
- ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES
- 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- TELESCOPE PIECES FLUSH AT TOP
- SIGN

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

PROJECT NO:

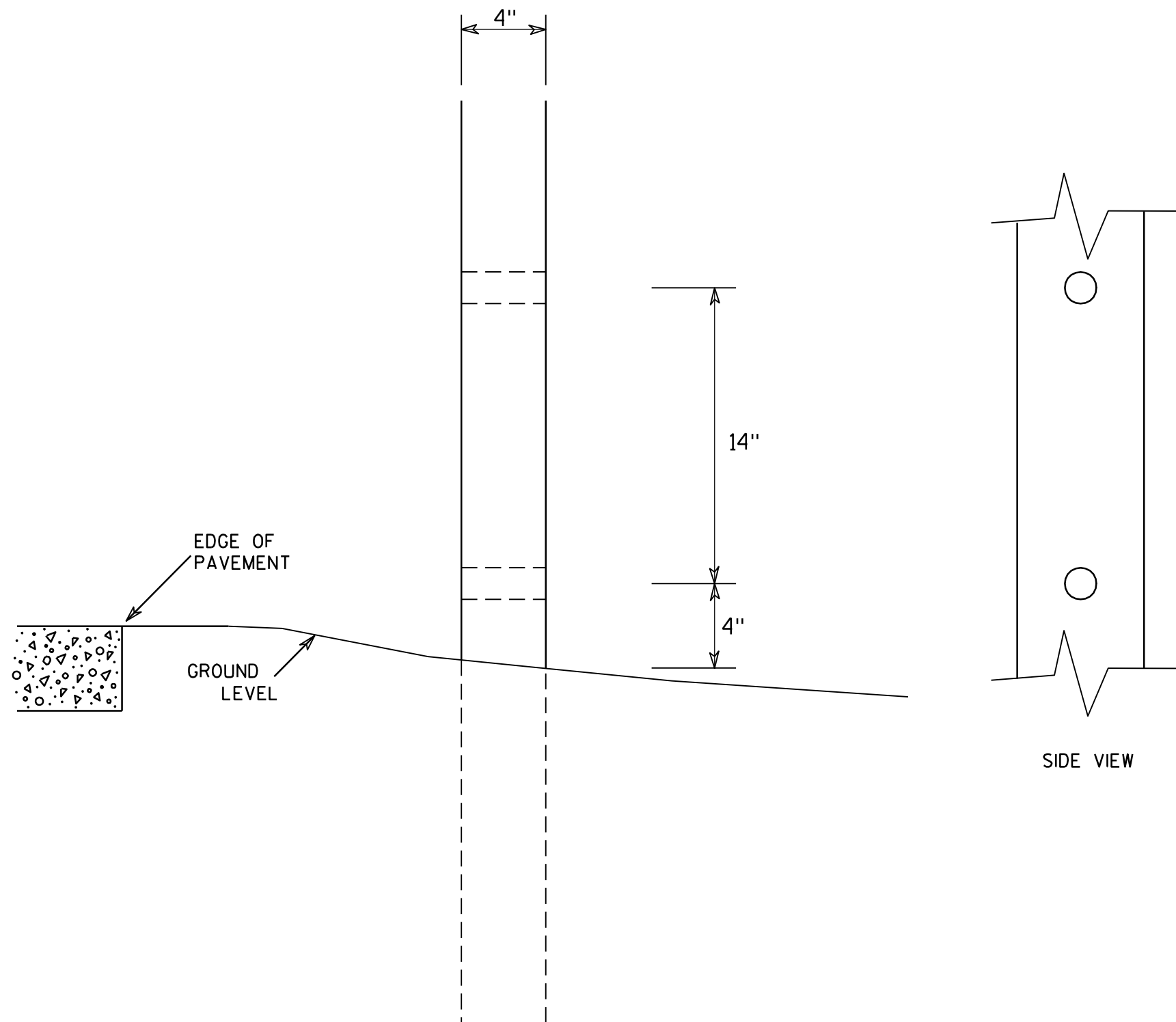
HWY:

COUNTY:

SHEET NO:

E

7

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

**4 X 6 WOOD POST
MODIFICATIONS**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

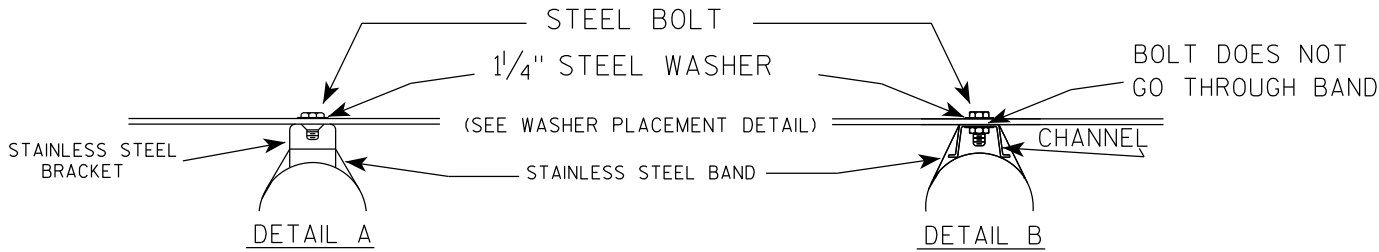
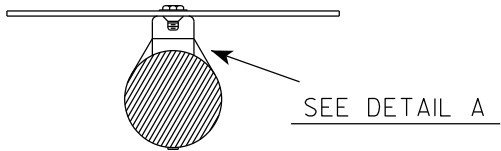
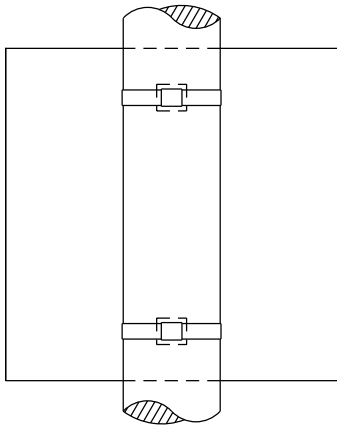
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SHEET NO:

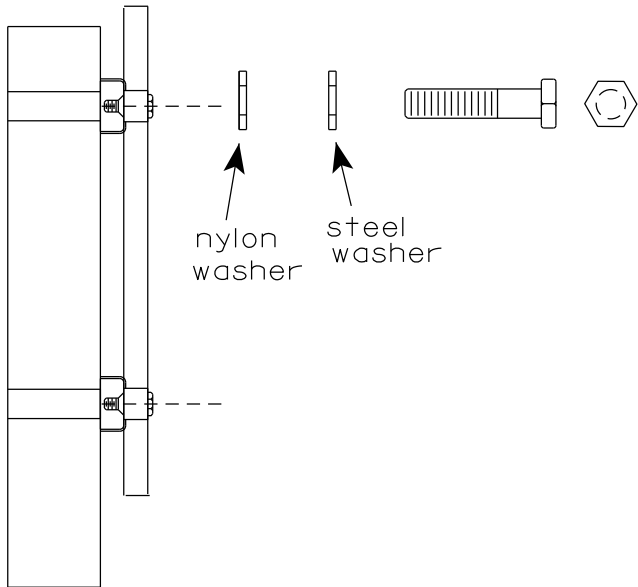
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

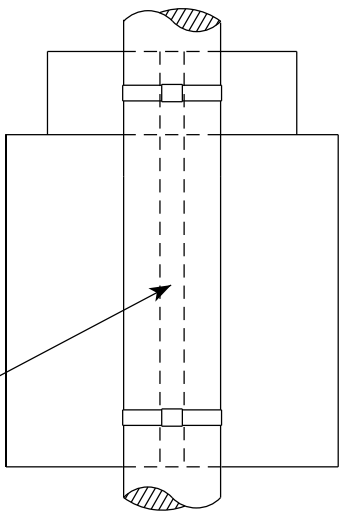


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

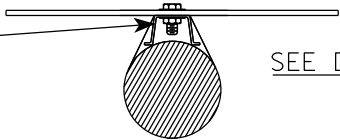
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



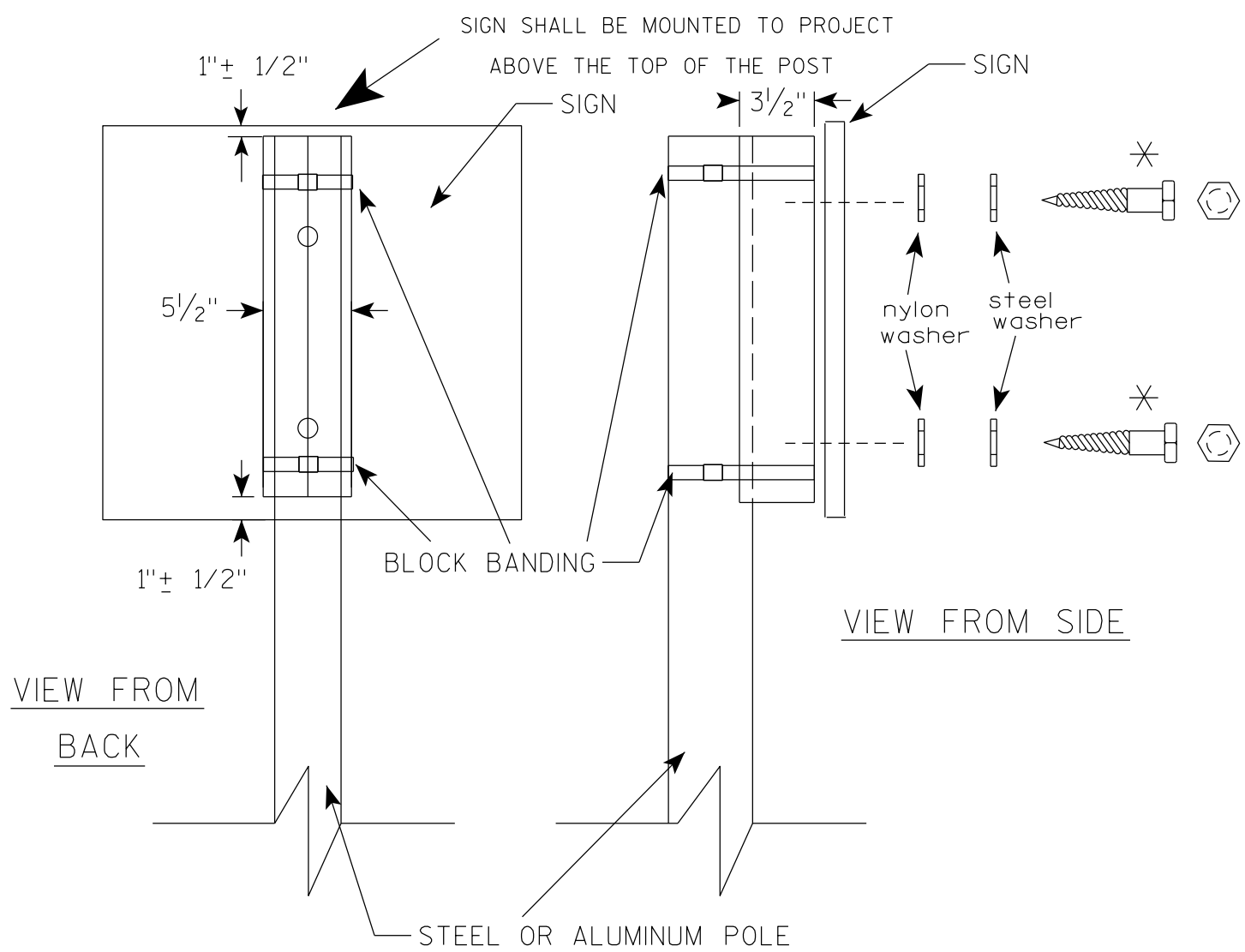
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

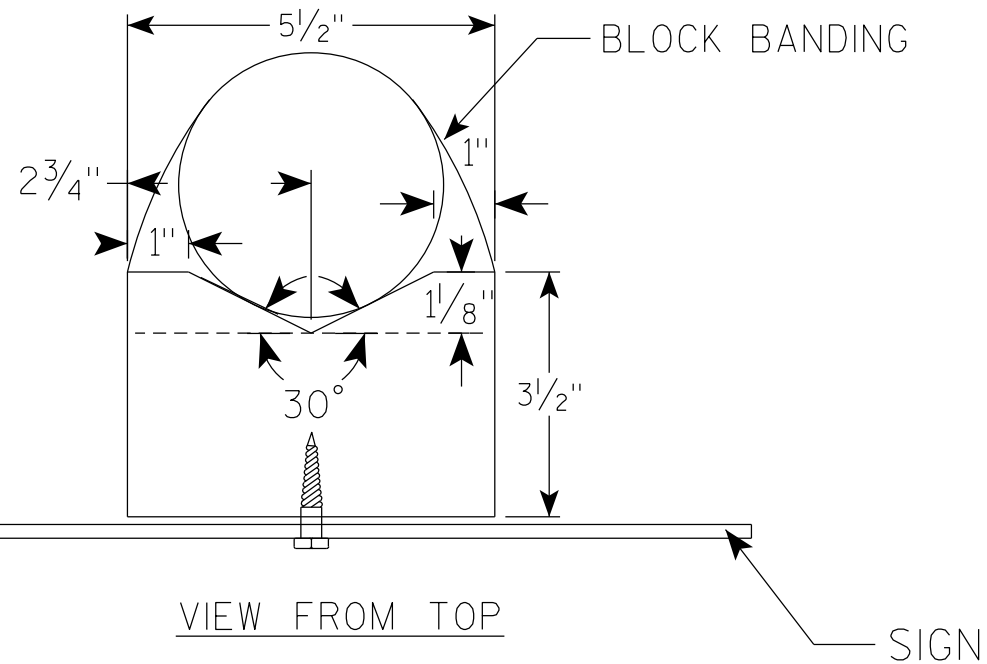
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO:

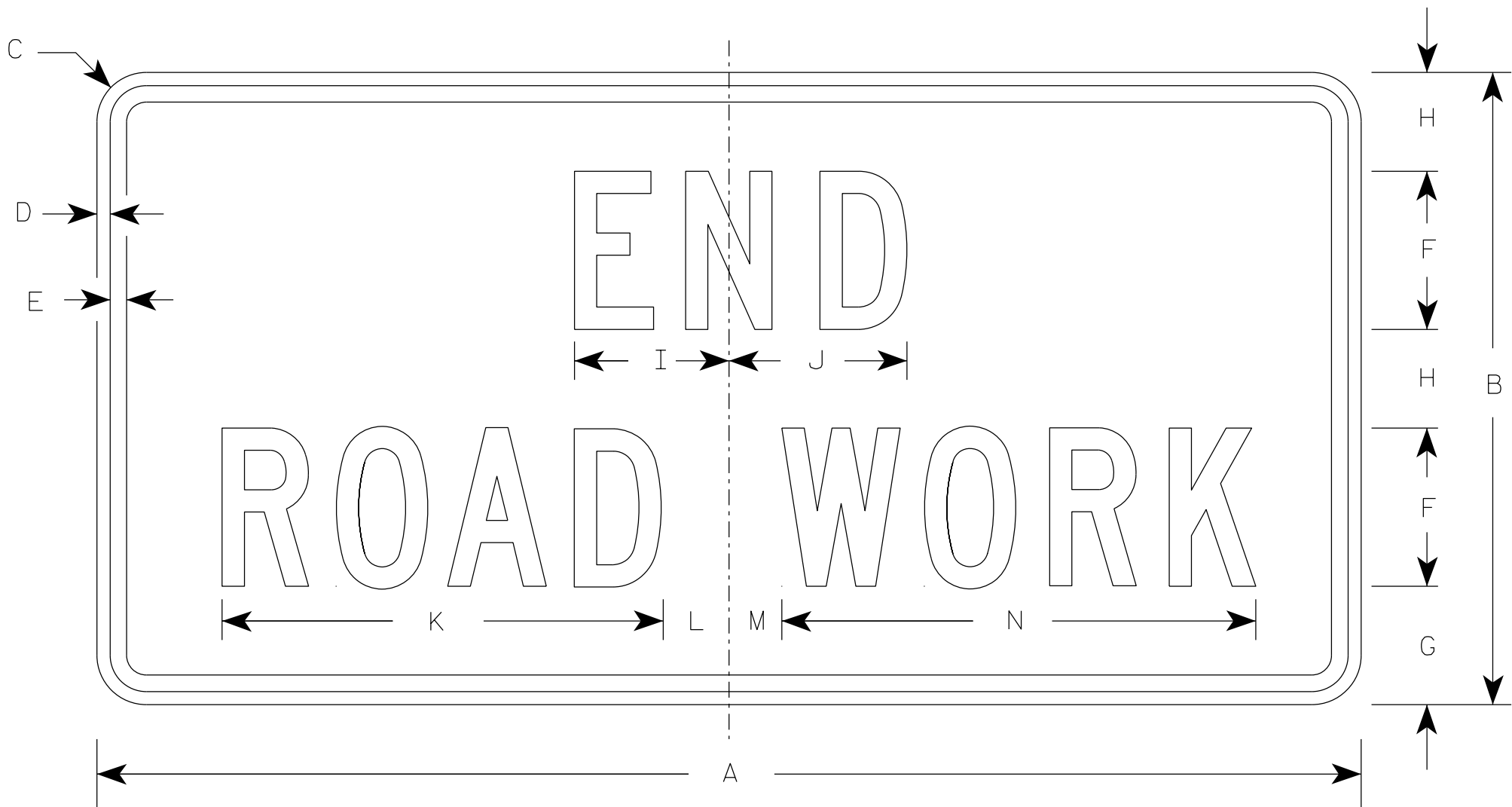
E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:

Background - Orange

Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



G20-2A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/2	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5
2	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
2M	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
3	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
4	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
5	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0

STANDARD SIGN

G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-2A.10

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - D
- 4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	21 1/4	3 1/2	1 1/2	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2						18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	28 1/4	4 3/8	1 5/8	31		39 1/4	2	4	37 7/8						32.0
5																											

STANDARD SIGN
G20-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57.3

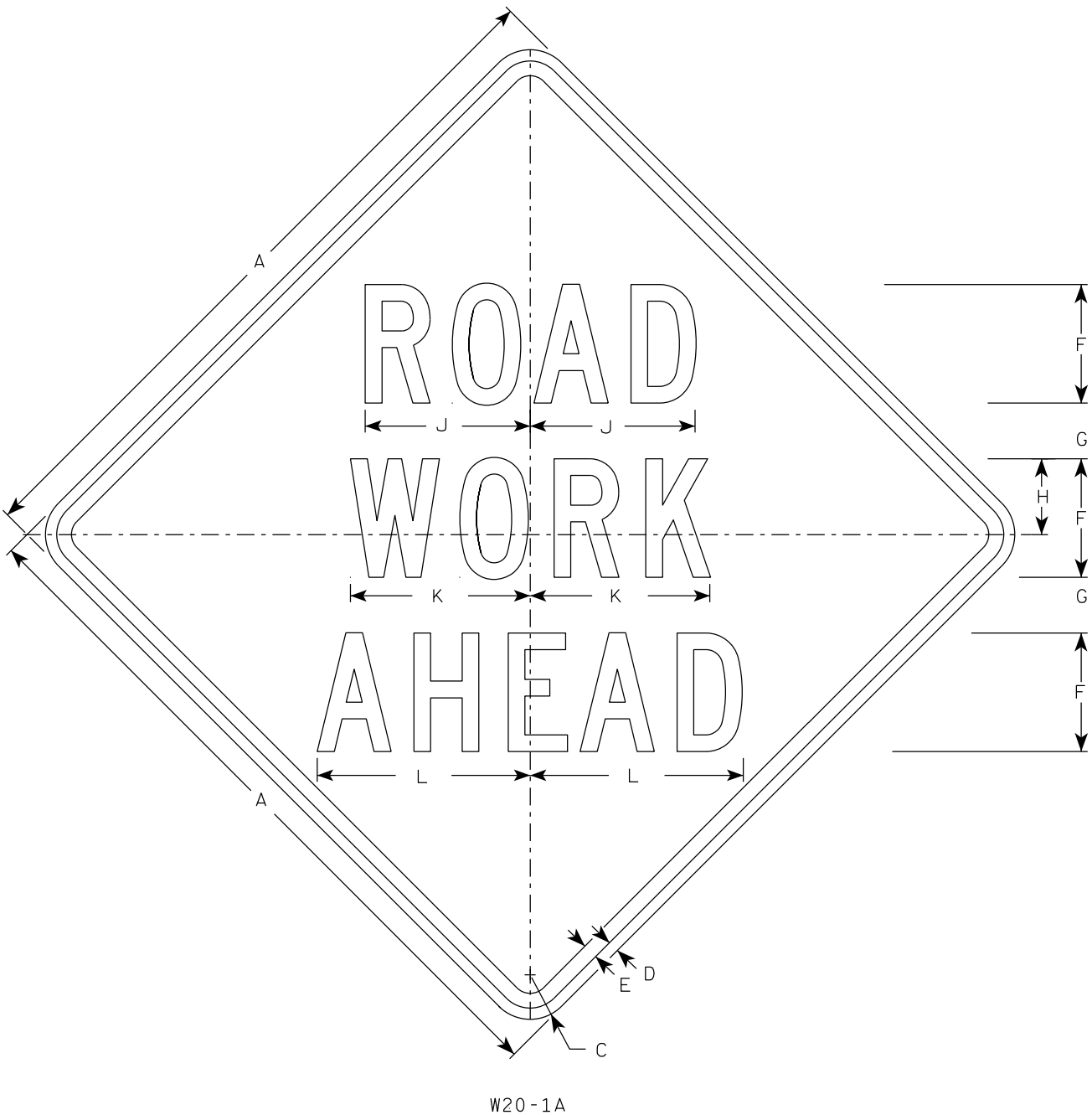
PROJECT NO:

HWY:

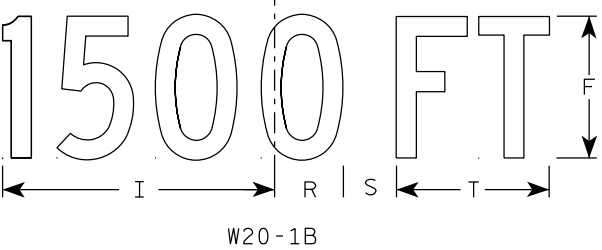
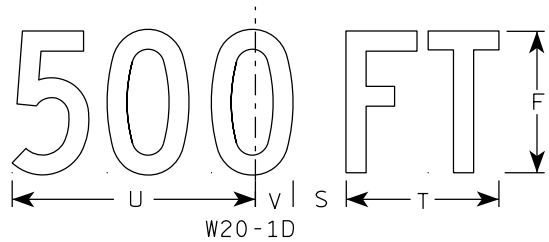
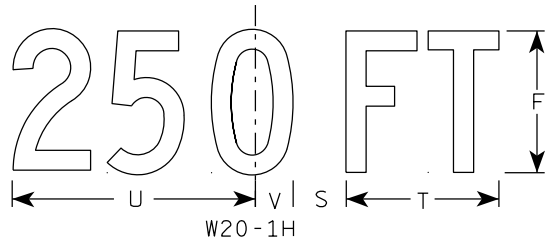
COUNTY:

SHEET NO:

E

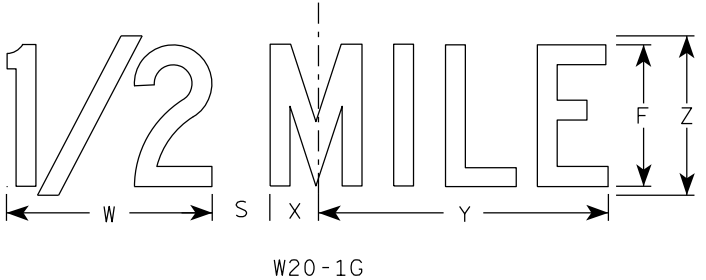


W20-1A

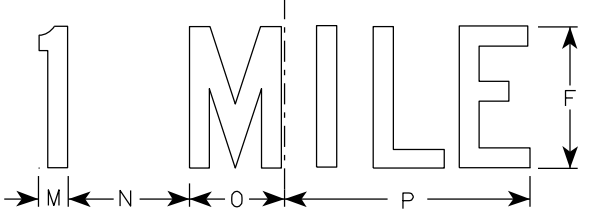


W20-1B

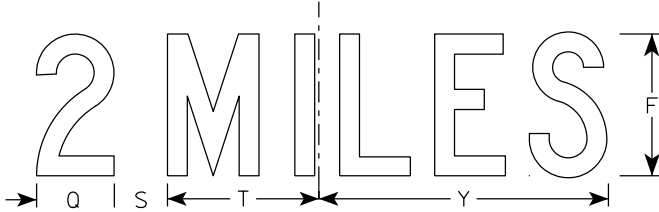
- NOTES
1. Sign is Type II - Type F Reflective
 2. Color:
Background - Orange
Message - Black
 3. Message Series - C
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G

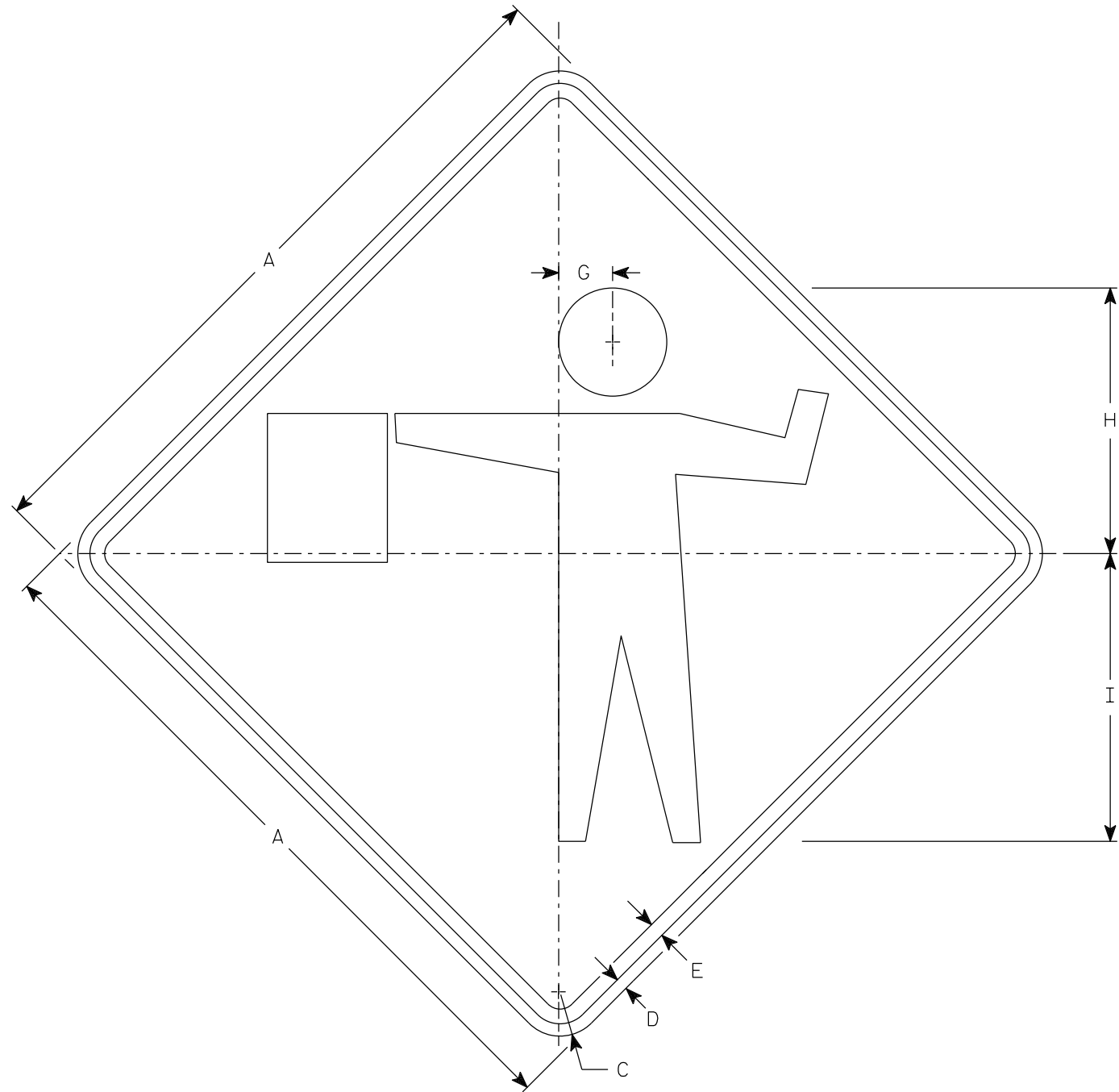


W20-1F



W20-1E

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0



W20-7A

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

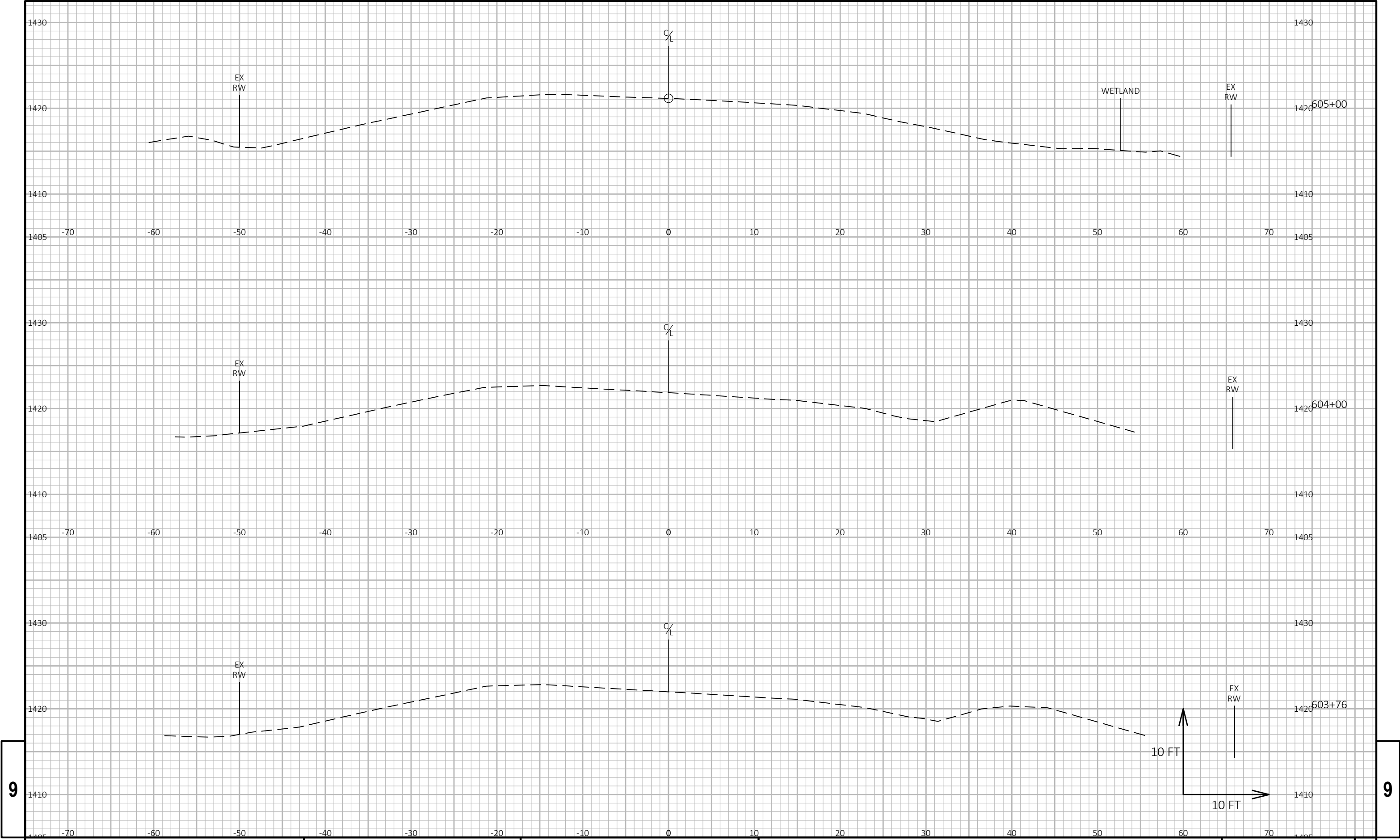
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4		2 3/4	13 1/2	14 5/8																		9.0
2S	48		3	3/4	1		3 3/4	18	19 1/2																		16.0
2M	48		3	3/4	1		3 3/4	18	19 1/2																		16.0
3	48		3	3/4	1		3 3/4	18	19 1/2																		16.0
4	48		3	3/4	1		3 3/4	18	19 1/2																		16.0
5	48		3	3/4	1		3 3/4	18	19 1/2																		16.0

STANDARD SIGN
W20-7A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

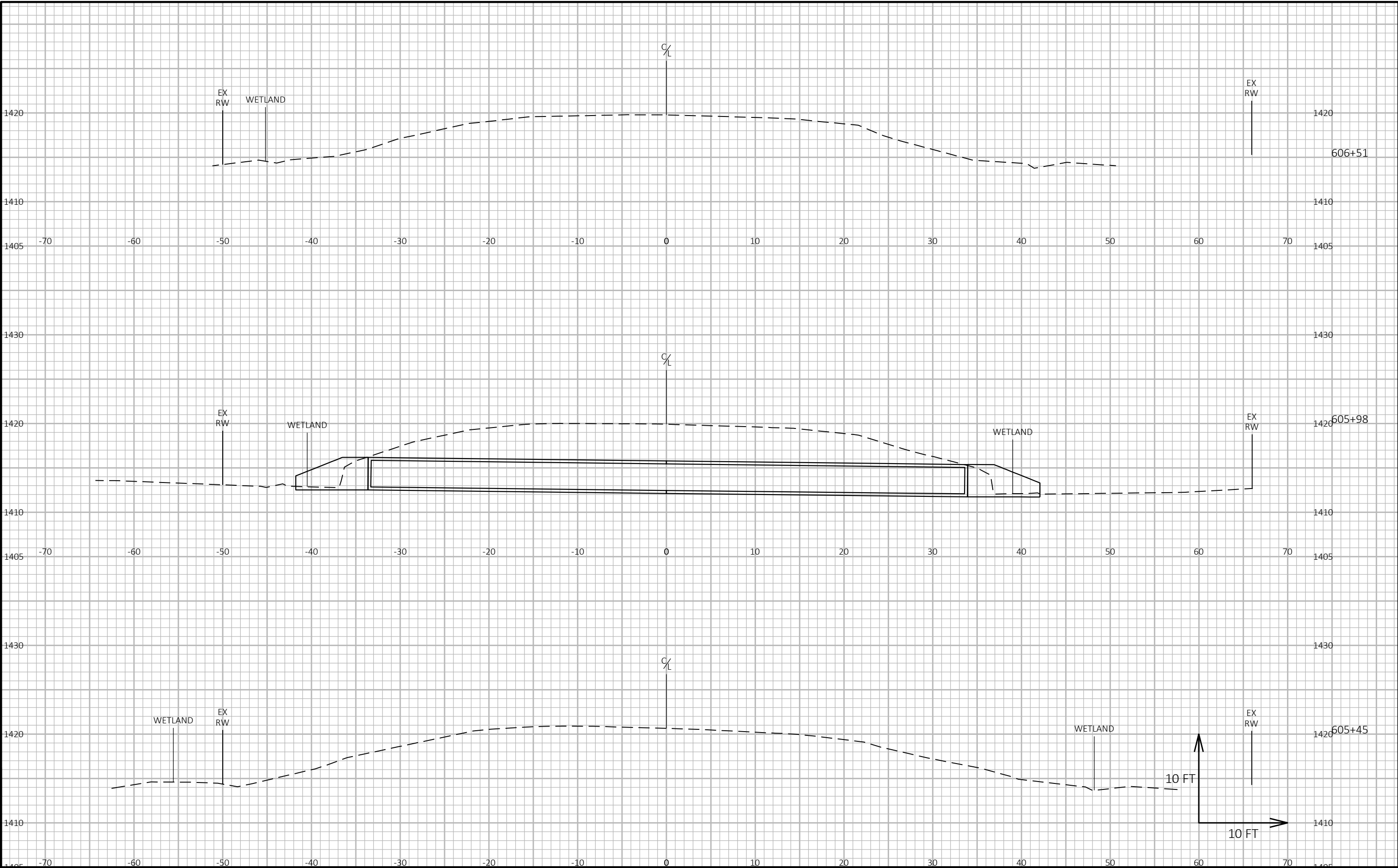
DATE 1/10/2024 PLATE NO. W20-7A.6



9

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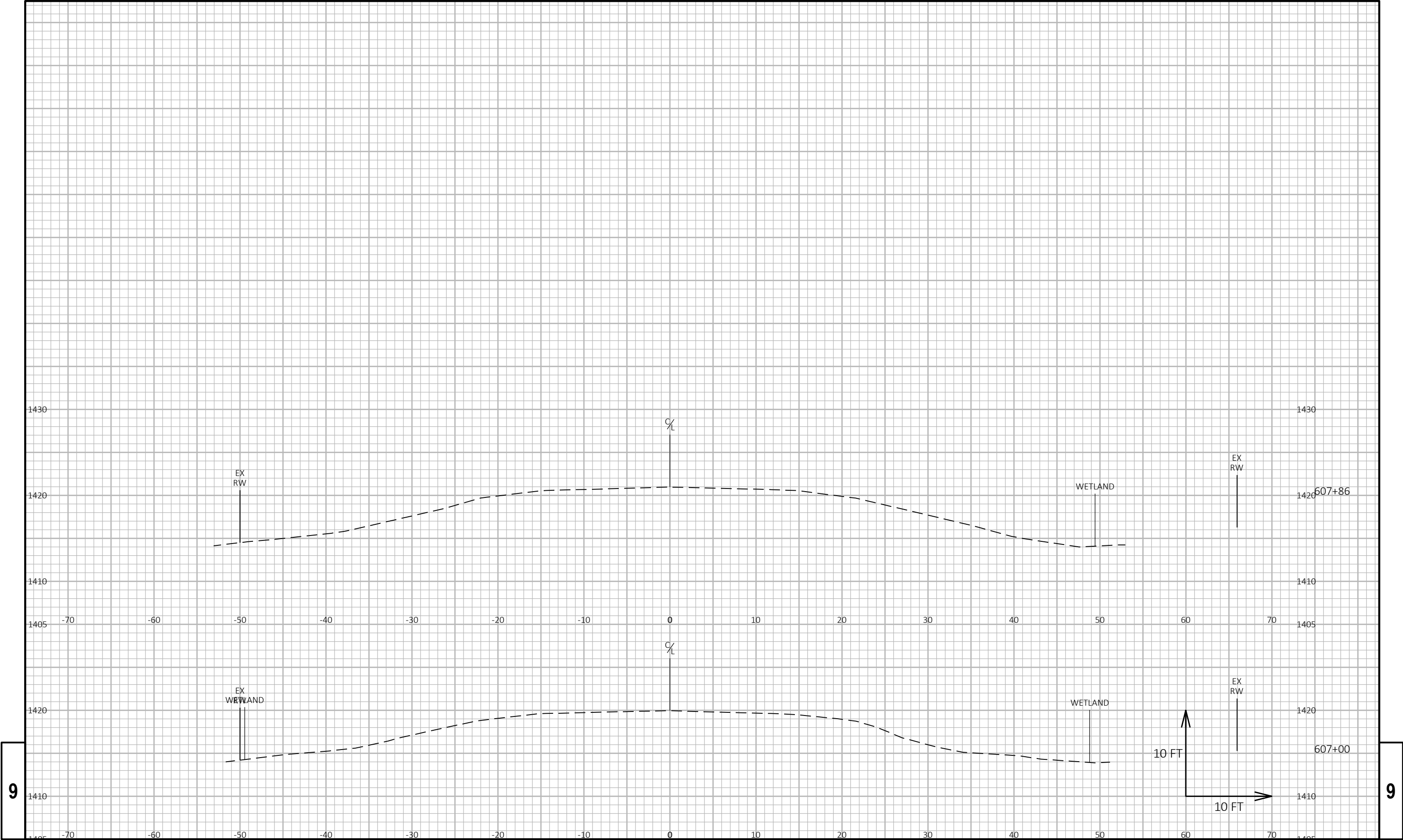
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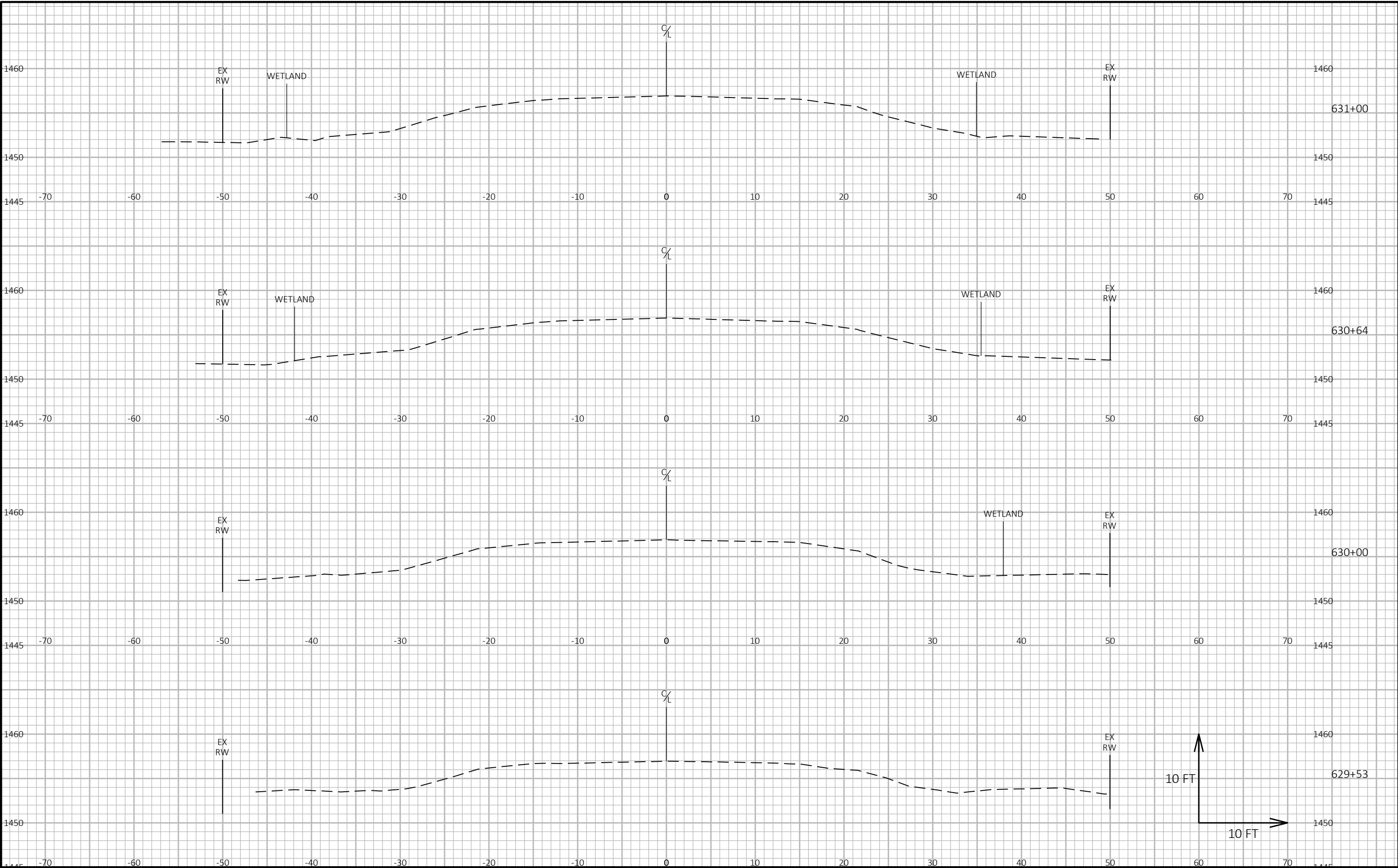
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PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 64	SHEET E
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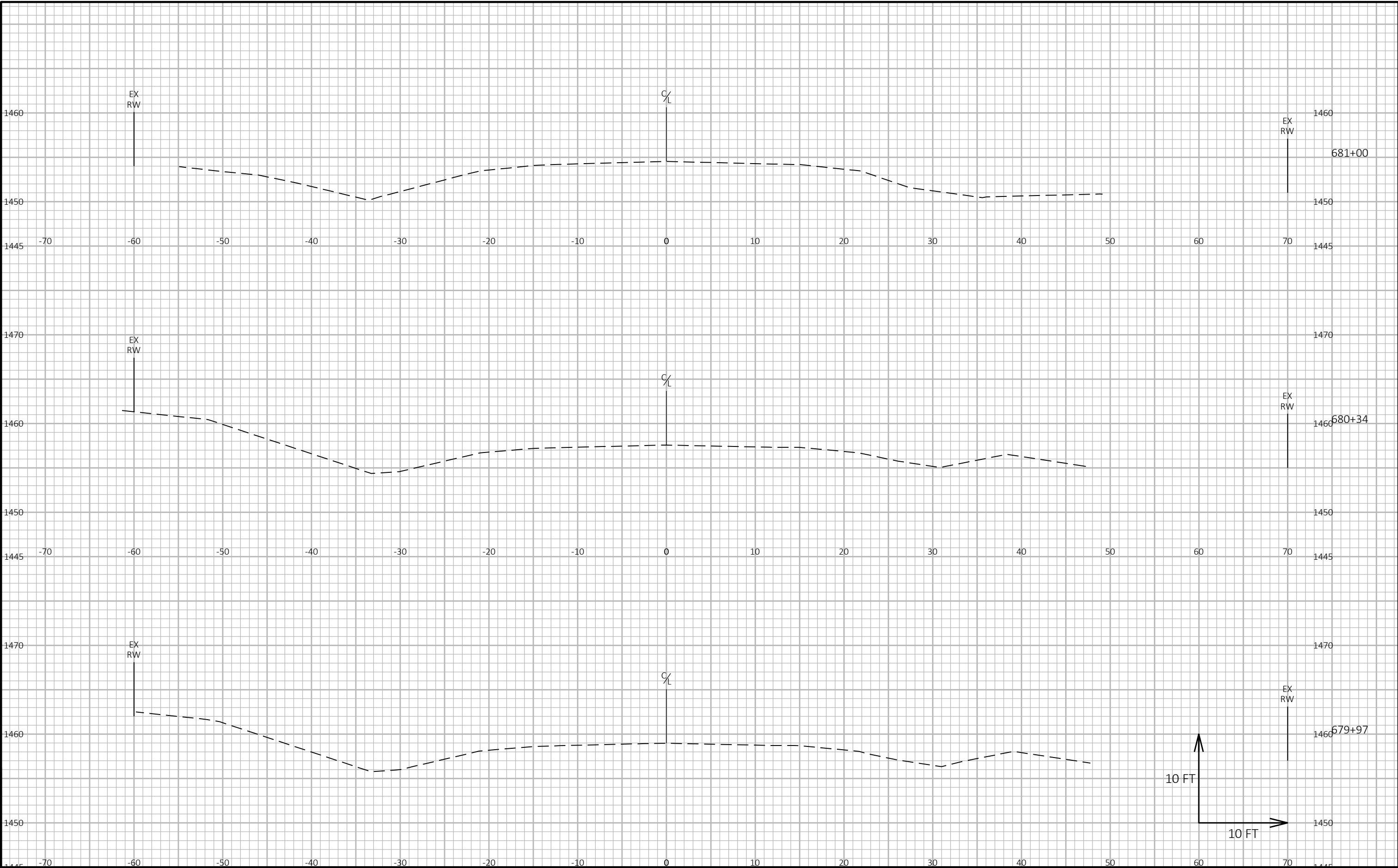
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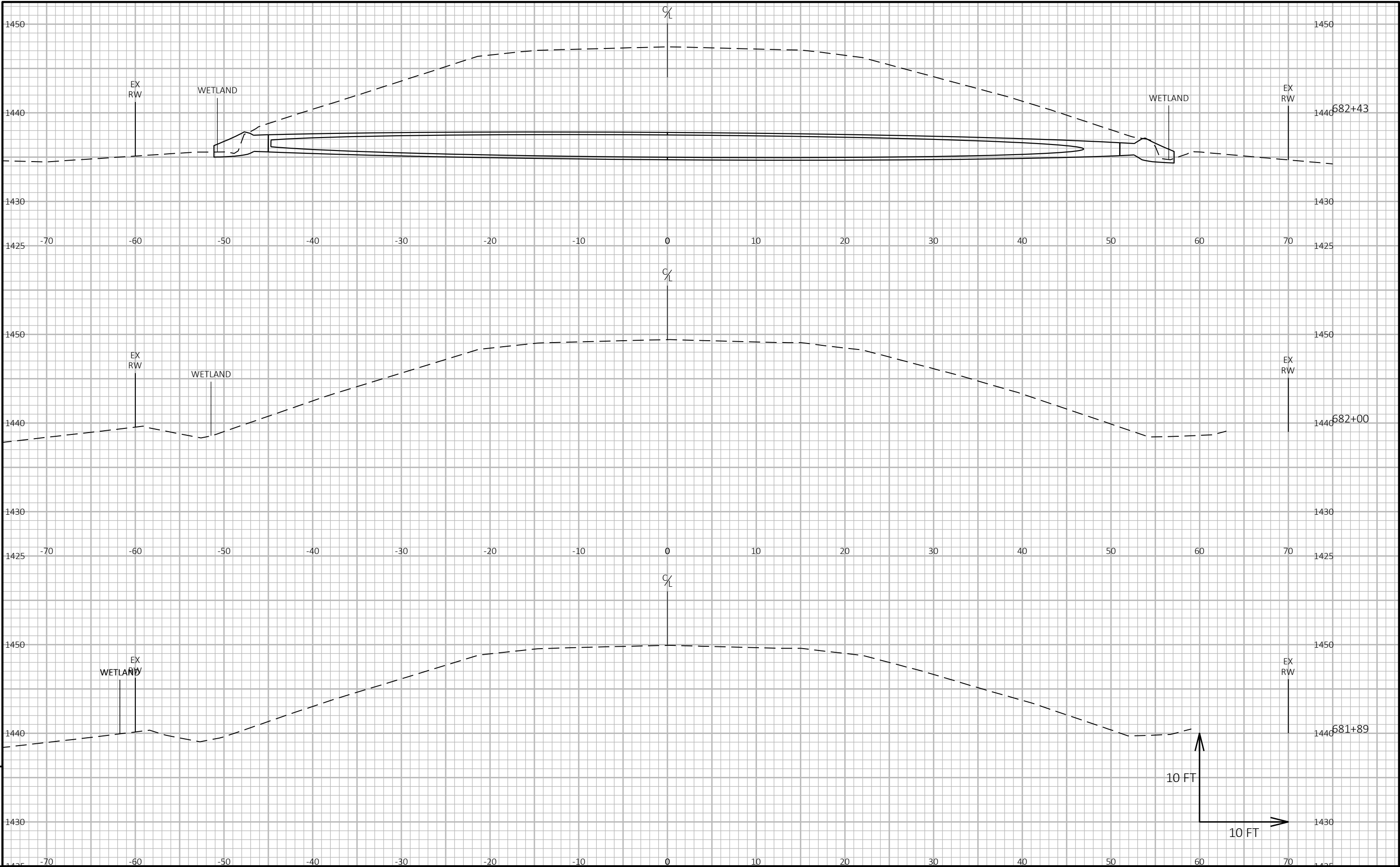
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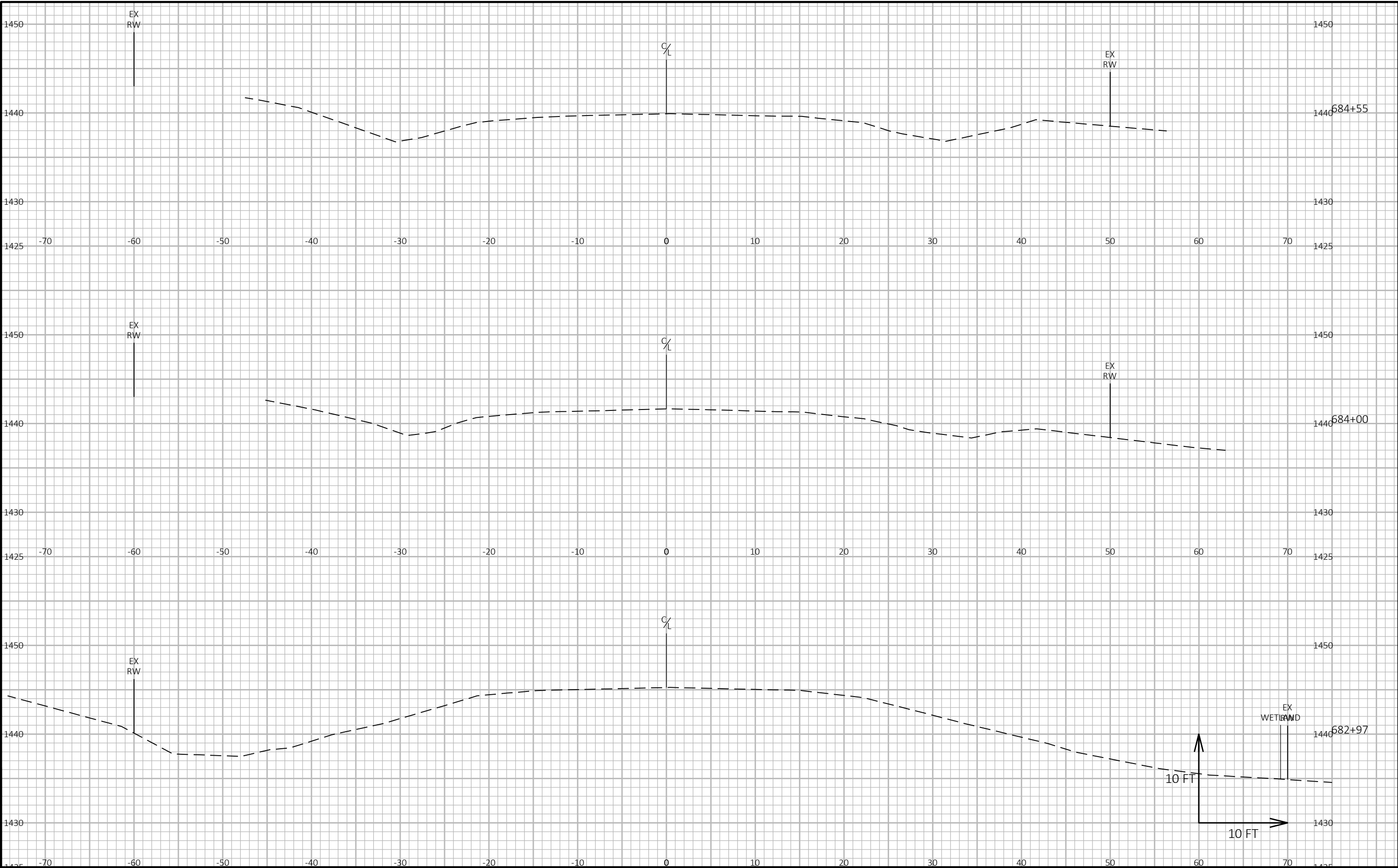
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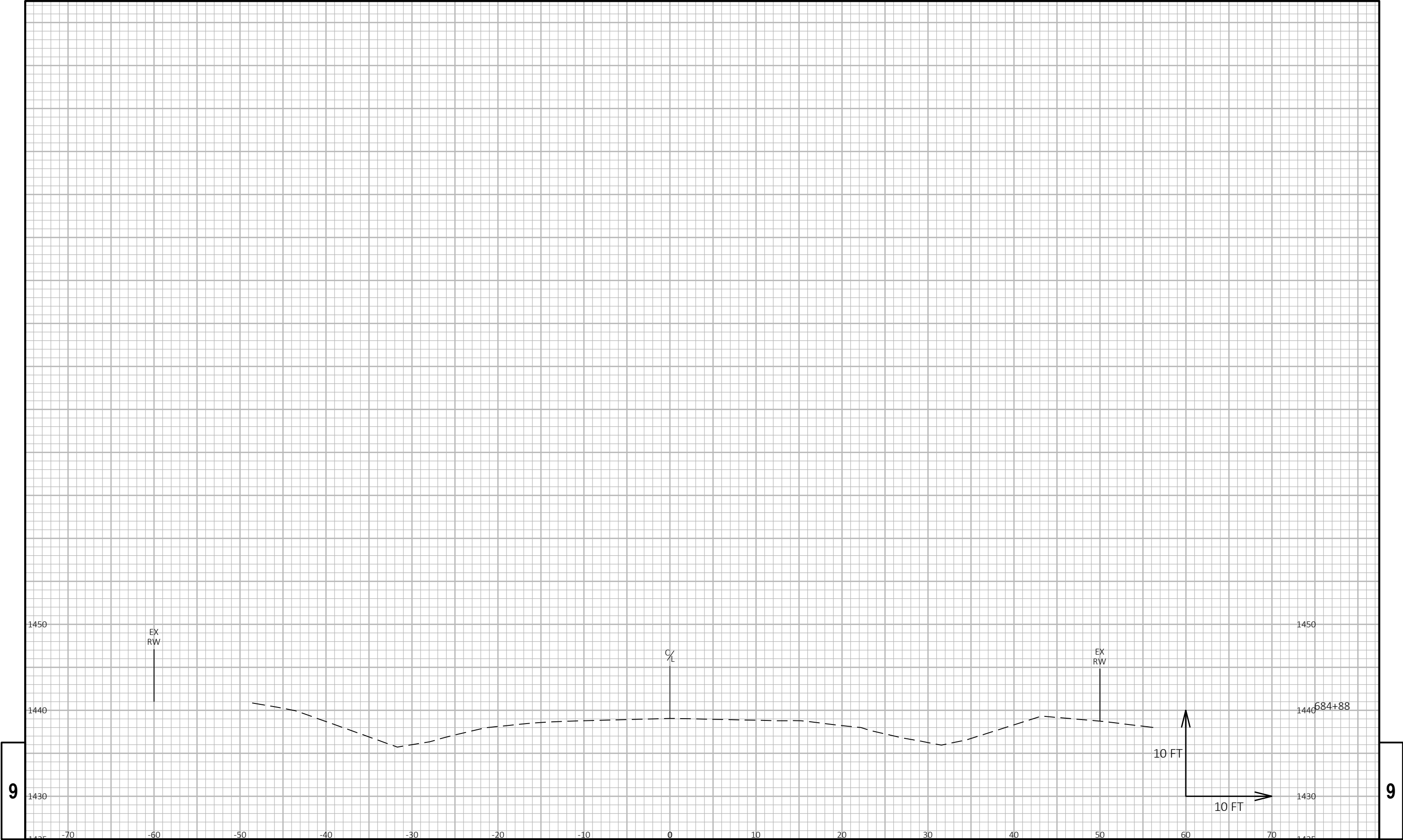
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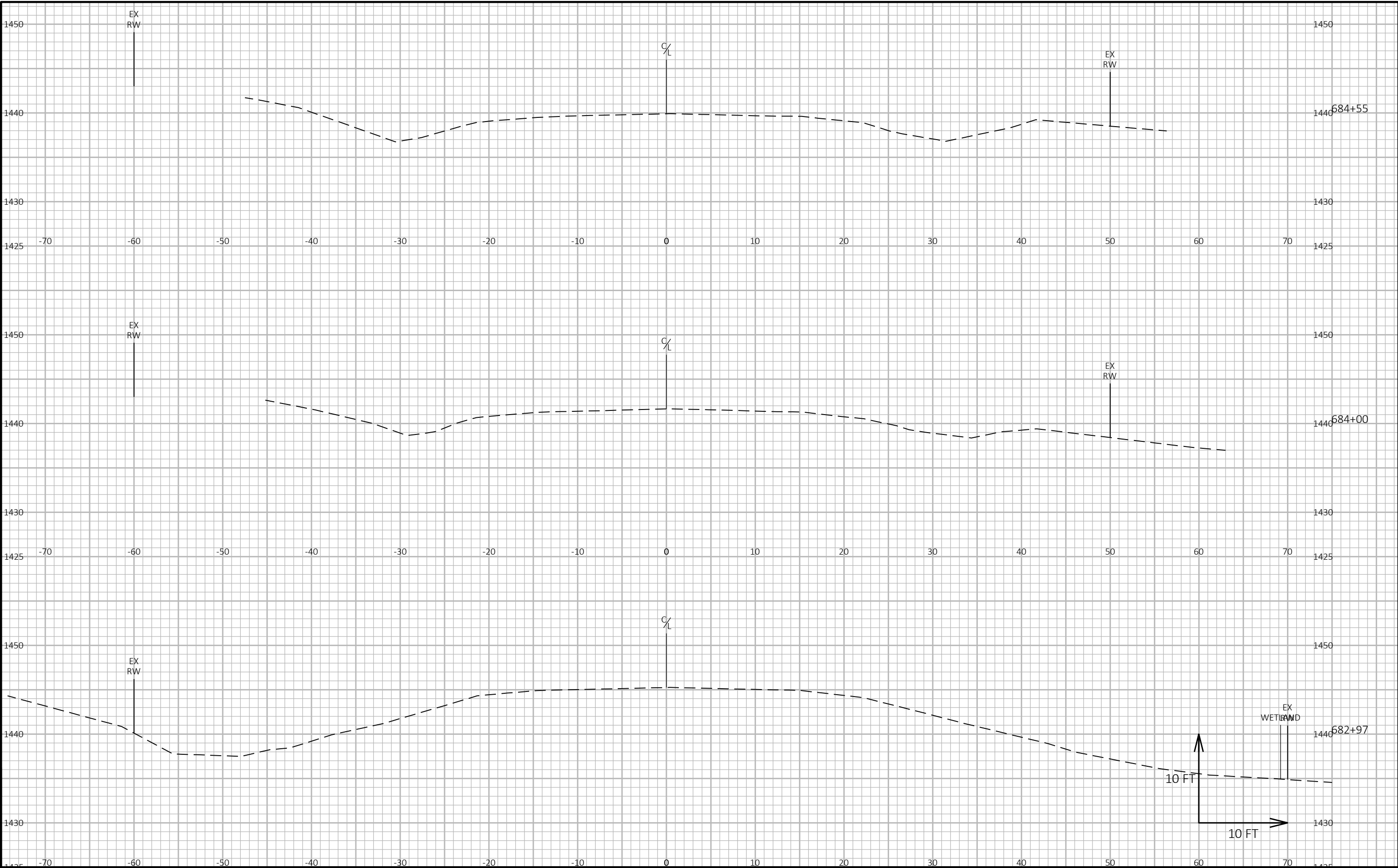
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PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 68	SHEET E
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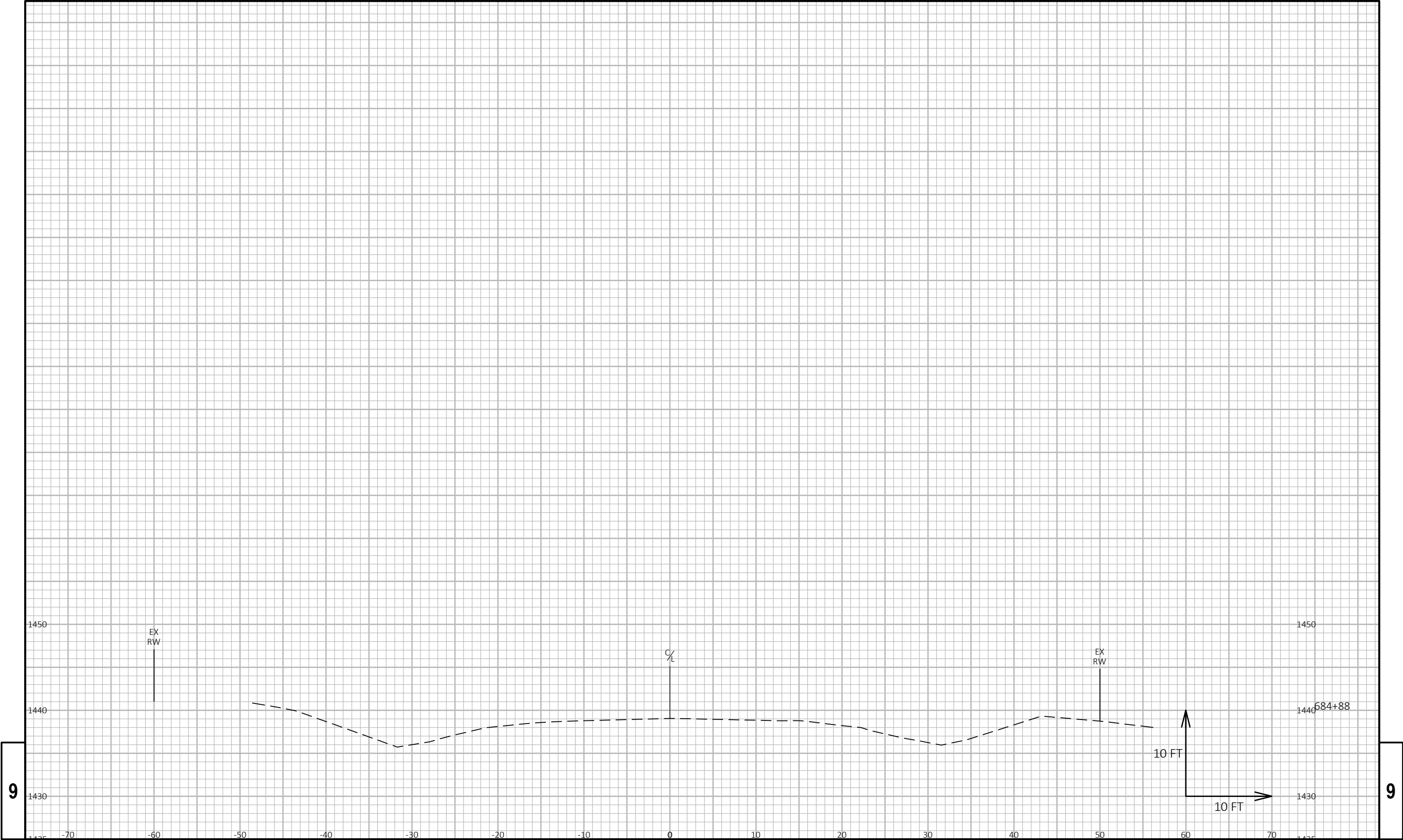
PROJECT NO:	9100-05-72	HWY:	STH 70	COUNTY:	FLORENCE	CROSS SECTIONS:	CULVERT 68	SHEET	E
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9

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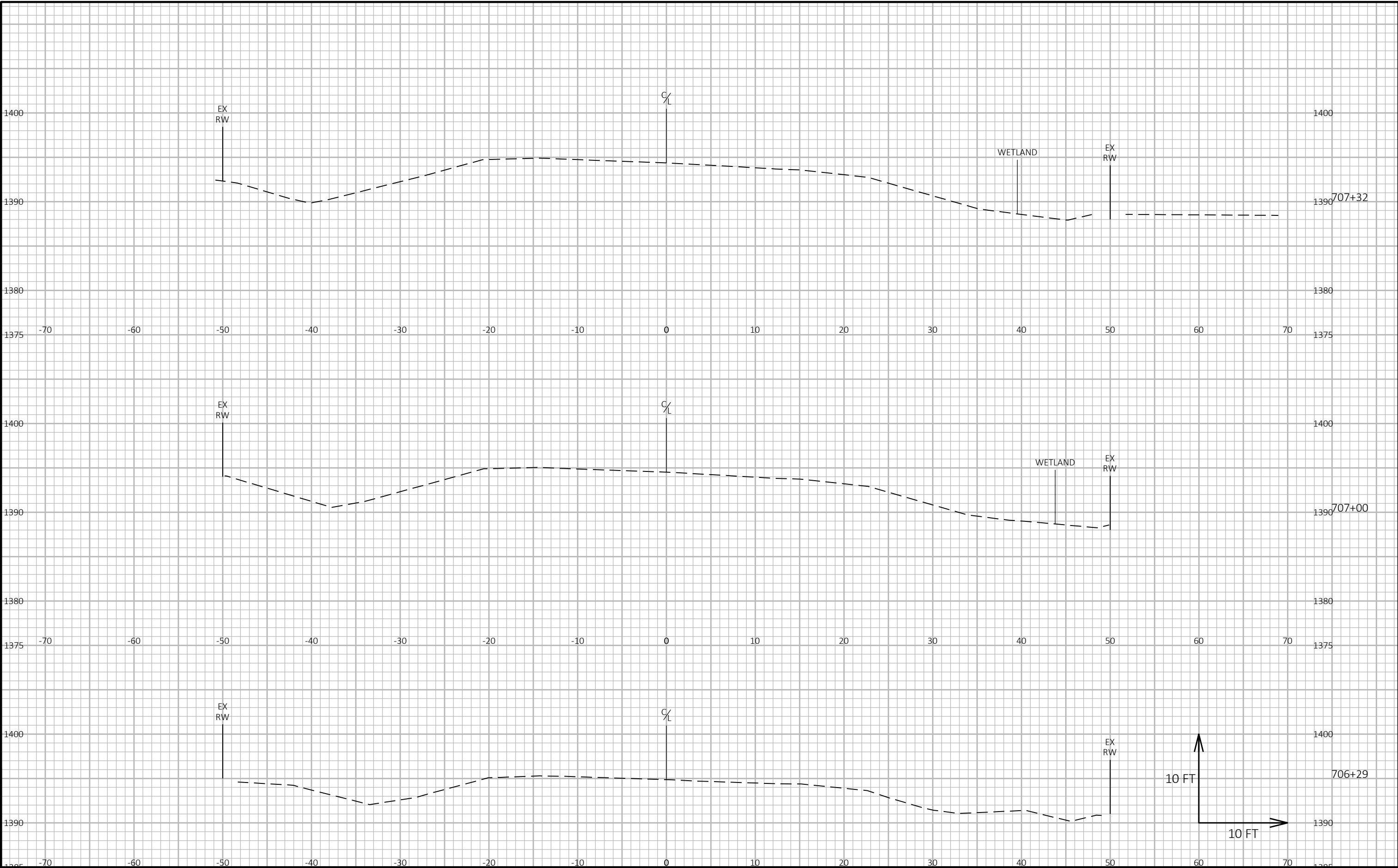
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9

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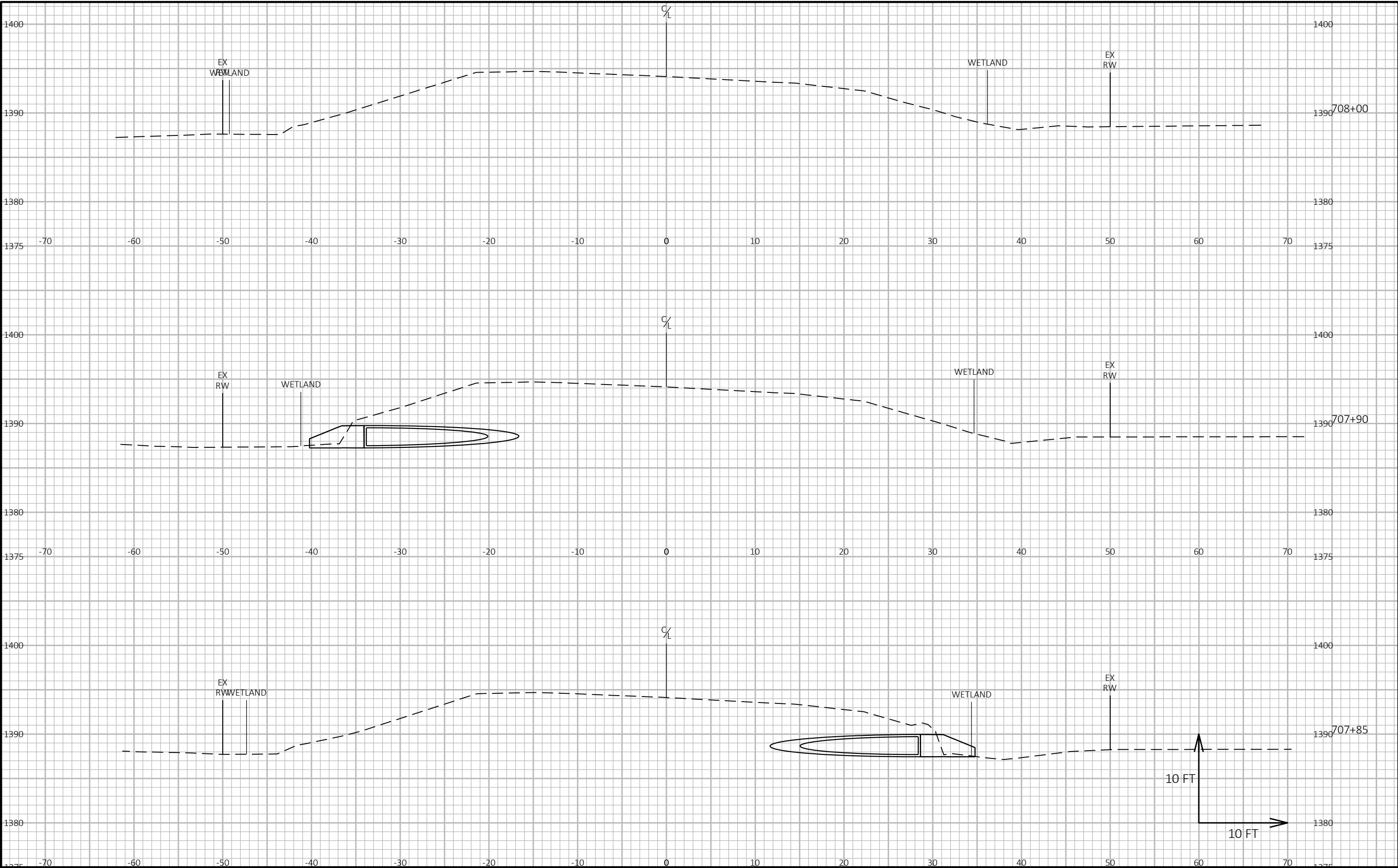
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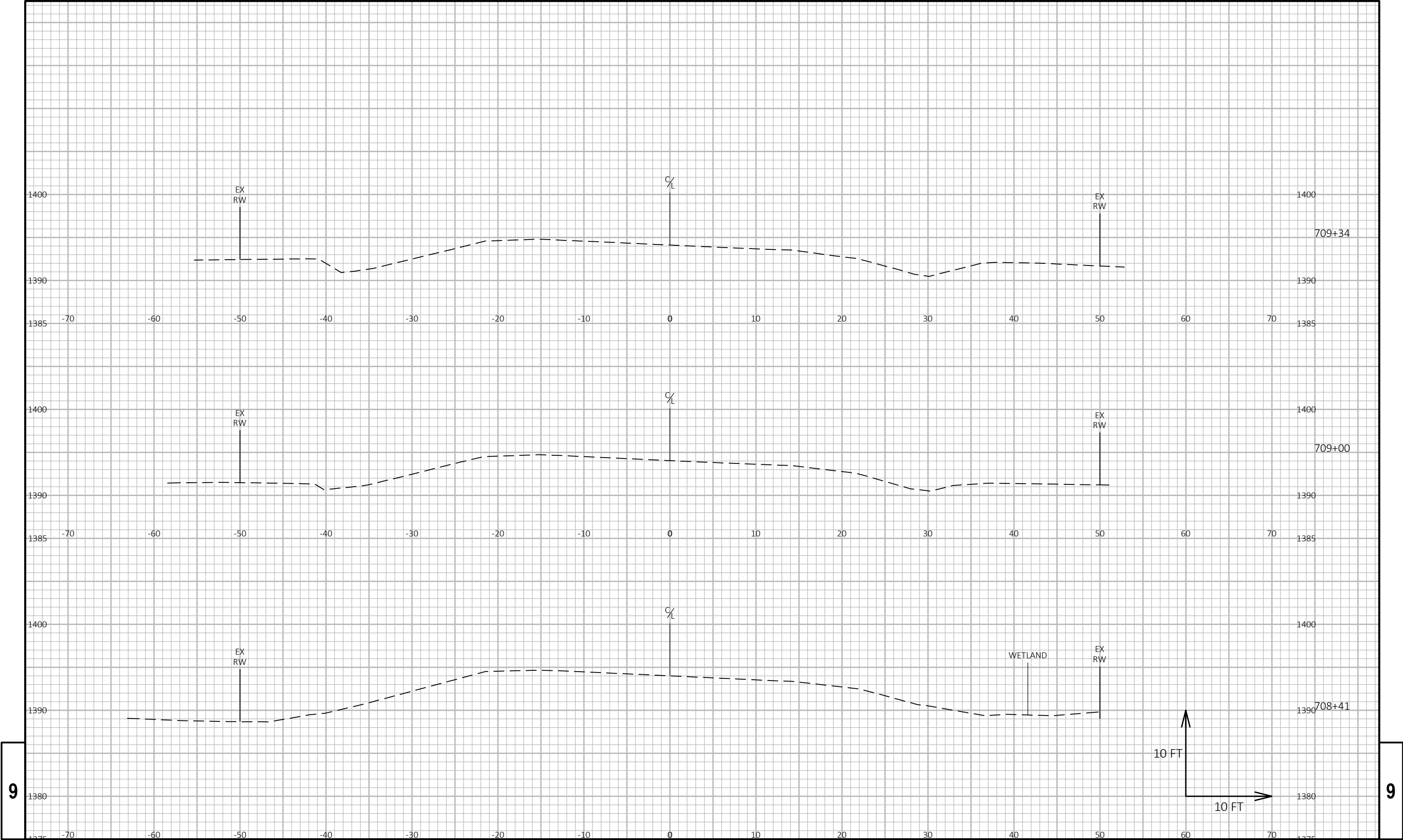
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9

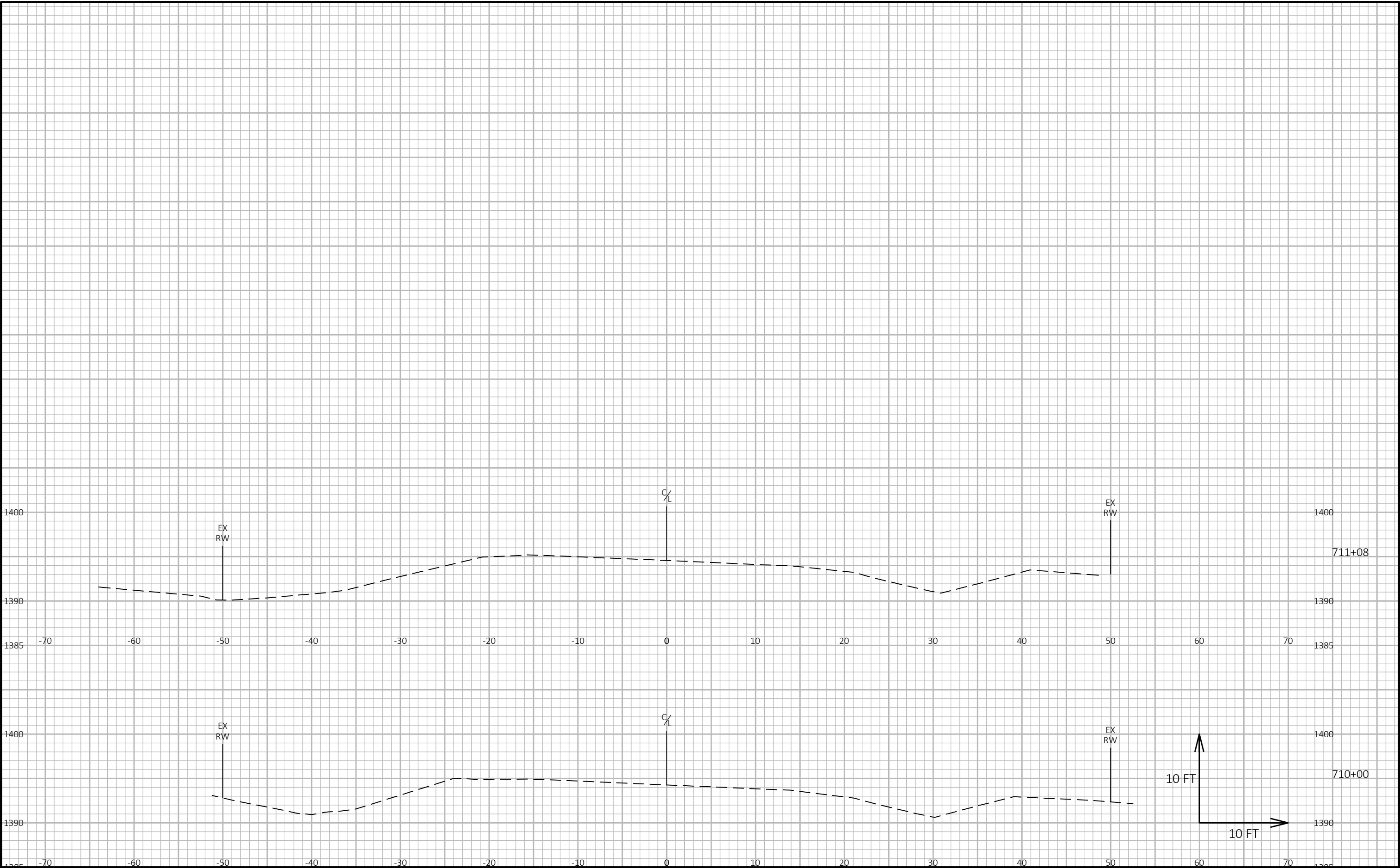
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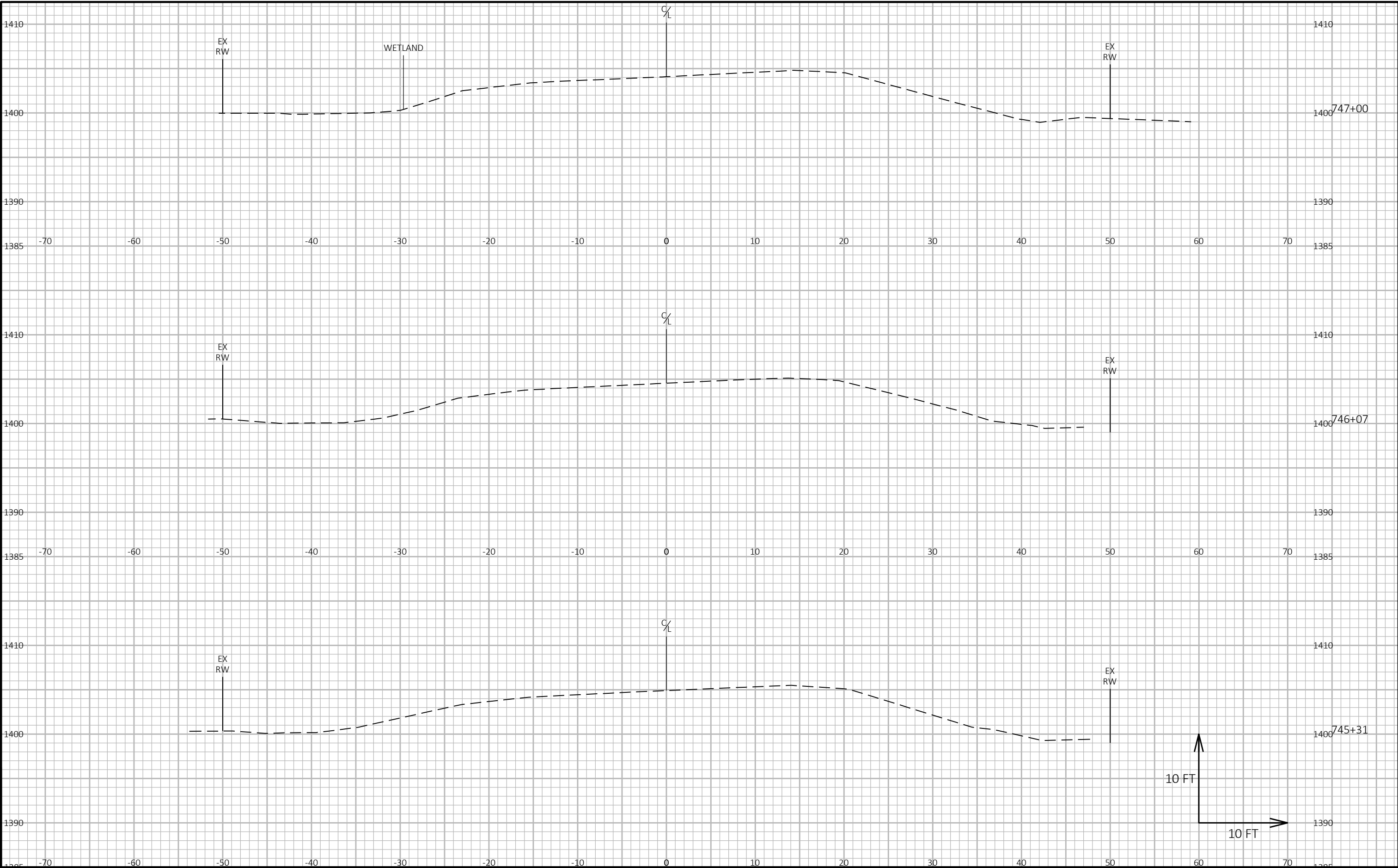
PROJECT NO:	9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS:	CULVERT 69	SHEET	E
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9

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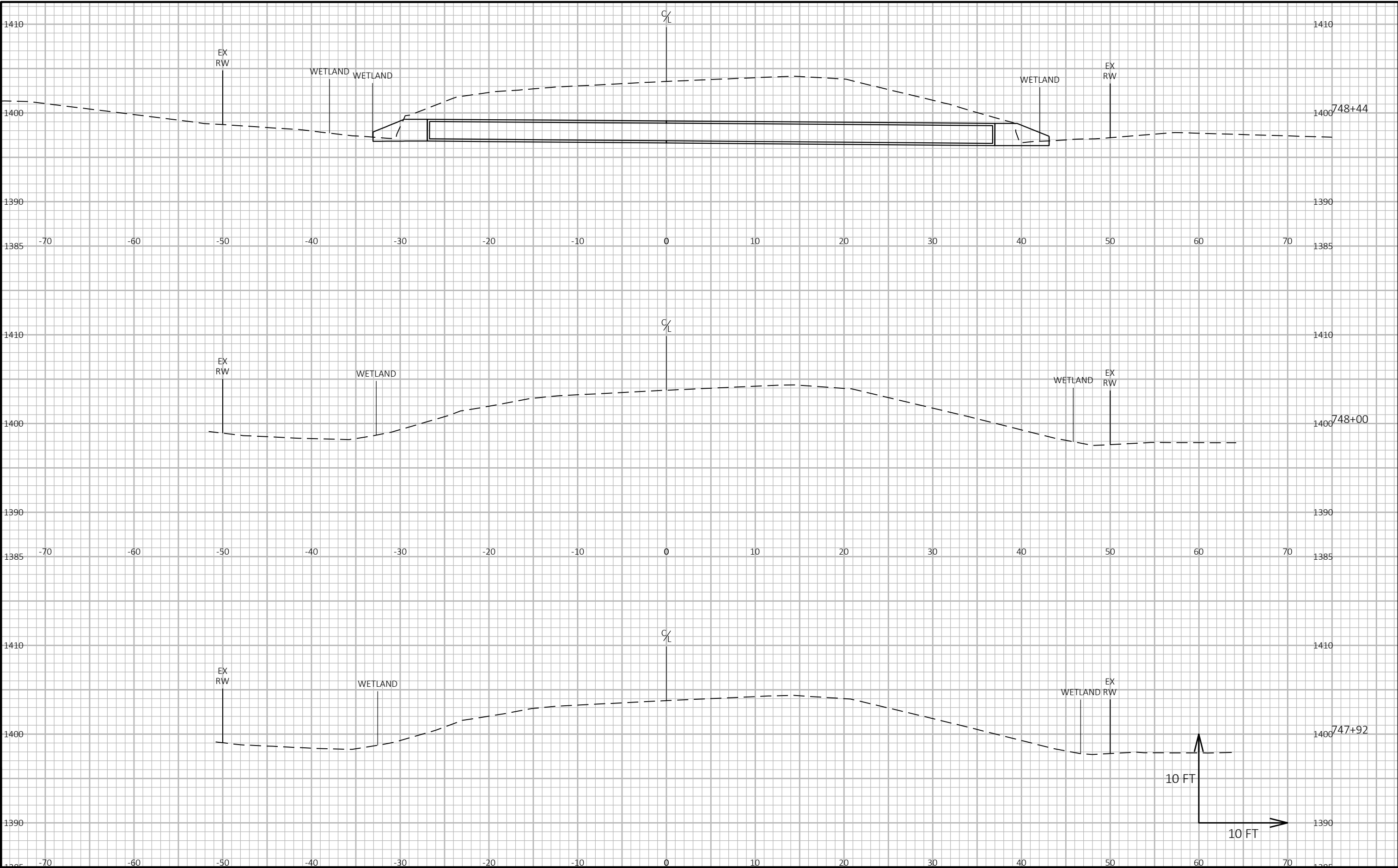




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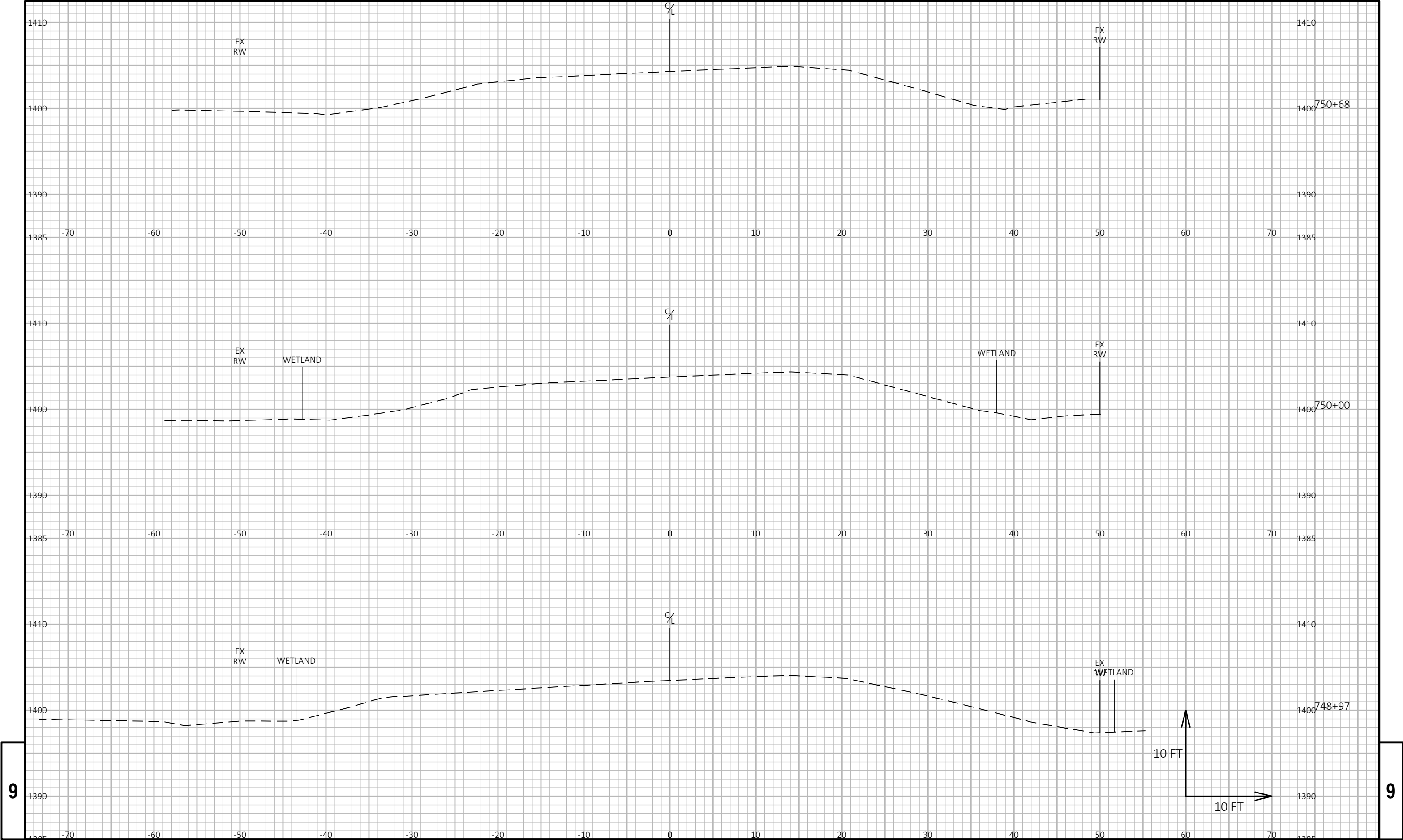
PROJECT NO:	9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 71	SHEET	E
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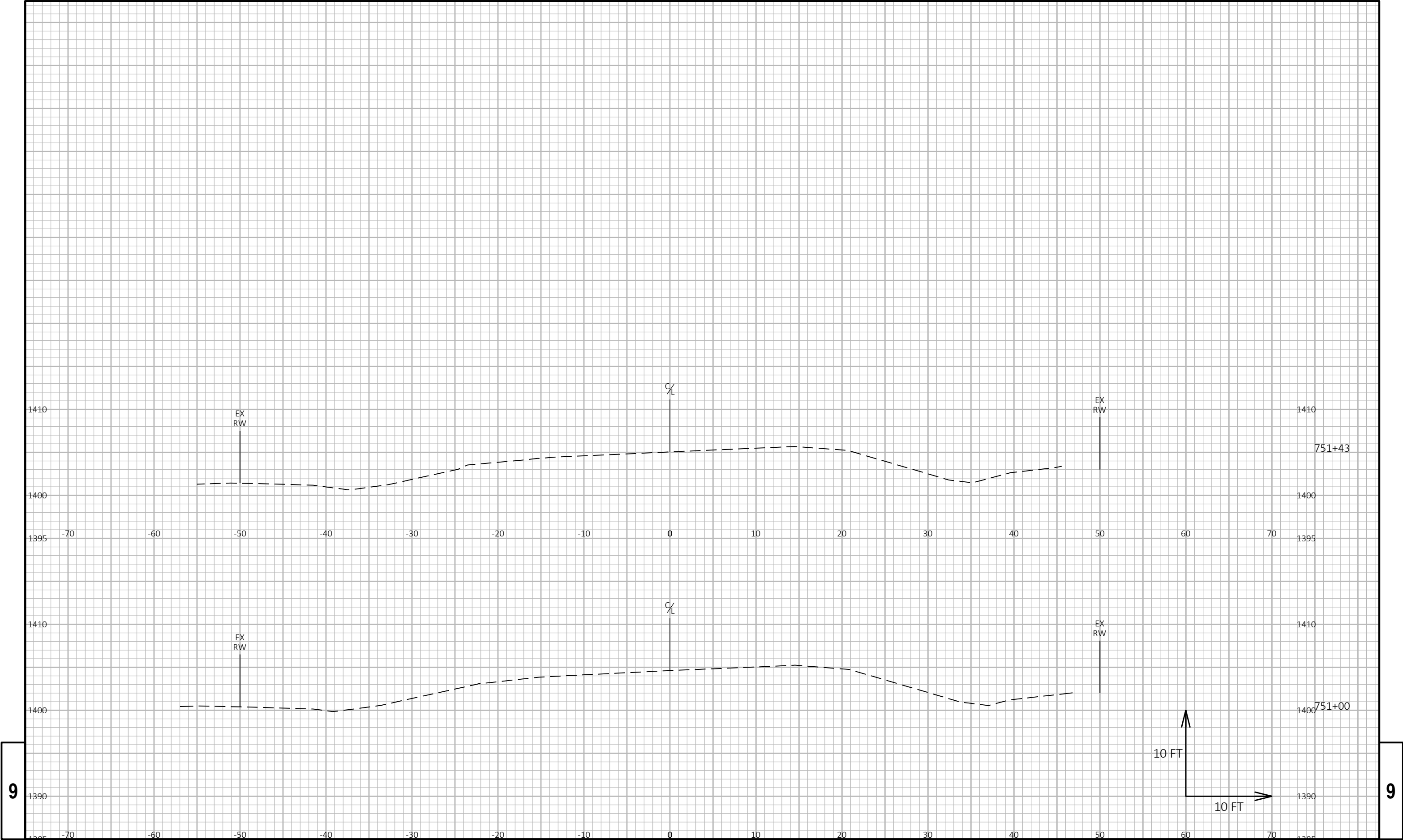
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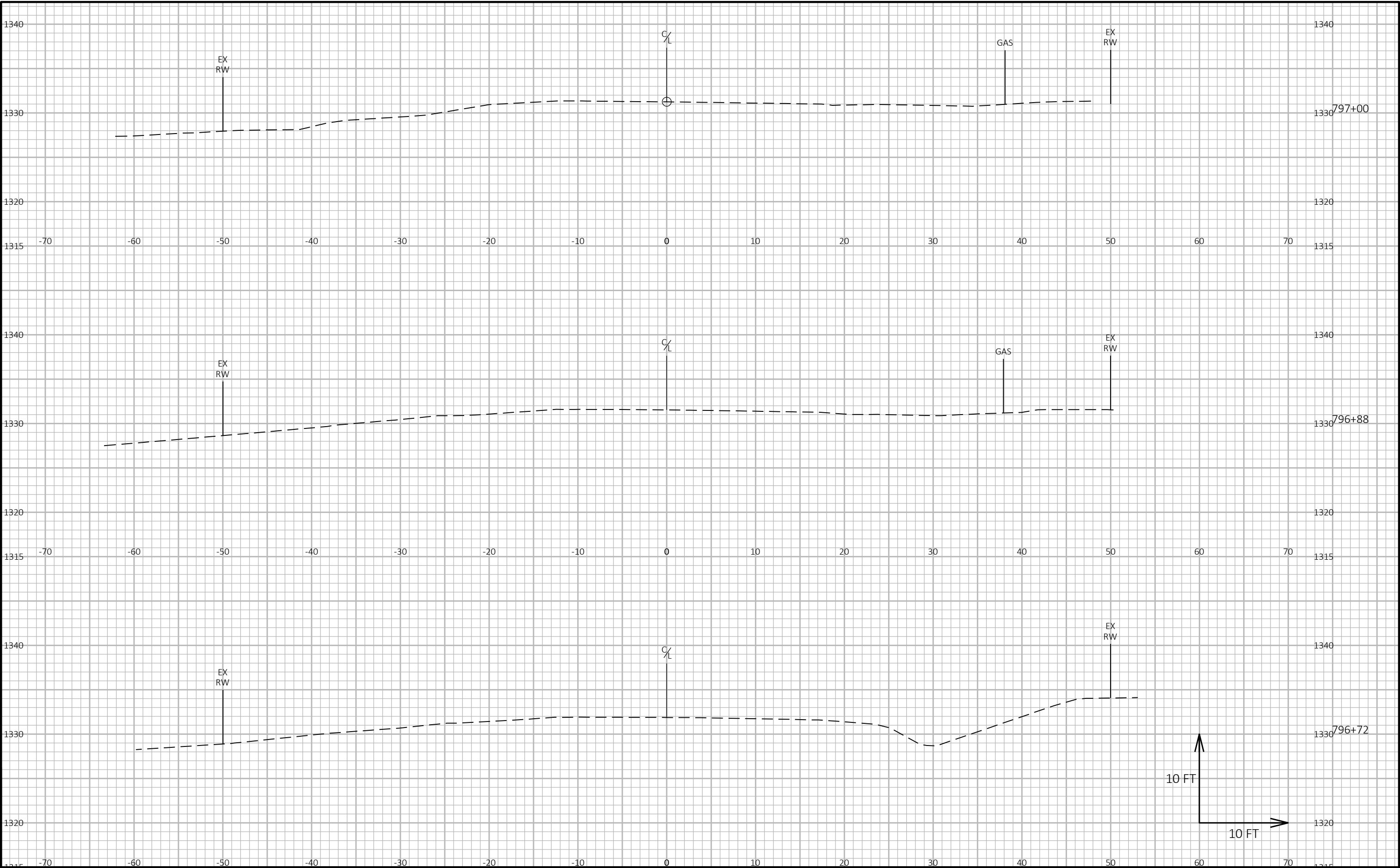
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PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 71	SHEET E
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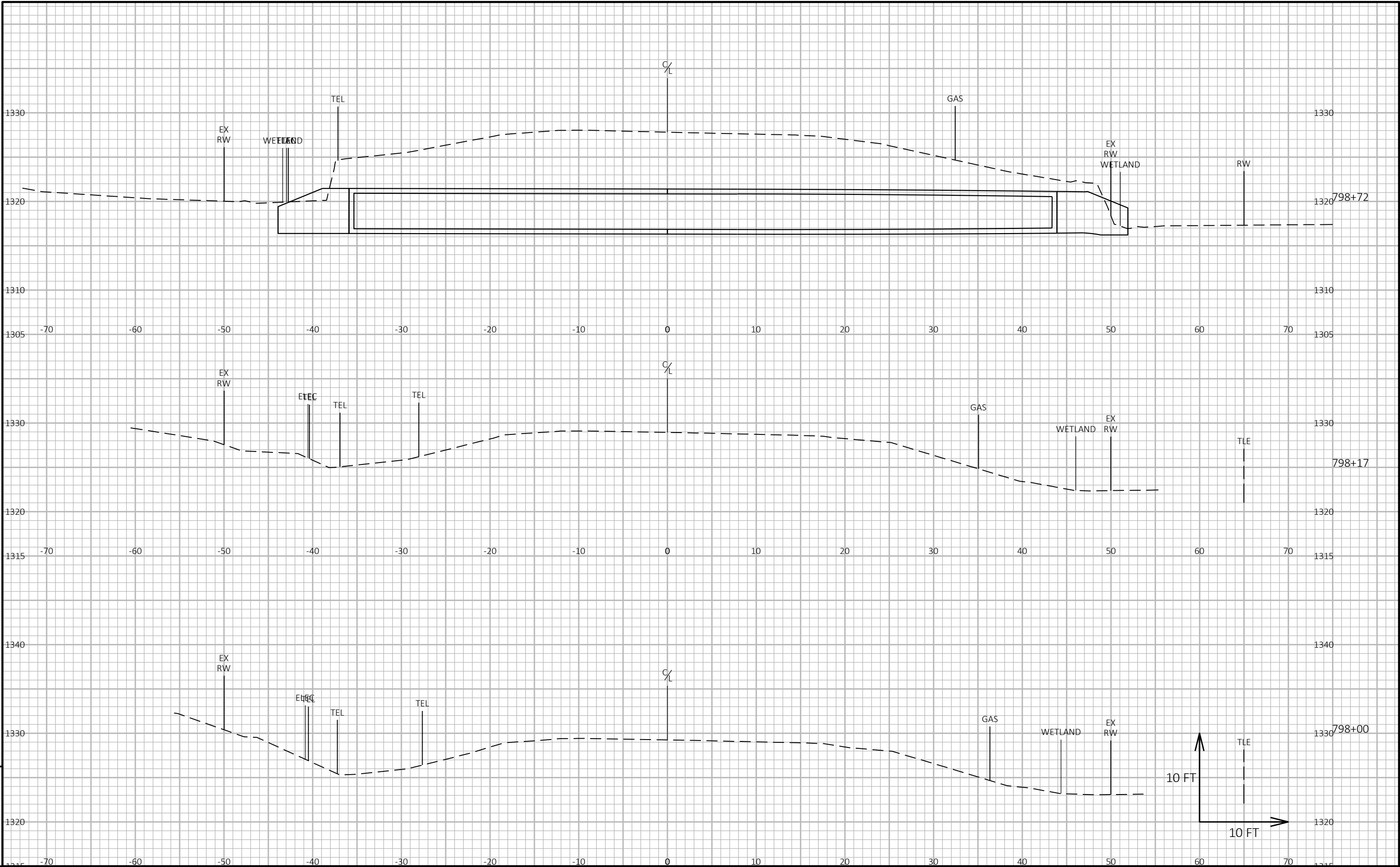
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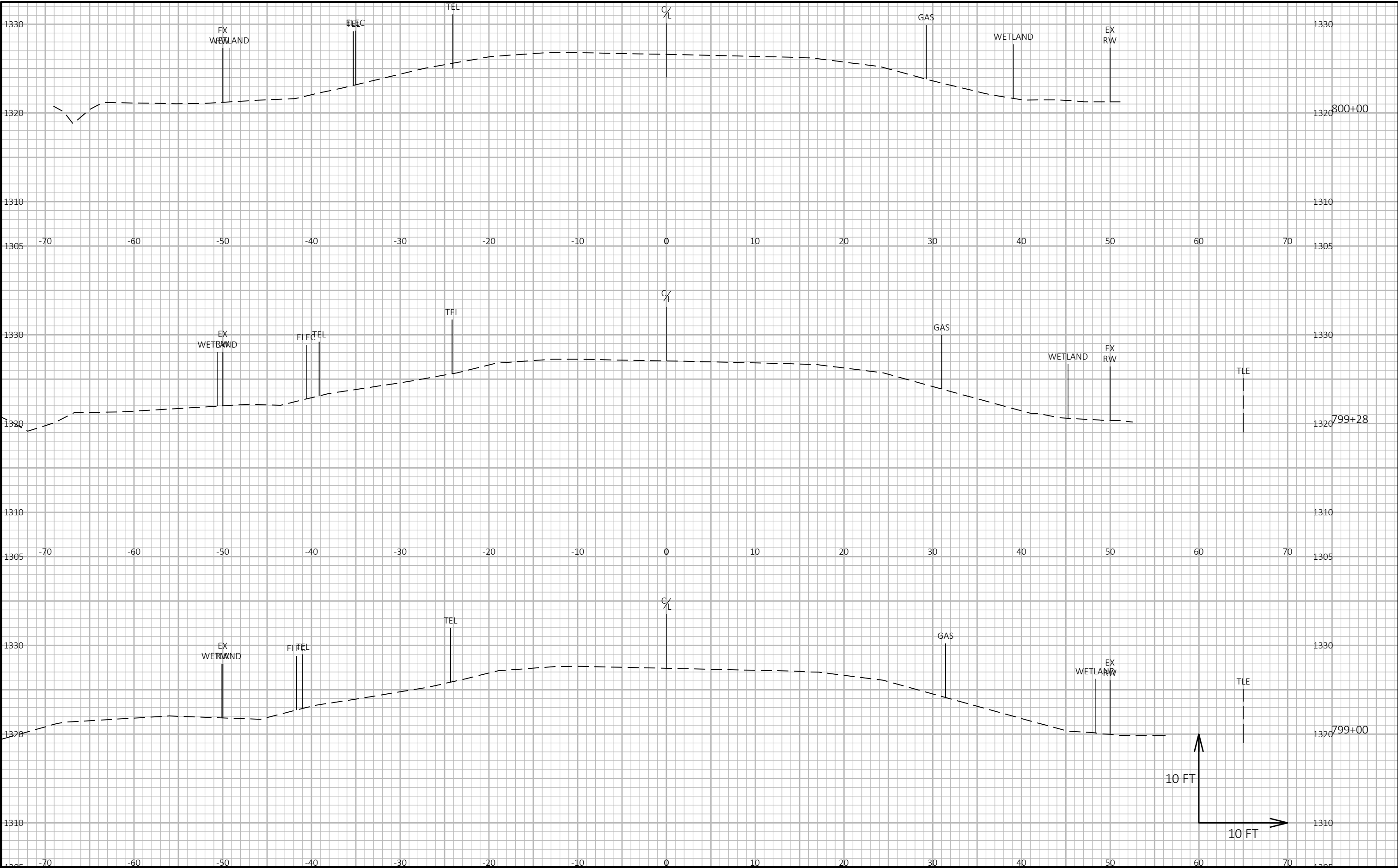
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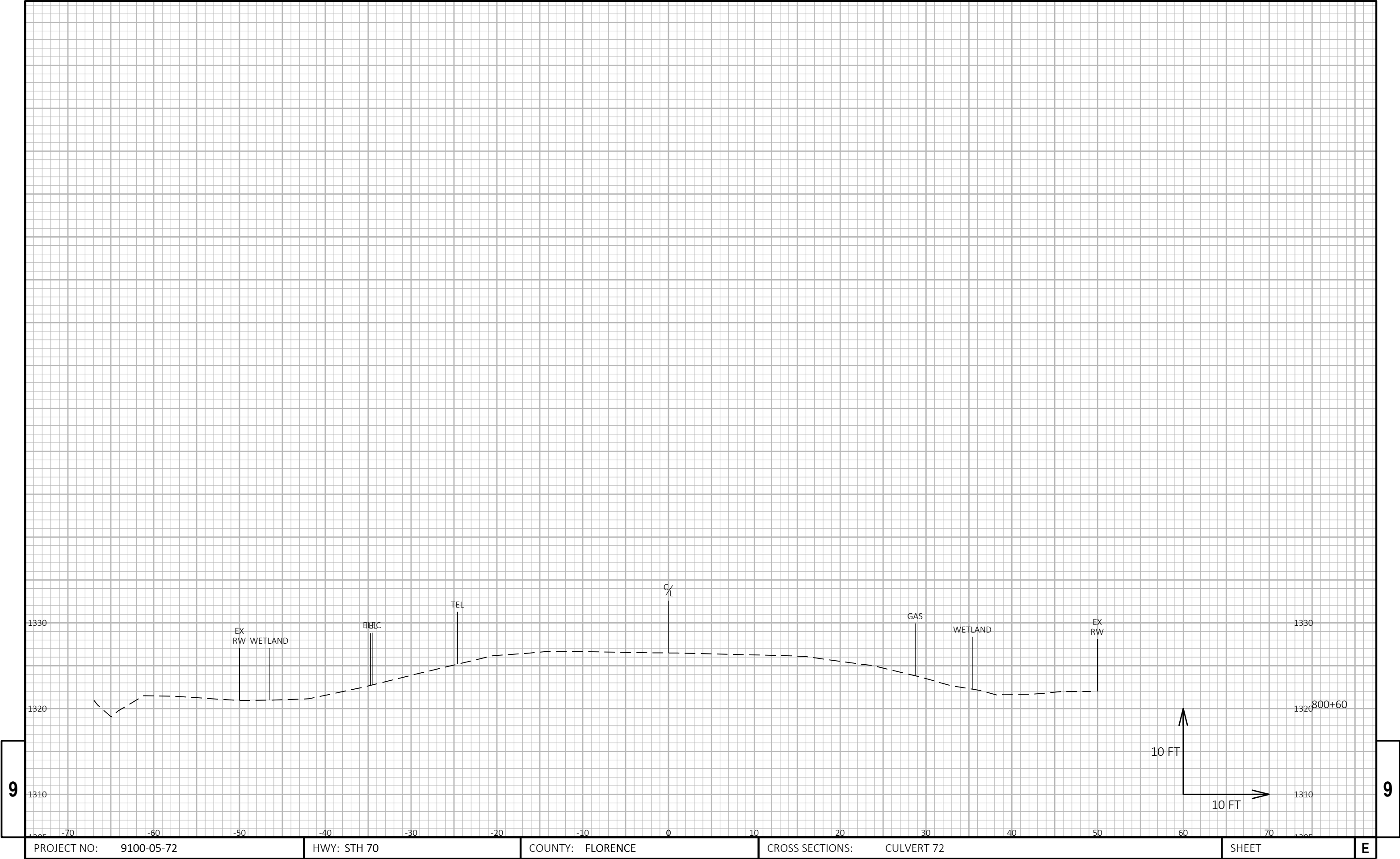
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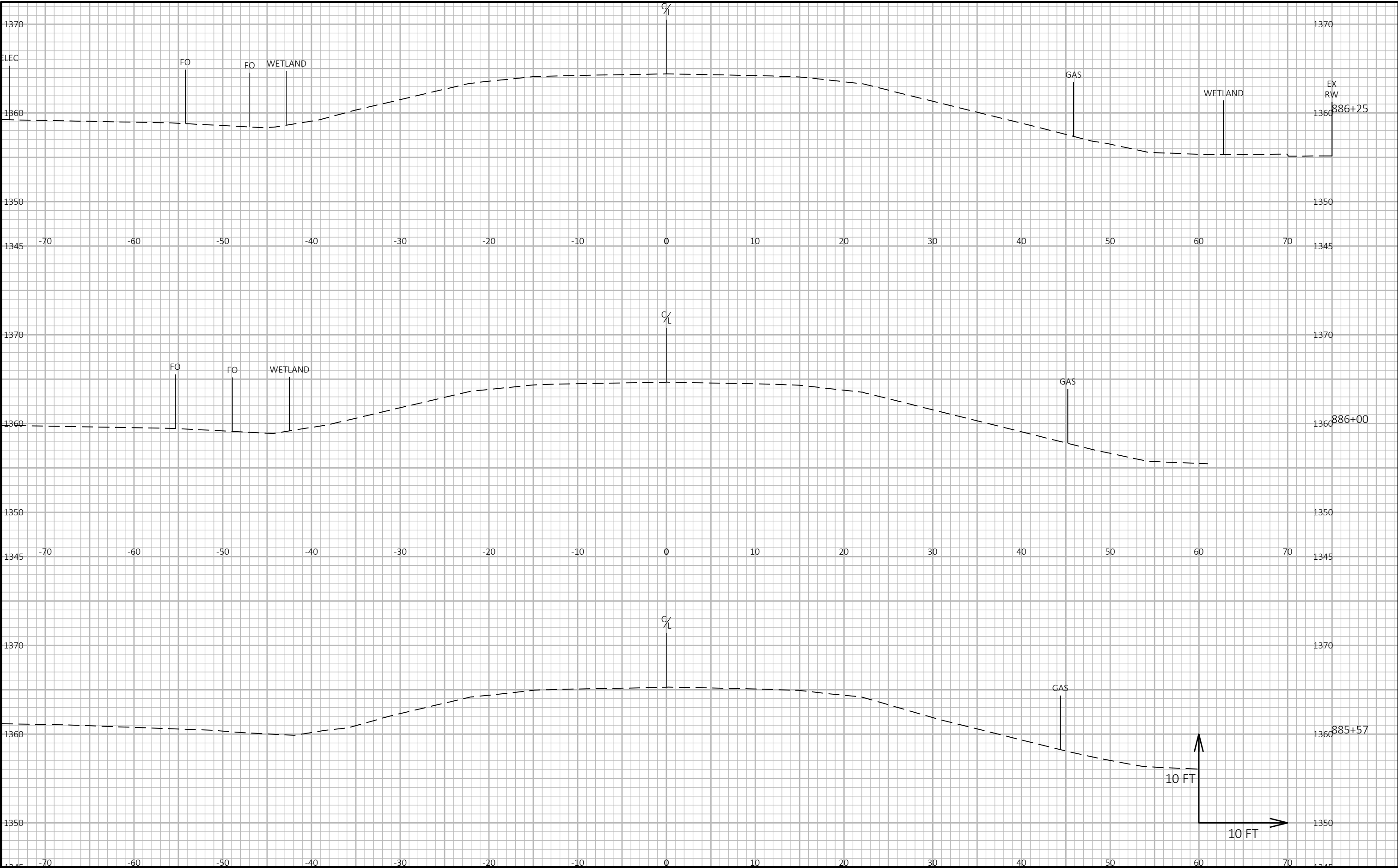
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PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 72	SHEET E
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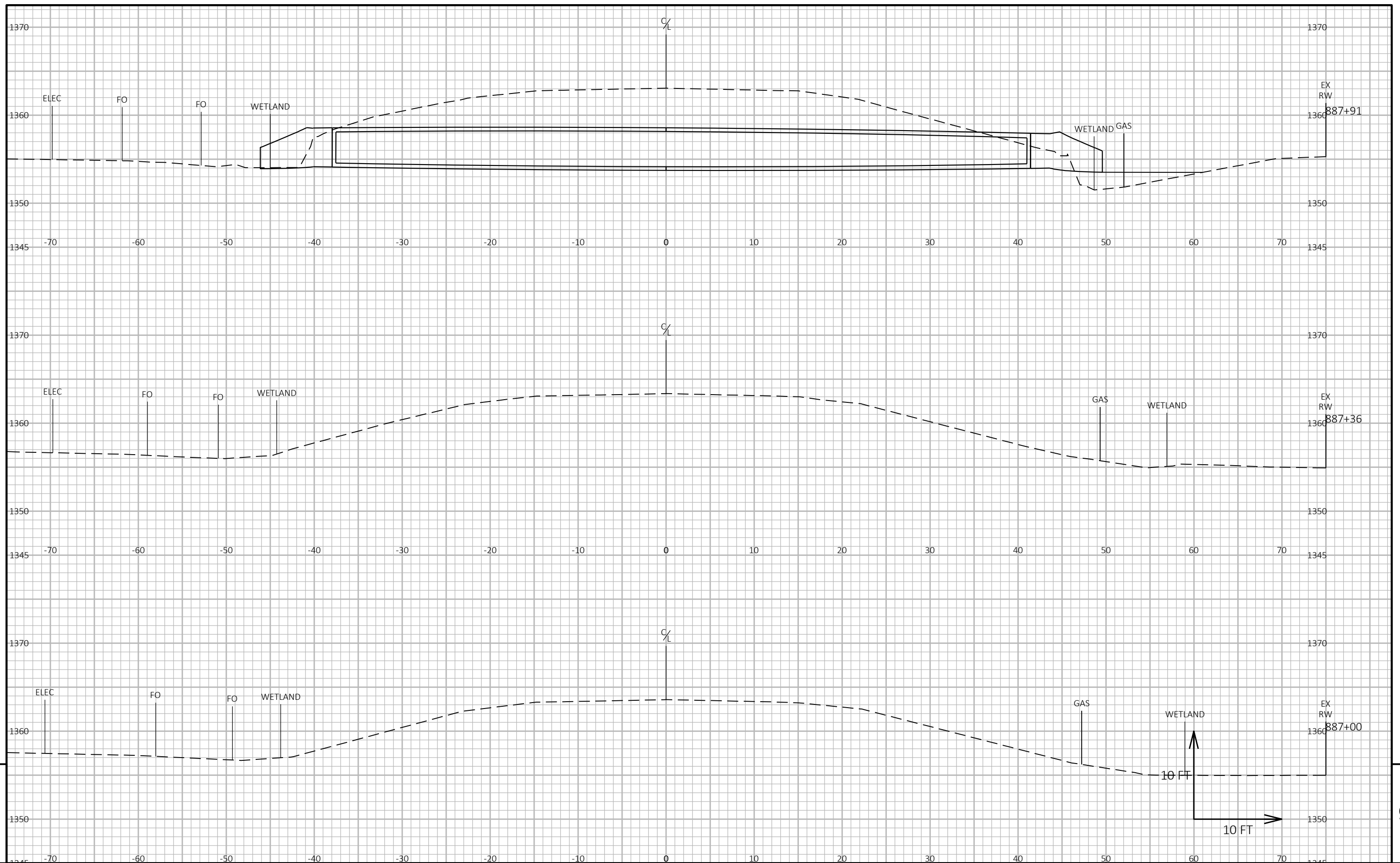
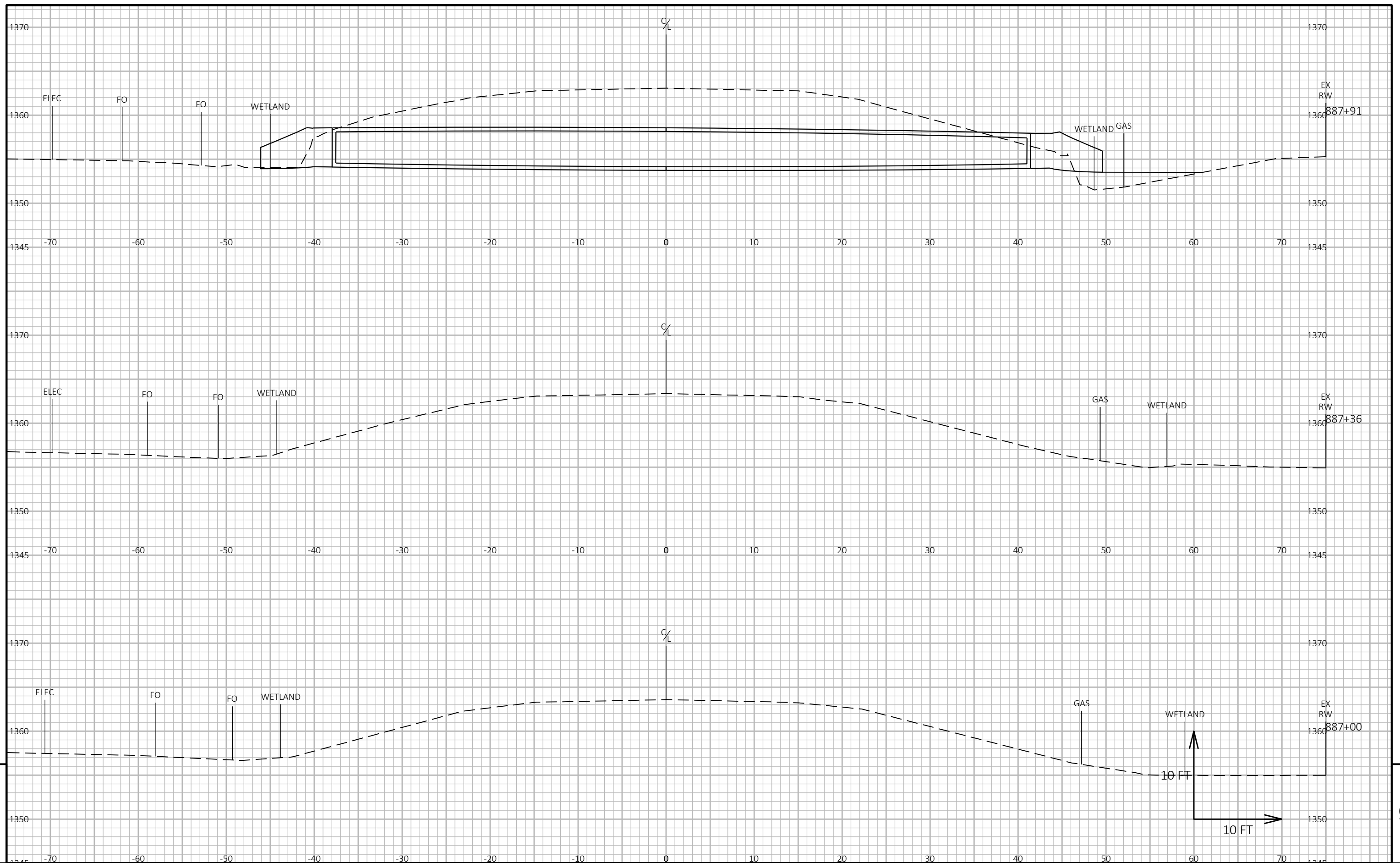
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PROJECT NO:	9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS:	CULVERT 76	SHEET	E
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PROJECT NO:	9100-05-72
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HWY: STH 70

COUNTY: FLORENCE

CROSS SECTIONS: CULVERT 76

SHEET

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FILE NAME : Y:\MILWAUKEE\202005\20295.00\ENG_DOCS\9100-05-01-72\9100050172\SHEETSPLAN\090207-XS.DWG
LAYOUT NAME - 02

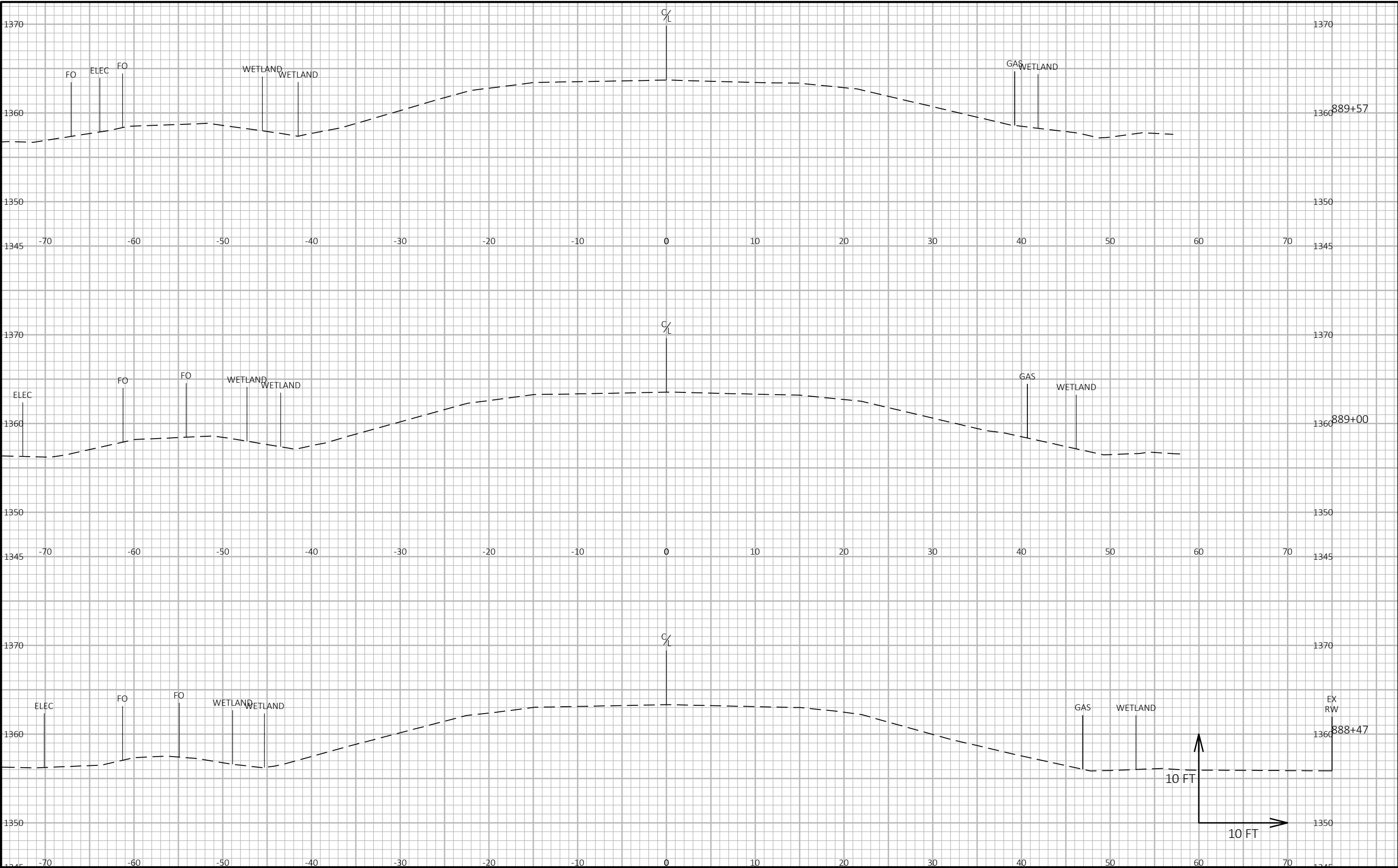
PLOT DATE : 8/25/2022 1:01 PM

PLOT BY : CLEGG, HEATHER

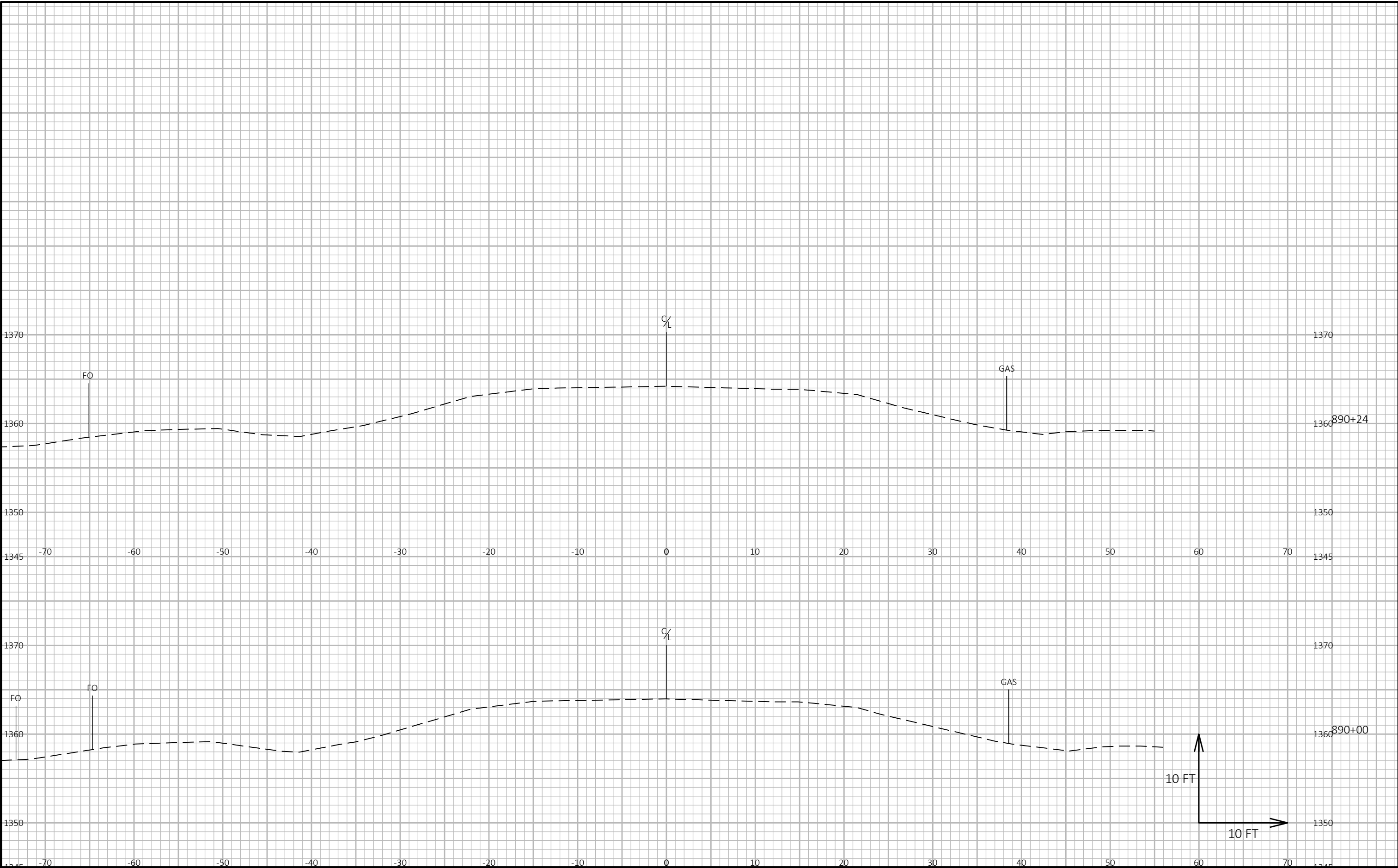
PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



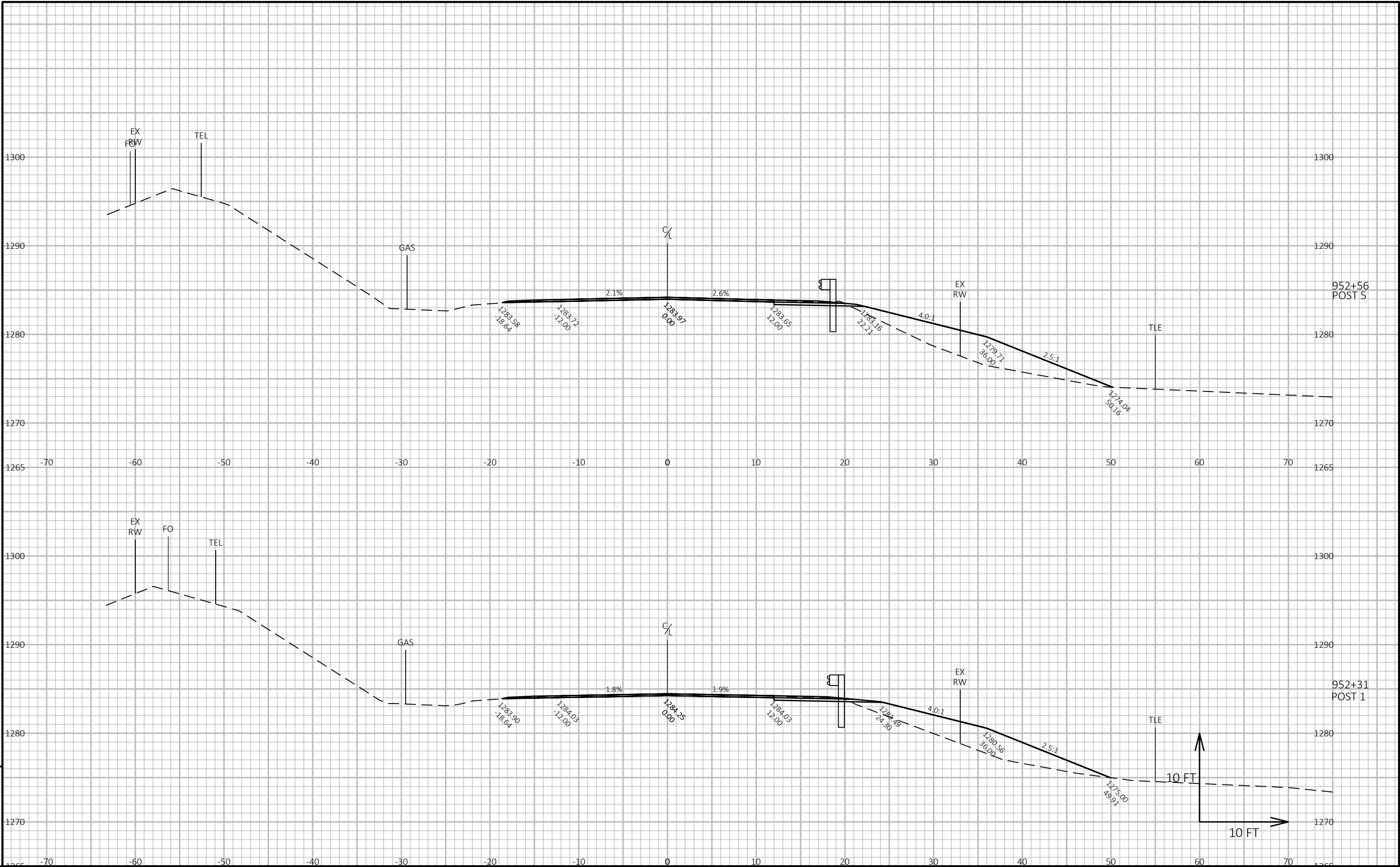
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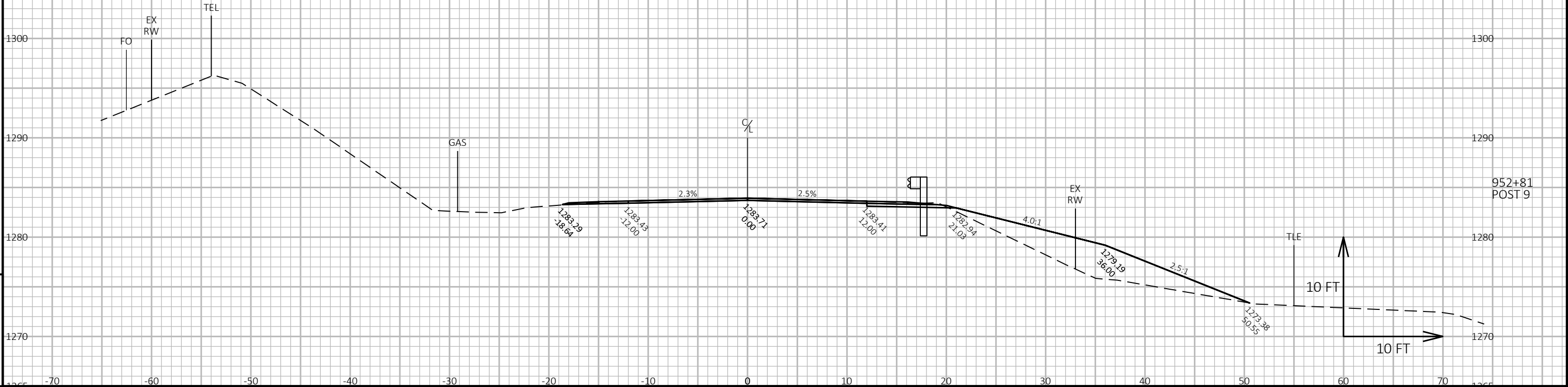
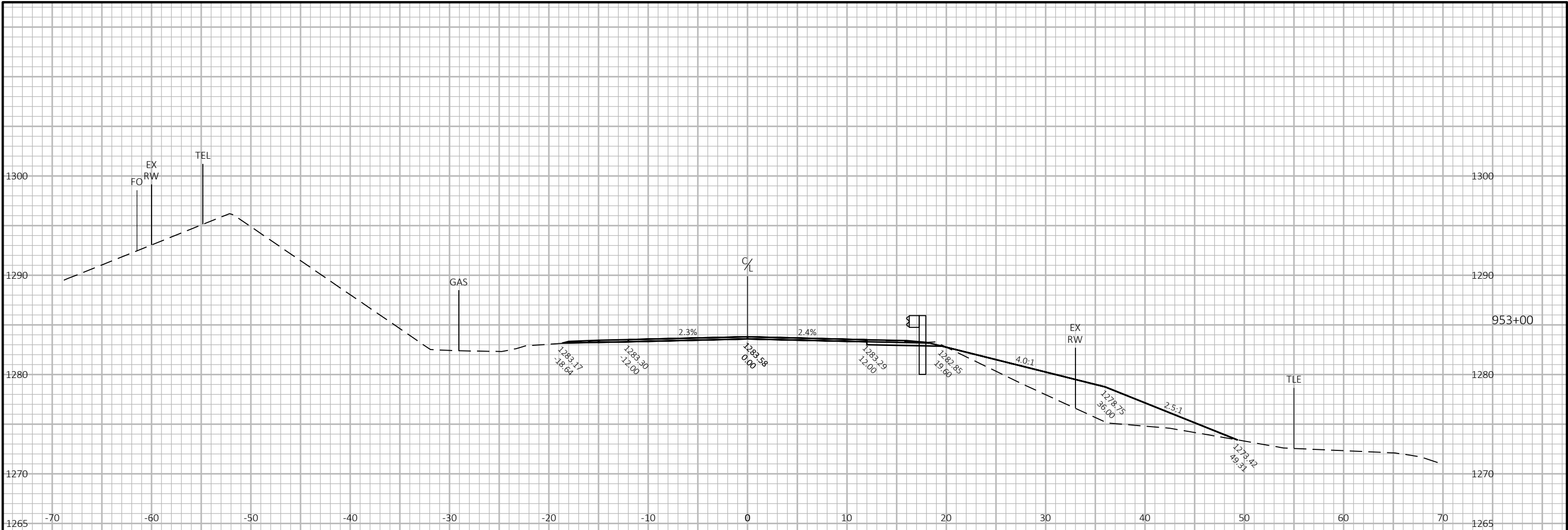


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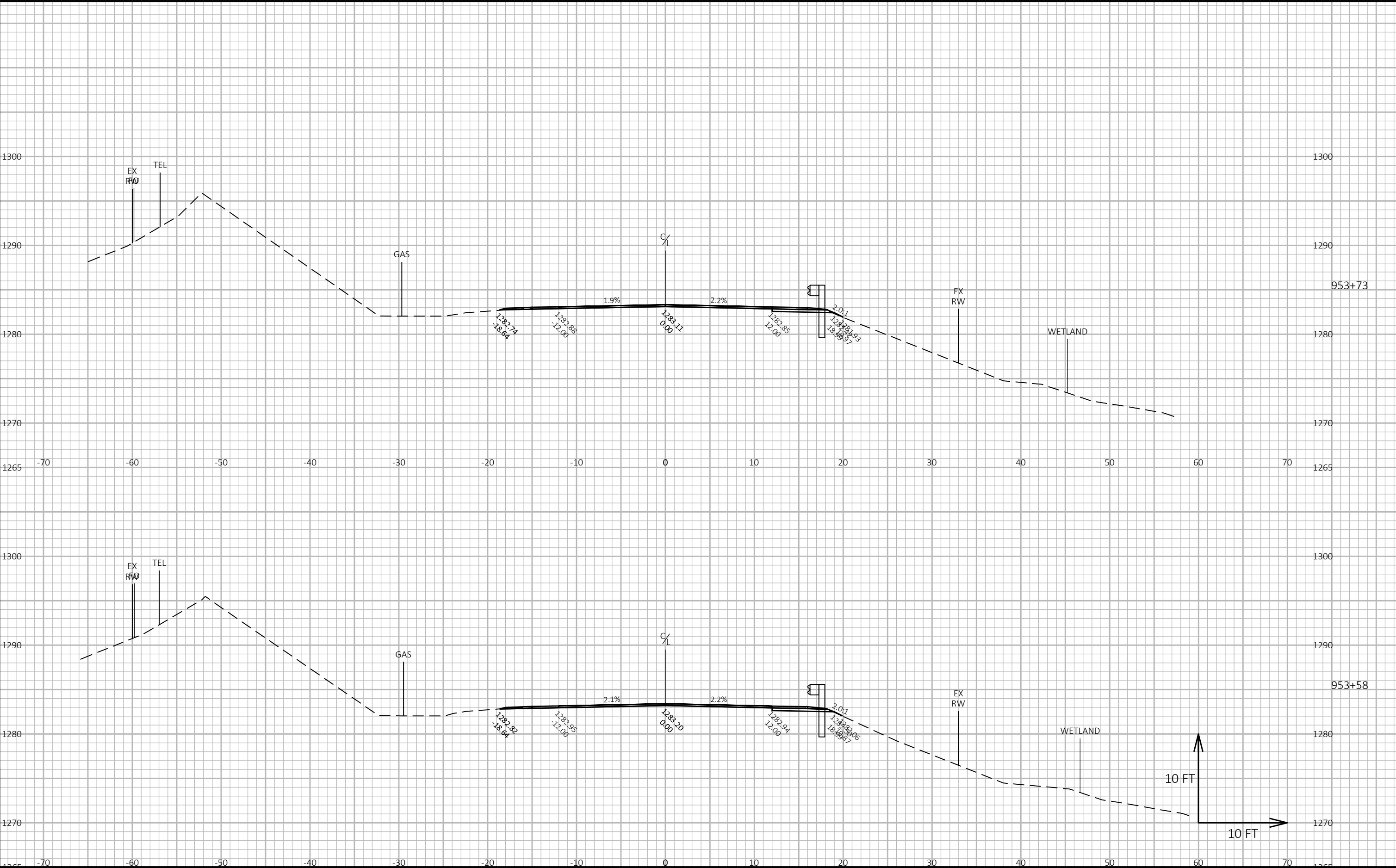
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PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 76	SHEET E
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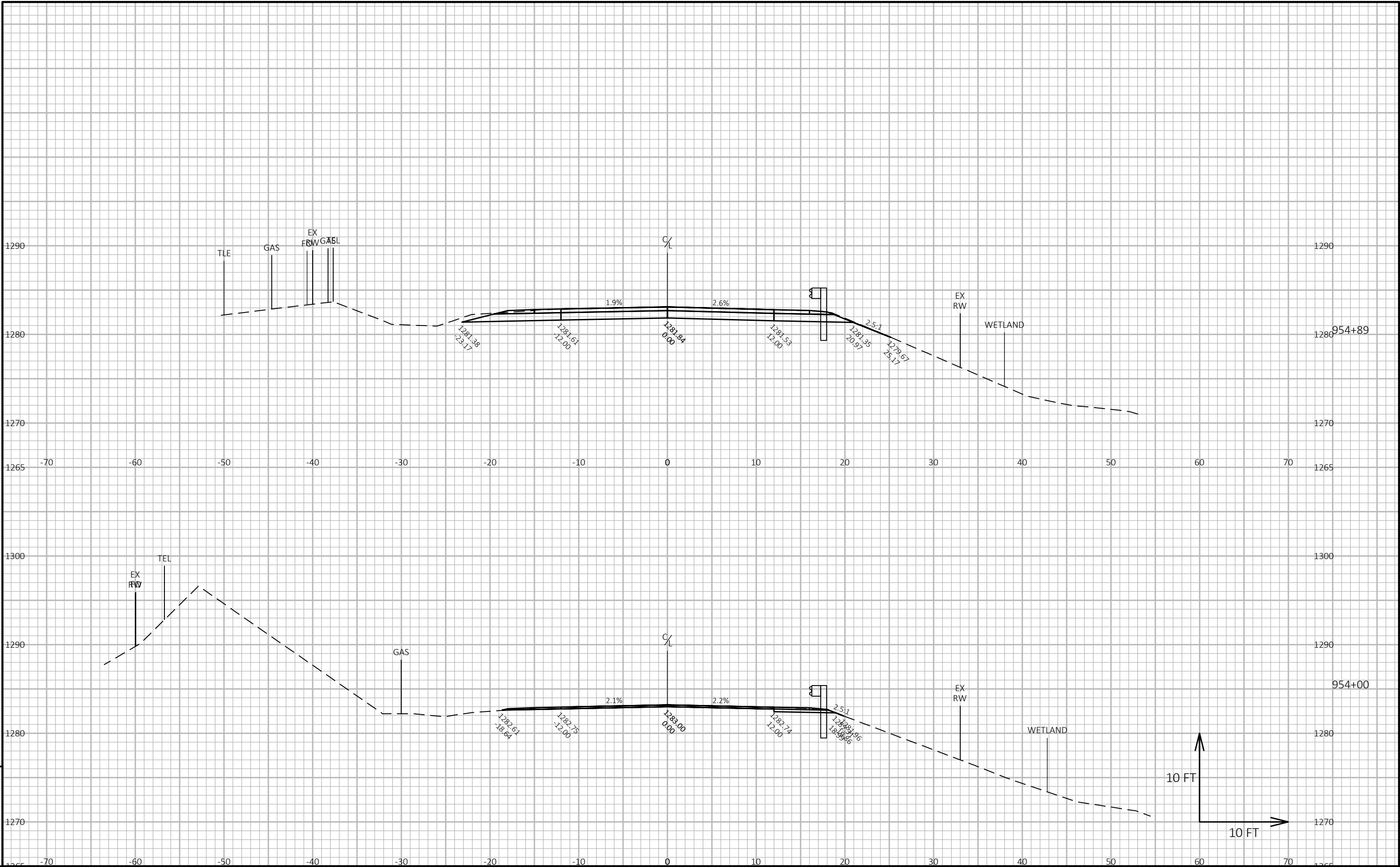


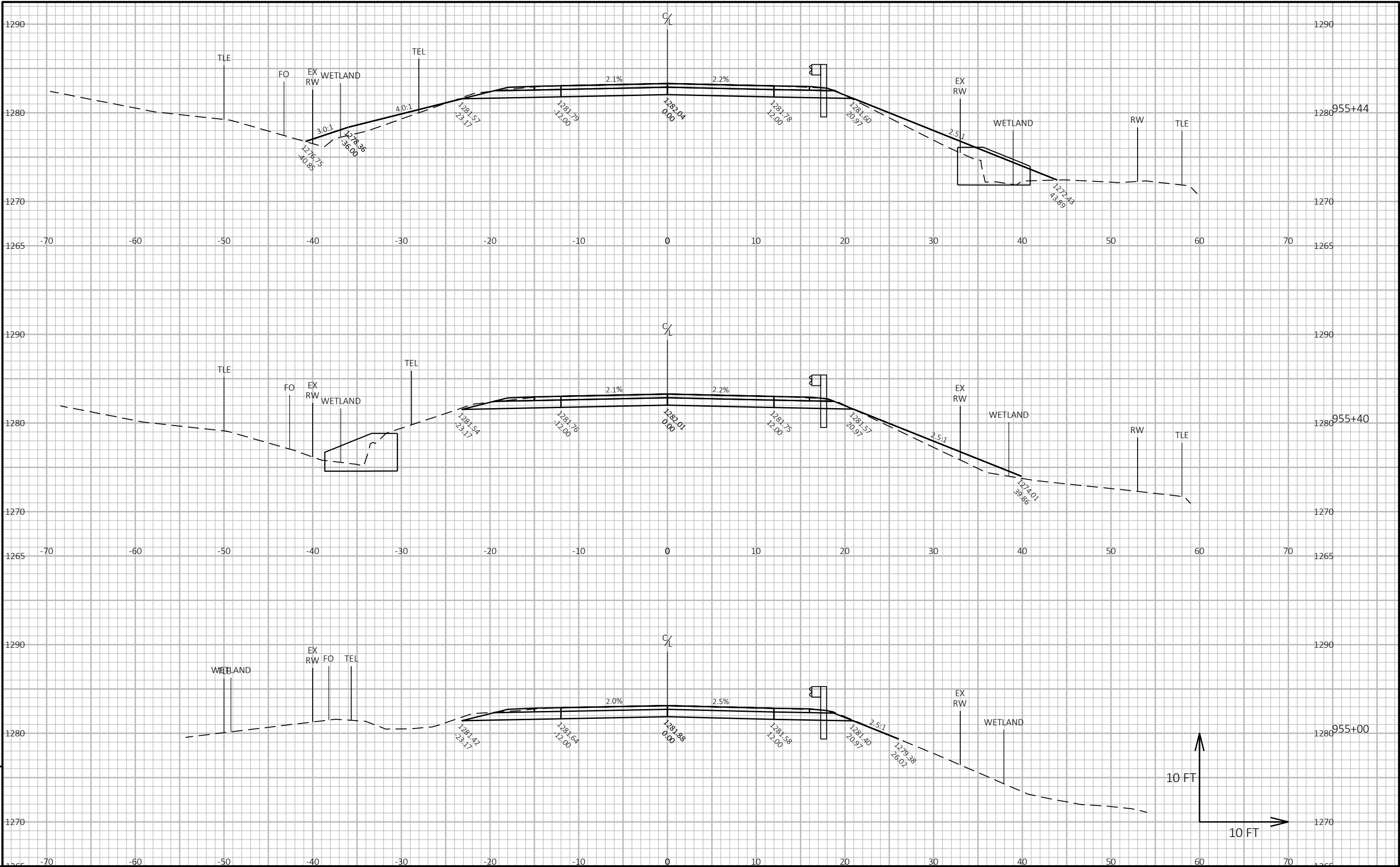
PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 79	SHEET E
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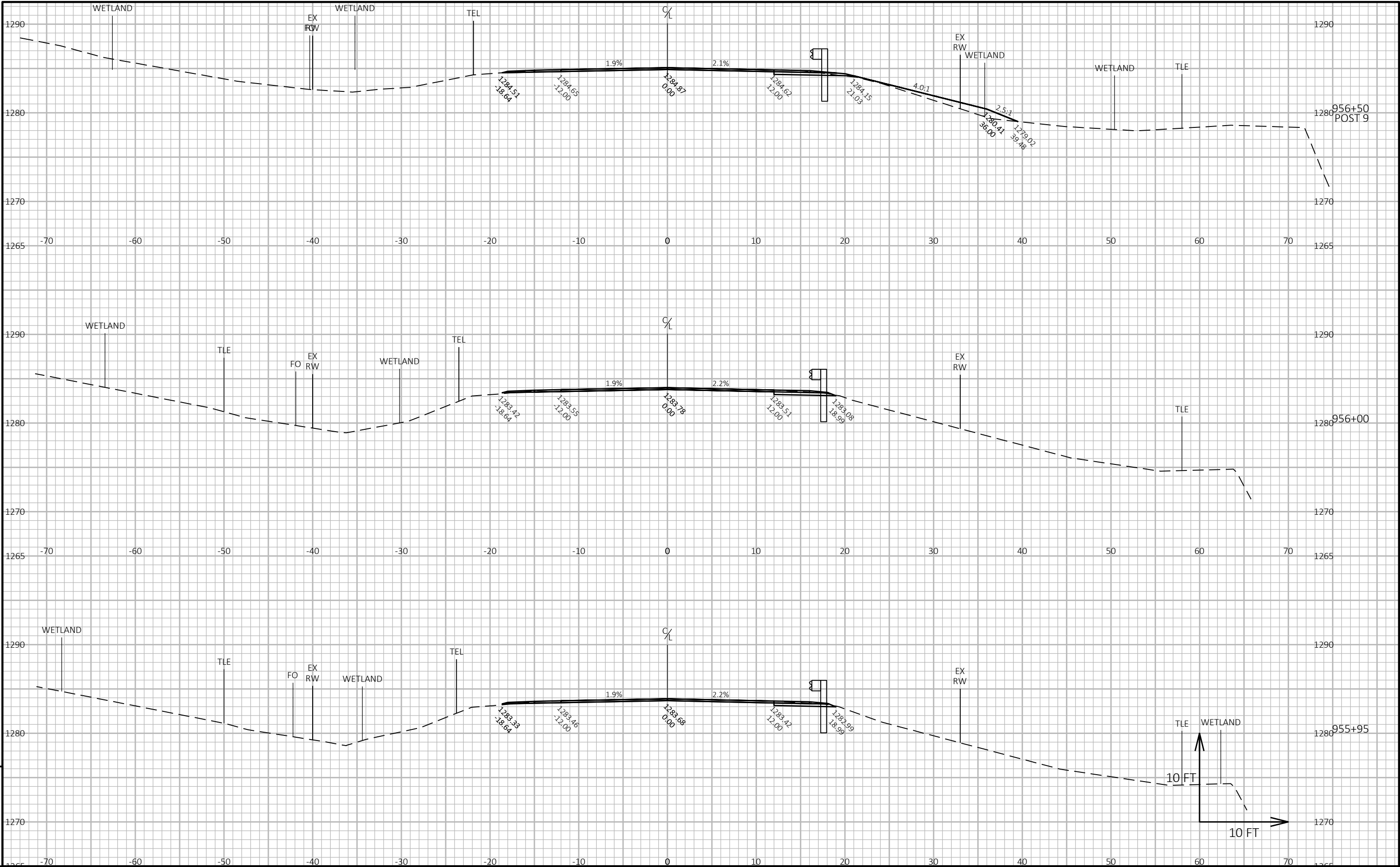


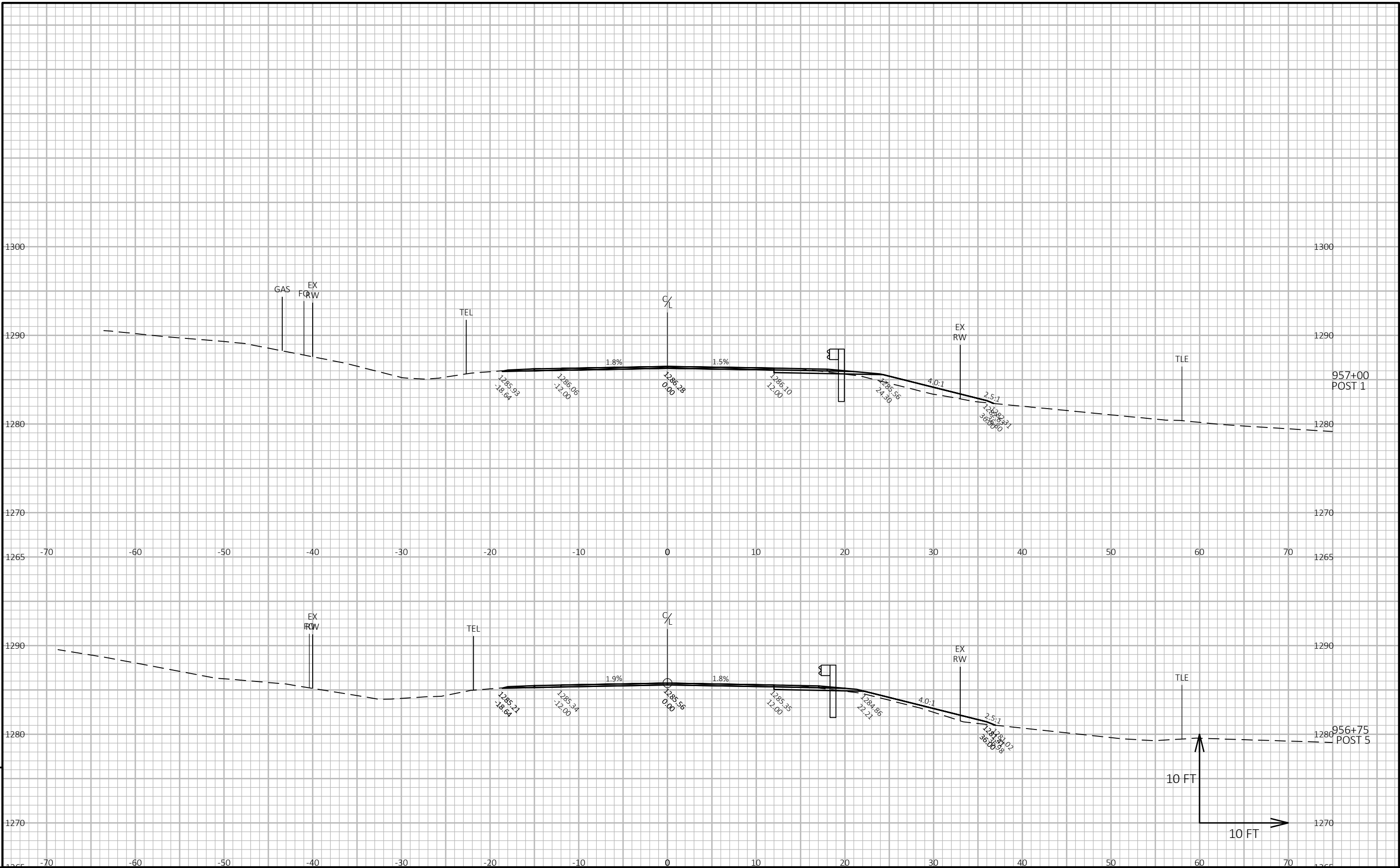
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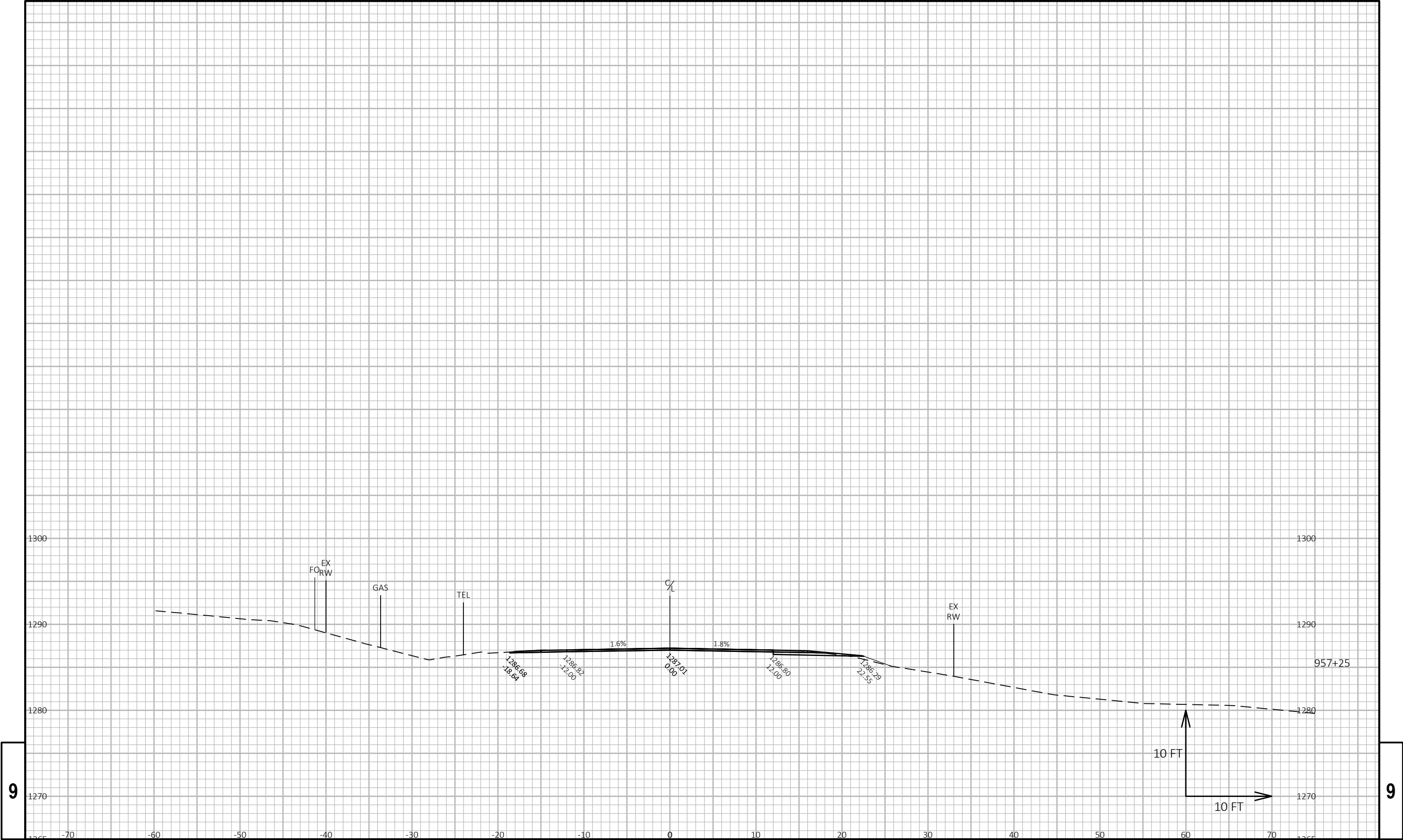
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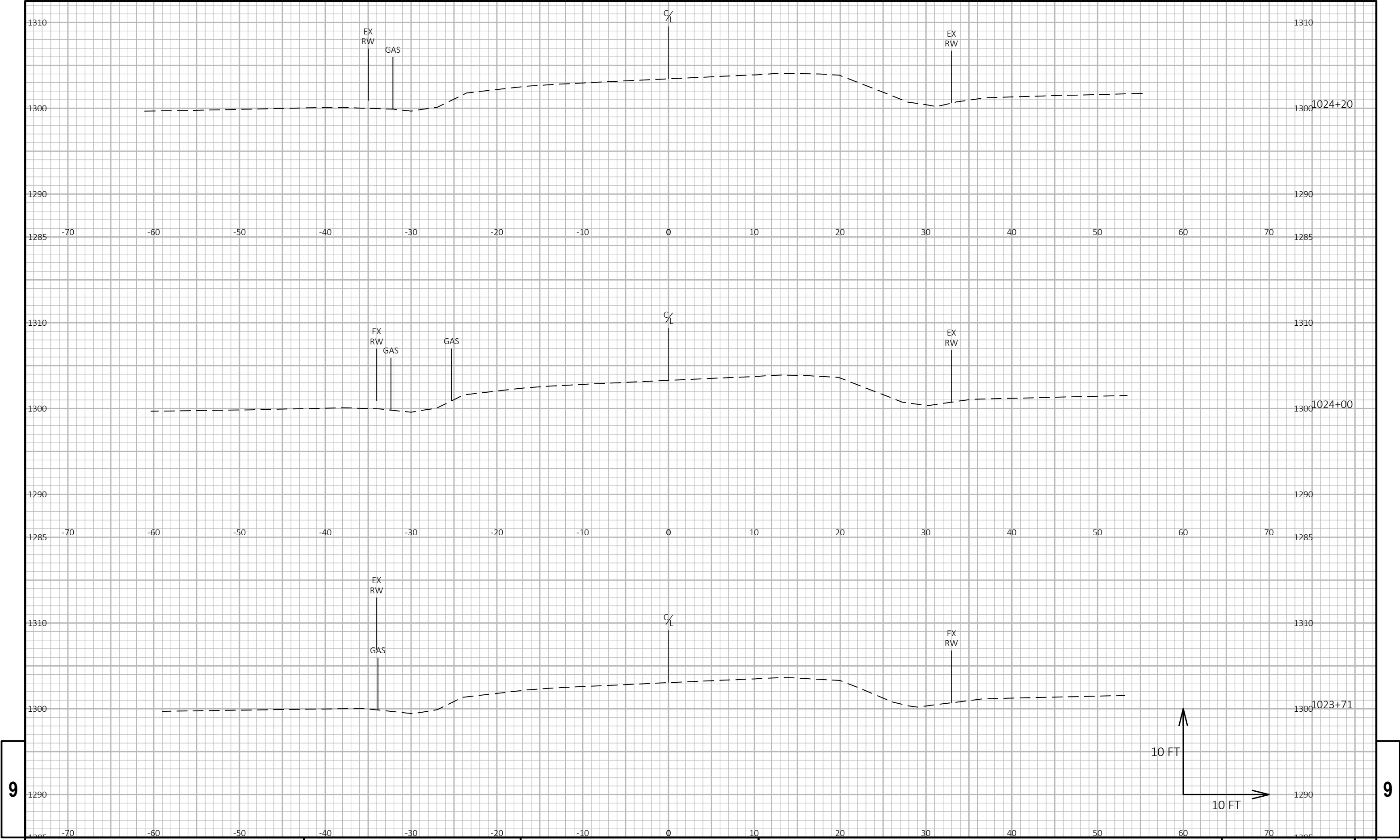




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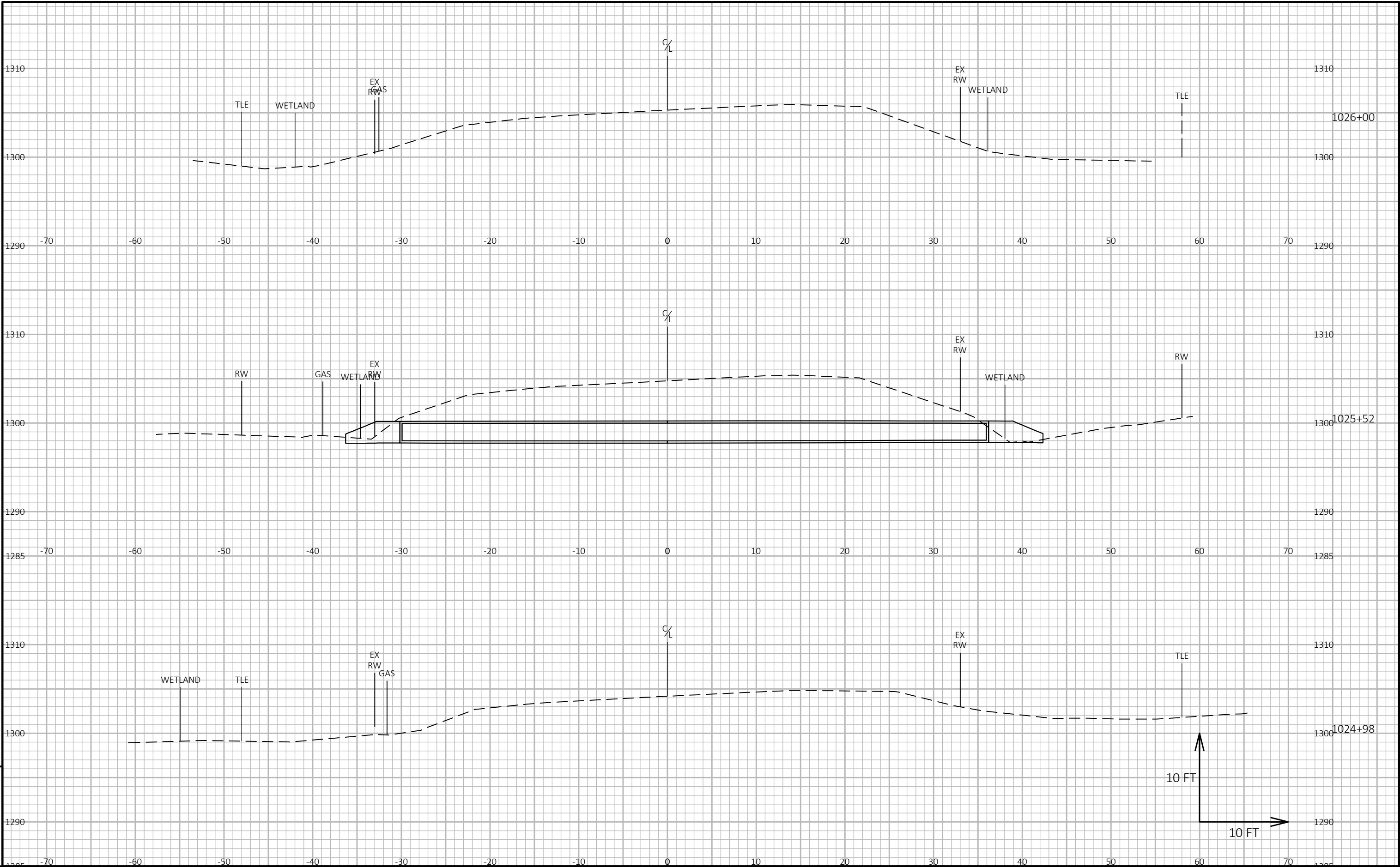
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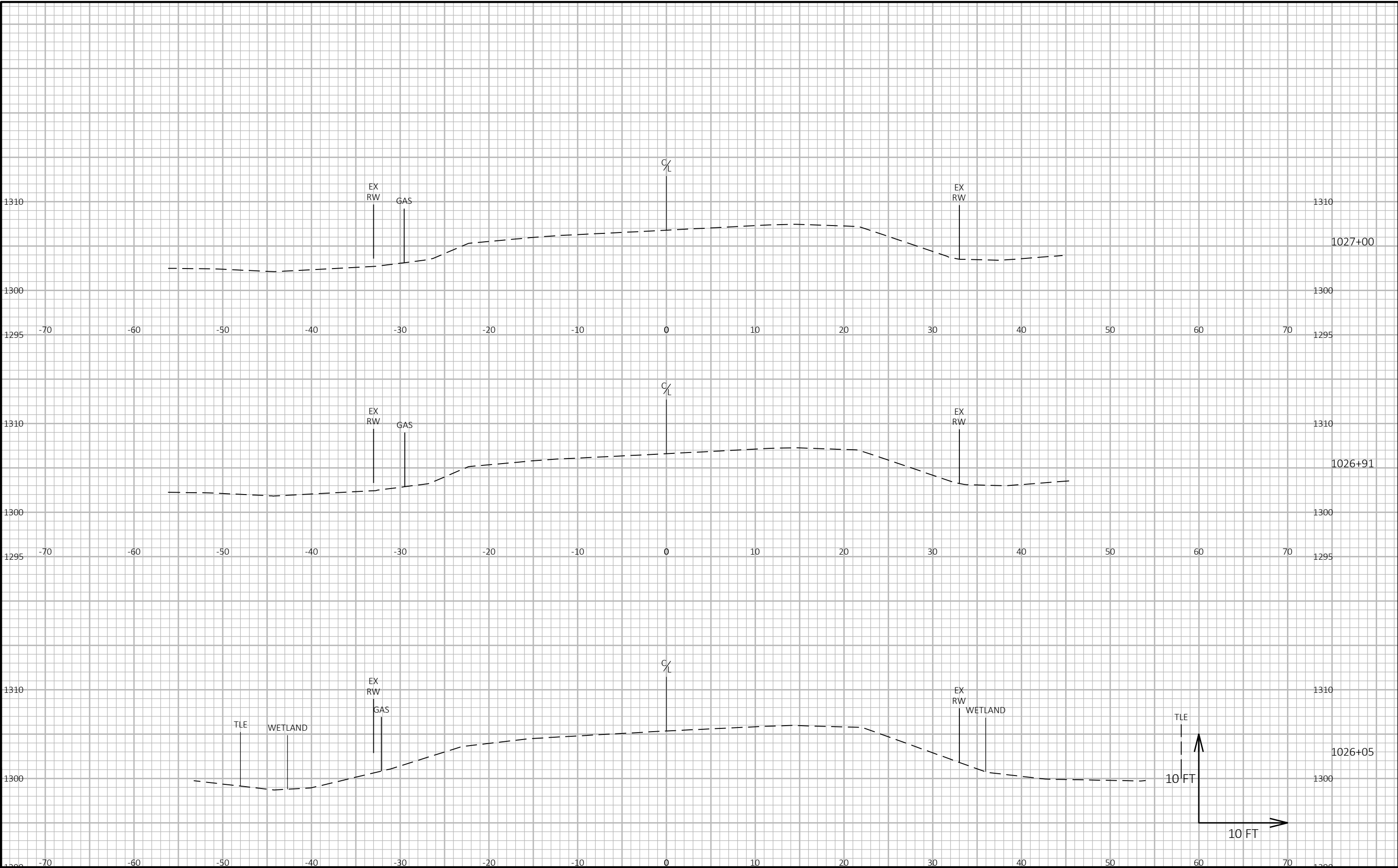
PROJECT NO: 9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS: CULVERT 79	SHEET E
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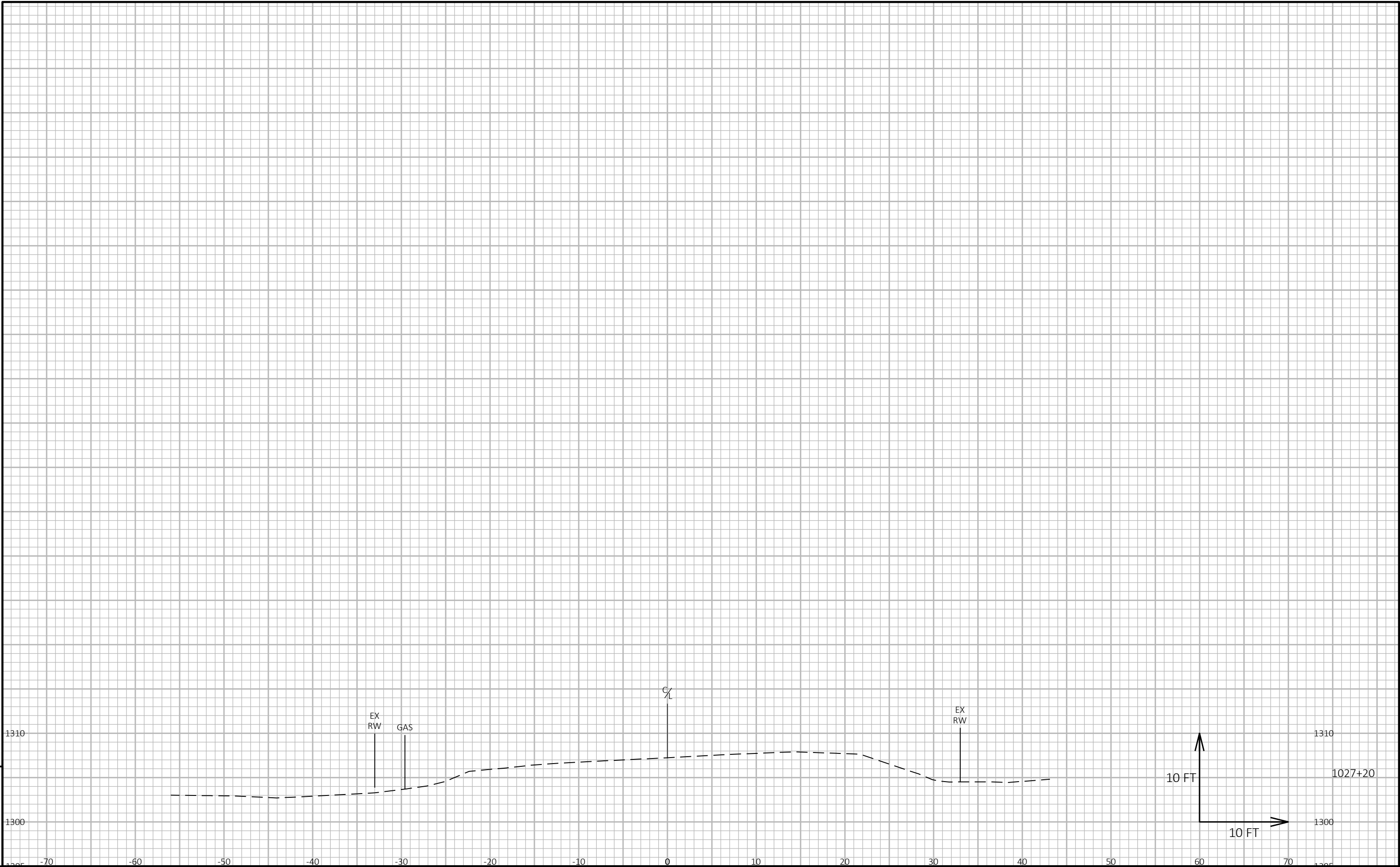




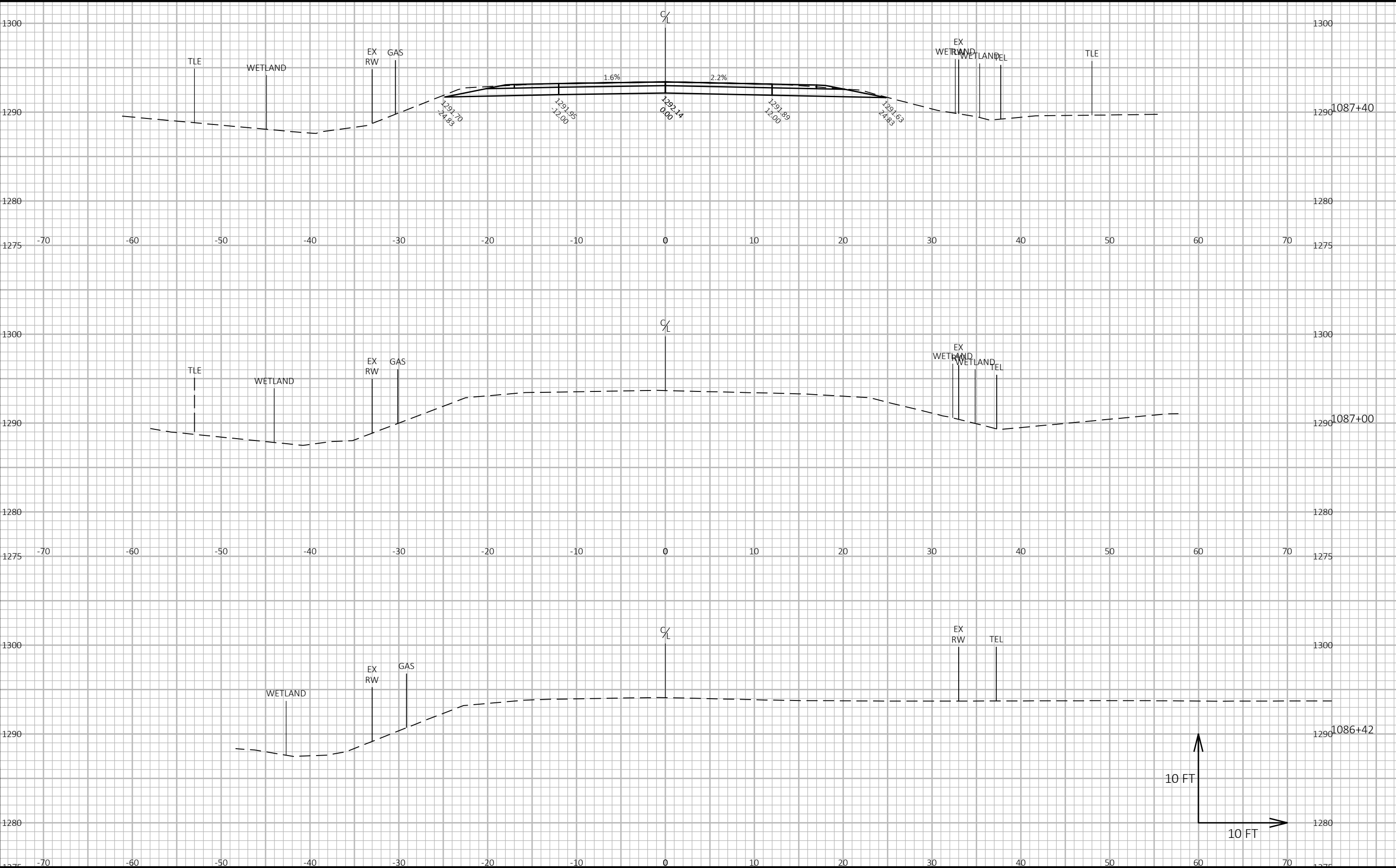
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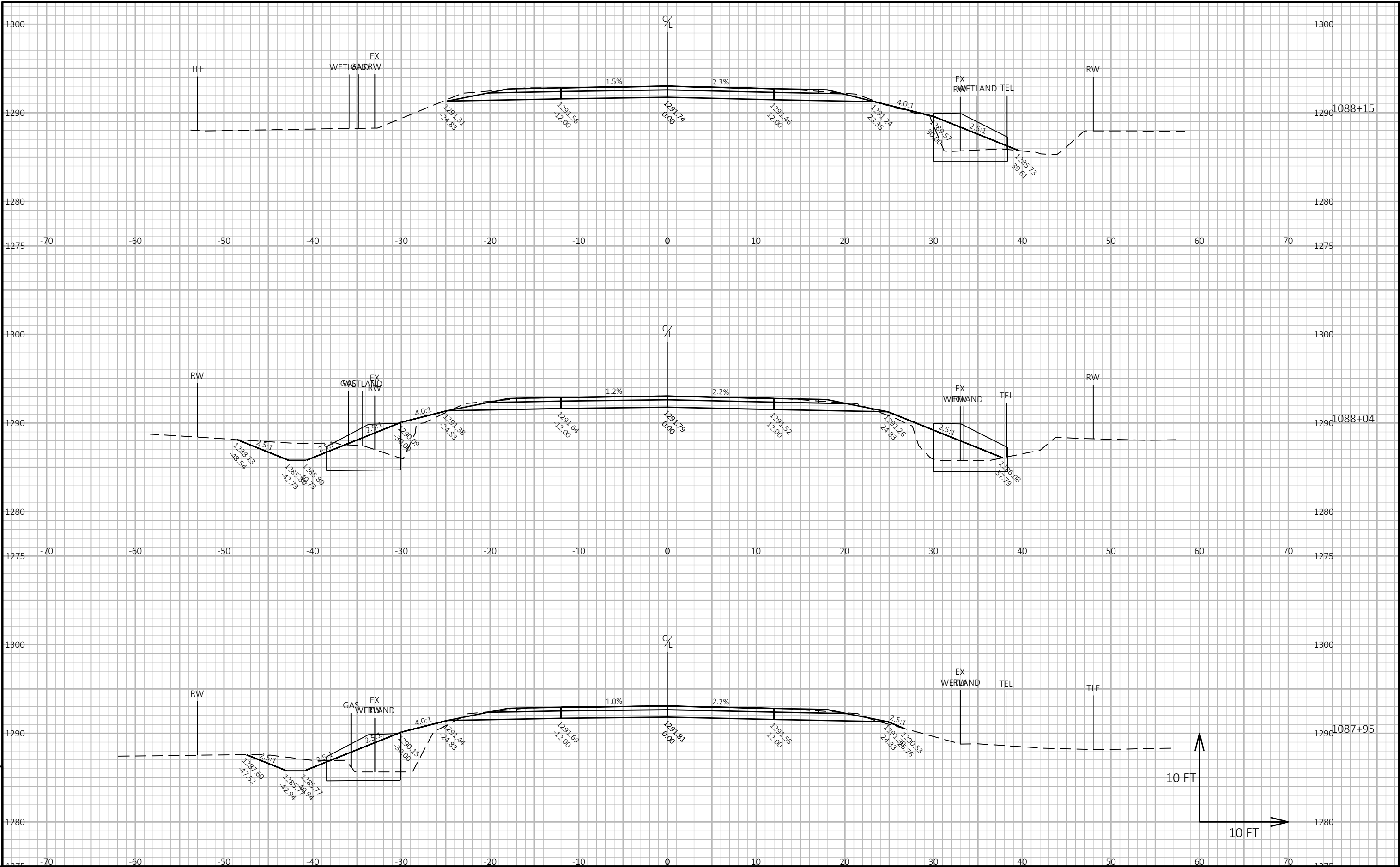
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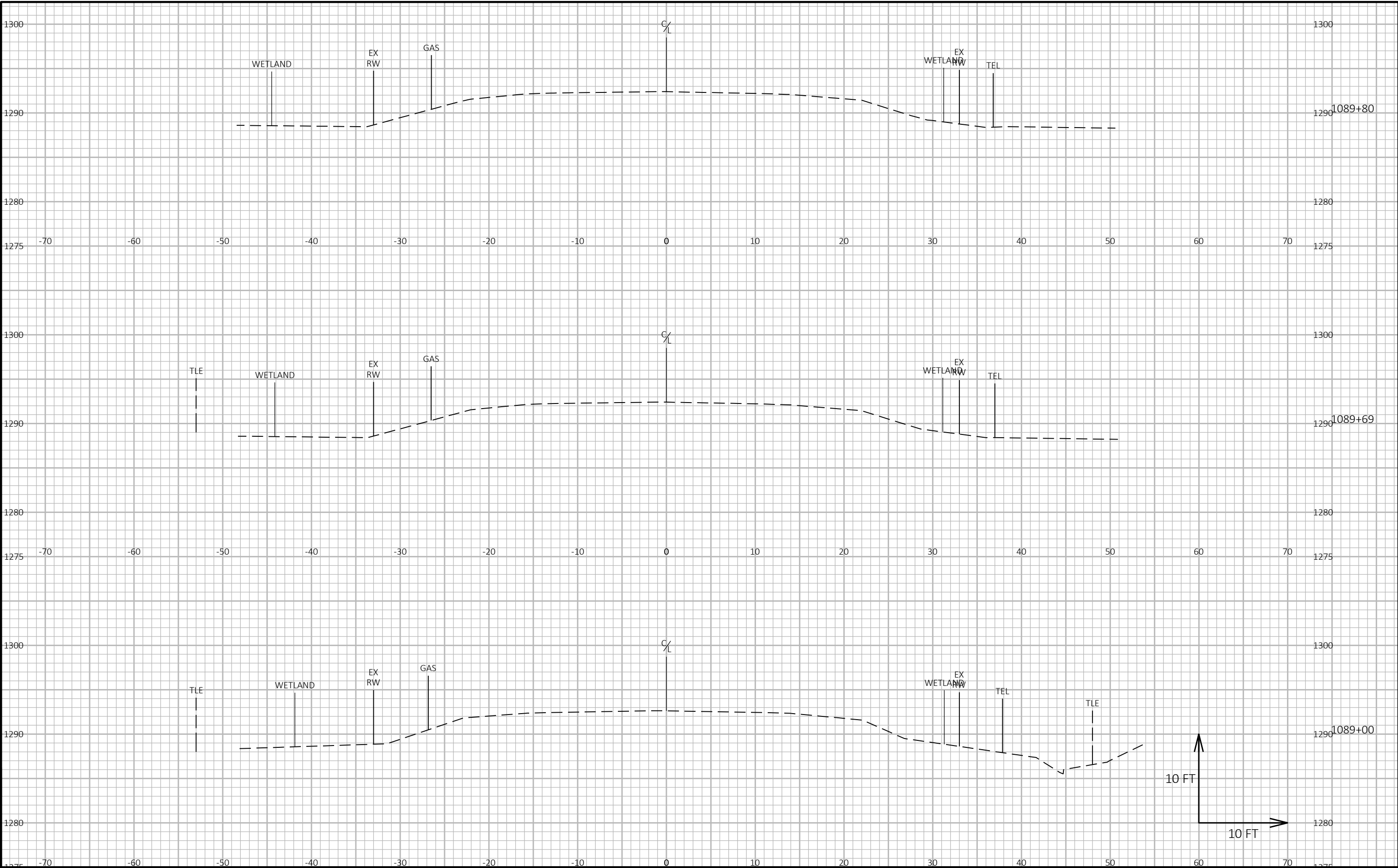
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PROJECT NO:	9100-05-72	HWY:	STH 70	COUNTY:	FLORENCE	CROSS SECTIONS:	CULVERT 83	SHEET	E
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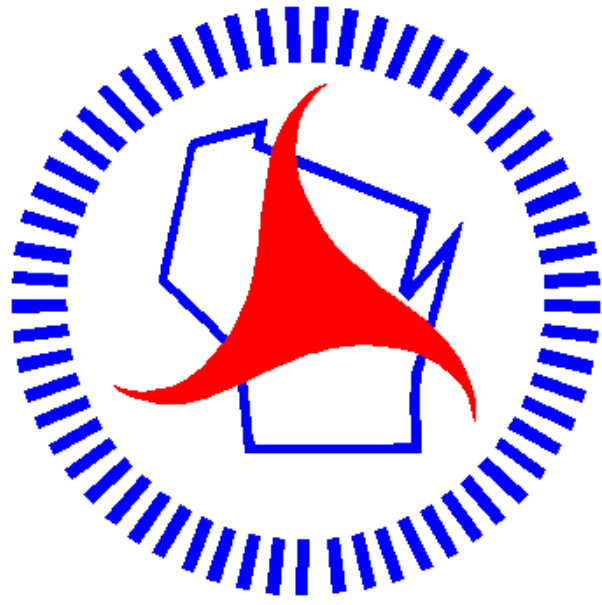




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PROJECT NO:	9100-05-72	HWY: STH 70	COUNTY: FLORENCE	CROSS SECTIONS:	CULVERT 87	SHEET	E
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Wisconsin Department of Transportation

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through innovation and exceptional service.

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