

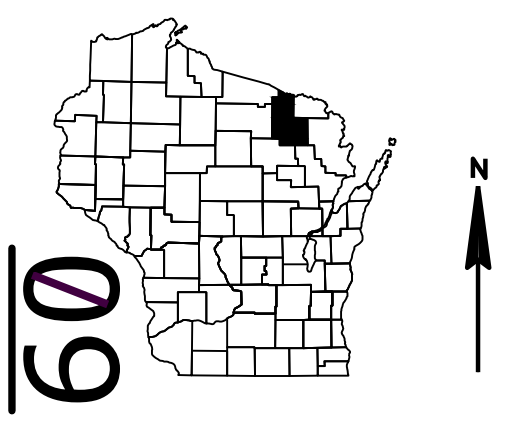
RHI
 PROJECT ID: 9165-13-70
 WITH: N/A
 COUNTY: FOREST

JUNE 2024

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details (Includes Erosion Control)
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 150



DESIGN DESIGNATION 9165-13-70

A.A.D.T.	2024	=	140 - 230
A.A.D.T.	2044	=	160 - 250
D.H.V.		=	23 - 36
D.D.		=	61/39
T.		=	7.7%
DESIGN SPEED		=	55 MPH
ESALS		=	21,900

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

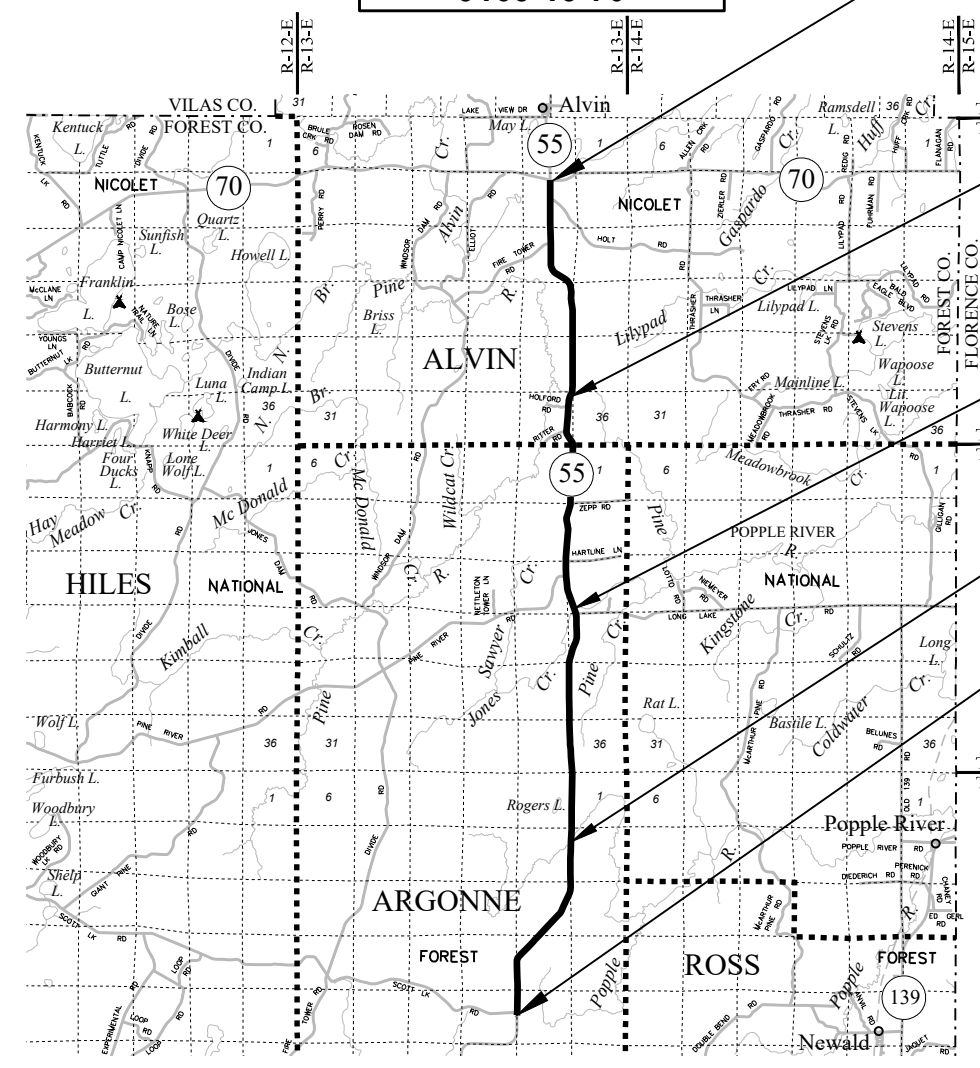
PLAN OF PROPOSED IMPROVEMENT

ARGONNE - NELMA

SCOTT LAKE ROAD TO STH 70
 STH 55
 FOREST COUNTY

STATE PROJECT NUMBER
9165-13-70

END PROJECT
 STA 1342+55



NET EXCEPTION TO CL LENGTH (B-21-0008)
 STA 1123+85 - STA 1129+65

NET EXCEPTION TO CL LENGTH (B-21-0018)
 STA 917+47 - STA 918+12

NET EXCEPTION TO CL LENGTH (B-21-0017)
 STA 691+02 - STA 691+70

BEGIN PROJECT
 STA 510+46
 Y=634,918.420
 X=851,956.59

LAYOUT
 SCALE 0 3.5 MI
 TOTAL NET LENGTH OF CENTERLINE = 15.624 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), FOREST COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12B.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9165-13-70	WISC 2024370	1

emcs
 500 North 17th Avenue
 Wausau, WI 54401
 715.845.1081 Fax 715.845.1099



02/26/2024
 (Date) Erik M. Oleson
 (Signature)

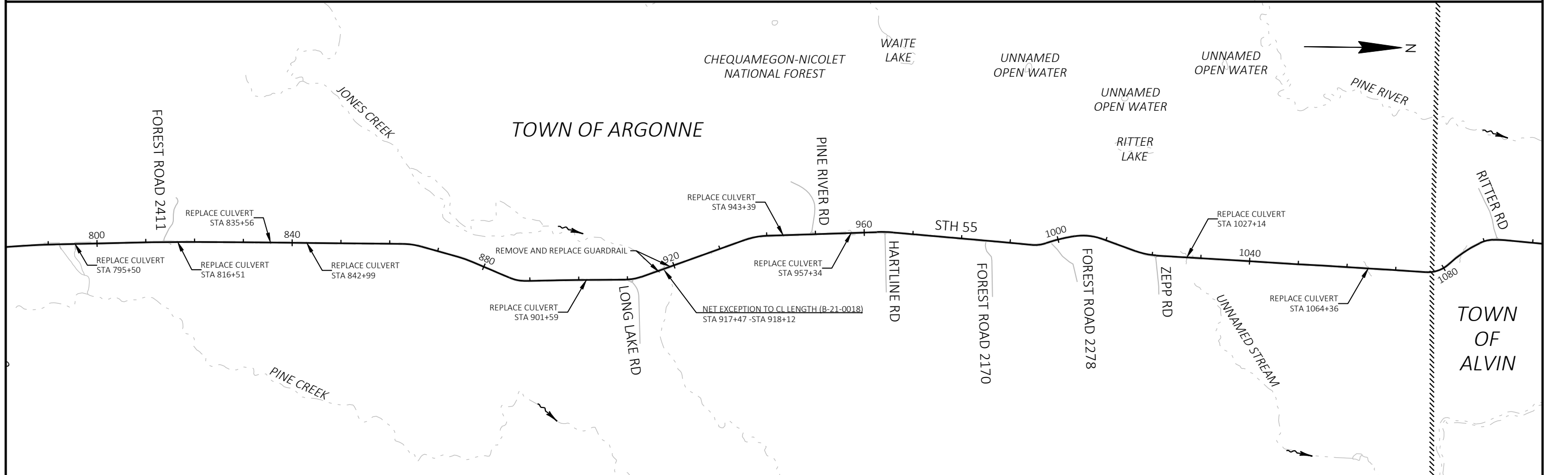
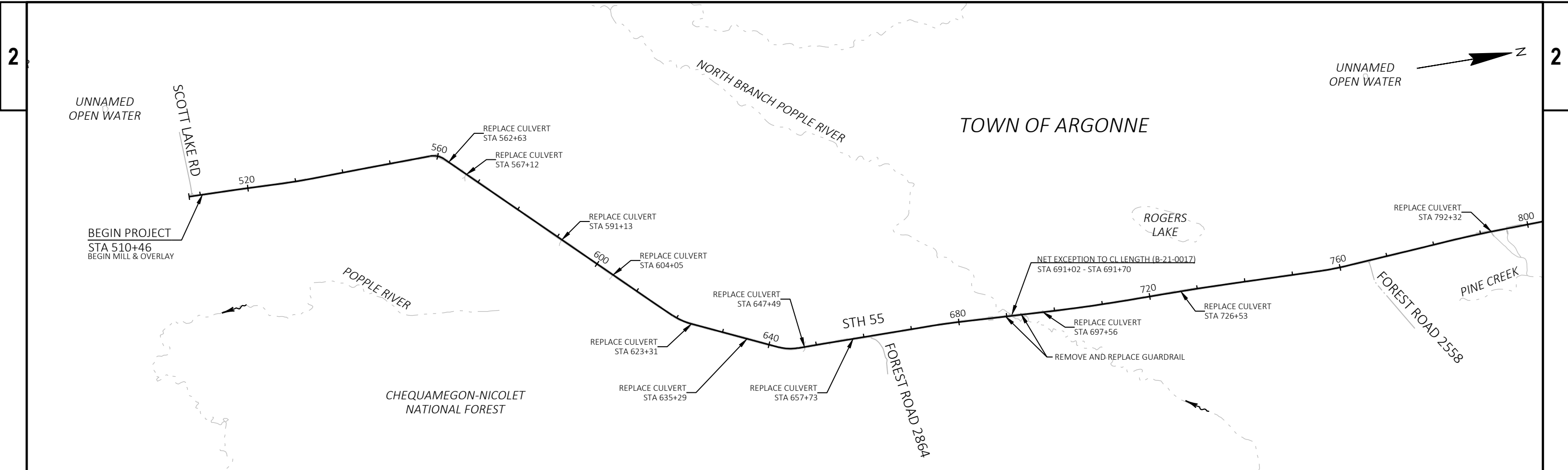
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

PREPARED BY

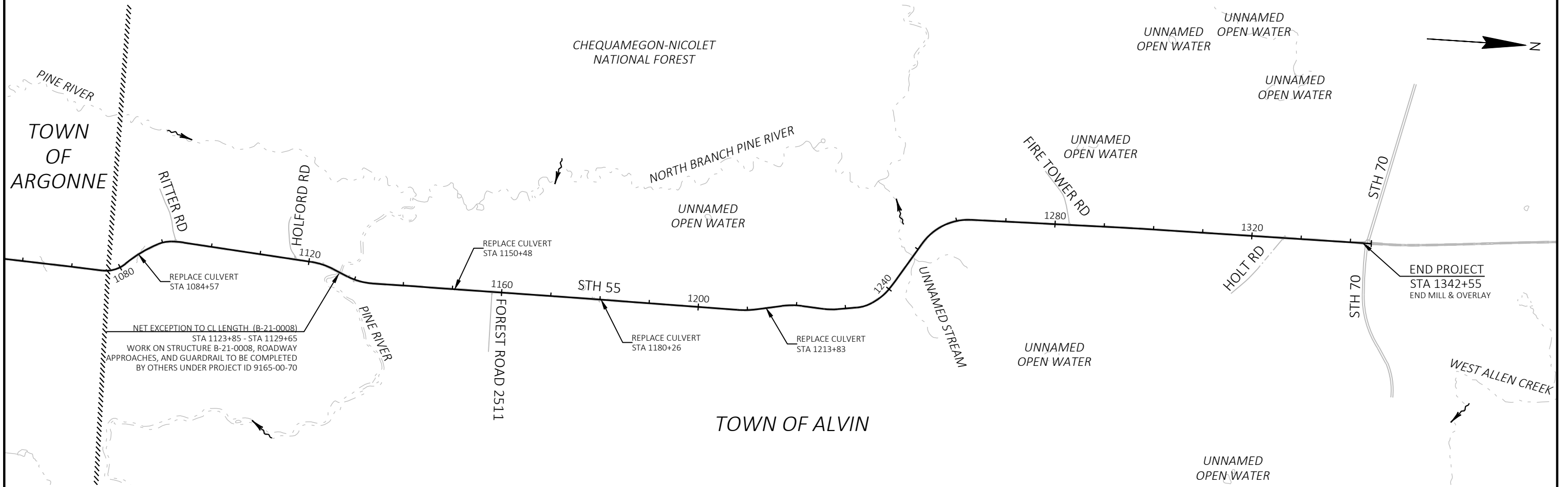
Surveyor	EMCS, INC.
Designer	EMCS, INC.
Project Manager	JOSHUA LANG
Regional Examiner	NORTHEAST REGION
Regional Supervisor	ANDREW FULCER

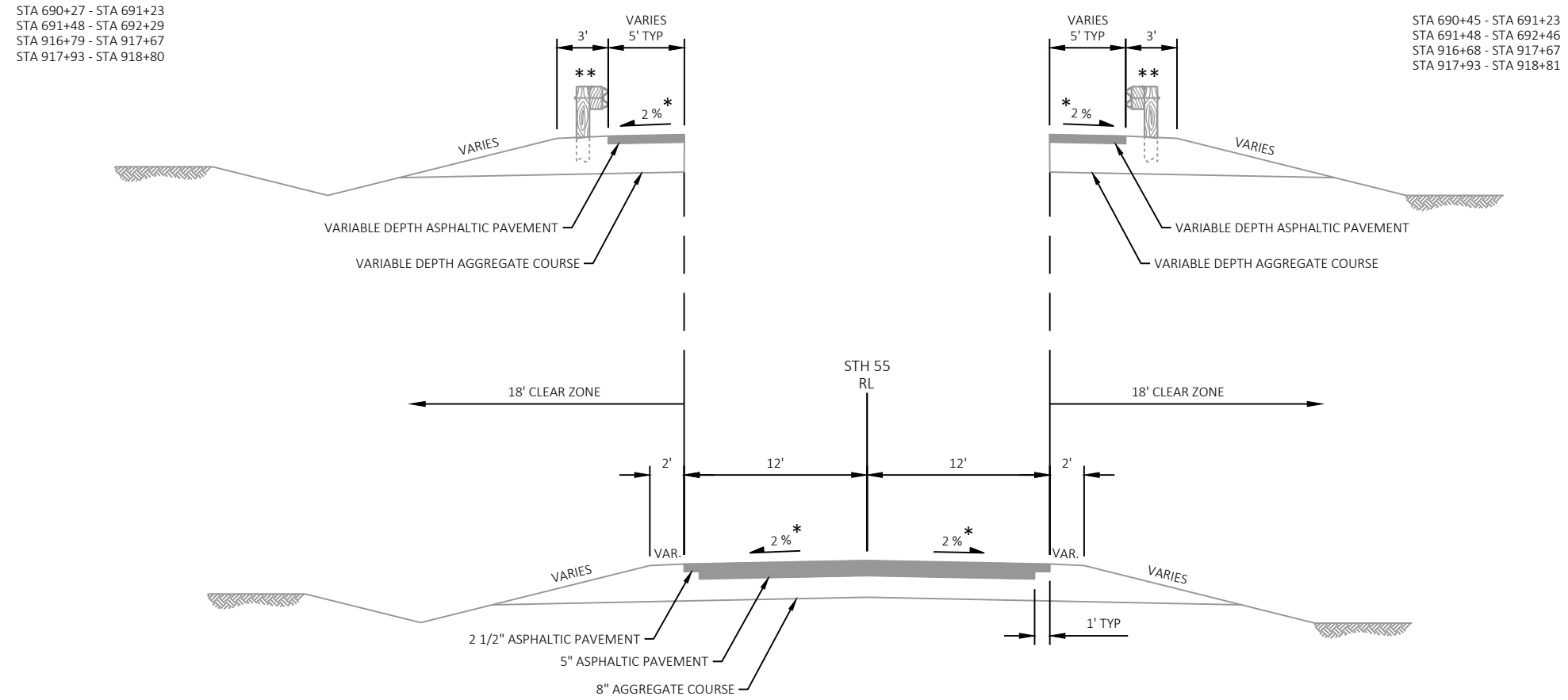
APPROVED FOR THE DEPARTMENT
 DATE: 02-26-2024
 Joshua J. Lang P.E.
 (Signature)

E



PROJECT NO: 9165-13-70	HWY: STH 55	COUNTY: FOREST	PROJECT OVERVIEW	SHEET	E
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EXISTING TYPICAL SECTION

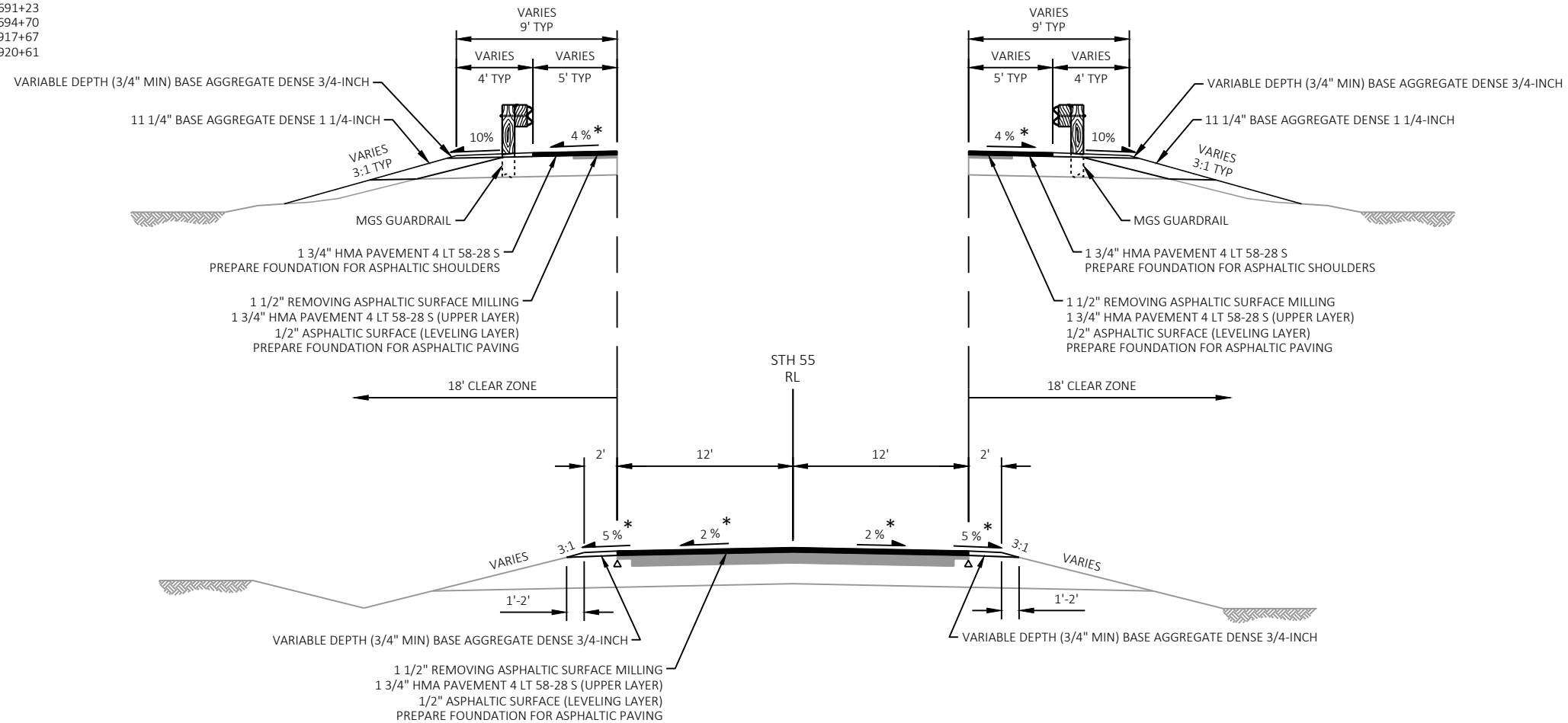
STA 510+46 - STA 691+02 (B-21-0017)
 STA 691+70 (B-21-0017) - STA 917+47 (B-21-0018)
 STA 918+12 (B-21-0018) - STA 1123+85 (B-21-0008)
 STA 1129+65 (B-21-0008) - STA 1342+55

NOTES

- * CROSS SLOPE VARIES DUE TO SUPERELEVATION, SEE SECTION 5 FOR PLANS FOR CURVE INFORMATION
 - ** SEE SECTION 5 PLANS FOR LOCATION OF EXISTING GUARDRAIL
- CONCRETE APPROACH SLABS ARE LOCATED AT STRUCTURES B-21-0017, B-21-018, AND B-21-0008

STA 688+11 - STA 691+23
 STA 691+48 - STA 694+70
 STA 915+75 - STA 917+67
 STA 917+93 - STA 920+61

STA 688+03 - STA 691+23
 STA 691+48 - STA 694+36
 STA 914+98 - STA 917+67
 STA 917+93 - STA 920+29

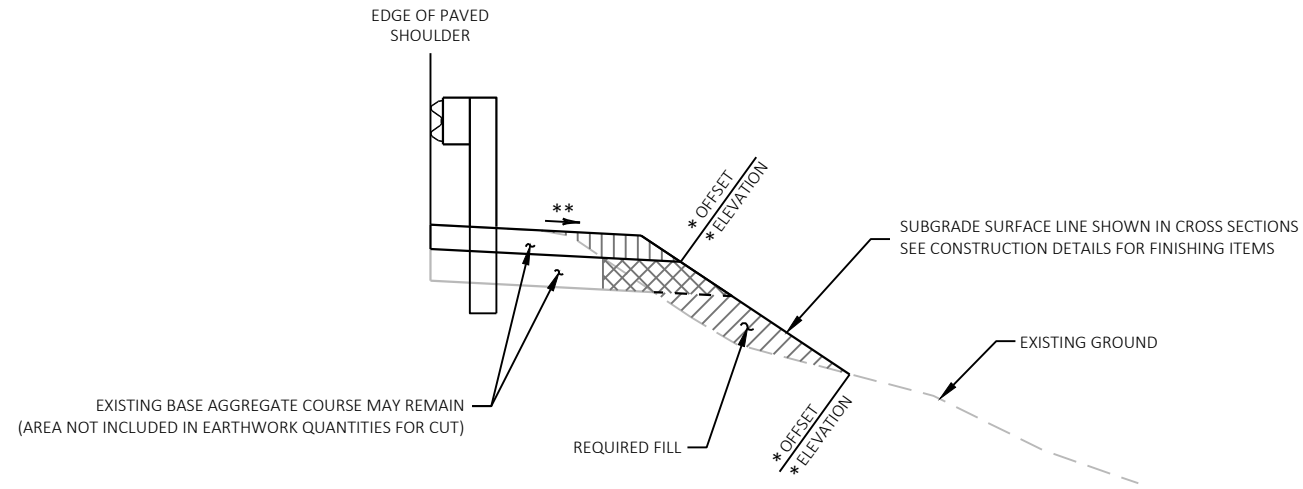


FINISHED TYPICAL SECTION

STA 510+46 - STA 691+02 (B-21-0017)
 STA 691+70 (B-21-0017) - STA 917+47 (B-21-0018)
 STA 918+12 (B-21-0017) - STA 1123+85 (B-21-0008)
 STA 1129+65 (B-21-0008) - STA 1342+56

NOTES

- * CROSS SLOPE VARIES DUE TO SUPERELEVATION, SEE SECTION 5 FOR PLANS FOR CURVE INFORMATION
- NO GUARDRAIL WORK AT STA 1125+04 TO STA 1128+50
- SEE CONSTRUCTION DETAILS FOR AREAS OF MILLING DEPTH TRANSITIONS.
- ▲ PAVEMENT SAFETY EDGE REQUIRED FOR PAVED SHOULDERS 3' OR LESS, SEE SDD "SAFETY EDGE"



SHOULDER WIDENING EARTHWORK & BASE AGGREGATE FOR GUARDRAIL DETAIL

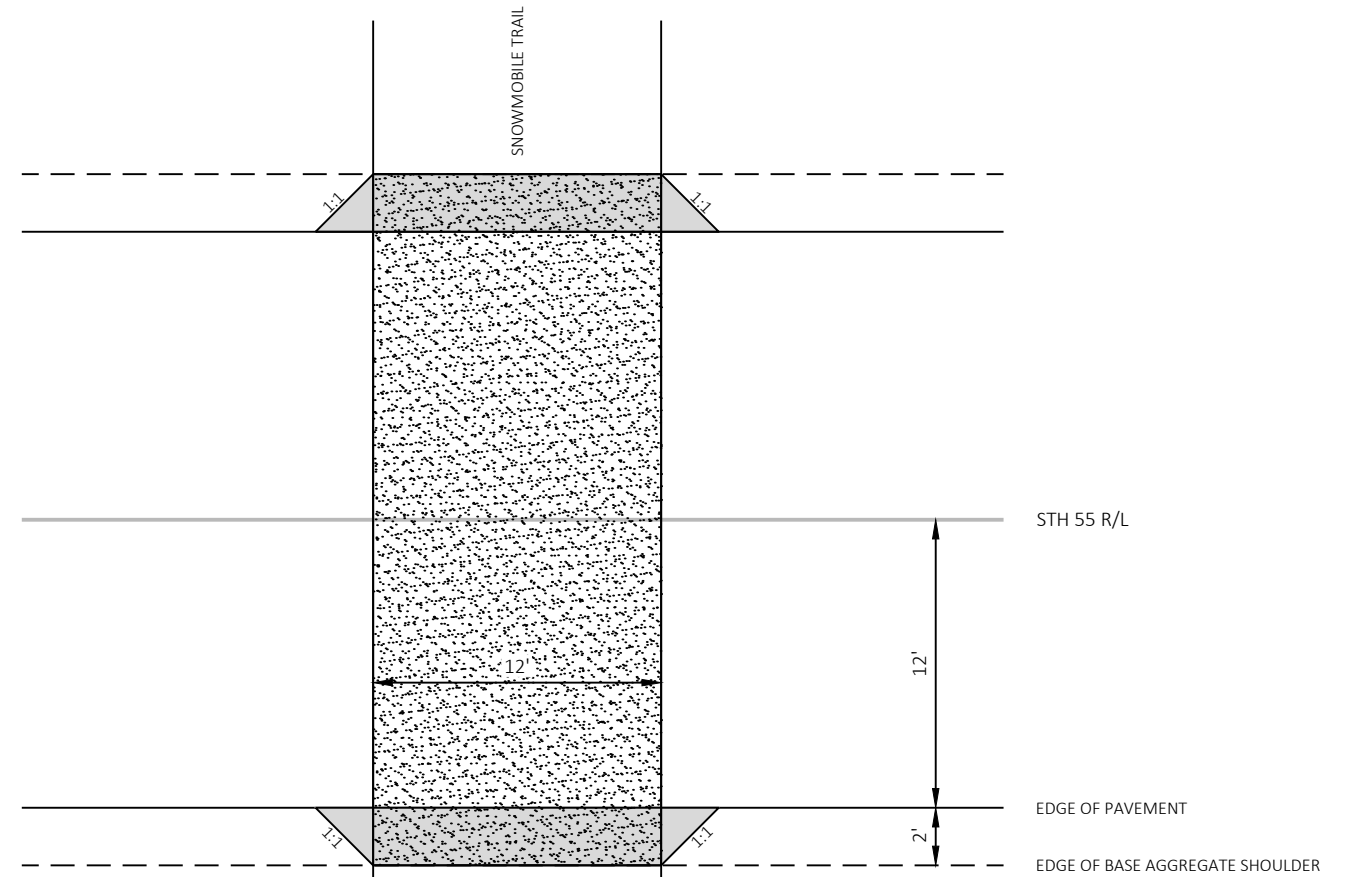
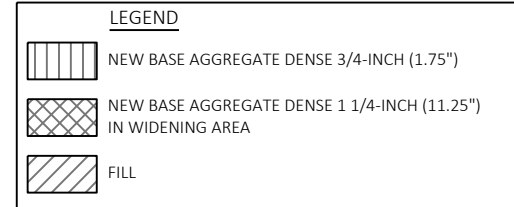
SEE SECTION 5 PLAN SHEETS, CROSS SECTIONS, AND TYPICAL SECTIONS FOR LOCATIONS

NOTES

BENCH FILL AS REQUIRED PER STANDARD SPECIFICATION 205.3.2(4).

*OFFSET AND ELEVATION PROVIDED TO THESE POINTS ON THE CROSS SECTIONS.

**SHOULDER SLOPE PROVIDED ON CROSS SECTIONS

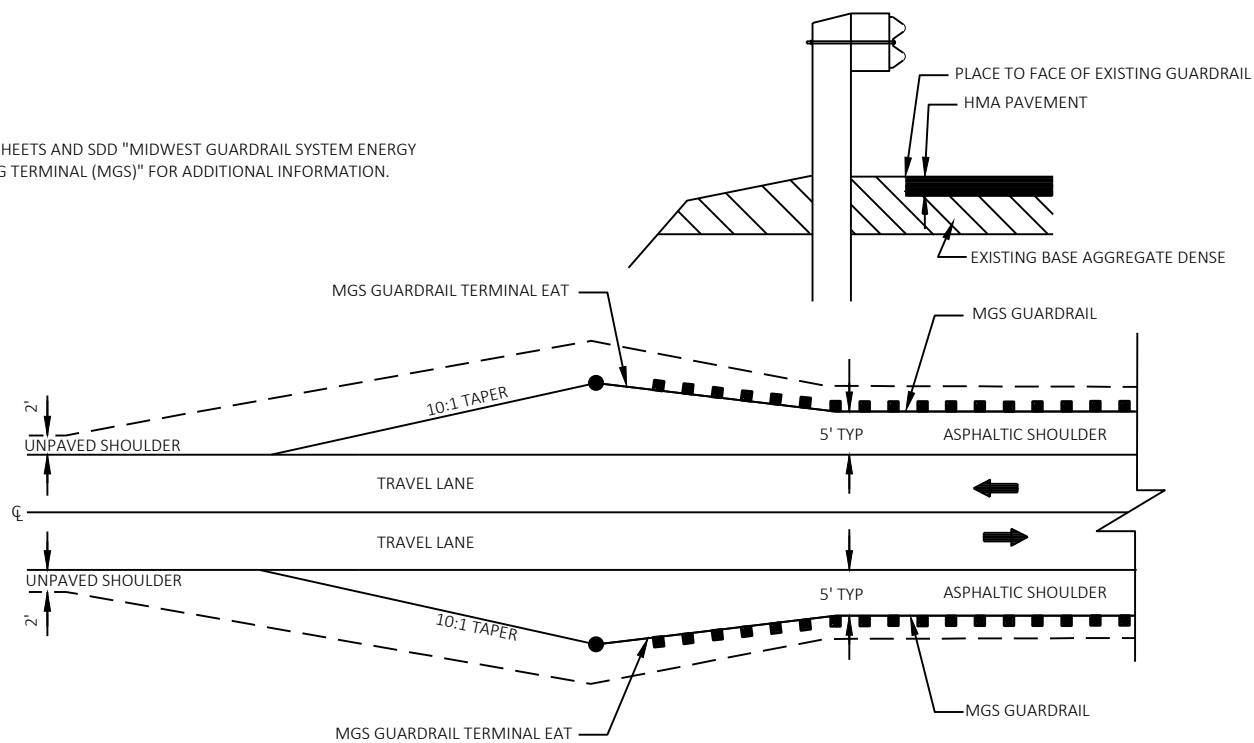


SNOWMOBILE TRAIL CROSSING DETAIL

STA 1326+48

NOTE

SEE PLAN SHEETS AND SDD "MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)" FOR ADDITIONAL INFORMATION.



PAVED SHOULDER AT GUARDRAIL DETAIL

STA 688+03 - STA 694+70
STA 914+98 - STA 920+61

NOTES

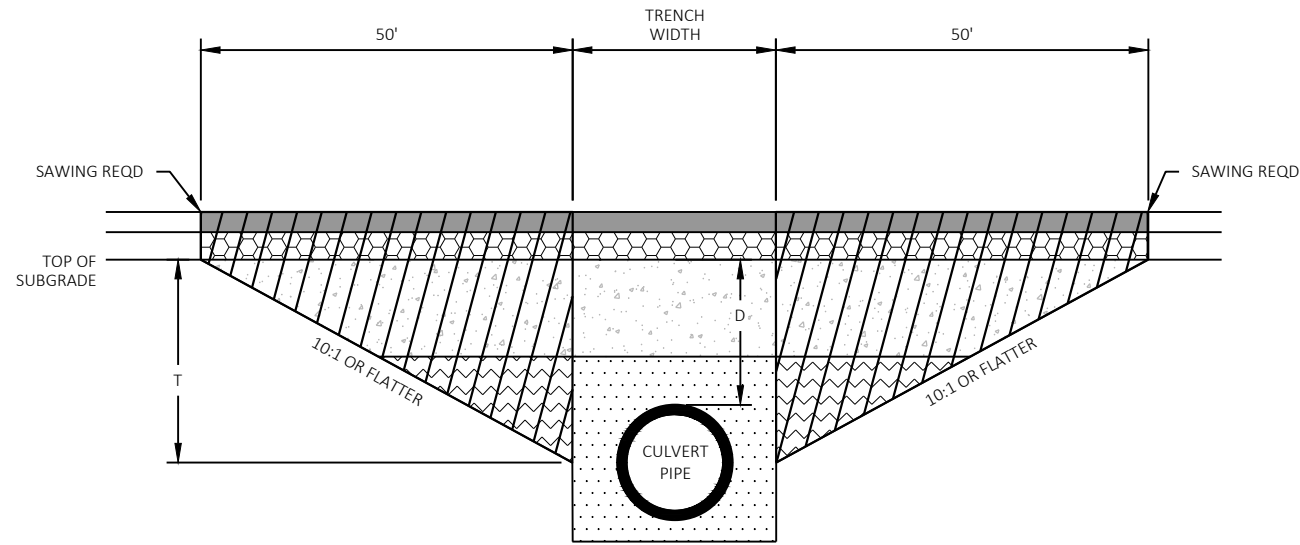
TRANSITION CUT IS PAID AS EXCAVATION COMMON.

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 THE MILLING AND OVERLAY OPERATIONS IN PROJECT 9165-13-70.

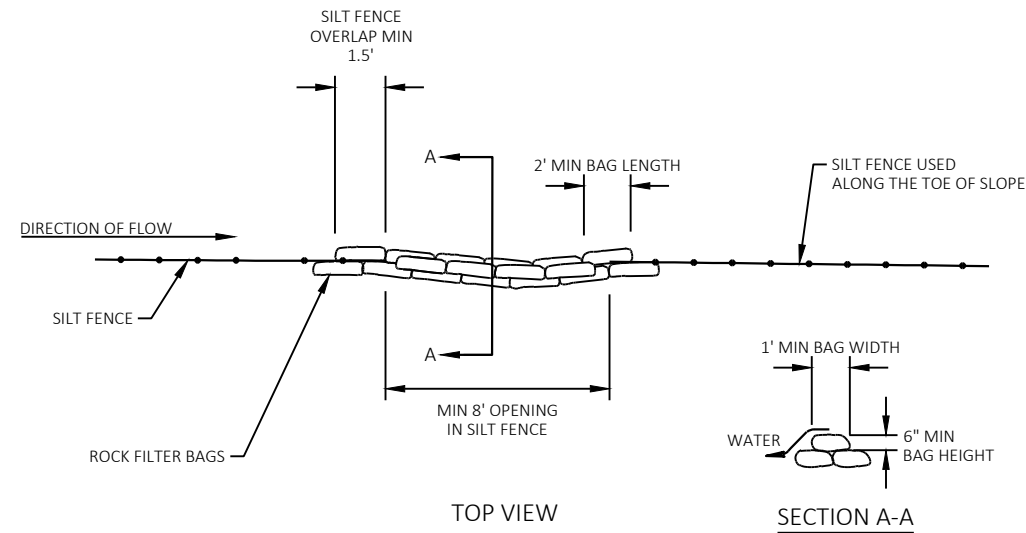
ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)
STH 55	562+63	0.0	24
STH 55	567+12	0.0	24
STH 55	591+13	0.0	24
STH 55	604+05	0.2	24
STH 55	623+31	0.1	24
STH 55	635+29	0.4	24
STH 55	647+49	0.2	29X45
STH 55	657+73	0.0	24
STH 55	697+56	0.0	24
STH 55	726+53	0.0	24
STH 55	792+32	1.3	34X53
STH 55	795+50	0.3	43X68
STH 55	816+51	0.1	24
STH 55	835+56	0.0	24
STH 55	842+99	0.3	24
STH 55	901+59	0.0	24
STH 55	943+39	0.0	24
STH 55	957+34	0.0	29X45
STH 55	1027+14	0.0	29X45
STH 55	1064+36	0.0	24X38
STH 55	1084+57	0.0	24
STH 55	1150+48	1.2	18
STH 55	1180+26	1.5	24
STH 55	1213+83	0.0	24X38



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.

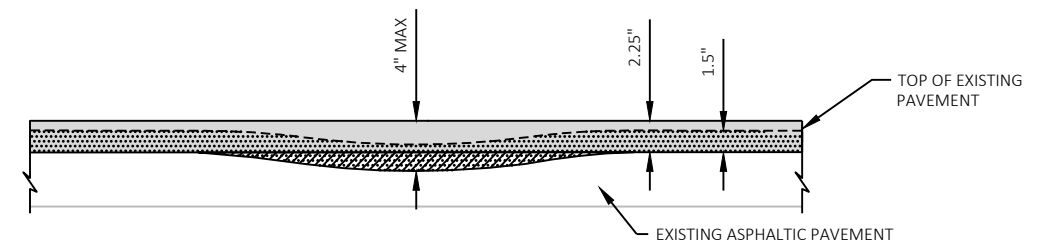
CULVERT PIPE TRANSITION



ROCK BAGS USED FOR SILT FENCE RELIEF

NOTE

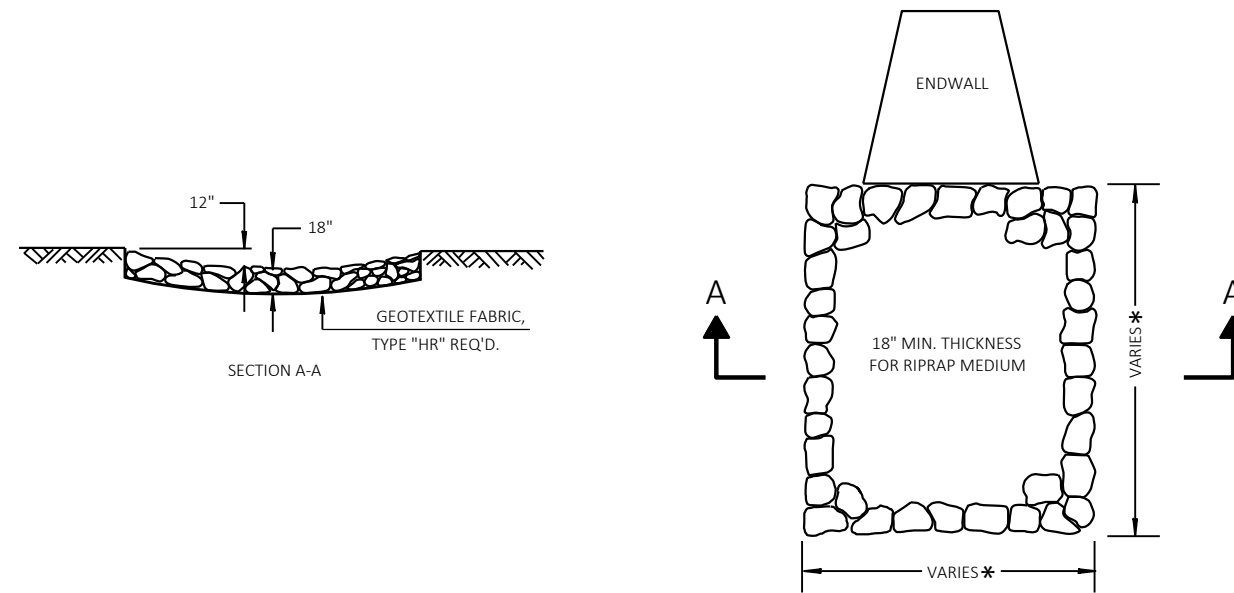
PLACE AT LOW POINT OF SILT FENCE AS DIRECTED BY THE ENGINEER.



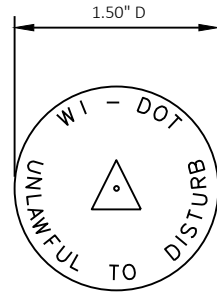
- REMOVING ASPHALTIC SURFACE MILLING
- PROPOSED HMA PAVEMENT OVERLAY
- PROPOSED ADDITIONAL ASPHALTIC SURFACE WEDGING (1.75\"/>

PAVEMENT WEDGE

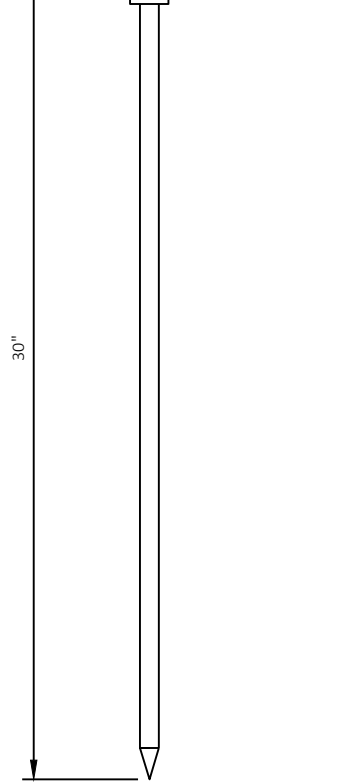
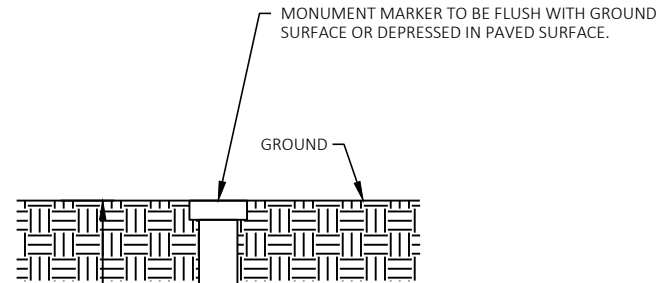
STA 766+75 - STA 769+75 (±)



RIPRAP MEDIUM TREATMENT AT CULVERTS
 SEE CONSTRUCTION DETAILS FOR LOCATIONS AND DIMENSIONS *



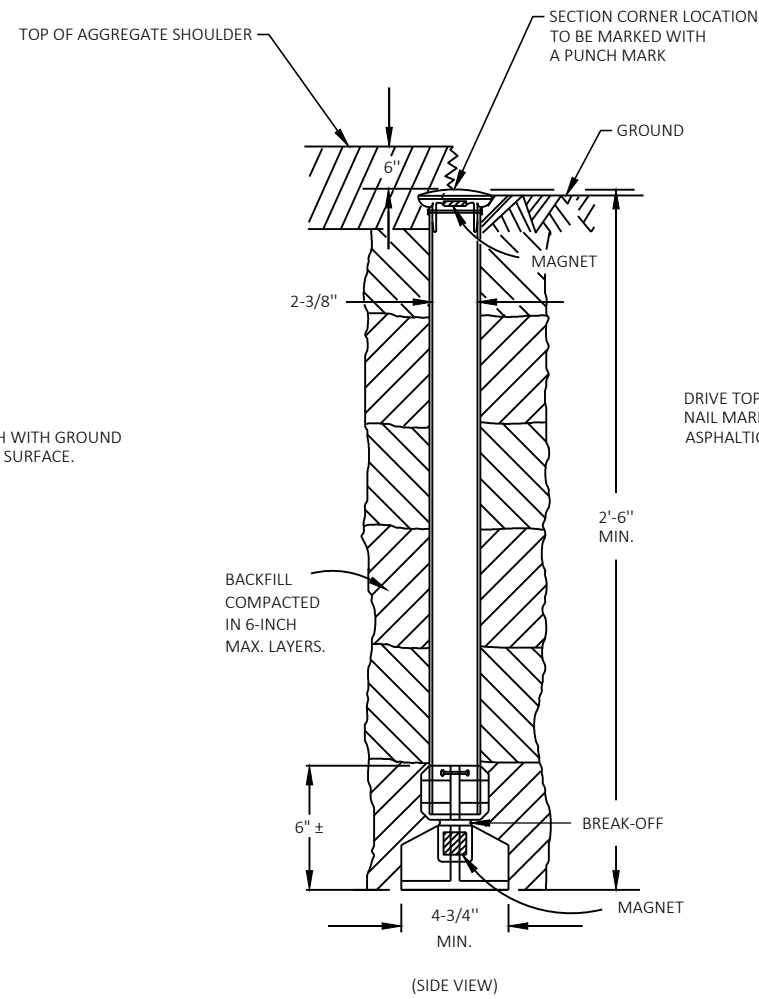
WISDOT MONUMENT CAP MARKER LOGO (SSDR130)
 CONTRACTOR TO ORDER LANDMARK REFERENCE MONUMENTS WITH THE ABOVE STAMPING



(FRONT VIEW)

BERNTSEN DRIVABLE MONUMENT SSDR130

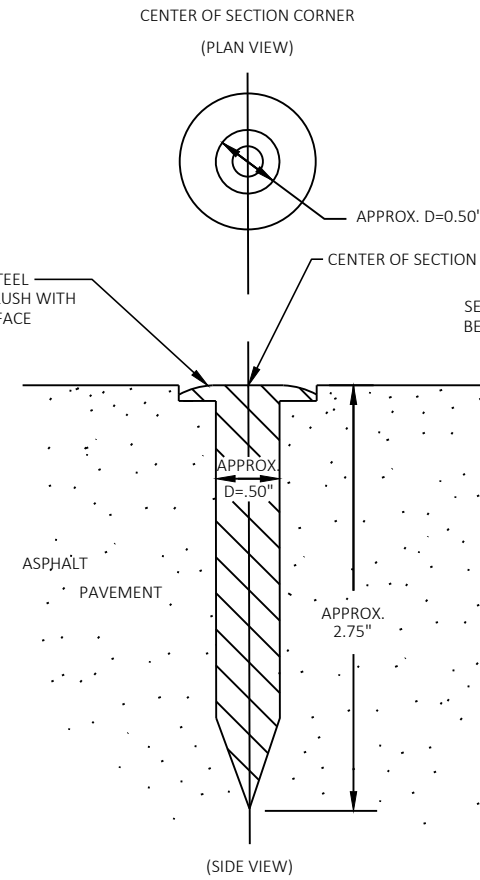
LANDMARK REFERENCE MONUMENT (TIES ONLY)



(SIDE VIEW)

OUTSIDE OF PAVEMENT

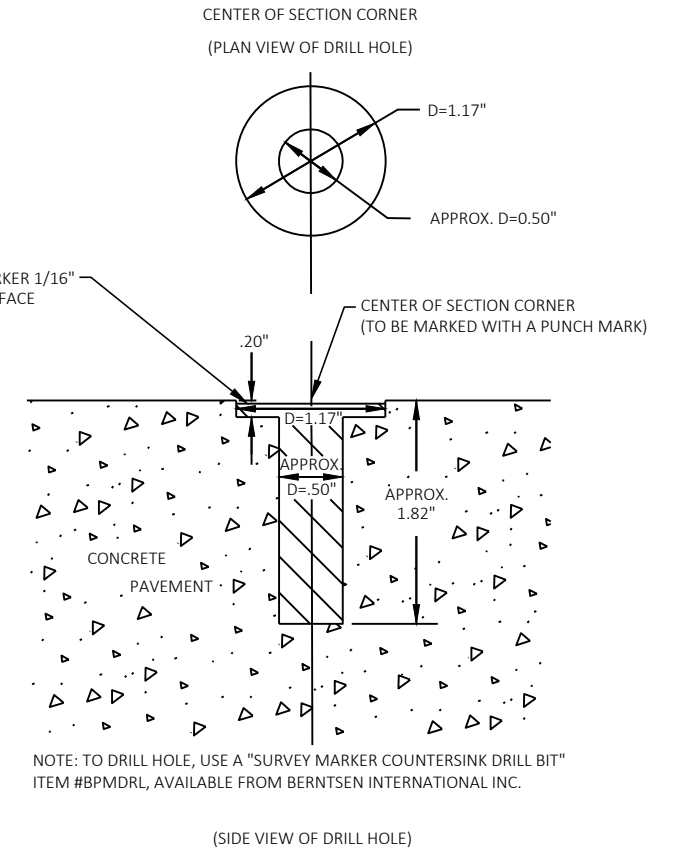
BERNTSEN A1BR30 ALUMINUM BREAK-OFF MONUMENT



(SIDE VIEW)

IN ASPHALTIC PAVEMENT

BERNTSEN SNM1 STEEL NAIL MARKER



(SIDE VIEW OF DRILL HOLE)

IN CONCRETE PAVEMENT

BERNTSEN BP - 1 BRASS MARKER WITH ANCHOR PLUG

NOTE: TO DRILL HOLE, USE A "SURVEY MARKER COUNTERSINK DRILL BIT" ITEM #BPMDDL, AVAILABLE FROM BERNTSEN INTERNATIONAL INC.

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

LEGEND

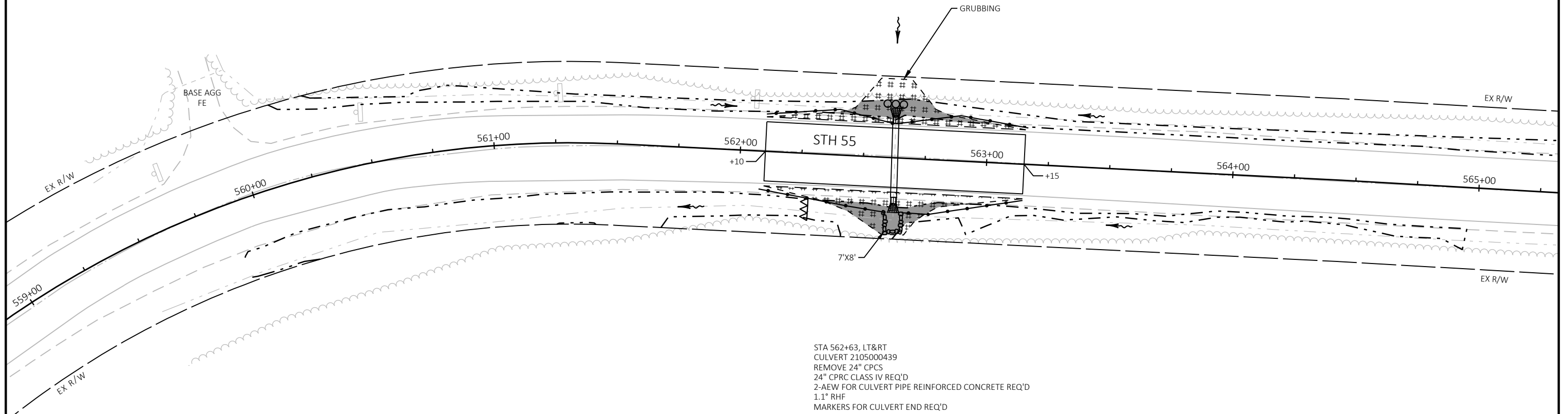
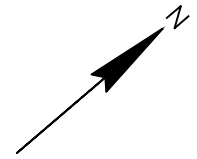
	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

NOTES

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.

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



STA 562+63, LT&RT
 CULVERT 2105000439
 REMOVE 24" CPCS
 24" CPCR CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE REQ'D
 1.1° RHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

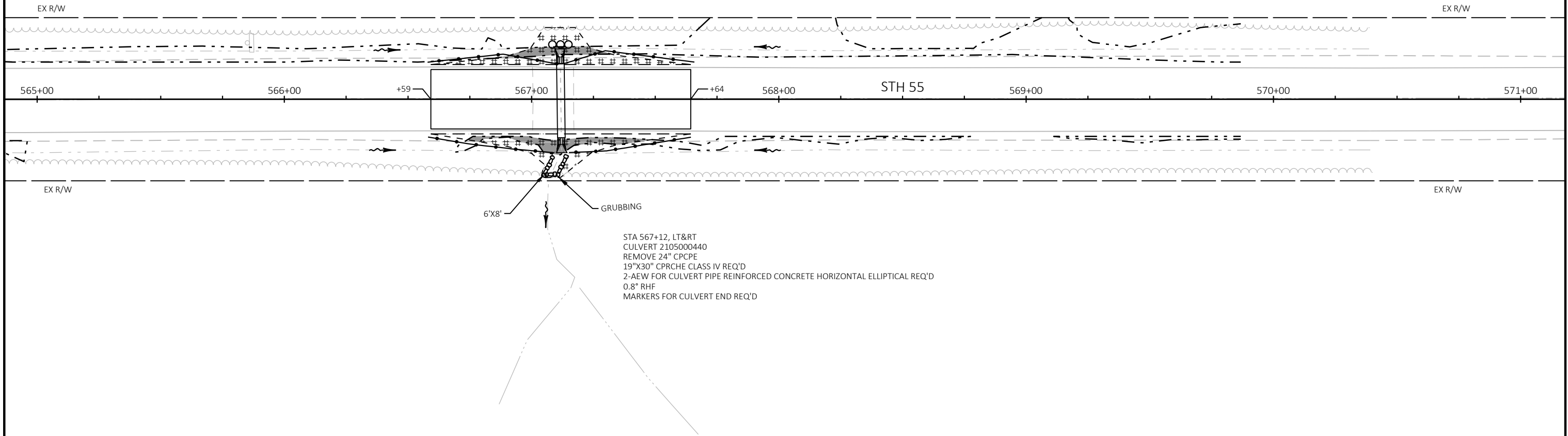
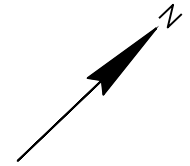
	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



STA 567+12, LT&RT
 CULVERT 2105000440
 REMOVE 24" CPCPE
 19"X30" CPRCHE CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL REQ'D
 0.8" RHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

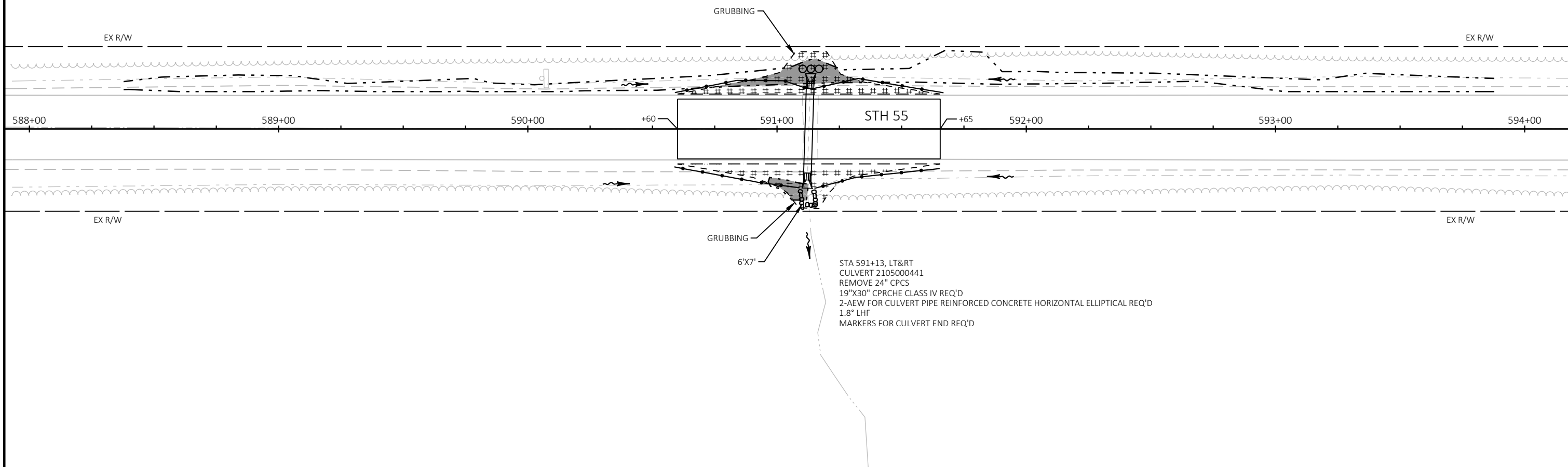
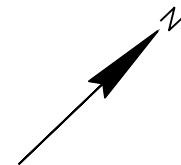
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	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



STA 591+13, LT&RT
 CULVERT 2105000441
 REMOVE 24" CPCS
 19"X30" CPRCHE CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL REQ'D
 1.8° LHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

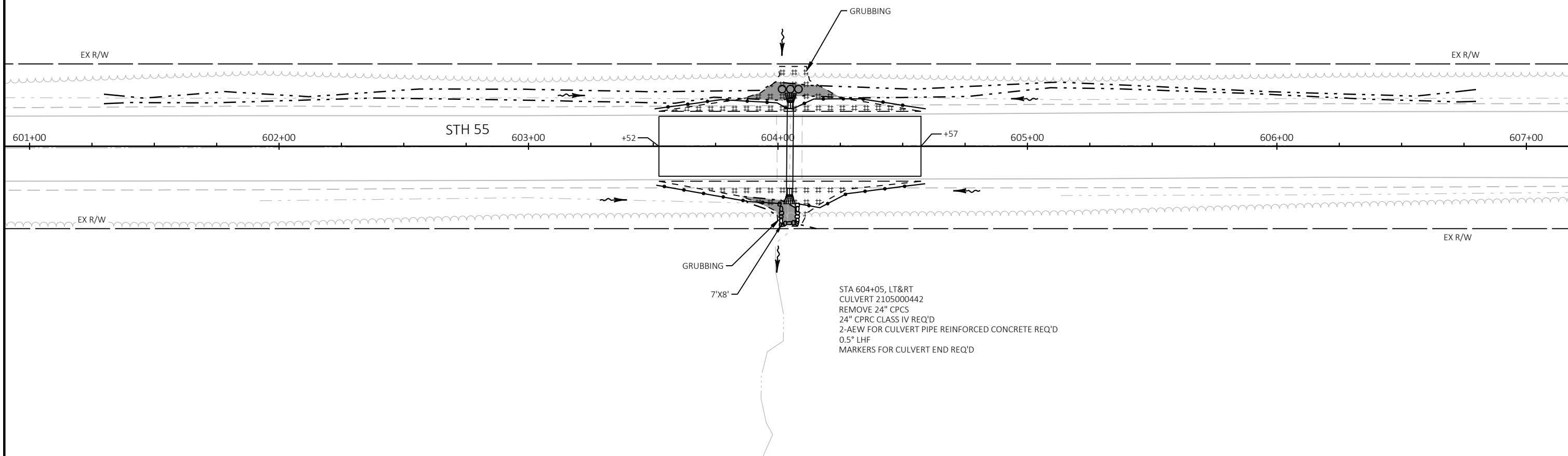
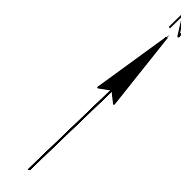
	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

NOTES

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.

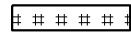
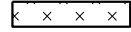
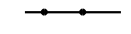
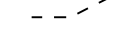

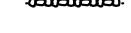

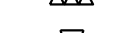
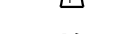

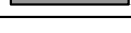
PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



STA 604+05, LT&RT
 CULVERT 2105000442
 REMOVE 24" CPCS
 24" CPRC CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE REQ'D
 0.5° LHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

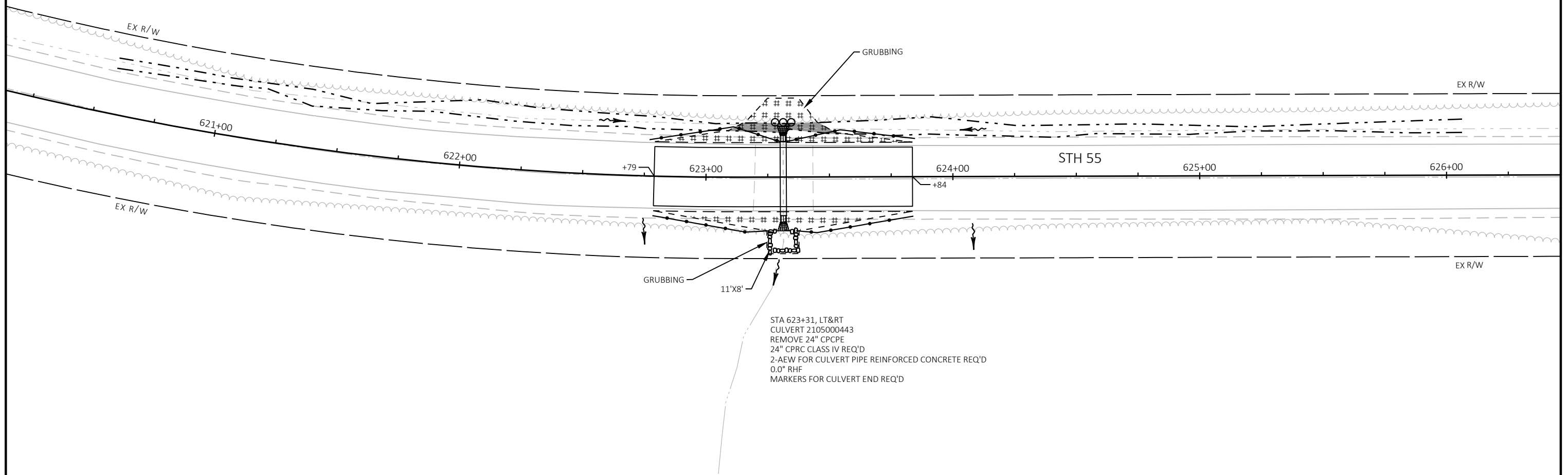
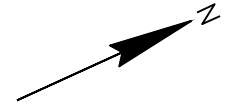
-  EROSION MAT CLASS I TYPE B
-  EROSION MAT URBAN CLASS I TYPE A
-  SILT FENCE
-  ESTIMATED SLOPE INTERCEPT
-  DELINEATED WETLAND BOUNDARY
-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
-  CULVERT PIPE CHECK
-  TEMPORARY DITCH CHECK
-  SILT FENCE RELIEF (ROCK BAGS)
-  SURFACE WATER FLOW
-  PERMITTED WETLAND/WATERWAY IMPACTS

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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.

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



STA 623+31, LT&RT
 CULVERT 2105000443
 REMOVE 24" CPCPE
 24" CPRC CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE REQ'D
 0.0° RHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

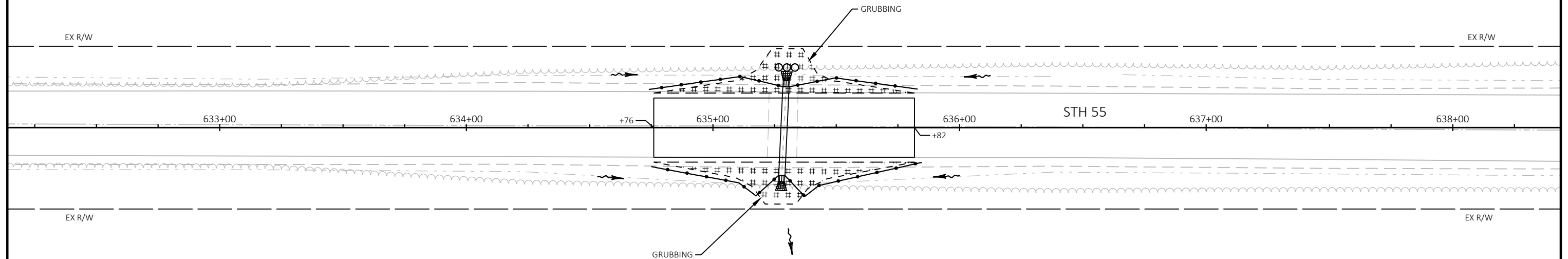
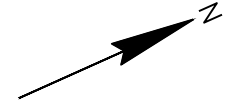
	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

NOTES

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.

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



STA 635+29, LT&RT
 CULVERT 2105000444
 REMOVE 24" CPCPE
 24" CPCR CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE REQ'D
 2.7° LHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

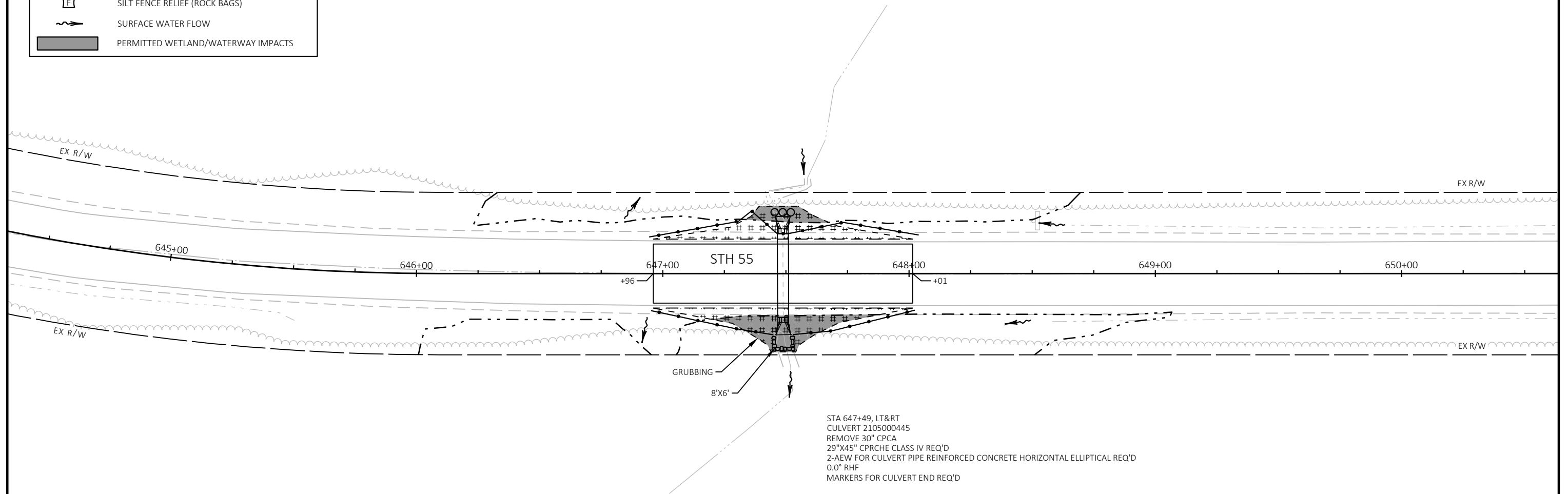
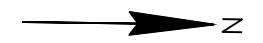
NOTES

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.

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

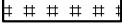
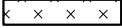






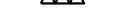
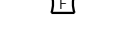
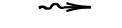
SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

WATER OBSERVED IN THIS PIPE DURING SURVEY.



STA 647+49, LT&RT
 CULVERT 2105000445
 REMOVE 30" CPCA
 29"X45" CPRCHE CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL REQ'D
 0.0° RHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

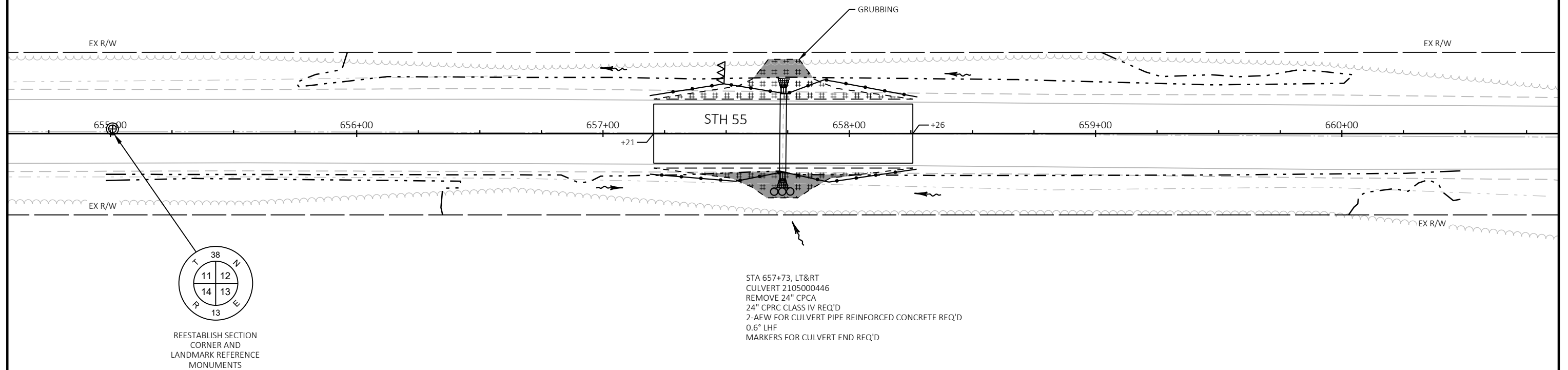
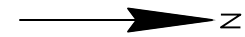
-  EROSION MAT CLASS I TYPE B
-  EROSION MAT URBAN CLASS I TYPE A
-  SILT FENCE
-  ESTIMATED SLOPE INTERCEPT
-  DELINEATED WETLAND BOUNDARY
-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
-  CULVERT PIPE CHECK
-  TEMPORARY DITCH CHECK
-  SILT FENCE RELIEF (ROCK BAGS)
-  SURFACE WATER FLOW
-  PERMITTED WETLAND/WATERWAY IMPACTS

NOTES

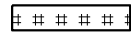
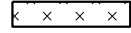
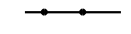
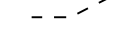

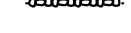

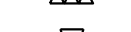
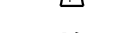

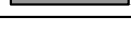
DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TOPSOILED AND COVERED WITH EROSION MAT.

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



LEGEND

-  EROSION MAT CLASS I TYPE B
-  EROSION MAT URBAN CLASS I TYPE A
-  SILT FENCE
-  ESTIMATED SLOPE INTERCEPT
-  DELINEATED WETLAND BOUNDARY
-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
-  CULVERT PIPE CHECK
-  TEMPORARY DITCH CHECK
-  SILT FENCE RELIEF (ROCK BAGS)
-  SURFACE WATER FLOW
-  PERMITTED WETLAND/WATERWAY IMPACTS

NOTES

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.

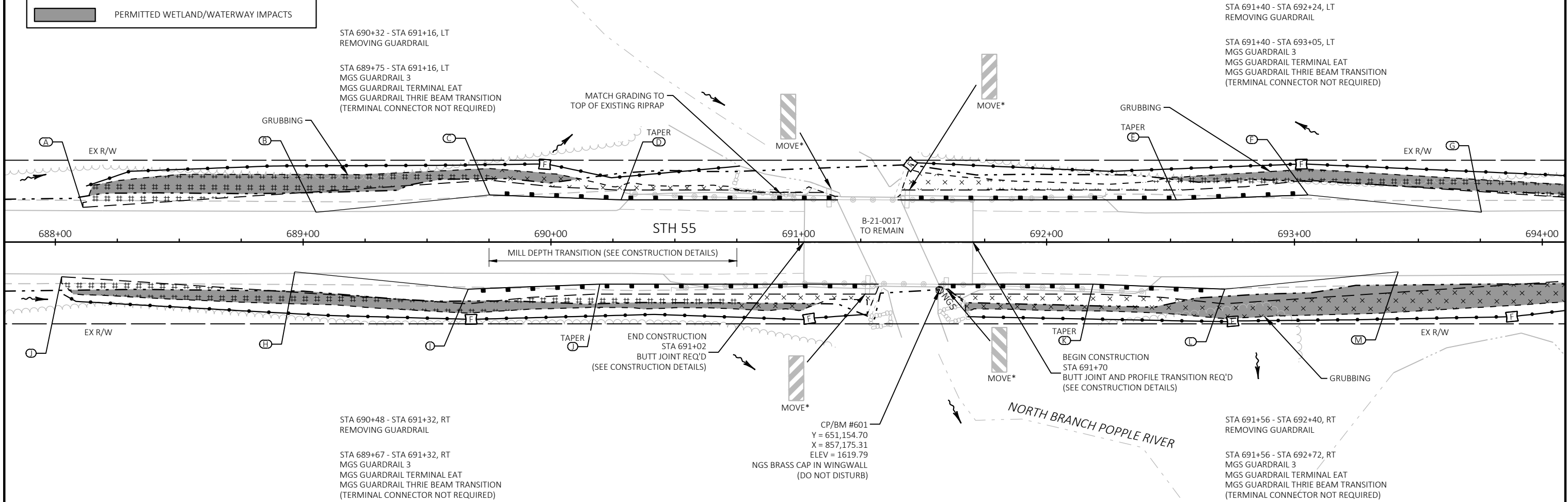
PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

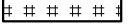
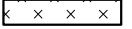






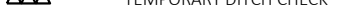
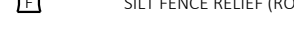

* MOVE SIGN DURING CONSTRUCTION AND REINSTALL IN THE EXISTING LOCATION.

STATION & OFFSET TABLE (GUARDRAIL)		
POINT	STATION	OFFSET
A	688+11.12	14.00' LT
B	689+05.20	12.00' LT
C	689+75.20	19.00' LT
D	690+28.28	17.00' LT
E	692+52.36	17.00' LT
F	693+05.45	19.00' LT
G	693+75.45	12.00' LT

STATION & OFFSET TABLE (GUARDRAIL)		
POINT	STATION	OFFSET
H	688+96.59	12.00' RT
I	689+66.59	19.00' RT
J	690+19.67	17.00' RT
J	688+02.51	14.00' RT
K	692+18.75	17.00' RT
L	692+71.83	19.00' RT
M	693+41.83	12.00' RT



LEGEND

-  EROSION MAT CLASS I TYPE B
-  EROSION MAT URBAN CLASS I TYPE A
-  SILT FENCE
-  ESTIMATED SLOPE INTERCEPT
-  DELINEATED WETLAND BOUNDARY
-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
-  CULVERT PIPE CHECK
-  TEMPORARY DITCH CHECK
-  SILT FENCE RELIEF (ROCK BAGS)
-  SURFACE WATER FLOW
-  PERMITTED WETLAND/WATERWAY IMPACTS

NOTES

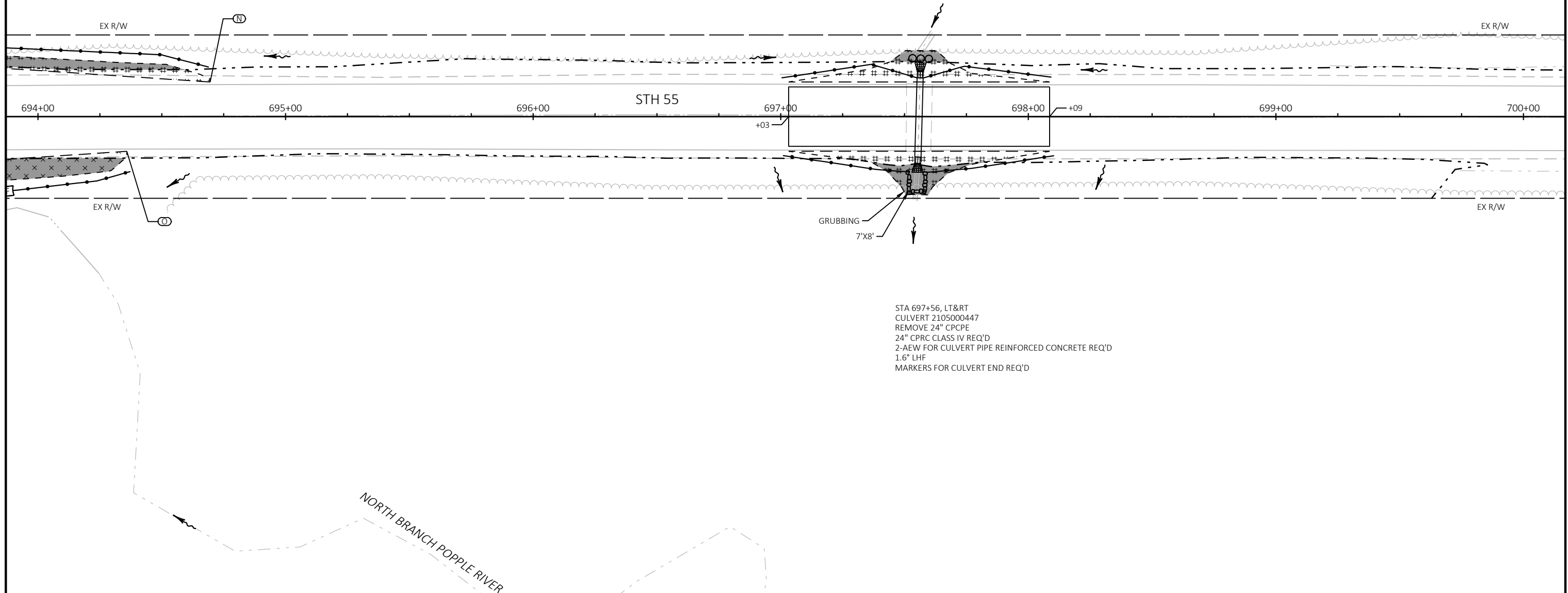
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PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

WATER OBSERVED IN THIS PIPE DURING SURVEY.

STATION & OFFSET TABLE (GUARDRAIL)		
POINT	STATION	OFFSET
N	694+69.52	14.00' LT
O	694+35.90	14.00' RT



STA 697+56, LT&RT
 CULVERT 2105000447
 REMOVE 24" CPCPE
 24" CPRC CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE REQ'D
 1.6° LHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

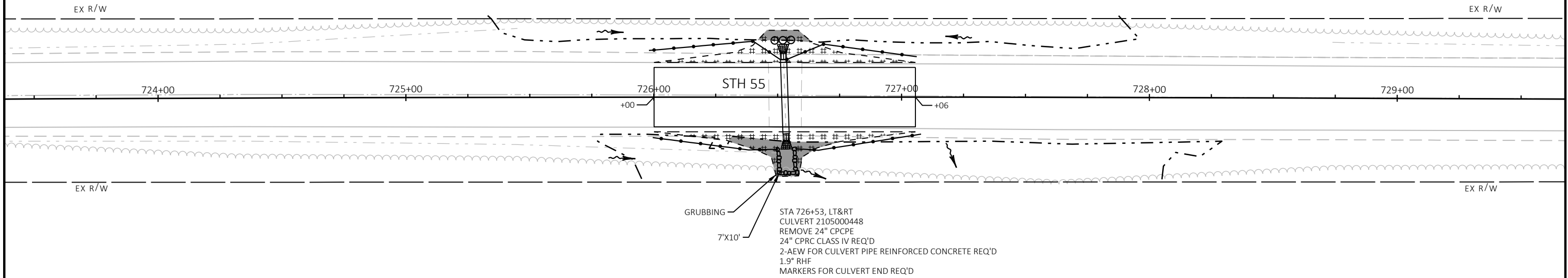
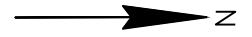
NOTES

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.

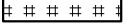
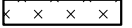


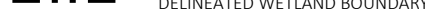

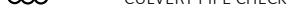
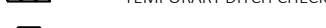
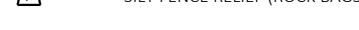

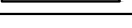
PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

WATER OBSERVED IN THIS PIPE DURING SURVEY.



LEGEND

-  EROSION MAT CLASS I TYPE B
-  EROSION MAT URBAN CLASS I TYPE A
-  SILT FENCE
-  ESTIMATED SLOPE INTERCEPT
-  DELINEATED WETLAND BOUNDARY
-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
-  CULVERT PIPE CHECK
-  TEMPORARY DITCH CHECK
-  SILT FENCE RELIEF (ROCK BAGS)
-  SURFACE WATER FLOW
-  PERMITTED WETLAND/WATERWAY IMPACTS

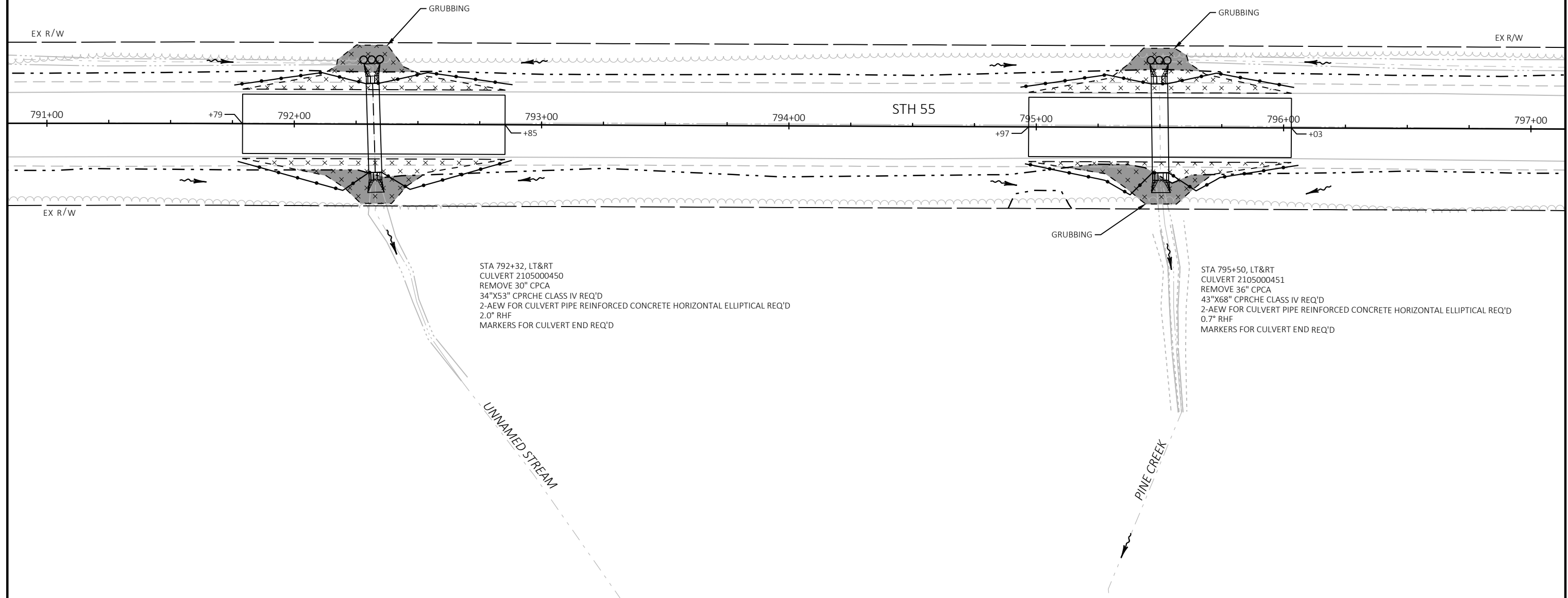
NOTES

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

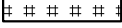
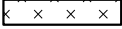






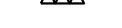
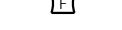
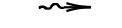
WATER OBSERVED IN THIS PIPE DURING SURVEY.



STA 792+32, LT&RT
 CULVERT 2105000450
 REMOVE 30" CPCA
 34"X53" CPRCHE CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL REQ'D
 2.0° RHF
 MARKERS FOR CULVERT END REQ'D

STA 795+50, LT&RT
 CULVERT 2105000451
 REMOVE 36" CPCA
 43"X68" CPRCHE CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL REQ'D
 0.7° RHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

-  EROSION MAT CLASS I TYPE B
-  EROSION MAT URBAN CLASS I TYPE A
-  SILT FENCE
-  ESTIMATED SLOPE INTERCEPT
-  DELINEATED WETLAND BOUNDARY
-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
-  CULVERT PIPE CHECK
-  TEMPORARY DITCH CHECK
-  SILT FENCE RELIEF (ROCK BAGS)
-  SURFACE WATER FLOW
-  PERMITTED WETLAND/WATERWAY IMPACTS

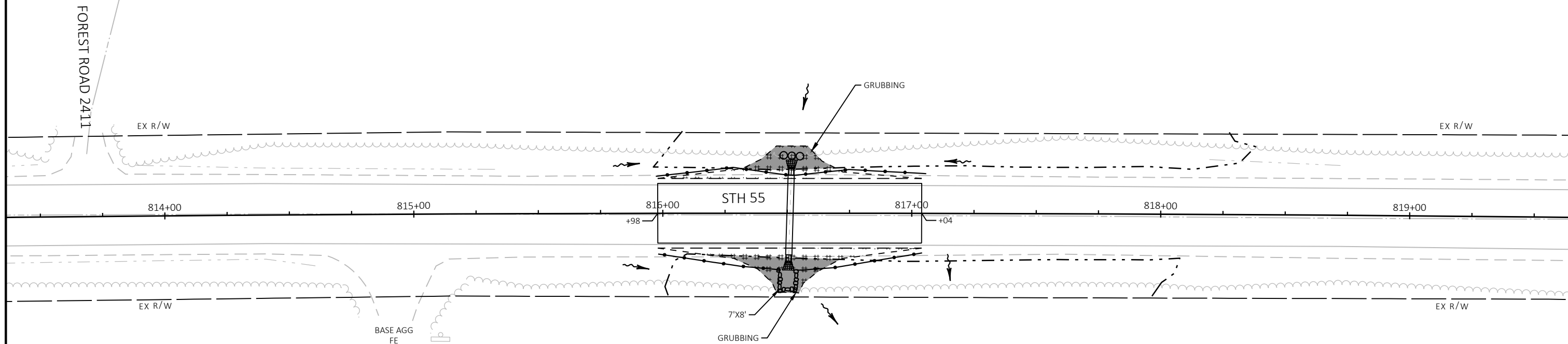
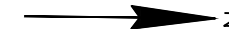
NOTES

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

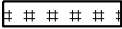
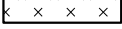
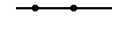
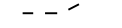




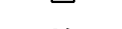

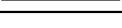
SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

WATER OBSERVED IN THIS PIPE DURING SURVEY.



STA 816+51, LT&RT
 CULVERT 2105000452
 REMOVE 24" CPCA
 24" CPRC CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE REQ'D
 1.7" RHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

-  EROSION MAT CLASS I TYPE B
-  EROSION MAT URBAN CLASS I TYPE A
-  SILT FENCE
-  ESTIMATED SLOPE INTERCEPT
-  DELINEATED WETLAND BOUNDARY
-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
-  CULVERT PIPE CHECK
-  TEMPORARY DITCH CHECK
-  SILT FENCE RELIEF (ROCK BAGS)
-  SURFACE WATER FLOW
-  PERMITTED WETLAND/WATERWAY IMPACTS

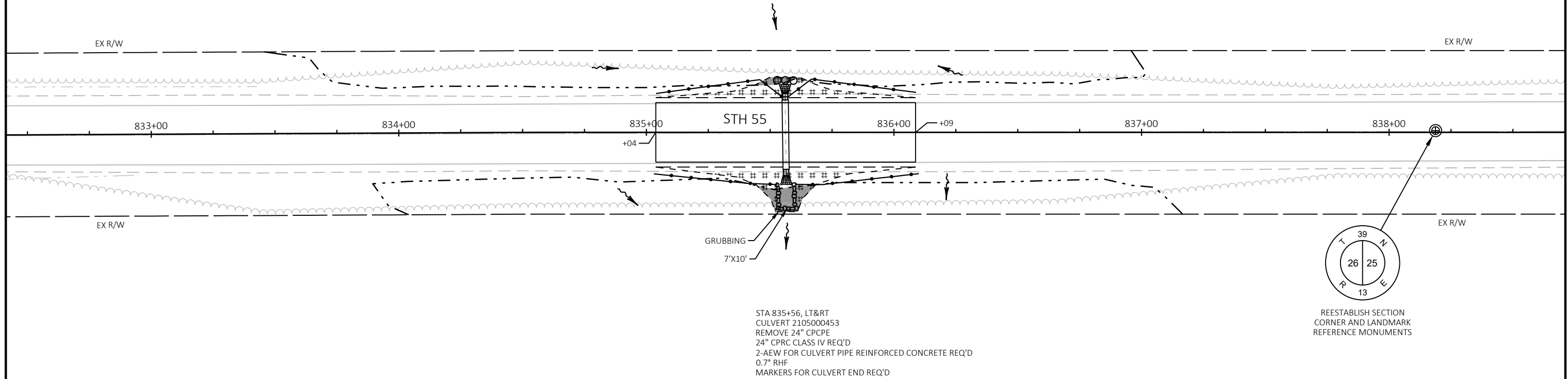
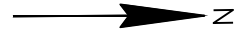
NOTES

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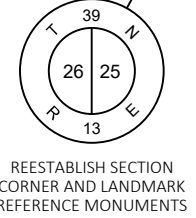
PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

WATER OBSERVED IN THIS PIPE DURING SURVEY.



STA 835+56, LT&RT
 CULVERT 2105000453
 REMOVE 24" CPCPE
 24" CPRC CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE REQ'D
 0.7" RHF
 MARKERS FOR CULVERT END REQ'D



LEGEND

	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

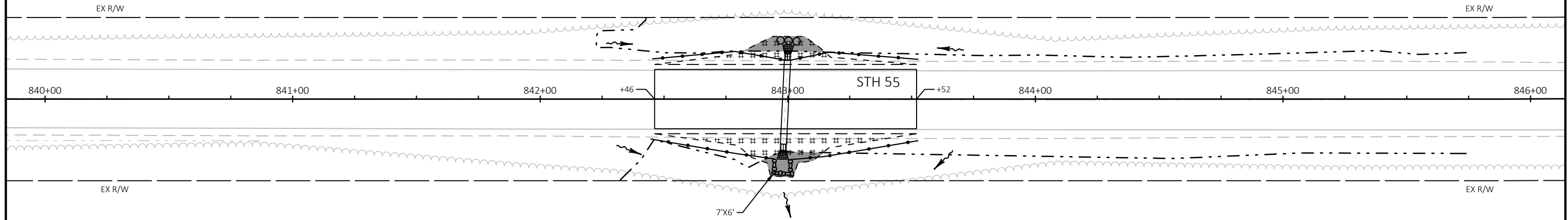
NOTES

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.

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

WATER OBSERVED IN THIS PIPE DURING SURVEY.



STA 842+99, LT&RT
 CULVERT 2105000454
 REMOVE 24" CPCA
 24" CPRC CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE REQ'D
 2.8° LHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

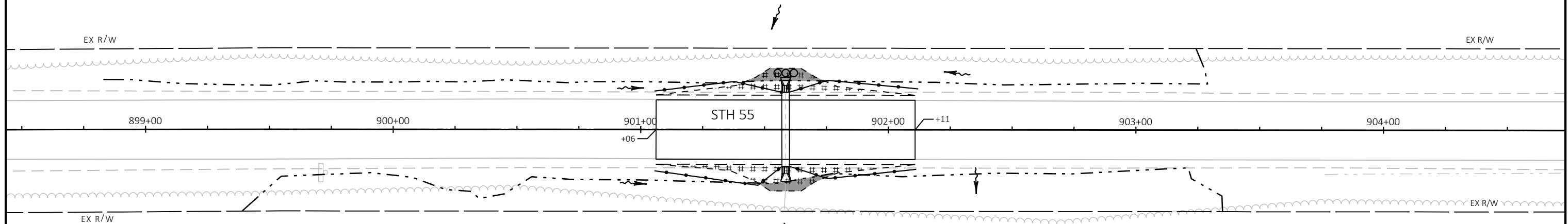
NOTES

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.

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

WATER OBSERVED IN THIS PIPE DURING SURVEY.



STA 901+59, LT&RT
 CULVERT 2105000456
 REMOVE 24" CPCA
 19"X30" CPRCHE CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL REQ'D
 0.0' RHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

NOTES

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.

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

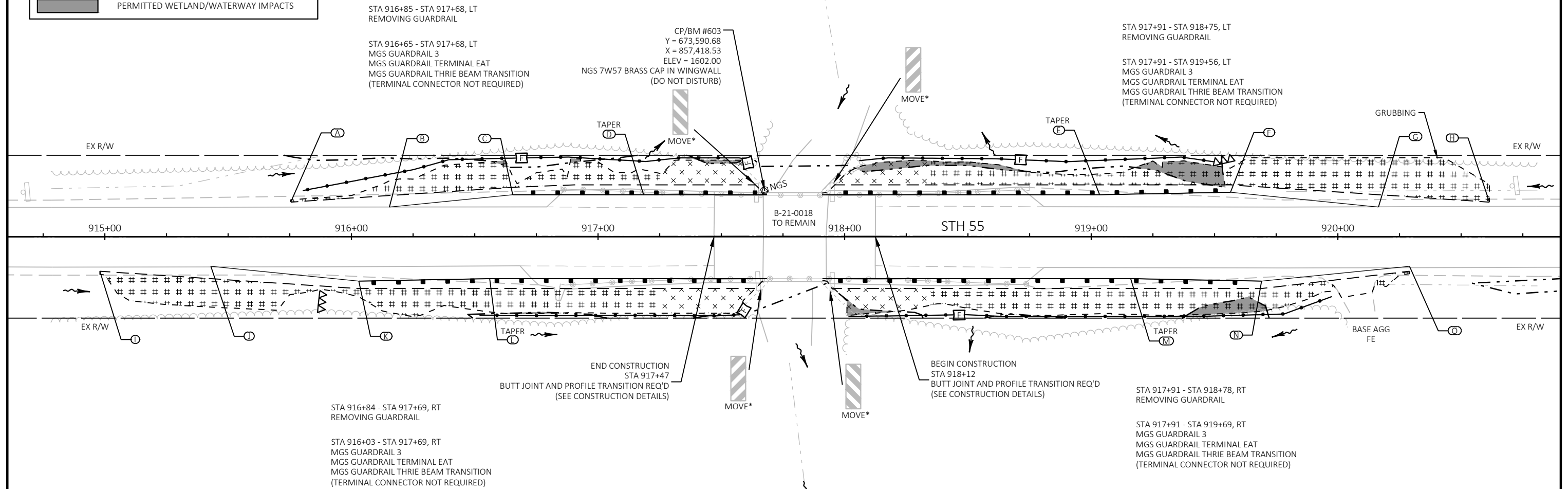
SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

STATION & OFFSET TABLE (GUARDRAIL)

POINT	STATION	OFFSET
A	915+75.36	14.00' LT
B	916+15.36	12.00' LT
C	916+65.36	17.00' LT
D	917+18.38	17.00' LT
E	919+03.37	17.00' LT
F	919+56.46	18.00' LT
G	920+16.46	12.00' LT
H	920+61.46	14.00' LT

STATION & OFFSET TABLE (GUARDRAIL)

POINT	STATION	OFFSET
I	914+97.96	14.00' RT
J	915+42.96	12.00' RT
K	916+02.96	18.00' RT
L	916+56.04	17.00' RT
M	919+15.97	17.00' RT
N	919+69.06	18.00' RT
O	920+29.06	12.00' RT



LEGEND

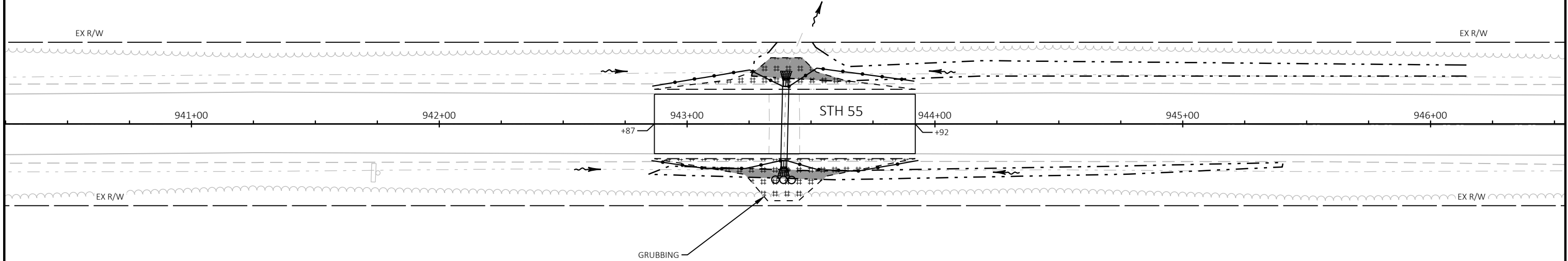
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	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

NOTES

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.

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



STA 943+39, LT&RT
 CULVERT 2105000458
 REMOVE 24" CPCPE
 24" CPRC CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE REQ'D
 1.4" LHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

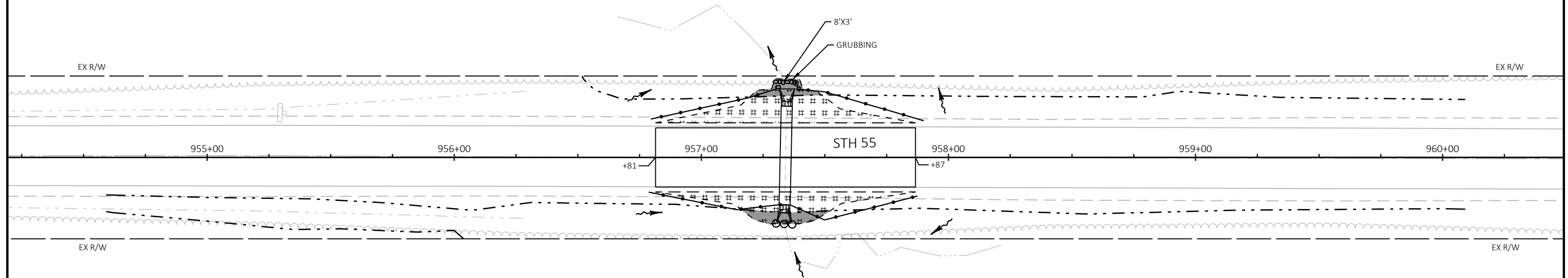
NOTES

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.

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

WATER OBSERVED IN THIS PIPE DURING SURVEY.



STA 957+34, LT&RT
 CULVERT 2105000459
 REMOVE 24" CPCA
 29"X45" CPRCHE CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL REQ'D
 1.2" LHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

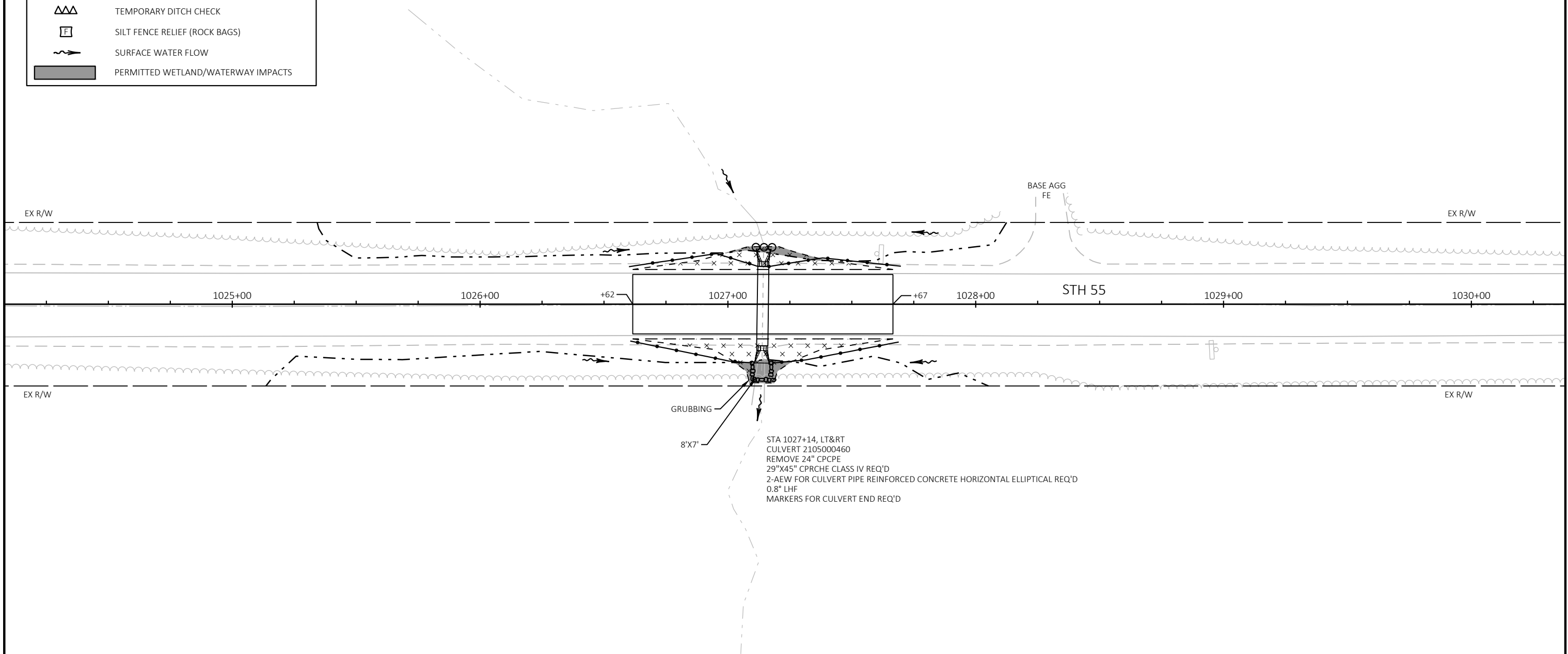
NOTES

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

WATER OBSERVED IN THIS PIPE DURING SURVEY.



GRUBBING
8'x7'

STA 1027+14, LT&RT
CULVERT 2105000460
REMOVE 24" CPCPE
29"x45" CPRCHE CLASS IV REQ'D
2-AEW FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL REQ'D
0.8' LHF
MARKERS FOR CULVERT END REQ'D

BASE AGG
FE

STH 55

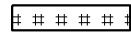
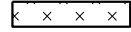
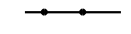
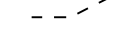

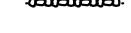

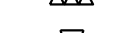
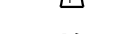

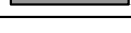
EX R/W

EX R/W

EX R/W

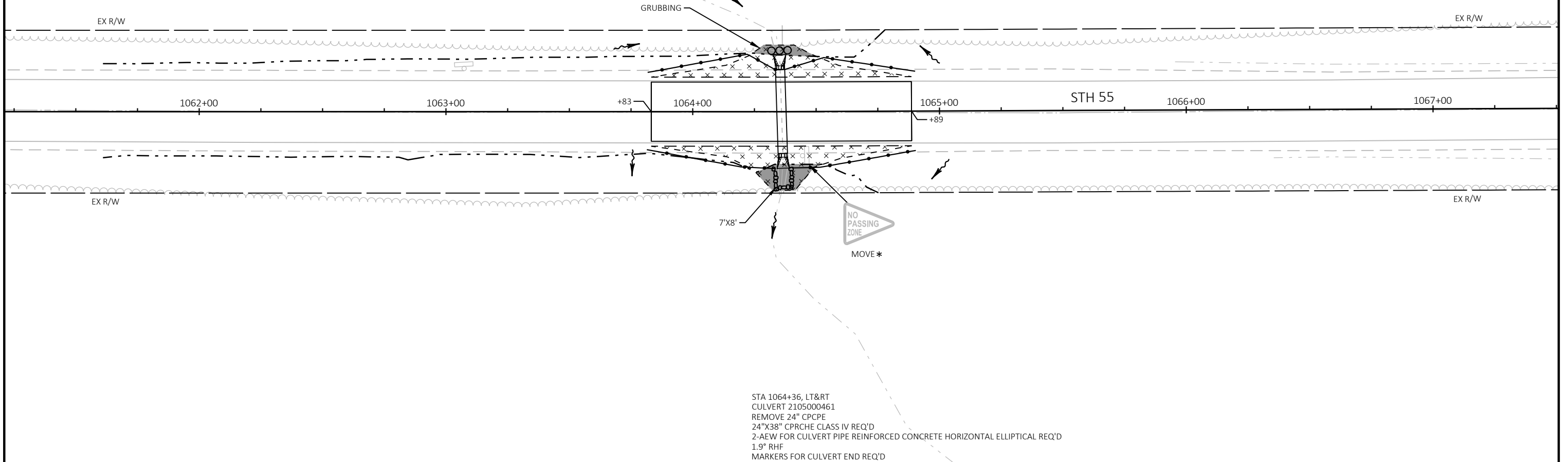
EX R/W

LEGEND

-  EROSION MAT CLASS I TYPE B
-  EROSION MAT URBAN CLASS I TYPE A
-  SILT FENCE
-  ESTIMATED SLOPE INTERCEPT
-  DELINEATED WETLAND BOUNDARY
-  RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
-  CULVERT PIPE CHECK
-  TEMPORARY DITCH CHECK
-  SILT FENCE RELIEF (ROCK BAGS)
-  SURFACE WATER FLOW
-  PERMITTED WETLAND/WATERWAY IMPACTS

NOTES

- 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.
- PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.
- SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.
- WATER OBSERVED IN THIS PIPE DURING SURVEY.
- * MOVE SIGN DURING CONSTRUCTION AND REINSTALL IN THE EXISTING LOCATION.



LEGEND

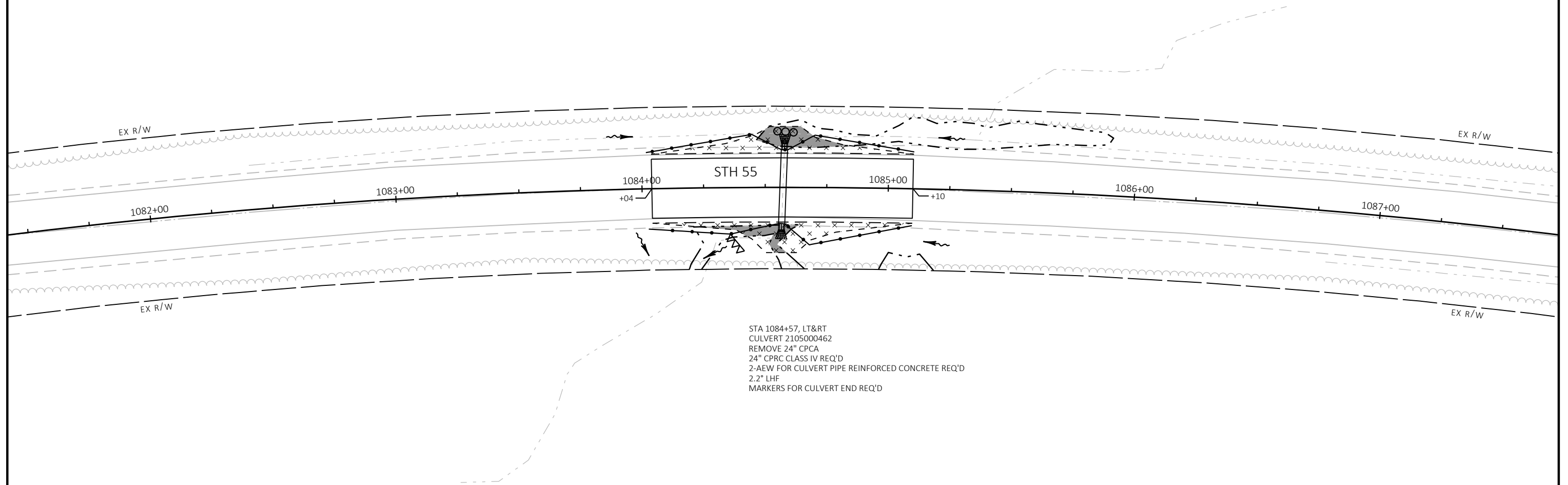
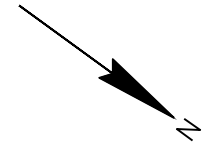
	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
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SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



LEGEND

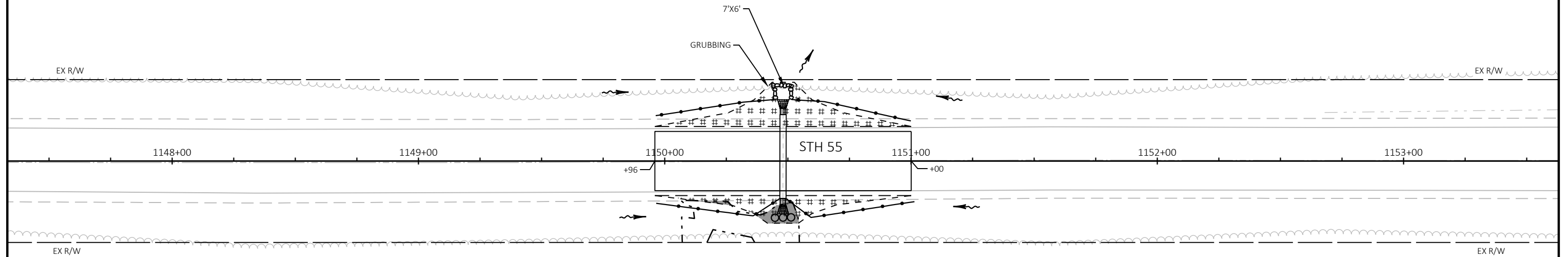
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	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



STA 1150+48 LT&RT
 CULVERT 2105000463
 REMOVE 18" CPCA
 24" CPCR CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE REQ'D
 0.0° RHF
 MARKERS FOR CULVERT END REQ'D

LEGEND

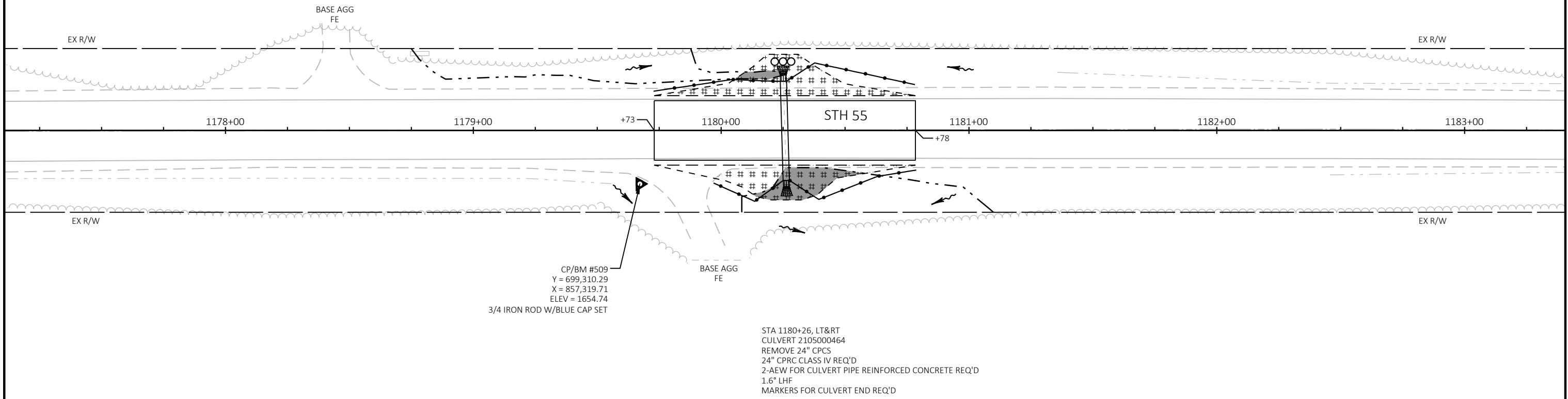
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	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

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

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



LEGEND

	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I TYPE A
	SILT FENCE
	ESTIMATED SLOPE INTERCEPT
	DELINEATED WETLAND BOUNDARY
	RIPRAP MEDIUM (SEE CONSTRUCTION DETAILS)
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK
	SILT FENCE RELIEF (ROCK BAGS)
	SURFACE WATER FLOW
	PERMITTED WETLAND/WATERWAY IMPACTS

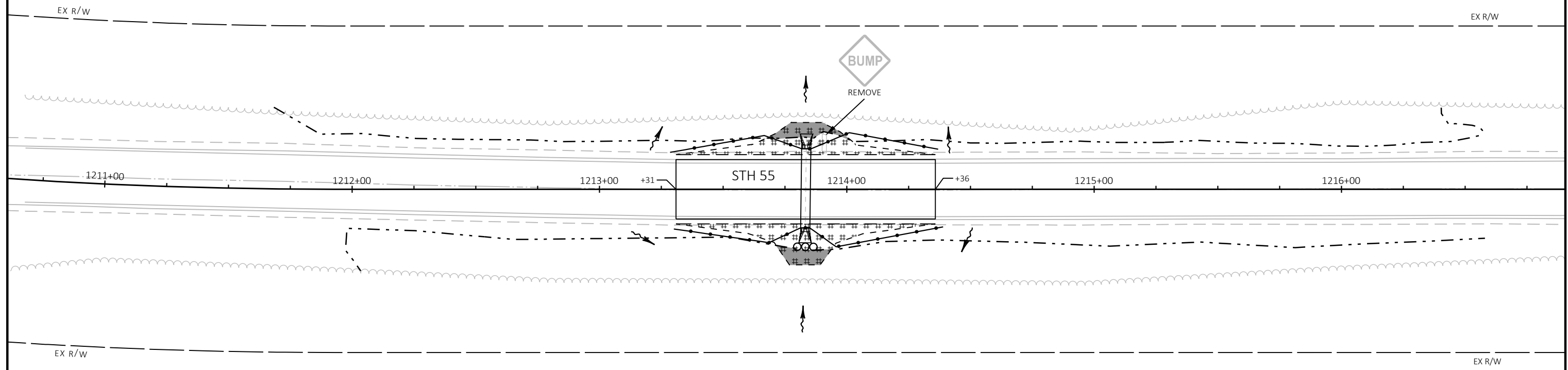
NOTES

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.

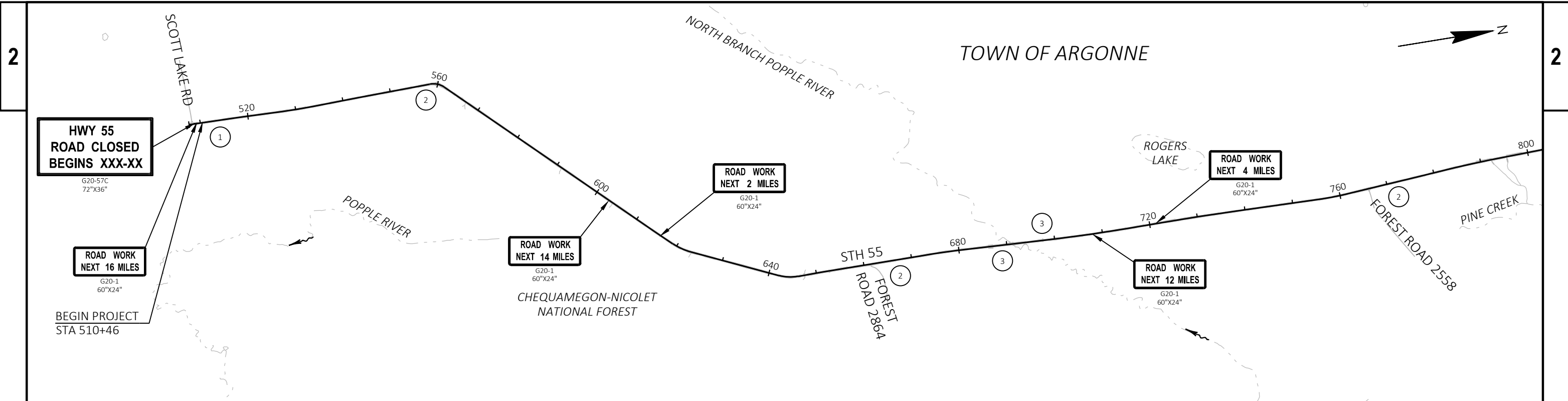
PLACE SILT FENCE WITHIN 1-FT TO 3-FT OF THE SLOPE INTERCEPT IN WETLAND AREAS.

SEE "CULVERT PIPE TRANSITION" CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.

WATER OBSERVED IN THIS PIPE DURING SURVEY.



STA 1213+83, LT&RT
 CULVERT 2105000466
 REMOVE 24" CPCS
 24"X38" CPRCHE CLASS IV REQ'D
 2-AEW FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL REQ'D
 0.7" LHF
 MARKERS FOR CULVERT END REQ'D

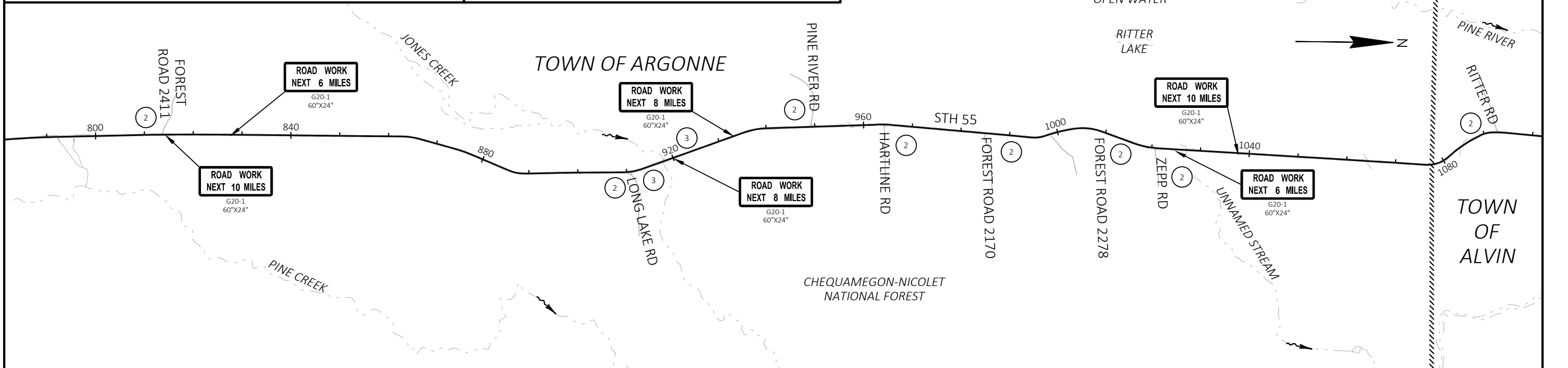


LEGEND

1	PLACE TRAFFIC CONTROL SIGNS PER SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC".
2	PLACE TRAFFIC CONTROL SIGNS PER "TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL" IN SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC".
3	PLACE TRAFFIC CONTROL SIGNS AND DRUMS PER SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY" IN AREAS OF GUARDRAIL REPLACEMENT.

TRAFFIC CONTROL GENERAL NOTES

- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- IF CONTRACTOR ELECTS TO DO ANY WORK PRIOR TO DETOUR PLACE G20-57 7 DAYS BEFORE PROJECT AND REMOVE WHEN PROJECT BEGINS.
- PLACE G20-57C SIGN 7 DAYS PRIOR TO THE EXPECTED START OF THE DETOUR. ADJUST THE DATE ACCORDINGLY. REMOVE WHEN CONSTRUCTION BEGINS.
- PLACE TRAFFIC CONTROL SIGNS PER SDD "TRAFFIC CONTROL, DROP-OFF SIGNING" DURING MILL AND OVERLAY OPERATIONS AS NEEDED.



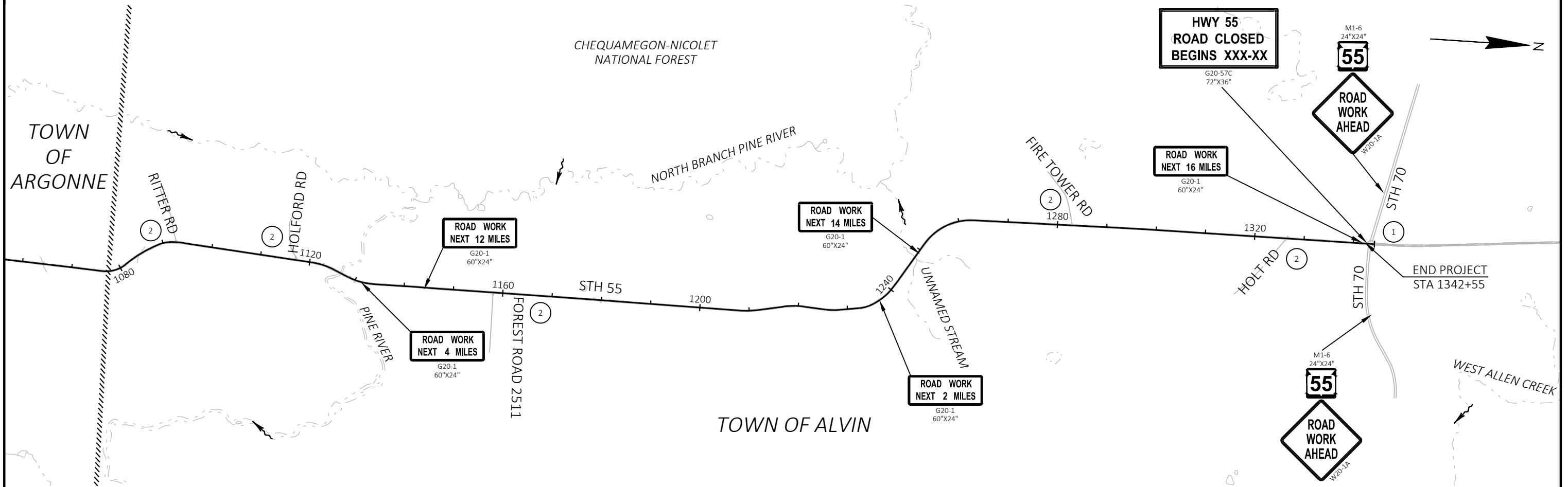
PROJECT NO: 9165-13-70	HWY: STH 55	COUNTY: FOREST	TRAFFIC CONTROL - OVERVIEW	SHEET	E
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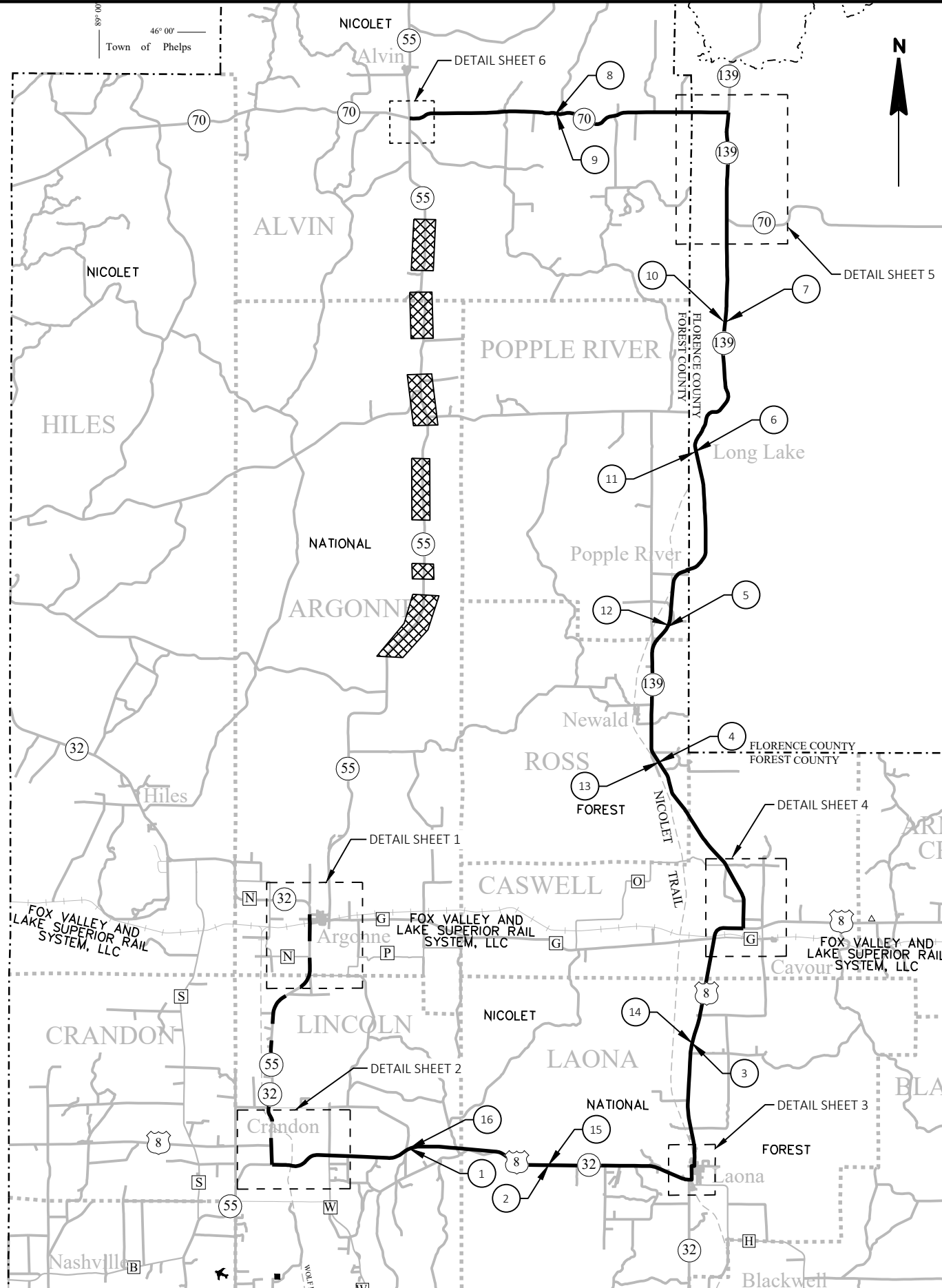
LEGEND

- 1 PLACE TRAFFIC CONTROL SIGNS PER SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC".
- 2 PLACE TRAFFIC CONTROL SIGNS PER "TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL" IN SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC".
- 3 PLACE TRAFFIC CONTROL SIGNS AND DRUMS PER SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY" IN AREAS OF GUARDRAIL REPLACEMENT.

TRAFFIC CONTROL GENERAL NOTES

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- 3. IF CONTRACTOR ELECTS TO DO ANY WORK PRIOR TO DETOUR PLACE G20-57 7 DAYS BEFORE PROJECT AND REMOVE WHEN PROJECT BEGINS.
- 4. PLACE G20-57C SIGN 7 DAYS PRIOR TO THE EXPECTED START OF THE DETOUR. ADJUST THE DATE ACCORDINGLY. REMOVE WHEN CONSTRUCTION BEGINS.
- 5. PLACE TRAFFIC CONTROL SIGNS PER SDD "TRAFFIC CONTROL, DROP-OFF SIGNING" DURING MILL AND OVERLAY OPERATIONS AS NEEDED.





LEGEND

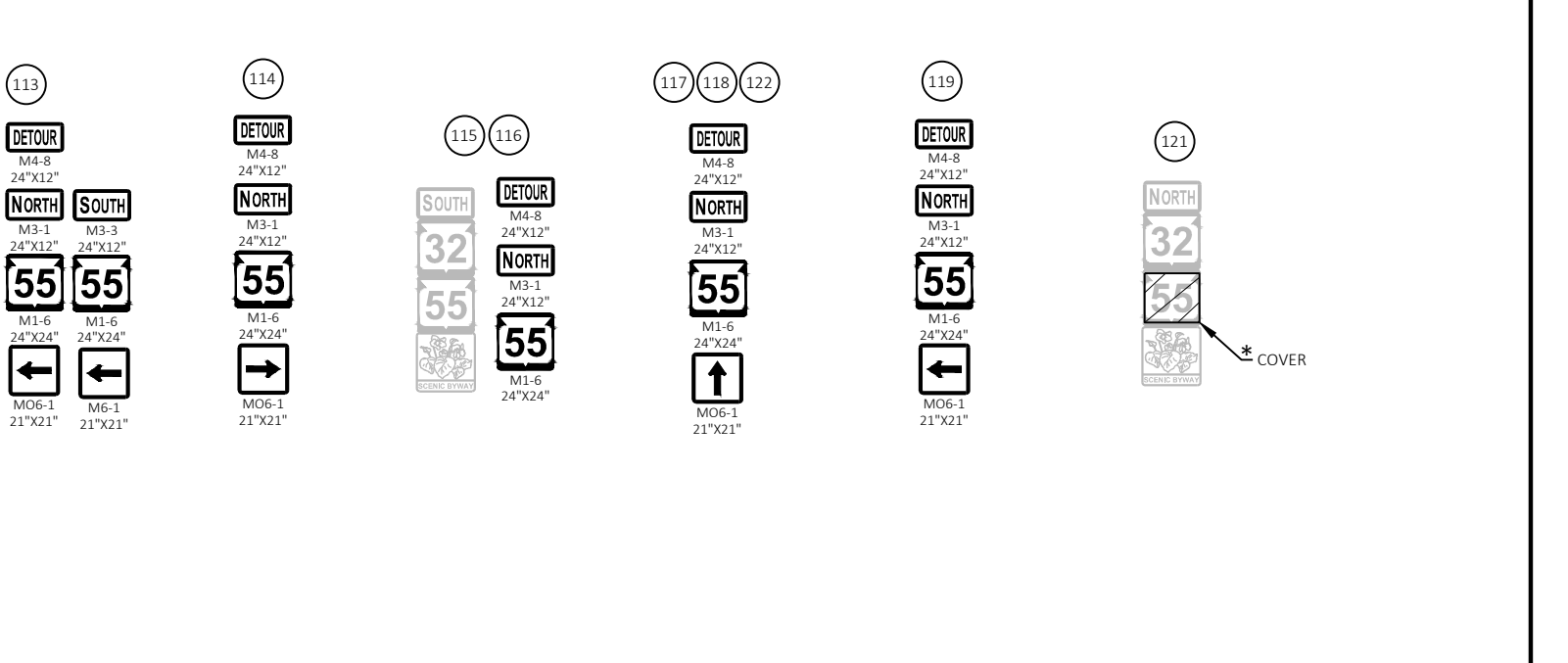
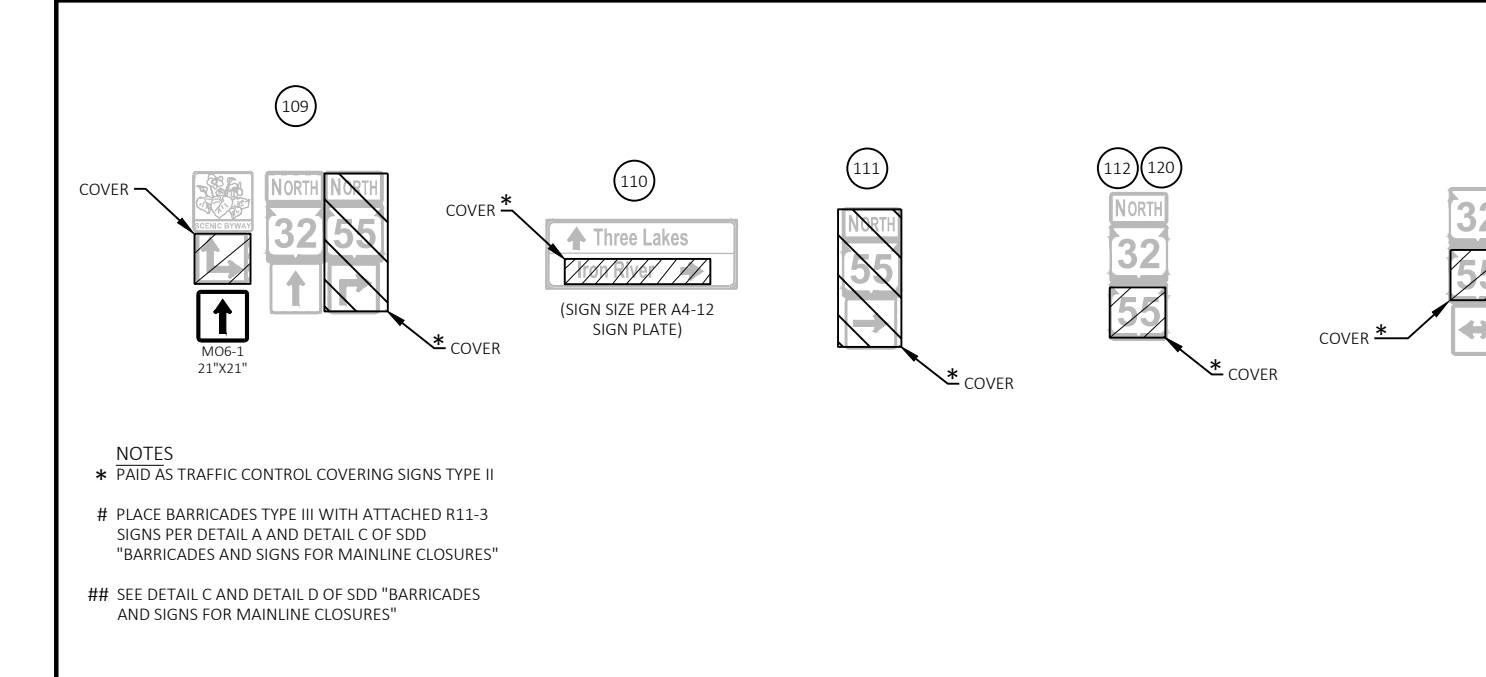
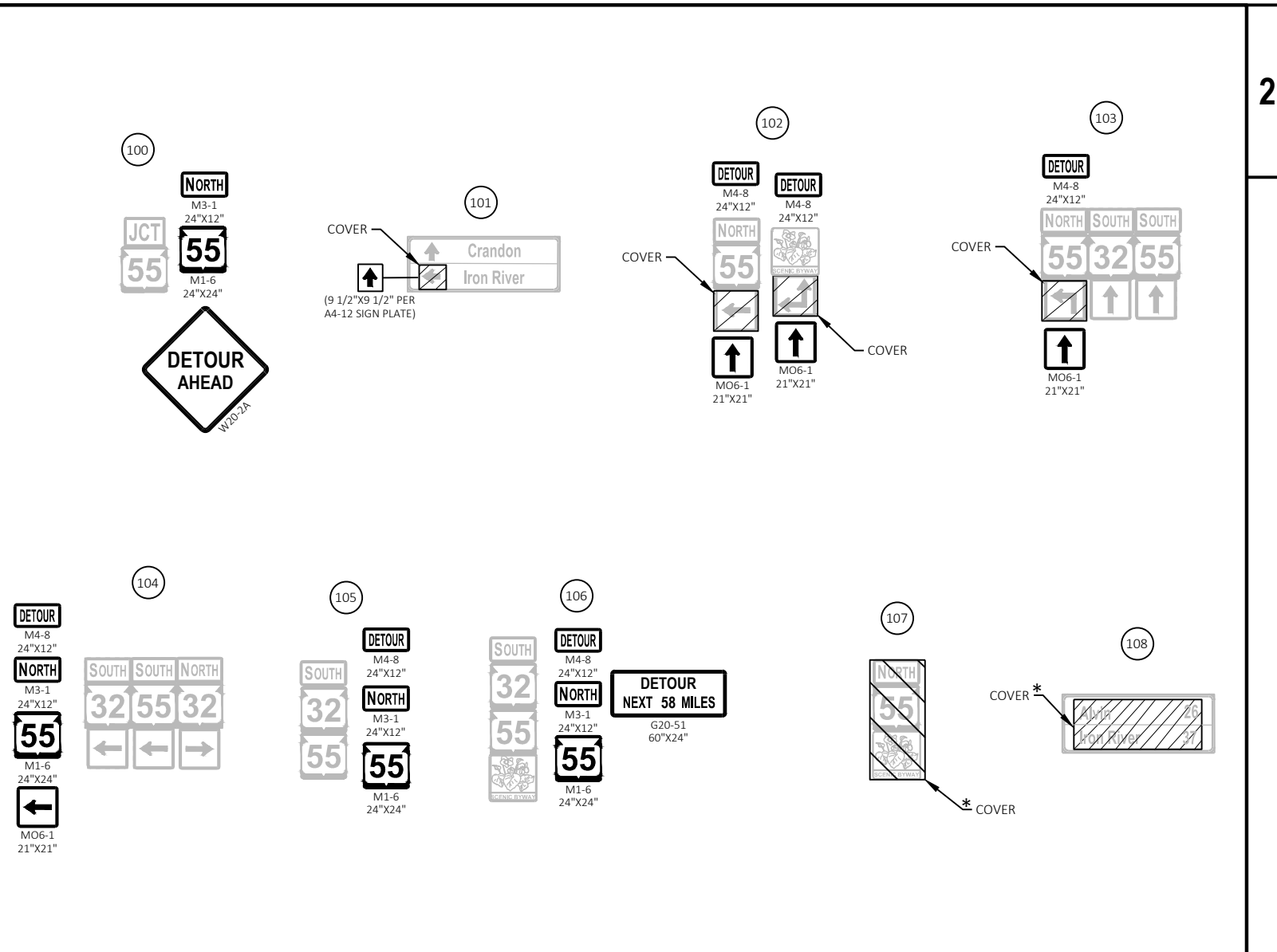
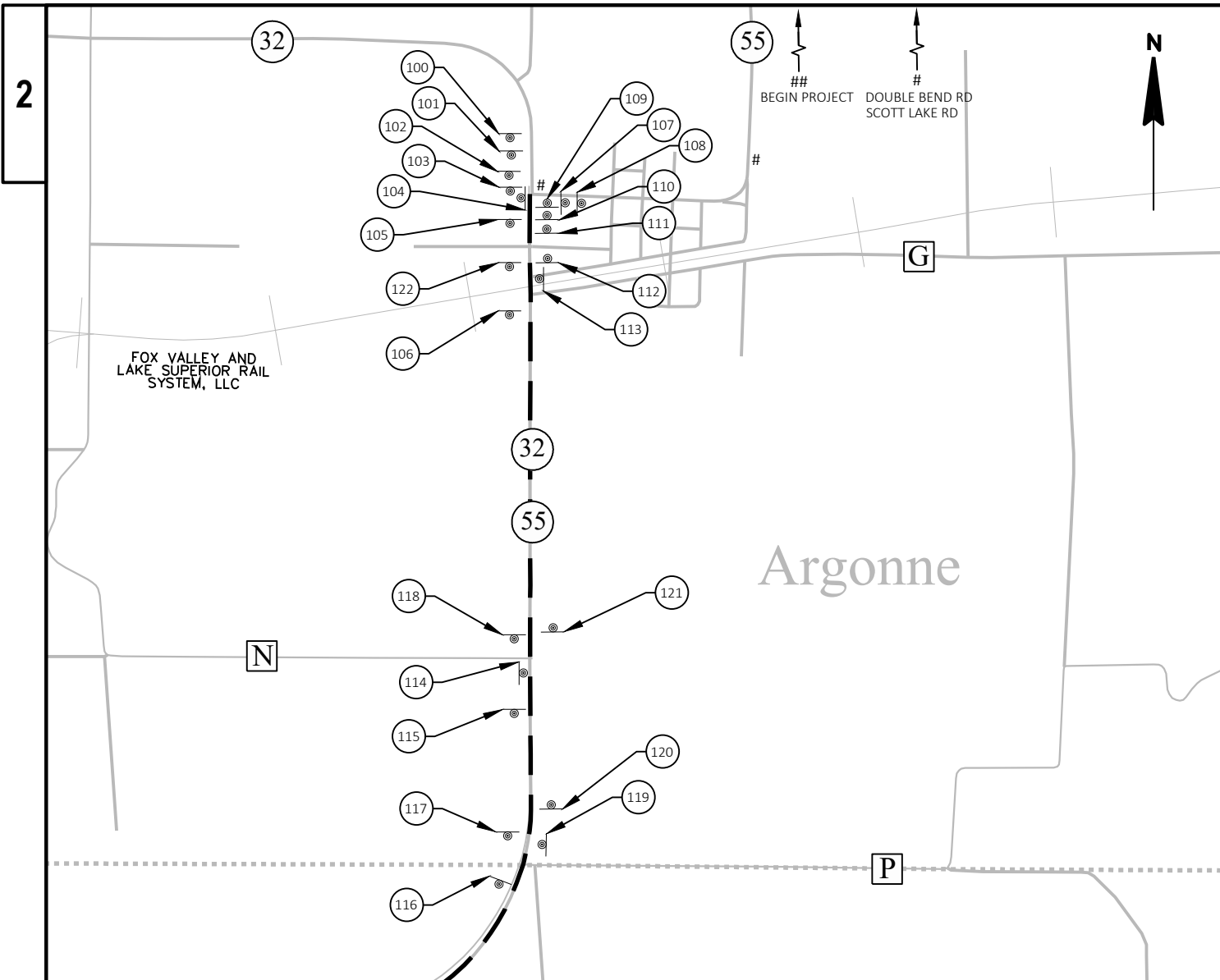
- DETOUR ROUTE (STH 55 NB AND STH 55 SB)
- DETOUR ROUTE (STH 55 NB)
- CULVERT REPLACEMENT WORK ZONES

NOTE

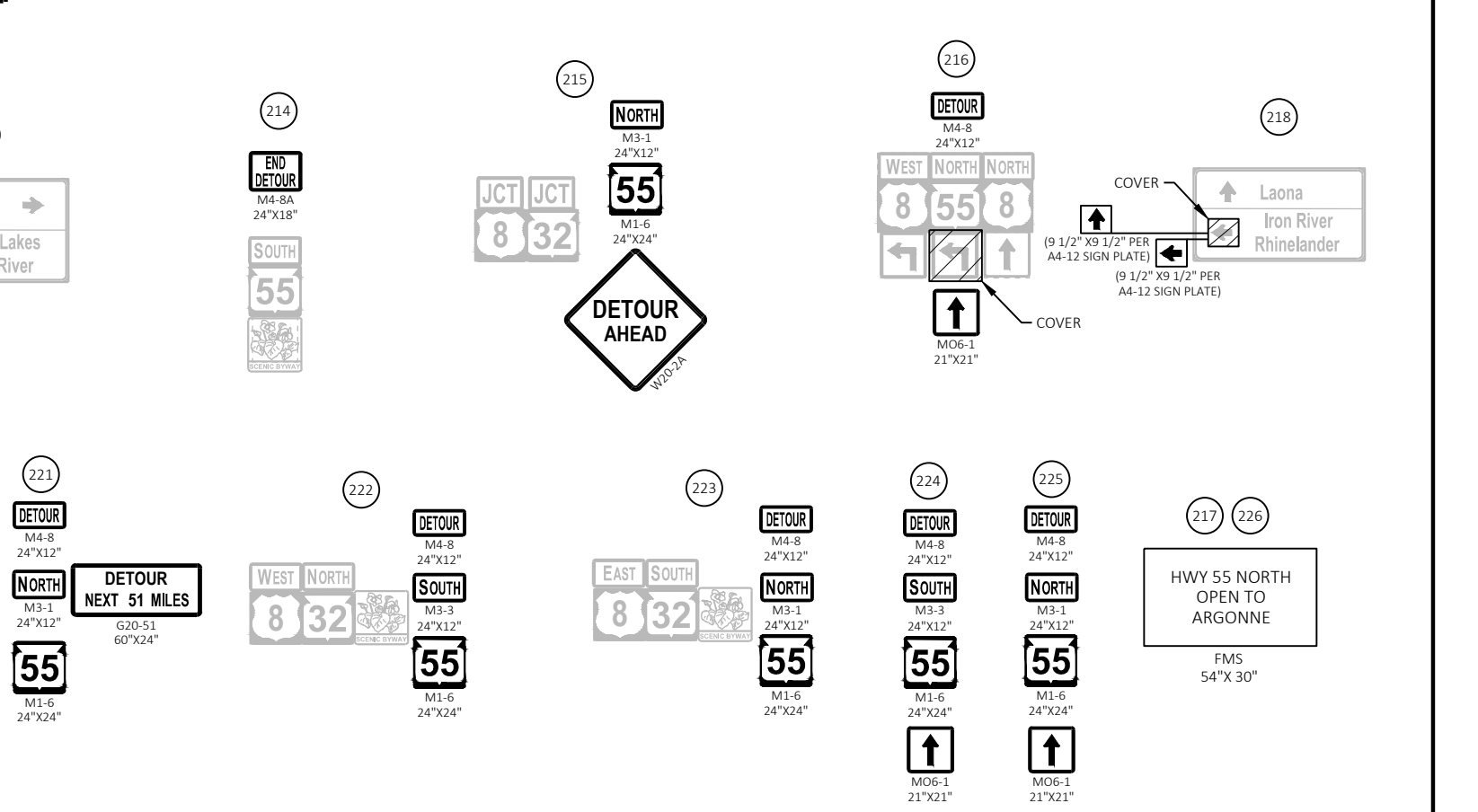
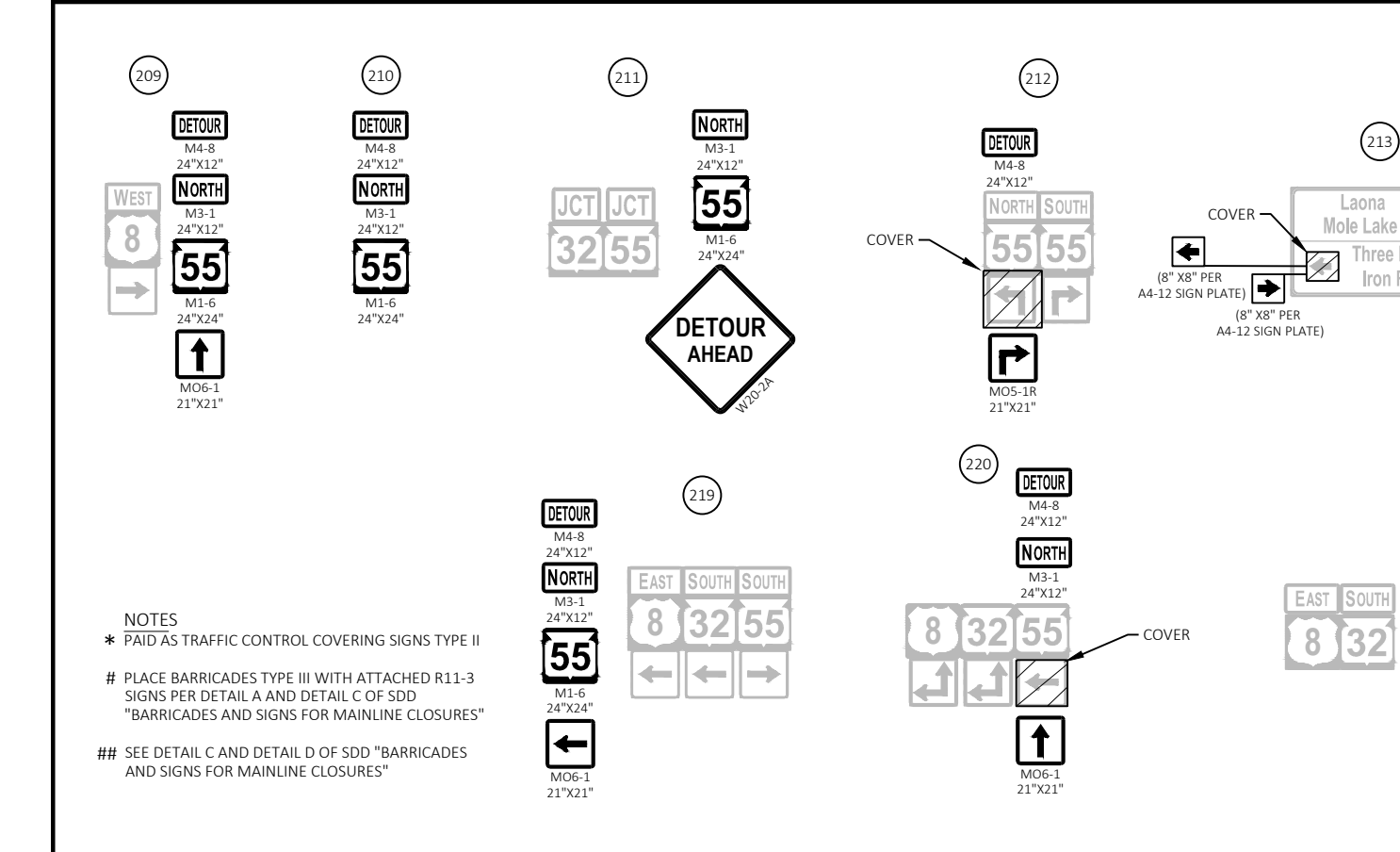
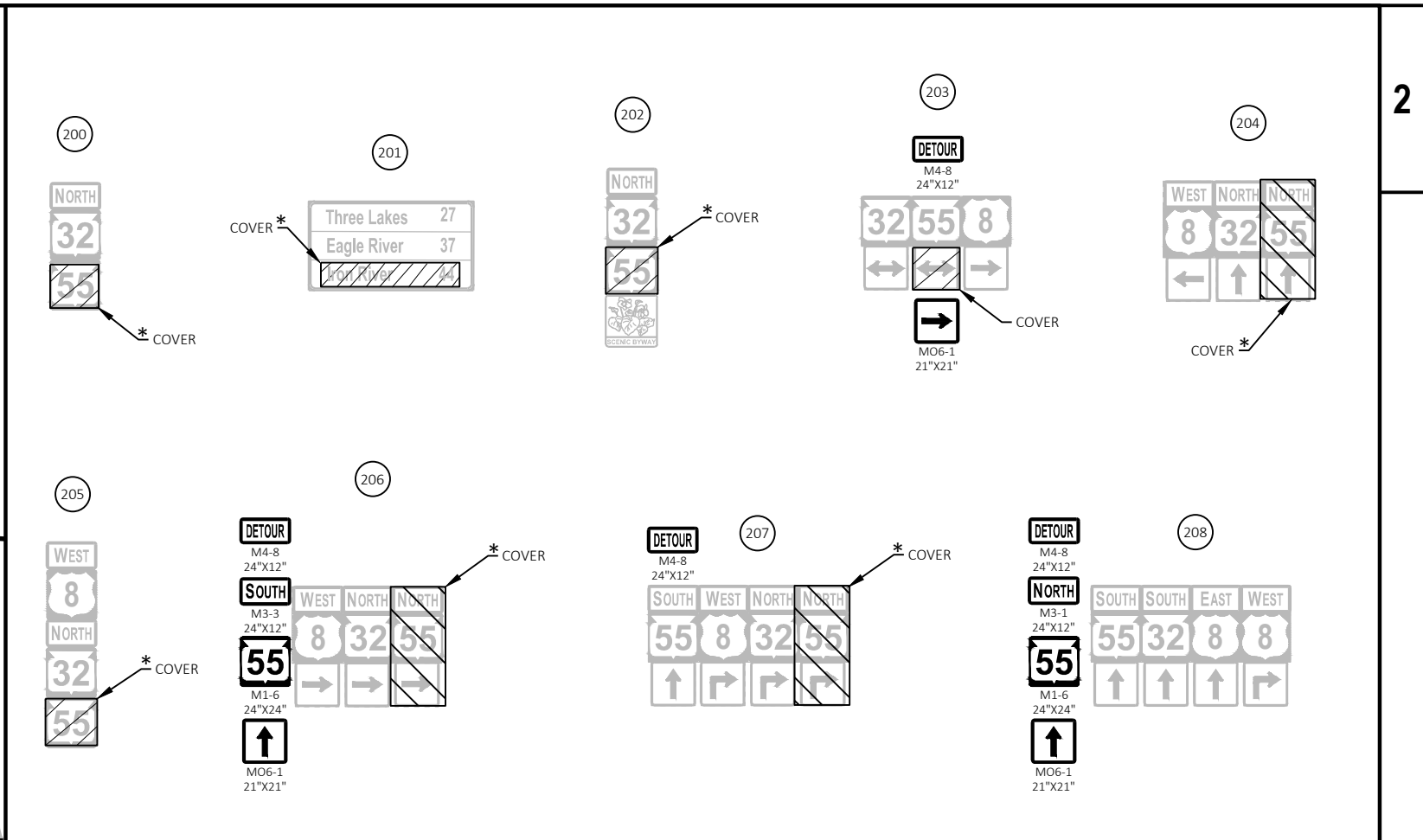
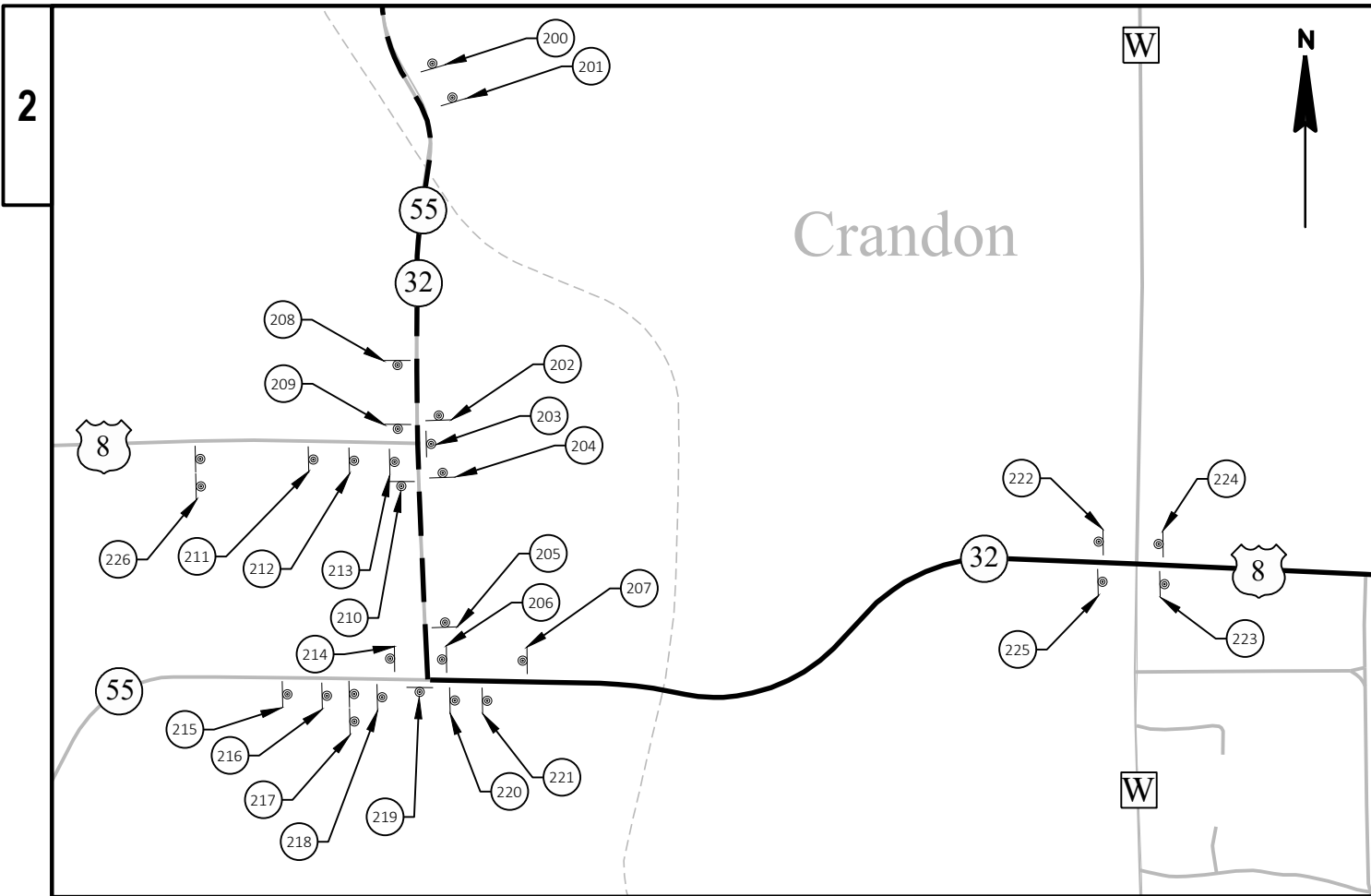
1. SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" AND "DETOUR SIGNING FOR MAINLINE CLOSURES" FOR SPACING AND PLACEMENT OF SIGNS AND OTHER DEVICES.
2. DETOUR IS IN PLACE DURING CULVERT REPLACEMENTS.
3. ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
4. DO NOT PLACE ANY ITEMS INCLUDING TRAFFIC CONTROL SIGNING WITHIN 50' OF RAILROAD RIGHT OF WAY EXCEPT AT THE INTERSECTION OF STH 32/55 AND CTH G IN ARGONNE.

Sign Inventory:

- 16 numbered circles (1-16)
- 1 DETOUR sign (M4-8, 24"x12")
- 1 NORTH sign (M3-1, 24"x12")
- 1 SOUTH sign (M3-3, 24"x12")
- 2 55 signs (M1-6, 24"x24")

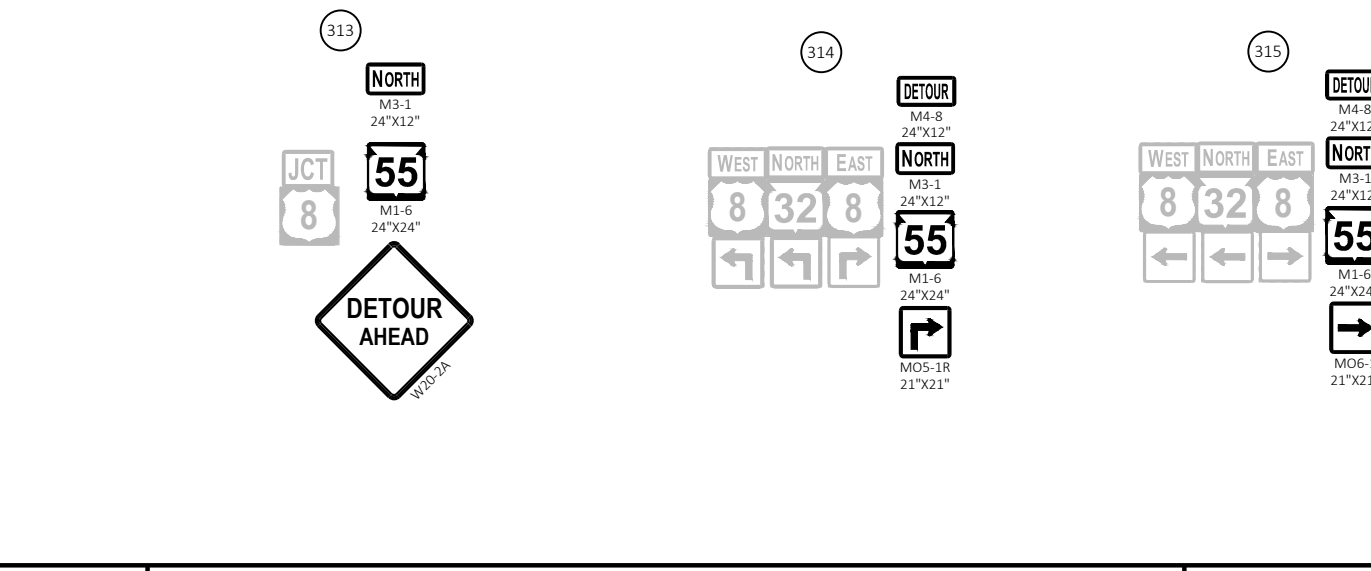
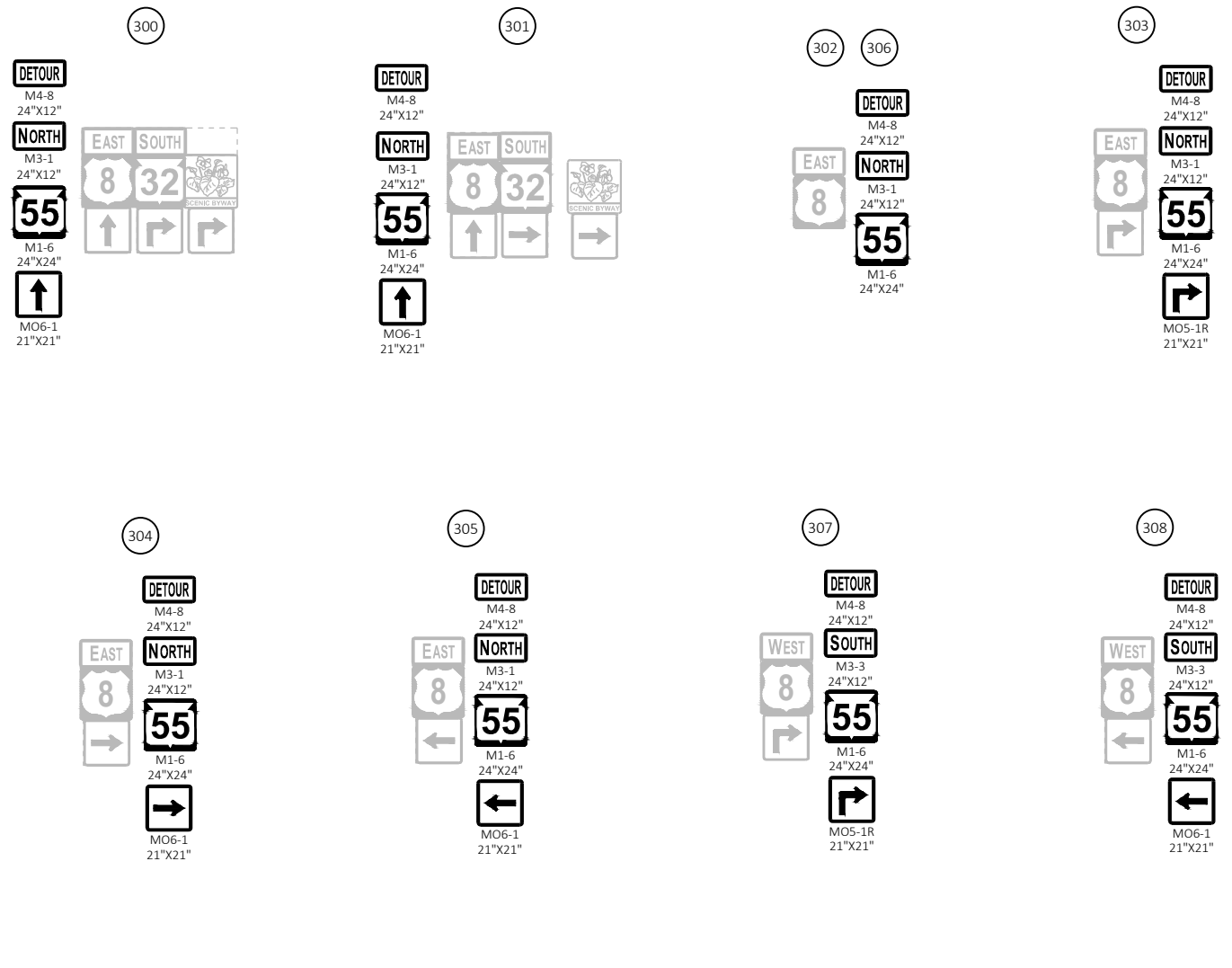
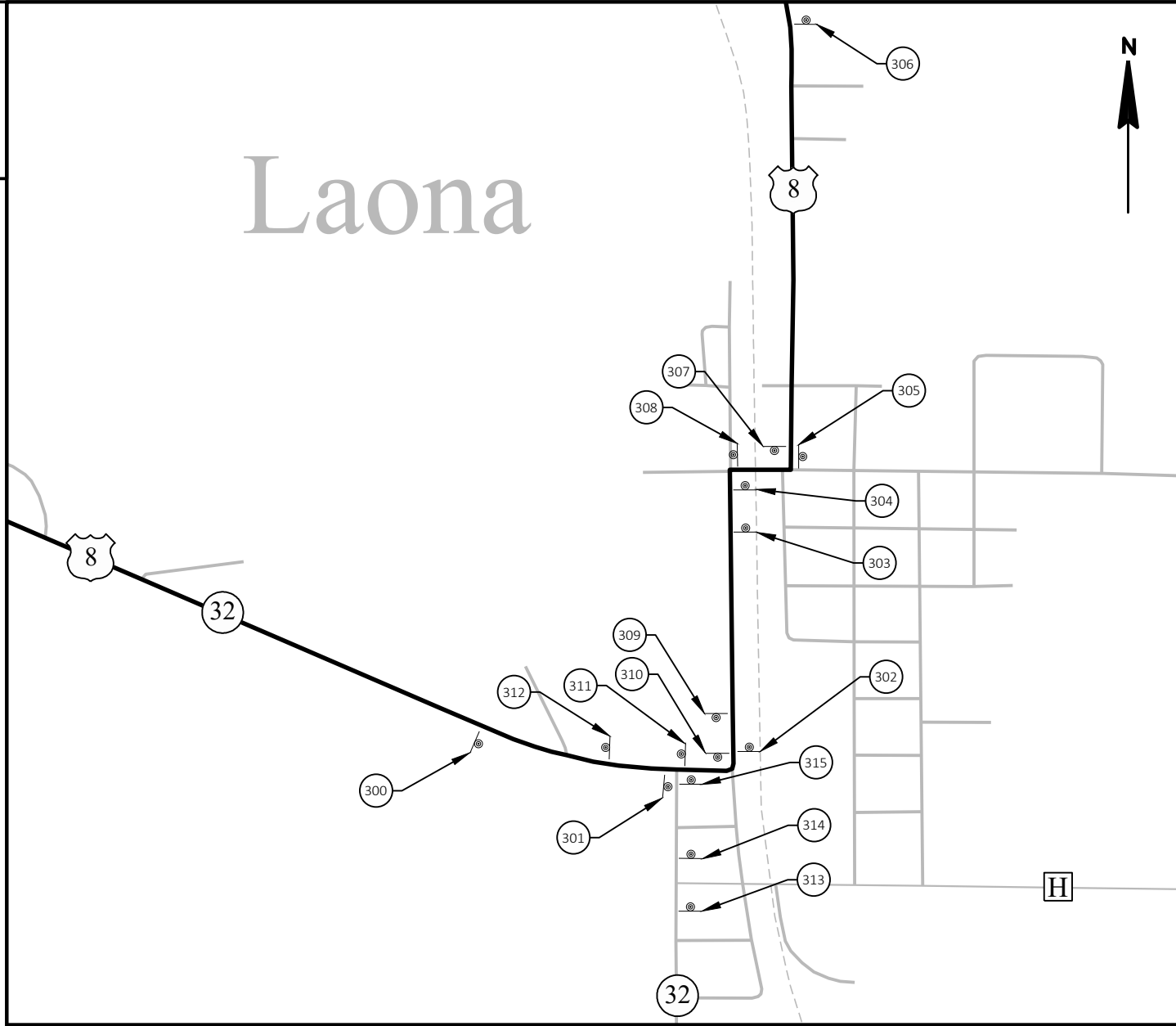


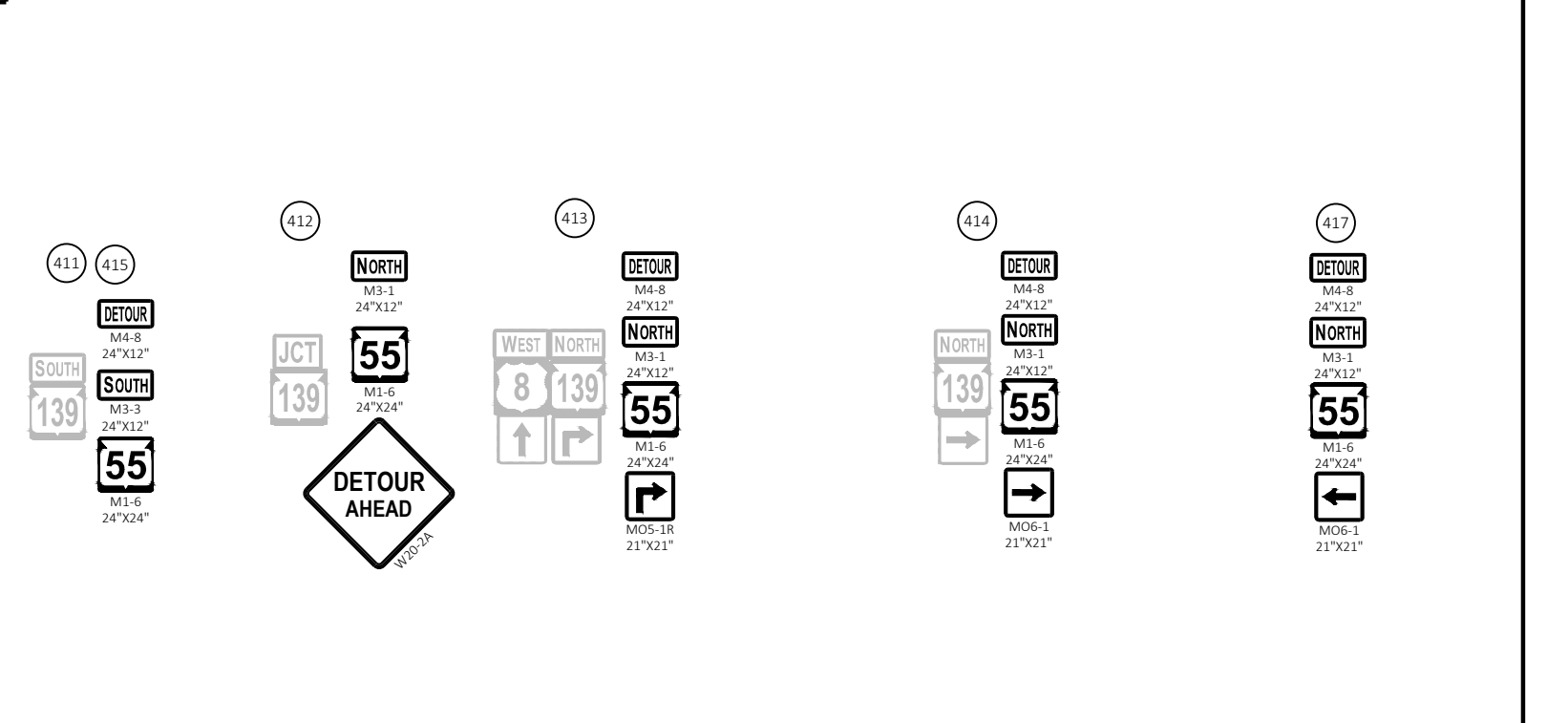
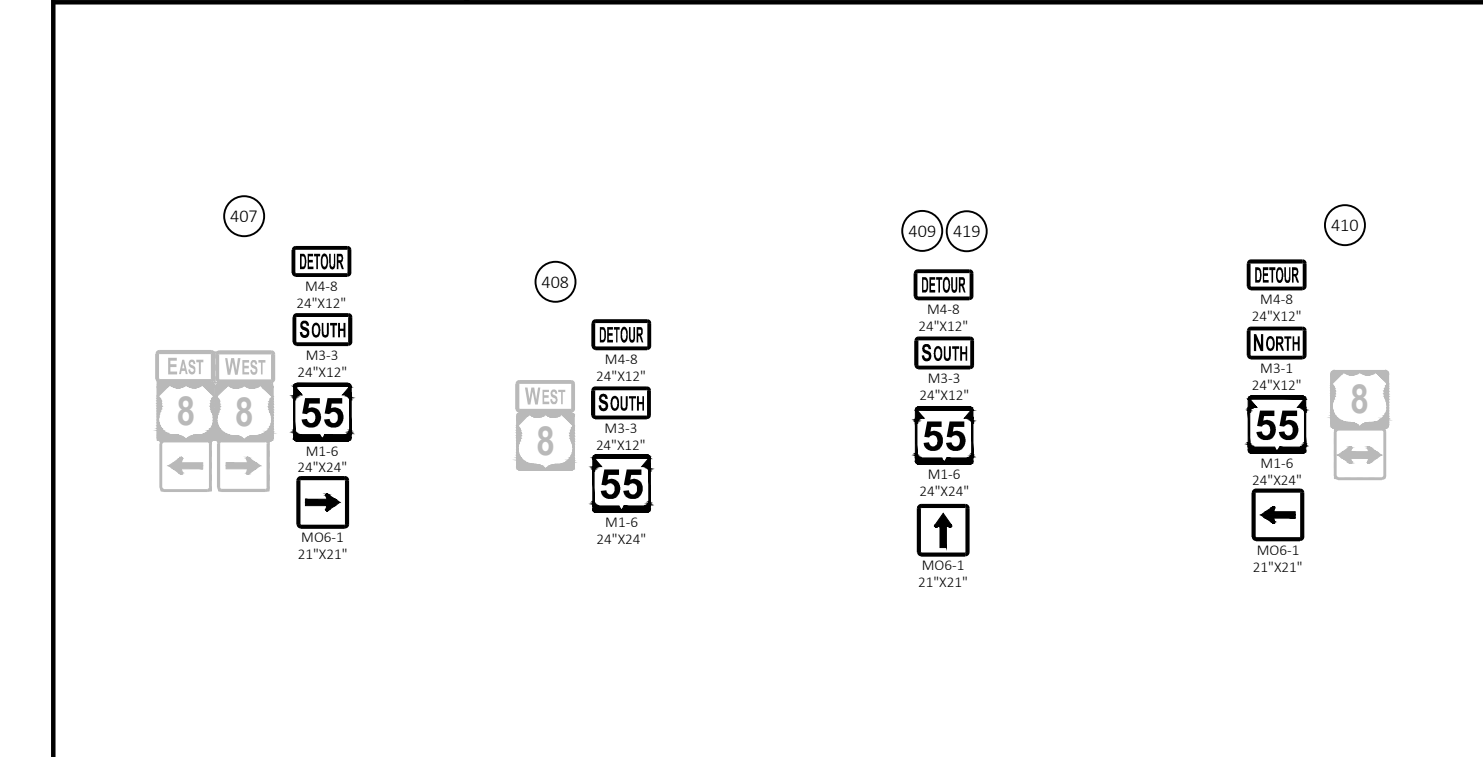
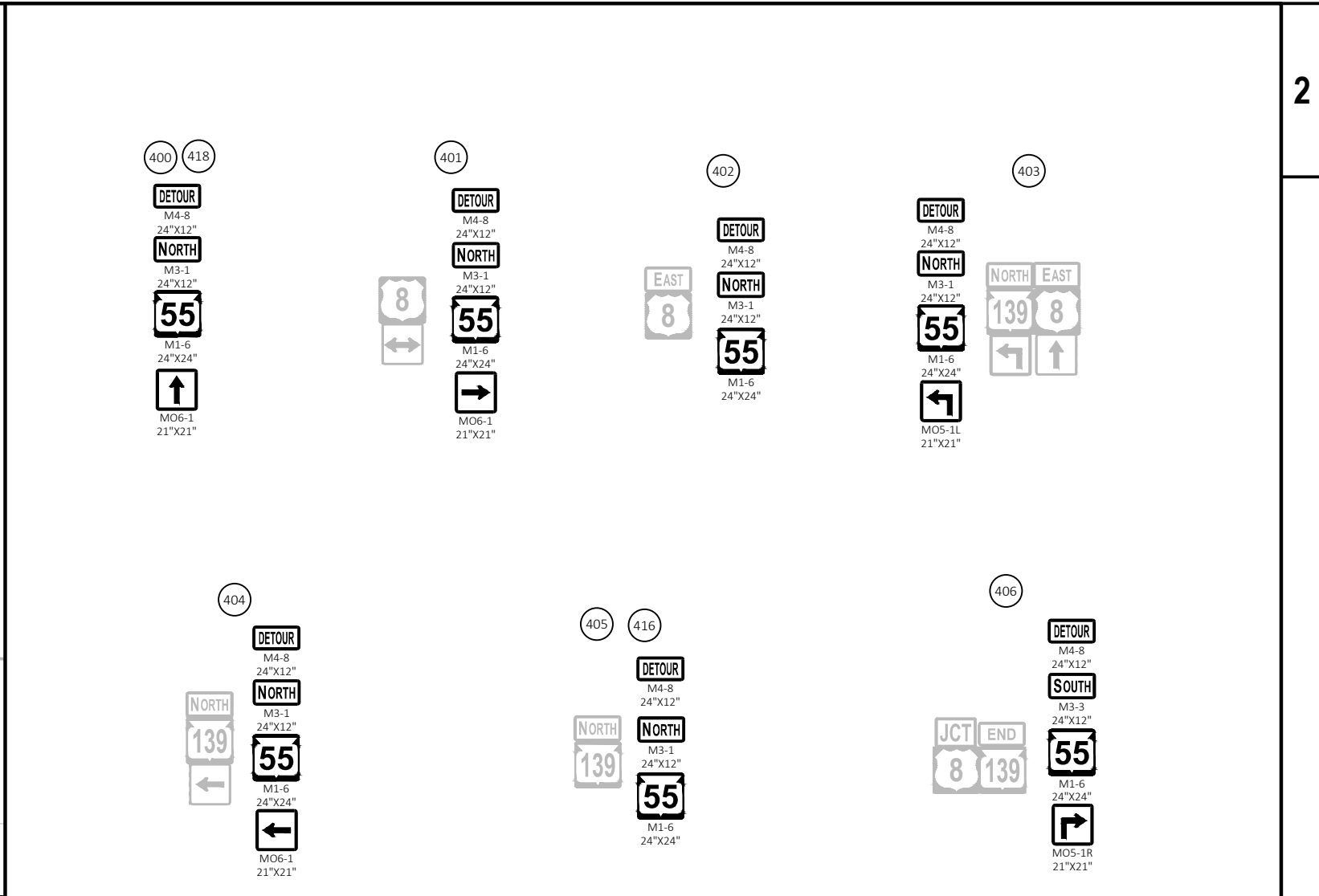
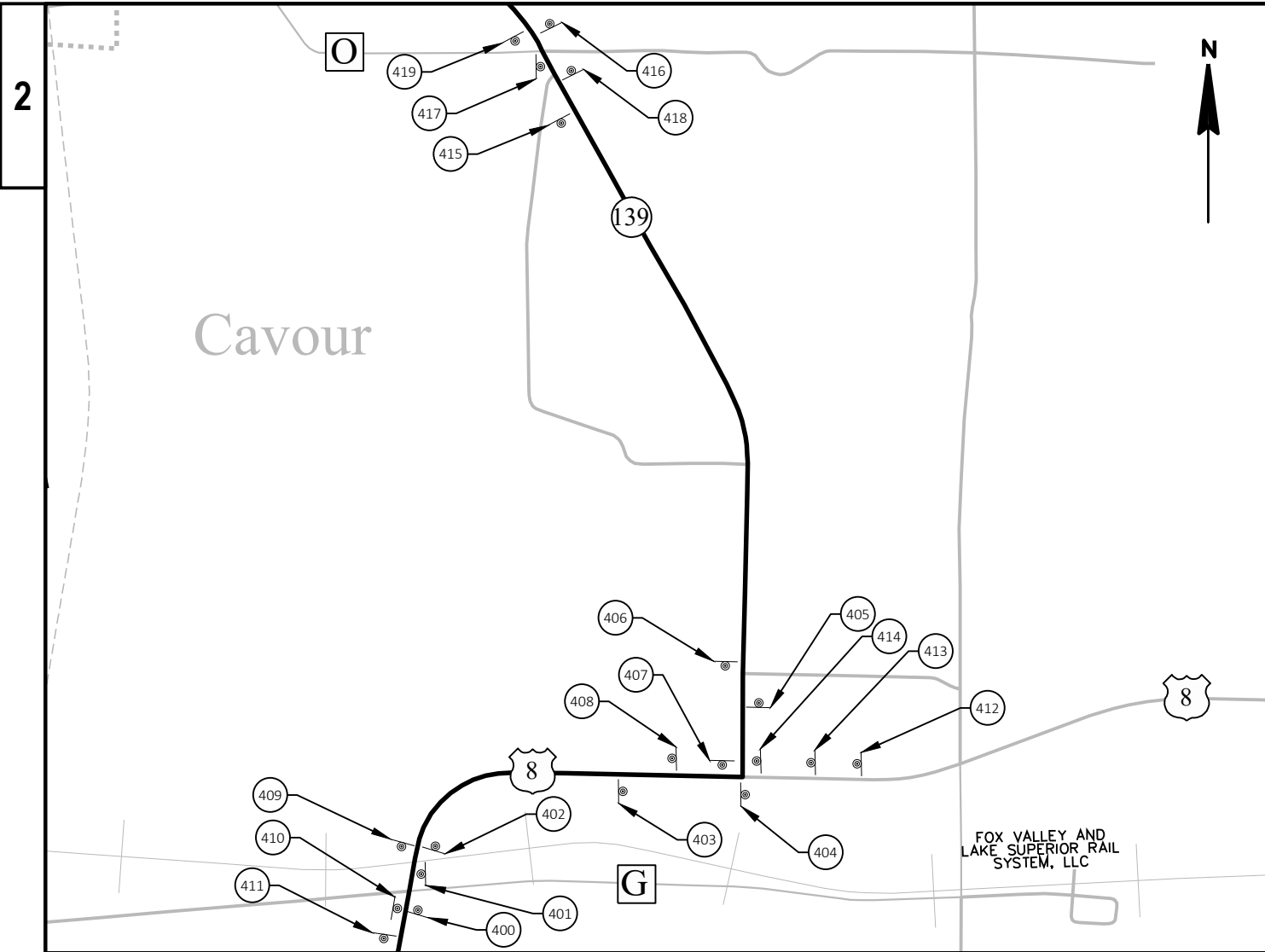
NOTES
 * PAID AS TRAFFIC CONTROL COVERING SIGNS TYPE II
 # PLACE BARRICADES TYPE III WITH ATTACHED R11-3 SIGNS PER DETAIL A AND DETAIL C OF SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
 ## SEE DETAIL C AND DETAIL D OF SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"

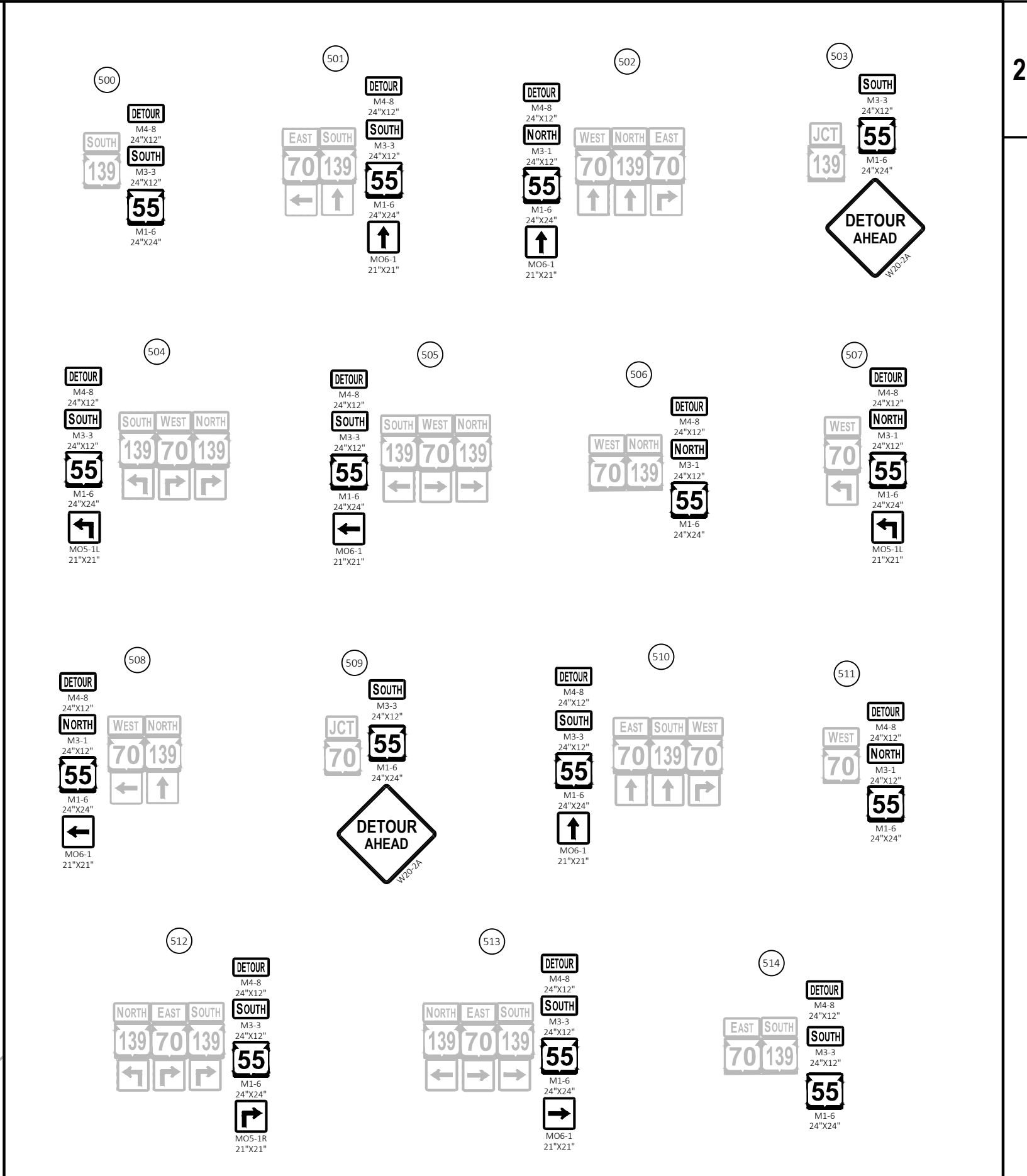
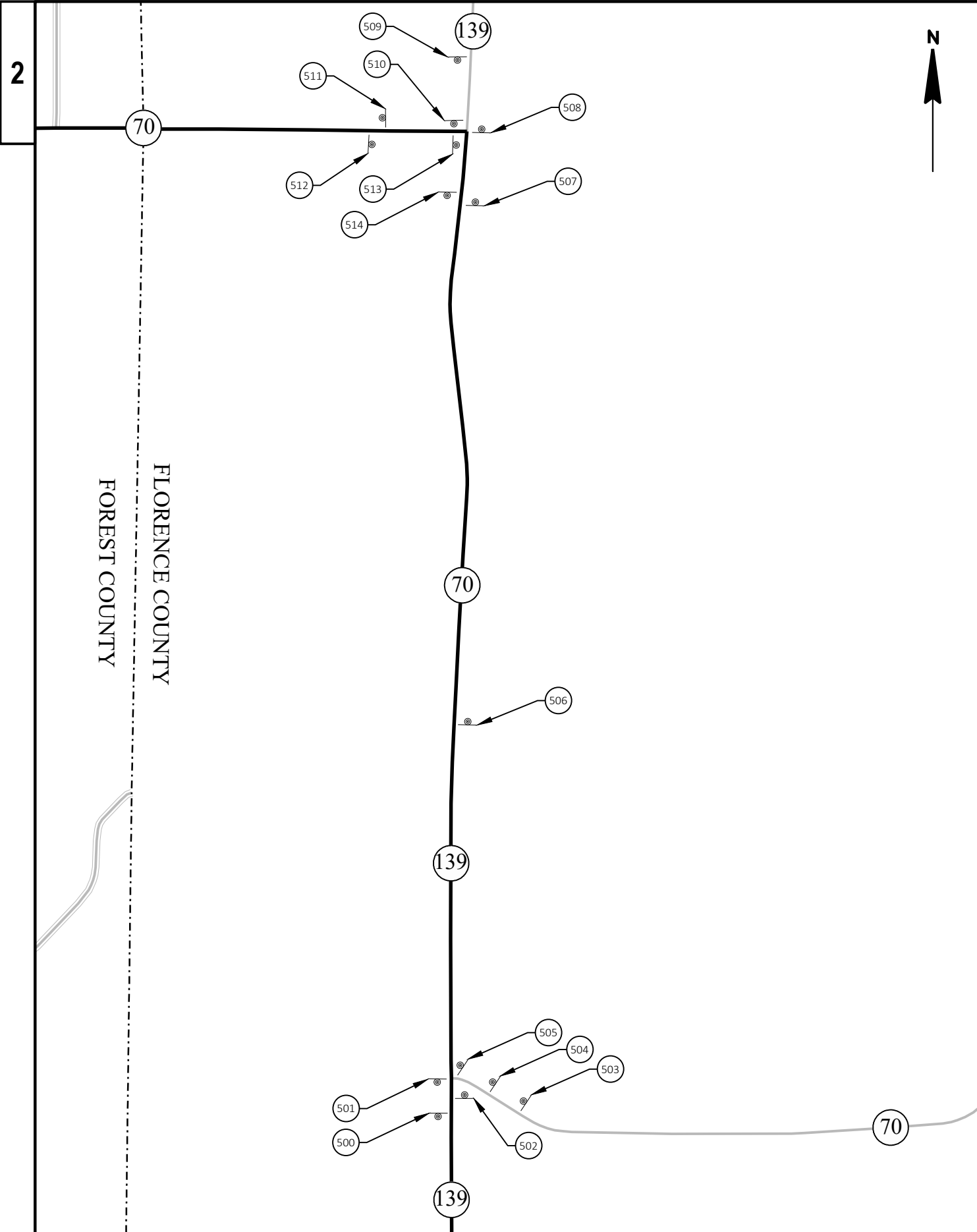


NOTES
 * PAID AS TRAFFIC CONTROL COVERING SIGNS TYPE II
 # PLACE BARRICADES TYPE III WITH ATTACHED R11-3 SIGNS PER DETAIL A AND DETAIL C OF SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
 ## SEE DETAIL C AND DETAIL D OF SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"

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PROJECT NO: 9165-13-70

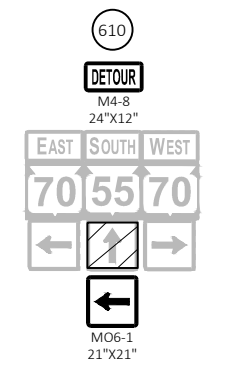
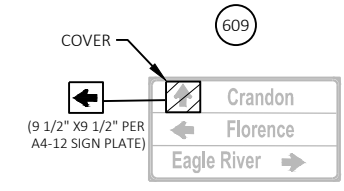
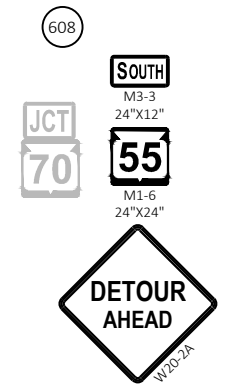
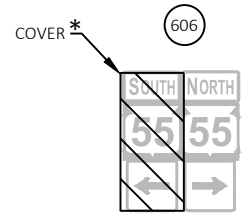
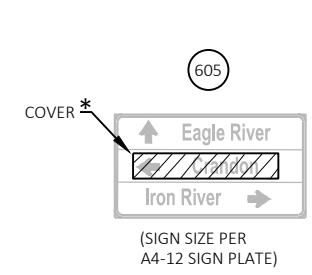
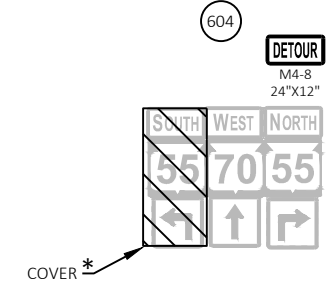
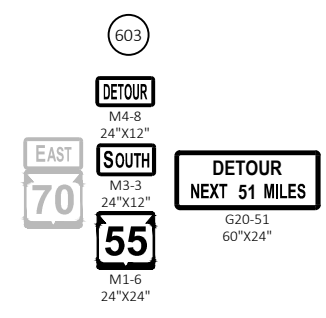
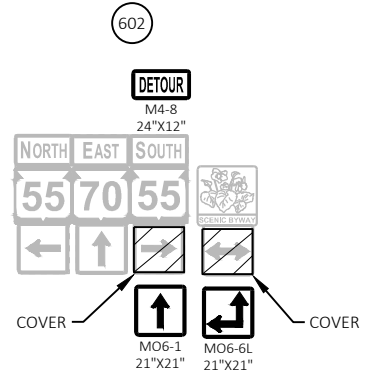
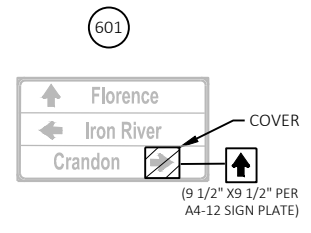
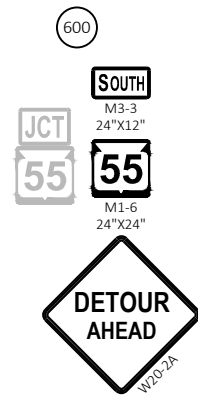
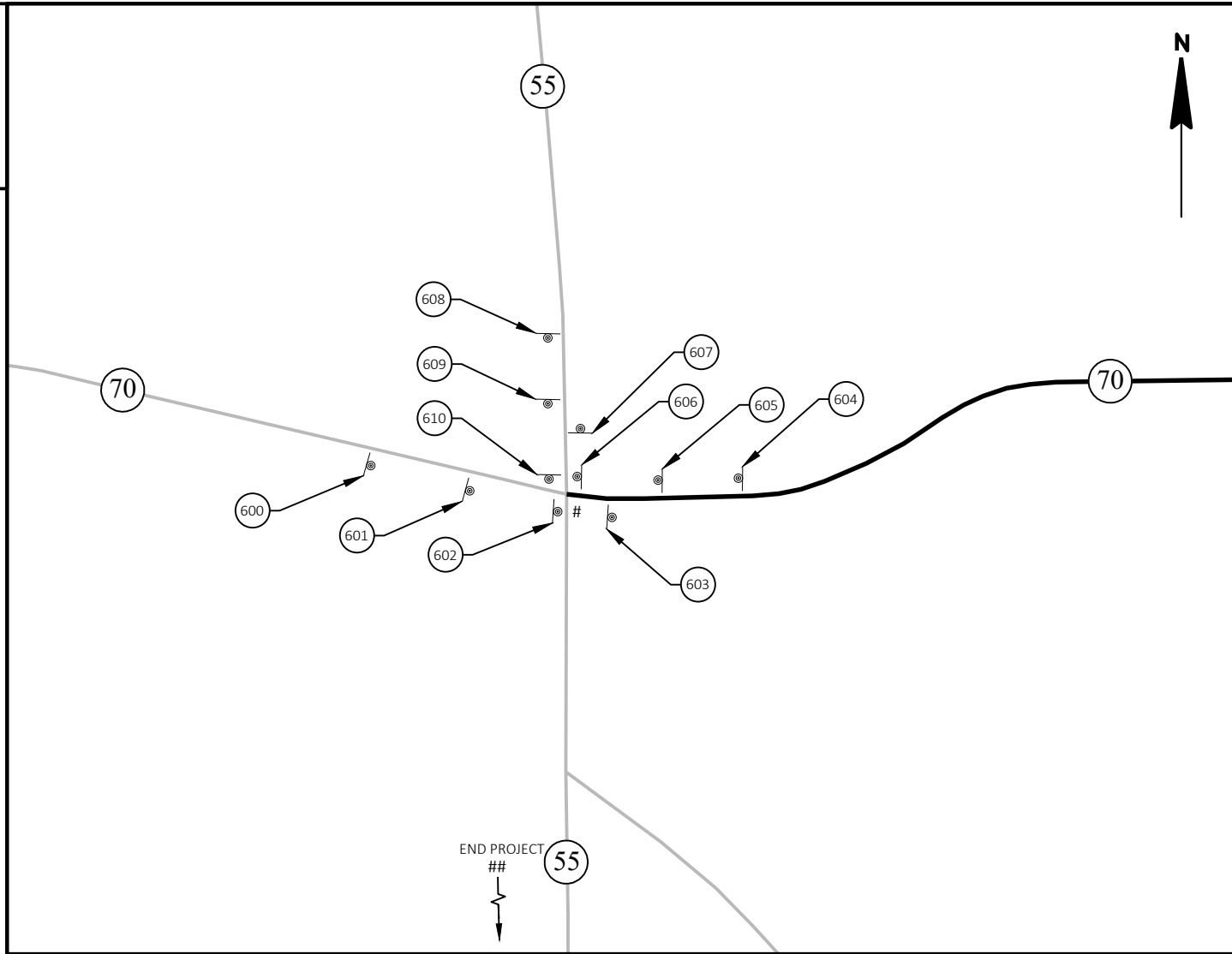
HWY: STH 55

COUNTY: FOREST

DETOUR - DETAIL SHEET 5

SHEET

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NOTES
 * PAID AS TRAFFIC CONTROL COVERING SIGNS TYPE II
 # PLACE BARRICADES TYPE III WITH ATTACHED R11-3 SIGNS PER DETAIL C OF SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
 ## SEE DETAIL C AND DETAIL D OF SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"

Estimate Of Quantities

9165-13-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	21.000	21.000
0004	203.0100	Removing Small Pipe Culverts	EACH	24.000	24.000
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	56.000	56.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	220,600.000	220,600.000
0010	204.0165	Removing Guardrail	LF	680.000	680.000
0012	204.0180	Removing Delineators and Markers	EACH	32.000	32.000
0014	205.0100	Excavation Common	CY	6,050.000	6,050.000
0016	208.0100	Borrow	CY	476.000	476.000
0018	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 9165-13-70	EACH	1.000	1.000
0020	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	19.000	19.000
0022	213.0100	Finishing Roadway (project) 01. 9165-13-70	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	4,650.000	4,650.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	4,380.000	4,380.000
0028	450.4000	HMA Cold Weather Paving	TON	2,650.000	2,650.000
0030	455.0605	Tack Coat	GAL	27,560.000	27,560.000
0032	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0034	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0036	460.2005	Incentive Density PWL HMA Pavement	DOL	19,770.000	19,770.000
0038	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	16,500.000	16,500.000
0040	460.2010	Incentive Air Voids HMA Pavement	DOL	22,200.000	22,200.000
0042	460.5224	HMA Pavement 4 LT 58-28 S	TON	22,200.000	22,200.000
0044	465.0105	Asphaltic Surface	TON	8,305.000	8,305.000
0046	465.0110	Asphaltic Surface Patching	TON	100.000	100.000
0048	465.0580	Asphaltic Rumble Strips, Transverse	SY	75.000	75.000
0050	522.0424	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	450.000	450.000
0052	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	28.000	28.000
0054	522.2419	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch	LF	94.000	94.000
0056	522.2424	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 24x38-Inch	LF	66.000	66.000
0058	522.2429	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 29x45-Inch	LF	106.000	106.000
0060	522.2434	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 34x53-Inch	LF	36.000	36.000
0062	522.2619	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch	EACH	6.000	6.000
0064	522.2624	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 24x38-Inch	EACH	4.000	4.000
0066	522.2629	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 29x45-Inch	EACH	6.000	6.000
0068	522.2634	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 34x53-Inch	EACH	2.000	2.000
0070	522.2643	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 43x68-Inch	EACH	2.000	2.000
0072	606.0200	Riprap Medium	CY	45.000	45.000
0074	614.2300	MGS Guardrail 3	LF	475.000	475.000
0076	614.2500	MGS Thrie Beam Transition	LF	304.000	304.000
0078	614.2610	MGS Guardrail Terminal EAT	EACH	8.000	8.000
0080	618.0100	Maintenance and Repair of Haul Roads (project) 01. 9165-13-70	EACH	1.000	1.000
0082	619.1000	Mobilization	EACH	1.000	1.000
0084	621.0100	Landmark Reference Monuments	EACH	68.000	68.000
0086	624.0100	Water	MGAL	90.000	90.000
0088	625.0100	Topsoil	SY	5,910.000	5,910.000
0090	628.1504	Silt Fence	LF	8,925.000	8,925.000
0092	628.1520	Silt Fence Maintenance	LF	8,925.000	8,925.000
0094	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0096	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0098	628.2004	Erosion Mat Class I Type B	SY	4,490.000	4,490.000
0100	628.2006	Erosion Mat Urban Class I Type A	SY	1,420.000	1,420.000

Estimate Of Quantities

9165-13-70

Line	Item	Item Description	Unit	Total	Qty
0102	628.7504	Temporary Ditch Checks	LF	95.000	95.000
0104	628.7555	Culvert Pipe Checks	EACH	140.000	140.000
0106	628.7570	Rock Bags	EACH	255.000	255.000
0108	629.0210	Fertilizer Type B	CWT	1.000	1.000
0110	630.0130	Seeding Mixture No. 30	LB	125.000	125.000
0112	630.0500	Seed Water	MGAL	155.000	155.000
0114	633.5200	Markers Culvert End	EACH	68.000	68.000
0116	638.2102	Moving Signs Type II	EACH	9.000	9.000
0118	638.2602	Removing Signs Type II	EACH	1.000	1.000
0120	638.3000	Removing Small Sign Supports	EACH	1.000	1.000
0122	642.5201	Field Office Type C	EACH	1.000	1.000
0124	643.0300	Traffic Control Drums	DAY	288.000	288.000
0126	643.0420	Traffic Control Barricades Type III	DAY	280.000	280.000
0128	643.0705	Traffic Control Warning Lights Type A	DAY	400.000	400.000
0130	643.0900	Traffic Control Signs	DAY	10,526.000	10,526.000
0132	643.0920	Traffic Control Covering Signs Type II	EACH	19.000	19.000
0134	643.1000	Traffic Control Signs Fixed Message	SF	58.500	58.500
0136	643.3165	Temporary Marking Line Paint 6-Inch	LF	252,440.000	252,440.000
0138	643.5000	Traffic Control	EACH	1.000	1.000
0140	645.0120	Geotextile Type HR	SY	171.000	171.000
0142	646.2020	Marking Line Epoxy 6-Inch	LF	198,880.000	198,880.000
0144	646.4720	Marking Line Same Day Epoxy 6-Inch	LF	97,425.000	97,425.000
0146	646.6466	Cold Weather Marking Epoxy 6-Inch	LF	74,080.000	74,080.000
0148	650.4500	Construction Staking Subgrade	LF	3,361.000	3,361.000
0150	650.5000	Construction Staking Base	LF	3,361.000	3,361.000
0152	650.6000	Construction Staking Pipe Culverts	EACH	24.000	24.000
0154	650.8000	Construction Staking Resurfacing Reference	LF	82,496.000	82,496.000
0156	650.9911	Construction Staking Supplemental Control (project) 01. 9165-13-70	EACH	1.000	1.000
0158	650.9920	Construction Staking Slope Stakes	LF	3,361.000	3,361.000
0160	690.0150	Sawing Asphalt	LF	1,660.000	1,660.000
0162	740.0440	Incentive IRI Ride	DOL	62,500.000	62,500.000
0164	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,400.000	2,400.000
0166	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,980.000	1,980.000
0168	SPV.0060	Special 01. Reestablish Section Corner Monuments	EACH	17.000	17.000
0170	SPV.0090	Special 01. Culv Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 43x68-Inch	LF	36.000	36.000
0172	SPV.0180	Special 01. Protective Thermoplastic Coating At Snowmobile Trail Crossings	SY	46.000	46.000

GRUBBING

STATION TO STATION OFFSET	201.0205 STA
562+52 - 562+73	LT 1
567+03 - 567+13	RT 1
591+05 - 591+19	RT 1
604+00 - 604+13	LT&RT 1
623+18 - 623+44	LT&RT 1
635+17 - 635+40	LT&RT 1
647+36 - 647+61	RT 1
657+67 - 657+80	LT 1
692+57 - 693+66	LT&RT 2
697+49 - 697+61	RT 1
726+48 - 726+59	RT 1
792+17 - 792+42	LT 1
795+39 - 795+61	LT&RT 1
816+44 - 816+60	LT&RT 1
835+51 - 835+62	RT 1
920+07 - 920+45	LT 1
943+31 - 943+47	RT 1
957+29 - 957+40	LT 1
1027+08 - 1027+19	RT 1
1064+27 - 1064+38	LT 1
1150+40 - 1150+56	LT 1
TOTALS	21

REMOVING SMALL PIPE CULVERT ITEMS

STATION	OFFSET	REMOVING SMALL PIPE CULVERTS		REMOVING DELINEATORS AND MARKERS		COMMENTS
		203.0100 EACH	204.0180* EACH	203.0100 EACH	204.0180* EACH	
562+63	LT&RT	1	--	--	--	24-INCH CPCS
567+12	LT&RT	1	1	--	--	24-INCH CPCPE
591+13	LT&RT	1	2	--	--	24-INCH CPCS
604+05	LT&RT	1	2	--	--	24-INCH CPCS
623+31	LT&RT	1	1	--	--	24-INCH CPCPE
635+29	LT&RT	1	2	--	--	24-INCH CPCPE
647+49	LT&RT	1	1	--	--	30-INCH CPCA
657+73	LT&RT	1	--	--	--	24-INCH CPCA
697+56	LT&RT	1	2	--	--	24-INCH CPCPE
726+53	LT&RT	1	--	--	--	24-INCH CPCPE
792+32	LT&RT	1	--	--	--	30-INCH CPCA
795+50	LT&RT	1	--	--	--	36-INCH CPCA
816+51	LT&RT	1	2	--	--	24-INCH CPCA
835+56	LT&RT	1	--	--	--	24-INCH CPCPE
842+99	LT&RT	1	--	--	--	24-INCH CPCA
901+59	LT&RT	1	--	--	--	24-INCH CPCA
943+39	LT&RT	1	2	--	--	24-INCH CPCPE
957+34	LT&RT	1	--	--	--	24-INCH CPCA
1027+14	LT&RT	1	--	--	--	24-INCH CPCPE
1064+26	LT&RT	1	--	--	--	24-INCH CPCPE
1084+57	LT&RT	1	1	--	--	24-INCH CPCA
1150+48	LT&RT	1	--	--	--	18-INCH CPCA
1180+26	LT&RT	1	2	--	--	24-INCH CPCS
1213+83	LT&RT	1	--	--	--	24-INCH CPCS
TOTALS		24	18			

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

REMOVING ASPHALT ITEMS

STATION TO STATION OFFSET	REMOVING ASPHALTIC SURFACE BUTT JOINTS		REMOVING ASPHALTIC SURFACE MILLING	
	204.0115 SY	204.0120 SY	204.0115 SY	204.0120 SY
510+46 - 691+02	LT&RT	13	--	48,210
691+70 - 917+47	LT&RT	15	--	60,370
918+12 - 1123+85	LT&RT	13	--	55,090
1129+65 - 1342+55	LT&RT	15	--	56,930
TOTALS		56		220,600

3

3

EARTHWORK

DIVISION	FROM/TO STATION	LOCATION	205.0100 EXCAVATION COMMON (NOTE 1)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (NOTE 2)	AVAILABLE MATERIAL (NOTE 3)	UNEXPANDED FILL	EXPANDED FILL (NOTE 4)	MASS ORDINATE +/- (NOTE 5)	208.0100 BORROW
			CY	CY	CY	CY	CY	CY	CY
1	STA 562+10 - STA 563+15	CULVERT 2105000439	203	39	164	--	--	164	--
1	STA 566+59 - STA 567+64	CULVERT 2105000440	206	39	167	--	--	167	--
1	STA 590+60 - STA 591+65	CULVERT 2105000441	229	39	190	--	--	190	--
1	STA 603+52 - STA 604+57	CULVERT 2105000442	231	39	192	--	--	192	--
1	STA 622+79 - STA 623+84	CULVERT 2105000443	212	39	173	--	--	173	--
1	STA 634+76 - STA 635+82	CULVERT 2105000444	271	39	232	--	--	232	--
1	STA 646+96 - STA 648+01	CULVERT 2105000445	252	39	213	--	--	213	--
1	STA 657+21 - STA 658+26	CULVERT 2105000446	217	39	178	--	--	178	--
1	STA 697+03 - STA 698+09	CULVERT 2105000447	217	39	178	--	--	178	--
1	STA 726+00 - STA 727+06	CULVERT 2105000448	206	39	167	--	--	167	--
1	STA 791+79 - STA 792+85	CULVERT 2105000450	398	39	359	--	--	359	--
1	STA 794+97 - STA 796+03	CULVERT 2105000451	332	39	293	--	--	293	--
1	STA 815+98 - STA 817+04	CULVERT 2105000452	224	39	185	--	--	185	--
1	STA 835+04 - STA 836+09	CULVERT 2105000453	194	39	155	--	--	155	--
1	STA 842+46 - STA 843+52	CULVERT 2105000454	251	39	212	--	--	212	--
1	STA 901+06 - STA 902+11	CULVERT 2105000456	209	39	170	--	--	170	--
1	STA 942+87 - STA 943+92	CULVERT 2105000458	206	39	167	--	--	167	--
1	STA 956+81 - STA 957+87	CULVERT 2105000459	275	39	236	--	--	236	--
1	STA 1026+62 - STA 1027+67	CULVERT 2105000460	229	39	190	--	--	190	--
1	STA 1063+83 - STA 1064+89	CULVERT 2105000461	220	39	181	--	--	181	--
1	STA 1084+04 - STA 1085+10	CULVERT 2105000462	206	39	167	--	--	167	--
1	STA 1149+96 - STA 1151+00	CULVERT 2105000463	298	39	259	--	--	259	--
1	STA 1179+73 - STA 1180+78	CULVERT 2105000464	389	39	350	--	--	350	--
1	STA 1213+31 - STA 1214+36	CULVERT 2105000466	207	39	168	--	--	168	--
SUBTOTALS			5,882	936	4,946	0	0	4,946	--
2	STA 688+03 - STA 694+36	POPPLE RIVER GUARDRAIL, RT	35	27	8	132	165	-157	157
2	STA 688+11 - STA 694+70	POPPLE RIVER GUARDRAIL, LT	41	34	7	116	145	-138	138
2	STA 914+98 - STA 920+29	JONES CREEK GUARDRAIL, RT	43	23	20	123	154	-134	134
2	STA 915+75 - STA 920+61	JONES CREEK GUARDRAIL, LT	49	21	27	59	74	-47	47
SUBTOTALS			168	105	62	430	538	-476	476
PROJECT TOTALS			6,050	1,041	5,008	430	538	4,470	476

- NOTES:
 1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT
 2) SALVAGED/UNUSABLE PAVEMENT MATERIAL = (AREA OF PROJECT PAVEMENT) * (TYPICAL DEPTH)
 3) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
 4) EXPANDED FILL FACTOR = (UNEXPANDED FILL) * (FILL FACTOR)
 5) MASS ORDINATE = AVAILABLE MATERIAL - (EXPANDED FILL); POSITIVE INDICATES AN EXCESS OF MATERIAL

BASE AGGREGATE ITEMS

STATION	TO	STATION	OFFSET	BASE AGGREGATE		COMMENTS
				305.0110 DENSE 3/4-INCH TON	305.0120 DENSE 1 1/4-INCH TON	
510+46	-	691+02	LT&RT	910	--	MAINLINE PAVING
562+10	-	563+15	LT&RT	18	170	CULVERT REPLACEMENT
566+59	-	567+64	LT&RT	18	170	CULVERT REPLACEMENT
590+60	-	591+65	LT&RT	18	170	CULVERT REPLACEMENT
603+52	-	604+57	LT&RT	18	170	CULVERT REPLACEMENT
622+79	-	623+84	LT&RT	18	170	CULVERT REPLACEMENT
634+76	-	635+82	LT&RT	18	170	CULVERT REPLACEMENT
646+96	-	648+01	LT&RT	18	170	CULVERT REPLACEMENT
657+21	-	658+26	LT&RT	18	170	CULVERT REPLACEMENT
688+97	-	691+02	LT&RT	22	84	GUARDRAIL
691+70	-	917+47	LT&RT	1,136	--	MAINLINE PAVING
691+70	-	693+75	LT&RT	22	84	GUARDRAIL
697+03	-	698+09	LT&RT	18	170	CULVERT REPLACEMENT
726+00	-	727+06	LT&RT	18	170	CULVERT REPLACEMENT
791+79	-	792+85	LT&RT	18	170	CULVERT REPLACEMENT
794+97	-	796+03	LT&RT	18	170	CULVERT REPLACEMENT
815+98	-	817+04	LT&RT	18	170	CULVERT REPLACEMENT
835+04	-	836+09	LT&RT	18	170	CULVERT REPLACEMENT
842+46	-	843+52	LT&RT	18	170	CULVERT REPLACEMENT
901+06	-	902+11	LT&RT	18	170	CULVERT REPLACEMENT
915+43	-	917+47	LT&RT	9	63	GUARDRAIL
918+12	-	1123+85	LT&RT	1,036	--	MAINLINE PAVING
918+12	-	920+29	LT&RT	10	69	GUARDRAIL
942+87	-	943+92	LT&RT	18	170	CULVERT REPLACEMENT
956+81	-	957+87	LT&RT	18	170	CULVERT REPLACEMENT
1026+62	-	1027+67	LT&RT	18	170	CULVERT REPLACEMENT
1063+83	-	1064+89	LT&RT	18	170	CULVERT REPLACEMENT
1084+04	-	1085+10	LT&RT	18	170	CULVERT REPLACEMENT
1129+65	-	1342+55	LT&RT	1,073	--	MAINLINE PAVING
1149+96	-	1151+00	LT&RT	18	170	CULVERT REPLACEMENT
1179+73	-	1180+78	LT&RT	18	170	CULVERT REPLACEMENT
1213+31	-	1214+36	LT&RT	18	170	CULVERT REPLACEMENT
TOTALS				4,650	4,380	

ASPHALTIC ITEMS

STATION	TO	STATION	OFFSET	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	450.4000 HMA COLD WEATHER PAVING TON	455.0605 TACK COAT GAL	460.5224 HMA PAVEMENT 4 LT 58-28 S TON	465.0105 ASPHALTIC SURFACE TON	465.0110 ASPHALTIC SURFACE PATCHING TON	465.0580 ASPHALTIC RUMBLE STRIPS, TRANSVERSE SY	690.0150 SAWING ASPHALT LF	COMMENTS	
510+46	-	691+02	LT&RT	--	--	5,778	4,720	1,348	--	--	--	MAINLINE PAVING	
562+10	-	563+15	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
566+59	-	567+64	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
590+60	-	591+65	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
603+52	-	604+57	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
622+79	-	623+84	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
634+76	-	635+82	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
646+96	-	648+01	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
657+21	-	658+26	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
688+97	-	691+02	LT&RT	4	--	25	21	6	--	--	118	GUARDRAIL PAVING	
691+70	-	917+47	LT&RT	--	--	7,465	6,097	1,742	--	--	--	MAINLINE PAVING	
691+70	-	693+75	LT&RT	4	--	24	19	6	--	--	126	GUARDRAIL PAVING	
697+03	-	698+09	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
726+00	-	727+06	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
766+75	-	769+75	LT&RT	--	--	48	--	40	--	--	--	PAVEMENT WEDGE	
791+79	-	792+85	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
794+97	-	796+03	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
815+98	-	817+04	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
835+04	-	836+09	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
842+46	-	843+52	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
901+06	-	902+11	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
915+43	-	917+47	LT&RT	3	--	19	16	5	--	--	139	GUARDRAIL PAVING	
918+12	-	1123+85	LT&RT	--	--	6,803	5,555	1,587	--	--	--	MAINLINE PAVING	
918+12	-	920+29	LT&RT	6	--	26	21	6	--	--	125	GUARDRAIL PAVING	
942+87	-	943+92	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
956+81	-	957+87	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
1026+62	-	1027+67	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
1063+83	-	1064+89	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
1084+04	-	1085+10	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
1129+65	-	1342+56	LT&RT	--	--	7,036	5,750	1,645	--	75	--	MAINLINE PAVING	
1149+96	-	1151+00	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
1179+73	-	1180+78	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
1213+31	-	1214+36	LT&RT	--	--	14	--	80	--	--	48	CULVERT REPLACEMENT	
1326+17	-	1326+54	LT&RT	2	--	--	1	--	--	--	--	SNOWMOBILE TRAIL CROSSING	
UNDISTRIBUTED				--	2,650	--	--	--	100	--	--	--	
TOTALS				19	2,650	27,560	22,200	8,305	100	75	1,660		

CULVERT PIPE ITEMS

STATION	OFFSET	204.0180*	633.5200*
		REMOVING DELINEATORS AND MARKERS EACH	MARKERS CULVERT END EACH
532+60	LT&RT	2	2
549+30	LT&RT	2	2
746+00	LT&RT	1	2
860+82	LT&RT	1	2
931+72	LT&RT	1	2
1193+86	LT&RT	2	2
1236+80	LT&RT	1	2
1248+29	LT&RT	1	2
1294+63	LT&RT	1	2
1315+58	LT&RT	2	2
TOTALS		14	20

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

HMA ACCEPTANCE

LOCATION	STA TO STA	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
11 FOOT DRIVING LANE	510+46 - 1342+56	UPPER LAYER	ASPHALTIC SURFACE	4 LT 58-28 S	19,770	1 3/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
11 FOOT DRIVING LANE	510+46 - 1342+56	LEVELING LAYER	MILLED EXISTING HMA SURFACE	ASPHALTIC SURFACE	5,646	1/2"	QMP AS PER SS 465	ACCEPTANCE BY ORDINARY COMPACTION
SHOULDERS AND BEAMGUARD WIDENINGS	VARIOUS	UPPER LAYER	MILLED EXISTING HMA SURFACE AND BASE AGGREGATE	4 LT 58-28 S	2,430	1 3/4"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
CULVERT REPLACEMENTS	VARIOUS	PAVING AFTER REPLACEMENTS	BASE AGGREGATE	ASPHALTIC SURFACE	1,920	5"	QMP AS PER SS 465	ACCEPTANCE BY ORDINARY COMPACTION
VARIOUS	VARIOUS	REPAIRS AFTER MILLING	MILLED EXISTING HMA SURFACE	ASPHALTIC SURFACE PATCHING	100	VARIES	QMP AS PER SS 465	ACCEPTANCE BY ORDINARY COMPACTION

CULVERT PIPE ITEMS

Table with columns for Station, Offset, and various pipe sizes (19X30-INCH, 24X38-INCH, 29X45-INCH, 34X53-INCH, 43X68-INCH). Includes sub-headers for different project codes like 522.0424, 522.1024, etc.

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

NOTE: 1) CULVERT PIPE INVERTS ARE SHOWN ON CROSS SECTIONS

RESTORATION ITEMS

Table with columns for Station, To Station, Offset, and various restoration materials (TOPSOIL SY, EROSION MAT CLASS I TYPE B SY, etc.).

NOTE: DO NOT APPLY FERTILIZER WITHIN 20-FT OF A WETLAND

EROSION CONTROL ITEMS

Table with columns for Station, To Station, Offset, and various erosion control items (SILT FENCE LF, SILT FENCE MAINTENANCE LF, etc.).

3

EROSION CONTROL MOBILIZATION

LOCATION	628.1905	628.1910
	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT	5	5
TOTALS	5	5

WATER

LOCATION	624.0100 MGAL
PROJECT	90
TOTAL	90

NOTE: THIS QUANTITY COVERS WATER USED IN BASE AGGREGATE DENSE PLACEMENT AND EARTHWORK OPERATIONS

REMOVING AND MOVING SIGNS

STATION	OFFSET	SIGN MESSAGE	638.2102	638.2602	638.3000
			MOVING SIGNS TYPE II EACH	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH
691+13	LT	OBJECT MARKER	1	--	--
691+29	RT	OBJECT MARKER	1	--	--
691+43	LT	OBJECT MARKER	1	--	--
691+59	RT	OBJECT MARKER	1	--	--
917+65	LT	OBJECT MARKER	1	--	--
917+66	RT	OBJECT MARKER	1	--	--
917+94	LT	OBJECT MARKER	1	--	--
917+94	RT	OBJECT MARKER	1	--	--
1064+45	RT	NO PASSING ZONE	1	--	--
1213+89	LT	BUMP	--	1	1
TOTALS			9	1	1

3

TRAFFIC CONTROL ITEMS

LOCATION	STAGE DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0900 TRAFFIC CONTROL SIGNS	
		NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY
PROJECT	75	--	--	--	--	--	--	42	3,150
DETOUR	20	--	--	14	280	20	400	364	7,280
SHOULDER CLOSURES	8	36	288	--	--	--	--	12	96
TOTALS			288		280		400		10,526

TRAFFIC CONTROL COVERING SIGNS TYPE II

SIGN NUMBER	NUMBER OF CYCLES	643.0920		COMMENTS
		NO.	EACH	
108	1	1	1	NORTH, STATE ROUTE 55, SCENIC BYWAY
109	1	1	1	ALVIN, IRON RIVER
110	1	1	1	NORTH, STATE ROUTE 55, ADVANCE ARROW RIGHT
111	1	1	1	IRON RIVER
112	1	1	1	NORTH, STATE ROUTE 55, ARROW RIGHT
113, 119	1	2	2	STATE ROUTE 55
114	1	1	1	STATE ROUTE 55
120	1	1	1	STATE ROUTE 55
200	1	1	1	STATE ROUTE 55
201	1	1	1	IRON RIVER
202	1	1	1	STATE ROUTE 55
204	1	1	1	NORTH, STATE ROUTE 55, ARROW AHEAD
205	1	1	1	STATE ROUTE 55
206	1	1	1	NORTH, STATE ROUTE 55, ARROW RIGHT
207	1	1	1	NORTH, STATE ROUTE 55, ADVANCE ARROW RIGHT
605	1	1	1	SOUTH, STATE ROUTE 55, ADVANCE ARROW LEFT
606	1	1	1	CRANDON
607	1	1	1	SOUTH, STATE ROUTE 55, ARROW LEFT
TOTAL			19	

TRAFFIC CONTROL SIGNS FIXED MESSAGE

LOCATION	SIGN SIZE W X H IN X IN	643.1000 SF	SIGN MESSAGE
NORTH PROJECT LIMIT	72" X 36"	18.00	HWY 55 / ROAD CLOSED / BEGINS XXX-XX
NORTHBOUND DETOUR	54" X 30"	11.25	HWY 55 NORTH OPEN TO ARGONNE
NORTHBOUND DETOUR	54" X 30"	11.25	HWY 55 NORTH OPEN TO ARGONNE
TOTAL		58.50	

LONG LINE PAVEMENT MARKING ITEMS

STATION TO	STATION	643.3165 TEMPORARY MARKING LINE PAINT 6-INCH		646.2020 MARKING LINE EPOXY 6-INCH			646.4720 MARKING LINE SAME DAY EPOXY 6-INCH		646.6466 COLD WEATHER MARKING EPOXY 6-INCH		
		SOLID	4' LINE 46' SKIP	SOLID	12.5' LINE 37.5' SKIP	SOLID	12.5' LINE 37.5' SKIP	SOLID	12.5' LINE 37.5' SKIP	SOLID	12.5' LINE 37.5' SKIP
		YELLOW	YELLOW	WHITE	YELLOW	WHITE	YELLOW	YELLOW	YELLOW	YELLOW	WHITE
510+46	- 1342+55	243,310	5,280	30,415	2,065	166,400	91,240	6,185	30,415	2,065	41,600
CULVERT REPLACEMENTS		3,780	80	--	--	--	--	--	--	--	--
TOTALS		247,090	5,360	30,415	2,065	166,400	91,240	6,185	30,415	2,065	41,600
			252,450		198,880		97,425			74,080	

GUARDRAIL ITEMS

LOCATION	STATION	TO	STATION	OFFSET	204.0165 614.2300 614.2500 614.2610			
					REMOVING GUARDRAIL LF	MGS GUARDRAIL 3 LF	MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL TERMINAL EAT EACH
B-21-0017	689+67	-	691+32	RT	85	75.0	38.0	1
B-21-0017	689+75	-	691+16	LT	85	50.0	38.0	1
B-21-0017	691+39	-	693+05	LT	85	75.0	38.0	1
B-21-0017	691+57	-	692+72	RT	85	25.0	38.0	1
B-21-0018	916+03	-	917+69	RT	85	75.0	38.0	1
B-21-0018	916+65	-	917+68	LT	85	12.5	38.0	1
B-21-0018	917+91	-	919+56	LT	85	75.0	38.0	1
B-21-0018	917+91	-	919+69	RT	85	87.5	38.0	1
TOTALS					680	475.0	304.0	8

PROTECTIVE THERMOPLASTIC COATING AT SNOWMOBILE TRAIL CROSSING

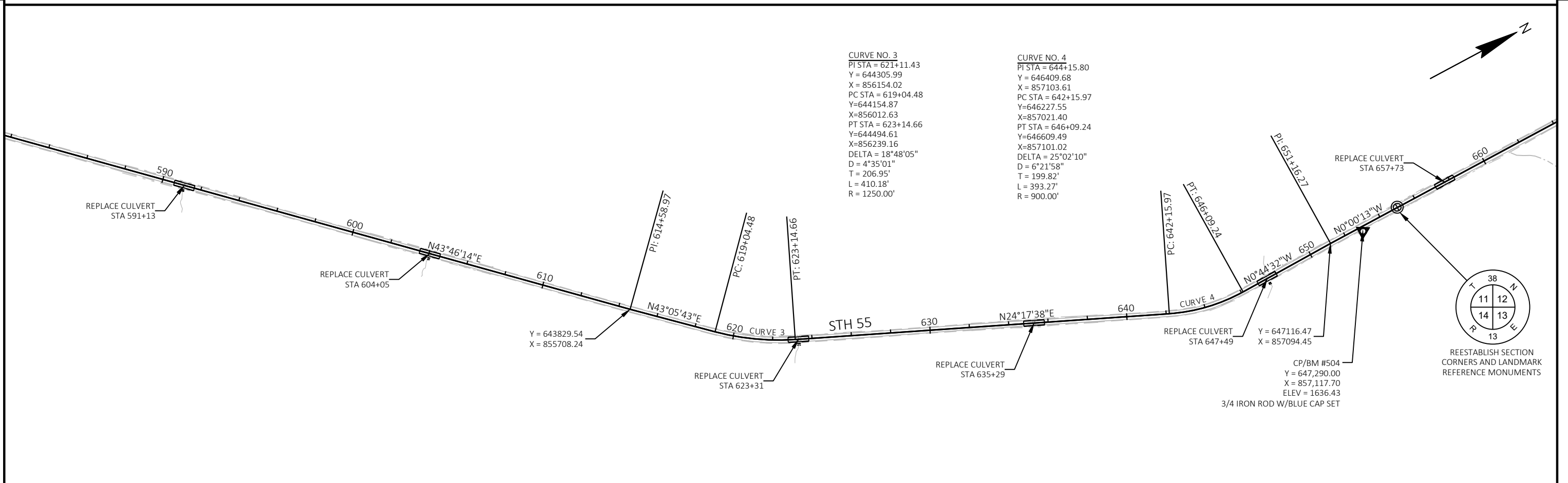
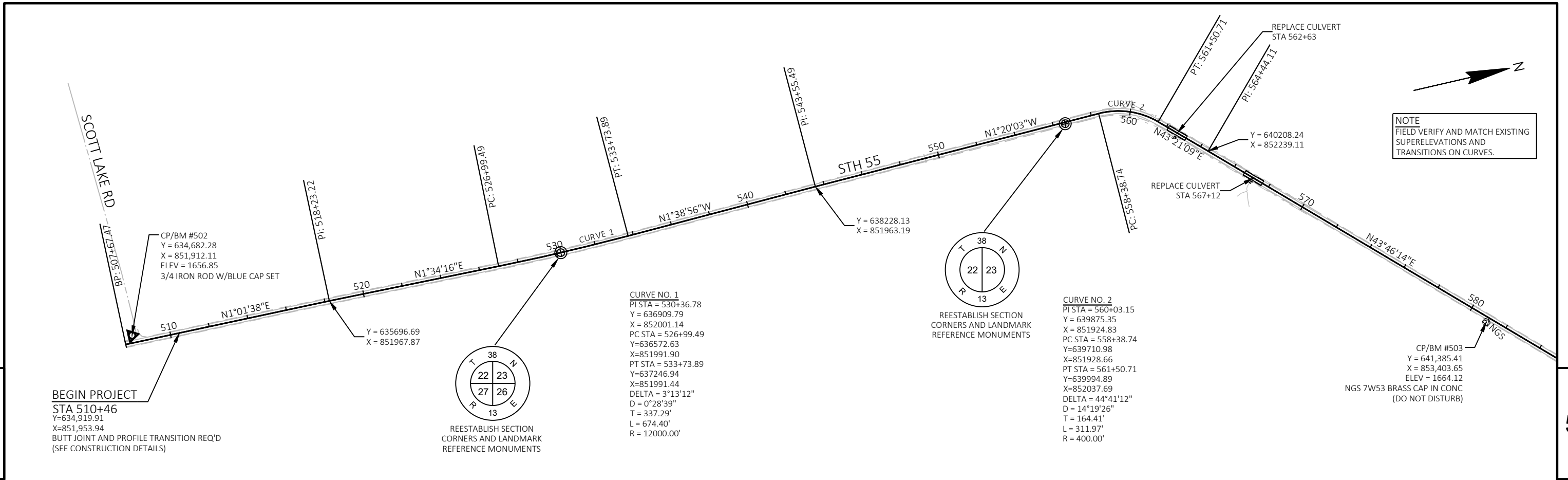
STATION	OFFSET	SPV.0180.01 SY
1326+48	LT&RT	46
TOTAL		46

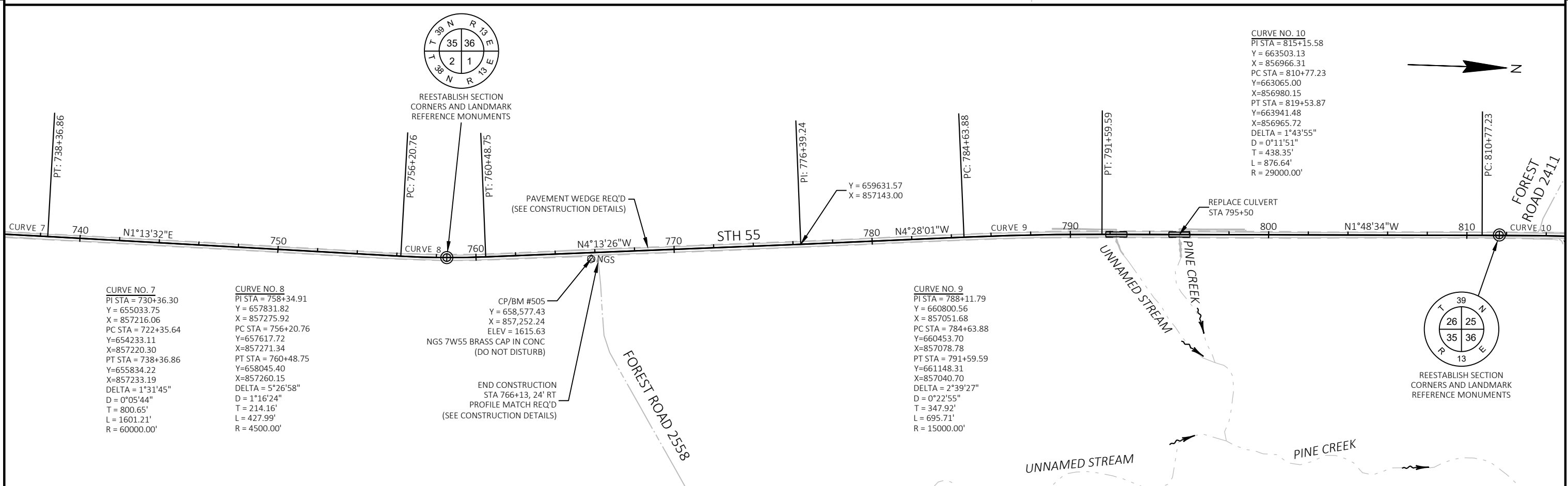
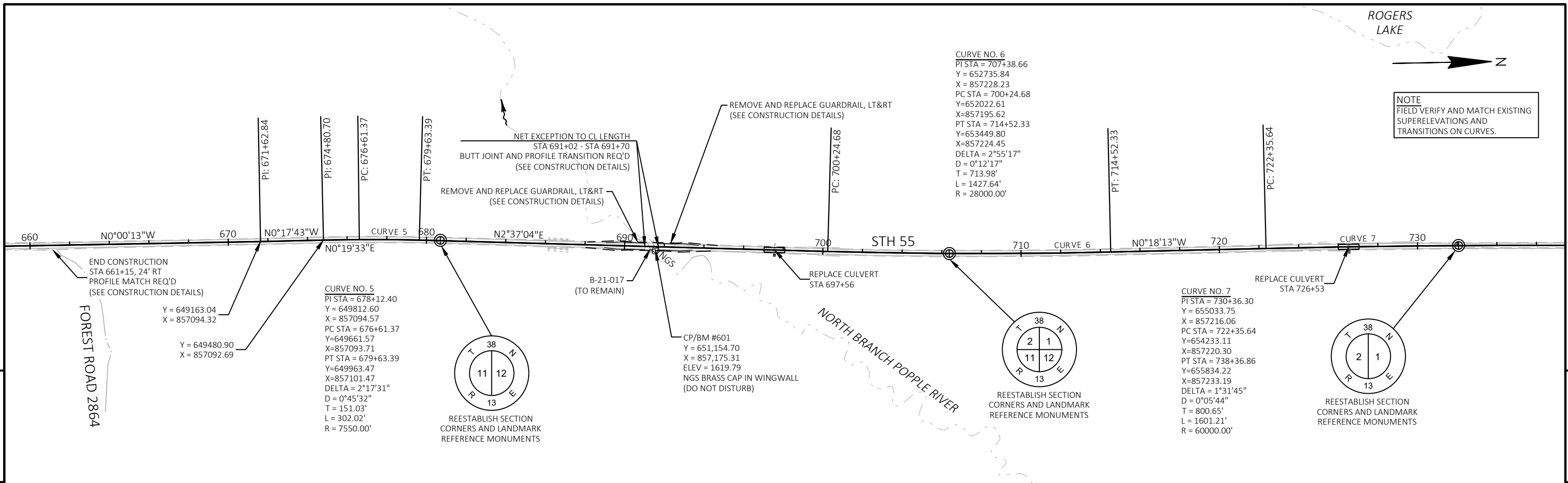
MONUMENT ITEMS

LOCATION	621.0100 LANDMARK REFERENCE MONUMENTS		SPV.0060.01 REESTABLISH SECTION CORNER MONUMENTS		COMMENTS
	EACH		EACH		
SEC 22 / 23 / 26 / 27, T38N, R13E	4		1		SECTION CORNER
SEC 22 / 23, T38N, R13E	4		1		QUARTER CORNER
SEC 11 / 12 / 13 / 14, T38N, R13E	4		1		SECTION CORNER
SEC 11 / 12, T38N, R13E	4		1		QUARTER CORNER
SEC 1 / 2 / 11 / 12, T38N, R13E	4		1		SECTION CORNER
SEC 1 / 2, T38N, R13E	4		1		QUARTER CORNER
SEC 35 / 36, T39N, R13E & SEC 1 / 2, T38N, R13E	4		1		SECTION CORNER
SEC 25 / 26 / 35 / 36, T39N, R13E	4		1		SECTION CORNER
SEC 25 / 26, T39N, R13E	4		1		QUARTER CORNER
SEC 23 / 24 / 25 / 26, T39N, R13E	4		1		SECTION CORNER
SEC 11 / 12 / 13 / 14, T39N, R13E	4		1		SECTION CORNER
SEC 11 / 12, T39N, R13E	4		1		QUARTER CORNER
SEC 1 / 2 / 11 / 12, T39N, R13E	4		1		SECTION CORNER
SEC 1 / 2, T39N, R13E	4		1		QUARTER CORNER
SEC 35 / 36, T40N, R13E & SEC 1 / 2, T39N, R13E	4		1		SECTION CORNER
SEC 23 / 24 / 25 / 26, T40N, R13E	4		1		SECTION CORNER
SEC 23 / 24, T40N, R13E	4		1		QUARTER CORNER
TOTALS	68		17		

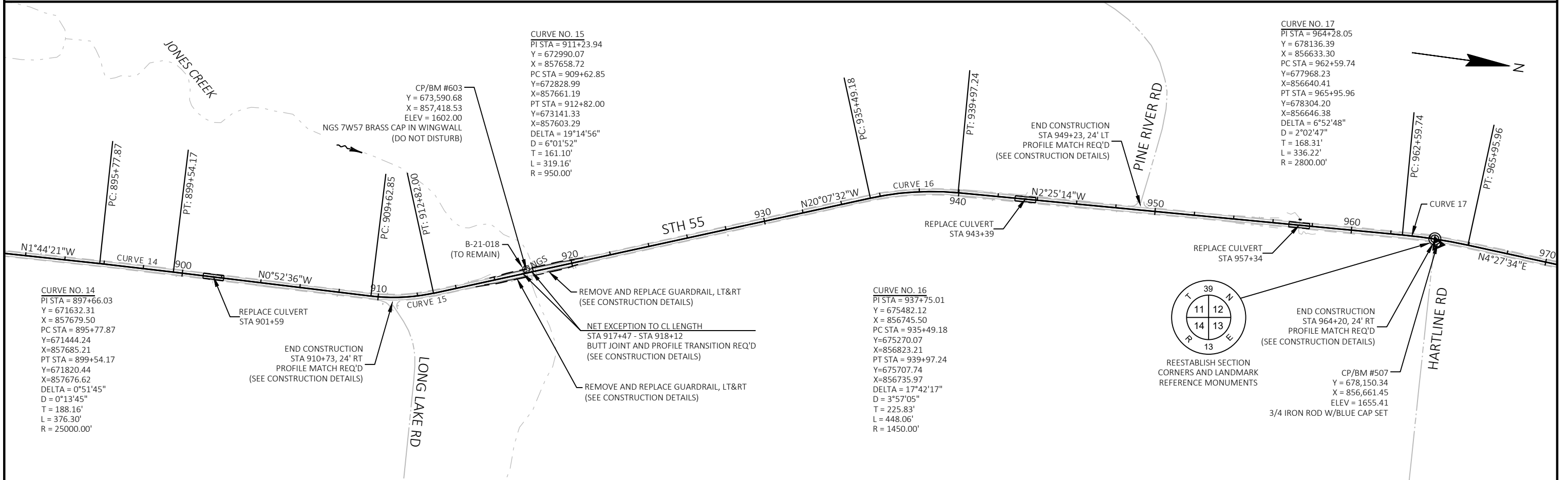
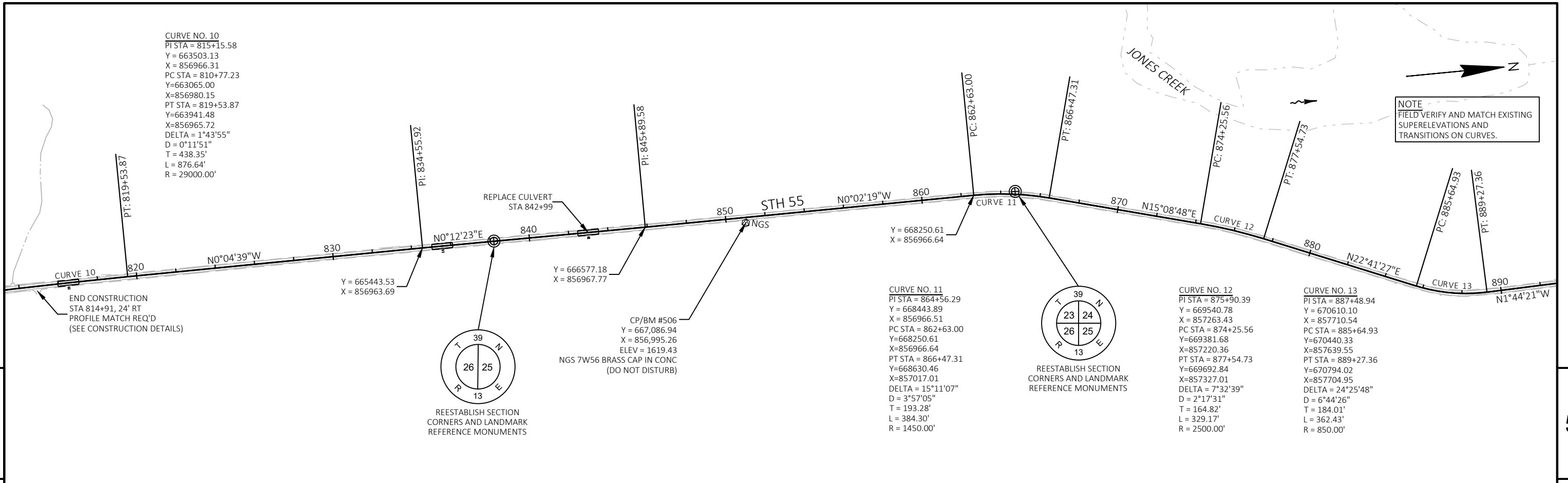
STAKING ITEMS

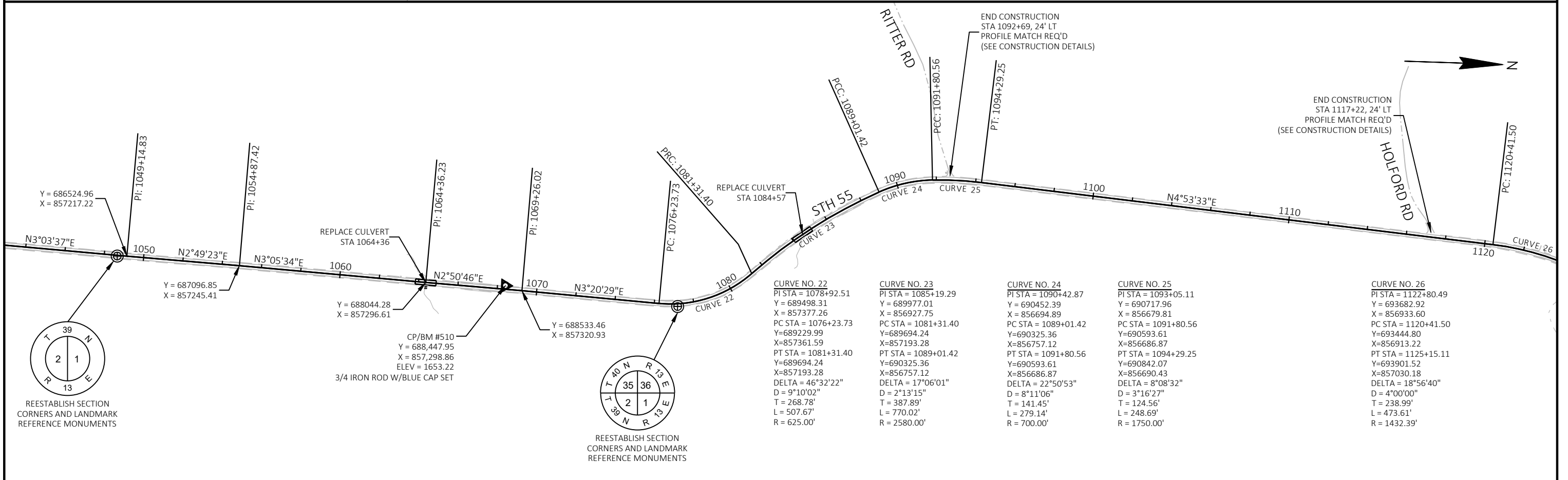
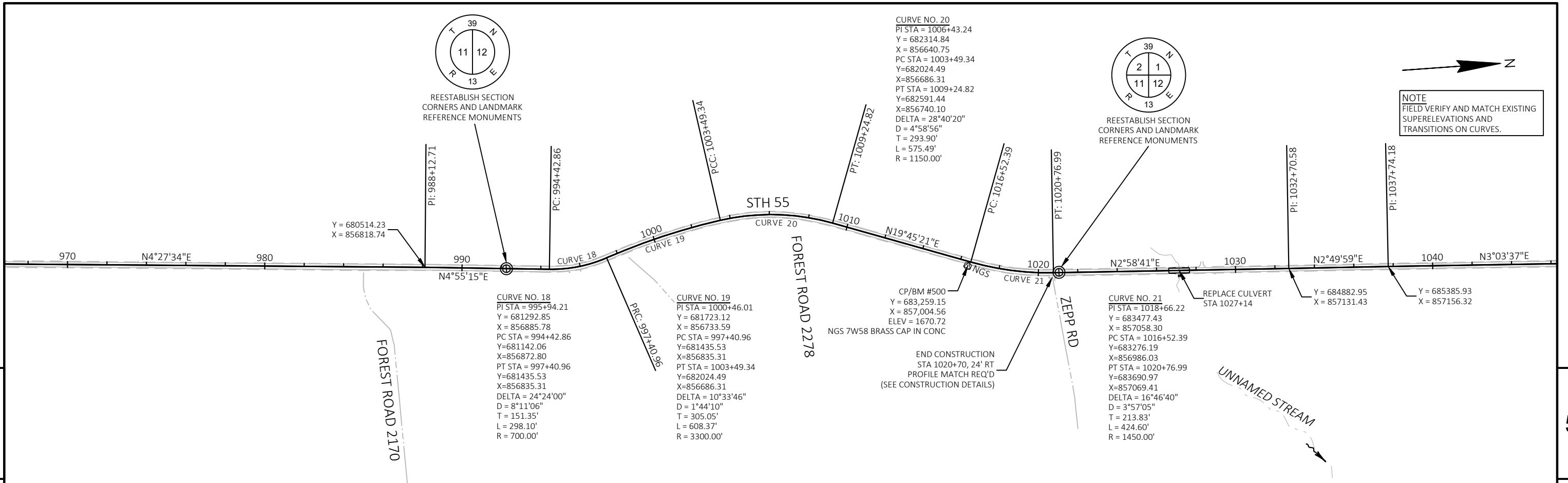
STATION	TO	STATION	OFFSET	650.4500	650.5000	650.6000	650.8000	650.9911.01	650.9920	COMMENTS
				CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING PIPE CULVERTS EACH	CONSTRUCTION STAKING RESURFACING REFERENCE LF	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (9165-13-70) EACH	CONSTRUCTION STAKING SLOPE STAKES LF	
510+46	-	691+02	LT&RT	--	--	--	18,056	--	--	MAINLINE PAVING
562+10	-	563+15	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
566+59	-	567+64	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
590+60	-	591+65	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
603+52	-	604+57	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
622+79	-	623+84	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
634+76	-	635+82	LT&RT	106	106	1	--	--	106	CULVERT REPLACEMENT
646+96	-	648+01	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
657+21	-	658+26	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
688+97	-	691+02	LT&RT	205	205	--	--	--	205	GUARDRAIL
691+70	-	917+47	LT&RT	--	--	--	22,577	--	--	MAINLINE PAVING
691+70	-	693+75	LT&RT	205	205	--	--	--	205	GUARDRAIL
697+03	-	698+09	LT&RT	106	106	1	--	--	106	CULVERT REPLACEMENT
726+00	-	727+06	LT&RT	106	106	1	--	--	106	CULVERT REPLACEMENT
791+79	-	792+85	LT&RT	106	106	1	--	--	106	CULVERT REPLACEMENT
794+97	-	796+03	LT&RT	106	106	1	--	--	106	CULVERT REPLACEMENT
815+98	-	817+04	LT&RT	106	106	1	--	--	106	CULVERT REPLACEMENT
835+04	-	836+09	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
842+46	-	843+52	LT&RT	106	106	1	--	--	106	CULVERT REPLACEMENT
901+06	-	902+11	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
915+43	-	917+47	LT&RT	204	204	--	--	--	204	GUARDRAIL
918+12	-	1123+85	LT&RT	--	--	--	20,573	--	--	MAINLINE PAVING
918+12	-	920+29	LT&RT	217	217	--	--	--	217	GUARDRAIL
942+87	-	943+92	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
956+81	-	957+87	LT&RT	106	106	1	--	--	106	CULVERT REPLACEMENT
1026+62	-	1027+67	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
1063+83	-	1064+89	LT&RT	106	106	1	--	--	106	CULVERT REPLACEMENT
1084+04	-	1085+10	LT&RT	106	106	1	--	--	106	CULVERT REPLACEMENT
1129+65	-	1342+55	LT&RT	--	--	--	21,290	--	--	MAINLINE PAVING
1149+96	-	1151+00	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
1179+73	-	1180+78	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
1213+31	-	1214+36	LT&RT	105	105	1	--	--	105	CULVERT REPLACEMENT
PROJECT			LT&RT	--	--	--	--	1	--	
TOTALS				3,361	3,361	24	82,496	1	3,361	



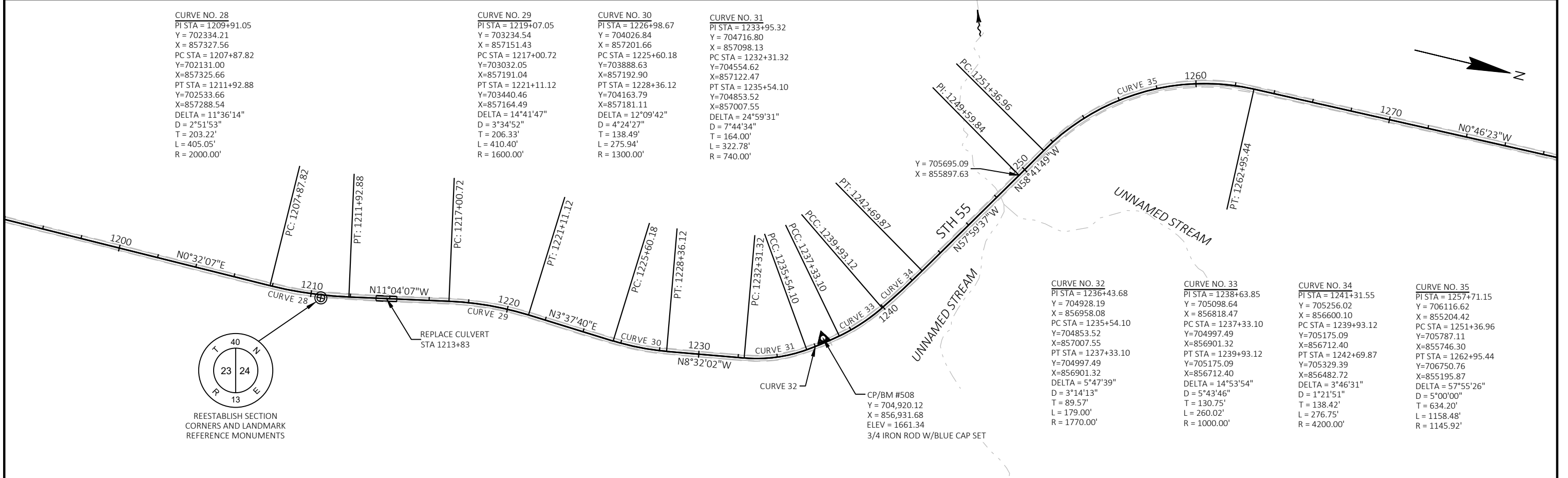
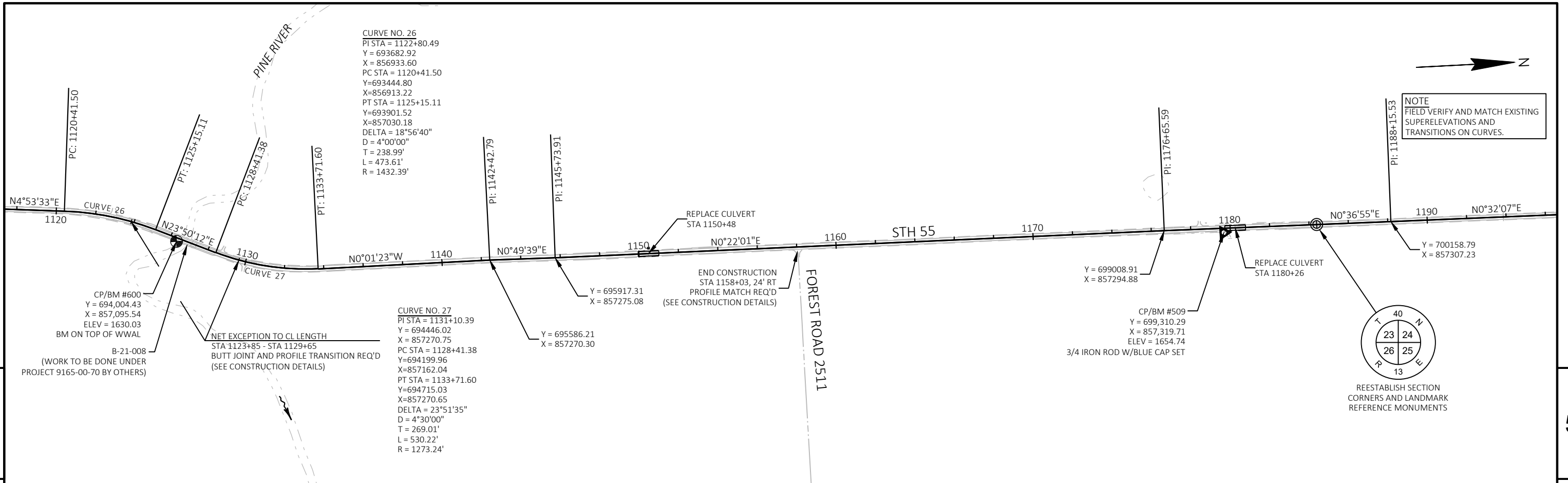


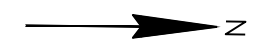
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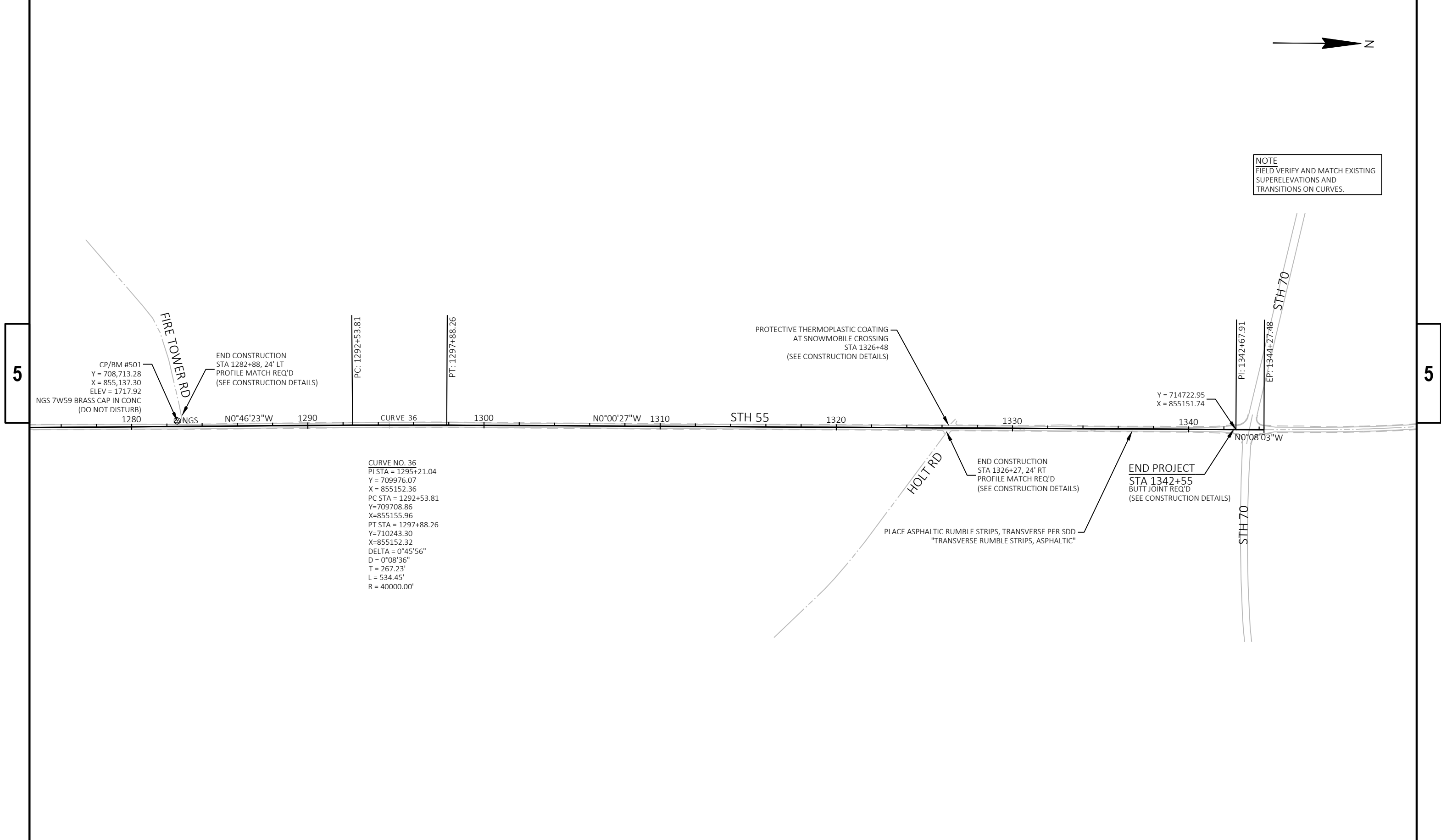


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NOTE
FIELD VERIFY AND MATCH EXISTING
SUPERELEVATIONS AND
TRANSITIONS ON CURVES.



5

5

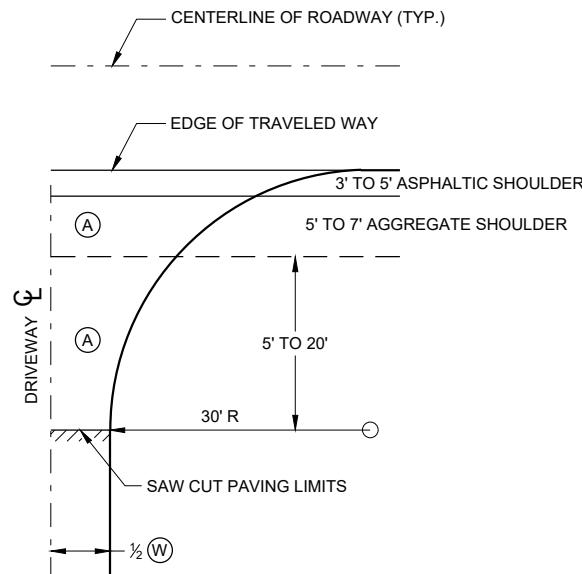
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Standard Detail Drawing List

08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
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
13A08-02	TRANSVERSE RUMBLE STRIPS, ASPHALTIC
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)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
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
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D45-03	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

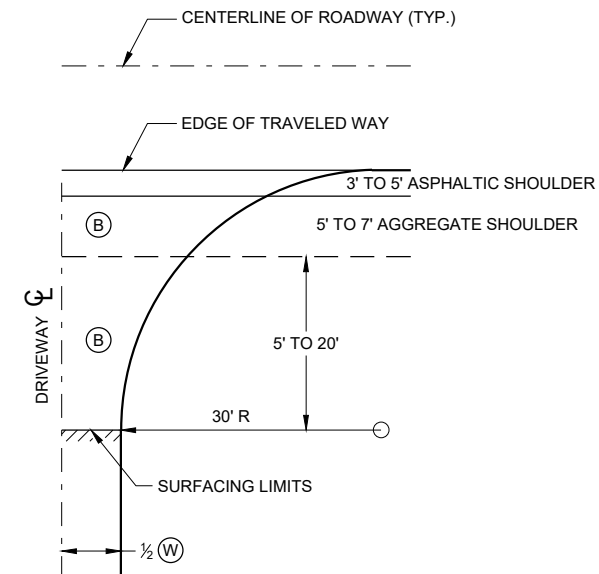
GENERAL NOTES

- ① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

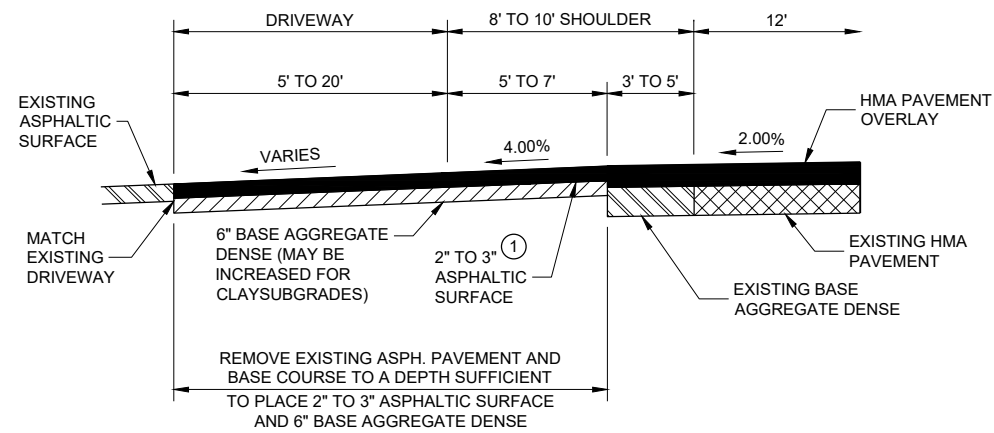


- Ⓐ : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)
- Ⓑ : PAID FOR AS BASE AGGREGATE DENSE 1 1/4" (TON)
- ⒲ : DRIVEWAY WIDTH 16' MIN. - 24' MAX.

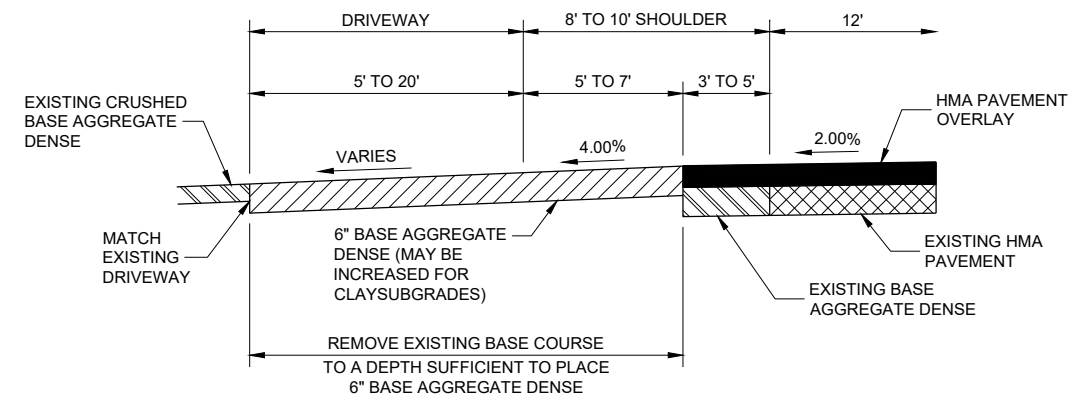
**PLAN VIEW
HALF SECTION**



**PLAN VIEW
HALF SECTION**



**PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS**



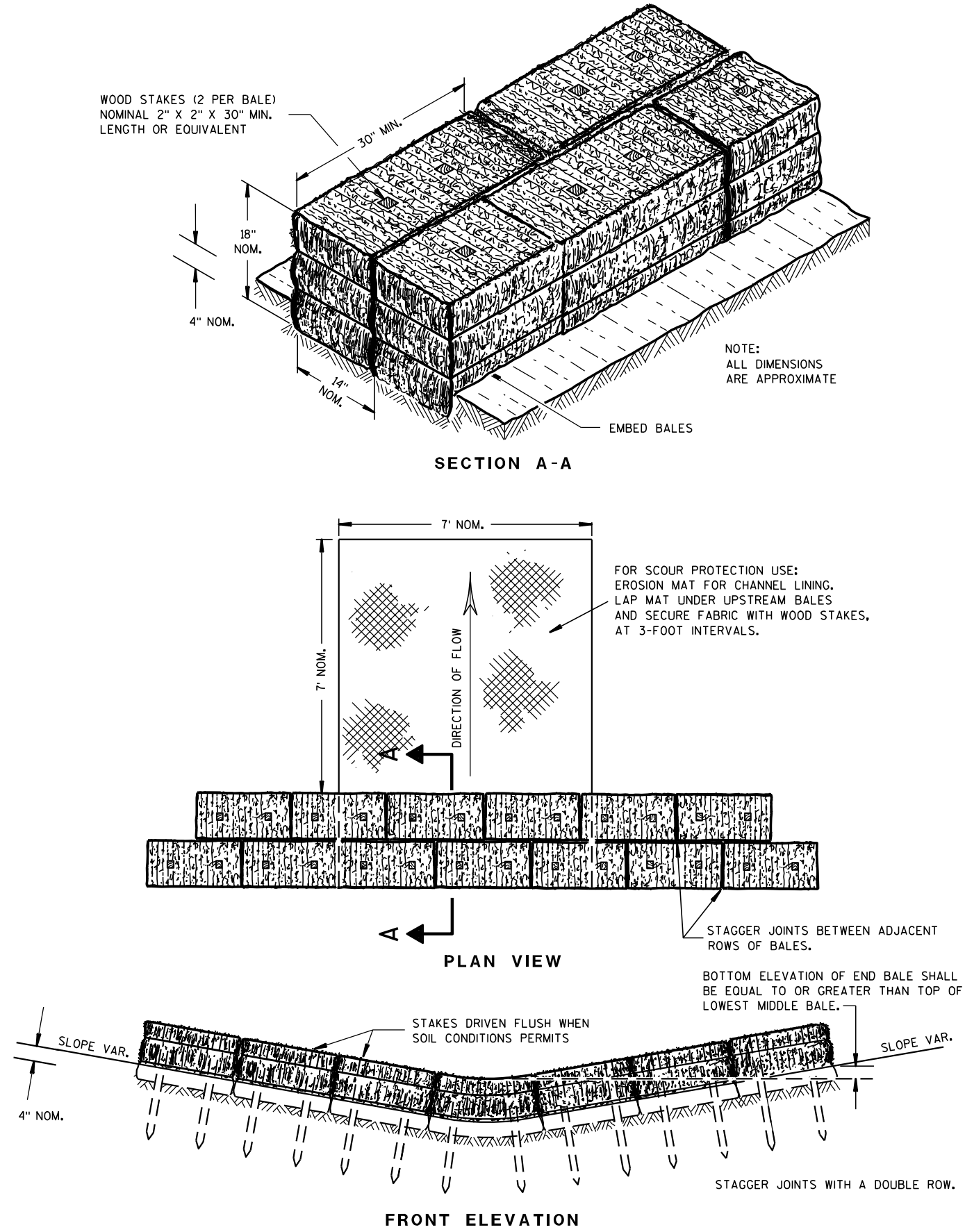
**PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS**

**DRIVEWAYS WITHOUT CURB
AND GUTTER RESURFACING
PROJECTS RURAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

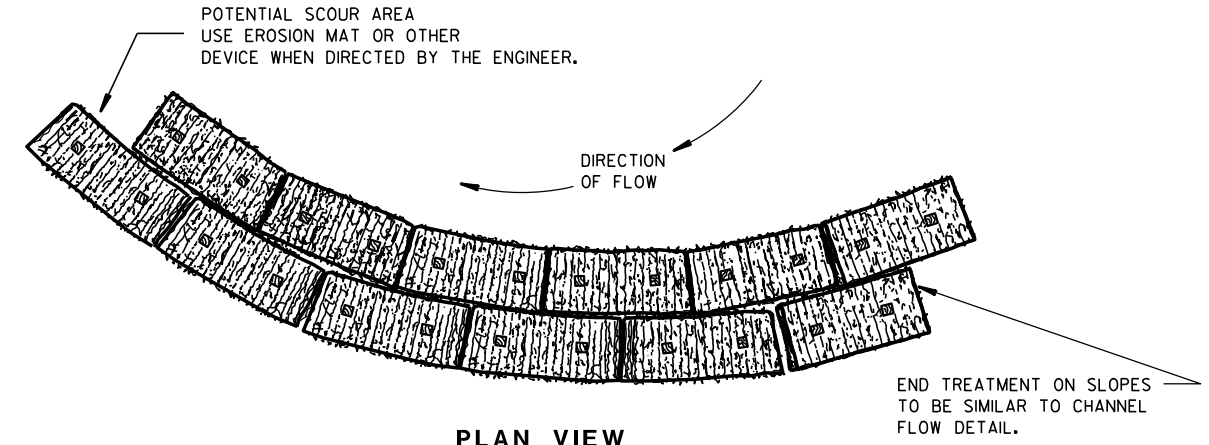


TEMPORARY DITCH CHECK USING EROSION BALES ①

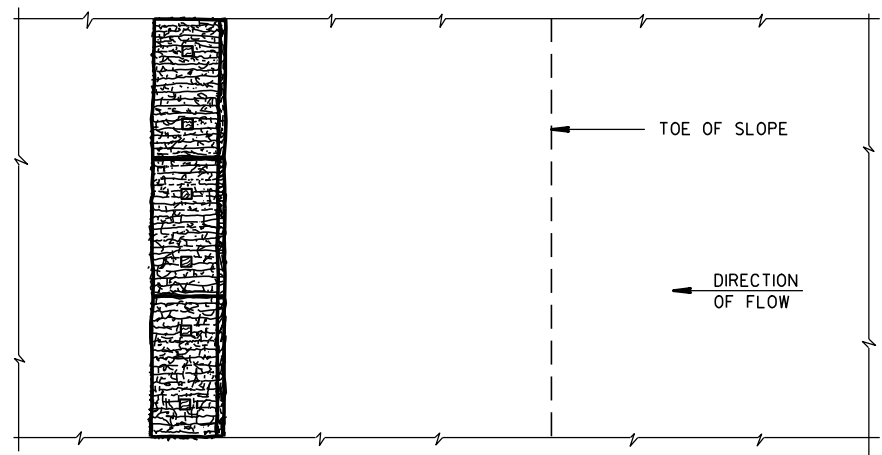
GENERAL NOTES

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.

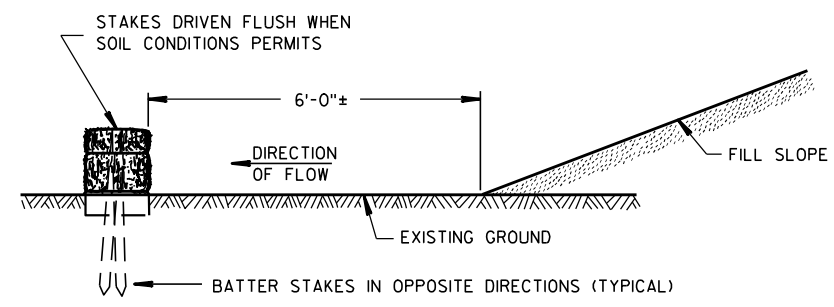
- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.



PLAN VIEW WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW

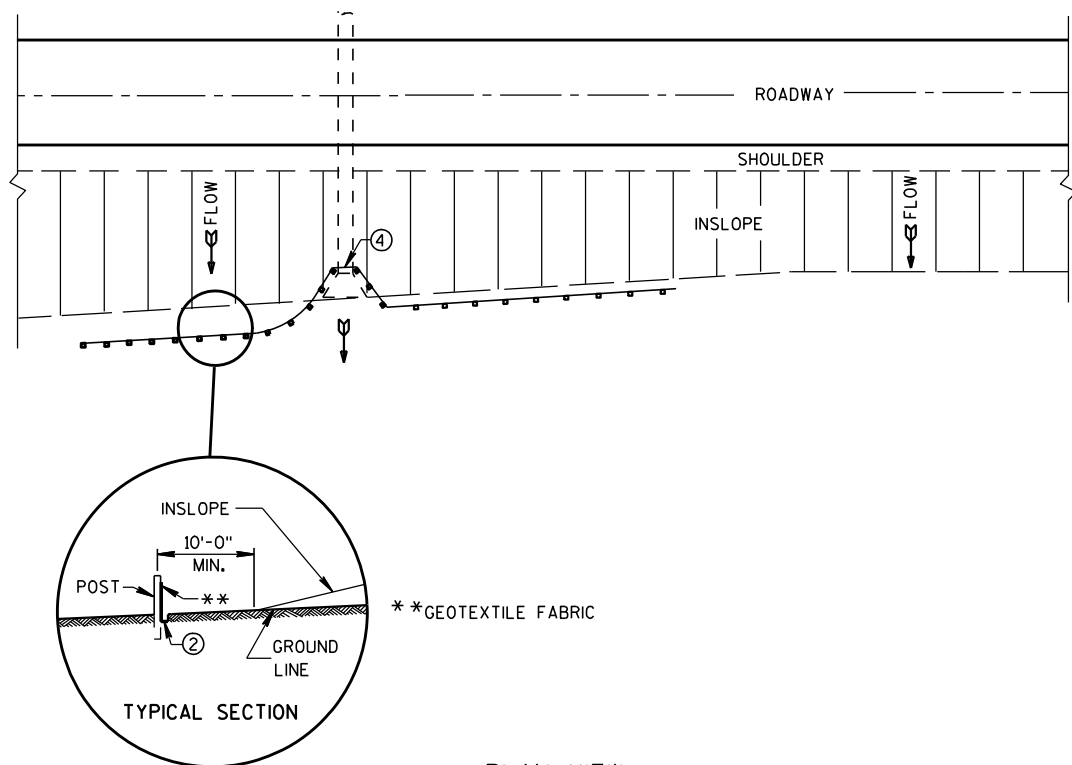


FRONT ELEVATION WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE EROSION BALES FOR SHEET FLOW

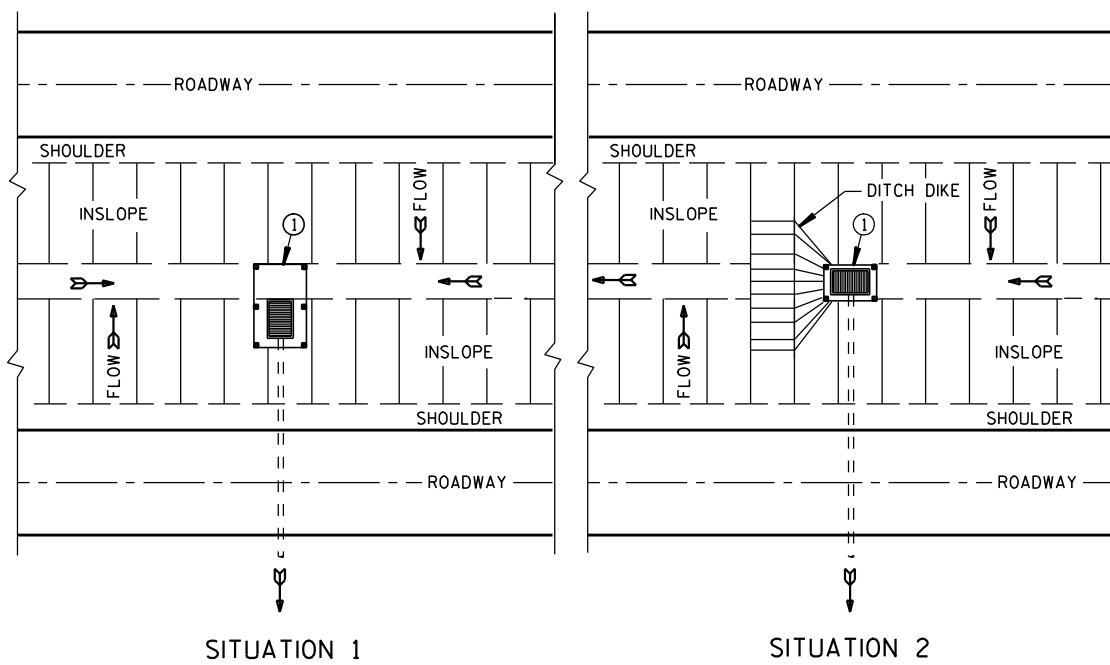
TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

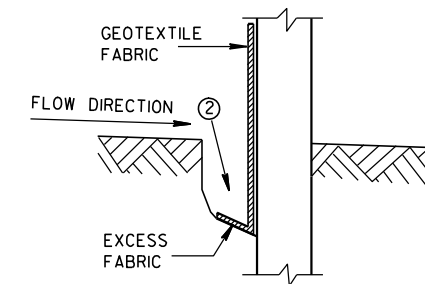


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

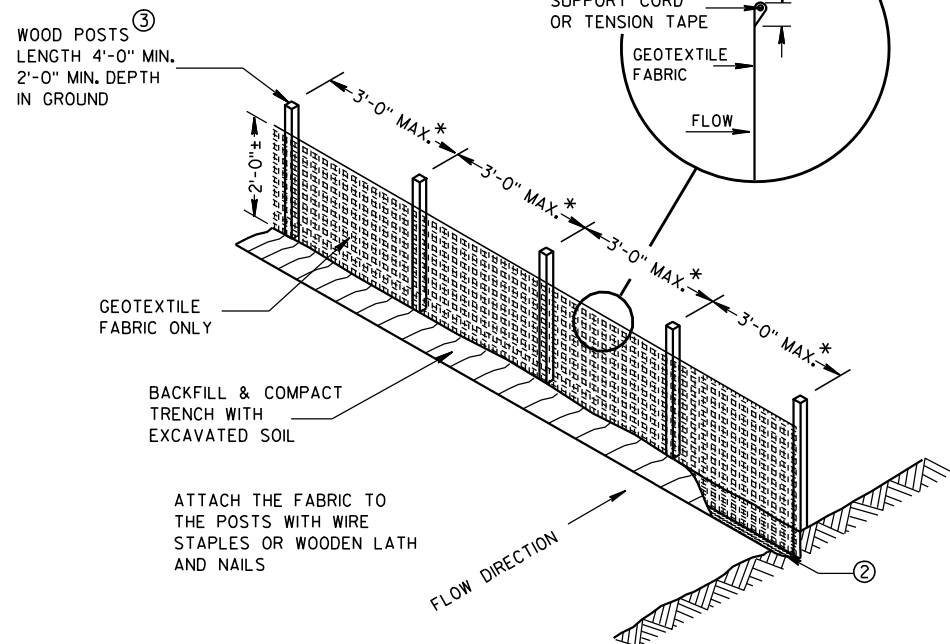
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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 1 1/8" X 1 1/8" 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.



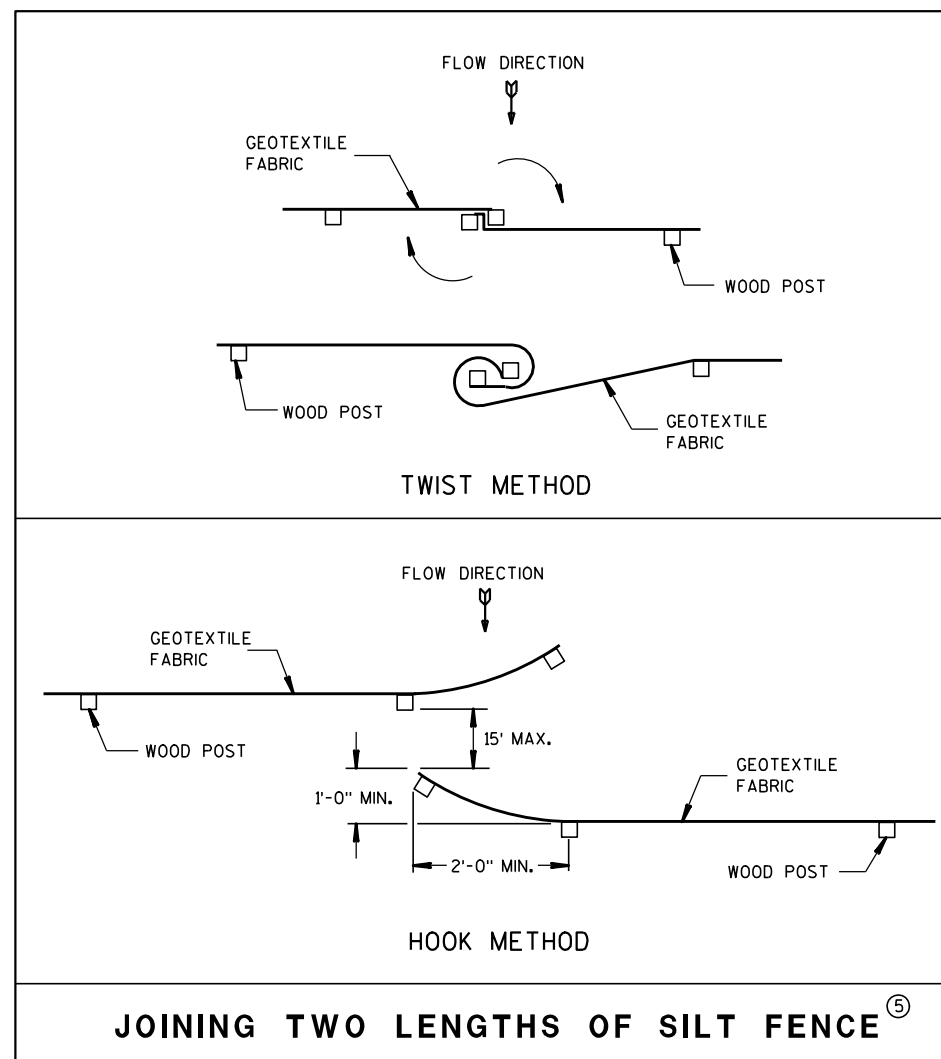
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

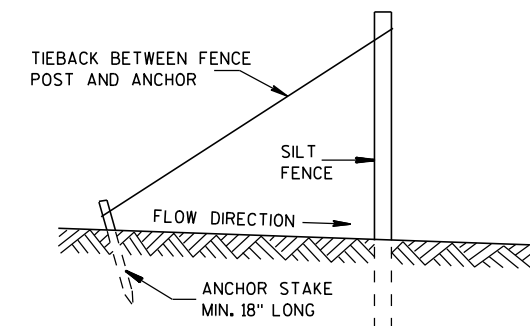


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE

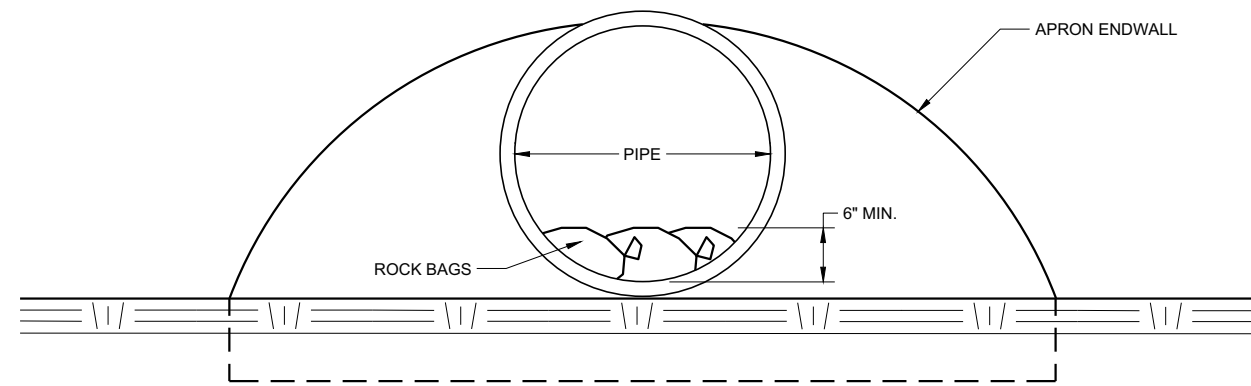


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

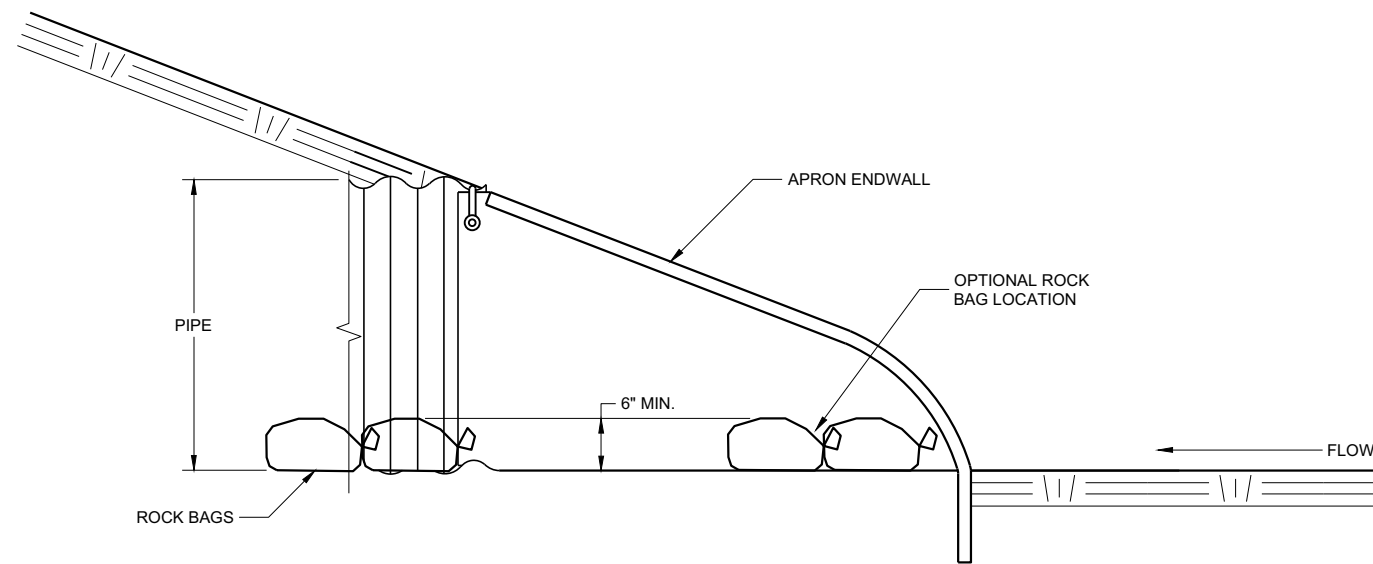
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Canestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



END VIEW



SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

6

6

SDD 08E15 - 01

SDD 08E15 - 01

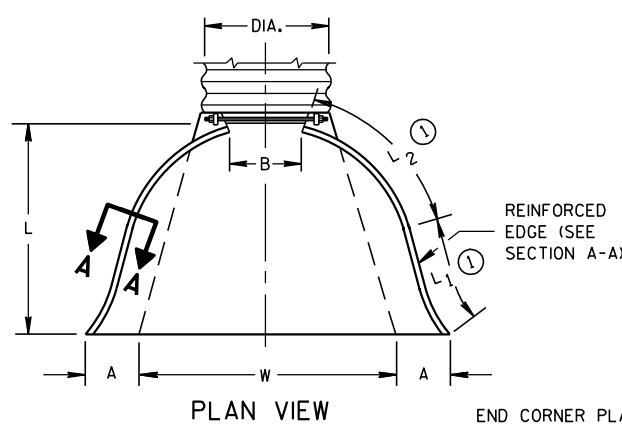
CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGINEER
<small>FHWA</small>	

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	L2	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 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.

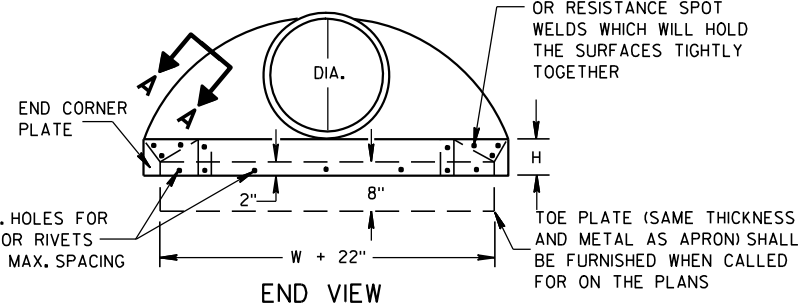
* EXCEPT CENTER PANEL SEE GENERAL NOTES

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	

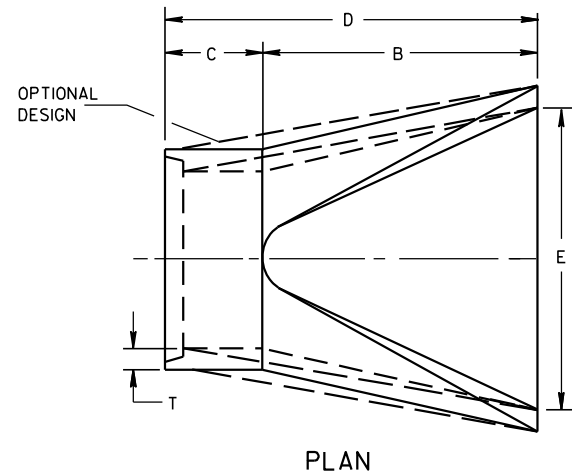
* MINIMUM
** MAXIMUM



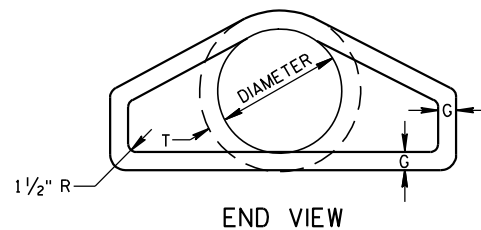
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



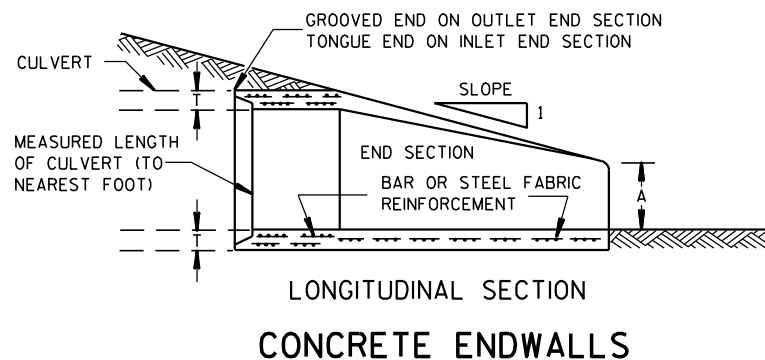
SIDE ELEVATION
METAL ENDWALLS



PLAN

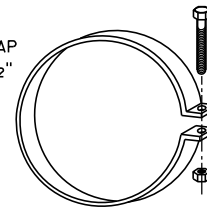


END VIEW

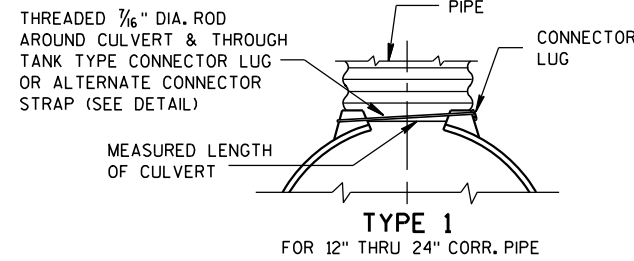


LONGITUDINAL SECTION
CONCRETE ENDWALLS

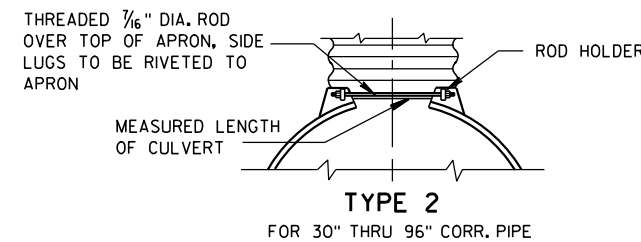
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



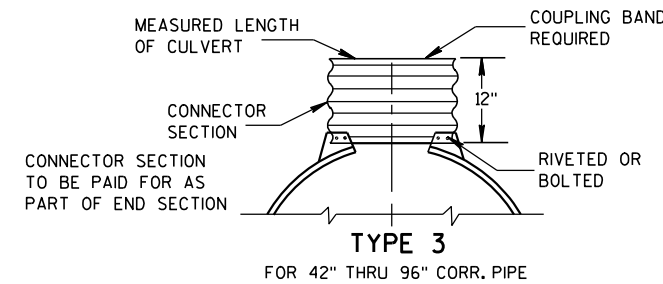
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



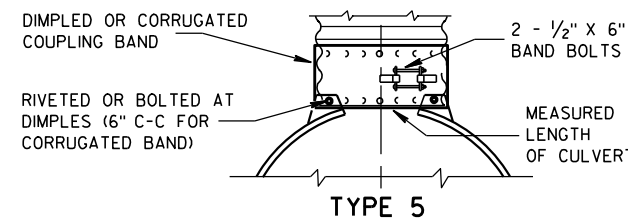
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

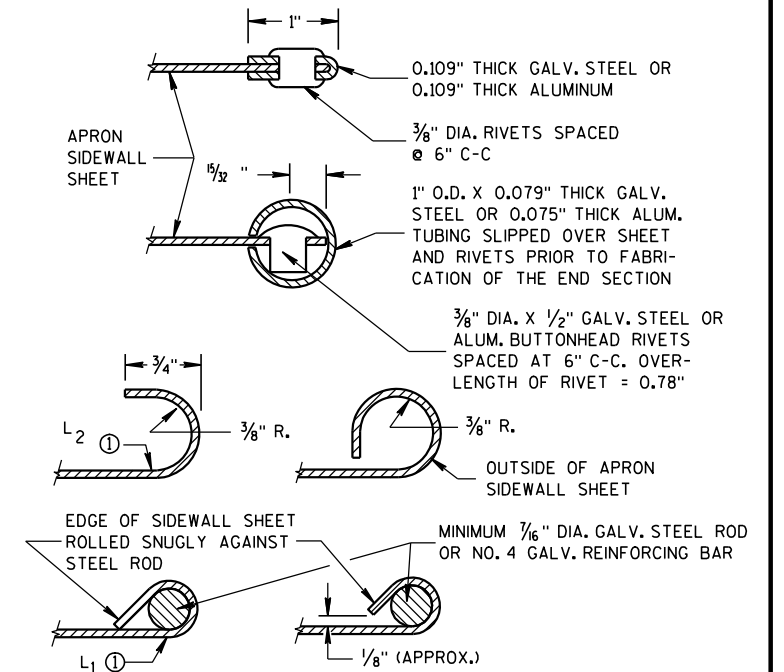
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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 VICE 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.

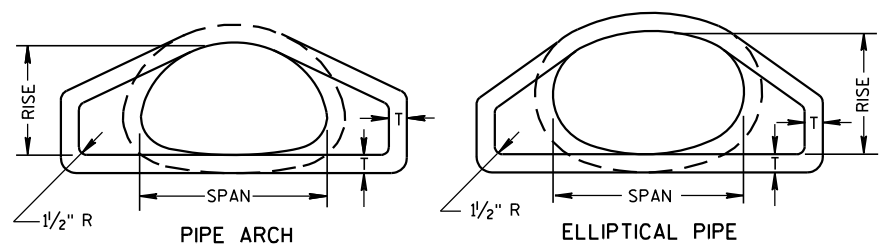
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

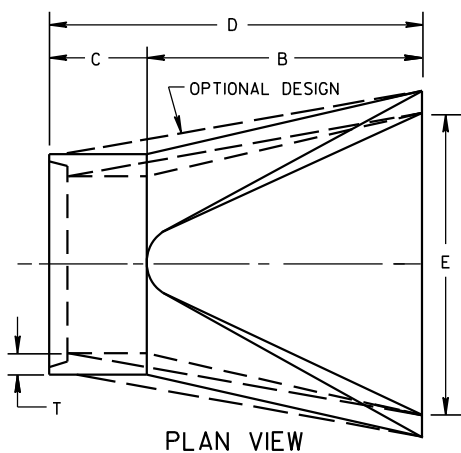
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

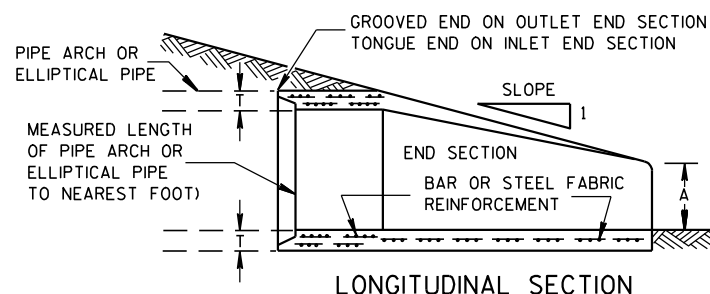
APPROVED
11/30/94 /S/ Rory L. Rhinesmith
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



END VIEW

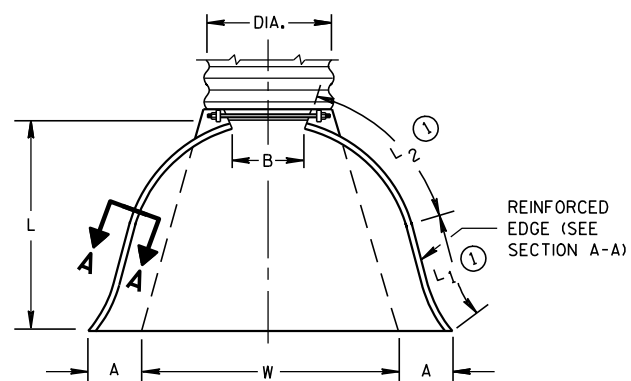


PLAN VIEW



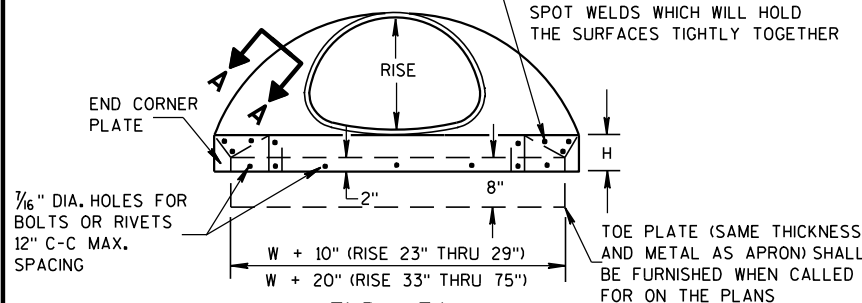
LONGITUDINAL SECTION

CONCRETE ENDWALLS

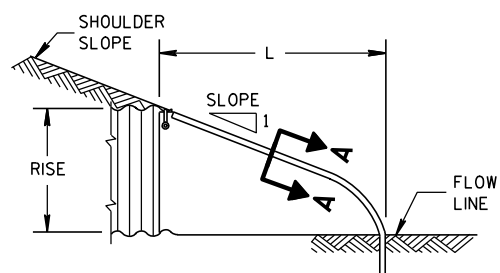


PLAN VIEW

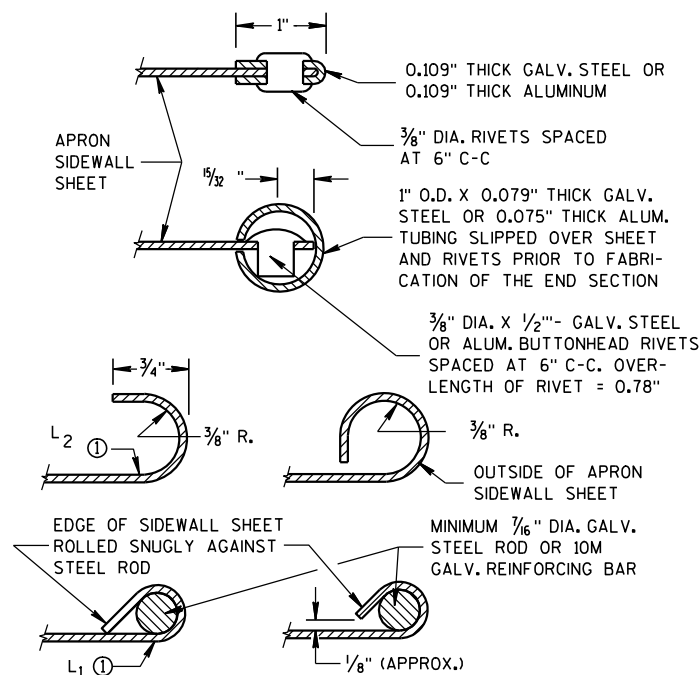
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW



SIDE ELEVATION
METAL ENDWALLS



SECTION A-A

2- 2/3" X 1/2" 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")	L1 (⓪)	L2 (⓪)	W (±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")	L1 (⓪)	L2 (⓪)	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 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	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED. * EXCEPT CENTER PANEL SEE GENERAL NOTES

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 5/16	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 3/4	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.

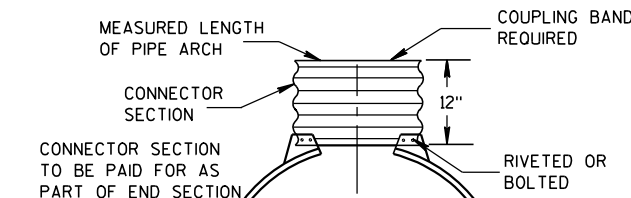
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

⓪ 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.



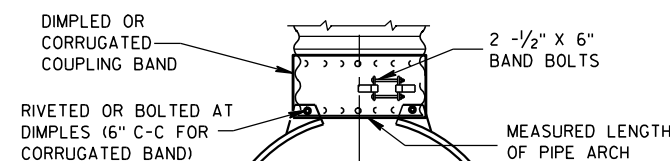
TYPE 2

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

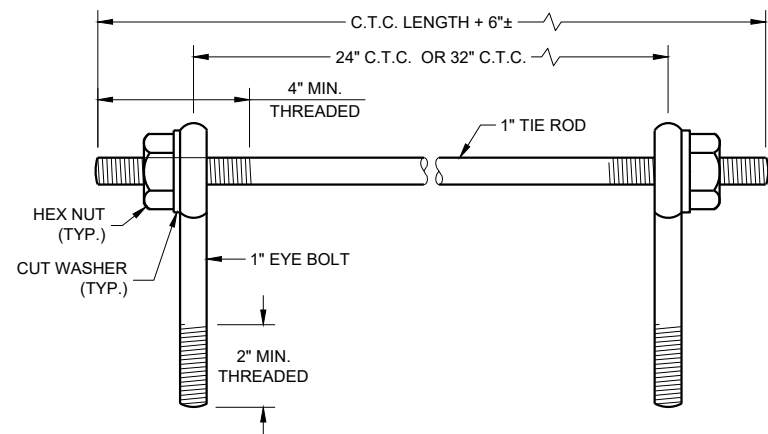
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

**APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPE**

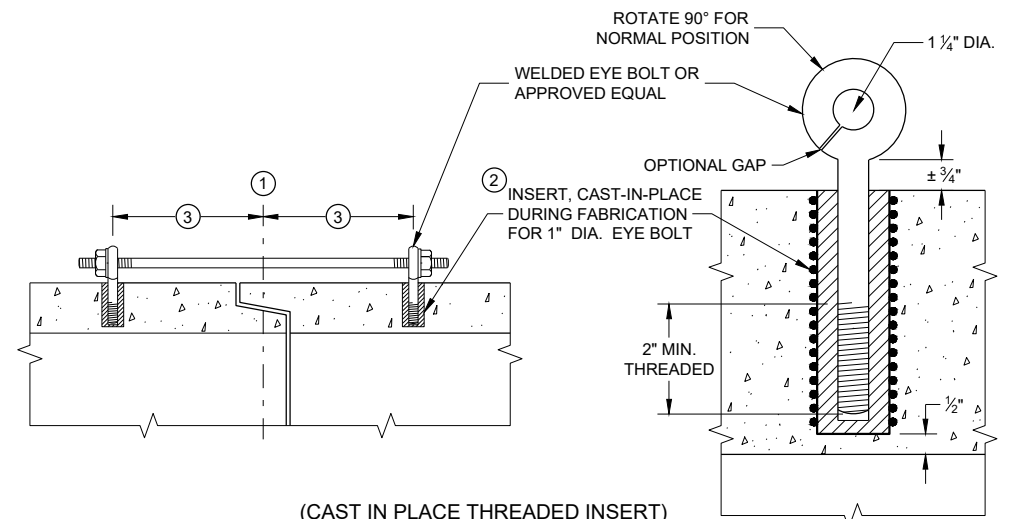
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

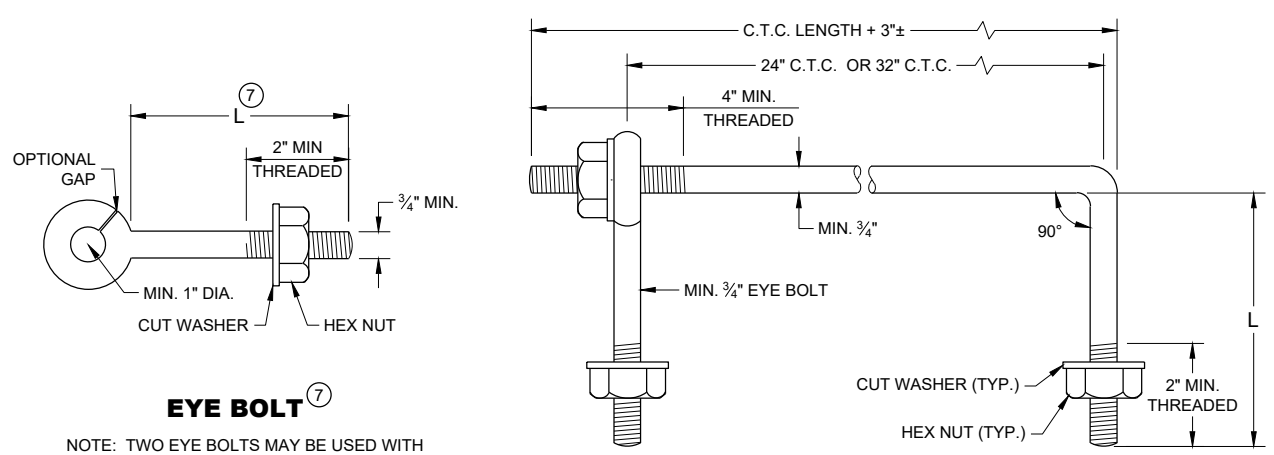
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

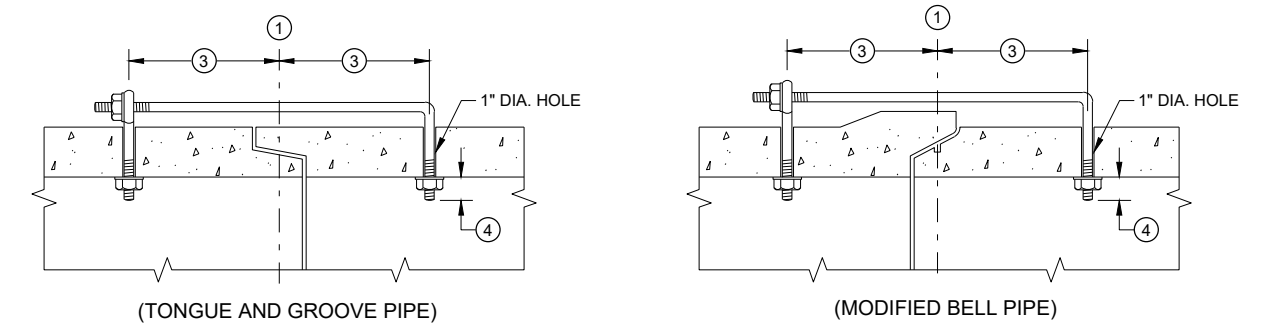
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 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 AND TIE ROD

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



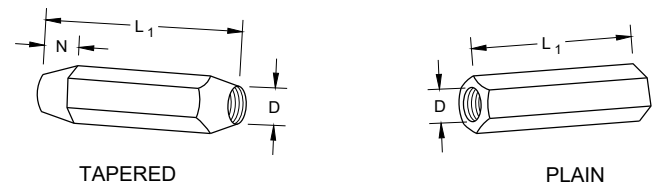
LONGITUDINAL SECTION
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

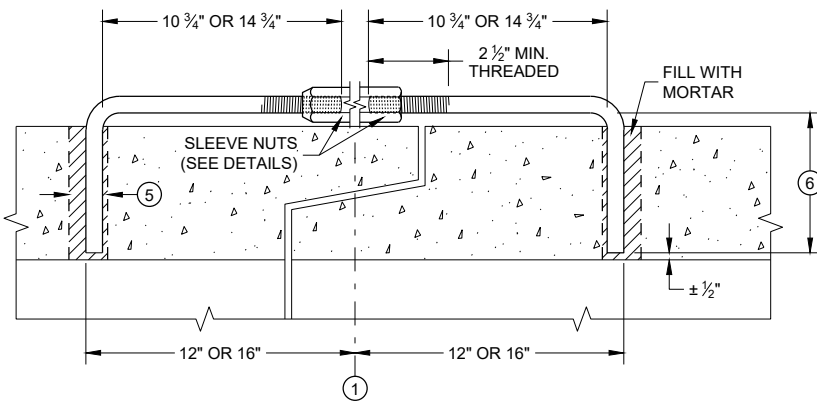
ADJUSTABLE TIE ROD TABLE

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

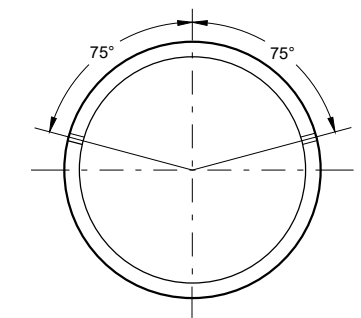


RIGHT AND LEFT THREADS SLEEVE NUTS



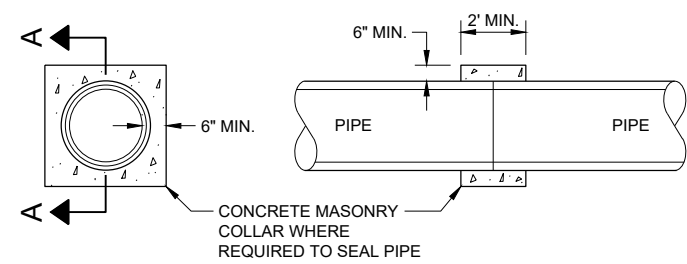
LONGITUDINAL SECTION

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

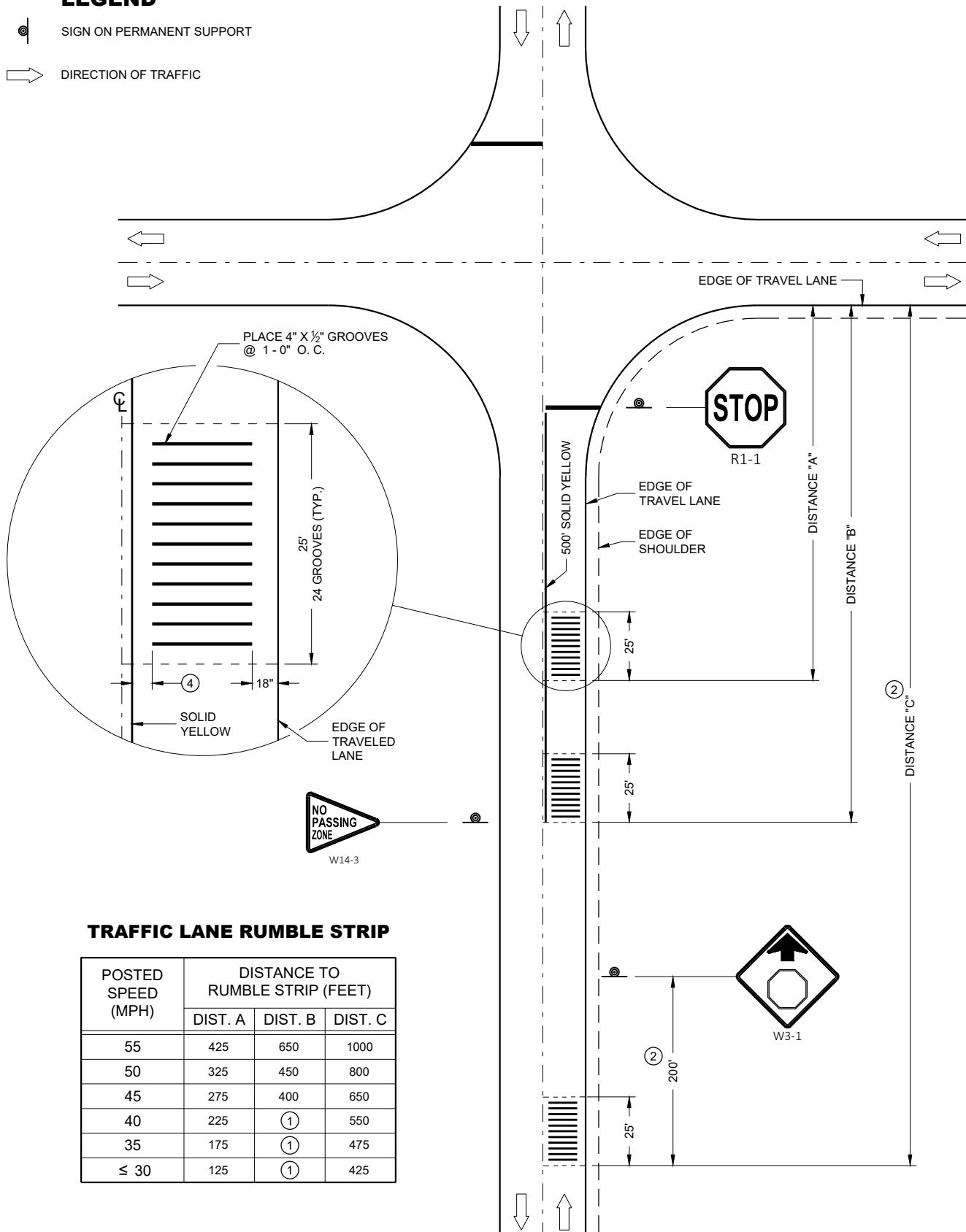
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC



TRAFFIC LANE RUMBLE STRIP

POSTED SPEED (MPH)	DISTANCE TO RUMBLE STRIP (FEET)		
	DIST. A	DIST. B	DIST. C
55	425	650	1000
50	325	450	800
45	275	400	650
40	225	①	550
35	175	①	475
≤ 30	125	①	425

RUMBLE STRIP LOCATION

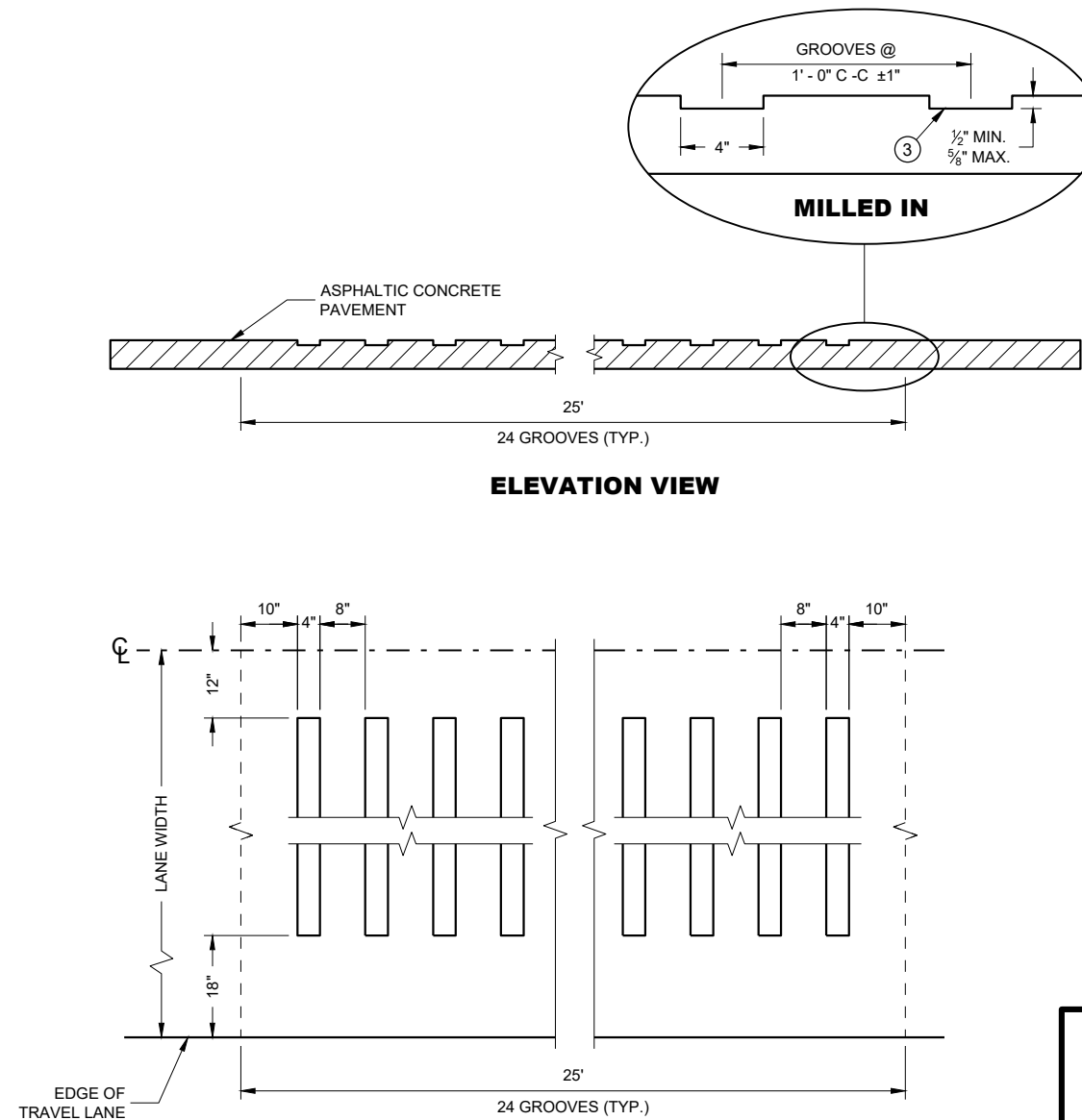
GENERAL NOTES

CONTRACTOR SHALL CONFIRM RUMBLE STRIP LOCATION WITH THE ENGINEER PRIOR TO INSTALLATION. THE ENGINEER MAY MODIFY THE RUMBLE STRIP LOCATION AS FIELD CONDITIONS DICTATE.

WHEN ASPHALTIC PAVEMENT IS NEW IN THE RUMBLE AREA, THE CONTRACTOR SHALL ALLOW THE PAVEMENT TO CURE A MINIMUM OF 7 DAYS PRIOR TO RUMBLE INSTALLATION.

PAVEMENT MARKING AND SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

- ① ELIMINATE THE MIDDLE SET OF RUMBLE STRIPS.
- ② LOCATE RUMBLE STRIP 200 FEET IN ADVANCE OF W3-1 SIGN AS SHOWN. IF W3-1 IS NOT IN PLACE, USE DISTANCE "C".
- ③ TYPICAL VERTICAL VARIATION BETWEEN PEAKS AND VALLEYS WITHIN THE CUT APPROXIMATELY 1/16".
- ④ 12 INCH CLEAR BETWEEN THE SOLID YELLOW LINE AND THE EDGE OF THE RUMBLE.



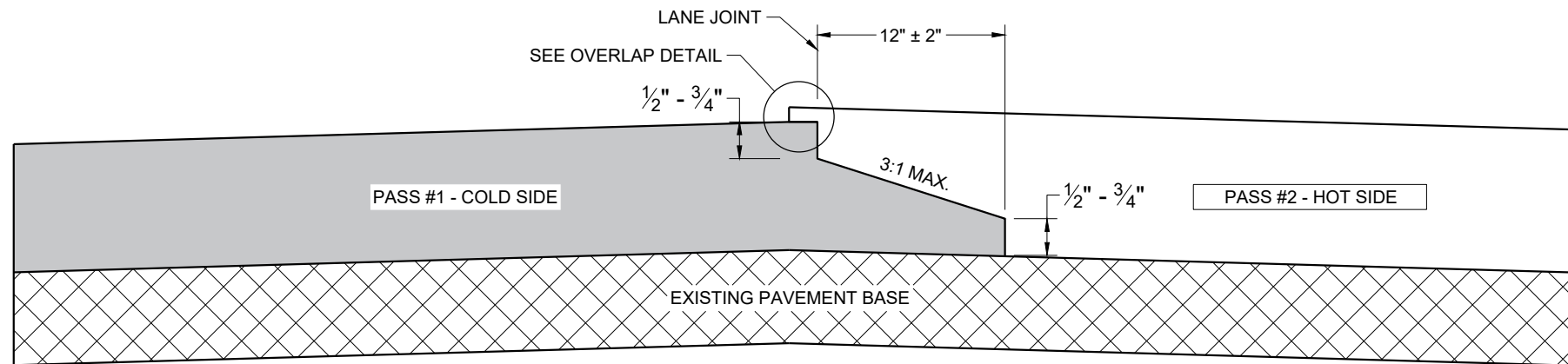
**PLAN VIEW
ASPHALTIC PAVEMENT MILLED IN**

TRANSVERSE RUMBLE STRIPS, ASPHALTIC

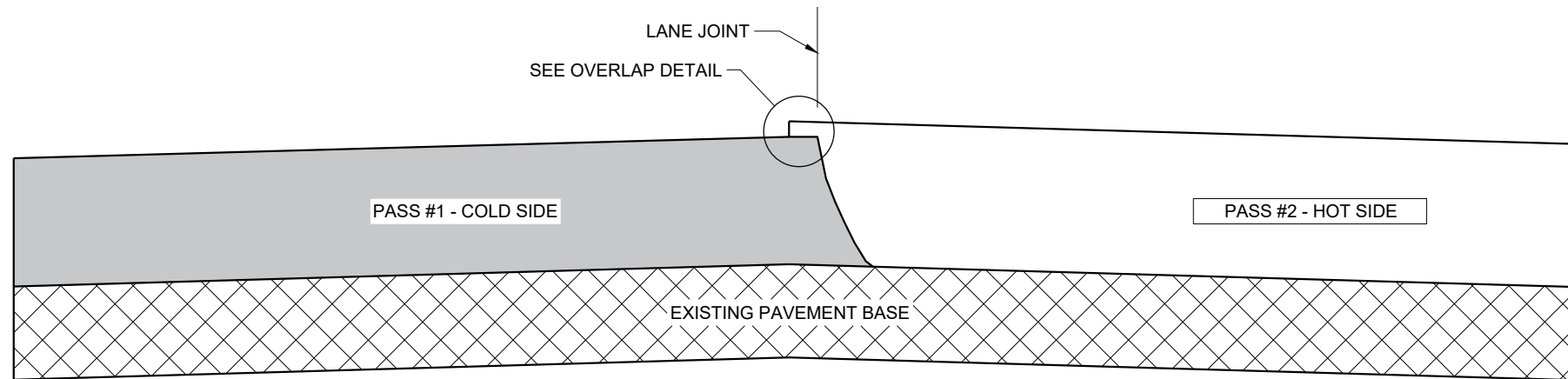
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

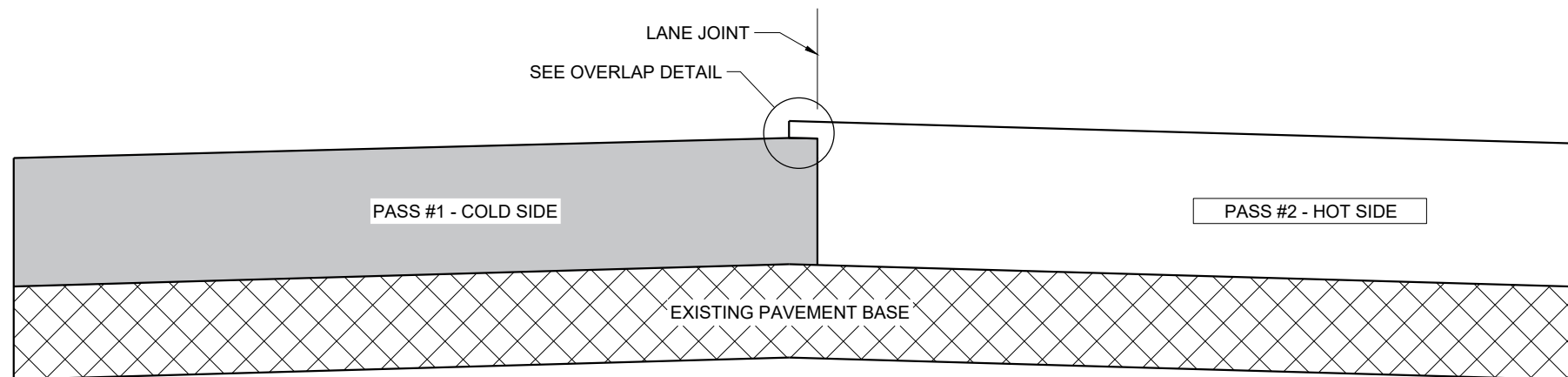
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

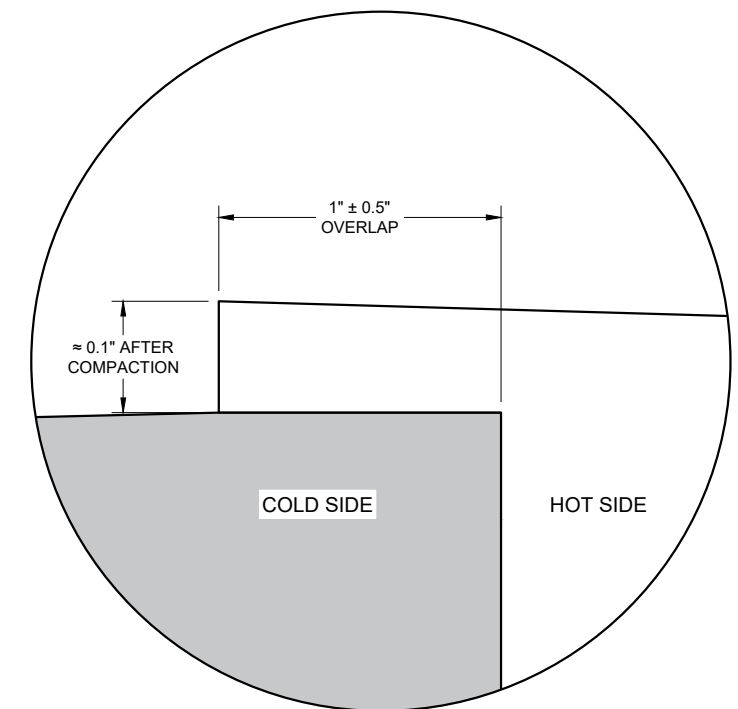
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)

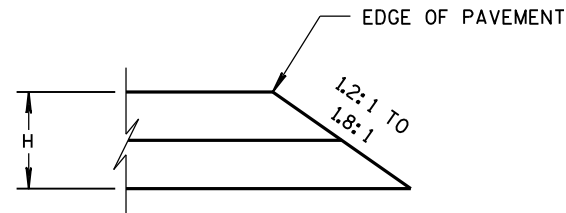
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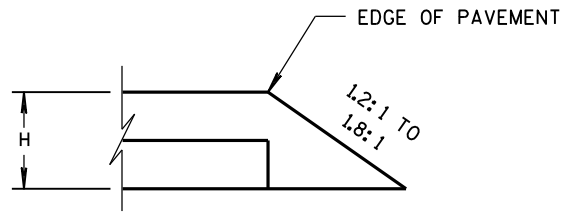
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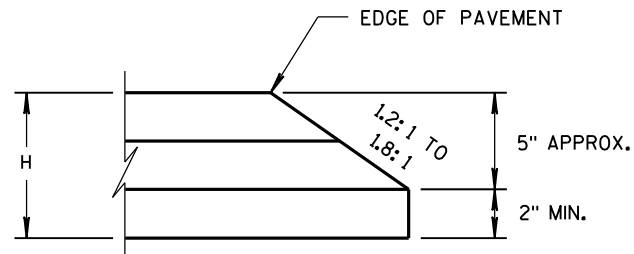
HMA LONGITUDINAL JOINTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
FHWA	



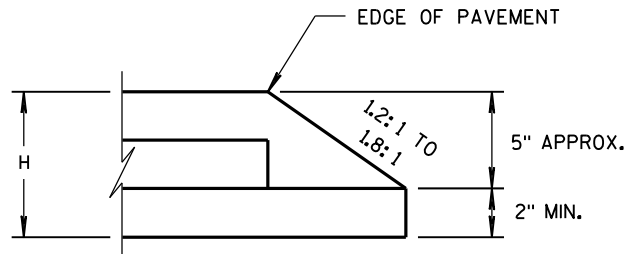
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

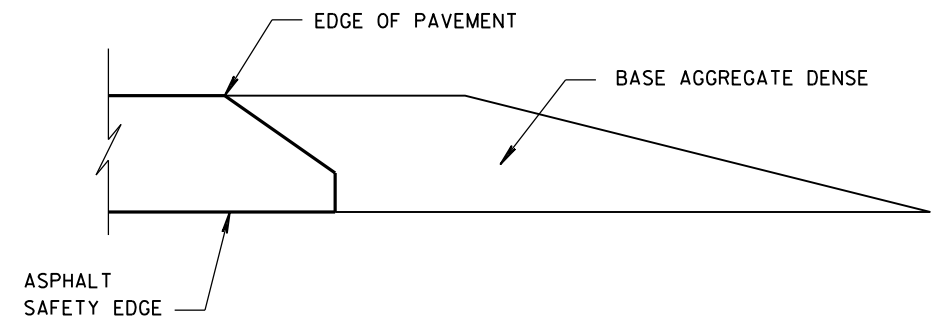


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

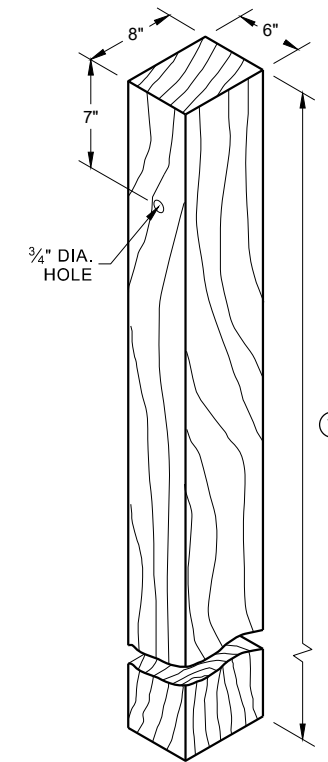
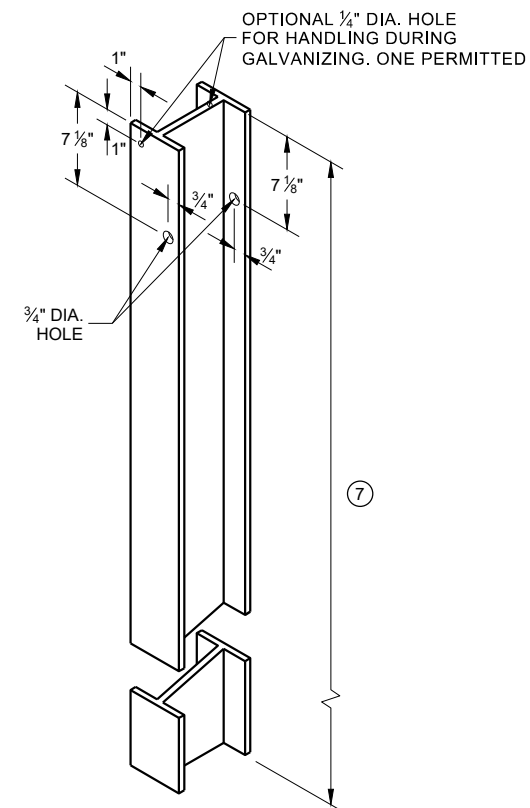
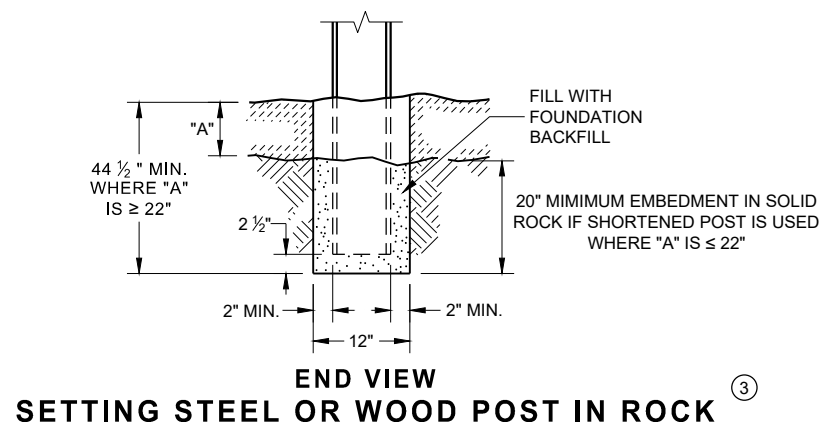
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S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

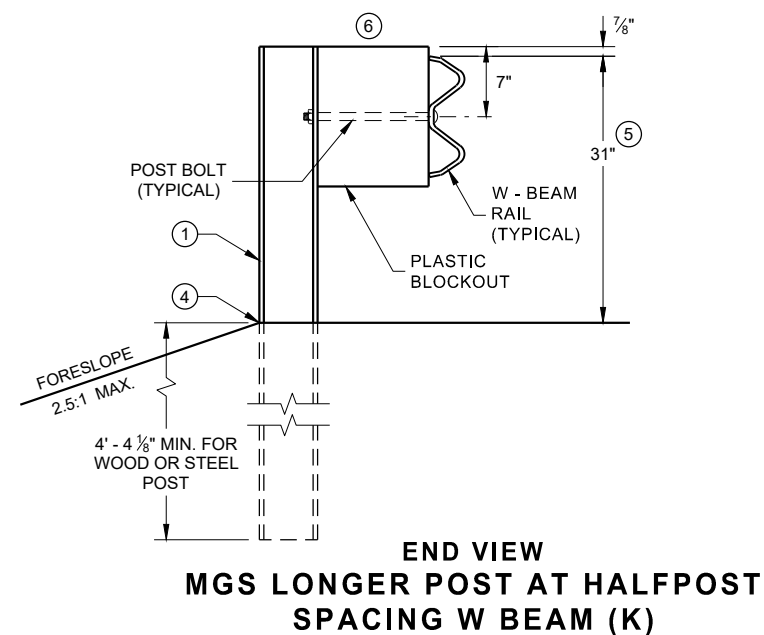
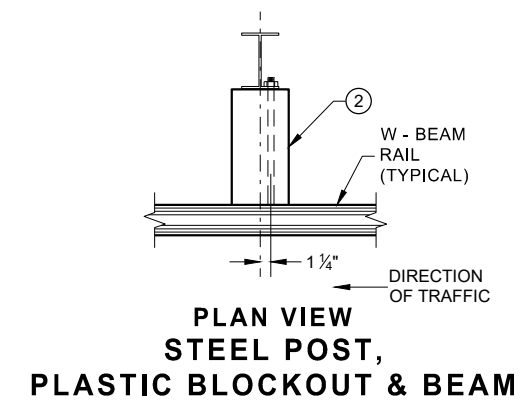
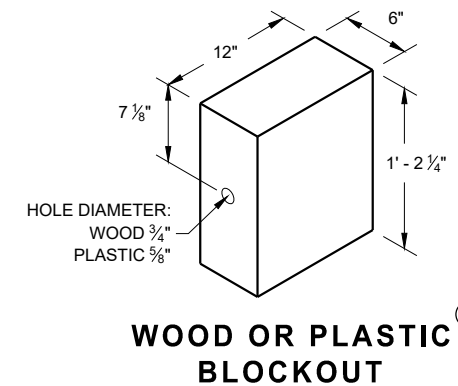
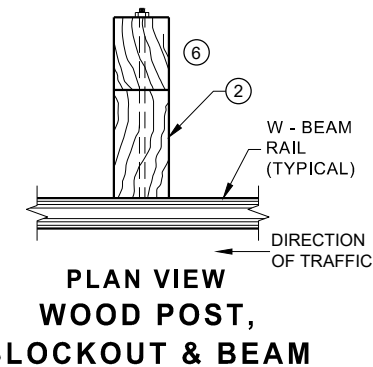
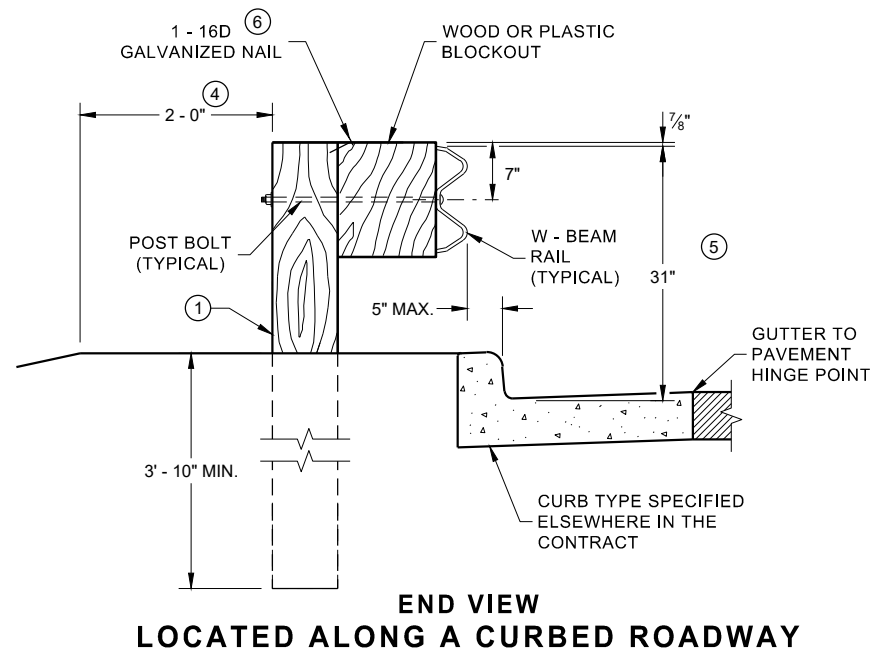
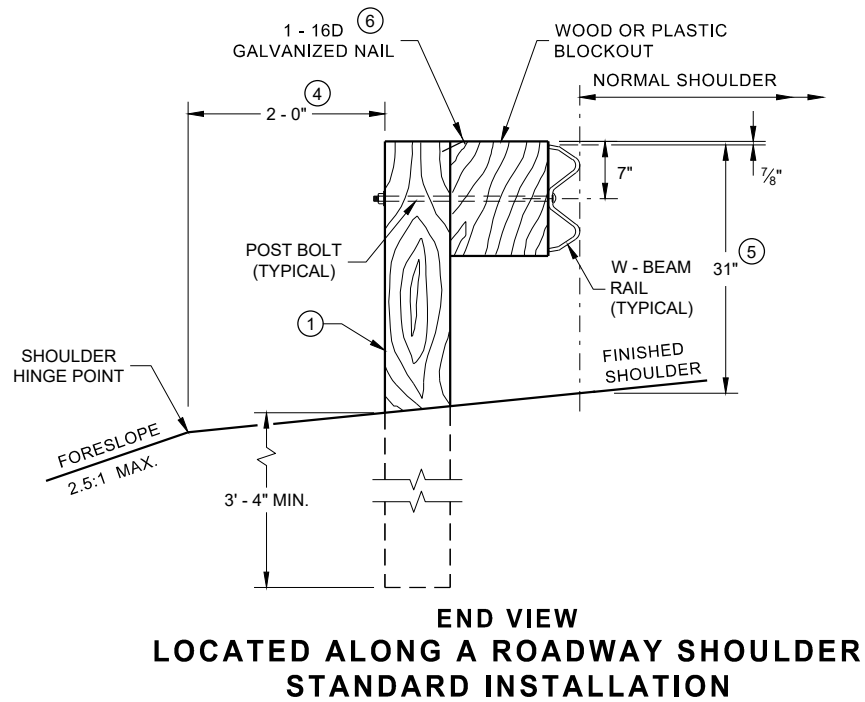
SAFETY EDGE _{SM}	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

- 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 THE 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".



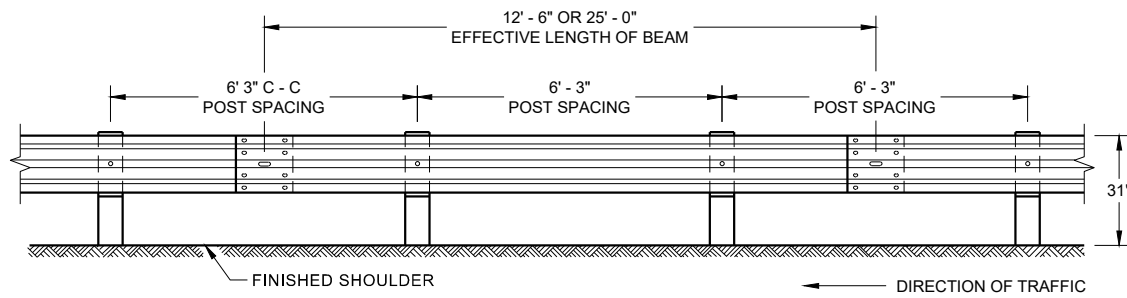
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9)

WOOD POST (6" X 8") NOMINAL

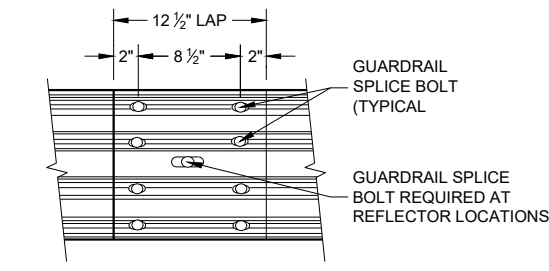


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



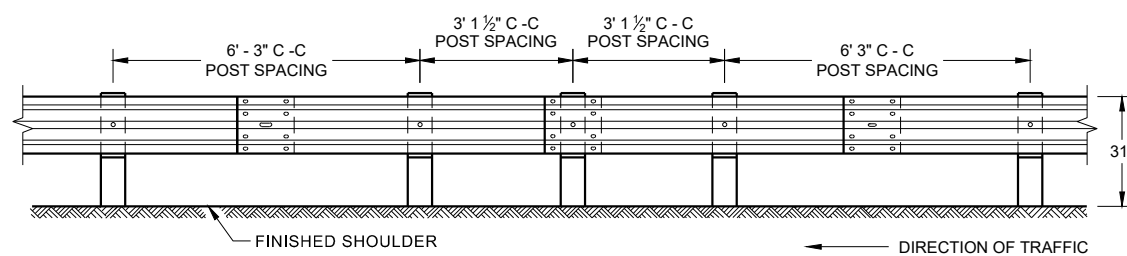
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



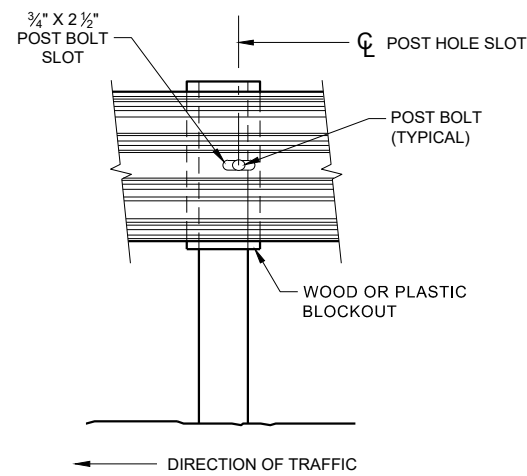
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

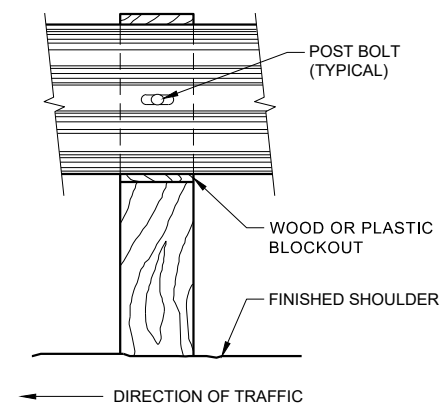
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER 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 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



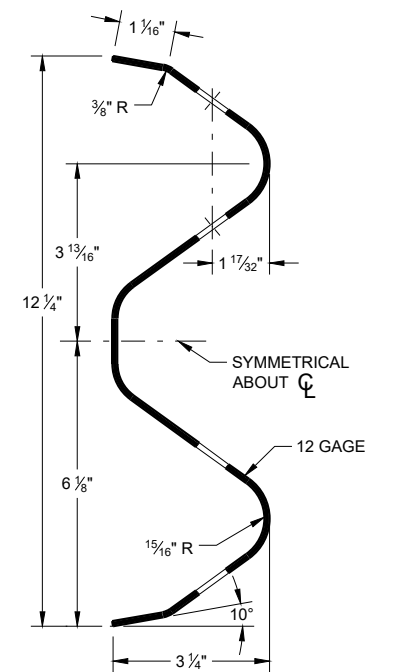
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



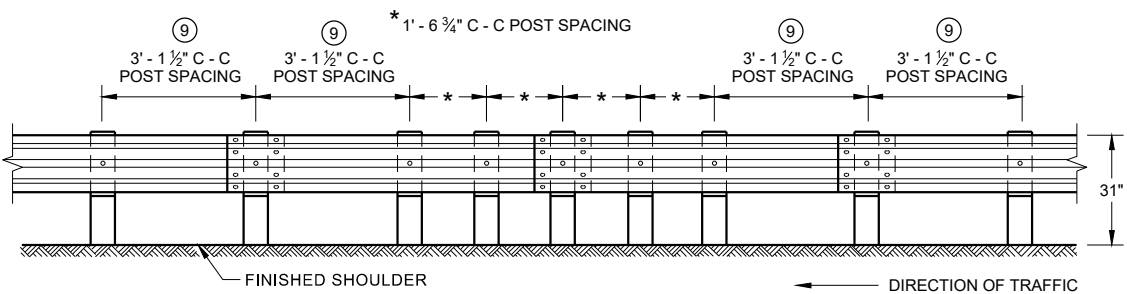
FRONT VIEW AT STEEL POST



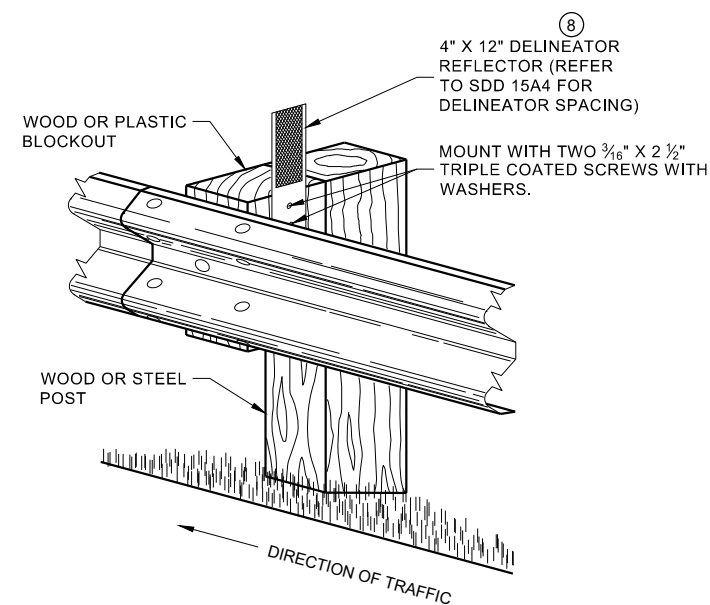
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

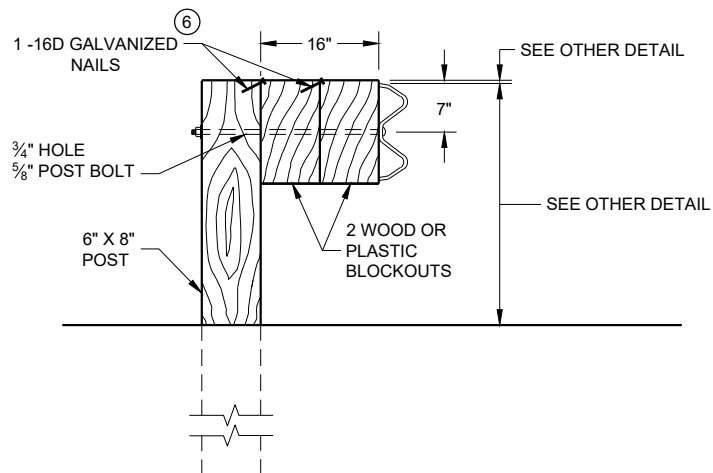
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

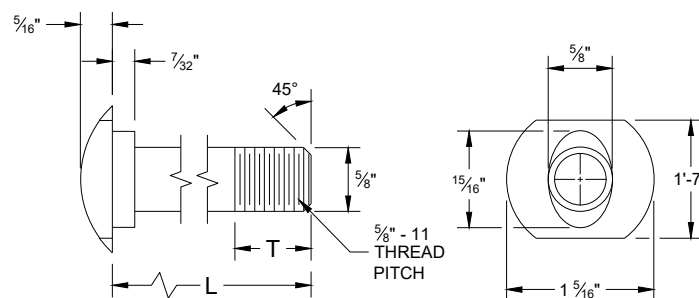


DETAIL FOR 16" BLOCKOUT DEPTH

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.

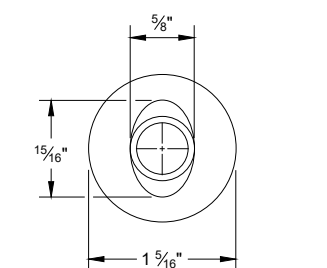
NOTE:

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.

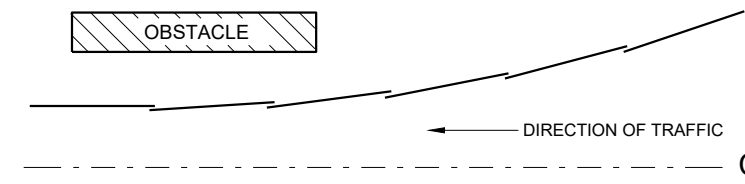


POST BOLT TABLE

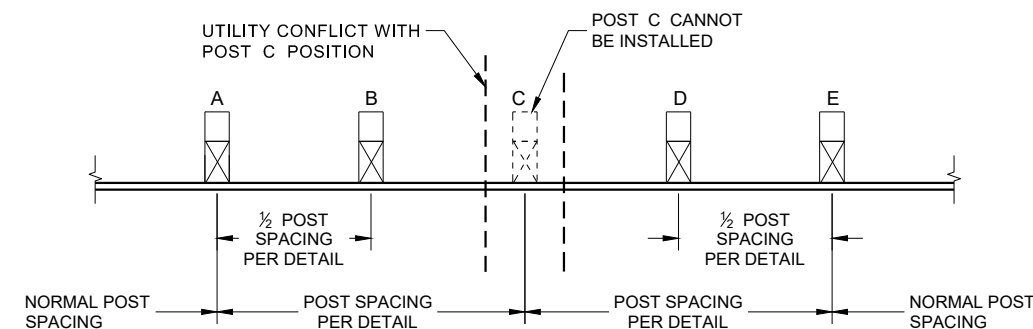
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



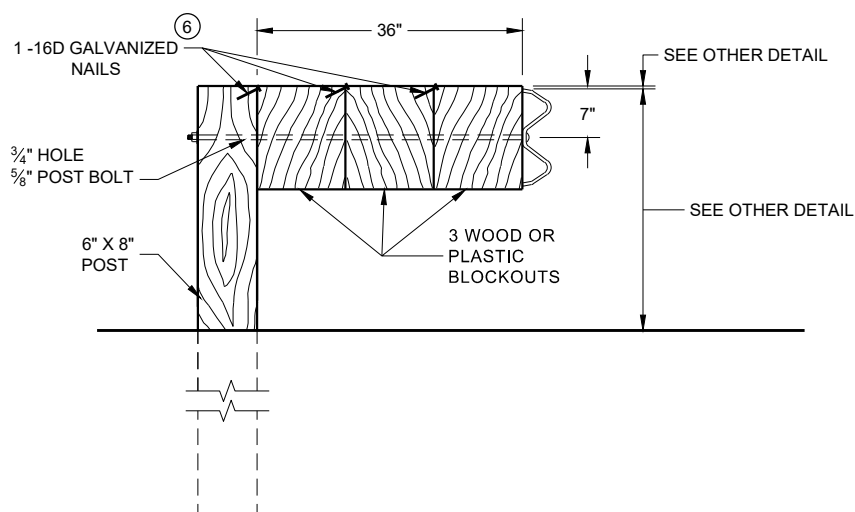
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

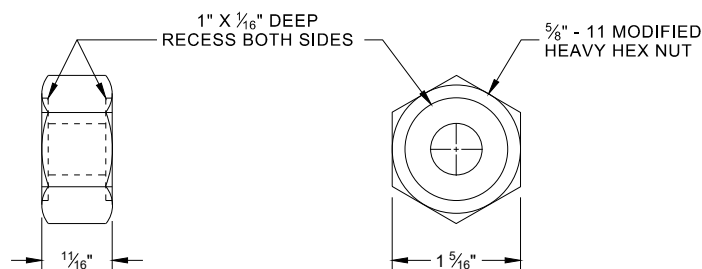


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

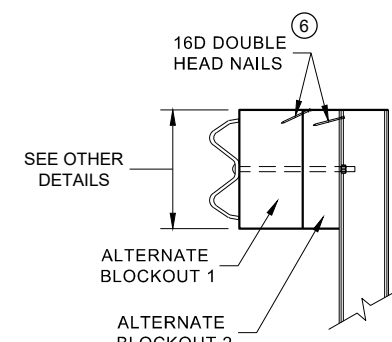


DETAIL FOR 36" BLOCKOUT DEPTH

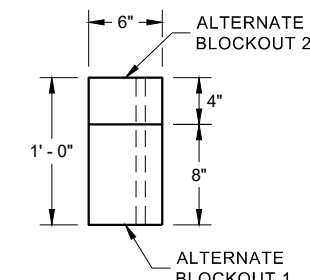
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



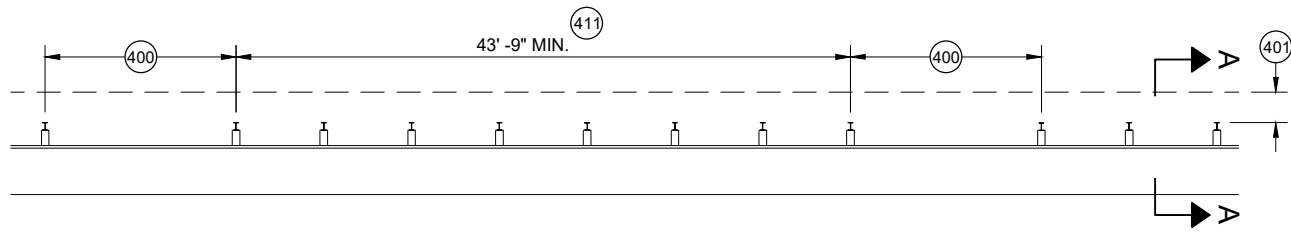
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

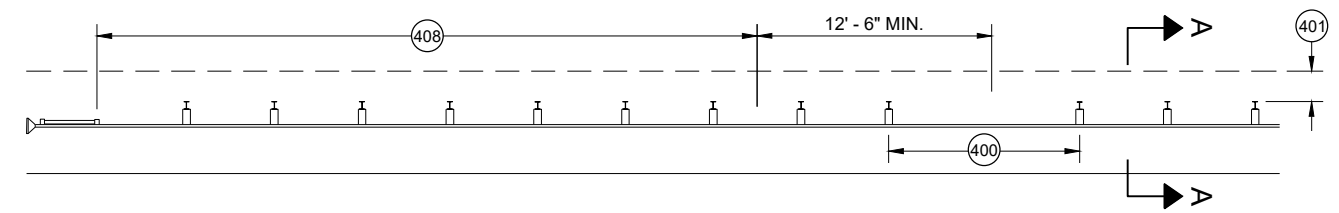
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

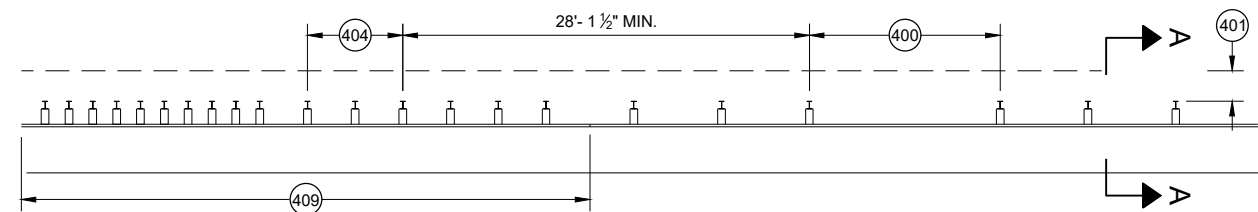
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



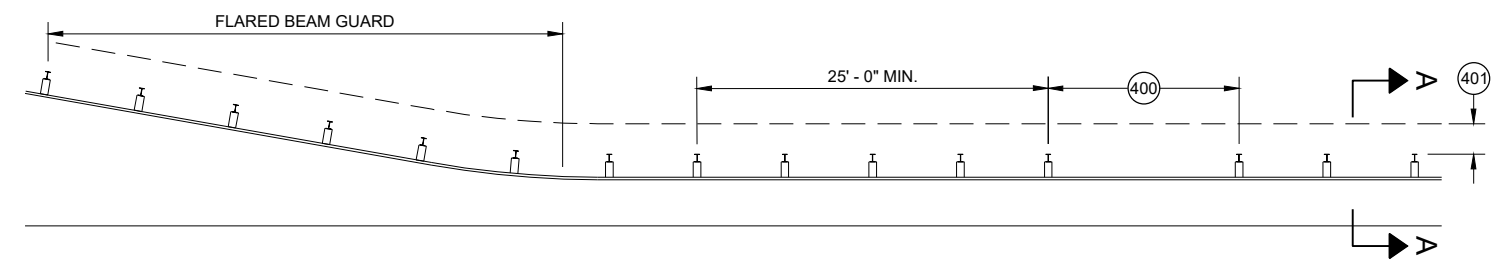
MISSING POST IN MGS GUARDRAIL



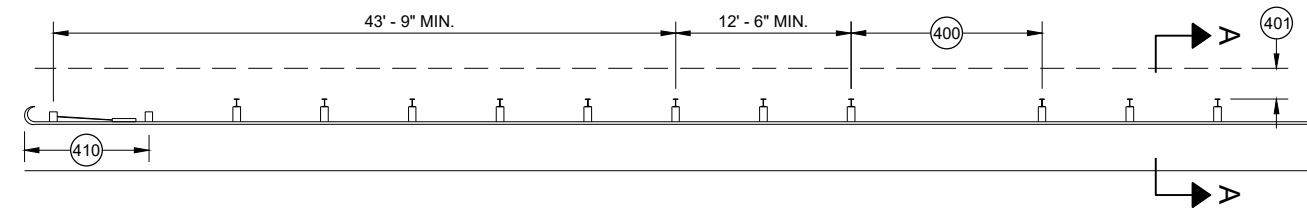
MISSING POST IN MGS GUARDRAIL NEAR EAT



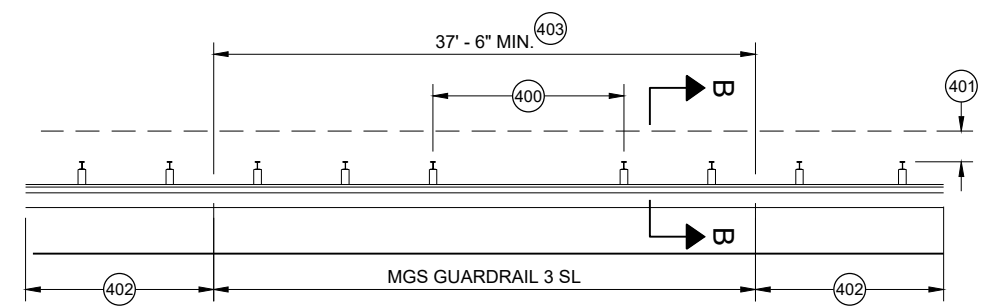
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

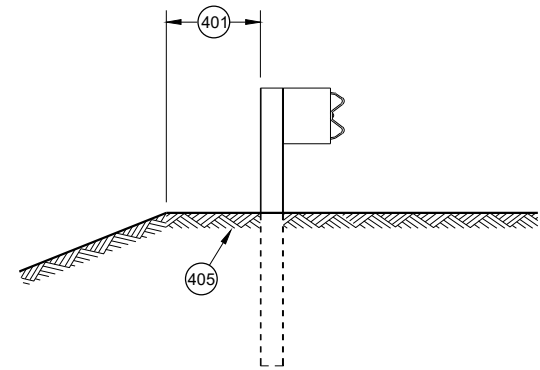


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

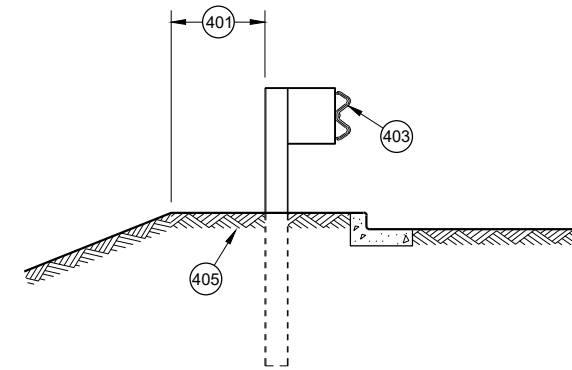


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 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
<small>FHWA</small>	

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE 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.

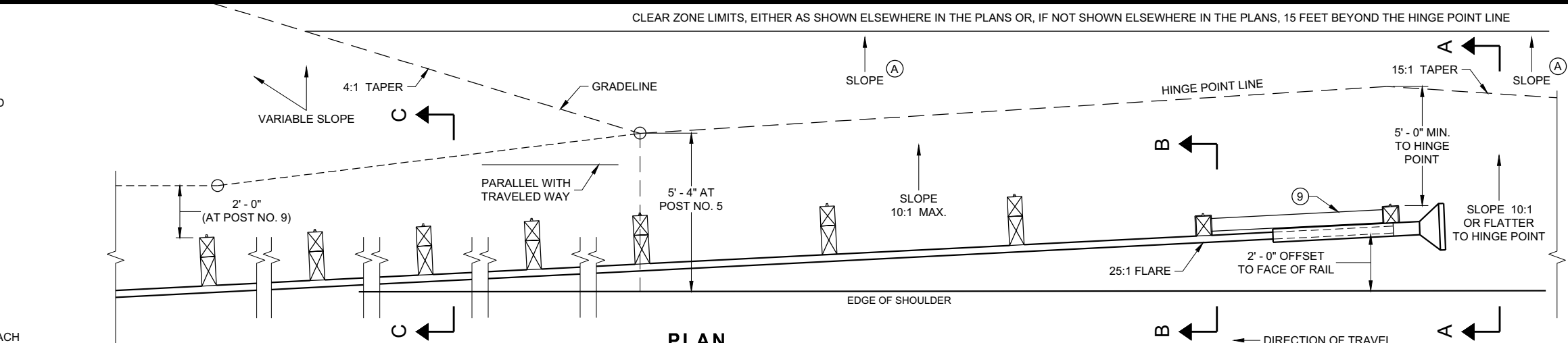
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

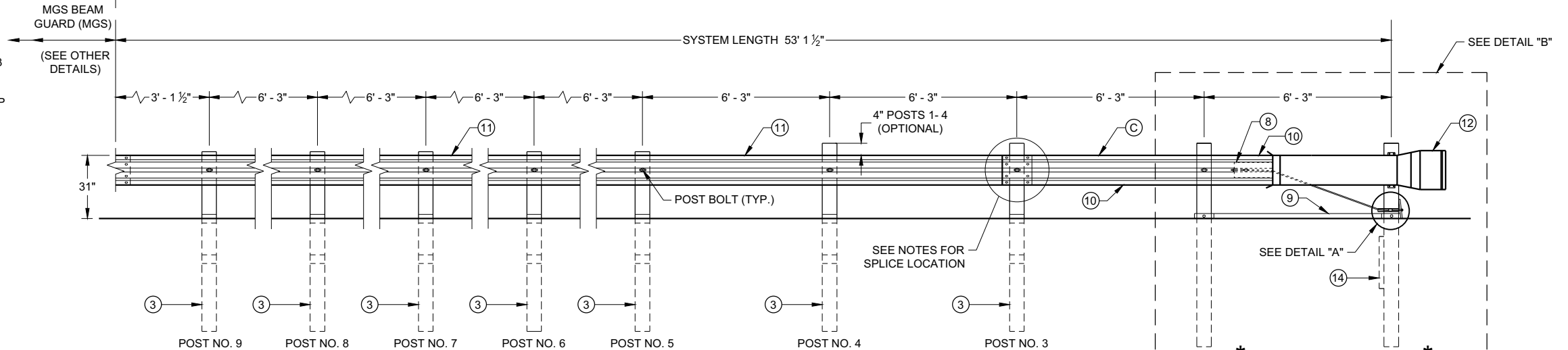
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

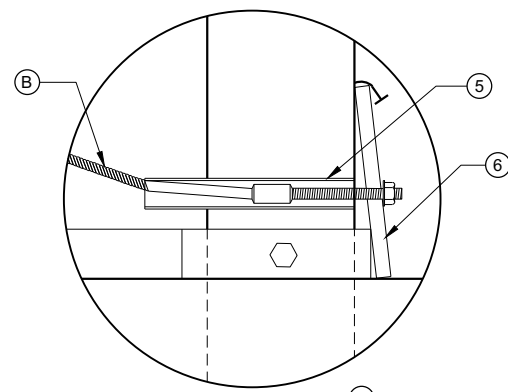
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



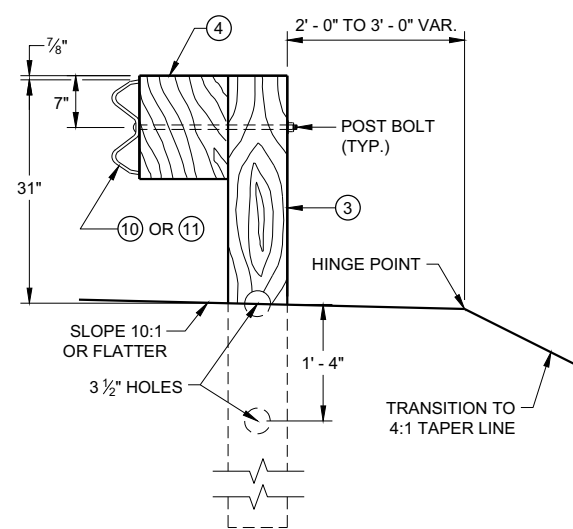
PLAN



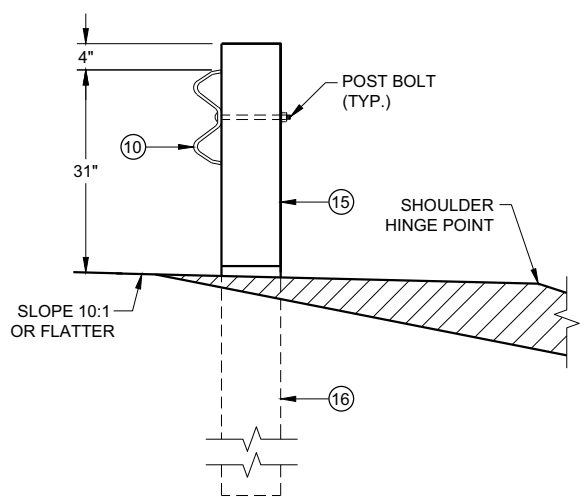
ELEVATION



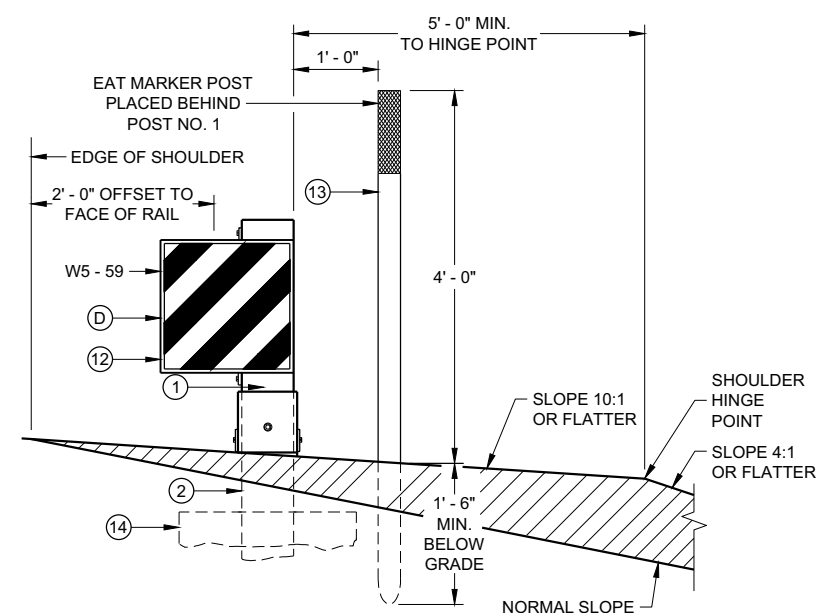
DETAIL "A"



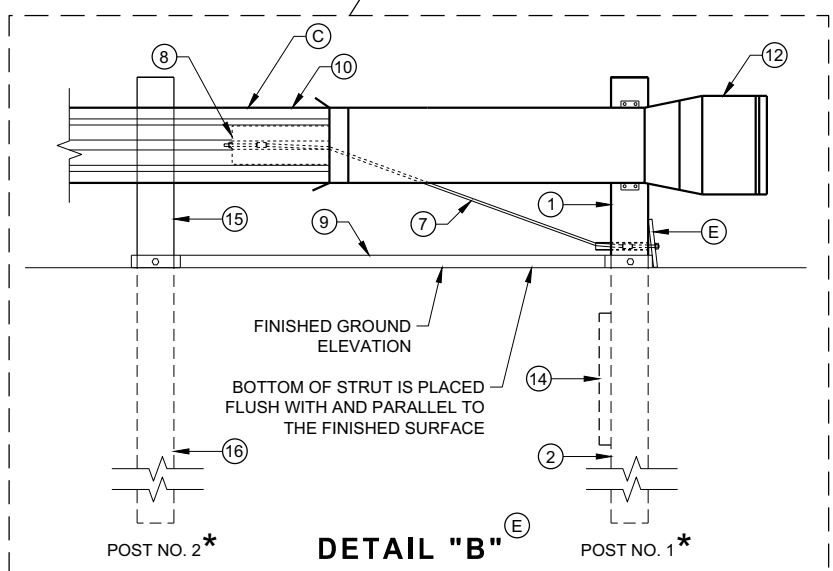
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B
TYPICAL AT POST NO. 2***



**SECTION A - A
TYPICAL AT POST NO. 1***



DETAIL "B"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

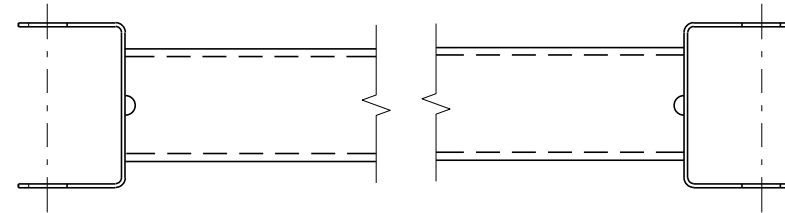
6

SDD 14B44 - 04a

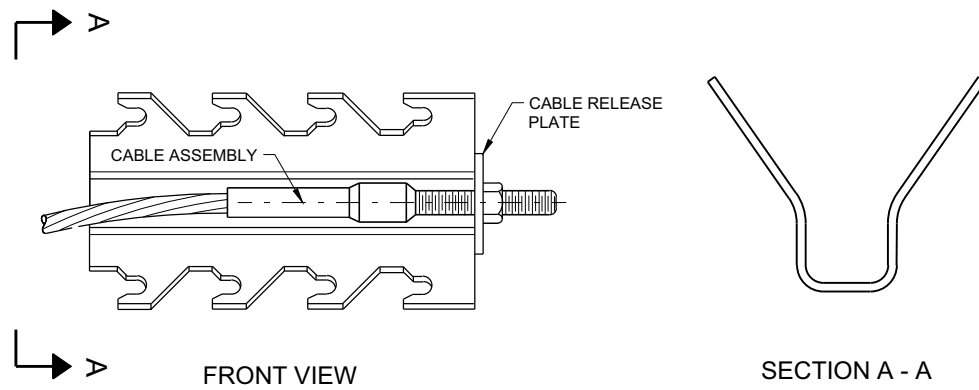
SDD 14B44 - 04a

BILL OF MATERIALS

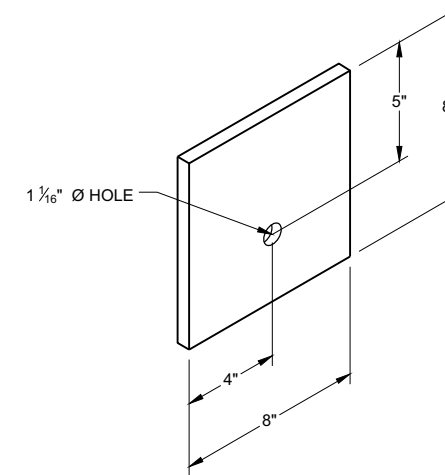
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL 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



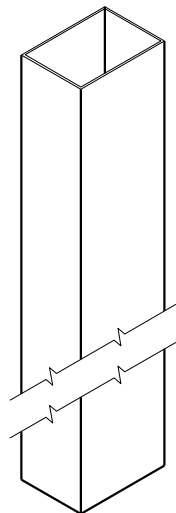
GENERIC GROUND STRUT ⑨ ⑤



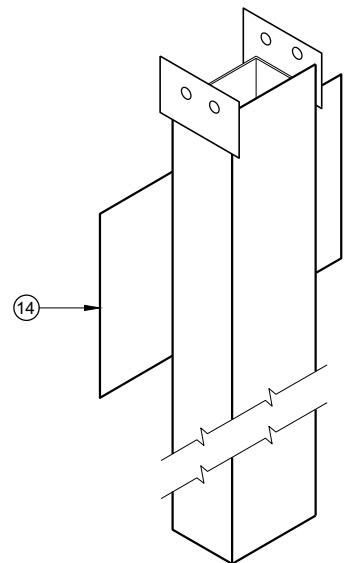
GENERIC ANCHOR CABLE BOX ⑨ ⑤



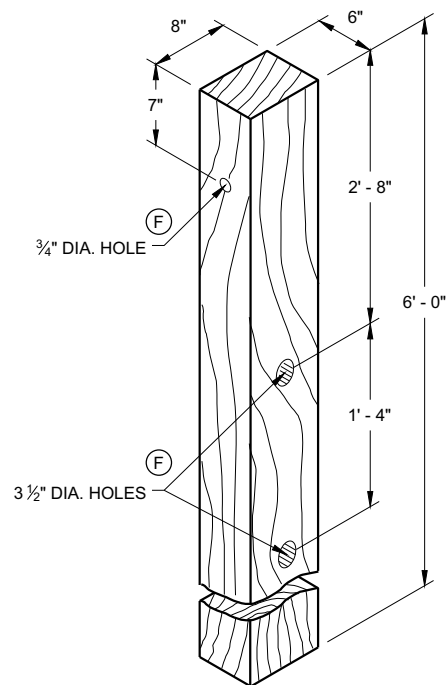
BEARING PLATE ⑥ ⑤



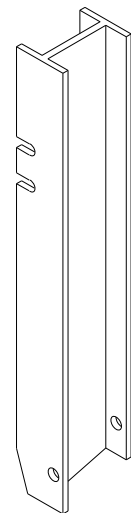
UPPER POST NO. 1 ⁽¹⁾ (E)



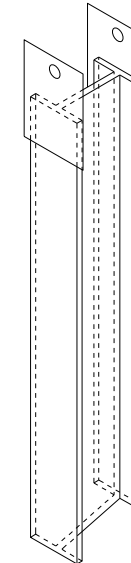
LOWER POST NO. 1 ⁽²⁾ (E)



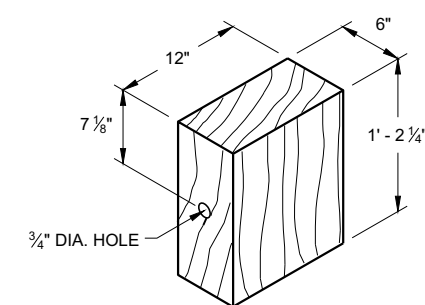
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

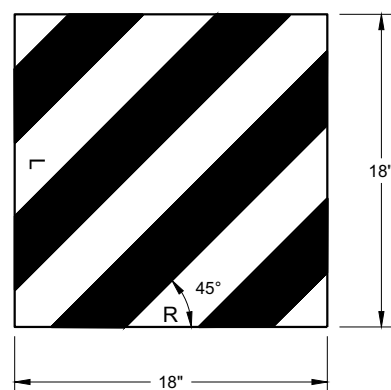


LOWER POST NO. 2 ⁽¹⁶⁾ (E)

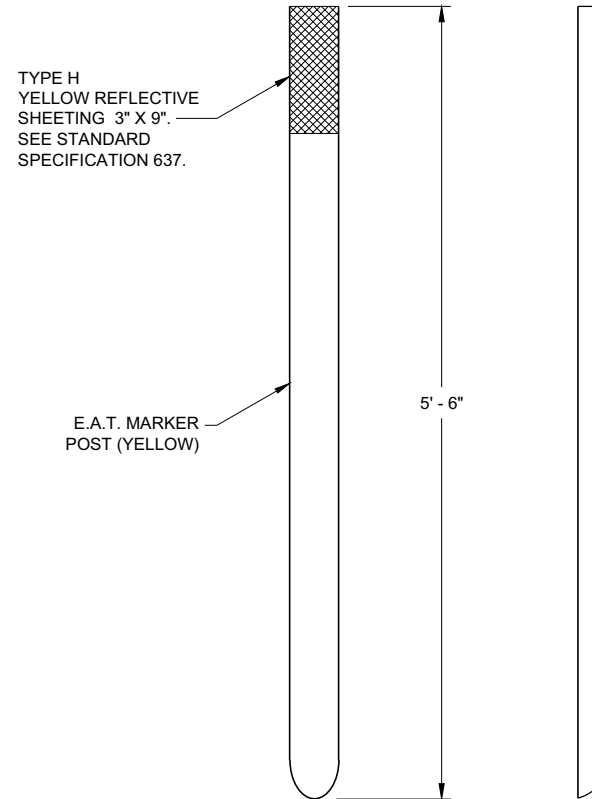


WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

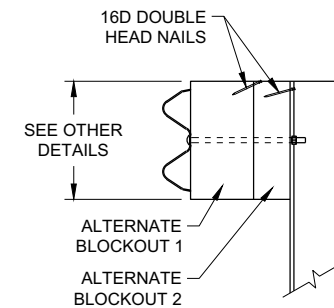
6



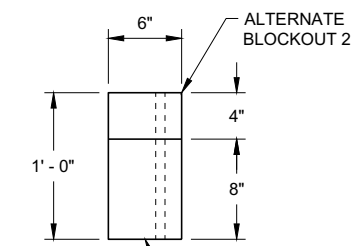
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



FRONT VIEW SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

6

SDD 14B44 - 04c

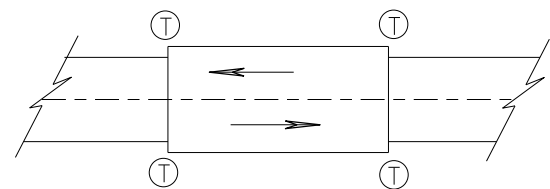
SDD 14B44 - 04c

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

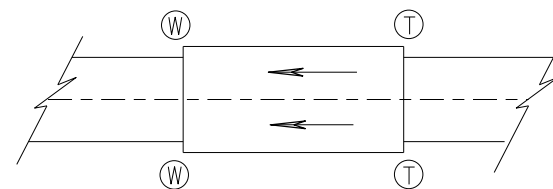
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

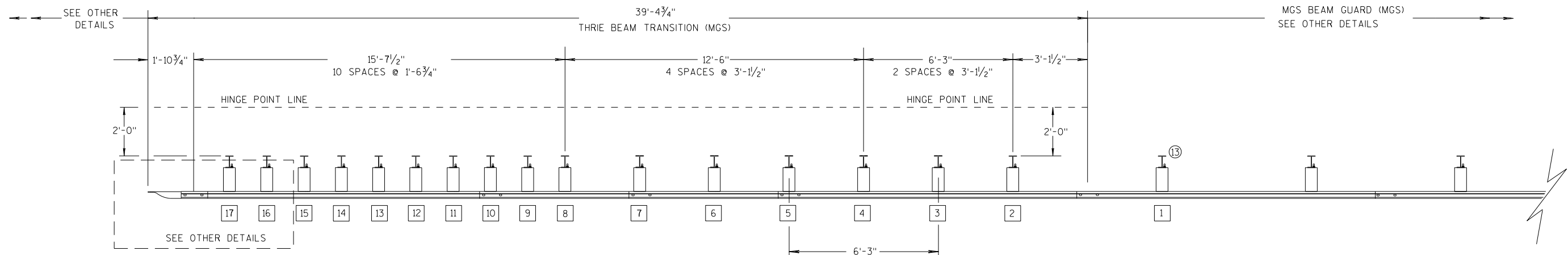
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

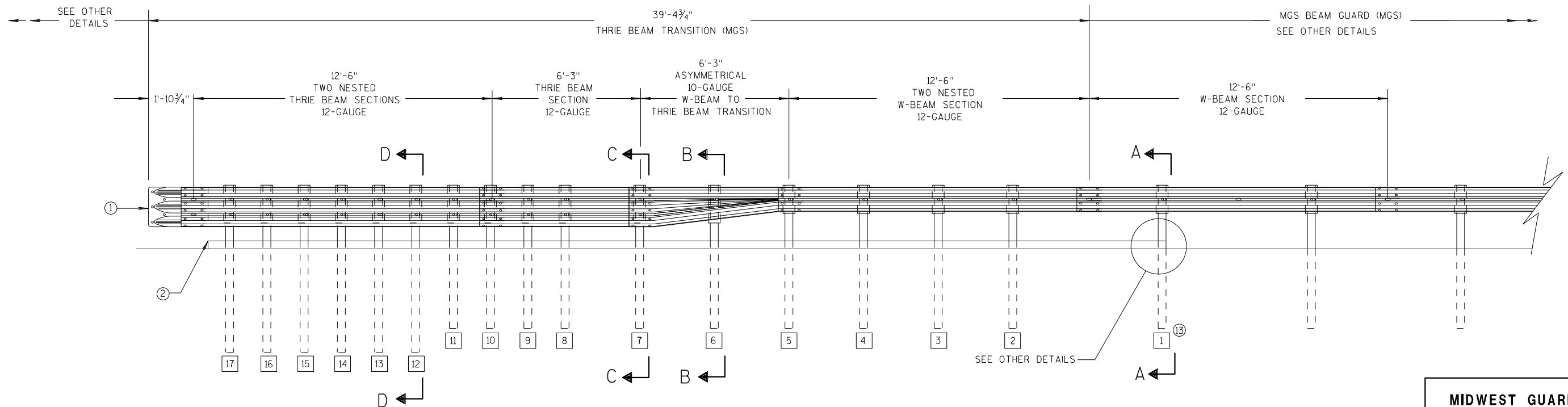
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

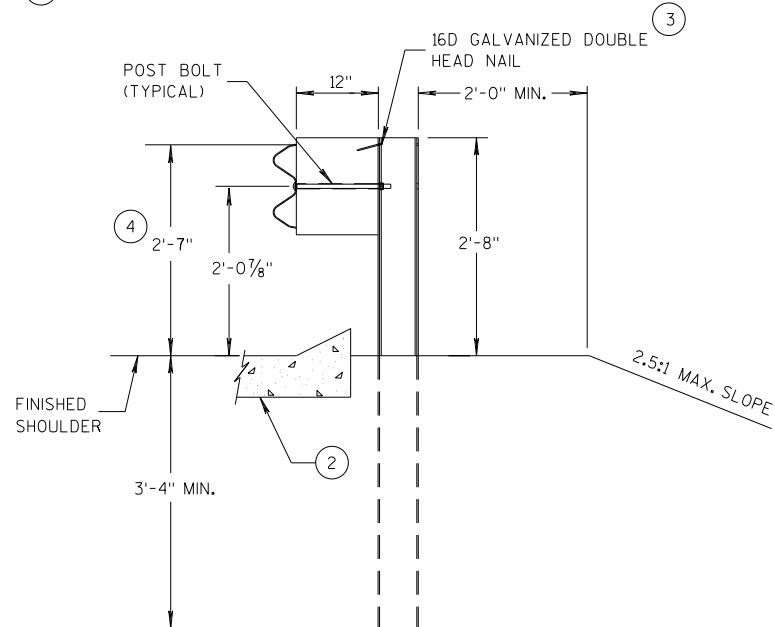
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

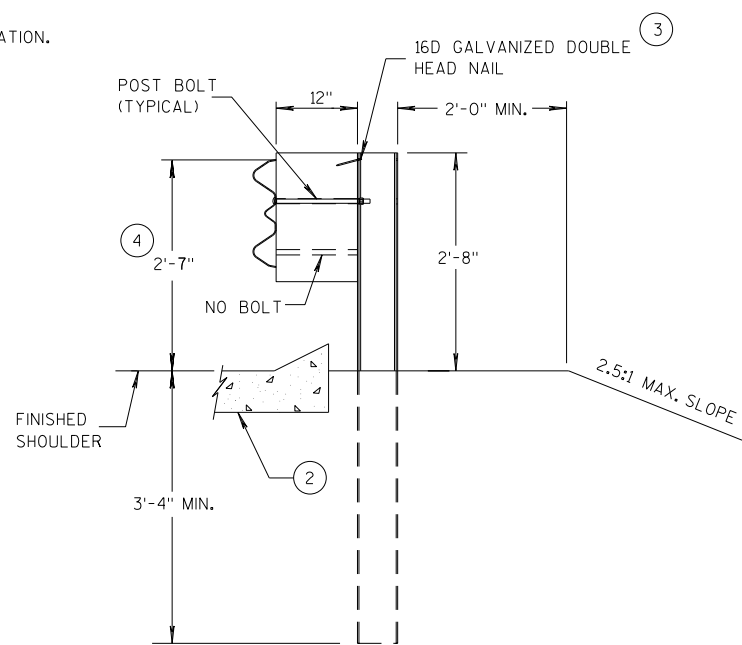
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

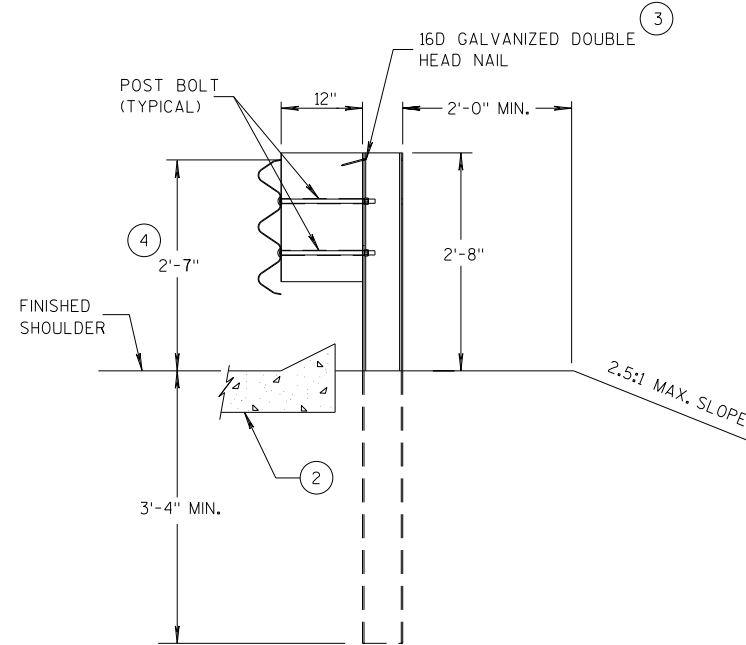
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



**SECTION C-C
POSTS 7-11**

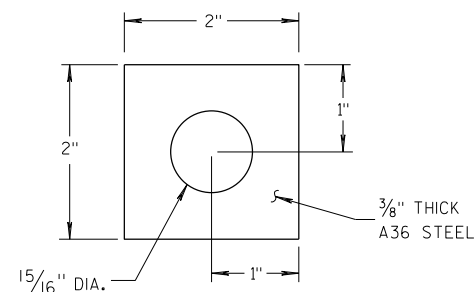
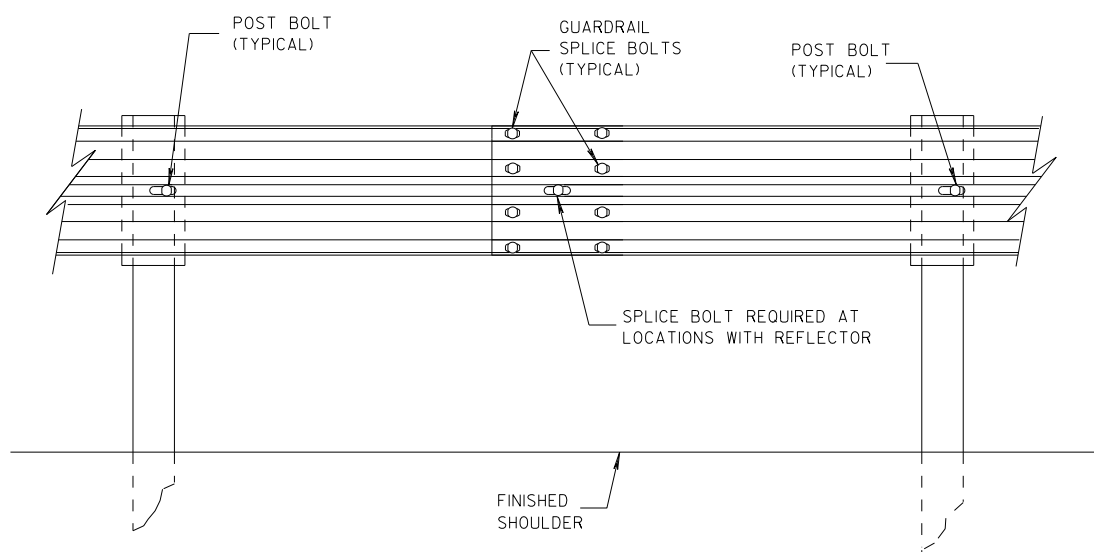
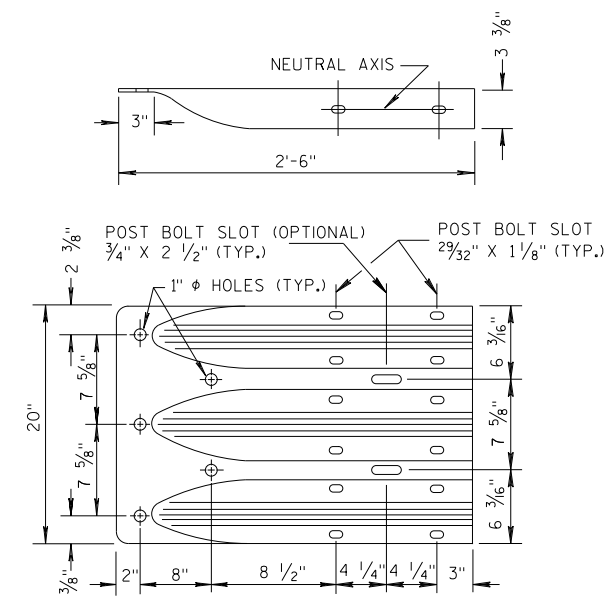


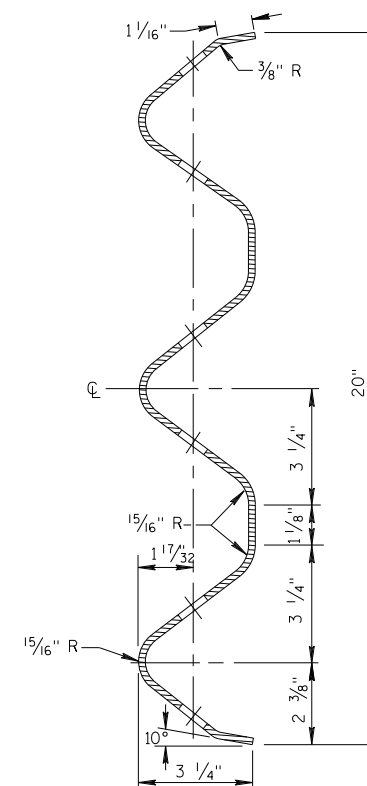
PLATE WASHER DETAIL



SPlice DETAIL



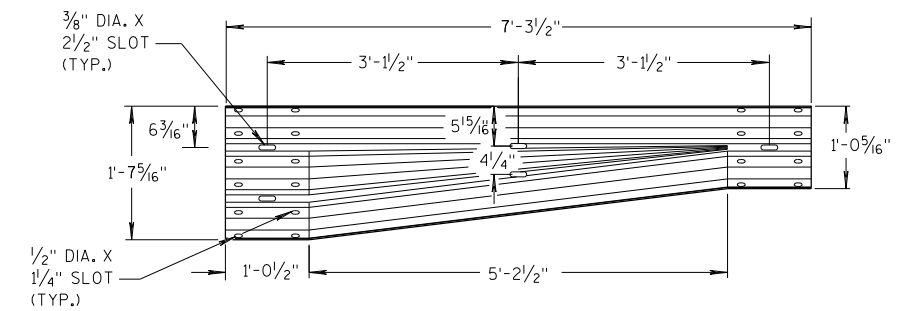
**THRIE BEAM
TERMINAL CONNECTOR**



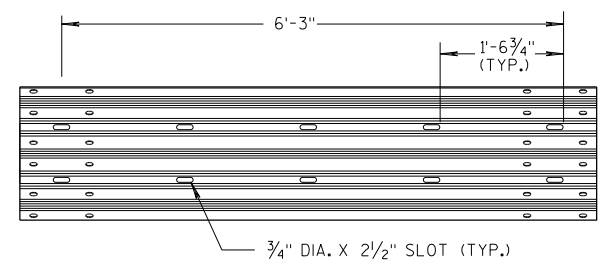
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

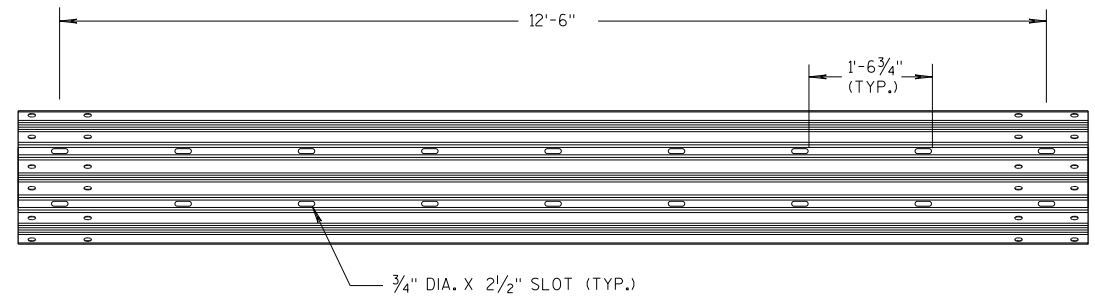
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



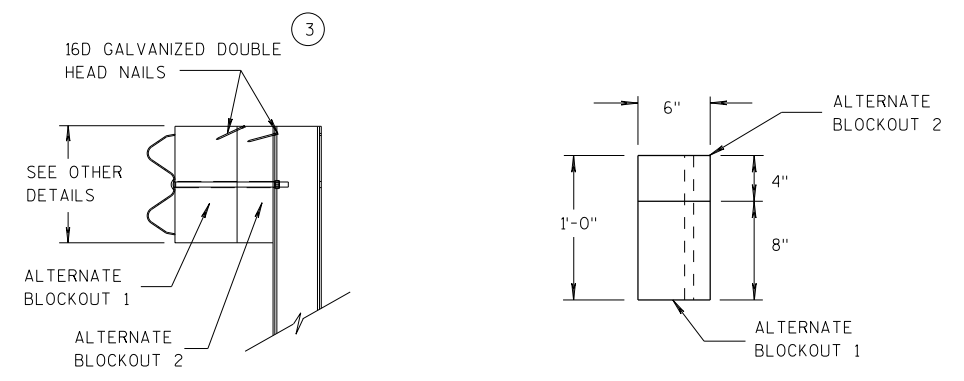
W-BEAM TO THRIE BEAM TRANSITION SECTION



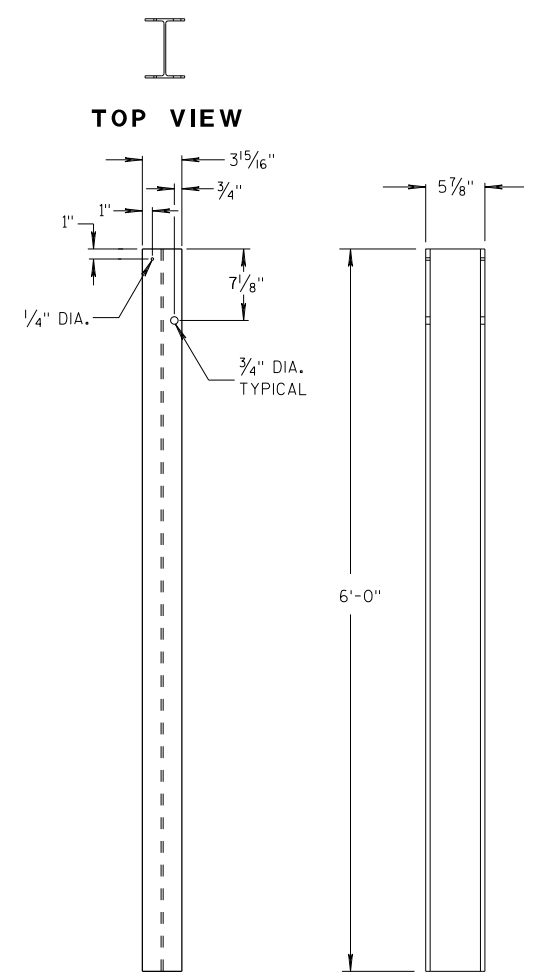
6'-3\"/>



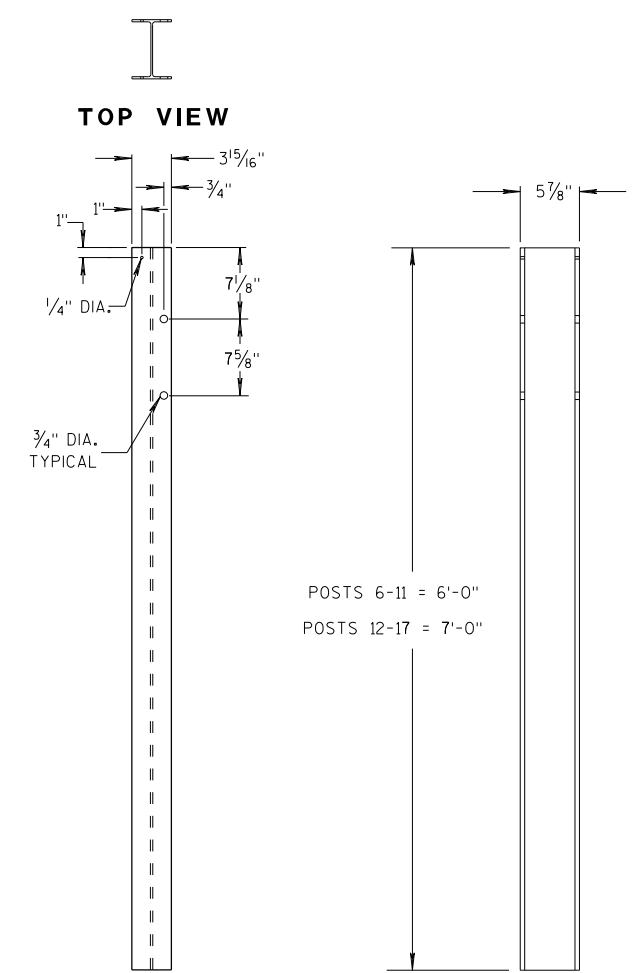
12'-6\"/>



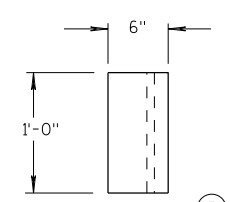
ALTERNATE WOOD BLOCKOUT DETAIL



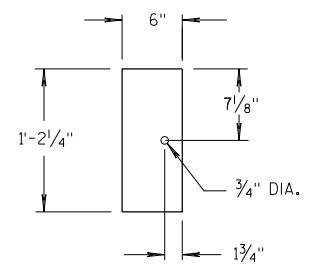
STEEL POSTS 1-5



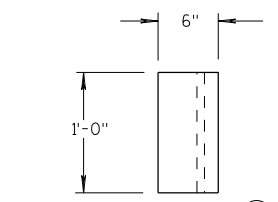
STEEL POSTS 6-17



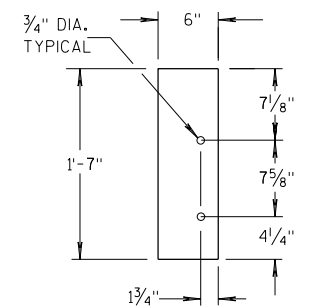
TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 1-5**



TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 6-17**

GENERAL NOTES

- STEEL POSTS ARE W6X9 OR W6X8.5.
- BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.
- (3) WHEN USING STEEL POSTS 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.
- (5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.
- (13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

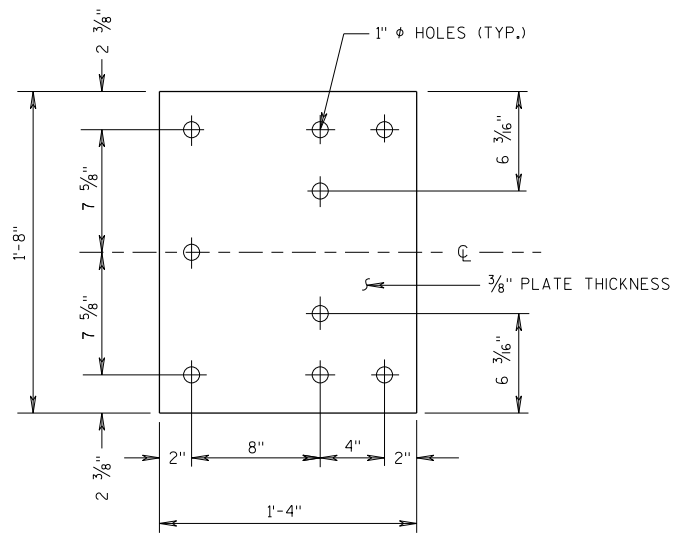
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

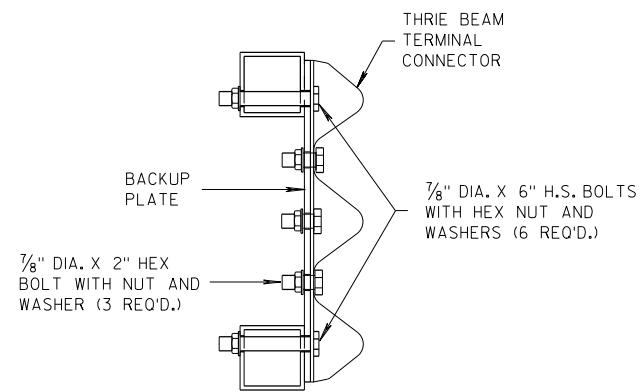
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S.D.D. 14 B 45-5c

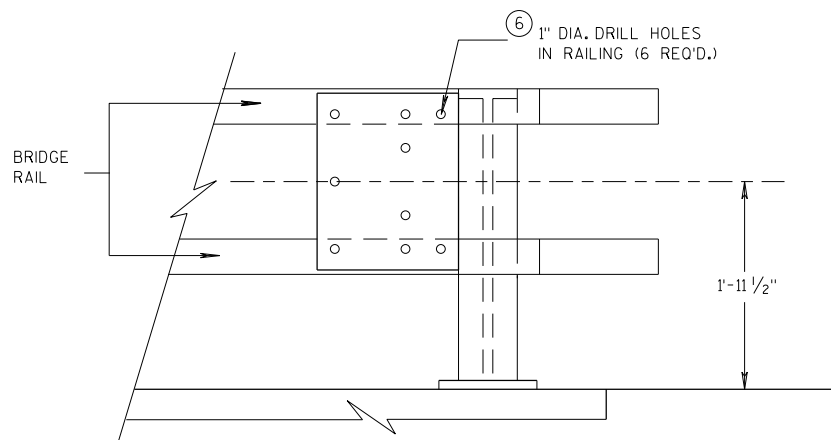
S.D.D. 14 B 45-5c



BACK-UP PLATE DETAIL



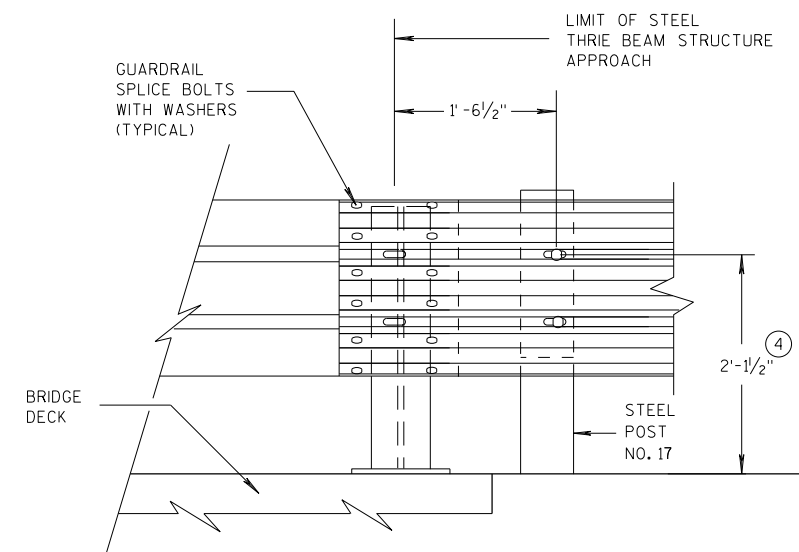
SECTION J-J



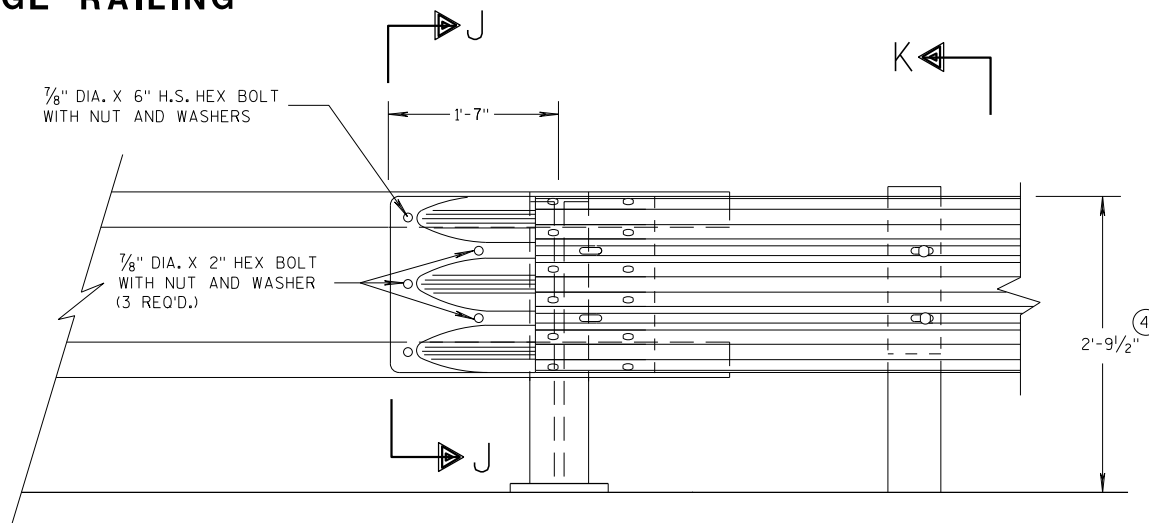
BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1'$.
- ⑥ DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

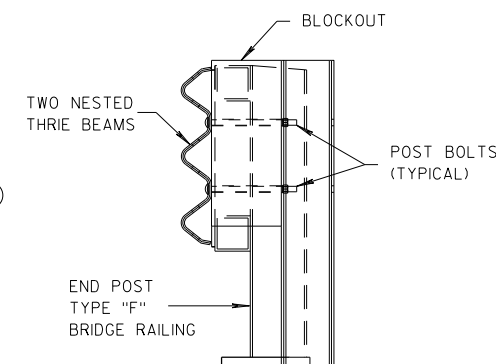


**FRONT VIEW
THRIE BEAM CONNECTION TO
STEEL RAILING TYPE "W"**



FRONT VIEW

**THRIE BEAM CONNECTION TO
TUBULAR RAILING TYPE "F"**

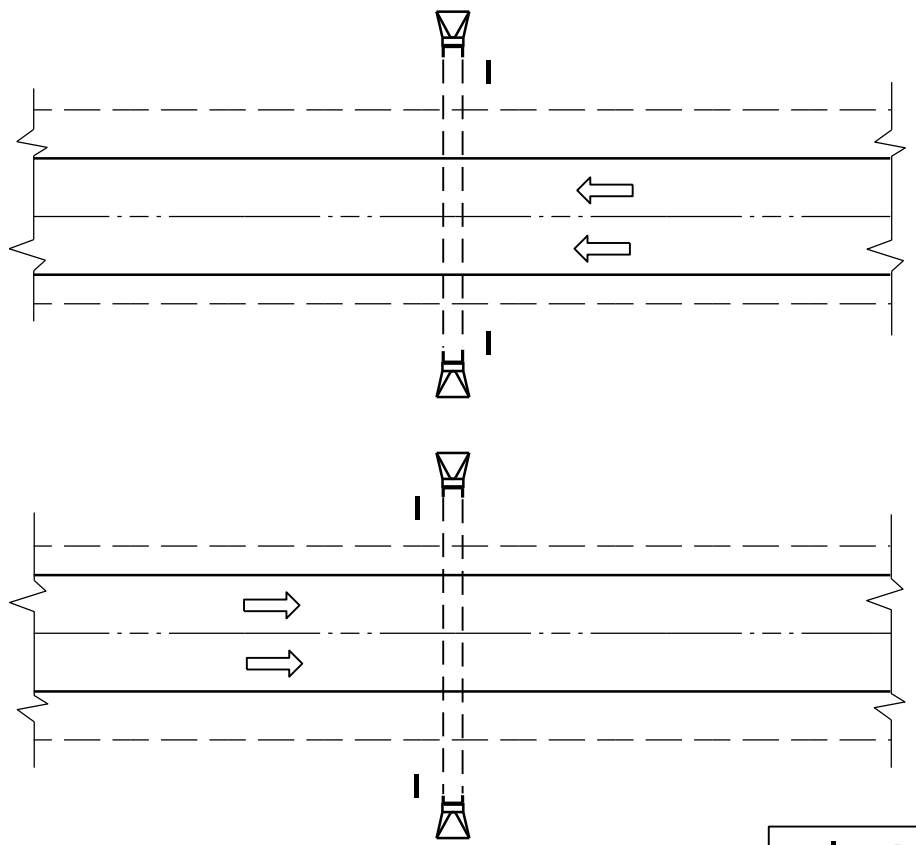


SECTION K-K

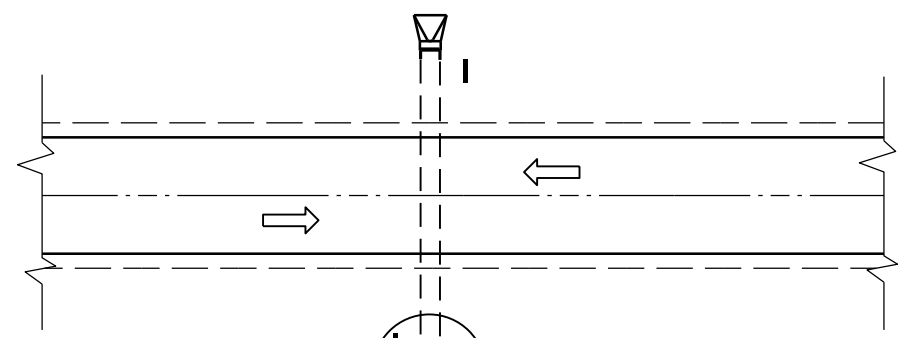
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

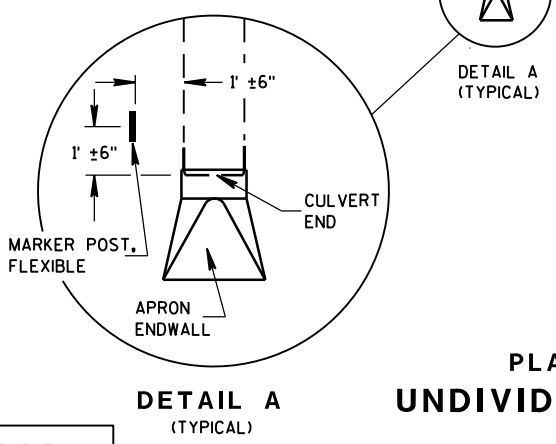
APPROVED
07/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



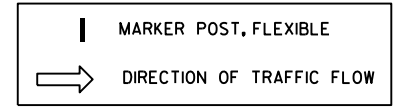
PLAN VIEW
DIVIDED HIGHWAY



PLAN VIEW
UNDIVIDED HIGHWAY

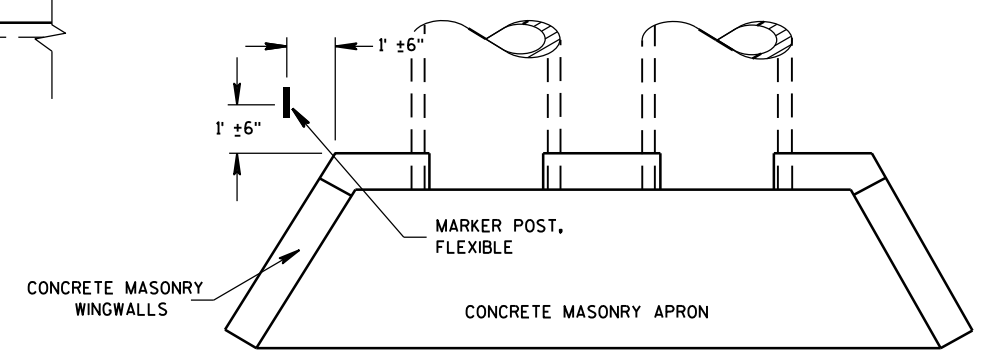


DETAIL A
(TYPICAL)



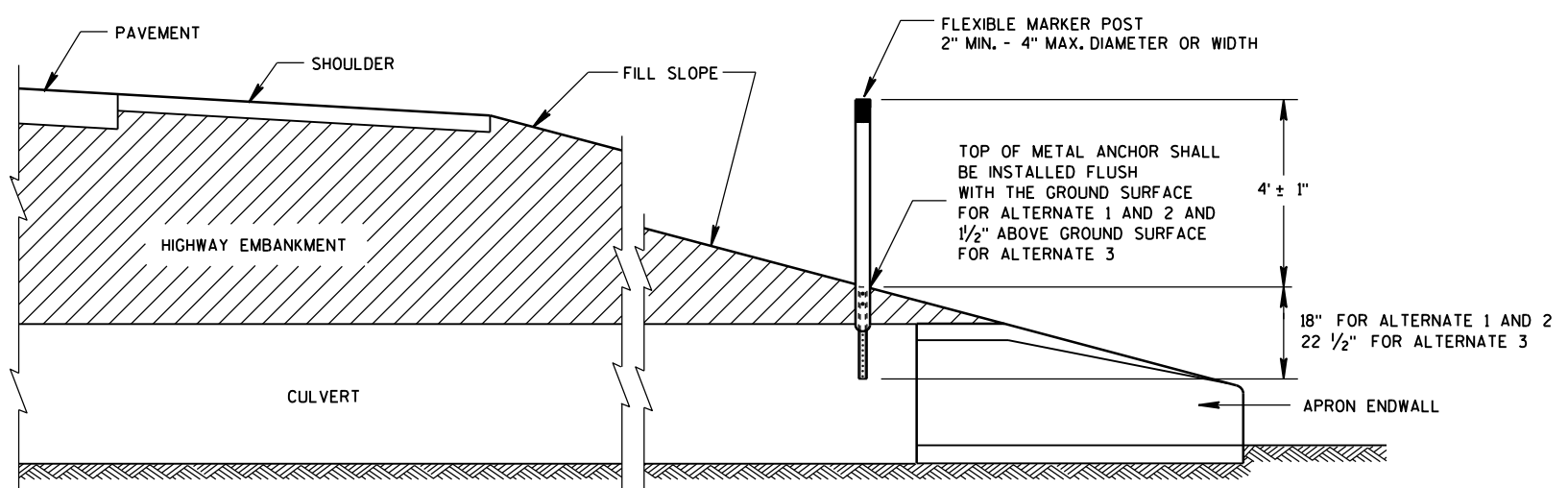
GENERAL NOTES

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

FLEXIBLE MARKER POST LOCATION



CROSS SECTION
FLEXIBLE MARKER POST

**FLEXIBLE MARKER POST
FOR CULVERT END**

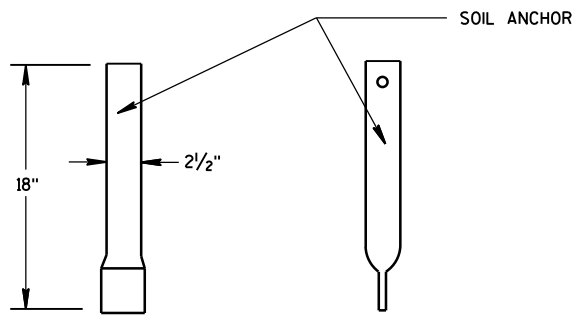
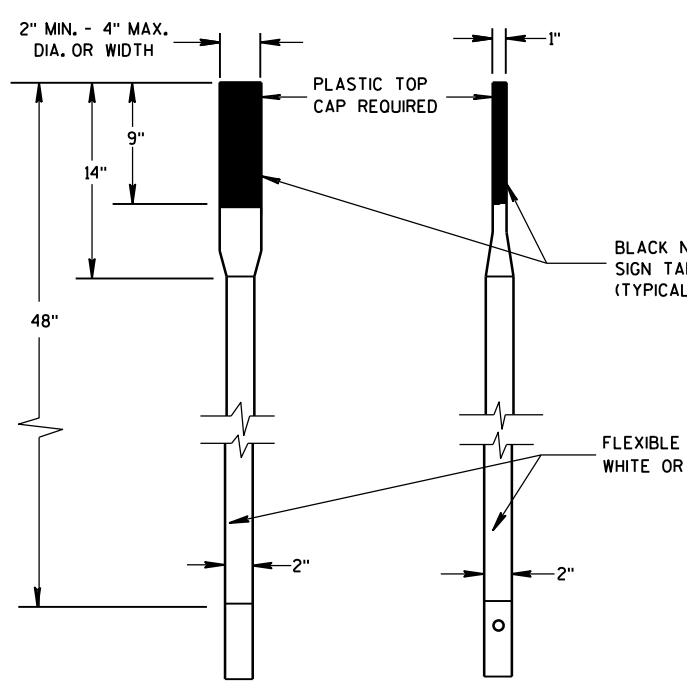
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

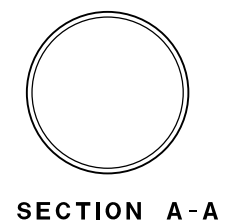
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S.D.D. 15 A 3-2a

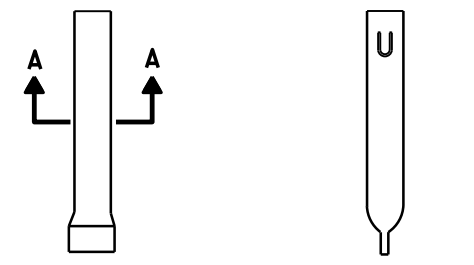
S.D.D. 15 A 3-2a



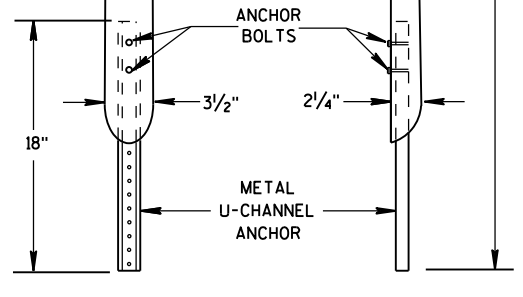
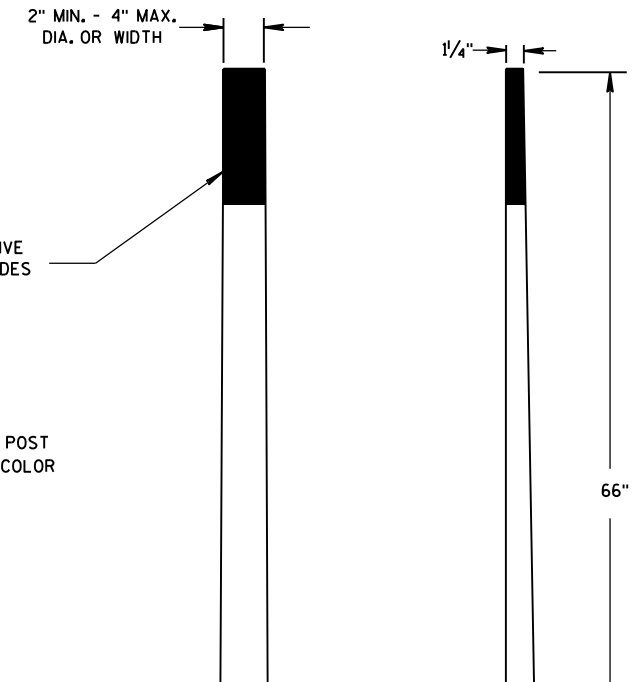
FRONT VIEW SIDE VIEW
ALTERNATE 1



SECTION A-A

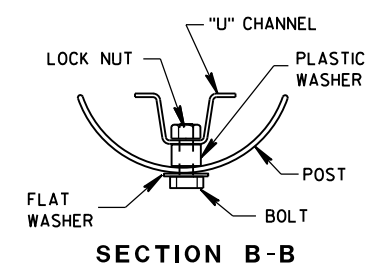


FRONT VIEW SIDE VIEW
ALTERNATE 1

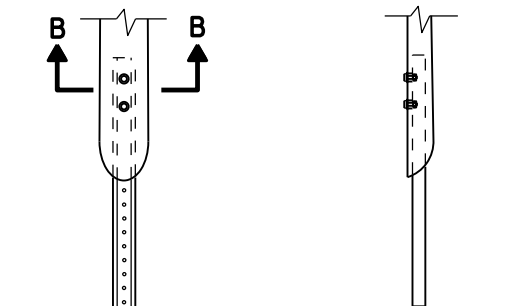


FRONT VIEW SIDE VIEW
ALTERNATE 2

FLEXIBLE MARKER POSTS

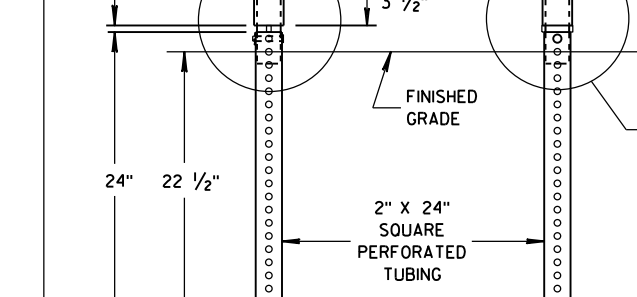
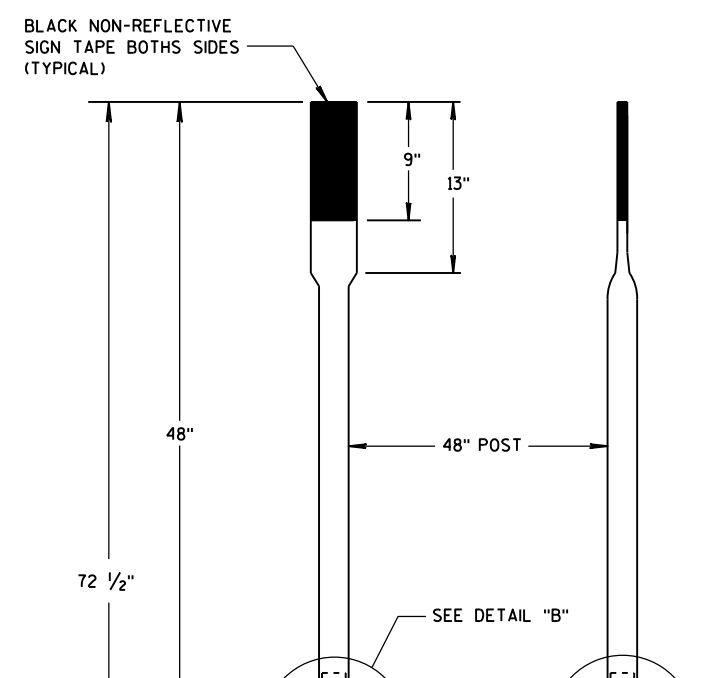


SECTION B-B

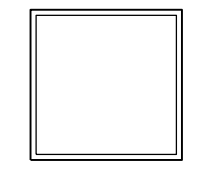


FRONT VIEW SIDE VIEW
ALTERNATE 2

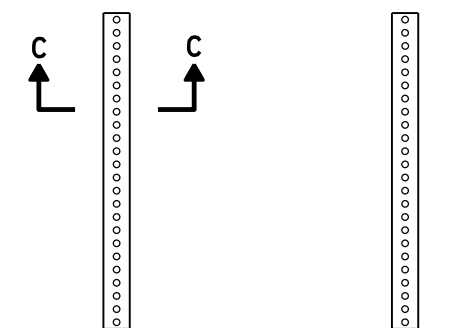
FLEXIBLE MARKER POST ANCHORS



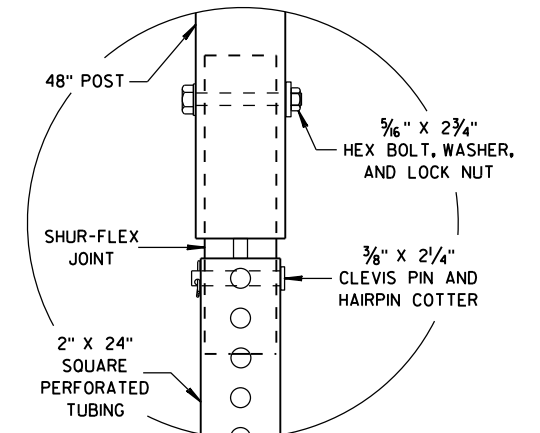
FRONT VIEW SIDE VIEW
ALTERNATE 3



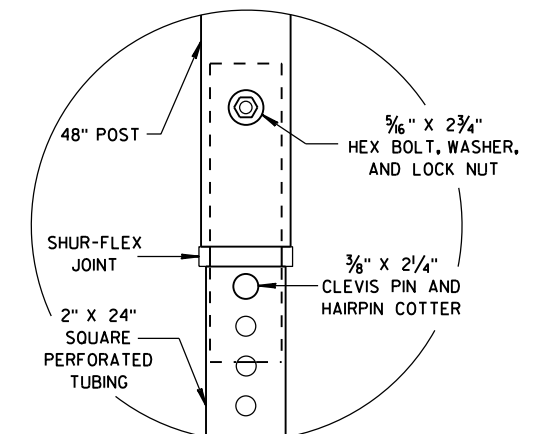
SECTION C-C



FRONT VIEW SIDE VIEW
ALTERNATE 3



DETAIL B

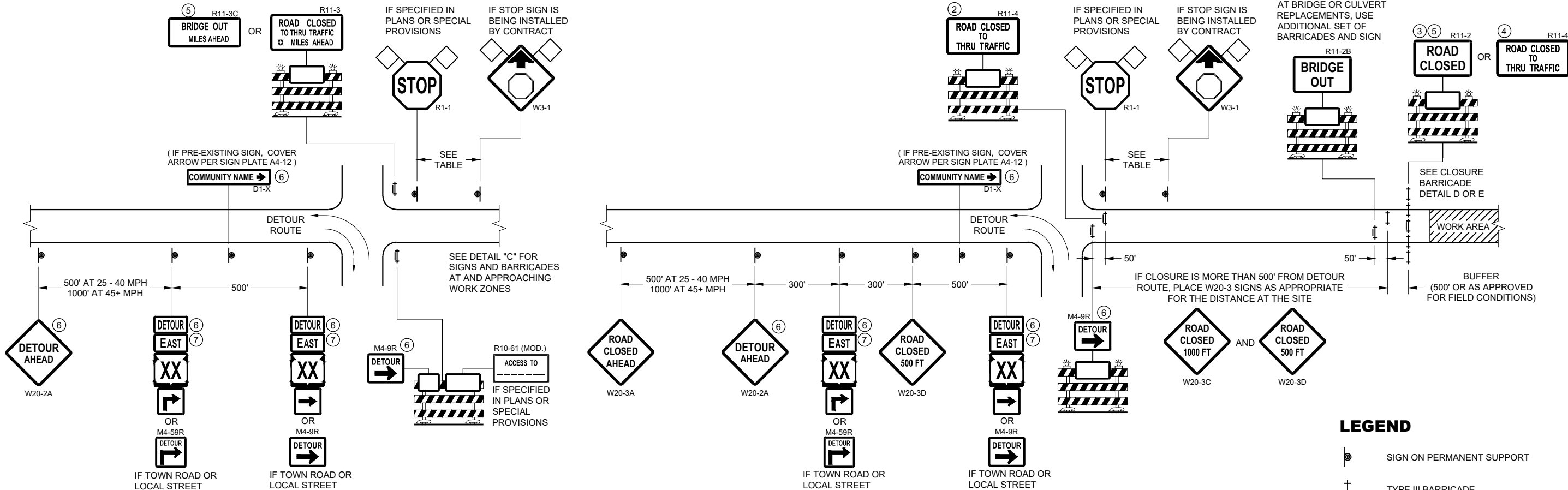


DETAIL C

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



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

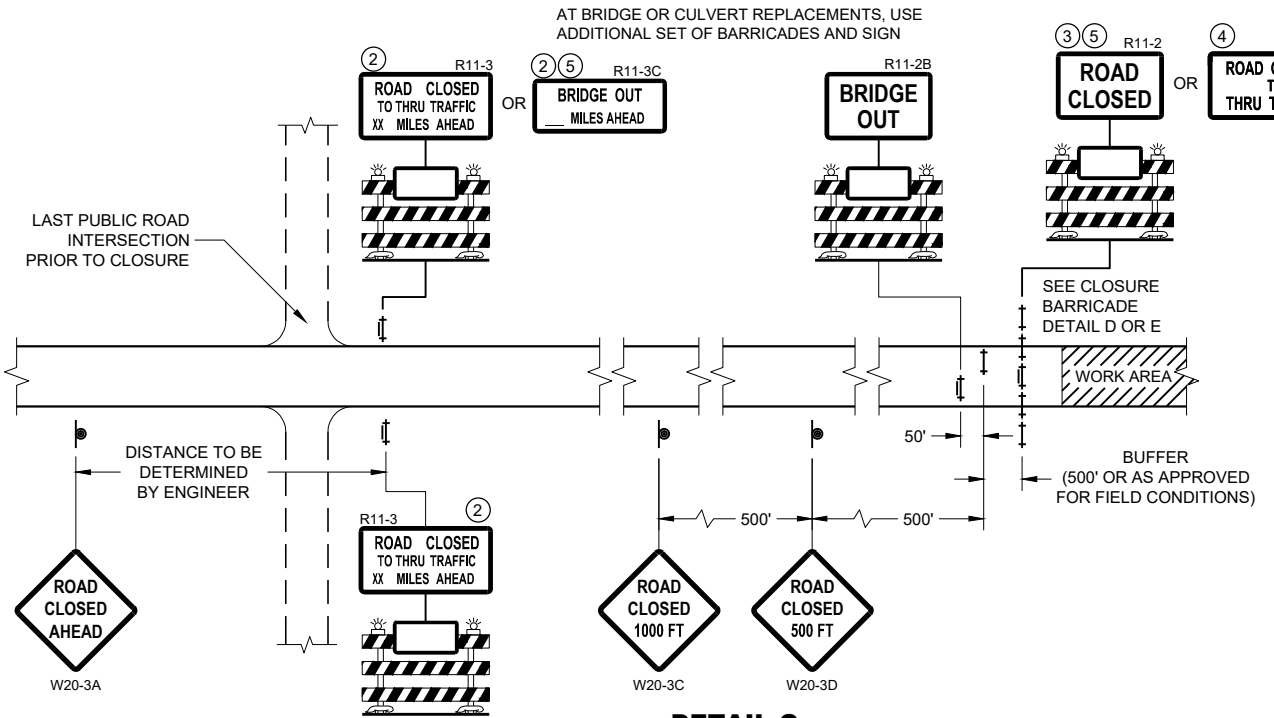
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



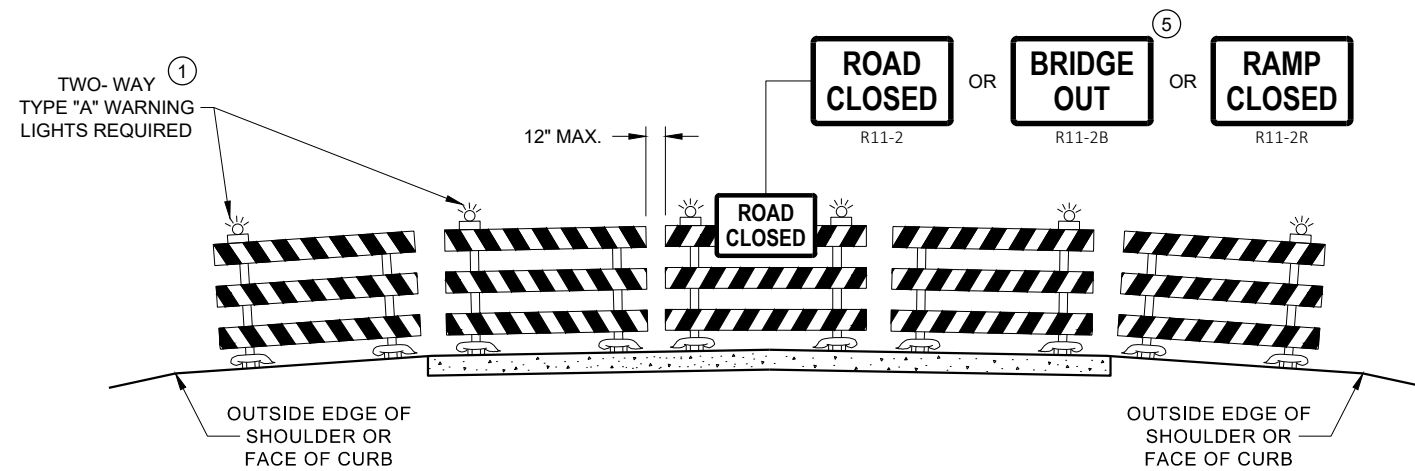
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

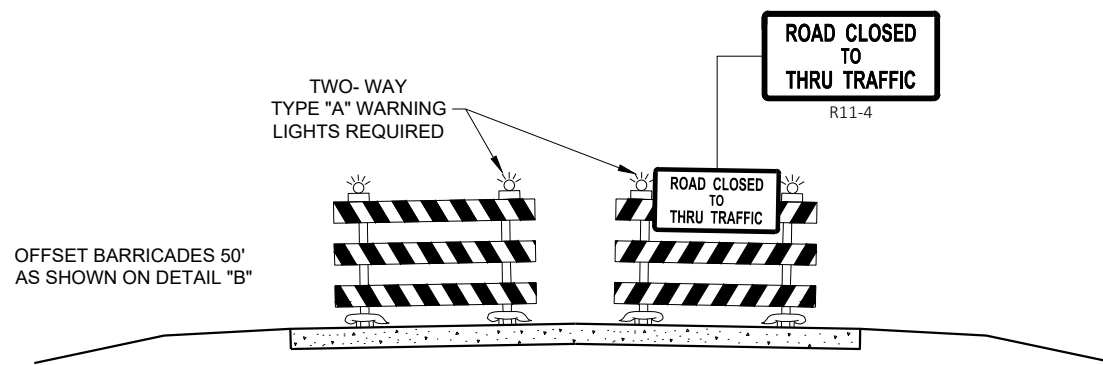
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE DATE WORK ZONE ENGINEER



**DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW**



**DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

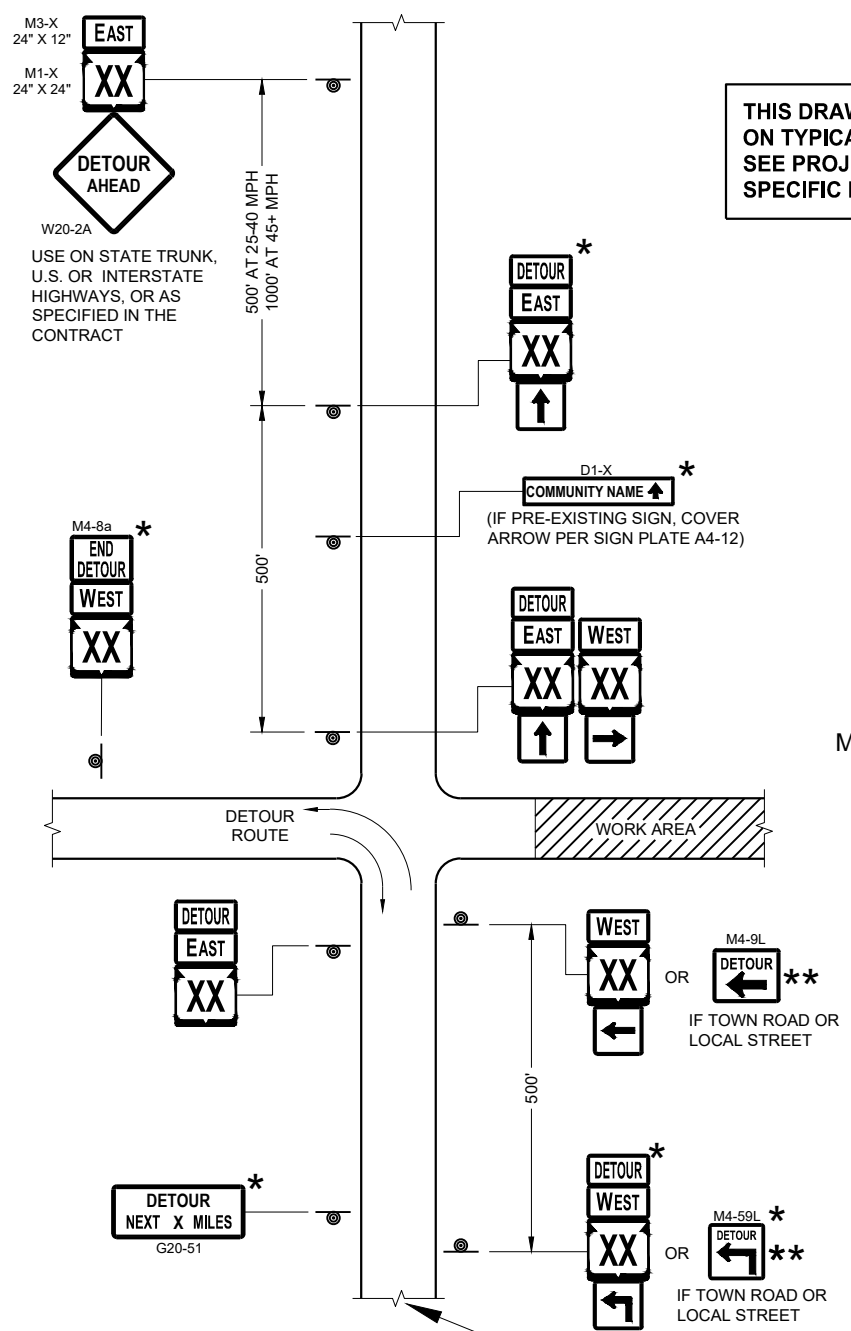
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER



THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

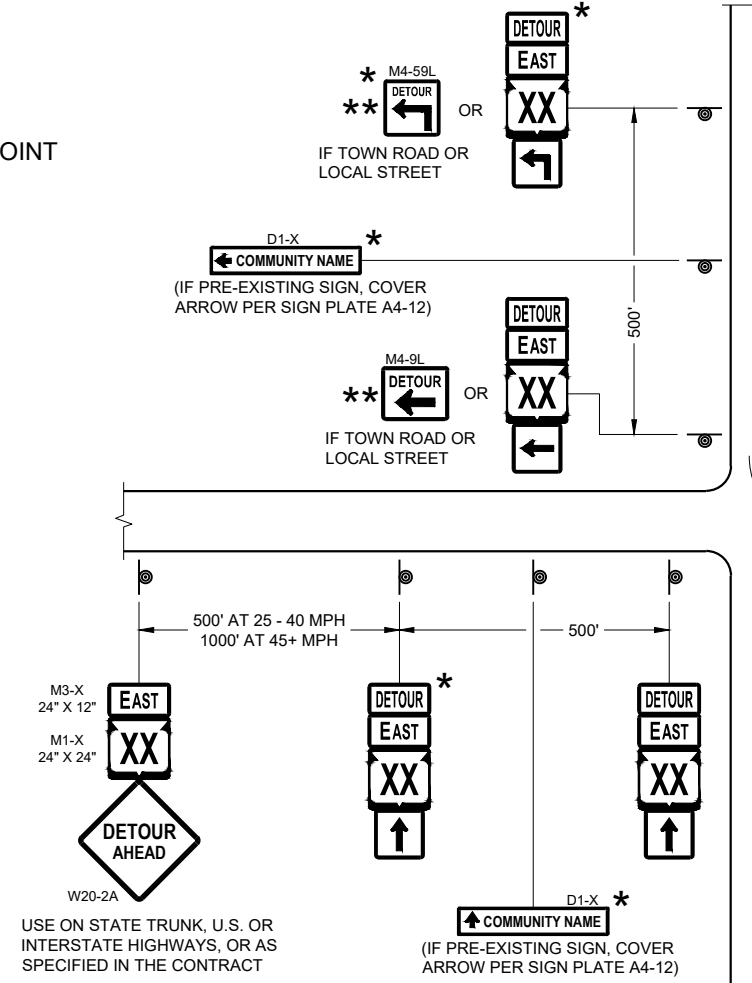
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

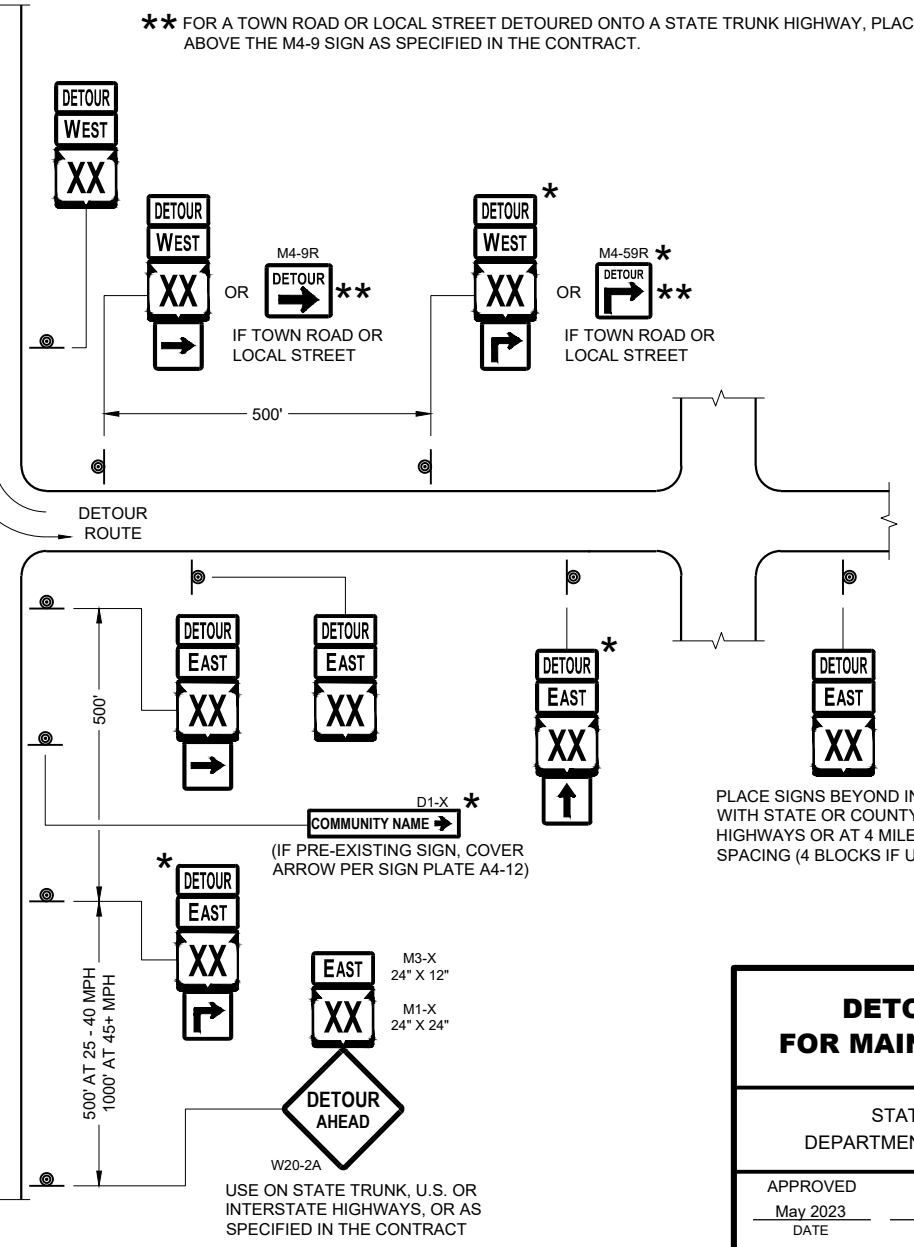
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-9R SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

MATCH POINT



**DETAIL F
DETOUR SIGNING**



**DETOUR SIGNING
FOR MAINLINE CLOSURES**

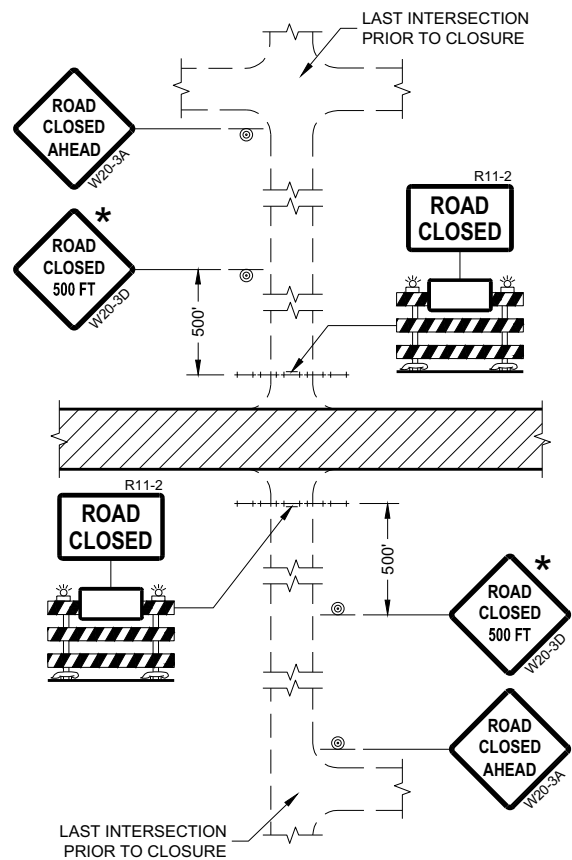
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

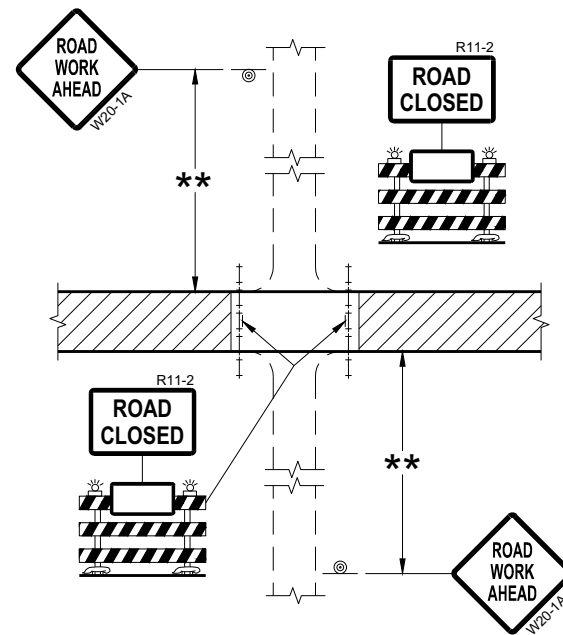
FHWA

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

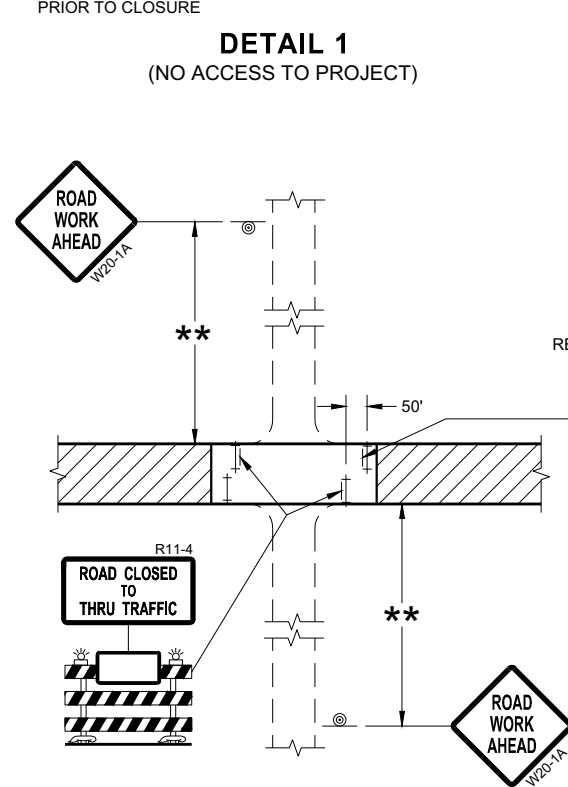
PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA)



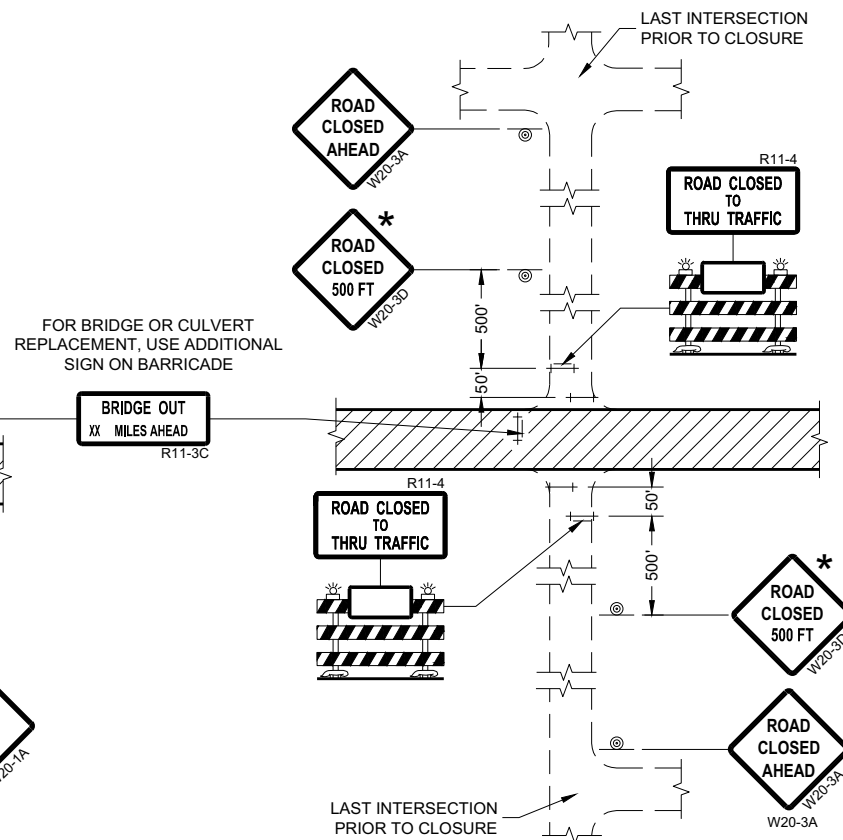
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.

** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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.

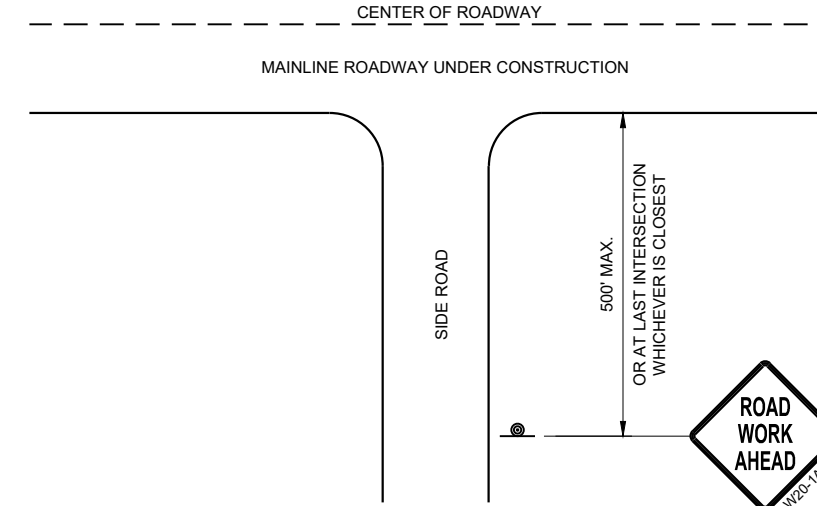
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

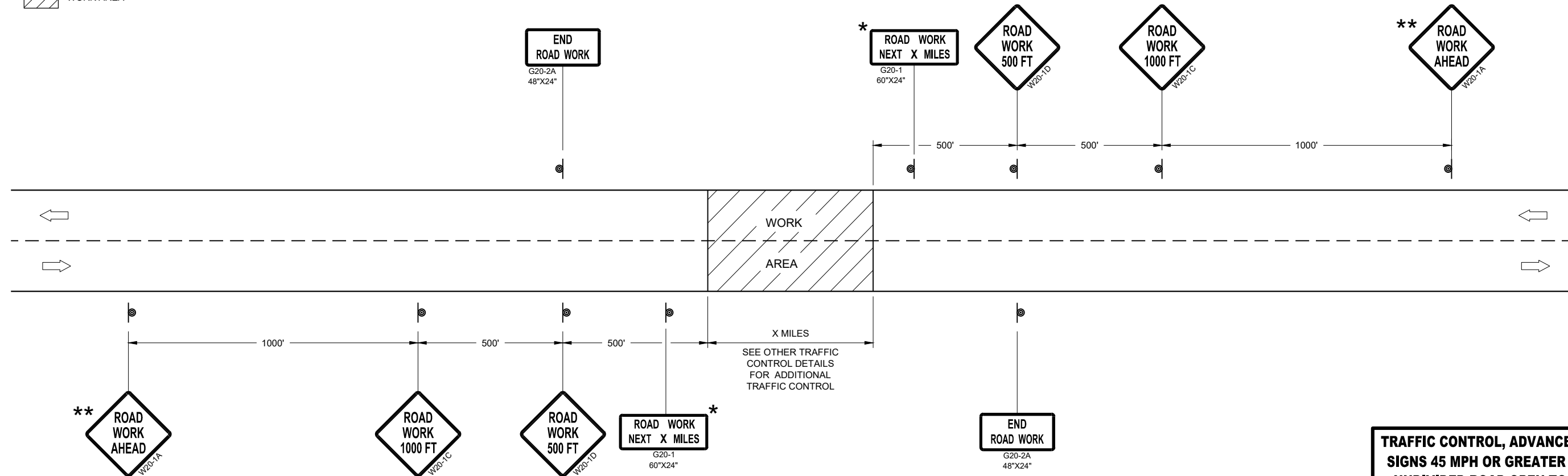
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

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
DATE July 2018 /S/ Andrew Heidtke
WORK ZONE ENGINEER




FHWA

GENERAL NOTES

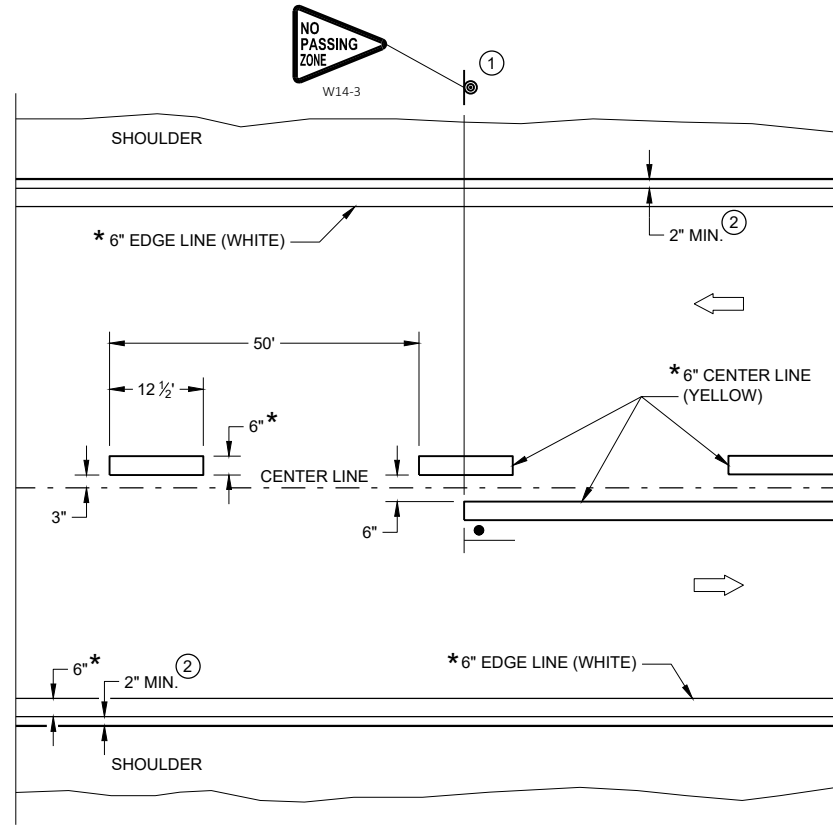
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- 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.

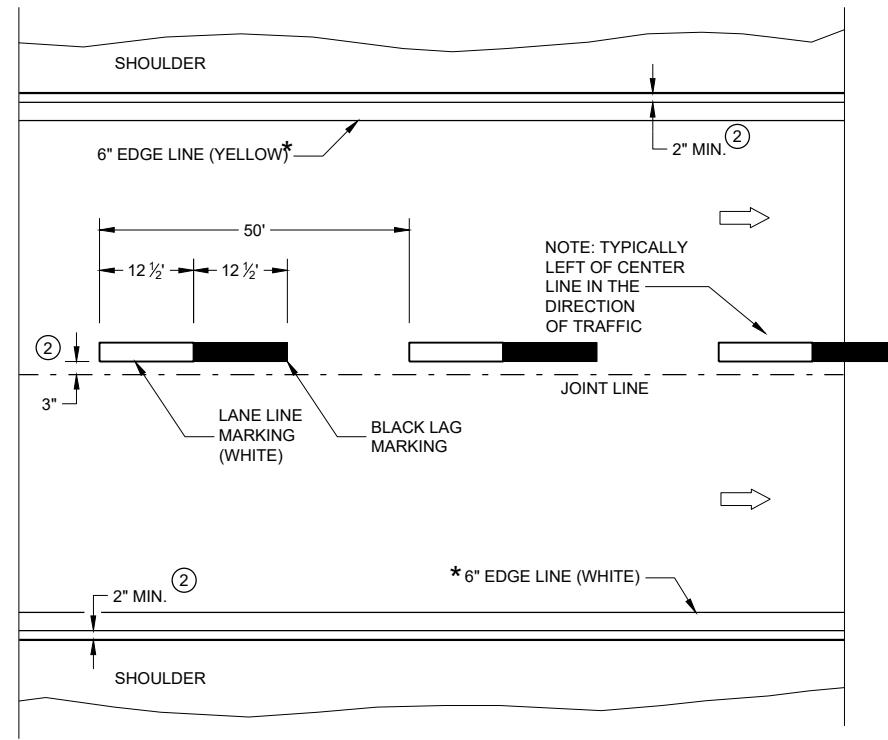
LEGEND

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

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

6

6

SDD 15C08-23a

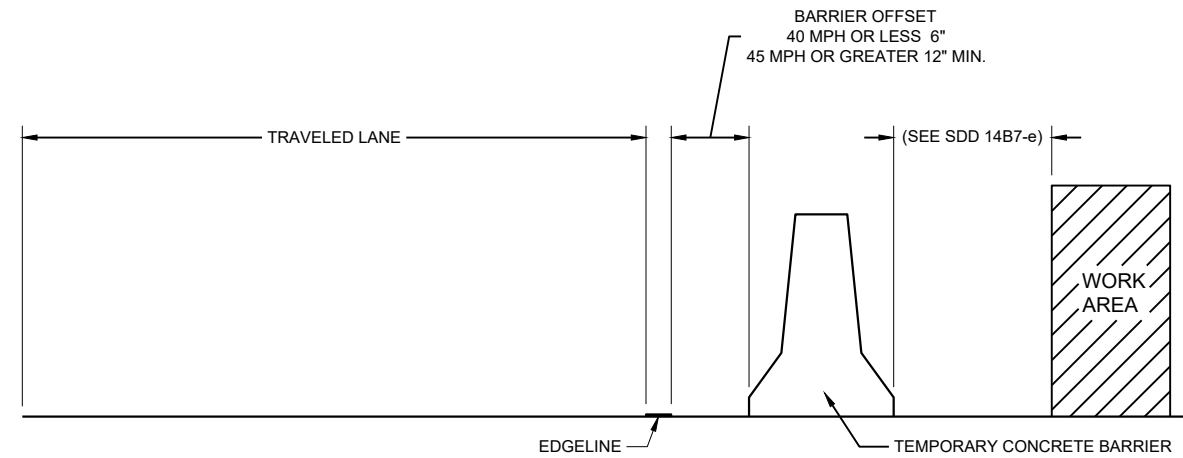
SDD 15C08-23a

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Jeannie Silver
DATE STATEWIDE SIGNING AND MARKING ENGINEER

FHWA



TEMPORARY BARRIER OFFSET FROM EDGELINE

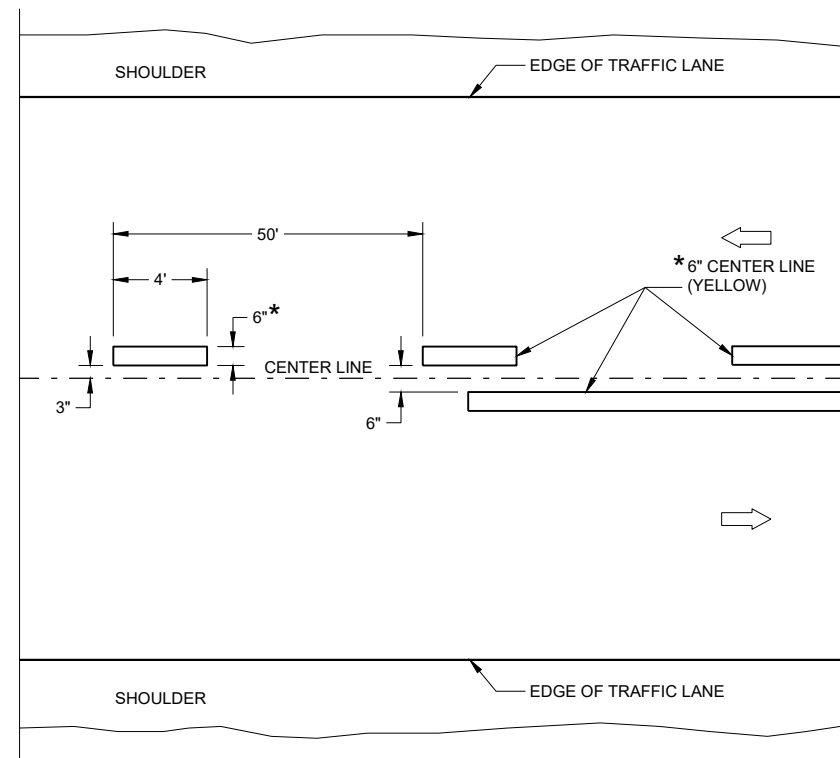
GENERAL NOTES

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

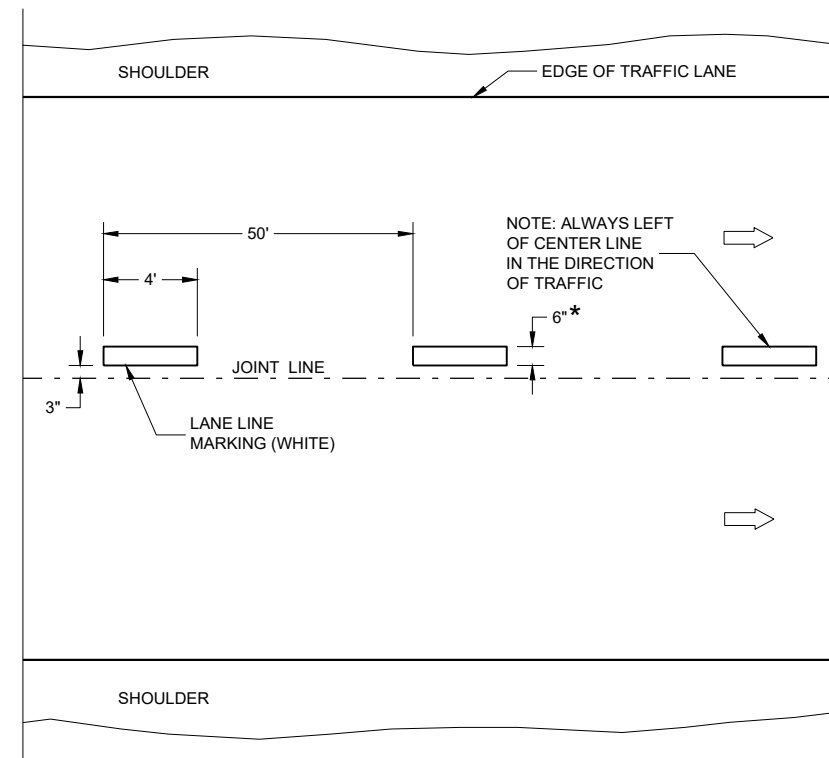
LEGEND

➡ DIRECTION OF TRAFFIC

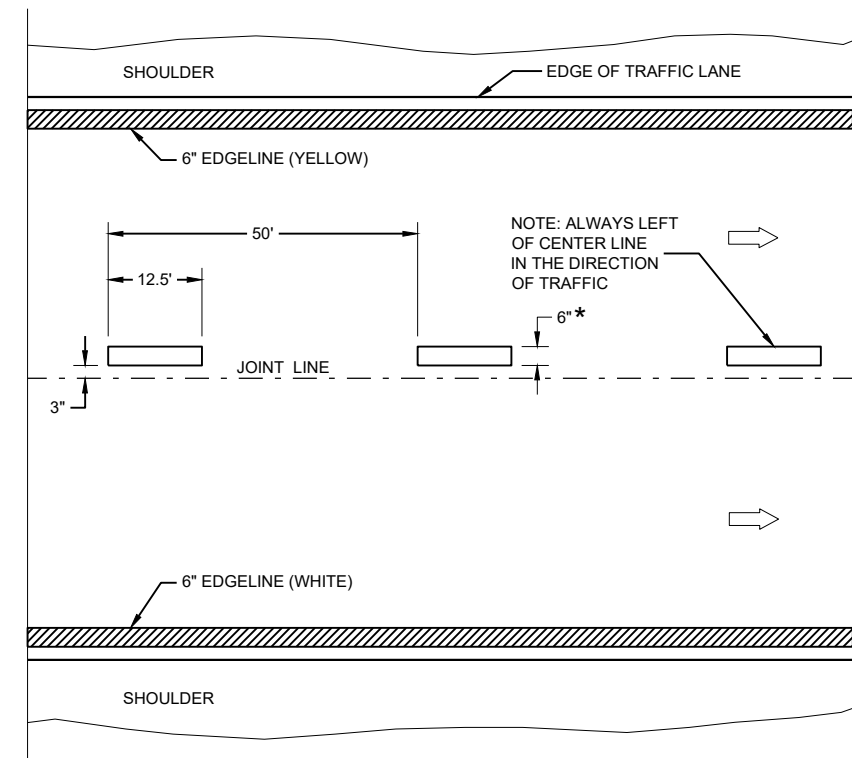
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

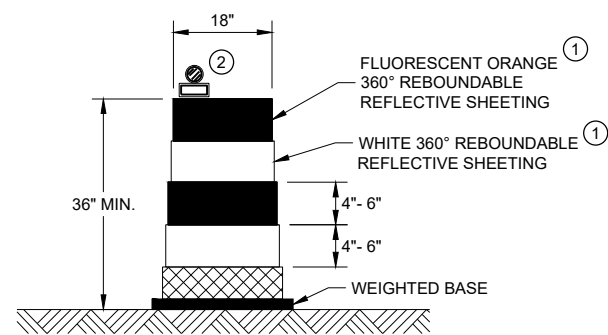
TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

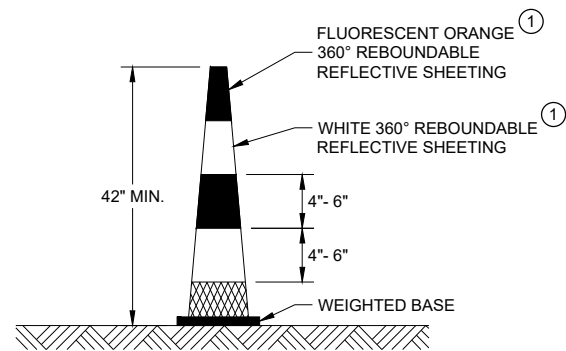
APPROVED
May 2023 /S/ Jeannie Silver
DATE STATEWIDE SIGNING AND MARKING ENGINEER

FHWA



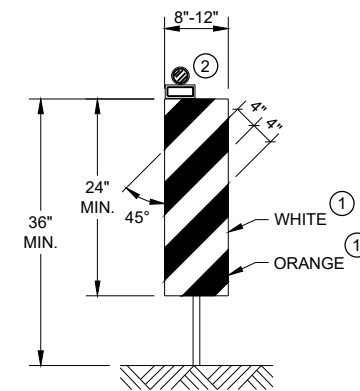
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

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

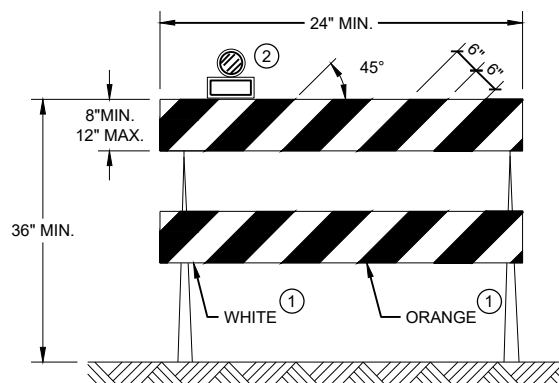


VERTICAL PANEL

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

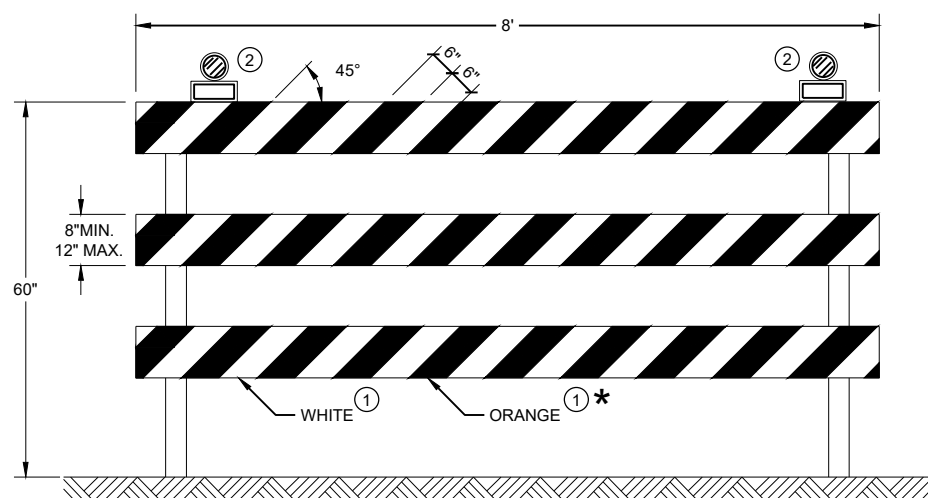
GENERAL NOTES

- 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.



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.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2022 DATE	/S/ Andrew Heidtke 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.

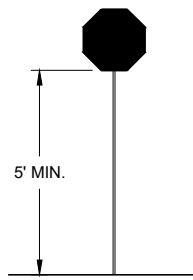
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

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.



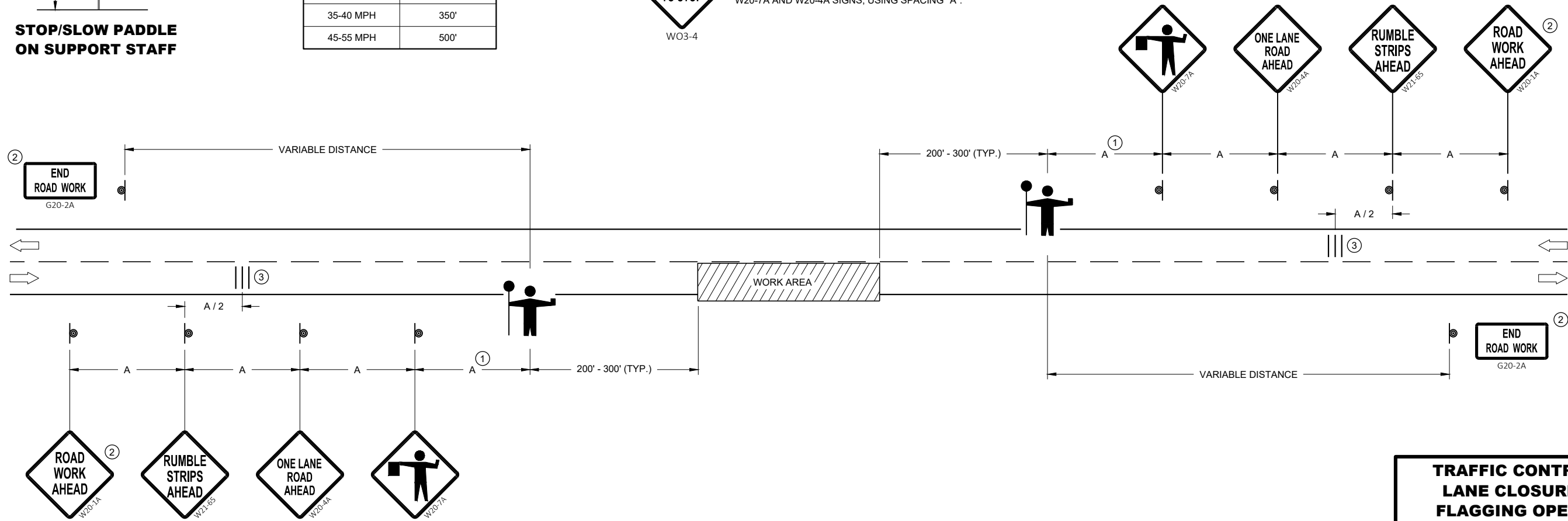
STOP/SLOW PADDLE ON SUPPORT STAFF

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
DATE: May 2022 /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
-  **AFAD** 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

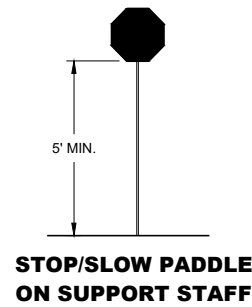
UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

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

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

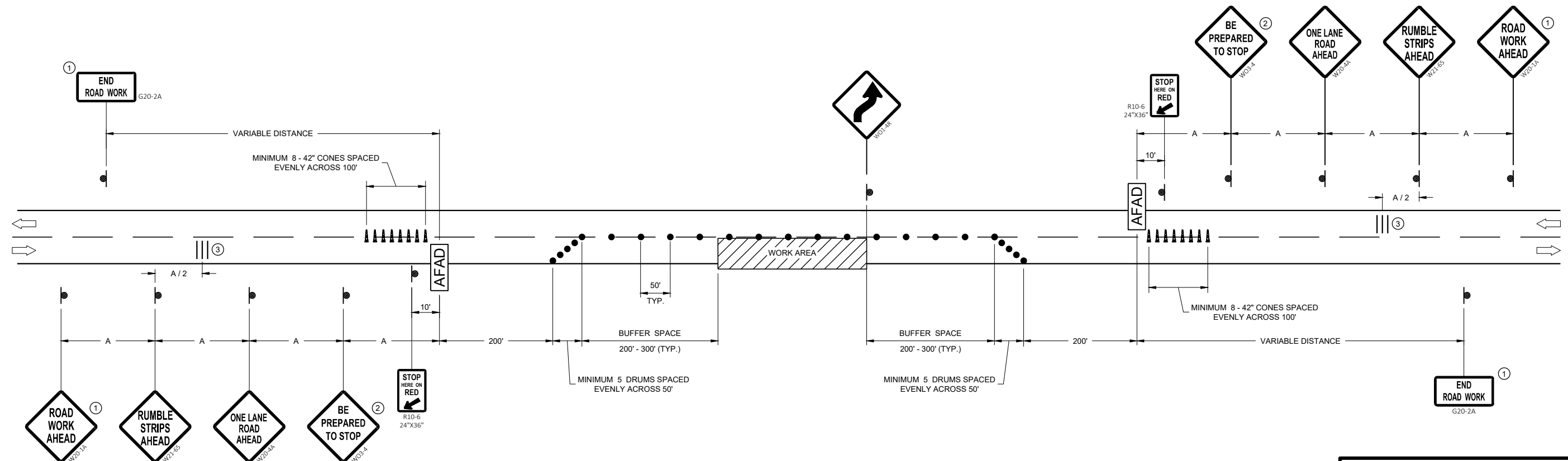
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

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

LEGEND

- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, 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 AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

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

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

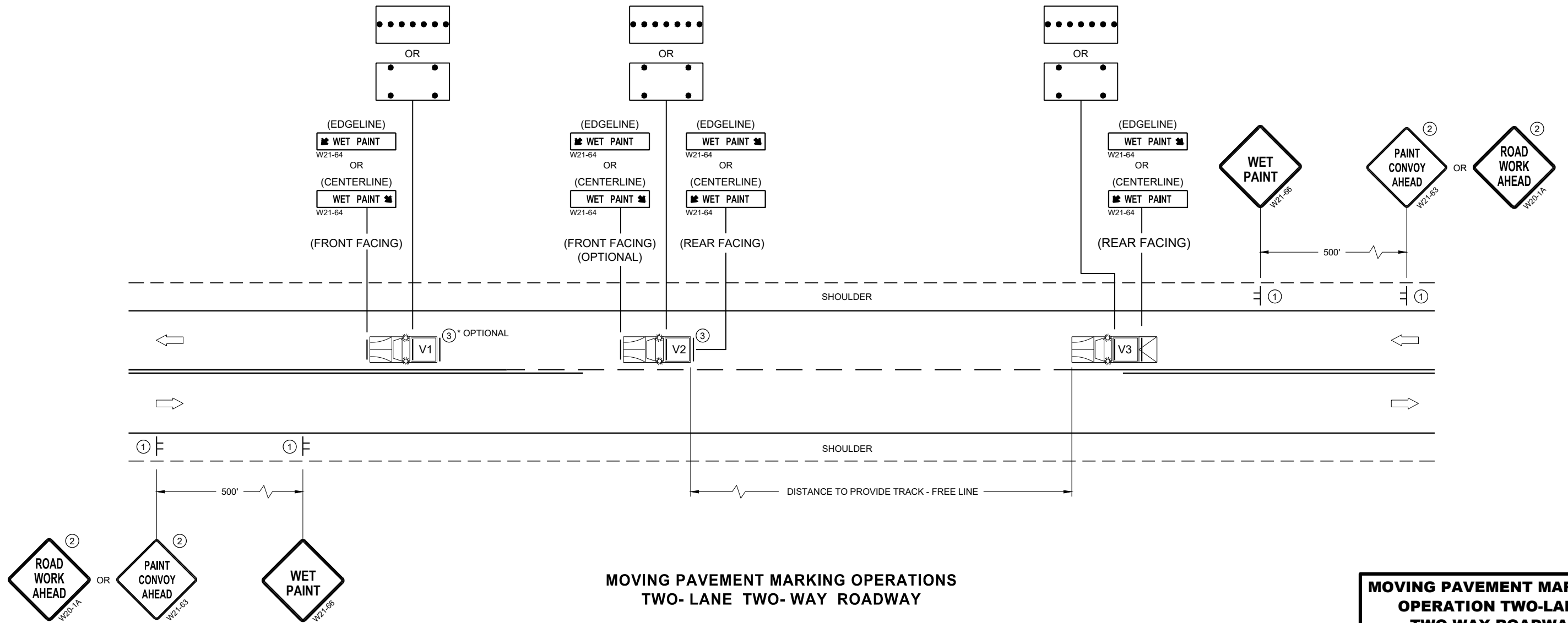
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

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.

6

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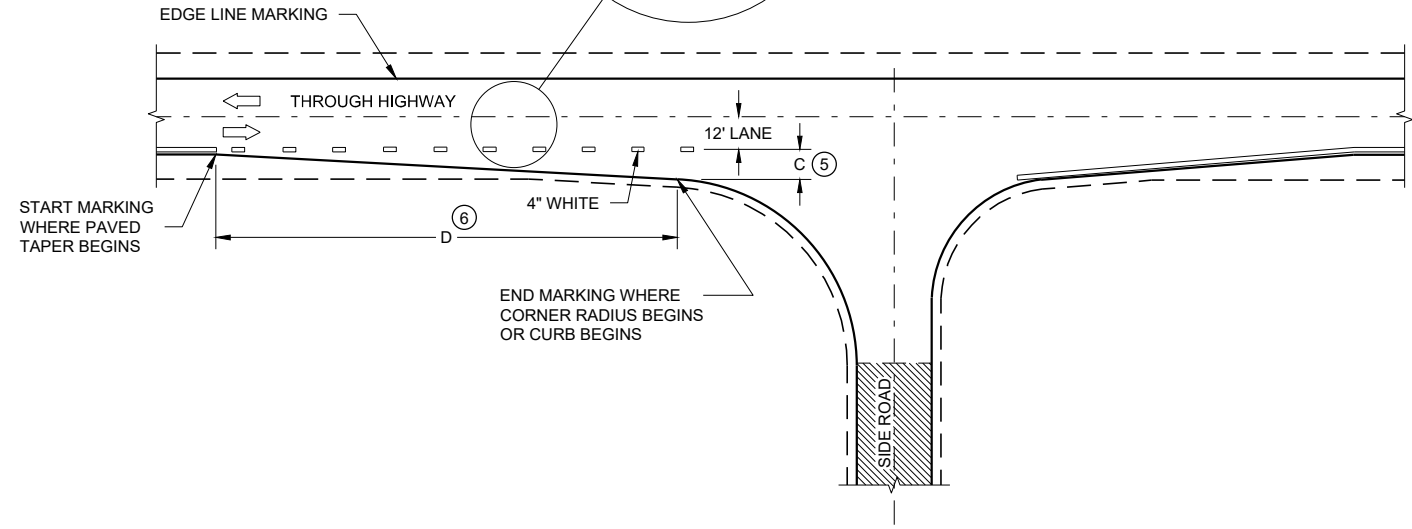
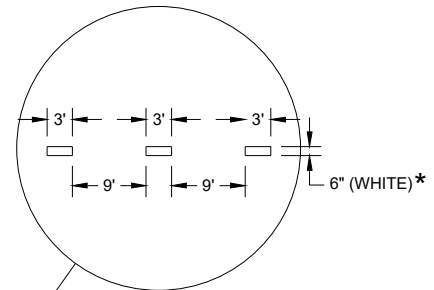


**MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY**

SDD 15C19-08a

SDD 15C19-08a

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2023 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



MINOR INTERSECTION

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

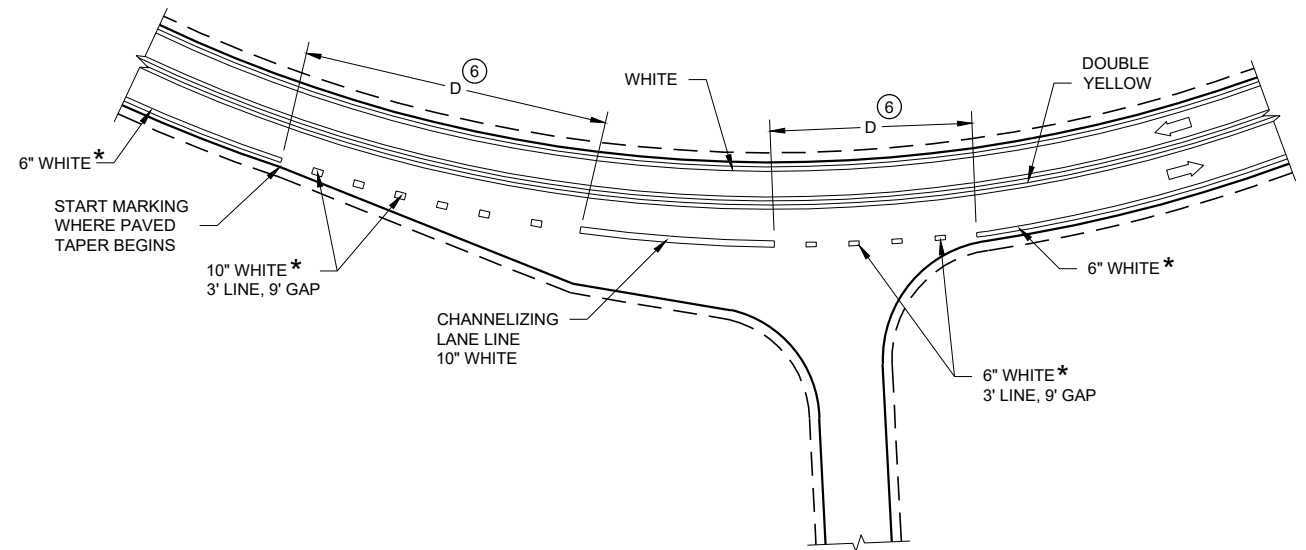
GENERAL NOTES

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

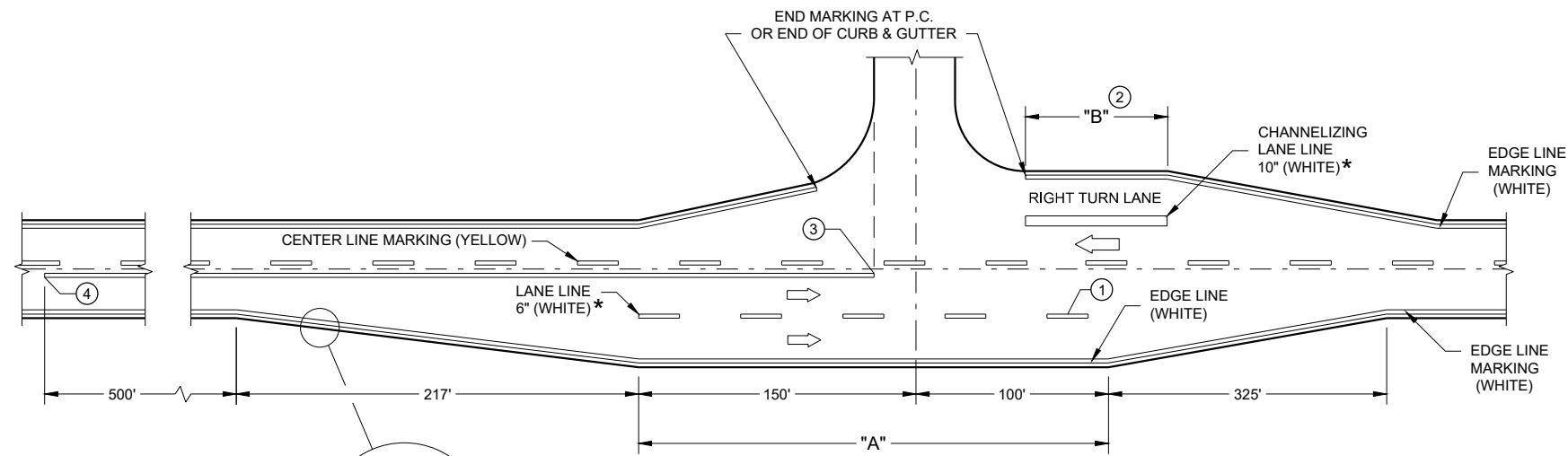
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4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

LEGEND

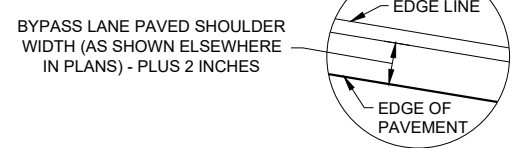
➔ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE



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







BYPASS LANE PAVED SHOULDER WIDTH (AS SHOWN ELSEWHERE IN PLANS) - PLUS 2 INCHES

**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.

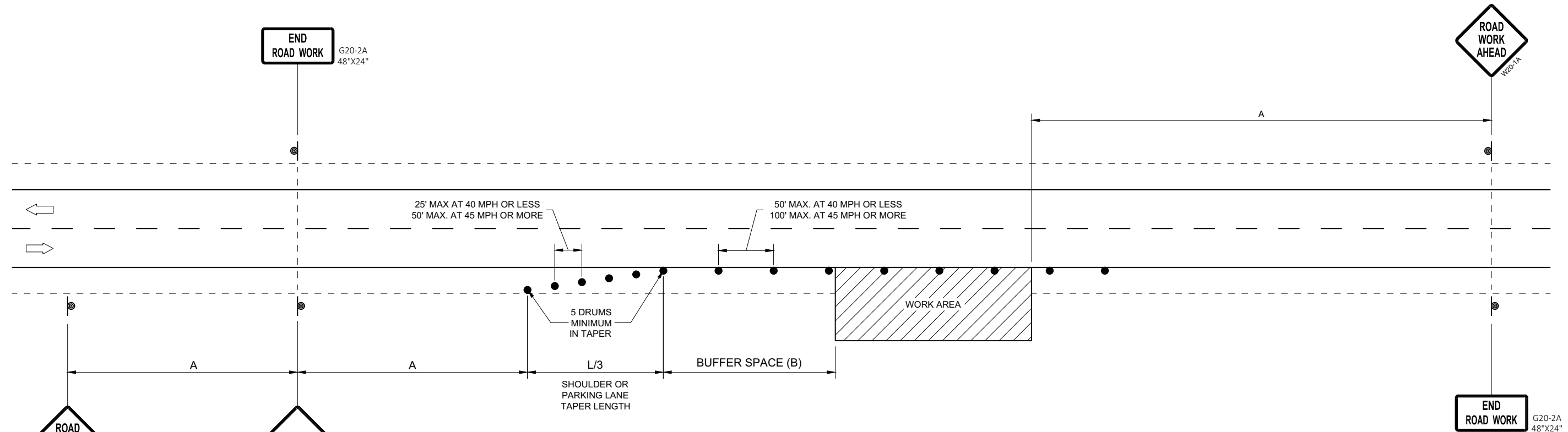
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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



OR
IF TRAFFIC CONTROL DEVICES
ENCROACH ONTO TRAVELED WAY, USE

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		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**

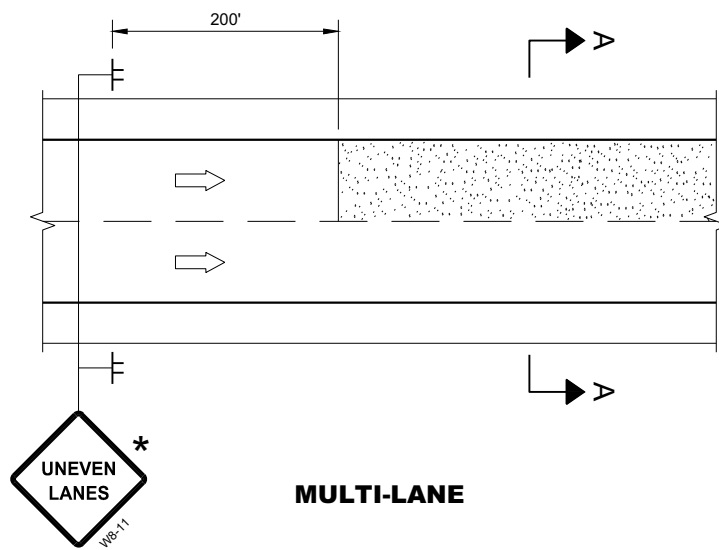
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER

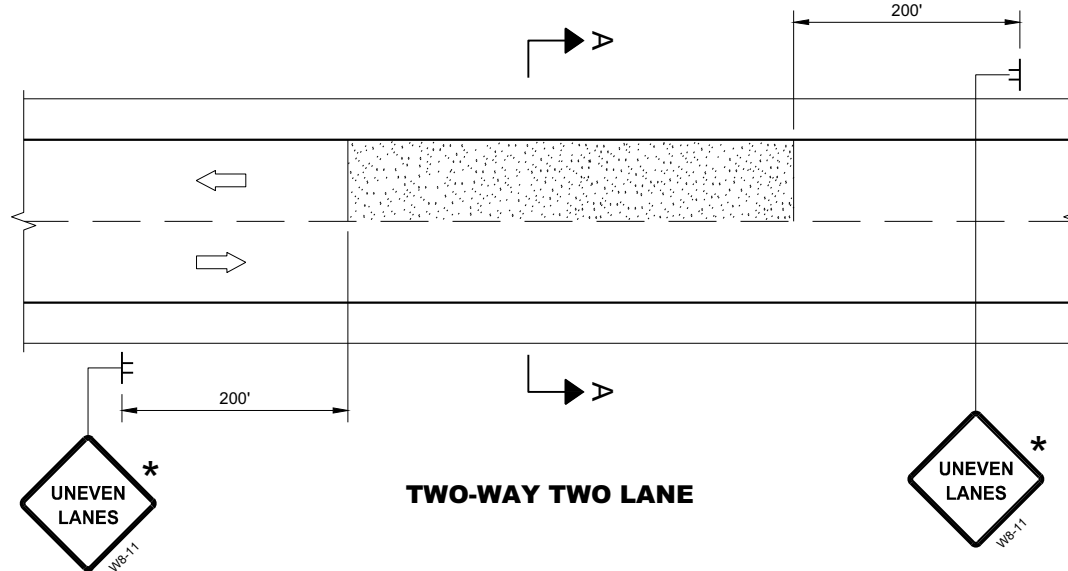
FHWA

SDD 15D28 - 04

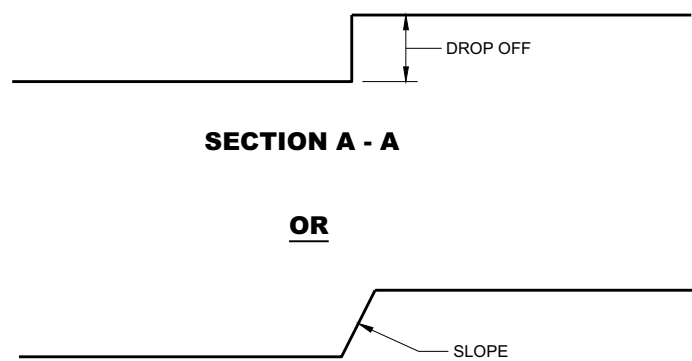
SDD 15D28 - 04



MULTI-LANE



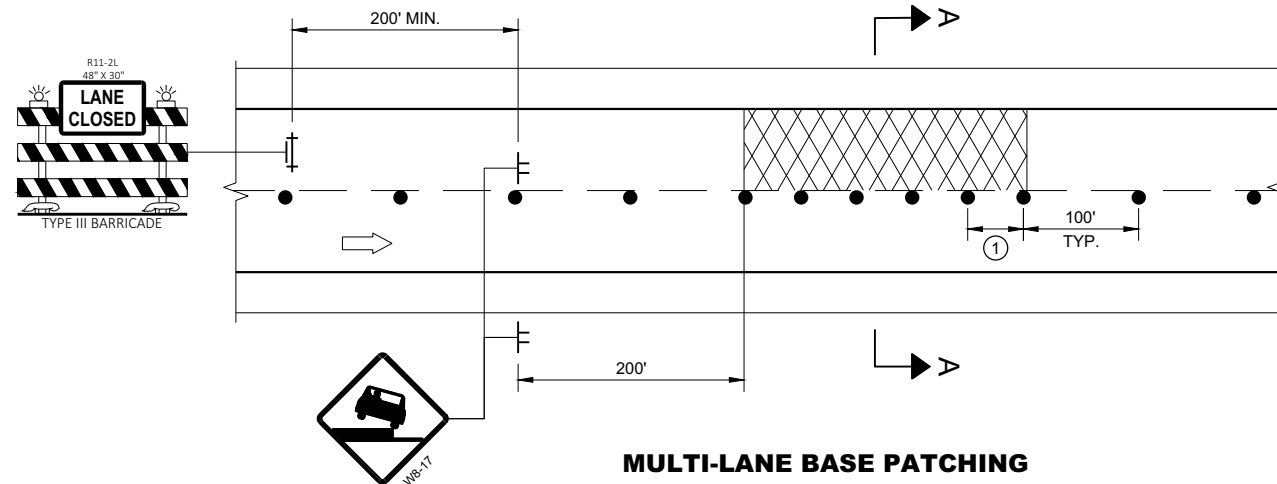
TWO-WAY TWO LANE



SECTION A - A

OR

SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

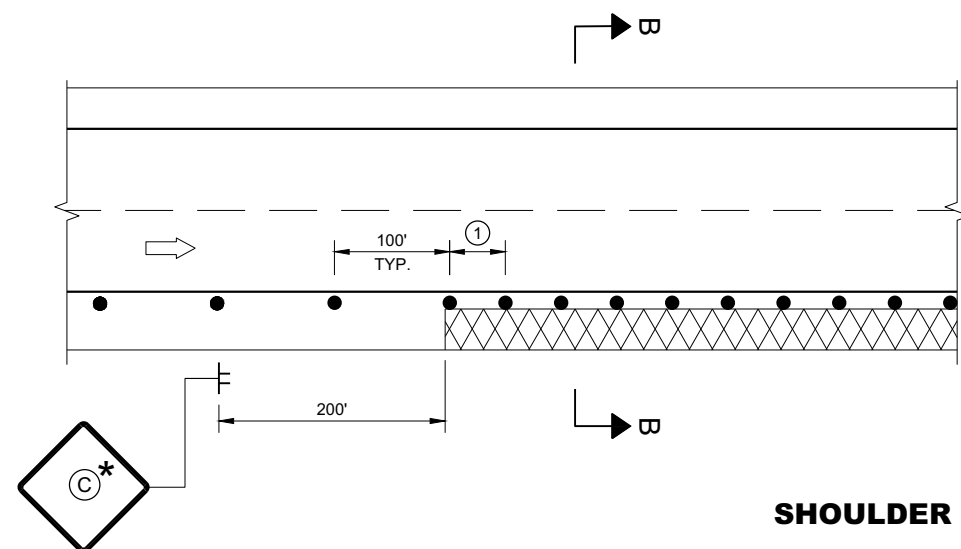
GENERAL NOTES

- FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- * IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.
- ① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

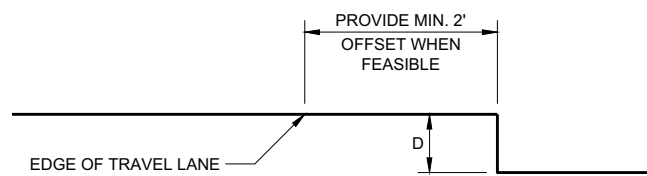
LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	 W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	 W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT



SHOULDER DROP-OFFS



SECTION B - B

**TRAFFIC CONTROL,
DROP-OFF SIGNING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Andrew Heidtke
DATE 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.

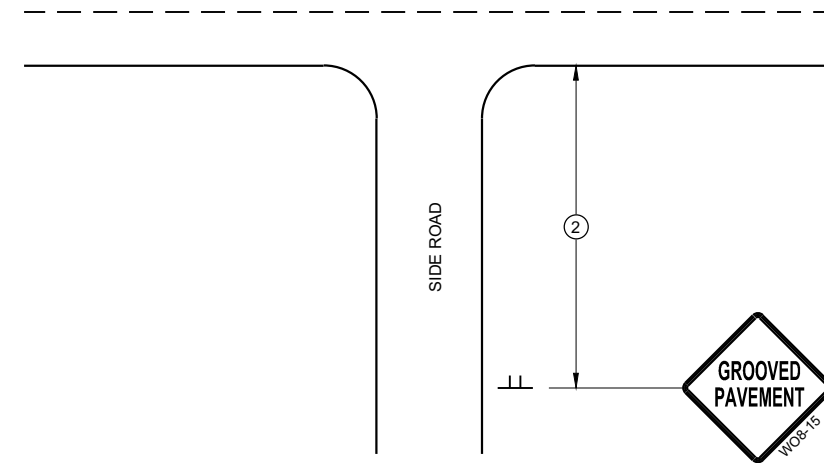
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

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.

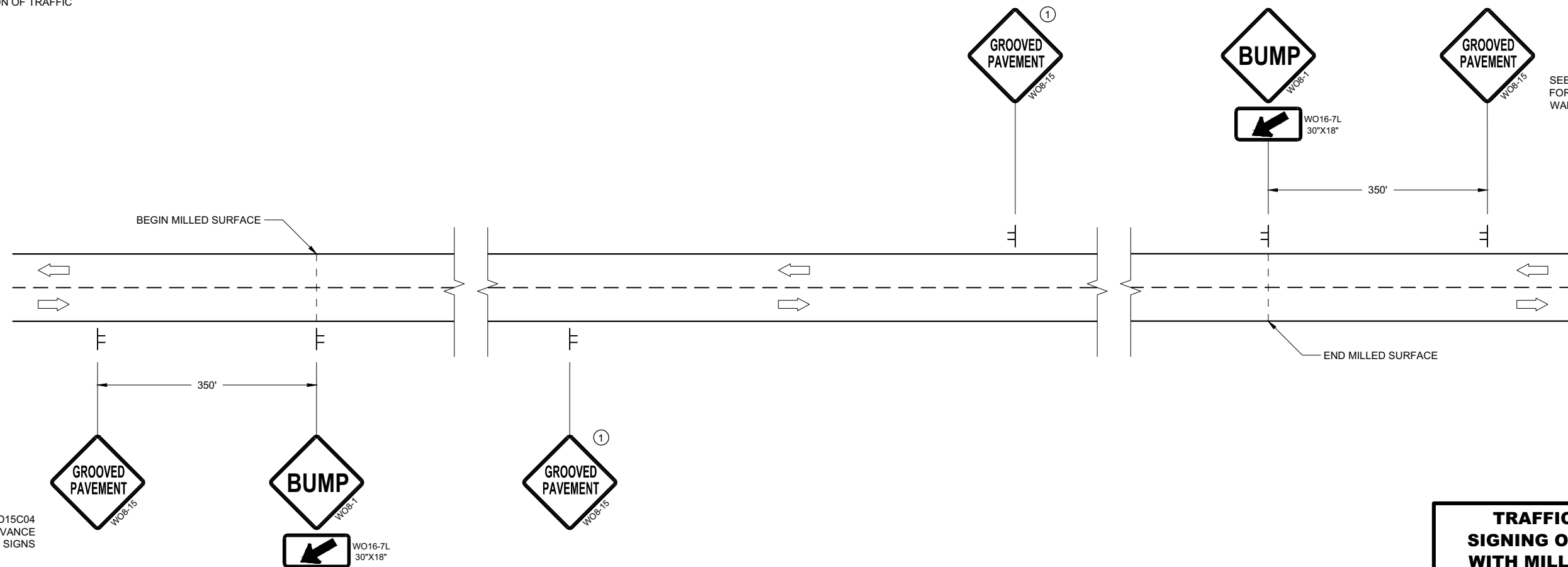
- ① PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2020 DATE	/S/ Andrew Heidtke 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.

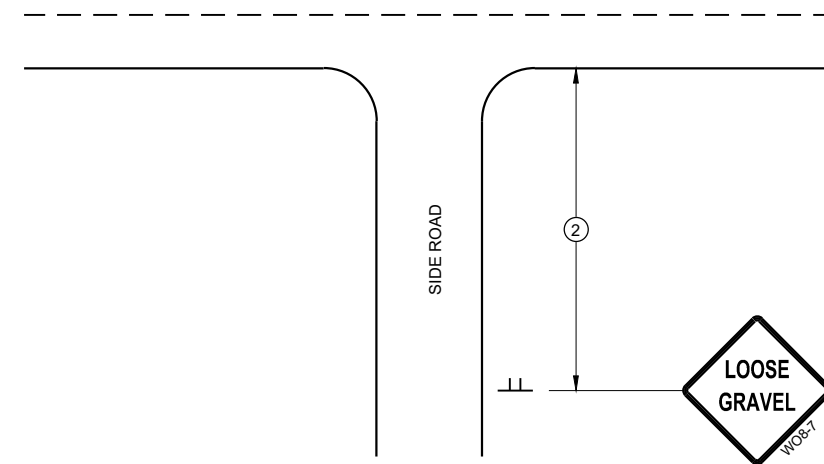
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

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.

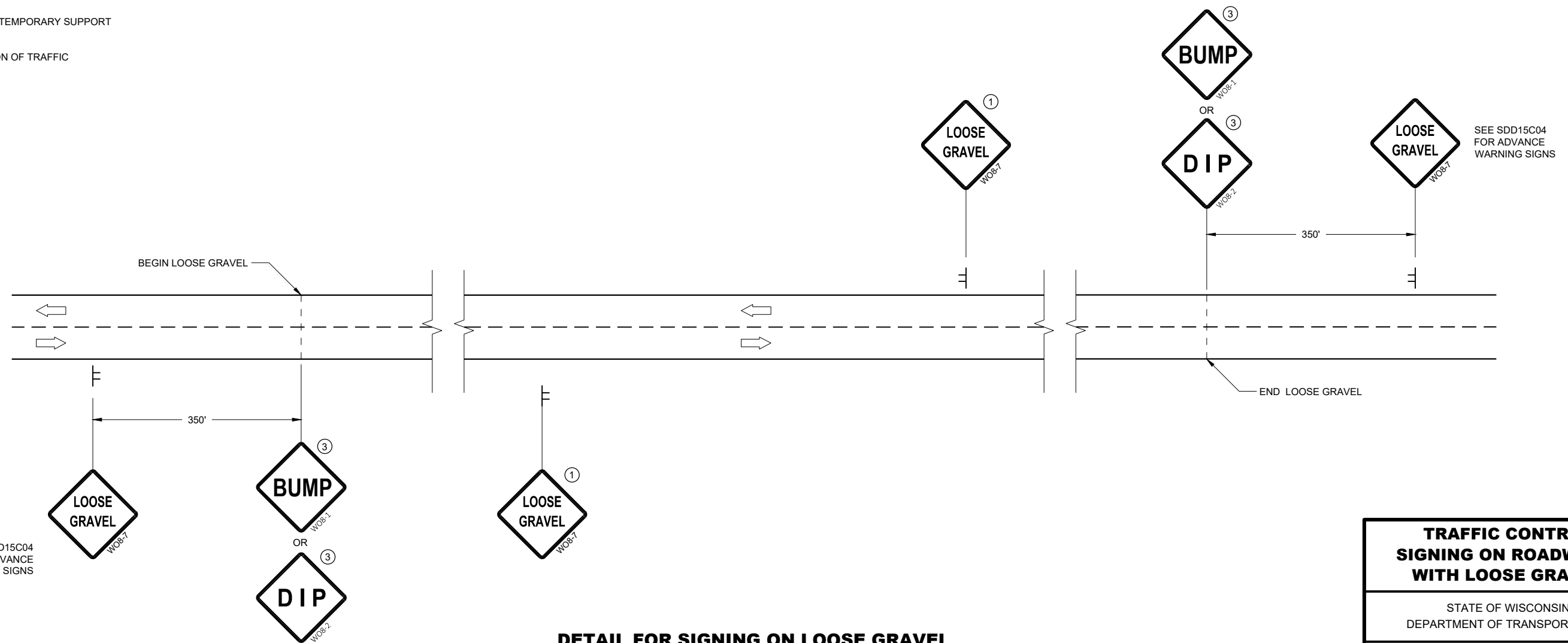
- ① PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.
- ③ ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

LEGEND

- ⊥ SIGN ON TEMPORARY SUPPORT
- ➡ DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON LOOSE GRAVEL OR CHIP SEALED SURFACES

SEE SDD15C04 FOR ADVANCE WARNING SIGNS





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

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.

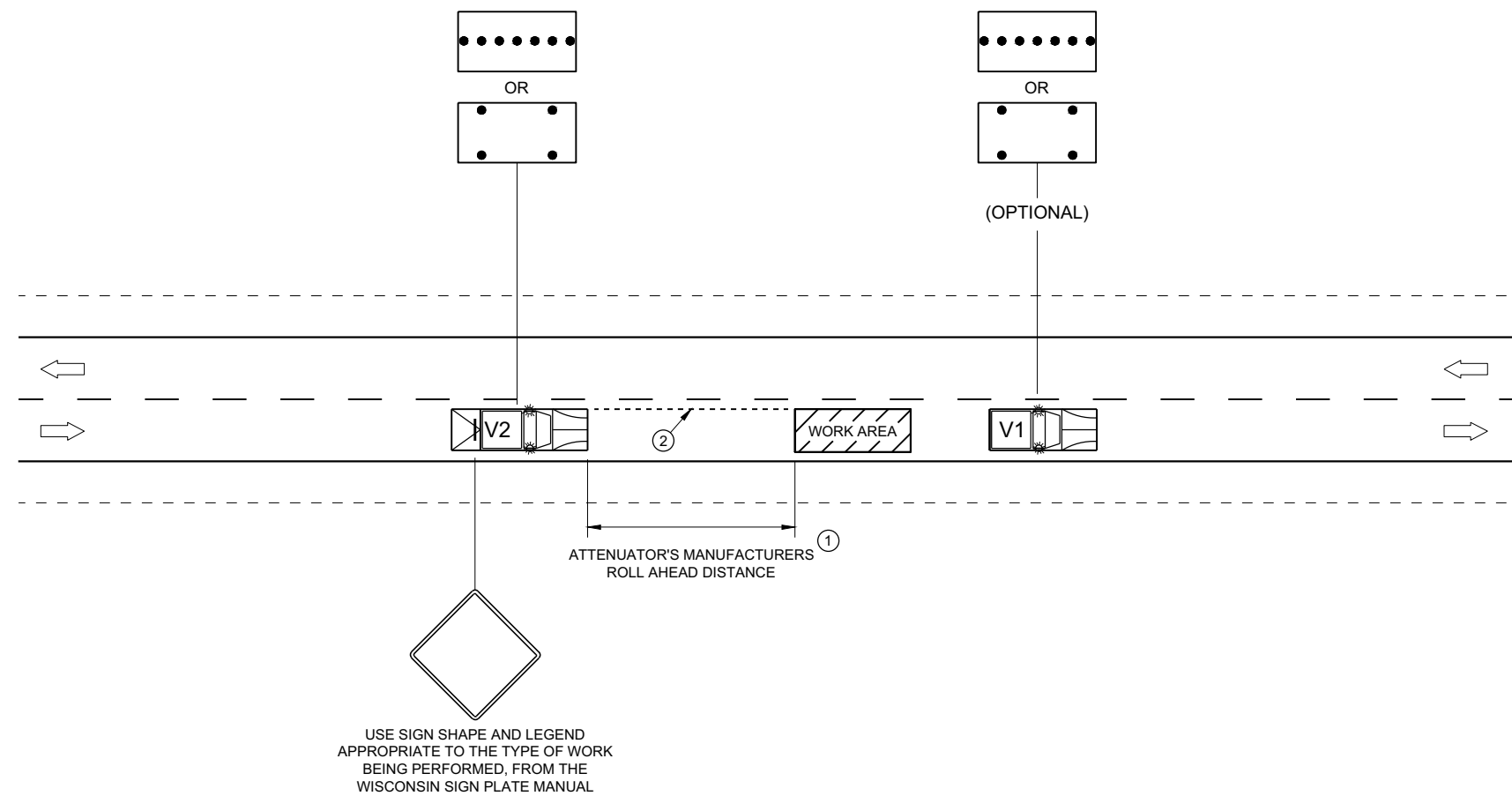
MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.

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.



6

6

SDD 15D51 - 01

SDD 15D51 - 01

**TRAFFIC CONTROL,
MOBILE OPERATIONS ON
AN UNDIVIDED ROADWAY**

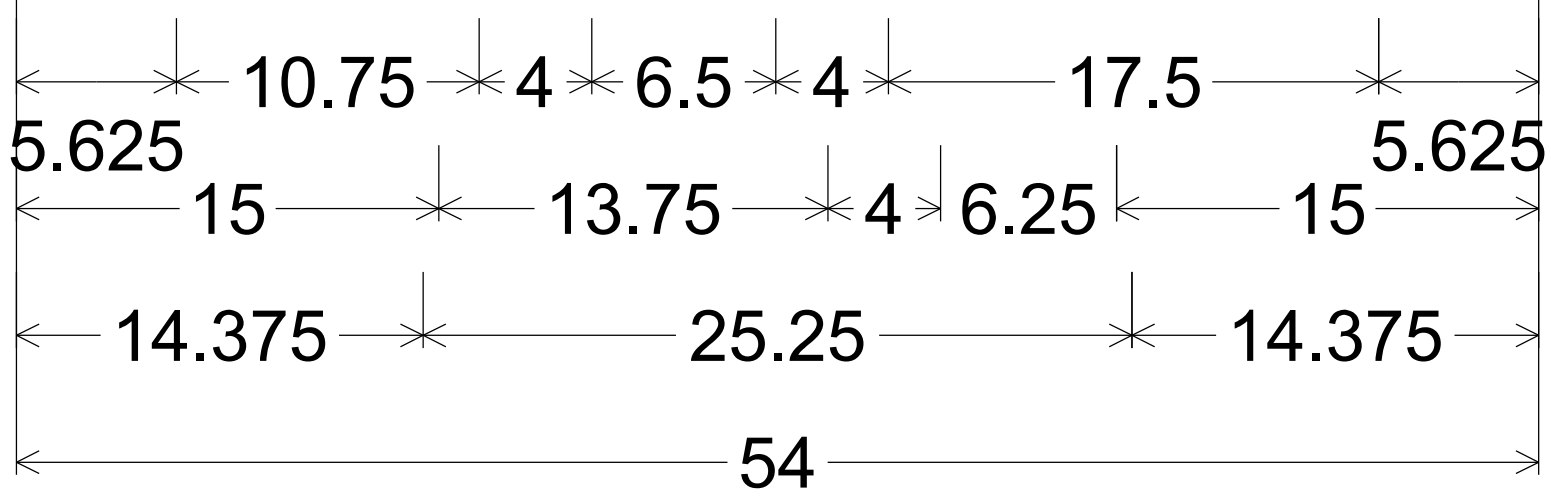
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA

NOTES

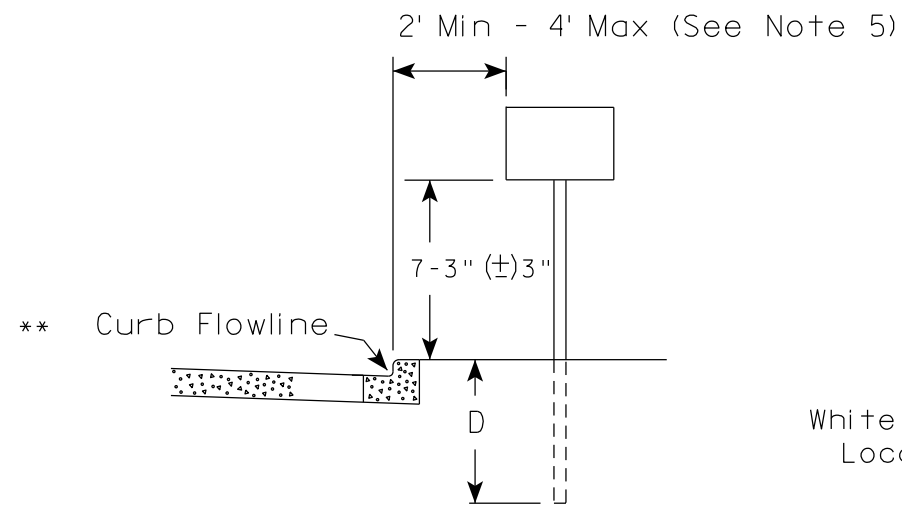
1. Fixed Message Sign Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - C



2.250" Radius, 0.625" Border, 0.500" Indent

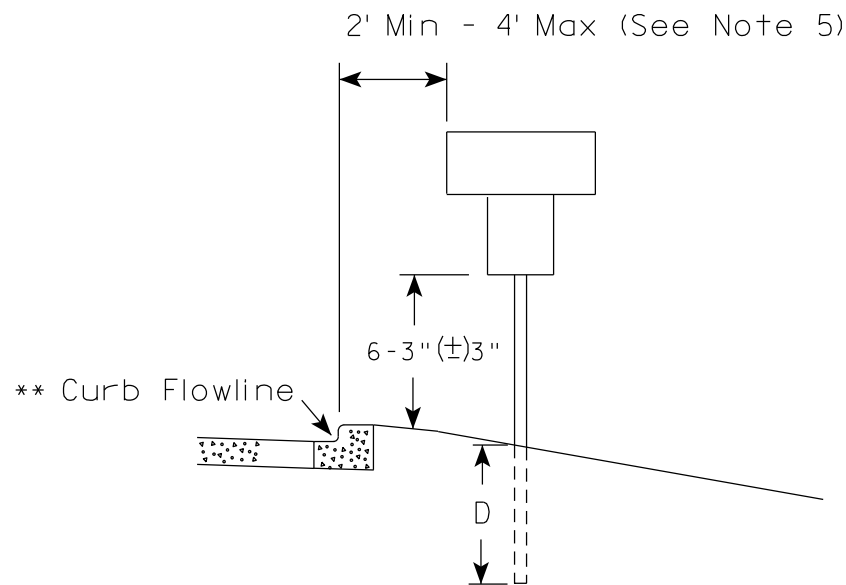
URBAN AREA

RURAL AREA (See Note 2)



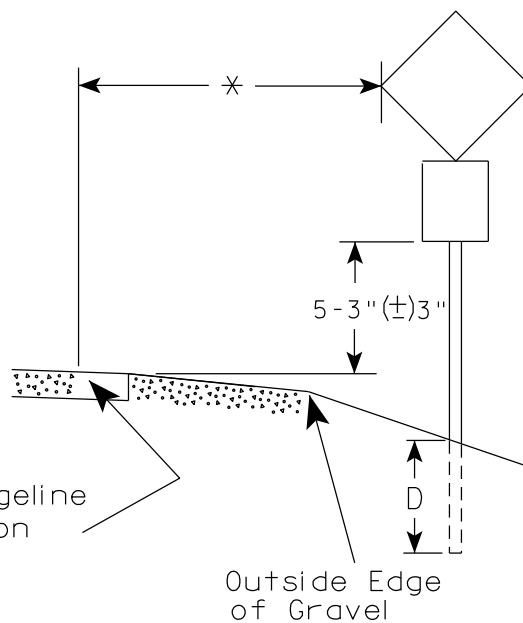
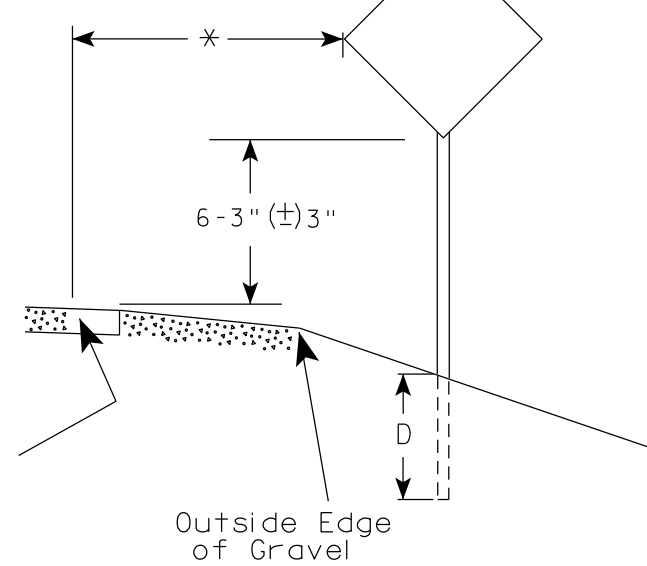
White Edgeline Location

Outside Edge of Gravel



White Edgeline Location

Outside Edge of Gravel



POST EMBEDMENT DEPTH

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

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.

* * 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. Raub
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	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

GENERAL NOTES

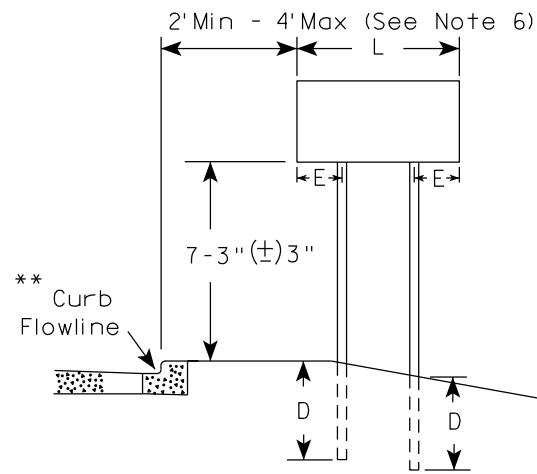
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- 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.

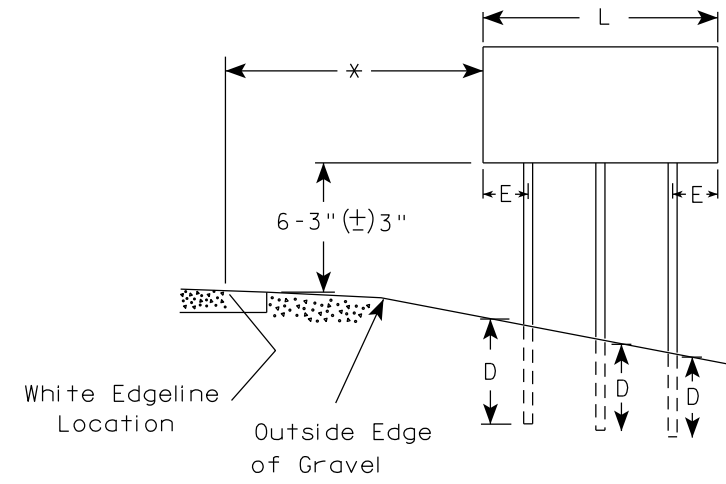
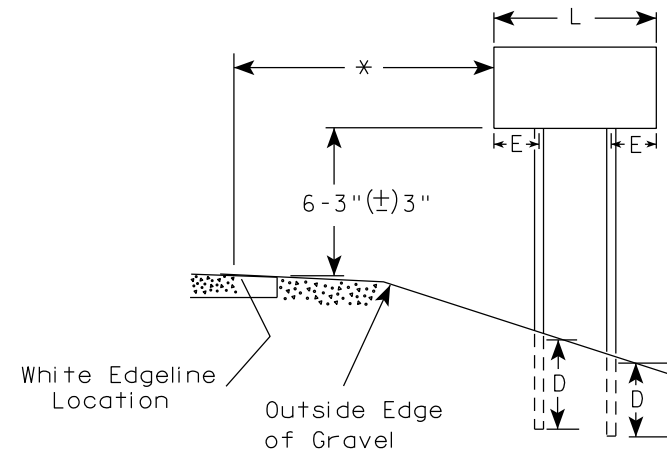
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs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

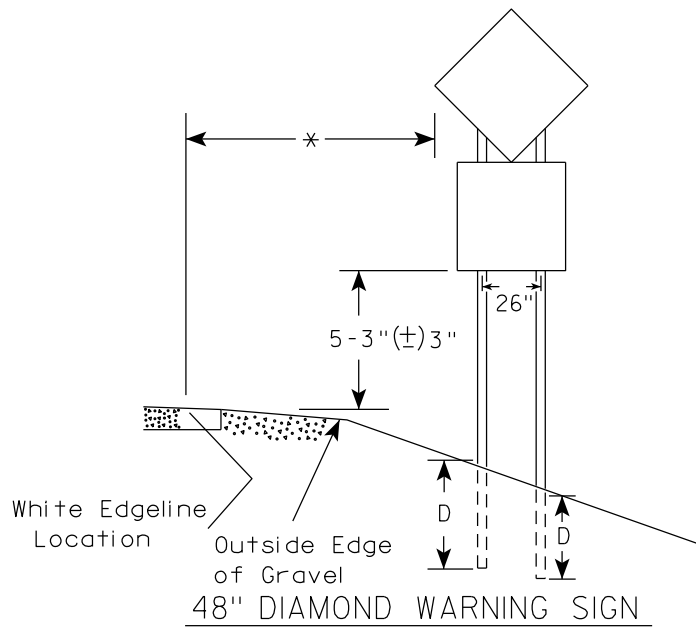
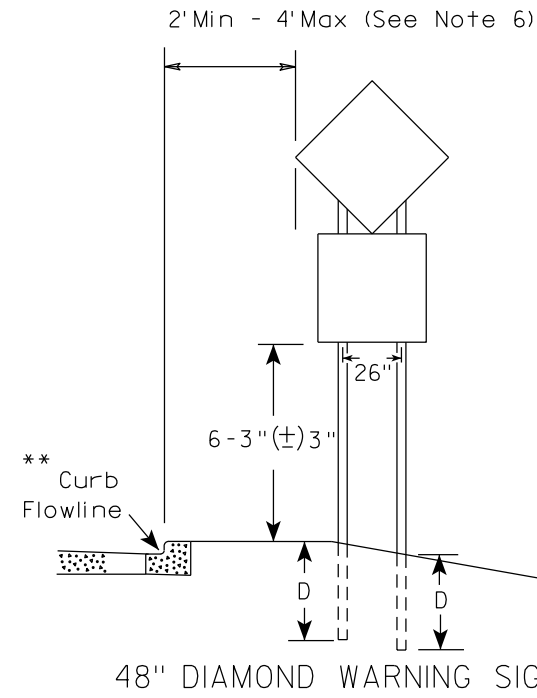
URBAN AREA



RURAL AREA (See Note 3)



URBAN AREA



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

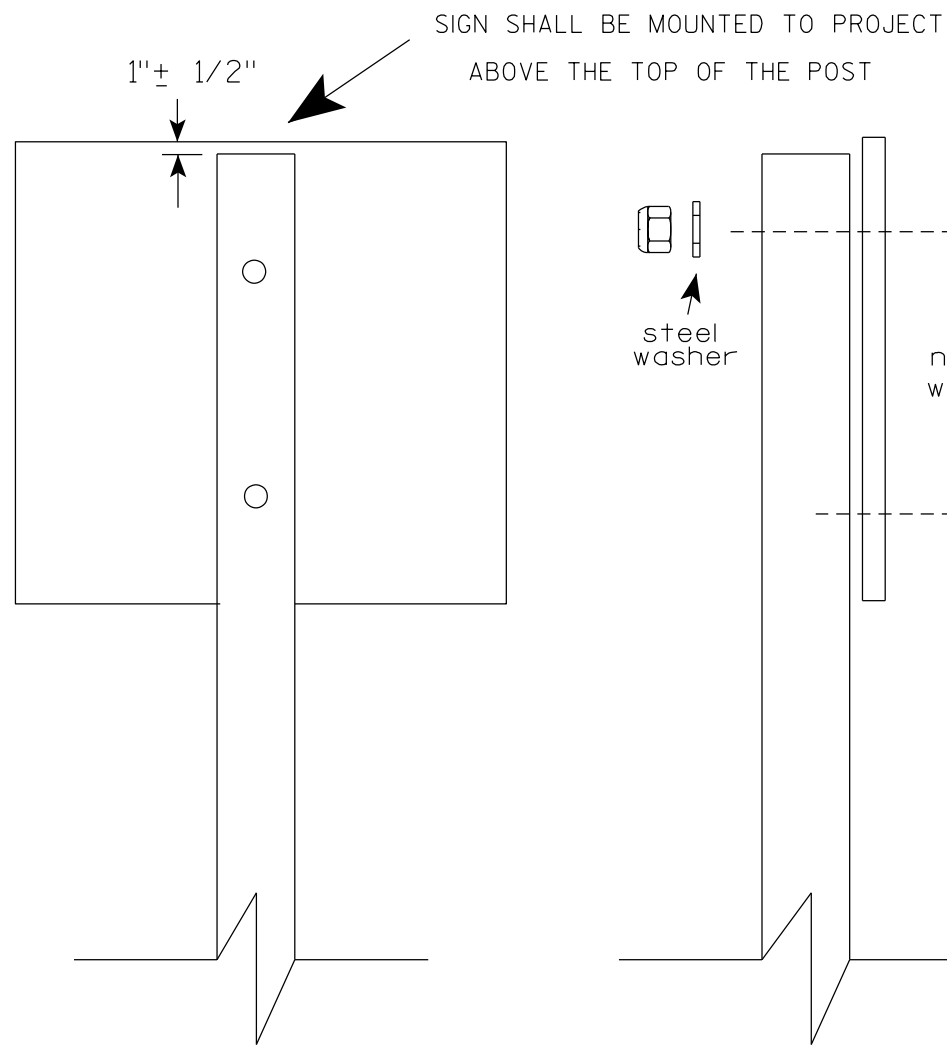
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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

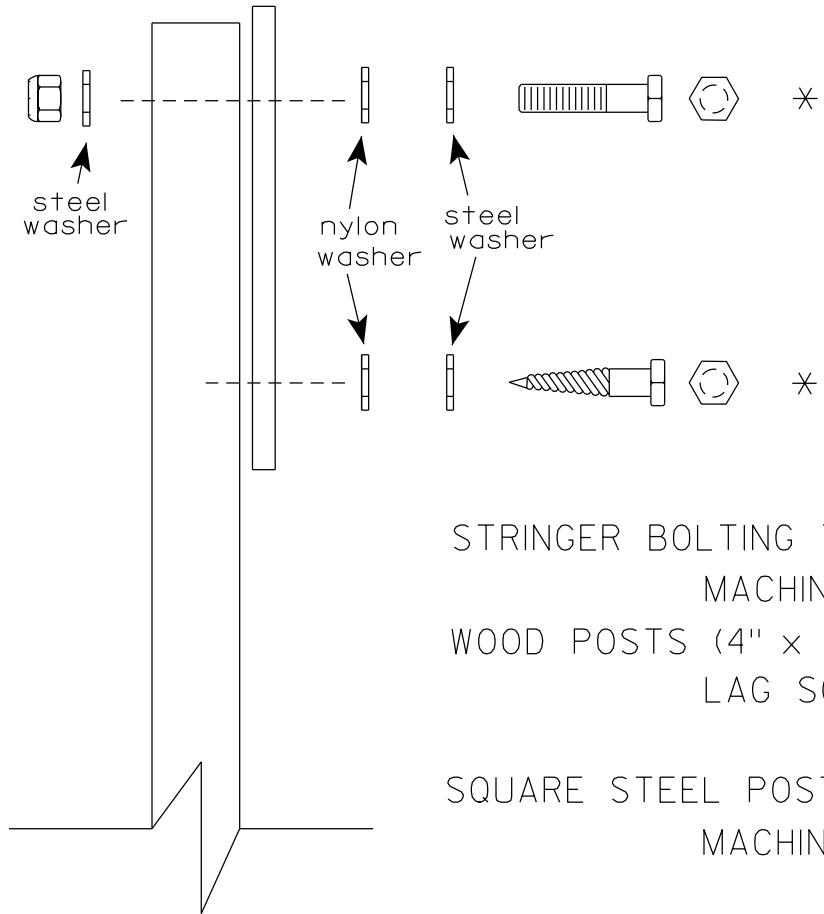
WISCONSIN DEPT OF TRANSPORTATION
 APPROVED *Matthew R Rauch*
 For State Traffic Engineer
 DATE 12/6/23 PLATE NO. A4-4.16



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 - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 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) -

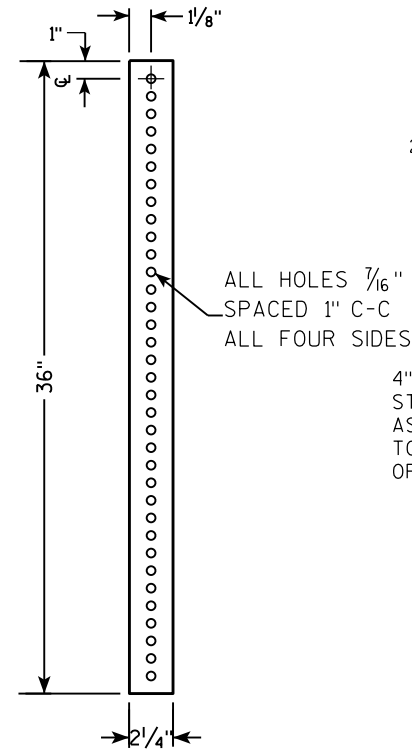
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

* 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

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

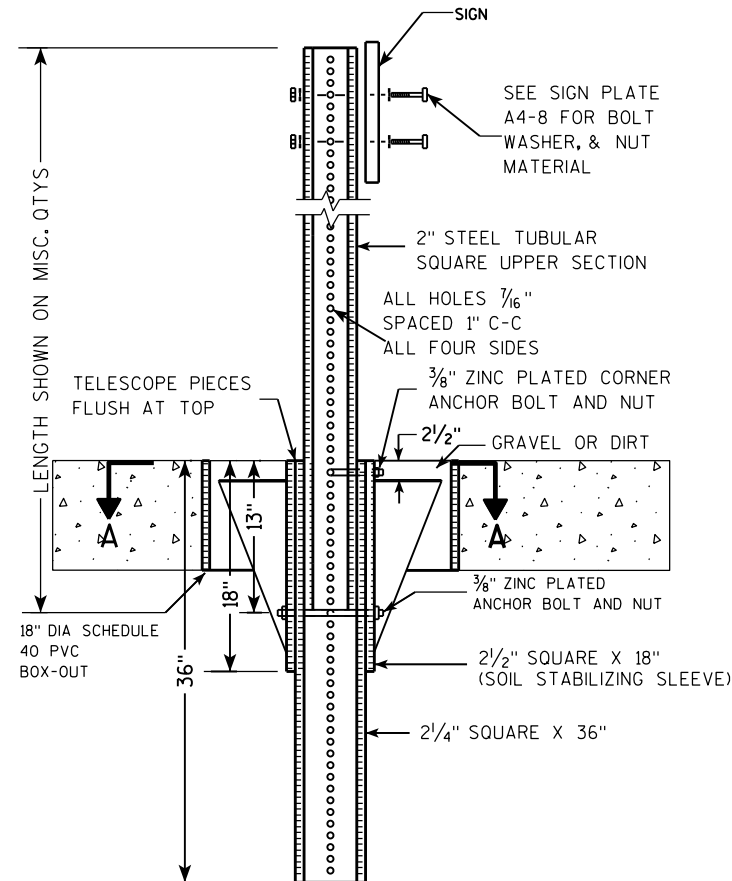
**2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



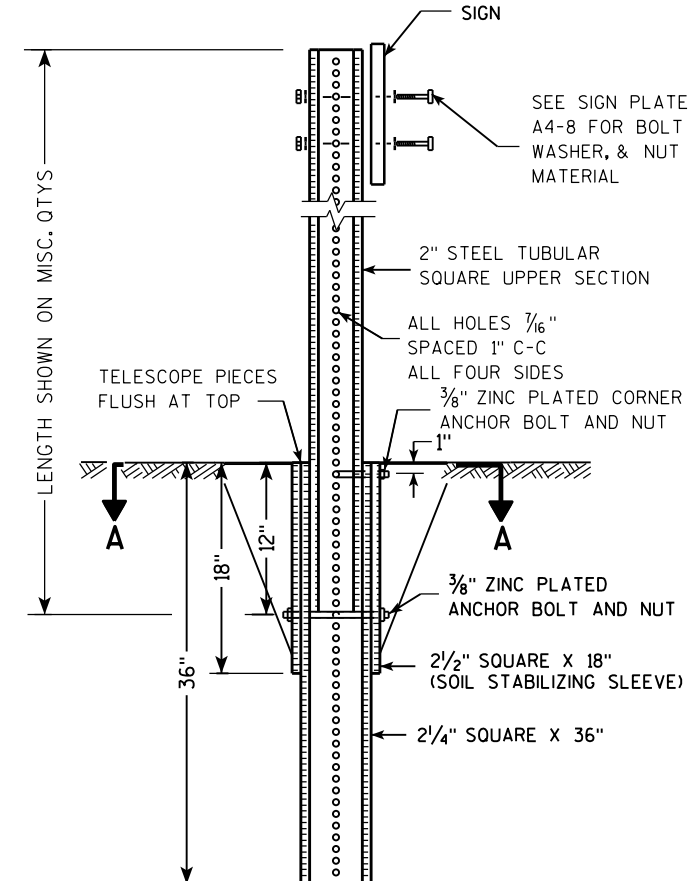
**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



**DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)**



**DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**

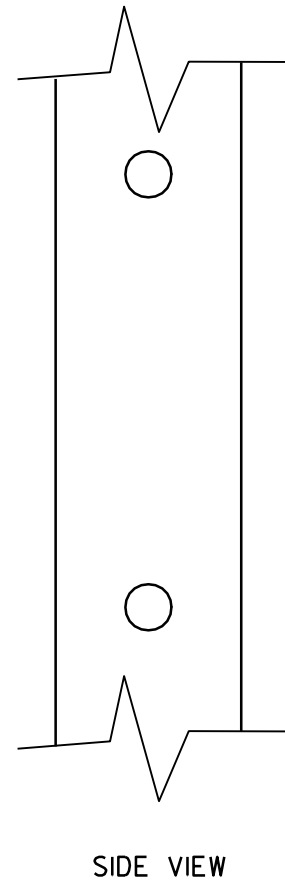
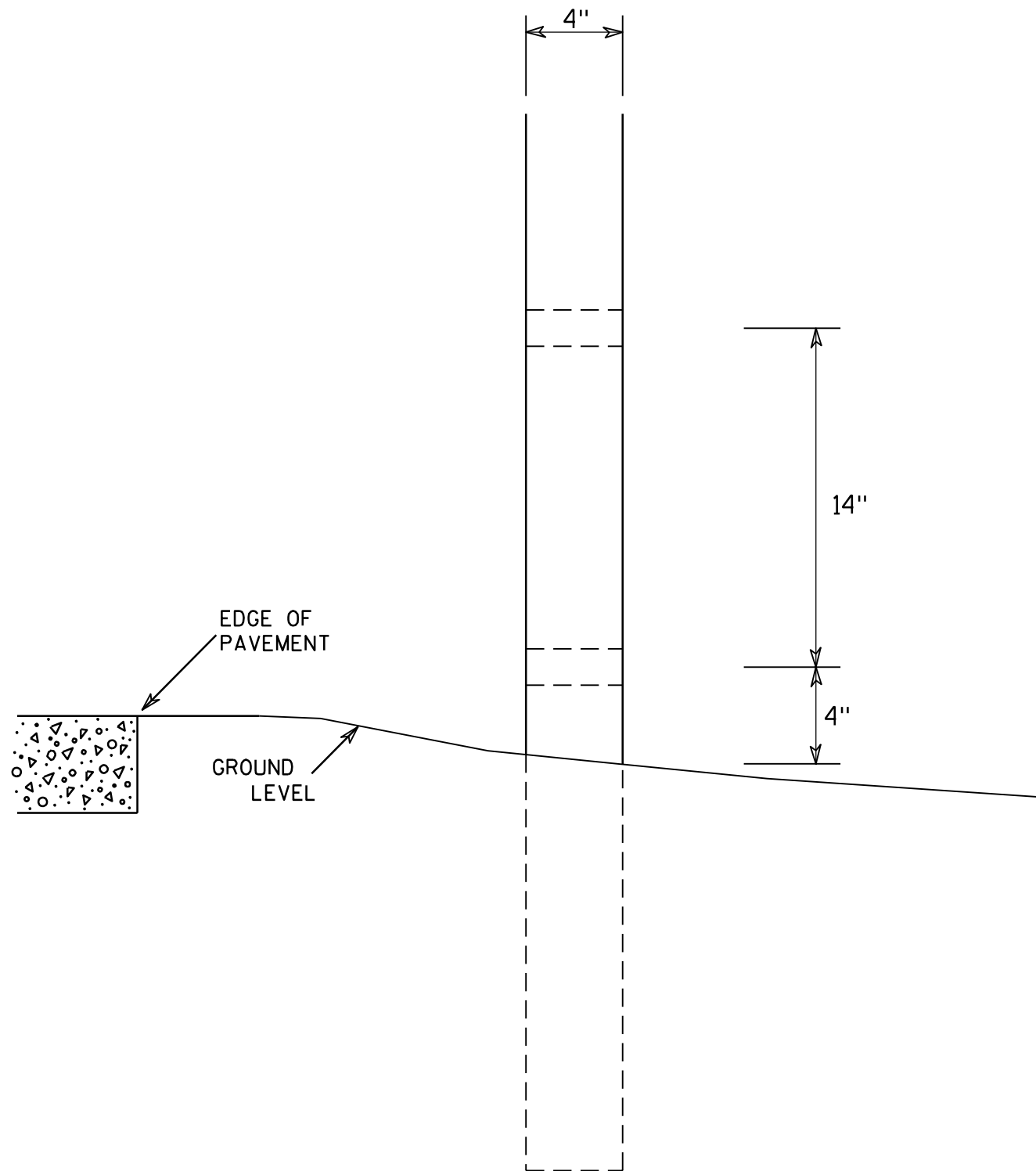


Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

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



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

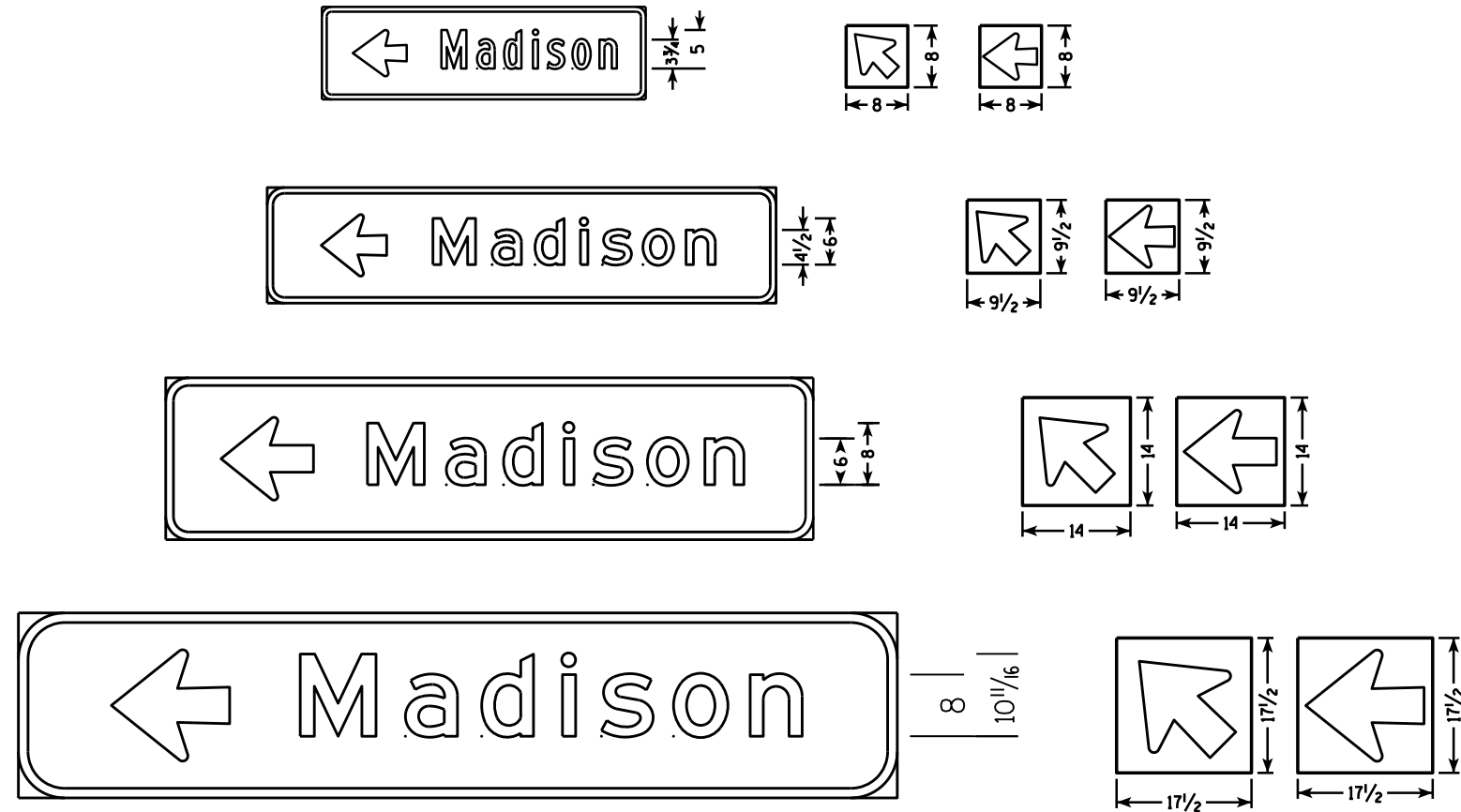
7

4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

SIGN LAYOUT WITH VARIOUS SIZED MESSAGES

GENERAL NOTES

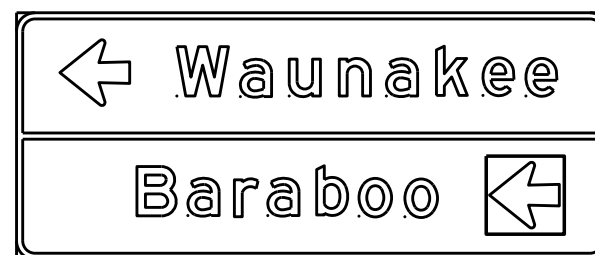
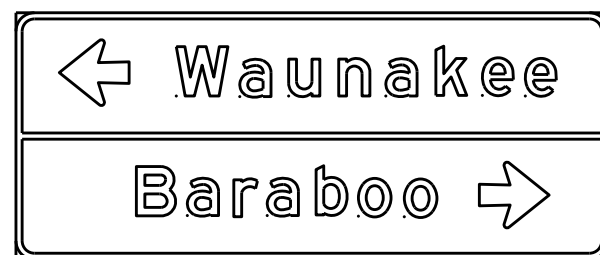
- Materials shall conform to Standard Specification Section 637.
Base - Sheet Aluminum 0.040" Thickness
Sheeting - Orange Type F Reflective
Arrow - Black Non-Reflective
- Arrow signs shall be fastened to permanent sign by either aluminum rivets or aluminum self-tapping sheet metal screws. There shall be a minimum of 2 fasteners used per arrow sign.
- There shall be a spacer consisting of a 0.08" nylon washer between the back of the arrow sign and the face of the permanent sign.
- Arrows are per standard plate A1-2
- Use separate arrow sign for each destination
- Tilt arrow is always at 45 degrees
- Arrow is centered on arrow sign



Lower Case Copy Size	Standard Width (Single Arrow)	2 Line Tilt Arrow Cover Width	3 Line Tilt Arrow Cover Width	Height
3 3/4" Series C	8	9 1/2	14 1/2	8
4 1/2" Series D & E	9 1/2	10	15	9 1/2
6" Series D & E	14	16	20 1/2	14
8" Series E	17 1/2	20 1/2	25	17 1/2

BEFORE

AFTER



DESTINATION DIRECTIONAL ARROW
FOR DETOUR SIGNS

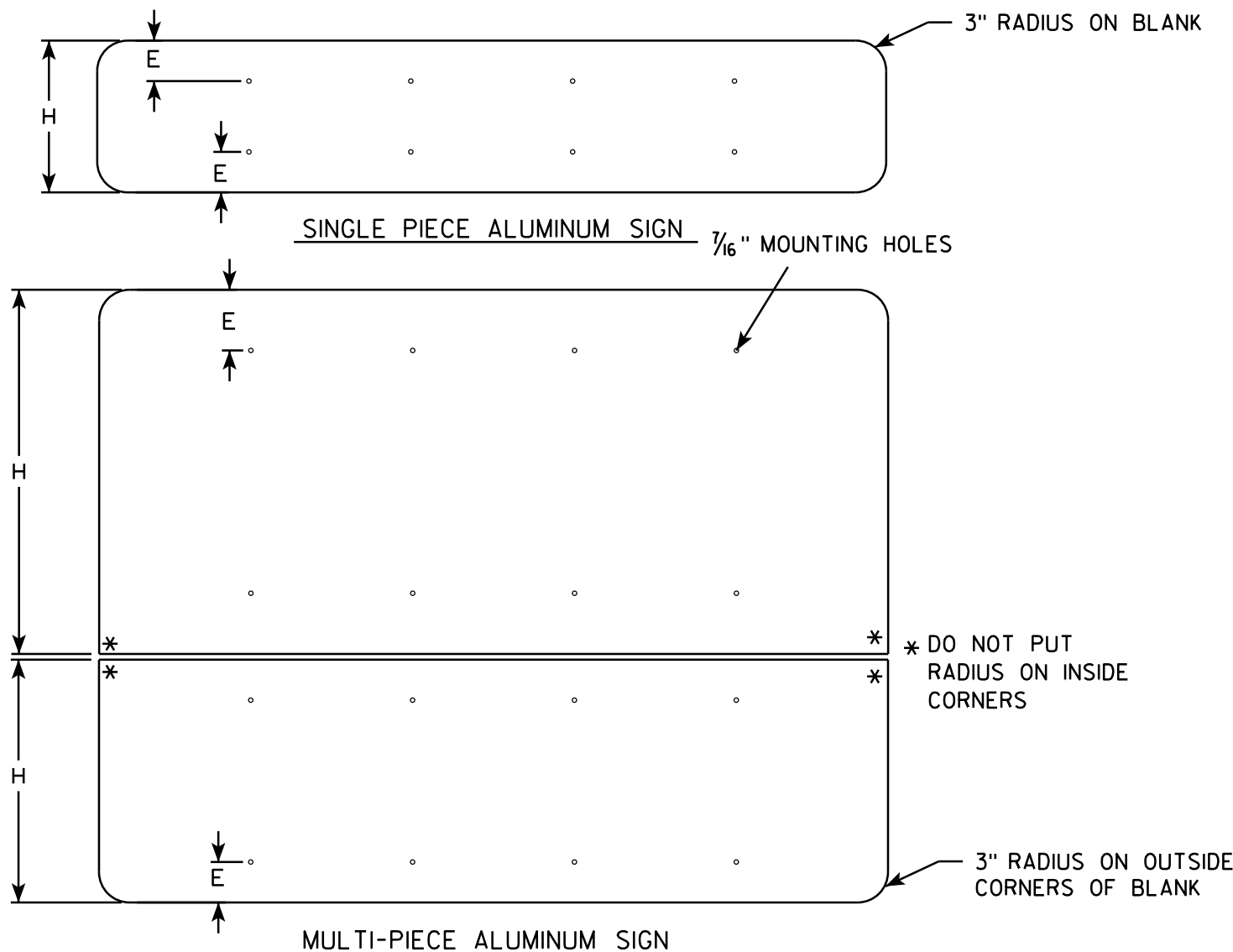
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
For State Traffic Engineer

DATE 10/08/14

PLATE NO. A4-12.2

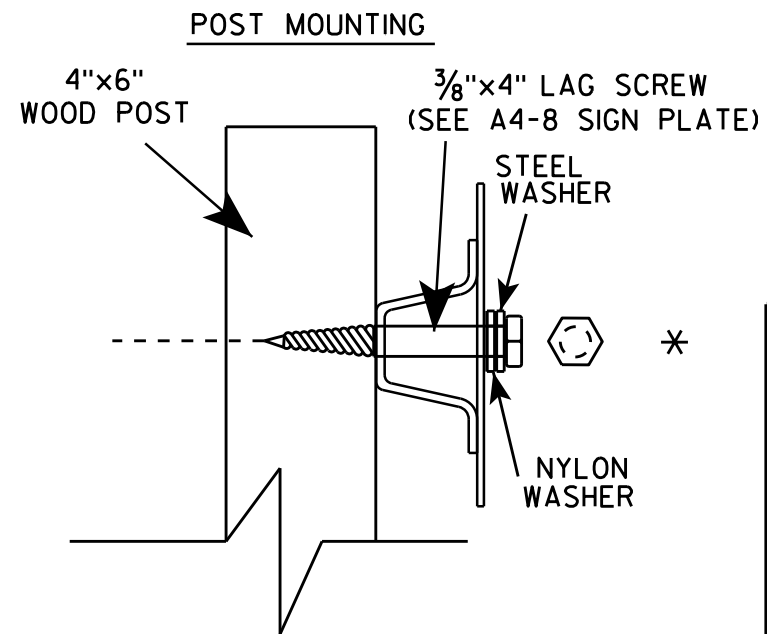
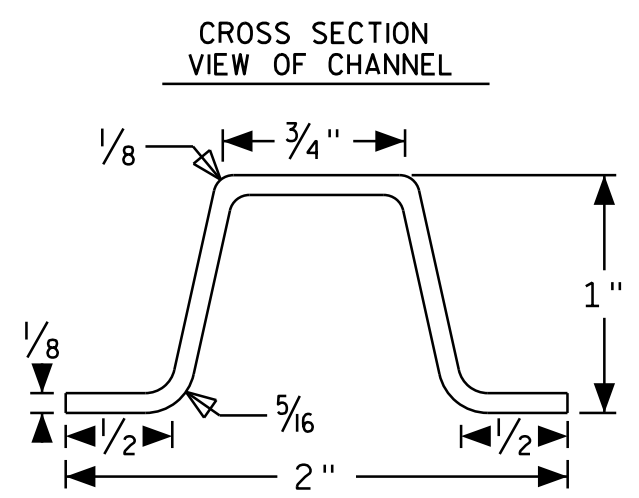
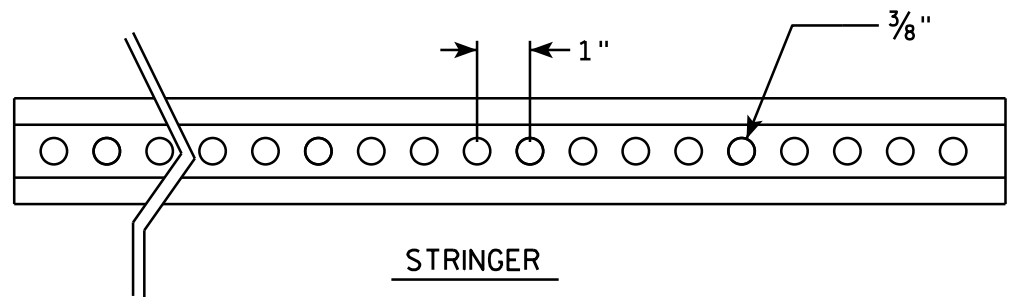


GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE $\frac{7}{16}$ " DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES
78"	72"	2	16"	15" 31" 47" 63"
84"	72"	2	17"	16 $\frac{1}{2}$ " 33 $\frac{1}{2}$ " 50 $\frac{1}{2}$ " 67 $\frac{1}{2}$ "
90"	72"	2	18"	18" 36" 54" 72"
96"	90"	2	19"	19 $\frac{1}{2}$ " 38 $\frac{1}{2}$ " 57 $\frac{1}{2}$ " 76 $\frac{1}{2}$ "
102"	90"	2	20"	21" 41" 61" 81"
108"	90"	2	21"	22 $\frac{1}{2}$ " 43 $\frac{1}{2}$ " 64 $\frac{1}{2}$ " 85 $\frac{1}{2}$ "
114"	108"	3	15"	12" 27" 42" 57" 72" 87" 102"
120"	108"	3	16"	12" 28" 44" 60" 76" 92" 108"
126"	108"	3	17"	12" 29" 46" 63" 80" 97" 114"
132"	126"	3	18"	12" 30" 48" 66" 84" 102" 120"
138"	126"	3	19"	12" 31" 50" 69" 88" 107" 126"
144"	126"	3	20"	12" 32" 52" 72" 92" 112" 132"

7



7

SIGN STRINGER MOUNTING REQUIREMENTS

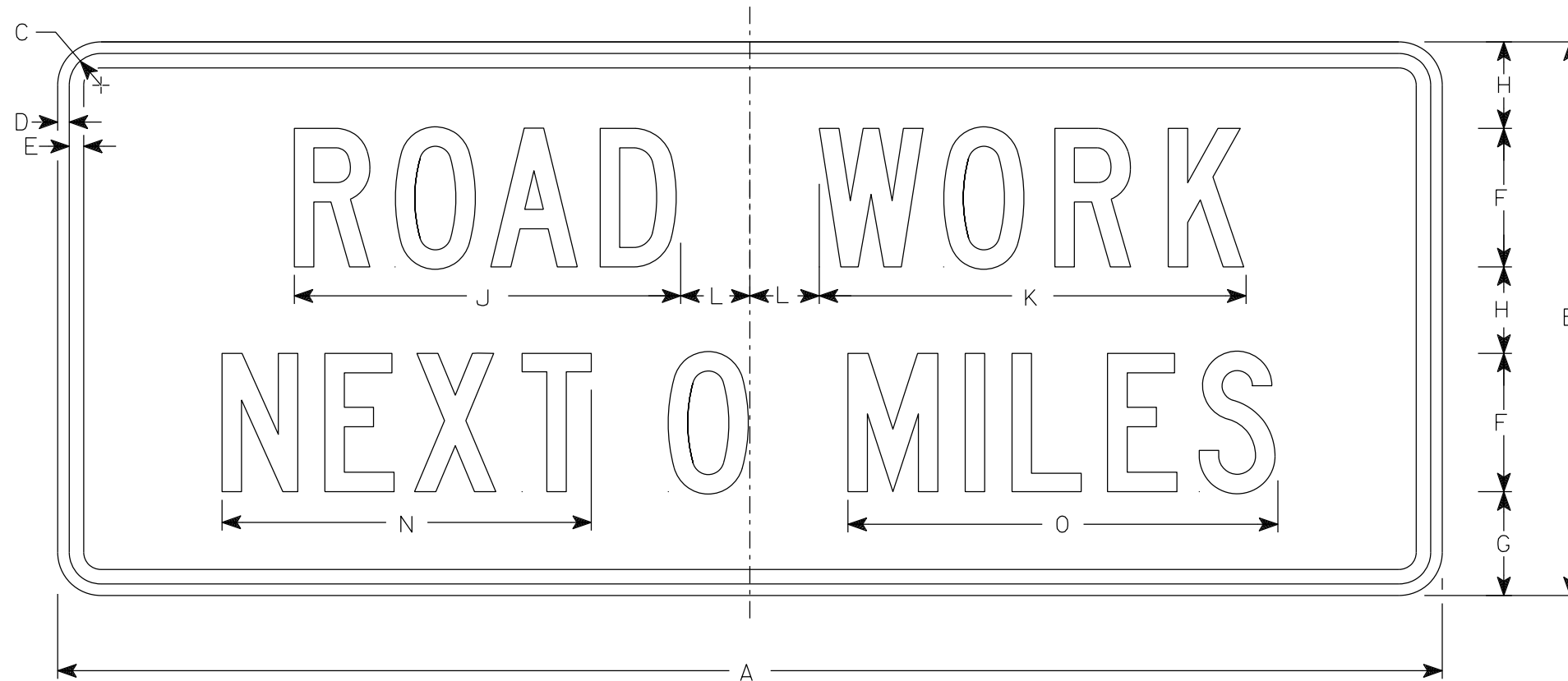
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE NO. A4-18.1

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.
5. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance



G20-1

7

7

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																												
2S	60	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8													10.0
2M	60	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8													10.0
3	60	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8													10.0
4	60	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8													10.0
5	60	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8													10.0

STANDARD SIGN
G20-1

WISCONSIN DEPT OF TRANSPORTATION

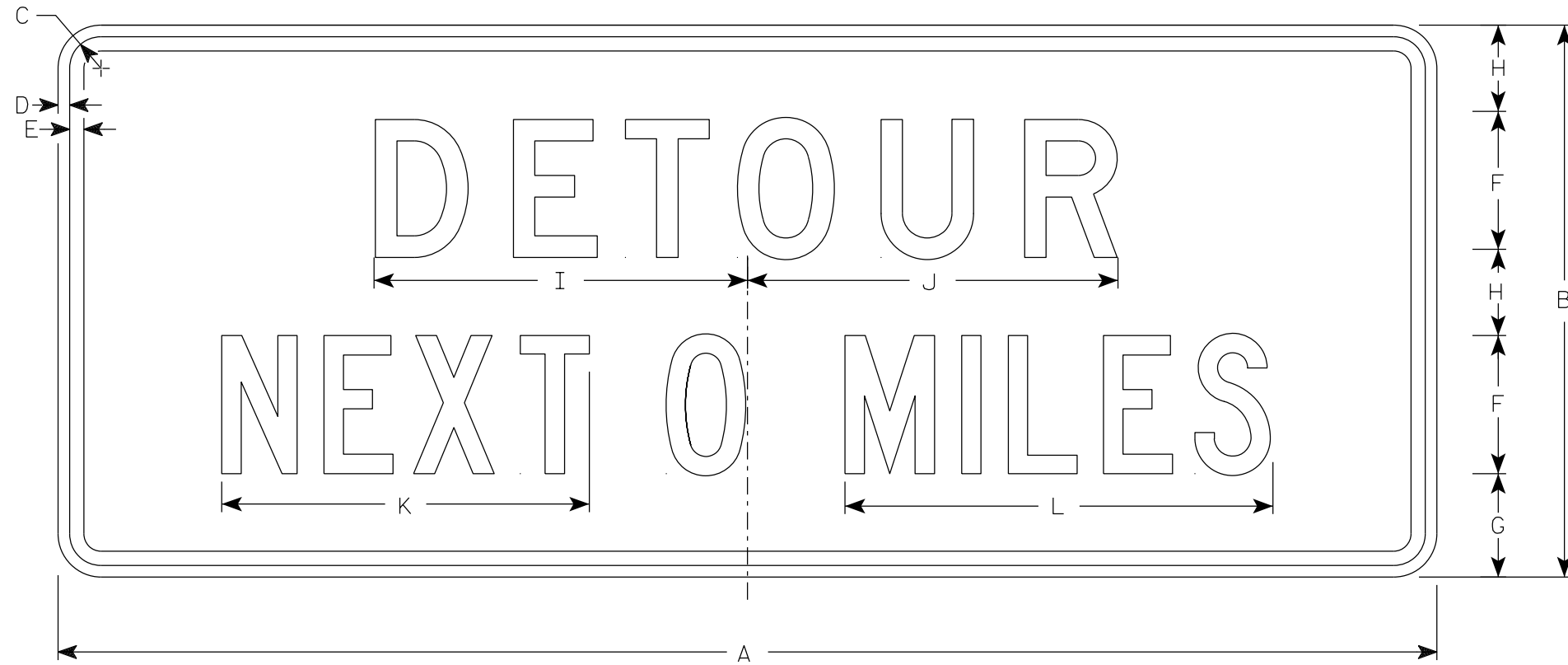
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-1.9

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 - Line 1 is D and Line 2 is 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.
5. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance



G20-51

7

7

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	60	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	16 1/4	16 1/8	16	18 5/8															10.0
2M	60	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	16 1/4	16 1/8	16	18 5/8															10.0
3	60	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	16 1/4	16 1/8	16	18 5/8															10.0
4	60	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	16 1/4	16 1/8	16	18 5/8															10.0
5	60	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	16 1/4	16 1/8	16	18 5/8															10.0

STANDARD SIGN
G20-51

WISCONSIN DEPT OF TRANSPORTATION

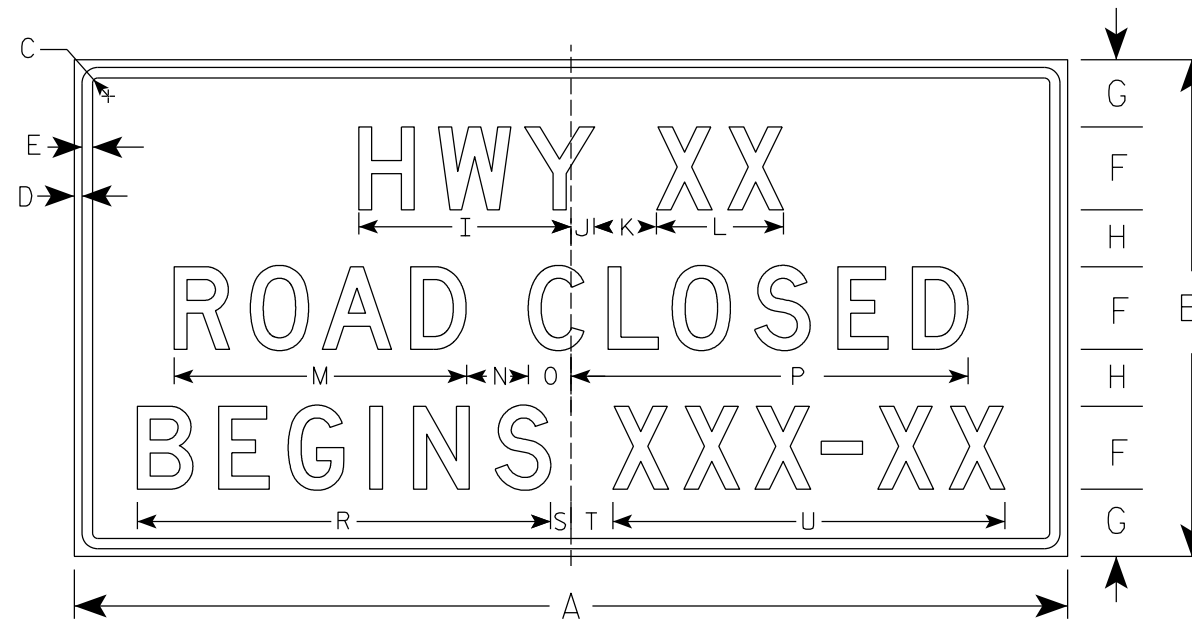
APPROVED *Matthew R. Rauch*
State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-51.3

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

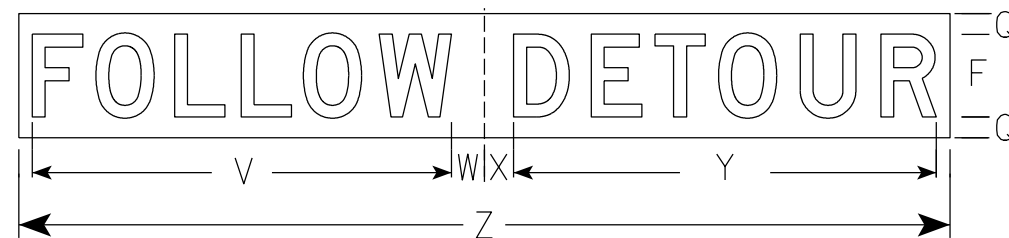
NOTES

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.



G20-57C

PLAQUE ON .040" ALUMINUM



USE ONLY ONCE WHEN ROAD IS CLOSED

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 1/8	5	2 7/8	29	2	30	1 3/4	3 1/4	28 3/8	40 1/2	2	2	29 3/4	66	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	6	4 1/8	38 3/8	2	39 7/8	2	4	37 7/8	29 3/4	3 1/8	2 7/8	40 7/8	90	32.0
5																											

STANDARD SIGN

G20-57C

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
For State Traffic Engineer

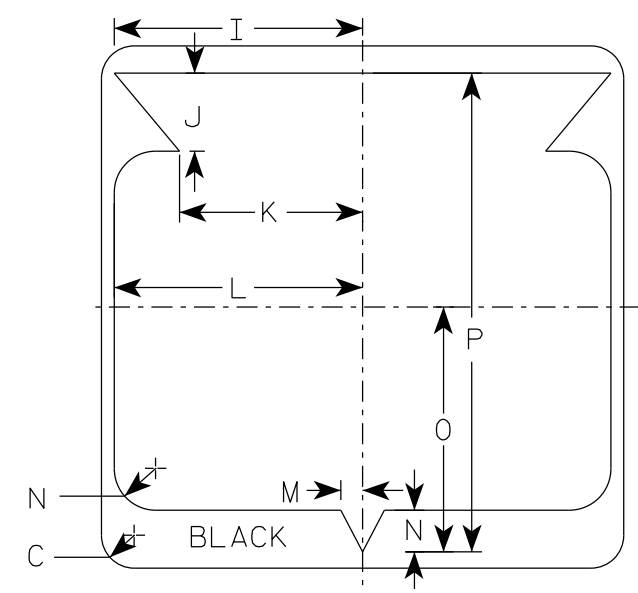
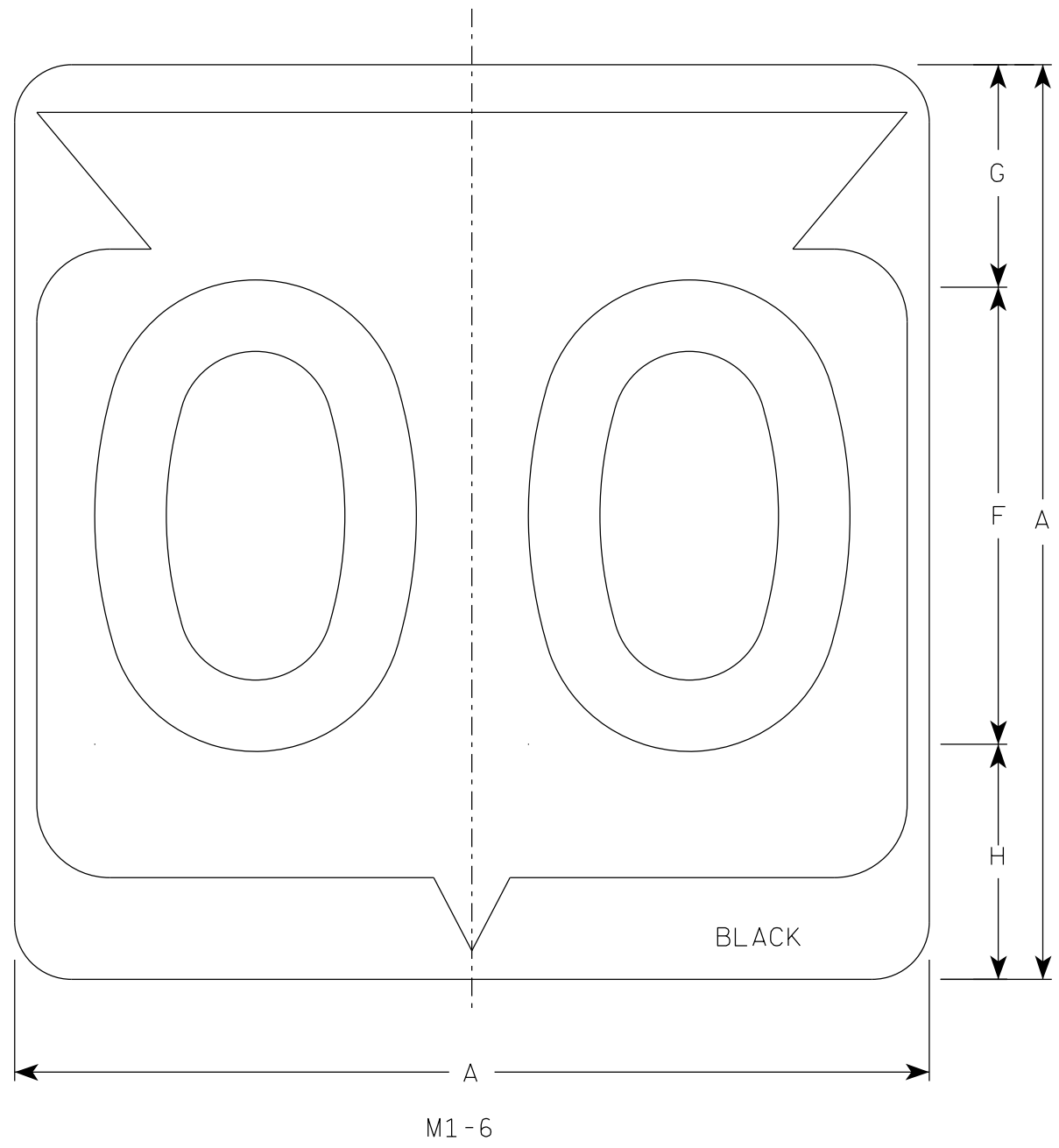
DATE 9/25/19

PLATE NO. G20-57C.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs Series C



7

7

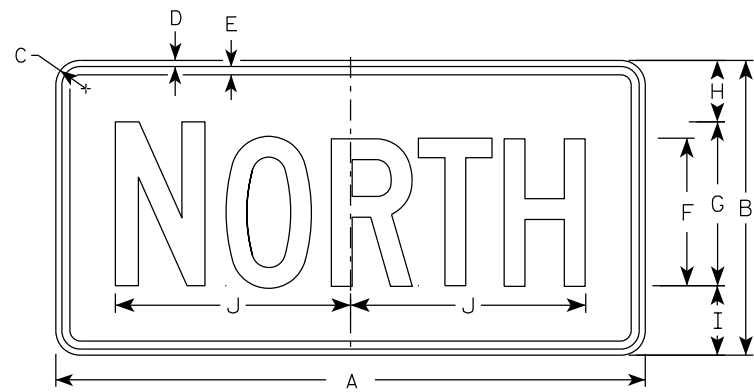
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
2M	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

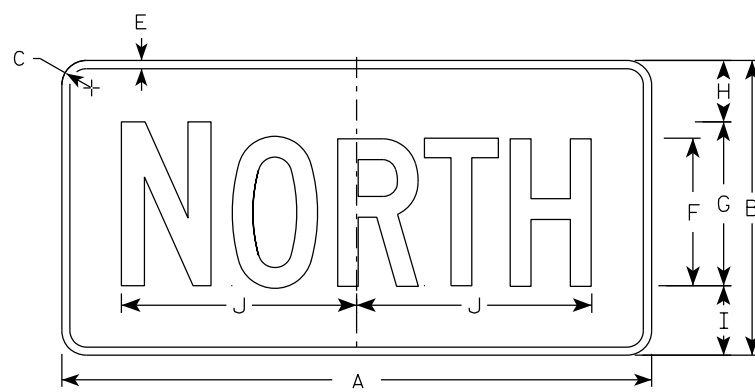
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*
for State Traffic Engineer

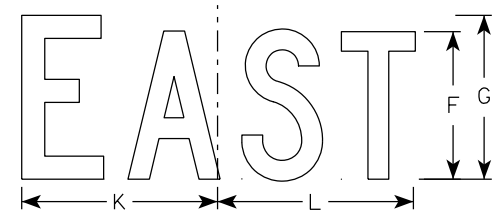
DATE 11/8/2022 PLATE NO. M1-6.11



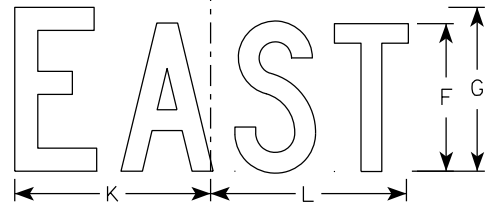
M3-1
MM3-1
MP3-1



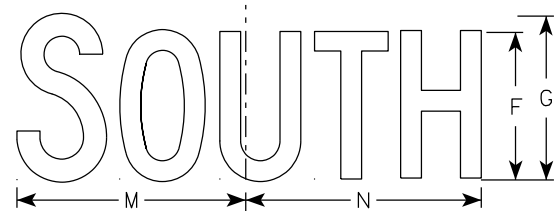
MB3-1
MK3-1
MN3-1



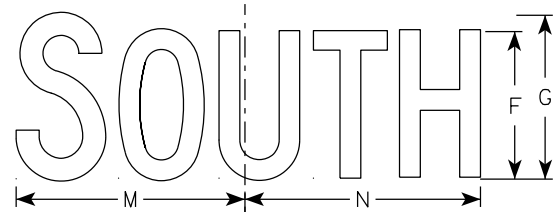
M3-2
MM3-2
MP3-2



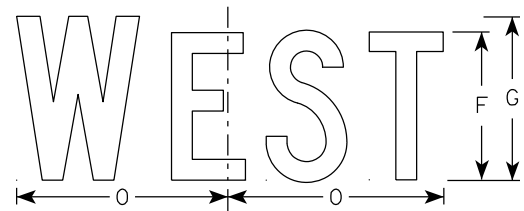
MB3-2
MK3-2
MN3-2



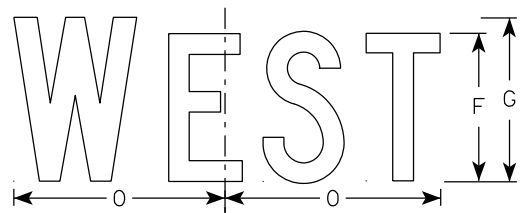
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

- All Signs Type II - Type H Reflective
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- 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.
- M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.

7

7

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																											
2S	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
2M	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

STANDARD SIGNS
M3-1 THRU M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

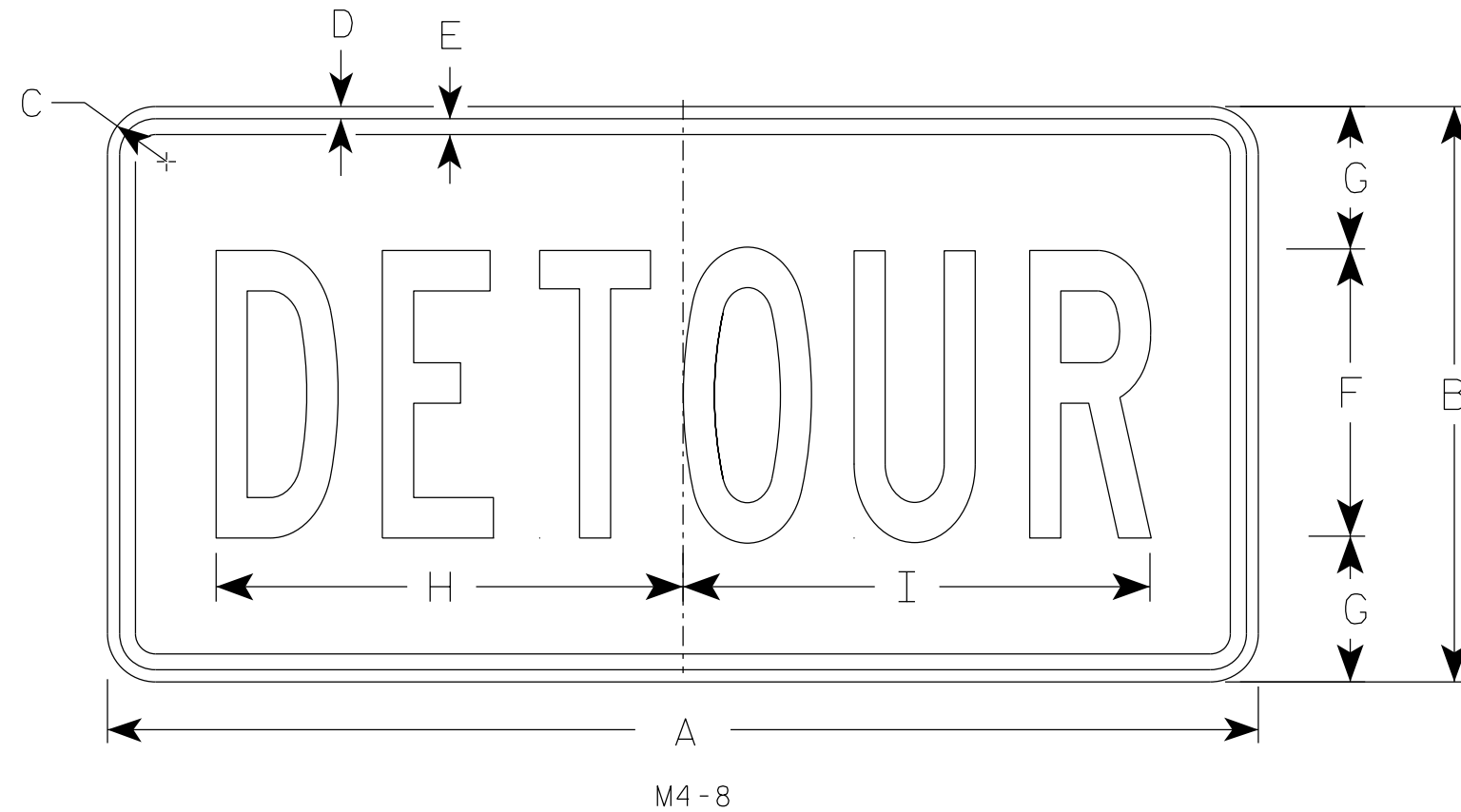
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/8/2023 PLATE NO. M3-1.15

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 - B
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.



7

7

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	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
2M	24	12	1 1/2	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
5	36	18	1 1/2	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5

STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

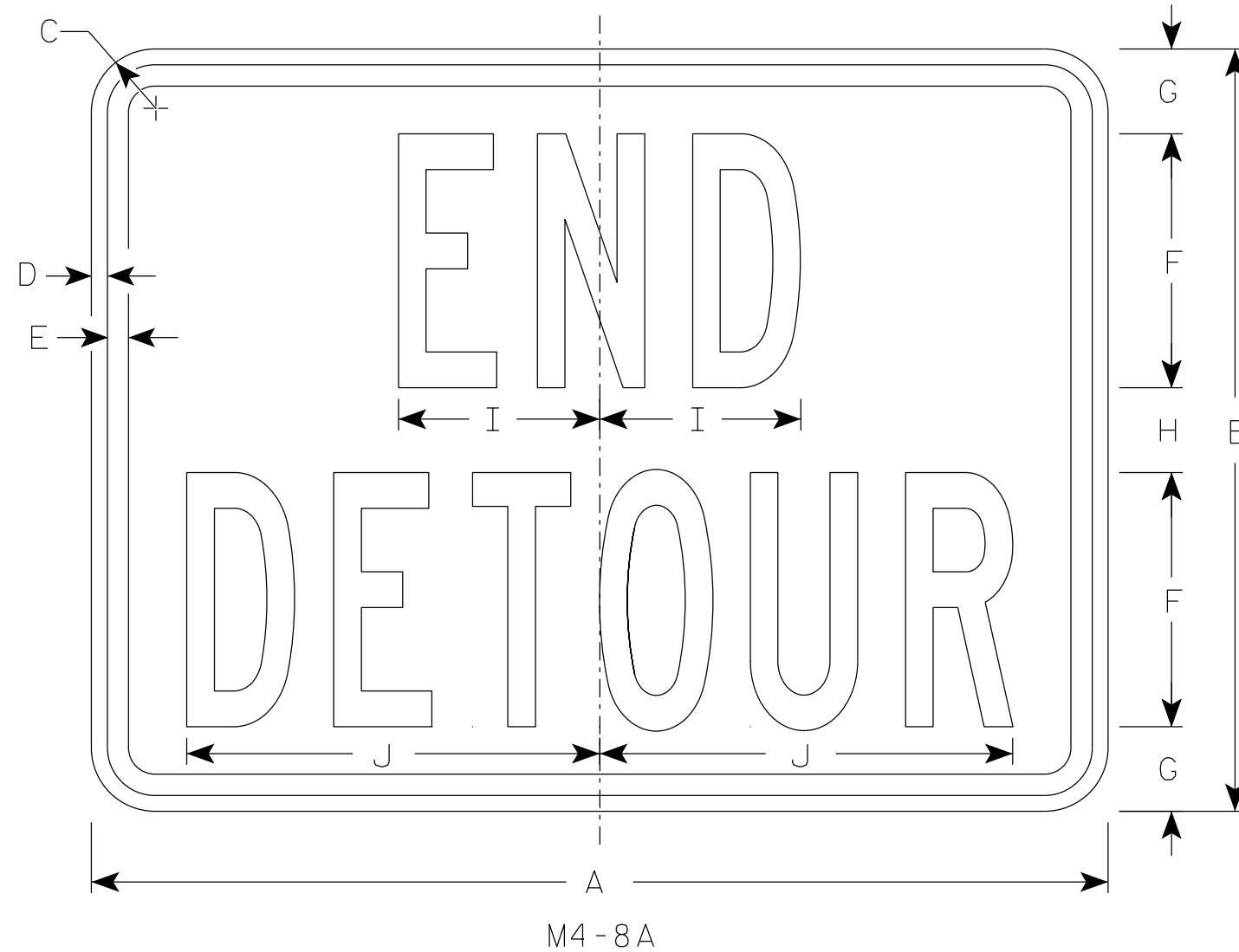
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

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 - B
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.



M4-8A

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	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
2M	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
5	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0

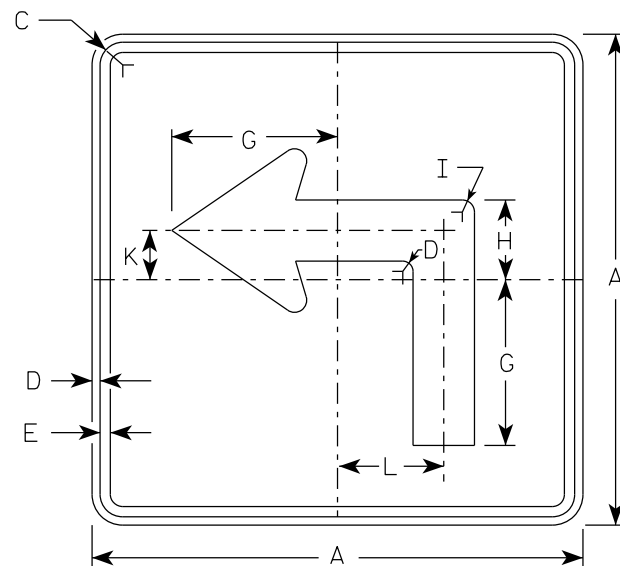
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

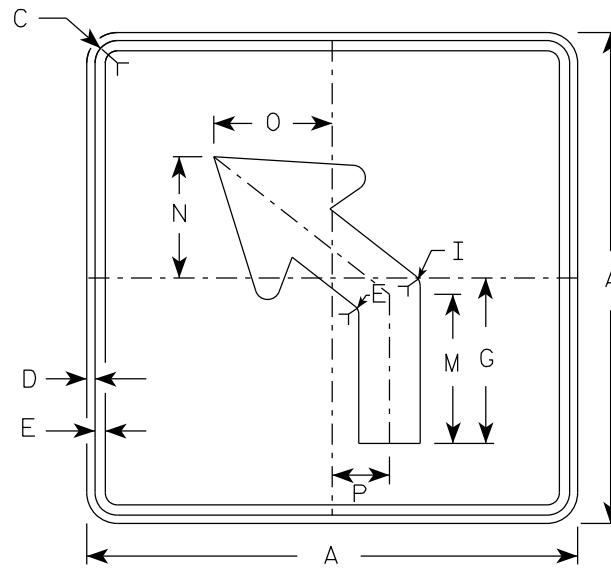
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8A.4

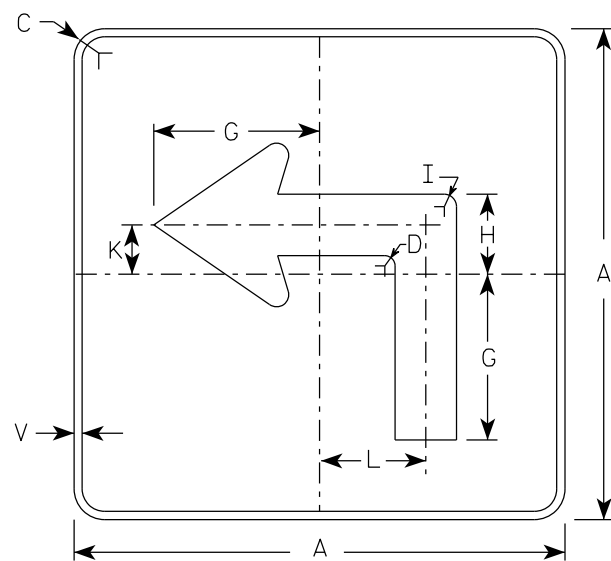
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**



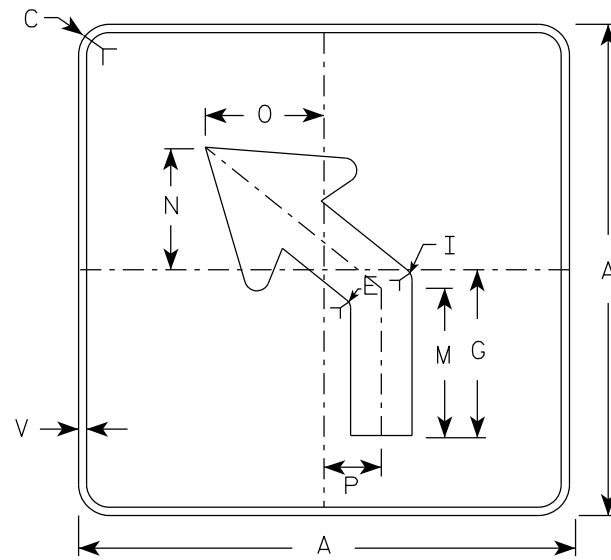
M5-1L
MM5-1L
M05-1L
MP5-1L



M5-2L
MM5-2L
M05-2L
MP5-2L

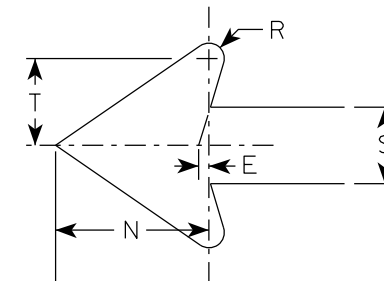


MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L

ARROW DETAIL



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 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.
- | | |
|-----------------|---|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

7

7

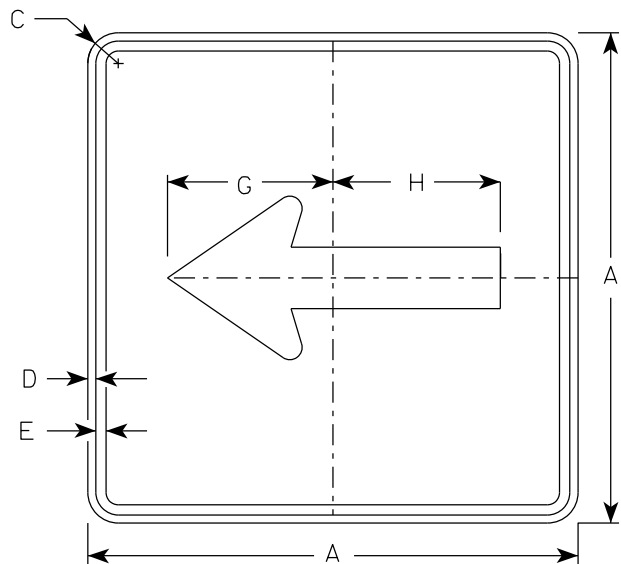
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
4	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
5	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25

STANDARD SIGN
M5-1 & M5-2

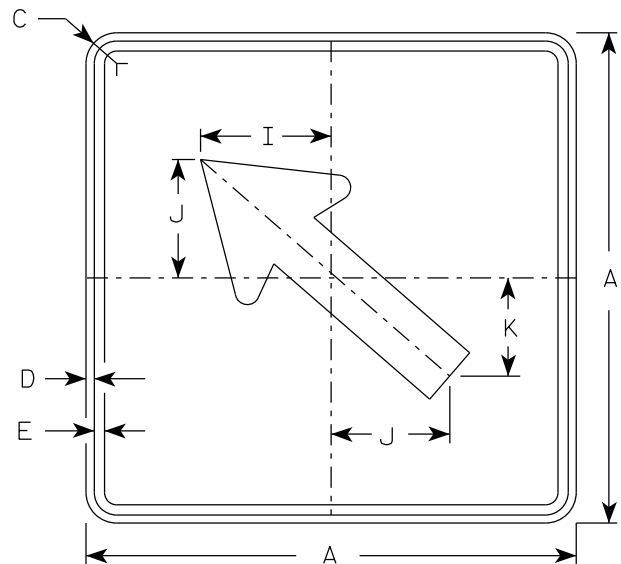
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

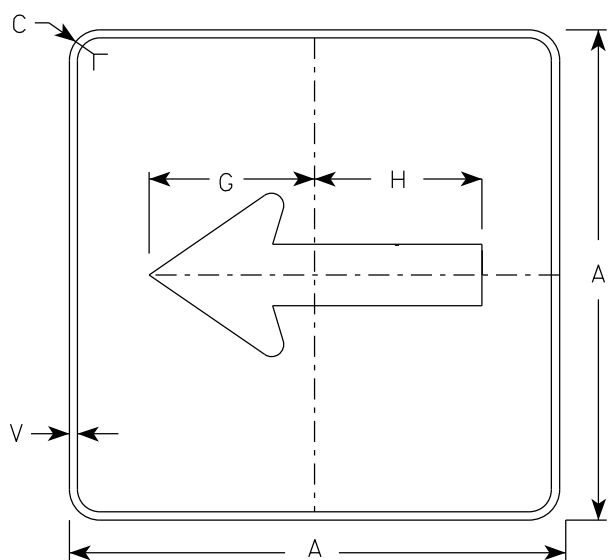
DATE 2/13/2023 PLATE NO. M5-1.15



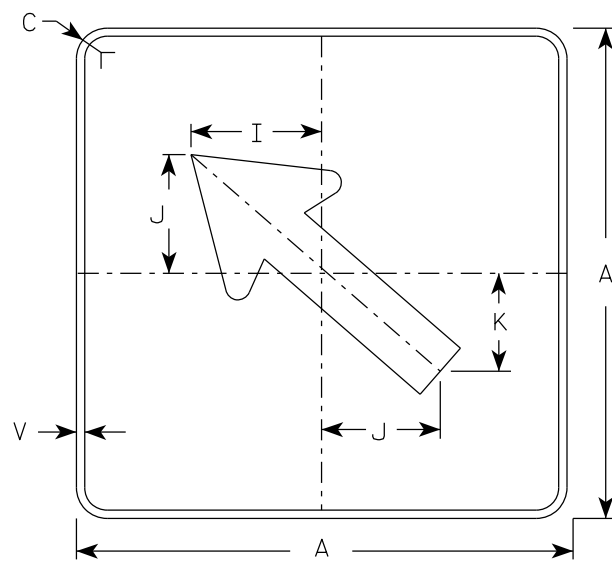
M6-1
MM6-1
M06-1
MP6-1



M6-2
MM6-2
M06-2
MP6-2



MB6-1
MK6-1
MN6-1
MR6-1

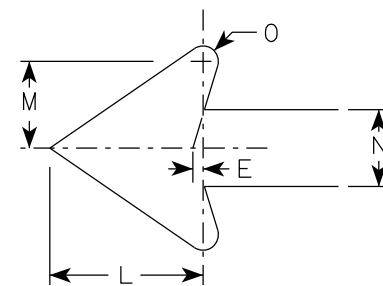


MB6-2
MK6-2
MN6-2
MR6-2

NOTES

- Signs are Type II - Type H Reflective except as Shown
- Color:
 - Background - See note 4
 - Message - See note 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.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

ARROW DETAIL



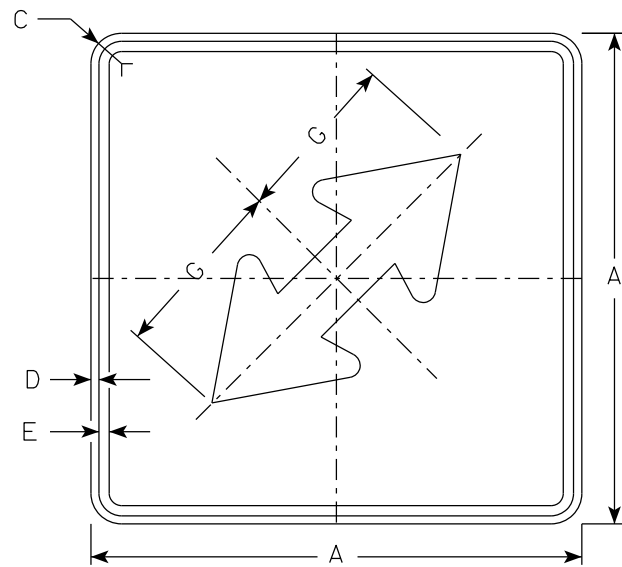
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2					3.06
2M	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2					3.06
3	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25
4	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25
5	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25

STANDARD SIGN
M6-1 & M6-2
SERIES

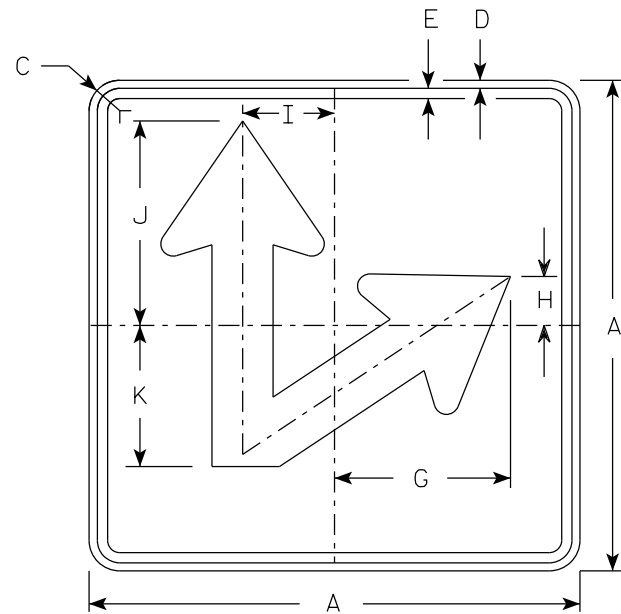
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

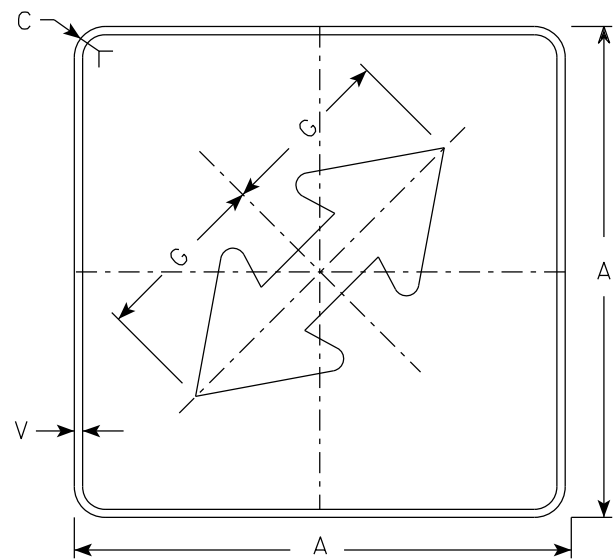
DATE 2/13/2023 PLATE NO. M6-1.16



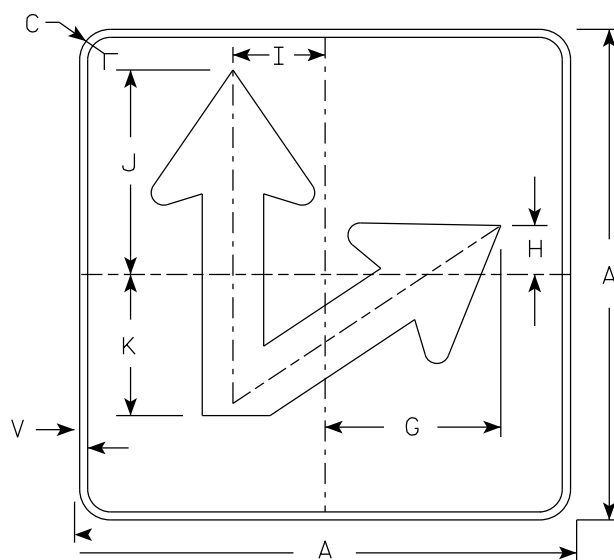
M6-5
MM6-5
M06-5
MP6-5



M6-7R
MM6-7R
M06-7R
MP6-7R



MB6-5
MK6-5
MN6-5
MR6-5

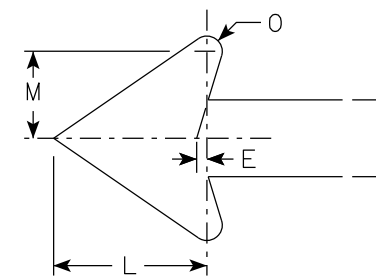


MB6-7R
MK6-7R
MN6-7R
MR6-7R

NOTES

- Sign is Type II - Type H Reflective except as Shown
- Color:
 - M6-5 and M6-7 Background - White
Message - Black
 - MB6-5 and MB6-7 Background - Blue
Message - White
 - MK6-5 and MK6-7 Background - Green
Message - White
 - MM6-5 and MM6-7 Background - White
Message - Green
 - MN6-5 and MN6-7 Background - Brown
Message - White
 - M06-5 and M06-7 Background - Orange - Type F Reflective
Message - Black
 - MP6-5 and MP6-7 Background - White
Message - Blue
 - MR6-5 and MR6-7 Background - Brown
Message - Yellow
- M6-7L same as M6-7R except arrow points ahead and left.

ARROW DETAIL



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																											
2S	21		1 1/2	3/8	3/8		7 1/2	2 1/8	4 1/4	8 3/4	6	5 1/4	3	2 5/8	1/2							1/2					3.06
2M	21		1 1/2	3/8	3/8		7 1/2	2 1/8	4 1/4	8 3/4	6	5 1/4	3	2 5/8	1/2							1/2					3.06
3	30		1 7/8	1/2	5/8		10 3/4	3	6 3/4	12 1/2	8 5/8	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25
4	30		1 7/8	1/2	5/8		10 3/4	3	6 3/4	12 1/2	8 5/8	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25
5	30		1 7/8	1/2	5/8		10 3/4	3	6 3/4	12 1/2	8 5/8	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25

STANDARD SIGN
M6-5 & M6-7
SERIES

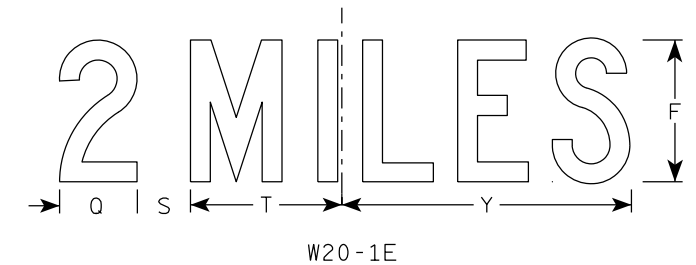
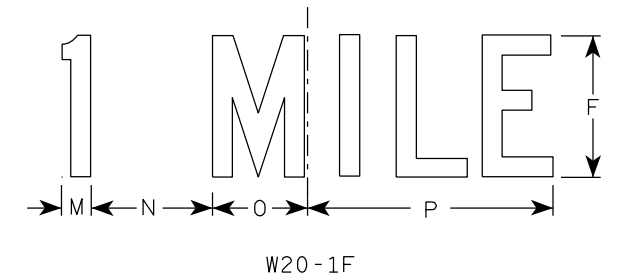
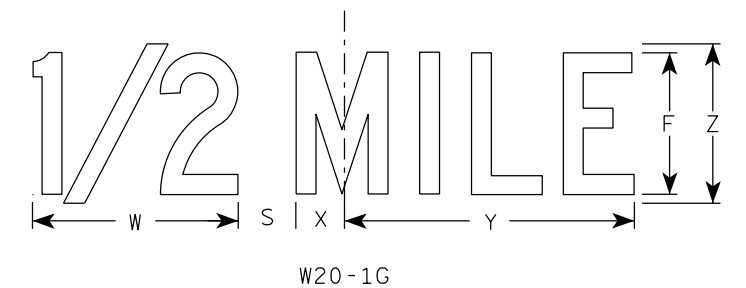
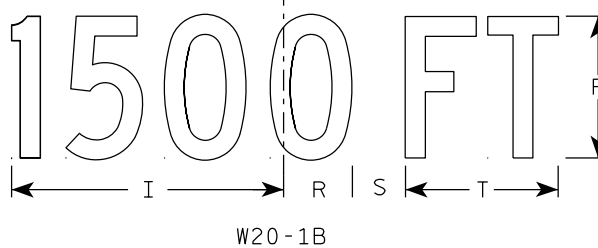
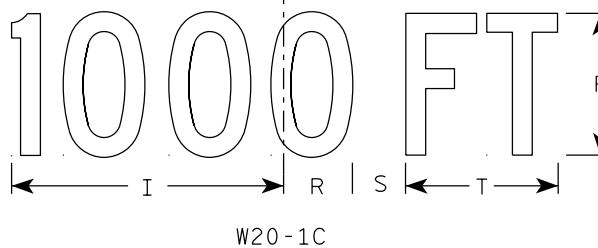
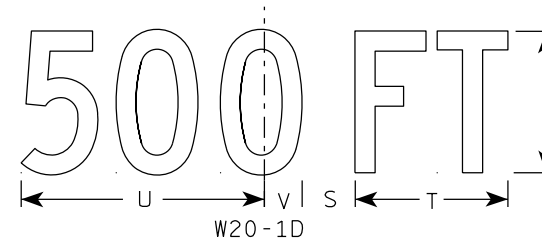
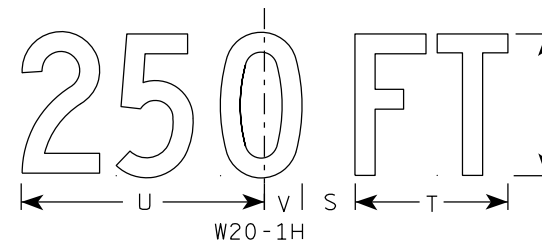
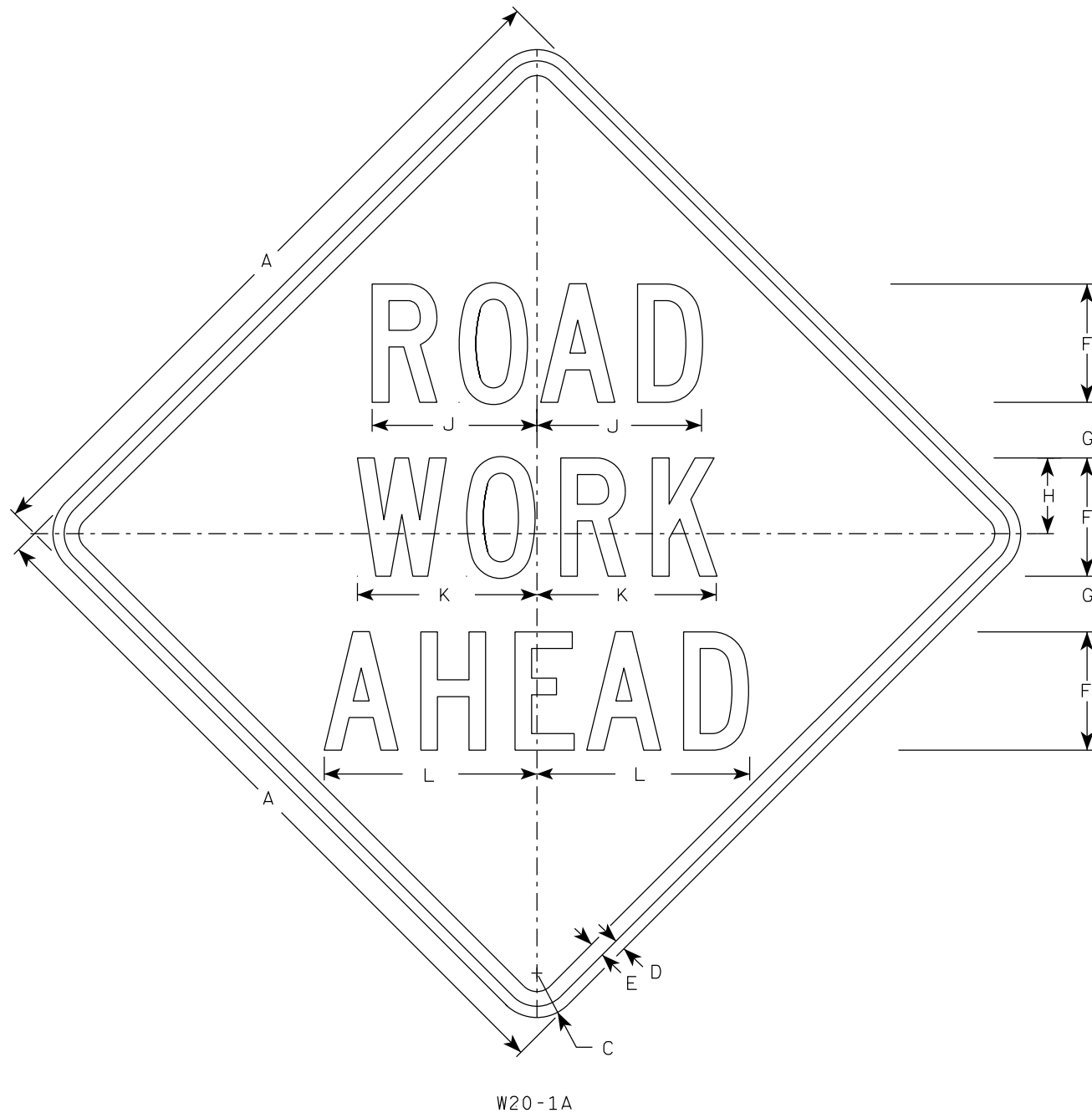
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/13/2023 PLATE NO. M6-7.11

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.



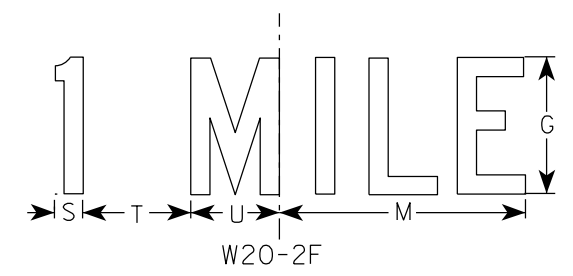
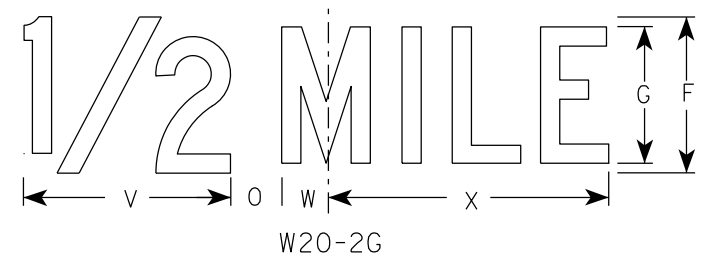
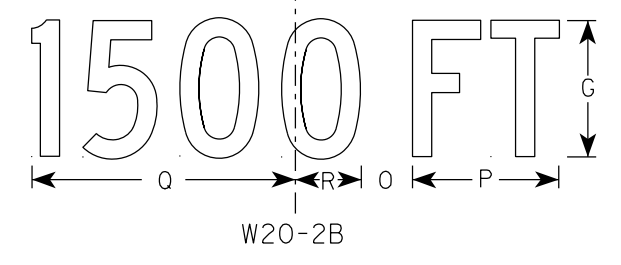
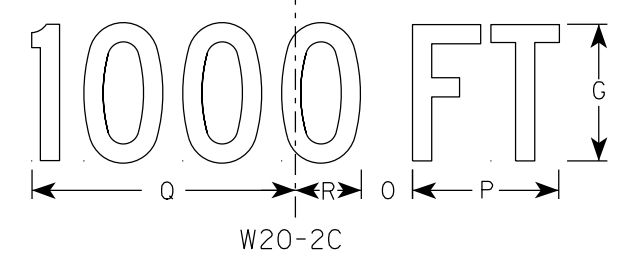
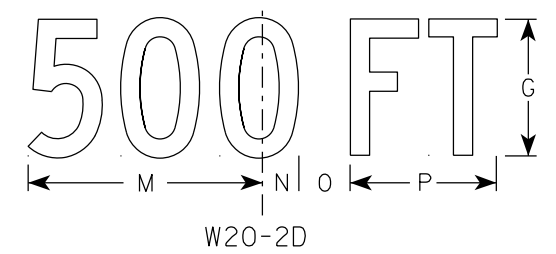
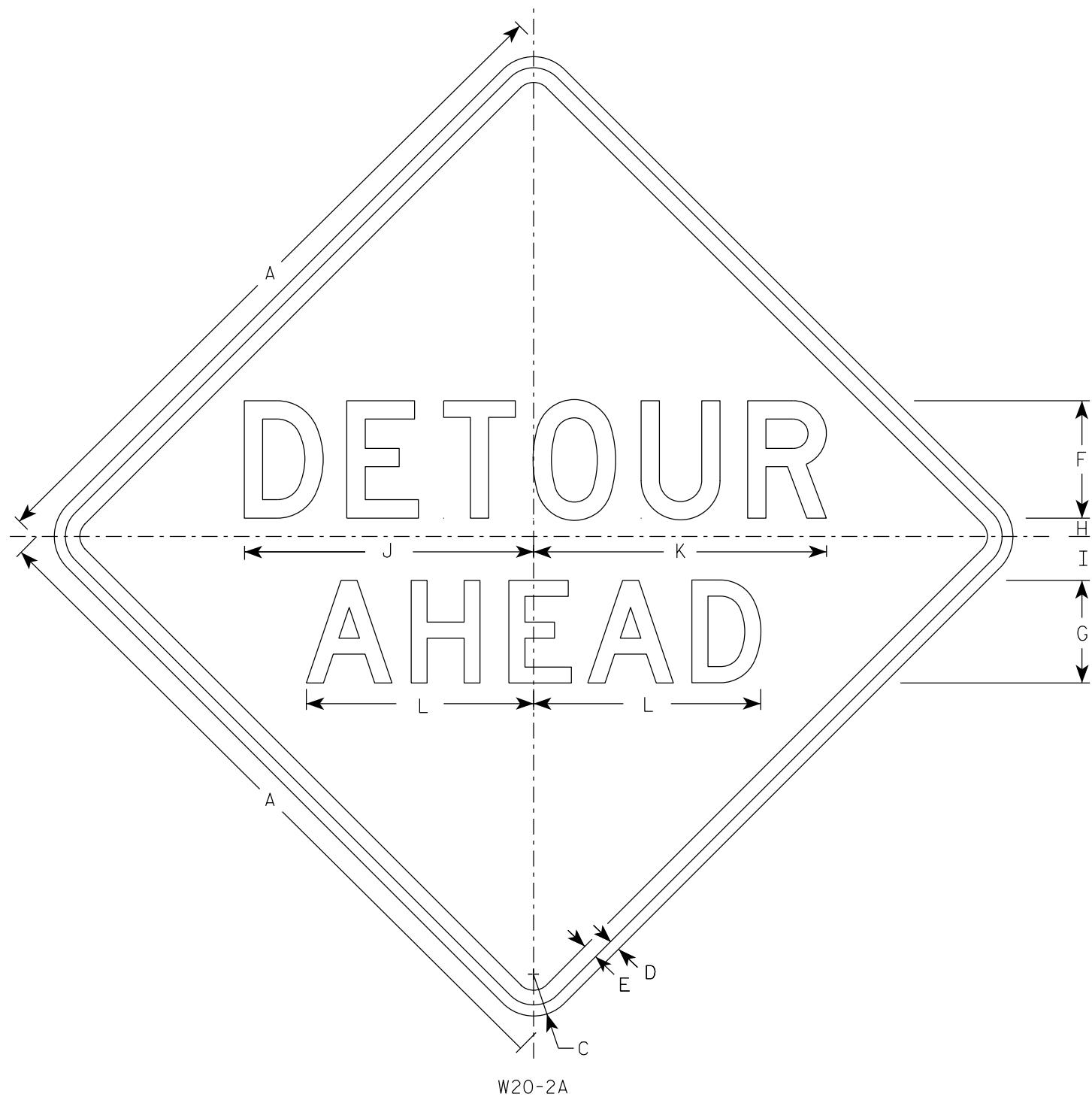
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13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

STANDARD SIGN
W20-1A, B, C, D, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-1.12



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
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.
5. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

7

7

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	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-2.7

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

DIVISION 2 - POPPLE RIVER GUARDRAIL, RT											
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOLUME (CY) (UNADJUSTED)			CUMULATIVE VOLUME (CY)			MASS ORDINATE
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	1.00	SALVAGED/ UNUSABLE PAVEMENT MATERIAL 1.00	EXPANDED FILL 1.25	
688+03	0	1	1	0	0	0	0	0	0	0	0
688+11	9	1	1	3	0	0	0	0	0	1	-1
688+50	39	1	1	6	1	1	6	2	2	8	-8
688+97	47	1	1	7	1	1	11	3	3	21	-21
689+00	3	1	1	7	0	0	1	3	3	22	-22
689+05	5	1	1	7	0	0	1	3	3	24	-24
689+50	45	2	2	8	2	2	12	6	6	39	-39
689+67	17	2	2	9	1	1	5	7	7	46	-46
689+75	9	2	2	8	1	1	3	8	8	49	-49
689+92	16	2	2	6	1	1	4	9	9	54	-54
690+00	9	2	2	5	1	1	2	9	9	56	-56
690+18	17	2	2	3	1	1	3	10	10	59	-59
690+20	2	2	2	3	0	0	0	10	10	60	-60
690+26	7	2	2	3	0	0	1	11	11	61	-61
690+28	2	2	2	2	0	0	0	11	11	61	-61
690+50	22	3	2	1	2	2	2	13	13	63	-62
691+00	50	4	2	2	6	4	3	19	16	67	-64
691+14	14	4	2	0	2	1	1	21	17	67	-64
691+31	17	0	0	1	1	1	0	22	18	68	-63
691+42	10	0	0	0	0	0	0	22	18	68	-64
691+50	8	0	0	0	0	0	0	22	18	68	-64
691+60	10	0	0	0	0	0	0	22	18	68	-64
692+00	40	4	2	2	3	2	2	25	20	70	-65
692+19	19	3	2	1	2	1	1	28	21	71	-65
692+21	2	3	2	1	0	0	0	28	21	72	-65
692+47	26	1	1	4	2	1	2	30	23	75	-67
692+50	3	1	1	5	0	0	1	30	23	75	-68
692+52	2	1	1	6	0	0	0	30	23	76	-69
692+54	2	1	1	7	0	0	0	30	23	77	-69
692+72	17	1	1	12	1	1	6	31	23	84	-77
692+80	9	1	1	13	0	0	4	31	24	89	-82
693+00	20	1	1	14	0	0	10	31	24	101	-93
693+05	5	1	1	14	0	0	3	32	24	104	-97
693+42	36	1	1	14	1	1	19	32	25	128	-121
693+50	8	1	1	13	0	0	4	33	25	134	-126
693+75	25	1	1	11	1	1	11	33	26	148	-141
694+00	25	1	1	8	1	1	8	34	26	158	-151
694+36	36	1	1	0	1	1	5	35	27	165	-157
694+50	14	0	0	0	0	0	0	35	27	165	-157
694+70	20	0	0	0	0	0	0	35	27	165	-157
					35	27	132				

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SECTION 3 SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT AREA/VOLUME. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SECTION 3 SUMMARY SHEET.
3 - EXPANDED MATERIAL	(UNEXPANDED MATERIAL)*(EXPANSION FACTOR)
4 - MASS ORDINATE	CUT - (EXPANDED FILL); POSITIVE. INDICATES AN EXCESS OF MATERIAL

DIVISION 2 - POPPLE RIVER GUARDRAIL, LT											
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOLUME (CY) (UNADJUSTED)			CUMULATIVE VOLUME (CY)			MASS ORDINATE
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	SALVAGED/ UNUSABLE PAVEMENT MATERIAL 1.00	EXPANDED FILL 1.25	
688+11	0	1	1	0	0	0	0	0	0	0	0
688+50	39	1	1	12	1	1	9	1	1	11	-11
688+97	47	1	1	10	2	2	19	3	3	35	-35
689+00	3	1	1	10	0	0	1	4	4	37	-37
689+05	5	2	2	10	0	0	2	4	4	39	-39
689+50	45	2	2	8	3	3	14	6	6	57	-57
689+67	17	1	1	7	1	1	5	7	7	63	-63
689+75	9	1	1	7	0	0	2	8	8	66	-66
689+92	16	1	1	4	1	1	3	8	8	70	-70
690+00	9	1	1	2	0	0	1	9	9	71	-71
690+18	17	2	2	0	1	1	1	10	10	72	-72
690+20	2	2	2	0	0	0	0	10	10	72	-72
690+26	7	2	2	0	0	0	0	10	10	72	-72
690+28	2	2	2	0	0	0	0	11	11	72	-72
690+50	22	4	2	0	2	2	0	13	12	72	-71
691+00	50	3	2	0	6	4	0	19	16	73	-69
691+14	14	0	0	0	1	1	0	20	16	73	-69
691+31	17	0	0	0	0	0	0	20	16	73	-69
691+42	10	0	0	1	0	0	0	20	16	73	-70
691+50	8	1	1	2	0	0	1	20	17	74	-70
691+60	10	3	2	2	1	1	1	21	17	75	-71
692+00	40	4	2	0	5	3	2	26	20	77	-71
692+19	19	3	2	0	2	1	0	28	22	77	-71
692+21	2	3	2	0	0	0	0	28	22	77	-71
692+47	26	3	2	1	3	2	1	31	24	78	-71
692+50	3	2	2	1	0	0	0	31	24	78	-71
692+52	2	2	2	2	0	0	0	31	24	78	-71
692+54	2	2	2	2	0	0	0	31	24	79	-72
692+72	17	1	1	5	1	1	2	32	25	81	-74
692+80	9	1	1	7	0	0	2	33	26	84	-77
693+00	20	1	1	11	1	1	6	34	27	91	-84
693+05	5	1	1	12	0	0	2	34	27	94	-87
693+42	36	1	1	11	1	1	15	35	28	113	-106
693+50	8	1	1	10	0	0	3	35	28	117	-110
693+75	25	1	1	8	1	1	9	36	29	128	-121
694+00	25	1	1	6	1	1	6	37	30	136	-129
694+36	36	1	1	3	2	2	5	39	32	143	-136
694+50	14	1	1	1	1	1	1	40	33	144	-137
694+70	20	2	2	0	1	1	1	41	34	145	-138
				41	34	116					

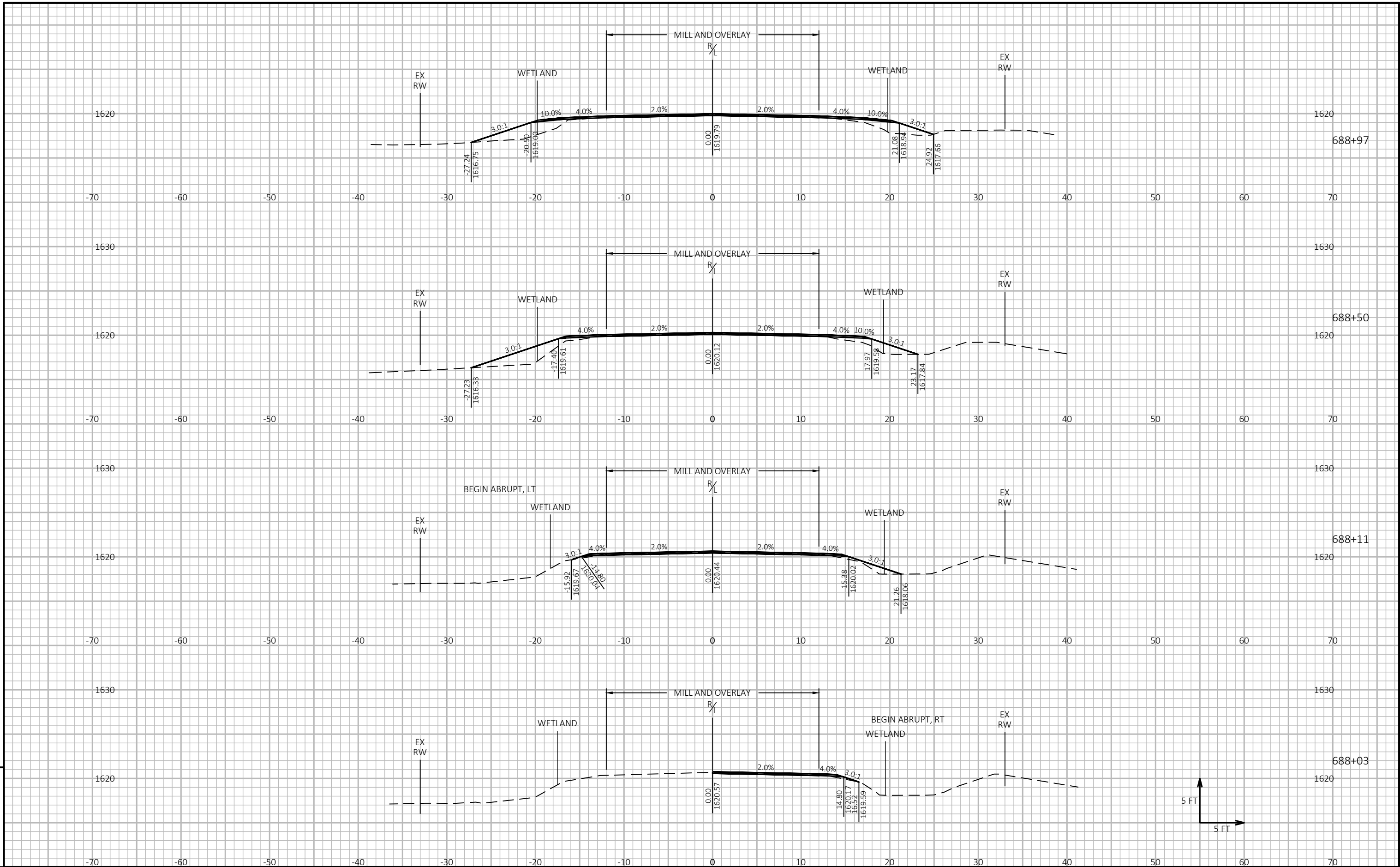
DIVISION 2 - JONES CREEK GUARDRAIL, RT											
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOLUME (CY) (UNADJUSTED)			CUMULATIVE VOLUME (CY)			MASS ORDINATE
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	EXPANDED FILL	
								1.00	1.00	1.25	
914+98	0	1	1	0	0	0	0	0	0	0	0
915+25	27	8	2	0	5	2	0	5	2	0	3
915+43	18	13	2	0	7	1	0	12	3	0	9
915+50	7	15	2	0	4	1	0	15	3	0	12
915+75	25	2	2	1	8	2	0	23	5	1	17
916+00	25	1	1	7	1	1	3	25	7	5	13
916+03	3	1	1	8	0	0	1	25	7	6	12
916+15	12	0	0	24	0	0	7	25	7	15	3
916+28	13	0	0	21	0	0	10	25	7	28	-10
916+50	22	0	0	11	0	0	13	25	7	44	-26
916+54	4	0	0	11	0	0	2	26	7	46	-28
916+65	11	0	0	12	0	0	5	26	7	52	-34
916+90	25	1	1	7	1	1	9	26	8	64	-45
917+00	10	2	2	7	0	0	2	27	9	67	-48
917+16	16	4	2	9	2	1	5	29	10	73	-54
917+50	34	3	2	9	4	2	12	33	12	87	-67
917+59	9	1	1	5	1	1	2	33	13	90	-70
917+67	8	0	0	0	0	0	1	33	13	91	-71
917+94	27	0	0	0	0	0	0	33	13	91	-71
918+00	6	1	1	3	0	0	0	34	13	92	-71
918+50	50	2	2	2	3	3	5	37	16	98	-78
919+00	50	0	0	7	2	2	8	39	18	108	-88
919+03	3	0	0	7	0	0	1	39	18	110	-89
919+05	2	0	0	7	0	0	1	39	18	110	-90
919+16	11	0	0	9	0	0	3	39	18	114	-94
919+18	2	0	0	9	0	0	1	39	19	115	-94
919+31	13	0	0	11	0	0	5	39	19	121	-101
919+44	13	1	1	12	0	0	6	39	19	128	-108
919+50	6	1	1	13	0	0	3	40	19	132	-111
919+56	6	1	1	13	0	0	3	40	19	136	-115
919+69	13	1	1	14	0	0	6	40	20	144	-123
920+00	31	1	1	0	1	1	8	41	21	154	-133
920+08	8	2	2	0	1	1	0	42	21	154	-134
920+29	21	1	1	0	1	1	0	43	23	154	-134
920+50	21	0	0	0	0	0	0	43	23	154	-134
920+61	11	0	0	0	0	0	0	43	23	154	-134
					43	23	123				

DIVISION 2 - JONES CREEK GUARDRAIL, LT											
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOLUME (CY) (UNADJUSTED)			CUMULATIVE VOLUME (CY)			MASS ORDINATE
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT 1.00	SALVAGED/ UNUSABLE PAVEMENT MATERIAL 1.00	EXPANDED FILL 1.25	
915+75	0	1	1	0	0	0	0	0	0	0	0
916+00	25	2	2	0	1	1	0	1	1	0	0
916+03	3	2	2	0	0	0	0	2	2	0	0
916+15	12	2	2	0	1	1	0	2	2	0	0
916+28	13	2	2	1	1	1	0	3	3	1	-1
916+50	22	2	2	1	1	1	1	4	4	2	-2
916+54	4	2	2	1	0	0	0	5	5	2	-2
916+65	11	2	2	0	1	1	0	5	5	2	-2
916+90	25	4	2	0	3	2	0	8	7	2	-1
917+00	10	4	2	1	1	1	0	10	8	3	-1
917+16	16	4	2	1	2	1	1	12	9	4	-1
917+50	34	3	2	6	5	2	4	17	12	9	-4
917+59	9	2	2	4	1	1	2	18	12	11	-6
917+67	8	0	0	0	0	0	1	18	13	12	-7
917+94	27	0	0	0	0	0	0	18	13	12	-7
918+00	6	1	1	1	0	0	0	18	13	12	-7
918+50	50	0	0	5	2	2	6	19	14	20	-14
919+00	50	0	0	4	0	0	9	20	15	31	-25
919+03	3	0	0	4	0	0	1	20	15	31	-26
919+05	2	0	0	5	0	0	0	20	15	32	-26
919+16	11	0	0	5	0	0	2	20	15	34	-29
919+18	2	0	0	5	0	0	0	20	15	35	-29
919+31	13	0	0	7	0	0	3	20	15	38	-33
919+44	13	0	0	10	0	0	4	20	15	43	-38
919+50	6	0	0	10	0	0	2	20	15	46	-41
919+56	6	0	0	10	0	0	2	20	15	49	-44
919+69	13	5	2	7	1	0	4	21	15	54	-48
920+00	31	11	2	5	9	2	7	30	17	62	-50
920+08	8	11	2	5	4	1	2	34	18	65	-49
920+29	21	10	2	5	8	2	4	42	19	69	-47
920+50	21	4	2	3	6	2	3	48	21	73	-46
920+61	11	0	0	0	1	0	1	49	21	74	-47

49	21	59
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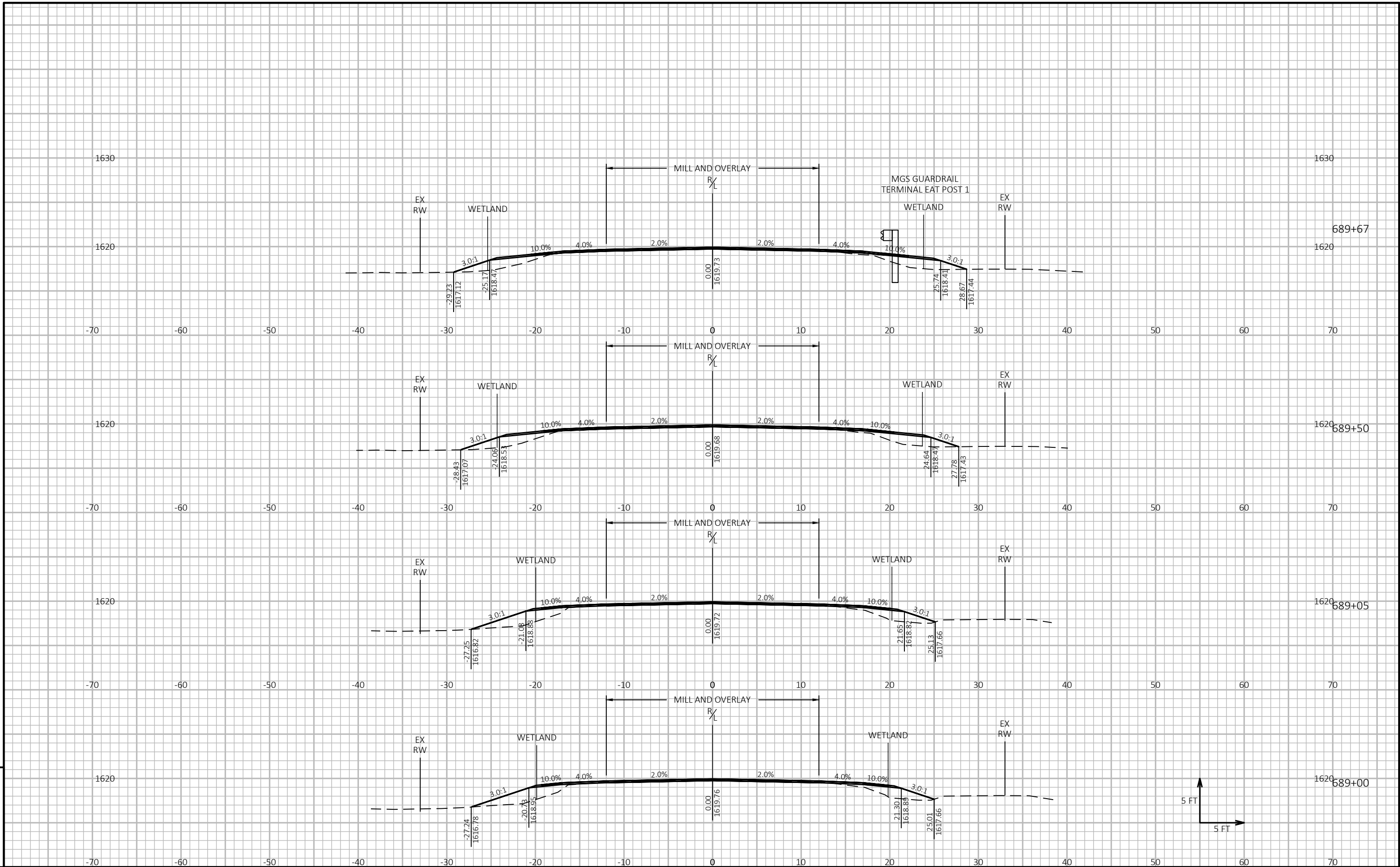
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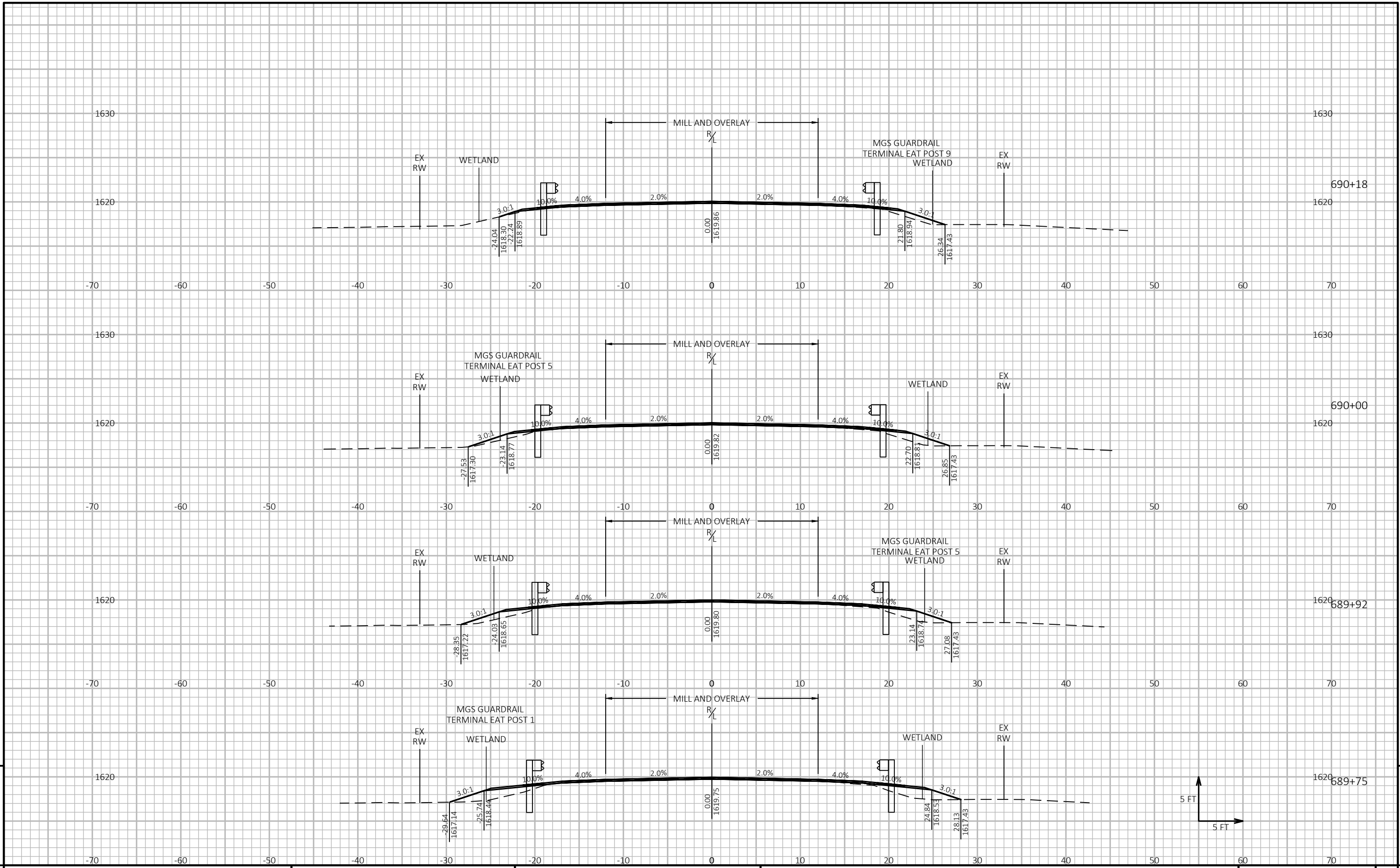
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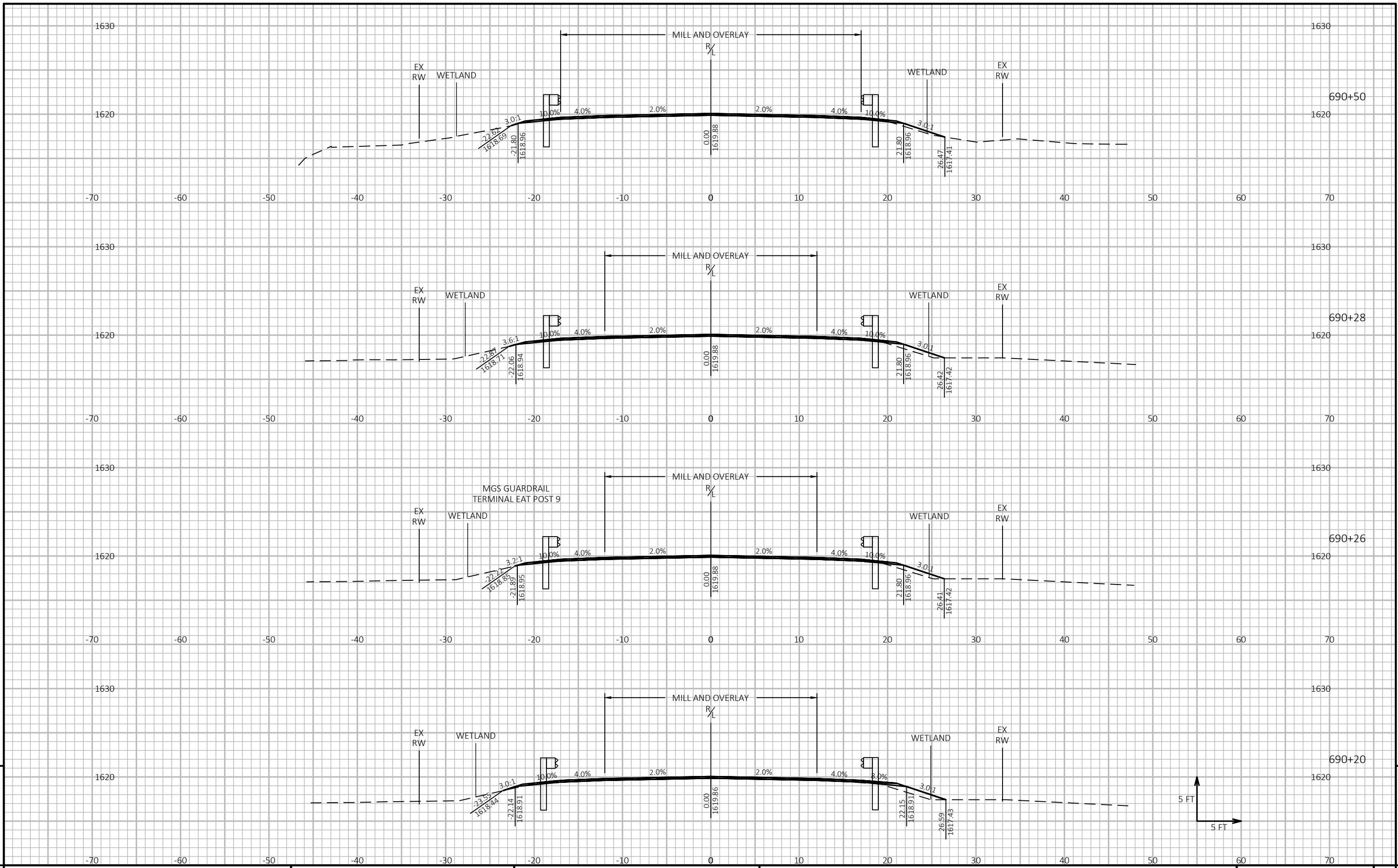
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PROJECT NO: 9165-13-70

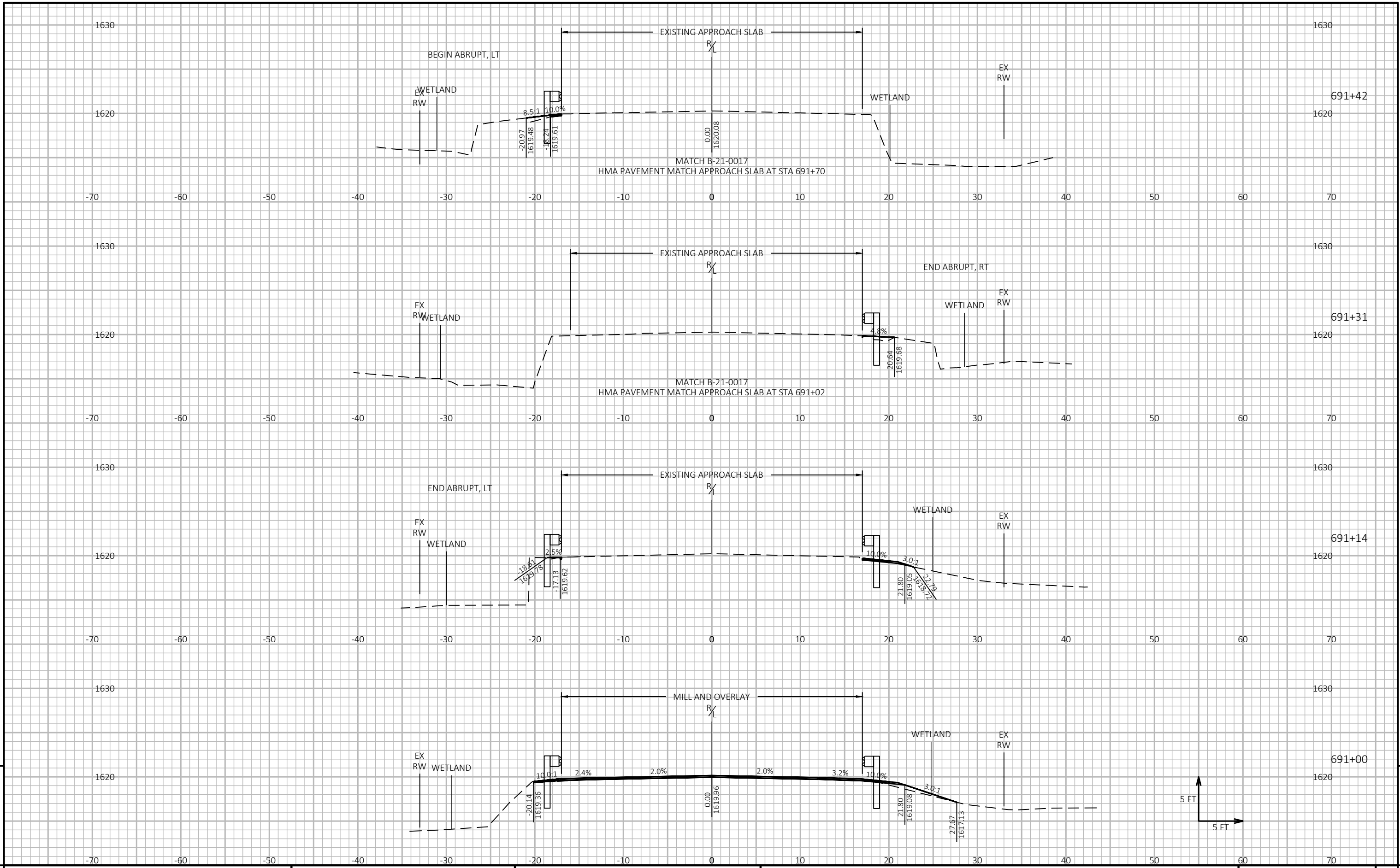
HWY: STH 55

COUNTY: FOREST

CROSS SECTIONS: GUARDRAIL REPLACEMENTS

SHEET

E



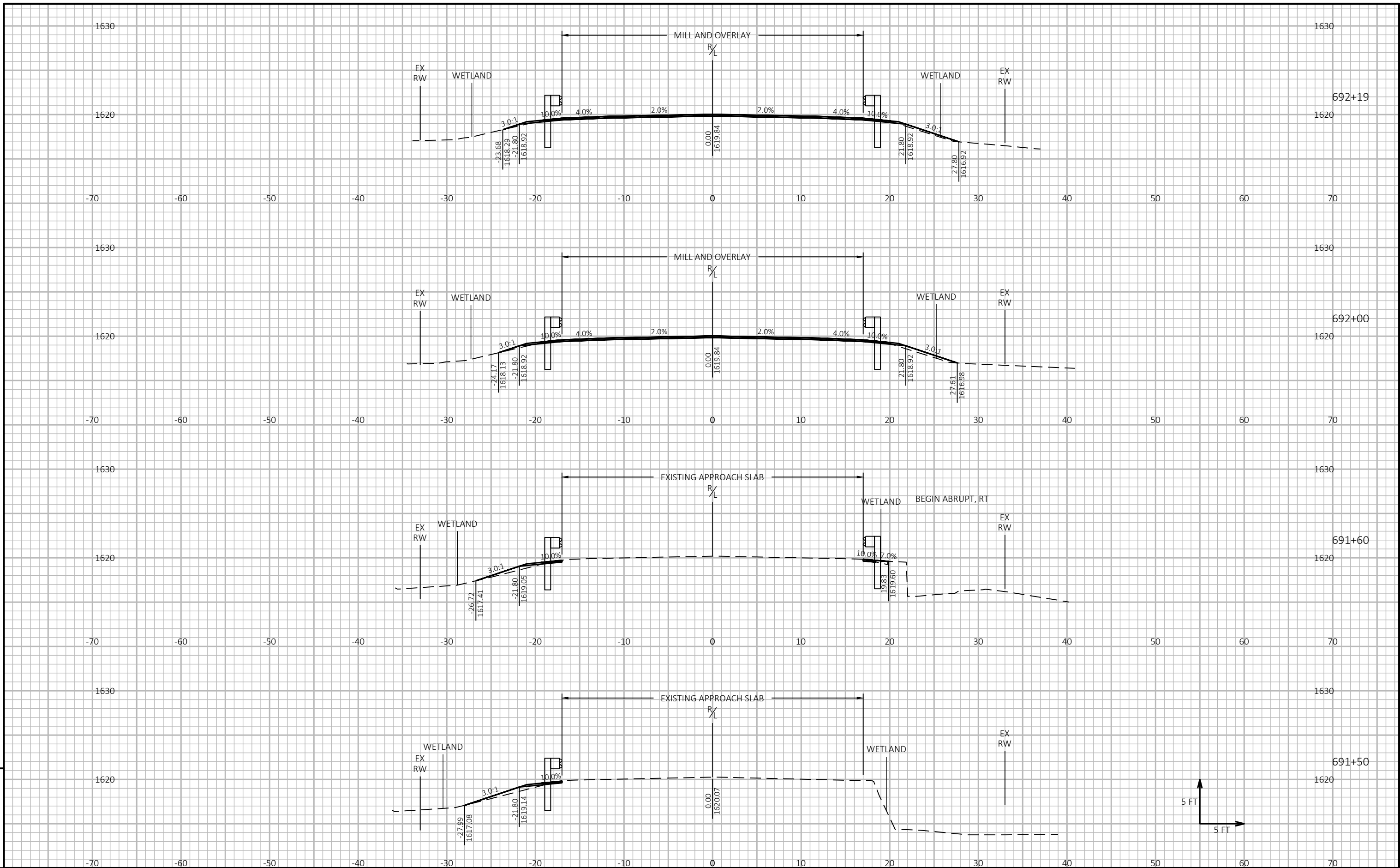
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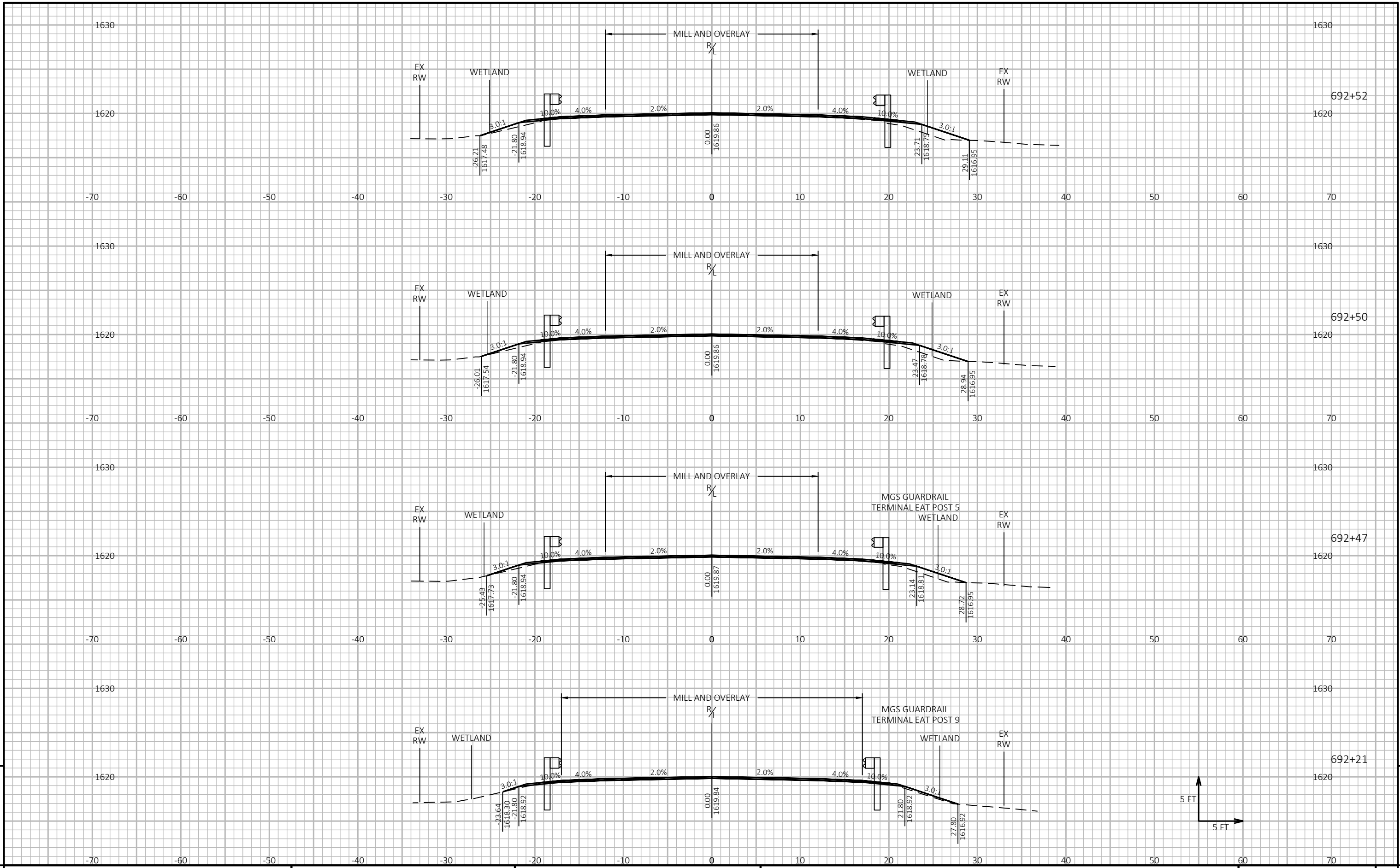
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PROJECT NO: 9165-13-70 HWY: STH 55 COUNTY: FOREST CROSS SECTIONS: GUARDRAIL REPLACEMENTS SHEET E

FILE NAME : P:\53XX\5387.DP.21.STH55.FOR\CADD\91651370\SHEETSPLAN\090201-XS.DWG PLOT DATE : 10/14/2022 1:55 PM PLOT BY : NICK MENNINGA PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT\CADD\ SHEET 49

LAYOUT NAME - 05





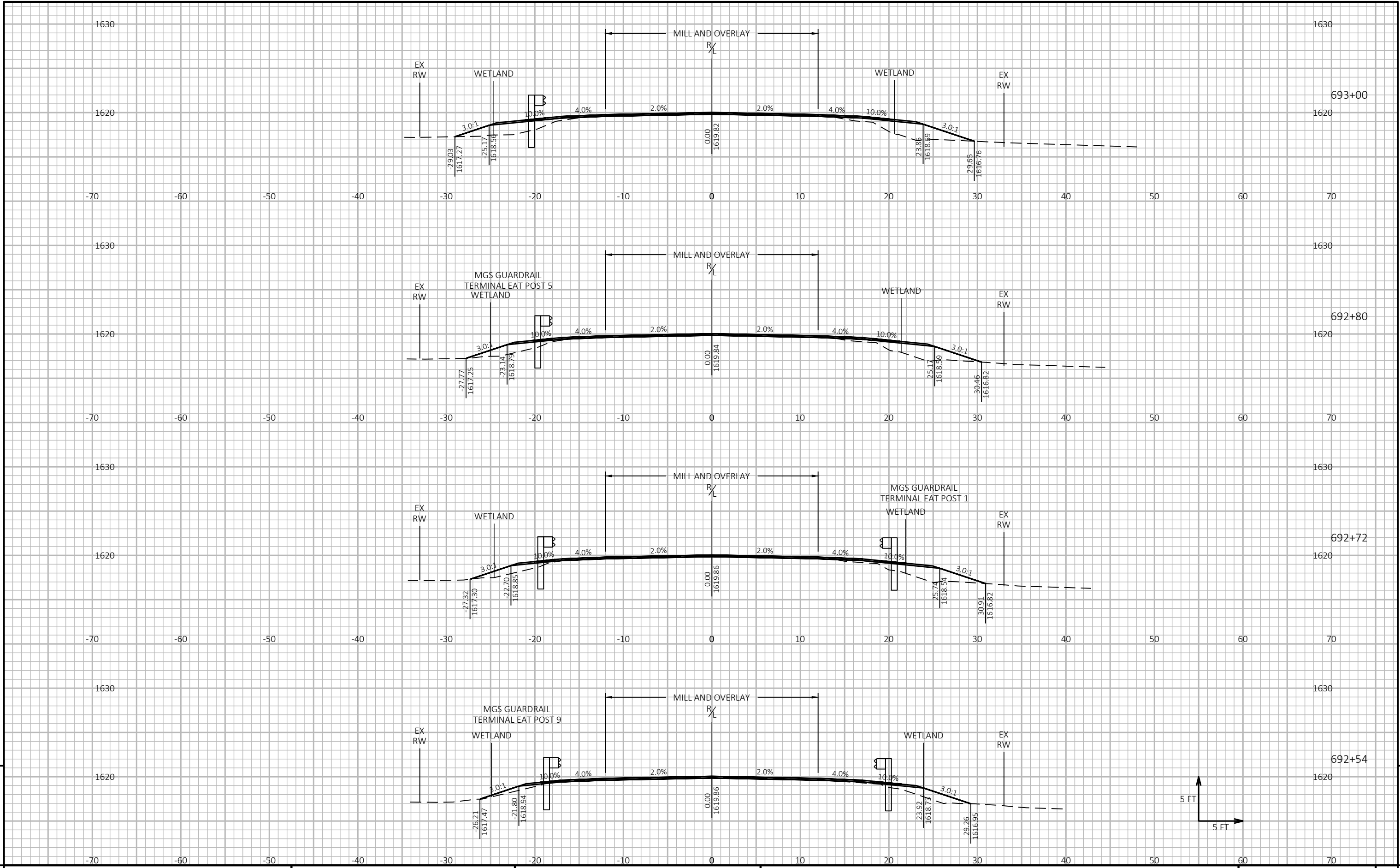
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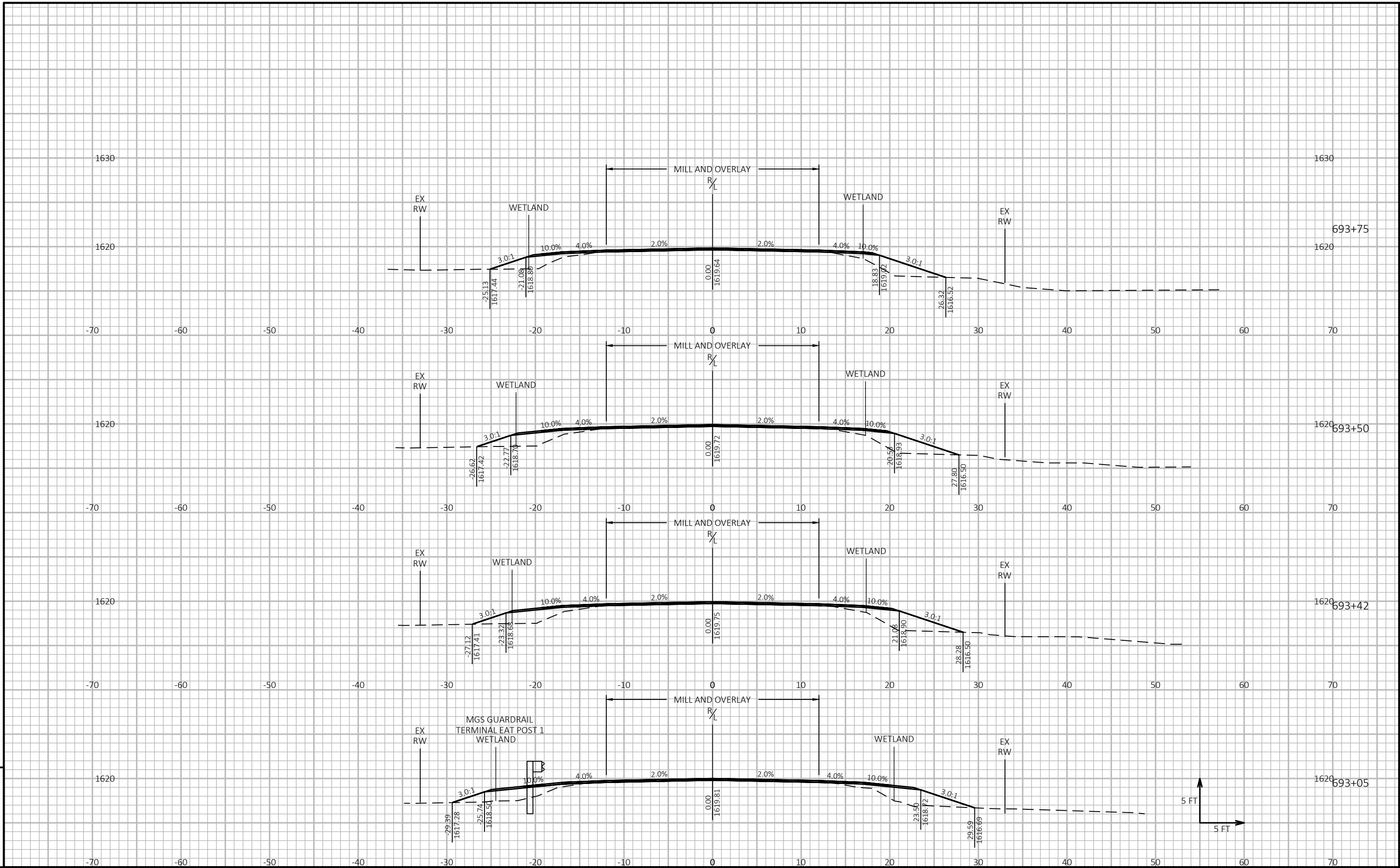
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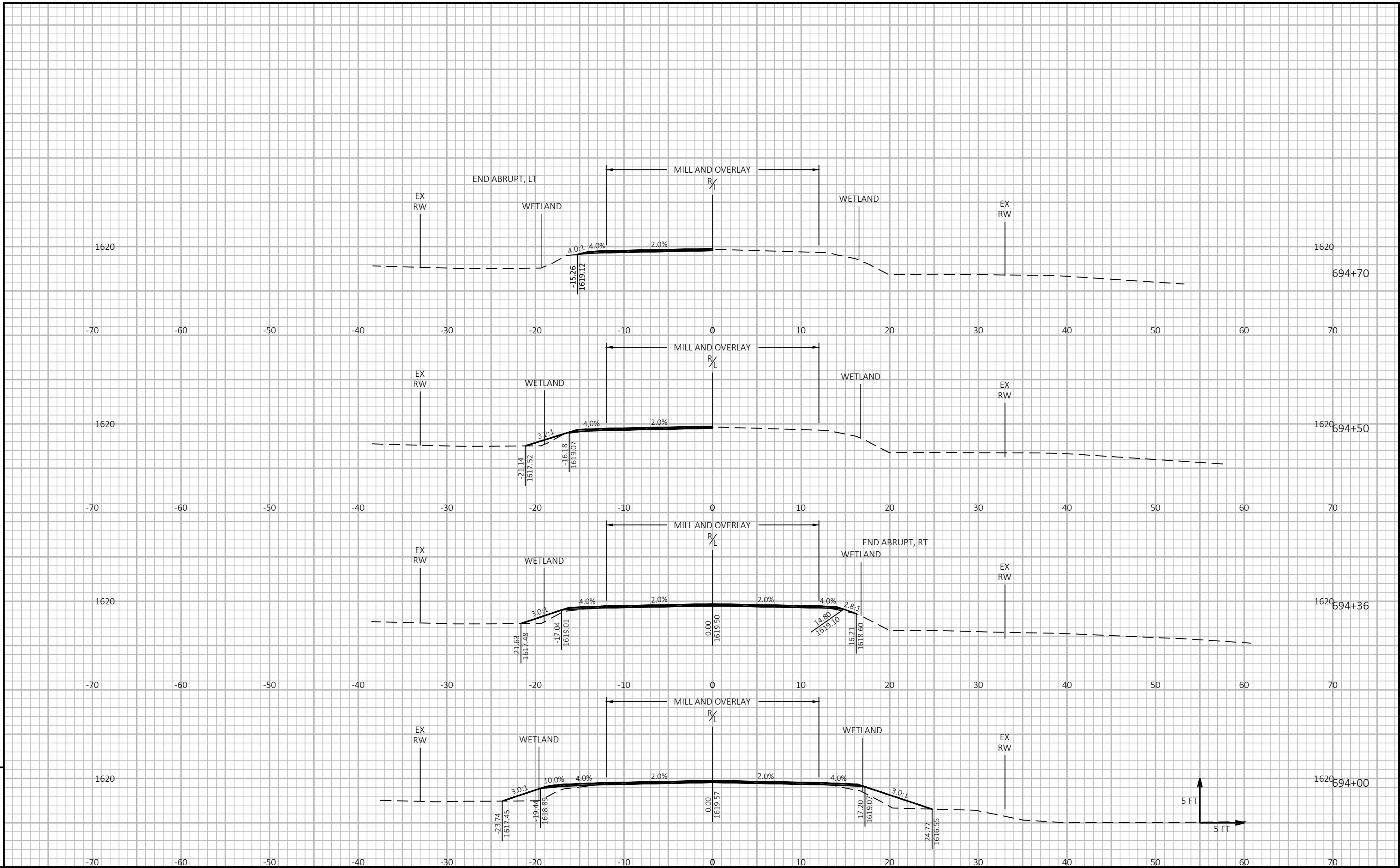
PROJECT NO: 9165-13-70 HWY: STH 55 COUNTY: FOREST CROSS SECTIONS: GUARDRAIL REPLACEMENTS SHEET E

FILE NAME : P:\53XX\5387.DP.21.STH55.FOR\CADD\91651370\SHEETSPLAN\090201-XS.DWG PLOT DATE : 10/14/2022 1:56 PM PLOT BY : NICK MENNINGA PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 07







PROJECT NO: 9165-13-70

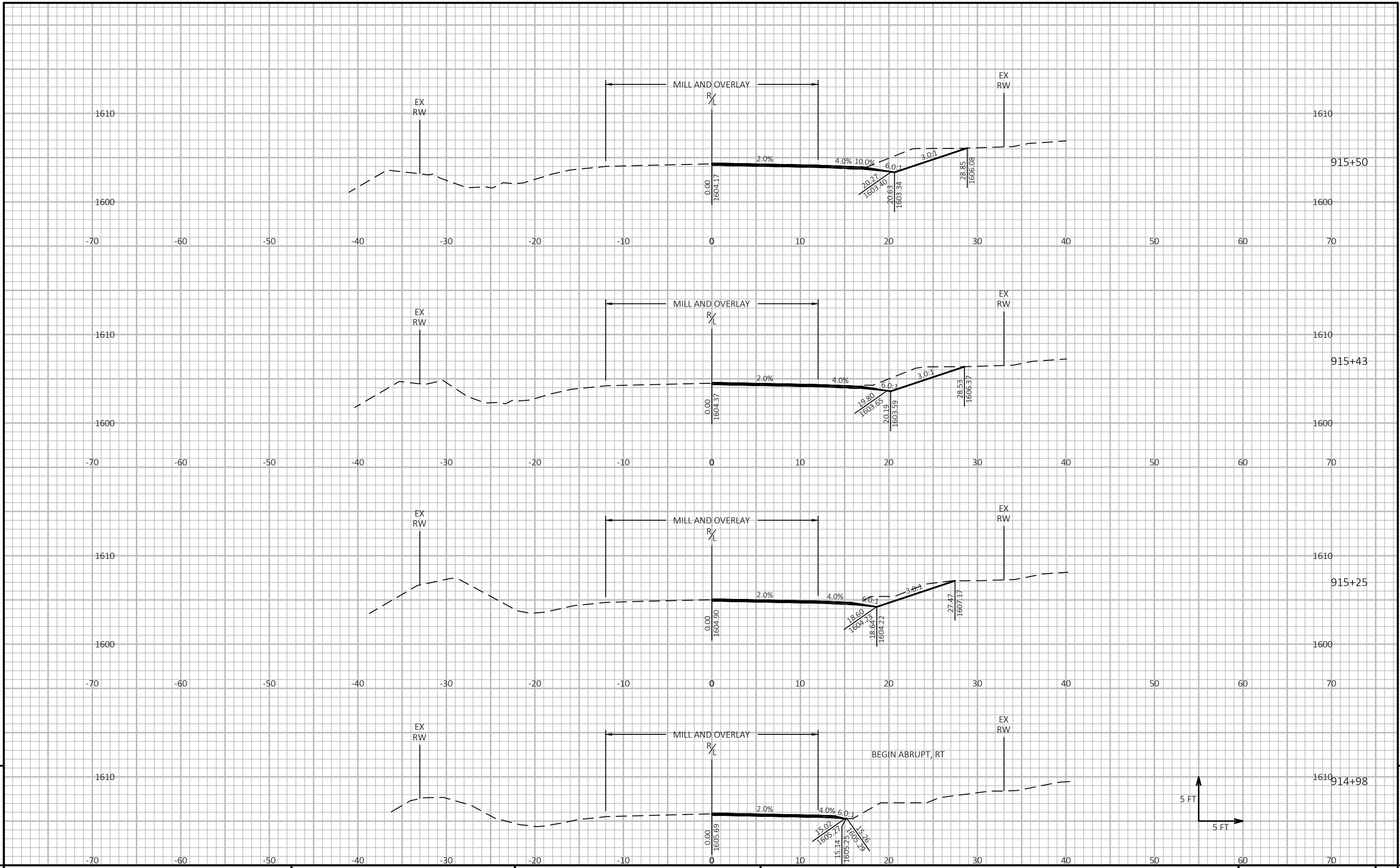
HWY: STH 55

COUNTY: FOREST

CROSS SECTIONS: GUARDRAIL REPLACEMENTS

SHEET

E



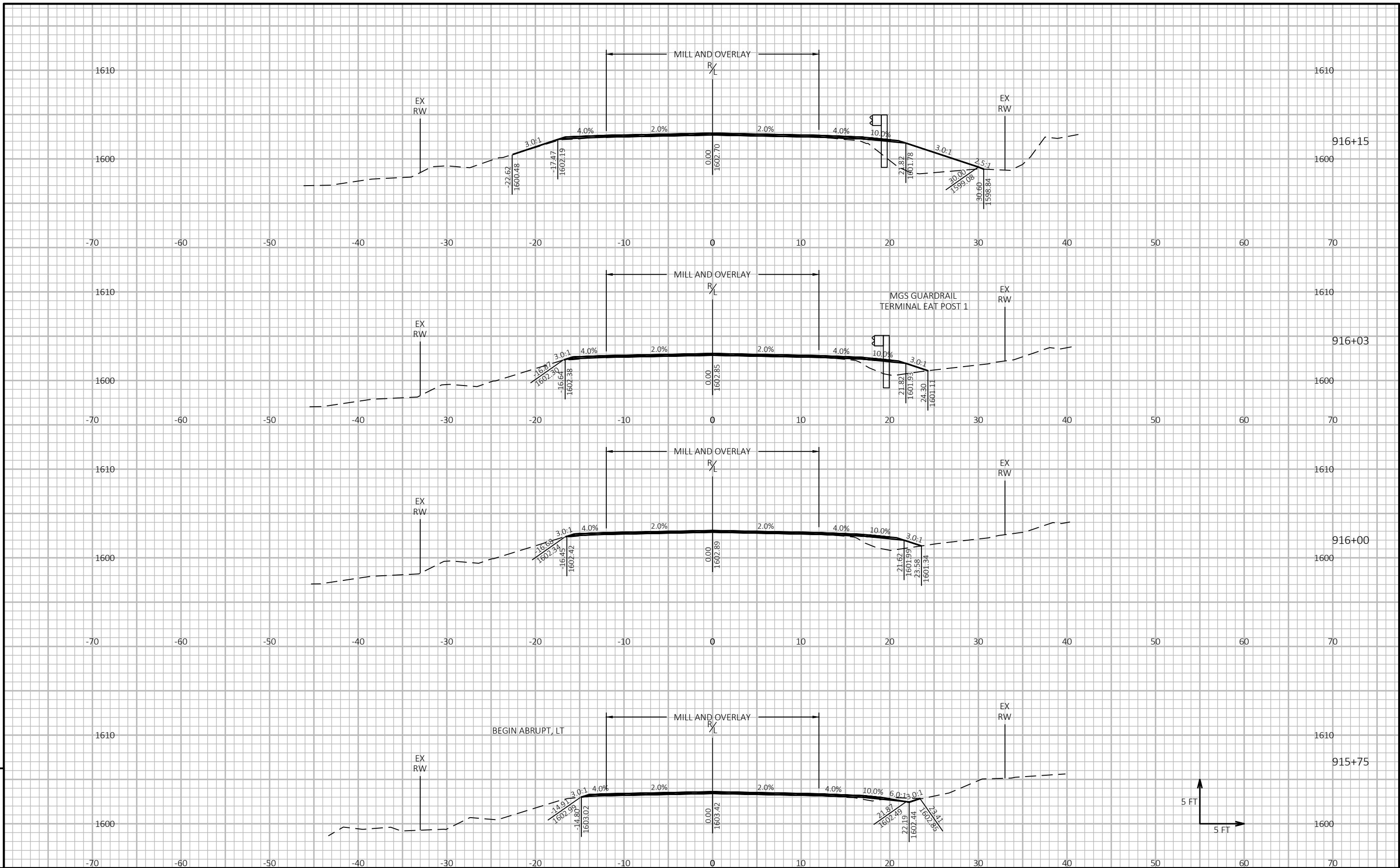
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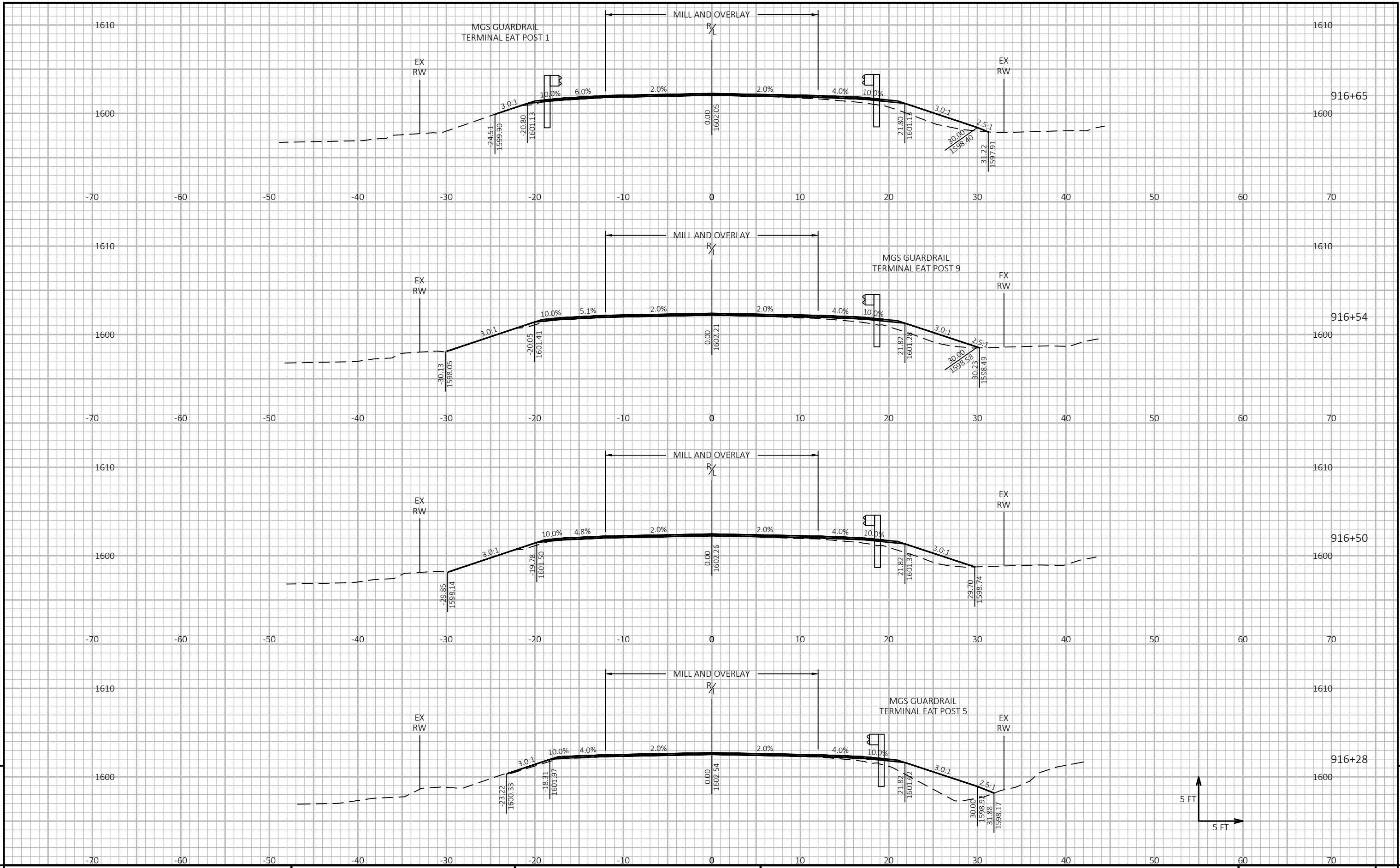
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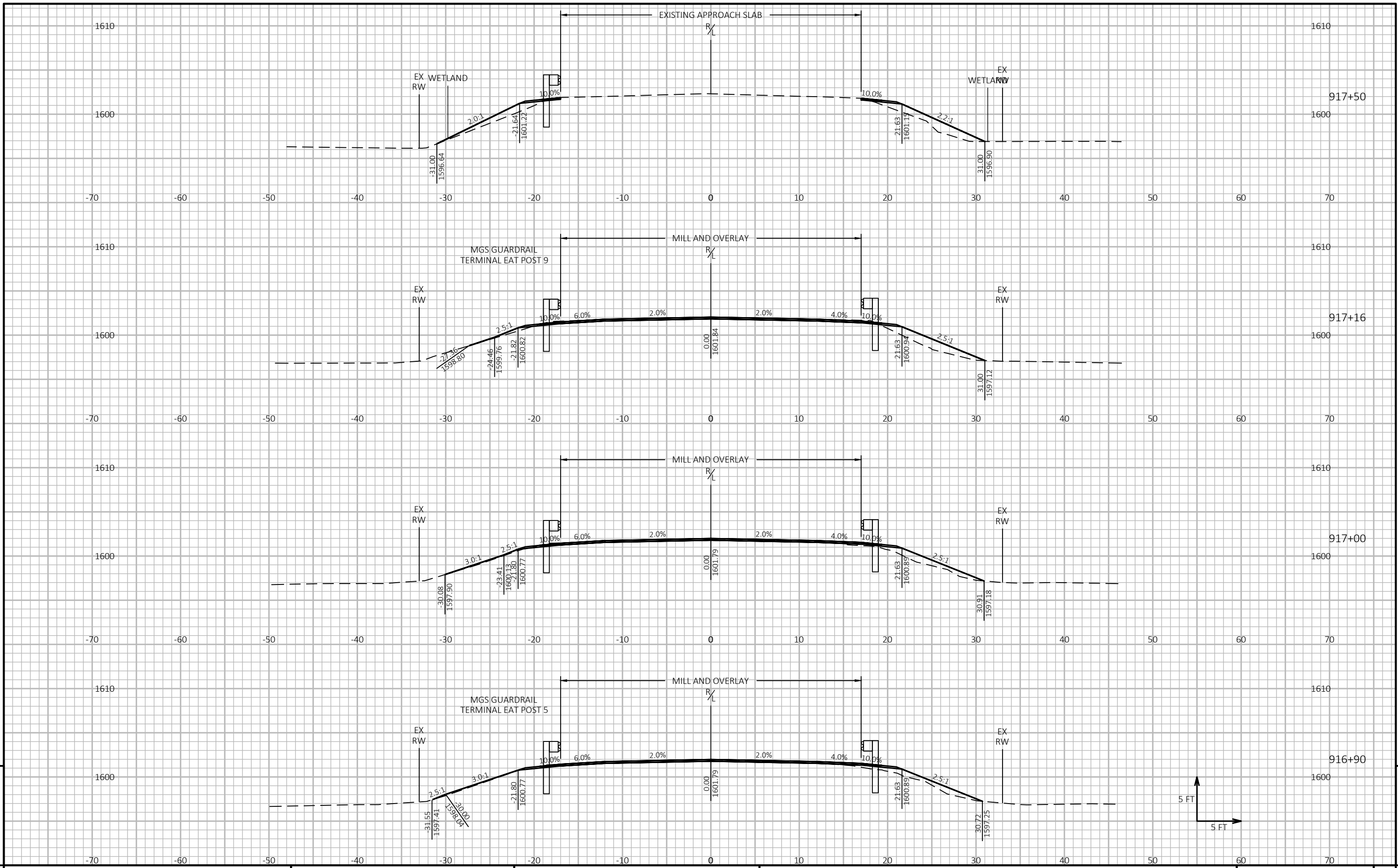
LAYOUT NAME - 11





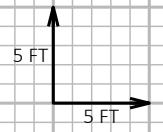
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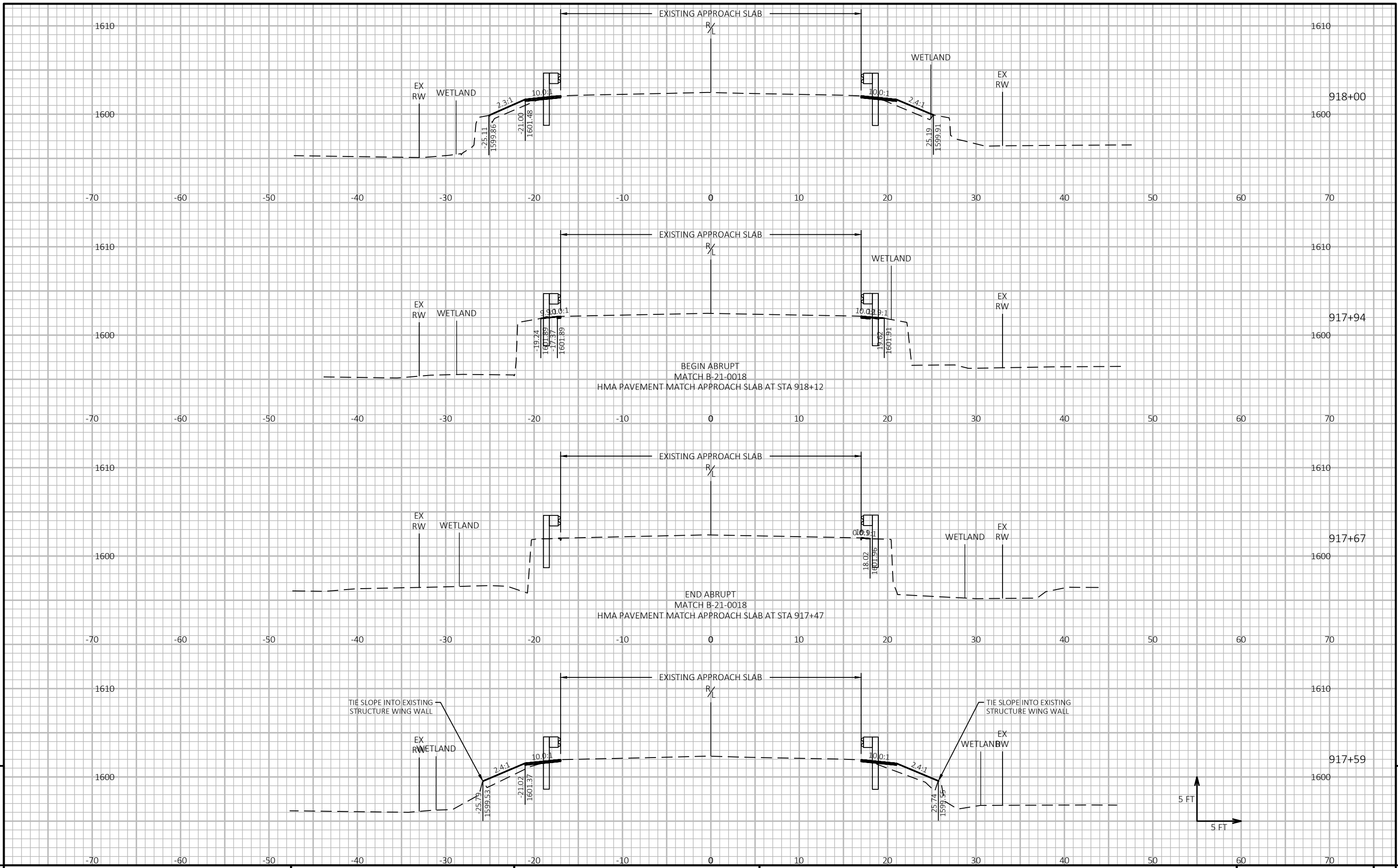
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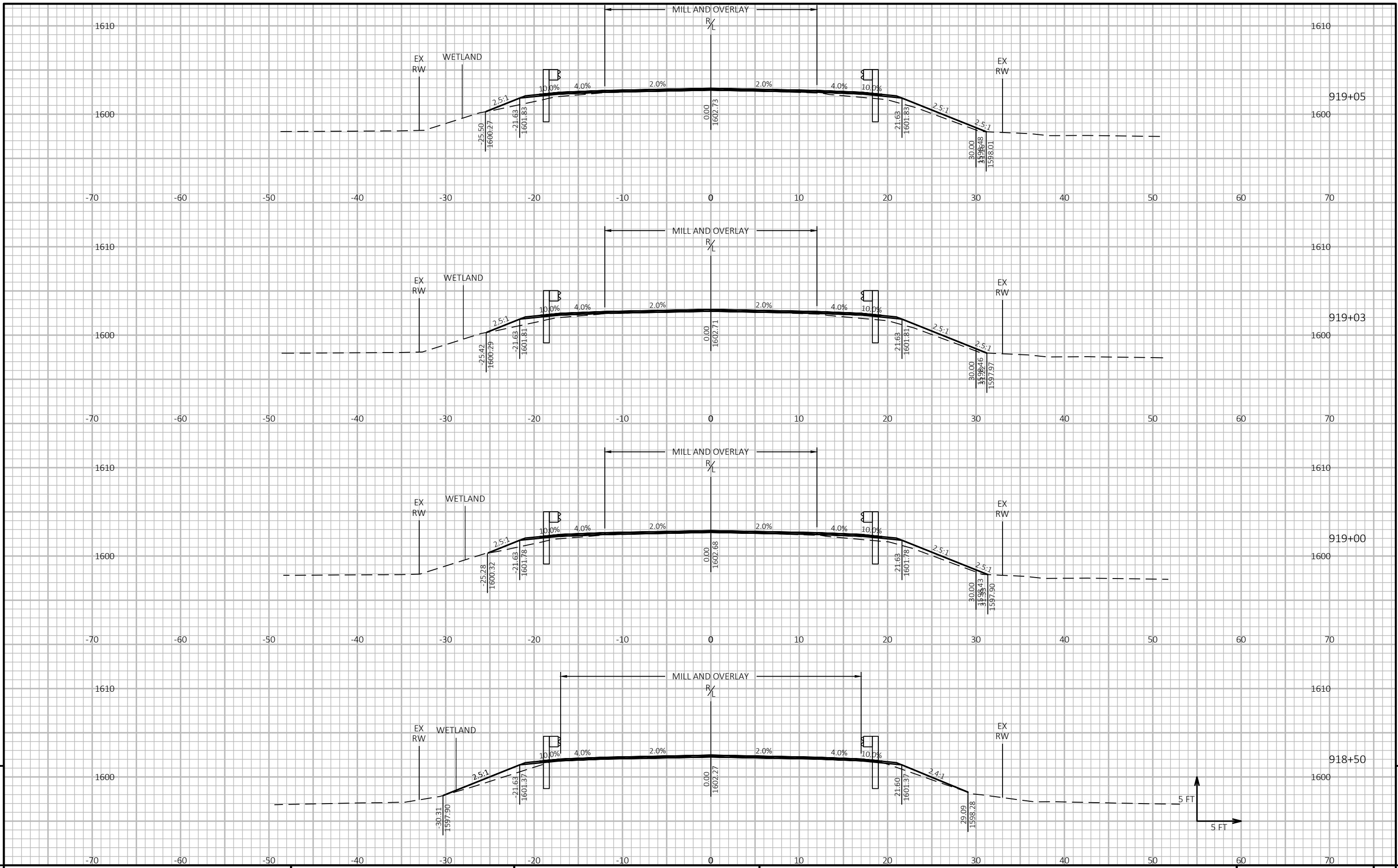
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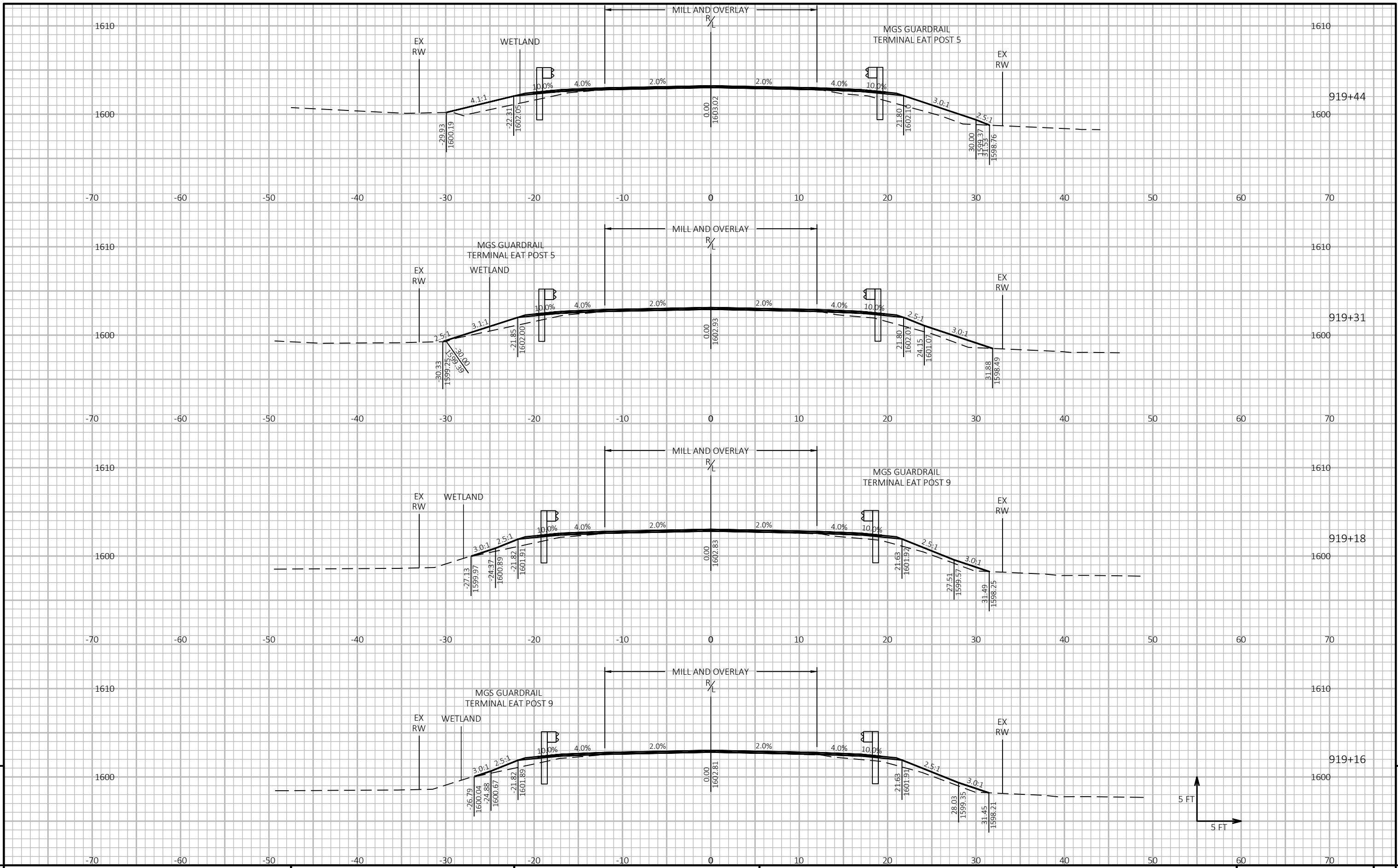
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PROJECT NO: 9165-13-70 HWY: STH 55 COUNTY: FOREST CROSS SECTIONS: GUARDRAIL REPLACEMENTS SHEET E

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LAYOUT NAME - 16



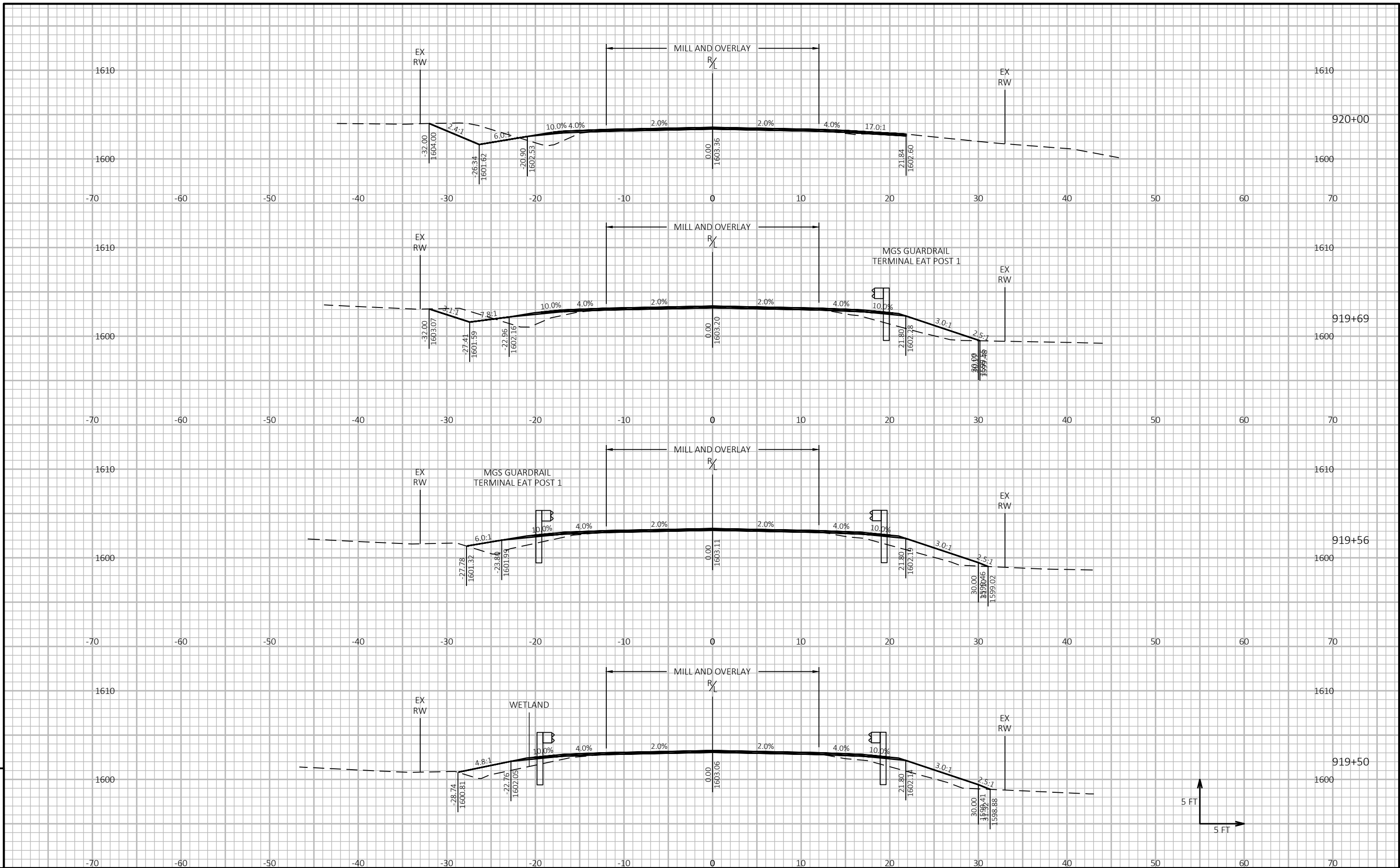
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PROJECT NO: 9165-13-70 HWY: STH 55 COUNTY: FOREST CROSS SECTIONS: GUARDRAIL REPLACEMENTS SHEET E

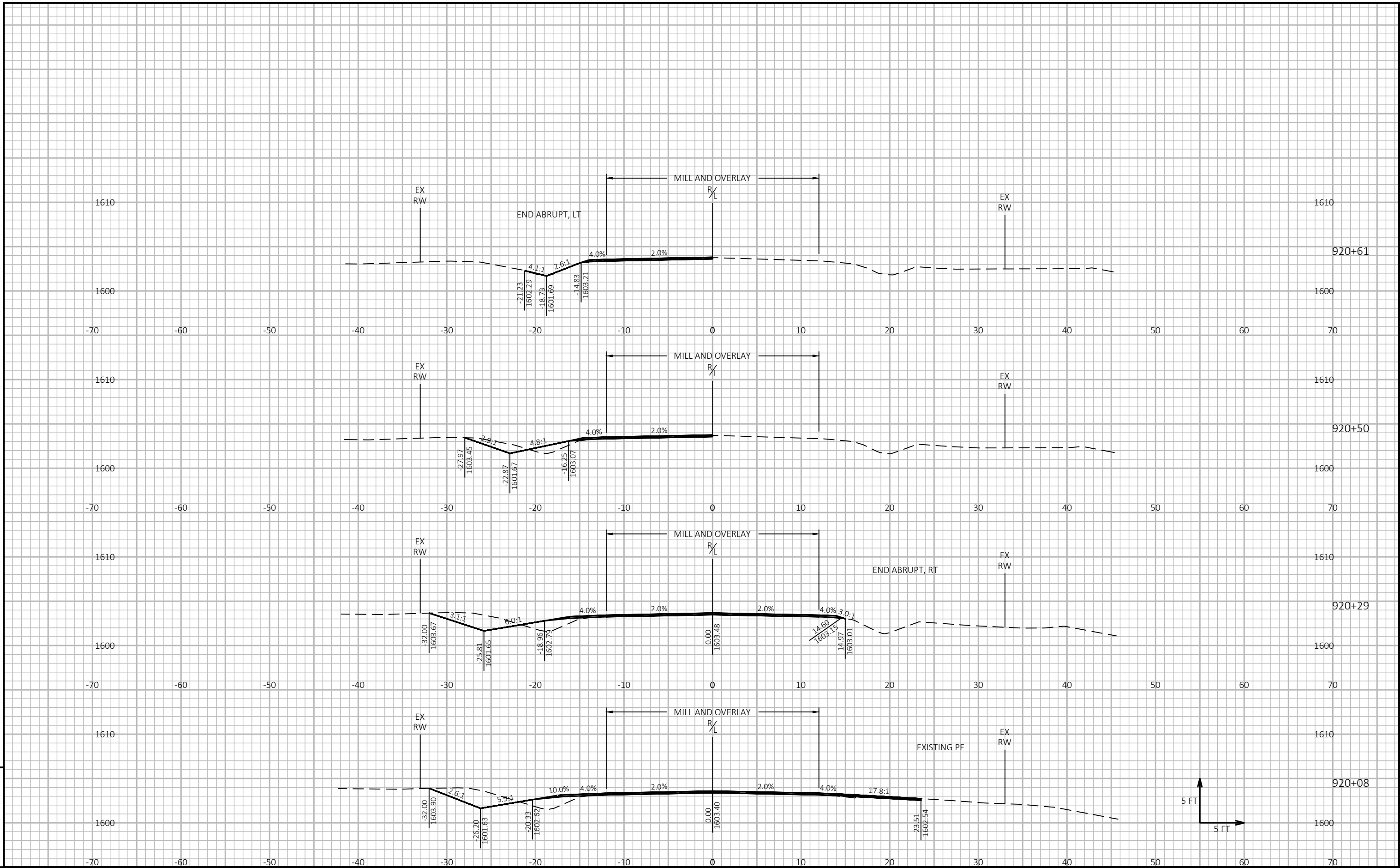
FILE NAME : P:\53XX\5387.DP.21.STH55.FOR\CADD\91651370\SHEETSPLAN\090201-XS.DWG PLOT DATE : 10/14/2022 1:57 PM PLOT BY : NICK MENNINGA PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 17



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PROJECT NO: 9165-13-70

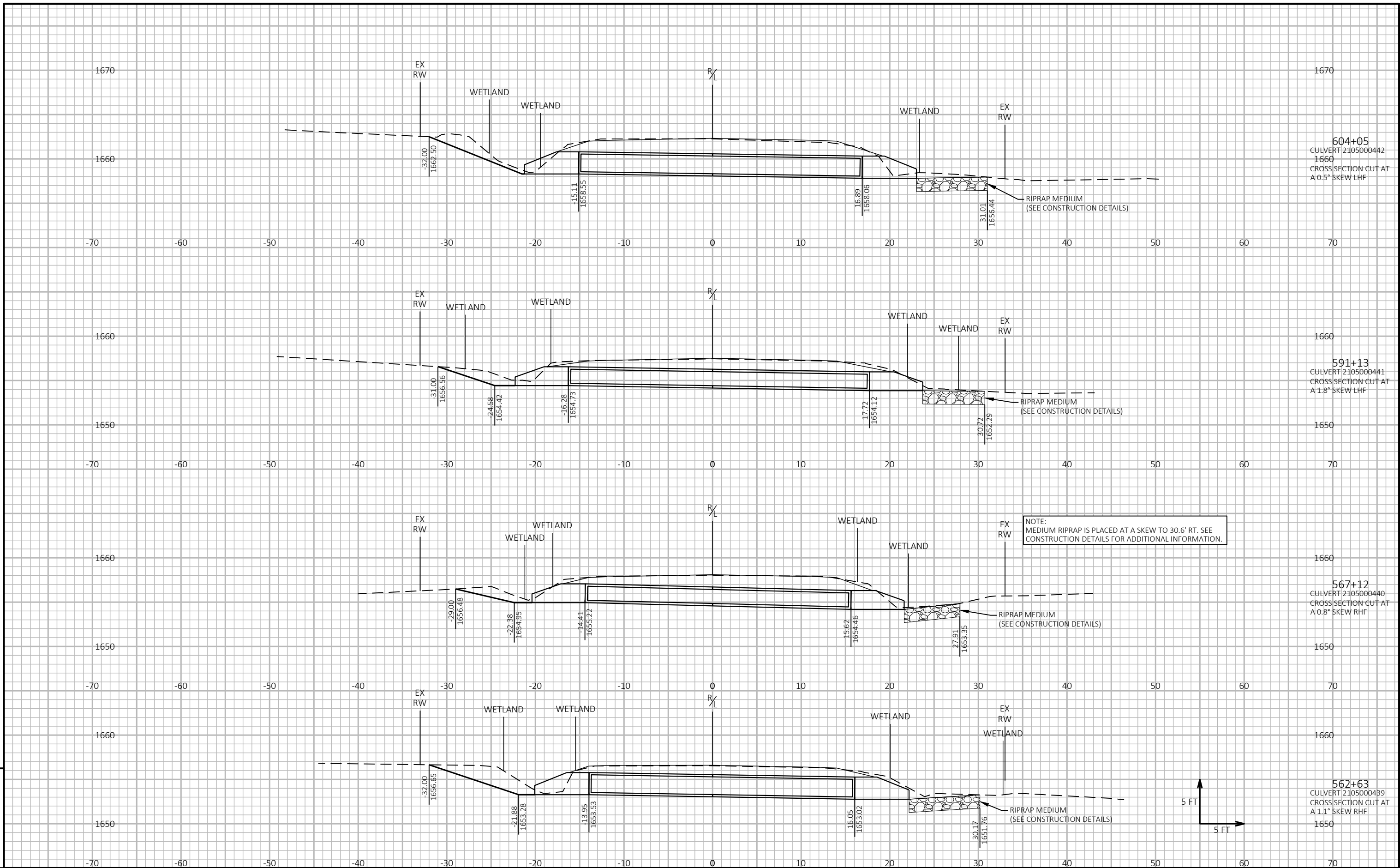
HWY: STH 55

COUNTY: FOREST

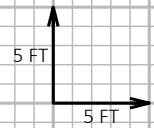
CROSS SECTIONS: GUARDRAIL REPLACEMENTS

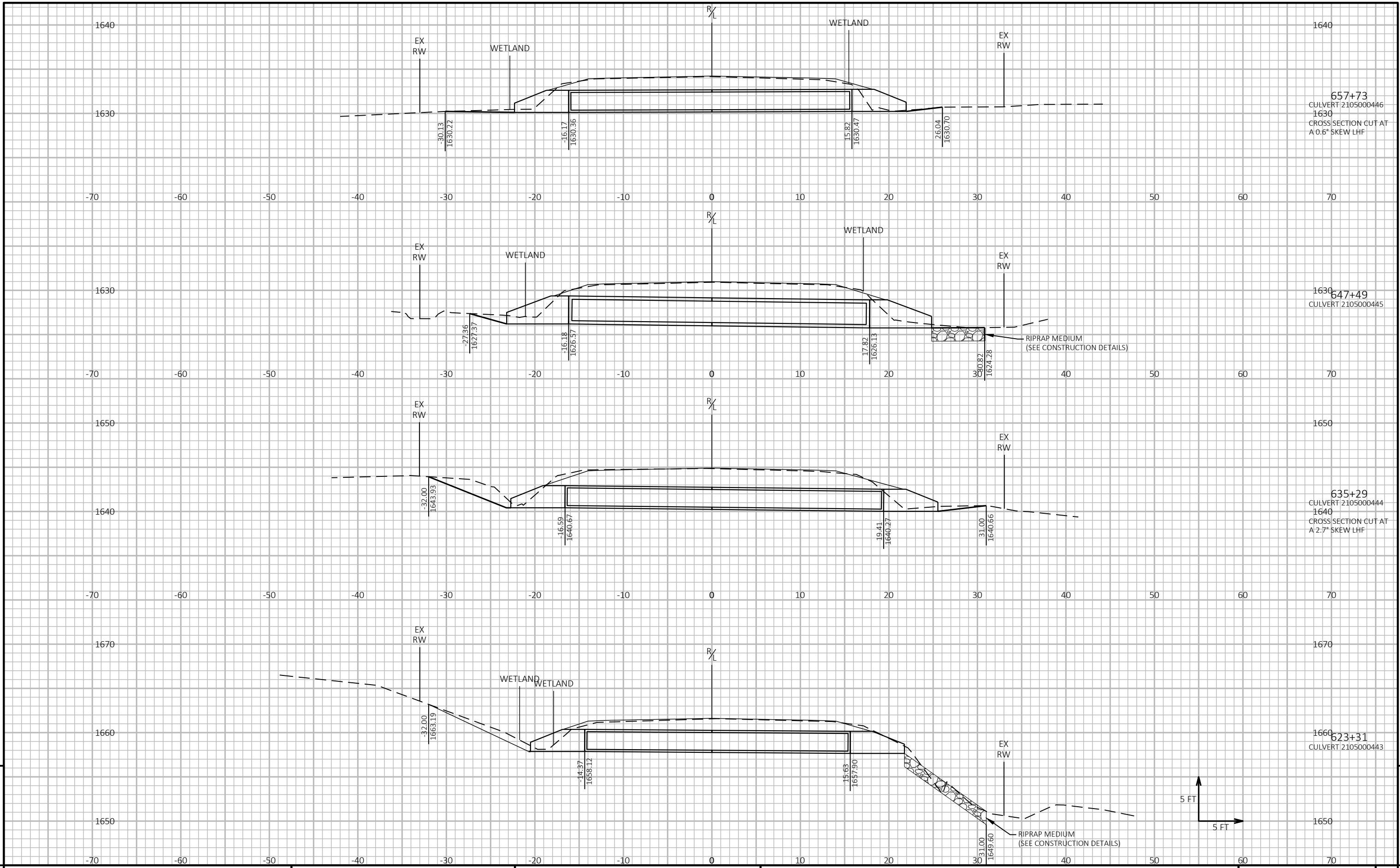
SHEET

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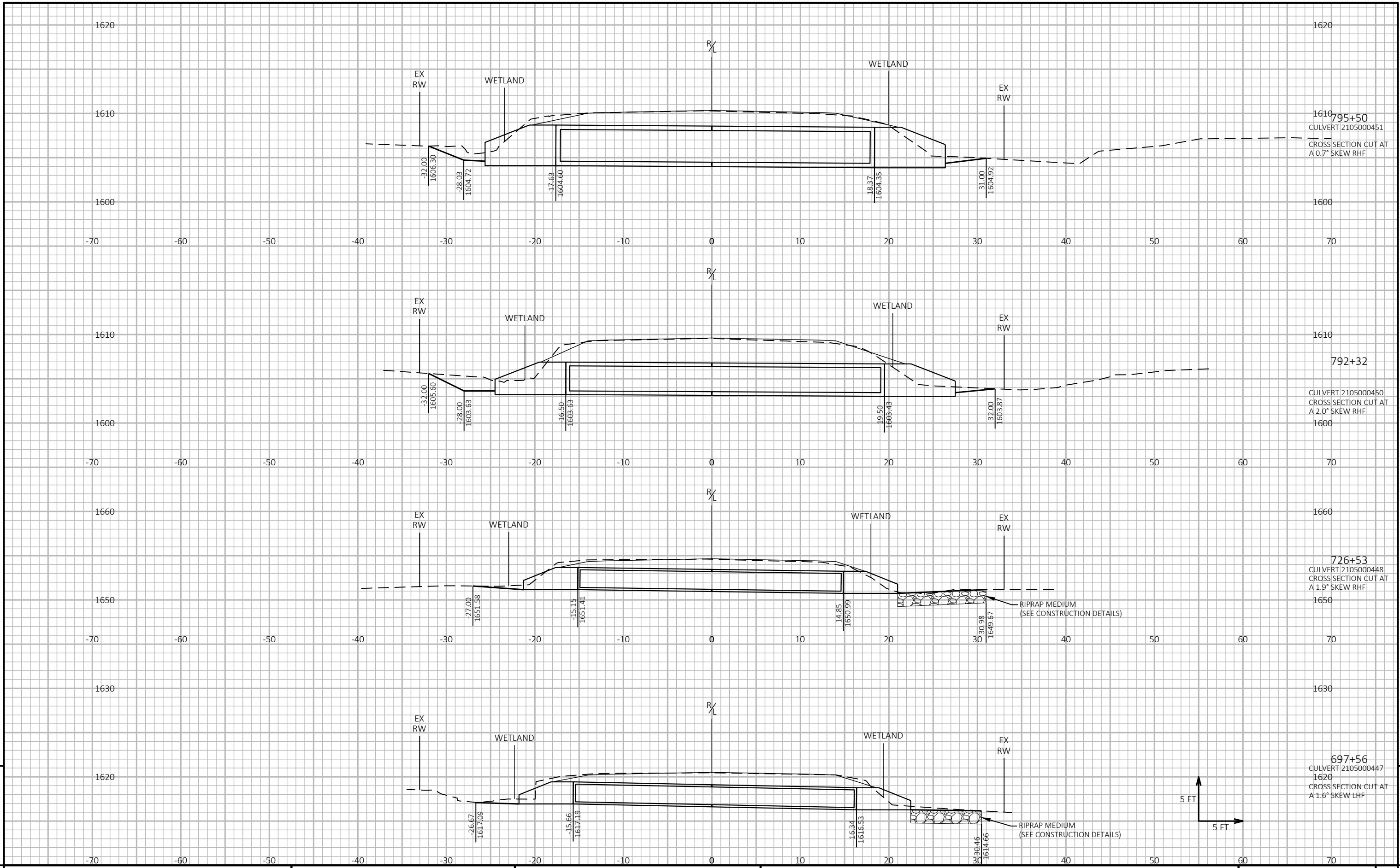
NOTE:
 MEDIUM RIPRAP IS PLACED AT A SKEW TO 30.6' RT. SEE
 CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.





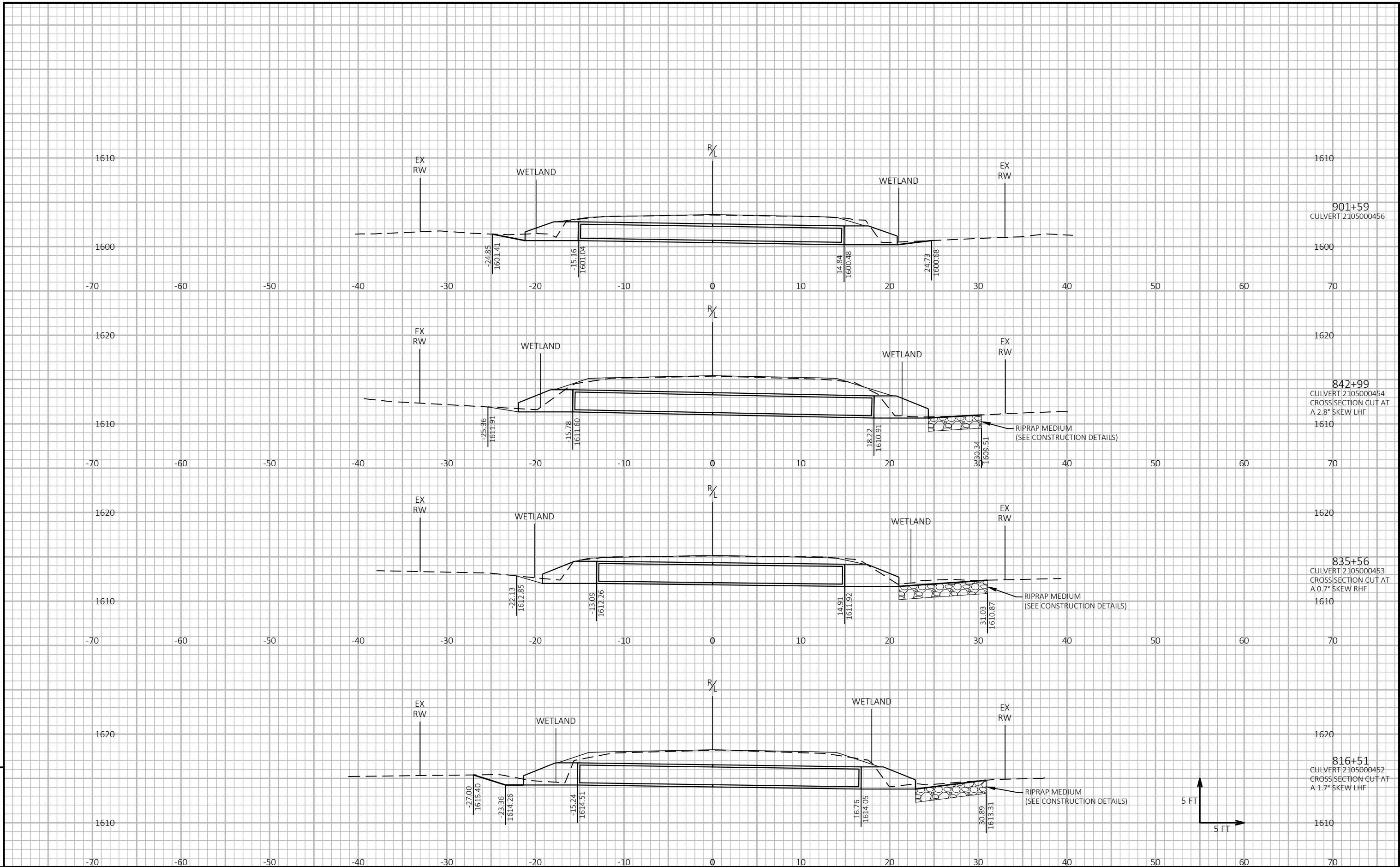
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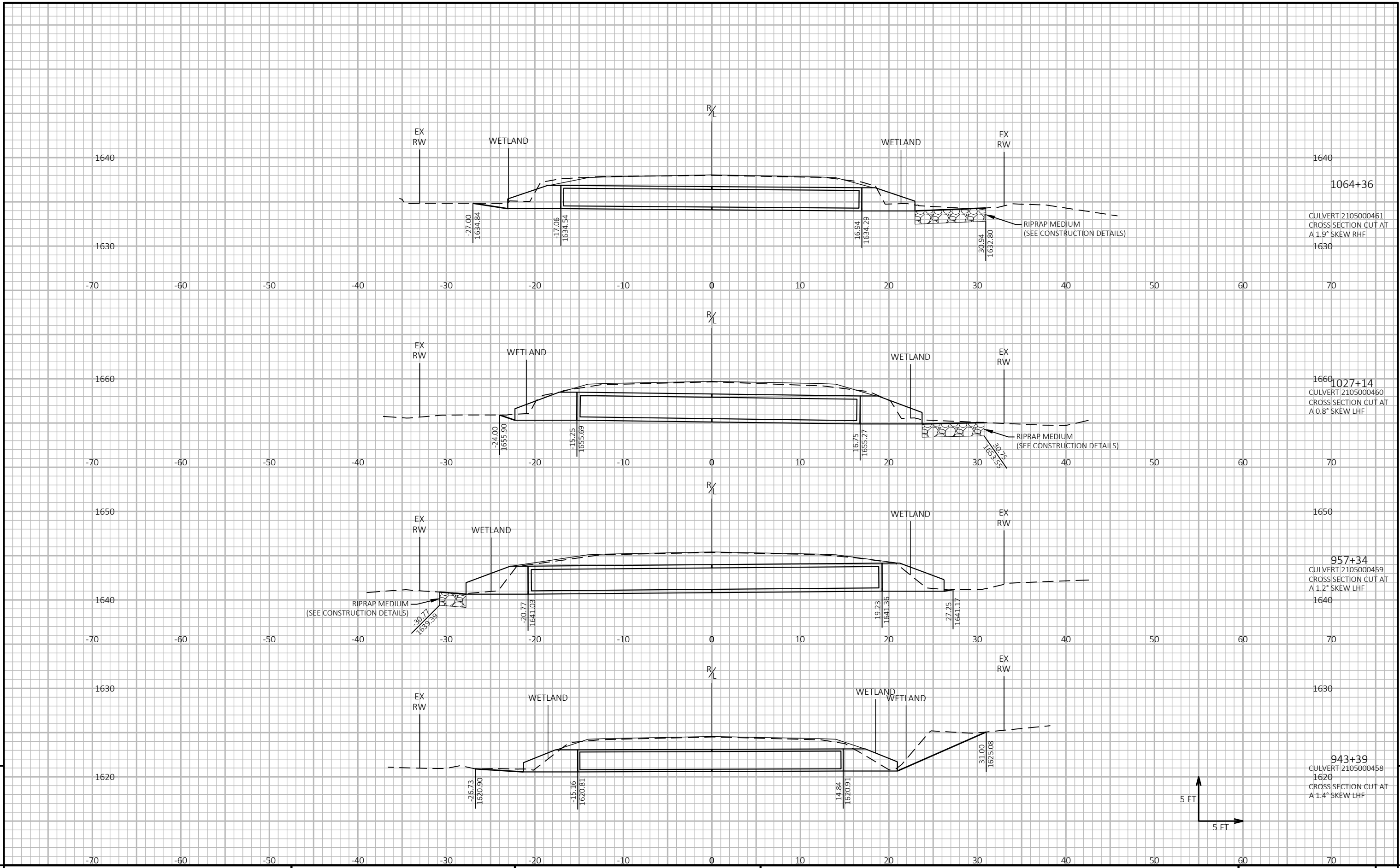
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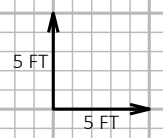
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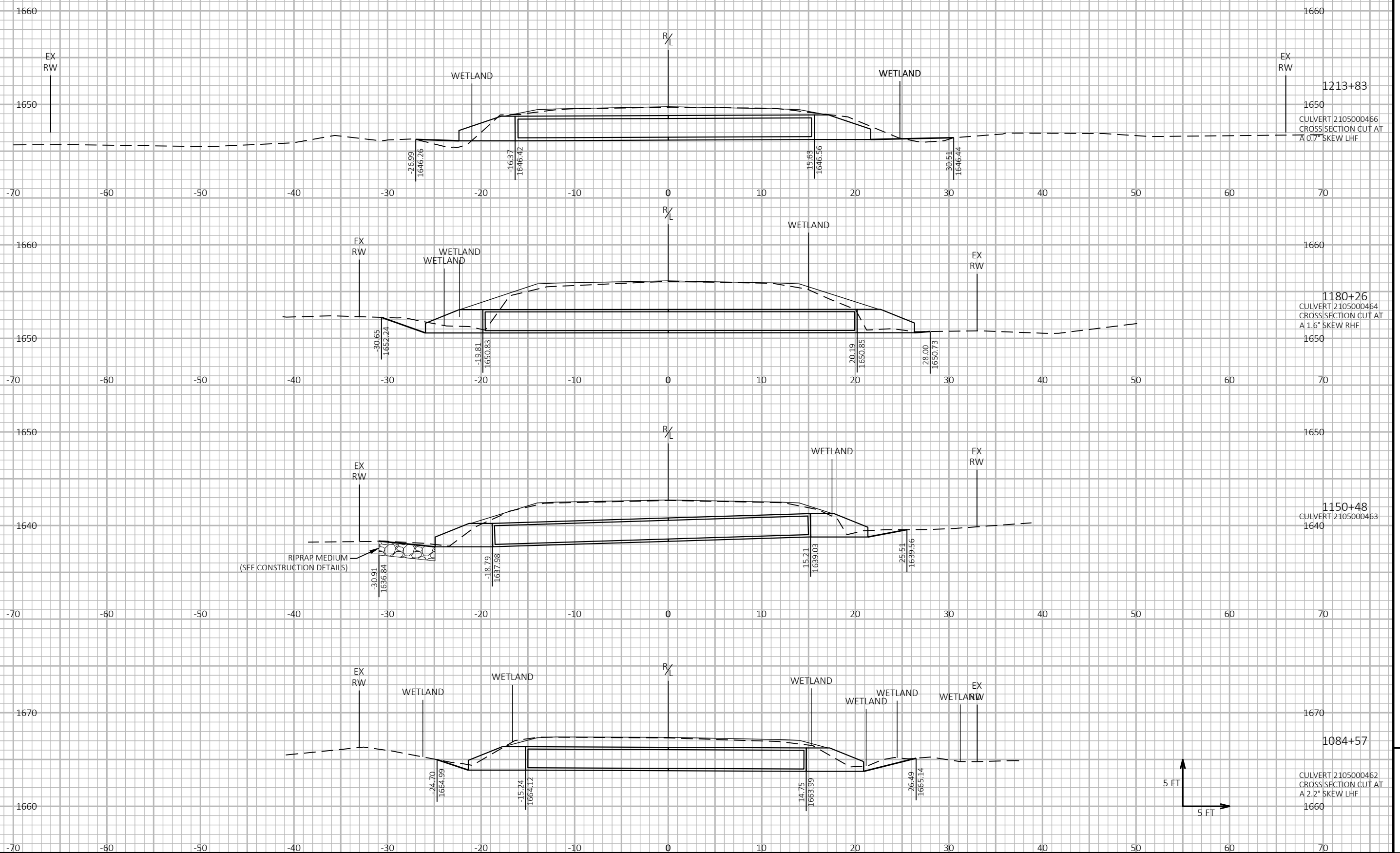
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