

EAU

APRIL 2022
ORDER OF SHEETS

- Section No. 1 Title
- Section No. 2 Typical Sections and Details
(Includes Erosion Control Plans)
- 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 = 48

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T GARFIELD, MOE ROAD (EAST)

NF BUFFALO RIVER BRIDGE B-27-0174

LOC STR

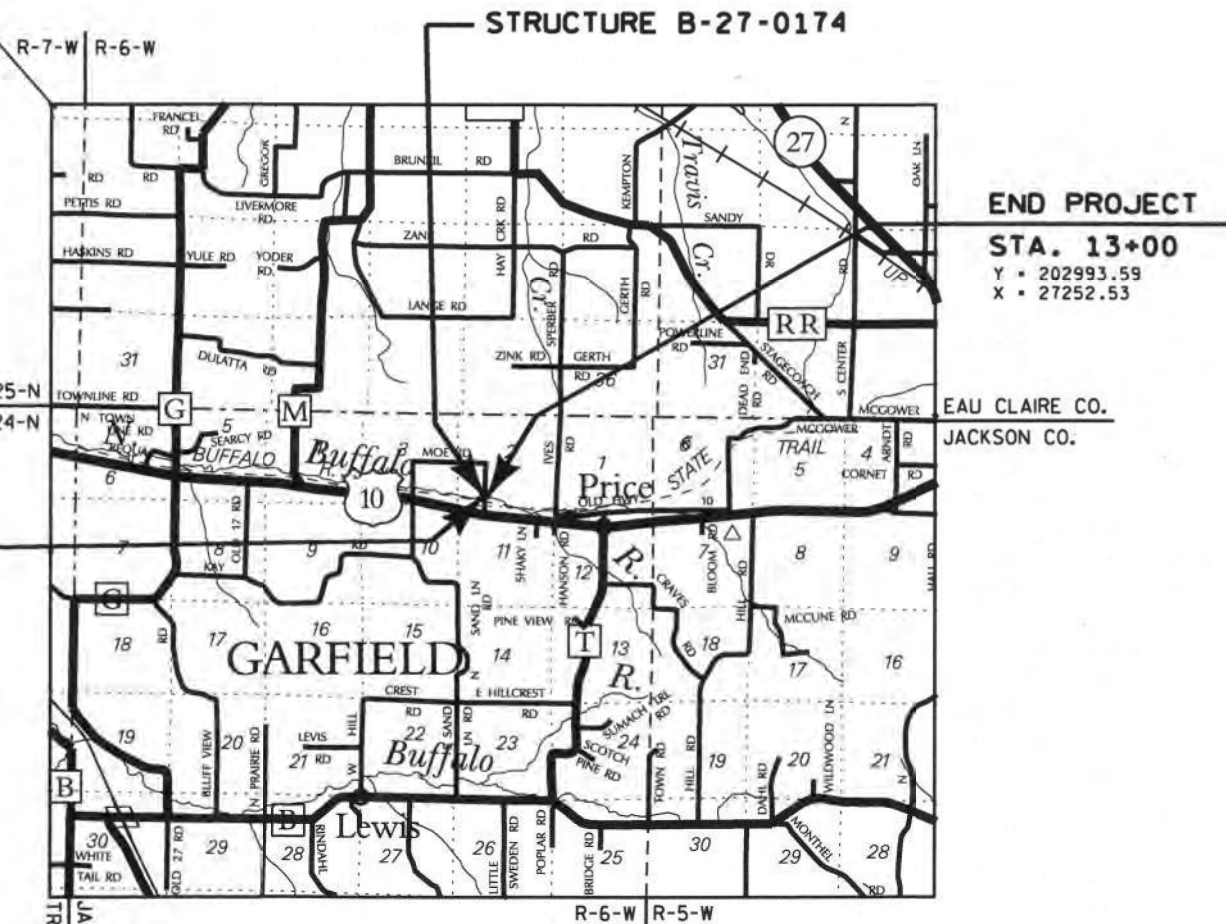
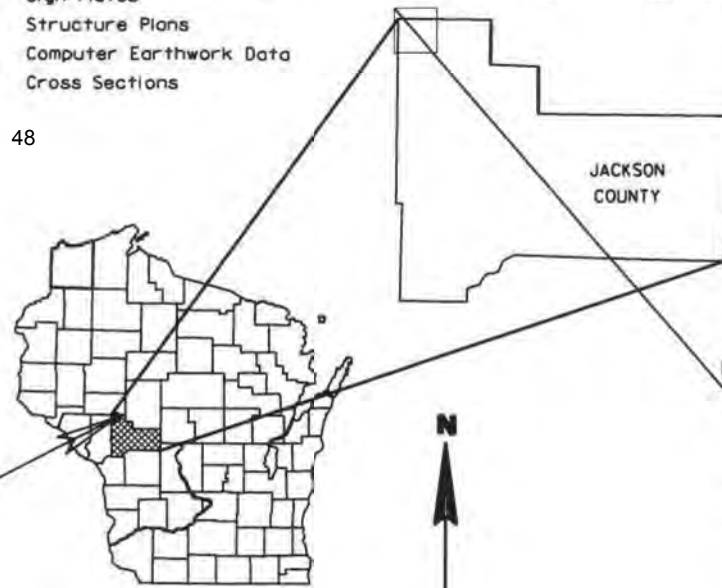
JACKSON COUNTY

STATE PROJECT NUMBER
7249-00-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7249-00-70	_____	_____

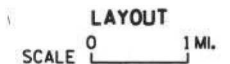
PROJECT ID: 7249-00-70
WITH: N/A

32



END PROJECT
STA. 13+00
 Y • 202993.59
 X • 27252.53

BEGIN PROJECT
STA. 7+00
 Y • 202394.04
 X • 27230.19



TOTAL NET LENGTH OF CENTERLINE = 0.114 MI.

DESIGN DESIGNATION

- A.A.D.T. (2022) = <100
- A.A.D.T. (2042) = <100
- D.H.V. = 10
- D. = 50/50
- T. = 5%
- DESIGN SPEED = 40 MPH
- ESALS = 36,500

CONVENTIONAL SYMBOLS PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS
- HIGH VOLTAGE
- MARSH AREA
- WOODED OR SHRUB AREA

- PROFILE**
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such)
- SPECIAL DITCH
- GRADE ELEVATION
- CULVERT (Profile View)
- UTILITIES**
- OVERHEAD
- ELECTRIC
- FIBER OPTIC
- GAS
- SANITARY SEWER
- STORM SEWER
- TELEPHONE
- WATER
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

ACCEPTED FOR

Town of Garfield

Date: 10/13/2021

Town Chairman

ORIGINAL PLANS PREPARED BY

AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

DATE: 10/15/2021

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

PREPARED BY

Surveyor: AYRES ASSOCIATES INC

Designer: AYRES ASSOCIATES INC

Project Manager: MATTHEW THORNSEN, PE

Regional Examiner: TOU YANG, PE

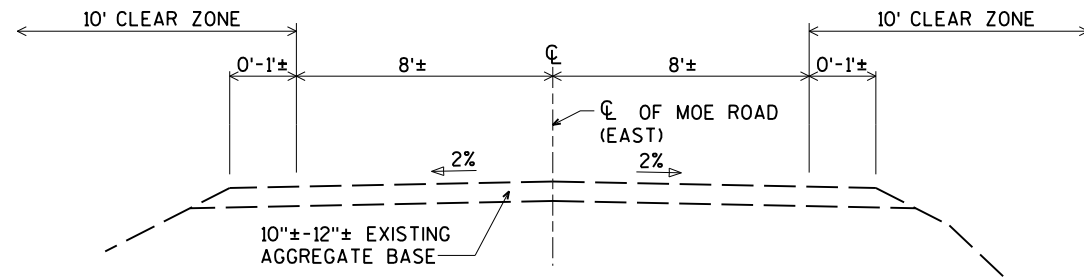
Regional Supervisor: TYLER RONGSTAD, PE

APPROVED FOR THE DEPARTMENT

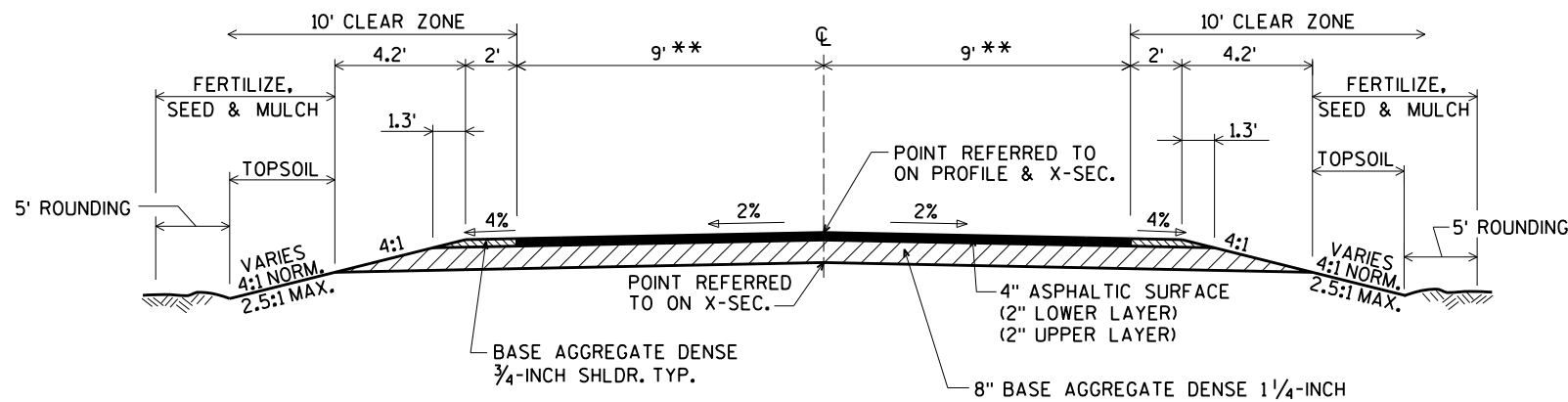
DATE: 10/21/2021

(Signature)

E



EXISTING TYPICAL SECTION



TYPICAL FINISHED SECTION

STA. 7+00 - STA. 9+75.75
STA. 10+24.25 - STA. 13+00

** THE ASPHALT SHALL BE PLACED 26.5 FEET WIDE AT THE ENDS OF THE BRIDGE AND TAPER TO 18 FEET AT 50 FEET FROM THE END OF THE BRIDGE.

GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

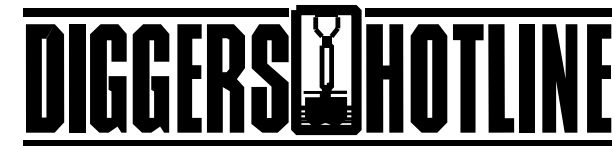
NO TREES AND/OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, SHALL BE FERTILIZED, SEED, AND MULCHED AS DIRECTED BY THE ENGINEER.

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPTS.



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

UTILITIES

NO UTILITIES IN PROJECT AREA.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:

BRAD BETTHAUSER
473 GRIFFITH DRIVE
WISCONSIN RAPIDS, WI 54494
715-421-7851
715-213-9064
bradley.betthouser@wisconsin.gov

TOWN CONTACT:

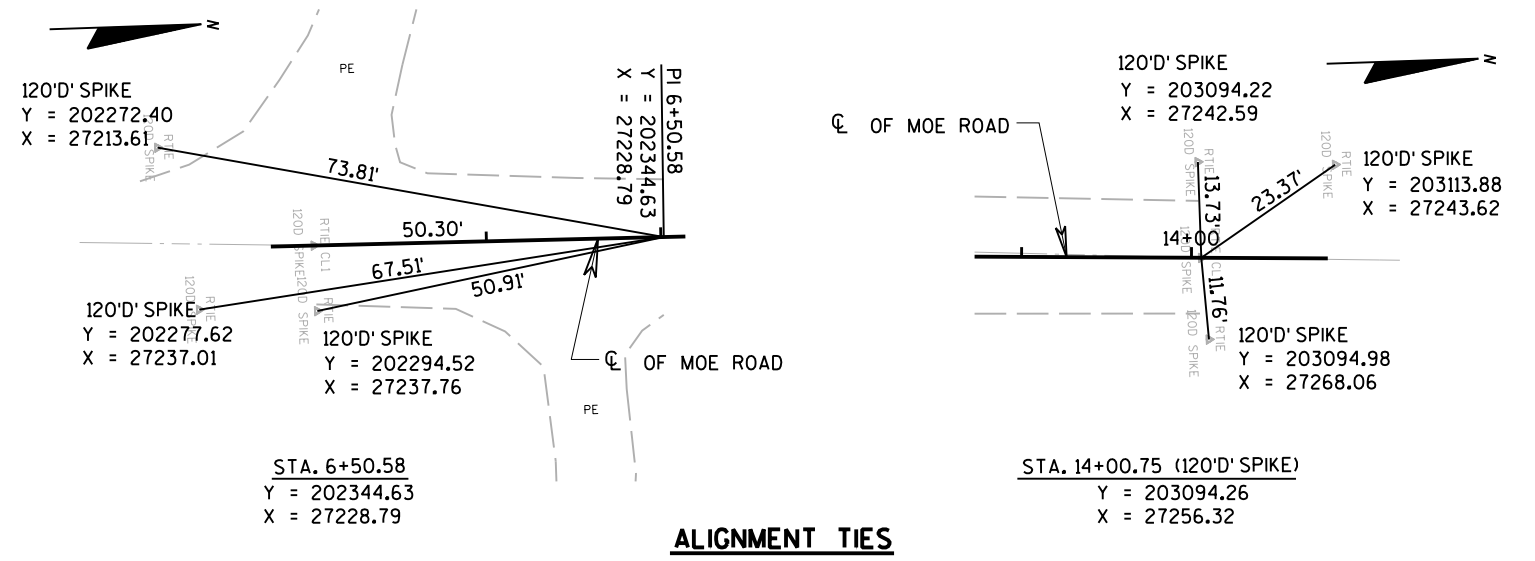
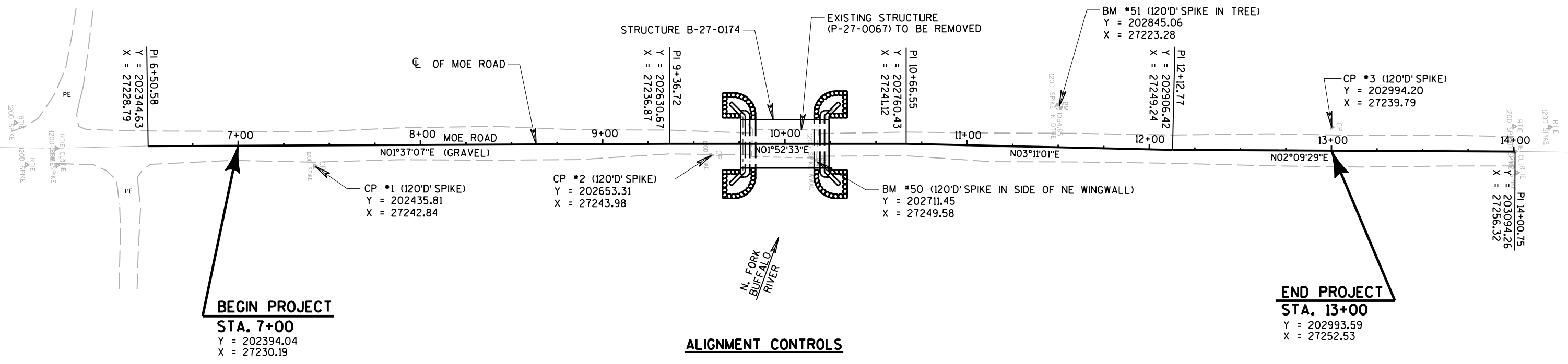
TOWN OF GARFIELD, CHAIRMAN
W16502 COUNTY ROAD B
OSSEO, WI 54758
ATTN: STEVEN DICKINSEN
715-533-3360
srcasfarm@gmail.com

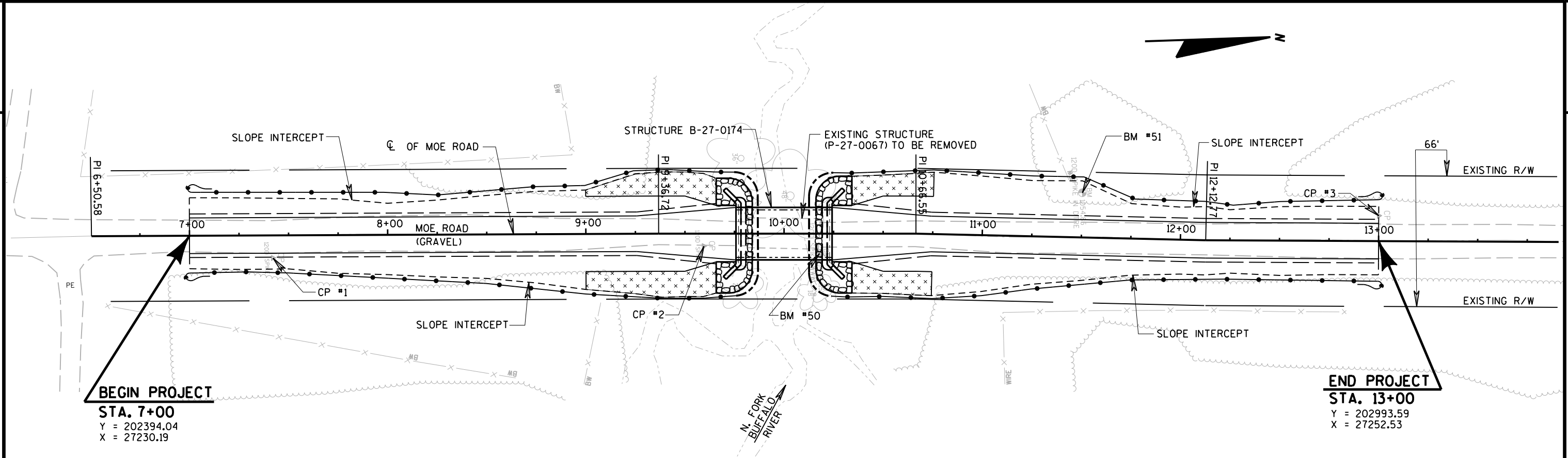
DESIGNER

AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: KAREN WALDERA, PE
715-834-3161
walderak@ayresassociates.com

COUNTY CONTACT:

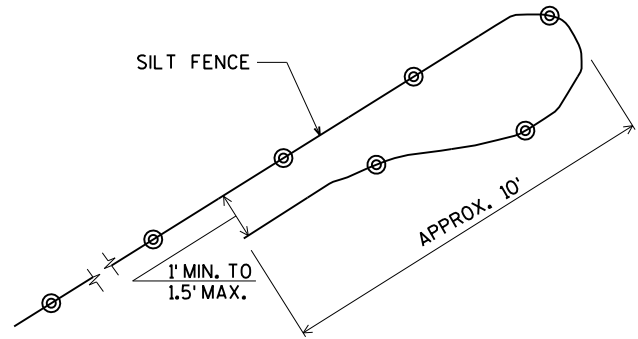
JACKSON COUNTY, HIGHWAY COMMISSIONER
119 HARRISON STREET
BLACK RIVER FALLS, WI 54615
ATTN: JAY BOREK
715-284-0233
jay.borek@co.jackson.wi.us





BEGIN PROJECT
STA. 7+00
 Y = 202394.04
 X = 27230.19

END PROJECT
STA. 13+00
 Y = 202993.59
 X = 27252.53



SILT FENCE END DETAIL
 (TURNAROUNDS - TO REDIRECT AMPHIBIANS AND REPTILES AWAY FROM CONSTRUCTION ZONE)

NOTE:
 NO DISTURBANCE OR TOPSOIL STOCKPILING IS ALLOWED OUTSIDE OF THE SLOPE INTERCEPTS. WETLANDS EXIST IN THE PROJECT AREA.
 NO EQUIPMENT, MATERIALS, STOCKPILES, ETC. MAY BE STORED (EVEN TEMPORARILY) IN ANY WETLAND.
 MULCH TO BE PLACED ON SIDE SLOPES NOT PROTECTED BY EROSION MAT.
 ALL EQUIPMENT OPERATING ON THIS PROJECT MUST BE CLEANED AND INSPECTED BY THE FIELD ENGINEER.

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

- LEGEND**
- x x x EROSION MAT CLASS II TYPE C
 - SILT FENCE
 - COFFERDAM
 - RIPRAP HEAVY SPECIAL

TOTAL PROJECT AREA = 0.909 ACRES
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.612 ACRES

Estimate Of Quantities

7249-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	6.000	6.000
0004	201.0205	Grubbing	STA	6.000	6.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-27-0067	EACH	1.000	1.000
0008	205.0100	Excavation Common	CY	121.000	121.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-27-0174	LS	1.000	1.000
0012	206.5000	Cofferdams (structure) 01. B-27-0174	LS	1.000	1.000
0014	208.0100	Borrow	CY	795.000	795.000
0016	210.1500	Backfill Structure Type A	TON	660.000	660.000
0018	213.0100	Finishing Roadway (project) 01. 7249-00-70	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	70.000	70.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	710.000	710.000
0024	455.0605	Tack Coat	GAL	82.000	82.000
0026	465.0105	Asphaltic Surface	TON	260.000	260.000
0028	502.0100	Concrete Masonry Bridges	CY	149.000	149.000
0030	502.3200	Protective Surface Treatment	SY	175.000	175.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	4,360.000	4,360.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	20,860.000	20,860.000
0036	513.4061	Railing Tubular Type M	LF	101.000	101.000
0038	516.0500	Rubberized Membrane Waterproofing	SY	12.000	12.000
0040	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	540.000	540.000
0042	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0044	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7249-00-70	EACH	1.000	1.000
0046	619.1000	Mobilization	EACH	1.000	1.000
0048	623.0200	Dust Control Surface Treatment	SY	1,420.000	1,420.000
0050	624.0100	Water	MGAL	12.000	12.000
0052	625.0100	Topsoil	SY	835.000	835.000
0054	627.0200	Mulching	SY	1,455.000	1,455.000
0056	628.1504	Silt Fence	LF	1,475.000	1,475.000
0058	628.1520	Silt Fence Maintenance	LF	2,950.000	2,950.000
0060	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0062	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0064	628.2027	Erosion Mat Class II Type C	SY	360.000	360.000
0066	629.0210	Fertilizer Type B	CWT	1.200	1.200
0068	630.0120	Seeding Mixture No. 20	LB	52.000	52.000
0070	630.0200	Seeding Temporary	LB	52.000	52.000
0072	630.0300	Seeding Borrow Pit	LB	5.000	5.000
0074	630.0500	Seed Water	MGAL	41.000	41.000
0076	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0078	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0080	638.2602	Removing Signs Type II	EACH	6.000	6.000
0082	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0084	642.5001	Field Office Type B	EACH	1.000	1.000
0086	643.0420	Traffic Control Barricades Type III	DAY	1,350.000	1,350.000
0088	643.0705	Traffic Control Warning Lights Type A	DAY	2,100.000	2,100.000
0090	643.0900	Traffic Control Signs	DAY	1,050.000	1,050.000
0092	643.5000	Traffic Control	EACH	1.000	1.000
0094	645.0111	Geotextile Type DF Schedule A	SY	220.000	220.000
0096	645.0120	Geotextile Type HR	SY	230.000	230.000
0098	650.4500	Construction Staking Subgrade	LF	552.000	552.000

Estimate Of Quantities

7249-00-70

Line	Item	Item Description	Unit	Total	Qty
0100	650.5000	Construction Staking Base	LF	552.000	552.000
0102	650.6500	Construction Staking Structure Layout (structure) 01. B-27-0174	LS	1.000	1.000
0104	650.9910	Construction Staking Supplemental Control (project) 01. 7249-00-70	LS	1.000	1.000
0106	650.9920	Construction Staking Slope Stakes	LF	552.000	552.000
0108	715.0502	Incentive Strength Concrete Structures	DOL	894.000	894.000
0110	999.2005.S	Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0112	SPV.0035	Special 01. Riprap Heavy Special	CY	110.000	110.000
0114	SPV.0090	Special 01. Flashing Stainless Steel	LF	87.000	87.000

CLEARING AND GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0105	201.0205
					CLEARING STA	GRUBBING STA
0010	9+25.75	-	10+74.25	LT/RT	1.5	1.5
TOTAL 0010					1.5	1.5
0030	7+00	-	9+25.75	LT/RT	2.25	2.25
0030	10+74.25	-	13+00	LT/RT	2.25	2.25
TOTAL 0030					4.5	4.5
PROJECT TOTAL					6.0	6.0

MOE ROAD (EAST) EARTHWORK SUMMARY

Category	From/To Station	Location	Common Excavation (1) (Item 205.0100)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste	Borrow (Item 208.0100)	Comment:
			Cut		Factor 1.30				
0010	9+25.75 to 9+75.75	MAINLINE	2	162	211	-209	0	209	50' SOUTH END OF DECK, APPROACH
0010	10+24.25 to 10+74.25	MAINLINE	2	137	178	-176	0	176	50' NORTH END OF DECK, APPROACH
TOTAL 0010			4	299	390			385	
0030	7+00 to 9+25.75	MAINLINE	53	189	246	-193	0	193	ADDITIONAL SOUTH APPROACH
0030	10+74.25 to 13+00	MAINLINE	64	216	281	-217	0	217	ADDITIONAL NORTH APPROACH
TOTAL 0030			117	405	527			410	
PROJECT TOTAL			121	704	917			795	

- 1) Common Excavation is the Cut. Item number 205.0100.
- 2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill * Fill Factor
- 3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material on the p
- 4) All quantities shown in CY.

BASE AGGREGATE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	624.0100	REMARKS
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	WATER MGAL	
0010	9+25.75	-	9+75.75	MAINLINE	10	70	1	50' SOUTH END OF DECK, APPROACH
0010	10+24.25	-	10+74.25	MAINLINE	10	70	1	50' NORTH END OF DECK, APPROACH
TOTAL 0010					20	140	2	
0030	7+00	-	9+25.75	MAINLINE	25	285	5	ADDITIONAL SOUTH APPROACH
0030	10+74.25	-	13+00	MAINLINE	25	285	5	ADDITIONAL NORTH APPROACH
TOTAL 0030					50	570	10	
PROJECT TOTAL					70	710	12	

ASPHALT

CATEGORY	STATION	TO	STATION	LOCATION	455.0605	465.0105	REMARKS
					TACK COAT GAL	ASPHALTIC SURFACE TON	
0010	9+25.75	-	9+75.75	MAINLINE	9	30	50' SOUTH END OF DECK, APPROACH
0010	10+24.25	-	10+74.25	MAINLINE	9	30	50' NORTH END OF DECK, APPROACH
TOTAL 0010					18	60	
0030	7+00	-	9+25.75	MAINLINE	32	100	ADDITIONAL SOUTH APPROACH
0030	10+74.25	-	13+00	MAINLINE	32	100	ADDITIONAL NORTH APPROACH
TOTAL 0030					64	200	
PROJECT TOTAL					82	260	

EROSION CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	625.0100	627.0200	628.1504	628.1520	628.2027	629.0210	630.0120	630.0200	630.0300	630.0500	REMARKS
					TOPSOIL SY	MULCHING SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	EROSION MAT CLASS II TYPE C SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEEDING TEMPORARY LB	SEEDING BORROW PIT LB	SEED WATER MGAL	
0010	9+25.75	-	9+75.75	LT/RT	125	55	100	200	120	0.1	5	5	1.0	4	50' SOUTH END OF DECK, APPROACH
0010	10+24.25	-	10+74.25	LT/RT	120	50	100	200	115	0.1	5	5	1.0	4	50' NORTH END OF DECK, APPROACH
0010			UNDISTRIBUTED		-	25	50	100	60	0.1	3	3	0.5	2	
TOTAL 0010					245	130	250	500	295	0.3	13	13	2.5	10	
0030	7+00	-	9+25.75	LT/RT	280	490	490	980	50	0.3	15	15	1.0	12	ADDITIONAL SOUTH APPROACH
0030	10+74.25	-	13+00	LT/RT	310	570	490	980	-	0.4	16	16	1.0	13	ADDITIONAL NORTH APPROACH
0030			UNDISTRIBUTED		-	265	245	490	15	0.2	8	8	0.5	6	
TOTAL 0030					590	1,325	1,225	2,450	65	0.9	39	39	2.5	31	
PROJECT TOTAL					835	1,455	1,475	2,950	360	1.2	52	52	5.0	41	

SIGNS

CATEGORY	STATION	LOCATION	634.0614	637.2230	638.2602	638.3000	REMARKS
			POSTS WOOD 4X6-INCH X 14-FT EACH	SIGNS TYPE II REFLECTIVE F SF	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
0010	9+77	RT	-	-	1	1	R12-1: WEIGHT LIMIT 40 TONS
0010	9+74	LT	1	3	-	-	W5-52L: CLEARANCE STRIPER DOWN RIGHT
0010	9+74	RT	1	3	-	-	W5-52R: CLEARANCE STRIPER DOWN LEFT
0010	9+80	LT	-	-	1	1	W5-52L: CLEARANCE STRIPER DOWN RIGHT
0010	9+80	RT	-	-	1	1	W5-52R: CLEARANCE STRIPER DOWN LEFT
0010	10+20	LT	-	-	1	1	W5-52R: CLEARANCE STRIPER DOWN LEFT
0010	10+20	RT	-	-	1	1	W5-52L: CLEARANCE STRIPER DOWN RIGHT
0010	10+26	LT	1	3	-	-	W5-52R: CLEARANCE STRIPER DOWN LEFT
0010	10+26	RT	1	3	-	-	W5-52L: CLEARANCE STRIPER DOWN RIGHT
0010	10+23	LT	-	-	1	1	R12-1: WEIGHT LIMIT 40 TONS
TOTAL 0010			4	12	6	6	

TRAFFIC CONTROL

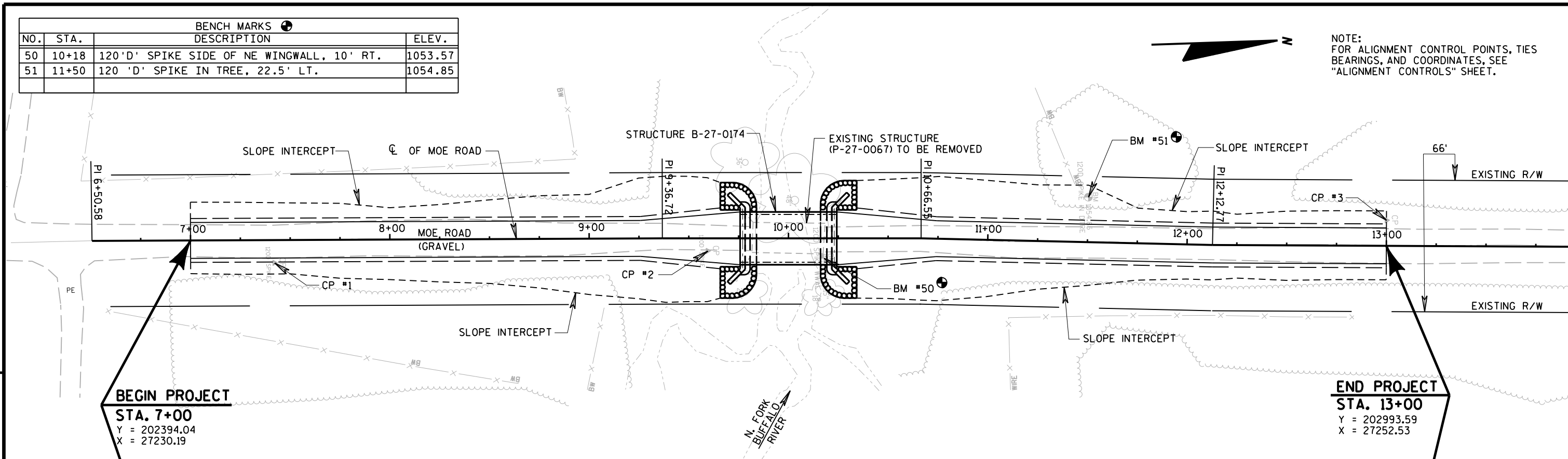
CATEGORY	LOCATION	DURATION		643.0420	643.0705	643.0900	643.5000		
		DAYS	NO.	TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A NO. DAY	TRAFFIC CONTROL SIGNS DAY	TRAFFIC CONTROL EACH		
0010	PER SDD 15C2	75	18	1,350	28	2,100	14	1,050	-
0010	MOE ROAD (EAST)	-	-	-	-	-	-	-	1
TOTAL 0010				1,350	28	2,100	14	1,050	1

STAKING

CATEGORY	STATION	TO	STATION	LOCATION	650.4500	650.5000	650.6500.01	650.9910.01	650.9920
					CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) (01. B-27-0174) LS	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 7249-00-70) LS	CONSTRUCTION STAKING SLOPE STAKES LF
0010	9+25.75	-	10+74.25	MAINLINE	100	100	-	-	100
0010	7+00	-	13+00	PROJECT 7249-00-70	-	-	-	1	-
TOTAL 0010					100	100	0	1	100
0020	9+75.75	-	10+24.25	B-27-0174	-	-	1	-	-
TOTAL 0020					0	0	1	0	0
'0030	7+00	-	9+25.75		226	226	-	-	226
0030	10+74.25	-	13+00	B-27-0174	226	226	-	-	226
TOTAL 0030					452	452	0	0	452
PROJECT TOTAL					552	552	1	1	552

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
50	10+18	120 'D' SPIKE SIDE OF NE WINGWALL, 10' RT.	1053.57
51	11+50	120 'D' SPIKE IN TREE, 22.5' LT.	1054.85

NOTE:
FOR ALIGNMENT CONTROL POINTS, TIES
BEARINGS, AND COORDINATES, SEE
"ALIGNMENT CONTROLS" SHEET.



BEGIN PROJECT
STA. 7+00
Y = 202394.04
X = 27230.19

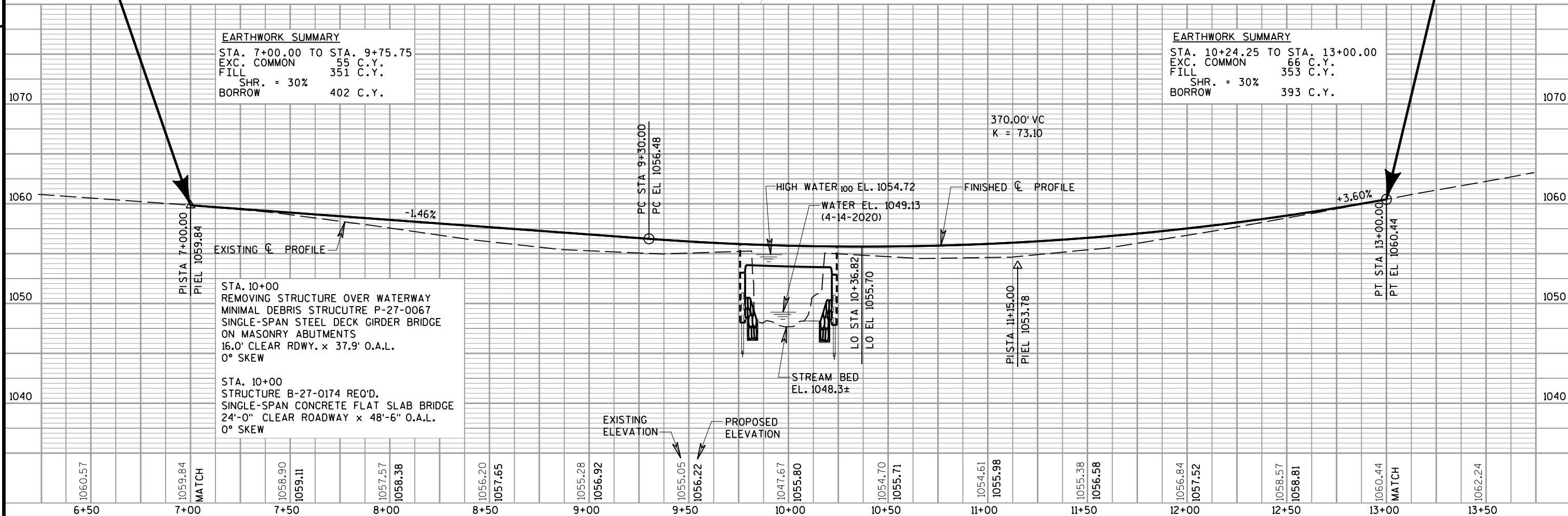
END PROJECT
STA. 13+00
Y = 202993.59
X = 27252.53

EARTHWORK SUMMARY

STA. 7+00.00 TO STA. 9+75.75	
EXC. COMMON	55 C.Y.
FILL	351 C.Y.
SHR. = 30%	
BORROW	402 C.Y.

EARTHWORK SUMMARY

STA. 10+24.25 TO STA. 13+00.00	
EXC. COMMON	66 C.Y.
FILL	353 C.Y.
SHR. = 30%	
BORROW	393 C.Y.

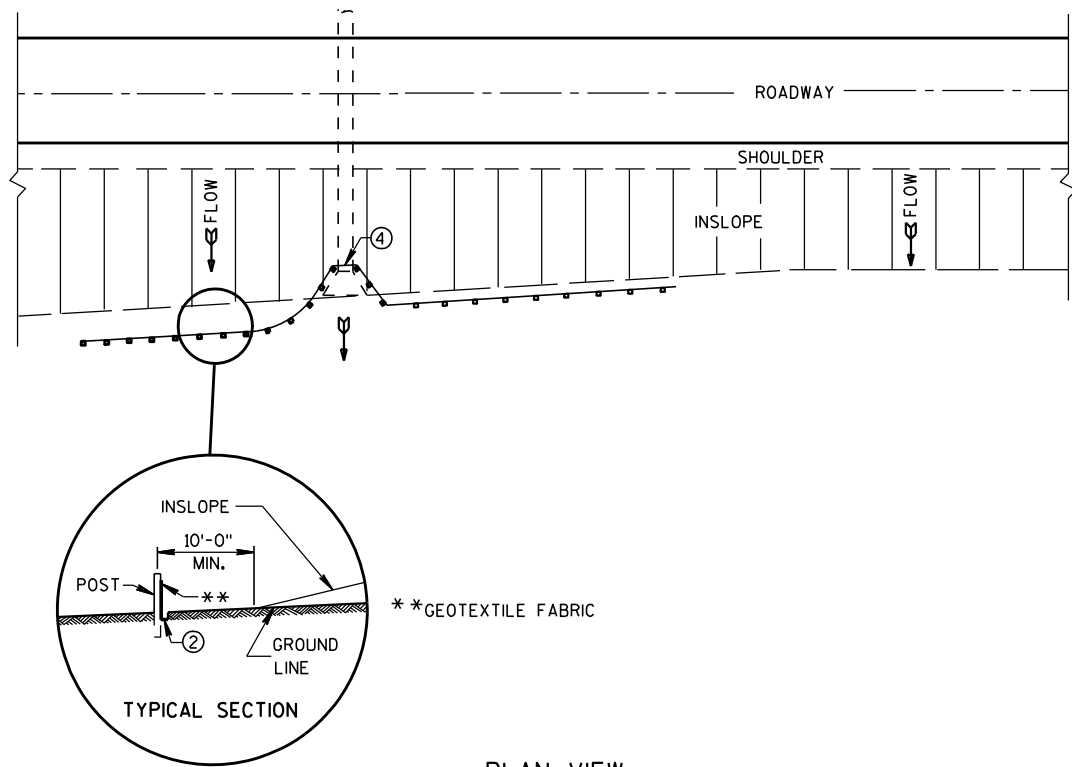


1060.57	1059.84	1058.90	1059.11	1057.57	1058.38	1056.20	1057.65	1055.28	1056.92	1055.05	1056.22	1047.67	1055.80	1054.70	1055.71	1054.61	1055.98	1055.38	1056.58	1056.84	1057.52	1058.57	1058.81	1060.44	1062.24
6+50	7+00	7+50	8+00	8+50	9+00	9+50	10+00	10+50	11+00	11+50	12+00	12+50	13+00	13+50											

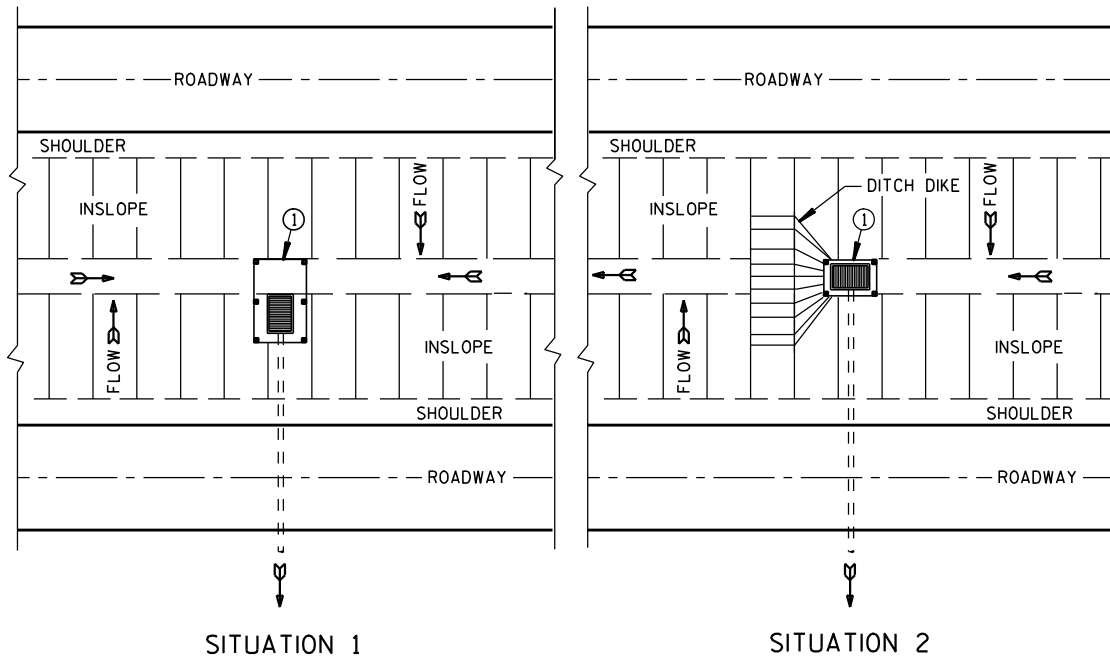
PROJECT NO: 7249-00-70 HWY: MOE ROAD COUNTY: JACKSON PLAN AND PROFILE SCALE, FEET 0 25 50 SHEET E

Standard Detail Drawing List

08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

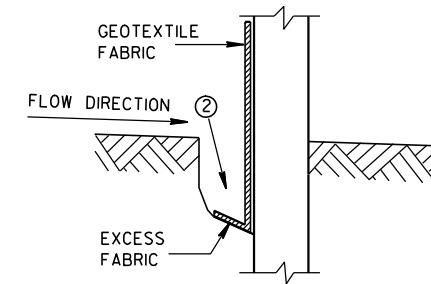


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

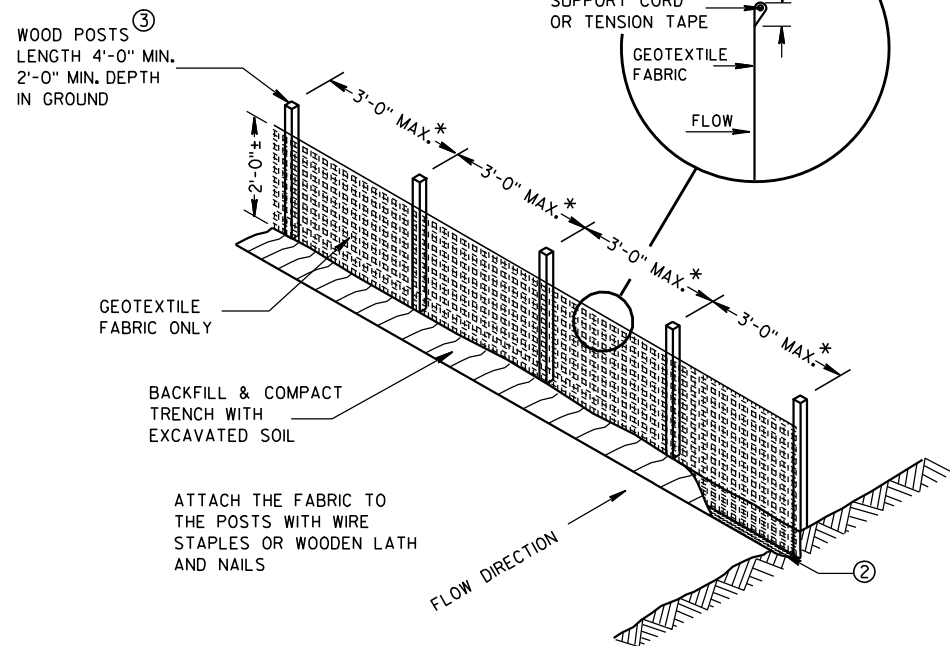
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.



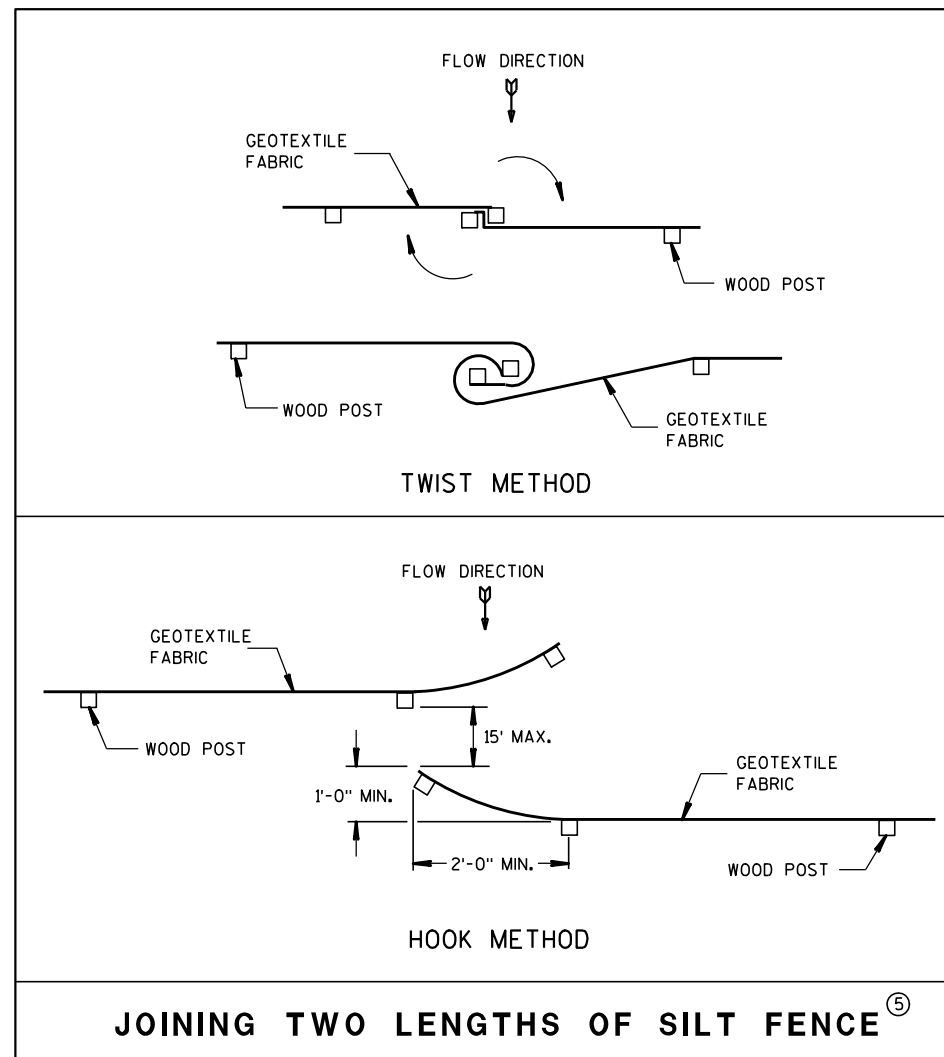
TRENCH DETAIL

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

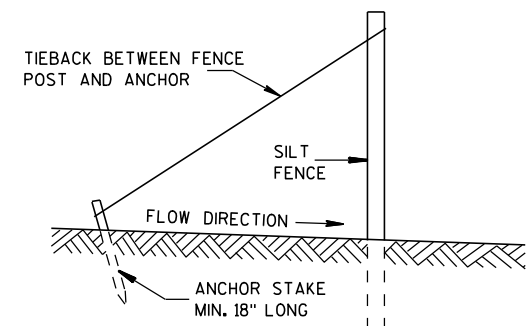


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤

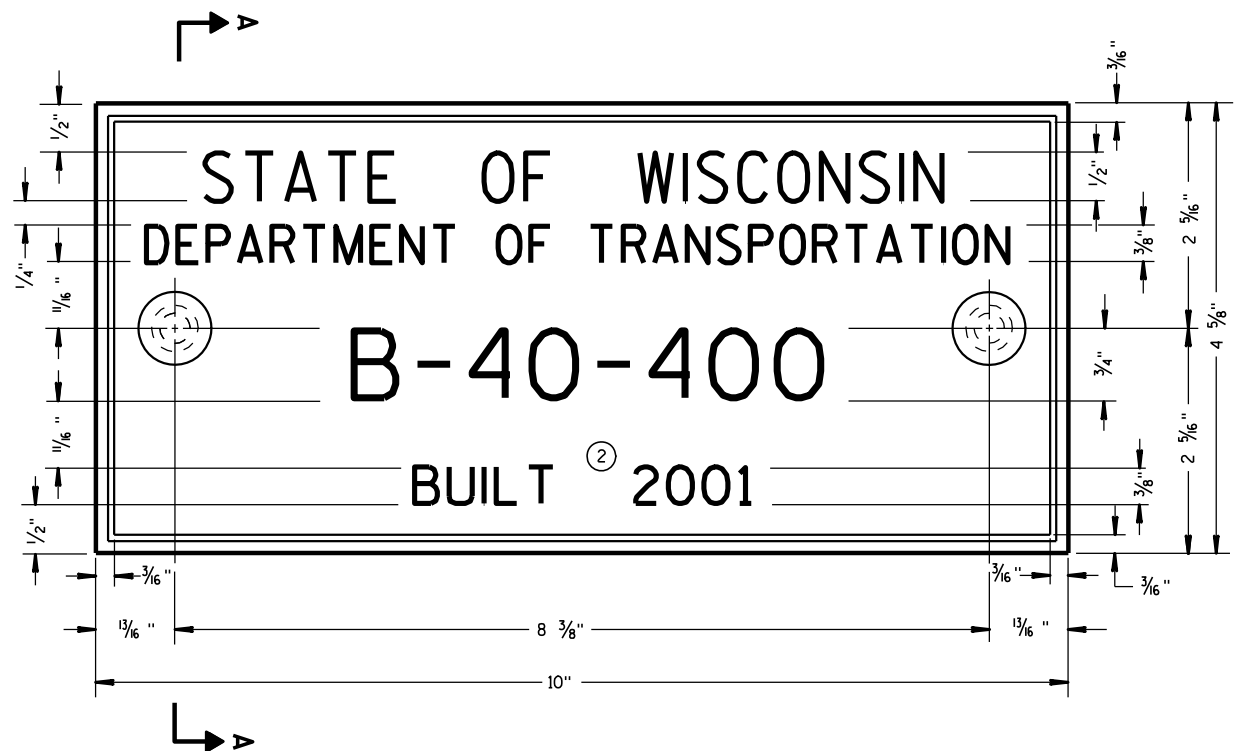


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



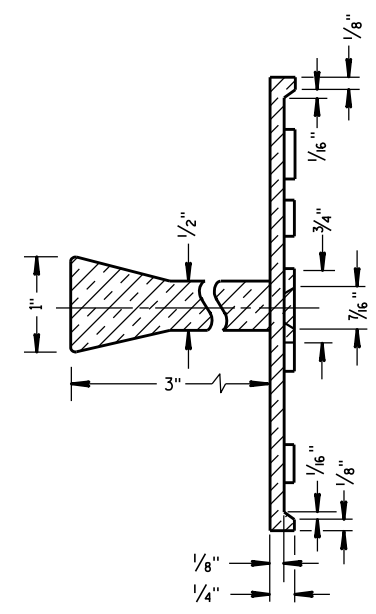
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

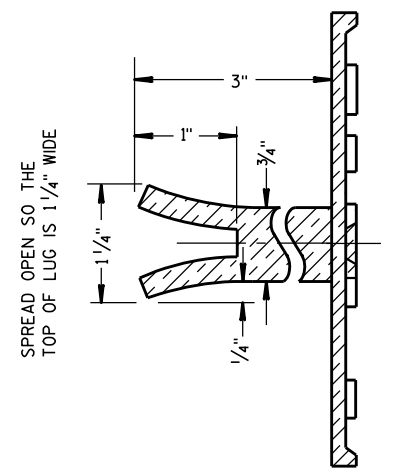
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG

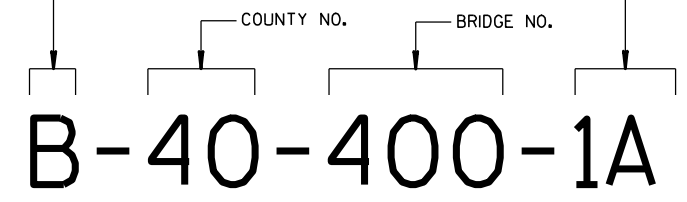
6

6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

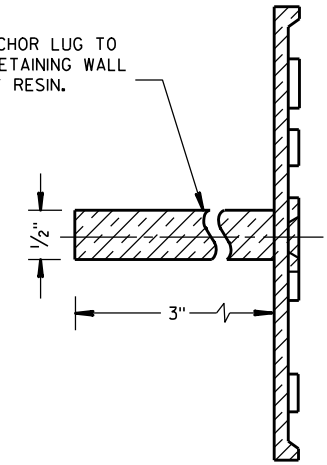
B = BRIDGE
C = CULVERT
R = RETAINING WALL

UNIT NO. FOR MULTIPLE
UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.

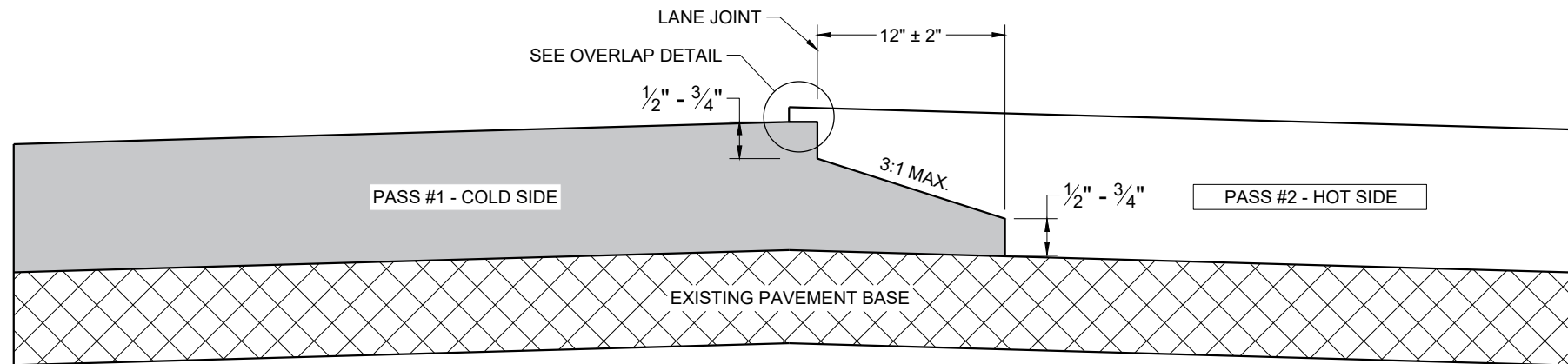


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

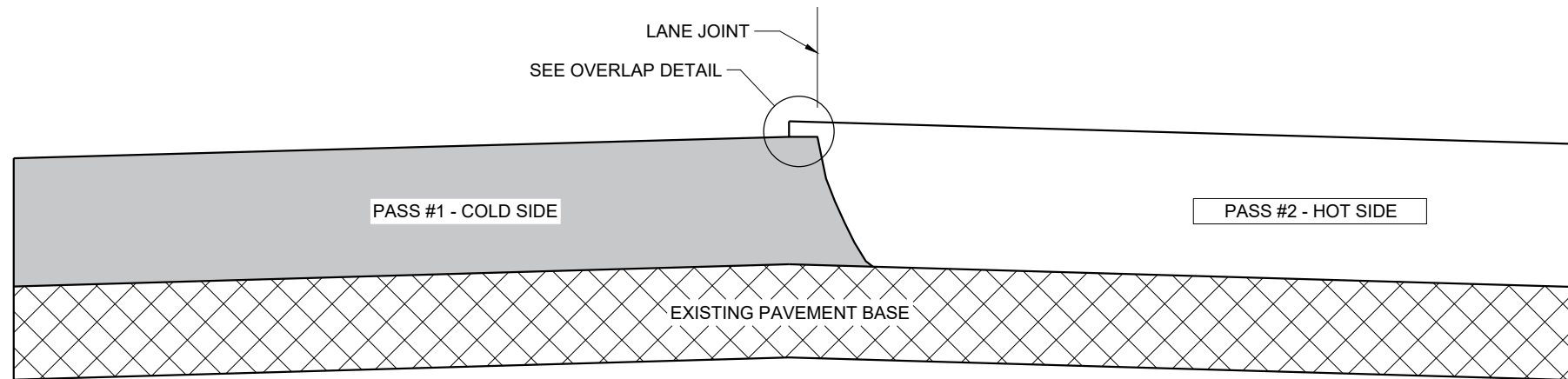
S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

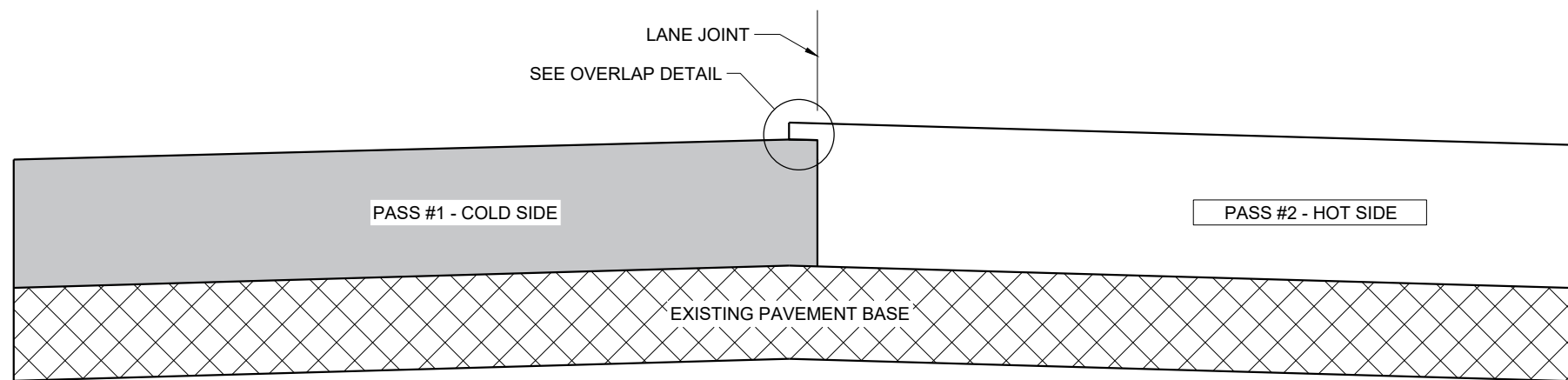
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



TYPICAL PAVEMENT CROSS SECTION NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION VERTICAL JOINT (MILLED)

GENERAL NOTES

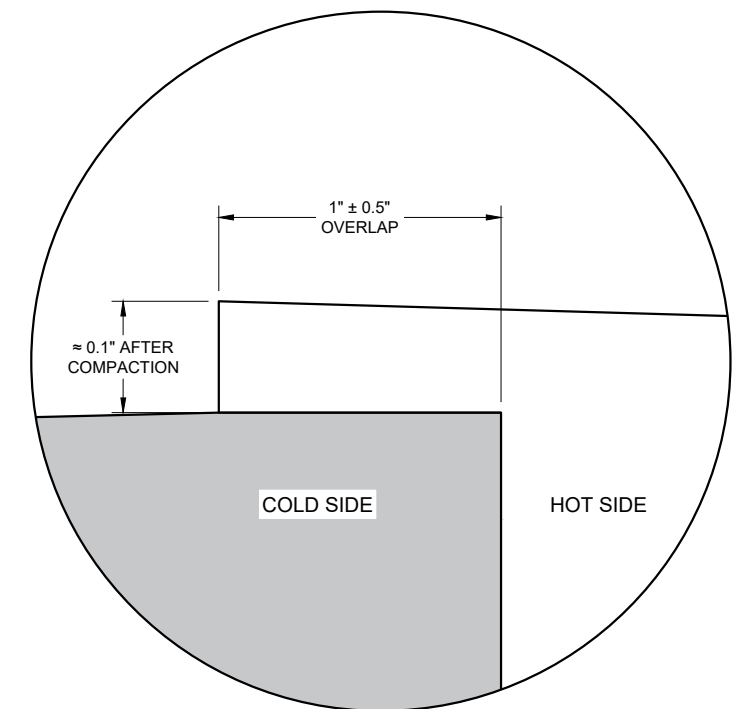
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

6

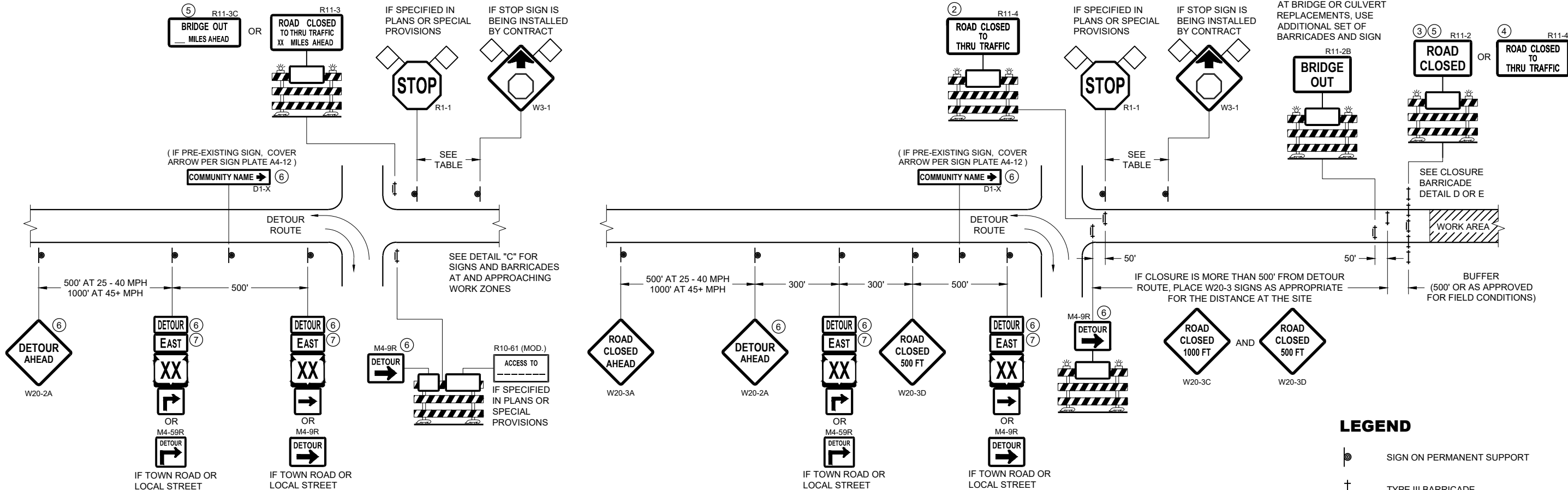
SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

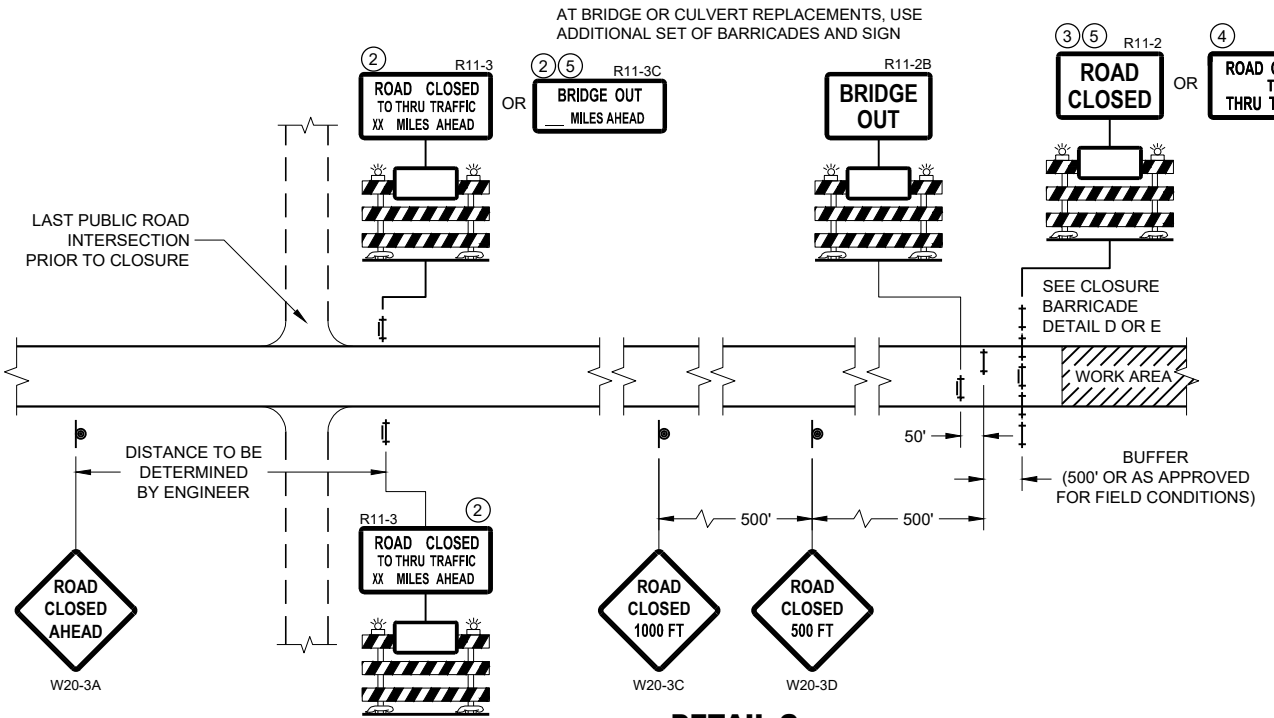
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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
- OR OR M1 - 4 M1 - 6 M1 - 5A
- OR M05 - 1 M06 - 1



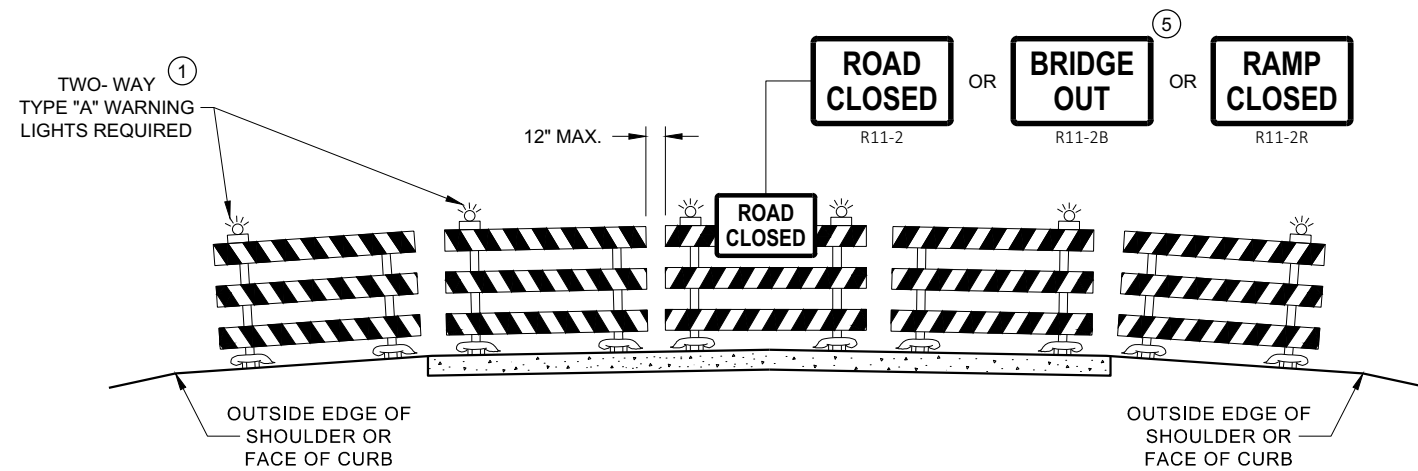
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

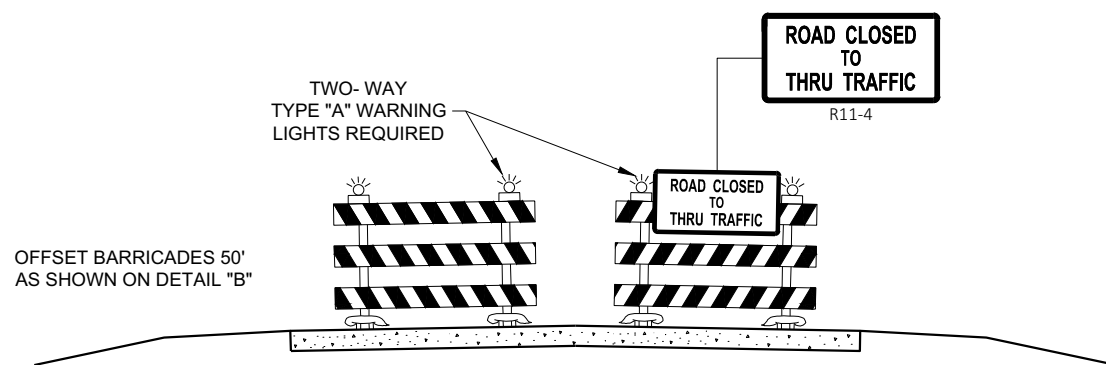
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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

FHWA

GENERAL NOTES

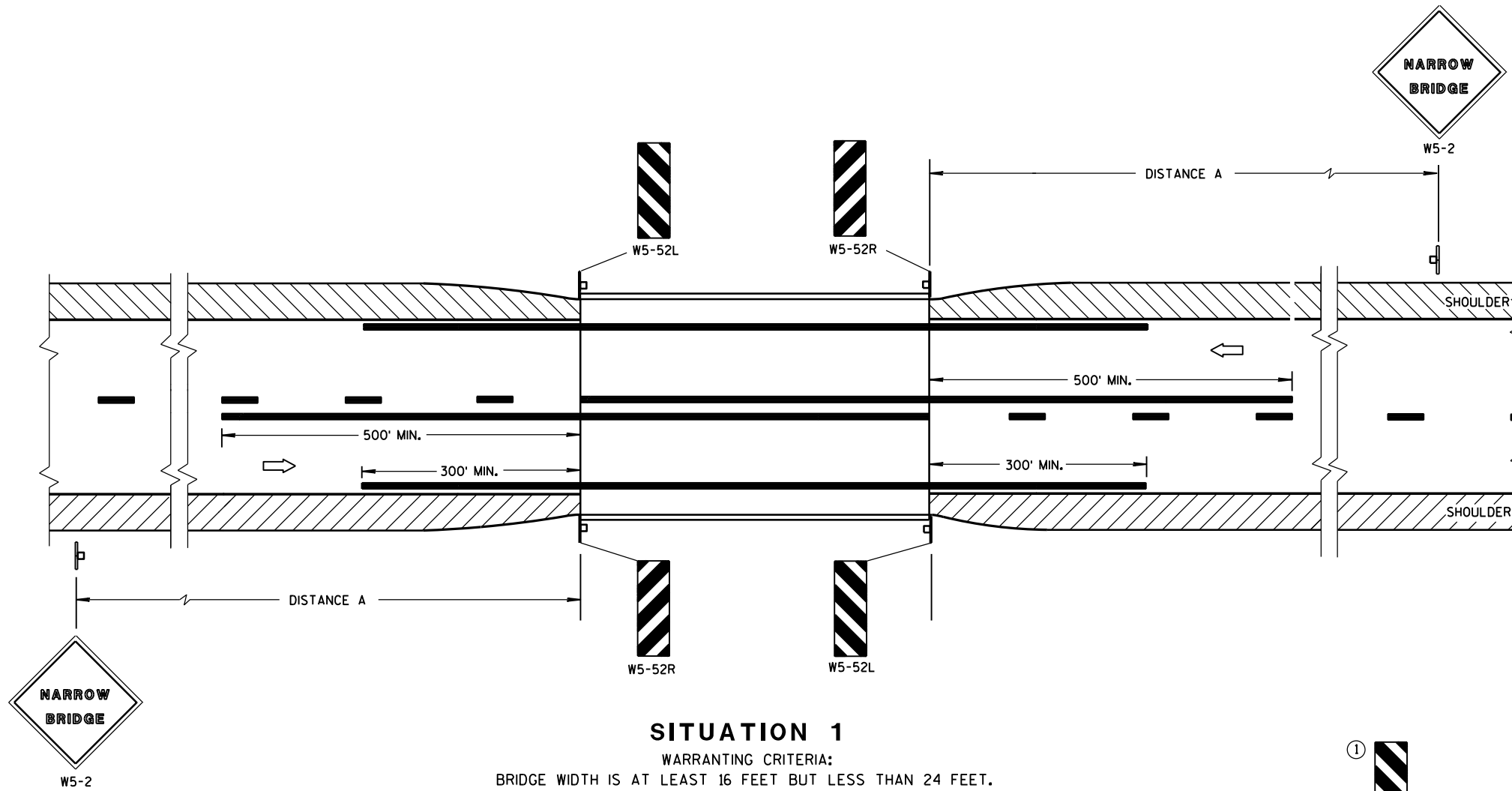
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

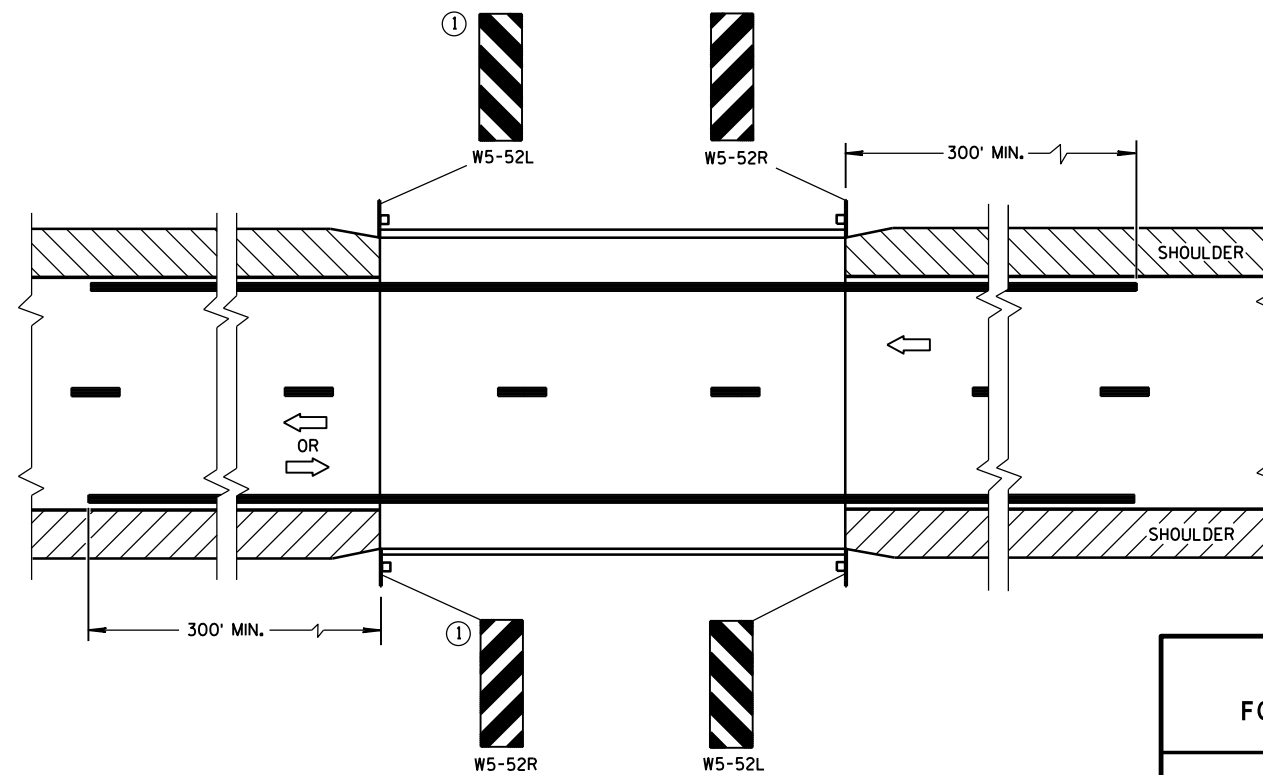
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 1

WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



SITUATION 2

WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

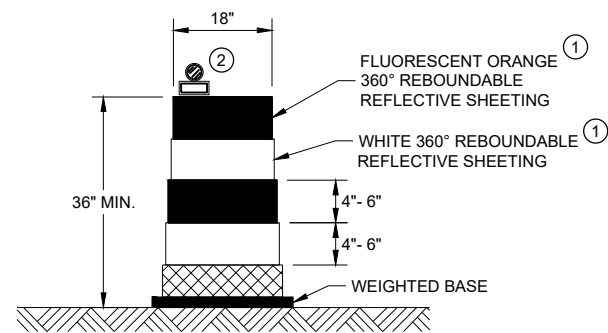
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

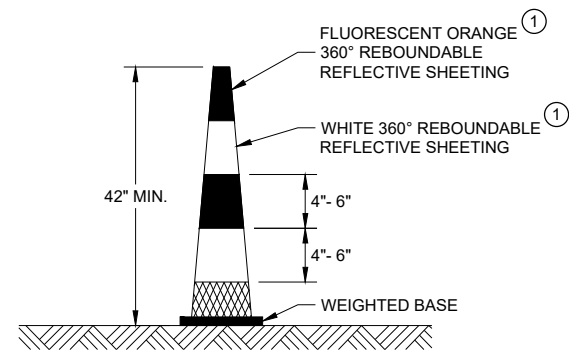
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

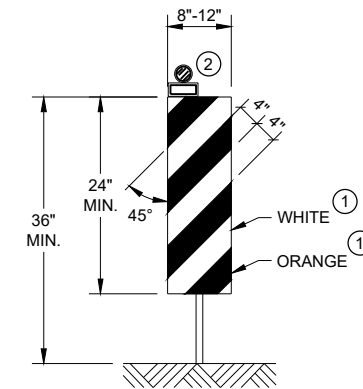


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

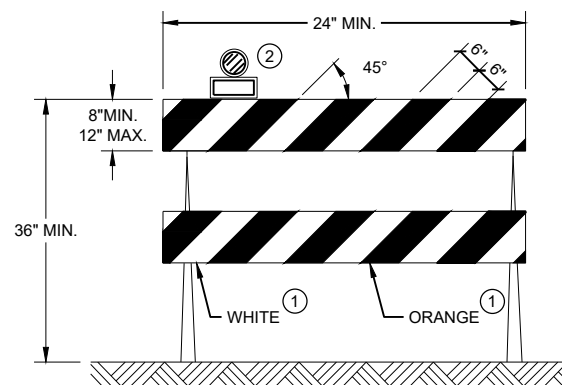


VERTICAL PANEL

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

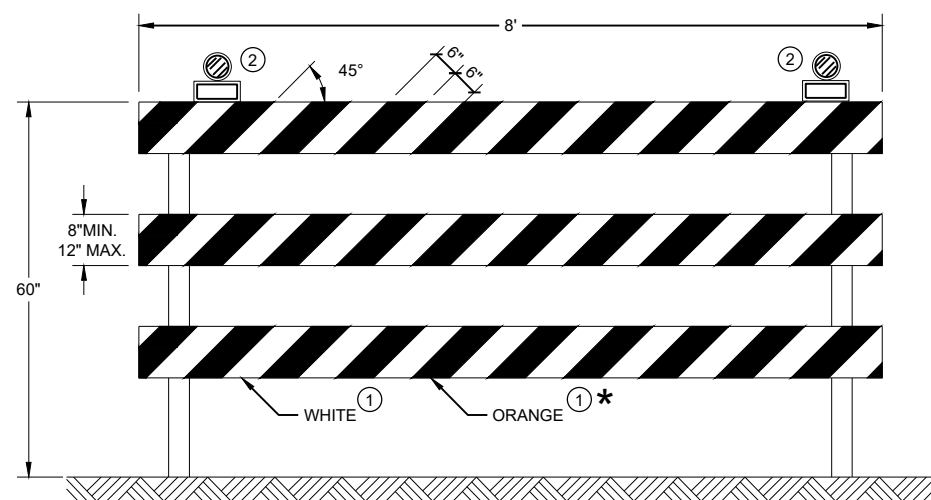
GENERAL NOTES

- 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 May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	



ELEVATION VIEW

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

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

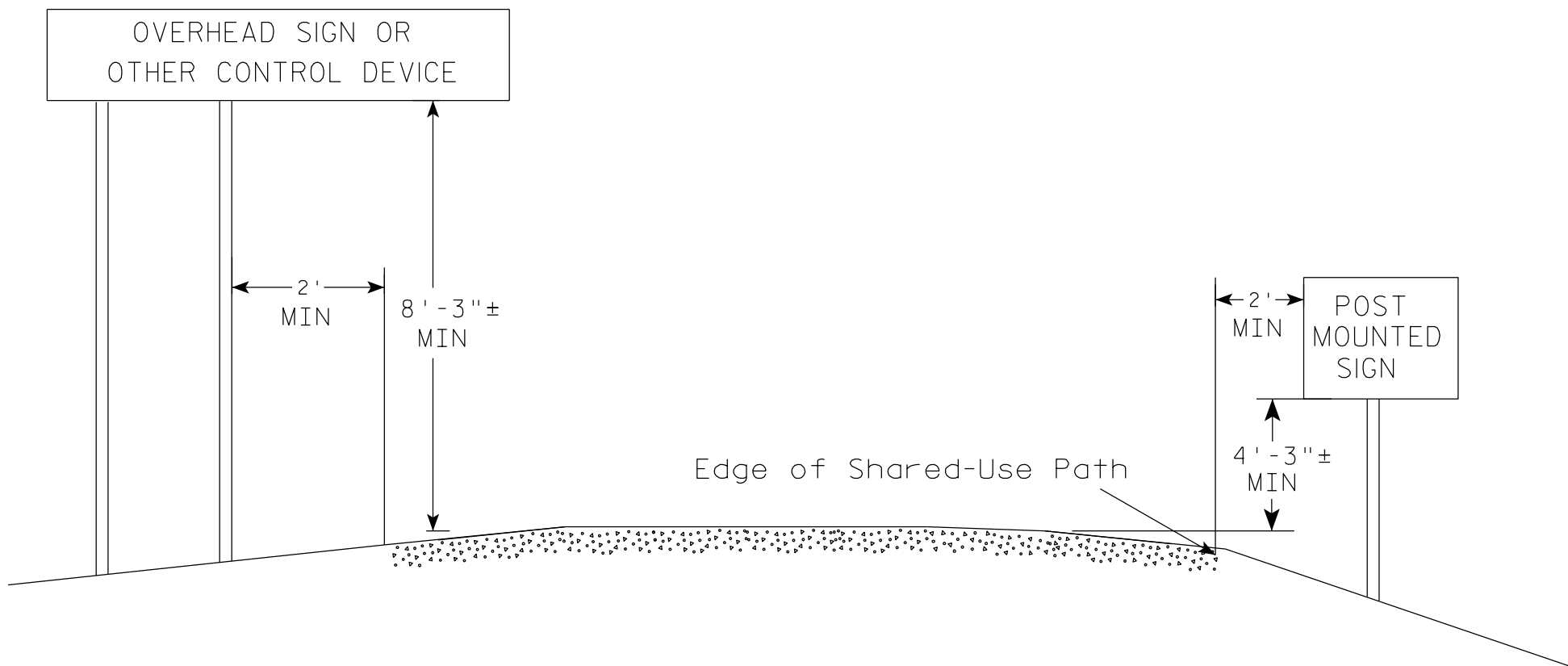
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. Offset distance shall be consistent with existing signs or consistent throughout length of project.
3. The height from ground level to the sign is 8'-3"± min. for the Overhead sign or other control device.
4. The height from ground level to the sign is 4'-3"± min. for the Post mounted sign.



POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON MULTI USE PATHS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

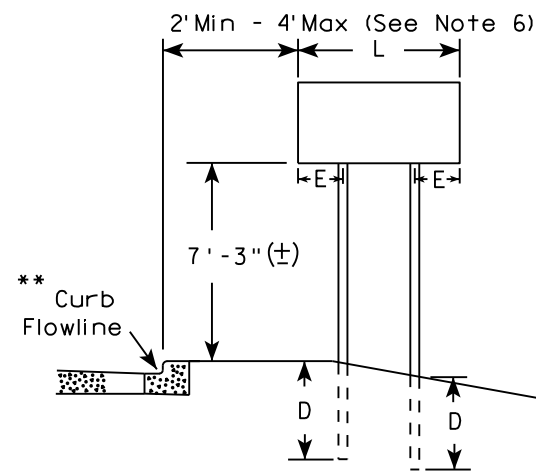
DATE 3/26/2020 PLATE NO. A4-3S.2

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

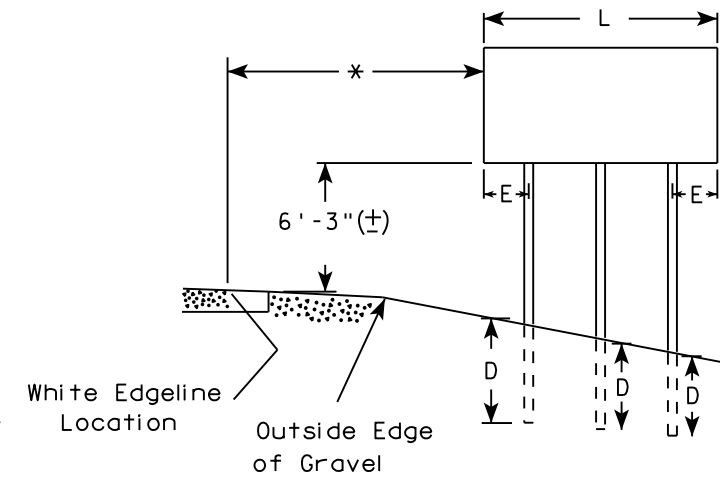
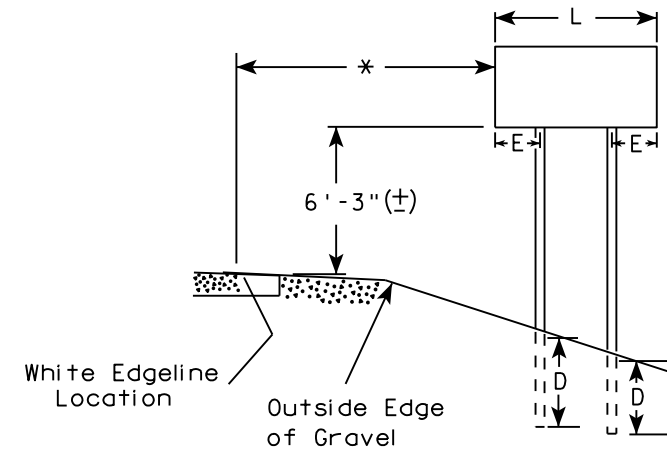
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-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" (±).

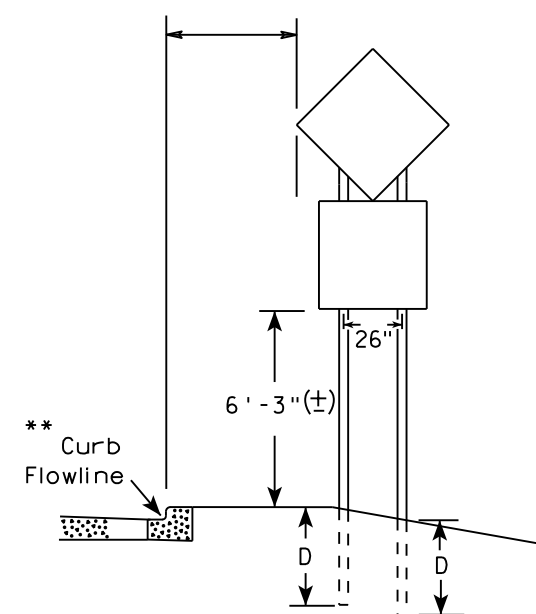
URBAN AREA



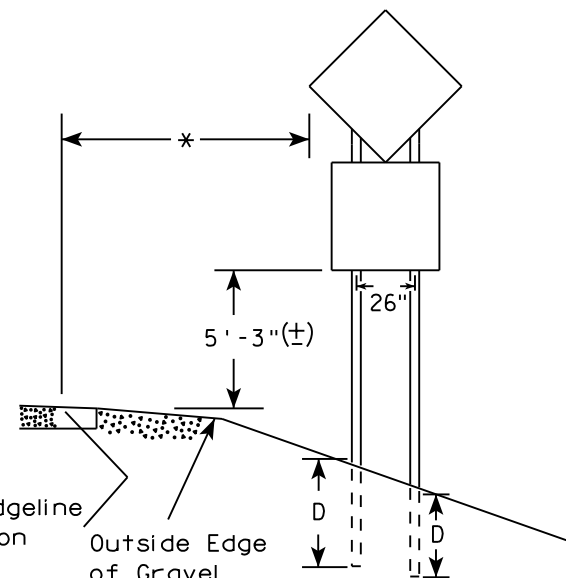
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

* 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.

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

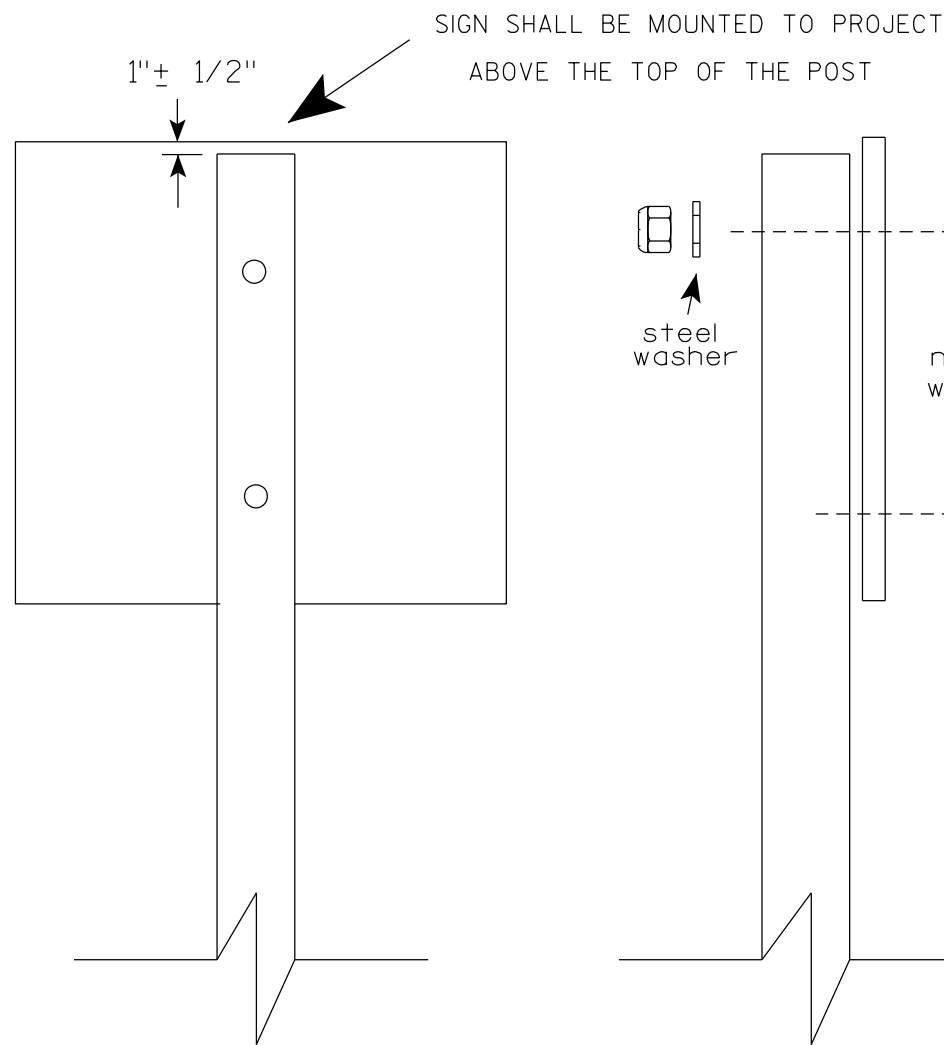
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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 8/21/17 PLATE NO. A4-4.15



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

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

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

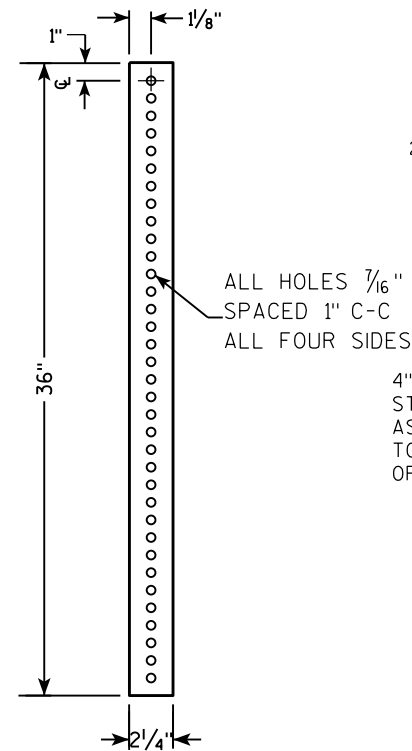
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE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

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

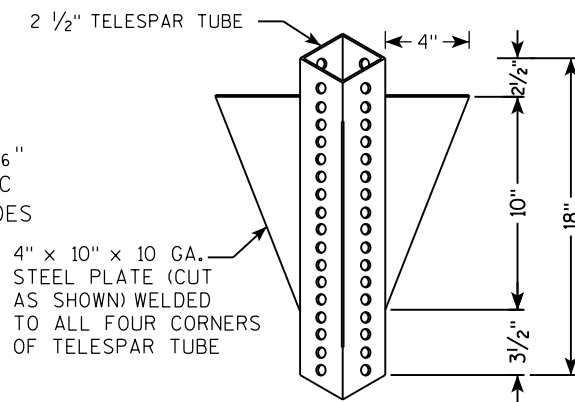
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

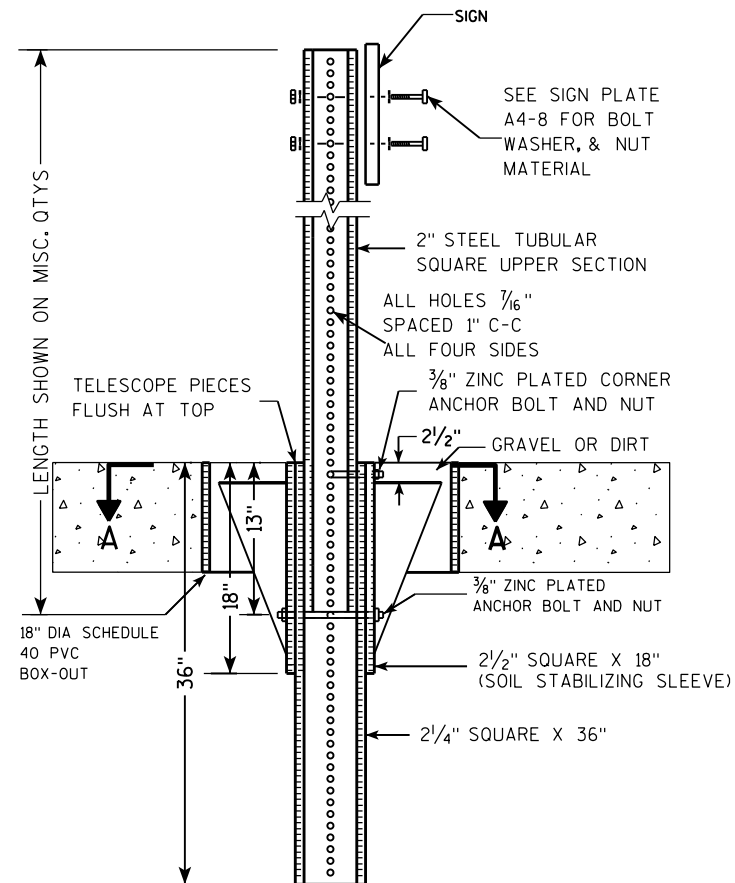
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



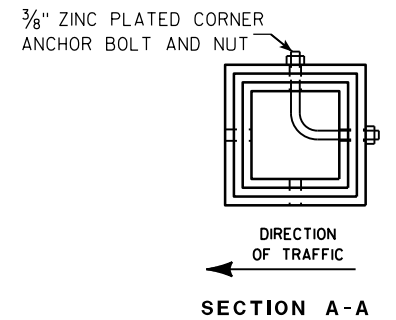
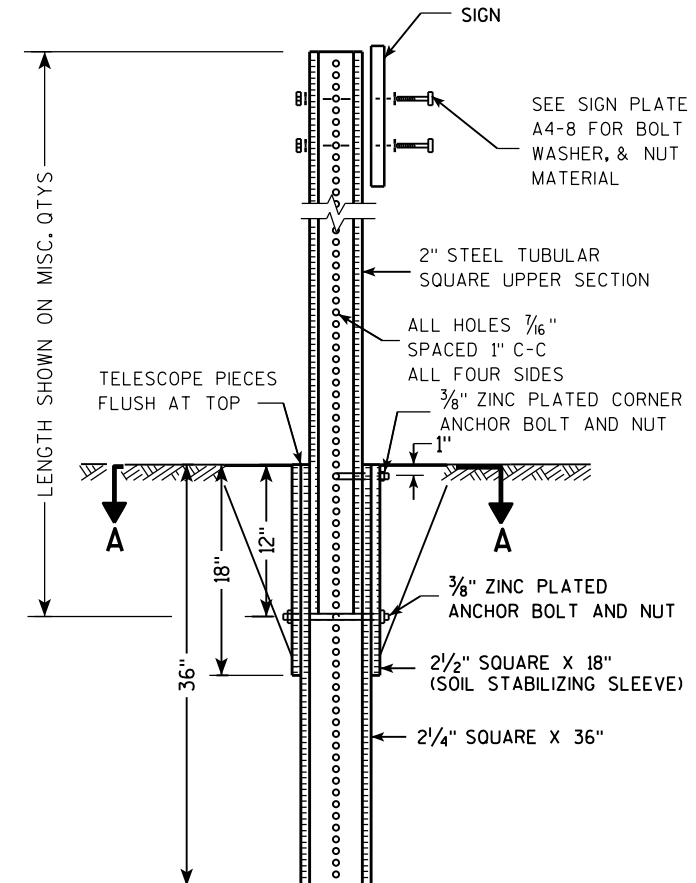
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



**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

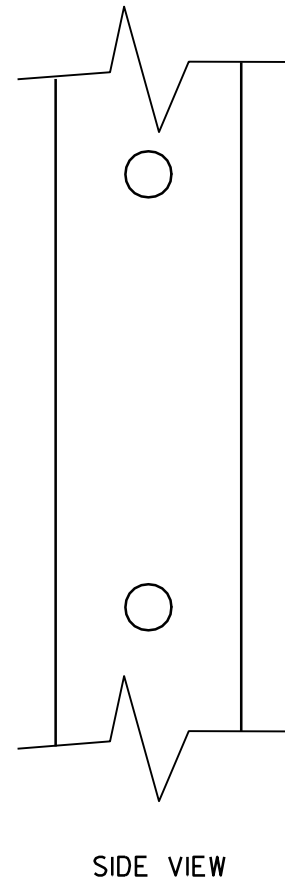
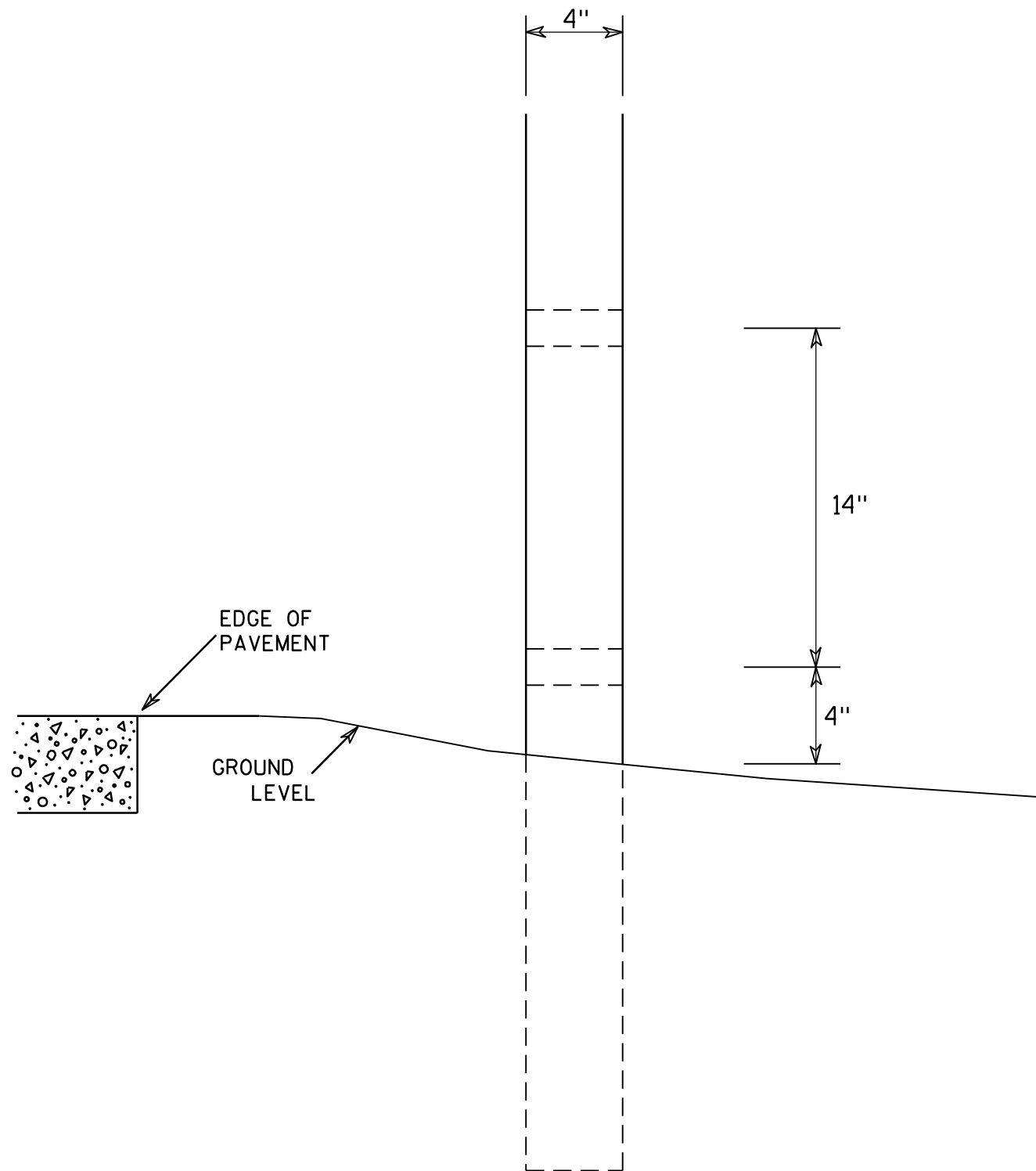
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**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



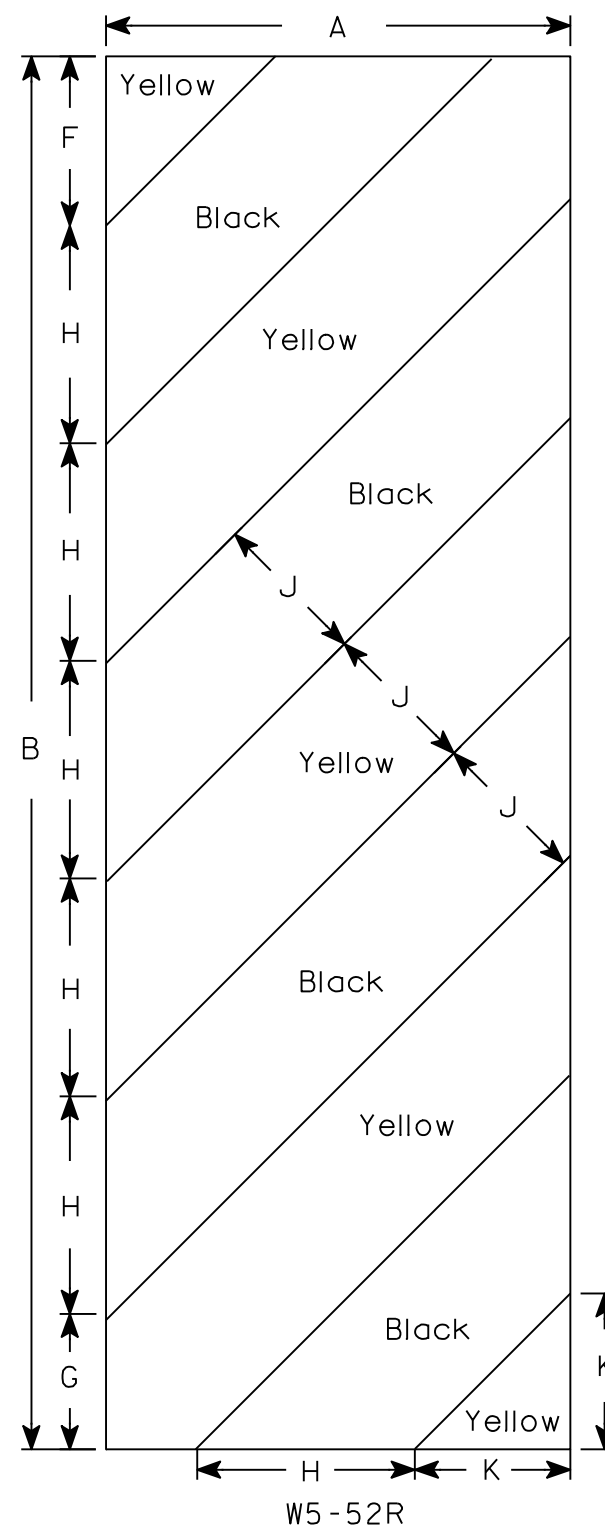
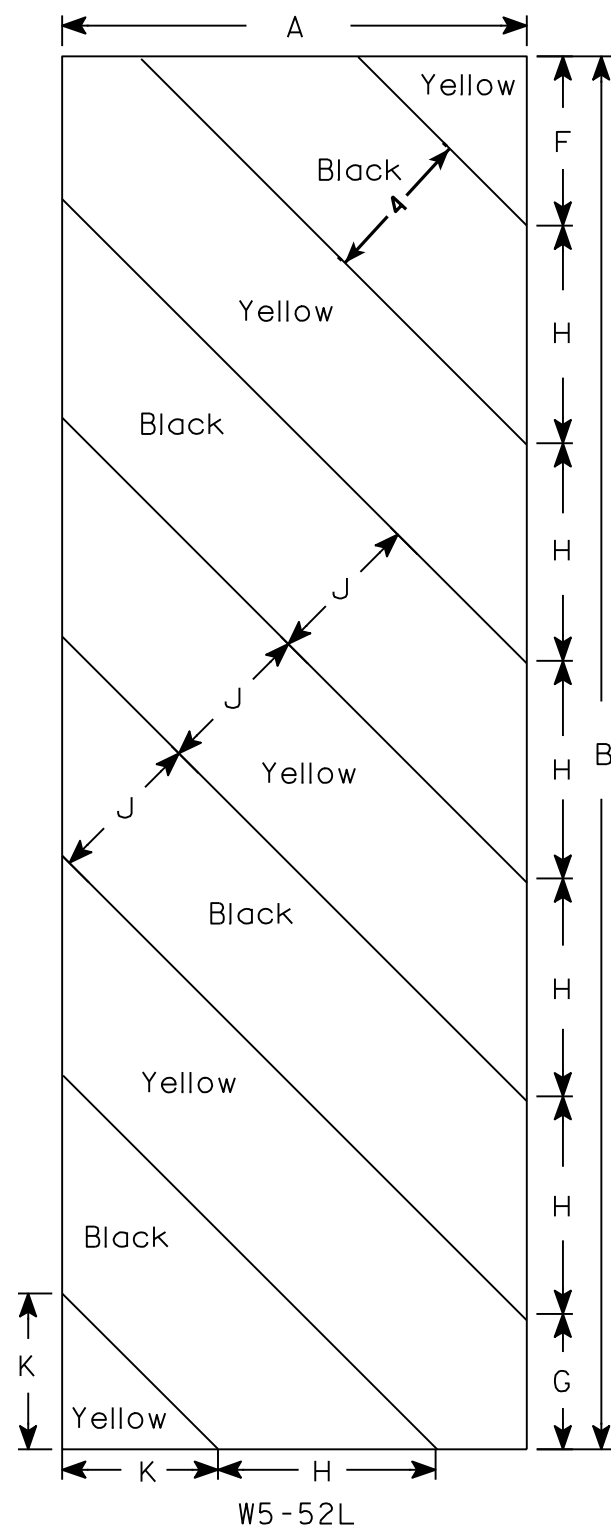
GENERAL NOTES

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>



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

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	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

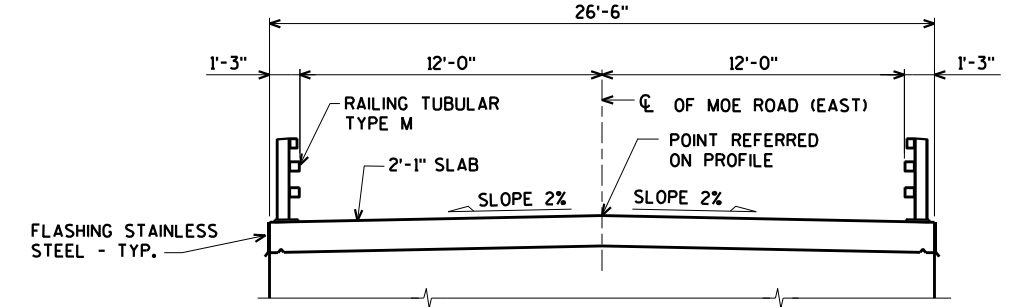
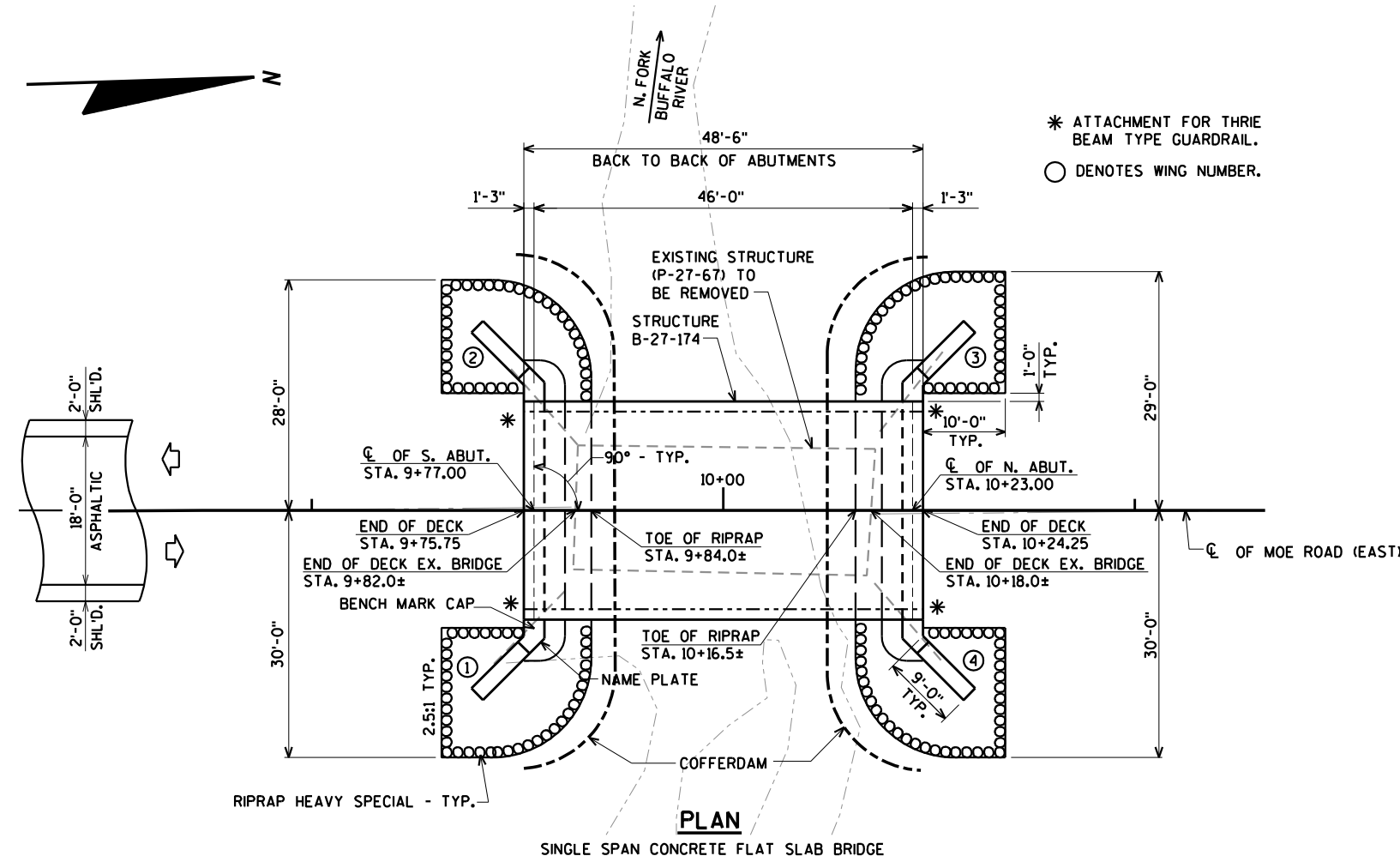
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

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



11/17/2021
PENTABLE:BRReou_shd_util.tbl



TYPICAL SECTION THRU BRIDGE

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
 INVENTORY RATING FACTOR: 1.25
 OPERATING RATING FACTOR: 1.62
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

MATERIAL PROPERTIES:

CONCRETE MASONRY SUPERSTRUCTURE $f'c = 4,000$ p.s.i.
 ALL OTHER $f'c = 3,500$ p.s.i.
 HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) $f_y = 60,000$ p.s.i.

HYDRAULIC DATA:

100 YEAR FREQUENCY

$Q_{100} = 1,130$ c.f.s.
 VEL. = 7.2 f.p.s.
 HW₁₀₀ = EL. 1054.72
 WATERWAY AREA = 158 sq. ft.
 DRAINAGE AREA = 8.1 sq. mi.
 ROADWAY OVERTOPPING = N/A
 SCOUR CRITICAL CODE = 8
 DATUM = NAVD88 (2012)

2 YEAR FREQUENCY

$Q_2 = 290$ c.f.s.
 VEL. = 2.9 f.p.s.
 HW₂ = EL. 1051.93

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 160 TONS # PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 45'-0" FOR BOTH ABUTMENTS.

*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

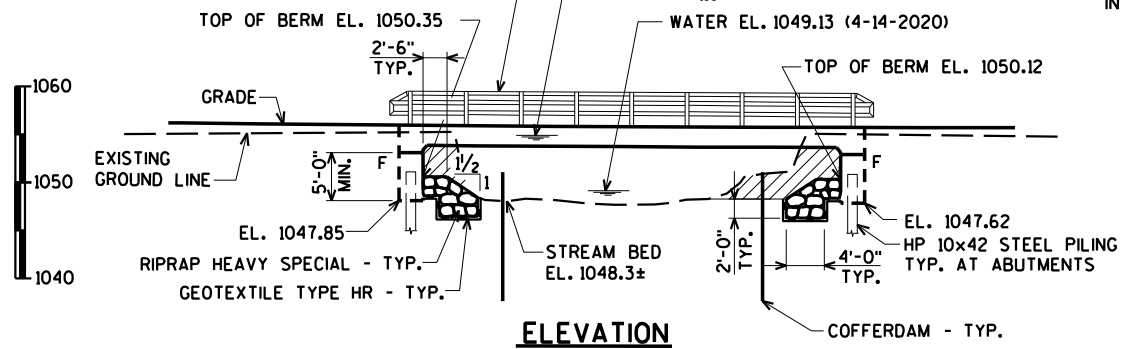
TRAFFIC DATA:

A.A.D.T. = <100 (2022)
 A.A.D.T. = <100 (2042)
 R.D.S. = 40 M.P.H.

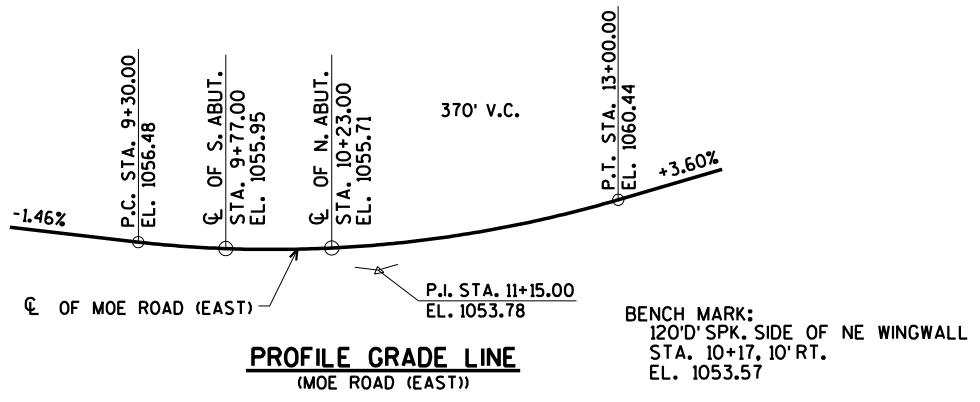
* ATTACHMENT FOR THRIE BEAM TYPE GUARDRAIL.
 ○ DENOTES WING NUMBER.

NOTE:
 FILL VOIDS IN EXPOSED RIPRAP HEAVY SPECIAL WITH CLEAN COBBLE-SIZED ROCK RANGING FROM 4-INCHES TO 8-INCHES IN SIZE AND TOP WITH 6-INCH TOP LAYER OF COBBLE-SIZED ROCK RANGING FROM 1-INCH TO 1.5-INCH IN SIZE. COBBLE-SIZED ROCK TO BE INCLUDED IN BID ITEM "RIPRAP HEAVY SPECIAL".

█ COST OF EXCAVATION OR FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-27-174".



ELEVATION



PROFILE GRADE LINE (MOE ROAD (EAST))

BENCH MARK:
 120'D SPK. SIDE OF NE WINGWALL
 STA. 10+17, 10' RT.
 EL. 1053.57

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. STRUCTURE DETAILS
4. SUBSURFACE EXPLORATION
5. SOUTH ABUTMENT
6. SOUTH ABUTMENT WING DETAILS & BILL OF BARS
7. NORTH ABUTMENT
8. NORTH ABUTMENT WING DETAILS & BILL OF BARS
9. SUPERSTRUCTURE
10. SUPERSTRUCTURE DETAILS
11. RAILING TUBULAR TYPE M



11/17/2021

BRIDGE OFFICE CONTACT:
 AARON BONK
 (608)-261-0261
 CONSULTANT CONTACT:
 ARLEN BEAUDETTE
 (715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>[Signature]</i>	SDR	11/29/21
		CHIEF STRUCTURES DESIGN ENGINEER	DATE
STRUCTURE B-27-174			
MOE ROAD (EAST) OVER N. FORK BUFFALO RIVER			
COUNTY	JACKSON	TOWN/CITY/VILLAGE	GARFIELD
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	ZSS	DESIGN CK'D.	JCK
DRAWN BY	JLB	PLANS CK'D.	AEB
GENERAL PLAN			SHEET 1 OF 11

DATE: _____
 CHECKED BY: _____
 BACK CHECKED BY: _____
 DATE: _____
 CORRECTED BY: _____

8

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TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER.	TOTAL	CATEGORY 20	CATEGORY 30*
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-27-67	LS	-----	-----	-----	1	1	-----
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-27-174	LS	-----	-----	-----	1	1	-----
206.5000	COFFERDAMS B-27-174	LS	-----	-----	-----	1	1	-----
210.1500	BACKFILL STRUCTURE TYPE A	TON	335	325	-----	660	660	-----
502.0100	CONCRETE MASONRY BRIDGES	CY	24.8	24.8	99.1	149	120	29
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	175	175	125	50
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,180	2,180	-----	4,360	4,360	-----
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,400	1,400	18,060	20,860	15,647	5,213
513.4061	RAILING TUBULAR TYPE M	LF	-----	-----	101	101	73	28
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6	6	-----	12	12	-----
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	270	270	-----	540	540	-----
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70	70	-----	140	140	-----
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	110	110	-----	220	220	-----
645.0120	GEOTEXTILE TYPE HR	SY	115	115	-----	230	230	-----
SPV.0035.01	RIPRAP HEAVY SPECIAL	CY	55	55	-----	110	110	-----
SPV.0090.01	FLASHING STAINLESS STEEL	LF	-----	-----	87	87	59	28
NON-BID ITEMS								
	FILLER	SIZE	-----	-----	-----	1/2" & 3/4"	1/2" & 3/4"	1/2" & 3/4"

*14' OF EXTRA DECK LENGTH WAS ADDED TO ELIMINATE ROADWAY OVERFLOW.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE. JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY SPECIAL AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-27-174" SHALL BE THE EXISTING GROUNDLINE.

THE EXISTING STRUCTURE, P-27-67, TO BE REMOVED, IS A SINGLE SPAN STEEL DECK GIRDER BRIDGE ON MASONRY ABUTMENTS, 35.9-FT. LONG WITH A 15.4-FT. CLEAR ROADWAY WIDTH.

AT THE BACK FACE OF ABUTMENTS, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.

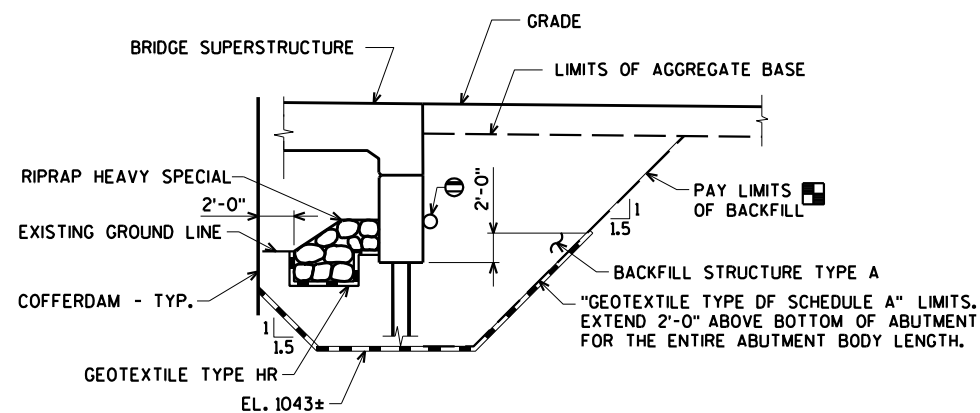
EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS SHALL BE PERFORMED AS DETAILED ON THIS SHEET. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED AS DETAILED ON THIS SHEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATIONS FOR STRUCTURES.

EXISTING SUBSTRUCTURE LOCATIONS ARE BASED ON SURVEY. REMOVE EXISTING SUBSTRUCTURES AS NEEDED TO BUILD NEW SUBSTRUCTURES. COST OF REMOVAL IS CONSIDERED INCIDENTAL TO THE "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-27-67" BID ITEM.

AT ABUTMENTS, CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

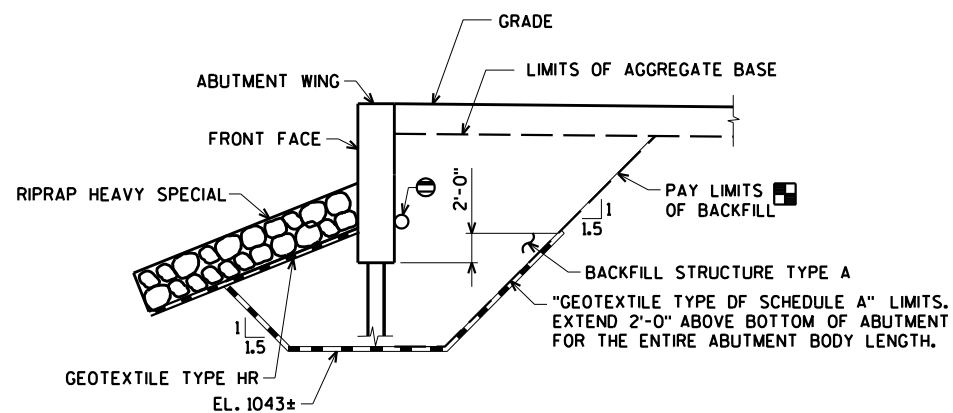
OVEREXCAVATE AREA OF PILING TO EL. 1043± TO REMOVE PEAT SOILS AT EACH ABUTMENT. THIS SHALL BE INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES".



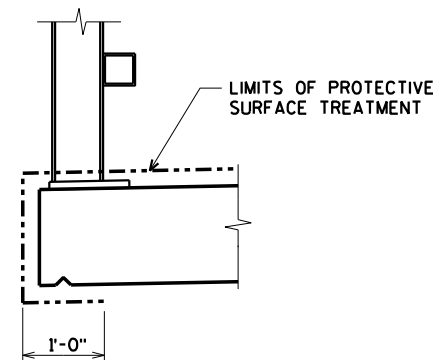
BACKFILL STRUCTURE LIMITS

■ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 6.



BACKFILL STRUCTURE LIMITS THRU WING



PROTECTIVE SURFACE TREATMENT DETAIL

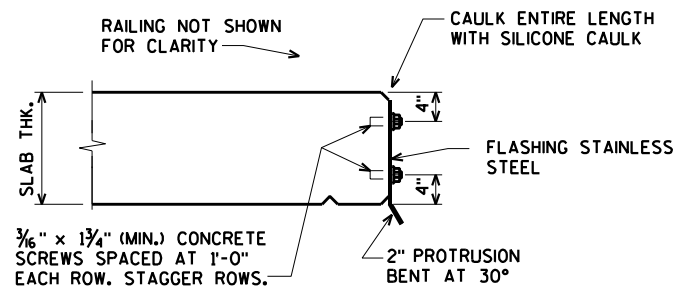
11/17/2021 PENTABLE:BRReou...shd...util.tbi

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-174			
DRAWN BY JLB		PLANS CK'D. AEB	
QUANTITIES AND NOTES			SHEET 2 OF 11

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



FLASHING DETAIL FOR NEW BRIDGES WITH OPEN RAILING

THE BID ITEM "FLASHING STAINLESS STEEL" SHALL INCLUDE PROVIDING AND INSTALLING THE STAINLESS STEEL FLASHING, SILICONE CAULK, 3/16" CONCRETE SCREWS AND CLEANING THE EDGE OF THE SLAB PRIOR TO ATTACHMENT OF THE FLASHING.

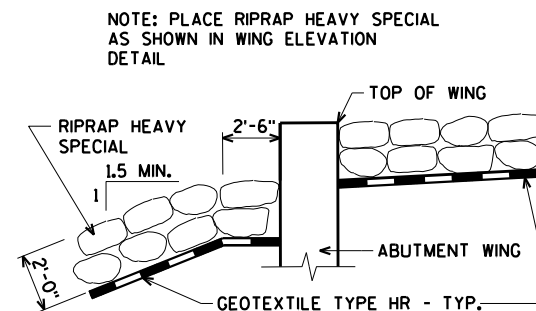
FLASHING TO BE INSTALLED AFTER PROTECTIVE SURFACE TREATMENT APPLICATION.

CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.

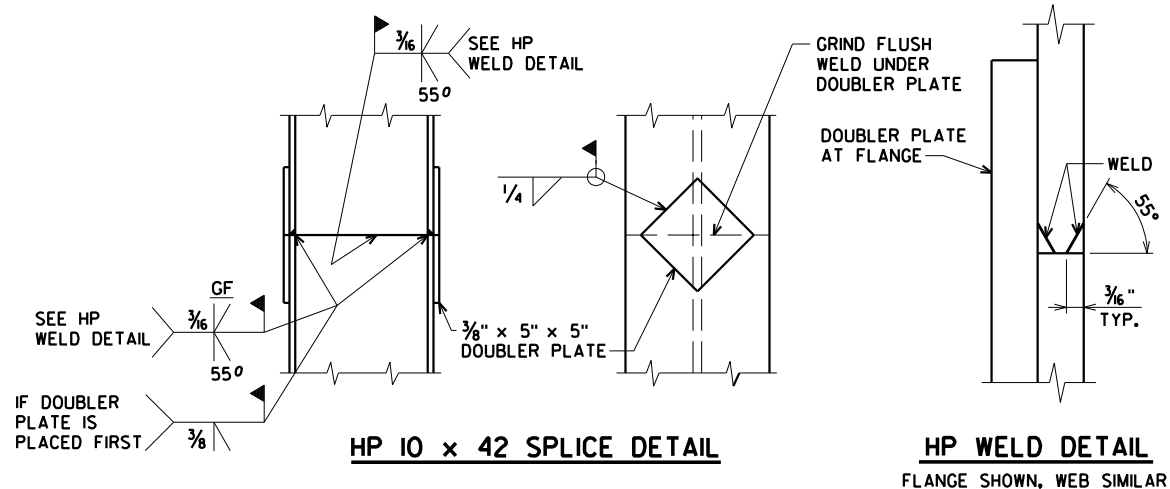
EXTEND FLASHING TO FRONT FACE OF ABUTMENT DIAPHRAGM.

TOP OF FLASHING TO BEGIN APPROX. 1-INCH BELOW TOP OF SLAB SURFACE.

THE FLASHING IS TO BE A CONSTANT HEIGHT BASED ON THE THINNEST SLAB DEPTH OVER THE BRIDGE LENGTH.



TYPICAL FILL SECTION AT WING TIPS



HP 10 x 42 SPLICE DETAIL

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

11/17/2021
PENTABLE:BRReou_shd_util.tbi

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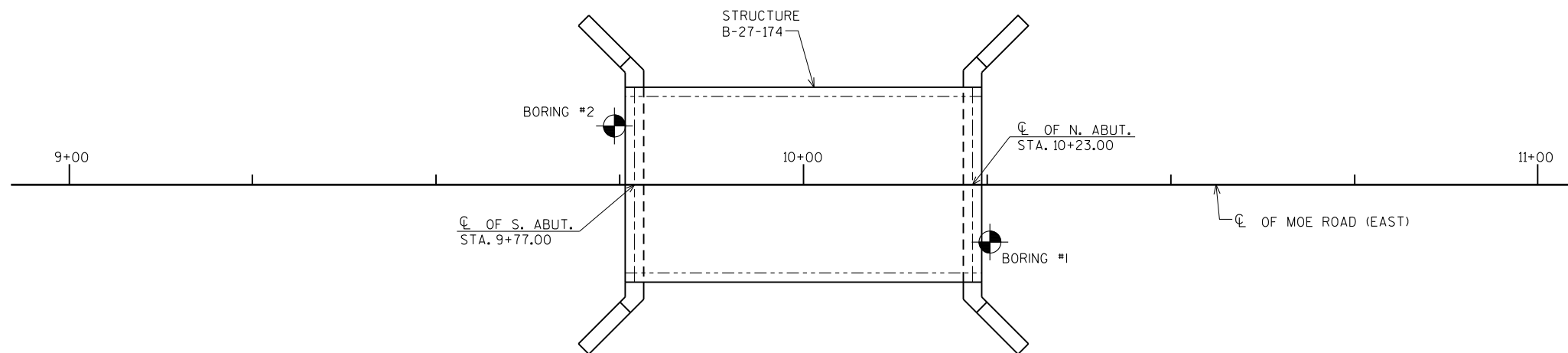
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-174			
DRAWN BY JLB		PLANS CK'D. AEB	
STRUCTURE DETAILS			SHEET 3 OF 11

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
Equ Claire, WI 54701
www.AyresAssociates.com

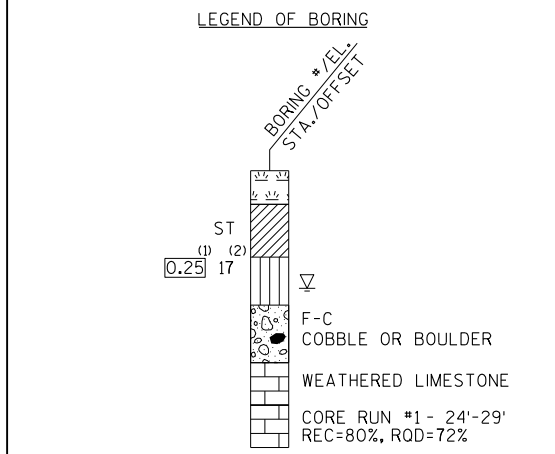
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	AUGUST 25, 2020	202719.08	27247.67
2	AUGUST 25, 2020	202668.47	27230.15

BORINGS COMPLETED BY: CHOSEN VALLEY TESTING, INC.
 REPORT COMPLETED BY: CHOSEN VALLEY TESTING, INC
 ALL COORDINATES REFERENCED TO WCCS NAD 83(91) JACKSON COUNTY

N. FORK
BUFFALO
RIVER



STATE PROJECT NUMBER		
7249-00-70		
MATERIAL SYMBOLS		
	ASPHALT	
	CONCRETE	
	SAND	
	BOULDERS OR COBBLES	
	SHALE	
	PEAT	
	GRAVEL	
	BEDROCK (UNKNOWN)	



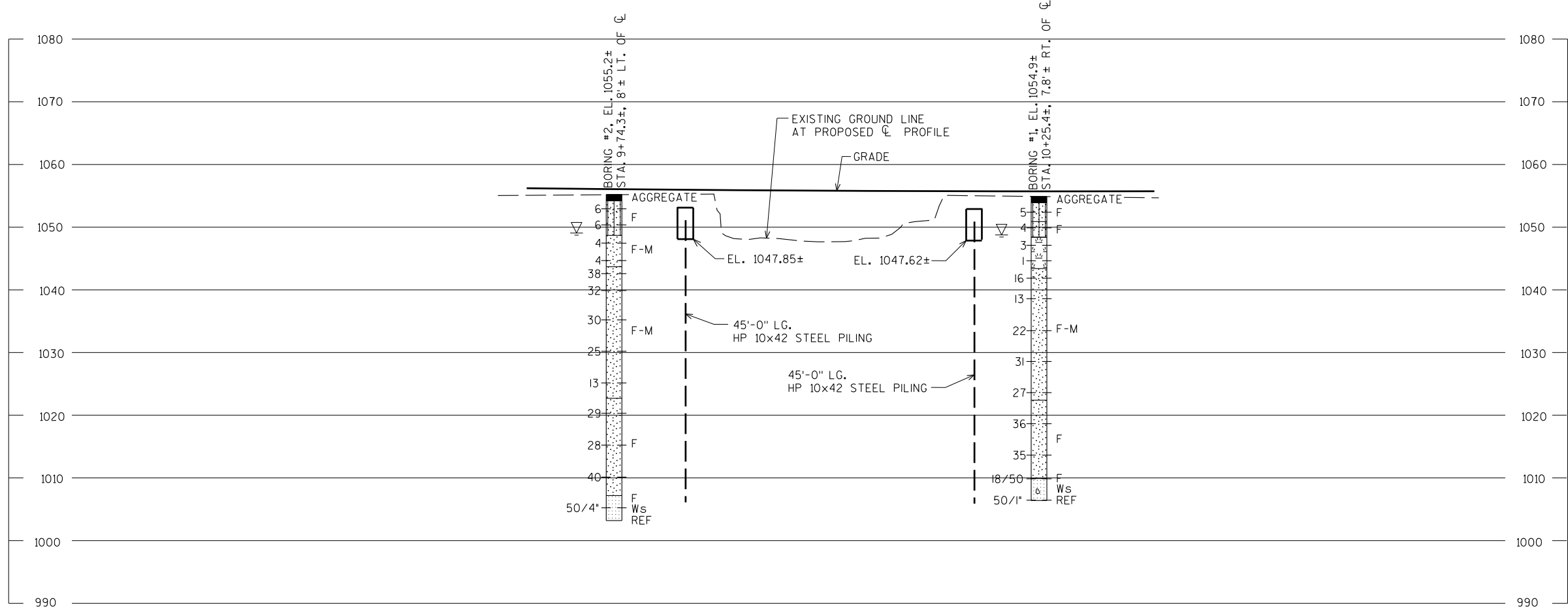
(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
 (2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION
 ▽ AT TIME OF DRILLING
 ▼ END OF DRILLING
 ▽ AFTER DRILLING

ABBREVIATIONS
 F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE, BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.



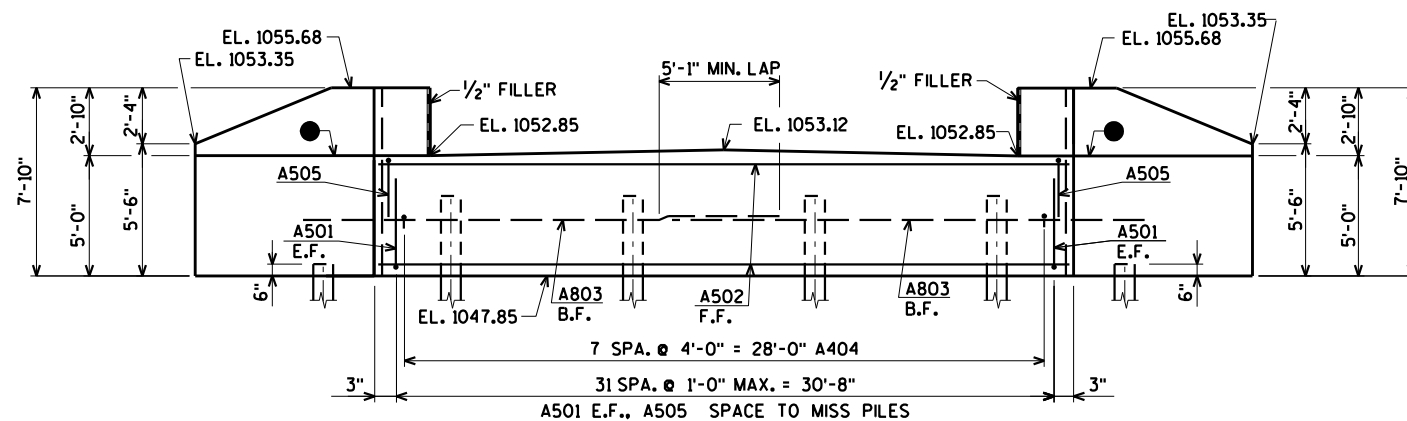
8/25/2021 PENTABLE:BRou-shd_util1.tbi

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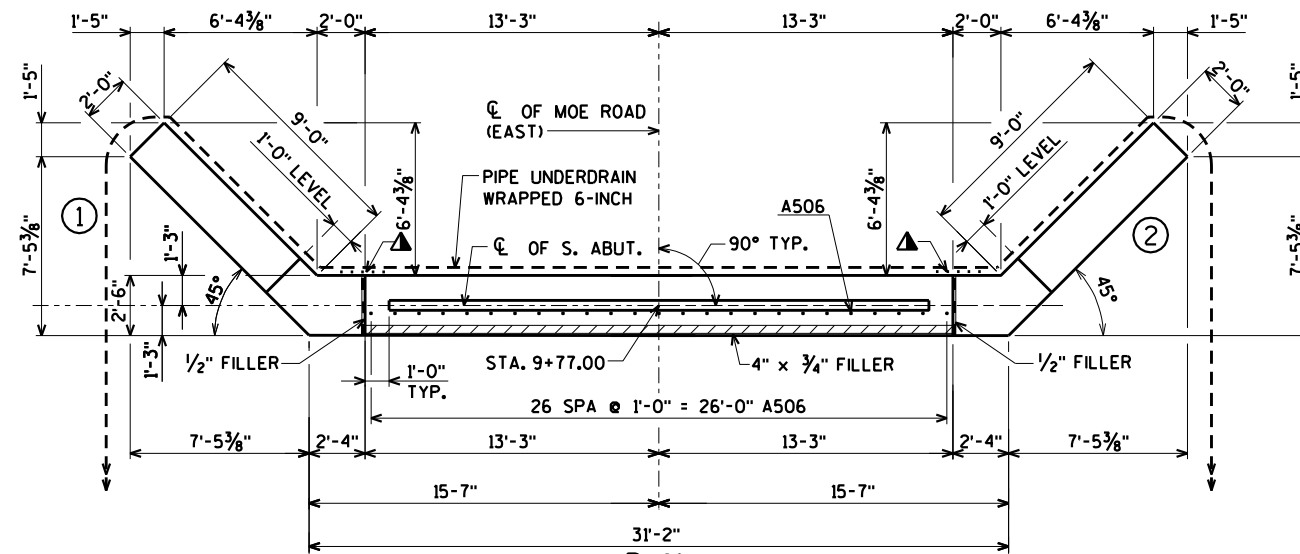
8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-174			
DRAWN BY JLB		PLANS CKD. AEB	
SUBSURFACE EXPLORATION			SHEET 4 OF 11

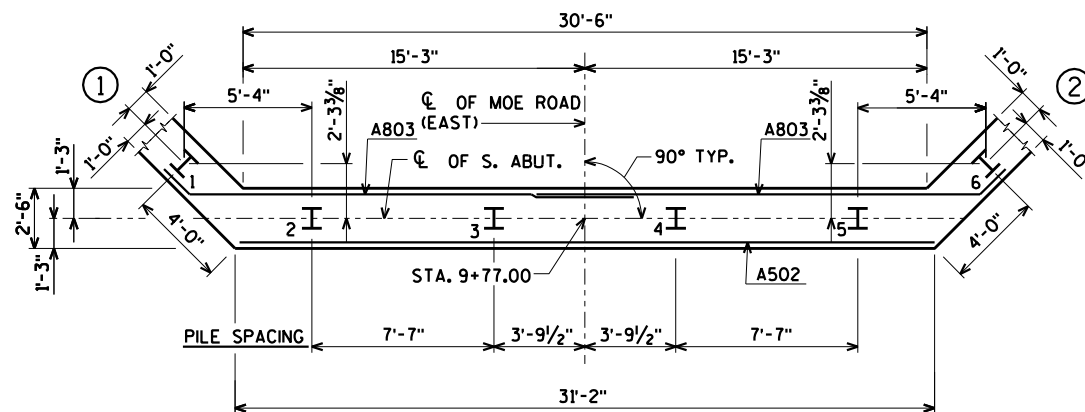
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)



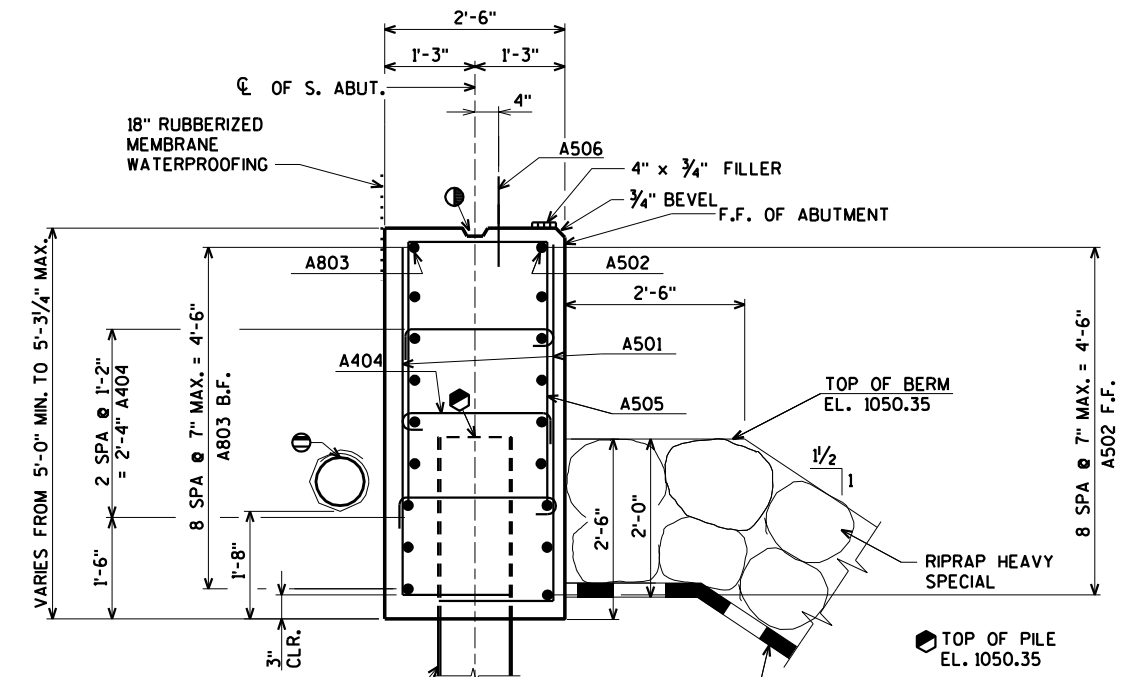
ELEVATION
(LOOKING WEST)



PLAN



PILE LAYOUT



ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE ESTIMATED LENGTH 45'-0".

TYPICAL SECTION THRU BODY

NOTE: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL SEE SHEET 6.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

Ⓛ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 3.

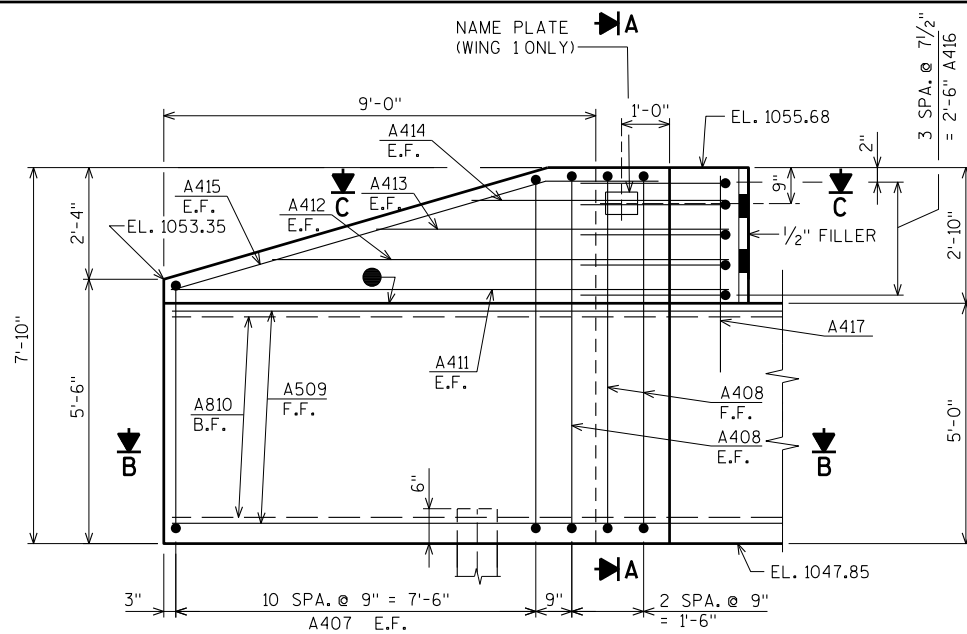
B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

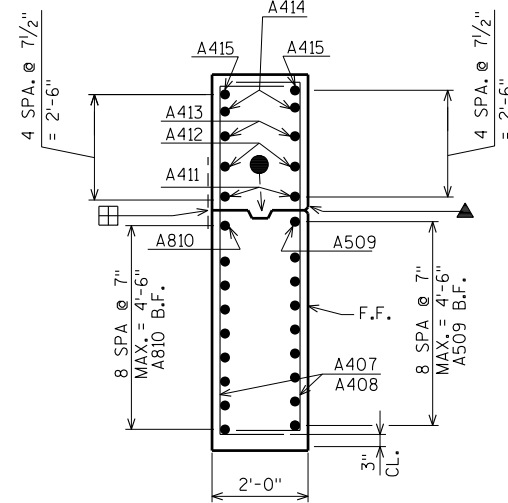
E.F. DENOTES EACH FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-174			
DRAWN BY JLB		PLANS CK'D. AEB	
SOUTH ABUTMENT			SHEET 5 OF 11

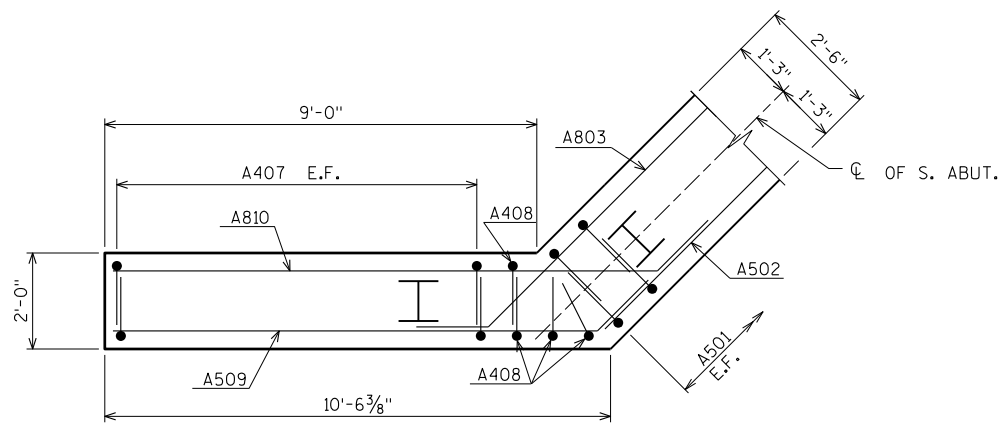
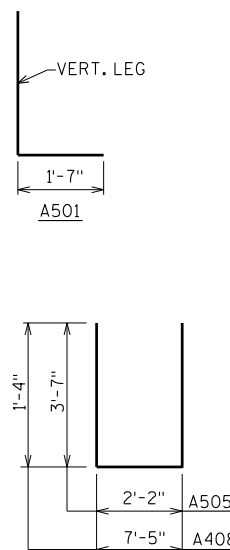
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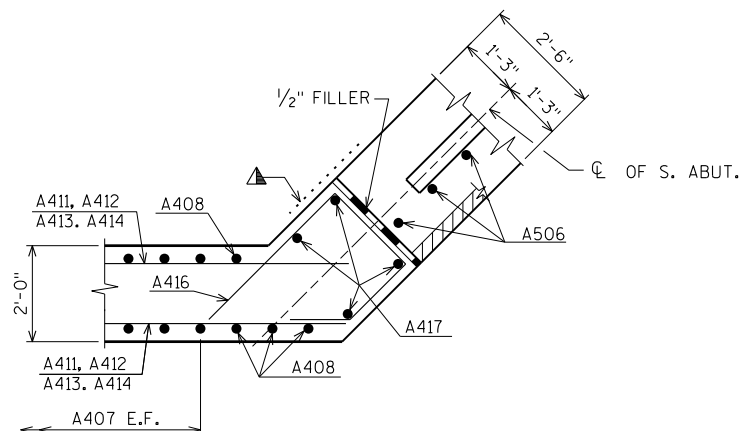
ELEVATION - WING 1
(WING 2 SIMILAR)



SECTION A



SECTION B



SECTION C

FOR PILE SPLICE DETAIL SEE SHEET 3.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

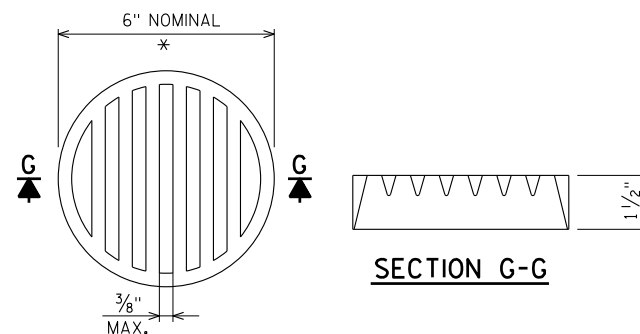
E.F. DENOTES EACH FACE.

▲ 3/4" 'V' GROOVE ON F.F. OF WINGWALL - NOT REQUIRED IF CONST. JT. IS NOT USED.

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▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WINGWALL.

▣ 18" RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES").



* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

RODENT SHIELD DETAIL

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR BUNDLED	BAR SERIES	2,180# UNCOATED
						1,400# COATED
						LOCATION
A501		64	6-0	X		BODY VERT. E.F.
A502		9	30-10			BODY HORIZ. F.F.
A803		18	23-8	X		BODY HORIZ. B.F.
A404		24	3-0	X		BODY TIES
A505		32	9-2	X		BODY VERT. TOP
A506	X	27	2-0			BODY DOWELS
A407	X	44	8-8	X	⊗	WINGS VERT. E.F.
A408	X	8	9-11	X		WINGS VERT. E.F.
A509	X	18	11-8	X		WINGS HORIZ. F.F.
A810	X	18	13-5	X		WINGS HORIZ. B.F.
A411	X	4	10-2			WINGS HORIZ. E.F.
A412	X	4	8-9			WINGS HORIZ. E.F.
A413	X	4	6-8			WINGS HORIZ. E.F.
A414	X	4	4-11			WINGS HORIZ. E.F.
A415	X	4	11-4	X		WINGS DIAG. E.F.
A416	X	10	6-1	X		WINGS HORIZ.
A417	X	8	3-8			WINGS VERT.

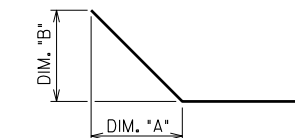
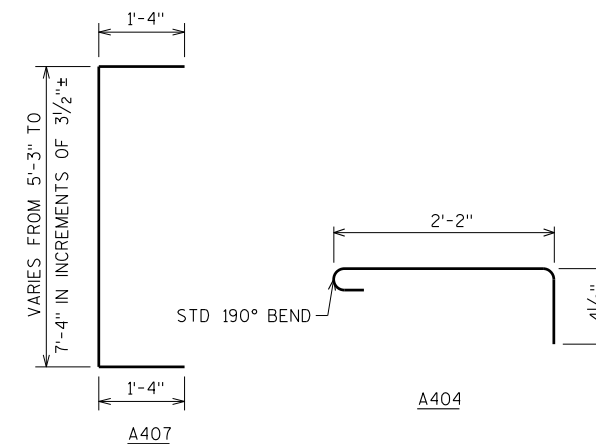
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

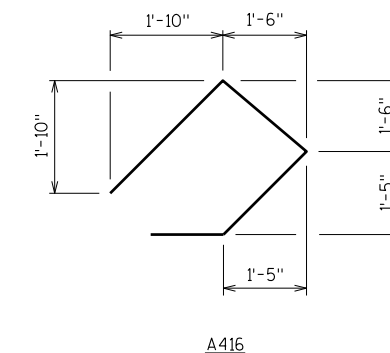
BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
A407	4 SERIES OF 11	7'-7" TO 9'-9"

BUNDLE AND TAG EACH SERIES SEPARATELY.



BAR NO.	DIM. 'A'	DIM. 'B'
A803	1'-0 3/4"	1'-0 3/4"
A509	1'-0 3/4"	1'-0 3/4"
A810	1'-0 3/4"	1'-0 3/4"
A415	7'-10"	2'-2"

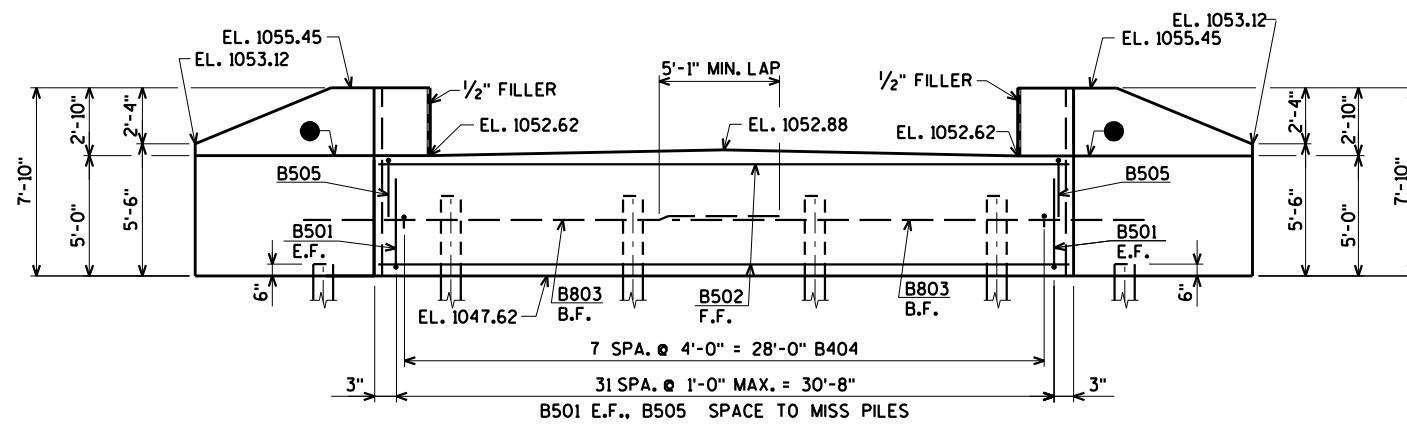


A416

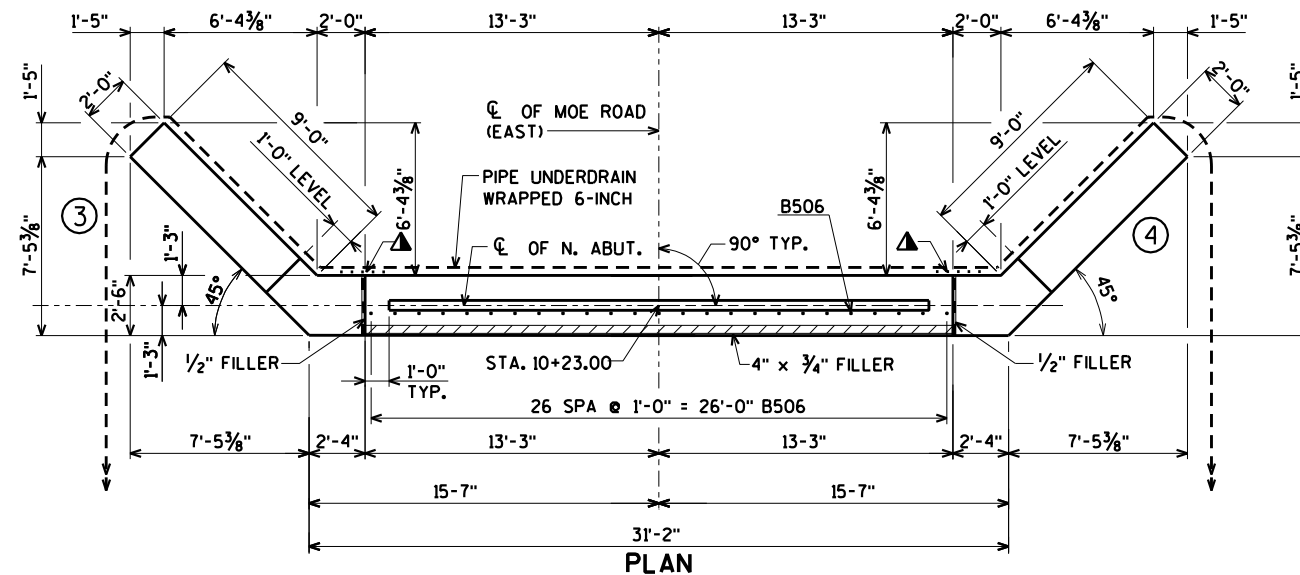
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NO.	DATE	REVISION	BY
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STRUCTURE B-27-174			
		DRAWN BY JLB	PLANS CK'D. AEB
SOUTH ABUTMENT WING DETAILS & BILL OF BARS			SHEET 6 OF 11

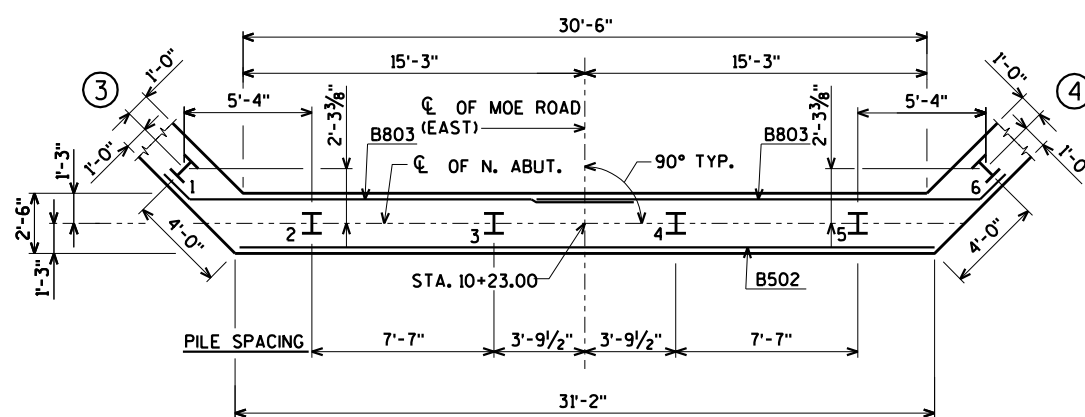
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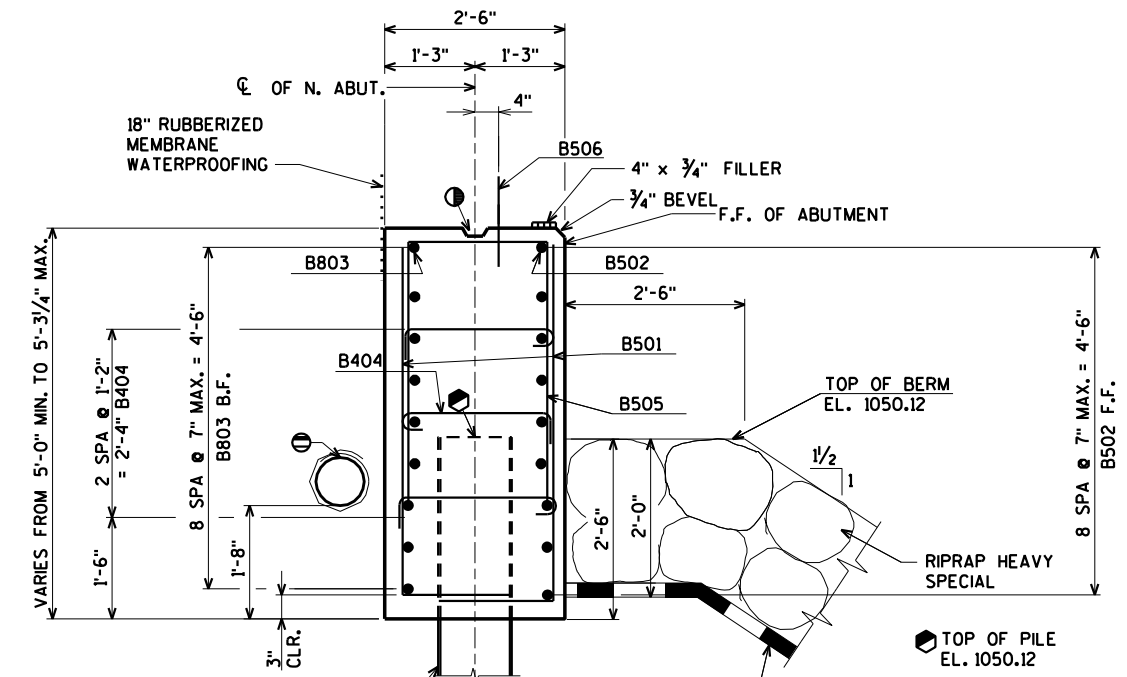
ELEVATION
(LOOKING EAST)



PLAN



PILE LAYOUT



TYPICAL SECTION THRU BODY

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FOR PILE SPLICE DETAIL SEE SHEET 3.

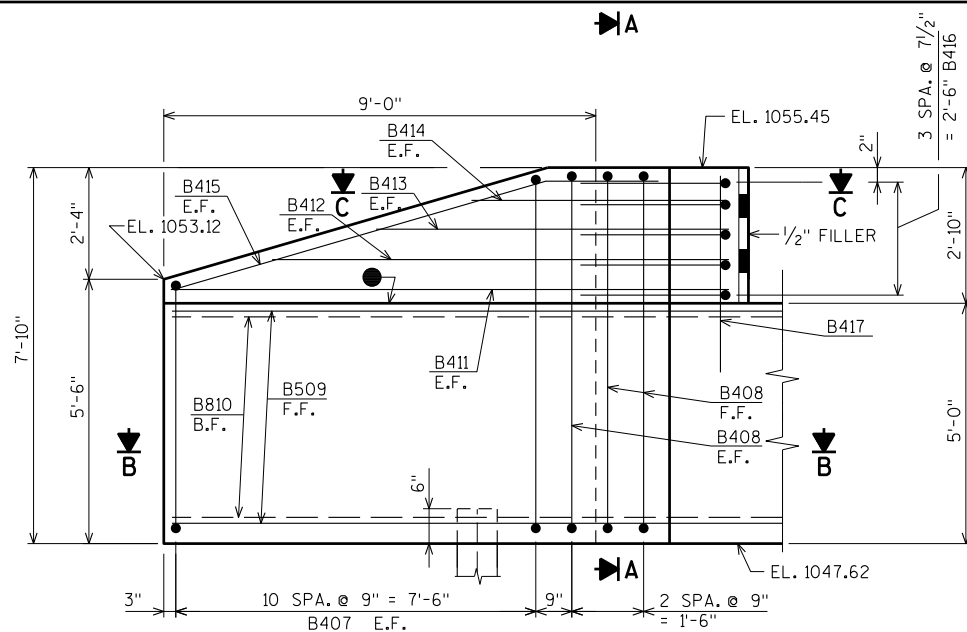
B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

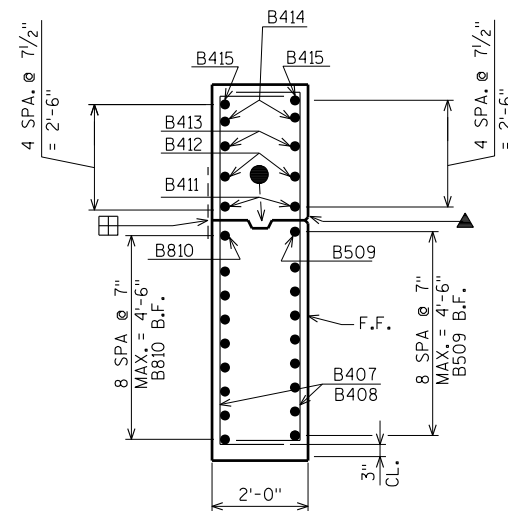
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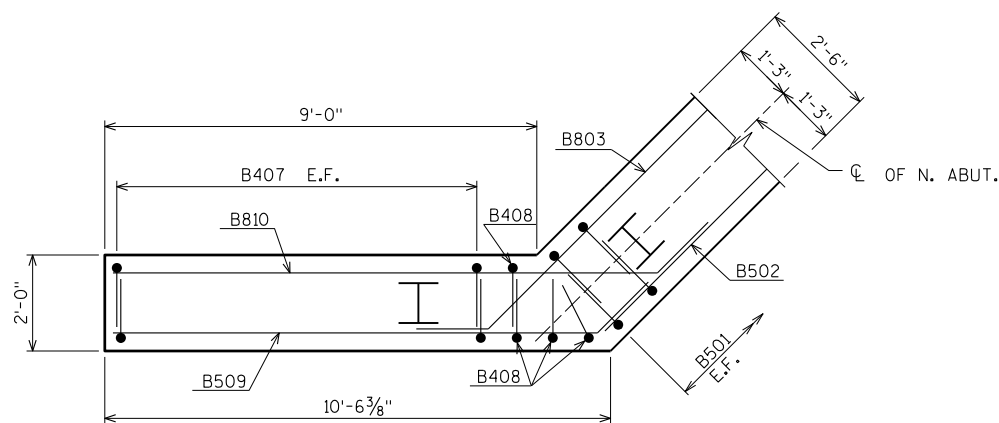
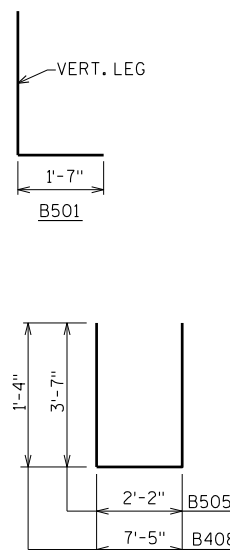
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-27-174			
DRAWN BY JLB		PLANS CK'D. AEB	
NORTH ABUTMENT			SHEET 7 OF 11



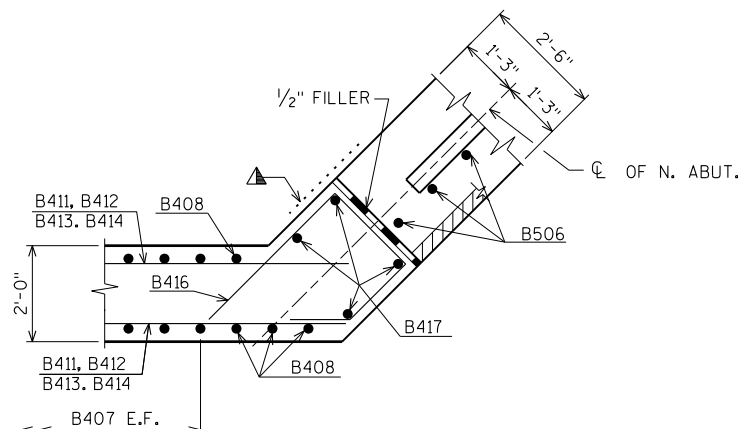
ELEVATION - WING 3
(WING 4 SIMILAR)



SECTION A



SECTION B



SECTION C

FOR PILE SPLICE DETAIL SEE SHEET 3.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

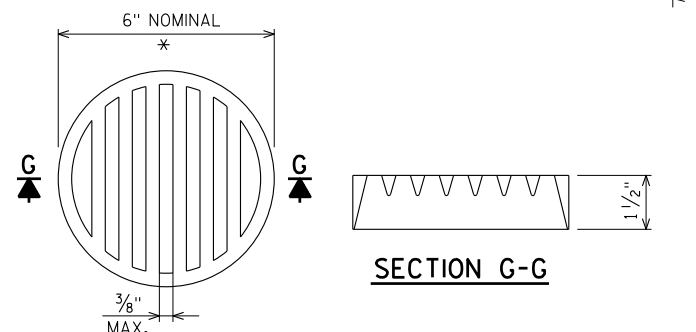
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						LOCATION	
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B502		9	30-10			BODY HORIZ. F.F.	
B803		18	23-8	X		BODY HORIZ. B.F.	
B404		24	3-0	X		BODY TIES	
B505		32	9-2	X		BODY VERT. TOP	
B506	X	27	2-0			BODY DOWELS	
B407	X	44	8-8	X	⊗	WINGS VERT. E.F.	
B408	X	8	9-11	X		WINGS VERT. E.F.	
B509	X	18	11-8	X		WINGS HORIZ. F.F.	
B810	X	18	13-5	X		WINGS HORIZ. B.F.	
B411	X	4	10-2			WINGS HORIZ. E.F.	
B412	X	4	8-9			WINGS HORIZ. E.F.	
B413	X	4	6-8			WINGS HORIZ. E.F.	
B414	X	4	4-11			WINGS HORIZ. E.F.	
B415	X	4	11-4	X		WINGS DIAG. E.F.	
B416	X	10	6-1	X		WINGS HORIZ.	
B417	X	8	3-8			WINGS VERT.	

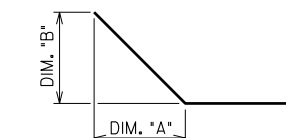
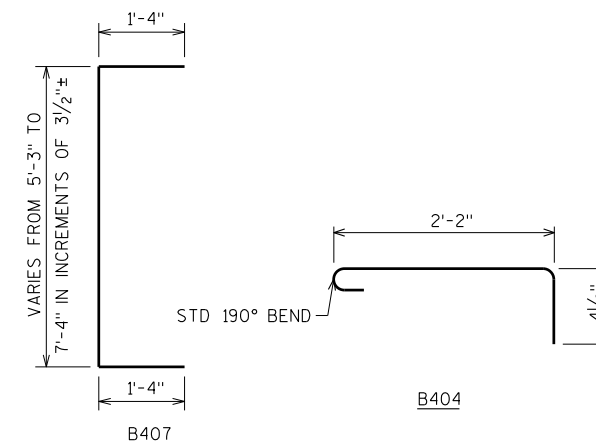
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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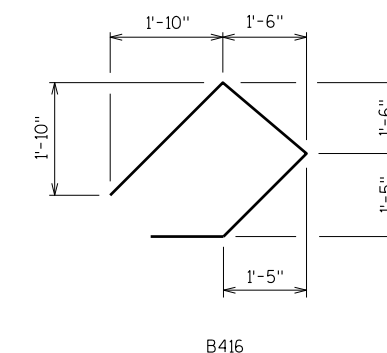
BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
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BUNDLE AND TAG EACH SERIES SEPARATELY.



BAR NO.	DIM. "A"	DIM. "B"
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B509	1'-0 3/4"	1'-0 3/4"
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B416

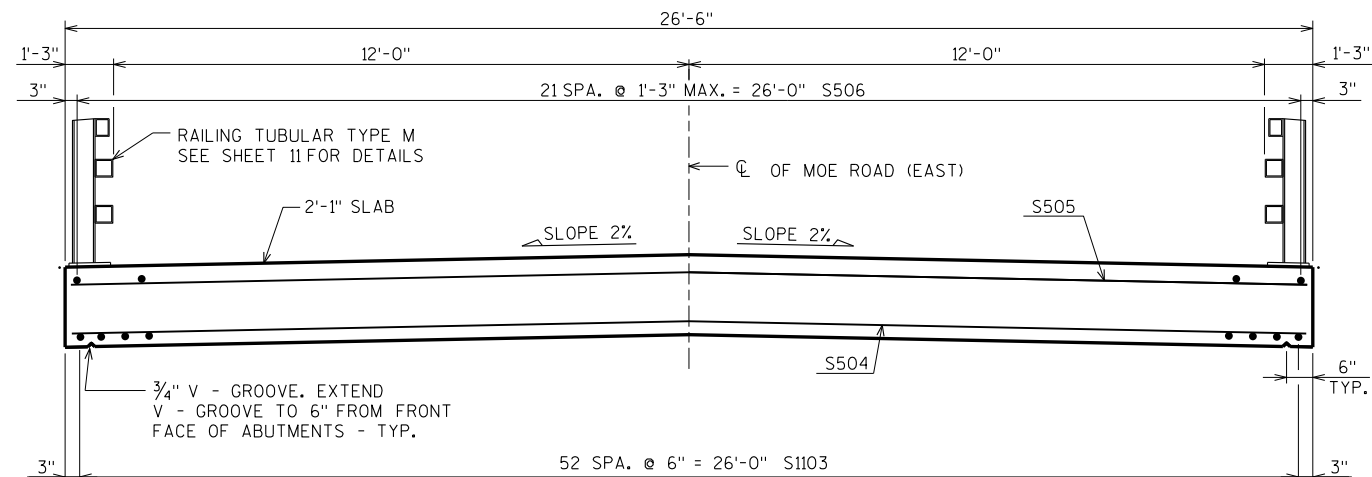
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NO.	DATE	REVISION	BY
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STRUCTURE B-27-174			
DRAWN BY JLB		PLANS CK'D. AEB	
NORTH ABUTMENT WING DETAILS & BILL OF BARS			SHEET 8 OF 11

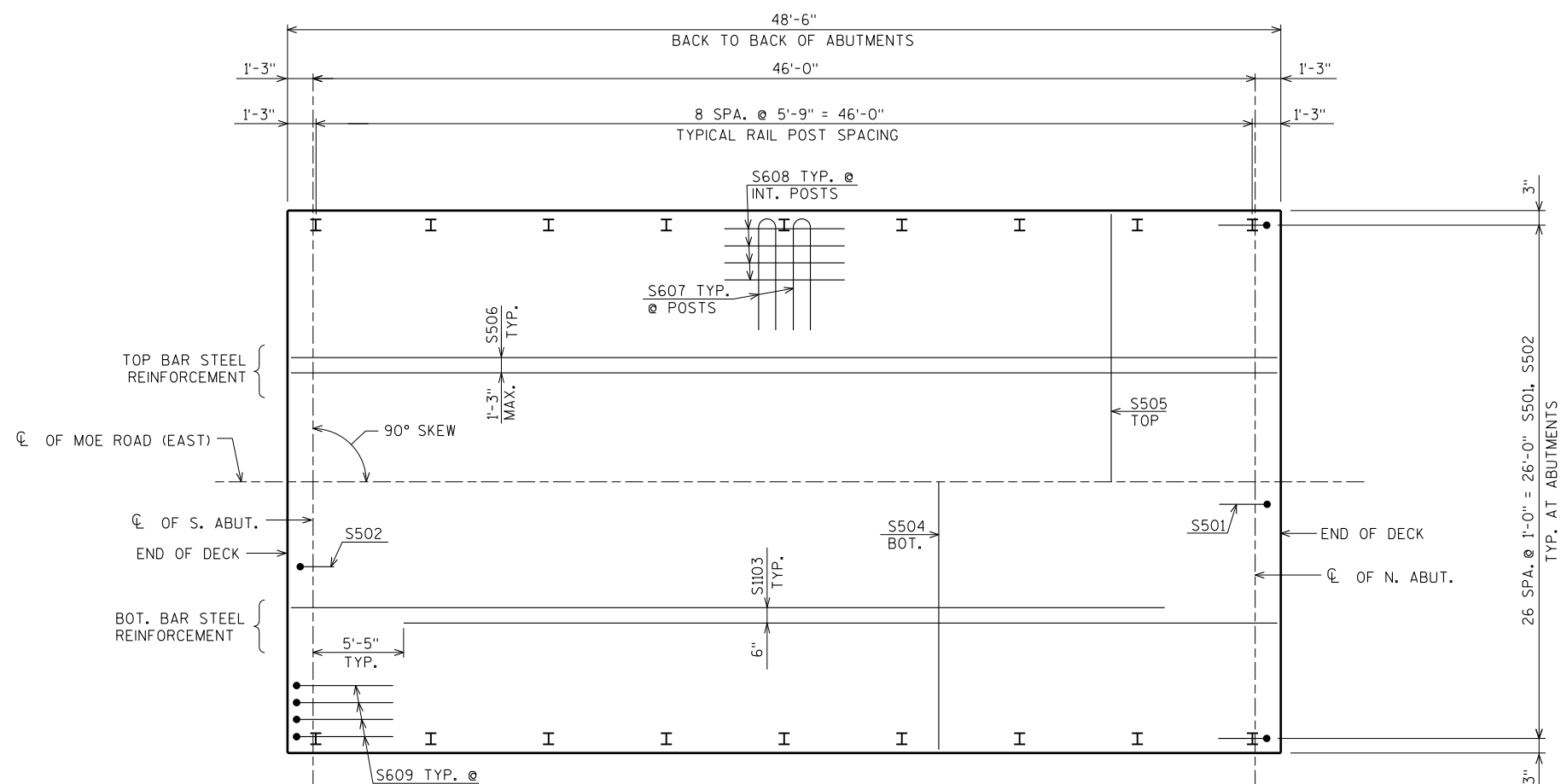
BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	18,060# COATED
							LOCATION
S501	X	54	6-3	X			SLAB @ ABUT.
S502	X	54	3-10	X			SLAB @ ABUT.
S1103	X	53	41-8				SLAB LONG. BOT.
S504	X	76	26-2				SLAB TRANS. BOT.
S505	X	49	26-2				SLAB TRANS. TOP
S506	X	22	48-2				SLAB LONG. TOP
S607	X	36	11-6	X			SLAB @ RAIL POSTS
S608	X	56	6-0				SLAB @ INT. RAIL POSTS
S609	X	16	4-8	X			SLAB @ END RAIL POSTS

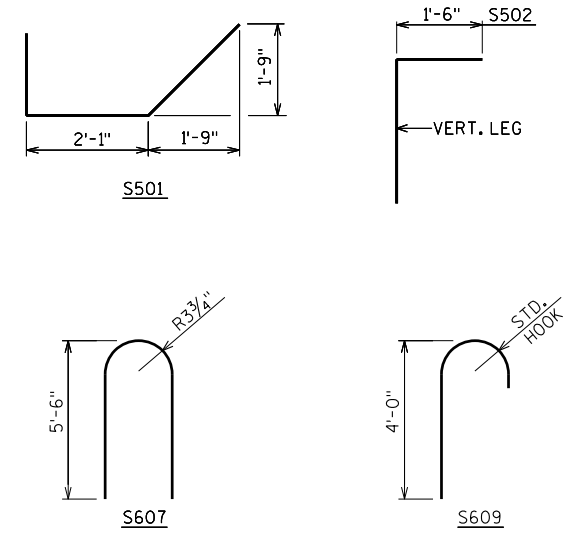
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



TYPICAL SECTION THRU BRIDGE



PLAN



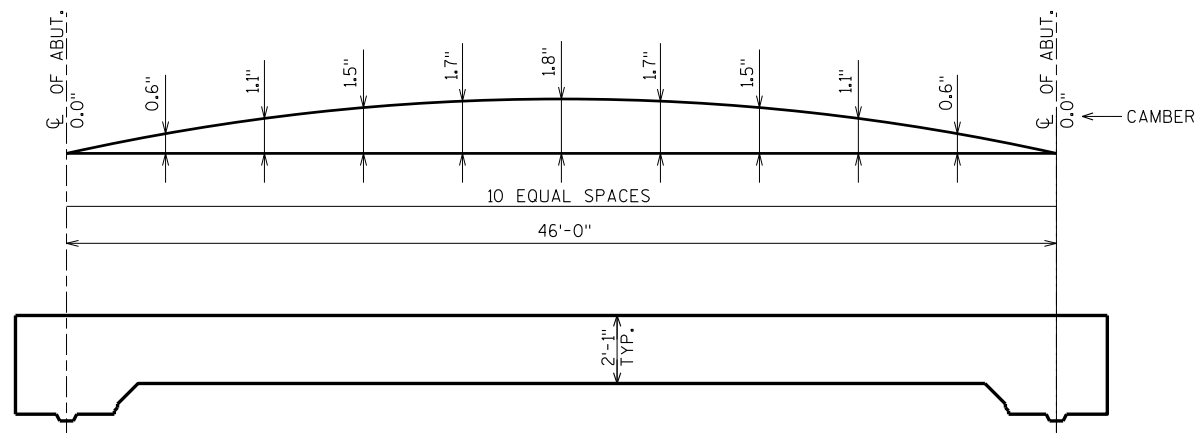
NO.	DATE	REVISION	BY
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STRUCTURE B-27-174			
DRAWN BY JLB		PLANS CK'D. AEB	
SUPERSTRUCTURE			SHEET 9 OF 11

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 ##dyses#_Active#42#42-1219,00 - Jackson Co. Moe Road over N Fk Buffalo River#Structures#Find#421219 super.dgn

8

8



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTION.

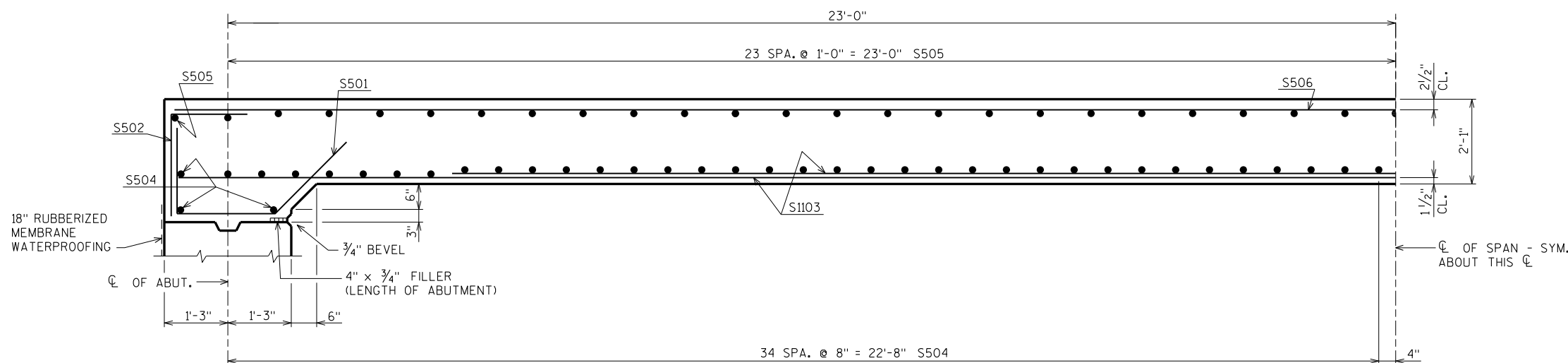
CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PARAPETS, SIDEWALKS AND MEDIANS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE FOLLOW THIS PROCEDURE:

- TOP OF SLAB ELEVATION AT FINAL GRADE
- MINUS... SLAB THICKNESS
- PLUS... CAMBER
- PLUS... FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)

EQUALS = TOP OF SLAB FALSEWORK ELEVATION



PART LONGITUDINAL SECTION

SURVEY TOP OF SLAB ELEVATIONS

LOCATION	℄ OF S. ABUT.	5/10 PTS.	℄ OF N. ABUT.
W. EDGE OF SLAB			
℄ OF STRUCTURE			
E. EDGE OF SLAB			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE ℄ OF ABUTMENTS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR ℄. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

TOP OF DECK ELEVATIONS

LOCATION	℄ OF S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ OF N. ABUT.
W. EDGE OF SLAB	1055.68	1055.64	1055.61	1055.58	1055.55	1055.53	1055.51	1055.49	1055.47	1055.46	1055.45
℄ OF MOE ROAD (EAST)	1055.95	1055.91	1055.88	1055.85	1055.82	1055.79	1055.77	1055.75	1055.74	1055.72	1055.71
E. EDGE OF SLAB	1055.68	1055.64	1055.61	1055.58	1055.55	1055.53	1055.51	1055.49	1055.47	1055.46	1055.45

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

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STRUCTURE B-27-174			
		DRAWN BY JLB	PLANS CK'D. AEB
SUPERSTRUCTURE DETAILS			SHEET 10 OF 11

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 ##cyres+_Active+42+42-1219.00 - Jackson Co. Moe Road over N Fk Buffalo River+Structures+Final+421219 super.dgn

LEGEND

- ① W6 x 25 with 1/8" x 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1/4" x 11 3/4" x 1'-8" WITH 1 7/8" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- ③ ASTM A449 - 1 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED), 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
- ④ 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/8" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- ⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/8" x 1 5/8" x 1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- ⑦ 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" x 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THREE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨ SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- ⑩ 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A 3/8" x 2 5/8" x 2'-4" PLATE USED IN NO. 5, 3/8" x 3 5/8" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪ 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 5/8" x 1 1/4" LONG. SLOTTED HOLES AT FIELD JOINTS AND 5/8" x 2 1/4" MIN. LONG. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A. PROVIDE 1/8" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.
- ⑫ 7/8" DIA. x 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D.)
- ⑬ 3/8" x 8" x 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THREE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- ⑭ 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.)
- ⑮ 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.

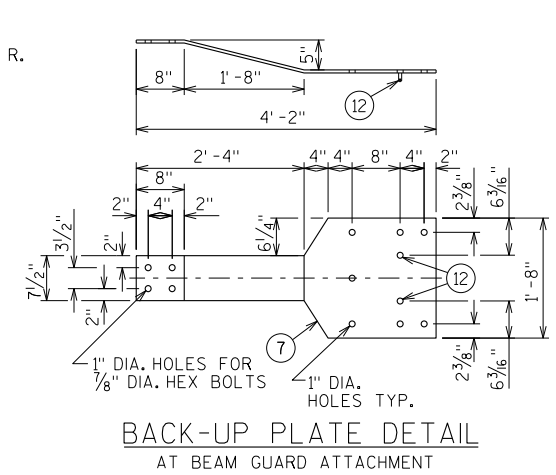
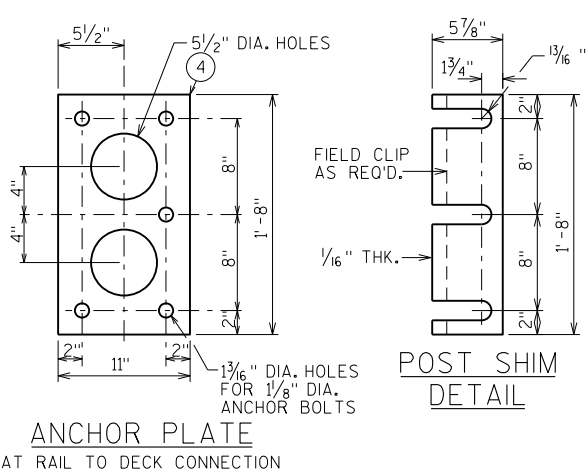
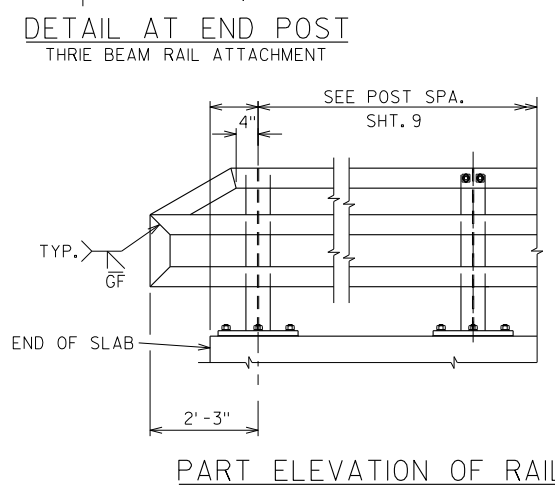
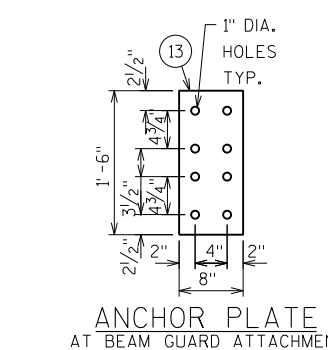
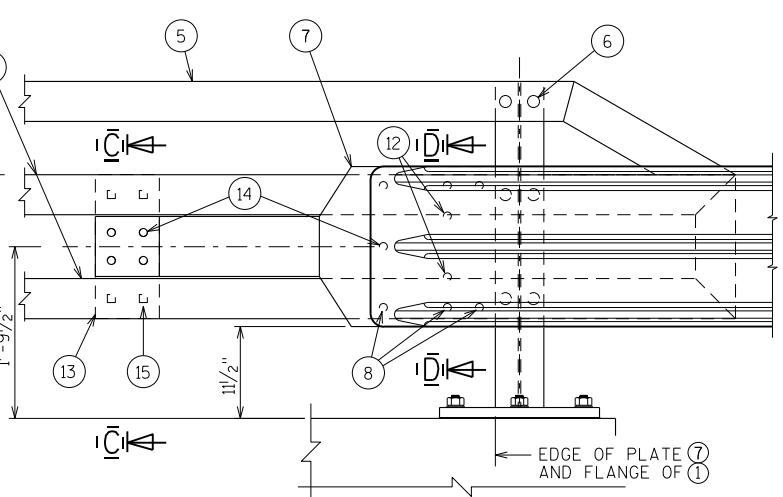
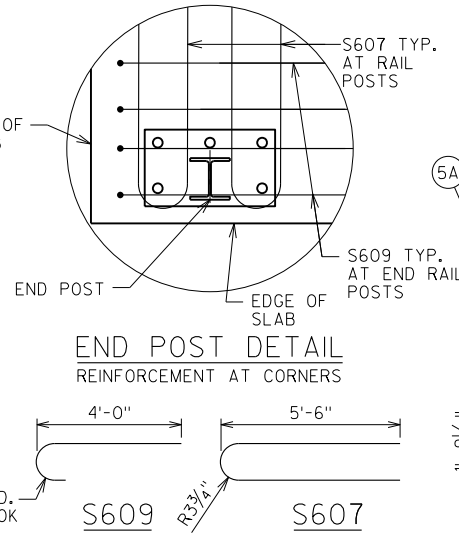
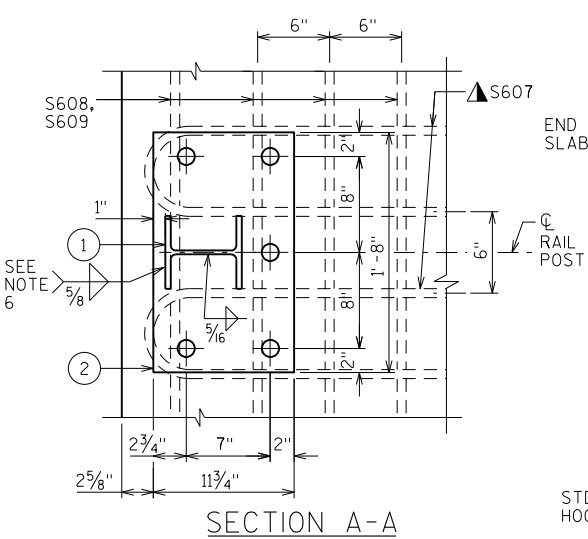
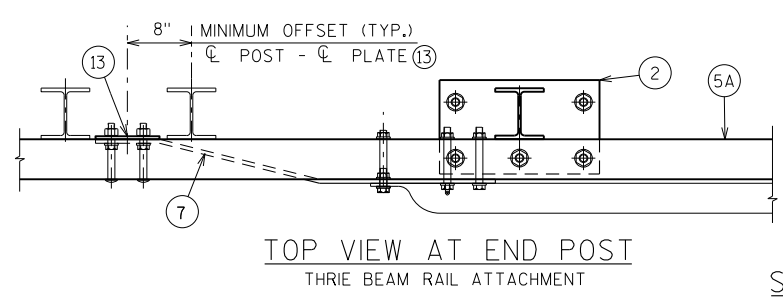
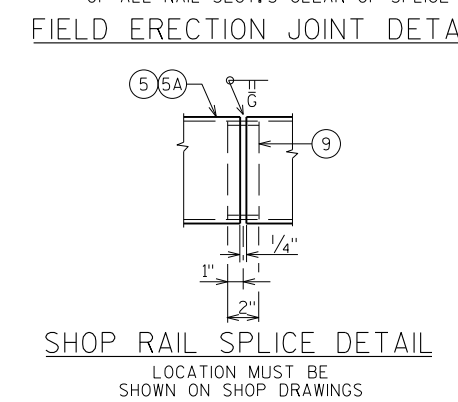
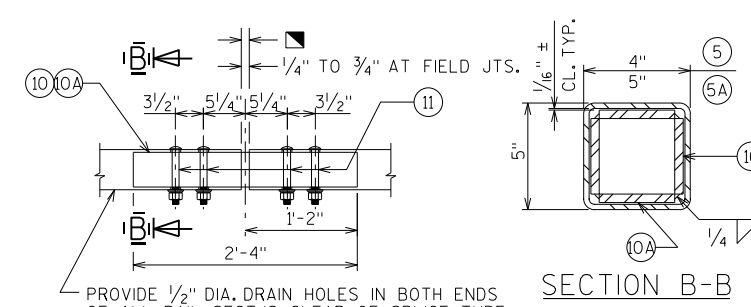
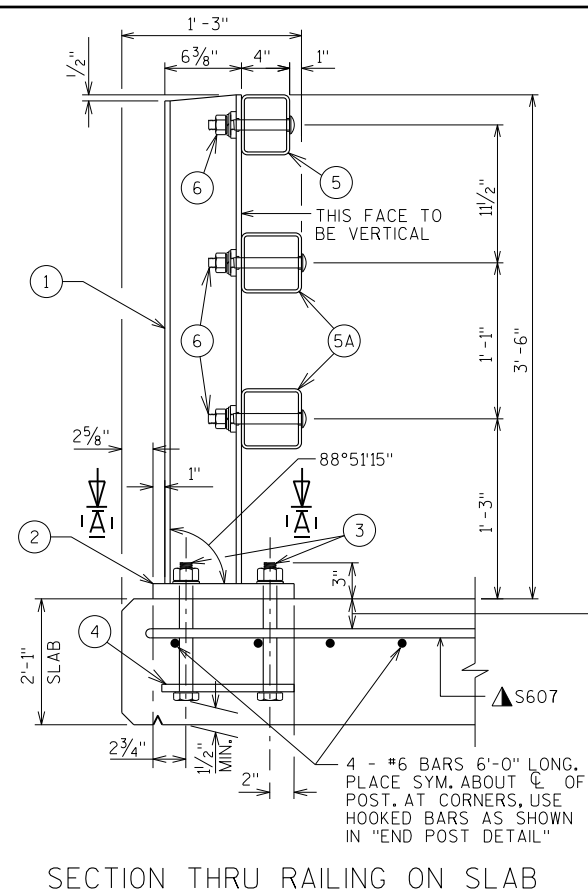
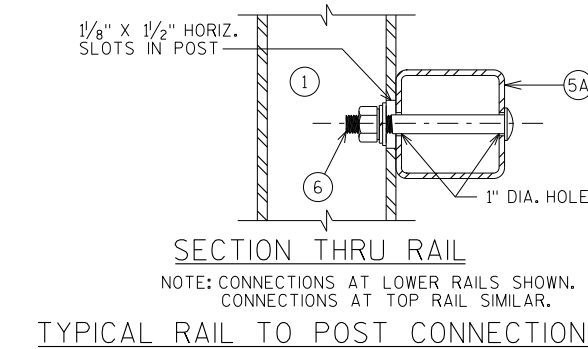
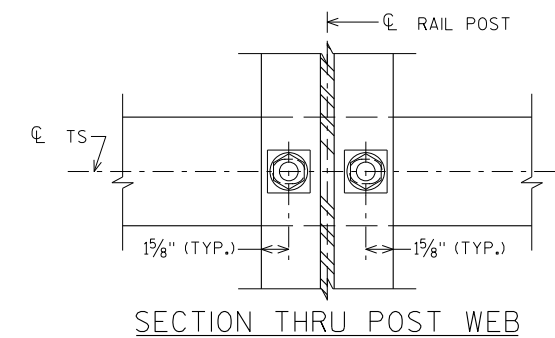
▲ TIE TO TOP MAT OF STEEL.

* ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.

■ RDWY. OPENING OR 2 1/2" MIN. FOR STRIP SEAL - EXP. JOINT & (1/4" TO 3/4") OPENING FOR AT ABUTMENT.

ORIGINAL PLANS PREPARED BY
AVRES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-27-174			
DRAWN BY JLB			PLANS CK'D. AEB
TUBULAR STEEL RAILING TYPE 'M'			SHEET 11 OF 11



8

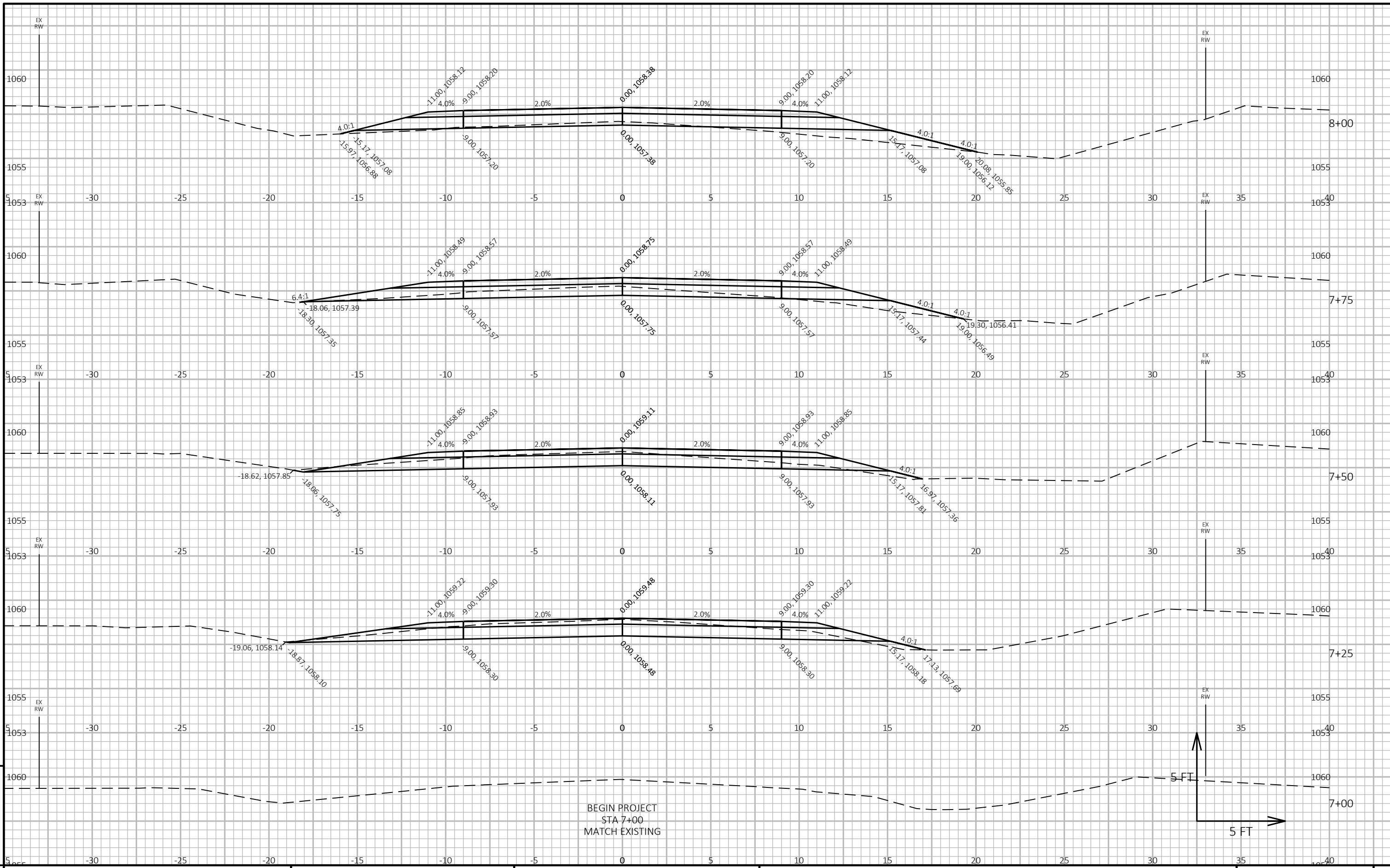
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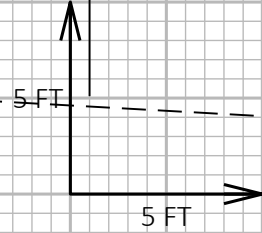
MOE ROAD (EAST) COMPUTER EARTHWORK

Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut 1.00	Expanded Fill 1.30	
7+00	--	23.3	0.0					
7+25	25	20.0	0.7	20	0	20	0	20
7+50	25	16.2	0.6	17	1	37	1	36
7+75	25	7.7	2.7	11	2	48	3	45
8+00	25	1.7	5.7	4	4	52	8	44
8+25	25	0.0	14.2	1	9	53	20	33
8+50	25	0.0	26.5	0	19	53	45	8
8+75	25	0.0	41.3	0	31	53	85	-32
9+00	25	0.0	61.9	0	48	53	148	-94
9+25	25	0.0	95.4	0	73	53	242	-189
9+25.75	1	0.0	95.4	0	3	53	246	-193
9+50	25	0.0	115.2	0	97	53	372	-319
9+65.75	16	2.9	46.2	1	47	54	434	-380
9+75.75	10	2.9	46.2	1	17	55	456	-401
BRIDGE	--	--	--	--	--	--	--	--
10+24.25	--	2.7	33.3	--	--	--	--	--
10+34.25	10	2.7	33.3	1	12	56	472	-416
10+50	16	0.0	92.0	1	37	57	519	-463
10+74.25	24	0.0	104.1	0	88	57	634	-577
10+75	1	0.0	104.1	0	3	57	637	-581
11+00	25	0.0	85.4	0	88	57	751	-695
11+25	25	0.0	56.9	0	66	57	837	-780
11+50	25	6.7	26.0	3	38	60	887	-827
11+75	25	0.1	7.3	3	15	63	907	-844
12+00	25	4.2	2.4	2	5	65	913	-848
12+25	25	9.9	0.4	7	1	71	915	-843
12+50	25	16.9	0.0	12	0	84	915	-831
12+75	25	21.0	0.0	18	0	101	915	-813
13+00	25	19.8	0.0	19	0	120	915	-795
				121	704			

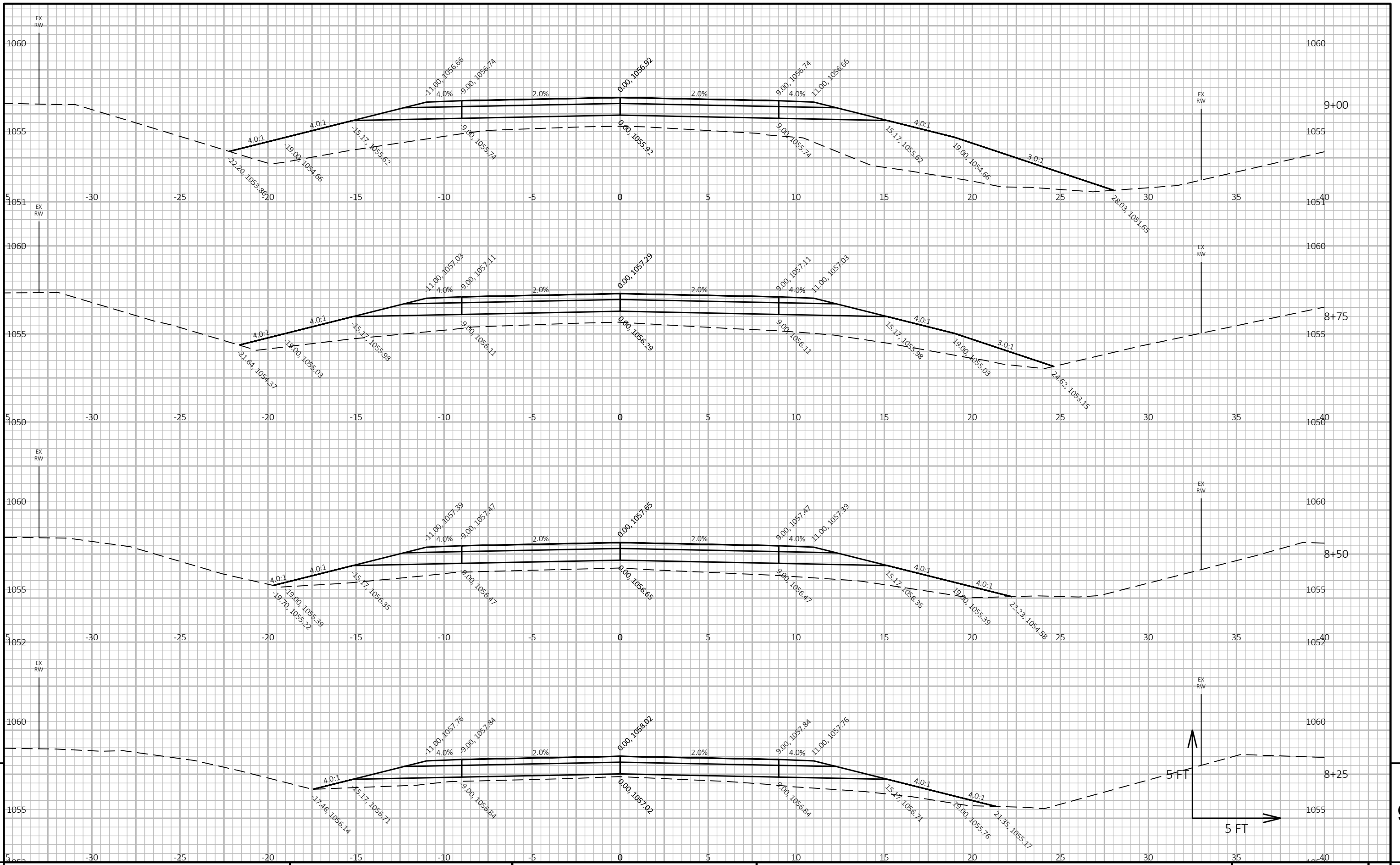
Note 1 - Cut	Volume need to be cut.
Note 2 - Fill	Volume needed to be filled.
Note 3 - Mass Ordinate	(Cut) - (Fill * 1.30)



BEGIN PROJECT
STA 7+00
MATCH EXISTING



9	PROJECT NO: 7249-00-70	HWY: MOE ROAD	COUNTY: JACKSON	CROSS SECTIONS: MOE ROAD	SHEET	9
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PROJECT NO: 7249-00-70

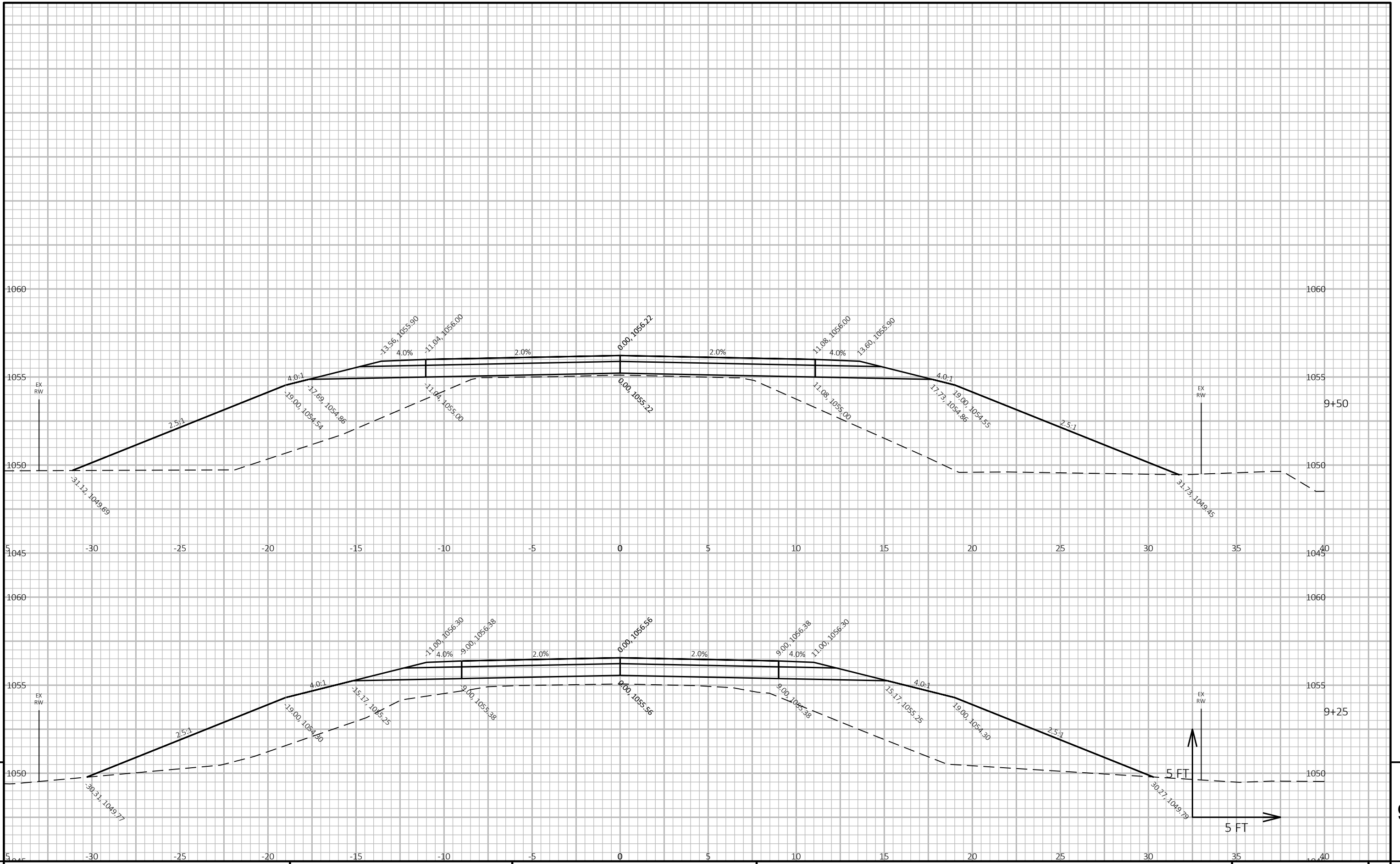
HWY: MOE ROAD

COUNTY: JACKSON

CROSS SECTIONS: MOE ROAD

SHEET

E



PROJECT NO: 7249-00-70

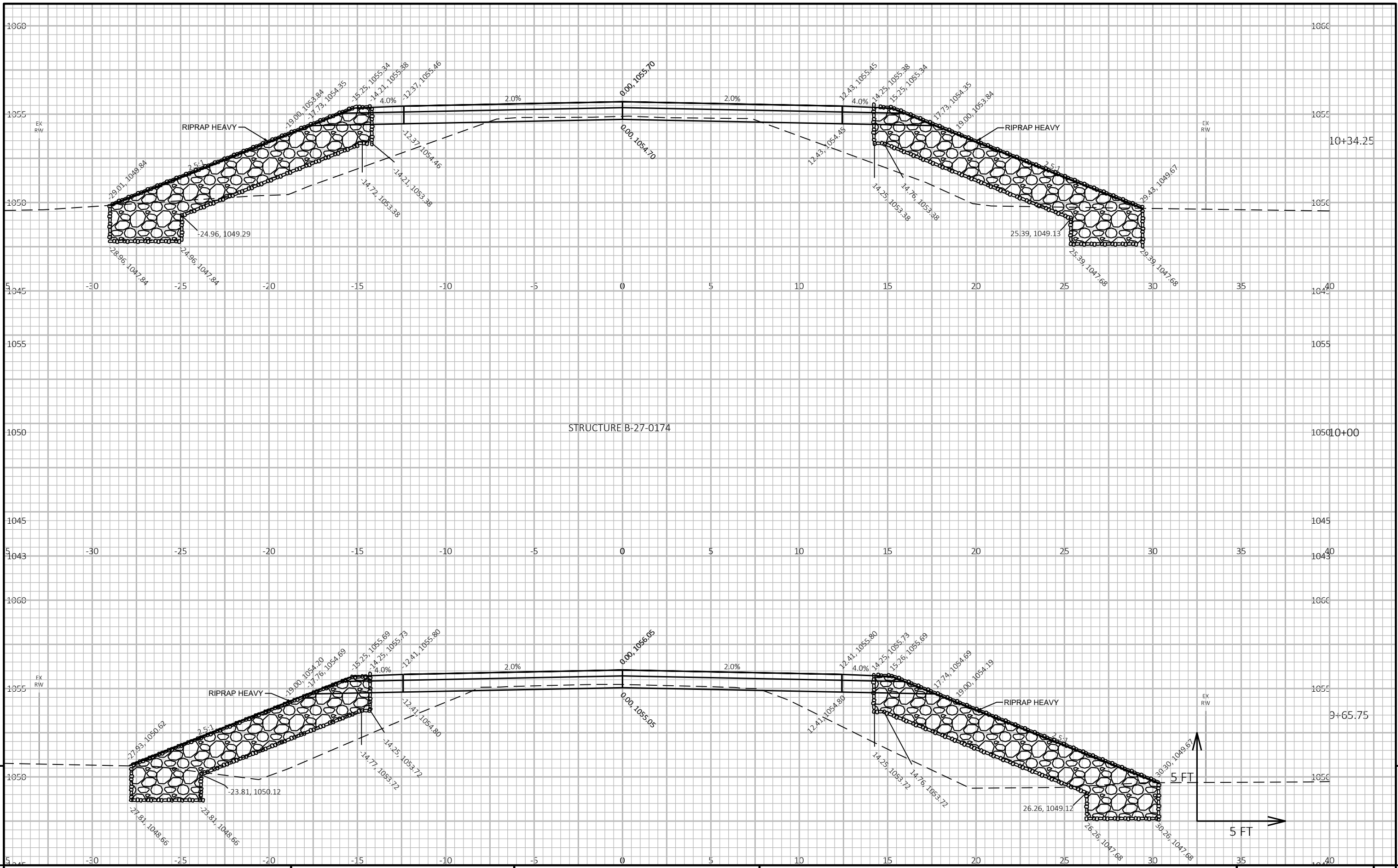
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COUNTY: JACKSON

CROSS SECTIONS: MOE ROAD

SHEET

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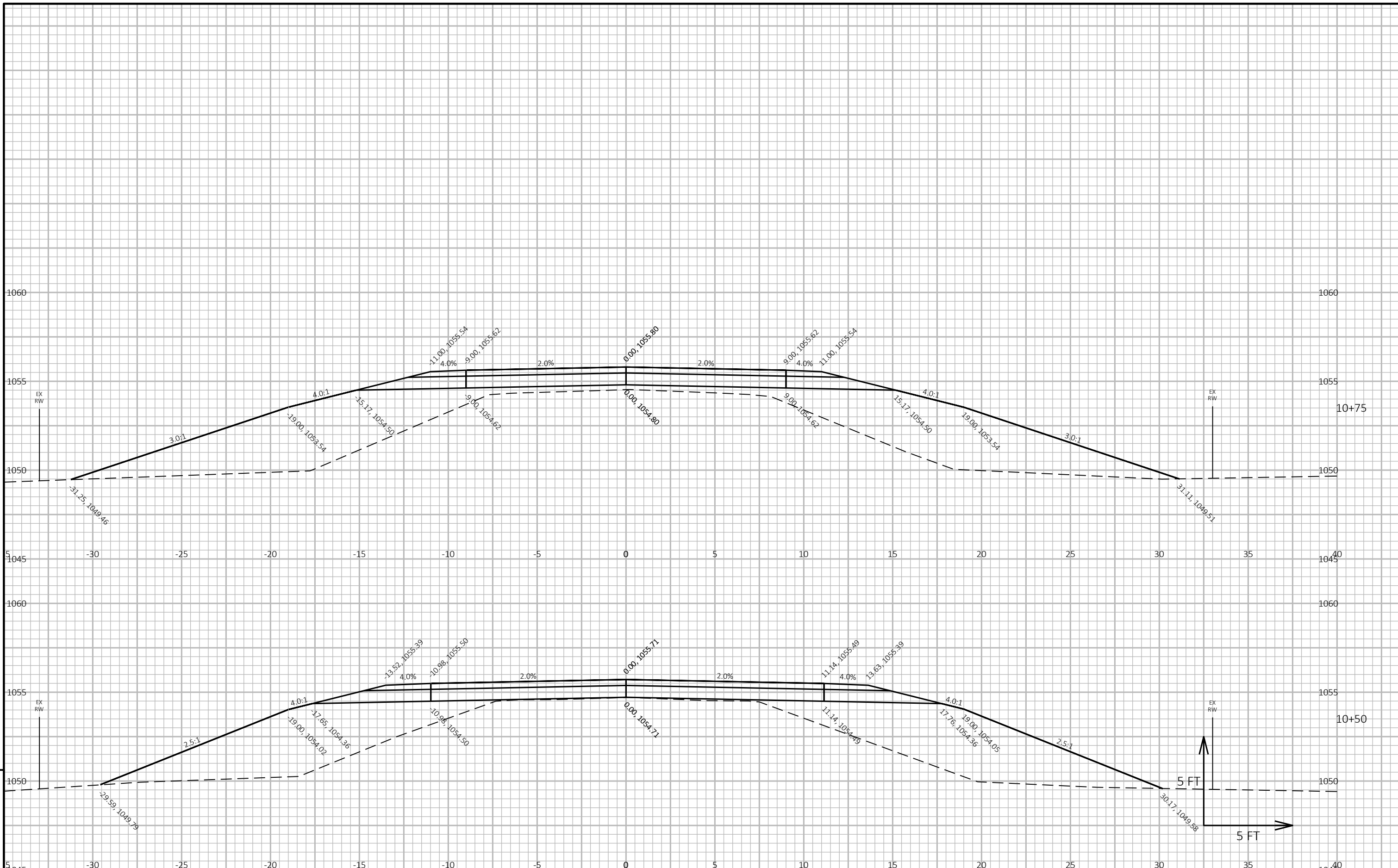
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COUNTY: JACKSON

CROSS SECTIONS: MOE ROAD

SHEET

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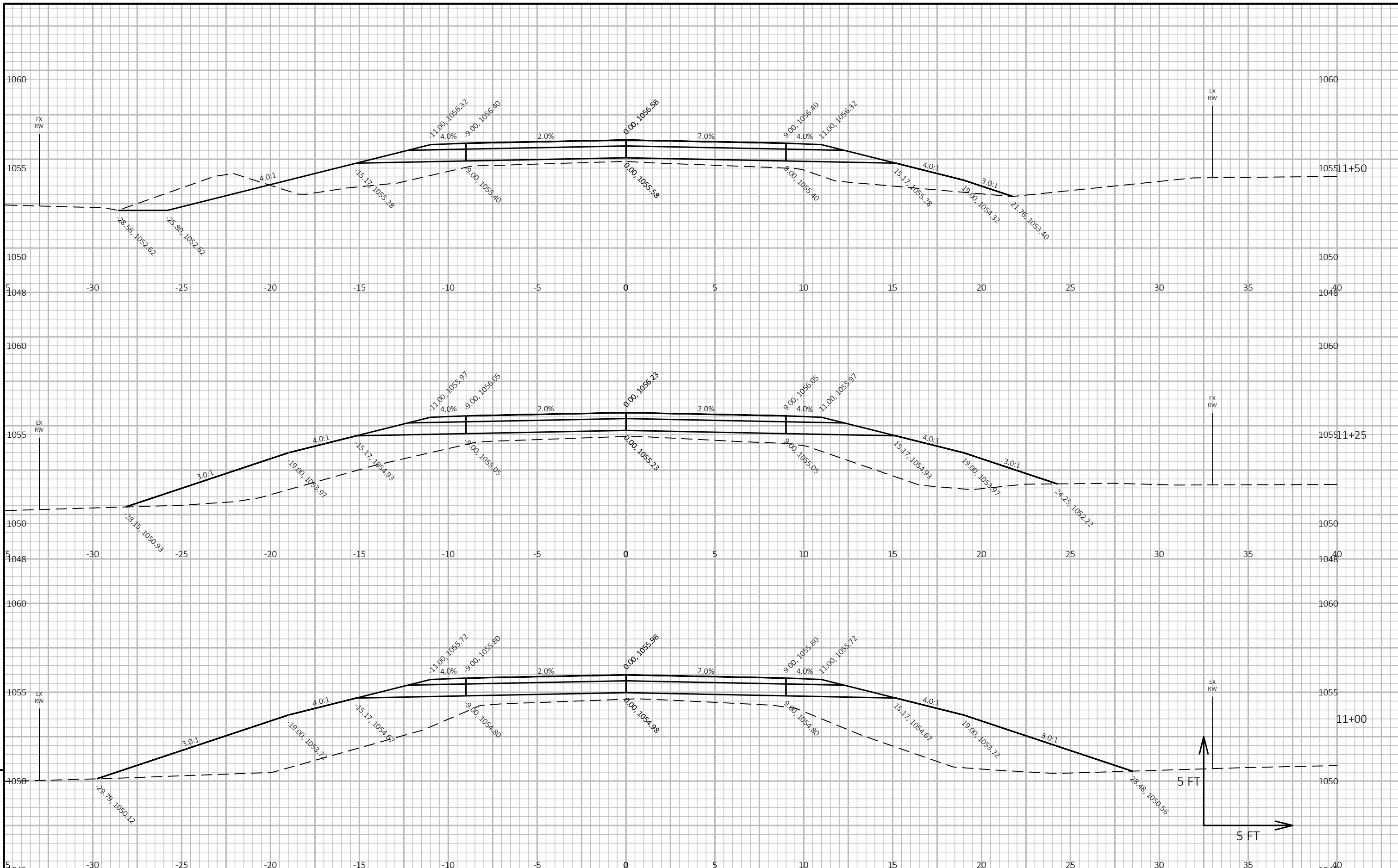
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COUNTY: JACKSON

CROSS SECTIONS: MOE ROAD

SHEET

E



PROJECT NO: 7249-00-70

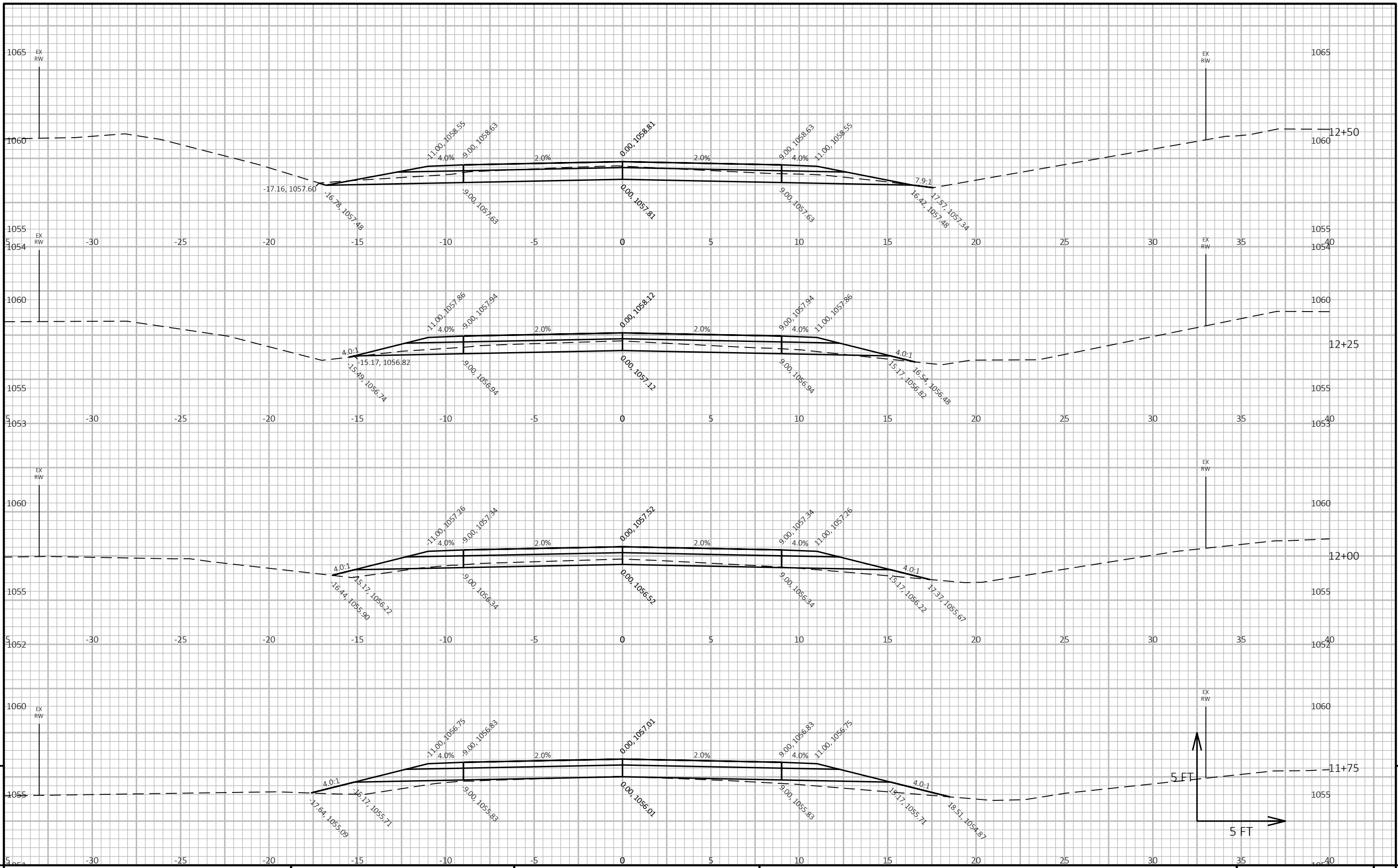
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COUNTY: JACKSON

CROSS SECTIONS: MOE ROAD

SHEET

E



PROJECT NO: 7249-00-70

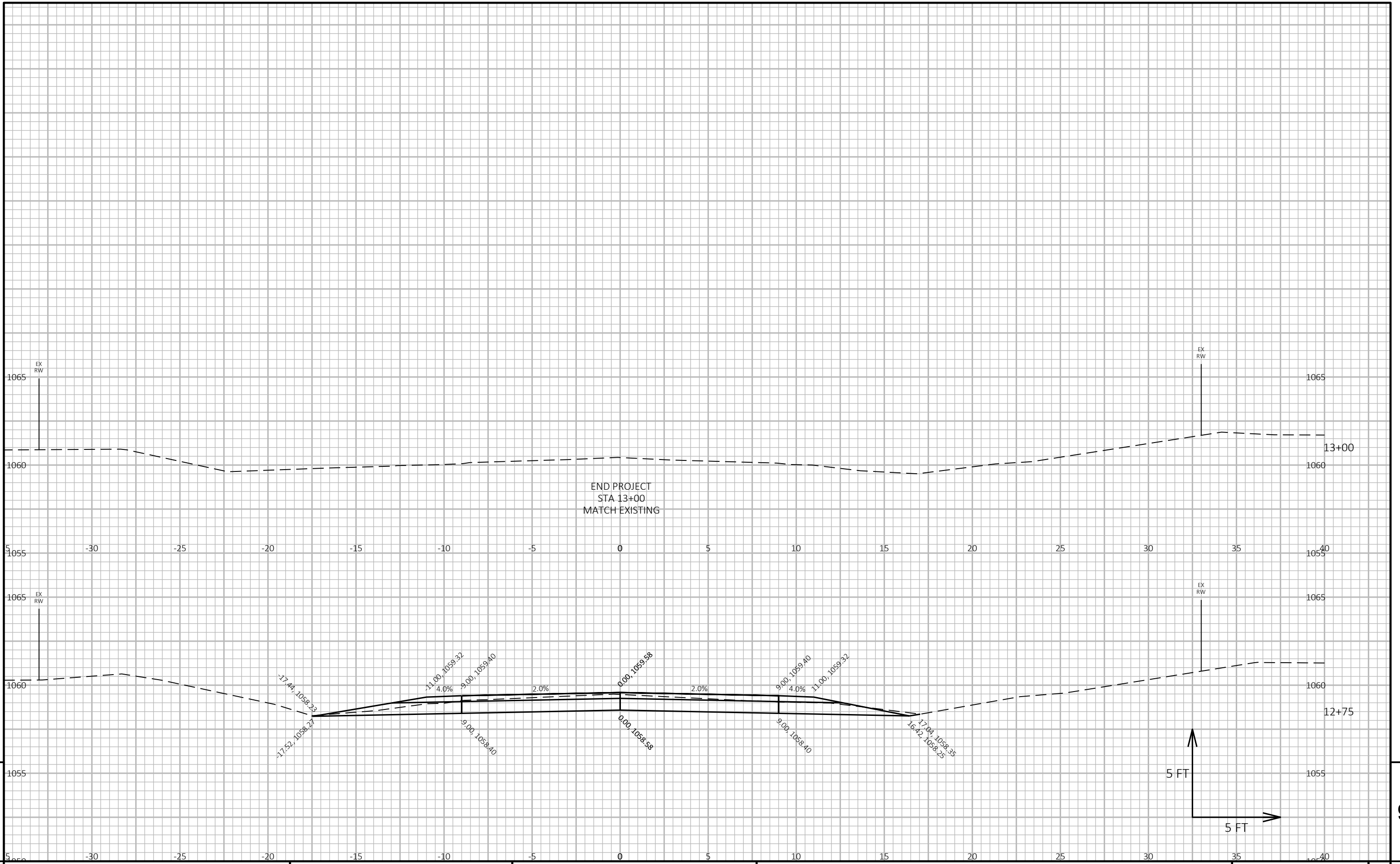
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COUNTY: JACKSON

CROSS SECTIONS: MOE ROAD

SHEET

E



9

9

PROJECT NO: 7249-00-70 HWY: MOE ROAD COUNTY: JACKSON CROSS SECTIONS: MOE ROAD SHEET E

FILE NAME: \\AYRES_ACTIVE\42\42-1219.00 - JACKSON CO. MOE ROAD OVER N FK BUFFALO RIVER\ROADWAY\C3D_AHR WORKING\DESIGN\421219_CRDR.DWG PLOT DATE: 2/22/2021 4:38 PM PLOT BY: ROSA, AUSTIN PLOT NAME: PLOT SCALE: 1 IN:5 FT HORZ. / 1 IN:5 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 08

Notes



Wisconsin Department of Transportation

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