SUP

PROJECT ID: 8727-06-70

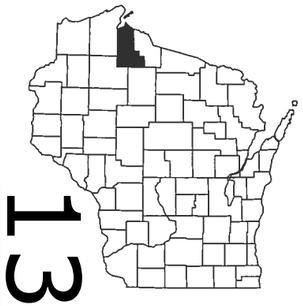
WITH: N/A

COUNTY: ASHLAND

JUNE 2015

ORDER OF SHEETS

TOTAL SHEETS = 96



DESIGN DESIGNATION

A.A.D.T.	(2016)	= 890
A.A.D.T.	(2036)	= 1,070
D.H.V.		= UNKNOWN
D.D.		= 62/38
T.		= 7%
DESIGN SPEED		= 55 MPH
ESALS		= N/A

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 (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MARENGO - ASHLAND

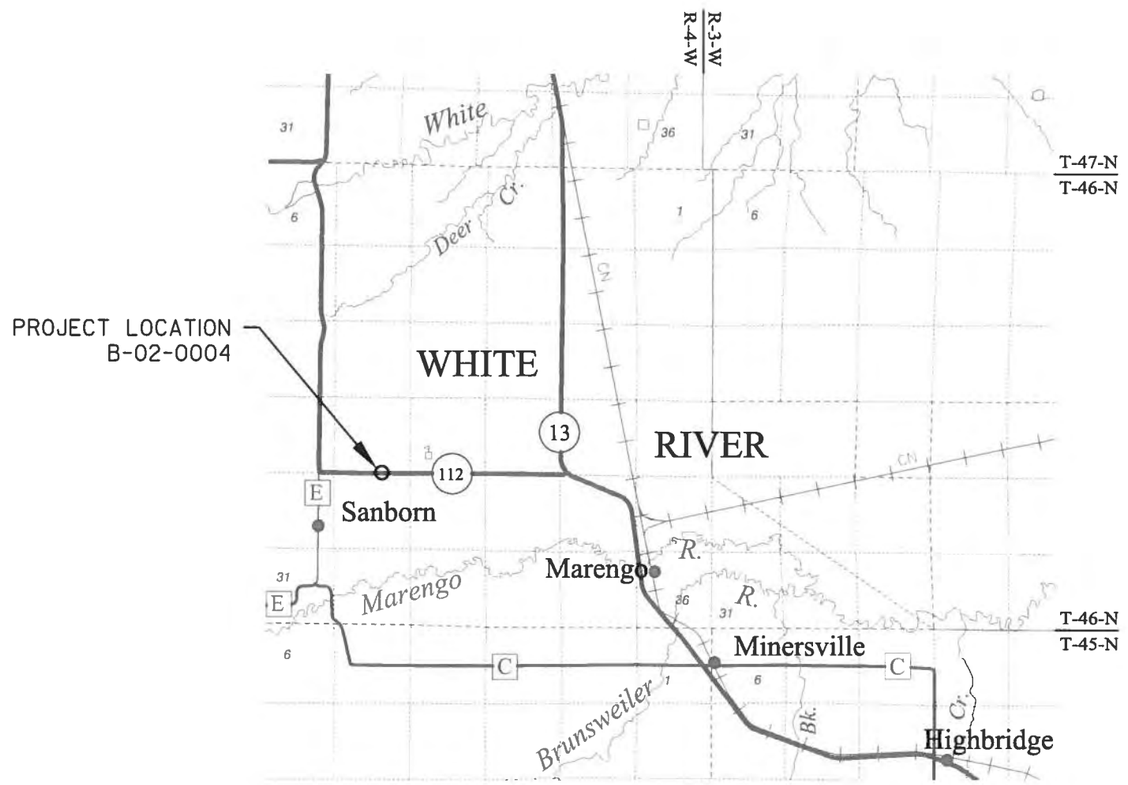
ANDERSON CREEK BRIDGE B-02-0004

STH 112

ASHLAND COUNTY

STATE PROJECT NUMBER
8727-06-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8727-06-70	WISC 2015336	1



LAYOUT

SCALE 0 2 MILES

TOTAL NET LENGTH OF CENTERLINE = 0.000

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), ASHLAND COUNTY (NAD 83), 2011 ADJUSTMENT.

ALL ELEVATIONS ON THIS PROJECT ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), 2011 ADJUSTMENT.

ORIGINAL PLANS PREPARED BY

emcs.inc

630 South 36th Avenue
Wausau, WI 54401
715.845.1081 Fax 715.845.1099

WISCONSIN
STEPHANIE G. CHRISTENSEN
E35808
WAUSAU, WI
PROFESSIONAL ENGINEER

1-22-15 (Date) Stephanie G. Christensen (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	EMCS, INC
Project Manager	PHIL KEPPERS
Regional Examiner	DAN OJIBWAY
Regional Supervisor	DAVID OSTROWSKI

APPROVED FOR THE DEPARTMENT

DATE: 1/22/2015 Philip L. Keppers (Signature)

E

2

GENERAL NOTES

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

EXISTING RIGHT-OF-WAY IS APPROXIMATE AND IS BASED ON AVAILABLE RIGHT-OF-WAY PLATS.

AS-BUILTS USED FOR PLAN DEVELOPMENT

PROJECT NO: S0242(3), CONSTRUCTION YEAR: 1955
PROJECT NO: 8727-06-60, CONSTRUCTION YEAR: 2011

OTHER CONTACTS

DNR LIAISON

SHAWN HASELEU
DNR NORTHERN REGION HEADQUARTERS
810 W. MAPLE STREET
SPOONER, WI 54801
(715)635-4228

UTILITIES

NORVADO

(COMMUNICATIONS)
STEVE FORSMAN
43750 USH 63
PO BOX 67
CABLE, WI 54821
(715) 798-7124
SFORSMAN@NORVADO.COM

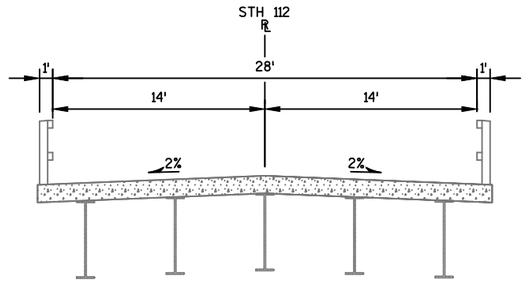
XCEL ENERGY

(ELECTRIC-DISTRIBUTION)
MURRAY SMERER
2400 FARM ROAD
ASHLAND, WI 54806
(715) 682-6928
MURRAY.J.SMERER@XCELENERGY.COM

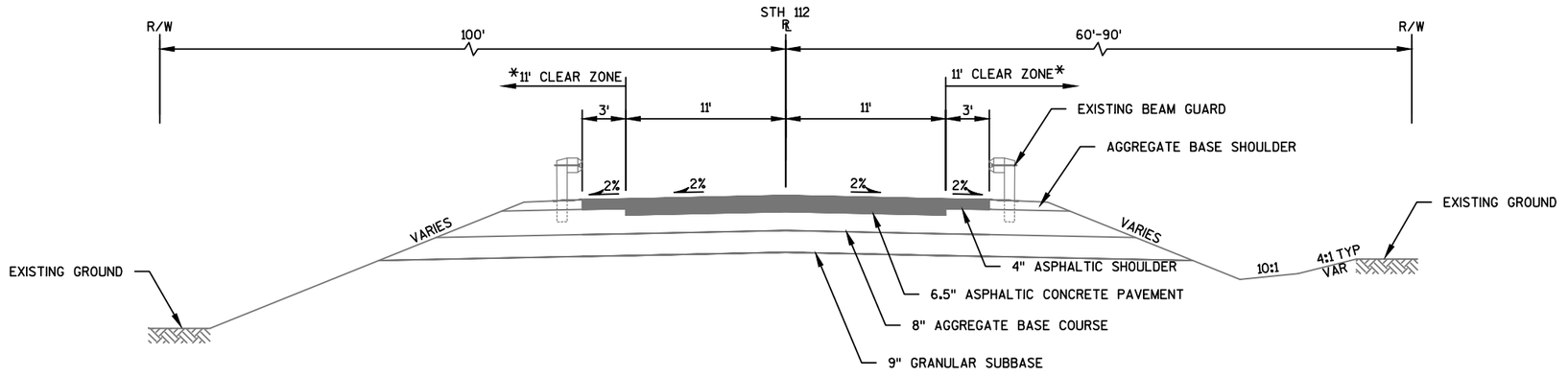
DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

ORDER OF SECTION 2 SHEETS



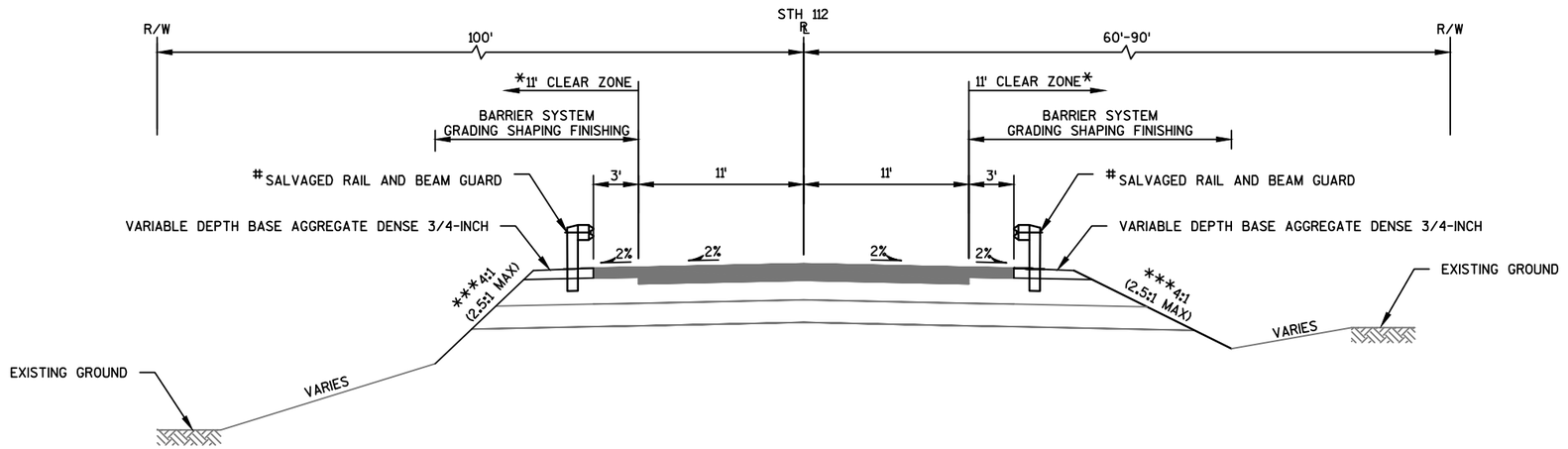
TYPICAL EXISTING SECTION
STH 112
STA 136+48.75 - STA 137+15.25
B-02-0004



TYPICAL EXISTING SECTION
STH 112
ROADWAY APPROACHES TO B-02-0004

NOTE:
*11' CLEAR ZONE ON ROADWAY APPROACHES OUTSIDE OF BEAM GUARD LIMITS

PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	TYPICAL SECTIONS	SHEET 3	E



TYPICAL FINISHED SECTION
STH 112
ROADWAY APPROACHES TO B-02-0004

NOTES:

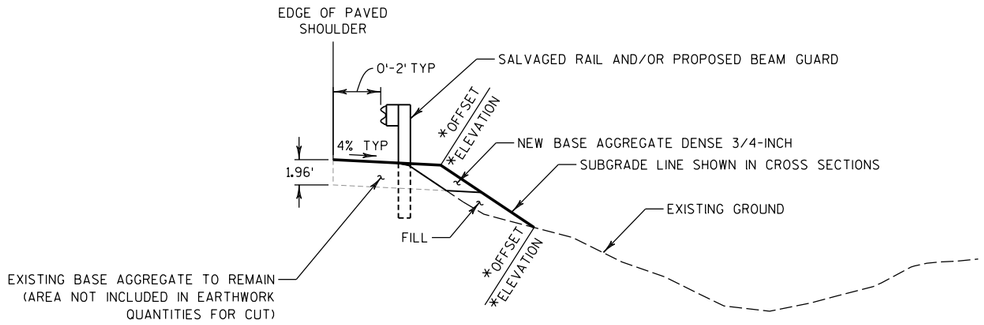
* 11' CLEAR ZONE ON ROADWAY APPROACHES OUTSIDE OF GUARDRAIL LIMITS.

\# SEE PLAN SHEETS AND CONSTRUCTION DETAILS FOR LIMITS OF SALVAGED RAIL AND BEAM GUARD.

** FINISH DISTURBED AREAS WITH EROSION MAT CLASS I TYPE B AND OTHER ITEMS INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING.

*** SIDE SLOPES VARY, SEE CROSS SECTIONS AND STANDARD DETAIL DRAWINGS FOR ADDITIONAL INFORMATION.

PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	TYPICAL SECTIONS	SHEET 4	E



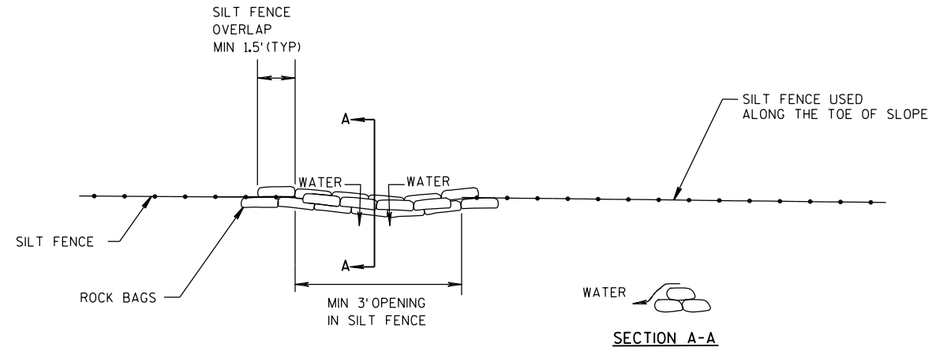
SHOULDER WIDENING EARTHWORK & BASE AGGREGATE FOR BEAM GUARD DETAIL

NOTES:

ANY CUT AND FILL REQUIRED IS INCIDENTAL TO THE BARRIER SYSTEM GRADING SHAPING FINISHING ITEM

BENCH FILL AS REQUIRED PER STANDARD SPECIFICATION 205.3.2(4)

* OFFSET AND ELEVATION PROVIDED ON CROSS SECTIONS

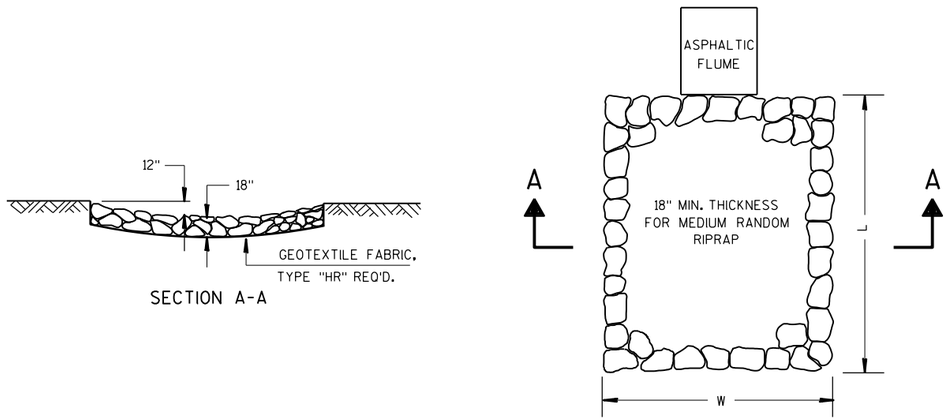


ROCK BAGS SILT FENCE RELIEF DETAIL

PAID AS ROCK BAGS

NOTE:

SEE CONSTRUCTION DETAIL FOR EROSION CONTROL FOR LOCATIONS

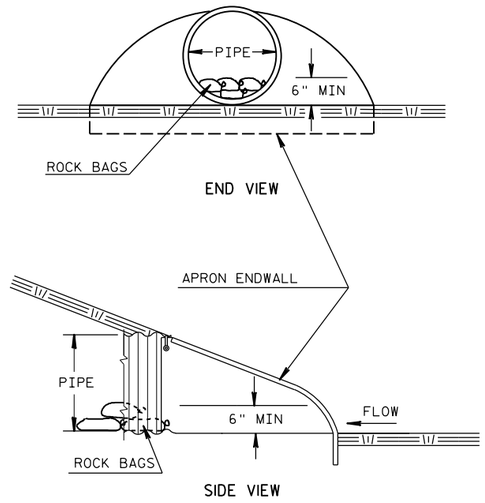


MEDIUM RANDOM RIPRAP TREATMENT AT ASPHALTIC FLUMES

FOR "L" AND "W" DIMENSIONS SEE EROSION CONTROL PLANS
STA 136+38, LT
STA 136+38, RT

NOTE:

SEE PLAN SHEET FOR ADDITIONAL INFORMATION



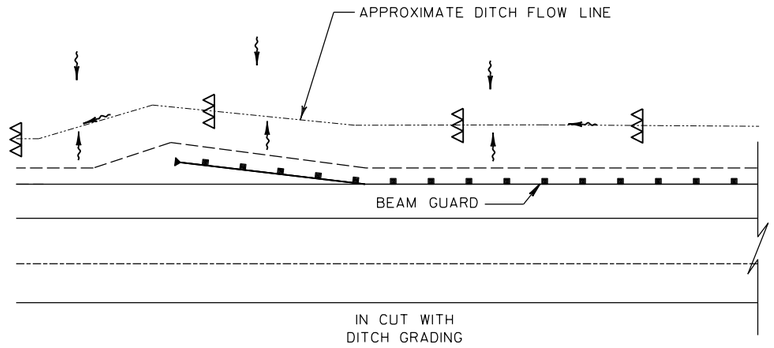
CULVERT PIPE CHECKS

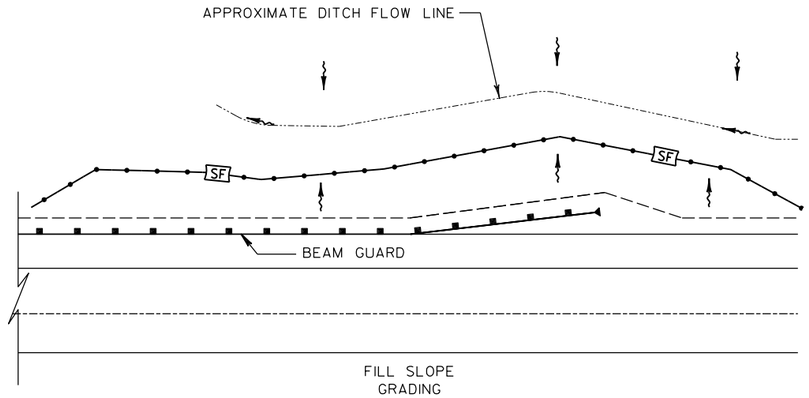
135+62 RT

NOTES:

INSTALL CULVERT PIPE CHECKS ON INLET END

PAID AS CULVERT PIPE CHECKS





LEGEND

SILT FENCE

TEMPORARY DITCH CHECK

SF SILT FENCE RELIEF (ROCK BAGS)

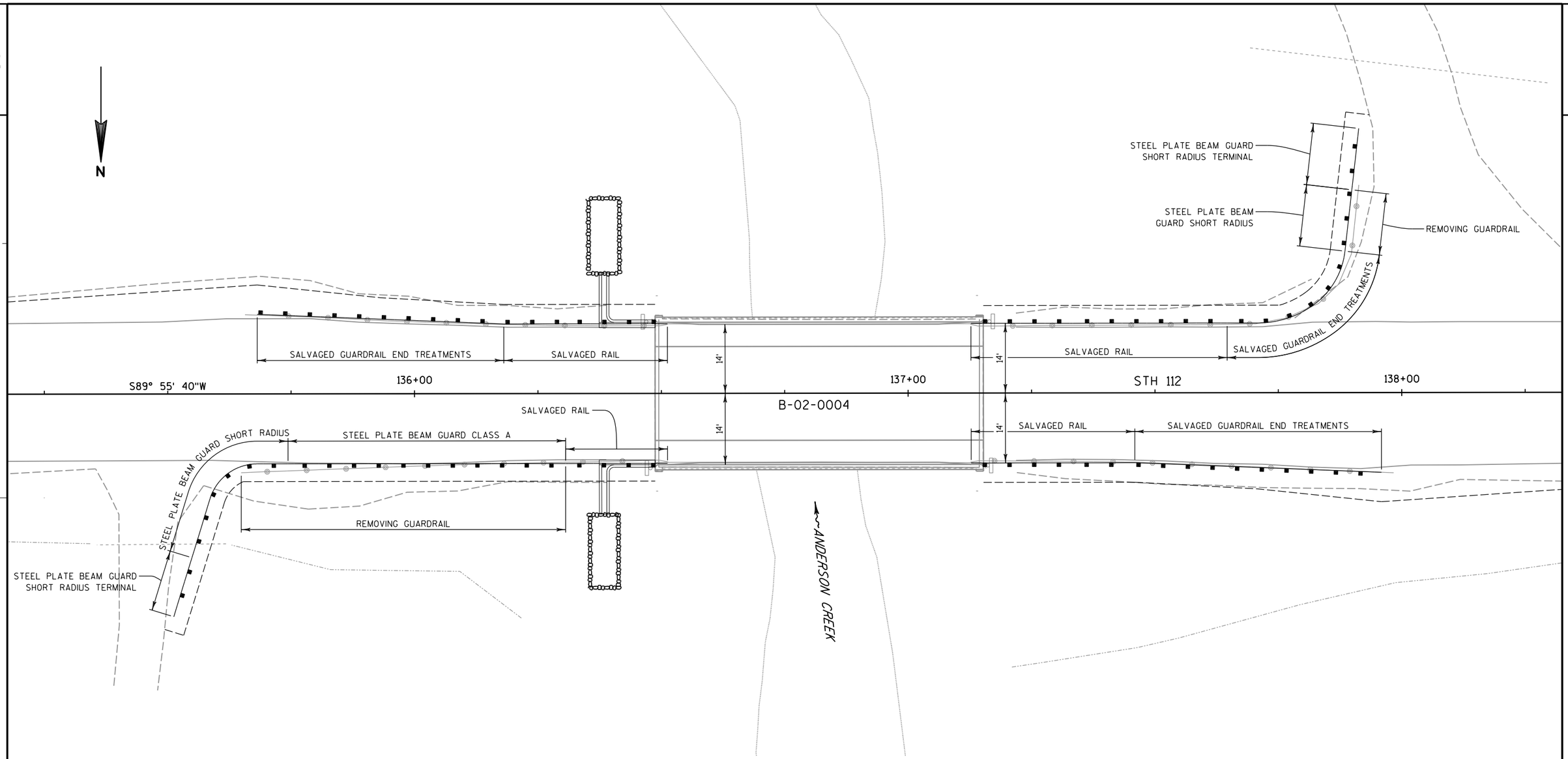
DETAIL FOR EROSION CONTROL FOR BEAM GUARD GRADING

RUNOFF COEFFICIENT TABLE

	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											

TOTAL PROJECT AREA = 1.66 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.23 ACRES

2



DETAIL FOR SALVAGING AND PROPOSED BEAM GUARD

NOTE:

REINSTALLING BEAM GUARD IS INCIDENTAL TO SALVAGED RAIL AND SALVAGED GUARDRAIL END TREATMENTS

PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CONSTRUCTION DETAILS	SHEET 7	E

TRAFFIC CONTROL GENERAL NOTES

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

2) "WO" SIGNS ARE THE SAME A "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

3) ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED. EQUIP WITH TYPE "A" (LOW INTENSITY FLASHING) LIGHTS PER SDDS.

NOTES:

* PLACE SIGN M1-6 WHEN ASSEMBLY IS MOUNTED ON ALL ROADWAYS OTHER THAN STH 112.

\# ADJUST TRAFFIC CONTROL PCMS MESSAGE AS NEEDED BASED ON WORK ZONE AREAS AND CONSTRUCTION SCHEDULE.

CONSIDER GEOMETRICS WHEN LOCATING MESSAGE BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE BOARD FOR A MINIMUM OF 1000 FEET IN FRONT OF THE MESSAGE BOARD.

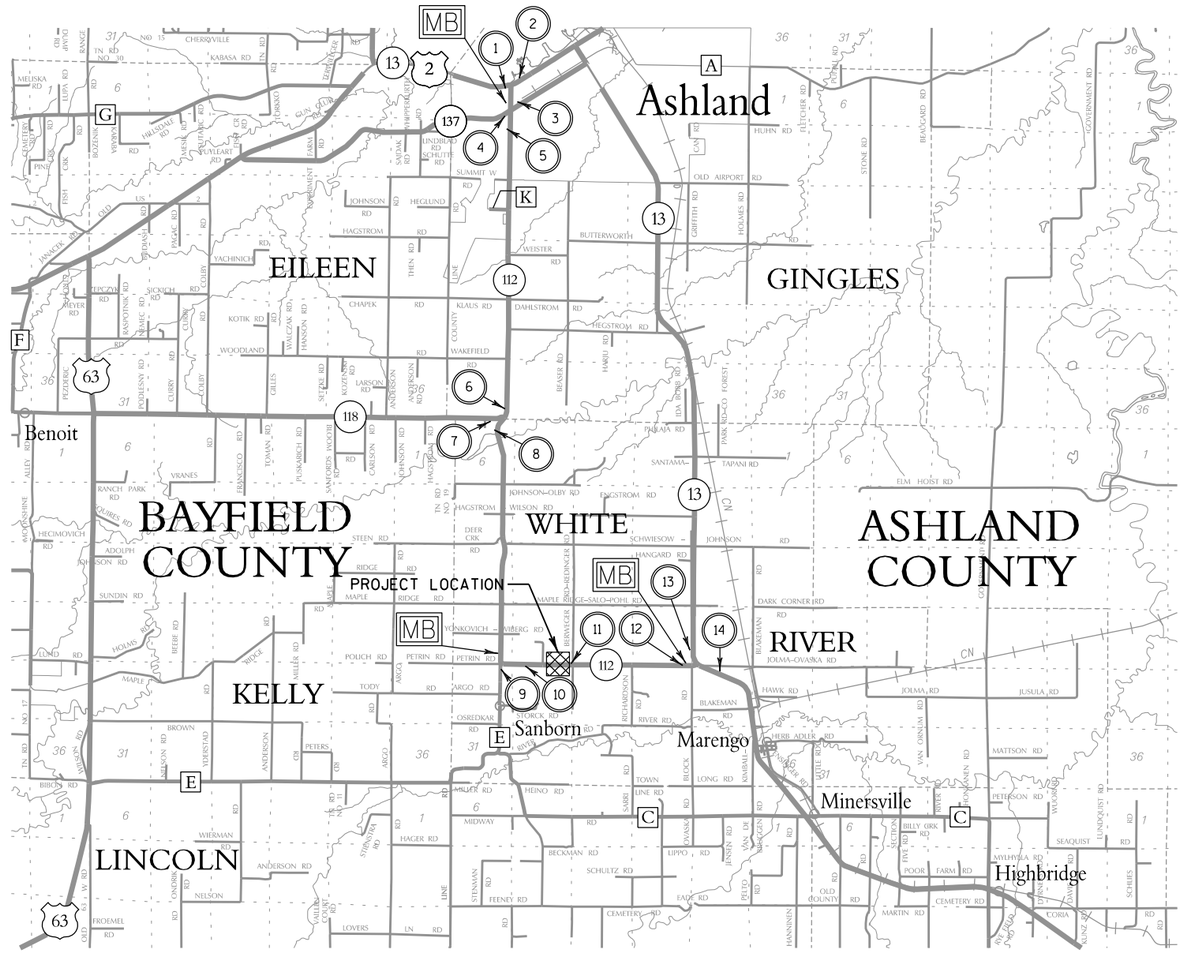
PLACE TRAFFIC CONTROL SIGNS PCMS AND DISPLAY THE "PRIOR TO CONSTRUCTION" MESSAGE 7 DAYS PRIOR TO THE EXPECTED START OF THE PROPOSED WORK THAT WILL REQUIRE LANE CLOSURES. ADJUST THE MESSAGE DATE ACCORDINGLY.

TRAFFIC CONTROL SIGNS PCMS MESSAGES			
		PRIOR TO CONSTRUCTION	
	PCMS SIGN LOCATION	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)
#	SB STH 112 0.5 MILES SOUTH OF USH 2	BRIDGE WORK STARTS	DATE
#	SB STH 112 0.1 MILE NORTH OF CTH E	BRIDGE WORK STARTS	DATE
#	NB STH 112 0.1 MILES WEST OF STH 13	BRIDGE WORK STARTS	DATE

LEGEND

MB — TRAFFIC CONTROL SIGN PCMS

WORK ZONE



ADVANCED WARNING FOR LANE WIDTH RESTRICTIONS

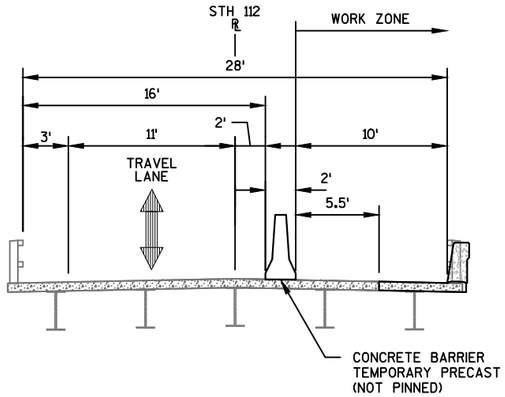
IN ADDITION TO THE W12-52 SIGNS SHOWN ON SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" PLACE THE FOLLOWING ADVANCED WARNING SIGNS AT THE FOLLOWING LOCATIONS DURING STAGE 3 AND 4

* 112 — M1-6 24" X 24"

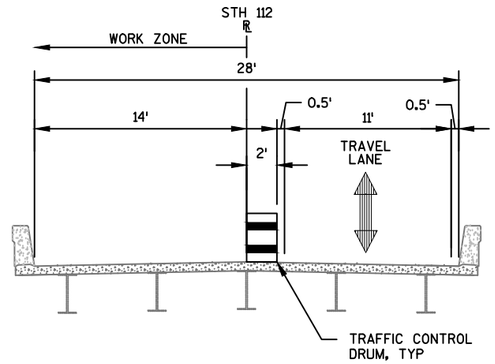
MAX. 11' WIDTH — W12-52 48" X 48"

XX MILES AHEAD — W057-52 36" X 24"

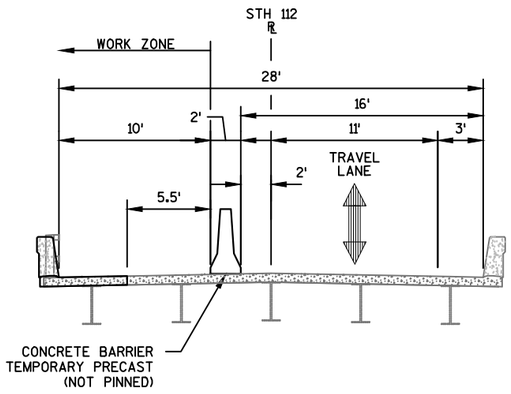
1. STH 13/USH 2 - 10½ MILES
2. STH 13/USH 2 - 10½ MILES
3. STH 137 - 10¼ MILES
4. STH 137 - 10¼ MILES
5. STH 112 - 10 MILES
6. STH 112 - 5¼ MILES
7. STH 118 - 5¼ MILES
8. STH 112 - 5 MILES
9. CTH E - 1 MILE
10. STH 112 - ¾ MILES
11. STH 112 - ¼ MILES
12. STH 112 - 2¼ MILES
13. STH 13 - 2½ MILES
14. STH 13 - 2½ MILES



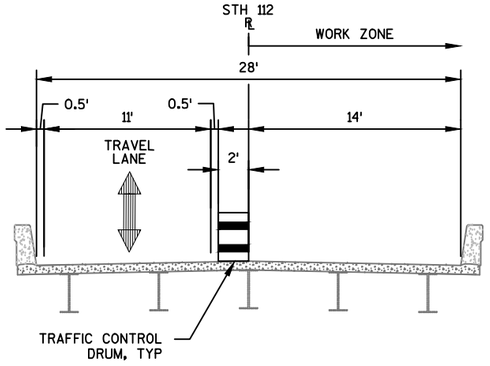
TRAFFIC CONTROL TYPICAL SECTION - STAGE 1
STH 112
LOOKING WEST
CONSTRUCTION ON RT SIDE OF B-02-0004
(REMOVE AND REPLACE RAILING)



TRAFFIC CONTROL TYPICAL SECTION - STAGE 3
STH 112
LOOKING WEST
CONSTRUCTION ON LT SIDE OF B-02-0004
(POLYMER OVERLAY)



TRAFFIC CONTROL TYPICAL SECTION - STAGE 2
STH 112
LOOKING WEST
CONSTRUCTION ON LT SIDE OF B-02-0004
(REMOVE AND REPLACE RAILING)



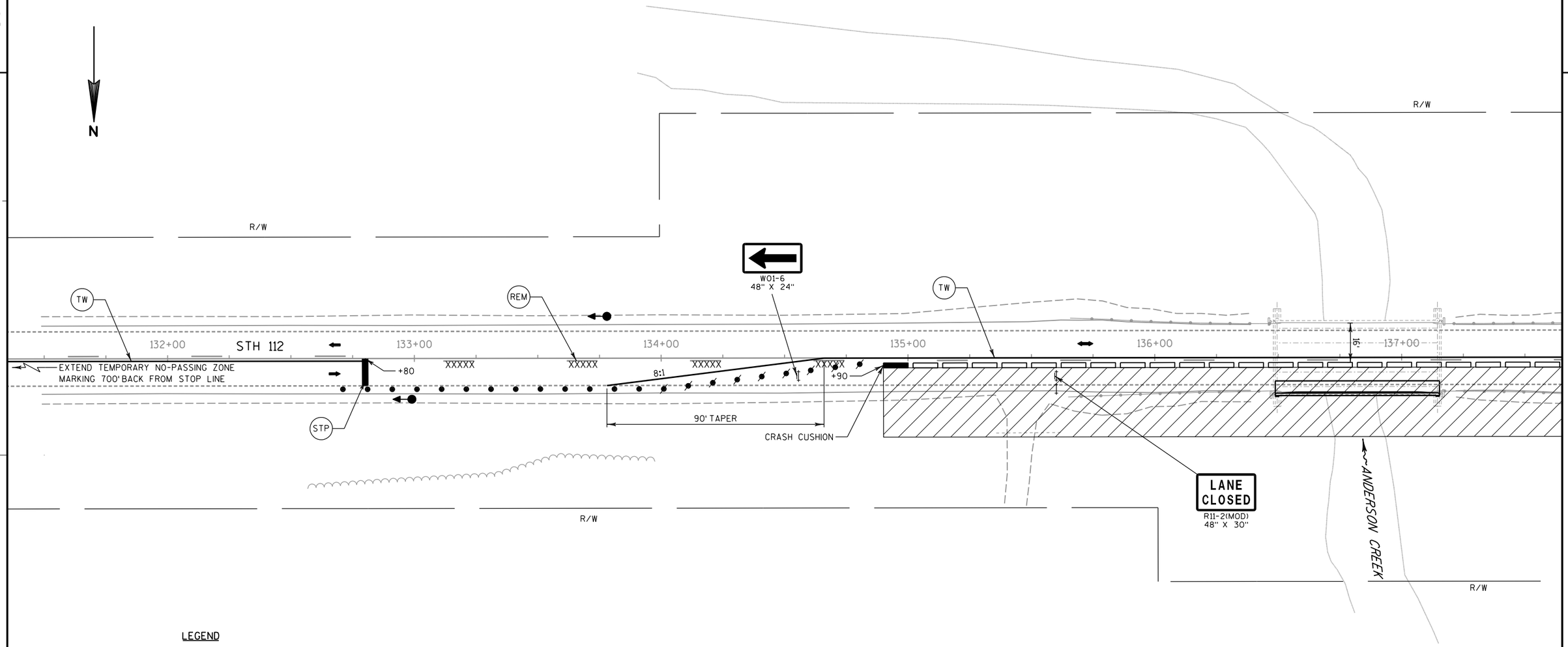
TRAFFIC CONTROL TYPICAL SECTION - STAGE 4
STH 112
LOOKING WEST
CONSTRUCTION ON RT SIDE OF B-02-0004
(POLYMER OVERLAY)

NOTES:

SEE TYPICAL SECTIONS, PLAN SHEETS, AND STRUCTURE PLANS FOR ADDITIONAL PROPOSED WORK INFORMATION.

SEE TRAFFIC CONTROL PLAN SHEETS FOR ADDITIONAL INFORMATION AND APPLICABLE SDD'S.

2



LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- WORK ZONE
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WITH/WITHOUT ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- XXXXX (REM) REMOVING PAVEMENT MARKINGS
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

SIGNAL TIMING
SIGNAL TIMING PROVIDED BY NW REGION, TRAFFIC SECTION

WB/NB: GREEN = 12, Y = 5, AR = 28
EB/SB: GREEN = 12, Y = 5, AR = 28

WORK IN STAGE 1
COMPLETE WORK ON THE RT SIDE OF BRIDGE: REPLACE BRIDGE RAILING, REHABILITATE BRIDGE, BEAM GUARD ADJUSTMENT AND REPLACEMENT, ASPHALTIC FLUME, ASPHALTIC SURFACE PATCHING, FINISHING, AND EROSION CONTROL.

STAGE 1 TRAFFIC
ONE-LANE BI-DIRECTIONAL STH 112 TRAFFIC LOCATED ON THE SOUTHBOUND (EASTBOUND) STH 112 TRAVEL LANE, CONTROLLED BY TEMPORARY SIGNALS AT BRIDGE.

WORK IN STAGE 4 (NOT SHOWN)
COMPLETE POLYMER OVERLAY ON THE RT SIDE OF BRIDGE.

STAGE 4 TRAFFIC (NOT SHOWN)
ONE-LANE BI-DIRECTIONAL STH 112 TRAFFIC LOCATED PARTIALLY ON THE SOUTHBOUND (EASTBOUND) STH 112 PAVED SHOULDER AND TRAVEL LANE. UTILIZE THE TEMPORARY TRAFFIC SIGNALS AND TRAFFIC CONTROL DRUMS IN PLACE OF TEMPORARY PRECAST CONCRETE BARRIER. SEE TRAFFIC CONTROL TYPICAL SECTIONS FOR TRAFFIC LANE LOCATION, TRAFFIC CONTROL DRUM LOCATION AND ADDITIONAL INFORMATION.

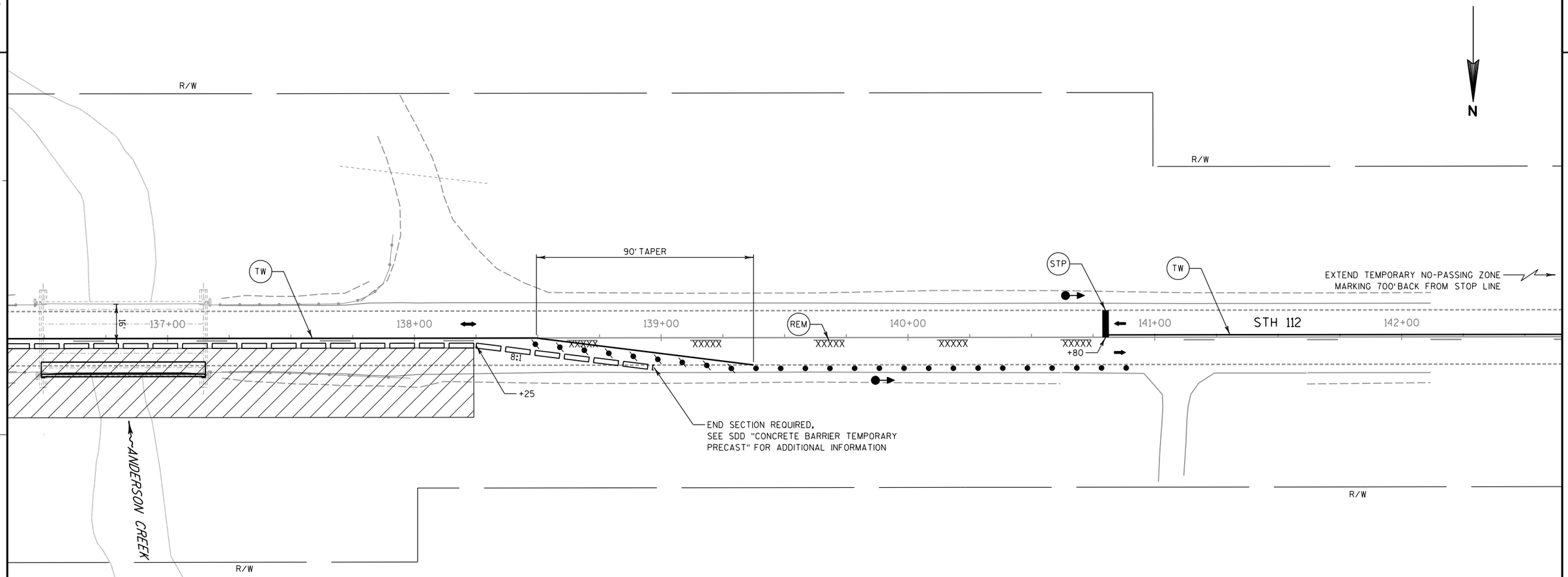
NOTES:
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR SIGNING AND ADDITIONAL INFORMATION.

SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION.

DURING STAGE 4 THE CLEAR ROADWAY WIDTH WILL BE REDUCED TO 12'. PLACE ADDITIONAL WIDTH RESTRICTION SIGNS AS SHOWN ON THE TRAFFIC CONTROL WIDTH RESTRICTIONS AND PCMS OVERVIEW SHEET.

PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	TRAFFIC CONTROL - STAGES 1 & 4	SHEET 10	E

2



WORK IN STAGE 1
COMPLETE WORK ON THE RT SIDE OF BRIDGE: REPLACE BRIDGE RAILING, REHABILITATE BRIDGE, BEAM GUARD ADJUSTMENT AND REPLACEMENT, ASPHALTIC FLUME, ASPHALTIC SURFACE PATCHING, FINISHING, AND EROSION CONTROL.

STAGE 1 TRAFFIC
ONE-LANE BI-DIRECTIONAL STH 112 TRAFFIC LOCATED ON THE SOUTHBOUND (EASTBOUND) STH 112 TRAVEL LANE, CONTROLLED BY TEMPORARY SIGNALS AT BRIDGE.

WORK IN STAGE 4 (NOT SHOWN)
COMPLETE POLYMER OVERLAY ON THE RT SIDE OF BRIDGE.

STAGE 4 TRAFFIC (NOT SHOWN)
ONE-LANE BI-DIRECTIONAL STH 112 TRAFFIC LOCATED PARTIALLY ON THE SOUTHBOUND (EASTBOUND) STH 112 PAVED SHOULDER AND TRAVEL LANE. UTILIZE THE TEMPORARY TRAFFIC SIGNALS AND TRAFFIC CONTROL DRUMS IN PLACE OF TEMPORARY PRECAST CONCRETE BARRIER. SEE TRAFFIC CONTROL TYPICAL SECTIONS FOR TRAFFIC LANE LOCATION, TRAFFIC CONTROL DRUM LOCATION AND ADDITIONAL INFORMATION.

NOTES:
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR SIGNING AND ADDITIONAL INFORMATION.

SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION.

DURING STAGE 4 THE CLEAR ROADWAY WIDTH WILL BE REDUCED TO 12'. PLACE ADDITIONAL WIDTH RESTRICTION SIGNS AS SHOWN ON THE TRAFFIC CONTROL WIDTH RESTRICTIONS AND PCMS OVERVIEW SHEET.

SIGNAL TIMING
SIGNAL TIMING PROVIDED BY NW REGION, TRAFFIC SECTION

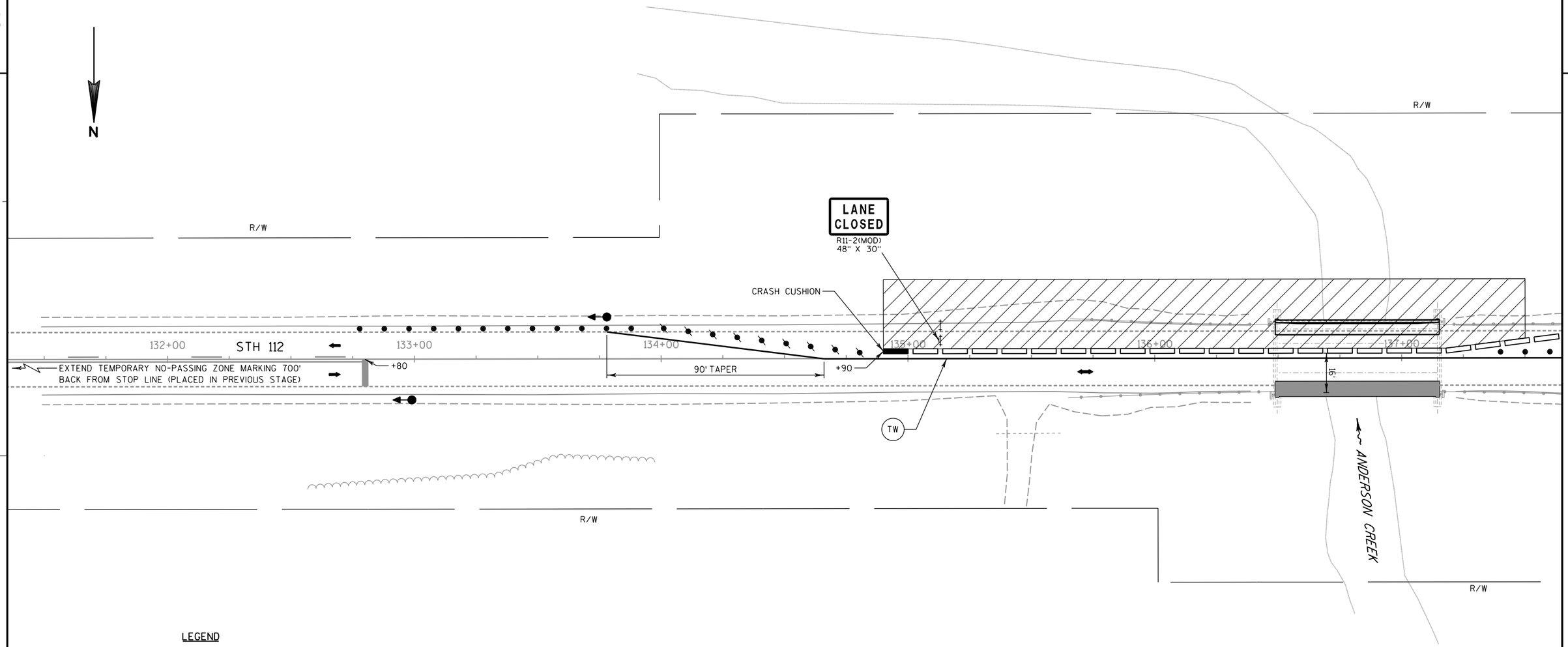
WB/NB: GREEN = 12, Y = 5, AR = 28
EB/SB: GREEN = 12, Y = 5, AR = 28

LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- WORK ZONE
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WTH/WITHOUT ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- XXXXX (REM) REMOVING PAVEMENT MARKINGS
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	TRAFFIC CONTROL - STAGES 1 & 4	SHEET 11	E

2



LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- WORK ZONE
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WTH/WITHOUT ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- XXXXX (REM) REMOVING PAVEMENT MARKINGS
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

SIGNAL TIMING
SIGNAL TIMING PROVIDED BY NW REGION, TRAFFIC SECTION

WB/NB: GREEN = 12, Y = 5, AR = 28
EB/SB: GREEN = 12, Y = 5, AR = 28

WORK IN STAGE 2
COMPLETE WORK ON THE LT SIDE OF BRIDGE: REPLACE BRIDGE RAILING, REHABILITATE BRIDGE, BEAM GUARD ADJUSTMENT AND REPLACEMENT, ASPHALTIC FLUME, ASPHALTIC SURFACE PATCHING, FINISHING, AND EROSION CONTROL.

STAGE 2 TRAFFIC
ONE-LANE BI-DIRECTIONAL STH 112 TRAFFIC LOCATED ON THE NORTHBOUND (WESTBOUND) STH 112 TRAVEL LANE, CONTROLLED BY TEMPORARY SIGNALS AT BRIDGE.

WORK IN STAGE 3 (NOT SHOWN)
COMPLETE POLYMER OVERLAY ON THE LT SIDE OF BRIDGE.

STAGE 3 TRAFFIC (NOT SHOWN)
ONE-LANE BI-DIRECTIONAL STH 112 TRAFFIC LOCATED PARTIALLY ON THE NORTHBOUND (WESTBOUND) STH 112 PAVED SHOULDER AND TRAVEL LANE. UTILIZE THE TEMPORARY TRAFFIC SIGNALS AND TRAFFIC CONTROL DRUMS IN PLACE OF TEMPORARY PRECAST CONCRETE BARRIER. SEE TRAFFIC CONTROL TYPICAL SECTIONS FOR TRAFFIC LANE LOCATION, TRAFFIC CONTROL DRUM LOCATION AND ADDITIONAL INFORMATION.

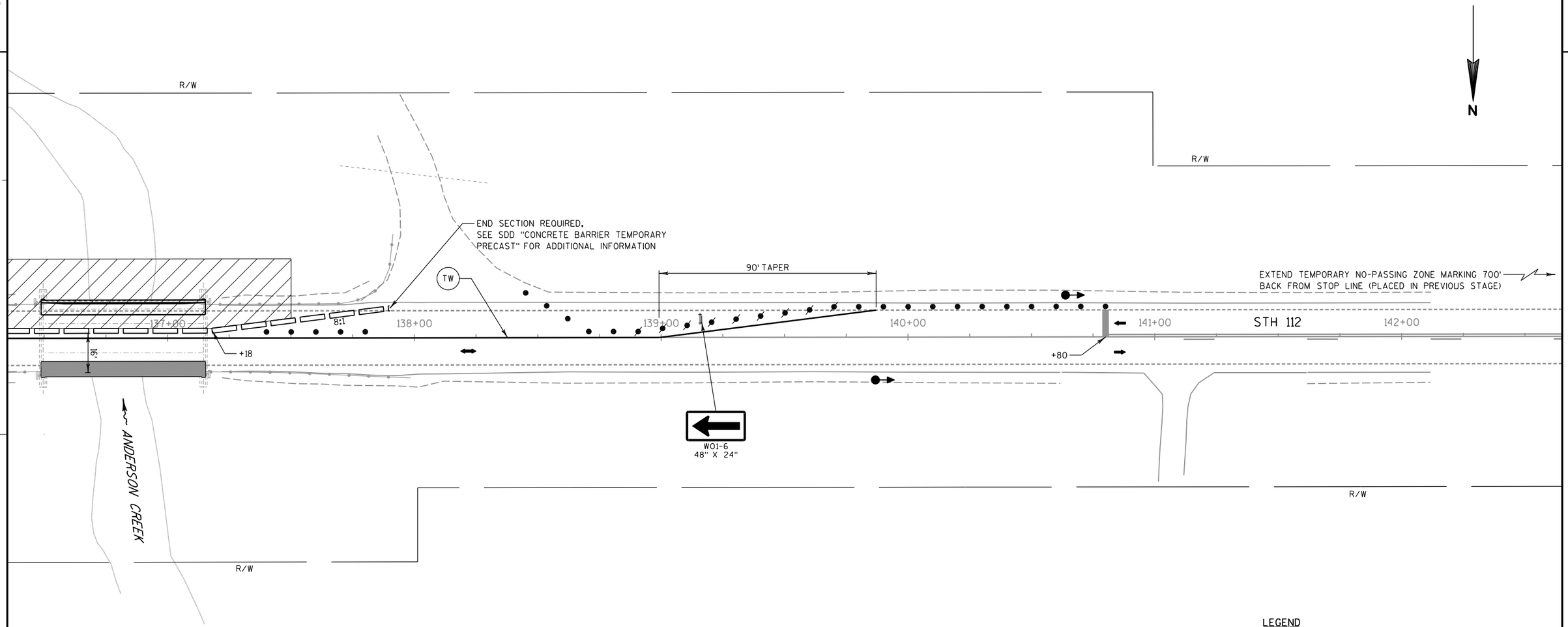
NOTES:
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR SIGNING AND ADDITIONAL INFORMATION.

SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION.

DURING STAGE 3 THE CLEAR ROADWAY WIDTH WILL BE REDUCED TO 12'. PLACE ADDITIONAL WIDTH RESTRICTION SIGNS AS SHOWN ON THE TRAFFIC CONTROL WIDTH RESTRICTIONS AND PCMS OVERVIEW SHEET.

PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	TRAFFIC CONTROL - STAGES 2 & 3	SHEET 12	E

2



WORK IN STAGE 2
COMPLETE WORK ON THE LT SIDE OF BRIDGE: REPLACE BRIDGE RAILING, REHABILITATE BRIDGE, BEAM GUARD ADJUSTMENT AND REPLACEMENT, ASPHALTIC FLUME, ASPHALTIC SURFACE PATCHING, FINISHING, AND EROSION CONTROL.

STAGE 2 TRAFFIC
ONE-LANE BI-DIRECTIONAL STH 112 TRAFFIC LOCATED ON THE NORTHBOUND (WESTBOUND) STH 112 TRAVEL LANE, CONTROLLED BY TEMPORARY SIGNALS AT BRIDGE.

WORK IN STAGE 3 (NOT SHOWN)
COMPLETE POLYMER OVERLAY ON THE LT SIDE OF BRIDGE.

STAGE 3 TRAFFIC (NOT SHOWN)
ONE-LANE BI-DIRECTIONAL STH 112 TRAFFIC LOCATED PARTIALLY ON THE NORTHBOUND (WESTBOUND) STH 112 PAVED SHOULDER AND TRAVEL LANE. UTILIZE THE TEMPORARY TRAFFIC SIGNALS AND TRAFFIC CONTROL DRUMS IN PLACE OF TEMPORARY PRECAST CONCRETE BARRIER. SEE TRAFFIC CONTROL TYPICAL SECTIONS FOR TRAFFIC LANE LOCATION, TRAFFIC CONTROL DRUM LOCATION AND ADDITIONAL INFORMATION.

NOTES:
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR SIGNING AND ADDITIONAL INFORMATION.

SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION.

DURING STAGE 3 THE CLEAR ROADWAY WIDTH WILL BE REDUCED TO 12'. PLACE ADDITIONAL WIDTH RESTRICTION SIGNS AS SHOWN ON THE TRAFFIC CONTROL WIDTH RESTRICTIONS AND PCMS OVERVIEW SHEET.

SIGNAL TIMING
SIGNAL TIMING PROVIDED BY NW REGION, TRAFFIC SECTION

WB/NB: GREEN = 12, Y = 5, AR = 28
EB/SB: GREEN = 12, Y = 5, AR = 28

LEGEND

- CONCRETE BARRIER TEMPORARY PRECAST
- WORK ZONE
- WORK COMPLETED IN PREVIOUS STAGES
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WTH/WITHOUT ATTACHED SIGN
- TEMPORARY SIGNAL ON 4" X 6" WOOD POST
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
- EXISTING PAVEMENT MARKING
- XXXXX (REM) REMOVING PAVEMENT MARKINGS
- (TW) TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
- (STP) TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	TRAFFIC CONTROL - STAGES 2 & 3	SHEET 13	E

DATE 26MAR15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	8727-06-70 QUANTITY
0010	203.0500.S	Removing Old Structure Over Waterway (station) 01. 136+49	LS	1.000	1.000
0020	204.0110	Removing Asphaltic Surface	SY	8.000	8.000
0030	204.0165	Removing Guardrail	LF	62.500	62.500
0040	213.0100	Finishing Roadway (project) 01. 8727-06-70	EACH	1.000	1.000
0050	305.0110	Base Aggregate Dense 3/4-Inch	TON	90.000	90.000
0060	465.0110	Asphaltic Surface Patching	TON	2.000	2.000
0070	465.0315	Asphaltic Flumes	SY	10.000	10.000
0080	502.0100	Concrete Masonry Bridges	CY	34.000	34.000
0090	502.3200	Protective Surface Treatment	SY	56.000	56.000
0100	505.0605	Bar Steel Reinforcement HS Coated Bridges	LB	8,840.000	8,840.000
0110	509.5100.S	Polymer Overlay	SY	207.000	207.000
0120	517.0900.S	Preparation and Coating of Top Flanges (structure) 01. B-02-0004	LS	1.000	1.000
0130	517.3000.S	Structure Overcoating Cleaning and Priming (structure) 01. B-02-0004	LS	1.000	1.000
0140	517.4000.S	Containment and Collection of Waste Materials (structure) 01. B-02-0004	LS	1.000	1.000
0150	517.6001.S	Portable Decontamination Facility	EACH	1.000	1.000
0160	603.8000	Concrete Barrier Temporary Precast Delivered	LF	410.000	410.000
0170	603.8125	Concrete Barrier Temporary Precast Installed	LF	715.000	715.000
0180	606.0200	Riprap Medium	CY	10.000	10.000
0190	614.0010	Barrier System Grading Shaping Finishing	EACH	4.000	4.000
0200	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0210	614.0305	Steel Plate Beam Guard Class A	LF	56.300	56.300
0220	614.0345	Steel Plate Beam Guard Short Radius	LF	44.500	44.500
0230	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	2.000	2.000
0240	614.0905	Crash Cushions Temporary	EACH	2.000	2.000
0250	614.0920	Salvaged Rail	LF	149.600	149.600
0260	614.0925	Salvaged Guardrail End Treatments	EACH	3.000	3.000
0270	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8727-06-70	EACH	1.000	1.000
0280	619.1000	Mobilization	EACH	1.000	1.000
0290	624.0100	Water	MGAL	1.000	1.000
0300	628.1504	Silt Fence	LF	875.000	875.000
0310	628.1520	Silt Fence Maintenance	LF	875.000	875.000
0320	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0330	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0340	628.2004	Erosion Mat Class I Type B	SY	700.000	700.000
0350	628.7504	Temporary Ditch Checks	LF	45.000	45.000
0360	628.7555	Culvert Pipe Checks	EACH	6.000	6.000
0370	628.7570	Rock Bags	EACH	150.000	150.000
0380	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0390	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0400	638.2602	Removing Signs Type II	EACH	4.000	4.000
0410	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0420	642.5001	Field Office Type B	EACH	1.000	1.000
0430	643.0100	Traffic Control (project) 01. 8727-06-70	EACH	1.000	1.000
0440	643.0300	Traffic Control Drums	DAY	4,616.000	4,616.000
0450	643.0420	Traffic Control Barricades Type III	DAY	290.000	290.000

DATE 26MAR15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	8727-06-70 QUANTITY
0460	643.0705	Traffic Control Warning Lights Type A	DAY	580.000	580.000
0470	643.0715	Traffic Control Warning Lights Type C	DAY	1,620.000	1,620.000
0480	643.0900	Traffic Control Signs	DAY	2,250.000	2,250.000
0490	643.1050	Traffic Control Signs PCMS	DAY	21.000	21.000
0500	645.0120	Geotextile Fabric Type HR	SY	34.000	34.000
0510	646.0106	Pavement Marking Epoxy 4-Inch	LF	350.000	350.000
0520	646.0600	Removing Pavement Markings	LF	125.000	125.000
0530	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	2,580.000	2,580.000
0540	649.1400	Temporary Pavement Marking Stop Line Removable Tape 24-Inch	LF	28.000	28.000
0550	650.9910	Construction Staking Supplemental Control (project) 01. 8727-06-70	LS	1.000	1.000
0560	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-02-0004	LS	1.000	1.000
0570	690.0150	Sawing Asphalt	LF	55.000	55.000
0580	715.0502	Incentive Strength Concrete Structures	DOL	500.000	500.000
0590	ASP.1T0A	On-the-Job Training Apprentice at $5. 00/HR	HRS	1,200.000	1,200.000
0600	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000

3

REMOVING ASPHALTIC SURFACE

STATION - STATION	LOCATION	204.0110 SY	COMMENTS
CAT 0010			
136+47 - 136+49	LT	1.5	SE QUADRANT PATCH FOR PARTIAL DECK REMOVAL
136+47 - 136+49	RT	1.5	NE QUADRANT PATCH FOR PARTIAL DECK REMOVAL
137+15 - 137+17	LT	1.5	SW QUADRANT PATCH FOR PARTIAL DECK REMOVAL
137+15 - 137+17	RT	1.5	NW QUADRANT PATCH FOR PARTIAL DECK REMOVAL
UNDISTRIBUTED	--	2.0	
TOTAL		8	

NOTE: UNDISTRIBUTED REMOVAL IS FOR ADDITIONAL DISTURBED AREAS ADJACENT TO THE BRIDGE WORK, IF REQUIRED

ASPHALTIC SURFACE PATCHING

STATION - STATION	LOCATION	465.0110 TON	COMMENTS
CAT 0010			
136+47 - 136+49	LT	0.30	SE QUADRANT PATCH FOR PARTIAL DECK REMOVAL
136+47 - 136+49	RT	0.30	NE QUADRANT PATCH FOR PARTIAL DECK REMOVAL
137+15 - 137+17	LT	0.30	SW QUADRANT PATCH FOR PARTIAL DECK REMOVAL
137+15 - 137+17	RT	0.30	NW QUADRANT PATCH FOR PARTIAL DECK REMOVAL
UNDISTRIBUTED	--	0.80	
TOTAL		2.00	

NOTE: UNDISTRIBUTED ASPHALTIC SURFACE IS FOR ADDITIONAL DISTURBED AREAS ADJACENT TO THE BRIDGE WORK, IF REQUIRED

3

BASE AGGREGATE DENSE ITEMS

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	COMMENTS
CAT 0010			
134+77 - 136+49	LT	22	SHOULDER AND GUARDRAIL
135+49 - 136+49	RT	16	SHOULDERS, DRIVEWAY, AND GUARDRAIL
137+15 - 137+94	LT	14	SHOULDER AND GUARDRAIL
137+15 - 138+87	RT	24	SHOULDERS, DRIVEWAY, AND GUARDRAIL
UNDISTRIBUTED	--	14	
TOTALS		90	

3

ASPHALTIC FLUMES

	STATION	LOCATION	465.0315 SY
CAT 0010			
	136+38	LT	5
	136+38	RT	5
TOTAL			10

CONCRETE BARRIER TEMPORARY PRECAST ITEMS

	STATION - STATION	LOCATION	603.8000 DELIVERED LF	603.8125 INSTALLED LF	614.0905 CRASH CUSHION TEMPORARY EACH	COMMENTS
CAT 0010						
	134+90 - 138+97	RT	410	410	1	STAGE 1
	134+90 - 137+90	LT	--	305	1	STAGE 2
TOTALS			410	715	2	

3

EROSION CONTROL ITEMS

	STATION - STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH	645.0120 GEOTEXTILE FABRIC TYPE HR SY
CAT 0010									
	134+77 - 136+49	LT	5	210	210	--	--	30	17
	135+49 - 136+49	RT	5	150	150	--	4	30	17
	137+15 - 137+94	LT	--	135	135	--	--	30	--
	137+15 - 138+87	RT	--	205	205	30	--	30	--
	UNDISTRIBUTED	--	--	175	175	15	2	30	--
TOTALS			10	875	875	45	6	150	34

NOTE: ROCK BAGS ARE FOR SILT FENCE RELIEF

3

BARRIER SYSTEM GRADING SHAPING FINISHING

STATION - STATION	LOCATION	614.0010 EACH	**COMMON EXC. CY	**FILL CY	**BORROW EXC. CY	**TOPSOIL SY	**FERTILIZER TYPE B CWT	**SEEDING #30 LB
CAT 0010								
134+77 - 136+49	LT	1	7	7	--	120	0.1	3
135+49 - 136+49	RT	1	1	5	4	40	0.1	1
137+15 - 137+94	LT	1	--	28	28	110	0.1	2
137+15 - 138+87	RT	1	1	5	4	290	0.2	6
TOTALS		4	9	45	36	560	1	12

NOTES: **NON-BID ITEM. ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY. ITEMS INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING. ANY STAKING REQUIRED IS INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING.

BEAM GUARD ITEMS

STATION - STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS LF	614.0390 STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL EACH	614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARDRAIL END TREATMENTS EACH
CAT 0010							
135+51 - 136+49	RT	50.0	56.3	32.0	1	20.7	--
135+68 - 136+49	LT	--	--	--	--	51.9	1
137+15 - 137+91	LT	12.5	--	12.5	1	43.8	1
137+15 - 137+96	RT	--	--	--	--	33.2	1
UNDISTRIBUTED	--	--	--	--	--	--	--
TOTALS		62.5	56.3	44.5	2.0	149.6	3

MAINTENANCE AND REPAIR OF HAUL ROADS

LOCATION	618.0100 (8727-06-70) EACH
CAT 0010	
PROJECT	1
TOTAL	1

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
CAT 0010		
PROJECT	3	2
TOTALS	3	2

WATER

LOCATION	624.0100 MGAL
CAT 0010	
PROJECT	1
TOTAL	1

NOTE: WATER PROVIDED FOR COMPACTION OF BASE AGGREGATE

EROSION MAT

STATION - STATION	LOCATION	628.2004 CLASS 1 TYPE B SY
CAT 0010		
134+77 - 136+49	LT	120
135+49 - 136+49	RT	40
137+15 - 137+94	LT	110
137+15 - 138+87	RT	290
UNDISTRIBUTED	--	140
TOTAL		700

3

TYPE II SIGNS AND SUPPORTS

SIGN NO.	SIGN CODE	W X H	634.0612 POSTS WOOD 4x6-INCH X 12-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
CAT 0010						
1	W5-52L	12 X 36	1	3.00	1	1
2	W5-52R	12 X 36	1	3.00	1	1
3	W5-52L	12 X 36	1	3.00	1	1
4	W5-52R	12 X 36	1	3.00	1	1
TOTALS			4	12.00	4	4

TRAFFIC CONTROL ITEMS

LOCATION	DAYS	643.0300 DRUMS NO.	643.0300 DRUMS DAYS	643.0420 BARRICADES TYPE III NO.	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO.	643.0705 WARNING LIGHTS TYPE A DAYS	643.0715 WARNING LIGHTS TYPE C NO.	643.0715 WARNING LIGHTS TYPE C DAYS	643.0900 SIGNS NO.	643.0900 SIGNS DAYS	COMMENTS
CAT 0010												
PROJECT	40	47	1,880	3	120	6	240	18	720	21	840	STAGE 1
PROJECT	40	53	2,120	3	120	6	240	18	720	21	840	STAGE 2
PROJECT	5	62	308	5	25	10	50	18	90	57	285	STAGE 3
PROJECT	5	62	308	5	25	10	50	18	90	57	285	STAGE 4
TOTALS			4,616		290		580		1,620		2,250	

TRAFFIC CONTROL SIGNS PCMS

LOCATION	DAYS	643.1050 NO.	643.1050 DAYS	COMMENTS
CAT 0010				
STH 112 SB	7	1	7	0.5 MILES SOUTH OF USH 2
STH 112 SB	7	1	7	0.1 MILES NORTH OF CTH E
STH 112 NB	7	1	7	0.1 MILES WEST OF STH 13
TOTAL			21	

PAVEMENT MARKING EPOXY

STATION - STATION	LOCATION	646.0106 4-INCH (YELLOW) LF	646.0106 4-INCH (WHITE) LF
CAT 0010			
132+80 - 140+80	LT & RT	200	150
TOTAL		200	150
		350	

3

TEMPORARY PAVEMENT MARKING ITEMS

STATION - STATION	LOCATION	646.0600 REMOVING PAVEMENT MARKING LF	649.0400 REMOVABLE TAPE 4-INCH (WHITE) LF	649.1400 STOP LINE REMOVABLE TAPE 24-INCH (WHITE) LF	COMMENTS
CAT 0010					
125+80 - 132+80	LT & RT	--	700	--	STAGE 1
132+80 - 140+80	LT & RT	125	565	28	STAGE 1
132+80 - 140+80	LT & RT	--	615	--	STAGE 2
140+80 - 147+80	LT & RT	--	700	--	STAGE 1
TOTALS		125	2,580	28	

FILE NAME : P:\48xx\4878.DP.13.STH112.ASH\CADDS\87270670\SheetsPlan\030201_mq.dgn PLOT DATE : 1/29/2015 PLOT BY : emo PLOT NAME : PLOT SCALE : 1:20
WISDOT/CADDS SHEET 43

3

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL

	STATION	LOCATION	650.9910 (8727-06-70) LS
CAT 0010			
	PROJECT	LT & RT	1
TOTAL			1

TEMPORARY TRAFFIC SIGNALS FOR BRIDGES

	STATION - STATION	LOCATION	661.0100 (B-02-0004) LS
CAT 0010			
	132+80 - 140+80	LT & RT	1
TOTAL			1

3

SAWING ASPHALT

	STATION - STATION	LOCATION	690.0150 ASPHALT LF	COMMENTS
CAT 0010				
	136+47 - 136+49	LT	8	SE QUADRANT PATCH FOR PARTIAL DECK REMOVAL
	136+47 - 136+49	RT	8	NE QUADRANT PATCH FOR PARTIAL DECK REMOVAL
	137+15 - 137+17	LT	8	SW QUADRANT PATCH FOR PARTIAL DECK REMOVAL
	137+15 - 137+17	RT	8	NW QUADRANT PATCH FOR PARTIAL DECK REMOVAL
	UNDISTRIBUTED	--	23	
TOTAL			55	

NOTE: UNDISTRIBUTED SAWING IS FOR ADDITIONAL DISTURBED AREAS ADJACENT TO THE BRIDGE WORK, IF REQUIRED

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
1	135+73, 74' LT	RAILROAD SPIKE IN 12" ELM	807.32
2	137+14, 13' LT	ALUMINUM CAP IN DECK	824.26

N

**SALVAGED RAIL AND GUARDRAIL END TREATMENTS
REMOVING GUARDRAIL
STEEL PLATE BEAM GUARD CLASS A, STEEL PLATE BEAM GUARD SHORT RADIUS & STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
STA 137+15 - STA 137+91, LT

DELINEATED WETLAND BOUNDARY

XCEL ENERGY
(ELECTRICITY)

R/W

**SALVAGED RAIL AND GUARDRAIL END TREATMENTS
STA 135+68 - STA 136+51, LT

BM 1

B-02-0004 BRIDGE REHABILITATION
REPLACE RAILING & POLYMER OVERLAY
STA 136+48.75 - STA 137+15.25
(SEE STRUCTURE PLANS)

CONTROL POINT 2
Y = 268754.09
X = 499438.86
0.75" REBAR SET
W/ EMCS CONTROL CAP

+49
END BARRIER SYSTEM
GRADING SHAPING FINISHING

+94
END BARRIER SYSTEM
GRADING SHAPING FINISHING

+15
BEGIN BARRIER SYSTEM
GRADING SHAPING FINISHING

RIPRAP MEDIUM
6' X 15'

W5-52L
12"X36"
1

W5-52R
12"X36"
3

+77
BEGIN BARRIER SYSTEM
GRADING SHAPING FINISHING

M

BM 2

+18

+72

BASE AGG PE

134+00 135+00 136+00 B-02-0004 137+00 STH 112 138+00 S89° 55' 40"W 139+00 140+00

+68

BASE
AGG FE

X 1

+46

RIPRAP MEDIUM
6' X 15'

W5-52R
12"X36"
2

ANDERSON CREEK

W5-52L
12"X36"
4

+87
END BARRIER SYSTEM
GRADING SHAPING FINISHING

STA 140+00
Y=268834.16
X=499278.90

STA 134+00
Y=268834.92
X=499878.90

+49
BEGIN BARRIER SYSTEM
GRADING SHAPING FINISHING

+49
END BARRIER SYSTEM
GRADING SHAPING FINISHING

NORVADO
(COMMUNICATIONS)

+15
BEGIN BARRIER SYSTEM
GRADING SHAPING FINISHING

R/W

CONTROL POINT 1
Y = 268877.30
X = 499839.58
0.75" REBAR SET
W/ EMCS CONTROL CAP

**SALVAGED RAIL AND GUARDRAIL END TREATMENTS
STA 137+13 - STA 137+96, RT

**SALVAGED RAIL AND GUARDRAIL END TREATMENTS
REMOVING GUARDRAIL
STEEL PLATE BEAM GUARD CLASS A, STEEL PLATE BEAM GUARD SHORT RADIUS & STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
STA 135+65 - STA 136+51, RT

NOTES:

(M) SEE SDD "PAVEMENT MARKING (MAINLINE)" FOR CENTERLINE AND EDGELINE MARKING. REPLACE EXISTING CENTERLINE STA 132+80 - STA 140+80.

* 4-INCH ASPHALTIC SURFACE PATCHING, BASE AGGREGATE DENSE 3/4-INCH AS NEEDED, SAWING ASPHALT AND REMOVING ASPHALTIC SURFACE TO ACCOMODATE BRIDGE RAILING REPLACEMENT (APPROXIMATE 6' X 2' AREA AT EACH QUADRANT).

SEE CONSTRUCTION DETAILS FOR ADDITIONAL EROSION CONTROL AND FINISHING ITEMS.

** SEE CONSTRUCTION DETAILS FOR ADDITIONAL BEAM GUARD ITEM DETAILS.

DATA TABLE

POINT NO.	STATION	OFFSET	RADIUS
1	135+68.10	24.14'RT	10'R
2	137+73.11	30.40'LT	16'R

LEGEND

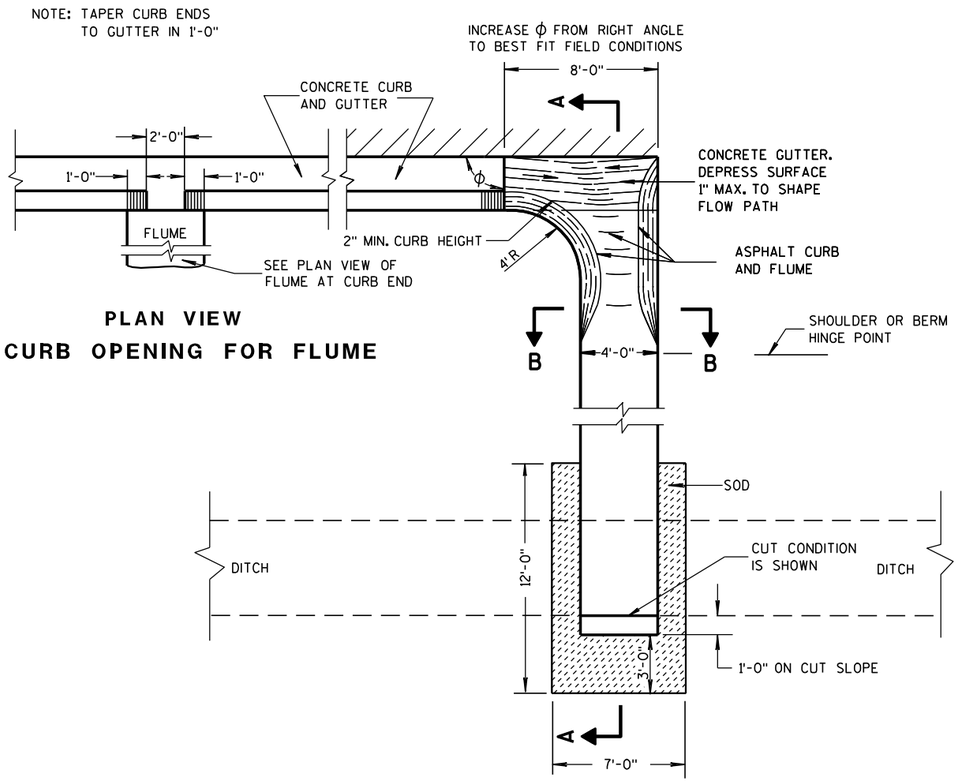
- EXISTING SIGN MOUNTED ON SINGLE POST
- PROPOSED SIGN MOUNTED ON SINGLE POST
- (X) SIGN - REMOVE AND REPLACE
- SLOPE INTERCEPT
- ASPHALTIC FLUME

PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	PLAN	SHEET 23	E

Standard Detail Drawing List

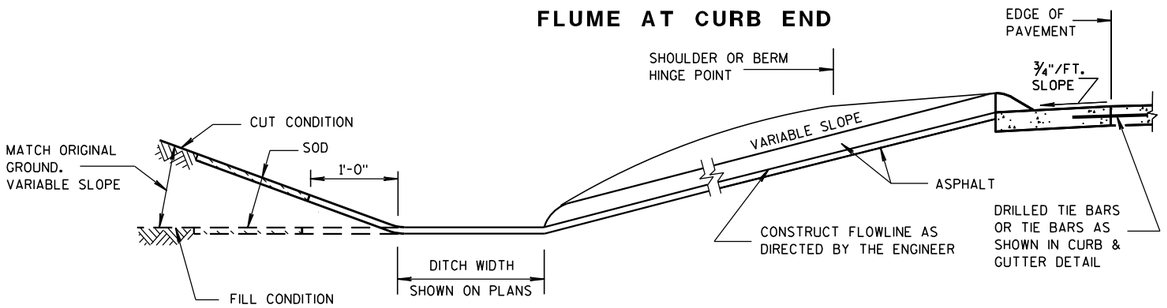
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B15-08A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-08C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
14B20-11C	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS
14B20-11D	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS
14B20-11E	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"
14B20-11F	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B20-11H	STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT
14B24-08A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D28-02	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D33-03	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

ASPHALTIC FLUME

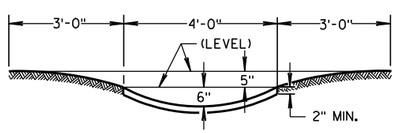


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

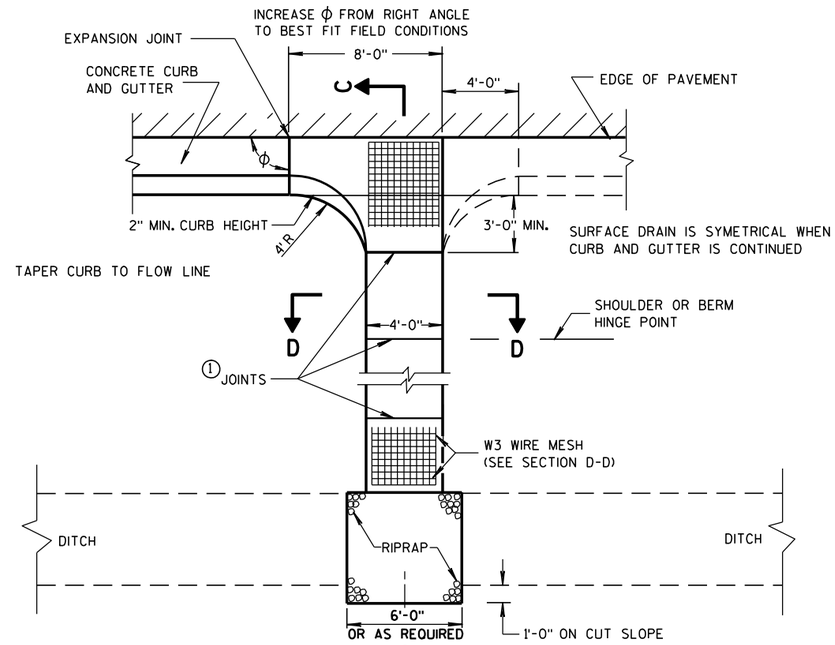
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

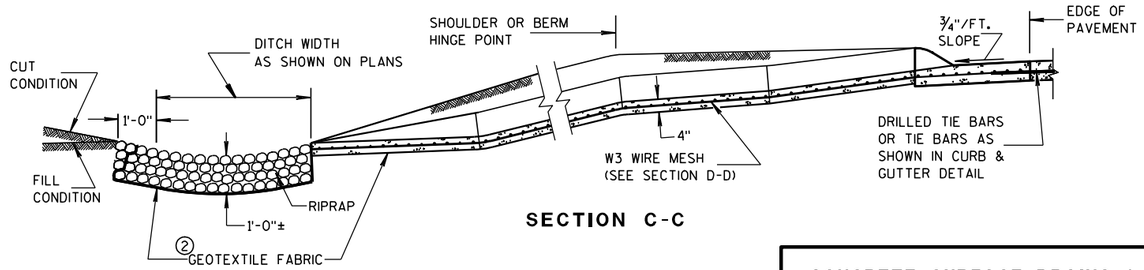
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

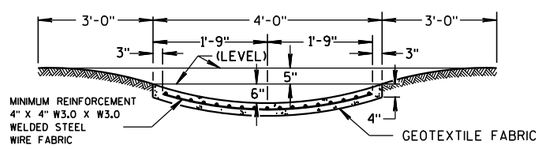
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
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MENT
FHWA

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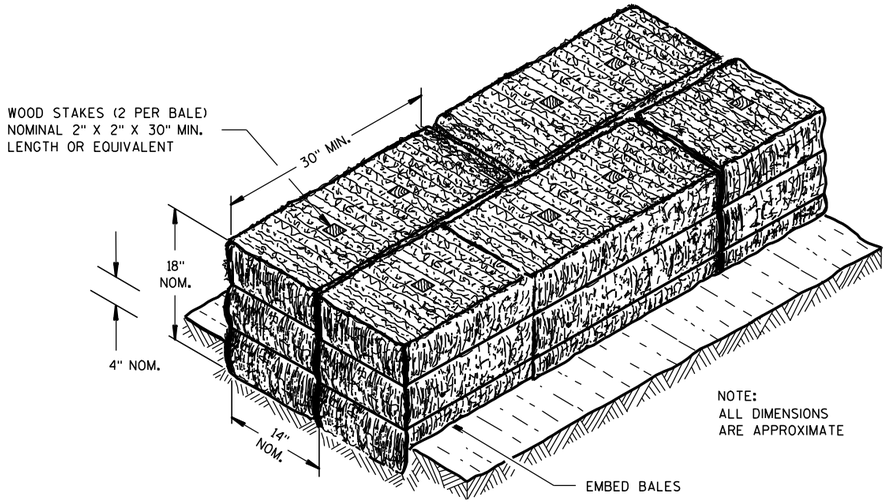
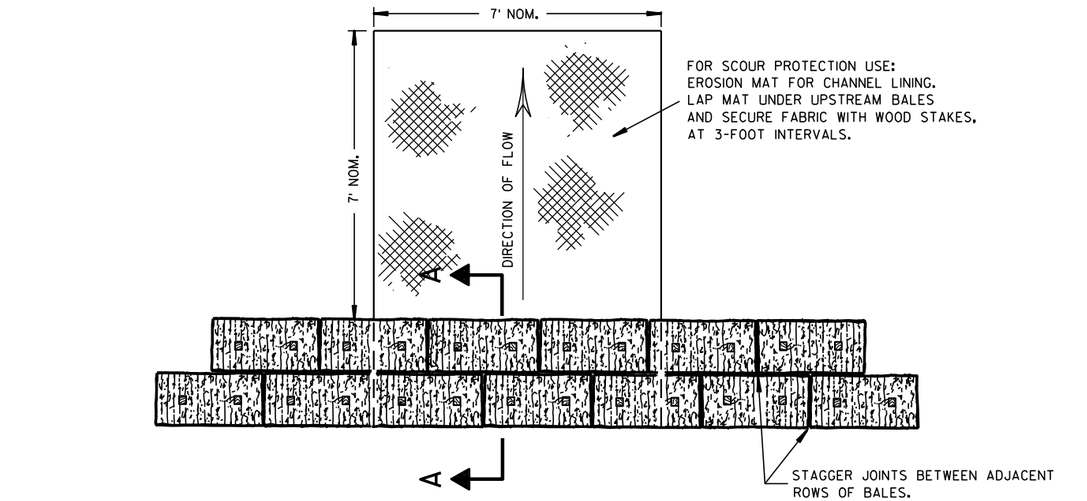
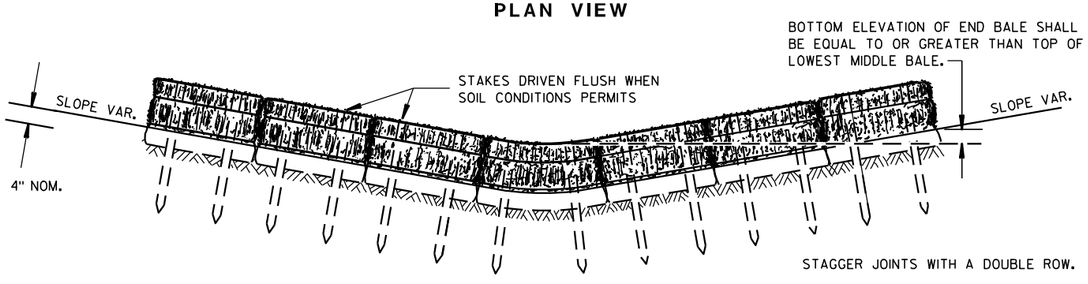
S.D.D. 8 D 4-5



SECTION A-A



PLAN VIEW



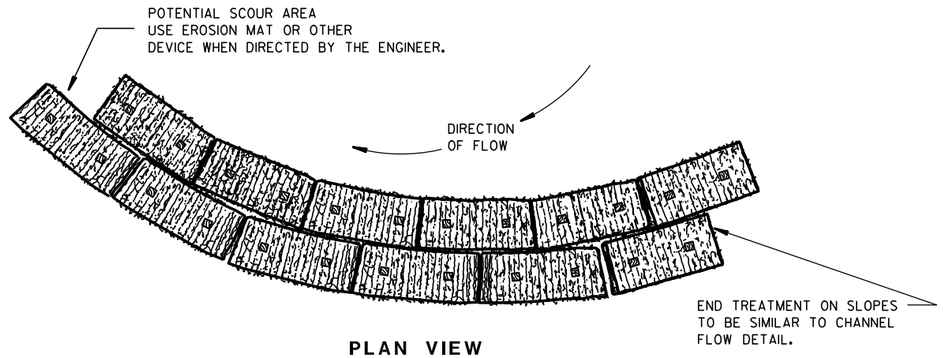
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

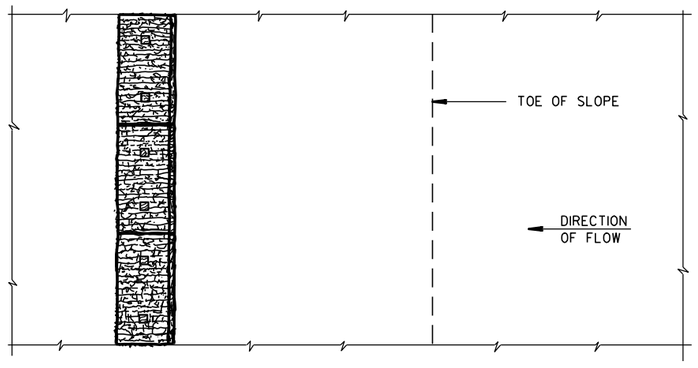
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

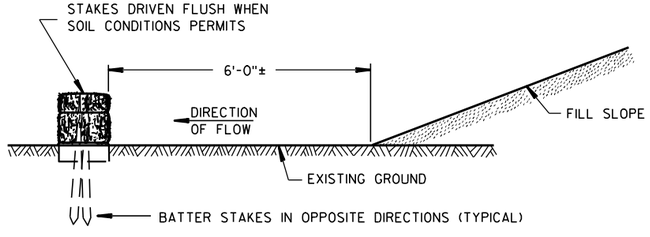


PLAN VIEW

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 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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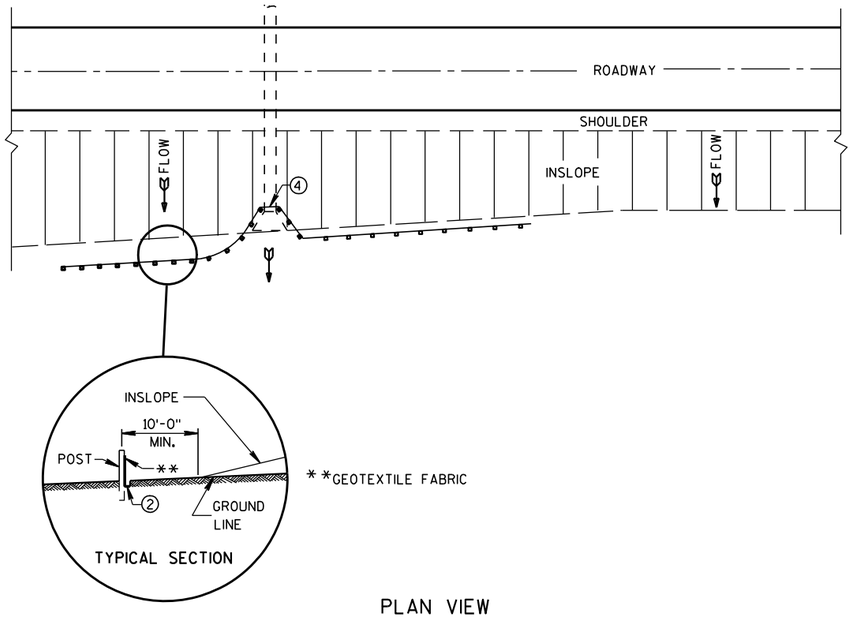
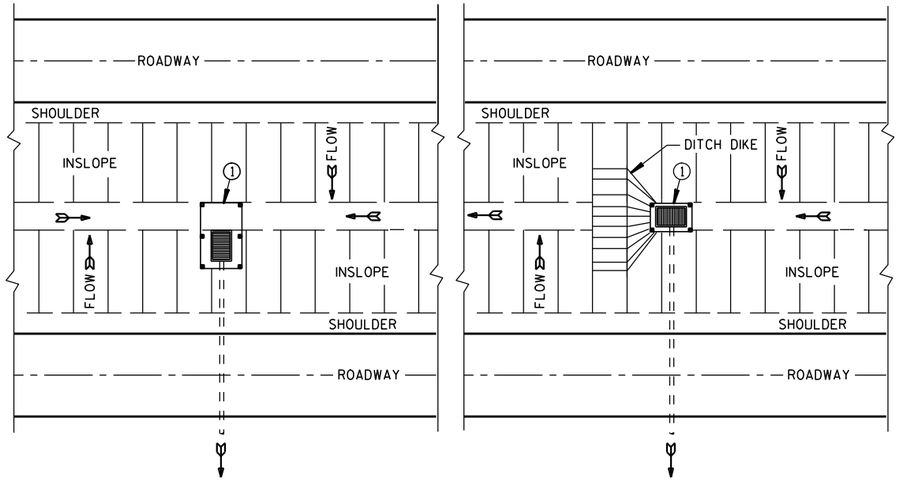
S.D.D. 8 E 8-3



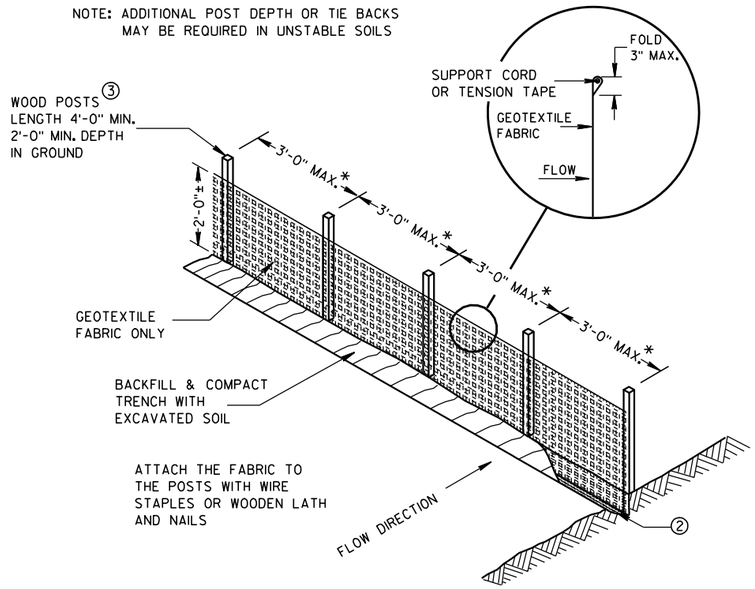
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE

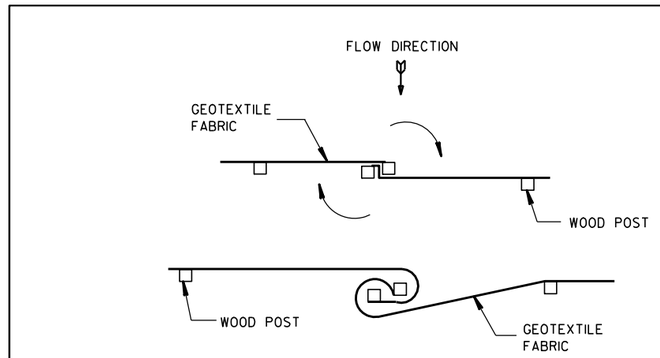


PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



SILT FENCE

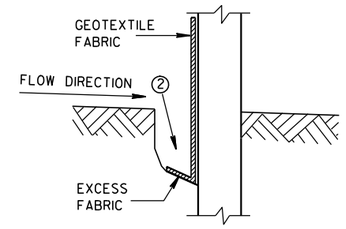


JOINING TWO LENGTHS OF SILT FENCE 5

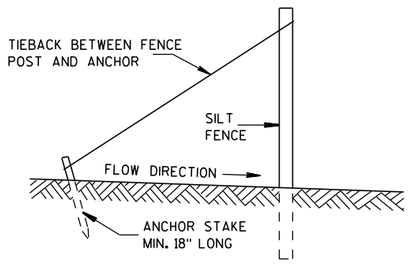
GENERAL NOTES

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 1⅛" X 1⅛" 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



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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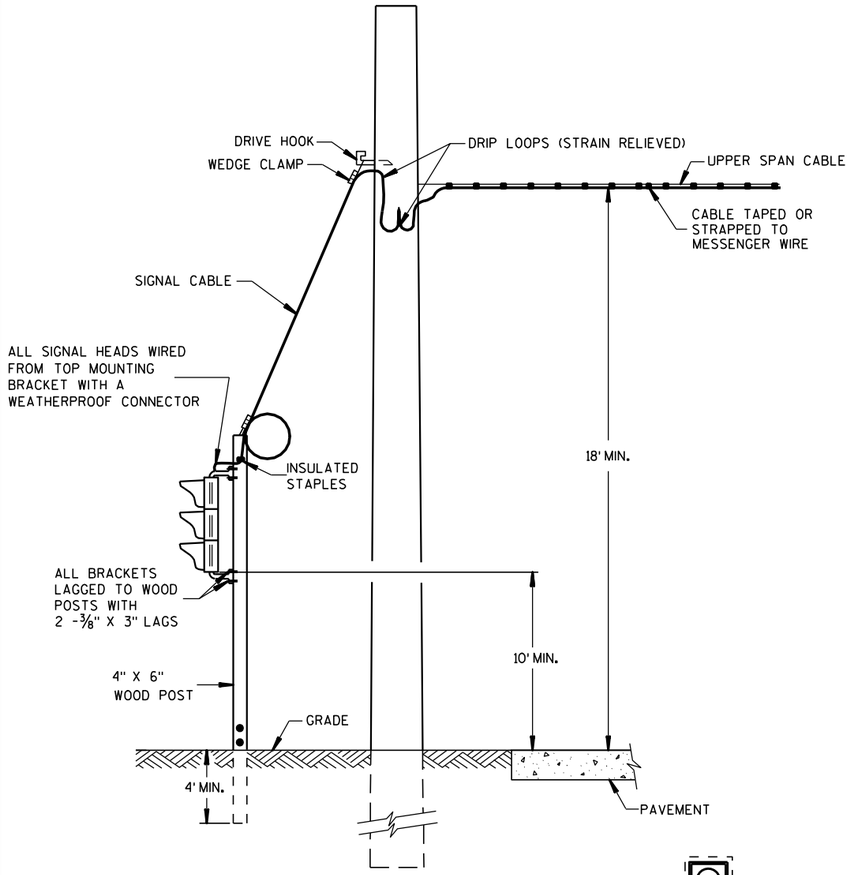
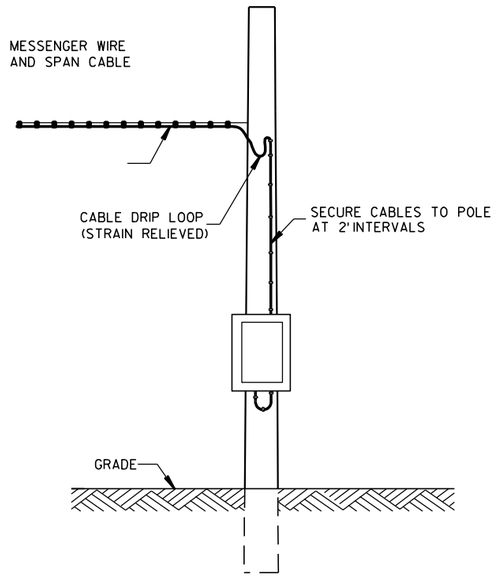
S.D.D. 8 E 9-6



TYPICAL DROP TO TRAFFIC SIGNAL FACE



POLE MOUNT CABINET INSTALLATION

GENERAL NOTES

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

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAYBE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY PLOLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

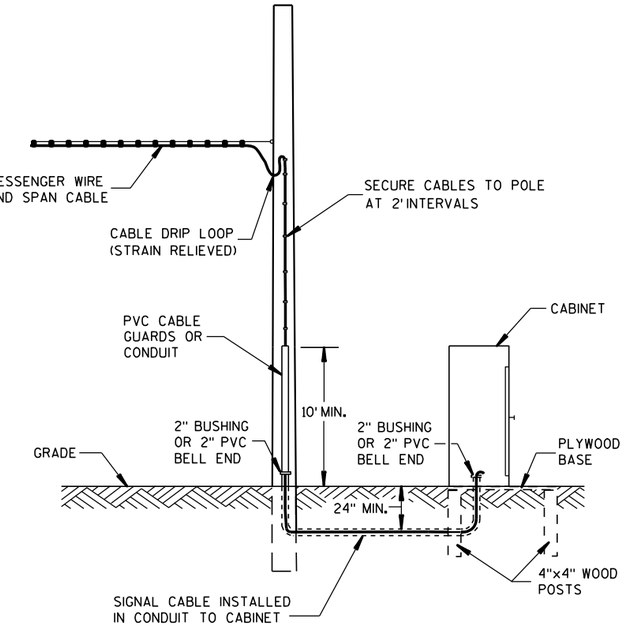
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

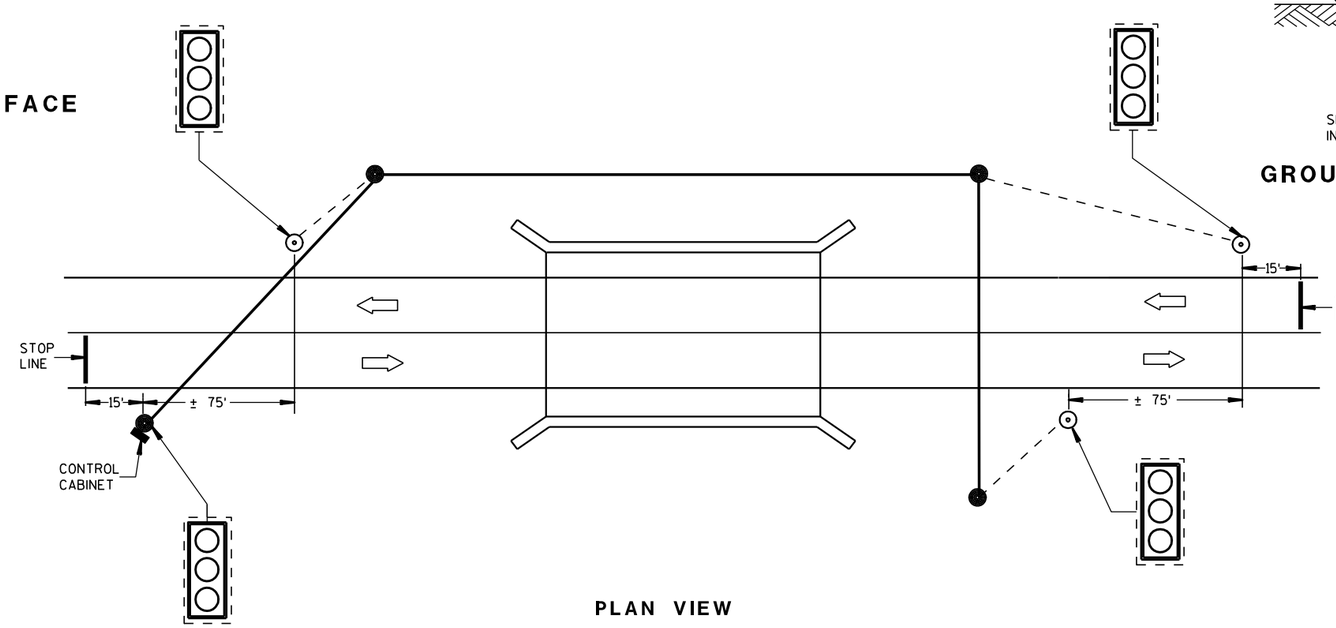
EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT

**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.



PLAN VIEW

TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

- WOOD POLE (NONBREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- LED TRAFFIC SIGNAL FACE WITH BACKPLATE (3-12")
- DIRECTION OF TRAFFIC

MINIMUM POLE LENGHTS	CLASS	MINIMUM BURIAL DEPTHS
25 FEET	V	5 FEET
30 FEET	V	6 FEET
35 FEET	IV	7 FEET
40 FEET	IV	8 FEET
45 FEET	IV	9 FEET

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/2/2011 DATE
/S/ Thomas J. Gosling STATE ELECTRICAL ENGI
FHWA

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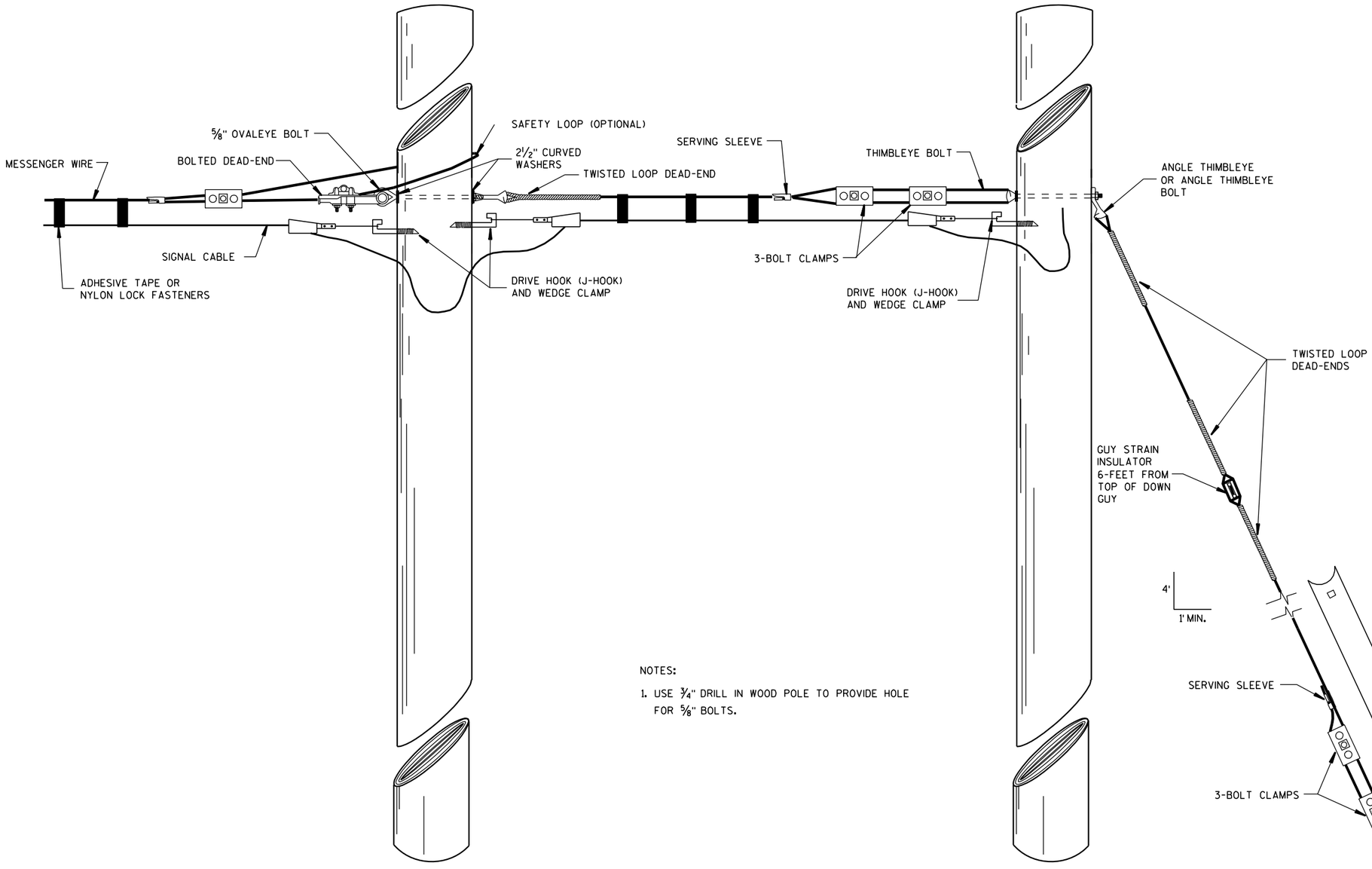

SPAN WIRE POLE

GUY POLE

NOTES:

1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

/S/ Thomas J. G... STATE ELECTRICAL ENGI

HWYS

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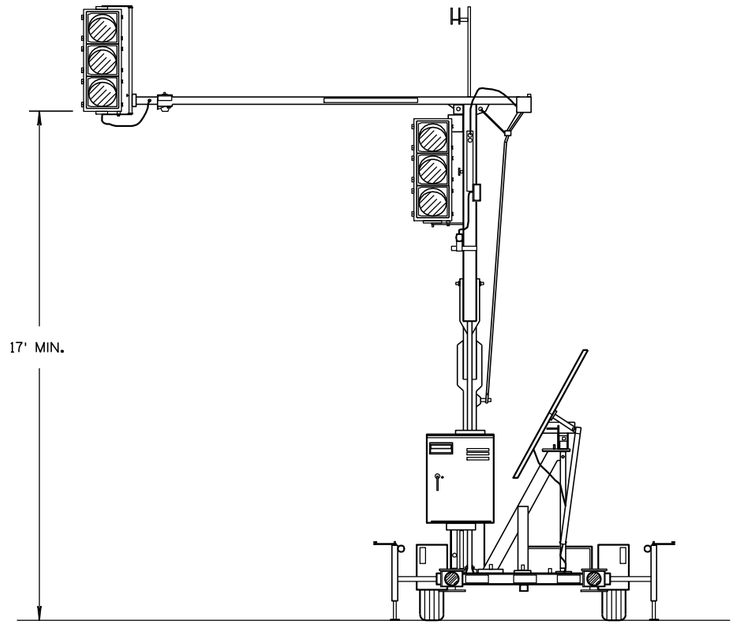
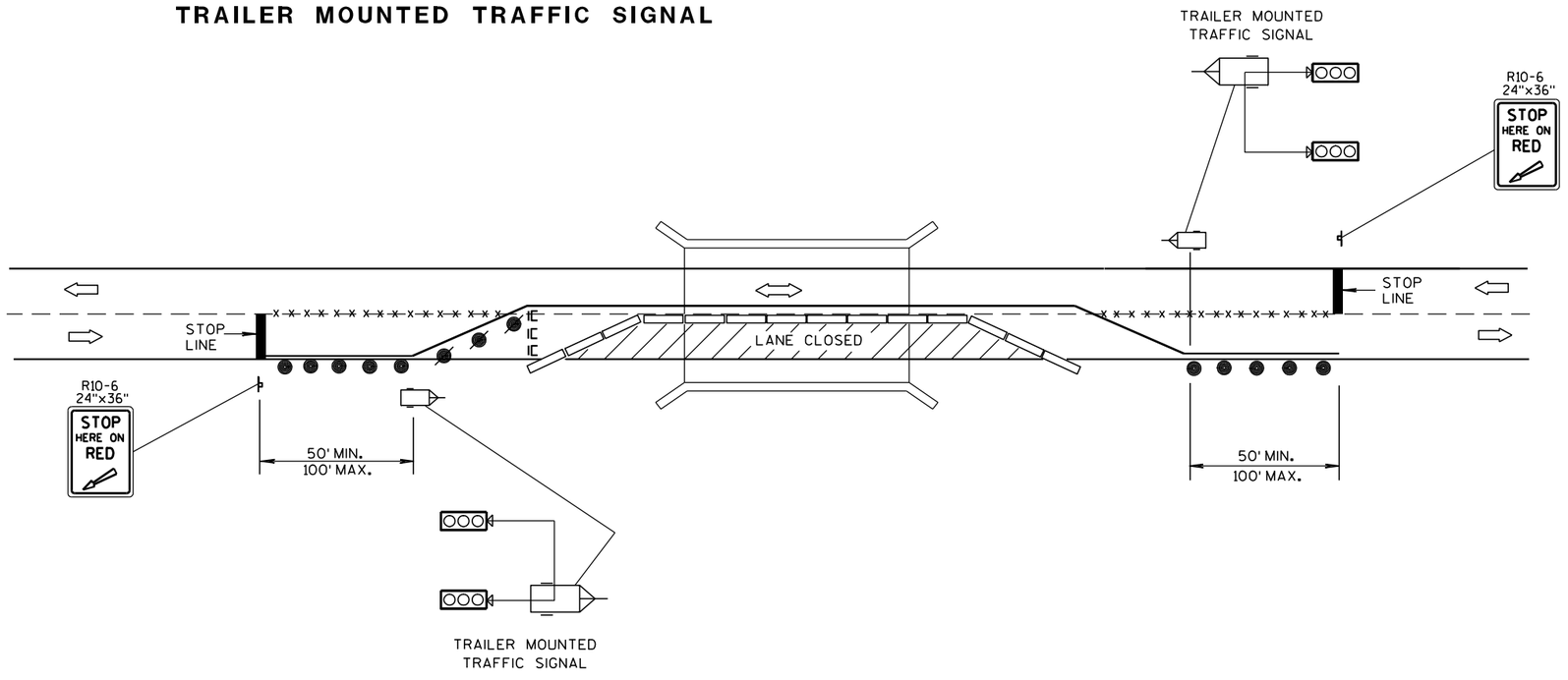


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 — DATE

/S/ Thomas J. Gosling — STATE ELECTRICAL ENGI

FHWA

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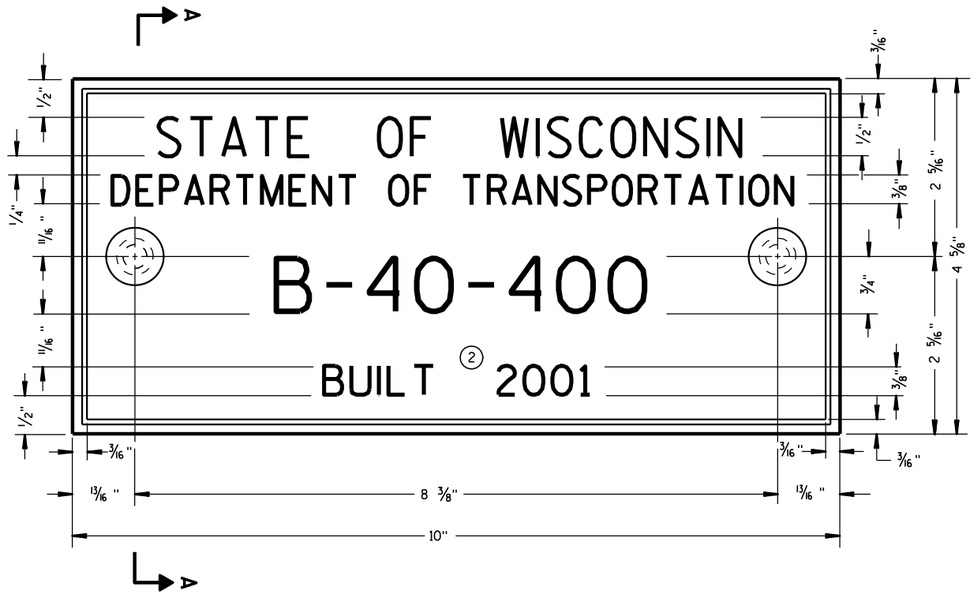


TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

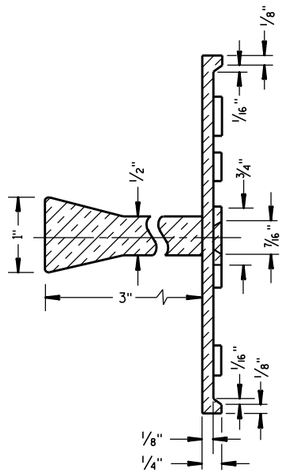
GENERAL NOTES

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.

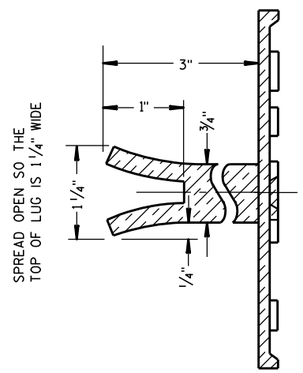
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

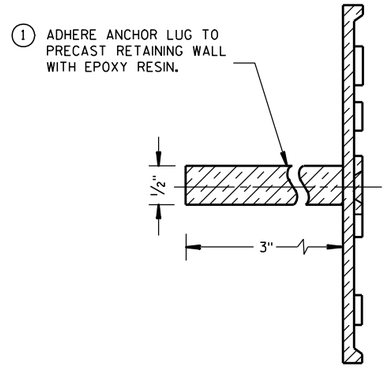
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

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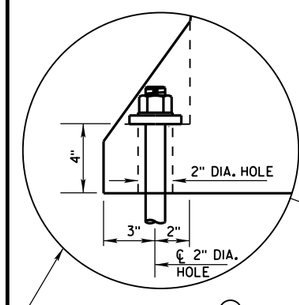
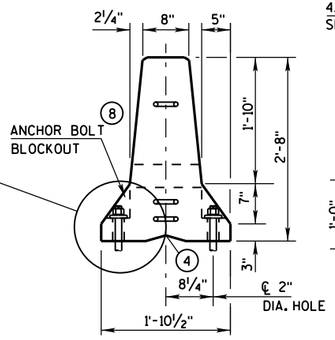
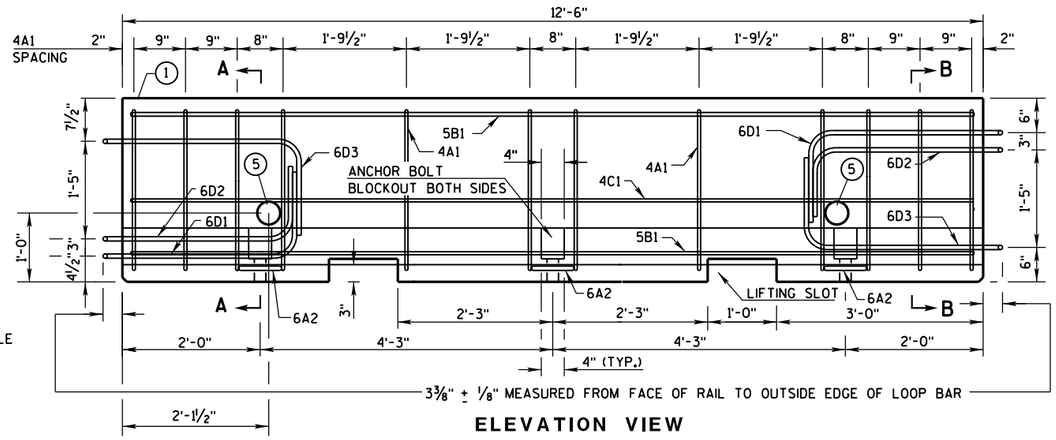
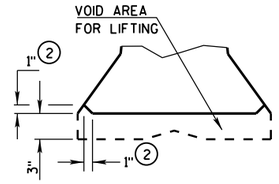




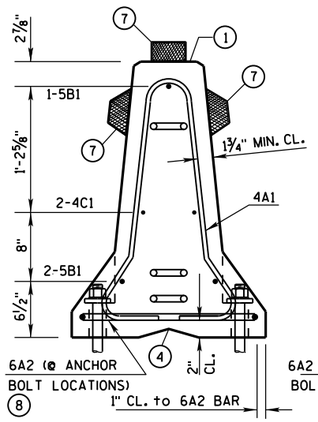
END VIEW



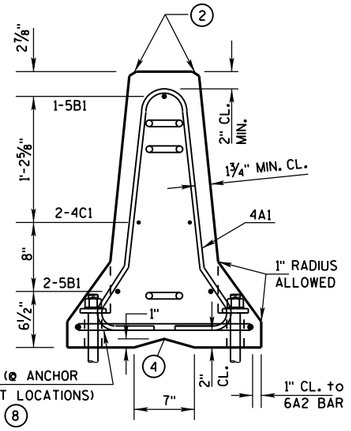
ELEVATION VIEW



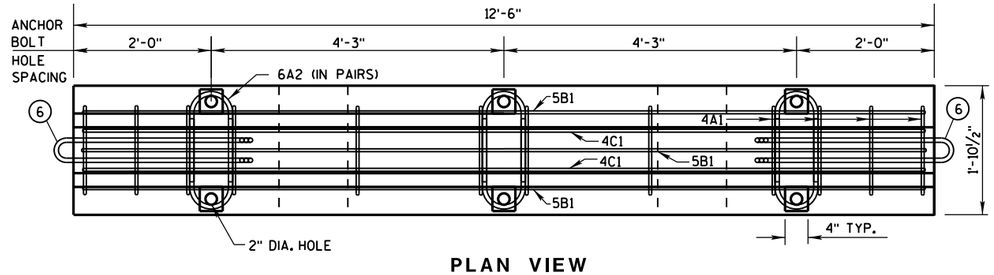
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

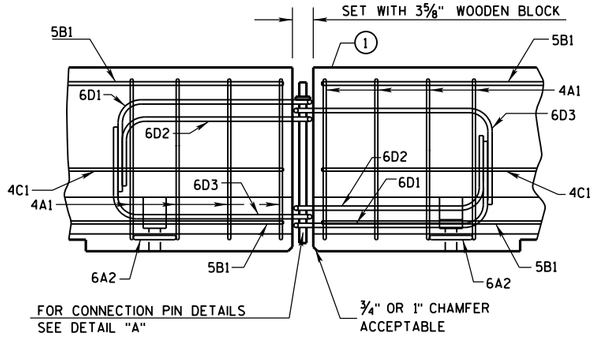


SECTION B-B
(STIRRUP PLACEMENT)

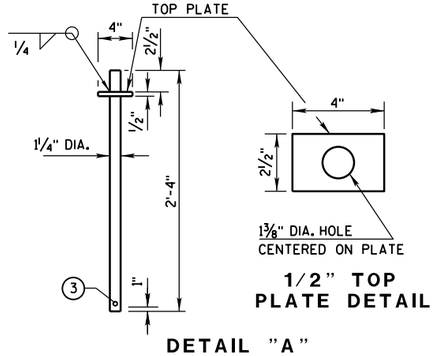


PLAN VIEW

DETAILS OF BARRIER SECTION

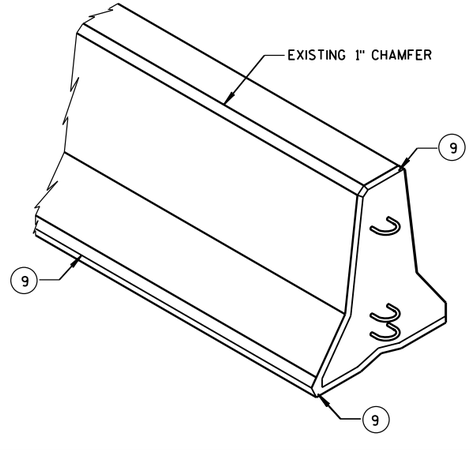


DETAILS OF BARRIER CONNECTION



1/2" TOP
PLATE DETAIL

DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-14(a) THRU 14B7-14(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR EPOXY ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

(6) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

(8) SEE SHEET D FOR ANCHORING CRITERIA.

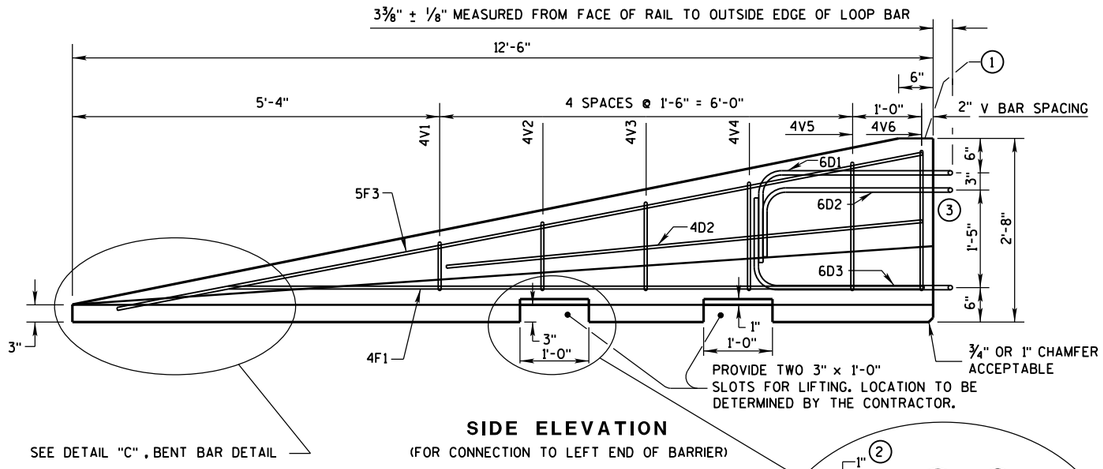
(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

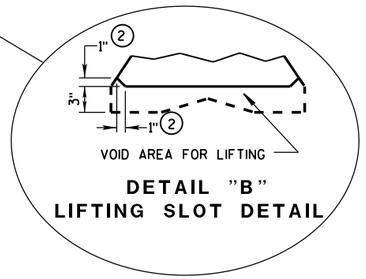
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

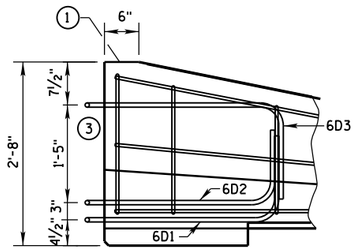
S.D.D. 14 B 7-14a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



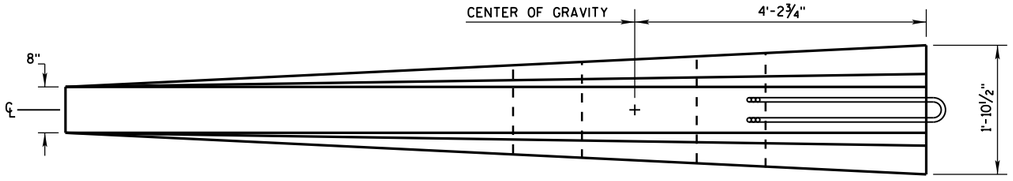
DETAIL "B"
LIFTING SLOT DETAIL



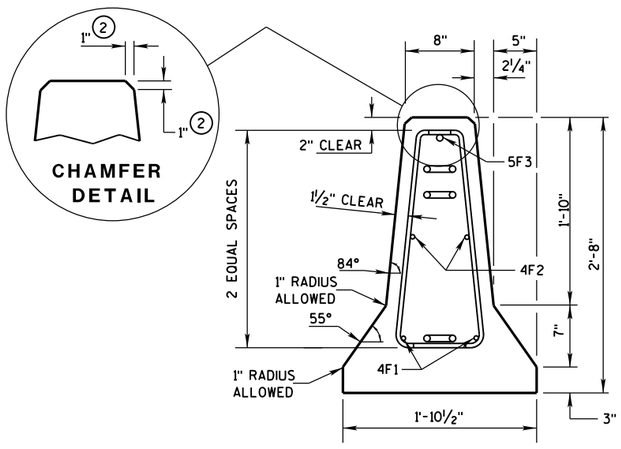
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

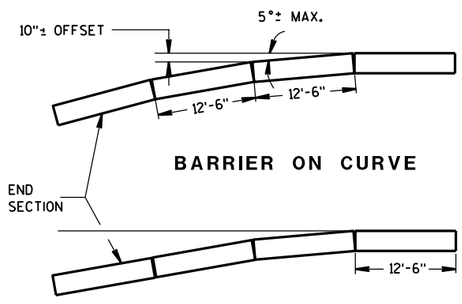
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



PLAN VIEW



END SECTION **FRONT ELEVATION**



BARRIER ON CURVE

FLARE AT BARRIER END

POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

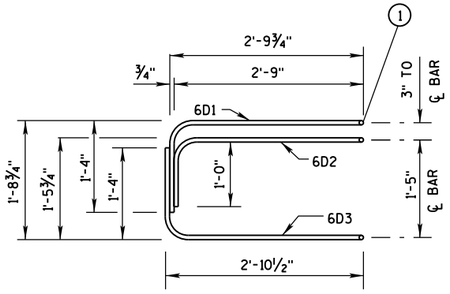
6

S.D.D. 14 B 7-14b

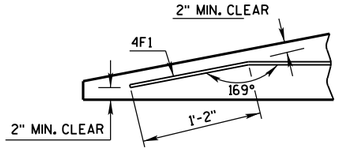
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

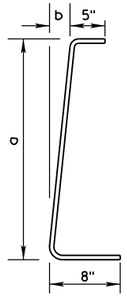
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

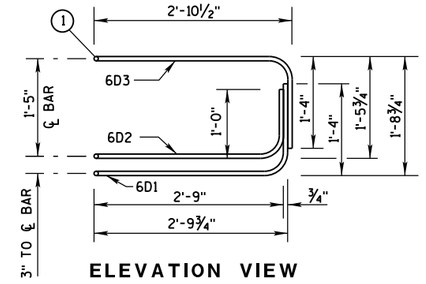
GENERAL NOTES

(1) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

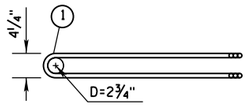
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

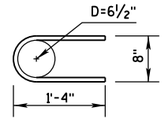
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



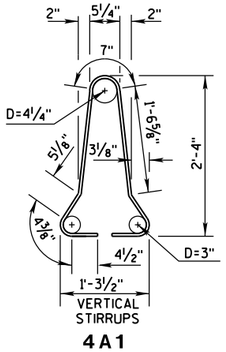
ELEVATION VIEW



PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



4A1

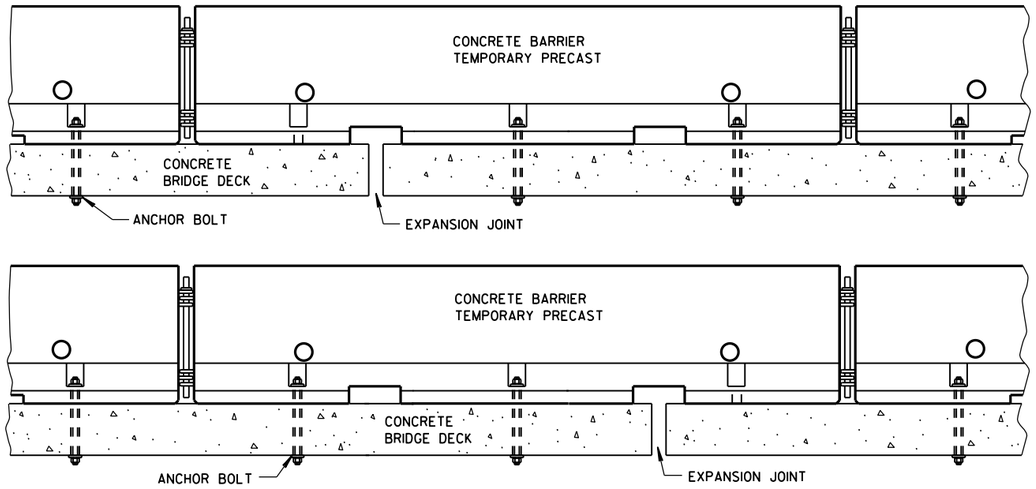
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

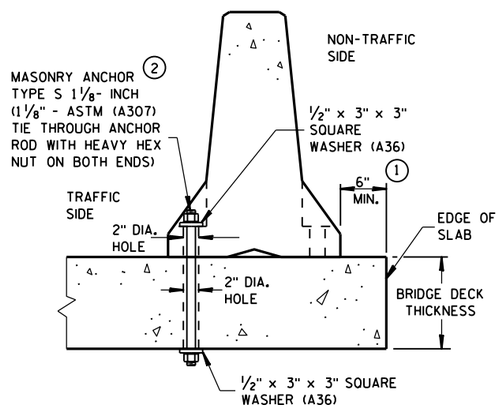
6

S.D.D. 14 B 7-14c



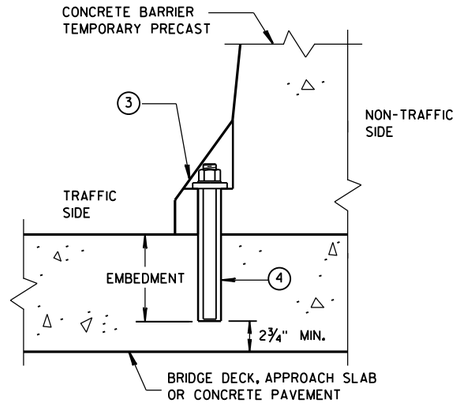
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR ② INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

① CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT. IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

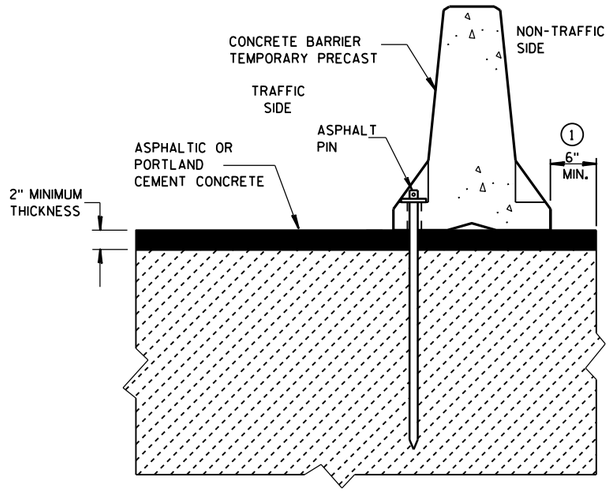
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALLANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR EPOXY MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

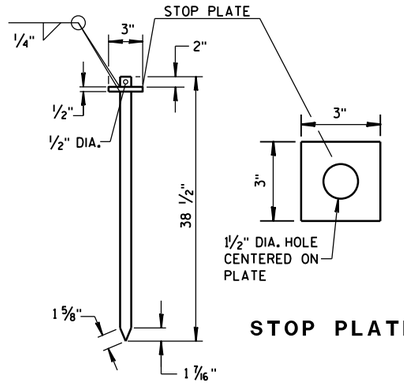
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

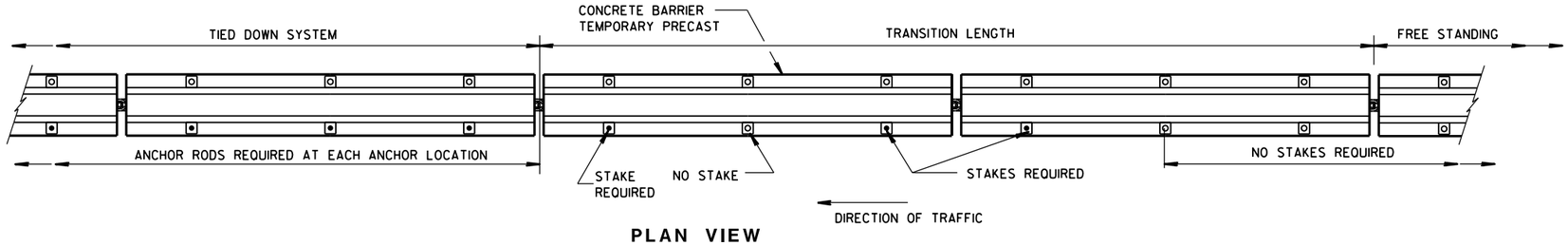
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

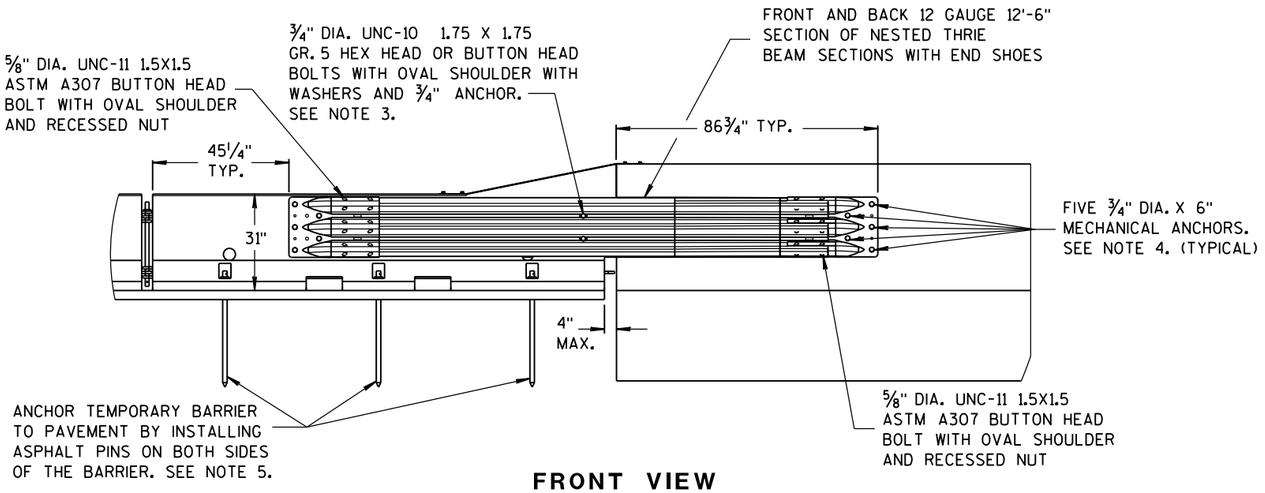
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

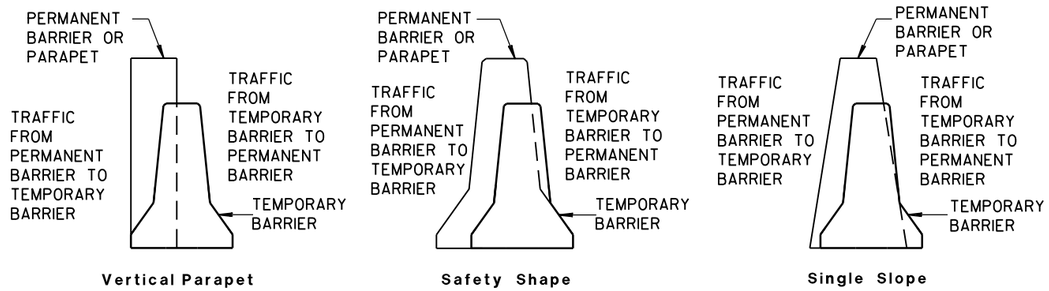
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 7-14d



FRONT VIEW



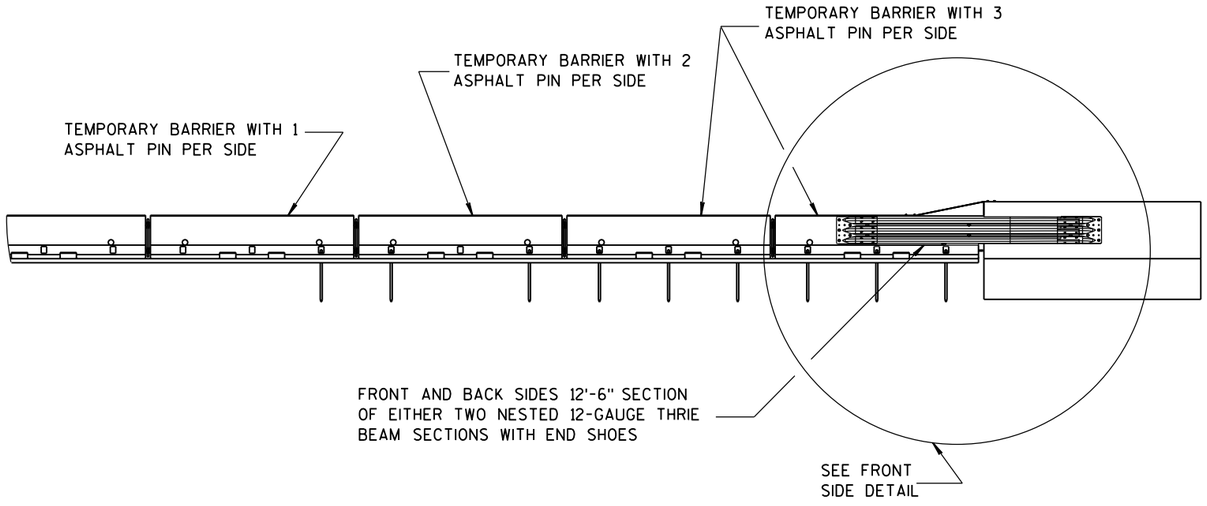
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

NOTES

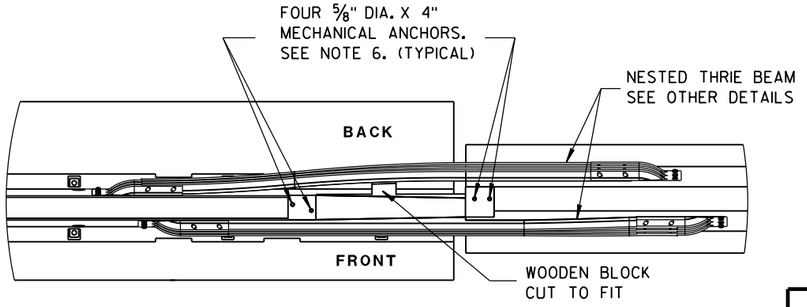
NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

BACK VIEW



FRONT VIEW



PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 14 B 7-14e

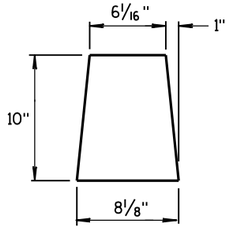
GUSSET 1

GUSSET 2

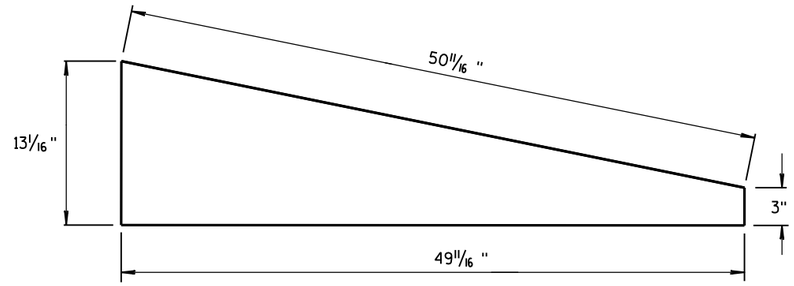
GUSSET 3

GUSSET 4

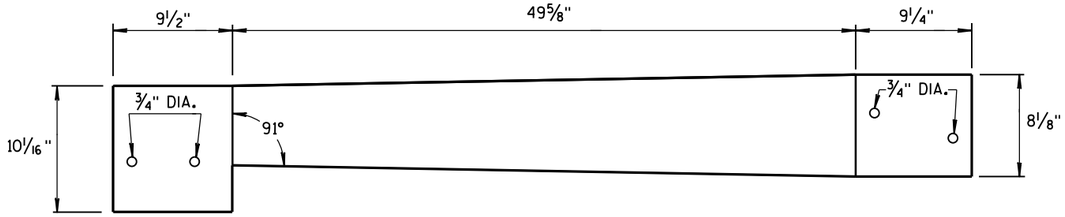
GUSSETS

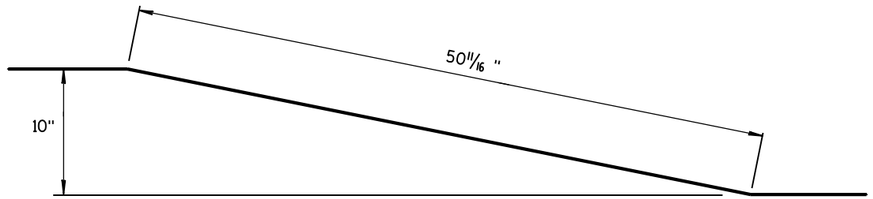


END PLATE

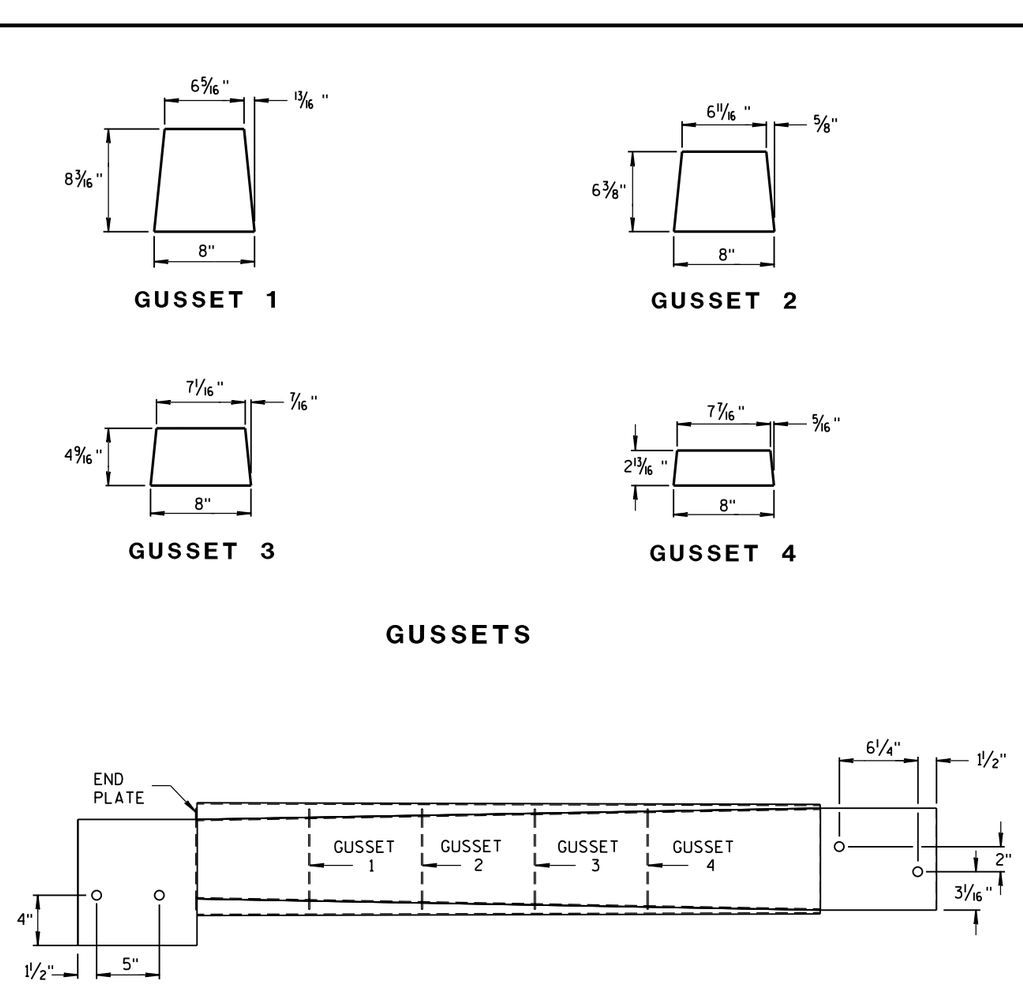


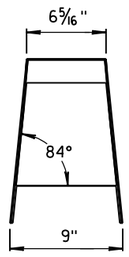
SIDE PLATE





TOP PLATE





SECTION C-C

SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

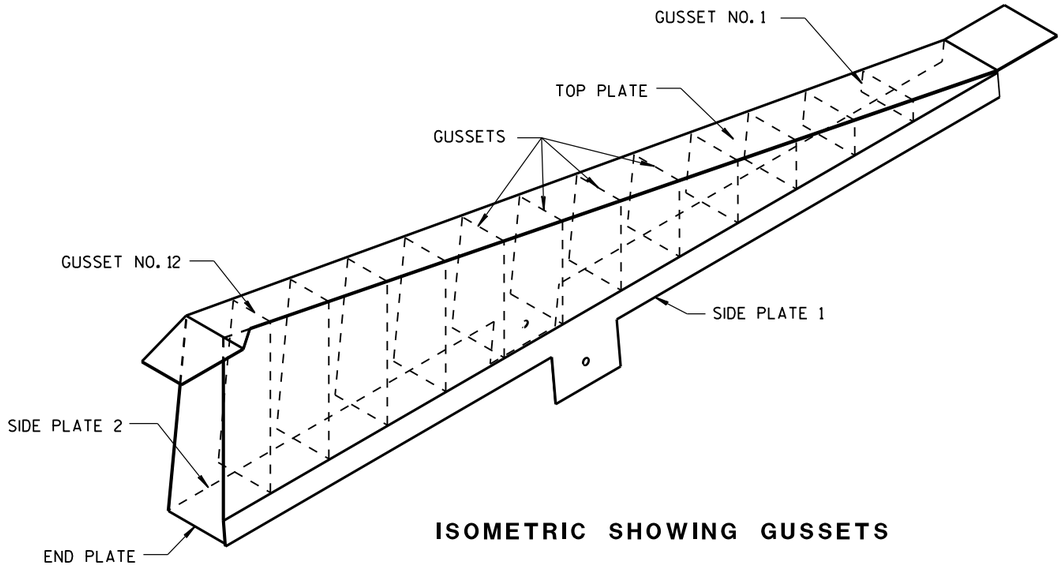
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

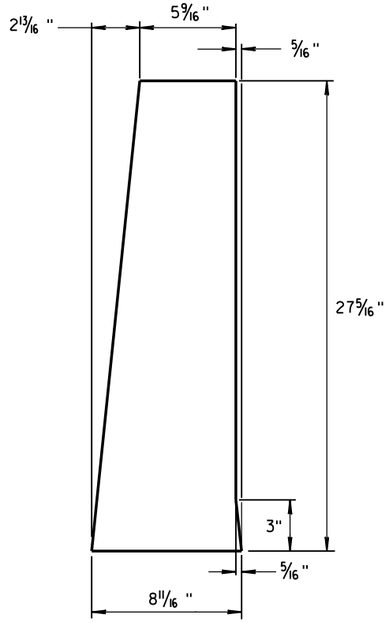
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 7-14f

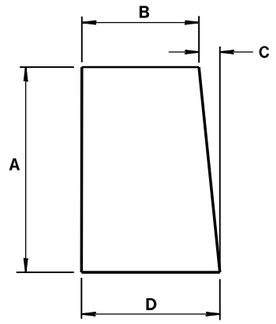


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



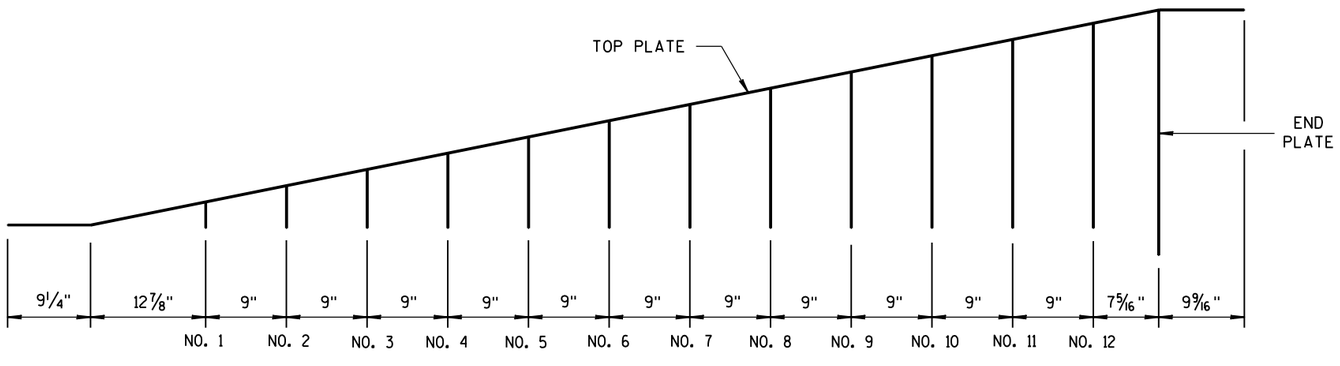
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 15/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



GUSSET LOCATION

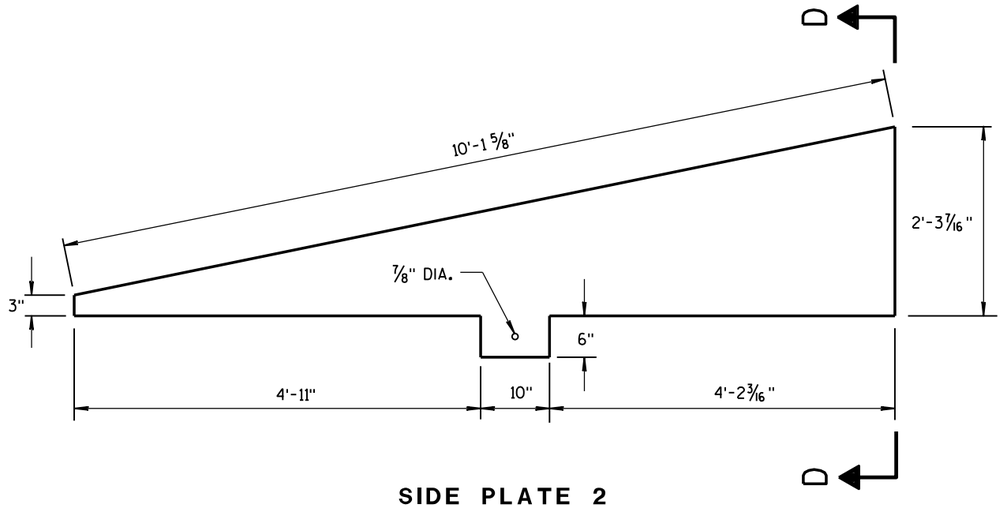
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

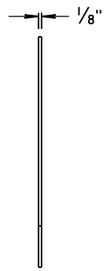
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

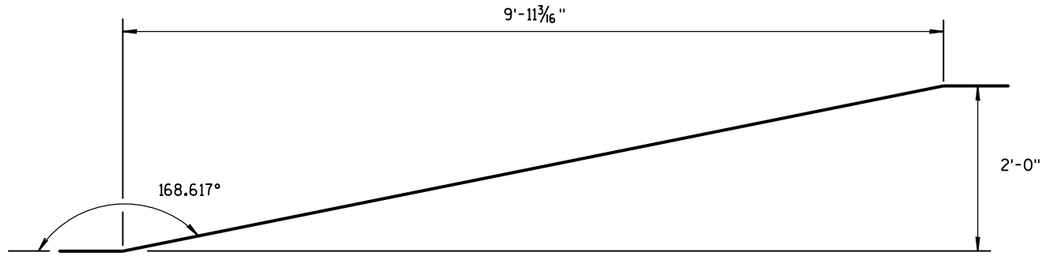
S.D.D. 14 B 7-14g



SIDE PLATE 2

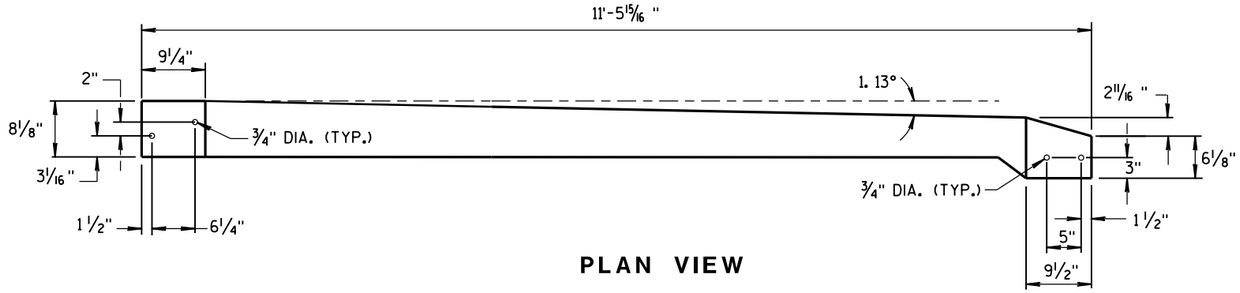


END VIEW



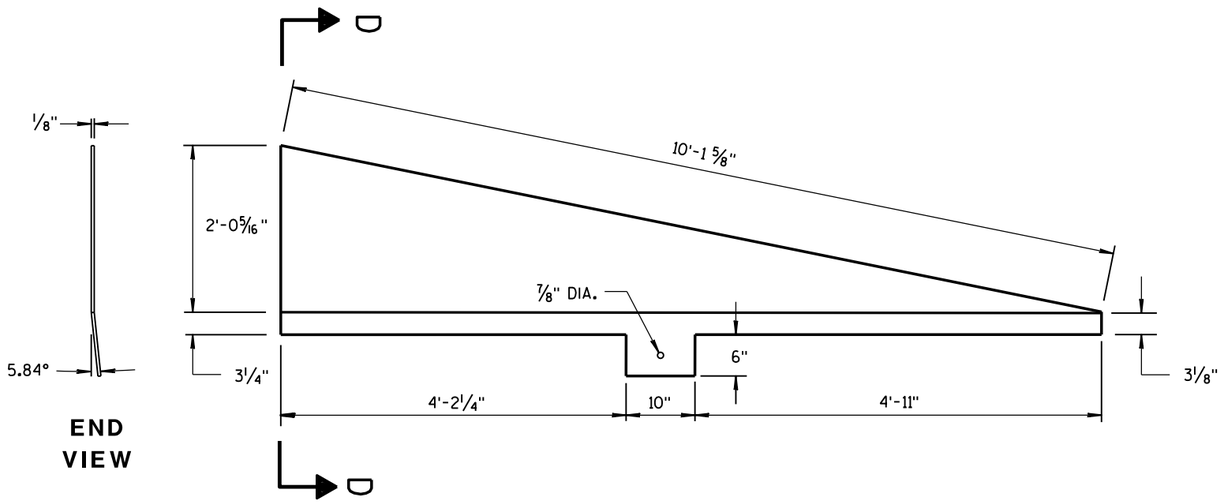
SIDE VIEW

TOP PLATE



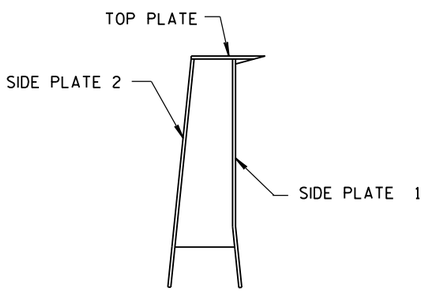
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

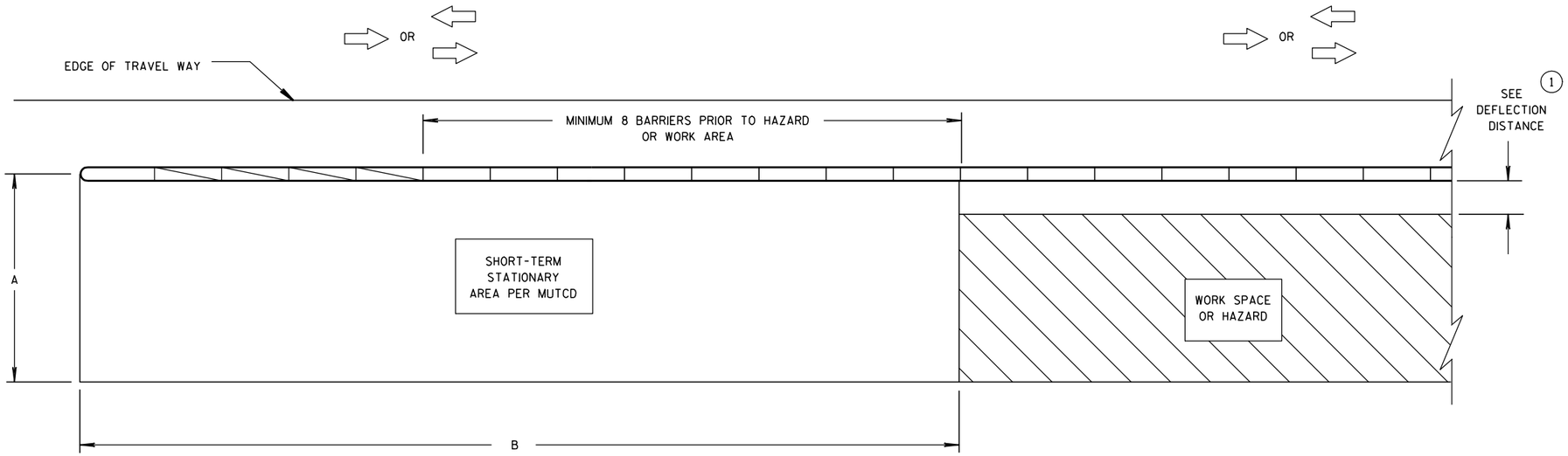
APPROVED
June 2014 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARD DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 7-14h

6

S.D.D. 14 B 7-14h



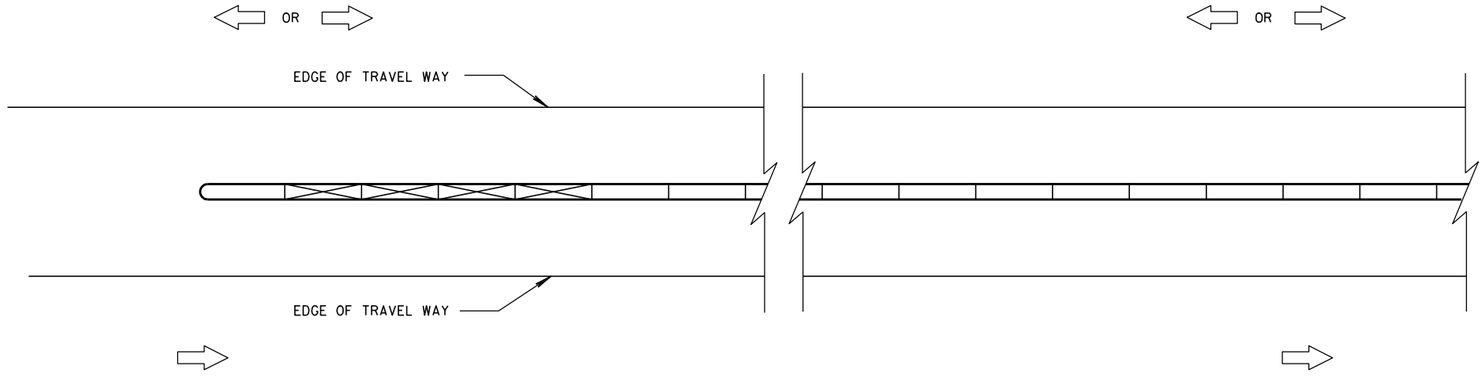
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE (2)

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

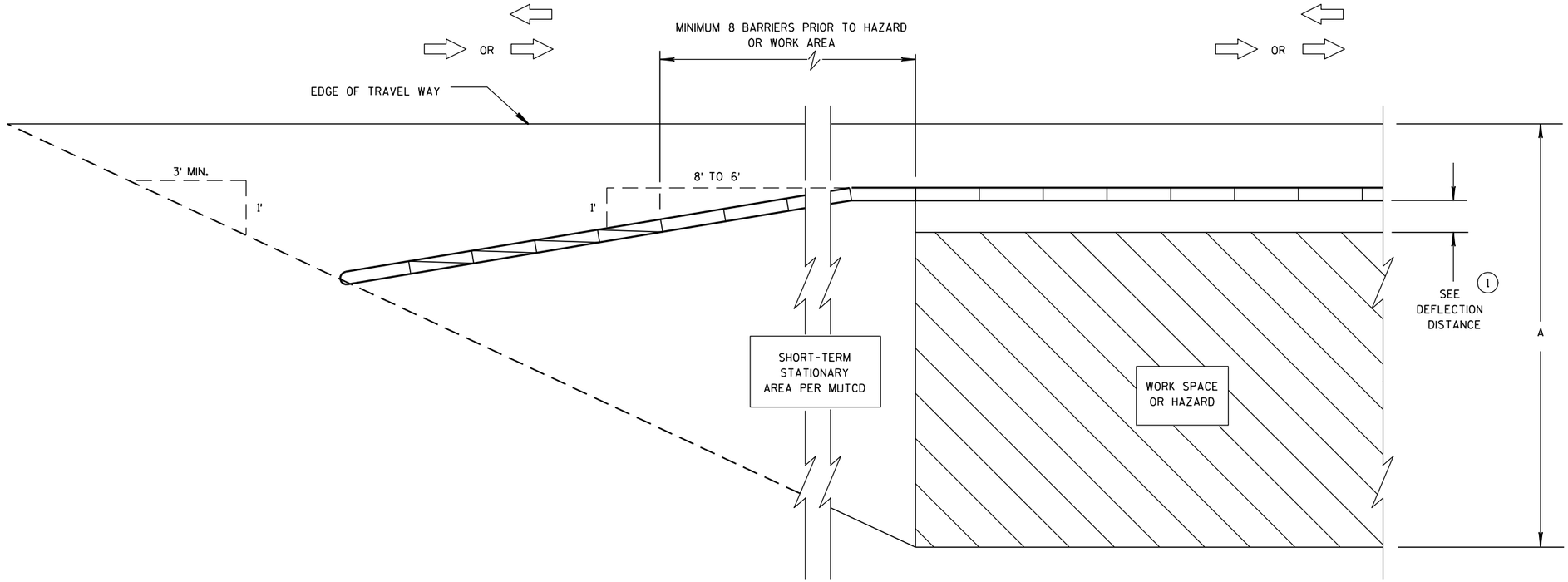
(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

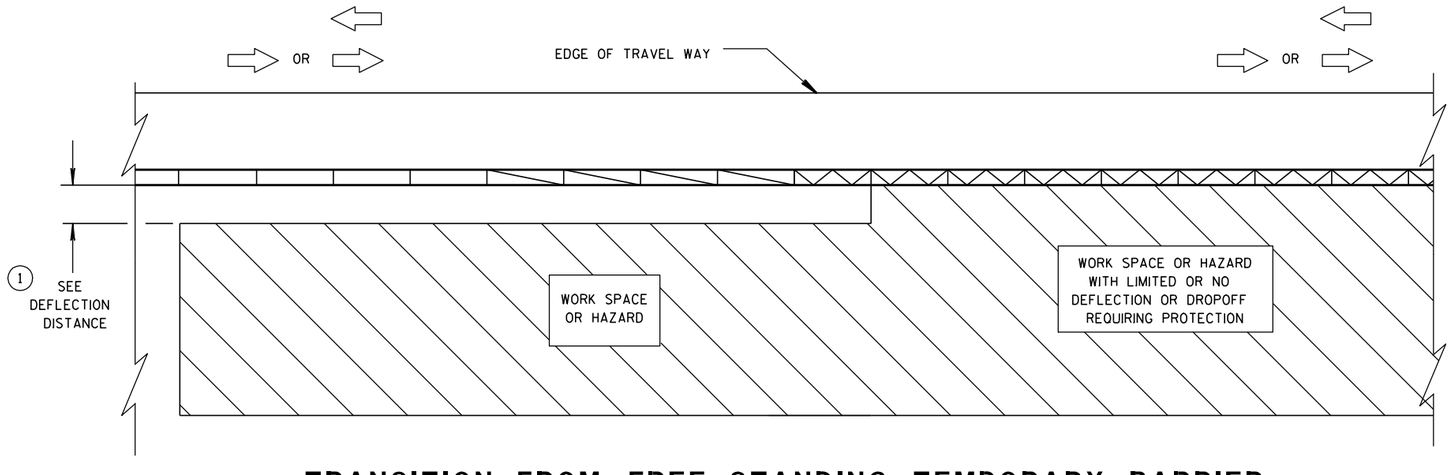
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 8-1a



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

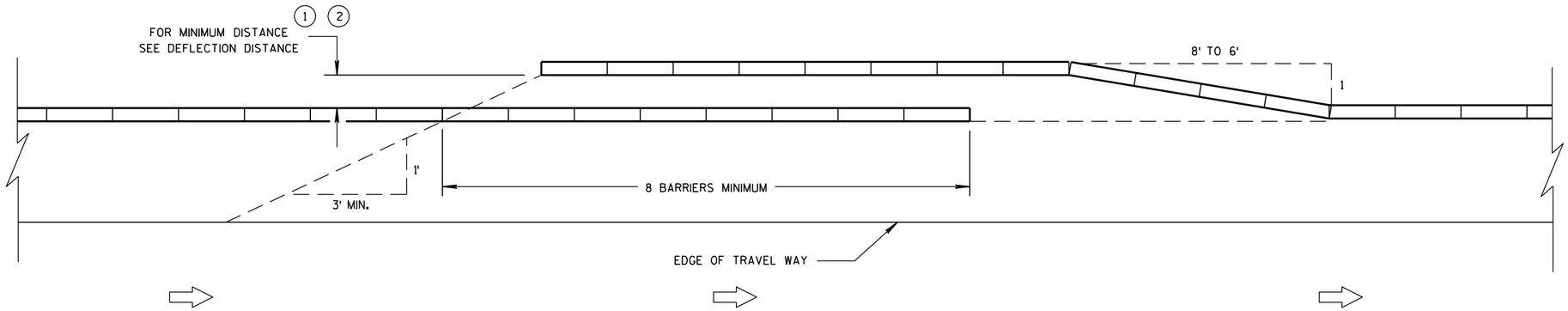
LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

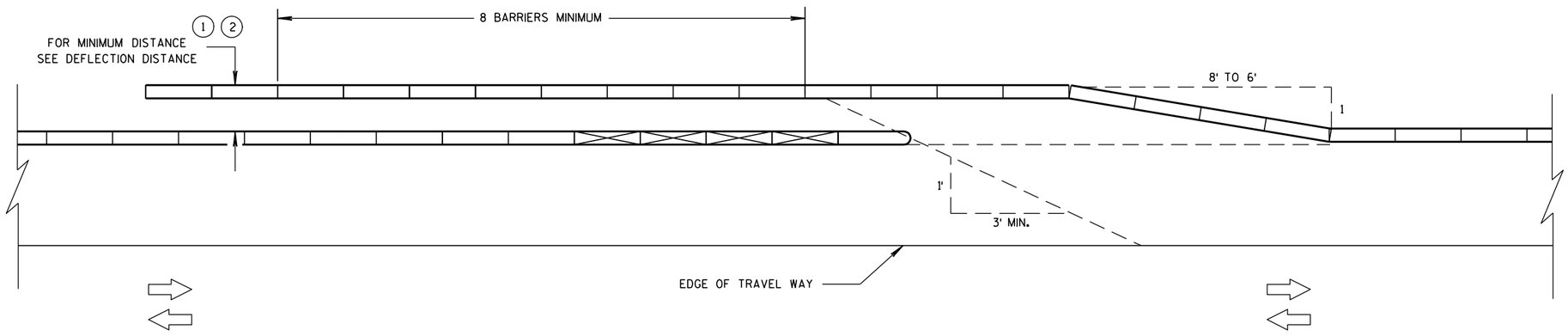
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

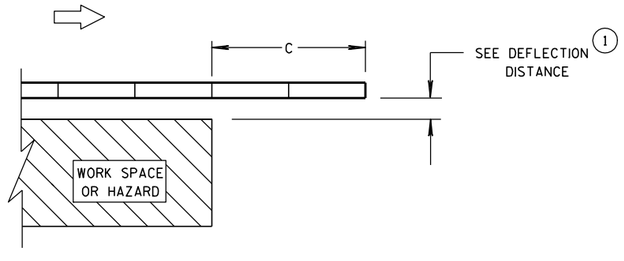
6
S.D.D. 14 B 8-1b



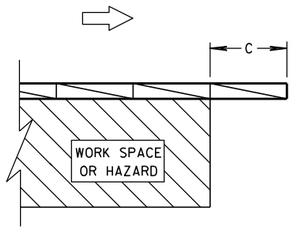
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

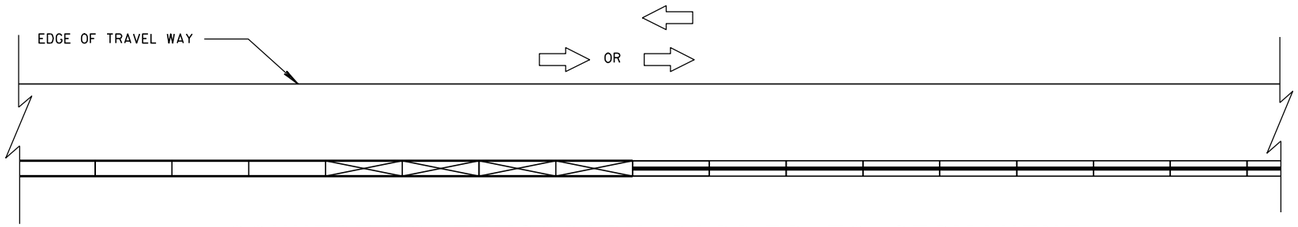
LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

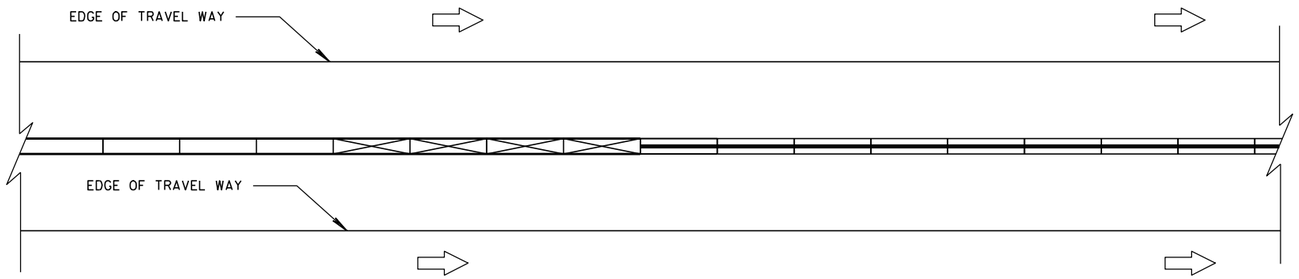
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 8-1c



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

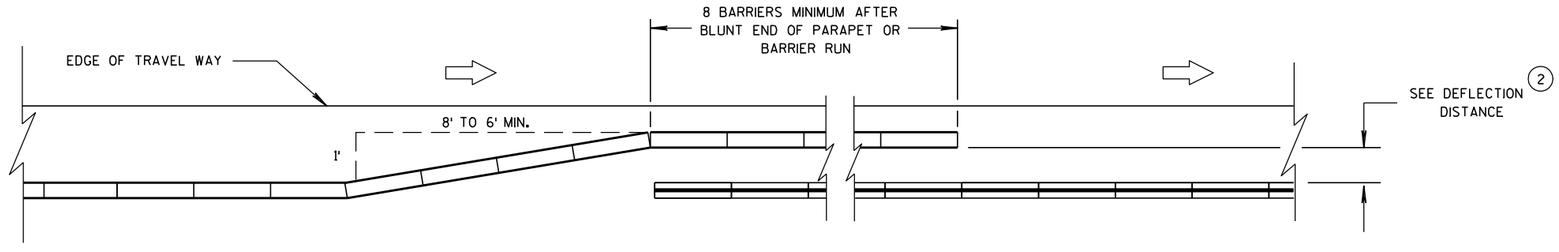
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

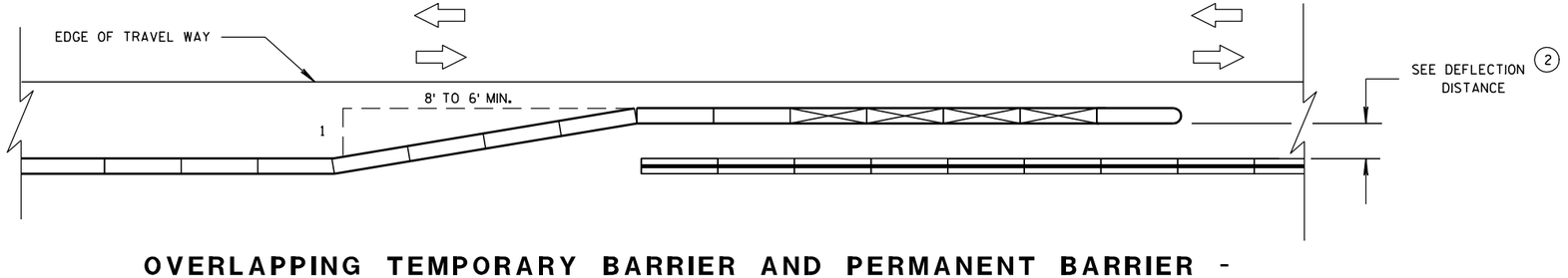
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO.....T

6
S.D.D. 14 B 8-1d

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

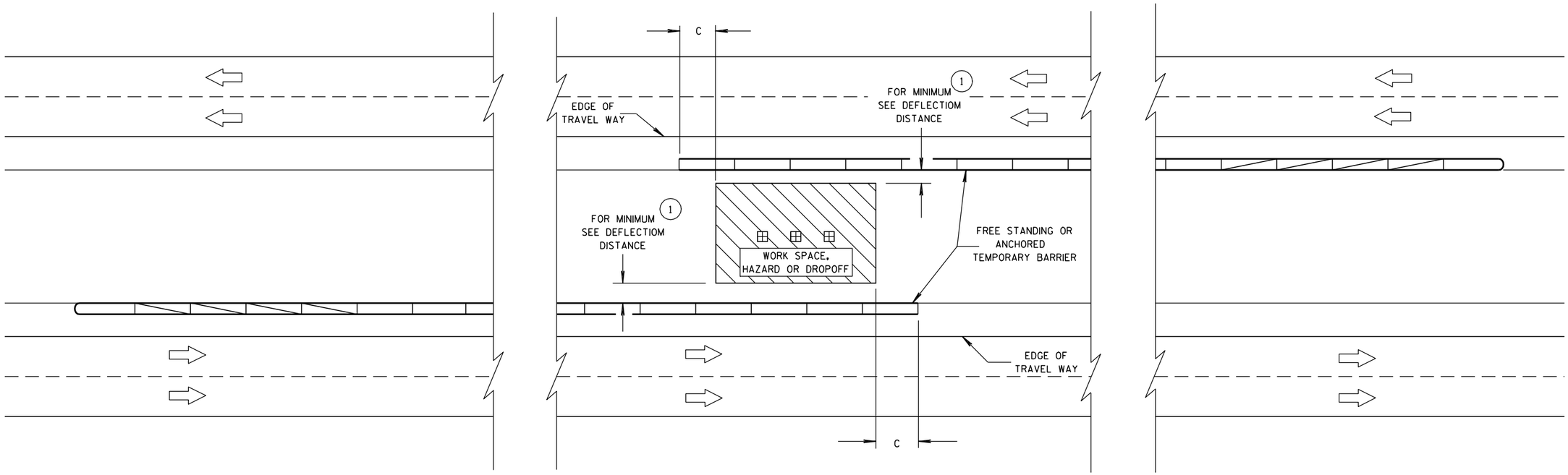
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8/31/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS ENGINNER 44
FHWA	TENT

6
S.D.D. 14 B 8-1e

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) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

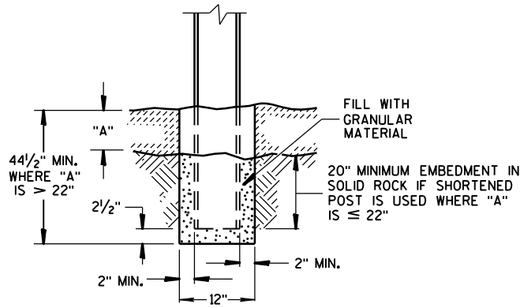
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

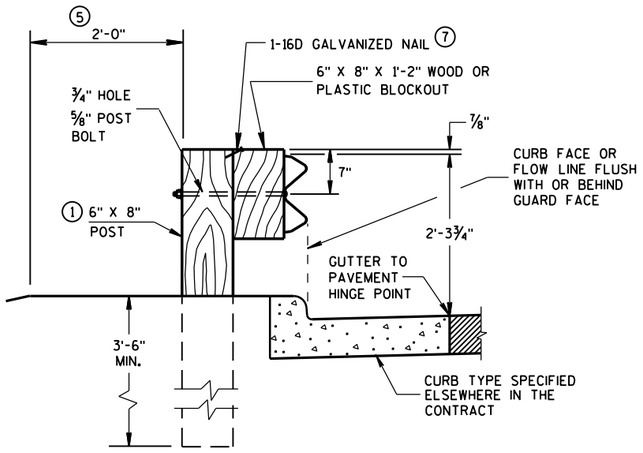
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

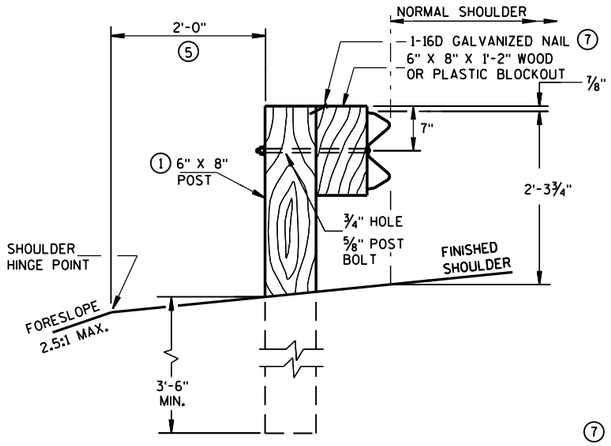
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



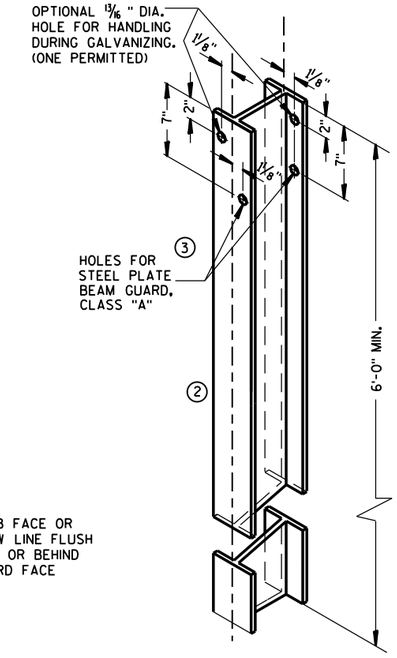
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



END VIEW
LOCATED ALONG A CURBED ROADWAY

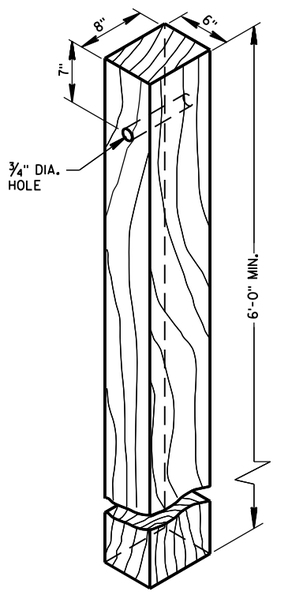


END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION

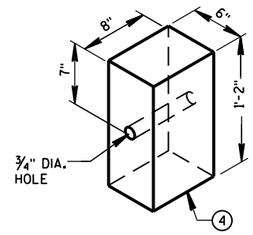


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

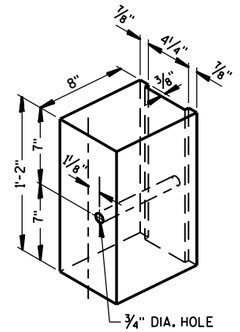
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



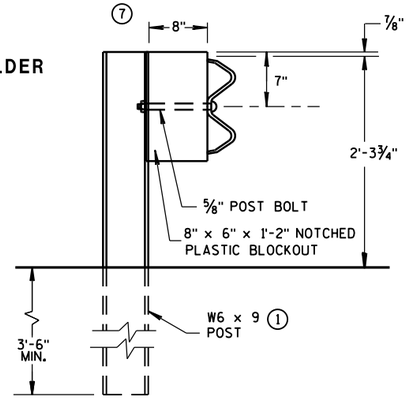
WOOD POST
(6"X8") NOMINAL



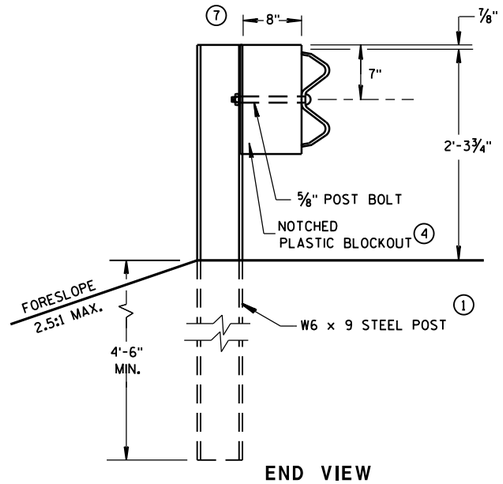
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



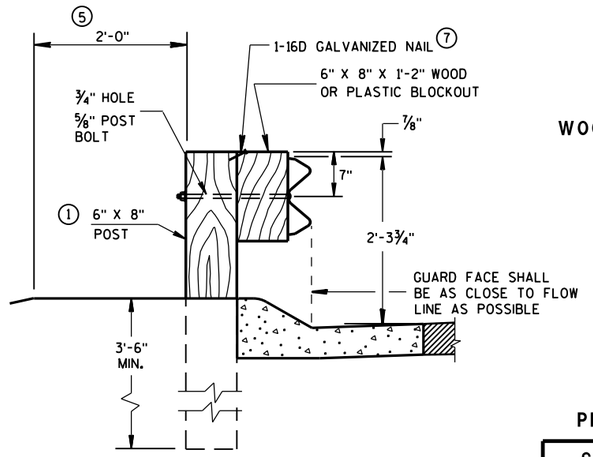
TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



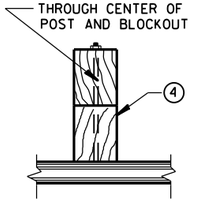
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



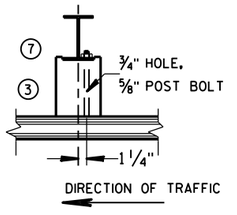
END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



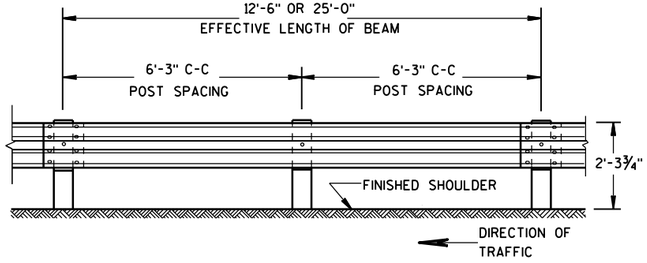
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

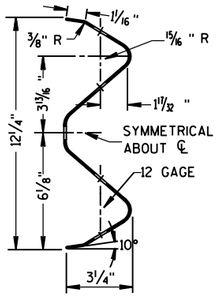
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 14 B 15-8a

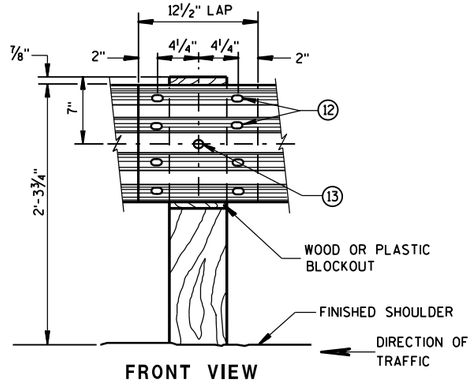


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

(8) PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

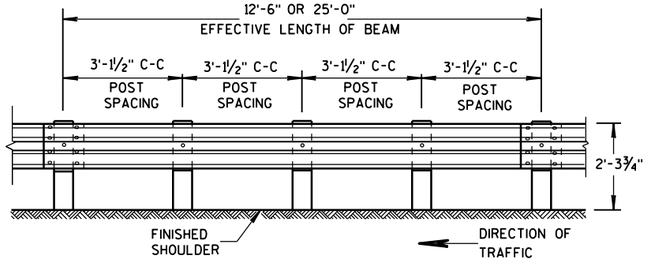
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

(10) REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

(11) PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

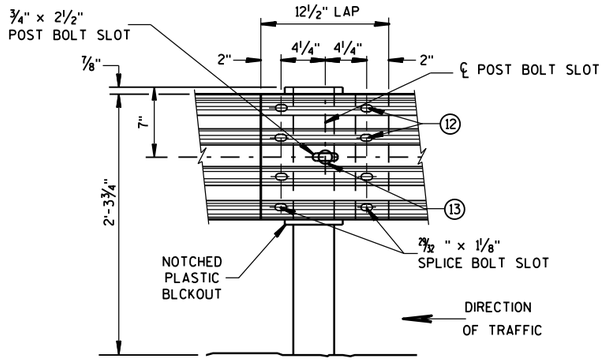
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) ⅝" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH ⅝" DIA. F844 FLAT WASHER UNDER NUT.



FRONT VIEW

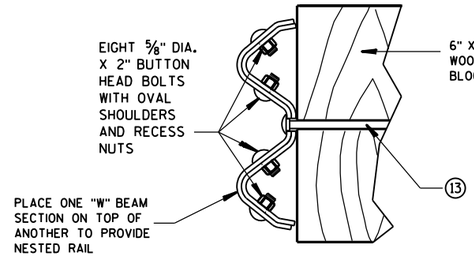
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

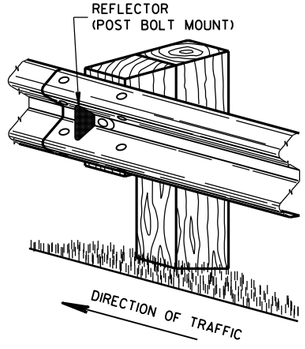


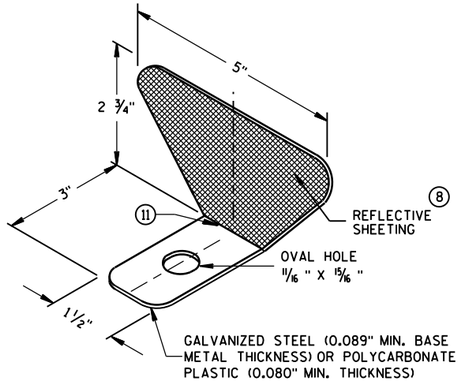
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING (9)

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (10)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 (11)	3
	> 200'	100' C-C	2	



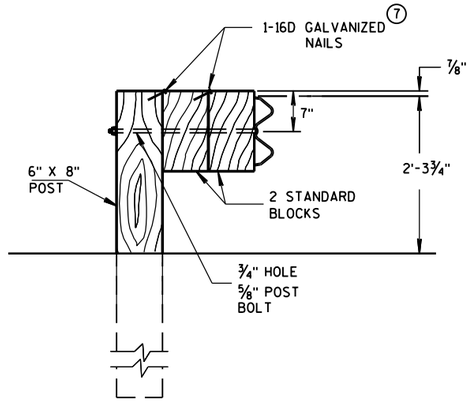


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (8)

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

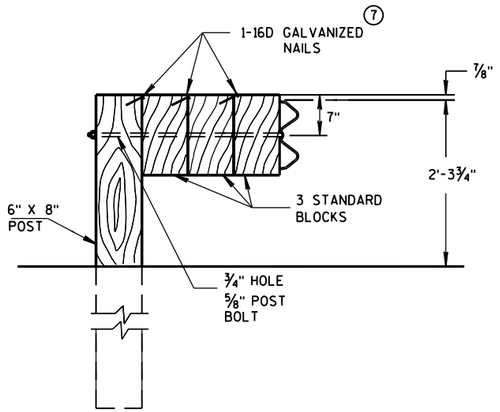
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 15-8b



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

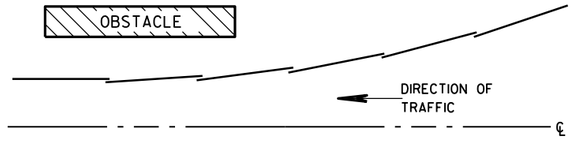


DETAIL FOR TRIPLE BLOCKS

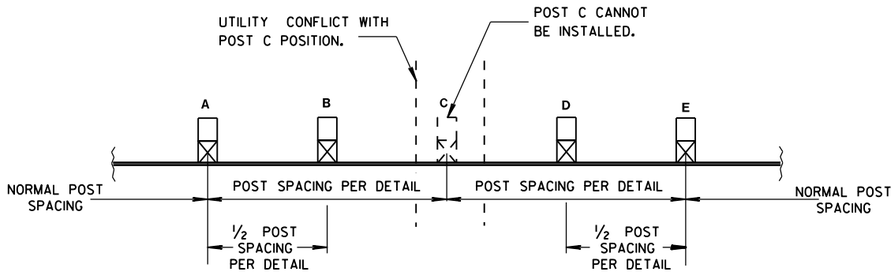
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.



PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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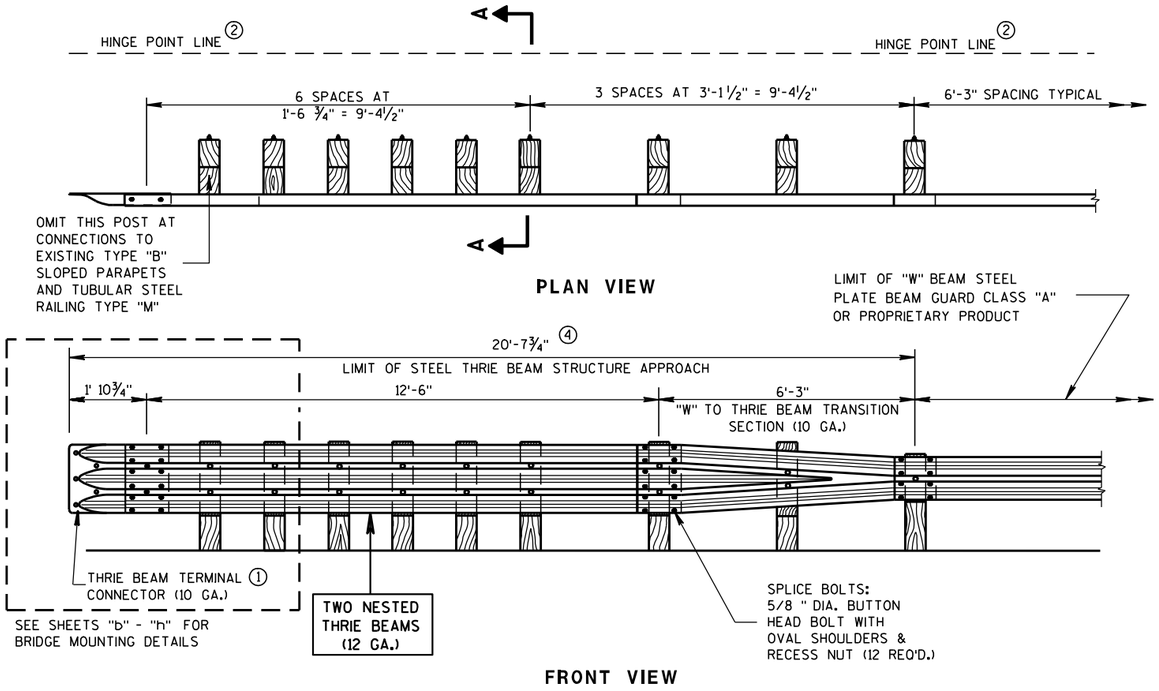
S.D.D. 14 B 15-8c



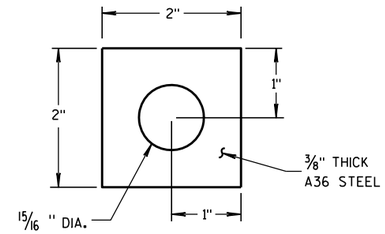


PLATE WASHER DETAIL

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

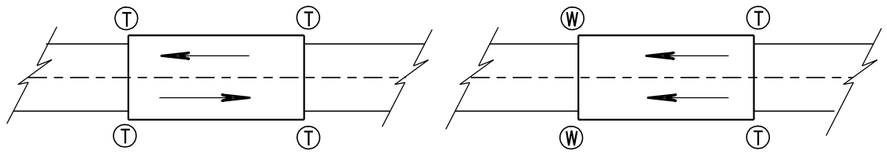
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



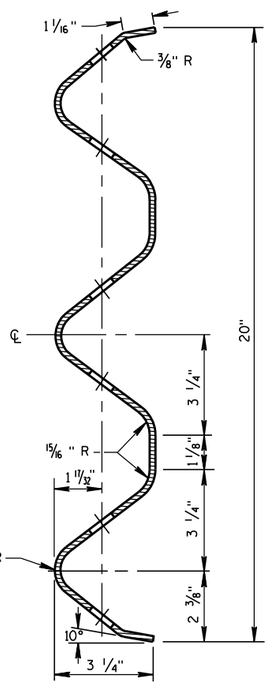
TWO WAY TRAFFIC

ONE WAY TRAFFIC

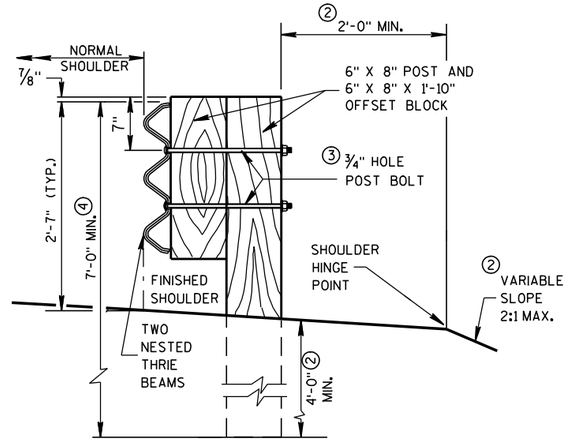
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

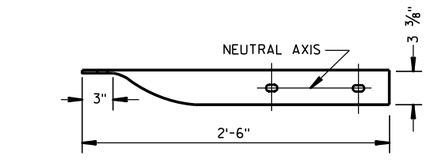
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

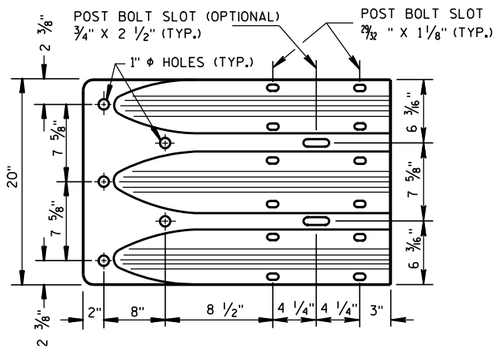


SECTION THRU THRIE BEAM RAIL ELEMENT

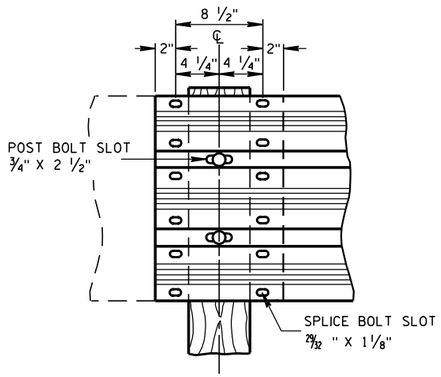


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

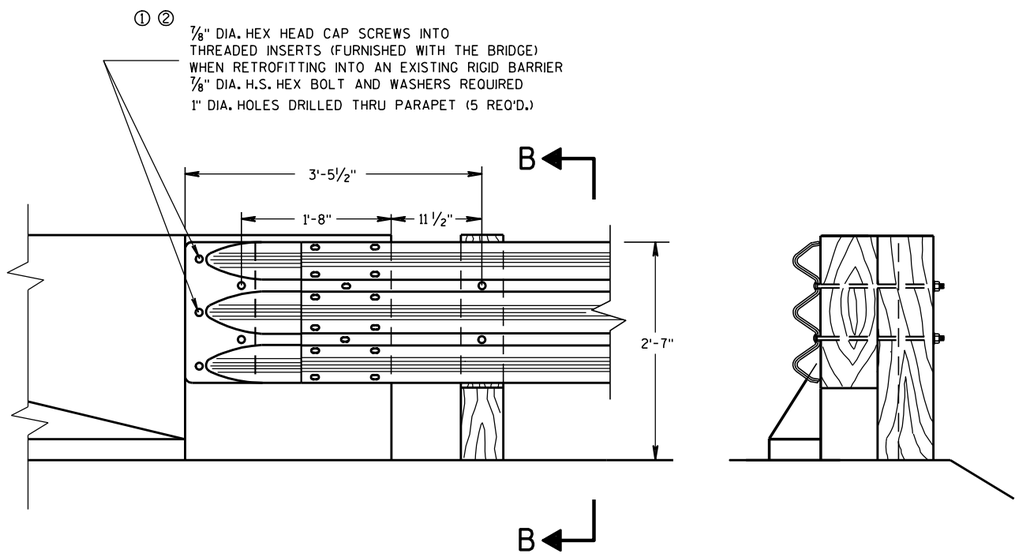
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

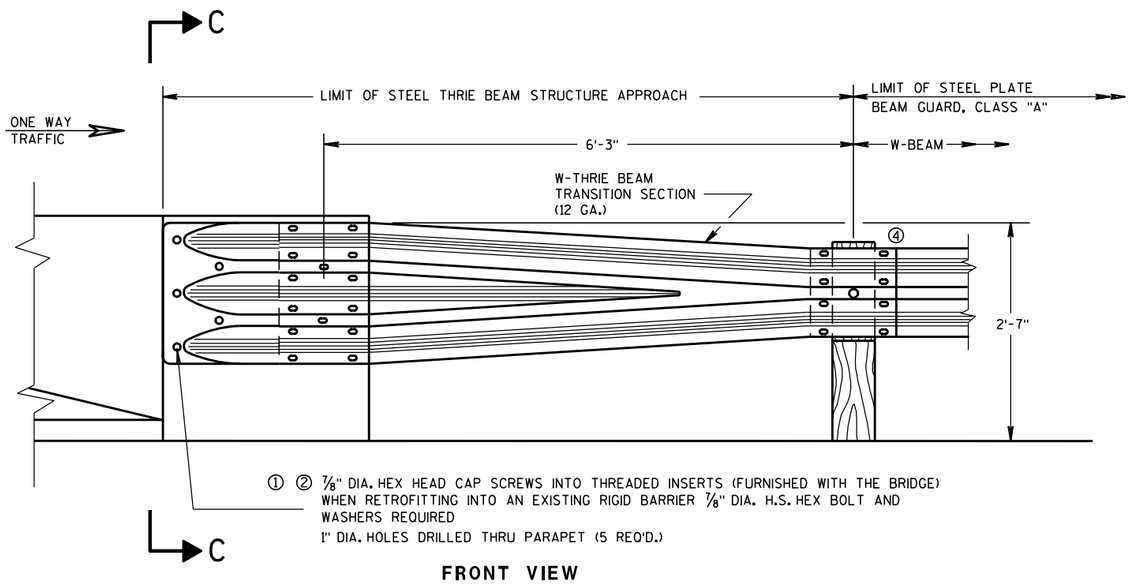
FHWA



FRONT VIEW

SECTION B-B

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.)

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

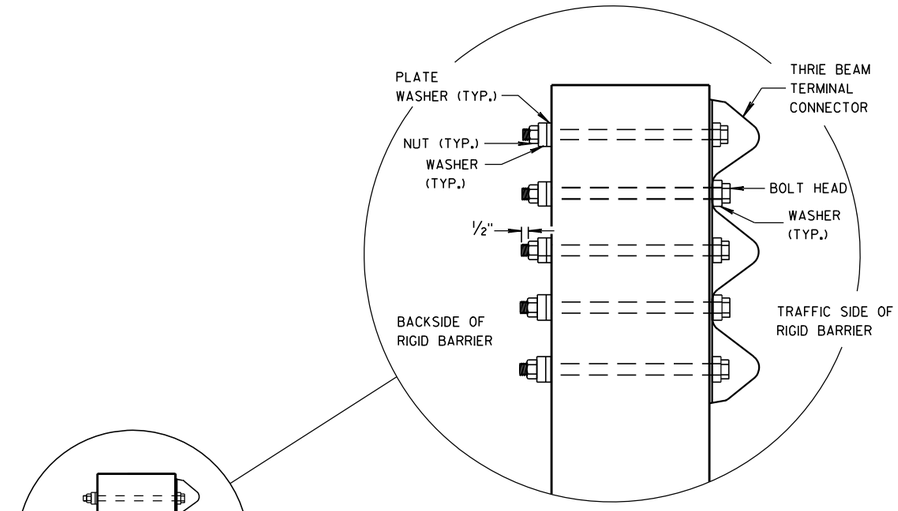
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

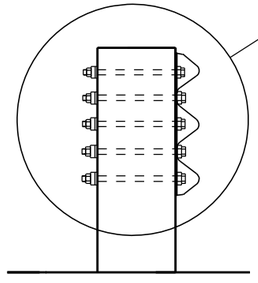
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.





SECTION C-C

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

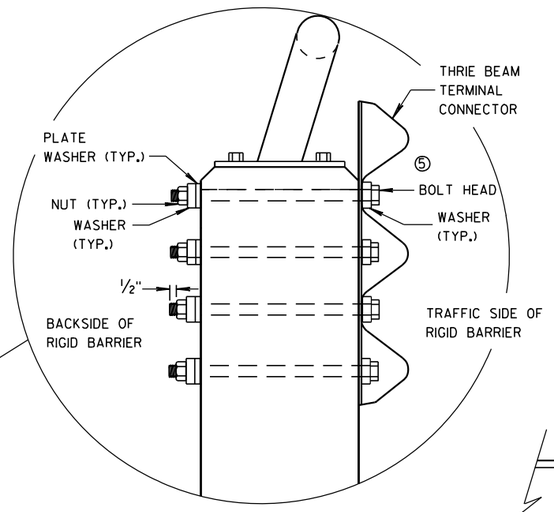
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

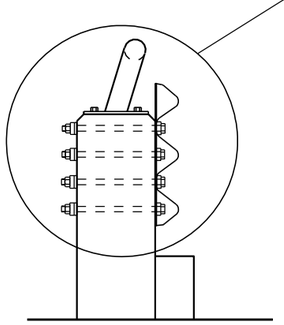
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

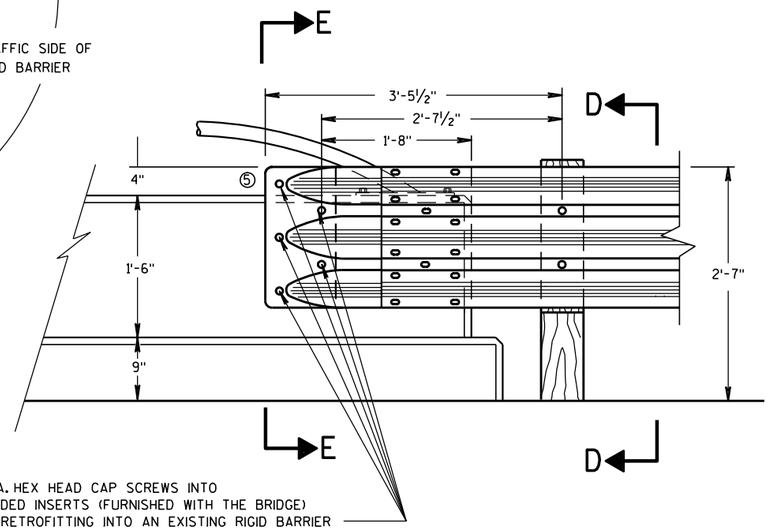
⑤ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.





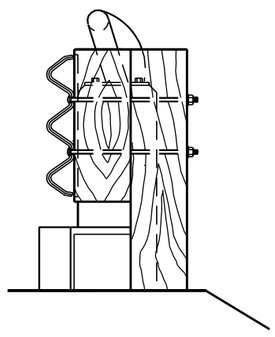
SECTION E-E



①② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER
⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

FRONT VIEW

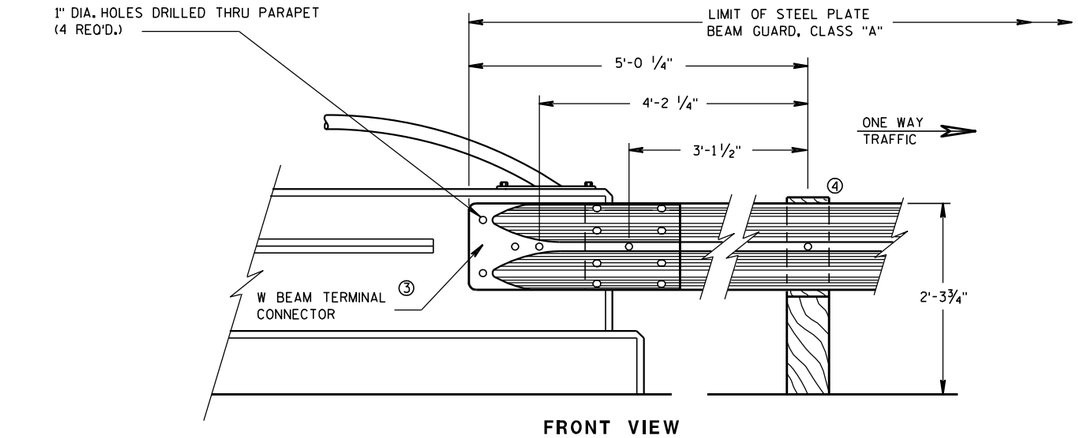


SECTION D-D

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

①② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER
⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER
⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. Zaa — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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S.D.D. 14 B 20-11c

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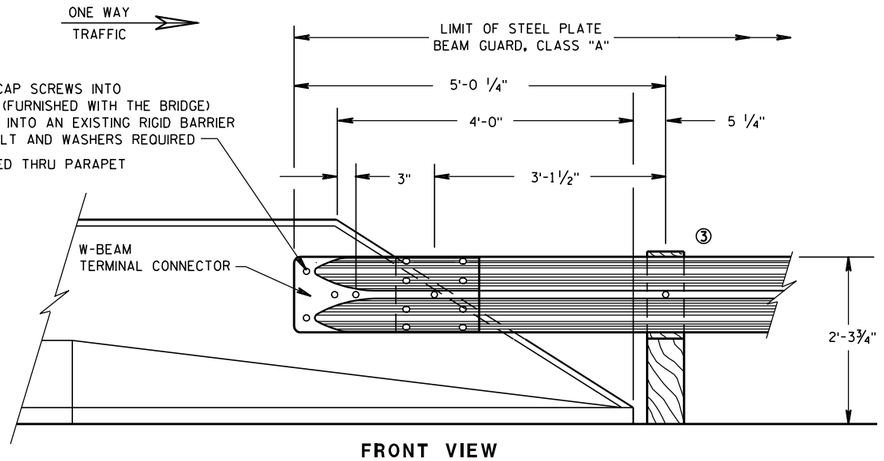
S.D.D. 14 B 20-11c



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

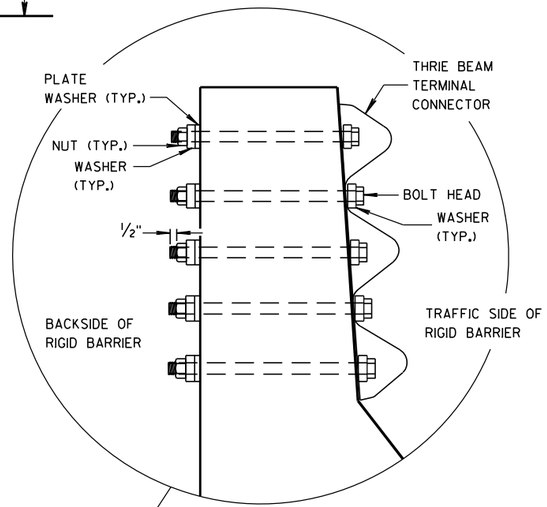
BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

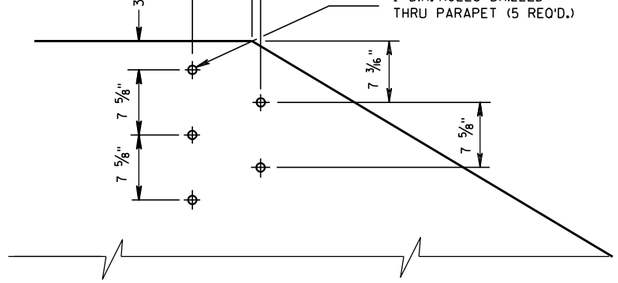
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

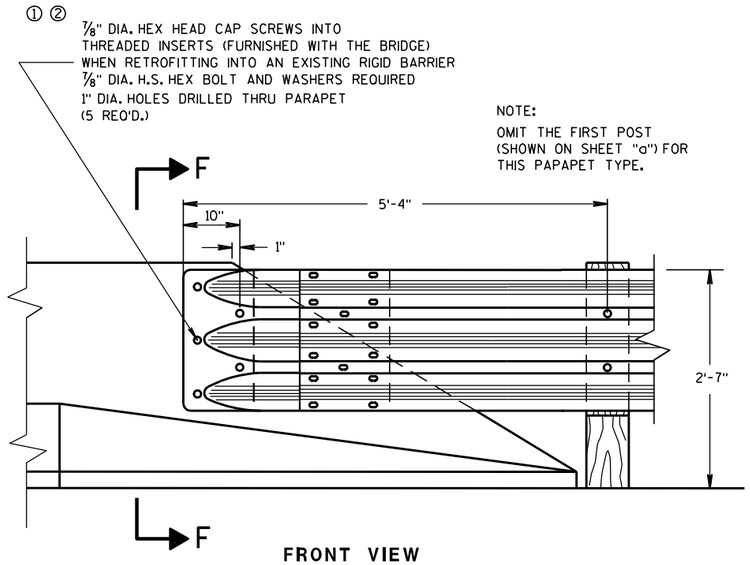
③ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

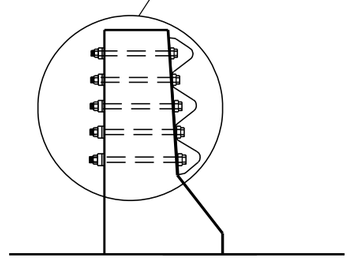




DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION F-F

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS

STATE OF WISCONSIN
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8/31/2012 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS DEVELOPMENT ENGINEER
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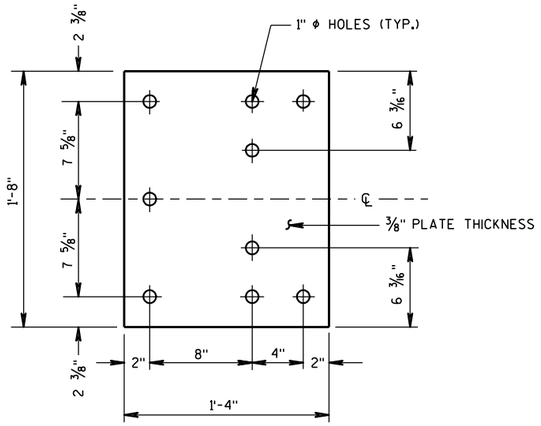
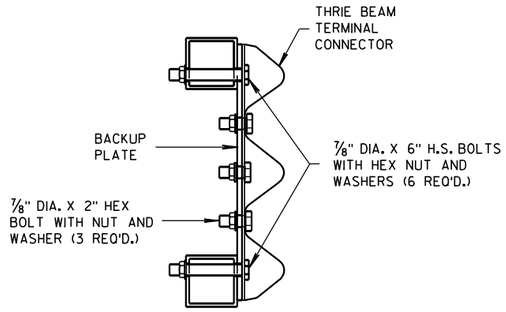


BACK-UP PLATE DETAIL



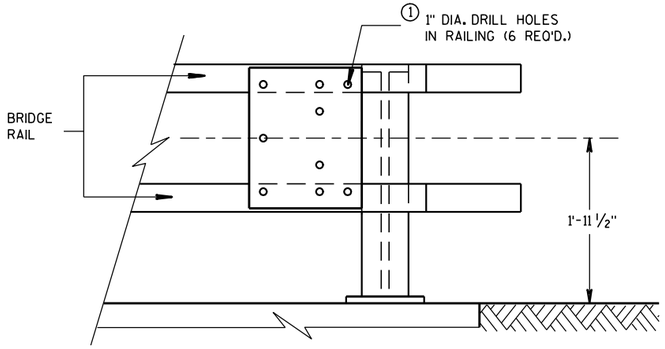
SECTION G-G

GENERAL NOTES

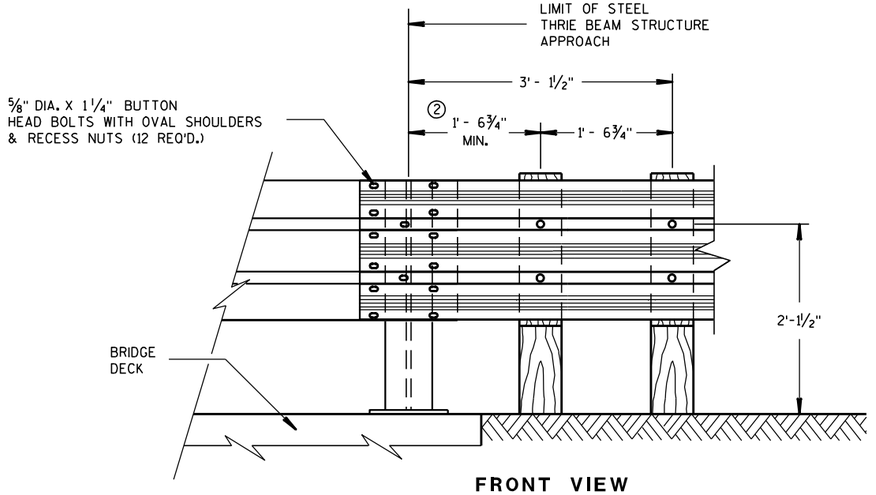
BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL AS CLOSE AS FEASIBLE TO THE STEEL END POST.

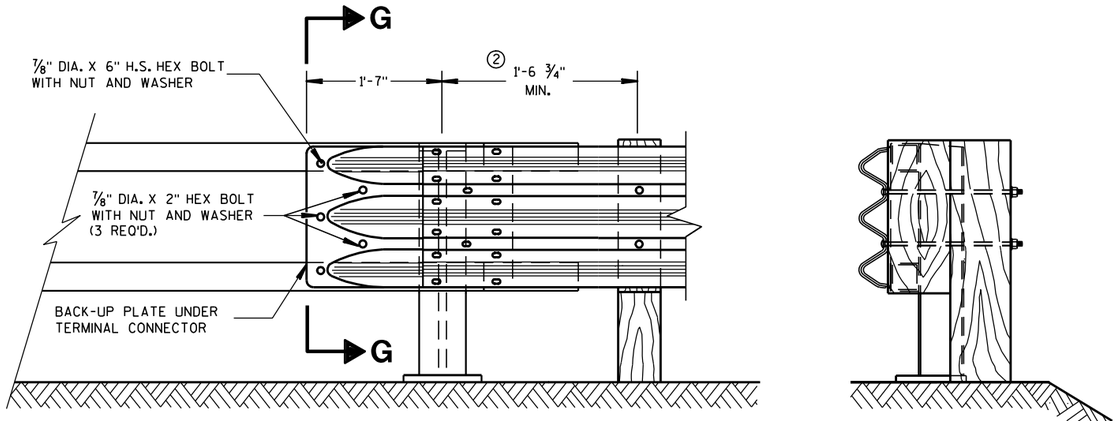


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW

END VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"

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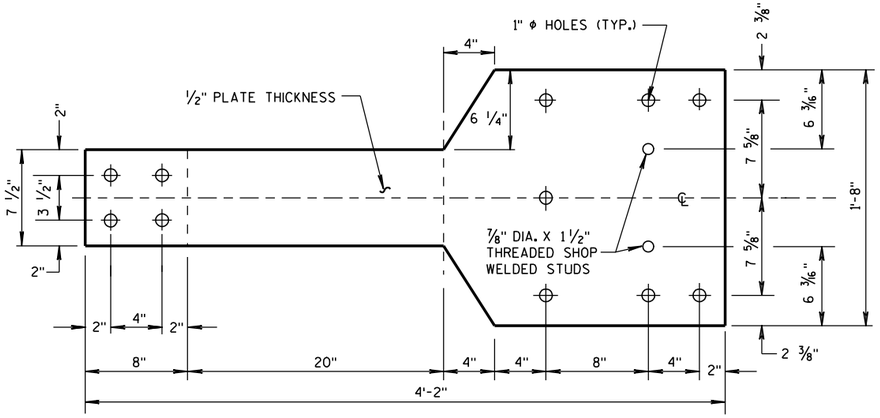
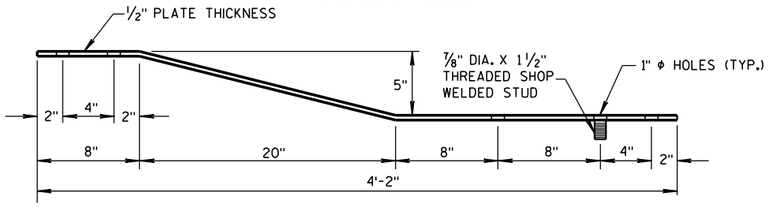
GENERAL NOTES

(1) VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL BE AS CLOSE AS FEASIBLE TO THE STEEL END POST.

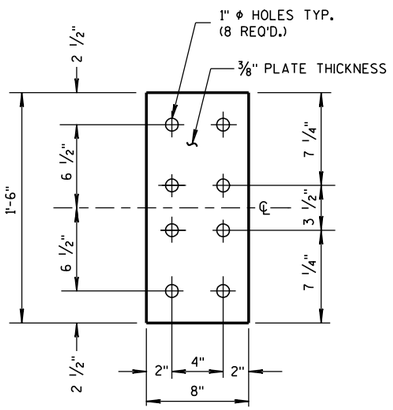


FRONT VIEW



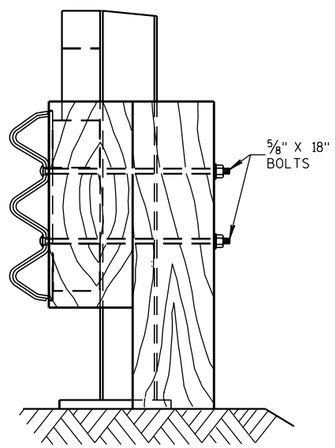
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

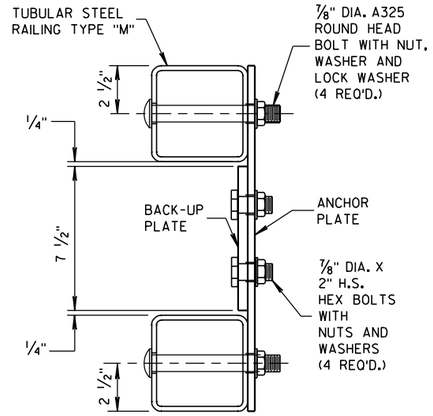


FRONT VIEW

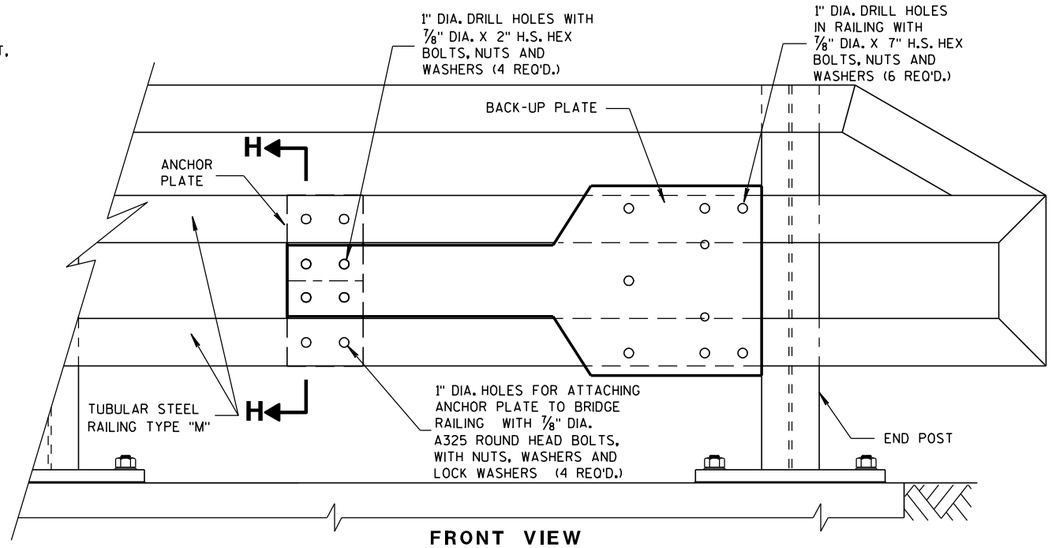
ANCHOR PLATE DETAIL, TYPE "M"



SECTION I-I

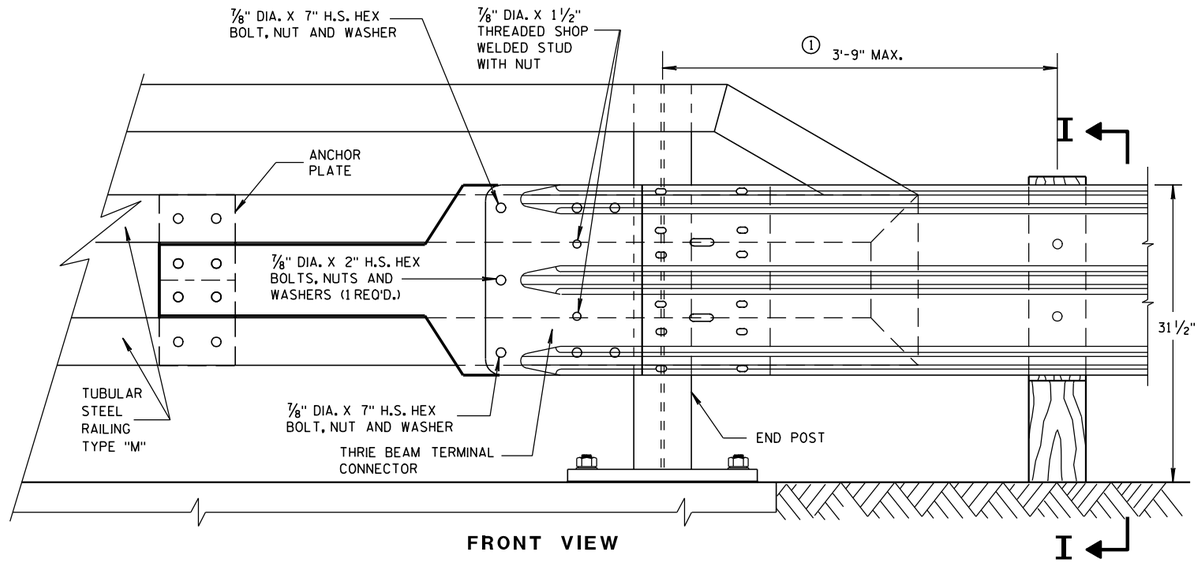


SECTION H-H

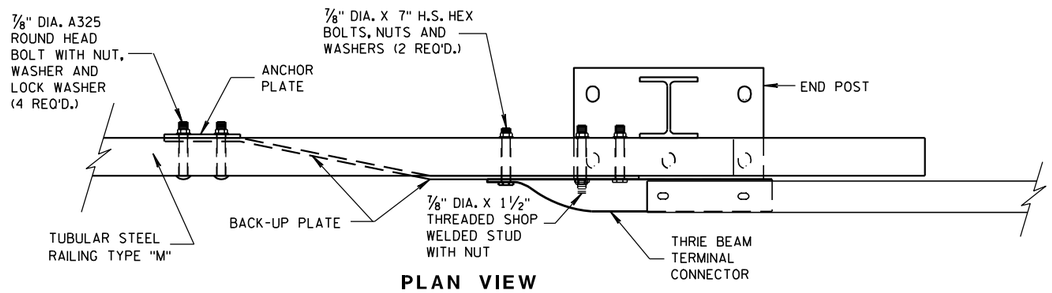


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"

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GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

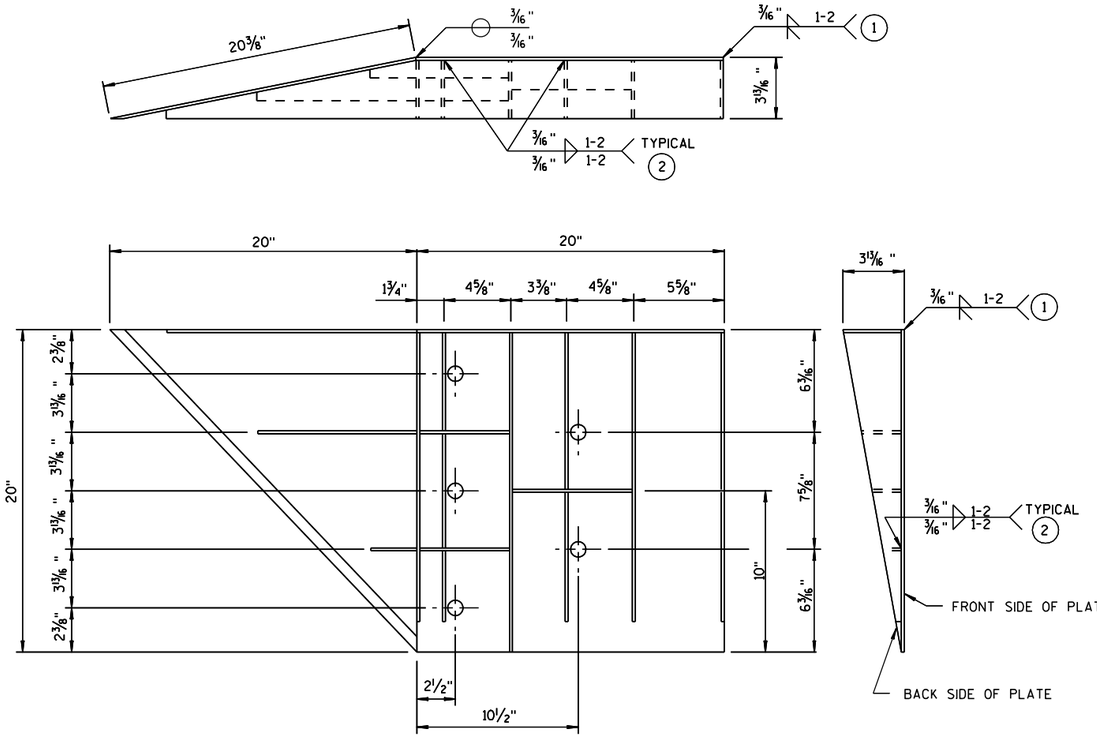
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

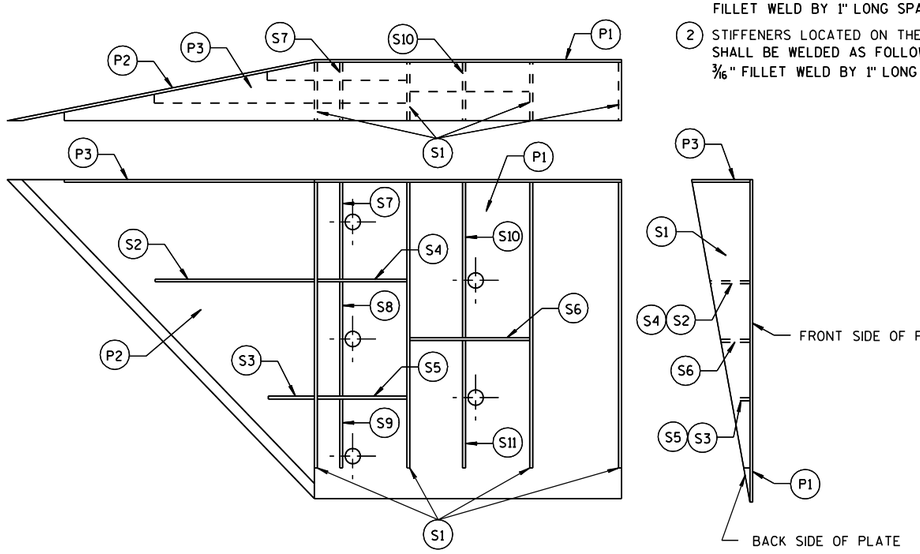


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

STATE OF WISCONSIN
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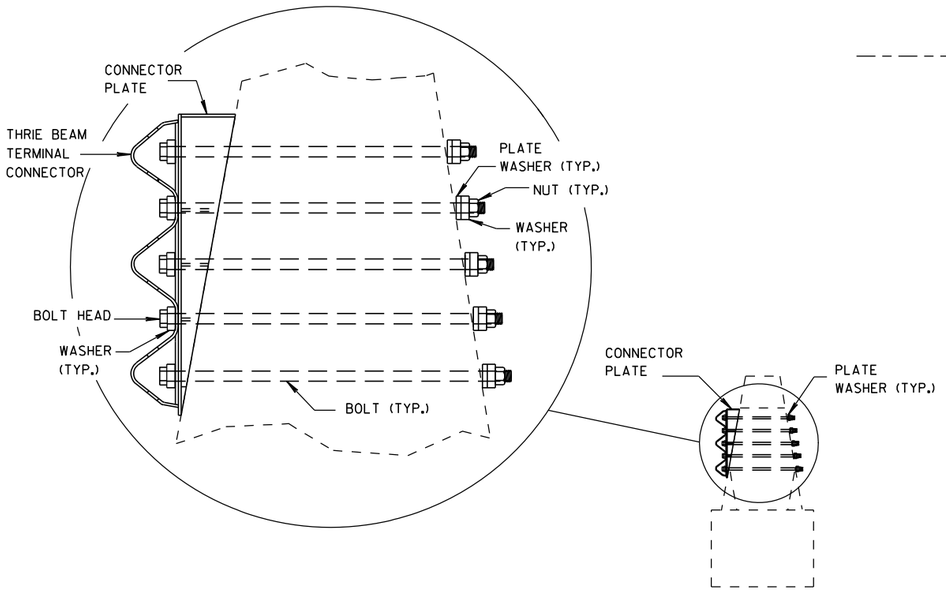
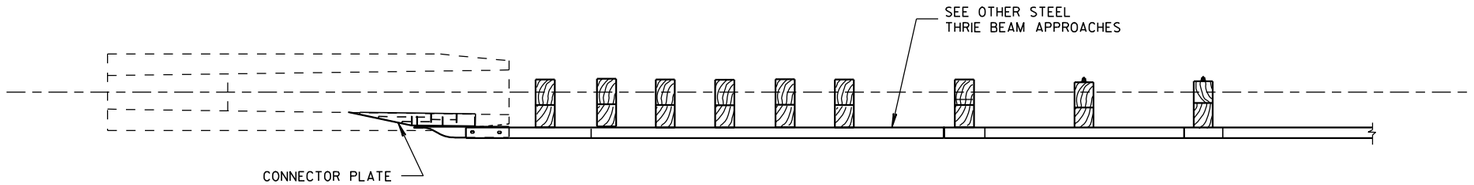
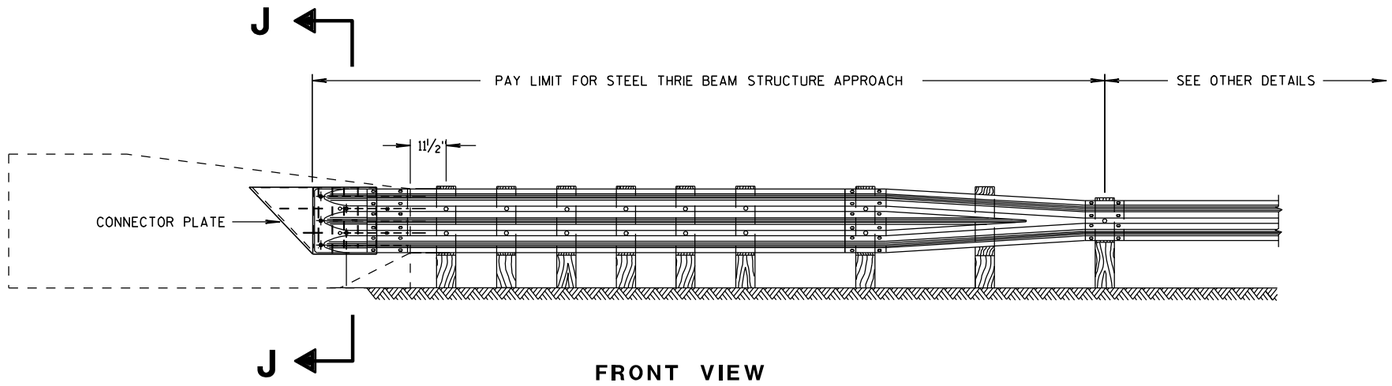


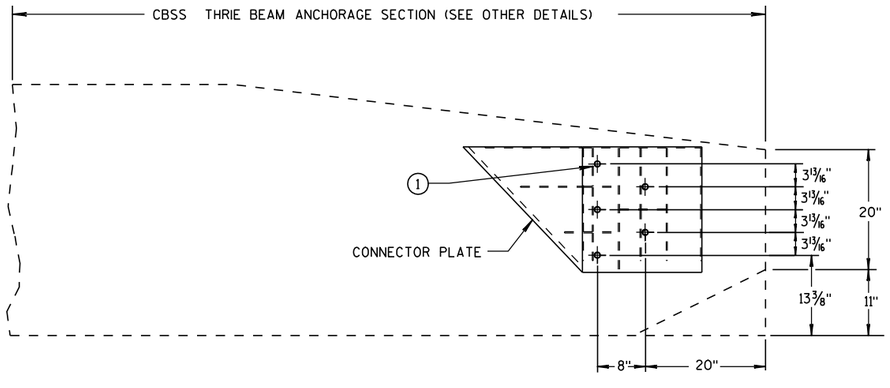
SECTION J-J



PLAN VIEW



FRONT VIEW



CONNECTOR PLATE LOCATION

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 614.

CONNECTOR PLATE, DRILLING HOLES THROUGH PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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ROADWAY STANDARDS ENGINEER

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BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
(1)	4	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
(2)	**	STEEL TUBE: OPTION 1 - QUANITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
(3)	2	SOIL PLATE: 2'-0" X 1'-6" X ¼" **
(4)	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
(5)	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
(6)	1	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
(7)	1	BEARING PLATE
(8)	1	BCT CABLE ASSEMBLY
(9)	1	CABLE ANCHOR BOX
(10)	1	STRUT & YOKE
(11)	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6½" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
(12)	3	STEEL PLATE BEAM: 12 GA. 13'-6½"
(13)	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
(14)	1	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(15)	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL ⅝" ø X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

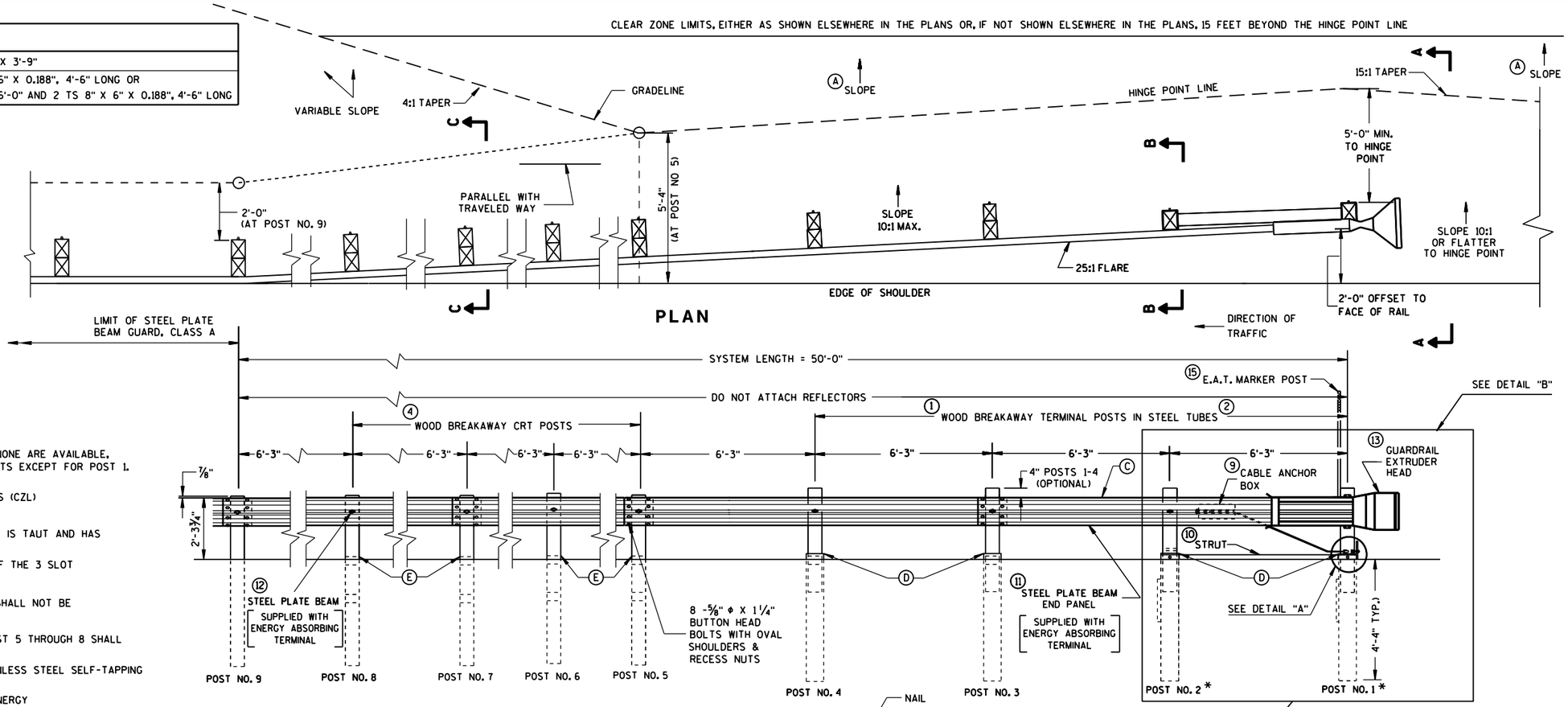
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

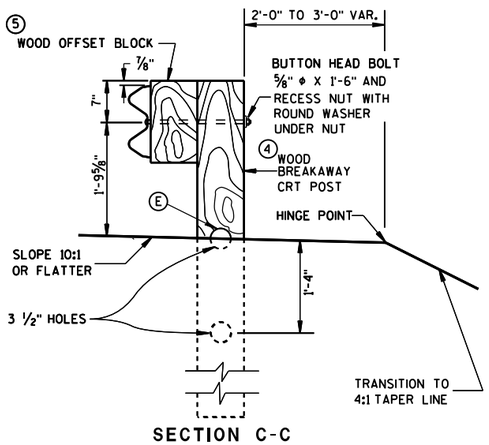
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

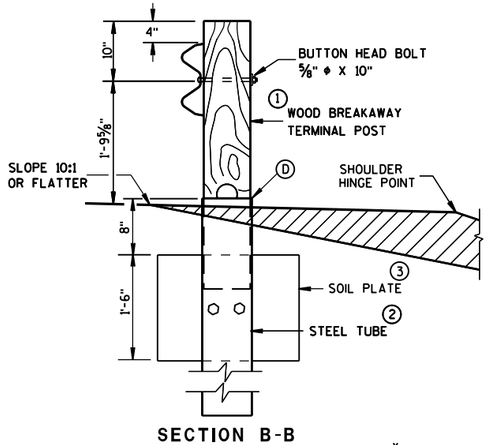
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.

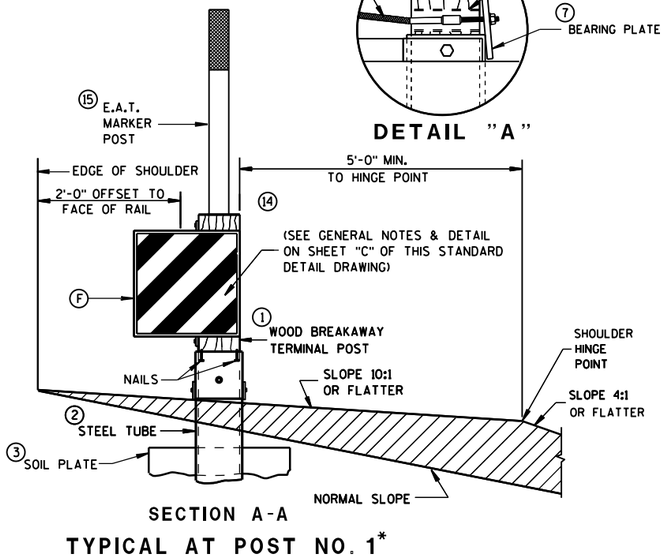




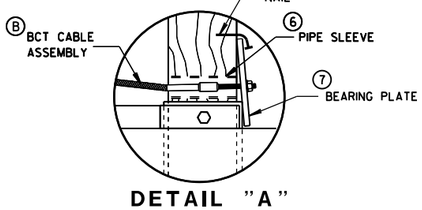
SECTION C-C
TYPICAL AT POST NOS. 6, 8



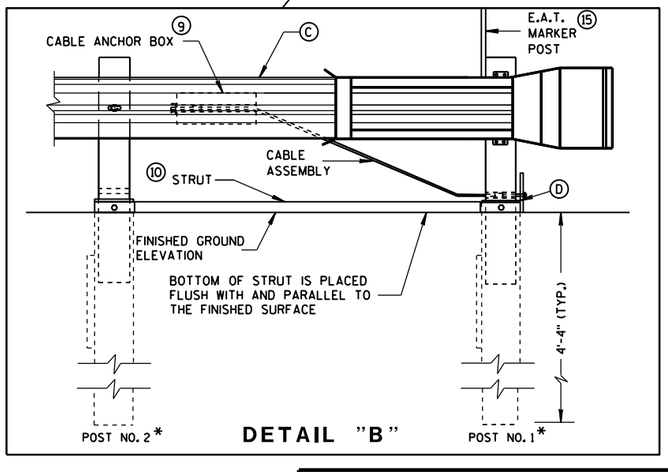
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

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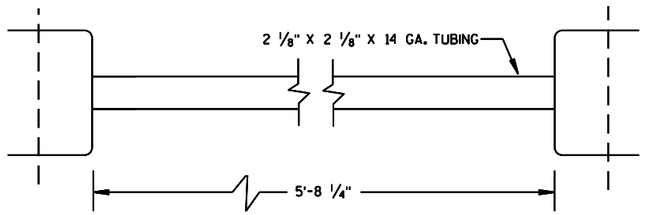
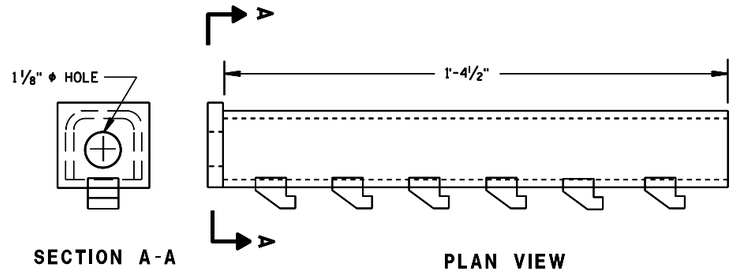
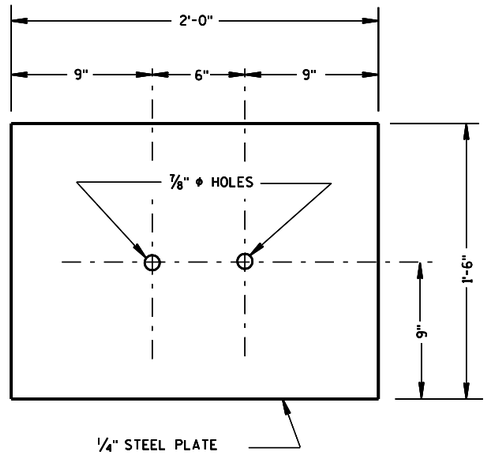


⑩ STRUT DETAIL (SKT-350)

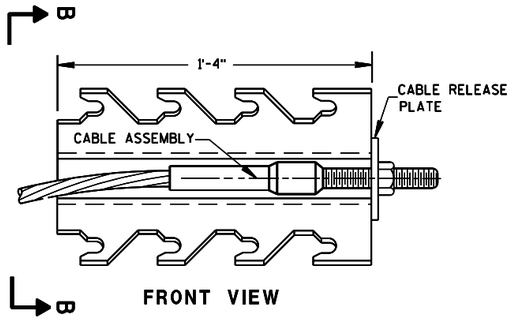


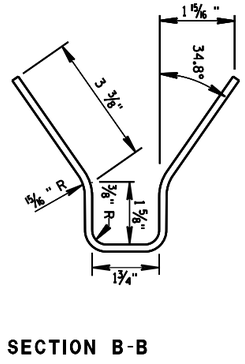
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



③ SOIL PLATE

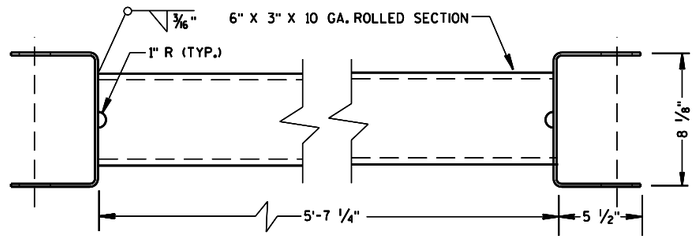
(SKT-350, ET-2000/ET-2000 PLUS)





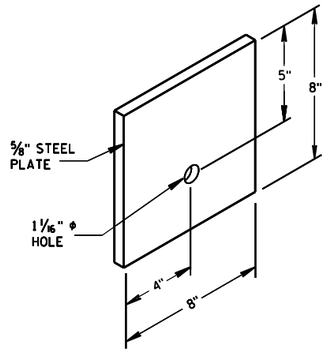
⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



⑦ STEEL BEARING PLATE

(SKT-350, ET-2000/ET-2000 PLUS)

6

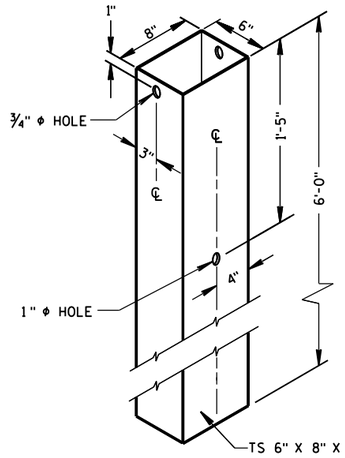
6

S.D.D. 14 B 24-8b

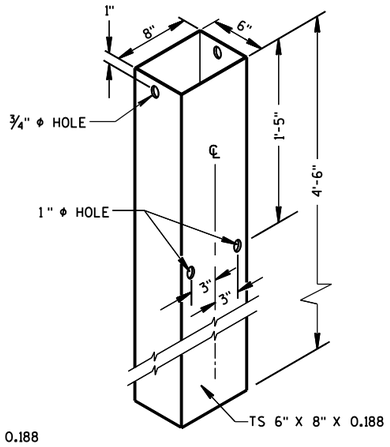
S.D.D. 14 B 24-8b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

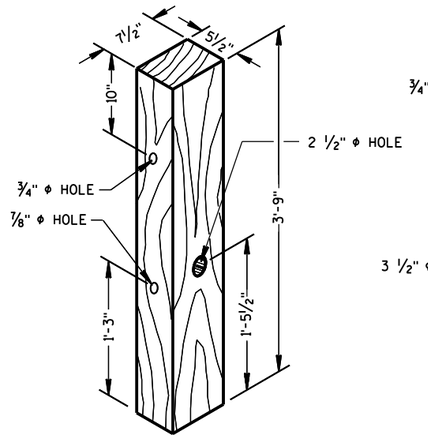
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



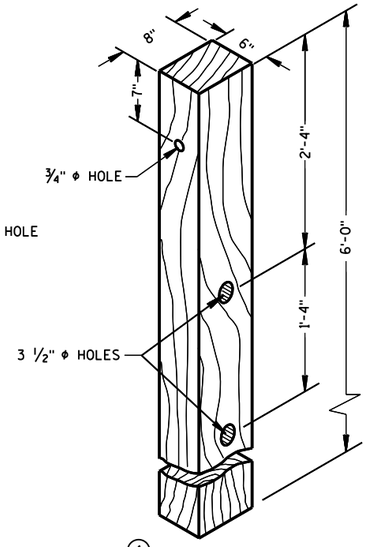
② 72" STEEL TUBE
(POSTS NO. 1-4



② 54" STEEL TUBE
(POSTS NO. 1-4



① TERMINAL POST
(POSTS NO. 1-4



④ CRT POST
(POSTS NO'S 5-8

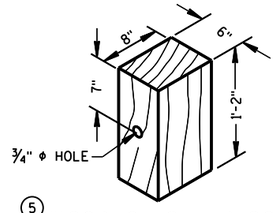
WOOD BREAKAWAY POSTS

GENERAL NOTES

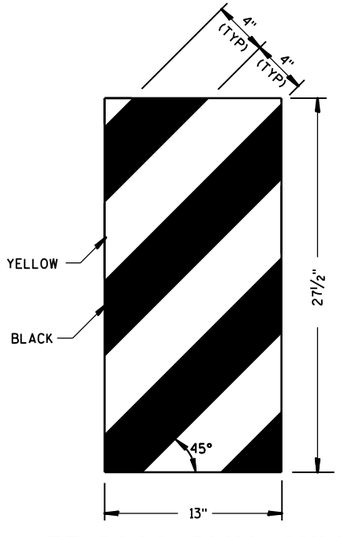
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

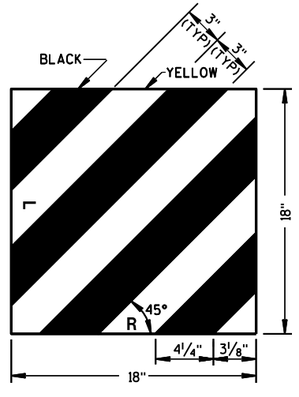
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.



⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

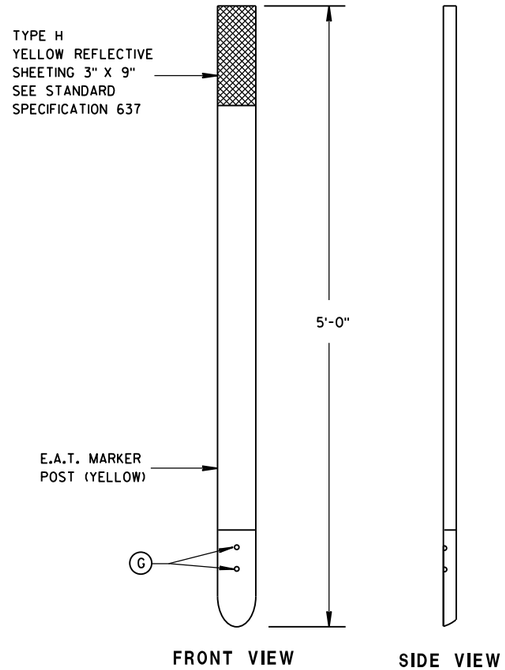


ET-2000 PLUS ONLY

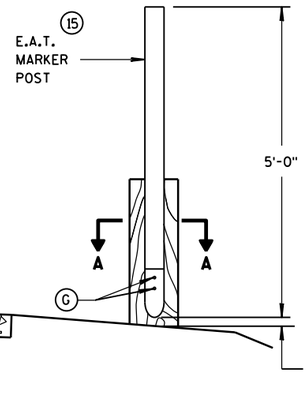


ET-2000 AND SKT-350

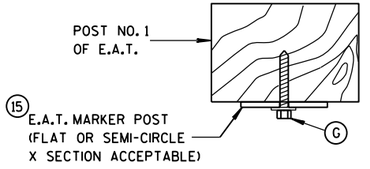
⑭ REFLECTIVE SHEETING DETAILS



⑮ E.A.T. MARKER POST



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

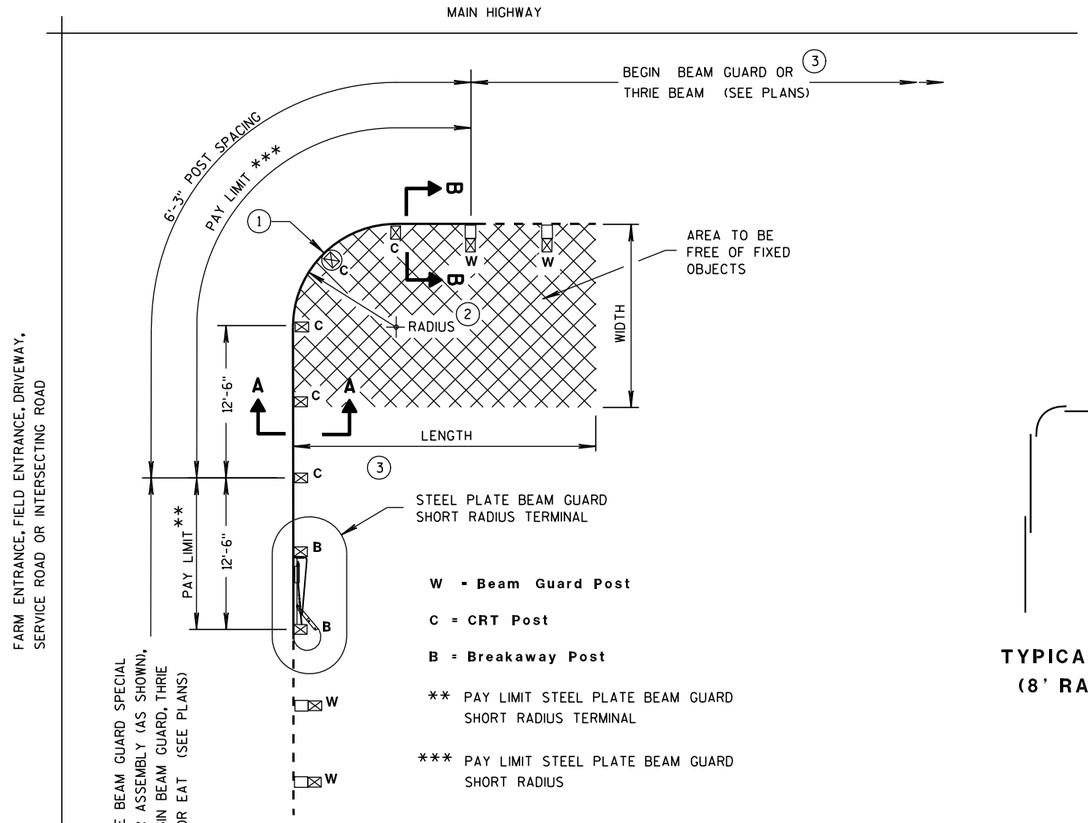
APPROVED
June 2014
DATE
/S/ Jerry H. Zoda
ROADWAY STANDARDS ENGINEER
FHWA

6

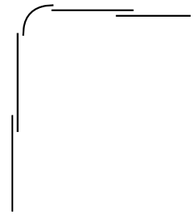
S.D.D. 14 B 24-8c

6

S.D.D. 14 B 24-8c



TYPICAL LAYOUT
(8' RADIUS SHOWN)



TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2. UNLESS NOTED OTHERWISE.

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

(1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.

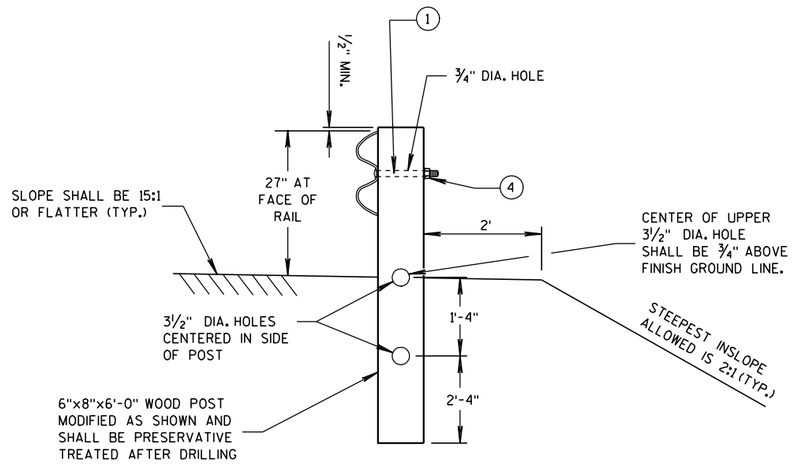
(2) RADIUS FROM 8' - 36'. SEE PLAN.

(3) HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.

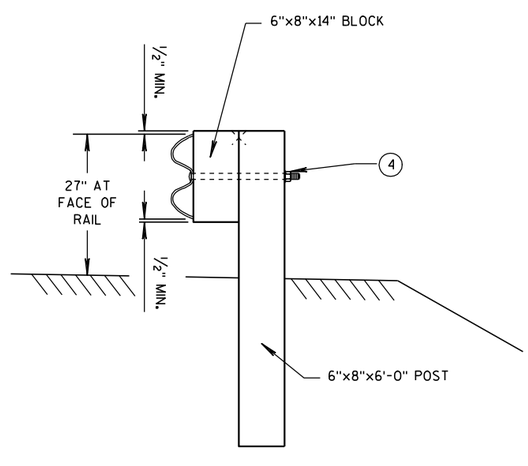
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION A-A
(CRT POST)



SECTION B-B
(BEAM GUARD POST)

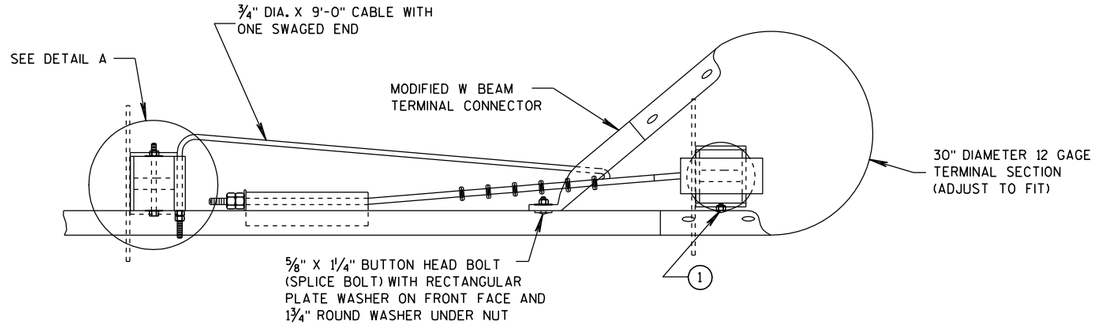
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

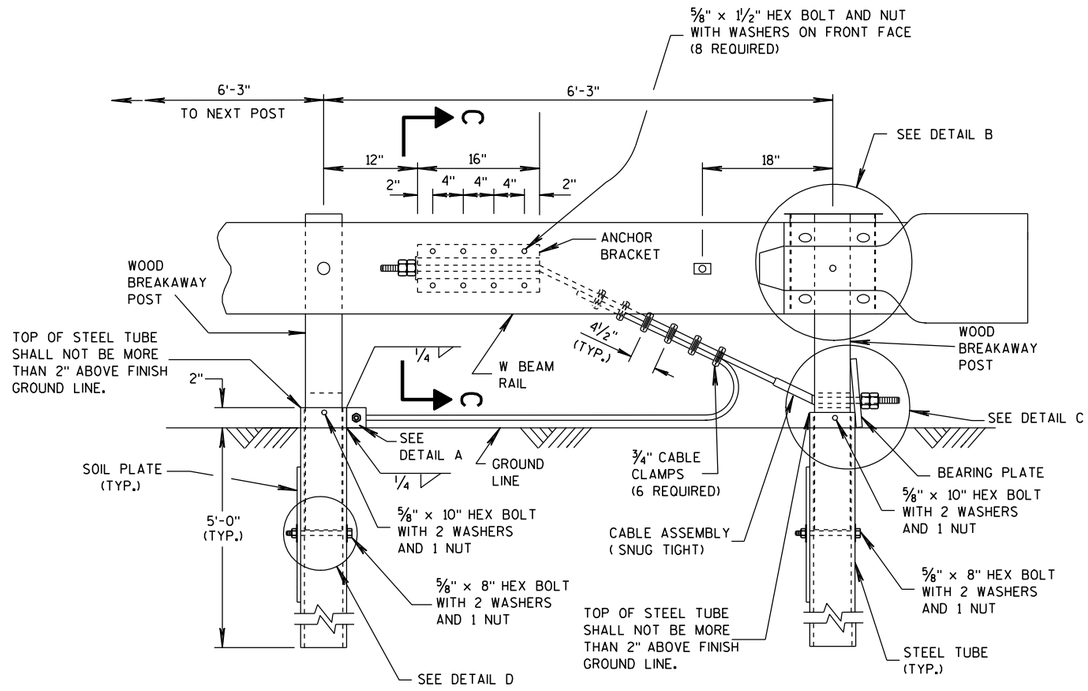
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 27-1a



PLAN VIEW



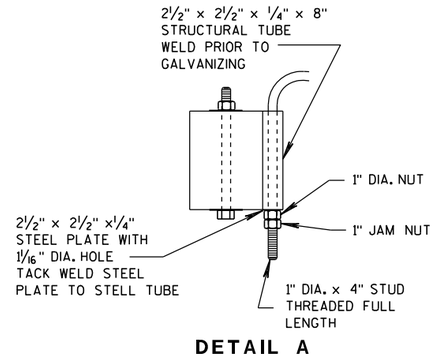
ELEVATION VIEW

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

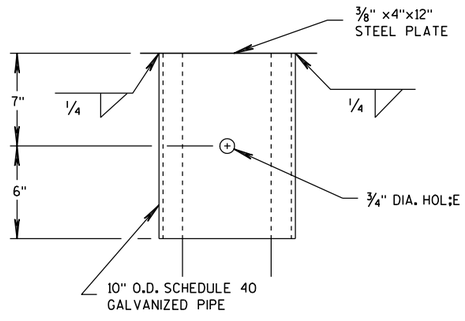
GENERAL NOTES

(1) ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A ⅝" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED ¾" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A



DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

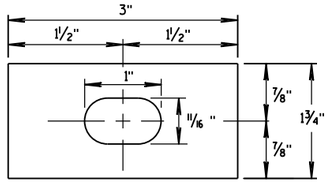
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

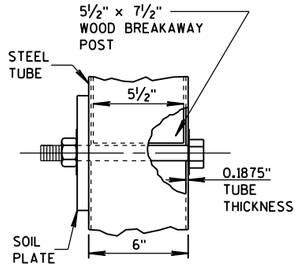
S.D.D. 14 B 27-1b

6

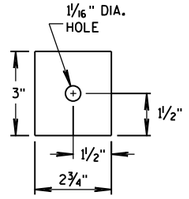
S.D.D. 14 B 27-1b



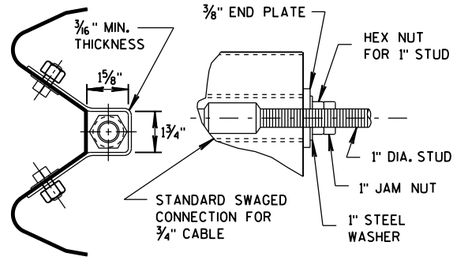
RECTANGULAR PLATE WASHER



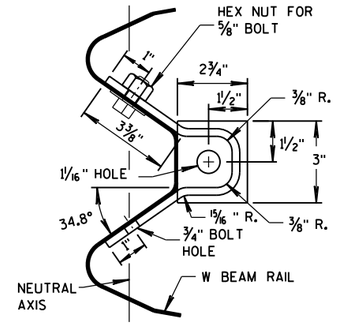
DETAIL D



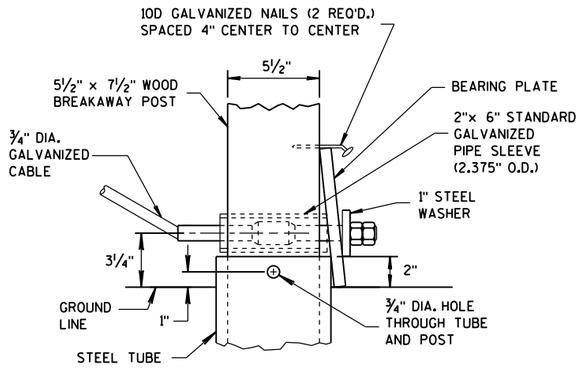
END PLATE



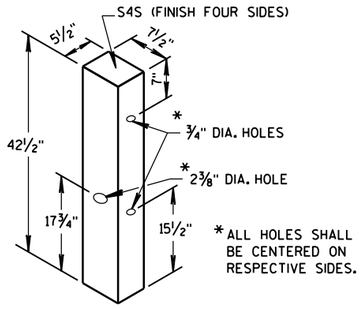
SECTION C-C
(END PLATE REMOVED)



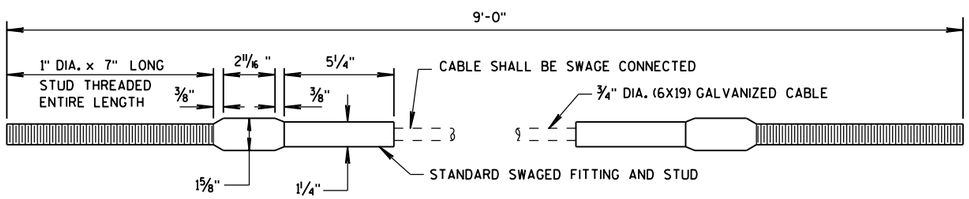
ANCHOR BRACKET



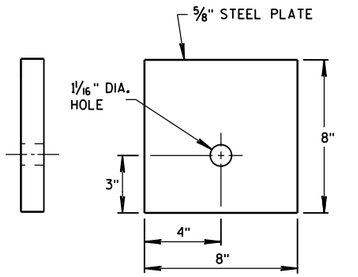
DETAIL C



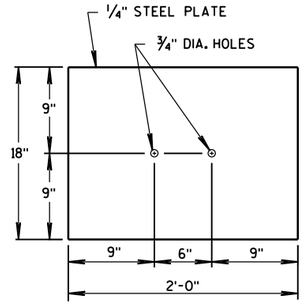
WOOD BREAKAWAY POST



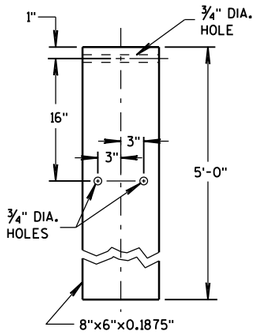
CABLE ASSEMBLY



BEARING PLATE



SOIL PLATE



STEEL TUBE

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

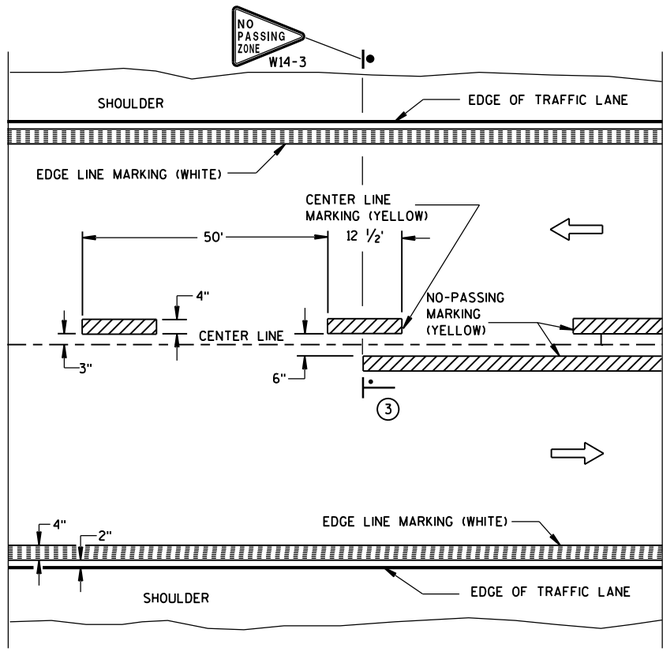
APPROVED
12/18/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

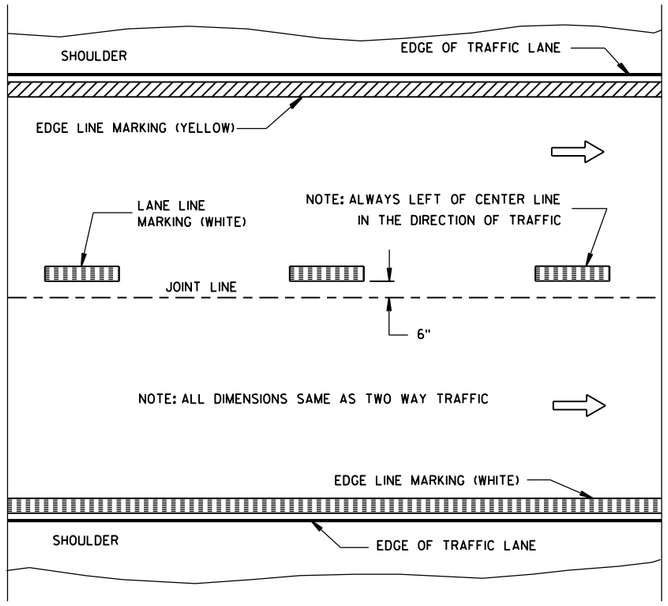
S.D.D. 14 B 27-1c

6

S.D.D. 14 B 27-1c

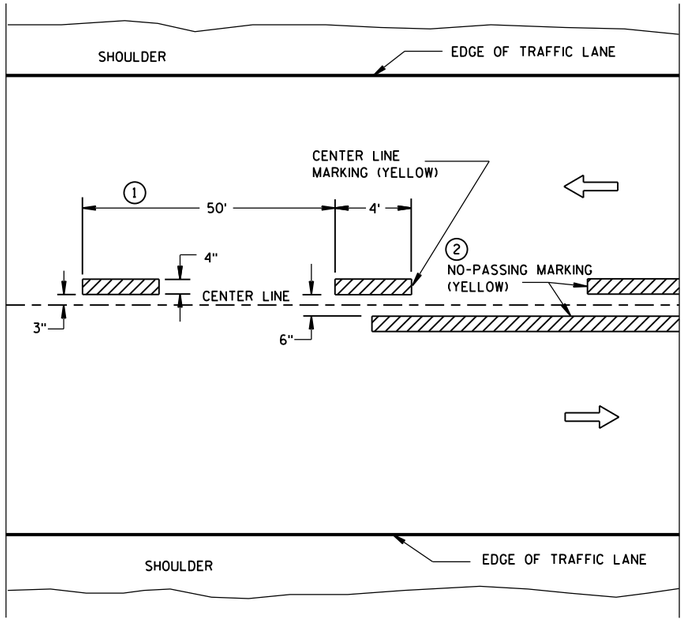


TWO WAY TRAFFIC

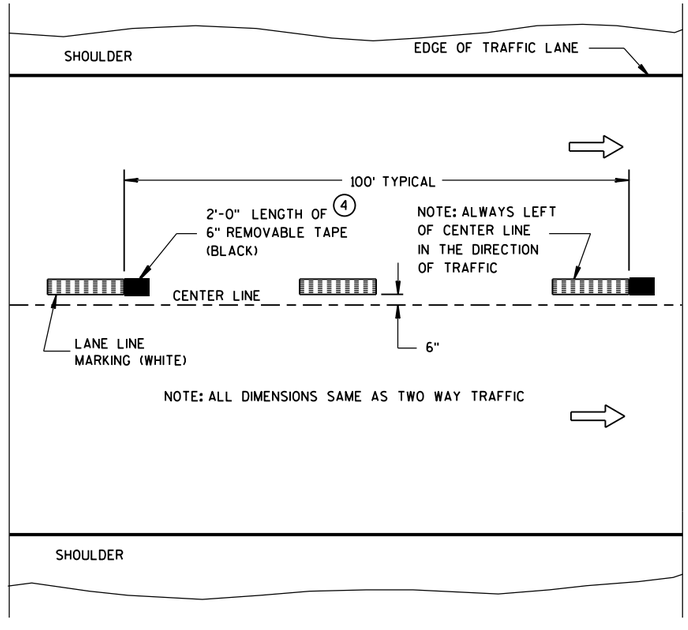


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

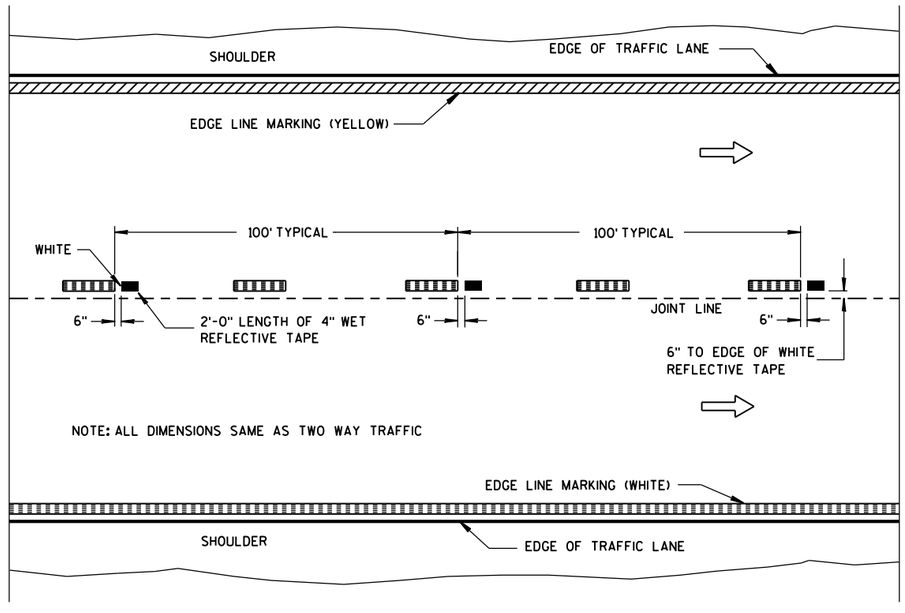
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

6

S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

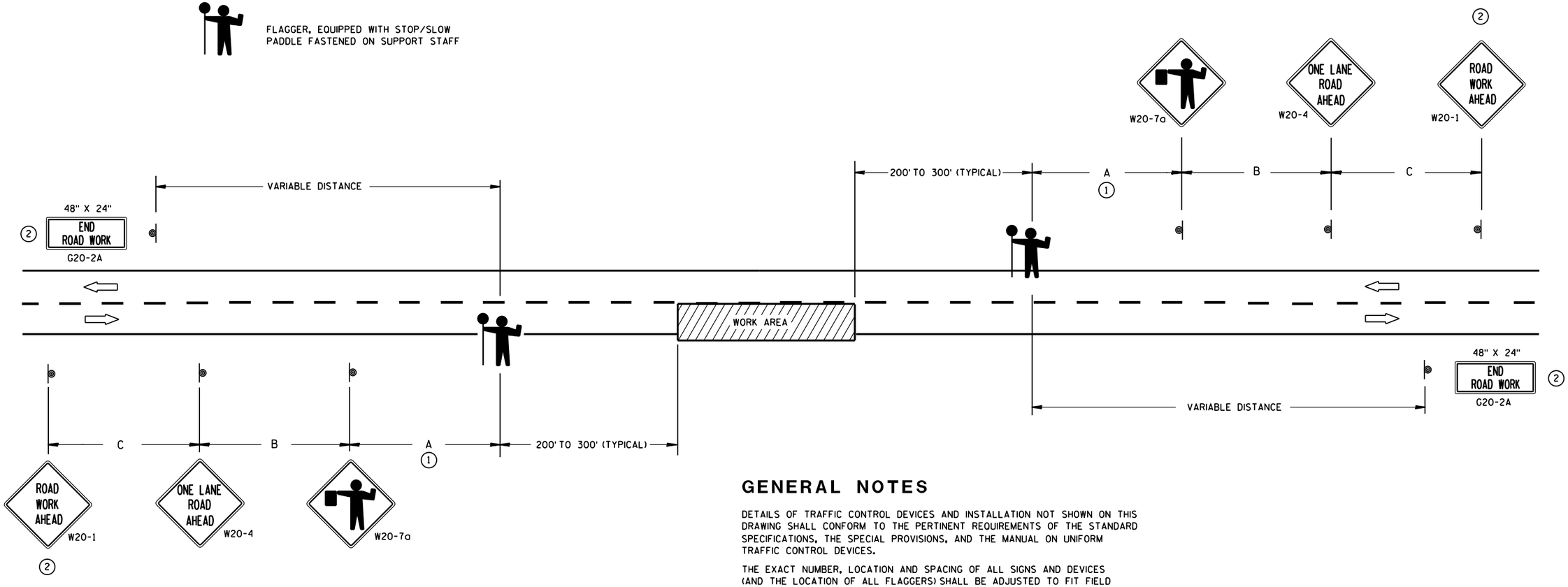
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

BE PREPARED TO STOP
W3-4

USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



(1) FOR A MOVING WORK OPERATION,
SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT 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.

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.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE 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.

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, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 12-4

6

S.D.D. 15 C 12-4

GENERAL NOTES

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

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

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

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

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.

W20-1 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.

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

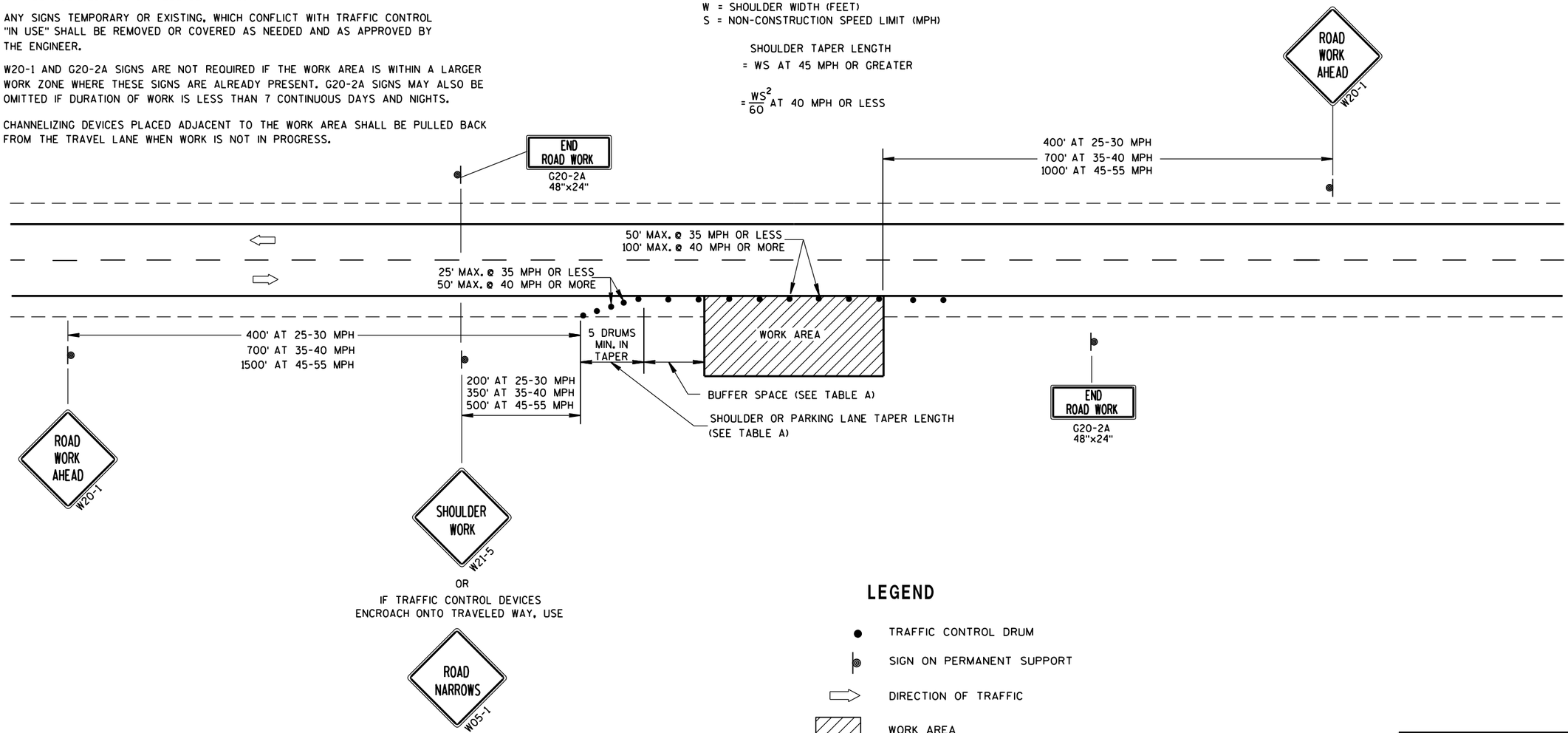
TABLE A

S \ W	SHOULDER TAPER LENGTH (FEET) 4	6	8	10	BUFFER SPACE (FEET)
30	20	30	40	50	85
35	30	45	55	70	120
40	40	55	75	90	170
45	60	90	120	150	220
50	70	100	135	170	280
55	75	110	150	185	335

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

SHOULDER TAPER LENGTH
= WS AT 45 MPH OR GREATER

$= \frac{WS^2}{60}$ AT 40 MPH OR LESS



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 D 28-2

6

S.D.D. 15 D 28-2

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC
- 4" X 6" WOOD POST
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE

W057-52
36"x24"

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

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"x48" UNLESS OTHERWISE NOTED.

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

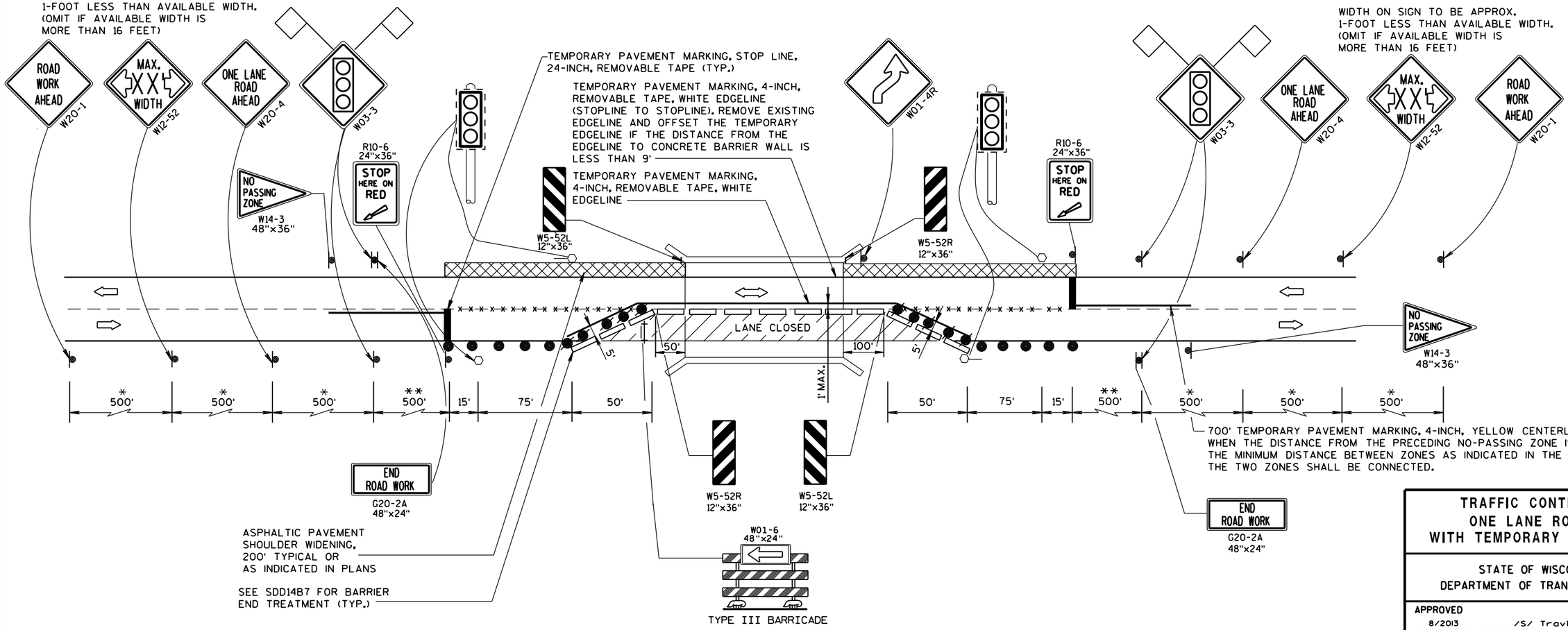
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.



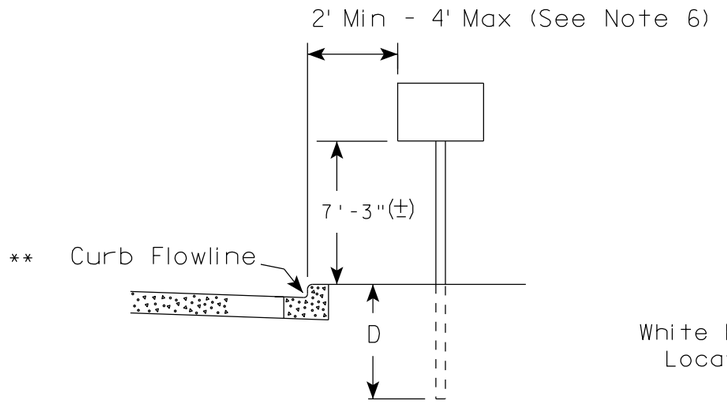
TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

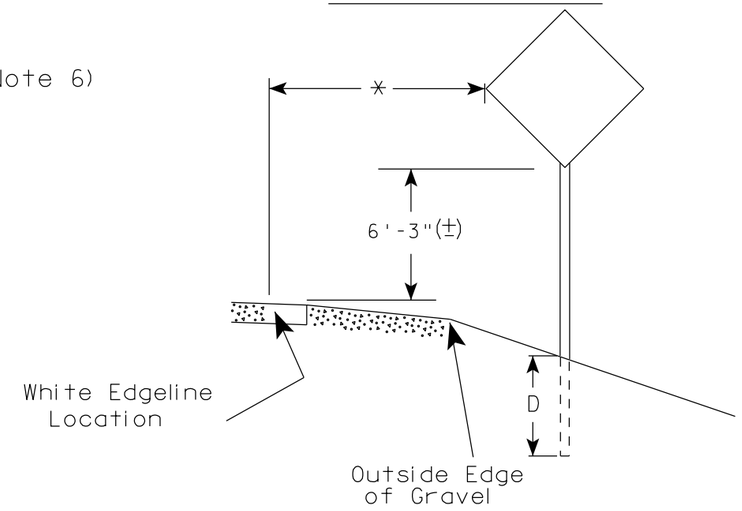
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

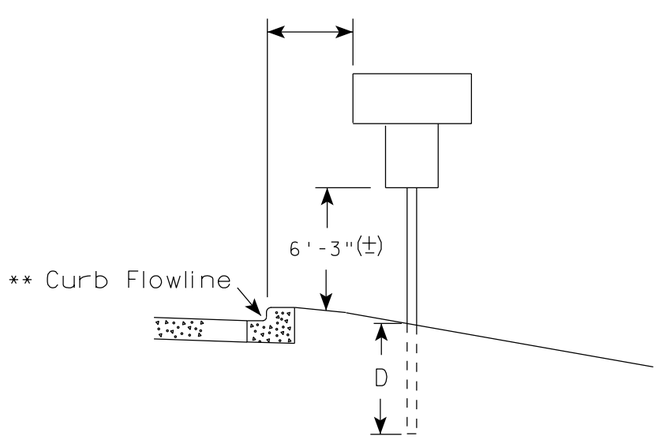
6
S.D.D. 15 D 33-3

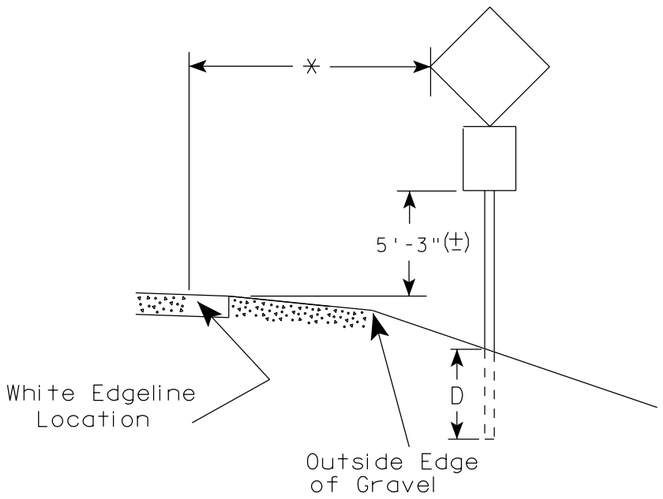
URBAN AREA



RURAL AREA (See Note 2)







** 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.

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, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. 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), 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" (±).

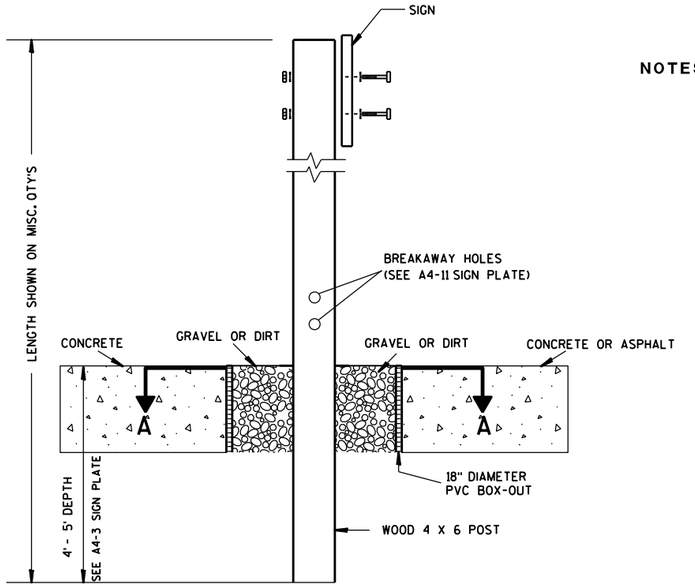
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-3.19

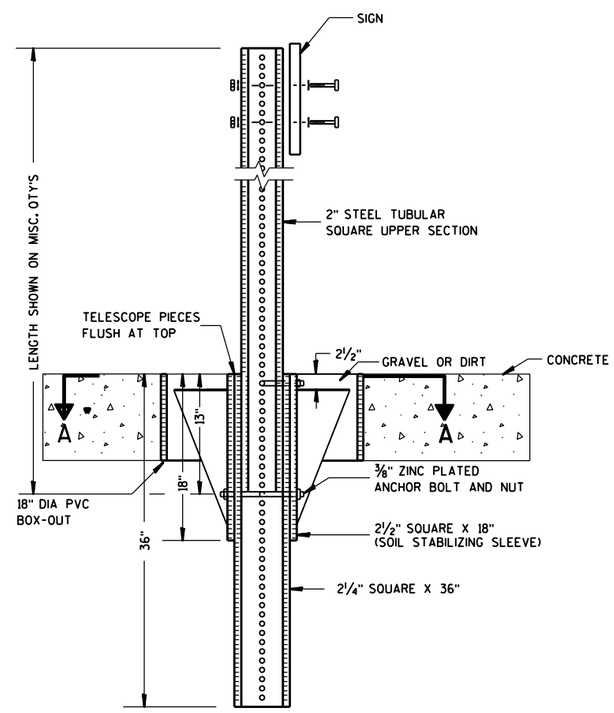
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

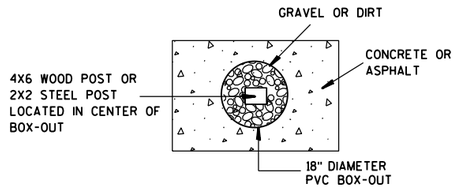
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

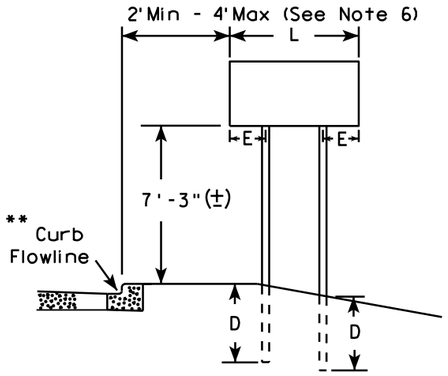
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

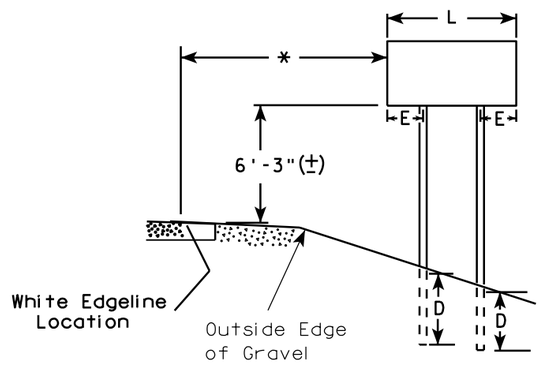
DATE 1/27/14 PLATE NO. A4-3B.1

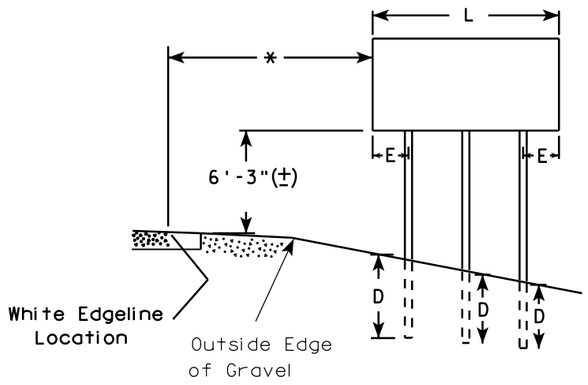
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

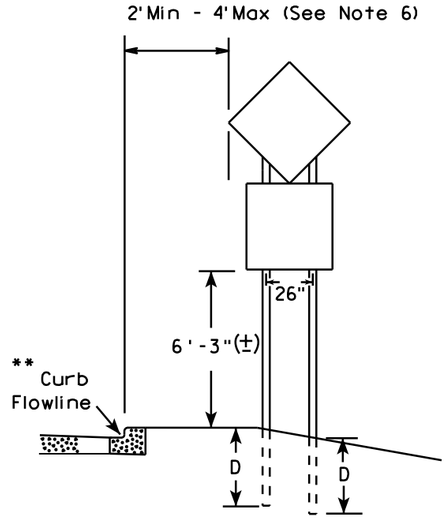
URBAN AREA



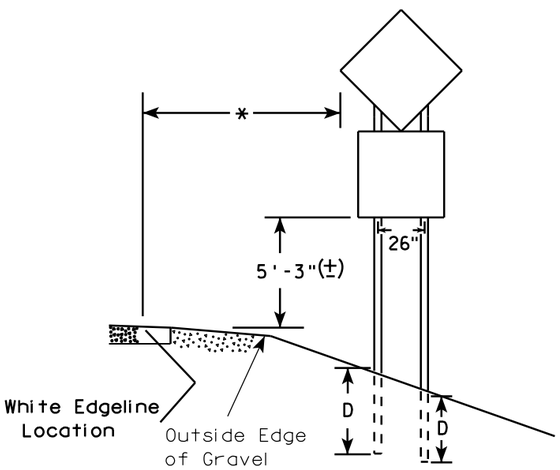
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
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" (±).

* 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 or 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 120"	L/5

***

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

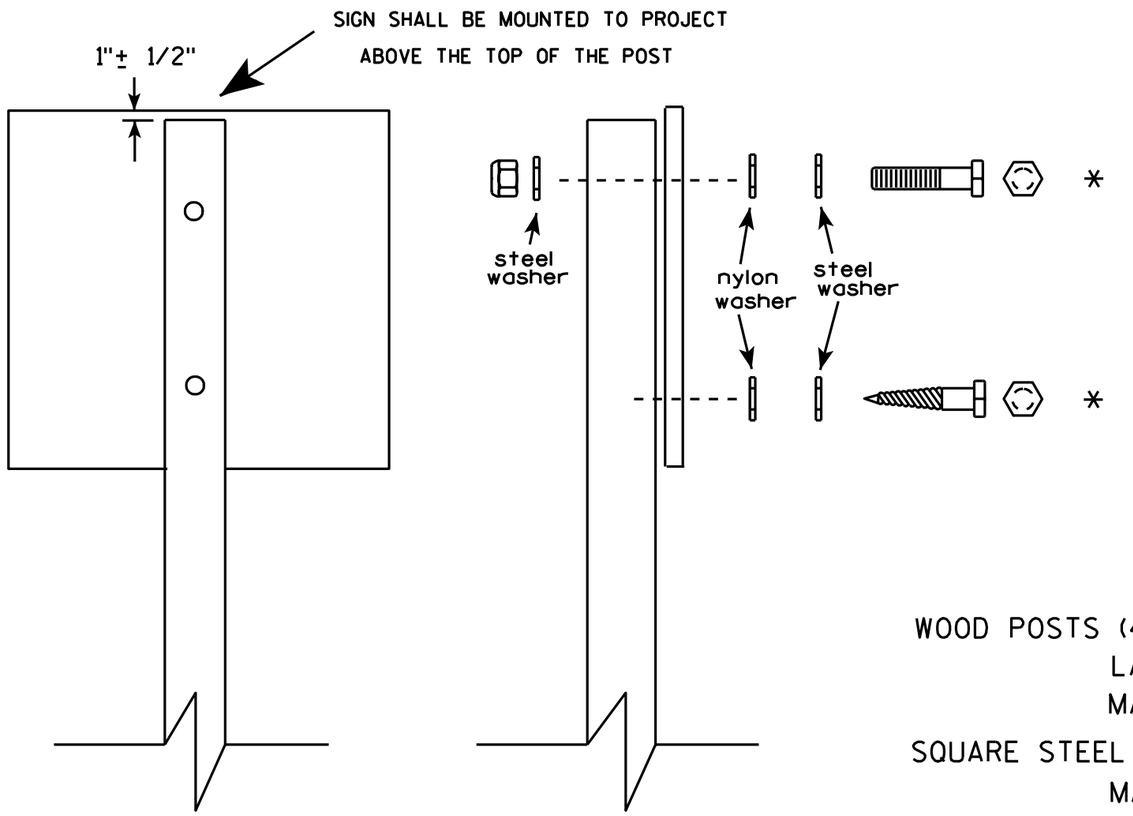
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-4 68 13

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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

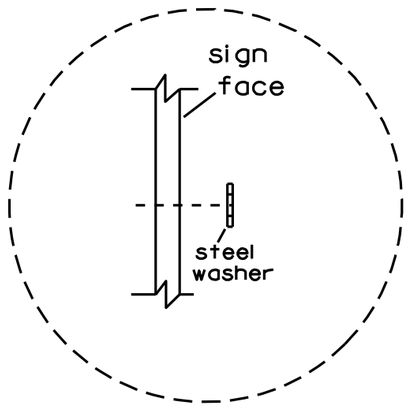
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
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 for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* 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 Matthew R Rauch
for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

PROJECT NO:

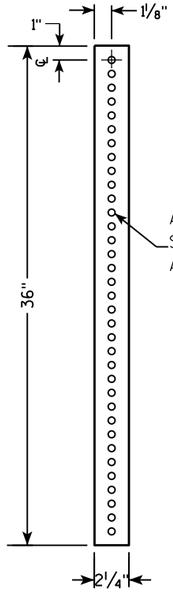
SHEET NO: 69 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\A48.DGN PLOT DATE : 23-MAR-2010 10:15 PLOT BY : ditjph

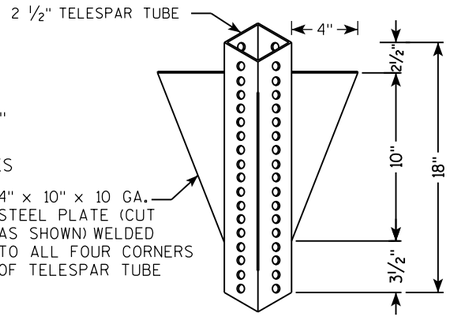
WISDOT/CADDS SHEET 42

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

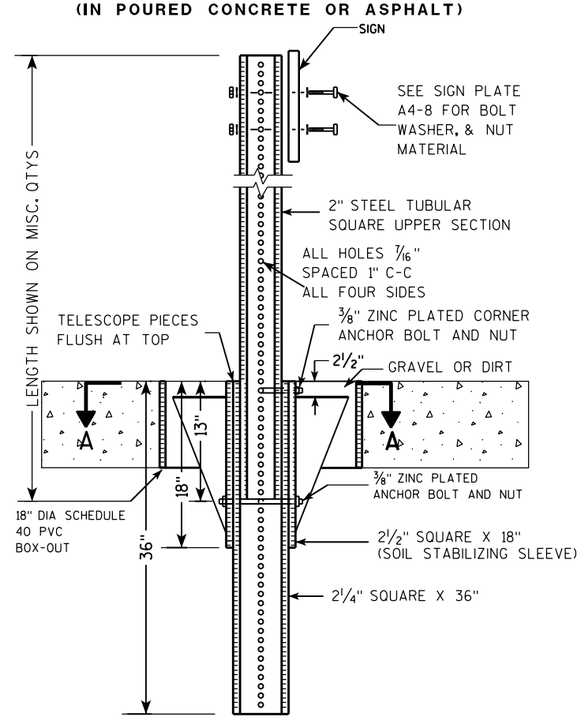
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



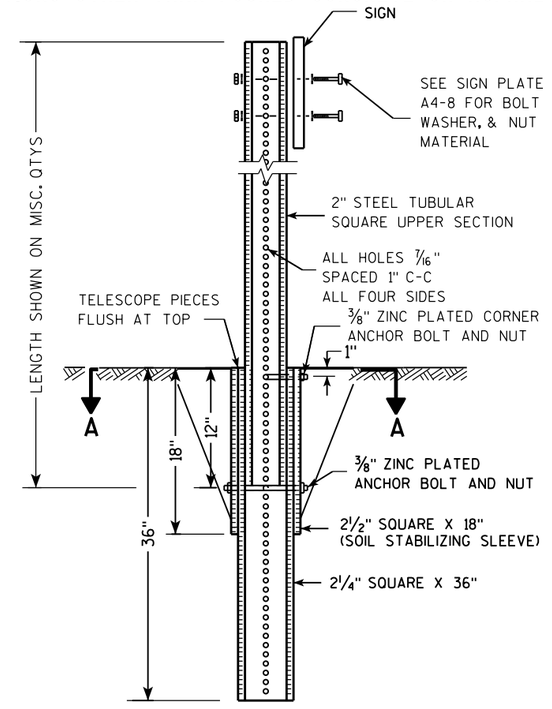
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

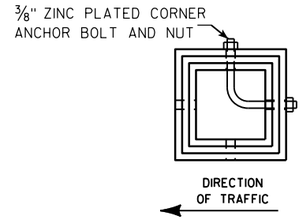


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

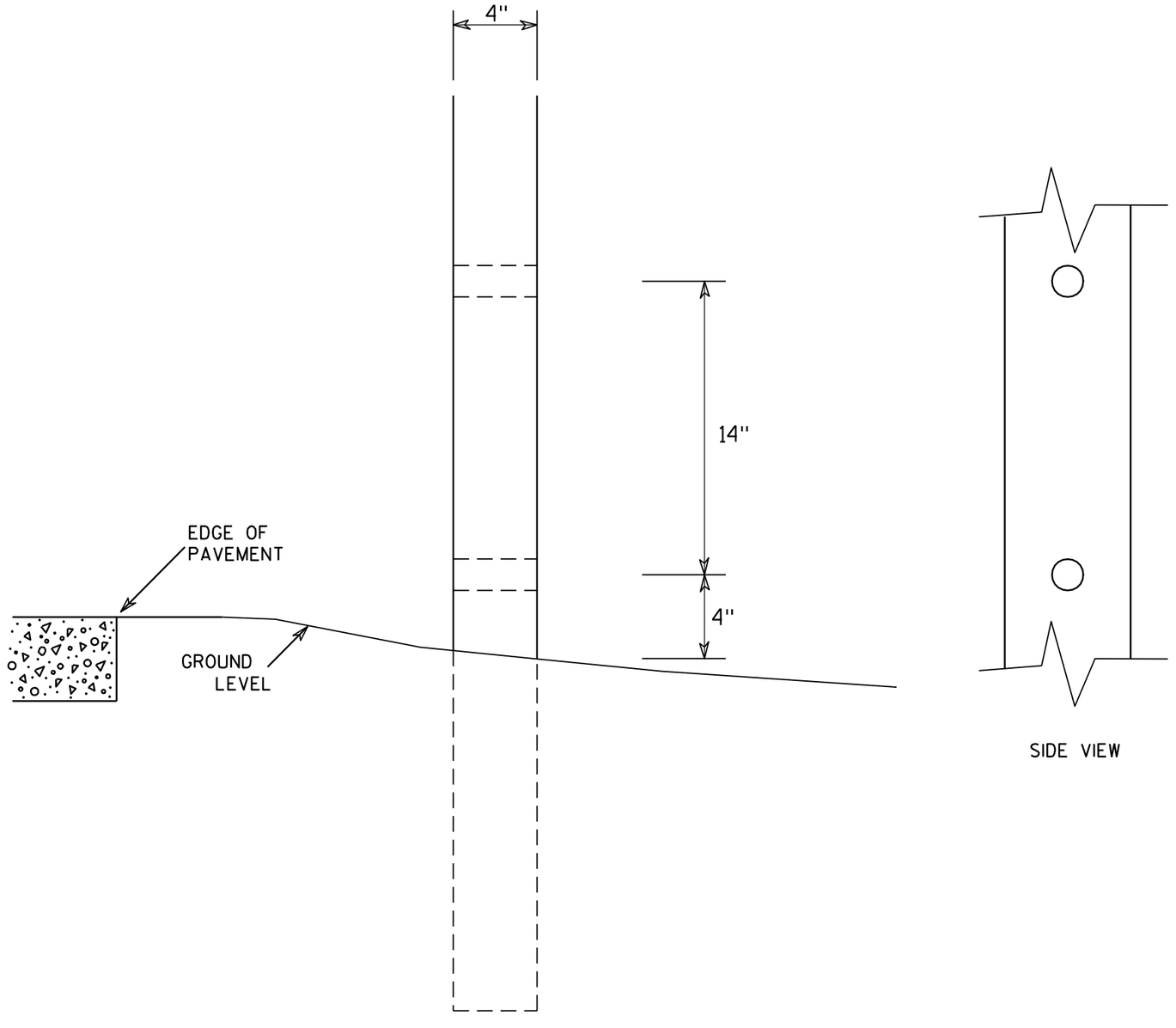
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 70 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



SIDE VIEW

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

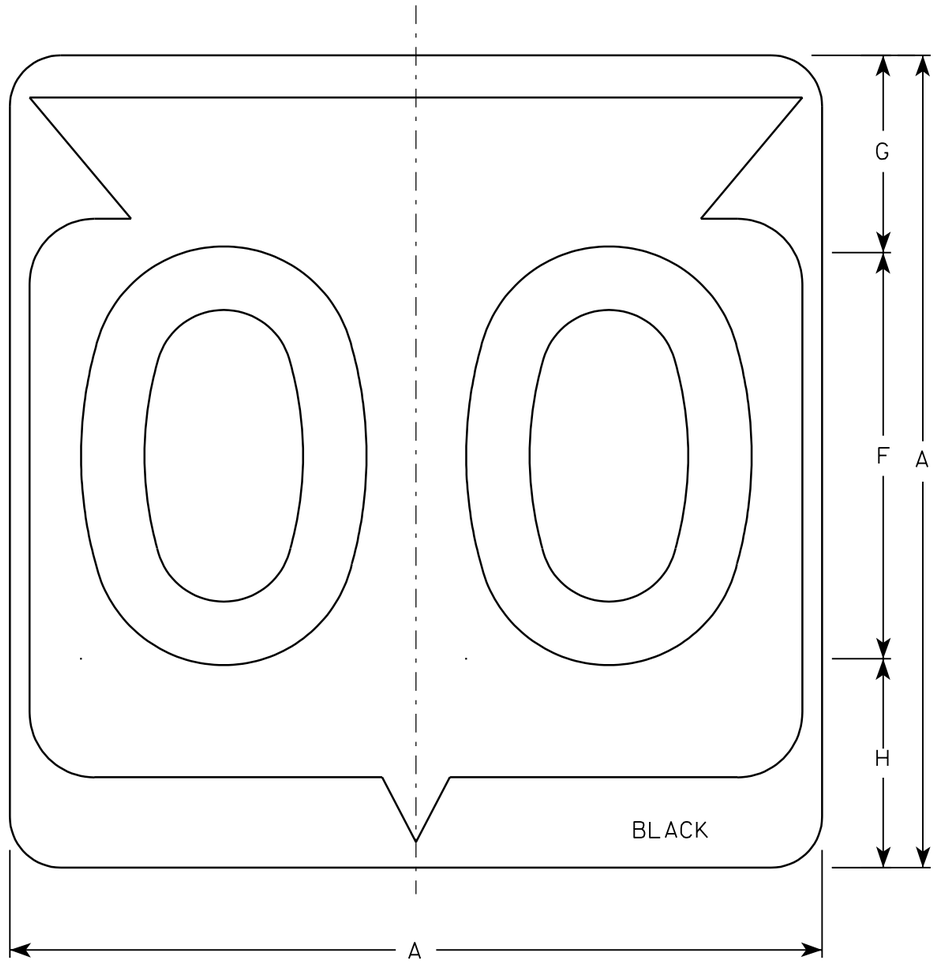
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

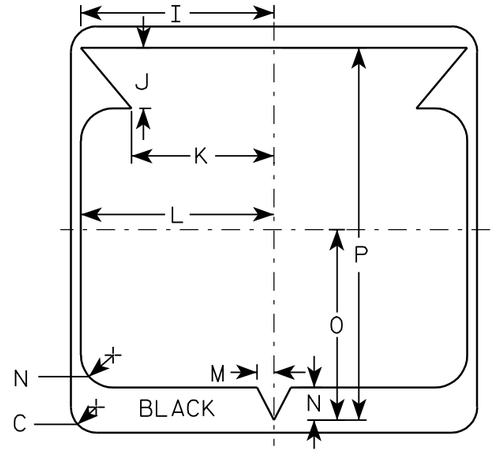
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 71	E



M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   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. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

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.	Area m2
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	.36
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	.81
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	.81
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	.81

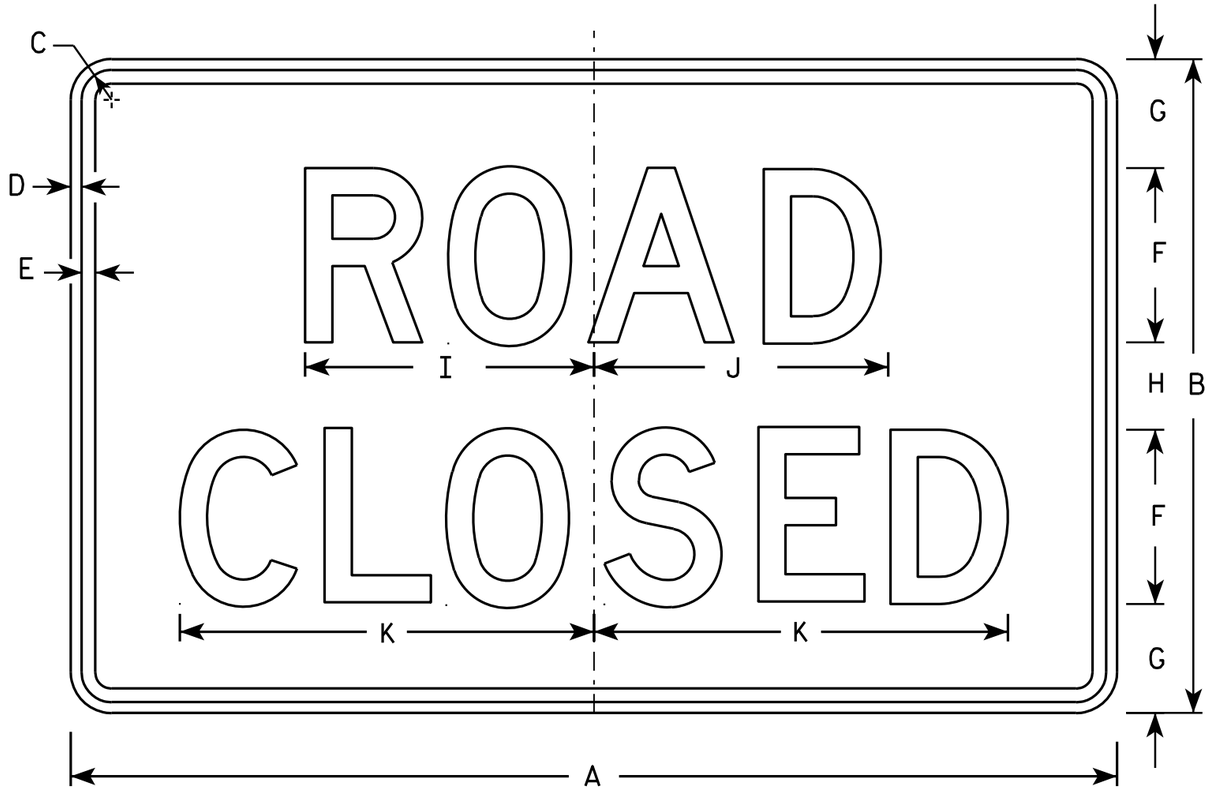
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

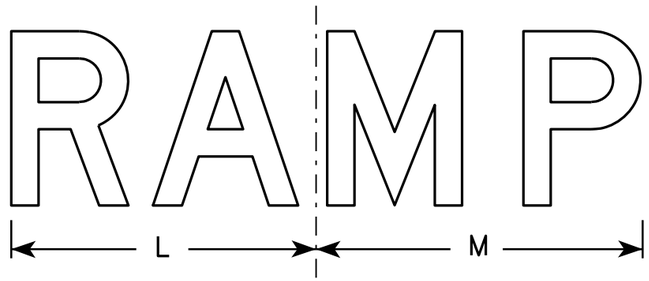
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 72	E



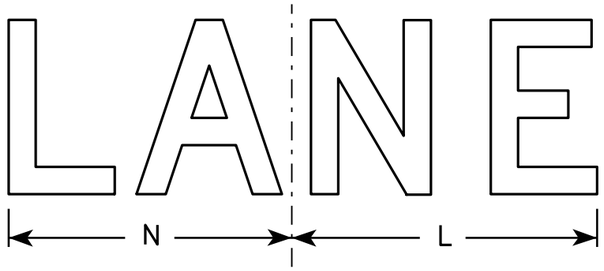
R11-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
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. Modify the message as required.



R11-2R



R11-2L

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	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0

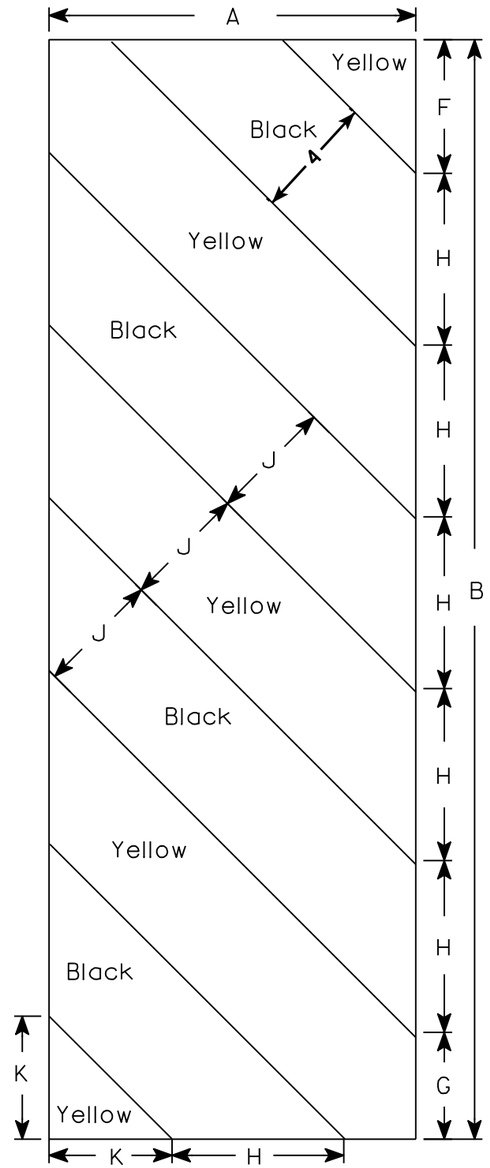
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

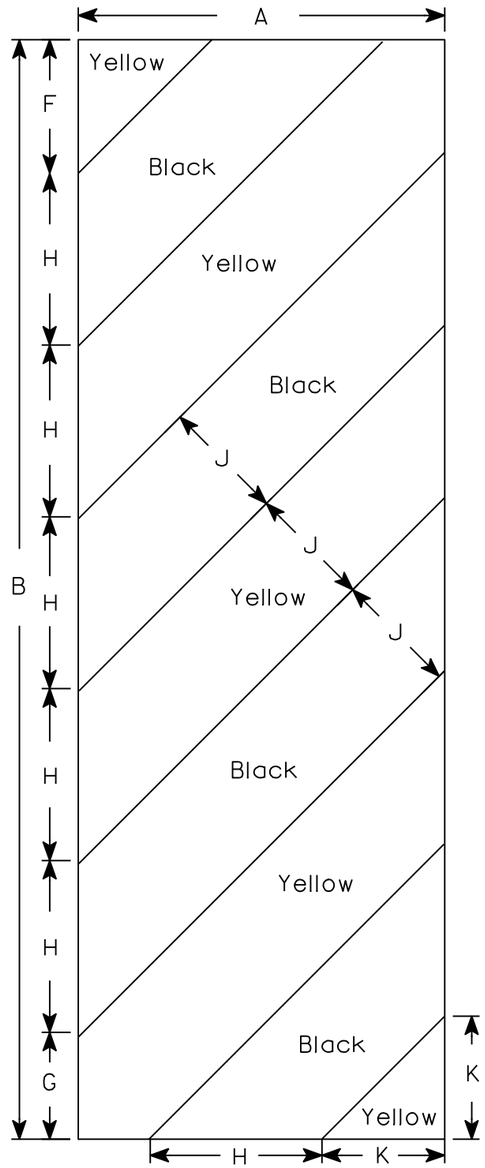
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 73	E



W5-52L



W5-52R

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.

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

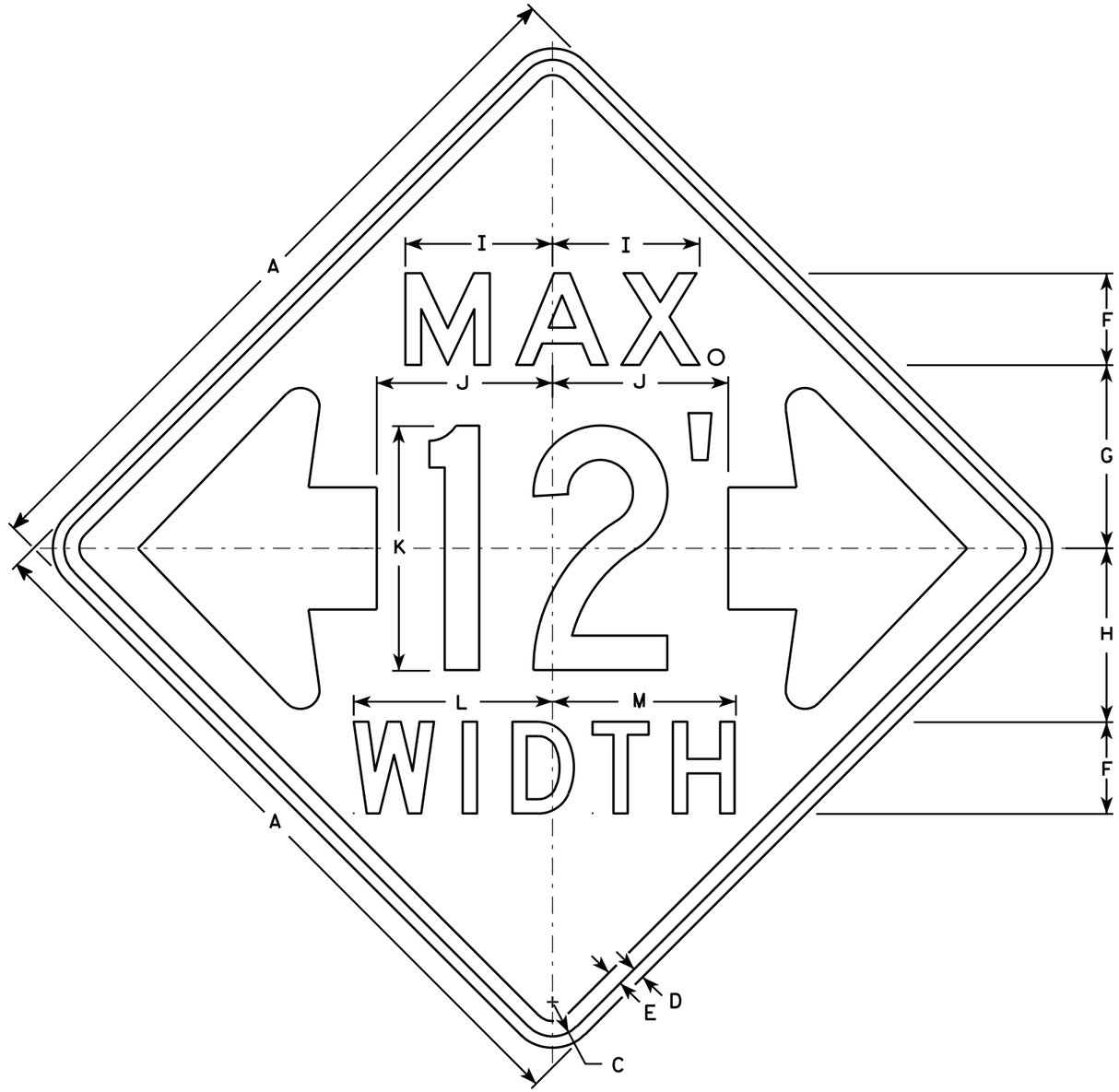
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

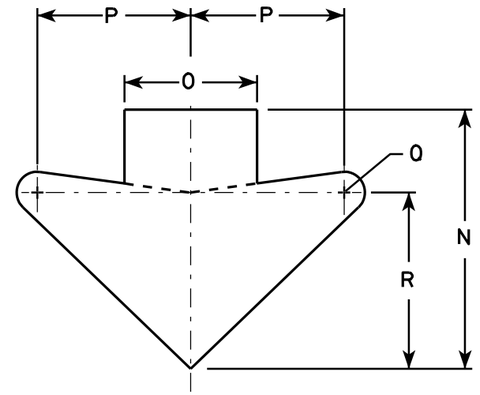
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 74 | E



W12-52

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
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. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



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	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN
W12-52

WISCONSIN DEPT OF TRANSPORTATION

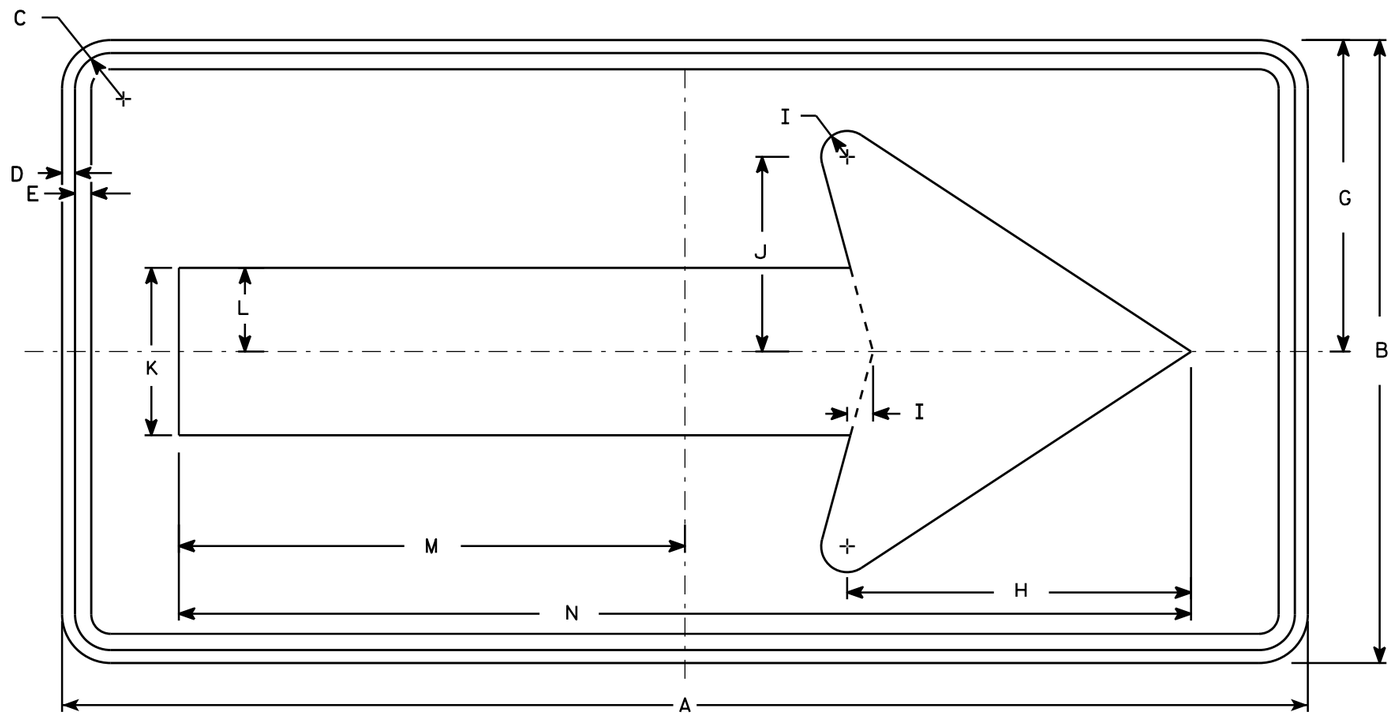
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 75 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W1252.DGN PLOT DATE : 16-MAR-2011 14:45 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.137199:1.000000
WISDOT/CADDS SHEET 42



W01-6

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

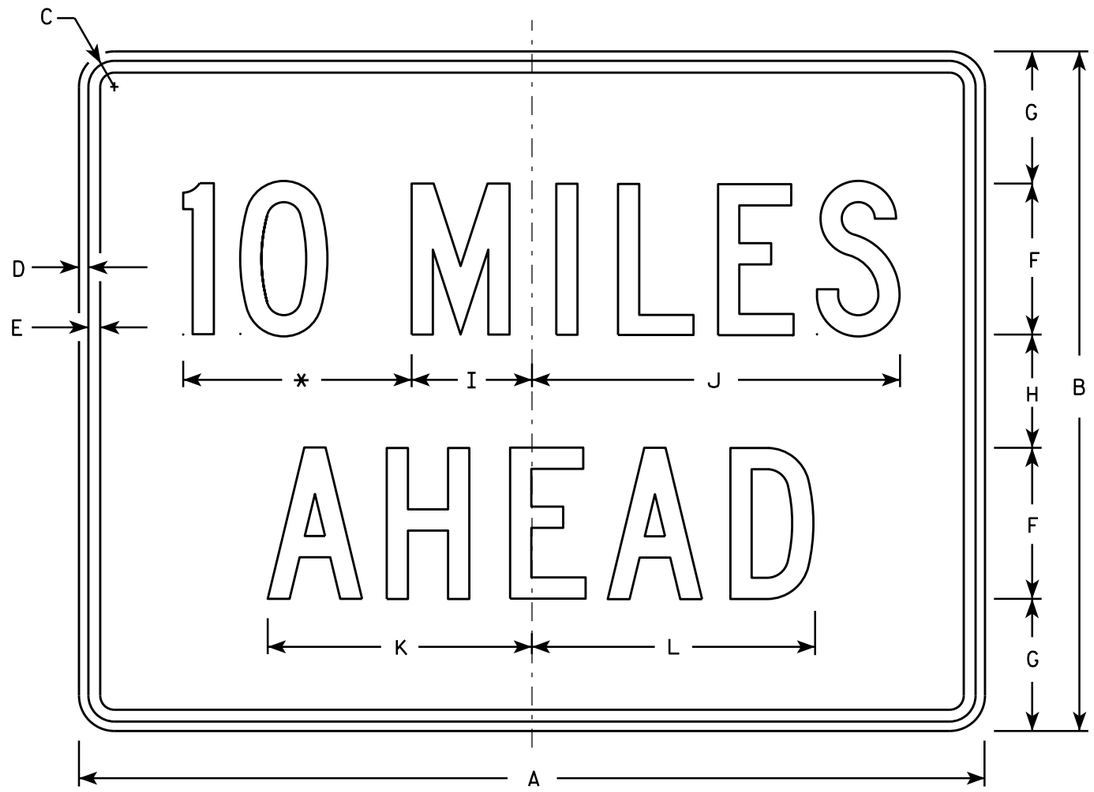
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

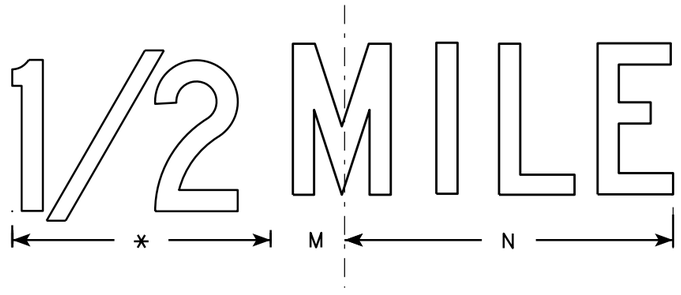
DATE 11/18/13 PLATE NO. W01-6.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W016.DGN PLOT DATE : 28-FEB-2014 11:37 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000 WISDOT/CADDS SHEET 42



W057-52



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
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. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

* See note 5

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	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	13													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	17 3/8													12.0

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

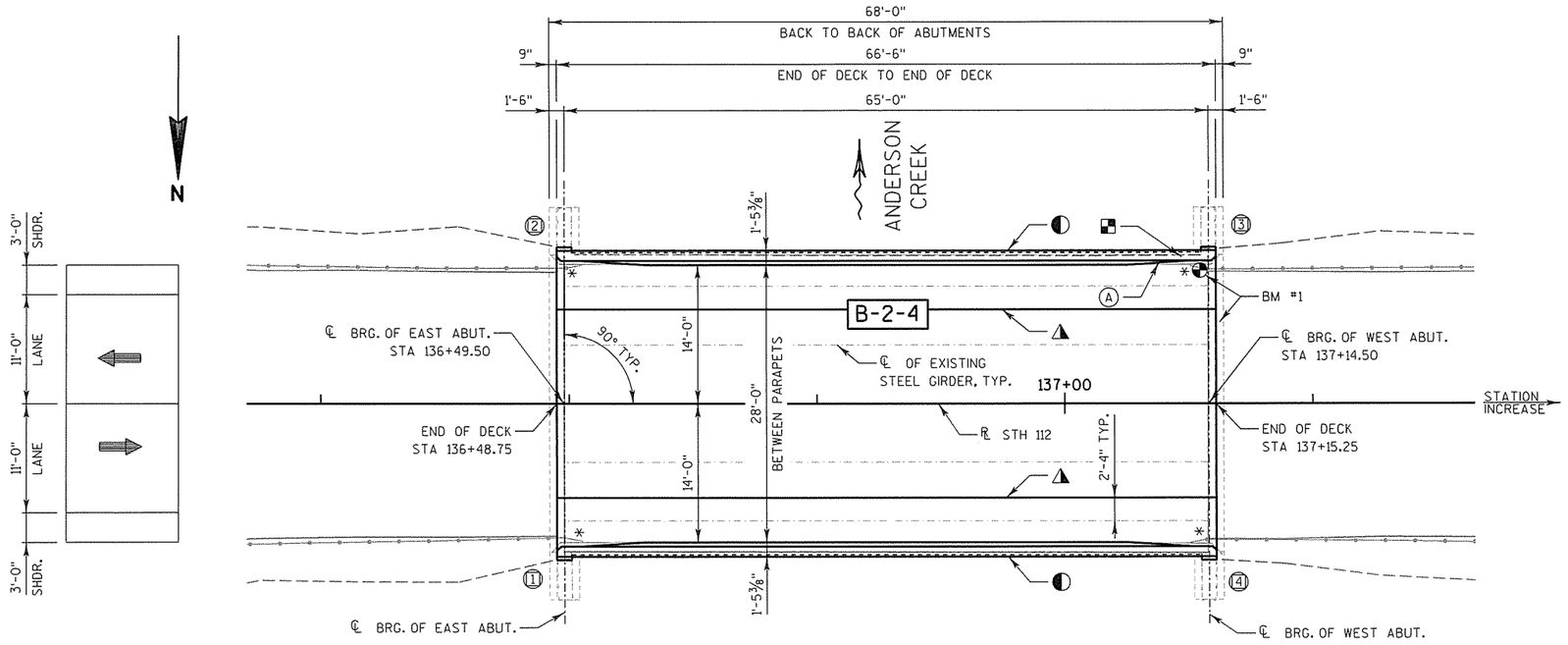
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W057-52.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

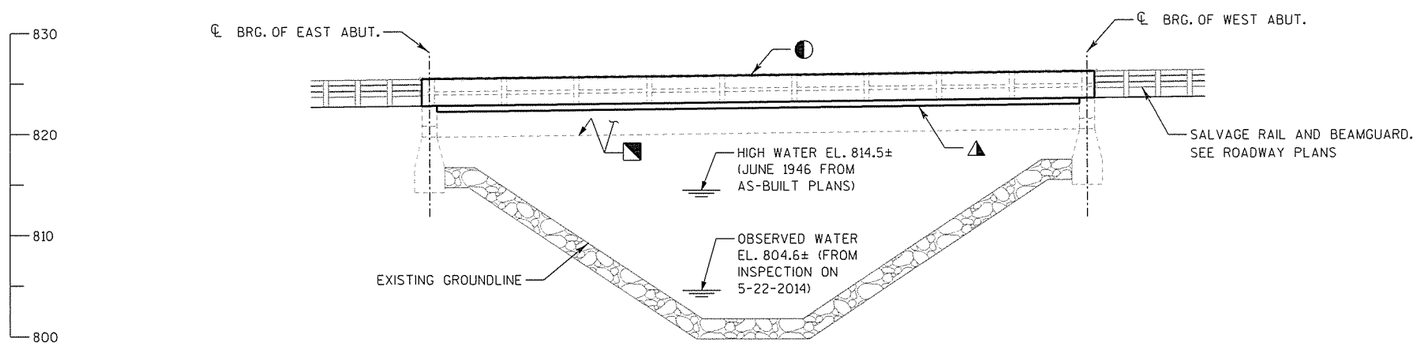
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W05752.DGN PLOT DATE : 28-FEB-2014 11:42 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 8.026599:1.000000 WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER
8727-06-70



PLAN

SINGLE SPAN-30" STEEL GIRDERS



ELEVATION

NORMAL TO ANDERSON CREEK
(LOOKING DOWNSTREAM)

BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
1	137+14.13' LT	WISDOT ALUMINUM DISK IN BRIDGE DECK	824.26

NOTES

(A) NEW NAME PLATE LOCATION

NEW BENCH MARK CAP TO BE ESTABLISH IN FIELD. PLACE ON TOP OF NEW PARAPET AS DETAILED ON "SINGLE SLOPE PARAPET 32SS" SHEET.

(X) DENOTES WINGWALL NUMBER

* THRIE BEAM RAIL ATTACHMENT

REMOVE AND DISPOSE OF EXISTING CONCRETE DECK OVERHANG. EXTENTS OF REMOVAL SHALL BE DEFINED BY SAWCUT. PLACE NEW CONCRETE DECK PRIOR TO PLACING POLYMER OVERLAY. SEE "SUPERSTRUCTURE DETAILS" SHEET FOR DETAILS.

REMOVE AND DISPOSE OF EXISTING TYPE "F" TUBULAR RAILING. REPLACE WITH SINGLE SLOPE 32SS CONCRETE PARAPET. SEE "SINGLE SLOPE PARAPET 32SS" SHEET FOR DETAILS.

CLEAN AND REPAINT EXTERIOR TOP OF BOTTOM FLANGE OF EXTERIOR STEEL GIRDER AND PORTIONS OF THE EXTERIOR WEB AS DIRECTED BY FIELD ENGINEER. WORK TO BE PAID FOR UNDER BID ITEMS "STRUCTURE OVERCOATING CLEANING CLEANING AND PRIMING B-2-4" AND "CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-2-4".

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HS-20
INVENTORY RATING: HS-12
OPERATING RATING: HS-20
WISCONSIN STD. PERMIT VEHICLE (WIS-SPV) = 160 KIPS

ULTIMATE DESIGN STRESSES:
CONCRETE MASONRY _____ f'c = 4,000 psi
HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 _____ fy = 60,000 psi

TRAFFIC DATA

ADT = 890 (2016)
ADT = 1,070 (2036)
RDS = 55 M.P.H.

WISCONSIN
MICHAEL D. RADTKE
40967
Elm Grove WI
PROFESSIONAL ENGINEER
JAN 27 2015

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. CROSS SECTION AND QUANTITIES
3. SUPERSTRUCTURE DETAILS
4. SINGLE SLOPE PARAPET 32SS

STRUCTURE DESIGN CONTACTS

BRIDGE OFFICE: WILLIAM DREHER (608) 266-8489
CONSULTANT: MIKE RADTKE (414) 347-1607

NO.	DATE	REVISION	BY

emcs INC
1300 W. Canal Street, Suite 200
Milwaukee, WI 53233
414.347.1607 Fax 414.347.1347

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher KAR 02/05/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-2-4

S.T.H. 112 OVER ANDERSON CREEK

COUNTY	TOWN
ASHLAND	WHITE RIVER

DESIGN SPEC. REHABILITATION N/A

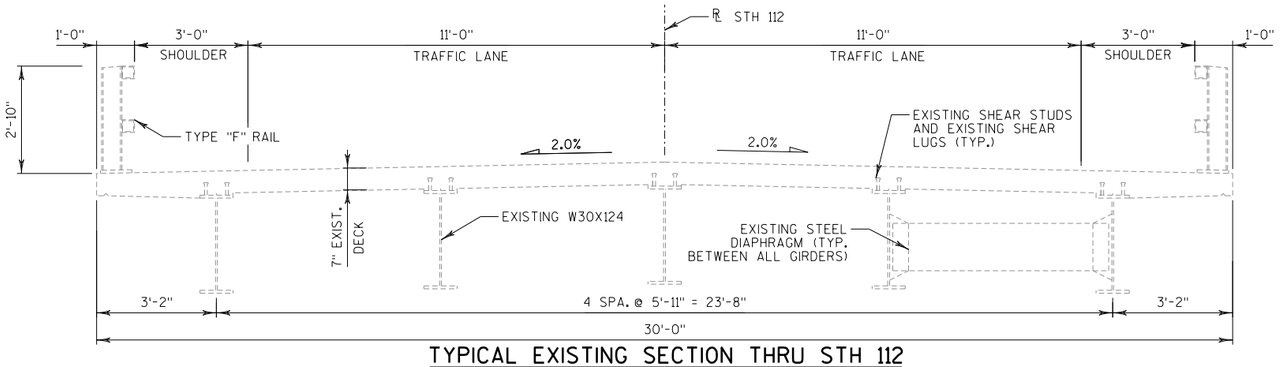
DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
AJC	MDR	AJC	MDR

GENERAL PLAN & ELEVATION

SHEET 1 OF 4
78

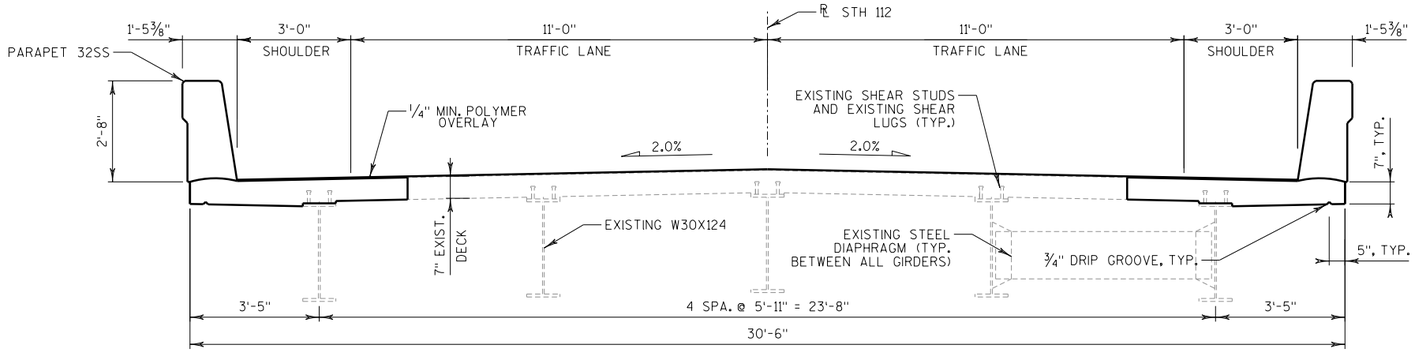
8

8



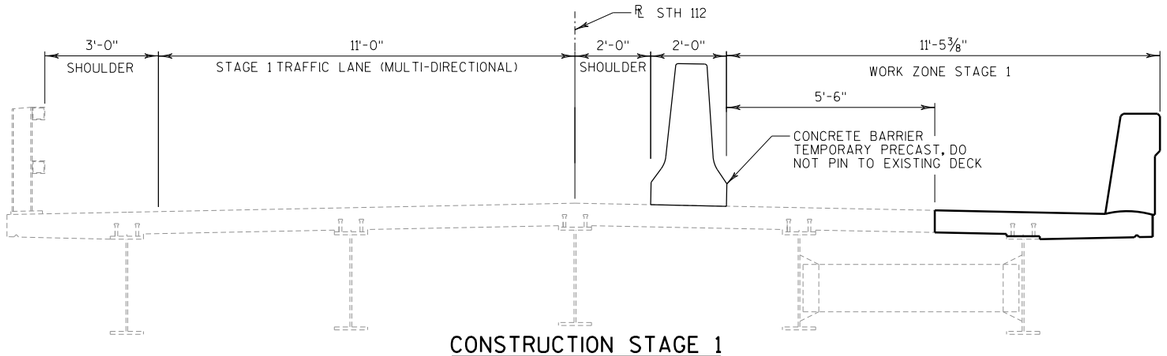
TYPICAL EXISTING SECTION THRU STH 112

LOOKING UPSTATION



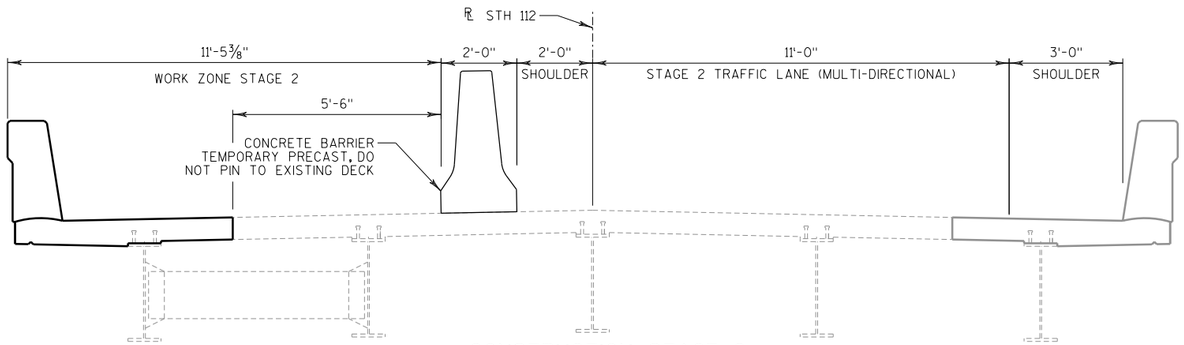
TYPICAL PROPOSED SECTION THRU STH 112

LOOKING UPSTATION



CONSTRUCTION STAGE 1

LOOKING UPSTATION



CONSTRUCTION STAGE 2

LOOKING UPSTATION

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET. ELEVATIONS REFERENCED TO NAVD 88, 2011 ADJUSTMENT.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED

ALL REINFORCING BARS ARE ENGLISH DESIGNATION AND THE FIRST DIGIT OF A 3-DIGIT BAR MARK OR FIRST TWO DIGITS OF A 4-DIGIT BAR MARK SIGNIFY THE BAR SIZE.

INFORMATION SHOWN IN THESE PLANS RELATING TO THE EXISTING BRIDGE IS BASED UPON DRAWINGS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

ANY EXCAVATION OR BACKFILL REQUIRED TO COMPLETE THE OVERLAY AND DECK OVERHANG IS INCIDENTAL TO THE BID ITEM CONCRETE MASONRY BRIDGES 502.0100.

PREPARATION OF THE DECK PRIOR TO POLYMER OVERLAY IS INCLUDED IN THE POLYMER OVERLAY BID ITEM.

THE CONTRACTOR MUST PROTECT THE EXISTING REINFORCEMENT STEEL, EXISTING STEEL GIRDERS, AND THE EXISTING SHEAR STUDS AND LUGS DURING DEMOLITION. REPLACEMENT OF BRIDGE COMPONENTS DAMAGED DURING THE REMOVAL OF THE EXISTING DECK WILL BE THE CONTRACTOR'S RESPONSIBILITY AND REPLACED AT NO ADDITIONAL COST TO THE STATE.

CONSTRUCTION STAGES 1 AND 2 SHOWN FOR REHABILITATION OF DECK OVERHANG. POLYMER OVERLAY WILL BE COMPLETED IN STAGES 3 AND 4 IN A SIMILAR MANNER. SEE ROADWAY PLANS FOR DETAILS.

ALL REMOVAL LINES SHALL BE DEFINED BY A 1" DEEP SAW CUT AT THE CONCRETE SURFACES.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTION YEAR OF 1955.

APPLY PROTECTIVE SURFACE TREATMENT TO TOP AND INSIDE FACE OF PARAPETS. PROTECTIVE SURFACE TREATMENT SHALL HAVE A GRAY PIGMENT.

THE USE OF BRIDGE OVERHANG BRACKETS FOR DECK FORMING IS PROHIBITED UNLESS CONTRACTOR PROVIDES ENGINEER STAMPED DESIGN FOR SHORING SYSTEM. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SUPPORT SYSTEM DURING CONSTRUCTION.

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	TOTAL
203.0500.S	REMOVING OLD STRUCTURE OVER WATERWAY STATION 136+49	LS	1
502.0100	CONCRETE MASONRY BRIDGES	CY	34
502.3200	PROTECTIVE SURFACE TREATMENT	SY	56
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	8840
509.5100.S	POLYMER OVERLAY	SY	207
517.0900.S	PREPARATION AND COATING OF TOP FLANGES B-2-4	LS	1
517.3000.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-2-4	LS	1
517.4000.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-2-4	LS	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4
	NON-BID ITEMS		
	PREFORMED JOINT FILLER	SIZE	1/2"

STATE PROJECT NUMBER

8727-06-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-2-4

DRAWN BY MDR | PLANS CK'D. AJC

CROSS SECTION AND QUANTITIES

SHEET 2 OF 4
79

8

8

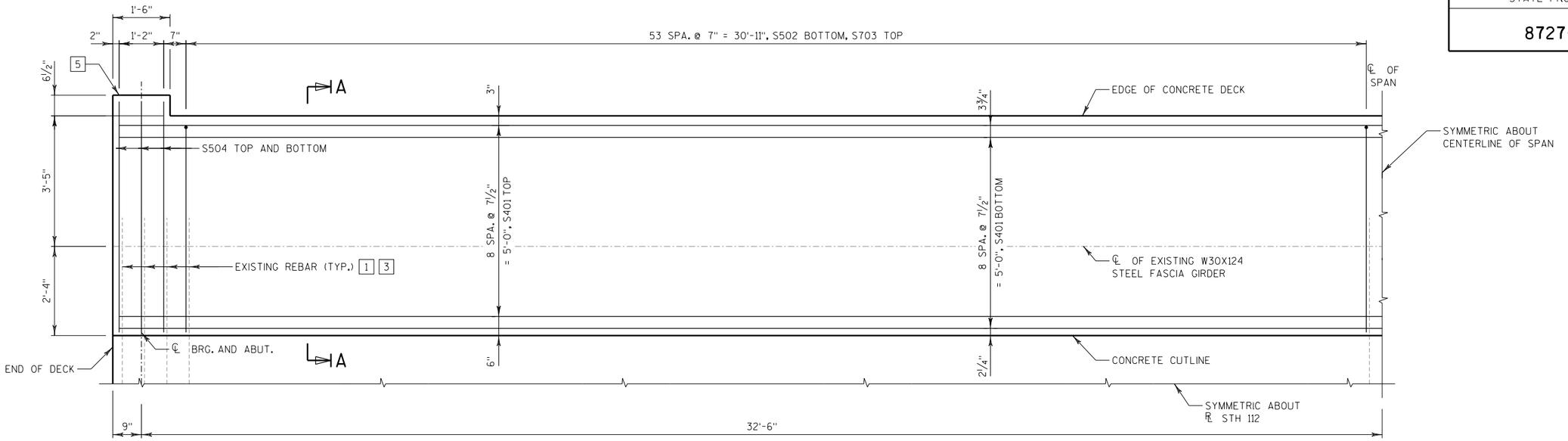
FILE NAME : P:\48xx\4878.DP.13.STH112.ASH\09 STRUCTURES\B-2-4_STH 112 over Anderson Creek\Plan\080102_ts.dgn

PLOT DATE : 1/27/2015

PLOT BY : ajc

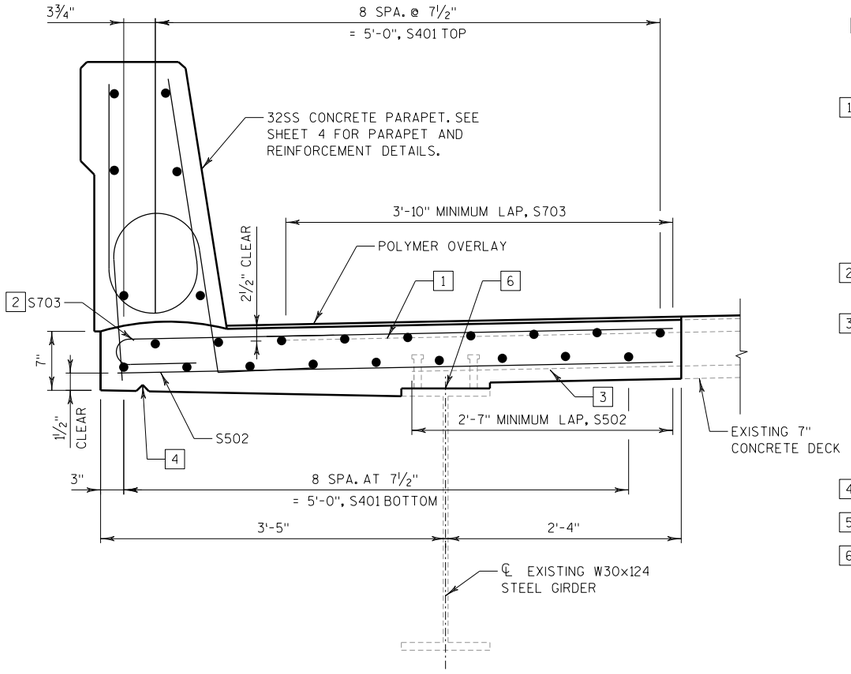
STATE PROJECT NUMBER

8727-06-70



PARTIAL DECK PLAN

SINGLE SPAN-30" STEEL GIRDERS



SECTION A-A

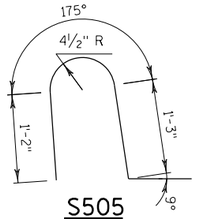
NOTES

PARAPET REINFORCEMENT NOT SHOWN FOR CLARITY. SEE SHEET 4 FOR PARAPET REINFORCEMENT DETAILS.

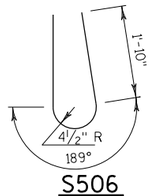
1. CUT, SALVAGE AND LAP EXISTING #5 BAR TO NEW #7 STANDARD 180° HOOK. PROTECT AND PRESERVE ENOUGH EXISTING BAR TO CREATE A MINIMUM 3'-10" LAP. FIELD ENGINEER TO DETERMINE THE ADEQUACY OF ALL EXISTING SALVAGED REBAR. SALVAGING REINFORCEMENT WILL INCLUDE CLEANING AND ALIGNING AS PER STANDARD SPECIFICATION 509. IF EXISTING STEEL IS DAMAGED DURING REMOVAL AND CANNOT BE SPLICED AS SHOWN THE CONTRACTOR MUST PROVIDE MECHANICAL BAR COUPLERS AT NO ADDITIONAL COST TO THE OWNER.
2. ROTATE #7 HOOKS HORIZONTALLY AS NEEDED TO ACHIEVE MINIMUM TOP AND BOTTOM CLEAR COVER.
3. CUT, SALVAGE AND LAP EXISTING #5 BAR TO NEW #5 STANDARD 180° HOOK. PROTECT AND PRESERVE ENOUGH EXISTING BAR TO CREATE A MINIMUM 2'-7" LAP. FIELD ENGINEER TO DETERMINE THE ADEQUACY OF ALL EXISTING SALVAGED REBAR. SALVAGING REINFORCEMENT WILL INCLUDE CLEANING AND ALIGNING AS PER STANDARD SPECIFICATION 509. IF EXISTING STEEL IS DAMAGED DURING REMOVAL AND CANNOT BE SPLICED AS SHOWN THE CONTRACTOR MUST PROVIDE MECHANICAL BAR COUPLERS AT NO ADDITIONAL COST TO THE OWNER.
4. PROVIDE ¾" V GROOVE 5" FROM EDGE, TYPICAL.
5. REPLACE EXISTING JOINT FILLER.
6. PREPARE AND COAT TOP FLANGES OF GIRDER PRIOR TO PLACING NEW CONCRETE MASONARY. WORK TO BE PAID UNDER BID ITEM "PREPARATION AND COATING OF TOP FLANGES B-2-4".

BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	72	33'-11"			SLAB LONG. TOP & BOTTOM
S502	X	216	5'-5"			SLAB TRANS. BOTTOM
S703	X	216	6'-3"	X		SLAB TRANS. TOP
S504	X	20	6'-0"			TOP & BOT. SLAB AT ABUT.
S505	X	148	4'-5"	X		PARAPET VERT.
S506	X	148	5'-0"	X		PARAPET VERT.
S507	X	48	2'-9"	X		PARAPET VERT.
S508	X	68	4'-4"	X		PARAPET VERT.
S509	X	44	4'-9"	X		PARAPET VERT.
S510	X	24	4'-10"	X		PARAPET VERT.
S511	X	4	34'-5"	X		PARAPET HORIZ.
S512	X	20	34'-5"			PARAPET HORIZ.



S505



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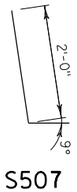

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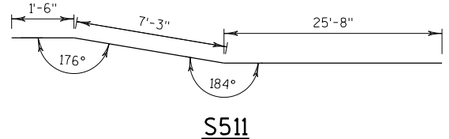

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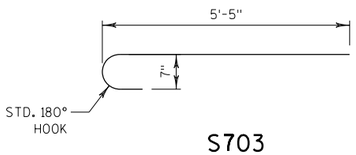

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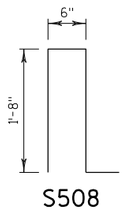

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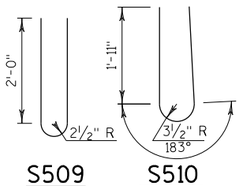


S509 S510

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-2-4

DRAWN BY AJC | PLANS CK'D. MDR

SUPERSTRUCTURE DETAILS

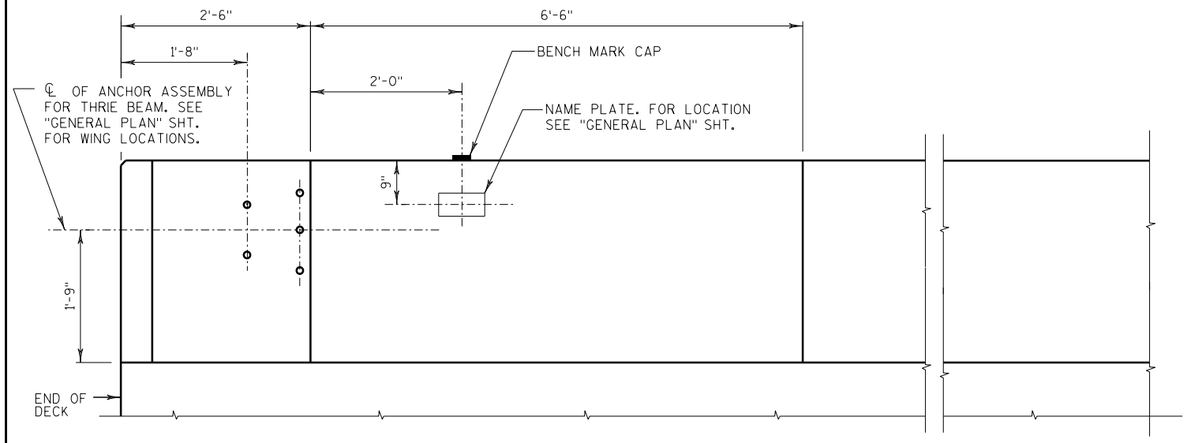
SHEET 3 OF 4
80

8

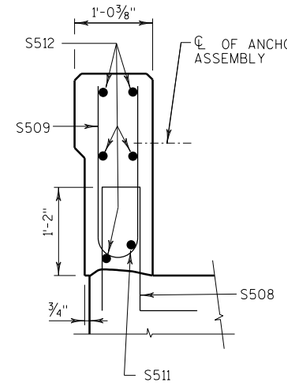
8

STATE PROJECT NUMBER

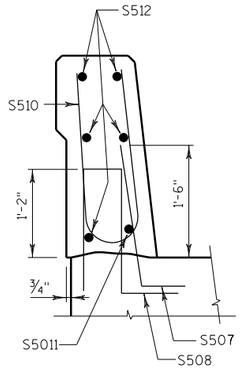
8727-06-70



INSIDE ELEVATION



SECTION A



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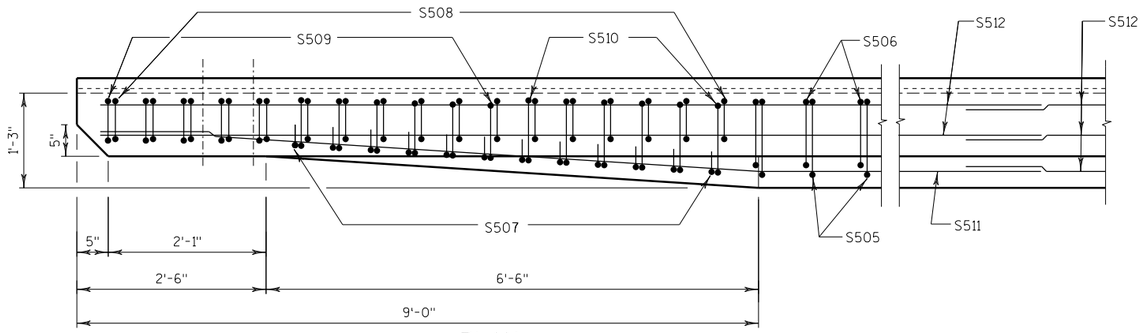
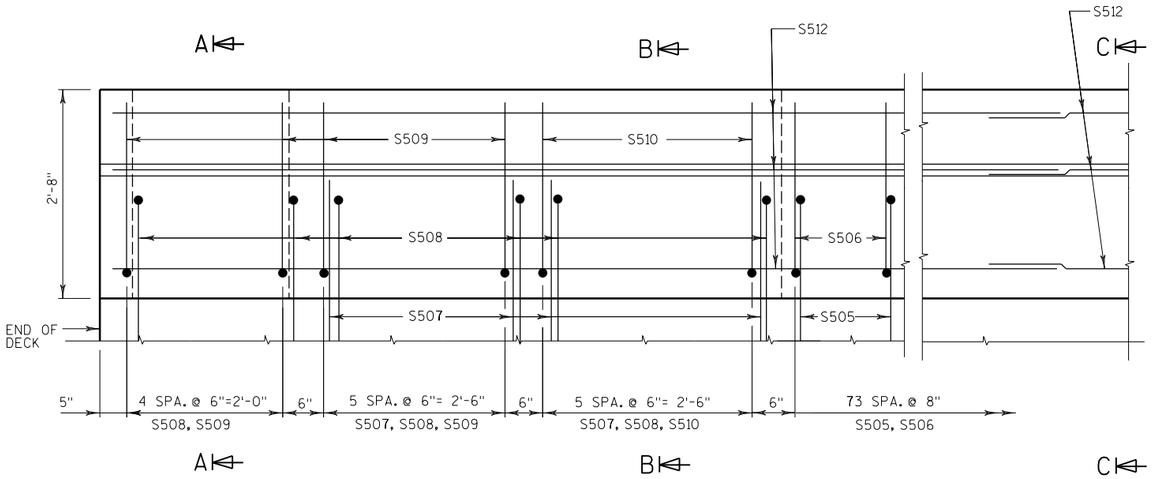
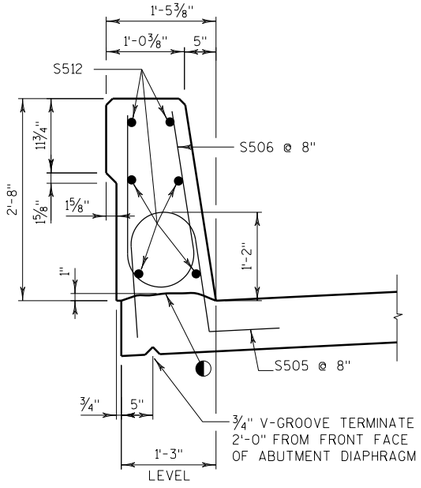


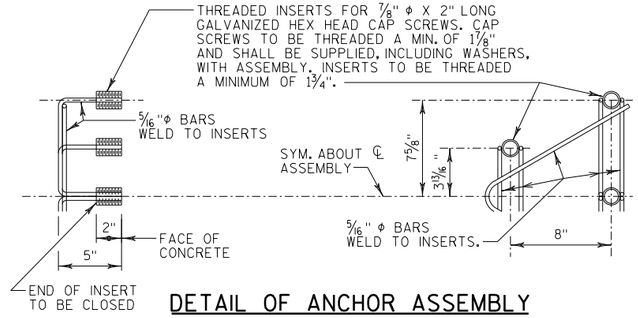
PLAN



OUTSIDE ELEVATION



SECTION C



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

NOTES

SEE SHEET 3 FOR BILL OF BARS AND BEND DIAGRAMS

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-2-4

DRAWN BY AJC | PLANS CK'D. MDR

SINGLE SLOPE PARAPET 32SS

SHFFT 4 OF 4

81

8

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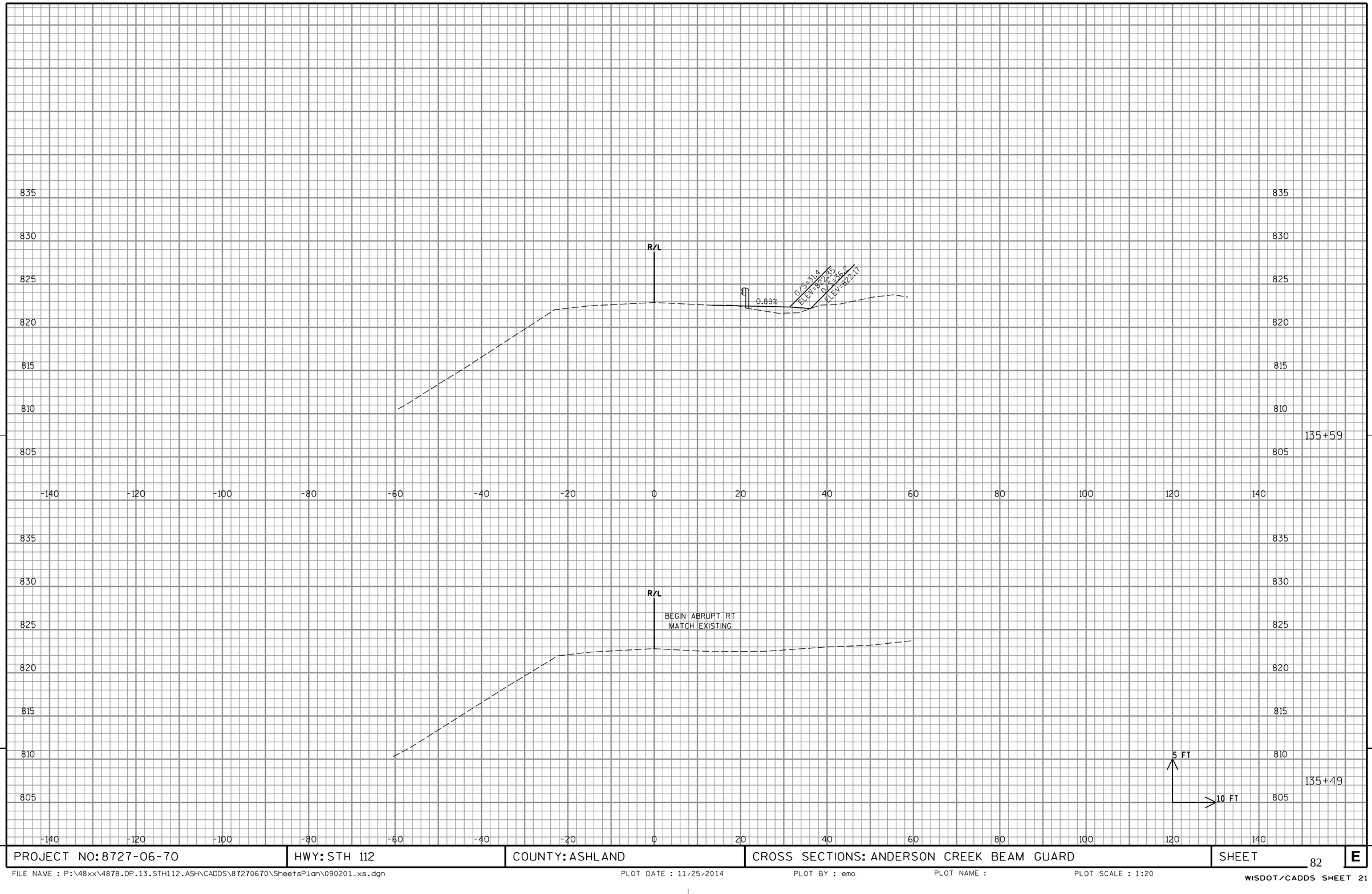

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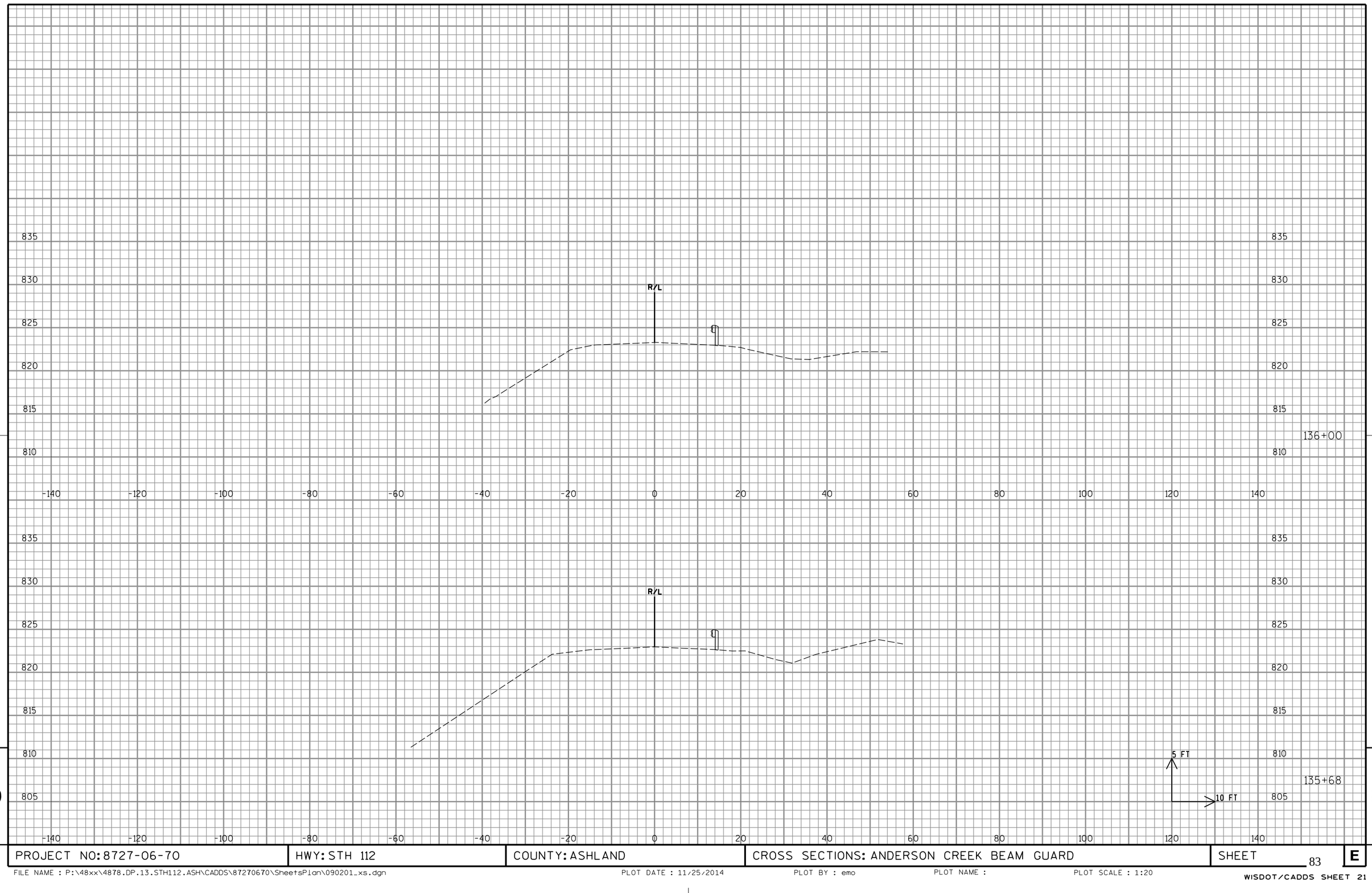
PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 82	E



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PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 83	E

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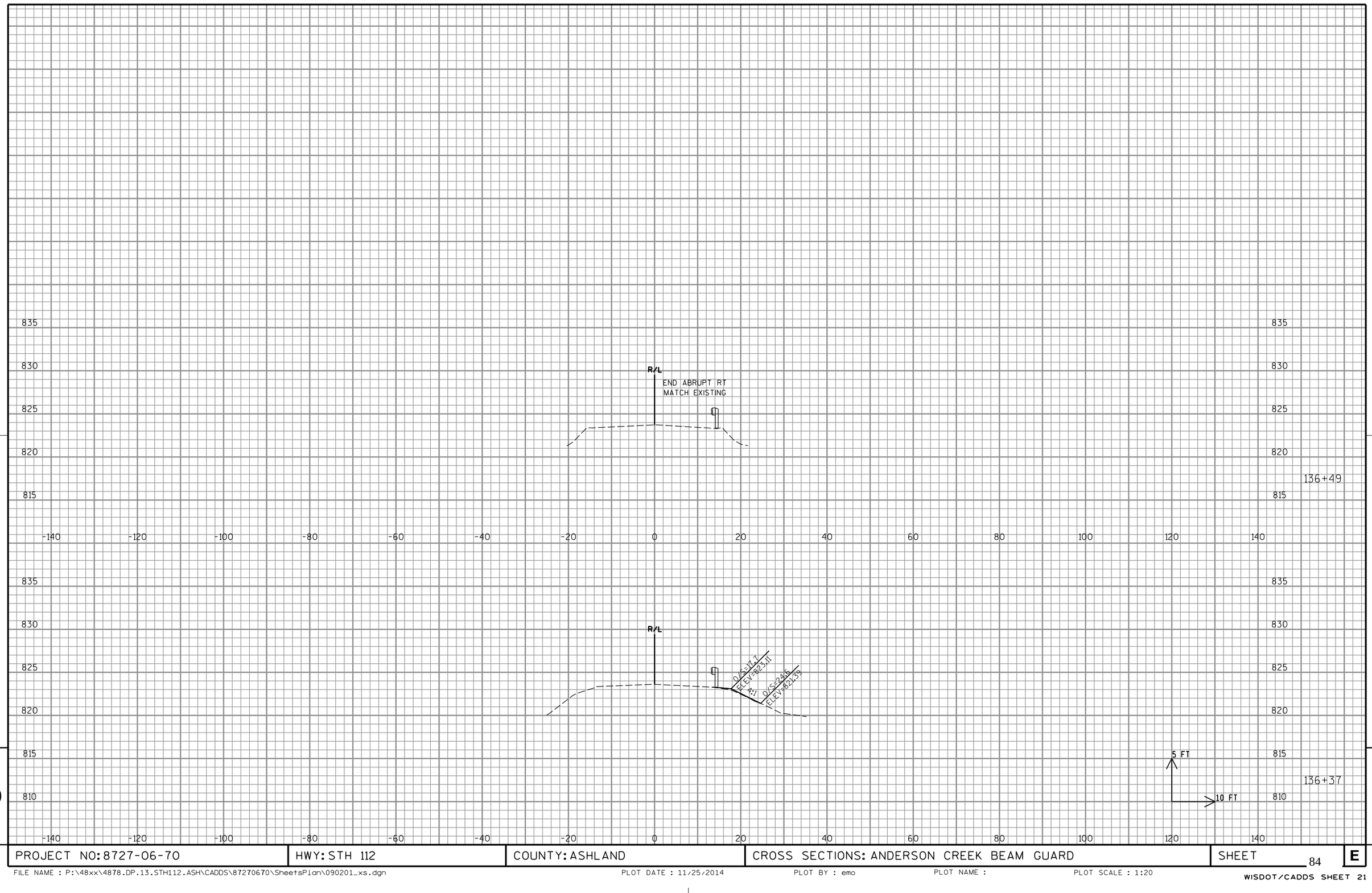
WISDOT/CADDS SHEET 21



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PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 84	E

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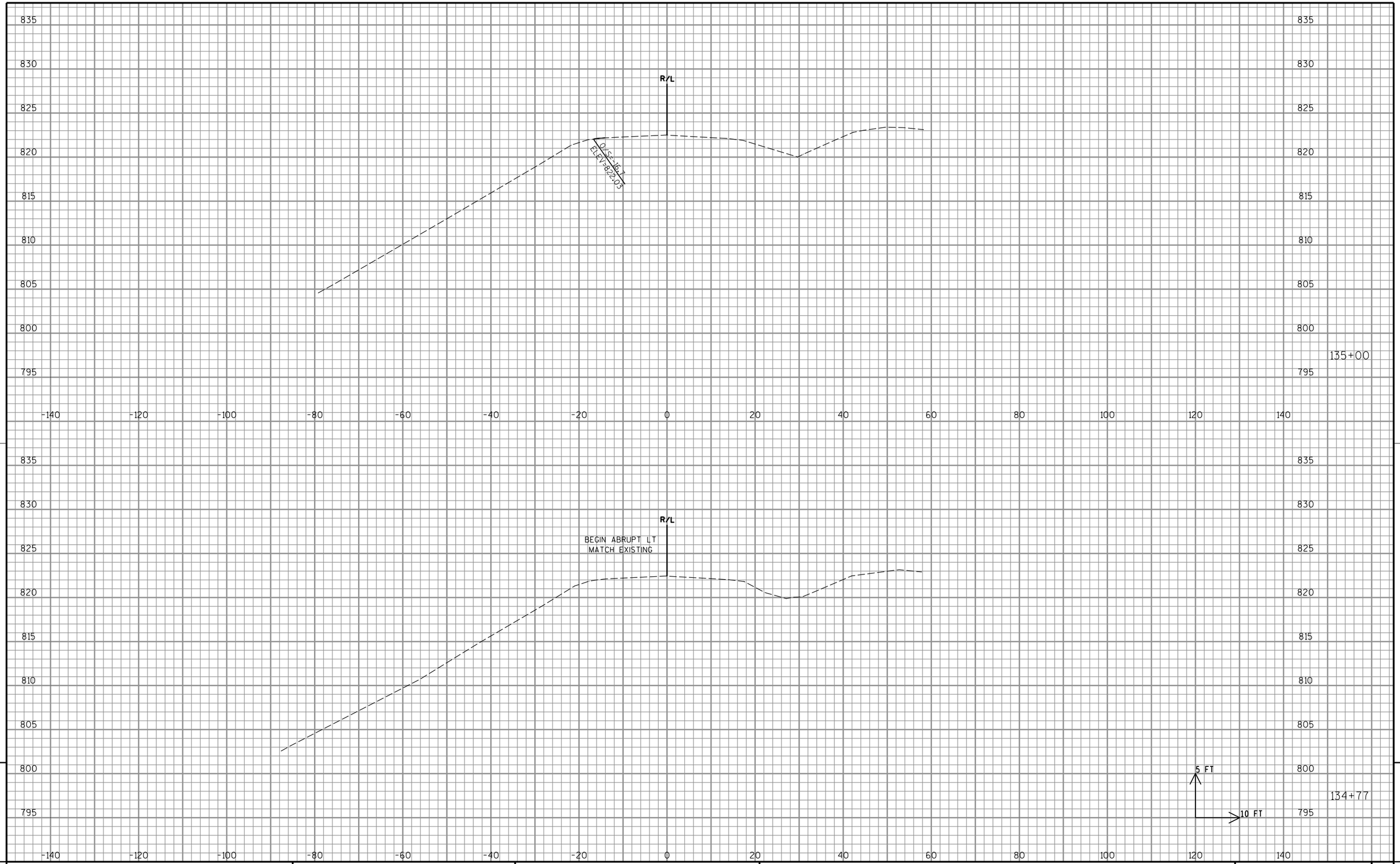

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PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 85	E

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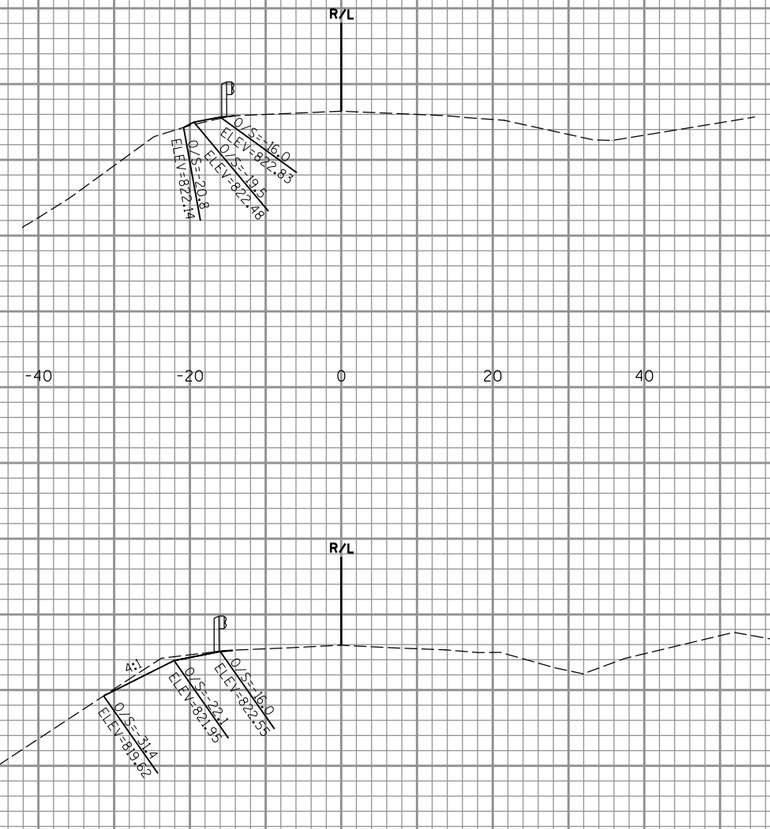

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PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 86	E

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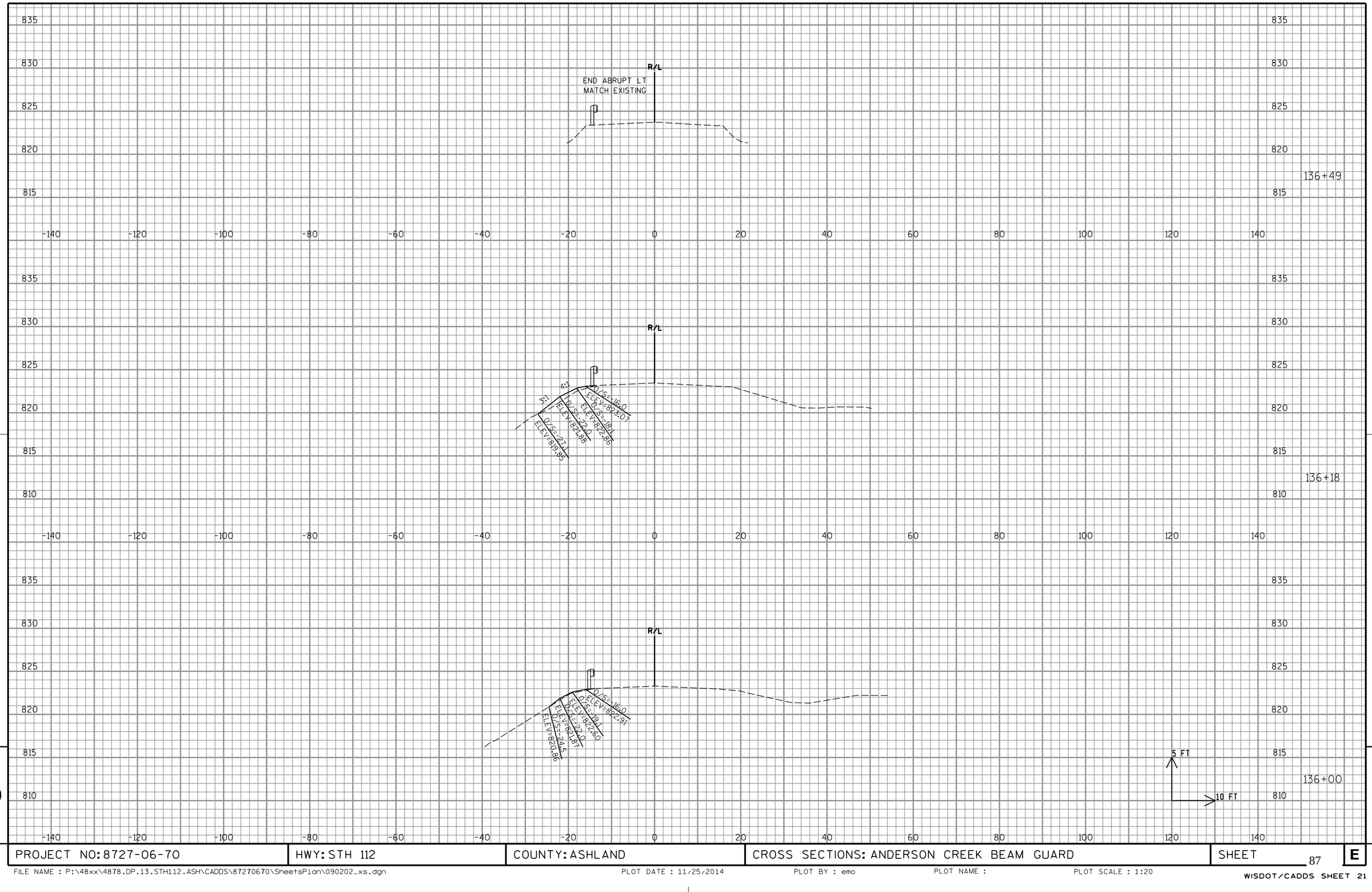
WISDOT/CADDS SHEET 21



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PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 87	E

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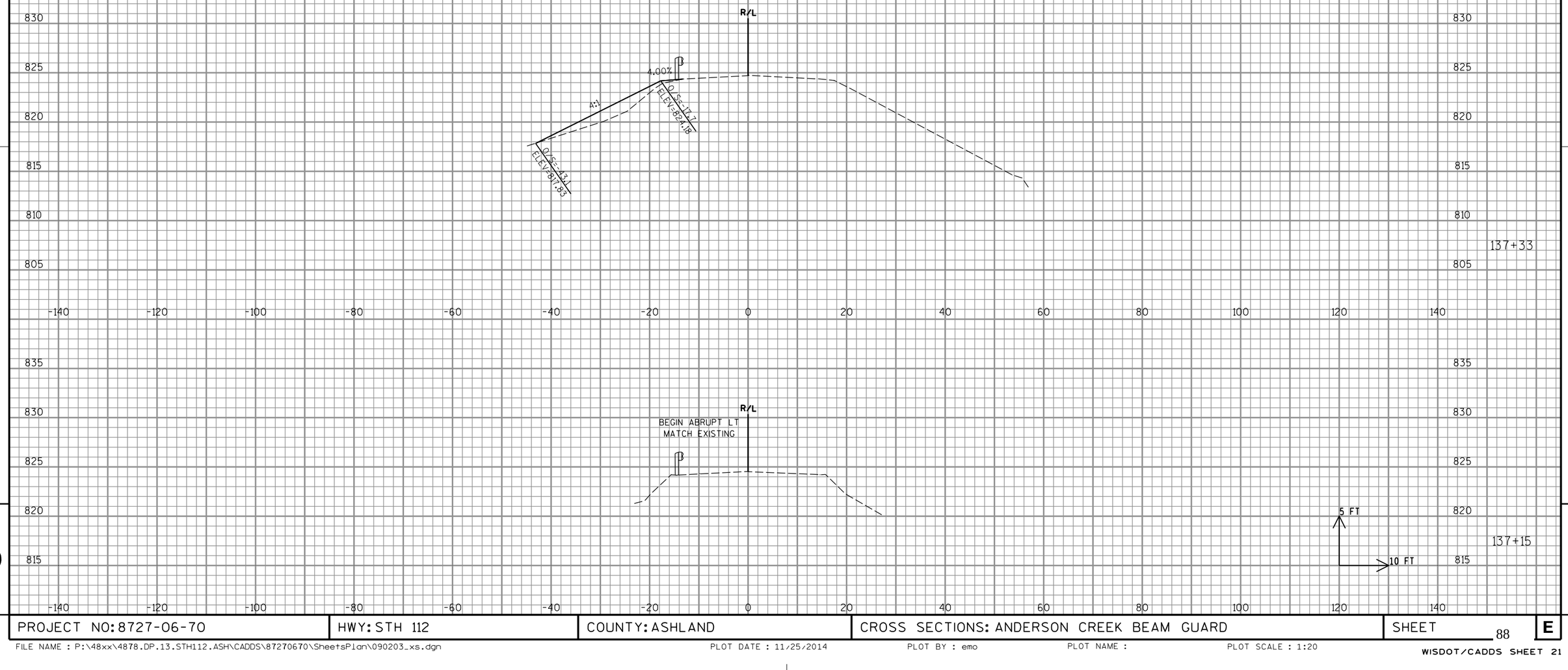

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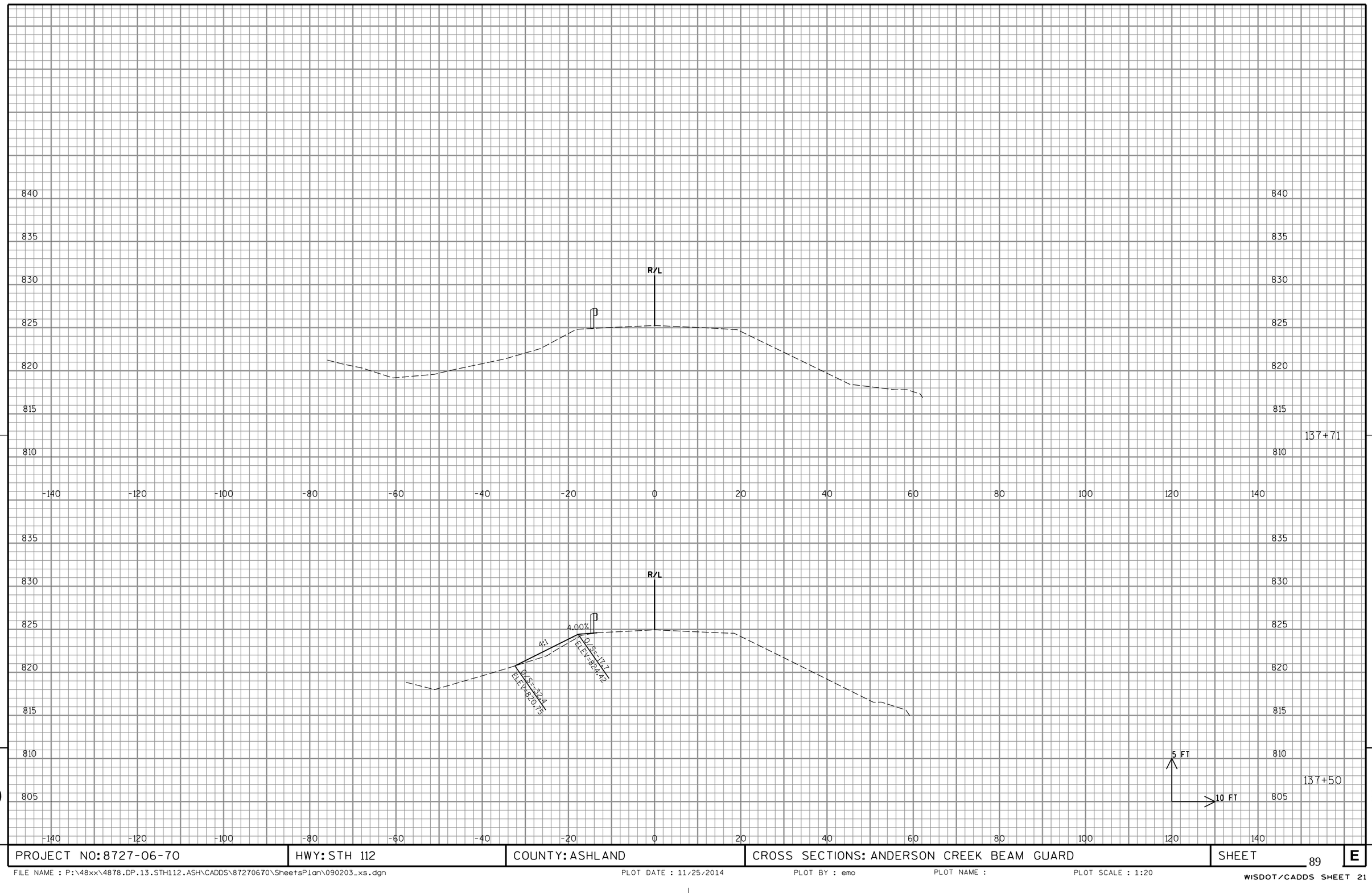
PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 88	E



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PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 89	E

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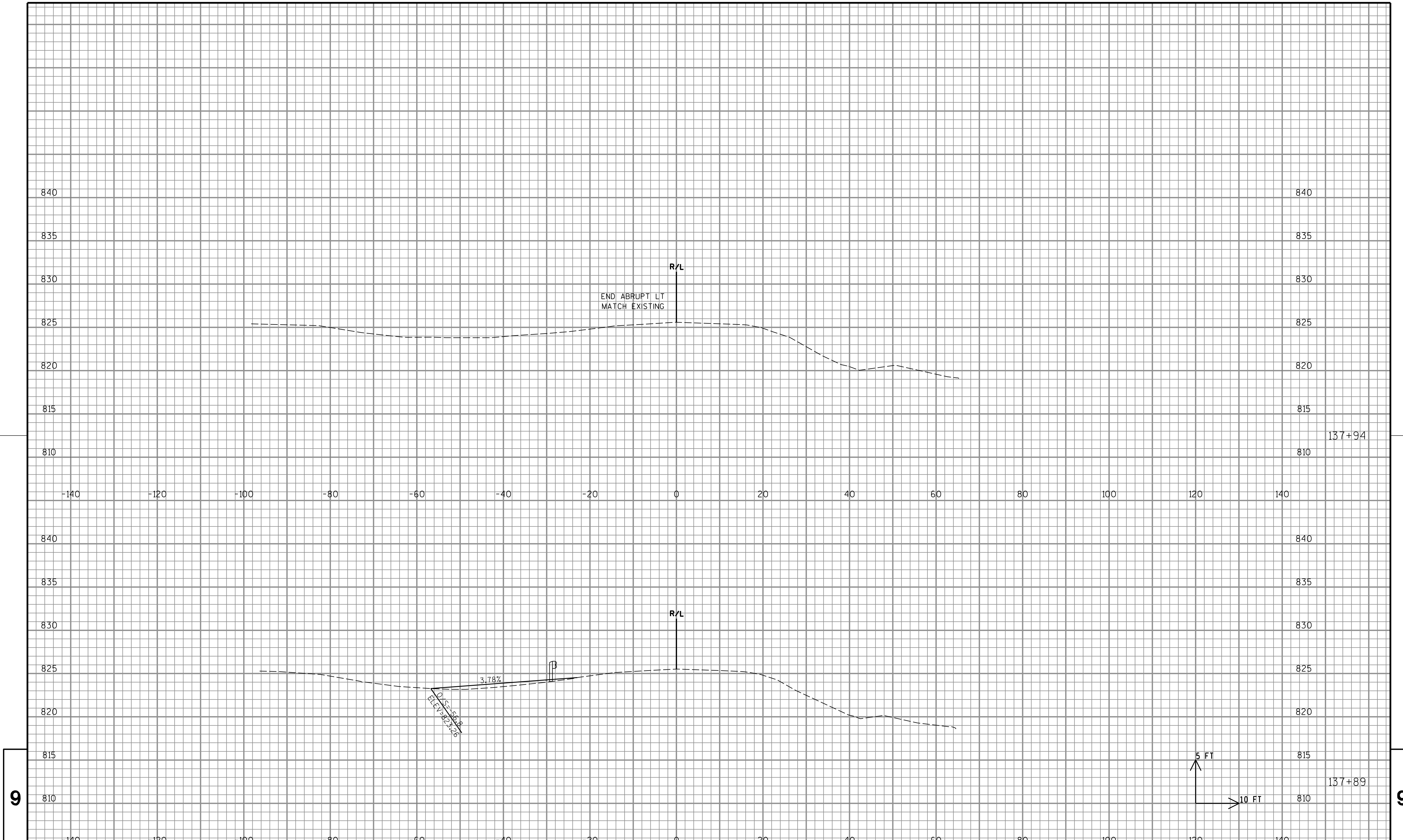
WISDOT/CADDS SHEET 21



PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 90	E

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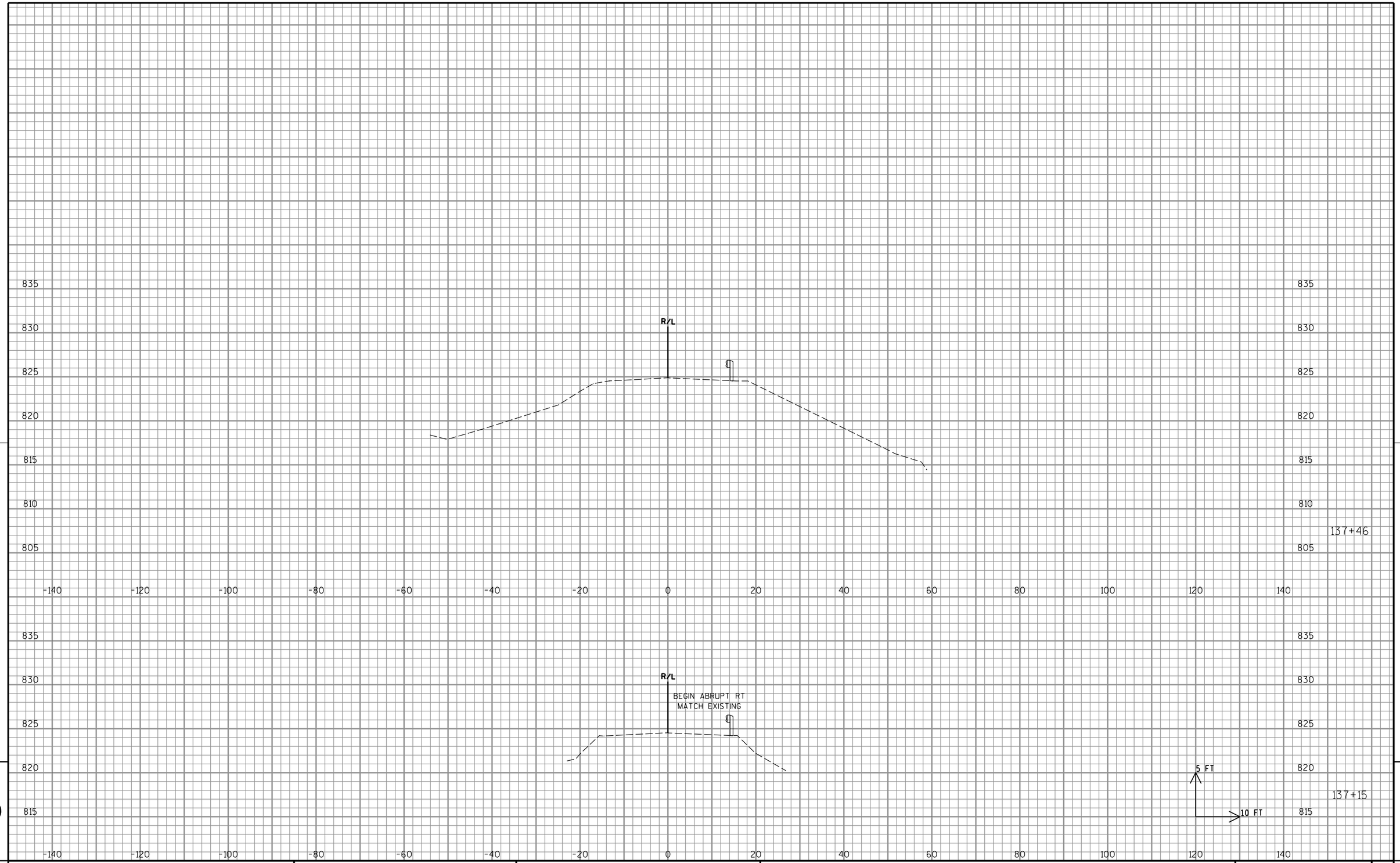
WISDOT/CADDS SHEET 21



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PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 91	E

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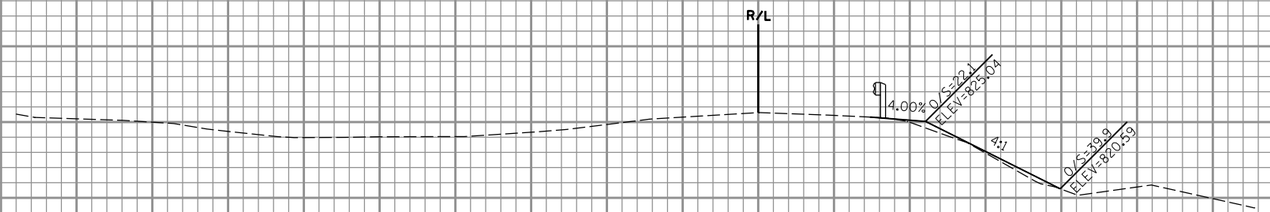

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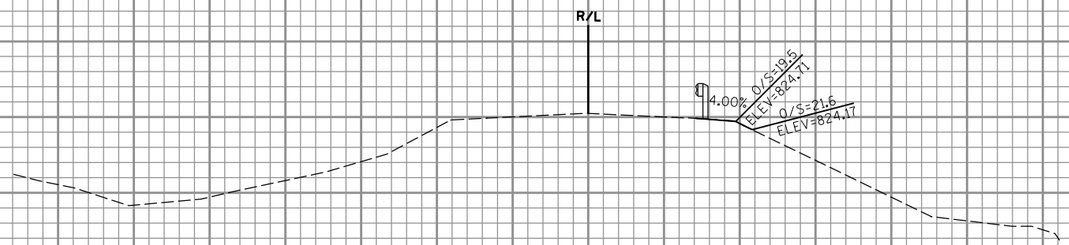

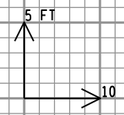

137+71

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PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 92	E

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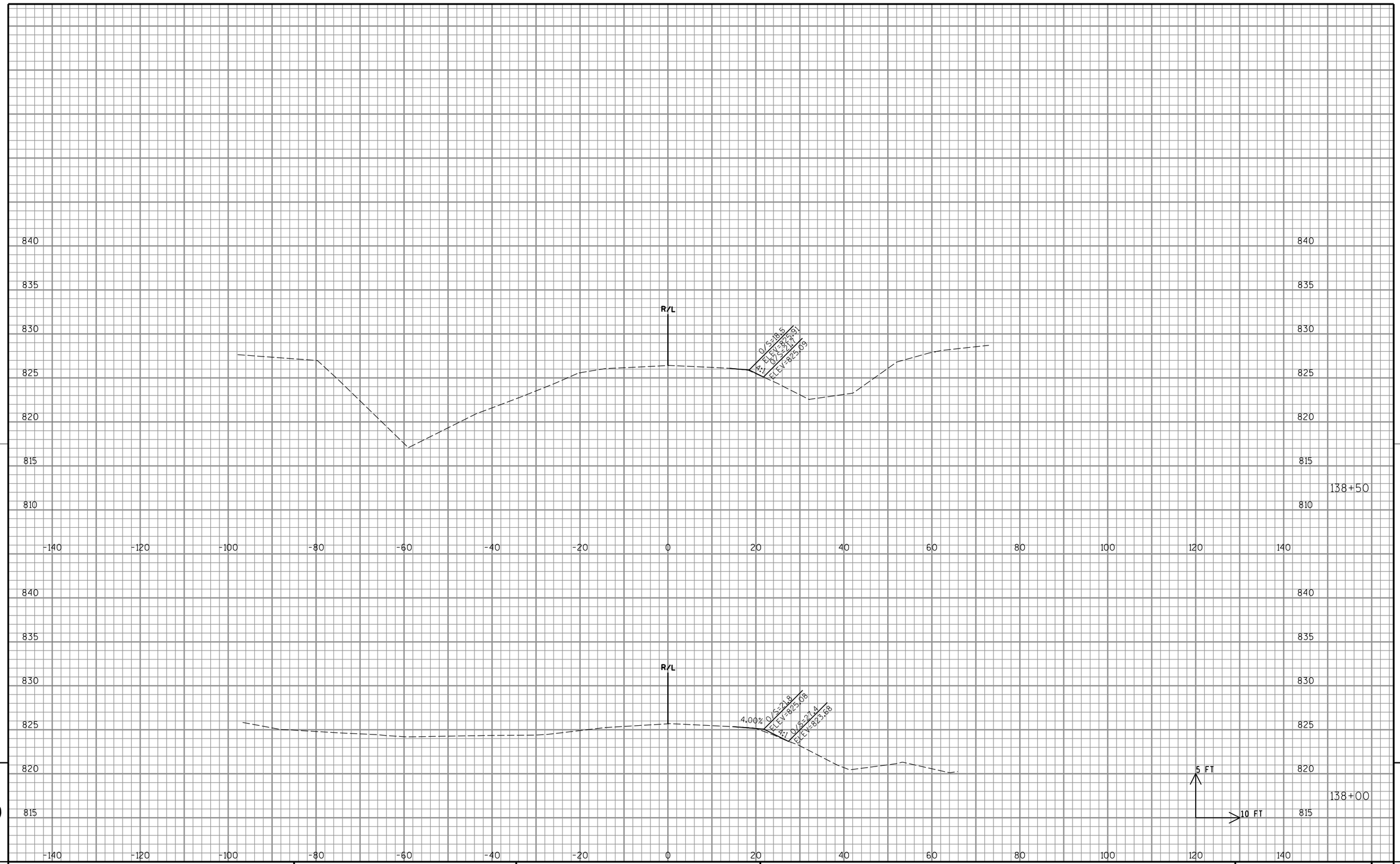

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PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 93	E

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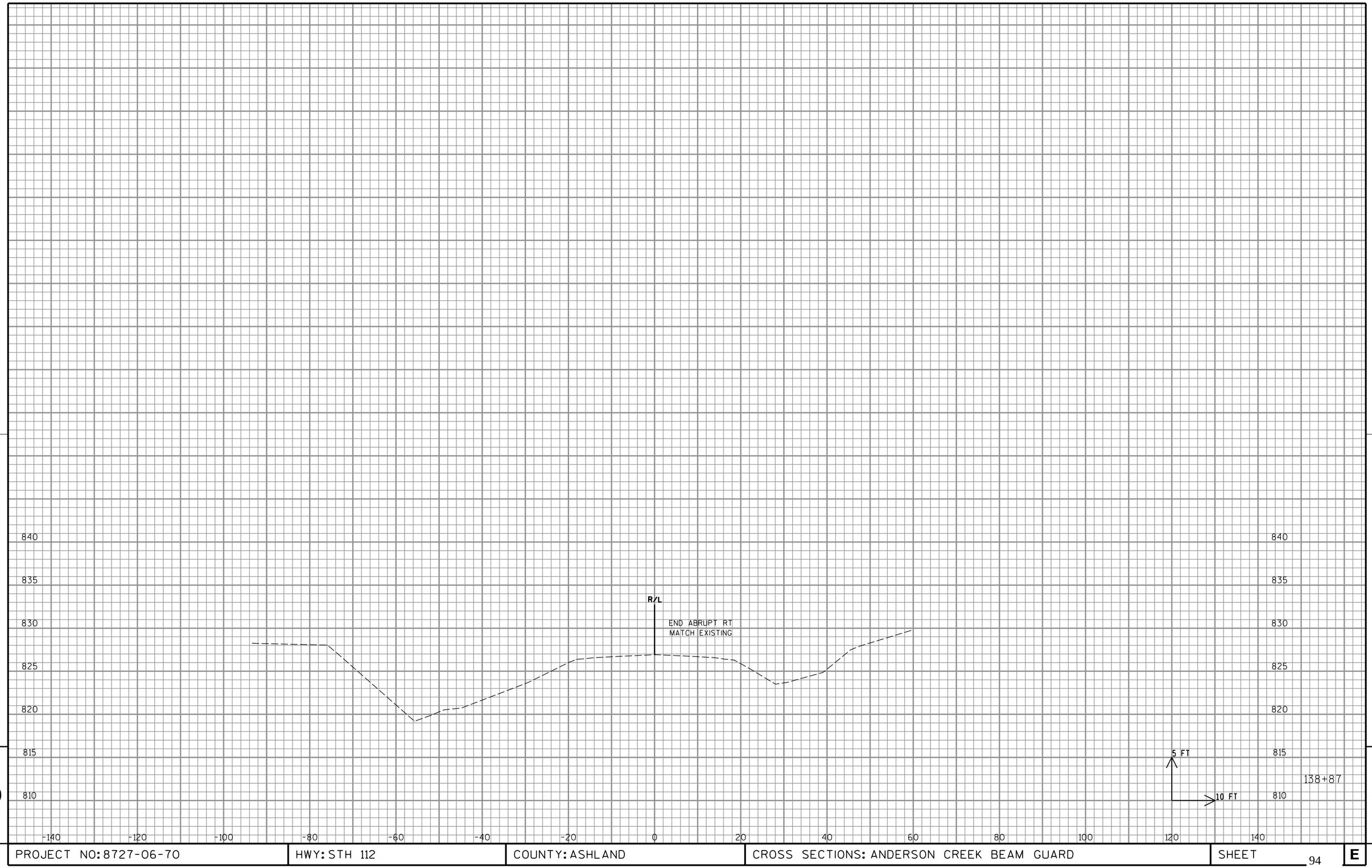

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PROJECT NO: 8727-06-70	HWY: STH 112	COUNTY: ASHLAND	CROSS SECTIONS: ANDERSON CREEK BEAM GUARD	SHEET 94	E

Notes

Wisconsin Department of Transportation

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