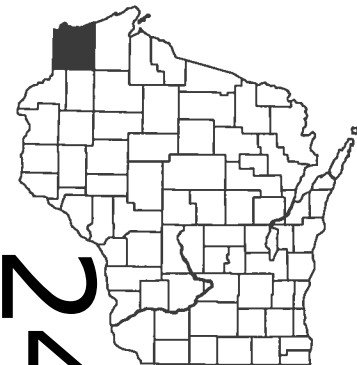


Section No.	Title
1	Typical Sections and Details (Inc Erosion Control)
2	Estimate of Quantities
3	Miscellaneous Quantities
4	Right of Way Plot
5	Plan and Profile
6	Standard Detail Drawings
7	Sign Plates
8	Structure Plans
9	Computer Earthwork Data
9	Cross Sections

TOTAL SHEETS = 102



DESIGN DESIGNATION

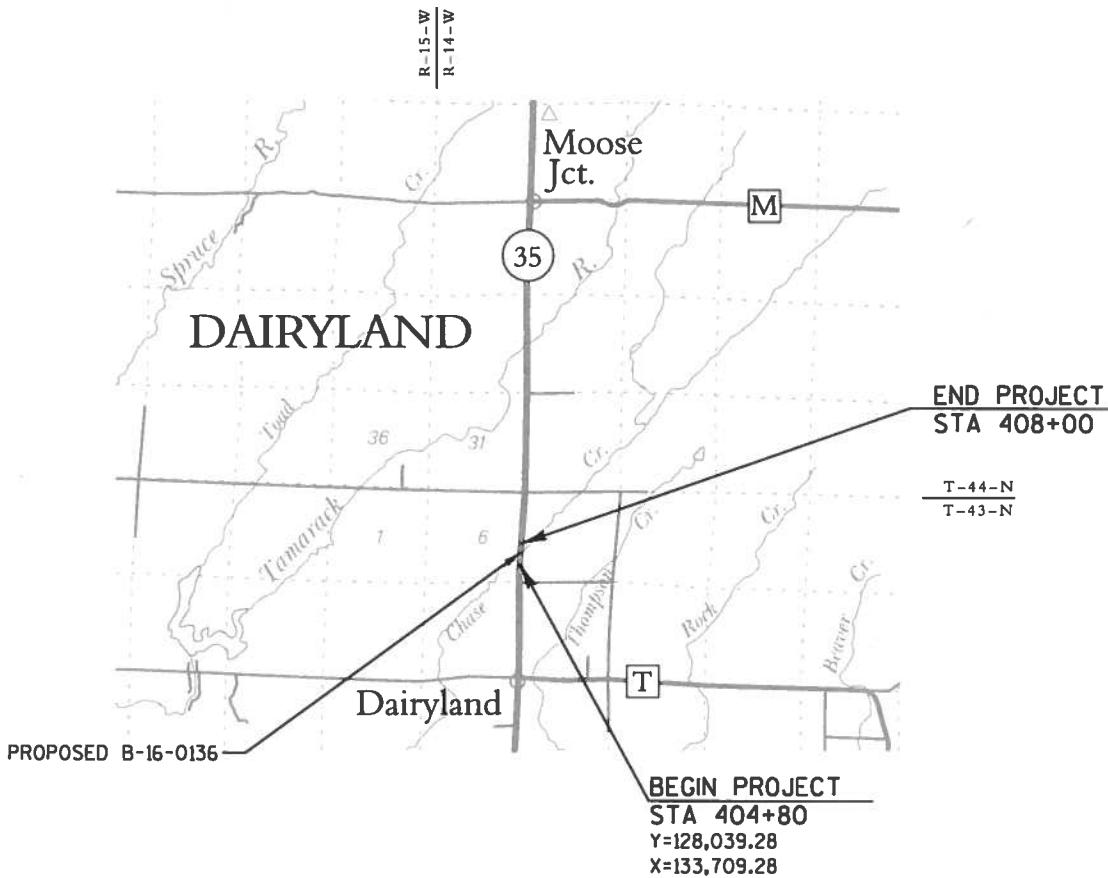
A.A.D.T. (2016)	=	1,025
A.A.D.T. (2036)	=	1,230
D.H.V. (2036)	=	245
O.D.	=	61/39
T.	=	12.3%
DESIGN SPEED	=	60 MPH
ESALS	=	N/A

CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
DAIRYLAND - SUPERIOR
CHASE CREEK BRIDGE B-16-0136
STH 35
DOUGLAS COUNTY

STATE PROJECT NUMBER
8010-02-75



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.061 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY
COORDINATE SYSTEM (WCCS), DOUGLAS COUNTY (NAD 83), 2007 ADJUSTMENT.
ALL ELEVATIONS ON THIS PROJECT ARE REFERENCED TO THE NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8010-02-75	WISC 2015655	1

ORIGINAL PLANS PREPARED BY
emcs, inc.
500 North 17th Avenue
Wausau, WI 54401
715.845.1081 Fax 715.845.1099



7-15-15 (Date) *Stephanie G. Christensen* (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	WISDOT / EMCS, INC.
Designer	EMCS, INC.
Project Manager	MATTHEW DICKENSON
Regional Examiner	CHRISTINE KOSKI
Regional Supervisor	DAVID OSTROWSKI

APPROVED FOR THE DEPARTMENT
DATE: 7/16/15 *David Ostrowski* (Signature)

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..

EXISTING RIGHT-OF-WAY SHOWN IS APPROXIMATE AND IS BASED ON AVAILABLE RIGHT-OF-WAY PLATS. NO WORK SHALL OCCUR OUTSIDE OF EXISTING RIGHT-OF-WAY.

PERMANENT PAVEMENT NEEDS ARE DEFINED IN THE MISCELLANEOUS QUANTITIES.

AS-BUILTS USED FOR PLAN DEVELOPMENT

PROJECT NO: T028-4(13), CONSTRUCTION YEAR: 1959
PROJECT NO: T028-4(12), CONSTRUCTION YEAR: 1960
PROJECT NO: 8010-19-71, CONSTRUCTION YEAR: 1993

ORDER OF SECTION 2 SHEETS

PROJECT OVERVIEW
WETLAND IMPACT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
EROSION CONTROL
TRAFFIC CONTROL

UTILITIES

CENTURYLINK

(COMMUNICATIONS)
ALAN NICKELL
P.O. BOX 181
SOLON SPRINGS, WI 54873
(715) 378-2131
alan.nickell@centurylink.com

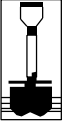
EAST CENTRAL ENERGY

(ELECTRIC)
VERN JOHNSON
P.O. BOX 39
BRAHAM, MN 55006
(763) 689-8076
vern.johnson@ecemn.com

ENVENTIS

(COMMUNICATIONS)
JEFF BRIGHT
4960 MILLER TRUNK HIGHWAY
SUITE 507
HERMANTOWN, MN 55811
(218) 740-6146
jeff.bright@enventis.com

DIGGERS



HOTLINE

Dial  or (800) 242-8511

www.DiggersHotline.com

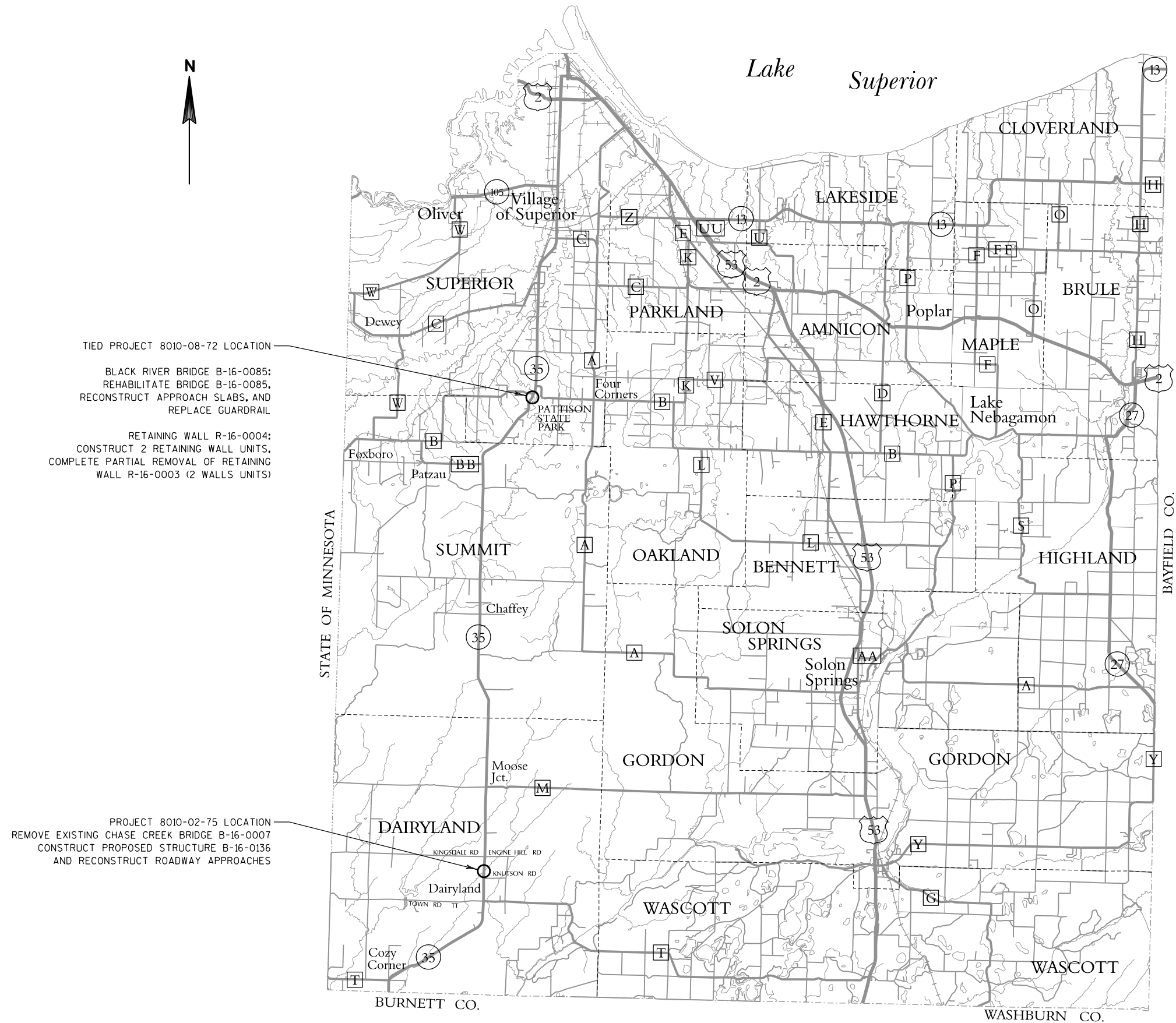
OTHER CONTACTS

DNR LIAISON

AMY CRONK
DNR NORTHERN REGION HEADQUARTERS
810 W. MAPLE STREET
SPOONER, WI 54801
(715) 635-4229

U.S. ARMY CORPS OF ENGINEERS

WILLIAM SANDE
US ARMY CORPS OF ENGINEERS
15945 RIVERS EDGE DRIVE, SUITE 240
HAYWARD, WI 54843
(715) 934-2170
william.sande@usace.army.mil



2

LEGEND



PERMITTED WETLAND IMPACTS



DELINEATED WETLAND BOUNDARY



SLOPE INTERCEPT



2

401+00

402+00

403+00

404+00

STH 35

405+00

406+00

EXISTING B-16-0007
PROPOSED B-16-0136

407+00

CHASE CREEK

R/W

R/W



406+00

EXISTING B-16-0007
PROPOSED B-16-0136

407+00

408+00

409+00

STH 35

410+00

411+00

412+00

CHASE CREEK

R/W

PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

WETLAND IMPACT OVERVIEW

SHEET

4

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADDs\Plan\4840_Chase Creek\020202.po.dgn

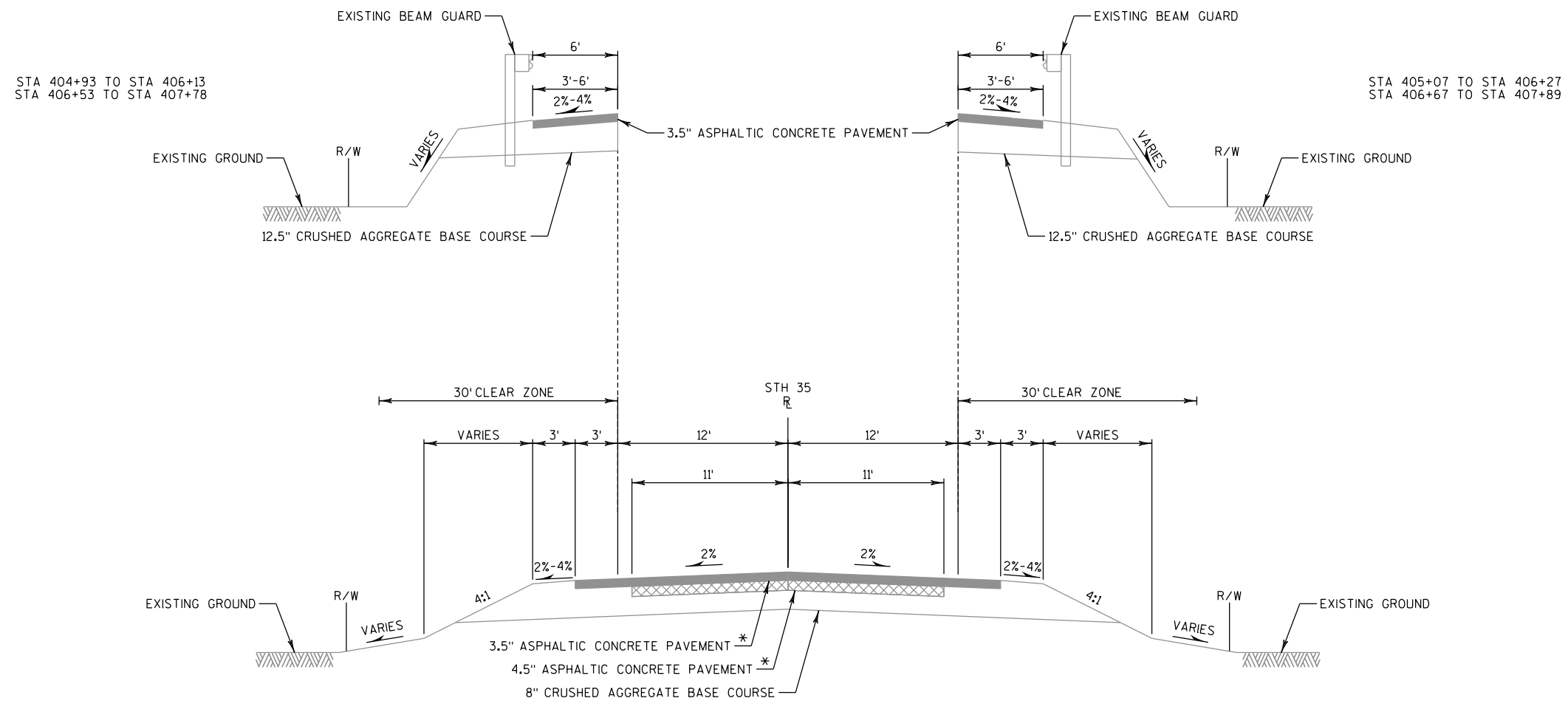
PLOT DATE : 7/23/2015

PLOT BY : emo

PLOT NAME :

PLOT SCALE : 1:40

WISDOT/CADDs SHEET 42



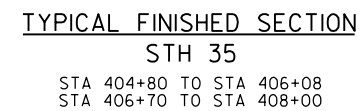
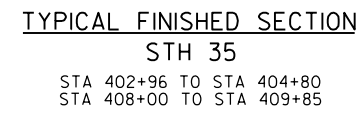
TYPICAL EXISTING SECTION

STH 35

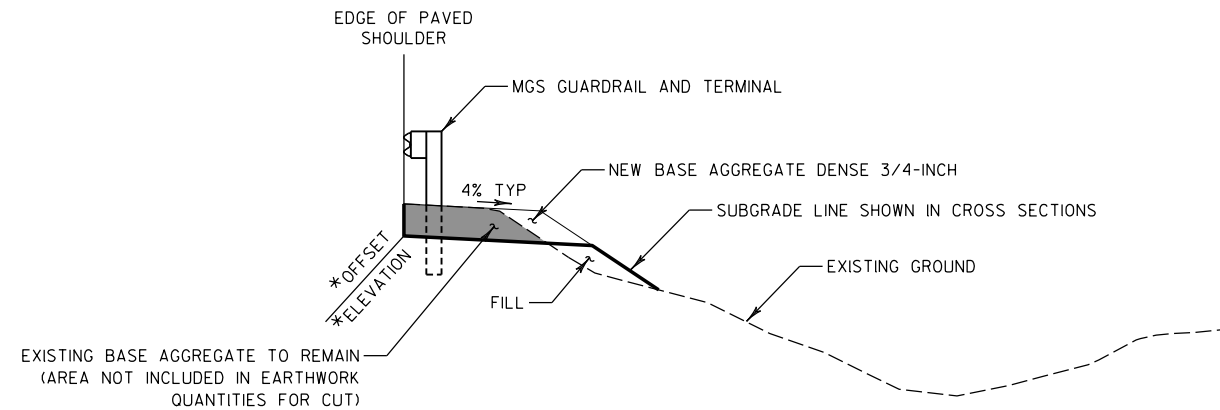
ROADWAY APPROACHES TO EXISTING B-16-0007

NOTE:

- * STRUCTURE B-16-0007 HAS CONCRETE APPROACH SLABS, SEE
PLAN SHEETS FOR LOCATIONS



E



SHOULDER WIDENING EARTHWORK & BASE AGGREGATE FOR GUARDRAIL DETAIL

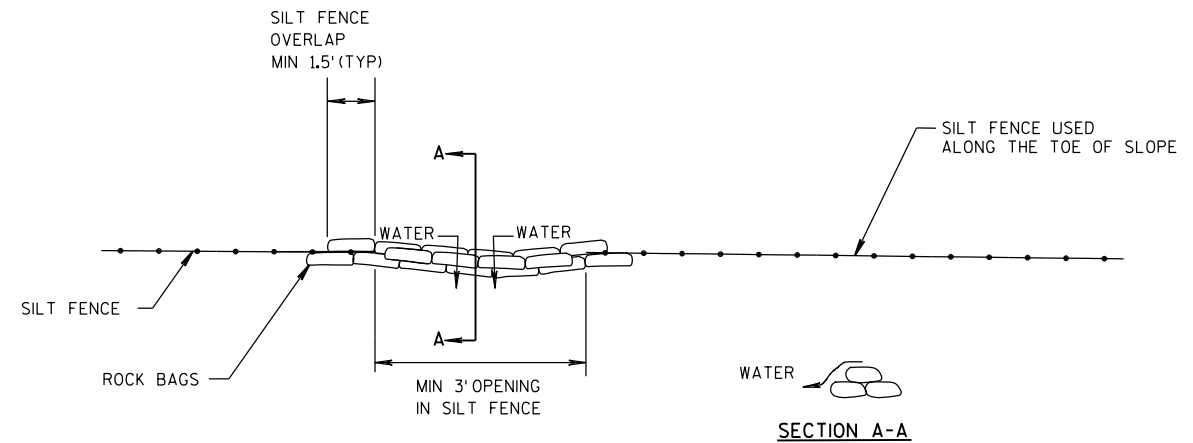
STA 402+96 TO STA 404+80
STA 408+00 TO STA 409+85

NOTES:

GUARDRAIL INSTALLATION TO BE MEASURED FROM REFERENCE LINE

BENCH FILL AS REQUIRED PER STANDARD SPECIFICATION 205.3.2(4)

* OFFSET AND ELEVATION PROVIDED FOR REFERENCE ONLY ON CROSS SECTIONS



TOP VIEW

ROCK BAGS SILT FENCE RELIEF DETAIL

PAID AS ROCK BAGS

NOTE:

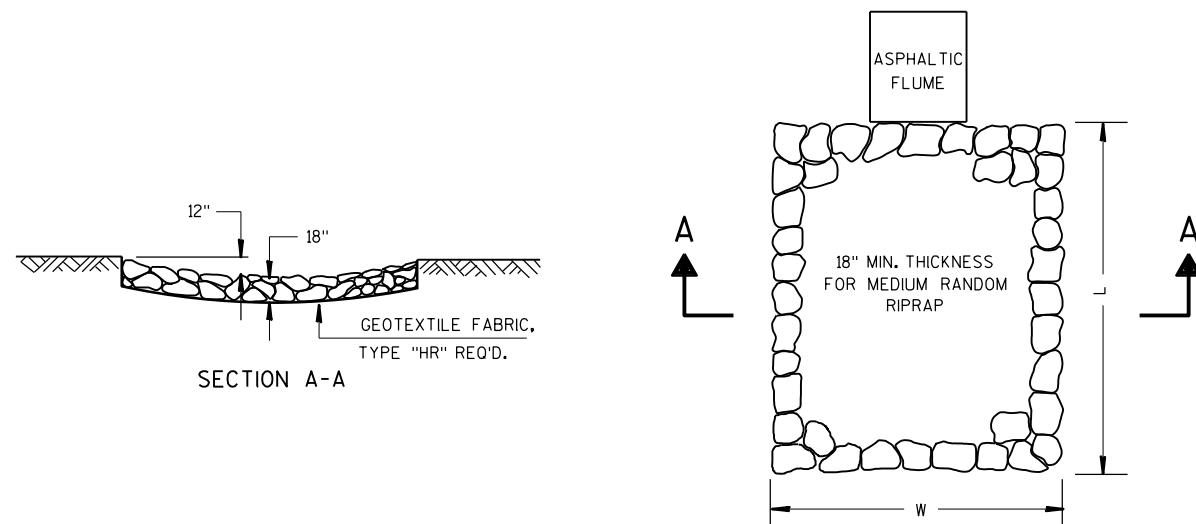
SEE EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION

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 = 2.37 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.21 ACRES

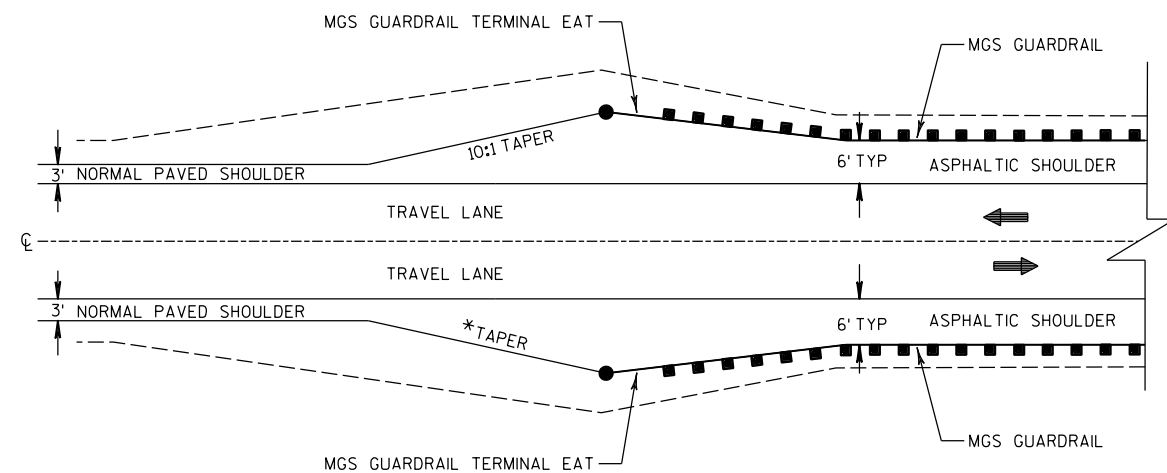
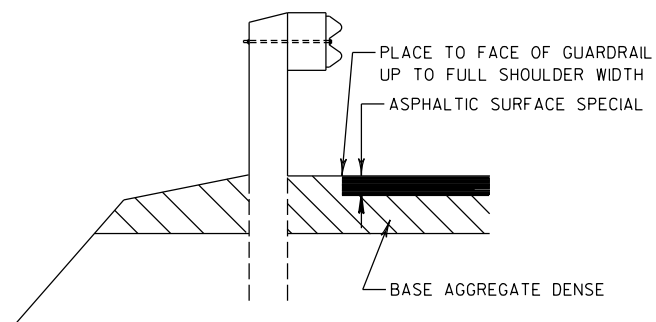


MEDIUM RANDOM RIPRAP TREATMENT AT ASPHALTIC FLUMES

STA 405+84, LT
STA 405+97, RT

NOTE:

SEE EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION AND FOR "L" AND "W" DIMENSIONS

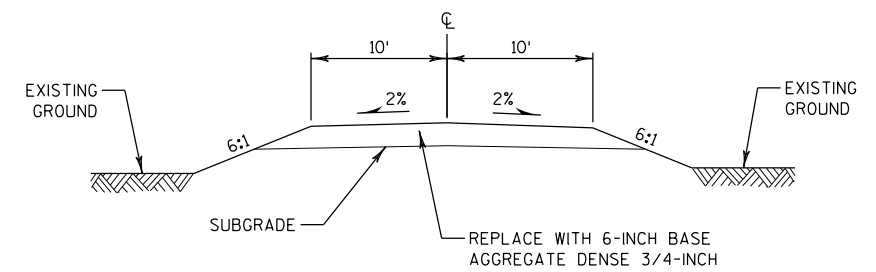


PAVED SHOULDER AT GUARDRAIL DETAIL

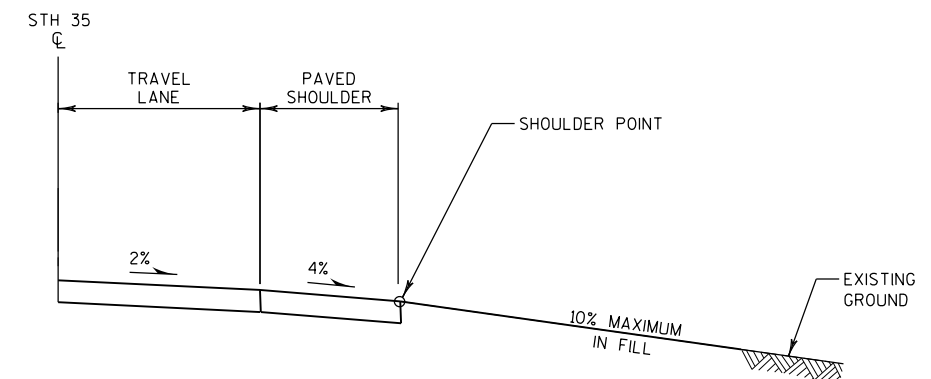
NOTES:

SEE PLAN SHEETS AND SDD "MIDWEST GUARDRAIL SYSTEM (MGS) EAT" FOR ADDITIONAL INFORMATION

* THE TAPERS ON THE RIGHT SIDE OF STH 35 VARY FROM AT 15:1 TO 25:1 DUE TO STAGING



TYPICAL CROSS SECTION



TYPICAL PROFILE

TYPICAL DRIVEWAY DETAIL IN DITCH GRADING

STA 403+85 RT

2

LEGEND

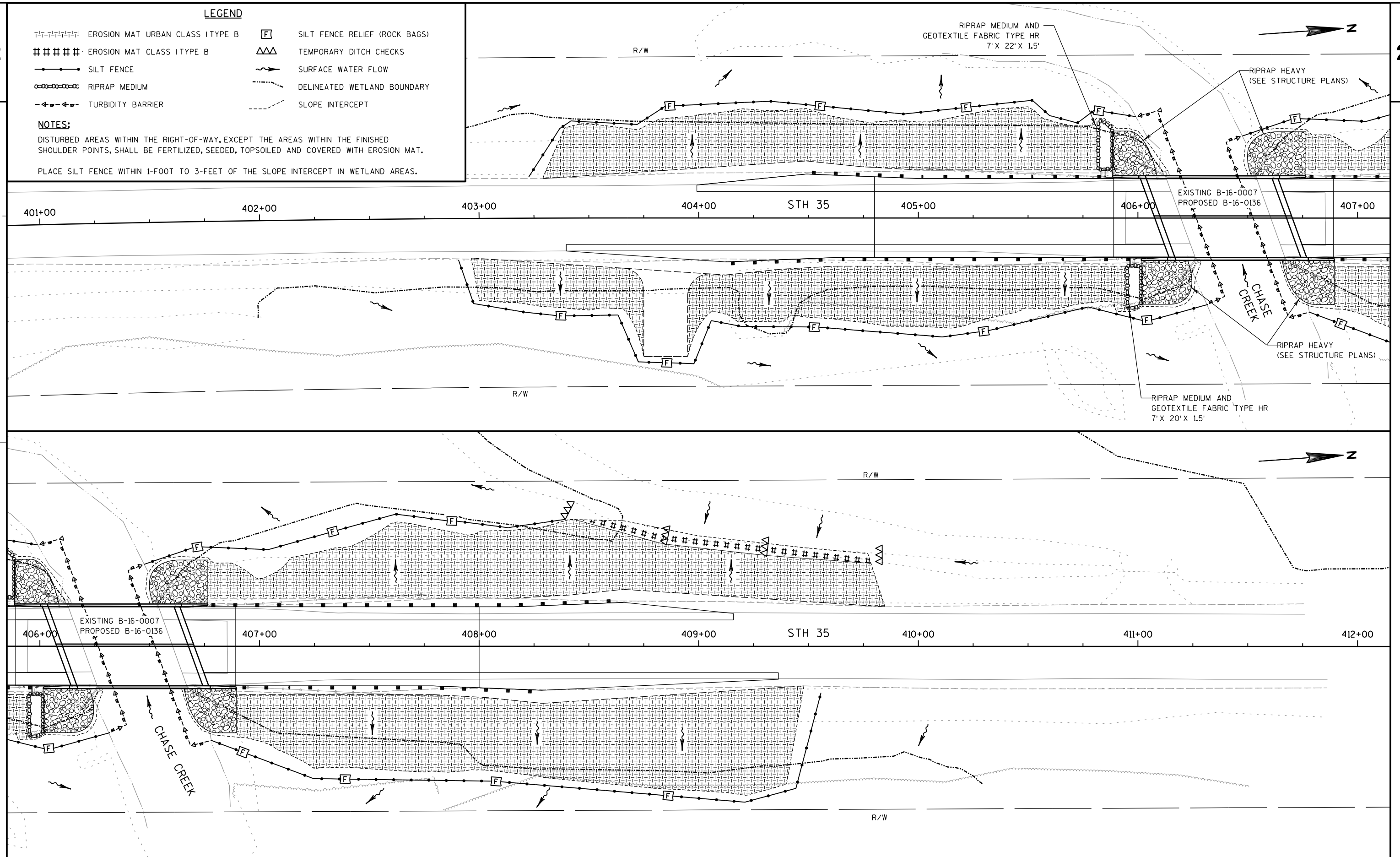
- | | |
|----------------------------------|-------------------------------|
| EROSION MAT URBAN CLASS I TYPE B | SILT FENCE RELIEF (ROCK BAGS) |
| EROSION MAT CLASS I TYPE B | TEMPORARY DITCH CHECKS |
| SILT FENCE | SURFACE WATER FLOW |
| RIPRAP MEDIUM | DELINEATED WETLAND BOUNDARY |
| TURBIDITY BARRIER | SLOPE INTERCEPT |

NOTES:

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

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

2



PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

EROSION CONTROL

SHEET

9

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADD\Plan\4840_Chase Creek\022001.ec.dgn

PLOT DATE : 7/23/2015

PLOT BY : emo

PLOT NAME :

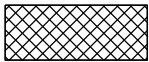
PLOT SCALE : 1:40

WISDOT/CADDs SHEET 42

TRAFFIC CONTROL GENERAL NOTES

- 1) ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- 2) "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- 3) ALL TYPE III BARRICADES SHALL BE EQUIPED WITH TYPE "A" (LOW INTENSITY FLASHING) LIGHTS PER SDDS.

LEGEND



WORK ZONE

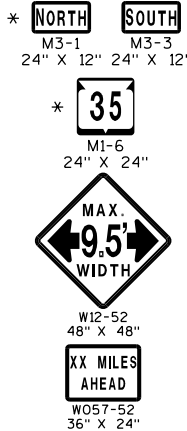


ADVANCED WARNING FOR LANE WIDTH RESTRICTIONS

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 2 AND 3

- | | | | |
|---|--------------------------|----|-----------------------|
| 1 | STH 35/STH 77 - 19 MILES | 10 | STH 35 - 4 MILES |
| 2 | STH 77 - 19 MILES | 11 | STH 35 - 31 MILES |
| 3 | STH 35 - 18 3/4 MILES | 12 | STH 105 - 31 MILES |
| 4 | STH 35 - 1 1/4 MILES | 13 | STH 35 - 31 1/4 MILES |
| 5 | CTH T - 1 1/4 MILES | 14 | STH 35 - 34 3/4 MILES |
| 6 | STH 35 - 1 MILE | 15 | USH 2 - 34 3/4 MILES |
| 7 | STH 35 - 3/4 MILES | 16 | USH 2 - 34 3/4 MILES |
| 8 | STH 35 - 3/2 MILES | 17 | STH 35 - 35 MILES |
| 9 | CTH M - 3/2 MILES | | |

STAGE 2 SIGNING

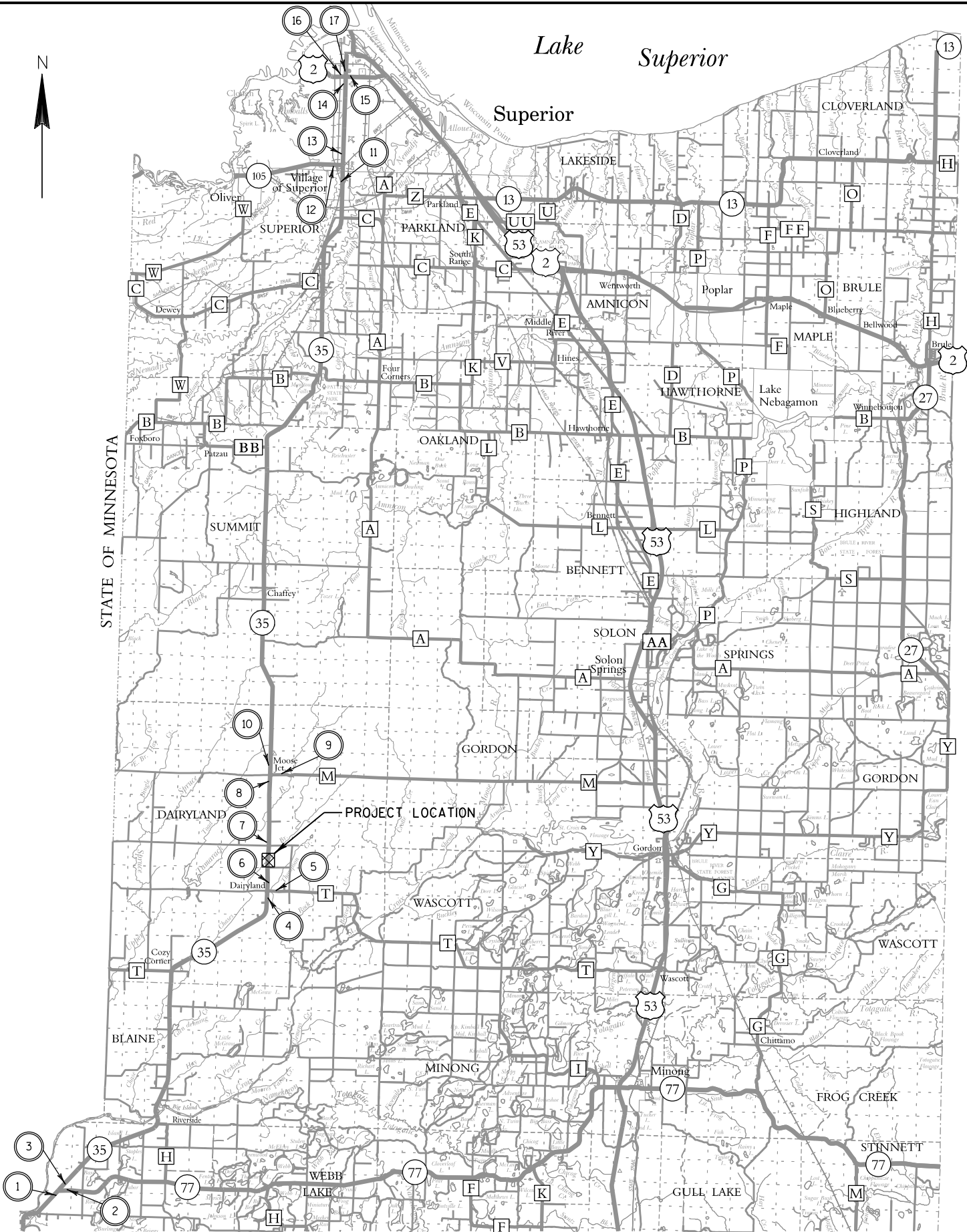


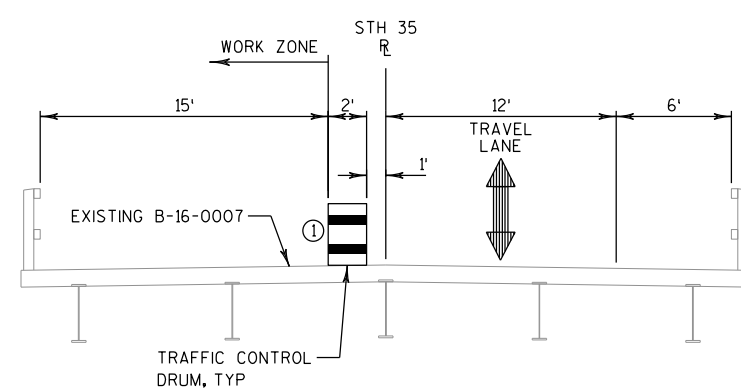
STAGE 3 SIGNING



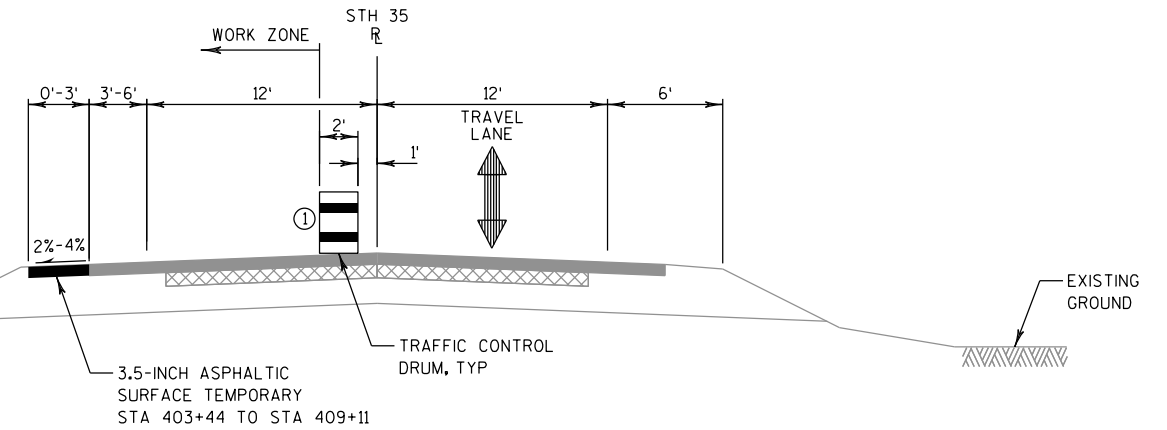
NOTE:

- * PLACE SIGN M1-6 AND SIGN M3-1 OR M3-3 WHEN ASSEMBLY IS MOUNTED ON ALL ROADWAYS OTHER THAN STH 35.





EXISTING GROUND

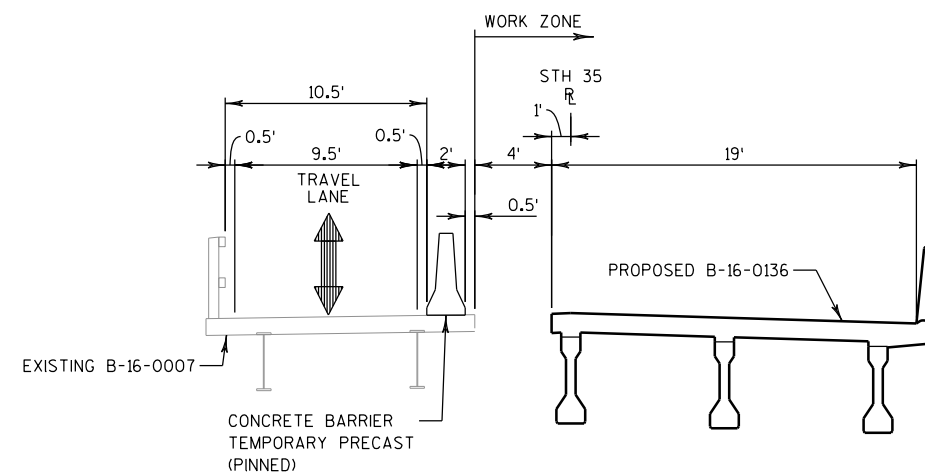


EXISTING GROUND

TRAFFIC CONTROL TYPICAL SECTIONS - STAGE 1

STH 35

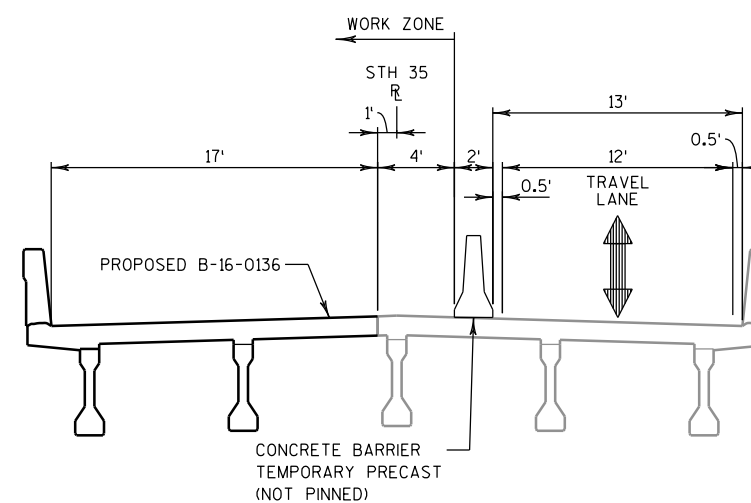
PAVE WEST APPROACH SHOULDER



TRAFFIC CONTROL TYPICAL SECTION - STAGE 2

STH 35

CONSTRUCT EAST SIDE B-16-0136 AND APPROACHES



TRAFFIC CONTROL TYPICAL SECTION - STAGE 3

STH 35

CONSTRUCT WEST SIDE B-16-0136 AND APPROACHES

NOTES:

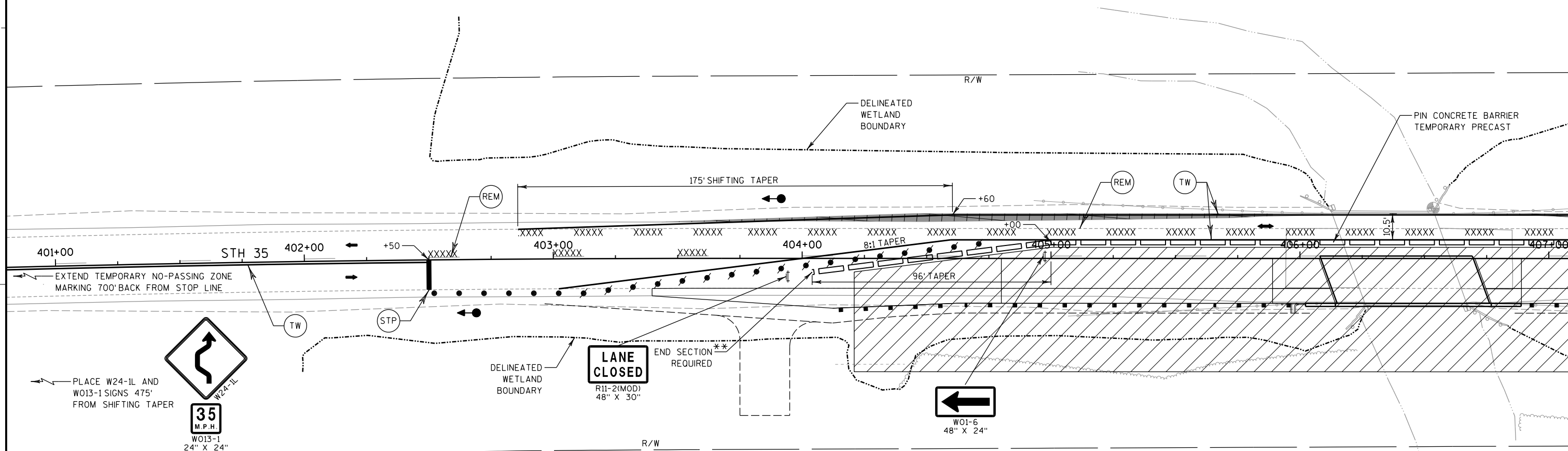
SEE TRAFFIC CONTROL PLAN SHEETS FOR PROPOSED WORK AND ADDITIONAL INFORMATION

- ① DRUM PLACEMENT SHOWN DURING WORKING HOURS, SHIFT TRAFFIC CONTROL DRUMS BEYOND PAVED SHOULDER DURING NON-WORKING HOURS

SIGNAL TIMING

SIGNAL TIMING PROVIDED BY NW
REGION, TRAFFIC SECTION. SIGNAL
TIMING ASSUMES 775' MAXIMUM
SPACING BETWEEN STOP LINES.

NB: GREEN = 12, Y = 4, AR = 29
SB: GREEN = 12, Y = 4, AR = 29

**LEGEND**

- CONCRETE BARRIER TEMPORARY PRECAST
- WORK ZONE
- 3-INCH ASPHALTIC SURFACE TEMPORARY (STAGE 1)
- DIRECTION OF TRAFFIC
- TYPE III BARRICADE WITH ATTACHED SIGN
-

WORK IN STAGE 1 (NOT SHOWN)

PAVE TEMPORARY ASPHALTIC SURFACE SHOULDERS. SEE TRAFFIC CONTROL TYPICAL SECTIONS AND SDD "TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)" FOR TRAFFIC CONTROL DEVICES AND ADDITIONAL INFORMATION

STAGE 1 TRAFFIC

STH 35 TRAFFIC REDUCED TO ONE LANE IN NORTHBOUND TRAVEL LANE WITH FLAGGING DURING WORKING HOURS. OPEN TO TWO LANES DURING NON-WORKING HOURS.

WORK IN STAGE 2

COMPLETE WORK ON NORTHBOUND STH 35: REMOVE AND CONSTRUCT RT SIDE OF BRIDGE AND CONCRETE APPROACHES, COMPLETE GRADING, AND REMOVING AND REPLACING GUARDRAIL, ASPHALTIC APPROACH PAVING, FINISHING AND EROSION CONTROL.

STAGE 2 TRAFFIC

ONE-LANE BI-DIRECTIONAL STH 35 TRAFFIC LOCATED PARTIALLY ON TEMPORARY ASPHALTIC SURFACE AND THE EXISTING SOUTHBOUND STH TRAVEL LANE, CONTROLLED BY TEMPORARY SIGNALS AT BRIDGE.

NOTES

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

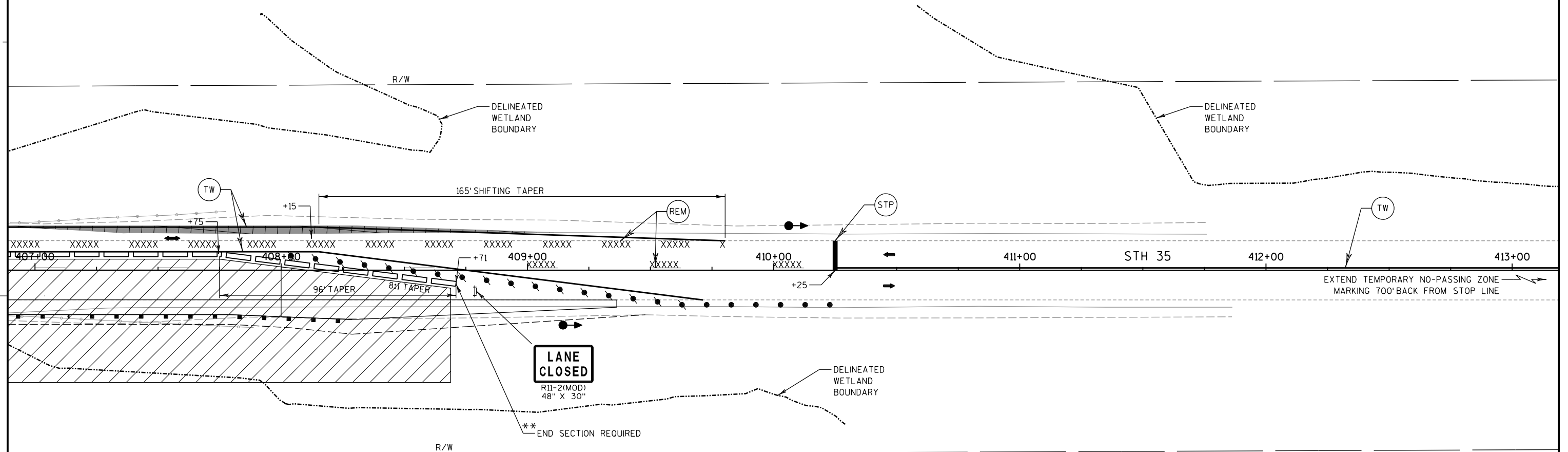
SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION.

** SEE SDD "CONCRETE BARRIER TEMPORARY PRECAST" FOR ADDITIONAL INFORMATION.

SIGNAL TIMING

SIGNAL TIMING PROVIDED BY NW
REGION, TRAFFIC SECTION. SIGNAL
TIMING ASSUMES 775' MAXIMUM
SPACING BETWEEN STOP LINES.

NB: GREEN = 12, Y = 4, AR = 29
SB: GREEN = 12, Y = 4, AR = 29

**WORK IN STAGE 1 (NOT SHOWN)**

PAVE TEMPORARY ASPHALTIC SURFACE
SHOULDERS. SEE TRAFFIC CONTROL TYPICAL
SECTIONS AND SDD "TRAFFIC CONTROL FOR
LANE CLOSURES (SUITABLE FOR MOVING
OPERATIONS)" FOR TRAFFIC CONTROL DEVICES
AND ADDITIONAL INFORMATION.

STAGE 1 TRAFFIC

STH 35 TRAFFIC REDUCED TO ONE LANE IN
NORTHBOUND TRAVEL LANE WITH FLAGGING DURING
WORKING HOURS. OPEN TO TWO LANES DURING
NON-WORKING HOURS.

WORK IN STAGE 2

COMPLETE WORK ON NORTHBOUND STH 35:
REMOVE AND CONSTRUCT RT SIDE OF BRIDGE
AND CONCRETE APPROACHES, COMPLETE
GRADING, AND REMOVING AND REPLACING
GUARDRAIL, ASPHALTIC APPROACH PAVING,
FINISHING AND EROSION CONTROL.

STAGE 2 TRAFFIC

ONE-LANE BI-DIRECTIONAL STH 35 TRAFFIC
LOCATED PARTIALLY ON TEMPORARY ASPHALTIC
SURFACE AND THE EXISTING SOUTHBOUND STH
TRAVEL LANE, CONTROLLED BY TEMPORARY
SIGNALS AT BRIDGE.

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.

** SEE SDD "CONCRETE BARRIER TEMPORARY PRECAST" FOR
ADDITIONAL INFORMATION.

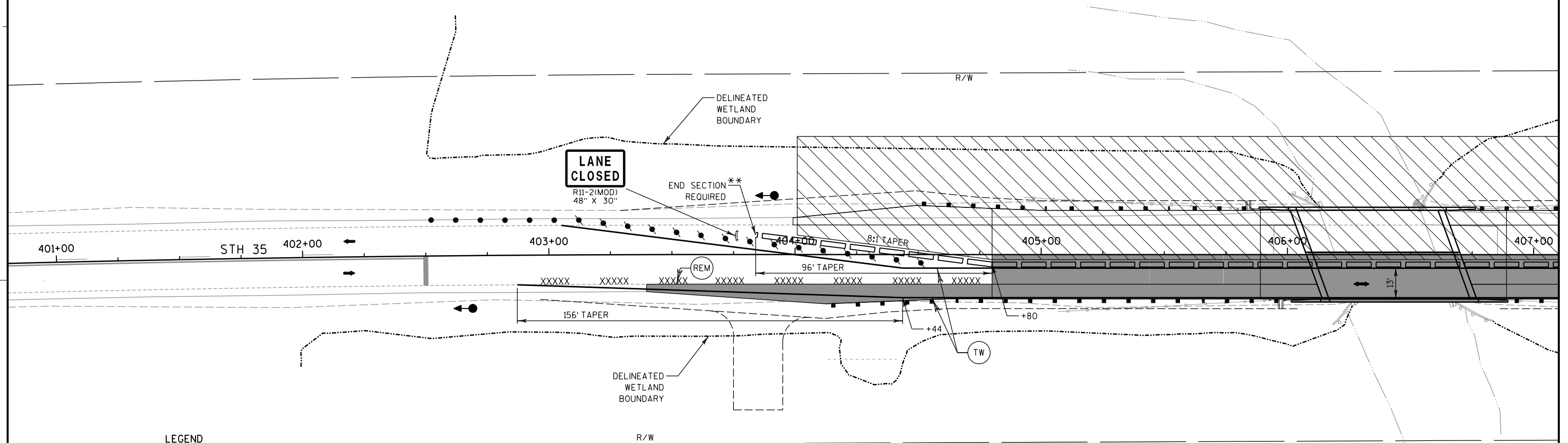
LEGEND

	CONCRETE BARRIER TEMPORARY PRECAST
	WORK ZONE
	3-INCH ASPHALTIC SURFACE TEMPORARY (STAGE 1)
	DIRECTION OF TRAFFIC
	TYPE III BARRICADE WITH ATTACHED SIGN
	TEMPORARY SIGNAL ON 4" X 6" WOOD POST
	TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
	EXISTING PAVEMENT MARKING
	REMOVING PAVEMENT MARKINGS
	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH
	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

SIGNAL TIMING

SIGNAL TIMING PROVIDED BY NW
REGION, TRAFFIC SECTION. SIGNAL
TIMING ASSUMES 775' MAXIMUM
SPACING BETWEEN STOP LINES.

NB: GREEN = 12, Y = 4, AR = 29
SB: GREEN = 12, Y = 4, AR = 29

**LEGEND**

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

WORK IN STAGE 3

COMPLETE WORK ON SOUTHBOUND STH 35:
REMOVE AND CONSTRUCT LT SIDE OF BRIDGE
AND CONCRETE APPROACHES, COMPLETE
GRADING, AND REMOVING AND REPLACING
GUARDRAIL, ASPHALTIC APPROACH PAVING,
FINISHING AND EROSION CONTROL.

STAGE 3 TRAFFIC

ONE-LANE BI-DIRECTIONAL STH 35 TRAFFIC
LOCATED PARTIALLY ON PAVED SHOULDER AND
NORTHBOUND TRAVEL LANE, CONTROLLED BY
TEMPORARY SIGNALS AT BRIDGE.

NOTES

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

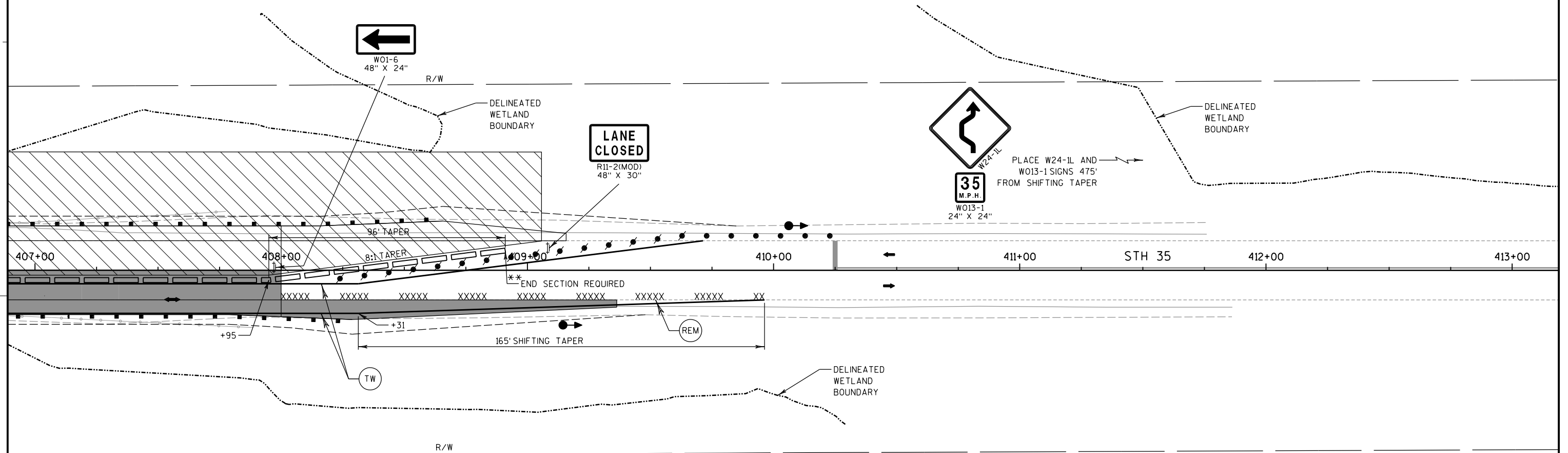
SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION"
FOR ADDITIONAL INFORMATION.

** SEE SDD "CONCRETE BARRIER TEMPORARY PRECAST" FOR
ADDITIONAL INFORMATION.

SIGNAL TIMING

SIGNAL TIMING PROVIDED BY NW
REGION, TRAFFIC SECTION. SIGNAL
TIMING ASSUMES 775' MAXIMUM
SPACING BETWEEN STOP LINES.

NB: GREEN = 12, Y = 4, AR = 29
SB: GREEN = 12, Y = 4, AR = 29

**LEGEND**

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

WORK IN STAGE 3

COMPLETE WORK ON SOUTHBOUND STH 35:
REMOVE AND CONSTRUCT LT SIDE OF BRIDGE
AND CONCRETE APPROACHES, COMPLETE
GRADING, AND REMOVING AND REPLACING
GUARDRAIL, ASPHALTIC APPROACH PAVING,
FINISHING AND EROSION CONTROL.

STAGE 3 TRAFFIC

ONE-LANE BI-DIRECTIONAL STH 35 TRAFFIC
LOCATED PARTIALLY ON PAVED SHOULDER AND
NORTHBOUND TRAVEL LANE, CONTROLLED BY
TEMPORARY SIGNALS AT BRIDGE.

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.

** SEE SDD "CONCRETE BARRIER TEMPORARY PRECAST" FOR
ADDITIONAL INFORMATION.

3

DATE 30SEP15		E S T I M A T E O F Q U A N T I T I E S			
LINE		8010-02-75			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0105	Clearing	STA	6.000	6.000
0020	201.0205	Grubbing	STA	6.000	6.000
0030	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0040	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 406+08	LS	1.000	1.000
0050	204.0100	Removing Pavement	SY	140.000	140.000
0060	204.0110	Removing Asphaltic Surface	SY	1,020.000	1,020.000
0090	205.0100	Excavation Common	CY	494.000	494.000
0100	206.1000	Excavation for Structures Bridges (structure) 01. B-16-0136	LS	1.000	1.000
0110	208.0100	Borrow	CY	766.000	766.000
0130	210.0100	Backfill Structure	CY	280.000	280.000
0140	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	8.000	8.000
0150	213.0100	Finishing Roadway (project) 01. 8010-02-75	EACH	1.000	1.000
0170	305.0110	Base Aggregate Dense 3/4-Inch	TON	195.000	195.000
0180	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	790.000	790.000
0190	415.0070	Concrete Pavement 7-Inch	SY	50.000	50.000
0200	415.0410	Concrete Pavement Approach Slab	SY	100.000	100.000
0210	455.0605	Tack Coat	GAL	50.000	50.000
0220	465.0125	Asphaltic Surface Temporary	TON	25.000	25.000
0230	465.0315	Asphaltic Flumes	SY	3.000	3.000
0240	502.0100	Concrete Masonry Bridges	CY	200.000	200.000
0250	502.3200	Protective Surface Treatment	SY	257.000	257.000
0260	502.3210	Pigmented Surface Sealer	SY	74.000	74.000
0270	503.0136	Prestressed Girder Type I 36-Inch	LF	305.000	305.000
0290	505.0400	Bar Steel Reinforcement HS Structures	LB	4,950.000	4,950.000
0300	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	26,200.000	26,200.000
0310	505.0904	Bar Couplers No. 4	EACH	6.000	6.000
0320	505.0906	Bar Couplers No. 6	EACH	46.000	46.000
0330	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	10.000	10.000
0350	506.4000	Steel Diaphragms (structure) 01. B-16-0136	EACH	4.000	4.000
0370	511.1200	Temporary Shoring (structure) 01. B-16-0136	SF	450.000	450.000
0400	516.0500	Rubberized Membrane Waterproofing	SY	28.000	28.000
0410	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	590.000	590.000
0430	603.8000	Concrete Barrier Temporary Precast Delivered	LF	510.000	510.000
0440	603.8125	Concrete Barrier Temporary Precast Installed	LF	980.000	980.000
0450	606.0200	Riprap Medium	CY	14.000	14.000
0460	606.0300	Riprap Heavy	CY	190.000	190.000
0470	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	190.000	190.000
0490	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0530	614.0920	Salvaged Rail	LF	400.000	400.000
0540	614.0925	Salvaged Guardrail End Treatments	EACH	4.000	4.000
0550	614.2300	MGS Guardrail 3	LF	300.000	300.000
0560	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0570	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0590	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8010-02-75	EACH	1.000	1.000
0610	619.1000	Mobilization	EACH	0.650	0.650

3

3

DATE 30SEP15		E S T I M A T E O F Q U A N T I T I E S			
LINE				8010-02-75	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0620	624.0100	Water	MGAL	10.000	10.000
0630	625.0500	Salvaged Topsoil	SY	4,150.000	4,150.000
0640	628.1504	Silt Fence	LF	1,425.000	1,425.000
0650	628.1520	Silt Fence Maintenance	LF	1,425.000	1,425.000
0660	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0670	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0680	628.2004	Erosion Mat Class I Type B	SY	150.000	150.000
0690	628.2008	Erosion Mat Urban Class I Type B	SY	4,000.000	4,000.000
0700	628.6005	Turbidity Barriers	SY	250.000	250.000
0710	628.7504	Temporary Ditch Checks	LF	75.000	75.000
0720	628.7570	Rock Bags	EACH	300.000	300.000
0730	629.0210	Fertilizer Type B	CWT	3.000	3.000
0740	630.0120	Seeding Mixture No. 20	LB	70.000	70.000
0750	630.0130	Seeding Mixture No. 30	LB	30.000	30.000
0760	630.0160	Seeding Mixture No. 60	LB	1.000	1.000
0850	642.5001	Field Office Type B	EACH	0.650	0.650
0860	643.0100	Traffic Control (project) 01. 8010-02-75	EACH	1.000	1.000
0880	643.0300	Traffic Control Drums	DAY	5,030.000	5,030.000
0890	643.0420	Traffic Control Barricades Type III	DAY	324.000	324.000
0900	643.0705	Traffic Control Warning Lights Type A	DAY	648.000	648.000
0910	643.0715	Traffic Control Warning Lights Type C	DAY	3,672.000	3,672.000
0920	643.0900	Traffic Control Signs	DAY	8,100.000	8,100.000
0940	645.0120	Geotextile Fabric Type HR	SY	330.000	330.000
0950	646.0106	Pavement Marking Epoxy 4-Inch	LF	1,600.000	1,600.000
0960	646.0600	Removing Pavement Markings	LF	1,200.000	1,200.000
0970	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	4,200.000	4,200.000
0980	649.1400	Temporary Pavement Marking Stop Line Removable Tape 24-Inch	LF	24.000	24.000
0990	650.4500	Construction Staking Subgrade	LF	589.000	589.000
1000	650.5000	Construction Staking Base	LF	589.000	589.000
1020	650.6500	Construction Staking Structure Layout (structure) 01. B-16-0136	LS	1.000	1.000
1040	650.7000	Construction Staking Concrete Pavement	LF	38.000	38.000
1060	650.9910	Construction Staking Supplemental Control (project) 01. 8010-02-75	LS	1.000	1.000
1080	650.9920	Construction Staking Slope Stakes	LF	627.000	627.000
1090	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-16-0136	LS	1.000	1.000
1110	690.0150	Sawing Asphalt	LF	780.000	780.000
1120	690.0250	Sawing Concrete	LF	50.000	50.000
1130	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1140	715.0502	Incentive Strength Concrete Structures	DOL	1,200.000	1,200.000
1150	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
1160	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
1220	SPV.0195	Special 01. Asphaltic Surface Special	TON	340.000	340.000

3

3

CLEARING AND GRUBBING ITEMS				
		201.0105	201.0205	
STATION - STATION		CLEARING	GRUBBING	
		STA	STA	
CAT 0010				
403+00 - 407+00		RT	4	4
408+00 - 410+00		RT	2	2
TOTALS		6	6	

3

REMOVING SMALL PIPE CULVERTS					
STATION	LOCATION	203.0100	FOR INFORMATION USE ONLY		
		EACH	SIZE (INCH)	MATERIAL	LENGTH (FT)
CAT 0010					
404+27	RT	1	18	CMCP	28
TOTAL		1			

REMOVING PAVEMENT			
			204.0100
STATION - STATION		LOCATION	SY
CAT 0010			
405+94 - 406+24		LT&RT	70
406+56 - 406+85		LT&RT	70
TOTAL			140

REMOVING ASPHALTIC SURFACE			
			204.0110
STATION - STATION		LOCATION	SY
CAT 0010			
403+40 - 406+26		LT&RT	510
406+54 - 409+36		LT&RT	510
TOTAL			1,020

EARTHWORK SUMMARY

DIVISION	LOCATION	EXCAVATION COMMON (NOTE 1) (ITEM #205.0100)	SALVAGED / UNUSEABLE PAVEMENT MATERIAL (NOTE 2)	AVAILABLE MATERIAL (NOTE 3)	UNEXPANDED FILL	EXPANDED FILL (NOTE 4)	MASS ORDINATE +/- (NOTE 5)	BORROW (ITEM #208.0100)
						FACTOR 1.25		
ID 8010-02-75								
1	SOUTH OF CHASE CREEK: STA 402+96 - STA 406+08	283	33	250	327	409	-159	159
1	NORTH OF CHASE CREEK: STA 406+70 - STA 409+85	211	33	178	627	784	-607	607
TOTALS		494	66	428	954	1,193	-766	766

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

3

BASE AGGREGATE DENSE ITEMS					
			305.0110	305.0120	
			3/4-INCH	1 1/4-INCH	
STATION - STATION		LOCATION	TON	TON	COMMENTS
CAT 0010					
402+96 - 404+80		LT&RT	40	--	SHOULDER AND GUARDRAIL
403+65 - 404+06		RT	35	--	FIELD ENTRANCE
404+80 - 406+08		LT&RT	40	390	APPROACH WORK
406+70 - 408+00		LT&RT	40	400	APPROACH WORK
408+00 - 409+85		LT&RT	40	--	SHOULDER AND GUARDRAIL
TOTALS			195	790	

CONCRETE PAVEMENT ITEMS				
		415.0070	415.0410	
		7-INCH	APPROACH SLAB	
STATION - STATION	LOCATION	SY	SY	
CAT 0010				
405+89 - 406+08	LT&RT	25	50	
406+70 - 406+89	LT&RT	25	50	
TOTALS		50	100	

3

ASPHALTIC ITEMS							
STATION - STATION	LOCATION	211.0400	455.0605	465.0125	465.0315	SPV.0195.01	COMMENTS
		PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	TACK COAT GAL	ASPHALTIC SURFACE TEMPORARY TON	ASPHALTIC FLUMES SY	ASPHALTIC SURFACE SPECIAL TON	
CAT 0010							
403+40 - 404+80	LT&RT	4	--	--	--	30	3.5-INCH PAVED SHOULDERS
403+44 - 409+11	LT	--	--	25	--	--	3.5-INCH TEMP WIDENING - STAGE 1
404+80 - 405+89	LT&RT	--	25	--	3	135	5.5-INCH MAINLINE PAVEMENT AND PAVED SHOULDERS
406+89 - 408+00	LT&RT	--	25	--	--	140	5.5-INCH MAINLINE PAVEMENT AND PAVED SHOULDERS
408+00 - 409+36	LT&RT	4	--	--	--	35	3.5-INCH PAVED SHOULDERS
TOTALS		8	50	25	3	340	

CONCRETE BARRIER TEMPORARY PRECAST ITEMS					
STATION - STATION	LOCATION	603.8000	603.8125	COMMENTS	
		DELIVERED	INSTALLED		
		LF	LF		
CAT 0010					
404+04 - 408+71	LT&RT	470	470	STAGE 2	
403+84 - 408+91	LT&RT	40	510	STAGE 3	
TOTALS		510	980		

RIPRAP AND GEOTEXTILE FABRIC ITEMS				
STATION	LOCATION	606.0200	645.0120	
		RIPRAP MEDIUM CY	GEOTEXTILE FABRIC TYPE HR SY	
CAT 0010				
405+84	LT	7	25	
405+97	RT	7	25	
TOTALS		14	50	

GUARDRAIL ITEMS						
STATION - STATION	LOCATION	614.0920	614.0925	614.2300	614.2500	614.2610
		SALVAGED	SALVAGED	MGS	MGS	MGS
		RAIL	END	MGS	THRIE BEAM	GUARDRAIL
		LF	TREATMENTS	GUARDRAIL 3	TRANSITION	TERMINAL EAT
CAT 0010		LF	EACH	LF	LF	EACH
404+12 - 406+05	RT	100.0	1	50.0	39.4	1
404+49 - 405+89	LT	100.0	1	100.0	39.4	1
406+73 - 408+66	LT	100.0	1	100.0	39.4	1
406+87 - 408+29	RT	100.0	1	50.0	39.4	1
TOTALS		400.0	4	300.0	157.6	4

MAINTENANCE AND REPAIR OF HAUL ROADS

	618.0100
	(8010-02-75)
	EACH
CAT 0010	
PROJECT	1
TOTAL	1

WATER

LOCATION		624.0100
		MGAL
CAT 0010		
PROJECT		10
TOTAL		10

NOTE: WATER PROVIDED FOR COMPACTION OF BASE AGGREGATE AND DUST CONTROL

EROSION CONTROL ITEMS

STATION - STATION	LOCATION	625.0500	628.1504	628.1520	628.2004	628.2008	628.6005	628.7504	628.7570	629.0210	630.0120	630.0130	630.0160
		SALVAGED TOPSOIL	SILT FENCE	SILT FENCE MAINTENANCE	EROSION MAT CLASS I TYPE B	EROSION MAT URBAN CLASS I TYPE B	TURBIDITY BARRIERS	TEMPORARY DITCH CHECKS	ROCK BAGS	FERTILIZER TYPE B	SEEDING MIXTURE	SEEDING MIXTURE	SEEDING MIXTURE
		SY	LF	LF	SY	SY	SY	LF	EACH	CWT	NO. 20 LB	NO. 30 LB	NO. 60 LB
CAT 0010													
402+96 - 406+31	RT	680	370	370	--	680	--	--	75	0.4	10	6	--
403+29 - 406+00	LT	650	285	285	--	650	--	--	60	0.4	10	5	--
406+48 - 409+85	LT	945	185	185	120	825	--	60	45	0.6	15	6	--
406+69 - 409+48	RT	1,035	300	300	--	1,035	--	--	60	0.6	20	6	--
B-16-0136	LT&RT	10	--	--	--	10	200	--	--	--	--	--	0.5
UNDISTRIBUTED	--	830	285	285	30	800	50	15	60	1	15	7	0.5
TOTALS		4,150	1,425	1,425	150	4,000	250	75	300	3	70	30	1

NOTES:
ROCK BAGS ARE FOR SILT FENCE RELIEF
SALVAGED TOPSOIL, SEED, AND EMAT AT B-16-0136 IS FOR WILDLIFE PASSAGE LOCATED IN FRONT OF THE SOUTH ABUTMENT OF B-16-0136; SEE STRUCTURE PLANS FOR DETAILS

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905	628.1910
	EACH	EMERGENCY EACH
CAT 0010		
PROJECT	3	3
TOTALS	3	3

TRAFFIC CONTROL ITEMS

LOCATION	DAYS	643.0420				643.0705		643.0715		643.0900		COMMENTS
		643.0300		BARRICADES		WARNING LIGHTS		WARNING LIGHTS		SIGNS		
		DRUMS		TYPE III		TYPE A		TYPE C				
		NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	
CAT 0010												
PROJECT	2	31	62	--	--	--	--	--	--	--	--	STAGE 1
PROJECT	53	46	2,438	3	159	6	318	34	1,802	75	3,975	STAGE 2
PROJECT	55	46	2,530	3	165	6	330	34	1,870	75	4,125	STAGE 3
TOTALS		5,030		324		648		3,672		8,100		

PAVEMENT MARKING EPOXY

		646.0106	
		4-INCH	
STATION - STATION	LOCATION	(YELLOW) LF	(WHITE) LF
CAT 0010			
402+50 - 410+25	LT&RT	200	1,400
TOTAL		200	1,400
		1,600	

TEMPORARY PAVEMENT MARKING ITEMS

STATION - STATION	LOCATION	646.0600	649.0400	649.1400	COMMENTS
		REMOVING PAVEMENT MARKINGS LF	REMOVABLE TAPE 4-INCH (WHITE) LF	STOP LINE REMOVABLE TAPE 24-INCH (WHITE) LF	
CAT 0010					
395+50 - 417+25	LT&RT	800	2,800	24	STAGE 2
403+00 - 410+00	LT&RT	400	1,400	--	STAGE 3
TOTALS		1,200	4,200	24	

CONSTRUCTION STAKING ITEMS

STATION - STATION	LOCATION	650.4500	650.5000	650.7000	650.9910.01	650.9920
		SUBGRADE	BASE	CONCRETE	SUPPLEMENTAL	SLOPE
		LF	LF	PAVEMENT	CONTROL	STAKES
		LF	LF	LF	8010-02-75	LF
CAT 0010						
402+96 - 406+08	LT & RT	293	293	19	--	312
406+70 - 409+85	LT & RT	296	296	19	--	315
PROJECT		--	--	--	1	--
TOTALS		589	589	38	1	627

CONSTRUCTION STAKING STRUCTURE LAYOUT

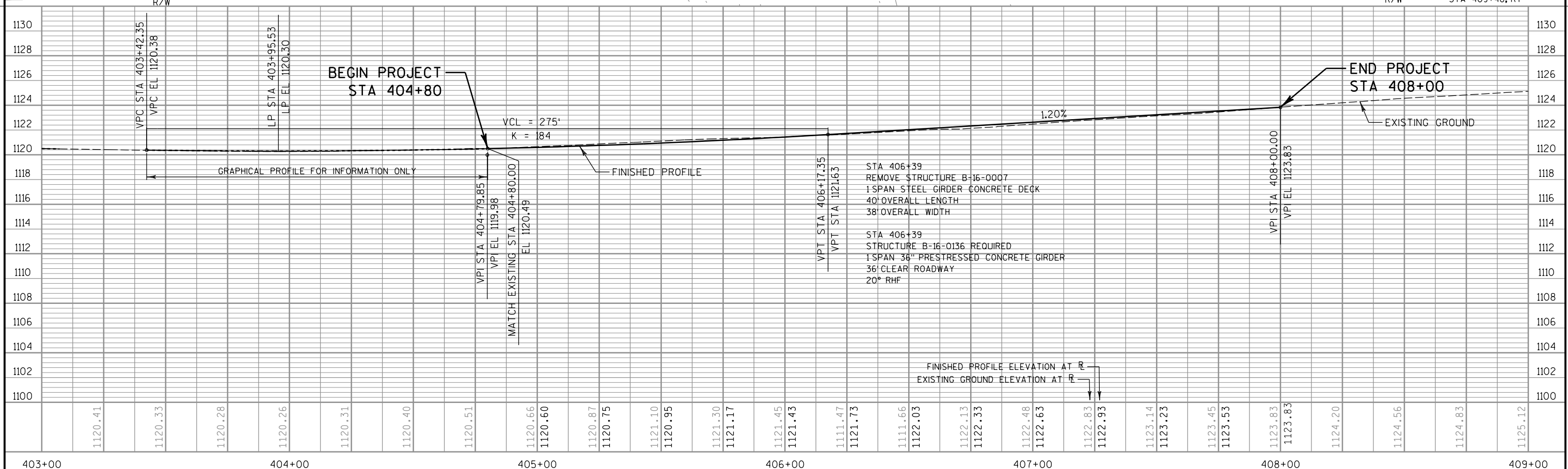
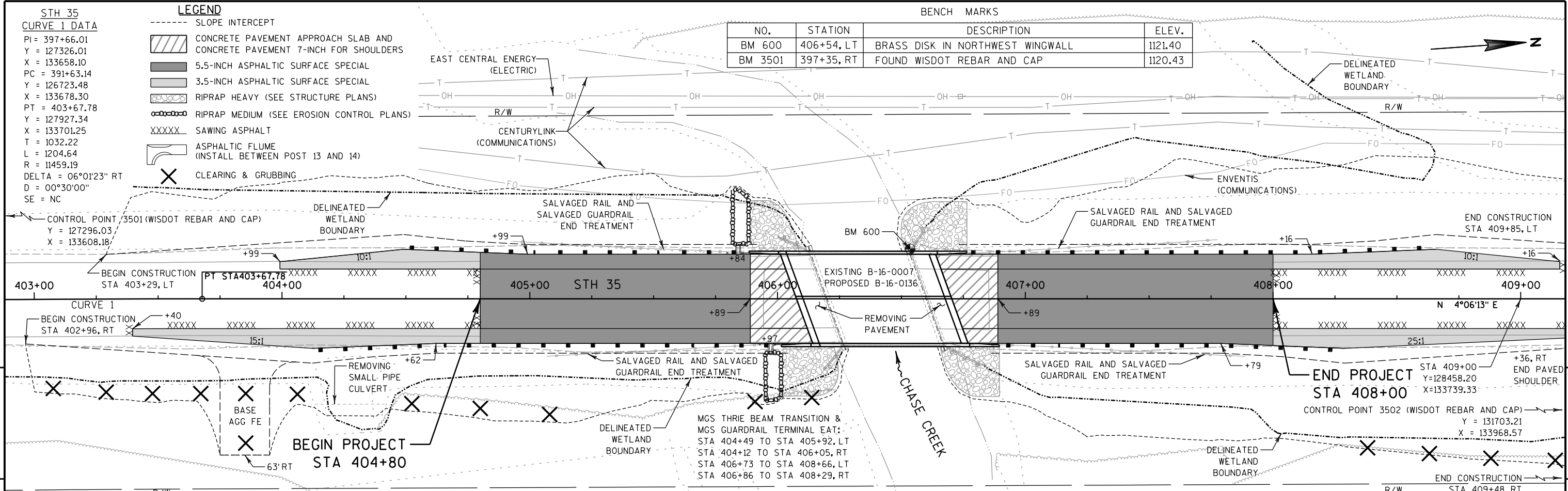
STATION	LOCATION	650.6500 (B-16-0136) LS
CAT 0010		
PROJECT	LT&RT	1
TOTAL		1

TEMPORARY TRAFFIC SIGNALS FOR BRIDGES

STATION	LOCATION	661.0100.01 (B-16-0136) LS
CAT 0010		
PROJECT	LT & RT	1
TOTAL		1

SAWING ITEMS

		690.0150	690.0250
		ASPHALT	CONCRETE
STATION - STATION	LOCATION	LF	LF
CAT 0010			
403+99 - 404+80	LT&RT	236	--
404+80	LT&RT	24	--
408+80 - 406+20	LT&RT	115	25
408+00	LT&RT	24	--
408+00 - 409+36	LT&RT	266	--
406+60 - 409+36	LT&RT	115	25
TOTALS		780	50



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
08E11-02	TURBIDITY BARRIER
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)
13B02-08A	CONCRETE BRIDGE APPROACH
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"
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
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

6



PLAN VIEW
FLUME AT CURB END



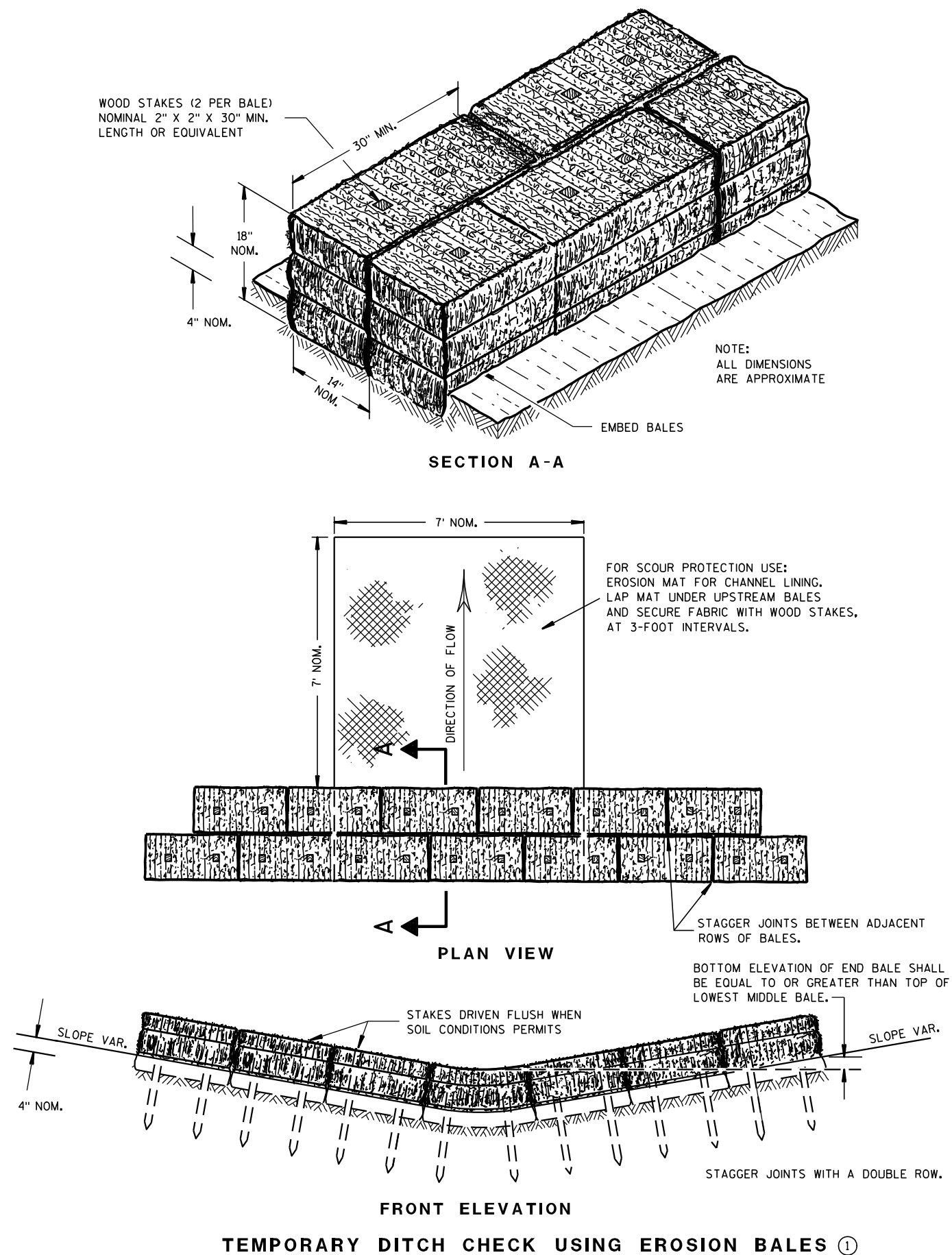
6

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

- ### ③ CONCRETE SURFACE DRAIN



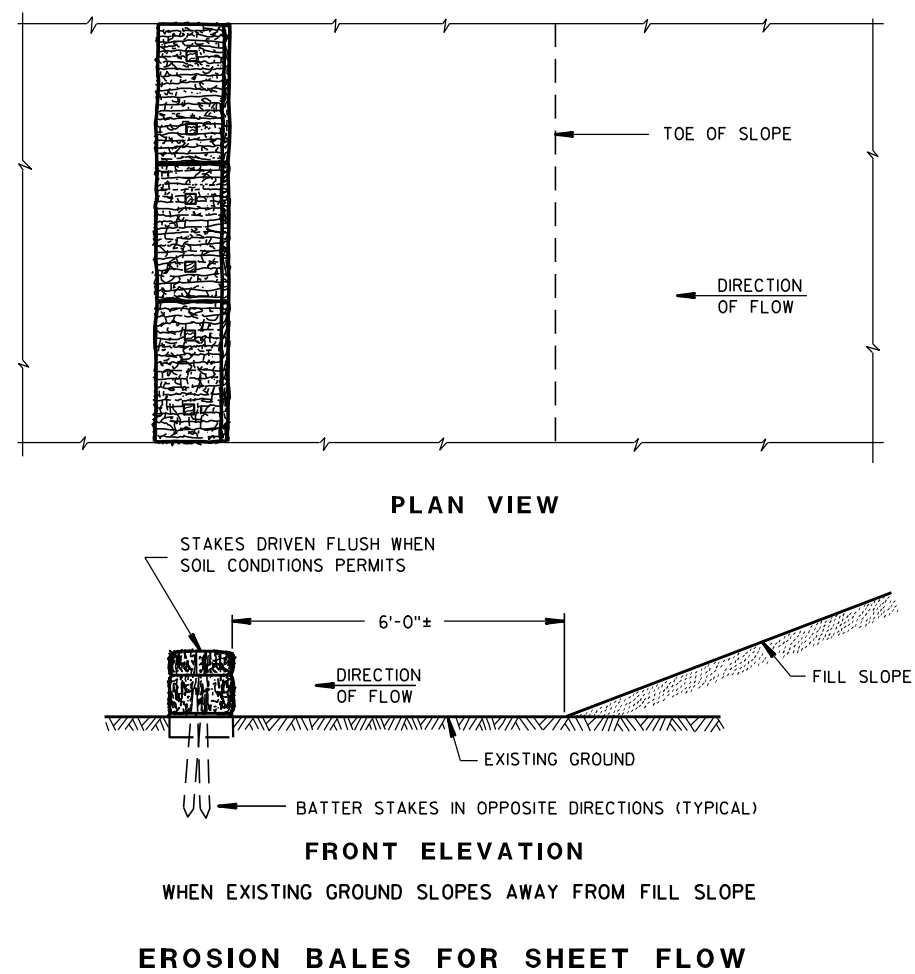
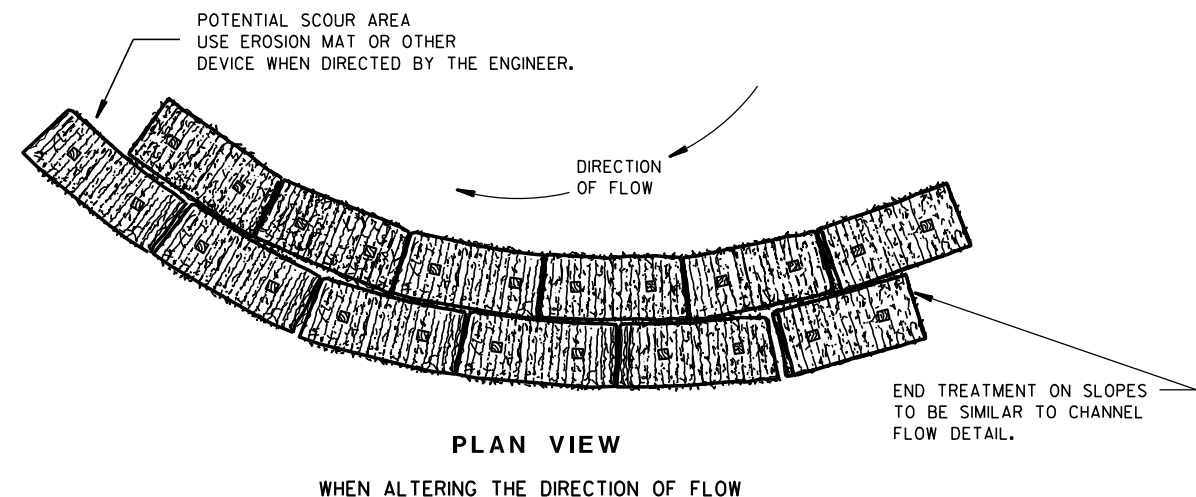
APPROVED
9-4-08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 25
ENGINEER



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

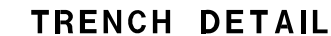
6/04/02
DATE

/S/ Beth Conn-----
CHIEF ROADWAY DEVELOPER 26 ENGINEER

FHWA



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

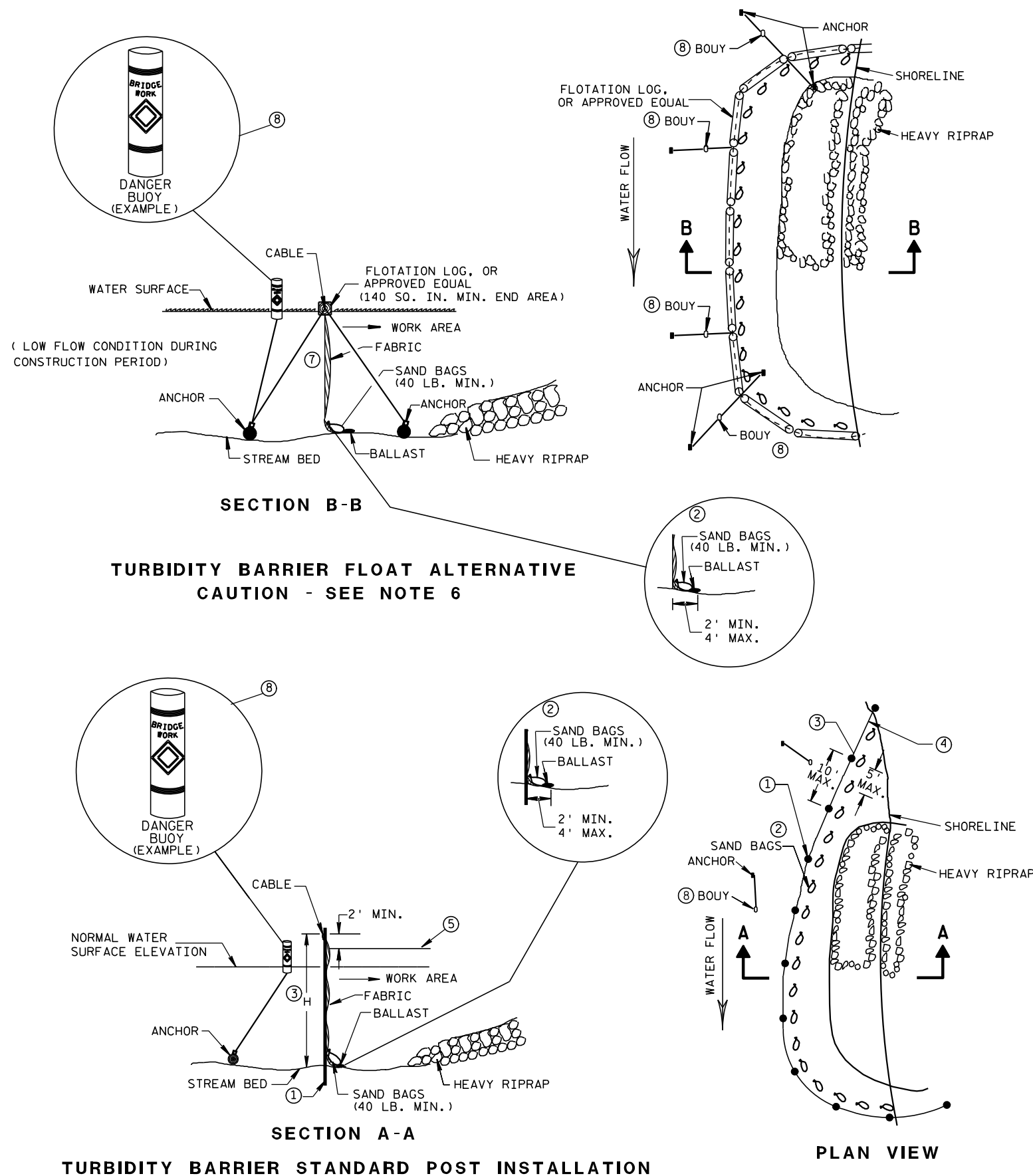


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE /S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT 27 INCHES

FHWA

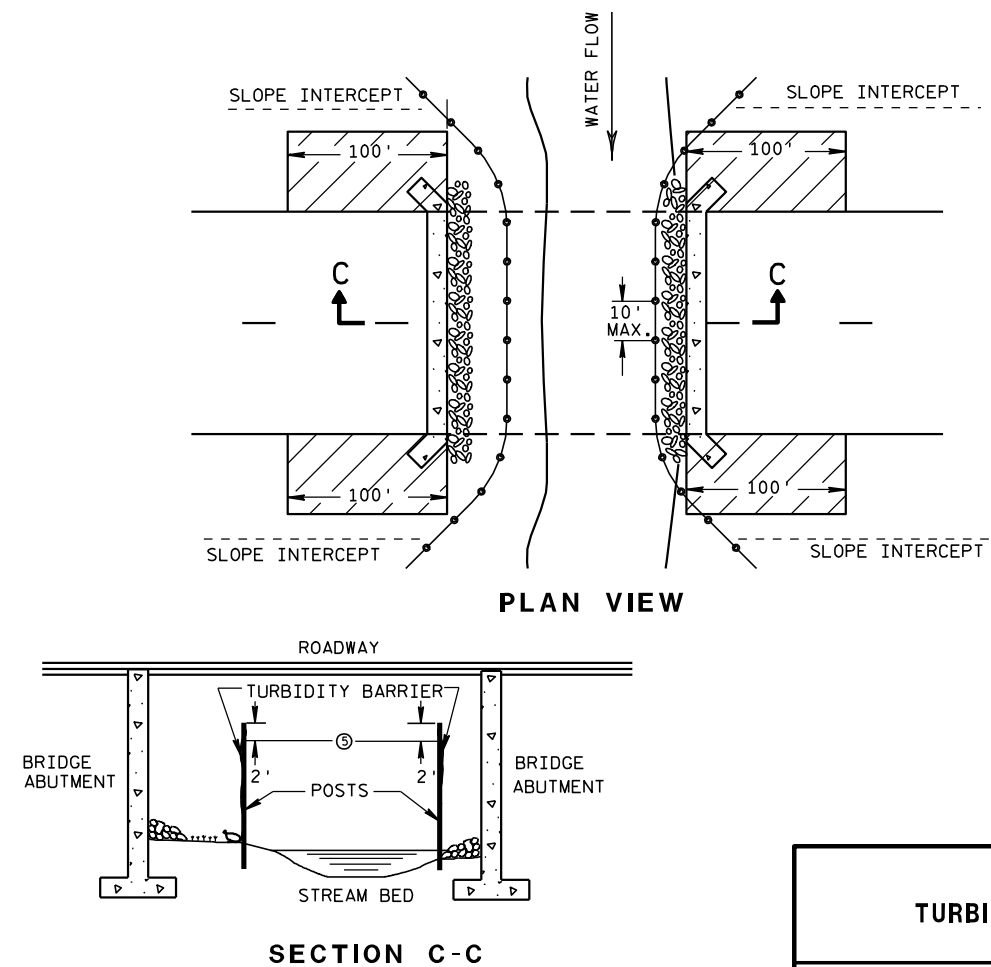


GENERAL NOTES

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

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

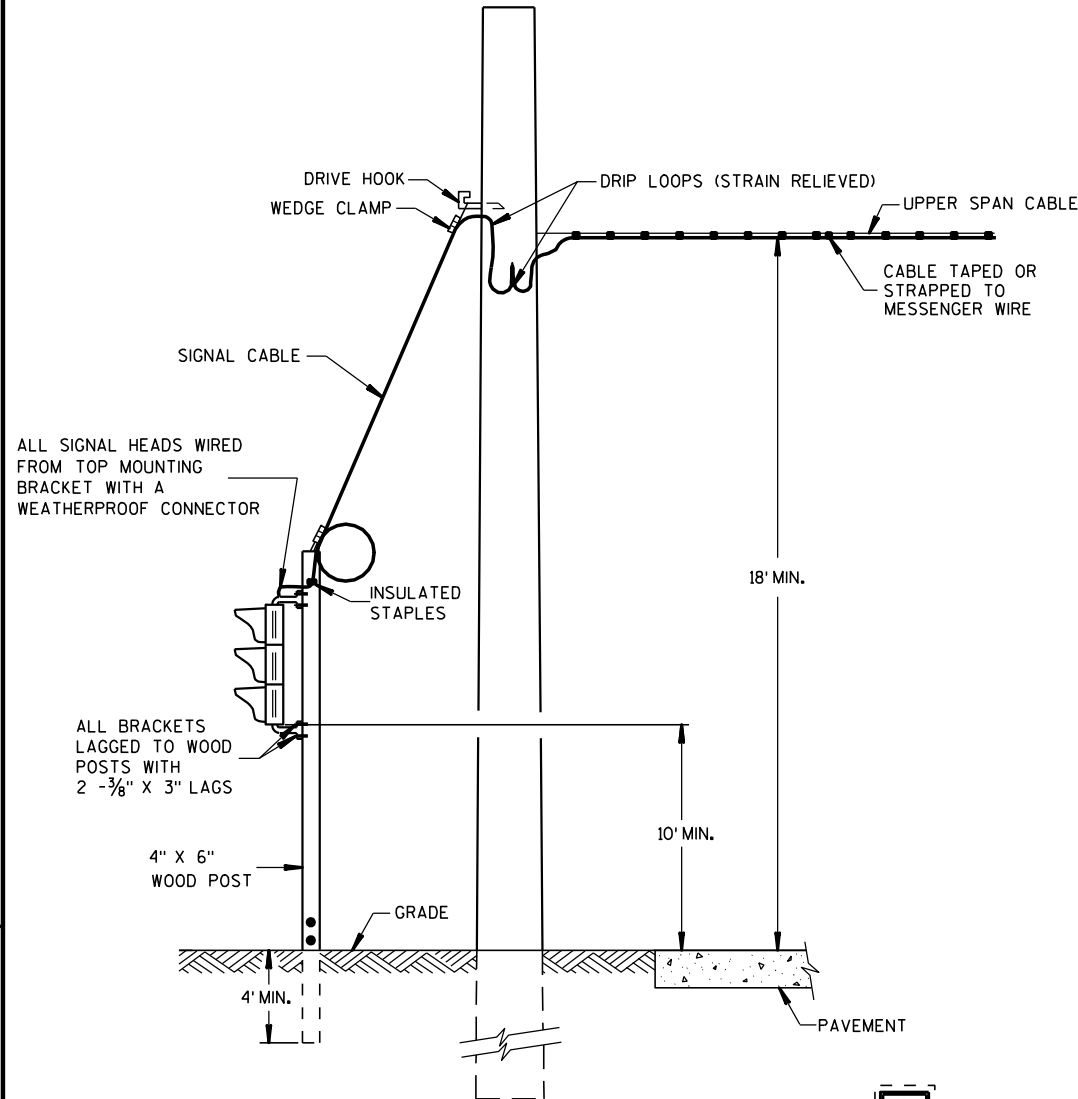
APPROVED

6/04/02
DATE

FWHA

/S/ Beth Conn
CHIEF ROADWAY DEVELOPER

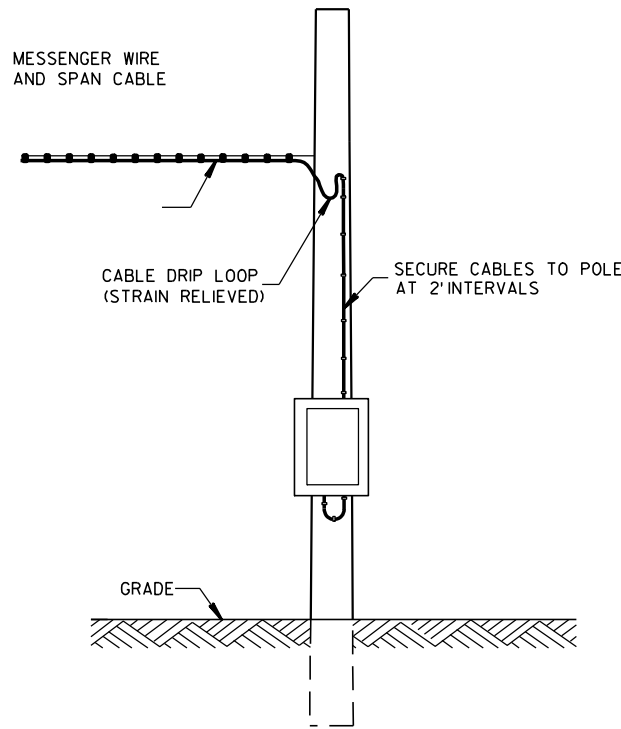
28 INEER



TYPICAL DROP TO TRAFFIC SIGNAL FACE

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.	

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



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 PLOES 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.

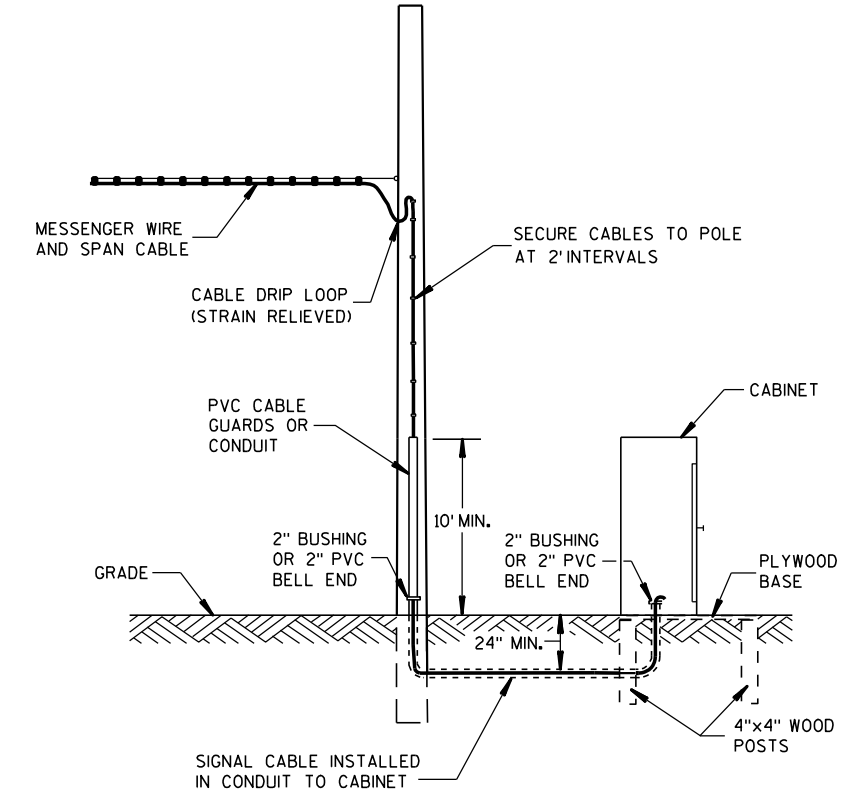
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

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

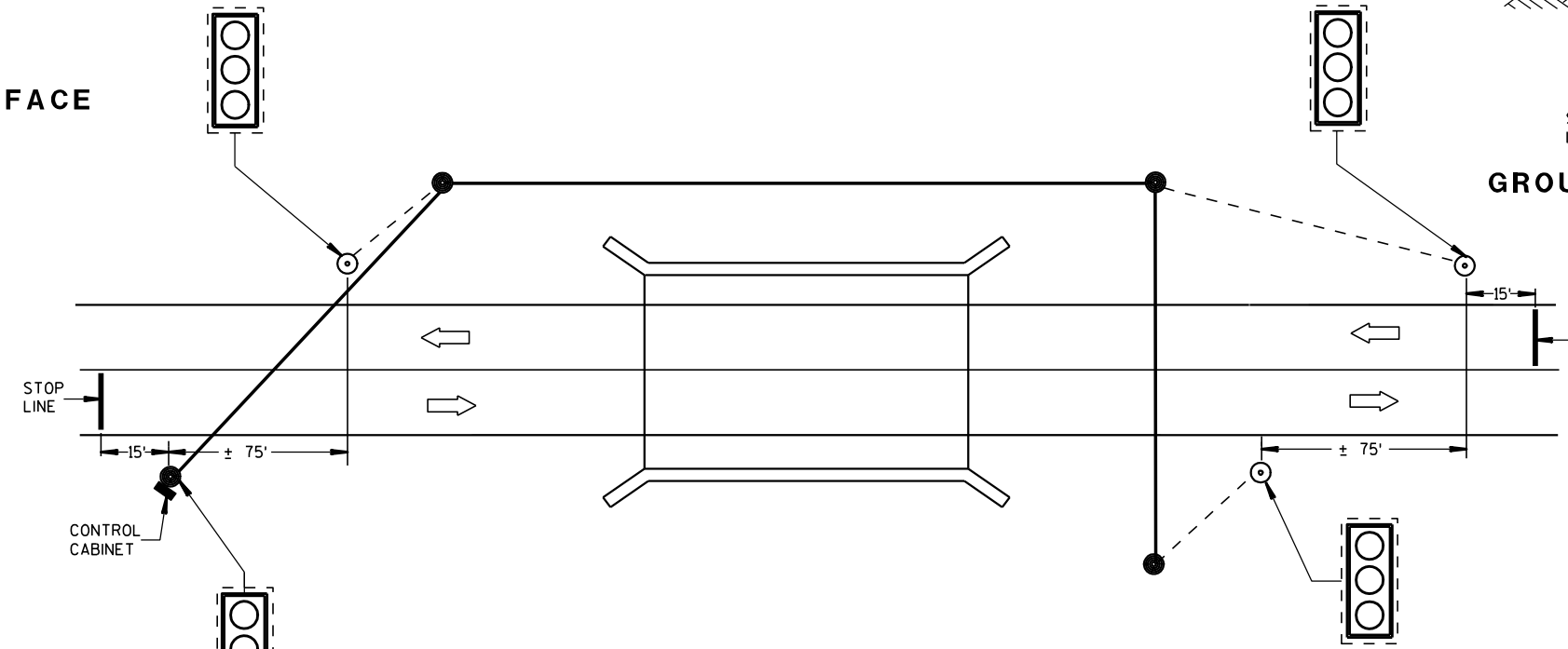
VERTICAL CLEARANCE ETC. PER NEC.

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



PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

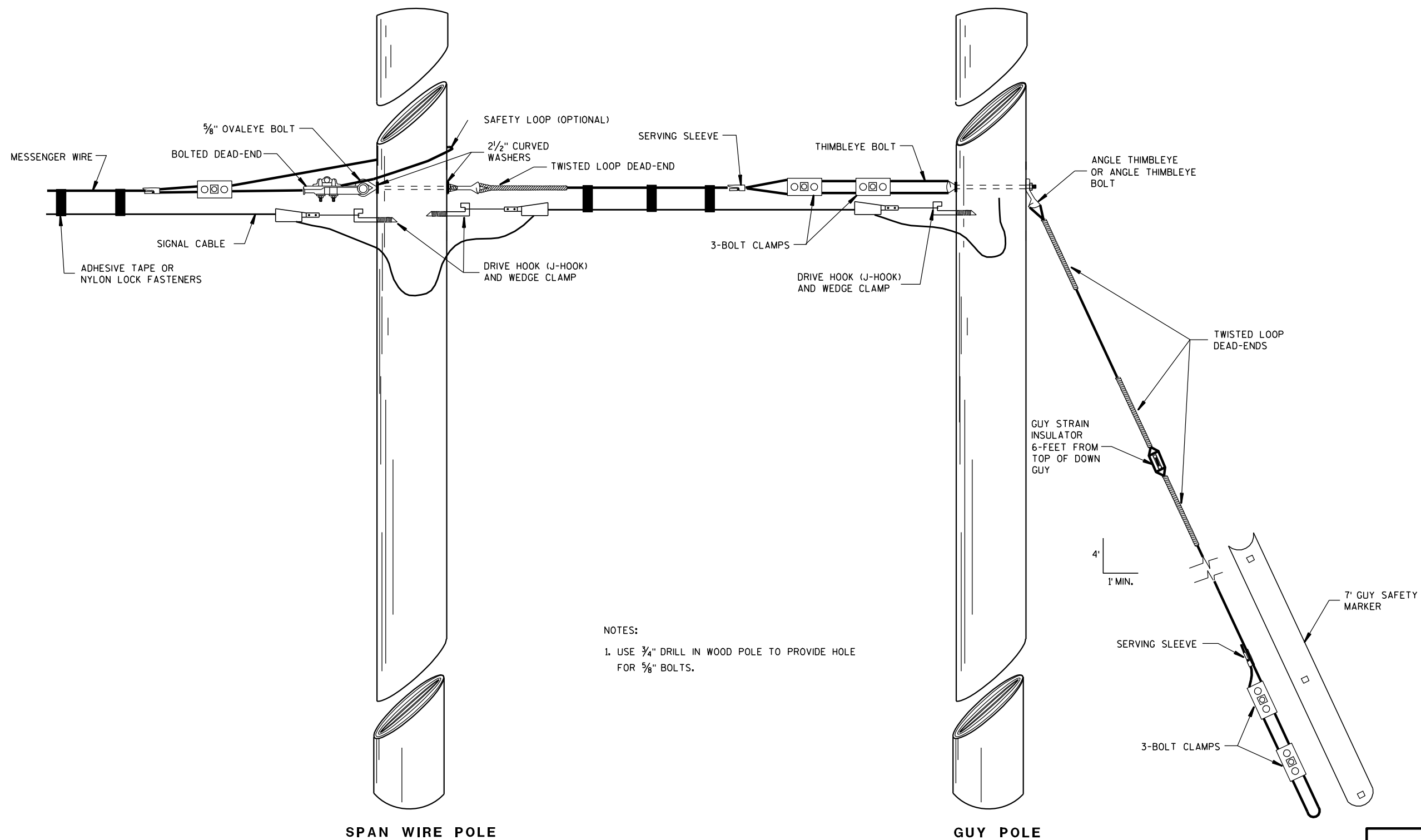
LEGEND

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

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/2/2011 DATE /S/ Thomas J. G... STATE ELECTRICAL ENGI 29 HWYS
FHWA



NOTES:

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

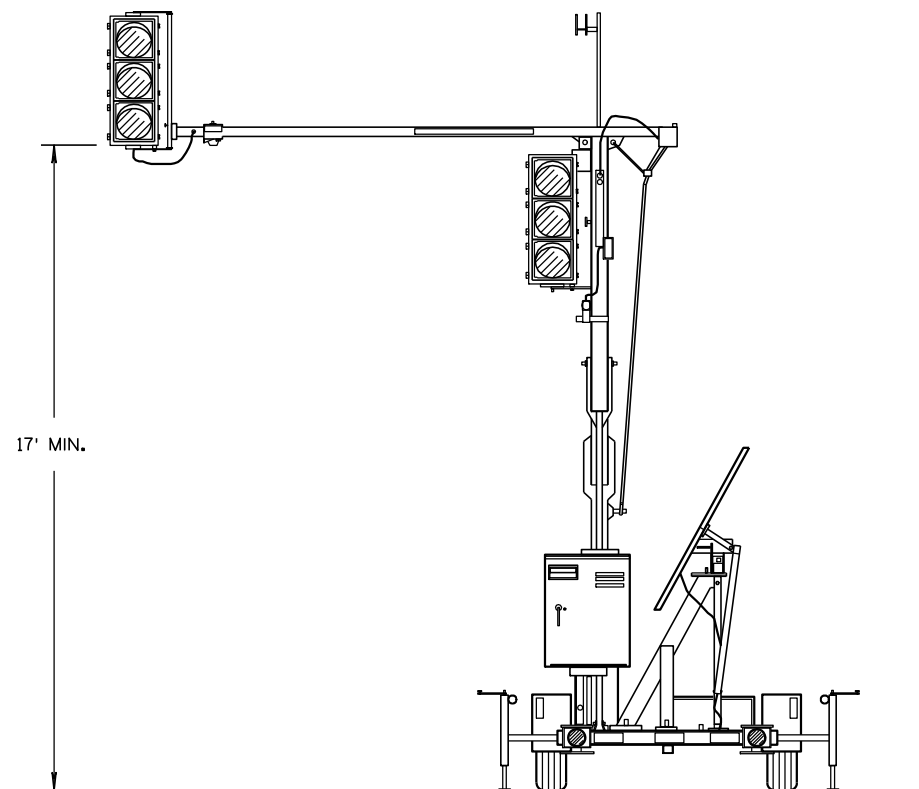
TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY
TRAFFIC SIGNAL INSTALLATIONSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011
DATE/S/ Thomas J. G...
STATE ELECTRICAL ENGR 30 HWYS

FHWA

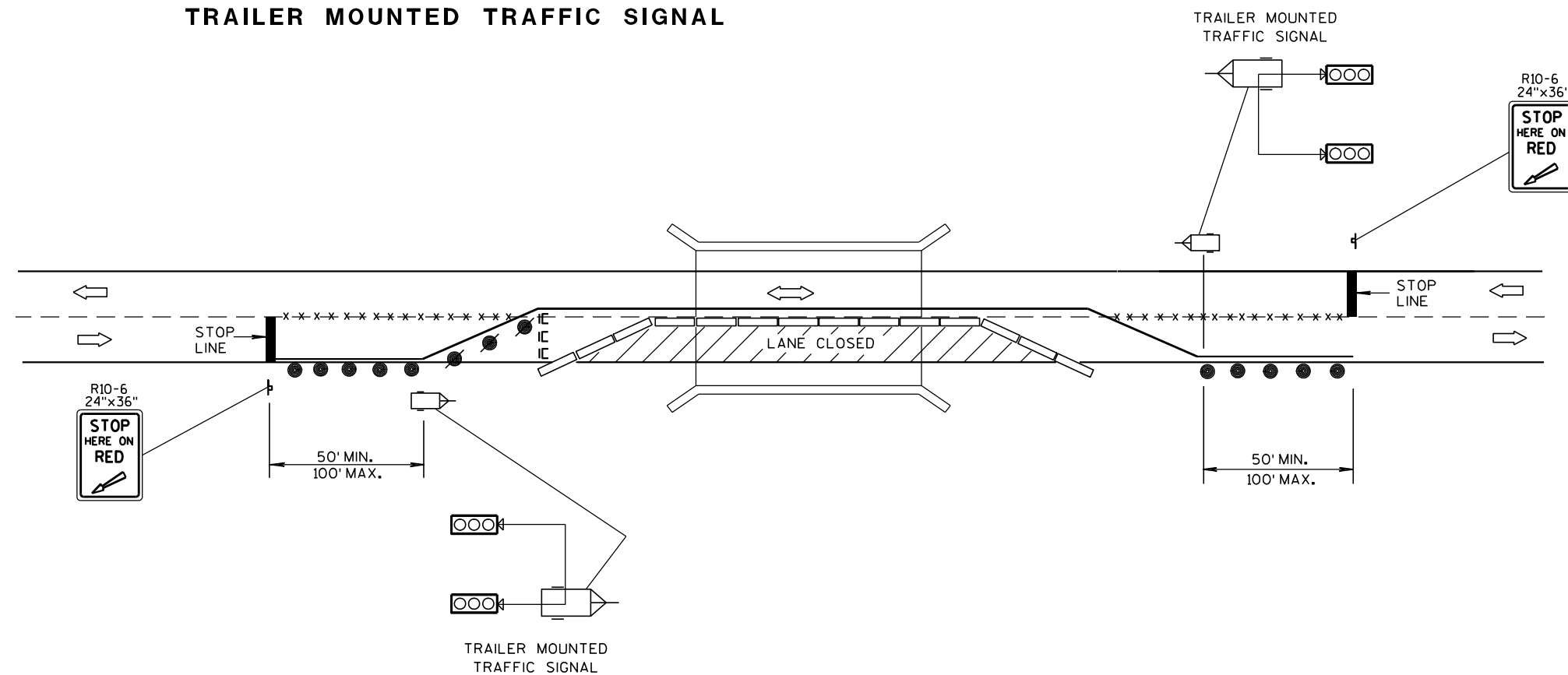


TRAILER MOUNTED TRAFFIC SIGNAL

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
- *-x-* REMOVING PAVEMENT MARKING
- IC 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

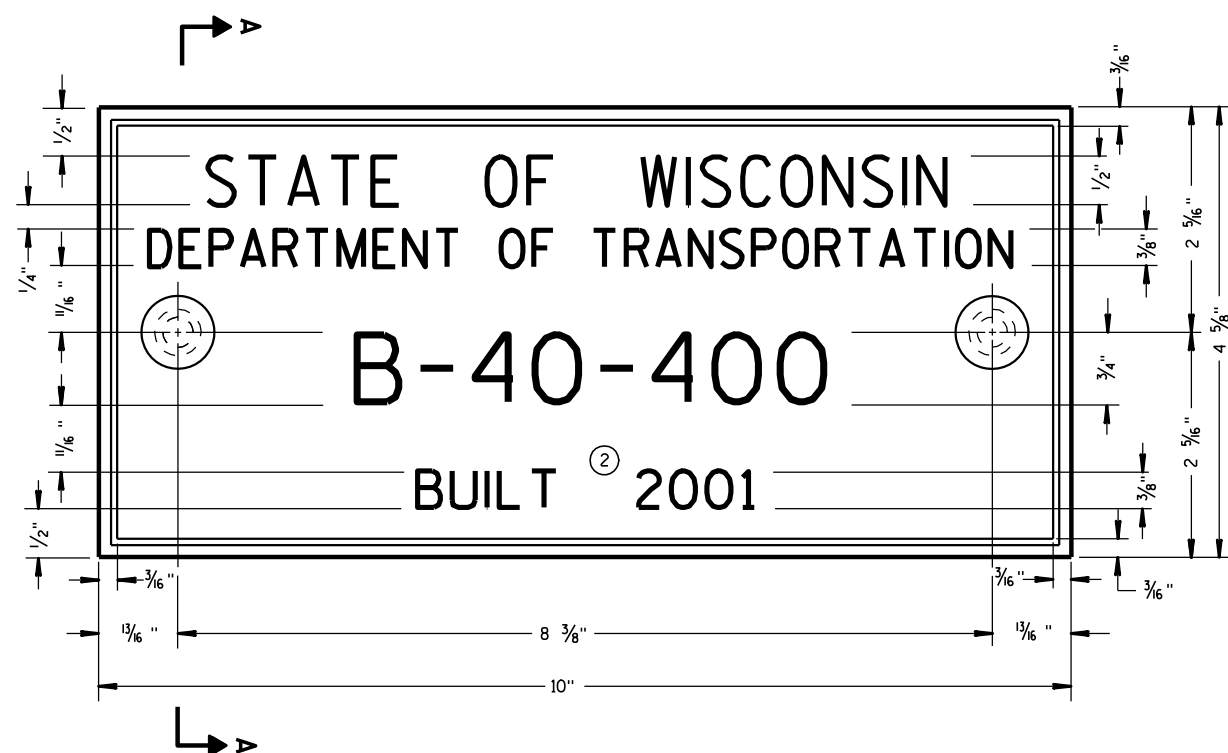
DATE

FHWA

/S/ Thomas J. Gorman

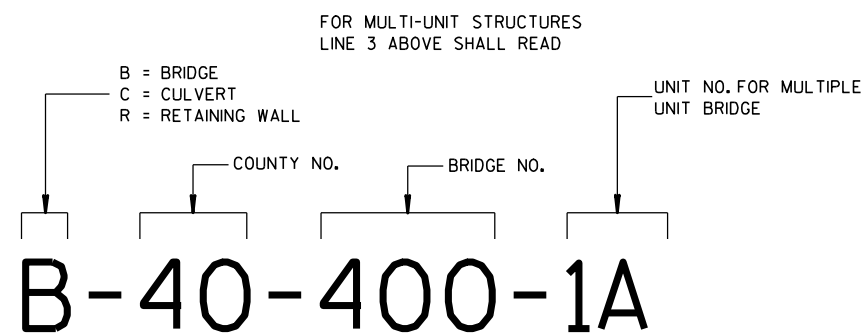
STATE ELECTRICAL ENGR 31

HWYS



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



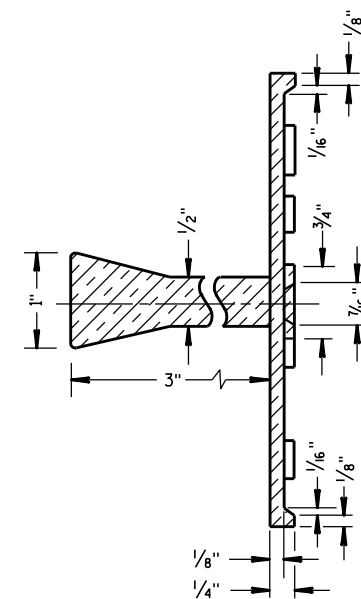
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

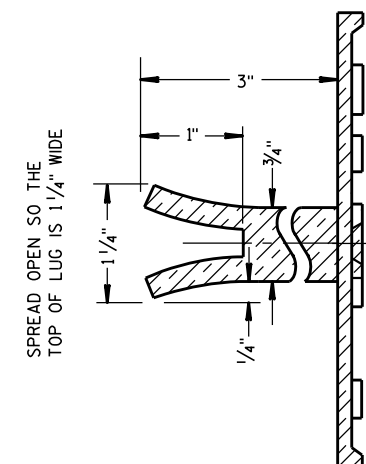
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

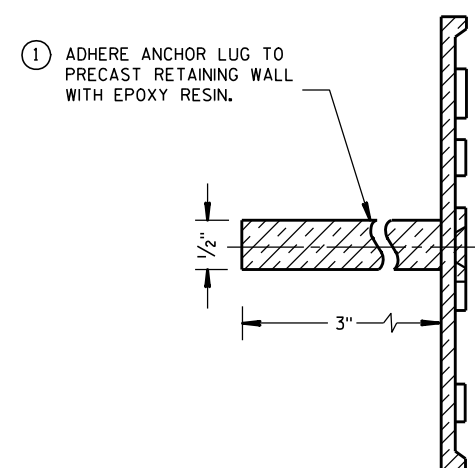
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



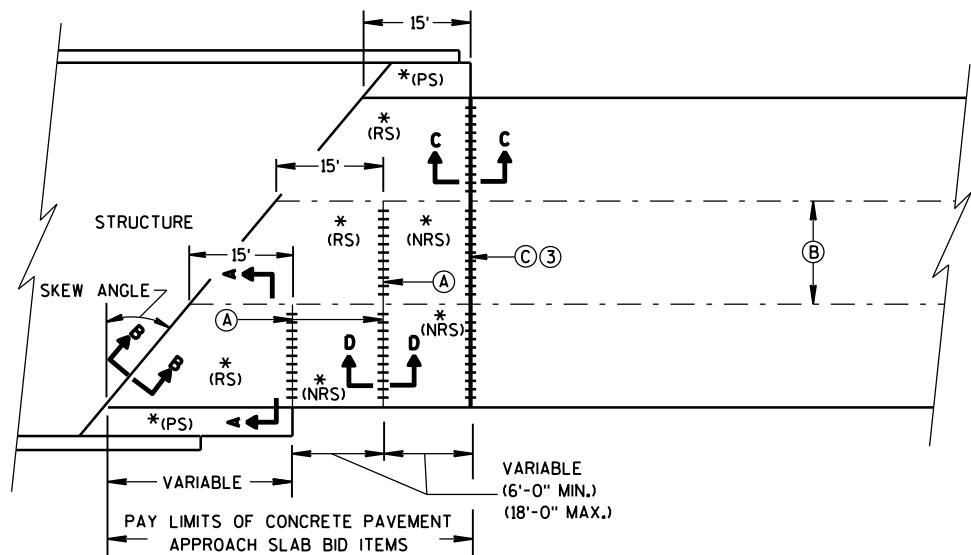
ALTERNATE LUG



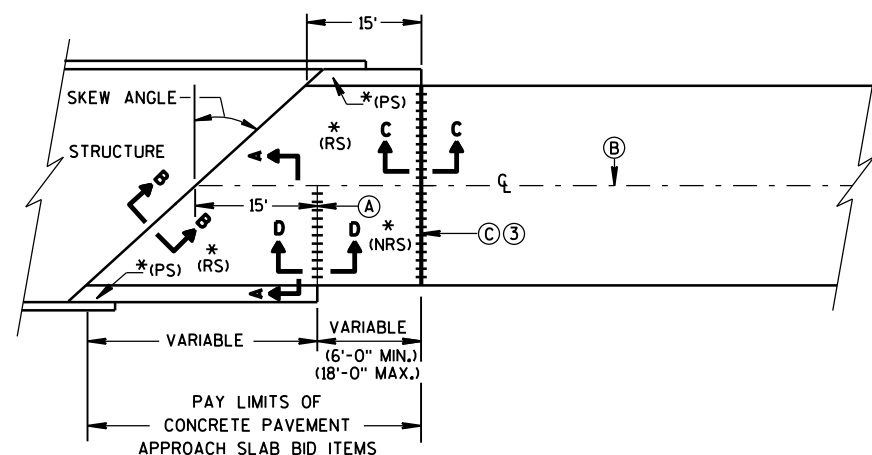
ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

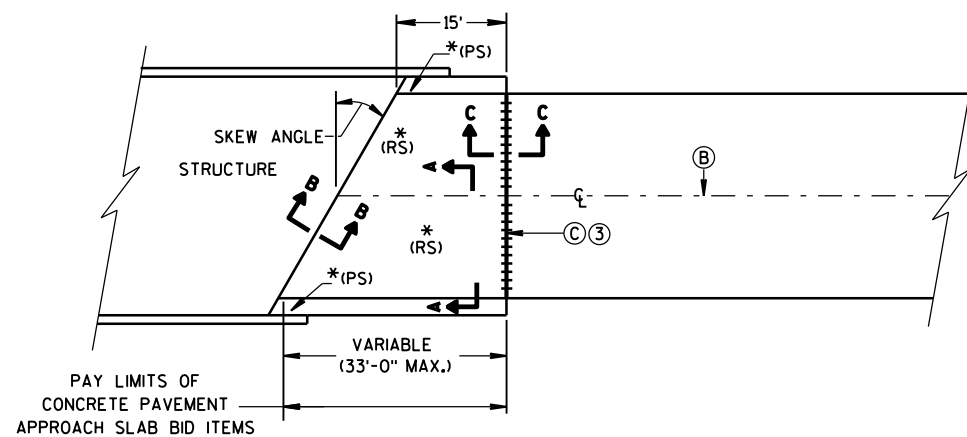
NAME PLATE (STRUCTURES)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED <u>3/26/10</u> DATE	<u>/S/ Scot Beck</u> CHIEF STRUCTURAL DEVELOPER	<u>32</u> VEER



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**



**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

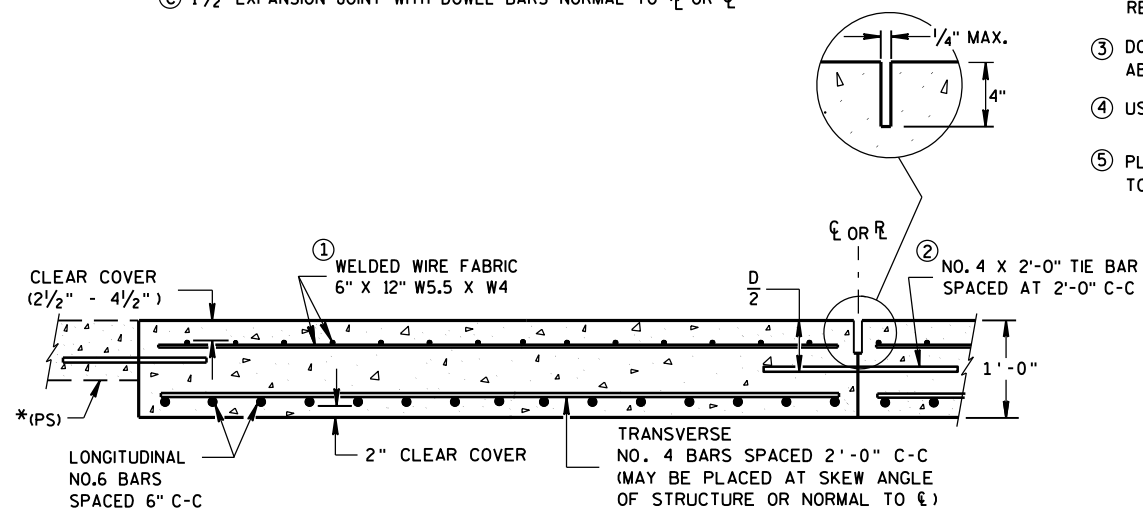


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

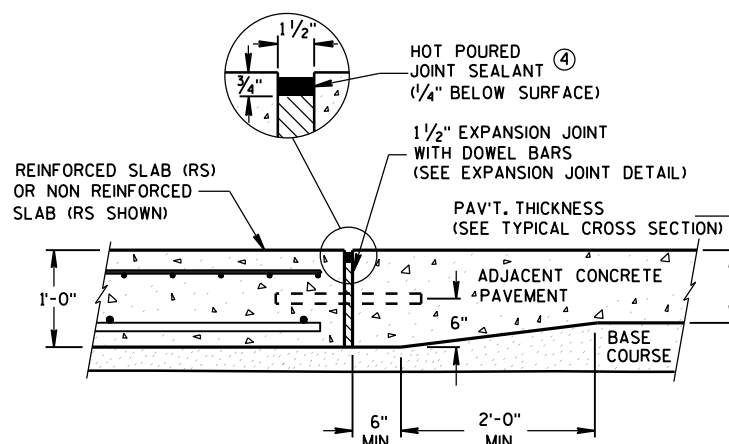
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

*** STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

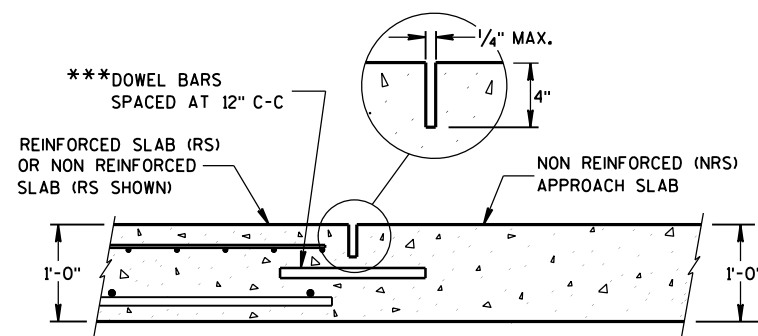
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



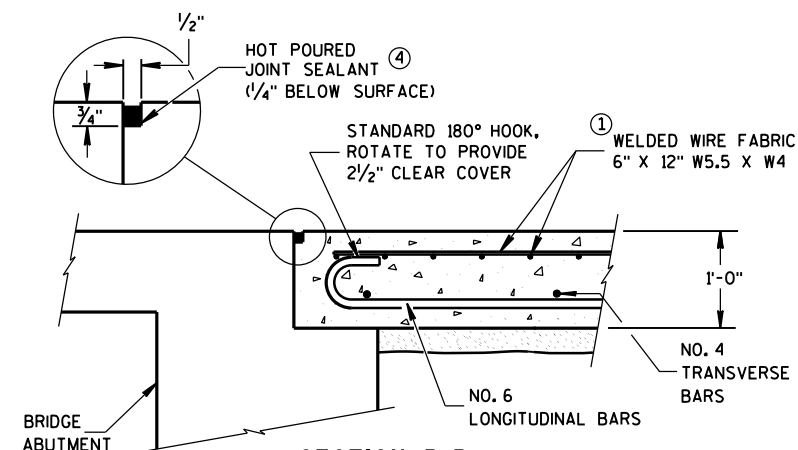
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

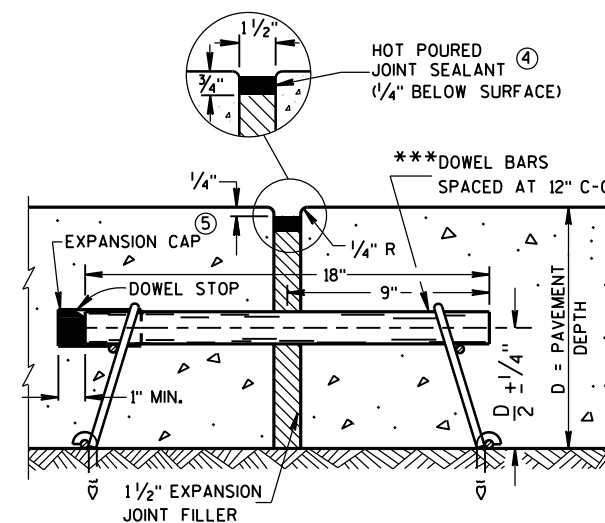
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**

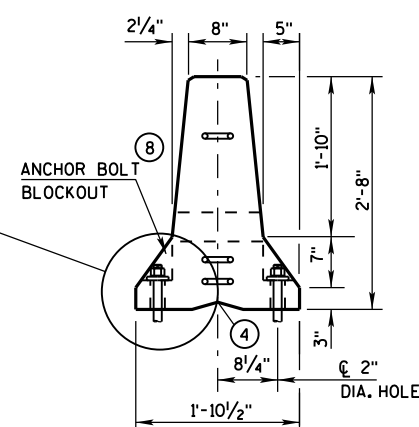
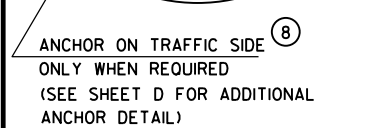


EXPANSION JOINT DETAIL

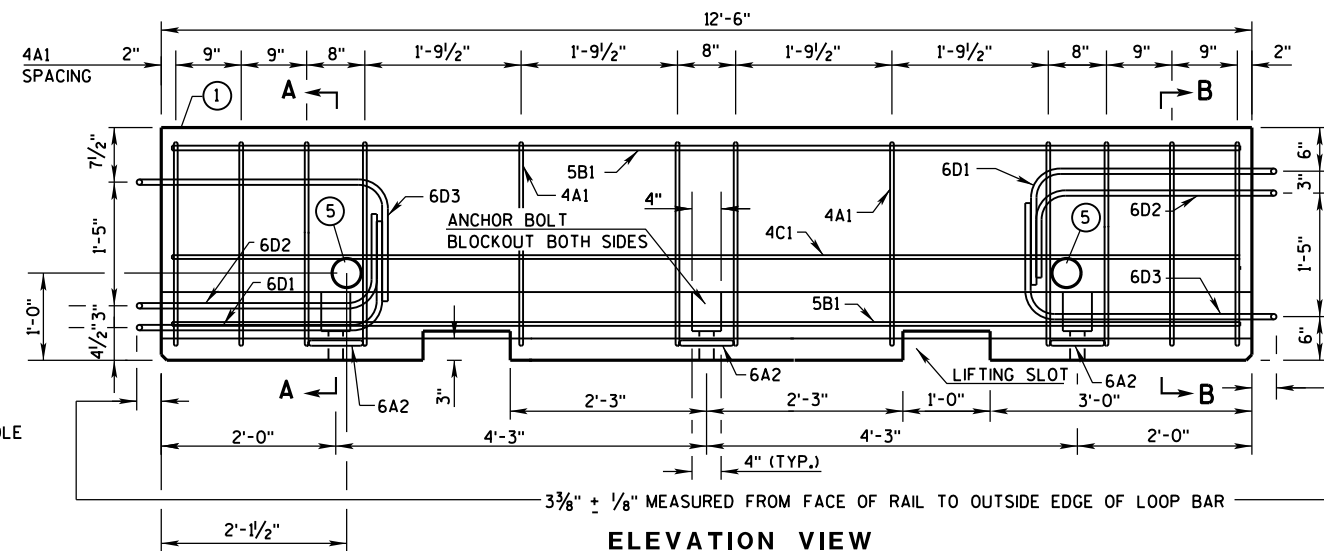
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

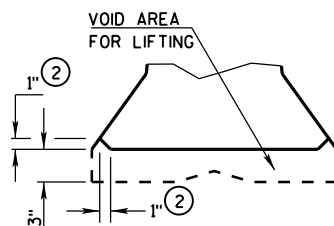
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE
PAVEMENT SUPEF 33
FHWA



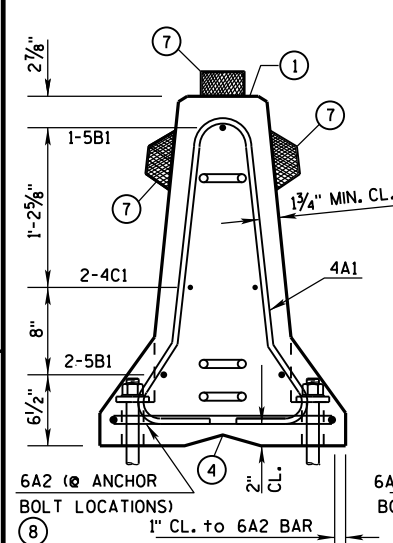
END VIEW



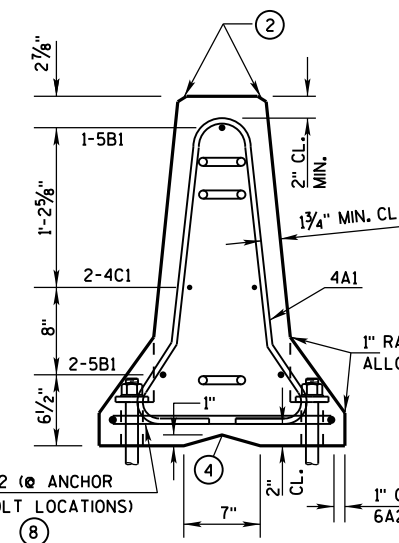
ELEVATION VIEW



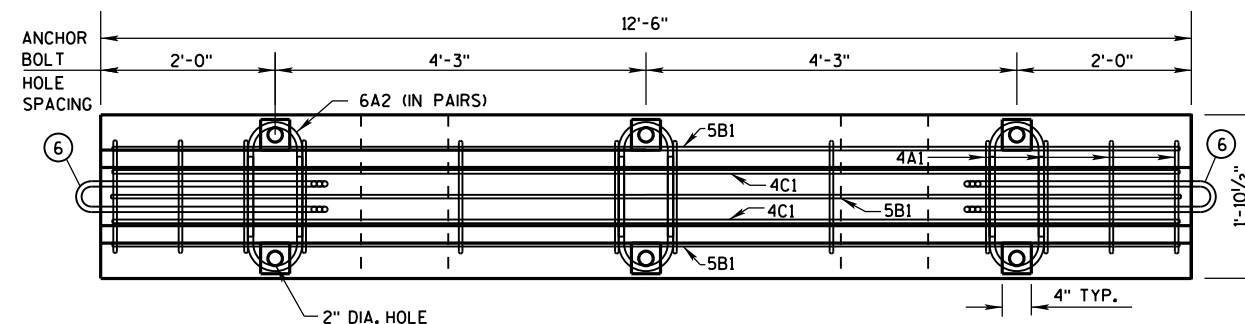
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

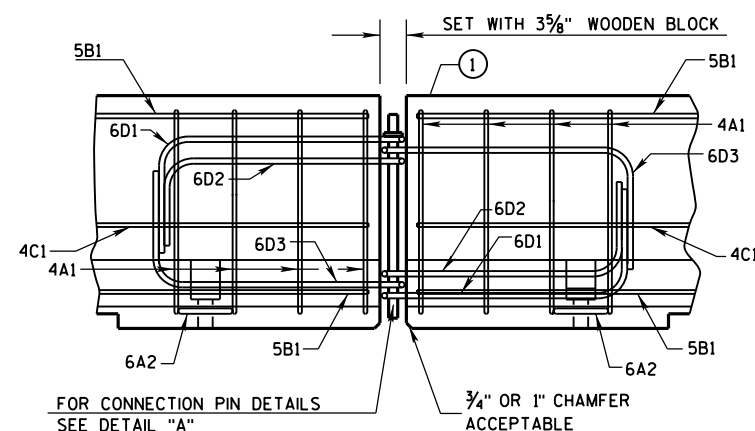


SECTION B-B
(STIRRUP PLACEMENT)

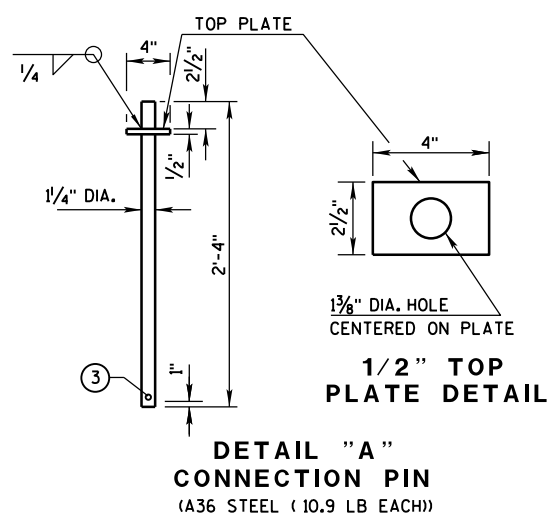


PLAN VIEW

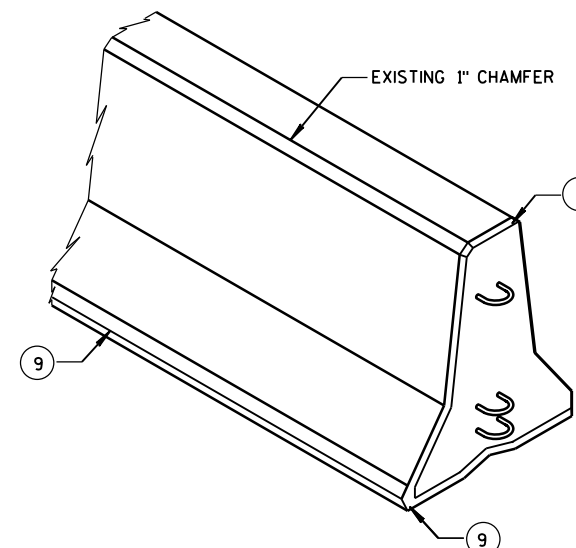
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



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



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-14(d) 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 $\frac{3}{4}$ " 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- $\frac{1}{2}$ " PLI BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN $\frac{1}{8}$ " OF THE PLAN DIMENSION.

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

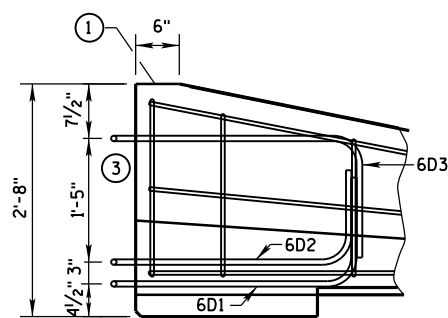
PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR ADHESIVE 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: W/CBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ A $\frac{3}{8}$ " 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.

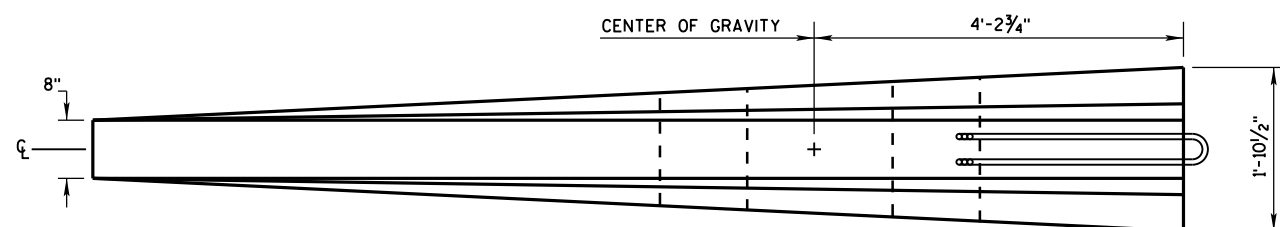
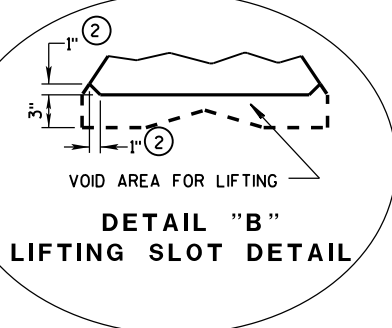
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION³⁴

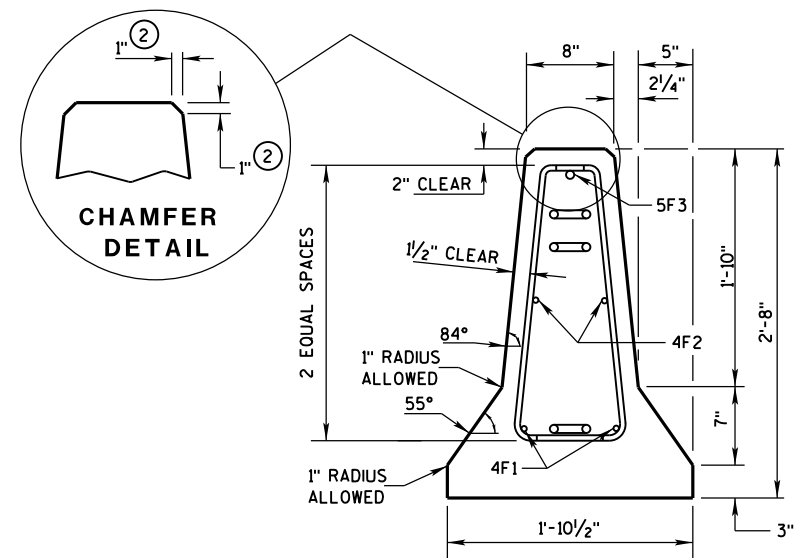


LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

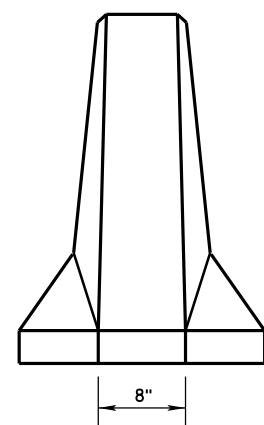
- ## GENERAL NOTES
- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
 - ② 1" CHAMFER TO PREVENT SPALLING.
 - ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION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



PLAN VIEW

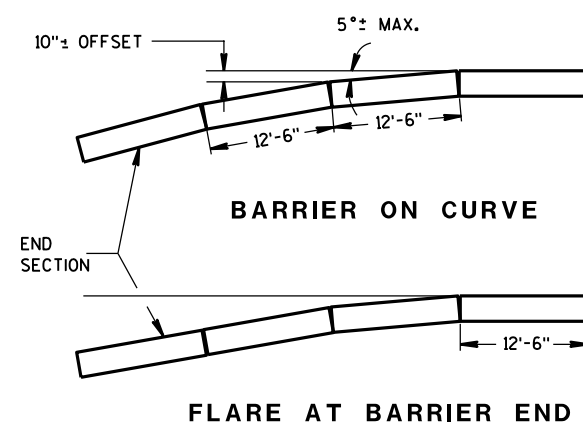


END SECTION



FRONT ELEVATION

DETAILS OF BARRIER TAPER SECTION



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

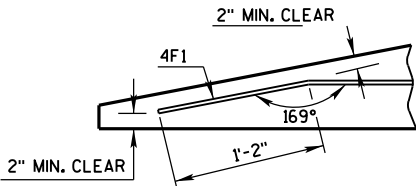
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 35

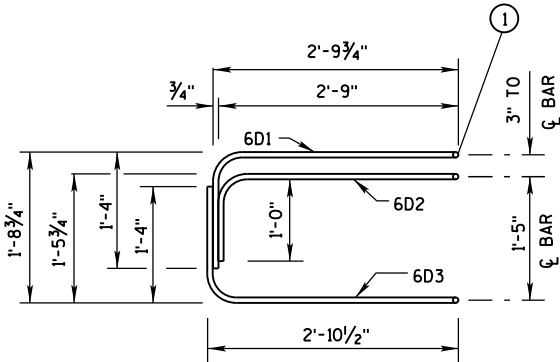
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

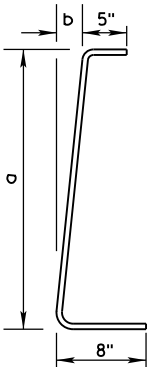
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

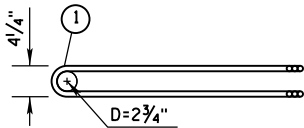
GENERAL NOTES

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

BARRIER SECTION
BILL OF MATERIALS

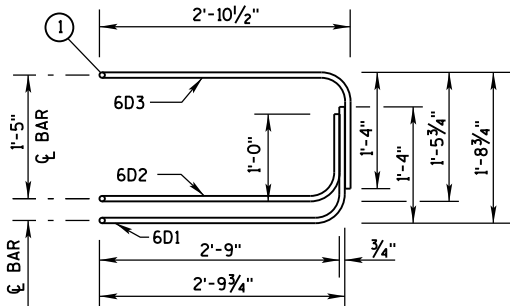
(PER 12'-6" BARRIER SECTION)

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"

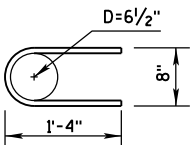


PLAN VIEW
LOOP BAR ASSEMBLY

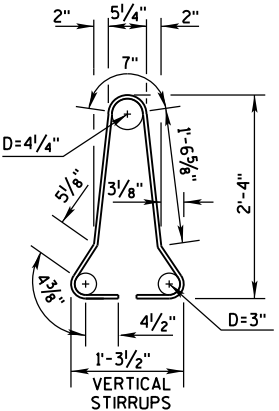
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

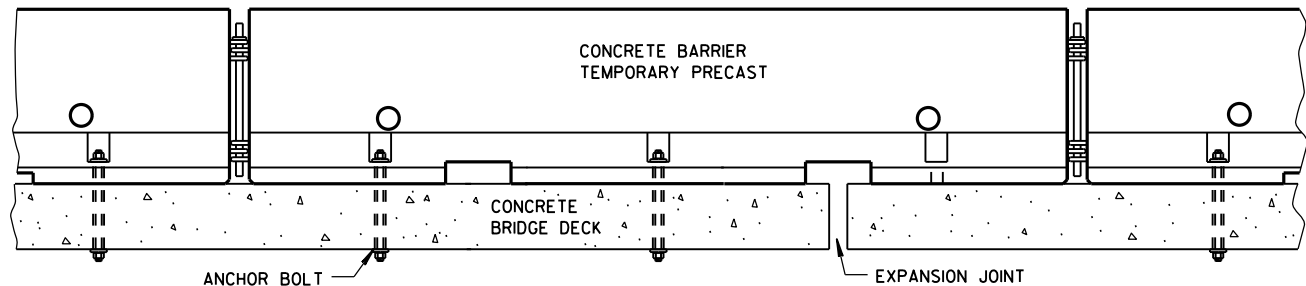
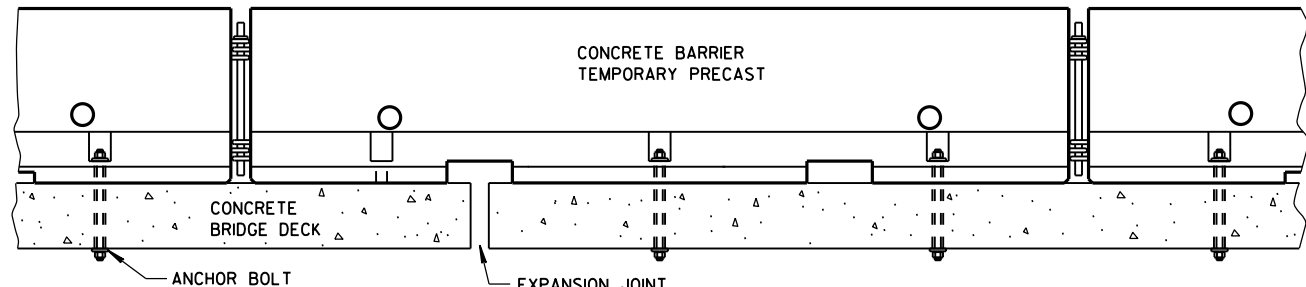


4A1

BARRIER SECTION

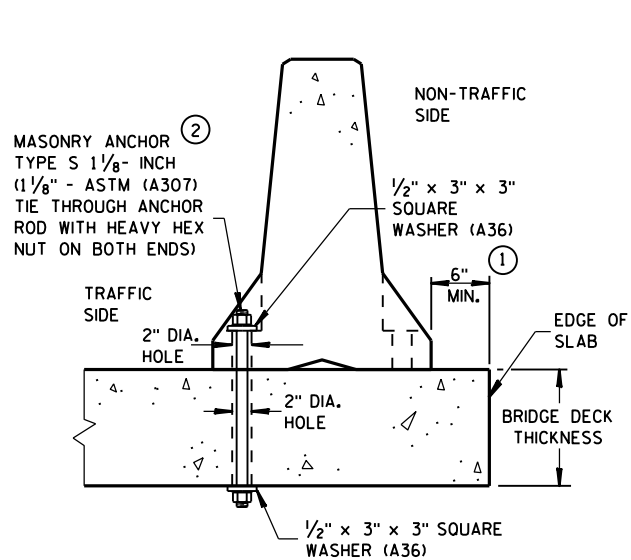
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



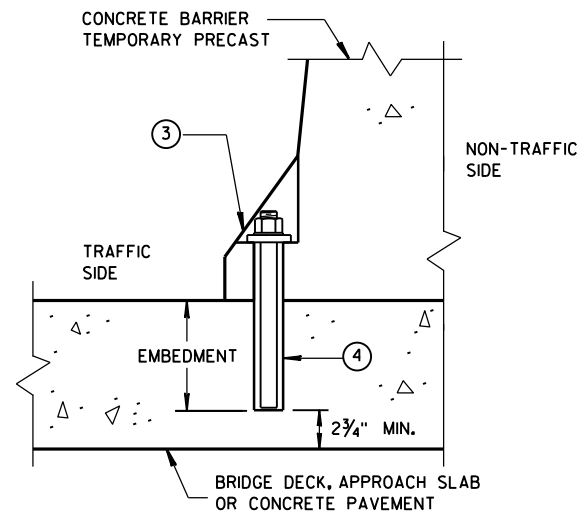
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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.)



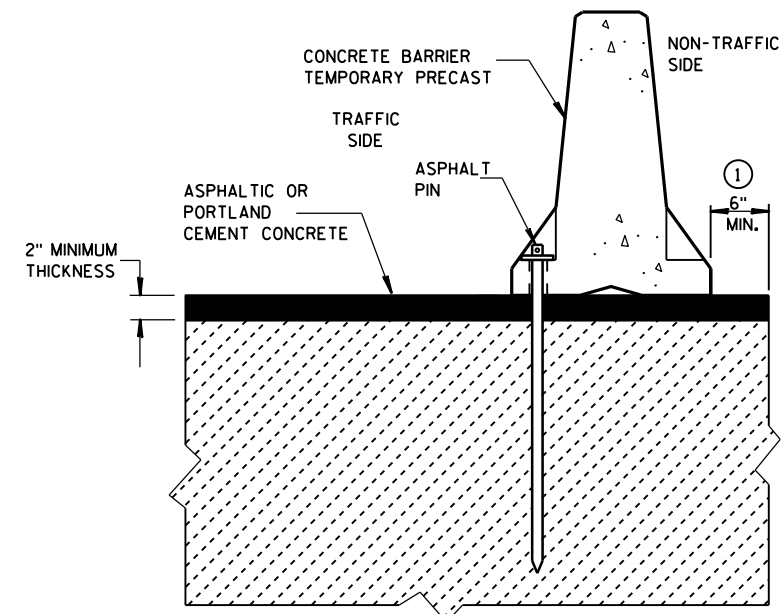
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



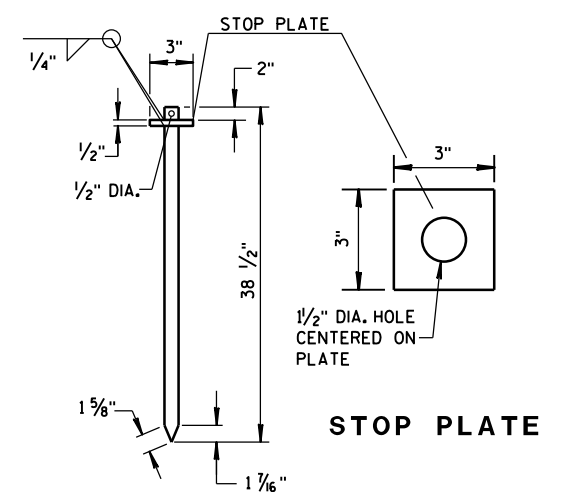
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

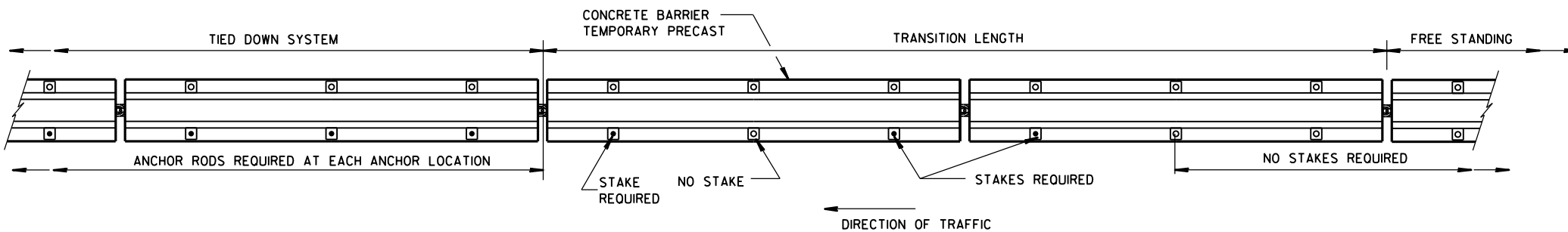


STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



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.)

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

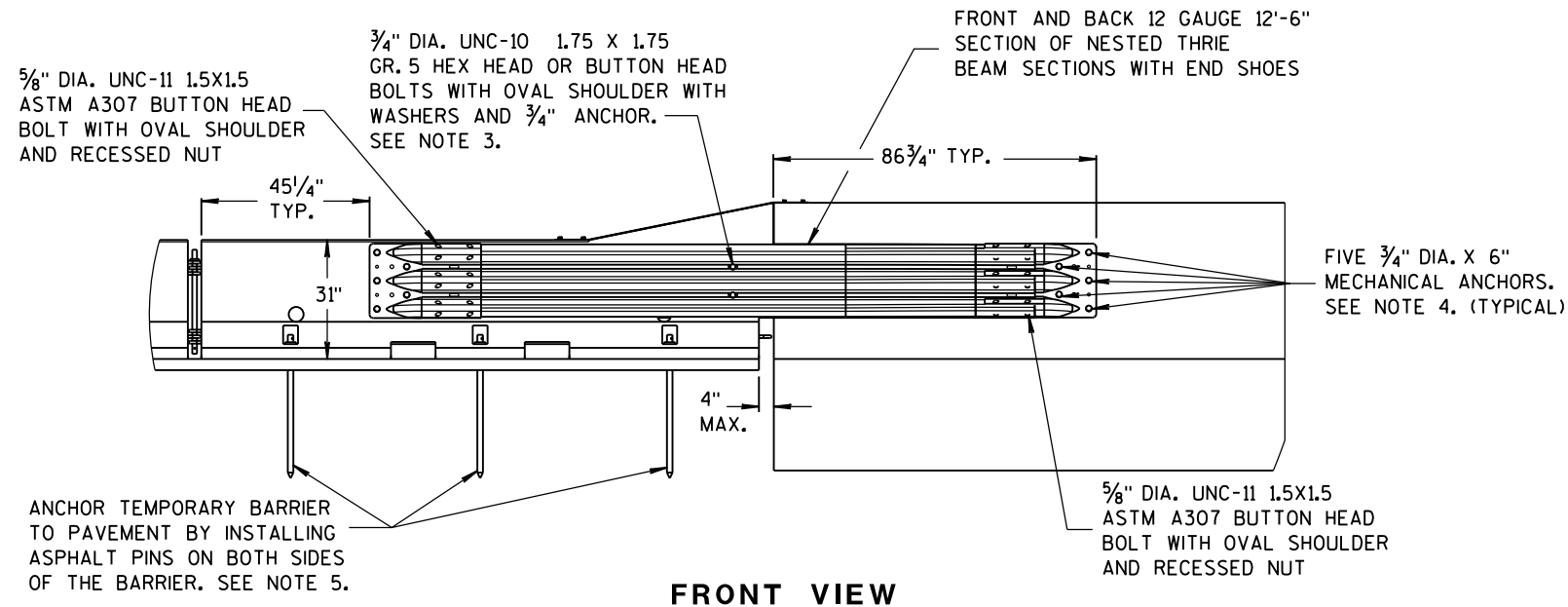
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 40 MPH OR LESS.
- ② ANCHORING IS INCIDENTAL TO CONCRETE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

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED 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 1 1/8"-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 ALL ANCHOR BOLTS AND COMPLETELY
FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CON-
CRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERCIAL GROUT OR MATERIAL
IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.
- ③ 1/8" DIAMETER A307 THREADED ROD, 1/2" 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 5/4" EMBEDMENT. SEE 603.2
AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION³⁷



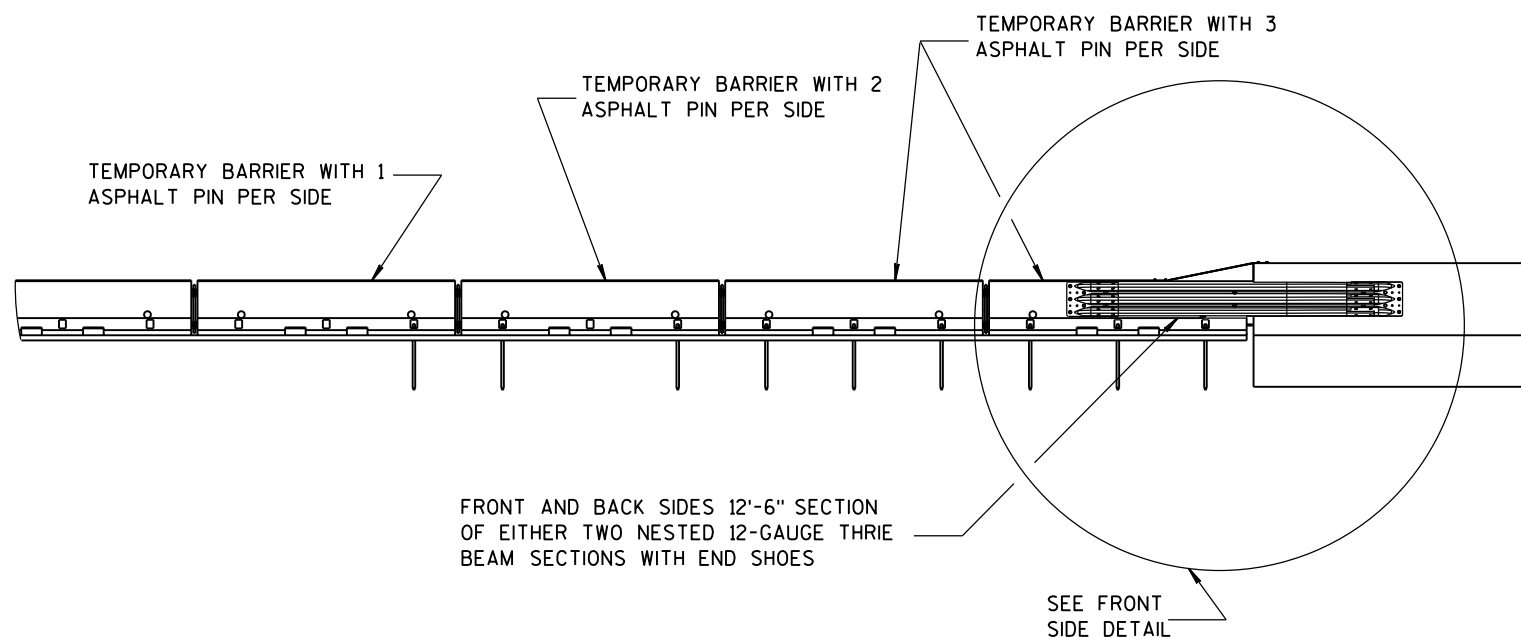
FRONT VIEW

NOTES

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

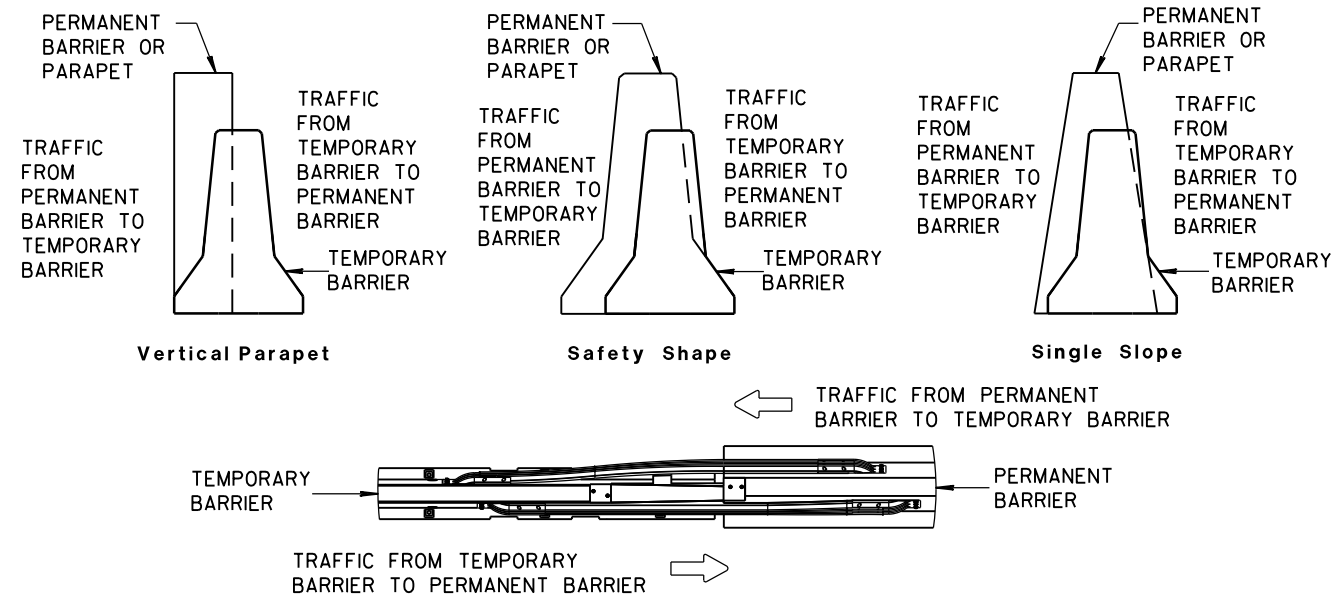
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.

4. MINIMUM MECHANICAL OR ADHESIVE 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 ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

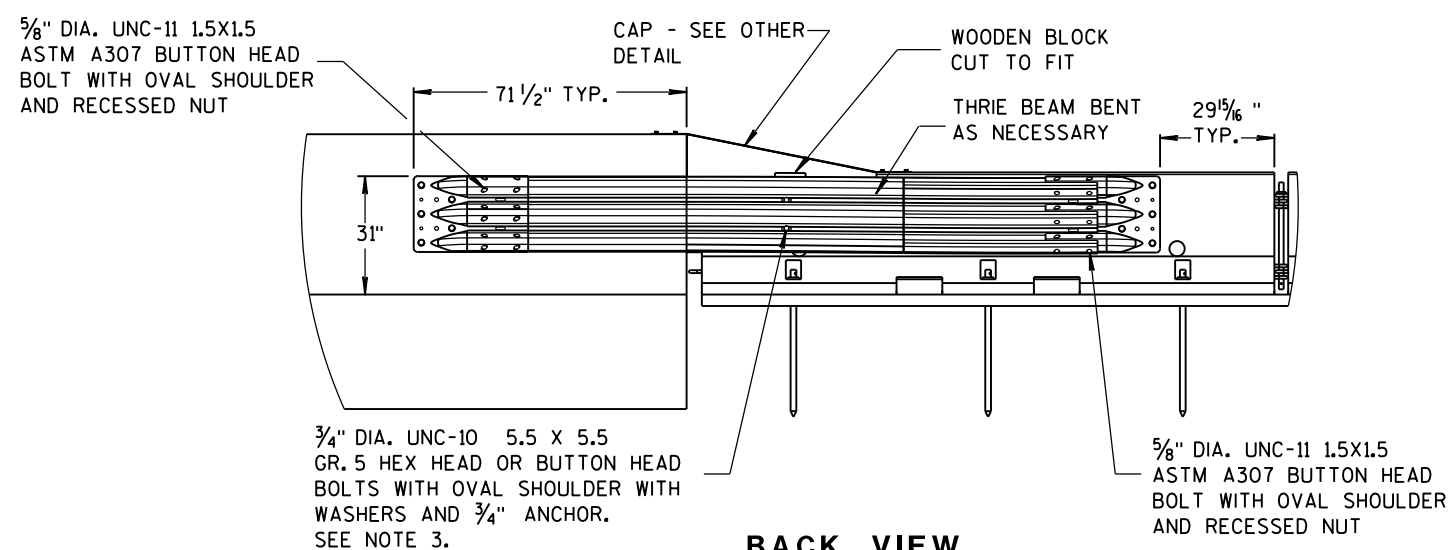


FRONT VIEW

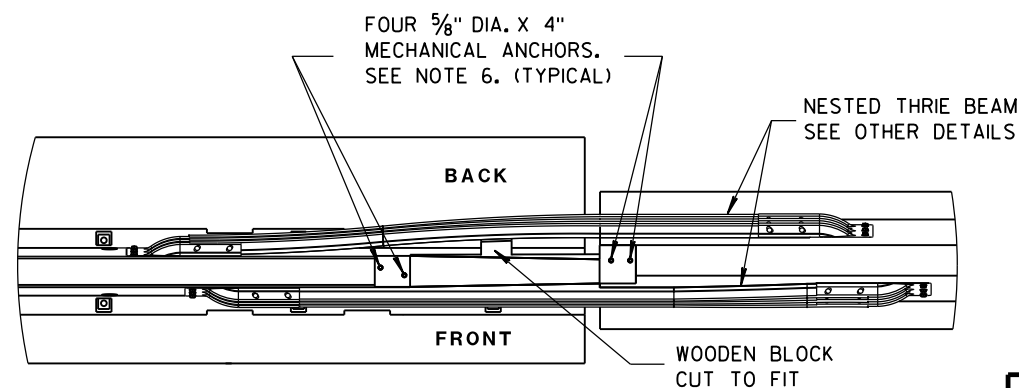
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



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



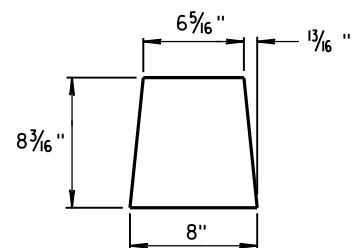
BACK VIEW



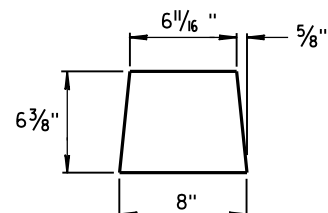
PLAN VIEW

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

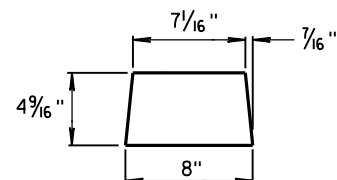
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



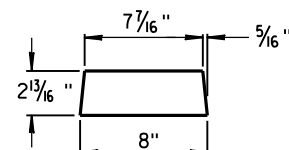
GUSSET 1



GUSSET 2

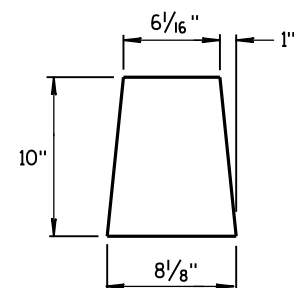


GUSSET 3

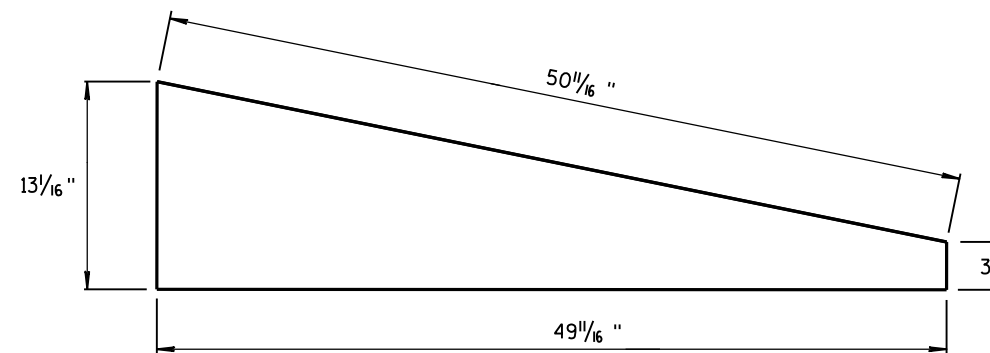


GUSSET 4

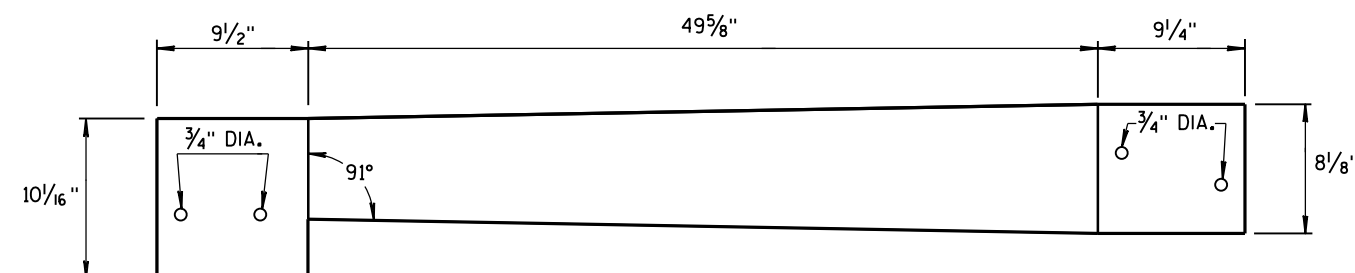
GUSSETS



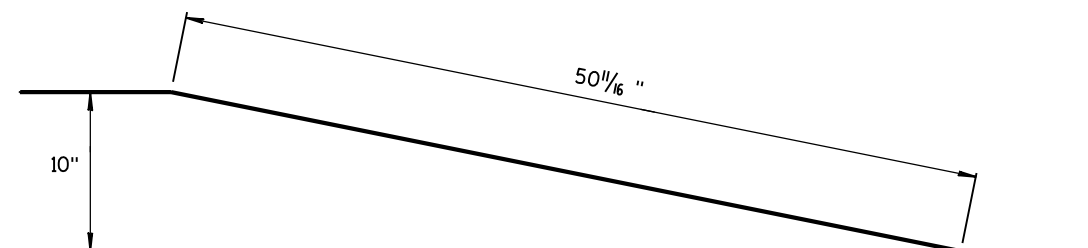
END PLATE



SIDE PLATE

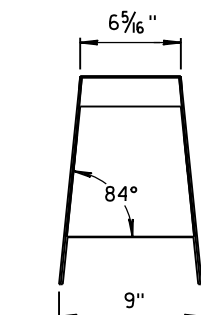
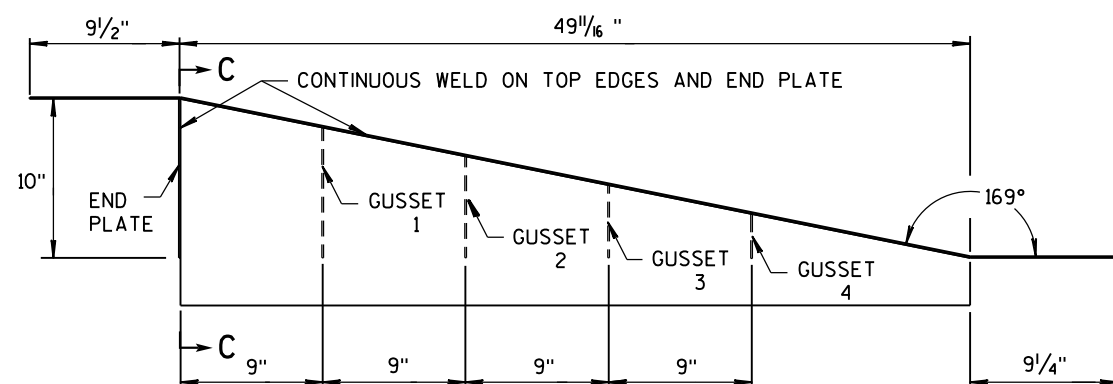
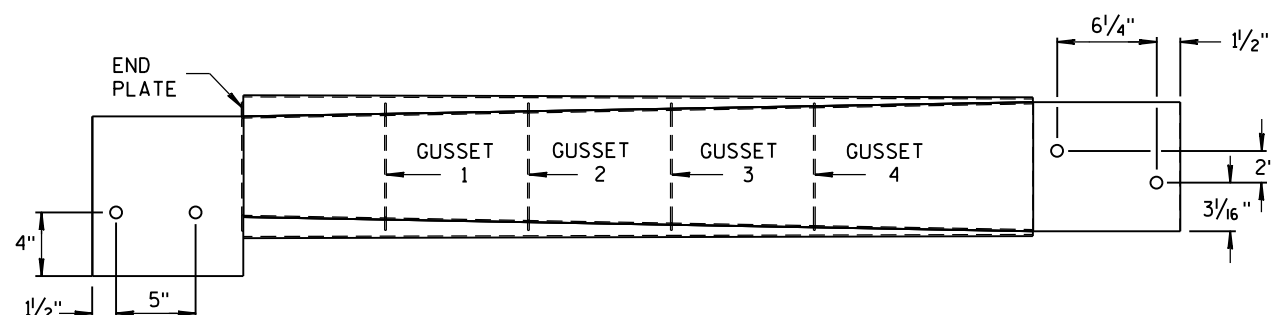


TOP PLATE



**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.



SECTION C-C

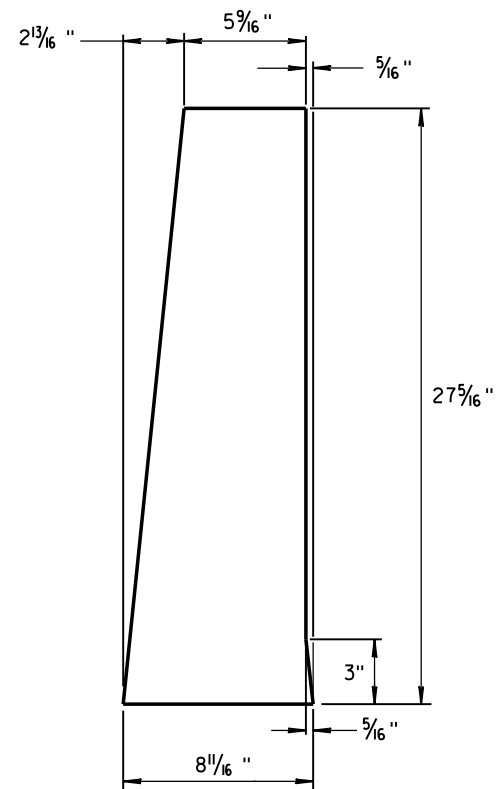
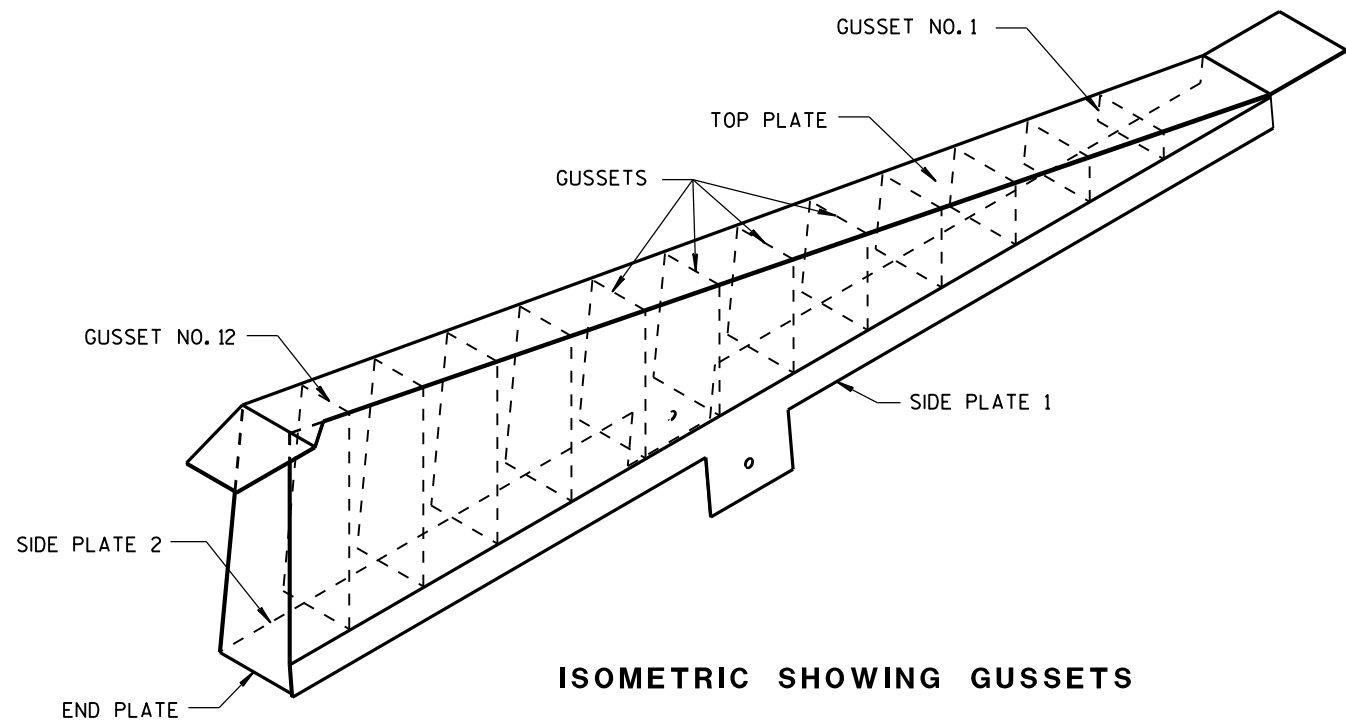
NOTES

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.

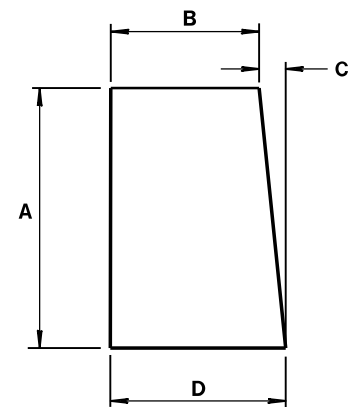
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END PLATE
1/8" STEEL PLATE

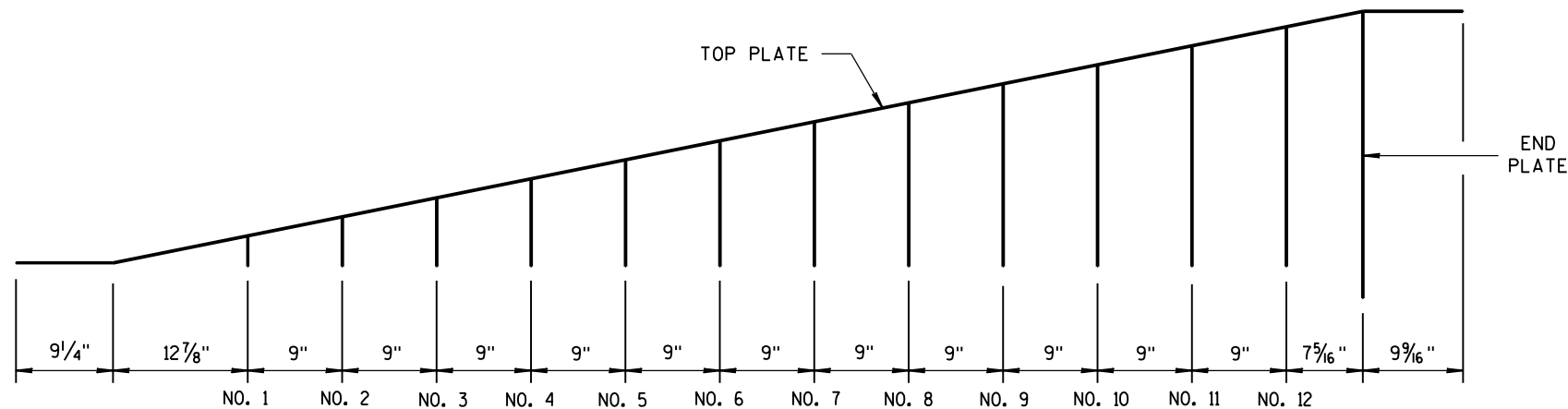


GUSSETS 1 - 12
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8 "	1 1/16 "	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 5/16 "	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.

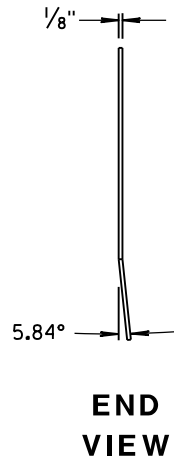
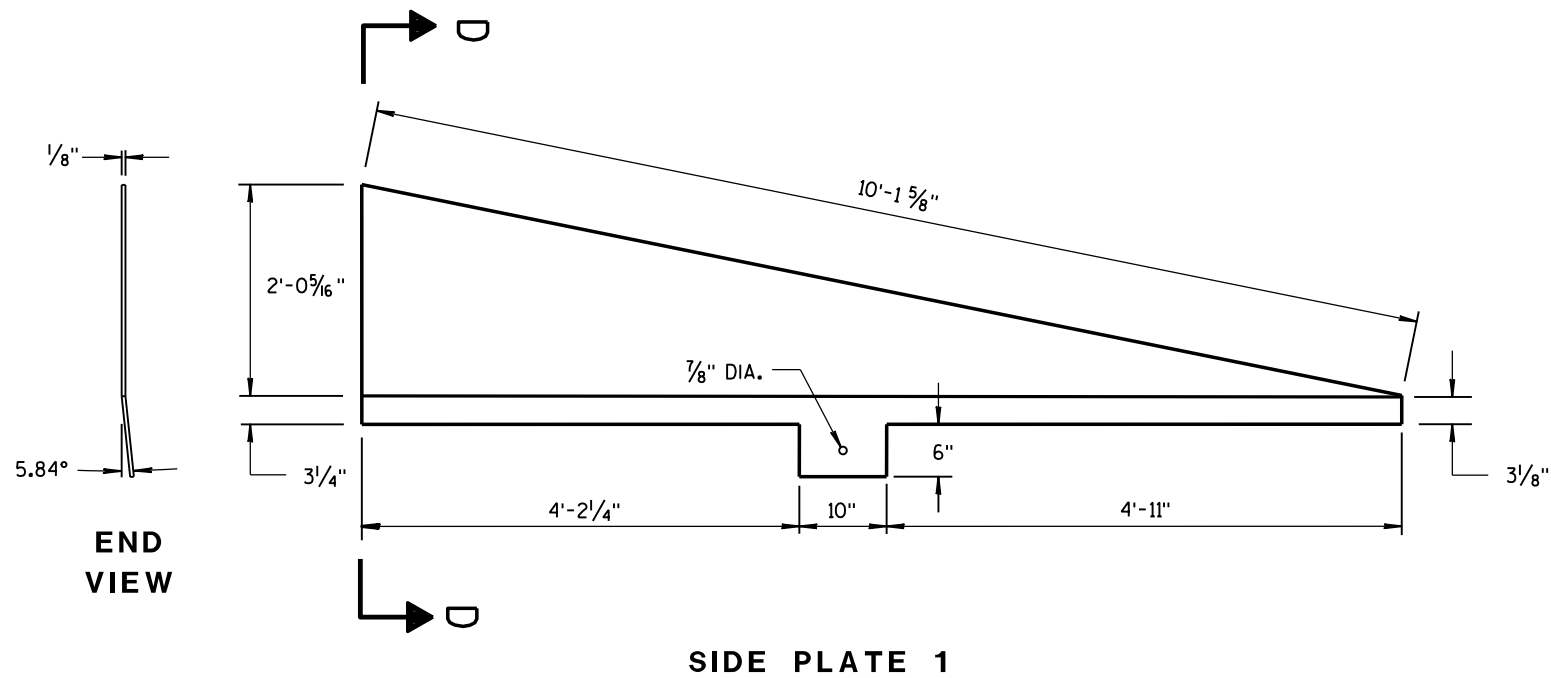
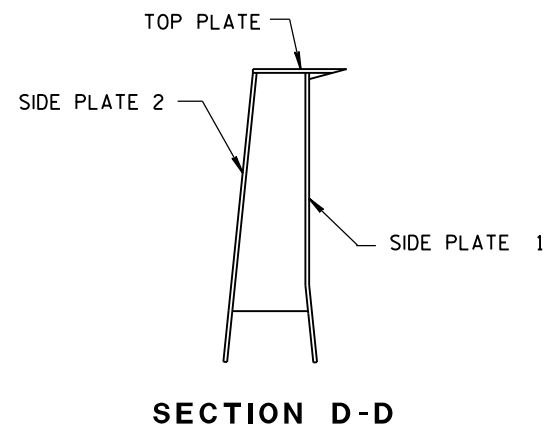
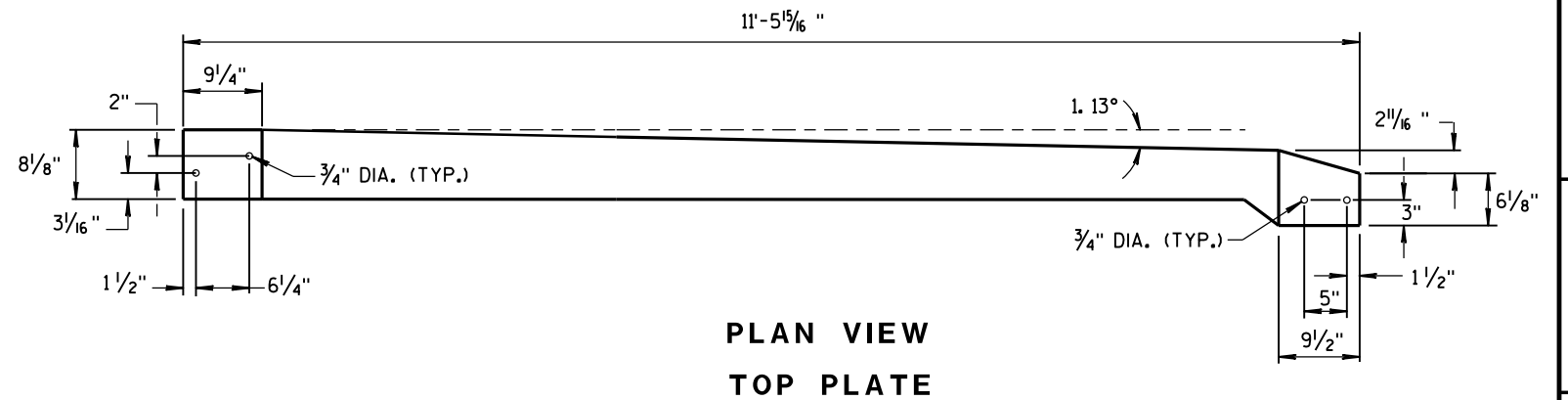
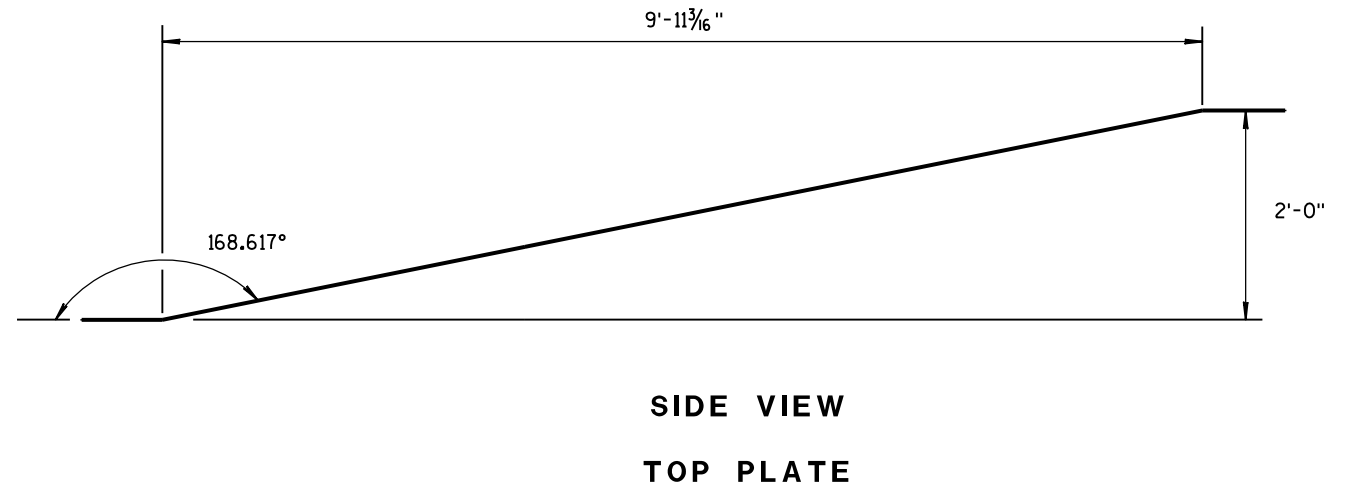
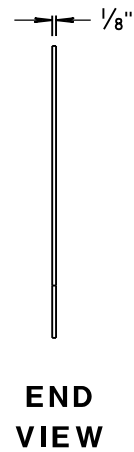
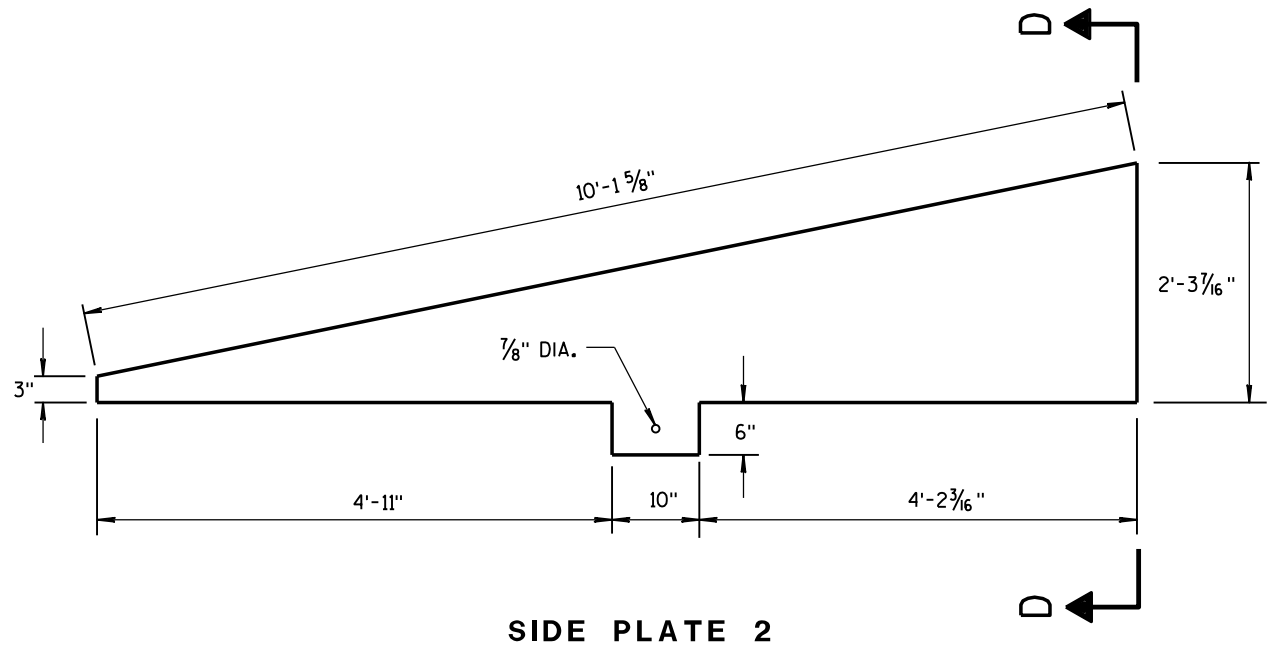


GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 40

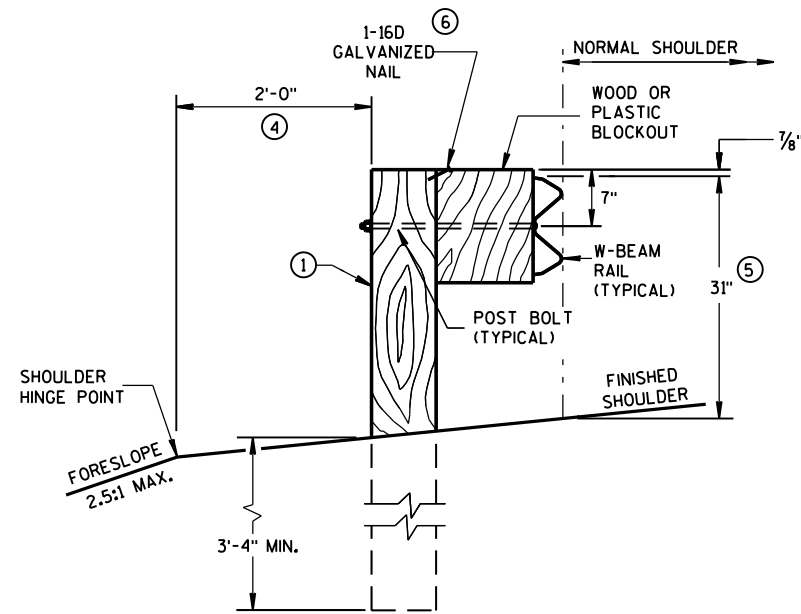


CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER

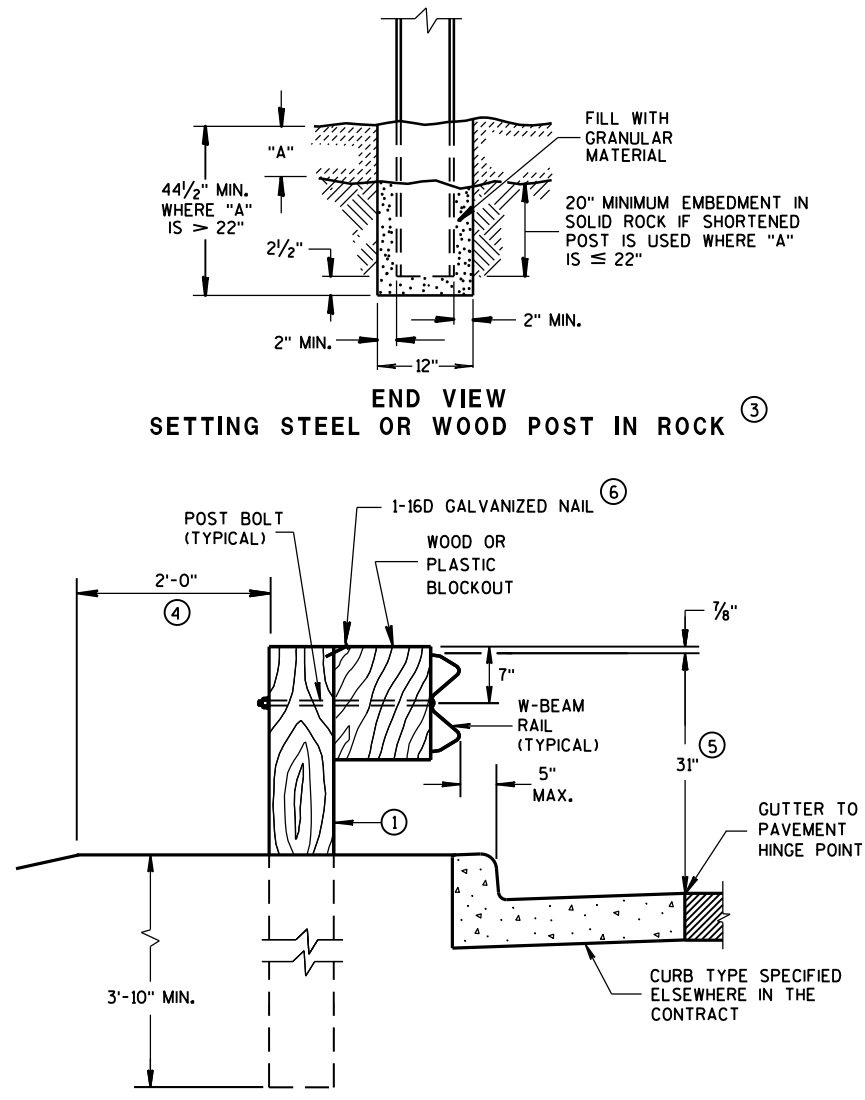
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2014	/S/ Jerry H. Zoog		
DATE	ROADWAY STANDARD	41	INT
FHWA	ENGINEER		

GENERAL NOTES

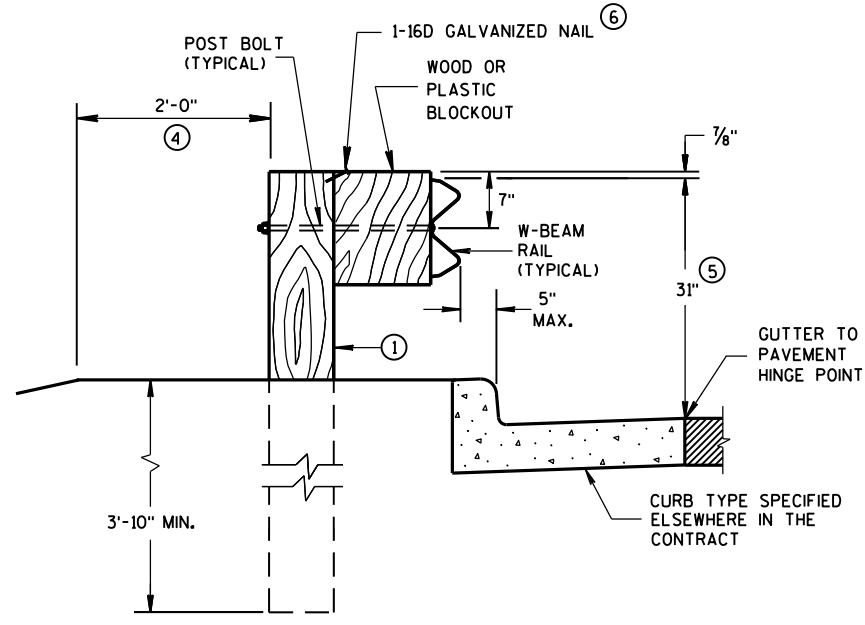
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL.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



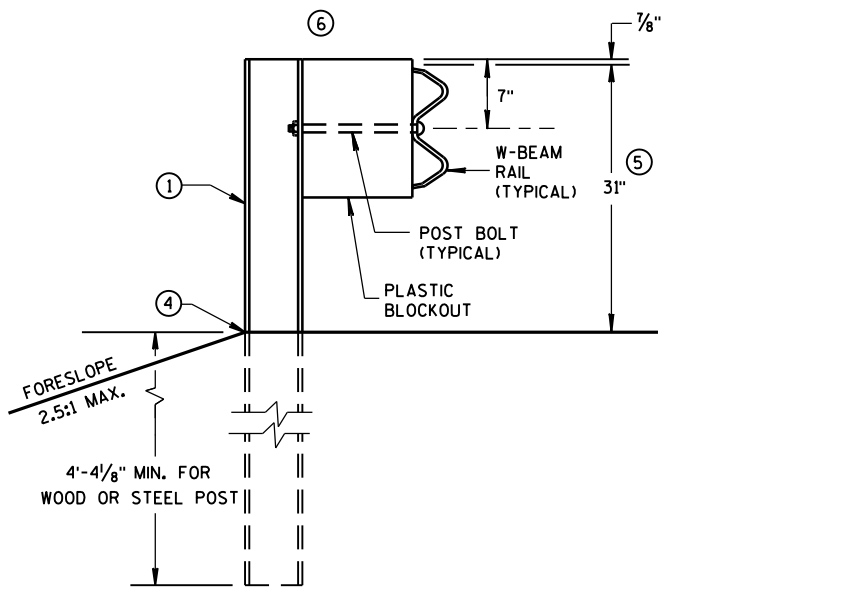
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



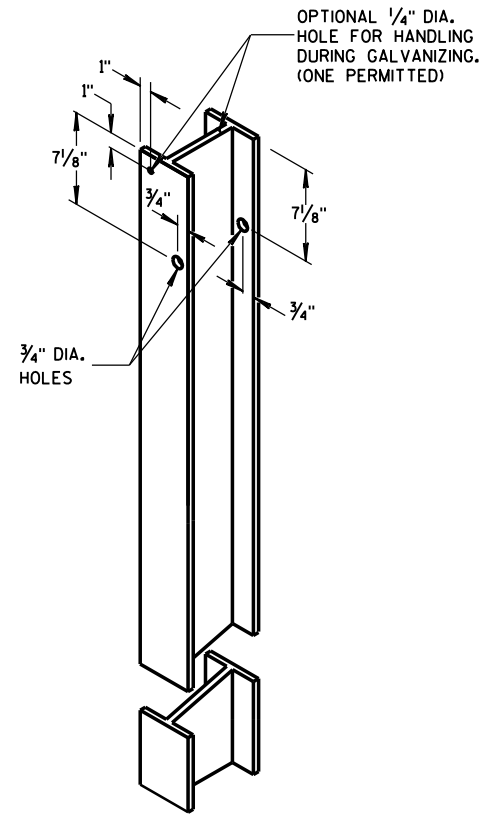
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ③



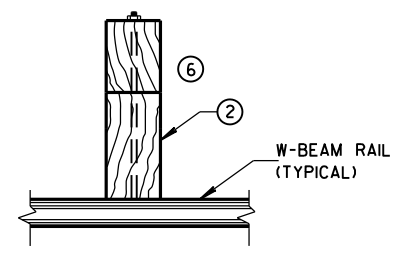
END VIEW
LOCATED ALONG A CURBED ROADWAY



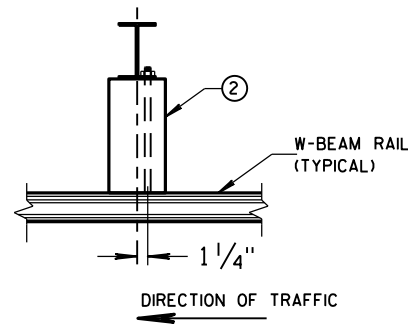
END VIEW
MGS LONGER POST AT HALFPST SPACING W BEAM (K)



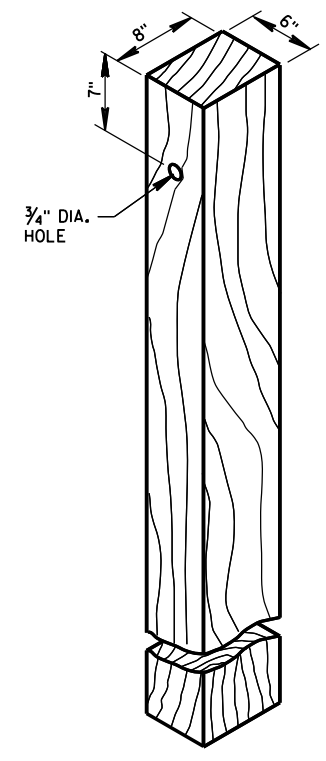
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



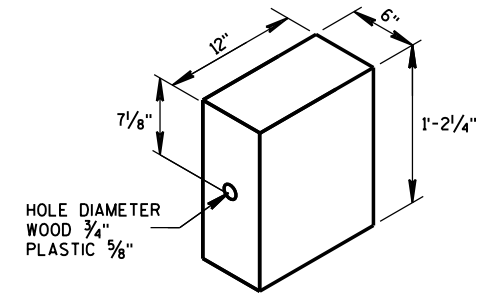
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



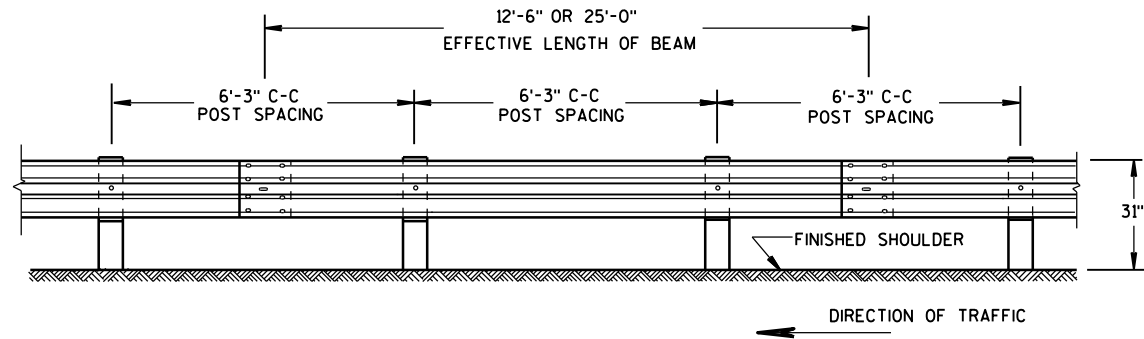
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



WOOD POST
(6" X 8") NOMINAL ①

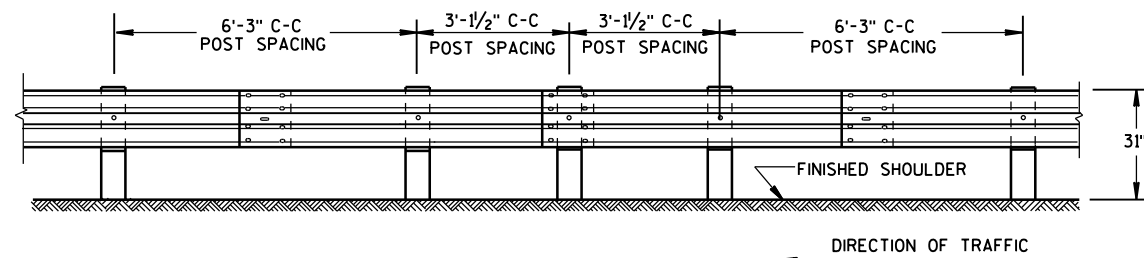


WOOD OR
PLASTIC BLOCKOUT ②



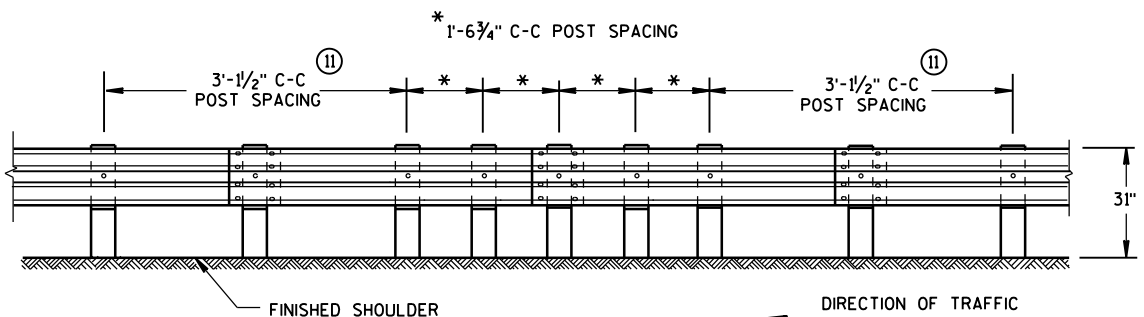
FRONT VIEW

POST SPACING STANDARD INSTALLATION



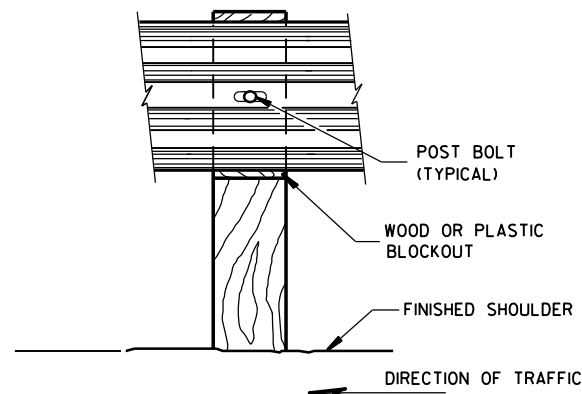
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

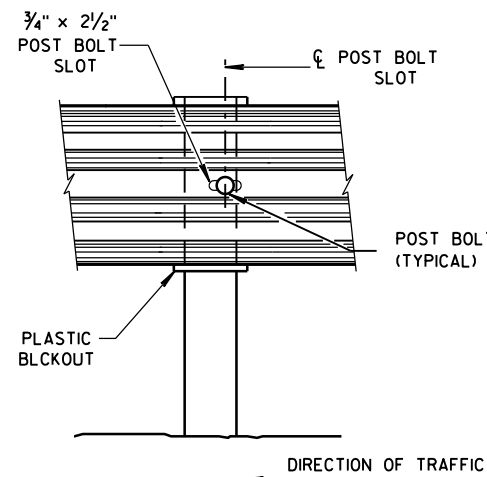


FRONT VIEW

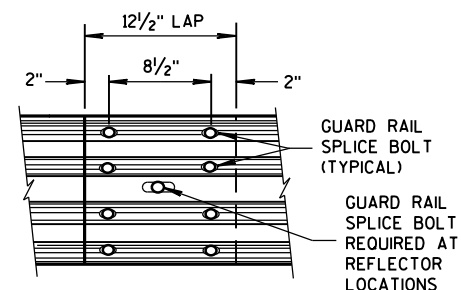
QUARTER POST SPACING (QS)



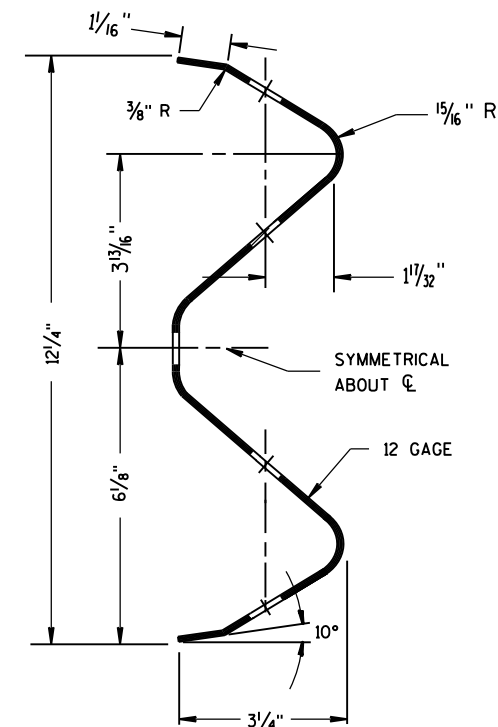
FRONT VIEW AT WOOD POST



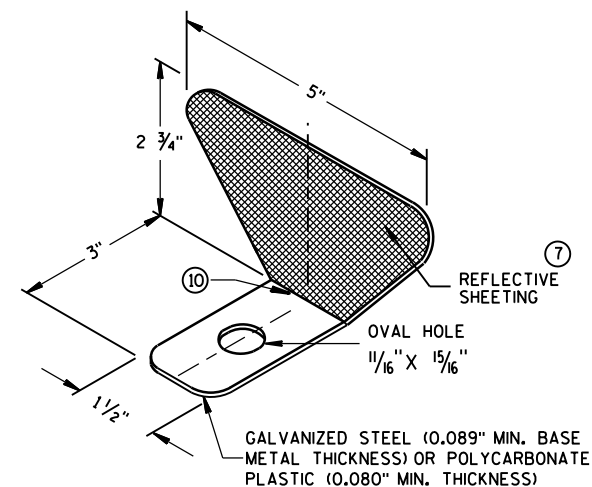
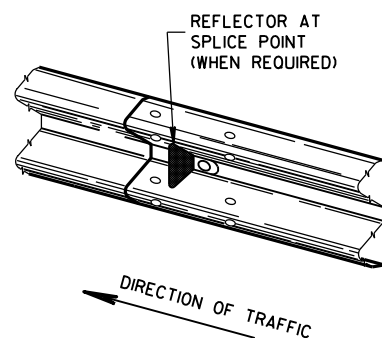
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

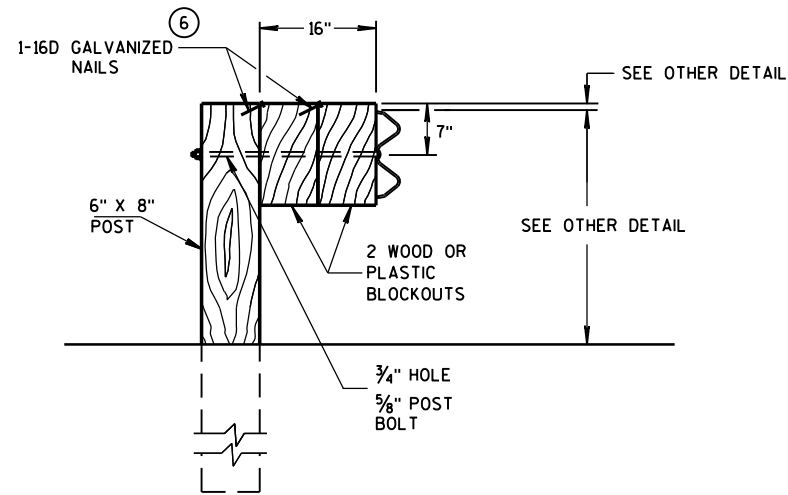
- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
 - ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
 - ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

	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 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑩	3
	> 200'	100' C-C	2	

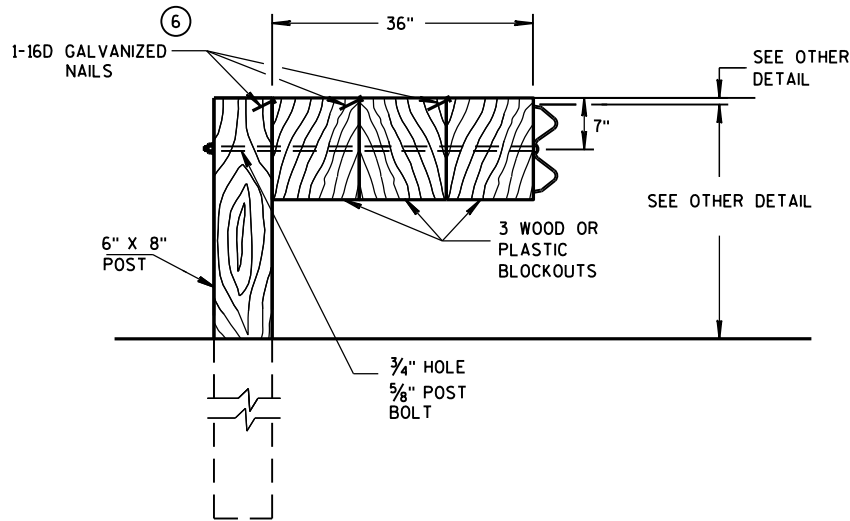
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

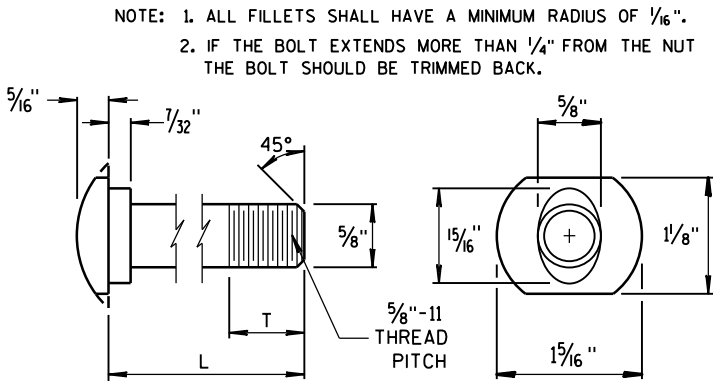
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

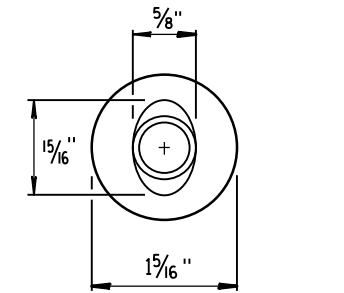
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

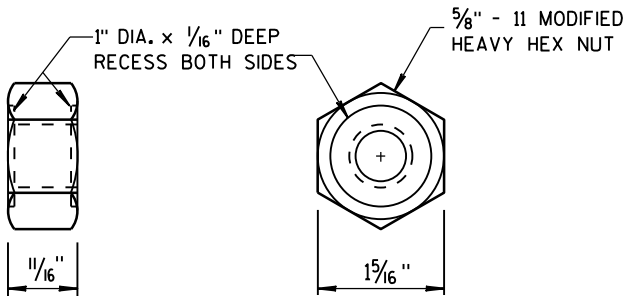


POST BOLT TABLE

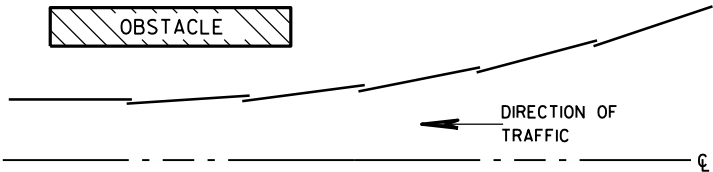
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



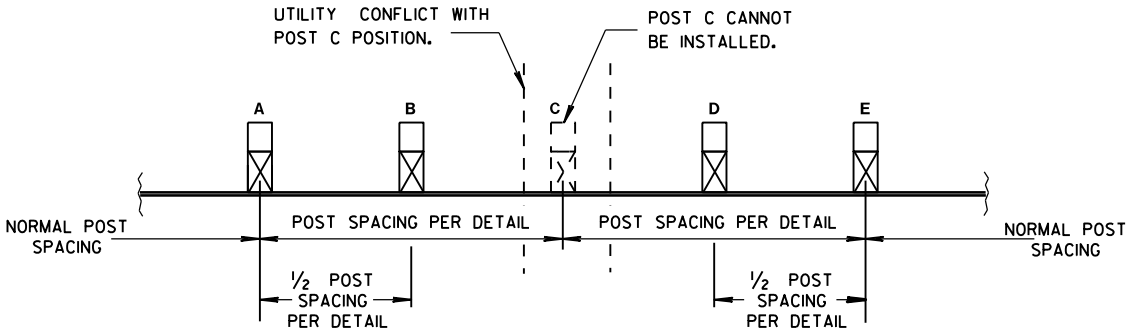
ALTERNATE BOLT HEAD



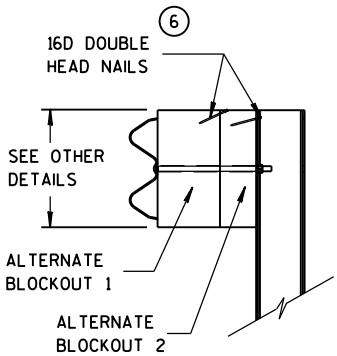
POST BOLT
AND RECESS NUT



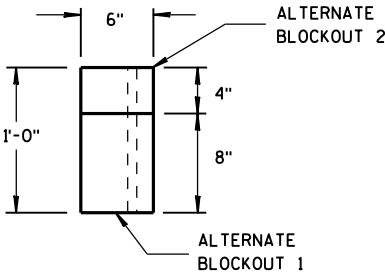
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS (44 ENT
FHWA ENGINEER

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

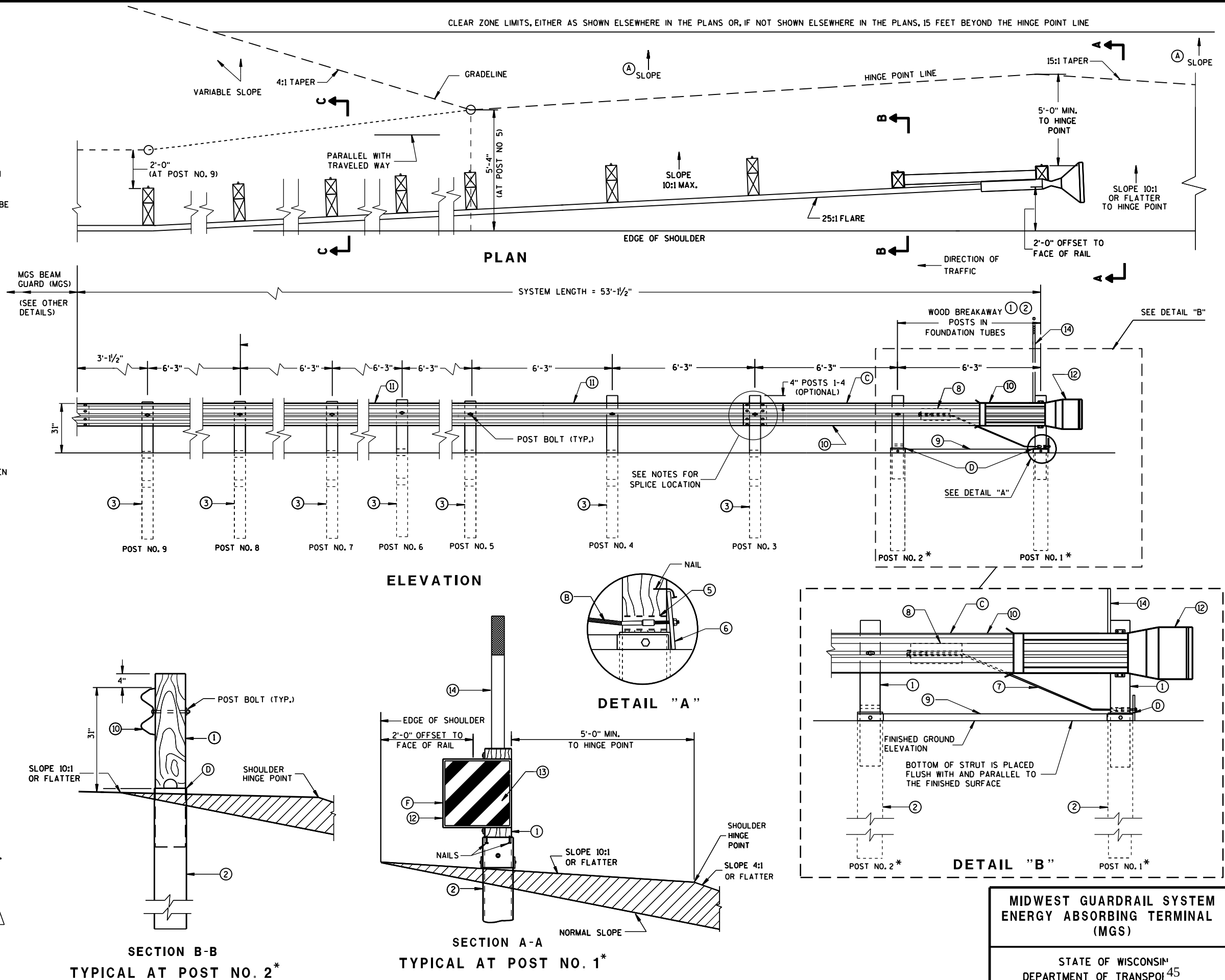
SEE SDD 14B42 FOR MORE INFORMATION.

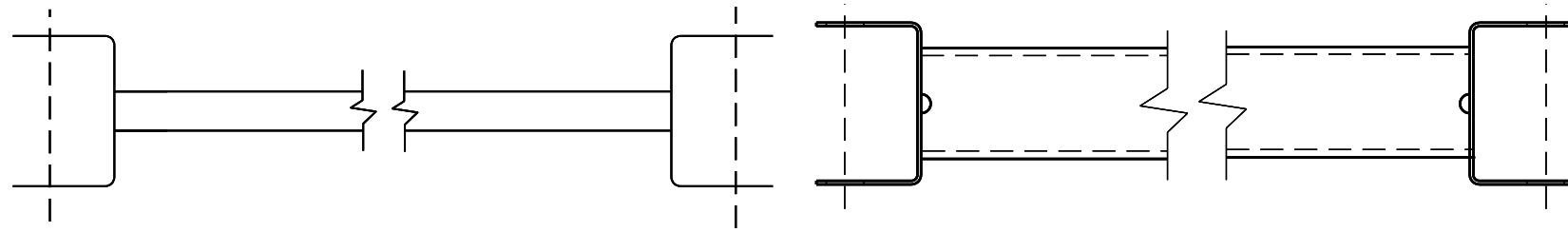
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

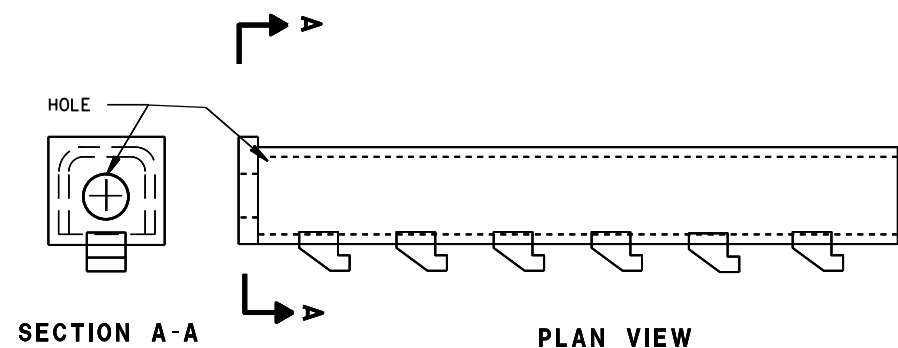
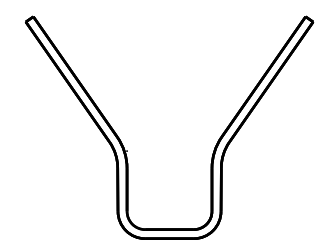
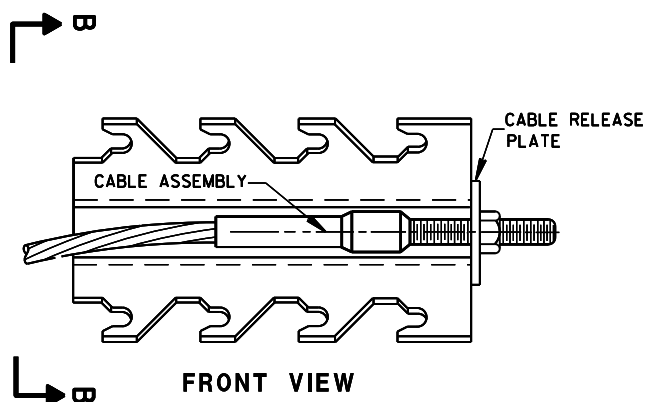
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.





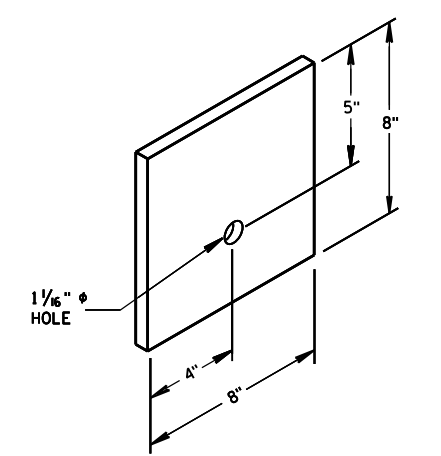
9 H
GENERIC GROUND STRUT



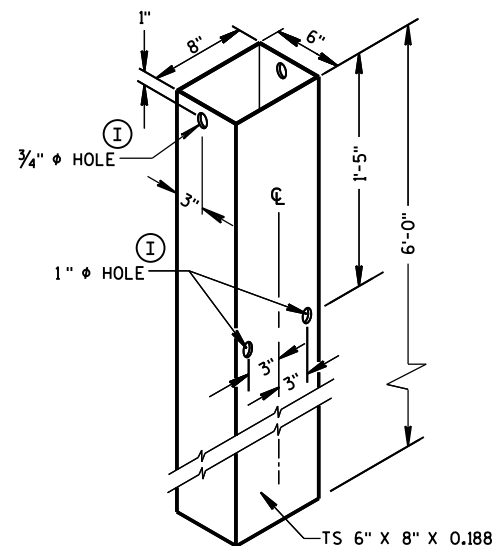
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

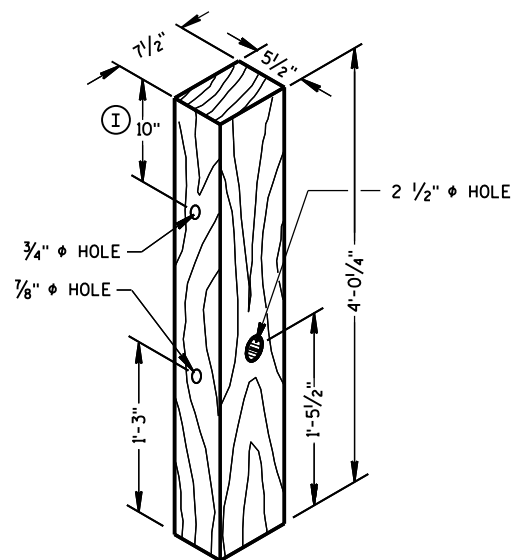
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



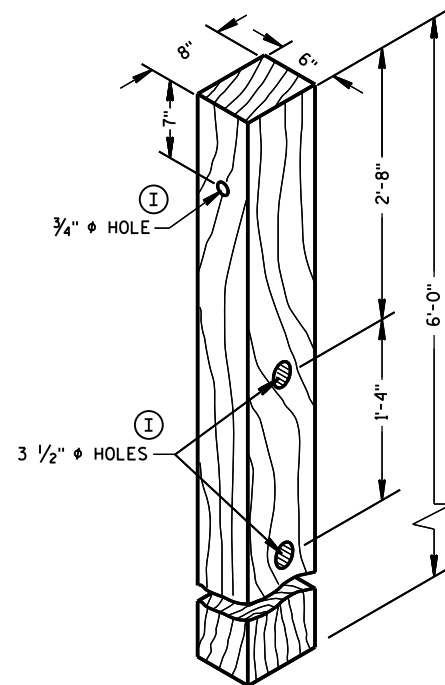
⑥
BEARING PLATE



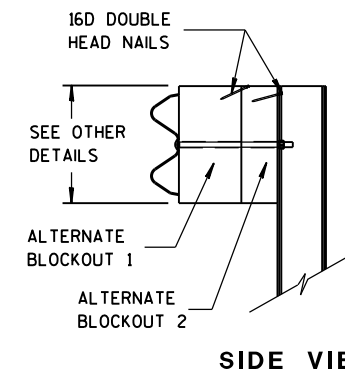
FOUNDATION TUBE ②



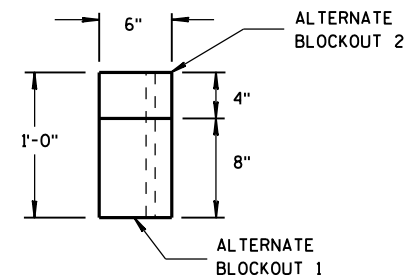
POSTS NUMBER 1 AND 2
WOOD BREAKAWAY POST ①



POSTS NUMBER 3-9
WOOD CRT POST ③

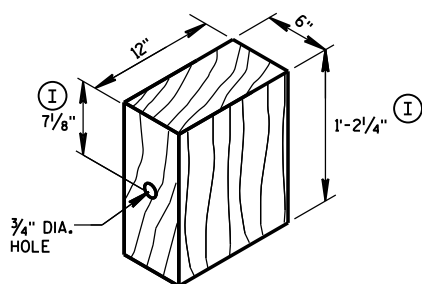


SIDE VIEW



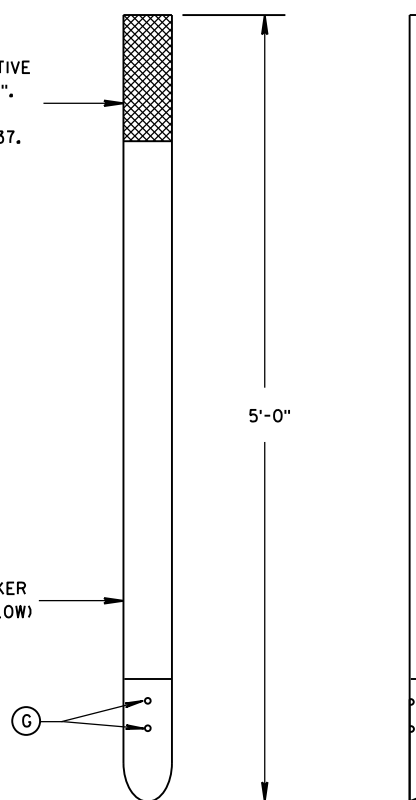
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



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

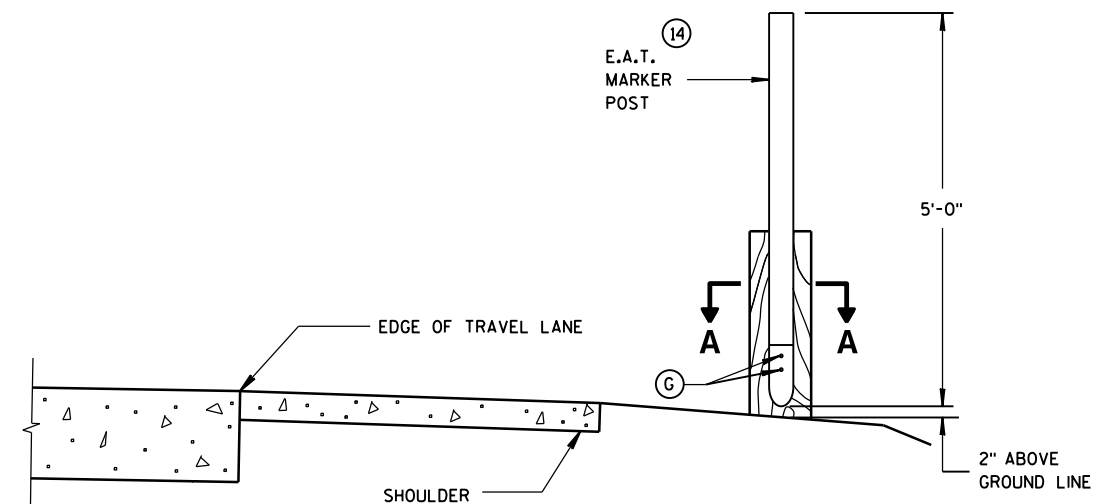
TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



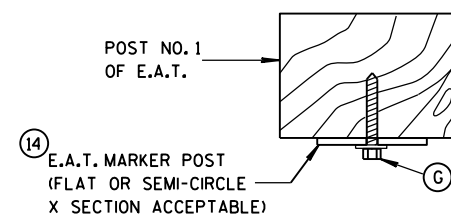
FRONT VIEW

SIDE VIEW

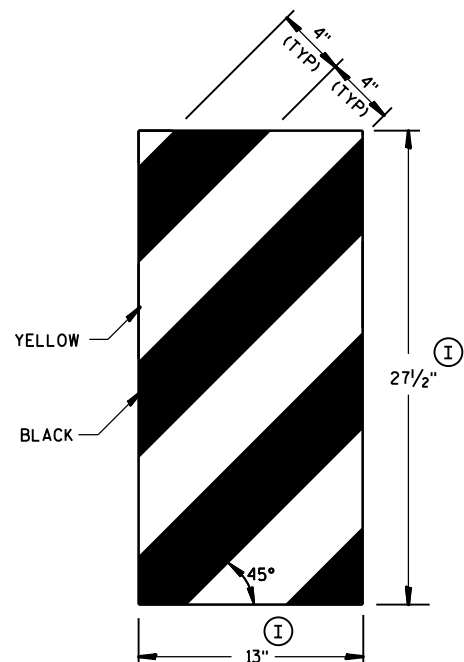
E.A.T. MARKER POST ⑭



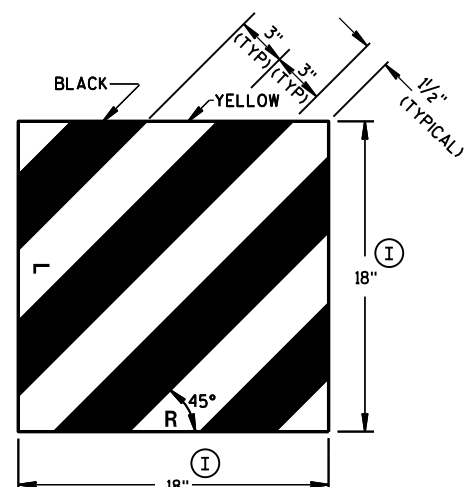
TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A



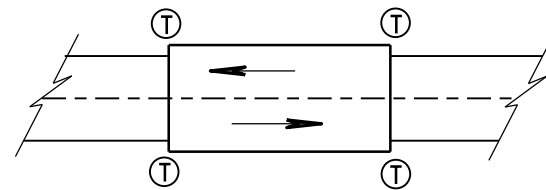
GENERIC REFLECTIVE SHEETING ⑬ ①



MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

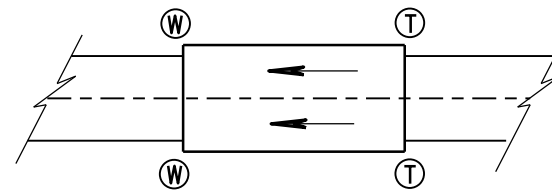
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 47 ENT
FHWA ENGINEER



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

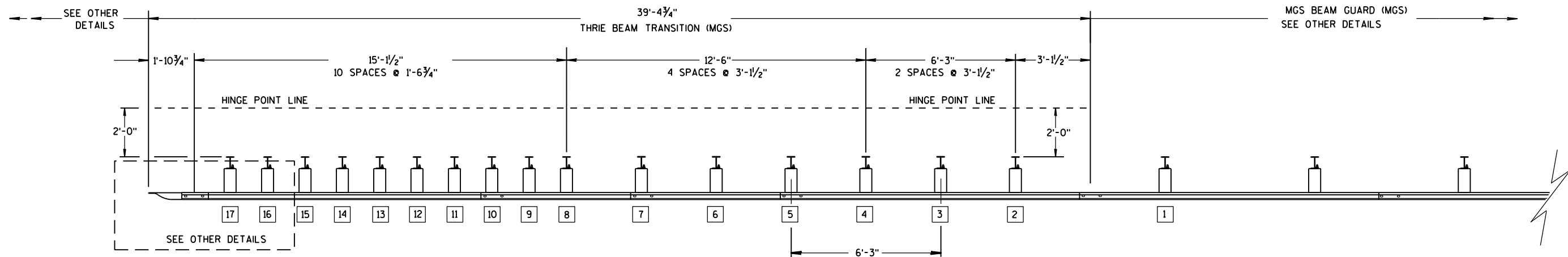
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

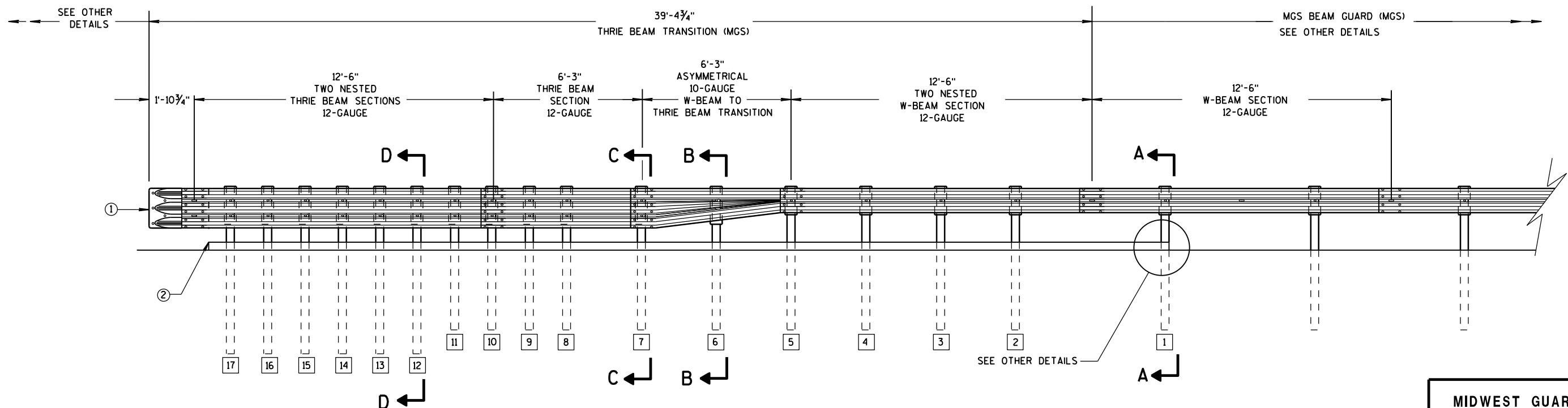
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

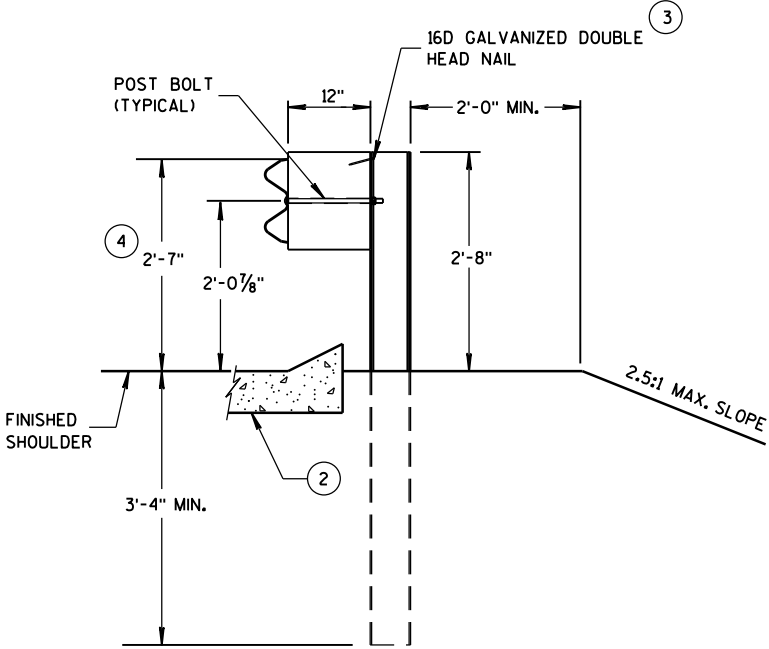
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

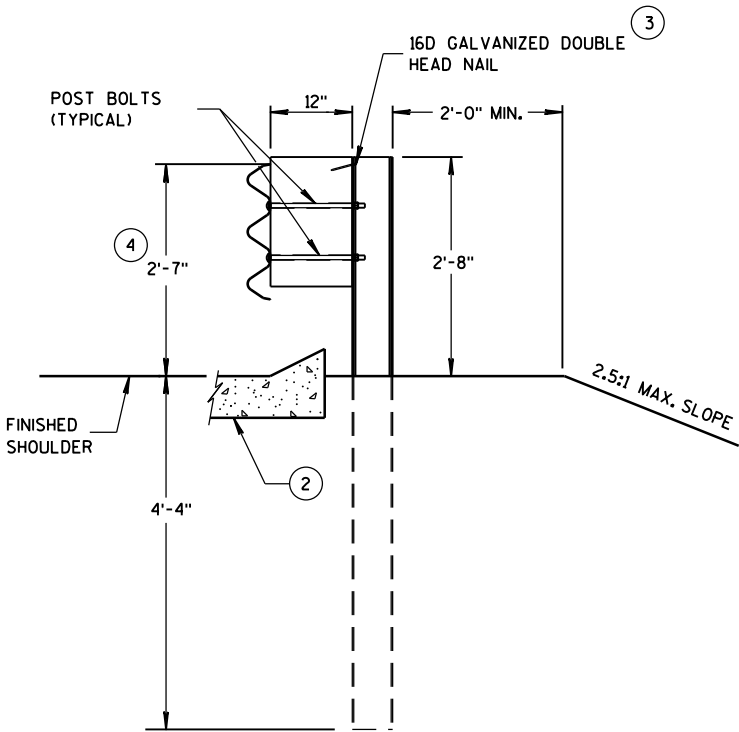
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 48

GENERAL NOTES

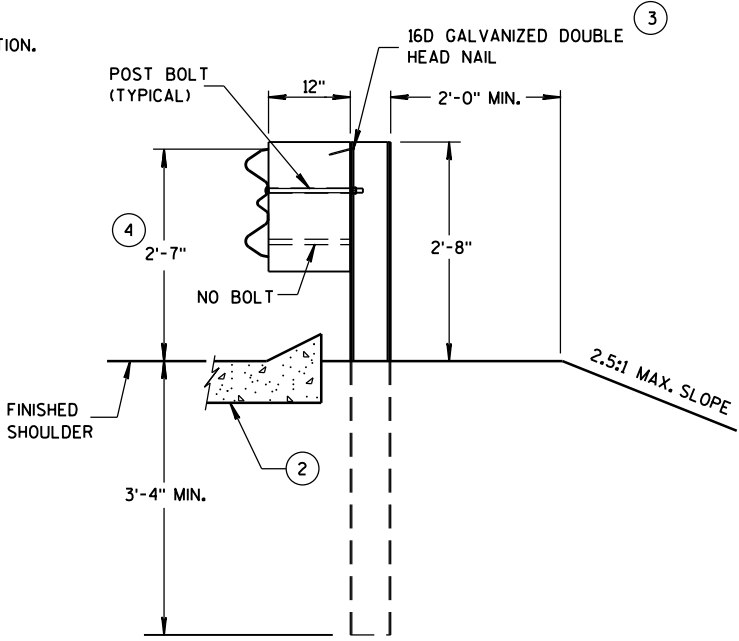
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



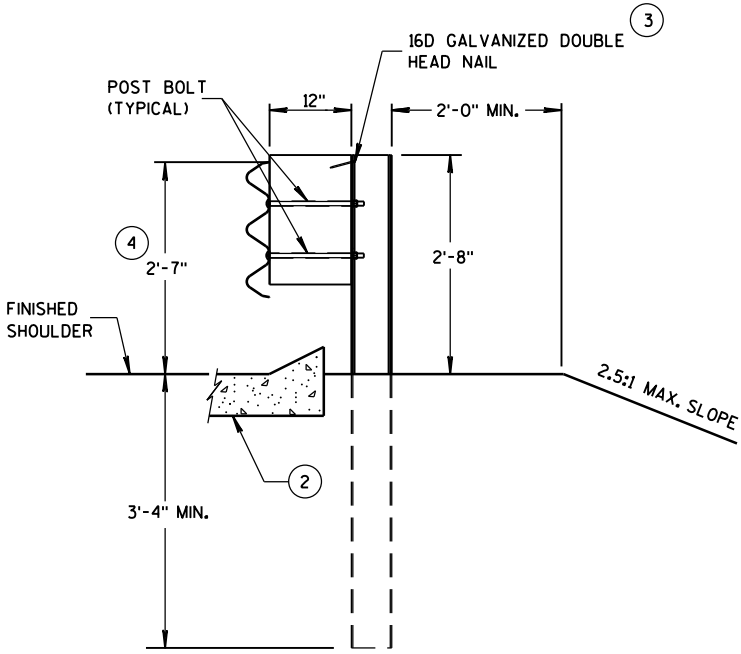
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

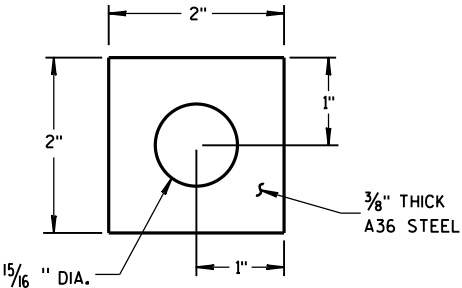
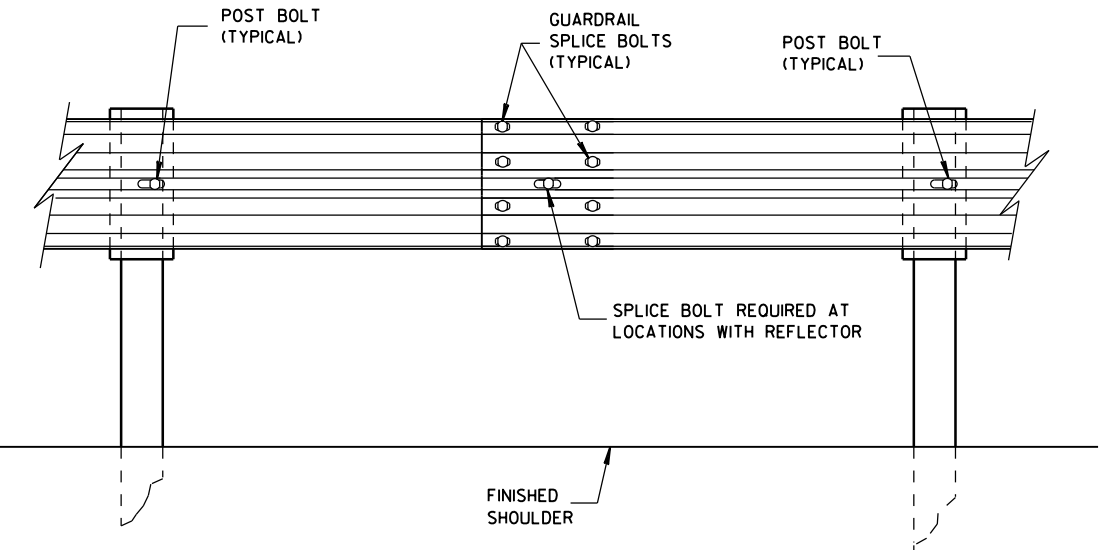
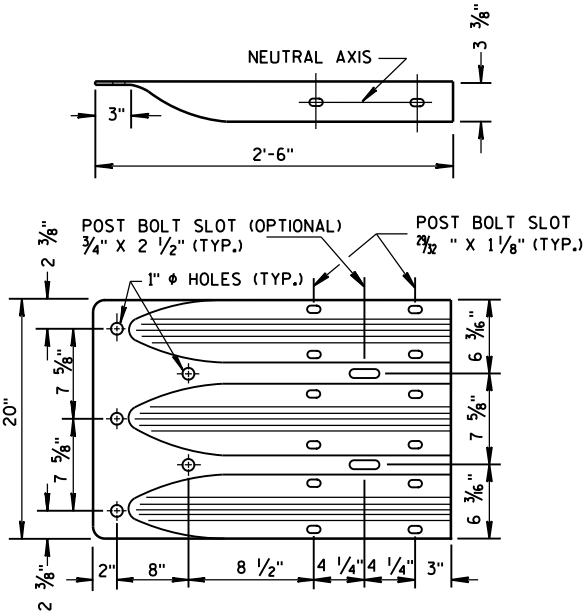


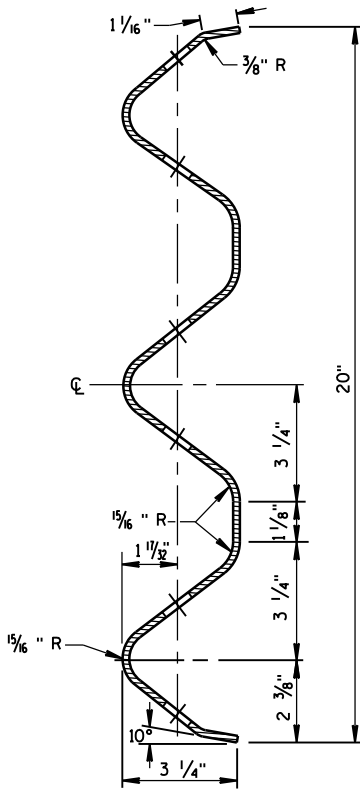
PLATE WASHER DETAIL



SPlice DETAIL



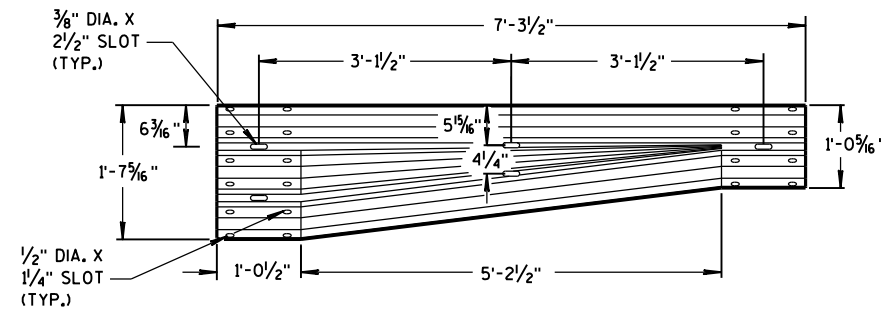
THRIE BEAM
TERMINAL CONNECTOR



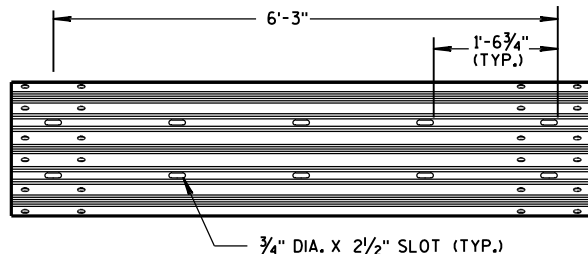
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

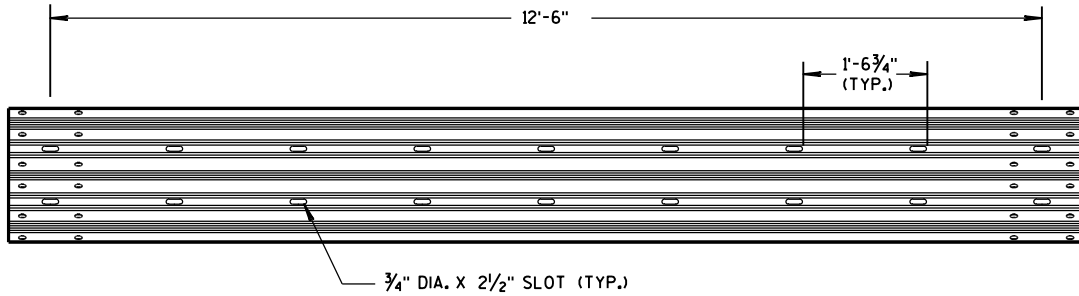
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



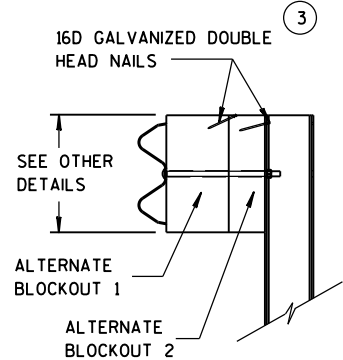
W-BEAM TO THRIE BEAM TRANSITION SECTION



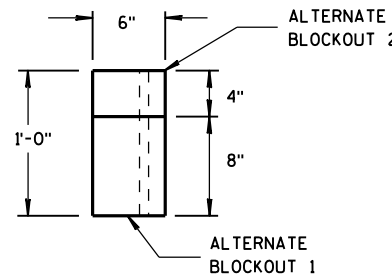
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

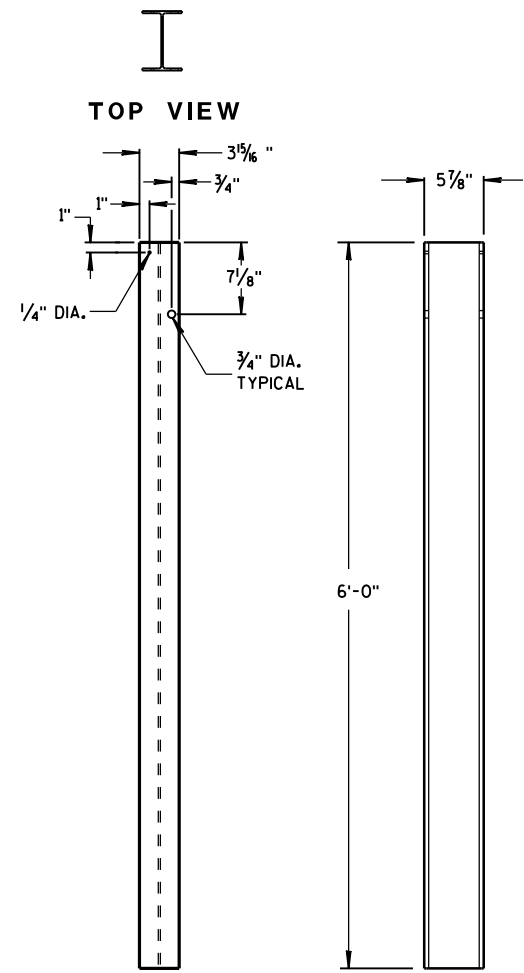


SIDE VIEW



TOP VIEW

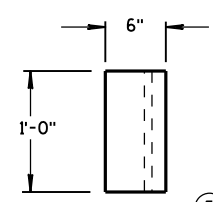
ALTERNATE WOOD BLOCKOUT DETAIL



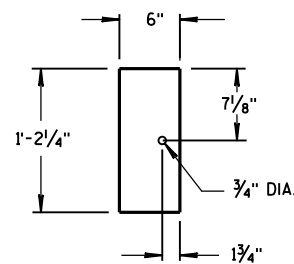
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

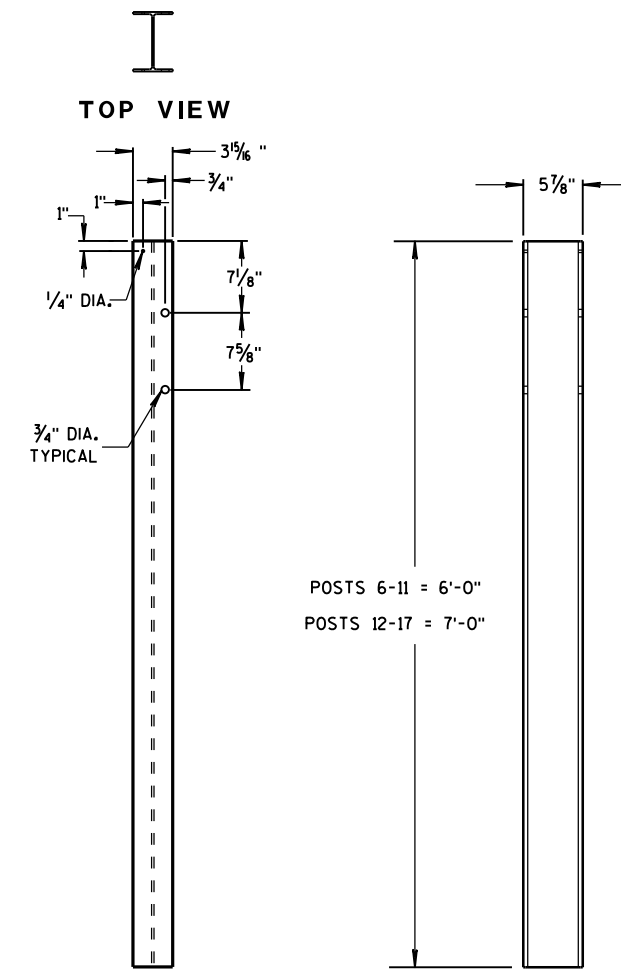


TOP VIEW



FRONT VIEW

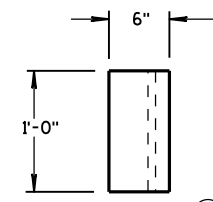
BLOCKOUT POSTS 1-5



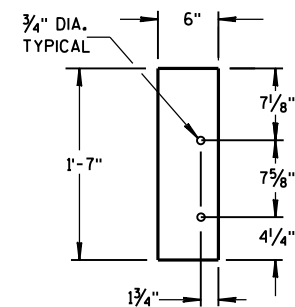
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

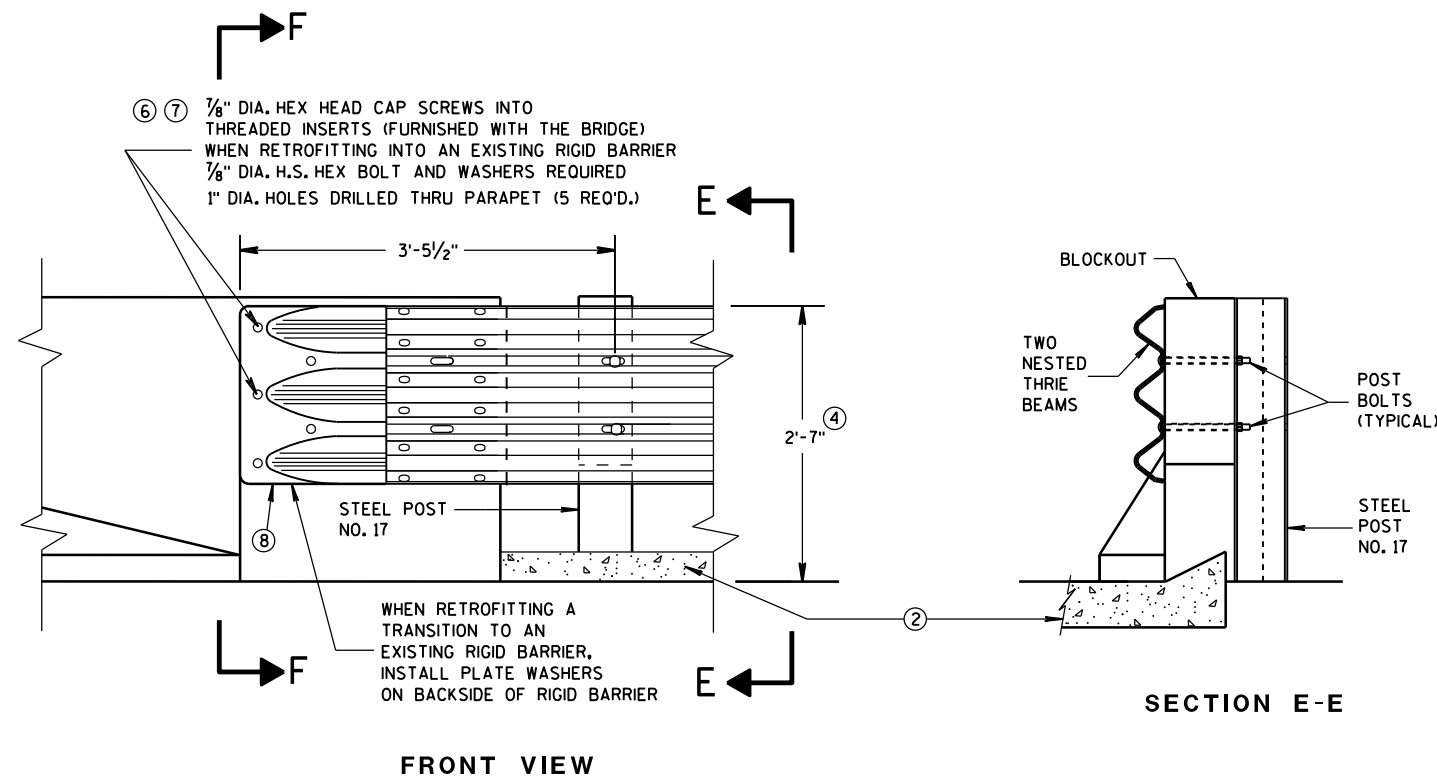
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

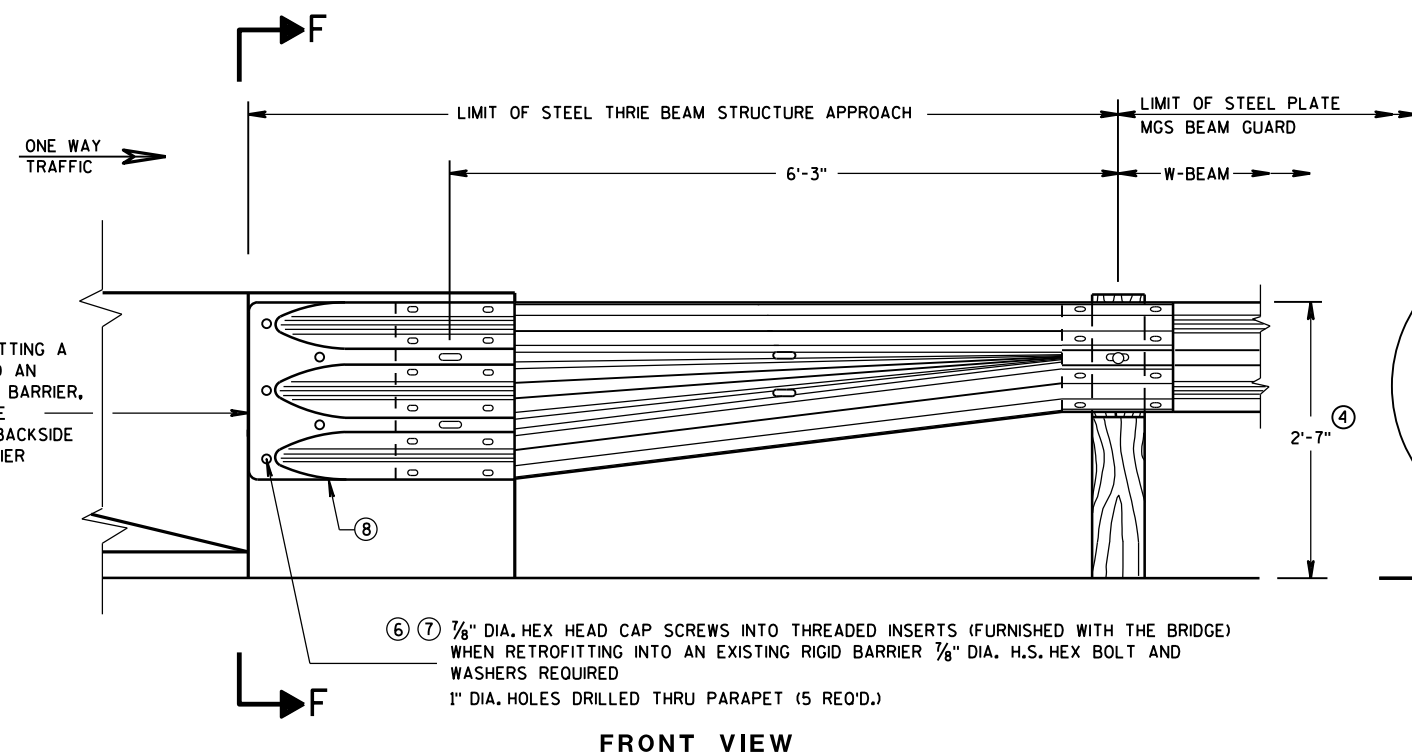
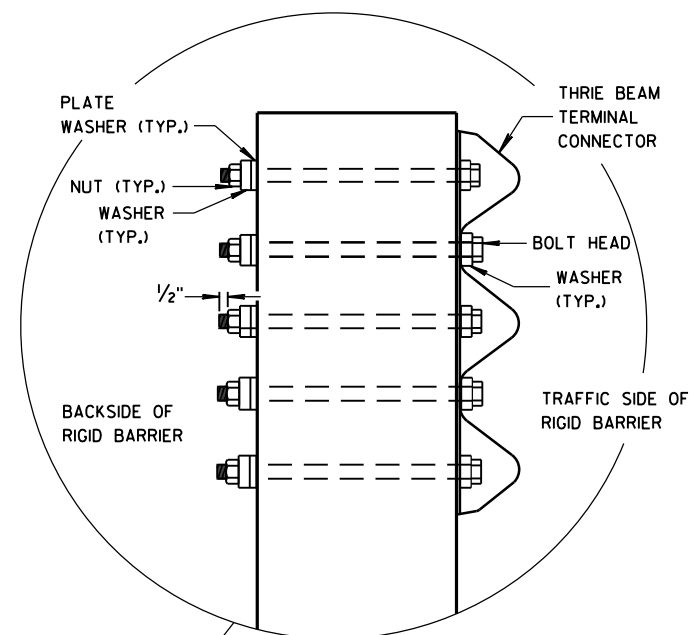
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



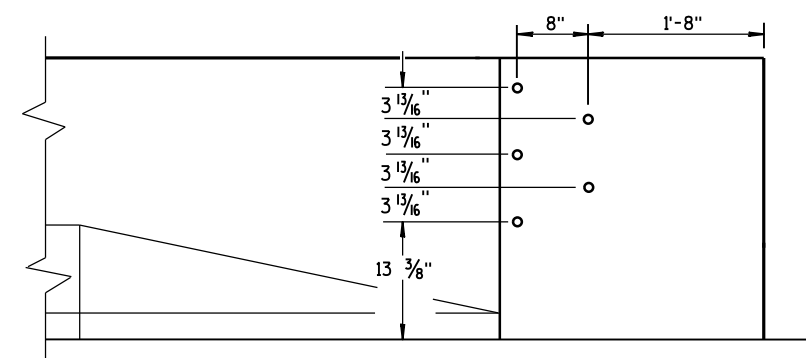
GENERAL NOTES

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

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ 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 CONNECTOR PLATE. 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.
- ⑧ 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 1/2".



SECTION F-F



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS 051

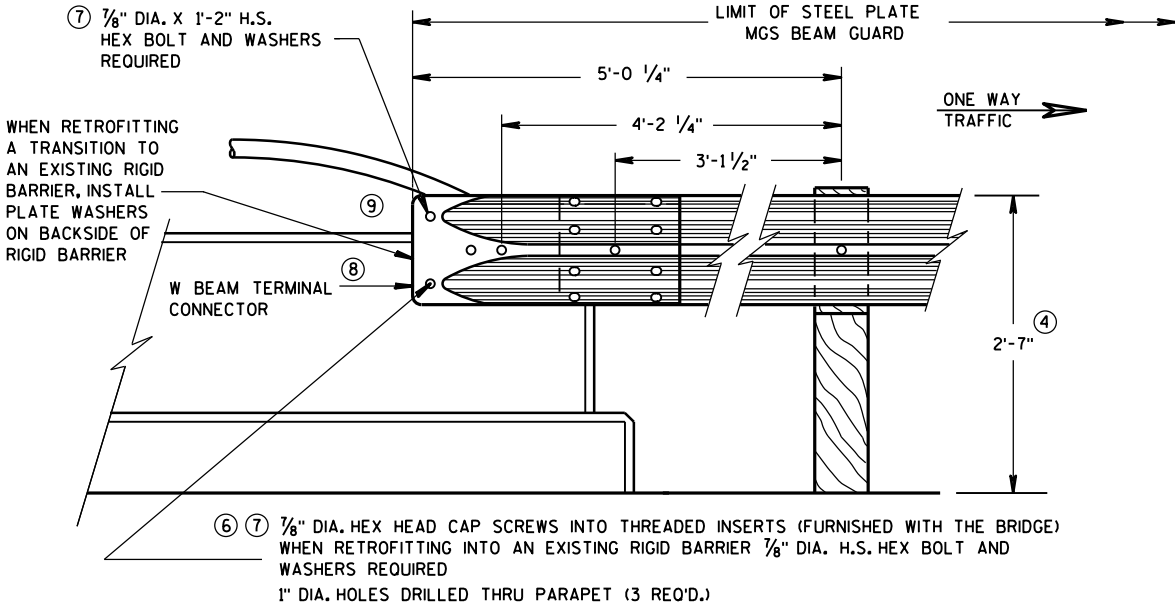
ENGINEER

NT

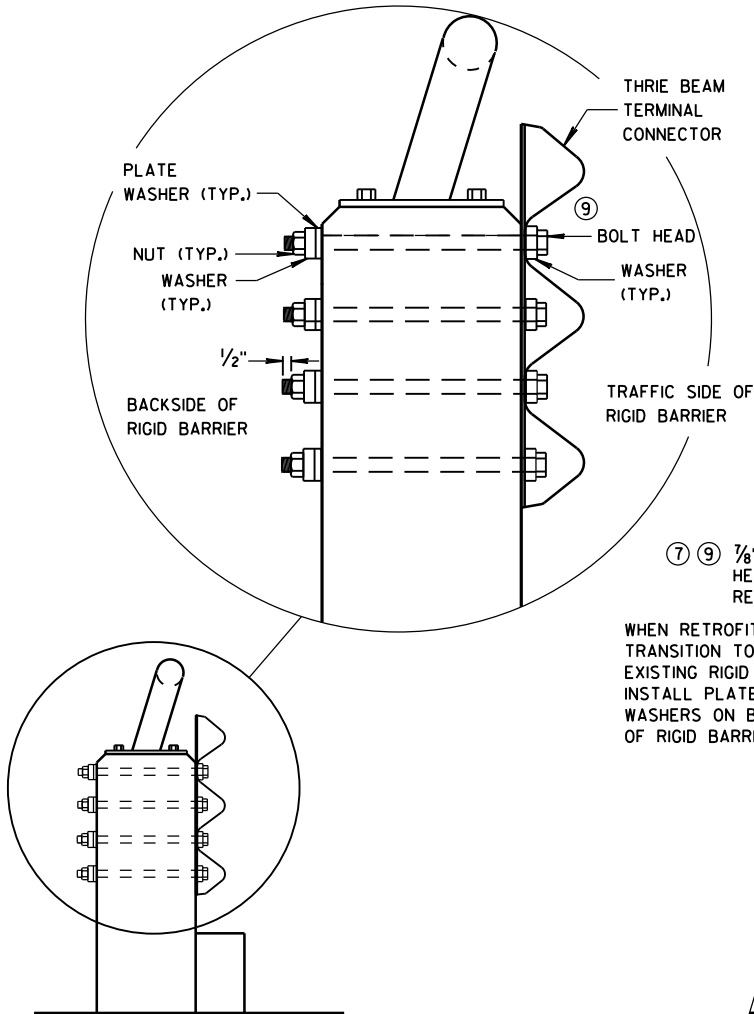
GENERAL NOTES

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

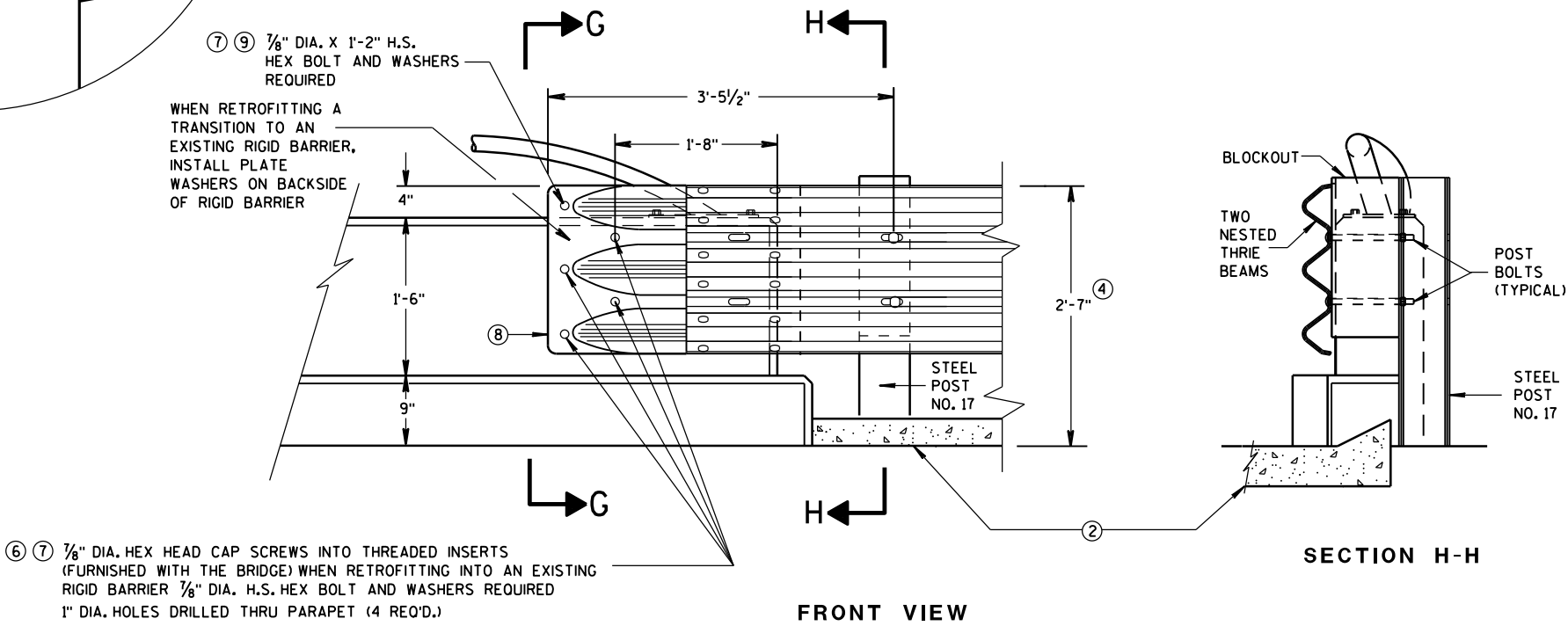
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH 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 CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ 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 $\frac{1}{2}"$.
- ⑨ 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.



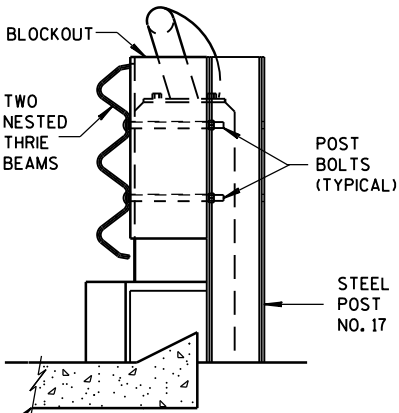
FRONT VIEW
W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION G-G



FRONT VIEW
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

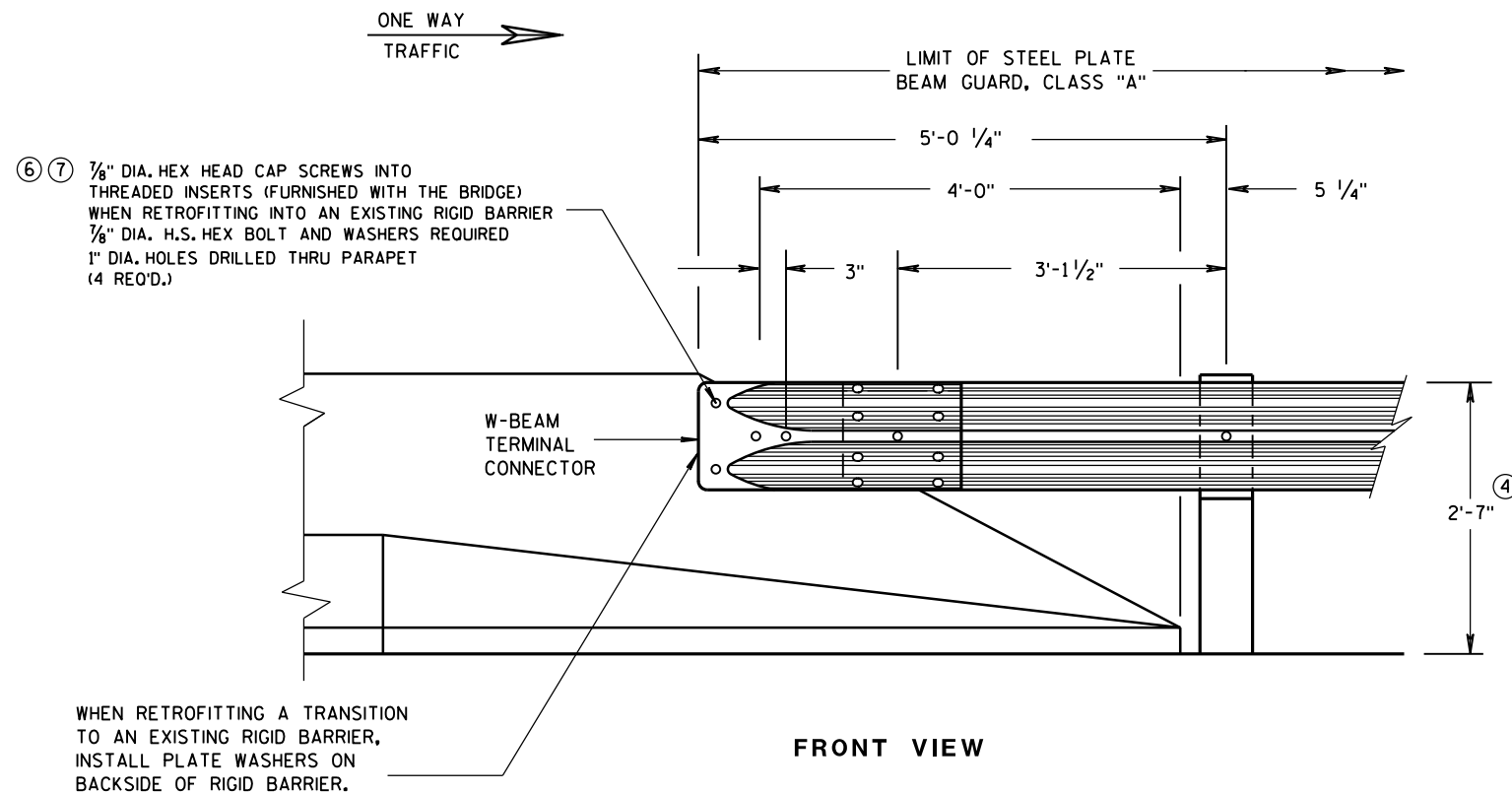


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

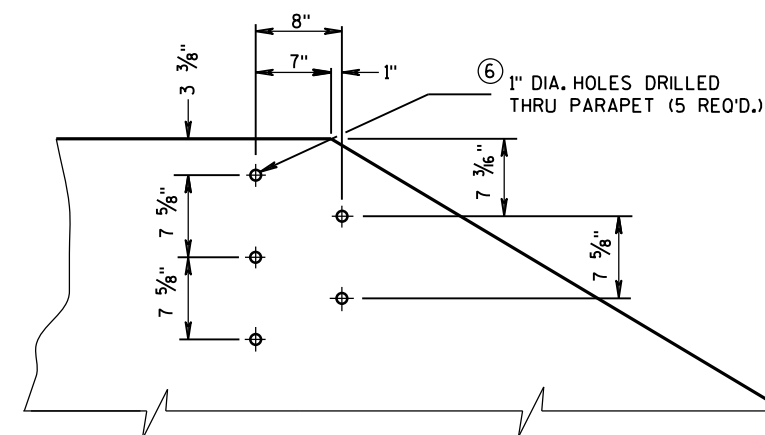
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 52 NT
ENGINEER
FHWA

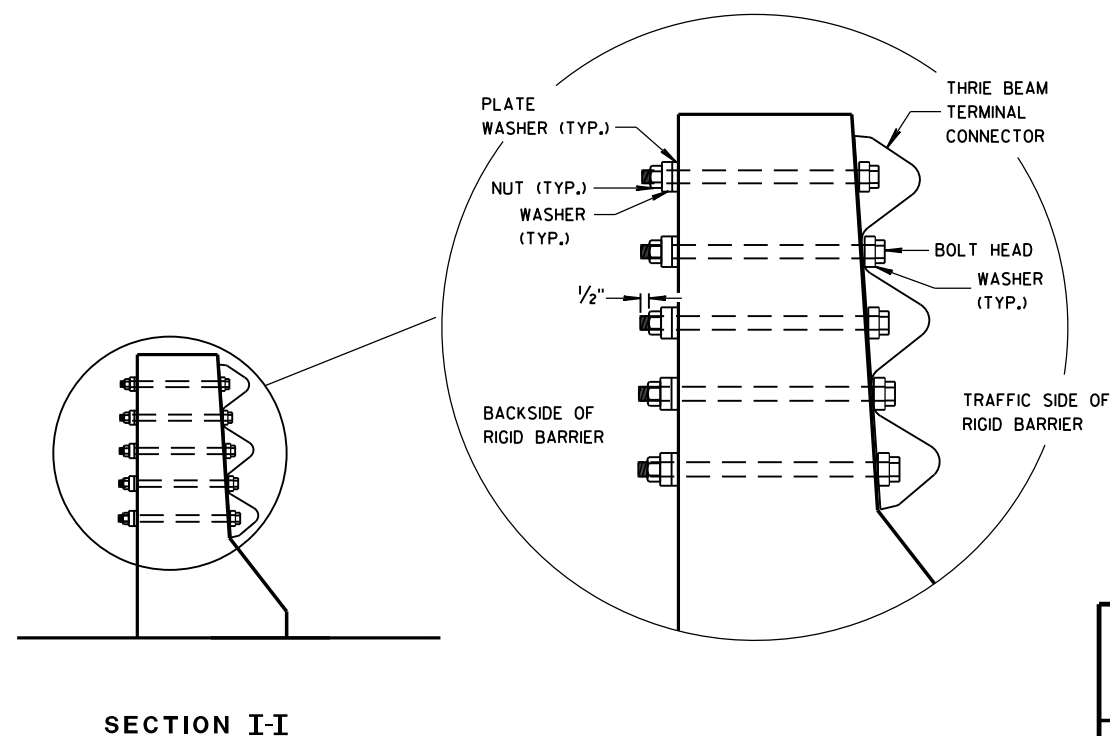
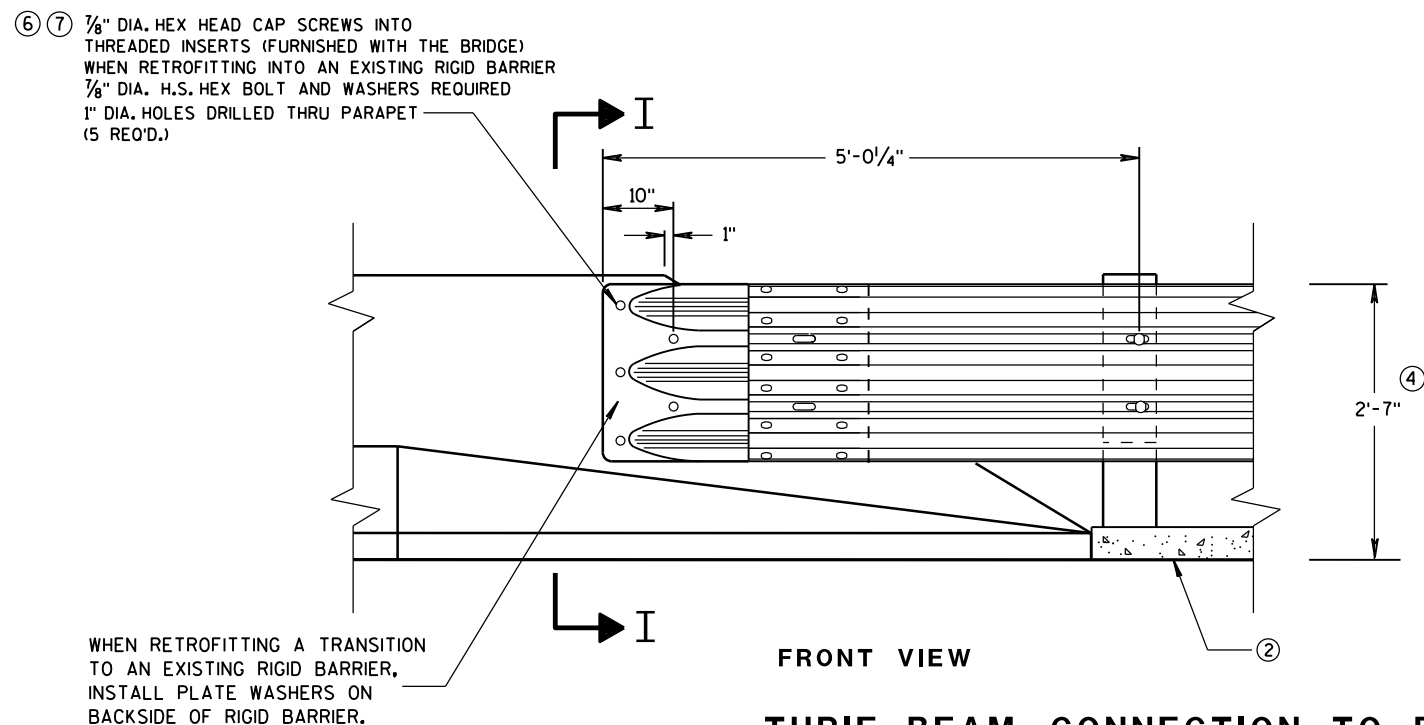


GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ 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 CONNECTOR PLATE. 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.



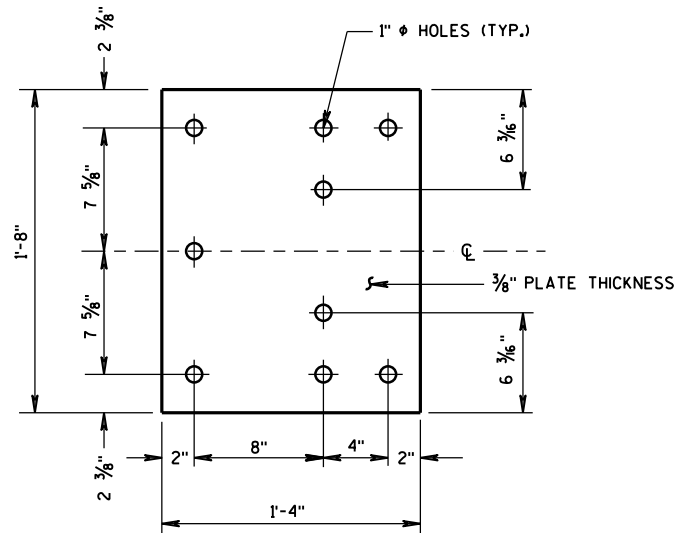
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



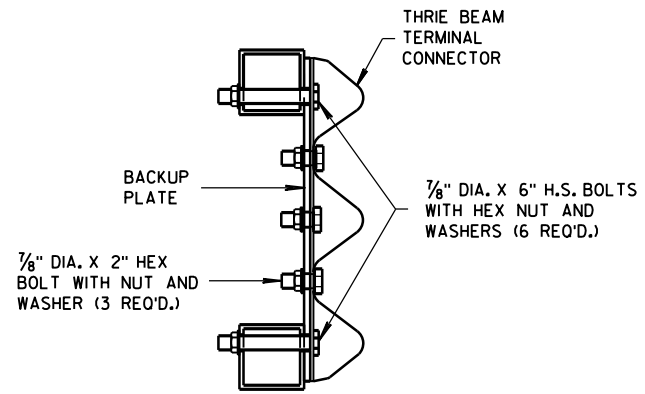
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

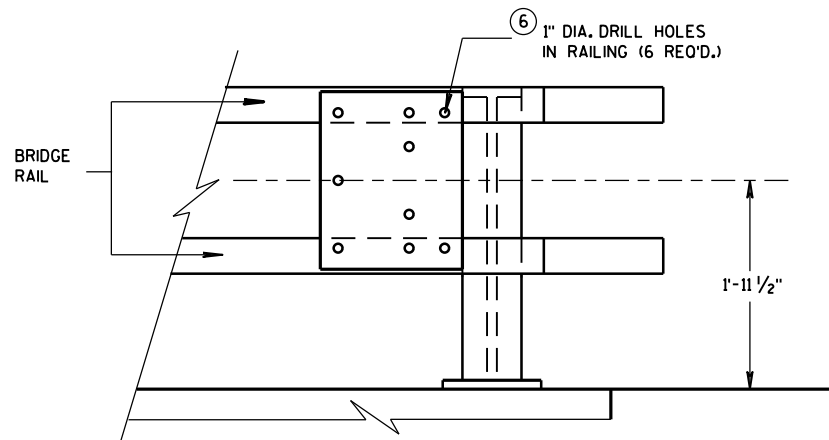
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 53 INT
FHWA



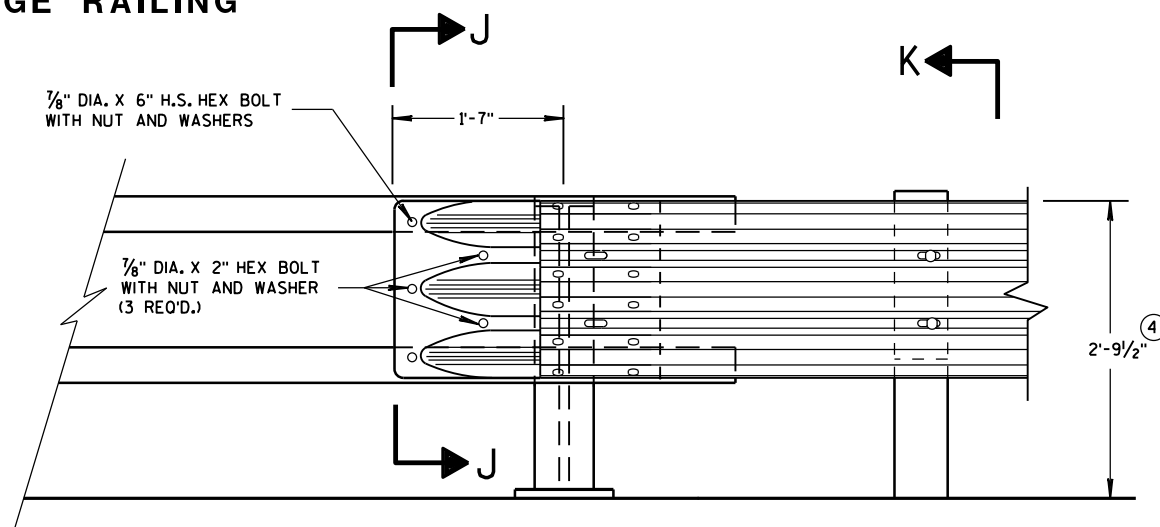
BACK-UP PLATE DETAIL



SECTION J-J

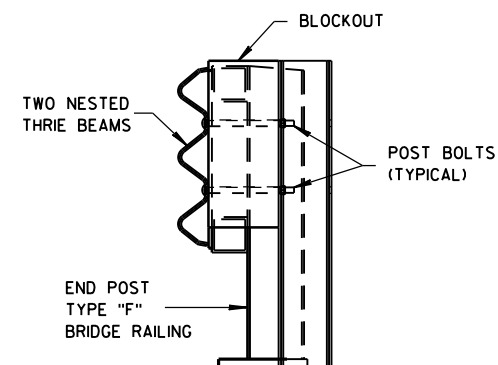


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

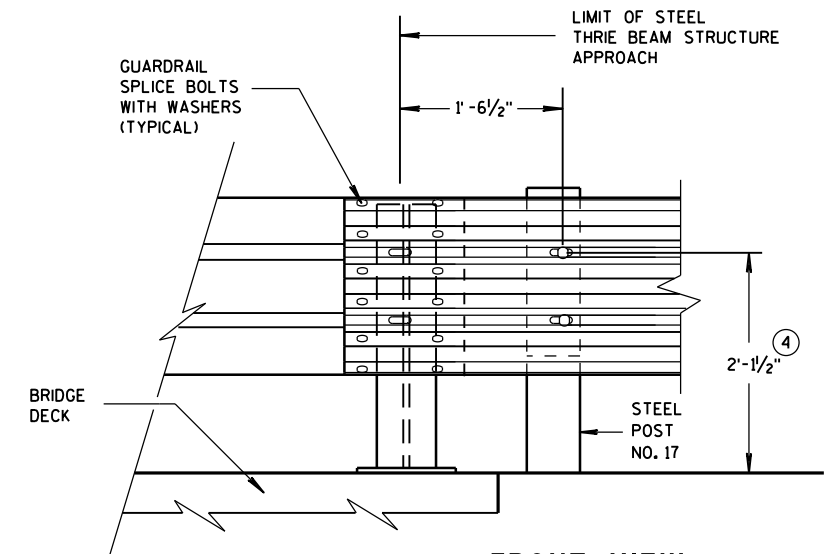
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

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



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

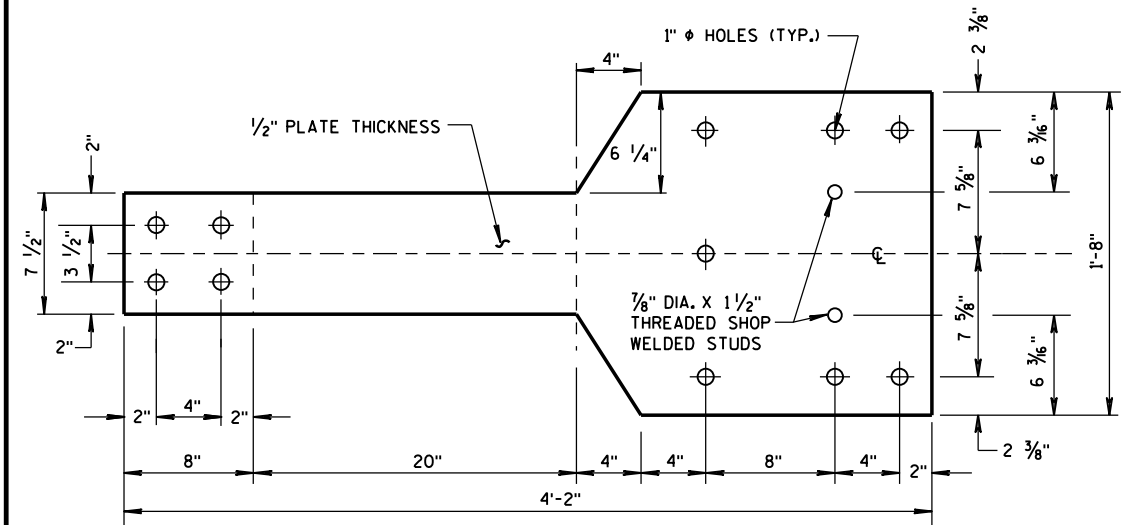
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

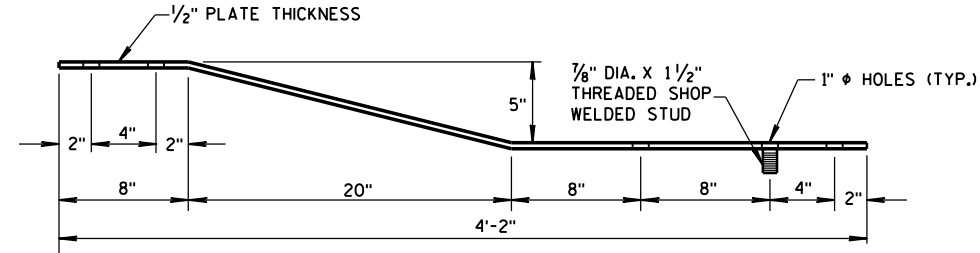
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 54 NT
FHWA ENGINEER

GENERAL NOTES

④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.

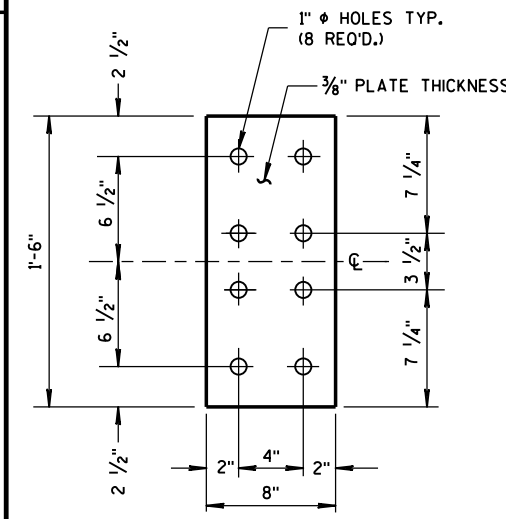


FRONT VIEW



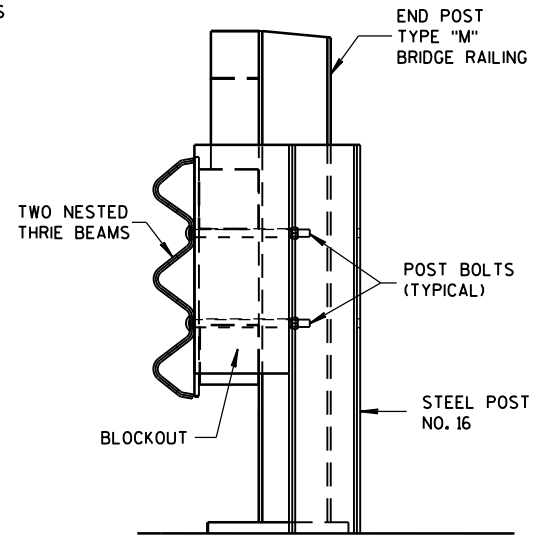
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

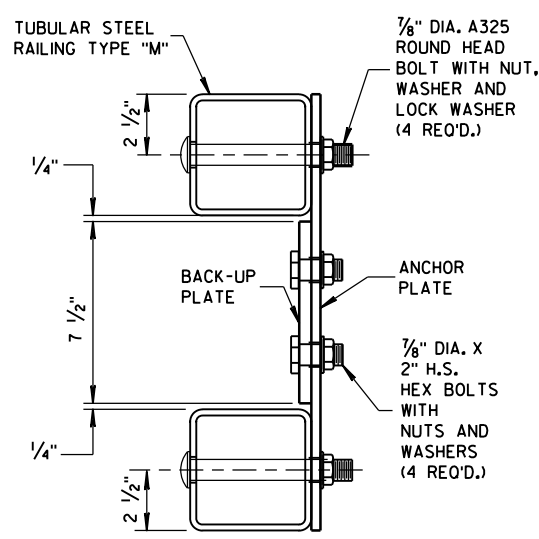


FRONT VIEW

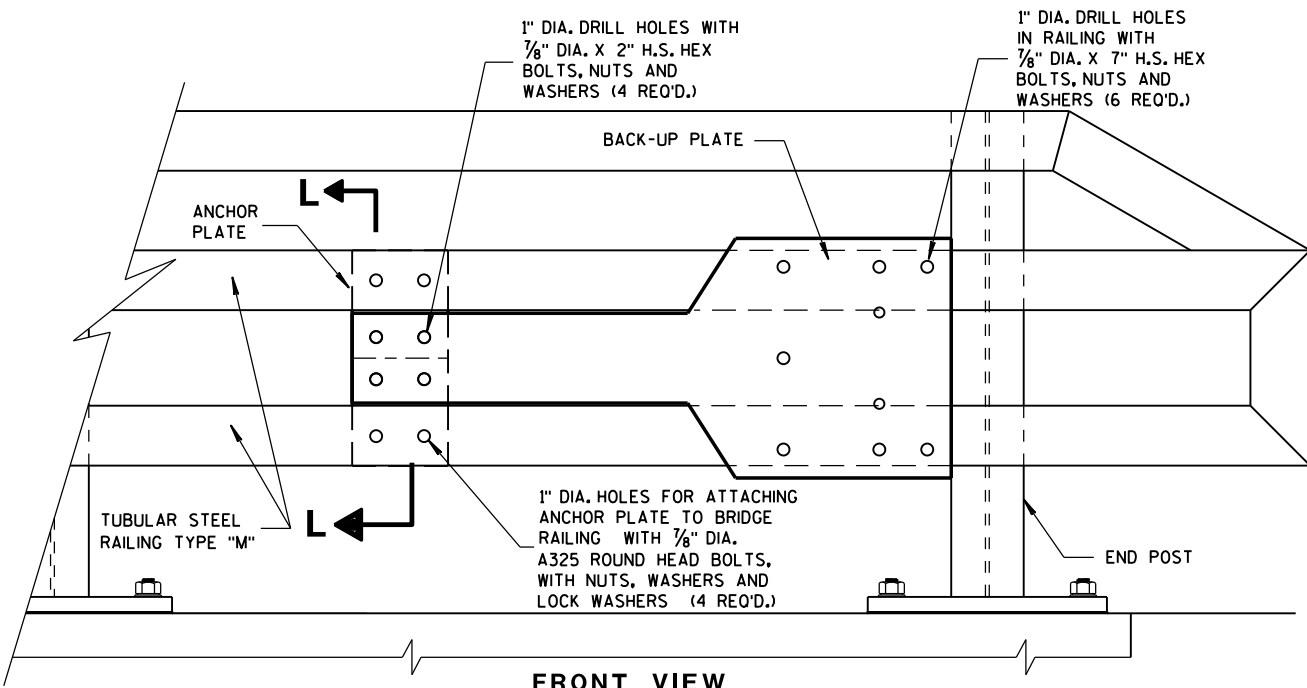
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

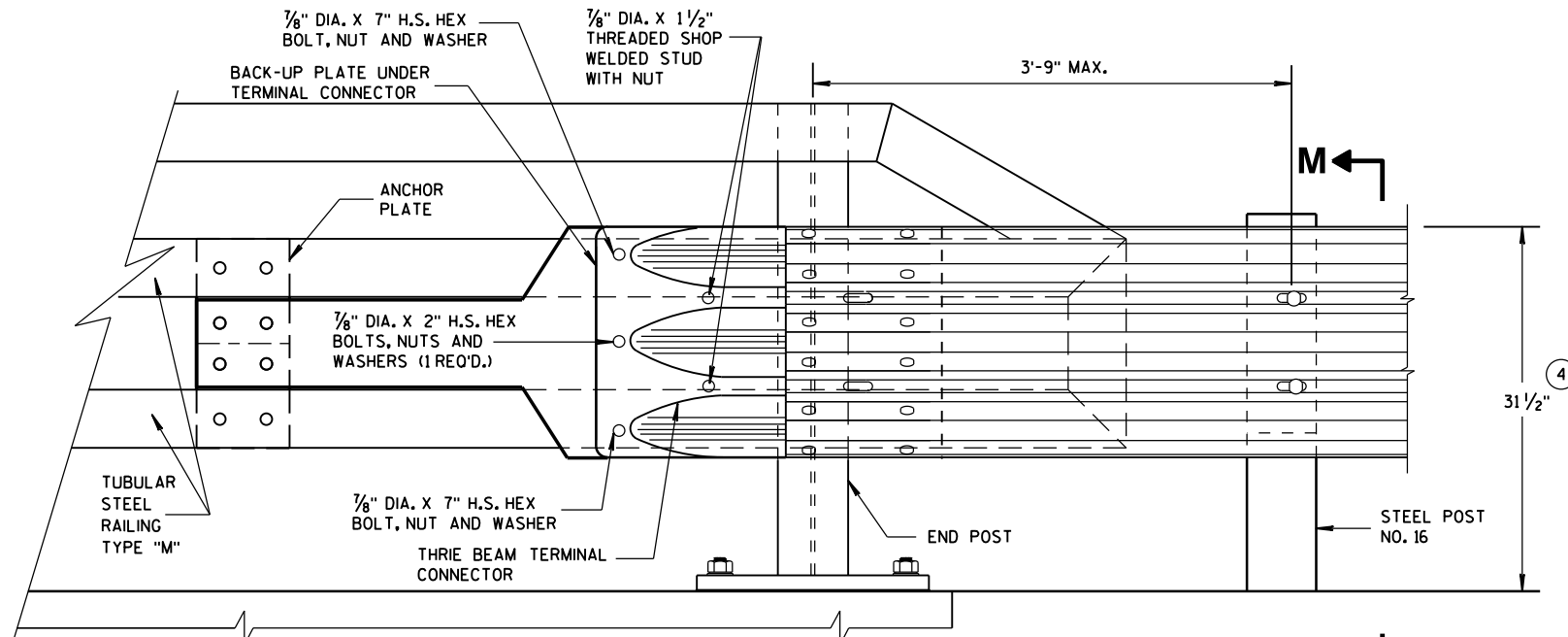


SECTION L-L

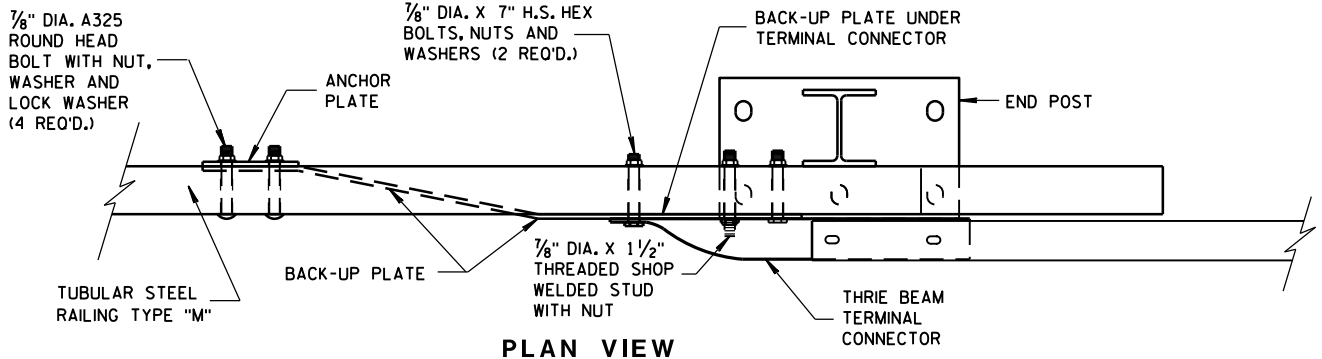


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER
FHWA



- 10 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND $\frac{3}{16}$ " FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 11 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
 $\frac{3}{16}$ " FILLET WELD BY 1" LONG SPACED AT 2".

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 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 1/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1/16" x 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 1/16"	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 3/16" x 6" x 3 3/8" 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 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

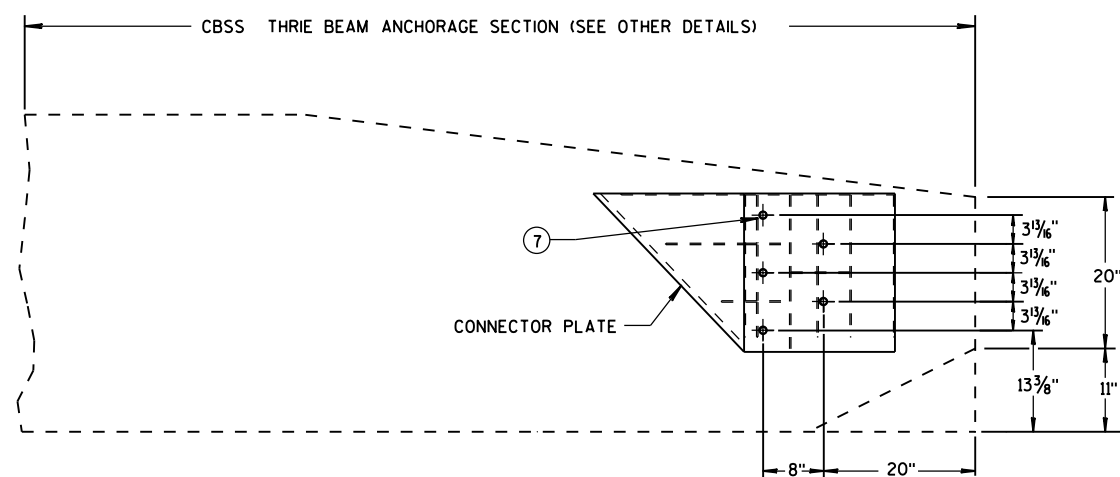
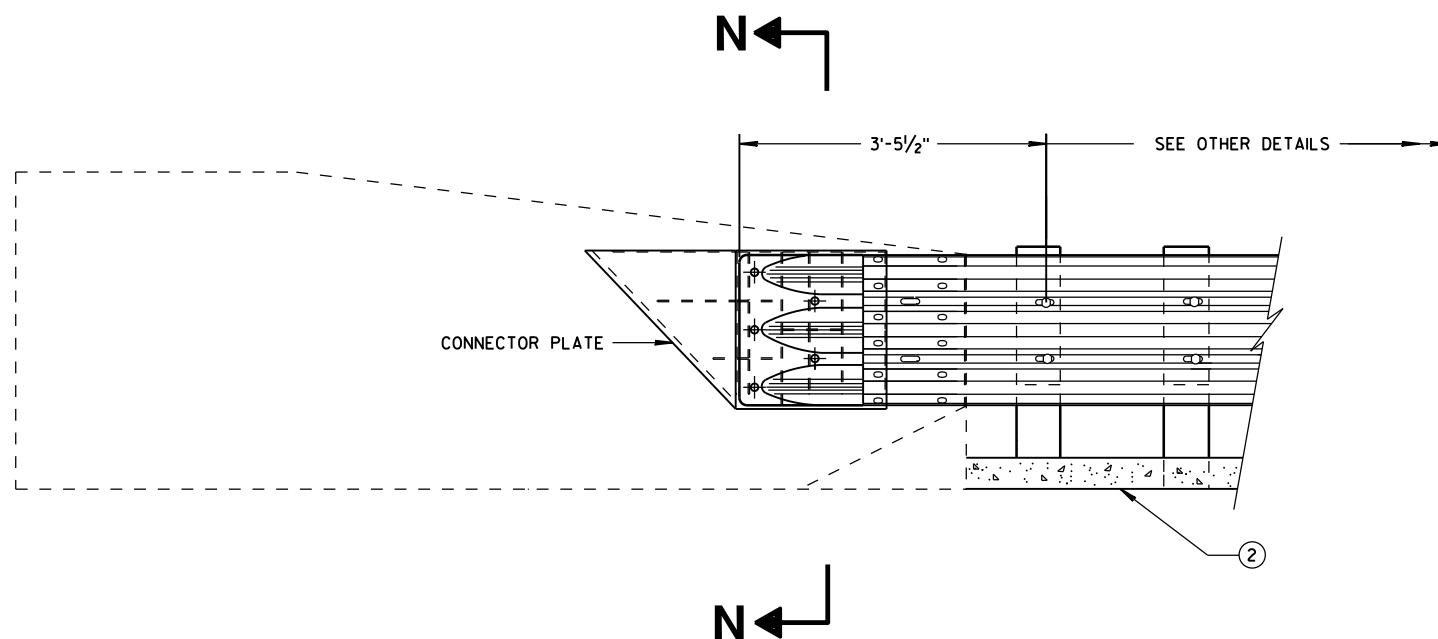
SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THREE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 56 INT
FHWA ENGINEER

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



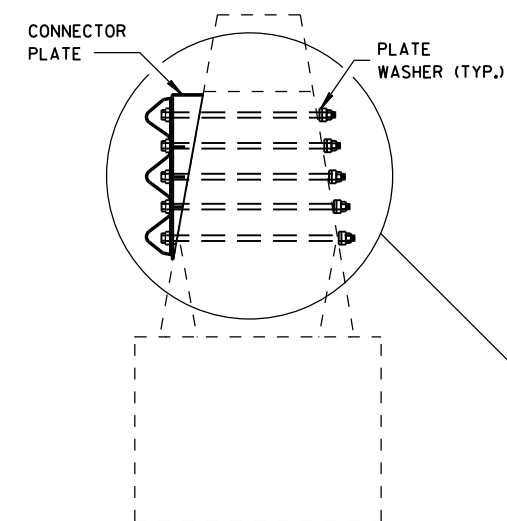
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

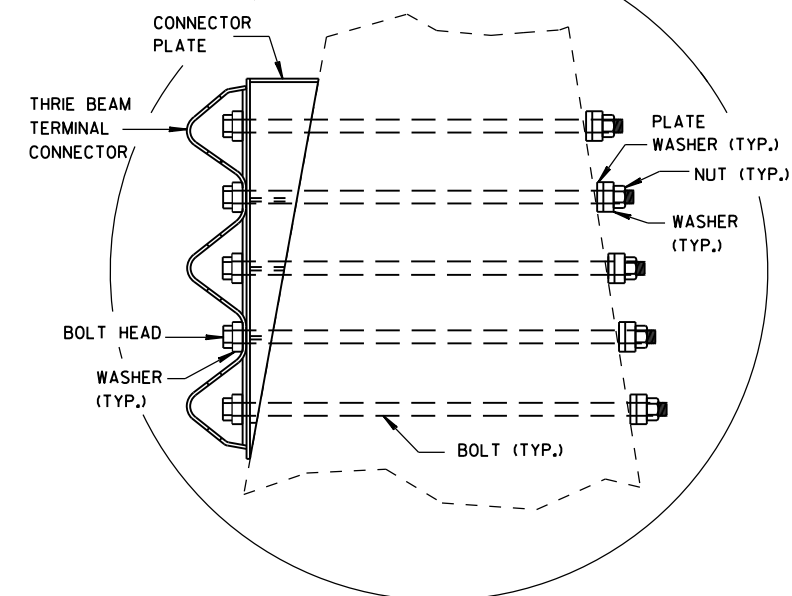
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

(7) 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 CONNECTOR PLATE. 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.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

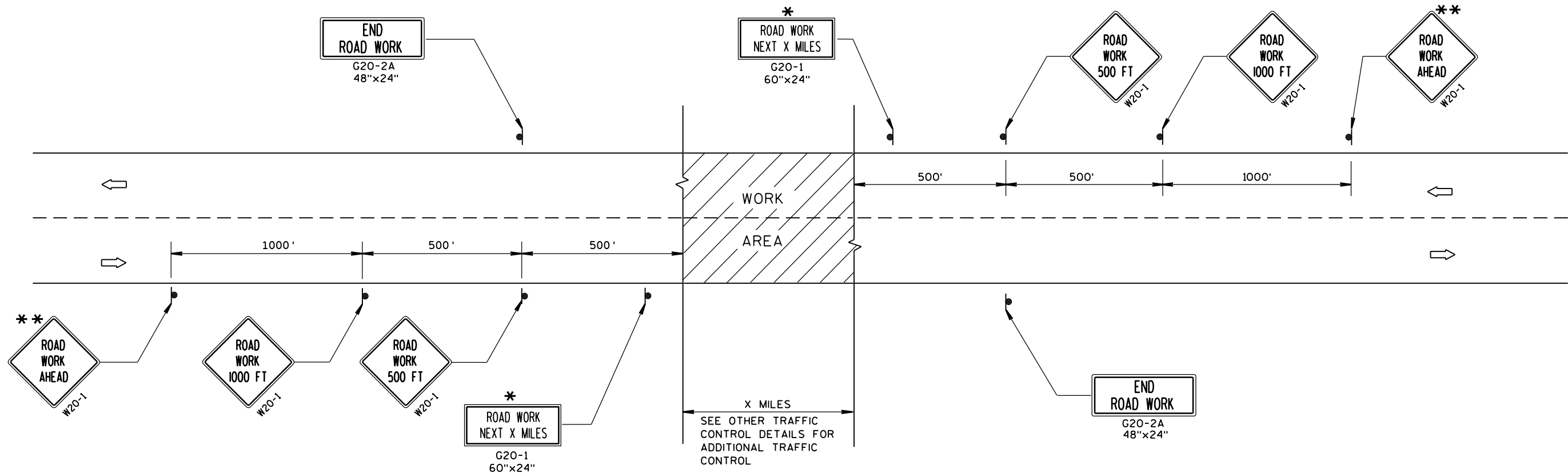
June, 2015

DATE

FHWA

/s/ Jerry H. Zoog
ROADWAY STANDARDS D 57
ENGINEER

NT



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

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.

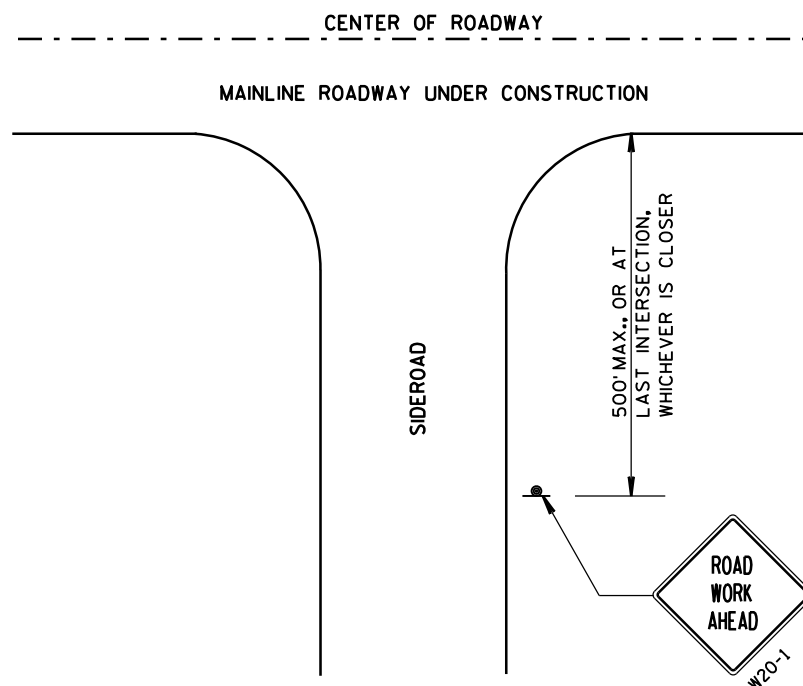
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

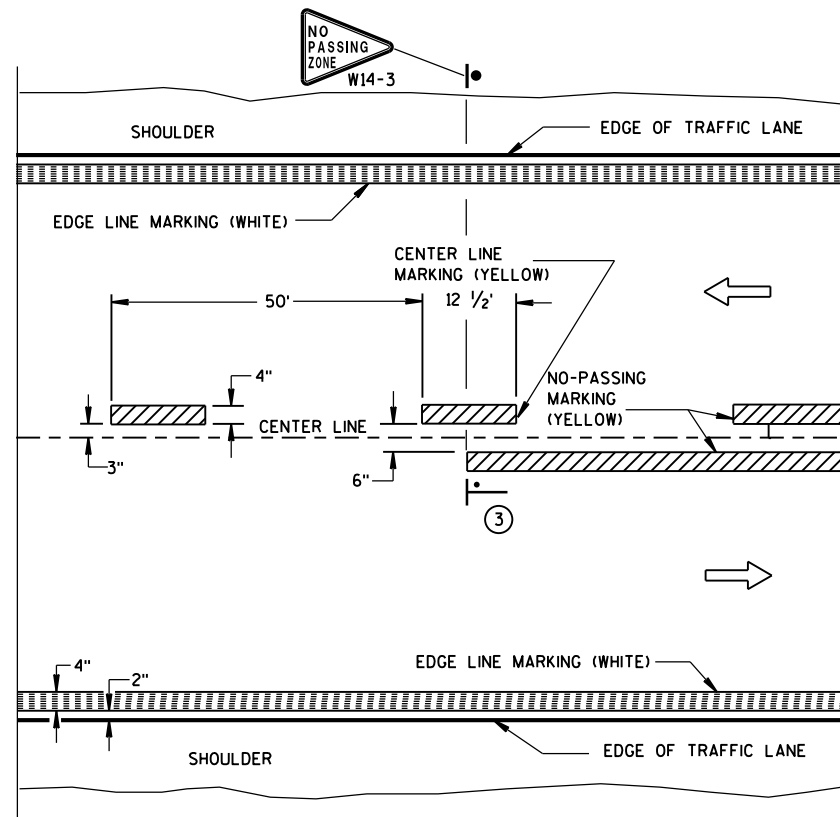
** PLACE ADDITIONAL W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



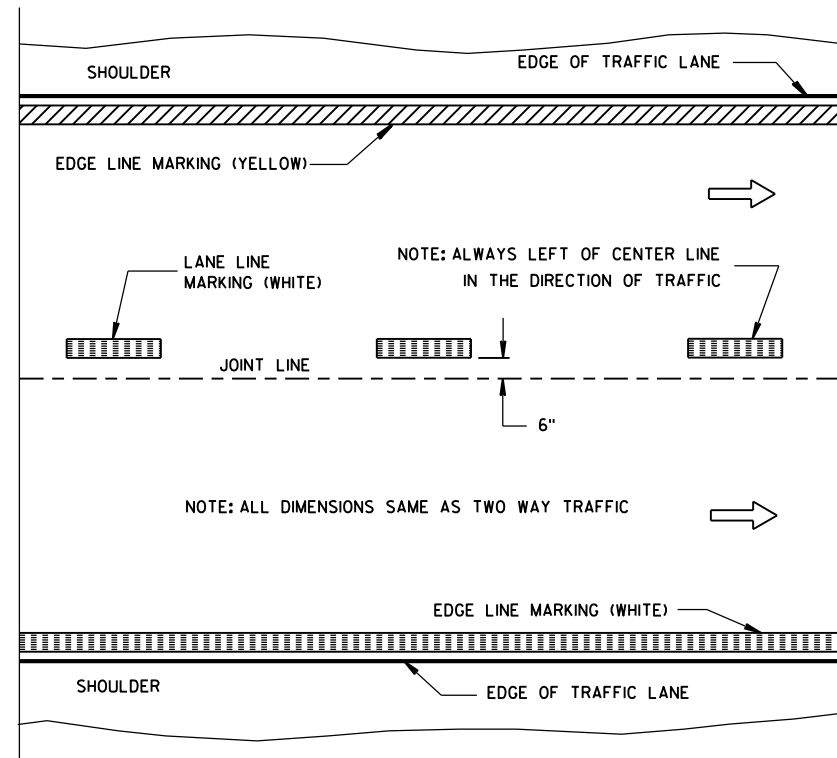
LEGEND

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

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER	SIGN
FHWA		

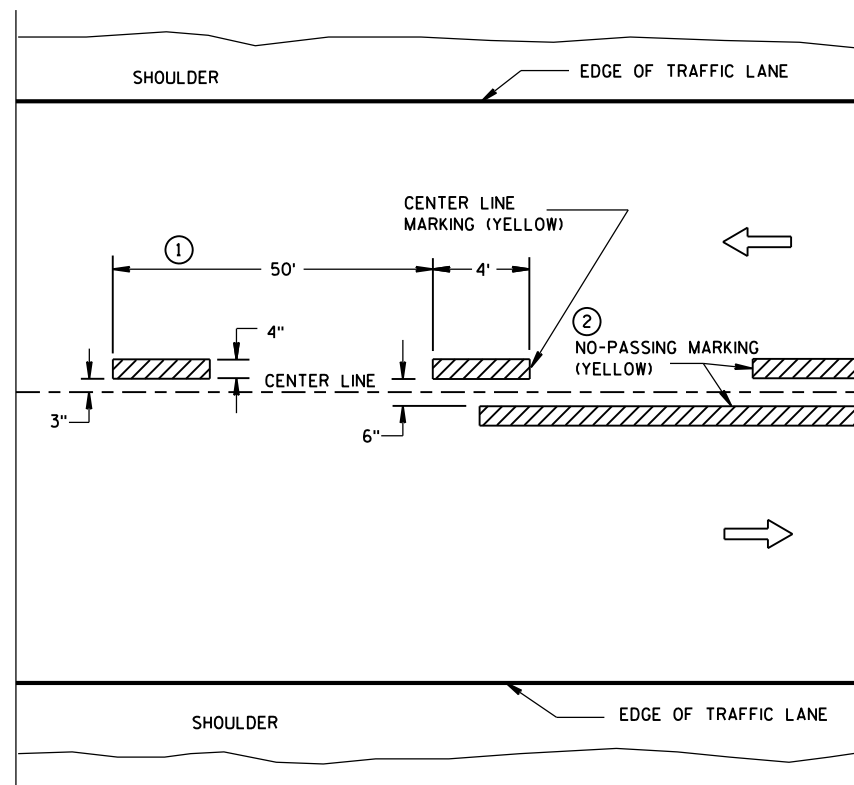


TWO WAY TRAFFIC

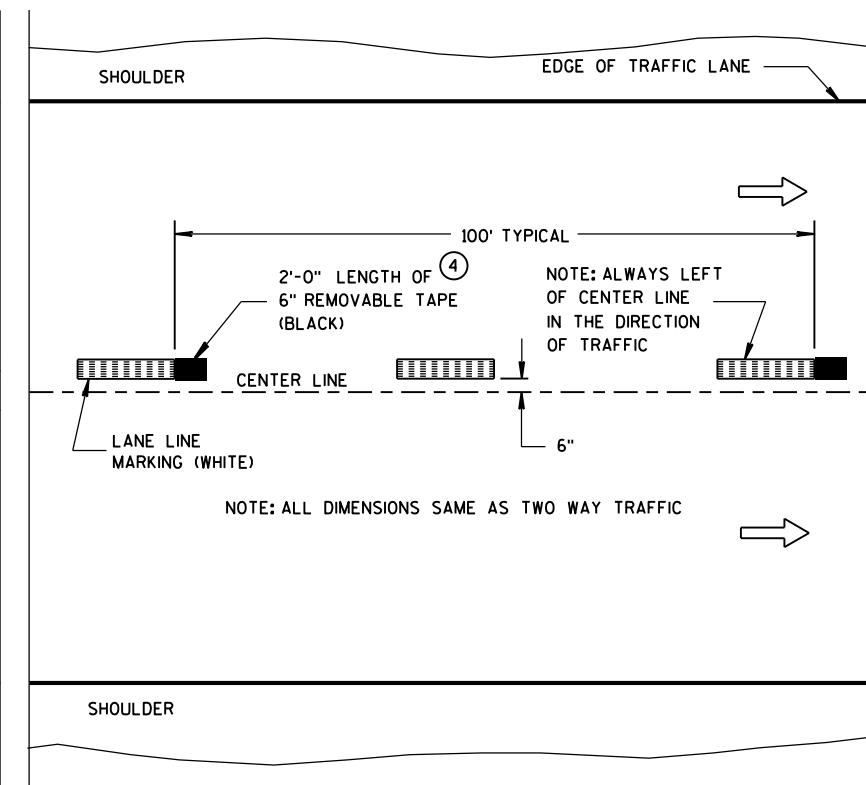


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

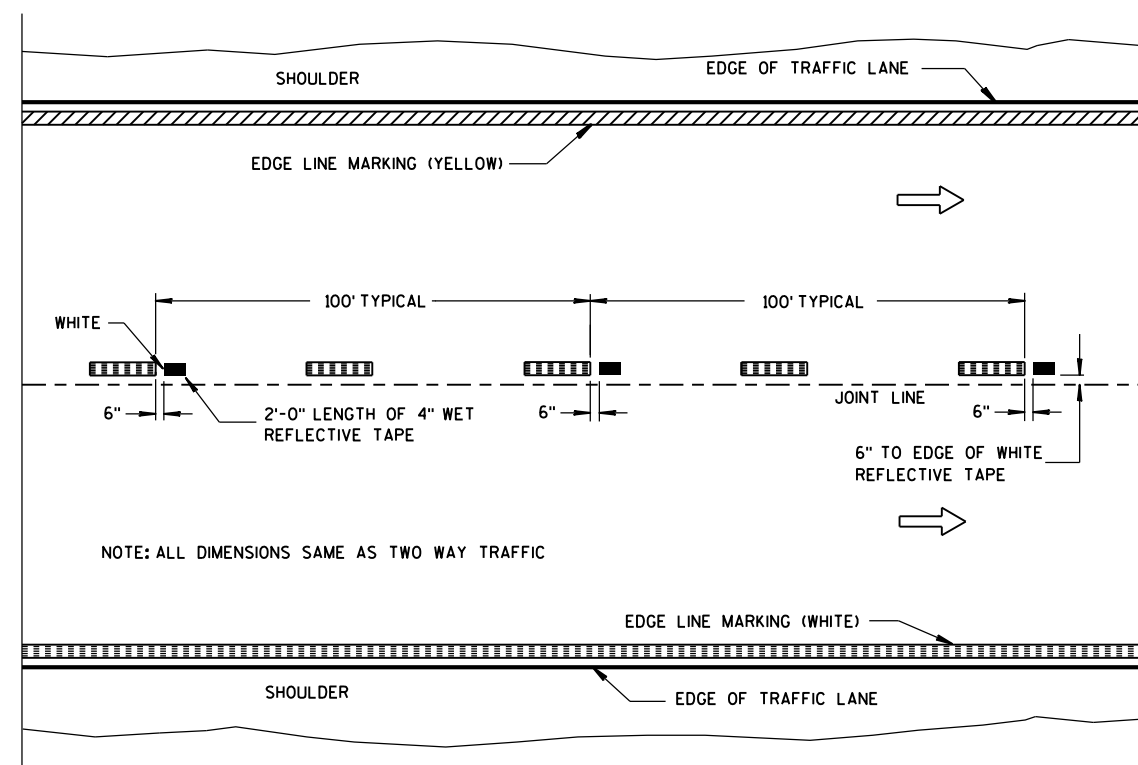
GENERAL NOTES

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

FHWA

/S/ Travis Feltes
STATE TRAFFIC E 59

LEGEND

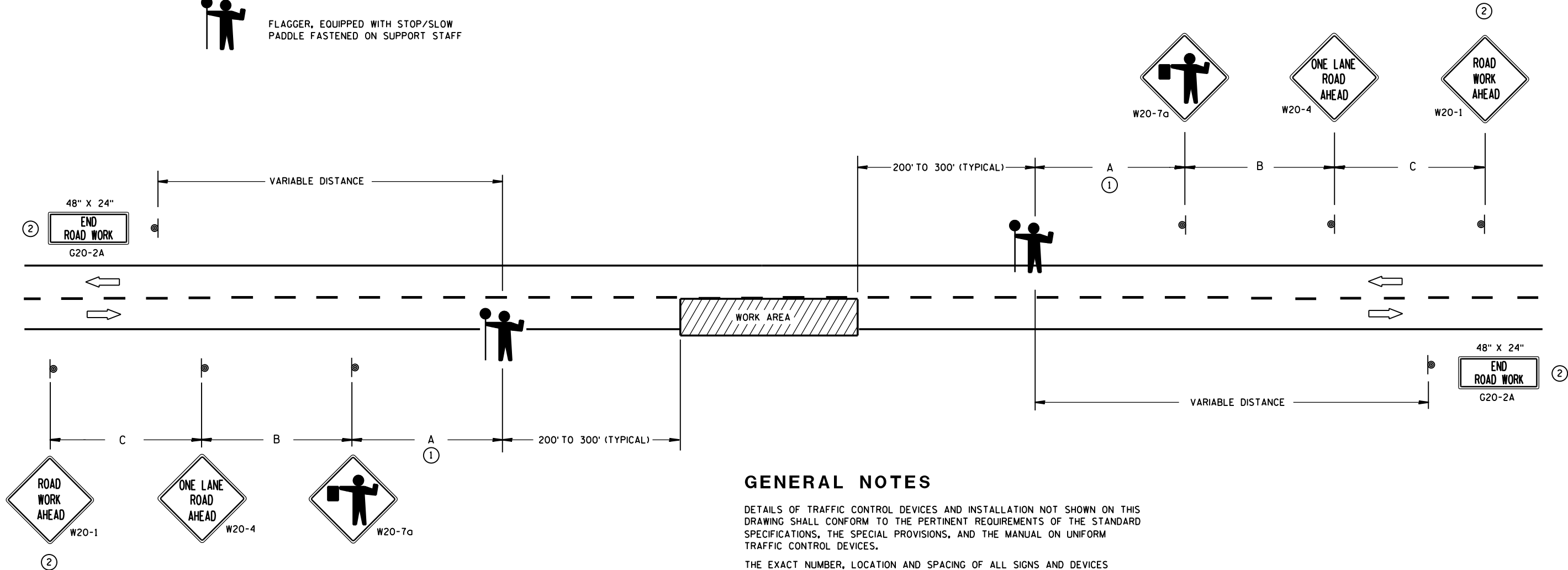
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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



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.



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.

- 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.

TRAFFIC CONTROL FOR LANE
CLOSURE (SUITABLE FOR
MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 60 SIGN
FHWA

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.

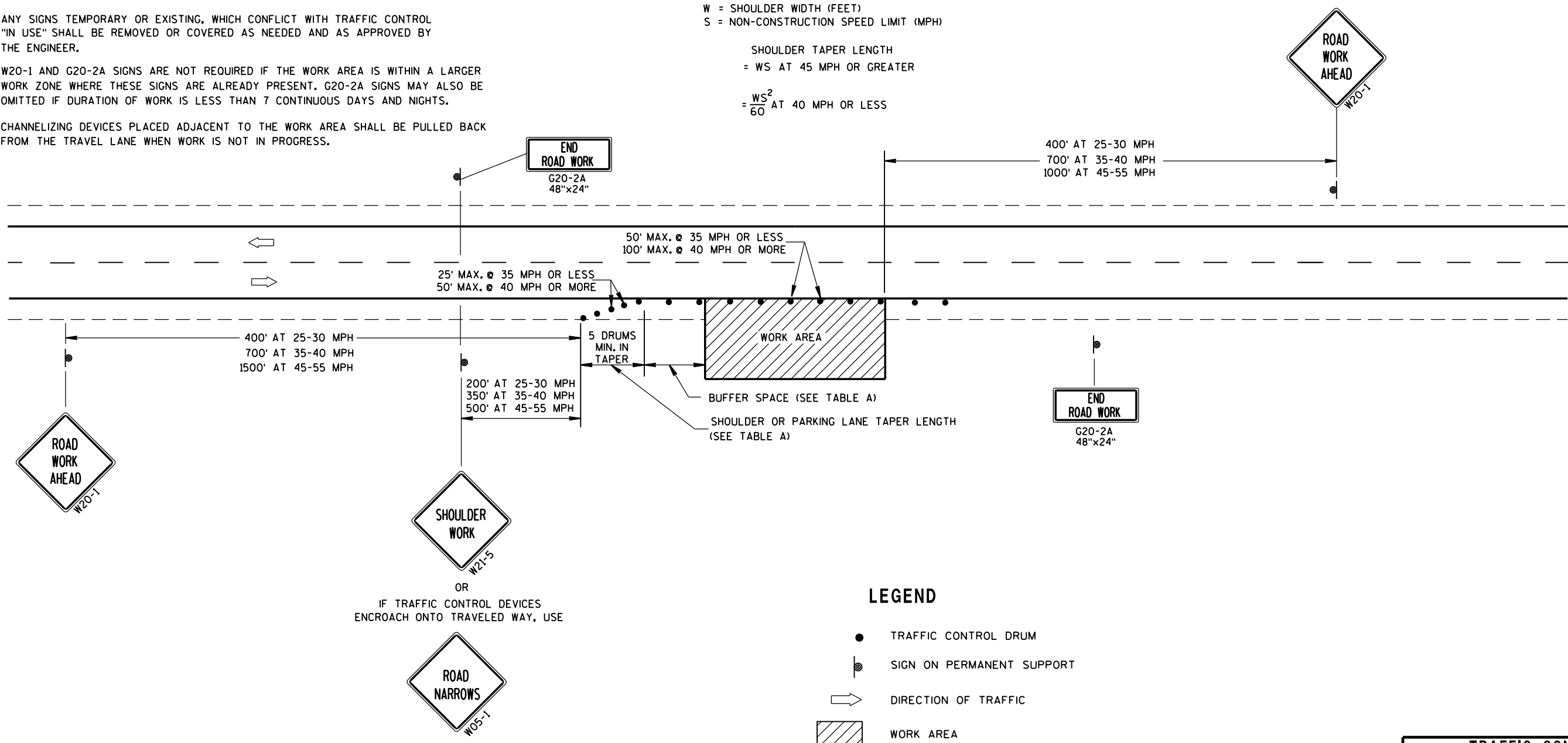
TABLE A

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
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 ENGINE 61	ESIGN
FHWA		

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



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.

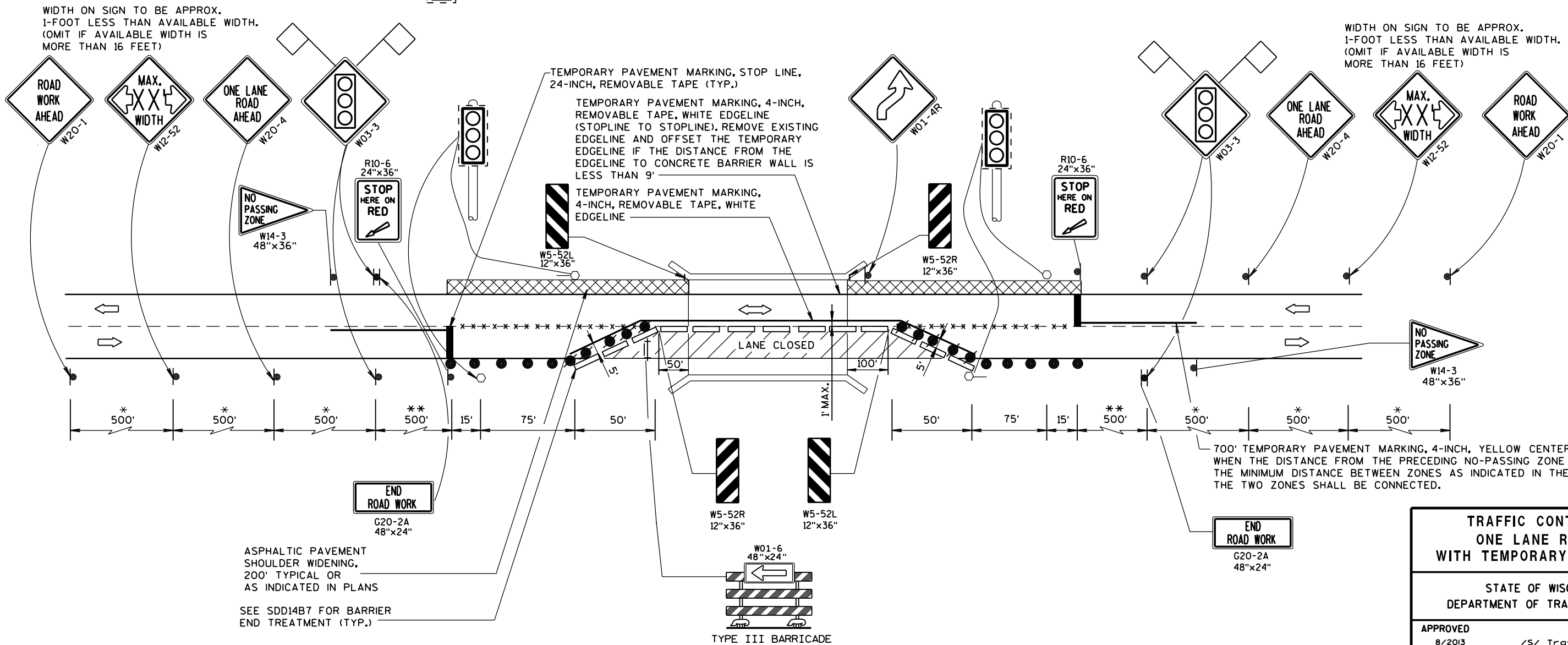
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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.

6



6

TRAFFIC CONTROL,
ONE LANE ROAD
WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 62 SIGN
FHWA

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
 INVENTORY RATING: RF = 1.10
 OPERATING RATING: RF = 1.51
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 KIPS

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

MATERIAL PROPERTIES:

CONCRETE MASONRY
 SUPERSTRUCTURE f'c = 4,000 psi
 ALL OTHER f'c = 3,500 psi

BAR STEEL REINFORCEMENT,
 HIGH STRENGTH, GRADE 60 fy = 60,000 psi

36-INCH PRESTRESSED GIRDERS,
 CONCRETE MASONRY f'c = 8,000 psi
 f'ci = 6,800 psi

0.6" DIA. PRESTRESSING STRANDS f's = 270,000 psi

HYDRAULIC DATA:

DRAINAGE AREA = 9.0 SQ. MI.
 WATERWAY AREA = 182 SQ. FT.
 VELOCITY = 2.20 F.P.S.
 Q(100) = 400 C.F.S.
 HIGH WATER (100) EL. = 1115.52
 HIGH WATER (2) EL. = 1112.92
 ROADWAY OVERTOPPING FREQUENCY = N/A
 SCOUR CRITICAL CODE = 8

FOUNDATION DATA:

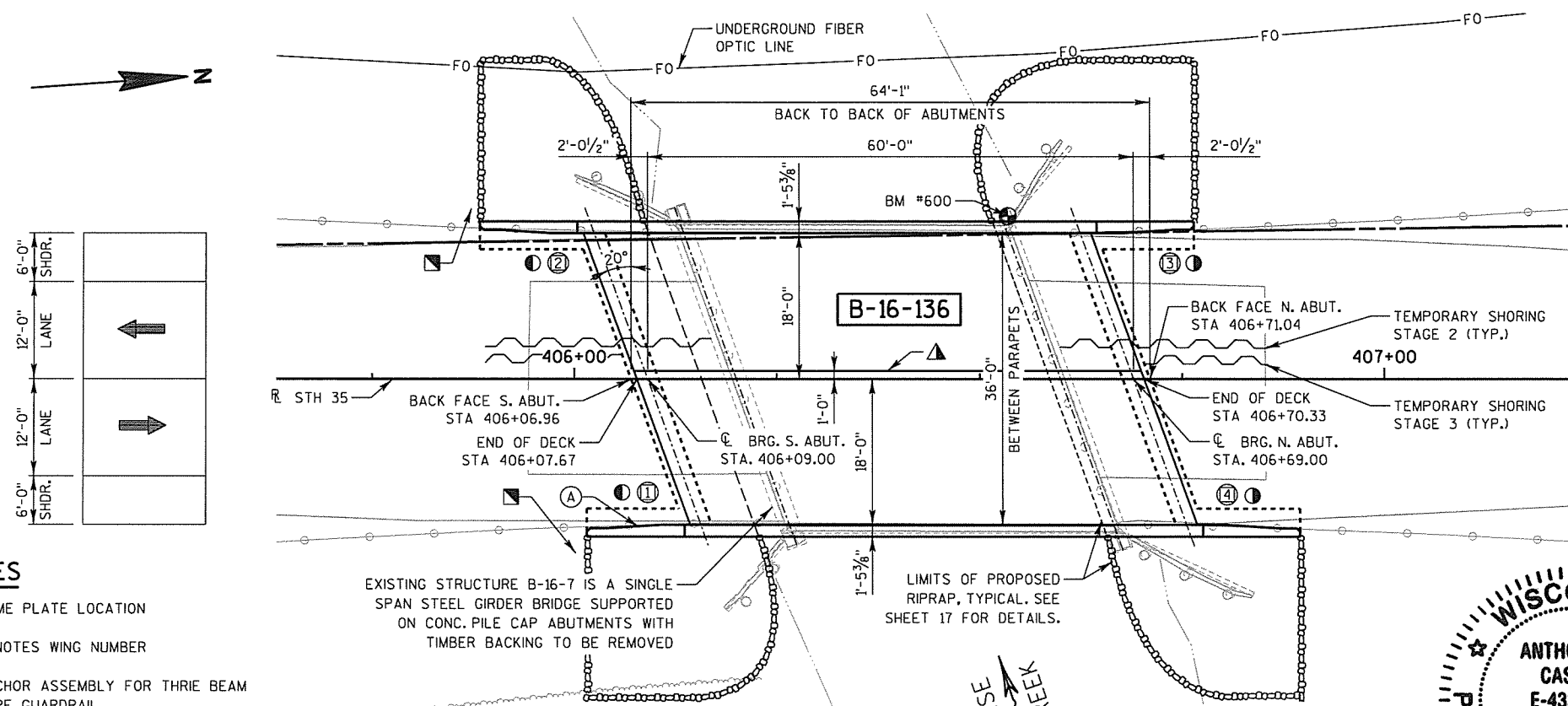
ABUTMENTS TO BE SUPPORTED ON HP 10X42 PILING DRIVEN TO A
 REQUIRED DRIVING RESISTANCE OF 180 TONS * PER PILE AS
 DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.
 ESTIMATED 40 FEET LONG.

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

TRAFFIC DATA:

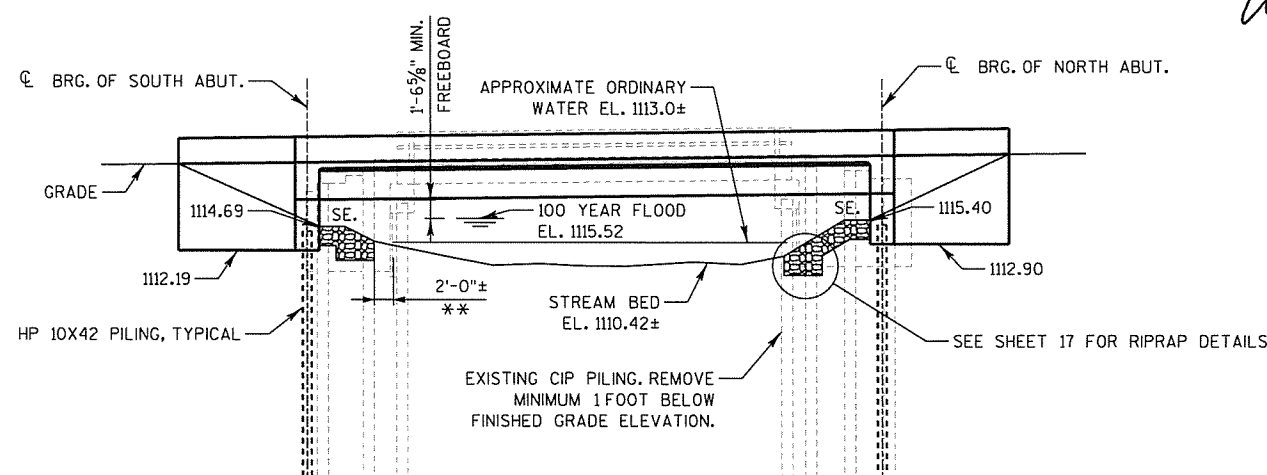
S.T.H. 35:

A.D.T. = 1,025 (2016)
 A.D.T. = 1,230 (2036)
 R.D.S. = 60 M.P.H.



PLAN

SINGLE SPAN 36" PRESTRESSED GIRDERS



ELEVATION

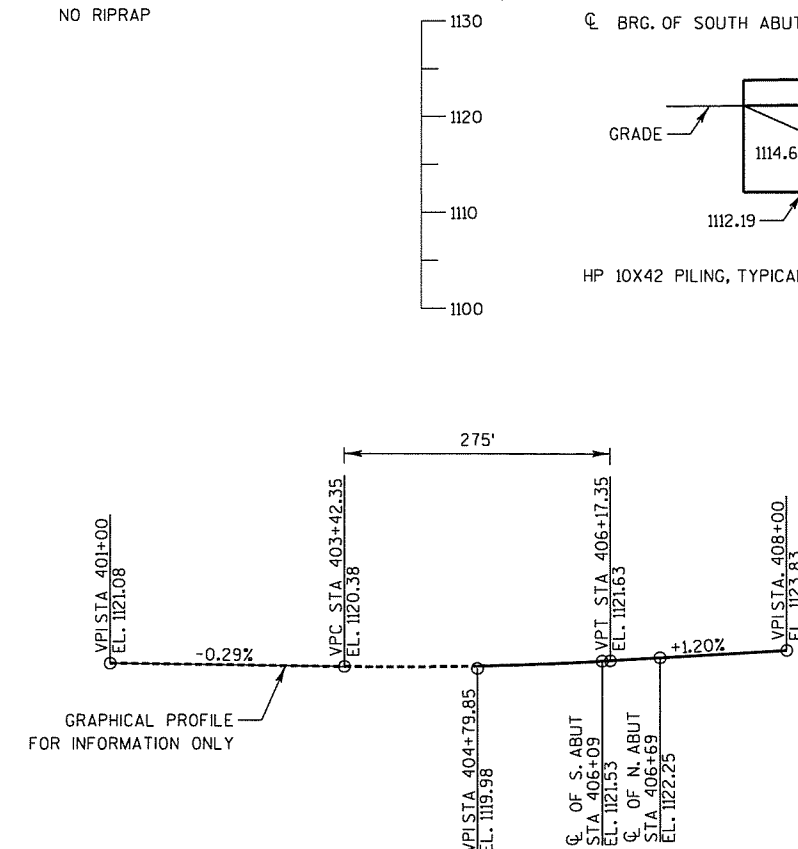
(LOOKING DOWNSTREAM)

BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
600	406+54 (LT)	BRASS DISK IN CONCRETE WINGWALL	1121.40

NOTES

- (A) NAME PLATE LOCATION
 (1) DENOTES WING NUMBER
 (1) ANCHOR ASSEMBLY FOR THREE BEAM
 TYPE GUARDRAIL
 (A) LONGITUDINAL JOINT. SEE CONSTRUCTION STAGING
 SHEET FOR LONGITUDINAL CONSTRUCTION JOINT DETAIL.
 (A) ASPHALTIC FLUMES PROVIDED FOR DRAINAGE. SEE
 ROADWAY SHEETS FOR DETAILS.
 ** WILDLIFE PASSAGE TO REMAIN NATURALLY FILLED,
 NO RIPRAP



PROFILE GRADE LINE - STH 35



LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. CROSS SECTION AND QUANTITIES
3. CONSTRUCTION STAGING
4. SUBSURFACE EXPLORATION
5. SOUTH ABUTMENT
6. SOUTH ABUTMENT WING DETAILS
7. SOUTH ABUTMENT DETAILS
8. NORTH ABUTMENT
9. NORTH ABUTMENT WING DETAILS
10. NORTH ABUTMENT DETAILS
11. 36" PRESTRESSED GIRDER DETAILS
12. STEEL DIAPHRAGM
13. SUPERSTRUCTURE
14. SUPERSTRUCTURE CROSS SECTION
15. SUPERSTRUCTURE DETAILS
16. SINGLE SLOPE PARAPET 32SS
17. HEAVY RIPRAP LAYOUT

STRUCTURE DESIGN CONTACTS

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

NO.	DATE	REVISION	BY
1300 W. Canal Street, Suite 200 Milwaukee, WI 53233 414.347.1607 Fax 414.347.1347			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dreher</i> SDR 08/02/15 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-16-136			
S.T.H. 35 OVER CHASE CREEK			
COUNTY	DOUGLAS	TOWN	DAIRYLAND
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	AJC	DESIGN CK'D.	MDR
DRAWN BY	AJC	PLANS CK'D.	MDR
GENERAL PLAN & ELEVATION			SHEET 1 OF 17
			63

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 ARE REFERENCED TO THE NAVD 88 DATUM.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

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.

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

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-16-136".

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

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEET.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 17 AND IN THE ABUTMENT DETAILS.

EXISTING BRIDGE B-16-7 IS A SINGLE SPAN STEEL GIRDER BRIDGE WITH AN OVERALL WIDTH OF 38'-0" AND AN OVERALL LENGTH OF 40'-0" AND IS TO BE REMOVED IN STAGES AS SHOWN ON SHEET 3.

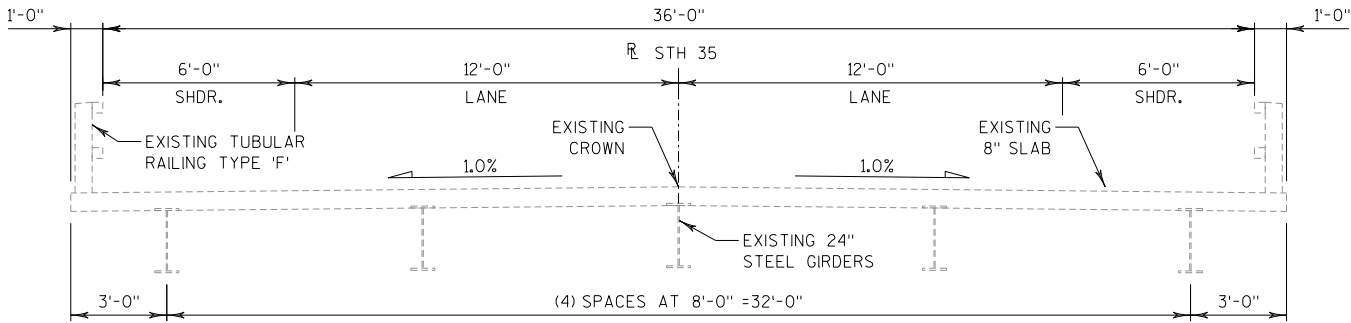
APPLY PROTECTIVE SURFACE TREATMENT TO TOP OF BRIDGE DECK. APPLY PIGMENTED SURFACE SEALER TO THE TOP AND INSIDE FACES OF PARAPETS.

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEMS	UNIT	SOUTH ABUT.	NORTH ABUT.	SUPER	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 406+08	LS	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-16-136	LS	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	140	140	-	280
502.0100	CONCRETE MASONRY BRIDGES	CY	47	47	106	200
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	257	257
502.3210	PIGMENTED SURFACE SEALER	SY	10	10	54	74
503.0136	PRESTRESSED GIRDER TYPE I 36-INCH	LF	-	-	305	305
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2480	2470	-	4950
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2220	2240	21740	26200
505.0904	BAR COUPLER NO. 4	EACH	2	2	2	6
505.0906	BAR COUPLER NO. 6	EACH	17	17	12	46
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	5	5	-	10
506.4000	STEEL DIAPHRAGMS B-16-136	EACH	-	-	4	4
511.1200	TEMPORARY SHORING B-16-136	SF	235	215	-	450
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	14	14	-	28
550.1100	PIILING STEEL HP 10-INCH X 42 LB	LF	295	295	-	590
606.0300	RIPRAP HEAVY	CY	80	110	-	190
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	95	95	-	190
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	2	-	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	120	160	-	280
	NON-BID ITEMS					
	FILLER	SIZE	-	-	-	1/2" & 3/4"

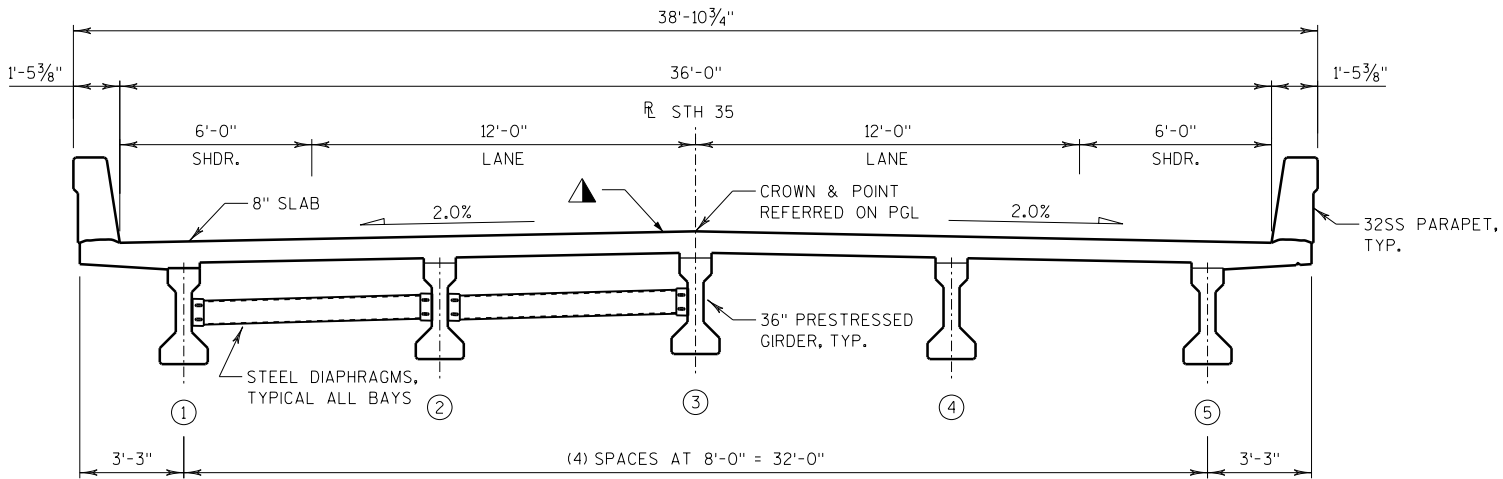
STATE PROJECT NUMBER

8010-02-75



EXISTING CROSS SECTION

(LOOKING NORTH)



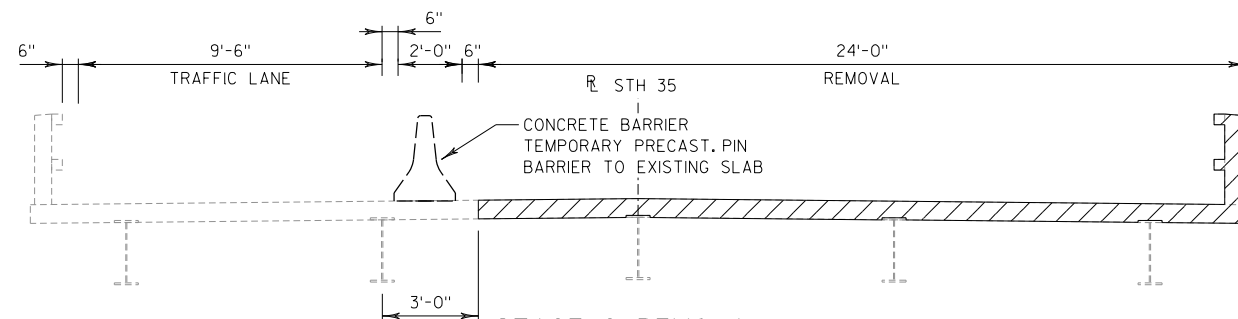
PROPOSED CROSS SECTION

(LOOKING NORTH)

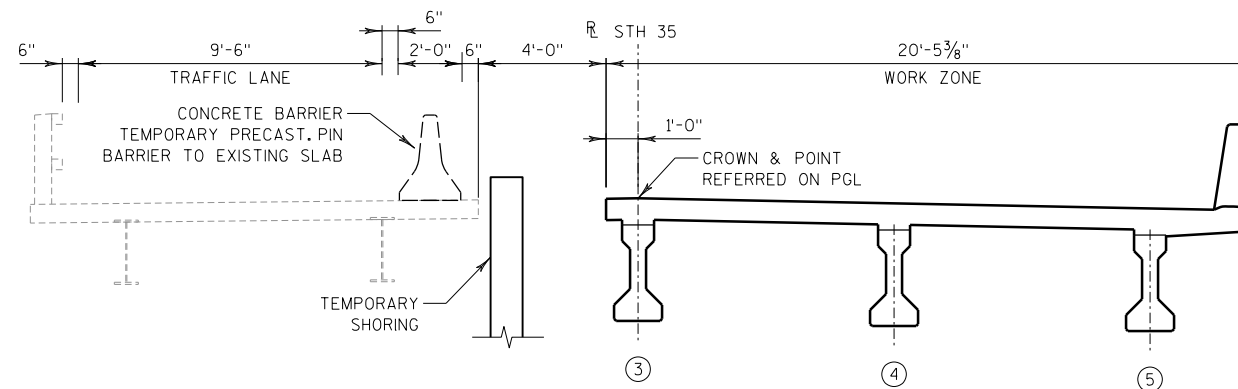
LEGEND

▲ LONGITUDINAL JOINT. PROVIDE PROPER BAR SPLICE AT JOINT. SEE CONSTRUCTION STAGING SHEET FOR LONGITUDINAL CONSTRUCTION JOINT DETAIL.

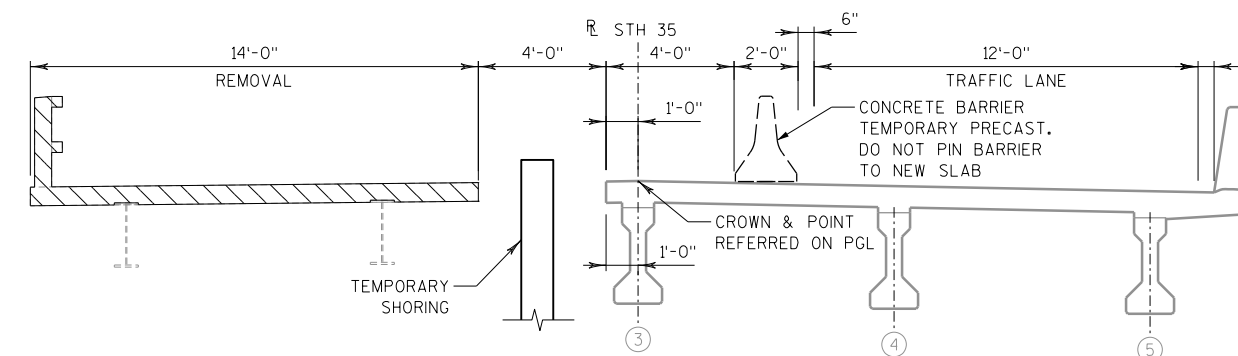
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
		DRAWN BY AJC	PLANS CK'D. MDR
CROSS SECTION AND QUANTITIES			SHEET 2 OF 17 64

**STAGE 2 REMOVAL**

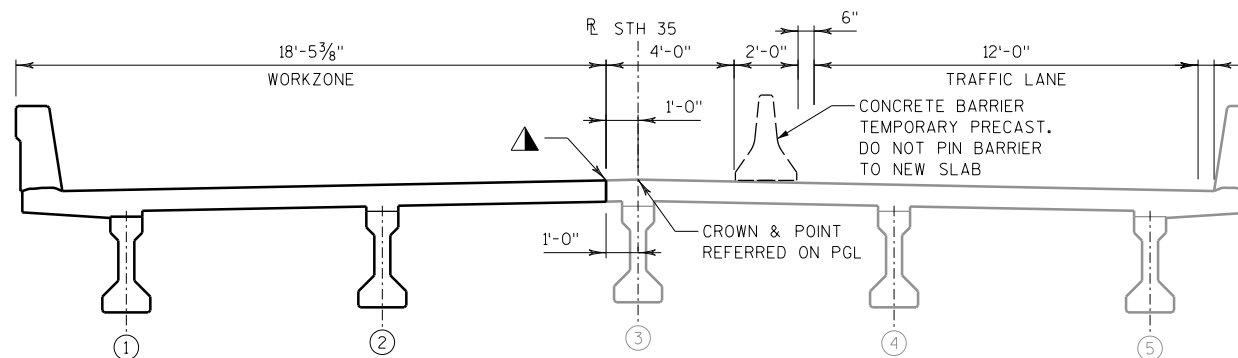
(LOOKING NORTH)

**STAGE 2 CONSTRUCTION**

(LOOKING NORTH)

**STAGE 3 REMOVAL**

(LOOKING NORTH)

**STAGE 3 CONSTRUCTION**

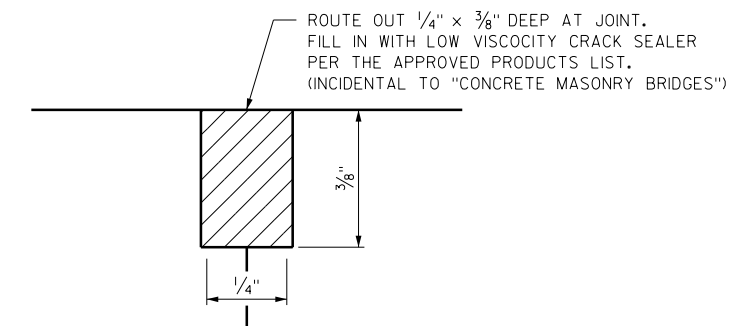
(LOOKING NORTH)

LEGEND

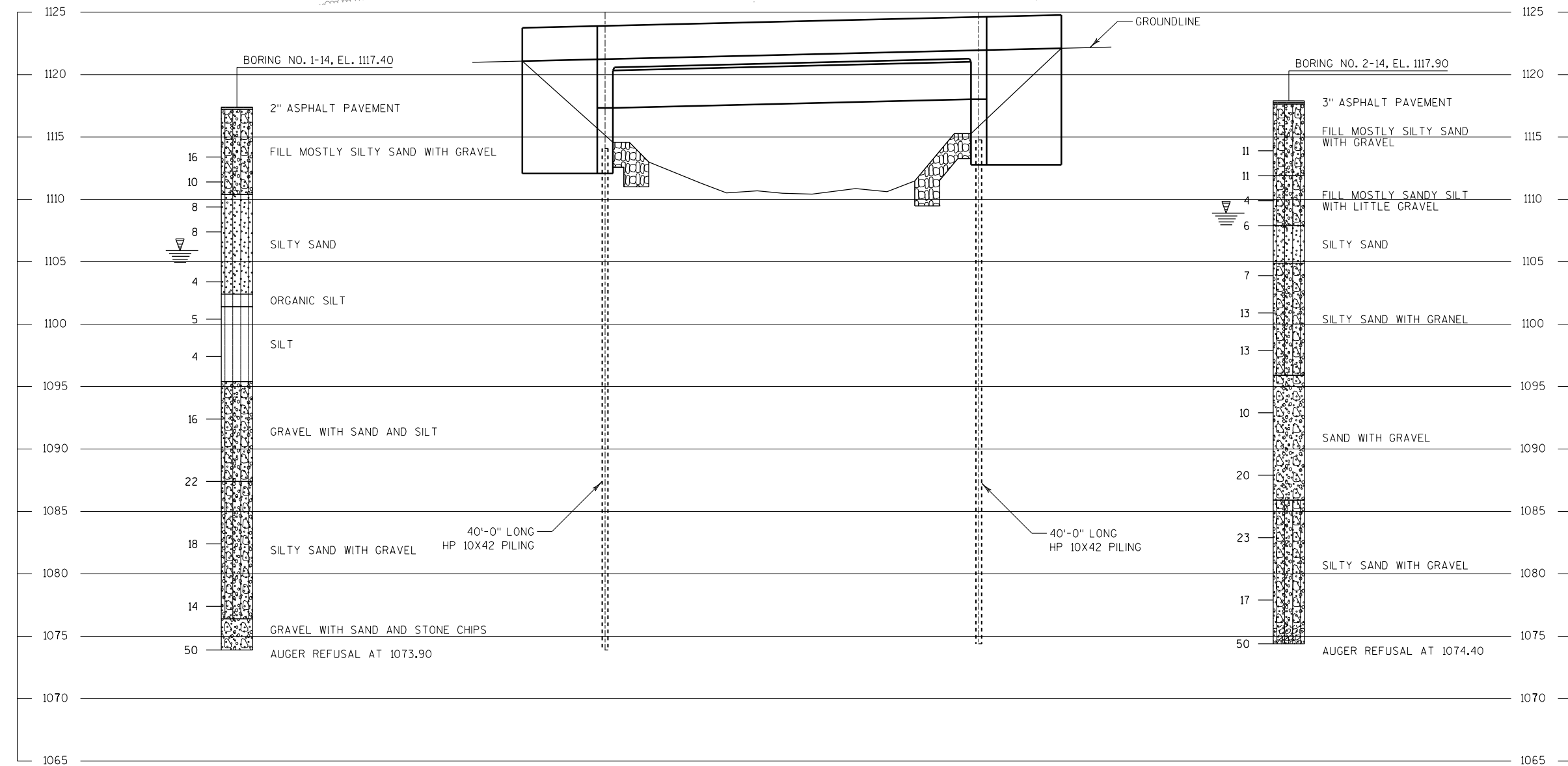
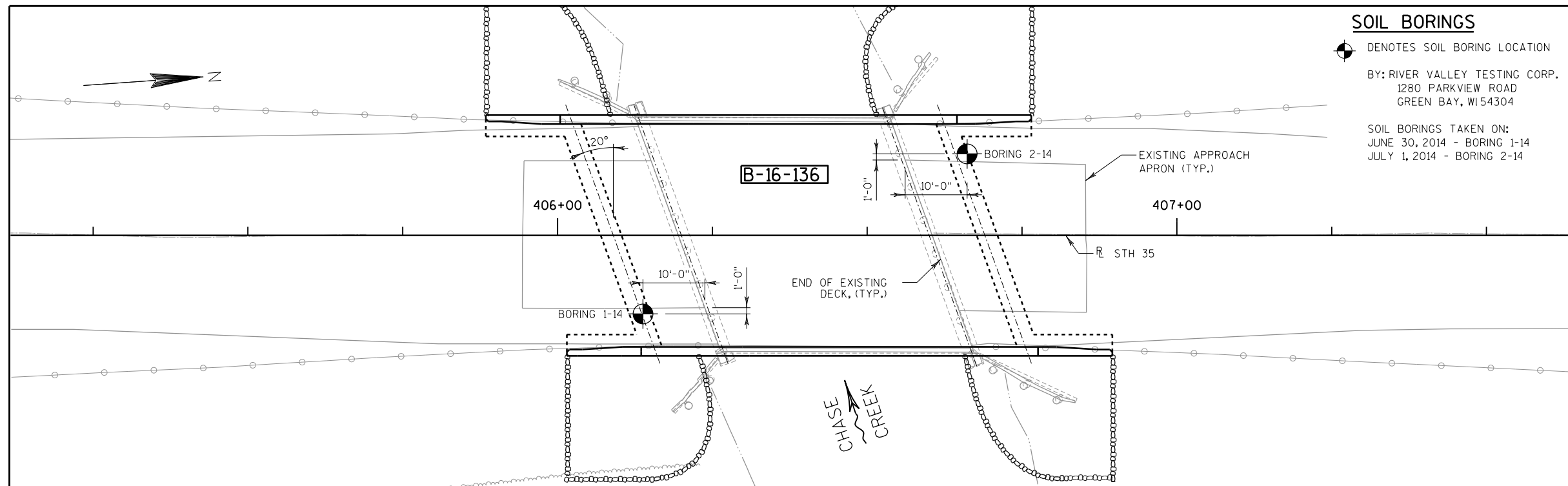
PORTION OF DECK TO BE REMOVED DURING CONSTRUCTION STAGE.

LONGITUDINAL JOINT. PROVIDE PROPER BAR SPLICE AT JOINT. SEE LONGITUDINAL CONSTRUCTION JOINT DETAIL BELOW FOR DETAILS.

FOR ABUTMENT AND SUPERSTRUCTURE DIAPHRAGM STAGE JOINT LOCATION AND DETAILS SEE SHEETS 5, 8, AND 15.

**LONGITUDINAL CONSTRUCTION
JOINT DETAIL**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY AJC		PLANS CK'D. MDR	
CONSTRUCTION STAGING		SHFFT 3 OF 17 65	



SOIL BORINGS

 DENOTES SOIL BORING LOCATION

BY: RIVER VALLEY TESTING CORP.
1280 PARKVIEW ROAD
GREEN BAY, WI 54304

SOIL BORINGS TAKEN ON:
JUNE 30, 2014 - BORING 1-14
JULY 1, 2014 - BORING 2-14

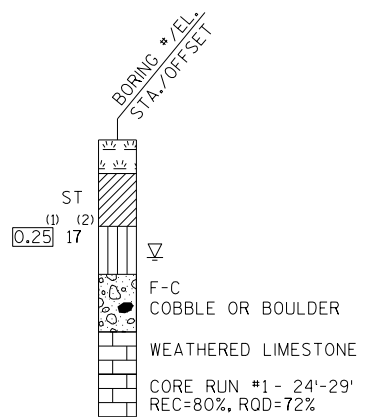
STATE PROJECT NUMBER

8010-02-75

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

▽ AT TIME OF DRILLING

▼ END OF DRILLING

 AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION
DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		AJC	PLANS CK'D. MDR
SUBSURFACE EXPLORATION		SHEET 4 OF 17 66	

GENERAL NOTES

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

F.F. DENOTES FRONT FACE.

B.F. DENOTES BACK FACE.

SEE SHEET 7 FOR TYPICAL SECTION OF ABUTMENT.

FOR PILE SPLICE DETAIL SEE SHEET 7.

(X) INDICATES GIRDER NUMBER.

(IX) INDICATES WINGWALL NUMBER

[1] PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE AS DIRECTED BY THE ENGINEER. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 7. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH". CAP END AS SHOWN.

[2] VERTICAL CONST. JT. - KEYWAY FORMED BY A SURFACED BEVELED 2" x 8", BEVEL EXPOSED EDGES 3/4".

[3] 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON BACK FACE.

[4] 3/4" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

[5] ROTATE AND FAN OUT REINFORCING BARS AS NEEDED AT SKEWED ENDS.

[6] 1/2" FILLER - EXTEND FROM BEAM SEAT TO TOP OF CONCRETE PARAPET. INCLUDED IN WINGWALL LENGTH.

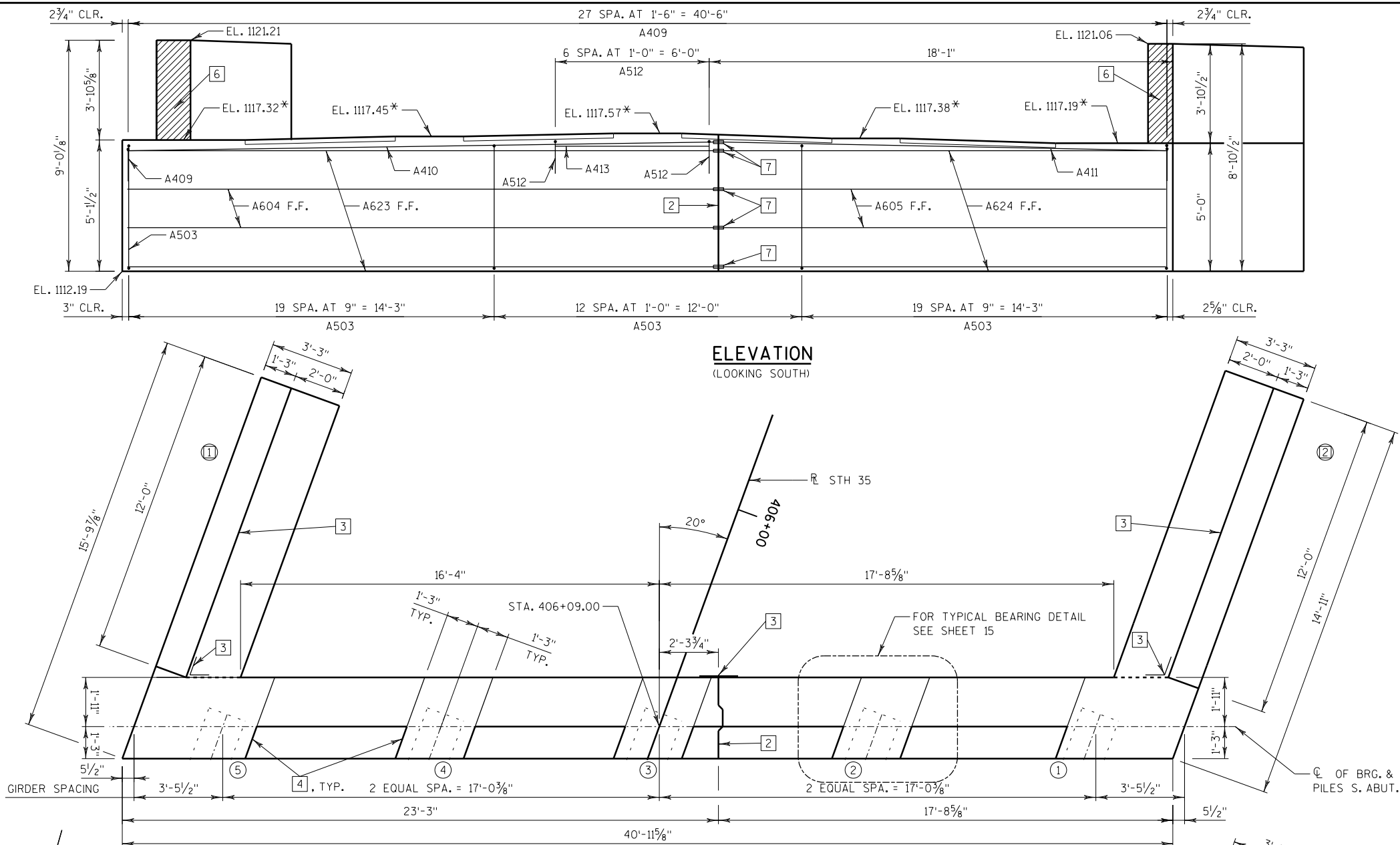
[7] PROVIDE THREADED BAR COUPLERS AT CONSTRUCTION JOINT.

[8] SUPPORT ABUTMENT ON HP 10x42 STEEL PILING, ESTIMATED 40'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.

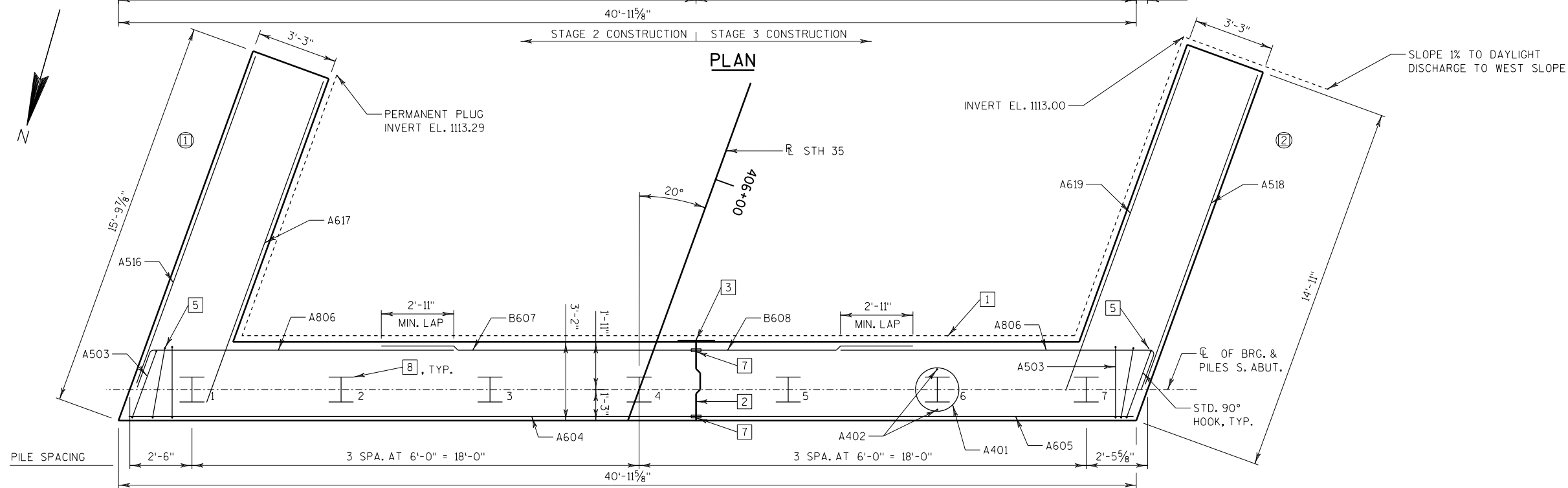
* ELEVATIONS AND DIMENSIONS TAKEN AT C. OF BRG. & PILES S. ABUT.

ELEVATION

(LOOKING SOUTH)

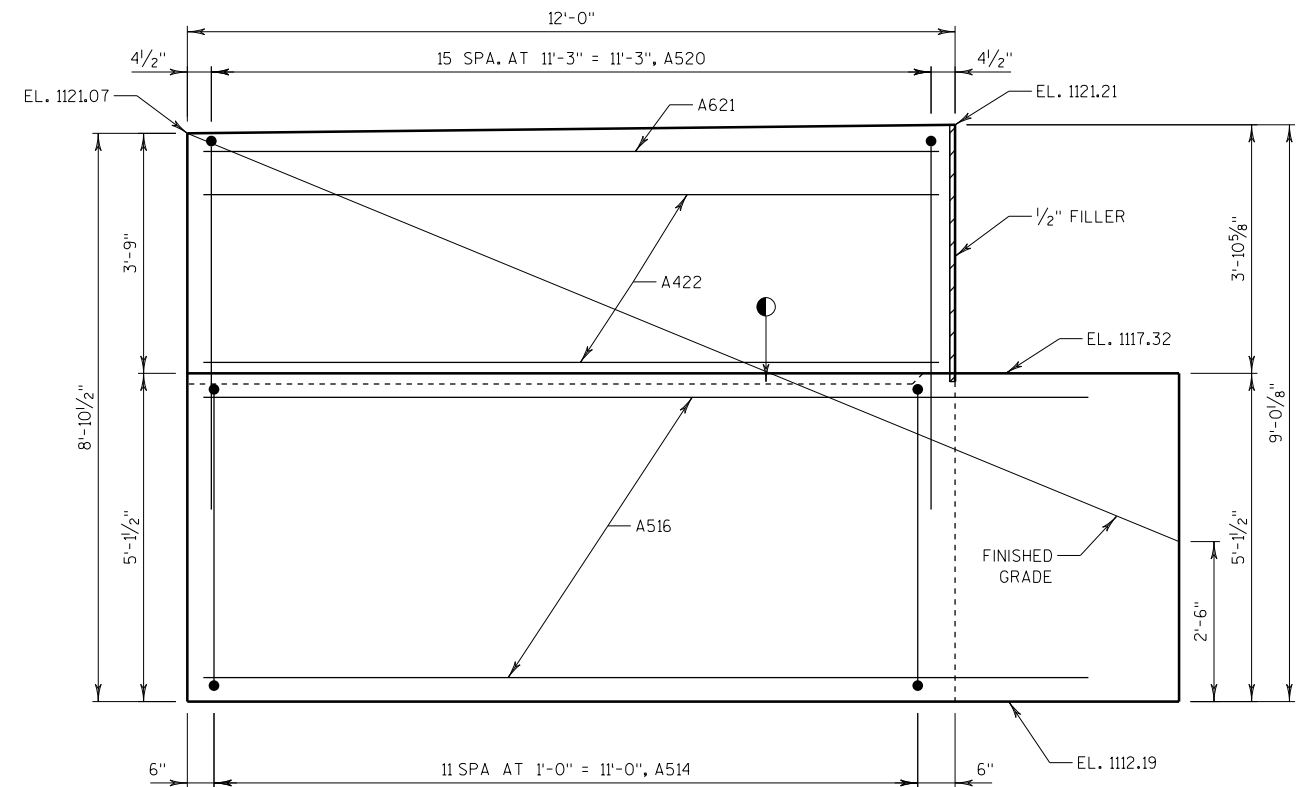


PLAN

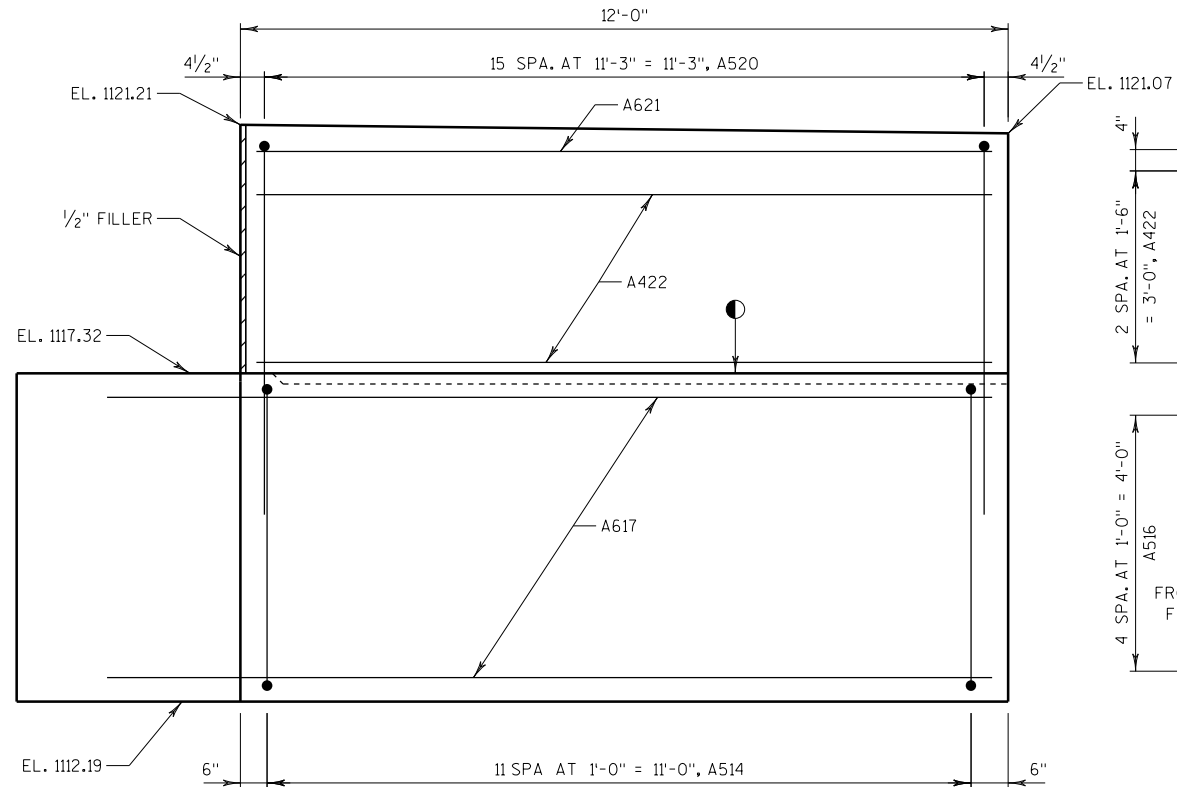


PILE PLAN

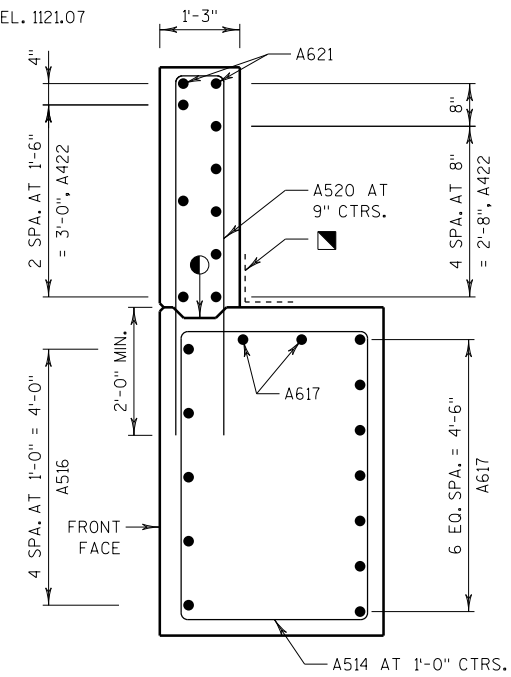
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
SOUTH ABUTMENT		SHFFT 5 OF 17 -67-	



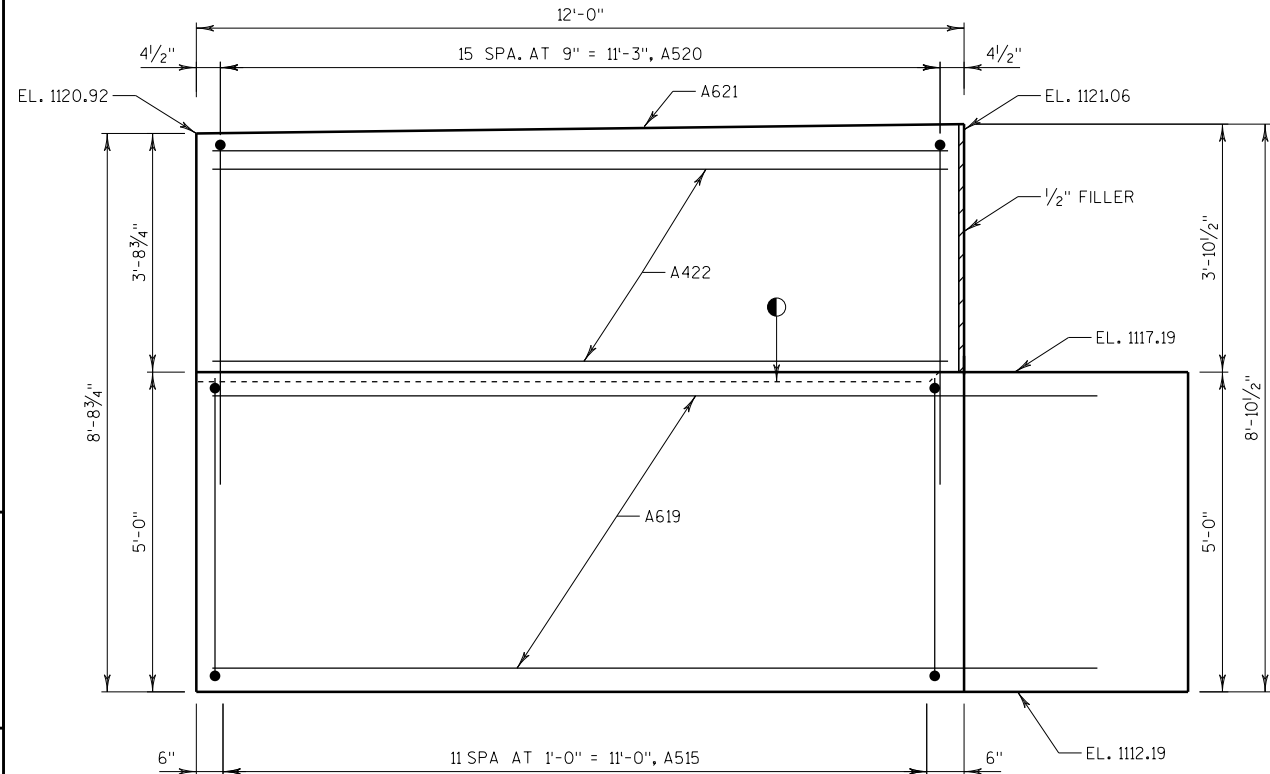
WING 1 ELEVATION
(FRONT FACE)



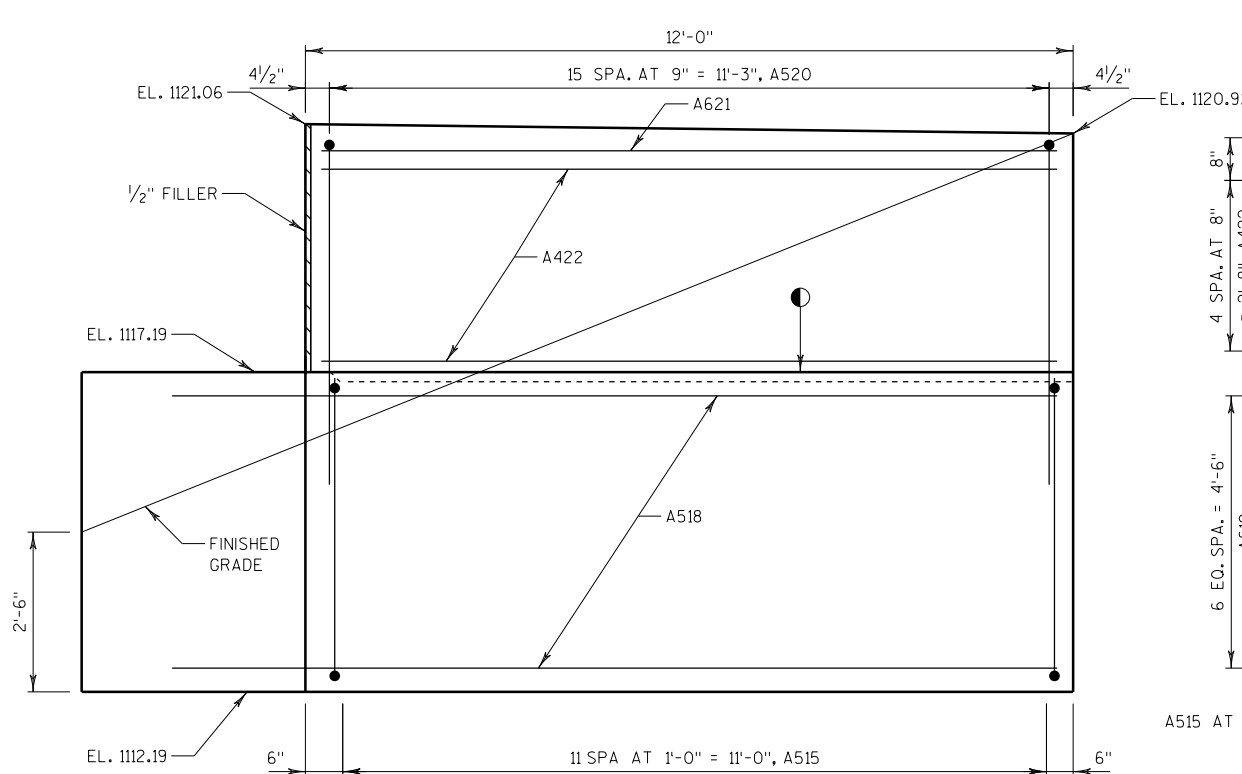
WING 1 ELEVATION
(BACK FACE)



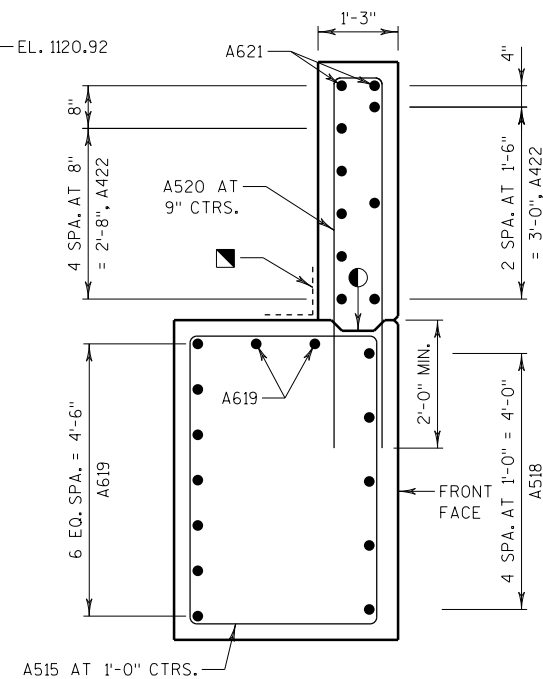
WING 1 SECTION



WING 2 ELEVATION
(BACK FACE)



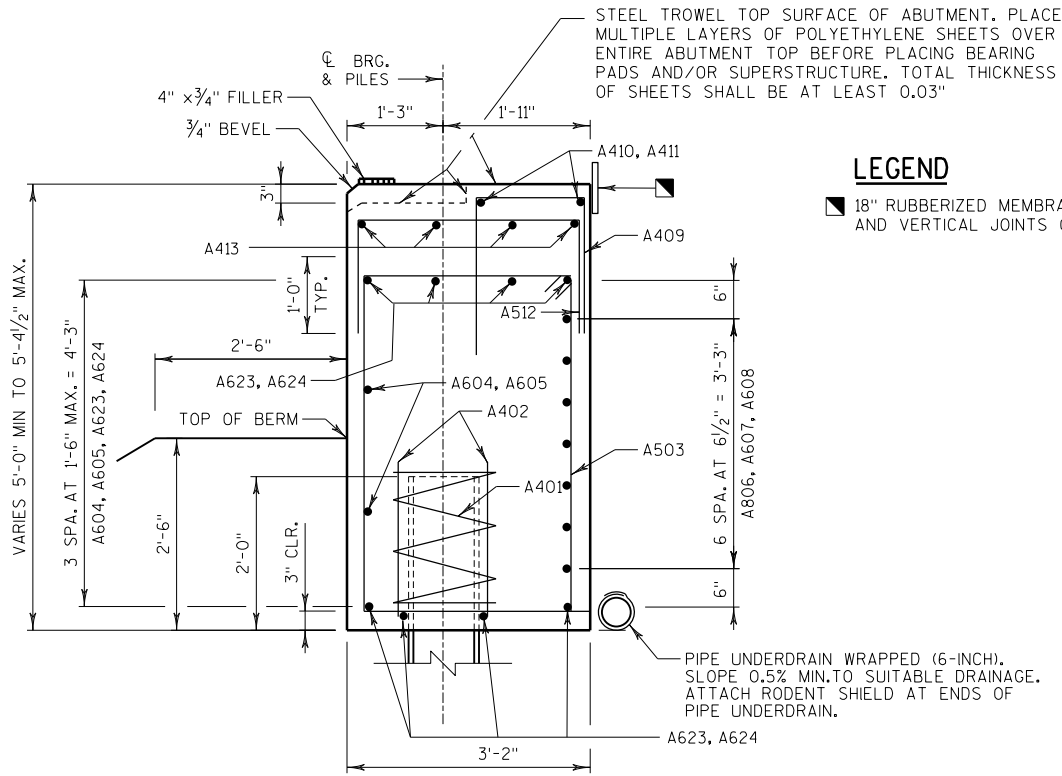
WING 2 ELEVATION
(FRONT FACE)



WING 2 SECTION

- OPTIONAL KEYED CONST. JOINT - FORMED BY A SURFACE BEVELED 2"x6.
- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE OF ABUTMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
SOUTH ABUTMENT WING DETAILS		SHFFT 6 OF 17 68	



LEGEND

■ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

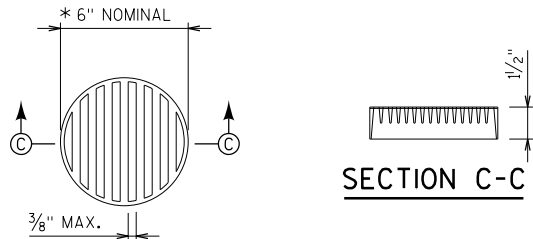
SOUTH ABUTMENT BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
A401		7	28'-0"	X		ABUT. BODY AT PILES
A402		14	2'-3"			ABUT. BODY AT PILES
A503		51	15'-0"	X		ABUT. BODY VERT.
A604		2	23'-0"			ABUT. BODY HORIZ. F.F. STAGE 2
A605		2	17'-6"			ABUT. BODY HORIZ. F.F. STAGE 3
A806		14	13'-2"	X		ABUT. BODY HORIZ. B.F. AT WINGS
A607		7	12'-10"			ABUT. BODY HORIZ. B.F. STAGE 2
A608		7	9'-7"			ABUT. BODY HORIZ. B.F. STAGE 3
A409		28	4'-3"	X		ABUT. BODY VERT.
A410		2	21'-11"			ABUT. BODY HORIZ. STAGE 2
A411		2	18'-4"			ABUT. BODY HORIZ. STAGE 3
A512		7	5'-5"	X		ABUT. BODY VERT.
A413		4	6'-0"			ABUT. BODY HORIZ.
A514	X	12	15'-10"	X		WING 1 VERT.
A515	X	12	15'-8"	X		WING 2 VERT.
A516	X	5	14'-0"			WING 1 HORIZ. F.F.
A617	X	9	13'-9"			WING 1 HORIZ. B.F.
A518	X	5	13'-3"			WING 2 HORIZ. F.F.
A619	X	9	14'-7"			WING 2 HORIZ. B.F.
A520	X	32	12'-2"	X		WING 1 & 2 VERT.
A621	X	4	11'-8"			WING 1 & 2 HORIZ.
A422	X	16	11'-8"			WING 1 & 2 HORIZ.
A623		8	22'-5"		X	ABUT. BODY HORIZ. STAGE 2
A624		8	18'-0"		X	ABUT. BODY HORIZ. STAGE 3

BAR MARK	A	B
A503	4'-4"	2'-10"
A409	1'-5"	1'-7"
A806	12'-0"	1'-4"
A512	1'-5"	2'-10"
A514	4'-8"	2'-11"
A515	4'-7"	2'-11"
A520	5'-9"	0'-11"

BAR SERIES TABLE

BAR MARK	NO.	REQ'D	LENGTHS FOR EACH SERIES
A623	2	SERIES OF 4	21'-11" TO 22'-11"
A624	2	SERIES OF 4	17'-6" TO 18'-6"



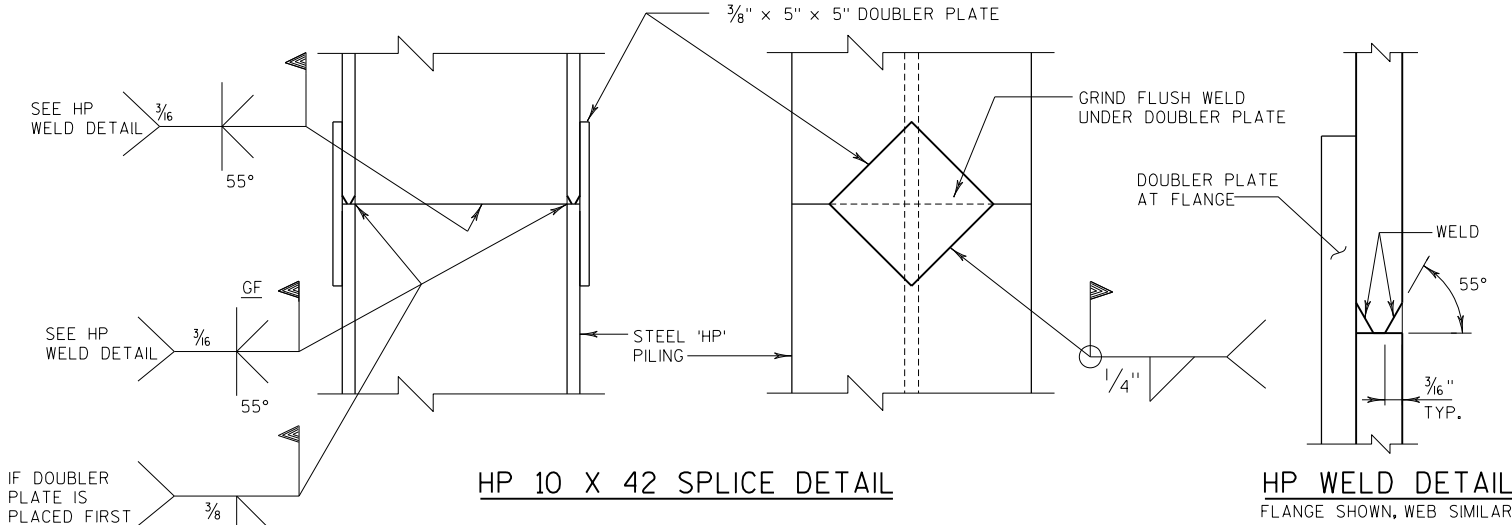
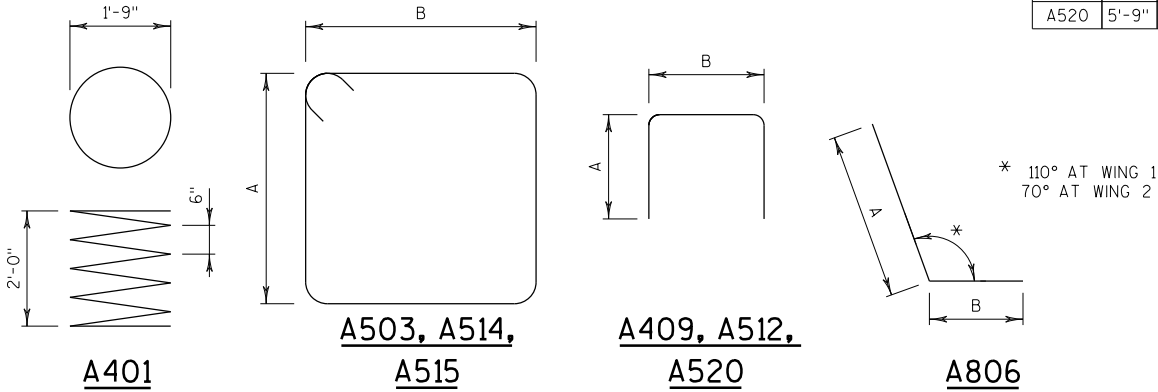
RODENT SHIELD

NOTES:

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

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

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



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
SOUTH ABUTMENT DETAILS		SHFFT 7 OF 17 -69-	

GENERAL NOTES

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

F.F. DENOTES FRONT FACE.

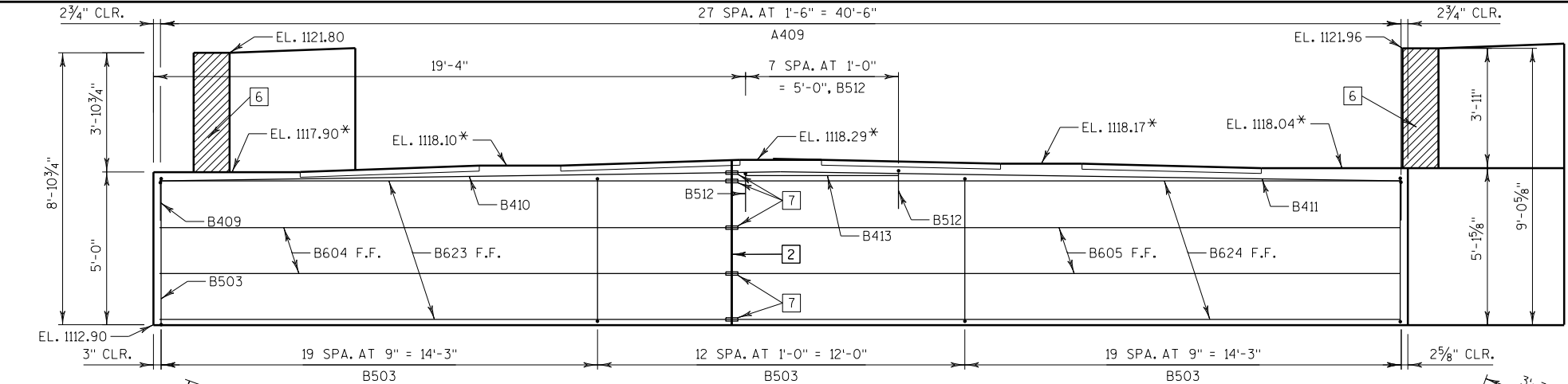
B.F. DENOTES BACK FACE.

SEE SHEET 10 FOR TYPICAL SECTION OF ABUTMENT.

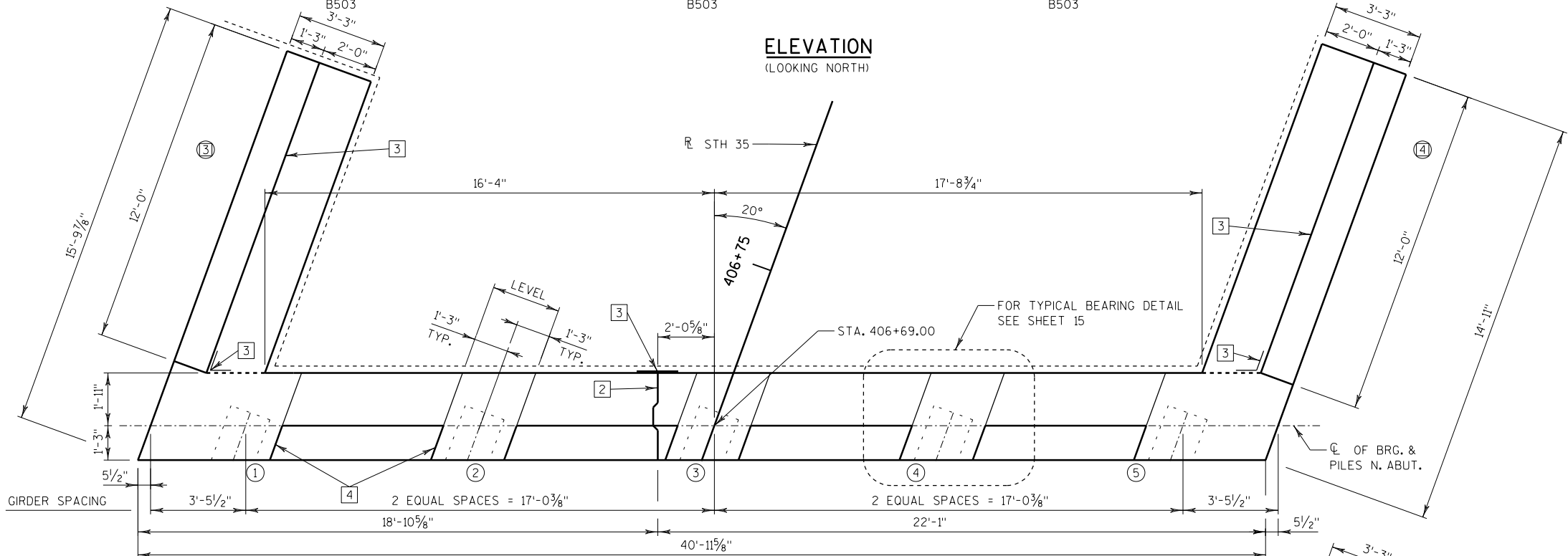
FOR PILE SPLICE DETAIL SEE SHEET 7.

- (X) INDICATES GIRDER NUMBER.
- (IX) INDICATES WINGWALL NUMBER
- [1] PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE AS DIRECTED BY THE ENGINEER. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 7 .RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH". CAP END AS SHOWN.
- [2] VERTICAL CONST. JT. - KEYWAY FORMED BY A SURFACED BEVELED 2" x 8", BEVEL EXPOSED EDGES 3/4".
- [3] 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL VERTICAL AND HORIZONTAL JOINTS ON BACK FACE.
- [4] 3/4" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- [5] ROTATE AND FAN OUT REINFORCING BARS AS NEEDED AT SKEWED ENDS.
- [6] 1/2" FILLER - EXTEND FROM BEAM SEAT TO TOP OF CONCRETE PARAPET. INCLUDED IN WINGWALL LENGTH.
- [7] PROVIDE THREADED BAR COUPLERS AT CONSTRUCTION JOINT.
- [8] SUPPORT ABUTMENT ON HP 10x42 STEEL PILING, ESTIMATED 40'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.

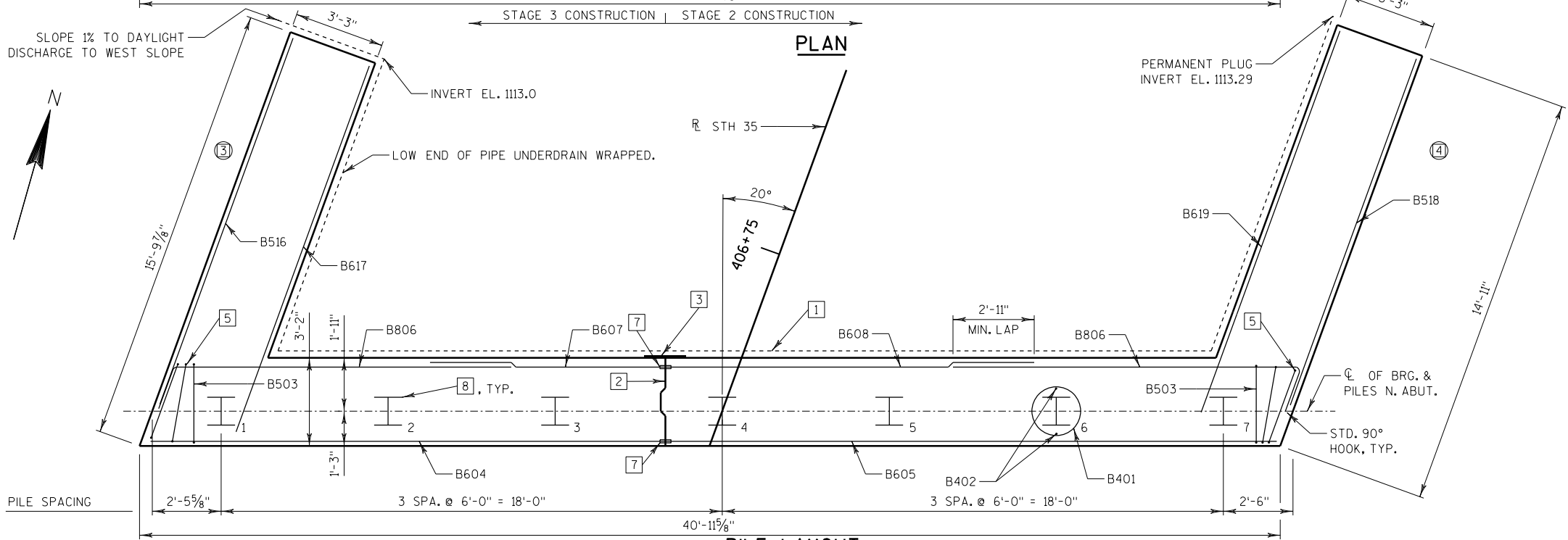
* ELEVATIONS AND DIMENSIONS TAKEN AT C/L OF BRG. & PILES N. ABUT.



ELEVATION
(LOOKING NORTH)

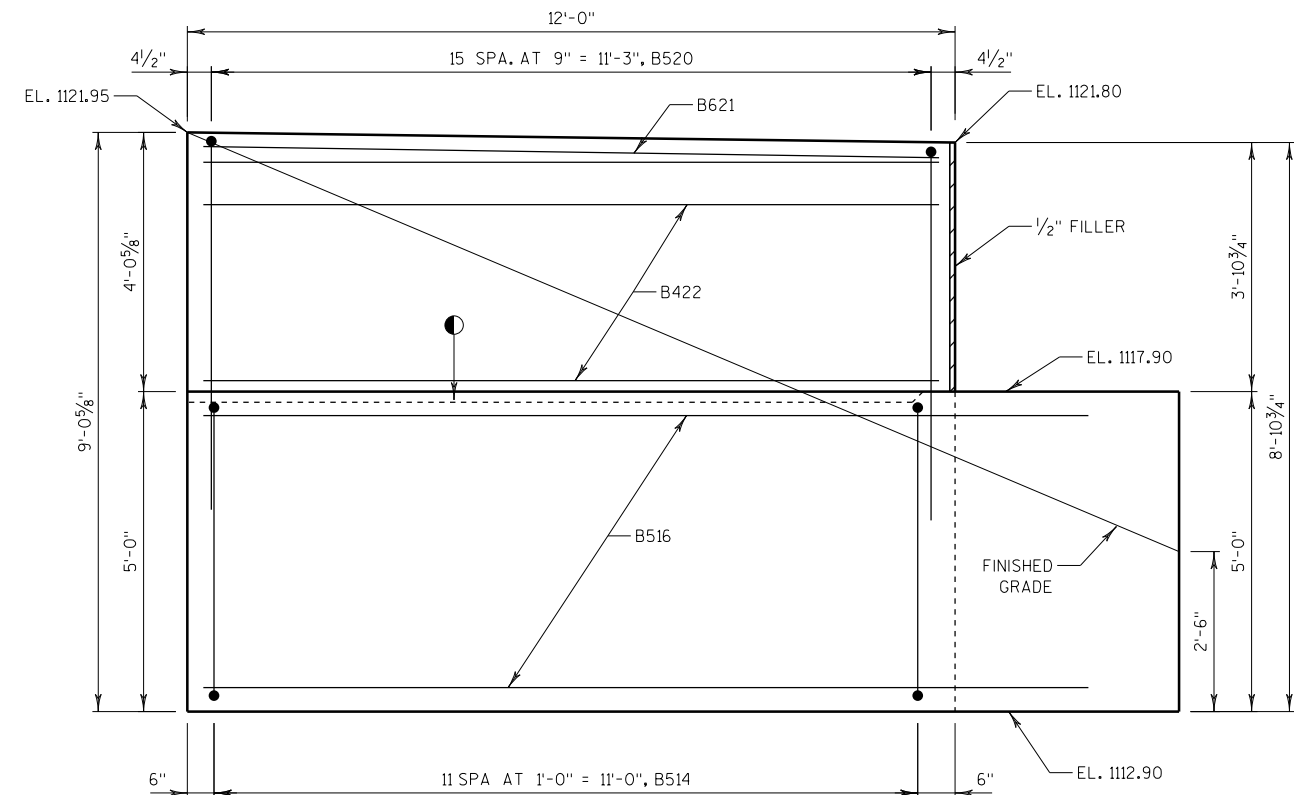


PLAN



PILE LAYOUT

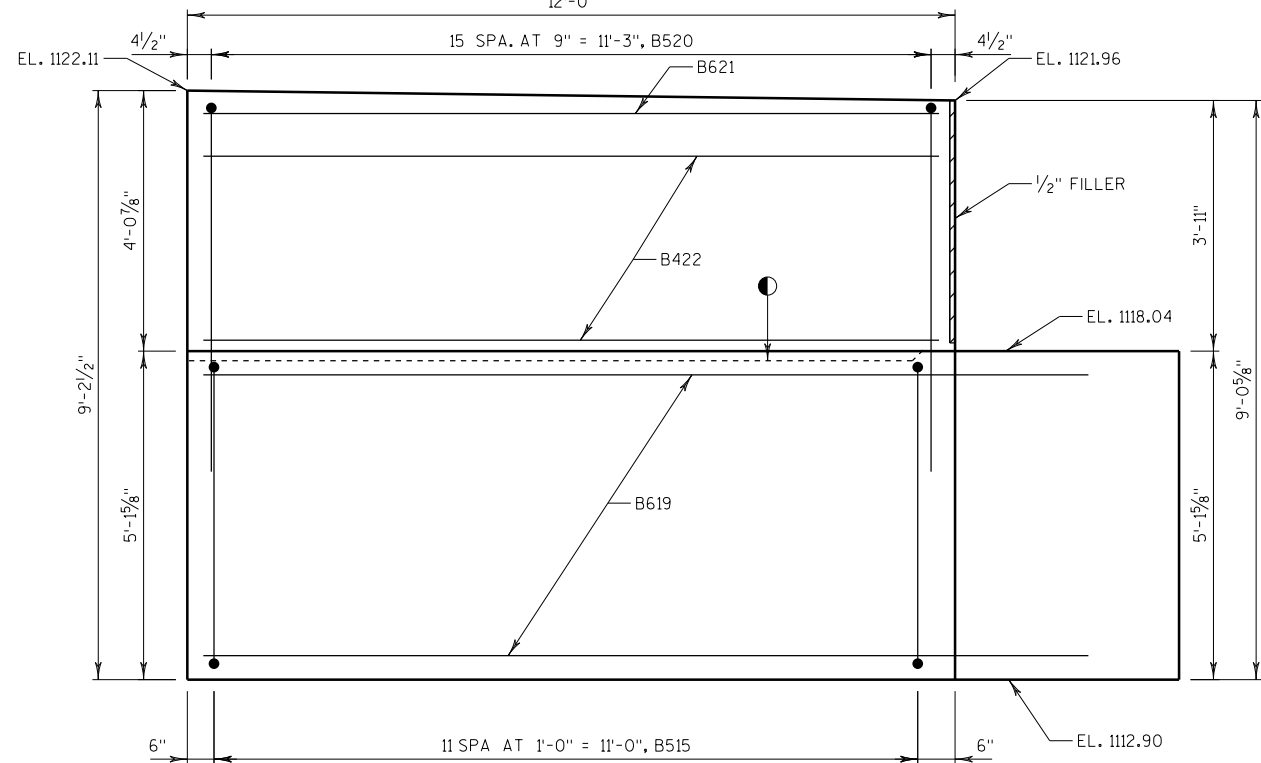
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
NORTH ABUTMENT		SHFFT 8 OF 17 -70-	



WING 3 ELEVATION

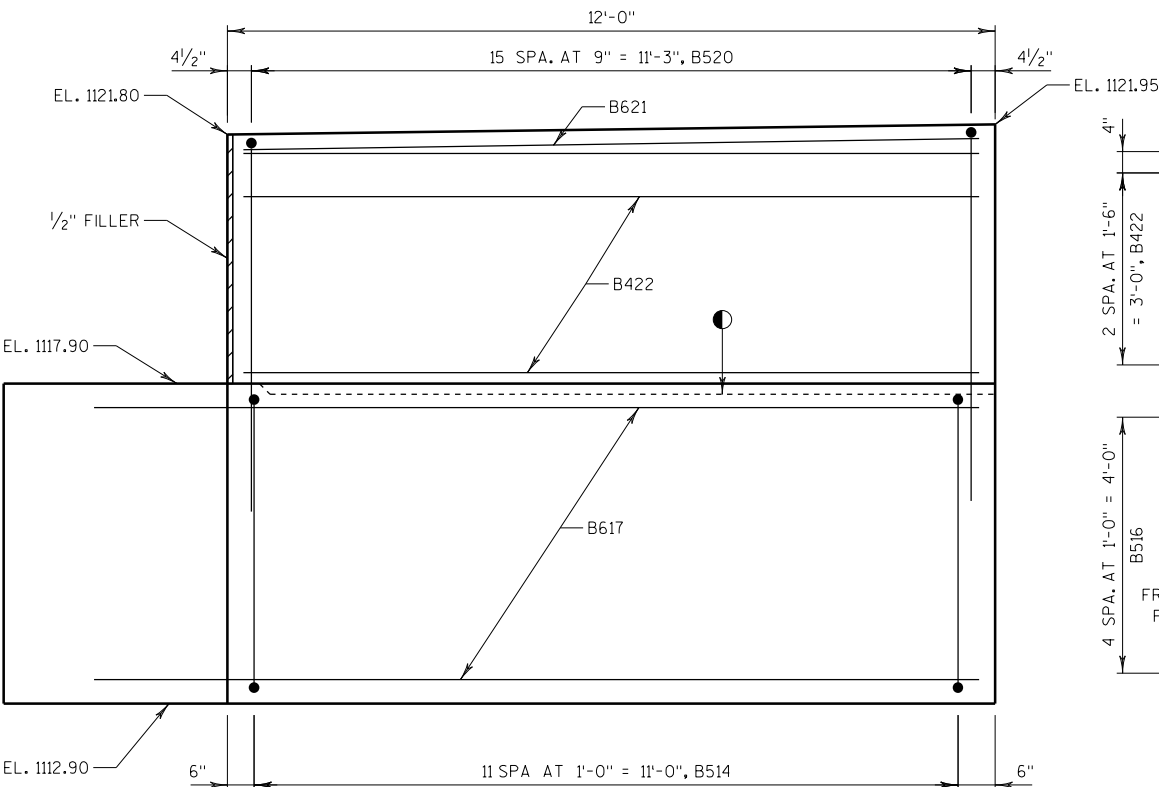
(FRONT FACE)

12'-0"



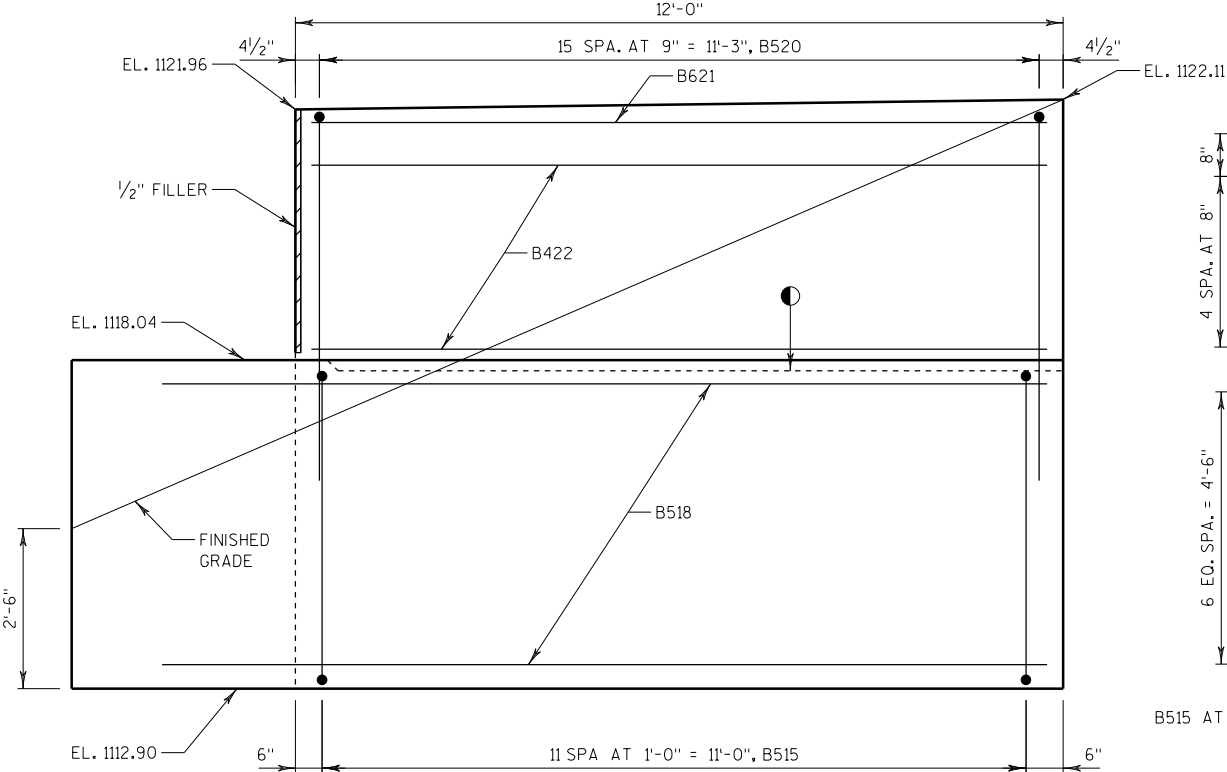
WING 4 ELEVATION

(BACK FACE)



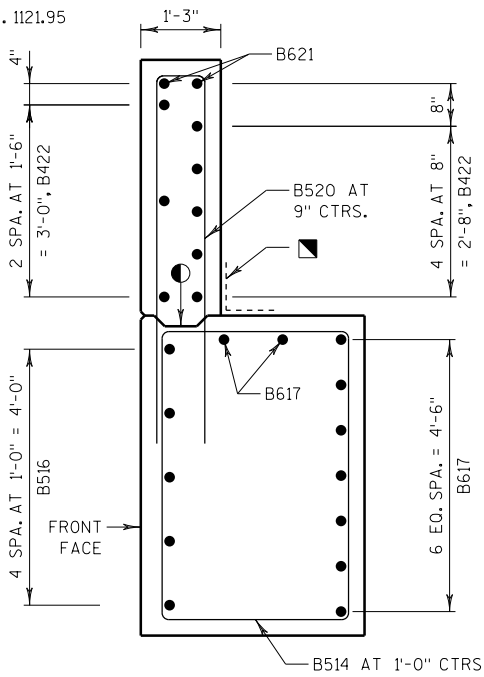
WING 3 ELEVATION

(BACK FACE)

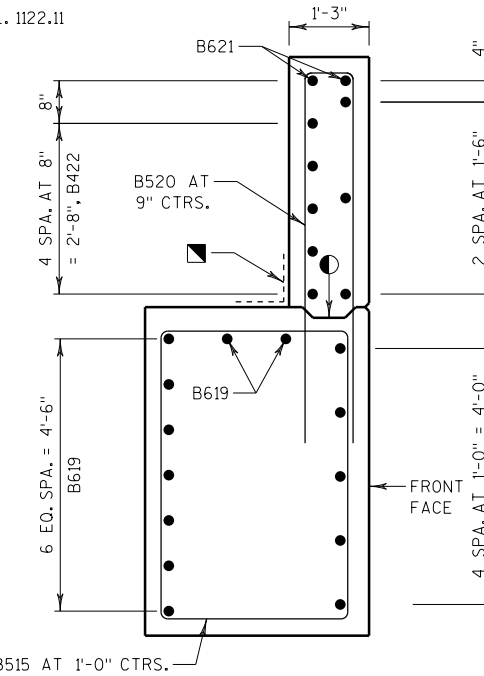


WING 4 ELEVATION

(FRONT FACE)



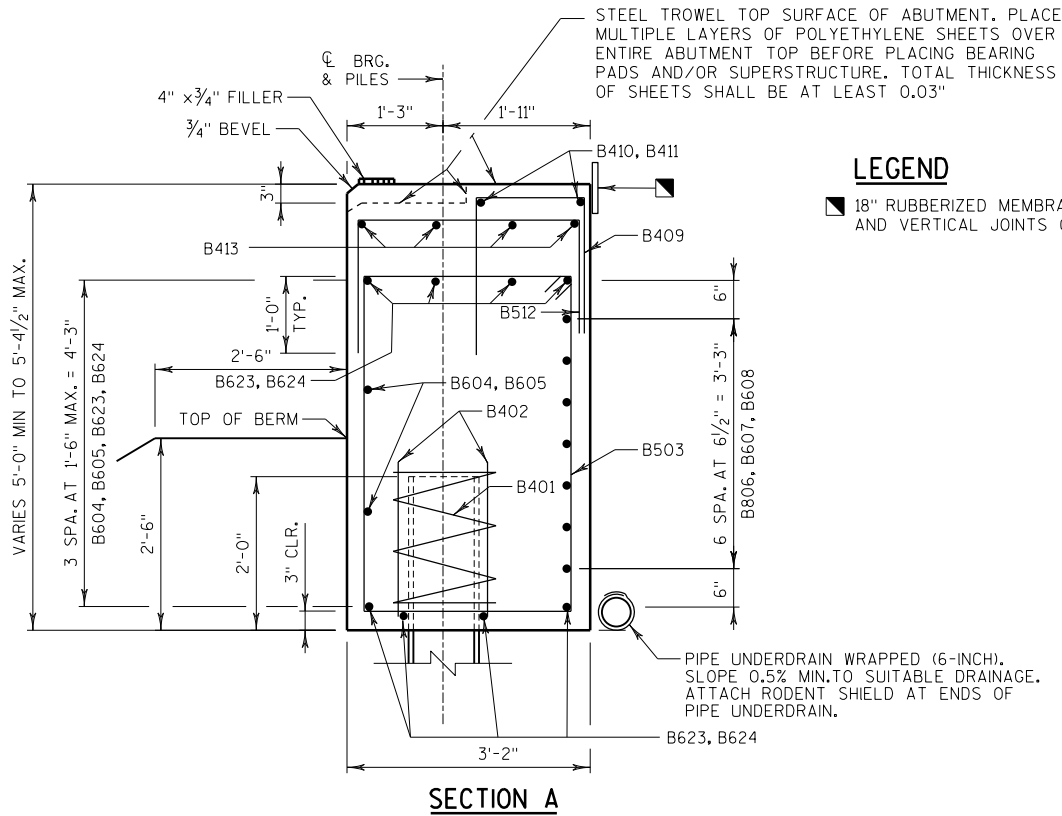
WING 3 SECTION



WING 4 SECTION

- OPTIONAL KEYED CONST. JOINT - FORMED BY A SURFACE BEVELED 2"x6.
- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE OF ABUTMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
NORTH ABUTMENT WING DETAILS		SHFFT 9 OF 17 -71-	



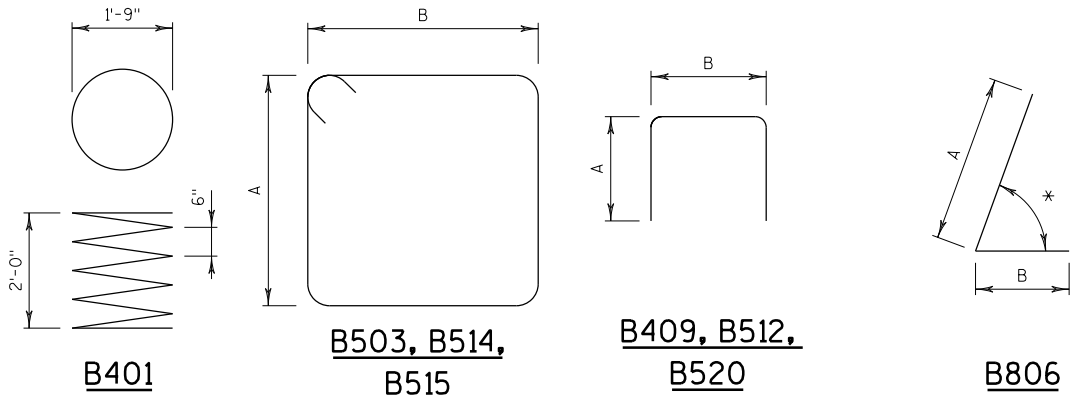
LEGEND

■ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.

NORTH ABUTMENT BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
B401		7	28'-0"	X		ABUT. BODY AT PILES
B402		14	2'-3"			ABUT. BODY AT PILES
B503		51	15'-0"	X		ABUT. BODY VERT.
B604		2	18'-7"			ABUT. BODY HORIZ. F.F. STAGE 3
B605		2	21'-11"			ABUT. BODY HORIZ. F.F. STAGE 2
B806		14	13'-2"	X		ABUT. BODY HORIZ. B.F. AT WINGS
B607		7	8'-5"			ABUT. BODY HORIZ. B.F. STAGE 3
B608		7	13'-11"			ABUT. BODY HORIZ. B.F. STAGE 2
B409		28	4'-3"	X		ABUT. BODY VERT.
B410		2	17'-6"			ABUT. BODY HORIZ. STAGE 3
B411		2	22'-8"			ABUT. BODY HORIZ. STAGE 2
B512		6	5'-5"	X		ABUT. BODY VERT.
B413		4	5'-0"			ABUT. BODY HORIZ.
B514	X	12	15'-8"	X		WING 3 VERT.
B515	X	12	15'-10"	X		WING 4 VERT.
B516	X	5	14'-0"			WING 3 HORIZ. F.F.
B617	X	9	14'-0"			WING 3 HORIZ. B.F.
B518	X	5	13'-3"			WING 4 HORIZ. F.F.
D619	X	9	14'-7"			WING 4 HORIZ. D.F.
B520	X	32	12'-6"	X		WING 3 & 4 VERT.
B621	X	4	11'-8"			WING 3 & 4 HORIZ.
B422	X	16	11'-8"			WING 3 & 4 HORIZ.
B623		8	18'-0"		X	ABUT. BODY HORIZ. STAGE 3
B624		8	22'-5"		X	ABUT. BODY HORIZ. STAGE 2

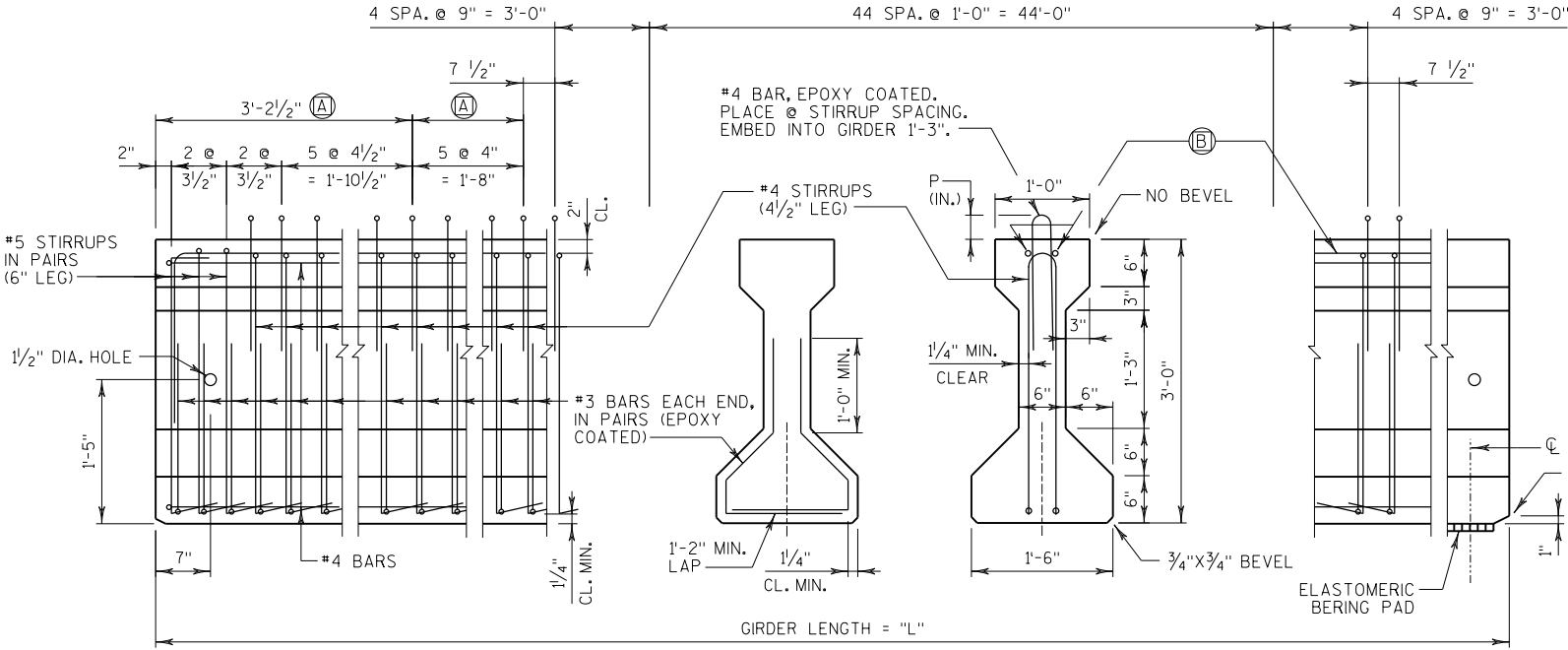
BAR MARK	A	B
B503	4'-4"	2'-10"
B806	12'-0"	1'-4"
B409	1'-5"	1'-7"
B512	1'-5"	2'-10"
B514	4'-7"	2'-11"
B515	4'-8"	2'-11"
B520	5'-11"	0'-11"



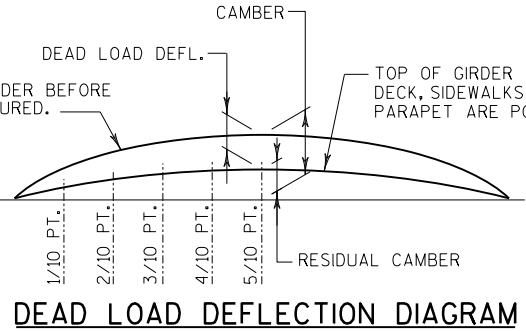
BARS SERIES TABLE

BAR MARK	NO.	REQ'D	LENGTHS FOR EACH SERIES
B623	2	SERIES OF 4	17'-6" TO 18'-6"
B624	2	SERIES OF 4	21'-11" TO 22'-11"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
NORTH ABUTMENT DETAILS		SHEET 10 OF 17 -72-	



SIDE VIEW & TYPICAL SECTION IN SPAN (A) DETAIL TYP. AT EACH END
(B) 2 - #4 BARS BEND DOWN 16 BAR DIA. AT ENDS



TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 2" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

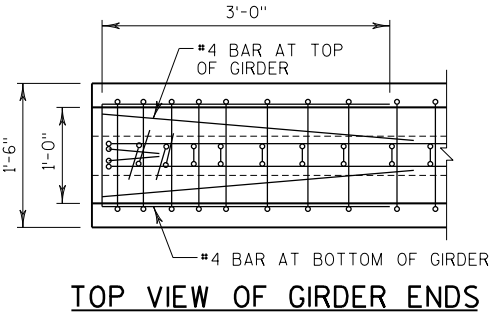
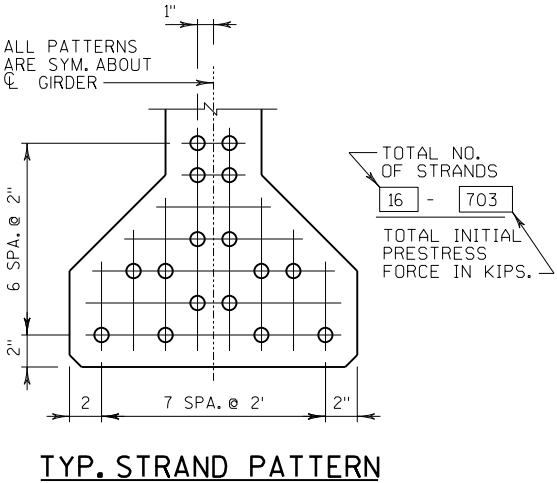
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

BEND EACH END OF #4 STIRRUPS 4 1/2" AND #5 STIRRUPS 6".

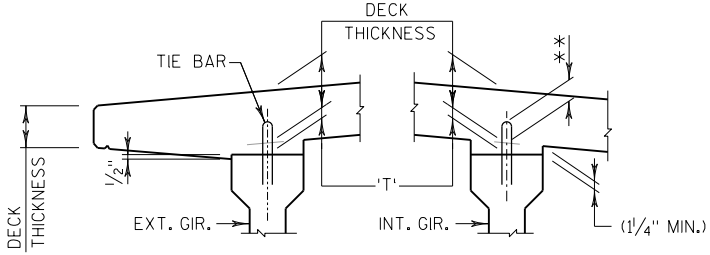
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.)
1	1.76

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T'. USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, ** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT CL. OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

- TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
- + DEAD LOAD DEFLECTION
- DECK THICKNESS
- = HAUNCH HEIGHT 'T'

NOTE:
AN AVERAGE HAUNCH ('T') OF 2 1/2" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA																		
SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN)									CONC. STRGTH f'c	"P" FIRST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	UNDRAPE TOTAL NO. OF STRANDS	PATTERN f'ci (psi)
			0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90							
1	1 & 5	61'-0"	0.2	0.4	0.6	0.7	0.7	0.7	0.6	0.4	0.2	8,000	6.00	6.00	6.00	0.6	16	6,800
1	2 - 4	61'-0"	0.2	0.4	0.6	0.7	0.8	0.7	0.6	0.4	0.2	8,000	6.00	6.00	6.00	0.6	16	6,800

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
36" PRESTRESSED GIRDER DETAILS		SHEET 11 OF 17 73	

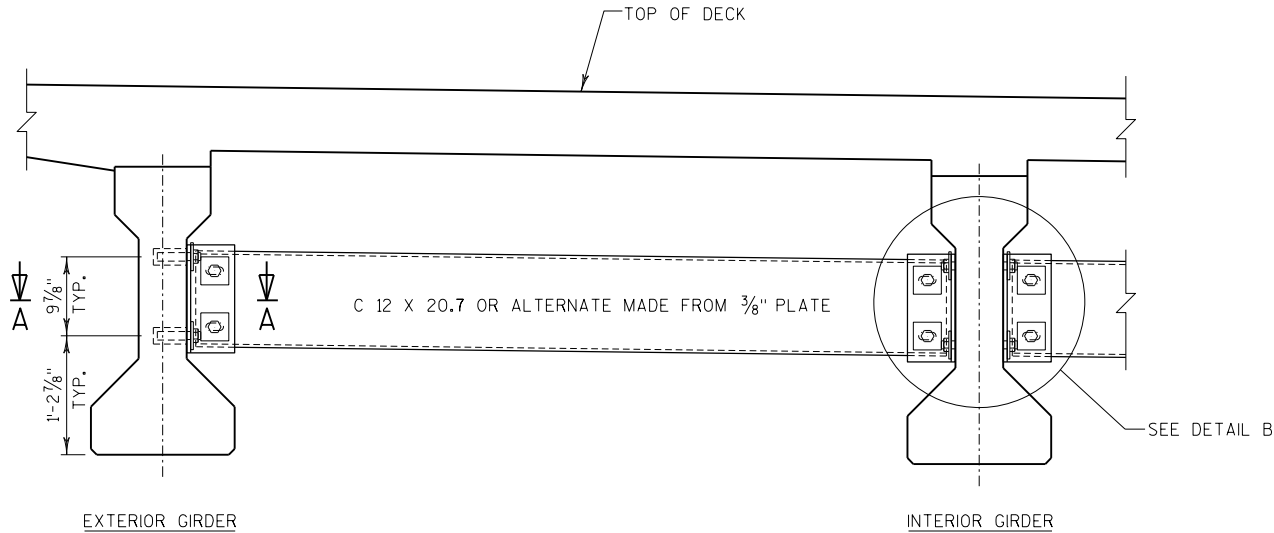
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-16-136", EACH.

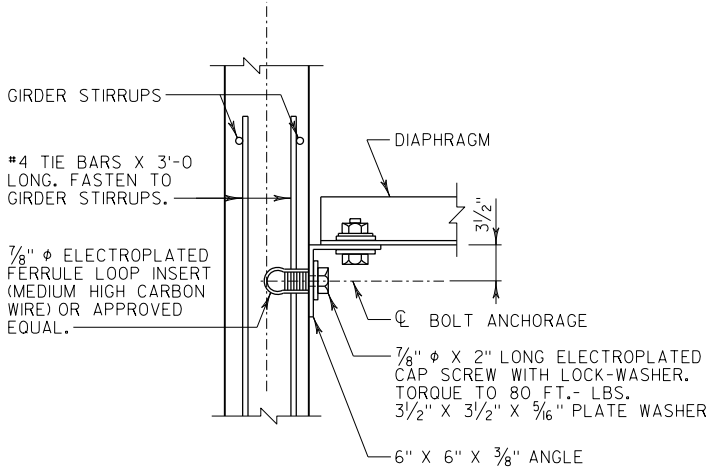
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

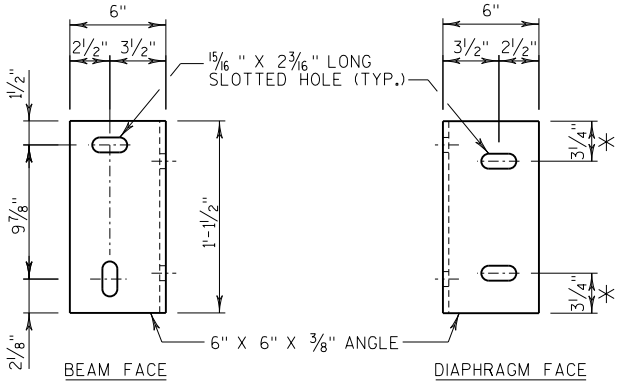
ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.



PART TRANSVERSE SECTION AT DIAPHRAGM

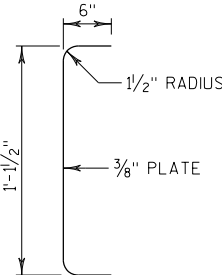


SECTION A-A
(FOR EXTERIOR ATTACHMENT)

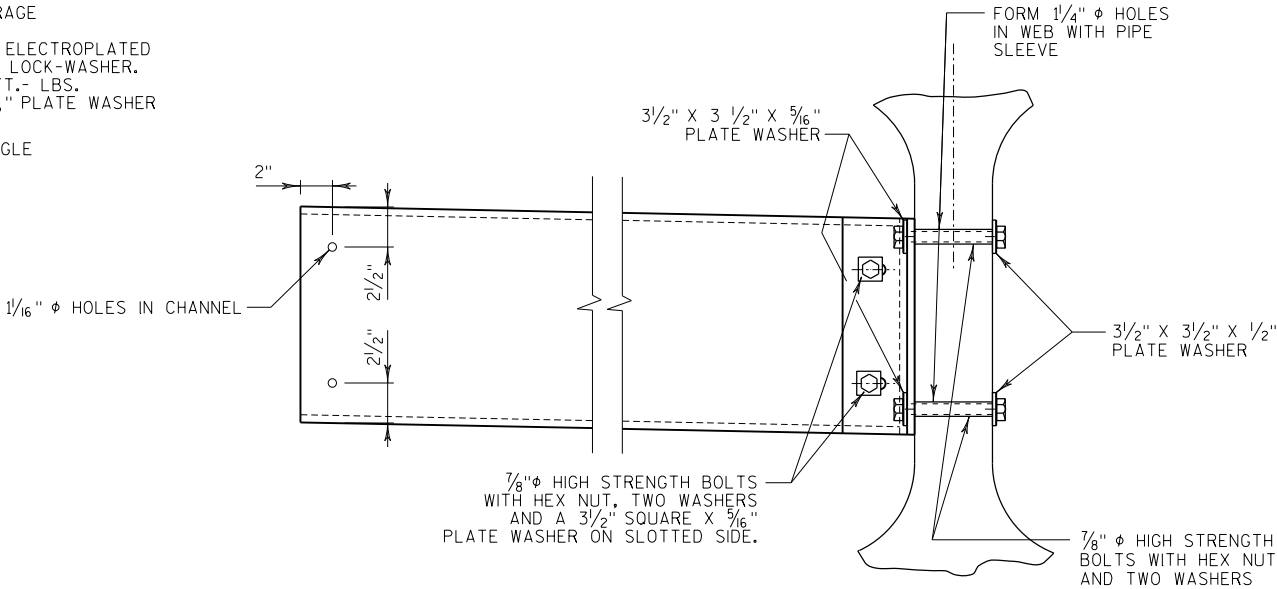


DIAPHRAGM SUPPORT

* 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM



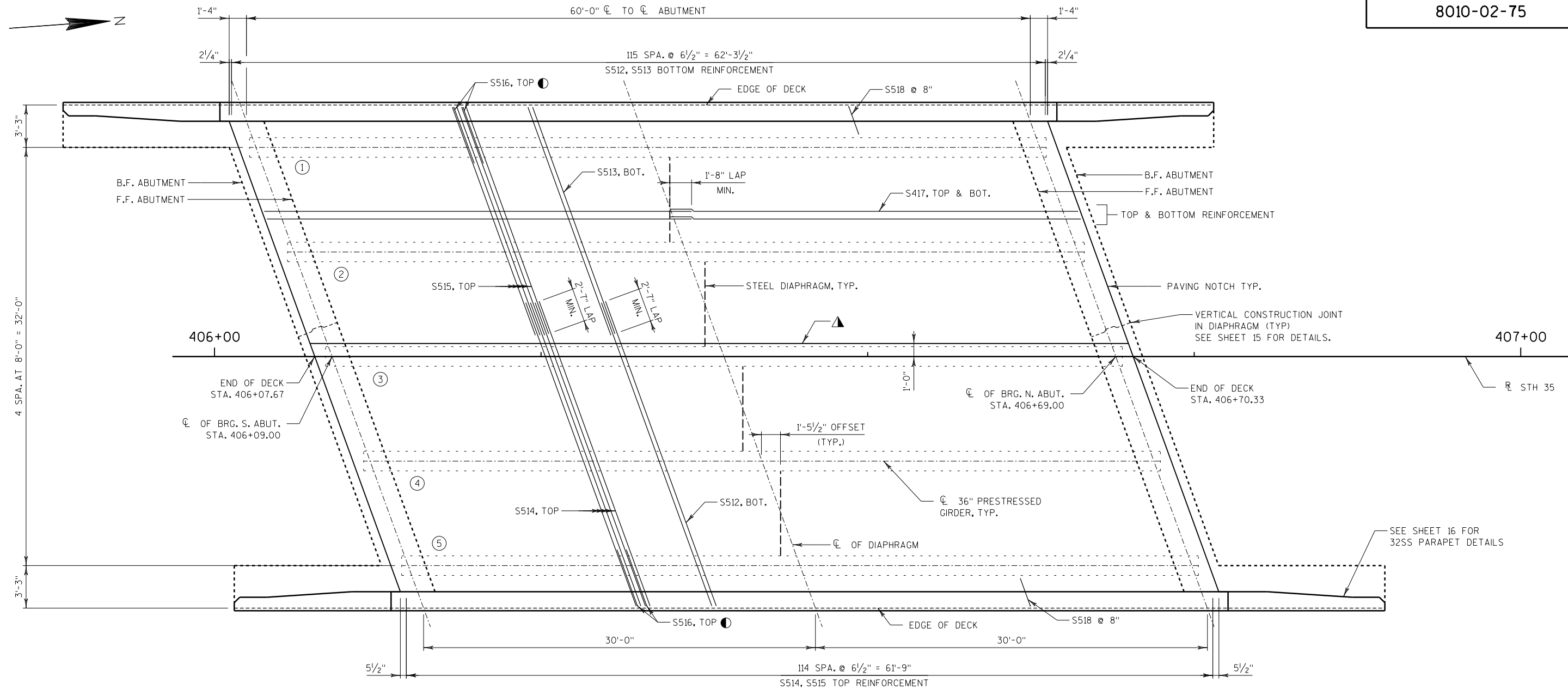
SECTION THRU
ALTERNATE DIAPHRAGM



DETAIL B

(FOR INTERIOR ATTACHMENT)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
STEEL DIAPHRAGM		SHEET 12 OF 17	
		74	



PLAN

TOP OF DECK ELEVATIONS

LOCATION	S. ABUT	0.1 PT	0.2 PT	0.3 PT	0.4 PT	0.5 PT	0.6 PT	0.7 PT	0.8 PT	0.9 PT	N. ABUT
W. EDGE DECK	1121.07	1121.14	1121.21	1121.28	1121.35	1121.42	1121.49	1121.56	1121.64	1121.71	1121.78
W. FLOW LINE	1121.10	1121.17	1121.24	1121.31	1121.38	1121.45	1121.52	1121.60	1121.67	1121.74	1121.81
GIRDER 1	1121.15	1121.21	1121.29	1121.36	1121.43	1121.50	1121.57	1121.64	1121.72	1121.79	1121.86
GIRDER 2	1121.34	1121.41	1121.48	1121.55	1121.62	1121.69	1121.77	1121.84	1121.91	1121.98	1122.05
GIRDER 3	1121.53	1121.60	1121.67	1121.75	1121.82	1121.89	1121.96	1122.03	1122.11	1122.18	1122.25
GIRDER 4	1121.41	1121.48	1121.55	1121.62	1121.69	1121.76	1121.84	1121.91	1121.98	1122.05	1122.12
GIRDER 5	1121.28	1121.35	1121.42	1121.50	1121.57	1121.64	1121.71	1121.78	1121.86	1121.93	1122.00
E. FLOW LINE	1121.25	1121.32	1121.39	1121.46	1121.54	1121.61	1121.68	1121.75	1121.82	1121.90	1121.97
E. EDGE DECK	1121.23	1121.30	1121.37	1121.44	1121.52	1121.59	1121.66	1121.73	1121.80	1121.88	1121.95

LEGEND:

- LAP S516 ONTO EVERY OTHER TRANSVERSE BAR IN THE TOP MAT AS SHOWN.
- ▲ LONGITUDINAL JOINT. SEE CONSTRUCTION STAGING SHEET FOR LONGITUDINAL CONSTRUCTION JOINT DETAIL.
- ① GIRDER NUMBER

NOTES:

THE BOTTOM TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS WITH A CENTER TO CENTER SPACING NOT TO EXCEED 4'-0". ONE LINE OF CONTINUOUS BAR CHAIRS SHALL BE PLACED NEAR EACH EDGE OF SLAB TO SUPPORT THE ENDS OF THE BOTTOM TRANSVERSE BAR STEEL.

THE TOP LONGITUDINAL BAR STEEL REINFORCEMENT SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS IN TRANSVERSE DIRECTION ON 4'-0" CENTERS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
SUPERSTRUCTURE		SHFFT 13 OF 17 75	

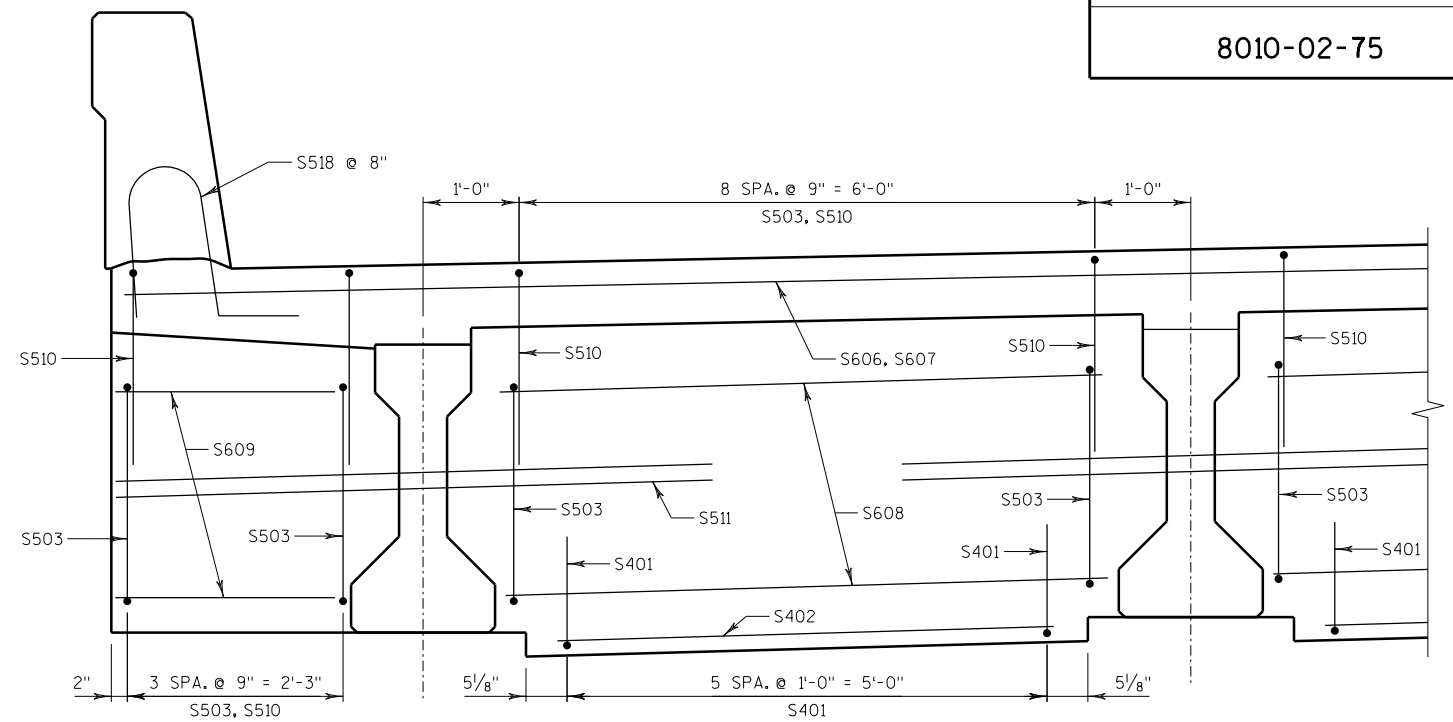
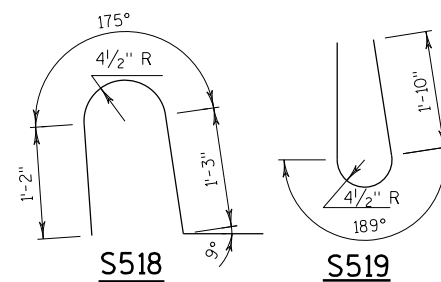
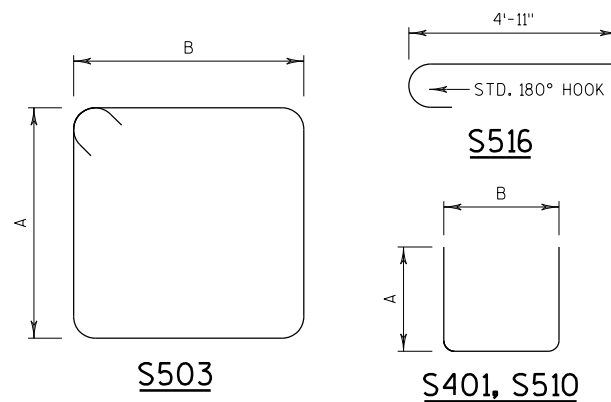


- LAP S516 ONTO EVERY OTHER TRANSVERSE BAR IN THE TOP MAT AS SHOWN.
- CONST. JOINT - STRIKE OFF AS SHOWN.
- ▲ LONGITUDINAL JOINT, SEE CONSTRUCTION STAGING SHEET.

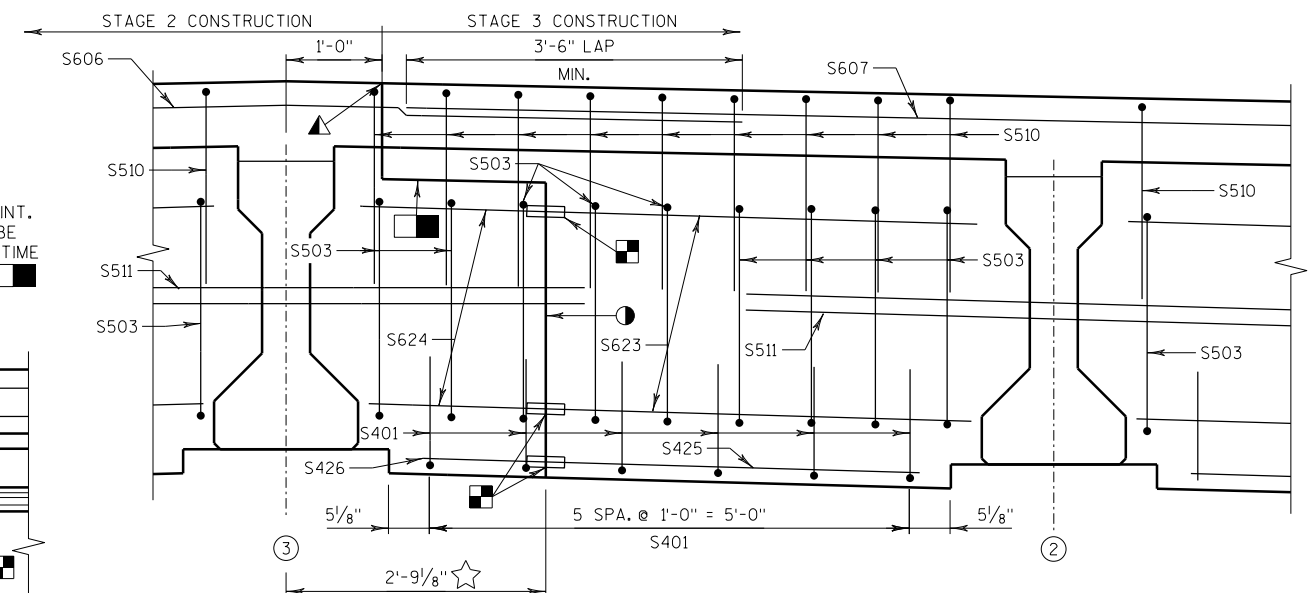
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
SUPERSTRUCTURE CROSS SECTION		SHEET 14 OF 17 76	

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	48	3'-1"	X		ABUT. DIAPHRAGM VERT.
S402	X	14	5'-6"			ABUT. DIAPHRAGM HORIZ.
S503	X	88	11'-10"	X		ABUT. DIAPHRAGM STIRRUP
S604	X	4	21'-11"			S. ABUT. DIAPHRAGM HORIZ. STAGE 2
S605	X	4	18'-7"			S. ABUT. DIAPHRAGM HORIZ. STAGE 3
S606	X	4	24'-11"			ABUT. DIAPHRAGM HORIZ. STAGE 2
S607	X	4	19'-1"			ABUT. DIAPHRAGM HORIZ. STAGE 3
S608	X	28	6'-7"			ABUT. DIAPHRAGM HORIZ. F.F.
S609	X	16	2'-4"			ABUT. DIAPHRAGM HORIZ. F.F.
S510	X	88	5'-10"	X		ABUT. DIAPHRAGM VERT.
S511	X	20	6'-0"			ABUT. DIAPH. HORIZ. THRU GIRDERS
S512	X	116	24'-2"			SLAB TRANS. BOTTOM STAGE 2
S513	X	116	19'-1"			SLAB TRANS. BOTTOM STAGE 3
S514	X	115	24'-2"			SLAB TRANS. TOP STAGE 2
S515	X	115	19'-1"			SLAB TRANS. TOP STAGE 3
S516	X	116	5'-5"	X		SLAB TRANS. TOP AT OVERHANGS
S417	X	230	32'-0"			SLAB LONG. TOP AND BOT.
S518	X	192	4'-5"	X		PARAPET VERT.
S519	X	192	5'-0"	X		PARAPET VERT.
S520	X	24	33'-2"			PARAPET HORIZ.
S621	X	4	23'-1"			N. ABUT. DIAPHRAGM HORIZ. STAGE 2
S622	X	4	17'-8"			N. ABUT. DIAPHRAGM HORIZ. STAGE 3
S623	X	4	4'-10"			S. ABUT. DIAPH. HORIZ. AT CONST. JT
S624	X	4	1'-8"			S. ABUT. DIAPH. HORIZ. AT CONST. JT.
S425	X	2	4'-3"			S. ABUT. DIAPH. HORIZ. AT CONST. JT
S426	X	2	1'-3"			S. ABUT. DIAPH. HORIZ. AT CONST. JT.

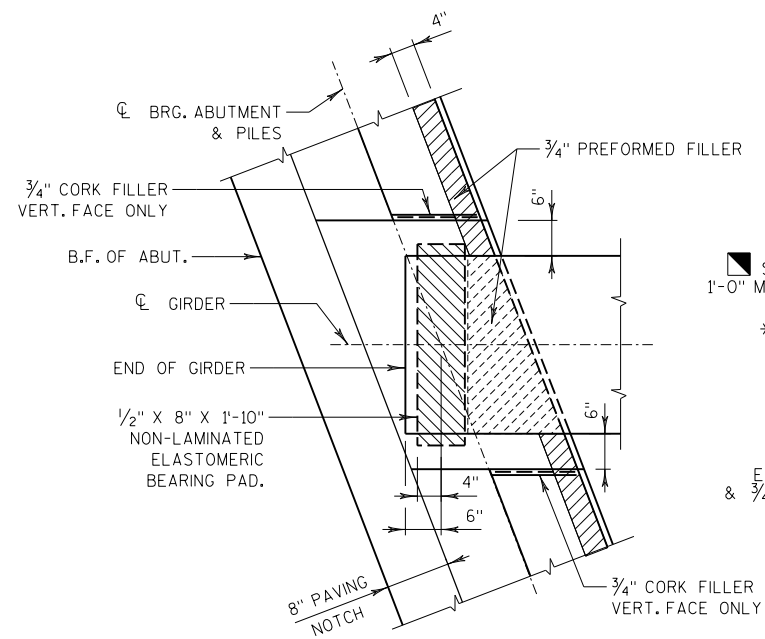
BAR MARK	A	B
S401	1'-2"	11"
S503	2'-7"	3'-0"
S510	1'-11"	2'-3"



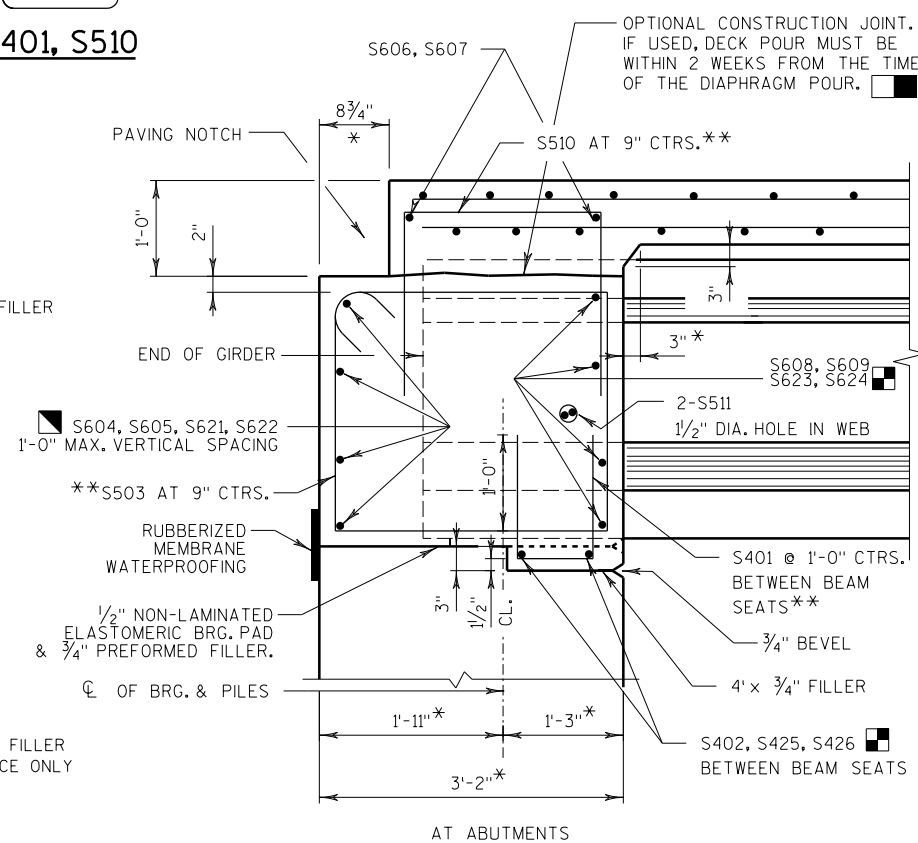
TYPICAL PARTIAL TRANSVERSE
SECTION AT ABUTMENT DIAPHRAGM



PARTIAL TRANSVERSE SECTION AT
SOUTH ABUTMENT CONSTRUCTION JOINT



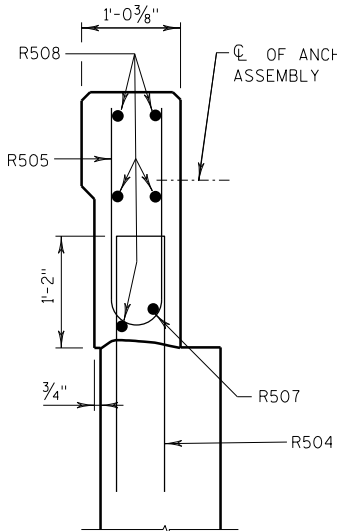
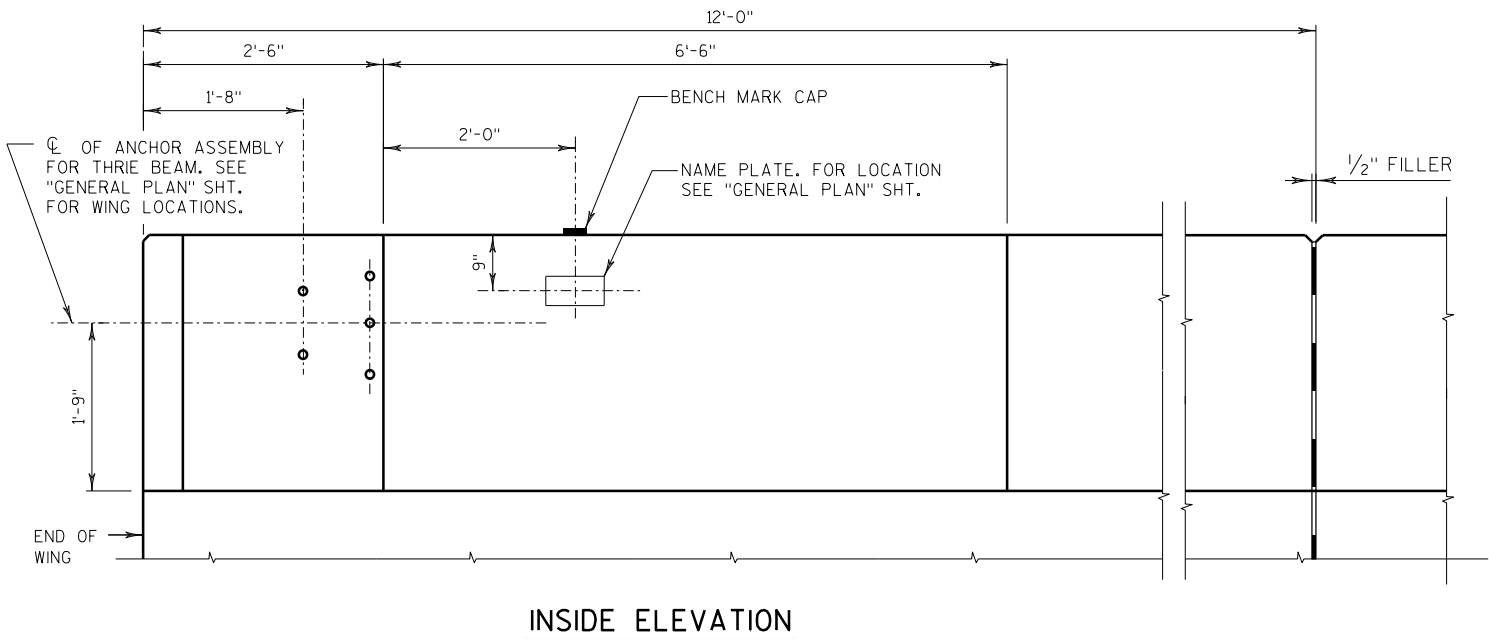
BEARING PAD DETAIL



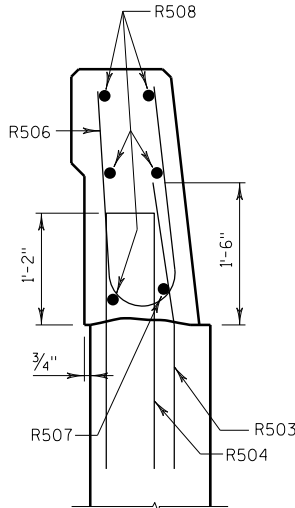
PART LONGIT. SECTION

- ① VERTICAL CONSTRUCTION JOINT. ALIGN WITH ABUTMENT VERTICAL CONSTRUCTION JOINT BELOW. RUN REINFORCEMENT THRU THE JOINT. FIELD BEND AS REQUIRED TO CLEAR STAGE 1 TRAFFIC. JOINT PERPENDICULAR TO THE $\mathcal{C}$ OF ABUTMENT
 - ▲ LONGITUDINAL JOINT. SEE CONSTRUCTION STAGING SHEET FOR LONGITUDINAL CONSTRUCTION JOINT DETAIL. JOINT PARALLEL WITH R/L OF STH 40
 - PROVIDE THREADED BAR COUPLERS AT CONSTRUCTION JOINT.
 - PROVIDE THREADED BAR COUPLERS AT CONSTRUCTION JOINT IN SOUTH ABUTMENT ONLY. FIELD CUT S608 AND S402 BARS TO FIT AT NORTH ABUTMENT.
 - OPTIONAL CONSTRUCTION JOINT.
 - ☆ MEASURED ALONG FRONT FACE OF ABUTMENT
 - * DIMENSION IS TAKEN NORMAL TO $\mathcal{C}$ SUBSTRUCTURE UNITS.
 - ** BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO $\mathcal{C}$ GIRDERS.

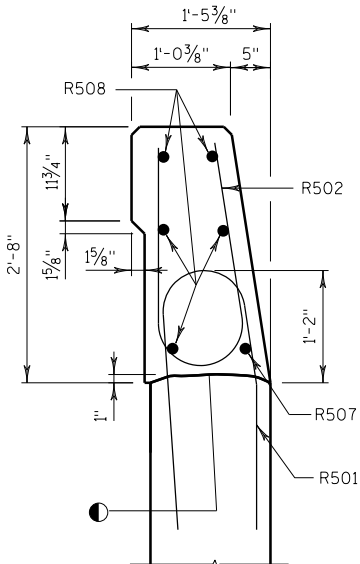
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
SUPERSTRUCTURE DETAILS		SHEET 15 OF 17 77	



SECTION A



SECTION B

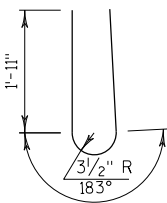
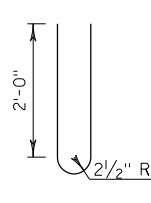
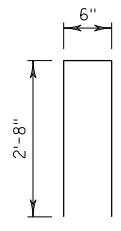
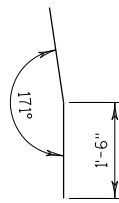
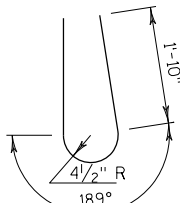
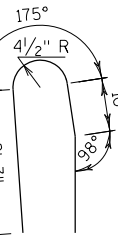


SECTION C

● CONST. JOINT - STRIKE OFF AS SHOWN.

BILL OF BARS

BAR MARK	COAT	NO. S. ABUT.	NO. N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	10	10	5'-10"	X		PARAPET - VERT.
R502	X	10	10	5'-0"	X		PARAPET - VERT.
R503	X	24	24	3'-0"	X		PARAPET - VERT.
R504	X	34	34	5'-7"	X		PARAPET - VERT.
R505	X	22	22	4'-9"	X		PARAPET - VERT.
R506	X	12	12	4'-10"	X		PARAPET - VERT.
R507	X	2	2	11'-6"	X		PARAPET - HORIZ.
R508	X	10	10	11'-6"			PARAPET - HORIZ.



R501

R502

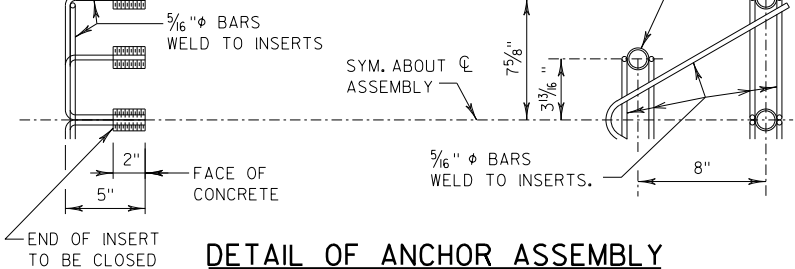
R503

R504

R505

R506

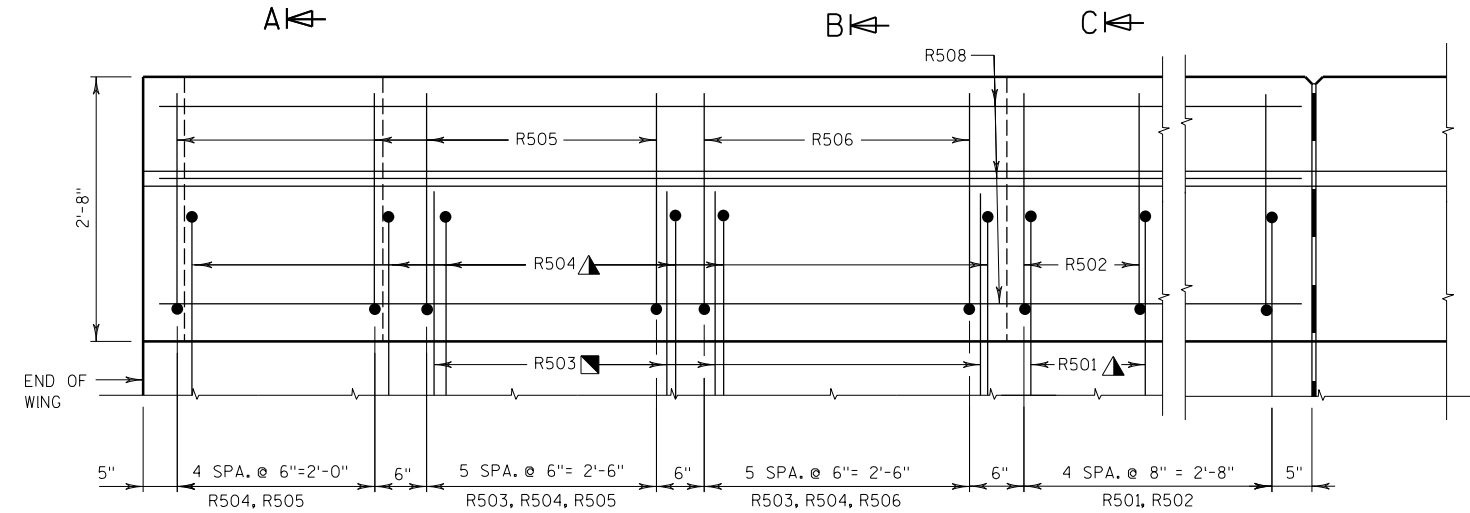
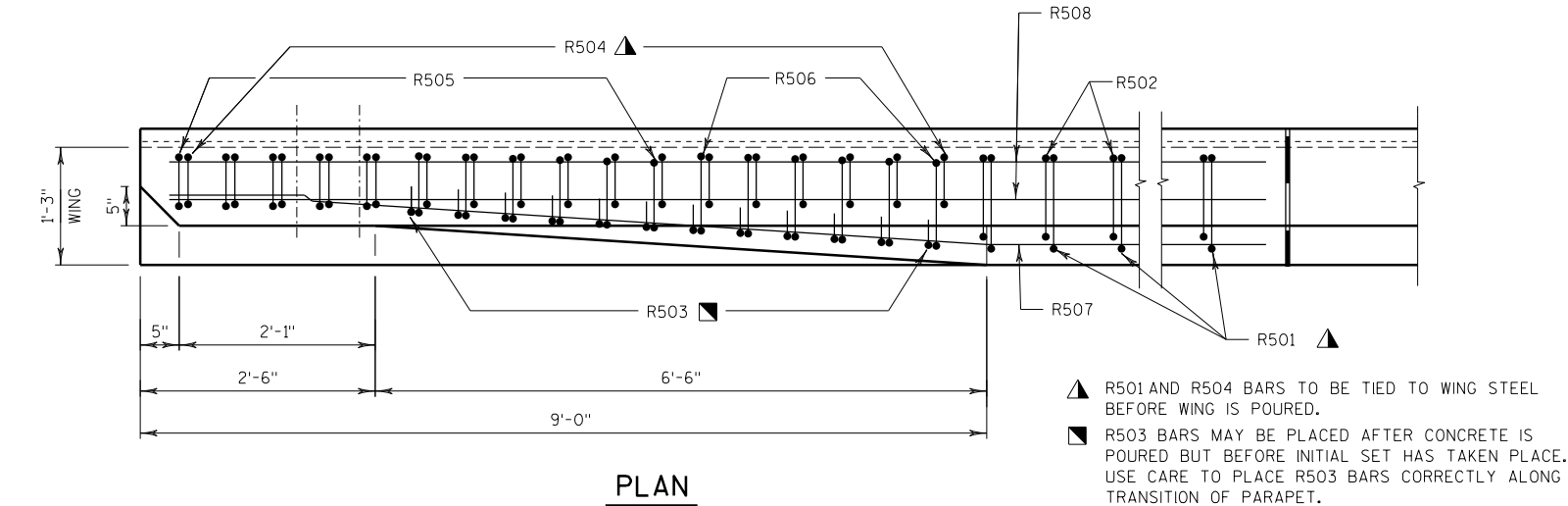
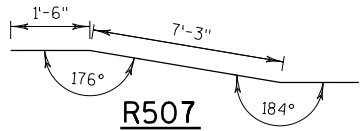
THREADED INSERTS FOR 7/8" ϕ X 2" LONG GALVANIZED HEX HEAD CAP SCREWS. CAP SCREWS TO BE THREADED A MIN. OF 1 1/8" AND SHALL BE SUPPLIED, INCLUDING WASHERS, WITH ASSEMBLY. INSERTS TO BE THREADED A MINIMUM OF 1 3/4".



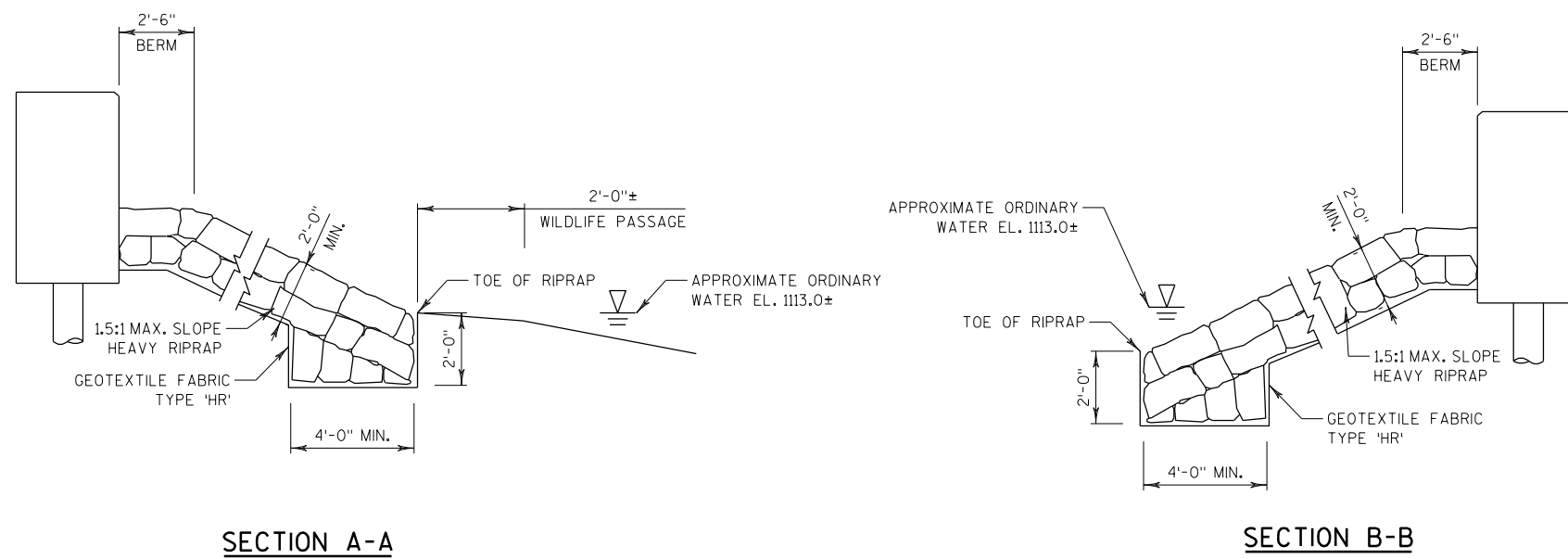
DETAIL OF ANCHOR ASSEMBLY

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

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



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
	DRAWN BY	TEO	PLANS CK'D. AJC
SINGLE SLOPE PARAPET 32SS		SHFFT 16 OF 17 78	



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-136			
DRAWN BY		TEO	PLANS CK'D. AJC
HEAVY RIPRAP LAYOUT		SHEET 17 OF 17 79	

8010-02-75
CHASE CREEK APPROACH - SOUTH

STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDNATE
		CUT	FILL	CUT	FILL	CUT 1.00 NOTE 1	EXPANDED FILL 1.25 NOTE 3	
402+96		0	0	0	0	0	0	0
403+00	4	0	5	0	0	0	0	0
403+29	29	0	9	0	8	0	10	-10
403+40	11	0	15	0	5	0	16	-16
403+85	45	0	54	0	58	0	89	-89
403+99	14	0	38	0	24	0	119	-119
404+00	1	0	36	0	1	0	120	-120
404+12	12	0	27	0	14	0	138	-138
404+27	15	0	20	0	13	0	154	-154
404+37	10	0	20	0	8	0	164	-164
404+49	12	0	43	0	14	0	181	-181
404+62	13	0	37	0	19	0	205	-205
404+74	12	0	39	0	17	0	226	-226
404+80	6	52	42	6	9	6	238	-232
404+99	19	54	43	37	30	43	275	-232
405+00	1	54	43	2	1	45	277	-232
405+44	44	69	36	100	64	145	357	-212
405+74	30	60	15	72	28	216	392	-176
405+89	15	57	18	33	9	249	403	-154
406+00	11	51	3	22	4	271	409	-137
406+02	2	46	0	4	0	275	409	-134
406+08	6	23	0	8	0	283	409	-126
COLUMN TOTALS				283	327			

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

9

9

8010-02-75
CHASE CREEK APPROACH - NORTH

STATION	DISTANCE	AREA (SF)		INCREMENTAL VOL (CY) (UNADJUSTED)		CUMULATIVE VOL (CY)		MASS ORDINATE
		CUT	FILL	CUT	FILL	CUT 1.00 NOTE 1	EXPANDED FILL 1.25 NOTE 3	
406+70		20	0	0	0	0	0	0
406+76	6	40	0	7	0	7	0	7
406+89	13	44	4	20	1	27	1	25
407+00	11	49	22	20	5	46	8	38
407+34	34	49	57	61	50	107	70	37
407+79	45	52	71	83	106	191	203	-13
408+00	21	0	73	20	56	211	273	-62
408+04	4	0	73	0	10	211	286	-75
408+16	12	0	75	0	33	211	327	-116
408+29	13	0	80	0	38	211	374	-163
408+41	12	0	87	0	37	211	420	-209
408+66	25	0	94	0	84	211	525	-314
409+00	34	0	73	0	106	211	657	-446
409+16	16	0	64	0	40	211	707	-496
409+36	21	0	49	0	43	211	760	-549
409+48	12	0	9	0	12	211	776	-565
409+85	37	0	0	0	6	211	784	-573
COLUMN TOTALS				211	627			

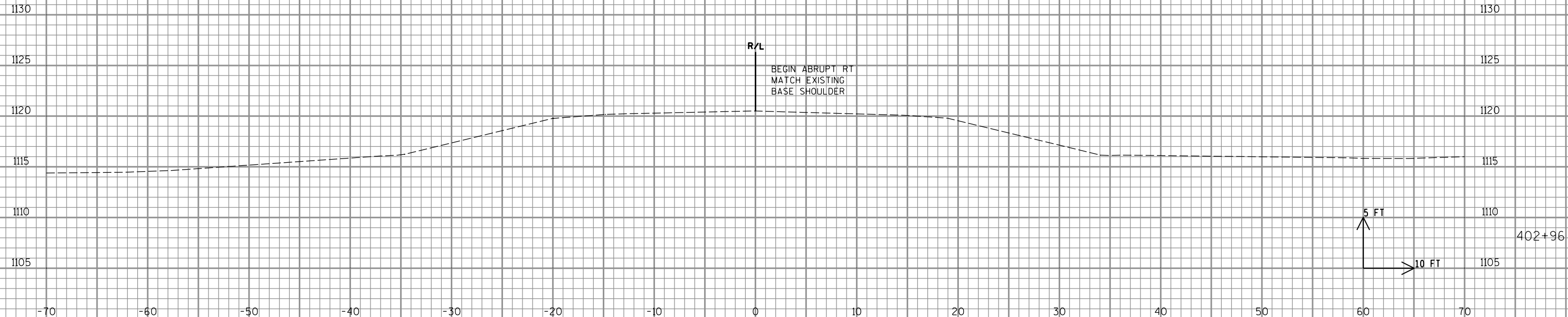
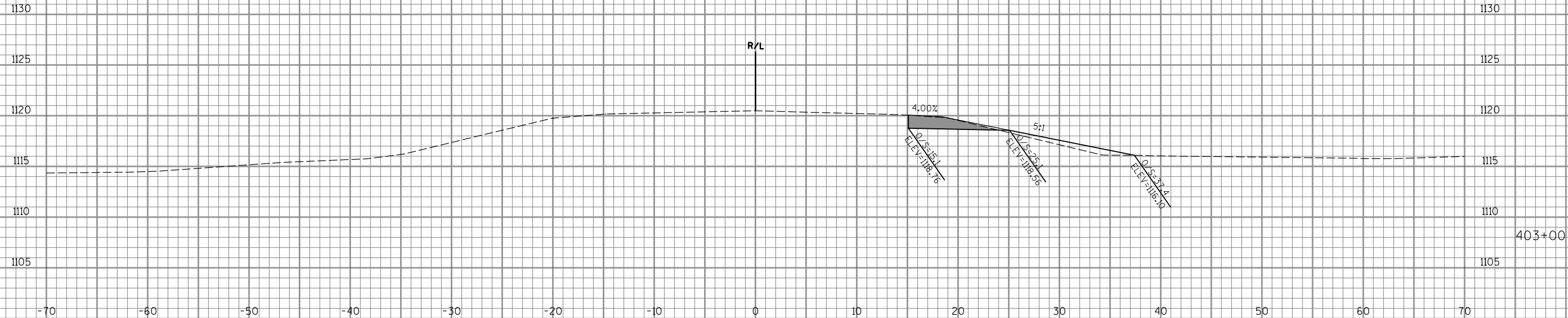
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
3 - EXPANDED FILL	(UNEXPANDED FILL)*(FILL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

9

9

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN



PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

SHEET

82

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADD\Plan\4840-Chase Creek\090201_xs.dgn

PLOT DATE : 7/23/2015

PLOT BY : emo

PLOT NAME :

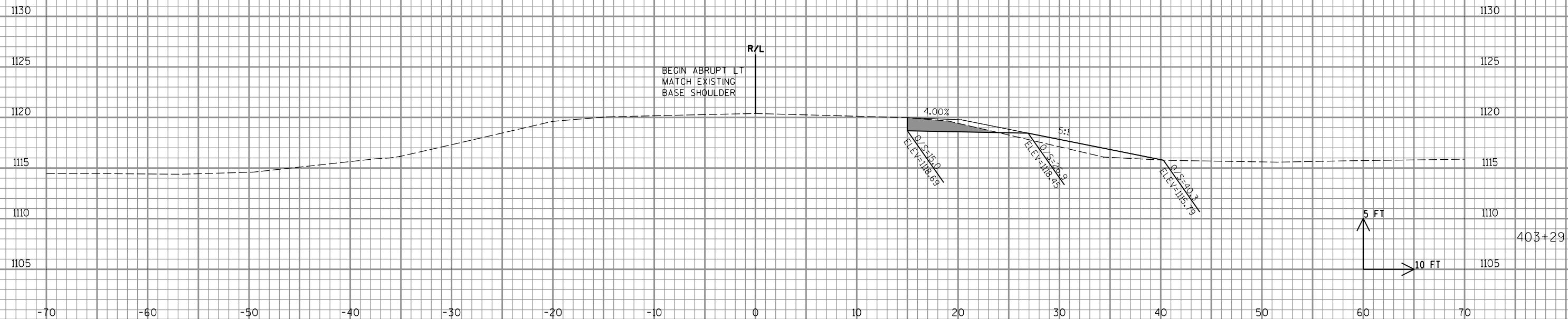
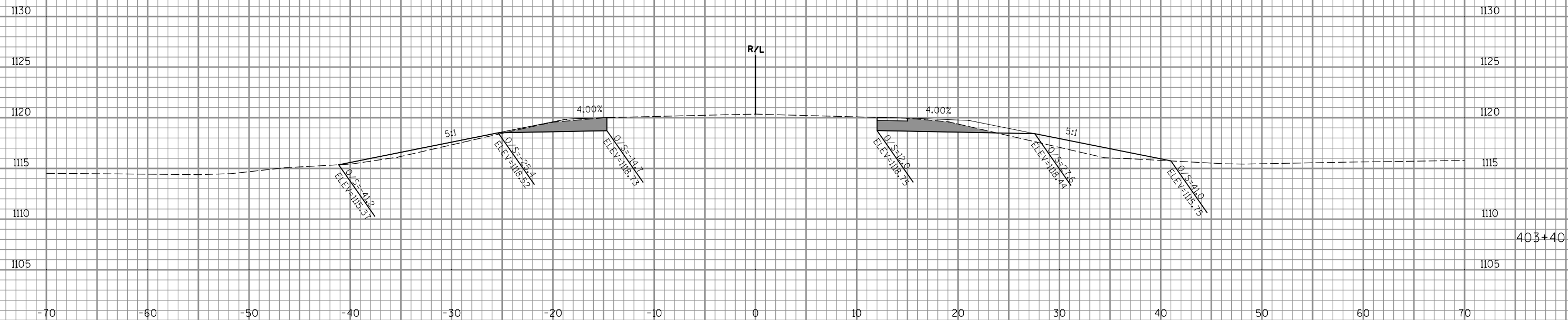
PLOT SCALE : 1:10

WISDOT/CADD SHEET 21

LEGEND



EXISTING BASE AGGREGATE DENSE TO REMAIN



PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

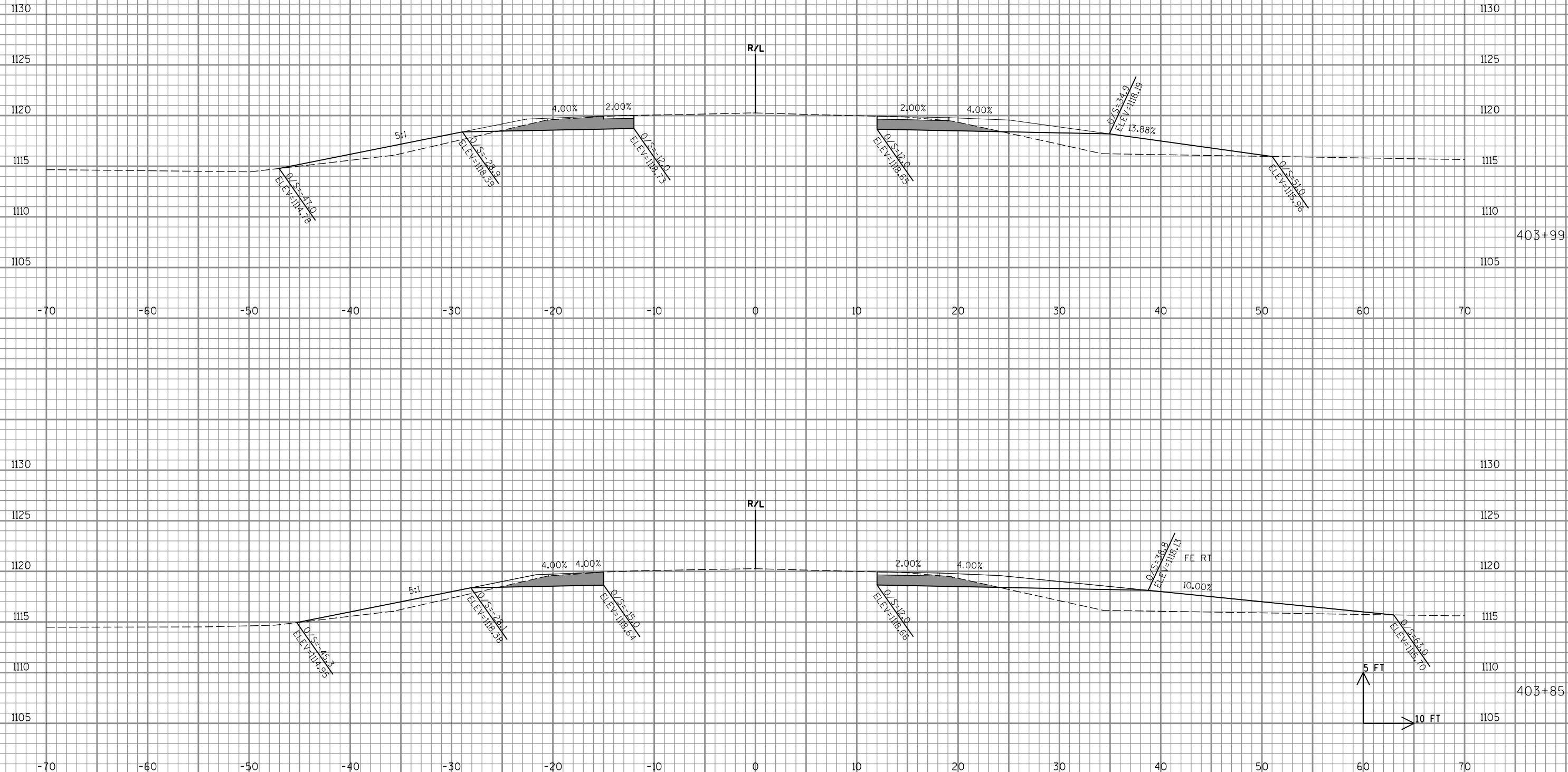
SHEET

83

E

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN



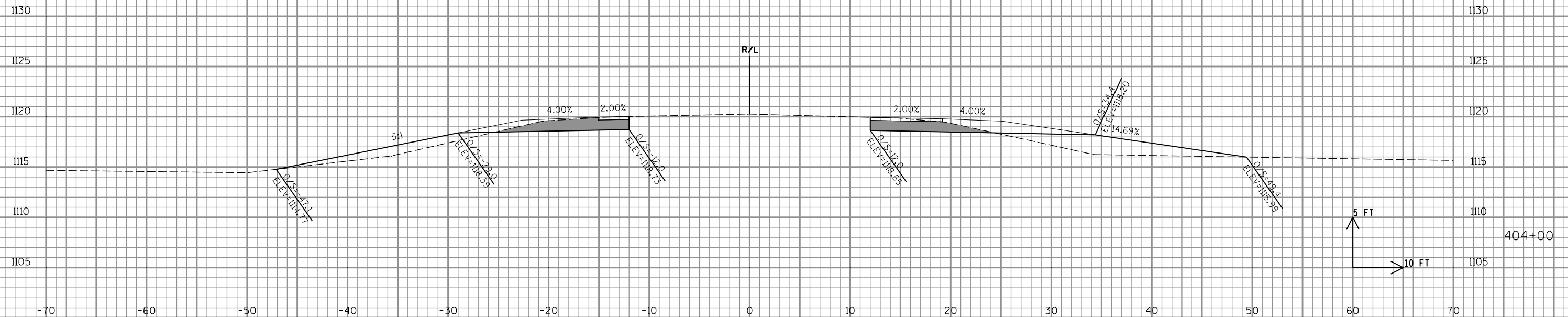
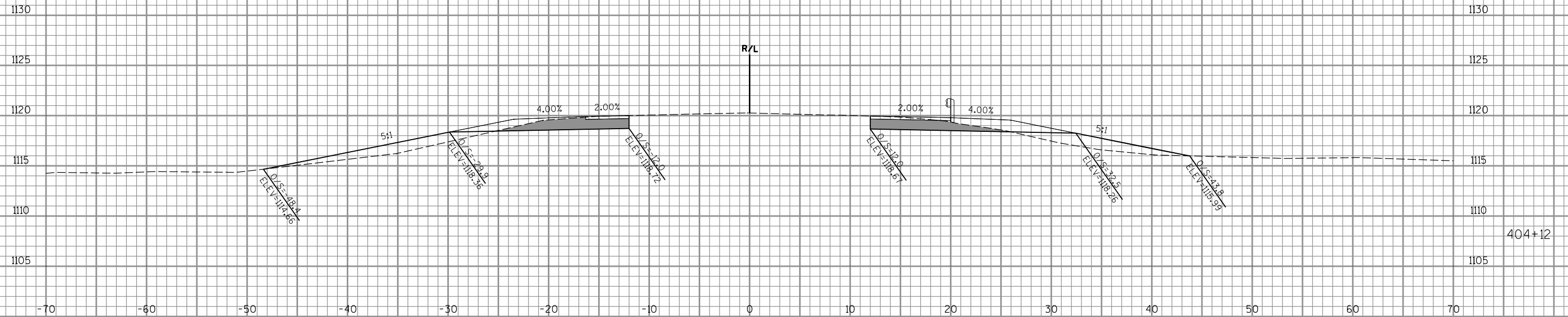
9

9

LEGEND



EXISTING BASE AGGREGATE DENSE TO REMAIN



PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

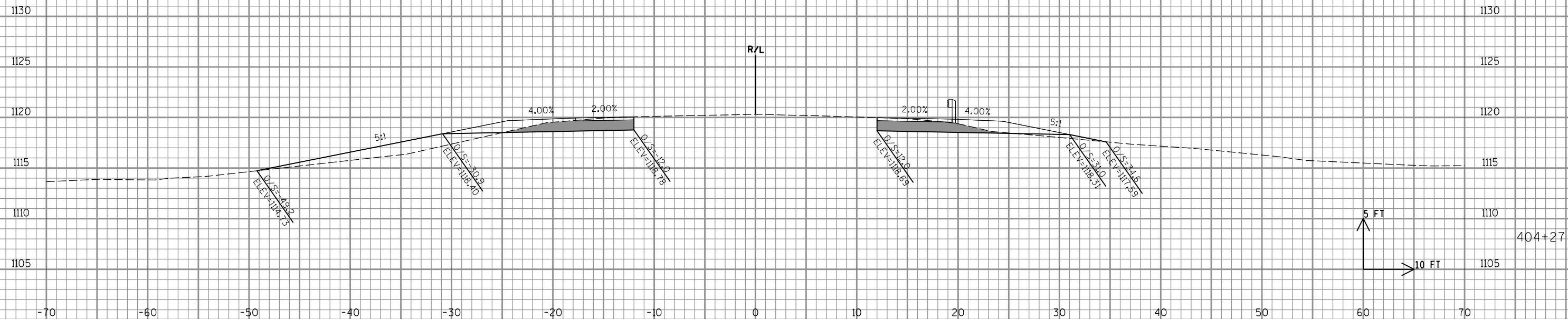
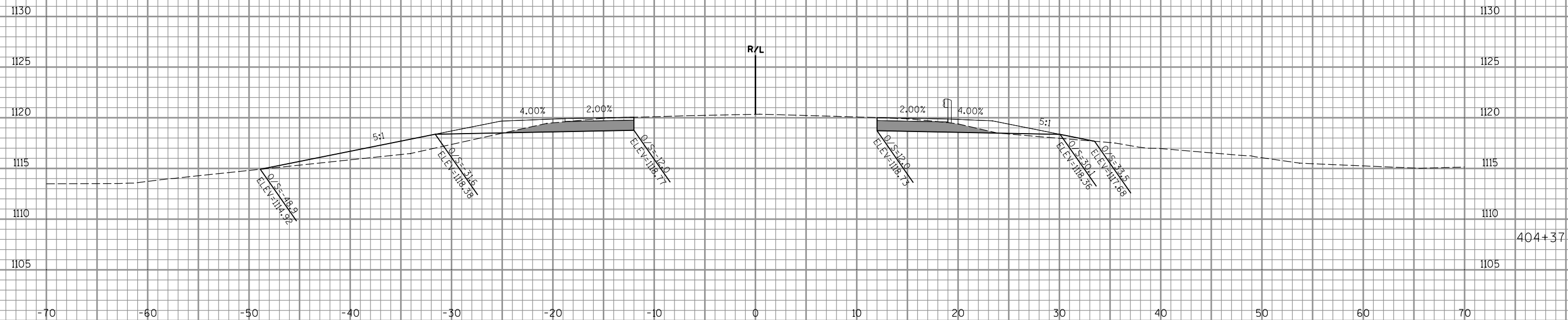
SHEET 85

E

LEGEND



EXISTING BASE AGGREGATE DENSE TO REMAIN



PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

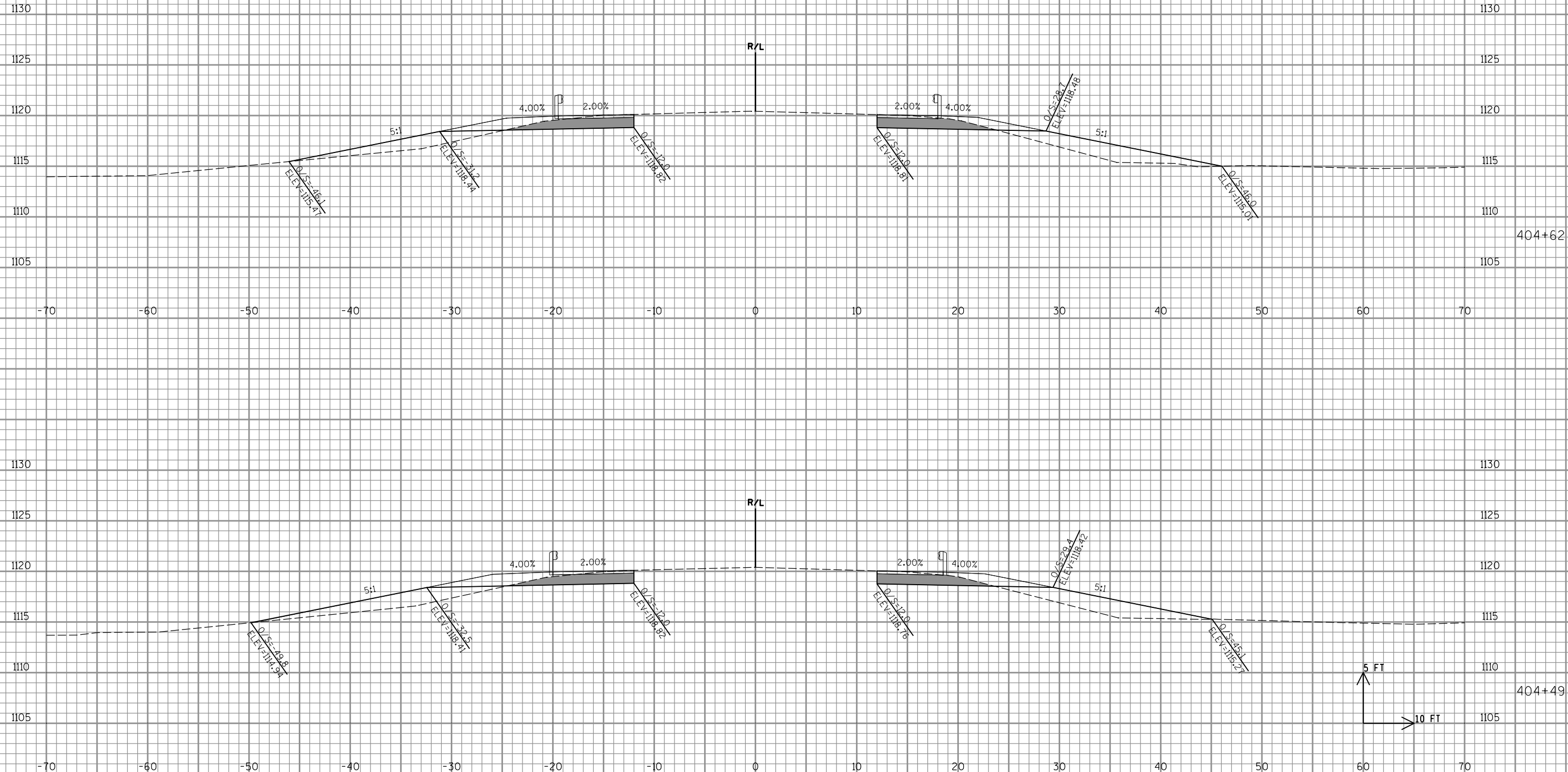
SHEET

86

E

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN

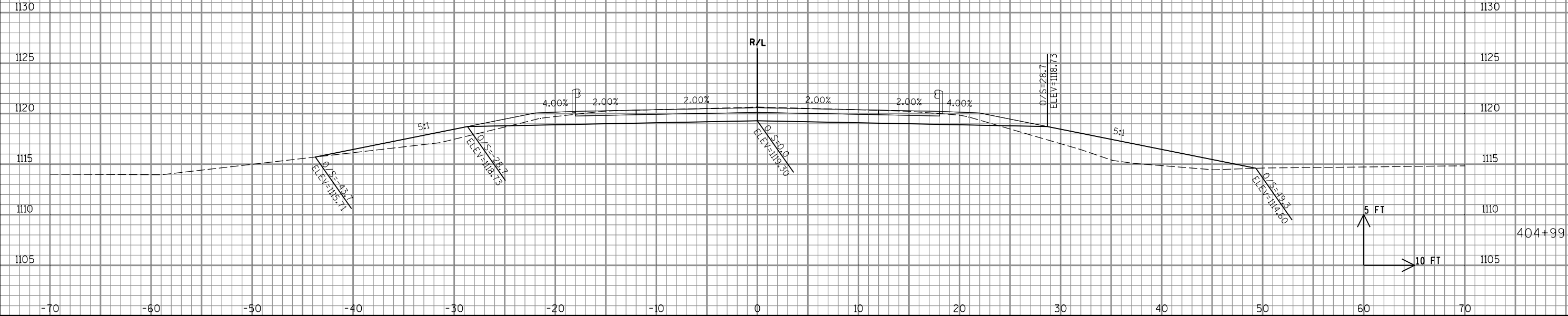
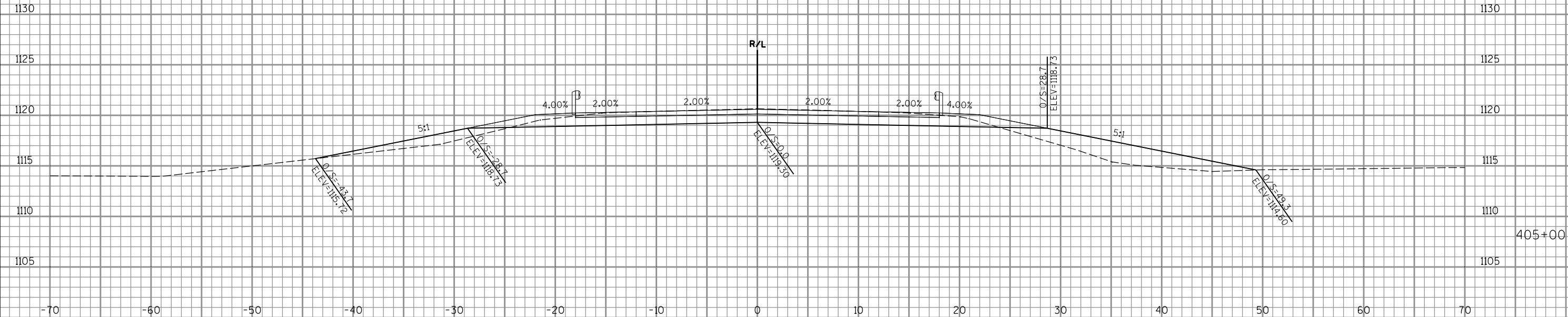


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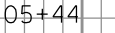
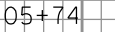
9

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN



EXISTING	BASE	AGGREGATE	DENSE	TO	REMAIN
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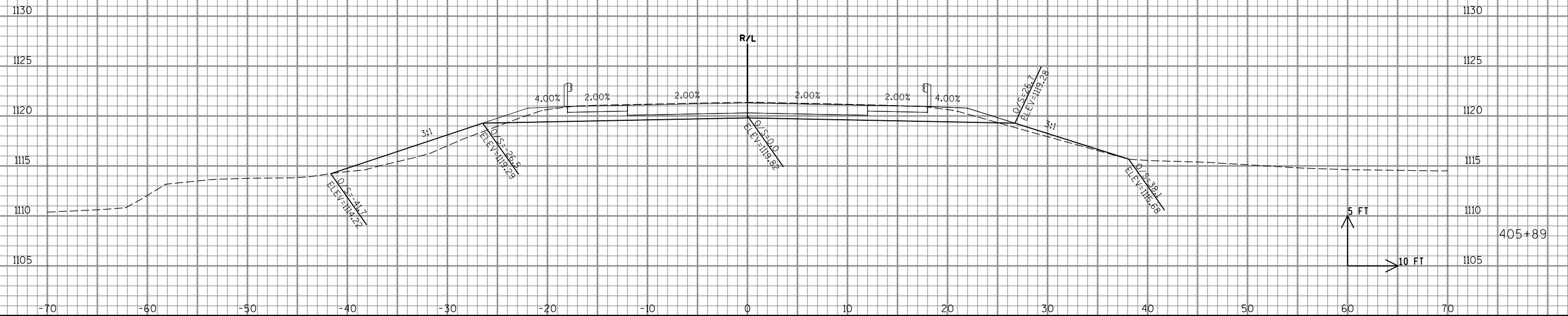
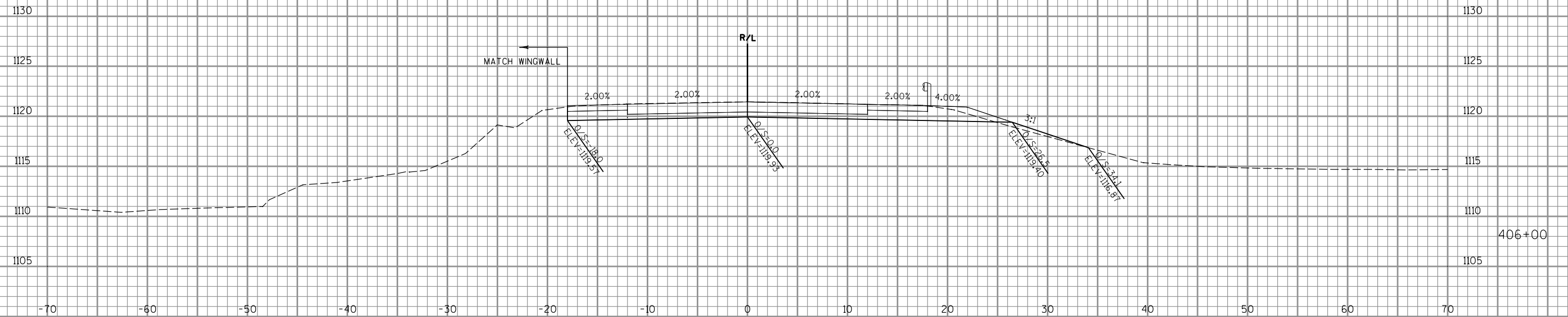


SHEET 90

WISDOT/CADDS SHEET 21

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN



PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

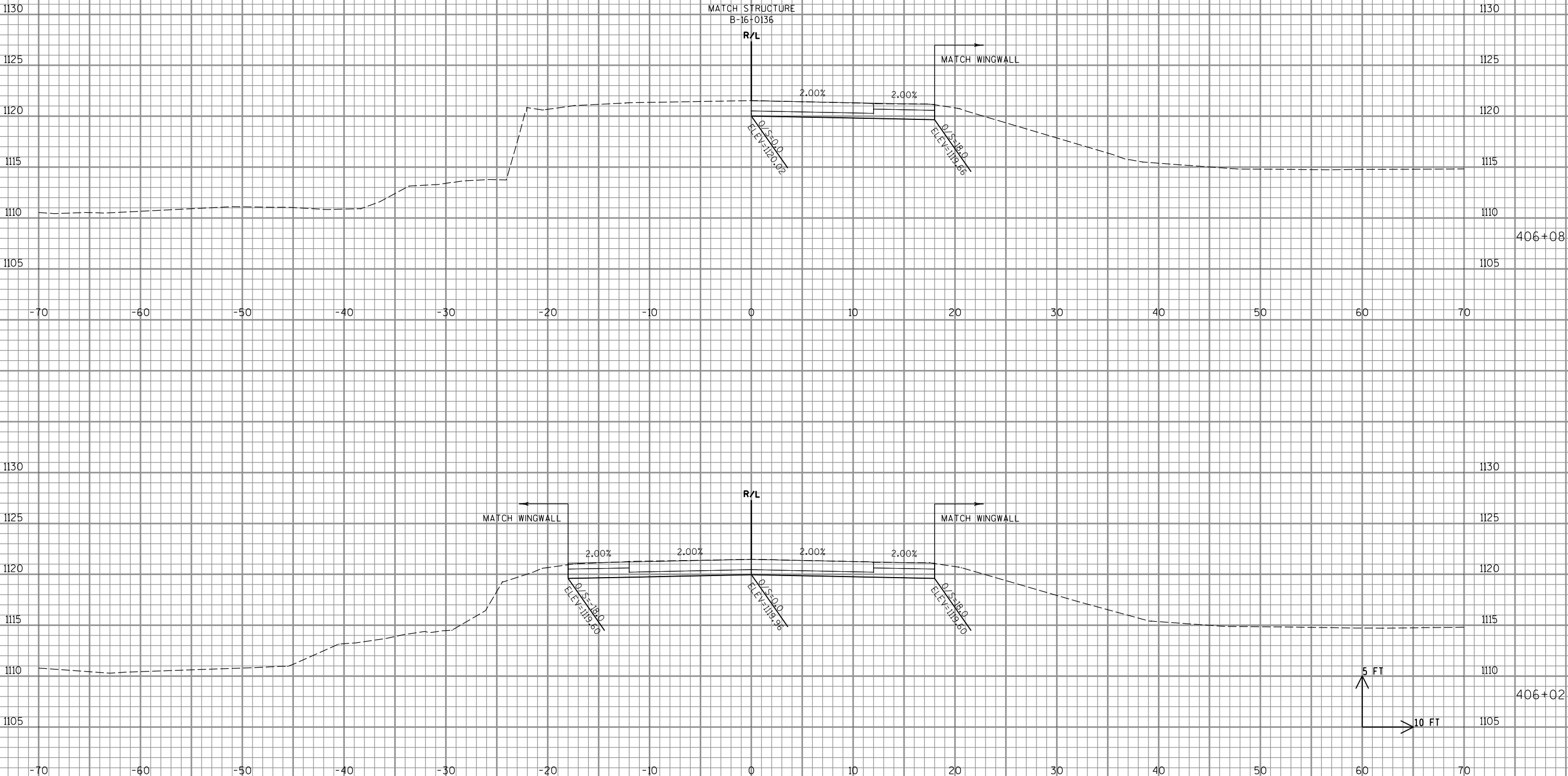
CROSS SECTIONS: CHASE CREEK

SHEET 91

E

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN



9

9

PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

SHEET 92

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADDs\Plan\4840-Chase Creek\090201_xs.dgn

PLOT DATE : 7/23/2015

PLOT BY : emo

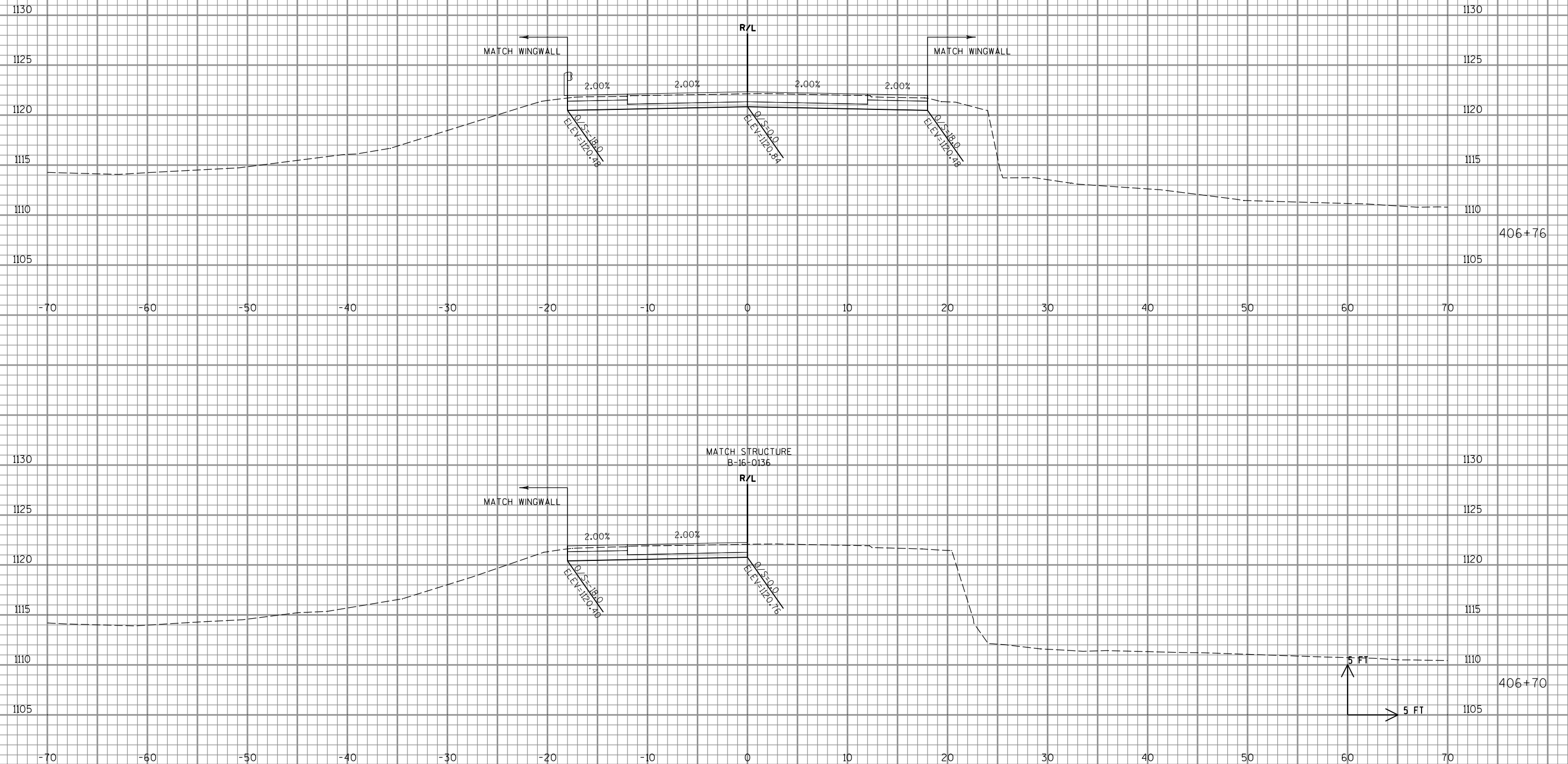
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PLOT SCALE : 1:10

WISDOT/CADDs SHEET 21

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN



PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

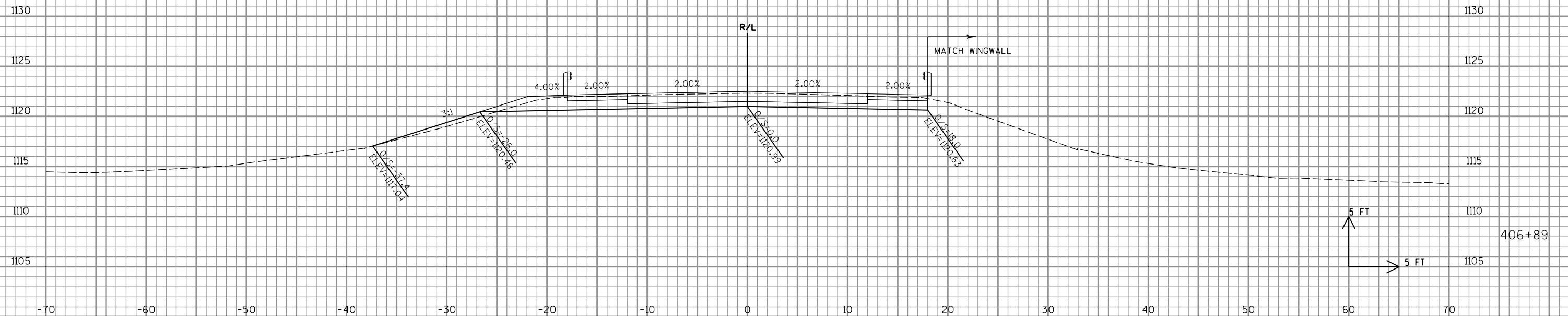
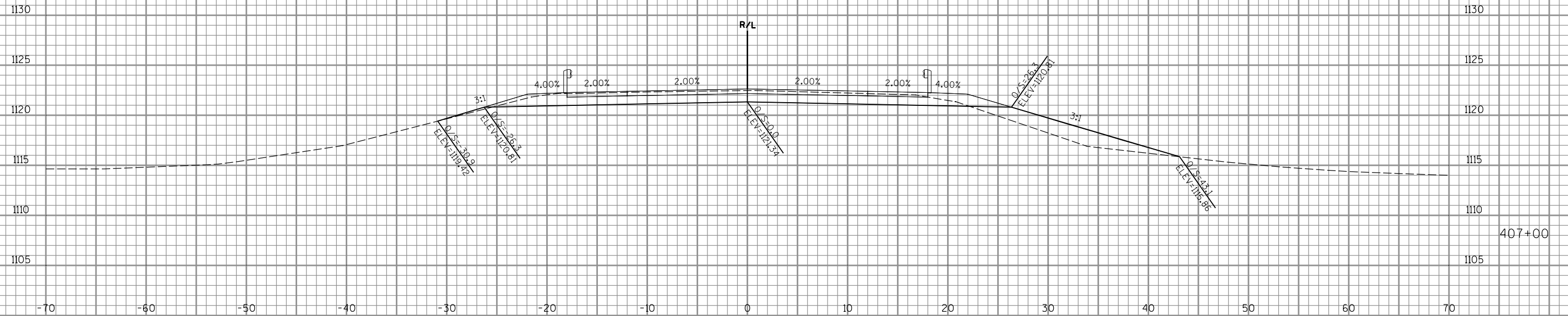
SHEET 93

E

LEGEND



EXISTING BASE AGGREGATE DENSE TO REMAIN



PROJECT NO: 8010-02-75

HWY: STH 35

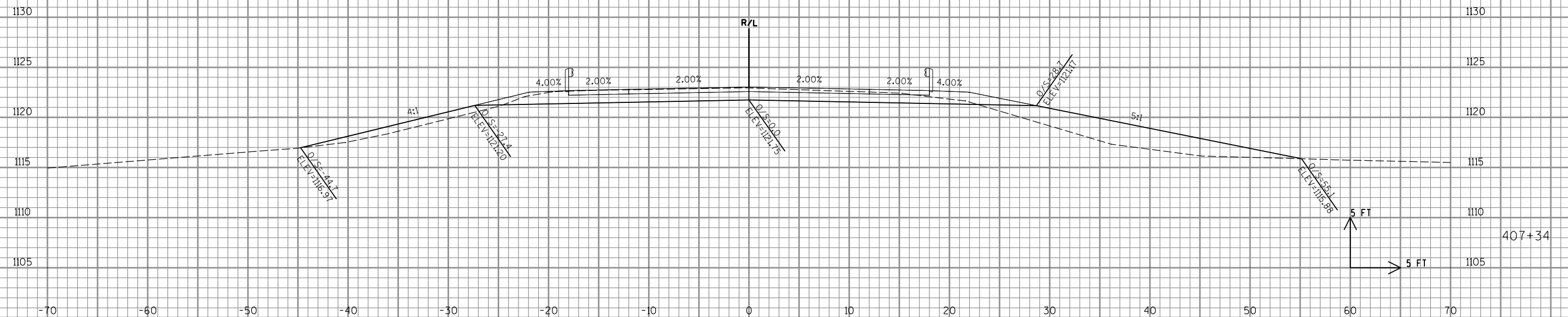
COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

SHEET 94

E

EXISTING	BASE	AGGREGATE	DENSE	TO	REMAIN
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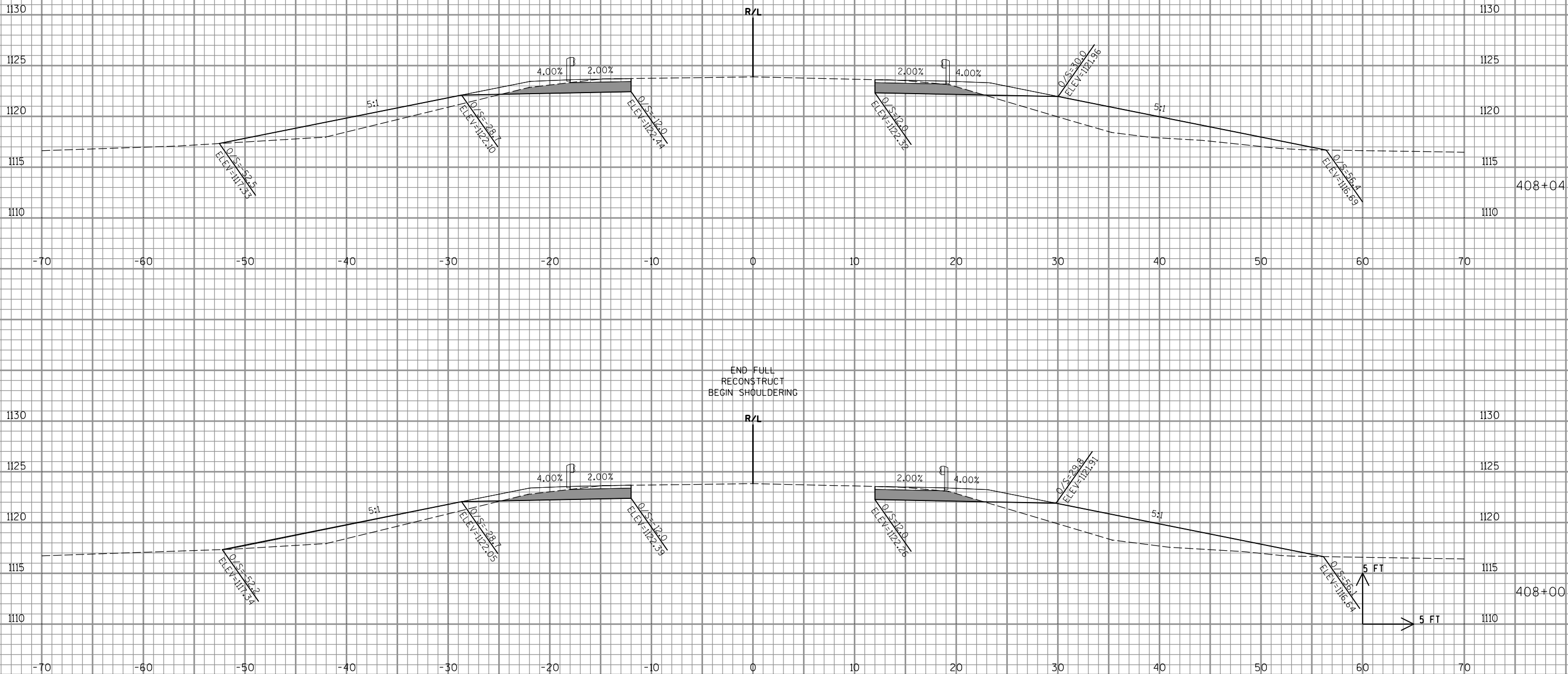


SHEET 95

WISDOT/CADDS SHEET 21

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN



9

9

PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

SHEET

96

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADD\Plan\4840-Chase Creek\090202.xs.dgn

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PLOT BY : emo

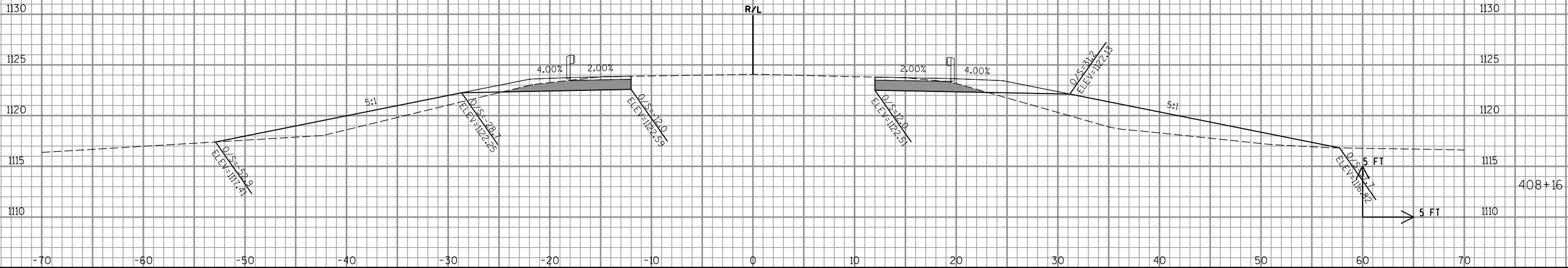
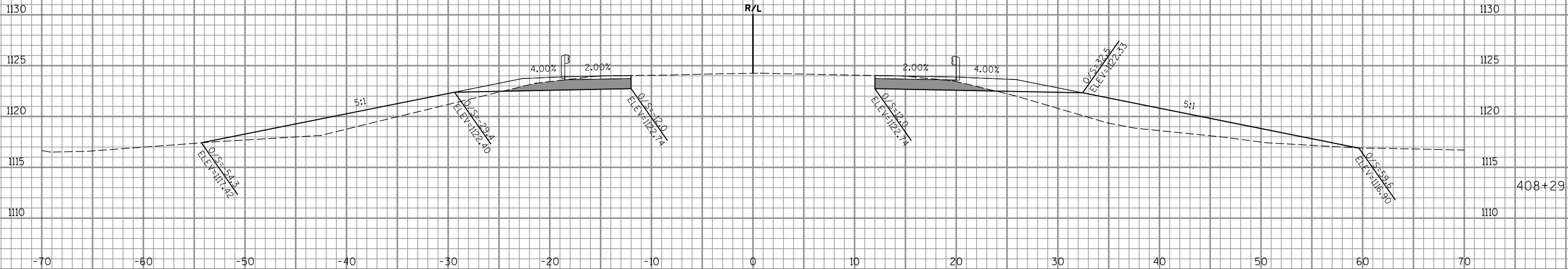
PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADD SHEET 21

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN



PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

SHEET 97

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADD\Plan\4840-Chase Creek\090202_xs.dgn

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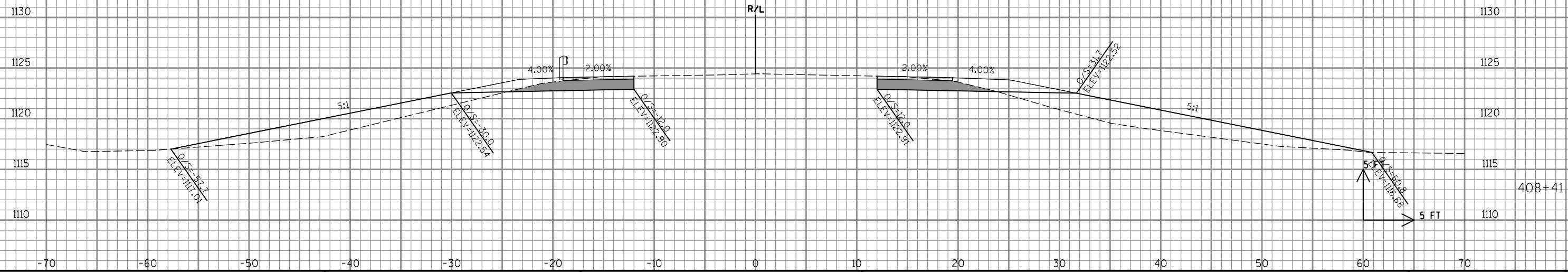
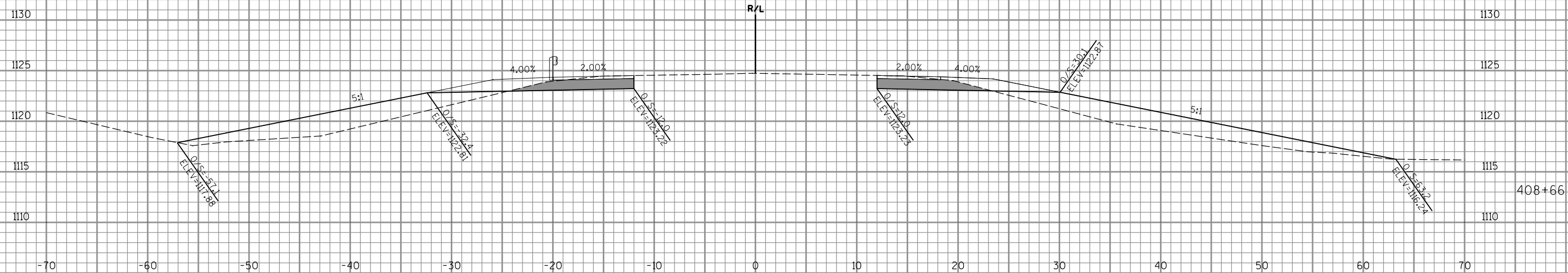
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PLOT SCALE : 1:10

WISDOT/CADD SHEET 21

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN



9

9

PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

SHEET

98

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADDs\Plan\4840_Chase Creek\090202_xs.dgn

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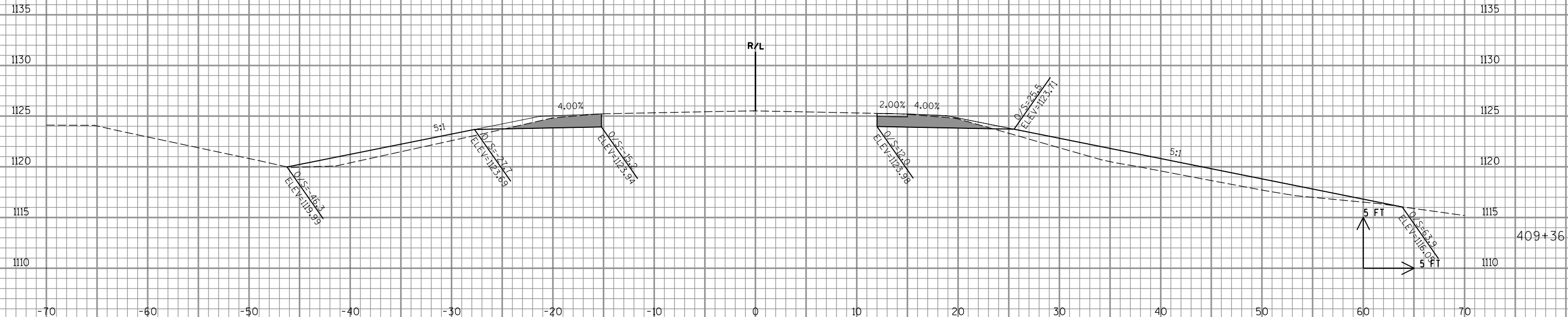
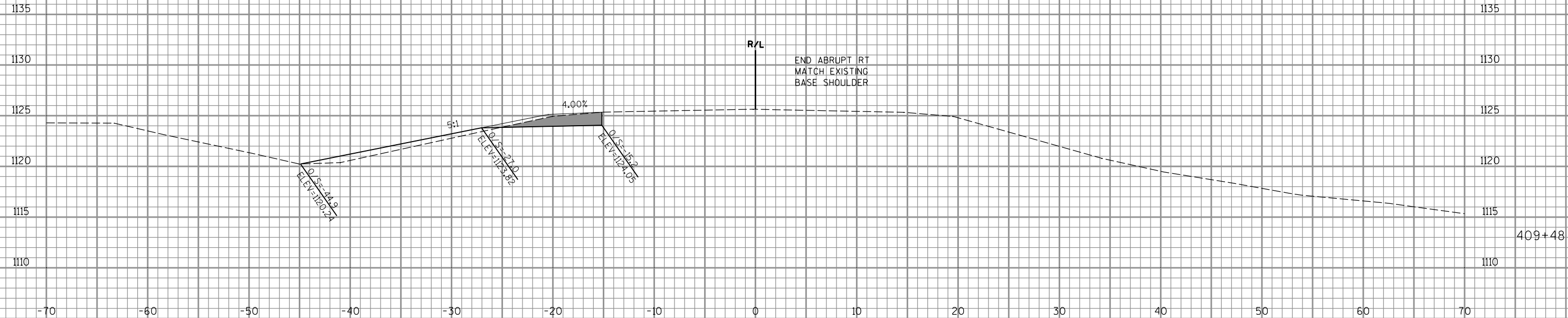
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PLOT SCALE : 1:10

WISDOT/CADDs SHEET 21

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN



9

9

PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

SHEET

100

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADDS\Plan\4840_Chase Creek\090202_xs.dgn

PLOT DATE : 7/23/2015

PLOT BY : emo

PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

LEGEND

EXISTING BASE AGGREGATE DENSE TO REMAIN

END ABRUPT LT
MATCH EXISTING
BASE SHOULDER

R/L

5 FT

5 FT

409+85

9

9

PROJECT NO: 8010-02-75

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: CHASE CREEK

SHEET

101

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADD\Plan\4840_Chase Creek\090202_xs.dgn

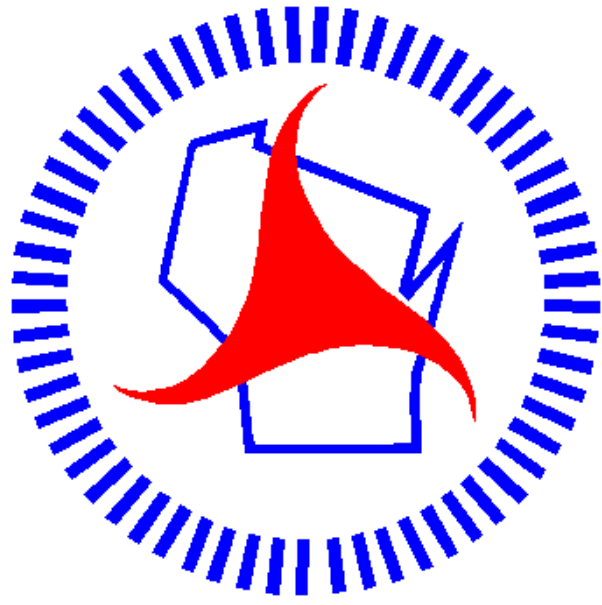
PLOT DATE : 7/23/2015

PLOT BY : emo

PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADD SHEET 21



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>

SUP
WITH: 8010-02-75

PROJECT ID: 8010-08-72

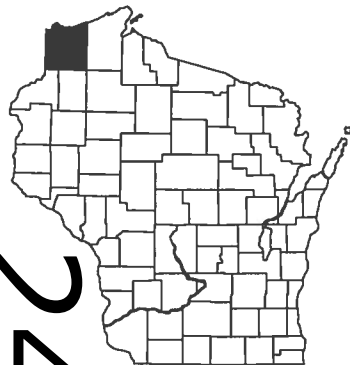
COUNTY: DOUGLAS

DEC 2015

ORDER OF SHEETS

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

TOTAL SHEETS = 122

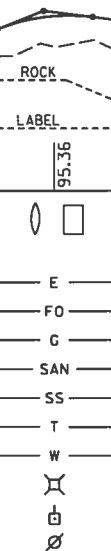


DESIGN DESIGNATION	STH 35 BLACK RIVER BRIDGE	STH 35 RETAINING WALL
A.A.O.T. (2016) =	3,400	1,900
A.A.O.T. (2036) =	4,300	2,300
O.H.V. (2036) =	600	320
O.D. =	60/40	60/40
T. =	12.1%	12.1%
DESIGN SPEED =	35 MPH	55 MPH
ESALS =	N/A	N/A

CONVENTIONAL SYMBOLS

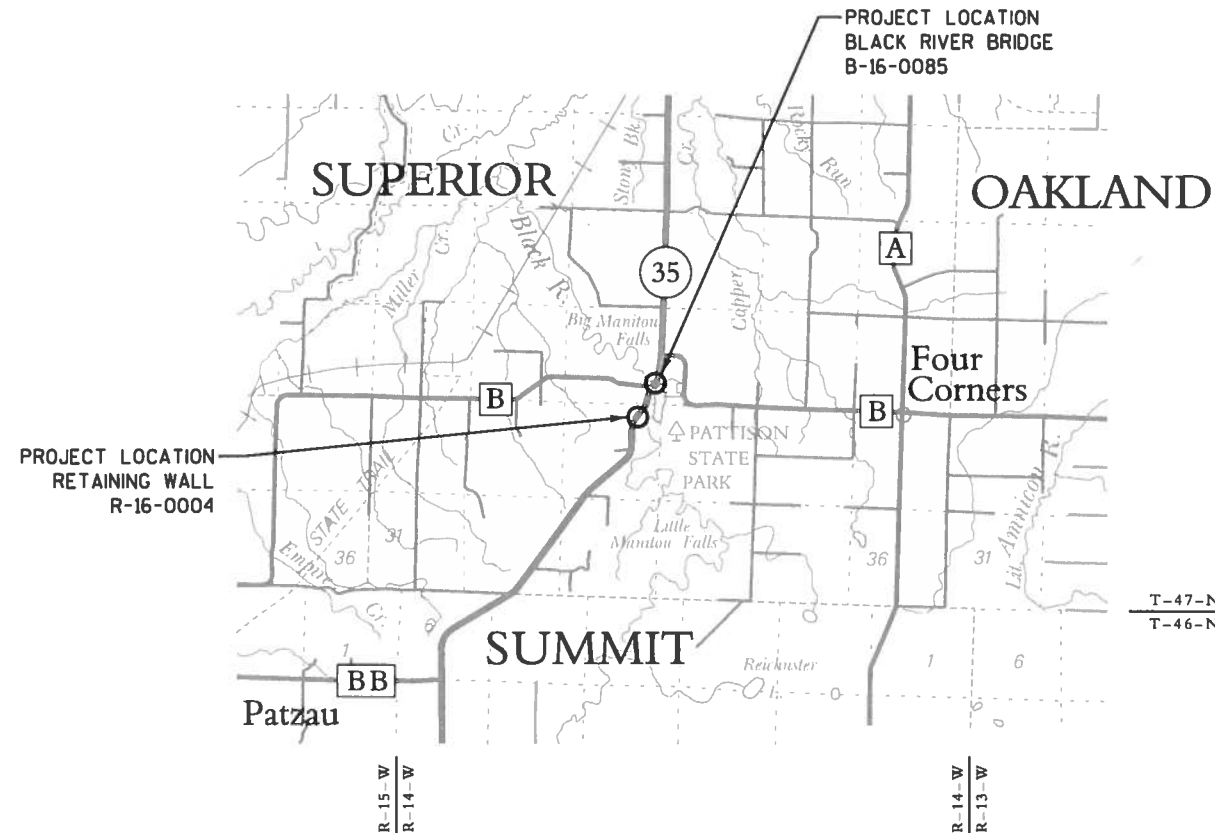
PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

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



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
DAIRYLAND - SUPERIOR
BLACK RIVER BRIDGE B-16-0085
STH 35
DOUGLAS COUNTY

STATE PROJECT NUMBER
8010-08-72



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY
COORDINATE SYSTEM (WCCS), DOUGLAS COUNTY (NAD 83), 2011 ADJUSTMENT.
ALL ELEVATIONS ON THIS PROJECT ARE REFERENCED TO THE NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAVD88), 2012 ADJUSTMENT.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8010-08-72		

ORIGINAL PLANS PREPARED BY

emcs inc

500 North 17th Avenue

Wausau, WI 54401

715.845.1081 Fax 715.845.1099



7-15-15 (Date) *Stephanie G. Christensen* (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT / EMCS, INC.
Designer	EMCS, INC.
Project Manager	MATTHEW DICKENSON
Regional Examiner	CHRISTINE KOSKI
Regional Supervisor	DAVID OSTROWSKI

APPROVED FOR THE DEPARTMENT
DATE: 7/16/15 *[Signature]* (Signature)

E

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. EXISTING UTILITIES WERE ONLY SURVEYED IN THE AREAS NEAR STRUCTURES B-16-0085 AND R-16-0004.

EXISTING RIGHT-OF-WAY SHOWN IS APPROXIMATE AND IS BASED ON AVAILABLE RIGHT-OF-WAY PLATS. NO WORK SHALL OCCUR OUTSIDE OF EXISTING RIGHT-OF-WAY.

AS-BUILT USED FOR PLAN DEVELOPMENT

PROJECT NO: 8010-05-72, CONSTRUCTION YEAR: 1997

ORDER OF SECTION 2 SHEETS

- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL
- PERMANENT SIGNING AND PAVEMENT MARKING
- TRAFFIC CONTROL

UTILITIES

CENTURYLINK
(COMMUNICATIONS)
ALAN NICKELL
P.O. BOX 181
SOLON SPRINGS, WI 54873
(715) 378-2131
alan.nickell@centurylink.com

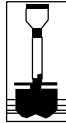
EAST CENTRAL ENERGY
(ELECTRIC)
VERN JOHNSON
P.O. BOX 39
BRAHAM, MN 55006
(763) 689-8076
vern.johnson@ecemn.com

ENVENTIS
(COMMUNICATIONS)
JEFF BRIGHT
4960 MILLER TRUNK HIGHWAY
SUITE 507
HERMANTOWN, MN 55811
(218) 740-6146
jeff.bright@enventis.com

PRIVATE UTILITIES

PATTISON STATE PARK
(WATER)
6294 S STATE RD 35
SUPERIOR, WI 54880
(715) 399-3111

DIGGERS



HOTLINE

Dial  or (800) 242-8511

www.DiggersHotline.com

OTHER CONTACT

DNR LIAISON
AMY CRONK
DNR NORTHERN REGION HEADQUARTERS
810 W. MAPLE STREET
SPOONER, WI 54801
(715) 635-4229

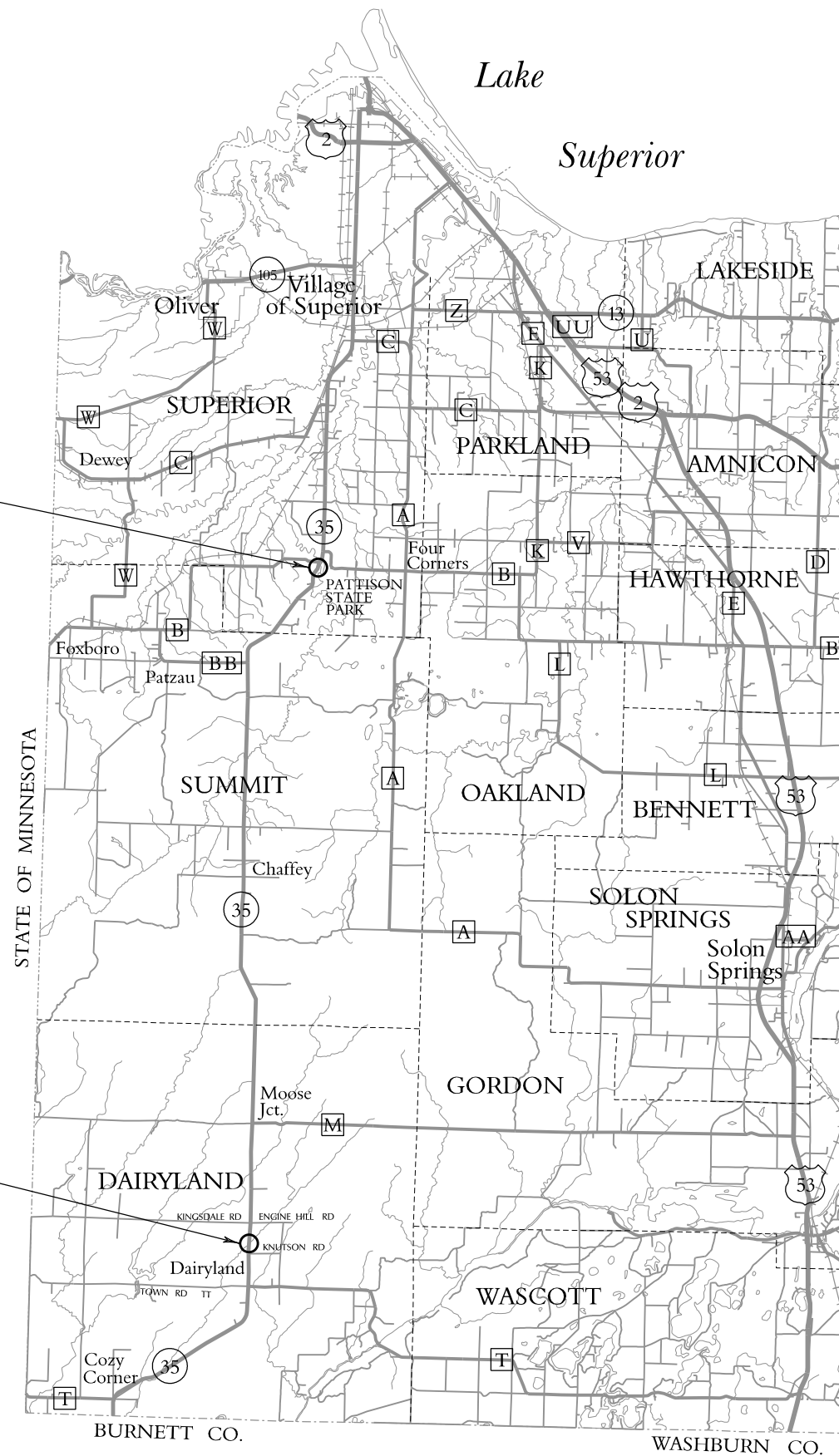


PROJECT 8010-08-72 LOCATION

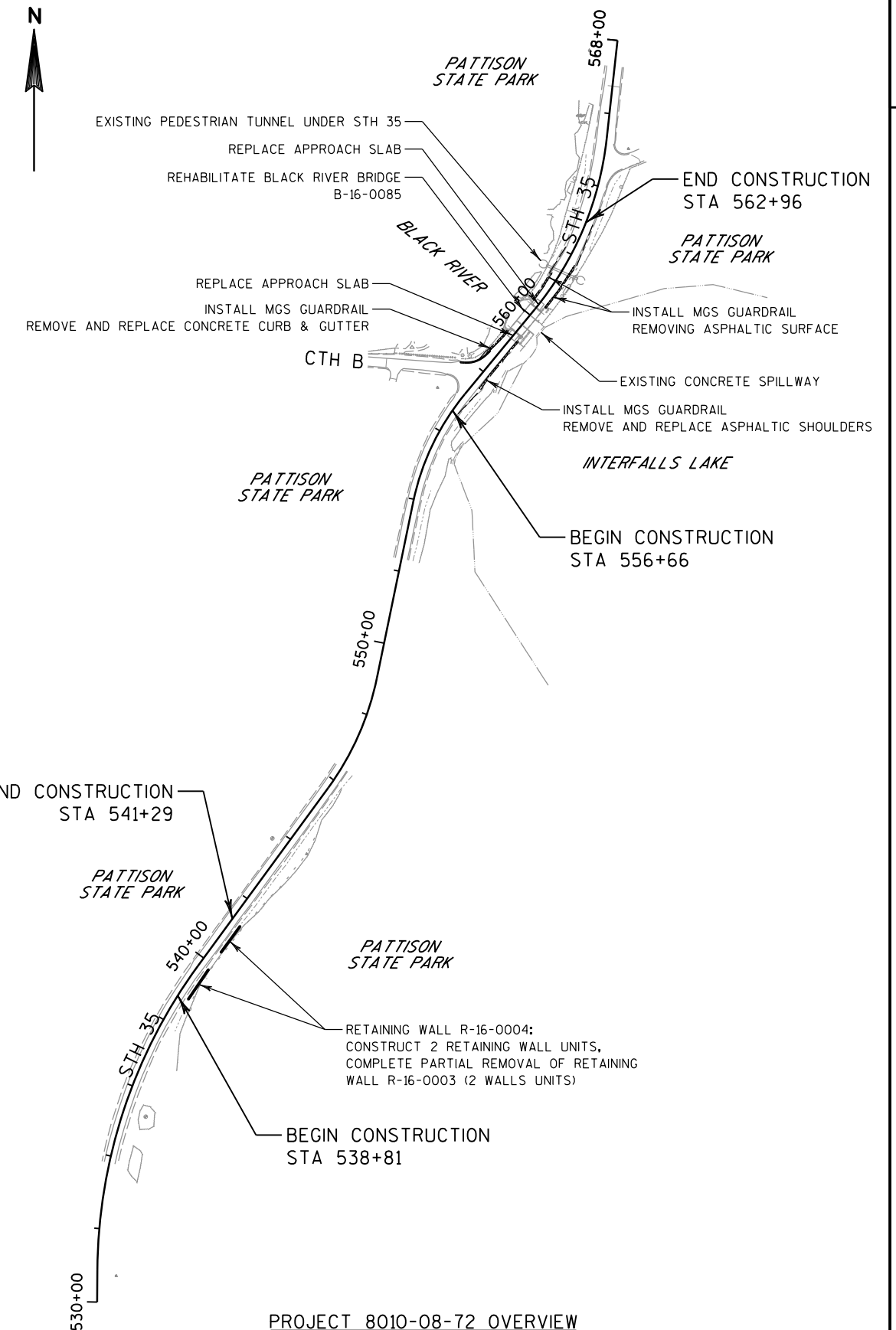
BLACK RIVER BRIDGE B-16-0085:
REHABILITATE BRIDGE B-16-0085, RECONSTRUCT
APPROACH SLABS, AND REPLACE GUARDRAIL

RETAINING WALL R-16-0004:
CONSTRUCT 2 RETAINING WALL UNITS,
COMPLETE PARTIAL REMOVAL OF RETAINING WALL
R-16-0003 (2 WALLS UNITS)

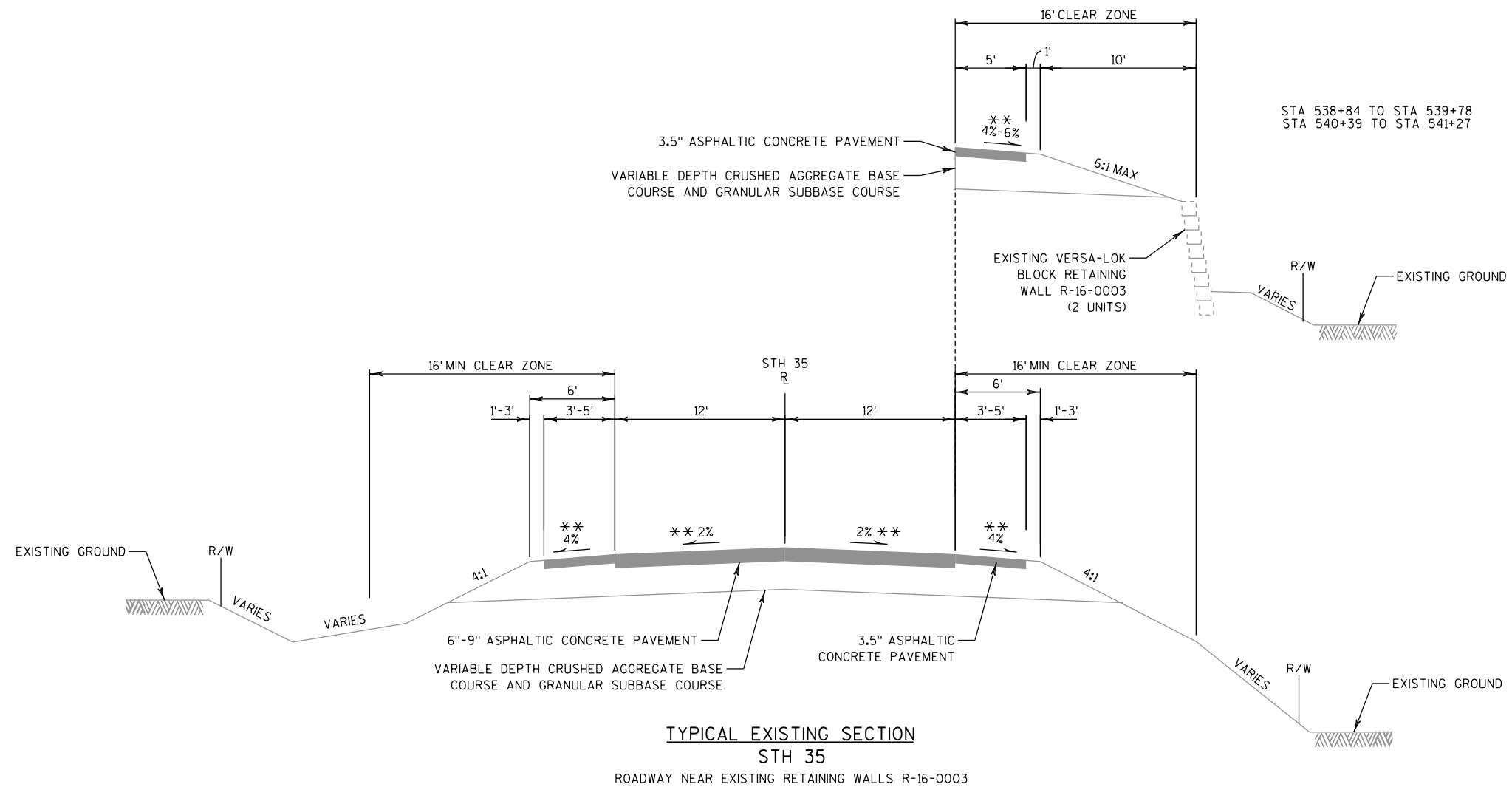
TIED PROJECT 8010-02-75 LOCATION
REMOVE EXISTING CHASE CREEK BRIDGE B-16-0007
CONSTRUCT PROPOSED STRUCTURE B-16-0136
AND RECONSTRUCT ROADWAY APPROACHES



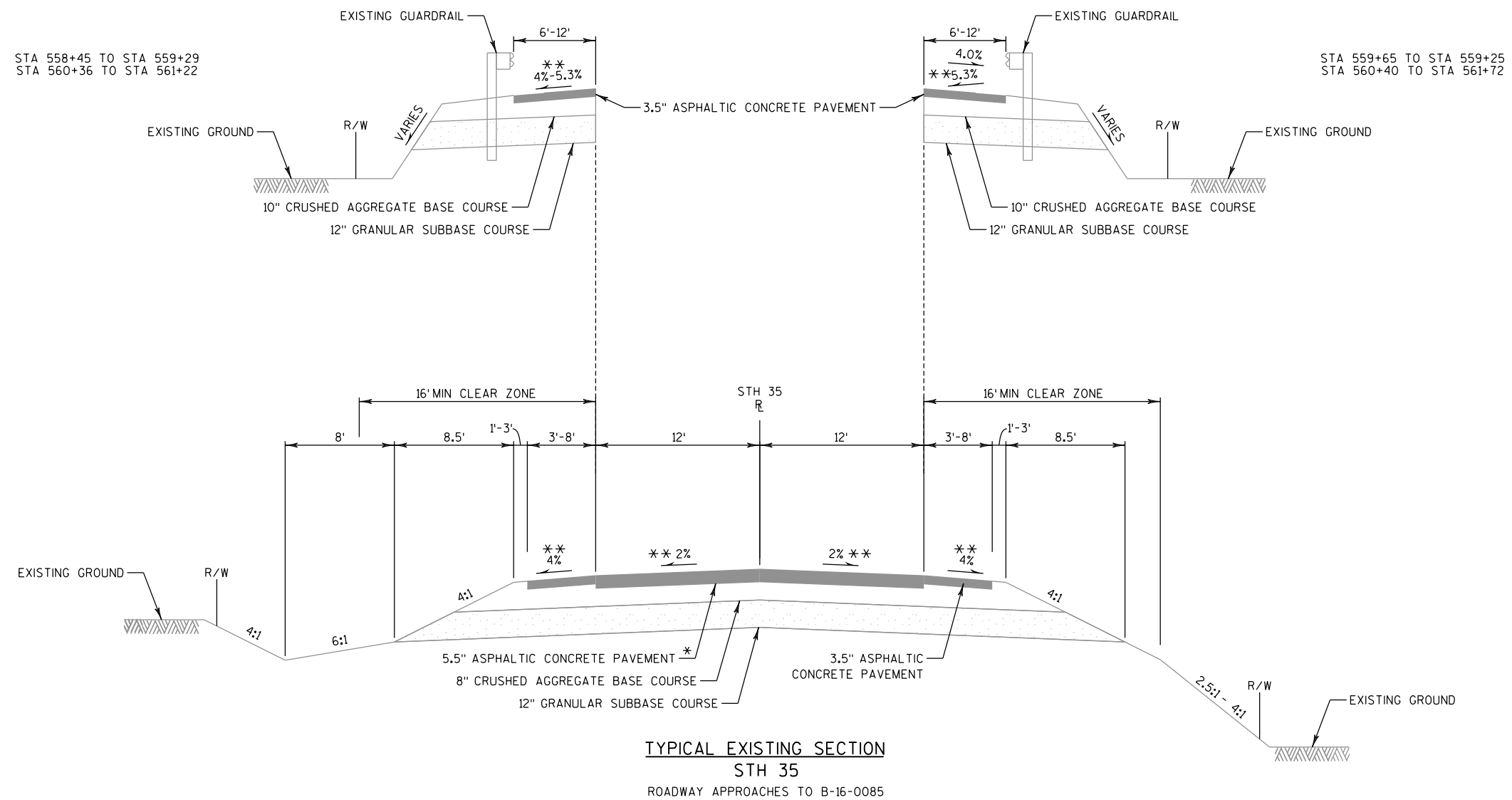
TIED PROJECT OVERVIEW



PROJECT 8010-08-72 OVERVIEW

**NOTE:**

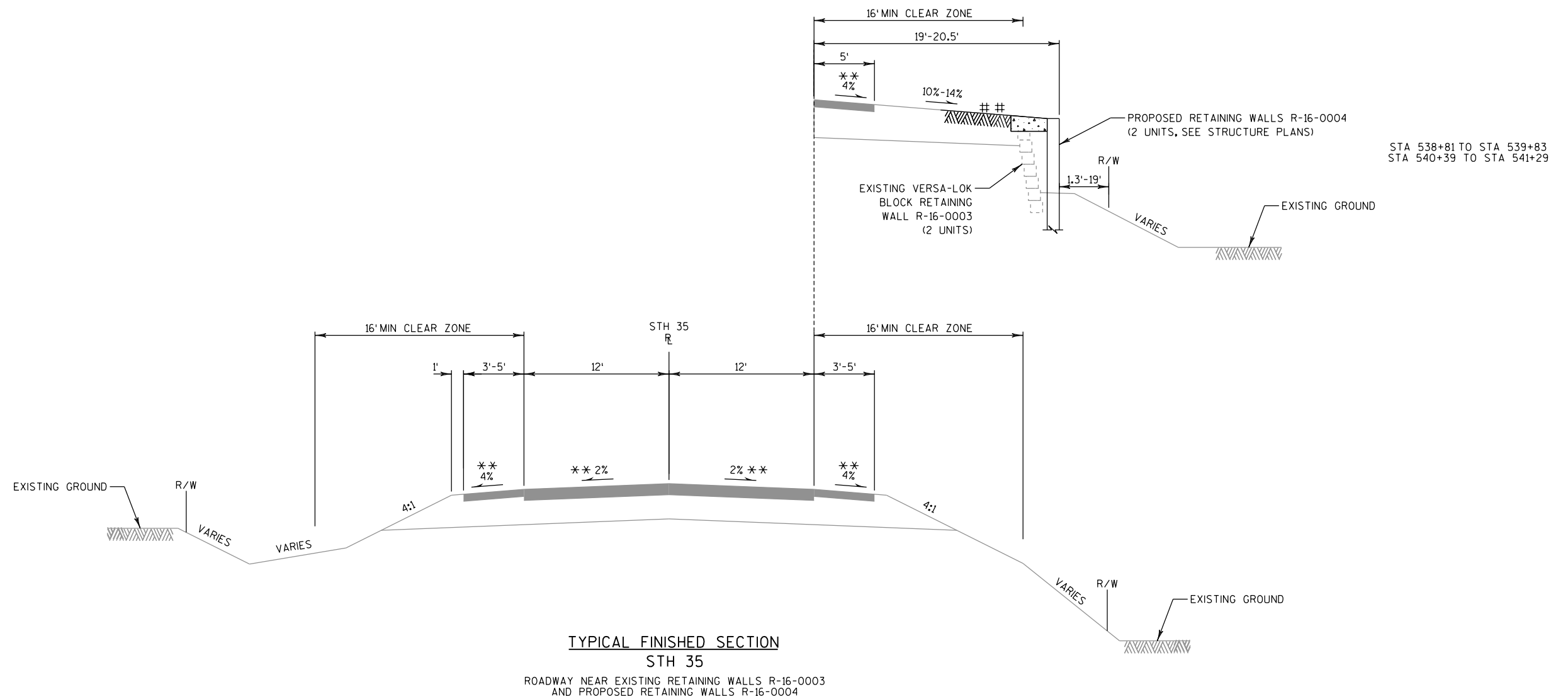
** CROSS SLOPE VARIES DUE TO SUPERELEVATION



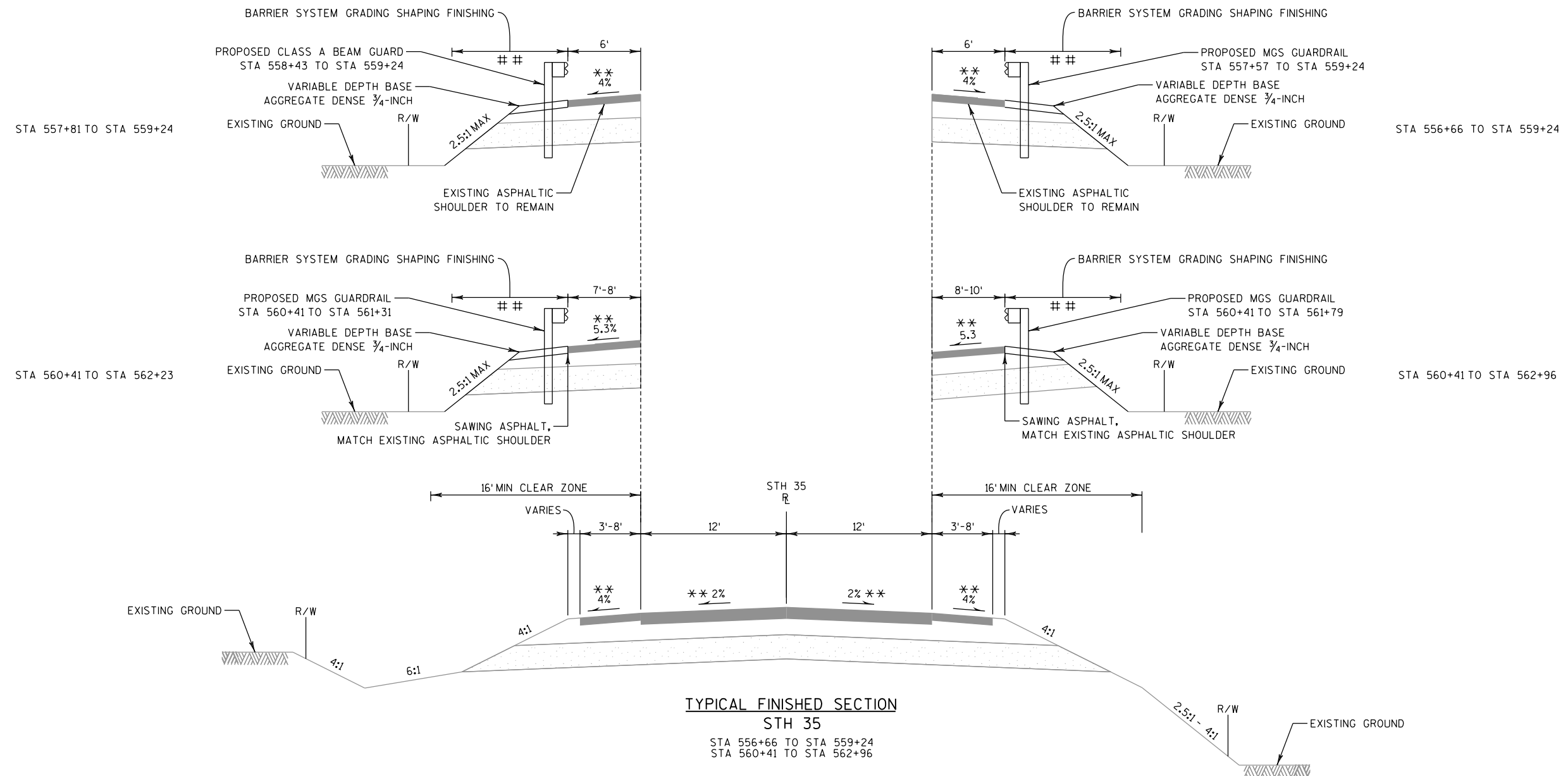
NOTES:

* STRUCTURE B-16-0085 HAS CONCRETE APPROACH SLABS, SEE PLAN SHEETS FOR LOCATIONS

** CROSS SLOPE VARIES DUE TO SUPERELEVATION

**NOTES:**

- ** CROSS SLOPE VARIES DUE TO SUPERELEVATION
- ## FINISH DISTURBED AREAS WITH EROSION MAT CLASS 1 TYPE B AND OTHER FINISHING ITEMS WHICH ARE INCIDENTAL TO SHAPING AND FINISHING RETAINING WALL

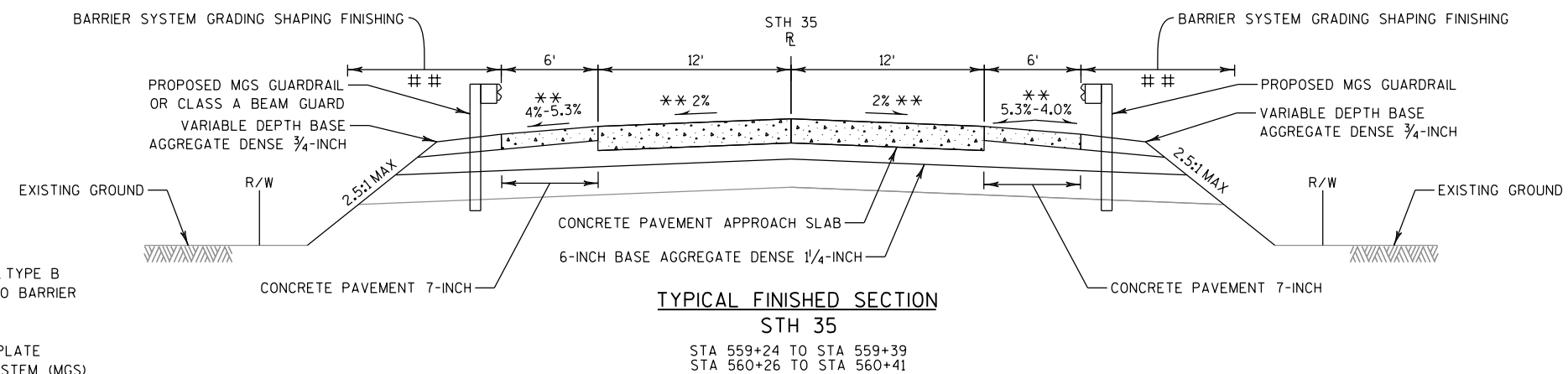


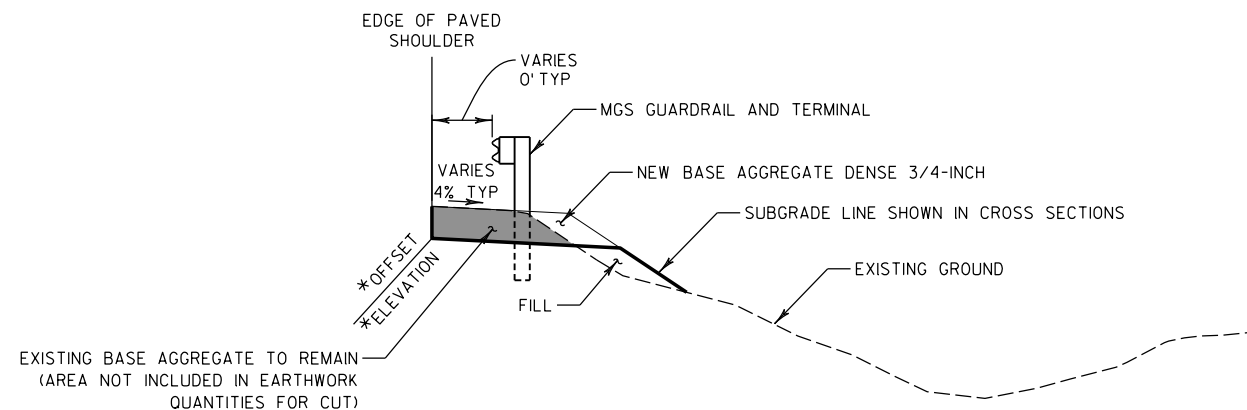
NOTES:

** CROSS SLOPE VARIES DUE TO SUPERELEVATION

FINISH DISTURBED AREAS WITH EROSION MAT CLASS 1 TYPE B AND OTHER FINISHING ITEMS WHICH ARE INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING

SEE CONSTRUCTION DETAILS AND SDD'S FOR STEEL PLATE BEAM GUARD, CLASS "A" AND MIDWEST GUARDRAIL SYSTEM (MGS)



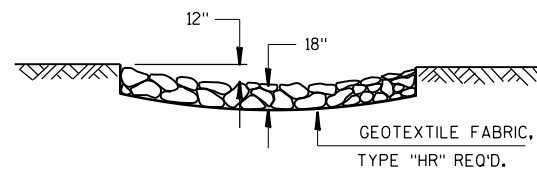


SHOULDER WIDENING EARTHWORK & BASE AGGREGATE FOR GUARDRAIL DETAIL

NOTES:
GUARDRAIL INSTALLATION TO BE MEASURED FROM REFERENCE LINE

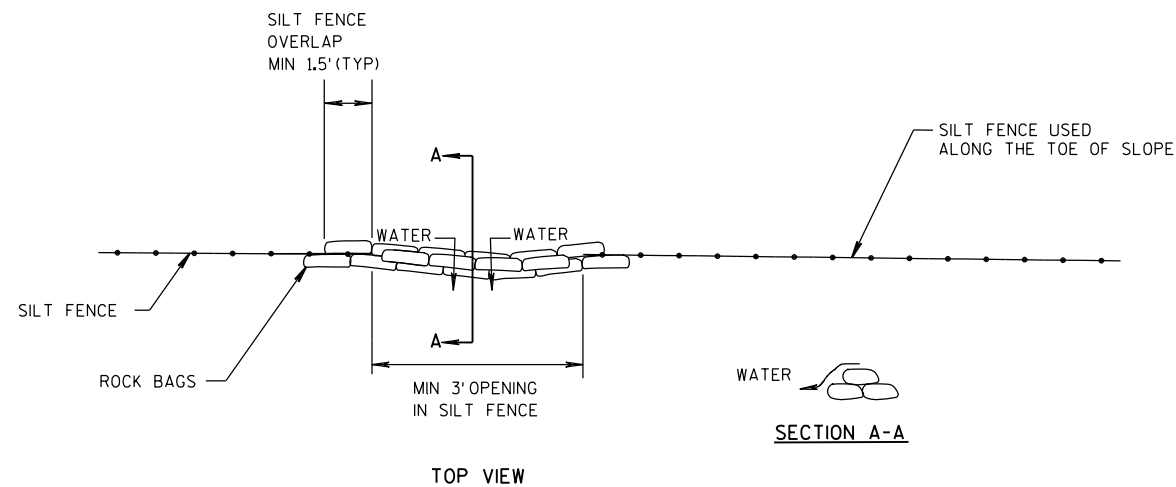
BENCH FILL AS REQUIRED PER STANDARD SPECIFICATION 205.3.2(4)

* OFFSET AND ELEVATION PROVIDED FOR REFERENCE ONLY ON CROSS SECTIONS



MEDIUM RANDOM RIPRAP TREATMENT REPLACEMENT

NOTE:
SEE EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION AND FOR DIMENSIONS



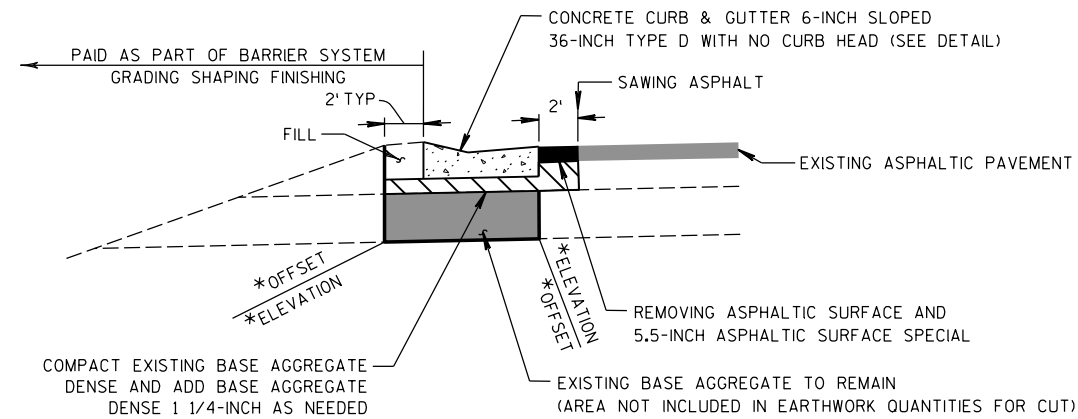
ROCK BAGS SILT FENCE RELIEF DETAIL
PAID AS ROCK BAGS

NOTE:
SEE EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION

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 = 2.92 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.35 ACRES

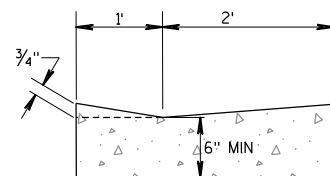


DETAIL OF ASPHALTIC SURFACE PATCH AT CURB & GUTTER INSTALLATION AREAS

STH 35/CTH B, NW QUADRANT

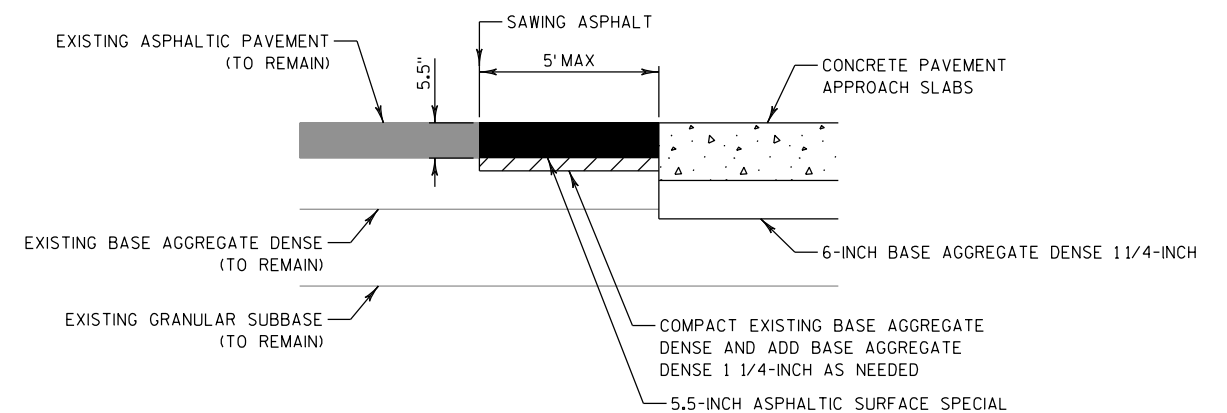
NOTE:

* OFFSET AND ELEVATION PROVIDED FOR
REFERENCE ONLY ON CROSS SECTIONS



CONCRETE CURB & GUTTER 36-INCH SLOPED TYPE D WITH NO CURB HEAD

STA 557+76 TO STA 558+55, LT
NO CURB HEAD ALLOWED IN FRONT OF GUARDRAIL TERMINAL
TO BE PAID FOR AS CONCRETE CURB & GUTTER 36-INCH SLOPED TYPE D
(FOR DETAILS NOT SHOWN, SEE SDD CONCRETE CURB,
CONCRETE CURB & GUTTER AND TIES)



DETAIL OF MAINLINE CONSTRUCTION JOINT AT CONCRETE PAVEMENT APPROACH SLABS

STA 558+19 TO STA 558+24
STA 560+41 TO STA 560+46

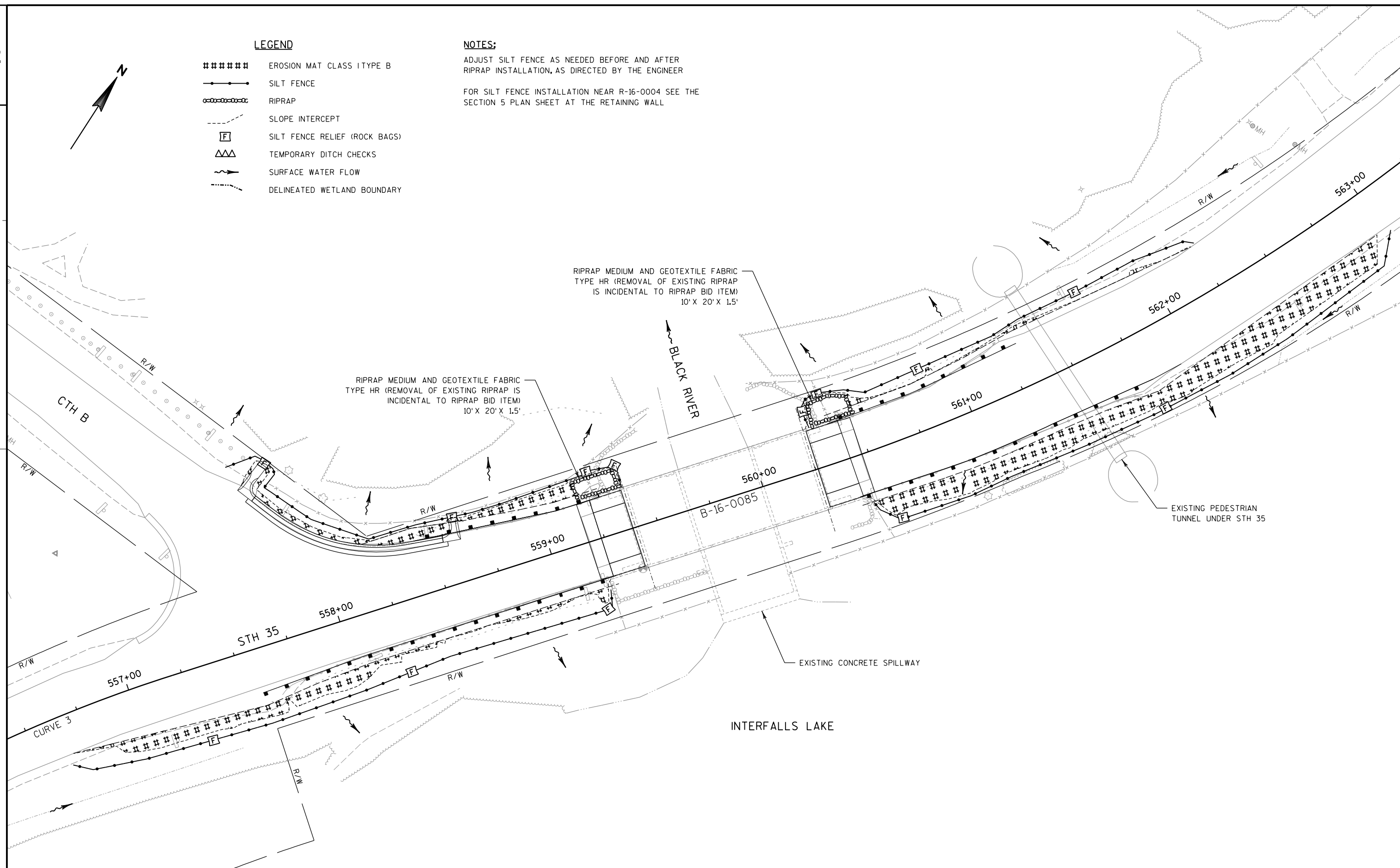
LEGEND

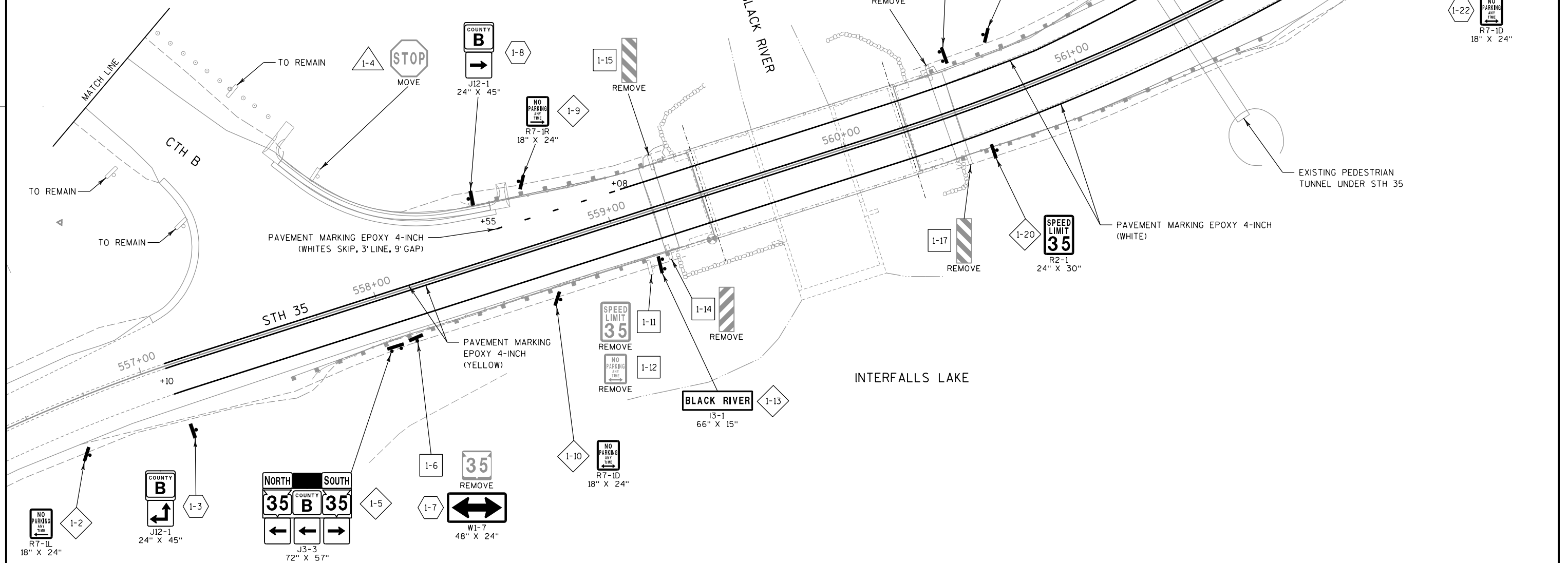
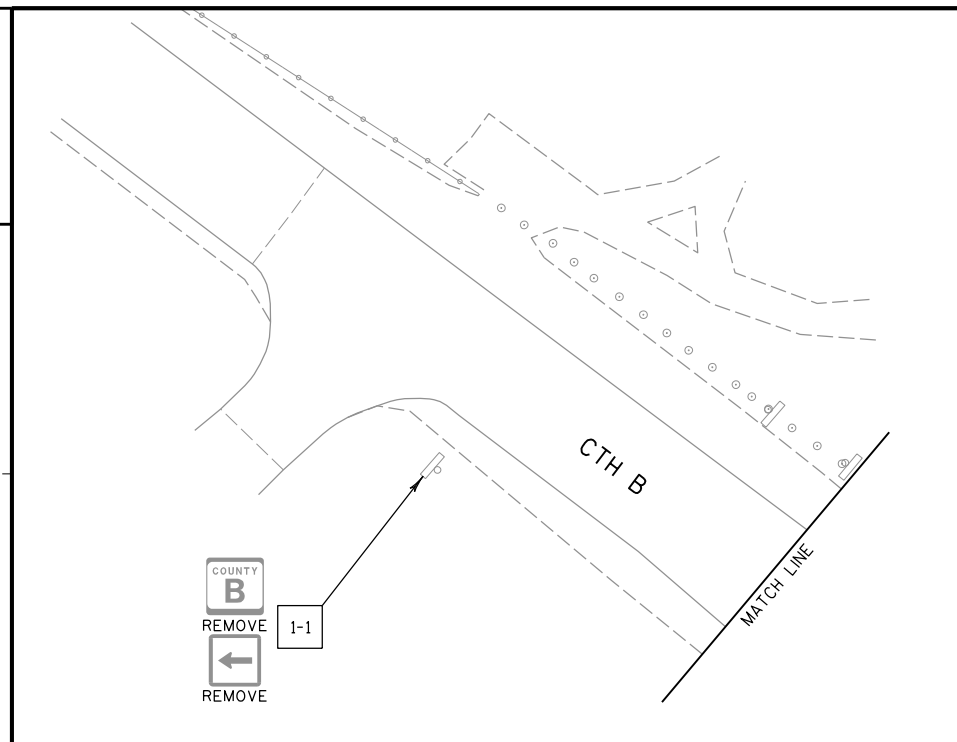
- ##### EROSION MAT CLASS I TYPE B
—●— SILT FENCE
—○— RIPRAP
- - - SLOPE INTERCEPT
[F] SILT FENCE RELIEF (ROCK BAGS)
△△△ TEMPORARY DITCH CHECKS
~> SURFACE WATER FLOW
- - - DELINEATED WETLAND BOUNDARY

NOTES:

ADJUST SILT FENCE AS NEEDED BEFORE AND AFTER
RIPRAP INSTALLATION, AS DIRECTED BY THE ENGINEER

FOR SILT FENCE INSTALLATION NEAR R-16-0004 SEE THE
SECTION 5 PLAN SHEET AT THE RETAINING WALL





LEGEND

- | | |
|---|--|
|  | EXISTING PAVEMENT MARKING |
|  | EXISTING SIGN MOUNTED ON SINGLE POST |
|  | PROPOSED SIGN MOUNTED ON SINGLE/DOUBLE SUPPORT |
|  | SIGN - PLACE NEW |
|  | SIGN - REMOVE |
|  | SIGN - REMOVE AND REPLACE |
|  | SIGN - MOVE |

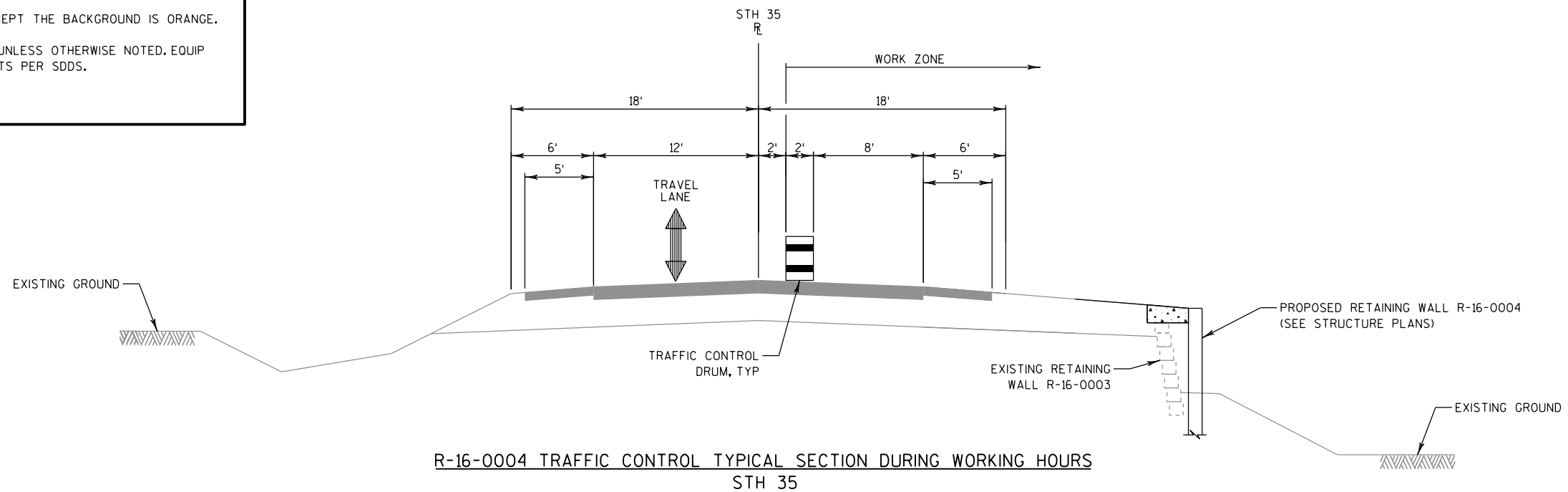
NOTES:

SEE SDD "PAVEMENT MARKING (MAINLINE)" FOR EDGE LINE AND
NO PASSING CENTERLINE PERMANENT PAVEMENT MARKING

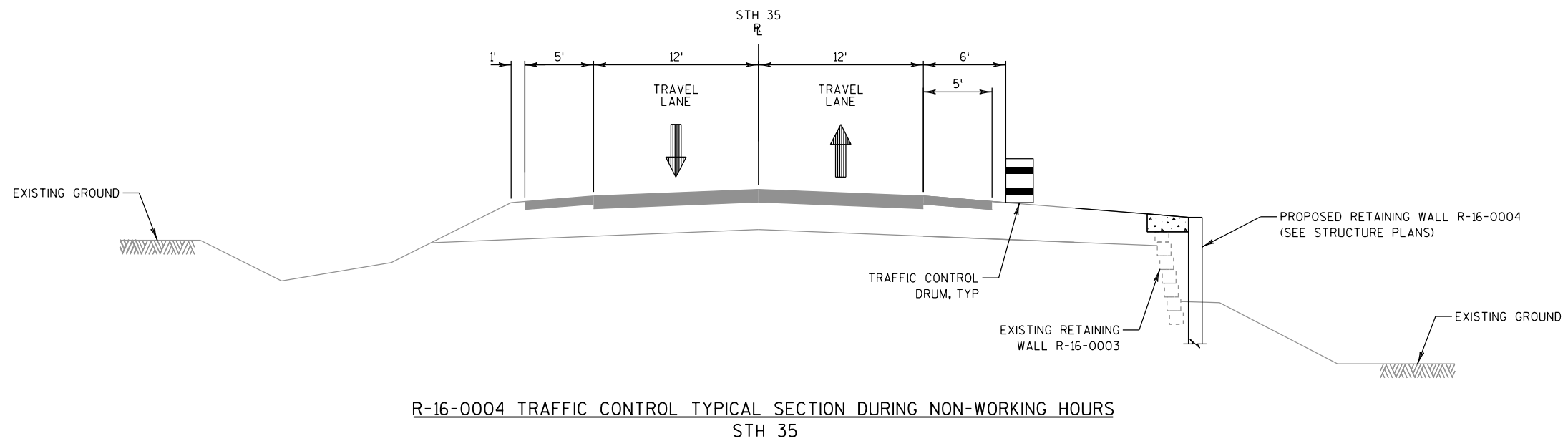
EXISTING SIGNS NOT SHOWN ARE TO REMAIN

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.



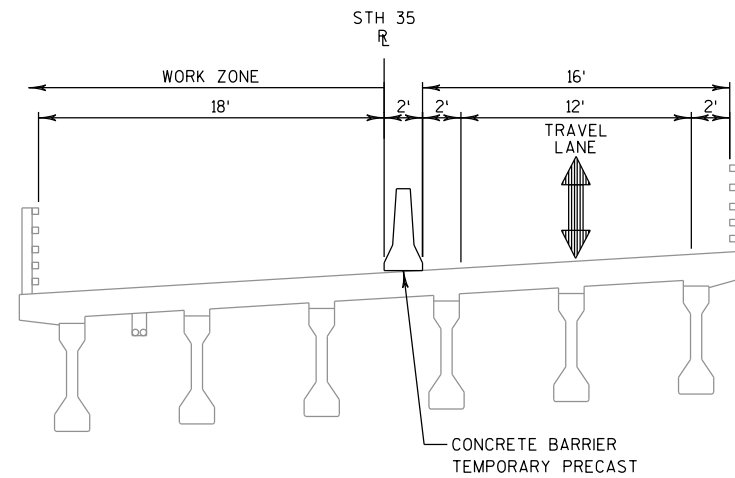
R-16-0004 TRAFFIC CONTROL TYPICAL SECTION DURING WORKING HOURS
STH 35



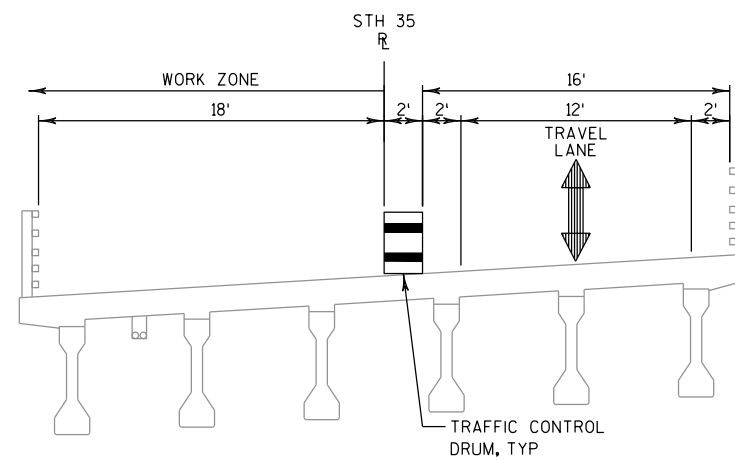
R-16-0004 TRAFFIC CONTROL TYPICAL SECTION DURING NON-WORKING HOURS
STH 35

NOTE:

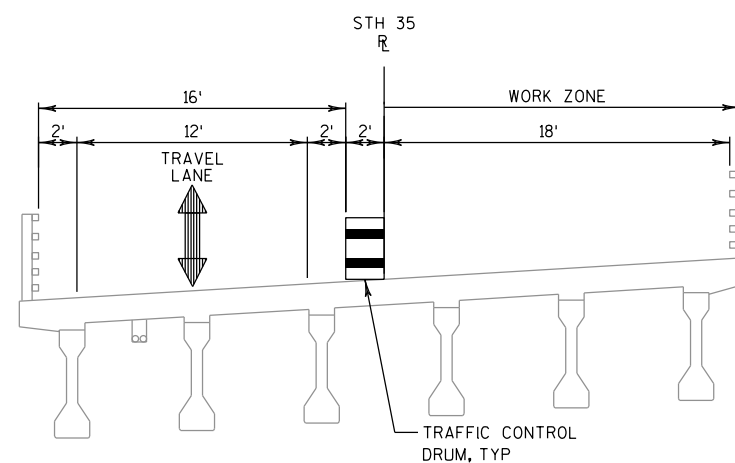
SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)" AND "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY"



B-16-0085 TRAFFIC CONTROL TYPICAL SECTION - STAGE B1
STH 35



B-16-0085 TRAFFIC CONTROL TYPICAL SECTION - STAGE B2
STH 35



B-16-0085 TRAFFIC CONTROL TYPICAL SECTION - STAGE B3
STH 35

NOTES:

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

SEE TRAFFIC CONTROL PLAN SHEETS FOR ADDITIONAL INFORMATION AND APPLICABLE SDDS.

SEE SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC" FOR SIDEROAD APPROACH WARNING SIGNS.

ANY DROP OFFS NOT BEHIND BARRIER SHALL BE FILLED WITH BASE AGGREGATE AT A 3:1 MAX SLOPE DURING NON-WORKING HOURS.

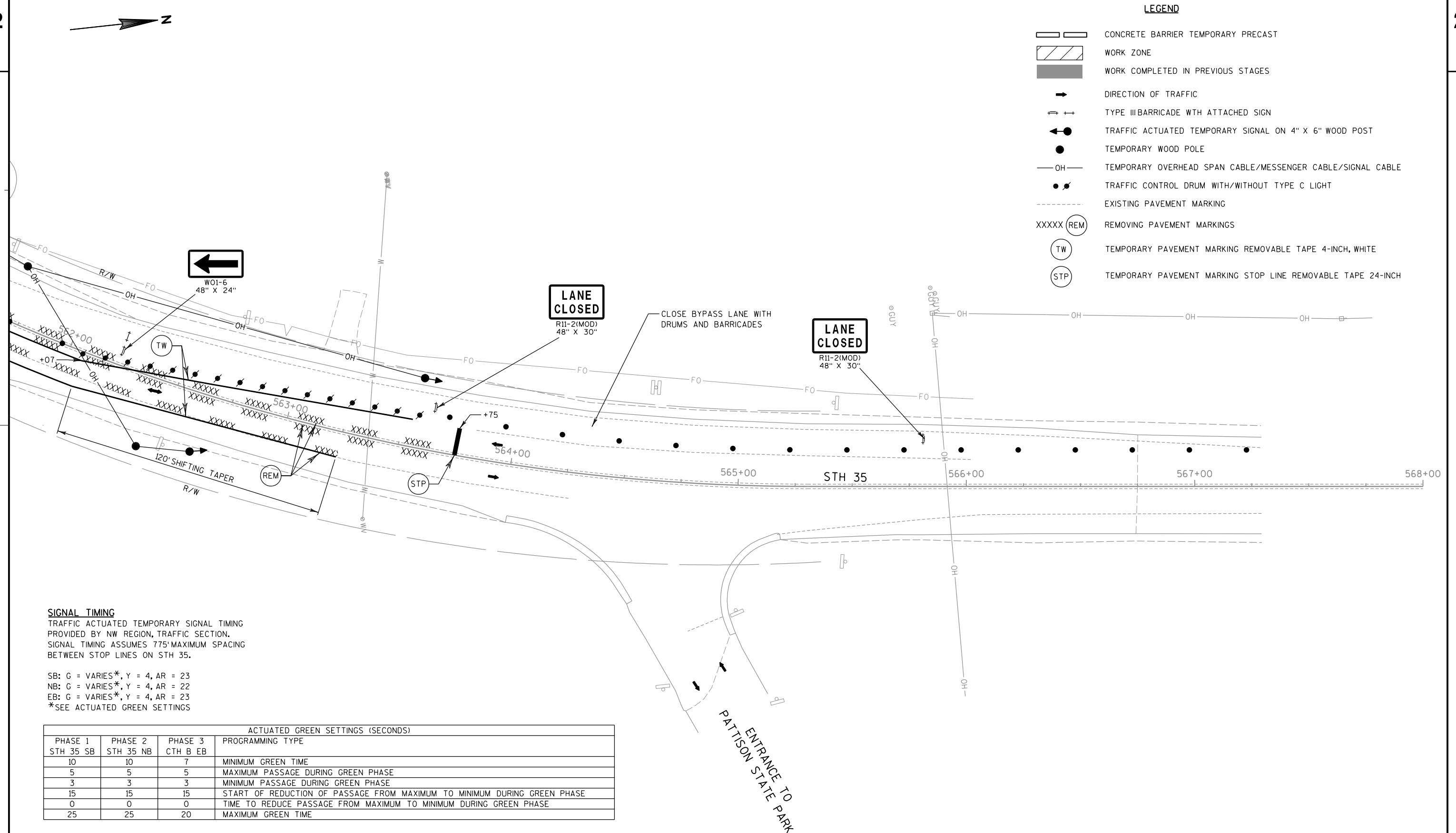
SIGNING FOR PATTISON STATE PARK

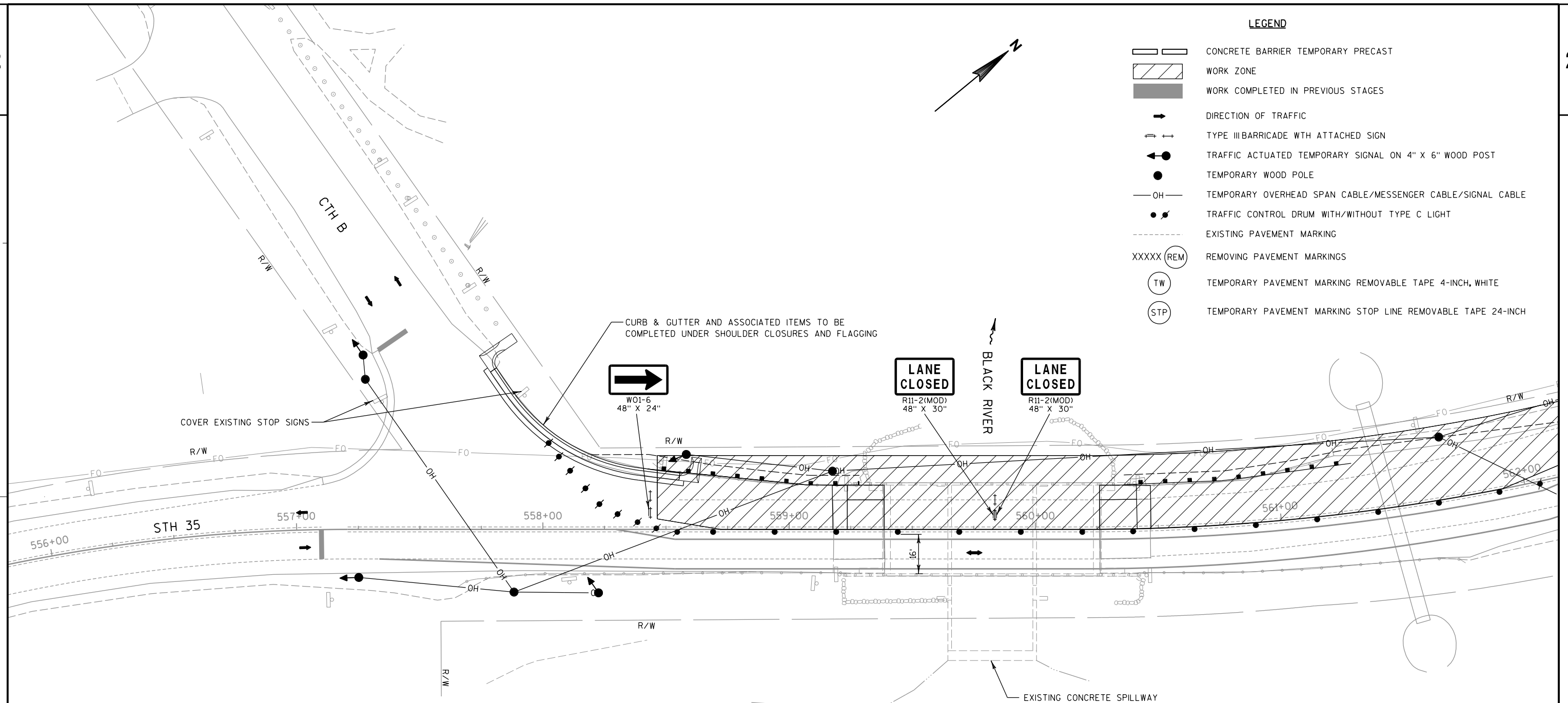
PLACE R10-61 (MOD) SIGNS MOUNTED ON TEMPORARY SIGN SUPPORTS ON CTH B TO THE EAST AND WEST OF STH 35 AND ON NB AND SB STH 35 AFTER THE ROADWORK AHEAD SIGN (W20-1) FOR THE DURATION OF THE PROJECT (PAID FOR AS TRAFFIC CONTROL SIGNS).

ROAD OPEN TO
PATTISON
STATE PARK

R10-61 (MOD)
60" X 41.5"







SIGNAL TIMING

TRAFFIC ACTUATED TEMPORARY SIGNAL TIMING
PROVIDED BY NW REGION, TRAFFIC SECTION.
SIGNAL TIMING ASSUMES 775' MAXIMUM SPACING
BETWEEN STOP LINES ON STH 35.

SB: G = VARIES*, Y = 4, AR = 23
NB: G = VARIES*, Y = 4, AR = 22
EB: G = VARIES*, Y = 4, AR = 23
*SEE ACTUATED GREEN SETTINGS

ACTUATED GREEN SETTINGS (SECONDS)			
PHASE 1 STH 35 SB	PHASE 2 STH 35 NB	PHASE 3 CTH B EB	PROGRAMMING TYPE
10	10	7	MINIMUM GREEN TIME
5	5	5	MAXIMUM PASSAGE DURING GREEN PHASE
3	3	3	MINIMUM PASSAGE DURING GREEN PHASE
15	15	15	START OF REDUCTION OF PASSAGE FROM MAXIMUM TO MINIMUM DURING GREEN PHASE
0	0	0	TIME TO REDUCE PASSAGE FROM MAXIMUM TO MINIMUM DURING GREEN PHASE
25	25	20	MAXIMUM GREEN TIME

WORK IN STAGE B2

COMPLETE WORK ON SOUTHBOUND STH 35:
CONSTRUCT CONCRETE APPROACHES, COMPLETE
GRADING, REMOVING AND REPLACING GUARDRAIL,
ASPHALTIC APPROACH PAVING, CURB & GUTTER,
FINISHING, AND EROSION CONTROL.

STAGE B2 TRAFFIC

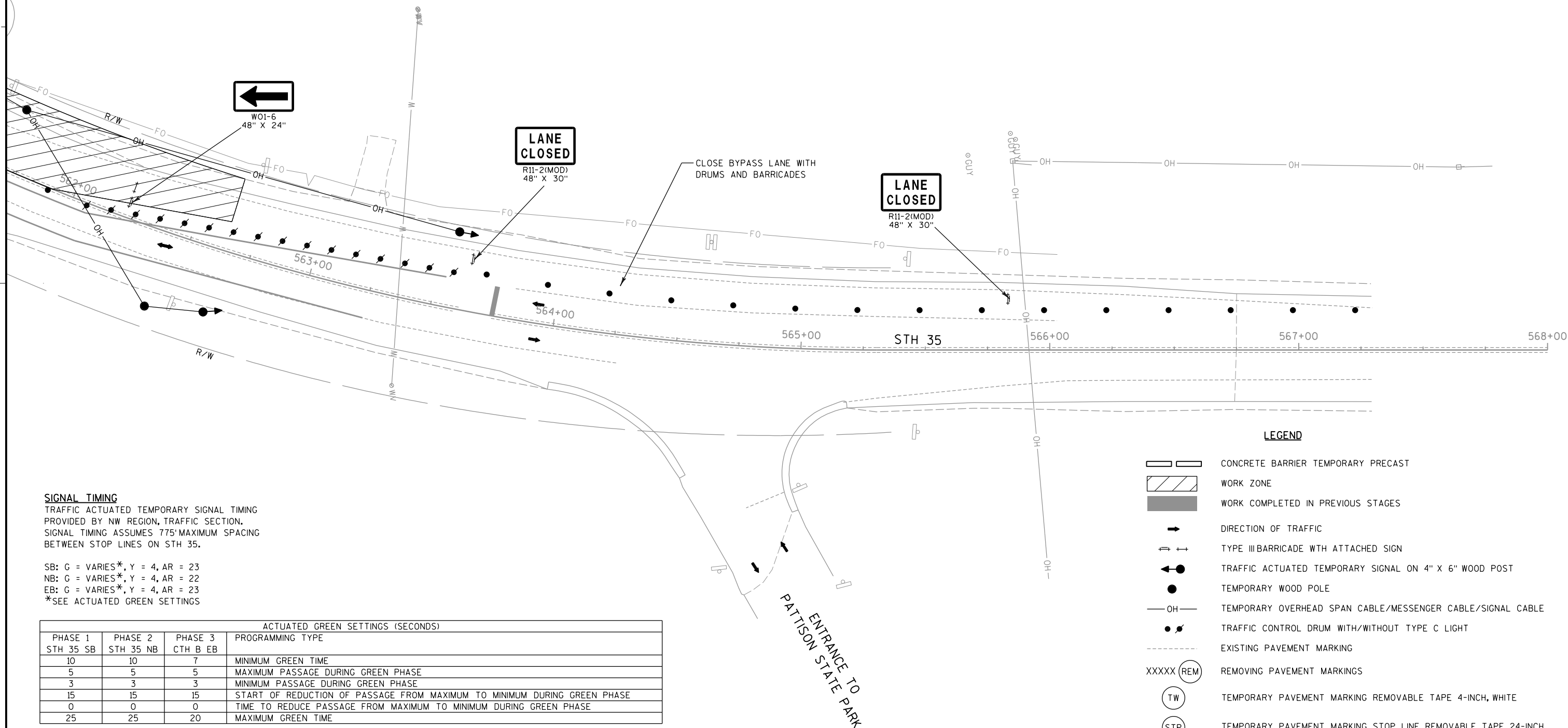
ONE-LANE BI-DIRECTIONAL STH 35 TRAFFIC
LOCATED PARTIALLY ON THE EXISTING PAVED
SHOULDER AND ON THE EXISTING NORTHBOUND STH
35 TRAVEL LANE, CONTROLLED BY TEMPORARY
SIGNALS AT BRIDGE.

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.

SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING
LANE, UNDIVIDED ROADWAY" FOR SHOULDER CLOSURES.



SIGNAL TIMING
TRAFFIC ACTUATED TEMPORARY SIGNAL TIMING
PROVIDED BY NW REGION, TRAFFIC SECTION.
SIGNAL TIMING ASSUMES 775' MAXIMUM SPACING
BETWEEN STOP LINES ON STH 35.

SB: G = VARIES*, Y = 4, AR = 23
NB: G = VARIES*, Y = 4, AR = 22
EB: G = VARIES*, Y = 4, AR = 23
*SEE ACTUATED GREEN SETTINGS

ACTUATED GREEN SETTINGS (SECONDS)			
PHASE 1 STH 35 SB	PHASE 2 STH 35 NB	PHASE 3 CTH B EB	PROGRAMMING TYPE
10	10	7	MINIMUM GREEN TIME
5	5	5	MAXIMUM PASSAGE DURING GREEN PHASE
3	3	3	MINIMUM PASSAGE DURING GREEN PHASE
15	15	15	START OF REDUCTION OF PASSAGE FROM MAXIMUM TO MINIMUM DURING GREEN PHASE
0	0	0	TIME TO REDUCE PASSAGE FROM MAXIMUM TO MINIMUM DURING GREEN PHASE
25	25	20	MAXIMUM GREEN TIME

LEGEND

CONCRETE BARRIER TEMPORARY PRECAST

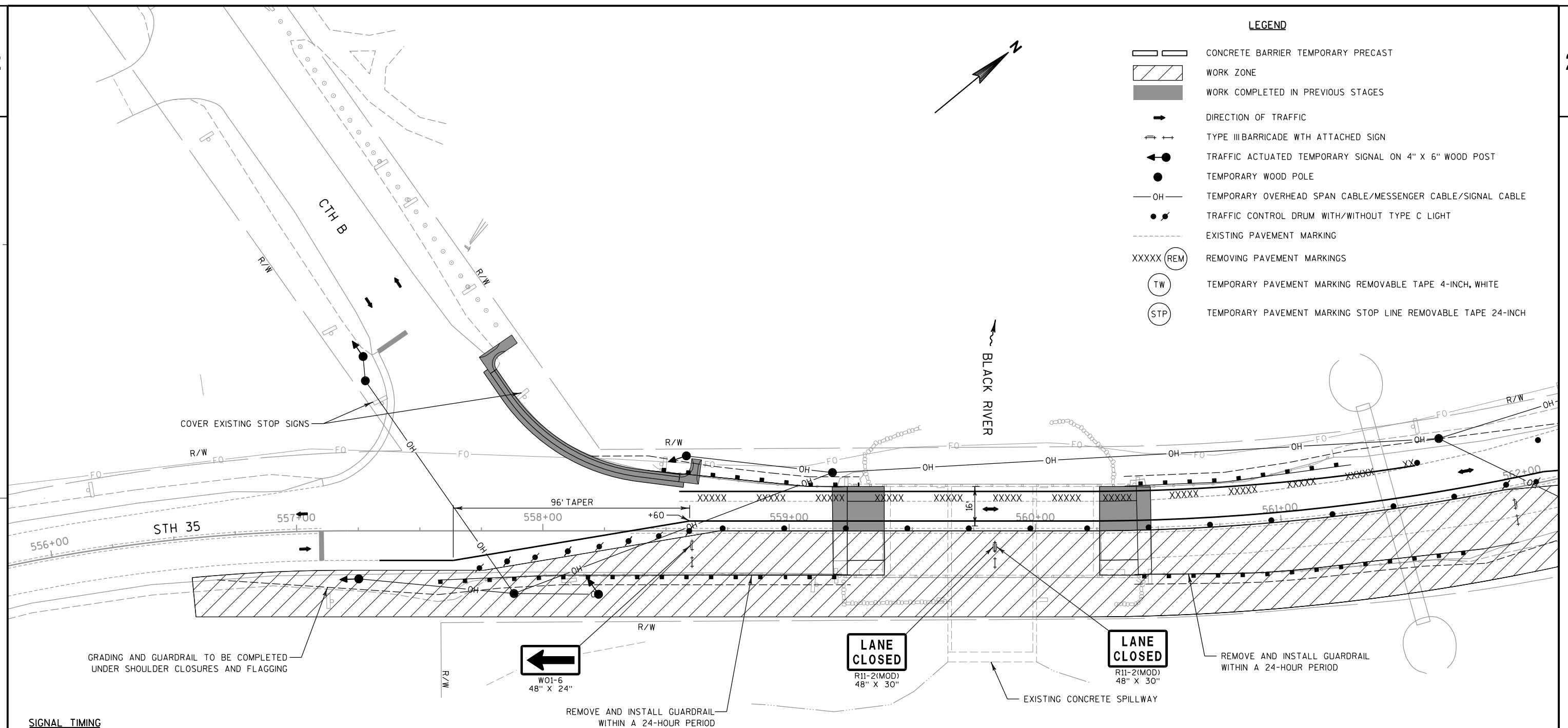
WORK ZONE

XXXXX

REM

TW

STP

**SIGNAL TIMING**

TRAFFIC ACTUATED TEMPORARY SIGNAL TIMING
PROVIDED BY NW REGION, TRAFFIC SECTION.
SIGNAL TIMING ASSUMES 775' MAXIMUM SPACING
BETWEEN STOP LINES ON STH 35.

SB: G = VARIES*, Y = 4, AR = 23

NB: G = VARIES*, Y = 4, AR = 22

EB: G = VARIES*, Y = 4, AR = 23

*SEE ACTUATED GREEN SETTINGS

ACTUATED GREEN SETTINGS (SECONDS)			
PHASE 1 STH 35 SB	PHASE 2 STH 35 NB	PHASE 3 CTH B EB	PROGRAMMING TYPE
10	10	7	MINIMUM GREEN TIME
5	5	5	MAXIMUM PASSAGE DURING GREEN PHASE
3	3	3	MINIMUM PASSAGE DURING GREEN PHASE
15	15	15	START OF REDUCTION OF PASSAGE FROM MAXIMUM TO MINIMUM DURING GREEN PHASE
0	0	0	TIME TO REDUCE PASSAGE FROM MAXIMUM TO MINIMUM DURING GREEN PHASE
25	25	20	MAXIMUM GREEN TIME

WORK IN STAGE B3

COMPLETE WORK ON NORTHBOUND STH 35:
CONSTRUCT CONCRETE APPROACHES, COMPLETE
GRADING, REMOVING AND REPLACING GUARDRAIL,
ASPHALTIC APPROACH PAVING, FINISHING, AND
EROSION CONTROL.

STAGE B3 TRAFFIC

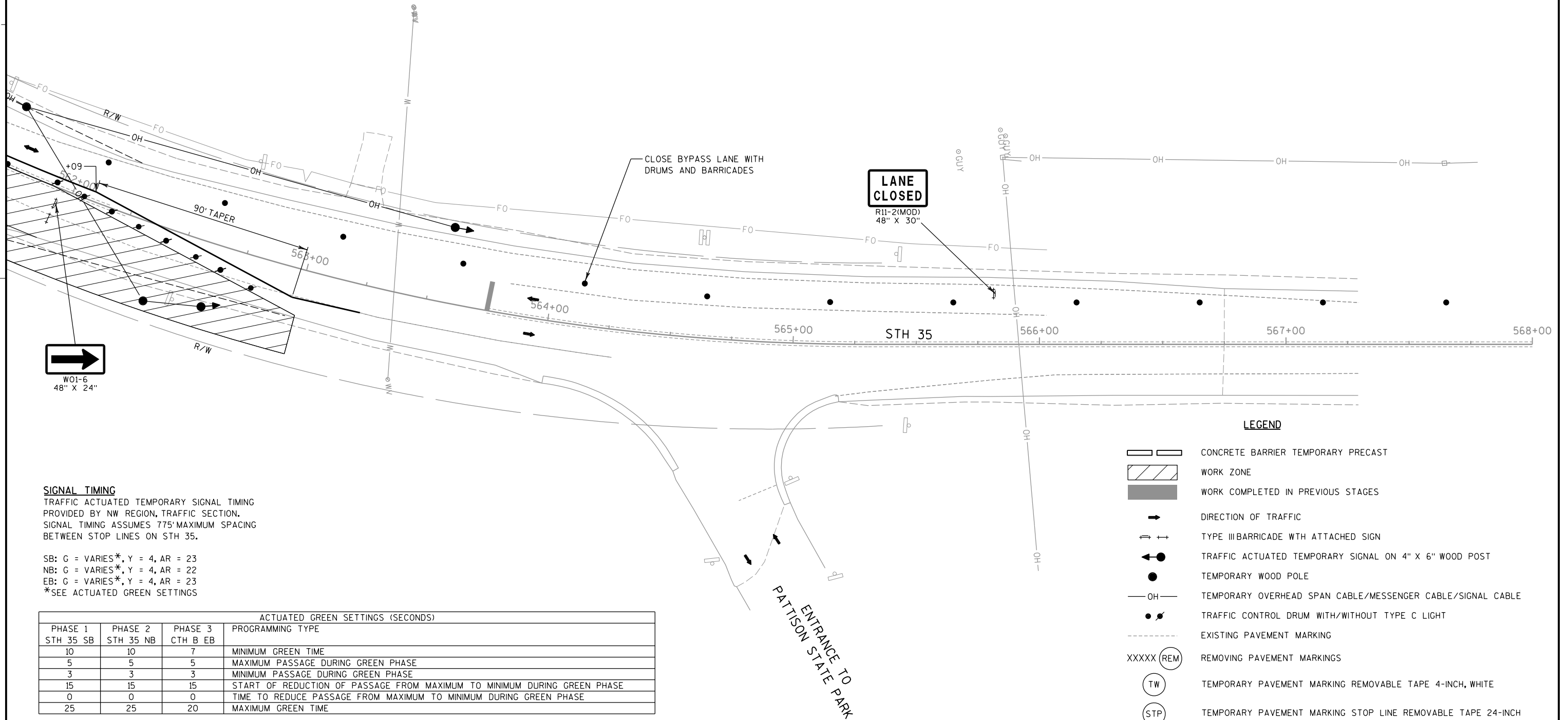
ONE-LANE BI-DIRECTIONAL STH 35 TRAFFIC
LOCATED PARTIALLY ON THE EXISTING PAVED
SHOULDER AND ON THE EXISTING SOUTHBOUND STH
35 TRAVEL LANE, CONTROLLED BY TEMPORARY
SIGNALS AT BRIDGE.

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.

SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING
LANE, UNDIVIDED ROADWAY" FOR SHOULDER CLOSURES.



SIGNAL TIMING
TRAFFIC ACTUATED TEMPORARY SIGNAL TIMING
PROVIDED BY NW REGION, TRAFFIC SECTION.
SIGNAL TIMING ASSUMES 775' MAXIMUM SPACING
BETWEEN STOP LINES ON STH 35.

SB: G = VARIES*, Y = 4, AR = 23
NB: G = VARIES*, Y = 4, AR = 22
EB: G = VARIES*, Y = 4, AR = 23
*SEE ACTUATED GREEN SETTINGS

ACTUATED GREEN SETTINGS (SECONDS)			
PHASE 1 STH 35 SB	PHASE 2 STH 35 NB	PHASE 3 CTH B EB	PROGRAMMING TYPE
10	10	7	MINIMUM GREEN TIME
5	5	5	MAXIMUM PASSAGE DURING GREEN PHASE
3	3	3	MINIMUM PASSAGE DURING GREEN PHASE
15	15	15	START OF REDUCTION OF PASSAGE FROM MAXIMUM TO MINIMUM DURING GREEN PHASE
0	0	0	TIME TO REDUCE PASSAGE FROM MAXIMUM TO MINIMUM DURING GREEN PHASE
25	25	20	MAXIMUM GREEN TIME

- LEGEND**
- CONCRETE BARRIER TEMPORARY PRECAST
 - WORK ZONE
 - WORK COMPLETED IN PREVIOUS STAGES
 - DIRECTION OF TRAFFIC
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TRAFFIC ACTUATED TEMPORARY SIGNAL ON 4" X 6" WOOD POST
 - TEMPORARY WOOD POLE
 - TEMPORARY OVERHEAD SPAN CABLE/MESSENGER CABLE/SIGNAL CABLE
 - TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE C LIGHT
 - EXISTING PAVEMENT MARKING
 - REMOVING PAVEMENT MARKINGS
 - TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH, WHITE
 - TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH

3

DATE 30SEP15		E S T I M A T E O F Q U A N T I T I E S			
LINE		8010-08-72			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0050	204.0100	Removing Pavement	SY	110.000	110.000
0060	204.0110	Removing Asphaltic Surface	SY	115.000	115.000
0070	204.0150	Removing Curb & Gutter	LF	90.000	90.000
0080	204.9105.S	Removing (item description) 01. Flashing	LS	1.000	1.000
0120	209.0100	Backfill Granular	CY	30.000	30.000
0160	213.0100	Finishing Roadway (project) 02. 8010-08-72	EACH	1.000	1.000
0170	305.0110	Base Aggregate Dense 3/4-Inch	TON	100.000	100.000
0180	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	80.000	80.000
0190	415.0070	Concrete Pavement 7-Inch	SY	40.000	40.000
0200	415.0410	Concrete Pavement Approach Slab	SY	80.000	80.000
0210	455.0605	Tack Coat	GAL	4.000	4.000
0230	465.0315	Asphaltic Flumes	SY	15.000	15.000
0280	504.0500	Concrete Masonry Retaining Walls	CY	17.000	17.000
0340	506.3005	Welded Stud Shear Connectors 7/8x4-Inch	EACH	127.000	127.000
0360	509.1500	Concrete Surface Repair	SF	25.000	25.000
0380	512.0500	Piling Steel Sheet Permanent Delivered	SF	2,820.000	2,820.000
0390	512.0600	Piling Steel Sheet Permanent Driven	SF	2,820.000	2,820.000
0420	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	90.000	90.000
0430	603.8000	Concrete Barrier Temporary Precast Delivered	LF	325.000	325.000
0440	603.8125	Concrete Barrier Temporary Precast Installed	LF	325.000	325.000
0450	606.0200	Riprap Medium	CY	20.000	20.000
0480	614.0010	Barrier System Grading Shaping Finishing	EACH	4.000	4.000
0500	614.0200	Steel Thrie Beam Structure Approach	LF	20.600	20.600
0510	614.0305	Steel Plate Beam Guard Class A	LF	12.500	12.500
0520	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	1.000	1.000
0530	614.0920	Salvaged Rail	LF	315.000	315.000
0540	614.0925	Salvaged Guardrail End Treatments	EACH	4.000	4.000
0550	614.2300	MGS Guardrail 3	LF	125.000	125.000
0560	614.2500	MGS Thrie Beam Transition	LF	118.200	118.200
0570	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0580	616.0404	Fence Chain Link Salvaged 4-FT	LF	30.000	30.000
0600	618.0100	Maintenance And Repair of Haul Roads (project) 02. 8010-08-72	EACH	1.000	1.000
0610	619.1000	Mobilization	EACH	0.350	0.350
0620	624.0100	Water	MGAL	2.000	2.000
0640	628.1504	Silt Fence	LF	1,465.000	1,465.000
0650	628.1520	Silt Fence Maintenance	LF	1,465.000	1,465.000
0660	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0670	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0680	628.2004	Erosion Mat Class I Type B	SY	750.000	750.000
0720	628.7570	Rock Bags	EACH	300.000	300.000
0770	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	15.000	15.000
0780	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	2.000	2.000
0790	637.2210	Signs Type II Reflective H	SF	83.500	83.500
0800	637.2230	Signs Type II Reflective F	SF	8.000	8.000
0810	638.2102	Moving Signs Type II	EACH	1.000	1.000
0820	638.2602	Removing Signs Type II	EACH	11.000	11.000
0830	638.3000	Removing Small Sign Supports	EACH	12.000	12.000
0840	638.4000	Moving Small Sign Supports	EACH	1.000	1.000
0850	642.5001	Field Office Type B	EACH	0.350	0.350

3

3

DATE 30SEP15		E S T I M A T E O F Q U A N T I T I E S			
LINE				8010-08-72	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0870	643.0100	Traffic Control (project) 02. 8010-08-72	EACH	1.000	1.000
0880	643.0300	Traffic Control Drums	DAY	2,115.000	2,115.000
0890	643.0420	Traffic Control Barricades Type III	DAY	231.000	231.000
0900	643.0705	Traffic Control Warning Lights Type A	DAY	462.000	462.000
0910	643.0715	Traffic Control Warning Lights Type C	DAY	749.000	749.000
0920	643.0900	Traffic Control Signs	DAY	1,263.000	1,263.000
0930	643.0920	Traffic Control Covering Signs Type II	EACH	2.000	2.000
0940	645.0120	Geotextile Fabric Type HR	SY	60.000	60.000
0950	646.0106	Pavement Marking Epoxy 4-Inch	LF	2,250.000	2,250.000
0960	646.0600	Removing Pavement Markings	LF	1,825.000	1,825.000
0970	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	2,025.000	2,025.000
0980	649.1400	Temporary Pavement Marking Stop Line Removable Tape 24-Inch	LF	24.000	24.000
1010	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	90.000	90.000
1030	650.6500	Construction Staking Structure Layout (structure) 02. R-16-0004	LS	1.000	1.000
1050	650.8000	Construction Staking Resurfacing Reference	LF	1,000.000	1,000.000
1070	650.9910	Construction Staking Supplemental Control (project) 02. 8010-08-72	LS	1.000	1.000
1100	661.0100	Temporary Traffic Signals for Bridges (structure) 02. B-16-0085	LS	1.000	1.000
1110	690.0150	Sawing Asphalt	LF	400.000	400.000
1120	690.0250	Sawing Concrete	LF	40.000	40.000
1130	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1170	SPV.0060	Special 01. Shaping and Finishing Retaining Wall	EACH	2.000	2.000
1180	SPV.0060	Special 02. Railing Tubular Type F-5 Anchorage	EACH	3.000	3.000
1190	SPV.0090	Special 01. Concrete Curb and Gutter Cure and Seal Treatment	LF	90.000	90.000
1200	SPV.0105	Special 01. Crack and Damage Survey Pedestrian Tunnel	LS	1.000	1.000
1210	SPV.0180	Special 01. Epoxy Sealer	SY	79.000	79.000
1220	SPV.0195	Special 01. Asphaltic Surface Special	TON	23.000	23.000

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REMOVING PAVEMENT

		204.0100
STATION - STATION	LOCATION	SY
CAT 0010		
559+19 - 559+39	LT&RT	55
560+26 - 560+46	LT&RT	55
TOTAL		110

REMOVING ASPHALTIC SURFACE

		204.0110
STATION - STATION	LOCATION	SY
CAT 0010		
557+74 - 558+63	LT	26
559+19 - 559+39	LT&RT	27
560+26 - 560+46	LT&RT	27
560+91 - 561+93	LT&RT	35
TOTAL		115

3

REMOVING CURB & GUTTER

		204.0150
STATION - STATION	LOCATION	LF
CAT 0010		
557+76 - 558+55	LT	90
TOTAL		90

BASE AGGREGATE DENSE ITEMS

		305.0110	305.0120		
	STATION - STATION	LOCATION	3/4-INCH TON	1 1/4-INCH TON	COMMENTS
CAT 0010					
	556+66 - 559+39	LT&RT	45	--	SHOULDER AND GUARDRAIL
	557+76 - 558+55	LT	--	8	CURB & GUTTER REPLACEMENT
	559+19 - 559+39	LT&RT	--	36	APPROACH WORK
	560+26 - 560+46	LT&RT	--	36	APPROACH WORK
	560+26 - 562+96	LT&RT	55	--	SHOULDER AND GUARDRAIL
TOTALS			100	80	

CONCRETE PAVEMENT ITEMS

		415.0070	415.0410
STATION - STATION	LOCATION	7-INCH SY	APPROACH SLAB SY
CAT 0010			
559+24 - 559+39	LT&RT	20	40
560+26 - 560+41	LT&RT	20	40
TOTALS		40	80

ASPHALTIC ITEMS

		455.0605	465.0315	SPV.0195.01	
		TACK	ASPHALTIC	ASPHALTIC	
		COAT	FLUMES	SURFACE	
STATION - STATION	LOCATION	GAL	SY	SPECIAL	TON
COMMENTS					
CAT 0010					
557+76	LT	--	9	--	
558+55	LT	--	6	--	
557+76 - 558+55	LT	2	--	9	PATCHING IN FRONT OF CURB & GUTTER
559+19 - 559+24	LT&RT	1	--	7	CONSTRUCTION JOINT AT APPROACH PAVEMENT
560+41 - 560+46	LT&RT	1	--	7	CONSTRUCTION JOINT AT APPROACH PAVEMENT
TOTALS		4	15	23	

CONCRETE CURB & GUTTER ITEMS				
STATION - STATION	LOCATION	601.0557	SPV.0090.01	
		6-INCH SLOPED	CURE AND	
CAT 0010		36-INCH TYPE D	SEAL TREATMENT	
		LF	LF	
557+76 - 558+55	LT	90	90	
TOTALS		90	90	

CONCRETE BARRIER TEMPORARY PRECAST ITEMS				
STATION - STATION	LOCATION	603.8000	603.8125	
		DELIVERED	INSTALLED	
CAT 0010		LF	LF	
				COMMENTS
558+34 - 561+51	LT	325	325	STAGE B1
TOTALS		325	325	

RIPRAP AND GEOTEXTILE FABRIC ITEMS				
STATION	LOCATION	606.0200	645.0120	
		RIPRAP	GEOTEXTILE	
CAT 0050		MEDIUM	FABRIC TYPE HR	
		CY	SY	
559+30	LT	9	28	
560+40	LT	11	32	
TOTALS		20	60	

BARRIER SYSTEM GRADING SHAPING FINISHING								
STATION - STATION	LOCATION	614.0010	**COMMON	**BORROW	**TOPSOIL	**FERTILIZER	**SEEDING	
		EACH	EXC. CY	**FILL CY	EXC. CY	SY	TYPE B CWT	
CAT 0010								*30 LB
556+66 - 559+25	RT	1	3	--	--	110	0.1	2
557+81 - 559+28	LT	1	2	--	--	50	0.1	1
560+37 - 562+23	LT	1	--	--	--	20	0.1	1
560+40 - 562+96	RT	1	8	1	--	270	0.2	5
TOTALS		4	13	1	0	450	0.5	9

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.
GRADING AND SHAPING FOR CONCRETE CURB AND GUTTER IS INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING IN THAT AREA.

BEAM GUARD ITEMS										
STATION - STATION	LOCATION	614.0200	614.0305	614.0370	614.0920	614.0925	614.2300	614.2500	614.2610	
		STEEL	STEEL PLATE	STEEL PLATE	SALVAGED	SALVAGED	MGS	MGS	MGS	
CAT 0010		THRIE BEAM	BEAM GUARD	BEAM GUARD	GUARDRAIL	GUARDRAIL	GUARDRAIL 3	THRIE BEAM	GUARDRAIL	
		STRUCTURE	CLASS A	ENERGY ABSORBING	END	TREATMENTS	LF	TRANSITION	TERMINAL EAT	
		APPROACH		TERMINAL	RAIL	EACH			TERMINAL EAT	
		LF	LF	EACH	LF	EACH		LF	EACH	
557+57 - 559+25	RT	--	--	--	122.5	1	75.0	39.4	1	
558+43 - 559+28	LT	20.6	12.5	1	47.5	1	--	--	--	
560+37 - 561+31	LT	--	--	--	47.5	1	--	39.4	1	
560+40 - 561+79	RT	--	--	--	97.5	1	50.0	39.4	1	
TOTALS		20.6	12.5	1	315.0	4	125.0	118.2	3	

3

FENCE CHAIN LINK SALVAGED 4-FT

		616.0404		
STATION	LOCATION	LF	COMMENT	
CAT 0010				
559+26	LT	15	SW CORNER OF B-16-0085	
560+38	LT	15	NW CORNER OF B-16-0085	
TOTAL		30		

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MAINTENANCE AND REPAIR OF HAUL ROADS

		618.0100
		(8010-08-72)
		EACH
CAT 0010		
PROJECT		1
TOTAL		1

WATER

		624.0100
		MGAL
CAT 0010		
PROJECT		2
TOTAL		2

NOTE: WATER PROVIDED FOR COMPACTION OF BASE AGGREGATE AND DUST CONTROL

EROSION CONTROL ITEMS

		628.1504		628.1520	628.2004	628.7570
		SILT	SILT	SILT FENCE	EROSION MAT	ROCK
		FENCE	FENCE	MAINTENANCE	CLASS I TYPE B	BAGS
STATION - STATION	LOCATION	LF	LF	LF	SY	EACH
CAT 0010						
538+81 - 541+29	RT	250	250		150	45
556+66 - 559+25	RT	250	250		110	45
557+81 - 559+28	LT	200	200		50	60
560+37 - 562+23	LT	200	200		20	60
560+40 - 562+96	RT	270	270		270	30
UNDISTRIBUTED		295	295		150	60
TOTALS		1,465	1,465		750	300

NOTE: ROCK BAGS ARE FOR SILT FENCE RELIEF

MOBILIZATIONS EROSION CONTROL

		628.1905	628.1910
		EACH	EMERGENCY
			EACH
CAT 0010			
PROJECT		3	2
TOTALS		3	2

TRAFFIC CONTROL COVERING SIGNS TYPE II

		643.0920			COMMENTS
STATION	LOCATION	NO.	CYCLES	EACH	
CAT 0010					
557+36	LT	1	1	1	CTH B STOP SIGN
557+93	LT	1	1	1	CTH B STOP SIGN
TOTAL				2	

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TYPE II SIGNS AND SUPPORTS

SIGN NO.	SIGN CODE	W	X	H	637.2210	637.2230	634.0616	634.0618	638.2102	638.4000	638.2602	638.3000	COMMENTS
					SIGNS	SIGNS	POSTS	POSTS	MOVING	MOVING	REMOVING	REMOVING	
					TYPE II	TYPE II	WOOD	WOOD	SIGNS	SMALL SIGN	SIGNS	SMALL SIGN	
					REFLECTIVE H SF	REFLECTIVE F SF	4x6x16 EACH	4x6x18 EACH	TYPE II EACH	SUPPORTS EACH	TYPE II EACH	SUPPORTS EACH	
CAT 0010													
1-1	--	--	X	--	--	--	--	--	--	--	1	1	
1-2	R7-1L	18	X	24	3.00	--	1	--	--	--	--	--	
1-3	J12-1	24	X	45	7.50	--	--	1	--	--	1	1	
1-4	--	--	X	--	--	--	--	--	1	1	--	--	
1-5	J3-3	72	X	57	28.50	--	2	--	--	--	--	--	
1-6	--	--	X	--	--	--	--	--	--	--	1	1	MOUNTED ON SAME POST AS 1-7
1-7	W1-7	48	X	24	--	8.00	1	--	--	--	--	--	MOUNTED ON SAME POST AS 1-6
1-8	J12-1	24	X	45	7.50	--	--	1	--	--	1	1	
1-9	R7-1R	18	X	24	3.00	--	1	--	--	--	--	--	
1-10	R7-1D	18	X	24	3.00	--	1	--	--	--	--	--	
1-11	--	--	X	--	--	--	--	--	--	--	1	1	MOUNTED ON SAME POST AS 1-11
1-12	--	--	X	--	--	--	--	--	--	--	--	--	MOUNTED ON SAME POST AS 1-10
1-13	I3-1	66	X	15	6.88	--	2	--	--	--	--	--	
1-14	--	--	X	--	--	--	--	--	--	--	1	1	
1-15	--	--	X	--	--	--	--	--	--	--	1	1	
1-16	--	--	X	--	--	--	--	--	--	--	1	1	
1-17	--	--	X	--	--	--	--	--	--	--	1	1	
1-18	I3-1	66	X	15	6.88	--	2	--	--	--	--	--	
1-19	R7-1D	18	X	24	3.00	--	1	--	--	--	--	--	
1-20	R2-1	24	X	30	5.00	--	1	--	--	--	--	--	
1-21	D1-1	60	X	15	6.25	--	2	--	--	--	1	2	
1-22	R7-1D	18	X	24	3.00	--	1	--	--	--	1	1	
TOTALS					83.50	8.00	15	2	1	1	11	12	

TRAFFIC CONTROL ITEMS

LOCATION	DAYS	643.0300		643.0420		643.0705		643.0715		643.0900		COMMENTS
		DRUMS		BARRICADES		WARNING LIGHTS		WARNING LIGHTS		SIGNS		
		NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	
CAT 0010												
PROJECT	7	47	329	5	35	10	70	25	175	30	210	STAGE B1
PROJECT	14	54	756	8	112	16	224	25	350	32	448	STAGE B2
PROJECT	14	41	574	6	84	12	168	16	224	31	434	STAGE B3
PROJECT	19	24	456	--	--	--	--	--	--	9	171	STRUCTURE R-16-0004
TOTALS			2,115		231		462		749		1,263	

3

PAVEMENT MARKING EPOXY

STATION - STATION	LOCATION	646.0106 4-INCH	
		(YELLOW) LF	(WHITE) LF
CAT 0010			
557+10 - 563+75	LT & RT	1,330	920
TOTAL		1,330	920
		2,250	

TEMPORARY PAVEMENT MARKING ITEMS

STATION - STATION	LOCATION	646.0600 REMOVING PAVEMENT MARKINGS	649.0400 REMOVABLE TAPE 4-INCH (WHITE)	649.1400 STOP LINE REMOVABLE TAPE 24-INCH (WHITE)	COMMENTS
		LF	LF	LF	
CAT 0010					
557+10 - 563+75	LT & RT	1,525	1,125	24	STAGE B1
557+10 - 563+75	LT & RT	300	900	--	STAGE B3
TOTALS		1,825	2,025	24	

3

CONSTRUCTION STAKING ITEMS

STATION - STATION	LOCATION	650.5500 CURB GUTTER AND CURB & GUTTER	650.8000 RESURFACING REFERENCE	650.9910.01 SUPPLEMENTAL CONTROL 8010-08-72
		LF	LF	LS
CAT 0010				
557+76 - 558+55	RT	90	--	--
PROJECT	LT&RT	--	1,000	1
TOTALS		90	1,000	1

CONSTRUCTION STAKING STRUCTURE LAYOUT

STATION	LOCATION	650.6500 (R-16-0004) LS
CAT 0010		
PROJECT	LT & RT	1
TOTAL		1

NOTE: INCLUDES STAKING OF BOTH RETAINING WALL UNITS

TEMPORARY TRAFFIC SIGNALS FOR BRIDGES

STATION	LOCATION	661.0100 (B-16-0085) LS
CAT 0010		
PROJECT	LT & RT	1
TOTAL		1

SAWING ITEMS

		690.0150	690.0250
		ASPHALT	CONCRETE
STATION - STATION	LOCATION	LF	LF
CAT 0010			
557+74 - 558+63	LT	125	--
559+19	LT&RT	36	--
559+19 - 559+39	LT&RT	--	20
560+46	LT&RT	36	--
560+91 - 560+93	LT&RT	203	--
560+26 - 560+46	LT&RT	--	20
TOTALS		400	40

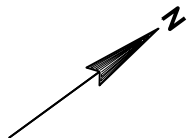
CRACK AND DAMAGE SURVEY PEDESTRIAN TUNNEL

		SPV.0105.01	
STATION	LOCATION	LS	COMMENT
CAT 0010			
561+45	LT&RT	1	PEDESTRIAN TUNNEL
TOTAL		1	

SHAPING AND FINISHING RETAINING WALLS

		SPV.0060.01	**TOPSOIL	**FERTILIZER	**SEEDING #30	
STATION - STATION	LOCATION	EACH	SY	TYPE B CWT	LB	COMMENT
CAT 0010						
538+81 - 539+83	RT	1	90	0.1	2	R-16-0004-1
540+39 - 541+29	RT	1	80	0.1	2	R-16-0004-2
TOTALS		2	170	0.2	4	

NOTES: **NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY.
ITEMS INCIDENTAL TO SHAPING AND FINISHING RETAINING WALLS.

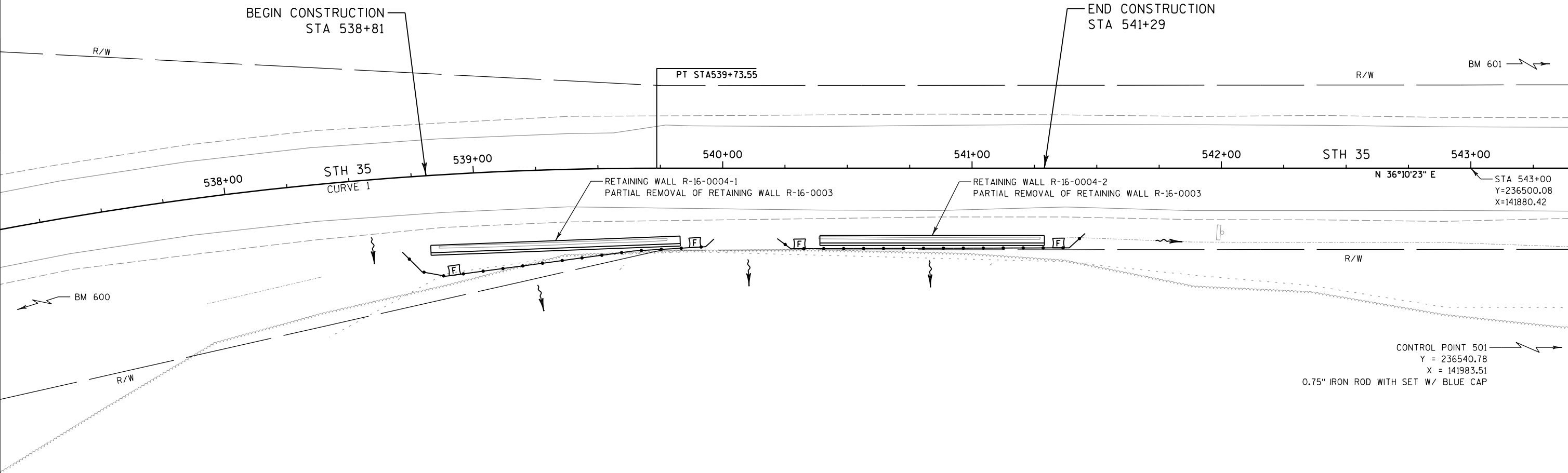


STH 35 CURVE 1 DATA
PI = 535+45.11
Y = 235866.48
X = 141417.15
PC = 530+86.65
Y = 235408.04
X = 141414.05
PT = 539+73.55
Y = 236236.56
X = 141687.74
T = 600.60
L = 886.90
R = 1420.00
DELTA = 35°47'08" RT
D = 04°02'06"
SE = 6.0%

LEGEND
—●— SILT FENCE
[F] SILT FENCE RELIEF (ROCK BAGS)
~> SURFACE WATER FLOW

BEGIN CONSTRUCTION
STA 538+81

END CONSTRUCTION
STA 541+29



PATTISON
STATE PARK

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
BM 600	535+30, RT	RR SPIKE IN 12-INCH POPLAR TREE	1049.69
BM 601	543+73, LT	RR SPIKE IN 12-INCH OAK TREE	1035.69

STH 35
 CURVE 3 DATA
 PI = 555+60.34
 Y = 237663.43
 X = 142307.59
 PC = 553+93.42
 Y = 237499.96
 X = 142273.83
 PT = 557+20.68
 Y = 237792.25
 X = 142413.73
 T = 299.35
 L = 327.26
 R = 674.07
 DELTA = 27°49'00" RT
 D = 08°30'00"
 SE = 5.8%

LEGEND

- SLOPE INTERCEPT
-  CONCRETE PAVEMENT APPROACH SLAB AND CONCRETE PAVEMENT 7-INCH FOR SHOULDERS
-  5.5-INCH ASPHALTIC SURFACE SPECIAL (SEE CONSTRUCTION DETAILS)
- XXXXX SAWING ASPHALT
-  ASPHALTIC FLUME
-  FENCE CHAIN LINK SALVAGED 4-FT (REMOVE AND REINSTALL)

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
BM 602	559+37, RT	BRASS DISK IN CONCRETE WINGWALL, 9P33	983.96

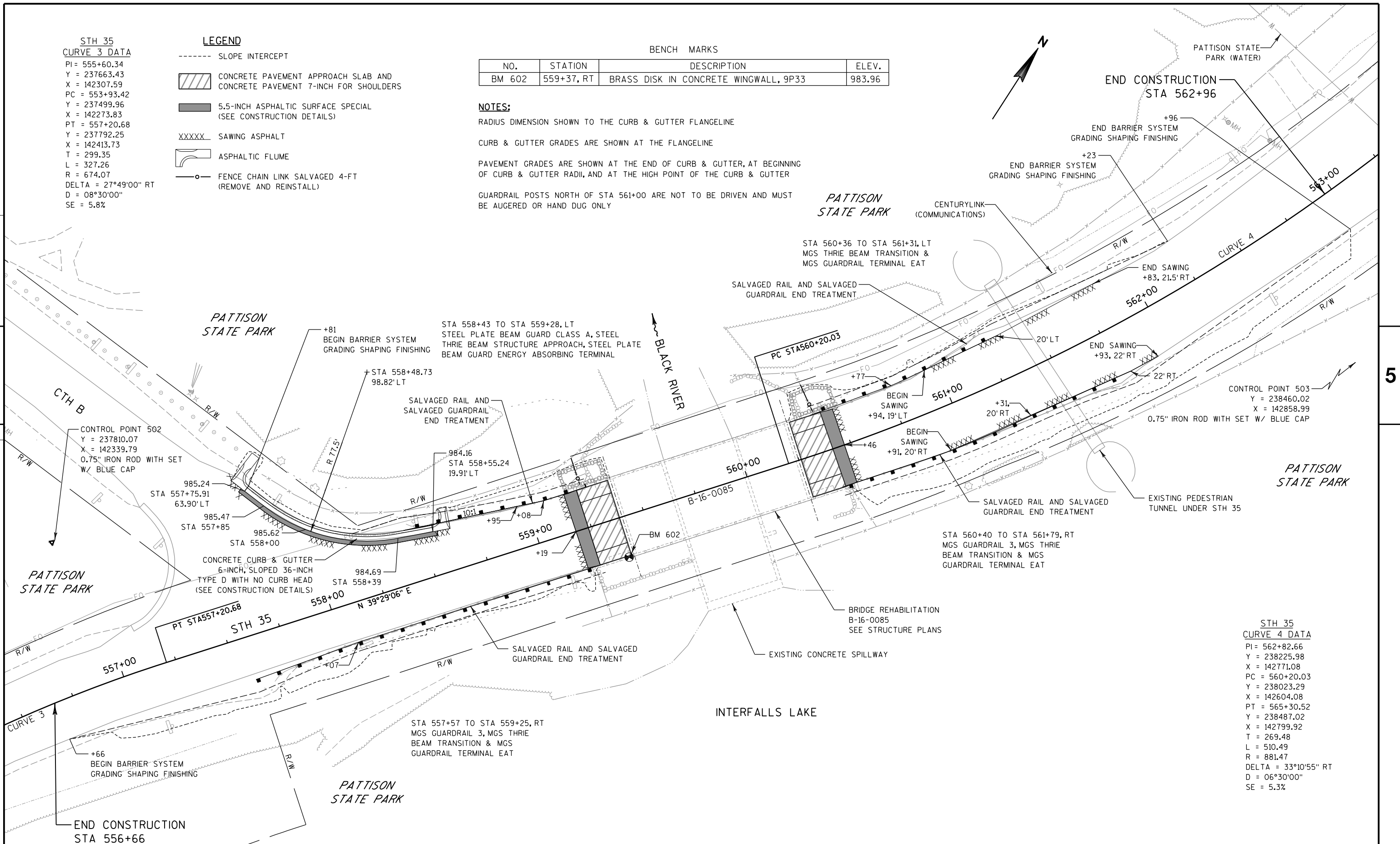
NOTES:

RADIUS DIMENSION SHOWN TO THE CURB & GUTTER FLANGELINE

CURB & GUTTER GRADES ARE SHOWN AT THE FLANGELINE

PAVEMENT GRADES ARE SHOWN AT THE END OF CURB & GUTTER, AT BEGINNING OF CURB & GUTTER RADIUS, AND AT THE HIGH POINT OF THE CURB & GUTTER

GUARDRAIL POSTS NORTH OF STA 561+00 ARE NOT TO BE DRIVEN AND MUST BE AUGERED OR HAND DUG ONLY



STH 35
 CURVE 4 DATA
 PI = 562+82.66
 Y = 238225.98
 X = 142771.08
 PC = 560+20.03
 Y = 238023.29
 X = 142604.08
 PT = 565+30.52
 Y = 238487.02
 X = 142799.92
 T = 269.48
 L = 510.49
 R = 881.47
 DELTA = 33°10'55" RT
 D = 06°30'00"
 SE = 5.3%

PROJECT NO: 8010-08-72

HWY: STH 35

COUNTY: DOUGLAS

PLAN

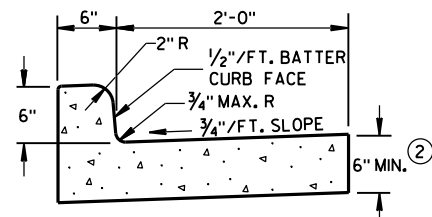
SHEET

29

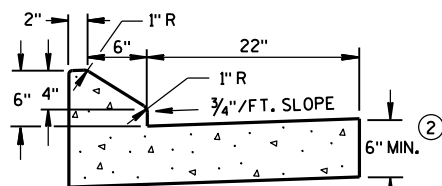
E

Standard Detail Drawing List

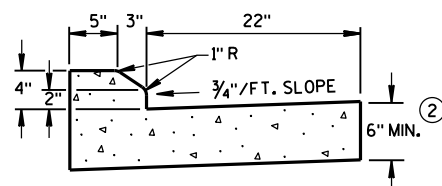
08D01-18	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
13B02-08A	CONCRETE BRIDGE APPROACH
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"
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
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11E	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
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
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15B03-15A	FENCE CHAIN LINK
15B03-15B	FENCE CHAIN LINK
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
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



TYPES A & D ①

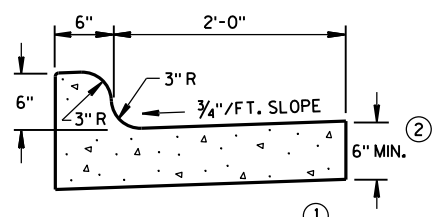


6" SLOPED CURB TYPES G & J ①



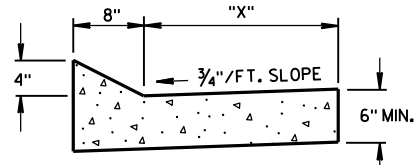
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



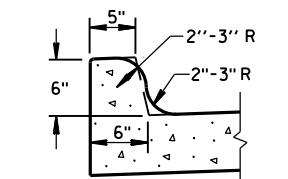
TYPES K & L ①

CONCRETE CURB & GUTTER 30"

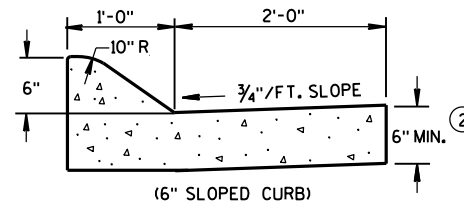


TYPES TBT & TBT ①
CONCRETE CURB & GUTTER

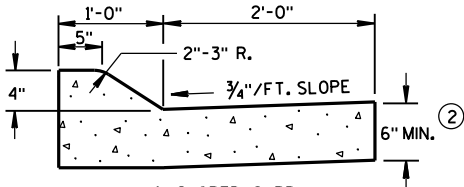
TBT & TBT	"X"
30"	22"
36"	28"



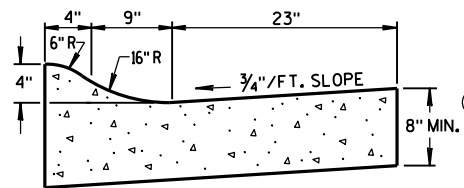
OPTIONAL CURB SHAPE
FOR TYPES K & L ①



(6" SLOPED CURB)

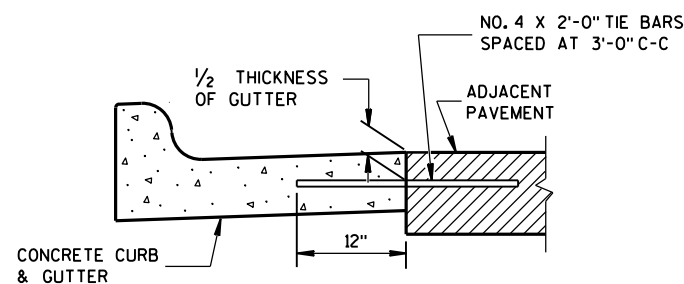


TYPES A & D ①

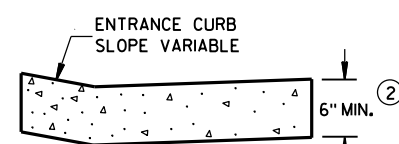


4" SLOPED CURB TYPES R & T ① ④

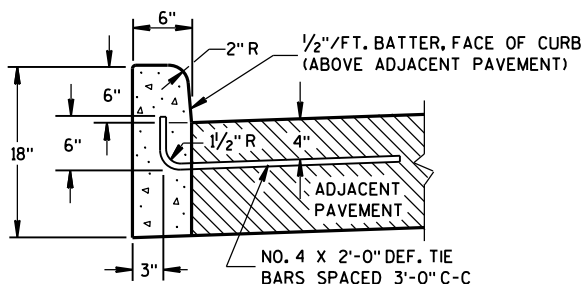
CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION ①

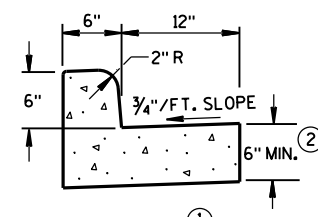


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

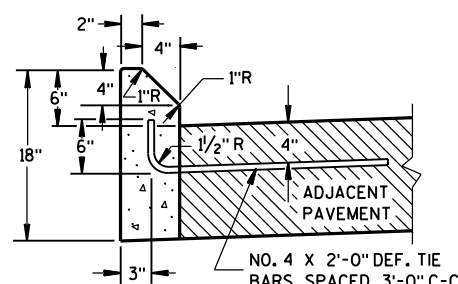


TYPES A & D ①

CONCRETE CURB



TYPES A & D
CONCRETE CURB & GUTTER 18"



TYPES G & J ①

GENERAL NOTES

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

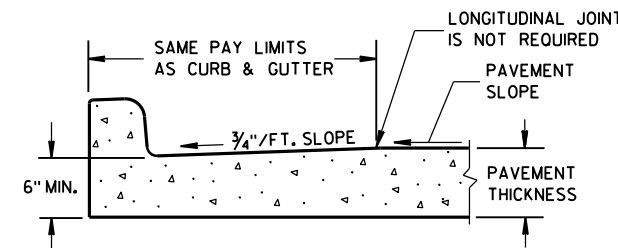
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

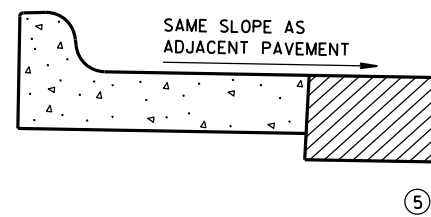
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

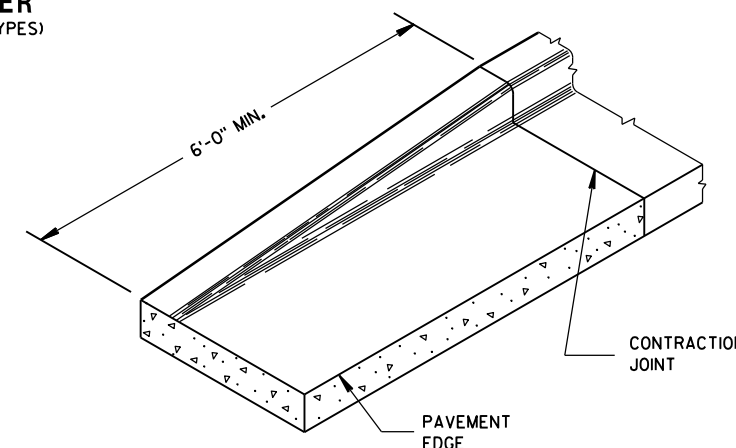
- TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBT.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



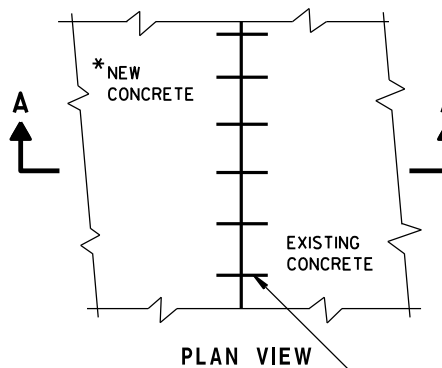
PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



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



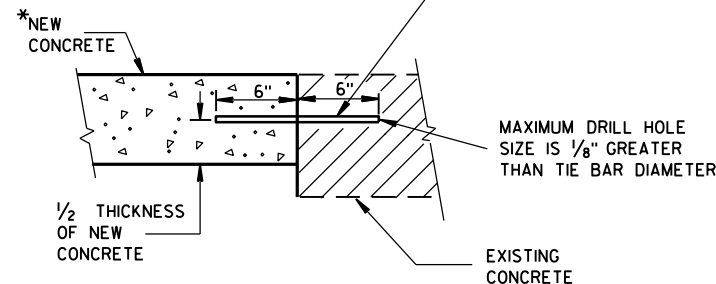
END SECTION CURB & GUTTER



PLAN VIEW

*NEW CURB & GUTTER,
SURFACE DRAINS,
CONCRETE PAVEMENT
OR OTHER NEW CONCRETE.

NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.



SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER
FHWA

6



PLAN VIEW
FLUME AT CURB END



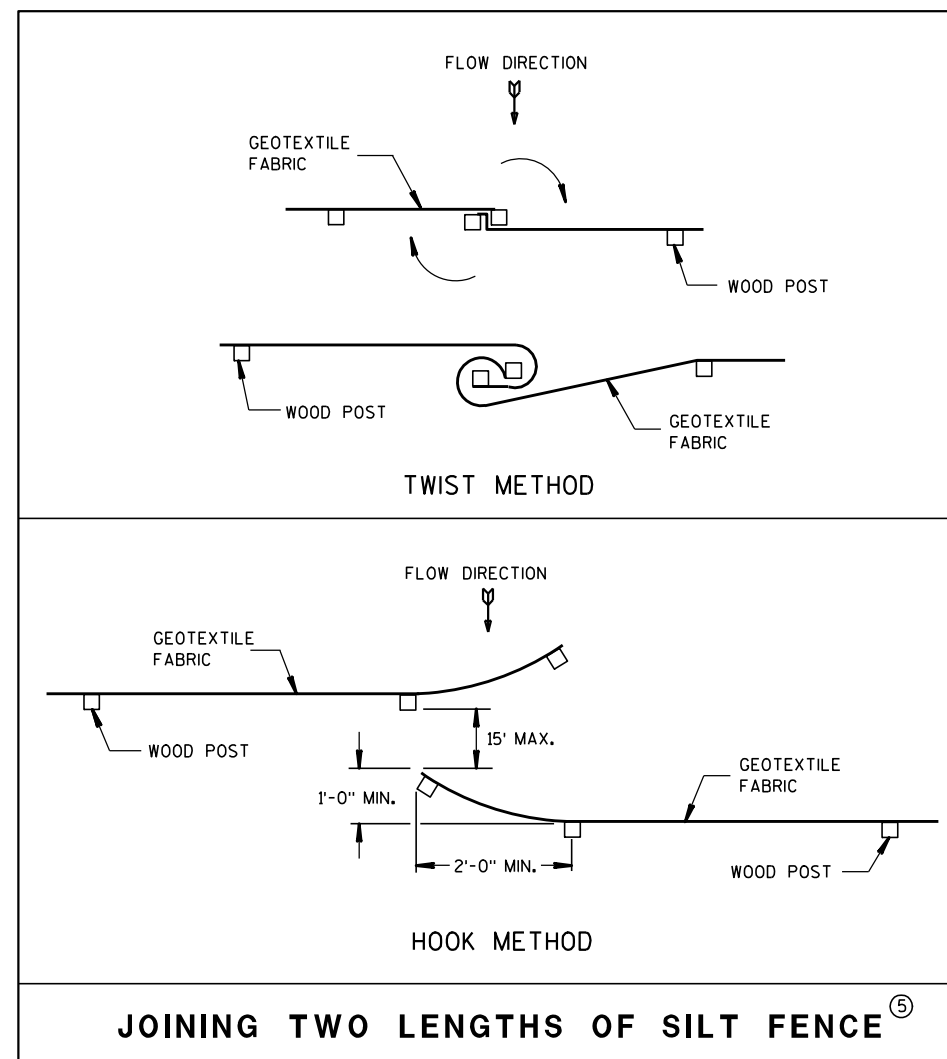
6

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

- ### ③ CONCRETE SURFACE DRAIN



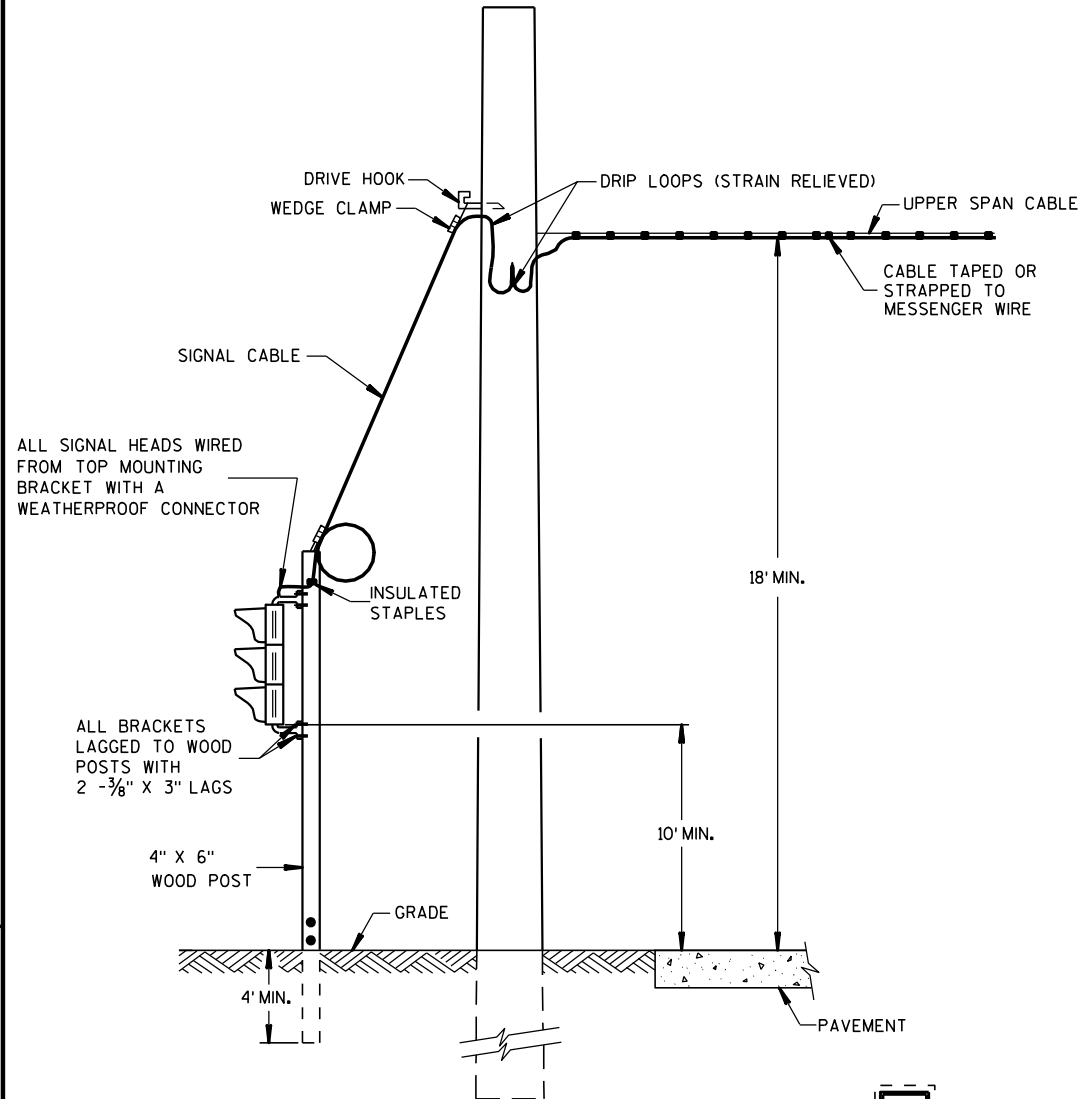
APPROVED
9-4-08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 32
ENGINEER



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



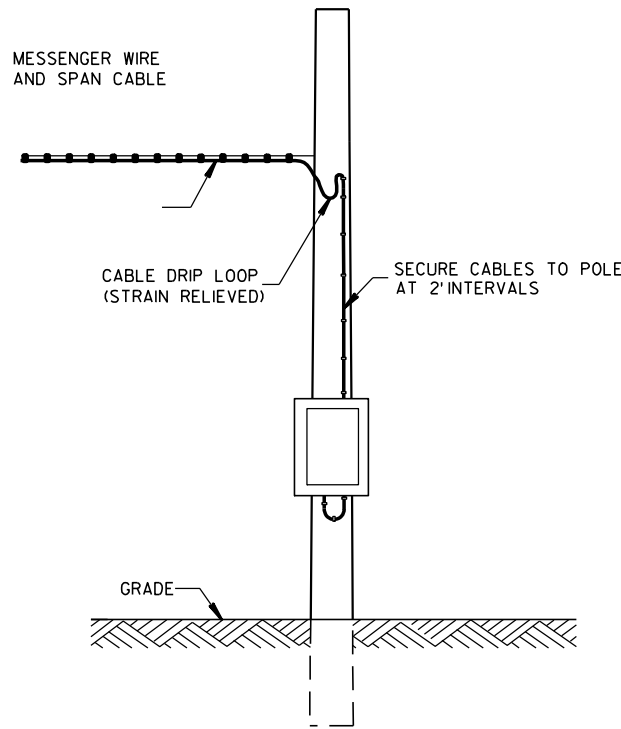
SILT FENCE
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED <u>4-29-05</u> DATE <u>/s/ Beth Connolly</u> CHIEF ROADWAY DEVELOPMENT ENGINEER



TYPICAL DROP TO TRAFFIC SIGNAL FACE

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.	

MINIMUM POLE LENGTHS	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



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 POLES 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.

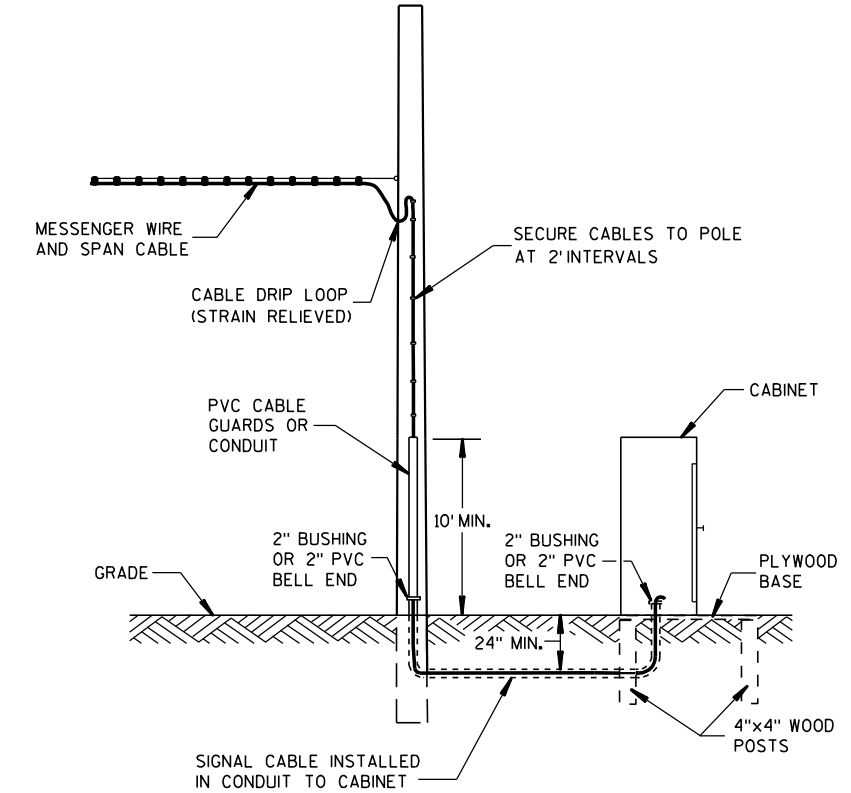
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

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

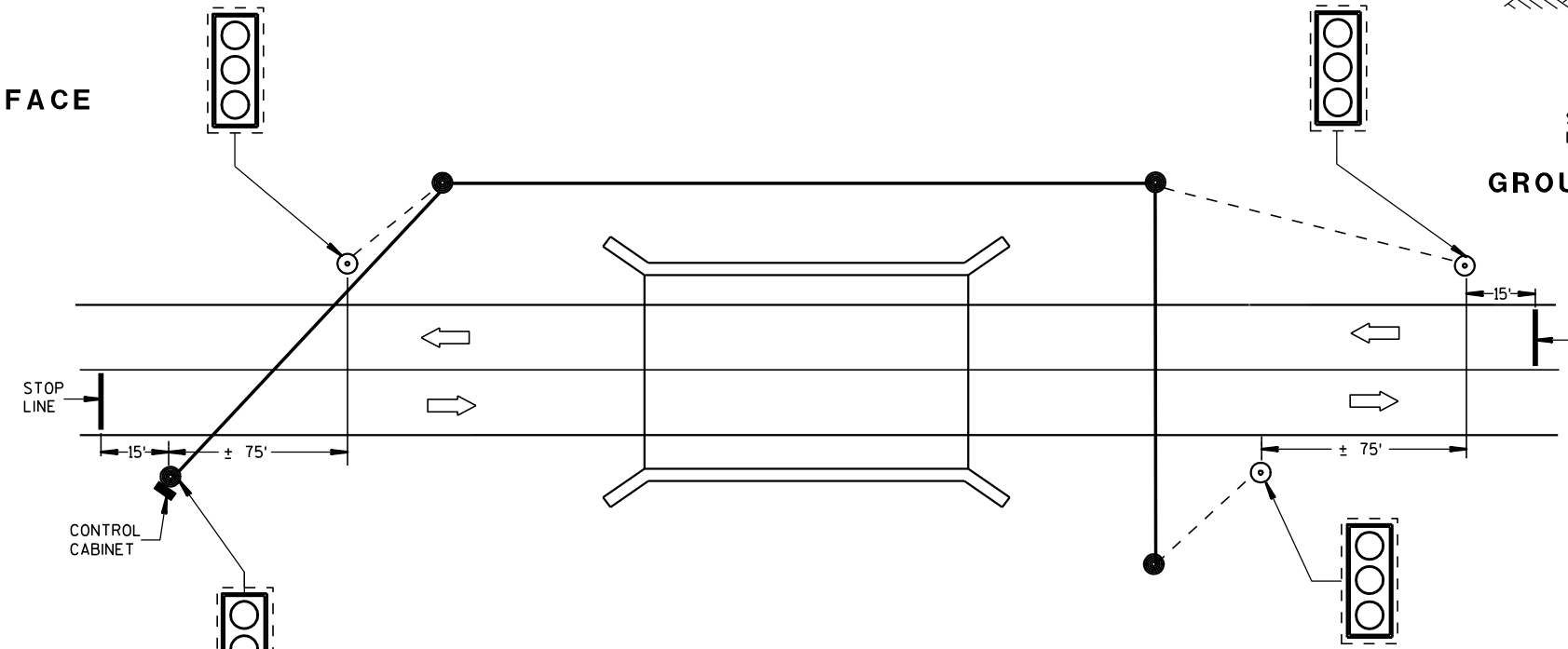
VERTICAL CLEARANCE ETC. PER NEC.

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



PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

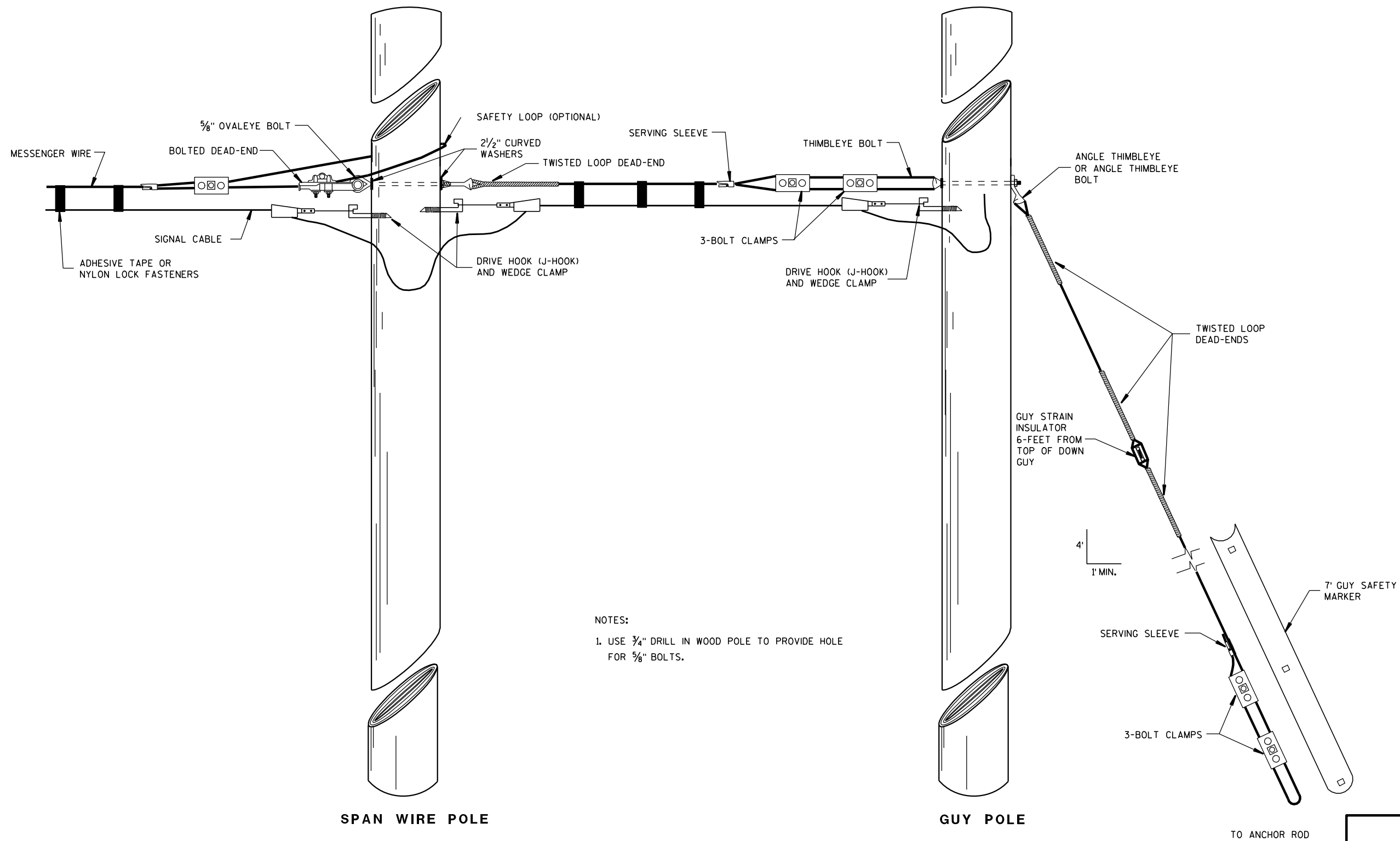
LEGEND

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

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/2/2011 /S/ Thomas J. G...
DATE STATE ELECTRICAL ENGI 34 HWYS
FHWA



NOTES:

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

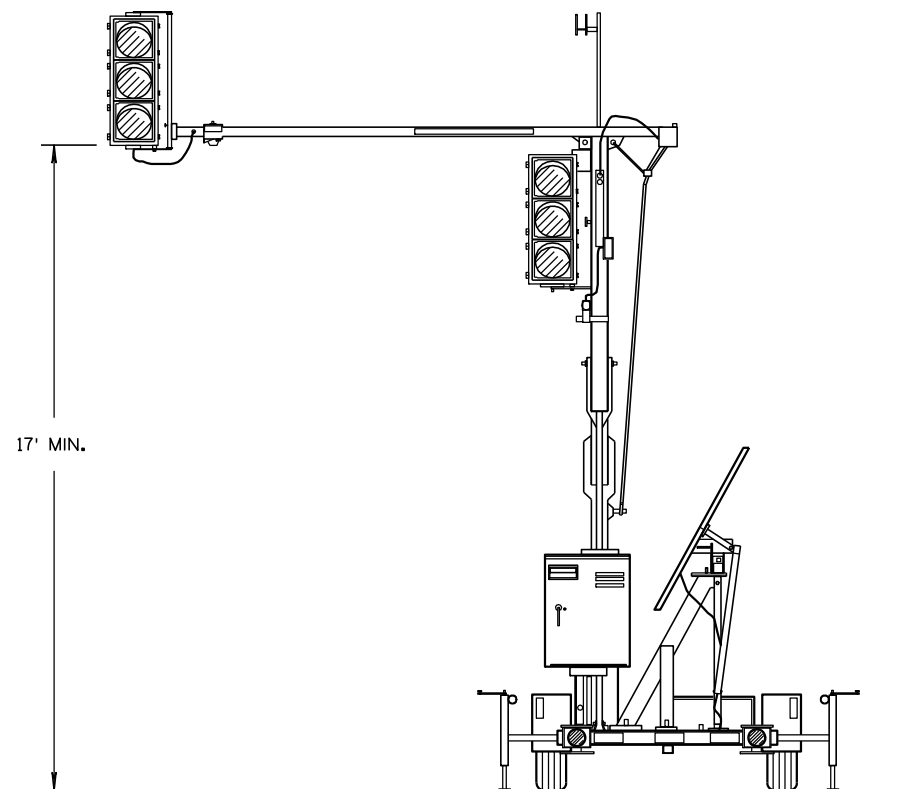
TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY
TRAFFIC SIGNAL INSTALLATIONSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011
DATE/S/ Thomas J. G...
STATE ELECTRICAL ENGR 35 HWYS

FHWA

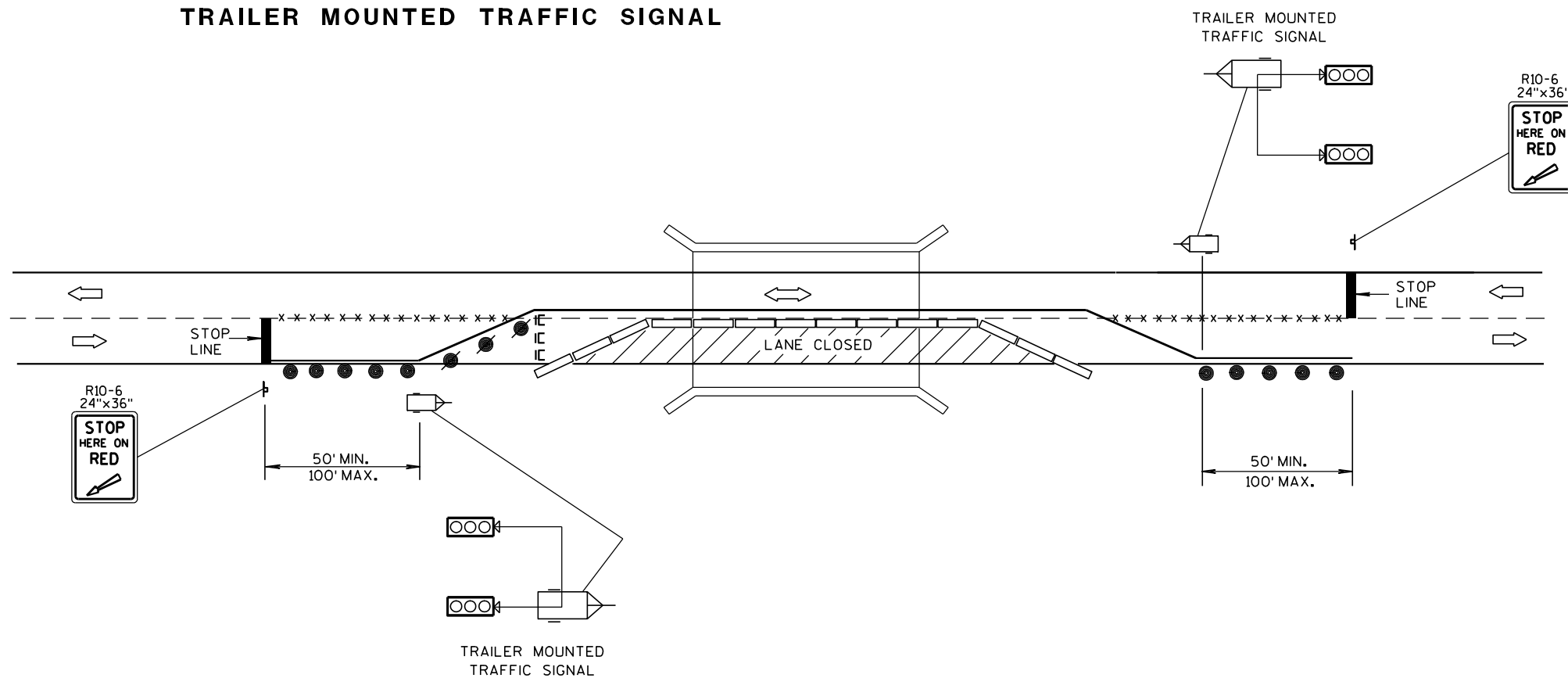


TRAILER MOUNTED TRAFFIC SIGNAL

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
- *-x-* 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

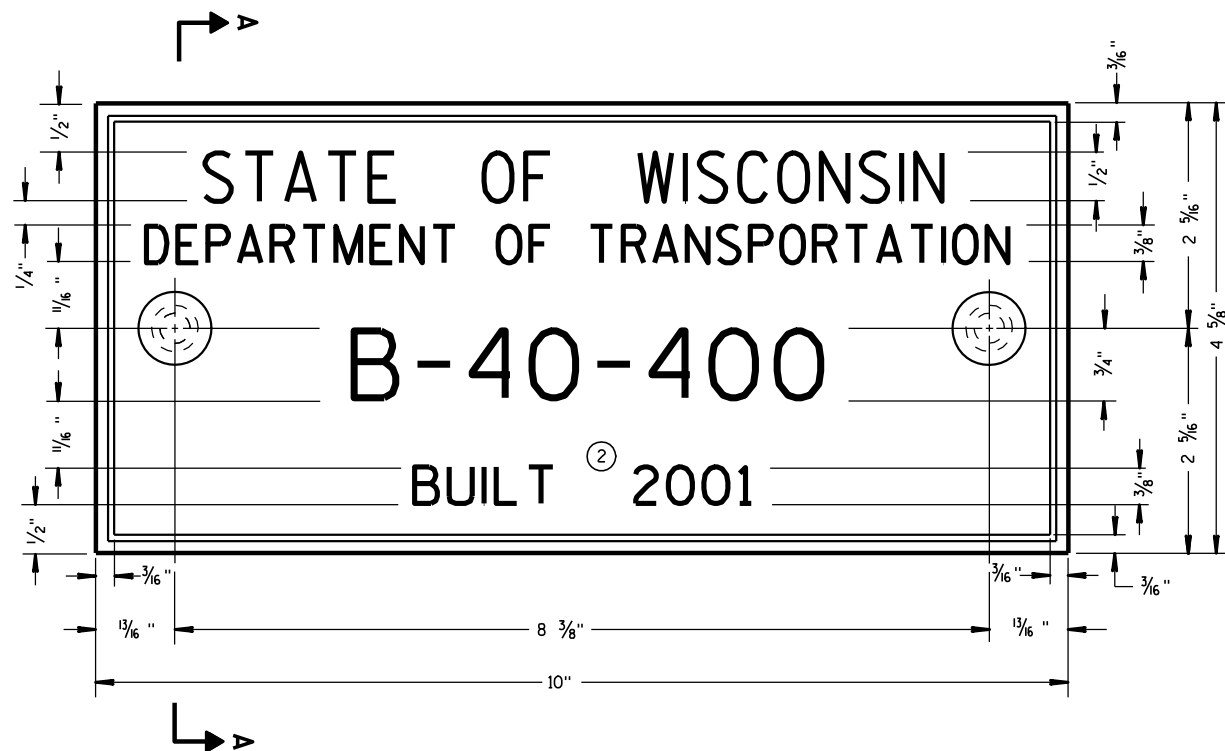
3/2/2011

DATE

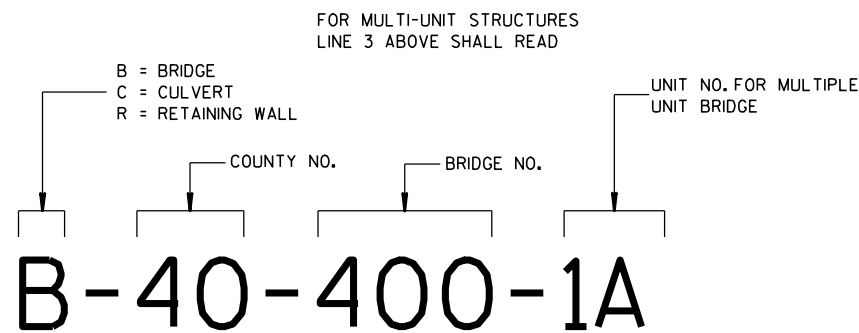
FHWA

/S/ Thomas J. Gorman
STATE ELECTRICAL ENGINEER

HWYS



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



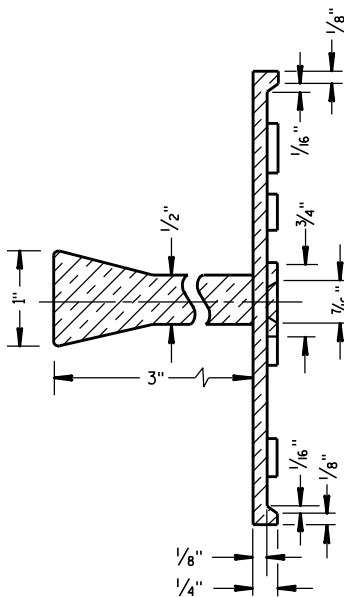
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

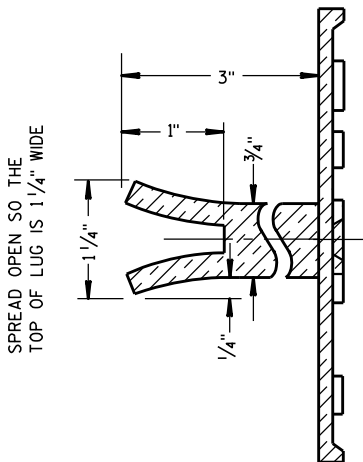
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

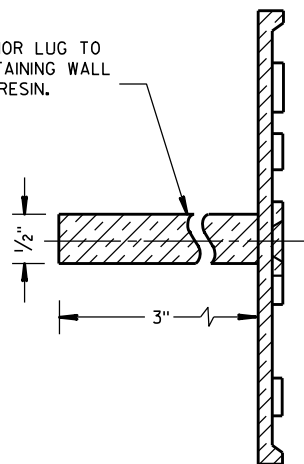


SECTION A-A



ALTERNATE LUG

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

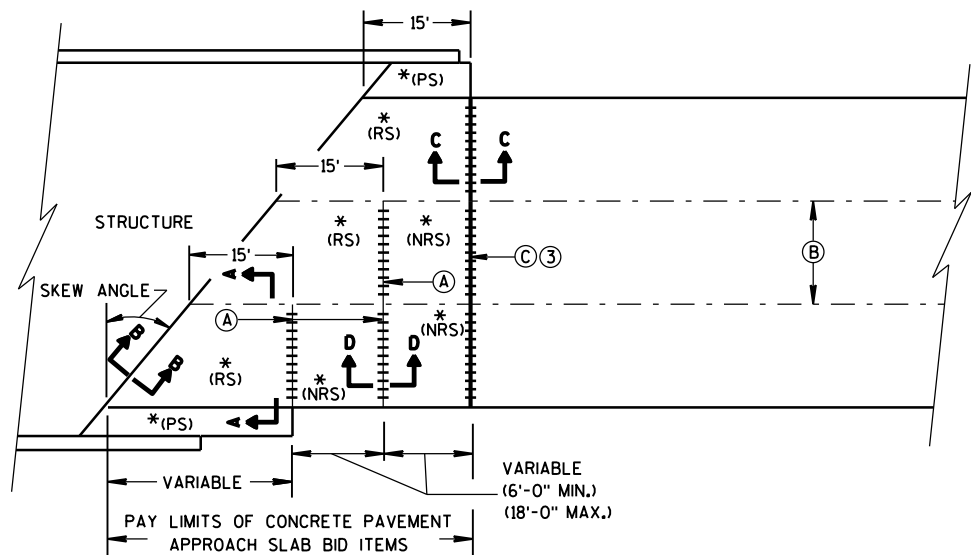


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

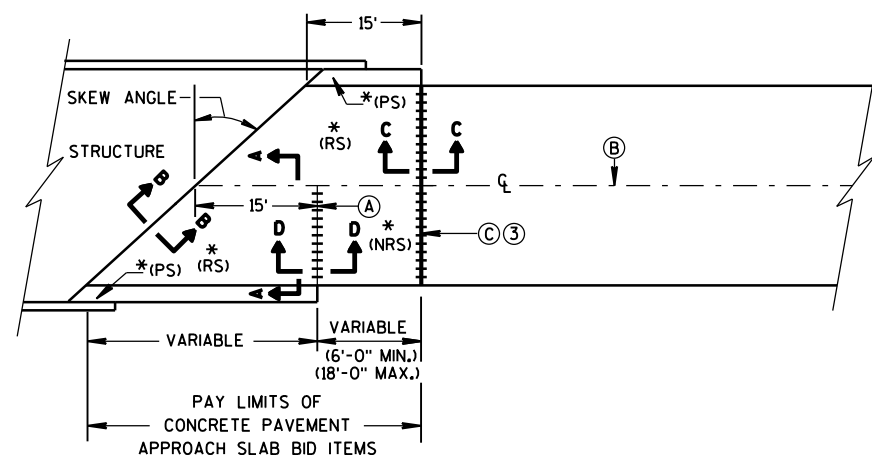
NAME PLATE
(STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

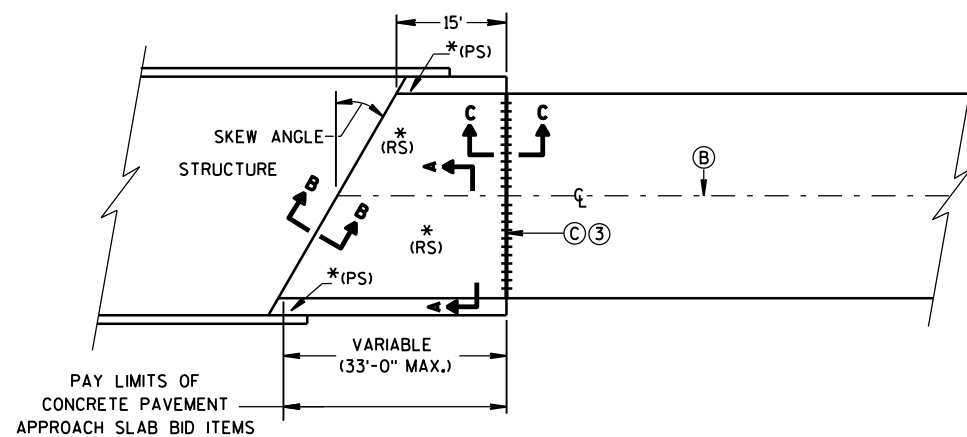
APPROVED
DATE 3/26/10
/S/ Scot Beck
CHIEF STRUCTURAL DEVELOPER
37
JEER
FHWA



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**



**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

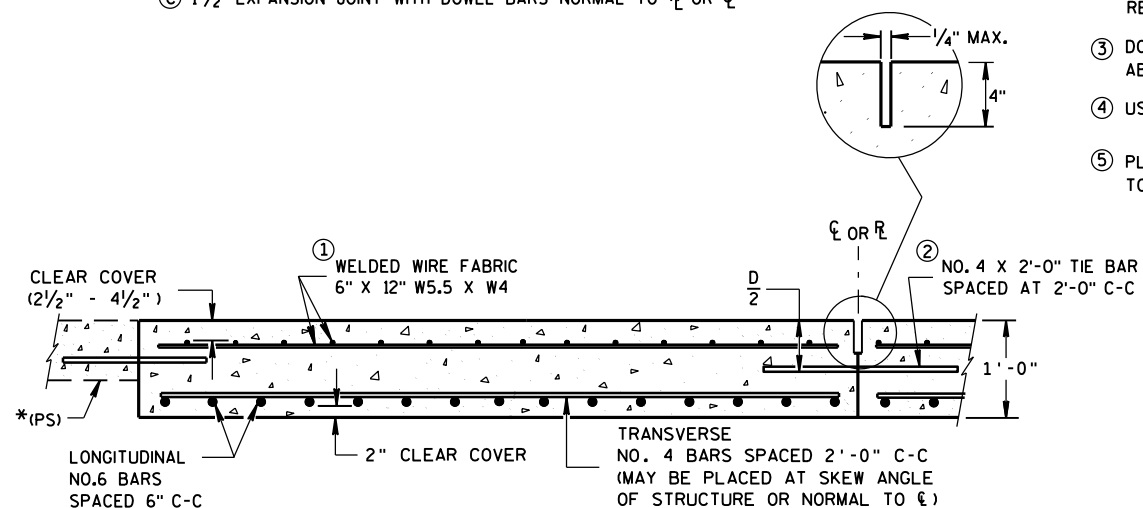


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

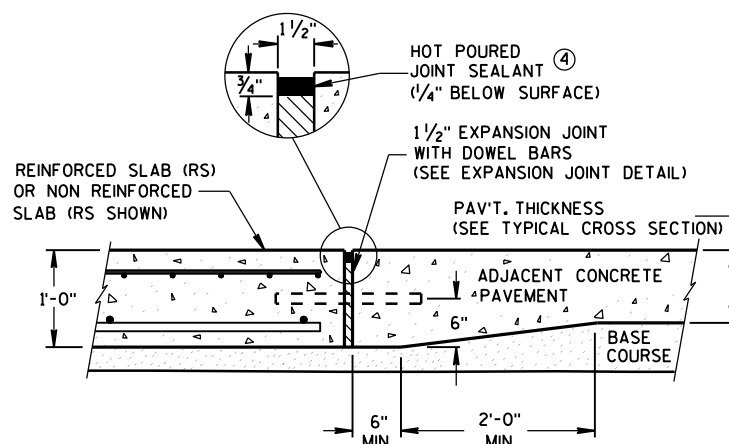
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

*** STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

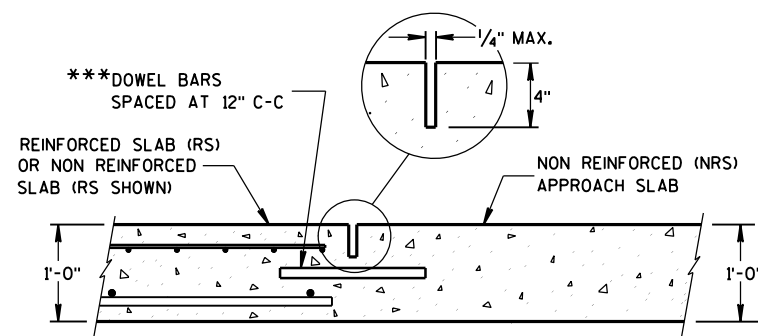
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



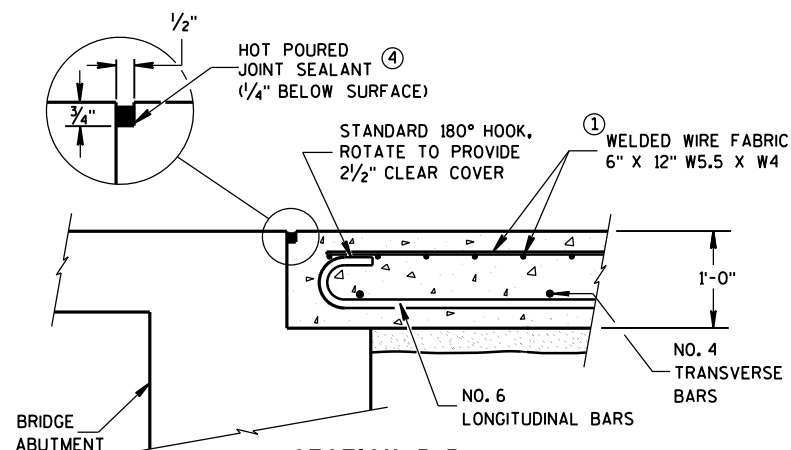
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

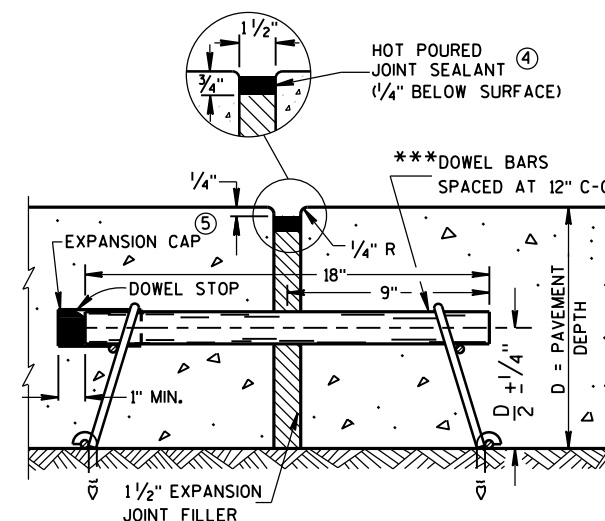
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**

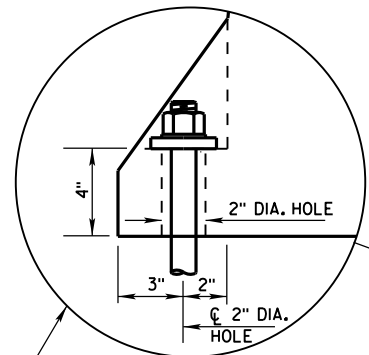


EXPANSION JOINT DETAIL

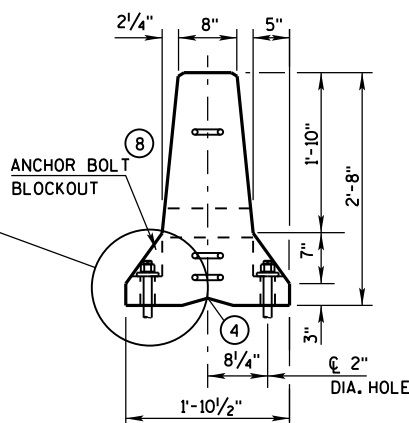
**CONCRETE PAVEMENT
APPROACH SLAB**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

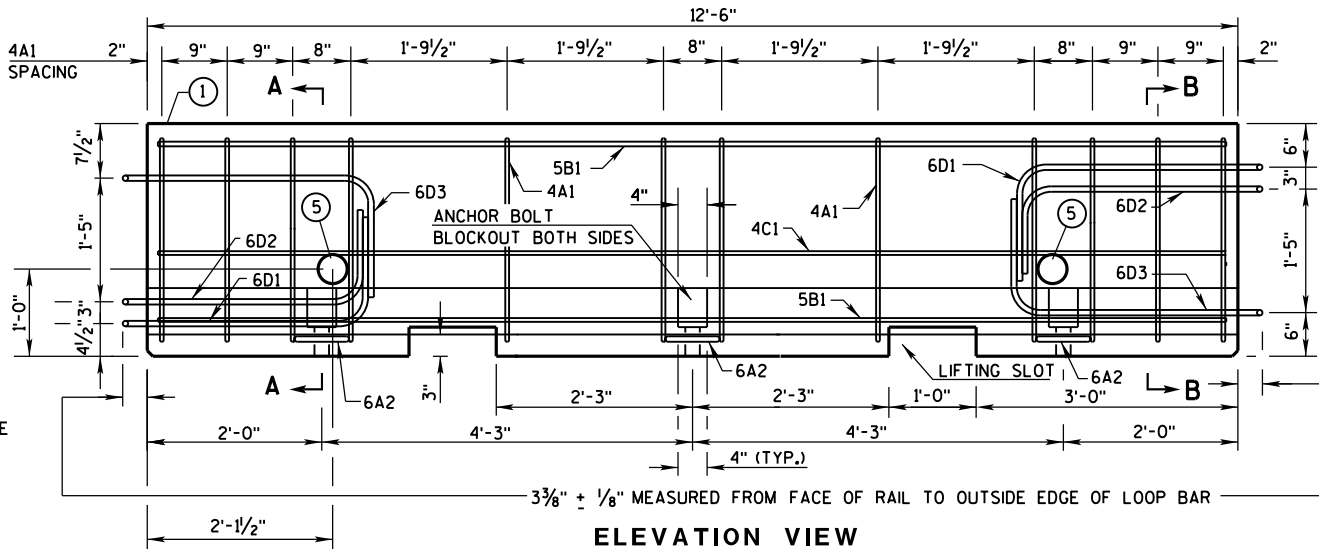
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE
PAVEMENT SUPER 38
FHWA



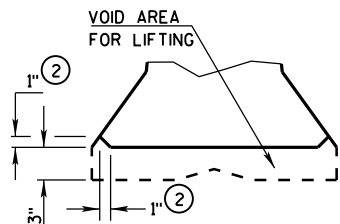
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



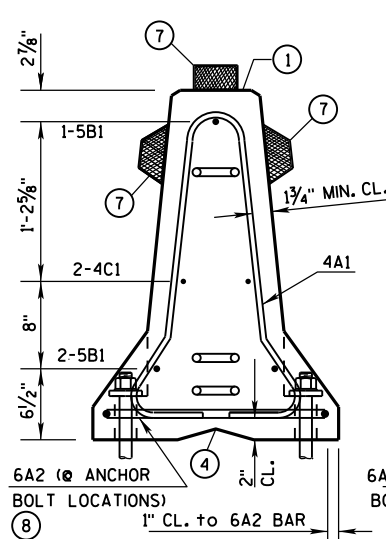
END VIEW



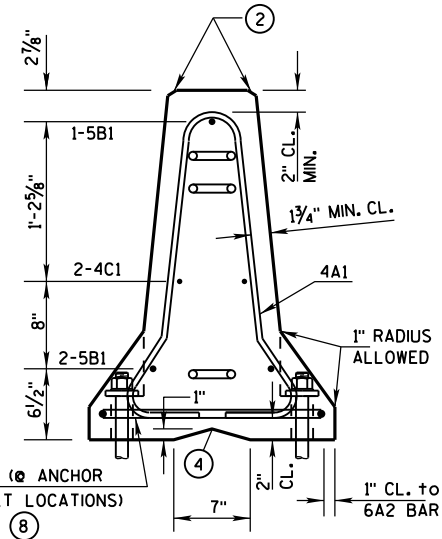
ELEVATION VIEW



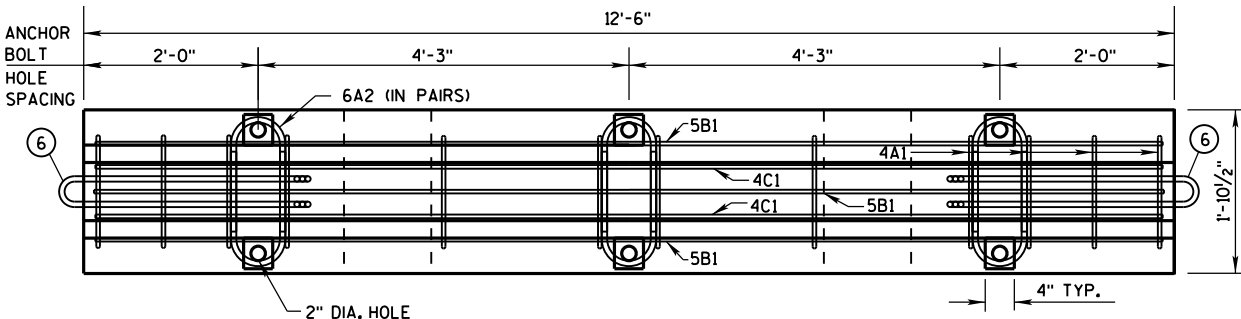
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

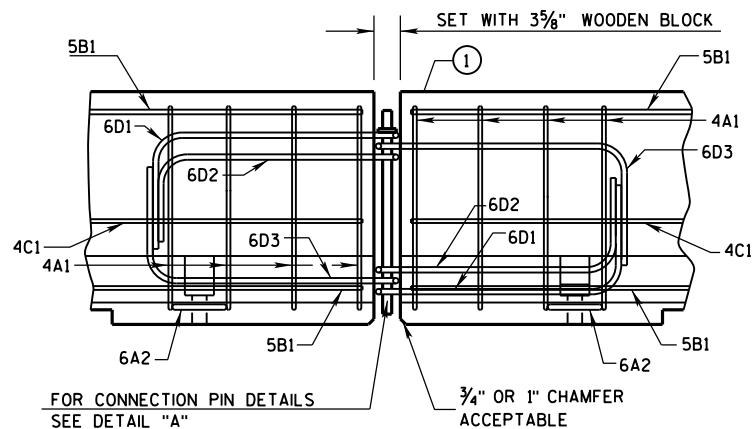


SECTION B-B
(STIRRUP PLACEMENT)

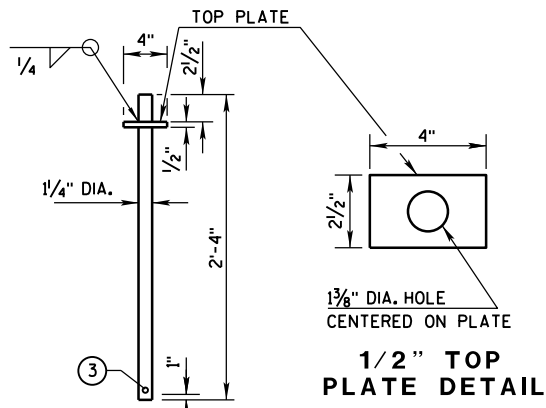


PLAN VIEW

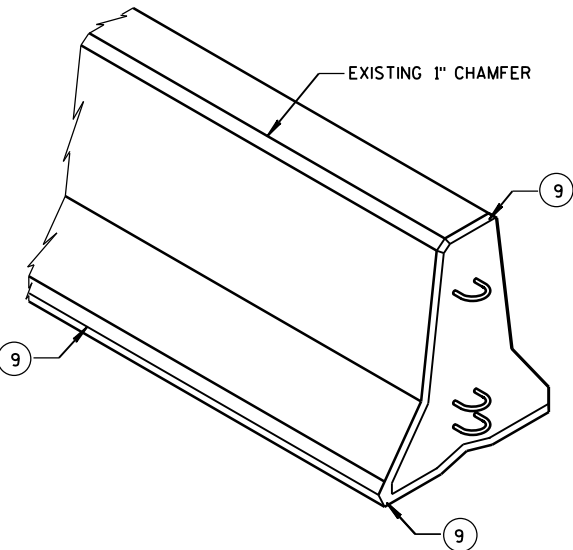
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



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



CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 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.

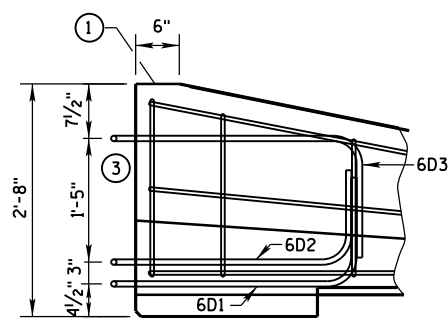
LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" 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.

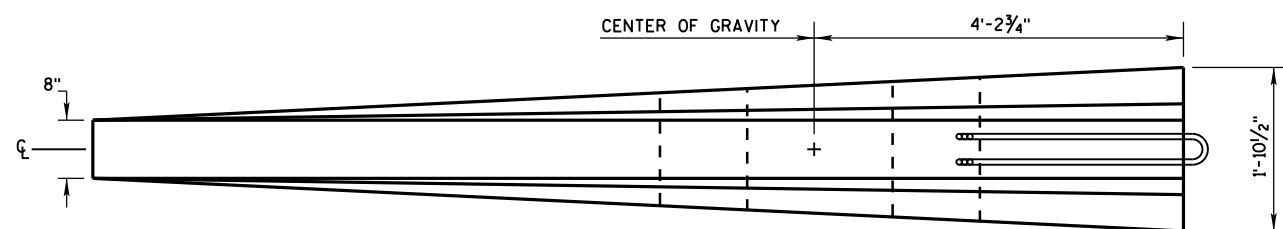
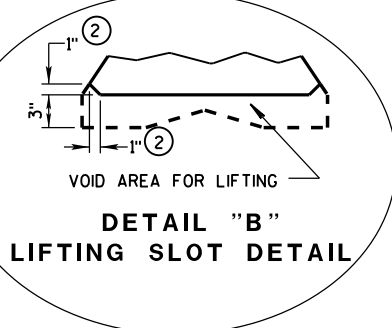
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - TYPE: WICBTP
 - MANUFACTURER
 - DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S 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.
- SEE SHEET D FOR ANCHORING CRITERIA.
- 1" CHAMFER OPTIONAL.

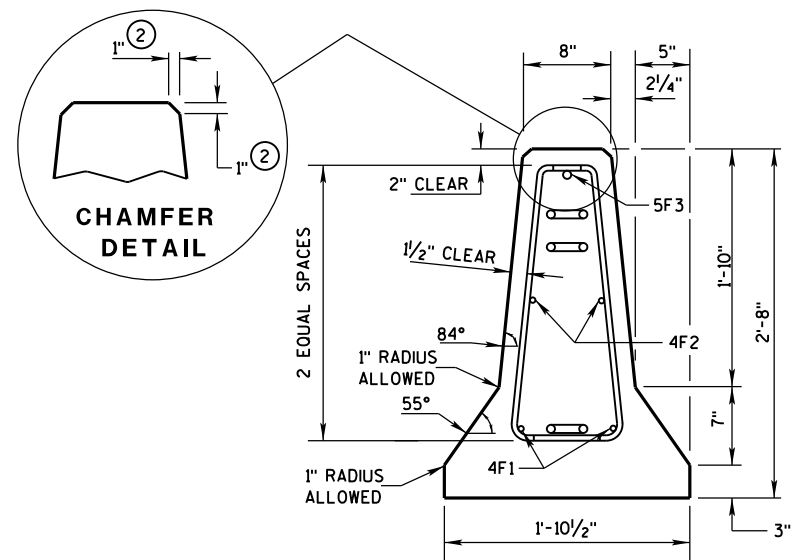


LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

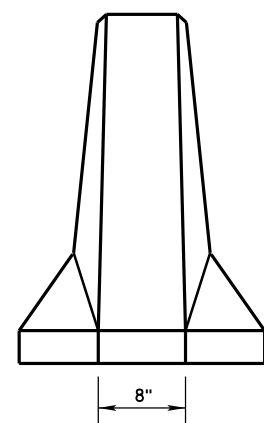
- ## GENERAL NOTES
- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
 - ② 1" CHAMFER TO PREVENT SPALLING.
 - ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION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



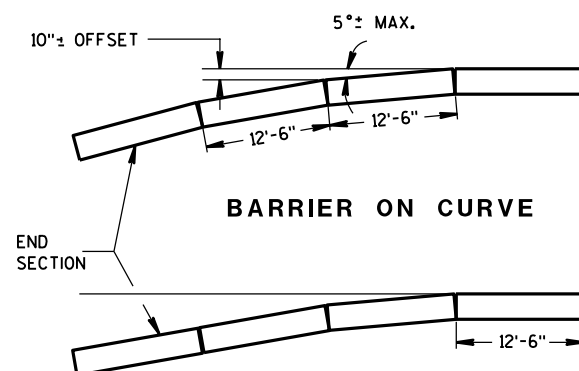
PLAN VIEW



END SECTION



FRONT ELEVATION



FLARE AT BARRIER END

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

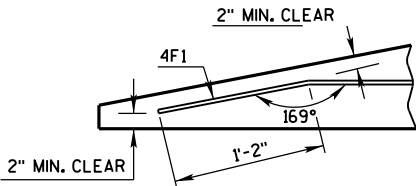
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁴⁰

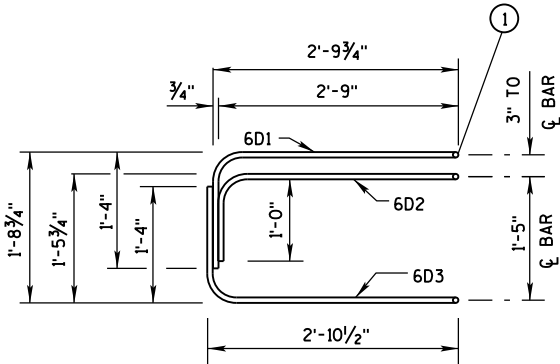
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

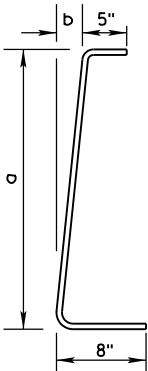
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

TAPER BARRIER SECTION

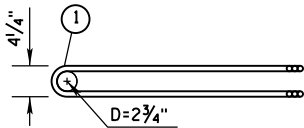
GENERAL NOTES

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

BARRIER SECTION
BILL OF MATERIALS

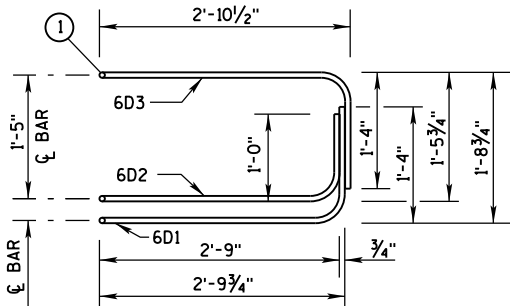
(PER 12'-6" BARRIER SECTION)

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"

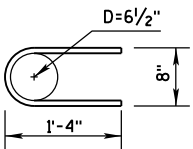


PLAN VIEW
LOOP BAR ASSEMBLY

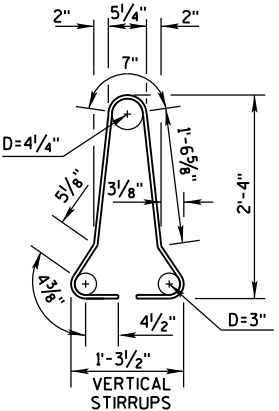
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

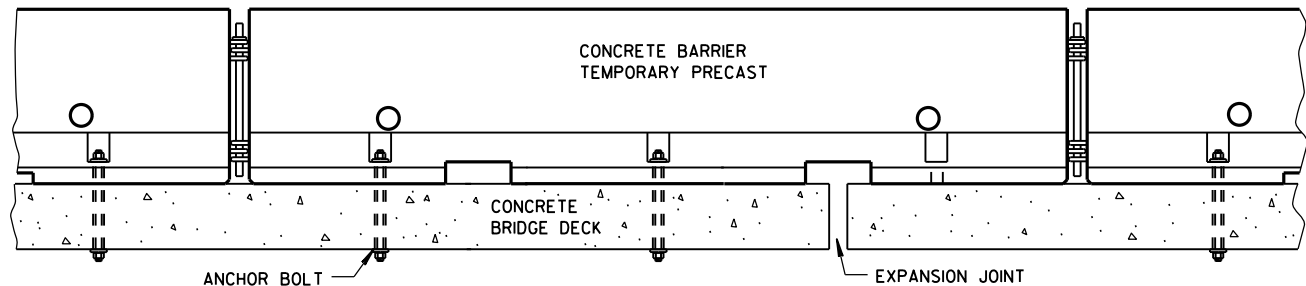
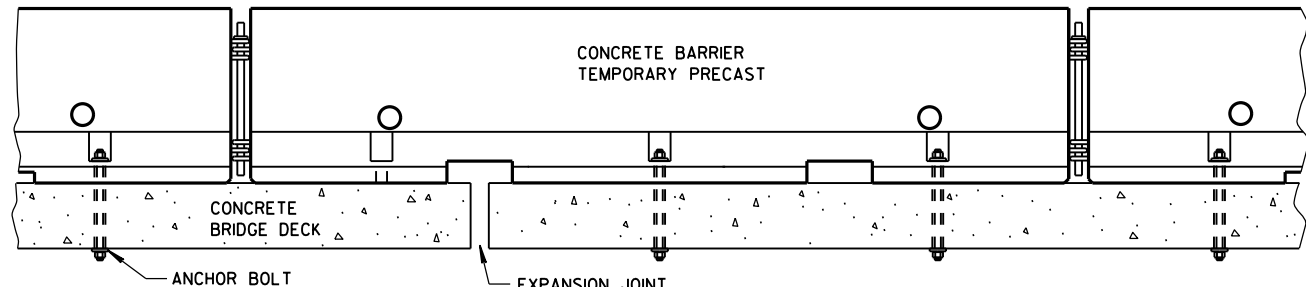


4A1

BARRIER SECTION

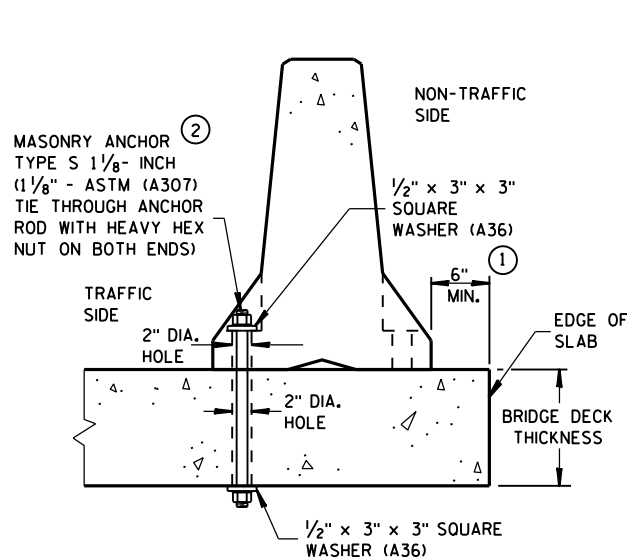
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



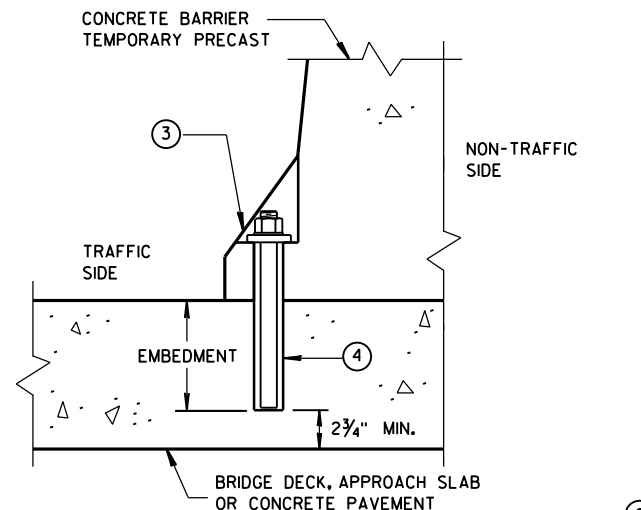
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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.)



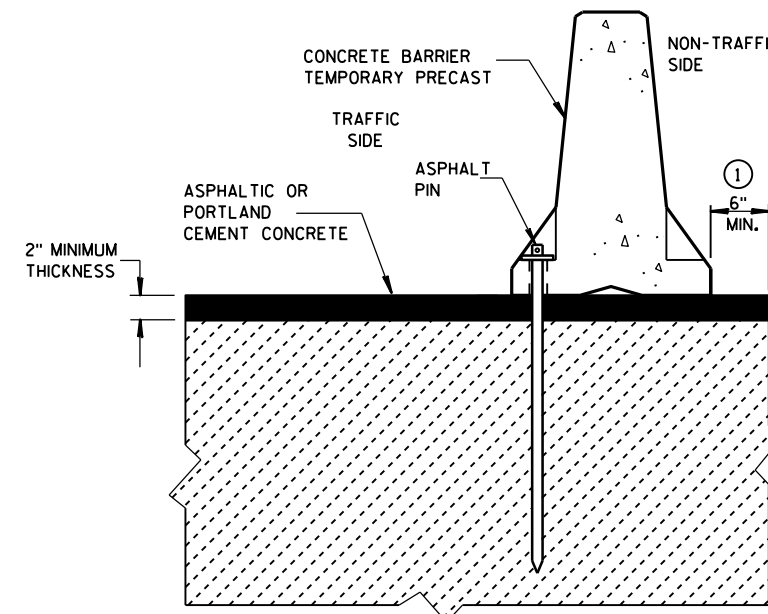
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



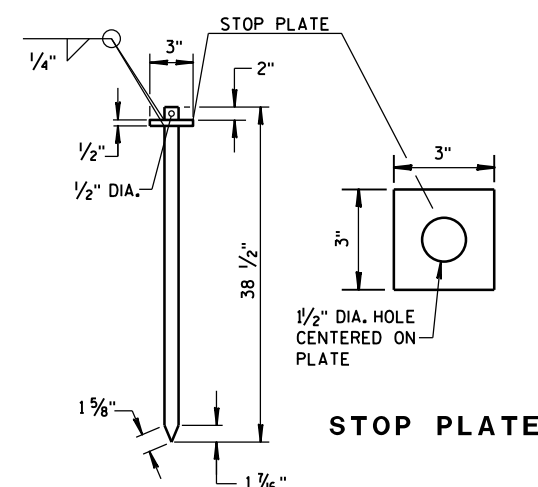
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



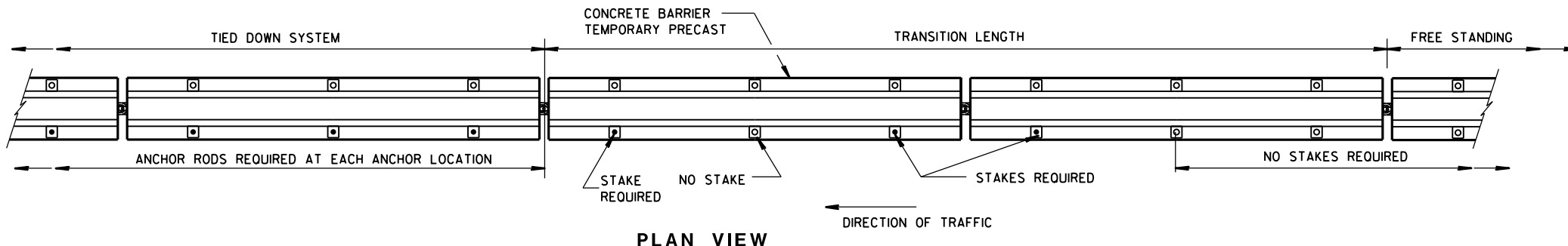
ASPHALT PIN (ASTM A36 STEEL)

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.)



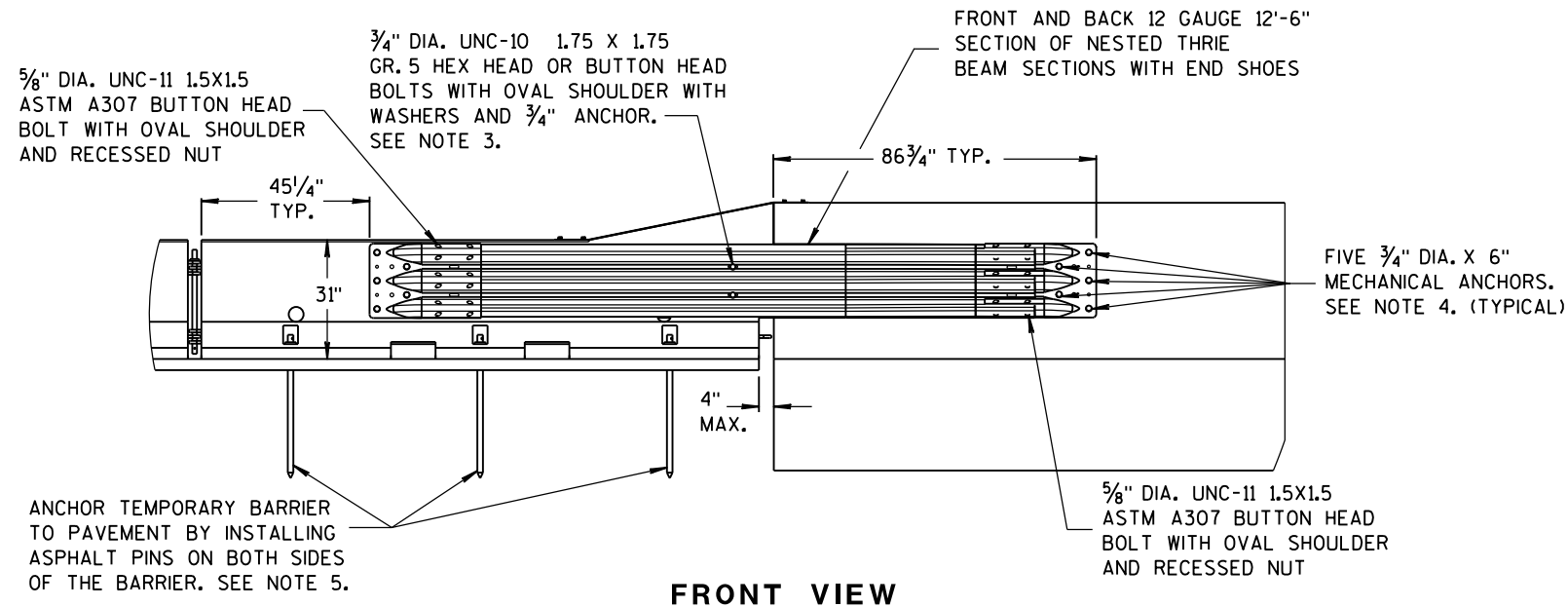
GENERAL NOTES

- 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

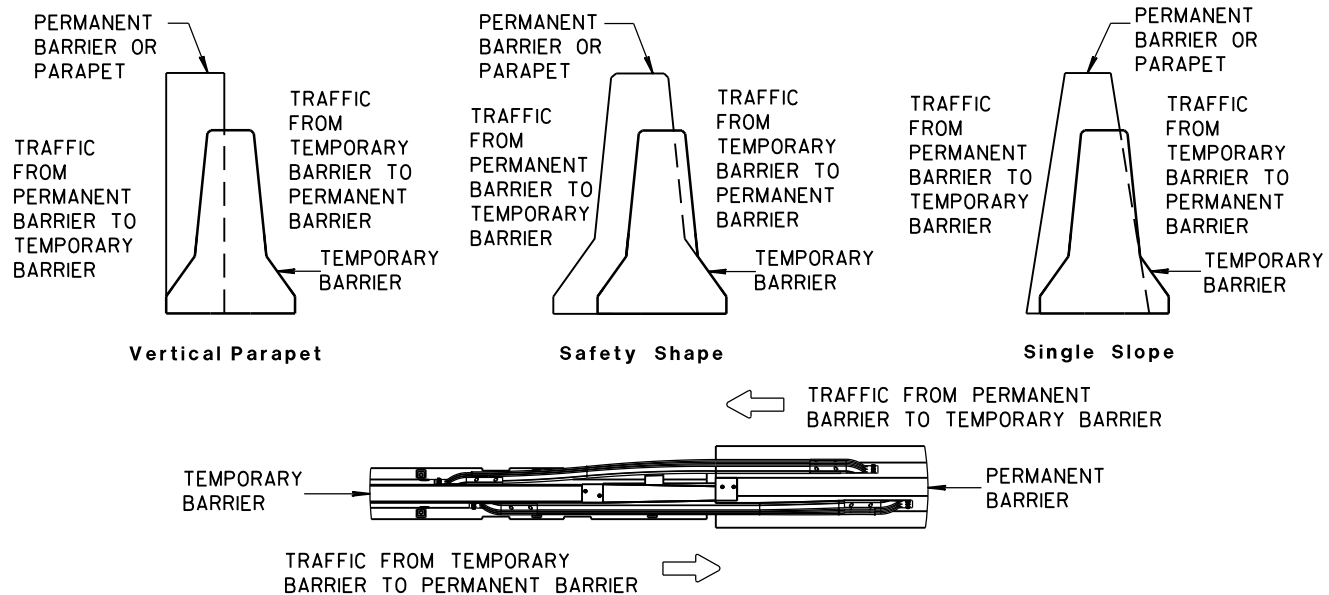
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.
- ANCHORING IS INCIDENTAL TO CONCRETE BARRIER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

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED 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 1 1/8-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 ALL ANCHOR 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 COMMERCIAL GROUT OR MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.
- 1 1/8" DIAMETER A307 THREADED ROD, 1/2" x 3" x 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.



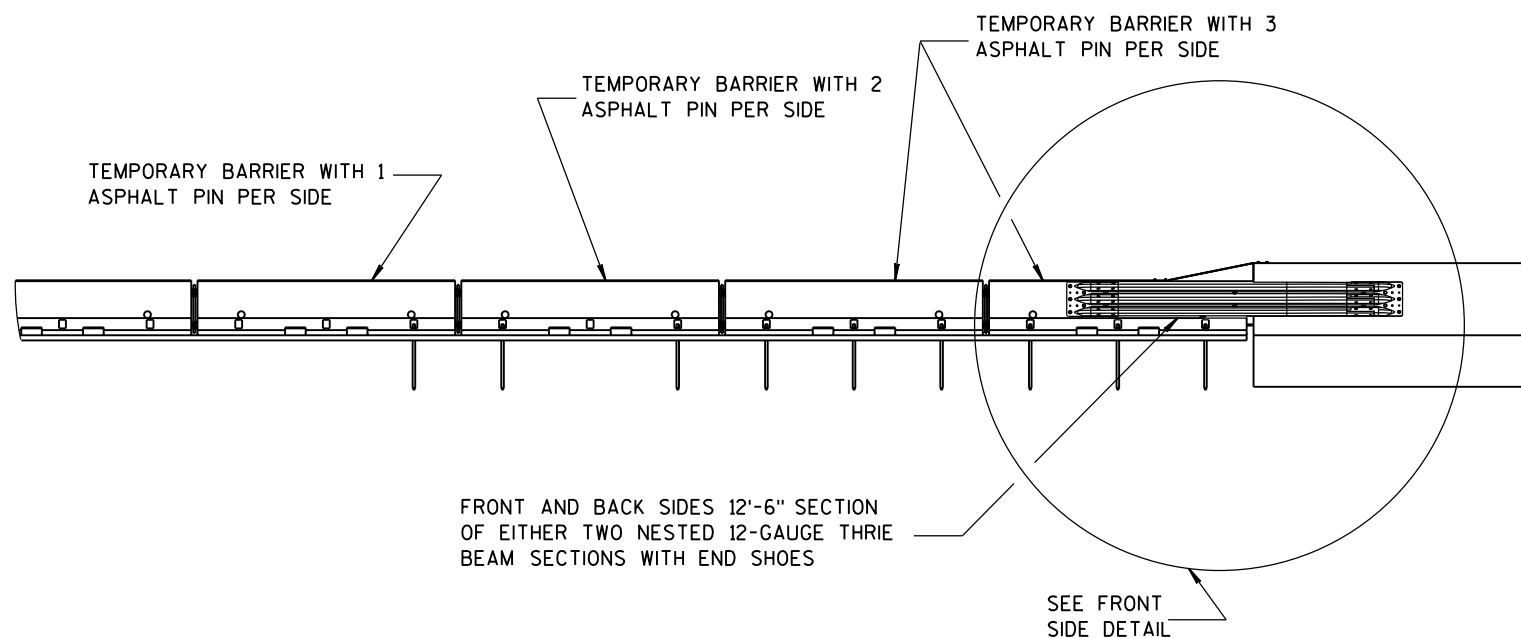
FRONT VIEW



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

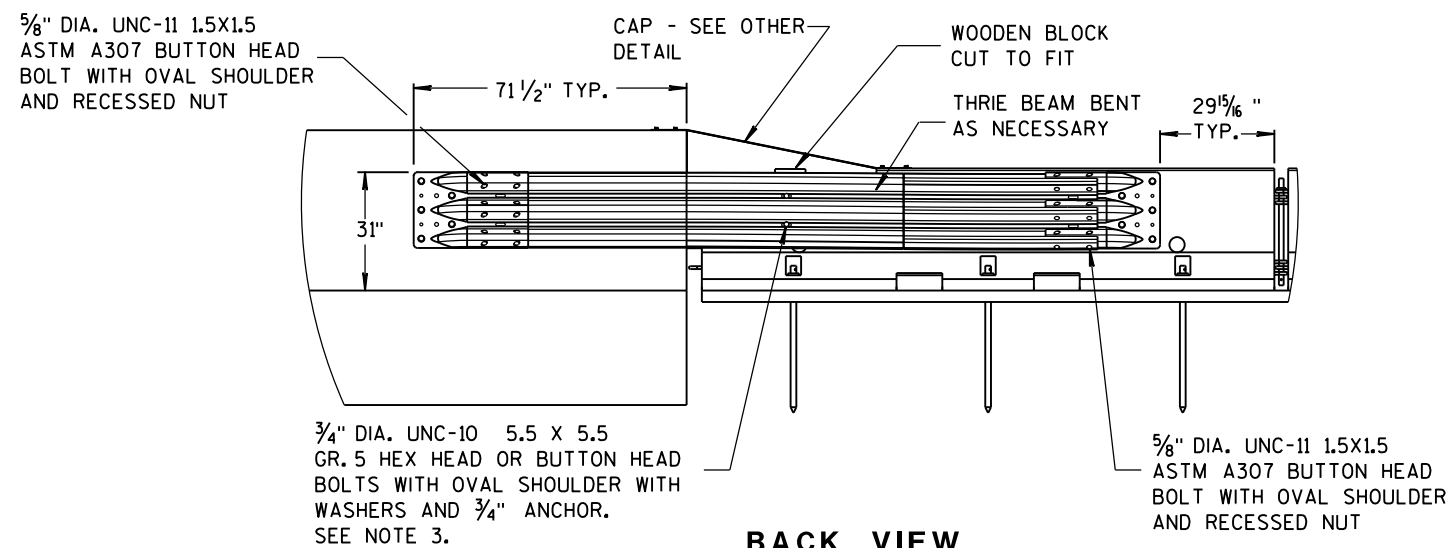
NOTES

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 ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR ADHESIVE 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 ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

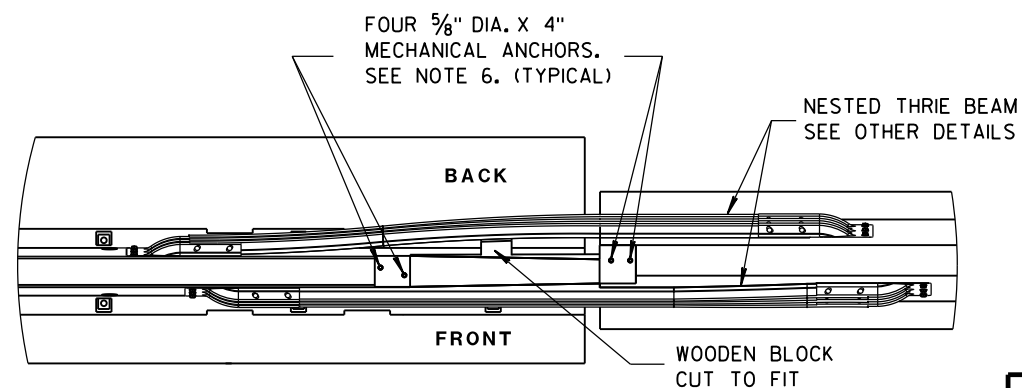


FRONT VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



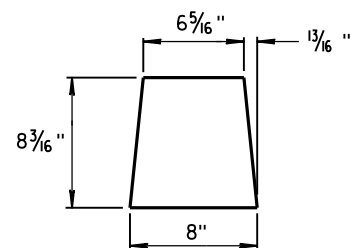
BACK VIEW



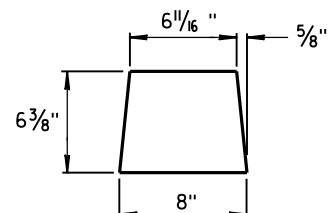
PLAN VIEW

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

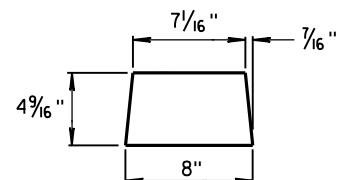
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



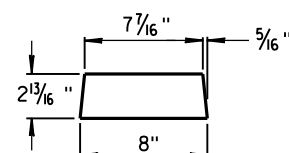
GUSSET 1



GUSSET 2

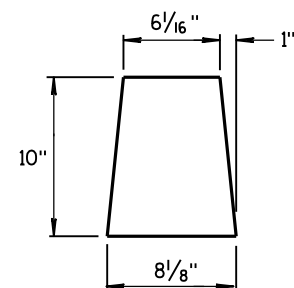


GUSSET 3

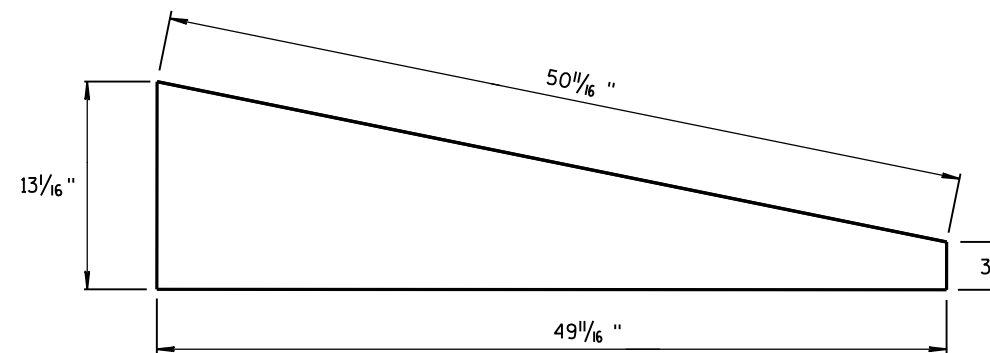


GUSSET 4

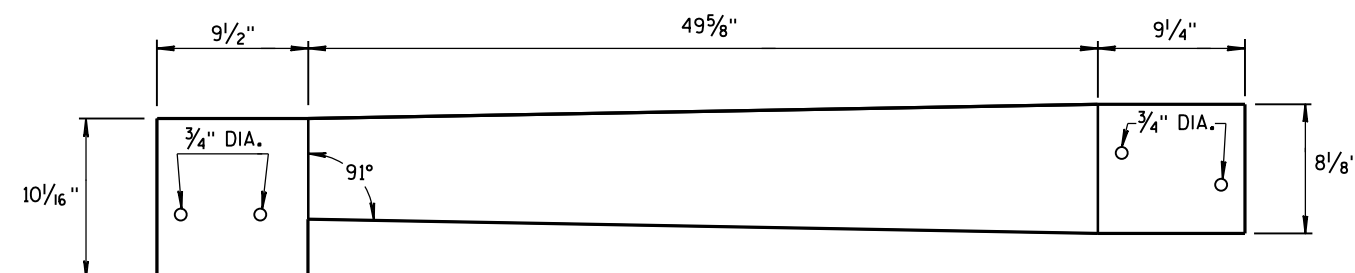
GUSSETS



END PLATE



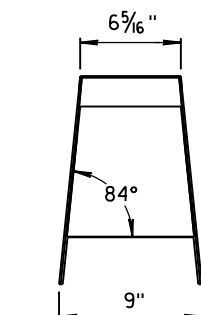
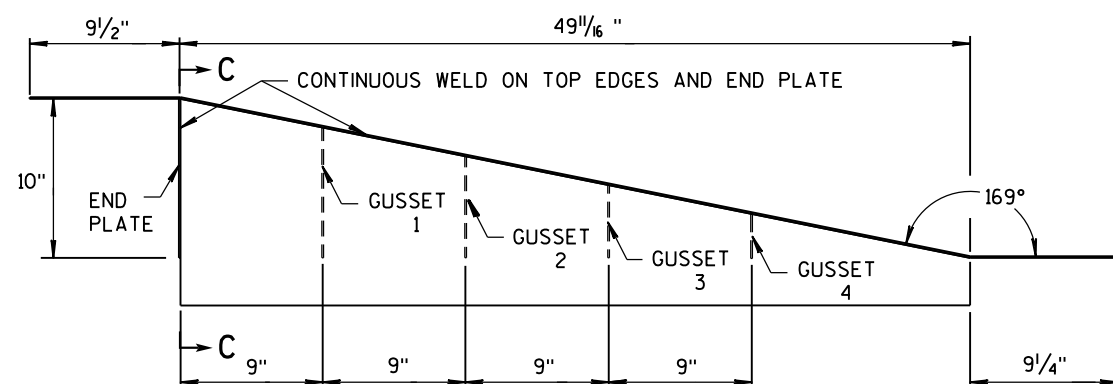
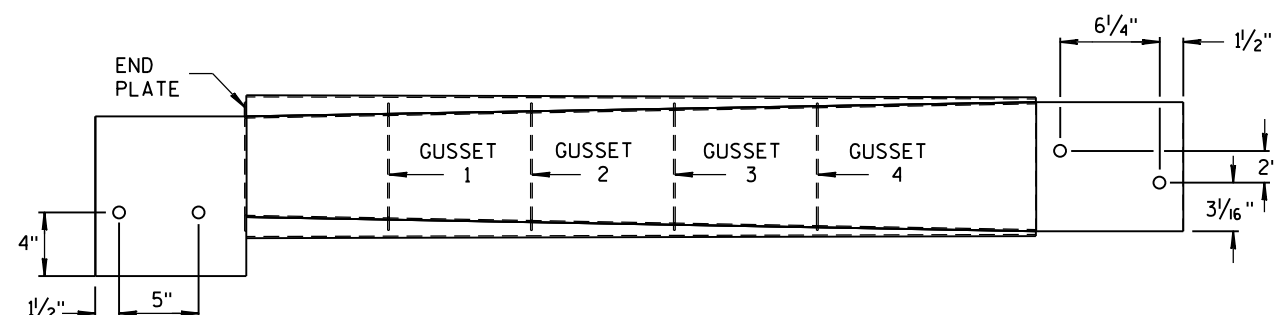
SIDE PLATE



TOP PLATE

**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.



SECTION C-C

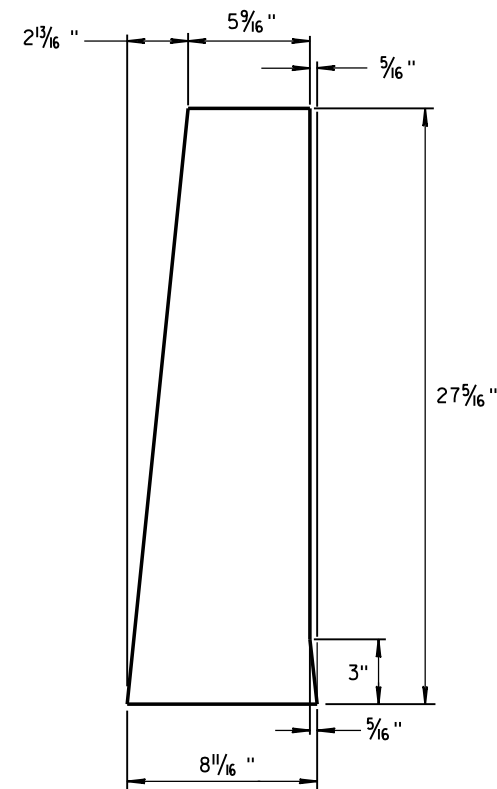
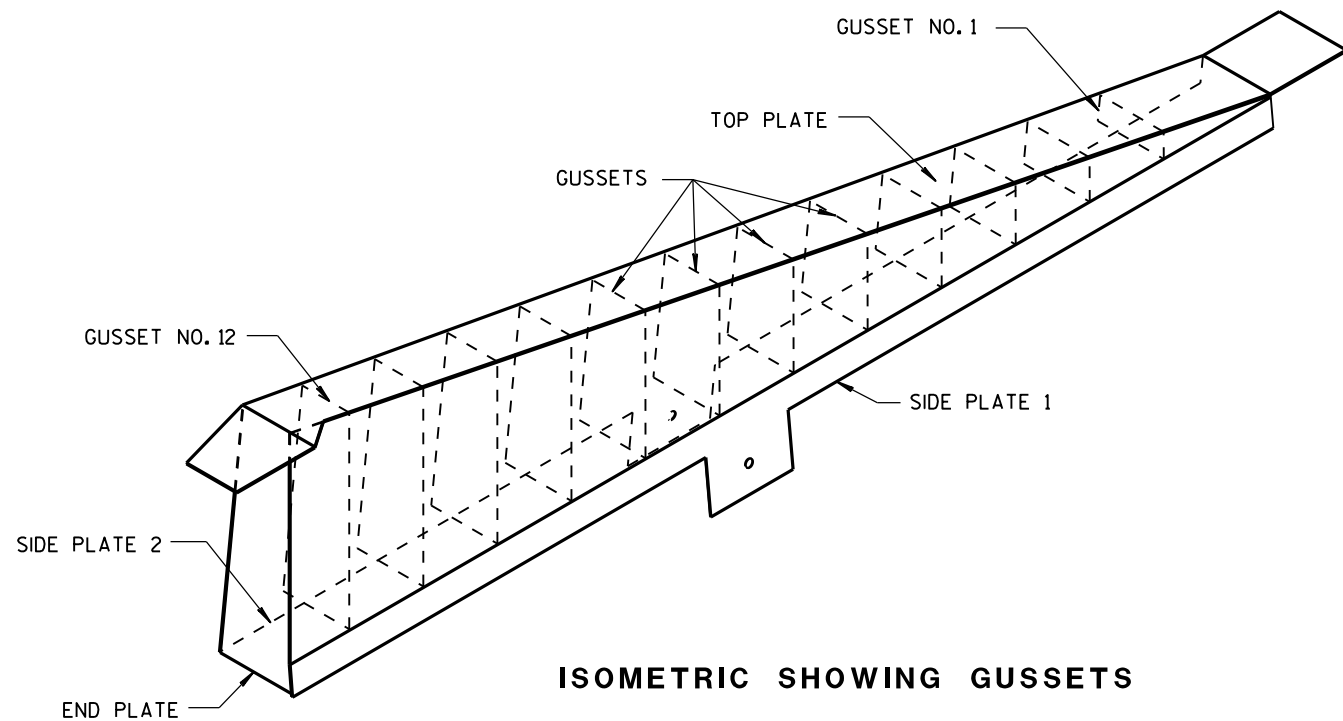
NOTES

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.

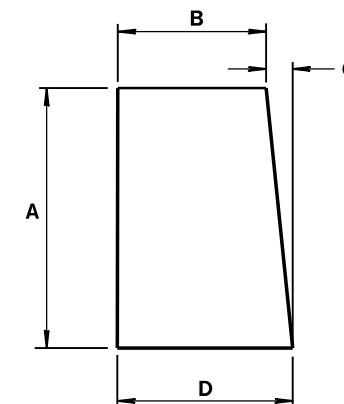
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END PLATE
1/8" STEEL PLATE

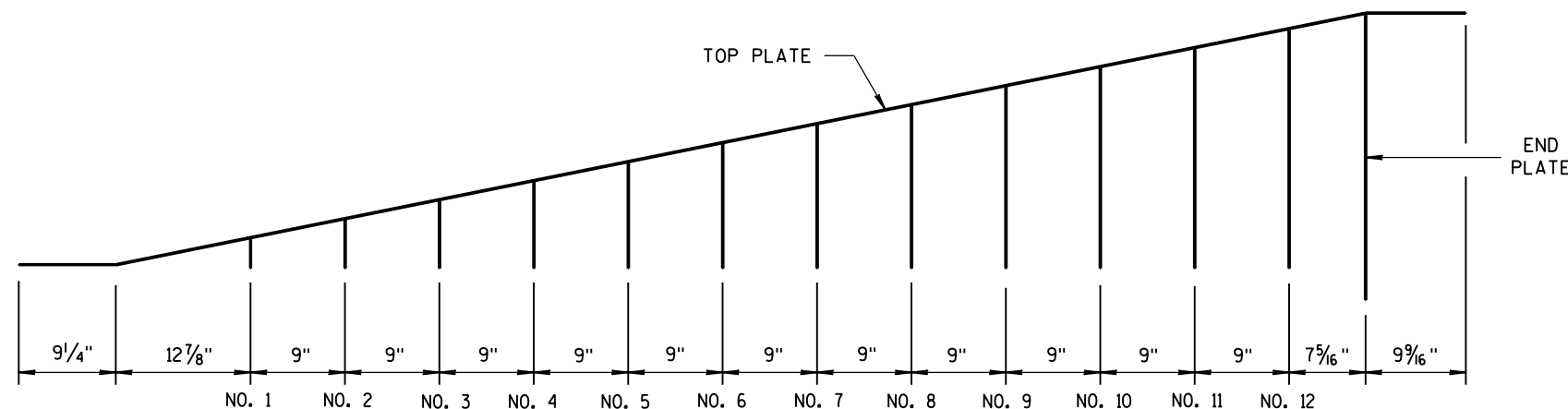


GUSSETS 1 - 12
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	1 1/16 "	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 5/16 "	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.

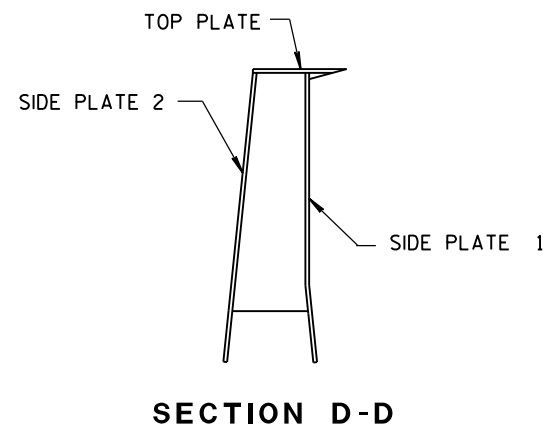
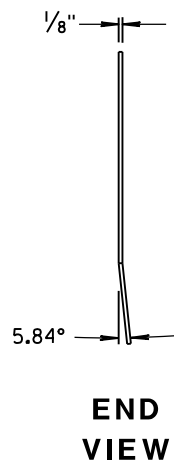
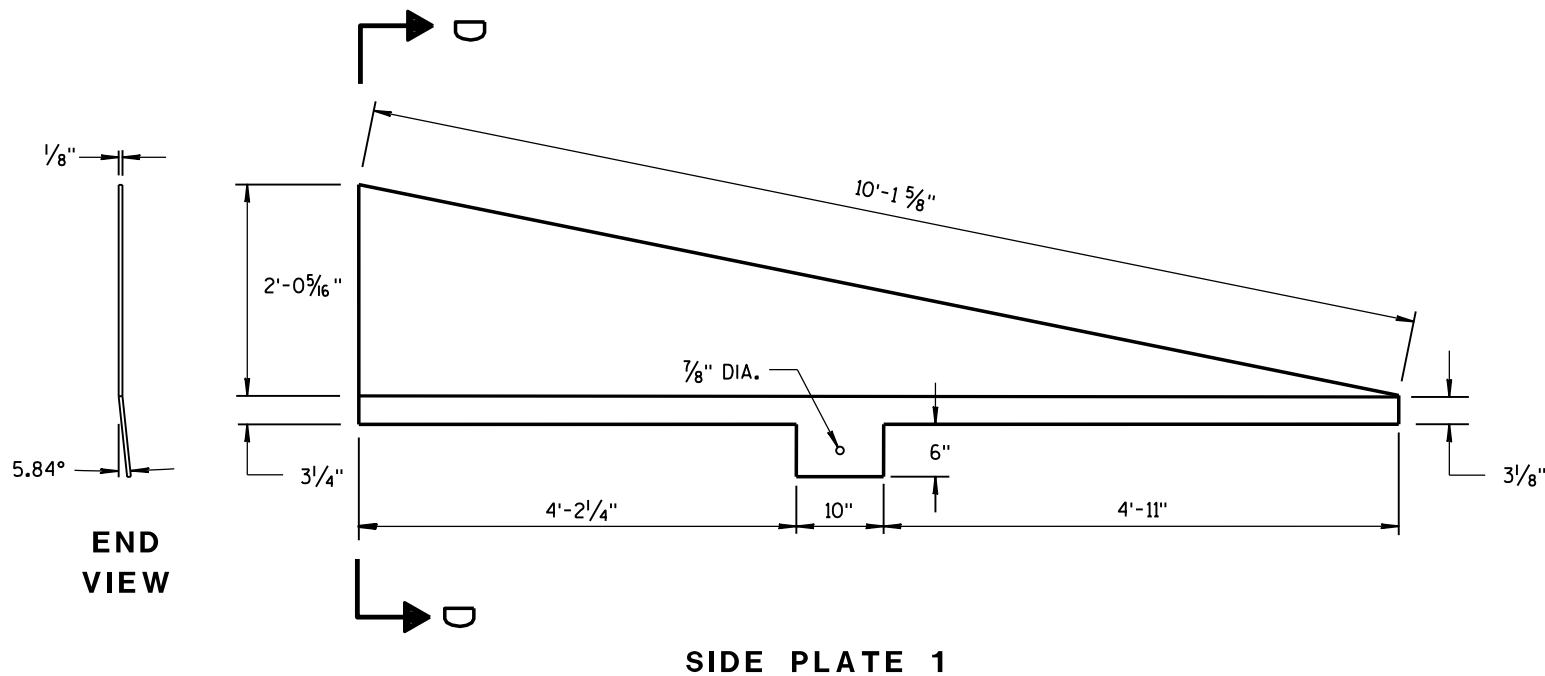
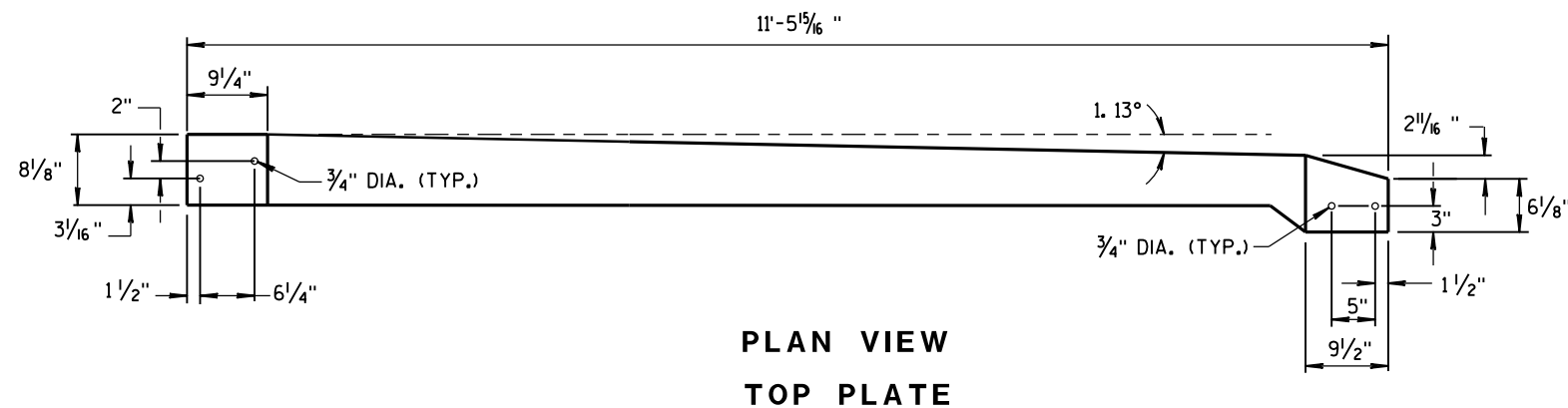
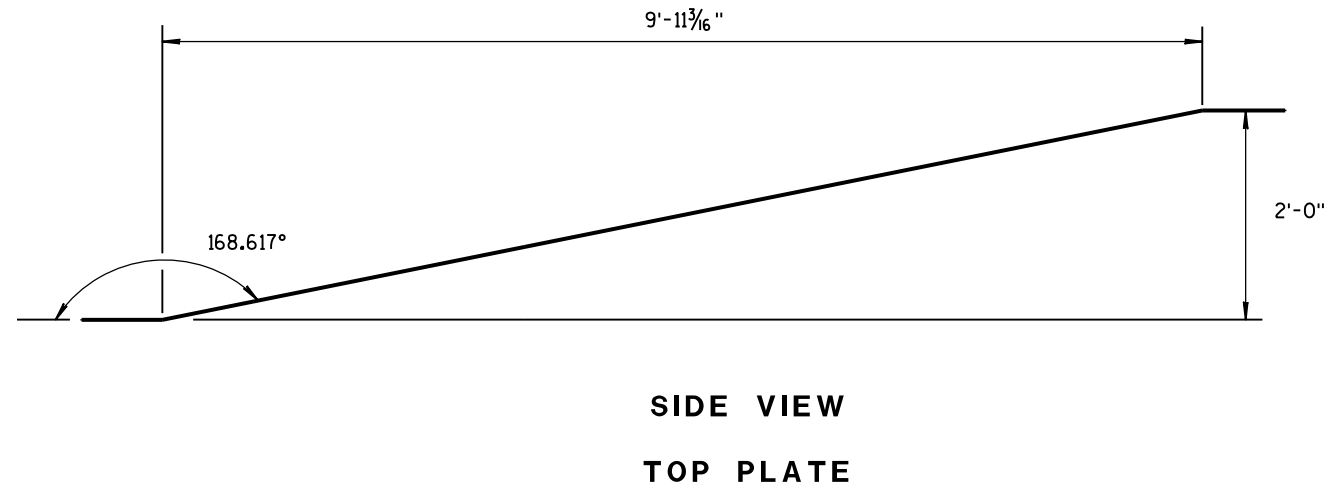
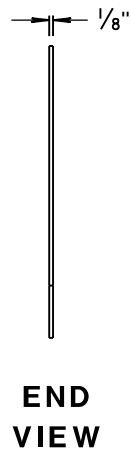
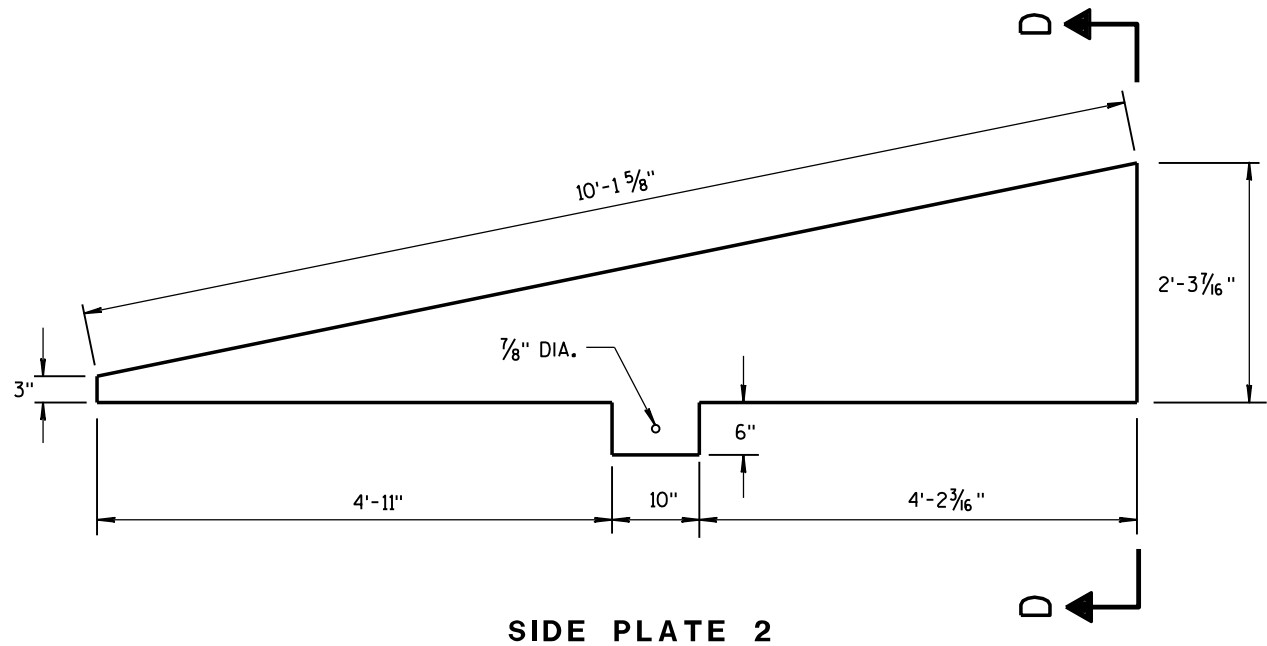


GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**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	/S/ Jerry H. Zoog		
DATE	ROADWAY STANDARD	46	INT
FHWA	ENGINEER		

6

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

- 6

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



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



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



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



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



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



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



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



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



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



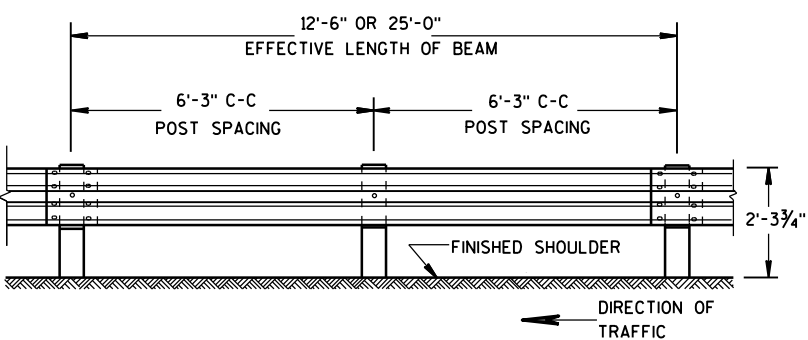
S.D.D. 14 B 15-8a



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

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

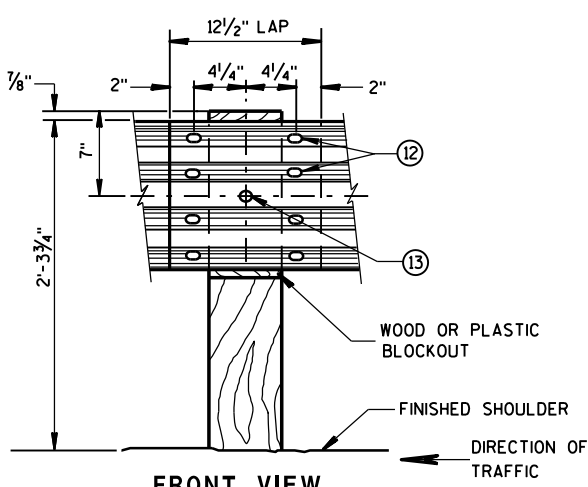
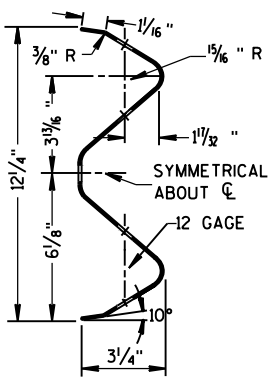
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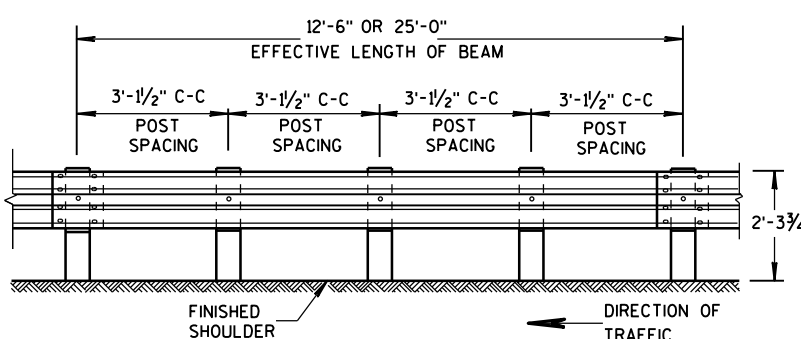
FRONT VIEW

POST SPACING STANDARD INSTALLATION

SECTION THRU W BEAM

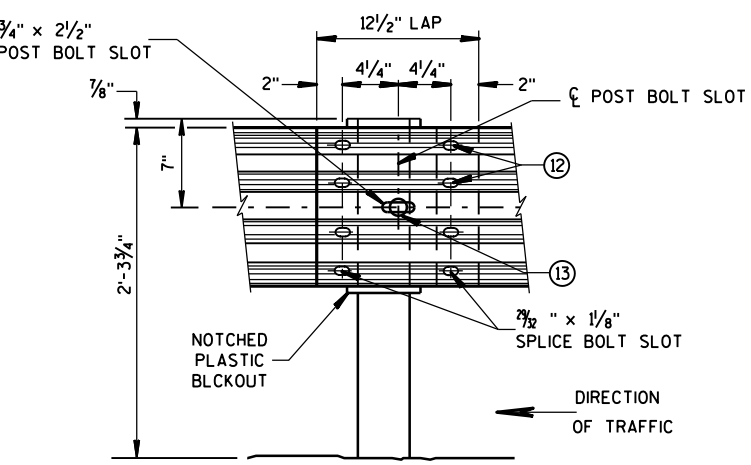


FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



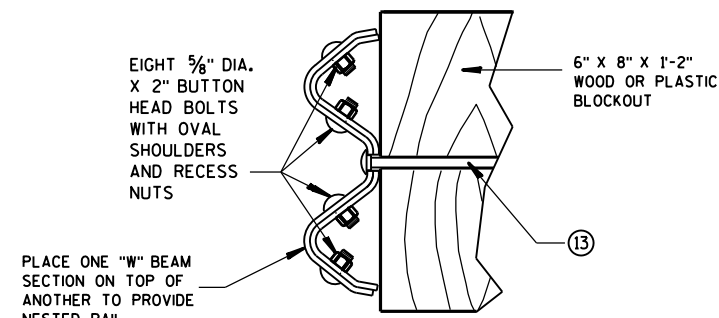
FRONT VIEW

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

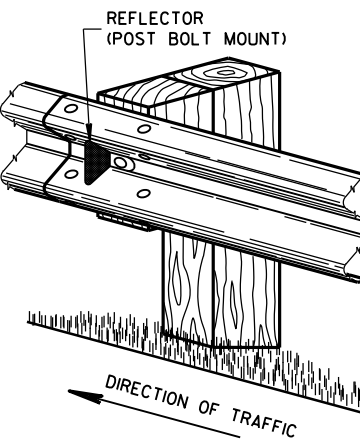


NESTED W BEAM (NW)

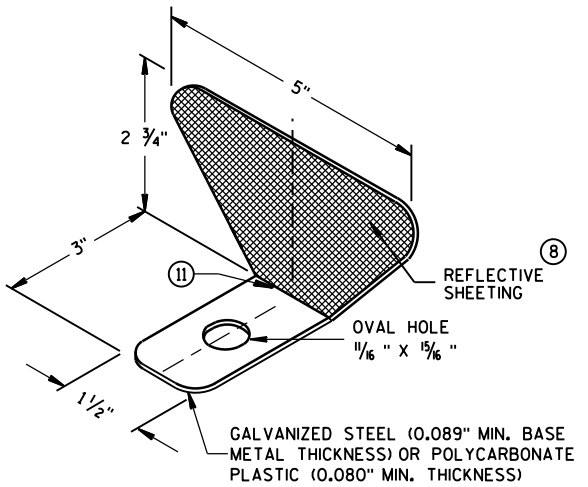
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

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

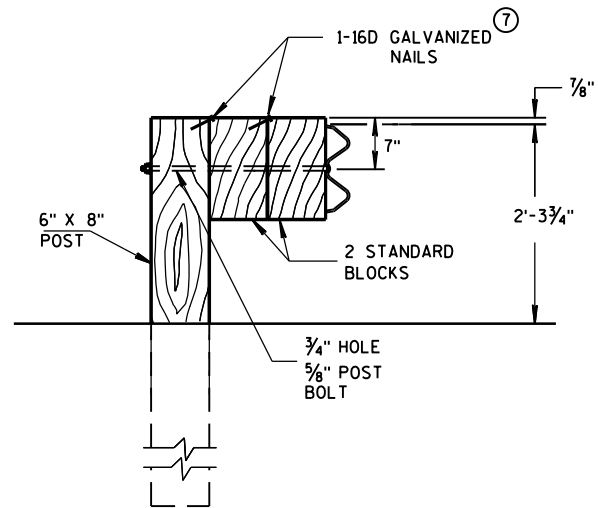


STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN⁴⁸
DEPARTMENT OF TRANSPORTATION

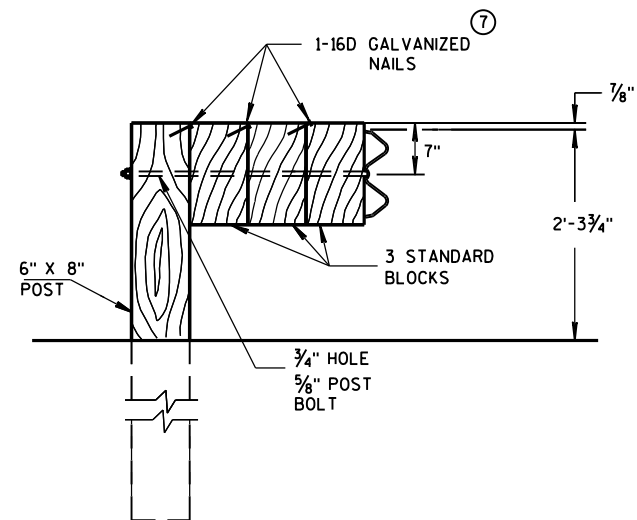
GENERAL NOTES

- 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 - 5/8" φ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



DETAIL FOR DOUBLE BLOCKS

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

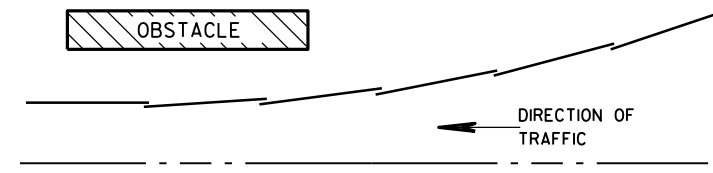


DETAIL FOR TRIPLE BLOCKS

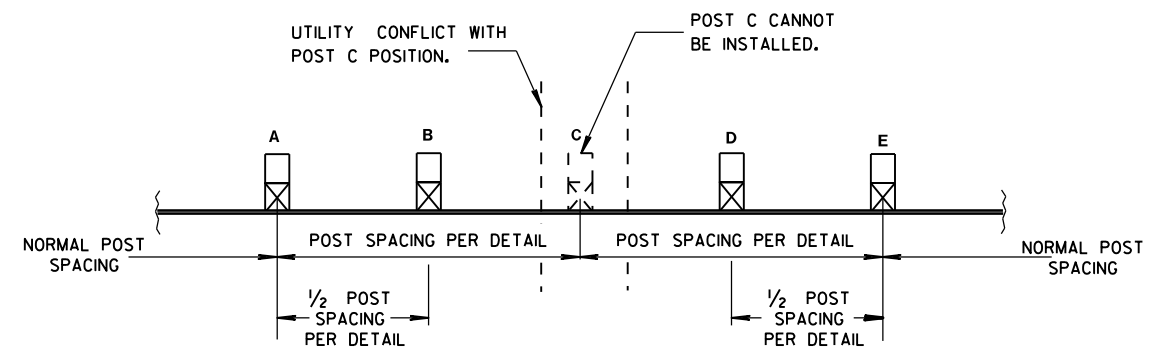
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

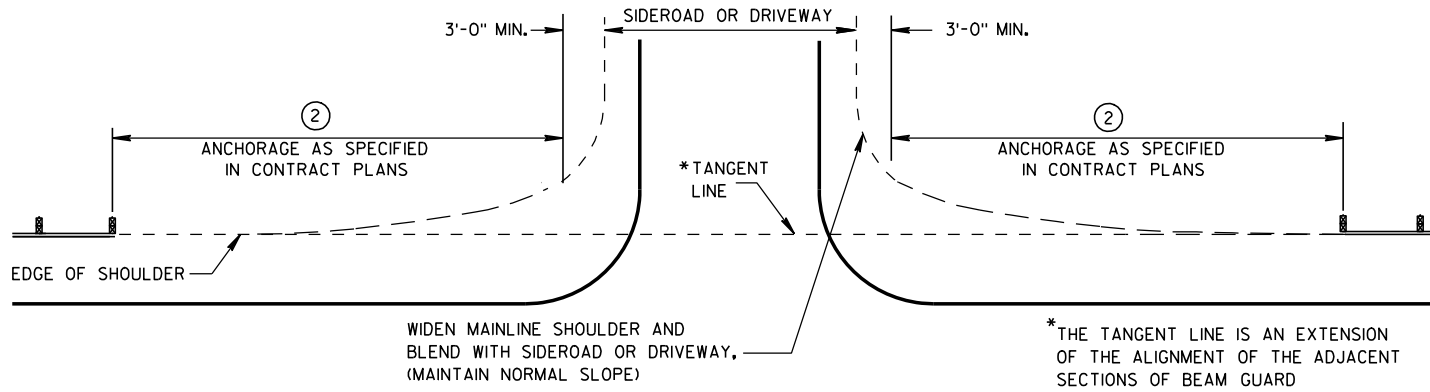
June 2014

DATE

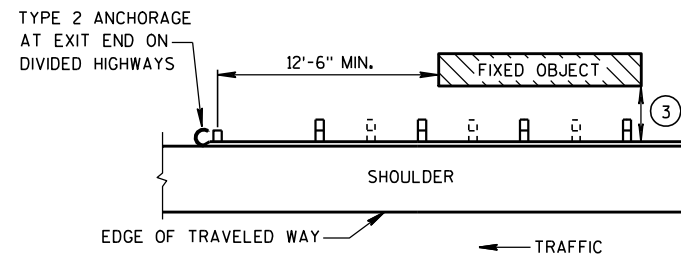
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

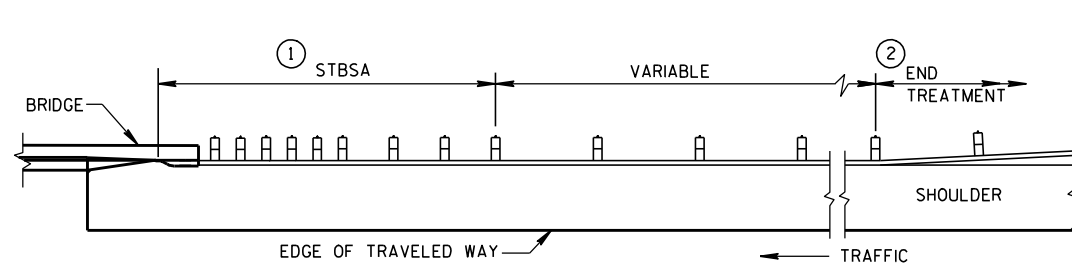
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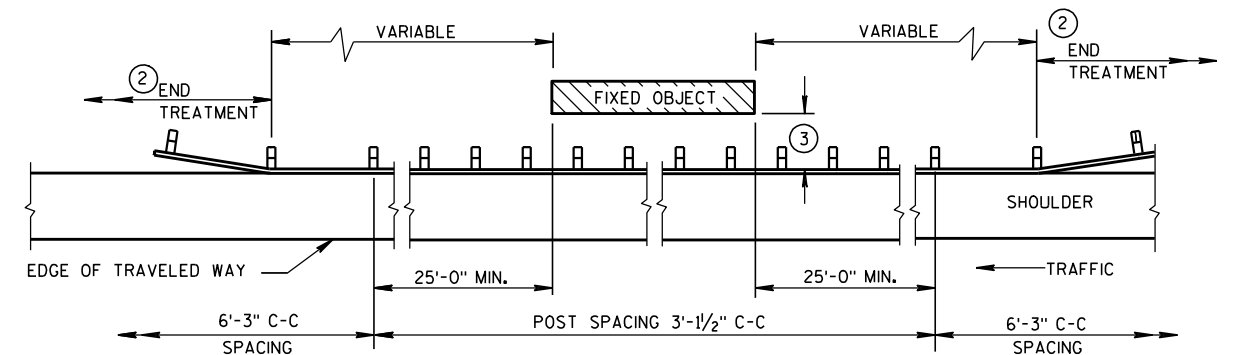
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES

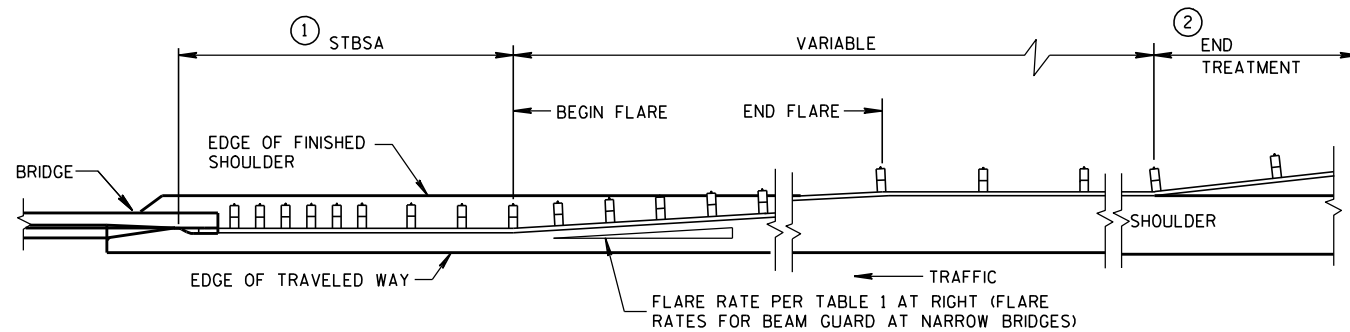


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1



BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH 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.

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

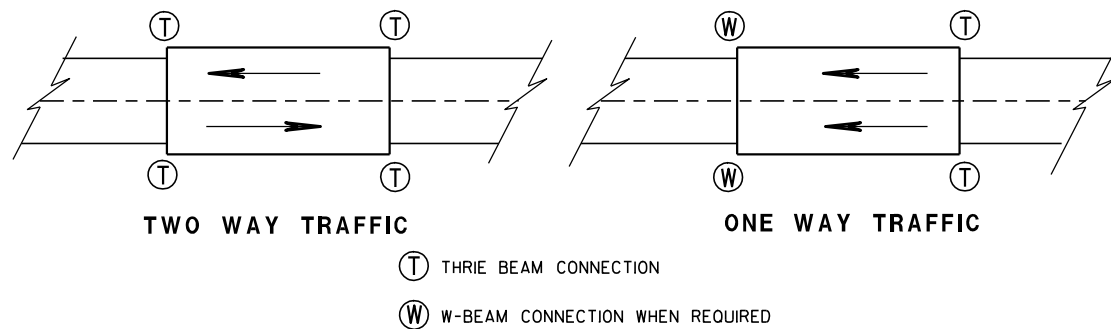
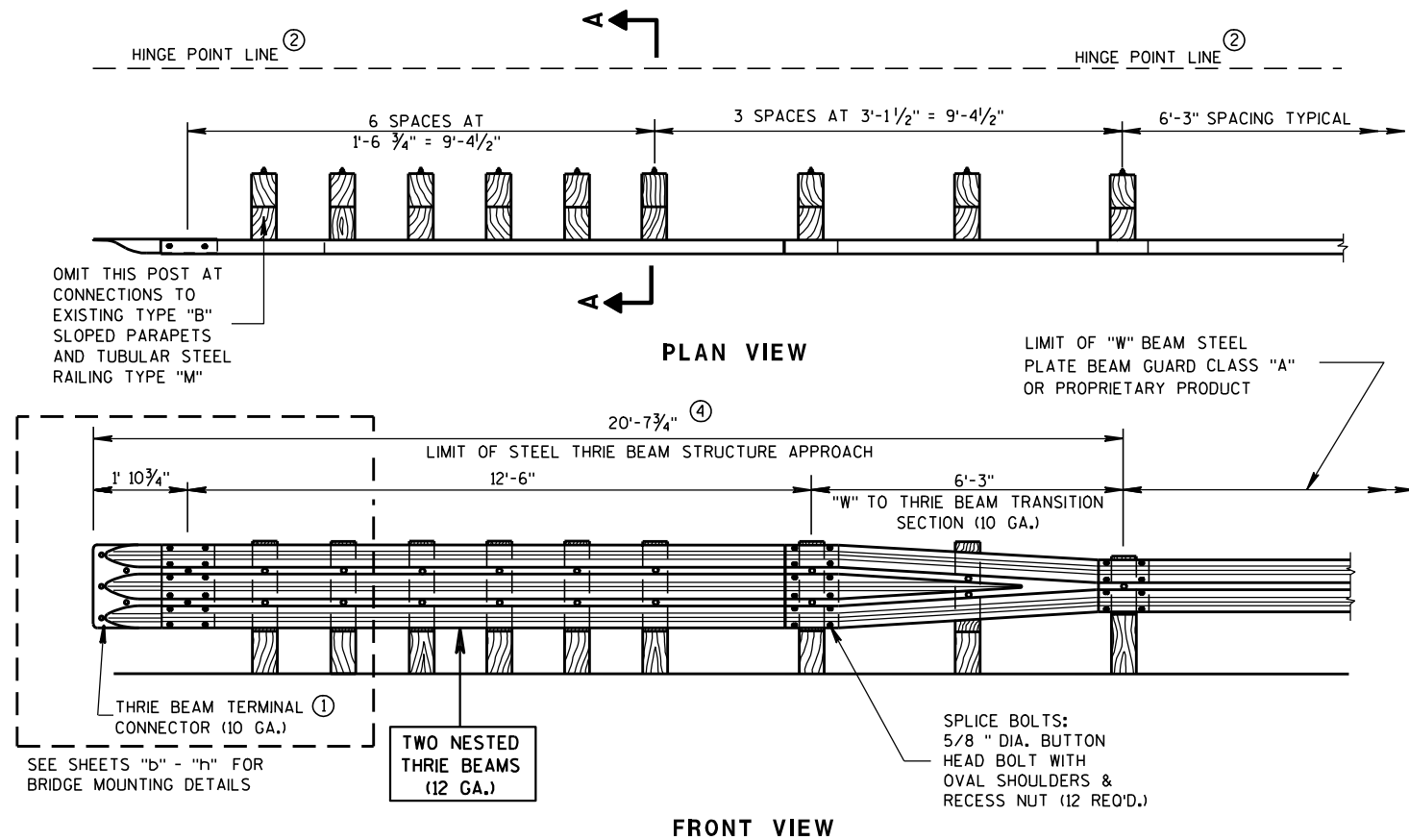
- STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1 1/2"
4'-6"	6' - 3"

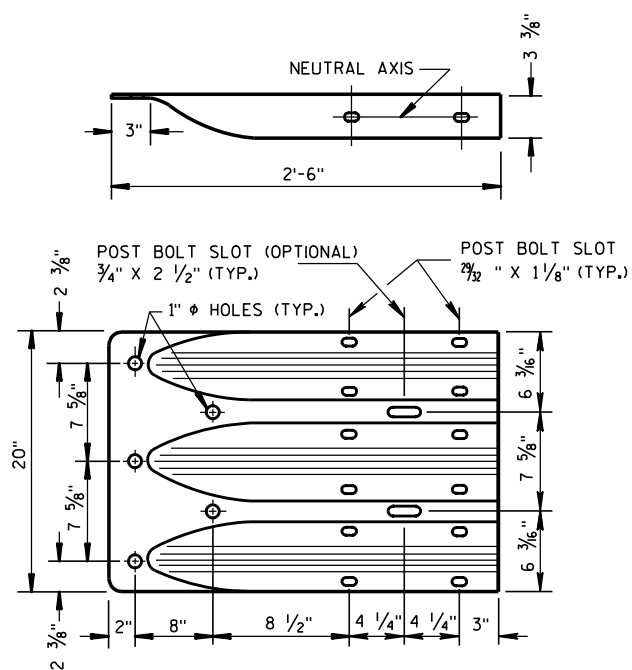
STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

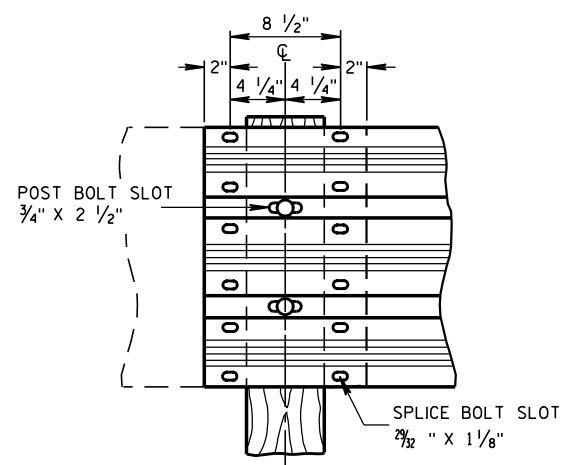
APPROVED
8-21-07 /S/ Jerry H. Zoon
DATE ROADWAY STANDARDS (50) INT
FHWA ENGINEER



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



THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

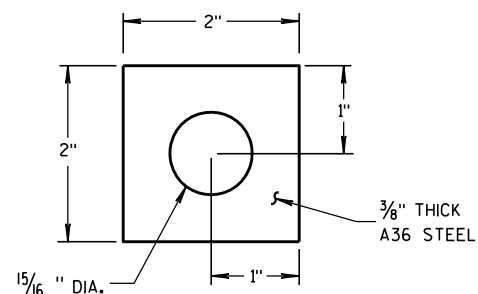
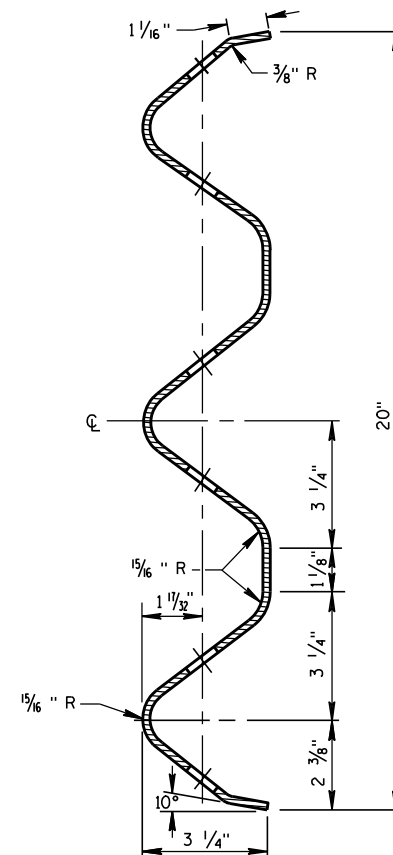


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

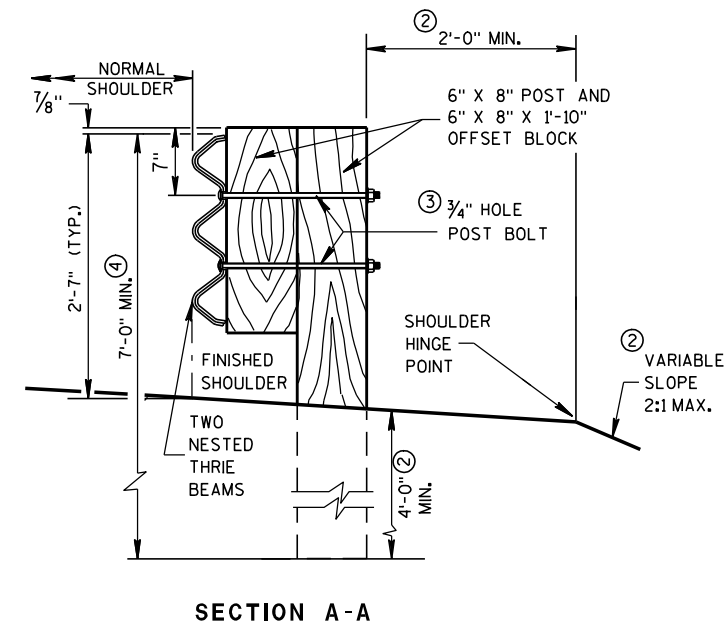
GENERAL NOTES

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.



STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

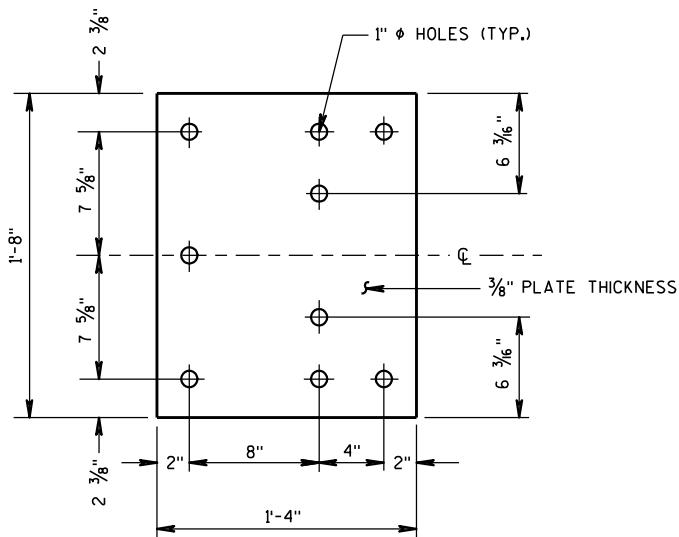
FHWA

/s/ Jerry H. Zoon

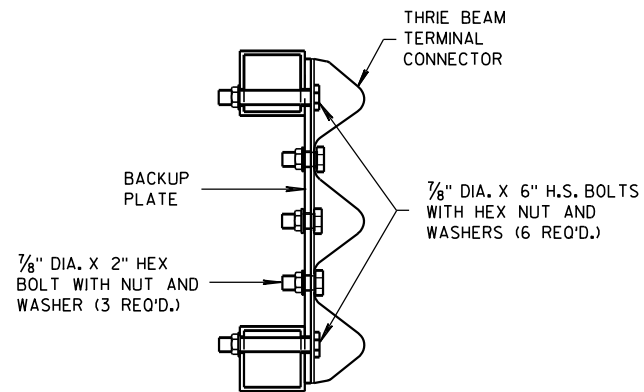
ROADWAY STANDARDS 51

ENGINEER

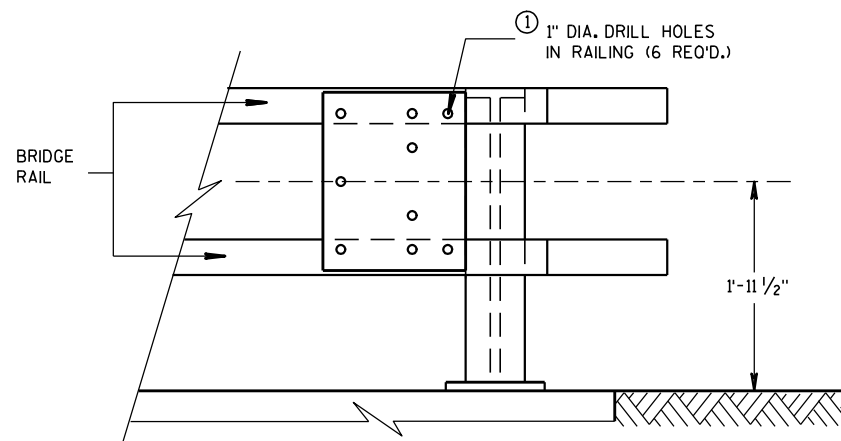
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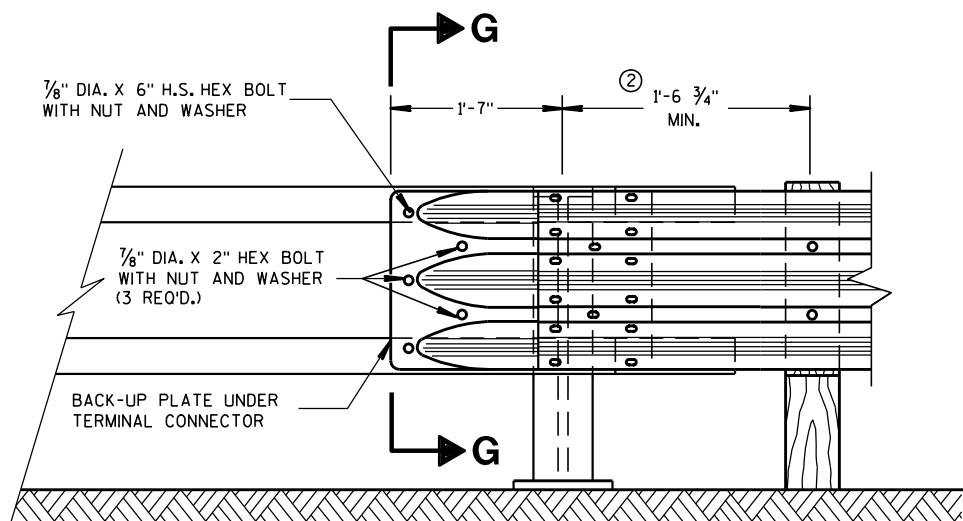
BACK-UP PLATE DETAIL



SECTION G-G

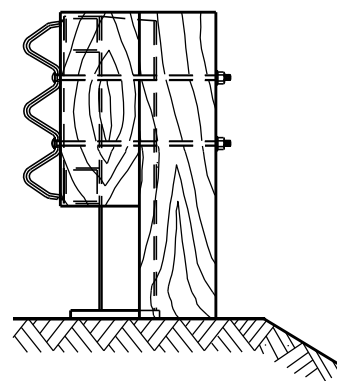


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

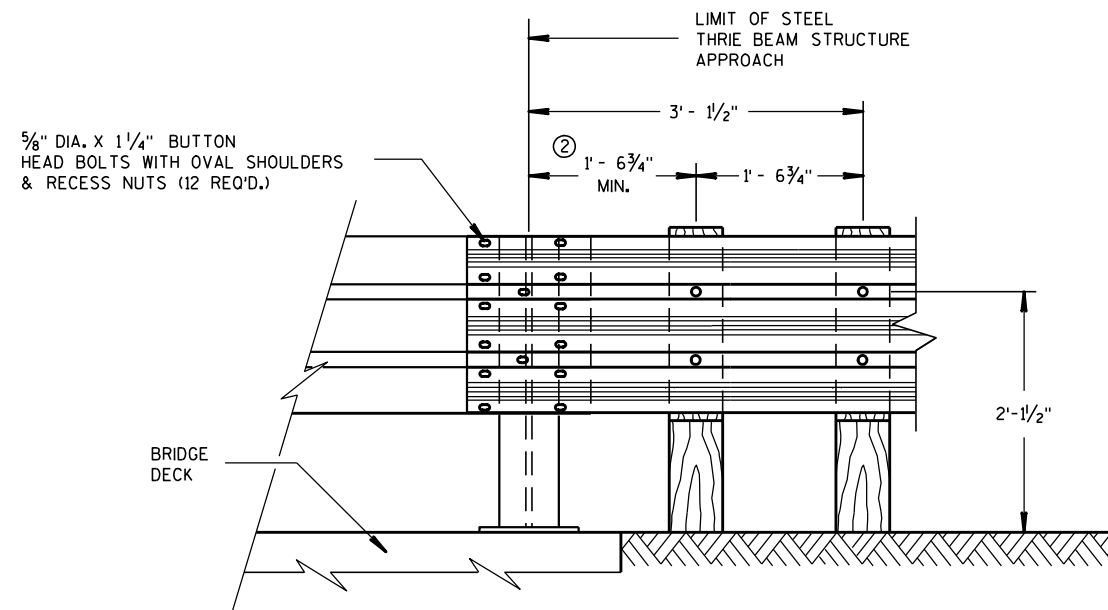


END VIEW

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.



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

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

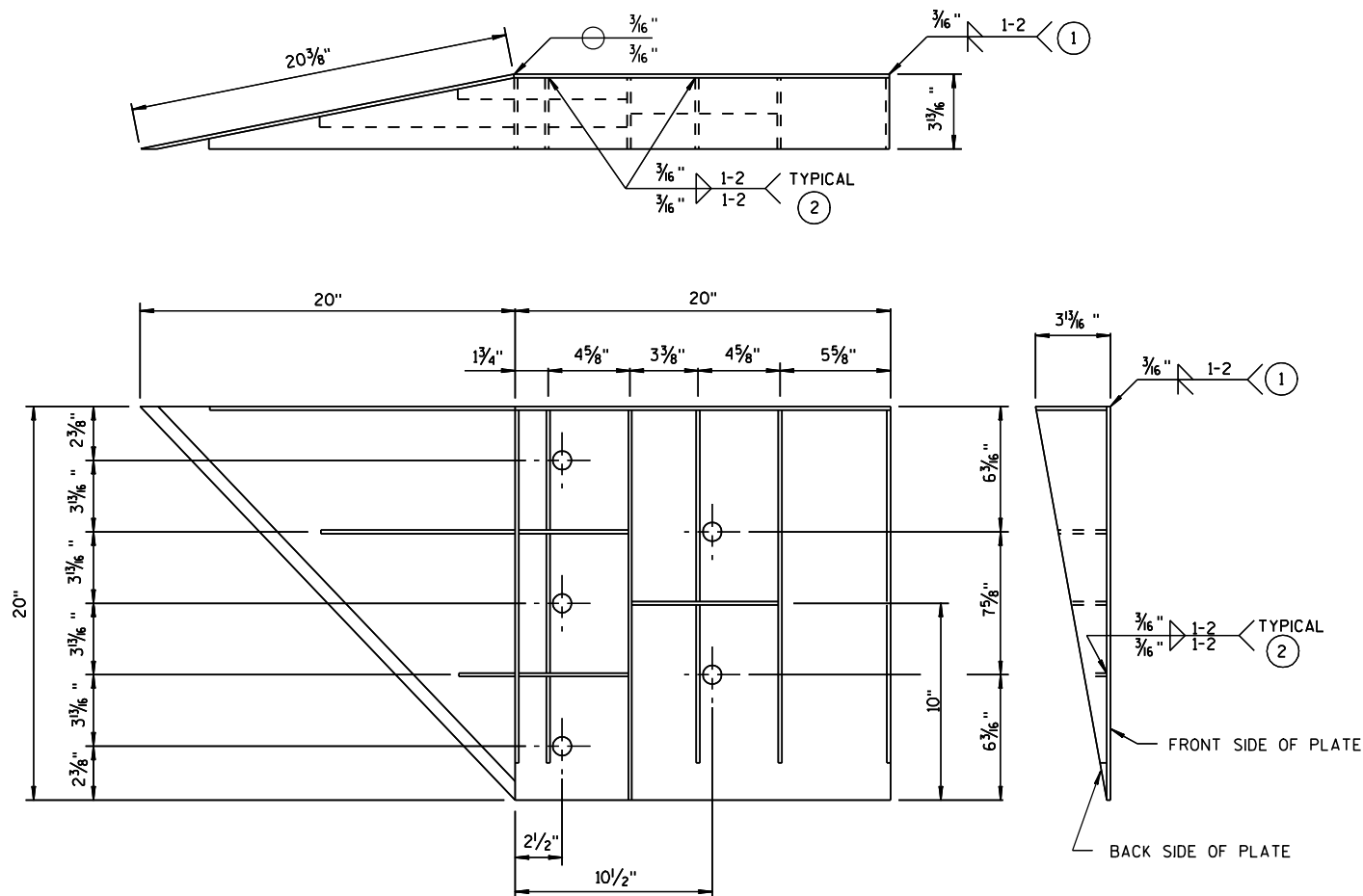
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

FHWA

/S/ Jerry H. Zapp
ROADWAY STANDARDS 52 ENT
ENGINEER



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

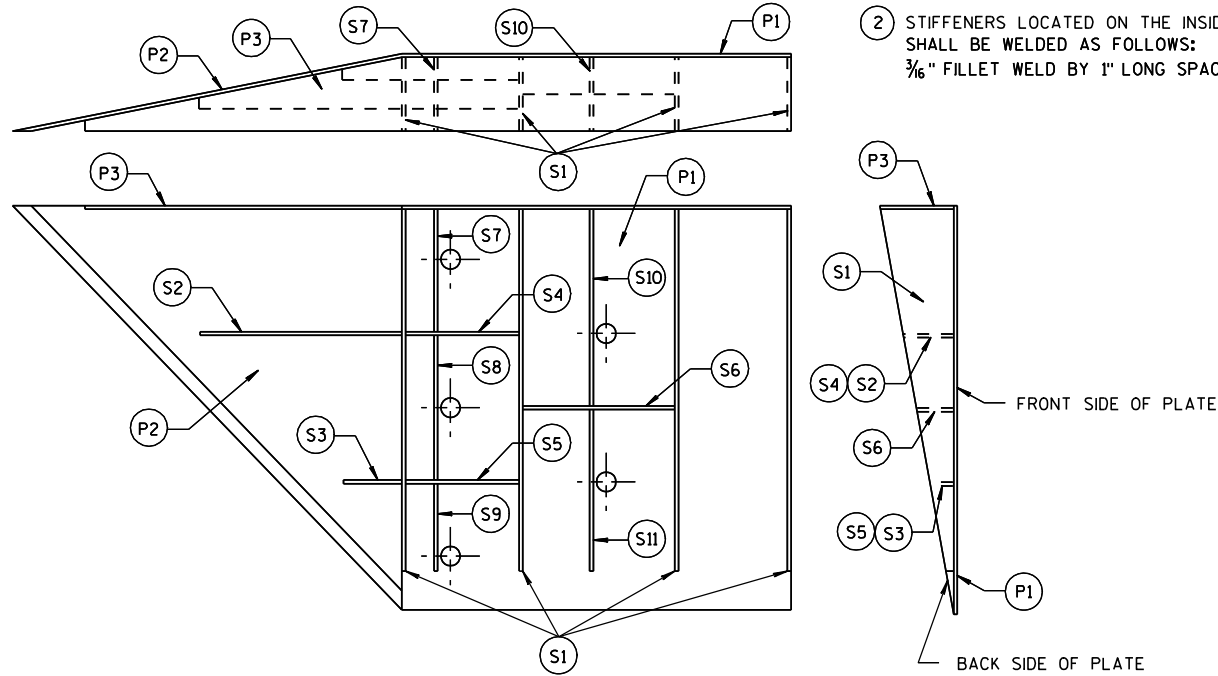


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

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 5/16"	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 1/16"	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 7/32" 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 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

STEEL THRIE BEAM STRUCTURE APPROACH

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".

**STEEL THRIE BEAM
STRUCTURE APPROACH,
CONNECTOR PLATE DETAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE

/S/ Jerry H. Zopp
ROADWAY STANDARDS
ENGINEER

53
CENT

FHWA

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
①	4	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	**	STEEL TUBE: OPTION 1 - QUANTITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANTITY 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 1/4" **
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 1/2" 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'-6 1/2" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
⑫	3	STEEL PLATE BEAM: 12 GA. 13'-6 1/2"
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 3/8" ϕ 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 3/2" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.

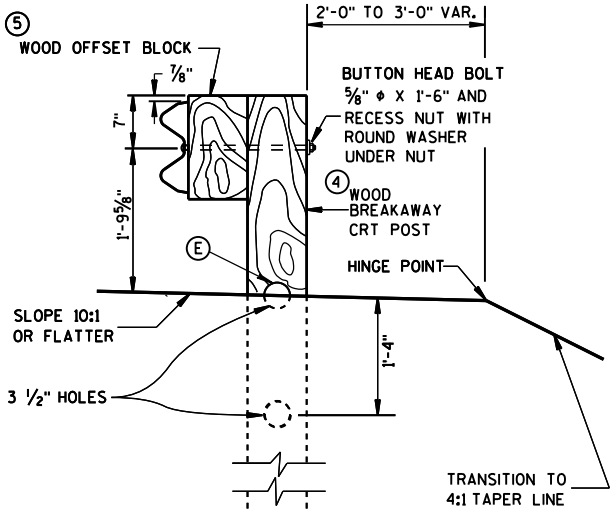
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

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

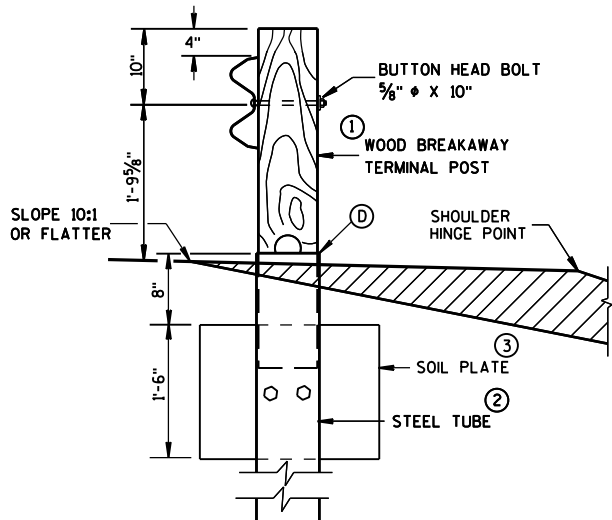
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

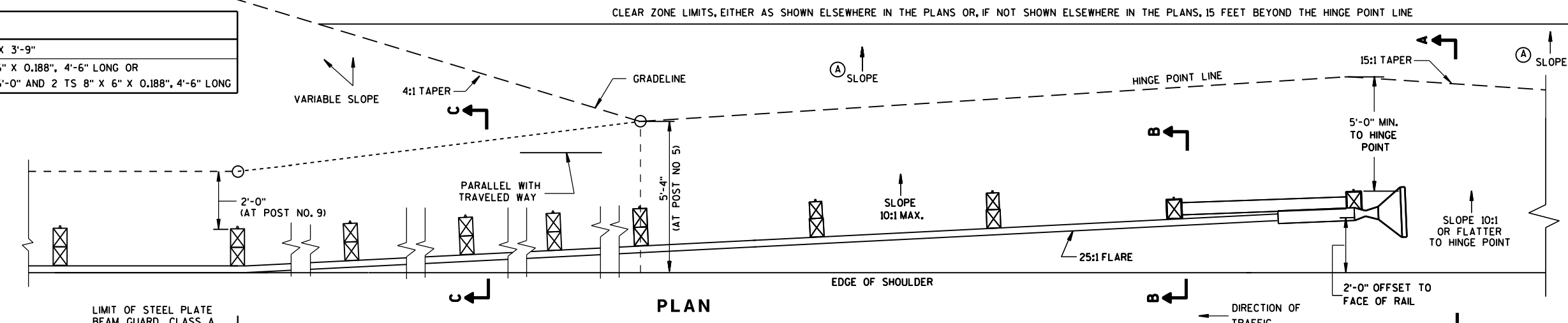
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE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



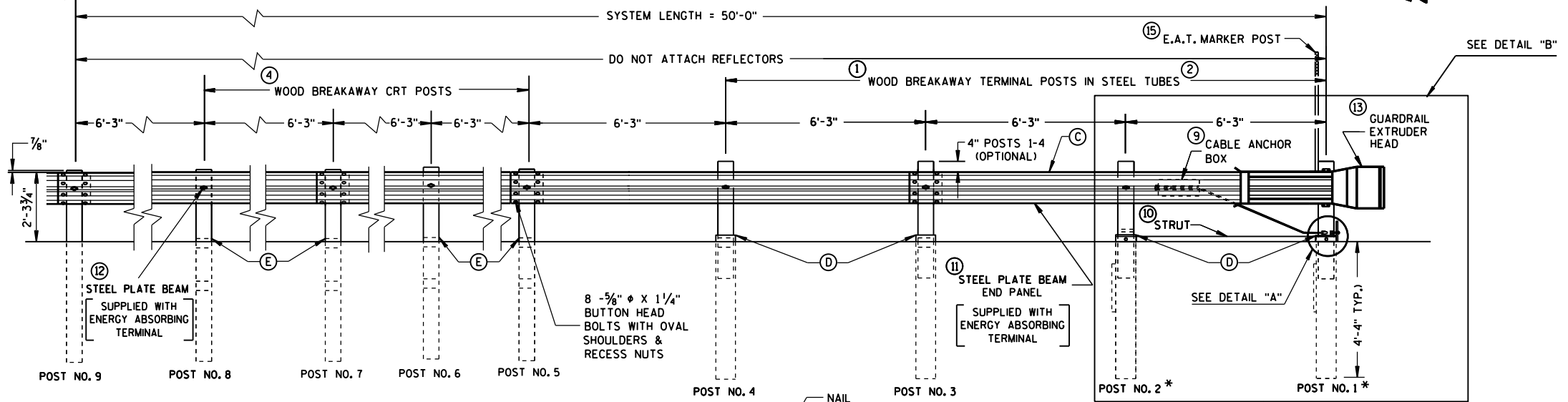
SECTION C-C
TYPICAL AT POST NOS. 6, 8



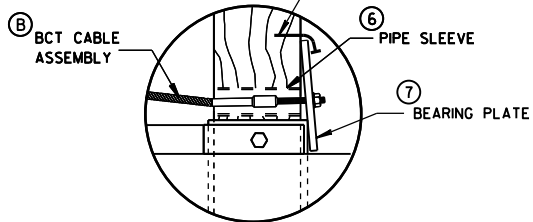
SECTION B-B
TYPICAL AT POST NO. 2 *



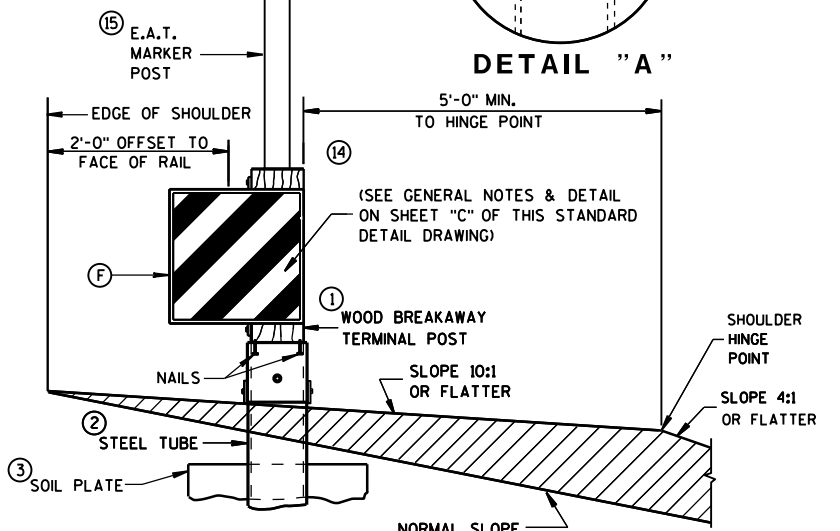
PLAN



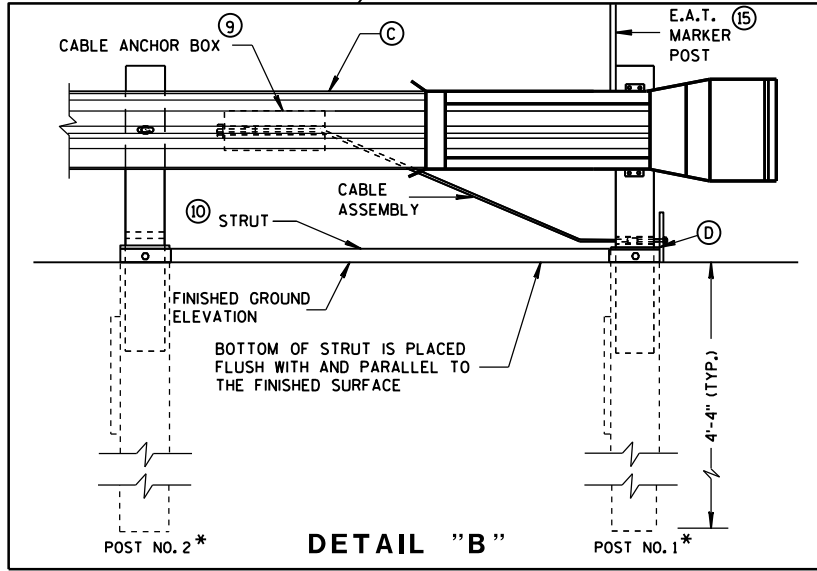
ELEVATION



DETAIL "A"



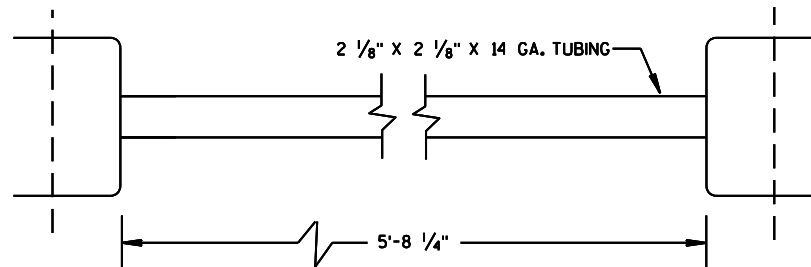
SECTION A-A
TYPICAL AT POST NO. 1 *



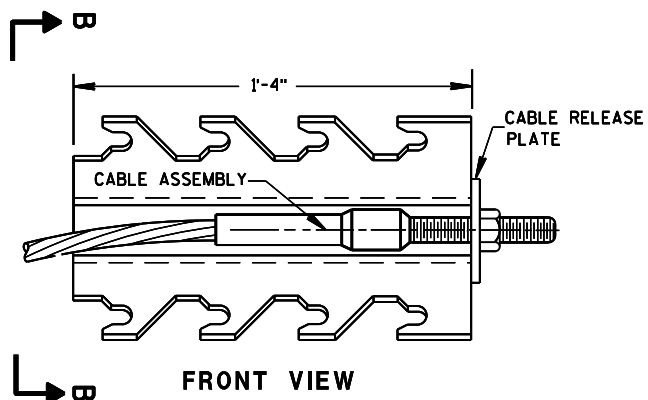
DETAIL "B"

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

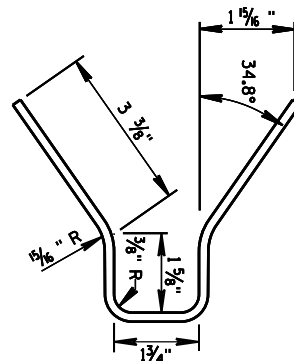
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



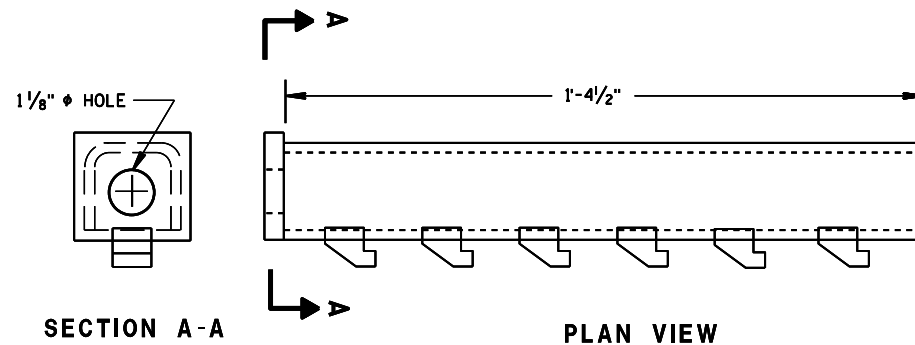
⑩ STRUT DETAIL (SKT-350)



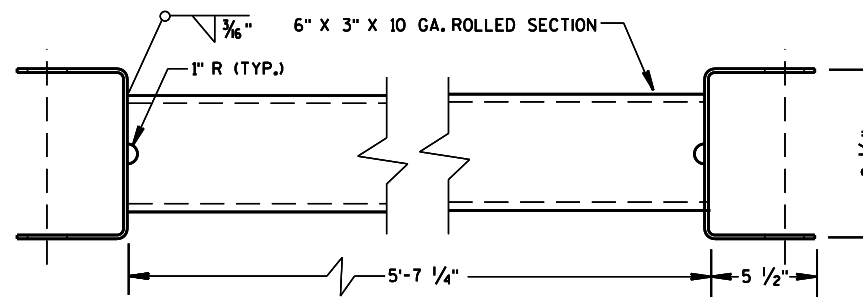
⑨ CABLE ANCHOR BOX (SKT-350)
(SKT-350)



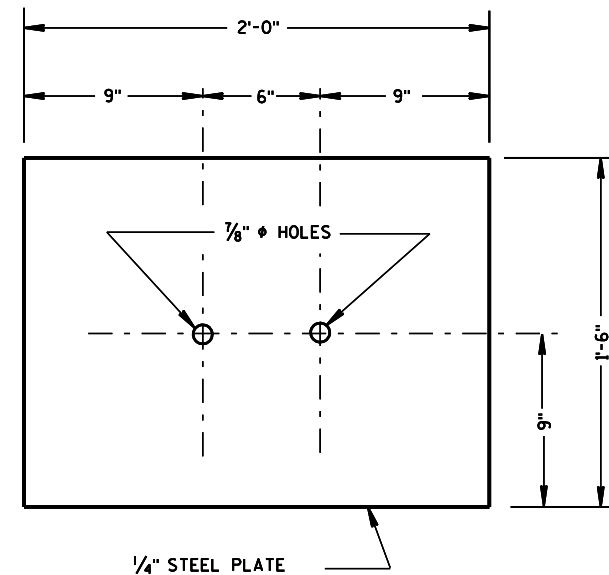
SECTION B-B



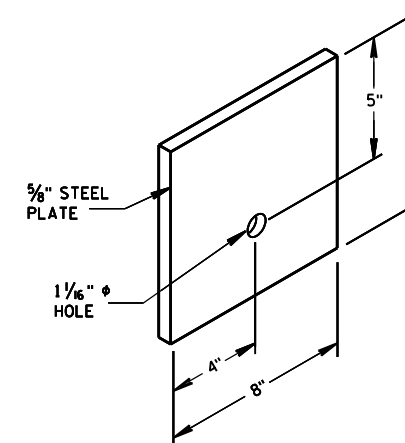
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)
(ET-2000/ET-2000 PLUS)



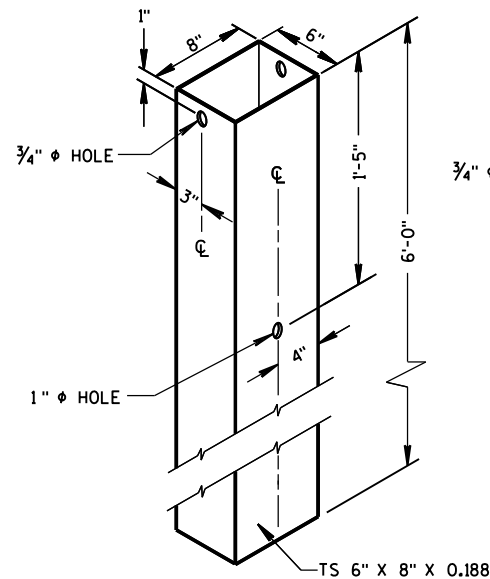
③ SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



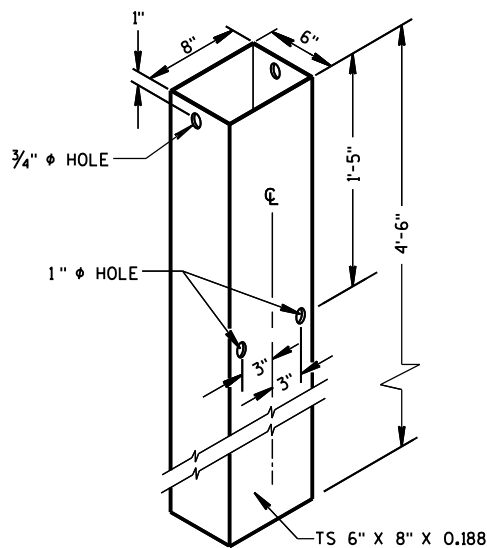
⑦ STEEL BEARING PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

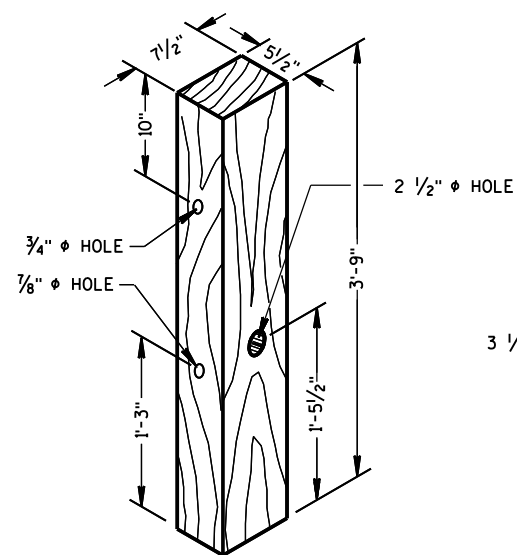
STATE OF WISCONSIN
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② 72" STEEL TUBE
(POSTS NO. 1-4)

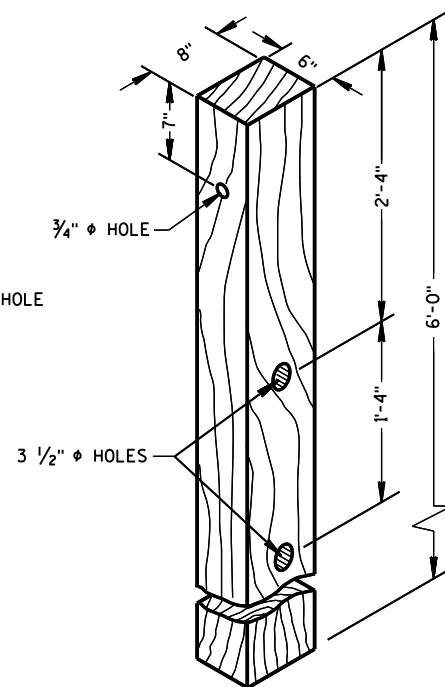


② 54" STEEL TUBE
(POSTS NO. 1-4)



① TERMINAL POST
(POSTS NO. 1-4)

WOOD BREAKAWAY POSTS



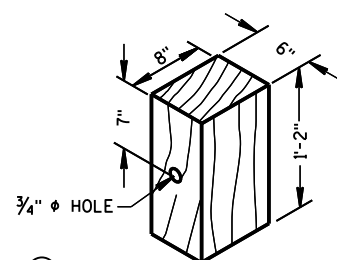
④ CRT POST
(POSTS NO'S 5-8)

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 1/2" 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.

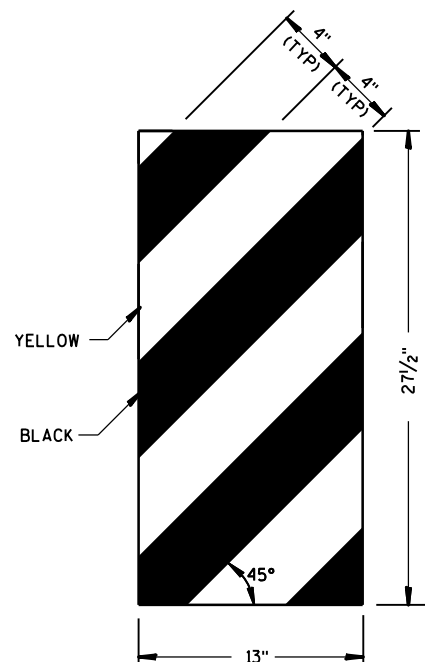
SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

⑥ 1/2" DIA. X 3" LAG BOLT WITH WASHER.



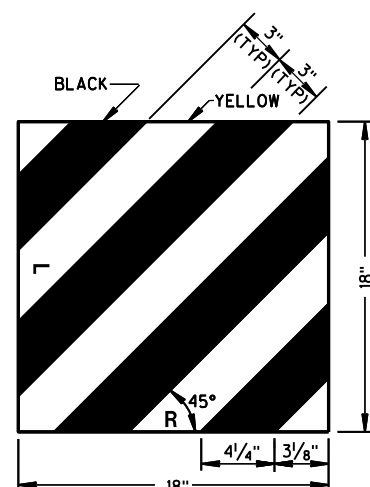
⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9"
SEE STANDARD
SPECIFICATION 637

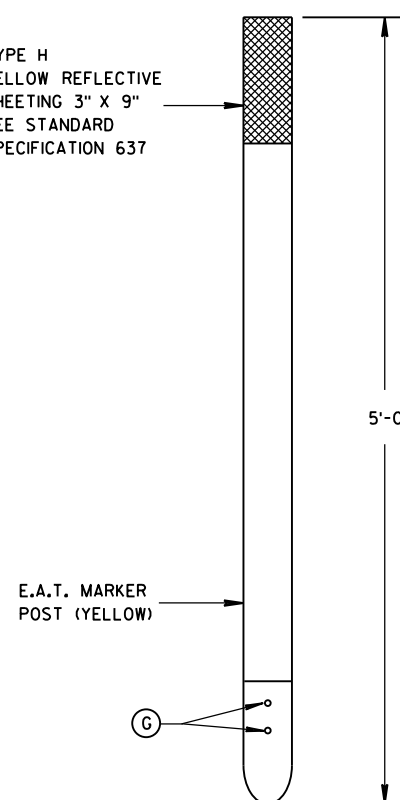


ET-2000 PLUS ONLY

⑭ REFLECTIVE SHEETING DETAILS



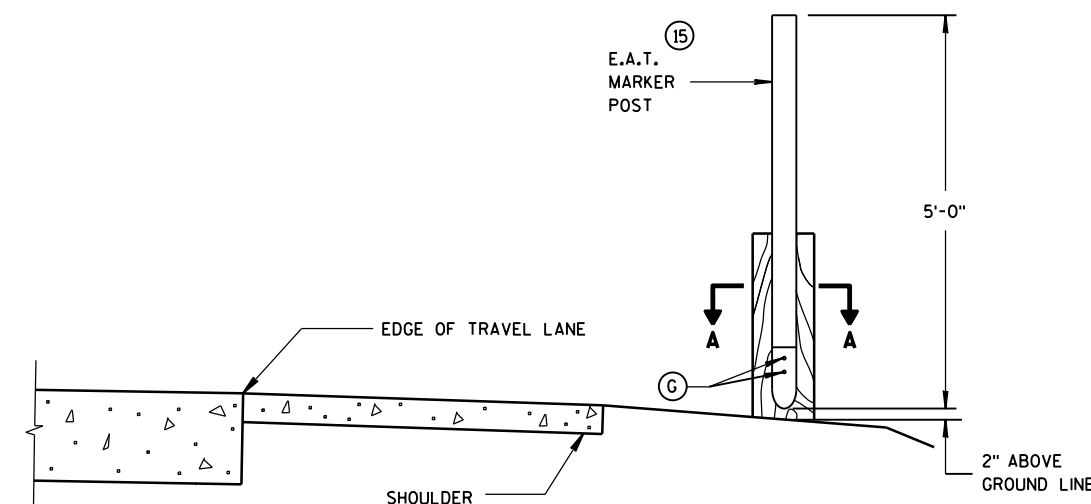
ET-2000 AND SKT-350



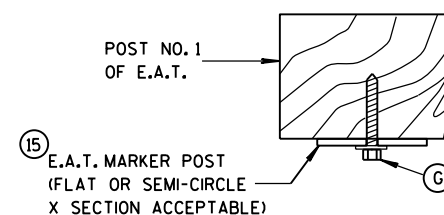
FRONT VIEW

SIDE VIEW

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
FHWA

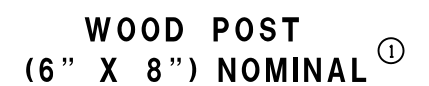
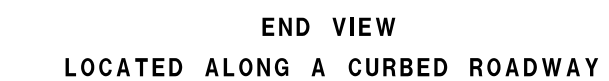
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
56

6

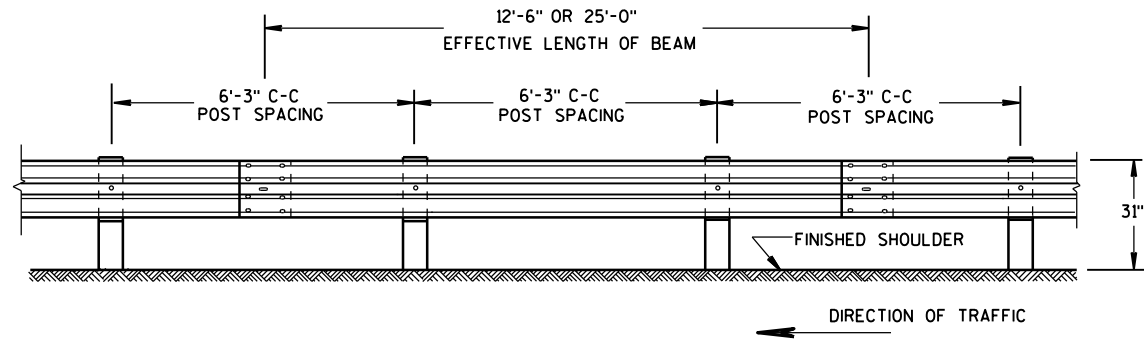
- S.D.D. 14 B 42-3a**



S.D.D. 14 B 42-3a

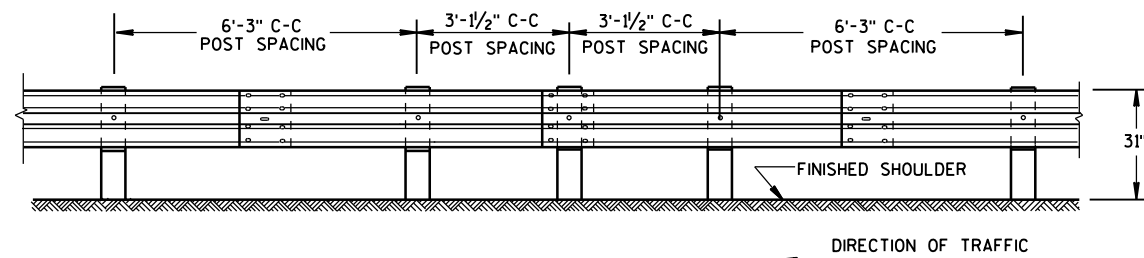


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 57



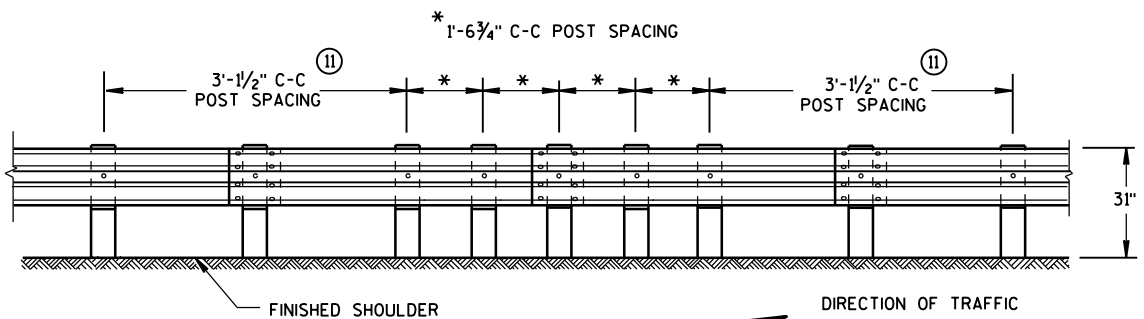
FRONT VIEW

POST SPACING STANDARD INSTALLATION



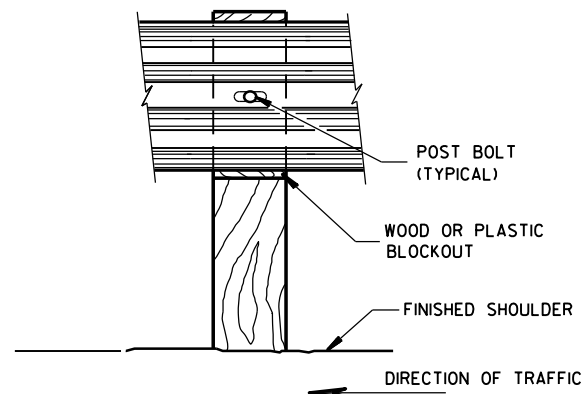
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

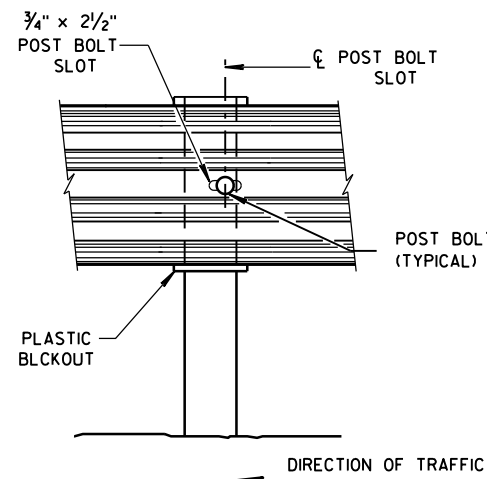


FRONT VIEW

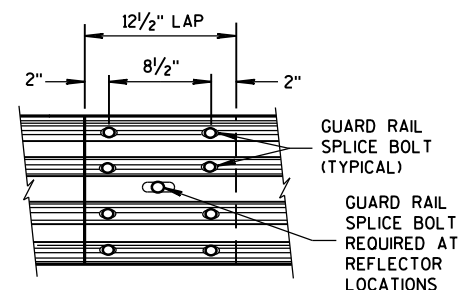
QUARTER POST SPACING (QS)



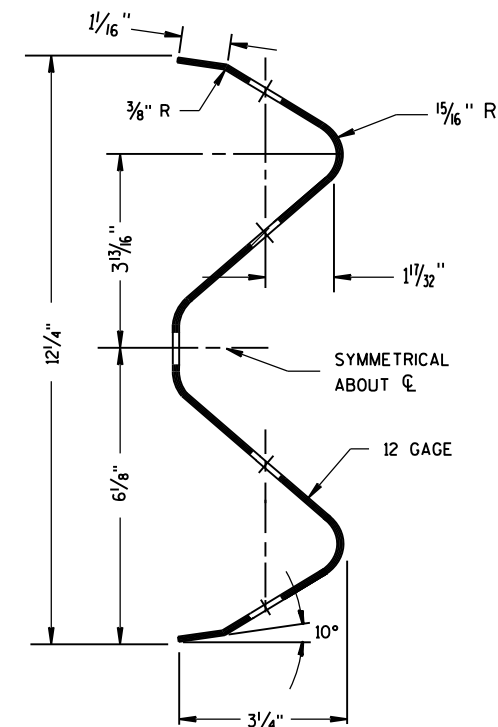
FRONT VIEW AT WOOD POST



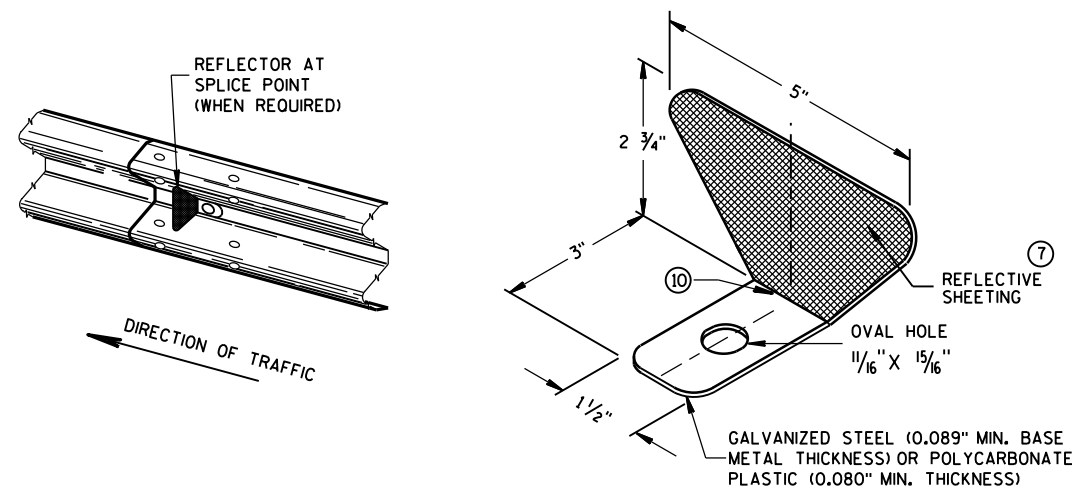
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

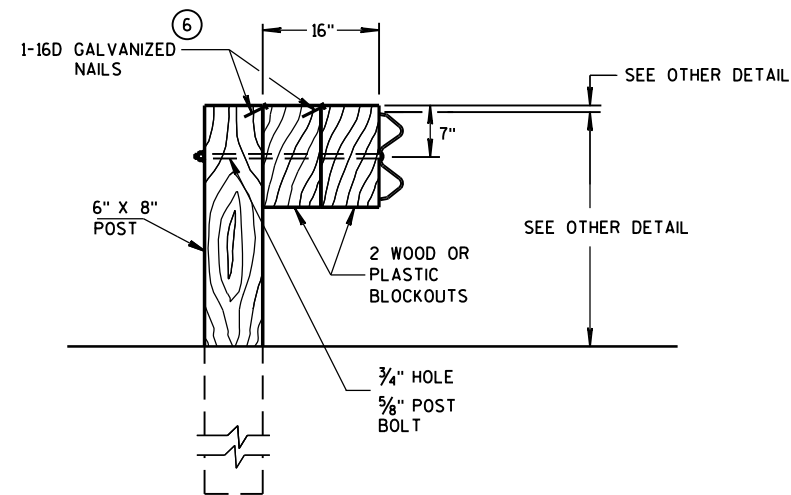
GENERAL NOTES

- ⑦ 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.
 - ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
 - ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING ^⑧				
	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 ^⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ^⑩	3
	> 200'	100' C-C	2	

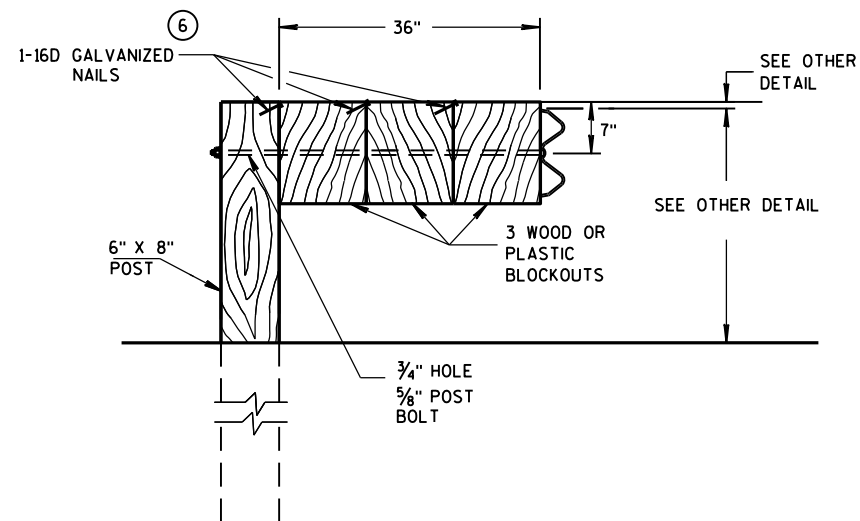
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

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



DETAIL FOR 36" BLOCKOUT DEPTH

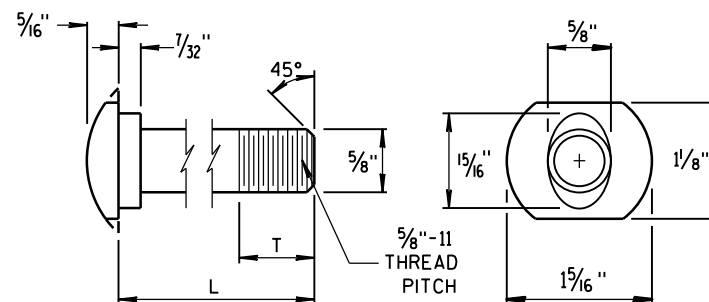
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

6

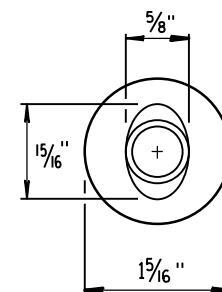
S.D.D. 14 B 42-3C

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{1}{16}$ ".
2. IF THE BOLT EXTENDS MORE THAN $\frac{1}{4}$ " FROM THE NUT
THE BOLT SHOULD BE TRIMMED BACK.

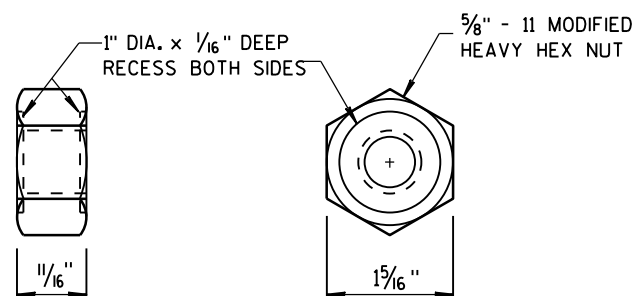


POST BOLT TABLE

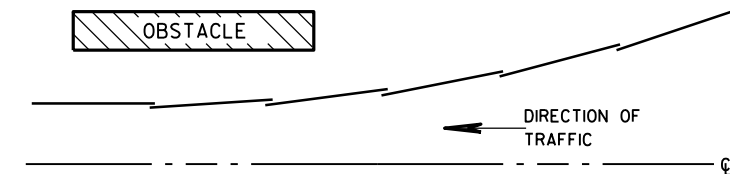
L	T (MIN.)
1¼"	1⅛"
2"	1¾"
10"	4"
14"	4⅞"
18"	4"
21"	4⅞"
25"	4"



ALTERNATE BOLT HEAD

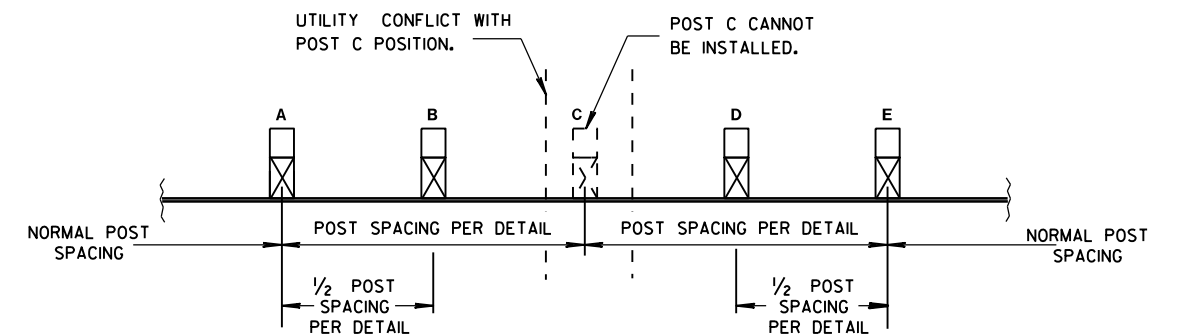


POST BOLT AND RECESS NUT

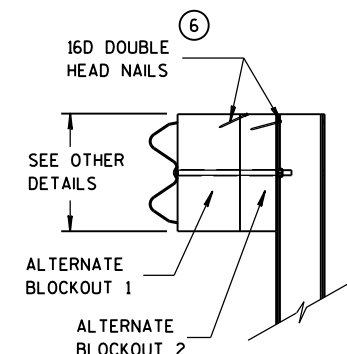


PLAN VIEW

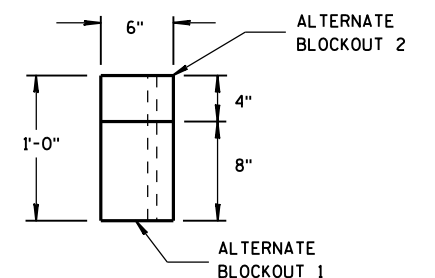
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS (59
ENGINEER

6 |

S.D.D. 14 B 42-3c

6

- S.D.D. 14 B 44-23**

S.D.D. 14 B 44-23

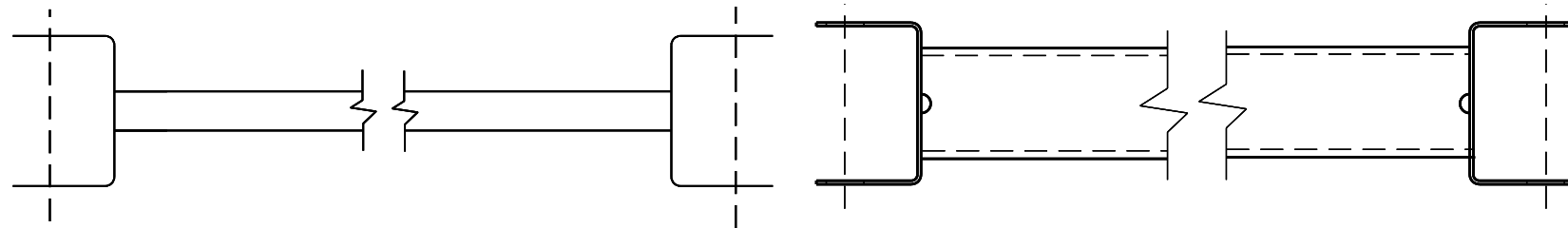
S.D.D. 14 B 44-23

S.D.D. 14 B 44-23

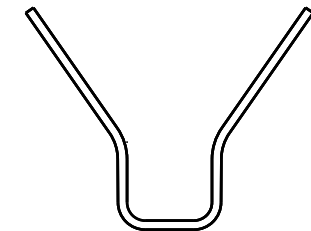
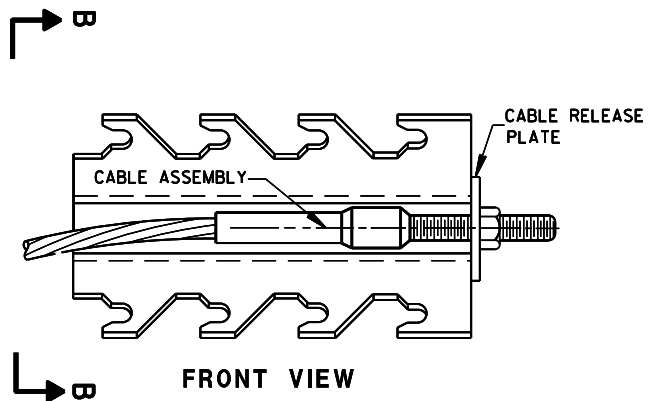
S.D.D. 14 B 44-23

S.D.D. 14 B 44-23

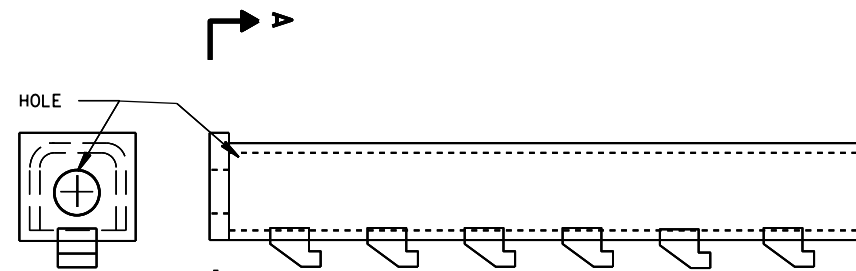




GENERIC GROUND STRUT (9) (H)



SECTION B-B



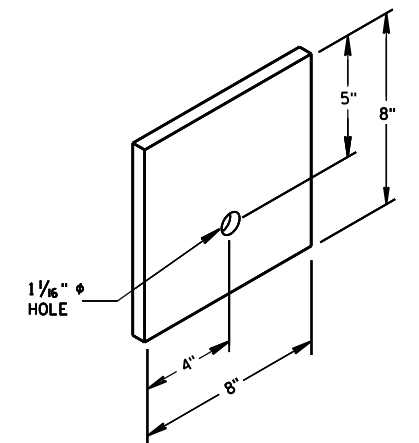
SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)

BILL OF MATERIALS

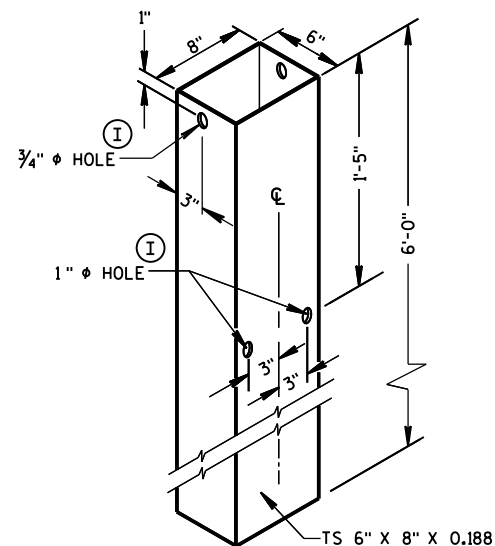
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



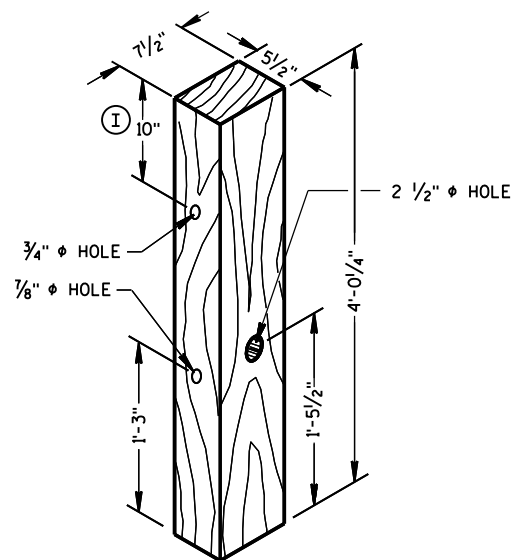
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

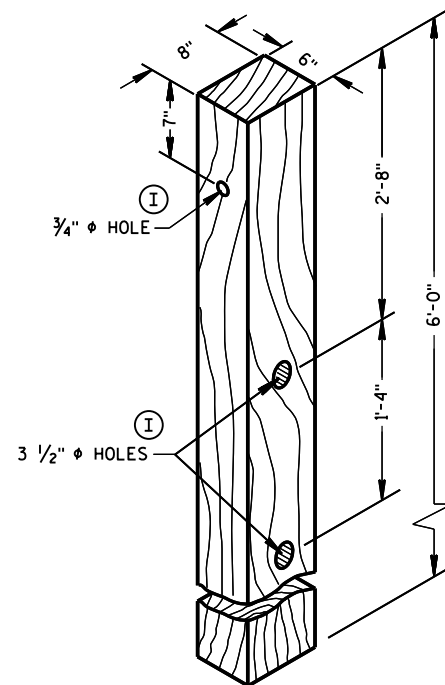
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



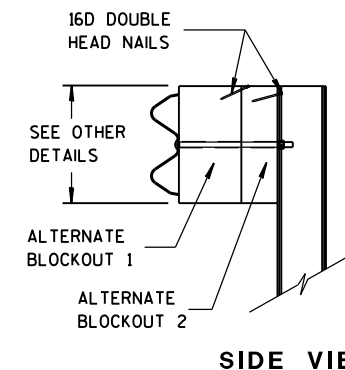
FOUNDATION TUBE ②



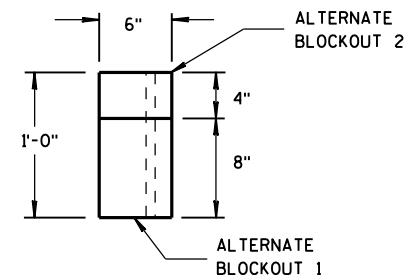
WOOD BREAKAWAY POST ①



WOOD CRT POST ③

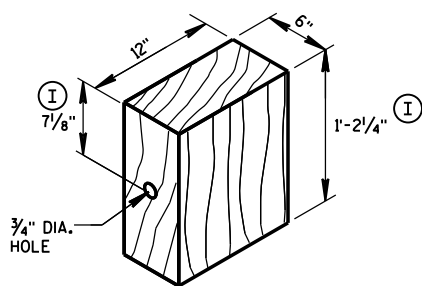


SIDE VIEW



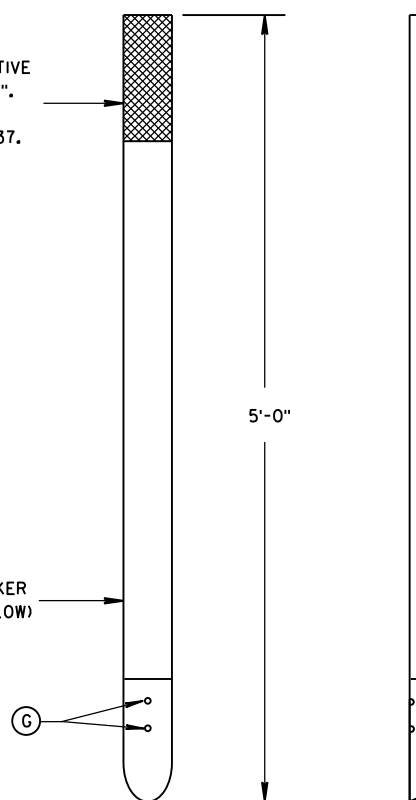
TOP VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**



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

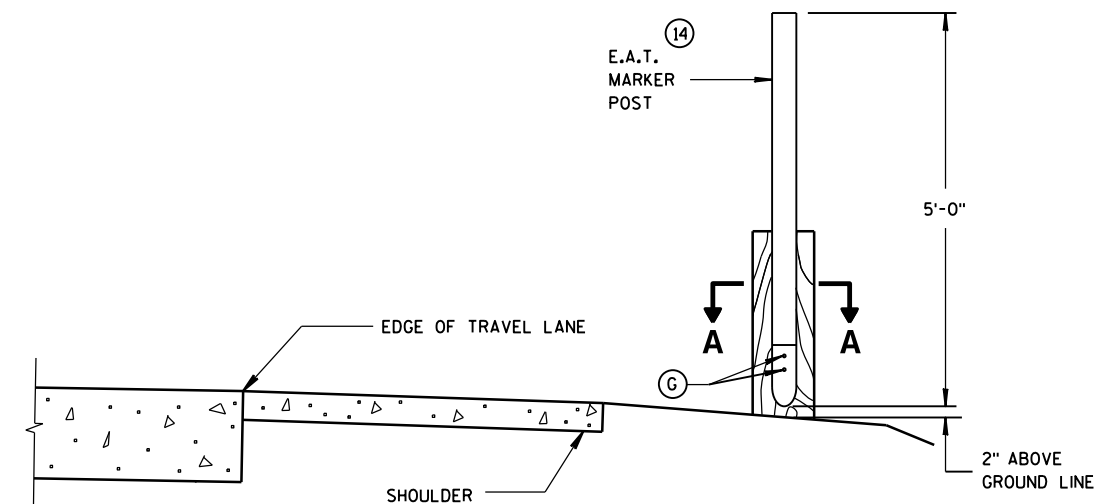
TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



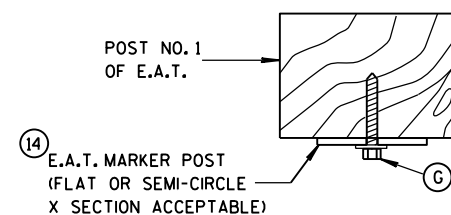
FRONT VIEW

SIDE VIEW

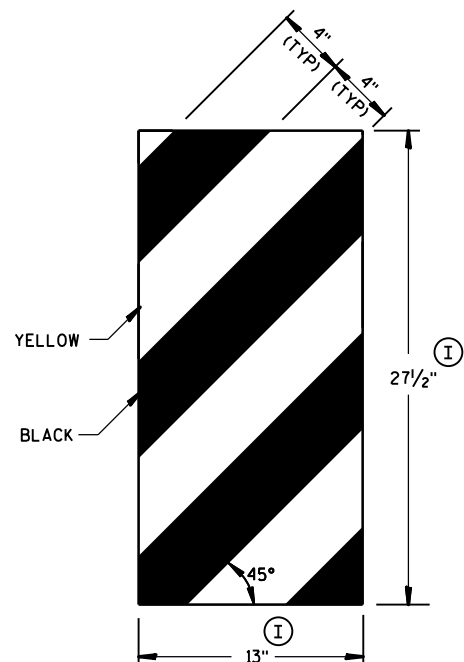
E.A.T. MARKER POST ⑭



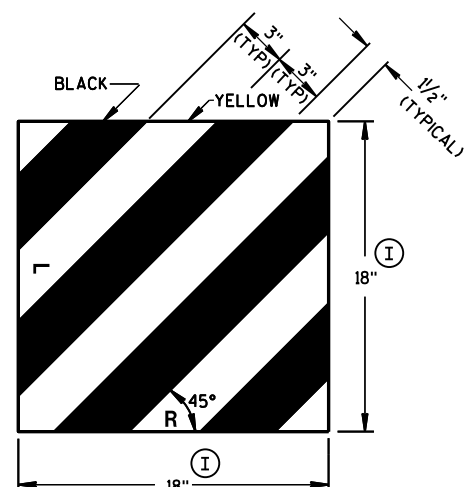
**TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1**
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A



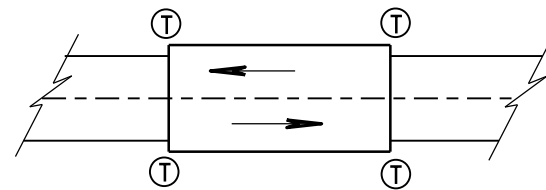
GENERIC REFLECTIVE SHEETING ⑬ ①



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

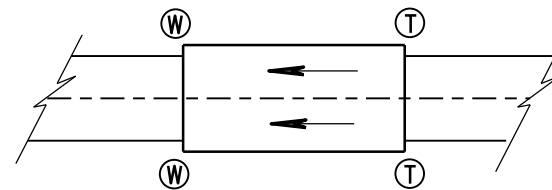
**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 62 ENT
FHWA ENGINEER



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

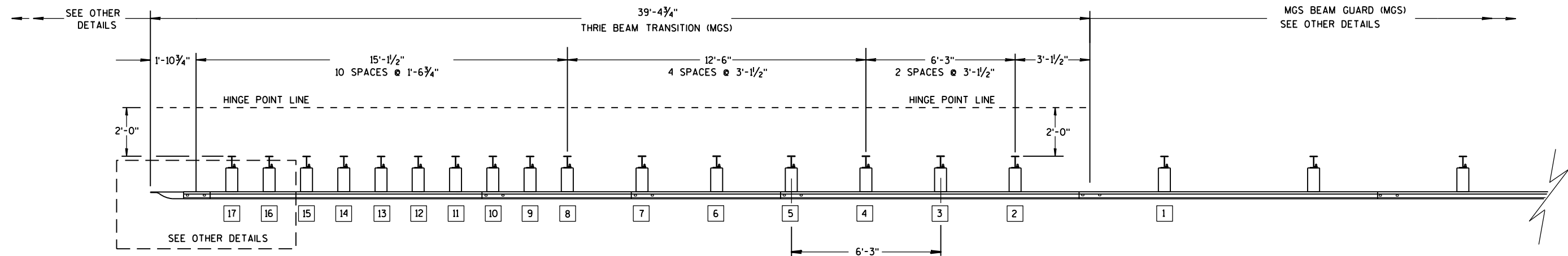
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

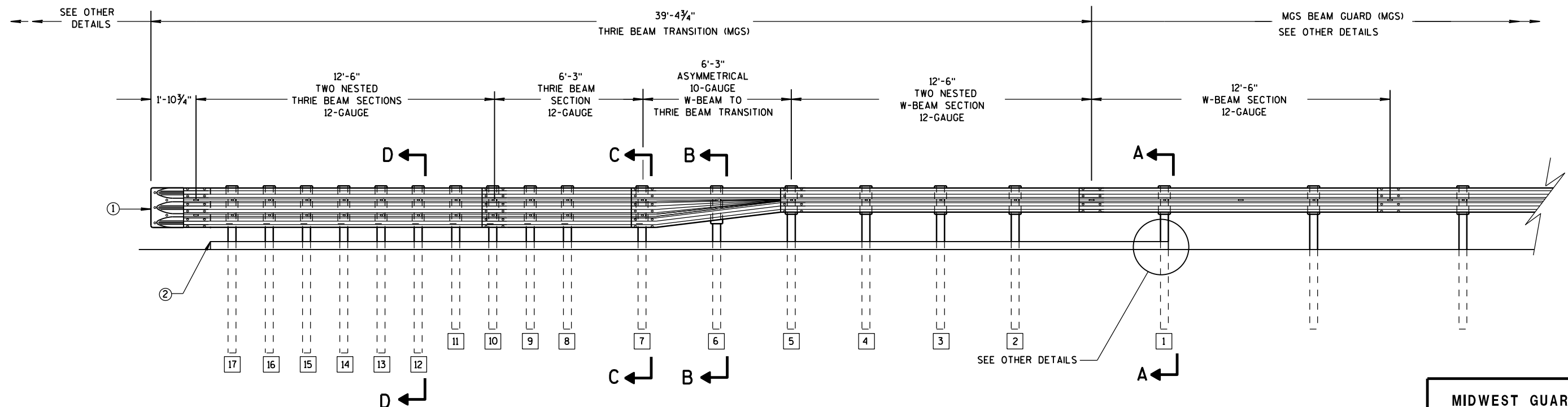
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

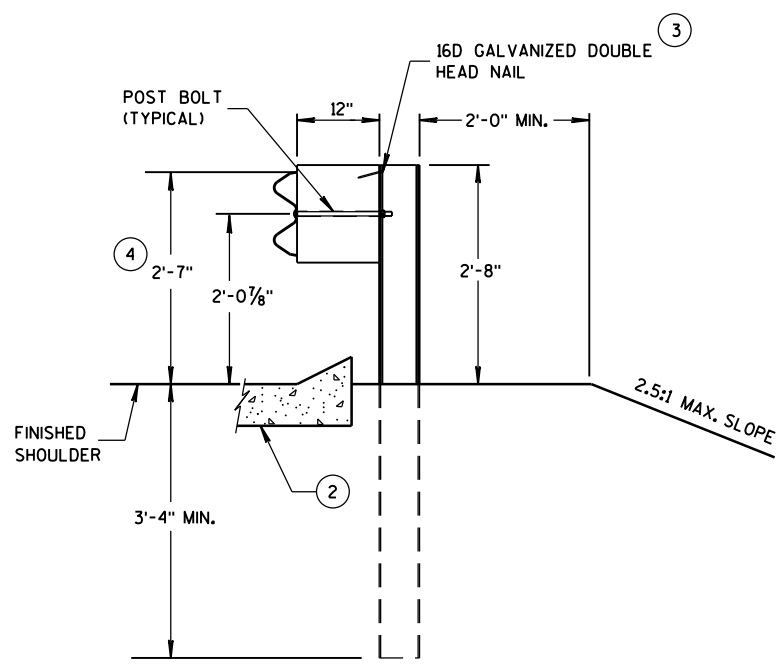
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

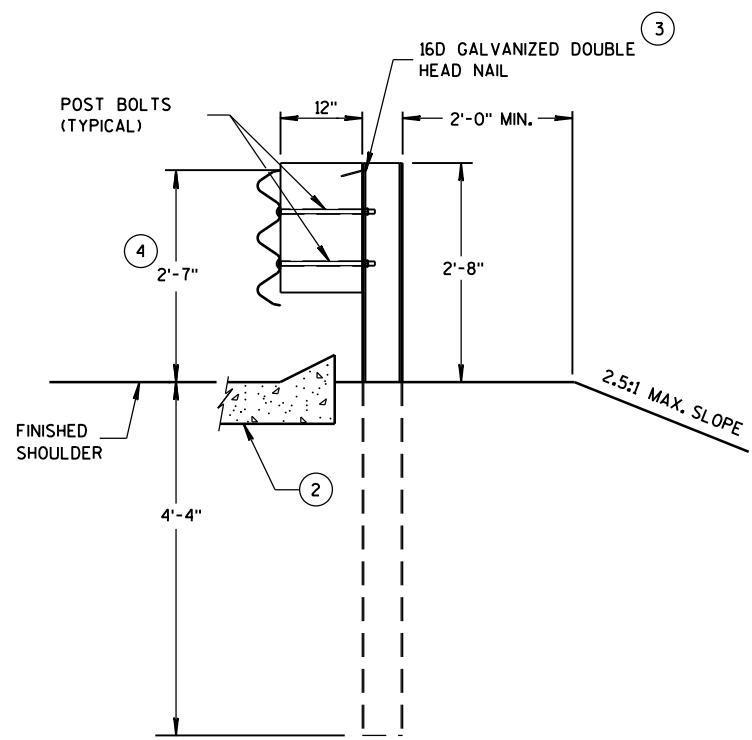
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 63

GENERAL NOTES

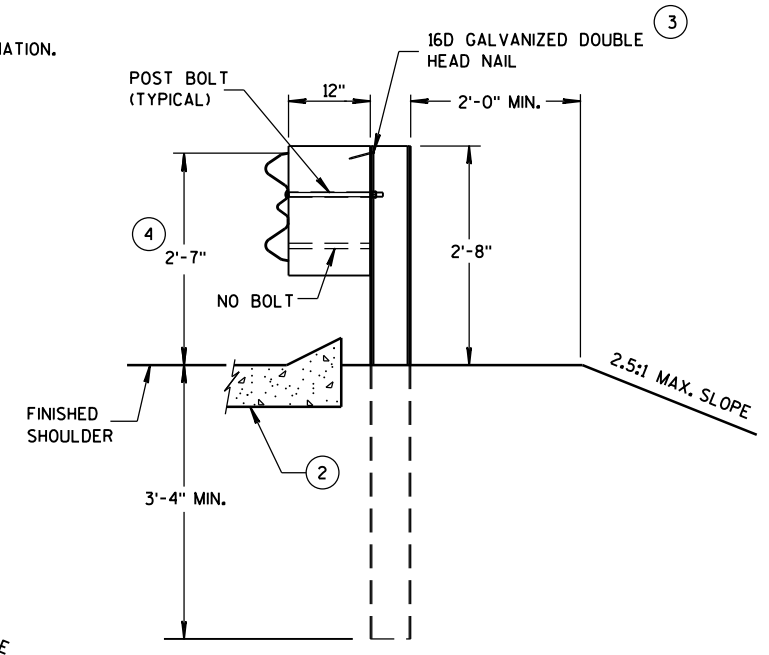
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



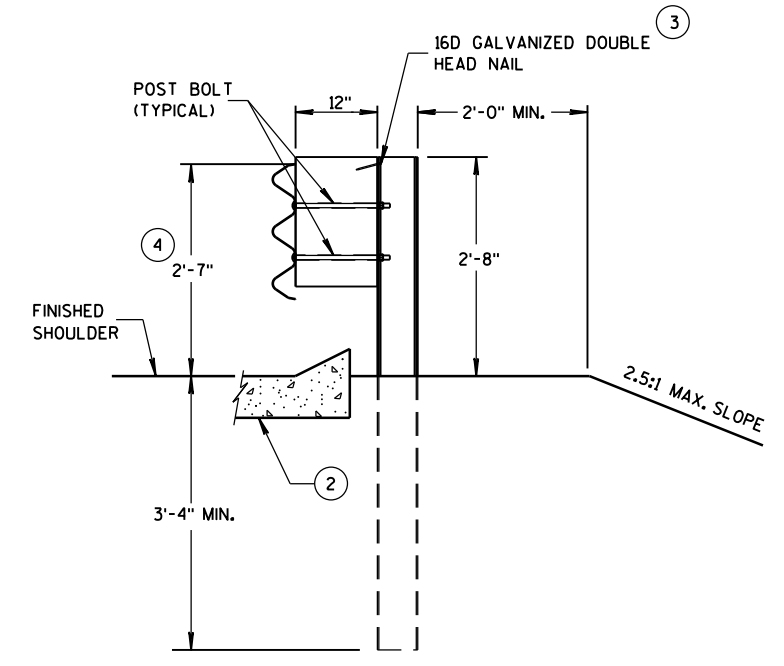
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

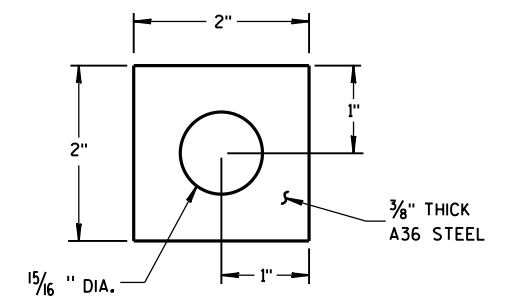
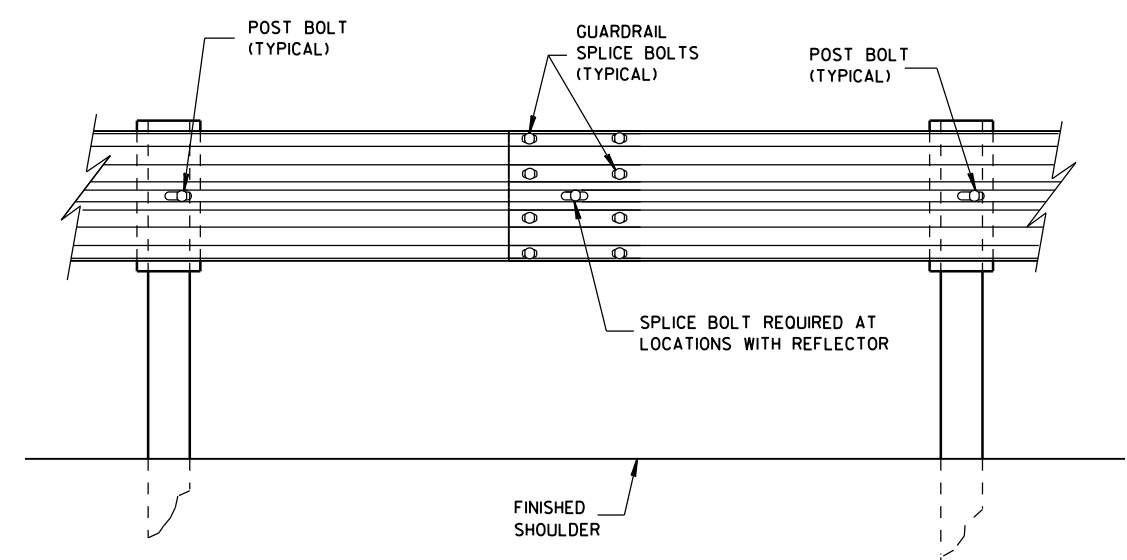
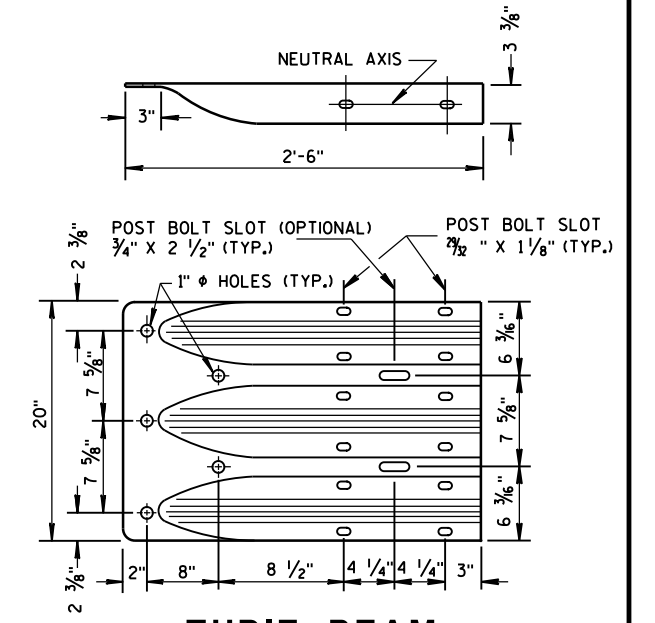


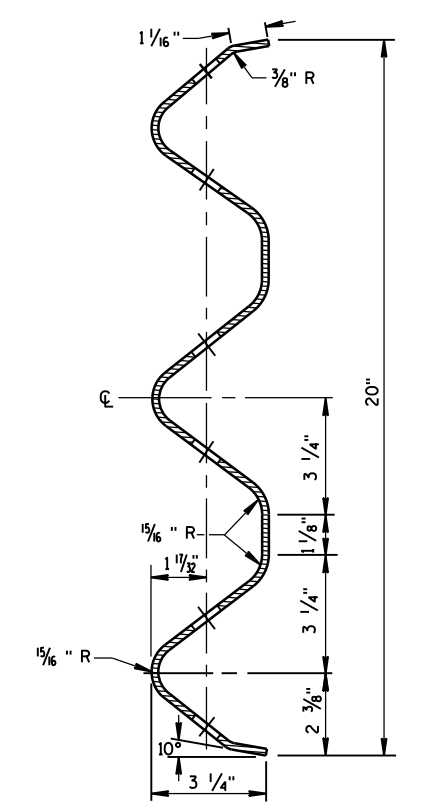
PLATE WASHER DETAIL



SPlice DETAIL



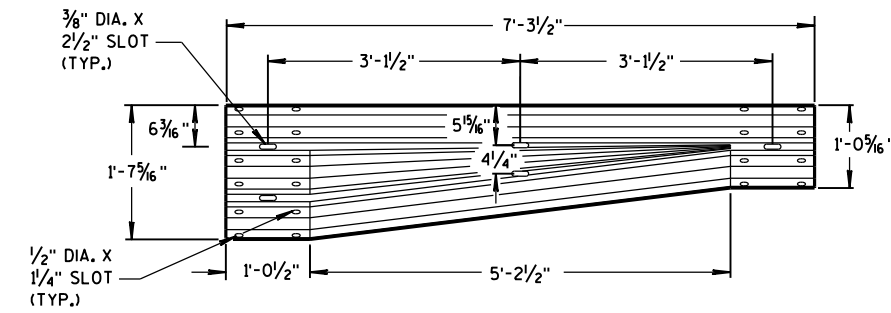
THRIE BEAM
TERMINAL CONNECTOR



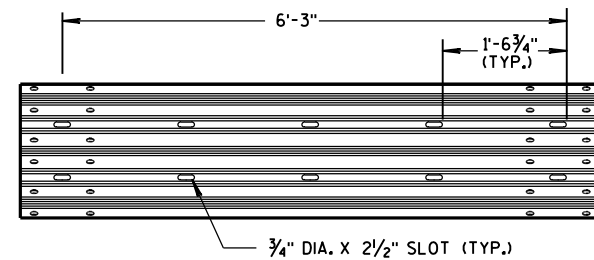
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

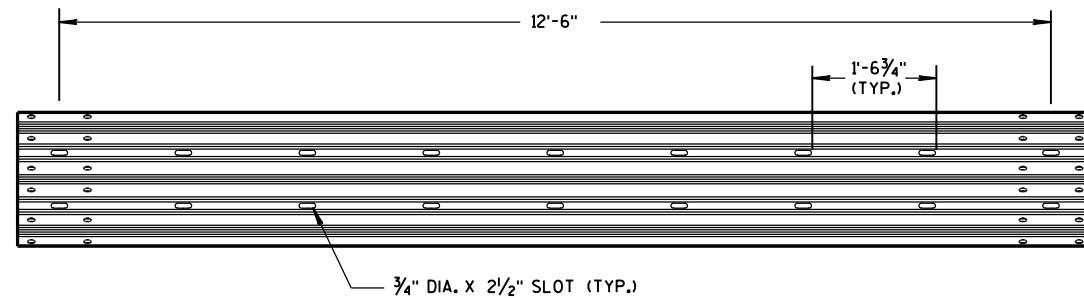
STATE OF WISCONSIN
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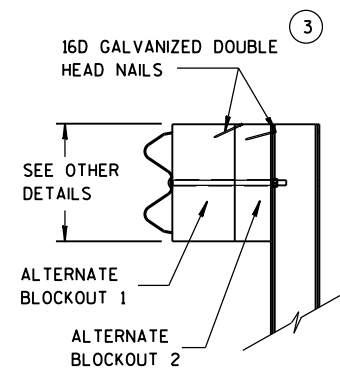
W-BEAM TO THRIE BEAM TRANSITION SECTION



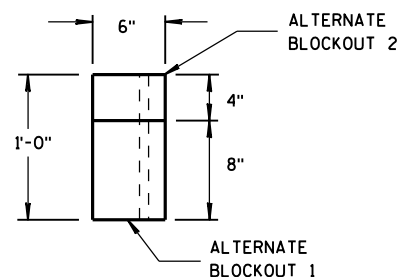
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

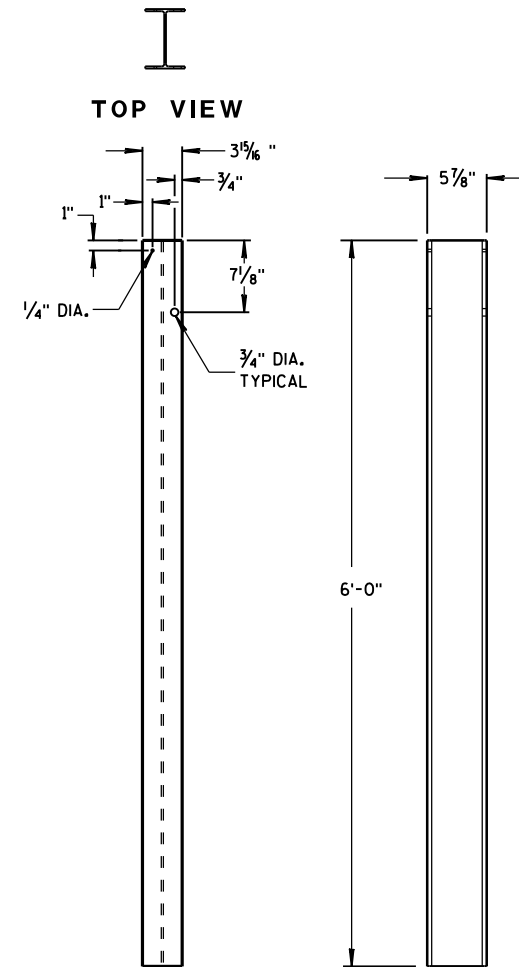


SIDE VIEW



TOP VIEW

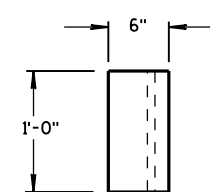
ALTERNATE WOOD BLOCKOUT DETAIL



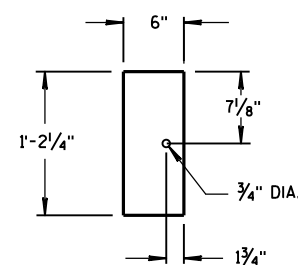
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

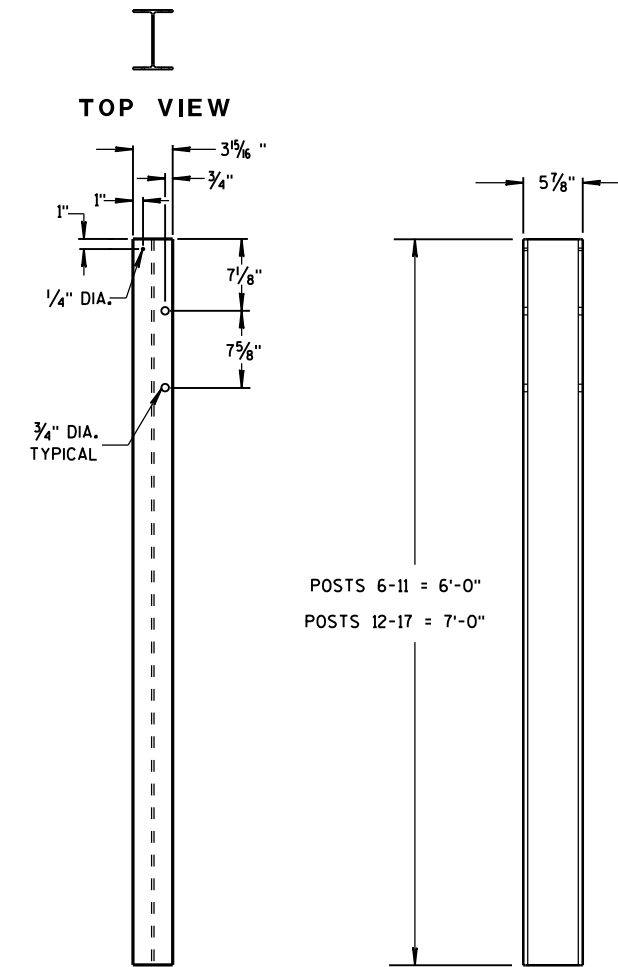


TOP VIEW



FRONT VIEW

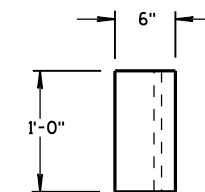
BLOCKOUT
POSTS 1-5



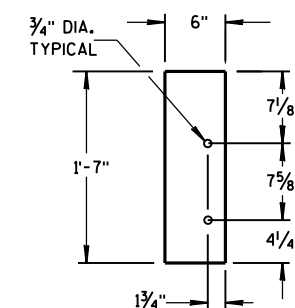
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT
POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

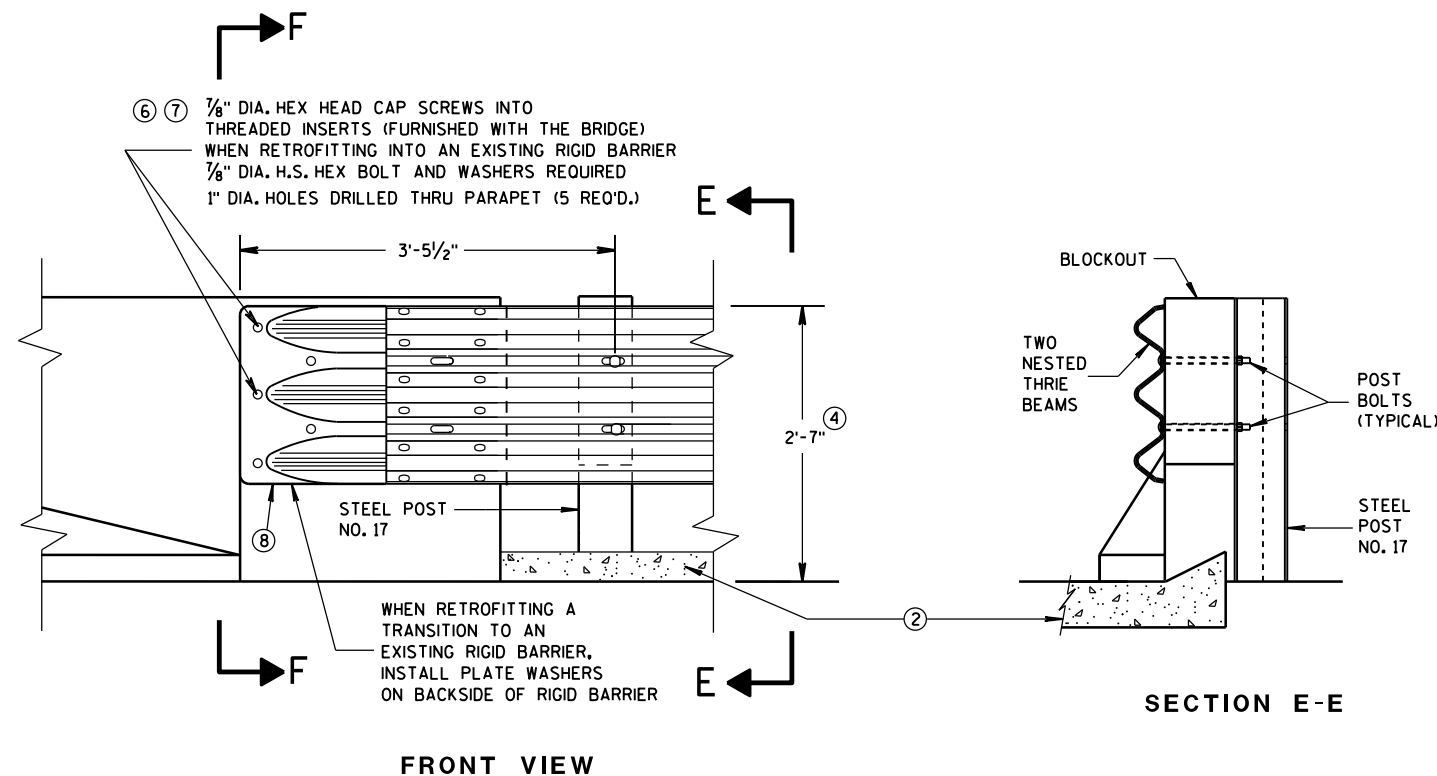
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

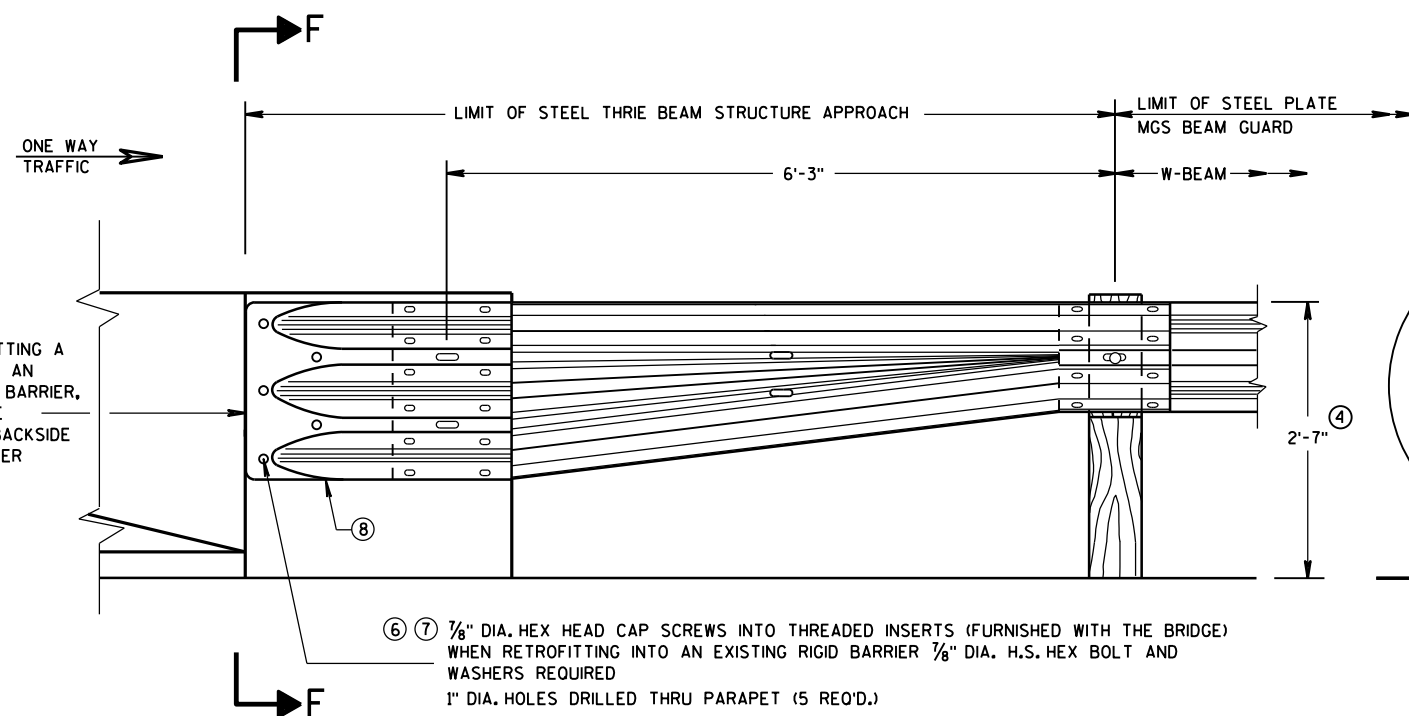
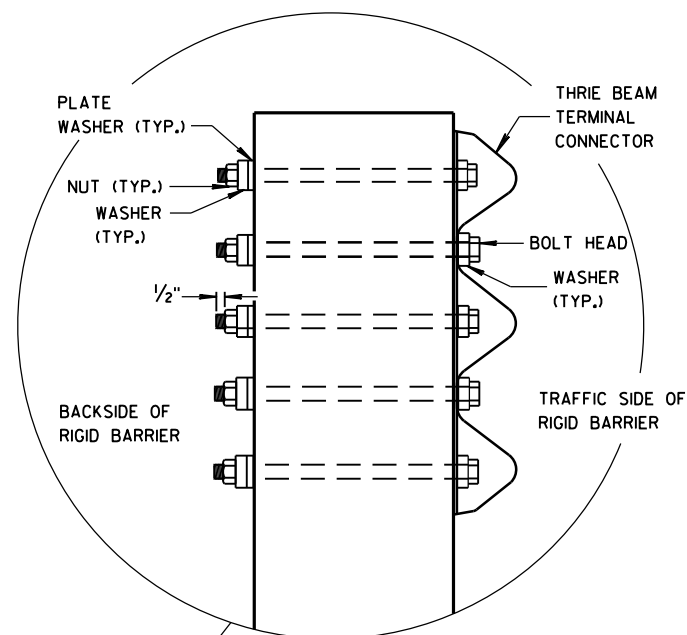


THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

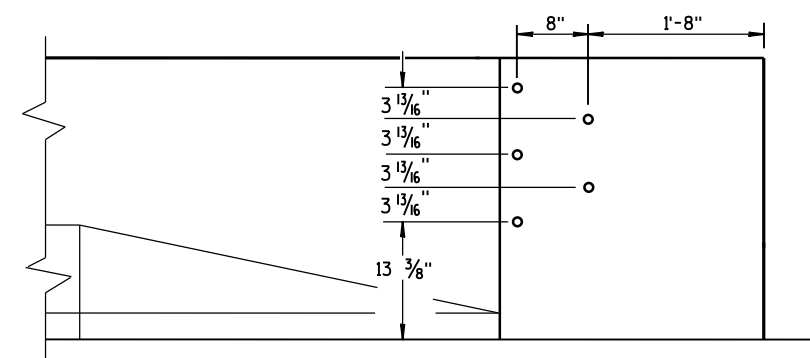
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ 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 CONNECTOR PLATE. 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.
- ⑧ 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 1/2".



W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

SECTION F-F



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS D 66

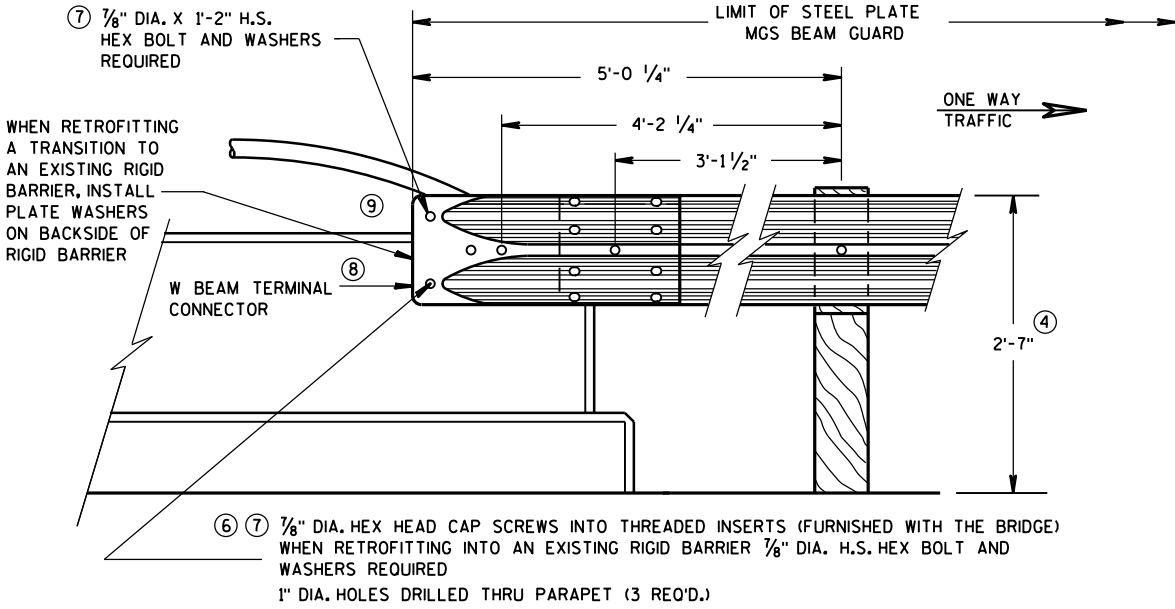
ENGINEER

NT

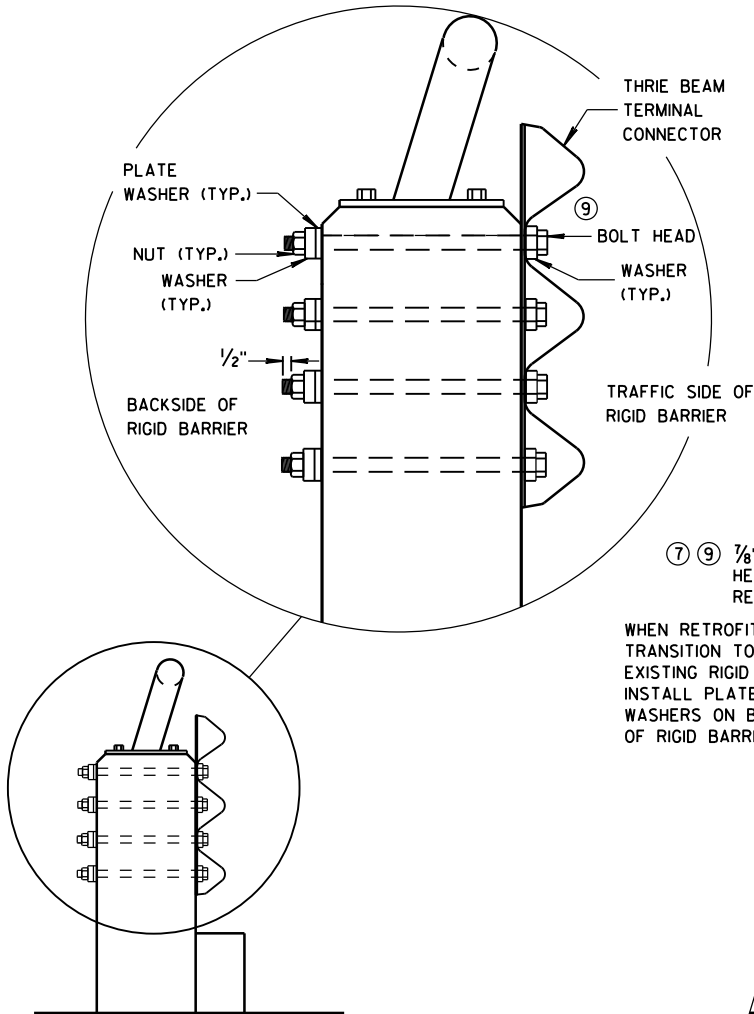
GENERAL NOTES

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

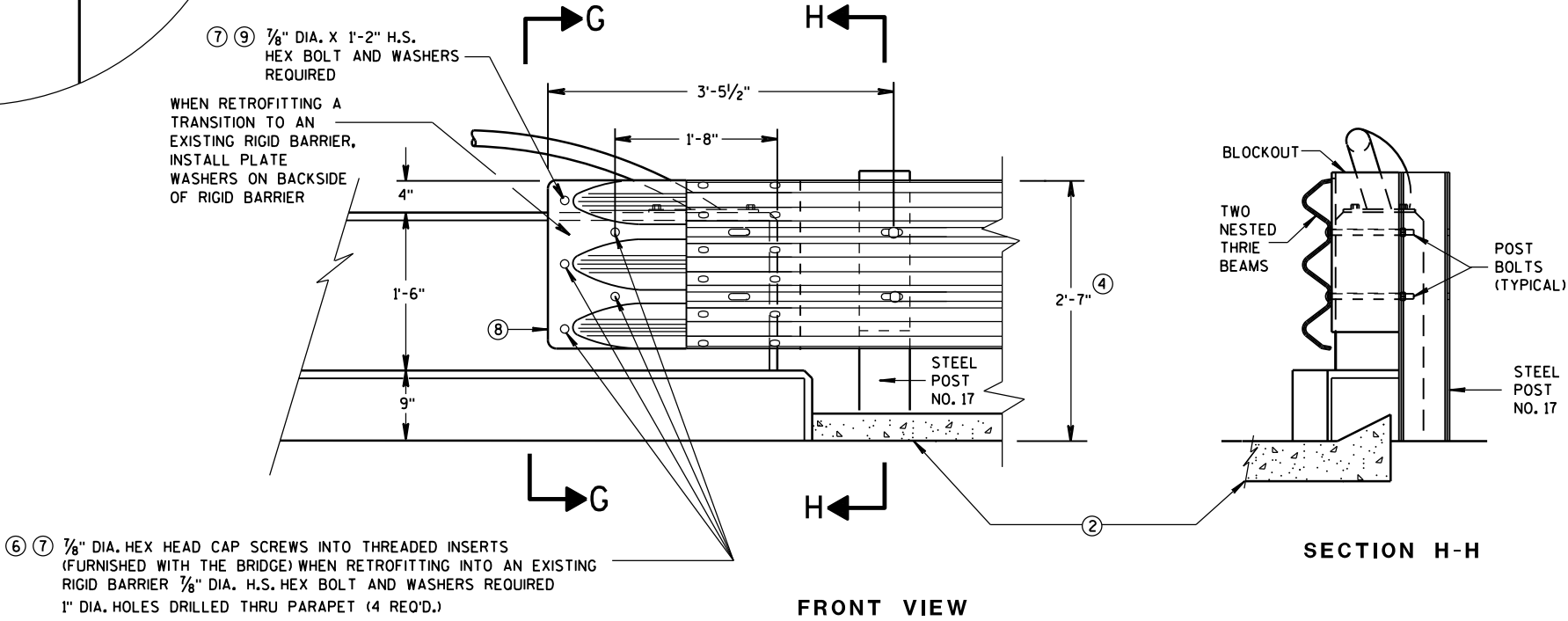
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH 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 CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ 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 $\frac{1}{2}"$.
- ⑨ 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.



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

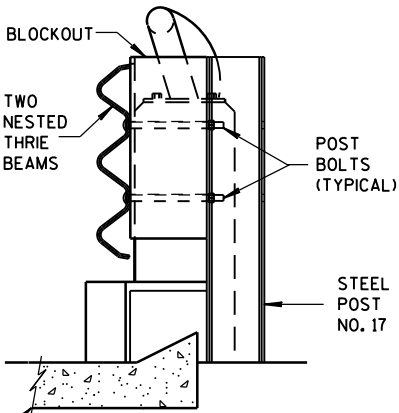


SECTION G-G



FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

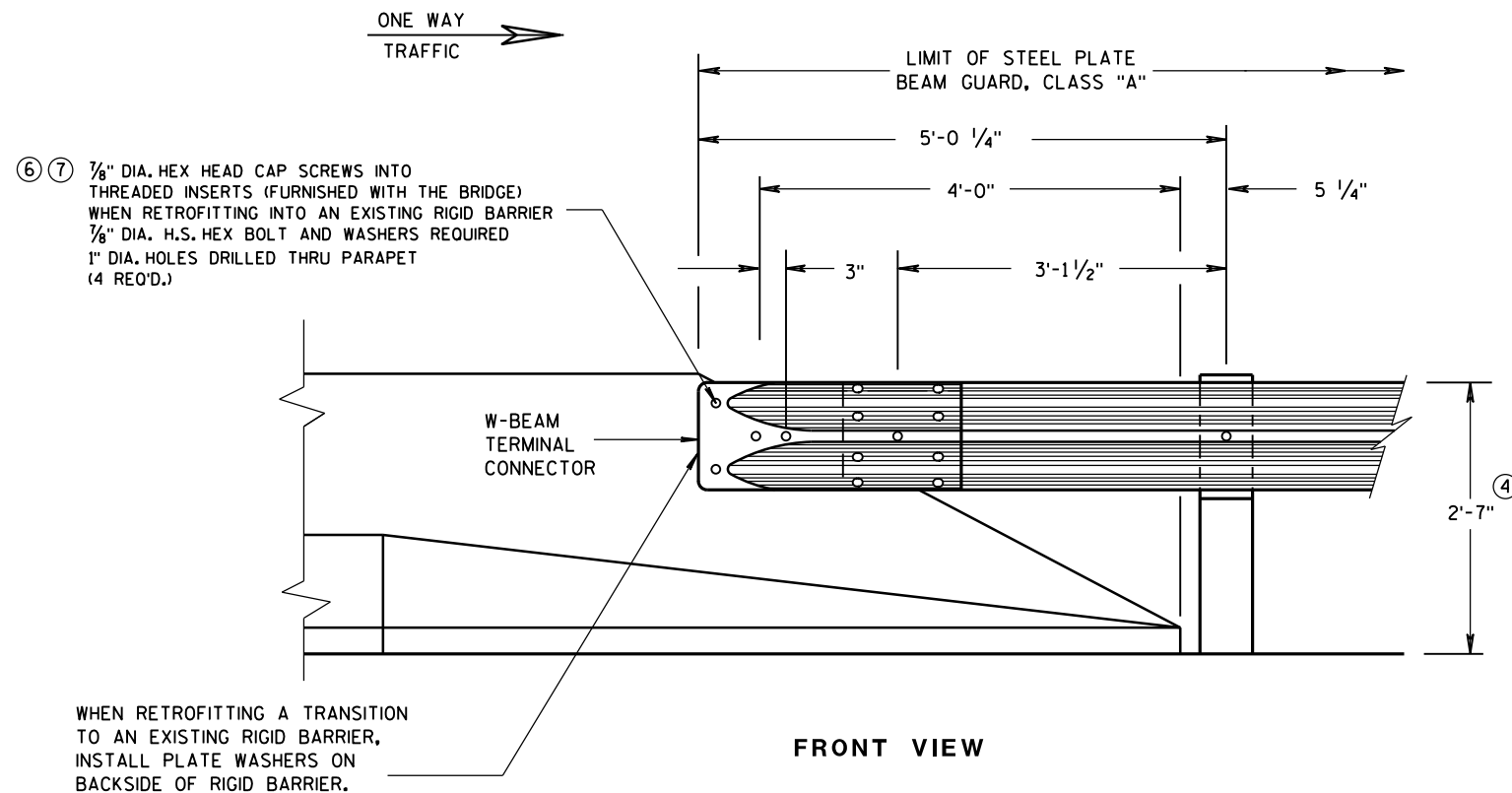


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

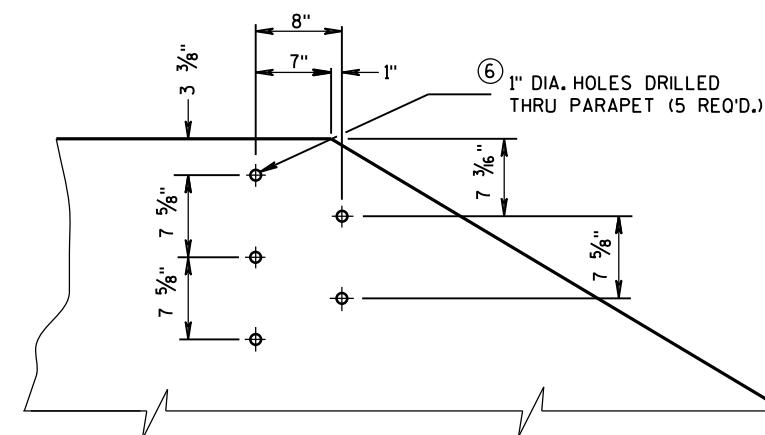
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June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 67 NT
FHWA ENGINEER

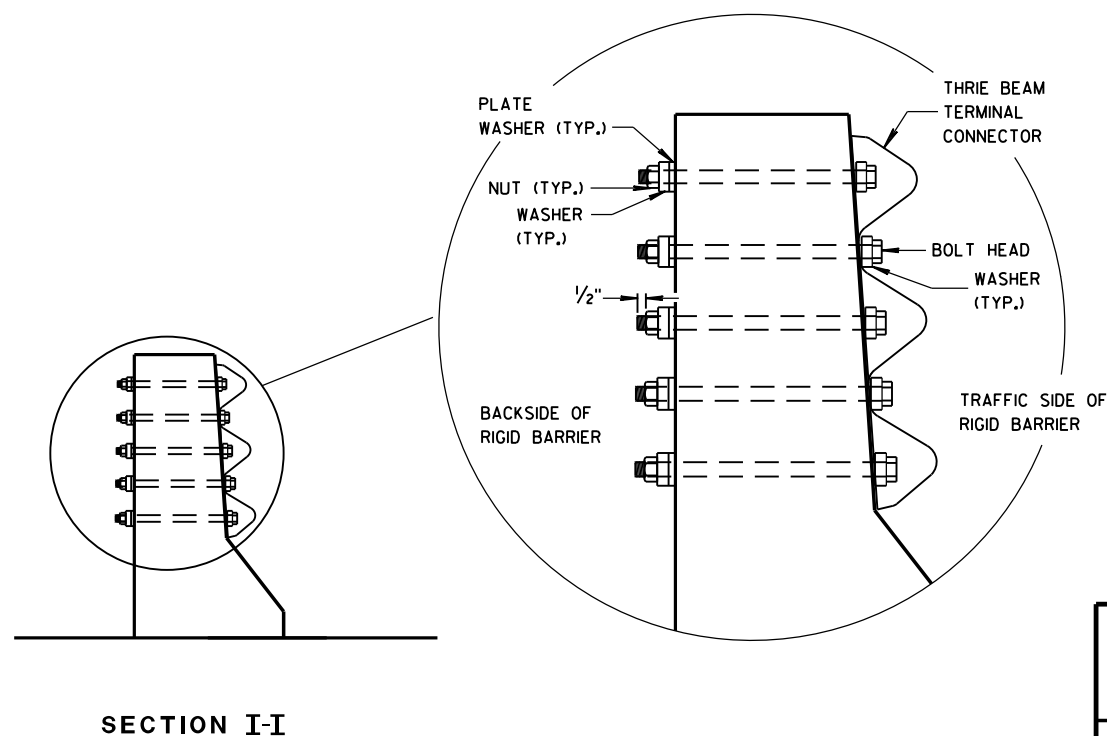
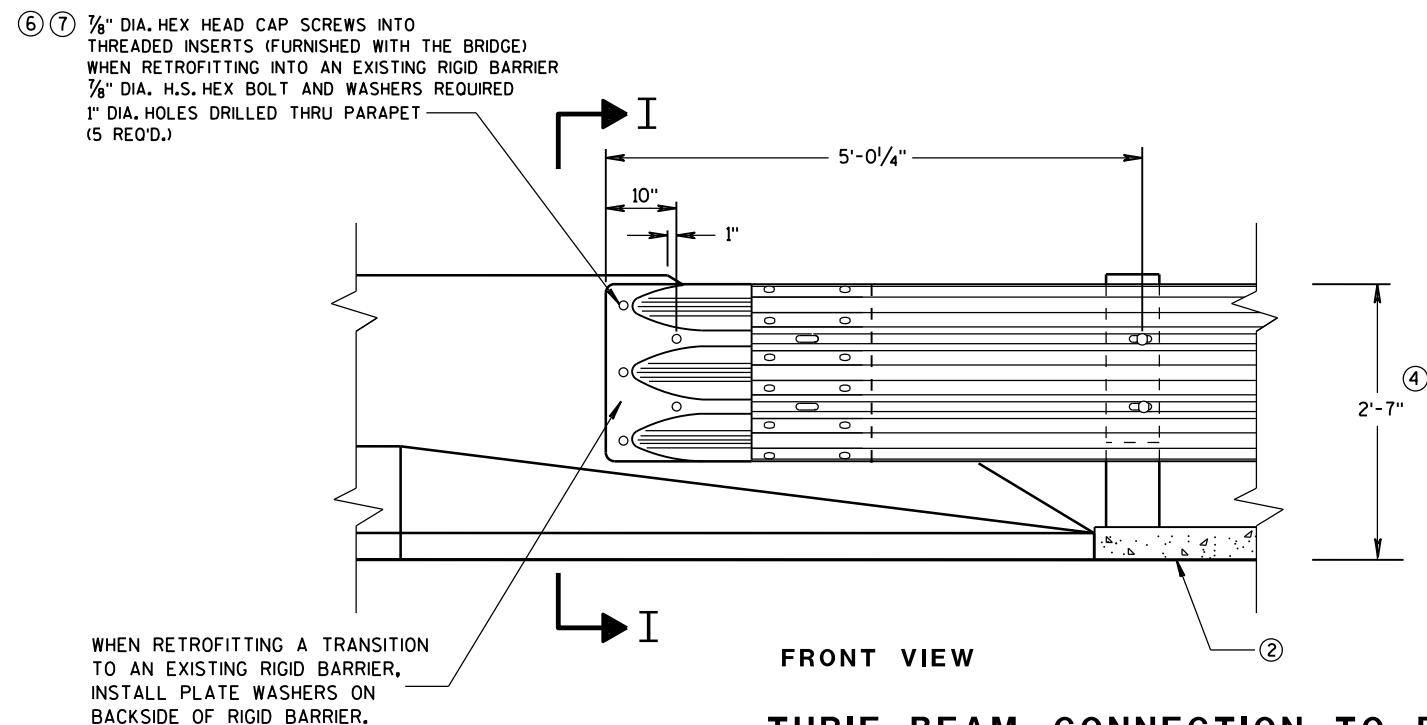


GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ 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 CONNECTOR PLATE. 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.



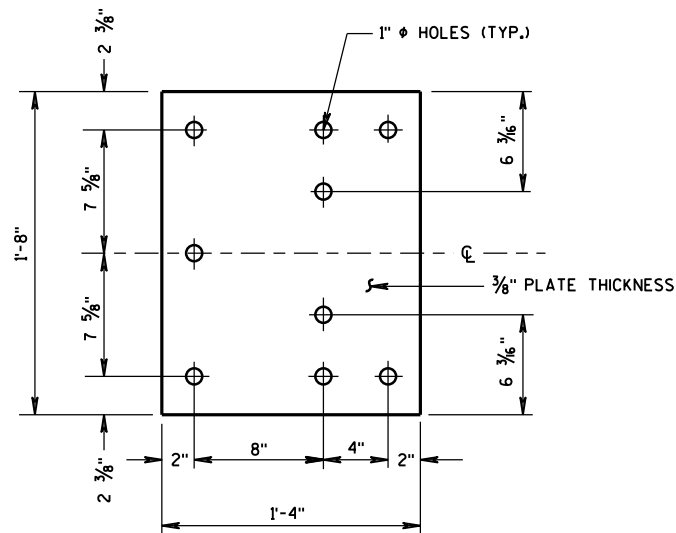
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



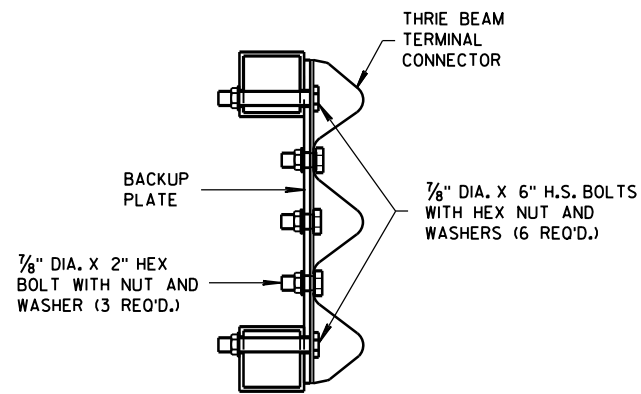
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

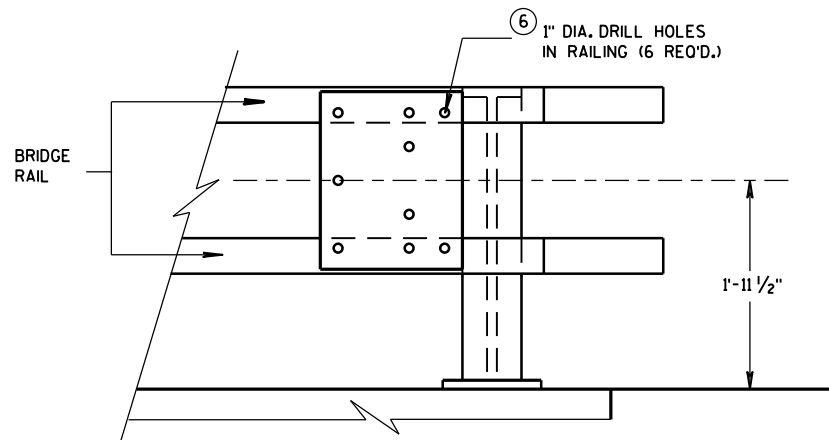
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June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER
FHWA



BACK-UP PLATE DETAIL



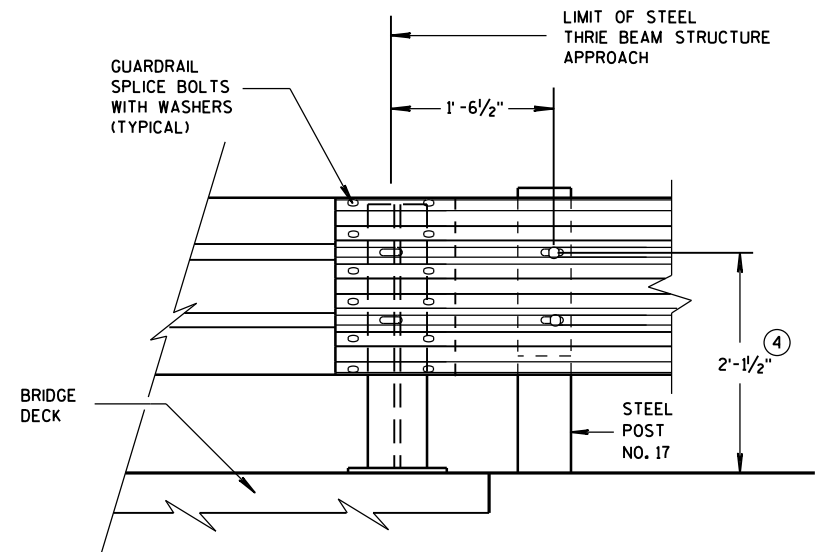
SECTION J-J



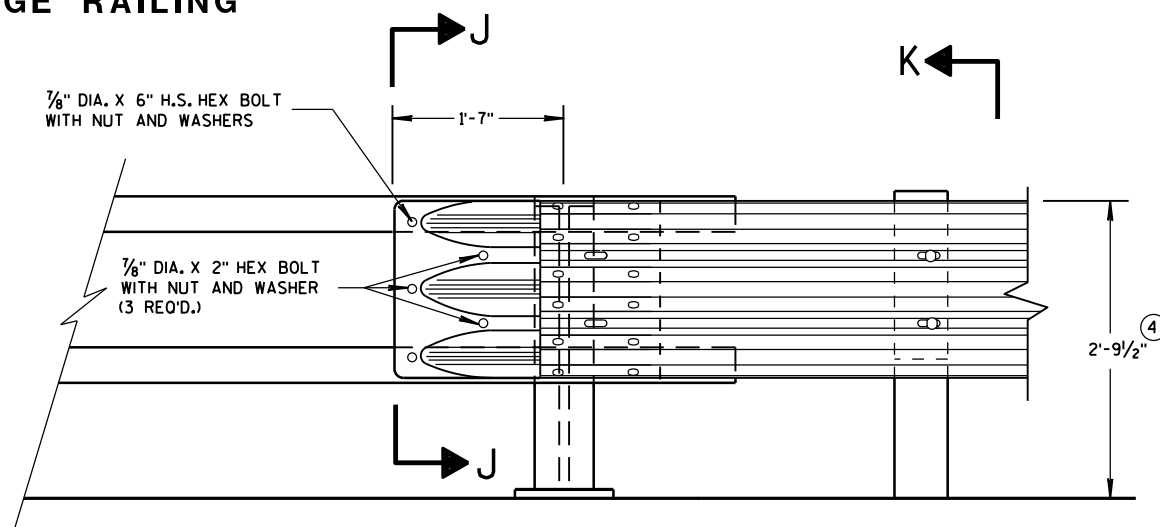
BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

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

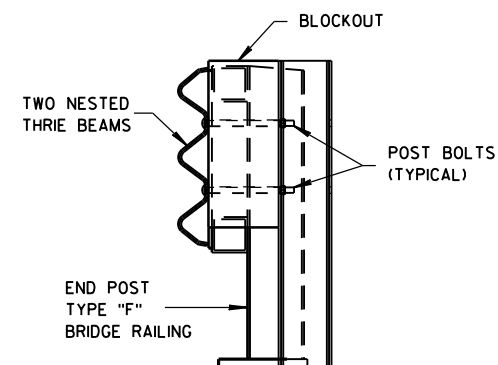


FRONT VIEW
THRIE BEAM CONNECTION TO
STEEL RAILING TYPE "W"



FRONT VIEW

THRIE BEAM CONNECTION TO
TUBULAR RAILING TYPE "F"



SECTION K-K

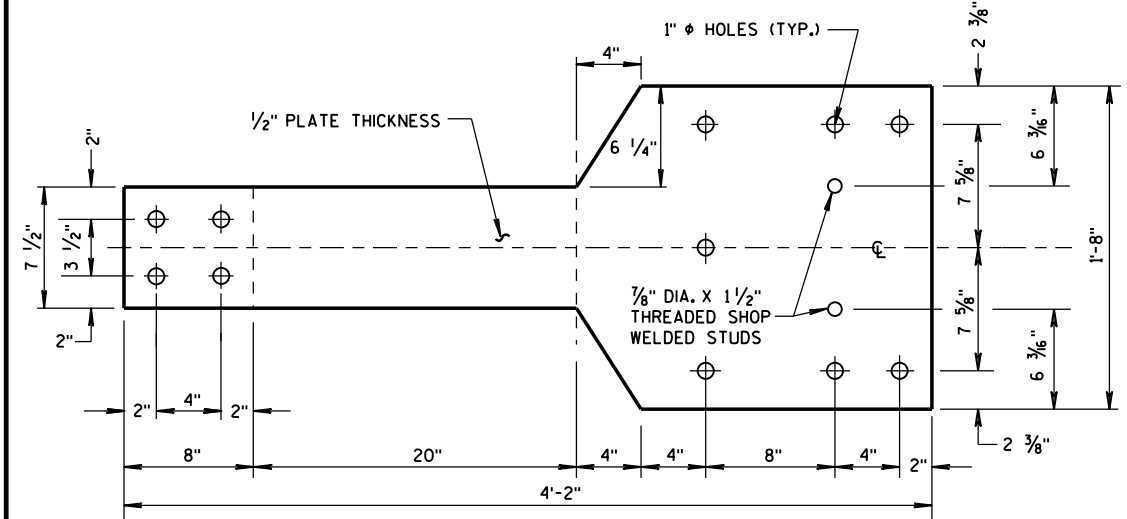
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

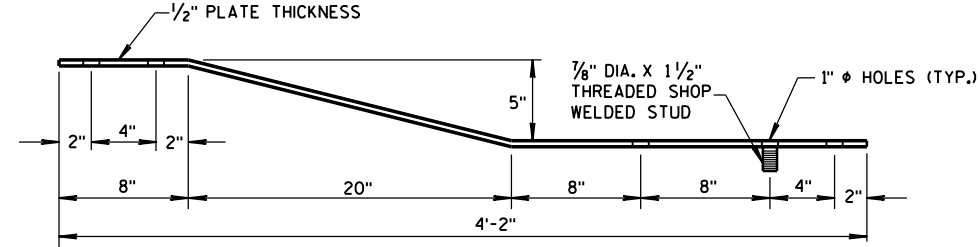
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 69 NT
FHWA ENGINEER

GENERAL NOTES

④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.

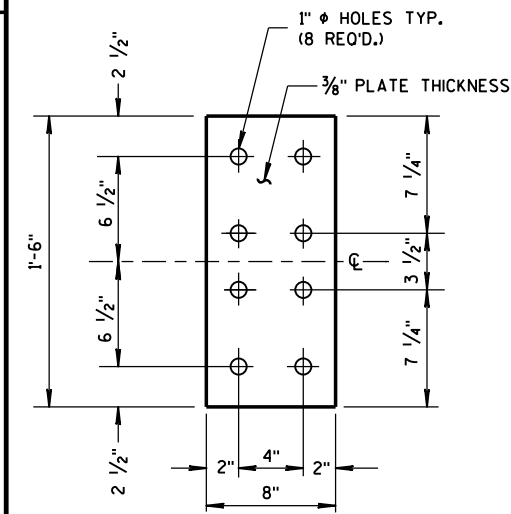


FRONT VIEW



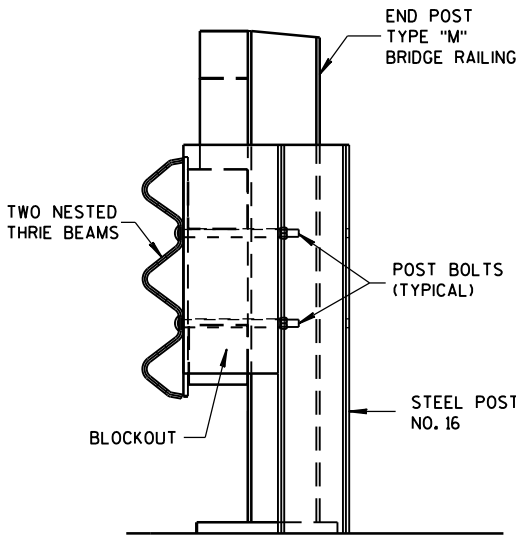
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

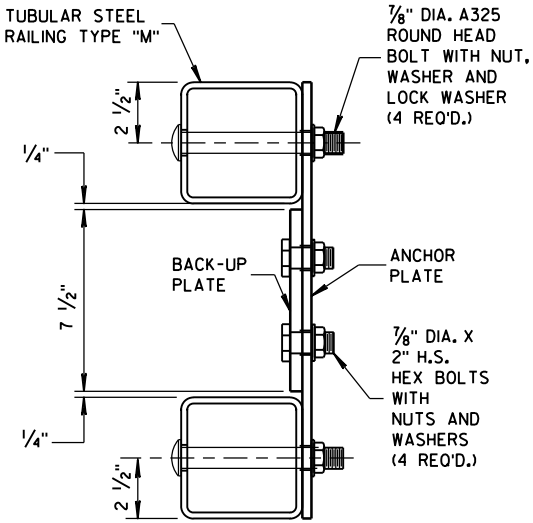


FRONT VIEW

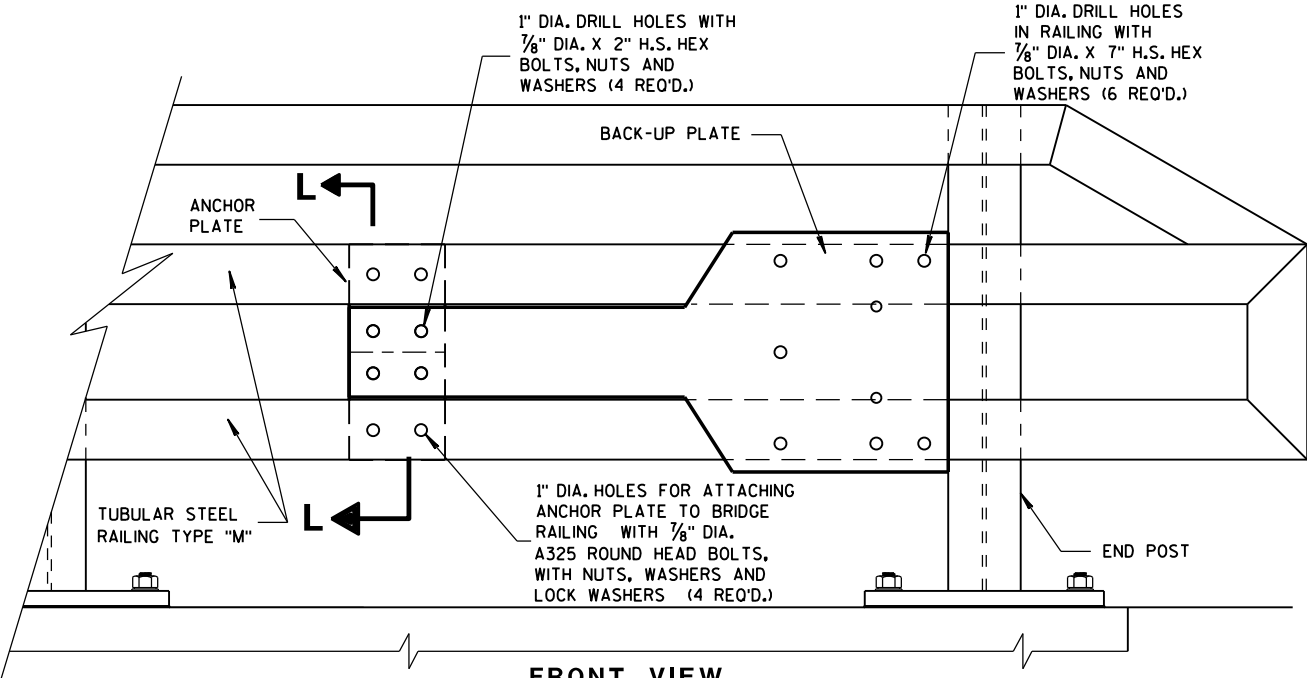
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

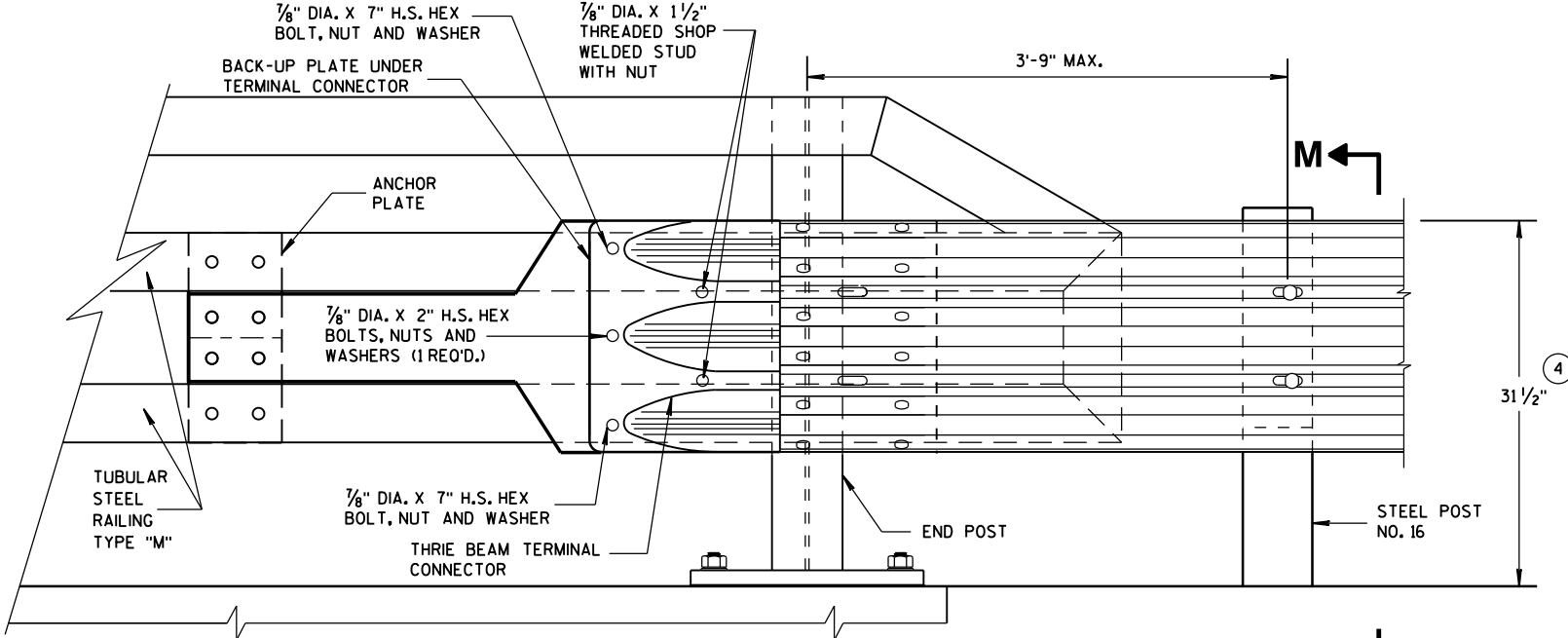


SECTION L-L

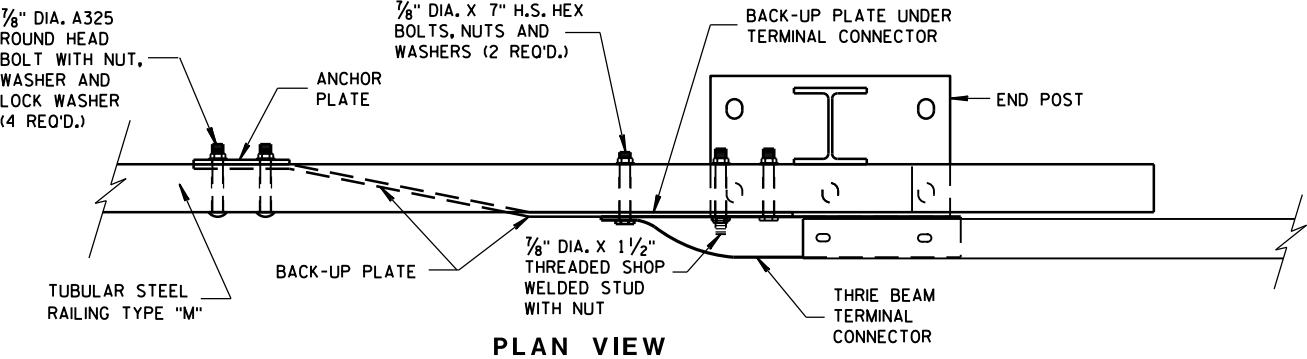


FRONT VIEW

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



FRONT VIEW



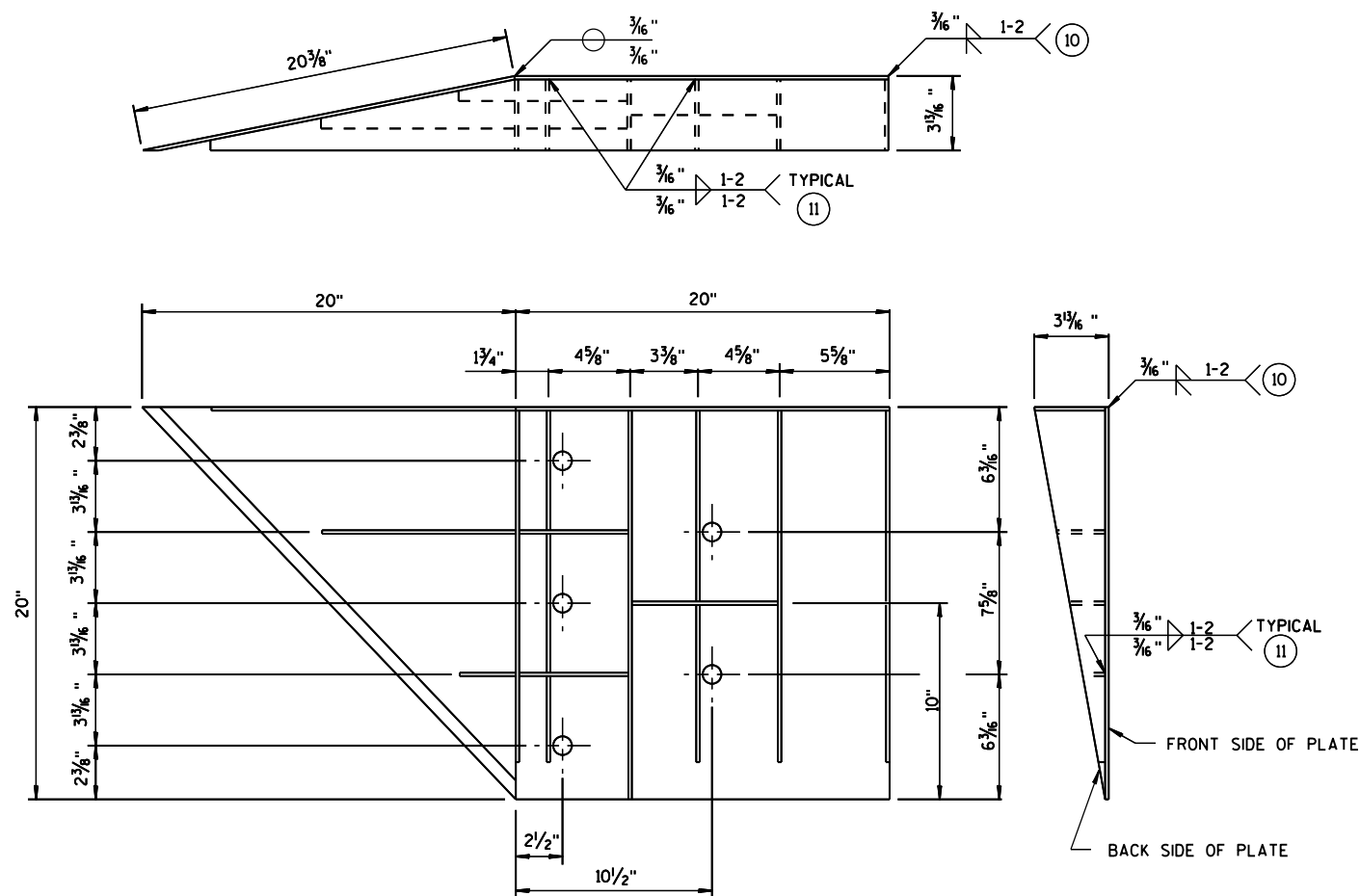
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS [70] INT
FHWA ENGINEER



WELDING INSTRUCTION

(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 7/16"	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 1/16" 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 1/16"	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 1/8"	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 7/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

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.

- ⑩ 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.
- ⑪ STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

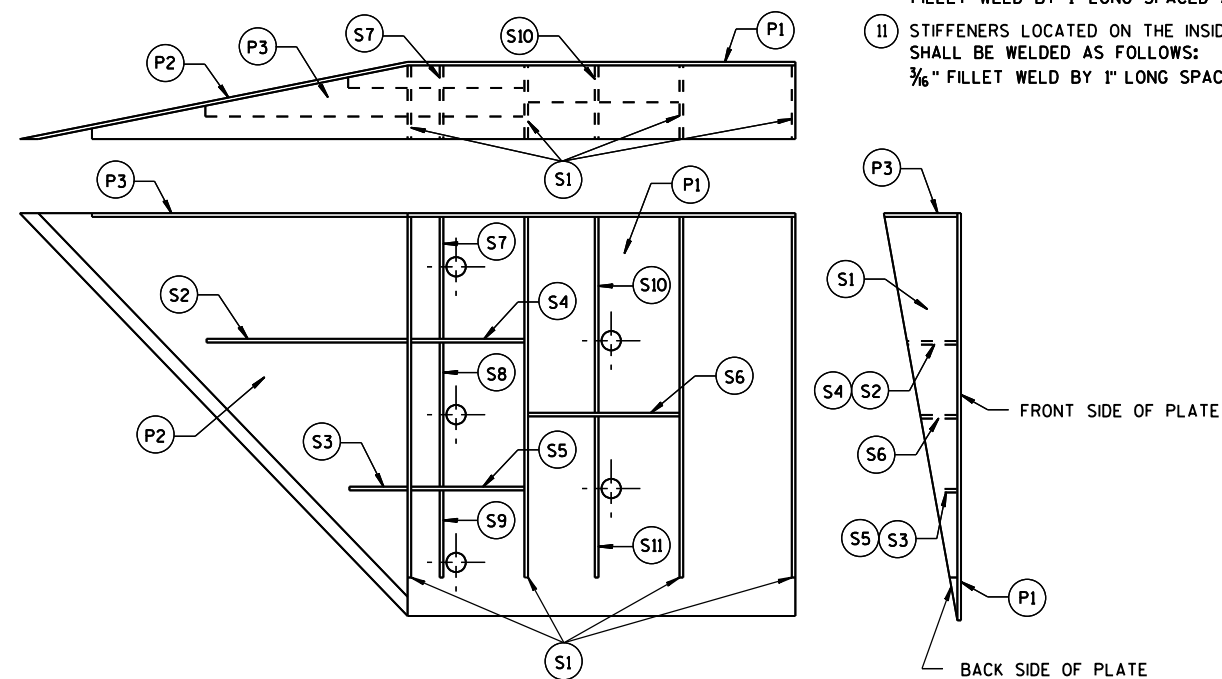


PLATE AND STIFFENER IDENTIFICATION

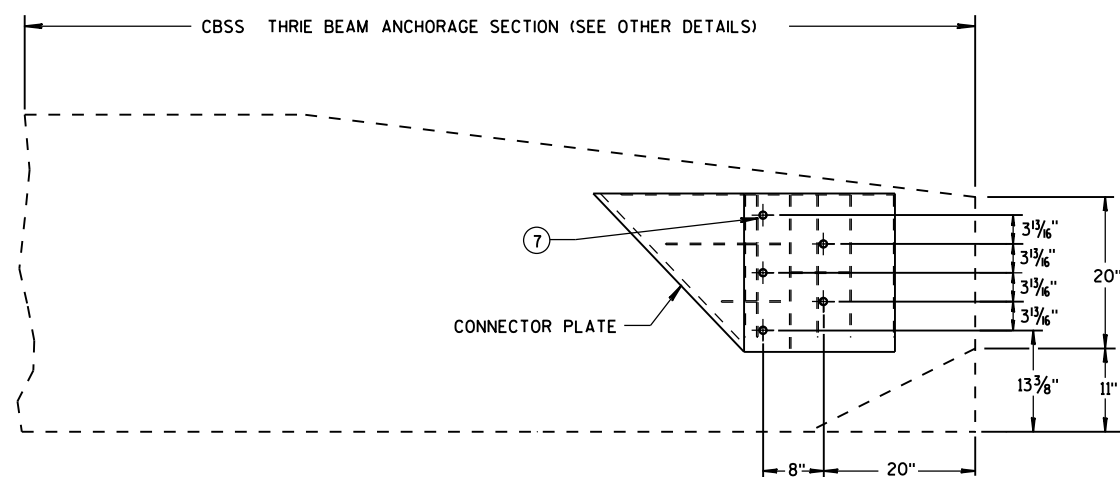
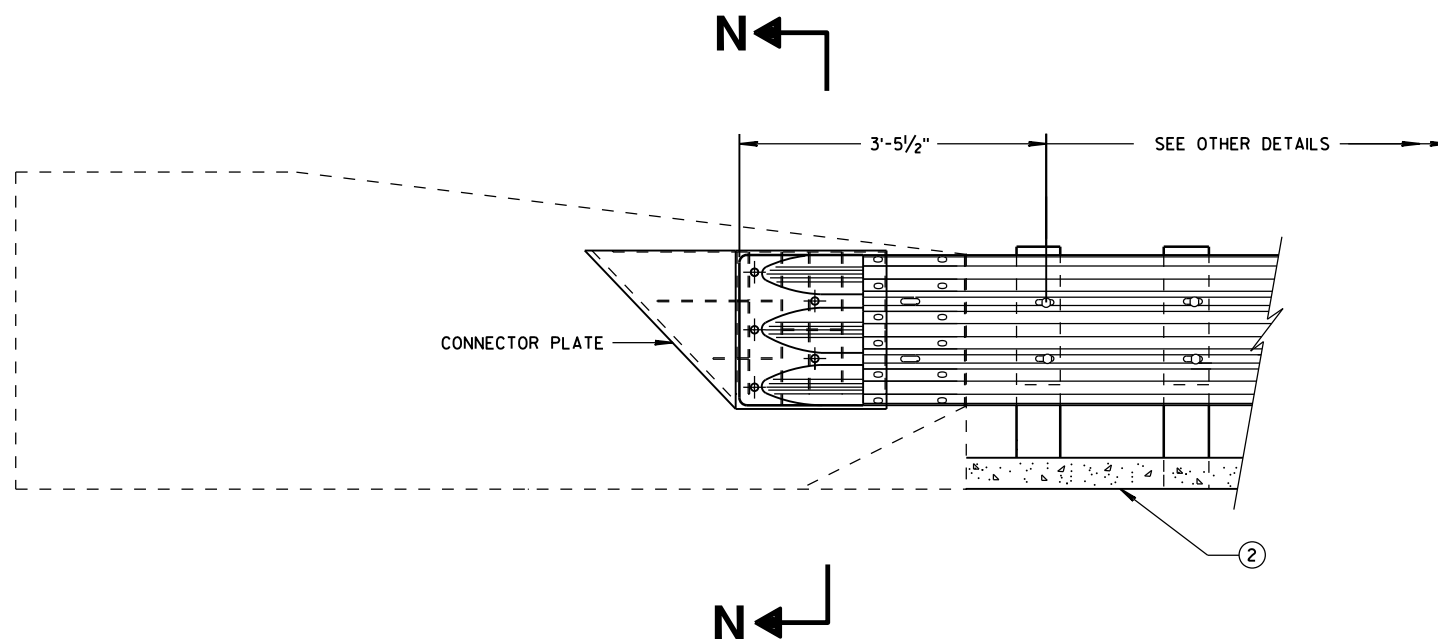
(VIEWED FROM BACK SIDE OF PLATE)

MIDWEST GUARDRAIL SYSTEM
THREE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER
FHWA

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



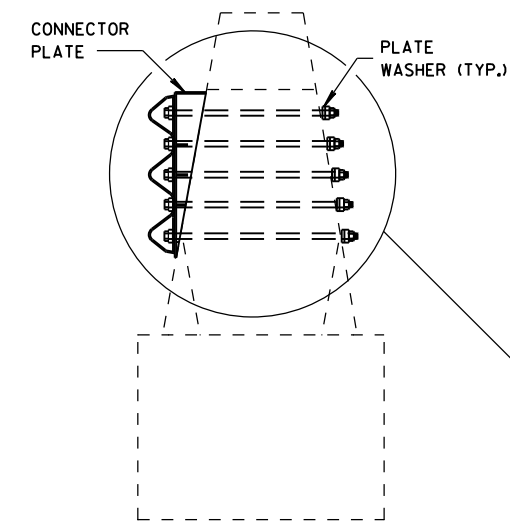
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

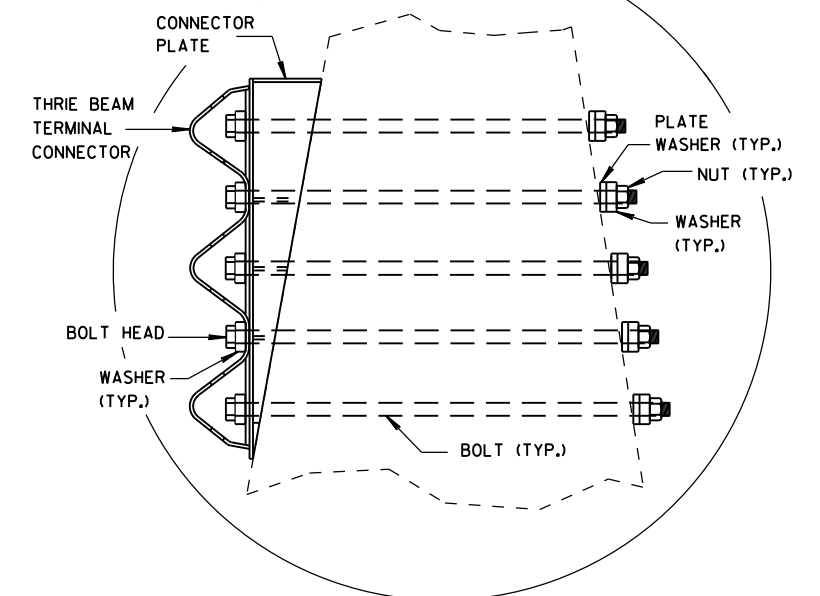
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

(7) 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 CONNECTOR PLATE. 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.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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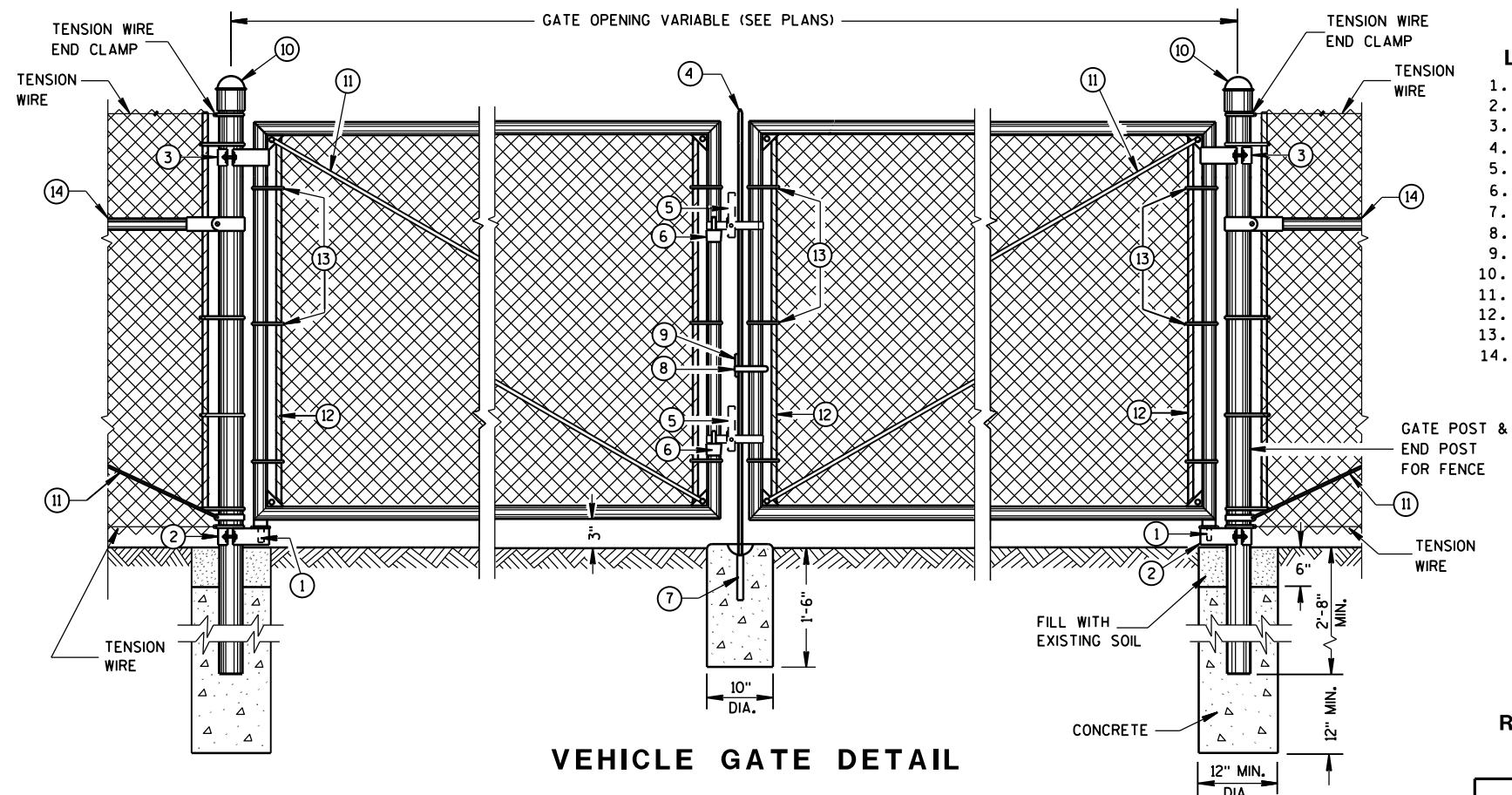
June, 2015

DATE

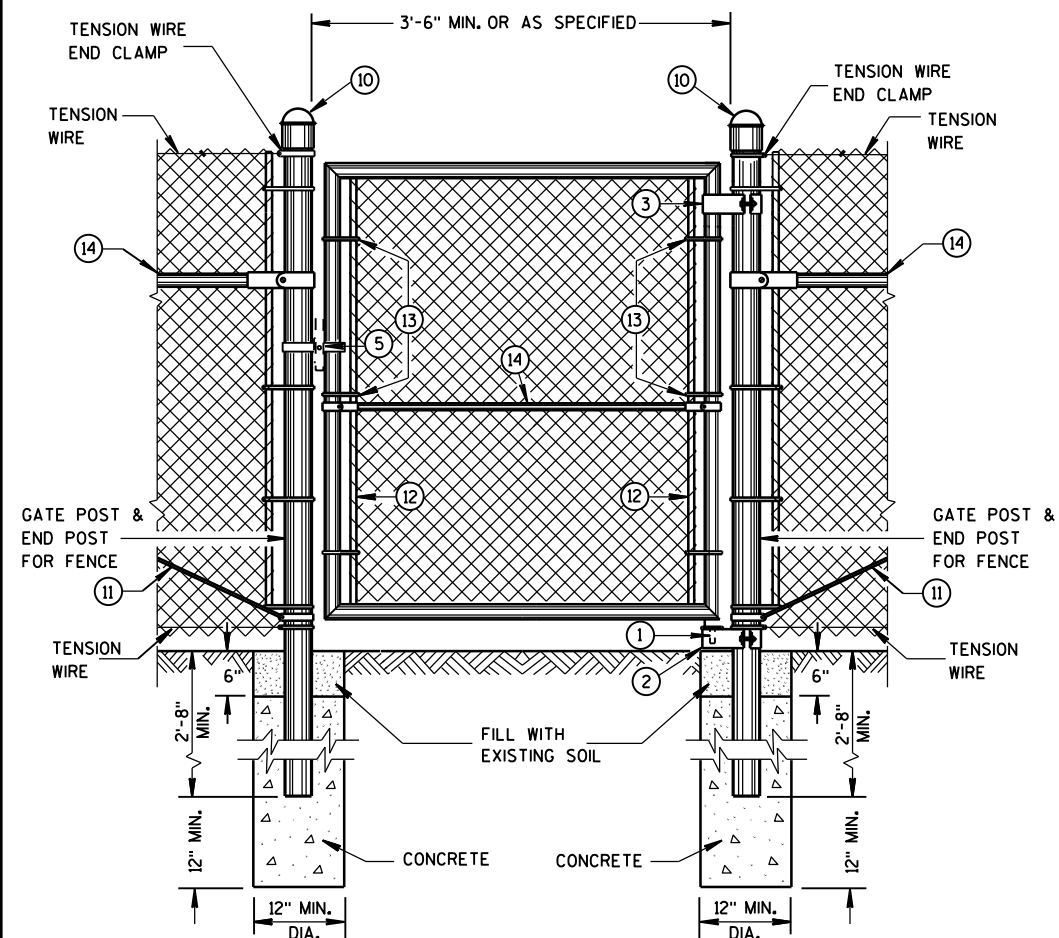
FHWA

/s/ Jerry H. Zoog
ROADWAY STANDARDS D 72
ENGINEER

NT



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

- ## LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

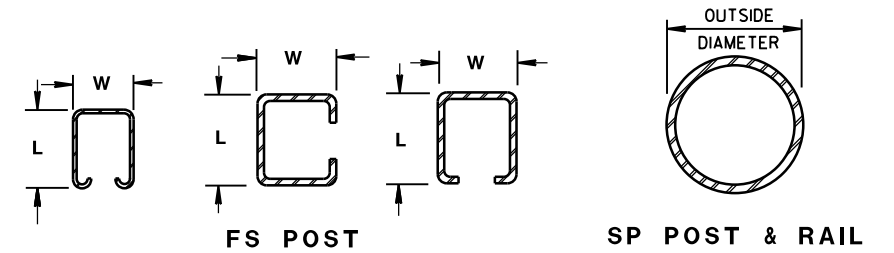
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.



CROSS SECTIONS OF POSTS AND RAILS

**ROLLED-FORMED STEEL FENCE POST
(2.0 OZ./SQ. FT. COATING)**

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

**ROUND STEEL FENCE POST
(1.8 OZ./SQ. FT. COATING)**

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2+
	GREATER THAN OR EQUAL TO 8 FT.	FS3

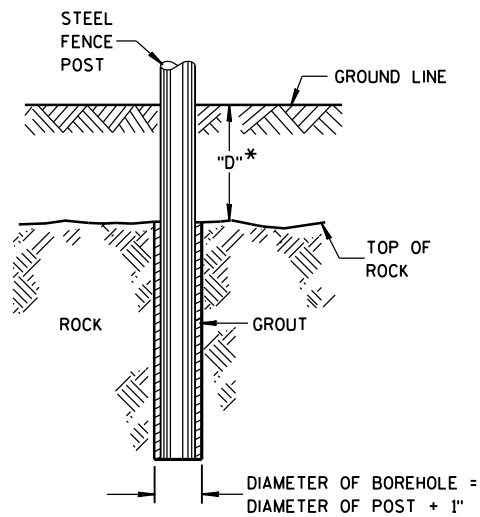
BRACE RAIL TYPES

USE		TYPE
BRACE RAIL	X	SP1 OR FS1

**** INCLUDES END, CORNER, ANGLE, INTERSECTION AND
INTERMEDIATE BRACED POSTS**

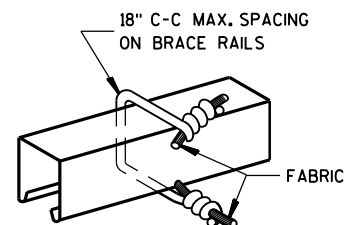
FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁷³



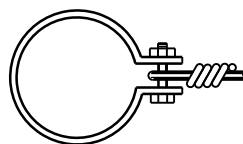
* IF "D" IS LESS THAN 2'-6",
DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST

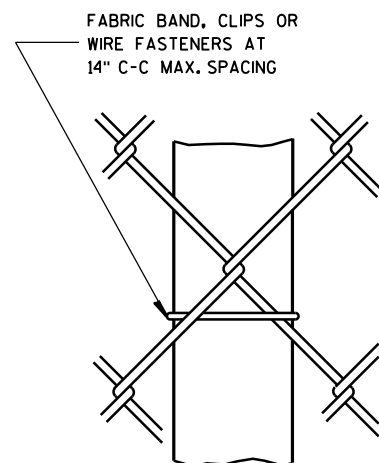


BRACE RAIL FABRIC FASTENER

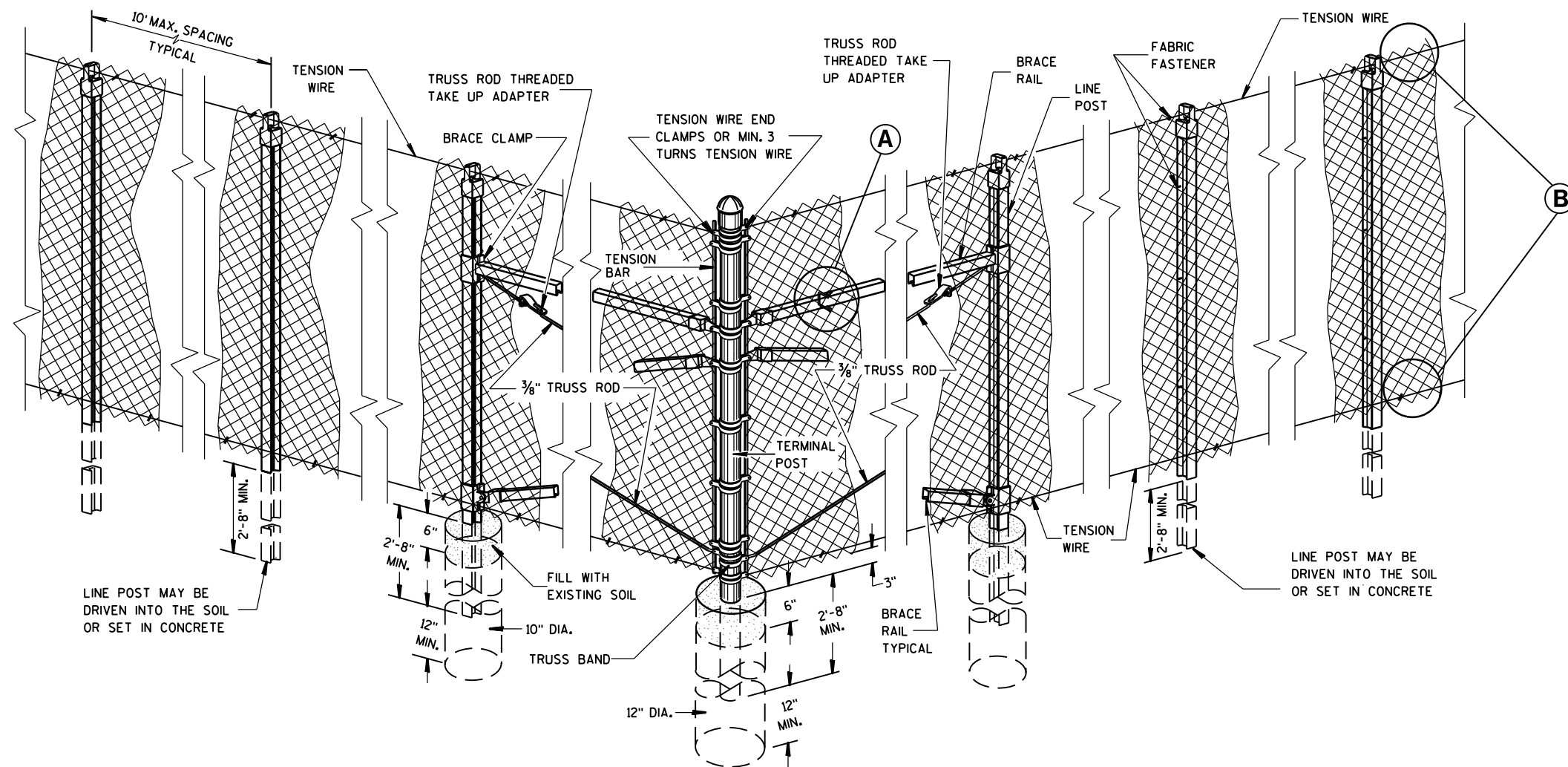
(A)



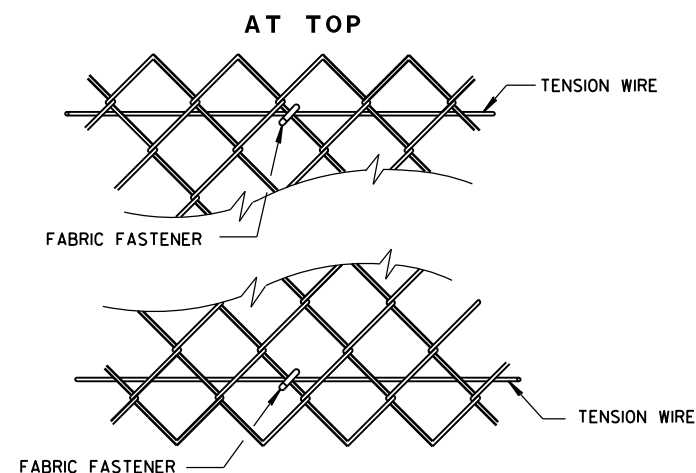
TENSION WIRE END CLAMP



LINE POST FABRIC FASTENER



END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



(B)

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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FEB. 2015

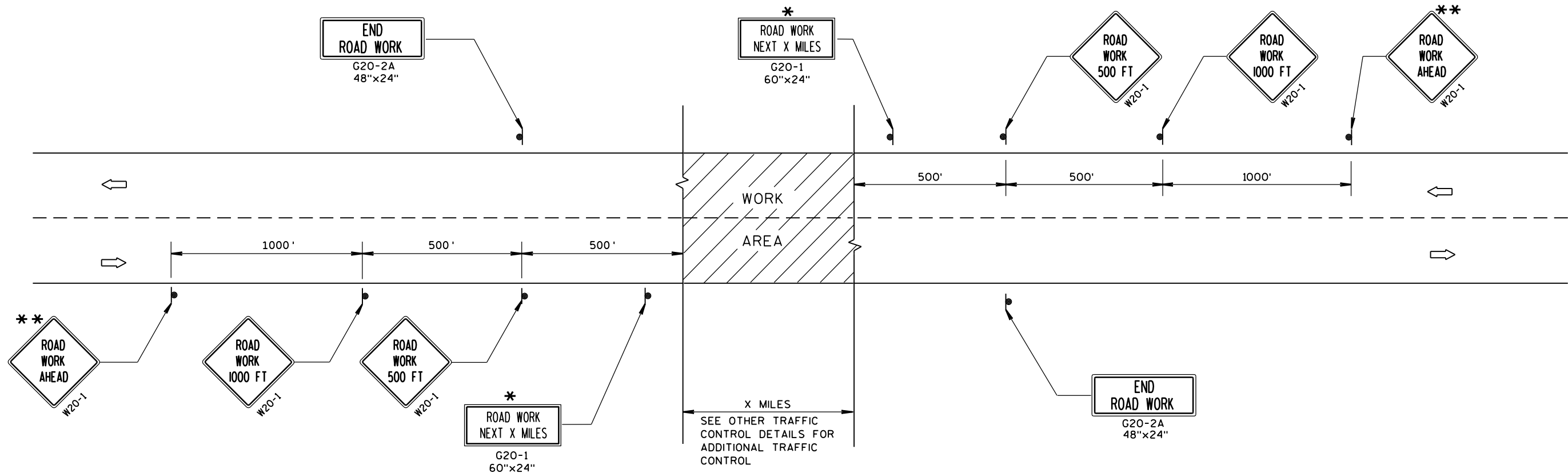
DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS 074

ENGINEER



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

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.

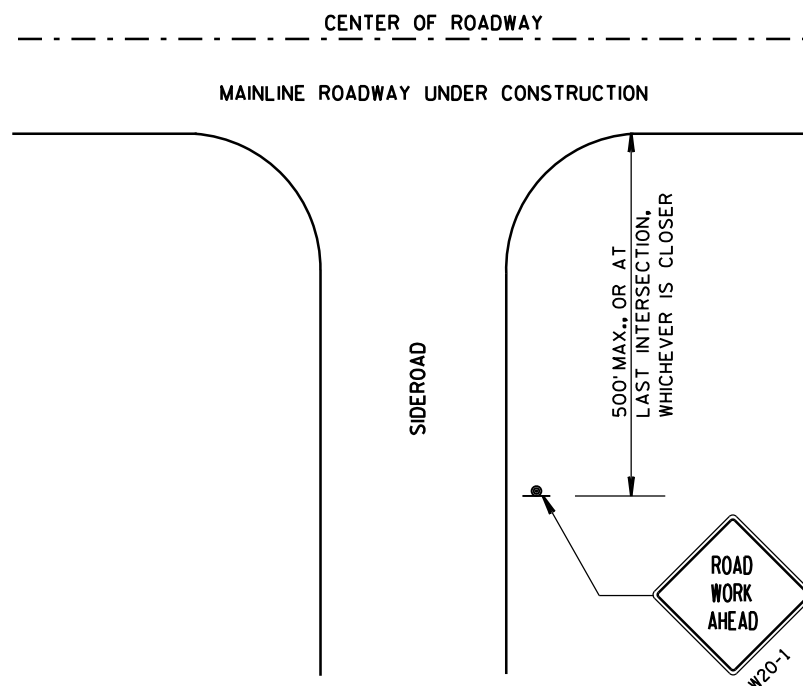
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



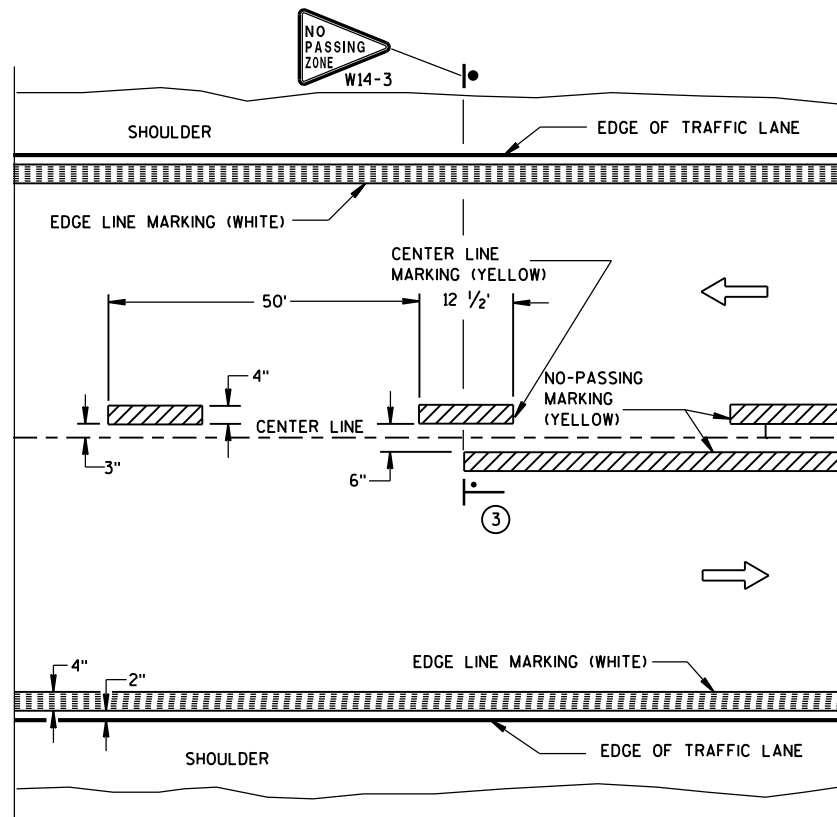
LEGEND

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

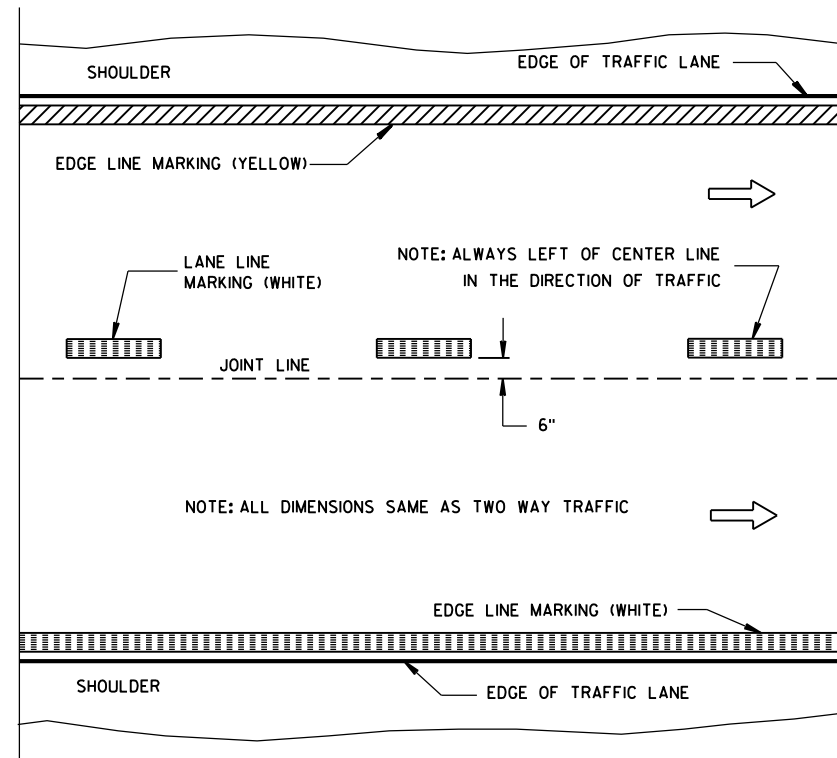
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

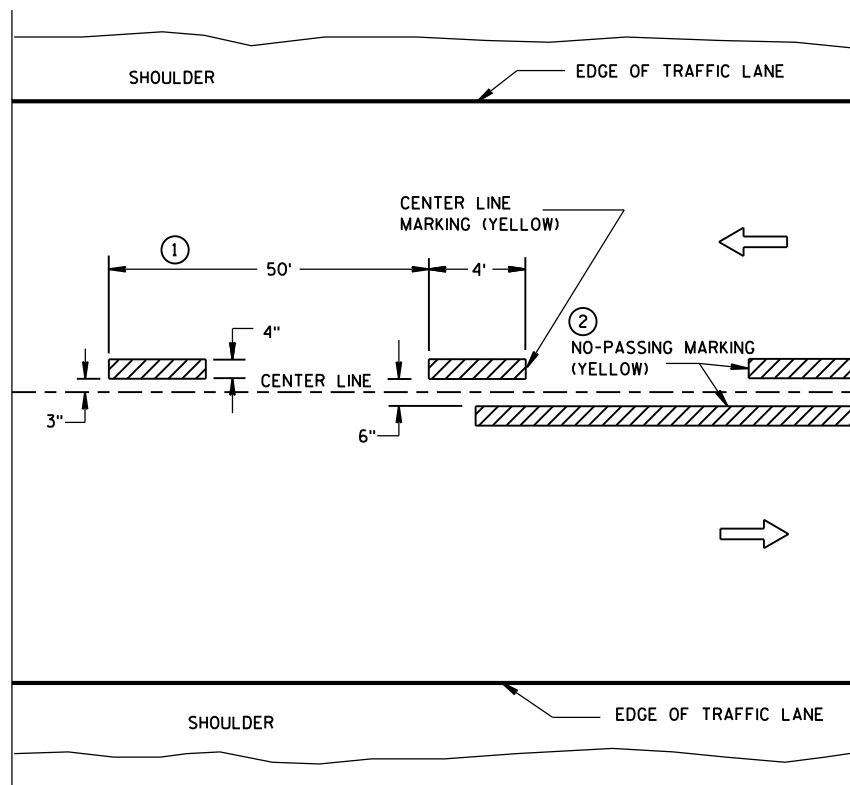


TWO WAY TRAFFIC

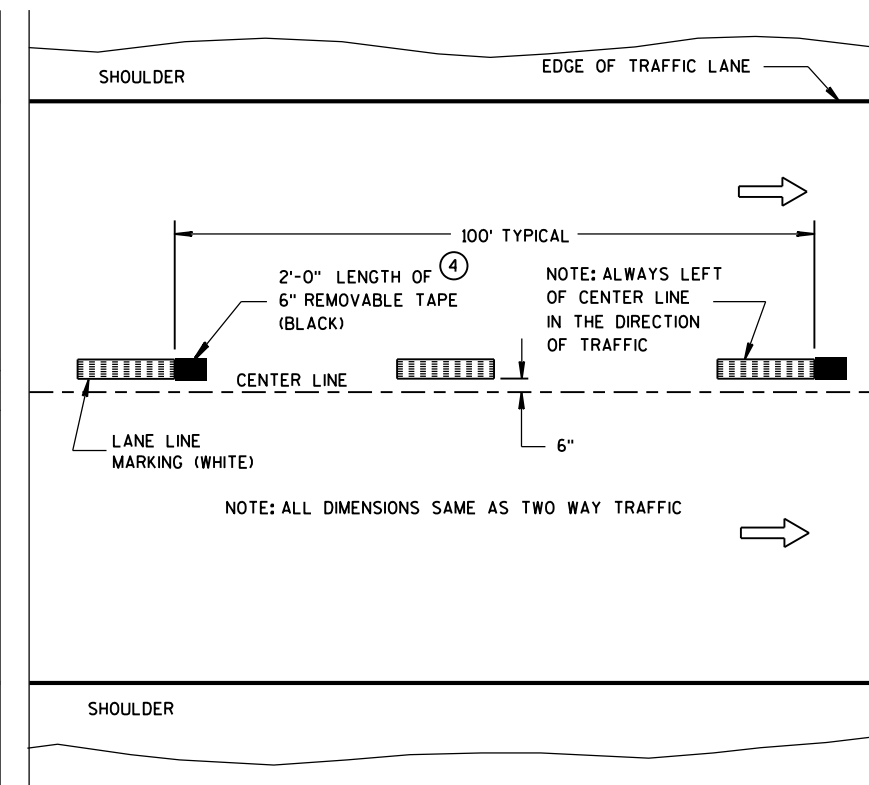


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

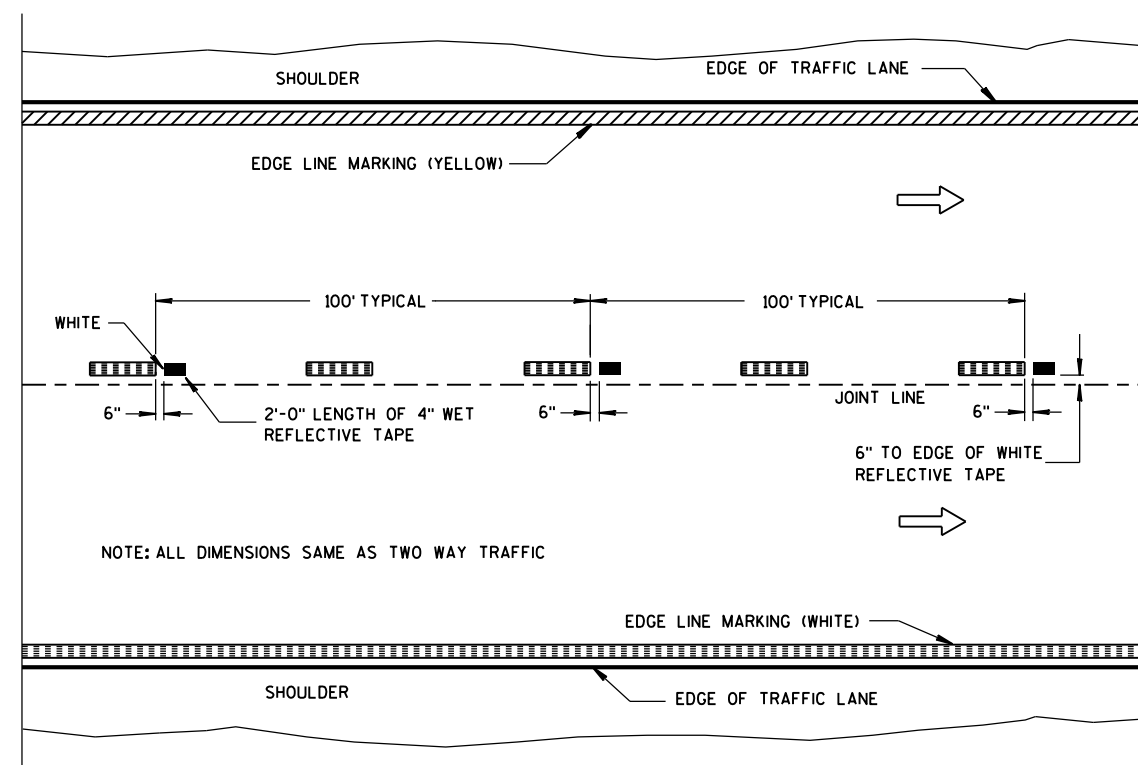
GENERAL NOTES

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)

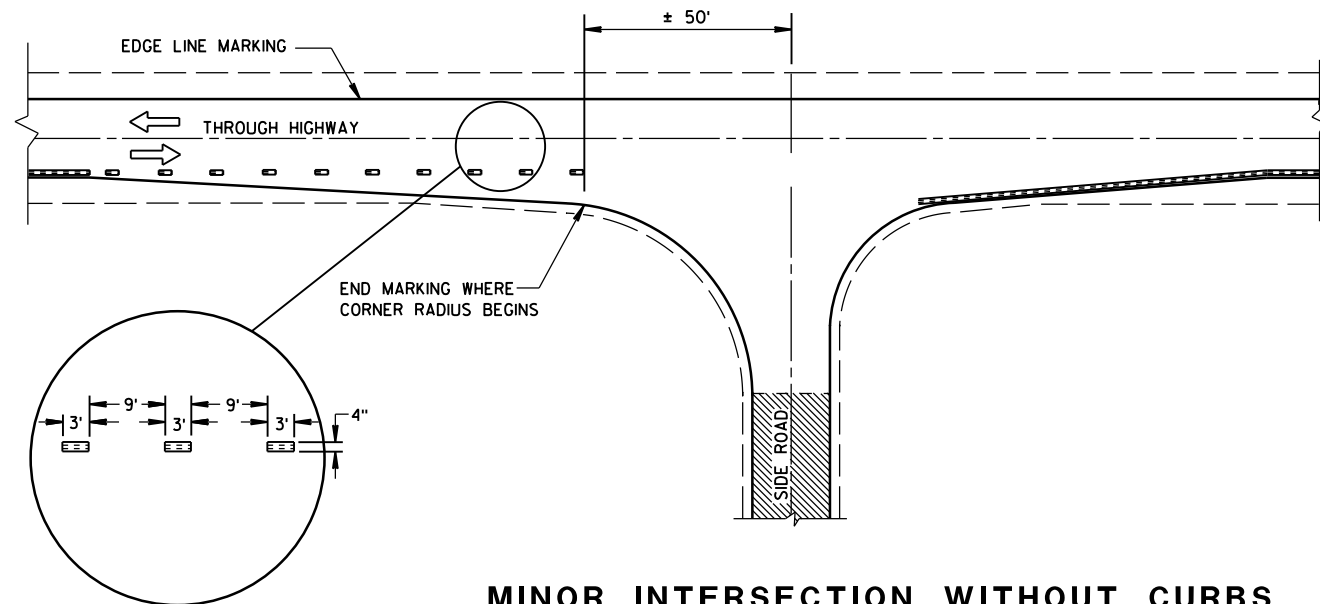
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

FHWA

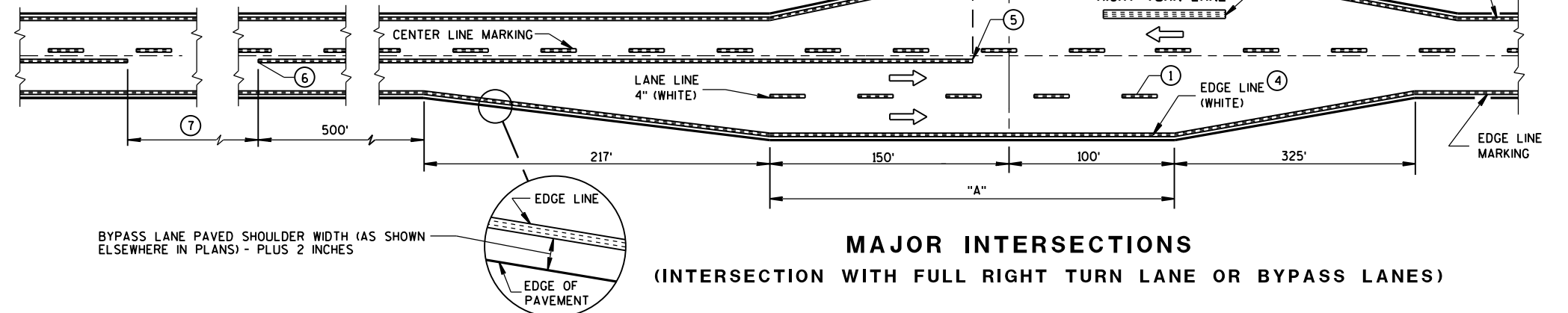
/S/ Travis Feltes
STATE TRAFFIC E 76



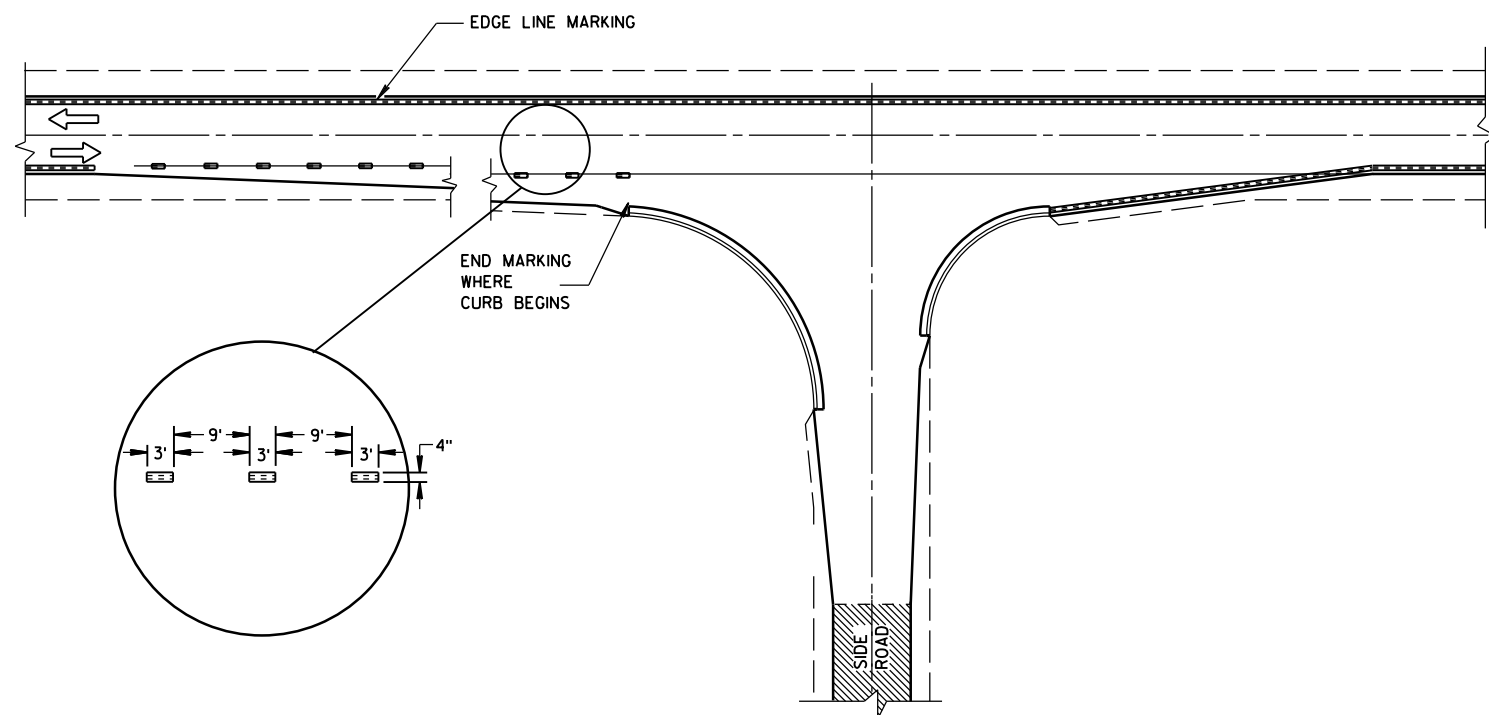
MINOR INTERSECTION WITHOUT CURBS

⑦

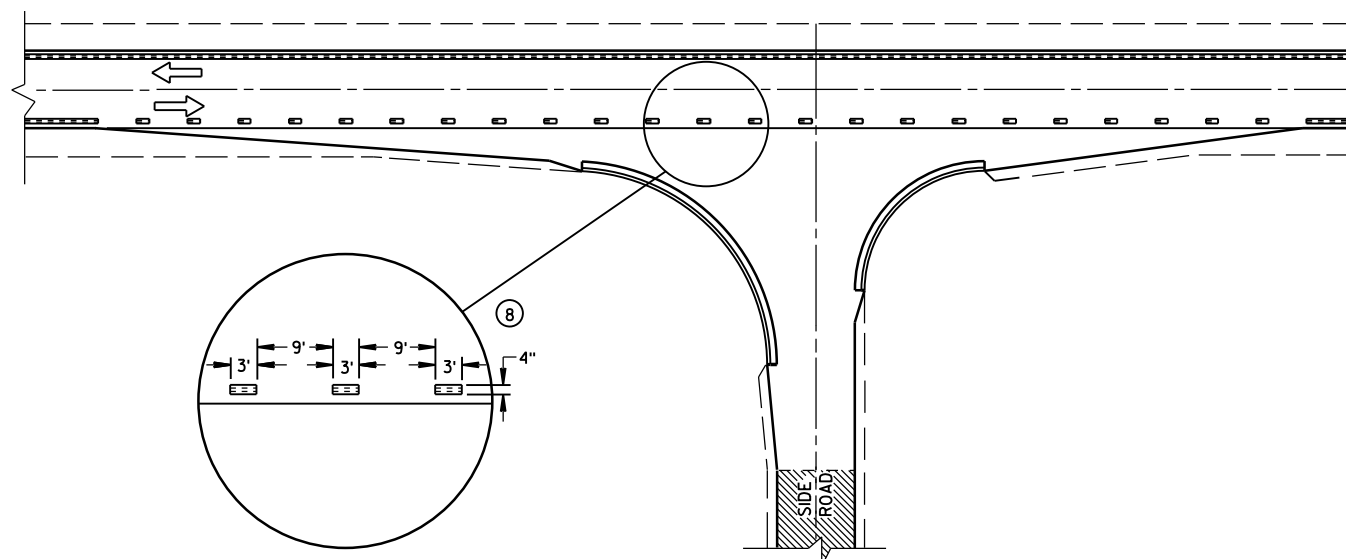
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



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



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

GENERAL NOTES

- EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
 - ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
 - ③ ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
 - ④ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
 - ⑤ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
 - ⑥ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
 - ⑦ IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
 - ⑧ 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

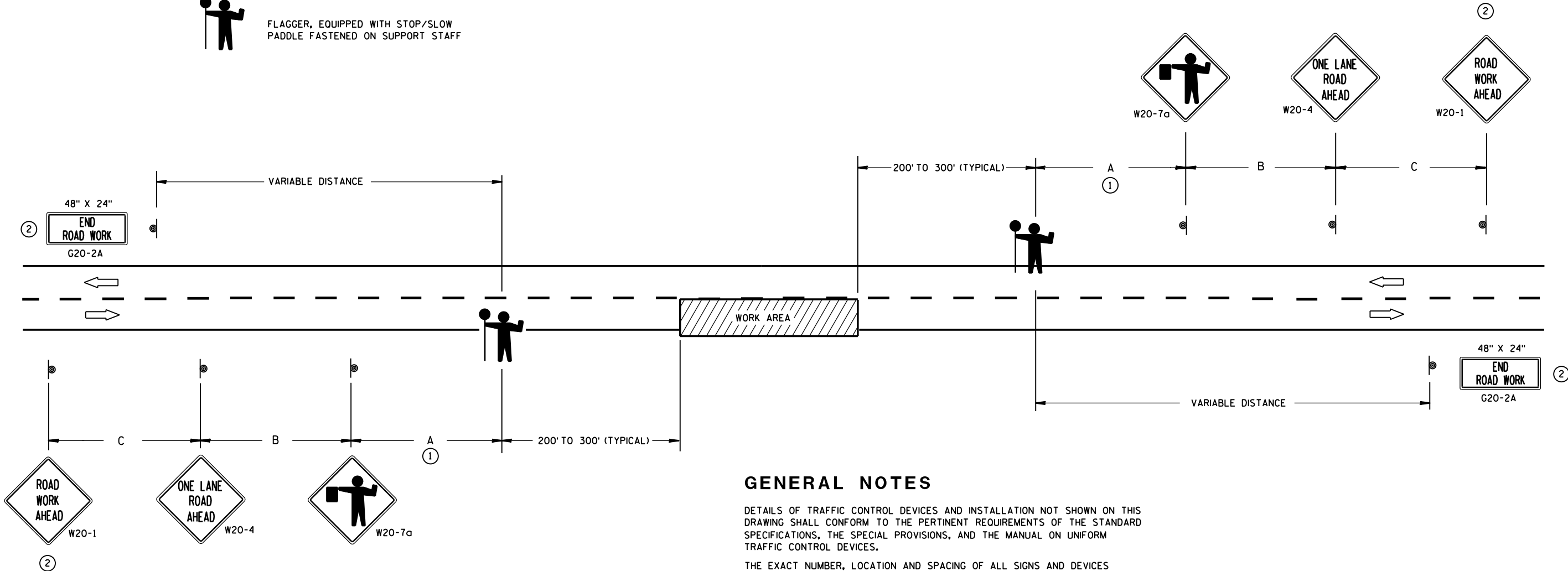
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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



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.



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.

- 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.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 78 SIGN
FHWA

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.

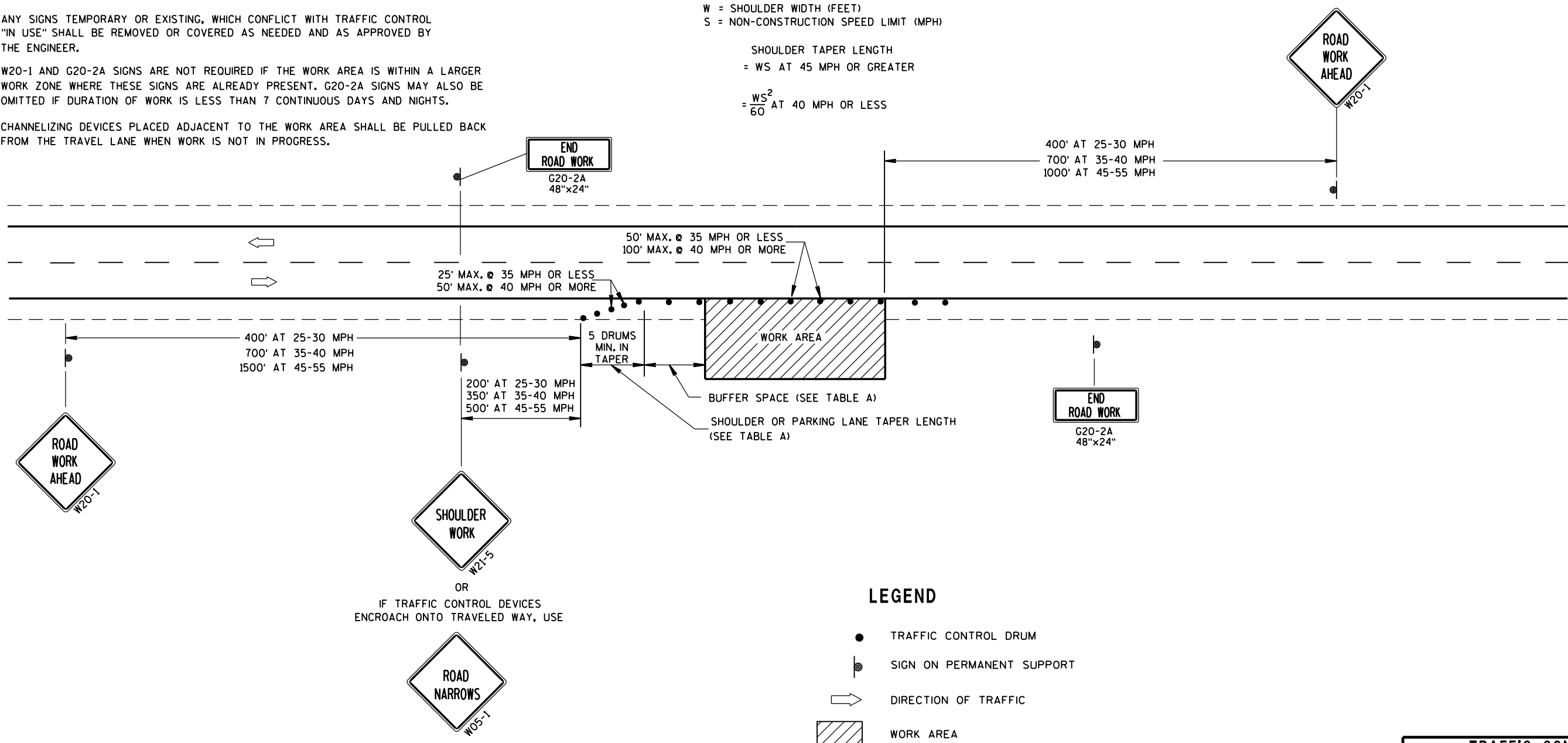
TABLE A

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
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 ENGINE 79	ESIGN
FHWA		

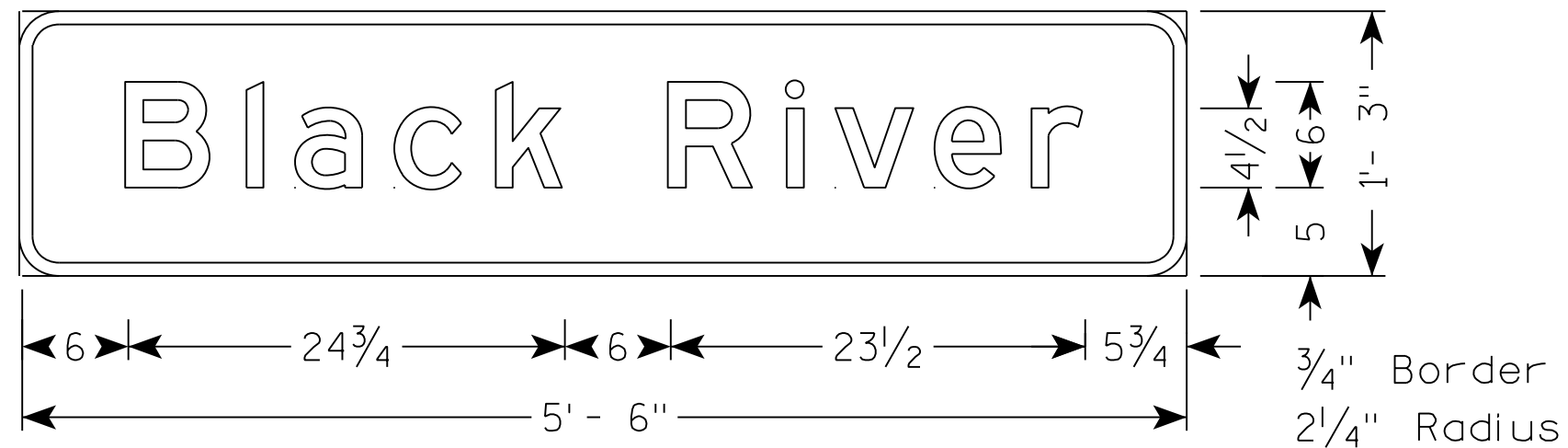
TEMPORARY SIGNAL WITH BACKPLATE
AND 12-INCH LENSES ON BREAKAWAY
POLE

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

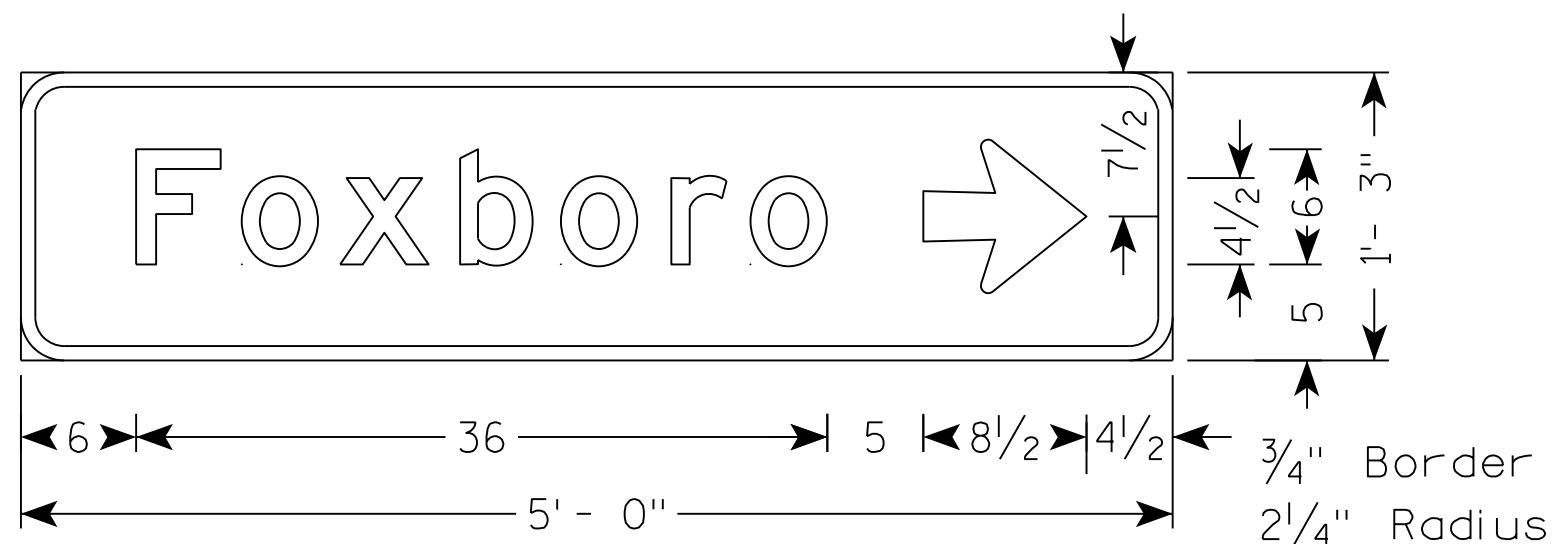
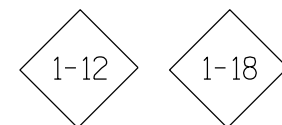


NOTES

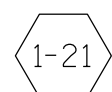
1. All Signs Type II - Type H Reflective
2. Color:
Background - GREEN
Message - WHITE
3. Message Series - E



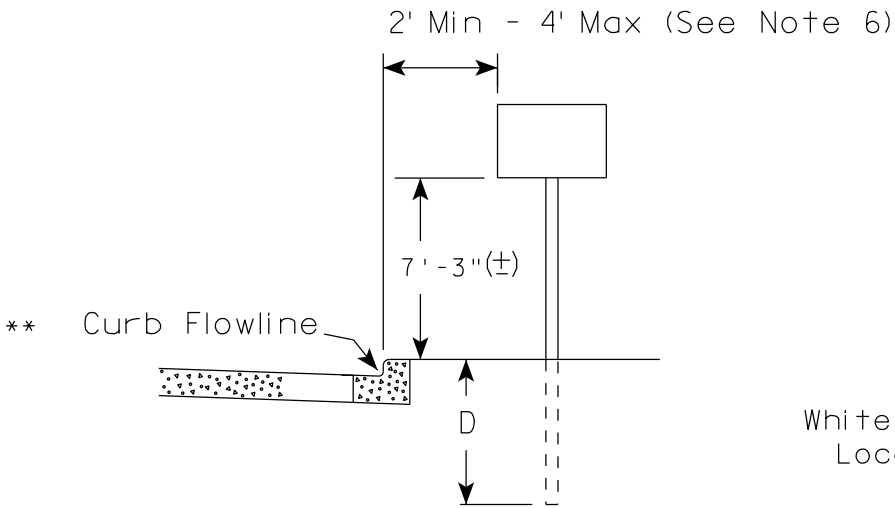
I3 - 1



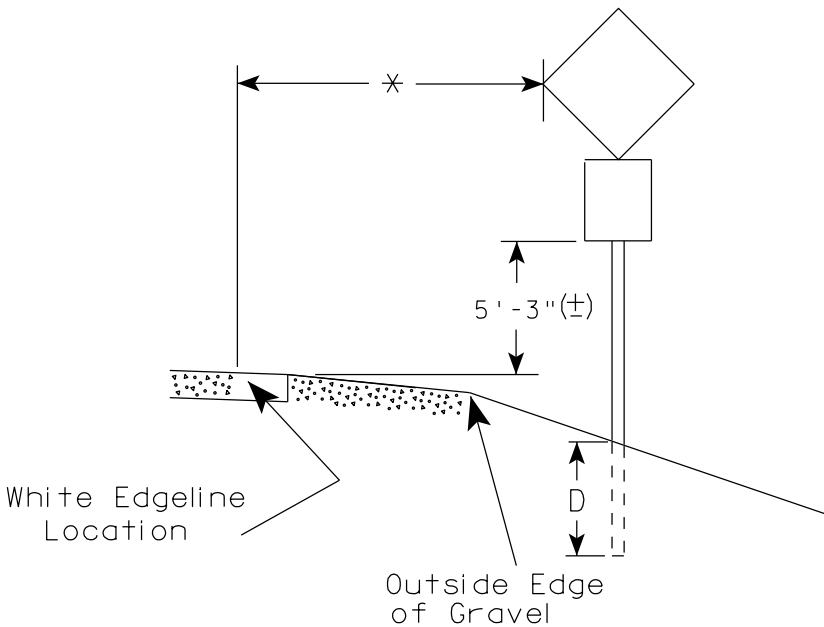
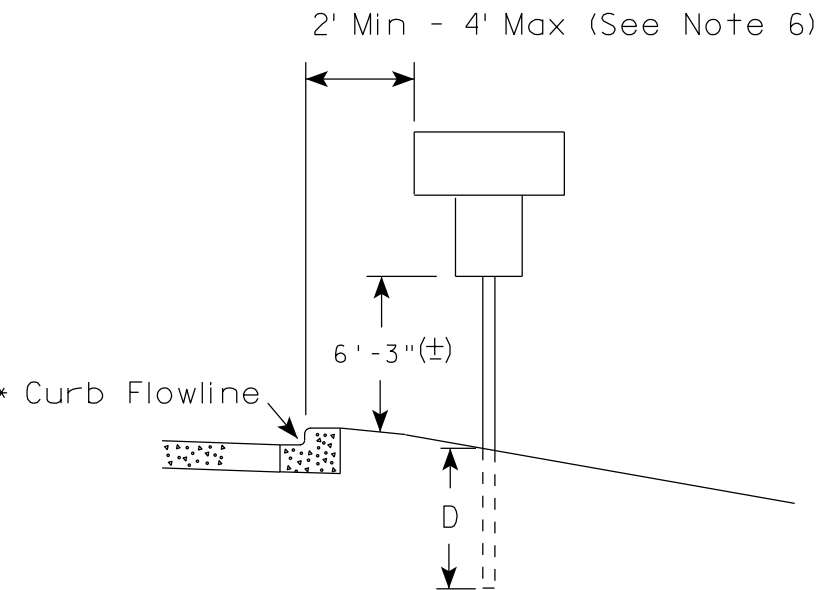
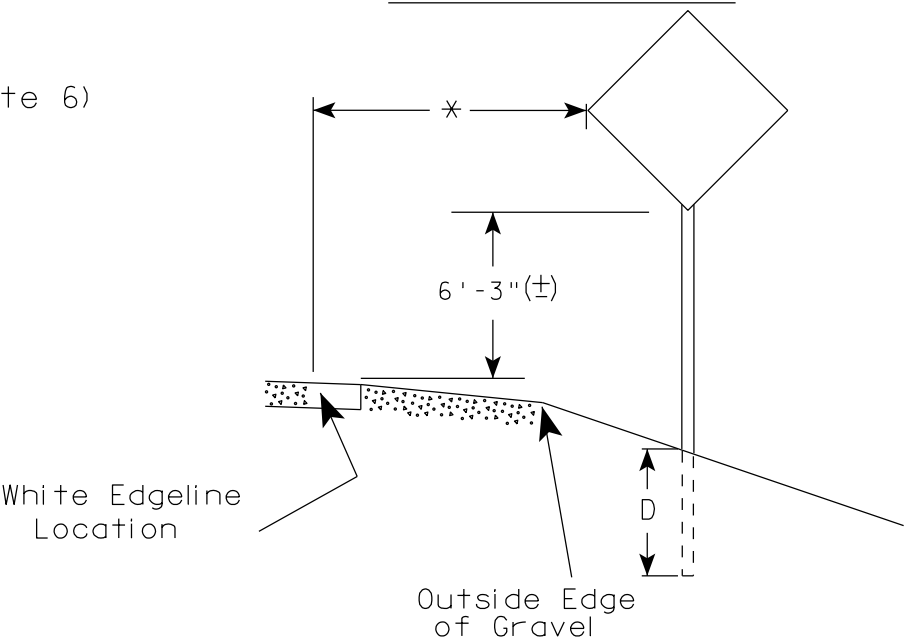
D1-1



URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on 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 directed 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" (±).

POST EMBEDMENT DEPTH

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

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

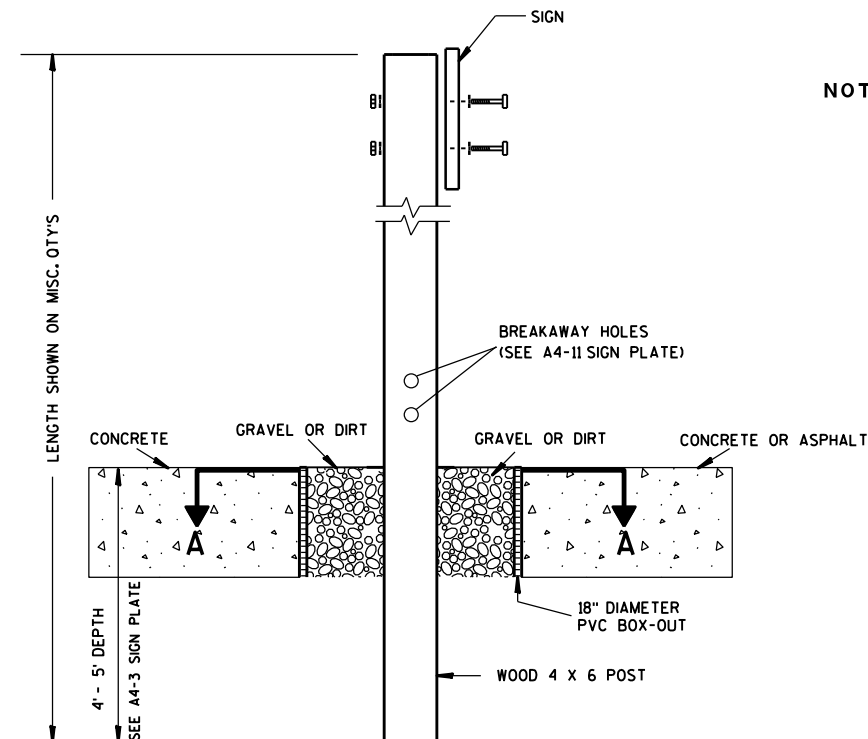
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

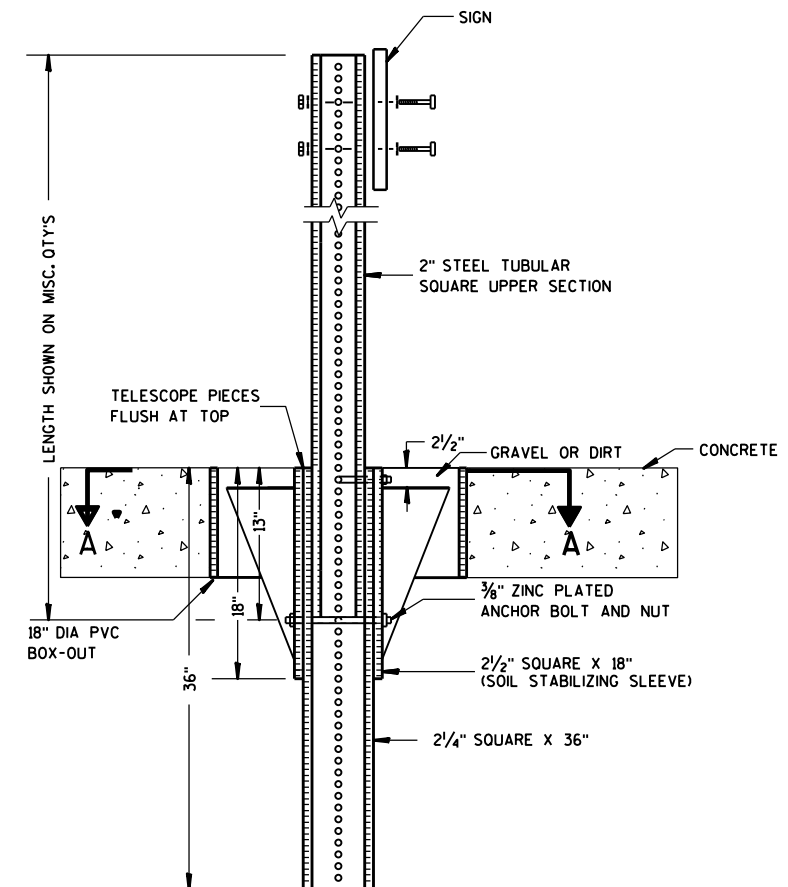
DATE 7/23/15 PLATE NO. A4-3.20
82



ELEVATION VIEW

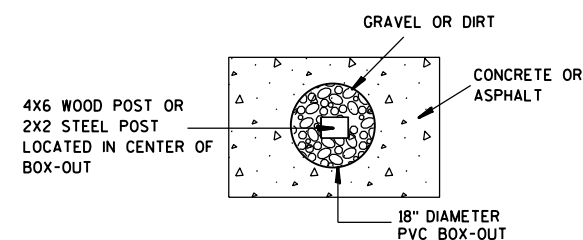
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLAT 83 A4-3B.1

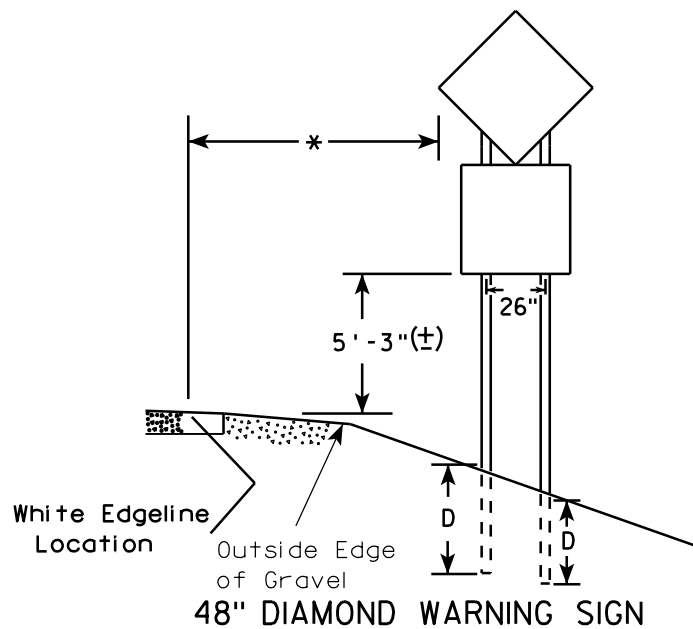
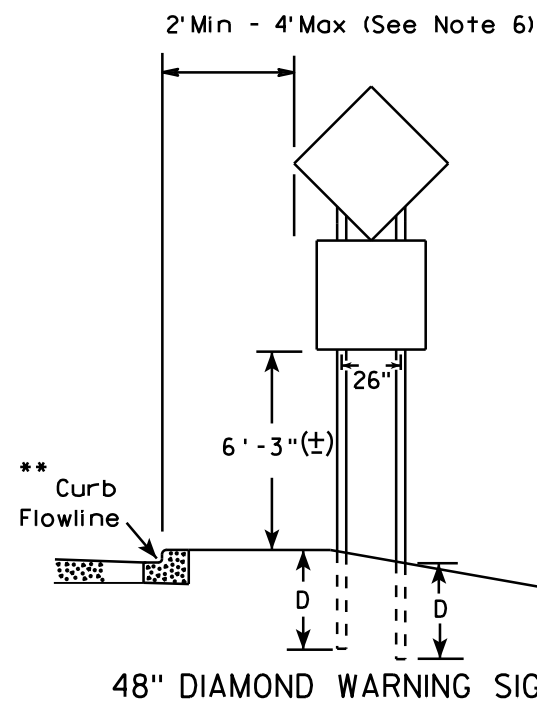
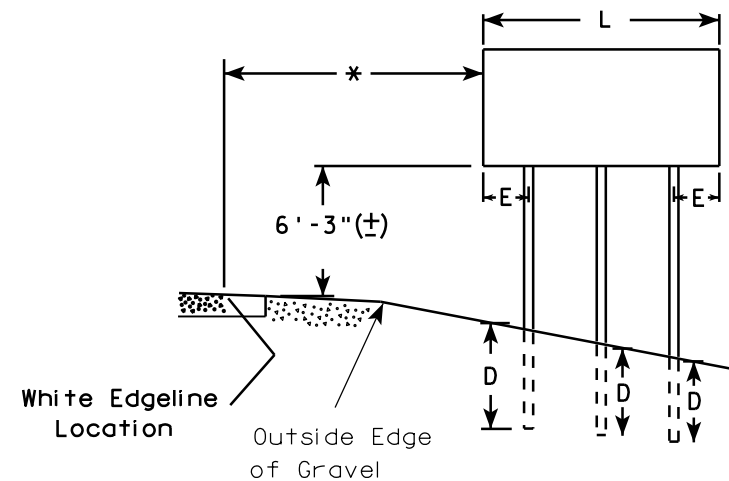
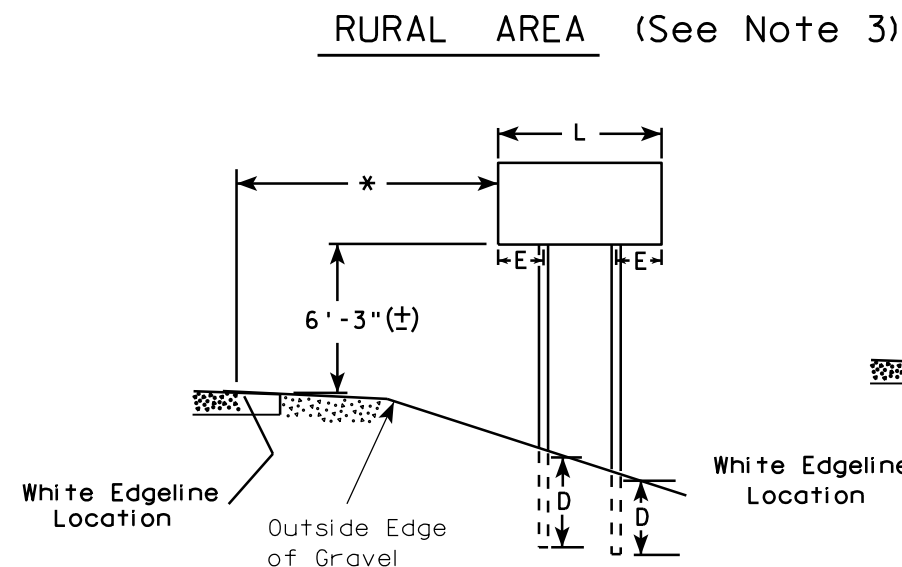
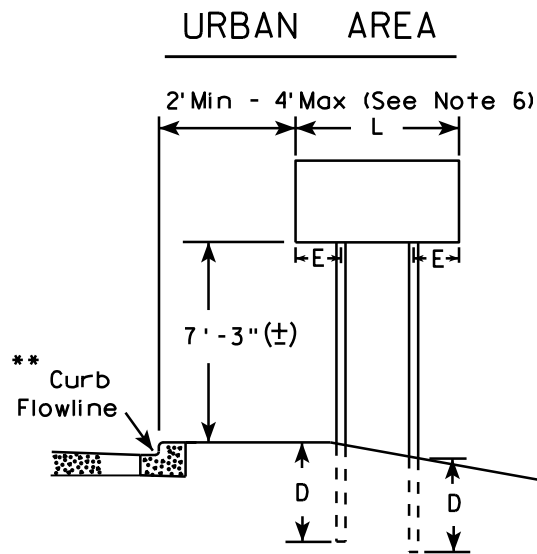
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- GENERAL NOTES**
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. 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 and less than 20 S.F. in area.

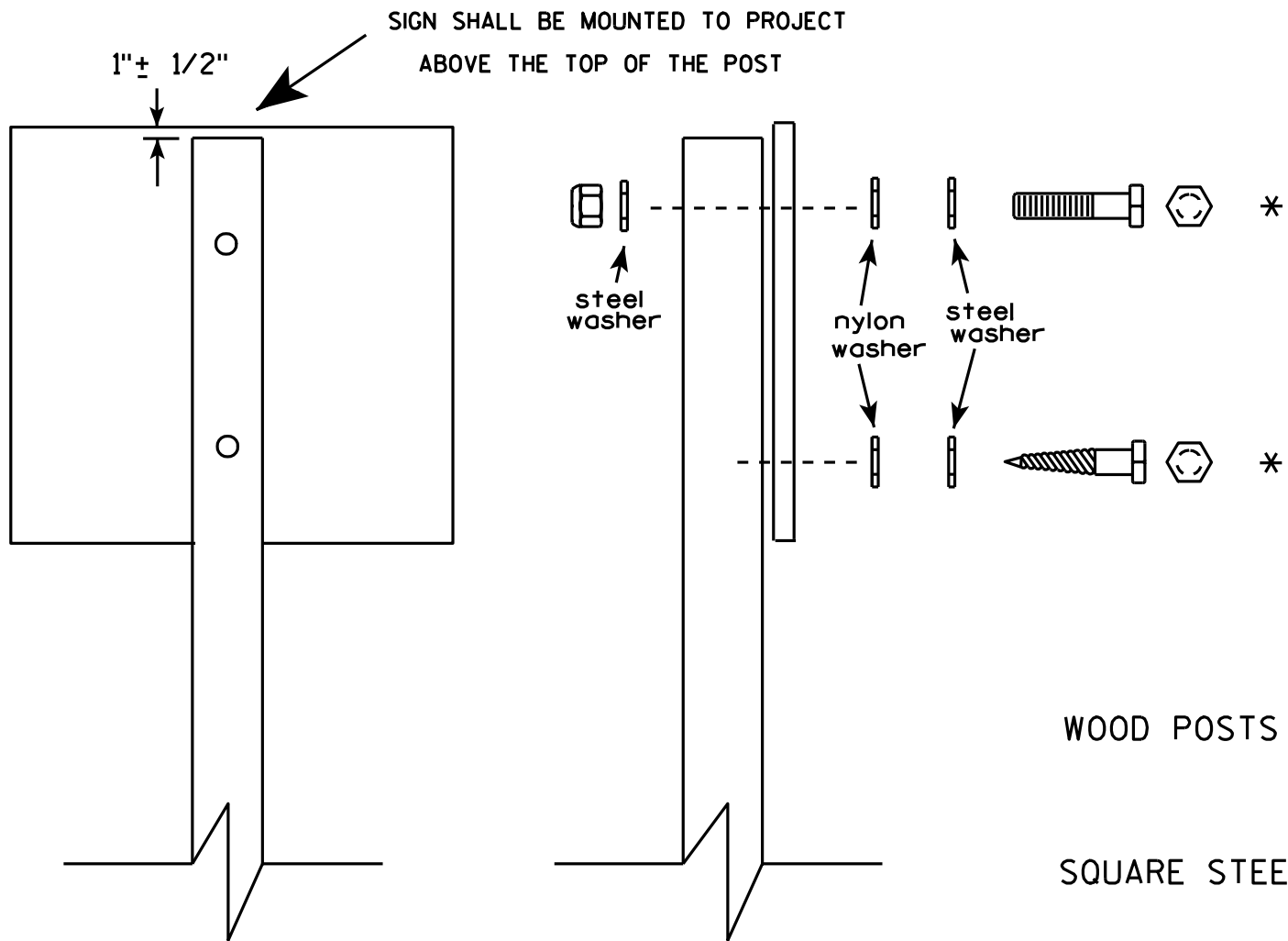
SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

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	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 7/23/15	PLATE NO. ^{AA-A} 14 84

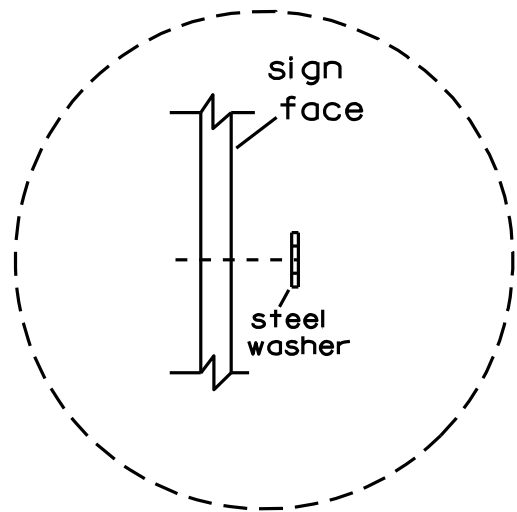


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- 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.

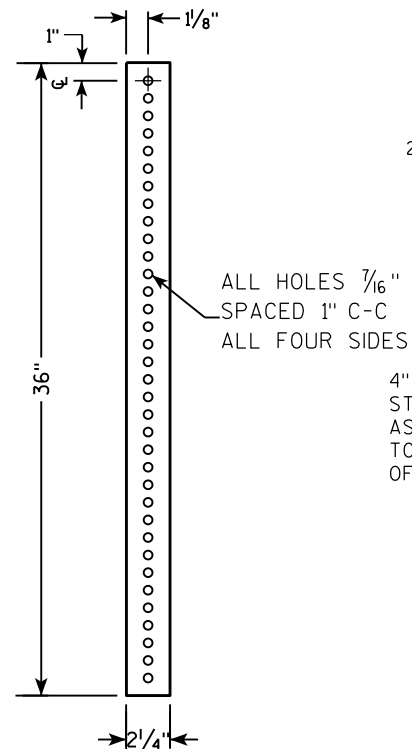


Washer Placement when Sign Has Other Than Type H or Type F Face

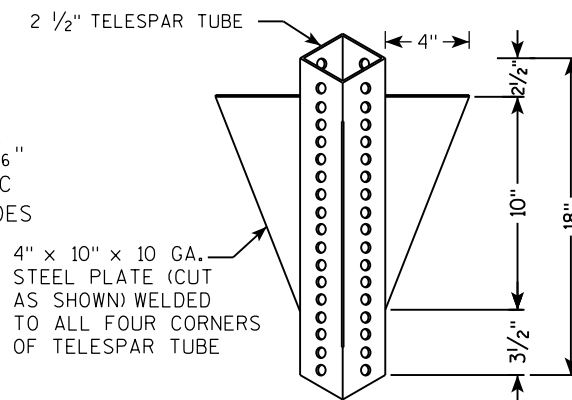
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

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



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



LENGTH SHOWN ON MISC. QTY'S
 18" DIA SCHEDULE 40 PVC BOX-OUT
 TELESCOPE PIECES FLUSH AT TOP
 36"
 18"
 13"
 2 1/2"
 2 1/4" SQUARE X 36"
 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 3/8" ZINC PLATED ANCHOR BOLT AND NUT
 2 1/2" GRAVEL OR DIRT
 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
 ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES
 2" STEEL TUBULAR SQUARE UPPER SECTION
 SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 SIGN

LENGTH SHOWN ON MISC. QTY'S

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

TELESCOPE PIECES FLUSH AT TOP

18"

12"

36"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

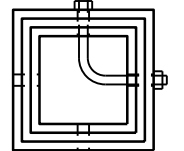
2 1/4" SQUARE X 36"

A

B

C

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



DIRECTION
OF TRAFFIC

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 86 14-9.9

SHEET NO:

1

PROJECT NO:

HWY:

COUNTY:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN

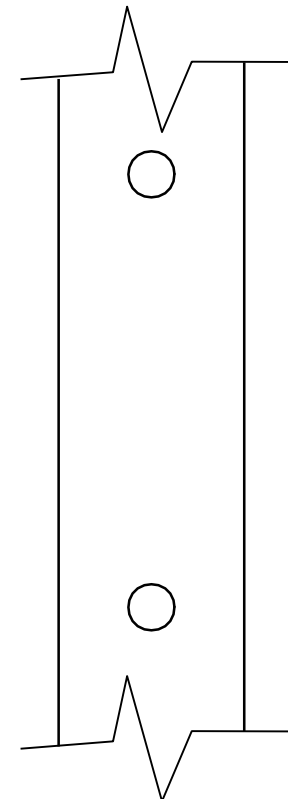
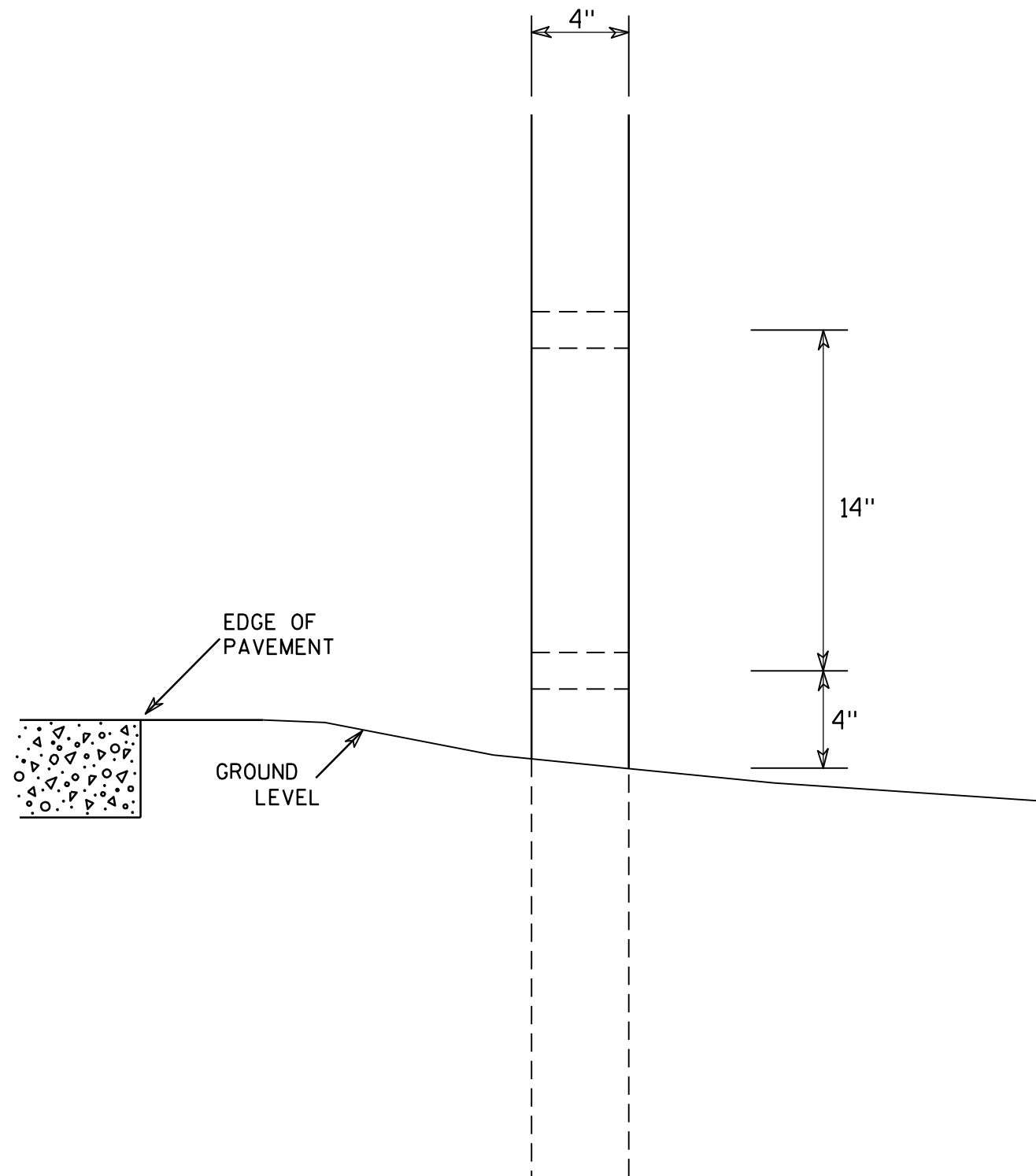
PLOT DATE : 05-FEB-2015 17:09

PLOT BY : mscs_ja

PLOT NAME :

PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

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:

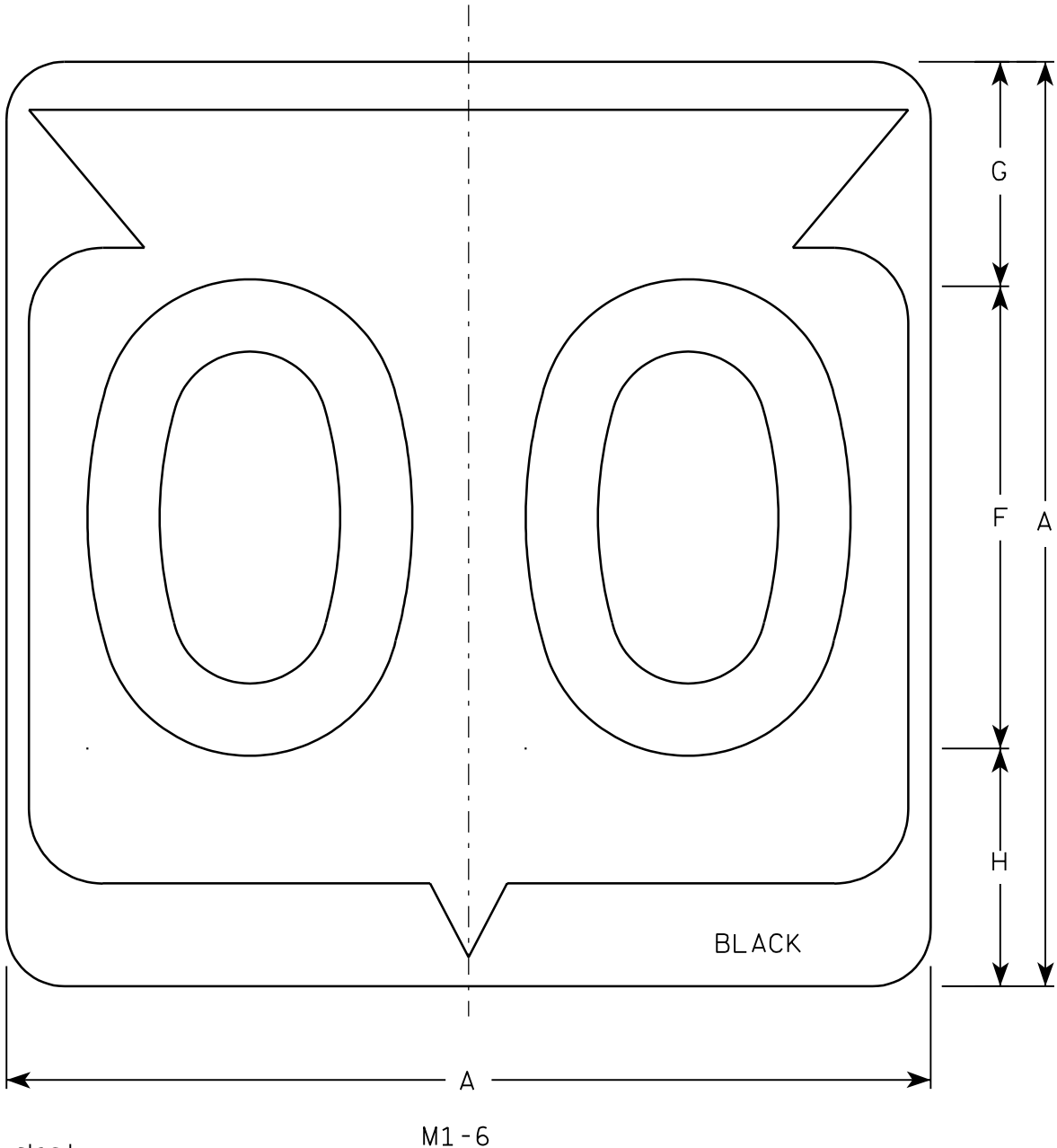
HWY:

COUNTY:

SHEET NO: 87

E

7



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 m ²
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

PROJECT NO:

HWY:

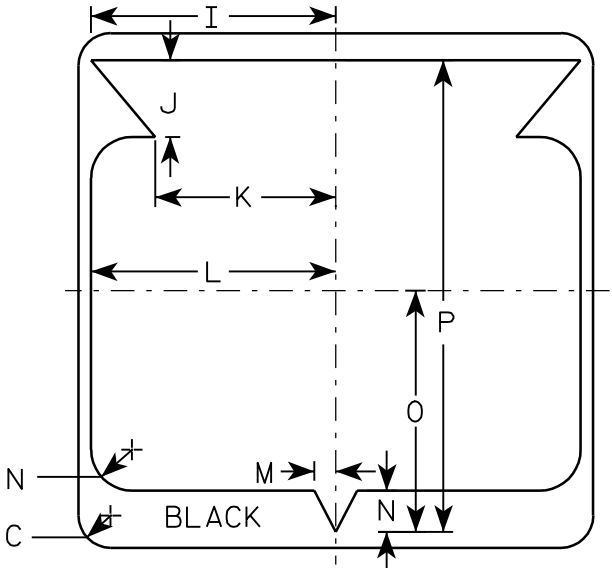
COUNTY:

SHEET NO: 88

E

NOTES

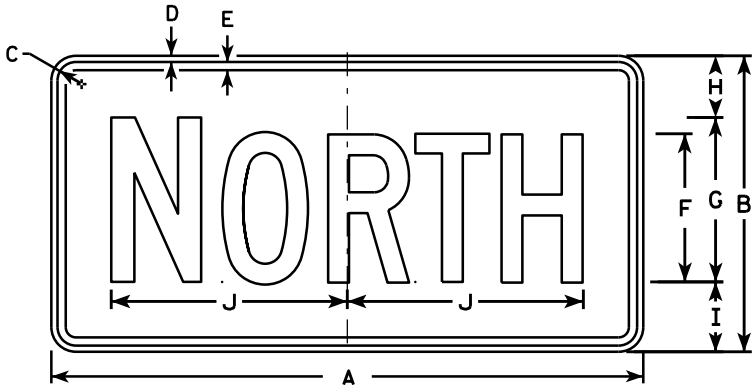
- Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White & Black - See Note 6
Message - Black
- Message Series - See note 5
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
- Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

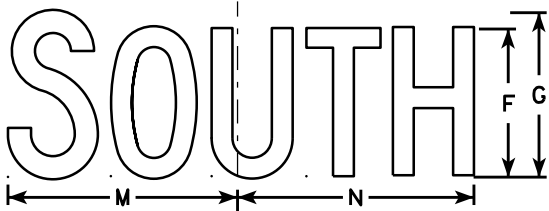
APPROVED
Chester J. Spang
for State Traffic Engineer
DATE 3/20/02 PLATE NO. M1-6.9



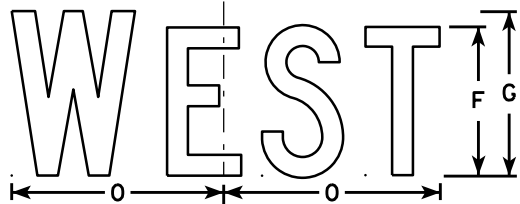
M3-1
MK3-1
MM3-1
MN3-1



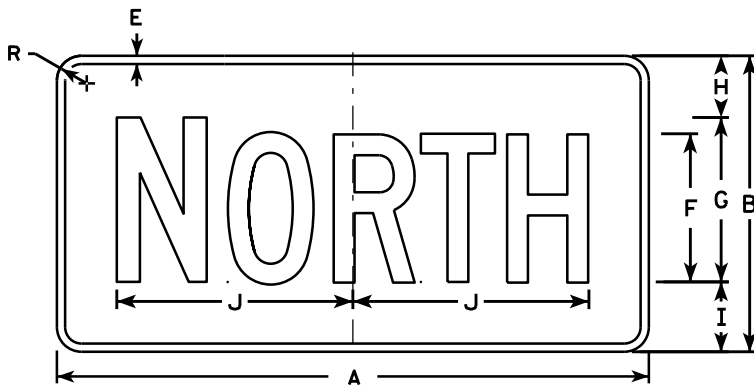
M3-2
MK3-2
MM3-2
MN3-2



M3-3
MK3-3
MM3-3
MN3-3



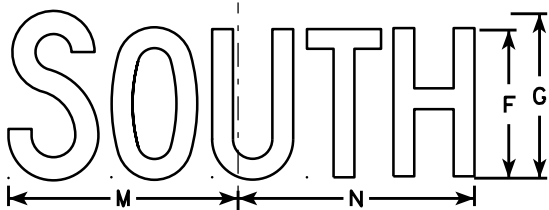
M3-4
MK3-4
MM3-4
MN3-4



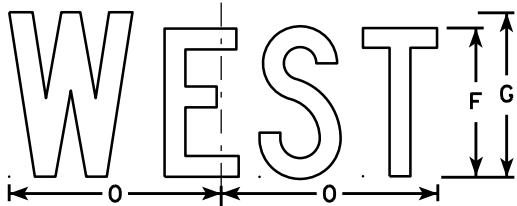
MB3-1



MB3-2



MB3-3



MB3-4

NOTES

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

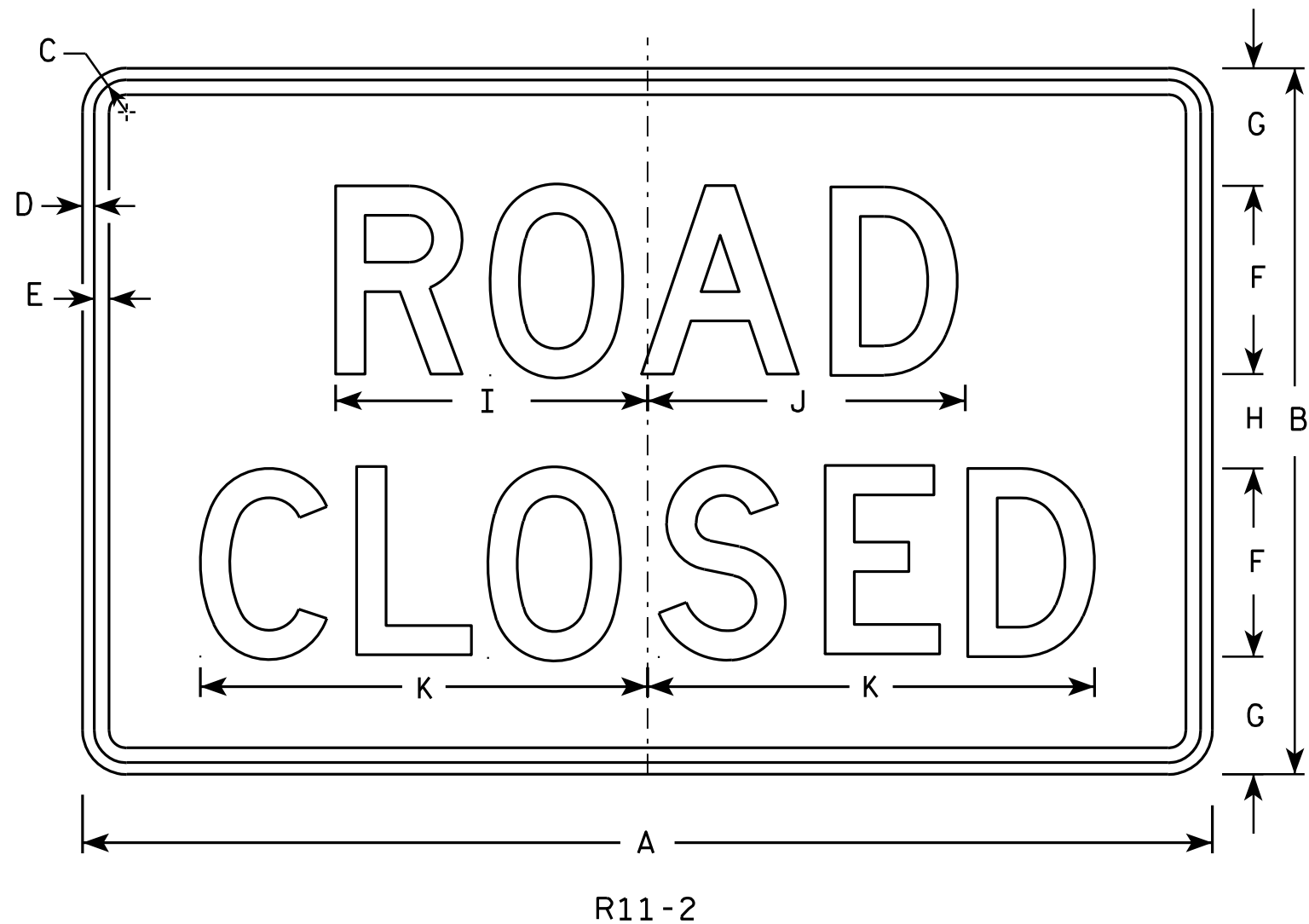
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thru M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

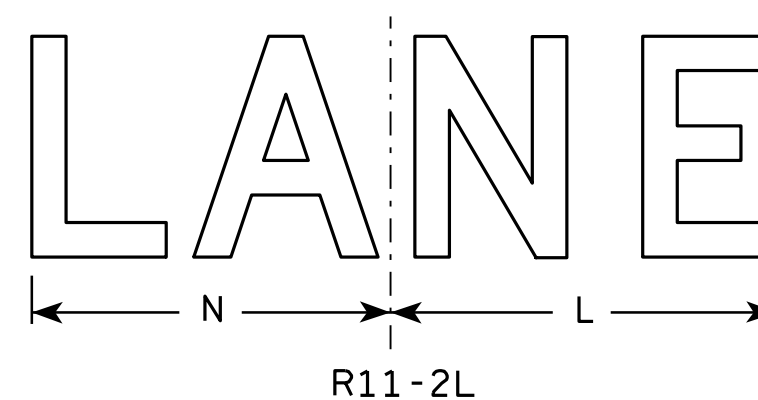
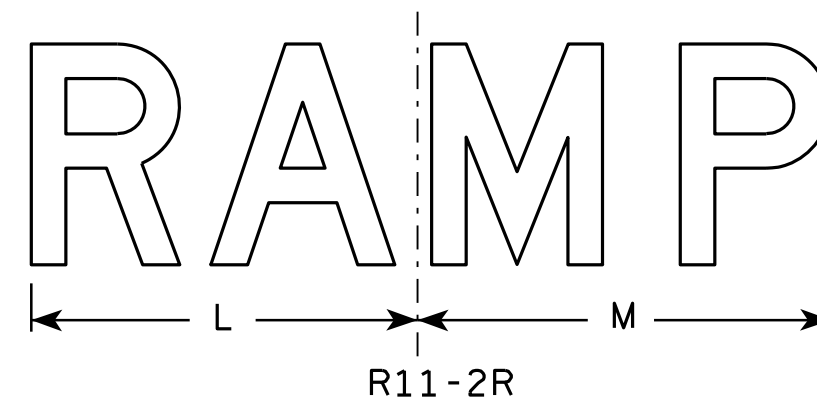
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 6/30/14 PLAT 89 M3-1.13



NOTES

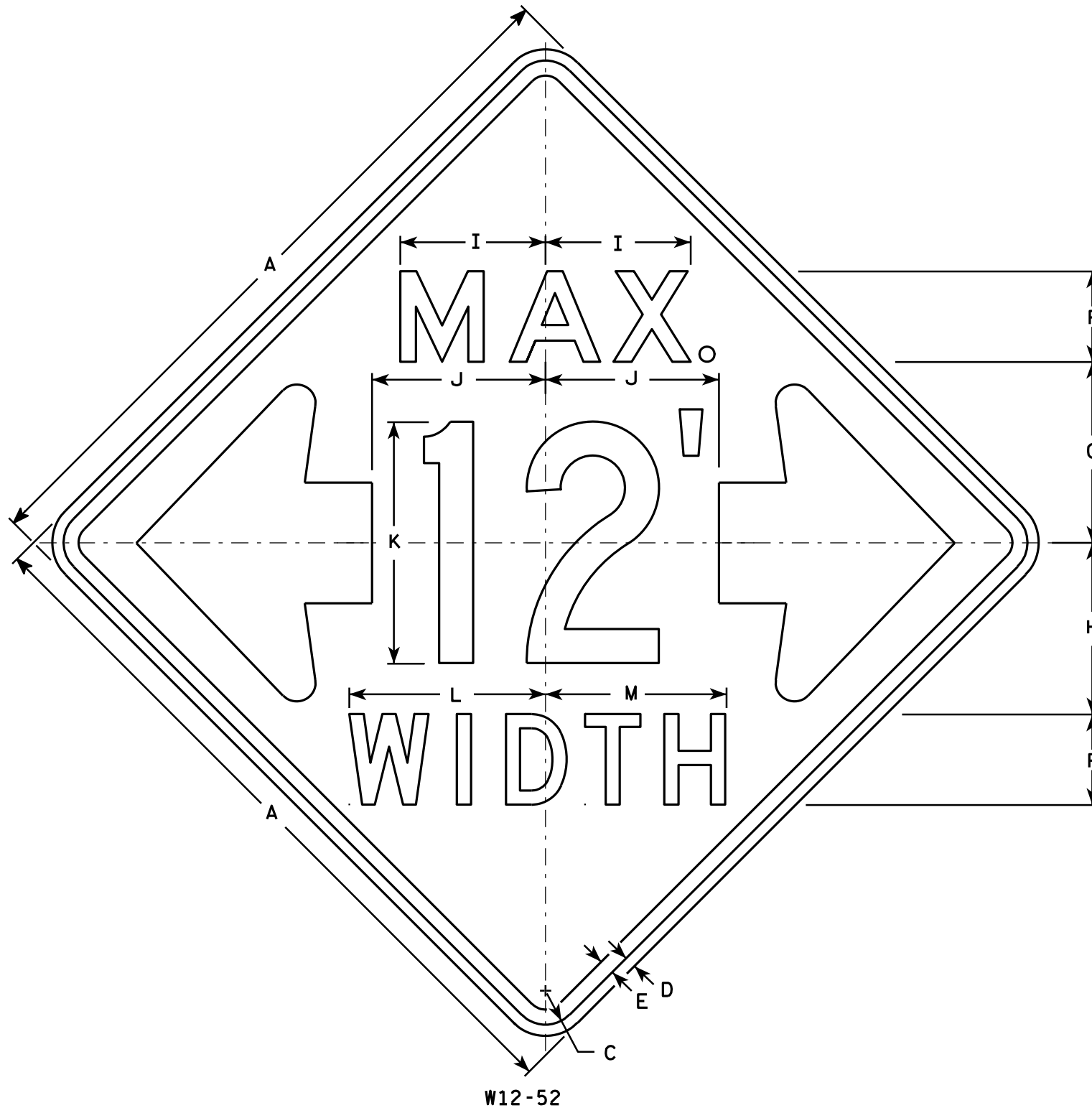
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as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



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

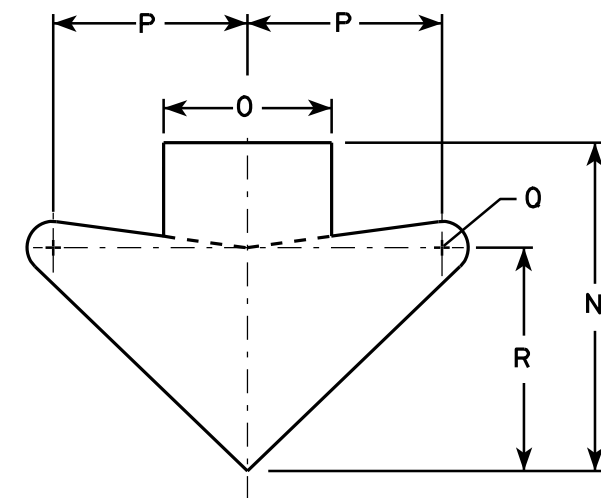
STANDARD SIGN	
R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE <u>4/1/11</u>	PLATE NO. <u>R11-2.10</u>

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 90	E
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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

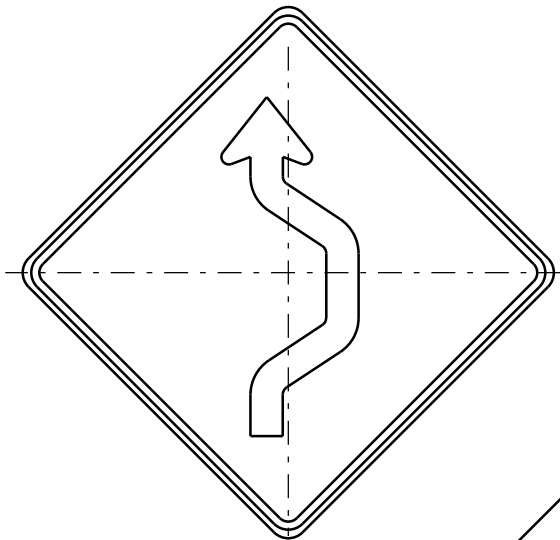
PROJECT NO:

HWY:

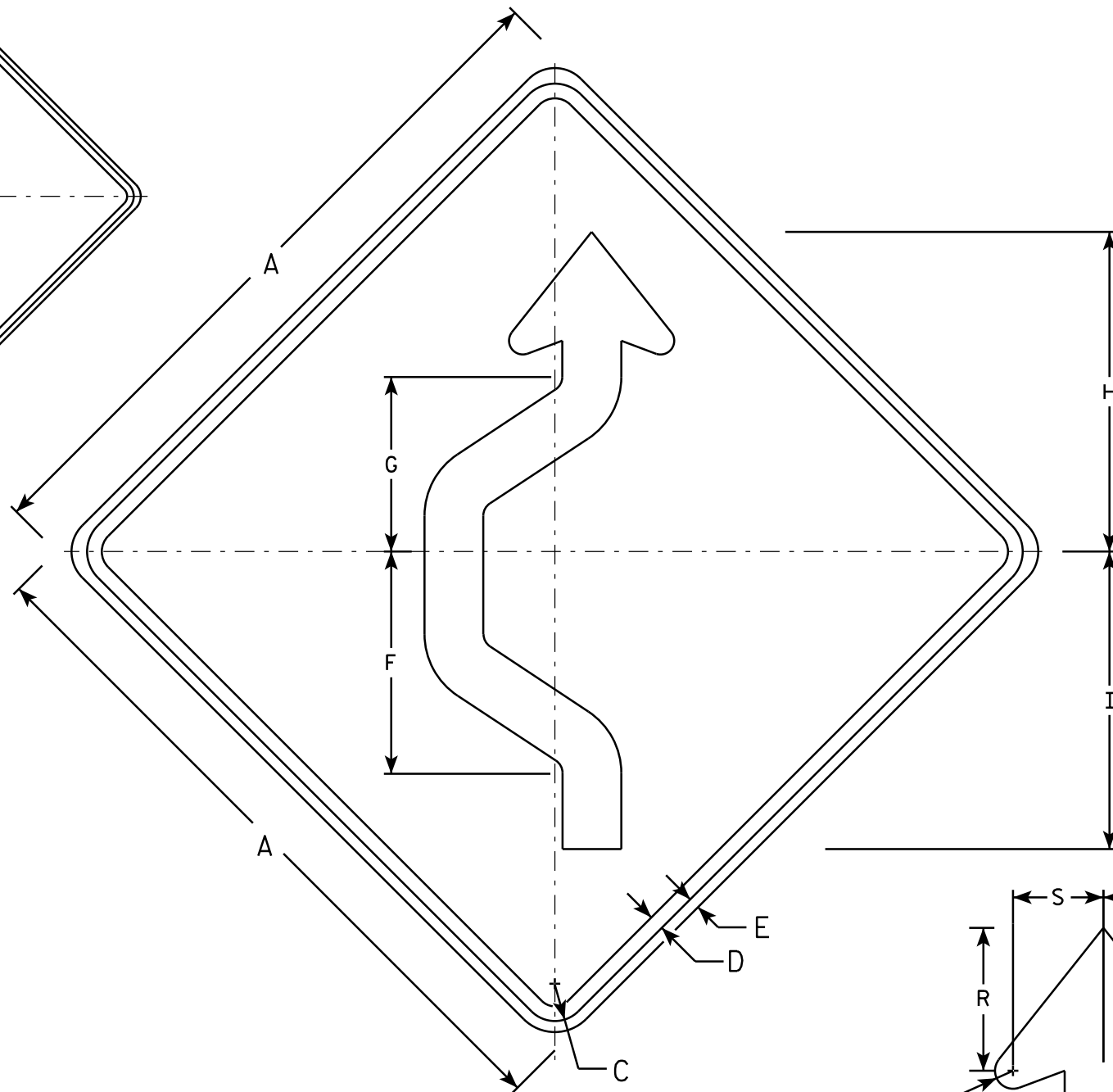
COUNTY:

SHEET NO: 91

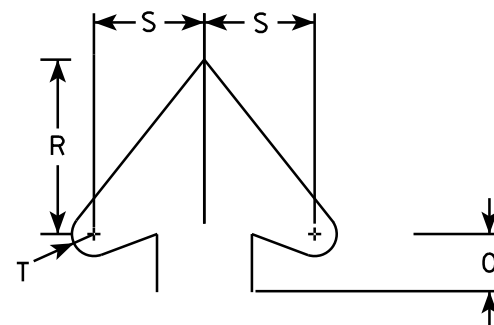
E



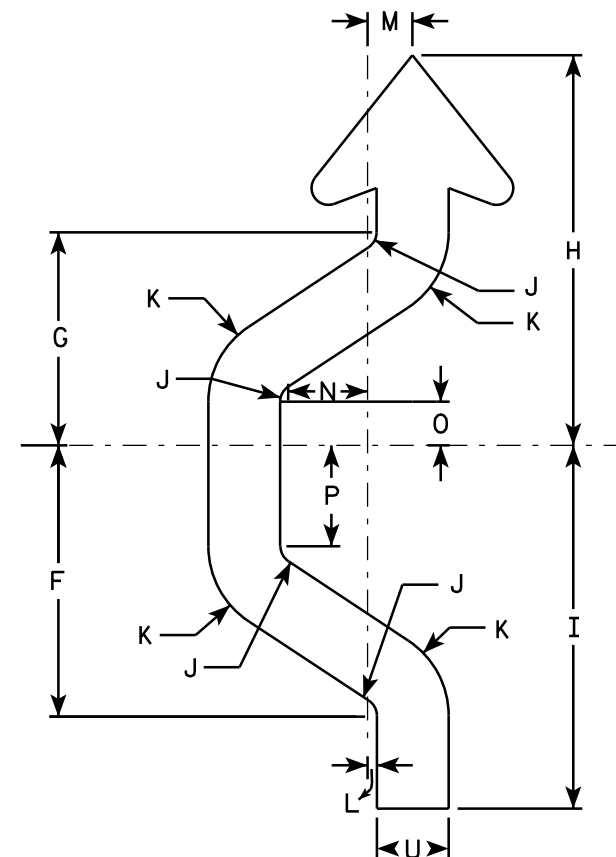
W24-1R



W24-1L



Arrowhead Detail

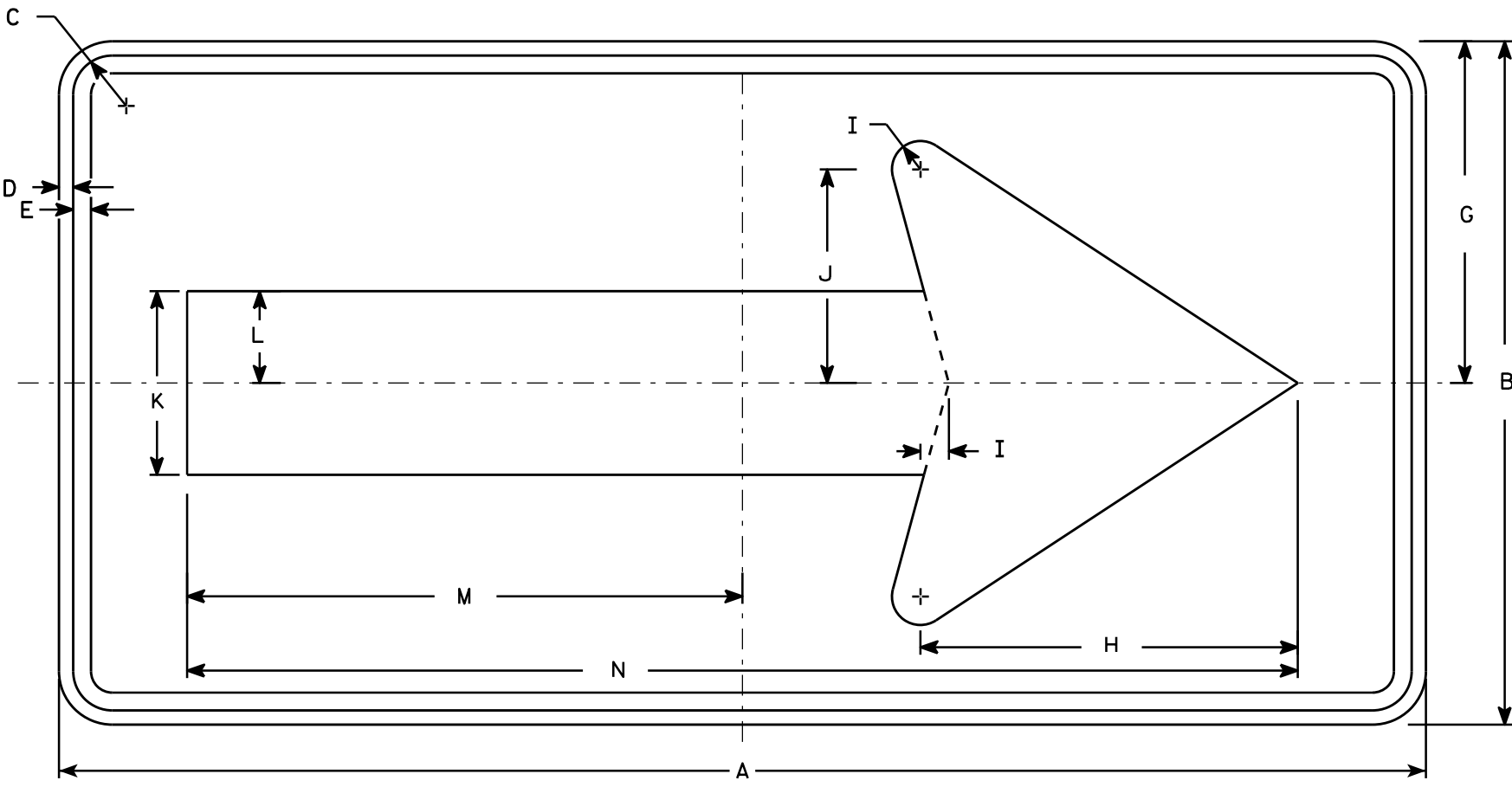


Arrow Detail

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. W24-1R is the same as W24-1L except reversed along the vertical centerline.

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	36		1 3/8	5/8	1/2	11 3/8	8 7/8	16 3/8	15 1/4	3/4	3 3/4	3/8	2	3 3/8	1 7/8	4 1/4		5 1/2	3 1/2	5/8	3						9
2M	36		1 3/8	5/8	1/2	11 3/8	8 7/8	16 3/8	15 1/4	3/4	3 3/4	3/8	2	3 3/8	1 7/8	4 1/4		5 1/2	3 1/2	5/8	3						9
3																											
4																											
5																											



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

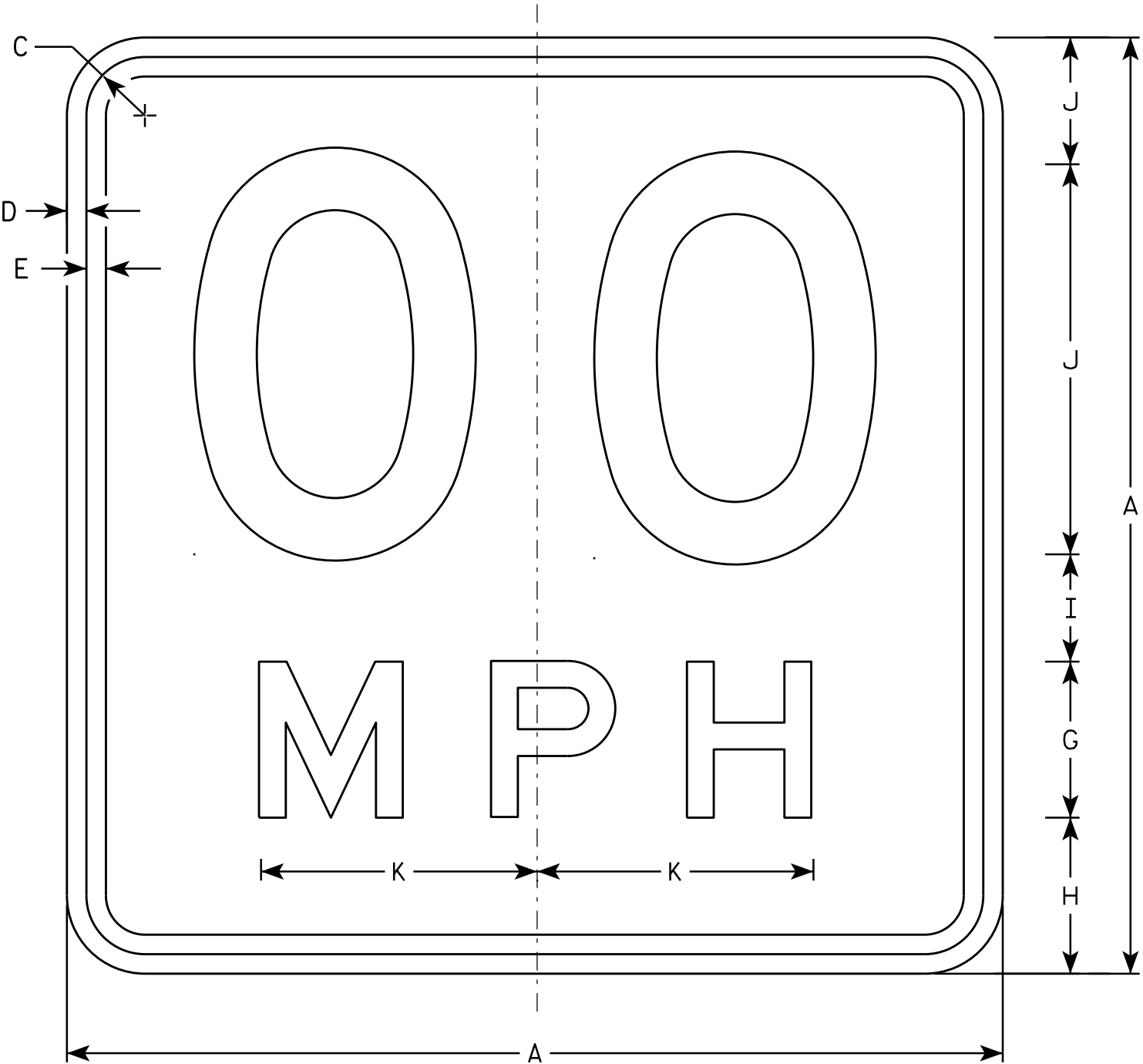
STANDARD SIGN

W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. 93 W01-6.1



W013-1

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 6
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 space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

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	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	7 1/8																4.00
2S	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
2M	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
3	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN
W013-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 11/21/13 PLATE 94 W013-1.1

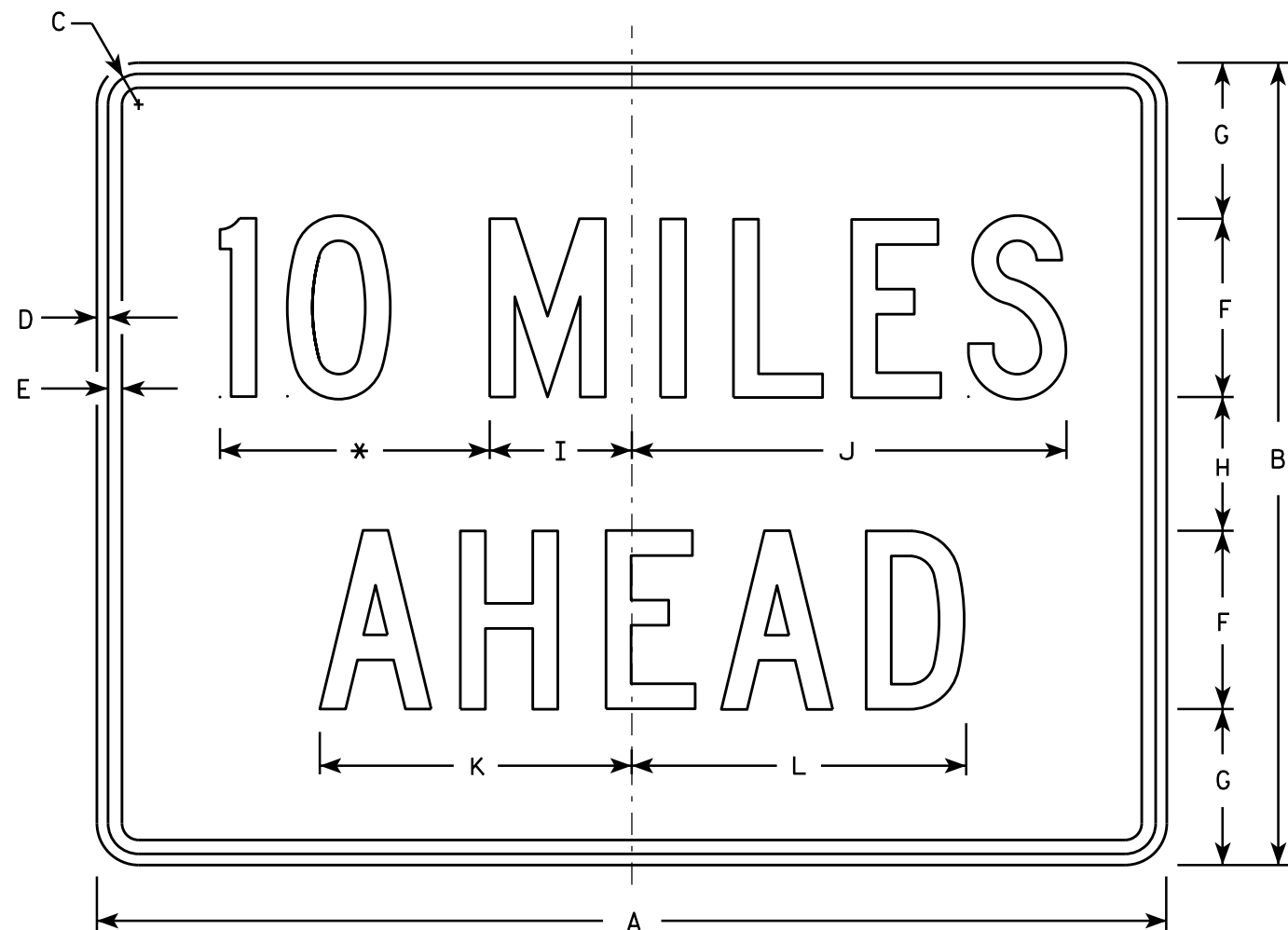
PROJECT NO:

HWY:

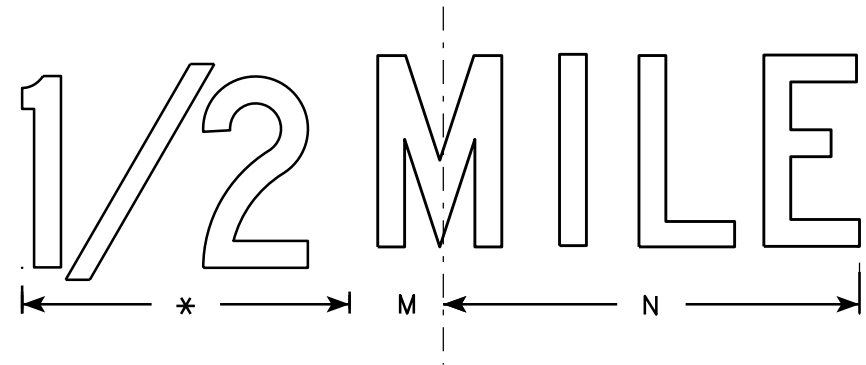
COUNTY:

SHEET NO:

E



W057-52



* See note 5

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.

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 95 W057-52.1

NOTES

(X) DENOTES WINGWALL NUMBER

* THRIE BEAM RAIL ATTACHMENT

▲ REMOVE AND REPLACE TOP OF CRACKED AND/OR DETERIORATED CONCRETE WINGWALL END. REMOVE TO SOUND CONCRETE OR 1'-2" FROM TOP OF WALL, WHICHEVER IS LARGER. WORK TO BE PAID FOR UNDER BID ITEM "CONCRETE SURFACE REPAIR". IF SOUND CONCRETE IS LOWER THAN 1'-2" BELOW TOP OF WINGWALL, CONTRACTOR TO NOTIFY ENGINEER. SEE "CONCRETE SURFACE & RAILING REPAIR" SHEET FOR DETAILS.

● REPLACE TUBULAR RAILING POST ANCHORAGE. REPAIRS TO BE PAID FOR UNDER BID ITEM "RAILING TUBULAR TYPE F-5 ANCHORAGE". SEE "CONCRETE SURFACE & RAILING REPAIR" SHEET FOR DETAILS.

■ EXISTING METAL FLASHING TO BE REMOVED ON WEST EDGE OF DECK. IF REQUIRED PERFORM CONCRETE SURFACE REPAIR TO EDGE OF DECK AS PER STANDARD SPECIFICATION 509 AS DIRECTED BY FIELD ENGINEER. ALL FLASHING REMOVAL AND CONCRETE SURFACE REPAIR REQUIRED UNDER FLASHING TO BE PAID FOR UNDER BID ITEM "REMOVING FLASHING".

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HS-20 (TAKEN FROM HSI, 05/24/2013)
INVENTORY RATING: HS-25 (TAKEN FROM HSI, 05/24/2013)
OPERATING RATING: HS-47 (TAKEN FROM HSI, 05/24/2013)
WISCONSIN STD. PERMIT VEHICLE (WIS-SPV) = 250 KIPS (TAKEN FROM HSI, 05/24/2013)

MATERIAL PROPERTIES:

CONCRETE MASONRY _____ f'c = 3,500 psi

TRAFFIC DATA

ADT = 3,400 (2016)
ADT = 4,300 (2036)
RDS = 40 M.P.H.

HYDRAULIC DATA

(FROM EXISTING PLANS DATED 1996)

$Q_{100} = 3,580$ C.F.S.
 $VELOCITY_{100} = 7.5$ F.P.S.
HIGH WATER = EL. 976.4
WATERWAY AREA = 480 SF
DRAINAGE AREA = 76.7 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL = NA

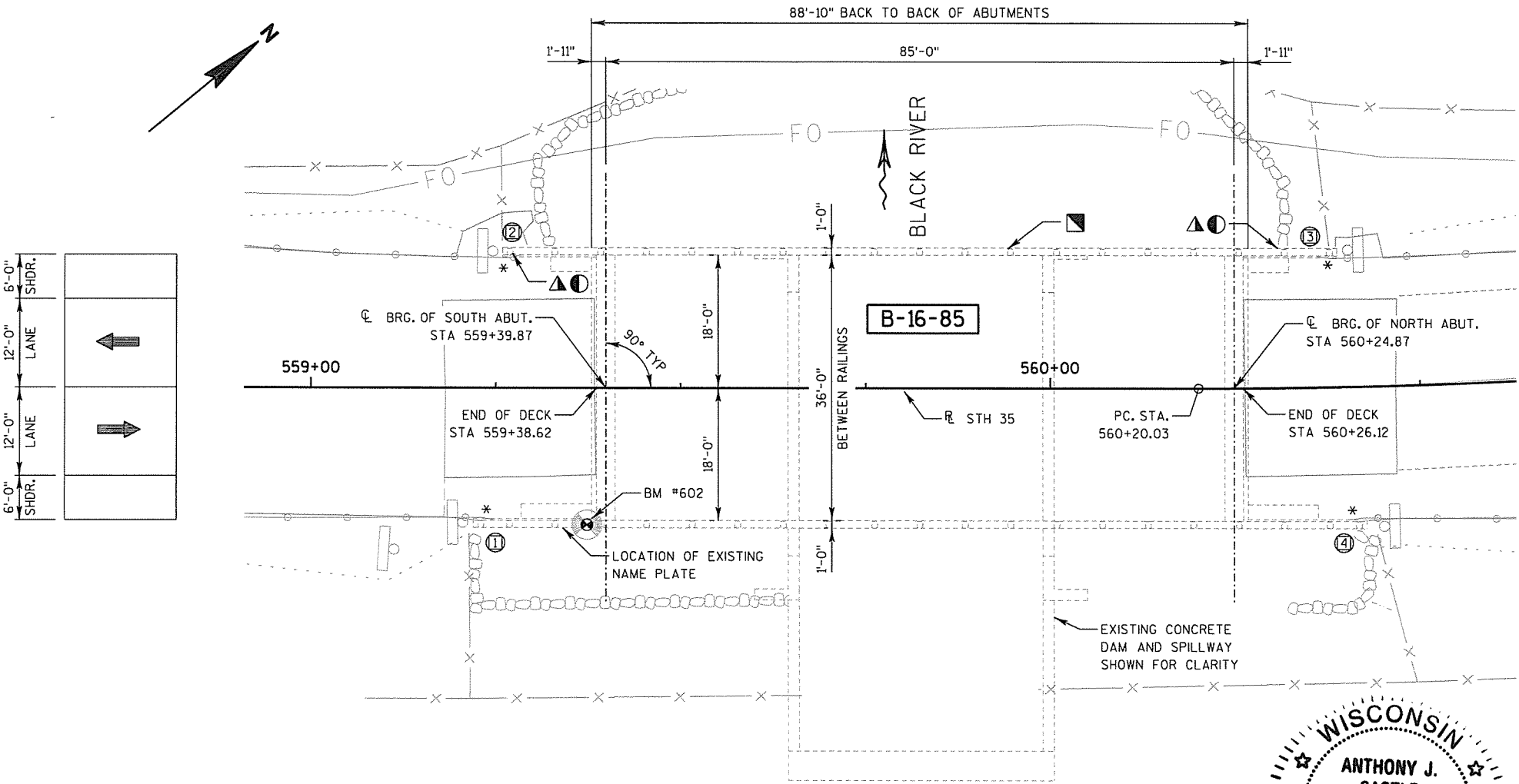
LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. CROSS SECTION AND QUANTITIES
3. CONCRETE SURFACE & RAILING REPAIR

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 <i>William C. Dreher</i> ^{SR} 08/02/15 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-16-85			
S.T.H. 35 OVER BLACK RIVER			
COUNTY	DOUGLAS	TOWN	SUPERIOR
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	AJC	DESIGN CK'D.	MDR
DRAWN BY	AJC	PLANS CK'D.	MDR
GENERAL PLAN & ELEVATION			96 OF 3

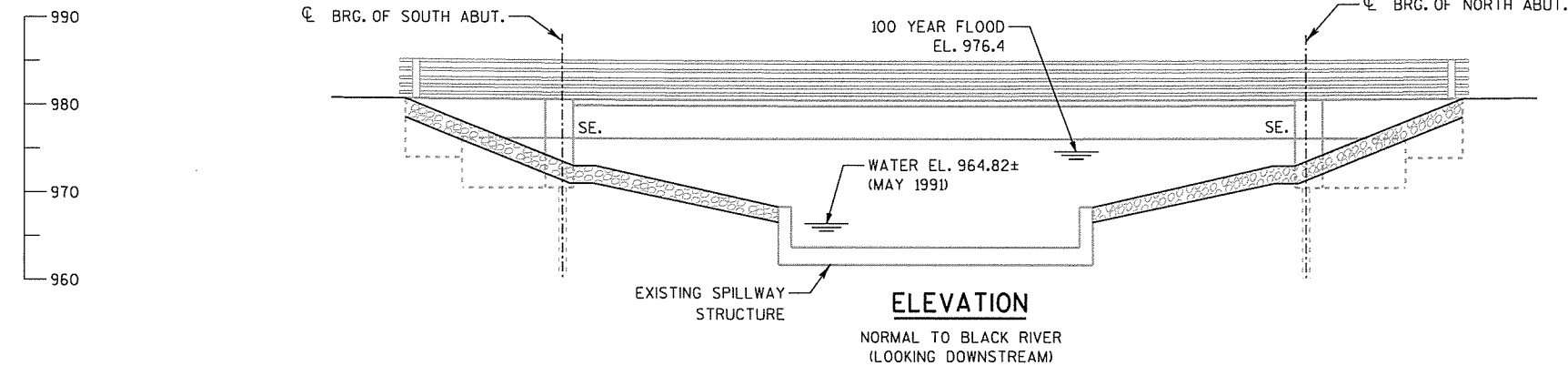


PLAN

SINGLE SPAN-45" PRESTRESSED GIRDERS

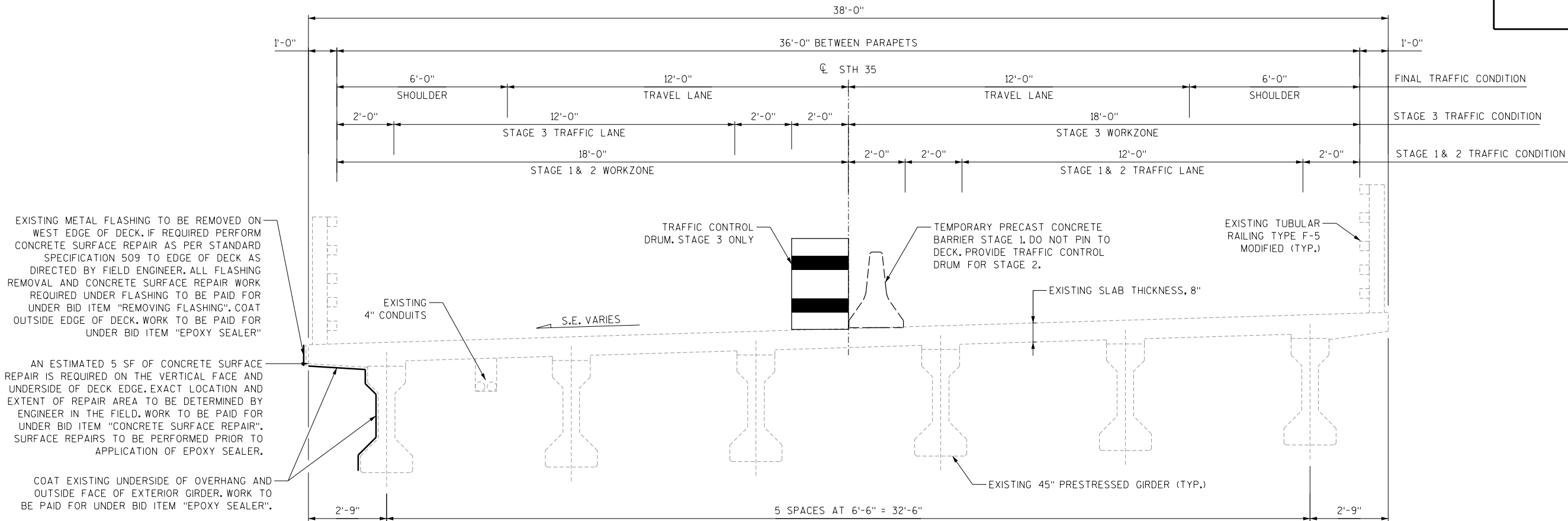
BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
602	559+37 (RT)	BRASS DISK IN CONCRETE WINGWALL	983.96



ELEVATION

NORMAL TO BLACK RIVER
(LOOKING DOWNSTREAM)



CROSS SECTION THRU ROADWAY

(LOOKING NORTH)

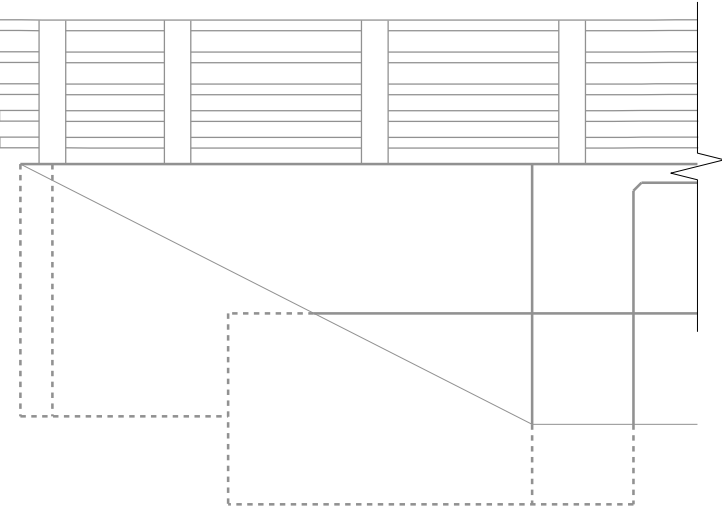
GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.
- THE EXISTING STRUCTURE, B-16-85, IS A SINGLE SPAN PRESTRESSED CONCRETE GIRDER BRIDGE STRUCTURE WITH AN OVERALL WIDTH OF 38'-0" AND AN OVERALL LENGTH OF 88'-10".
- ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1-INCH DEEP SAW CUT.
- IF THE EXISTING NAME PLATE IS DAMAGED AND A NEW NAME PLATE IS REQUIRED, THE ORIGINAL CONSTRUCTION DATE IS 1997.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.
- "CONCRETE SURFACE REPAIR" SHALL BE USED FOR NEEDED REPAIRS ON THE EXISTING ABUTMENTS, WINGWALLS, AND GIRDER. LOCATION AND LIMITS OF REPAIR SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. SEE "CONCRETE SURFACE REPAIR" SHEET FOR DETAILS.
- AGGREGATE BACKFILL AND RESTORATION NEEDED FOR PARTIAL REMOVAL OF WINGWALL 2 WILL BE PAID FOR UNDER ROADWAY BID ITEMS.

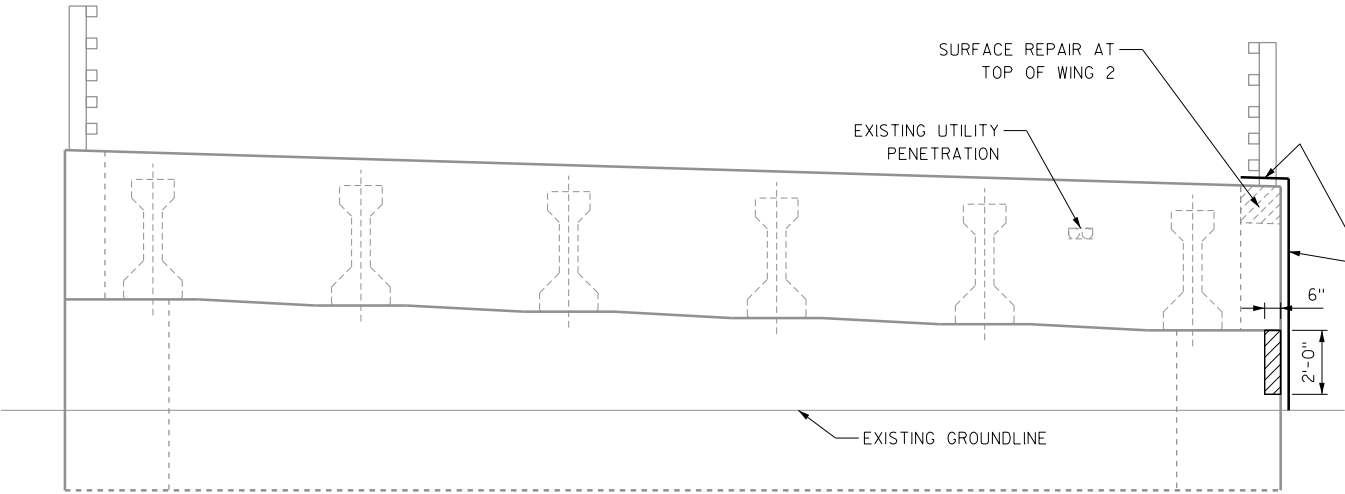
TOTAL ESTIMATED QUANTITIES

	BID ITEM	UNIT	TOTAL
204.9105.S	REMOVING FLASHING	LS	1
509.1500	CONCRETE SURFACE REPAIR	SF	25
SPV.0060	RAILING TUBULAR TYPE F-5 ANCHORAGE	EA	3
SPV.0180	EPOXY SEALER	SY	79

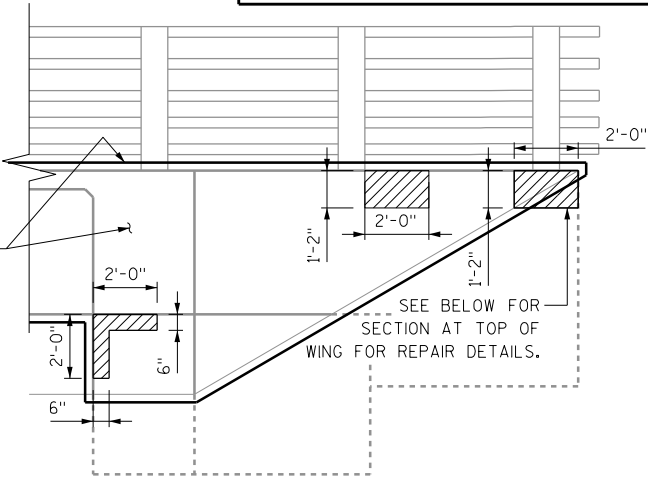
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-85			
DRAWN BY AJC		PLANS CK'D. MDR	
CROSS SECTION AND QUANTITIES			SHEET 2 OF 3 -97



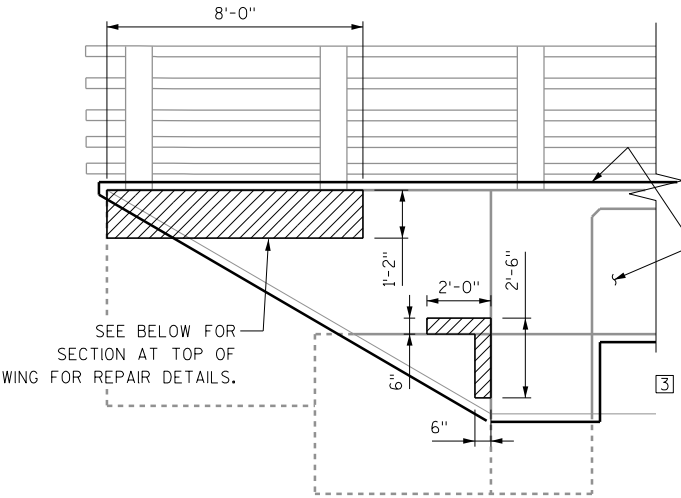
WING 1 ELEVATION
(LOOKING WEST)



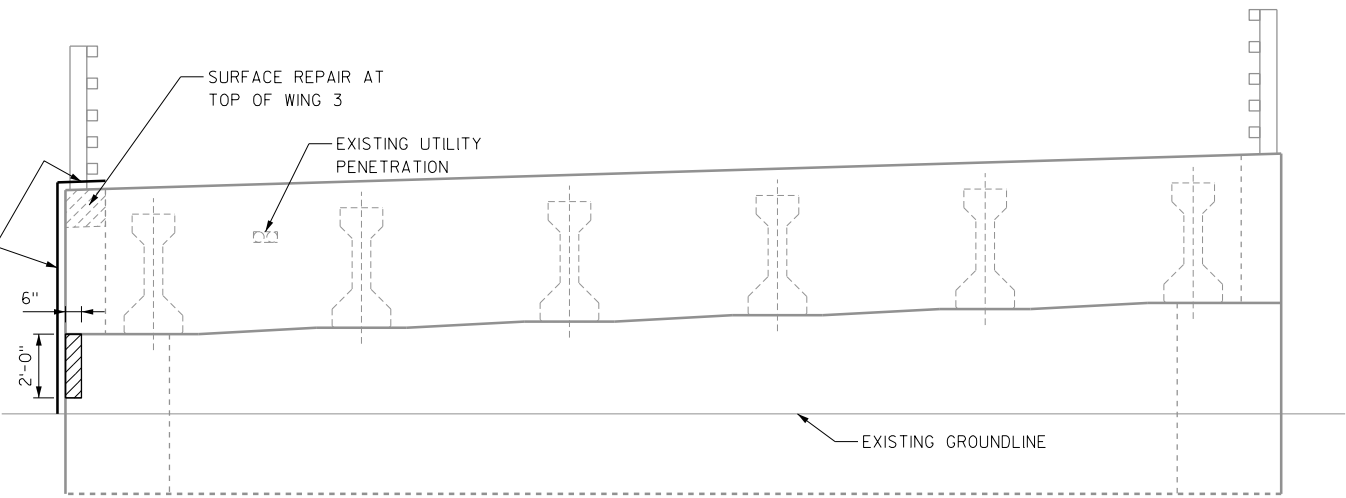
SOUTH ABUTMENT
(LOOKING SOUTH)



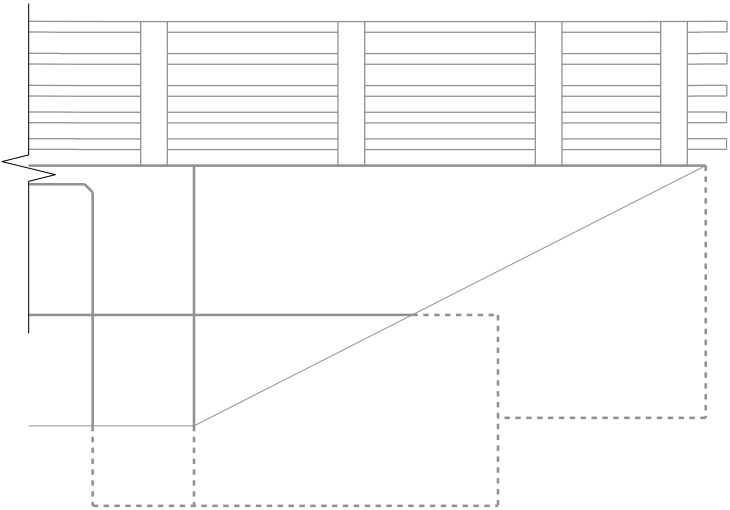
WING 2 ELEVATION
(LOOKING EAST)



WING 3 ELEVATION
(LOOKING EAST)



NORTH ABUTMENT
(LOOKING NORTH)



WING 4 ELEVATION
(LOOKING WEST)

GENERAL NOTES

BID ITEM SHALL BE "RAILING TUBULAR TYPE F-5 ANCHORAGE", WHICH INCLUDES ALL ITEMS SHOWN IN "SECTION AT TOP OF WING" DETAIL.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH, STRAIGHT AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL, EXCEPT ANCHORAGE PLATE NO. 2 SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND THE EXISTING PLATE WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

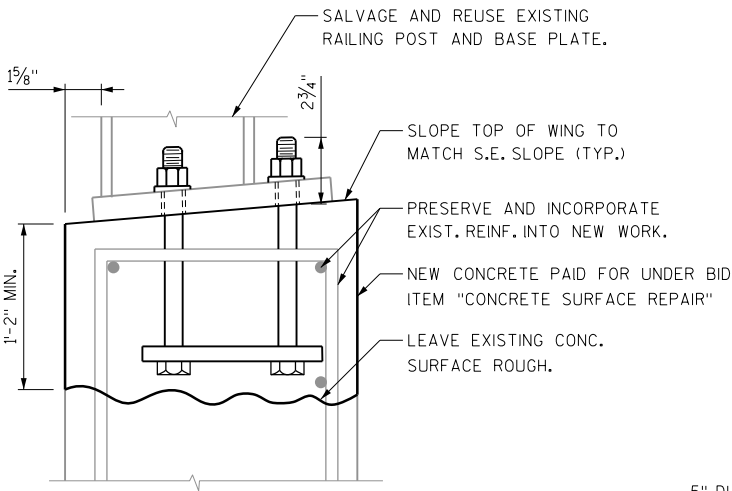
ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

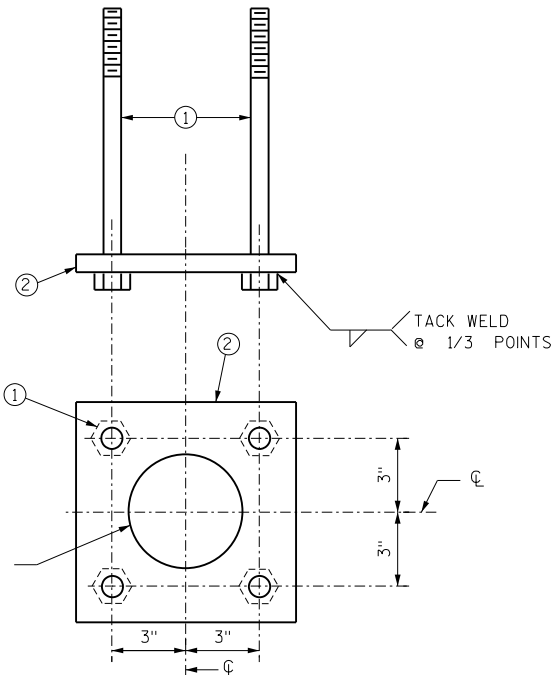
LEGEND

- ① A325 - 7/8" DIA. HEX BOLTS (GALVANIZED) WITH A325 NUT & WASHER, 14" LONG AT END POSTS. USE 8" LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO EXISTING PLATE. CHAMFER TOP OF BOLTS BEFORE THREADING.
- ② 1/4" X 8" X 8" FLAT BAR, WITH 15/16" DIA. HOLES FOR ANCHOR BOLTS NO. 1.
- ③ COAT EXISTING AND REPAIRED SURFACE OF FACE AND TOP OF WINGWALL AND ABUTMENT AS SHOWN. WORK TO BE PAID FOR UNDER BID ITEM "EPOXY SEALER".

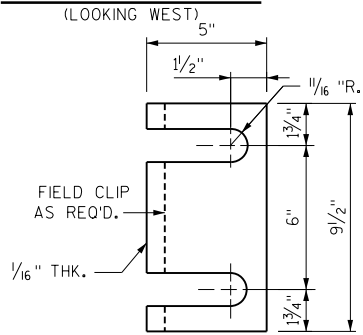
CONCRETE SURFACE REPAIR REQUIRED. LOCATIONS AND DIMENSIONS OF SPALL AREAS ARE APPROXIMATE AND SHOULD BE USED AS A GUIDE ONLY. AREAS TO BE DETERMINED BY ENGINEER IN THE FIELD.



SECTION AT TOP OF WING
AT WINGS 2 & 3

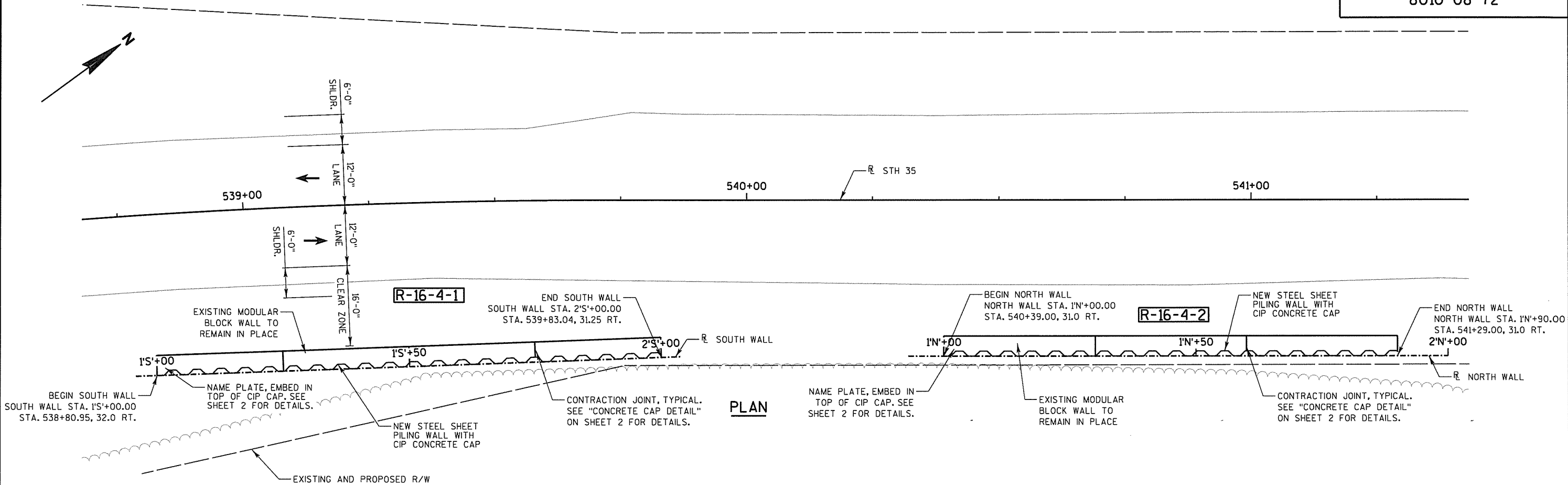


ANCHORAGE DETAIL
AT WINGS 2 & 3



POST SHIM DETAIL
AT WINGS 2 & 3

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-16-85			
DRAWN BY AJC		PLANS CK'D. MDR	
CONC. SURFACE & RAILING REPAIR		SHFFT 3 OF 3 -98	



NOTES

- DRAWINGS SHALL NOT BE SCALED.
- ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NAVD 88 DATUM.
- ALL STATIONS AND OFFSETS GIVEN ARE FROM THE FRONT FACE OF THE WALL UNLESS SHOWN OTHERWISE.
- BEVEL EXPOSED EDGES OF CONCRETE $\frac{3}{4}$ " UNLESS NOTED OTHERWISE.
- MINIMUM EFFECTIVE SECTION MODULUS OF STEEL SHEET PILING SHALL BE 4.0 INCHES CUBED PER FOOT OF WALL.
- ANY EXCAVATION REQUIRED TO PLACE CONCRETE CAP WORK TO BE PAID FOR UNDER BID ITEM "CONCRETE MASONRY RETAINING WALLS".
- DO NOT RUN REINFORCEMENT THRU CONTRACTION JOINTS. LOCATE CONTRACTION JOINTS AT INTERLOCK OF SHEET PILE.
- REFER TO ASBUILT PLANS FOR MODULAR BLOCK WALL DETAILS. SHEET PILING SHALL BE DRIVEN DIRECTLY IN FRONT OF EXISTING BLOCK WALL.
- EXISTING MODULAR BLOCK WALL CONSISTS OF TWO UNITS TOTALING APPROXIMATELY 180 FEET IN LENGTH. EXISTING WALL TO REMAIN IN PLACE.
- STEEL SHEET PILING TO BE PAINTED PER STANDARD SPECIFICATION 512. PAINT BOTH SIDES OF WALL. COLOR TO BE FEDERAL STANDARD # 20057, BROWN. PAINTING INCLUDED IN BID ITEM "PILING STEEL SHEET PERMANENT DELIVERED".

DESIGN DATA

LIVE LOAD
LIVE LOAD SURCHARGE (ROADWAY) _____ 100 PSF

MATERIAL PROPERTIES
CONCRETE MASONRY RETAINING WALL _____ f'_c = 3,000 PSI
STEEL SHEET PILING (ASTM A328) _____ f_y = 39,000 PSI
WELDED WIRE FABRIC (ASTM A497) _____ f_y = 70,000 PSI

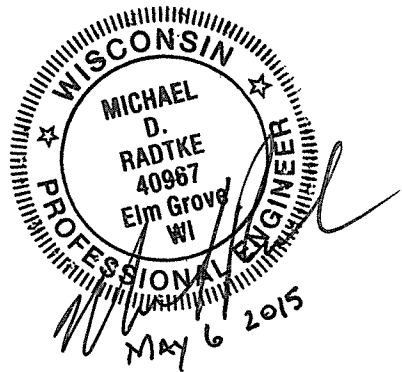
TRAFFIC DATA

ADT = 1,900 (2016)
ADT = 2,300 (2036)
RDS = 60 M.P.H.

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
209.0100	BACKFILL GRANULAR	CY	30
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	17
506.3005	WELDED STUD SHEAR CONNECTORS $\frac{3}{8}$ " X 4-INCH	EACH	127
512.0500	PILING STEEL SHEET PERMANENT DELIVERED	SF	2820
512.0600	PILING STEEL SHEET PERMANENT DRIVEN	SF	2820

NO.	STATION	DESCRIPTION	ELEV.
BM 600	535+30, RT	RR SPIKE IN 12-INCH POPLAR TREE	1049.69
BM 601	543+73, LT	RR SPIKE IN 12-INCH OAK TREE	1035.69



LIST OF DRAWINGS

- GENERAL PLAN
- ELEVATION AND TYPICAL SECTION
- SUBSURFACE EXPLORATION

STRUCTURE DESIGN CONTACTS

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

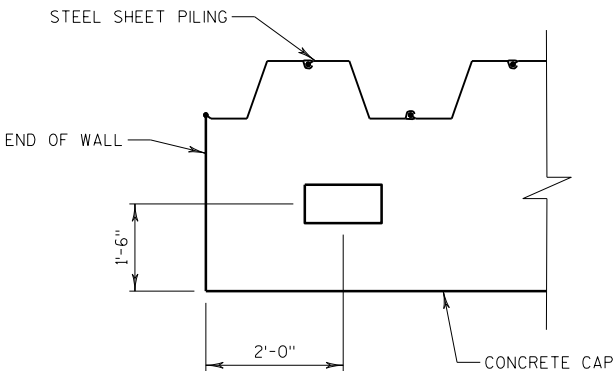
NO.	DATE	REVISION	BY
emcs 1300 W. Canal Street, Suite 200 Milwaukee, WI 53233 414.347.1607 Fax 414.347.1347			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dreher</i> ^{SR} 9/30/15 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE R-16-4			
SHEET PILING RETAINING WALL ALONG S.T.H. 35			
COUNTY	DOUGLAS	TOWN	SUPERIOR
DESIGN SPEC. AASHTO LRFD DESIGN SPECIFICATIONS			
DESIGNED BY	AJC	DESIGN CK'D.	MDR
DRAWN BY	AJC	PLANS CK'D.	MDR
GENERAL PLAN			SHEET 1 OF 3 99

GEOMETRY TABLE (R-16-4-1)

LOCATION	WALL STATION	ROADWAY STATION	OFFSET TO F.F. OF WALL	TOP OF WALL	FINISHED GRADE @ F.F. OF WALL
BEGIN WALL	1'S'+00.00	538+80.95	32.0' RT	1046.36	1046.36
WALL STEP	1'S'+14.00	538+95.28	32.3' RT	1046.08	1043.64
CONTRACT. JT.	1'S'+25.00	539+06.53	32.5' RT	1045.86	1041.04
CONTRACT. JT.	1'S'+50.00	539+32.11	32.5' RT	1045.38	1040.03
CONTRACT. JT.	1'S'+75.00	539+57.70	32.1' RT	1044.88	1040.52
WALL STEP	1'S'+86.00	539+68.94	31.80' RT	1044.66	1042.03
END WALL	2'S'+00.00	539+83.04	31.25' RT	1044.39	1044.39

GEOMETRY TABLE (R-16-4-2)

LOCATION	WALL STATION	ROADWAY STATION	OFFSET TO F.F. OF WALL	TOP OF WALL	FINISHED GRADE @ F.F. OF WALL
BEGIN WALL	1'N'+00.00	540+39.00	31.0' RT	1043.14	1043.14
WALL STEP	1'N'+12.00	540+51.00	31.0' RT	1042.92	1040.58
CONTRACT. JT.	1'N'+30.00	540+69.00	31.0' RT	1042.60	1037.32
CONTRACT. JT.	1'N'+60.00	540+99.00	31.0' RT	1042.07	1037.14
WALL STEP	1'N'+78.00	541+17.00	31.0' RT	1041.76	1039.27
END WALL	1'N'+90.00	541+29.00	31.0' RT	1041.54	1041.54

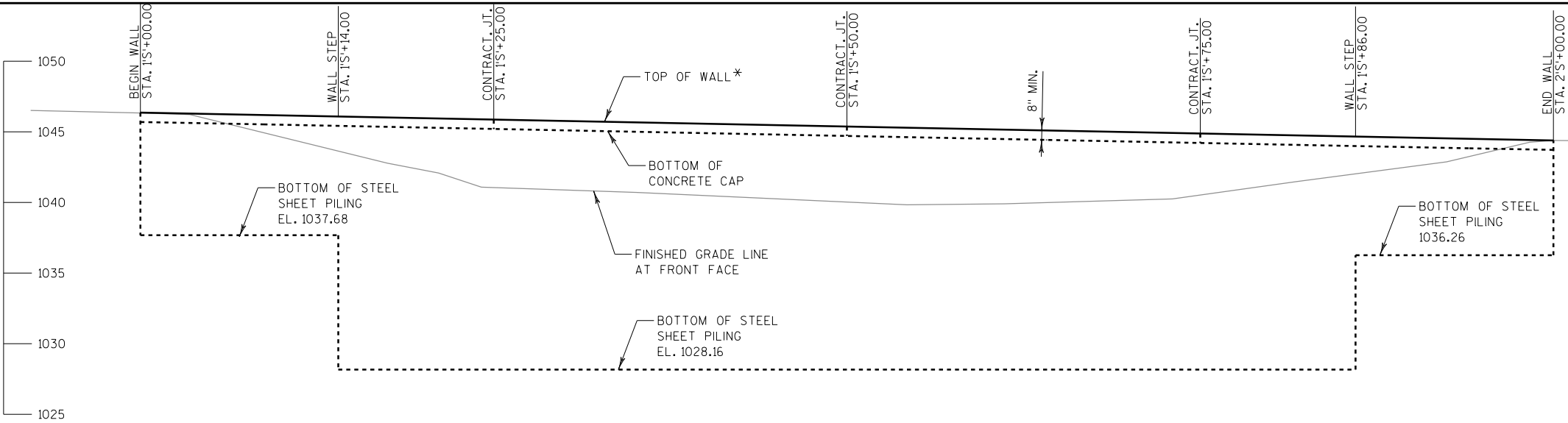


NAME PLATE DETAIL

(PLAN VIEW OF CAP)

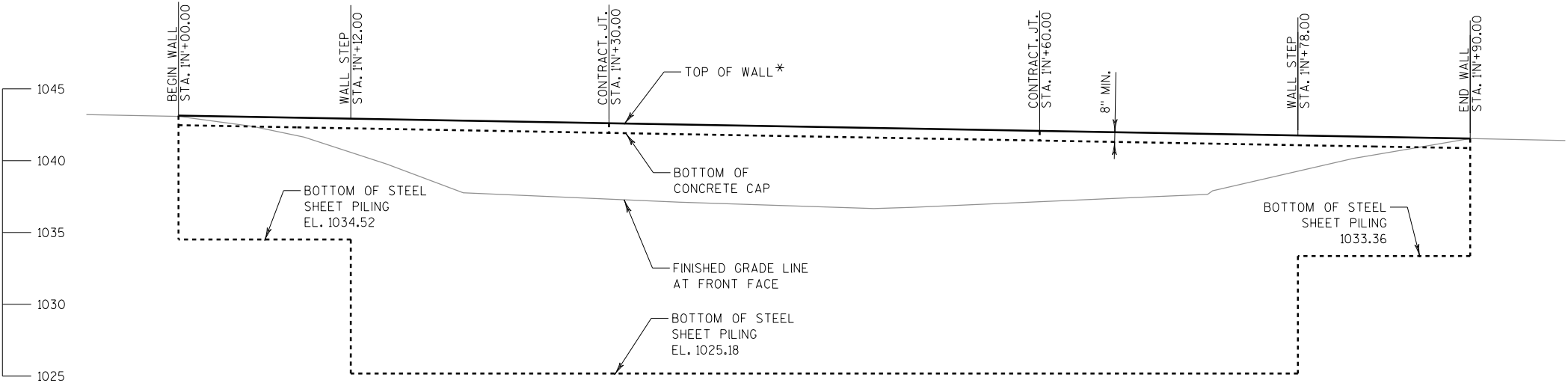
R-16-4-1

(LOOKING WEST)



R-16-4-2

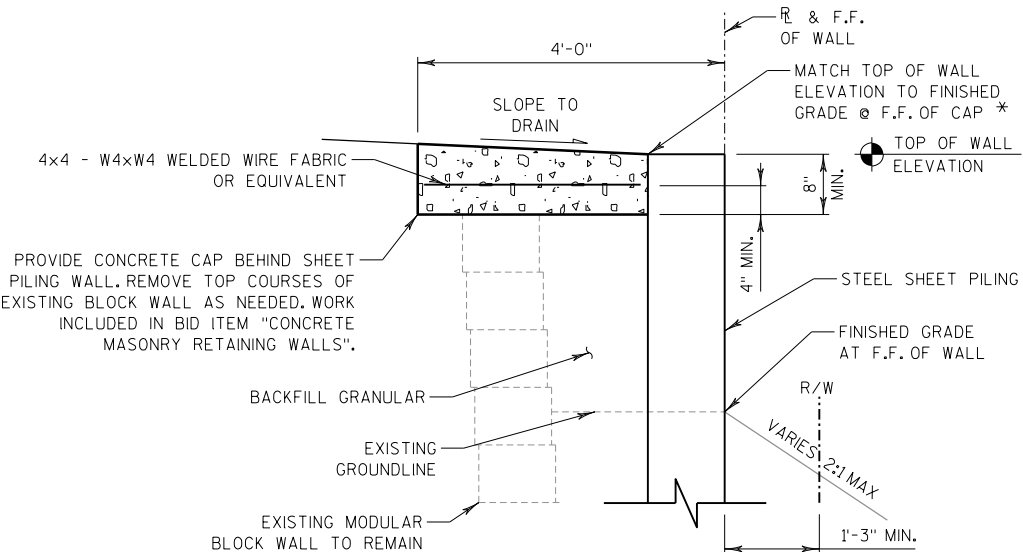
(LOOKING WEST)



*FLAME CUT TOP OF SHEET PILE WALL IN FIELD FLUSH WITH GROUND LINE AS NOT TO CREATE ANY PROJECTIONS. WORK TO BE INCLUDED IN BID ITEM "PILING STEEL SHEET PERMANENT DRIVEN".

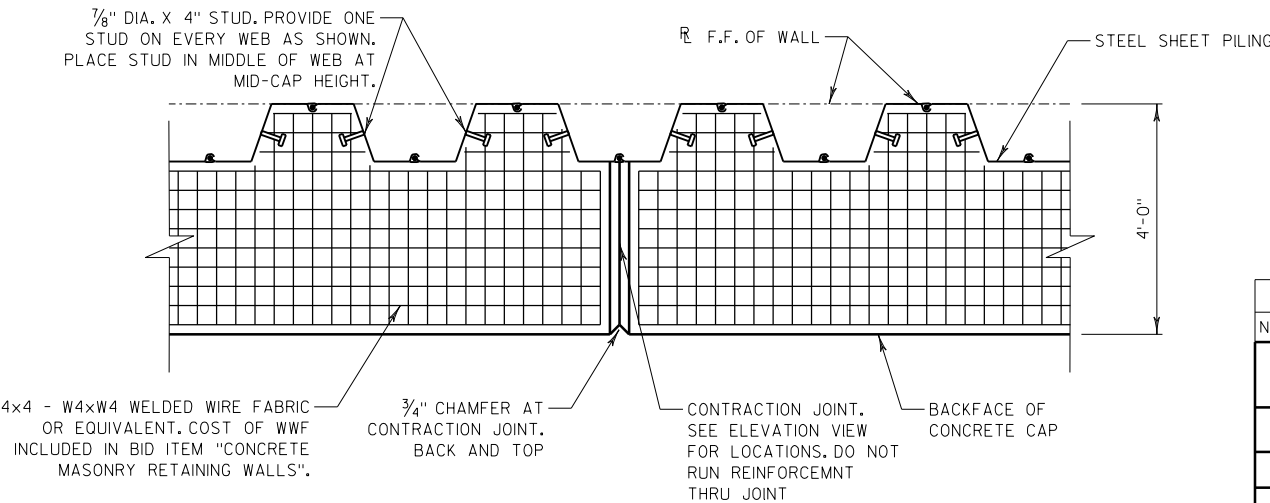
TYPICAL WALL SECTION

(LOOKING NORTH)

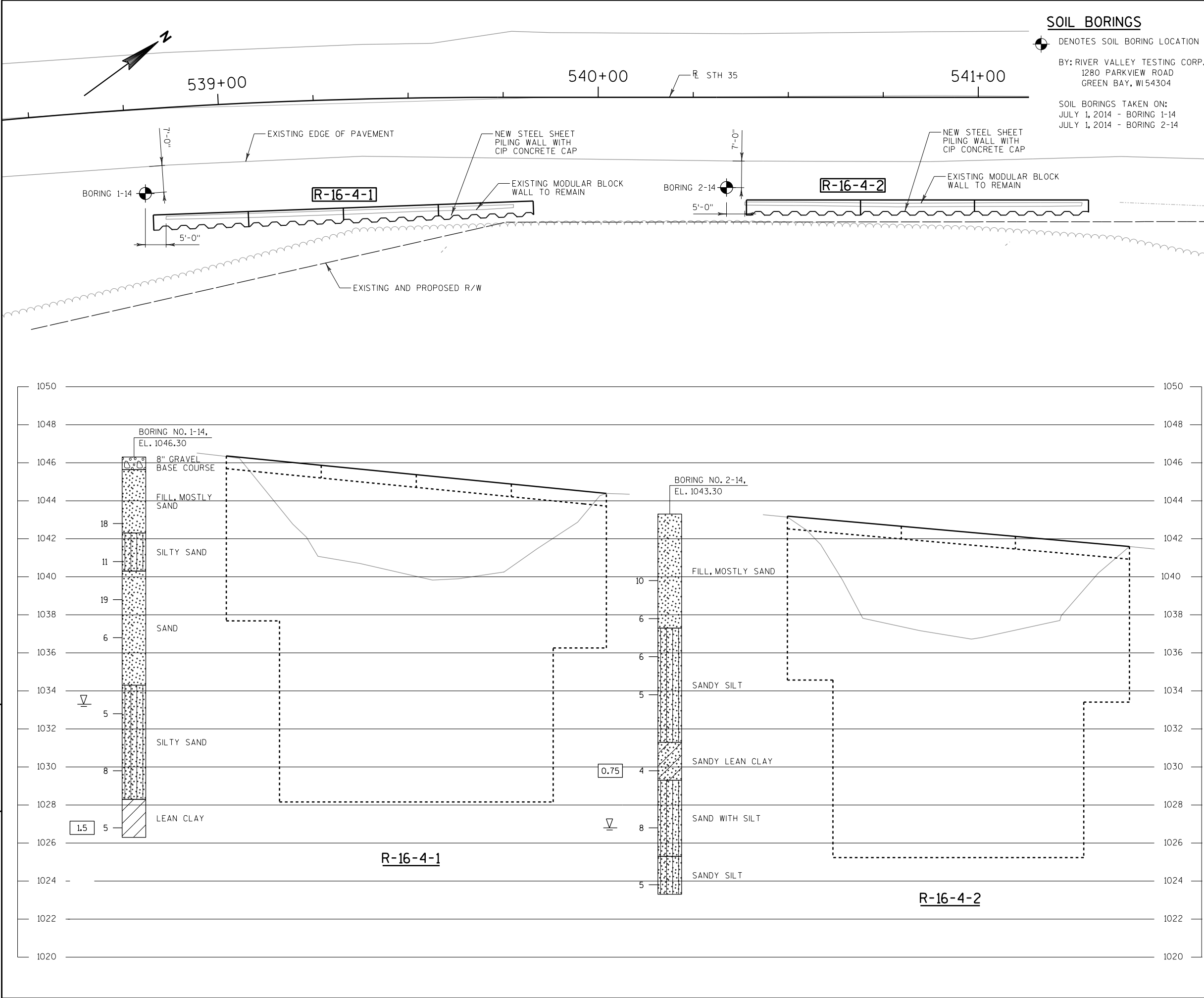


CONCRETE CAP DETAIL

(PLAN VIEW OF CAP)



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-16-4			
DRAWN BY AJC		PLANS CK'D. MDR	
ELEVATION AND TYPICAL SECTION		SHFFT 2 OF 3 100	



SOIL BORINGS

DENOTES SOIL BORING LOCATION

BY: RIVER VALLEY TESTING CORP.
1280 PARKVIEW ROAD
GREEN BAY, WI 54304

SOIL BORINGS TAKEN ON:
JULY 1, 2014 - BORING 1-14
JULY 1, 2014 - BORING 2-14

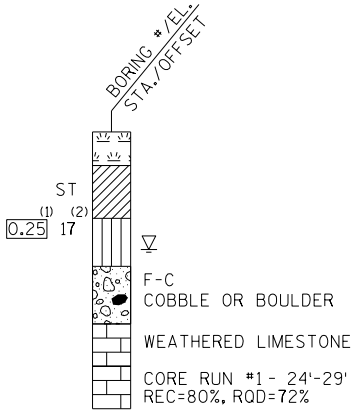
STATE PROJECT NUMBER

8010-08-72

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

▽ AT TIME OF DRILLING

▼ END OF DRILLING

▽ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

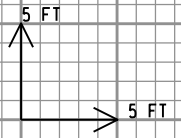
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE R-16-4			
DRAWN BY		AJC	PLANS CK'D. MDR
SUBSURFACE EXPLORATION		SHEET 3 OF 3 101	

EXISTING BASE AGGREGATE DENSE TO REMAIN



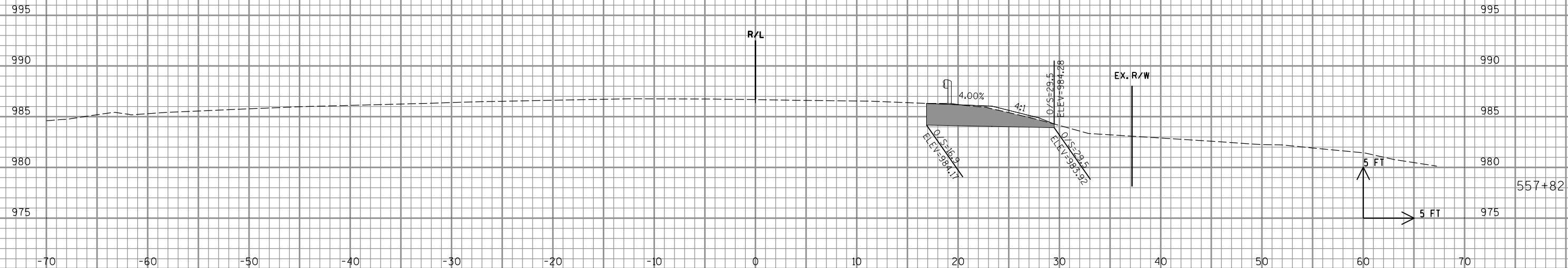
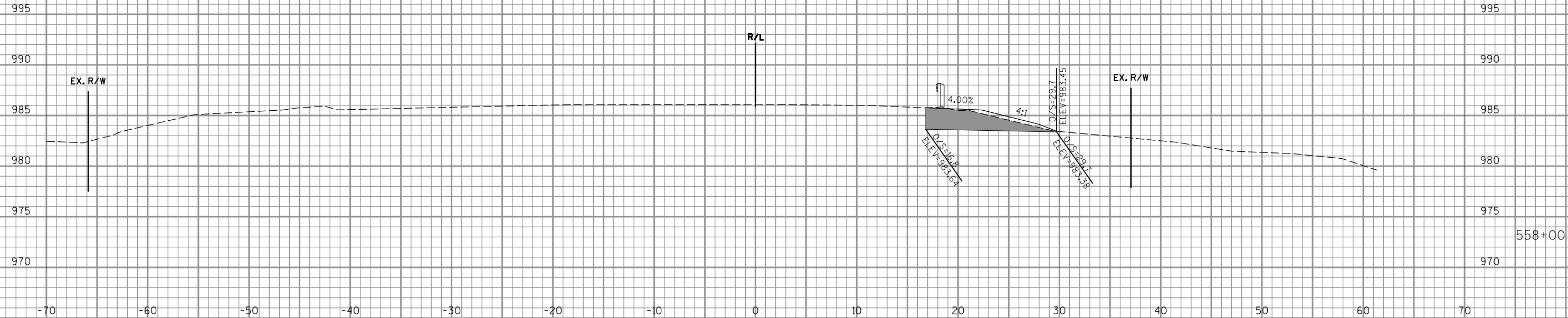
EXISTING BASE AGGREGATE DENSE TO REMAIN



NOTES:
THE MATCH LINE IS AT THE EXISTING SAWED
EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN



EXISTING BASE AGGREGATE DENSE TO REMAIN



WISDOT/CADDS SHEET 21

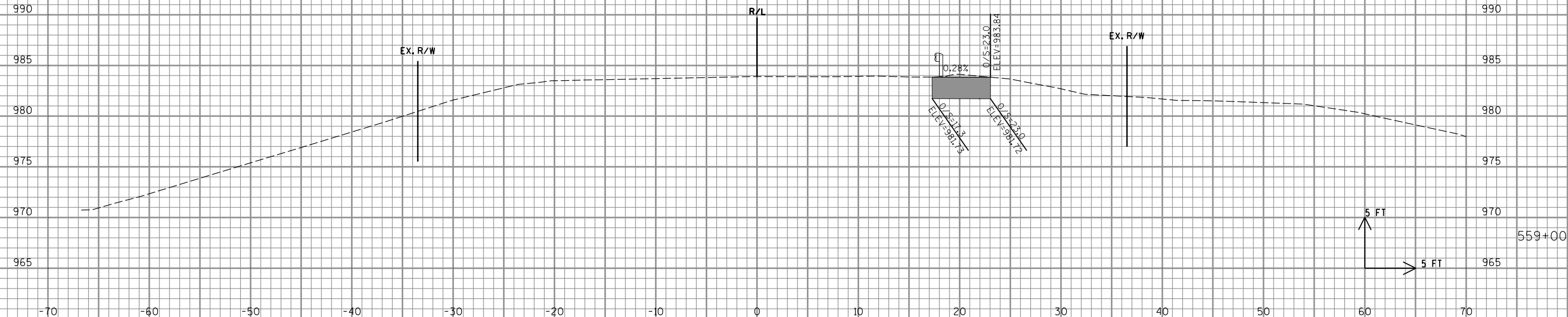
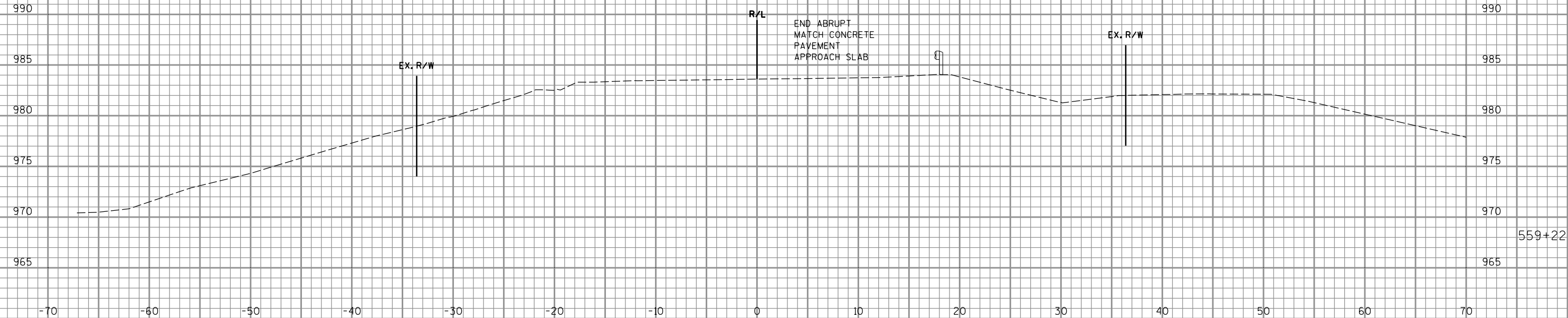
NOTES:
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EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN

END ABRUPT
MATCH CONCRETE
PAVEMENT
APPROACH SLAB

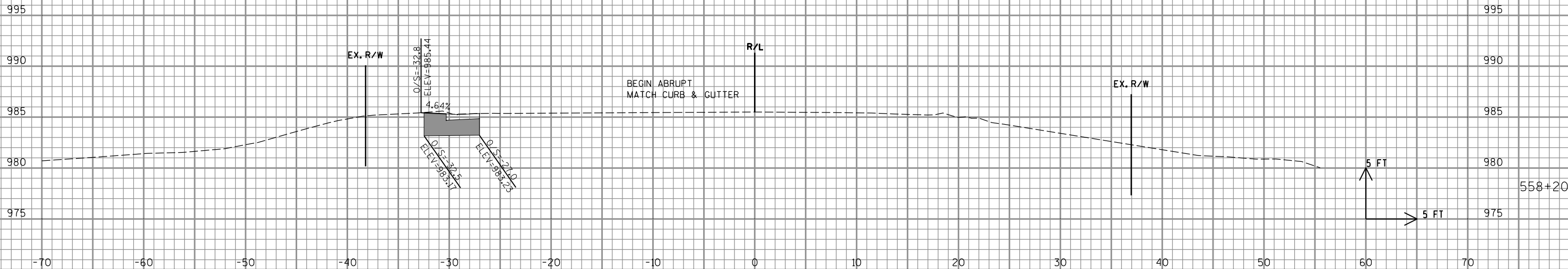
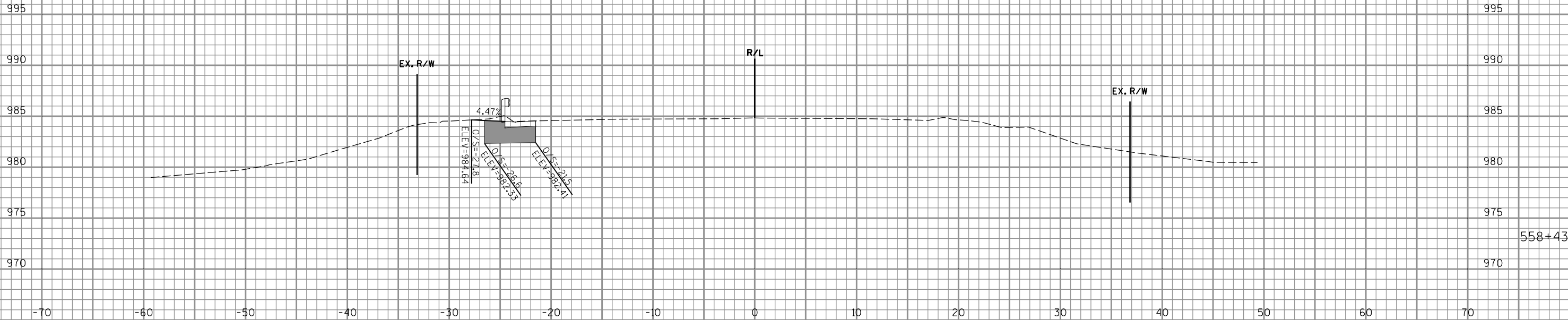
0.28%
O/S=23.0
ELEV=983.84
O/S=23.0
ELEV=981.72
O/S=11.3
ELEV=981.73



NOTES:
THE MATCH LINE IS AT THE EXISTING SAWED
EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

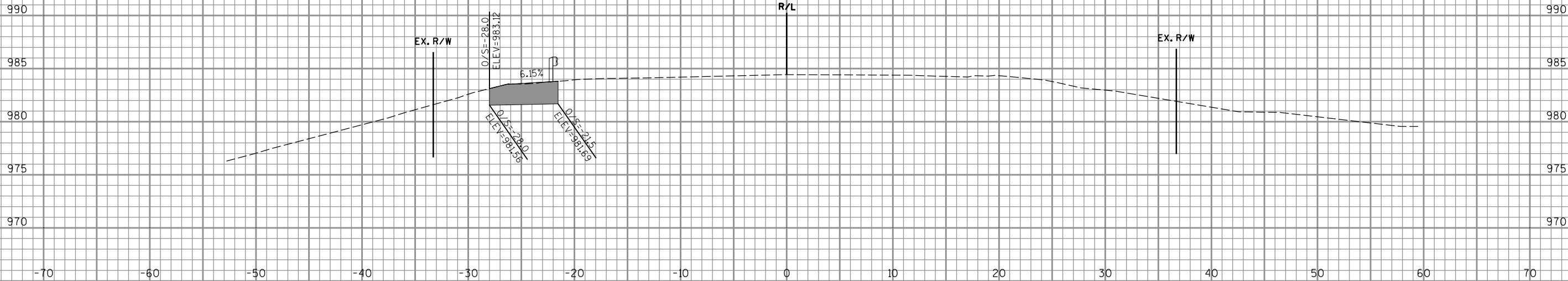
EXISTING BASE AGGREGATE DENSE TO REMAIN



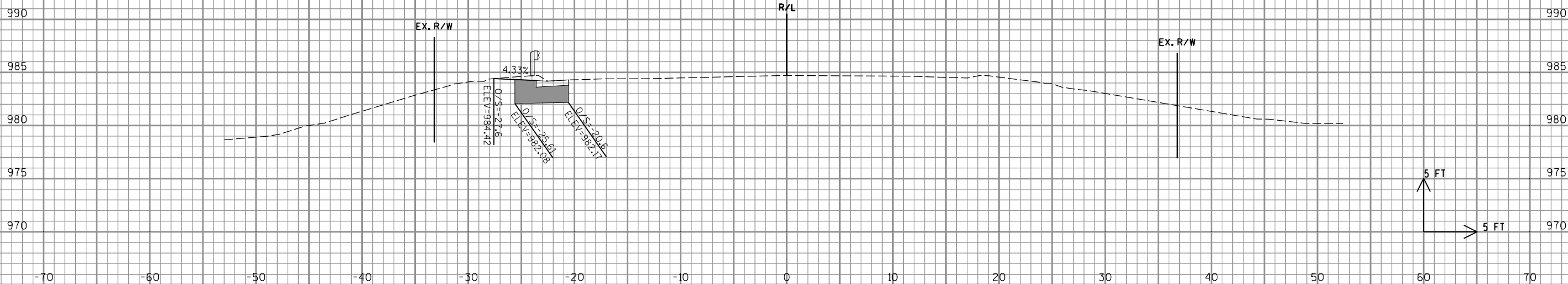
NOTES:
THE MATCH LINE IS AT THE EXISTING SAWED
EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN



558+67

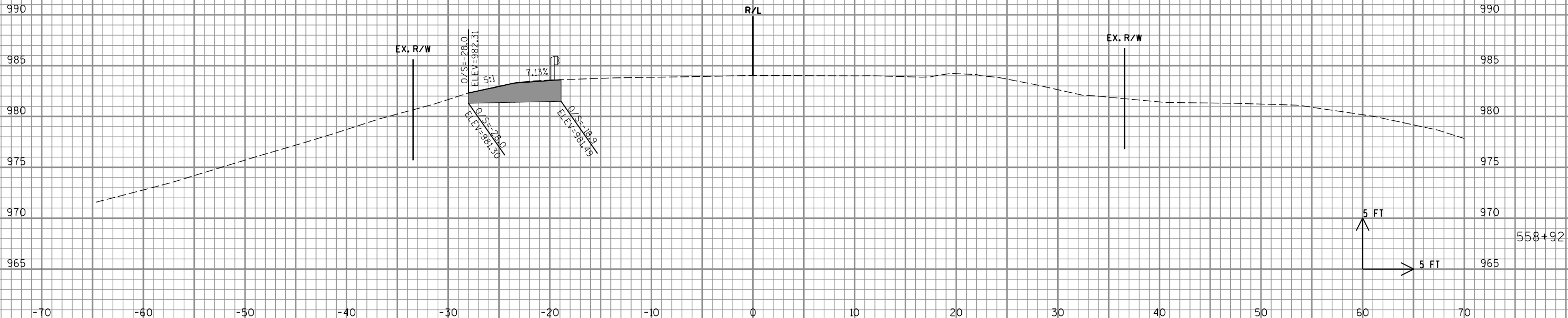
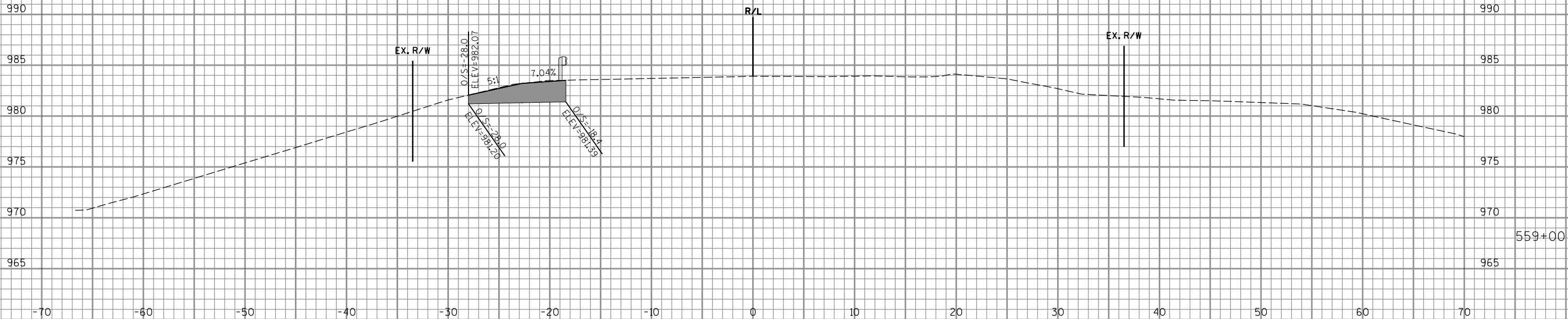


558+50

NOTES:
THE MATCH LINE IS AT THE EXISTING SAWED
EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN



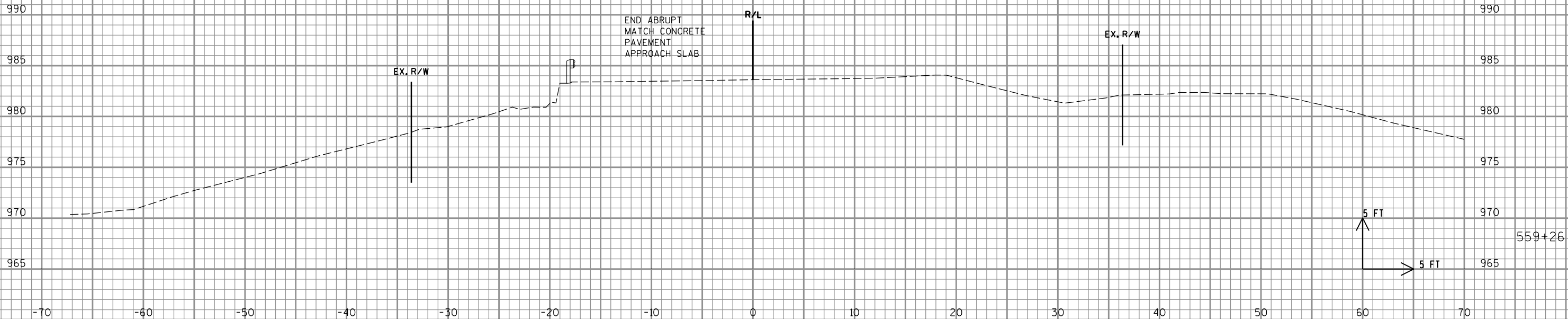
9

9

NOTES:
THE MATCH LINE IS AT THE EXISTING SAWED
EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN



9

9

PROJECT NO: 8010-08-72

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: GUARDRAIL - BLACK RIVER BRIDGE B-16-0085, LT

SHEET

110

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADD\Plan\4841_Black River\090203_xs.dgn

PLOT DATE : 7/23/2015

PLOT BY : emo

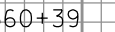
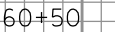
PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADD SHEET 21

FOR LIMITS OF APPROACH WORK, SEE PLAN SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN



NOTES:
THE MATCH LINE IS AT THE EXISTING SAWED
EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN

EX. R/W

R/L

EX. R/W

O/S=-23.8
ELEV=983.64
4.41%
O/S=-22.8
ELEV=981.59
O/S=-18.2
ELEV=981.9

561+00

EX. R/W

R/L

EX. R/W

O/S=-22.1
ELEV=983.42
3.91%
O/S=-22.1
ELEV=981.31
O/S=-18.1
ELEV=981.7

560+80

5 FT

5 FT

9

9

PROJECT NO: 8010-08-72

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: GUARDRAIL - BLACK RIVER BRIDGE B-16-0085, LT

SHEET

112

E

FILE NAME : P:\48xx\4840-4841-0P.14.STH35.DOU\CADD\Plan\4841-Black River\090204_xs.dgn

PLOT DATE : 7/23/2015

PLOT BY : emo

PLOT NAME :

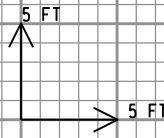
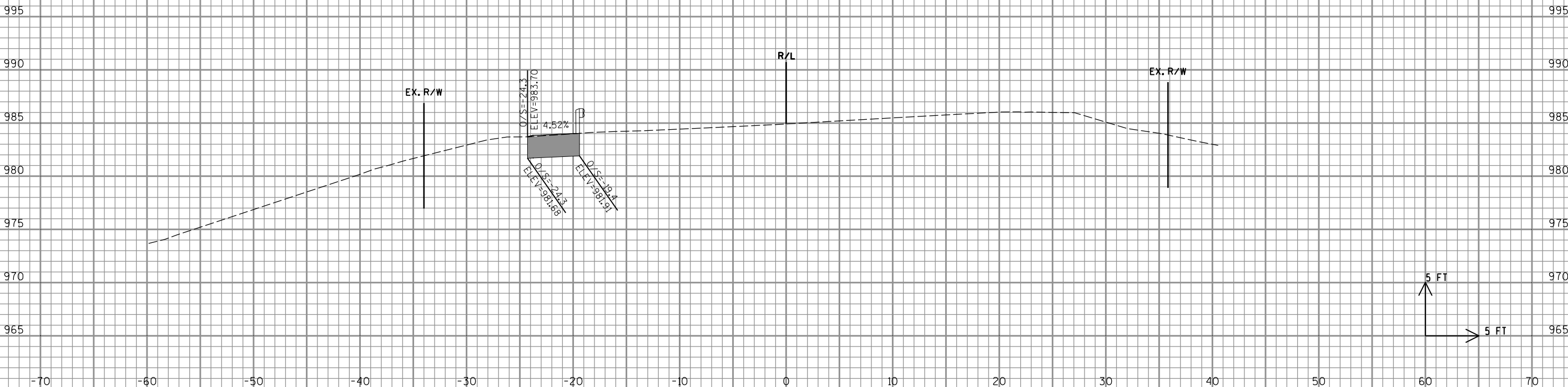
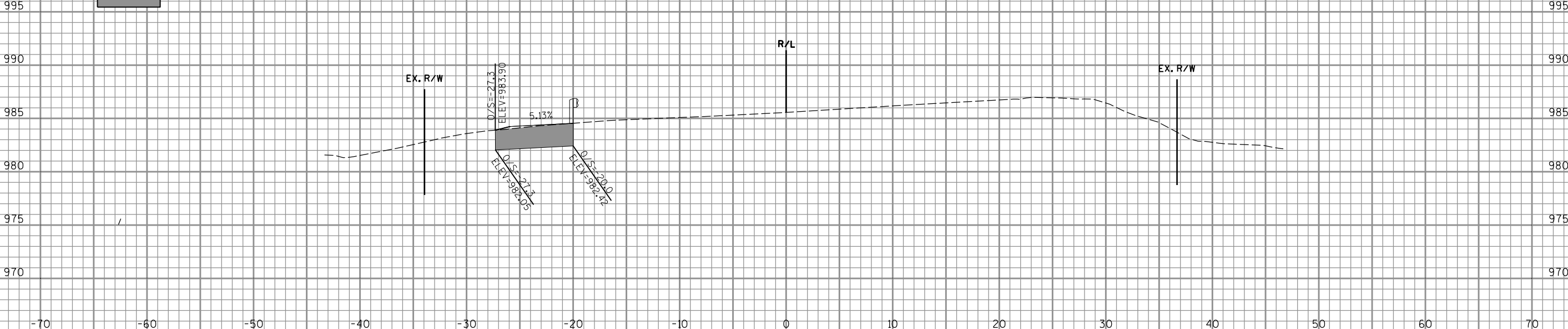
PLOT SCALE : 1:10

WISDOT/CADDs SHEET 21

NOTES:
THE MATCH LINE IS AT THE EXISTING SAWED
EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

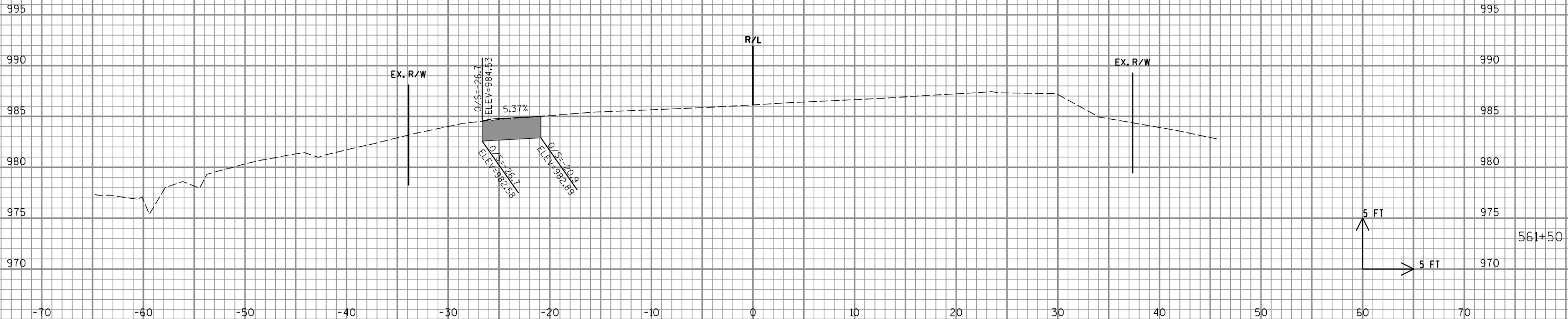
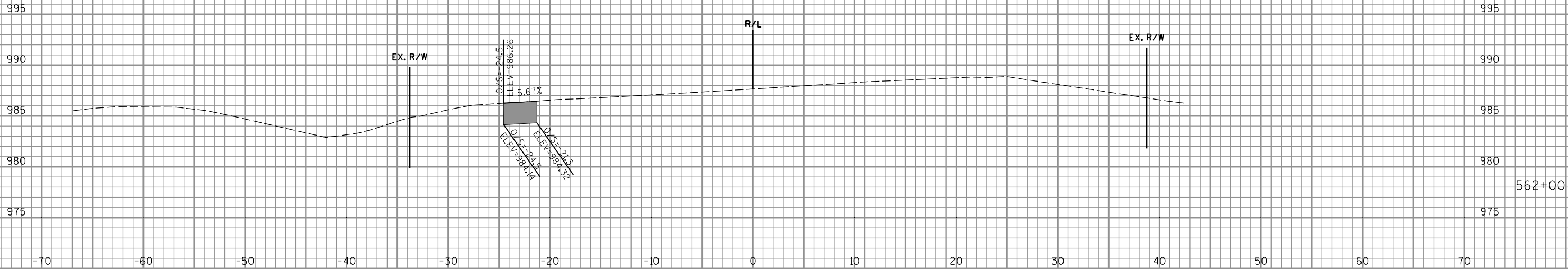
EXISTING BASE AGGREGATE DENSE TO REMAIN



NOTES:
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EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

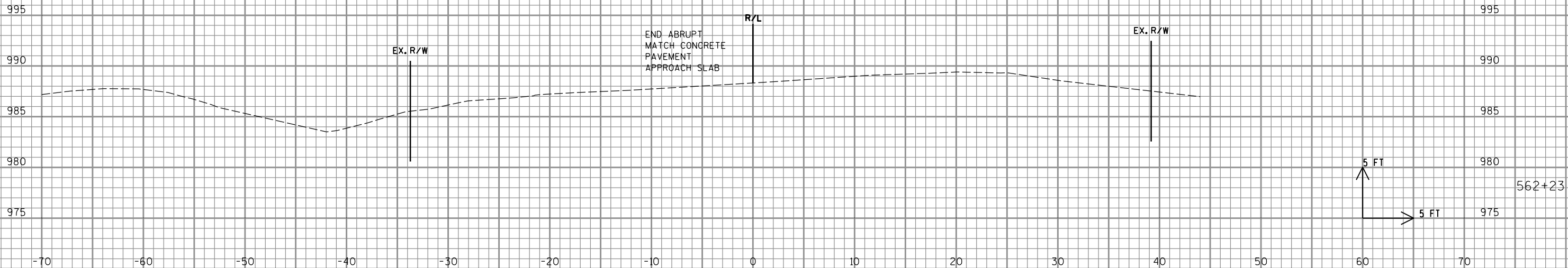
EXISTING BASE AGGREGATE DENSE TO REMAIN



NOTES:
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EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN



PROJECT NO: 8010-08-72

HWY: STH 35

COUNTY: DOUGLAS

CROSS SECTIONS: GUARDRAIL - BLACK RIVER BRIDGE B-16-0085, LT

SHEET

115

E

FILE NAME : P:\48xx\4840-4841-DP.14.STH35.DOU\CADDs\Plan\4841_Black River\090204_xs.dgn

PLOT DATE : 7/23/2015

PLOT BY : emo

PLOT NAME :

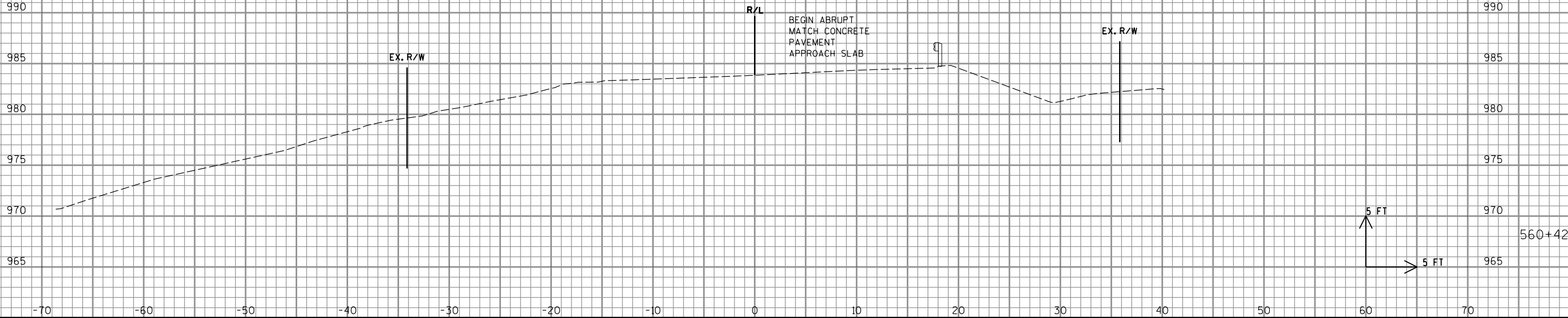
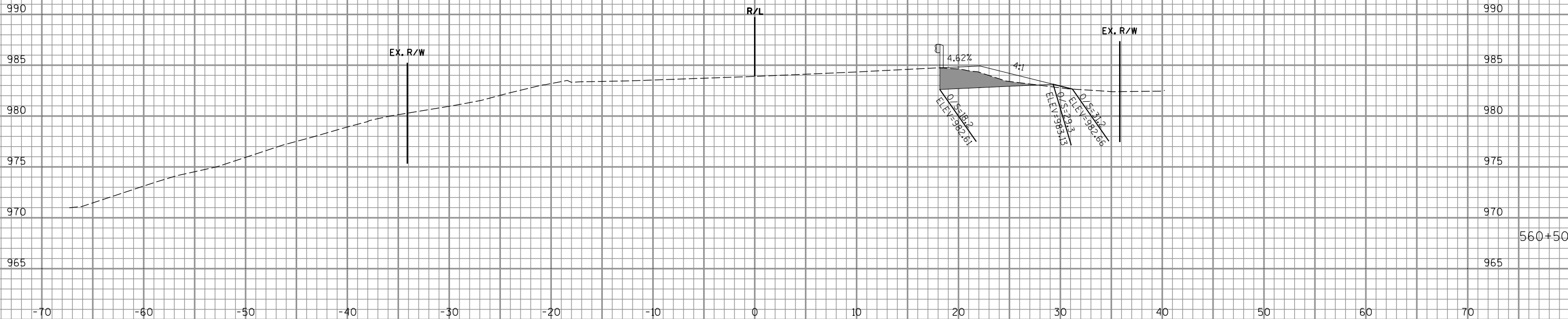
PLOT SCALE : 1:10

WISDOT/CADDs SHEET 21

NOTES:
THE MATCH LINE IS AT THE EXISTING SAWED
EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN



NOTES:
THE MATCH LINE IS AT THE EXISTING SAWED
EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN

EX. R/W

R/L

EX. R/W

5.84%
0.5:12.9
ELEV=987.59

4:1
0.5:12.5
ELEV=985.32

561+30

EX. R/W

R/L

EX. R/W

5.59%
0.5:12.9
ELEV=983.74

4:1
0.5:12.3
ELEV=984.43

561+00

5 FT

5 FT

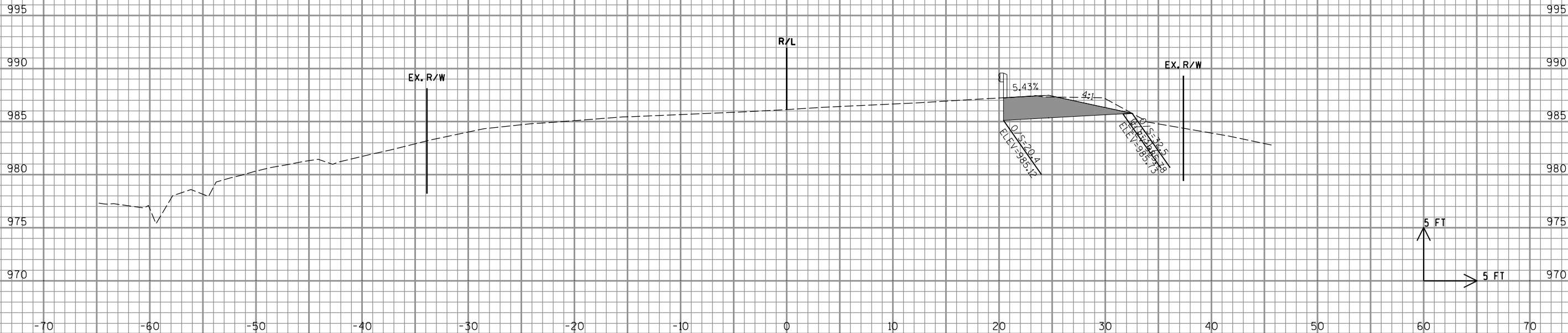
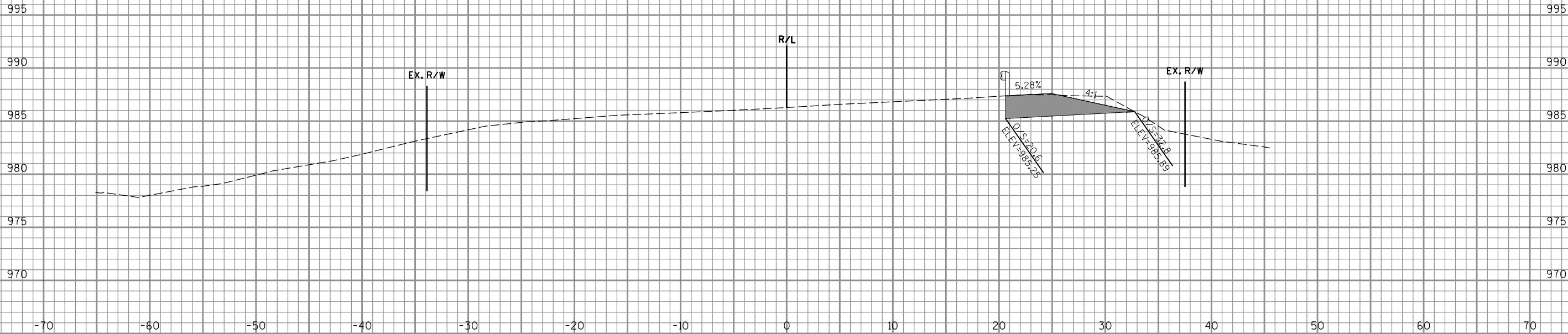
9

9

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EDGE OF PAVEMENT

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SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN

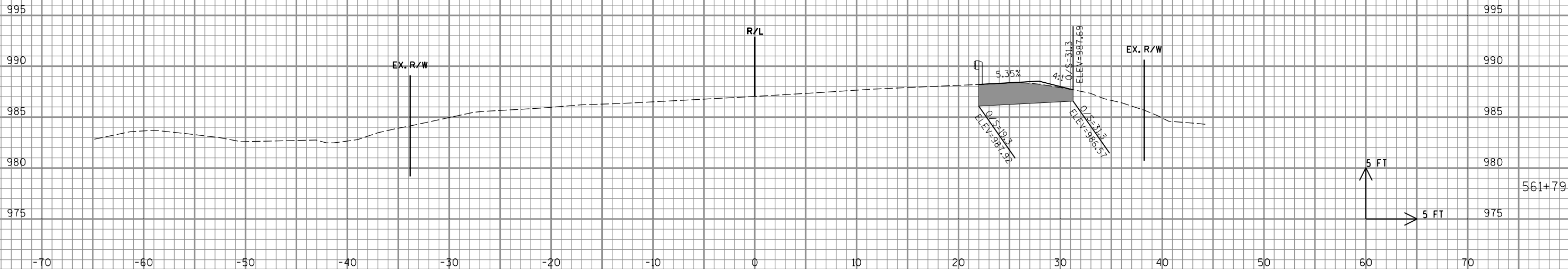
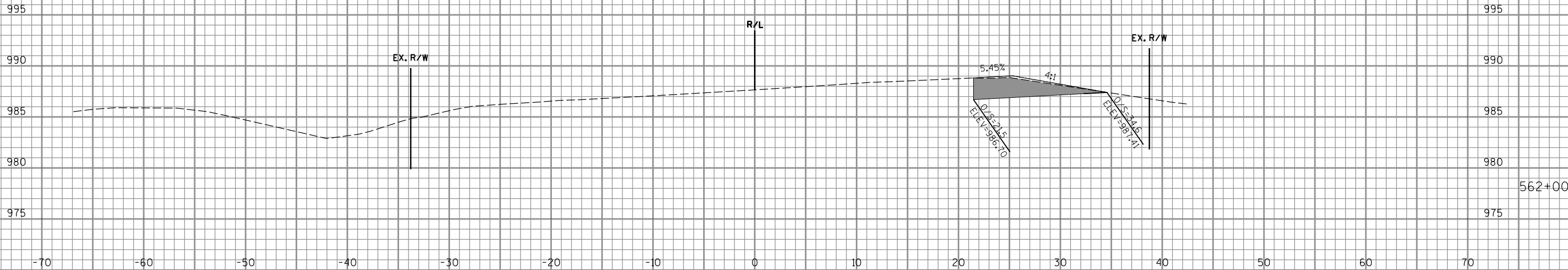


5 FT
5 FT

NOTES:
THE MATCH LINE IS AT THE EXISTING SAWED
EDGE OF PAVEMENT

FOR LIMITS OF APPROACH WORK, SEE PLAN
SHEETS

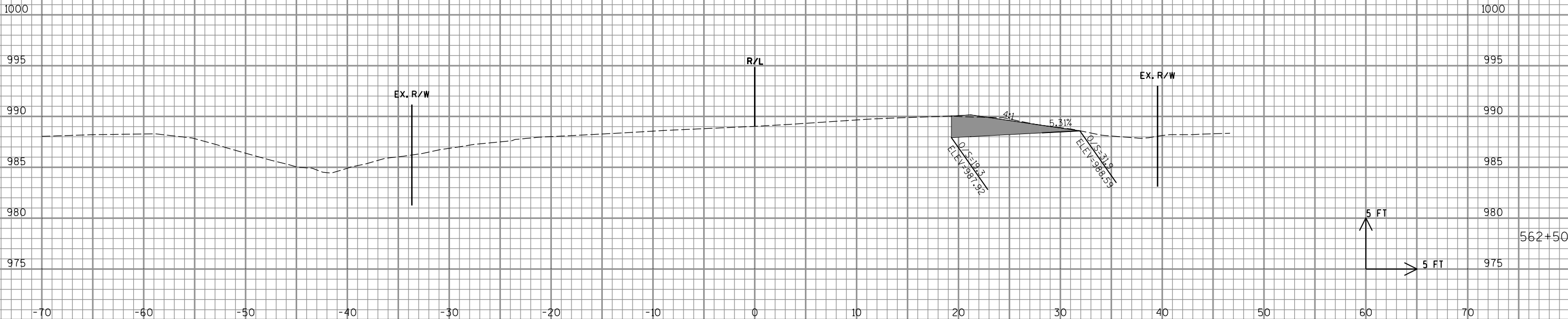
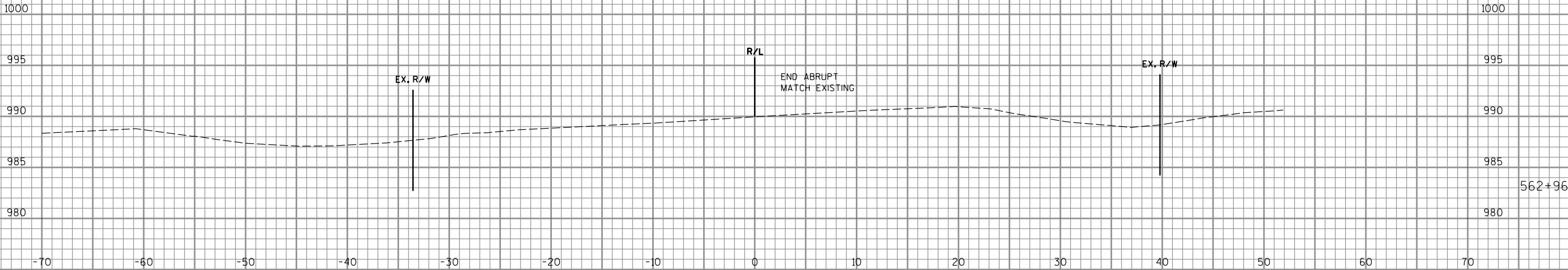
EXISTING BASE AGGREGATE DENSE TO REMAIN



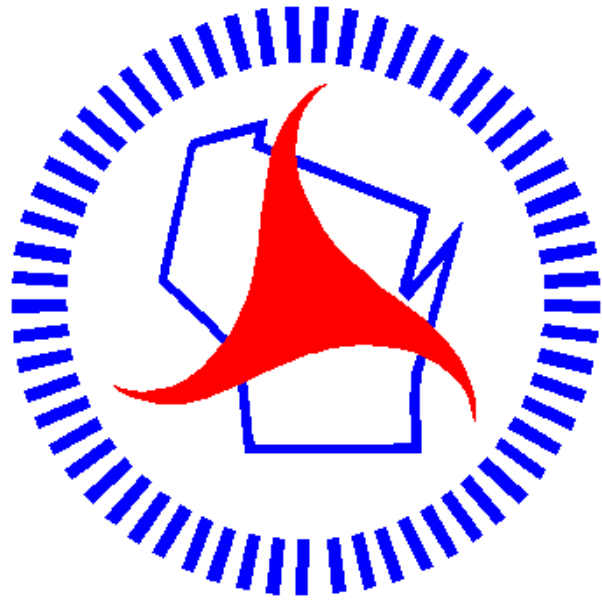
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SHEETS

EXISTING BASE AGGREGATE DENSE TO REMAIN



Notes



Wisconsin Department of Transportation

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<http://www.dot.wisconsin.gov>