SWL

Mar 2014

PROJECT ID: 5434-00-71

WITH: ----------

COUNTY: COLUMBIA

ORDER OF SHEETS

TOTAL SHEETS = 54

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

RIO - CTH G

(MIDDLE BRANCH DUCK CREEK BRIDGE B-11-0154)

CTH SS

COLUMBIA

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5434-00-71	WISC 2014066	1

PROJECT

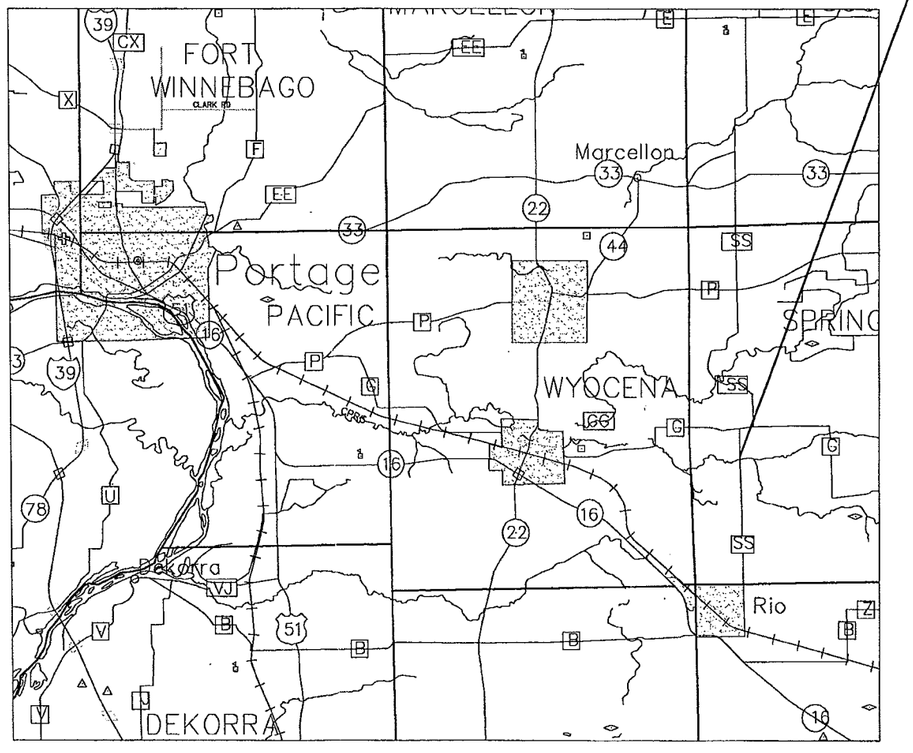
STA. 2+00 TO STA 5+00

N = 376,609.56

E = 599,507.17

STATE PROJECT NUMBER

5434-00-71



LAYOUT

SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.057 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), COLUMBIA COUNTY.

N

DESIGN DESIGNATION

A.A.D.T.	2014	=	290
A.A.D.T.	2034	=	350
D.H.V.	2034	=	60
D.D.		=	60/40
T.	-----	=	3.8%
DESIGN SPEED		=	60 MPH
ESALS		=	36,500

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

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

UTILITIES

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

ACCEPTED FOR

COUNTY of COLUMBIA

10/24/13 (Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY

DONOHUE®

WISCONSIN JOHN C. BAINTER, JR. E-34975 SHEBOYGAN WI PROFESSIONAL ENGINEER

10/29/13 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AYRES
Designer	DONOHUE
Management Consultant	KJOHNSON ENGINEERS, INC.
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 11/1/2013 Kimberly A. John (Management Consultant Signature)

E

FILE NAME : L:\PROJECTS\12224\DWG\010101_TI.DWG

PLOT DATE : October 29, 2013

PLOT BY : BAINTER, JOHN

PLOT NAME : ----------

WISDOT/CADDS SHEET 15

2

GENERAL NOTES

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY ARE TO BE FERTILIZED,
SEEDED AND COVERED AS DIRECTED BY THE ENGINEER.

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

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

CUT VOLUMES SHOWN ON THE EARTHWORK SUMMARY DO NOT INCLUDE QUANTITY GENERATED FROM THE ITEM "EXCAVATION FOR STRUCTURES, BRIDGES" AND THE EXCAVATION REQUIRED TO PLACE THE ITEM "RIPRAP HEAVY".

FILL VOLUMES SHOWN ON THE EARTHWORK SUMMARY DO NOT INCLUDE QUANTITY REQUIRED TO PLACE THE ITEM "BACKFILL STRUCTURE".

WETLANDS EXIST IN THE PROJECT AREA, EQUIPMENT SHALL NOT BE OPERATED OUTSIDE THE SLOPE INTERCEPTS WHERE THERE ARE WETLANDS.

THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE
CONTRACTOR A MONUMENT WHICH SHALL BE SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.

ELEVATIONS REFERENCED ON THIS PLAN ARE BASED ON NGS MONUMENT PID#DH5555 (NAVD 88)

THE 4-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A
1¾" UPPER LAYER AND A 2¼" LOWER LAYER

UTILITIES

ELECTRICAL
ADAMS COLUMBIA ELECTRIC
ATTN: ED NEVAR
W6290 HWY 33
PARDEVILLE, WI 53954-0216
(800) 831-8629 EXT. 333
ENEVAR@ACECWI.COM

ATC
ATTN: DOUG VOSBERG
5303 FEN OAK DRIVE
MADISON, WI 53718
(608) 877-7650
DVOSBERG@ATCLC.COM

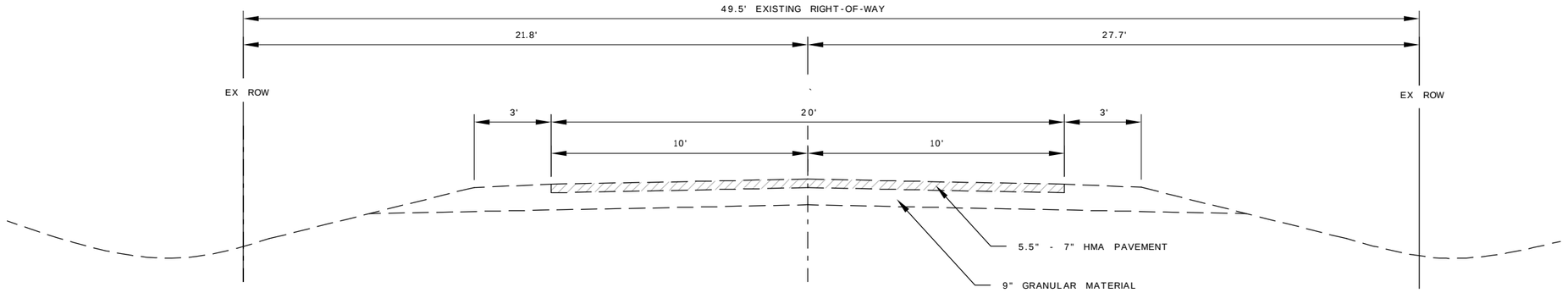
DNR CONTACT
CATHY BLESER
DEPARTMENT OF NATURAL RESOURCES
SOUTH CENTRAL REGIONAL HEADQUARTERS
3911 FISH HATCHERY RD
FICHBURG, WI 53711-5397
(608) 275-3308
CATHERINE.BLESER@WISCONSIN.GOV

DESIGN CONTACT
JOHN BAINTER
DONOHUE & ASSOCIATES
3311 WEEDEN CREEK ROAD
SHEBOYGAN, WI 53081
(920) 208-0296
JBAINTER@DONOHUE-ASSOCIATES.COM

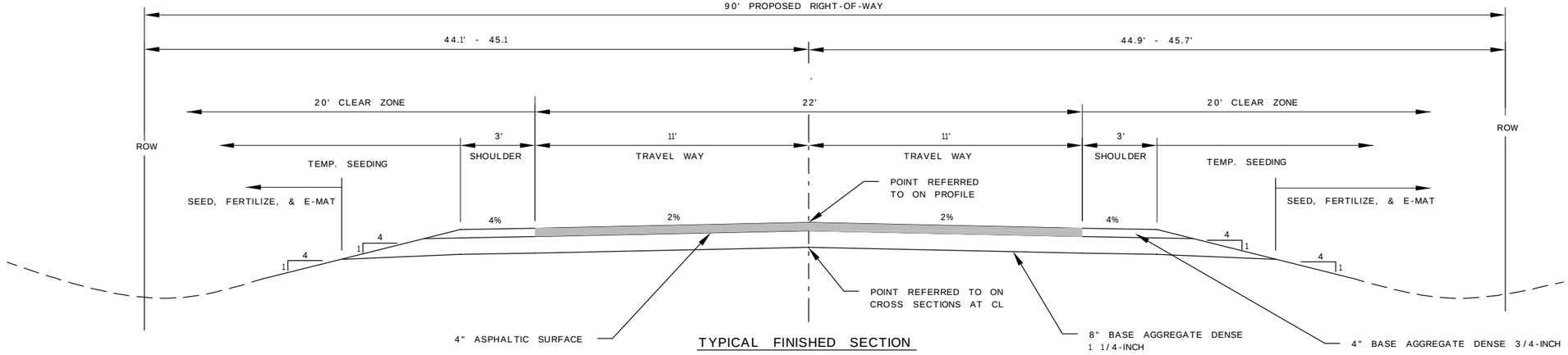
COUNTY CONTACT
COLUMBIA COUNTY
MR. THOMAS LORFELD
HIGHWAY COMMISSIONER
P.O. BOX 875
WYOCENA, WI
(608) 429-2136
TOM.LORFELD@CO.COLUMBIA.WI.US

STANDARD ABBREVIATIONS

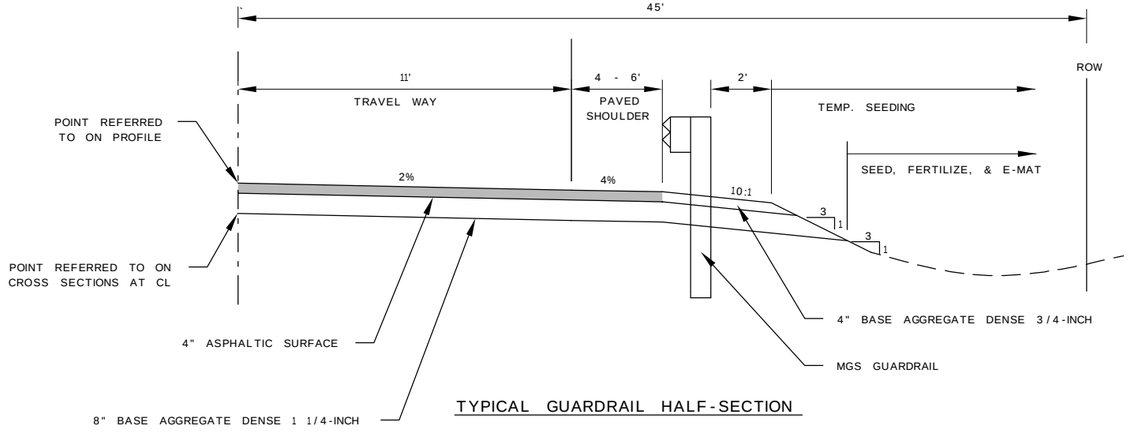
ABUT.	ABUTMENT
A.D.T	AVERAGE DAILY TRAFFIC
B.M.	BENCHMARK
D.H.V.	DESIGN HOURLY VOLUME
D.	DIRECTIONAL DISTRIBUTION
FERT.	FERTILIZER
H.W.	HIGH WATER
CWT.	HUNDRED WEIGHT
L.S.	LUMP SUM
OBS.	OBSERVED
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENT
R/W	RIGHT OF WAY
STA	STATION
T.	TRUCK (PERCENT OF)
TYP.	TYPICAL
V.C.	VERTICAL CURVE



TYPICAL EXISTING SECTION



TYPICAL FINISHED SECTION



TYPICAL GUARDRAIL HALF-SECTION

PROJECT NO: 5434-00-71	HWY: CTH SS	COUNTY: COLUMBIA	PLAN: TYPICAL SECTIONS	SHEET 3	E

FILE NAME : L:\PROJECTS\12224\DWG\020101_GN.DWG PLOT DATE : 10/31/2013 3:26 PM PLOT BY : BAINTER, JOHN PLOT NAME : ---------- PLOT SCALE : 1:5_XREF

WISDOT/CADDS SHEET 42

DATE 08JAN14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5434-00-71 QUANTITY
0010	201.0105	CLEARING	STA	3.000	3.000
0020	201.0205	GRUBBING	STA	3.000	3.000
0030	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 3+39	LS	1.000	1.000
0050	205.0100	EXCAVATION COMMON **P**	CY	500.000	500.000
0060	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-11-0154	LS	1.000	1.000
0080	208.0100	BORROW	CY	77.000	77.000
0090	210.0100	BACKFILL STRUCTURE	CY	230.000	230.000
0100	213.0100	FINISHING ROADWAY (PROJECT) 01. 5434-00-71	EACH	1.000	1.000
0120	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	65.000	65.000
0130	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	555.000	555.000
0140	312.0115	SELECT CRUSHED MATERIAL	CY	65.000	65.000
0150	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	160.000	160.000
0160	455.0605	TACK COAT	GAL	18.000	18.000
0170	465.0105	ASPHALTIC SURFACE	TON	160.000	160.000
0180	502.0100	CONCRETE MASONRY BRIDGES	CY	156.000	156.000
0190	502.3200	PROTECTIVE SURFACE TREATMENT	SY	165.000	165.000
0200	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	4,600.000	4,600.000
0210	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	16,970.000	16,970.000
0230	513.7050	RAILING STEEL TYPE W (STRUCTURE) 01. B-11-0154	LS	1.000	1.000
0240	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	20.000	20.000
0270	550.0500	PILE POINTS	EACH	13.000	13.000
0280	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	585.000	585.000
0290	606.0300	RIPRAP HEAVY	CY	210.000	210.000
0300	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	194.000	194.000
0310	614.2300	MGS GUARDRAIL 3	LF	25.000	25.000
0320	614.2500	MGS THRIE BEAM TRANSITION	LF	156.000	156.000
0330	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000
0340	619.1000	MOBILIZATION	EACH	0.500	0.500
0350	625.0100	TOPSOIL **P**	SY	945.000	945.000
0360	628.1504	SILT FENCE	LF	670.000	670.000
0370	628.1520	SILT FENCE MAINTENANCE	LF	670.000	670.000
0380	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	2.000	2.000
0390	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0400	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	945.000	945.000
0410	628.6005	TURBIDITY BARRIERS	SY	100.000	100.000
0420	628.7504	TEMPORARY DITCH CHECKS	LF	80.000	80.000
0430	629.0210	FERTILIZER TYPE B	CWT	0.600	0.600
0440	630.0120	SEEDING MIXTURE NO. 20 **P**	LB	25.000	25.000
0450	630.0200	SEEDING TEMPORARY	LB	25.000	25.000
0460	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	4.000	4.000
0470	637.2230	SIGNS TYPE II REFLECTIVE F	SF	12.000	12.000
0480	638.2602	REMOVING SIGNS TYPE II	EACH	5.000	5.000
0490	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	5.000	5.000
0500	642.5001	FIELD OFFICE TYPE B	EACH	0.500	0.500
0510	643.0100	TRAFFIC CONTROL (PROJECT) 01. 5434-00-71	EACH	1.000	1.000
0530	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	251.000	251.000
0540	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	350.000	350.000
0550	650.5000	CONSTRUCTION STAKING BASE	LF	350.000	350.000
0560	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-11-0154	LS	1.000	1.000

3

DATE 08JAN14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5434-00-71 QUANTITY
0580	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 5434-00-71	LS	1.000	1.000
0600	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	350.000	350.000
0610	690.0150	SAWING ASPHALT	LF	2.300	2.300
0620	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5. 00/HR	HRS	185.000	185.000
0630	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	150.000	150.000
0650	SPV.0195	SPECIAL 01. SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	36.000	36.000

3

3

CLEARING AND GRUBBING

LOCATION	#201.0105 CLEARING STA	#201.0205 GRUBBING STA
1+50 - 2+75, RT	1.25	1.25
3+25 - 5+00, RT	1.75	1.75
TOTALS	**3**	**3**

EARTHWORK SUMMARY

DIVISION	CAT	FROM/TO STATION	LOCATION	**P** EXCAVATION COMMON (NOTE 1) (ITEM #205.0100)	SALVAGED / UNUSEABLE PAVEMENT MATERIAL (NOTE 3)	AVAILABLE MATERIAL (NOTE 4)	UNEXPANDED FILL (NOTE 5)	EXPANDED FILL (NOTE 6)	MASS ORDINATE +/- (NOTE 7)	WASTE	BORROW (ITEM #208.0100) (NOTE 8)
				CUT (NOTE 2)				FACTOR 1.25			FACTOR 1.15
5434-00-71											
1	0010	1+50 - 3+32	SOUTH OF BRIDGE	295	46	249	205	256	-7	---	7
2	0010	3+66 - 5+00	NORTH OF BRIDGE	205	37	168	195	244	-76	---	70
TOTALS				500	83	417	400	500	-83	0	77

1) NO EBS IS ANTICIPATED. IF EBS IS REQUIRED IT WILL BE PAID AS COMMON EXCAVATION. ITEM NUMBER 205.0100
2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT
3) SALVAGED/UNUSABLE PAVEMENT MATERIAL EQUALS AREA OF PROJECT PAVEMENT REMOVAL * TYPICAL EXISTING PAVEMENT
4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
5) UNEXPANDED FILL IS A SUM OF CROSS SECTION AREAS FROM EACH DIVISIONAL SHEET
6) EXPANDED FILL FACTOR = 1.25, EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR
7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
8) BORROW = (ABSOLUTE VALUE OF MASS ORDINATE / EXPANDED FILL FACTOR) * BORROW FACTOR

BASE AGGREGATE

LOCATION	#305.0110 BASE AGGREGATE DENSE 3/4-INCH TONS	#305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TONS
1+50 - 3+18.64	35	265
3+59.18 - 5+00	30	290
TOTALS	**65**	**555**

CONCRETE PAVEMENT APPROACH SLAB, ITEM NO. 415.0410

LOCATION	DESCRIPTION	SY
2+94.37 - BRIDGE	SOUTH APPROACH	80
BRIDGE - 383+63	NORTH APPROACH	80
TOTAL		**160**

ASPHALT ITEMS

LOCATION	#455.0605 TACK COAT GAL	#465.0105 ASPHALTIC SURFACE TON
1+50 - 2+94.37	9.5	85
383+63 - 5+00	8.5	75
TOTALS	**18**	**160**

MGS GUARDRAIL ITEMS

LOCATION	#614.2300 MGS GUARDRAIL 3 LF	#614.2500 MGS THRIE BEAM TRANSITION LF	#614.2610 MGS GUARDRAIL TERMINAL EAT EACH
SE QUADRANT	25	39	1
SW QUADRANT	0	39	1
NW QUADRANT	0	39	1
NE QUADRANT	0	39	1
TOTALS	**25**	**156**	**4**

EROSION CONTROL ITEMS

LOCATION	#625.0100 **P** TOPSOIL SY	#628.1504 SILT FENCE LF	#628.1520 SILT FENCE MAINTENANCE LF	#628.2008 EROSION MAT URBAN CLASS 1 TYPE B SY	#628.7504 TEMPORARY DITCH CHECKS LF	#629.0210 **P** FERTILIZER TYPE B CWT	#630.0120 SEED MIXTURE NO. 20 LBS	#630.0200 SEEDING TEMPORARY LBS
SE QUADRANT	255	175	175	255	20	0.15	7	7
SW QUADRANT	195	160	160	195	20	0.12	5	5
NW QUADRANT	215	140	140	215	20	0.13	6	6
NE QUADRANT	280	195	195	280	20	0.20	7	7
TOTALS	**945**	**670**	**670**	**945**	**80**	**0.60**	**25**	**25**

CONSTRUCTION STAKING

LOCATION	#650.4500 CONSTRUCTION STAKING SUBGRADE LF	#650.5000 CONSTRUCTION STAKING BASE LF	#650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
1+50 - 5+00	350	350	350
TOTALS	**350**	**350**	**350**

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

LOCAITON	DESCRIPTION	#638.2602 REMOVING SIGNS TYPE II EACH	#638.3000 REMOVING SMALL SIGN SUPPORTS EACH
SE QUADRANT	TIGER STRIPE	1	1
SE QUADRANT	WEIGHT RESTR.	1	1
SW QUADRANT	TIGER STRIPE	1	1
NW QUADRANT	TIGER STRIPE	1	1
NE QUADRANT	TIGER STRIPE	1	1
TOTALS		**5**	**5**

SIGNS AND POSTS

LOCATION	SIGN CODE	#637.2230 SIGNS TYPE II REFLECTIVE F SF	#634.0612 POSTS WOOD 4X6X12 EACH	REMARKS
3+18, LT	W5-52L	3	1	OBJECT MARKER
3+18, RT	W5-52R	3	1	OBJECT MARKER
3+60, RT	W5-52L	3	1	OBJECT MARKER
3+60, LT	W5-52L	3	1	OBJECT MARKER
TOTALS		**12**	**4**	

SAWING ASPHALT

LOCATION	LF
1+50 - 2+00, RT	50
2+00	20
5+00	20
TOTALS	**90**

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
5434-00-01	4.01	1
FEDERAL PROJECT NUMBER		

PLAT OF RIGHT-OF-WAY REQUIRED FOR

RIO-CTH G

(MIDDLE BRANCH DUCK CREEK BRIDGE B-11-0154)

CTH SS — COLUMBIA COUNTY

CONSTRUCTION PROJECT NUMBER
5434-00-71

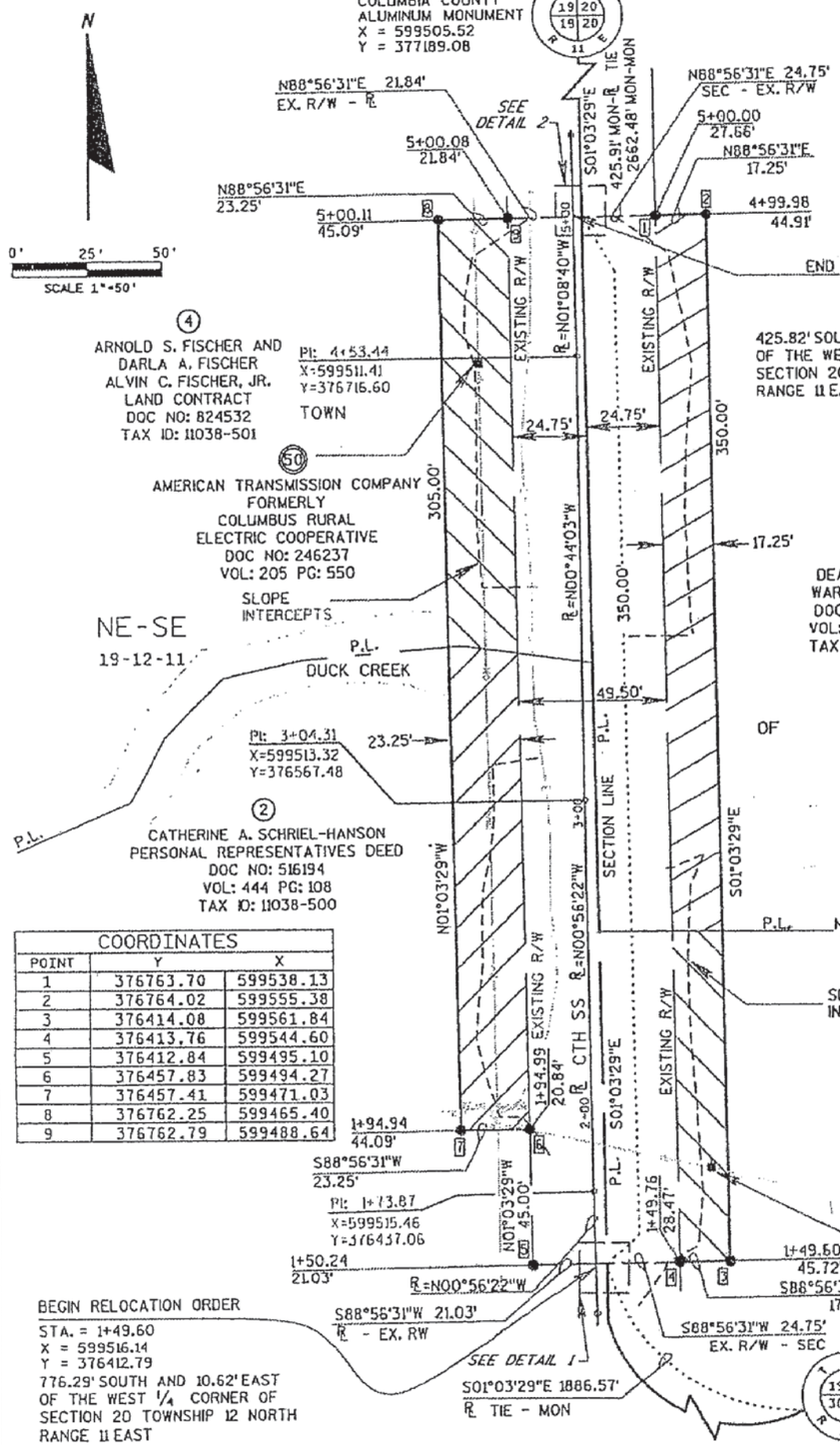
SCHEDULE OF LANDS AND INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE COUNTY.

PARCEL NUMBER	OWNER(S)	INTERESTS REQUIRED	TOTAL ACRES	NEW	EXISTING	TOTAL FEE	TOTAL ACRES REMAINING
1	WILLOW MILL CAMPSITE, LLC.	FEE	20.00	0.04	0.06	0.10	19.90
2	CATHERINE A. SCHRIEL-HANSON	FEE	15.00	0.09	0.11	0.20	14.80
3	DEAN ROBERTS	FEE	20.00	0.10	0.14	0.24	19.76
4	*** SEE BELOW ***	FEE	25.00	0.08	0.08	0.16	24.84
50	AMERICAN TRANSMISSION COMPANY	RELEASE OF RIGHTS					

*** VENDEE(S): ARNOLD S. FISCHER AND DARLA A. FISCHER ***
VENDOR(S): ALVIN C. FISCHER, JR.

NET LENGTH OF CENTERLINE = 0.066 MILES



COORDINATES		
POINT	Y	X
1	376763.70	599538.13
2	376764.02	599555.38
3	376414.08	599561.84
4	376413.76	599544.60
5	376412.84	599495.10
6	376457.83	599494.27
7	376457.41	599471.03
8	376762.25	599465.40
9	376762.79	599488.64

CONVENTIONAL SYMBOLS AND ABBREVIATIONS

STATE, COUNTY, OR TOWN LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
PROPOSED REFERENCE LINE
PROPOSED R/W LINE
EXISTING H.E. LINE
PROPERTY LINE
EASEMENT LINE
CORPORATE LIMITS
EXISTING CENTERLINE
LOT & TIE LINES
UTILITIES — FO (TYPE) (TELEPHONE, GAS, ELECTRIC, CABLE TV, FIBER OPTIC)
ACCESS RESTRICTED (BY PREVIOUS PROJECT/CONTROL)
NO ACCESS (BY ACQUISITION)
NO ACCESS (BY STATUTORY AUTHORITY)
FEE (HATCH VARIES)
TEMPORARY LIMITED EASEMENT
PERMANENT LIMITED EASEMENT
PARCEL NUMBER 102
ENCROACHMENT NUMBER (NOT SHOWN) 21-1
BUILDING
FOUND IRON PIPE/PIN (LD "IF UNLESS NOTED)
R/W MONUMENT (CONC)
R/W STANDARD (ALUM)
SIGN (SIGN)

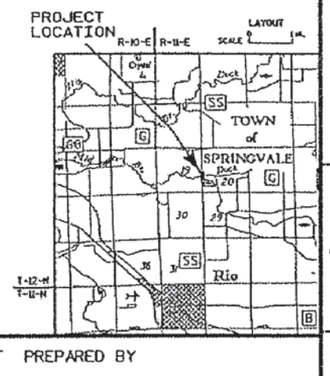
ACCESS POINT	AP
ACCESS RIGHTS	AR
ACRES	AC.
AND OTHERS	ET.AL.
CENTERLINE	C/L
CERTIFIED SURVEY MAP	CSM
DOCUMENT	DOC.
HIGHWAY EASEMENT	H.E.
LAND CONTRACT	LC
MONUMENT	MON.
PAGE	P.
PROPERTY LINE	PL
PERMANENT LIMITED EASEMENT	PLE
RECORDED AS	(000')
REFERENCE LINE	R/L
REMAINING	REM.
RIGHT-OF-WAY	R/W
SECTION	SEC.
SQUARE FEET	SQ.FT.
STATION	STA.
TEMPORARY LIMITED EASEMENT	TLE
VOLUME	V.

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	DELTA
LENGTH OF CURVE	L
TANGENT	TAN

	NON-COMPENSABLE	COMPENSABLE
POWER POLE	○	●
TELEPHONE POLE	Ø	ø
TELEPHONE PEDESTAL	⌶	✕
SECTION CORNER		

LOCATION MAP



PLAT PREPARED BY

AYRES ASSOCIATES — Engineers/Architects, Scientists/Surveyors, 1802 Pankratz Street, Madison, WI 53704

THIS SURVEY IS PREPARED AT THE REQUEST OF THE COLUMBIA COUNTY HIGHWAY DEPARTMENT. THE FIELD SURVEY WAS PERFORMED IN MAY 2012. THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN
JAMEY L. REID
Portage, WI
S-2559
PROFESSIONAL LAND SURVEYOR

Jamey L Reid — August 19, 2013
JAMEY L. REID, RLS — S-2559 — DATE

NOTES

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), COLUMBIA COUNTY ZONE, NAD83 (2007) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID AND GROUND VALUES ON THIS PLAT.

RIGHT OF WAY MONUMENTS ARE TYPE II (3/4" X 24" REINFORCEMENT BAR WEIGHING 1.13 LB/FT) AND ARE PLACED PRIOR TO THE COMPLETION OF THE PROJECT, OR AT THE TIME OF LAND TITLE TRANSFER.

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

EXISTING RIGHT OF WAY BASED ON SPRINGVALE TOWN ROAD RECORDS IN VOLUME 1 PAGE 36 OF TOWN CLERKS RECORDS.

REVISION DATE:

COLUMBIA COUNTY

APPROVED FOR COLUMBIA COUNTY HIGHWAY DEPARTMENT
DATE 8/21/13 COMMISSIONER

CATHERINE A
SCHRIEL-HANSON

WETLAND BOUNDARY

SAWCUT AND MATCH EXISTING

MGS TERMINAL EAT
POST 1 STA 2+25, 17, LT

TURBIDITY BARRIER

SILT FENCE (TYP)

CONCRETE APPROACH SLAB

MIDDLE BRANCH DUCK CREEK

PROPOSED STRUCTURE
B-11-0154

REMOVE OLD BRIDGE P-11-0068
STA 3+50
SINGLE SPAN CONCRETE SLAB &
STEEL GIRDER BRIDGE
26.0' OVERALL LENGTH
23.6' DECK WIDTH

WETLAND BOUNDARY

SLOPE INTERCEPT

PROP ROW

ARNOLD S. AND
DARLA A. FISCHER

ATC
(OVERHEAD ELECTRIC)

ADAMS COLUMBIA ELECTRIC
(BURIED ELECTRIC)

N

PI: 0+66.37

PI: 1+33.58

PI: 1+73.87

PI: 3+04.31

PI: 4+13.44

PI: 5+27.50

PI: 5+84.05

PI: 6+55.42

EXROW

CTH SS

1+00

2+00

3+00

4+00

5+00

6+00

BEGIN CONSTRUCTION STA 1+50

MGS THRIE BEAM

MGS THRIE BEAM

MGS TERMINAL EAT
POST 1 STA 1+68, 17' RT

MGS GUARDRAIL

EXROW

30°

38'

CTH SS
REFERENCE LINE

SECTION LINE

SAWCUT AND MATCH EXISTING

BEGIN PROJECT 5434-00-71
STA. 2+00

END PROJECT 5434-00-71
STA. 5+00

PROP ROW

MGS TERMINAL EAT
POST 1 STA 4+68, 17' LT
POST 1 STA 4+60, 17' RT

WILLOW MILL
CAMPSITE LLC

WETLAND BOUNDARY

HEAVY RIPRAP AND
GEOTEXTILE FABRIC
TYPE HR

WETLAND BOUNDARY

CONCRETE APPROACH SLAB

DEAN ROBERTS
WARRANTY DEED

5

5

VCL = 300.00
K = 350.91

830

825

820

815

810

STA 2+00.00
EL 822.71

VPC STA 2+00.00
VPC EL 822.71

.14%

Q100
EL = 820.16)

PROPOSED GRADE @

VPI STA 3+50.00
VPI EL 822.50

STA 3+50
STRUCTURE B-11-0154
30' CLEAR ROADWAY WIDTH
40' $10\frac{5}{8}$" OVERALL LENGTH
30 DEGREE LHF

MEASURED WATER
EL = 814.86 (5-29-2012)

STREAMBED
EL = 812.01

STA 5+00.00
EL 823.57

VPT STA 5+00.00
VPT EL 823.57

.71%

EXISTING GRADE @

EXISTING ELEVATION ON

PROPOSED ELEVATION ON

22.99 22.80 22.71 22.71 22.72 22.68 22.73 22.71 22.82 22.82 23.00 23.00 23.24 23.25 23.57 23.57 23.92 24.36

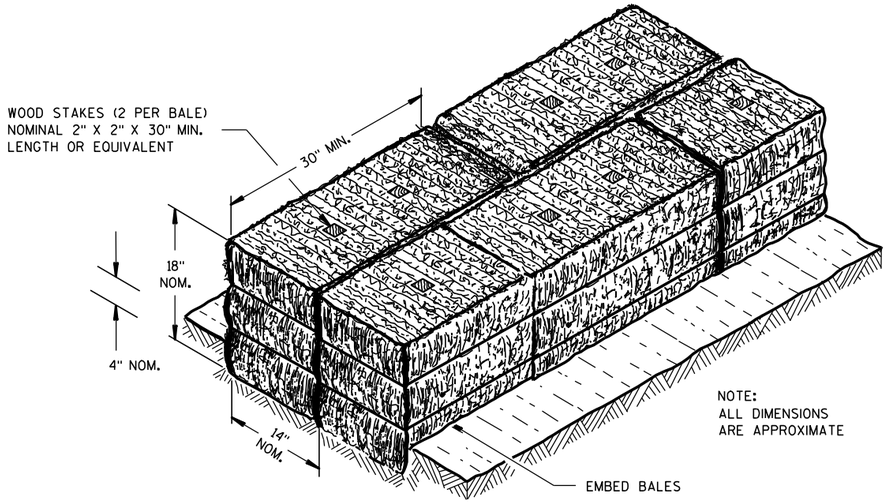
1+00 2+00 3+00 4+00 5+00 6+00

PROJECT NO: 5434-00-71	HWY: CTH SS	COUNTY: COLUMBIA	PLAN & PROFILE	SHEET 8	E

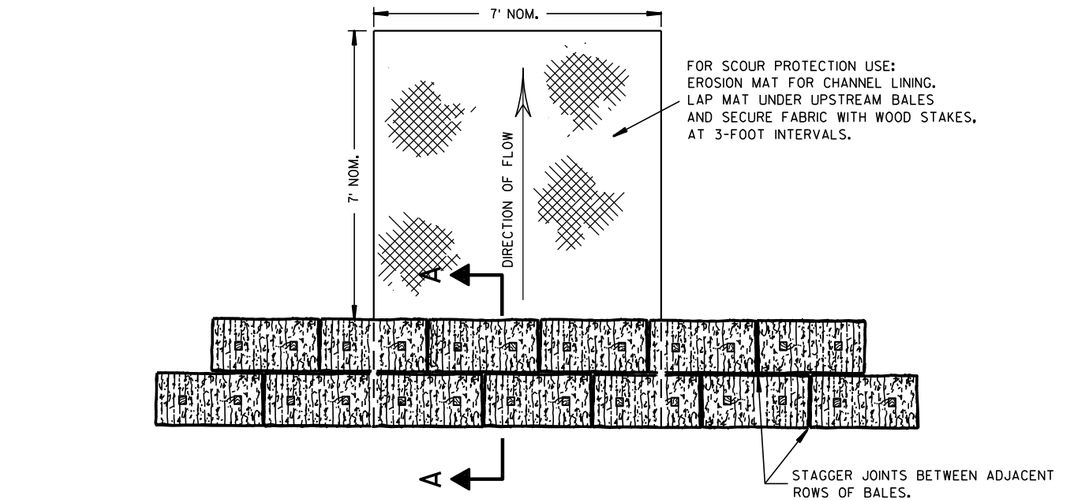
FILE NAME : L:\PROJECTS\12224\DWG\050101_PP.DWG PLOT DATE : 10/29/2013 1:18 PM PLOT BY : BAINTER, JOHN PLOT NAME : ---------- PLOT SCALE : ******** WISDOT/CADDS SHEET 35

Standard Detail Drawing List

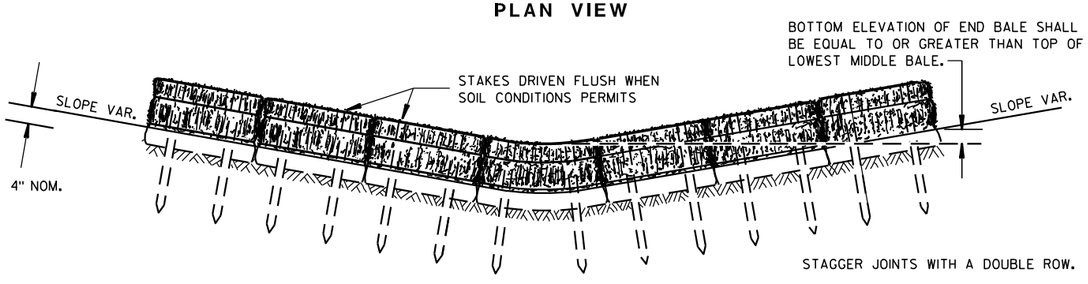
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
13C01-16	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-06	SIGNING & MARKING FOR TWO LANE BRIDGES
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)



SECTION A-A



PLAN VIEW



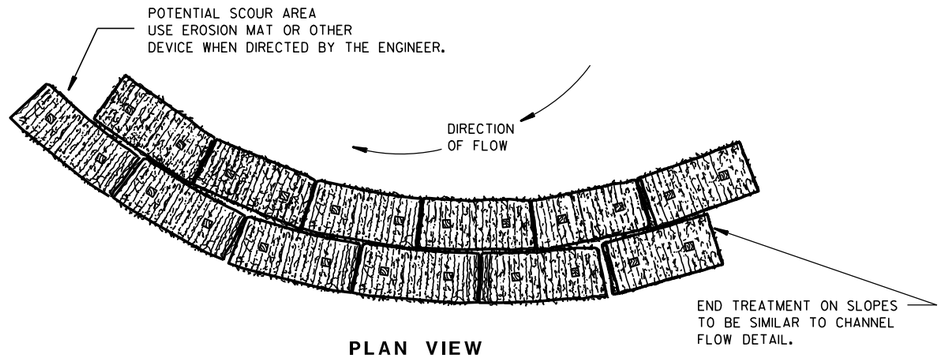
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

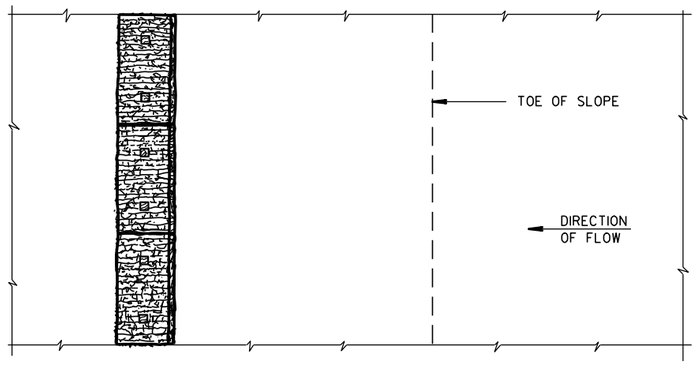
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

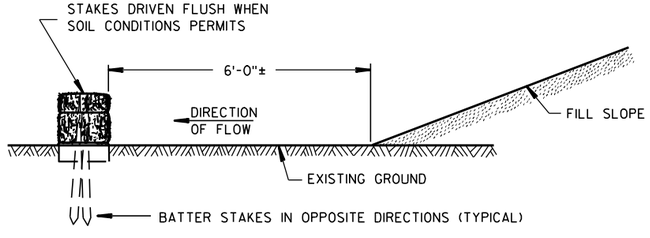


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

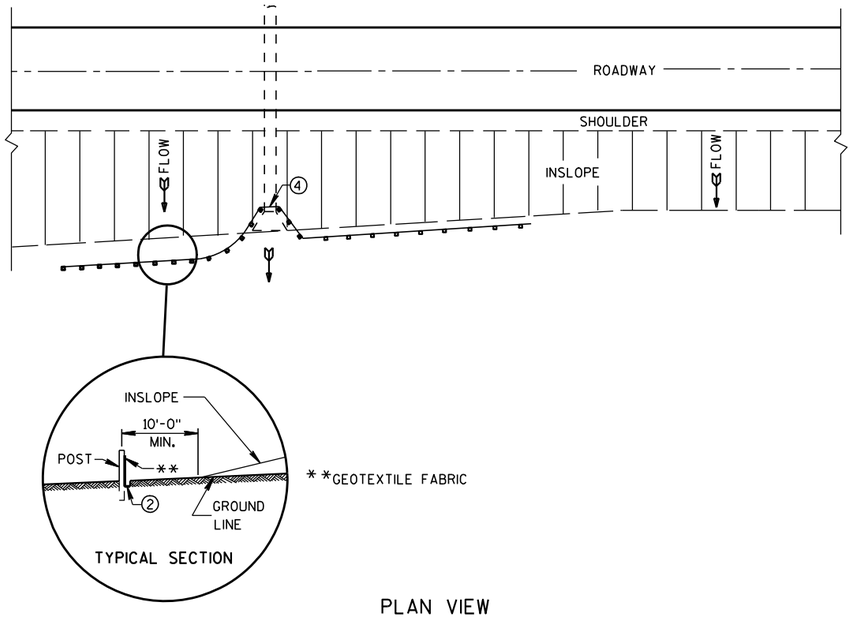
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

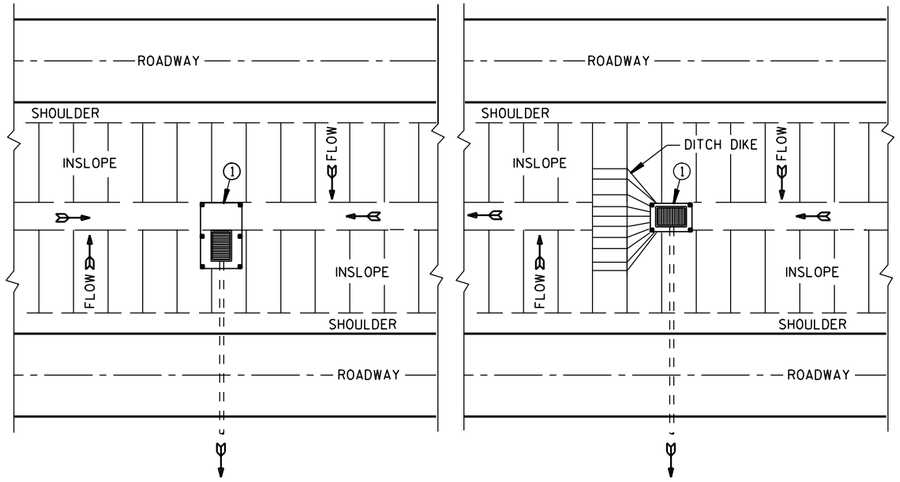
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

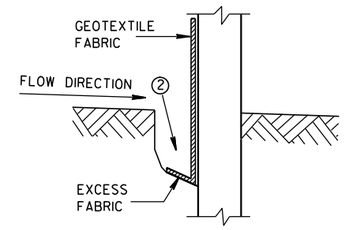
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

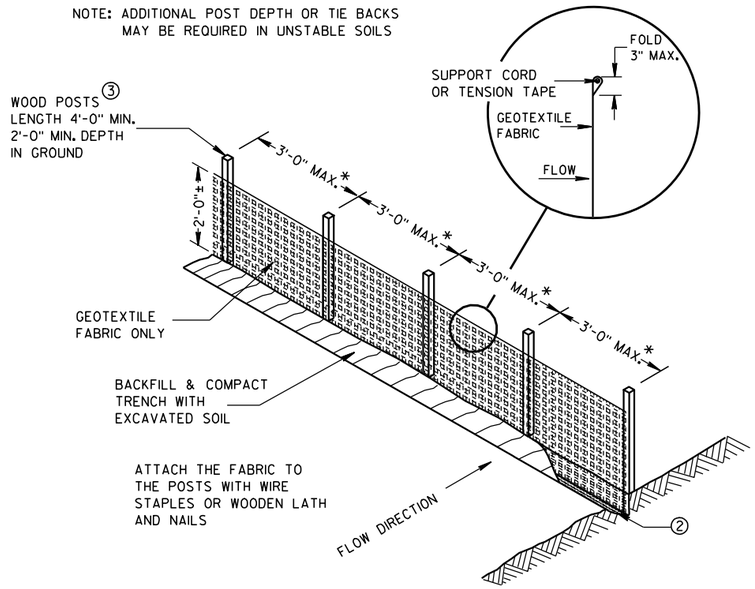
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

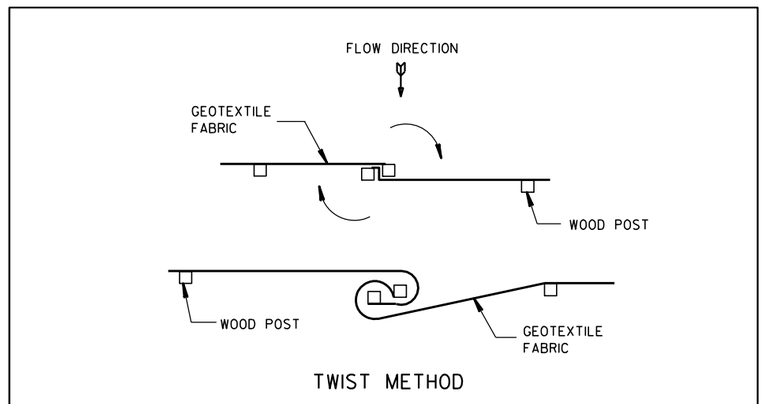
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



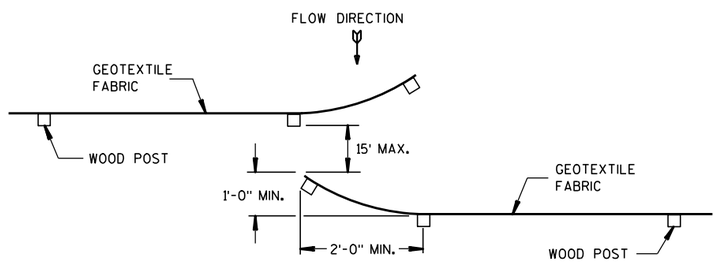
TRENCH DETAIL



SILT FENCE

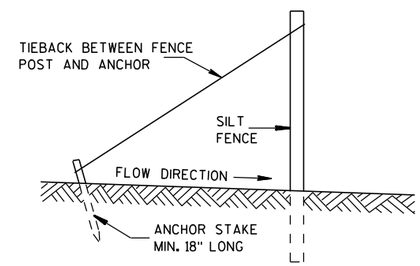


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

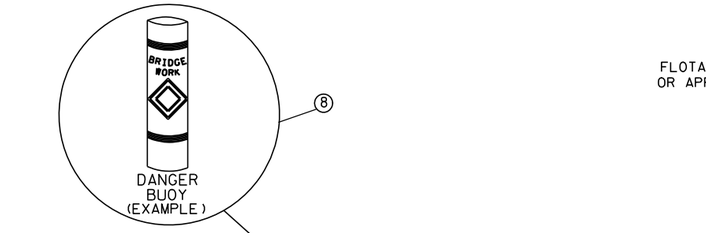
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

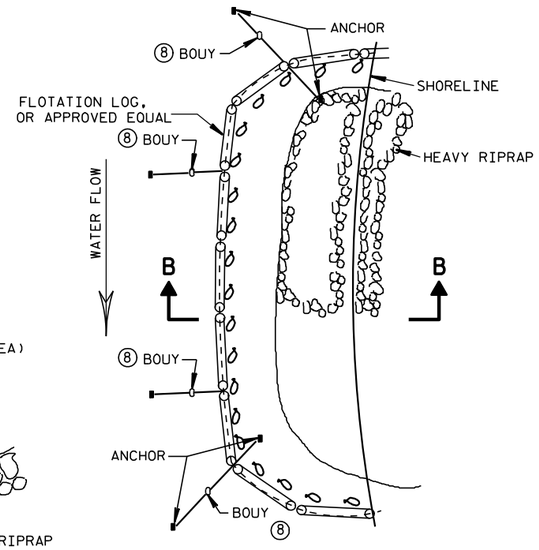
S.D.D. 8 E 9-6

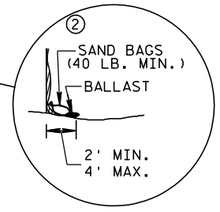
6

S.D.D. 8 E 9-6

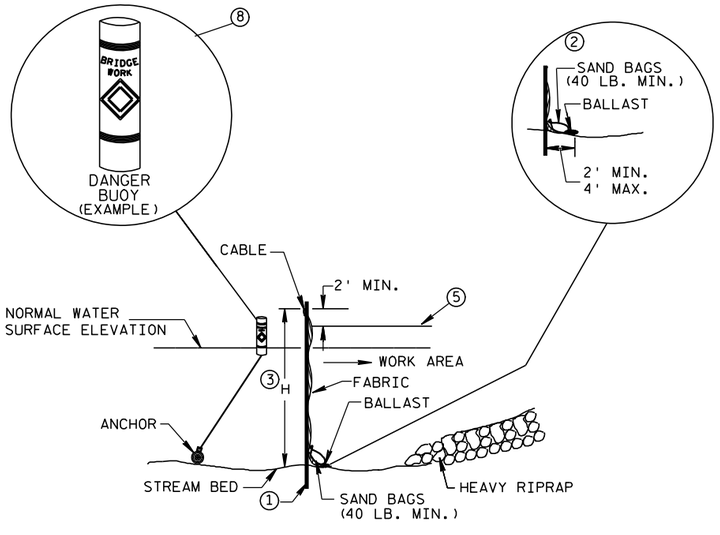


SECTION B-B

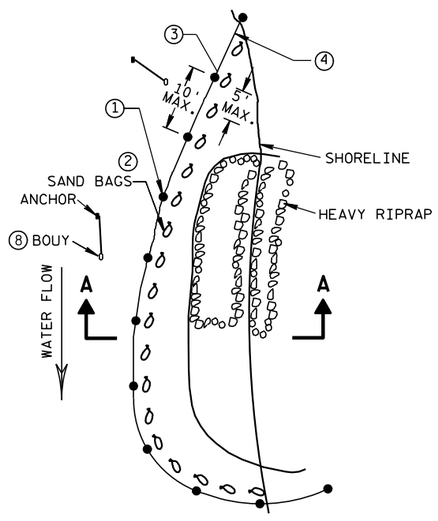




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

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.

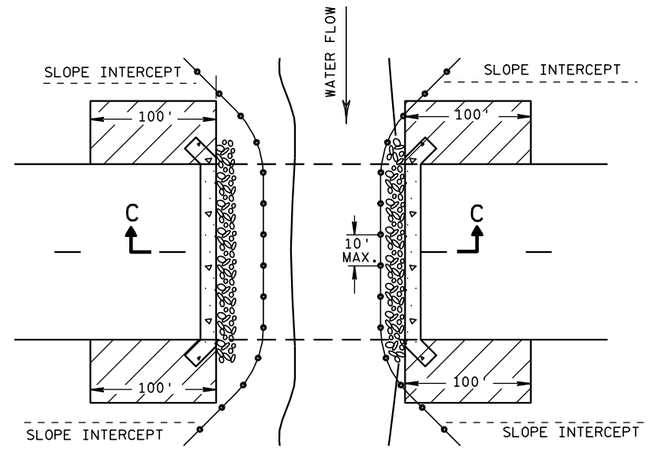
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

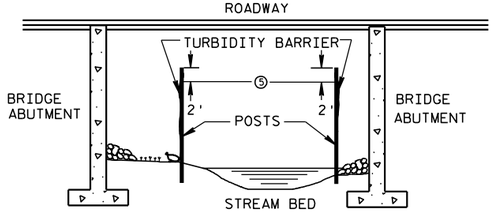
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

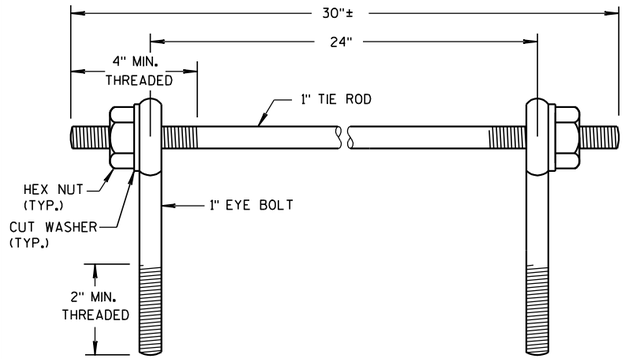
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

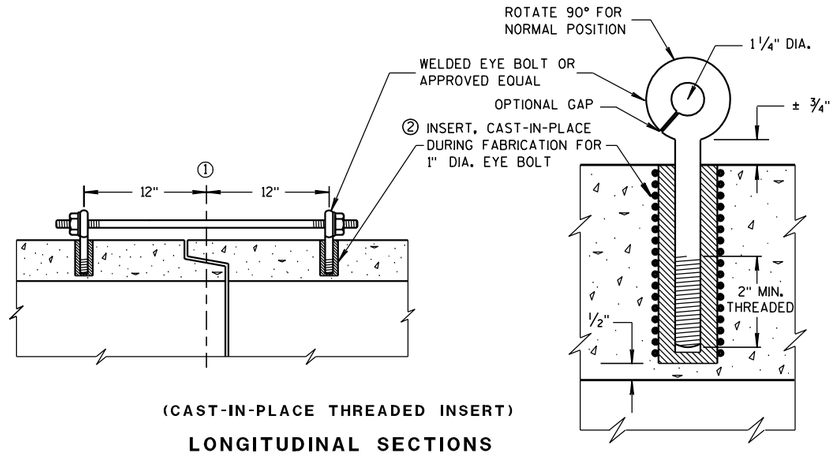
S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

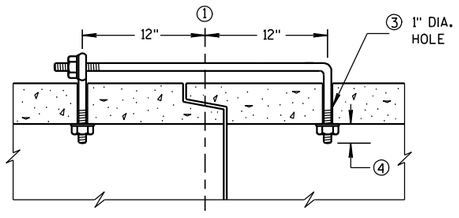
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

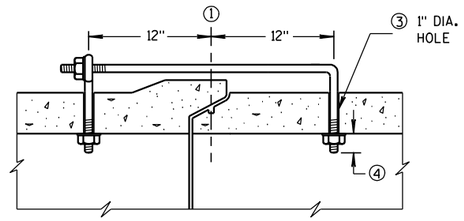
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

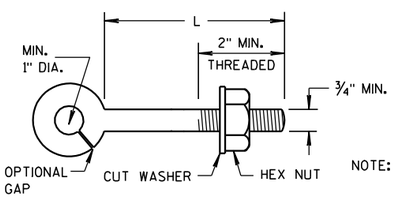


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

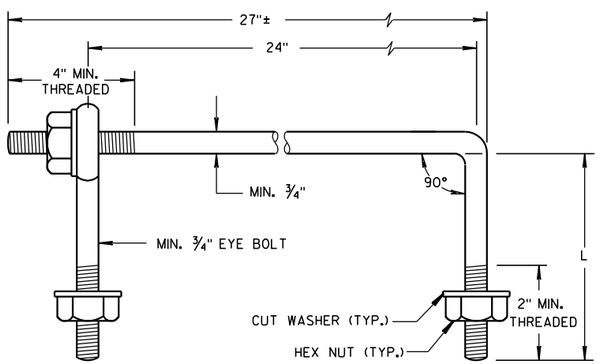
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

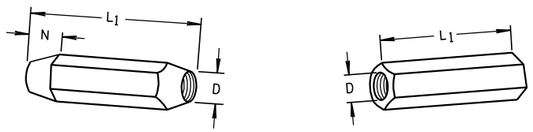
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

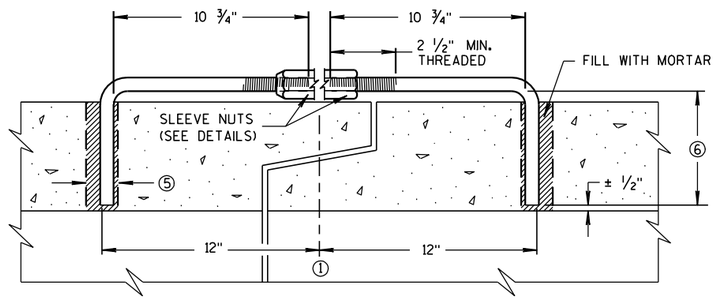
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

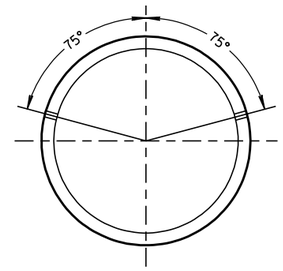
SLEEVE NUTS



LONGITUDINAL SECTION

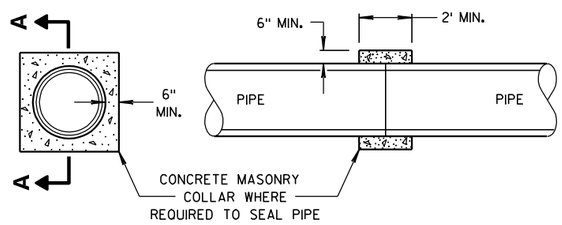
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

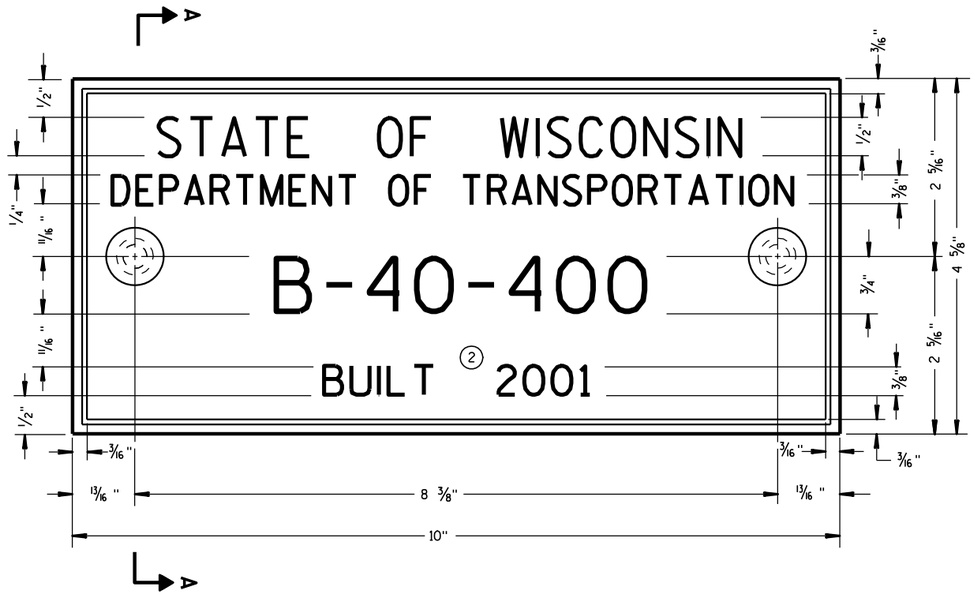
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 F 4-7

6

S.D.D. 8 F 4-7



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

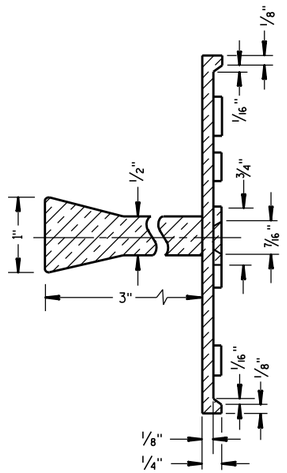
GENERAL NOTES

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

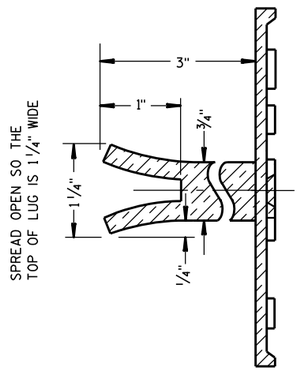
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

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



SECTION A-A



ALTERNATE LUG

FOR MULTI-UNIT STRUCTURES LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

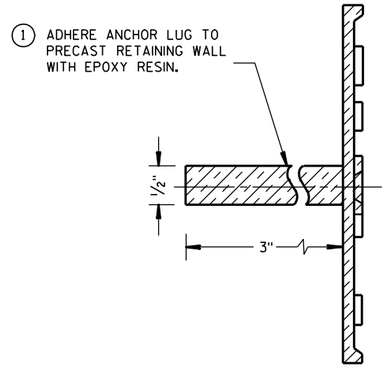
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

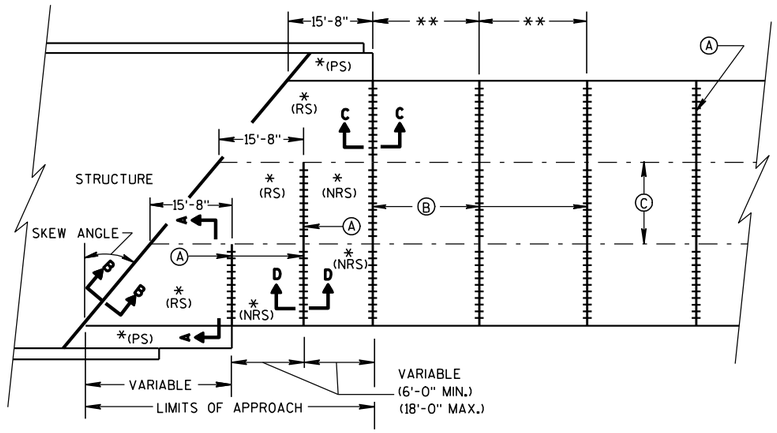
FHWA

6

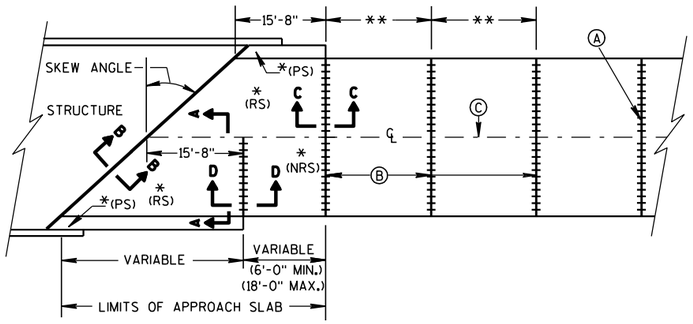
S.D.D. 12 A 3-10

6

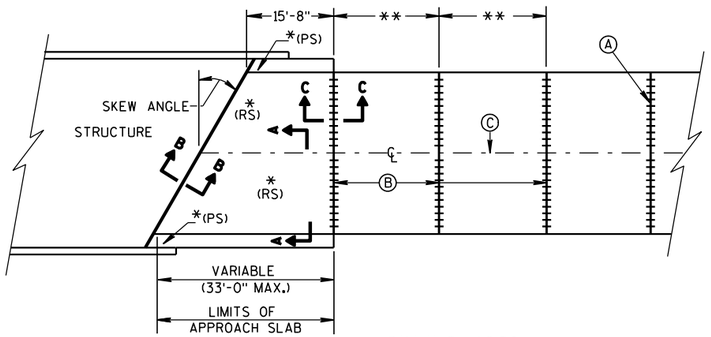
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



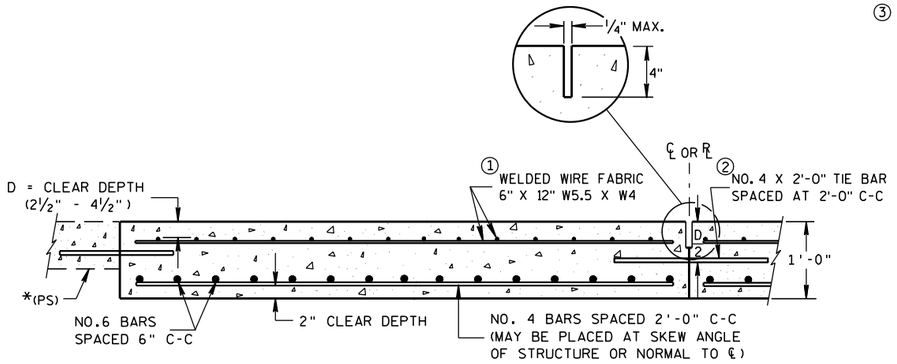
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

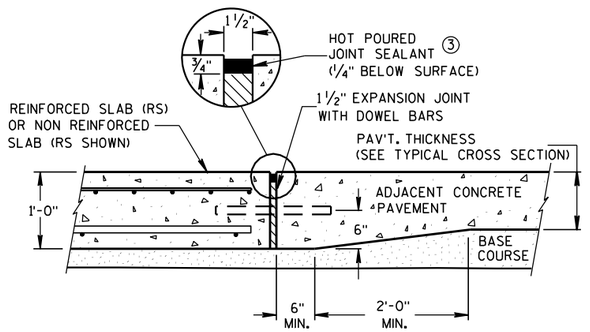
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING
(SEE SDD 13C4, SDD 13C11, & SDD 13C13)

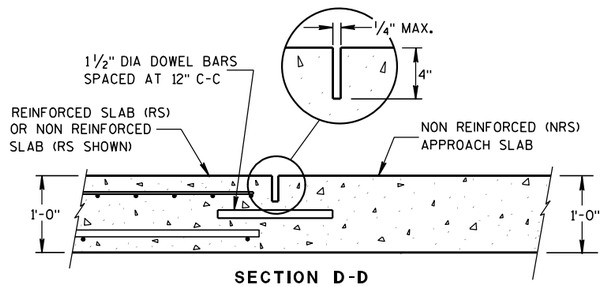
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

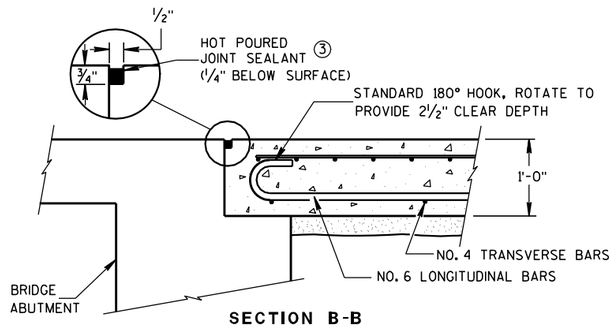
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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.

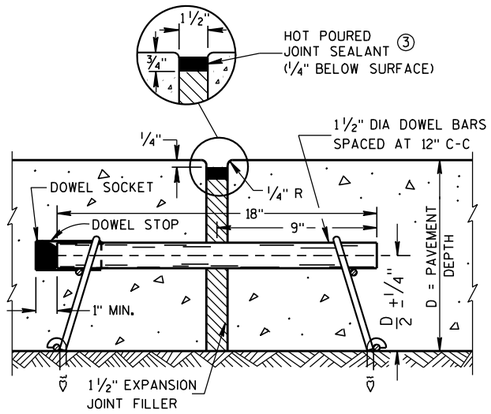
(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

(2) THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

(3) USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



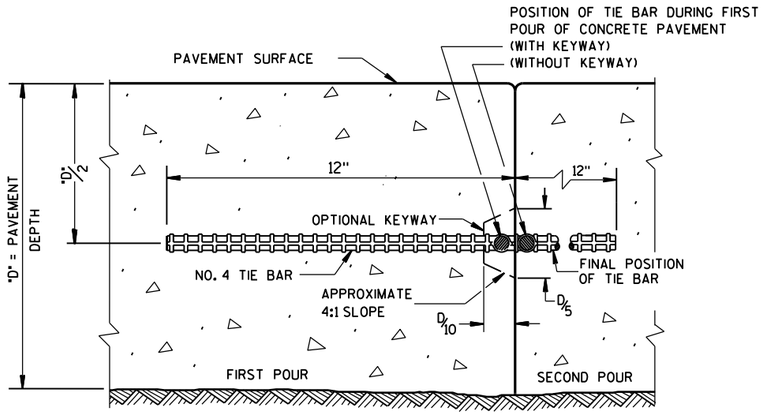
EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

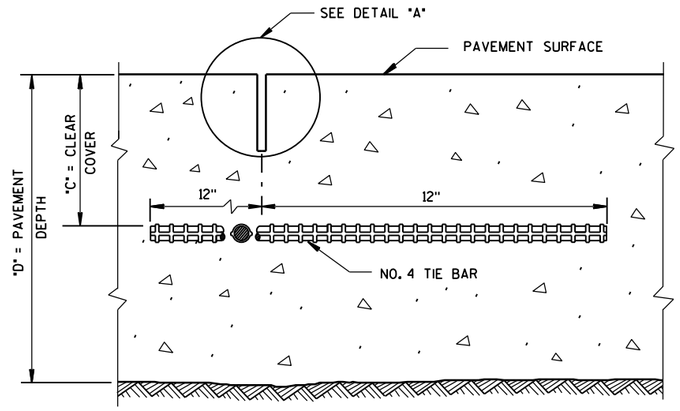
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE — ENGINEER
FHWA

6
S.D.D. 13 B 2-6



CONSTRUCTION JOINT



SAWED JOINT

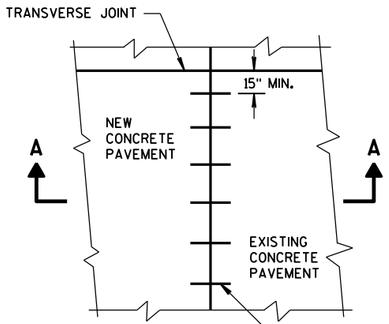
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

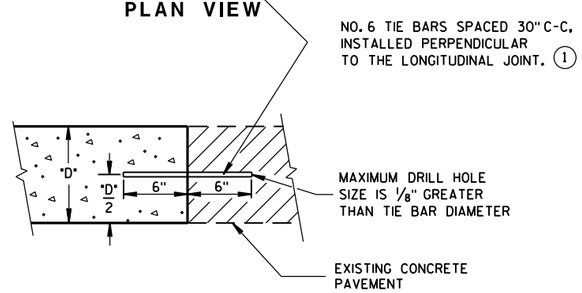
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

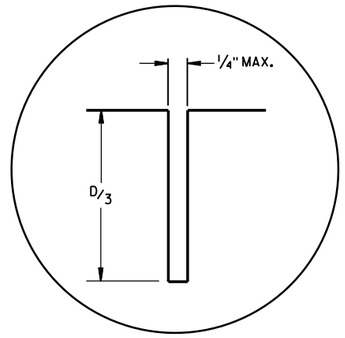


PLAN VIEW



SECTION A-A

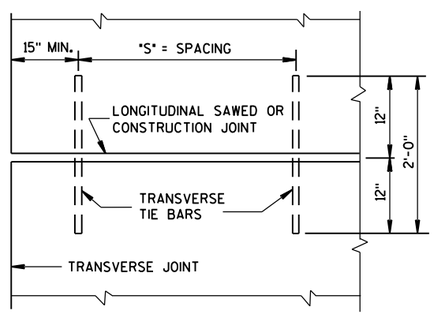
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"

TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 1/2"	3"±1/2"	48"	42"
7, 7 1/2"	3 1/4"±1"	45"	36"
8, 8 1/2"	3 3/4"±1"	39"	30"
9, 9 1/2"	4 1/4"±1"	33"	27"
10, 10 1/2"	4 3/4"±1"	30"	24"
11, 11 1/2"	5 1/4"±1"	27"	21"
12"	5 3/4"±1"	24"	21"



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE

ENGINEER

FHWA

6

S.D.D. 13 C 1-16

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), 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.

(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(G) ½" 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.

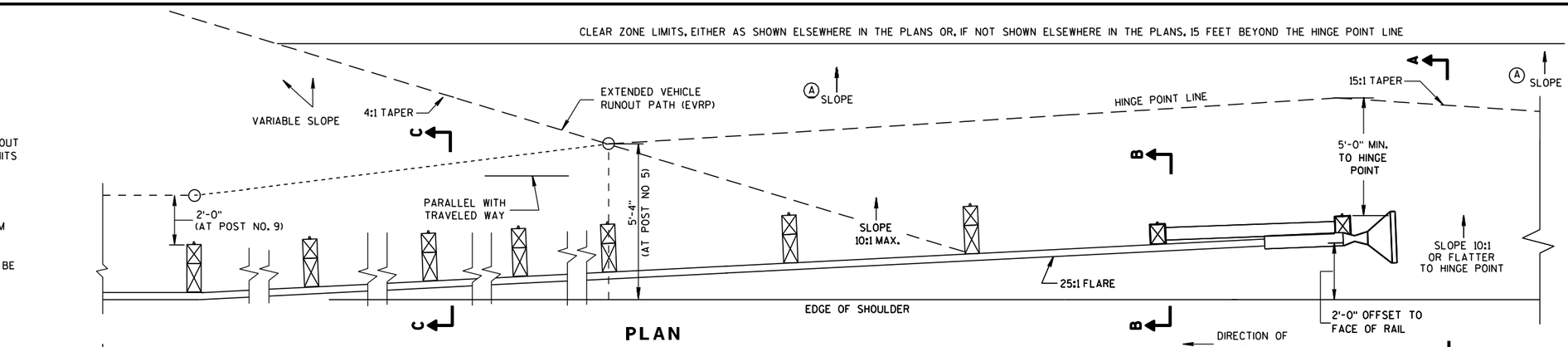
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

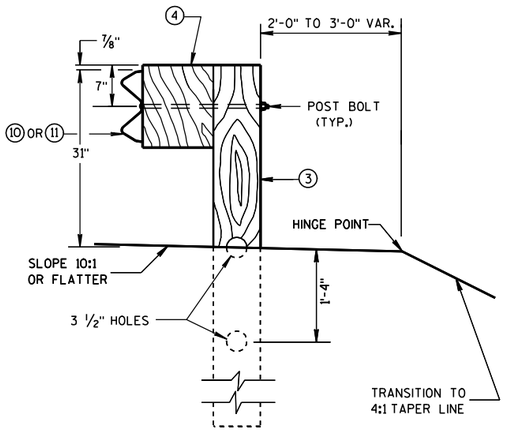
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

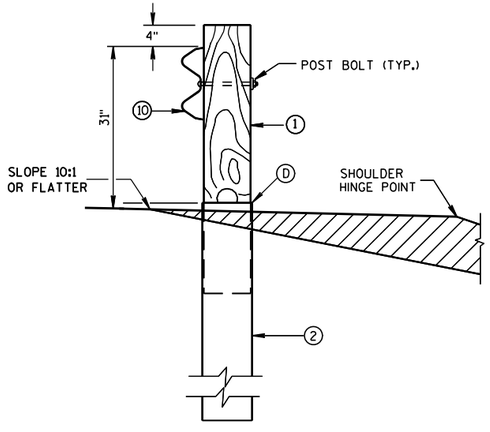
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

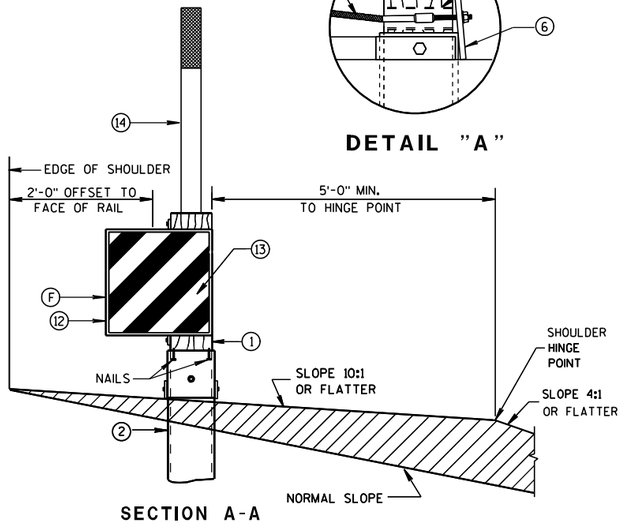




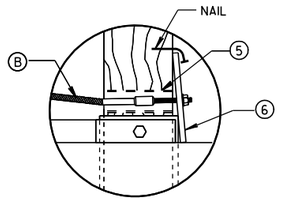
SECTION C-C
TYPICAL AT POST NOS. 3-9



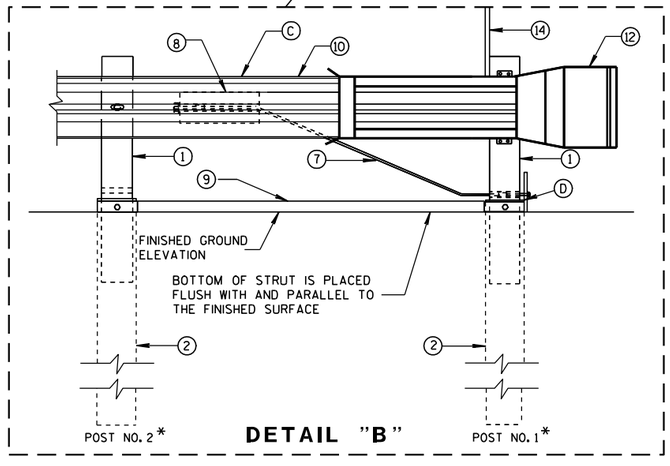
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

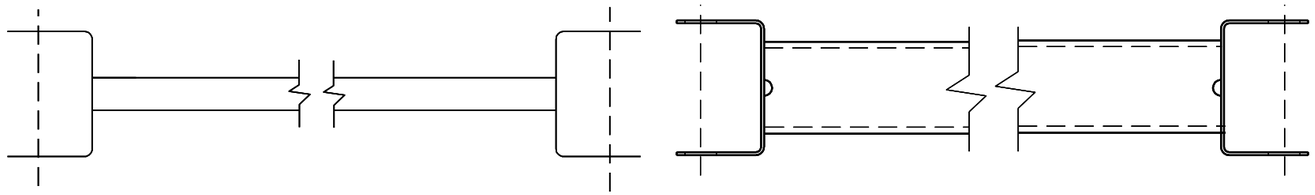
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1a

6

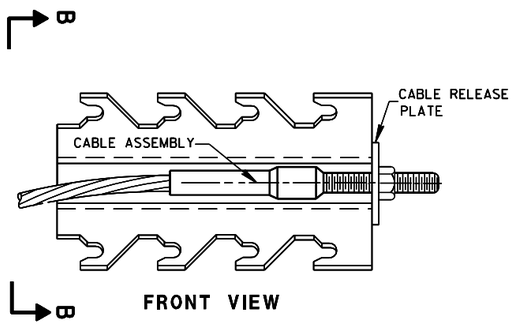
S.D.D. 14 B 44-1a



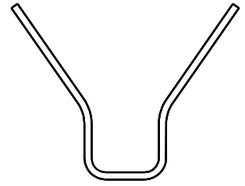
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

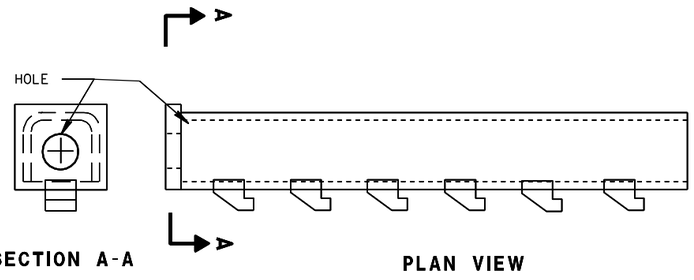
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR 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 H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



FRONT VIEW



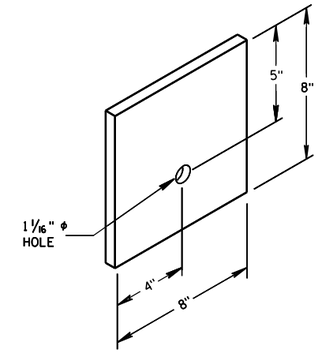
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



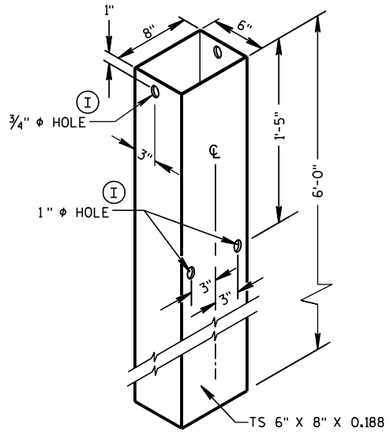
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

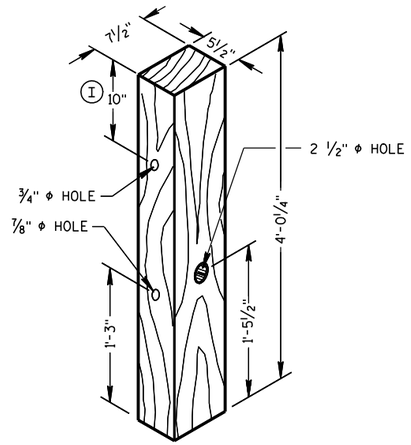
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

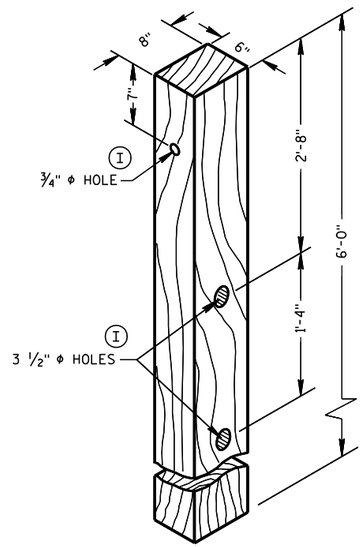


FOUNDATION TUBE (2)



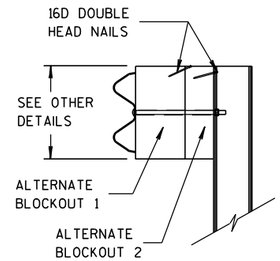
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

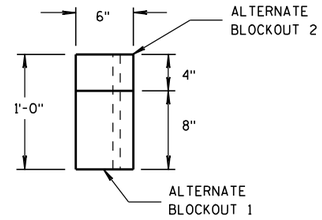


POSTS NUMBER 3-9

WOOD CRT POST (3)

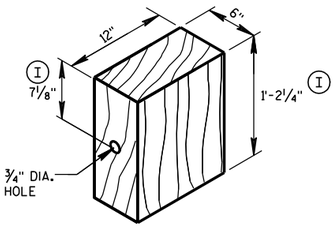


SIDE VIEW



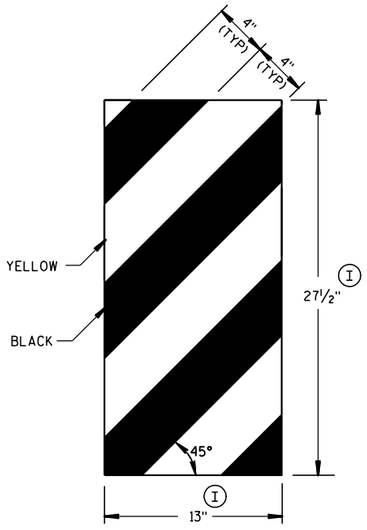
TOP VIEW

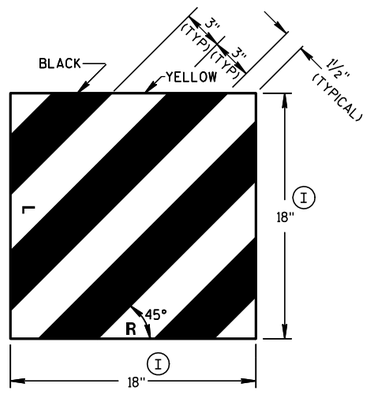
ALTERNATE WOOD BLOCKOUT DETAIL



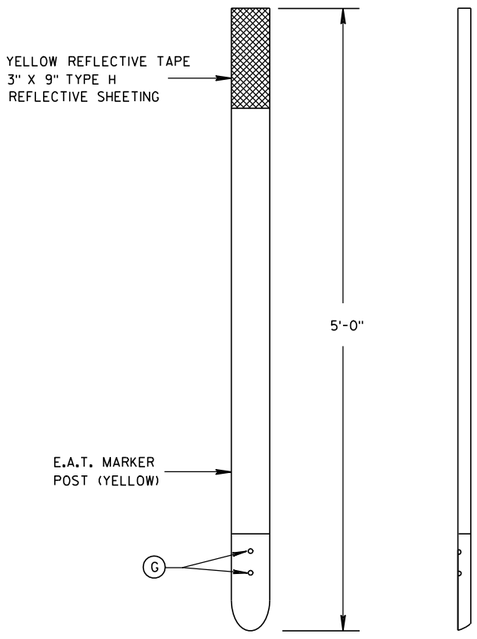
WOOD BLOCKOUT (4)

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





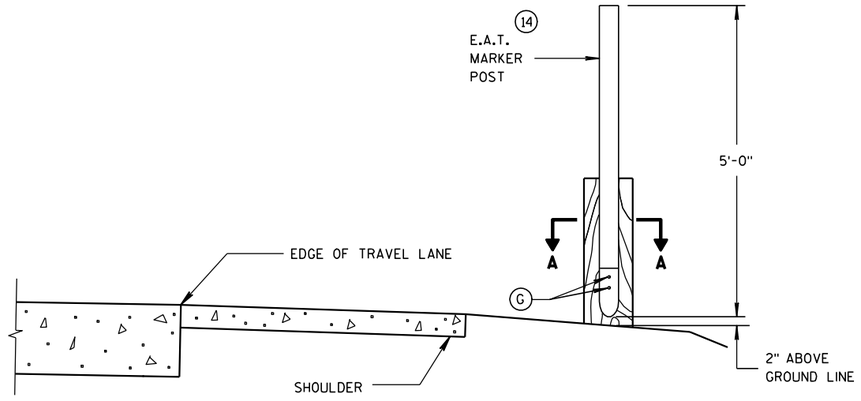
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

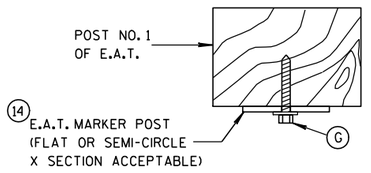
SIDE VIEW

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

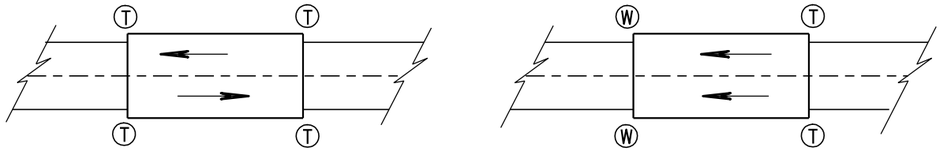
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-1c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

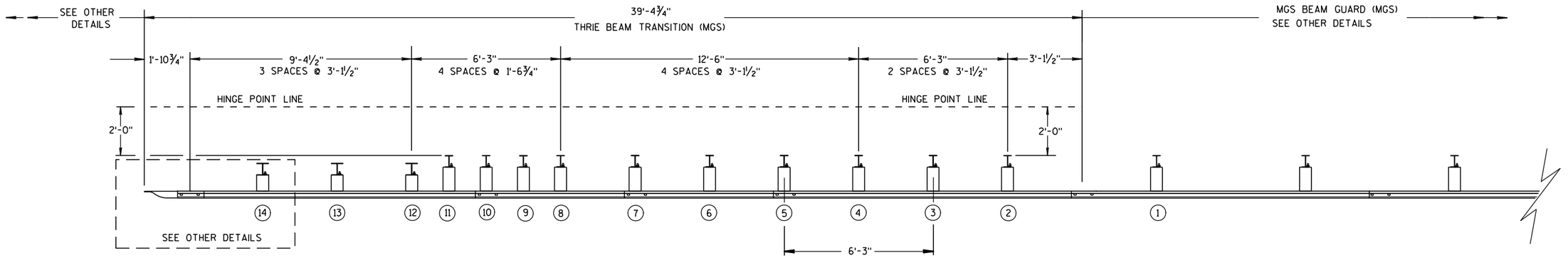
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

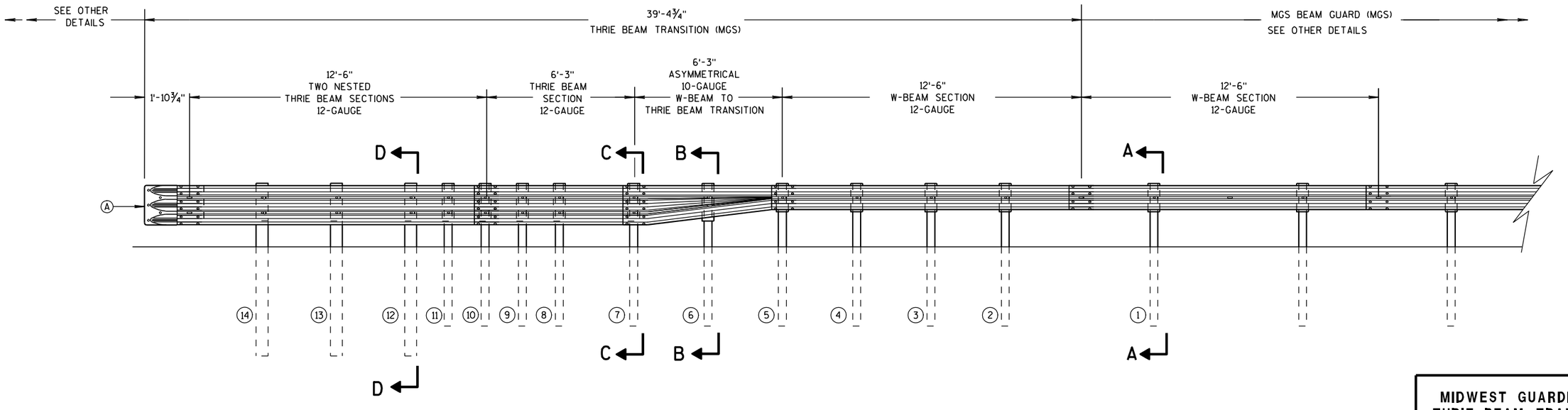
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

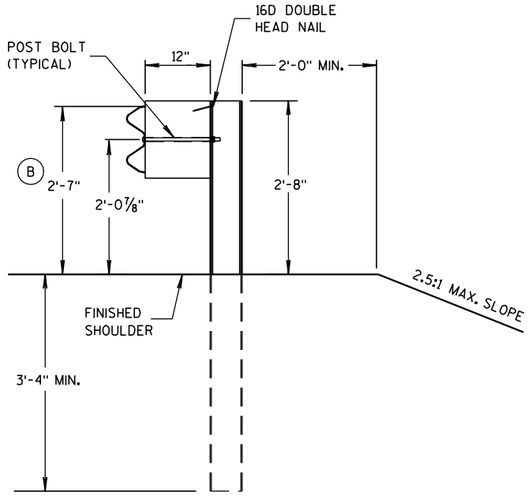
S.D.D. 14 B 45-3a

6

S.D.D. 14 B 45-3a

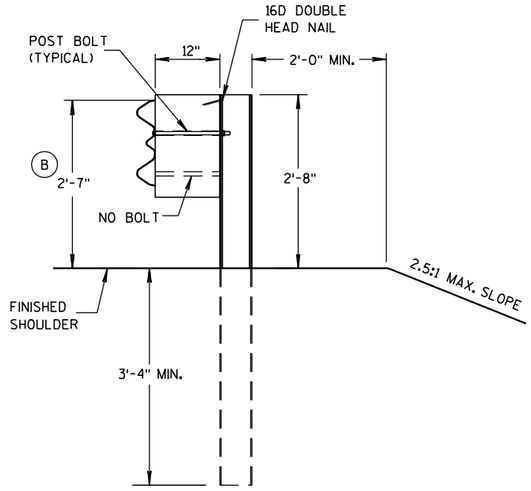
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



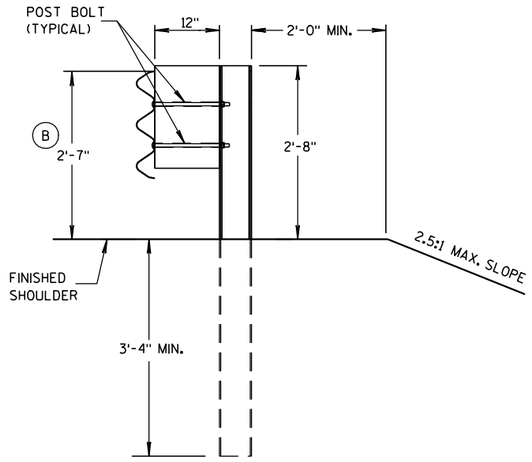
SECTION A-A

POSTS 1-5



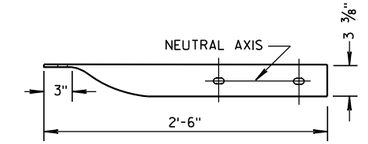
SECTION B-B

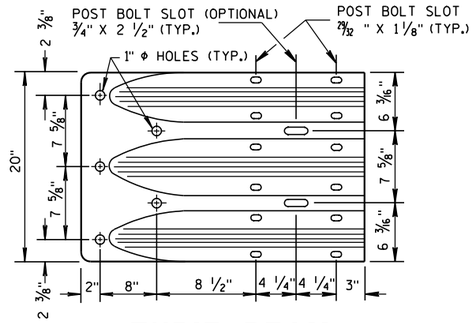
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

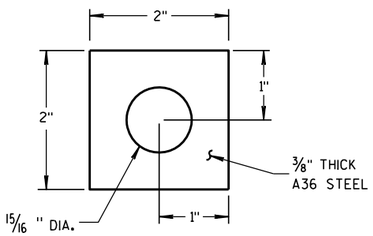
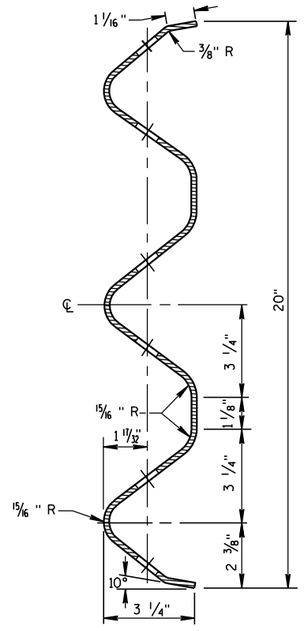
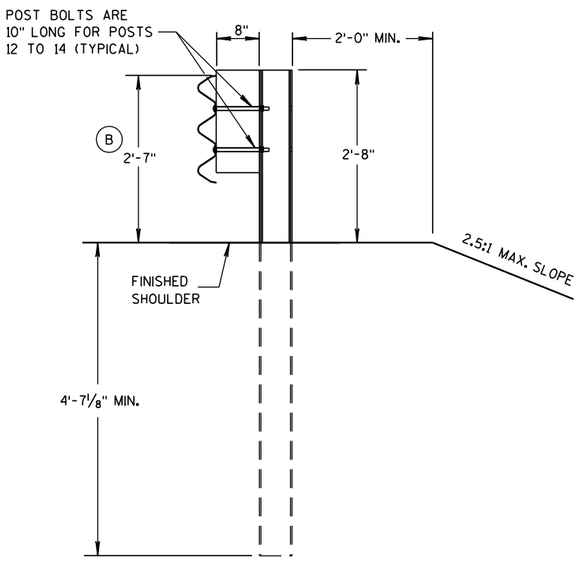


PLATE WASHER DETAIL

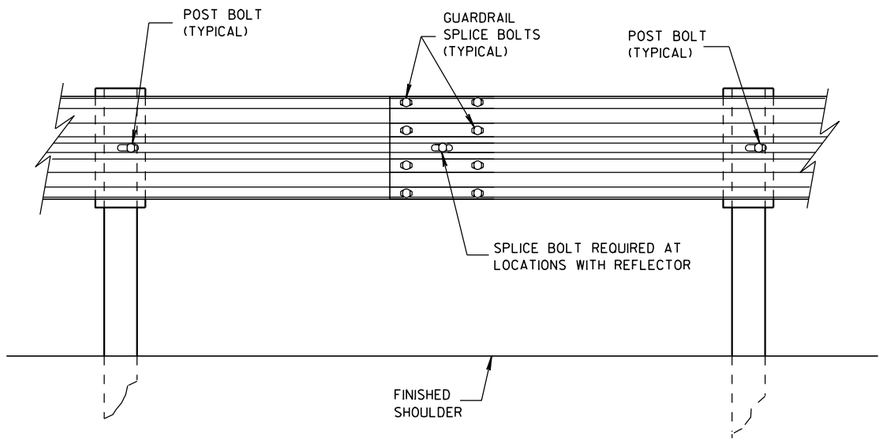


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

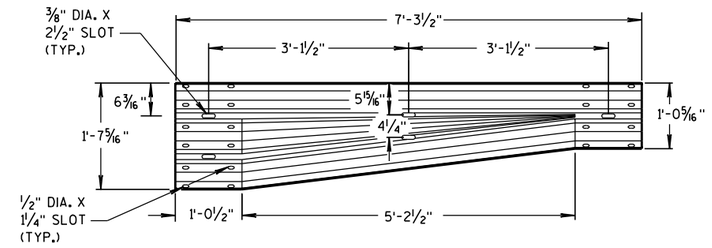
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

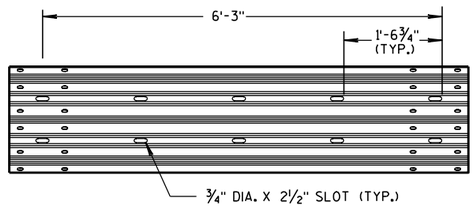
S.D.D. 14 B 45-3b

6

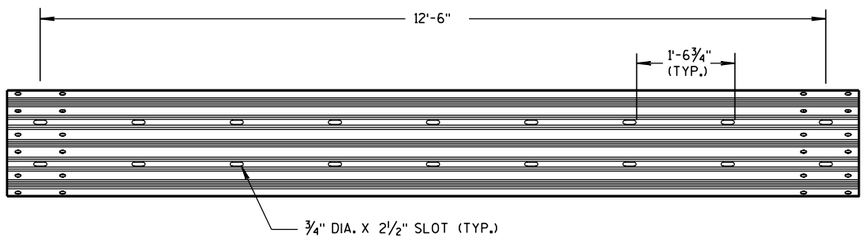
S.D.D. 14 B 45-3b



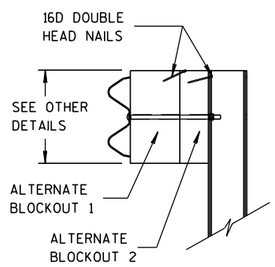
W-BEAM TO THRIE BEAM TRANSITION SECTION



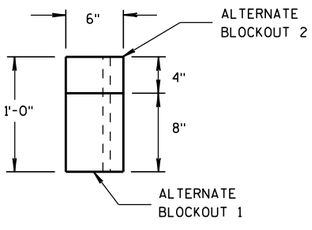
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

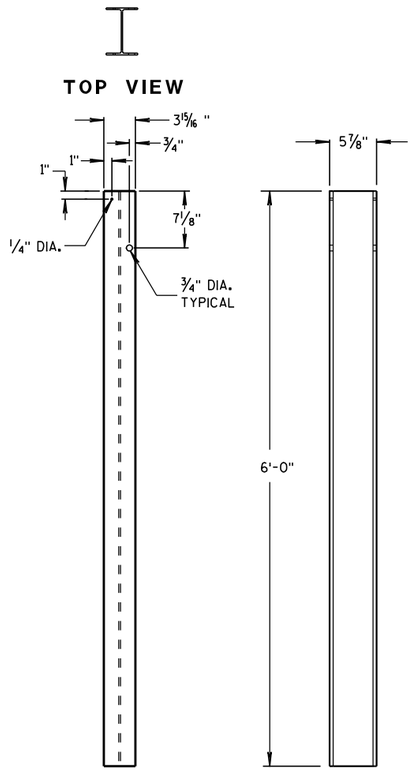


SIDE VIEW



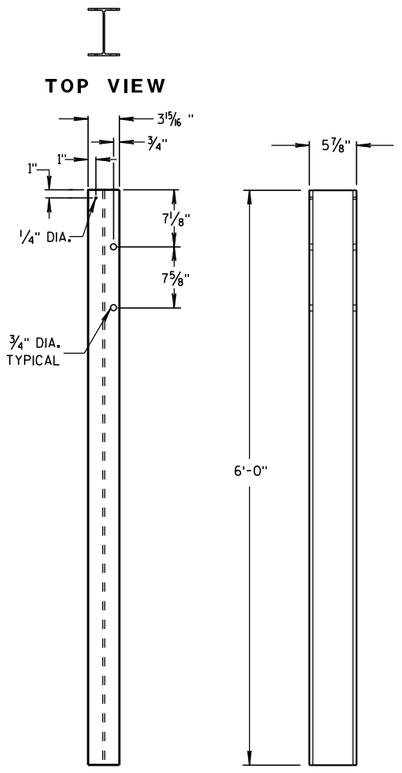
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



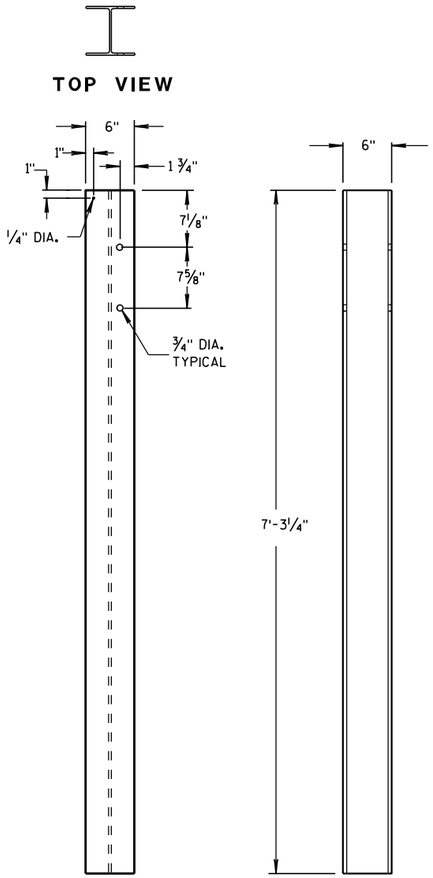
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

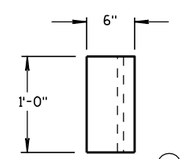
STEEL POSTS 6-11



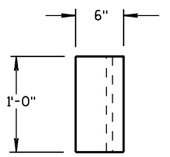
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

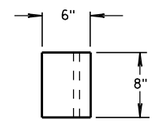
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



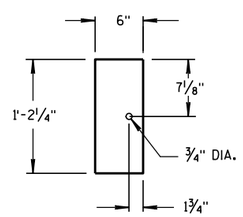
TOP VIEW (1)



TOP VIEW (1)

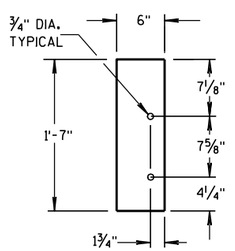


TOP VIEW



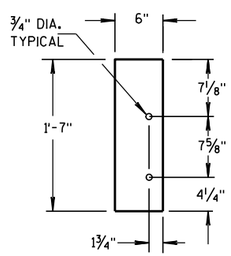
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

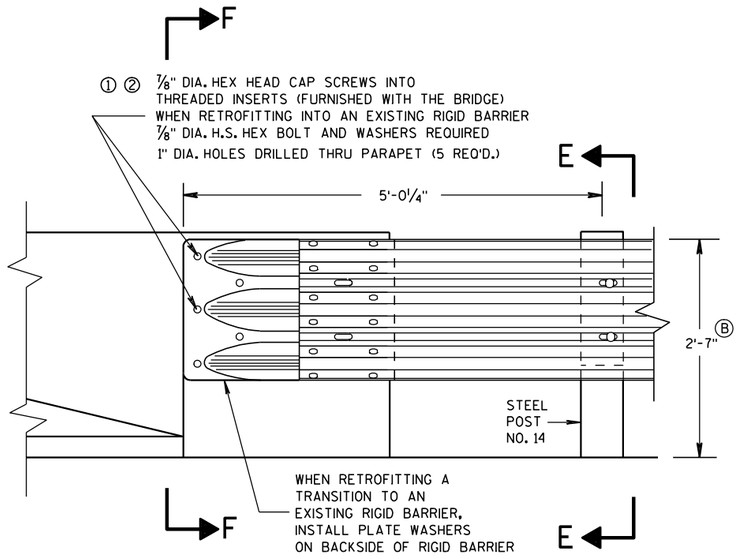
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

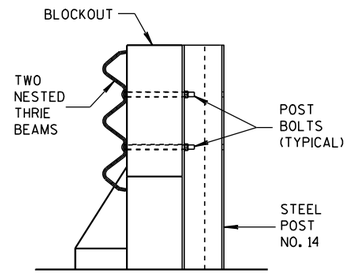
S.D.D. 14 B 45-3c

6

S.D.D. 14 B 45-3c



FRONT VIEW



SECTION E-E

GENERAL NOTES

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

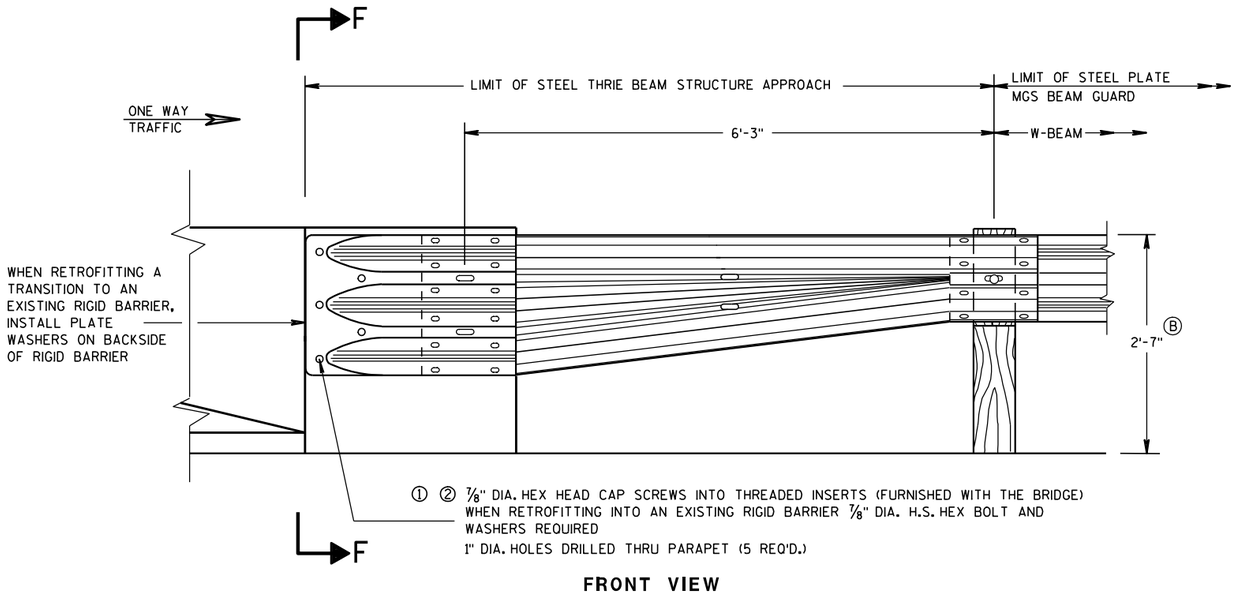
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM 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.

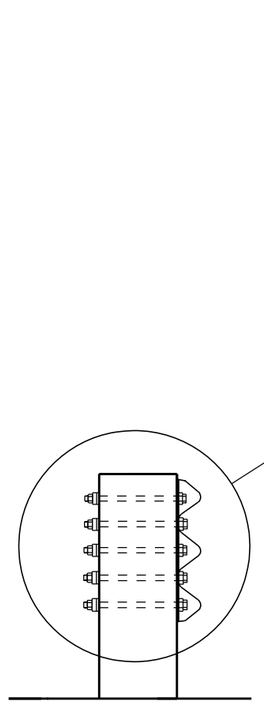
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

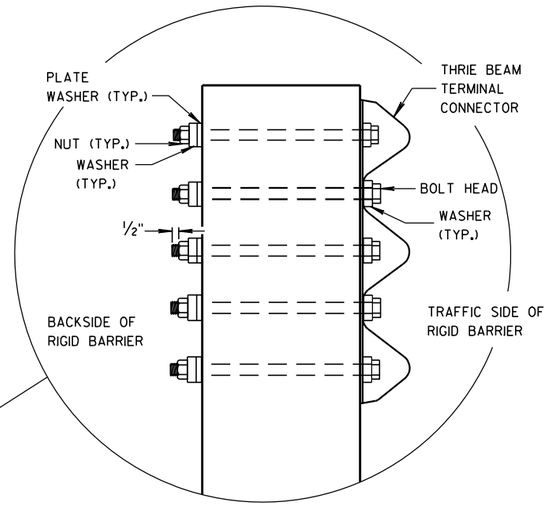
THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW



SECTION F-F



W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER

FHWA

GENERAL NOTES

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

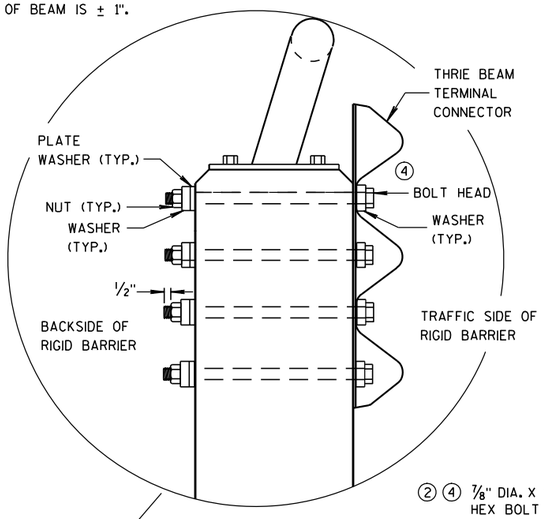
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

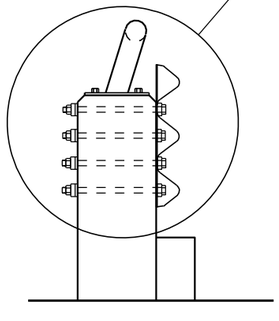
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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.

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

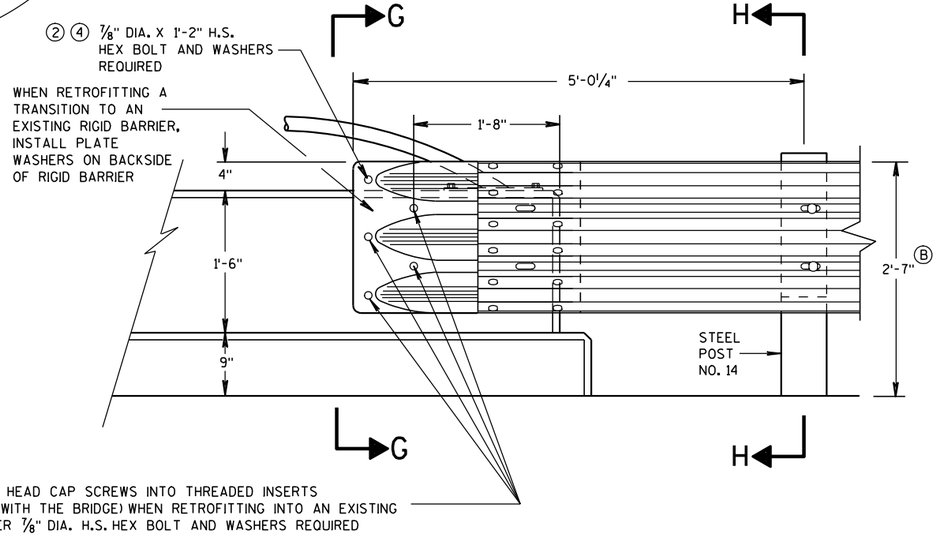
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

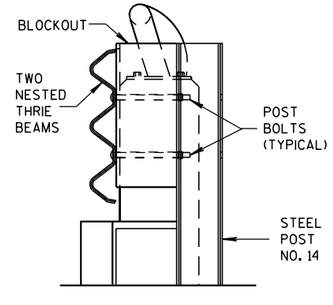




SECTION G-G

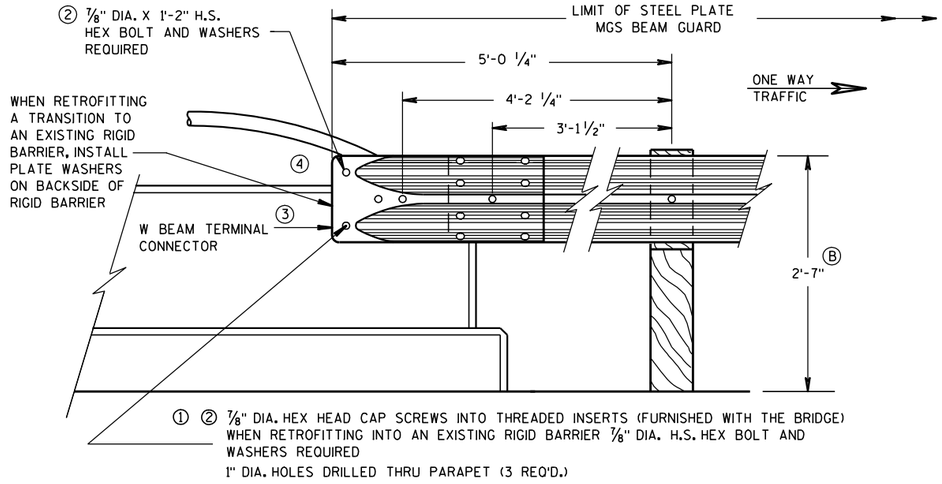


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

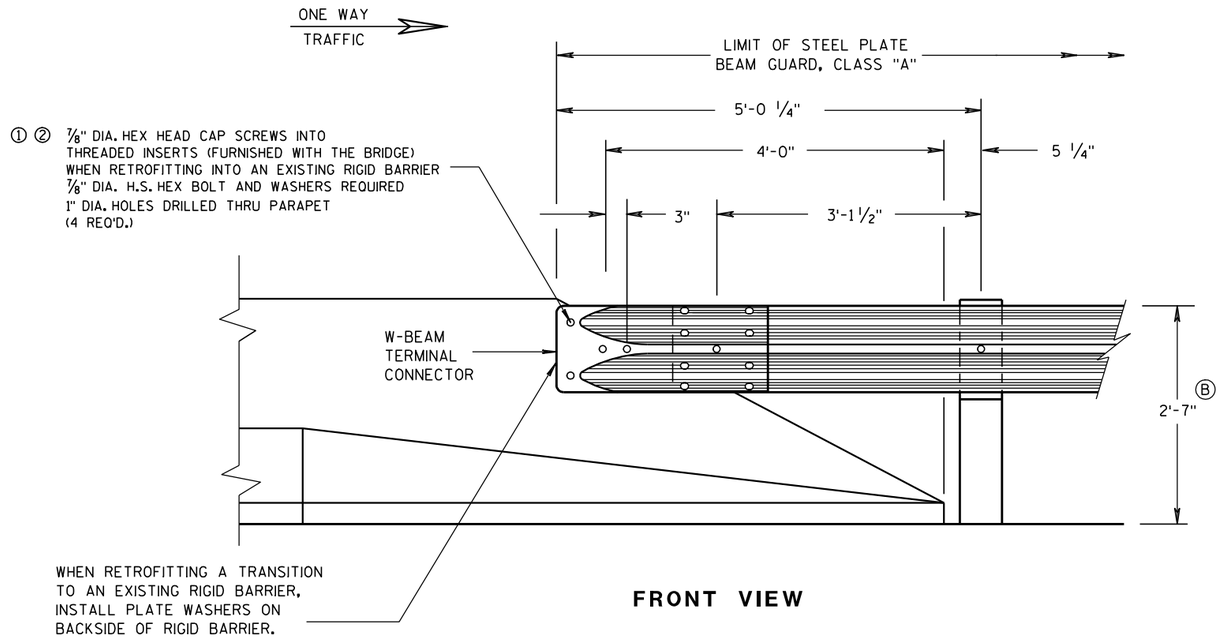
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

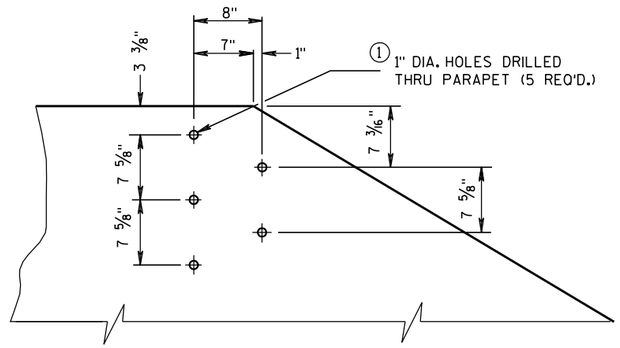
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

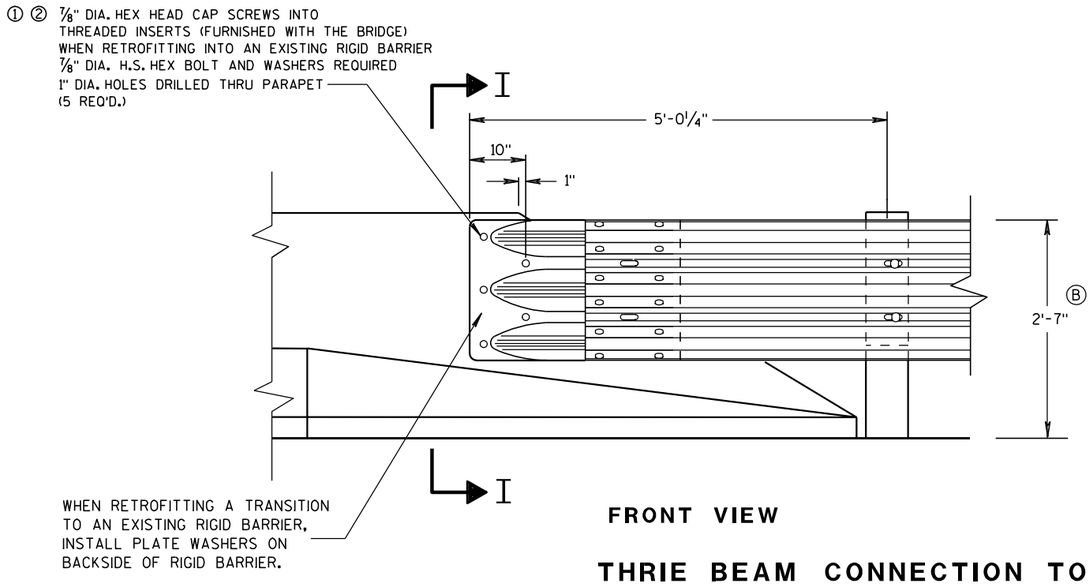
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM 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.

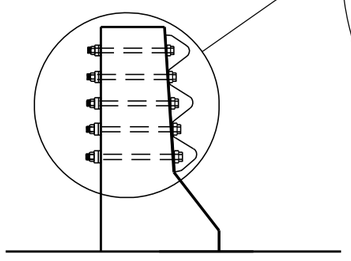
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



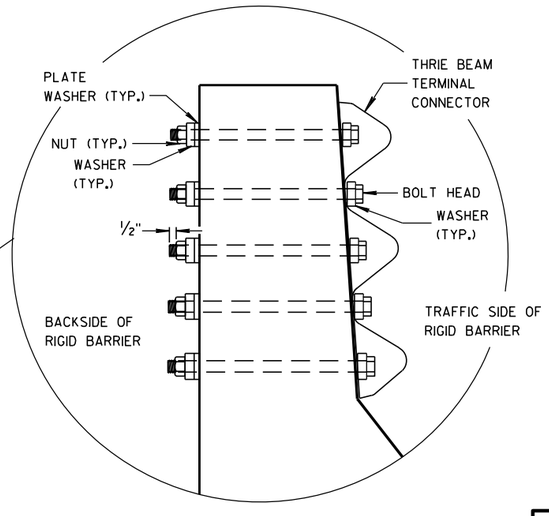
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

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FHWA

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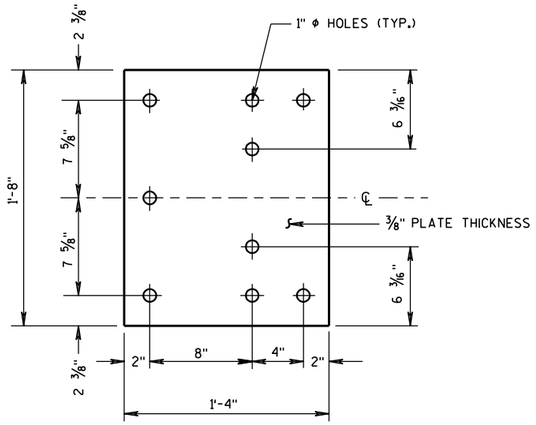
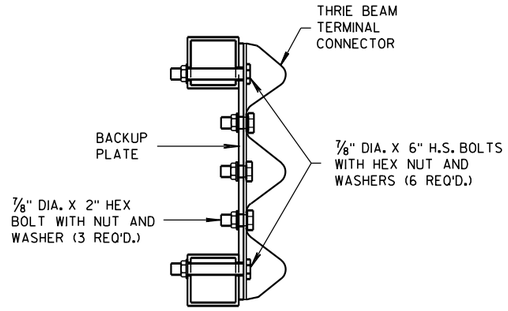
S.D.D. 14 B 45-3f

6

S.D.D. 14 B 45-3f



BACK-UP PLATE DETAIL

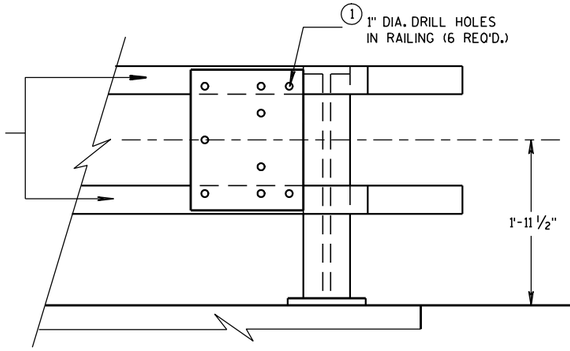


SECTION J-J

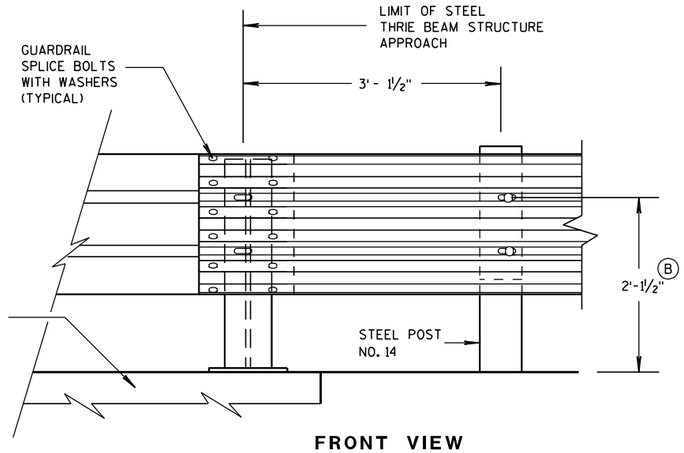
GENERAL NOTES

(1) DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(B) TOLERANCE FOR TOP OF BEAM IS ± 1".

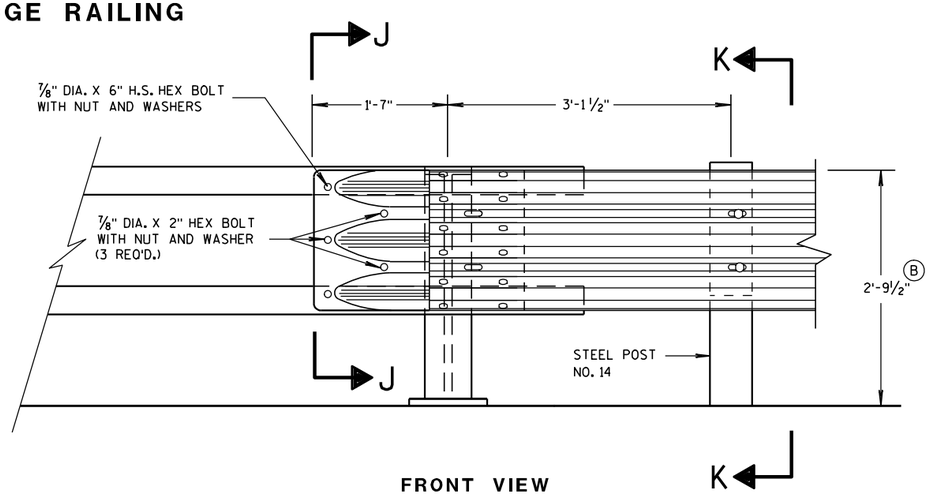


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

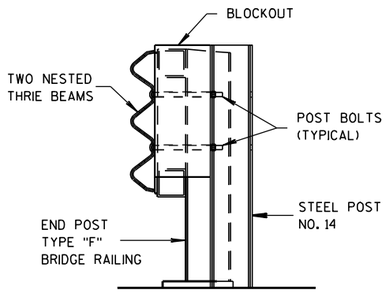


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 14 B 45-3g

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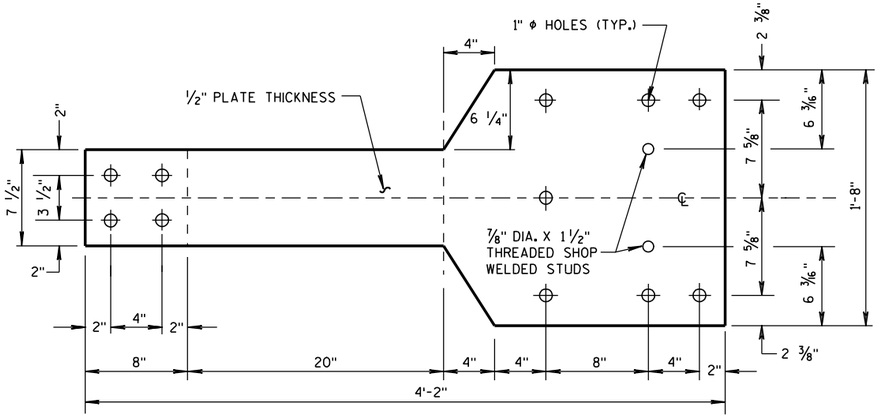
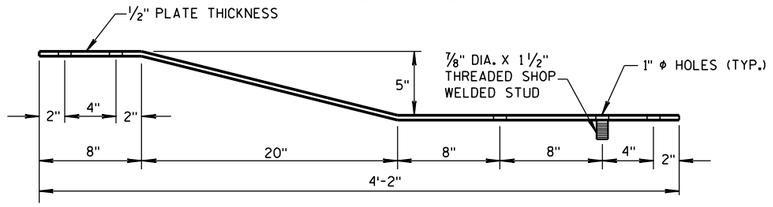
S.D.D. 14 B 45-3g

GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

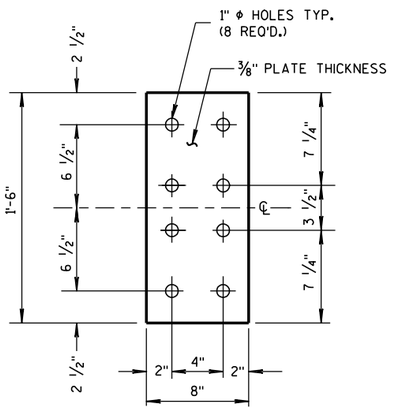


FRONT VIEW



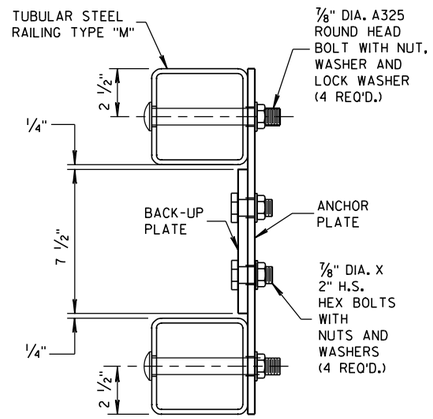
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

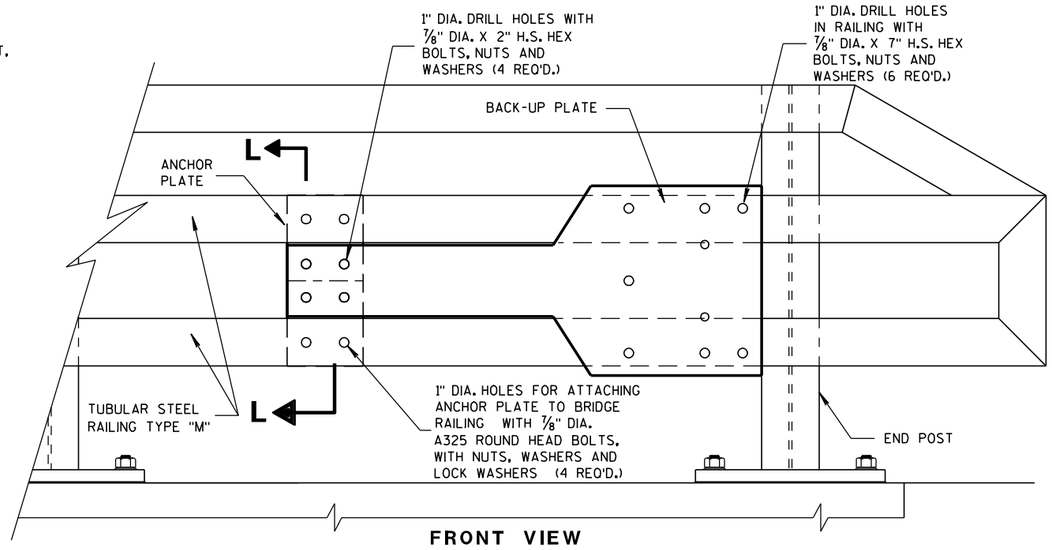


FRONT VIEW

ANCHOR PLATE DETAIL, TYPE "M"

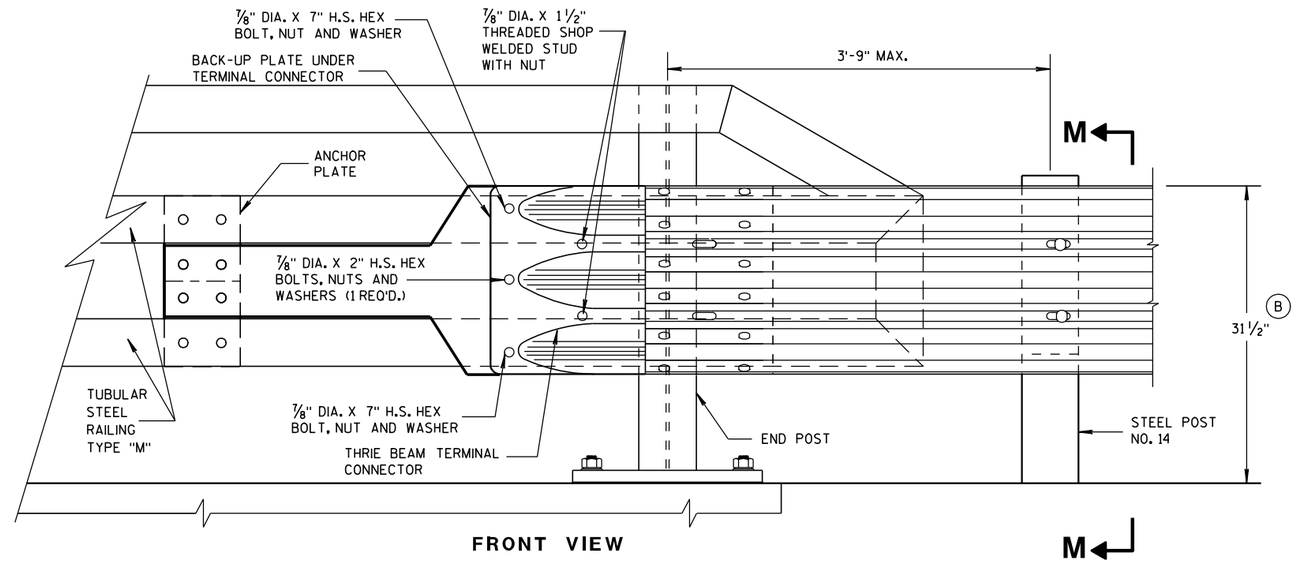


SECTION L-L

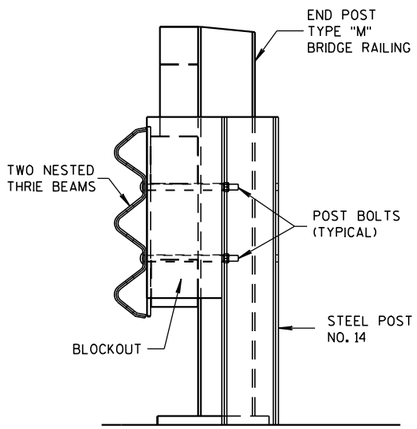


FRONT VIEW

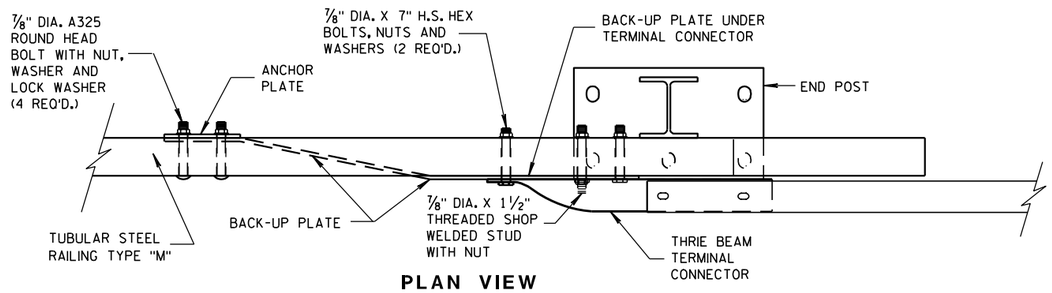
ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



SECTION M-M



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
27
ENT
FHWA

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S.D. 14 B 45-3h

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S.D. 14 B 45-3h

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

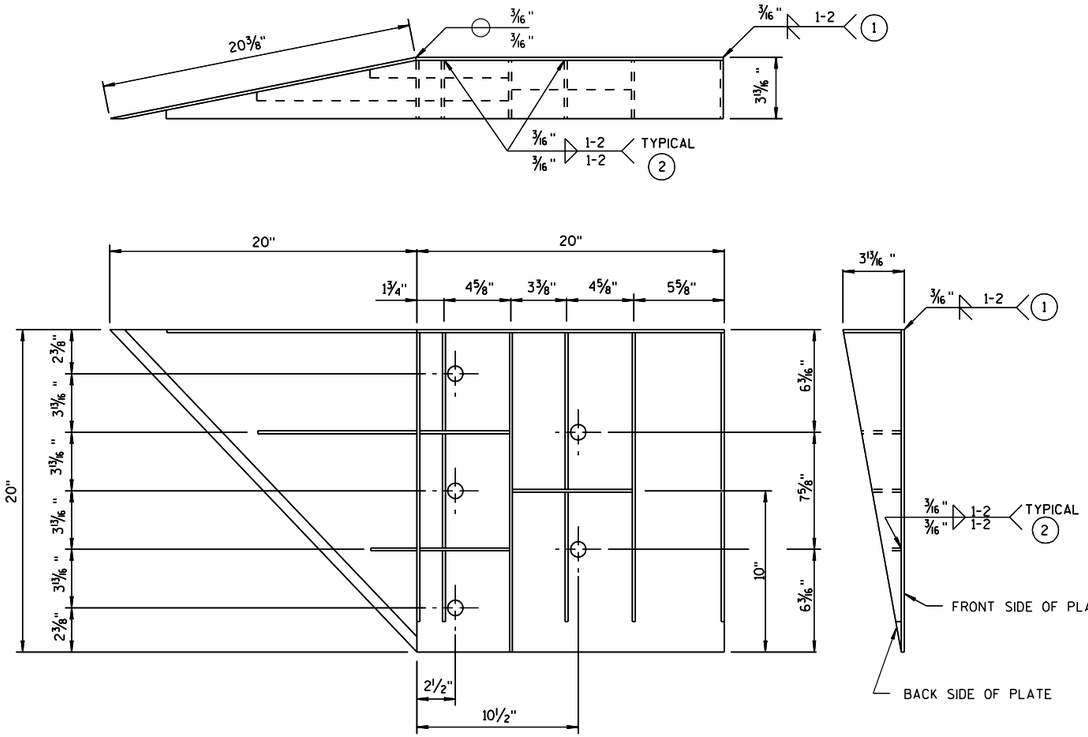
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

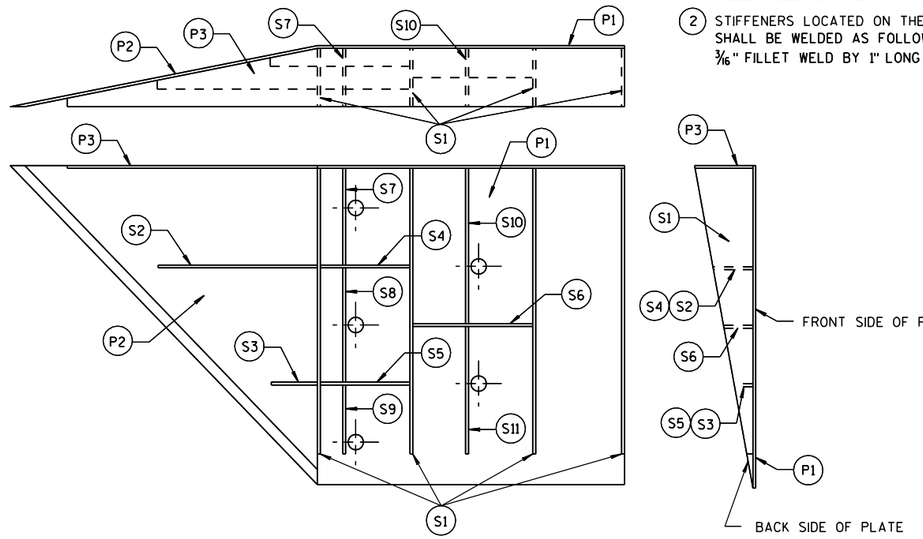


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

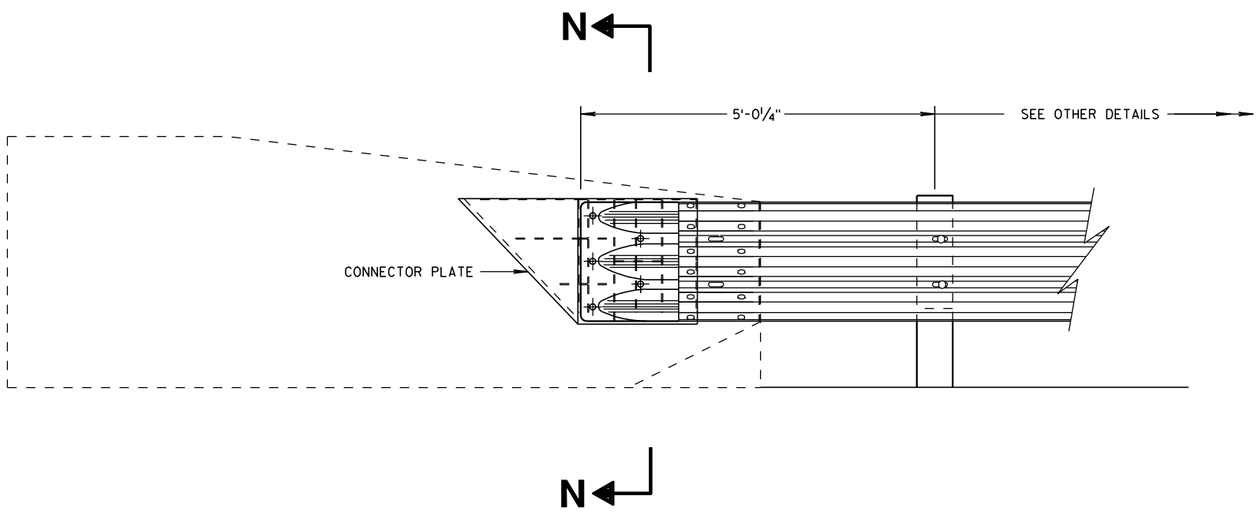
SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

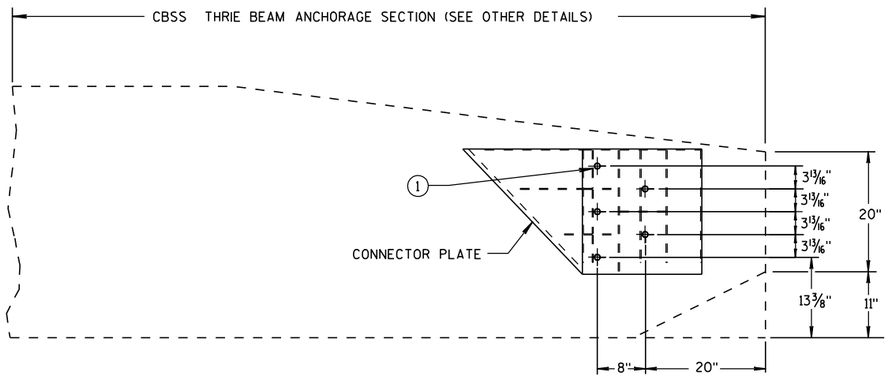
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H ---- — ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 14 B 45-3i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

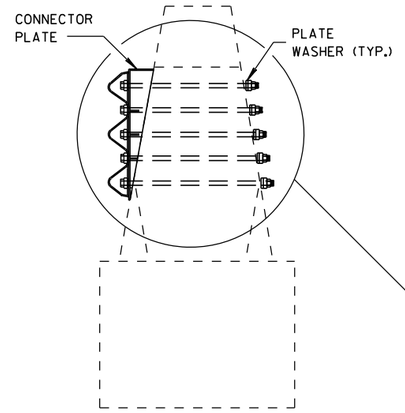


SINGLE SLOPE CONNECTION PLATE PLACEMENT

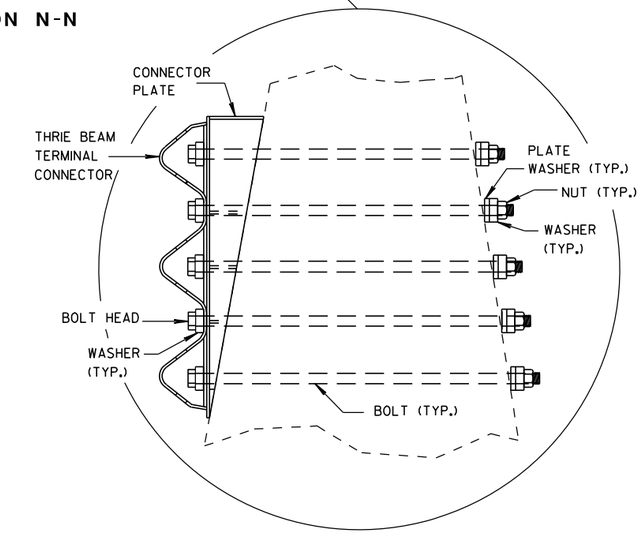
GENERAL NOTES

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

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM 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 ⅝" 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
8/31/2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

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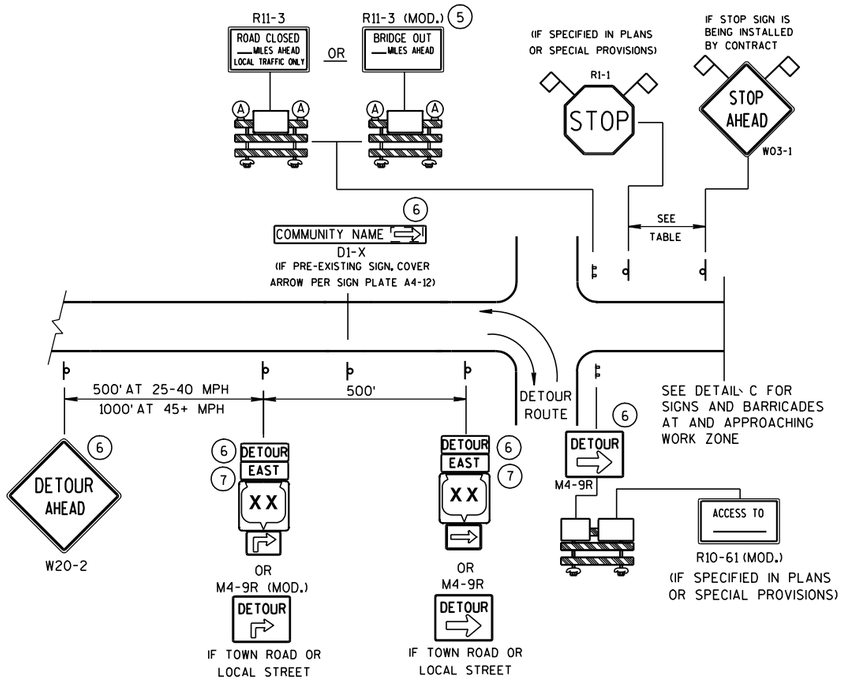
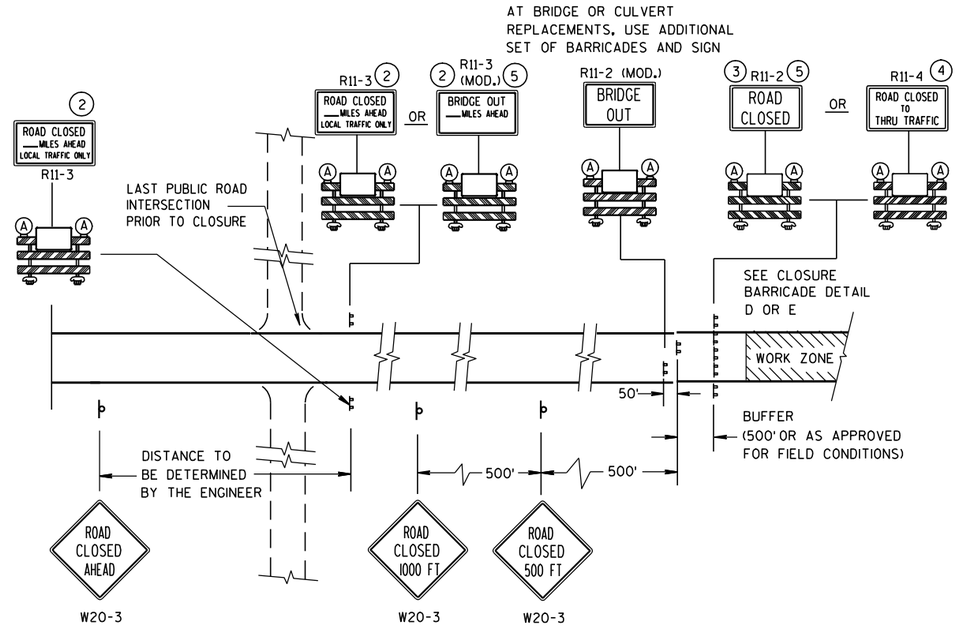
S.D.D. 14 B 45-3j



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

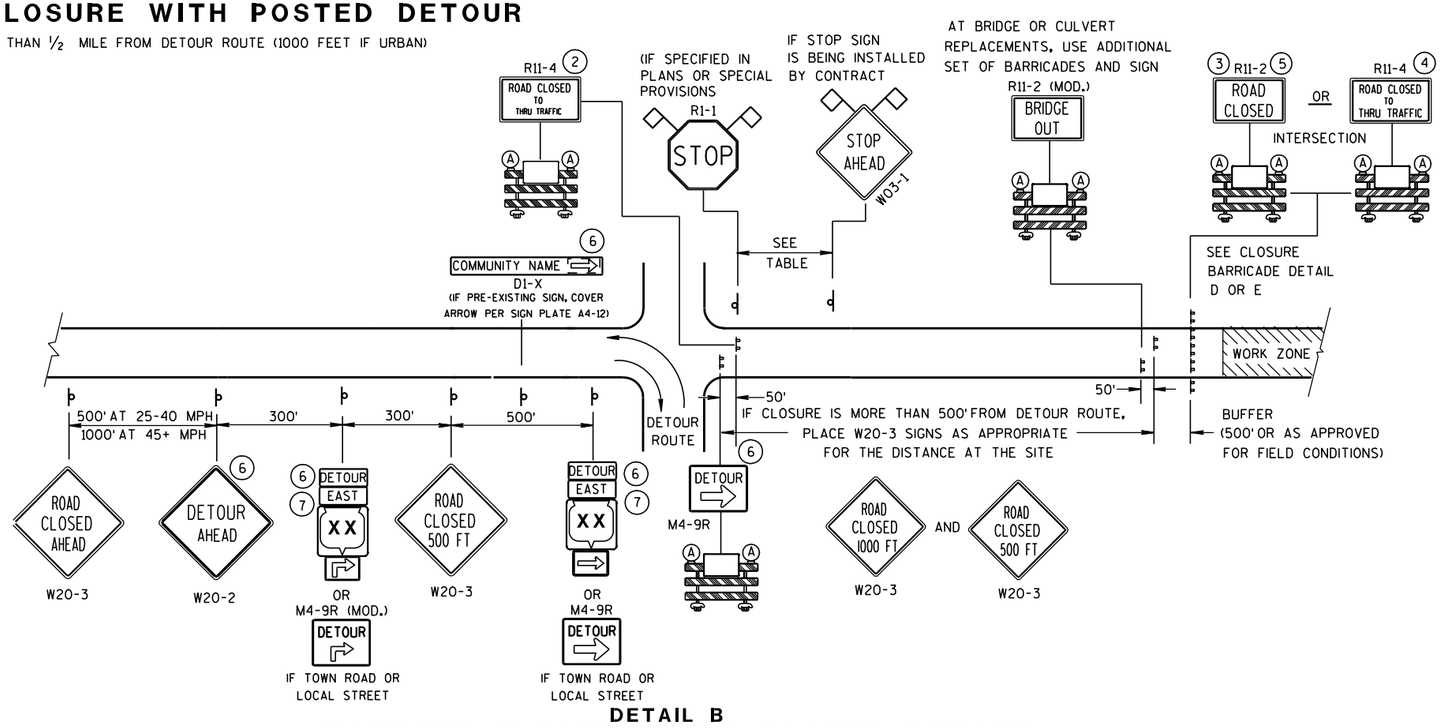


DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

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

SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

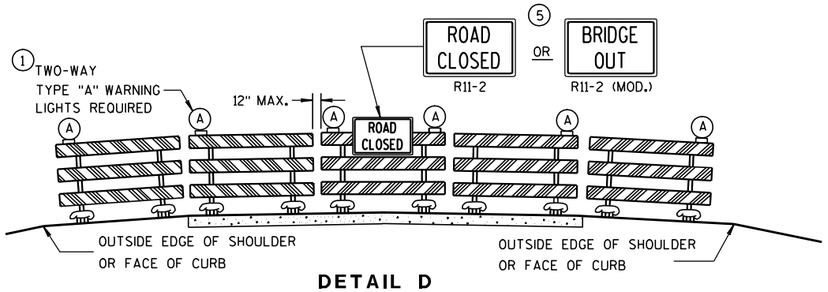
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

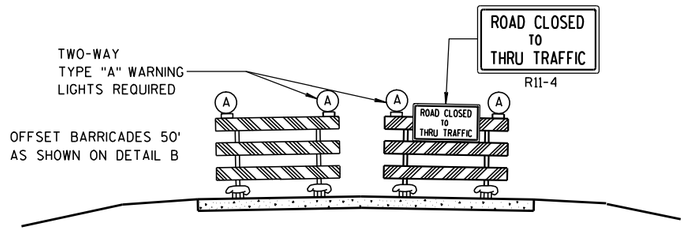
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/16/03 — DATE

/S/ Thomas N. [illegible] — CHIEF SIGNS AND MARKING ENGINEER

FHWA

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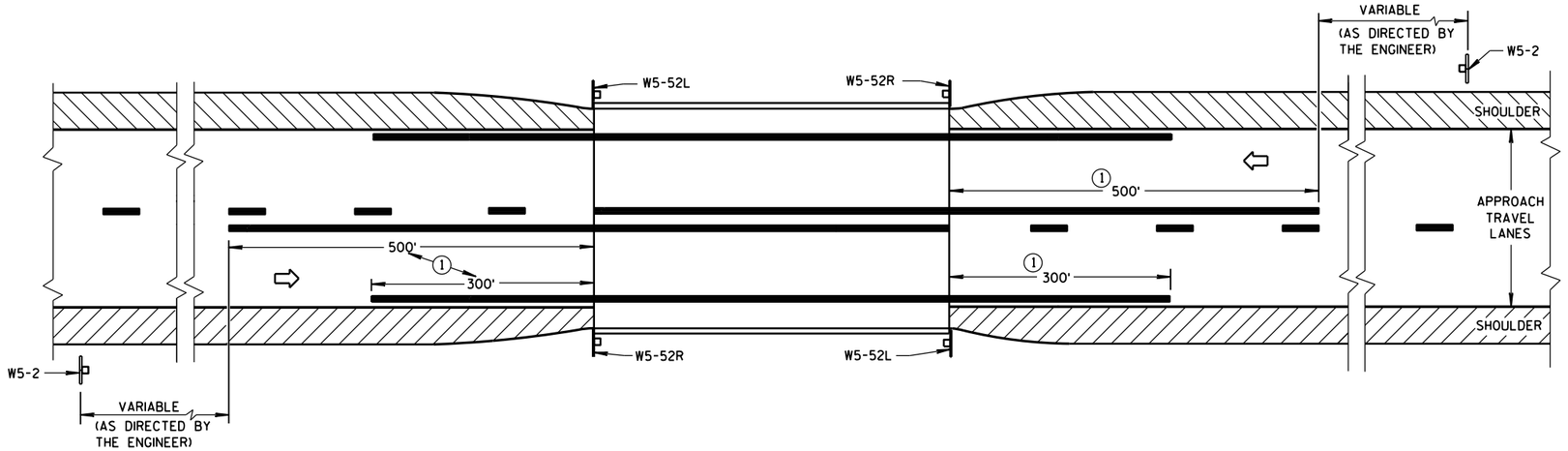
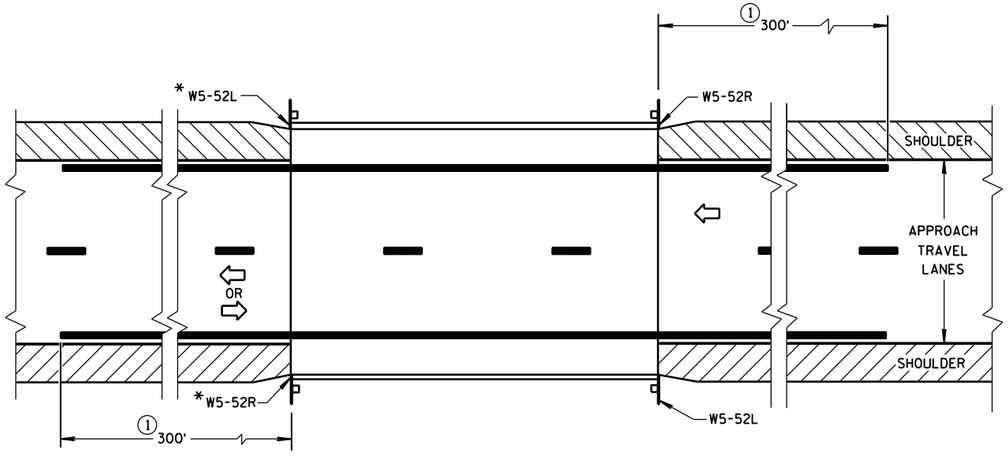
S.D.D. 15 C 2-4b



SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 18 FEET BUT LESS THAN 24 FEET



*OMIT ON ONE-WAY TRAVELLED WAYS

SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.

GENERAL NOTES

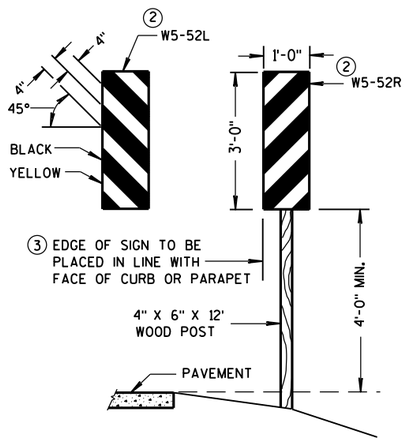
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

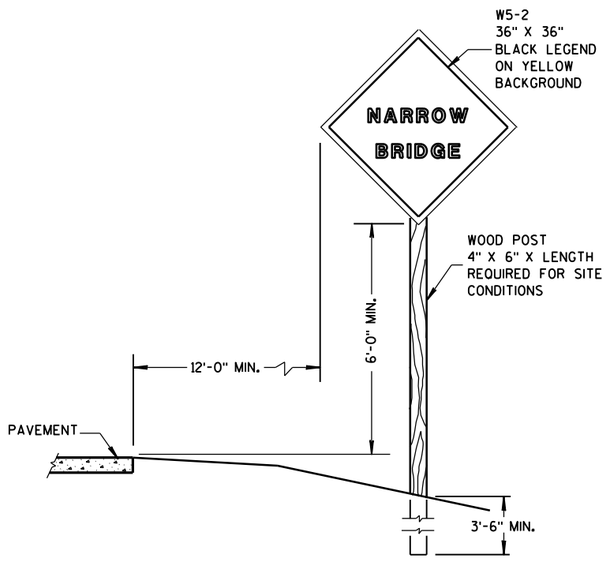
(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.



OBJECT MARKER PLACEMENT



SIGN PLACEMENT

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/4/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 6-6

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

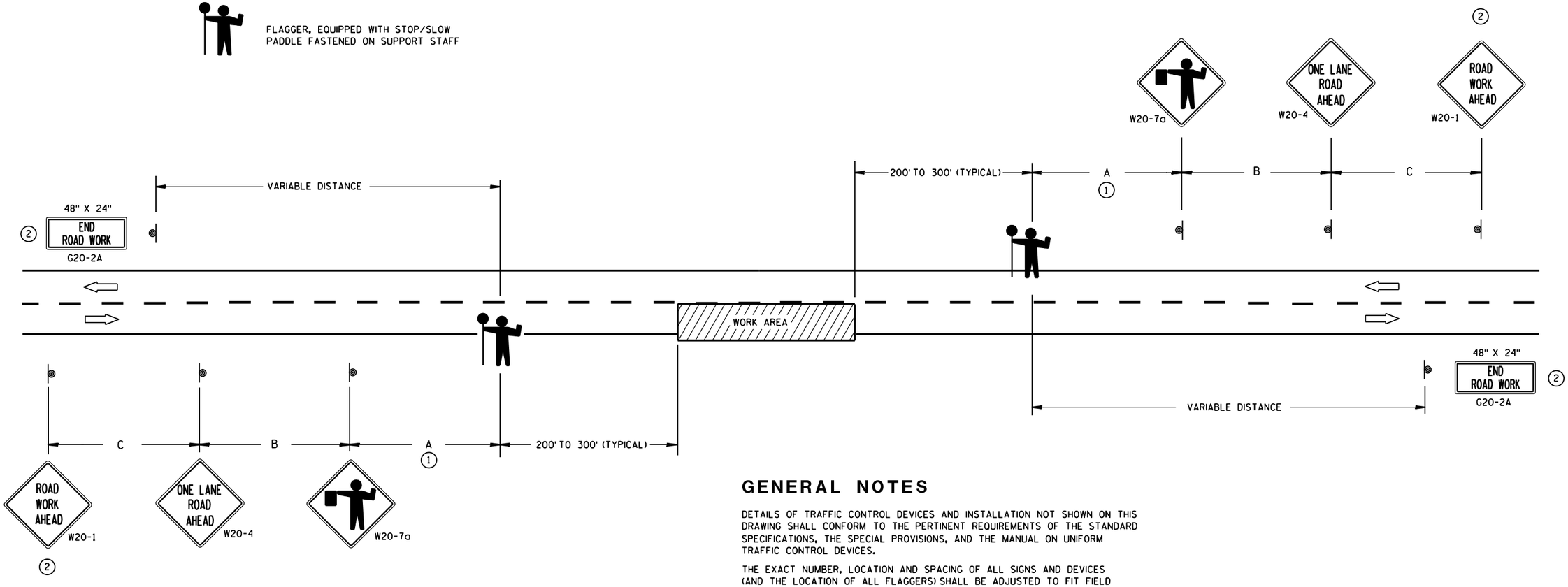
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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

W3-4

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



(1) FOR A MOVING WORK OPERATION,
SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

GENERAL NOTES

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

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

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

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

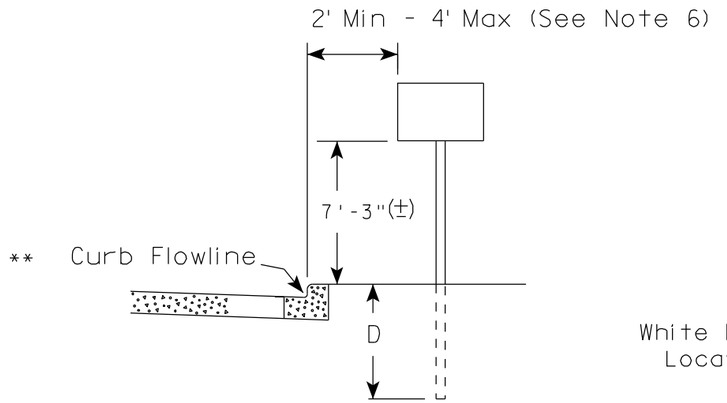
6

S.D.D. 15 C 12-4

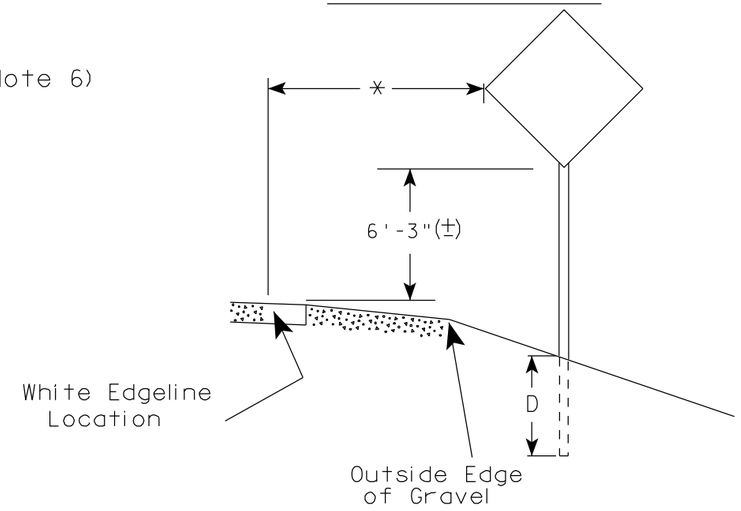
6

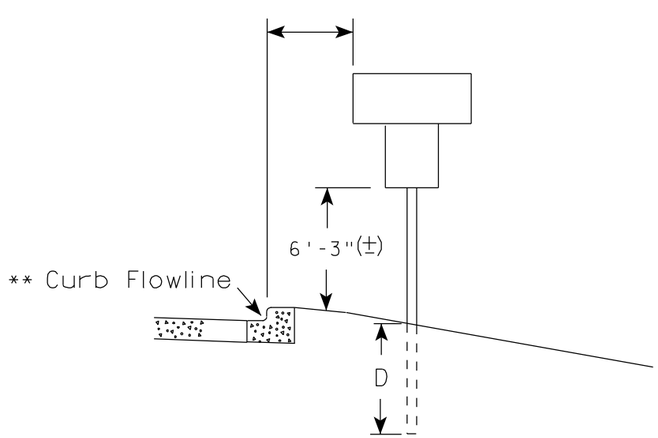
S.D.D. 15 C 12-4

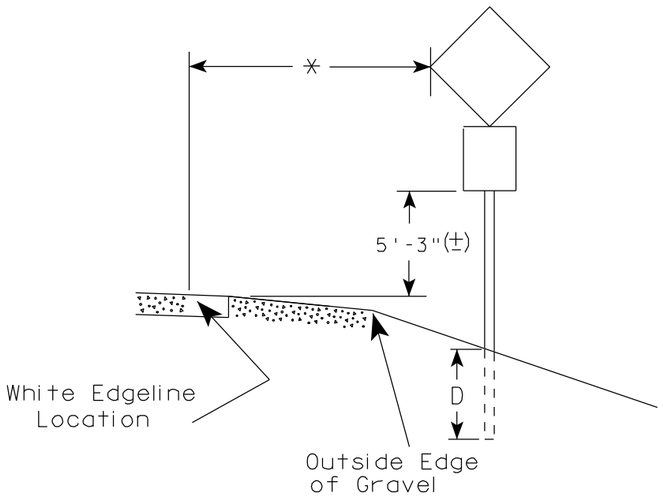
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) 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 stop signs (R1-1F) 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) & End of Rod Markers (W5-56 & W5-56A) 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'

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

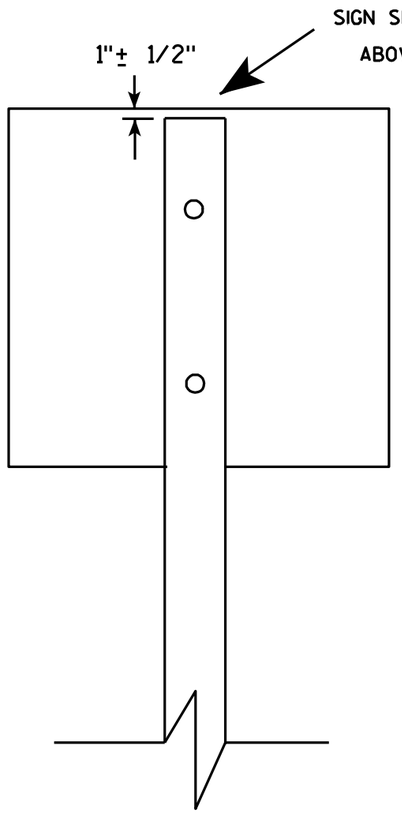
WISCONSIN DEPT OF TRANSPORTATION

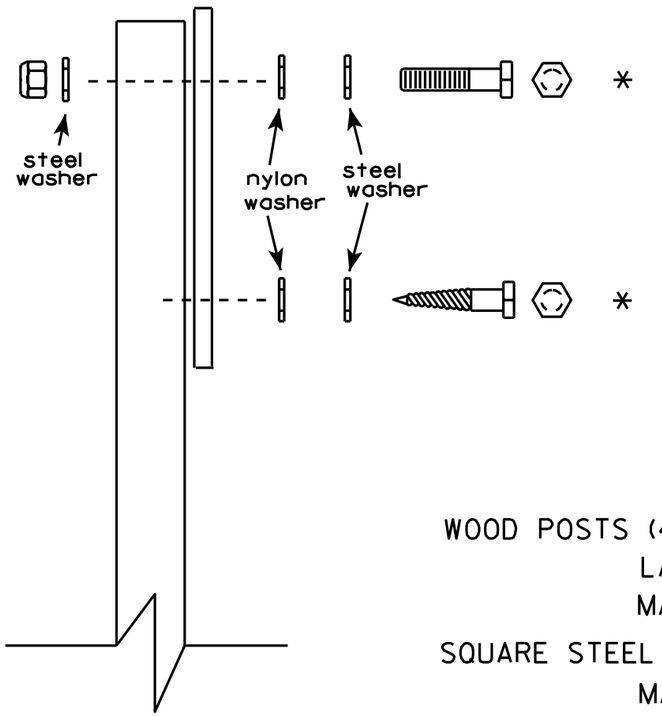
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A43.DGN PLOT DATE : 30-SEP-2013 13:25 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 99.237937:1.000000 WISDOT/CADDS SHEET 42





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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

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

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

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")

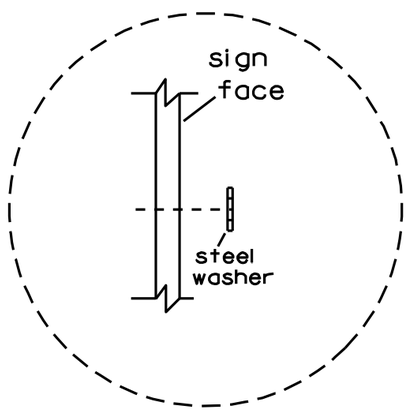
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts

RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

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

1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

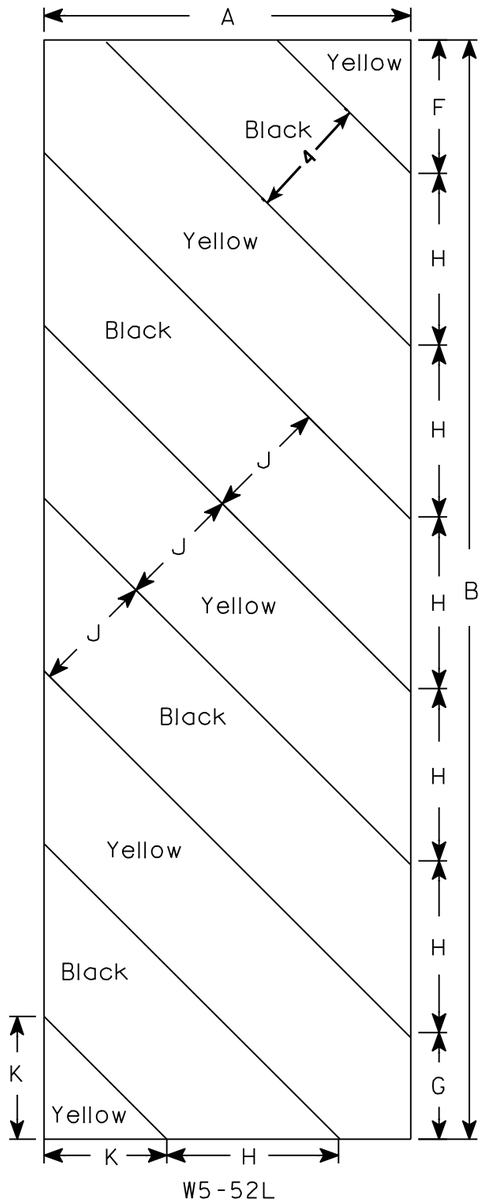
DATE 3/23/10 PLATE NO. A4-8.7

7

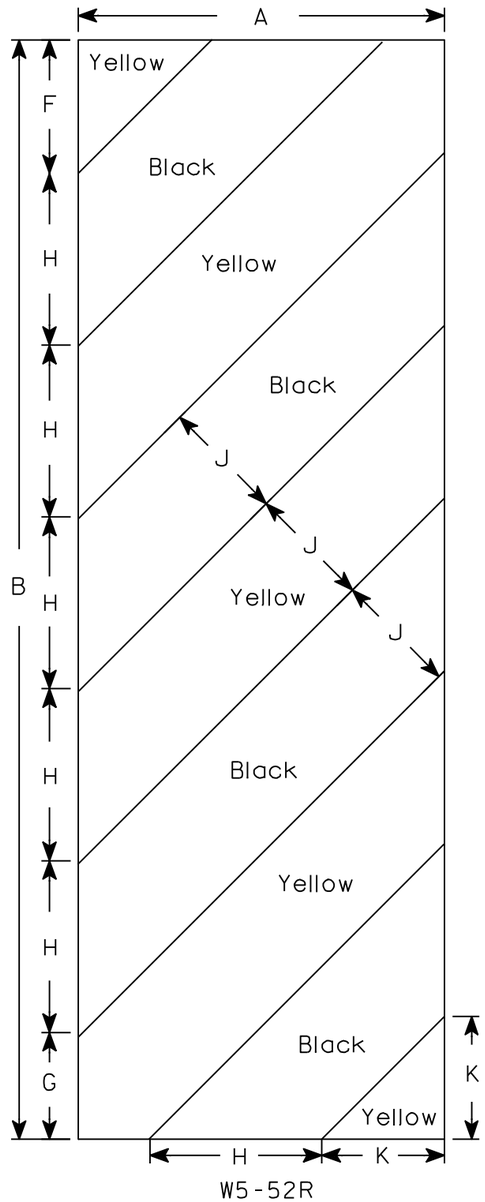
7

PROJECT NO:

SHEET NO: 35 E



W5-52L



W5-52R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

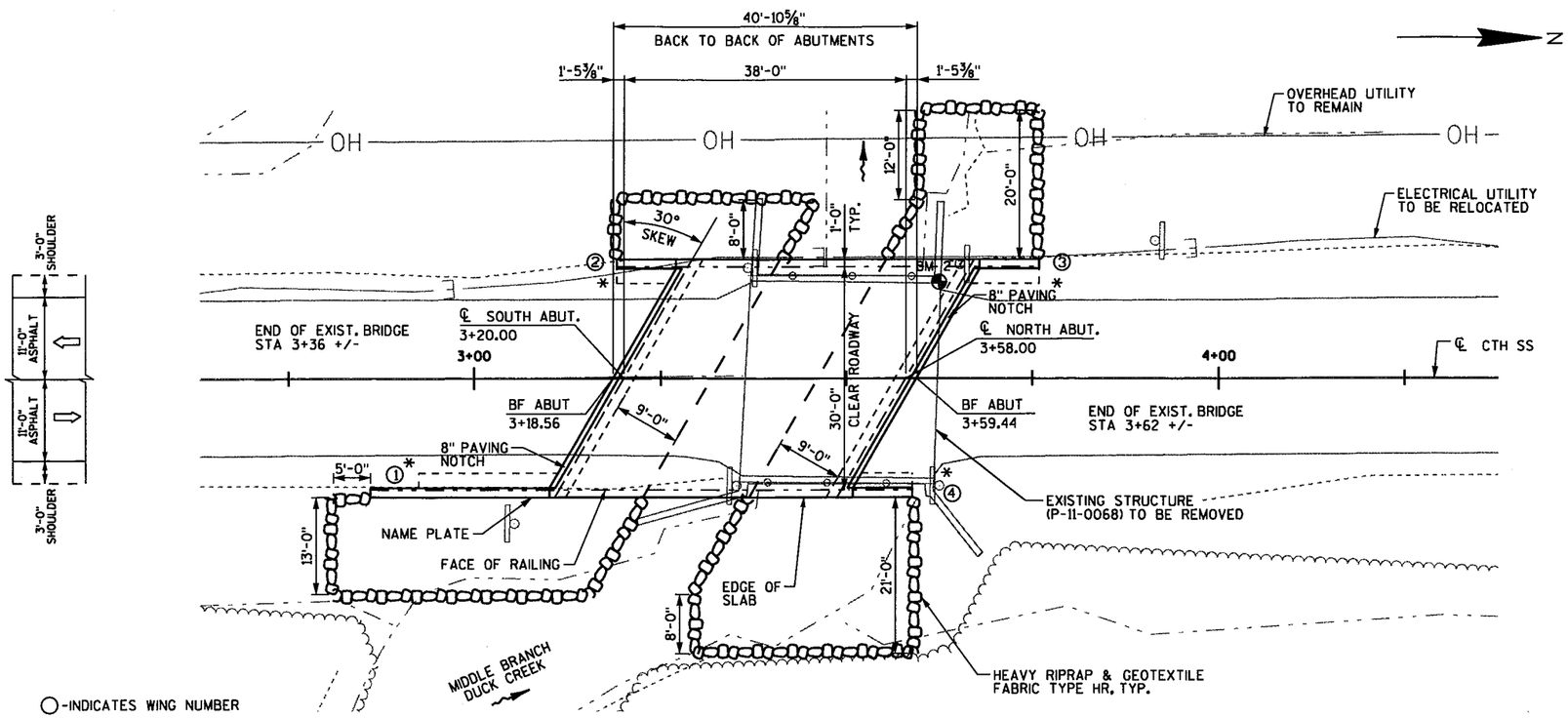
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 36	E



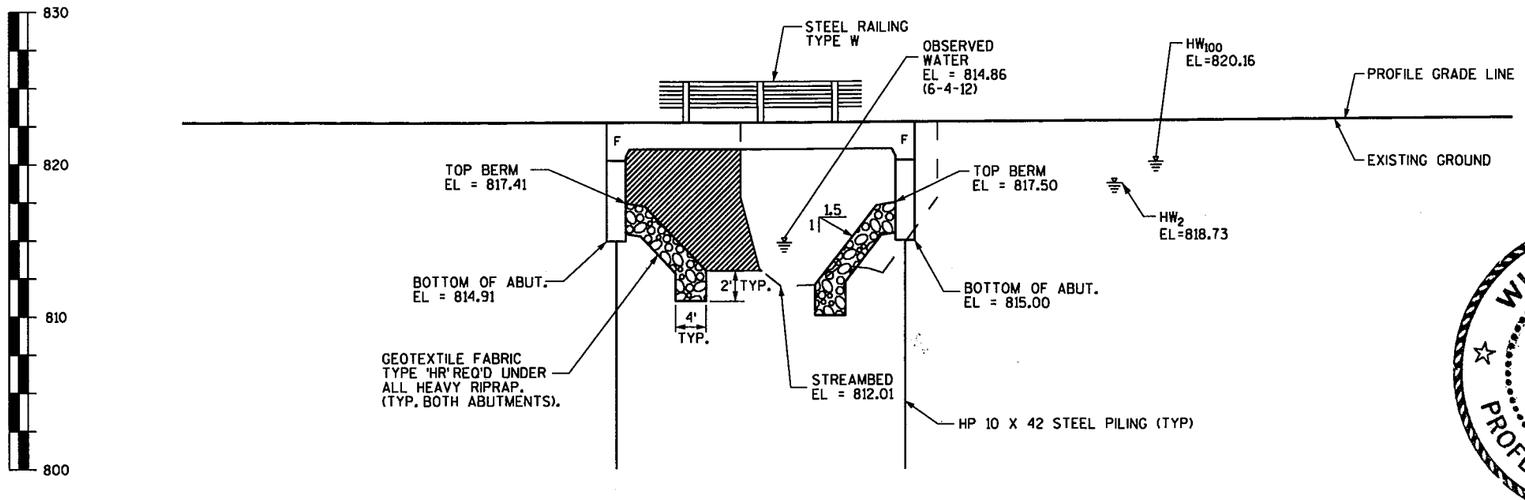
○-INDICATES WING NUMBER

* ANCHOR ASSEMBLY FOR THRIE BEAM GUARDRAIL

BM * -INDICATES BENCH MARK NUMBER

PLAN

(SINGLE SPAN CONCRETE FLAT SLAB BRIDGE)



ELEVATION

(NORMAL TO ℄ OF STRUCTURE)

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
2	3+62, LT	CHISELED □ ON NW CORNER	823.48

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES (B-11-154)"

WISCONSIN
PHILIP J. ENGLEBERT E-16118 SHEBOYGAN, WIS.
PROFESSIONAL ENGINEER

7/11/13

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
608-266-8489

CONSULTANT CONTACT:
PHIL ENGLEBERT
920-208-0296

STATE PROJECT NUMBER
5434-00-71

DESIGN DATA

LIVE LOAD:
- DESIGN RATING: HL-93
- INVENTORY RATING FACTOR: 1.12
- OPERATING RATING FACTOR: 1.45
- MAXIMUM STANDARD PERMIT VEHICLE LOAD = 250 KIPS
- STRUCTURE IS DESIGNED FOR 20#/SQ FT FUTURE WEARING SURFACE

ULTIMATE DESIGN STRESSES:
- CONCRETE MASONRY SLAB ——— f'c = 4,000 psi
- CONCRETE MASONRY ALL OTHER ——— f'c = 3,500 psi
- HIGH STRENGTH BAR STEEL REINFORCEMENT ——— fy = 60,000 psi

TRAFFIC VOLUME
- A.A.D.T. = 290 (2014)
- A.A.D.T. = 350 (2034)
- DESIGN SPEED = 60 MPH

HYDRAULIC DATA
- DRAINAGE AREA = 22.2 SQ. MILES
- WATERWAY AREA = 136 SQ. FEET
- Q_{100} = 740 CFS
- VELOCITY = 5.44 FPS
- HIGH $WATER_{100}$ = EL. 820.16
- RDWY OVERTOPPING = N/A
- SCOUR CRITICAL CODE = 8

- Q_2 = 330 CFS
- HIGH $WATER_2$ = EL. 818.73

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 140 TONS † PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 45' 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.

LIST OF DRAWINGS

NO.	DATE	REVISION	BY

DONOHUE & ASSOCIATES

ACCEPTED William C. Dreher KAR 11/26/13
CHIEF STRUCTURES DESIGN ENGINEER DATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-154

CTH SS OVER MIDDLE BRANCH DUCK CREEK

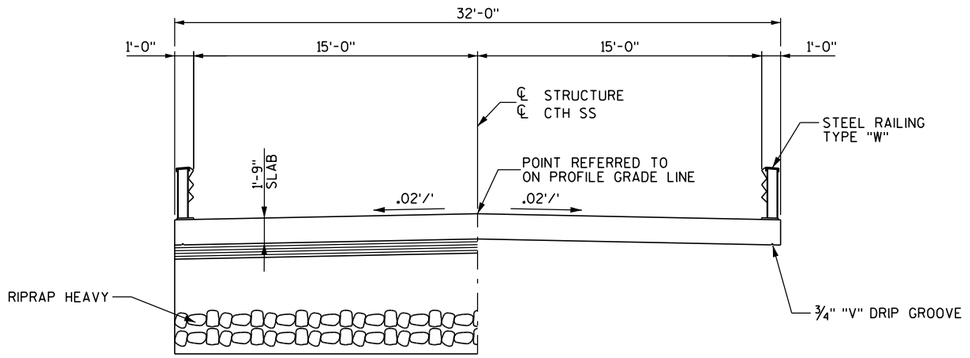
COUNTY	TOWN/~~CITY/VILLAGE~~
COLUMBIA	SPRINGVALE

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

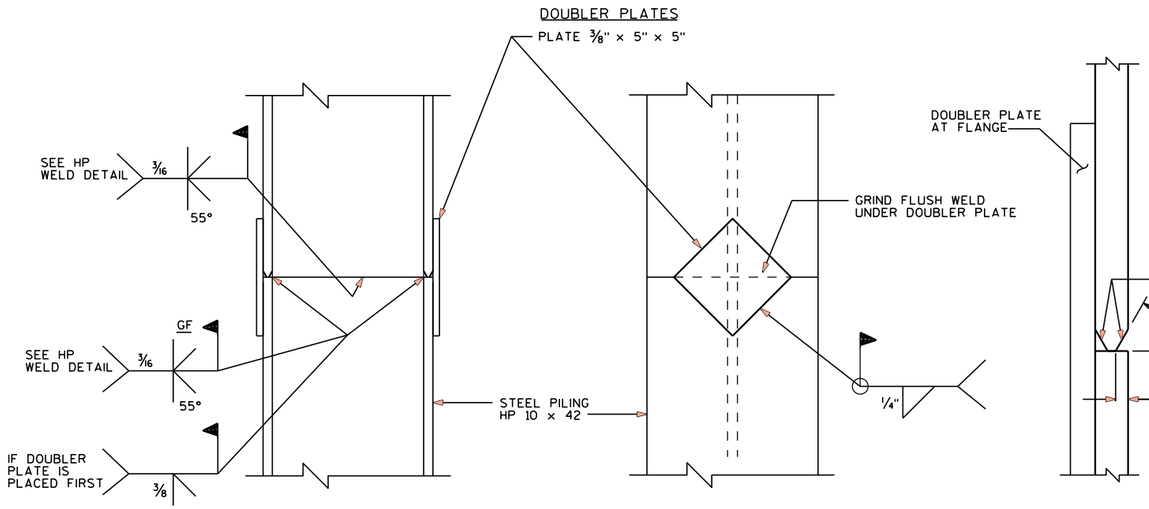
DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
SJG	PJE	SJG	PJE

GENERAL PLAN

SHEET 1 OF 10
37

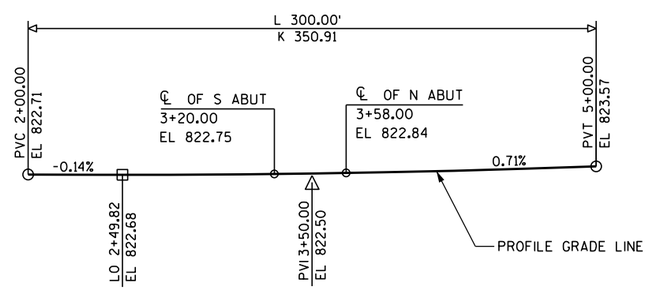


CROSS SECTION THROUGH BRIDGE



STEEL 'HP' SHAPES

HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR



PROFILE GRADE LINE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

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 1 AND IN THE ABUTMENT DETAILS.

ALL VOIDS BETWEEN HEAVY RIPRAP SHALL BE "FILLED" USING "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR" FROM EL. 814.0 TO THE TOP OF BERM AND INCLUDING THE HORIZONTAL SURFACE OF THE BERM.

THE FINISHED GRADED SECTION SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

THE LOWER LIMITS OF EXCAVATION FOR STRUCTURES FOR THE ABUTMENTS SHALL BE THE BOTTOM OF THE SLOPE PROTECTION.

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

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

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND SIDES OF THE DECK AND 1'-0" UNDER DECK AT EDGES.

THIS BRIDGE WILL REPLACE P-11-0068, A SINGLE SPAN SLAB BRIDGE WITH TOTAL LENGTH OF 23.6' BETWEEN INSIDE FACE OF ABUTMENTS AND CLEAR ROADWAY WIDTH OF 25.6'.

TOTAL ESTIMATED QUANTITIES

BID ITEMS	BID ITEMS	UNIT	SOUTH ABUT.	NORTH ABUT.	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY, MINIMAL DEBRIS, STA 3+39	LS				1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-11-154)	LS				1
210.0100	BACKFILL STRUCTURE	CY	125	105		230
312.0115	SELECT CRUSHED MATERIAL	CY		65		65
502.0100	CONCRETE MASONRY BRIDGES	CY	38	29	89	156
502.3200	PROTECTIVE SURFACE TREATMENT	SY			165	165
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2410	2190		4600
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	2120	1090	13,760	16,970
513.7050	RAILING STEEL TYPE W (B-11-154)	LS				1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	9		20
550.0500	PILE POINTS	EACH	7	6		13
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	315	270		585
606.0300	RIPRAP HEAVY	CY	94	116		210
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	102	92		194
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	113	138		251
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	15	21		36
	NON-BID ITEMS					
	PREFORMED JOINT FILLER	SIZE				½",¾"

STATE PROJECT NUMBER
5434-00-71

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-154

DRAWN BY SJG | PLANS CK'D. PJE

SECTION, NOTES & QUANTITIES

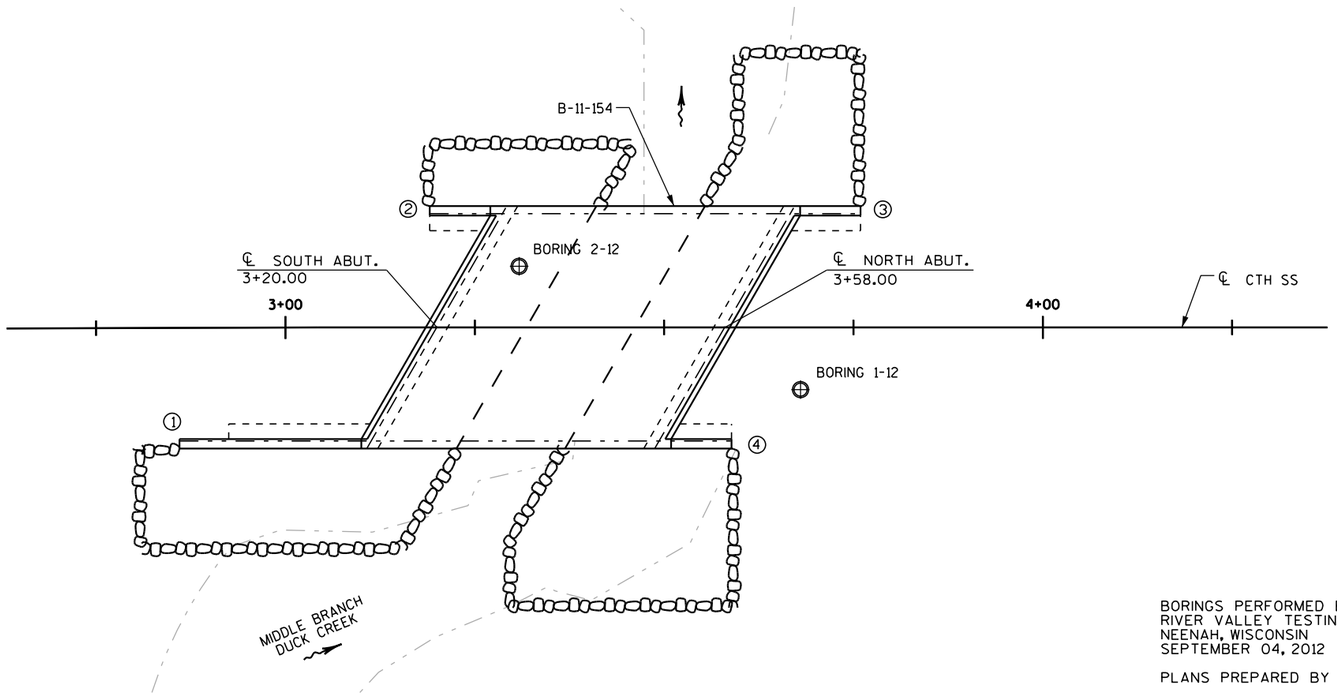
SHEET 2 OF 10

38

8

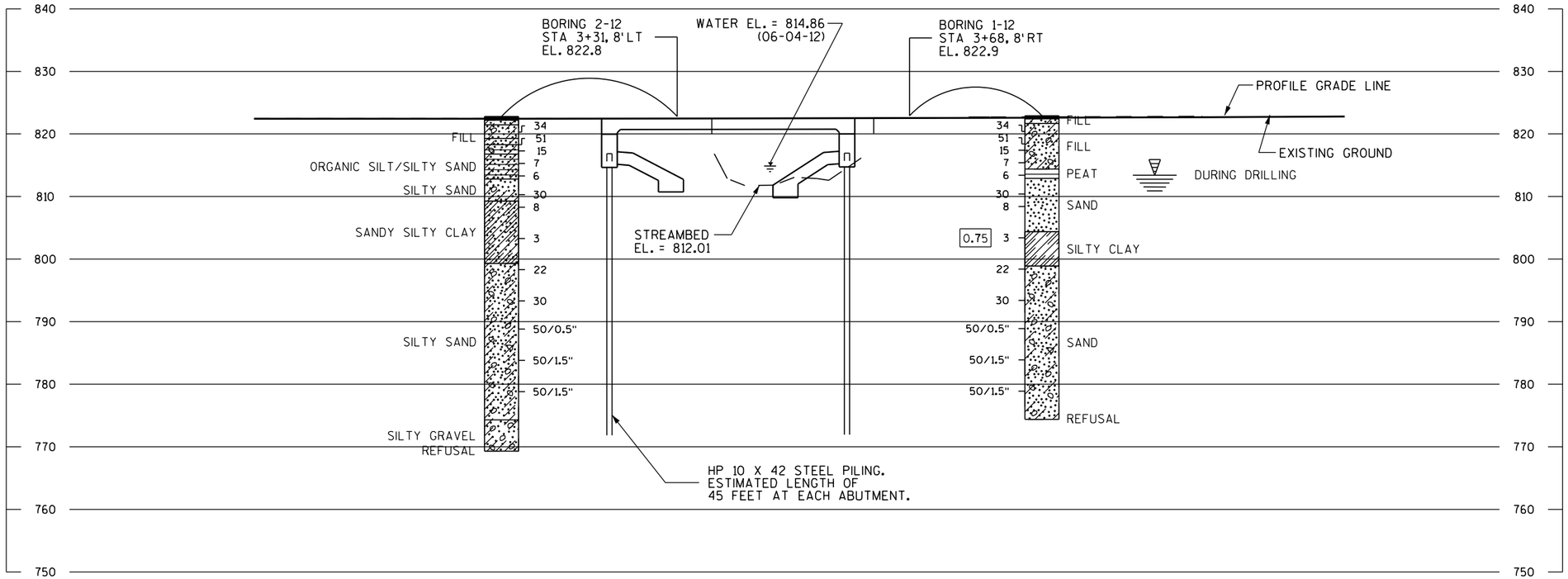
8

FILE NAME : L:\Projects\12224\Dwg\B-11-154\08_02section notes.DGN PLOT DATE : 07/11/13 PLOT TIME : 9:10:18 AM PLOT BY : sginal



BORINGS PERFORMED BY:
RIVER VALLEY TESTING CORP.
NEENAH, WISCONSIN
SEPTEMBER 04, 2012

PLANS PREPARED BY DONOHUE & ASSOCIATES, INC.



STATE PROJECT NUMBER

5434-00-71

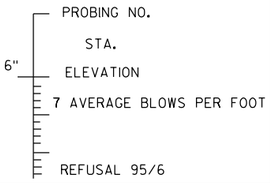
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

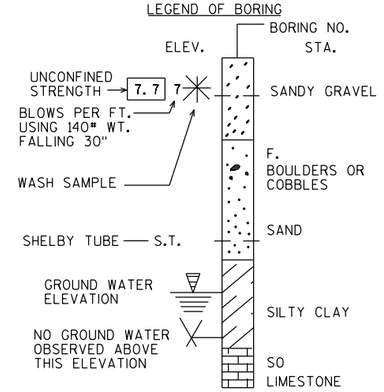
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-154

DRAWN BY SJG | PLANS CK'D. PJE

SUBSURFACE EXPLORATION

SHEET 3 OF 10

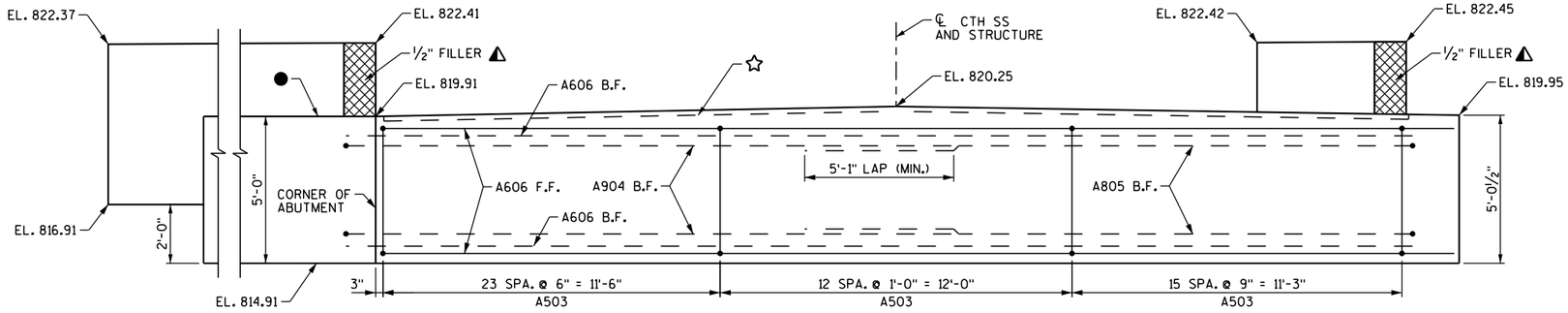
39

8

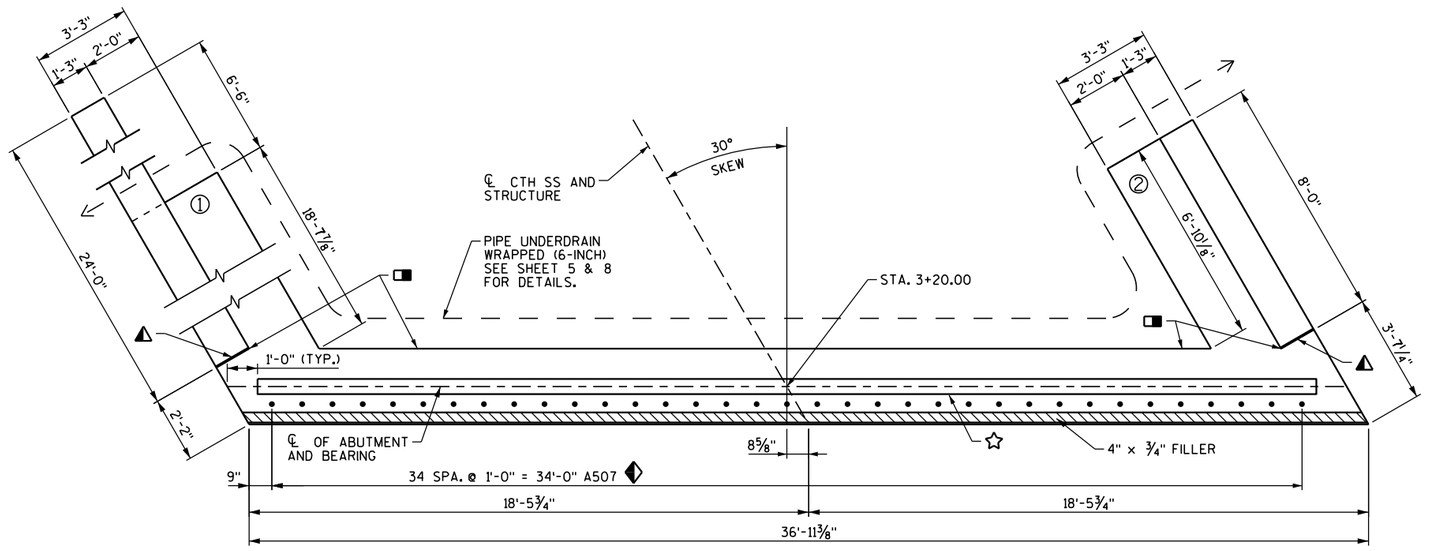
8

STATE PROJECT NUMBER

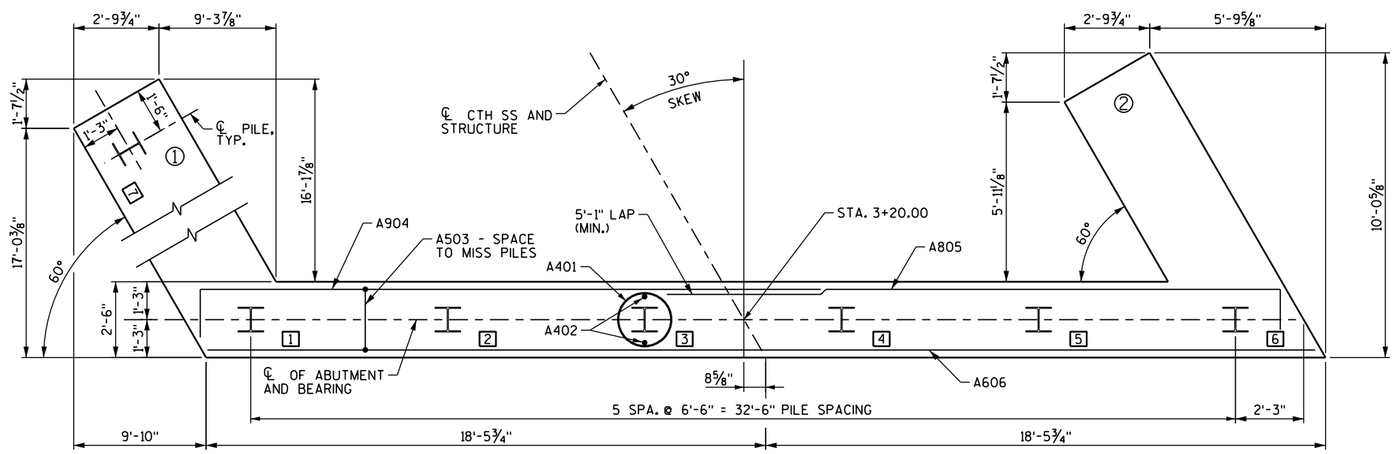
5434-00-71



ELEVATION



PLAN



PLAN

LEGEND

☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

◘ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

⚠ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

◆ A507 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".

FOR PILE SPLICE DETAIL SEE SHEET 2

B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-154

DRAWN BY SJG | PLANS CK'D. PJE

SOUTH ABUTMENT

SHEET 4 OF 10

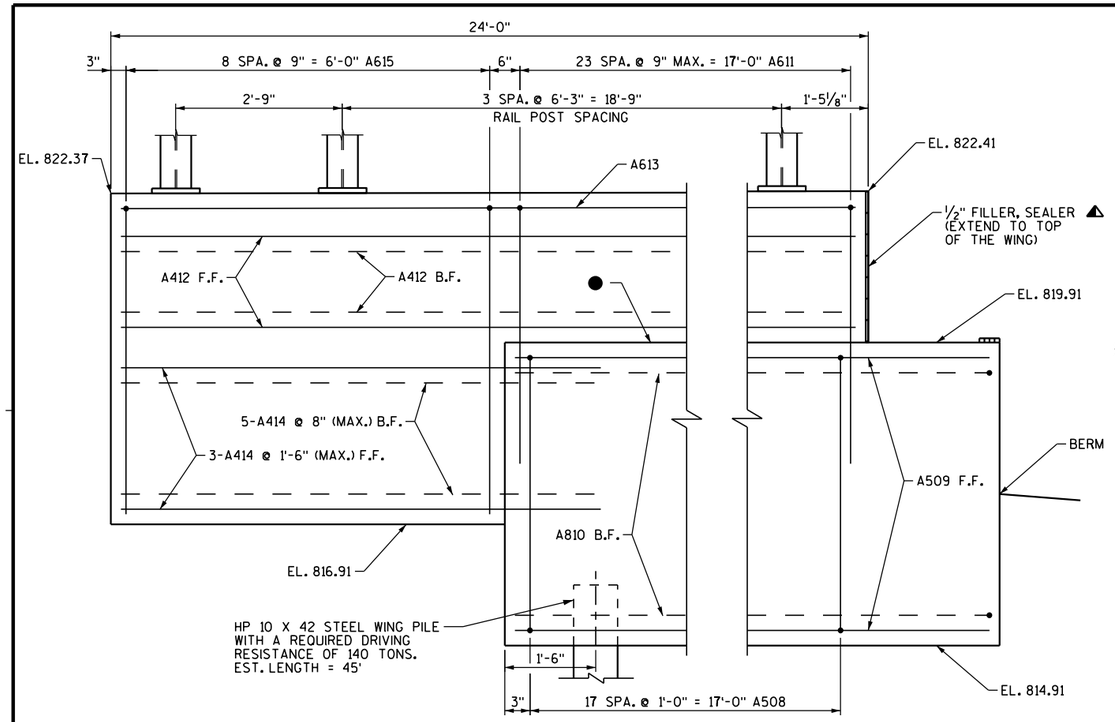
40

8

8

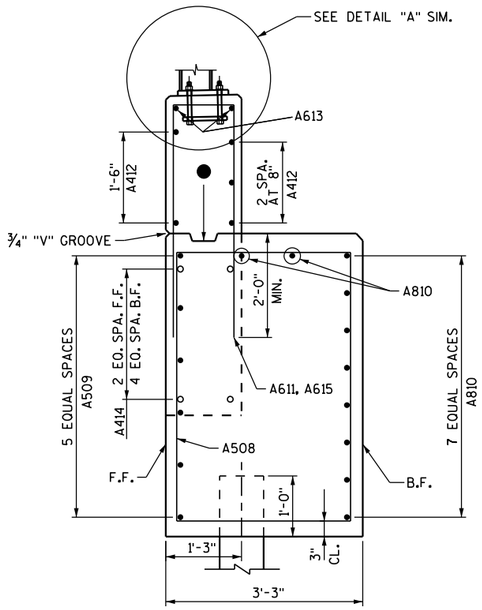
STATE PROJECT NUMBER

5434-00-71

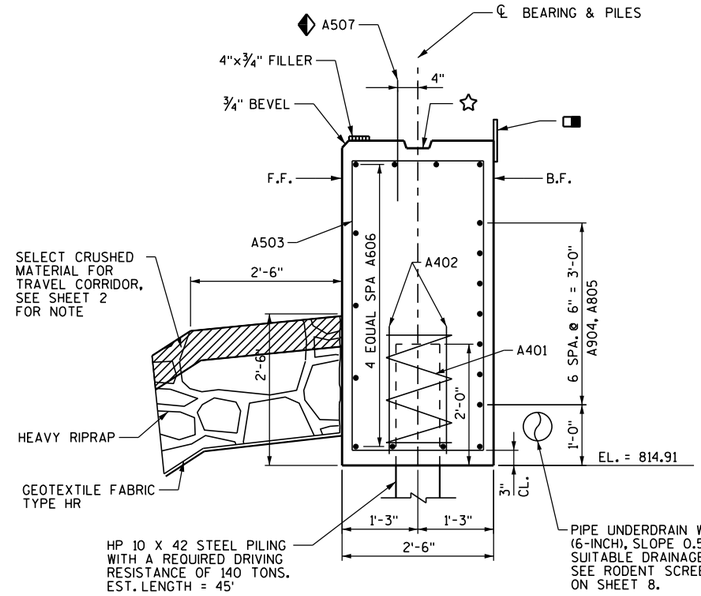


ELEVATION - WING 1

(LOOKING AT FRONT FACE)

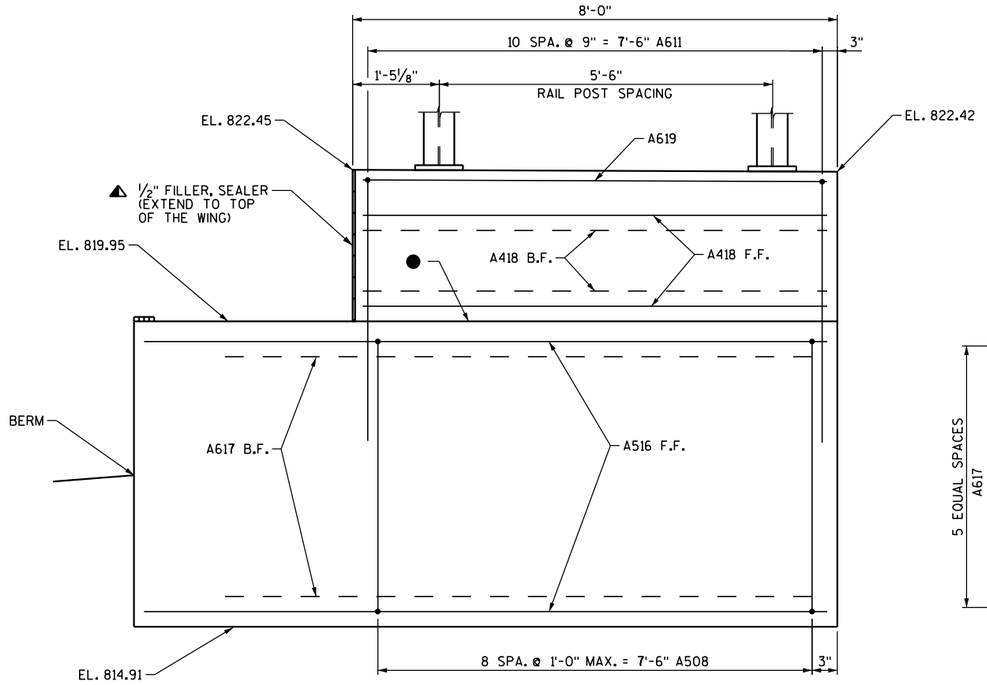


SECTION - WING 1



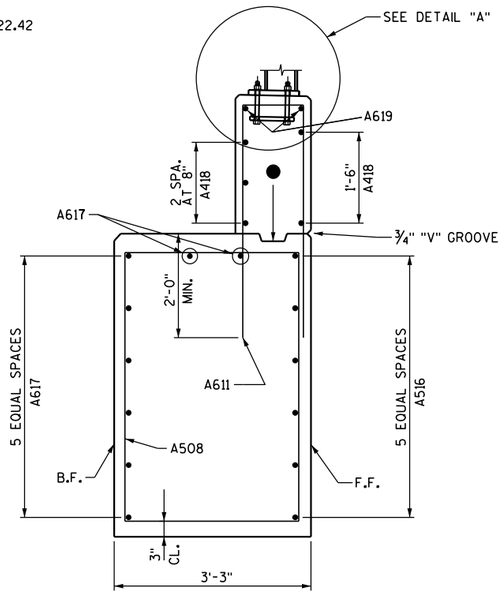
NOTE: HORIZ. BARS INSIDE THE ABUTMENT BODY NOT OTHERWISE IDENTIFIED ARE A606 BARS.

SECTION THRU ABUT BODY

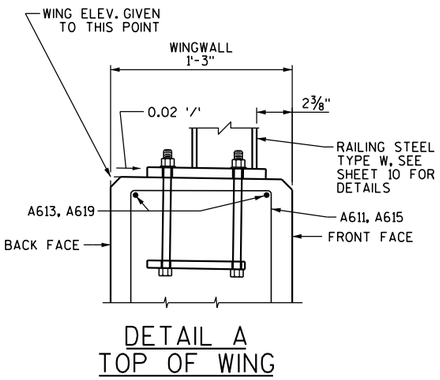


ELEVATION - WING 2

(LOOKING AT FRONT FACE)



SECTION - WING 2



DETAIL A
TOP OF WING

LEGEND

- ● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◨ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ⚠ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- ◆ A507 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- ☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-154

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SOUTH ABUTMENT, WINGS 1 & 2

SHEET 5 OF 10

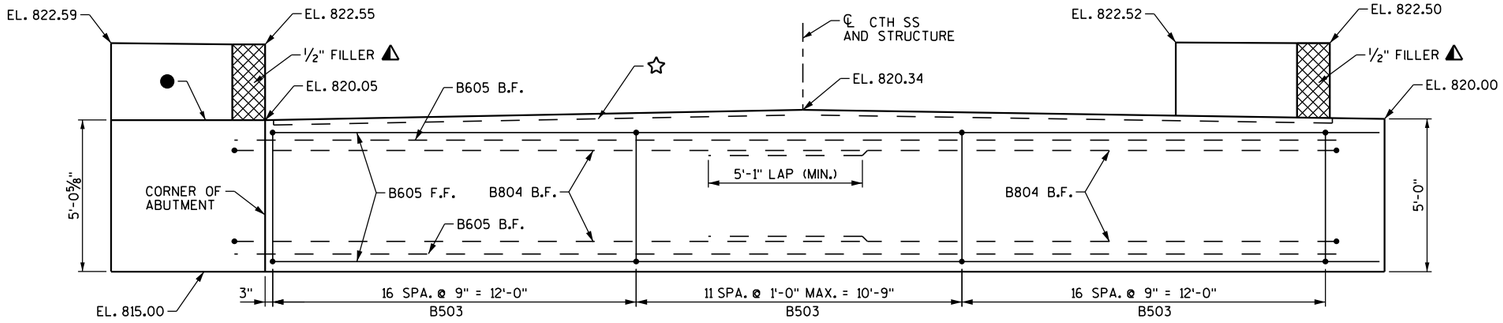
41

8

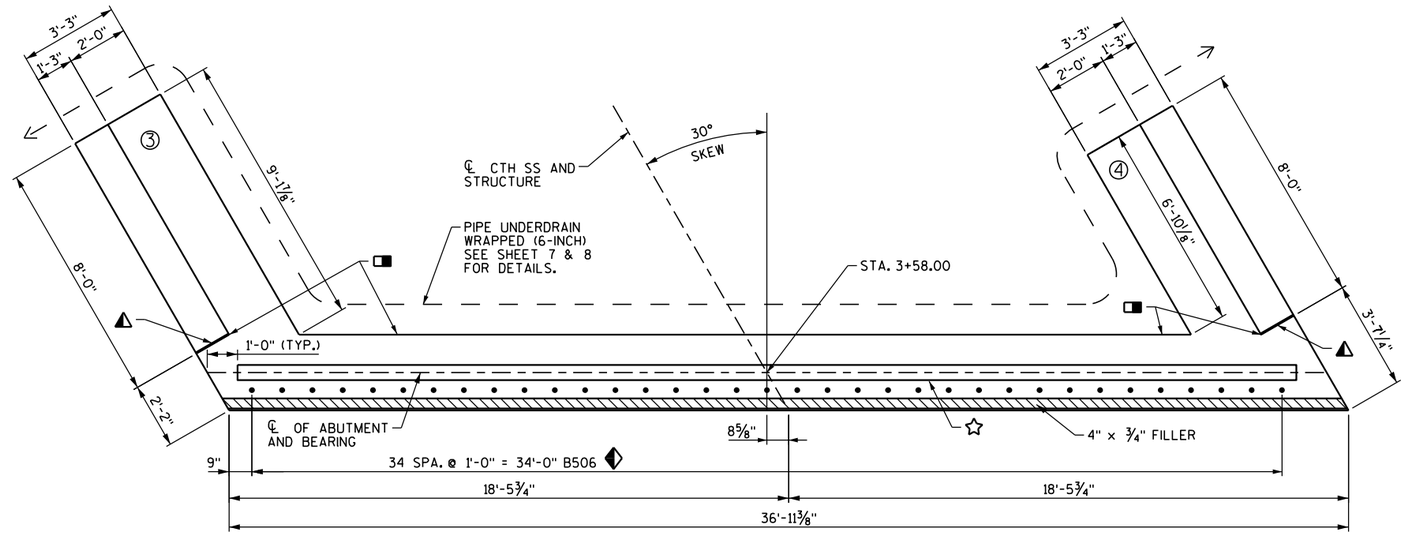
8

STATE PROJECT NUMBER

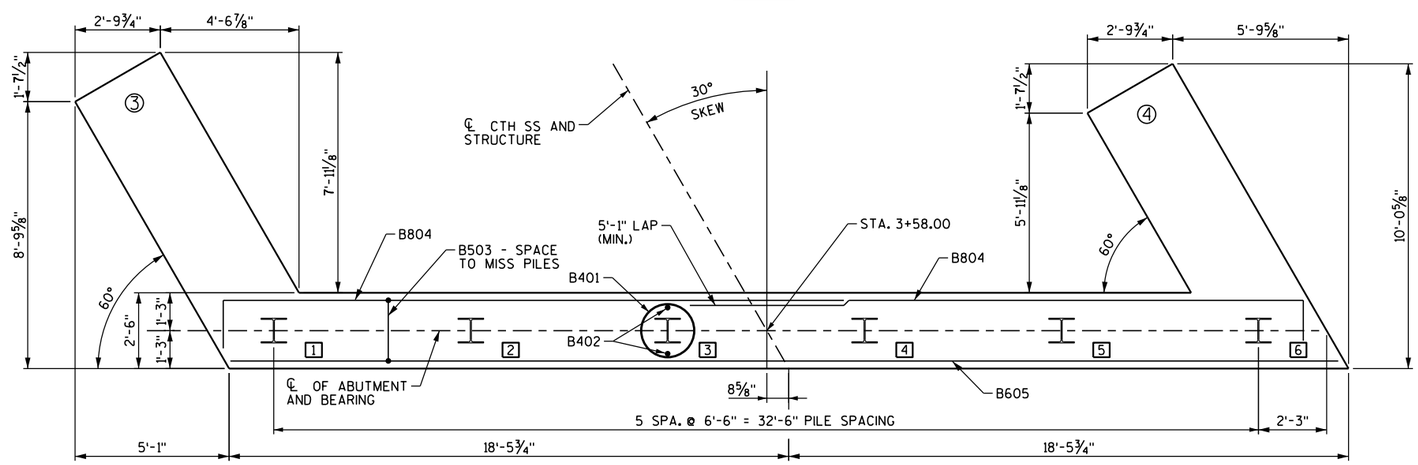
5434-00-71



ELEVATION



PLAN



PLAN

LEGEND

☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

▬ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

⚠ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

◆ B506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".

FOR PILE SPLICE DETAIL SEE SHEET 2

B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-154

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NORTH ABUTMENT

SHEET 6 OF 10

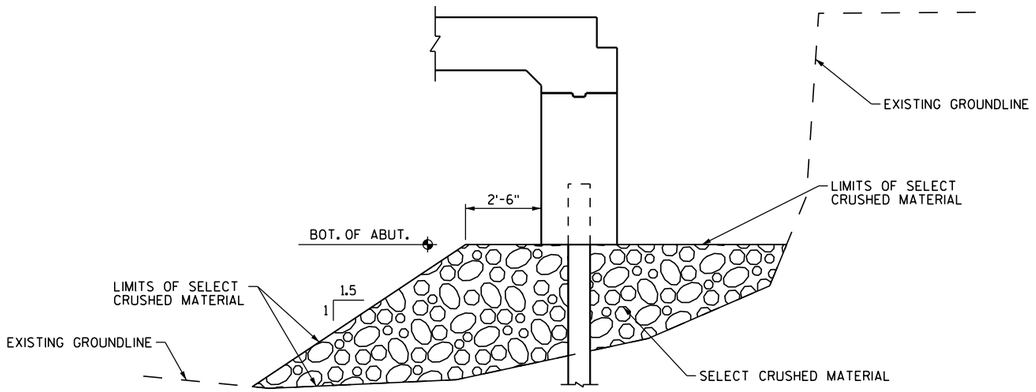
42

8

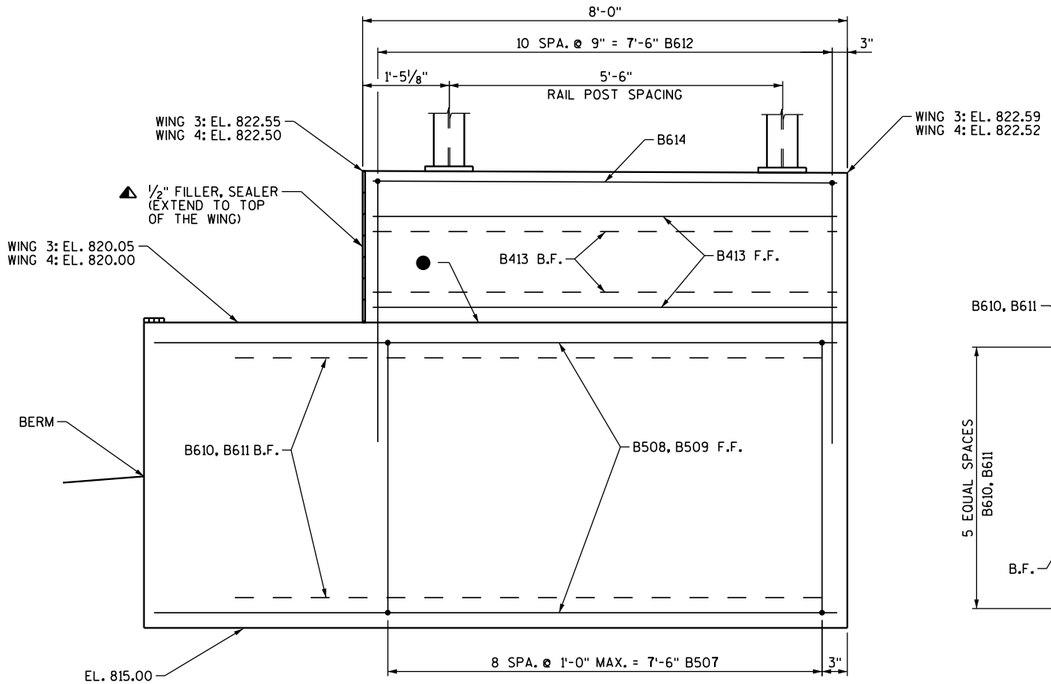
8

STATE PROJECT NUMBER

5434-00-71

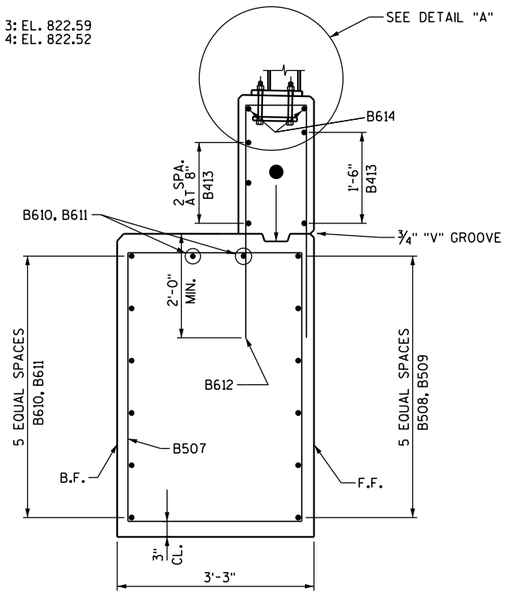


LIMITS OF SELECT CRUSHED MATERIAL AT NORTH ABUTMENT

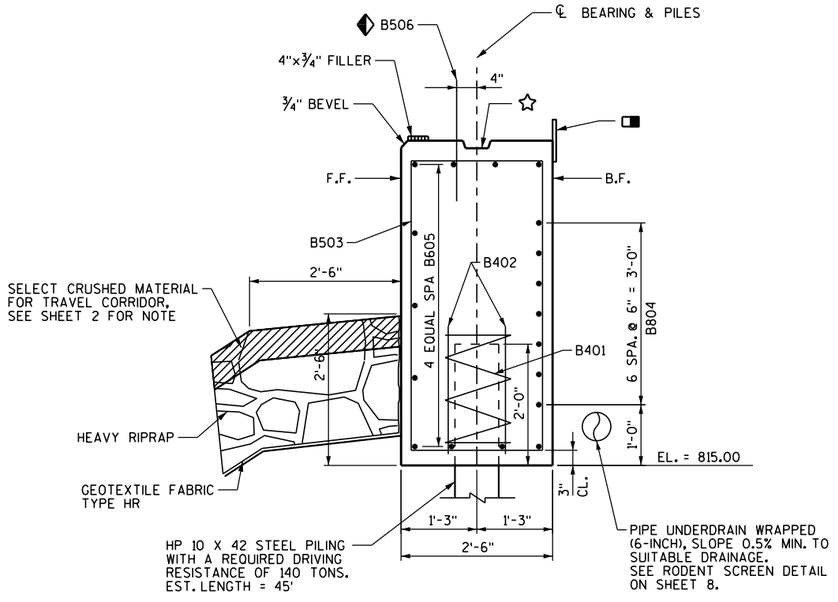


ELEVATION - WING 3

(LOOKING AT FRONT FACE)
(WING 4 SIMILAR)

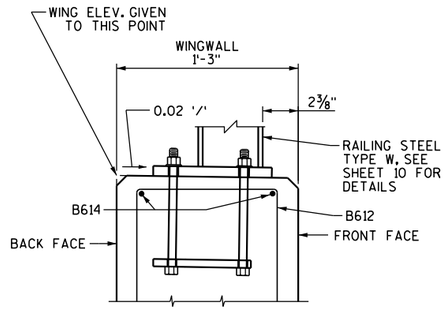


SECTION THRU WING



NOTE: HORIZ. BARS INSIDE THE ABUTMENT BODY NOT OTHERWISE IDENTIFIED ARE B605 BARS.

SECTION THRU ABUT BODY



DETAIL A TOP OF WING

LEGEND

- ● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◨ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ◭ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- ◆ B506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- ☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-154

DRAWN BY SJG | PLANS CK'D. PJE

NORTH ABUTMENT, WINGS 3 & 4

SHEET 7 OF 10

43

8

8

FILE NAME : L:\Projects\12224\Dwg\B-11-154\08_07north abut wings.dgn PLOT DATE : 07/08/13 PLOT TIME : 9:26:07 AM PLOT BY : sginal

STATE PROJECT NUMBER

5434-00-71

BILL OF BARS - SOUTH ABUTMENT

COATED: 2120 LBS
UNCOATED: 2410 LBS

BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
A401		6	28'-0"		X	BODY AT PILES
A402		12	2'-3"			BODY AT PILES
A503		51	13'-9"		X	BODY STIRRUPS
A904		7	22'-4"		X	BODY HORIZONTAL AT BACK FACE
A805		7	22'-2"		X	BODY HORIZONTAL AT BACK FACE
A606		11	36'-7"			BODY HORIZONTAL
A507	X	35	2'-0"			BODY DOWELS
A508	X	27	15'-3"		X	WING STIRRUPS (WINGS 1 & 2)
A509	X	6	19'-4"			WING HORIZONTAL AT FRONT FACE (WING 1)
A810	X	8	21'-8"		X	WING HORIZONTAL AT BACK FACE (WING 1)
A611	X	35	9'-3"		X	WING VERTICAL (WINGS 1 & 2)
A412	X	5	23'-7"			WING HORIZONTAL AT EACH FACE (WING 1)
A613	X	2	23'-7"			WING HORIZONTAL AT EACH FACE (WING 1)
A414	X	8	7'-11"			WING HORIZONTAL AT EACH FACE (WING 1)
A615	X	9	10'-7"		X	WING VERTICAL (WING 1)
A516	X	6	11'-2'			WING HORIZONTAL AT FRONT FACE (WING 2)
A617	X	6	10'-8"			WING HORIZONTAL AT BACK FACE (WING 2)
A418	X	5	7'-7"			WING HORIZONTAL AT EACH FACE (WING 2)
A619	X	2	7'-7"			WING HORIZONTAL AT EACH FACE (WING 2)

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

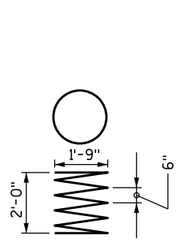
BILL OF BARS - NORTH ABUTMENT

COATED: 1090 LBS
UNCOATED: 2190 LBS

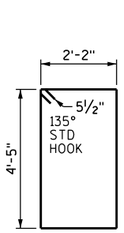
BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
B401		6	28'-0"		X	BODY AT PILES
B402		12	2'-3"			BODY AT PILES
B503		44	13'-9"		X	BODY STIRRUPS
B804		14	22'-2"		X	BODY HORIZONTAL AT BACK FACE
B605		11	36'-7"			BODY HORIZONTAL
B506	X	35	2'-0"			BODY DOWELS
B507	X	18	15'-3"		X	WING STIRRUPS (WINGS 3 & 4)
B508	X	6	9'-10"			WING HORIZONTAL AT FRONT FACE (WING 3)
B509	X	6	11'-2"			WING HORIZONTAL AT FRONT FACE (WING 4)
B610	X	6	11'-1"			WING HORIZONTAL AT BACK FACE (WING 3)
B611	X	6	10'-8"			WING HORIZONTAL AT BACK FACE (WING 4)
B612	X	22	9'-3"		X	WING VERTICAL (WINGS 3 & 4)
B413	X	10	7'-7"			WING HORIZONTAL AT EACH FACE (WINGS 3 & 4)
B614	X	4	7'-7"			WING HORIZONTAL AT EACH FACE (WINGS 3 & 4)

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

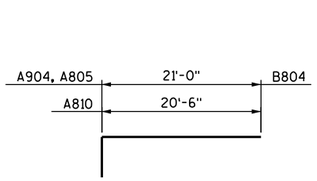
THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.



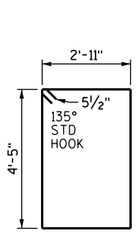
A401
B401



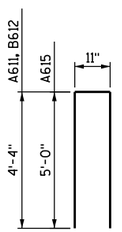
A503
B503



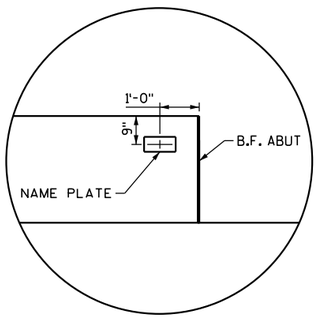
A904, A805, A810
B804



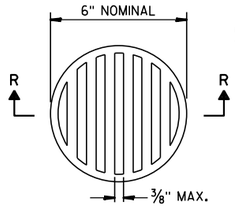
A508
B507



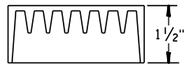
A611, A615
B612



NAME PLATE LOCATION
(WING 1 ONLY)



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



SECTION R-R

RODENT SCREEN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-154

DRAWN BY SJG | PLANS CK'D. PJE

ABUTMENT
BILL OF BARS

SHEET 8 OF 10

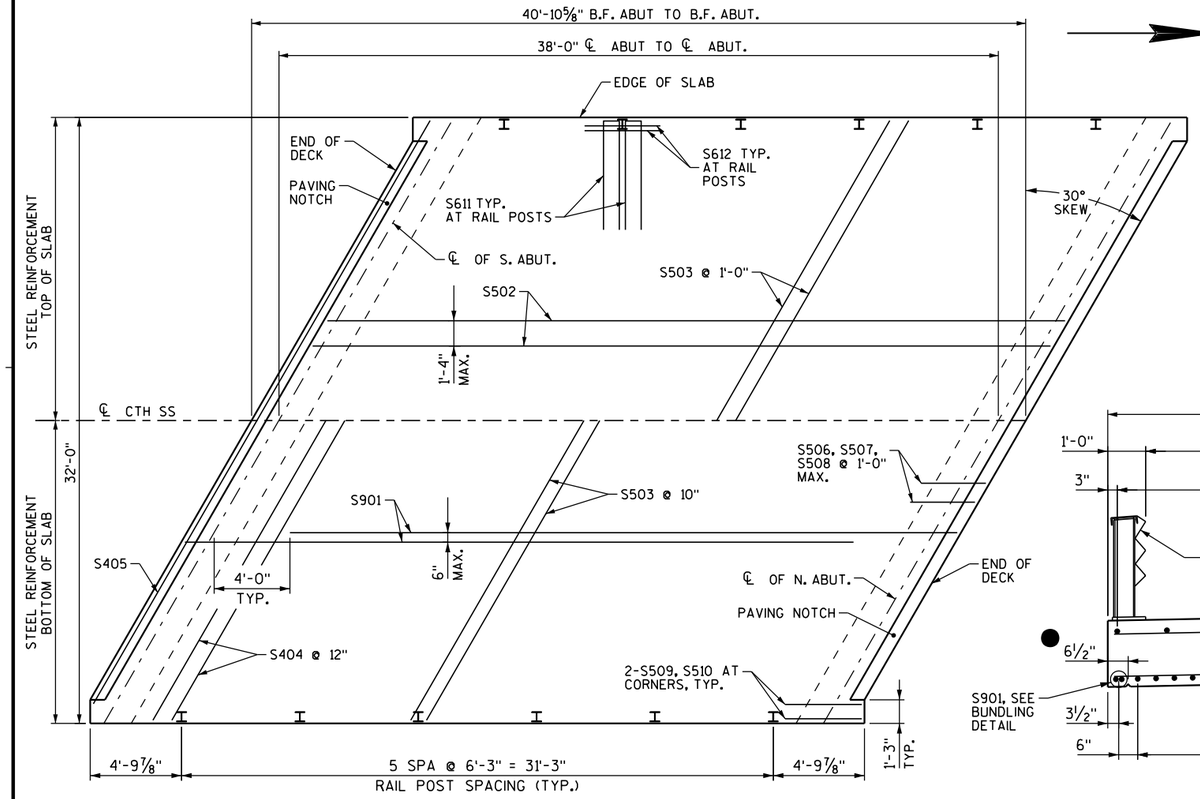
44

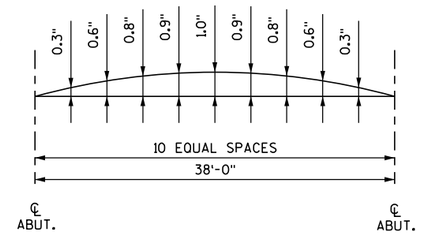
8

8

STATE PROJECT NUMBER

5434-00-71





CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

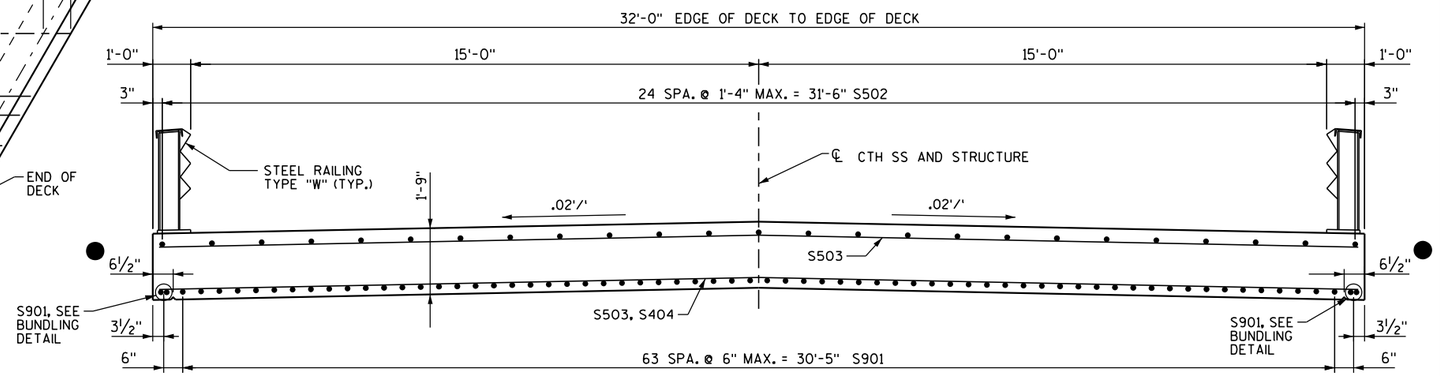
NOTES

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

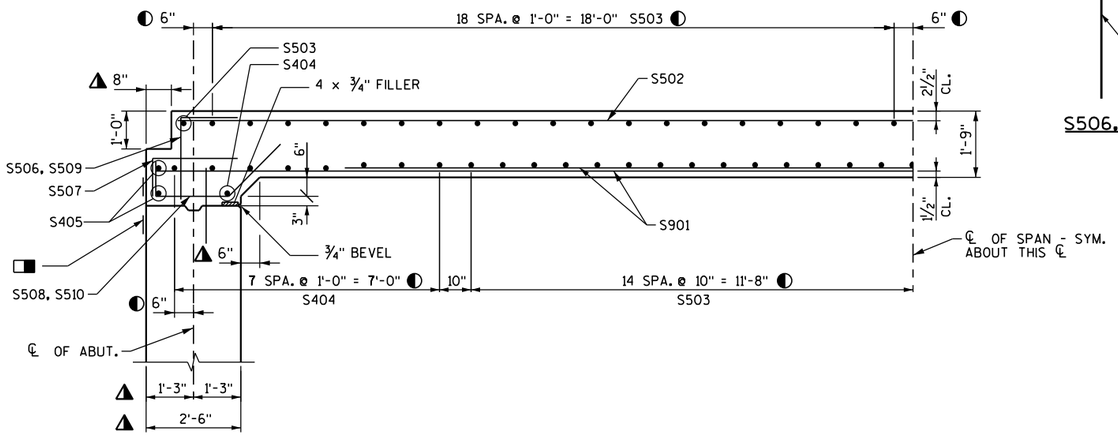
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

● ¾" CONTINUOUS DRIP GROOVE. TERMINATE 2'-0" FROM FRONT FACE OF ABUT.

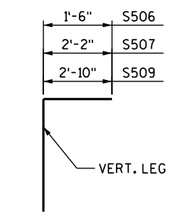
▭ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE.



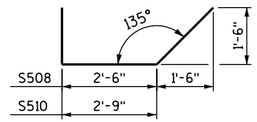
CROSS SECTION THRU ROADWAY



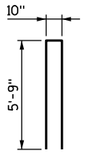
PARTIAL LONGITUDINAL SECTION



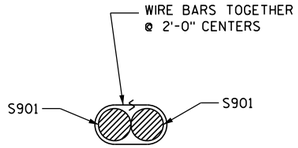
S506, S507, S509



S508, S510



S611



BUNDLING DETAIL

BILL OF BARS - SUPERSTRUCTURE

COATED: 13,760 LBS

BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
S901	X	68	35'-3"			SLAB LONGITUDINAL BOTTOM
S502	X	25	38'-11"			SLAB LONGITUDINAL TOP
S503	X	69	36'-6"			SLAB TRANSVERSE TOP & BOTTOM
S404	X	18	36'-6"			SLAB TRANSVERSE BOTTOM
S405	X	4	35-6"			SLAB TRANSVERSE BOTTOM
S506	X	60	3'-6"		X	SLAB AT ABUTMENT
S507	X	60	3'-2"		X	SLAB AT ABUTMENT
S508	X	60	5'-8"		X	SLAB AT ABUTMENT
S509	X	8	4'-10"		X	SLAB AT ABUTMENT CORNERS
S510	X	8	5'-11"		X	SLAB AT ABUTMENT CORNERS
S611	X	24	12'-0"		X	SLAB AT RAIL POSTS
S612	X	24	4'-0"			SLAB AT RAIL POSTS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

NOTES

◐ DIMENSIONS MEASURED ALONG CTH SS

▲ DIMENSIONS MEASURED NORMAL TO ℄ OF SUBSTRUCTURE

TOP OF DECK ELEVATIONS

	℄ OF S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ OF N. ABUT.
WEST EDGE OF SLAB	822.45	822.46	822.46	822.47	822.48	822.49	822.51	822.52	822.53	822.54	822.55
℄	822.75	822.75	822.76	822.77	822.78	822.79	822.80	822.81	822.82	822.83	822.84
EAST EDGE OF SLAB	822.41	822.42	822.42	822.43	822.44	822.45	822.46	822.47	822.48	822.49	822.50

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-154

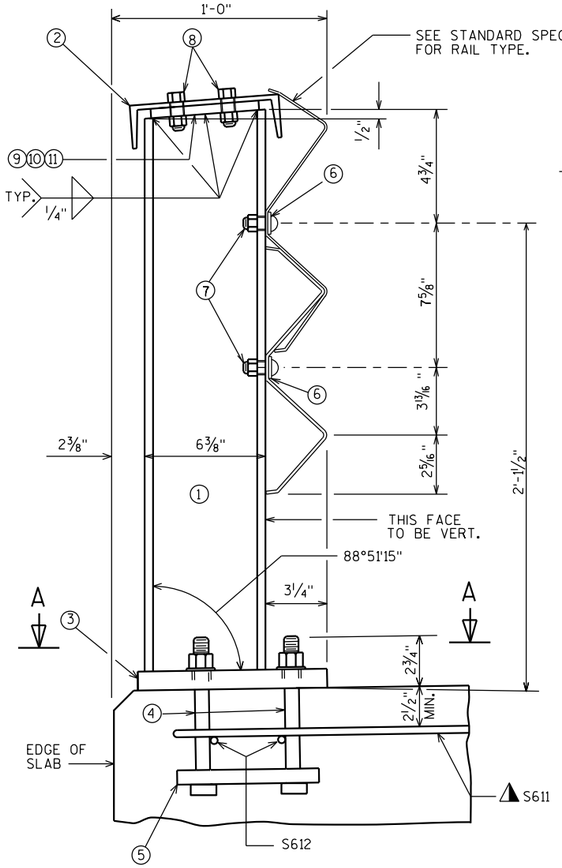
DRAWN BY SJG | PLANS CK'D. PJE

SUPERSTRUCTURE

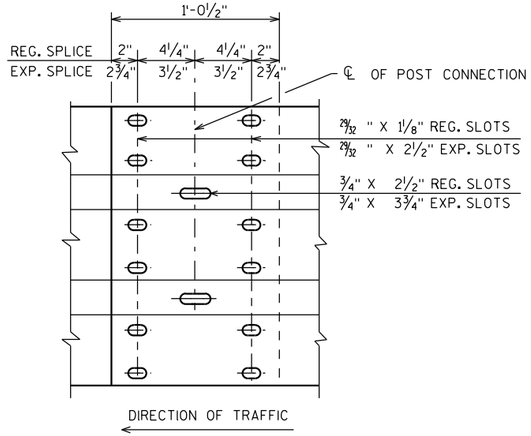
SHEET 9 OF 10

45

FILE NAME : L:\Projects\12224\Dwg\B-11-154\08_09superstructure.dgn PLOT DATE : 06/28/13 PLOT TIME : 8:00:44 AM PLOT BY : sginal



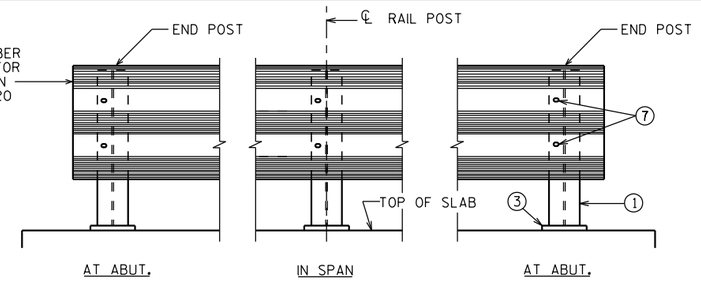
SECTION THRU RAILING



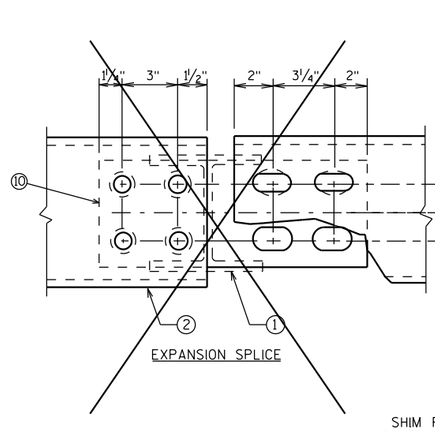
RAIL MEMBER SPLICE

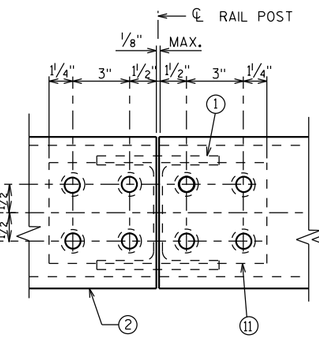
5/8" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS.

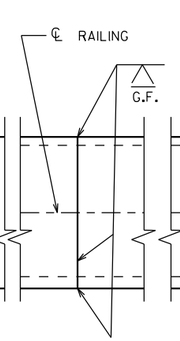
AT END POSTS, RAIL MEMBER SHALL HAVE PROVISIONS FOR A THRIE BEAM CONNECTION AS SHOWN ON SDD 14 B 20 STANDARDS.

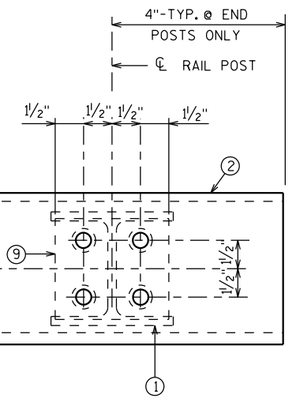


ELEVATION



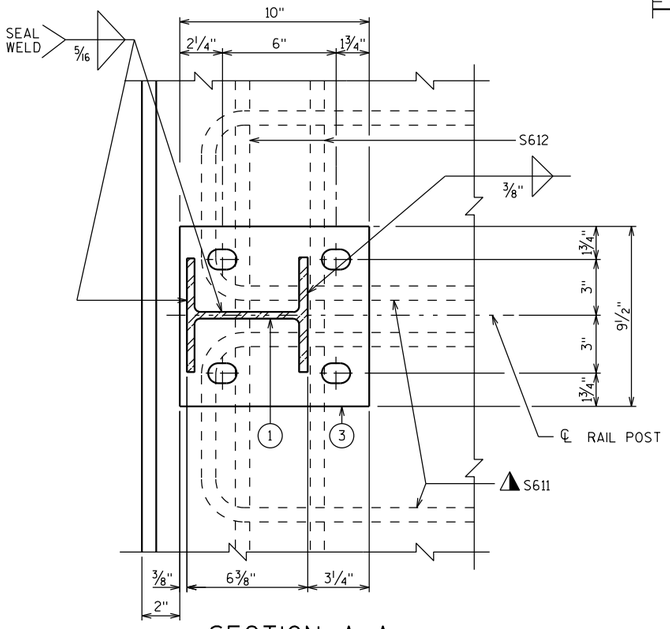




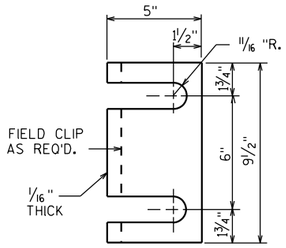


CHANNEL MEMBER DETAILS

SHIM PLATES 6"x1/16"x6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERT. ALIGNMENT.

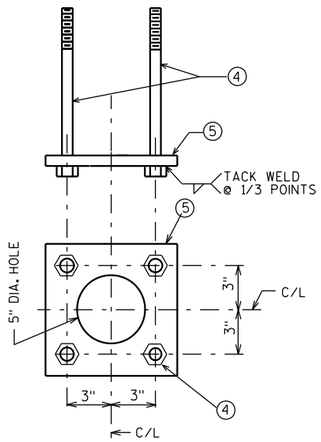


SECTION A-A



POST SHIM DETAIL

(4 PER POST)



ANCHORAGE DETAIL

LEGEND

① W6x25 WITH 2 - 3/4" x 2 1/2" VERT. SLOTS IN FLG. (SLOT ON OTHER SIDE OF WEB IS OPTIONAL) FOR NO. 7. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POSTS VERTICAL AND NORMAL TO GRADE LINE.

② C8x11.5 WITH 13/16 " DIA. HOLES FOR NO. 8.

③ BASE PLATE 1" X 9 1/2" x 10" WITH 1 1/16" x 1 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 4. WELD TO NO. 1 AS SHOWN.

④ A325 - 7/8" DIA. HEX BOLTS (GALVANIZED) WITH A325 NUT AND WASHER. 14" LONG AT END POSTS AND AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 15". USE 8" LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 3. CHAMFER TOP OF BOLTS BEFORE THREADING.

⑤ 1/4" x 8" x 8" FLAT BAR WITH 15/16 " DIA. HOLES FOR ANCHOR BOLTS NO. 4.

⑥ 1 3/4" x 3" MOUNTING BOLT WASHER (GALVANIZED).

⑦ 5/8" DIA. BUTTON HEAD POST MOUNTING BOLT WITH ROUND WASHER AND NUT.

⑧ 5/8" DIA. x 2" HEX BOLTS WITH NUT AND TWO WASHERS EACH.

⑨ PLATE 1/2" x 5 3/4" x 6" AT BASIC POST CONNECTION. 1 1/4" DIA. HOLES IN PLATE. 13/16 " DIA. HOLES IN CHANNEL.

⑩ ~~PLATE 1/2" x 5 3/4" x 1' 2 1/2". 1 1/4" DIA. HOLES IN PLATE. 13/16 " DIA. HOLES IN CHANNEL. EXPANSION SLOTS ON JOINT SIDE OF POST. 1 1/16" x 2 1/4" IN PLATE, 13/16 " x 2 1/4" IN CHANNEL. (AT EXPANSION SPLICE.)~~

⑪ PLATE 1/2" x 5 3/4" x 11 1/2". 1 1/4" DIA. HOLES IN PLATE. 13/16 " DIA. HOLES IN CHANNEL. (AT TYPICAL SPLICE.)

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE W B-11-154" WHICH INCLUDES ALL ITEMS SHOWN.

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

ALL MATERIAL EXCEPT ANCHORAGE DETAIL NO. 5 SHALL BE GALVANIZED AFTER FABRICATION.

PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND CHANNELS SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY SSPC SPECS.

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

FILL BOLT SLOT OPENINGS IN POST SHIMS & PLATE NO. 3 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CHANNEL MEMBER SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF EIGHT (EXCEPT AT ABUTMENTS).

AT EXPANSION SLOTS IN RAIL AND CHANNEL MEMBERS, TIGHTEN BOLTS, BACK OFF ONE HALF TURN AND BURR THREADS. RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

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

⚠ TIE TO TOP MAT OF STEEL.

STATE PROJECT NUMBER

5434-00-71

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-154

DRAWN BY SJG | PLANS CK'D. PJE

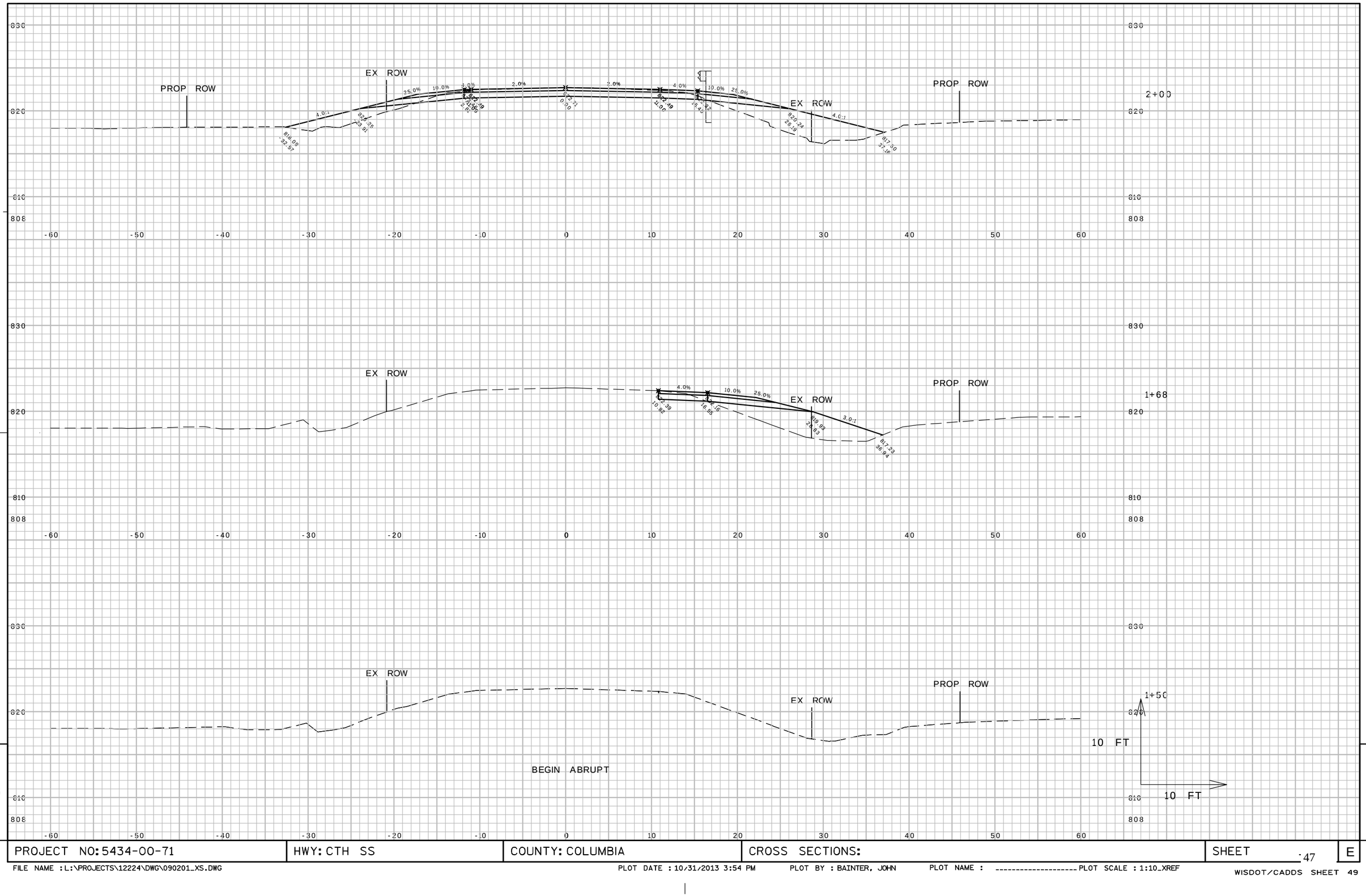
STEEL RAILING TYPE "W"

SHEET 10 OF 10

46

8

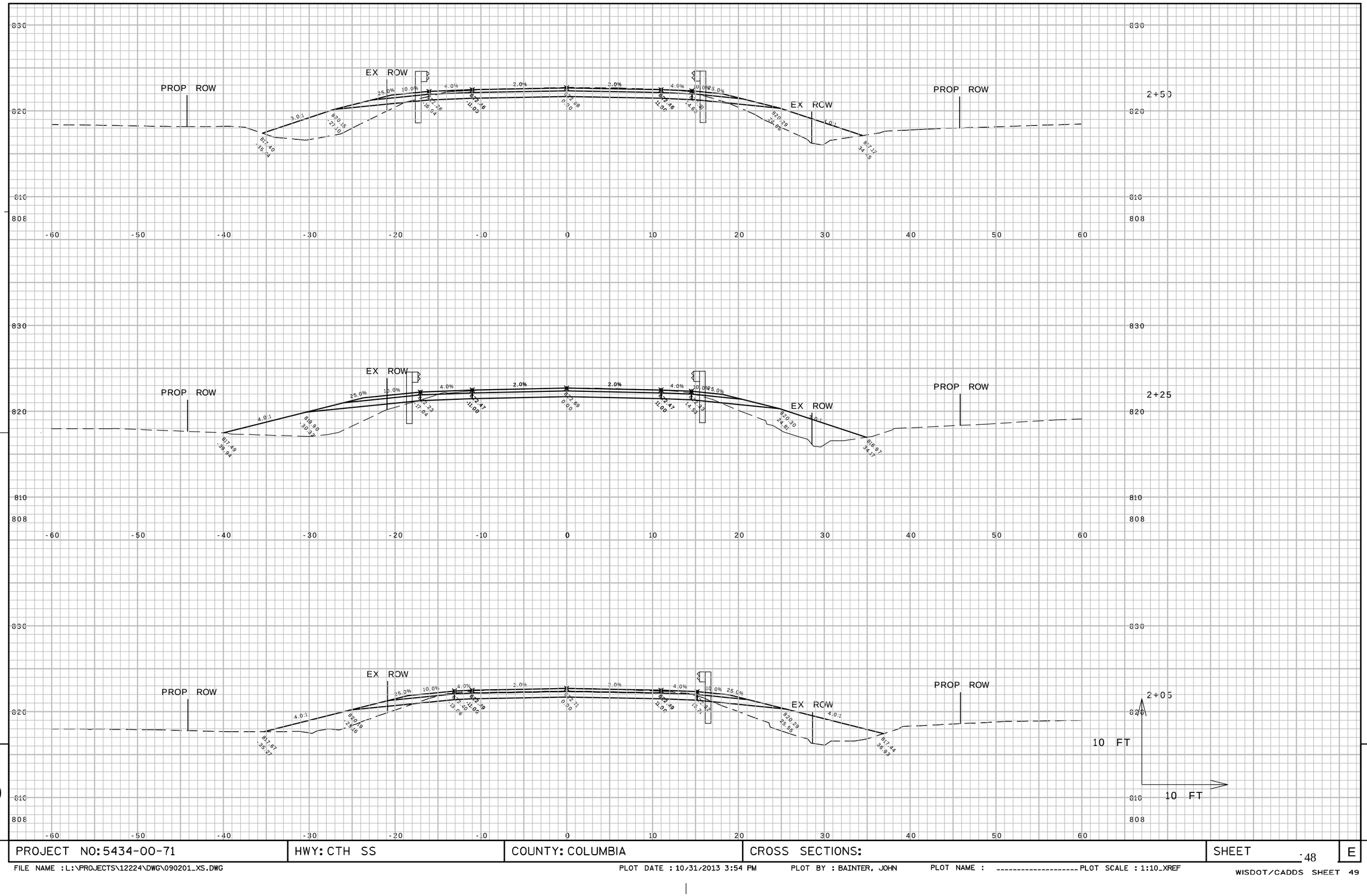
8



PROJECT NO: 5434-00-71	HWY: CTH SS	COUNTY: COLUMBIA	CROSS SECTIONS:	SHEET 47 E

FILE NAME : L:\PROJECTS\12224\DWG\090201_XS.DWG PLOT DATE : 10/31/2013 3:54 PM PLOT BY : BAINTER, JOHN PLOT NAME : ---------- PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



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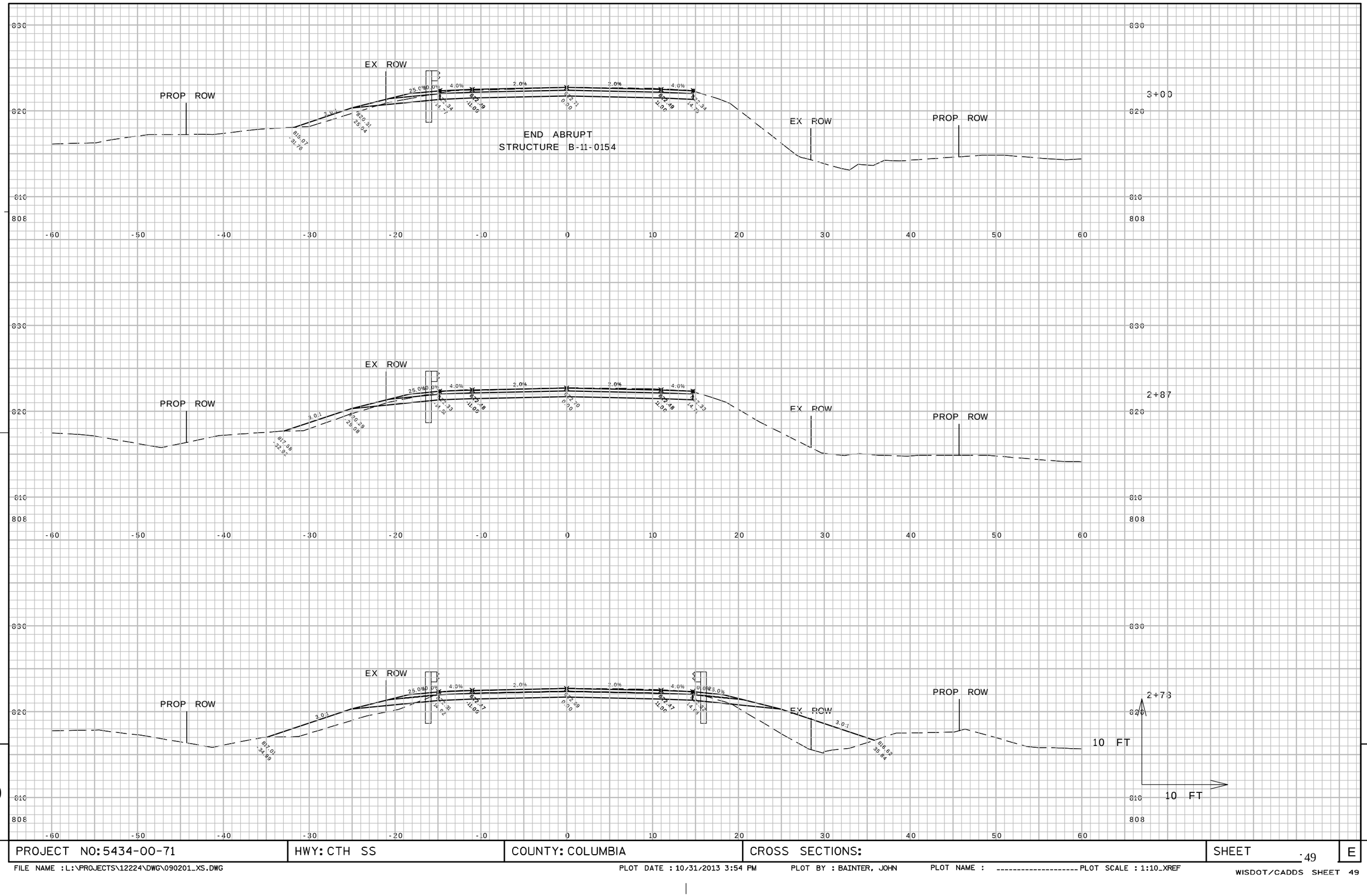
PROJECT NO: 5434-00-71	HWY: CTH SS	COUNTY: COLUMBIA	CROSS SECTIONS:	SHEET	E



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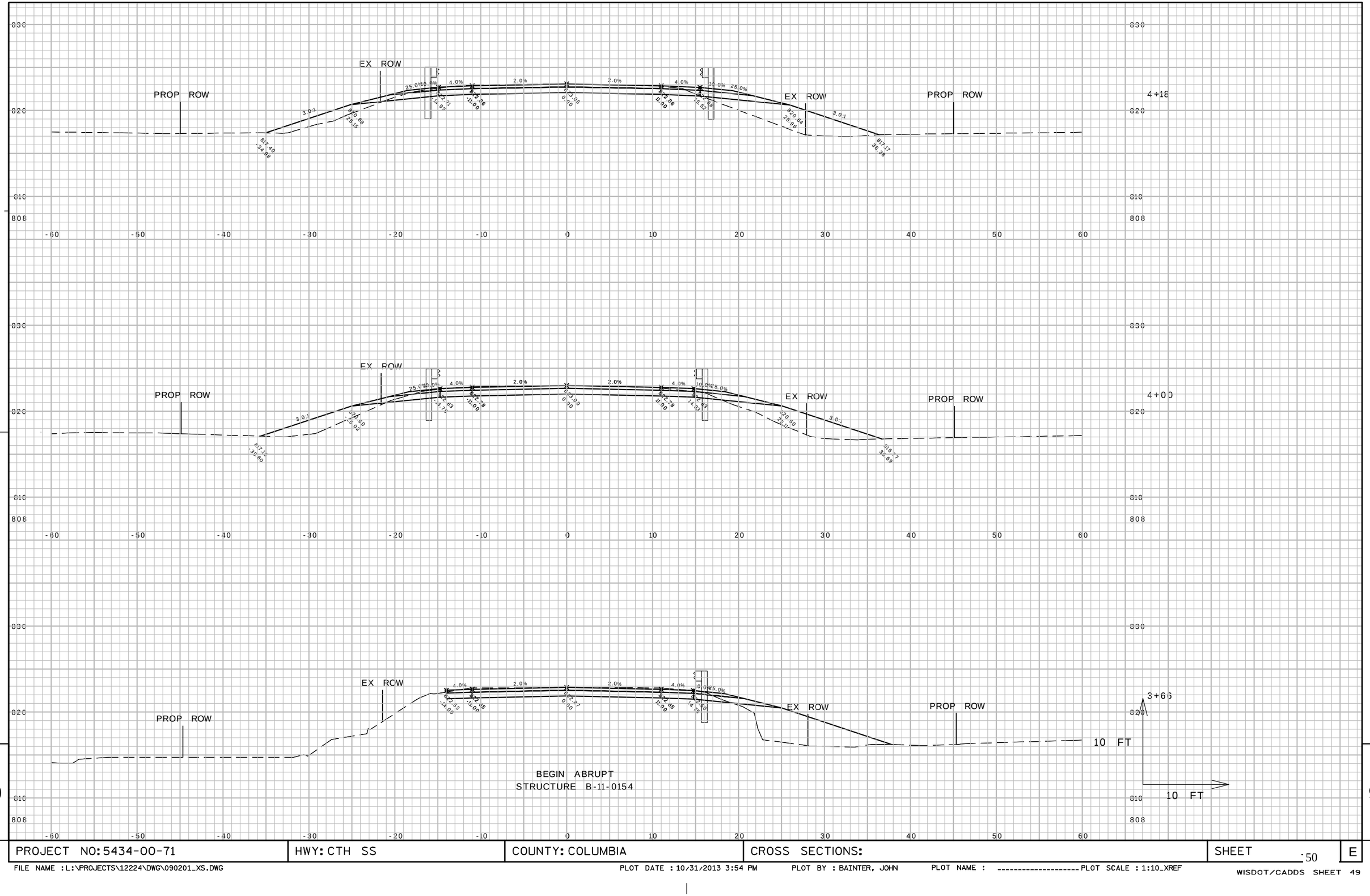

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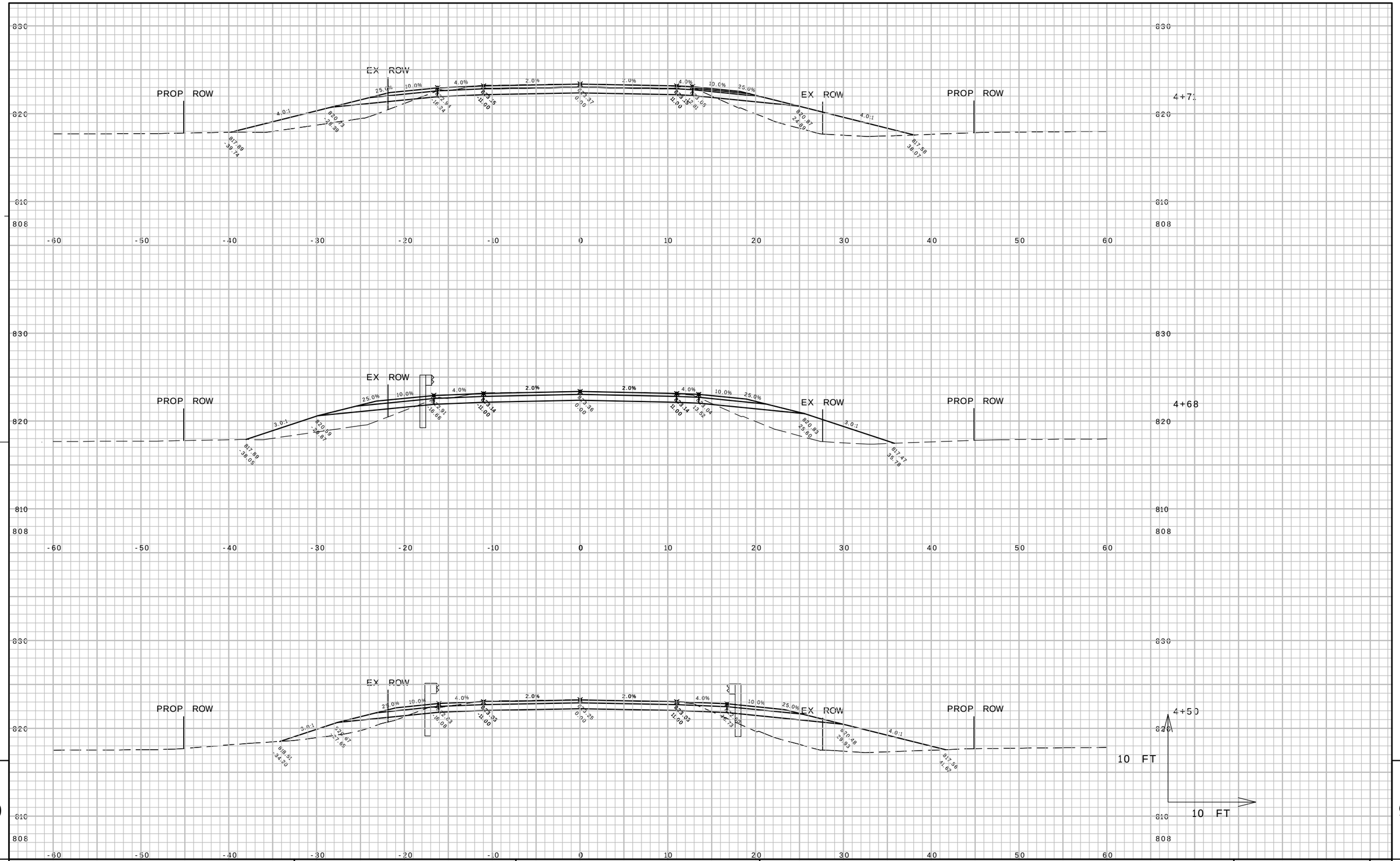

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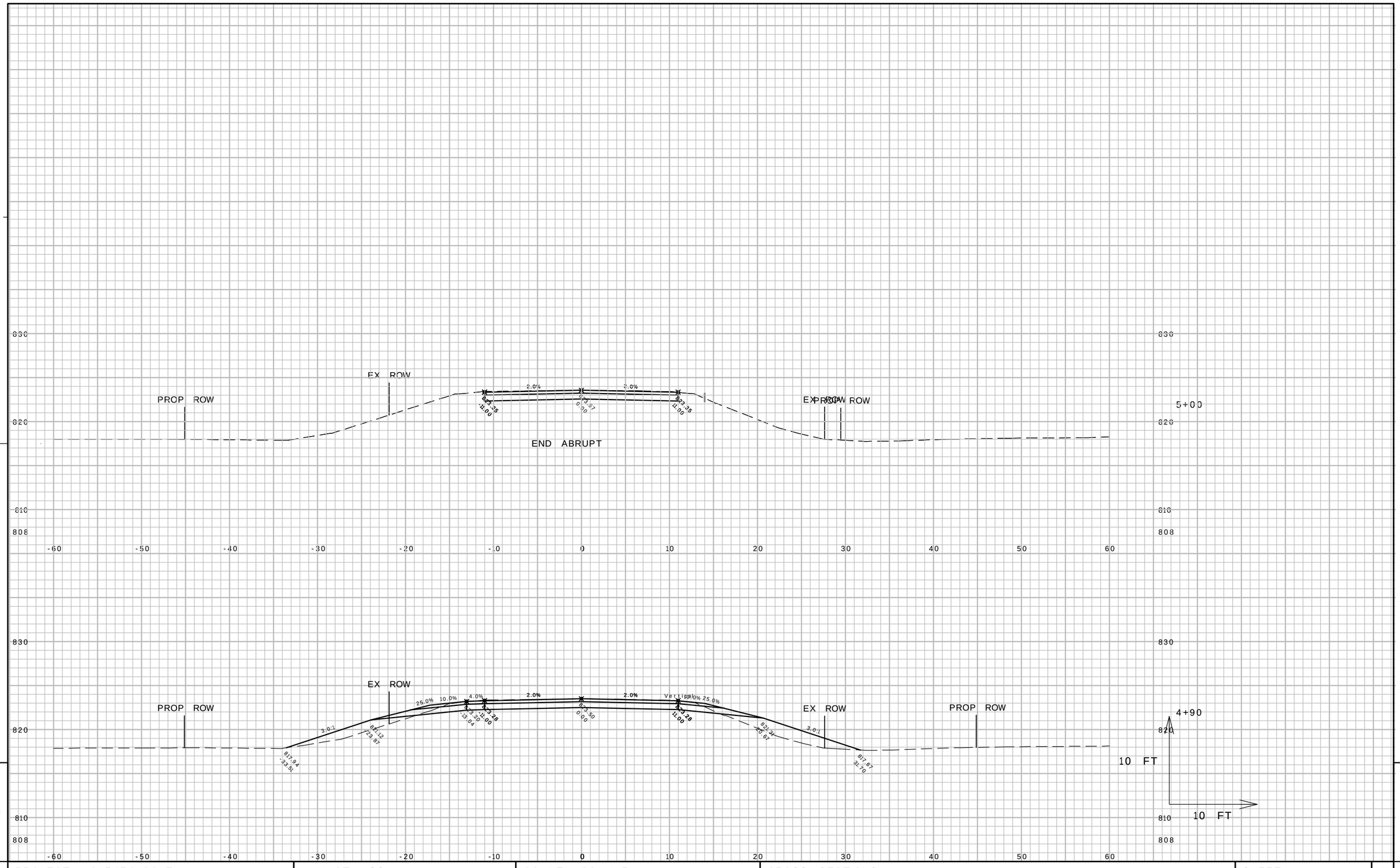
PROJECT NO: 5434-00-71	HWY: CTH SS	COUNTY: COLUMBIA	CROSS SECTIONS:	SHEET	E



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FILE NAME : L:\PROJECTS\12224\DWG\090201_XS.DWG PLOT DATE : 10/31/2013 3:54 PM PLOT BY : BAINTER, JOHN PLOT NAME : ---------- PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

SWL

PROJECT ID: 5903-00-72
WITH: ----------

MAR 2014
ORDER OF SHEETS

TOTAL SHEETS = 54

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

Town of Fort Winnebago, Clark Road

(Fox River Bridge B-11-0155)

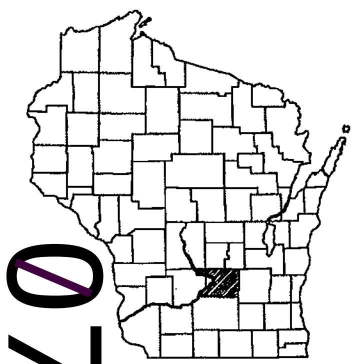
Town Road

Columbia

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5903-00-72	WISC 2014067	1

STATE PROJECT NUMBER
5903-00-72

PROJECT
STA. 3+08 TO STA. 7+00
N = 413,106.18
E = 546,129.48



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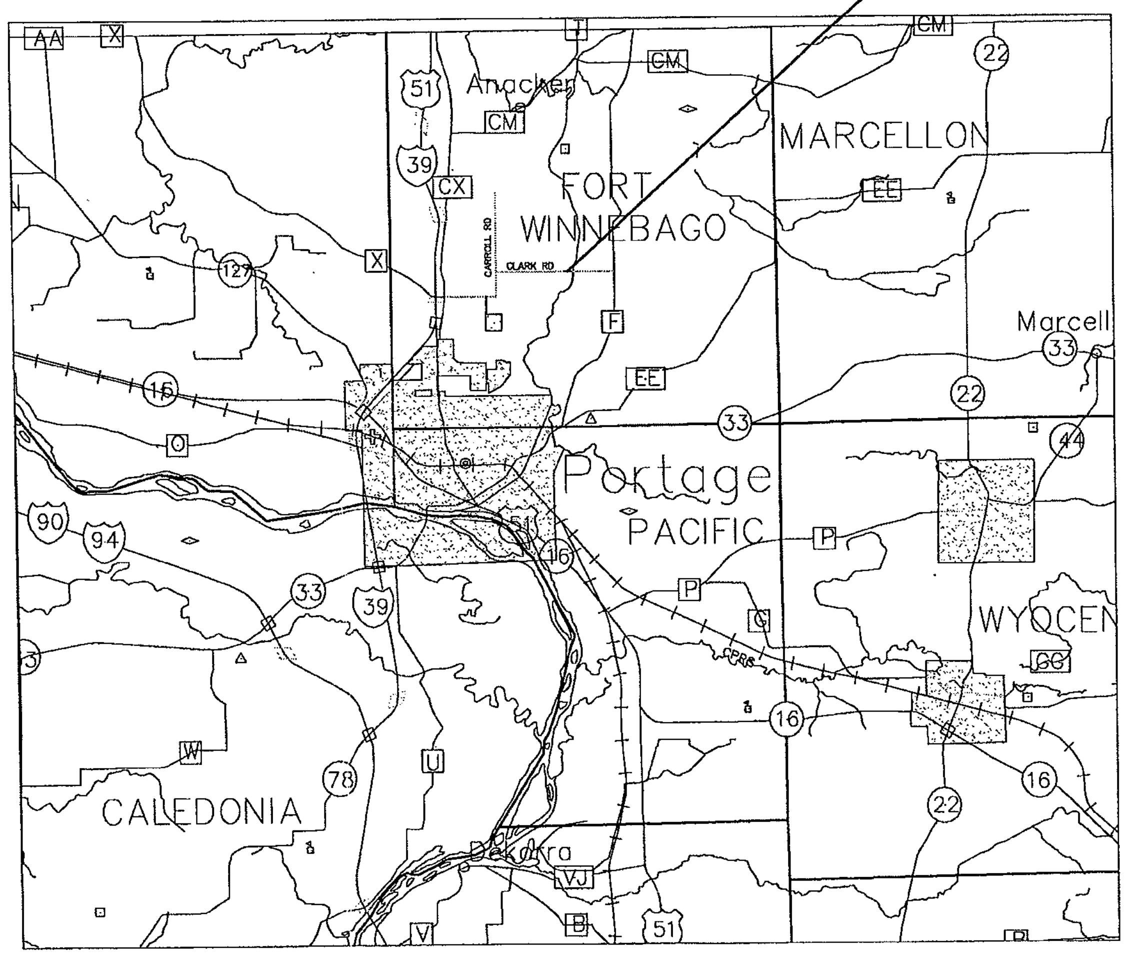
N



COUNTY: COLUMBIA

DESIGN DESIGNATION

A.A.D.T.	2014	=	530
A.A.D.T.	2034	=	660
D.H.V.	2034	=	109
D.D.		=	62/38
T.		=	4.0
DESIGN SPEED		=	40 MPH
ESALS		=	51,100

CONVENTIONAL SYMBOLS

PLAN
CORPORATE LIMITS
PROPERTY LINE (PL + 58.1)
LOT LINE
LIMITED HIGHWAY EASEMENT
EXISTING RIGHT OF WAY
PROPOSED OR NEW R/W LINE
SLOPE INTERCEPT
REFERENCE LINE
EXISTING CULVERT
PROPOSED CULVERT (Box or Pipe)
COMBUSTIBLE FLUIDS (CAUTION)
MARSH AREA
WOODED OR SHRUB AREA

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

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

LAYOUT
SCALE 0 — 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.074 MI.

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), 'COLUMBIA' COUNTY."

ACCEPTED FOR
TOWN of FORT WINNEBAGO
[signature] 10-29-13 Chairman
(Date) (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY
DONOHUE®

WISCONSIN
JOHN C. BAINTER, JR.
E-34975
SHEBOYGAN WI
PROFESSIONAL ENGINEER

10/29/13 [signature]
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: AYRES
Designer: DONOHUE & ASSOCIATES
Management Consultant: KJOHNSON ENGINEERS, INC.
C.O. Examiner:

APPROVED FOR THE DEPARTMENT
DATE: 11/1/2013 [signature]
(Management Consultant Signature)

E

GENERAL NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY ARE TO BE FERTILIZED,
SEEDED AND COVERED AS DIRECTED BY THE ENGINEER.

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

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

CUT VOLUMES SHOWN ON THE EARTHWORK SUMMARY DO NOT INCLUDE QUANTITY GENERATED FROM THE ITEM "EXCAVATION FOR STRUCTURES, BRIDGES" AND THE EXCAVATION REQUIRED TO PLACE THE ITEM "RIPRAP HEAVY".

FILL VOLUMES SHOWN ON THE EARTHWORK SUMMARY DO NOT INCLUDE QUANTITY REQUIRED TO PLACE THE ITEM "BACKFILL STRUCTURE".

WETLANDS EXIST IN THE PROJECT AREA, EQUIPMENT SHALL NOT BE OPERATED OUTSIDE THE SLOPE INTERCEPTS WHERE THERE ARE WETLANDS.

THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE
CONTRACTOR A MONUMENT WHICH SHALL BE SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.

ELEVATIONS REFERENCED ON THIS PLAN ARE BASED ON NGS MONUMENT PID#DH5555 (NAVD 88)

THE 4-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A
1¾" UPPER LAYER AND A 2¼" LOWER LAYER

DNR CONTACT
CATHY BLESER
DEPARTMENT OF NATURAL RESOURCES
SOUTH CENTRAL REGIONAL HEADQUARTERS
3911 FISH HATCHERY RD
FICHBURG, WI 53711-5397
(608) 275-3308
CATHERINE.BLESER@WISCONSIN.GOV

DESIGN CONTACT
JOHN BAINTER
DONOHUE & ASSOCIATES
3311 WEEDEN CREEK ROAD
SHEBOYGAN, WI 53081
(920) 208-0296
JBAINTER@DONOHUE-ASSOCIATES.COM

COUNTY CONTACT
COLUMBIA COUNTY
MR. THOMAS LORFELD
HIGHWAY COMMISSIONER
P.O. BOX 875
WYOCENA, WI
(608) 429-2136
TOM.LORFELD@CO.COLUMBIA.WI.US

TOWN CONTACT
TOWN OF FORT WINNEBAGO
MR. WILLIAM SCHROEDER, SR
TOWN CHAIRMAN
N8470 WILCOX ROAD
PORTAGE, WI
(608) 742-2981
FORTWINN@GMAIL.COM

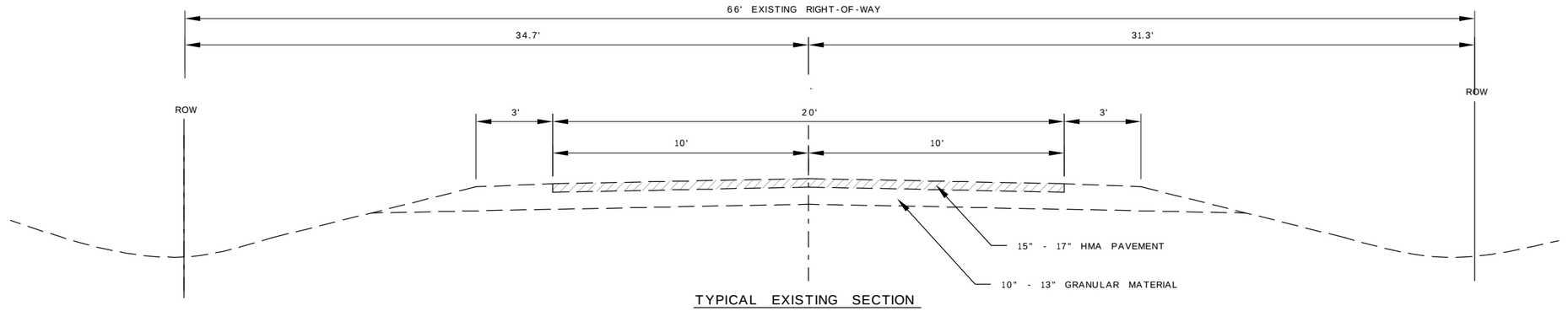
UTILITIES
THERE ARE NO KNOW UTILITY FACILITES WITHIN THE PROJECT AREA. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILTY TO CONFIRM THIS.

STANDARD ABBREVIATIONS

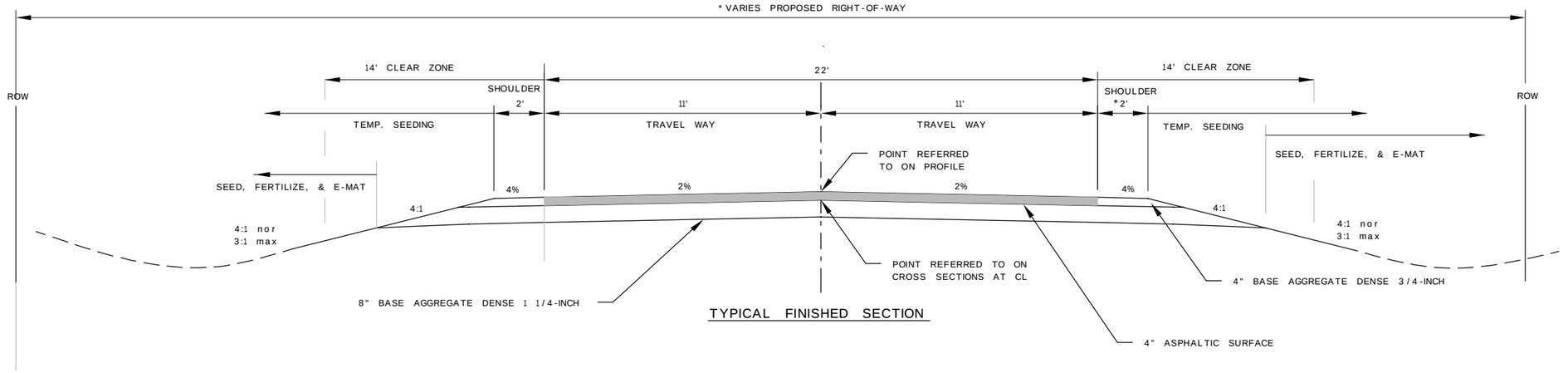
ABUT.	ABUTMENT
A.D.T	AVERAGE DAILY TRAFFIC
B.M.	BENCHMARK
D.H.V.	DESIGN HOURLY VOLUME
D.	DIRECTIONAL DISTRIBUTION
FERT.	FERTILIZER
H.W.	HIGH WATER
CWT.	HUNDRED WEIGHT
L.S.	LUMP SUM
OBS.	OBSERVED
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENT
R/W	RIGHT OF WAY
STA	STATION
T.	TRUCK (PERCENT OF)
TYP.	TYPICAL
V.C.	VERTICAL CURVE

* * NOT A MEMBER OF DIGGER'S HOTLINE

PROJECT NO: 5903-00-72	HWY: CLARK RD	COUNTY: COLUMBIA	PLAN: NOTES, SDD, & UTILITIES	SHEET 2	E



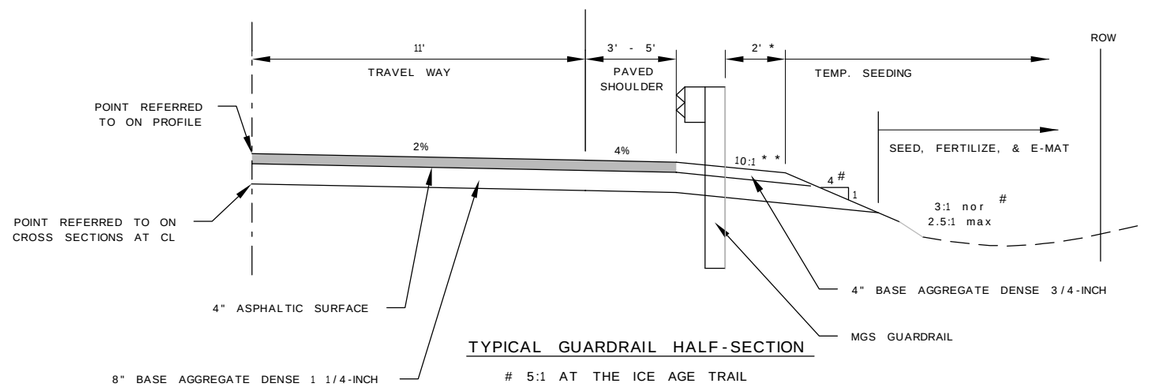
TYPICAL EXISTING SECTION



TYPICAL FINISHED SECTION

* 140 FEET WEST OF BRIDGE
96 FEET EAST OF BRIDGE

* 4' FOR ICE AGE TRAIL (STA 3+08 - 4+15)



TYPICAL GUARDRAIL HALF-SECTION

\# 5:1 AT THE ICE AGE TRAIL
* 4' FOR ICE AGE TRAIL (STA 4+15 - 4+75)
* * 5% FOR ICE AGE TRAIL (STA 4+15 - 4+75)

PROJECT NO: 5903-00-72	HWY: CLARK RD	COUNTY: COLUMBIA	PLAN: TYPICAL SECTIONS	SHEET 3	E

DATE 08JAN14 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5903-00-72 QUANTITY
0010	201.0105	CLEARING	STA	4.000	4.000
0020	201.0205	GRUBBING	STA	4.000	4.000
0040	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 02. 5+64	LS	1.000	1.000
0050	205.0100	EXCAVATION COMMON **P**	CY	220.000	220.000
0070	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 02. B-11-0155	LS	1.000	1.000
0080	208.0100	BORROW	CY	1,030.000	1,030.000
0090	210.0100	BACKFILL STRUCTURE	CY	283.000	283.000
0110	213.0100	FINISHING ROADWAY (PROJECT) 02. 5903-00-72	EACH	1.000	1.000
0120	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	50.000	50.000
0130	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	590.000	590.000
0150	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	140.000	140.000
0160	455.0605	TACK COAT	GAL	19.000	19.000
0170	465.0105	ASPHALTIC SURFACE	TON	170.000	170.000
0180	502.0100	CONCRETE MASONRY BRIDGES	CY	289.000	289.000
0190	502.3200	PROTECTIVE SURFACE TREATMENT	SY	372.000	372.000
0200	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	7,780.000	7,780.000
0210	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	45,080.000	45,080.000
0220	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-11-0155	LS	1.000	1.000
0240	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	22.000	22.000
0250	520.0112	CULVERT PIPE CLASS III 12-INCH	LF	32.000	32.000
0260	520.1012	APRON ENDWALLS FOR CULVERT PIPE 12-INCH	EACH	2.000	2.000
0270	550.0500	PILE POINTS	EACH	26.000	26.000
0280	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	1,380.000	1,380.000
0290	606.0300	RIPRAP HEAVY	CY	226.000	226.000
0300	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	130.000	130.000
0320	614.2500	MGS THRIE BEAM TRANSITION	LF	156.000	156.000
0330	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000
0340	619.1000	MOBILIZATION	EACH	0.500	0.500
0350	625.0100	TOPSOIL **P**	SY	1,860.000	1,860.000
0360	628.1504	SILT FENCE	LF	770.000	770.000
0370	628.1520	SILT FENCE MAINTENANCE	LF	1,540.000	1,540.000
0380	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	2.000	2.000
0390	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0400	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	1,860.000	1,860.000
0420	628.7504	TEMPORARY DITCH CHECKS	LF	80.000	80.000
0430	629.0210	FERTILIZER TYPE B	CWT	1.200	1.200
0440	630.0120	SEEDING MIXTURE NO. 20 **P**	LB	50.000	50.000
0450	630.0200	SEEDING TEMPORARY	LB	50.000	50.000
0460	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	4.000	4.000
0470	637.2230	SIGNS TYPE II REFLECTIVE F	SF	12.000	12.000
0480	638.2602	REMOVING SIGNS TYPE II	EACH	8.000	8.000
0490	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	8.000	8.000
0500	642.5001	FIELD OFFICE TYPE B	EACH	0.500	0.500
0520	643.0100	TRAFFIC CONTROL (PROJECT) 02. 5903-00-72	EACH	1.000	1.000
0530	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	276.000	276.000
0540	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	392.000	392.000
0550	650.5000	CONSTRUCTION STAKING BASE	LF	392.000	392.000
0570	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 02. B-11-0155	LS	1.000	1.000

3

DATE 08JAN14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5903-00-72 QUANTITY
0590	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 02. 5903-00-72	LS	1.000	1.000
0600	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	392.000	392.000
0610	690.0150	SAWING ASPHALT	LF	80.000	80.000
0620	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5. 00/HR	HRS	190.000	190.000
0630	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	150.000	150.000
0640	SPV.0045	SPECIAL 01. BUOYS WATERWAY	DAY	10.000	10.000
0650	SPV.0195	SPECIAL 01. SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	36.000	36.000

3

CLEARING AND GRUBBING

LOCATION	#201.0105 CLEARING STA	#201.0205 GRUBBING STA
3+50 - 5+00, LT	2	2
6+25 - 7+50, LT AND RT	2	2
TOTALS	**4**	**4**

EARTHWORK SUMMARY

DIVISION	CAT	FROM/TO STATION	LOCATION	**P** EXCAVATION COMMON (NOTE 1) (ITEM #205.0100)	SALVAGED / UNUSEABLE PAVEMENT MATERIAL (NOTE 3)	AVAILABLE MATERIAL (NOTE 4)	UNEXPANDED FILL (NOTE 5)	EXPANDED FILL (NOTE 6)	MASS ORDINATE +/- (NOTE 7)	WASTE	BORROW (ITEM #208.0100) (NOTE 8)
				CUT (NOTE 2)				FACTOR 1.25			FACTOR 1.15
5903-00-72											
1	0010	3+08 - 5+13	WEST OF BRIDGE	105	61	44	835	1,044	-1,000	---	920
2	0010	6+00 - 7+50	EAST OF BRIDGE	115	47	68	150	188	-120	---	110
TOTALS				220	108	112	985	1,231	-1,119	0	1,030

1) NO EBS IS ANTICIPATED. IF EBS IS REQUIRED IT WILL BE PAID AS COMMON EXCAVATION. ITEM NUMBER 205.0100
2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT
3) SALVAGED/UNUSABLE PAVEMENT MATERIAL EQUALS AREA OF PROJECT PAVEMENT REMOVAL * TYPICAL EXISTING PAVEMENT
4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
5) UNEXPANDED FILL IS A SUM OF CROSS SECTION AREAS FROM EACH DIVISIONAL SHEET
6) EXPANDED FILL FACTOR = 1.25, EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR
7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
8) BORROW = (ABSOLUTE VALUE OF MASS ORDINATE / EXPANDED FILL FACTOR) * BORROW FACTOR

BASE AGGREGATE

LOCATION	#305.0110 BASE AGGREGATE DENSE 3/4-INCH TONS	#305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TONS
3+08 - APPROACH SLAB	30	385
APPROACH SLAB - 7+00	20	205
TOTALS	**50**	**590**

CONCRETE PAVEMENT APPROACH SLAB, ITEM NO. 415.0410

LOCATION	DESCRIPTION	SY
4+94 - BRIDGE	WEST APPROACH	70
BRIDGE TO 6+34	EAST APPROACH	70
TOTAL		**140**

ASPHALT ITEMS

LOCATION	#455.0605 TACK COAT GAL	#465.0105 ASPHALTIC SURFACE TON
3+08 - APPROACH SLAB	13.0	115.0
APPROACH SLAB - 7+00	6.0	55.0
TOTALS	**19**	**170**

SAWING ASPHALT

LOCATION	LF
2+58	20
7+00 - 7+15, RT	15
7+50	20
7+00 - 7+25, LT	25
TOTALS	**80**

MGS GUARDRAIL ITEMS

LOCATION	#614.2500 MGS THRIE BEAM TRANSITION LF	#614.2610 MGS GUARDRAIL TERMINAL EAT EACH
SE QUADRANT	39	1
SW QUADRANT	39	1
NW QUADRANT	39	1
NE QUADRANT	39	1
TOTALS	**156**	**4**

CULVERT ITEMS

LOCATION	#520.0112 CULVERT PIPE CLASS III 12-INCH LF	#4520.1012 APRON ENDWALL FOR CULVERT PIPE 12-INCH EACH
STA 4+47, 55' RT	32	2
TOTALS	**32**	**2**

EROSION CONTROL ITEMS

LOCATION	#625.0100 **P** TOPSOIL SY	#628.1504 SILT FENCE LF	#628.1520 SILT FENCE MAINTENANCE LF	#628.2008 EROSION MAT URBAN CLASS 1 TYPE B SY	#628.7504 TEMPORARY DITCH CHECKS LF	#629.0210 **P** FERTILIZER TYPE B CWT	#630.0120 SEED MIXTURE NO. 20 LBS	#630.0200 SEEDING TEMPORARY LBS
NW QUADRANT	660	235	470	660	20	0.40	18	18
SW QUADRANT	650	205	410	650	20	0.40	18	18
NE QUADRANT	265	160	320	265	20	0.20	7	7
SE QUADRANT	285	170	340	285	20	0.20	7	7
TOTALS	**1860**	**770**	**1540**	**1860**	**80**	**1.20**	**50**	**50**

REMOVING SIGNS TYPE II AND REMOVING SMALL SIGN SUPPORTS

LOCATION	DESCRIPTION	#638.2602 REMOVING SIGNS TYPE II EACH	#638.3000 REMOVING SMALL SIGN SUPPORTS EACH
4+40, LT	TRAIL	1	1
4+45, RT	TRAIL	1	1
4+85, RT	WT RESTRICTION	1	1
BRIDGE CORNERS	TIGER STRIPES	4	4
6+40, LT	WT RESTRICTION	1	1
TOTALS		**8**	**8**

SIGNS AND POSTS

LOCATION	SIGN CODE	#637.2230 SIGNS TYPE II REFLECTIVE F SF	#634.0612 POSTS WOOD 4X6X12 EACH	REMARKS
5+13, LT	W5-52L	3	1	OBJECT MARKER
5+13, RT	W5-52R	3	1	OBJECT MARKER
6+13, RT	W5-52L	3	1	OBJECT MARKER
6+13, LT	W5-52L	3	1	OBJECT MARKER
TOTALS		**12**	**4**	

CONSTRUCTION STAKING

LOCATION	#650.4500 CONSTRUCTION STAKING SUBGRADE LF	#650.5000 CONSTRUCTION STAKING BASE LF	#650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
3+08 - 7+00	392	392	392
TOTALS	**392**	**392**	**392**

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
5903-00-01		
FEDERAL PROJECT NUMBER	4.01	1

PLAT OF RIGHT-OF-WAY REQUIRED FOR

TOWN OF FORT WINNEBAGO, CLARK ROAD

(FOX RIVER BRIDGE B-11-0155)

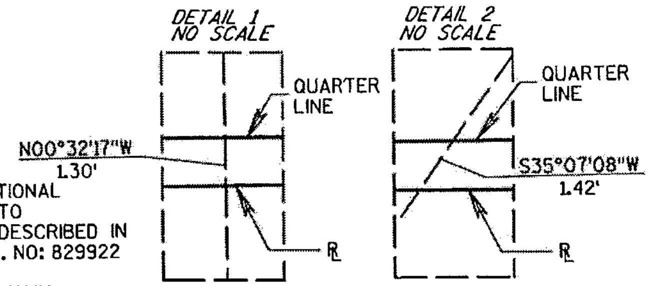
TOWN ROAD — COLUMBIA COUNTY

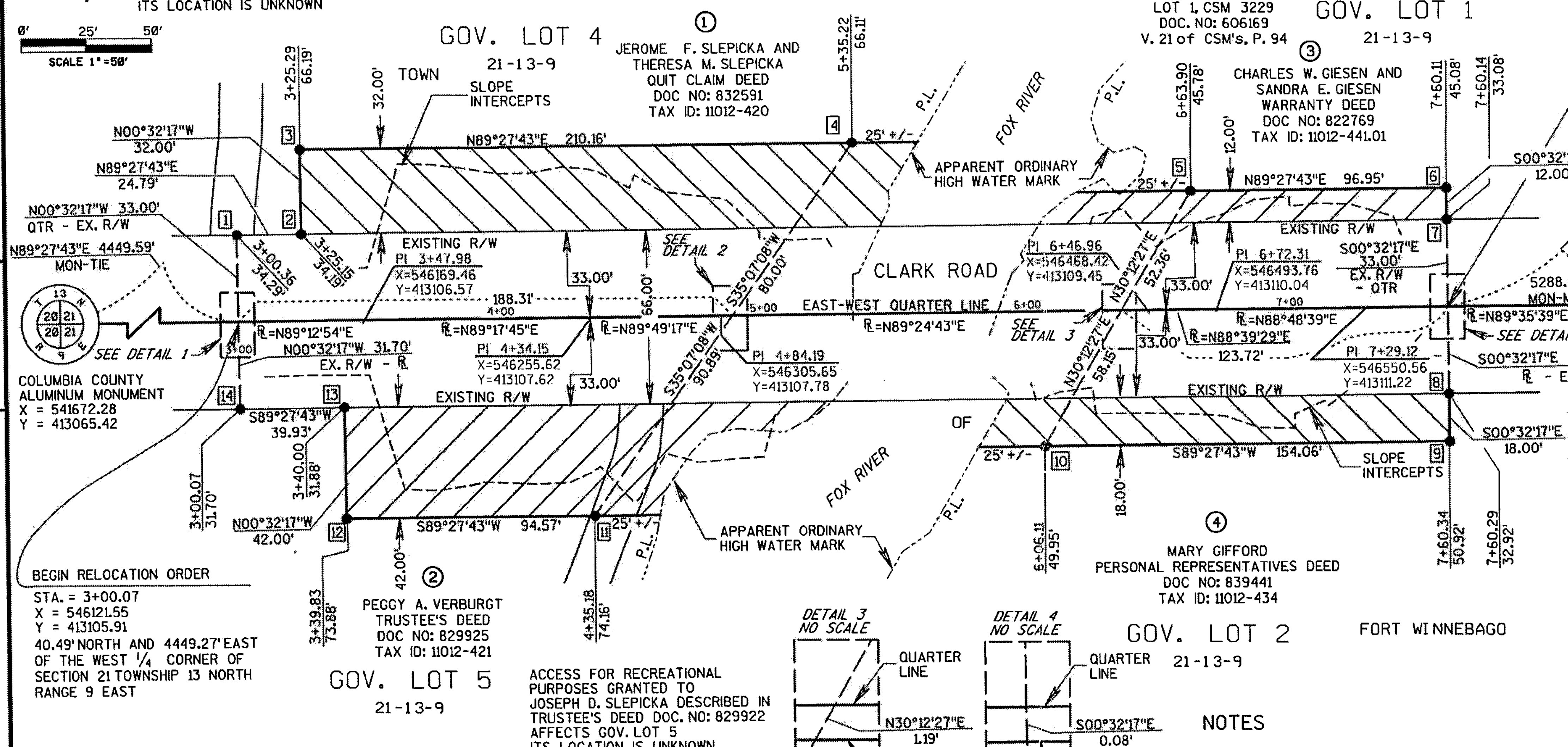
CONSTRUCTION PROJECT NUMBER 5903-00-72

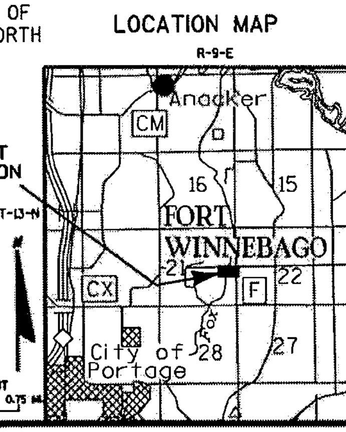
OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE TOWN.

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NUMBER	OWNER(S)	INTERESTS REQUIRED	TOTAL ACRES	NEW	EXISTING	TOTAL FEE	TOTAL ACRES REMAINING
1	JEROME F. SLEPICKA AND THERESA M. SLEPICKA	HIGHWAY EASEMENT	61.65	0.15	0.18	0.33 HE	61.32
2	PEGGY A. VERBURGT	HIGHWAY EASEMENT	57.00	0.14	0.18	0.32 HE	56.68
3	CHARLES W. GIESEN AND SANDRA E. GIESEN	FEE	40.00	0.04	0.12	0.16	39.84
4	MARY GIFFORD	FEE	46.15	0.07	0.13	0.20	45.95







PLAT PREPARED BY

AYRES ASSOCIATES — Engineers/Architects Scientists/Surveyors 1802 Pankratz Street Madison, WI 53704

THIS SURVEY IS PREPARED AT THE REQUEST OF THE COLUMBIA COUNTY HIGHWAY DEPARTMENT. THE FIELD SURVEY WAS PERFORMED IN JUNE 2012. THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN JAMEY L. REID Portage, WI S-2559 PROFESSIONAL LAND SURVEYOR

Revised 10/29/2013

JAMEY L. REID, RLS — S-2559 — August 15, 2013 — DATE

REVISION DATE:
September 30, 2013
October 21, 2013
October 29, 2013

COLUMBIA COUNTY

APPROVED FOR TOWN OF FORT WINNEBAGO

DATE 10-31-13 TOWN CHAIRMAN

CONVENTIONAL SYMBOLS AND ABBREVIATIONS

STATE, COUNTY, or TOWN LINE; SECTION LINE; QUARTER LINE; SIXTEENTH LINE; PROPOSED REFERENCE LINE; PROPOSED R/W LINE; EXISTING H.E. LINE; PROPERTY LINE; EASEMENT LINE; CORPORATE LIMITS; EXISTING CENTERLINE; LOT & TIE LINES; UTILITIES FO (TELEPHONE, GAS, ELECTRIC, CABLE TV, FIBER OPTIC); ACCESS RESTRICTED (BY PREVIOUS PROJECT/CONTROL)

NO ACCESS (BY ACQUISTION); NO ACCESS (BY STATUTORY AUTHORITY); FEE (HATCH VARIES); TEMPORARY LIMITED EASEMENT; PERMANENT LIMITED EASEMENT; PARCEL NUMBER; ENCROACHMENT NUMBER (OFF PREMISES); BUILDING; FOUND IRON PIPE/PIN; R/W MONUMENT; R/W STANDARD; SIGN

ACCESS POINT	AP
ACCESS RIGHTS	AR
ACRES	AC.
AND OTHERS	ET.AL.
CENTERLINE	C/L
CERTIFIED SURVEY MAP	CSM
DOCUMENT	DOC.
HIGHWAY EASEMENT	H.E.
LAND CONTRACT	LC
MONUMENT	MON.
PAGE	P.
PROPERTY LINE	PL
PERMANENT LIMITED EASEMENT	PLE
RECORDED AS	(100')
REFERENCE LINE	R/L
REMAINING	REM.
RIGHT-OF-WAY	R/W
SECTION	SEC.
SQUARE FEET	SQ.FT.
STATION	STA.
TEMPORARY LIMITED EASEMENT	TLE
VOLUME	V.

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	DELTA
LENGTH OF CURVE	L
TANGENT	TAN

POWER POLE; TELEPHONE POLE; TELEPHONE PEDESTAL (NON COMPENSABLE / COMPENSABLE); SECTION CORNER

POINT	Y	X
1	413140.21	546121.36
2	413140.44	546146.15
3	413172.44	546145.85
4	413174.41	546356.00
5	413155.61	546484.28
6	413156.52	546581.23
7	413144.52	546581.34
8	413078.53	546581.96
9	413060.53	546582.13
10	413059.08	546428.08
11	413033.47	546256.88
12	413032.58	546162.31
13	413074.58	546161.91
14	413074.21	546121.98

NOTES

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), COLUMBIA COUNTY ZONE, NAD83 (2007) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID AND GROUND VALUES ON THIS PLAT.

RIGHT OF WAY MONUMENTS ARE TYPE II (3/4" X 24" REINFORCEMENT BAR WEIGHING 1.50 LB/FT) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT, OR AT THE TIME OF LAND TITLE TRANSFER.

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

EXISTING RIGHT OF WAY BASED ON CERTIFIED SURVEY MAP NUMBER 3229, PRESUMED 66 FEET WIDE PER STATE STATUTE 82.31(2) AND CENTERED ON THE EAST-WEST 1/4 LINE.

SIDEWALK CLOSED
R9-9
24" X 12"

JEROME F. SLEPICKA AND
THERESA M. SLEPICKA

WETLAND BOUNDRY

HIGHWAY EASEMENT

SLOPE INTERCEPT

ICE AGE TRAIL

PI: 2+33.17

PI: 2+88.31

PI: 3+47.98

PI: 4+34.15

PI: 4+84.39

EX ROW

MGS TERMINAL EAT
POST 1 STA 4+18, 16' RT
POST 1 STA 4+33, 16' LT

MGS THRIE BEAM

SAWCUT AND MATCH EXISTING

CONNECTION ICE AGE TRAIL

3+00

4+00

5+00

6+00

7+00

8+00

30°

22'

CLARK RD

ICE AGE TRAIL

4.0'

90

CONCRETE APPROACH SLAB

EX ROW

WETLAND BOUNDRY

PEGGY A. VERBURGT

HIGHWAY EASEMENT

CONNECTION ICE AGE TRAIL

ICE AGE TRAIL

STA 4+47, 55' RT
1-CULVERT PIPE 12-INCH
2-AEW REQ'D

SIDEWALK CLOSED
R9-9
24" X 12"

FOX RIVER

WETLAND BOUNDRY

REMOVE OLD BRIDGE P-11-0902
STA 5+64
TWO SPAN WOOD BRIDGE & STEEL
GIRDER BRIDGE
57.0' OVERALL LENGTH
26.3' DECK WIDTH

N

PROP ROW

CHARLES W. GIESEN AND
SANDRA E. GIESEN

PI: 6+46.16

PI: 6+92.31

PI: 7+29.12

END CONSTRUCTION
STA 7+50

MGS TERMINAL EAT
POST 1 STA 6+94, 17' RT
POST 1 STA 7+10, 15' LT

SAWCUT AND MATCH EXISTING

CONCRETE APPROACH SLAB

PROP ROW

MARY GIFFORD

WETLAND BOUNDRY

SLOPE INTERCEPT

BEGIN PROJECT 5903-00-71
STA. 3+08
N = 413,106.18
E = 546,129.48

END PROJECT 5903-00-71
STA. 7+00

5

5

-5.50%

VCL = 280.00

K = 64.06

STA 3+08.00
EL 795.74

VPC STA 3+40.00
VPC EL 793.98

PROPOSED GRADE @ `

Q100
EL = 781.32

VPI STA 4+80.00
VPI EL 786.28

OBSERVED WATER
EL = 775.03
(5-30-12)

STREAMBED
EL = 772.30

VPT STA 6+20.00
VPT EL 784.70

-1.13%

-1.26%

STA 7+00.00
EL 783.79

STA 7+50.00
EL 783.17

EXISTING GRADE @ `

STA 5+64
STRUCTURE B-11-0155
28.0' CLEAR ROADWAY WIDTH
92' $10\frac{5}{8}$" OVERALL LENGTH
30 DEGREE LHF

EXISTING GROUND ON `

PROPOSED ELEVATION ON `

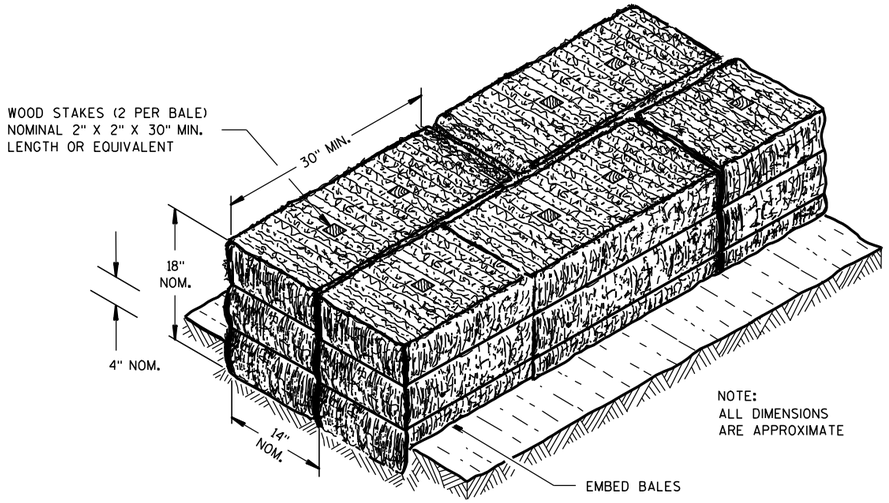
3+00	4+00	5+00	6+00	7+00	8+00
799.15	796.19	793.39 / 793.44	790.72 / 790.96	788.22 / 788.87	786.43 / 787.18	783.18 / 785.87	784.89 / 784.95	784.35 / 784.36	783.79 / 783.79	783.17 / 783.17	782.54

783 775 767

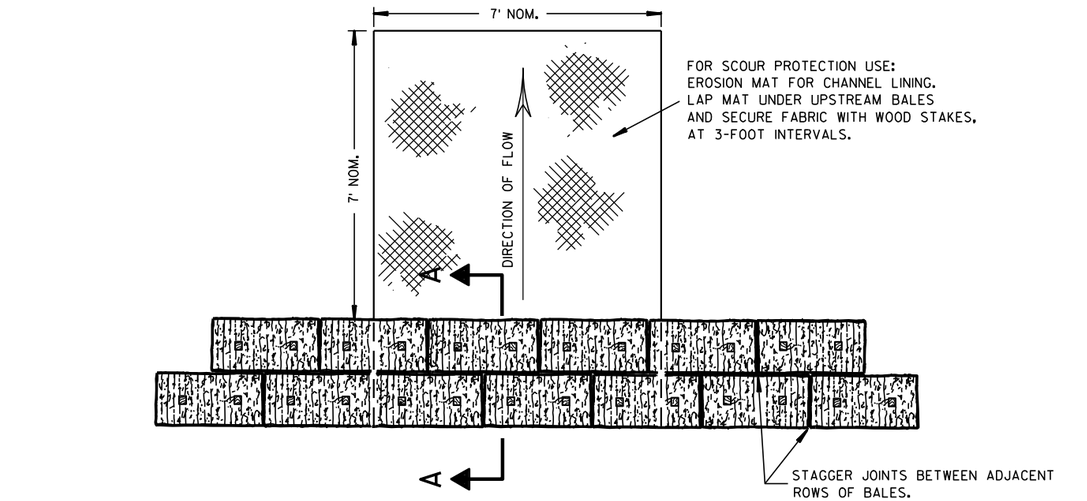
PROJECT NO: 5903-00-72	HWY: CLARK RD	COUNTY: COLUMBIA	PLAN & PROFILE	SHEET 8	E

Standard Detail Drawing List

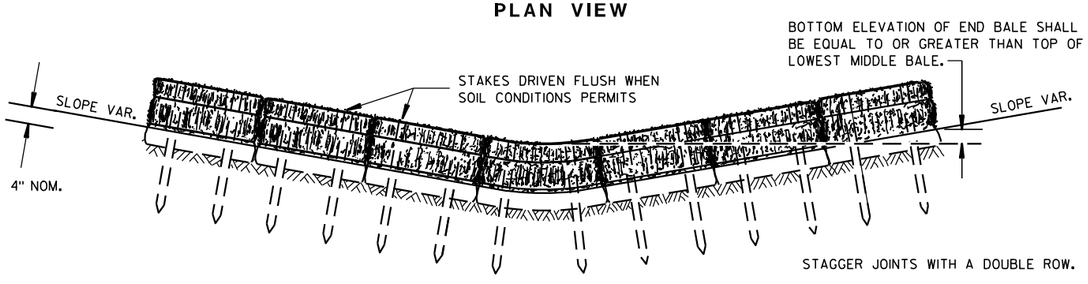
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
13C01-16	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-06	SIGNING & MARKING FOR TWO LANE BRIDGES
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)



SECTION A-A



PLAN VIEW



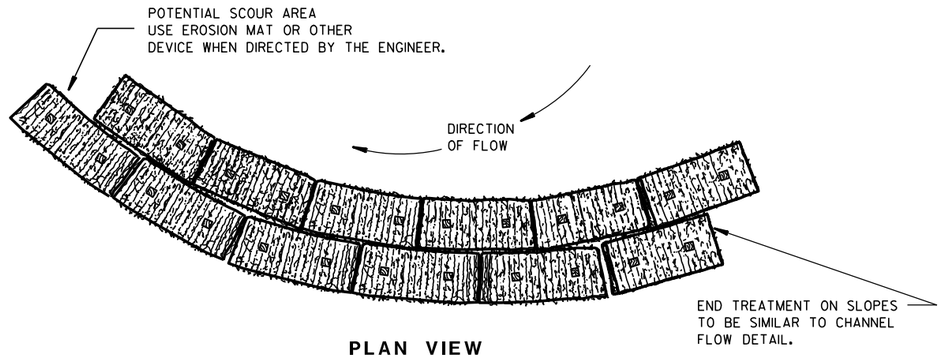
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

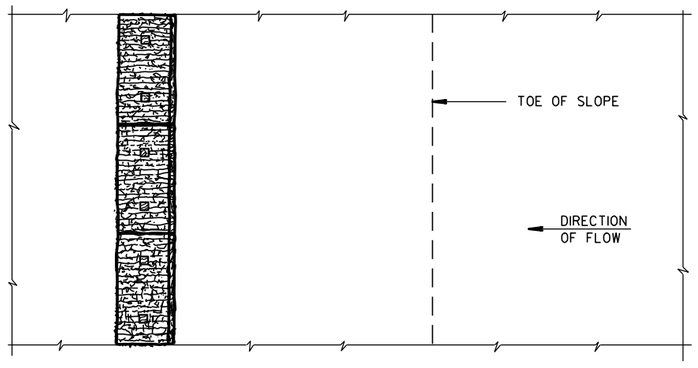
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

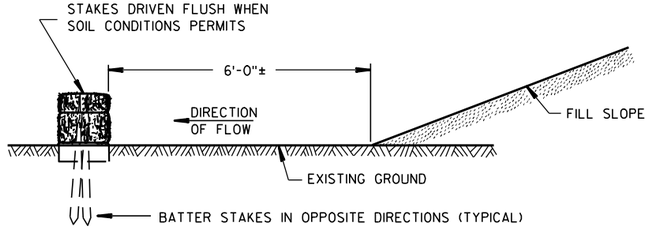


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

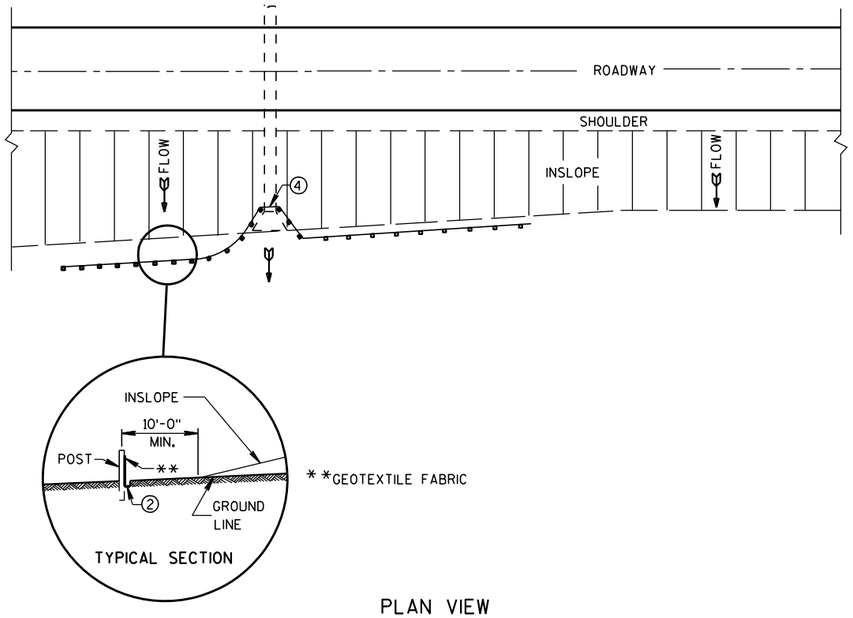
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

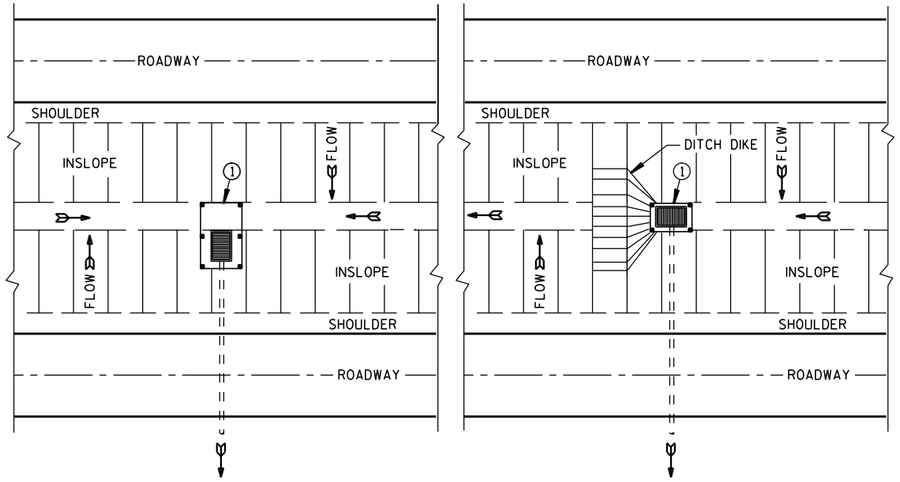
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

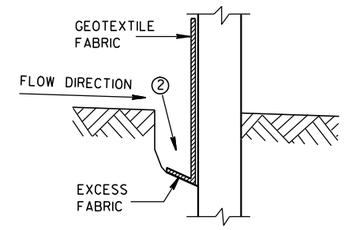
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

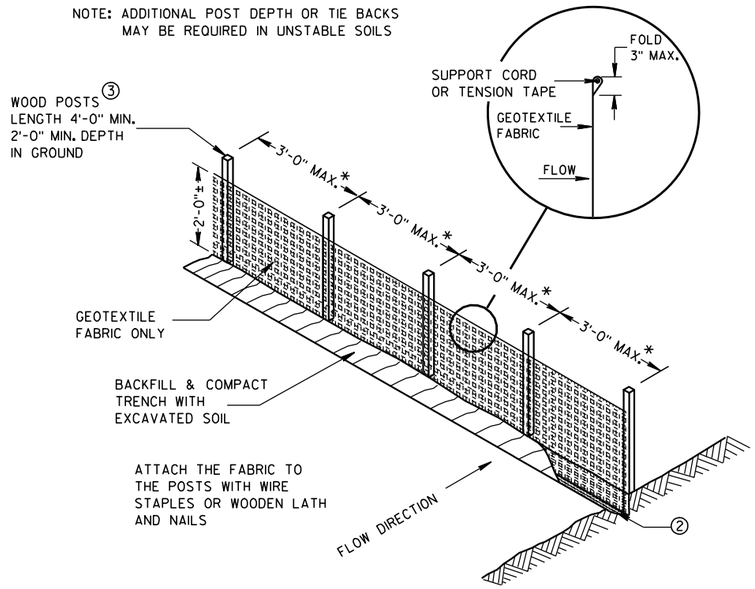
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

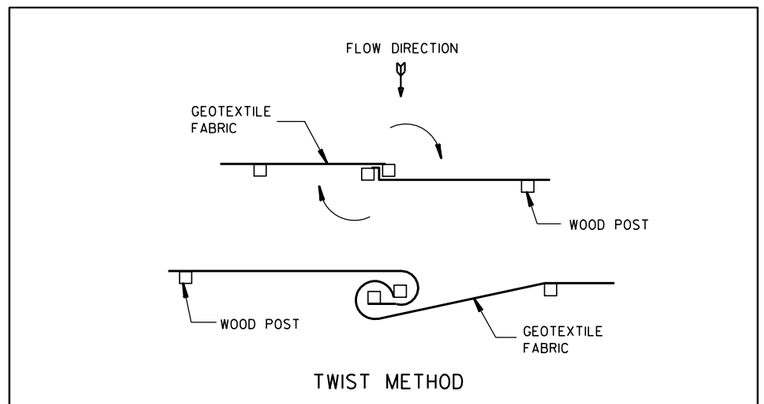
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



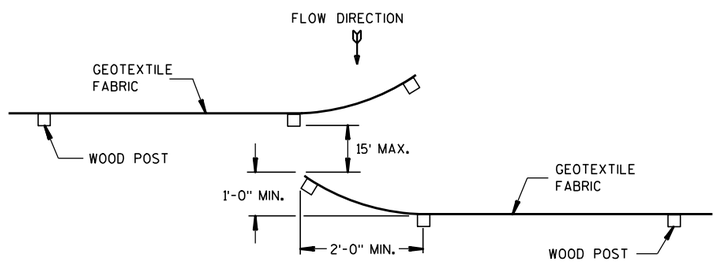
TRENCH DETAIL



SILT FENCE

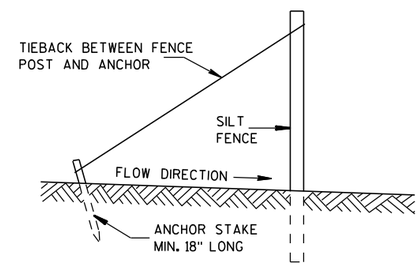


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

METAL APRON ENDWALLS

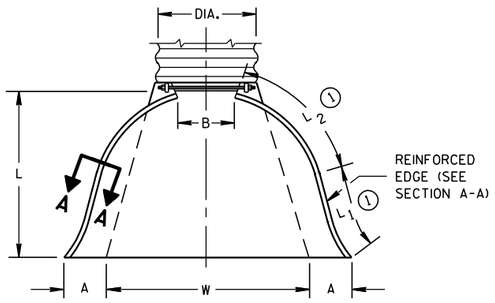
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

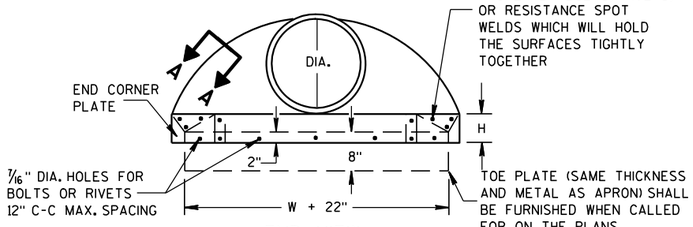
REINFORCED CONCRETE APRON ENDWALLS

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

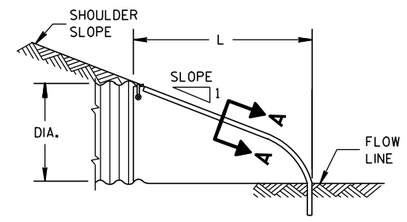
*MINIMUM
**MAXIMUM



PLAN VIEW

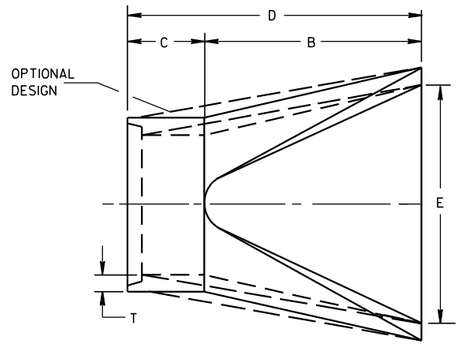


END VIEW

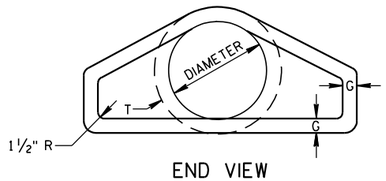


SIDE ELEVATION

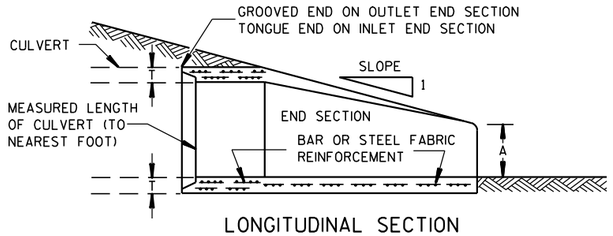
METAL ENDWALLS



PLAN

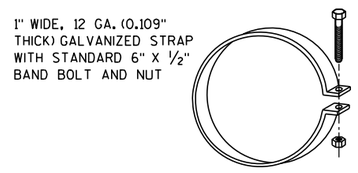


END VIEW



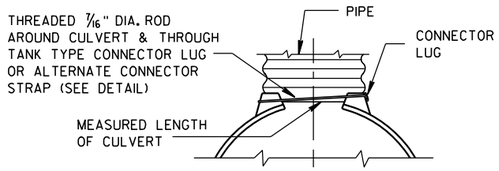
LONGITUDINAL SECTION

CONCRETE ENDWALLS

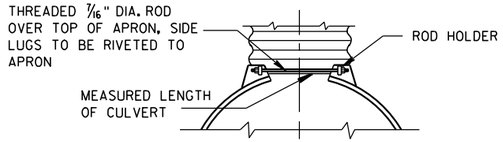


ALTERNATE FOR TYPE 1 CONNECTION

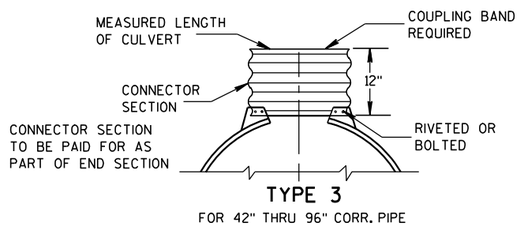
END SECTION CONNECTOR STRAP



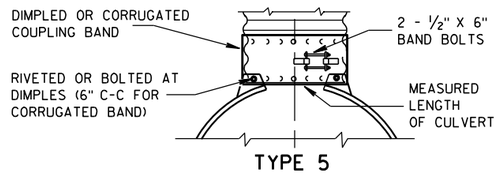
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

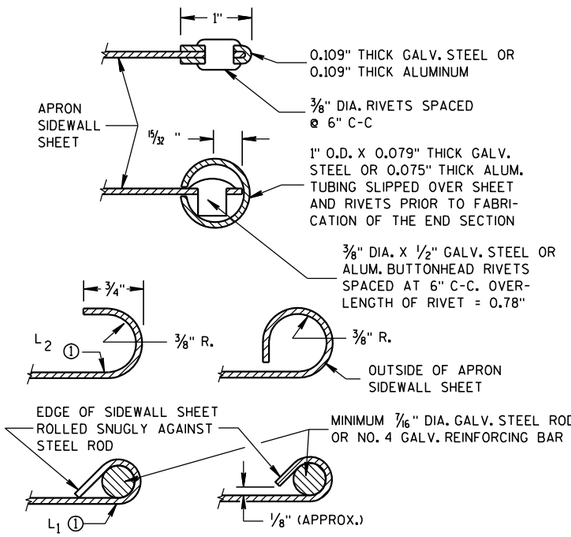
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

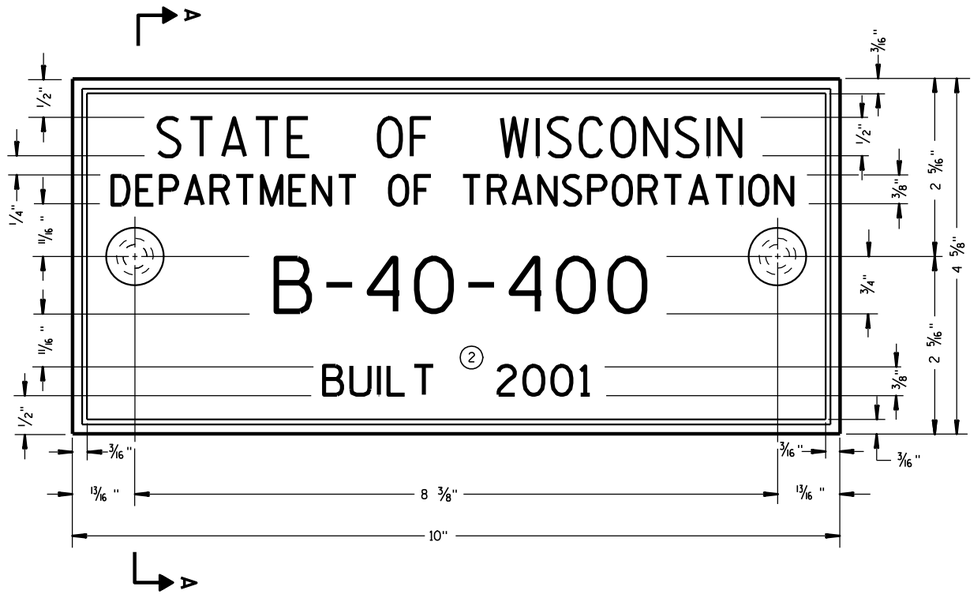
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 F 1-11



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

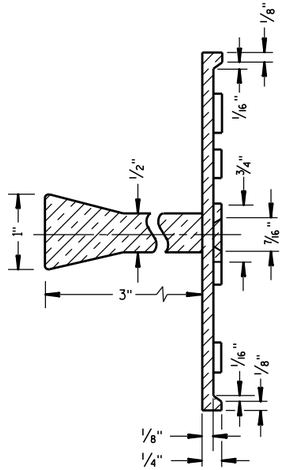
GENERAL NOTES

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

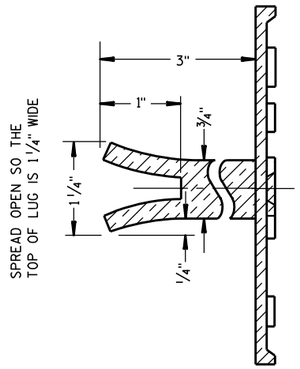
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

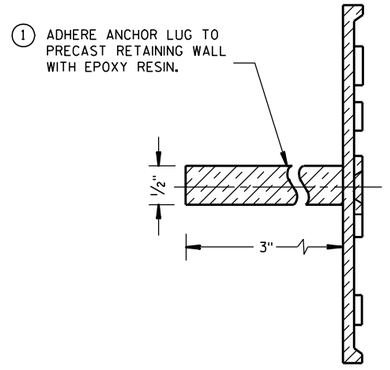
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

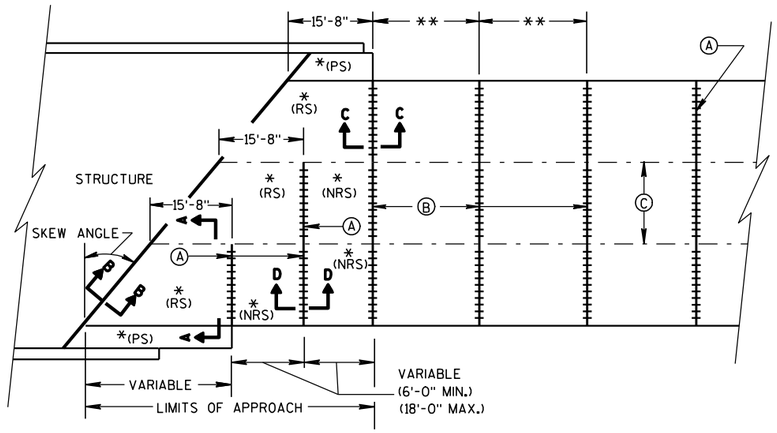
FHWA

6

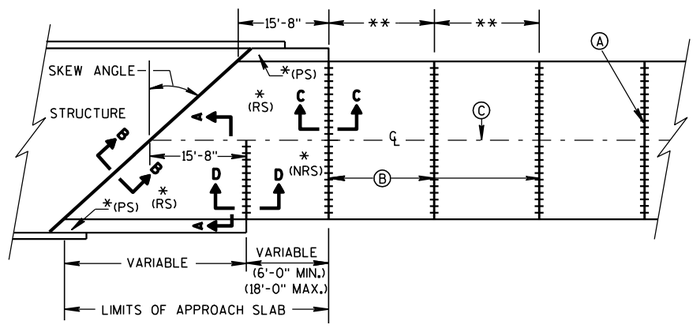
S.D.D. 12 A 3-10

6

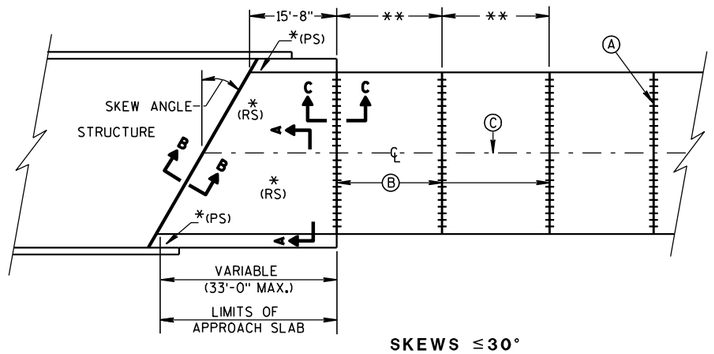
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



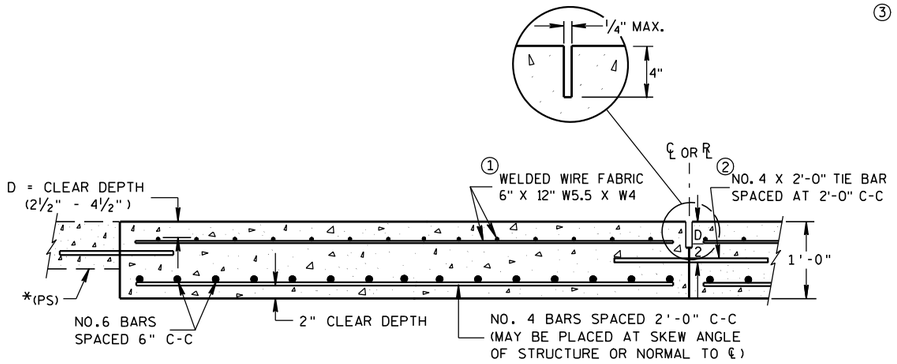
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

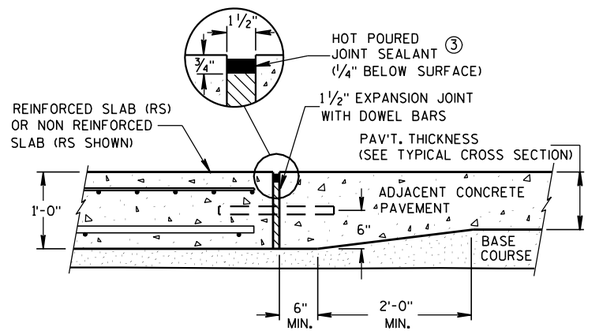
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING
(SEE SDD 13C4, SDD 13C11, & SDD 13C13)

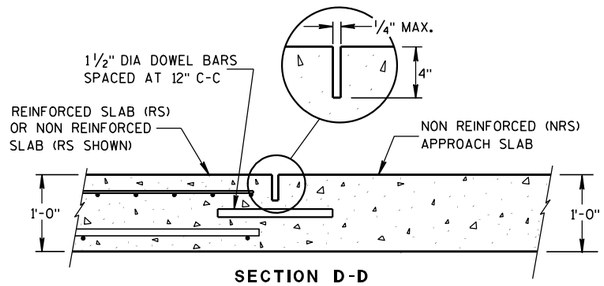
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

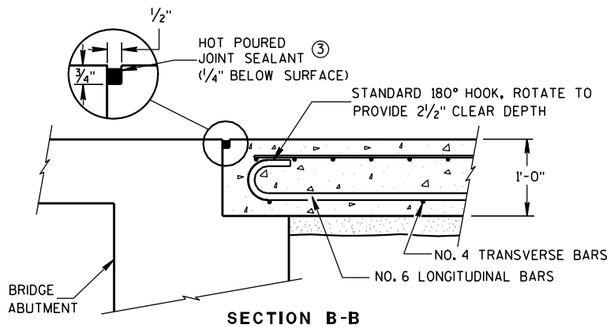
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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.

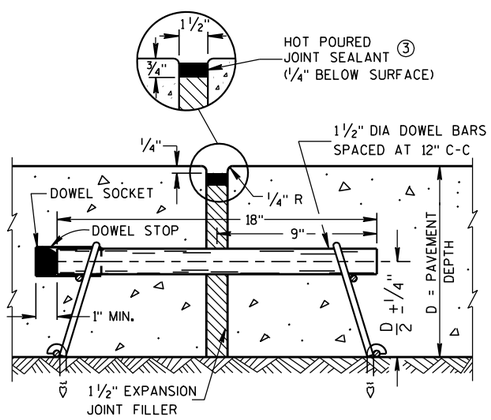
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

② THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

③ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT

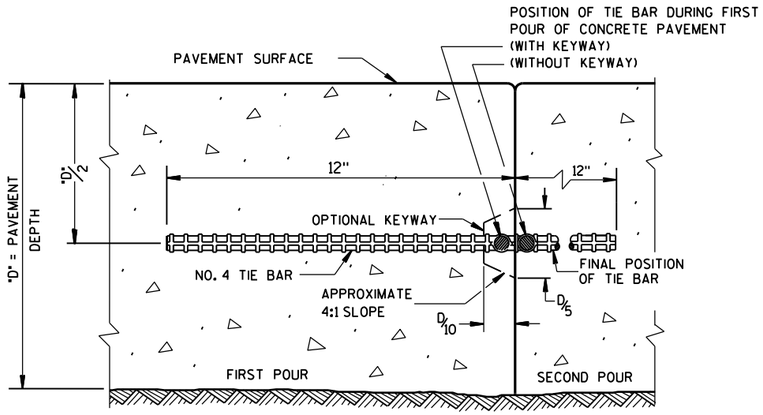


EXPANSION JOINT

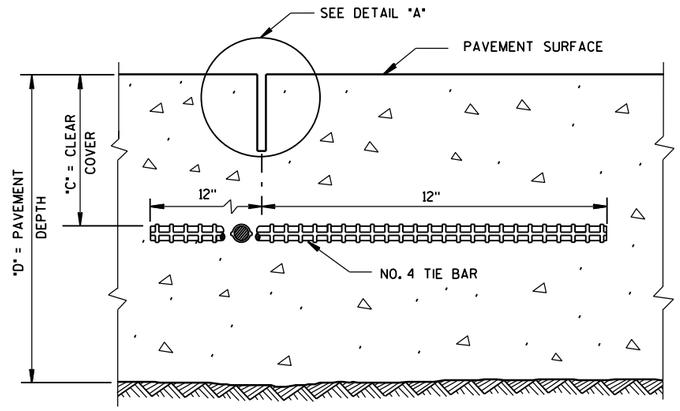
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE — ENGINEER
FHWA



CONSTRUCTION JOINT



SAWED JOINT

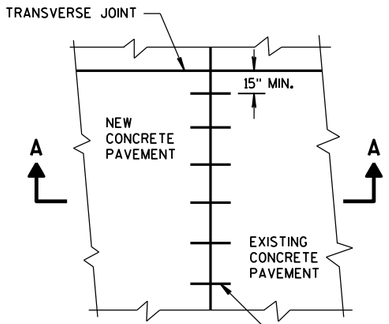
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

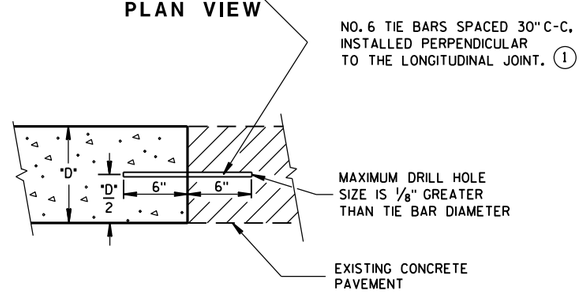
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

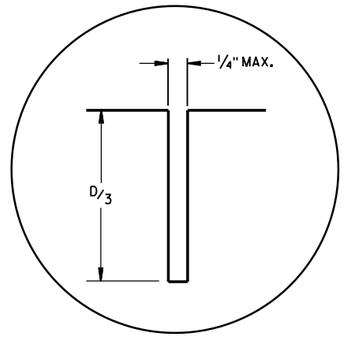


PLAN VIEW



SECTION A-A

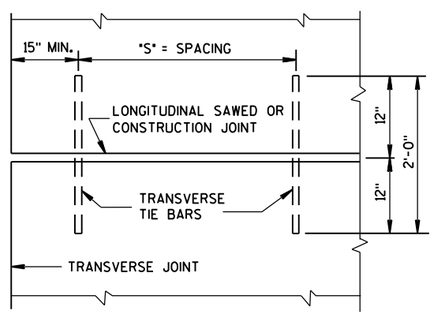
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"

TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 1/2"	3"±1/2"	48"	42"
7, 7 1/2"	3 1/4"±1"	45"	36"
8, 8 1/2"	3 3/4"±1"	39"	30"
9, 9 1/2"	4 1/4"±1"	33"	27"
10, 10 1/2"	4 3/4"±1"	30"	24"
11, 11 1/2"	5 1/4"±1"	27"	21"
12"	5 3/4"±1"	24"	21"



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE

FHWA

6

S.D.D. 13 C 1-16

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), 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.

(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(G) ½" 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.

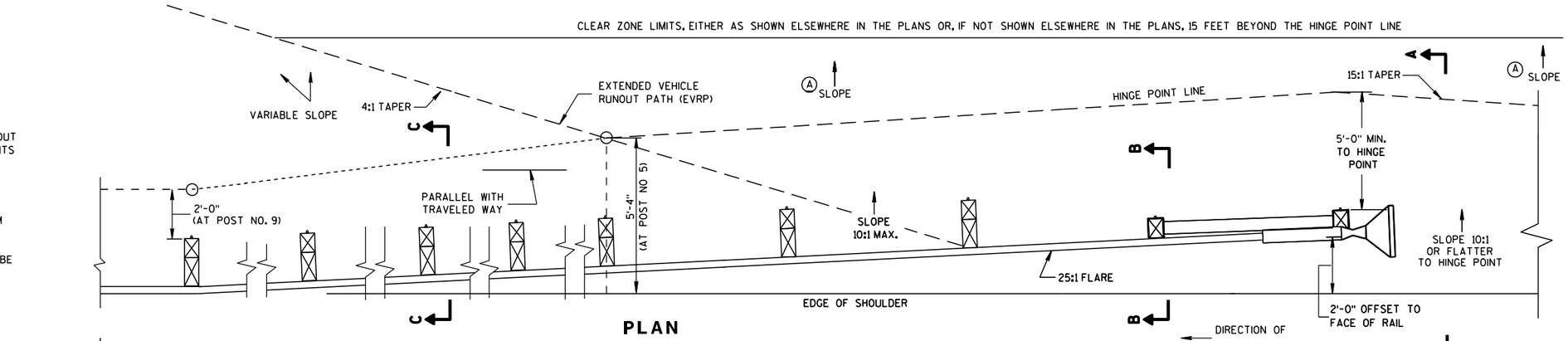
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

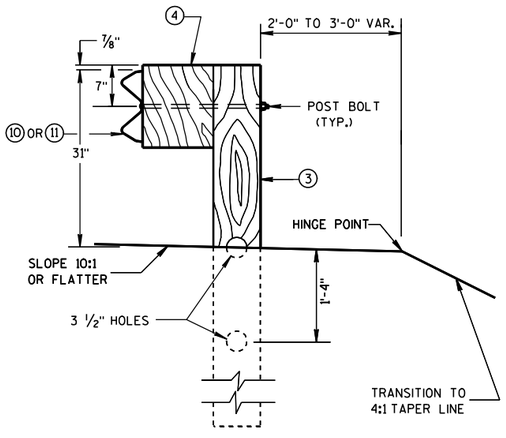
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

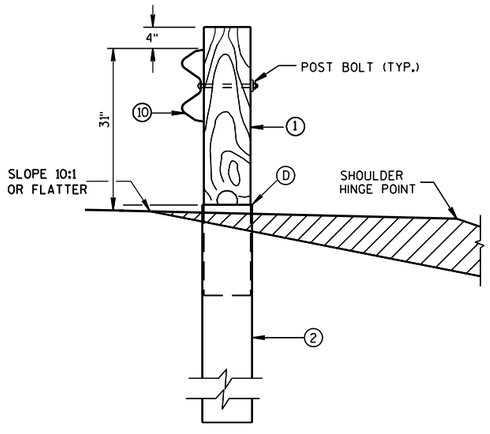
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

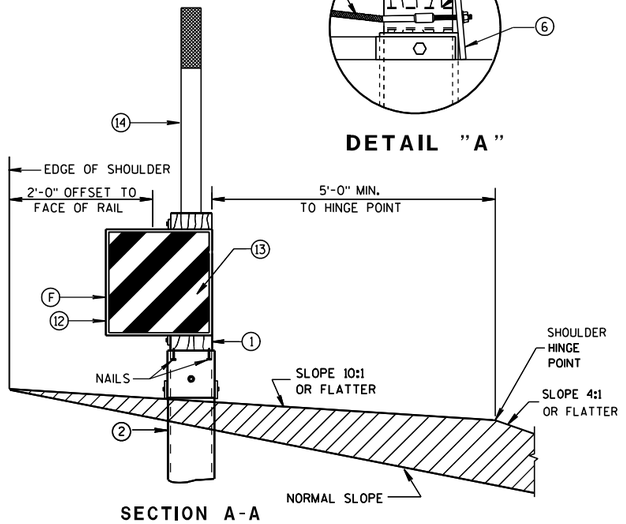




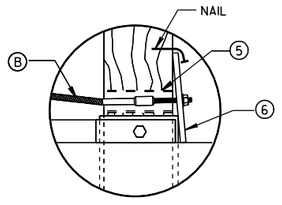
SECTION C-C
TYPICAL AT POST NOS. 3-9



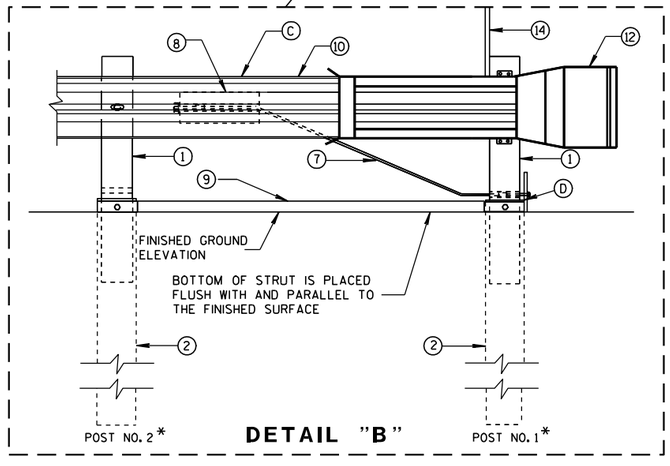
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"

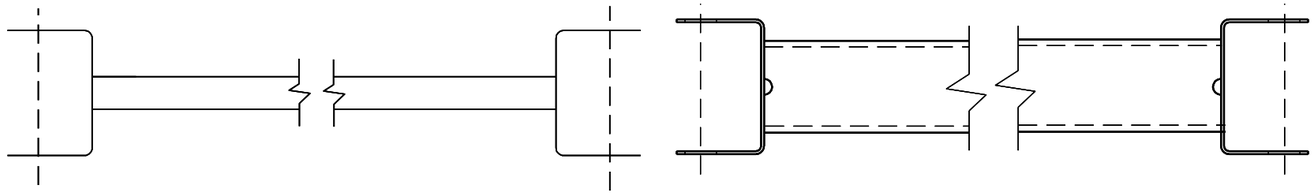


DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

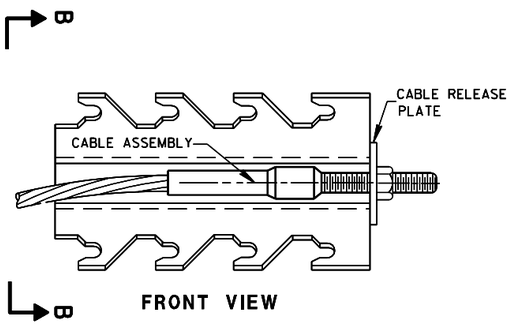
6
S.D.D. 14 B 44-1a



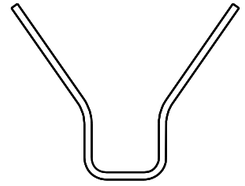
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

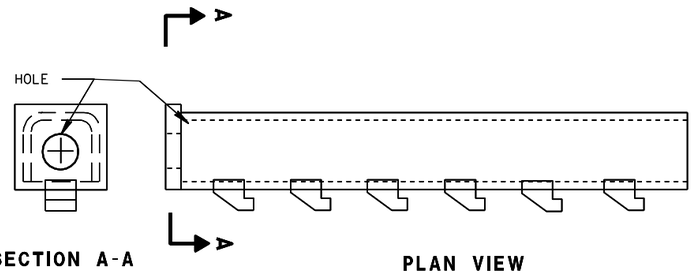
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR 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 H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



FRONT VIEW



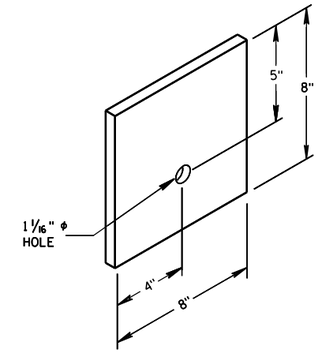
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



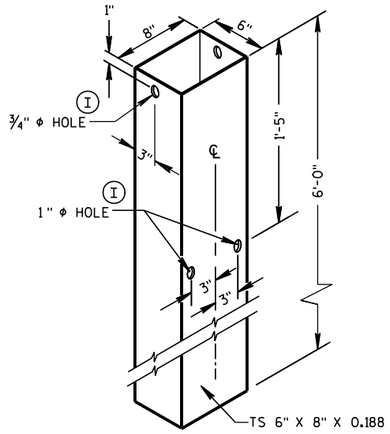
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

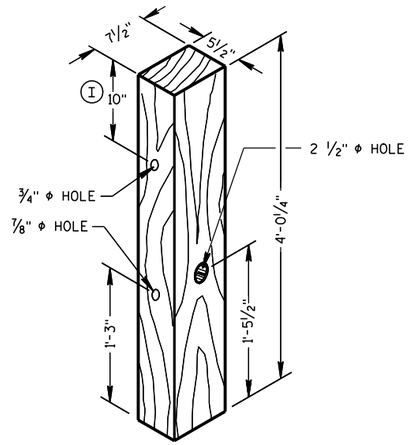
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

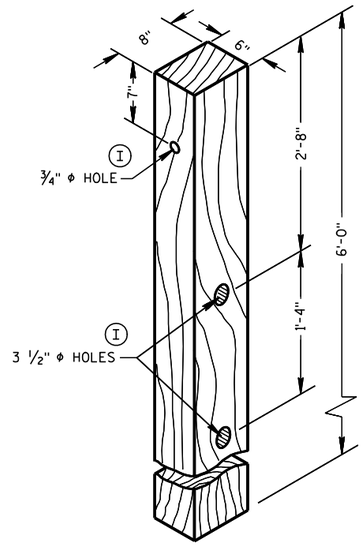


FOUNDATION TUBE (2)



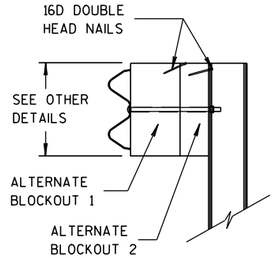
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

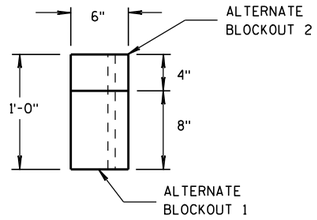


POSTS NUMBER 3-9

WOOD CRT POST (3)

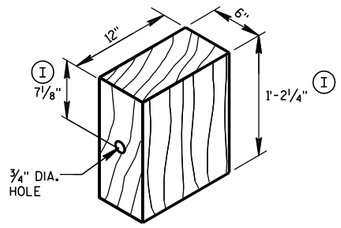


SIDE VIEW



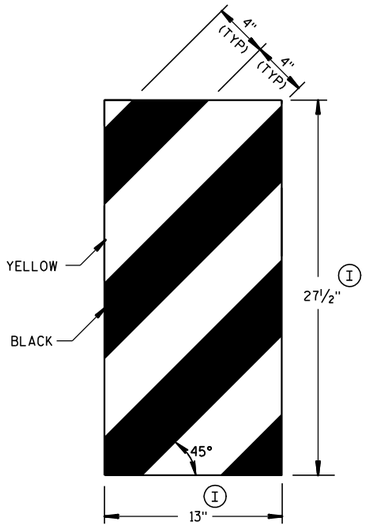
TOP VIEW

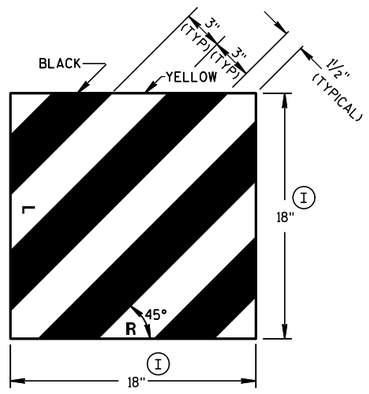
ALTERNATE WOOD BLOCKOUT DETAIL



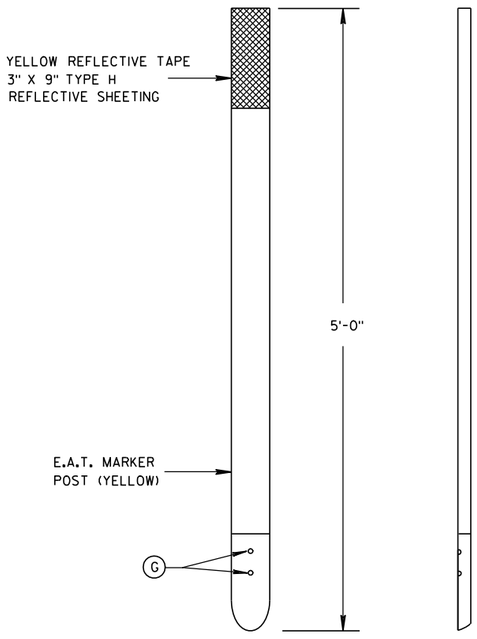
WOOD BLOCKOUT (4)

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





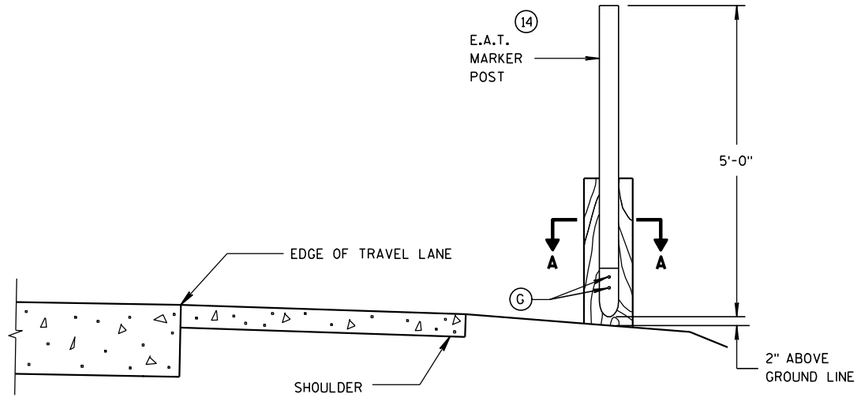
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

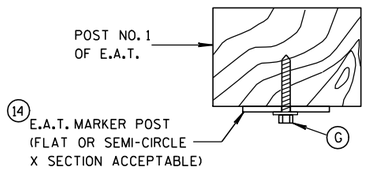
SIDE VIEW

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

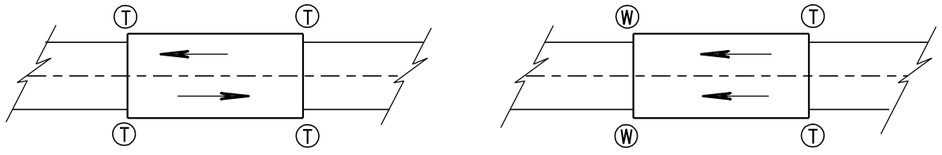
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011
DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
[illegible]ENT
FHWA

6

S.D.D. 14 B 44-1c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

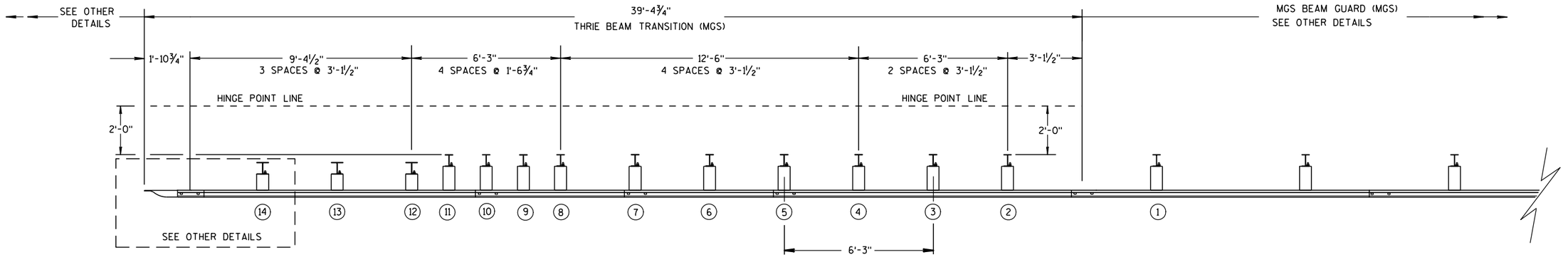
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

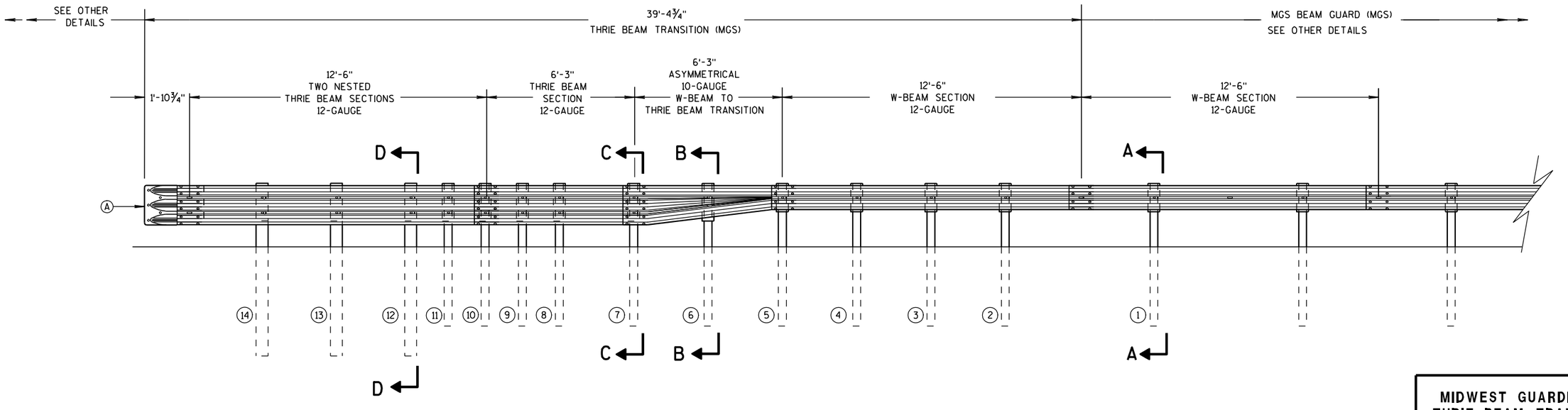
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

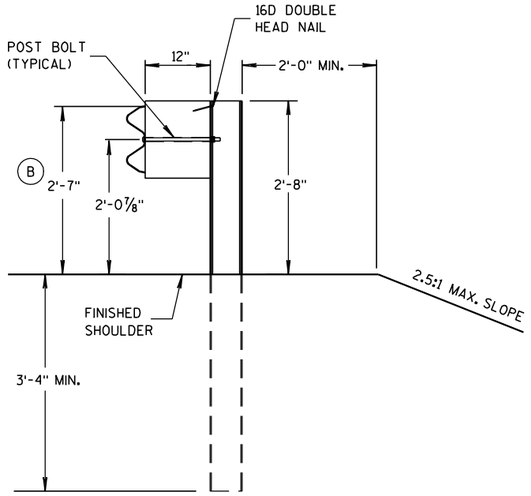
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3a

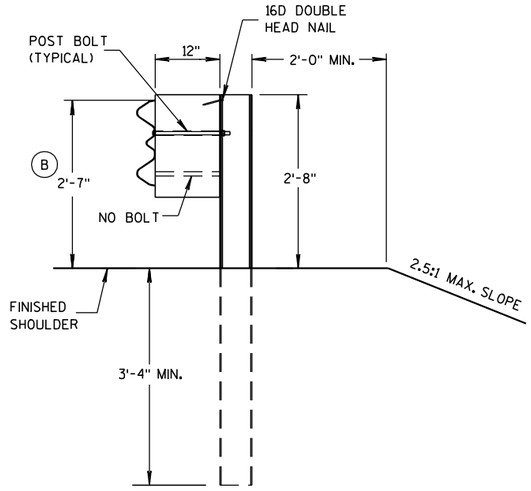
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



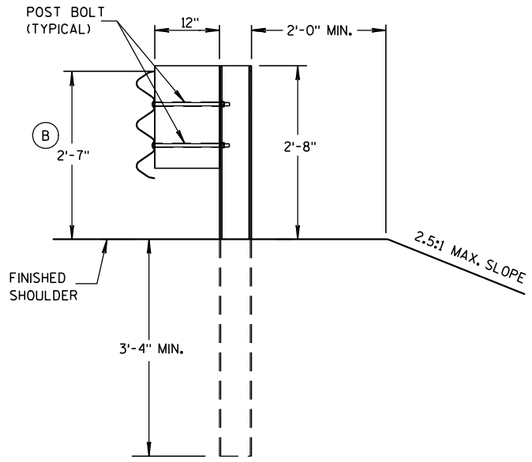
SECTION A-A

POSTS 1-5



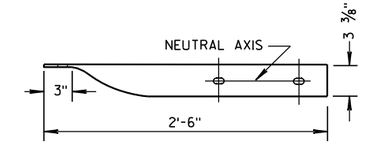
SECTION B-B

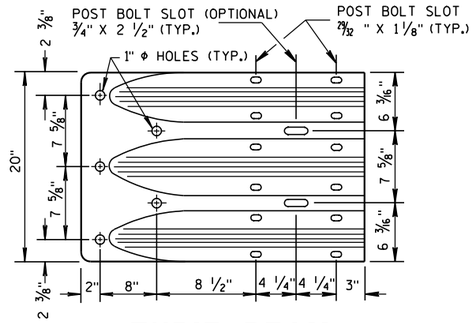
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

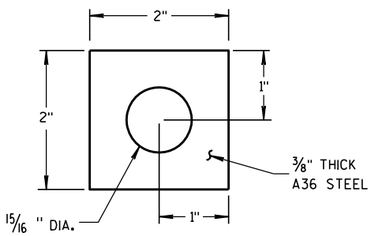
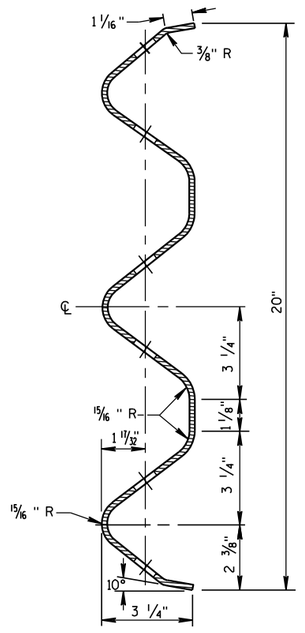
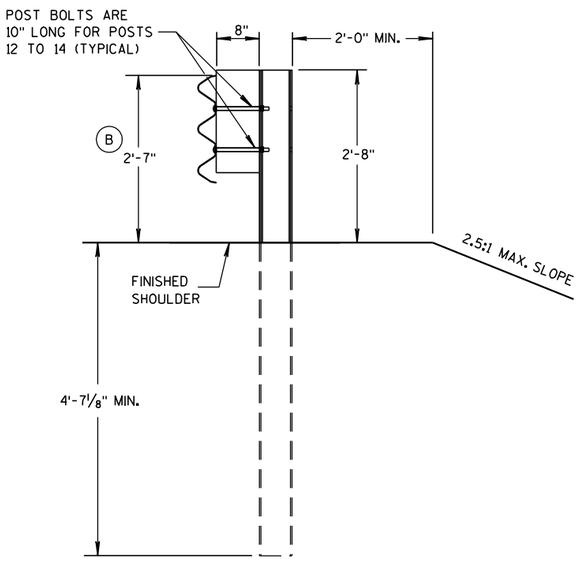


PLATE WASHER DETAIL

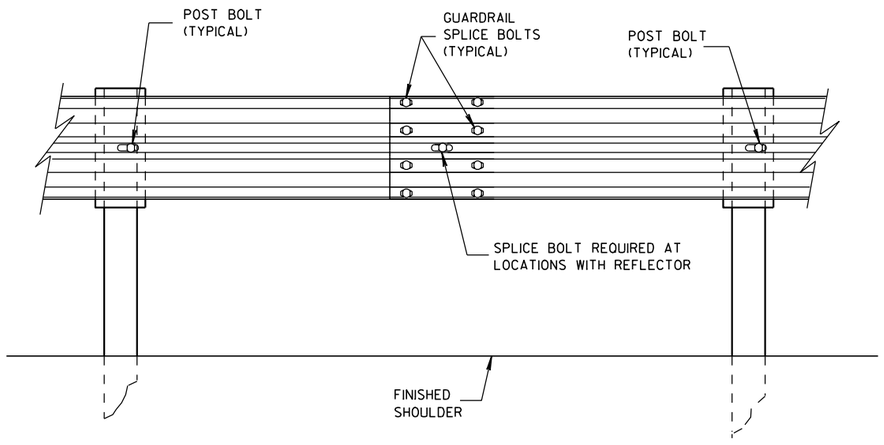


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

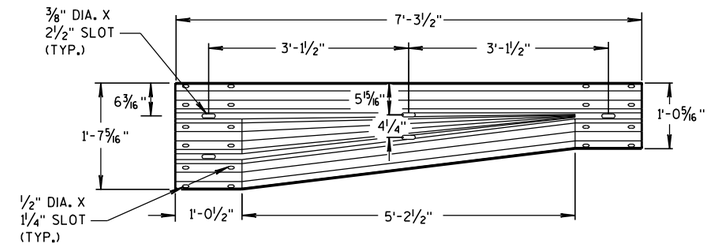
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

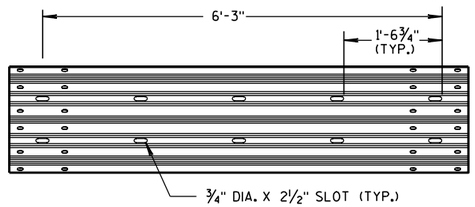
S.D.D. 14 B 45-3b

6

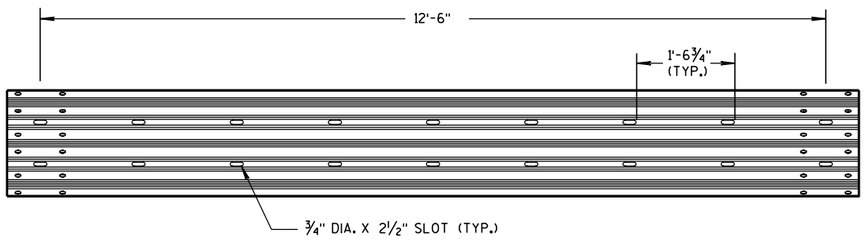
S.D.D. 14 B 45-3b



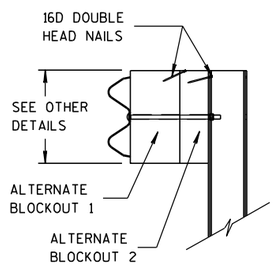
W-BEAM TO THRIE BEAM TRANSITION SECTION



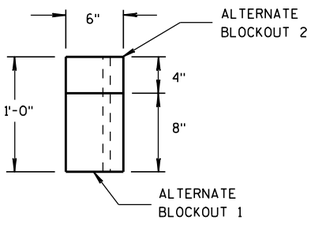
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

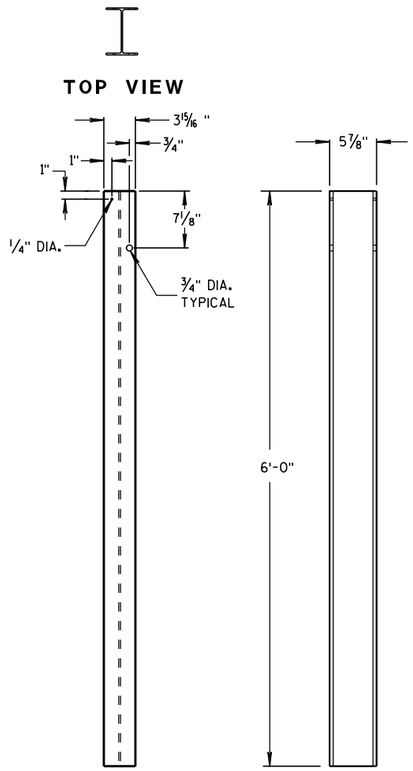


SIDE VIEW



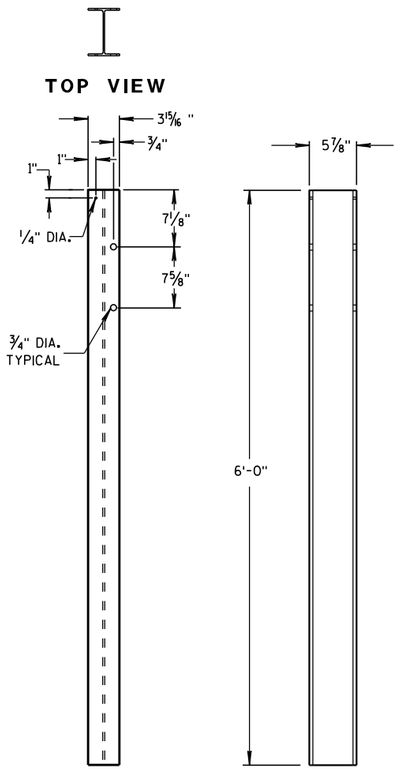
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



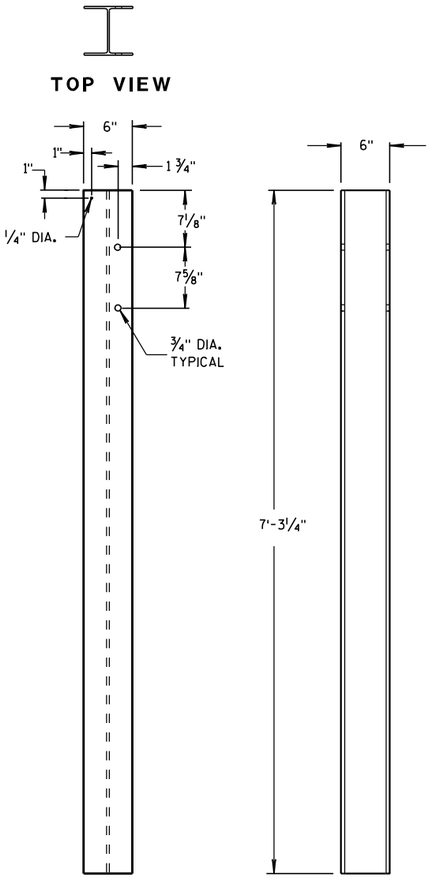
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5



FRONT VIEW SIDE VIEW

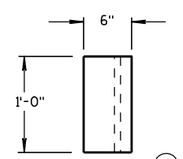
STEEL POSTS 6-11



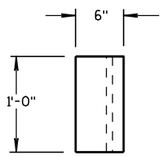
FRONT VIEW SIDE VIEW

STEEL POSTS 12-14

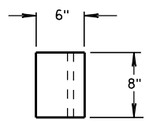
1 WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



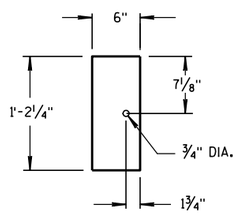
TOP VIEW (1)



TOP VIEW (1)

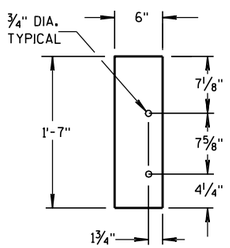


TOP VIEW



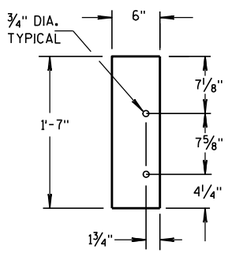
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

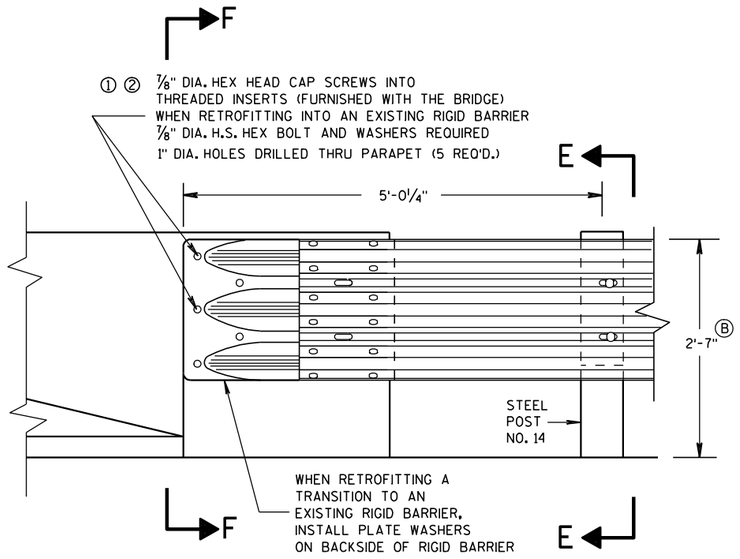
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

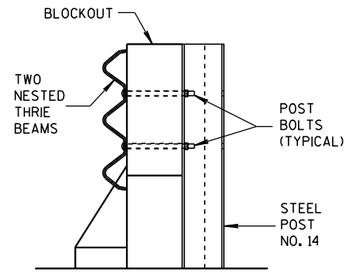
S.D.D. 14 B 45-3c

6

S.D.D. 14 B 45-3c



FRONT VIEW



SECTION E-E

GENERAL NOTES

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

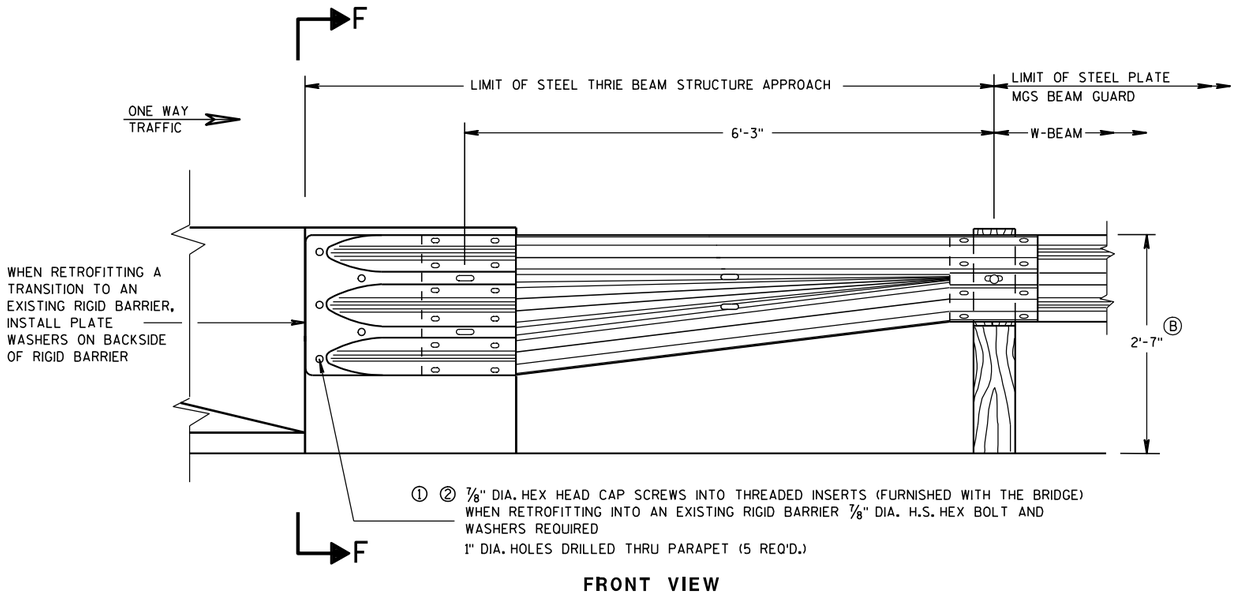
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM 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.

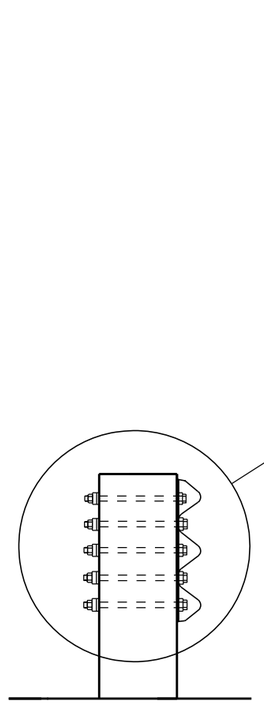
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

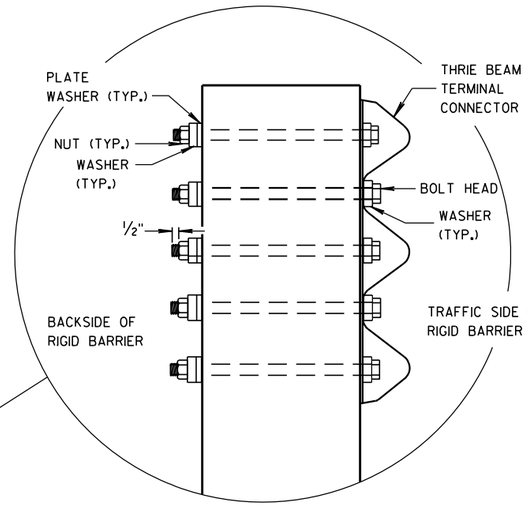
THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



FRONT VIEW



SECTION F-F



W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER

FHWA

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GENERAL NOTES

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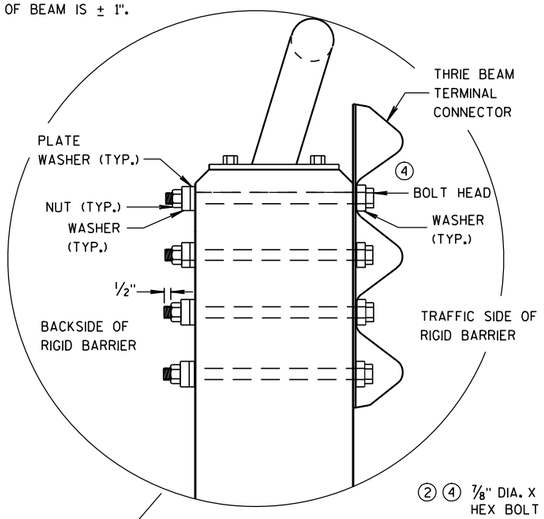
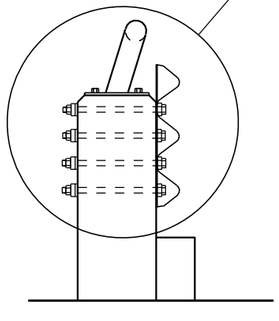
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2". BLOCK IS INCIDENTAL TO THE CONTRACT.

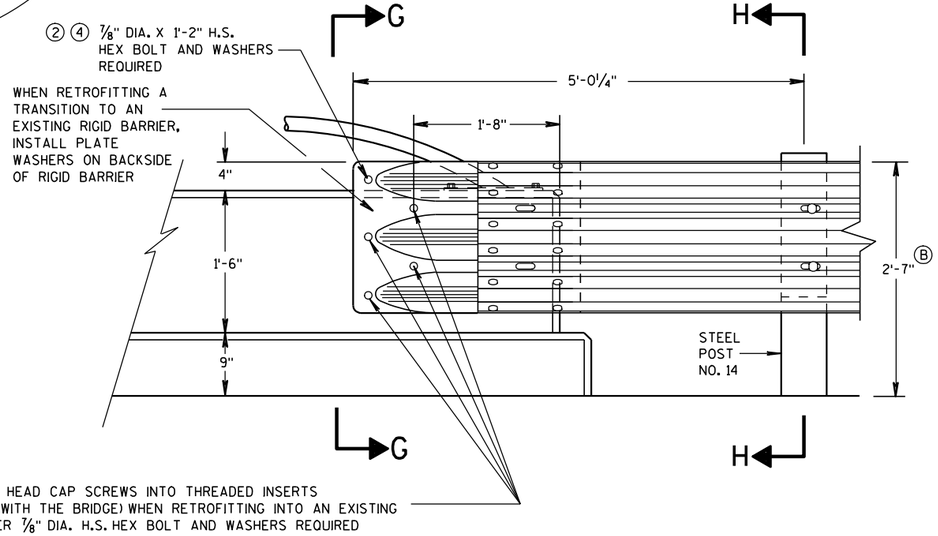
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

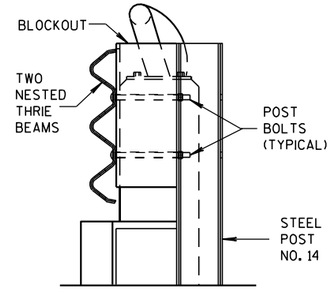




SECTION G-G

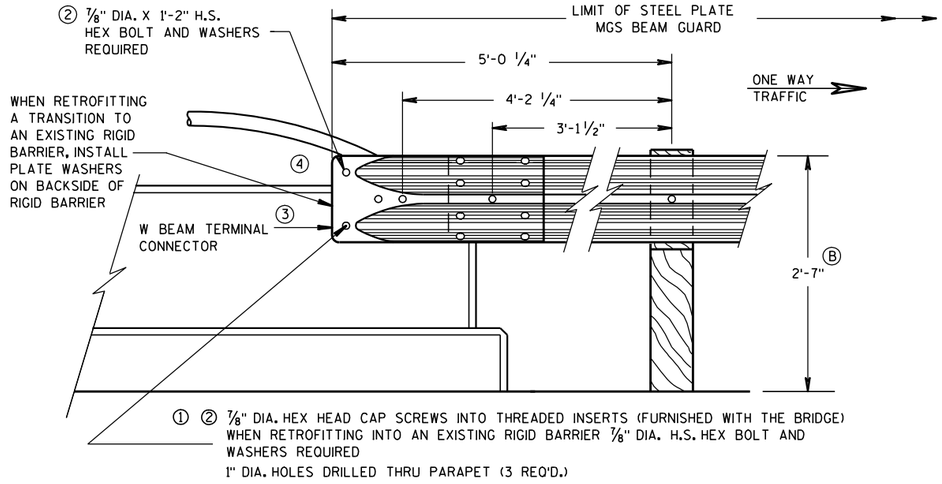


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012
DATE

/S/ Jerry H. Zogg
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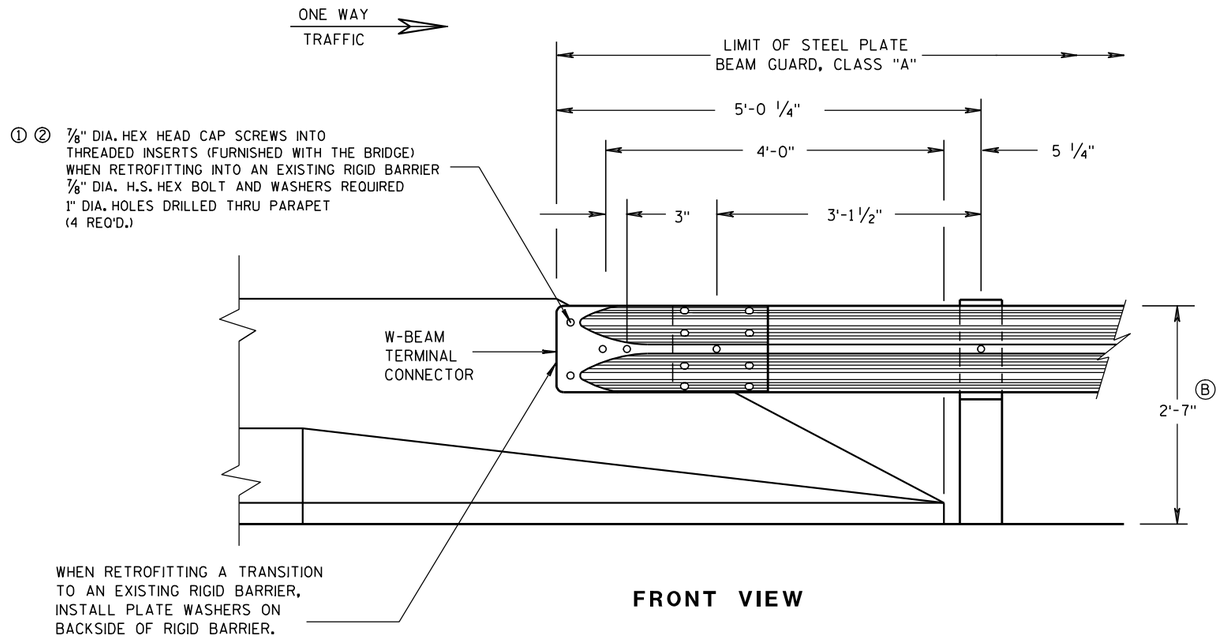

FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

GENERAL NOTES

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

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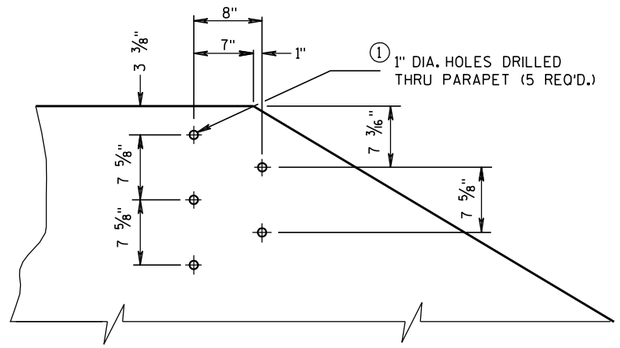
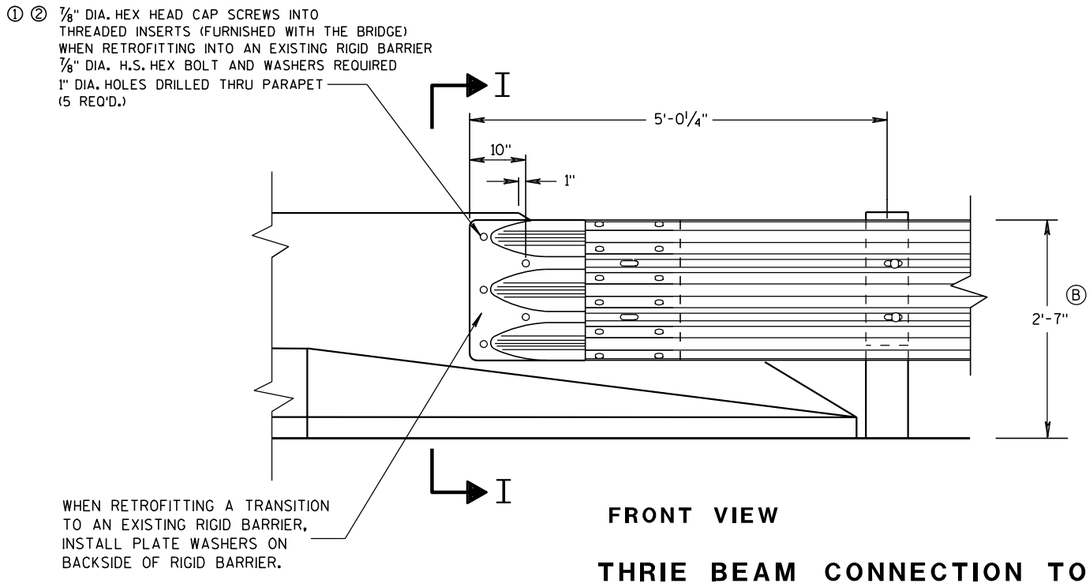
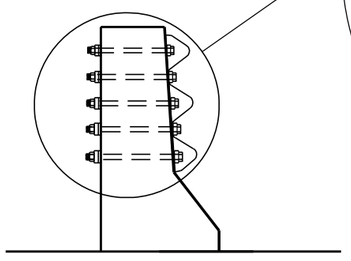
Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".



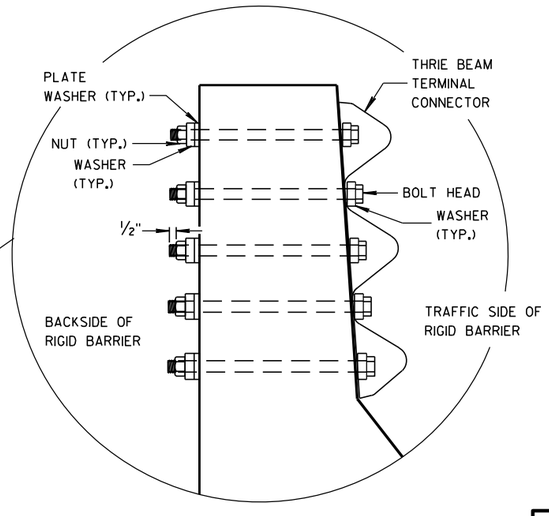
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

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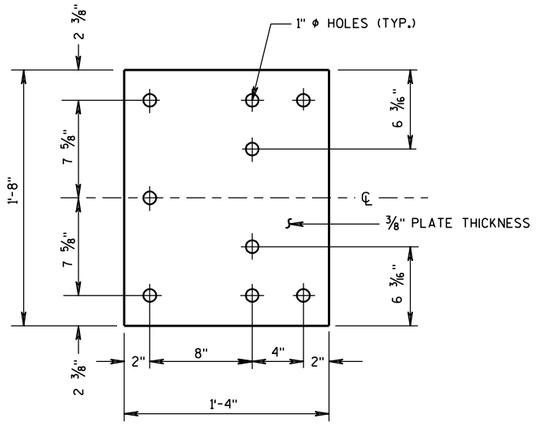
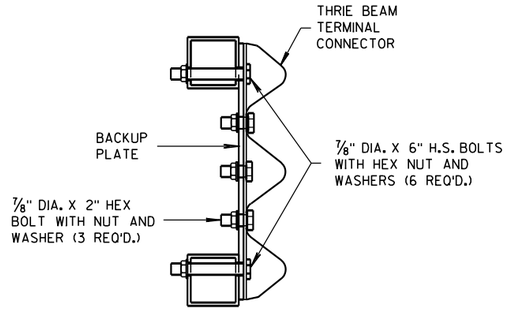


BACK-UP PLATE DETAIL

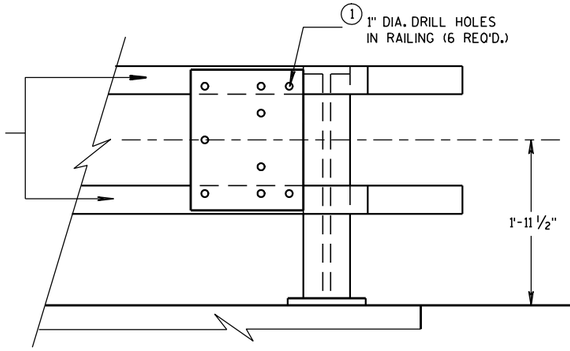


SECTION J-J

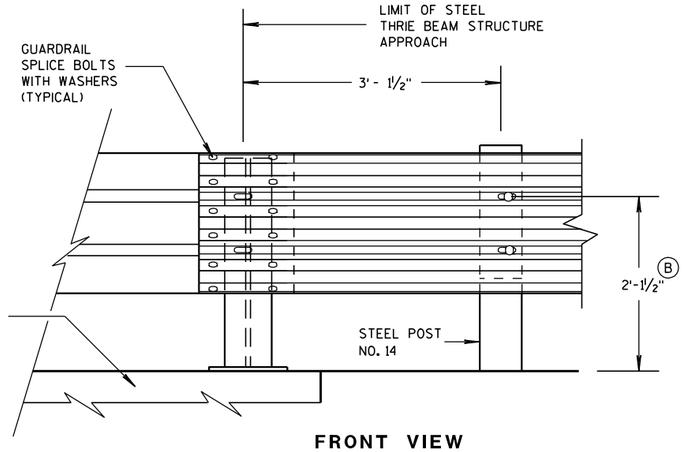
GENERAL NOTES

(1) DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(B) TOLERANCE FOR TOP OF BEAM IS ± 1".

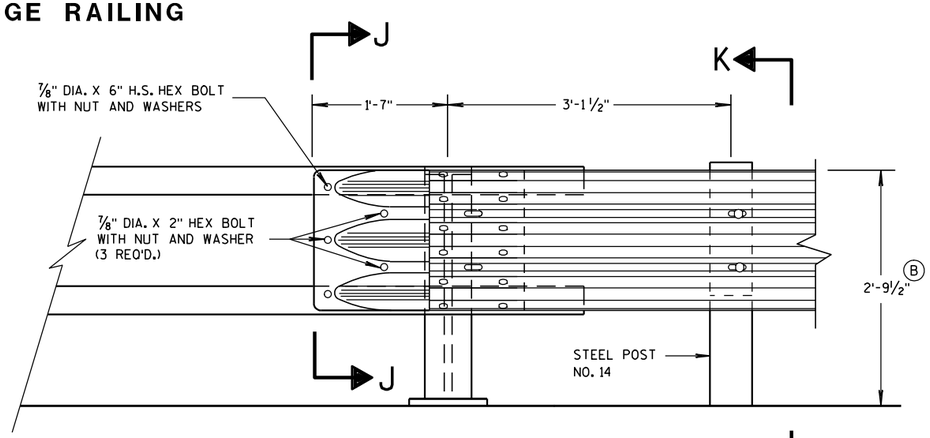


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

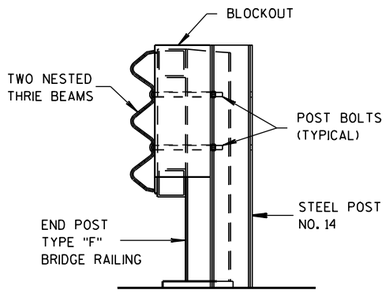


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS D 25 ENT
ENGINEER
FHWA

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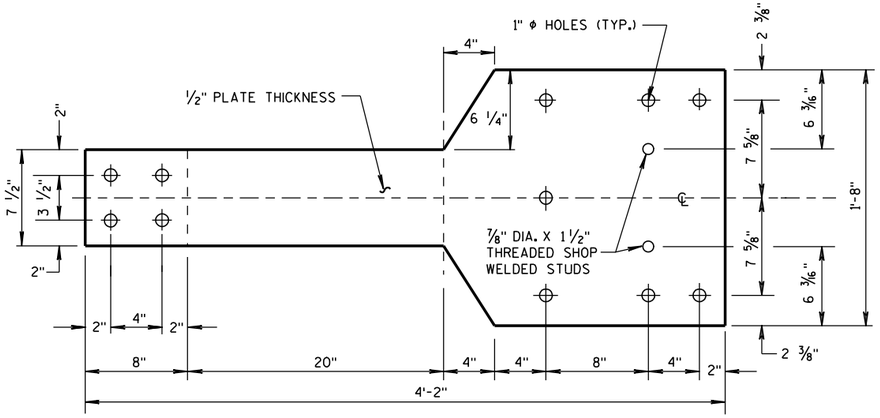
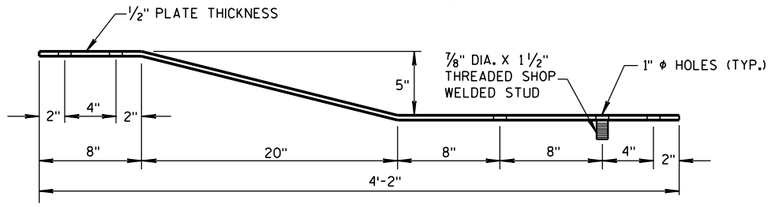
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

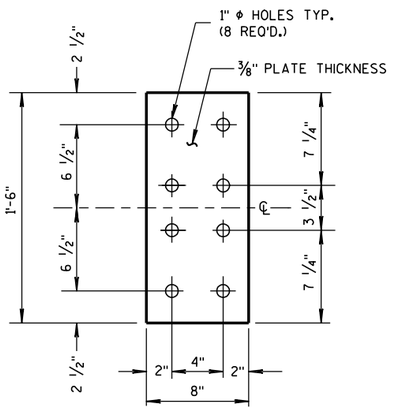


FRONT VIEW



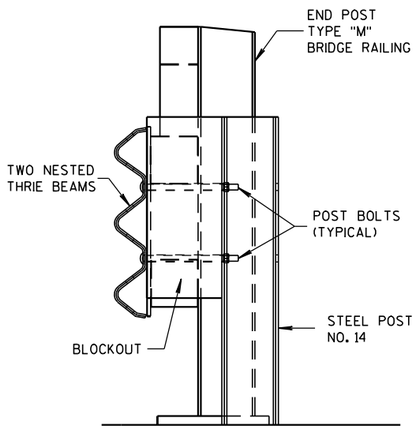
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

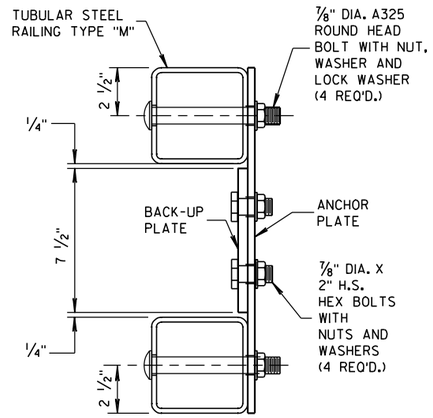


FRONT VIEW

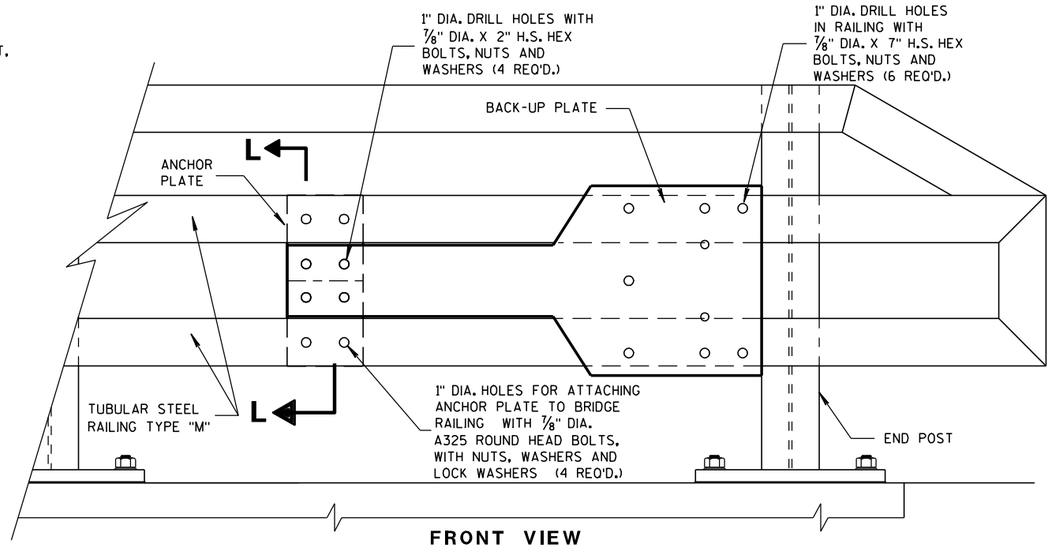
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

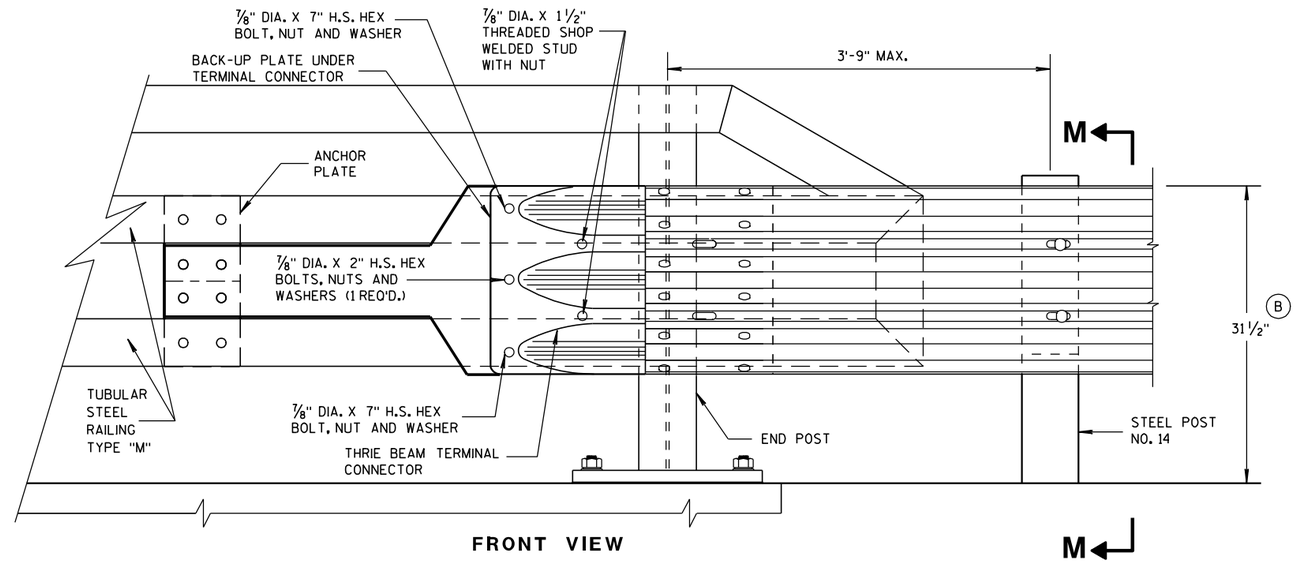


SECTION L-L

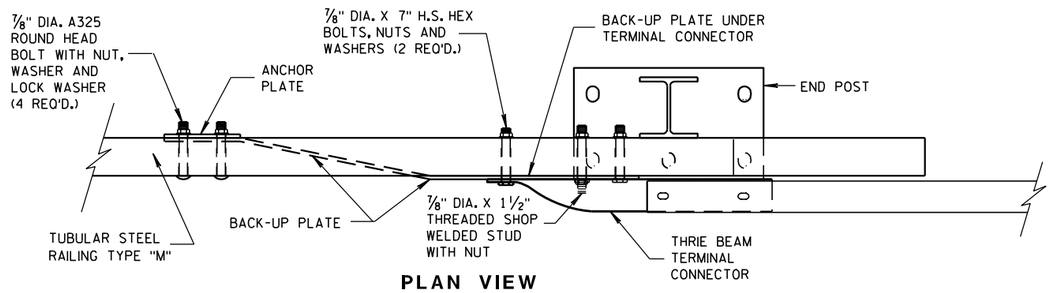


FRONT VIEW

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

8-31-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

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GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

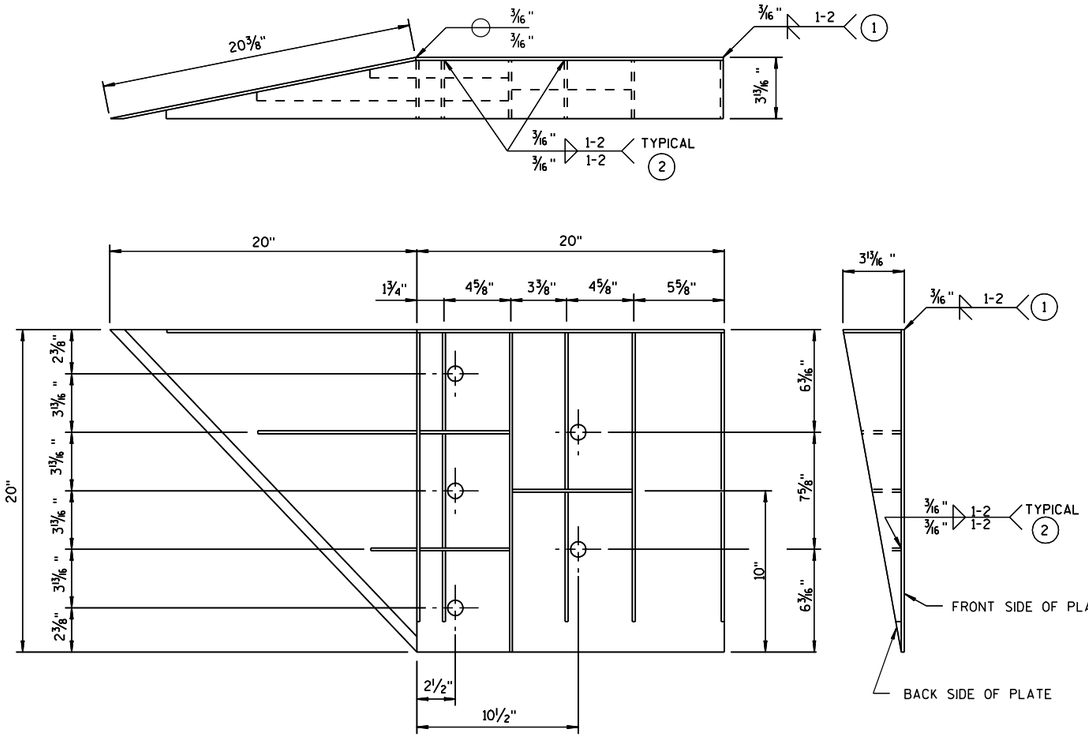
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

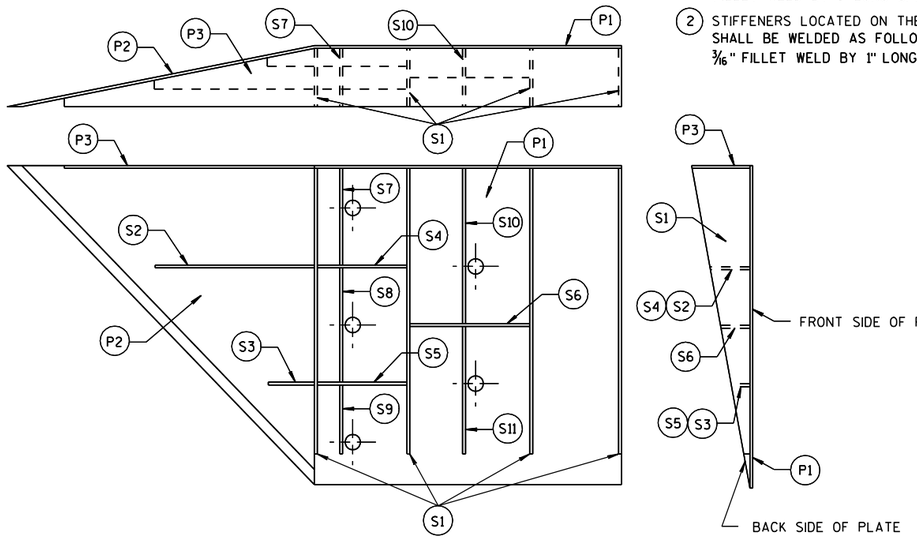


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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8/31/2012 DATE
/S/ Jerry H ---- ROADWAY STANDARDS ENGINEER
FHWA

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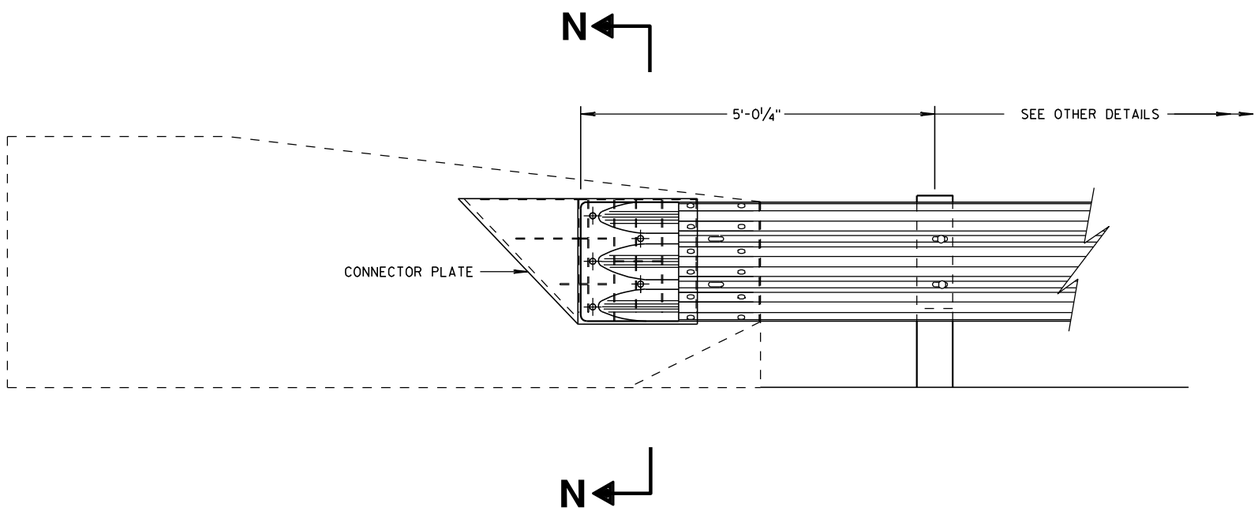
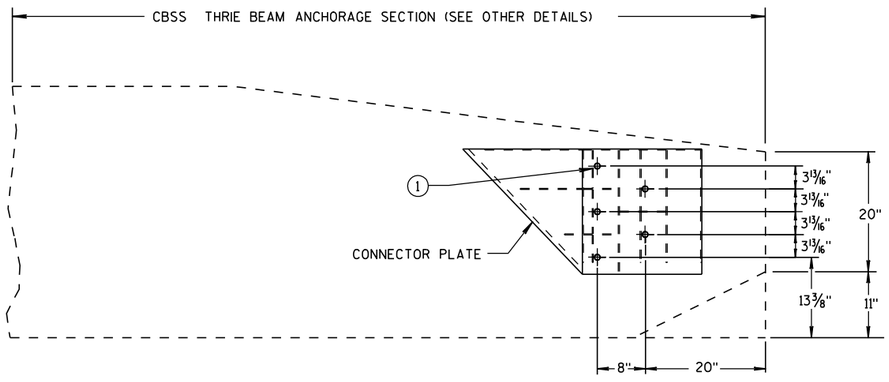
S.D.D. 14 B 45-3i



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.

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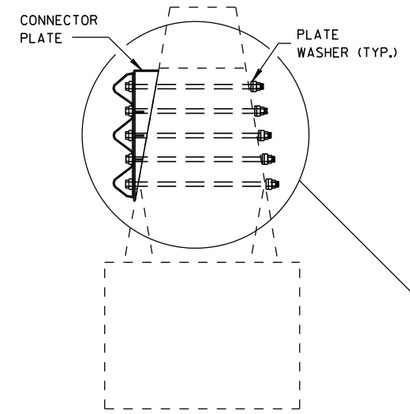
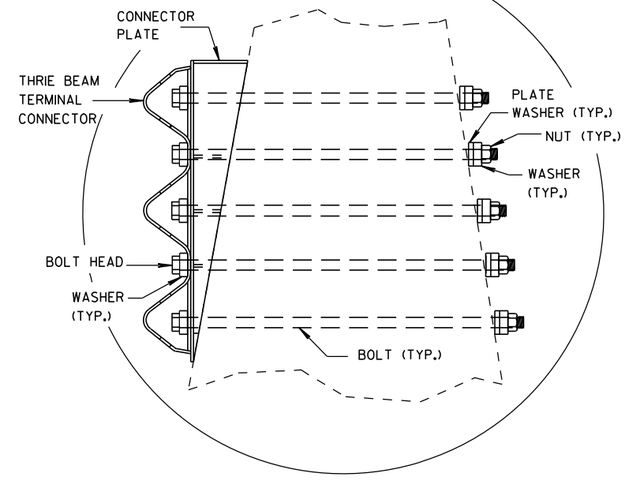


SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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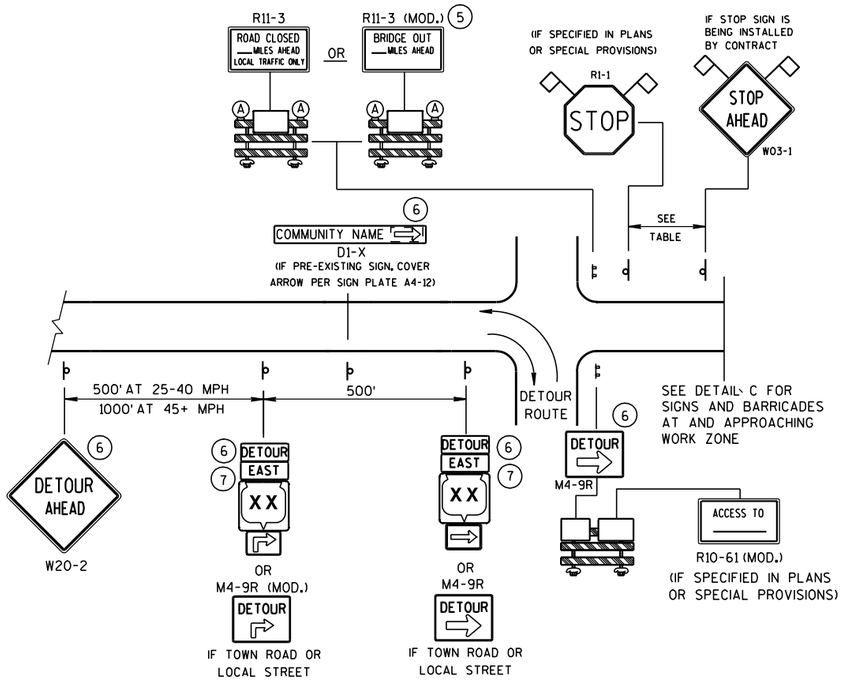
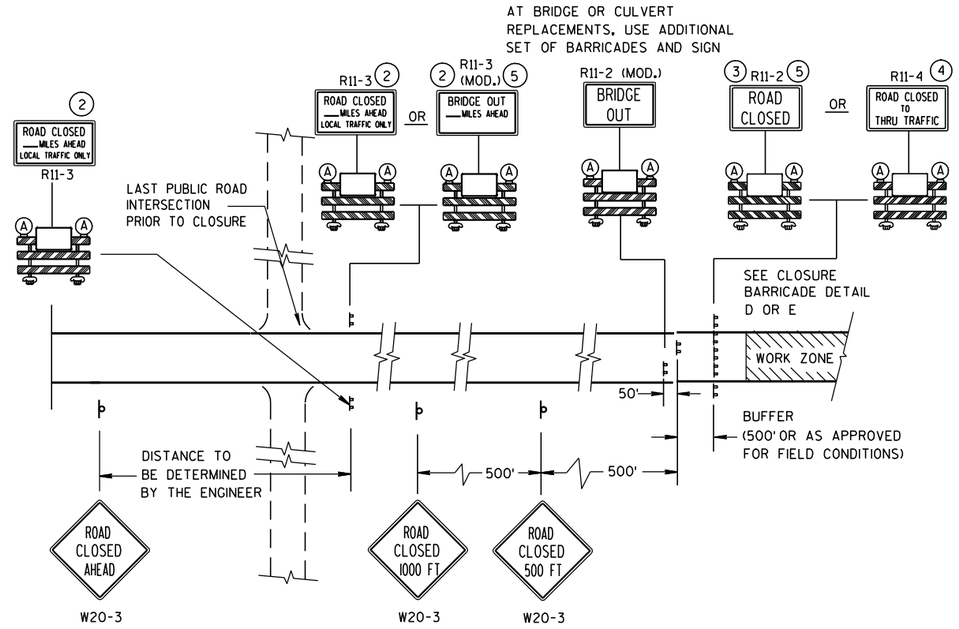


DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

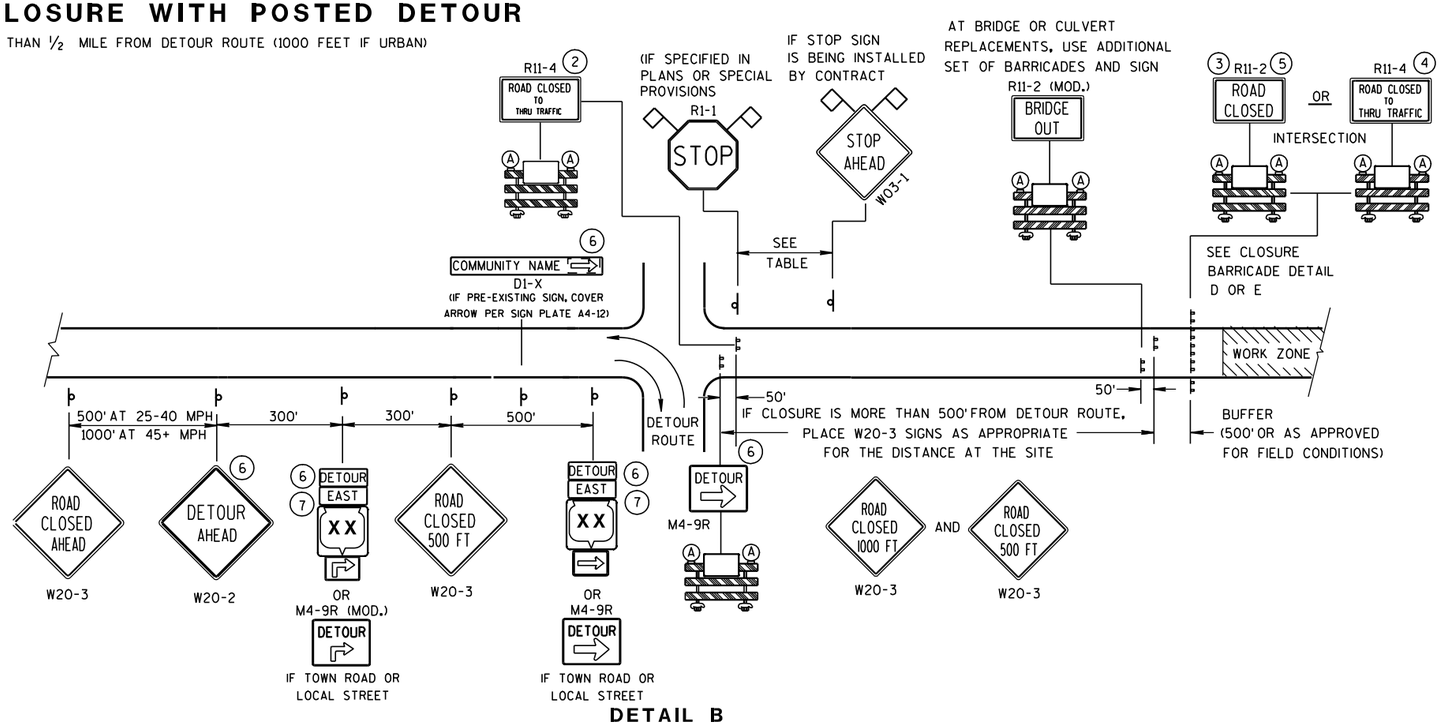


SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

SEE SDD 15C2-4b FOR GENERAL NOTES AND FOOTNOTES ① THROUGH ⑦



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

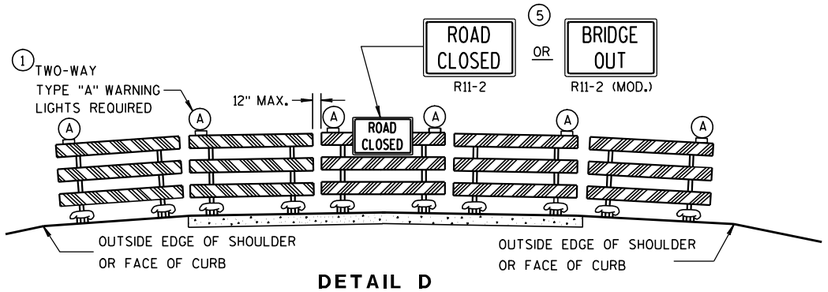
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

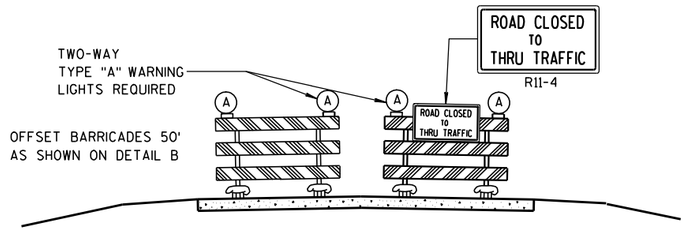
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

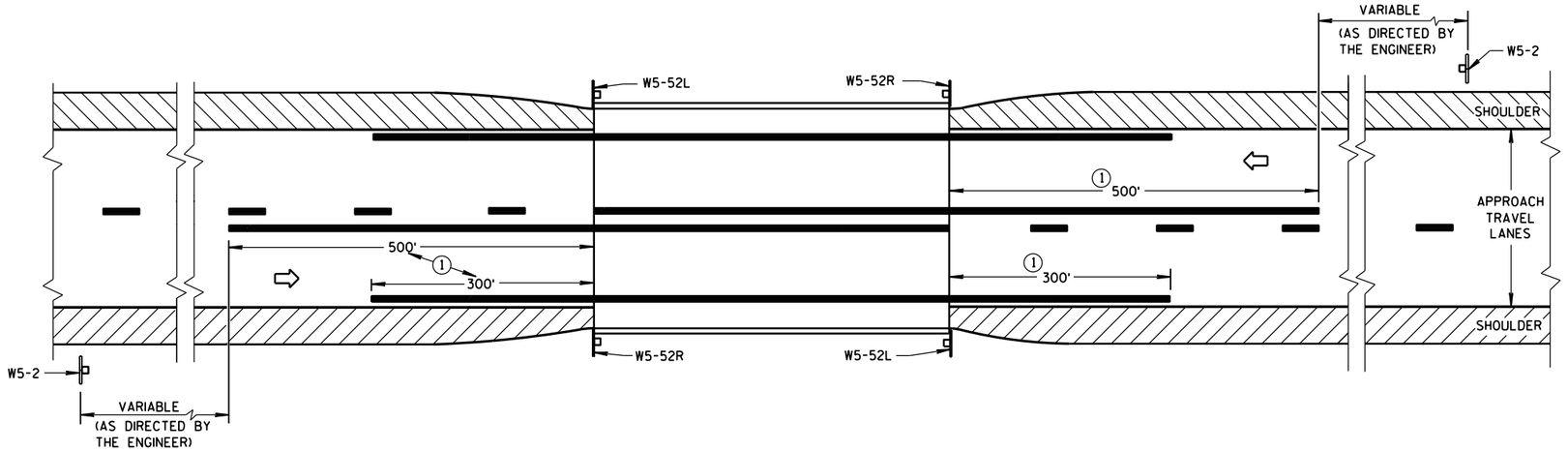
9/16/03
DATE

/S/ Thomas N. N[illegible]
CHIEF SIGNS AND MARKINGS ENGINEER

FHWA

6

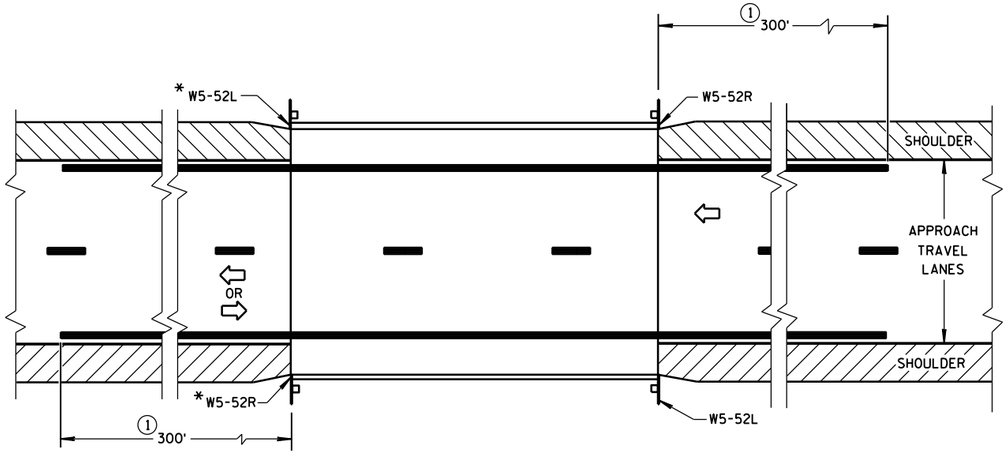
S.D.D. 15 C 2-4b



SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 18 FEET BUT LESS THAN 24 FEET



*OMIT ON ONE-WAY TRAVELLED WAYS

SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.

GENERAL NOTES

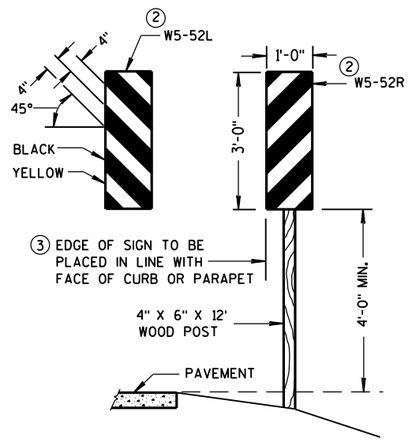
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

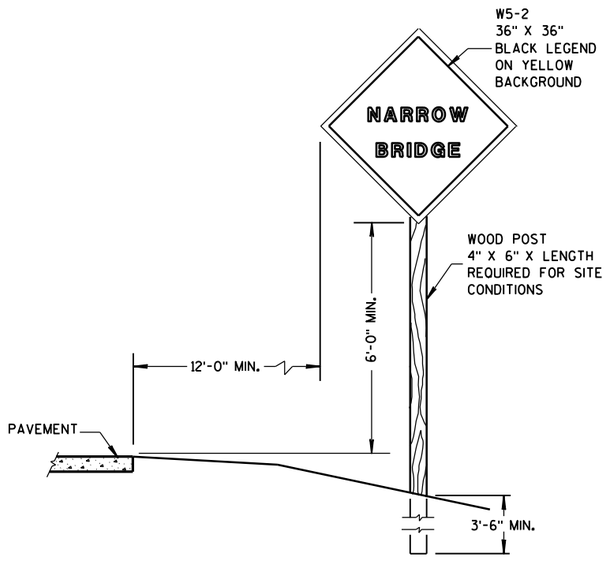
(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.



OBJECT MARKER PLACEMENT



SIGN PLACEMENT

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/4/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 6-6

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

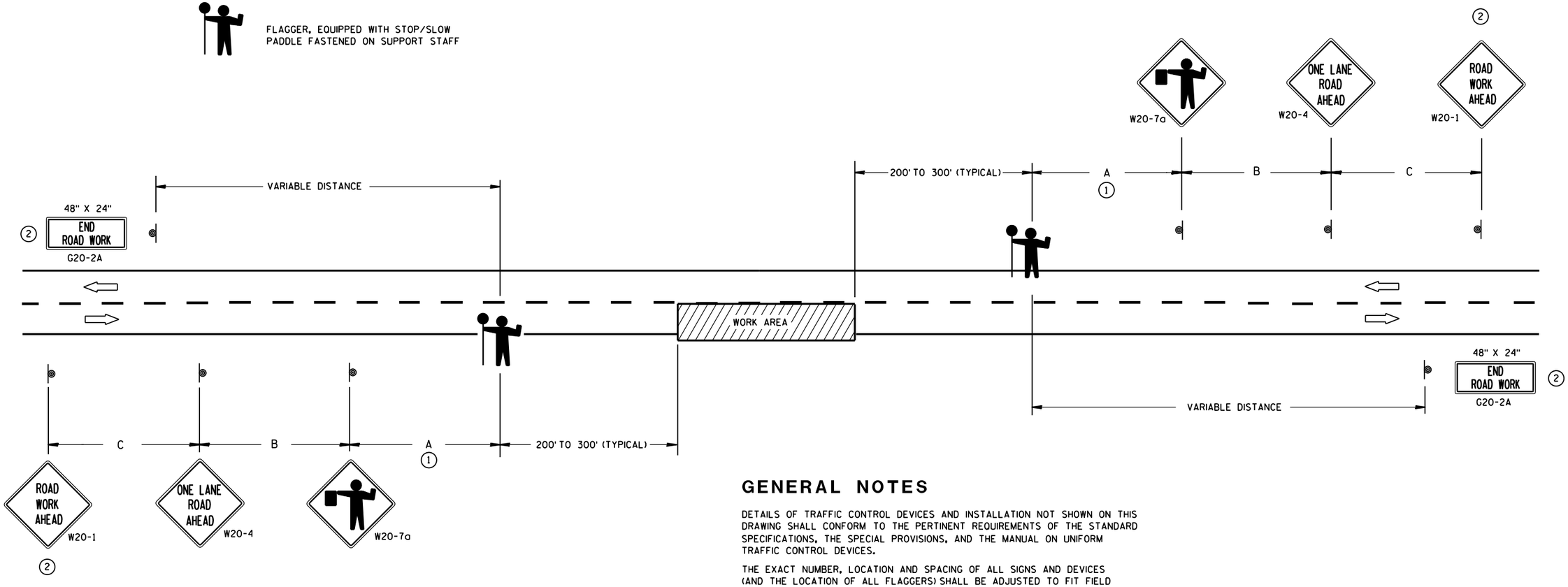
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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

W3-4

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



(1) FOR A MOVING WORK OPERATION,
SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

GENERAL NOTES

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

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

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

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

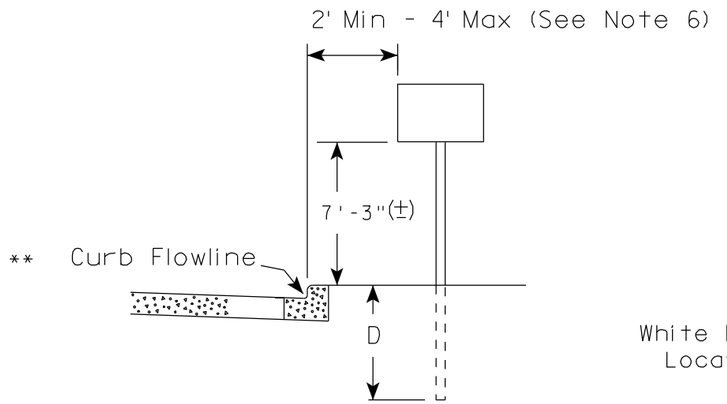
6

S.D.D. 15 C 12-4

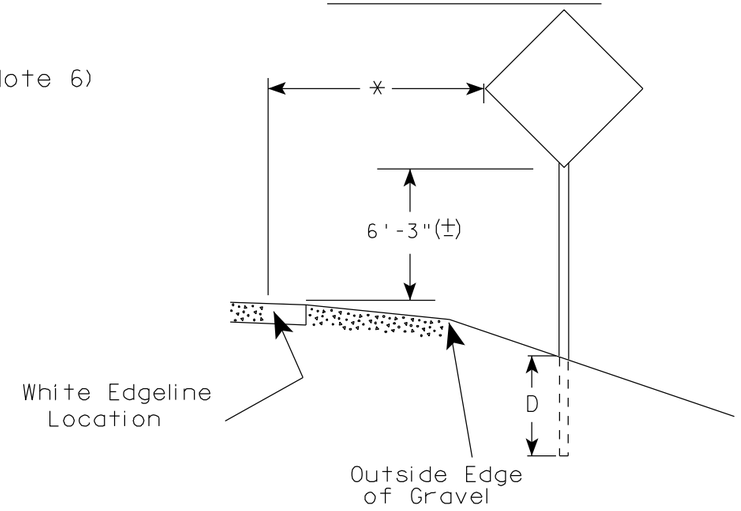
6

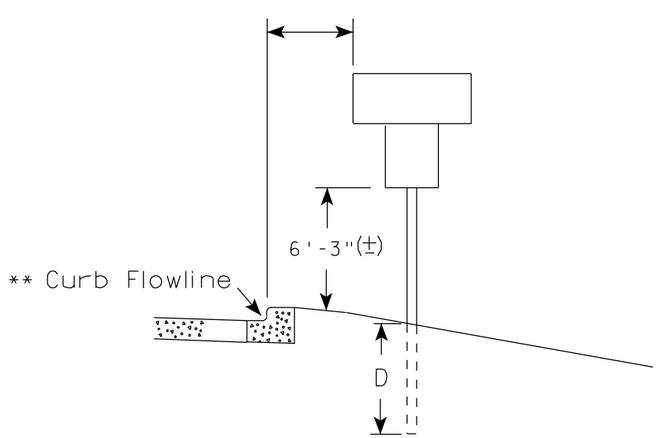
S.D.D. 15 C 12-4

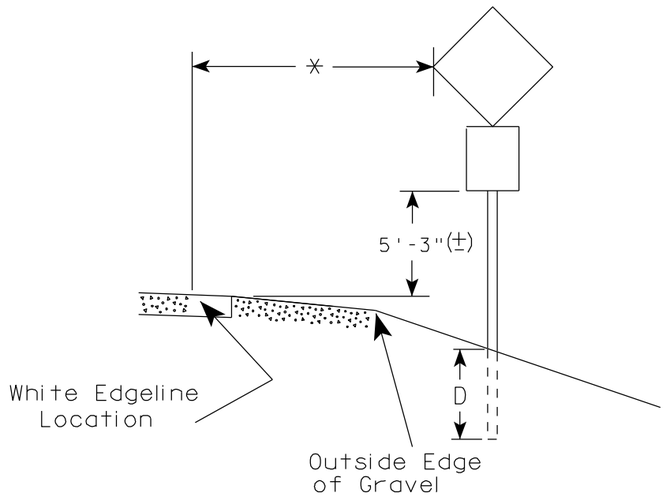
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) 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 stop signs (R1-1F) 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) & End of Rod Markers (W5-56 & W5-56A) 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'

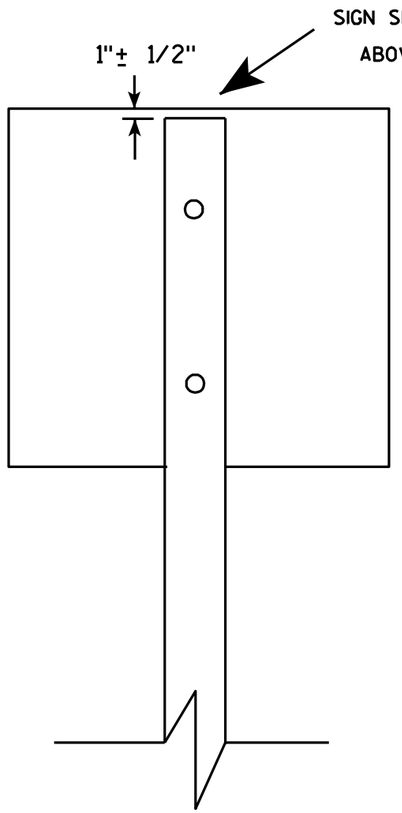
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

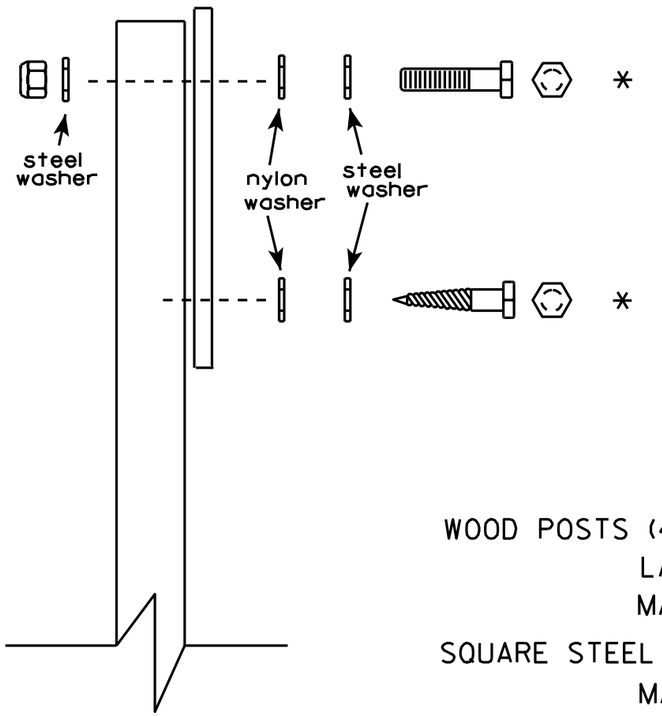
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E





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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

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

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

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")

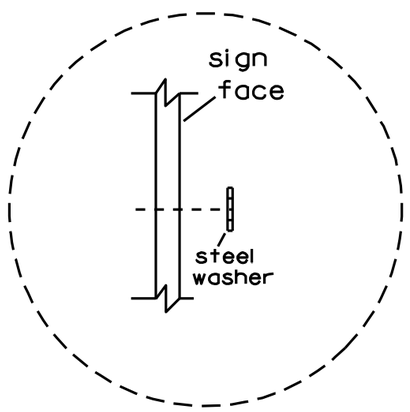
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts

RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

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

1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

7

7

PROJECT NO:

SHEET NO: 34 E

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

WISDOT/CADDS SHEET 42

R9-9

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	18	1 3/4	1/2	1/2	4	3 1/2	3	10 3/4	8 1/8																	3.75
2M	30	18	1 3/4	1/2	1/2	4	3 1/2	3	10 3/4	8 1/8																	3.75
3																											
4																											
5																											

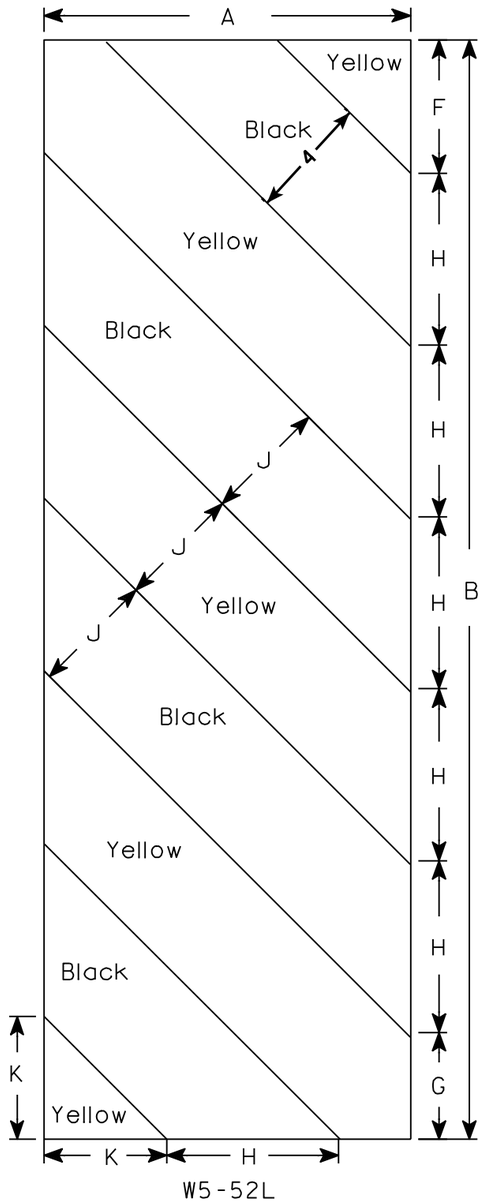
STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

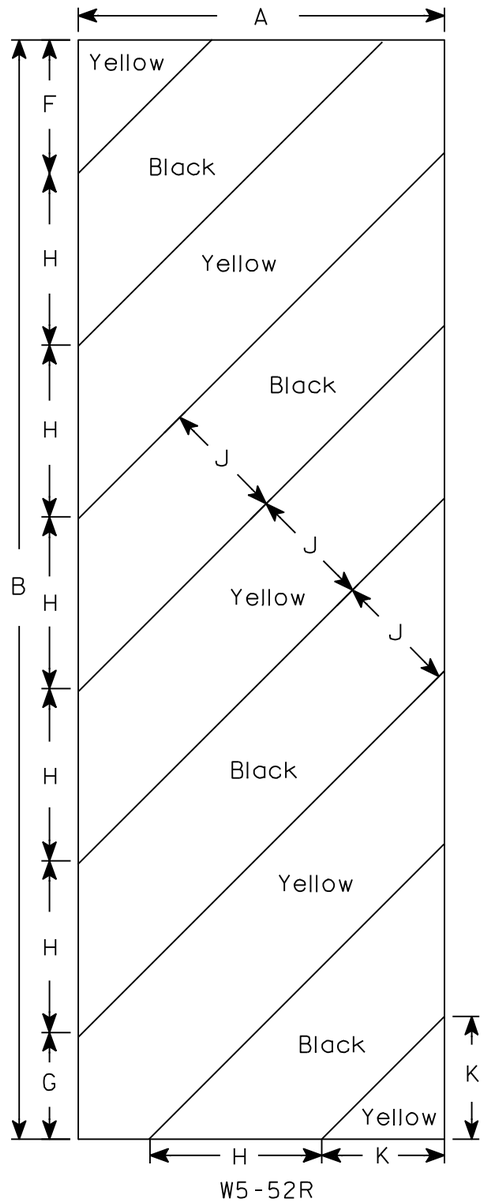
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/2011 PLATE NO. R9-9.5

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 35	E



W5-52L



W5-52R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

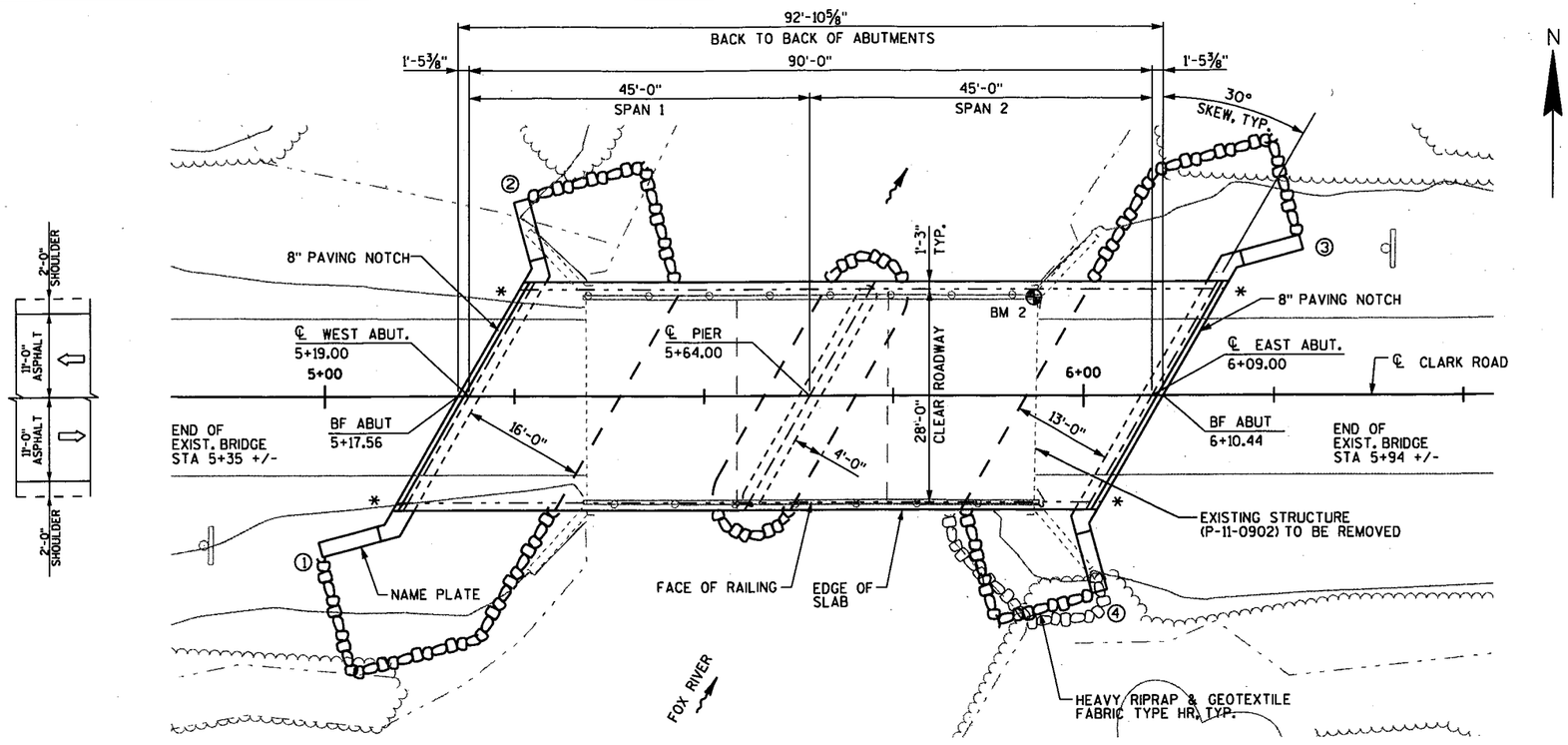
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 36	E



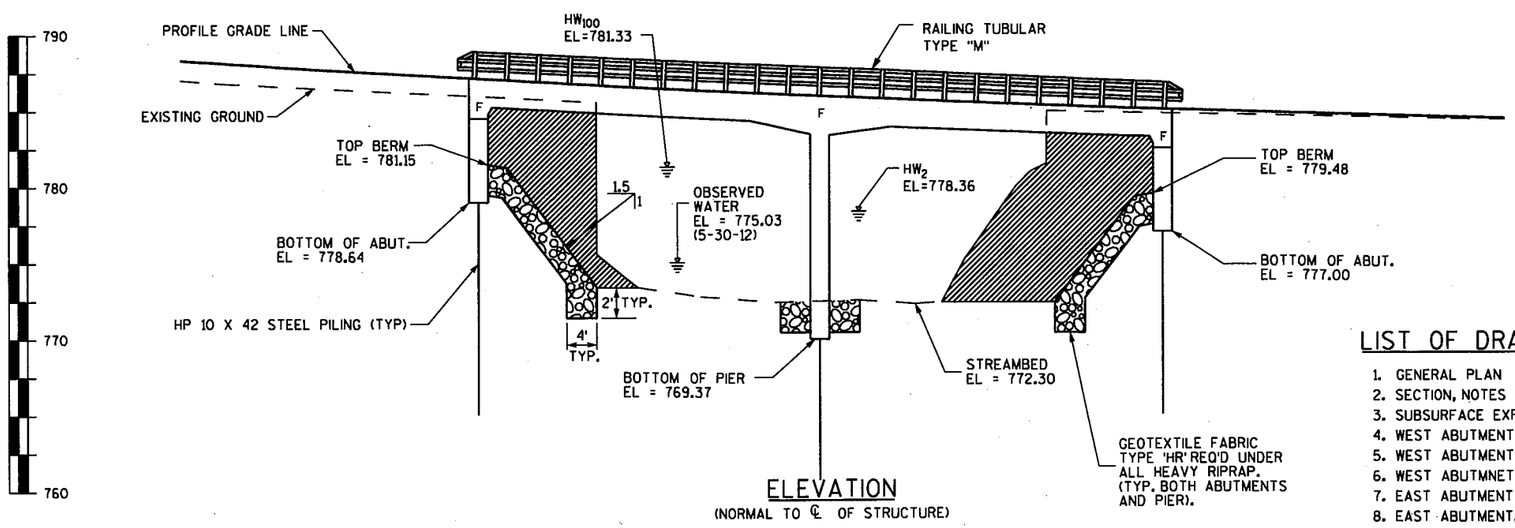
○-INDICATES WING NUMBER

* ANCHOR ASSEMBLY FOR THRIE BEAM GUARDRAIL

BM * -INDICATES BENCH MARK NUMBER

PLAN

(TWO SPAN CONCRETE HAUNCHED SLAB BRIDGE)



ELEVATION

(NORMAL TO ℄ OF STRUCTURE)

COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES (B-11-155)"

LIST OF DRAWINGS

1. GENERAL PLAN
2. SECTION, NOTES & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT, WING 1
6. WEST ABUTMNET, WING 2
7. EAST ABUTMENT
8. EAST ABUTMENT, WING 3
9. EAST ABUTMENT, WING 4
10. PIER
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE DETAILS
13. RAILING TUBULAR TYPE 'M'

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
608-266-8489

CONSULTANT CONTACT:
DAMIAN NEVERS
920-208-0296

STATE PROJECT NUMBER
5903-00-72

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.17
OPERATING RATING FACTOR: 1.52
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) = 250 KIPS
STRUCTURE IS DESIGNED FOR 20#/SQ FT FUTURE WEARING SURFACE

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB — f'c = 4,000 psi
CONCRETE MASONRY ALL OTHER — f'c = 3,500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT — fy = 60,000 psi

TRAFFIC VOLUME

A.A.D.T. = 530 (2014)
A.A.D.T. = 660 (2034)
DESIGN SPEED = 45 MPH

HYDRAULIC DATA

DRAINAGE AREA = 89.5 SQ. MILES
WATERWAY AREA = 604 SQ. FEET
Q_{100} = 1148 CFS
VELOCITY = 2.36 FPS
HIGH WATER$_{100}$ = EL. 781.33
RDWY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5
Q_2 = 300 CFS
HIGH WATER$_2$ = EL. 778.36

WISCONSIN
PHILIP J. ENGLEBERT
E-16118
SHEBOYGAN, WIS.
PROFESSIONAL ENGINEER
11/13/13

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS † PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 50'LONG.

PIER TO BE SUPPORTED ON HP 10 X 42 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS † PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 60'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.

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
2	5+93, LT	MOST EASTERLY BOLT IN TOP OF WOODEN BRIDGE CURB	785.32

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

NO.	DATE	REVISION	BY

DONOHUE & ASSOCIATES

ACCEPTED William C. Dreher KAR 11/14/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-155

CLARK ROAD OVER FOX RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
COLUMBIA	FORT WINNEBAGO

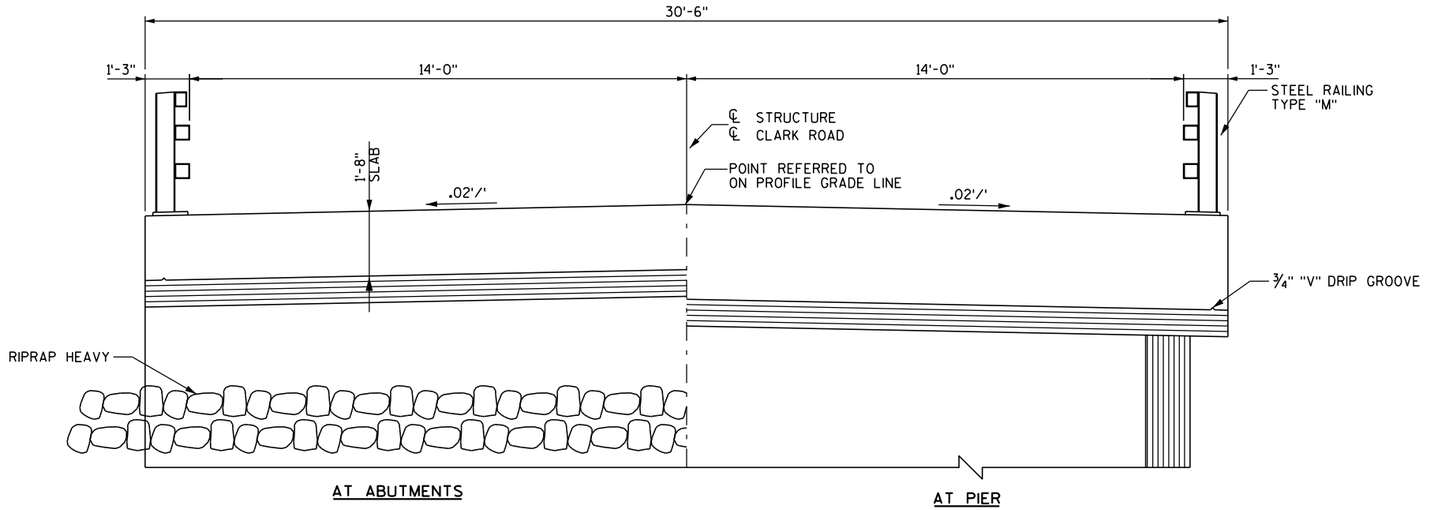
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
DJN	PJE	DJN	PJE

GENERAL PLAN

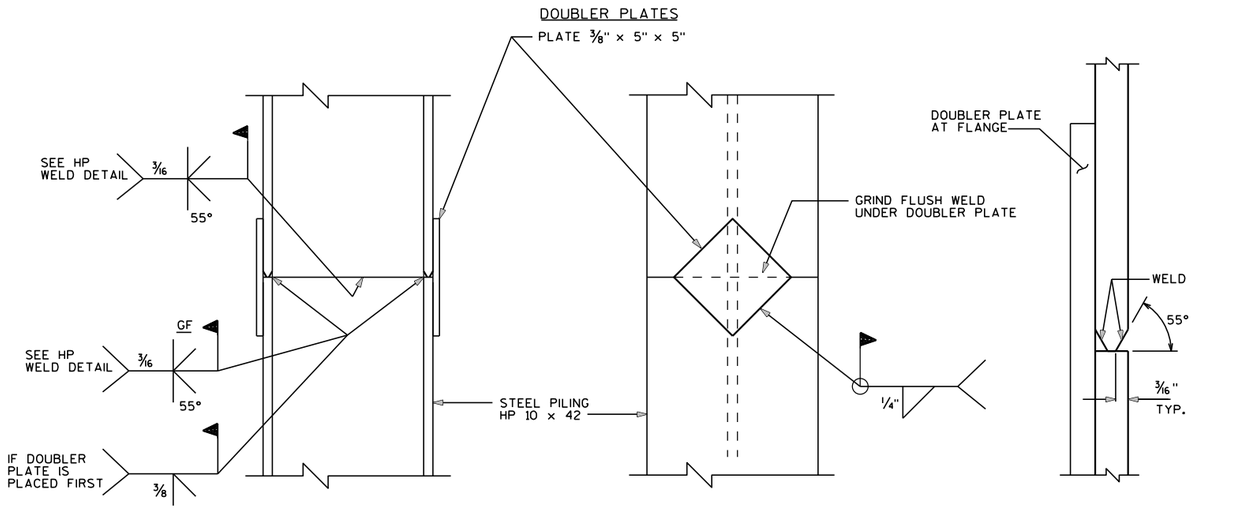
SHEET 1 OF 13

37



CROSS SECTION THROUGH BRIDGE

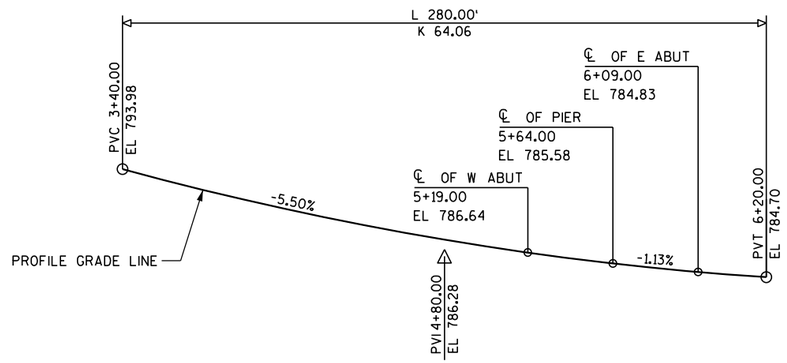
(LOOKING EAST)



STEEL 'HP' SHAPES

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR



PROFILE GRADE LINE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

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 1 AND IN THE ABUTMENT DETAILS.

ALL VOIDS BETWEEN HEAVY RIPRAP SHALL BE "FILLED" USING "SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR" FROM EL. 777.0 TO THE TOP OF BERM AND INCLUDING THE HORIZONTAL SURFACE OF THE BERM.

THE FINISHED GRADED SECTION SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

THE LOWER LIMITS OF EXCAVATION FOR STRUCTURES FOR THE ABUTMENTS SHALL BE THE BOTTOM OF THE SLOPE PROTECTION.

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

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

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND SIDES OF THE DECK AND 1'-0" UNDER DECK AT EDGES.

THIS BRIDGE WILL REPLACE P-11-0902, A THREE SPAN TIMBER BRIDGE WITH TOTAL LENGTH OF 57.0' BETWEEN INSIDE FACE OF ABUTMENTS AND CLEAR ROADWAY WIDTH OF 26.3'.

TOTAL ESTIMATED QUANTITIES

BID ITEMS	BID ITEMS	UNIT	WEST ABUT.	PIER	EAST ABUT.	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY, MINIMAL DEBRIS, STA 5+64	LS					1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES (B-11-155)	LS					1
210.0100	BACKFILL STRUCTURE	CY	120	43	120		283
502.0100	CONCRETE MASONRY BRIDGES	CY	29	42	29	189	289
502.3200	PROTECTIVE SURFACE TREATMENT	SY				372	372
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2900	1980	2900		7780
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1370	70	1360	42280	45080
513.4060	RAILING TUBULAR TYPE M (B-11-155)	LS					1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11		11		22
550.0500	PILE POINTS	EACH	9	8	9		26
550.1100.S	PILING STEEL HP 10-INCH X 42 LB	LF	450	480	450		1380
606.0300	RIPRAP HEAVY	CY	110	24	92		226
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	65		65		130
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	147	9	120		276
SPV.0195.01	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	15		21		36
	NON-BID ITEMS						
	PREFORMED JOINT FILLER	SIZE					½",¾"

STATE PROJECT NUMBER

5903-00-72

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

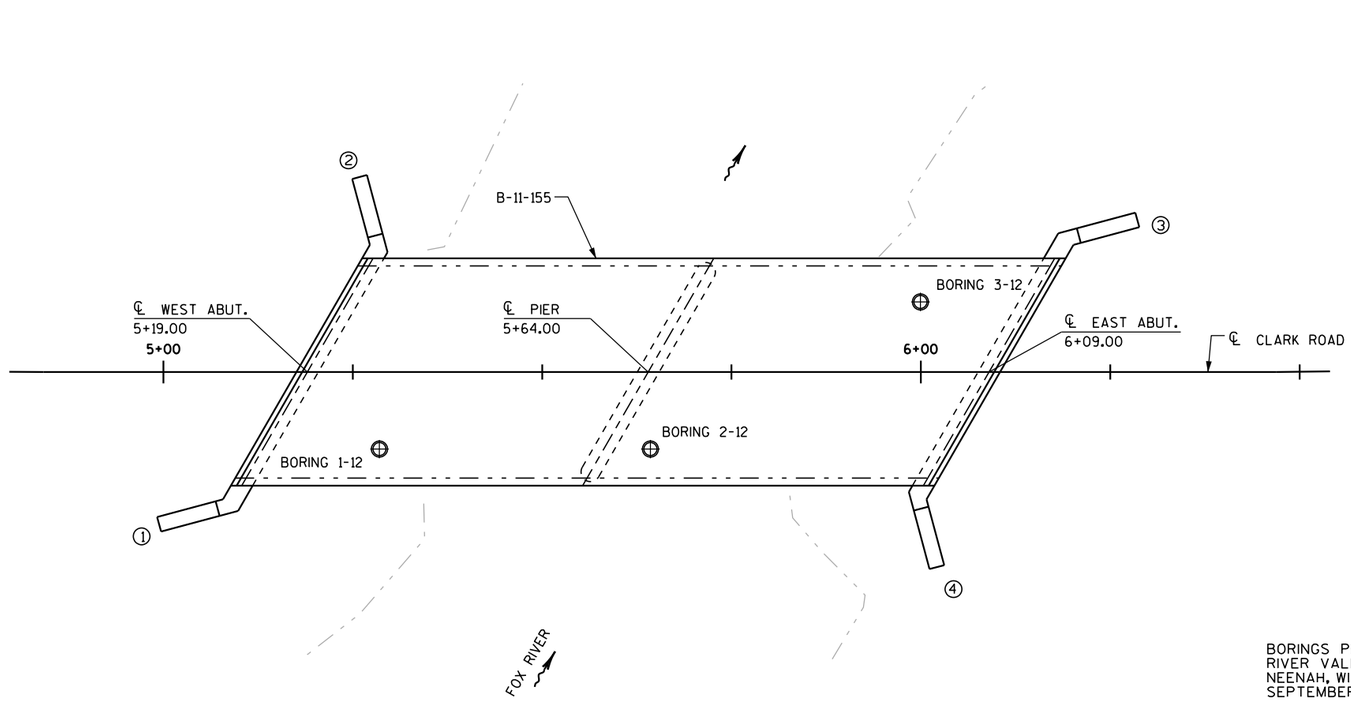
SECTION, NOTES & QUANTITIES

SHEET 2 OF 13

38

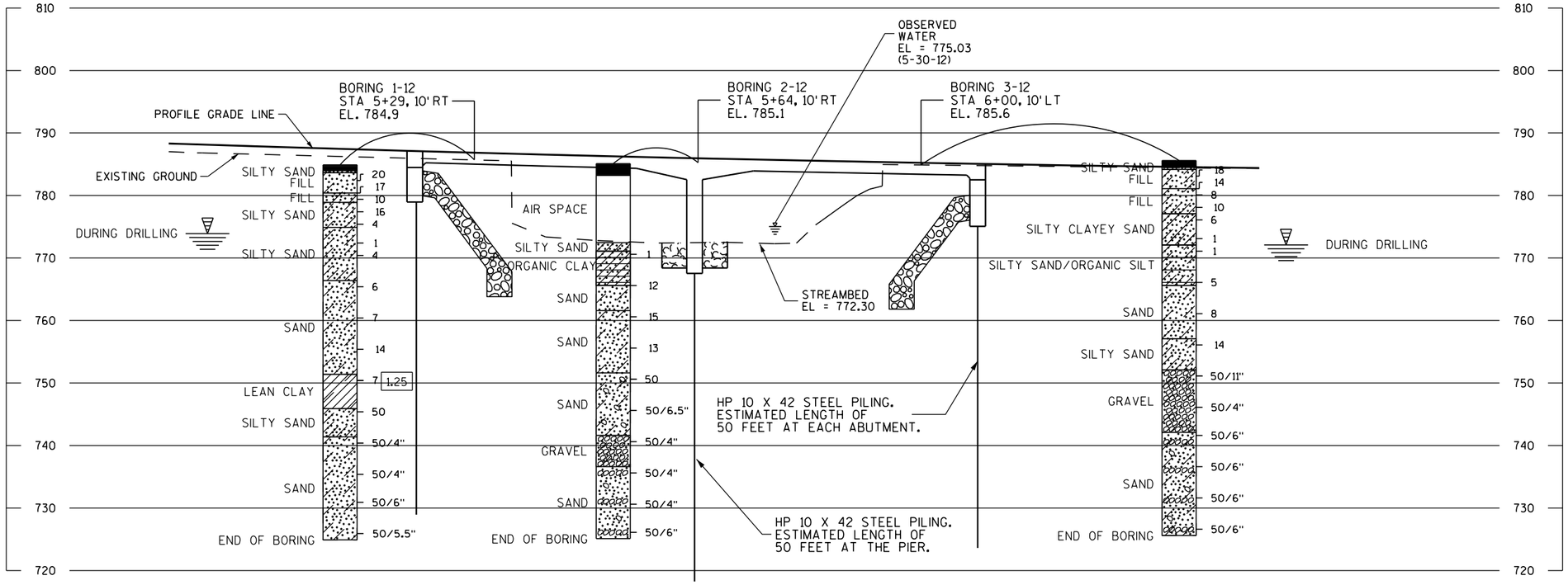
8

8



BORINGS PERFORMED BY:
RIVER VALLEY TESTING CORP.
NEENAH, WISCONSIN
SEPTEMBER 06 & 07, 2012

PLANS PREPARED BY DONOHUE & ASSOCIATES, INC.



STATE PROJECT NUMBER

5903-00-72

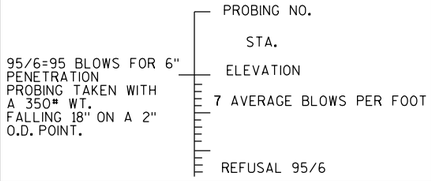
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

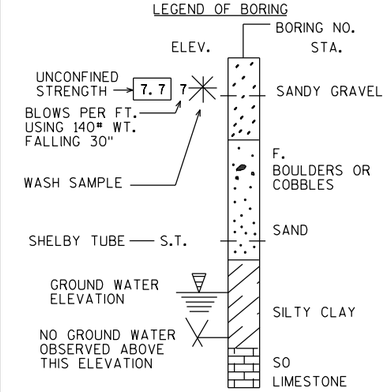
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

SUBSURFACE EXPLORATION

SHEET 3 OF 13

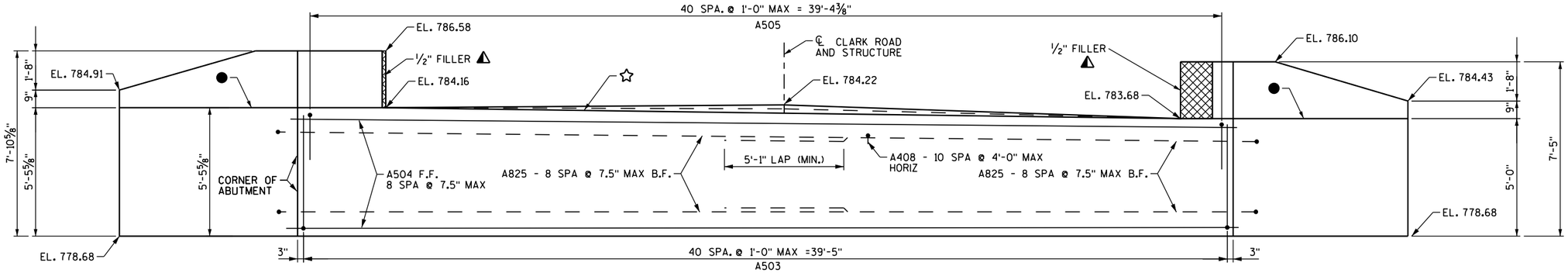
39

8

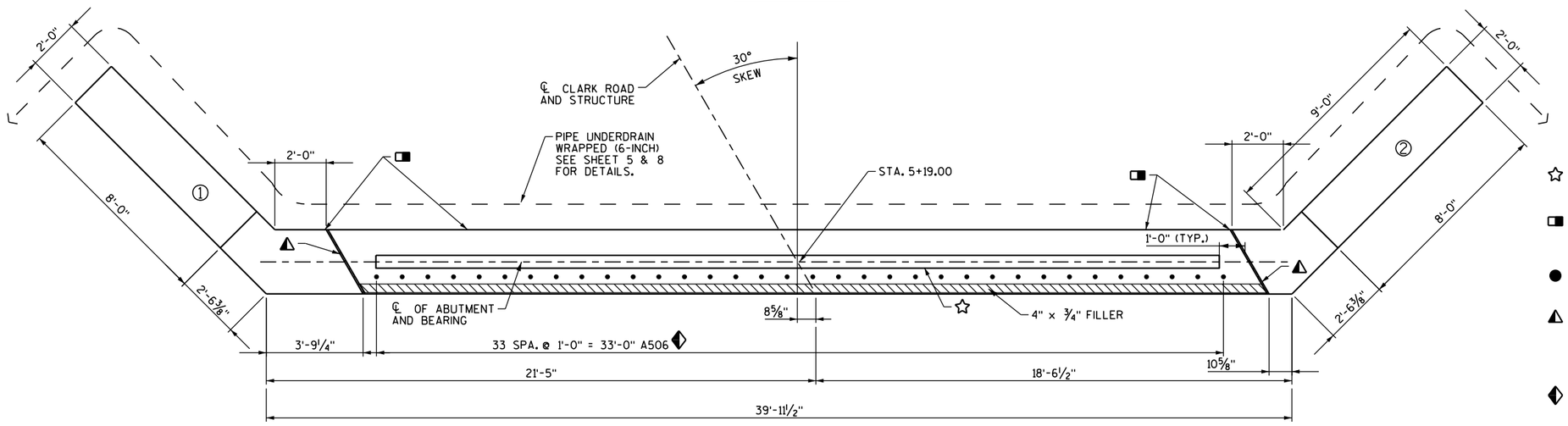
8

STATE PROJECT NUMBER

5903-00-72



ELEVATION



LEGEND

☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

▬ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

◭ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

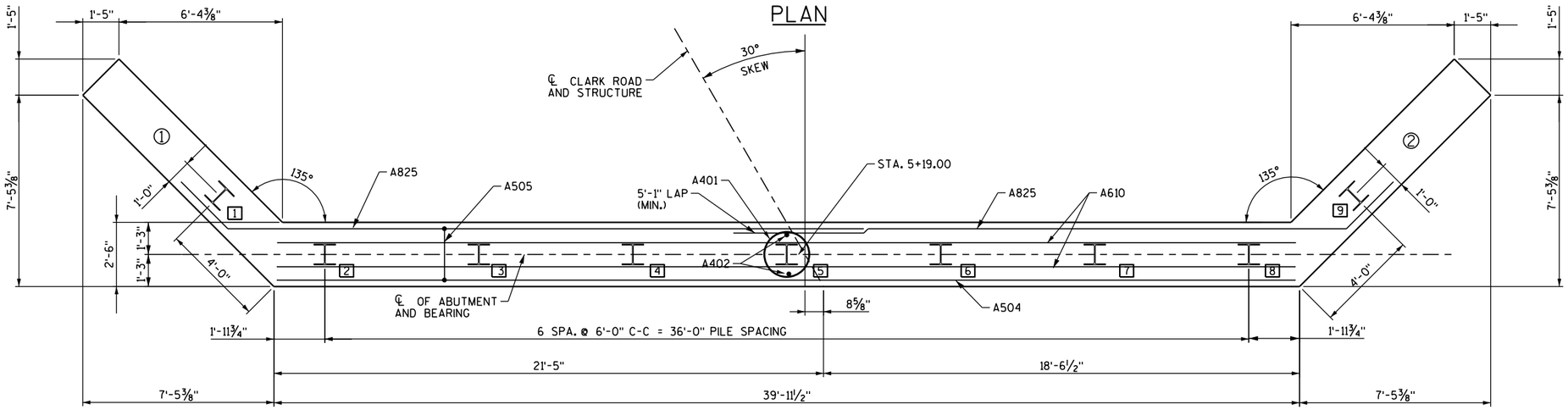
◆ A506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".

FOR PILE SPLICE DETAIL SEE SHEET 2

B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

PLAN



PILE PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

WEST ABUTMENT

SHEET 4 OF 10

40

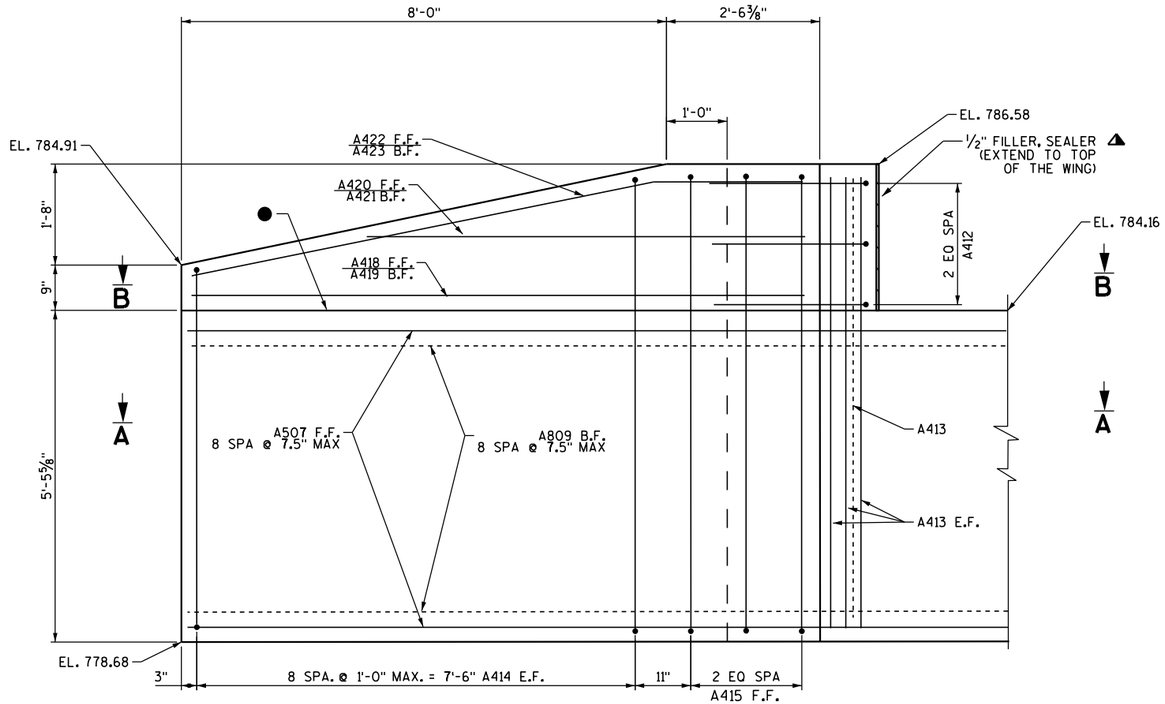
8

8

FILE NAME : L:\Projects\12225\Dwg\B-11-155\08_04west abutment.DGN PLOT DATE : 11/13/13 PLOT TIME : 1:07:05 PM PLOT BY : dnevers

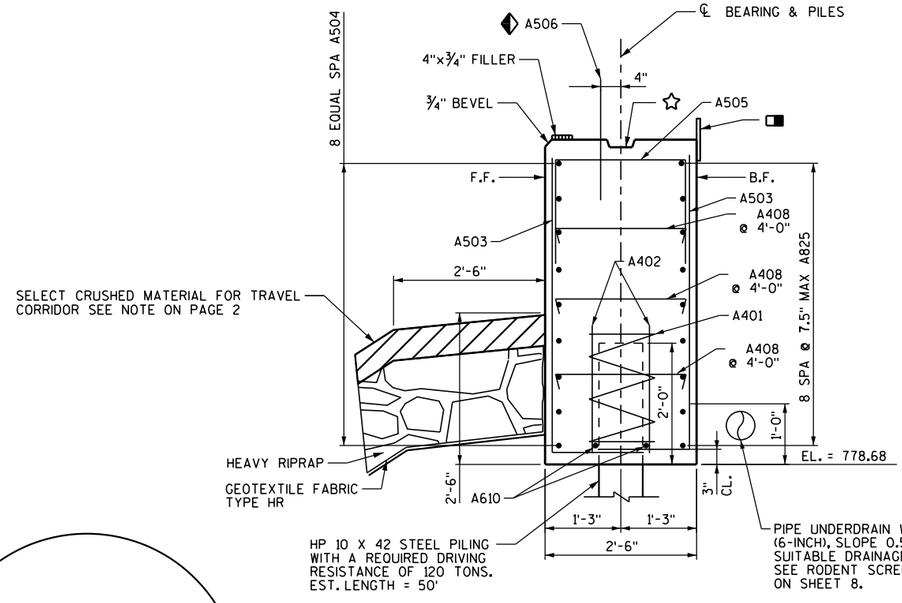
STATE PROJECT NUMBER

5903-00-72

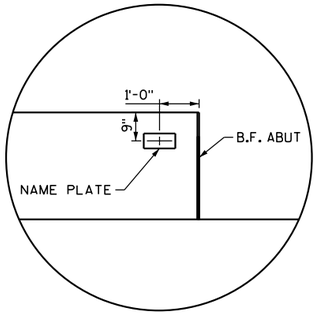


ELEVATION - WING 1

(LOOKING AT FRONT FACE)

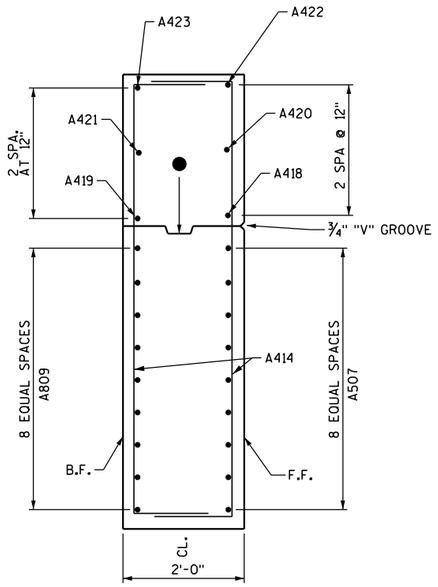


SECTION THRU ABUT BODY



NAME PLATE LOCATION

(WING 1 ONLY)



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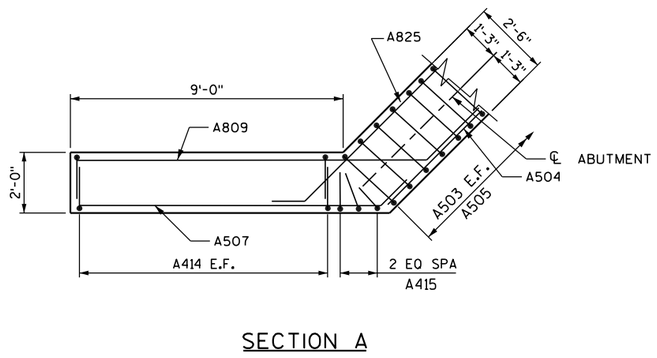
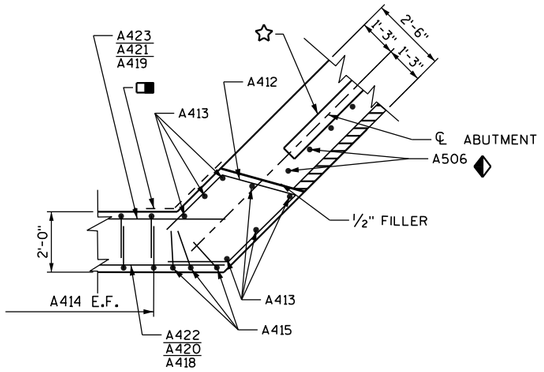


SECTION A



SECTION B

LEGEND

- ● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◨ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ▲ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- ◆ A506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- ☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

WEST ABUTMENT, WING 1

SHEET 5 OF 13

41

8

8

FILE NAME : L:\Projects\12225\Dwg\B-11-155\08_05west abut wing 1.dgn PLOT DATE : 11/13/13 PLOT TIME : 1:07:35 PM PLOT BY : dnevers

STATE PROJECT NUMBER

5903-00-72

WEST ABUTMENT

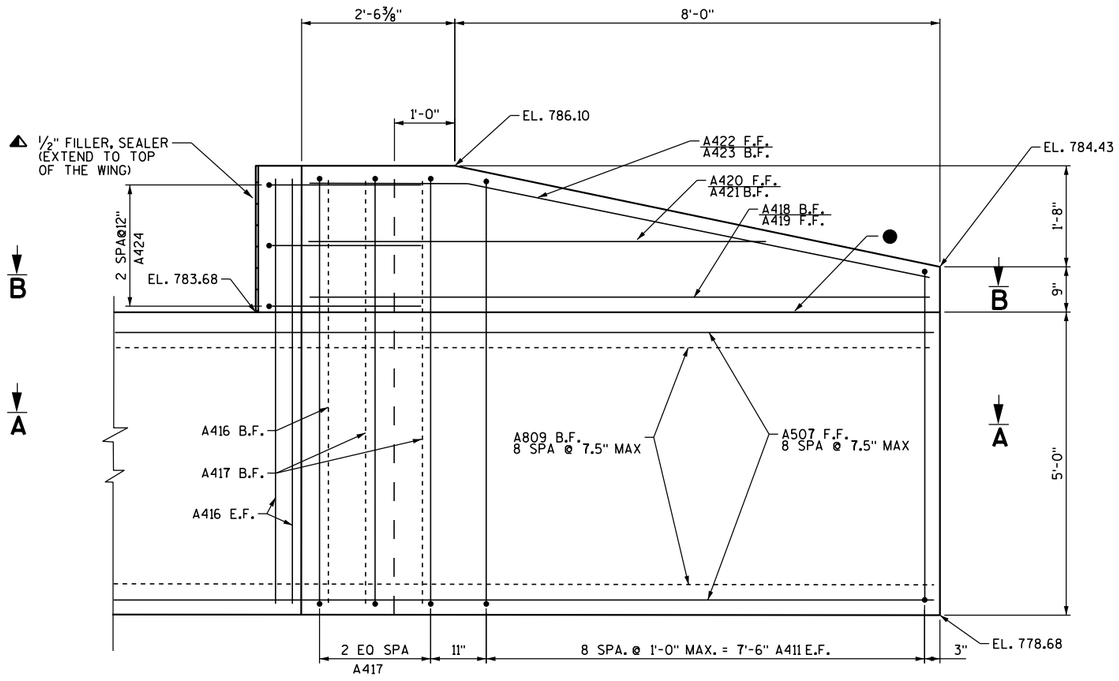
BILL OF BARS

COATED: 1370 LBS
UNCOATED: 2900 LBS

BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
A401		9	28'-0"		X	BODY @ PILES
A402		18	2'-3"			BODY @ PILES
A503		82	6'-5"		X	BODY VERT. E.F.
A504		9	39'-11"			BODY HORIZ. F.F.
A505		41	8'-2"		X	BODY TIES
A506	X	34	2'-0"			BODY DOWELS
A507	X	18	12'-0"		X	WING 1 & 2 HORIZ. F.F.
A408		33	2'-11"		X	BODY HORIZ. TIES
A809	X	18	13'-1"		X	WING 1 & 2 HORIZ. B.F.
A610		2	39'-11"			BODY @ PILES
A411	X	18	9'-0"	(X)		WING 2 VERT. E.F.
A412	X	3	9'-8"		X	WING 1 HORIZ.
A413	X	7	7'-7"			WING 1 VERT.
A414	X	18	9'-6"	(X)	X	WING 1 VERT. E.F.
A415	X	3	10'-7"		X	WING 1 VERT. E.F.
A416	X	5	7'-0"			WING 2 VERT.
A417	X	5	10'-0"		X	WING 2 VERT.
A418	X	2	10'-3"			WING 1 & 2 HORIZ. F.F.
A419	X	2	10'-3"			WING 1 & 2 HORIZ. B.F.
A420	X	2	8'-6"			WING 1 & 2 HORIZ. F.F.
A421	X	2	8'-6"			WING 1 & 2 HORIZ. B.F.
A422	X	2	10'-0"		X	WING 1 & 2 DIAG. F.F.
A423	X	2	10'-0"		X	WING 1 & 2 DIAG. B.F.
A424	X	3	8'-1"		X	WING 2 HORIZ.
A825		18	26'-0"		X	BODY HORIZ. B.F.

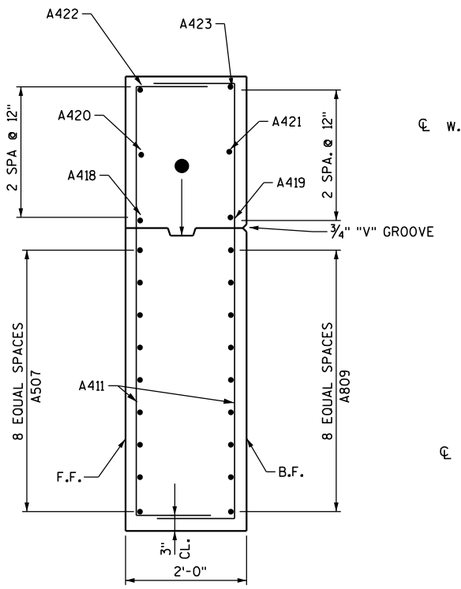
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

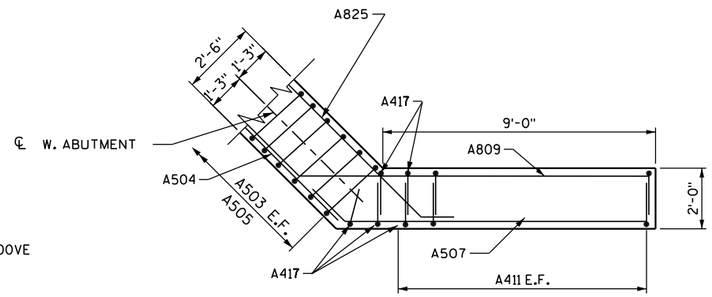


ELEVATION - WING 2

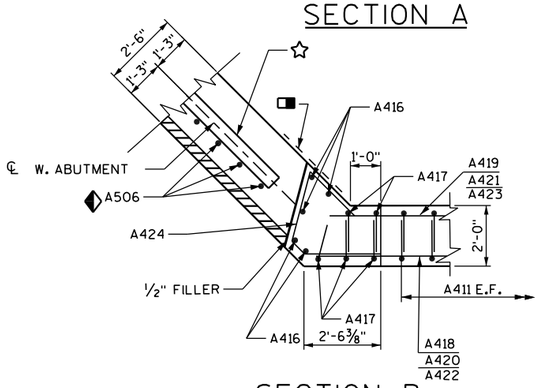
(LOOKING AT FRONT FACE)



SECTION THRU WING



SECTION A



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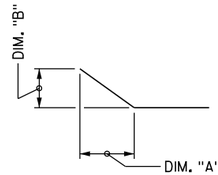

BAR MARK	DIM. "A"	DIM. "B"
A507	1' - 0¾"	1' - 0¾"
A809	1' - 0¾"	1' - 0¾"
A422	7' - 9"	1' - 8"
A423	7' - 9"	1' - 8"
A825	1' - 10"	1' - 10"

LEGEND

- ● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ▬ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
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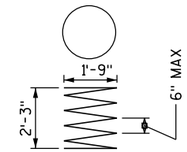
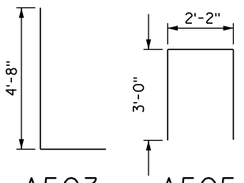
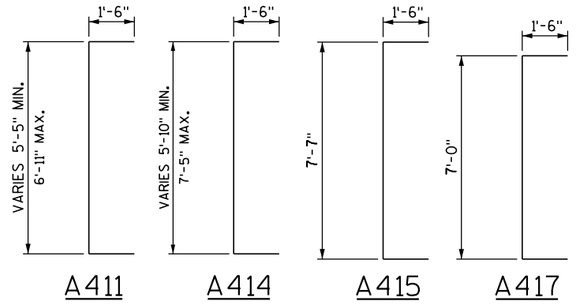
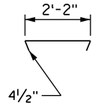
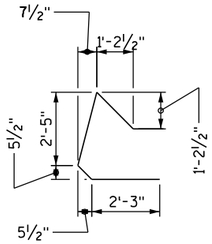
- ☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

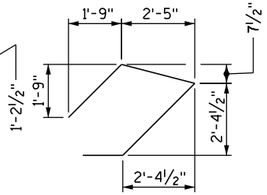












BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A411	2 SERIES OF 9	8' - 3" TO 9' - 9"
A414	2 SERIES OF 9	8' - 8" TO 10' - 4"

WORK THIS SHEET WITH SHEETS 4 & 5

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

WEST ABUTMENT, WING 2

SHEET 6 OF 13

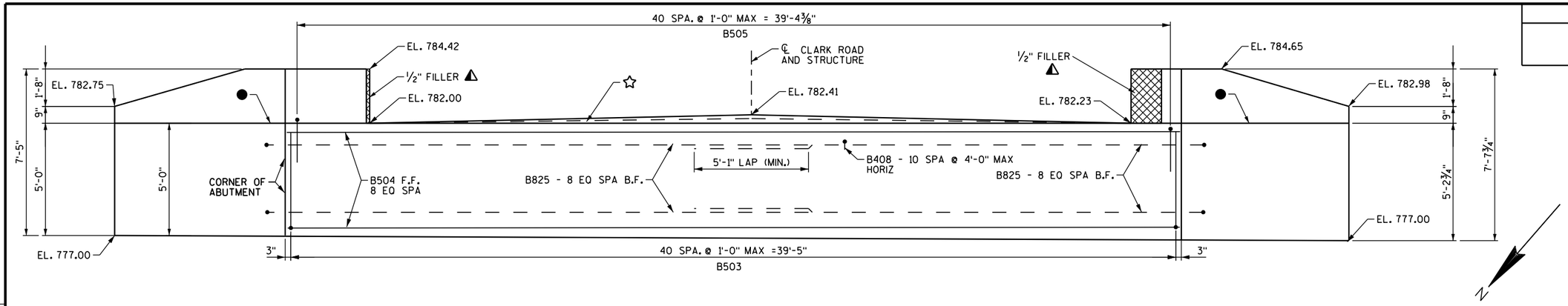
42

8

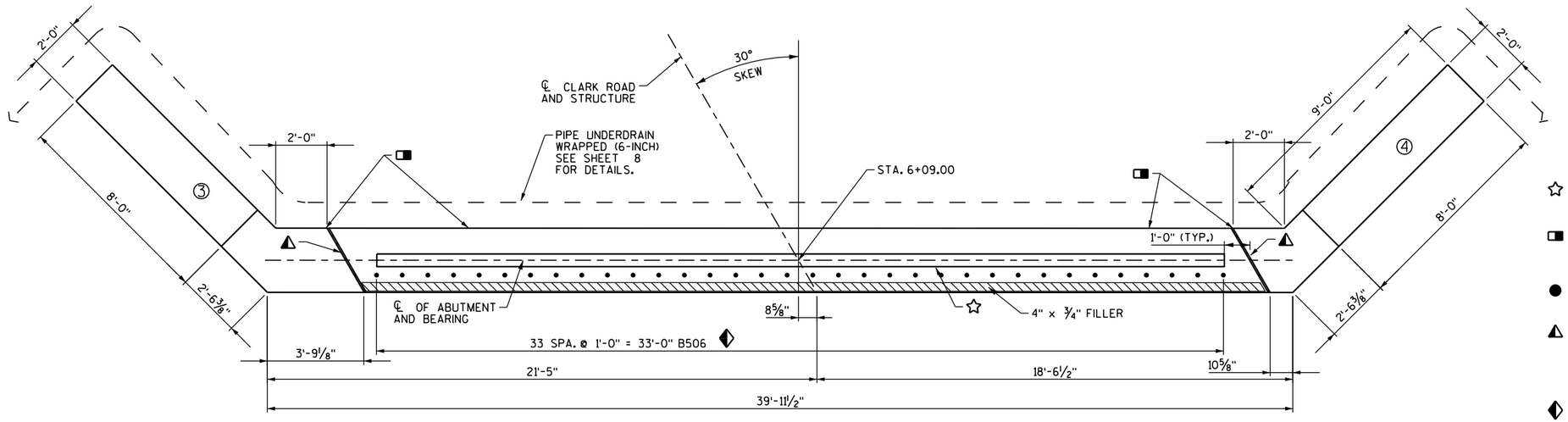
8

STATE PROJECT NUMBER

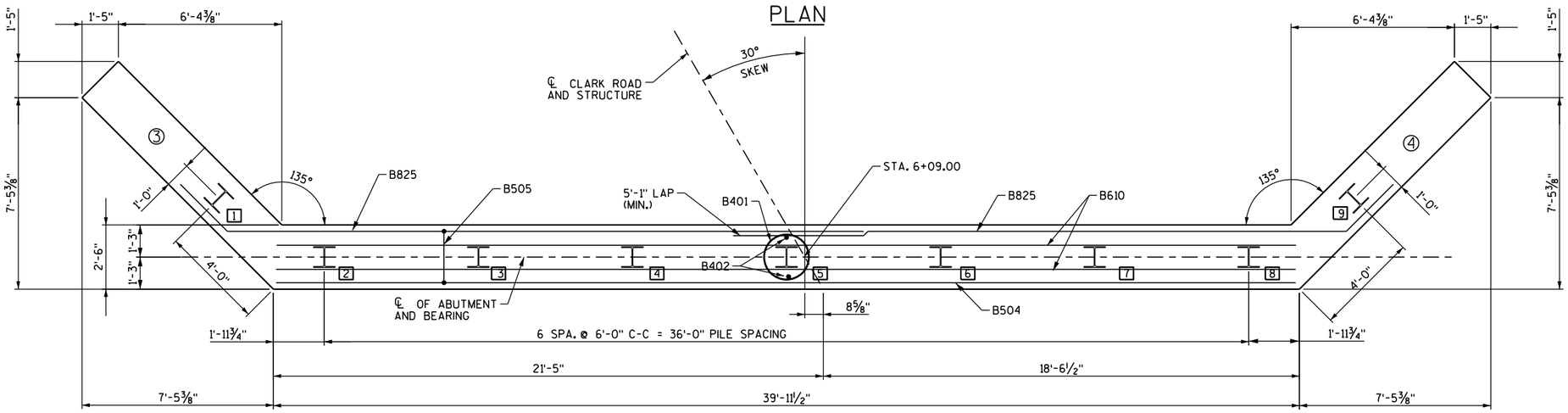
5903-00-72



ELEVATION



PLAN



PILE PLAN

LEGEND

- ☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".
- ▬ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◭ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- ◆ A506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".

FOR PILE SPLICE DETAIL SEE SHEET 2

B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

EAST ABUTMENT

SHEET 7 OF 13

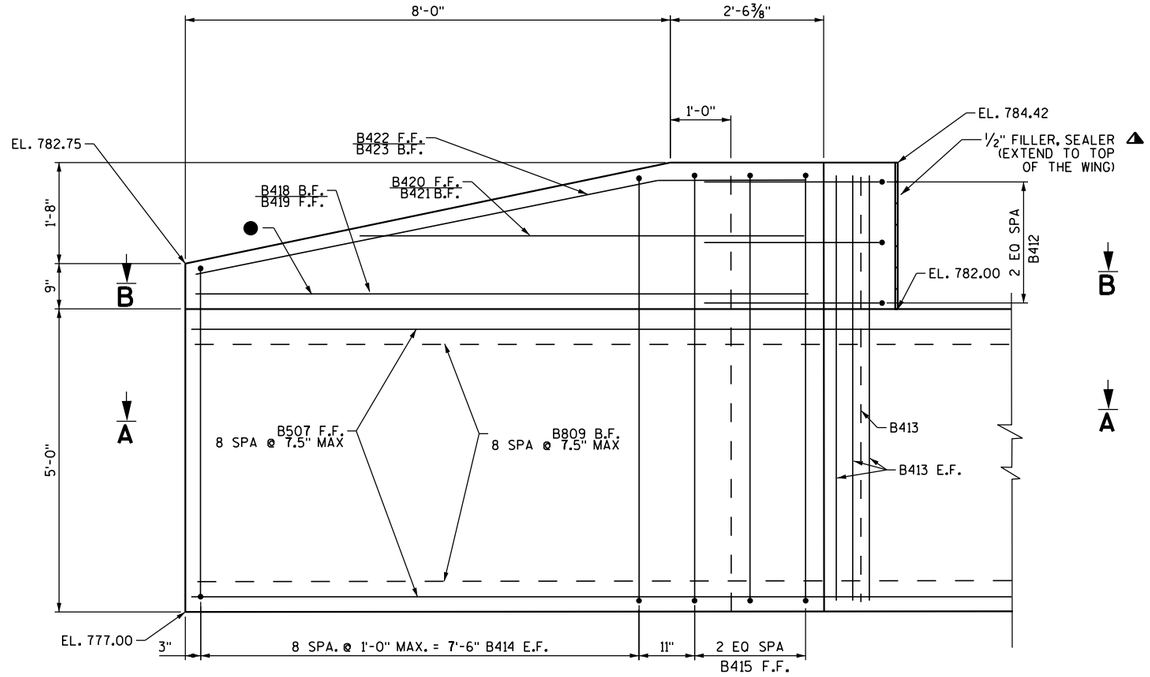
43

8

8

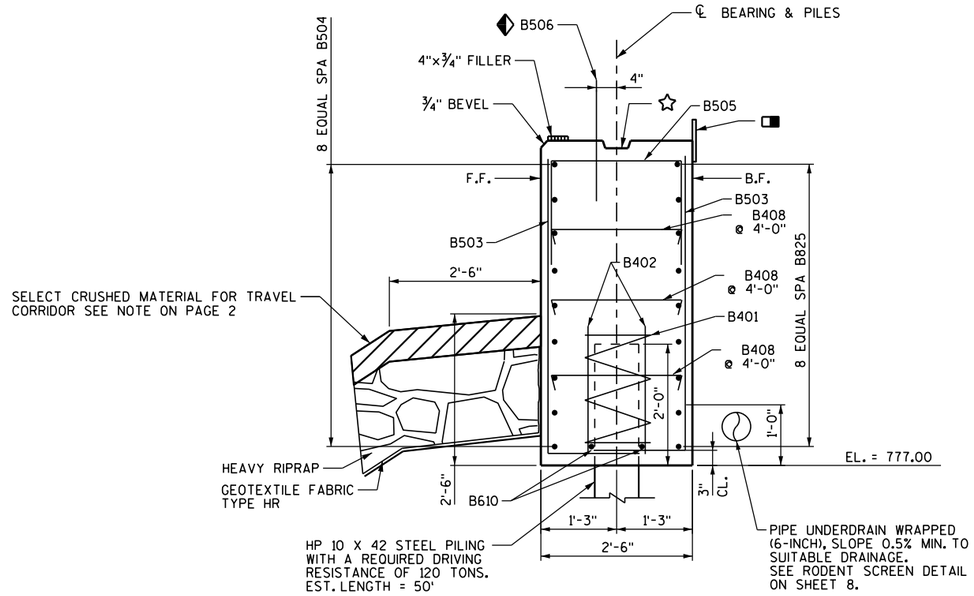
STATE PROJECT NUMBER

5903-00-72

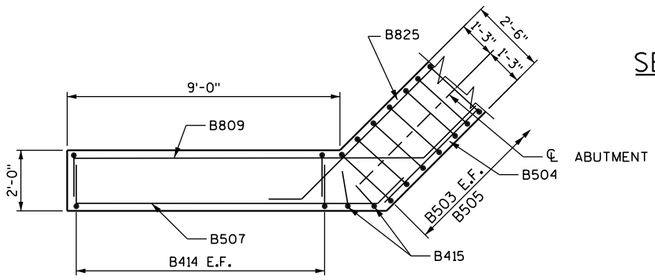


ELEVATION - WING 3

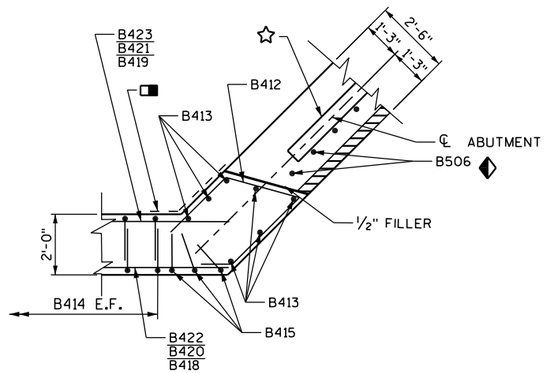
(LOOKING AT FRONT FACE)



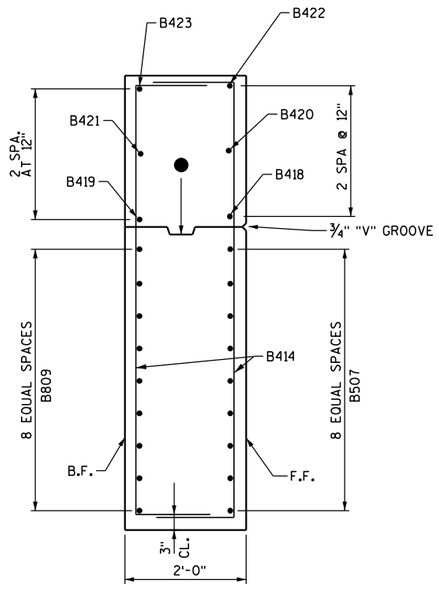
SECTION THRU ABUT BODY



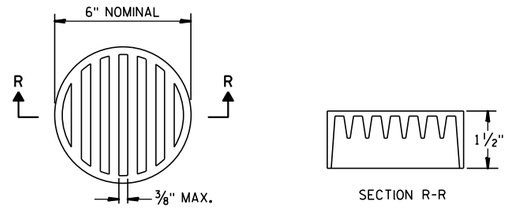
SECTION A



SECTION B



SECTION THRU WING



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

RODENT SCREEN

LEGEND

- ● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◘ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ▲ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- ◆ B506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- ☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

EAST ABUTMENT, WING 3

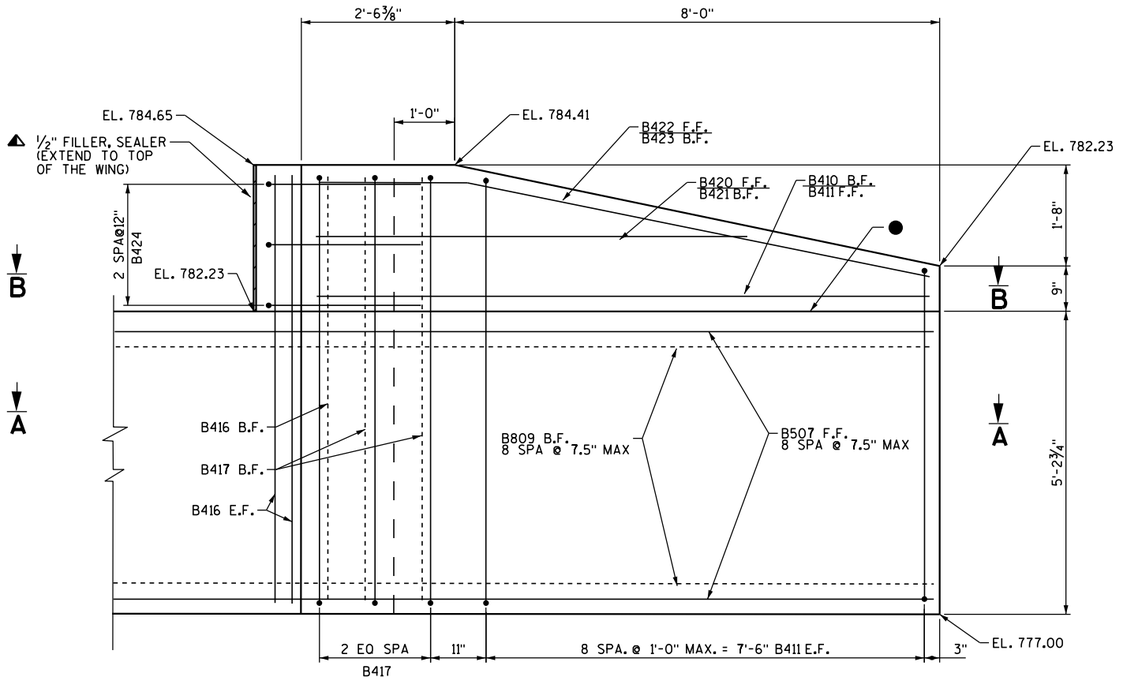
SHEET 8 OF 13

44

8

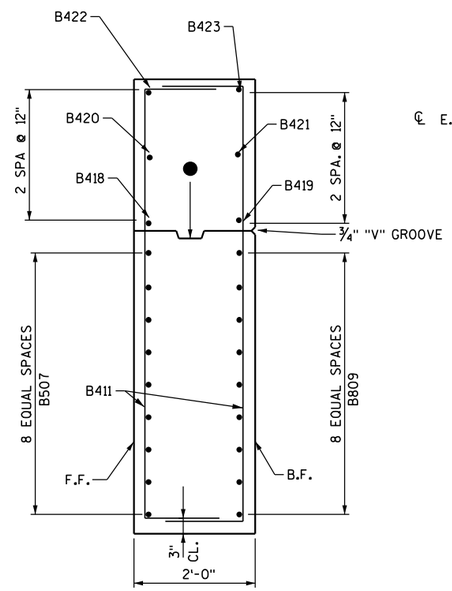
8

FILE NAME : L:\Projects\12225\Dwg\B-11-155\08_08east abut wing 3.dgn PLOT DATE : 11/13/13 PLOT TIME : 1:08:03 PM PLOT BY : dnevers

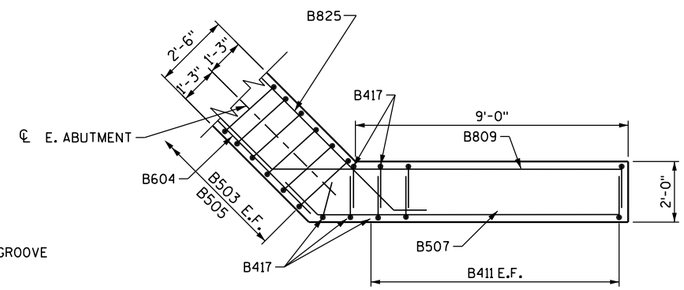


ELEVATION - WING 4

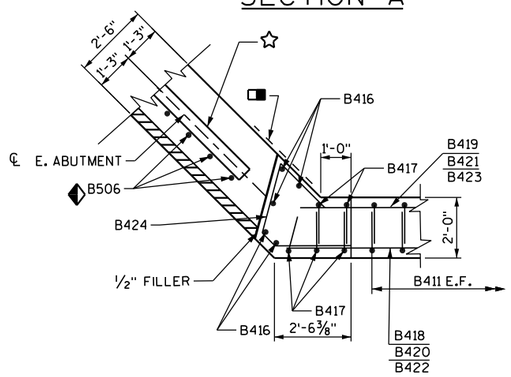
(LOOKING AT FRONT FACE)



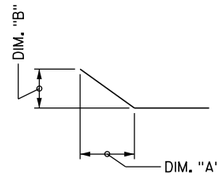
SECTION THRU WING



SECTION A



SECTION B



BAR MARK	DIM. "A"	DIM. "B"
B507	1' - 0¾"	1' - 0¾"
B809	1' - 0¾"	1' - 0¾"
B422	7' - 9"	1' - 8"
B423	7' - 9"	1' - 8"
B825	1' - 10"	1' - 10"

LEGEND

- ● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◘ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ▲ NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)
- ◆ B506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. EMBED BARS 1'-0".
- ☆ KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" X 6".

EAST ABUTMENT

BILL OF BARS

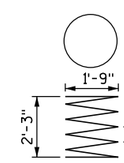
COATED: 1360 LBS
UNCOATED: 2900 LBS

STATE PROJECT NUMBER
5903-00-72

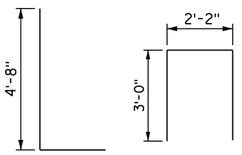
BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
B401		9	28'-0"		X	BODY @ PILES
B402		18	2'-3"			BODY @ PILES
B503		82	6'-5"		X	BODY VERT. E.F.
B504		9	39'-11"			BODY HORIZ. F.F.
B505		41	8'-2"		X	BODY TIES
B506	X	34	2'-0"			BODY DOWELS
B507	X	18	12'-0"		X	WING 3 & 4 HORIZ. F.F.
B408		33	2'-11"		X	BODY HORIZ. TIES
B809	X	18	13'-1"		X	WING 3 & 4 HORIZ. B.F.
B610		2	39'-11"			BODY @ PILES
B411	X	18	9'-4"	Ⓧ		WING 4 VERT. E.F.
B412	X	3	9'-8"		X	WING 3 HORIZ.
B413	X	7	7'-0"			WING 3 VERT.
B414	X	18	9'-1"	Ⓧ	X	WING 3 VERT. E.F.
B415	X	3	10'-0"		X	WING 3 VERT. E.F.
B416	X	5	7'-0"			WING 4 VERT.
B417	X	5	10'-2"		X	WING 4 VERT.
B418	X	2	10'-3"			WING 3 & 4 HORIZ. F.F.
B419	X	2	10'-3"			WING 3 & 4 HORIZ. B.F.
B420	X	2	8'-6"			WING 3 & 4 HORIZ. F.F.
B421	X	2	8'-6"			WING 3 & 4 HORIZ. B.F.
B422	X	2	10'-0"		X	WING 3 & 4 DIAG. F.F.
B423	X	2	10'-0"		X	WING 3 & 4 DIAG. B.F.
B424	X	3	8'-1"		X	WING 4 HORIZ.
B825		18	26'-0"		X	BODY HORIZ. B.F.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

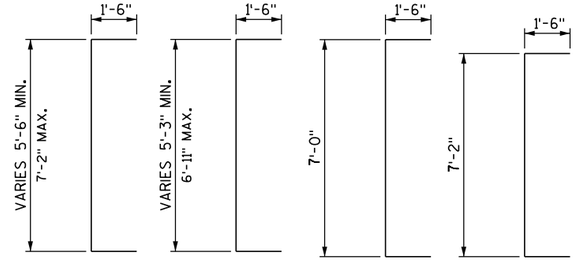
Ⓧ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.



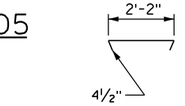
B401



B503 B505



B411 B414 B415 B417



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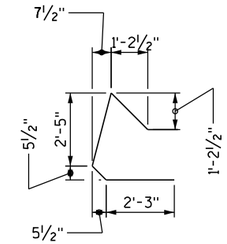

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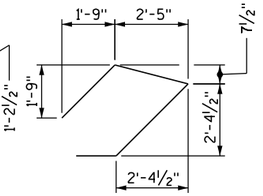


B412

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
B411	2 SERIES OF 9	8' - 6" TO 10' - 2"
B414	2 SERIES OF 9	8' - 3" TO 9' - 11"

WORK THIS SHEET WITH SHEETS 7 & 8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

EAST ABUTMENT, WING 4

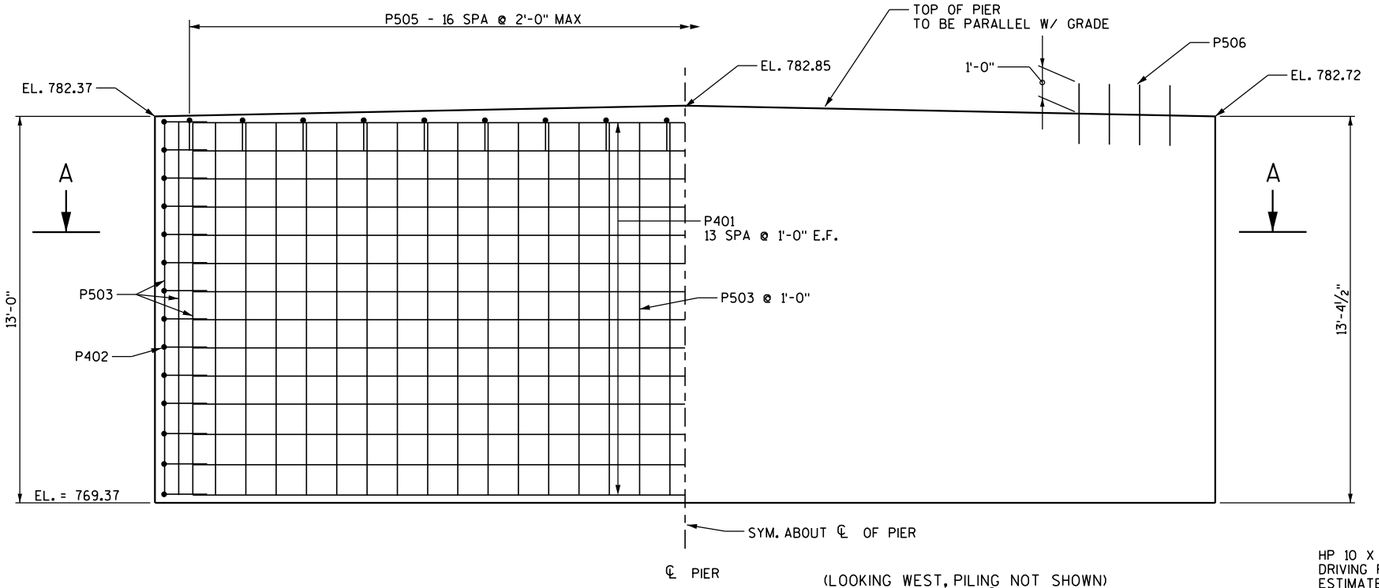
SHEET 9 OF 13
45

8

8

STATE PROJECT NUMBER

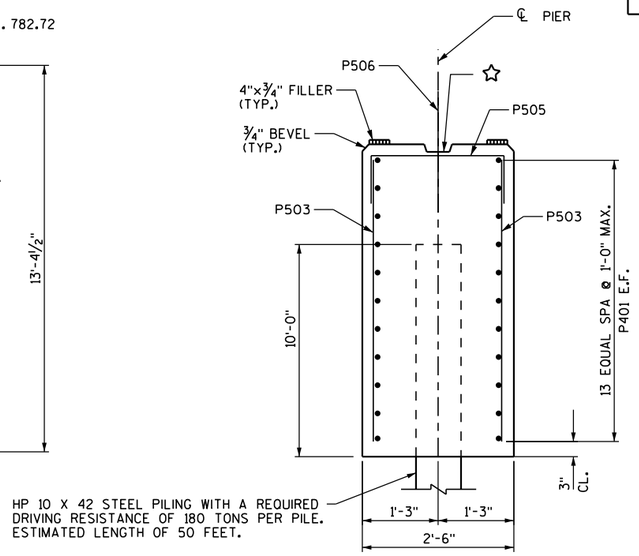
5903-00-72



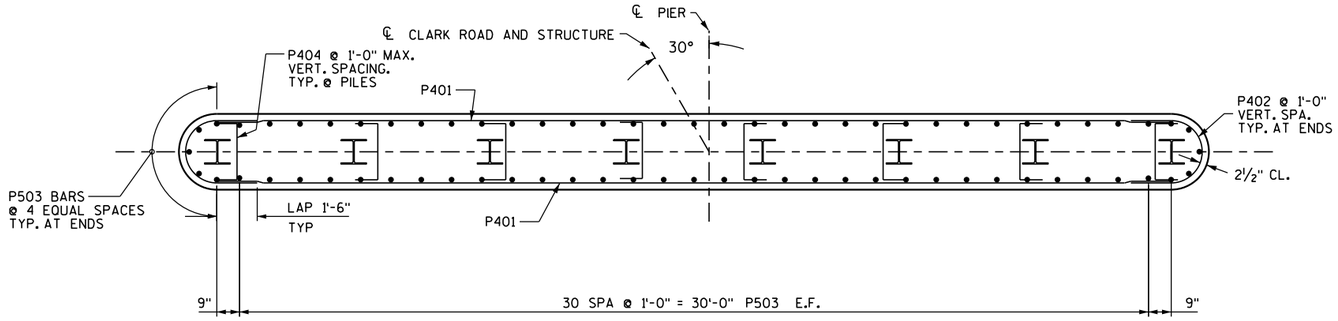
ELEVATION

(LOOKING EAST, PILING NOT SHOWN)
(ELEVATIONS AT ℄ OF PIER)

(LOOKING WEST, PILING NOT SHOWN)
(ELEVATIONS AT ℄ OF PIER)



END VIEW

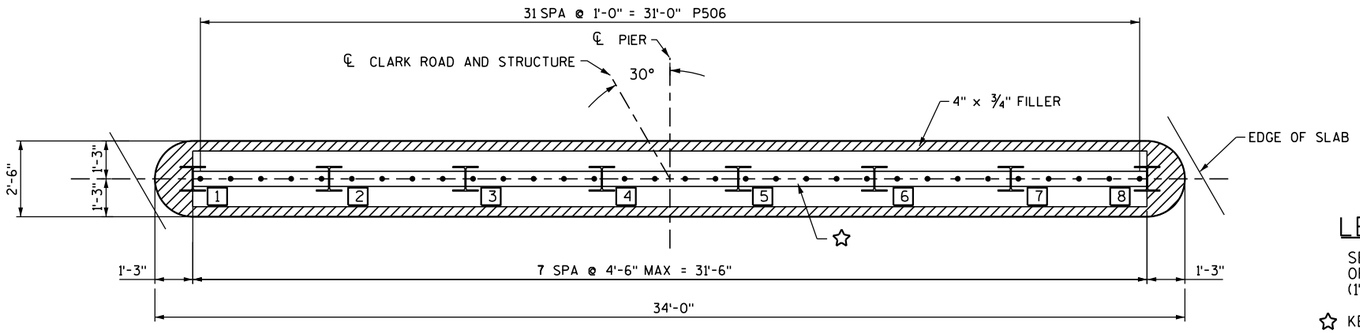


SECTION A

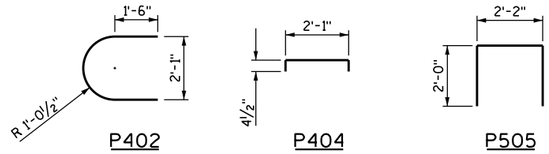
COATED: 70 LBS
UNCOATED: 1980 LBS

BILL OF BARS

BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
P401		28	31'-6"			BODY HORIZONTAL
P402		28	6'-4"		X	BODY HORIZONTAL ENDS
P503		72	12'-10"			BODY VERTICAL
P404		104	2'-10"		X	BODY TIES
P505		17	6'-2"		X	BODY TOP
P506	X	32	2'-0"			BODY VERTICAL DOWELS



PILE PLAN



LEGEND

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ¾" FILLER WITH NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

☆ KEYED CONST. JOINT FORMED BY BEVELED 2" x 6".

P506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL CONCRETE SET HAS TAKEN PLACE. IMBED BARS 1'-0".

FOR PILE SPLICE DETAIL SEE SHEET 2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-155

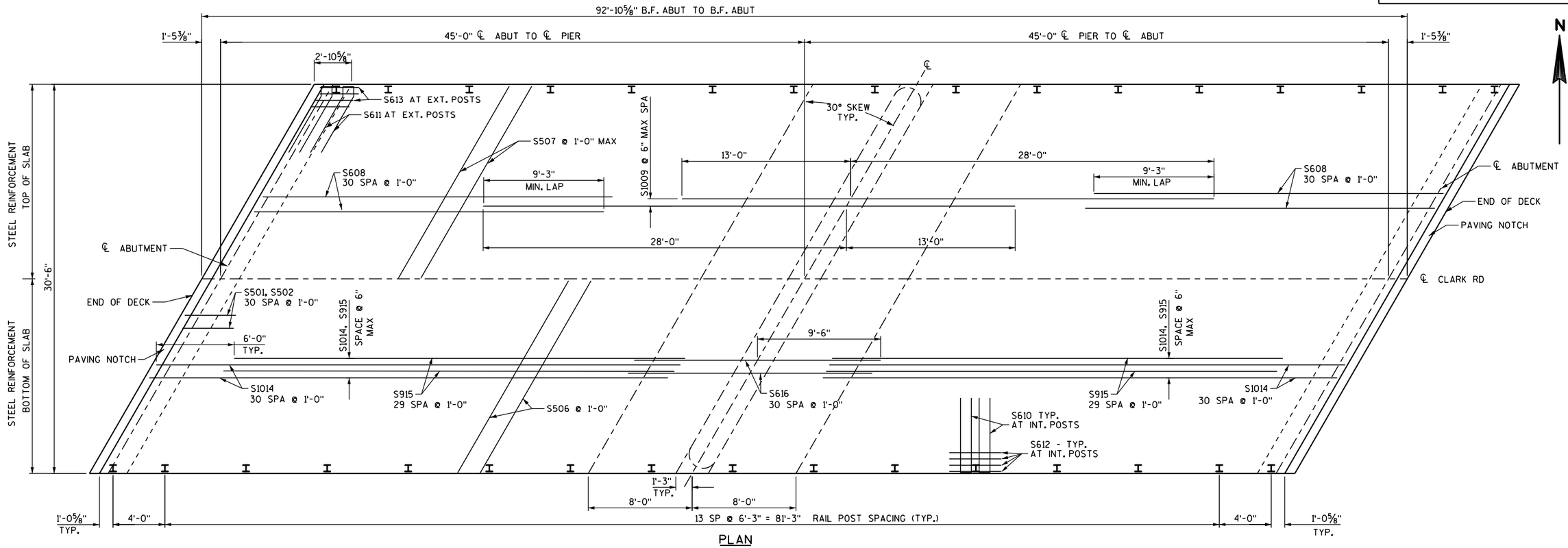
DRAWN BY DJN | PLANS CK'D. PJE

PIER

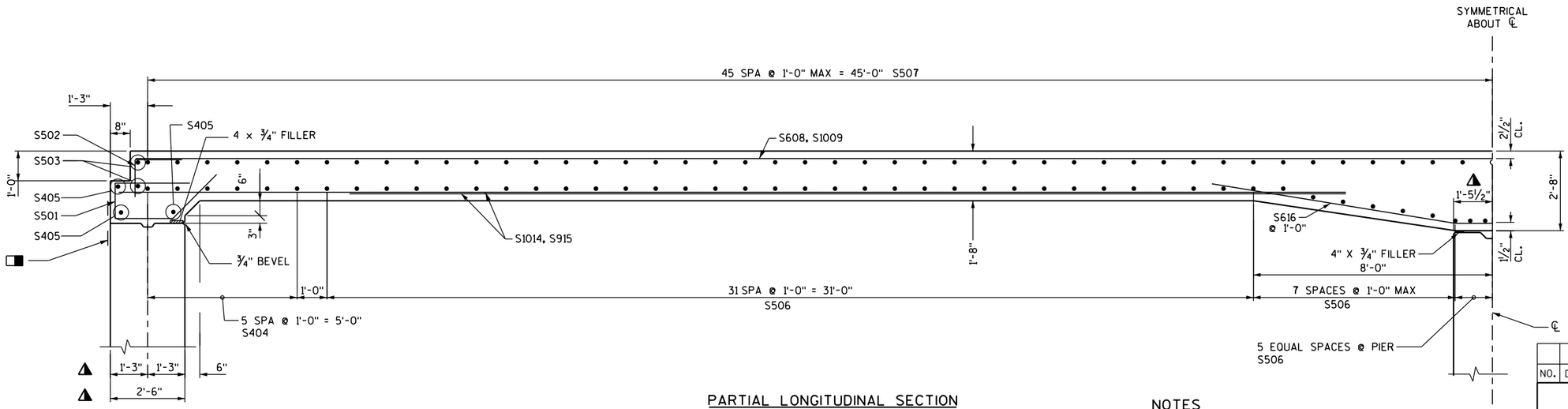
SHEET 10 OF 13

46

STATE PROJECT NUMBER
5903-00-72



PLAN



PARTIAL LONGITUDINAL SECTION

NOTES

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

⚠ DIMENSIONS MEASURED NORMAL TO ℄ OF SUBSTRUCTURE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

SUPERSTRUCTURE

SHEET 11 OF 13

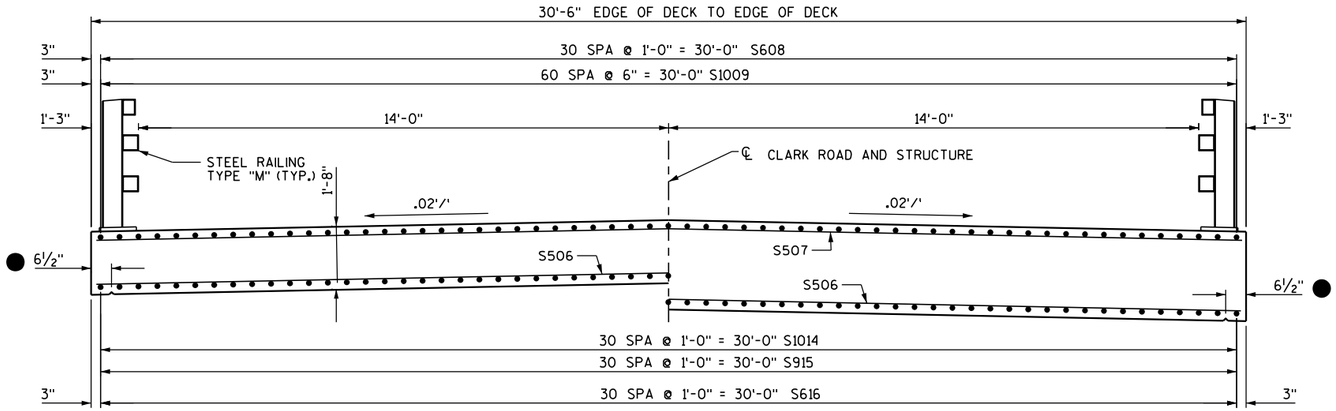
47

8

8

FILE NAME : L:\Projects\12225\Dwg\B-11-155\08_11superstructure.dgn PLOT DATE : 11/13/13 PLOT TIME : 12:17:19 PM PLOT BY : dnevers

STATE PROJECT NUMBER
5903-00-72



IN SPAN AT PIER

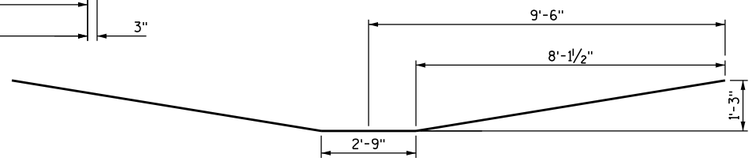
CROSS SECTION THRU ROADWAY

NOTES

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

● ¾" CONTINUOUS DRIP GROOVE TO END 2'-0" AWAY FROM FACE OF ABUTMENT.

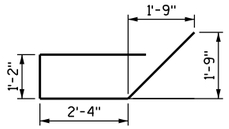


S616

BILL OF BARS

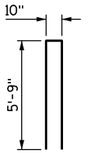
COATED: 42280 LBS
UNCOATED: 0 LBS

BAR MARK	COAT	NUMBER REQUIRED	LENGTH	BAR SERIES	BENT	LOCATION
S501	X	62	9'-0"		X	AT ABUTMENT
S502	X	62	3'-6"		X	AT ABUTMENT
S503	X	4	34'-10"			AT ABUTMENT
S404	X	12	34'-10"			AT ABUTMENT
S405	X	6	34'-10"			AT ABUTMENT
S506	X	82	34'-10"			TRANSVERSE BOTTOM
S507	X	91	34'-10"			TRANSVERSE TOP
S608	X	62	27'-0"			LONGITUDINAL TOP
S1009	X	61	41'-0"			LONGITUDINAL TOP
S610	X	56	12'-0"		X	AT INTERIOR RAIL POSTS
S611	X	8	12'-0"		X	AT EXTERIOR RAIL POSTS
S612	X	112	6'-0"			AT INTERIOR RAIL POSTS
S613	X	16	4'-0"			AT EXTERIOR RAIL POSTS
S1014	X	62	41'-10"			LONGITUDINAL BOTTOM
S915	X	60	34'-6"			LONGITUDINAL BOTTOM
S616	X	31	19'-2"		X	LONGITUDINAL BOTTOM OVER PIER

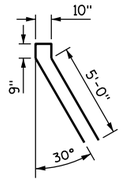


S501

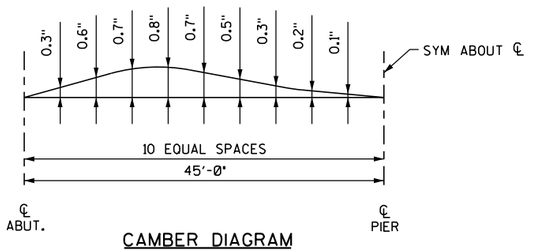
S502



S610



S611



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

TOP OF DECK ELEVATIONS

	℄ OF W. ABUT	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ OF PIER	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ OF E. ABUT
NORTH EDGE	786.10	785.99	785.87	785.77	785.66	785.56	785.46	785.37	785.28	785.19	785.10	785.02	784.94	784.86	784.79	784.72	784.65	784.59	784.53	784.47	784.42
℄	786.64	786.52	786.40	786.29	786.17	786.07	785.96	785.86	785.76	785.67	785.58	785.49	785.40	785.32	785.24	785.17	785.09	785.02	784.96	784.89	784.83
SOUTH EDGE	786.58	786.45	786.33	786.21	786.09	785.98	785.86	785.76	785.65	785.55	785.45	785.36	785.27	785.18	785.09	785.01	784.93	784.86	784.78	784.72	784.65

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

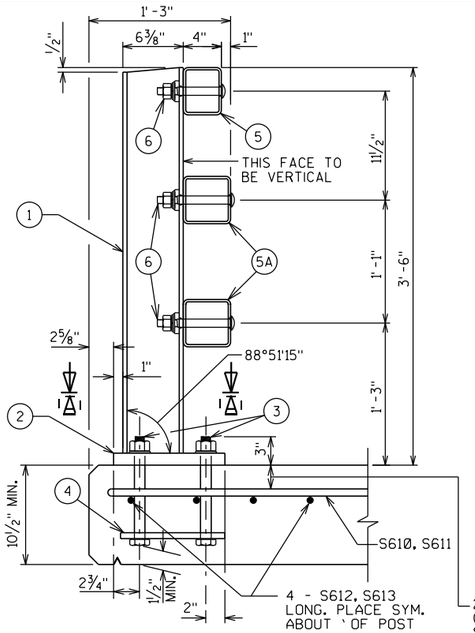
STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

SUPERSTRUCTURE DETAILS

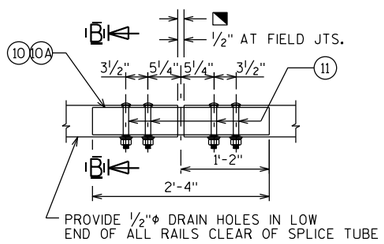
SHEET 12 OF 13

48

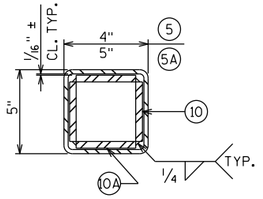


SECTION THRU RAILING ON DECK

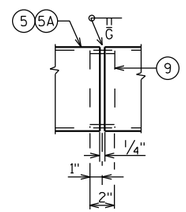
2½" FOR SLABS ON GIRDERS; FOR OTHER STRUCTURES, PLACE BELOW TOP MAT SLAB REINFORCEMENT.



FIELD ERECTION JOINT DETAIL

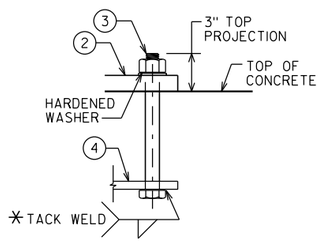


SECTION B-B

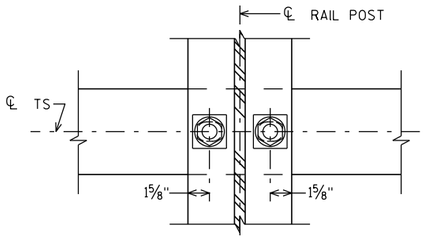


SHOP RAIL SPLICE DETAIL

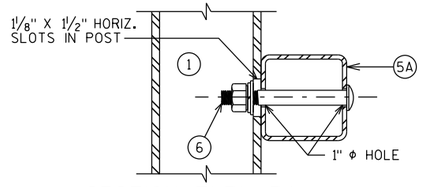
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



ANCHOR BOLTS



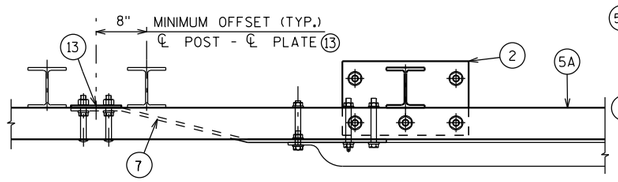
SECTION THRU POST WEB



SECTION THRU RAIL

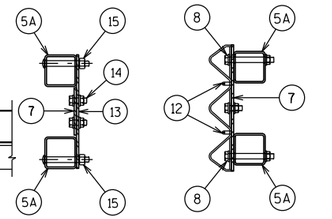
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

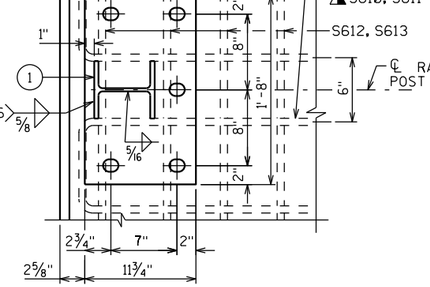


TOP VIEW AT END POST

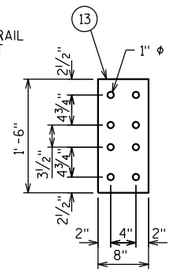
THRIE BEAM RAIL ATTACHMENT



SECTION C-C SECTION D-D

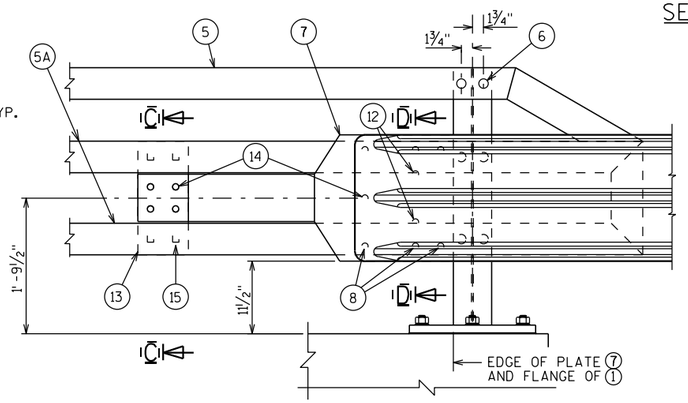


SECTION A-A



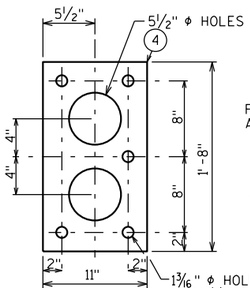
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT



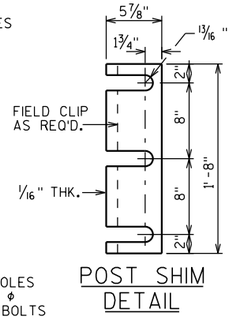
DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT

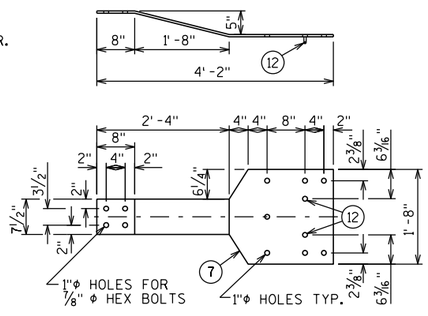


ANCHOR PLATE

AT RAIL TO DECK CONNECTION

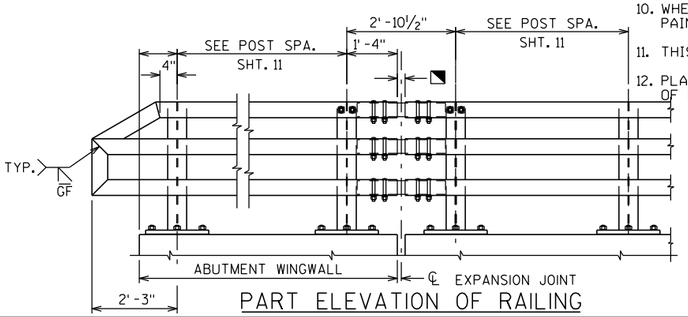


POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

1. W6 x 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1¼" × 11¾" × 1'-8" WITH 1⅝" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
3. ASTM A449 - 1⅛" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10¾" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
4. ⅝" × 11" × 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1⅜" DIA. HOLES FOR ANCHOR BOLTS NO. 3
5. TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
5A. TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
6. ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3⁄16" X 1⅝" X 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
7. ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
8. 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
9. SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".
10. ⅜" X 3⅝" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
10A. ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
11. ⅞" φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15⁄16 " X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15⁄16 " X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.
12. ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
13. ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
14. ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
15. 1" φ HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-11-155" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 ksi. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

⚠ TIE TO TOP MAT OF STEEL.

✳ FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

◥ RDWY. OPENING OR 2½" MIN. FOR STRIP SEAL EXP. JOINT & ½" OPENING FOR A1 ABUTMENT.

STATE PROJECT NUMBER

5903-00-72

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-11-155

DRAWN BY DJN | PLANS CK'D. PJE

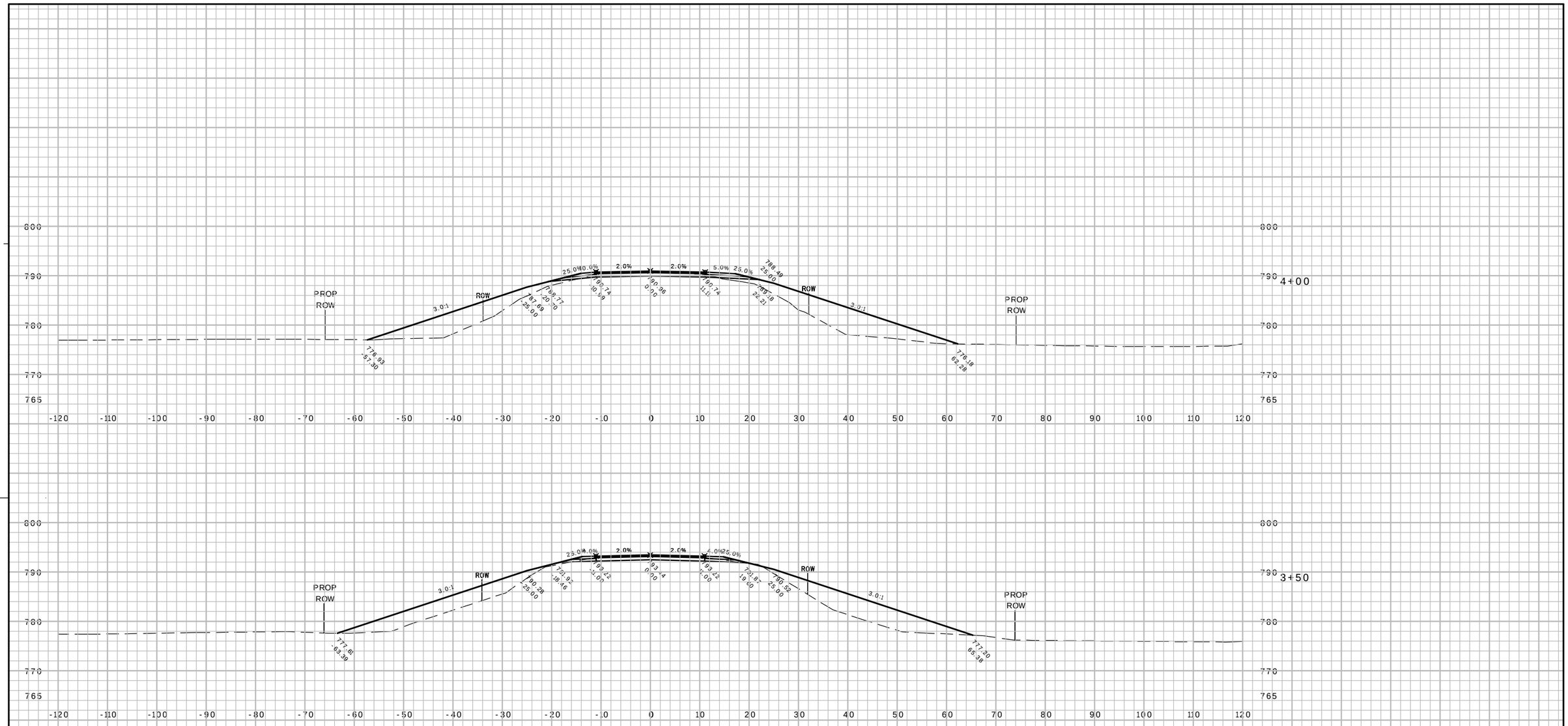
TUBULAR STEEL RAILING TYPE M

SHEET 13 OF 13

49

SCALE =

RAILM
7-13



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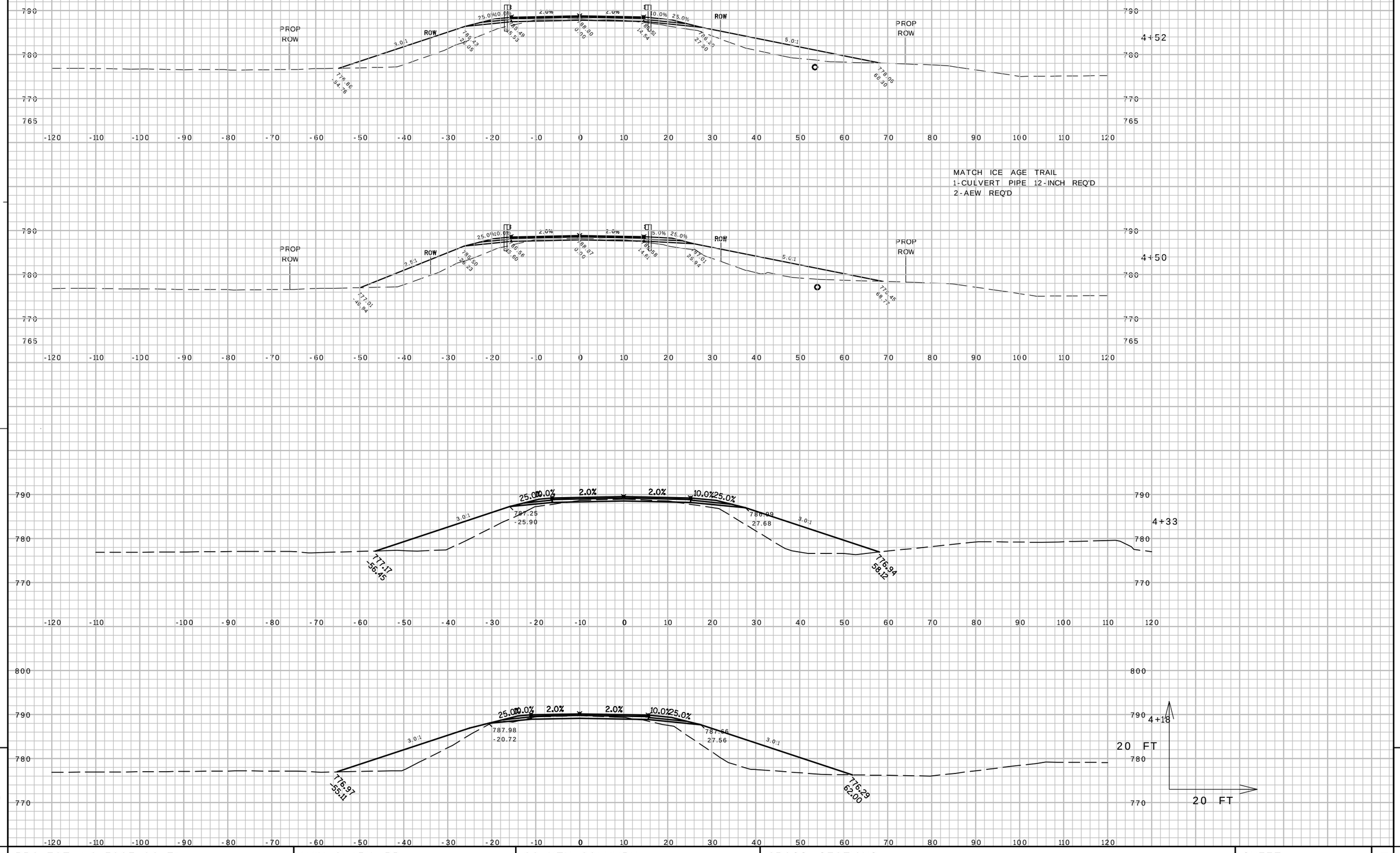
WISDOT/CADDS SHEET 49



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9

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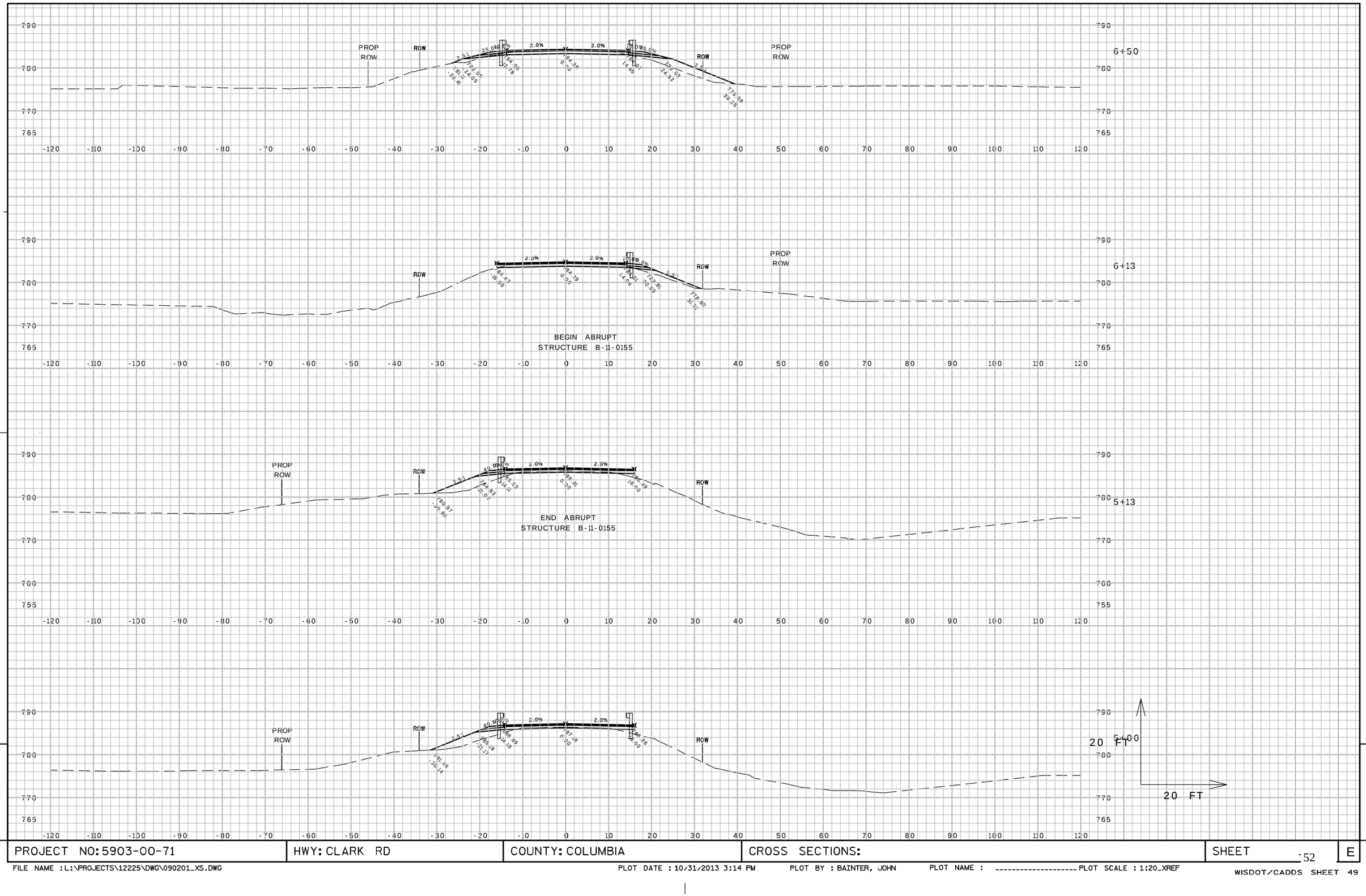

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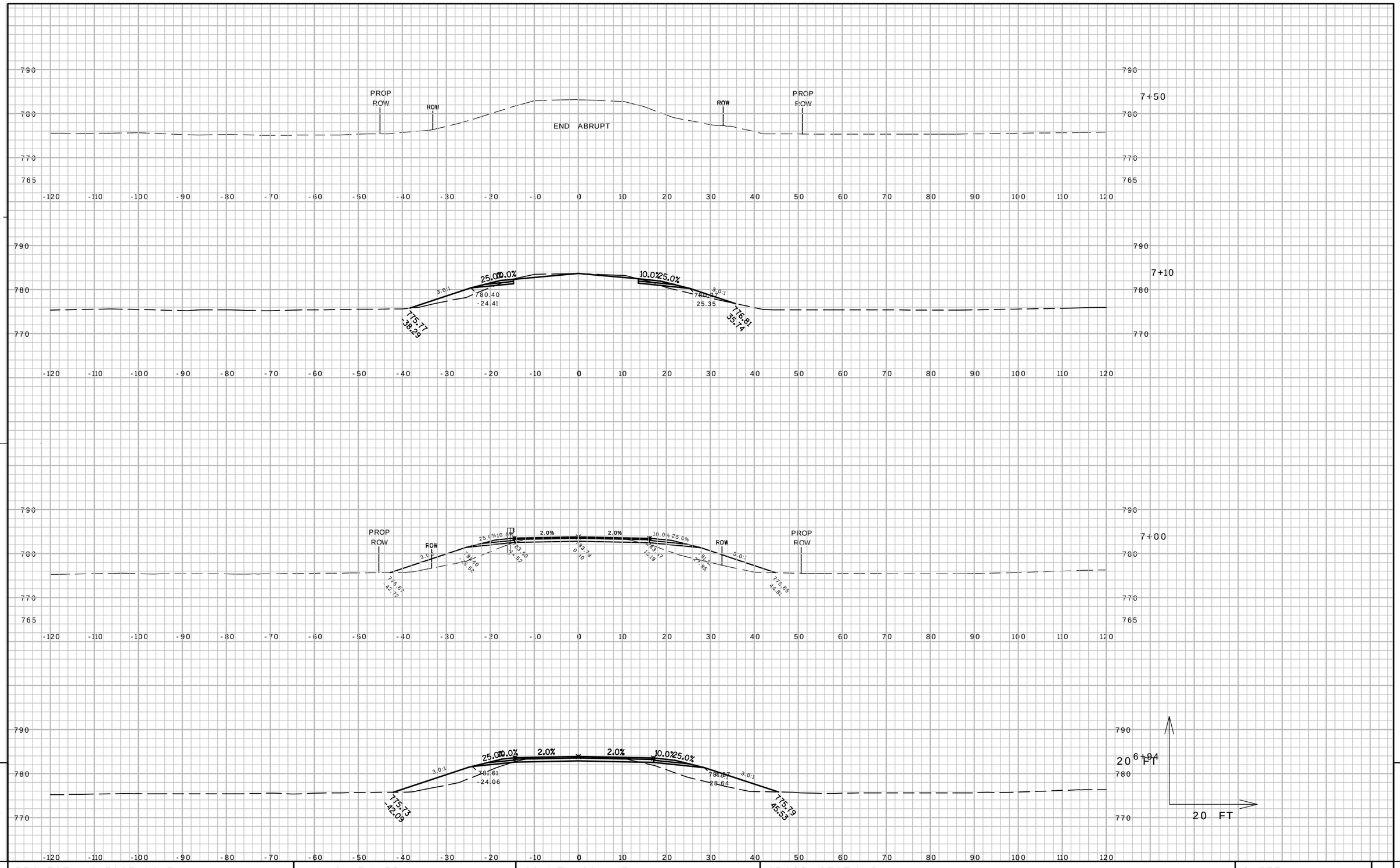

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WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

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