SWL MAR 13

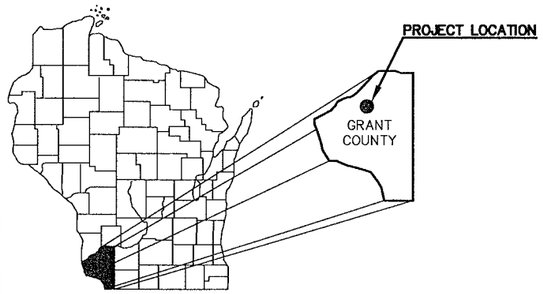
PROJECT ID: 5801-00-75
WITH: N/A

COUNTY: GRANT

08

ORDER OF SHEETS

TOTAL SHEETS = 54



DESIGN DESIGNATION

A.A.D.T.	(2013)	=	210
A.A.D.T.	(2033)	=	280
D.H.V.		=	21
D.D.		=	62/38
T.		=	3.6%
DESIGN SPEED		=	45 MPH
ESALS		=	14,600

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WERLEY - STH 133

(BIG GREEN RIVER BRIDGE B-22-0279)

CTH K
GRANT COUNTY

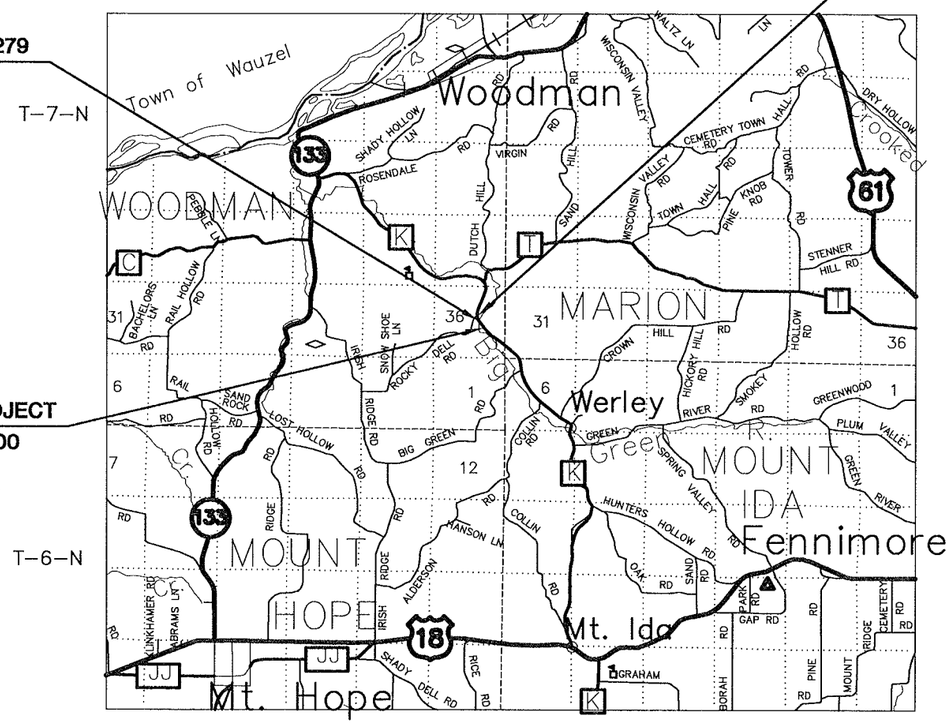
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5801-00-75	———	—

STATE PROJECT NUMBER
5801-00-75

STRUCTURE B-22-0279

BEGIN PROJECT
STA. 10+20.00
Y=593358.186
X=797350.062

END PROJECT
STA. 14+55.00



LAYOUT
SCALE 0 1 MILES

TOTAL NET LENGTH OF CENTERLINE = 0.082 MILES

NOTE:
ALL COORDINATES SHOWN ON THIS PLAN ARE BASED ON THE WISCONSIN COUNTY COORDINATE SYSTEM, GRANT COUNTY.

ACCEPTED FOR
COUNTY of GRANT
10-25-12 (Date) David J. Paulsen (Highway Commissioner)

ORIGINAL PLANS PREPARED BY

WESTBROOK
Associated Engineers, Inc.
619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WISCONSIN 53588
PHONE (608) 588-7866
FAX (608) 588-7954

WISCONSIN
JOHN J. STOLZMAN
E-36988
RICHLAND CENTER, WI
PROFESSIONAL ENGINEER

10/24/12 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: WESTBROOK
Designer: WESTBROOK
Management Consultant: KJOHNSON ENGINEERS, INC.
C.O. Examiner: JE

APPROVED FOR THE DEPARTMENT
DATE: 10-29-12 Kimberly A. John (Management Consultant Signature)

E

FILE NAME: G:\1-BRIDGE PROJECTS\Bridge Files\10215 CTH K Grant\01-CAD\Road\10215_100 ti.dwg
PLOT DATE: Oct 25, 2012
PLOT BY: johns0
PLOT SCALE:
ROTATION:
WISDOT/CADDS SHEET 15

2

DIGGERS HOTLINE

Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

** DENOTES UTILITY IS NOT
MEMBER OF DIGGERS HOTLINE

UTILITIES

SCENIC RIVERS ENERGY COOPERATIVE
231 N. SHERIDAN STREET
LANCASTER, WI 53813

ATTN: JEFF FARREY
(608) 723-2121
srec@stec.net

TDS TELECOM
140 N. MONROE STREET
LANCASTER, WI 53581

ATTN: KEN KLASS
(608) 723-3633
kenneth.klass@tdstelecom.com

COUNTY LIAISON

GRANT COUNTY HIGHWAY DEPARTMENT
1011 N. ADAMS STREET
LANCASTER, WI 53813

ATTN: DAVID LAMBERT, P.E., HIGHWAY COMMISSIONER
(608) 723-2595
dlambert@co.grant.wi.gov

WisDNR LIAISON

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711

ATTN: CATHY BLESER
(608) 275-3308
Cathrine.Bleser@Wisconsin.gov

CONSULTANT LIAISON

WESTBROOK ASSOCIATED ENGINEERS, INC.
619 E. HOXIE STREET
SPRING GREEN, WI 53588

ATTN: JOHN STOLZMAN, P.E.
(608) 588-7866
jstolzman@westbrookeng.com

GENERAL NOTES

SILT FENCE TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SILT FENCE SHALL BE IN PLACE PRIOR TO CONSTRUCTION.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE DRIVING LANES AND THE SHOULDERS, ARE TO BE FERTILIZED, SEEDED AND EROSION MATTED, AS DIRECTED BY THE ENGINEER.

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

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

D.O.T. MONUMENT IS TO BE FURNISHED BY THE STATE AND PLACED BY THE CONTRACTOR IN THE SAME WING THAT THE PROPOSED NAME PLATE WILL BE PLACED, AS DIRECTED BY THE ENGINEER.

SALVAGED TOPSOIL & EROSION MAT SHALL BE PLACED ON THE SLOPES 5.0' BEYOND THE SLOPE INTERCEPT WITH THE ORIGINAL GROUND AS SHOWN
ON THE CROSS SECTIONS AND AS DIRECTED BY THE ENGINEER IN THE FIELD.

WETLANDS EXIST IN THE PROJECT AREA. DO NOT DISTURB WETLAND AREAS SHOWN OUTSIDE THE CONSTRUCTION LIMITS. NOTHING IS TO BE STORED WITHIN WETLAND BOUNDARY.

THE ASPHALTIC SURFACE SHALL BE PLACED IN TWO LIFTS CONSISTING OF A 2¼" LOWER LAYER AND A 1¾" UPPER LAYER.

TIED TO HMP SURVEY STATIONS "WOODMAN C GPS" AND "MOUNT IDA W GPS" VIA RTK-GPS SURVEY FOR HORIZONTAL AND VERTICAL POSITIONS. HORIZONTAL LATITUDES AND LONGITUDES ARE CONVERTED TO GRANT COUNTY COORDINATES. ELEVATIONS ARE REFERENCED TO NAVD88 DATUM.

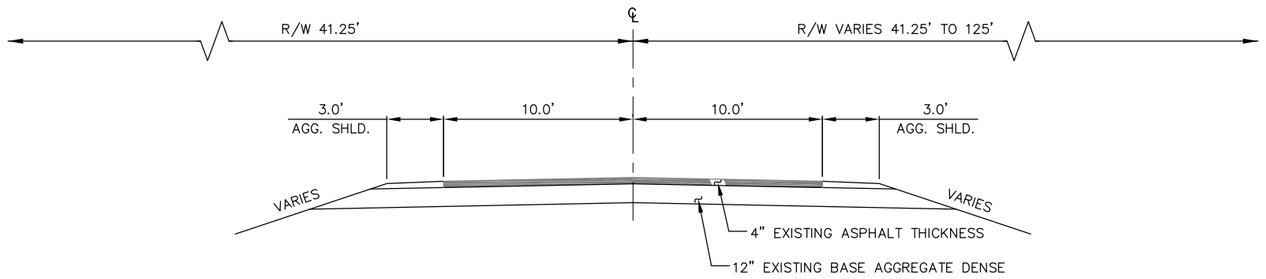
STANDARD ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC	L.F.	LINEAR FEET	REQ'D.	REQUIRED
AGG.	AGGREGATE	L.H.F.	LEFT HAND FORWARD	RT.	RIGHT
B.M.	BENCH MARK	L.S.	LUMP SUM	R/W	RIGHT-OF-WAY
$\underset{L}{C}$ OR CL	CENTERLINE	LT.	LEFT	RD.	ROAD
CR.	CRUSHED	MAX.	MAXIMUM	RDWY.	ROADWAY
C.T.H.	COUNTY TRUNK HIGHWAY	MIN.	MINIMUM	S.	SOUTH
CWT.	HUNDREDWEIGHT	N.	NORTH	SE	SOUTHEAST
C.Y.	CUBIC YARD	NOR.	NORMAL	SHRK.	SHRINKAGE
D.H.	DOUBLE HEADED	PAV'T.	PAVEMENT	S.R.	SIDE ROAD
D.H.V.	DESIGN HOURLY VOLUME	P.C.	POINT OF CURVE	STD.	STANDARD
DIR.	DIRECTED	P.I.	POINT OF INTERSECTION	S.T.H.	STATE TRUNK HIGHWAY
E.	EAST	P.E.	PRIVATE ENTRANCE	STA.	STATION
COR.	CORNER	P.K.	PARKER-KALON NAIL	S.Y.	SQUARE YARD
EL. OR ELEV.	ELEVATION	$\underset{L}{P}$ OR PL	PROPERTY LINE	T	TANGENT LENGTH OF CURVE
F.E.	FIELD ENTRANCE	P.P.	POWER POLE	T_L	TRANSIT LINE
FT.	FOOT (FEET)	PROJ.	PROJECT	UNCL.	UNCLASSIFIED EXCAVATION
GAL.	GALLON	P.T.	POINT OF TANGENCY	V	DESIGN SPEED
H.W.	HIGH WATER	PVMT.	PAVEMENT	V.C.	VERTICAL CURVE
IN.	INCHES	R.	RADIUS	VAR.	VARIABLE
K	SIGHT DISTANCE	R.R.	RAILROAD	W.	WEST
L.	LENGTH OF CURVE	REINF.	REINFORCED		

RUNOFF COEFFICIENT TABLE

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

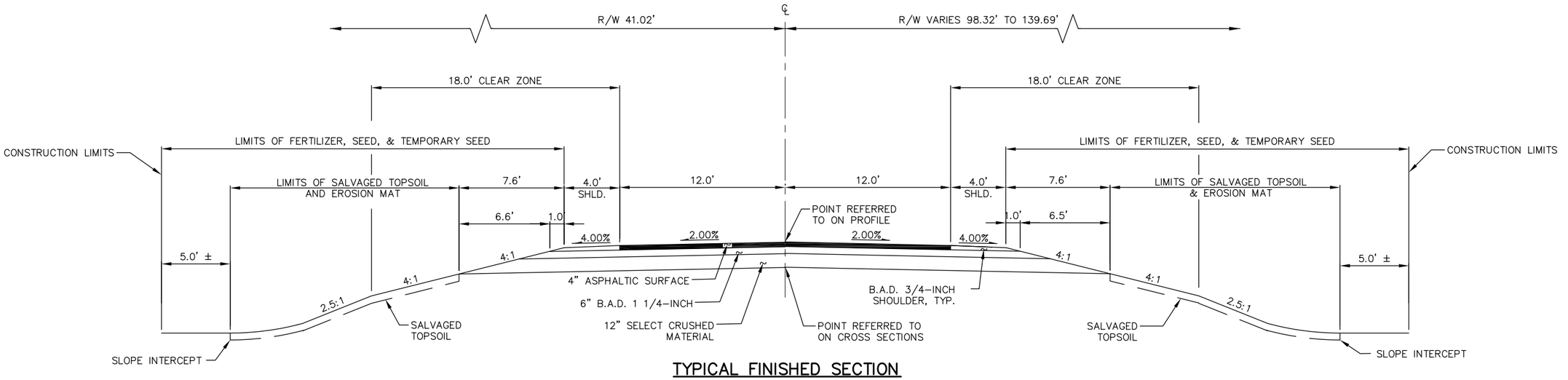
TOTAL PROJECT AREA = 1.67 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.65 ACRES



TYPICAL EXISTING SECTION

STA. 10+20 TO STA. 14+55

NOTE: NEW CENTERLINE DOES NOT MATCH EXISTING CENTERLINE EXACTLY.

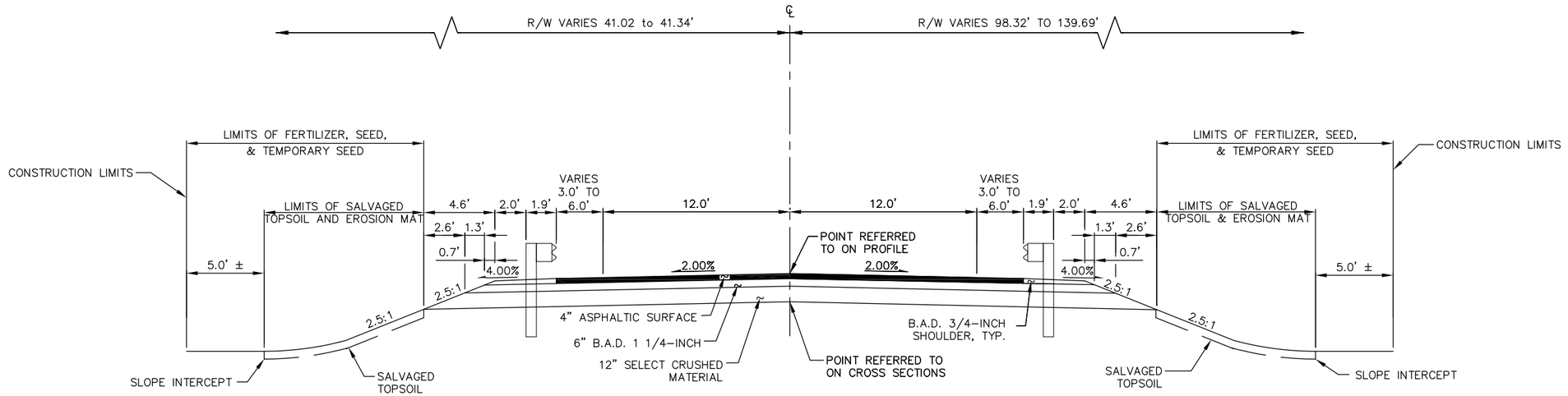


TYPICAL FINISHED SECTION

STA. 10+20.00 TO STA. 10+44.96 LT.
STA. 10+20.00 TO STA. 10+62.28 RT.

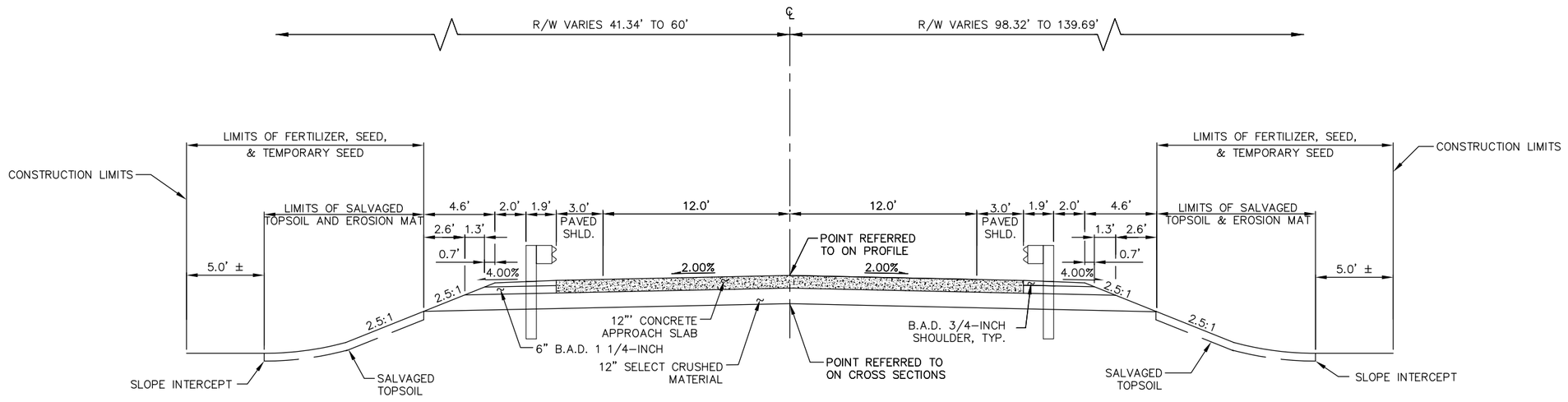
PROJECT NO: 5801-00-75	HWY: CTH K	COUNTY: GRANT	TYPICAL SECTIONS	SHEET 3	E

FILE NAME: G:\1-BRIDGE PROJECTS\Bridge Files\10215 CTH K Grant\01-CAD\Road\10215_201.dwg PLOT DATE: Oct 25, 2012 PLOT BY: johns0 PLOT SCALE: ROTATION:



TYPICAL FINISHED SECTION

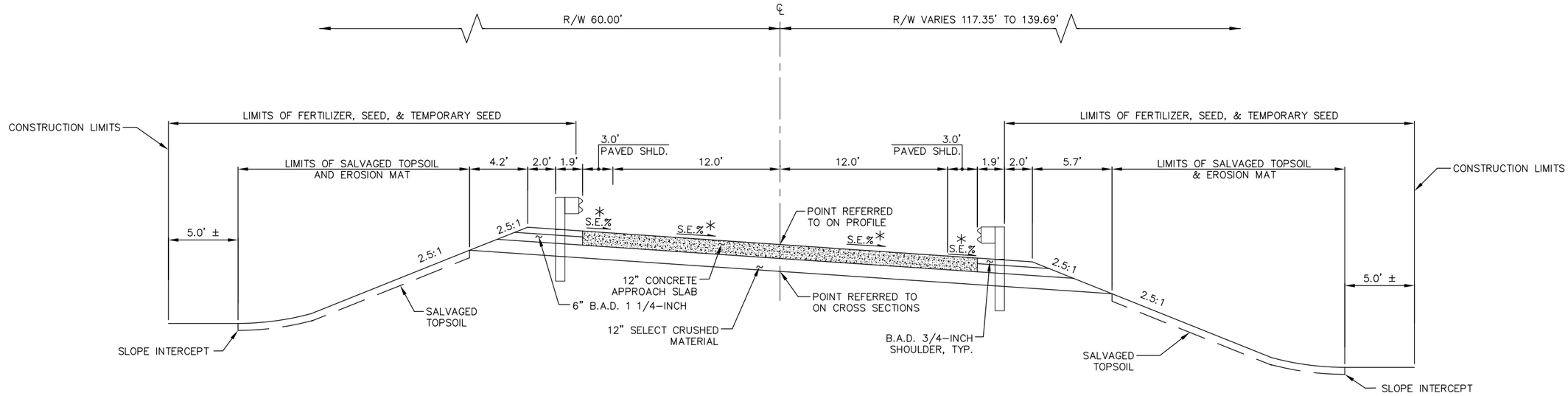
STA. 10+44.96 TO STA. 11+43.00 LT.
STA. 10+62.28 TO STA. 11+43.00 RT.



TYPICAL FINISHED SECTION

STA. 11+43.00 TO STA. 11+58.63 LT.
STA. 11+43.00 TO STA. 11+75.94 RT.
STA. 13+06.73 TO STA. 13+20.00

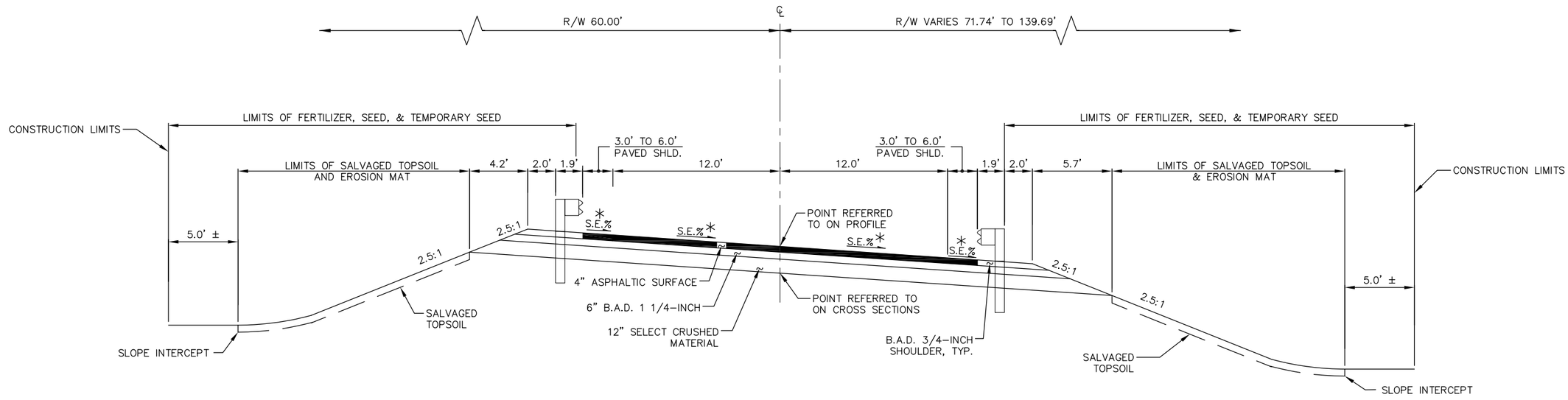
PROJECT NO: 5801-00-75	HWY: CTH K	COUNTY: GRANT	TYPICAL SECTIONS	SHEET 4	E



TYPICAL FINISHED SUPERELEVATED SECTION

STA. 13+20.00 TO STA. 13+31.00

* MATCH CROSS-SLOPE AT STA. 13+20. USING A CONSTANT RATE OF CHANGE, TRANSITION THE CROSS SLOPE FROM PROPOSED NORMAL CROWN AT STA. 13+20 TO FULL SUPERELEVATION OF 6.00% AT STA. 14+55.

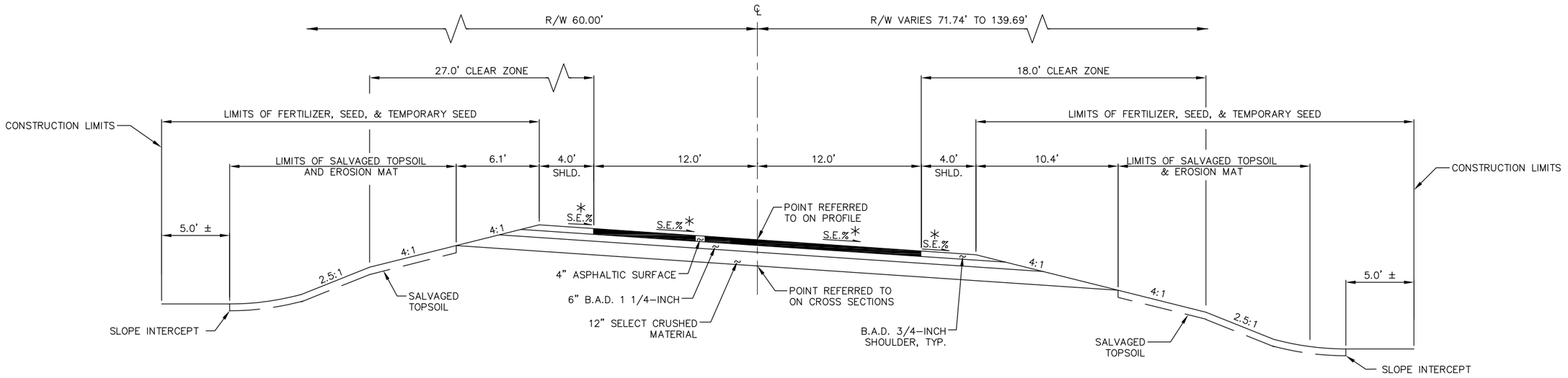


TYPICAL FINISHED SUPERELEVATED SECTION

STA. 13+31.00 TO STA. 14+11.00 LT.
STA. 13+31.00 TO STA. 14+29.00 RT.

* MATCH CROSS-SLOPE AT STA. 13+20. USING A CONSTANT RATE OF CHANGE, TRANSITION THE CROSS SLOPE FROM PROPOSED NORMAL CROWN AT STA. 13+20 TO FULL SUPERELEVATION OF 6.00% AT STA. 14+55.

PROJECT NO: 5801-00-75	HWY: CTH K	COUNTY: GRANT	TYPICAL SECTIONS	SHEET 5	E



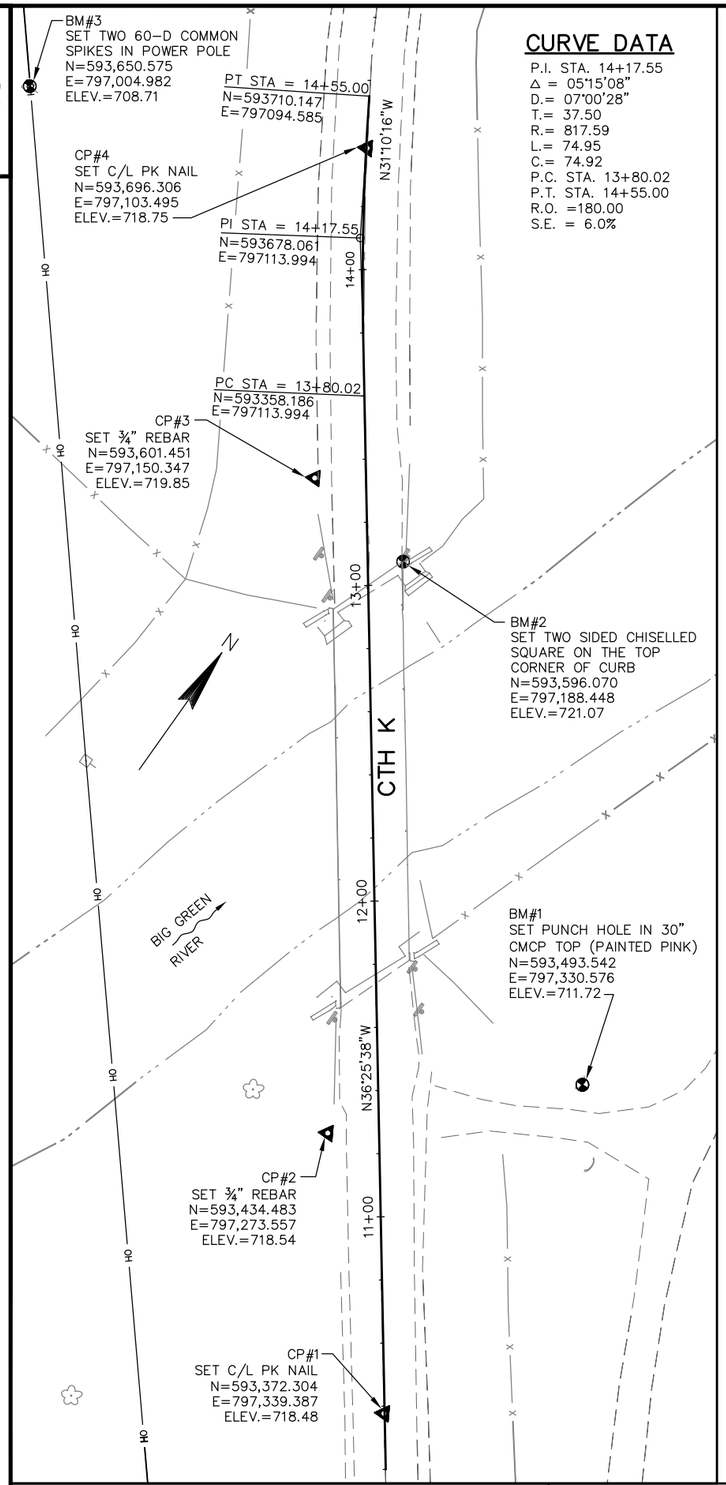
TYPICAL FINISHED SUPERELEVATED SECTION

STA. 14+11.00 LT. TO STA. 14+55.00
STA. 14+29.00 RT. TO STA. 14+55.00

* MATCH CROSS-SLOPE AT STA. 13+20. USING A CONSTANT RATE OF CHANGE, TRANSITION THE CROSS SLOPE FROM PROPOSED NORMAL CROWN AT STA. 13+20 TO FULL SUPERELEVATION OF 6.00% AT STA. 14+55.

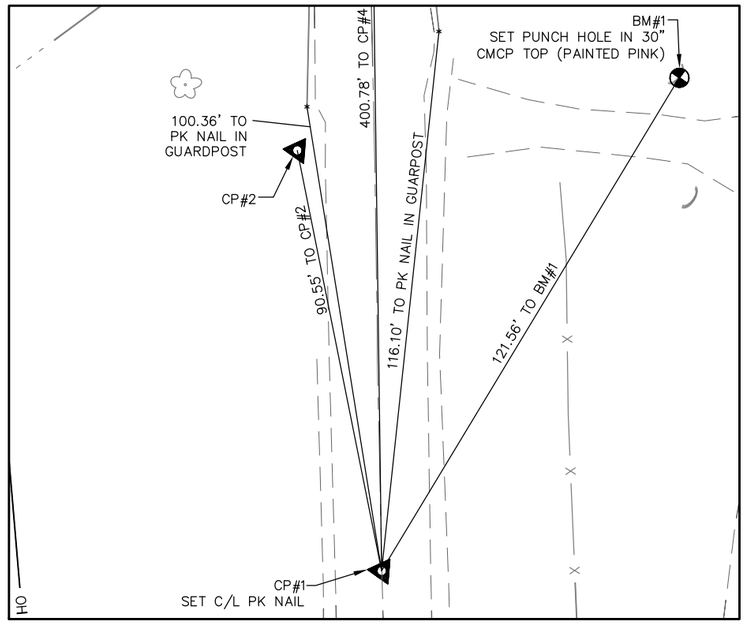
PROJECT NO: 5801-00-75	HWY: CTH K	COUNTY: GRANT	TYPICAL SECTIONS	SHEET 6	E

FILE NAME: G:\1-BRIDGE PROJECTS\Bridge Files\10215 CTH K Grant\01-CAD\Road\10215_201.dwg PLOT DATE: Oct 25, 2012 PLOT BY: johns0 PLOT SCALE: ROTATION:

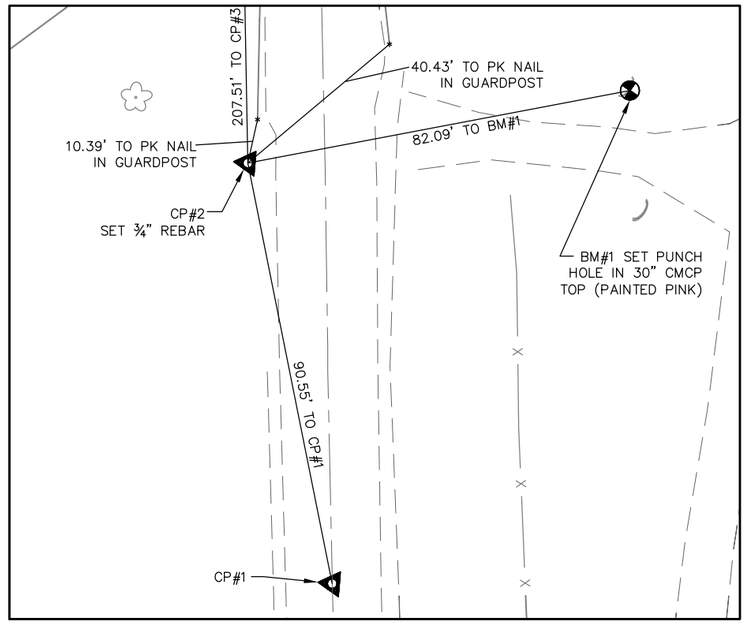


CURVE DATA

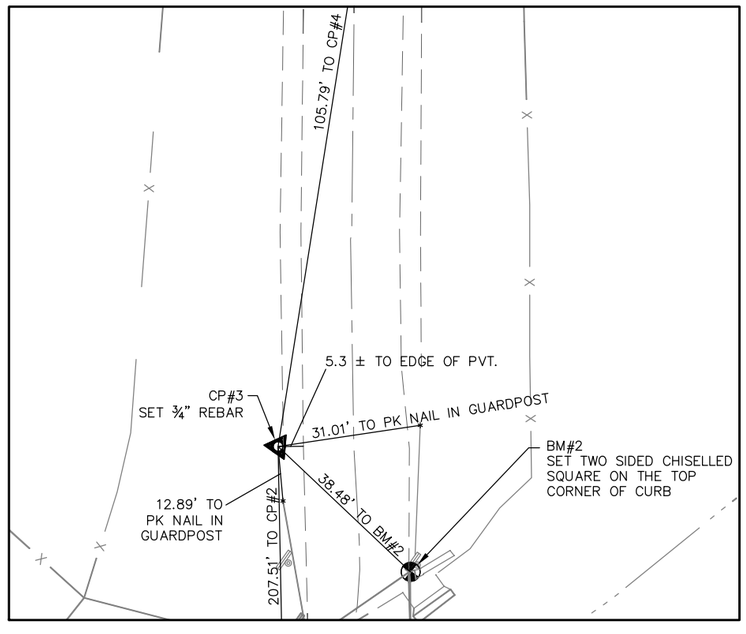
P.I. STA. 14+17.55
Δ = 05°15'08"
D.= 07°00'28"
T.= 37.50
R.= 817.59
L.= 74.95
C.= 74.92
P.C. STA. 13+80.02
P.T. STA. 14+55.00
R.O. =180.00
S.E. = 6.0%



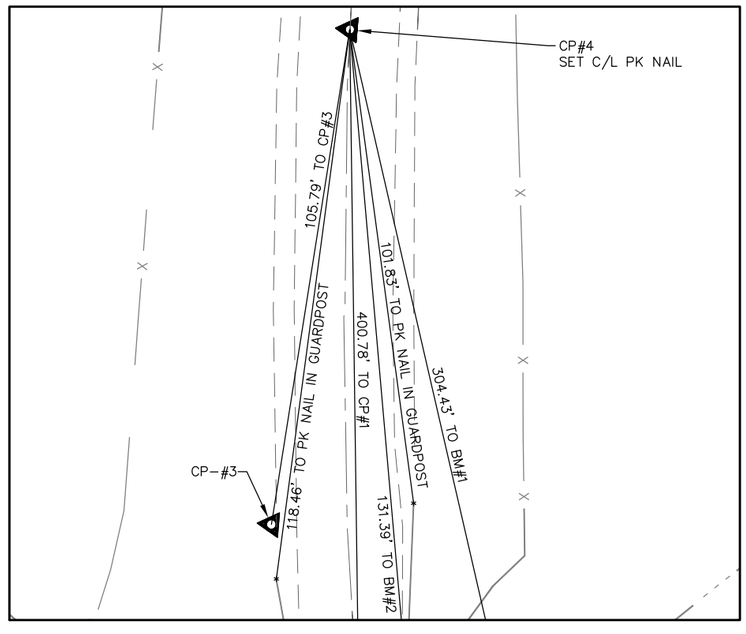
TIES TO CP#1



TIES TO CP#2



TIES TO CP#3



TIES TO CP#4

PROJECT NO: 5801-00-75	HWY: CTH K	COUNTY: GRANT	ALIGNMENT DETAILS	SHEET 7	E

FILE NAME: G:\1-BRIDGE PROJECTS\Bridge Files\10215 CTH K Grant\01-CAD\Road\10215_230.dwg PLOT DATE: Oct 12, 2012 PLOT BY: johns0 PLOT SCALE: 1:40 ROTATION: 39.75°

DATE 09JAN13 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	5801-00-75 QUANTITY
0010	201.0105	CLEARING	STA	2.000	2.000
0020	201.0205	GRUBBING	STA	2.000	2.000
0030	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 12+37	LS	1.000	1.000
0040	205.0100	EXCAVATION COMMON	CY	630.000	630.000
0050	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-22-0279	LS	1.000	1.000
0060	208.0100	BORROW	CY	263.000	263.000
0070	210.0100	BACKFILL STRUCTURE	CY	562.000	562.000
0080	213.0100	FINISHING ROADWAY (PROJECT) 01. 5801-00-75	EACH	1.000	1.000
0090	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	110.000	110.000
0100	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	560.000	560.000
0110	312.0110	SELECT CRUSHED MATERIAL	TON	1,320.000	1,320.000
0120	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	174.000	174.000
0130	455.0605	TACK COAT	GAL	20.000	20.000
0140	465.0105	ASPHALTIC SURFACE	TON	206.000	206.000
0150	502.0100	CONCRETE MASONRY BRIDGES	CY	295.000	295.000
0160	502.3200	PROTECTIVE SURFACE TREATMENT	SY	558.000	558.000
0170	503.0172	PRESTRESSED GIRDER TYPE I 72W-INCH	LF	548.000	548.000
0180	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	5,500.000	5,500.000
0190	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	33,900.000	33,900.000
0200	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	8.000	8.000
0210	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-22-0279	EACH	6.000	6.000
0220	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-22-0279	LS	1.000	1.000
0230	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	18.000	18.000
0240	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	800.000	800.000
0250	606.0300	RIPRAP HEAVY	CY	370.000	370.000
0260	606.0700	GROUTED RIPRAP HEAVY	CY	24.000	24.000
0270	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	150.000	150.000
0280	614.0920	SALVAGED RAIL	LF	122.000	122.000
0290	614.2500	MGS THRIE BEAM TRANSITION	LF	160.000	160.000
0300	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	4.000	4.000
0310	619.1000	MOBILIZATION	EACH	1.000	1.000
0320	625.0500	SALVAGED TOPSOIL	SY	1,010.000	1,010.000
0330	628.1504	SILT FENCE	LF	1,200.000	1,200.000
0340	628.1520	SILT FENCE MAINTENANCE	LF	2,400.000	2,400.000
0350	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	1.000	1.000
0360	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	1.000	1.000
0370	628.2023	EROSION MAT CLASS II TYPE B	SY	1,220.000	1,220.000
0380	628.7504	TEMPORARY DITCH CHECKS	LF	75.000	75.000
0390	629.0210	FERTILIZER TYPE B	CWT	2.000	2.000
0400	630.0120	SEEDING MIXTURE NO. 20	LB	50.000	50.000
0410	630.0200	SEEDING TEMPORARY	LB	50.000	50.000
0420	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	4.000	4.000
0430	637.0202	SIGNS REFLECTIVE TYPE II	SF	12.000	12.000
0440	638.2602	REMOVING SIGNS TYPE II	EACH	6.000	6.000
0450	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	6.000	6.000
0460	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0470	643.0100	TRAFFIC CONTROL (PROJECT) 01. 5801-00-75	EACH	1.000	1.000
0480	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,260.000	1,260.000
0490	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	1,960.000	1,960.000

3

DATE 09JAN13 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	5801-00-75 QUANTITY
0500	643.0900	TRAFFIC CONTROL SIGNS	DAY	980.000	980.000
0510	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	635.000	635.000
0520	646.0103	PAVEMENT MARKING PAINT 4-INCH	LF	870.000	870.000
0530	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	295.000	295.000
0540	650.5000	CONSTRUCTION STAKING BASE	LF	295.000	295.000
0550	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-22-0279	LS	1.000	1.000
0560	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 5801-00-75	LS	1.000	1.000
0570	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	295.000	295.000
0580	690.0150	SAWING ASPHALT	LF	42.000	42.000
0590	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,770.000	1,770.000

CLEARING AND GRUBBING

STATION – STATION	LOCATION	201.0105 CLEARING (STA)	201.0205 GRUBBING (STA)
10+20.00 – 11+66.79	MAINLINE	1	1
13+07.21 – 14+55.00	MAINLINE	1	1
	TOTALS	2	2

SALVAGED RAIL

STATION – STATION	LOCATION	614.0920 (LF)
11+36.00 – 11+67.00	MAINLINE, LT.	31
11+51.00 – 11+81.00	MAINLINE, RT.	30
12+93.00 – 13+24.00	MAINLINE, LT.	30
13+07.00 – 13+38.00	MAINLINE, RT.	31
	TOTALS	122

BASE AGGREGATE DENSE

STATION – STATION	LOCATION	305.0110 ¾–INCH (TON)	305.0120 1¼–INCH BASE (TON)	312.0110 SELECT CRUSHED MATERIAL (TON)
10+20.00 – 11+66.79	MAINLINE	56	278	658
13+07.21 – 14+55.00	MAINLINE	54	282	662
	TOTALS	110	560	1320

CONCRETE PAVEMENT APPROACH SLAB

STATION – STATION	LOCATION	415.0410 (SY)
11+43.00 – 11+66.79	MAINLINE	87
13+07.21 – 13+43.00	MAINLINE	87
	TOTALS	174

ASPHALTIC ITEMS

STATION – STATION	LOCATION	455.0605 TACK COAT (GAL)	465.0105 ASPHALTIC SURFACE (TON)
10+20.00 – 11+66.79	MAINLINE	10	102
13+07.21 – 14+55.00	MAINLINE	10	104
	TOTALS	20	206

MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT

STATION – STATION	LOCATION	614.2500 (LF)	614.2610 (EA)
11+21.00 – 11+61.00	MAINLINE, LT	40	1
11+38.00 – 11+78.00	MAINLINE, RT	40	1
12+96.00 – 13+36.00	MAINLINE, LT	40	1
13+13.00 – 13+53.00	MAINLINE, RT	40	1
	TOTAL	160	4

EROSION CONTROL ITEMS

STATION – STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)	628.7504 TEMPORARY DITCH CHECKS (LF)	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)	628.2023 EROSION MAT CLASS II TYPE B (SY)
10+20.00 – 11+66.79	MAINLINE	425	850	---	0.5	0.5	375
13+07.21 – 14+55.00	MAINLINE	775	1550	---	0.5	0.5	635
	UNDISTRIBUTED	---	---	75	---	---	210
	TOTALS	1200	2400	75	1	1	1220

FINISHING ITEMS

STATION – STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0120 SEEDING MIXTURE NO. 20 (LB)	630.0200 SEEDING TEMPORARY (LB)
10+20.00 – 11+66.79	MAINLINE	375	0.4	17	17
13+07.21 – 14+55.00	MAINLINE	635	0.6	24	24
	UNDISTRIBUTED	---	1.0	9	9
	TOTALS	1010	2.0	50	50

POSTS WOOD 4x6–INCH X 12 FT

LOCATION	634.0612 (EACH)
4 CORNERS OF BRIDGE	4
TOTAL	4

SIGNS REFLECTIVE TYPE II

LOCATION	TYPE	637.0202 (SF)
4 CORNERS OF BRIDGE	W5–52, LT & RT	12
	TOTAL	12

REMOVING SIGNS TYPE II
REMOVING SMALL SIGNS SUPPORTS

DESCRIPTION	LOCATION	638.2602 (EACH)	638.3000 (EACH)
W5–52	STA. 11+61, 12 FT LT.	1	1
W5–52	STA. 11+78, 12 FT RT.	1	1
W5–52	STA. 12+96, 12 FT LT.	1	1
W5–52	STA. 13+13, 12 FT RT.	1	1
17 TON	STA. 11+65, 14 FT RT.	1	1
17 TON	STA. 13+10, 14 FT LT.	1	1
	TOTAL	6	6

TRAFFIC CONTROL ITEMS

DESCRIPTION	MUTCD I.D. NUMBER	QTY	DAYS PER ITEM	643.0420 TRAFFIC CONTROL BARRICADES, TYPE III (DAYS)	643.0705 TRAFFIC CONTROL WARNING LIGHTS, TYPE A (DAYS)	643.0900 TRAFFIC CONTROL SIGNS (DAYS)
TRAFFIC CONTROL BARRICADES, TYPE III	N/A	18	70	1260	--	--
WARNING LIGHTS TYPE A	N/A	28	70	--	1960	--
"ROAD CLOSED AHEAD"	W20–3	2	70	--	--	140
"ROAD CLOSED __ MILES AHEAD"	R11–3	2	70	--	--	140
"BRIDGE OUT ___ MILES AHEAD"	R11–3 (MOD.)	2	70	--	--	140
"ROAD CLOSED 1000 FT"	W20–3	2	70	--	--	140
"ROAD CLOSED 500 FT"	W20–3	2	70	--	--	140
"BRIDGE OUT"	R11–2 (MOD.)	2	70	--	--	140
"ROAD CLOSED"	R11–2	2	70	--	--	140
			TOTAL SIGN DAYS	1260	1960	980

TRAFFIC CONTROL PROJECT

643.0100
LS
1

PAVEMENT MARKING PAINT 4–INCH

STATION – STATION	LOCATION	646.0103 PAVEMENT MARKING PAINT 4–INCH (LF)
10+20.00 – 14+55.00	CENTERLINE – DOUBLE YELLOW	870
	TOTALS	870

NOTE: UNLESS NOTED, ALL ITEMS ARE IN CATEGORY 0010.

PROJECT NO: 5801–00–75	HWY: CTH K	COUNTY: GRANT	MISCELLANEOUS QUANTITIES (1 OF 2)	SHEET 10	E

LAYOUT ITEMS

STATION – STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE (LF)	650.5000 CONSTRUCTION STAKING BASE (LF)	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT B–06–182 (LS)	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (LS)	650.9920 CONSTRUCTION STAKING SLOPE STAKES (LF)
10+20.00 – 11+66.79	MAINLINE	147	147	--	--	147
13+07.21 – 14+55.00	MAINLINE	148	148	--	--	148
	TOTALS	295	295	1 *	1	295

*CATEGORY 0020

SAWING ASPHALT

STATION	LOCATION	690.0150 (LF)
10+20.00	MAINLINE	21
14+55.00	MAINLINE	21
	TOTALS	42

EARTHWORK SUMMARY

Division	From/To Station	Location	Common Excavation (1) Cut (2)	(item # 205.0100) EBS Excavation (3)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6) (item #205.0500)	Rock Excavation (7) (item #205.0200)	Reduced Marsh in Fill (8) Factor 0.60	Reduced EBS in Fill (9) Factor 0.80	Expanded Marsh Backfill (10) Factor 1.50	Expanded EBS Backfill (11) Factor 1.30	Expanded Rock (12) Factor 1.10	Unexpanded Fill	Expanded Fill (13) Factor 1.30	Mass Ordinate +/- (14)	Waste	Borrow (item #208.0100)	Comment:
1	10+20 to 11+66.79	Mainline stage 1	295	0	0	295	0	0	0	0	0	0	0	250	325	-30		30	
	13+07.21 to 14+55	Mainline stage 1	335	0	0	335	0	0	0	0	0	0	0	437	568	-233		233	
Division 1 Subtotal			630	0	0	630	0	0	0	0	0	0	0	687	893	-263		263	
Division 2 Subtotal			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	See Note 15
Grand Total			630	0	0	630	0	0	0	0	0	0	0	687	893	263	0	263	
		Total Common Exc	630																

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusable Pavement Material
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500
7) Rock Excavation item number 205.0200
8) Reduced Marsh in Fill - Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
9) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.11
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.11
12) Expanded Rock - Factor = 1.1.
13) Expanded Fill. Factor = 1.30
Depending on selections: **Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor**
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor
14) 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.
15) Borrow Excavation item number 208.0100

NOTE: UNLESS NOTED, ALL ITEMS ARE IN CATEGORY 0010.

PROJECT NO: 5801–00–75	HWY: CTH K	COUNTY: GRANT	MISCELLANEOUS QUANTITIES (2 OF 2)	SHEET 11	E

CONVENTIONAL SIGNS AND ABBREVIATIONS

STATE LINE
COUNTY LINE
TOWNSHIP AND RANGE LINES
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE
CORPORATE LINE (NAME)
LOT, TIE AND OTHER MINOR LINES
SLOPE INTERCEPTS
UNDERGROUND FACILITY (GAS, TELEPHONE, ELECTRIC, ETC.) G (TYPE)
FENCE
TEMPORARY LIMITED EASEMENT
PERMANENT LIMITED EASEMENT
BEAM GUARD
TRANSMISSION TOWER AND LINE

SECTION CORNER (T. 5 N. R. 4 E. 5 4 8 9)
HAZARDOUS UTILITY SITE (CAUTION)
BRIDGE
STREAM OR RIVER (NAME)
LAKE (NAME)
CULVERT(BOX, PIPE OR CATTLE PASS) (TYPE)
RAIL LINE (SMALL SCALE) (LARGE SCALE)

FOUNDATION OR RUIN (FND.)
BUILDING (TYPE)
CEMETERY
GAS MARKER OR TELEPHONE PEDESTAL T.P.(TYPE)
IRON PIN
R/W MONUMENT
VALVE GAS(TYPE)
WINDMILL
SILO, MANHOLE, VENT, SEPTIC VENT, WELL, ETC. M.H.(TYPE)
GAS PUMPS
BUSHES
TREES (DECIDUOUS) (CONIFEROUS)
WOODS

	COMPENSABLE	NON-COMPENSABLE
POWER POLE	■	□
TELEPHONE POLE	●	⌀
SIGN	◪	◫

NO ACCESS (BY ACQUISITION)
NO ACCESS (BY STATUTORY AUTHORITY)
NO ACCESS (BY PREVIOUS PROJECT)

ACRES	AC.	LENGTH	L.
AHEAD	AH.	LONG CHORD	L.C.
ALUMINUM	ALUM.	LONG CHORD BEARING	L.C.B.
AND OTHERS	ET AL	MONUMENT	MON.
ANTENNA	ANT.	PAGE	P.
APARTMENTS	APTS.	PARKER-KALON FASTENER	P.K.
BACK	BK.	PERMANENT LIMITED EASEMENT	P.L.E.
BARN	B.	POWER POLE	P.P.
BLOCK	BLK.	PROPERTY LINE	P.L.
BUILDING	BLDG.	RADIUS	R.
CENTERLINE	℄	REFERENCE LINE	R
CERTIFIED SURVEY MAP	C.S.M.	RIGHT OF WAY	R/W
CONCRETE	CONC.	SECTION	SEC.
CORNER	COR.	SHED	S.
ELECTRIC PEDESTAL	E.P.	SQUARE FEET	S.F.
FOUNDATION	FDN.	STATION	STA.
GALVANIZED	GALV.	TANGENT	TAN.
GARAGE	G.	TANK	T.
GAS PUMP	G.P.	TELEPHONE PEDESTAL	T.P.
GAS VALVE	G.V.	TEMPORARY LIMITED EASEMENT	T.L.E.
HOUSE	H.	VOLUME	VOL.
HOUSE TRAILER	H.T.	WALL	W.

NOTES

COORDINATES ON THIS PLAT ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), GRANT COUNTY. ALL DISTANCES ARE GROUND LENGTH.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO ACQUISITION.

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

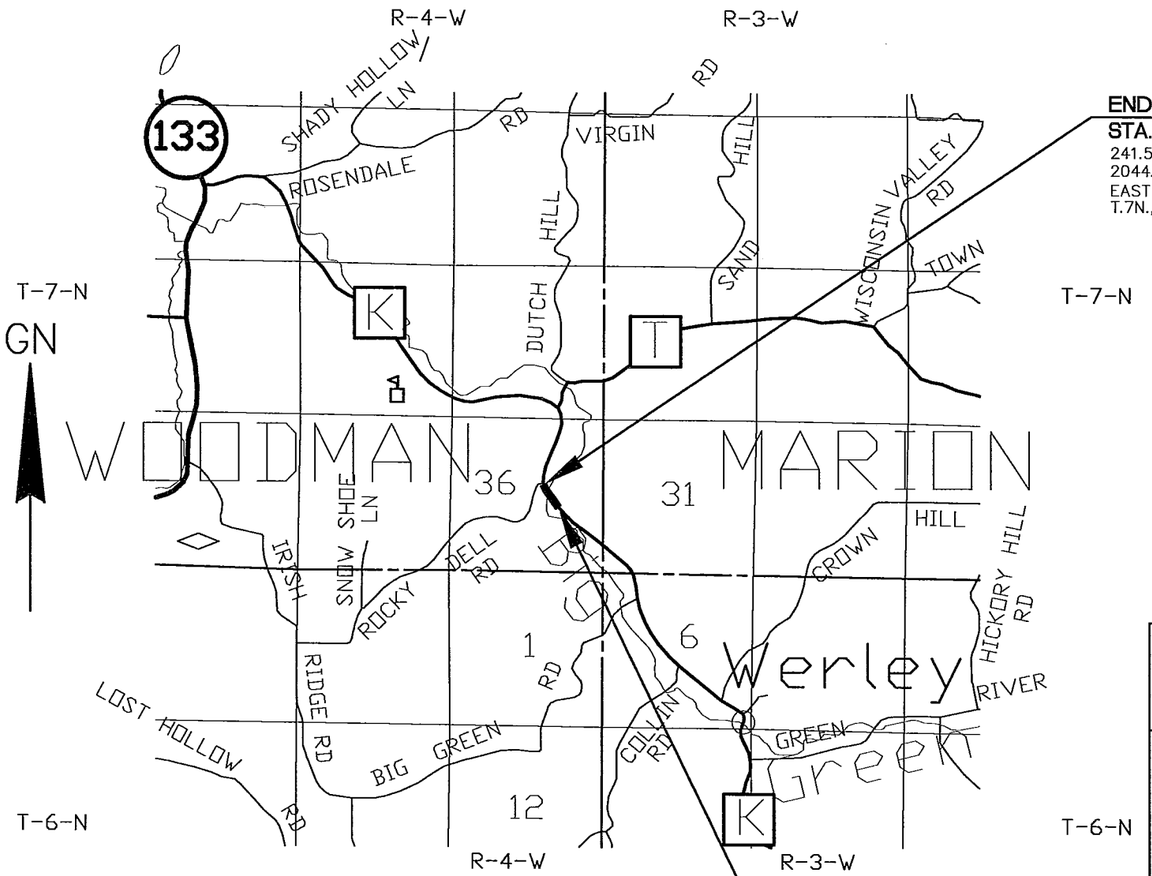
PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. EXCLUDING RIGHT-OF-WAY BOUNDARIES, THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
5801-00-05	4.01	2
FEDERAL PROJECT NUMBER		

PLAT OF RIGHT-OF-WAY REQUIRED FOR
WERLEY – STH 133
(BIG GREEN RIVER BRIDGE B-22-0279)

CTH K — GRANT COUNTY

CONSTRUCTION PROJECT NUMBER
5801-00-75



END RELOCATION ORDER
STA. 14+55.03
241.56 FT. NORTH OF AND
2044.07 FT. WEST OF THE
EAST ¼ COR. OF SEC. 36,
T.7N., R.4W.

BEGIN RELOCATION ORDER
STA. 10+20
110.42 FT. SOUTH OF AND
1788.58 FT WEST OF THE
EAST ¼ COR. OF SEC. 36,
T.7N., R.4W.

SCALE
0 .25 0.5 MI.
SCALE

TOTAL NET LENGTH OF CENTERLINE = 0.082 MI. (RURAL)

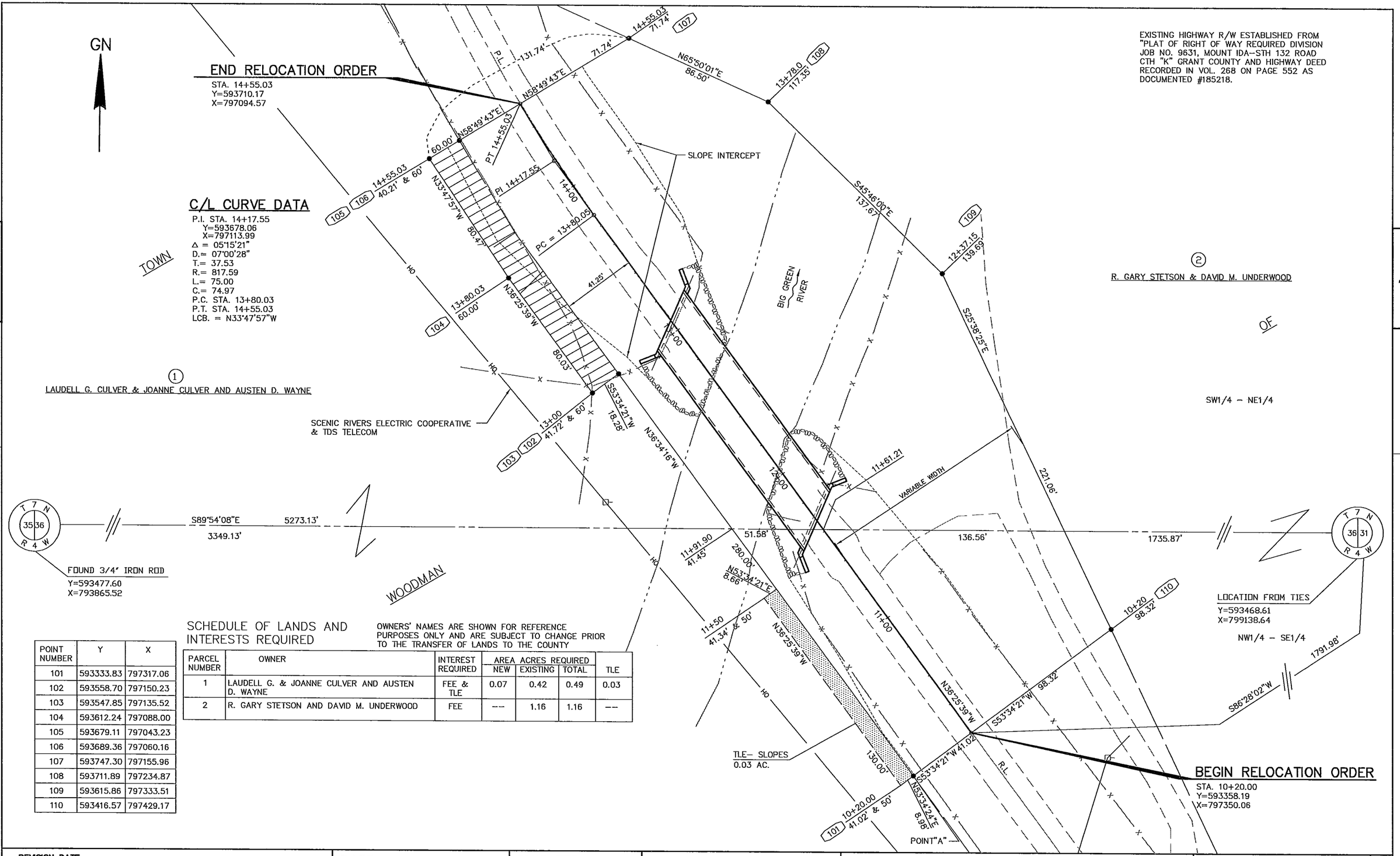
WESTBROOK Associated Engineers, Inc.
619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WI 53588
PHONE (608) 588-7866
FAX (608) 588-7954

WISCONSIN
MICHAEL D. GOEBEL
S-1241
LONE ROCK WI
LAND SURVEYOR
9-25-12

REVISION DATE

APPROVED FOR GRANT COUNTY
DATE: 10-11-12 David J. Rambat (Signature)

12 E



SCHEDULE OF LANDS AND INTERESTS REQUIRED

OWNERS' NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LANDS TO THE COUNTY

PARCEL NUMBER	OWNER	INTEREST REQUIRED	AREA ACRES REQUIRED			
			NEW	EXISTING	TOTAL	TLE
1	LAUDELL G. & JOANNE CULVER AND AUSTEN D. WAYNE	FEE & TLE	0.07	0.42	0.49	0.03
2	R. GARY STETSON AND DAVID M. UNDERWOOD	FEE	---	1.16	1.16	---

POINT NUMBER	Y	X
101	593333.83	797317.06
102	593558.70	797150.23
103	593547.85	797135.52
104	593612.24	797088.00
105	593679.11	797043.23
106	593689.36	797060.16
107	593747.30	797155.96
108	593711.89	797234.87
109	593615.86	797333.51
110	593416.57	797429.17

EXISTING HIGHWAY R/W ESTABLISHED FROM "PLAT OF RIGHT OF WAY REQUIRED DIVISION JOB NO. 9631, MOUNT IDA–STH 132 ROAD CTH "K" GRANT COUNTY AND HIGHWAY DEED RECORDED IN VOL. 268 ON PAGE 552 AS DOCUMENTED #185218.

REVISION DATE	DATE	SCALE, FEET	HWY: CTH K	R/W PROJECT NUMBER 5801–00–05	PLAT SHEET NO: 4.02	
		0 25 50	COUNTY: GRANT	CONSTRUCTION PROJECT NUMBER 5801–00–75	PS&E SHEET 13	E

FILE NAME: G:\1–BRIDGE PROJECTS\Bridge Files\10215 CTH K Grant\01–CAD\Road\10215_401.dwg
PLOT DATE: Sep 25, 2012
ROTATION: 0°
WISDOT/CADDS SHEET 70

JOANNE & LAUDELL CULVER AND AUSTEN WAYNE

SCENIC RIVERS ENERGY COOPERATIVE & TDS TELECOM

OH

0.03 ACRES TEMPORARY LIMITED EASEMENT

STA. 12+40
REMOVE EXISTING STRUCTURE B-22-0018
SINGLE SPAN STEEL OVERHEAD TRUSS STRUCTURE
126.9' O.A.L., 26.0' O.A.W.

JOANNE & LAUDELL CULVER AND AUSTEN WAYNE

0.07 ACRES FEE

LEGEND

- SILT FENCE
- XXXXXXXX SAW EXISTING PAVEMENT
- FLOW ARROW
- HEAVY RIPRAP (SEE STRUCTURE PLANS FOR QUANTITIES)
- EROSION MAT CLASS II TYPE B

CURVE DATA

P.I. STA. 14+17.55
Δ = 05°15'08"
D.= 07°00'28"
T.= 37.50
R.= 817.59
L.= 74.95
C.= 74.92
P.C. STA. 13+80.11
P.T. STA. 14+55.00
R.O. =180.00
S.E. = 6.0%

PROPOSED CATTLE PASS

CONCRETE APPROACH SLAB (TYP.), BOTH APPROACHES

CP#2

CP#3

CP#4

PROPOSED C/L CTH K

EXISTING C/L CTH K

CP#1

11+00

12+00

13+00

14+00

PC STA = 13+80.05

PI STA = 14+17.55

PT STA = 14+55.00

BM#2

41.25 FT R/W

CTH K (ASPHALT)

BEGIN PROJECT
STA. 10+20
MATCH EXISTING

F.E.

F.E. TO BE ABANDONED

STRUCTURE B-22-279 REQUIRED

BIG GREEN RIVER

SLOPE INTERCEPT

FENCE TO BE REMOVED BY OTHERS (TYP.)

R/W VARIES 41.25 FT TO 125 FT

END PROJECT
STA. 14+55
MATCH EXISTING

P.E. TO REMAIN

BM#1

SCENIC RIVERS ENERGY COOPERATIVE

R. GARY STETSON AND DAVID UNDERWOOD

VPI STA = 12+37.00
VPI EL = 722.15
L=375.00
K=106.42

1.80%

1.72%

EXISTING GROUNDLINE

PROPOSED C/L CTH K

BOP STA = 10+20.00
BOP EL = 718.24

VPC STA = 10+49.50
VPC EL = 718.77

VPT STA = 14+24.50
VPT EL = 718.93

EOP STA = 14+55.00
EOP EL = 718.40

HIGH WATER 100
EL. = 709.72

OBSERVED WATER
EL. = 702.94
(12/22/2010)

STREAMBED
EL. = 698.46

PROPOSED C/L ELEVATION

EXISTING GROUNDLINE

722 / 718 / 714 / 710 / 706 / 702 / 698 / 694

717.89 718.71 718.78 719.37 719.56 720.22 720.11 705.51 720.42 703.07 720.50 720.56 720.34 720.12 719.95 719.33 719.32 718.51 718.49 717.46

10+00 10+50 11+00 11+50 12+00 12+50 13+00 13+50 14+00 14+50 15+00

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEVATION
1	11+40.53	SET PUNCH HOLE IN 30" CMCP TOP (PAINTED PINK), 64.69' RT.	711.72
2	13+07.35	CHISELED ½ SQUARE ON TOP OF THE NW CURB CORNER OF B-22-18 (PAINTED PINK), 11.26' RT.	721.07
3	14+50.97	SET 2-60d COMMON SPIKES IN P.P., 107.52' LT.	708.71

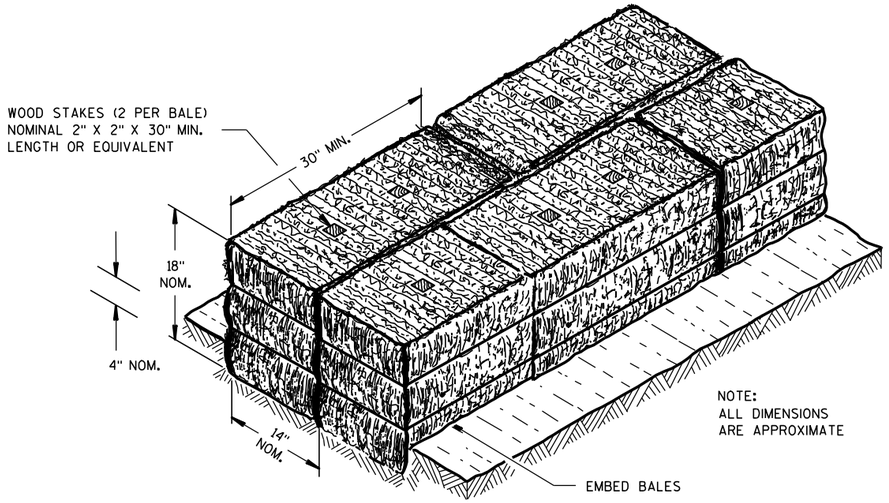
STA. 12+37
STRUCTURE B-22-279 REQUIRED
SINGLE SPAN PRESTRESSED 72W-INCH GIRDER STRUCTURE
O.A.L. = 139.42 FT, O.A.W. = 32.5 FT, SKEW = 30° RHF
SEE STRUCTURE DRAWINGS SHEETS 1 THRU 14

PROJECT NO: 5801-00-75	HWY: CTH K	COUNTY: GRANT	PLAN & PROFILE (MAINLINE)	SHEET	E

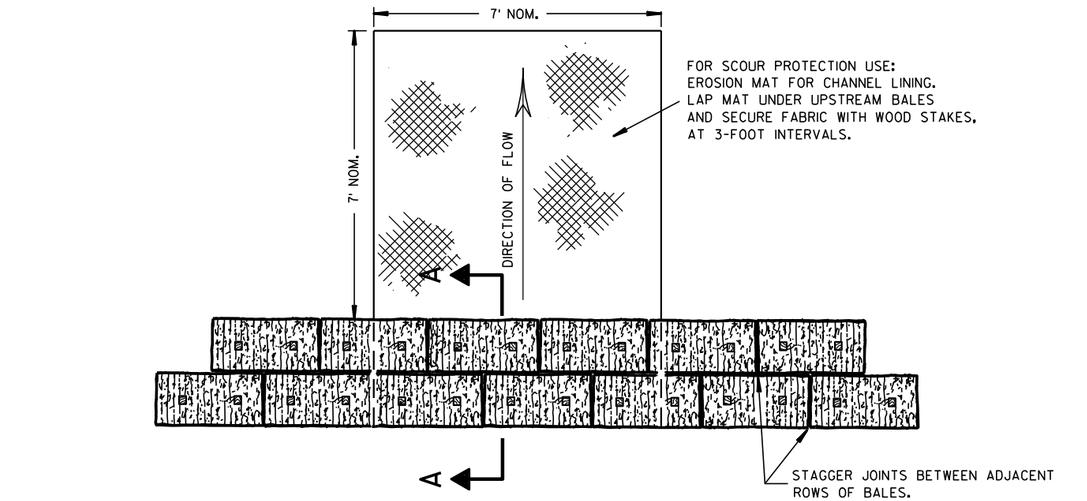
FILE NAME: G:\1-BRIDGE PROJECTS\Bridge Files\10215 CTH K Grant\01-CAD\Road\10215_500.dwg PLOT DATE: Oct 30, 2012 PLOT BY: johns0 PLOT SCALE: ROTATION:

Standard Detail Drawing List

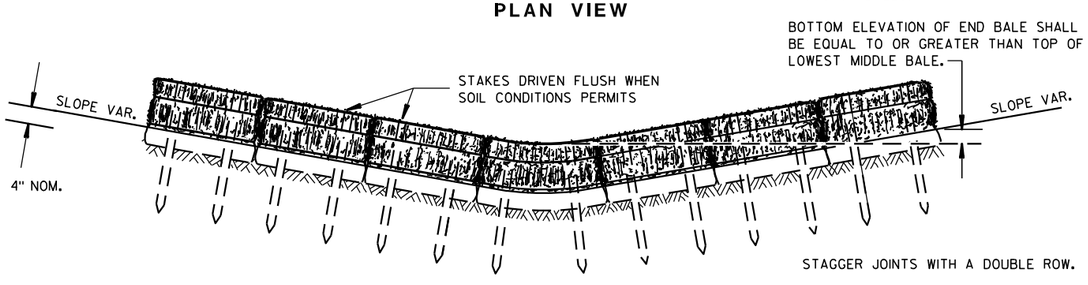
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	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)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-05	SIGNING & MARKING FOR TWO LANE BRIDGES



SECTION A-A



PLAN VIEW



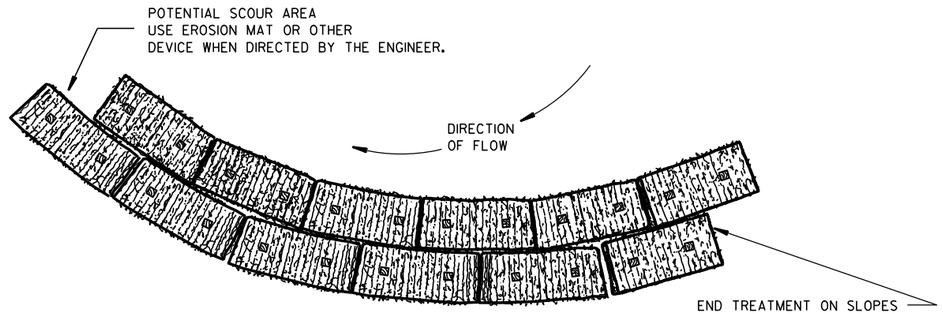
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

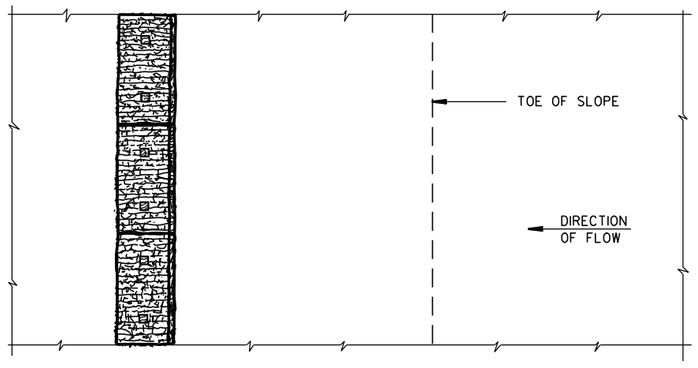
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

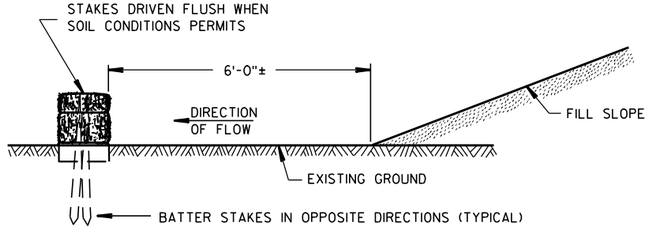


PLAN VIEW

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

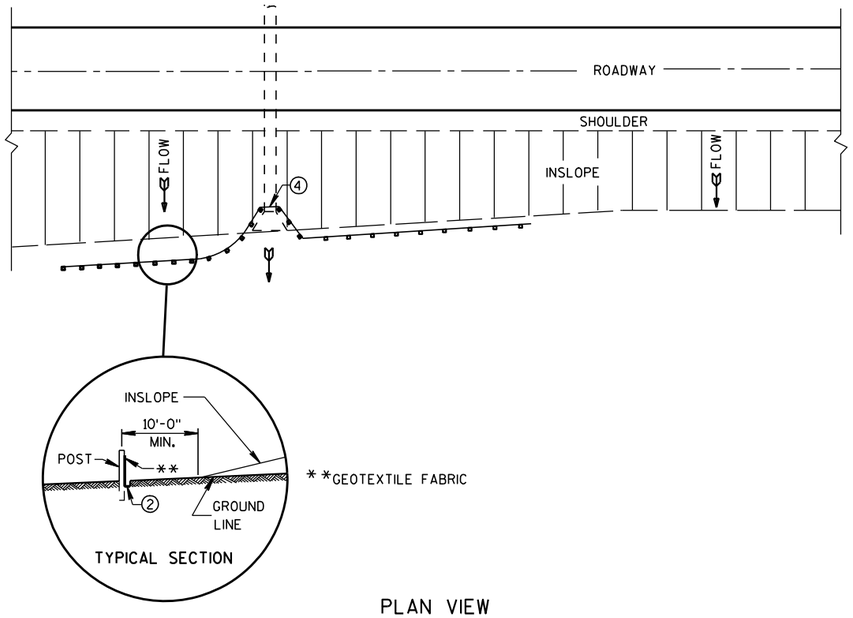
FHWA

6

S.D.D. 8 E 8-3

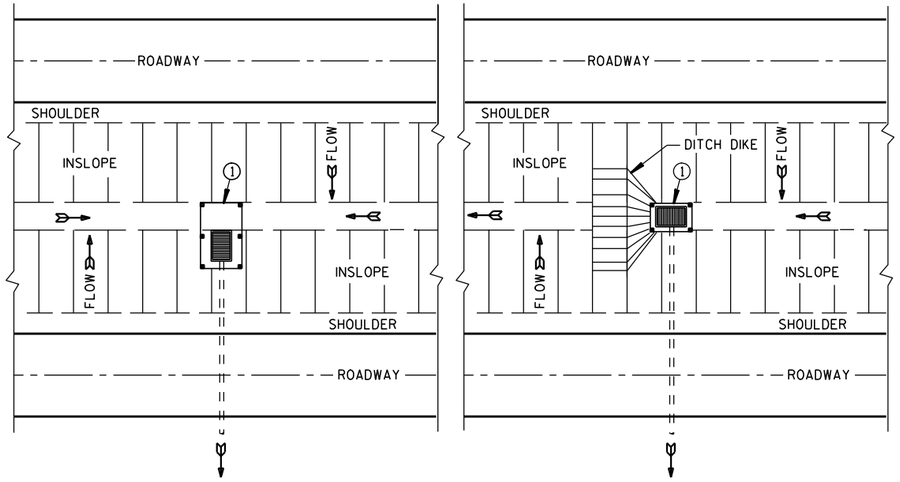
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



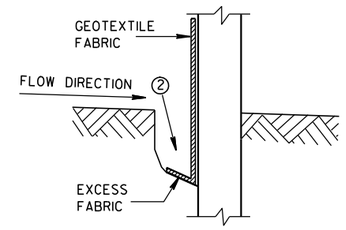
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

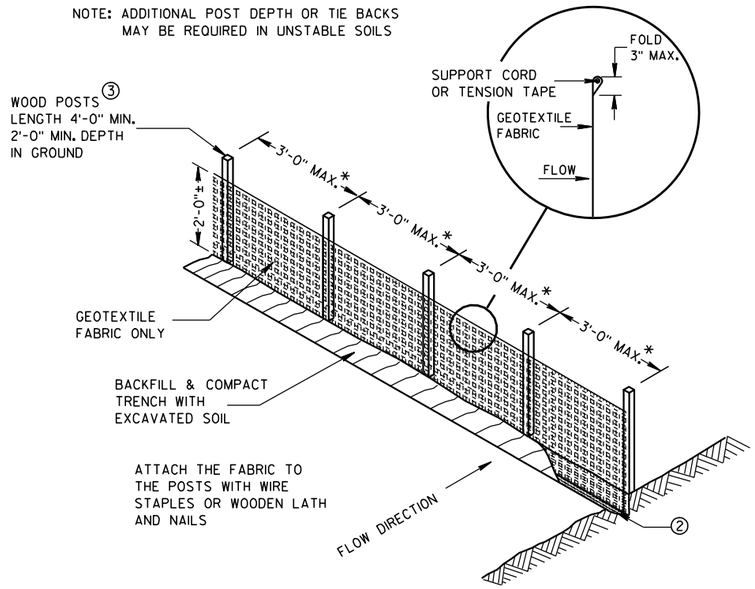
GENERAL NOTES

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

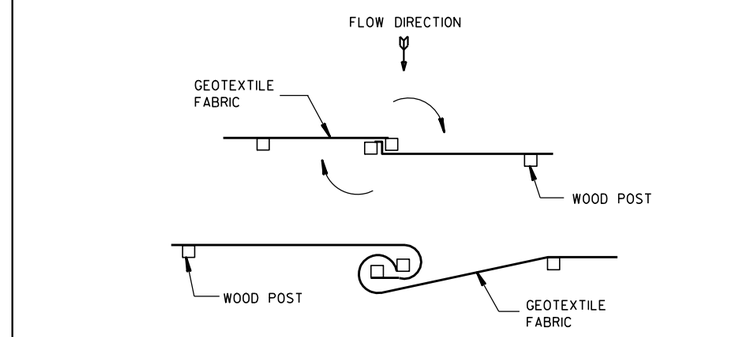
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL 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.



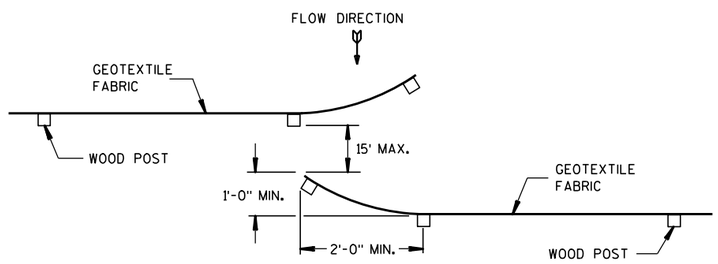
TRENCH DETAIL



SILT FENCE

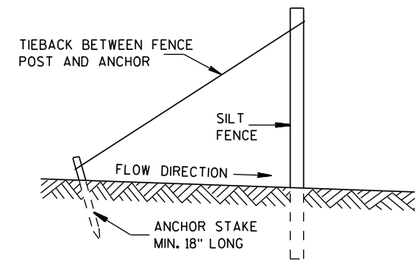


TWIST METHOD



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

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S.D.D. 8 E 9-6

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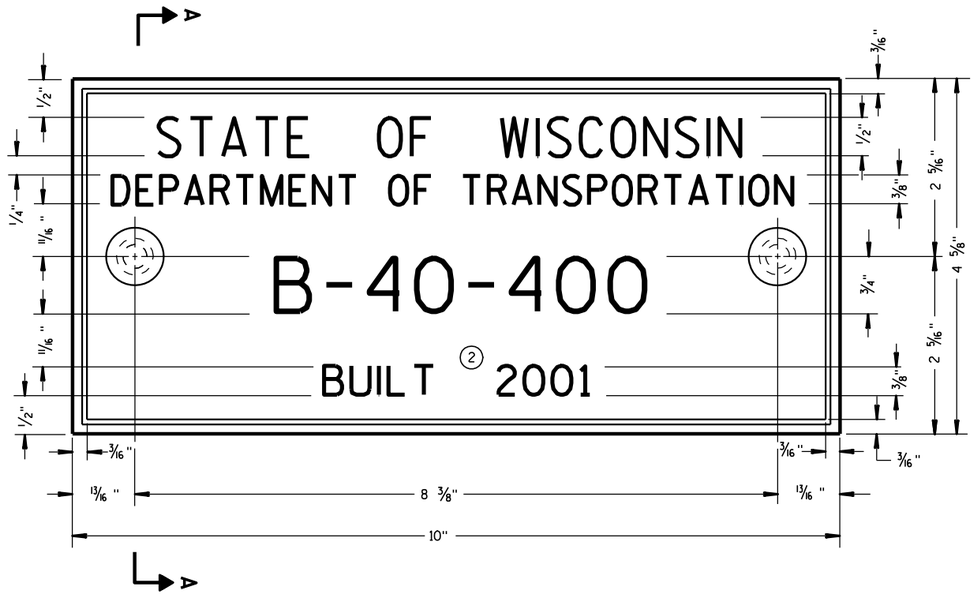
S.D.D. 8 E 9-6



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

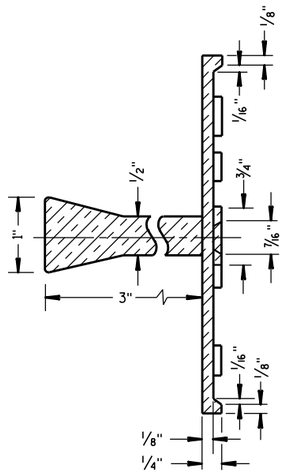
GENERAL NOTES

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

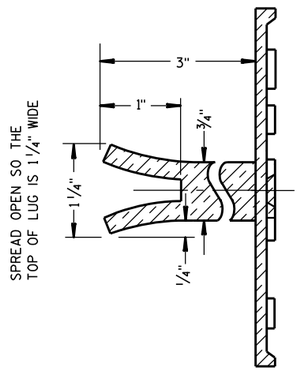
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

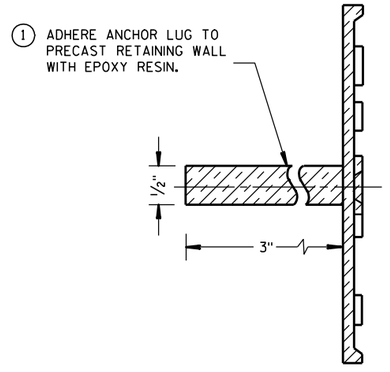
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

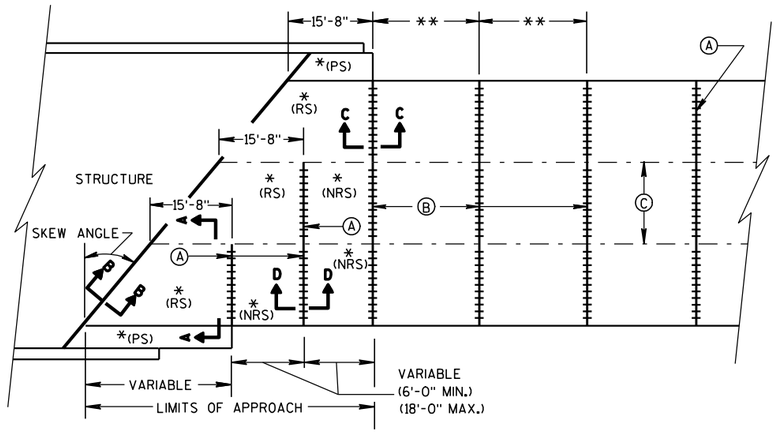
3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

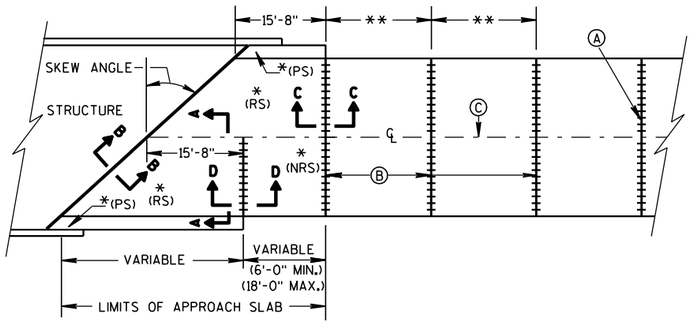
FHWA

6

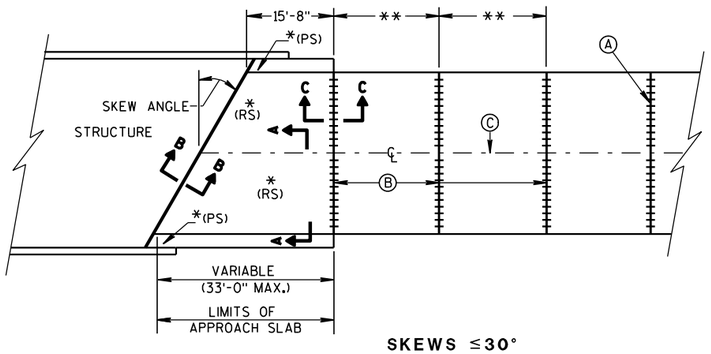
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



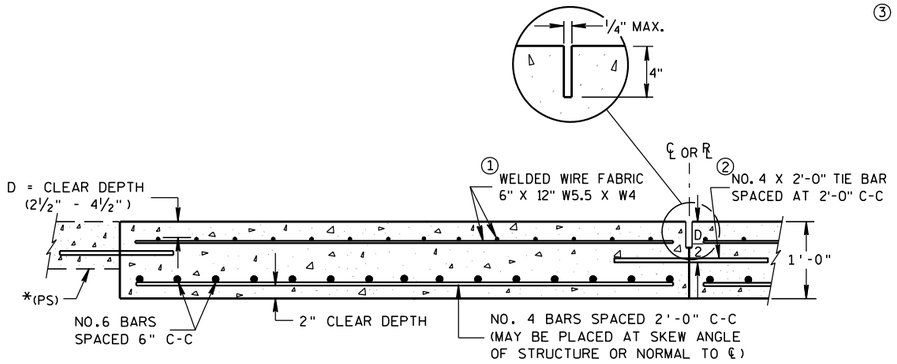
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

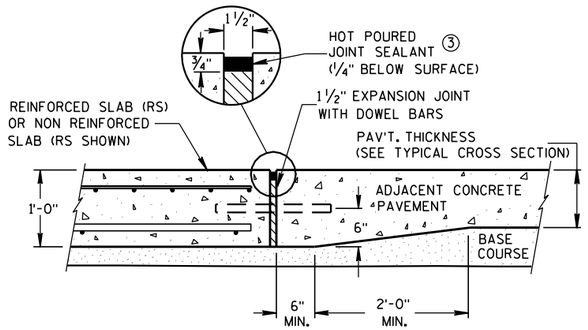
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

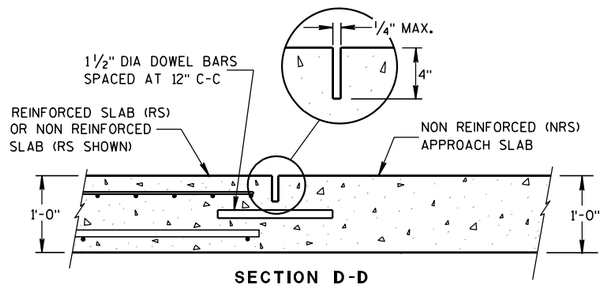
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

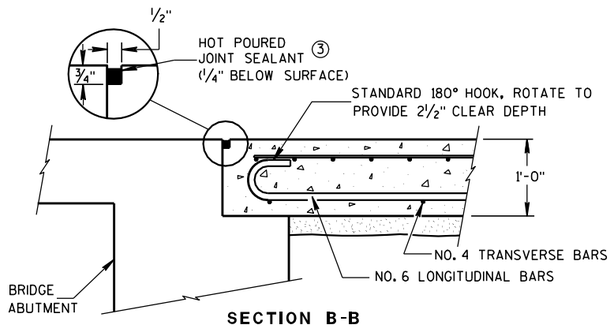
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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.

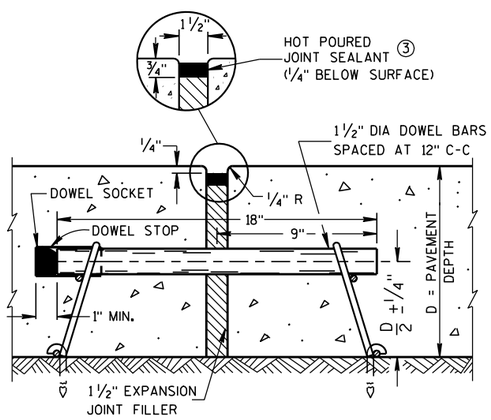
(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

(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

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S.D.D. 13 B 2-6

GENERAL NOTES

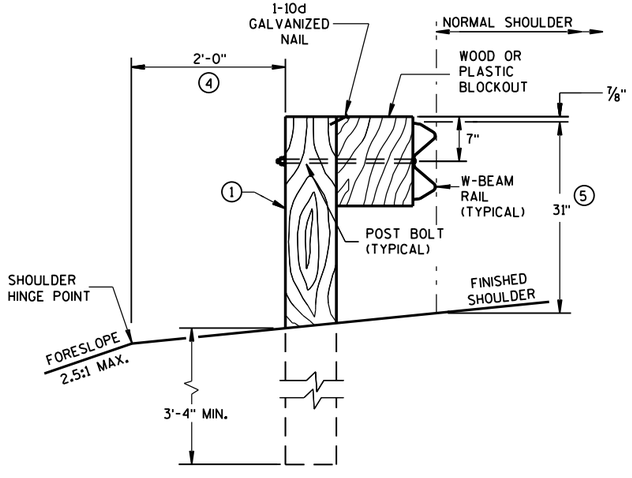
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

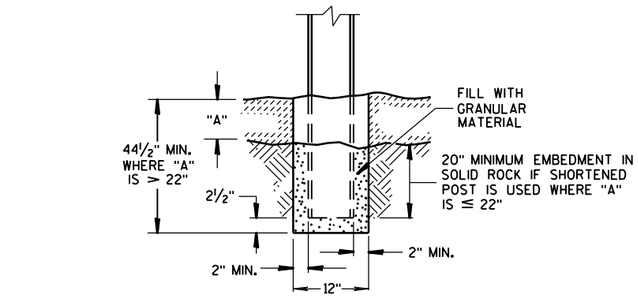
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".



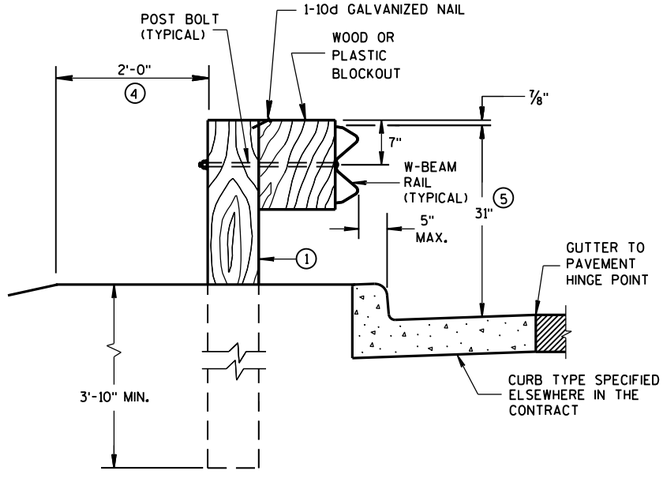
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



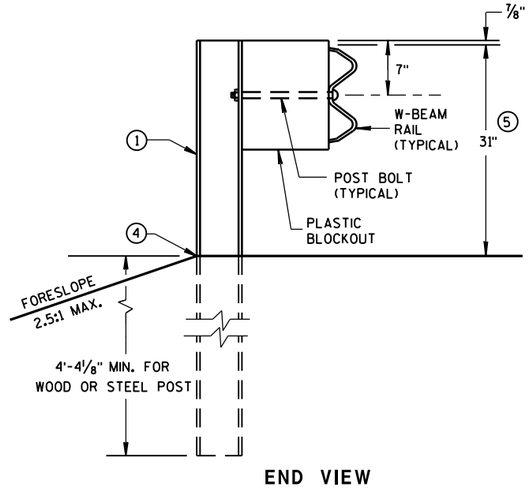
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



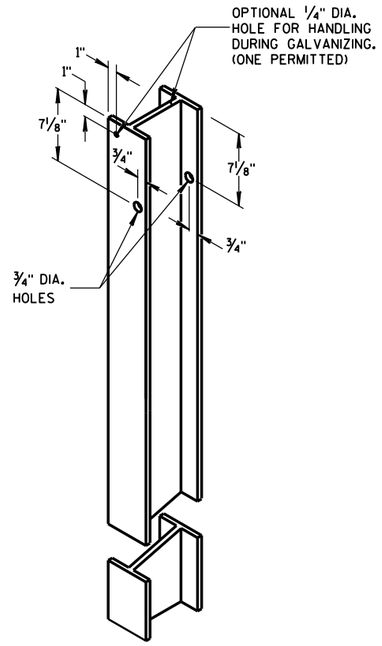
END VIEW

LOCATED ALONG A CURBED ROADWAY

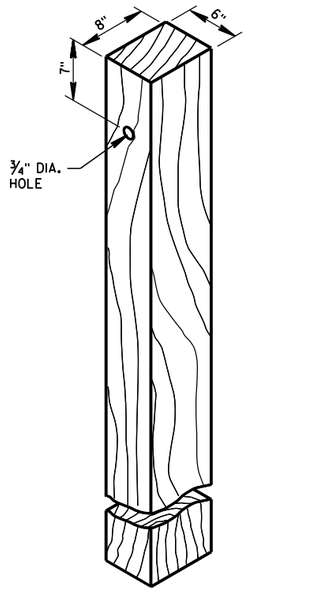


END VIEW

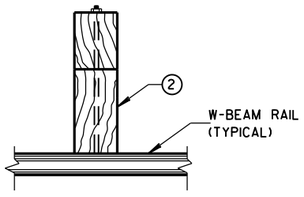
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



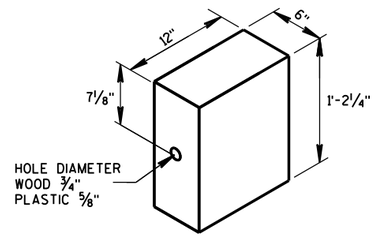
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



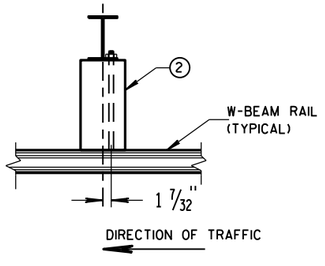
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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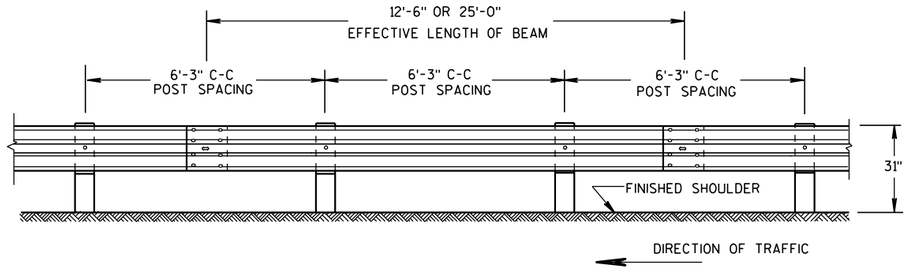
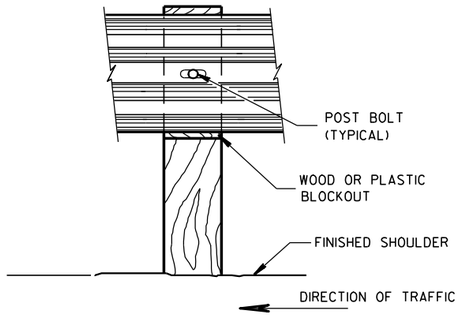
S.D.D. 14 B 42-2a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



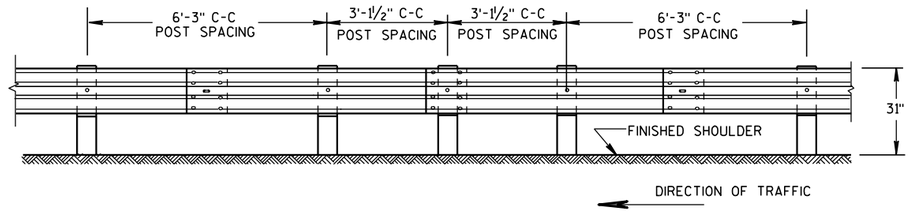
FRONT VIEW AT WOOD POST

GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

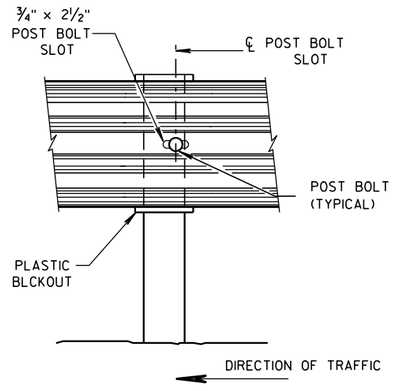
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

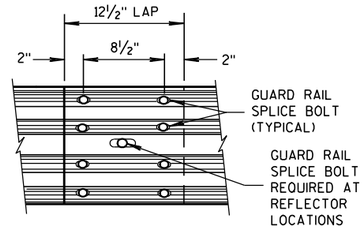


FRONT VIEW

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

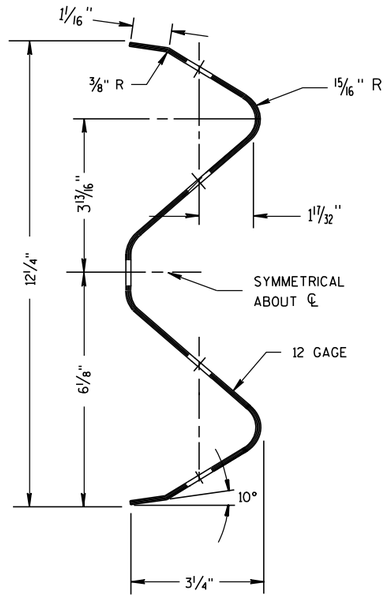


FRONT VIEW AT STEEL POST

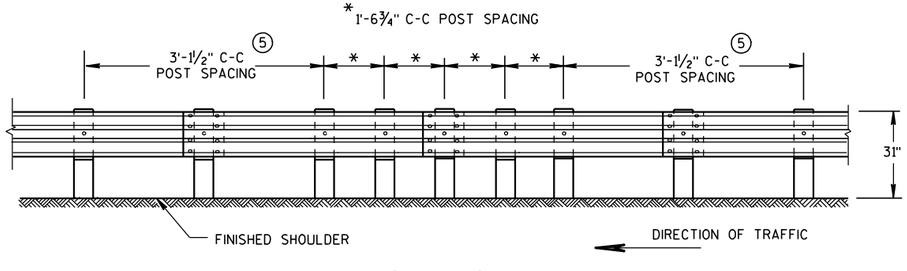


FRONT VIEW

MID-SPAN BEAM SPLICE

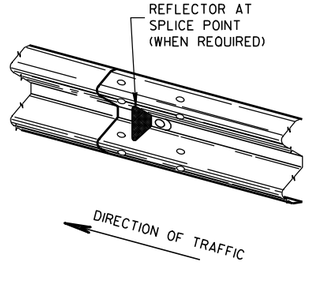


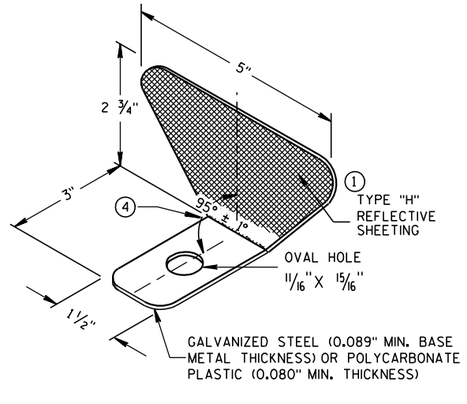
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①

REFLECTOR SPACING ②

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 1 ③	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ④	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 42-2b

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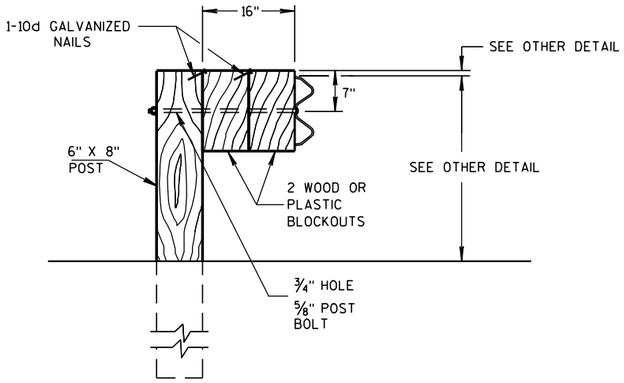
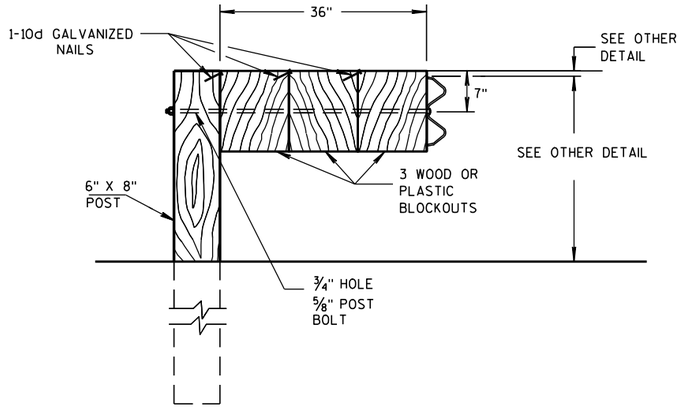
S.D.D. 14 B 42-2b



DETAIL FOR 16" BLOCKOUT DEPTH

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

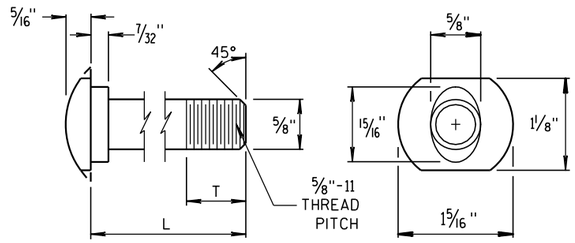


DETAIL FOR 36" BLOCKOUT DEPTH

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

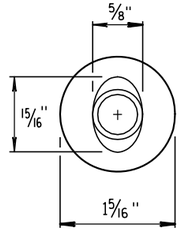
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

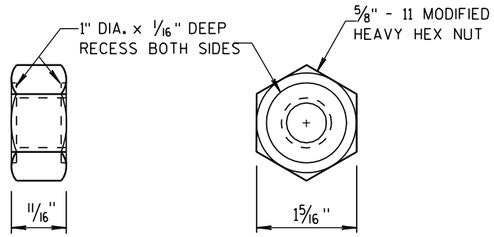


POST BOLT TABLE

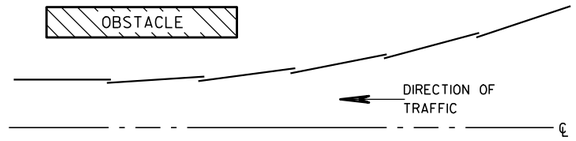
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

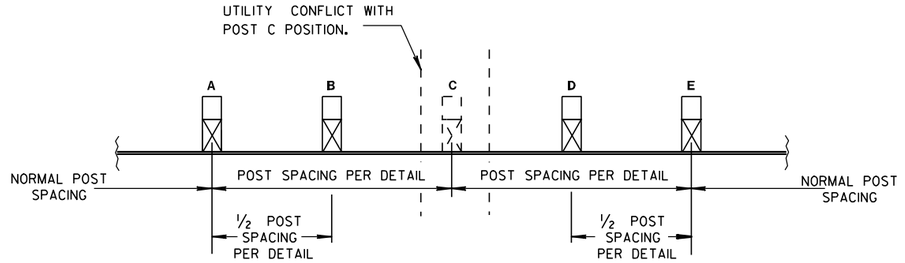


POST BOLT AND RECESS NUT

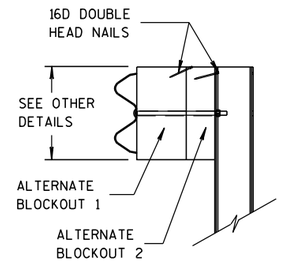


PLAN VIEW

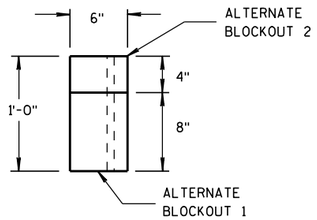
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

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

FHWA

ENT

6

S.D.D. 14 B 42-2c

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.

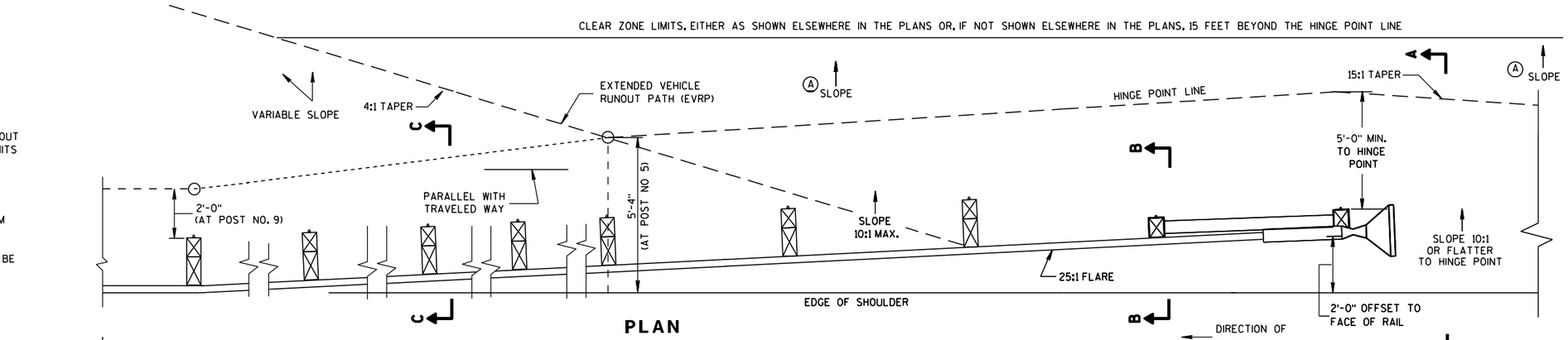
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

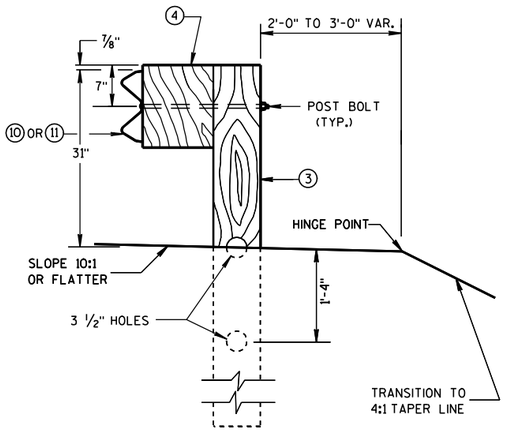
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

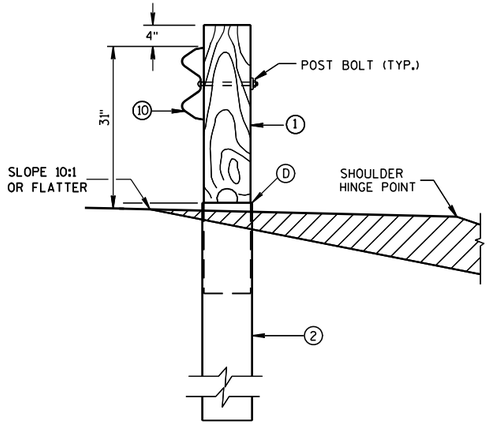
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

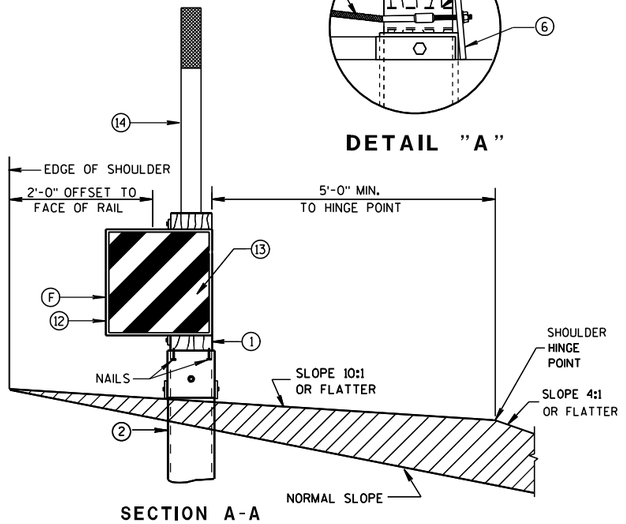




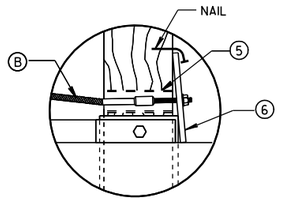
SECTION C-C
TYPICAL AT POST NOS. 3-9



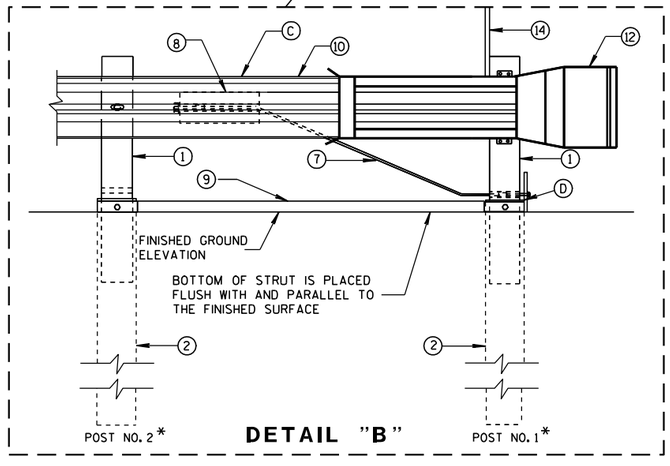
SECTION B-B
TYPICAL AT POST NO. 2*



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

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

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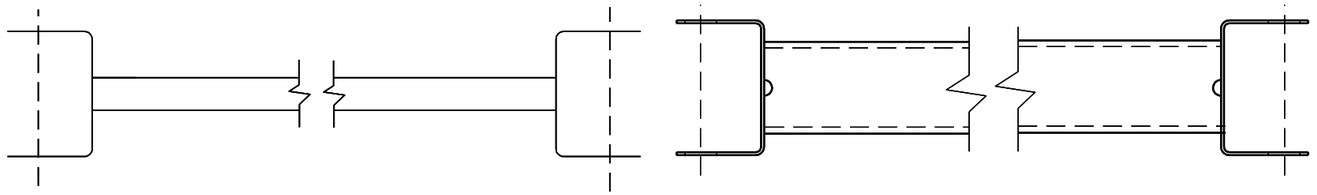
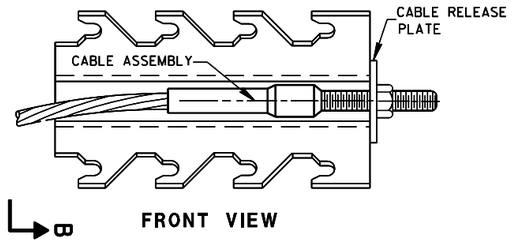


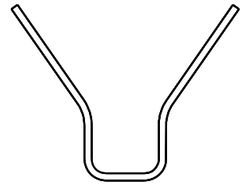
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

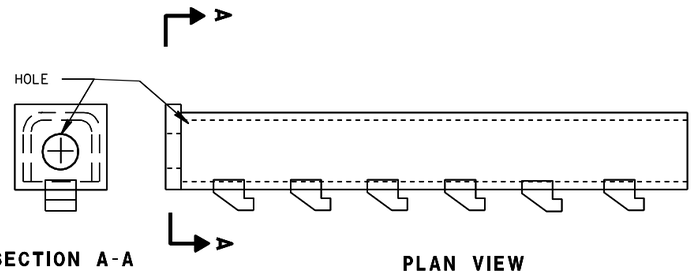
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR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



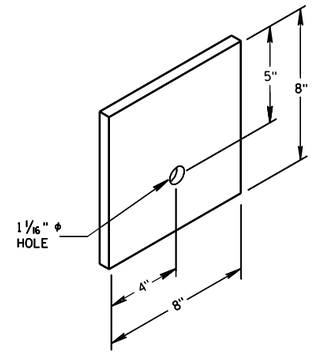
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



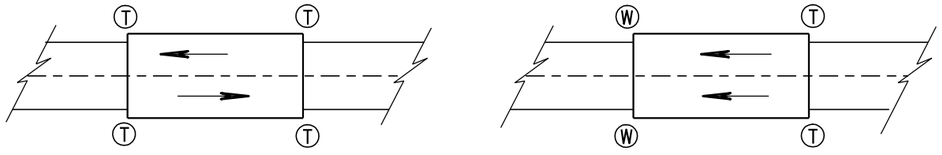
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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



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

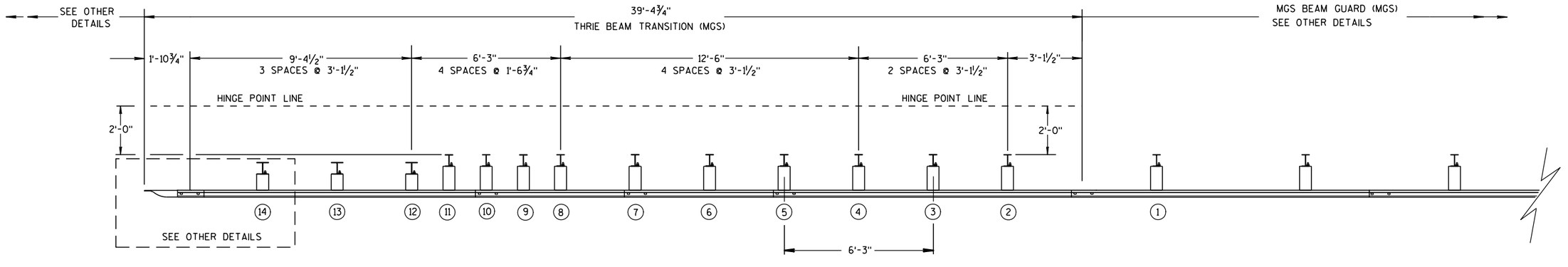
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

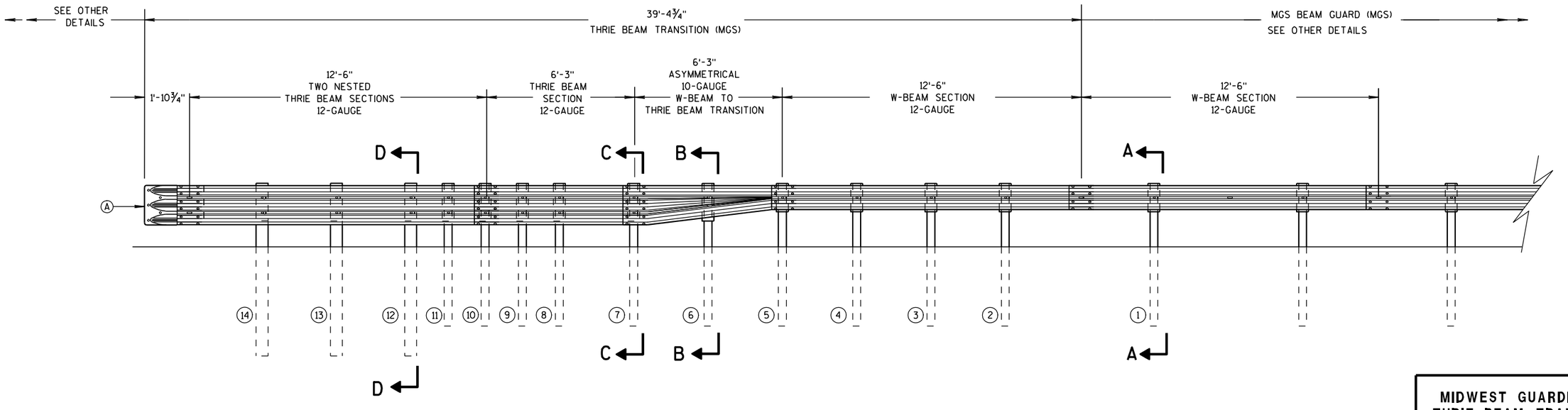
TRANSITION USES STEEL POSTS ONLY.

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	25

6

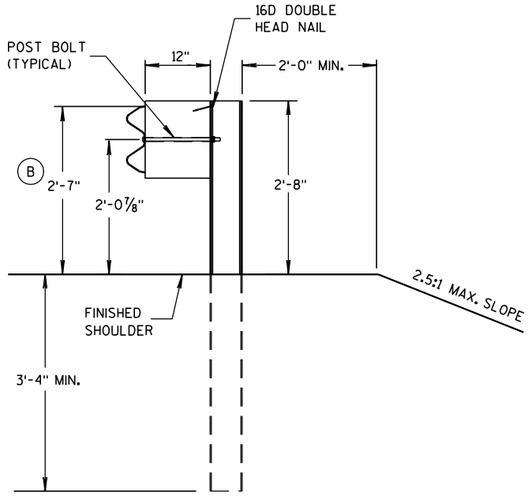
S.D.D. 14 B 45-3a

6

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

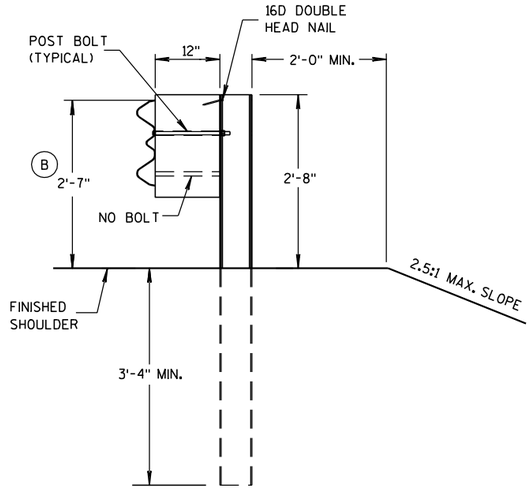
GENERAL NOTES

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



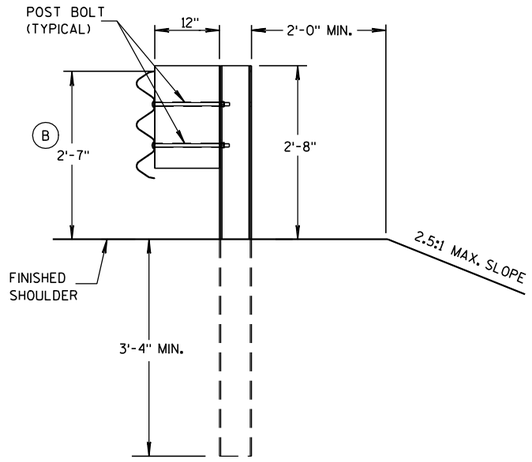
SECTION A-A

POSTS 1-5



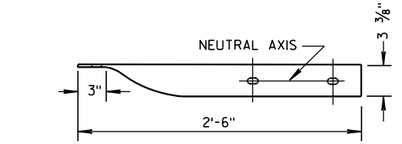
SECTION B-B

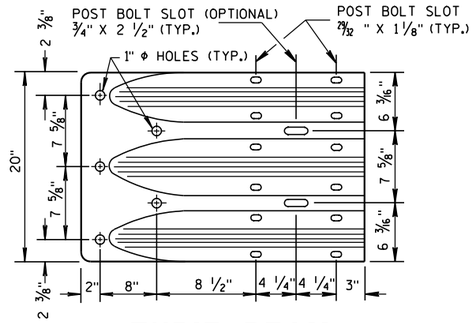
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

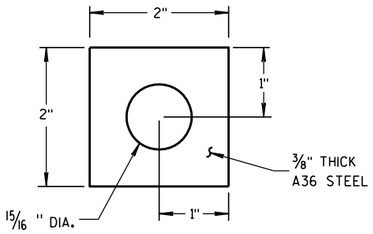
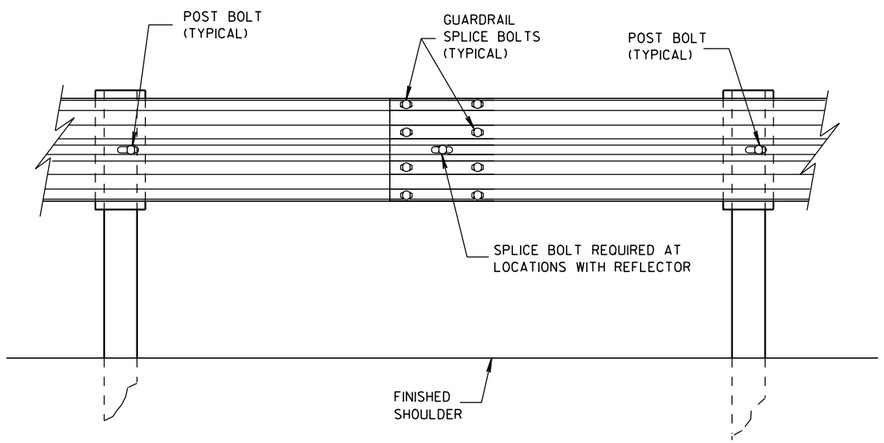


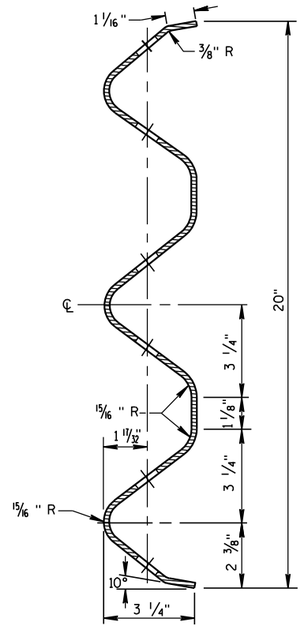
PLATE WASHER DETAIL

SECTION D-D

POSTS 12-14



SPLICE DETAIL



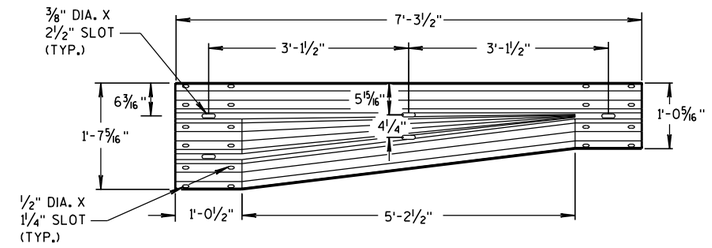
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

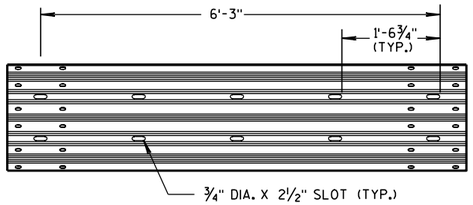
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

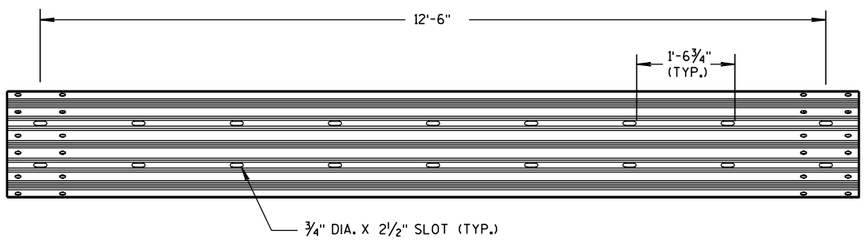
S.D.D. 14 B 45-3b



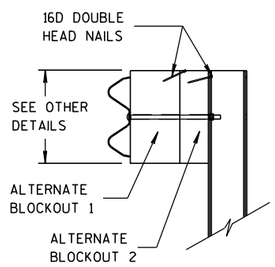
W-BEAM TO THRIE BEAM TRANSITION SECTION



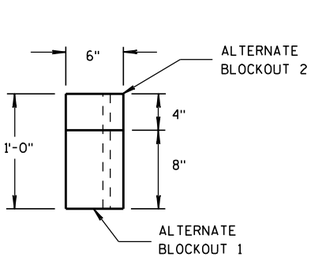
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

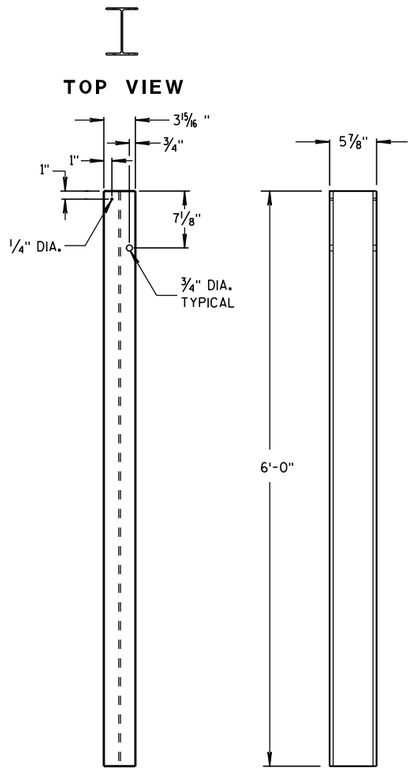


SIDE VIEW

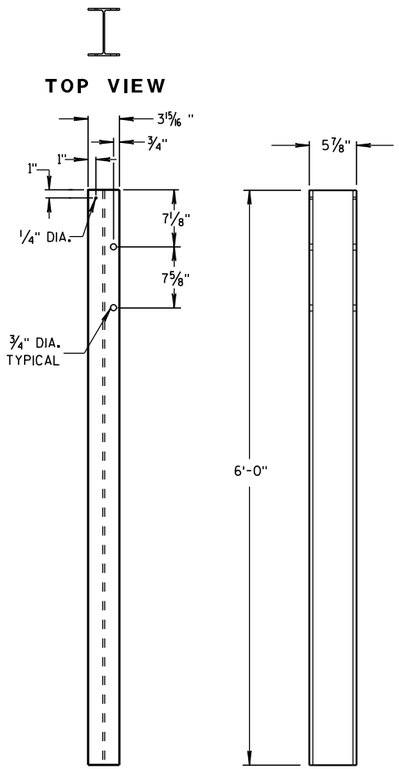


TOP VIEW

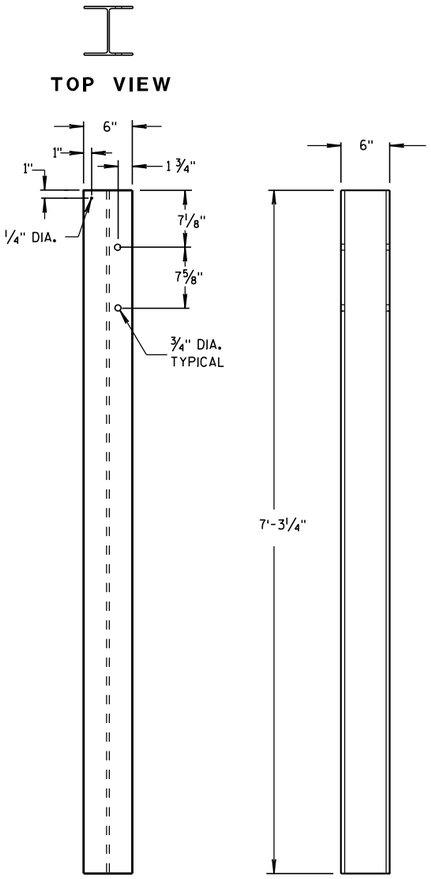
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

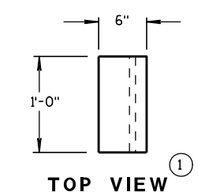


STEEL POSTS 6-11

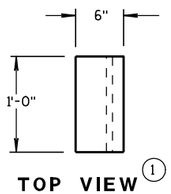


STEEL POSTS 12-14

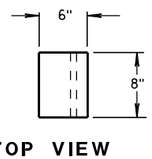
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



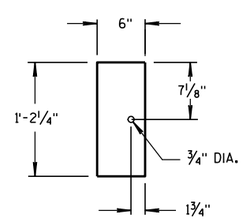
TOP VIEW (1)



TOP VIEW (1)

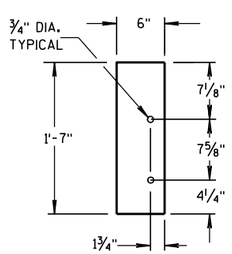


TOP VIEW



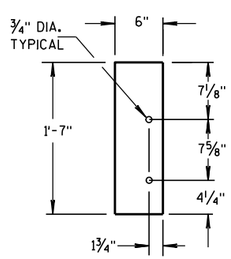
FRONT VIEW

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)

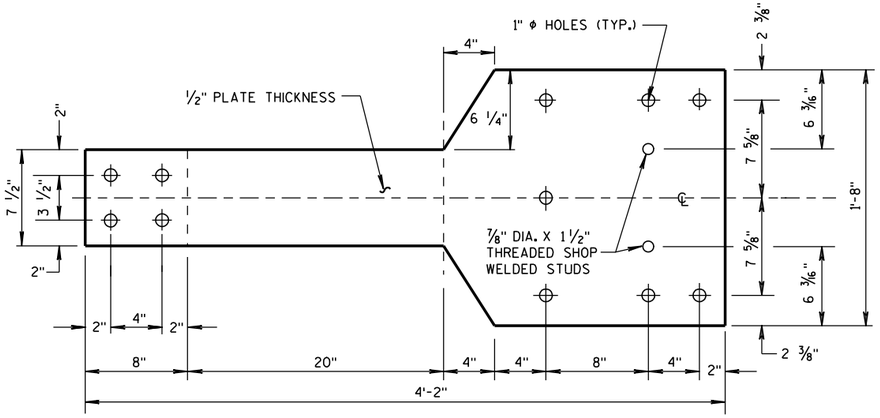
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

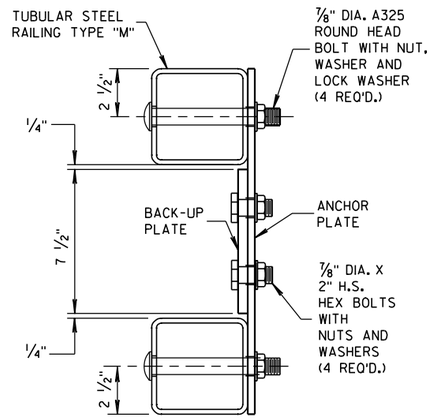
S.D.D. 14 B 45-3c

GENERAL NOTES

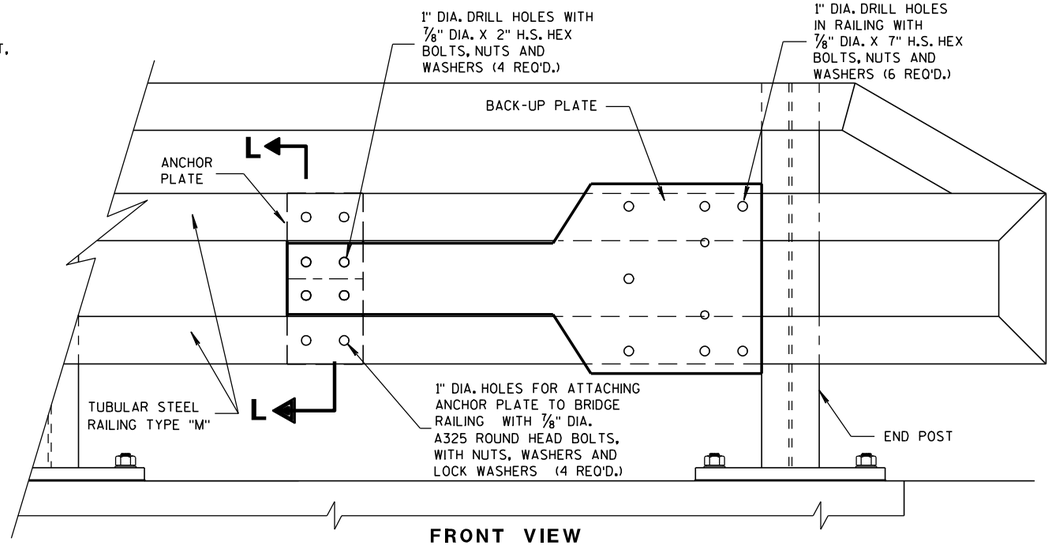
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

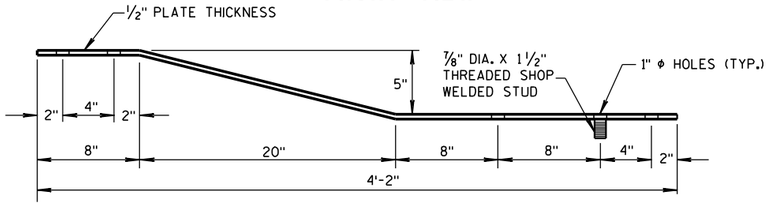


SECTION L-L



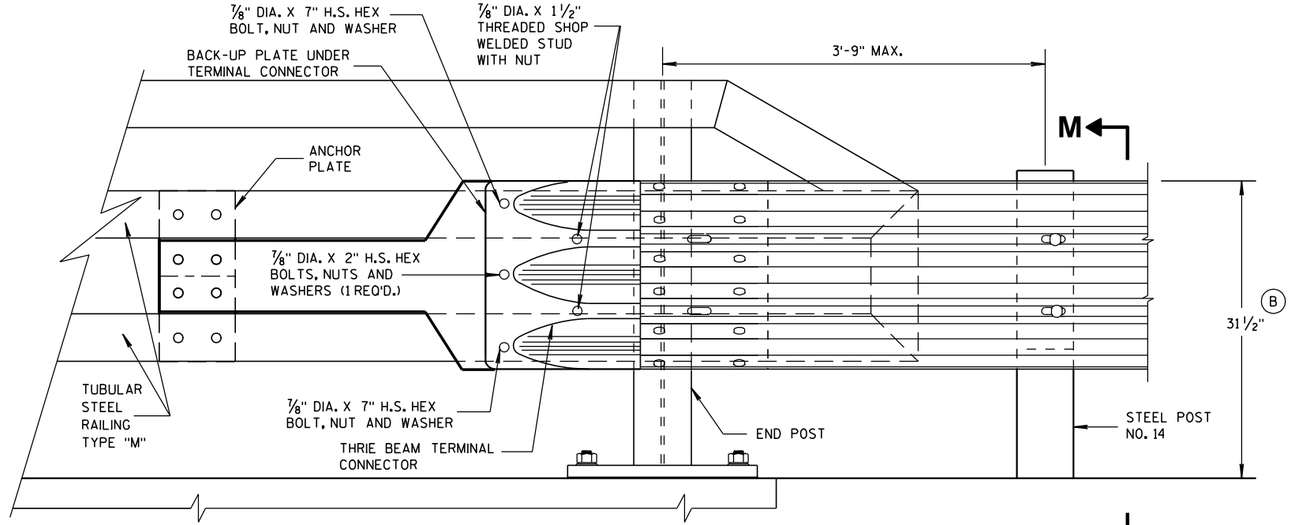
FRONT VIEW

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

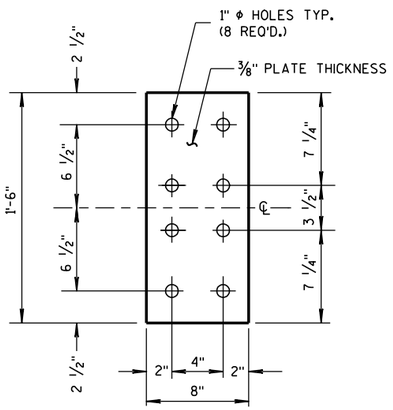


PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

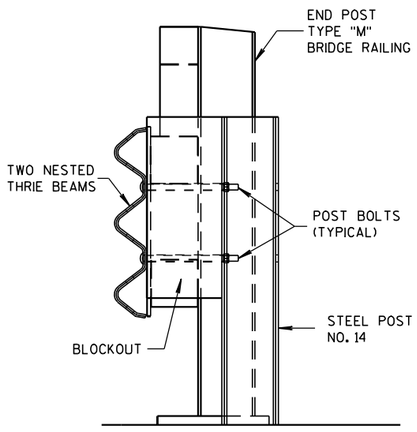


FRONT VIEW

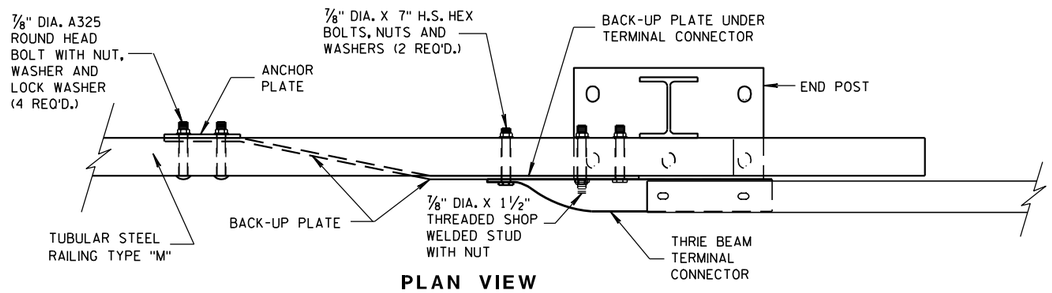


FRONT VIEW

ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

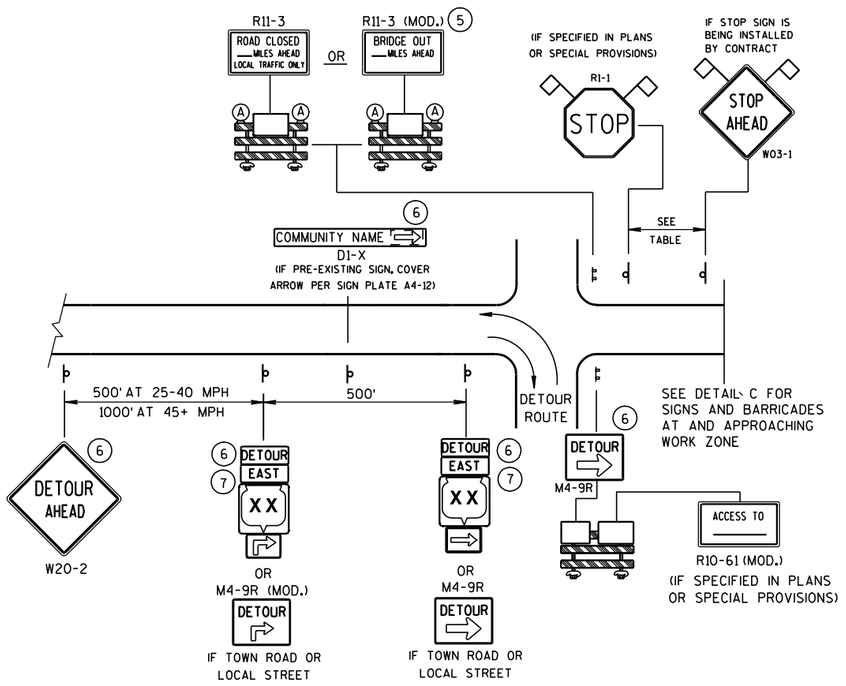
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8-31-2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS ENGINEER
FHWA	28 ENT

6

S.D. 14 B 45-3h

6

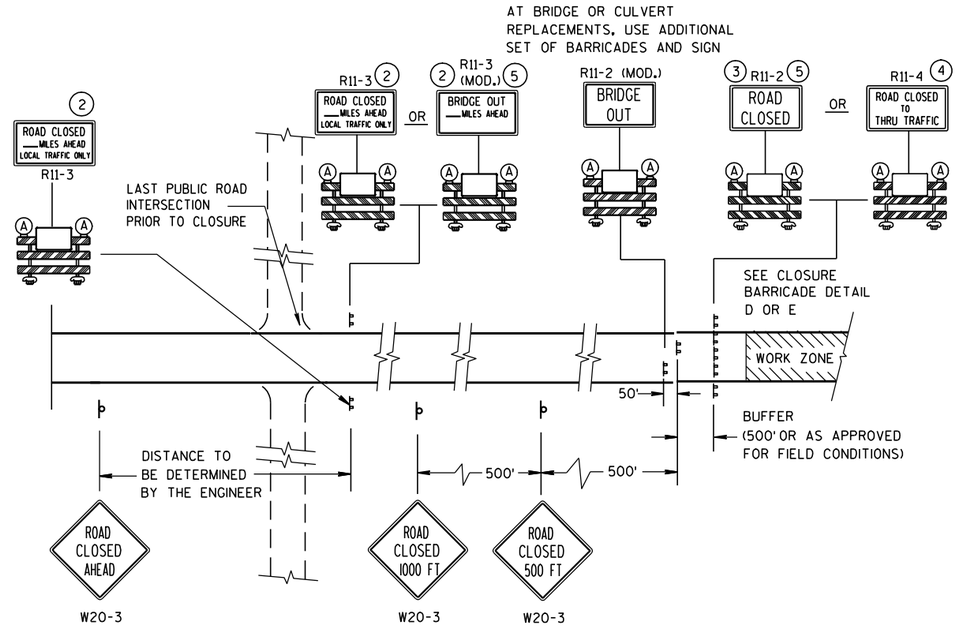
S.D. 14 B 45-3h



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

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

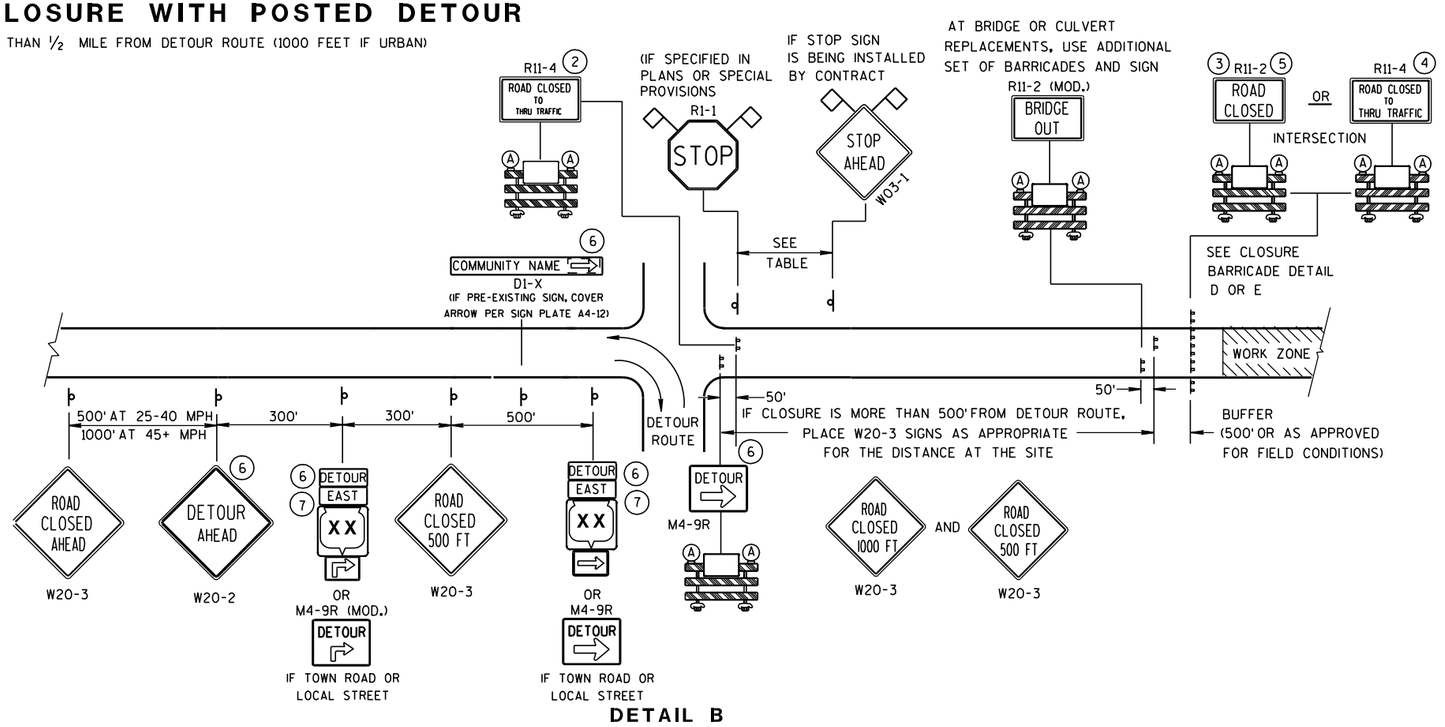


DETAIL C

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

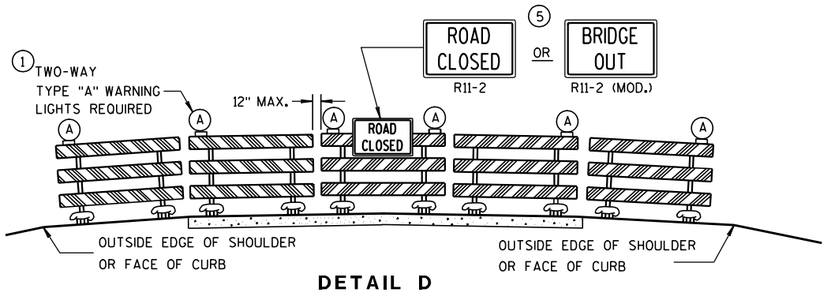
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

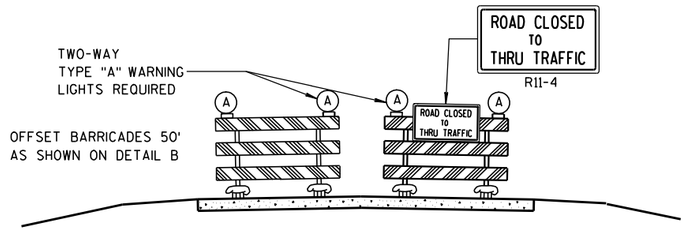
S.D.D. 15 C 2-4a



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

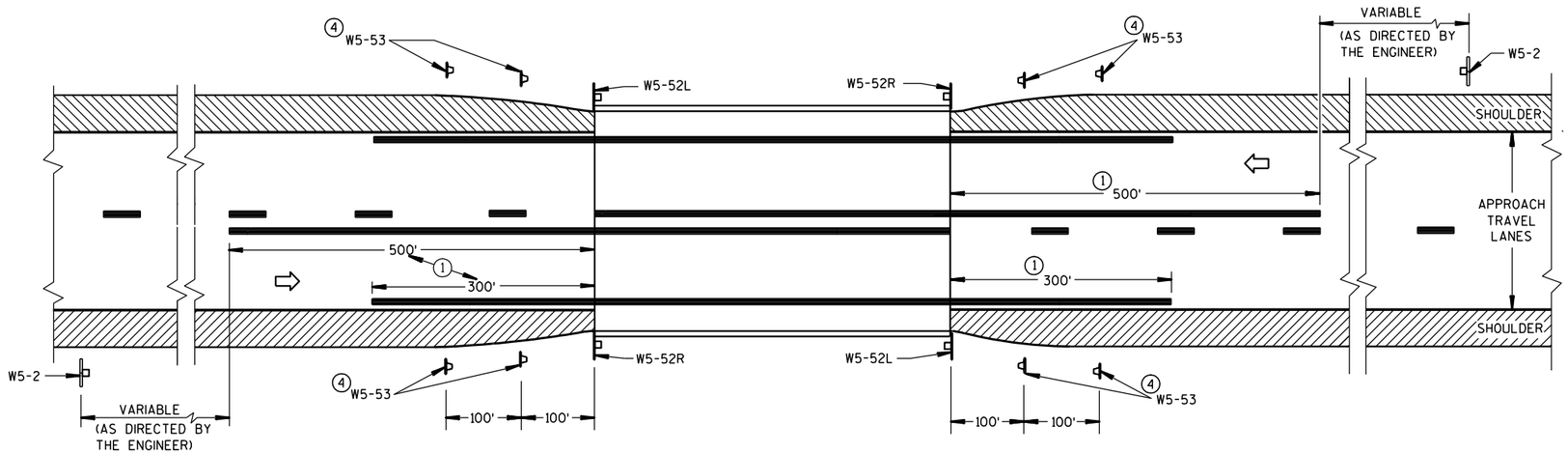
9/16/03
DATE

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

FHWA

6

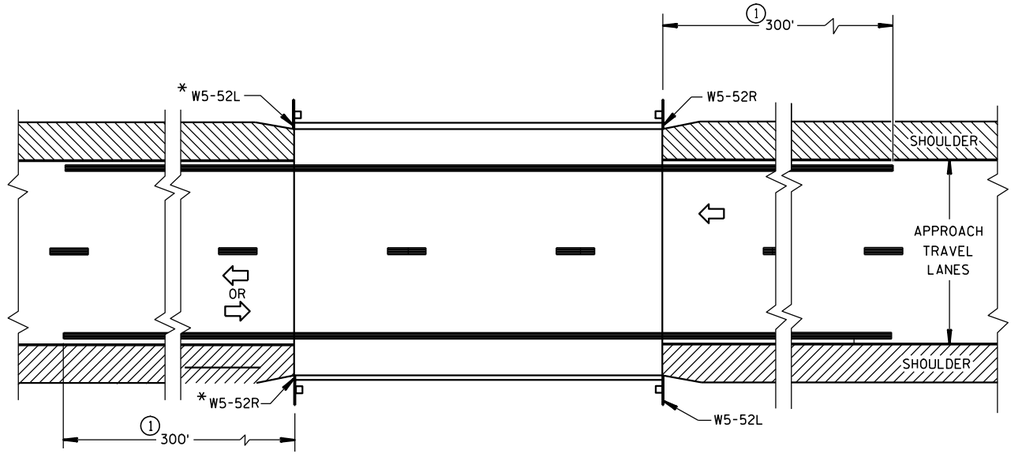
S.D.D. 15 C 2-4b



SITUATION 1

WARRANTING CRITERION:

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

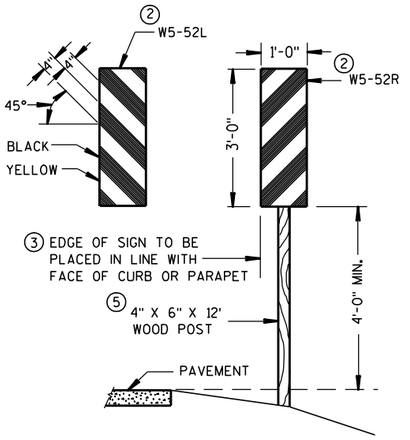


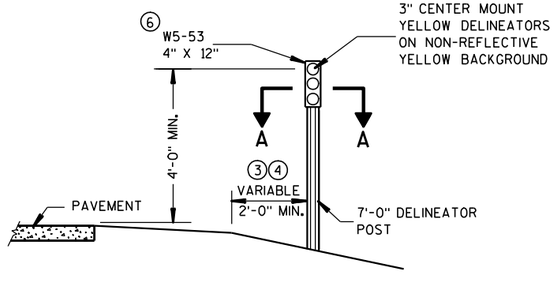
*OMIT ON ONE-WAY TRAVELLED WAYS

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.





OBJECT MARKER PLACEMENT

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.

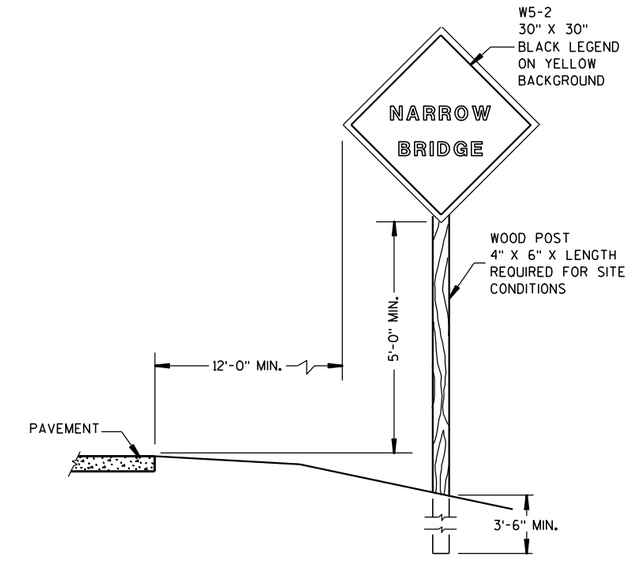
② FACE OF OBJECT MARKERS W5-52R AND W5-52L SHALL BE COVERED WITH TYPE H REFLECTIVE SHEETING.

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

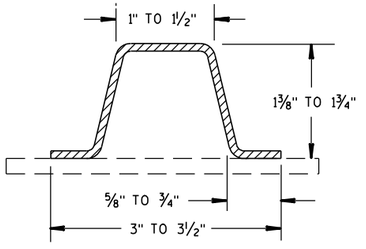
④ OBJECT MARKERS (W5-53) SHALL BE LOCATED ALONG A LINE FLARED AWAY FROM THE BRIDGE CORNER TO DELINEATE THE NARROWING OF THE SHOULDER OR BERM.

⑤ A 12 FOOT DELINEATOR POST MAY BE USED INSTEAD OF A WOOD POST.

⑥ NON-BID ITEM. INCIDENTAL TO OTHER ITEMS.



SIGN PLACEMENT



SECTION A-A

(MINIMUM WEIGHT 1.9 LBS. PER FT. AFTER GALVANIZING)

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

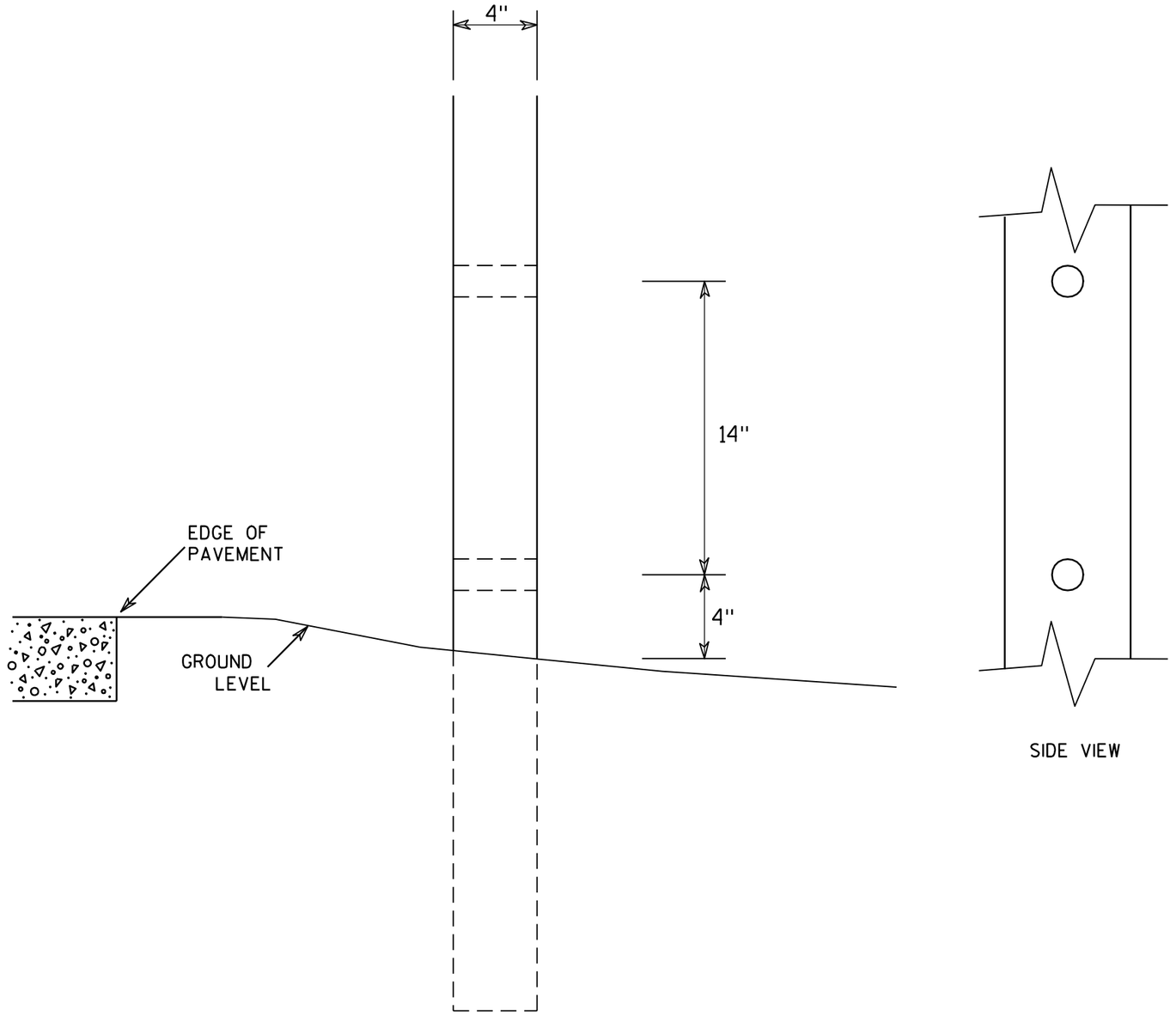
9/5/06
DATE

/S/ Thomas N. [illegible]
STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 6-5



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS

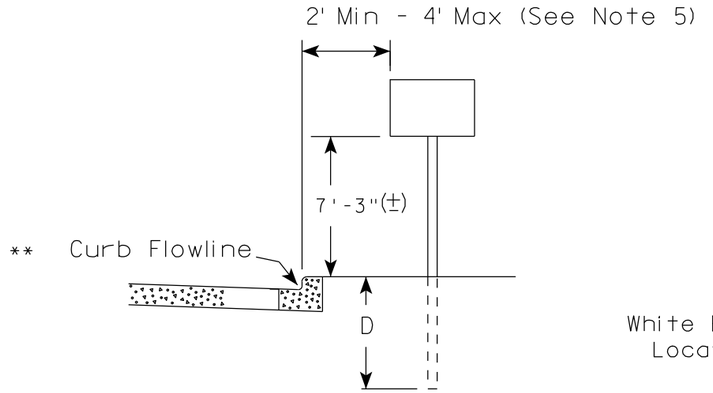
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

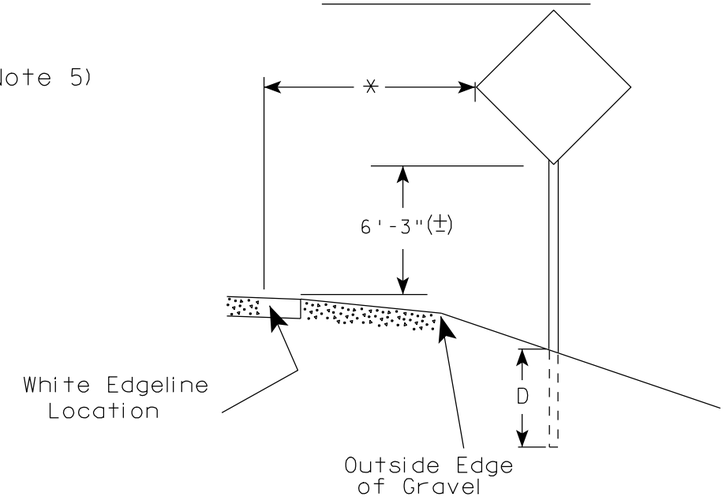
DATE 3/27/97 PLATE NO. A4-11.2

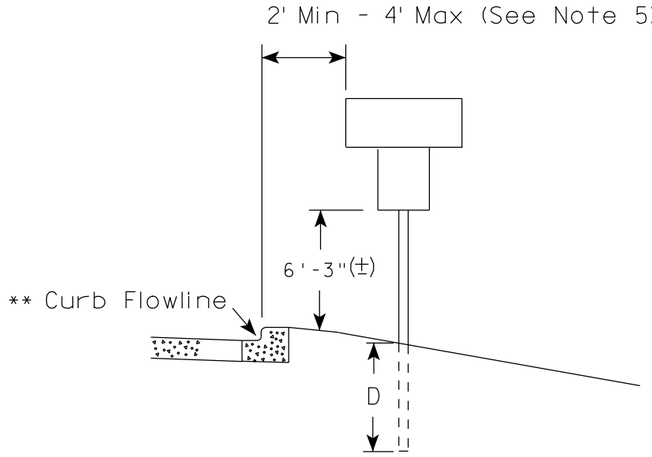
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 32	E

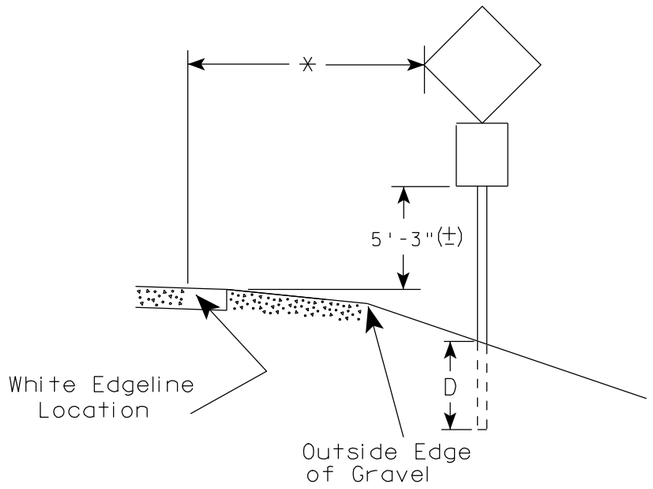
URBAN AREA



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 or larger than 20 sq. ft. 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), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road 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'

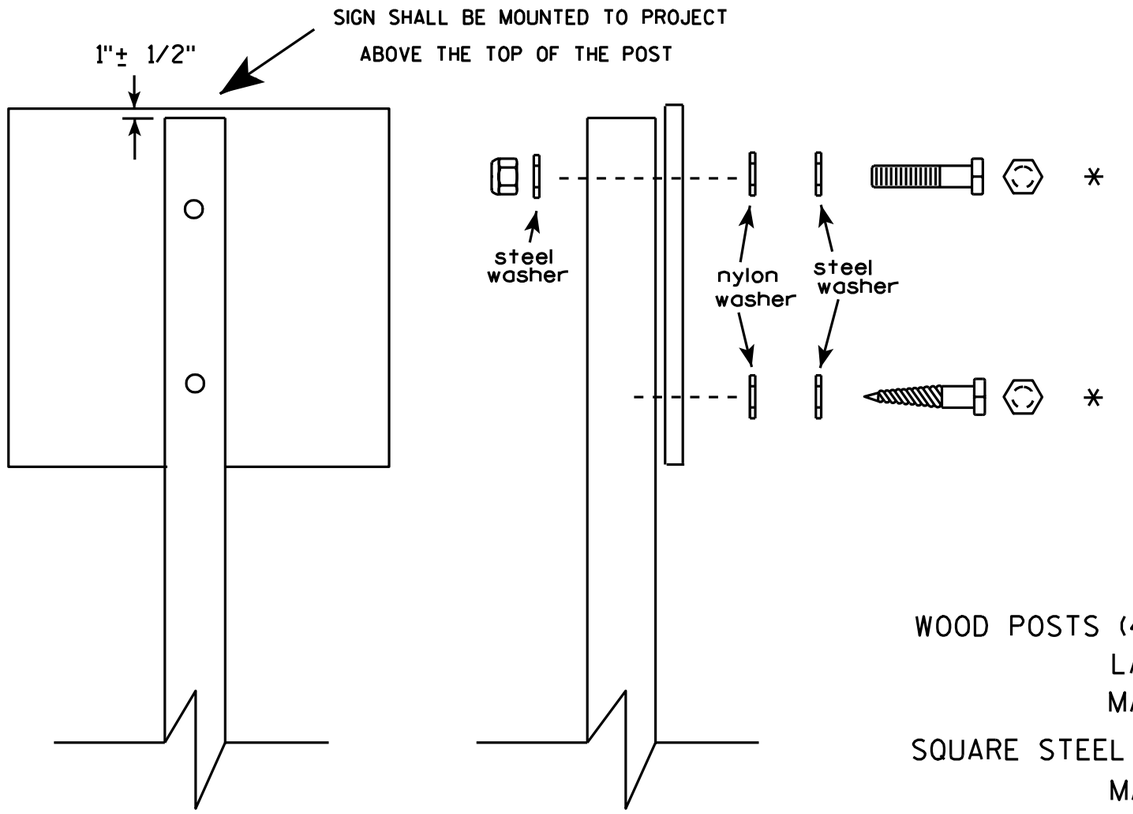
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-3.16

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 33	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

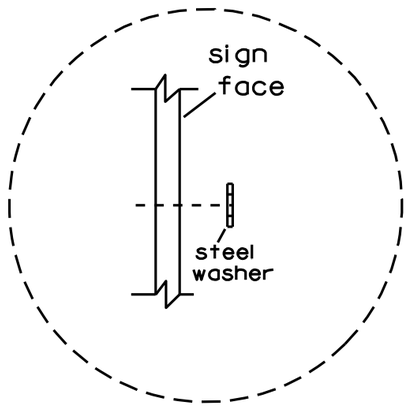
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

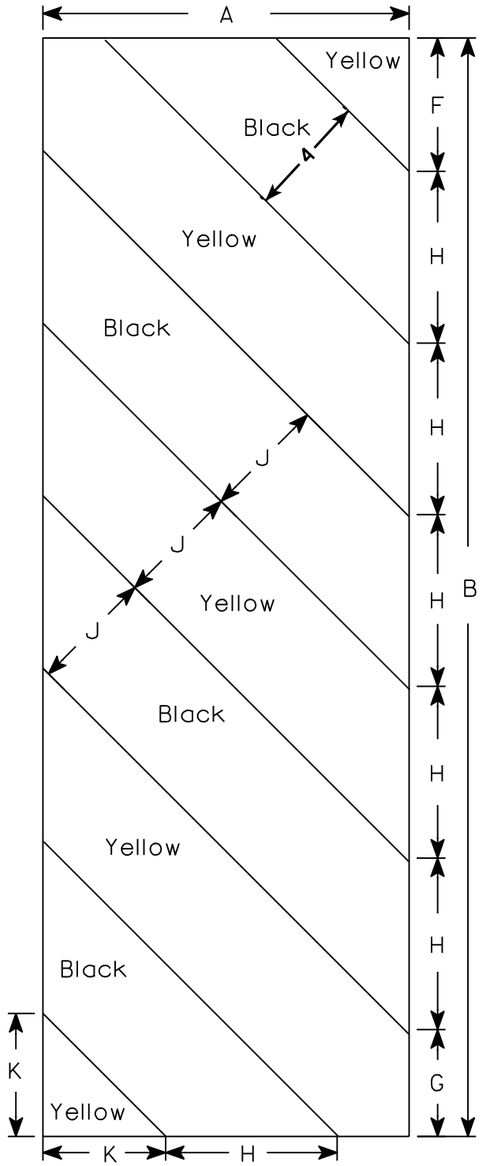
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS

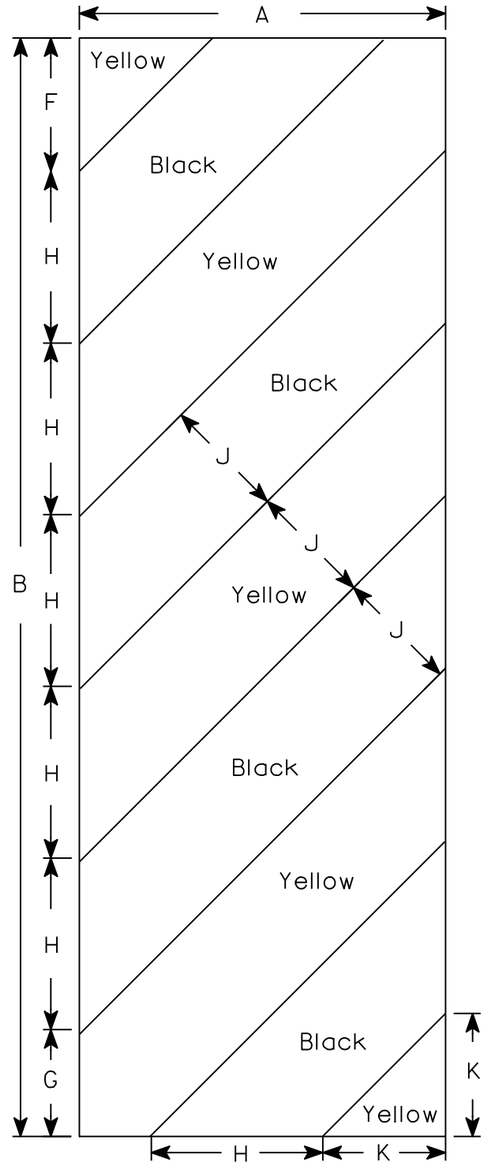
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type H 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

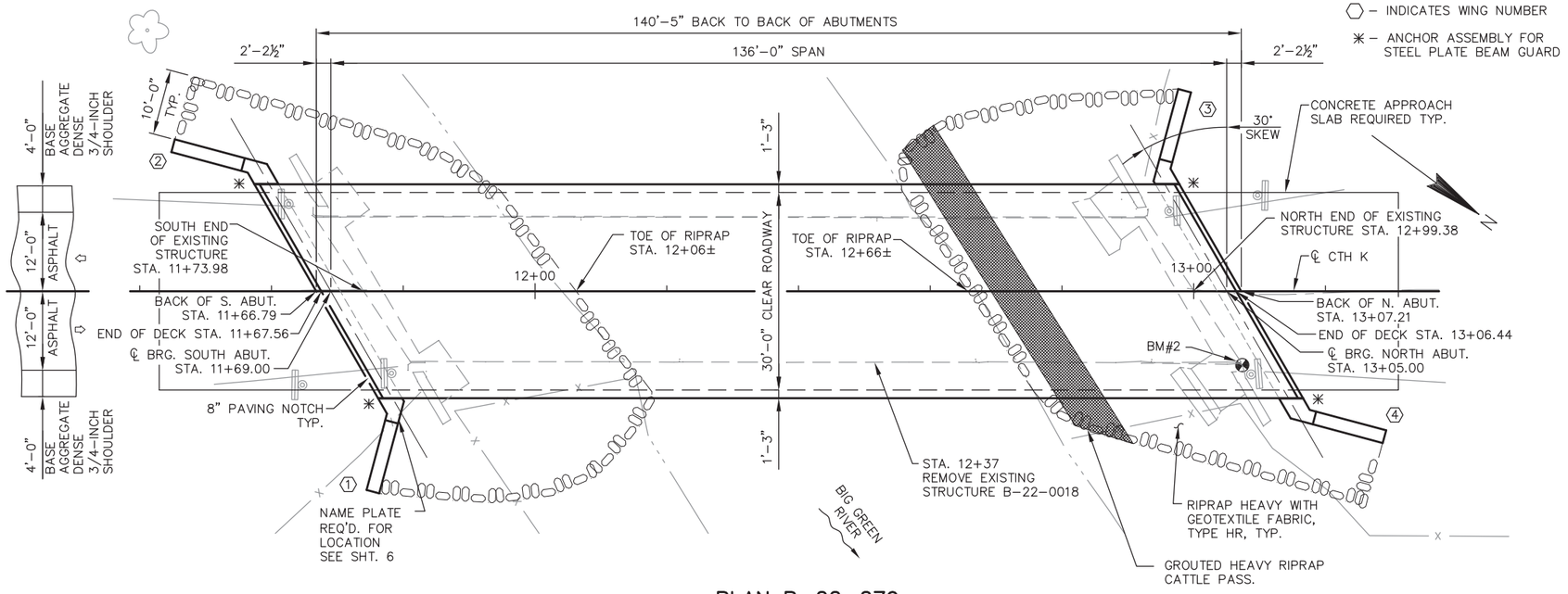
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/22/11 PLATE NO. W5-52.8

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

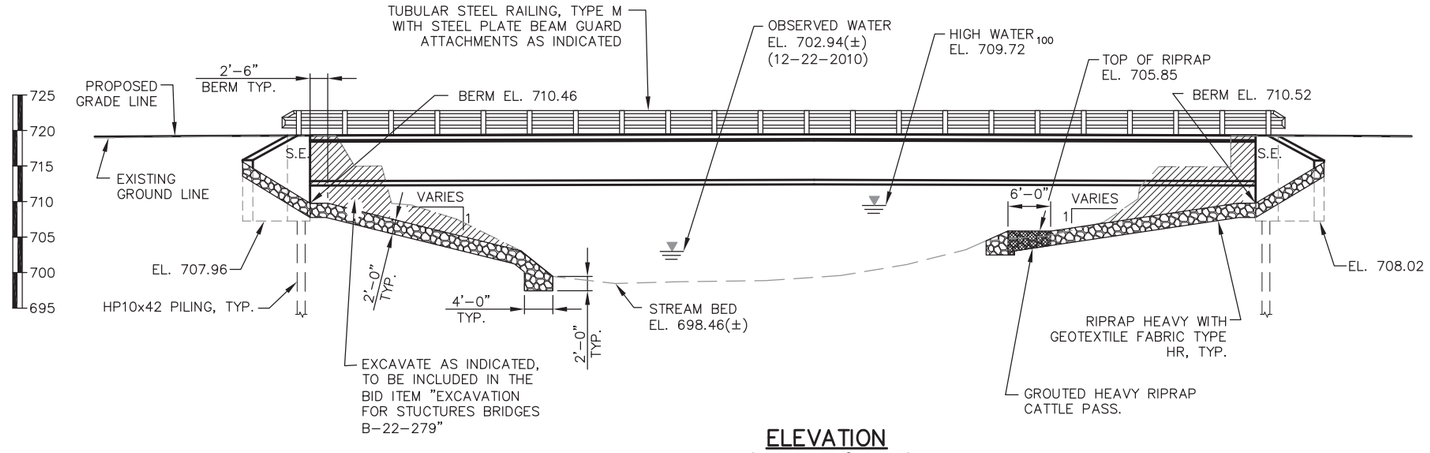
STATE PROJECT NUMBER

5801-00-75



PLAN B-22-279

(SINGLE SPAN 72W-INCH PRESTRESSED CONCRETE GIRDER STRUCTURE)



ELEVATION

(NORMAL TO ℄ CTH K)

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEVATION
1	11+40.53	SET PUNCH HOLE IN 30" CMCP TOP (PAINTED PINK), 64.69' RT.	711.72
2	13+07.35	CHISELED ½ SQUARE ON TOP OF THE NW CURB CORNER OF B-22-18 (PAINTED PINK), 11.26' RT.	721.07
3	14+50.97	SET 2-60d COMMON SPIKES IN P.P., 107.52' LT.	708.71

TIED TO HMP SURVEY STATIONS "WOODMAN C GPS" AND "MOUNT IDA W GPS" VIA RTK-GPS SURVEY FOR HORIZONTAL AND VERTICAL POSITIONS. HORIZONTAL LATITUDES AND LONGITUDES ARE CONVERTED TO GRANT COUNTY COORDINATES. ELEVATIONS ARE REFERENCED TO NAVD88 DATUM.

LIST OF DRAWINGS

DESIGN DATA

LIVE LOAD:

DESIGN LOADING	HL-93
INVENTORY RATING FACTOR	1.26
OPERATING RATING FACTOR	1.63
WISCONSIN STANDARD PERMIT VEHICLE RATING	200 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY, DECK	$f'c$ = 4,000 p.s.i.
ALL OTHER	$f'c$ = 3,500 p.s.i.
HIGH-STRENGTH BAR STEEL REINFORCEMENT	fy = 60,000 p.s.i.
72W-INCH PRESTRESSED GIRDERS CONCRETE MASONRY	fy = 8,000 p.s.i.
STRANDS – 0.6" DIA. WITH AN ULTIMATE TENSILE STRENGTH OF	fy = 270,000 p.s.i.

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP10x42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATE 50 FT PILE LENGTHS AT SOUTH ABUTMENT AND 30 FT PILE LENGTHS AT NORTH ABUTMENT.

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

TRAFFIC DATA

A.A.D.T.(2013)	210
A.A.D.T.(2033)	280
DESIGN SPEED	45 M.P.H.

HYDRAULIC DATA

Q_{100}	6,600 c.f.s.
Q_{100} (THRU BRIDGE)	6,600 c.f.s.
Q_{100} (ROAD)	N/A c.f.s.
DRAINAGE AREA	33.0 SQ. MI.
WATERWAY AREA @ Q_{100}	641 SQ. FT.
VELOCITY	10.30 f.p.s.
HIGH $WATER_{100}$ ELEVATION	709.72 ft
SCOUR CRITICAL CODE	8
Q_2	900 c.f.s.
Q_2 ELEVATION	703.00 ft

BRIDGE OFFICE CONTACT
BILL DREHER, P.E.
(608) 266-8489

CONSULTANT CONTACT
JOHN STOLZMAN, P.E.
(608) 588-7866

WISCONSIN
JOHN J. STOLZMAN
E-36988
RICHLAND CENTER, WI
PROFESSIONAL ENGINEER

8-30-2012

NO.	DATE	REVISION	BY

WESTBROOK
Associated Engineers, Inc.
619 EAST HOXIE STREET
P.O. BOX 429
SPRING GREEN, WI 53588
PHONE (608) 588-7866
FAX (608) 588-7954

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 01/08/13
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-22-279

CTH K OVER THE BIG GREEN RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
GRANT	WOODMAN

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
MIR	JAP	MIR	JJS

GENERAL PLAN

SHEET 1 OF 14

36

8

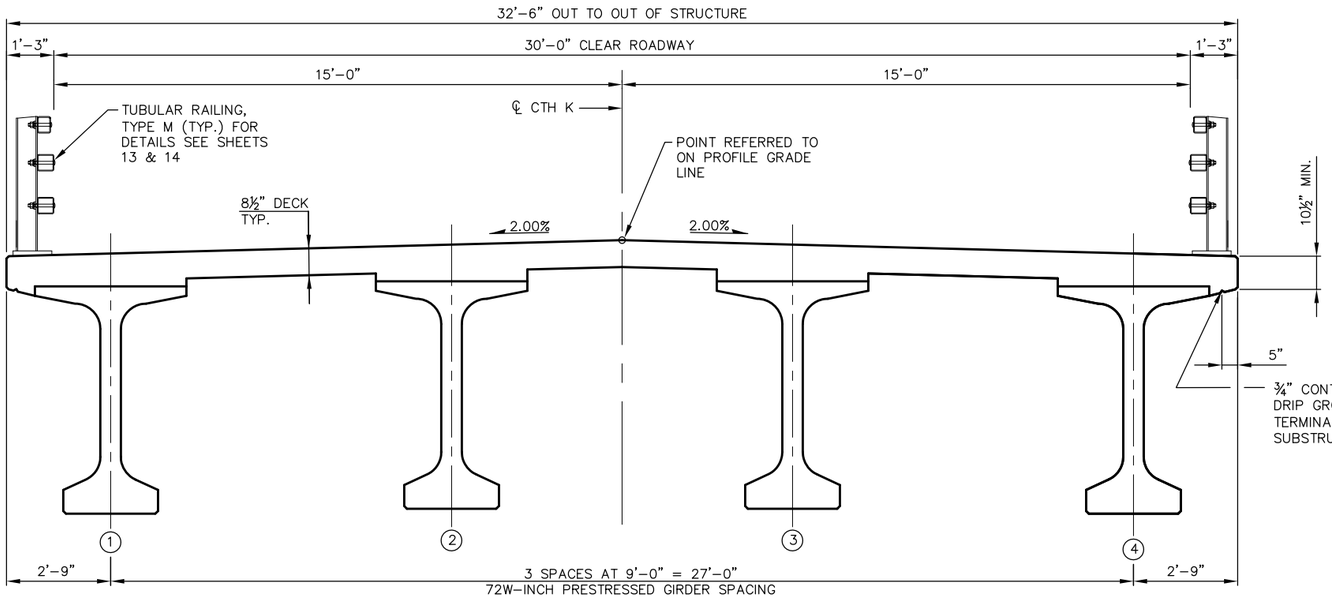
8

I.D. 5801-00-75

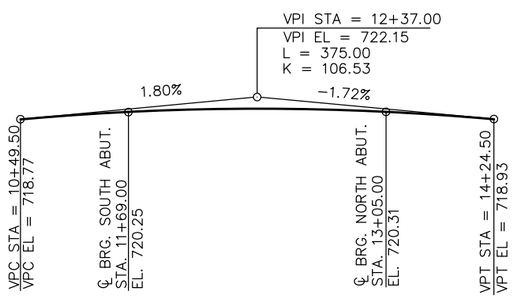
PLOT DATE: Aug 30, 2012

FILE: 01-10215_fsh.dwg
PLOT SCALE:

STATE PROJECT NUMBER
5801–00–75



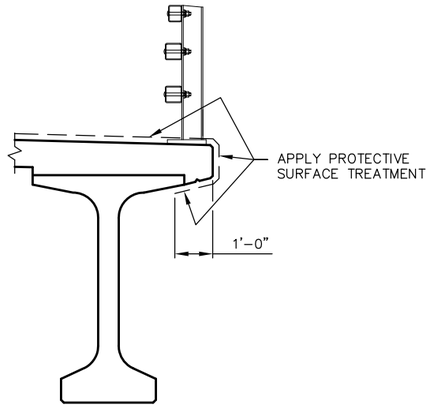
CROSS SECTION THRU ROADWAY
(LOOKING NORTH)



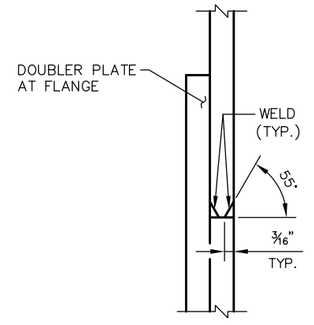
PROFILE GRADE LINE, CTH K

TOTAL ESTIMATED QUANTITIES

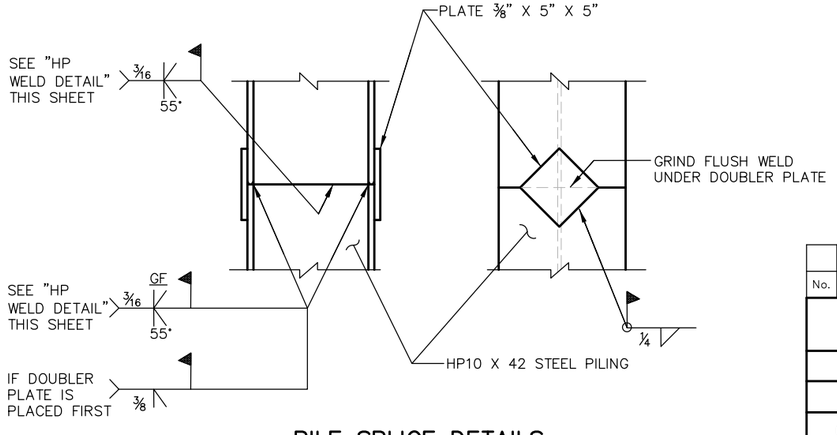
	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 12+37	LS	–––	–––	–––	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B–22–279	LS	–––	–––	–––	1
210.0100	BACKFILL STRUCTURE	CY	281	281	–––	562
502.0100	CONCRETE MASONRY BRIDGES	CY	49	49	197	295
502.3200	PROTECTIVE SURFACE TREATMENT	SY	–––	–––	558	558
503.0172	PRESTRESSED GIRDER TYPE I 72W–INCH	LF	–––	–––	548	548
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2750	2750	–––	5500
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	2085	2085	29730	33900
506.2605	BEARING PADS ELASTOMERIC NON–LAMINATED	EA	4	4	–––	8
506.4000	STEEL DIAPHRAGMS B–22–279	EA	–––	–––	6	6
550.1100	PILING STEEL HP 10–INCH X 42 LB	LF	500	300	–––	800
513.4060	RAILING TUBULAR TYPE M STRUCTURE B–22–279	LS	–––	–––	–––	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	9	–––	18
606.0300	RIPRAP HEAVY	CY	194	176	–––	370
606.0700	GROUTED RIPRAP HEAVY	CY	–––	24	–––	24
612.0406	PIPE UNDERDRAIN WRAPPED 6–INCH	LF	75	75	–––	150
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	313	322	–––	635
(NON–BID ITEM)	FILLER	SIZE	–––	–––	–––	½" & ¾"



PROTECTIVE SURFACE TREATMENT DETAIL



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR



PILE SPLICE DETAILS

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.

THE STREAM BED IN FRONT OF THE ABUTMENT SHALL BE COVERED WITH RIPRAP AS SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

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

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

THE MINIMUM CONCRETE HAUNCH SHALL BE 2" FOR DESIGN CALCULATIONS AND HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE HAUNCH DEPTH OF 3¾", WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.

THE EXISTING STRUCTURE (B–22–0018) IS A SINGLE SPAN STEEL LOW TRUSS STRUCTURE WITH AN OVERALL LENGTH OF 126.9' AND A CLEAR ROADWAY WIDTH OF 22.0' TO BE REMOVED.

No.	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B–22–279

Drawn By: CDS | Plans Checked: JJS

CROSS SECTION AND QUANTITIES

SHEET 2 OF 14

37

8

8

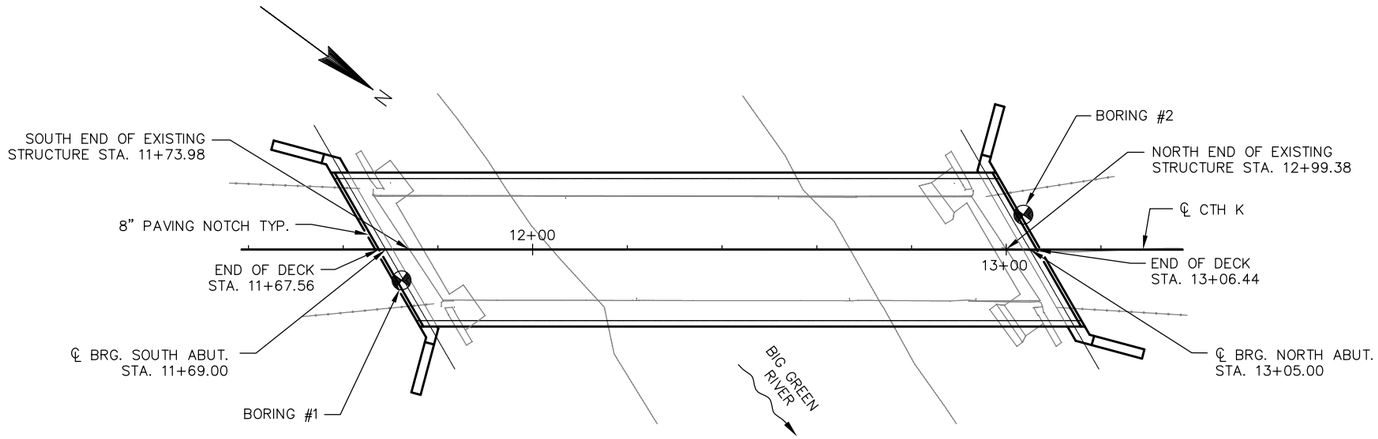
I.D. 5801–00–75

PLOT DATE: Jan 08, 2013

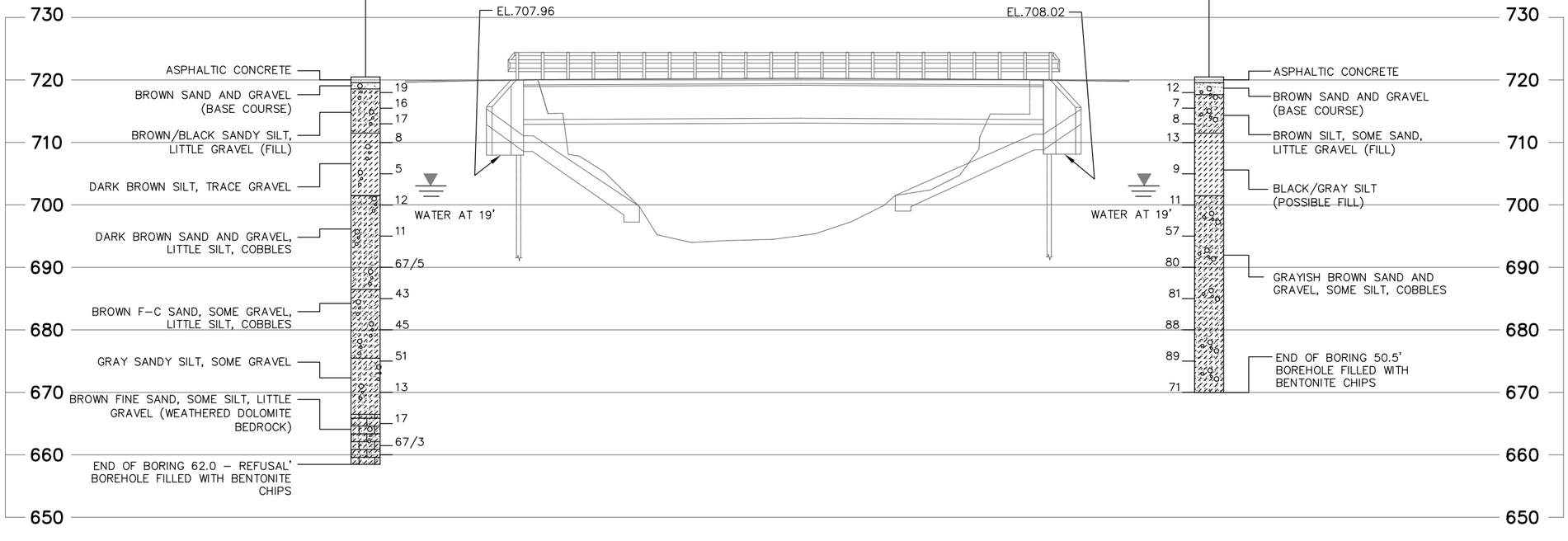
FILE: 02–10215_qnt.dwg
PLOT SCALE: 1/8" = 1'–0"

SOIL BORINGS
BY: NUMMELIN TESTING SERVICES, INC.
STEVENS POINT/WAUNAKEE, WI
ON: APRIL 15, 2011

SUBSURFACE INVESTIGATION REPORT
BY: NUMMELIN TESTING SERVICES, INC.
STEVENS POINT/WAUNAKEE, WI
ON: APRIL 12, 2011



PLAN B-22-279



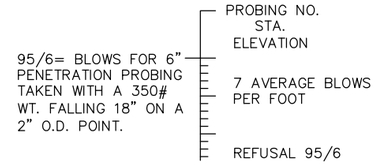
STATE PROJECT NUMBER

5801-00-75

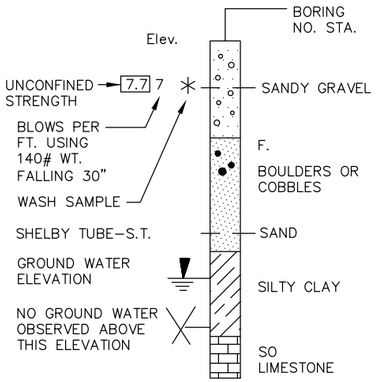
ABBREVIATIONS
F-FINE M-MEDIUM C-COARSE
WS - WEATHERED SO-SOUND

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 THE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

No.	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-22-279

Drawn By RBV | Plans Checked JJS

SUBSURFACE EXPLORATION

SHEET 3 OF 14

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8

8

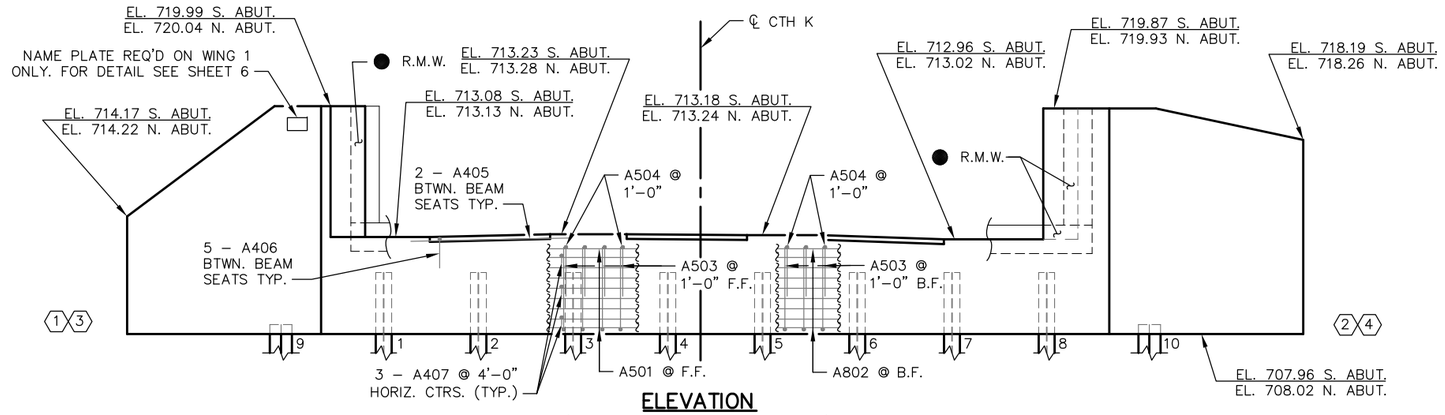
I.D. 5801-00-75

PLOT DATE: Aug 30, 2012

FILE: 03-10215_bor.dwg
PLOT SCALE: 1/8" = 1'-0"

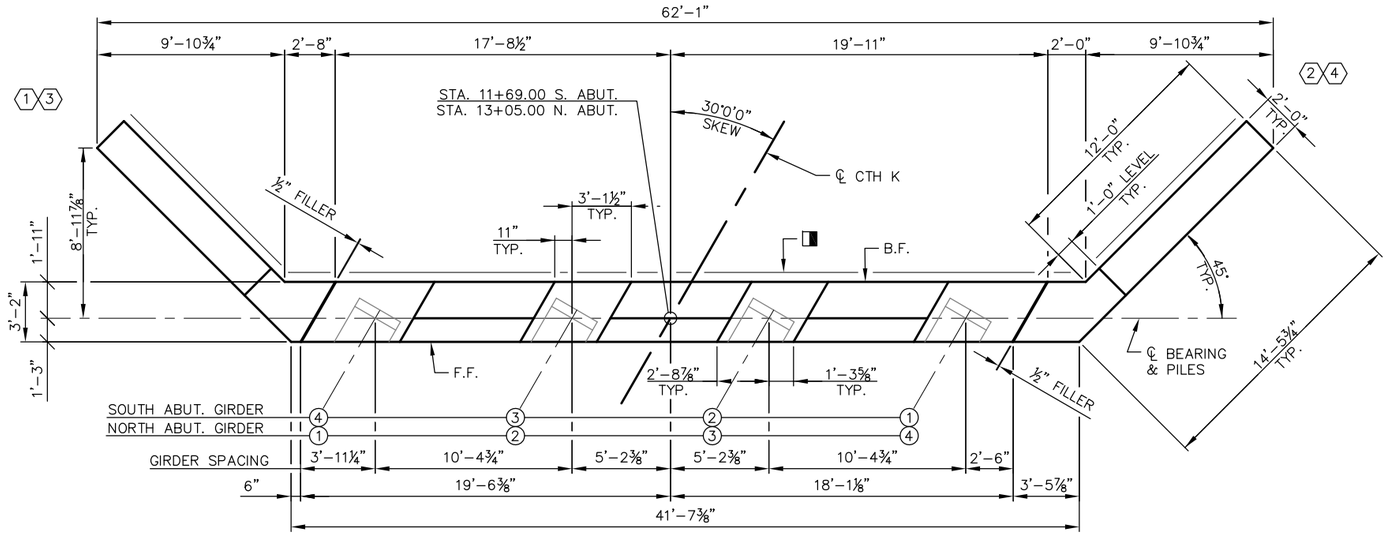
STATE PROJECT NUMBER

5801-00-75

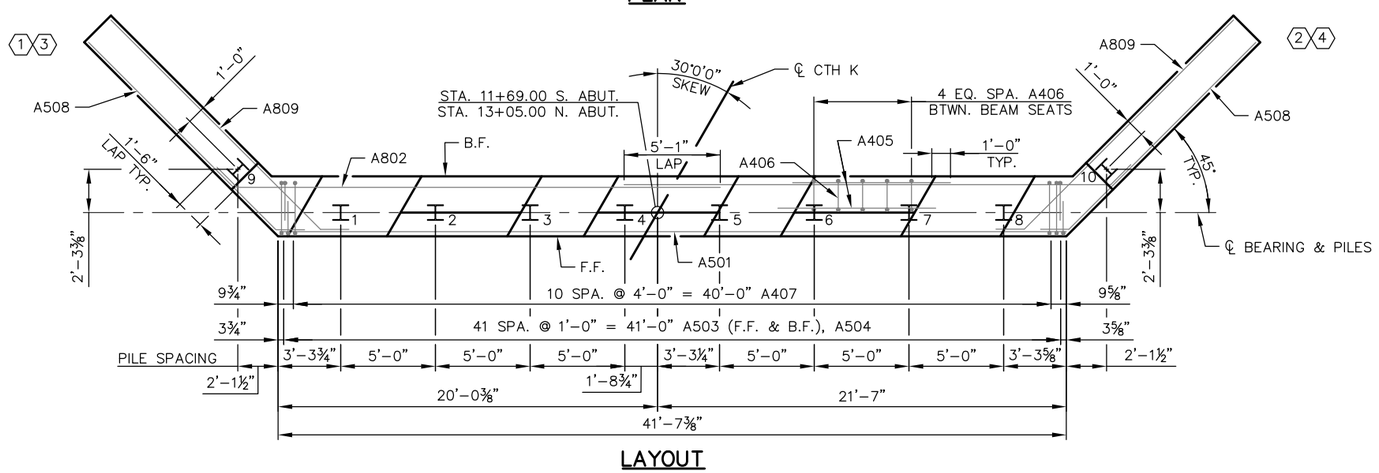


ELEVATION

(SOUTH ABUTMENT LOOKING SOUTH)
(NORTH ABUTMENT LOOKING NORTH)



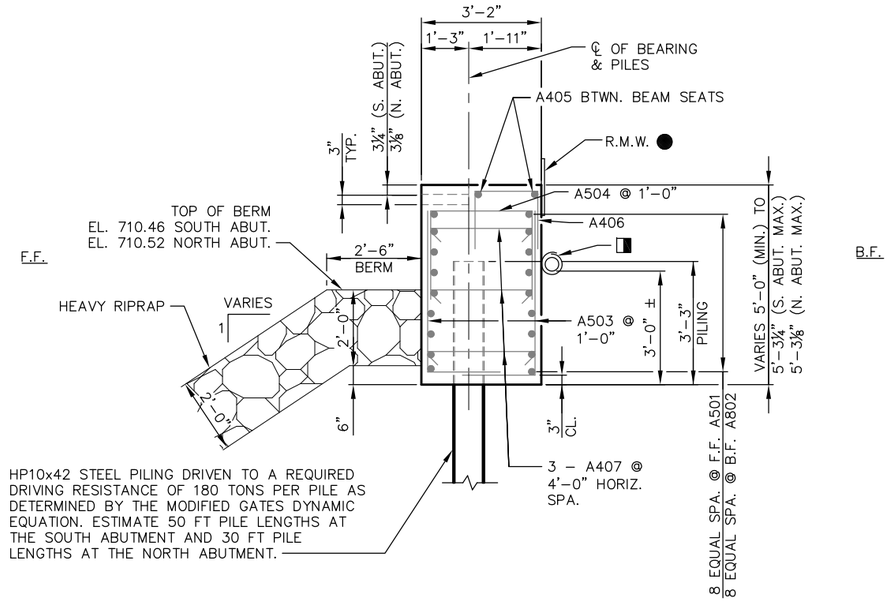
PLAN



LAYOUT

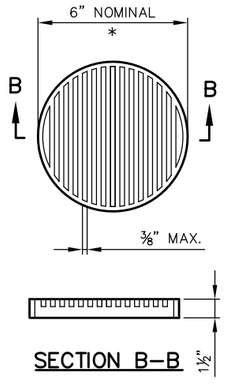
- ● 18" RUBBERIZED MEMBRANE WATERPROOFING (R.M.W.). SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE
- ○ INDICATES GIRDER NUMBER
- ⬡ WING NUMBER
- ◨ PIPE UNDERDRAIN WRAPPED (6–INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET. RODENT SHIELD IS INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6–INCH."

F.F. – FRONT FACE
B.F. – BACK FACE



HP10x42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATE 50 FT PILE LENGTHS AT THE SOUTH ABUTMENT AND 30 FT PILE LENGTHS AT THE NORTH ABUTMENT.

SECTION THRU ABUTMENT BODY



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

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

THE RODENT SCREEN 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 SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1–INCH SHEET METAL SCREWS.

RODENT SCREEN DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B–22–279

DRAWN BY CDS | PLANS CK'D JJS

ABUTMENTS

SHEET 4 OF 14

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8

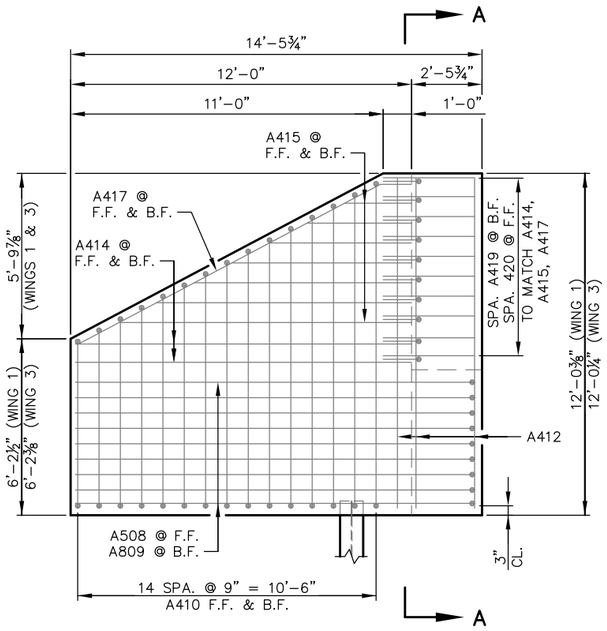
8

I.D. 5801–00–75

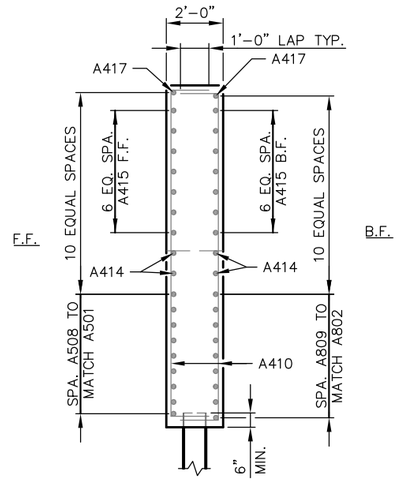
PLOT DATE: Aug 30, 2012

FILE: 04–06–10215_abut.dwg
PLOT SCALE:

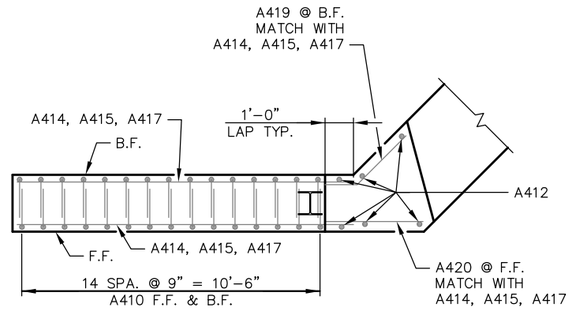
STATE PROJECT NUMBER
5801-00-75



ELEVATION – WINGS 1 & 3
(FRONT FACE)

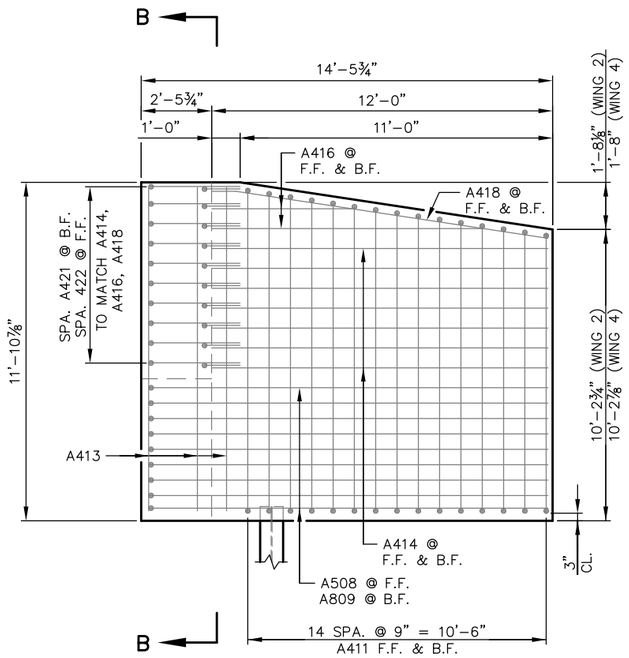


SECTION A–A

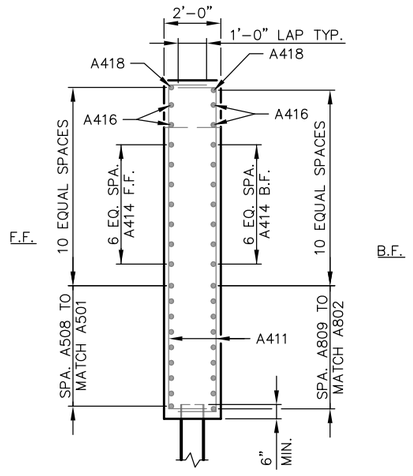


PLAN – WINGS 1 & 3

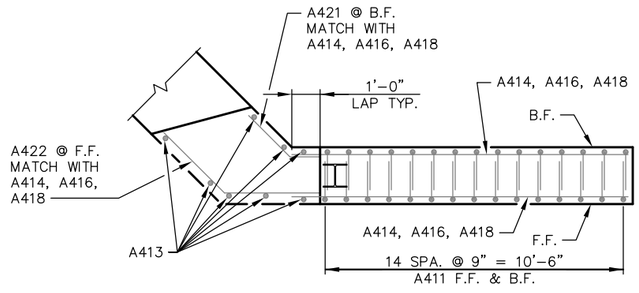
F.F = FRONT FACE
B.F. = BACK FACE



ELEVATION – WINGS 2 & 4
(FRONT FACE)



SECTION B–B



PLAN – WINGS 2 & 4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-22-279

DRAWN BY	CDS	PLANS CK'D	JJS

WINGS

SHEET 5 OF 14

40

8

8

I.D. 5801-00-75

PLOT DATE: Aug 30, 2012

FILE: 04-06-10215_abut.dwg
PLOT SCALE:

STATE PROJECT NUMBER
5801–00–75

THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

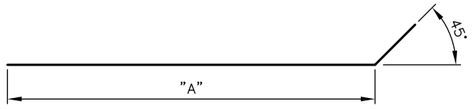
BILL OF BARS
BOTH ABUTMENTS

COATED = 4,170 LBS.
UNCOATED = 5,500 LBS.

MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION	
A501		18	41–5			BODY – F.F.	HORIZ.
A802		36	27–7	X		BODY – B.F.	HORIZ.
A503		168	6–3	X		BODY – F.F. & B.F.	VERT.
A504		84	7–5	X		BODY – TOP	VERT.
A405		12	8–4			BODY – TOP	HORIZ.
A406		30	4–8	X		BODY – TOP	VERT.
A407		66	3–7	X		BODY – F.F. & B.F.	HORIZ.
A508	36		15–8	X		WINGS 1–4 – F.F.	HORIZ.
A809	36		17–1	X		WINGS 1–4 – B.F.	HORIZ.
⚠ A410	60		11–3	X	X	WINGS 1 & 3 – F.F. & B.F.	VERT.
⚠ A411	60		13–3	X	X	WINGS 2 & 4 – F.F. & B.F.	VERT.
A412	12		11–7			WINGS 1 & 3 – F.F. & B.F.	VERT.
A413	16		11–5			WINGS 2 & 4 – F.F. & B.F.	VERT.
A414	36		11–10			WINGS 1–4 – F.F. & B.F.	HORIZ.
⚠ A415	28		6–7		X	WINGS 1 & 3 – F.F. & B.F.	HORIZ.
⚠ A416	8		8–4		X	WINGS 2 & 4 – F.F. & B.F.	HORIZ.
A417	4		13–4	X		WINGS 1 & 3 – F.F. & B.F.	HORIZ.
A418	4		12–1	X		WINGS 2 & 4 – F.F. & B.F.	HORIZ.
A419	20		3–5	X		WINGS 1 & 3 – B.F.	HORIZ.
A420	20		3–7			WINGS 1 & 3 – F.F.	HORIZ.
A421	20		3–2	X		WINGS 2 & 4 – B.F.	HORIZ.
A422	20		6–2	X		WINGS 2 & 4 – F.F.	HORIZ.

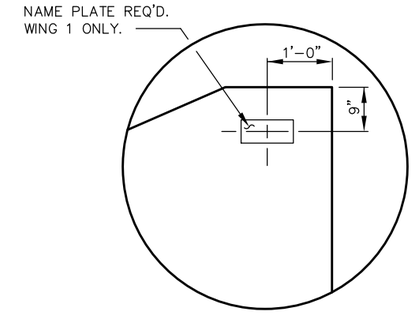
⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

F.F = FRONT FACE
B.F. = BACK FACE

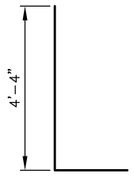


A802, A508, A809

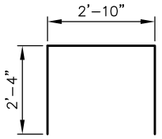
MARK	"A"
A802	26–1
A508	14–2
A809	15–10



NAME PLATE DETAIL



A503



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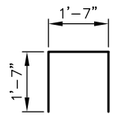
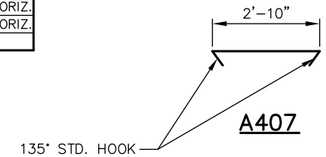


A406



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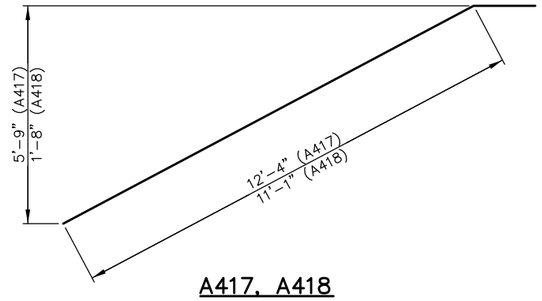
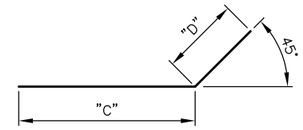


A417, A418

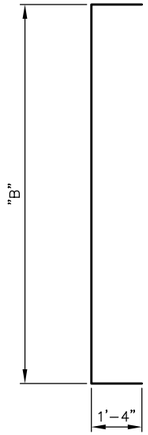


A419, A421, A422

MARK	"C"	"D"
A419	2–5	1–0
A421	2–2	1–0
A422	2–10	3–4

BAR SERIES TABLE

MARK	NUMBER	LENGTH
A410	4 SERIES OF 15	8–5 TO 14–0
A411	4 SERIES OF 15	12–5 TO 14–0
A415	4 SERIES OF 7	2–7 TO 10–6
A416	4 SERIES OF 2	6–0 TO 10–7



A410, A411

MARK	"B"
A410	5–10
	6–3
	6–7
	7–0
	7–5
	7–10
	8–2
	8–7
	9–0
	9–5
	9–9
	10–2
	10–7
	11–0
	11–5

MARK	"B"
A411	9–10
	9–11
	10–1
	10–2
	10–3
	10–5
	10–6
	10–7
	10–9
	10–10
	11–0
	11–1
	11–2
	11–4
	11–5

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B–22–279

DRAWN BY CDS | PLANS CK'D JJS

ABUTMENT DETAILS

SHEET 6 OF 14

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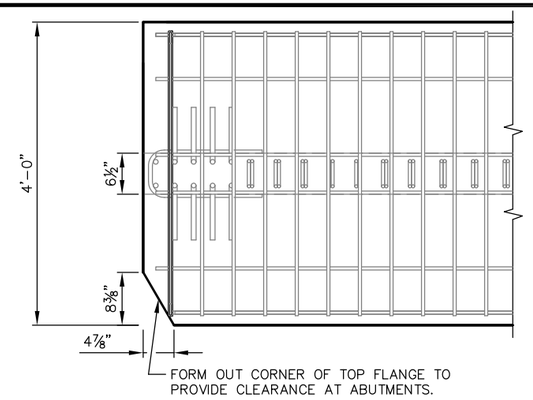
I.D. 5801–00–75

PLOT DATE: Aug 30, 2012

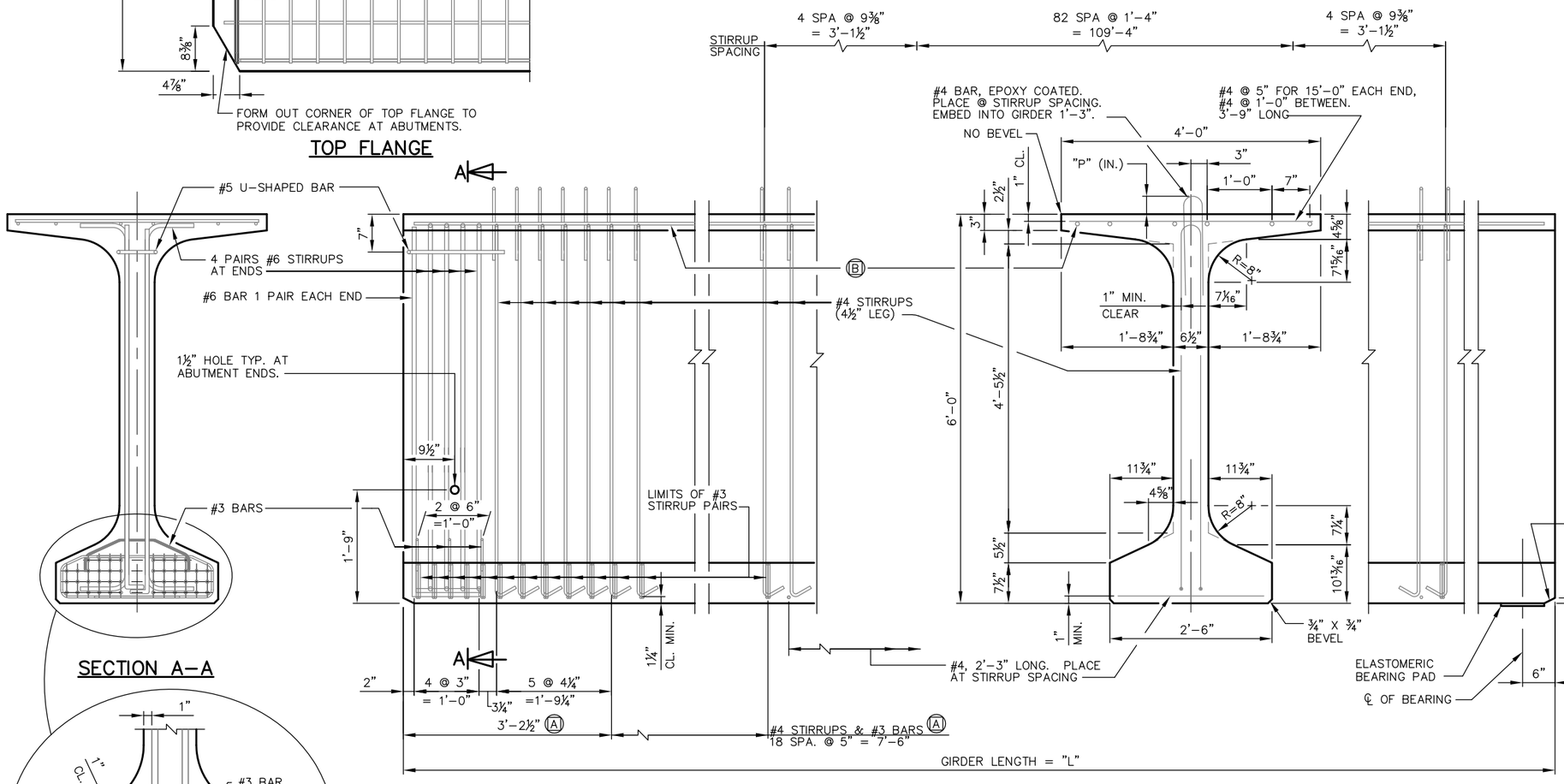
FILE: 04–06–10215_abut.dwg
PLOT SCALE:

STATE PROJECT NUMBER

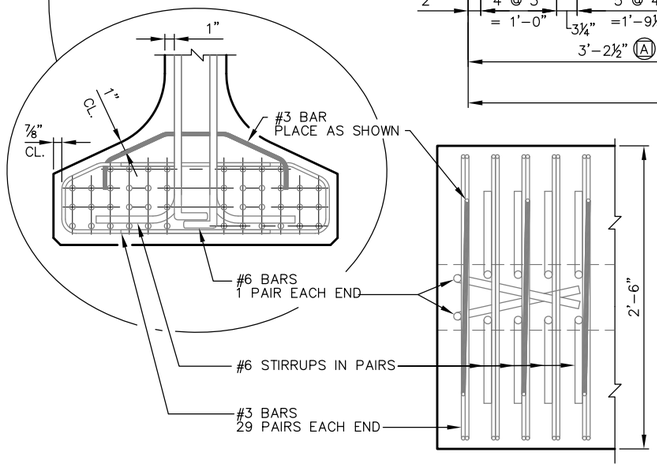
5801-00-75



TOP FLANGE



SECTION A-A



BOTTOM FLANGE

SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

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

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

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

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

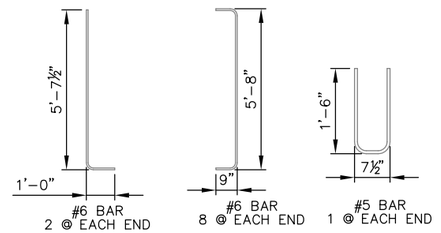
SPACING SHOW FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, ONE OPTION IS AVAILABLE;

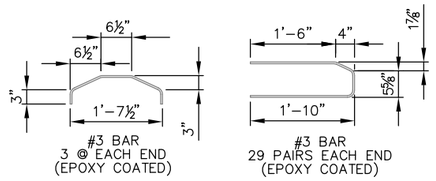
USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT CHIEF, (608) 266-5161.

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

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





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

GIRDER DATA

GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" 1st ⅓ OF GIRDER	"P" MID ⅓ OF GIRDER	"P" END ⅓ OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *
1&4	137'-0"	0.57	1.08	1.47	1.73	1.81	1.73	1.47	1.08	0.57	8,000	8.0	8.5	8.0	0.6	42	6,800	67	20.5	23.5	5	---	---
2&3	137'-0"	0.68	1.29	1.76	2.06	2.17	2.06	1.76	1.29	0.68	8,000	8.0	8.5	8.0	0.6	42	6,800	67	20.5	23.5	5	---	---

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-22-279

DRAWN BY MIR | PLANS CK'D JJS

72W-INCH PRESTRESSED GIRDER DETAILS

SHEET 7 OF 14

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I.D. 5801-00-75

PLOT DATE: Aug 30, 2012

FILE: 07-08-10215_psg72w.dwg
PLOT SCALE:

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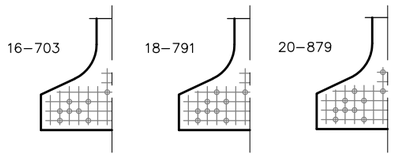
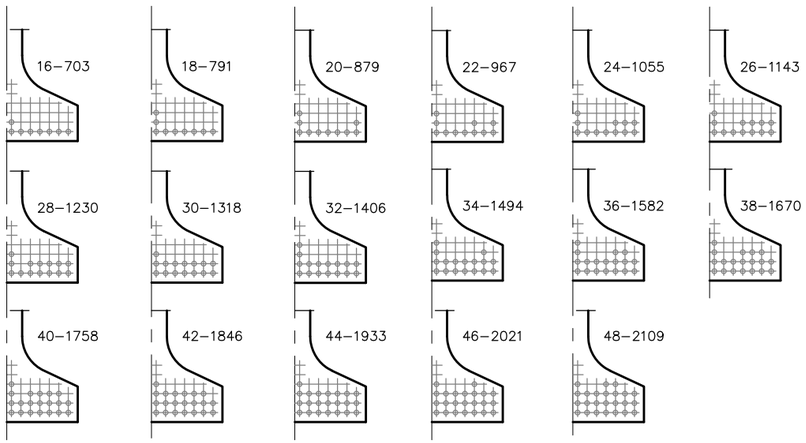


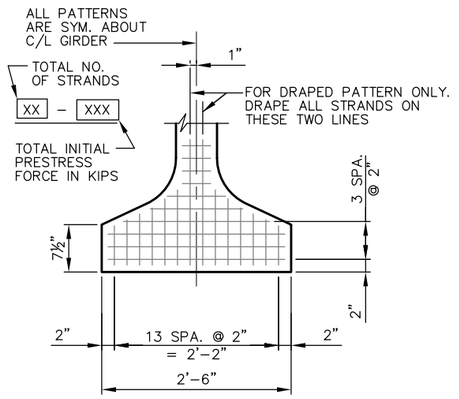
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6" ø STRANDS

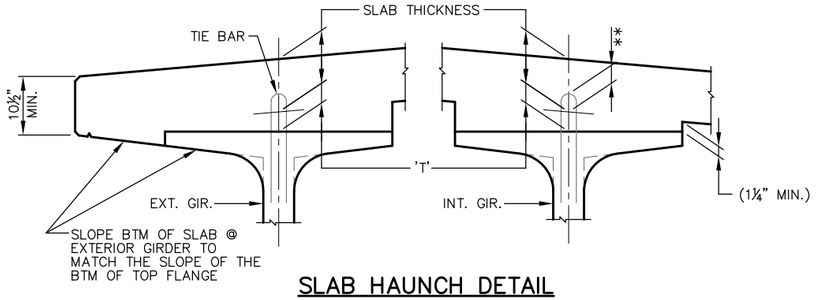


ARRANGEMENT AT C/L SPAN – FOR GIRDERS WITH DRAPED STRANDS

0.6" ø STRANDS



TYP. STRAND PATTERN



SLAB HAUNCH DETAIL

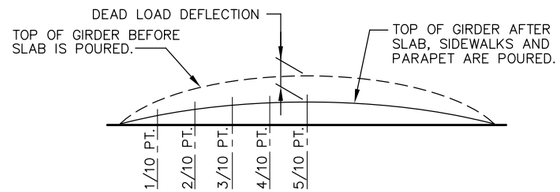
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

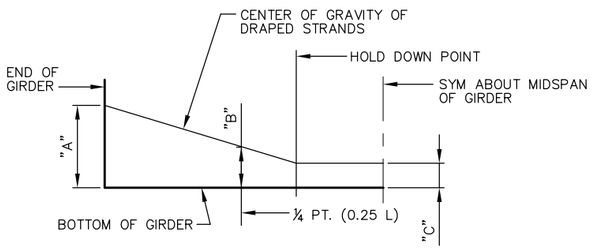
TO DETERMINE 'T', ELEV. OF TOP OF GIRDERS AT C/L OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

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

NOTE: AN AVERAGE HAUNCH ('T') OF 3¾" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

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

SPAN	CAMBER (IN.)*
1	3.94

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B–22–279

DRAWN BY MIR | PLANS CK'D JJS

72W–INCH PRESTRESSED GIRDER DETAILS

SHEET 8 OF 14

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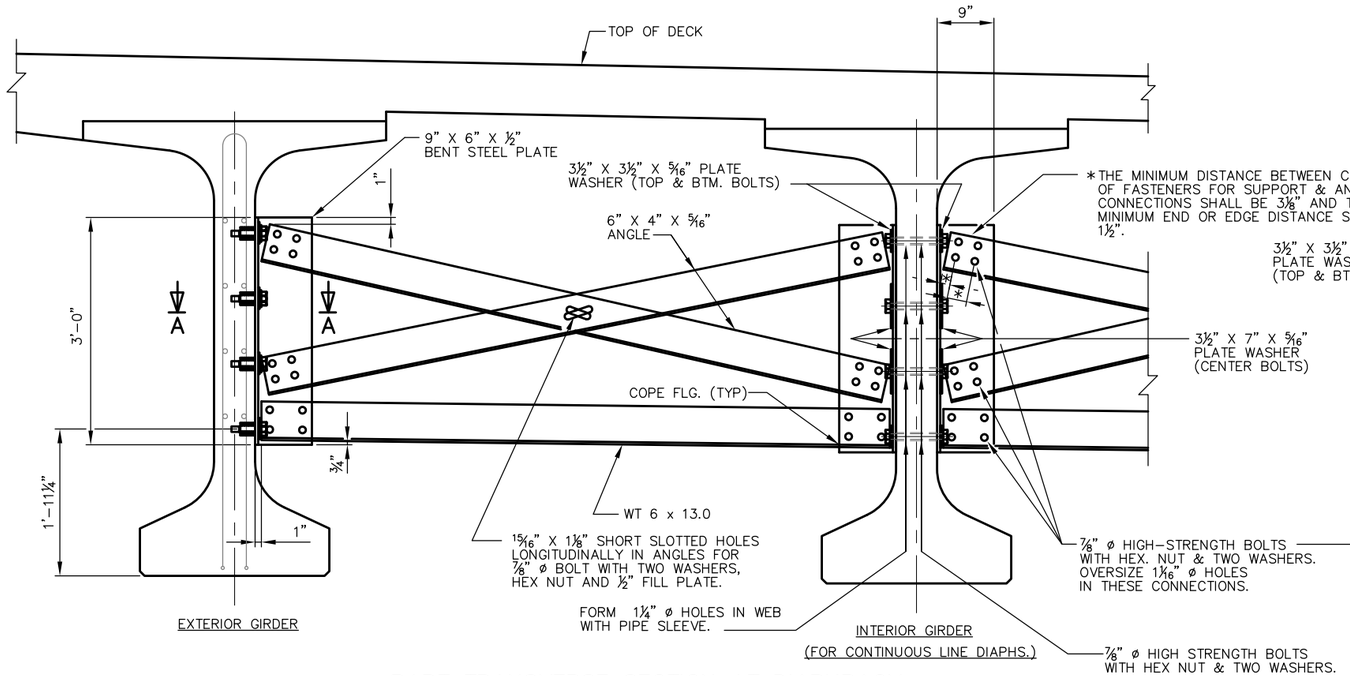
FILE: 07–08–10215_psg72w.dwg
PLOT SCALE:

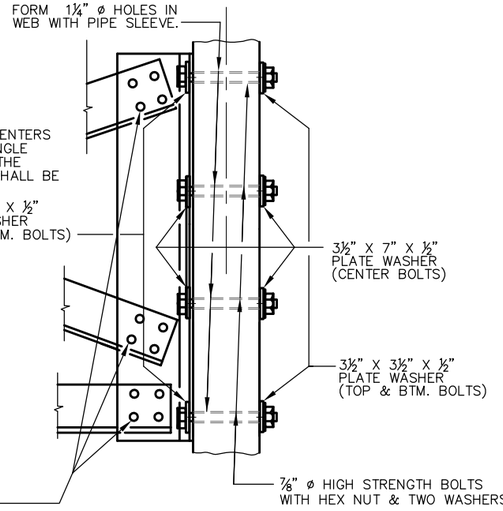
I.D. 5801–00–75 PLOT DATE: Aug 30, 2012

STATE PROJECT NUMBER

5801-00-75



PART TRANSVERSE SECTION AT DIAPHRAGM



SECTION AT INTERIOR GIRDERS (FOR STAGGERED DIAPHRAGMS)

NOTES

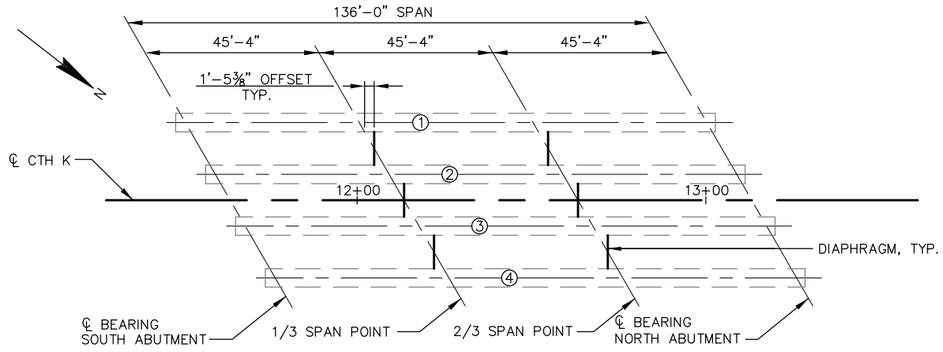
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-22-279", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

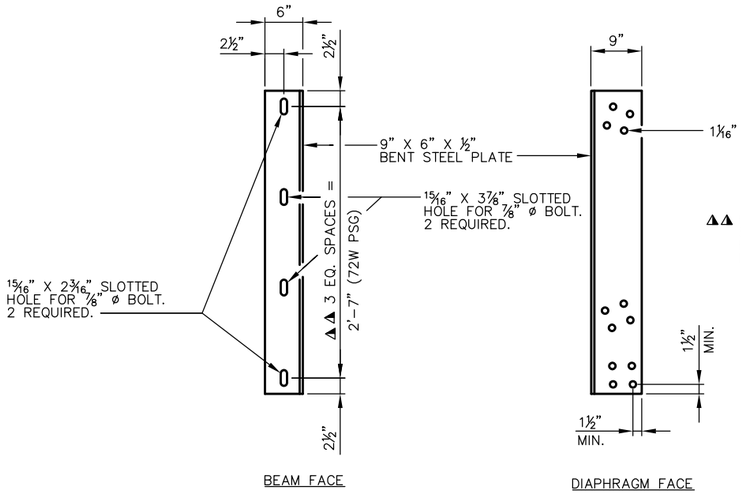
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

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

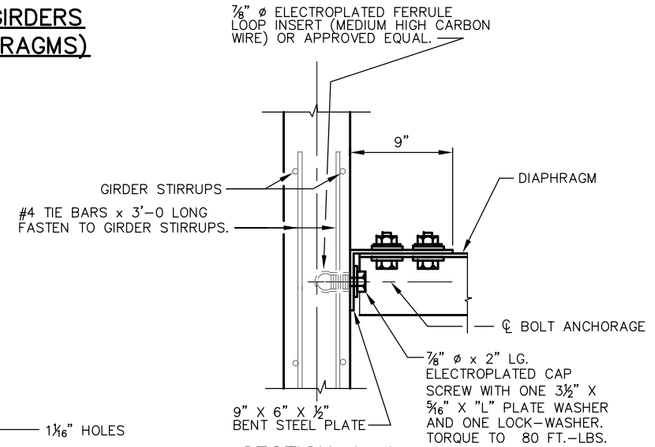
PLACE AT ⅓ AND ⅔ POINTS.



INTERMEDIATE STEEL DIAPHRAGM LAYOUT



DIAPHRAGM SUPPORT



SECTION A-A

(FOR EXTERIOR ATTACHMENT)

▲▲ BOLT HOLES SHALL BE SPACED SO AS TO MISS PRESTRESSED STRANDS IN CONCRETE BEAMS.

"L" = 3½"; TOP AND BOTTOM BOLTS
"L" = 7"; CENTER BOLTS

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-22-279

DRAWN BY MIR | PLANS CK'D JJS

INTERMEDIATE STEEL DIAPHRAGMS

SHEET 9 OF 14

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I.D. 5801-00-75

PLOT DATE: Aug 30, 2012

FILE: 09-10215_dia.dwg
PLOT SCALE:

8

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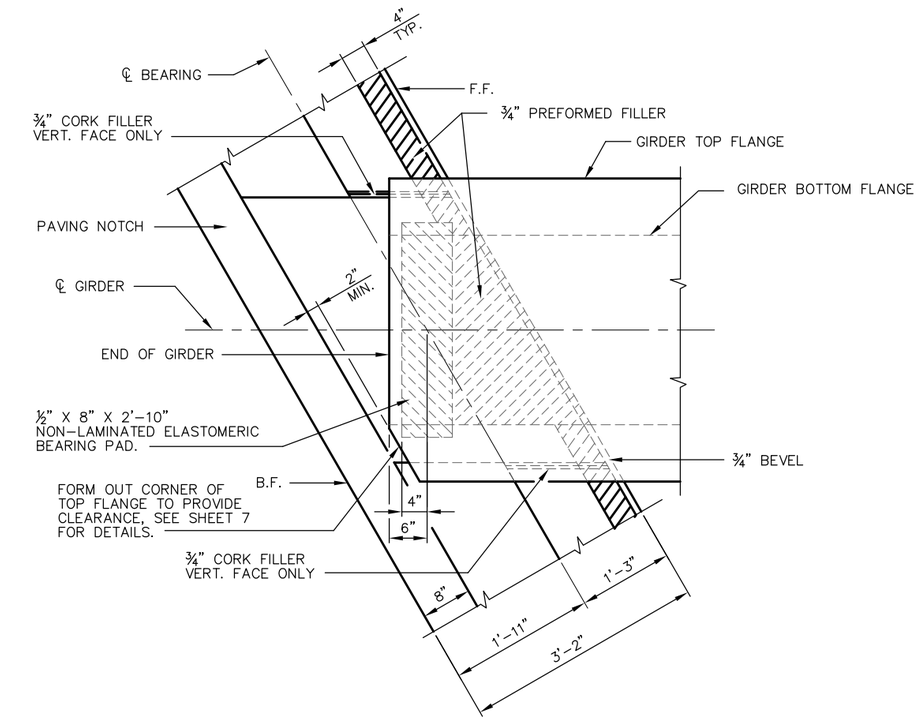
F.F. = FRONT FACE
B.F. = BACK FACE



BEARING PAD DETAILS

TOP OF DECK ELEVATIONS

SPAN 1											
	℄ S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ N. ABUT.
W. DECK EDGE	719.87	719.96	720.04	720.10	720.15	720.17	720.18	720.17	720.15	720.10	720.04
GIRDER 1	719.93	720.02	720.10	720.16	720.20	720.22	720.23	720.22	720.19	720.15	720.09
GIRDER 2	720.15	720.23	720.30	720.36	720.39	720.41	720.41	720.39	720.36	720.31	720.24
GIRDER 3	720.18	720.26	720.33	720.37	720.40	720.41	720.40	720.38	720.34	720.28	720.21
GIRDER 4	720.03	720.11	720.16	720.20	720.23	720.23	720.22	720.19	720.14	720.28	719.99
E. DECK EDGE	719.99	720.07	720.12	720.16	720.18	720.18	720.17	720.13	720.08	720.02	719.93

8

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-22-279

DRAWN BY MIR | PLANS CK'D JJS

BEAM SEAT DETAIL

SHEET 10 OF 14

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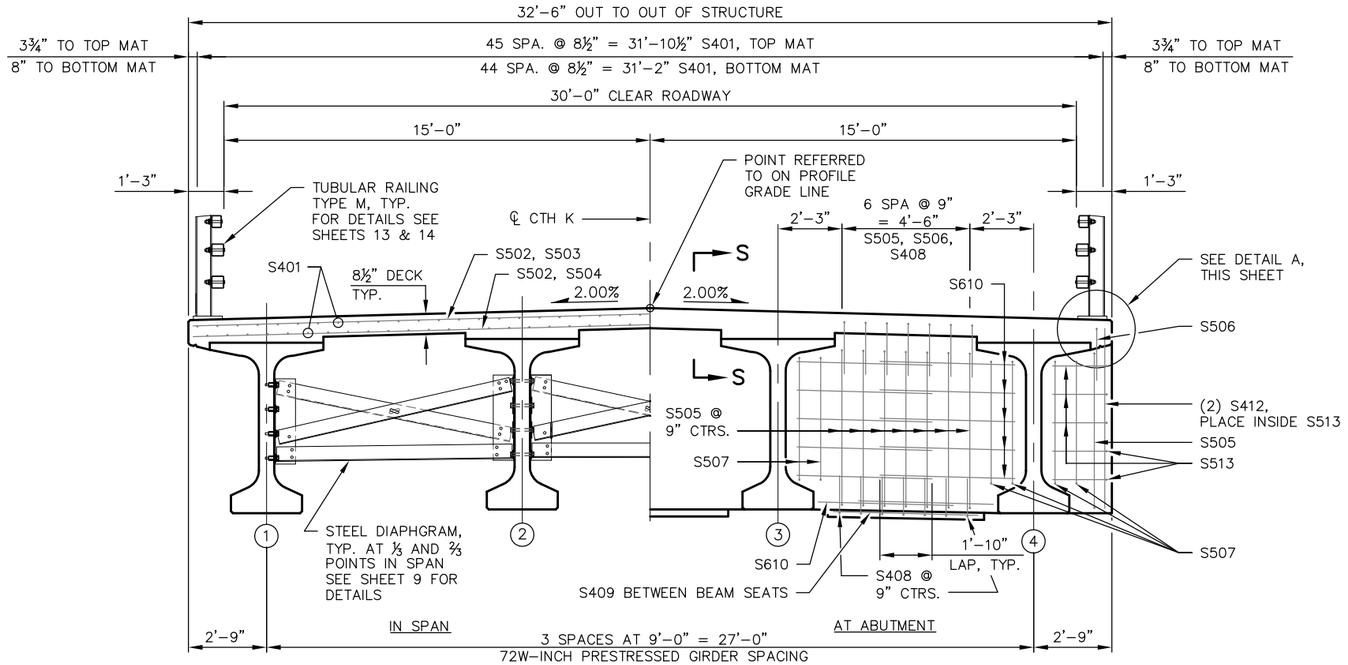
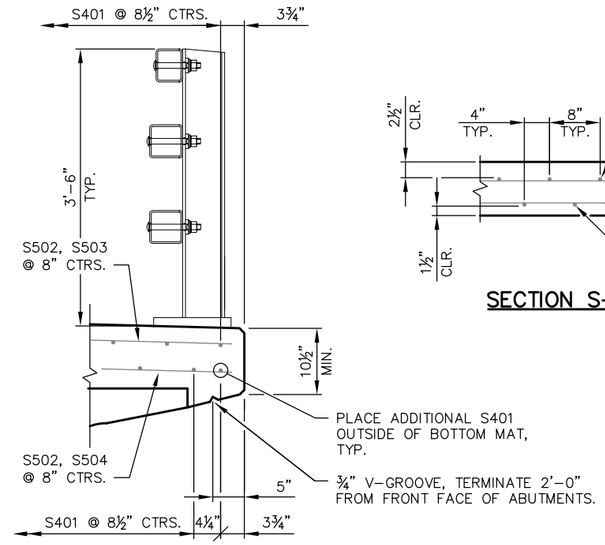
FILE: 10-10215_seat.dwg
PLOT SCALE:

STATE PROJECT NUMBER
5801-00-75

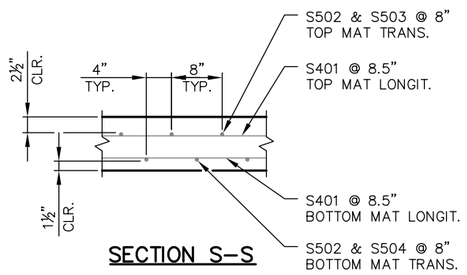


CROSS-SECTION THRU ROADWAY

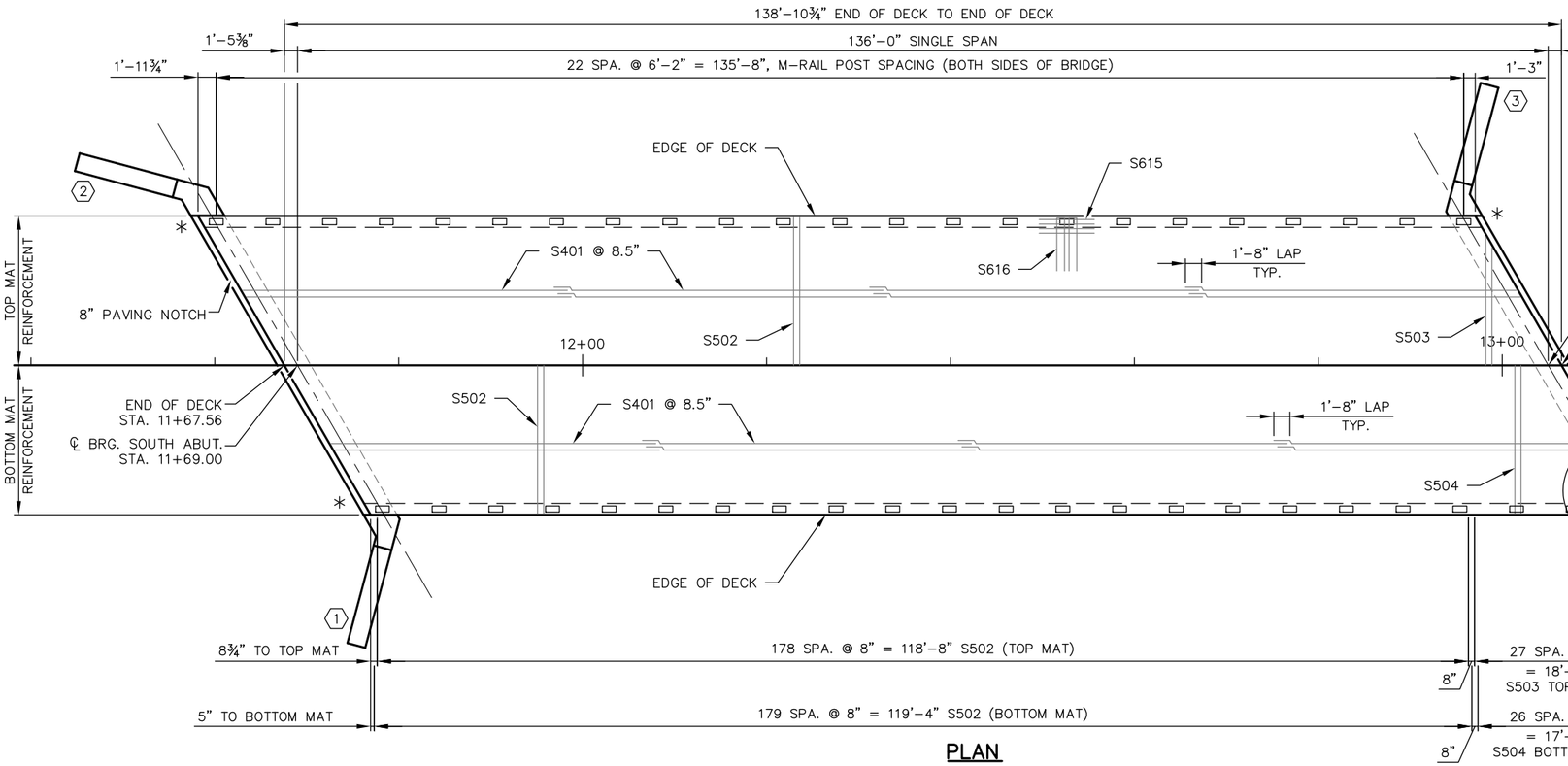
(LOOKING NORTH)



DETAIL A



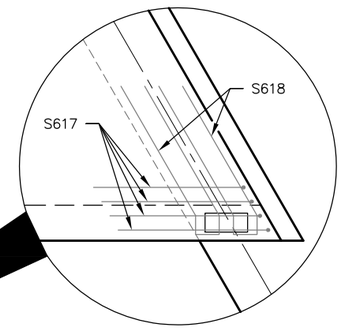
SECTION S-S



PLAN

⬡ INDICATES WING NUMBER

* ANCHOR ASSEMBLY FOR STEEL PLATE BEAM GUARD



CORNER DETAIL

RAIL POST ANCHORAGE
WINGS 2 & 4

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STRUCTURES DESIGN SECTION

STRUCTURE B-22-279

DRAWN BY MIR | PLANS CK'D JJS

SUPERSTRUCTURE

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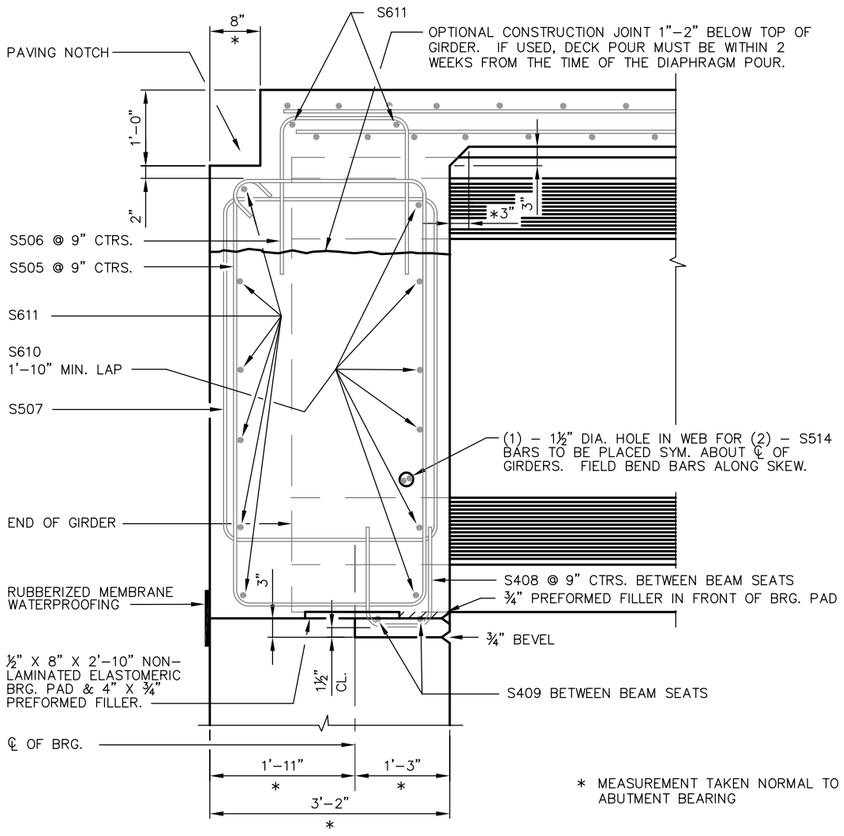
I.D. 5801-00-75

PLOT DATE: Aug 30, 2012

FILE: 11-10215_ss.dwg
PLOT SCALE: None



* MEASUREMENT TAKEN NORMAL TO ℄ ABUTMENT BEARING

PARTIAL LONGITUDINAL SECTION

THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

BILL OF BARS SUPERSTRUCTURE

COATED = 29,730 LBS.

	MARK	NUMBER COATED	NUMBER UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION	
	S401	372		36–0			DECK – TOP AND BOTTOM	LONGIT.
	S502	359		32–2			DECK – TOP AND BOTTOM	TRANS.
⚠	S503	56		16–6		X	DECK – TOP	TRANS.
⚠	S504	54		16–6		X	DECK – BOTTOM	TRANS.
	S505	46		18–8	X		ABUTMENT DIAPHRAGMS	VERT.
	S506	46		6–4	X		ABUTMENT DIAPHRAGMS	VERT.
	S507	32		16–0	X		ABUTMENT DIAPHRAGMS	VERT.
	S408	42		3–7	X		ABUTMENT DIAPHRAGMS	VERT.
	S409	12		6–0			ABUTMENT DIAPHRAGMS	HORIZ.
	S610	72		4–9			ABUTMENT DIAPHRAGMS	HORIZ.
	S611	16		37–1			ABUTMENT DIAPHRAGMS	HORIZ.
	S412	8		6–4			ABUTMENT DIAPHRAGMS – END	VERT.
	S513	20		7–3	X		ABUTMENT DIAPHRAGMS – END	HORIZ.
	S514	8		6–0			ABUTMENT DIAPHRAGMS	HORIZ.
*	S615	176		6–0			DECK AT RAIL POST	LONGIT.
*	S616	88		12–0	X		DECK AT RAIL POST	TRANS.
*	S617	8		6–0	X		DECK AT RAIL POST – CORNER 2 & 4	LONGIT.
*	S618	4		12–0	X		DECK AT RAIL POST – CORNER 2 & 4	TRANS.

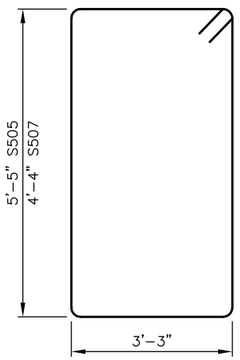
* SEE SHEETS 11 AND 13 FOR PLACEMENT

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

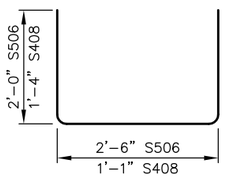
BAR SERIES TABLE

MARK	NO. REQ'D	LENGTH
S503	2 SERIES OF 28	32–1 TO 0–11
S504	2 SERIES OF 27	31–6 TO 1–6

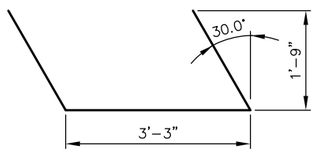
BUNDLE AND TAG EACH SERIES SEPERATELY.



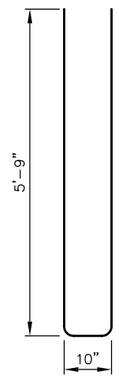
S505, S507



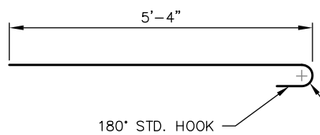
S506, S408



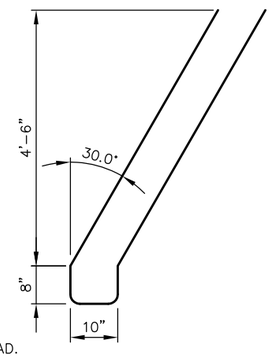
S513



S616



S617



S618

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B–22–279

DRAWN BY MIR | PLANS CK'D JJS

SUPERSTRUCTURE DETAILS

SHEET 12 OF 14

47

STATE PROJECT NUMBER

5801–00–75

8

8

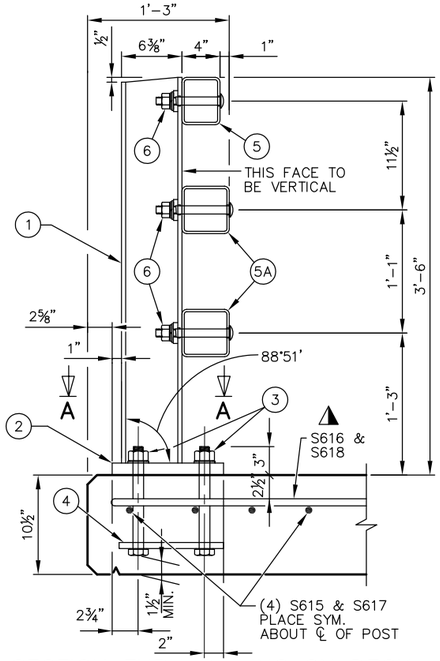
FILE: 12–10215_ss_details.dwg
PLOT SCALE: 3/32"=1'–0"

I.D. 5801–00–75

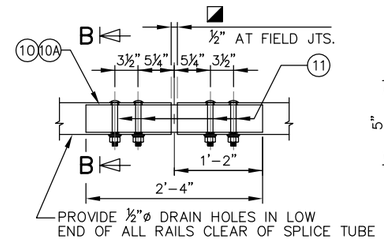
PLOT DATE: Aug 30, 2012

STATE PROJECT NUMBER

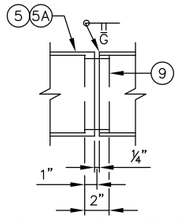
5801-00-75



SECTION THRU RAILING ON DECK

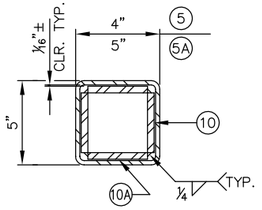


FIELD ERECTION JOINT DETAIL

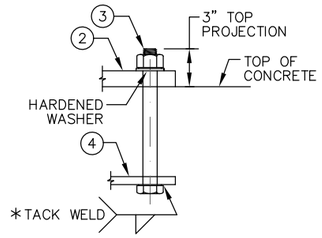


SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

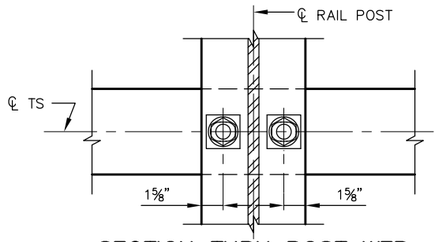


SECTION B-B

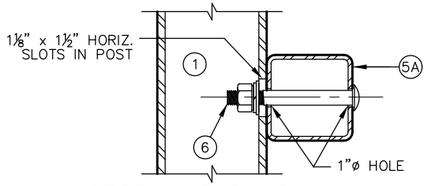


ANCHOR BOLTS

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



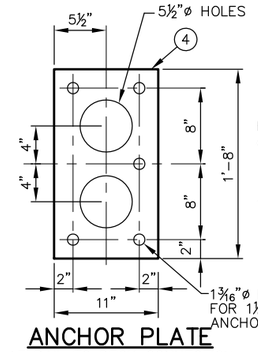
SECTION THRU POST WEB



SECTION THRU RAIL

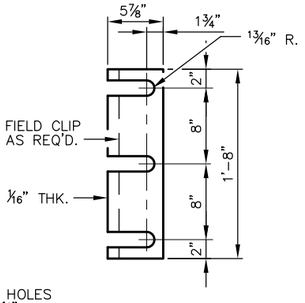
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

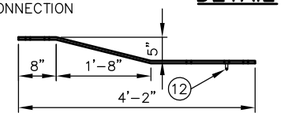


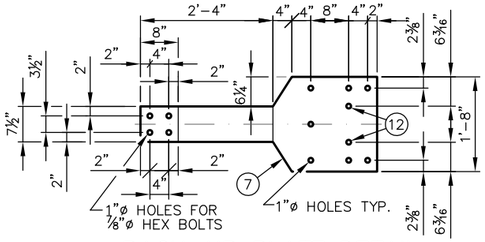
ANCHOR PLATE

AT RAIL TO DECK CONNECTION



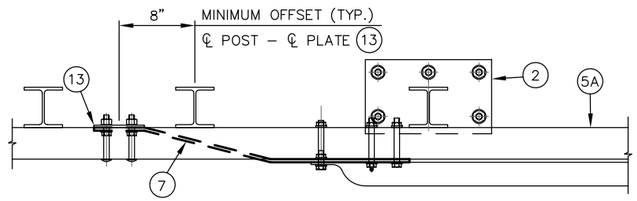
POST SHIM DETAIL





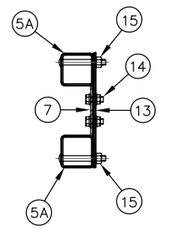
BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENTS

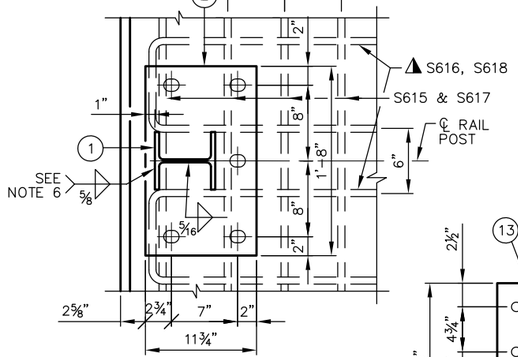


TOP VIEW AT END POST

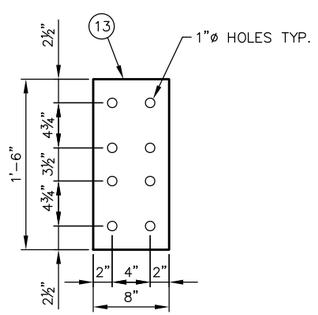
(THRIE BEAM RAIL ATTACHMENT)



SECTION C-C

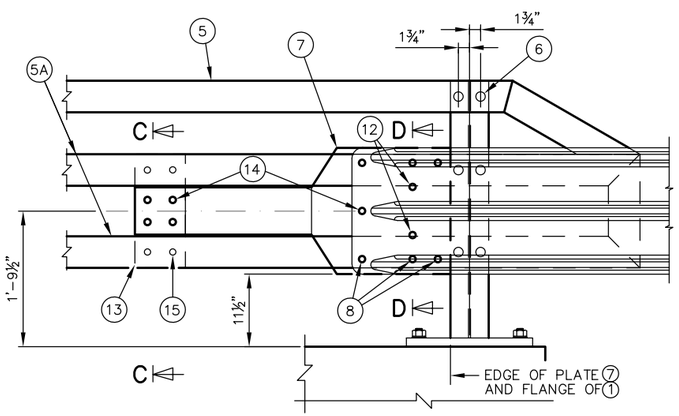


SECTION A-A



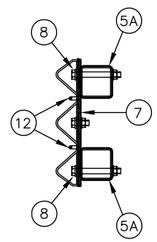
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

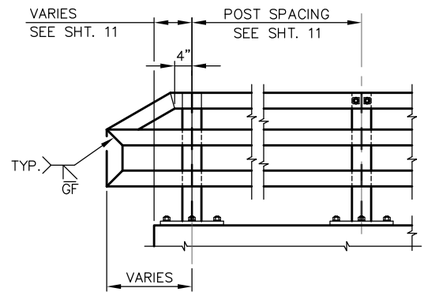


DETAIL AT END POST

(THRIE BEAM RAIL ATTACHMENT)



SECTION D-D



PART ELEVATION OF RAILING

SEE SHEET 14 FOR LEGEND & NOTES.

⚠ TIE TO TOP MAT OF STEEL.

◪ RDWY. OPENING OR 2 1/2" MIN. FOR STRIP SEAL EXP. JOINT AND 1/2" OPENING FOR A1 ABUTMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-22-279

DRAWN BY CDS | PLANS CK'D JJS

TUBULAR STEEL RAILING, TYPE M

SHEET 13 OF 14

48

I.D. 5801-00-75 PLOT DATE: Aug 30, 2012

FILE: 13-14-10215_mrail.dwg
PLOT SCALE:

8

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STATE PROJECT NUMBER
5801–00–75

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" x 11¾" x 1'–8" WITH 1⁵⁄₁₆" 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 CONSTRUCTABILITY.)

(4) ⅝" x 11" x 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, ⅜" 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"ø 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 SYMMETRICALLY ABOUT TUBES NO. 5A.

(14) ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D).

(15) 1"ø 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–22–279" 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 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON–STAINING GRAY NON–BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. 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.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B–22–279

DRAWN BY CDS | PLANS CK'D JJS

TUBULAR STEEL RAILING, TYPE M

SHEET 14 OF 14

49

I.D. 5801–00–75

PLOT DATE: Aug 30, 2012

FILE: 13–14–10215_mrail.dwg
PLOT SCALE:

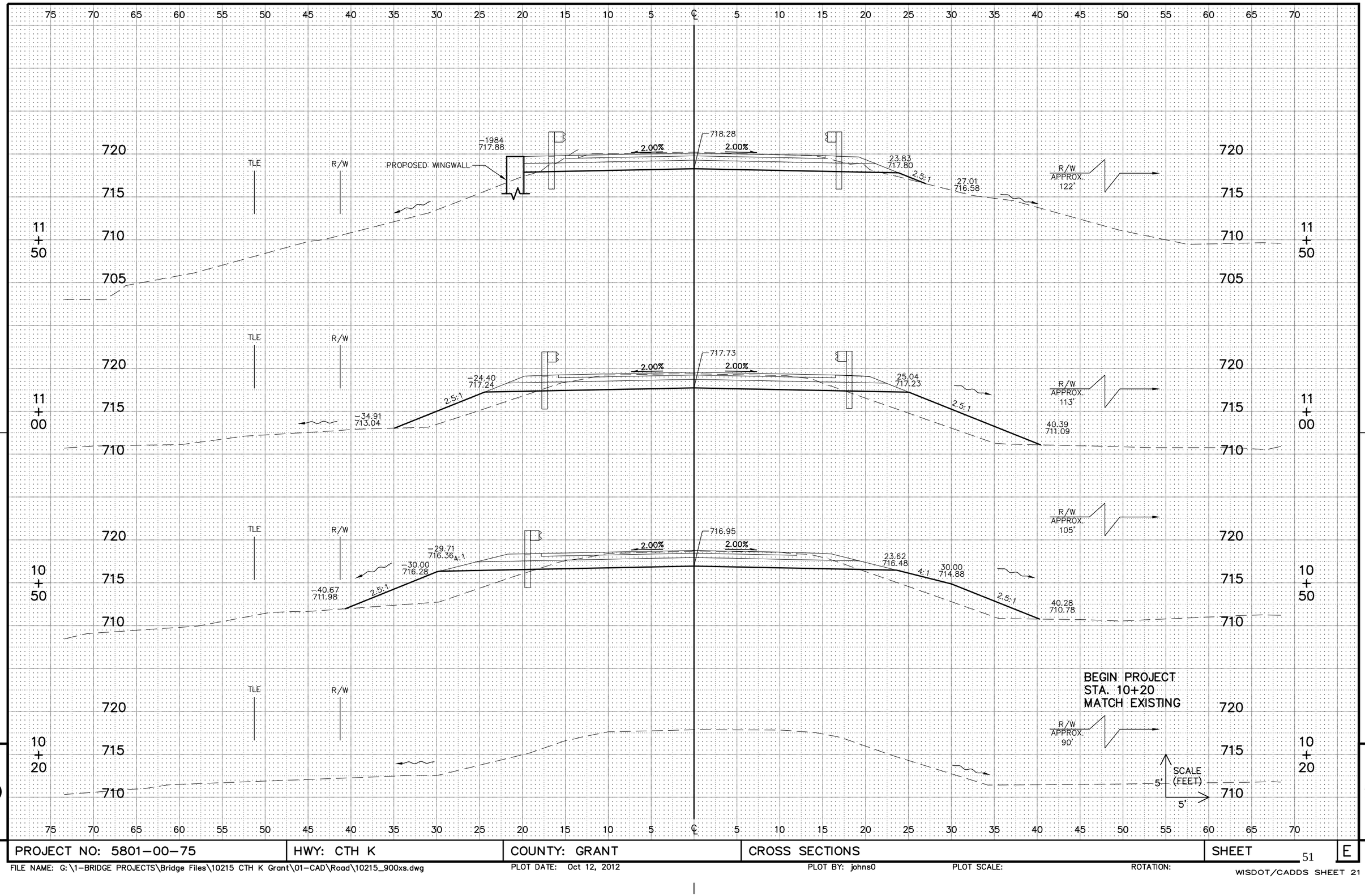
DIVISION 1 MAINLINE APPROACH 1

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.3	Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
10+20.00	1020		55	0	69	0	0	0	0	0	0	0	0	0	0	0
10+50.00	1050	30	55	0	69	0	61	0	77	0	61	100	0	0	0	-39
11+00.00	1100	50	49	0	57	0	96	0	116	0	157	251	0	0	0	-94
11+50.00	1150	50	66	0	2	0	106	0	54	0	264	321	0	0	0	-57
11+66.79	1167	17	33	0	8	0	31	0	3	0	295	325	0	0	0	-30
						Column totals	295	0	250	0						

DIVISION 1 MAINLINE APPROACH 2

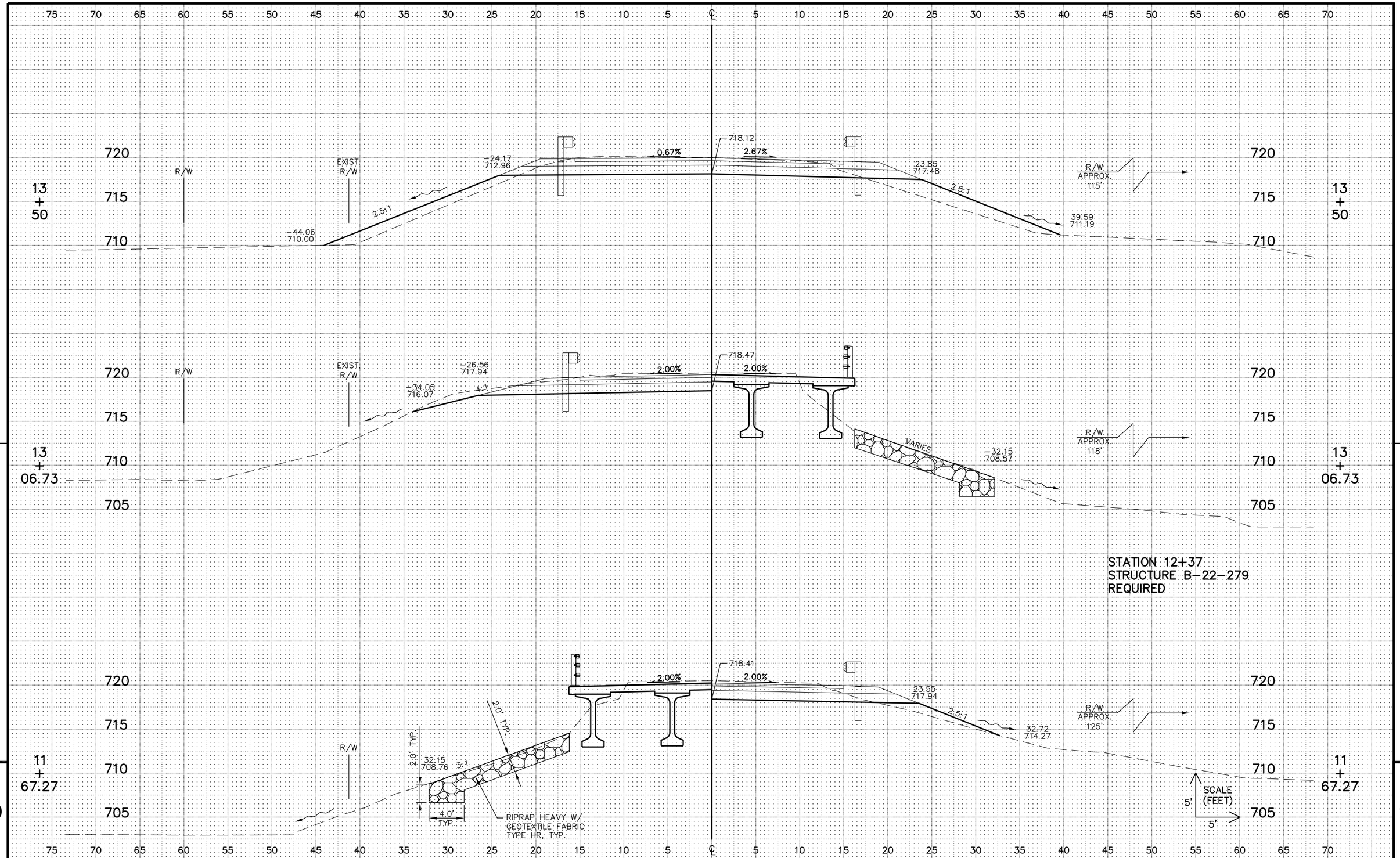
STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.3	Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
13+07.21	1307.21		50	0.0	0	0.0	0	0	0	0	0	0	0	0	0	0
13+50.00	1350	43	64	0.0	48	0.0	90	0	38	0	90	49	0	0	0	40
14+00.00	1400	50	63	0.0	120	0.0	117	0	155	0	207	251	0	0	0	-44
14+55.00	1455	55	63	0.0	120	0.0	128	0	244	0	335	569	0	0	0	-233
						Column totals	335	0	437	0						

Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Granuar Backfill (or Cut, or Borrow)
5 - Expanded EBS	Will be backfilled with Granuar Backfill (or Cut, or Borrow)
6 - Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill
7 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Expanded Rock) * Fill Factor)]
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut + EBS + Marsh Exc) - ((Fill - (Reduced Marsh in Fill) - (Reduced EBS in Fill) - (Expanded Rock)) * Fill Factor))]
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Cut or Borrow: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]



PROJECT NO: 5801-00-75	HWY: CTH K	COUNTY: GRANT	CROSS SECTIONS	SHEET E

FILE NAME: G:\1-BRIDGE PROJECTS\Bridge Files\10215 CTH K Grant\01-CAD\Road\10215_900xs.dwg | PLOT DATE: Oct 12, 2012 | PLOT BY: johns0 | PLOT SCALE: | ROTATION:



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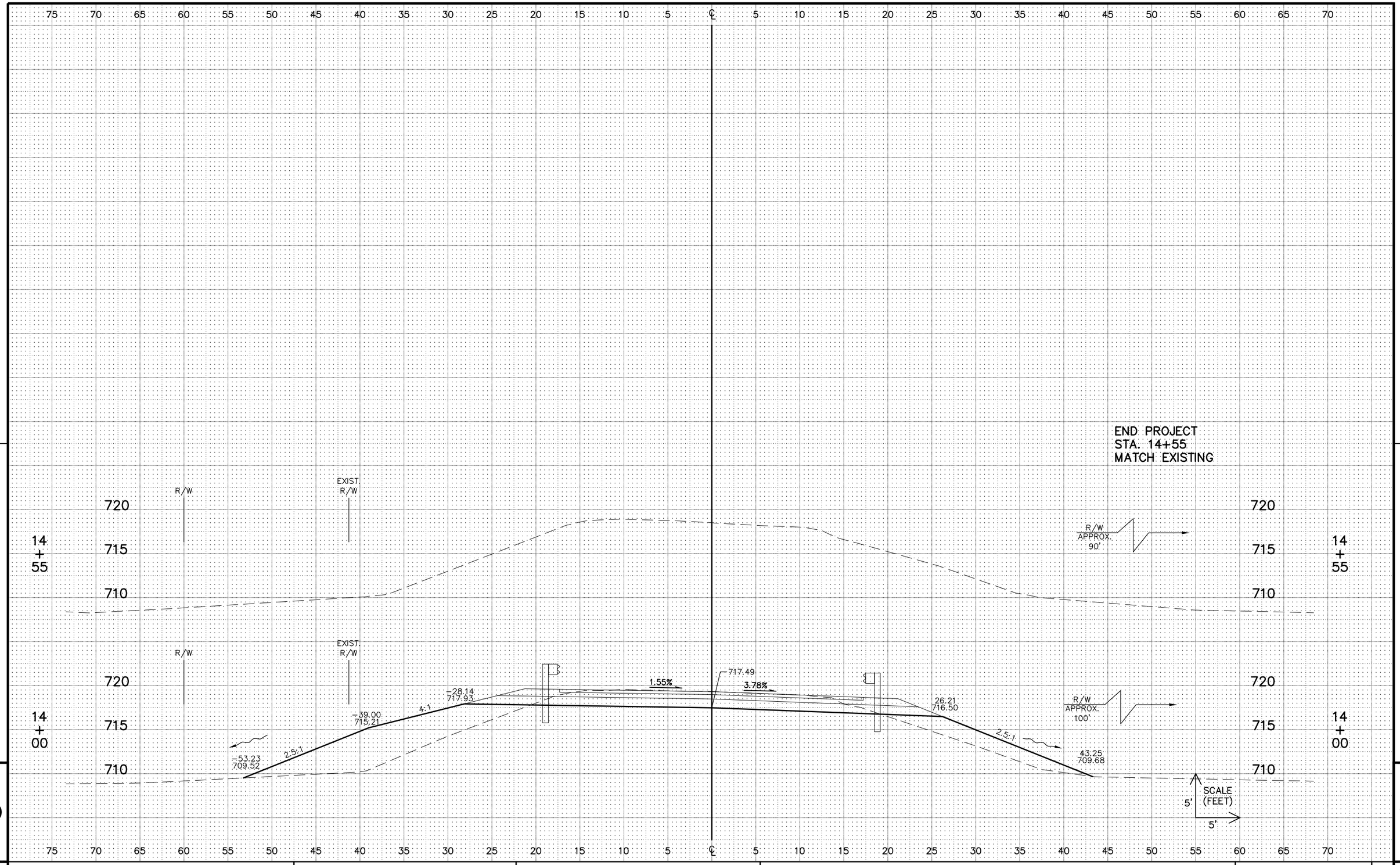
PROJECT NO: 5801-00-75	HWY: CTH K	COUNTY: GRANT	CROSS SECTIONS	SHEET E

FILE NAME: G:\1-BRIDGE PROJECTS\Bridge Files\10215 CTH K Grant\01-CAD\Road\10215_900xs.dwg
PLOT DATE: Oct 12, 2012
PLOT BY: johns0
PLOT SCALE:
ROTATION:

WISDOT/CADDS SHEET 21



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9

PROJECT NO: 5801-00-75	HWY: CTH K	COUNTY: GRANT	CROSS SECTIONS	SHEET	E

FILE NAME: G:\1-BRIDGE PROJECTS\Bridge Files\10215 CTH K Grant\01-CAD\Road\10215_900xs.dwg | PLOT DATE: Oct 12, 2012 | PLOT BY: johns0 | PLOT SCALE: | ROTATION:

Wisconsin Department of Transportation

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