

EAU

JANUARY 2022

PROJECT ID:
WITH: N/A

8837-08-70

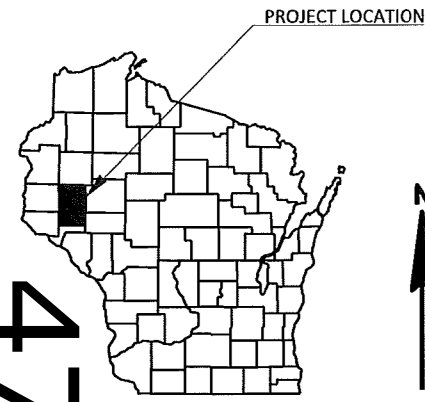
COUNTY:

DUNN

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	TLE Exhibit
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 60



DESIGN DESIGNATION	BRIDGE REPLACEMENT
A.A.D.T. (2022)	= 600
A.A.D.T. (2042)	= 685
D.H.V.	= N/A
D.D.	= 60/40
T.	= 12.9%
DESIGN SPEED	= 50 MPH
ESALS	= N/A

CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

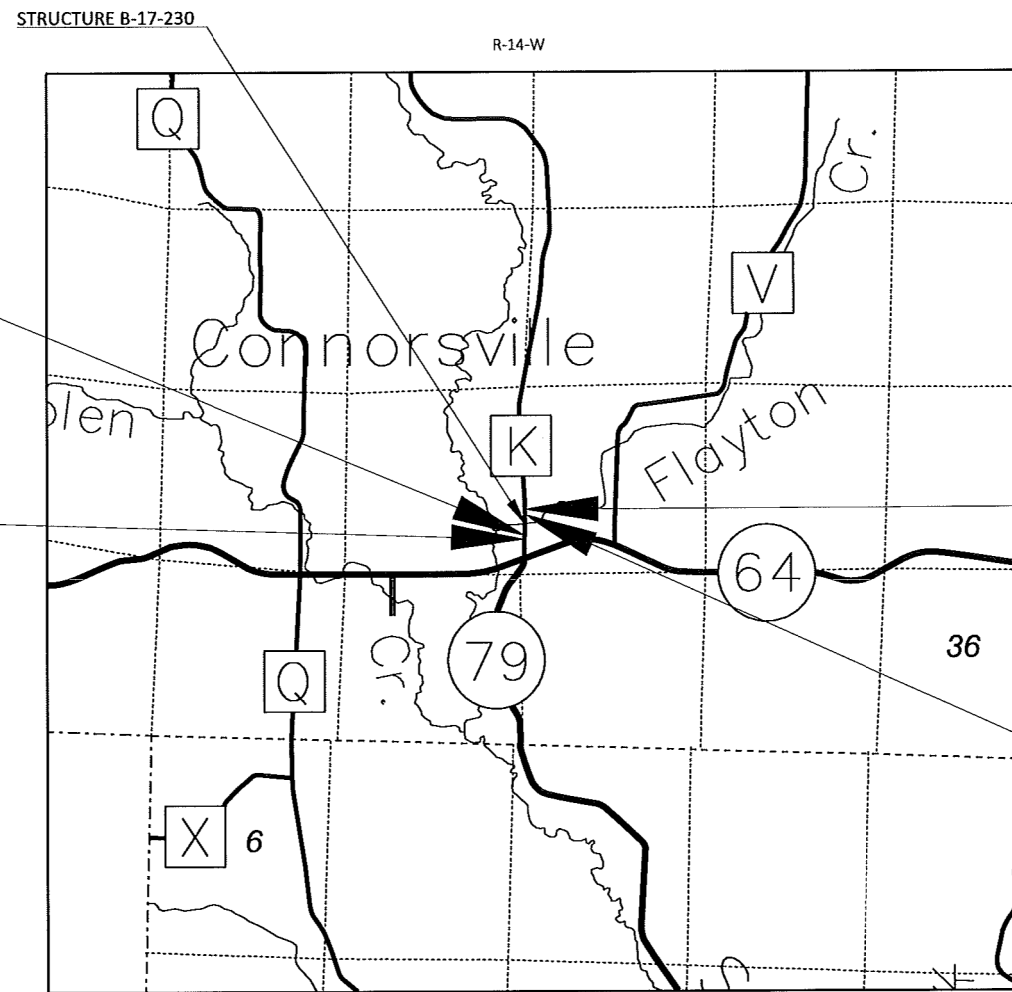
PLAN OF PROPOSED IMPROVEMENT

CONNORSVILLE - NCL

(FLAYTON CREEK BRIDGE, B-17-0230)

CTH K
DUNN COUNTY

STATE PROJECT NUMBER
8837-08-70

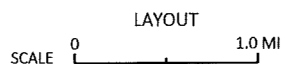


BEGIN PROJECT 8837-08-70
STA 102+03.28'K'
X = 118,244.924
Y = 226,327.113

BEGIN CONSTRUCTION
STA 101+36.21'K'

END CONSTRUCTION
STA 105+45.18'K'

END PROJECT 8837-08-70
STA 103+48.28'K'



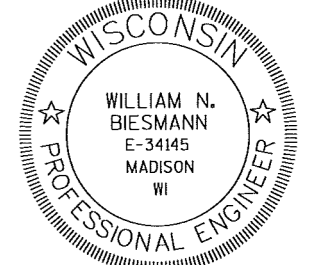
TOTAL NET LENGTH OF CENTERLINE = 0.028 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE COORDINATE SYSTEM (WCCS), DUNN COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8837-08-70	WISC 2022140	1

ACCEPTED FOR:
COUNTY OF DUNN
DATE: 7/19/21
(Accepting Authority Signature)

ORIGINAL PLANS PREPARED BY
KL Engineering
[A] Better Experience



DATE: 7/15/2021
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	KL ENGINEERING
Designer	KL ENGINEERING
Regional Examiner	TOU YANG, PE
Regional Supervisor	TYLER RONGSTAD, PE

APPROVED FOR THE DEPARTMENT
DATE: 07/22/2021
(Signature)

STANDARD ABBREVIATIONS

ASPH	ASPHALT
AVG	AVERAGE
BAD	BASE AGGREGATE DENSE
BG	BEAMGUARD
BLDG	BUILDING
BM	BENCH MARK
CMCP	CULVERT METAL CULVERT PIPE
CONC	CONCRETE
CP	CONTROL PIPE
CPCS	CULVERT PIPE CORRUGATED STEEL
D	DEGREE OF CURVE
DISCH	DISCHARGE
EP	EDGE OF PAVEMENT
EXIST	EXISTING
ELEC	ELECTRIC
FO	FIBER OPTIC
HMA	HOT MIX ASPHALT
IV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
NC	NORMAL CROWN
NOR	NORMAL
PAVT	PAVEMENT
PC	POINT OF CURVE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PNT	POINT
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
REQ'D	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SDD	STANDARD DETAIL DRAWINGS
SE	SUPER ELEVATION
SHLD	SHOULDER
STA	STATION
T	TANGENT LENGTH
TEL	TELEPHONE
TLE	TEMPORARY LIMITED EASEMENT
TYP	TYPICAL
VCL	VERTICAL CURVE LENGTH
VCP	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT
WB	WESTBOUND



UTILITY CONTACTS

COMMUNICATIONS

LUMEN TECHNOLOGIES
 KYLE SCHLAMPP
 20 SOUTH WILSON AVENUE
 RICE LAKE, WI 54868
 (715) 234-5573
 (715) 292-0082 cell
 kyle.schlammpp@lumen.com

POWER

DUNN ENERGY COOPERATIVE
 TRICIA BAUER
 P.O. BOX 200
 MENOMONIE, WI 54751
 (715) 232-6240
 tricia@dunnenergy.com

DAIRY LAND POWER COOPERATIVE
 MIKE LYDON
 3200 EAST AVENUE SOUTH
 P.O. BOX 817
 LA CROSSE, WI 54602
 (608) 787-1381
 michael.lydon@dairylandpower.com

GENERAL NOTES

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

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

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

4-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH 1.75-INCH UPPER LAYER AND 2.25-INCH LOWER LAYER

WETLANDS, WATERWAYS, AND OTHER ENVIRONMENTALLY SENSITIVE AREAS SHALL BE PROTECTED AT ALL TIMES. DO NOT STORE EQUIPMENT OR MATERIALS NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.

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

THE CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY THE OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

PLACE TOPSOIL IN ALL GRADED AREAS AS DESIGNATED BY THE ENGINEER. SEED, MULCH, AND FERTILIZE ALL AREAS WITHIN 5 DAYS OF PLACEMENT OF TOPSOIL.

TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL OR EQUIPMENT WILL NOT BE PERMITTED IN WETLANDS, FLOODWAY, OR FLOODPLAIN OF ANY WATERWAY.

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

EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER.

THE LOCATION OF ALL PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD PRIOR TO PLACEMENT.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ADJUST DITCH GRADING AS NECESSARY TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER.

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	0.70 - 0.95											
CONCRETE	0.80 - 0.95											
BRICK	0.70 - 0.80											
DRIVES, WALKS	0.75 - 0.85											
ROOFS	0.75 - 0.95											
GRAVEL ROADS, SHOULDERS	0.40 - 0.60											

TOTAL PROJECT AREA = 0.81 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.44 ACRES

WISDOT

WISDOT NORTHWEST REGION OFFICE
 MATTHEW THORNSEN
 718 W. CLAIREMONT AVENUE
 EAU CLAIRE, WI 54701
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 matthew.thornsen@dot.wi.gov

CONSULTANT

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 chalverson@klengineering.com

PUBLIC WORKS DIRECTOR

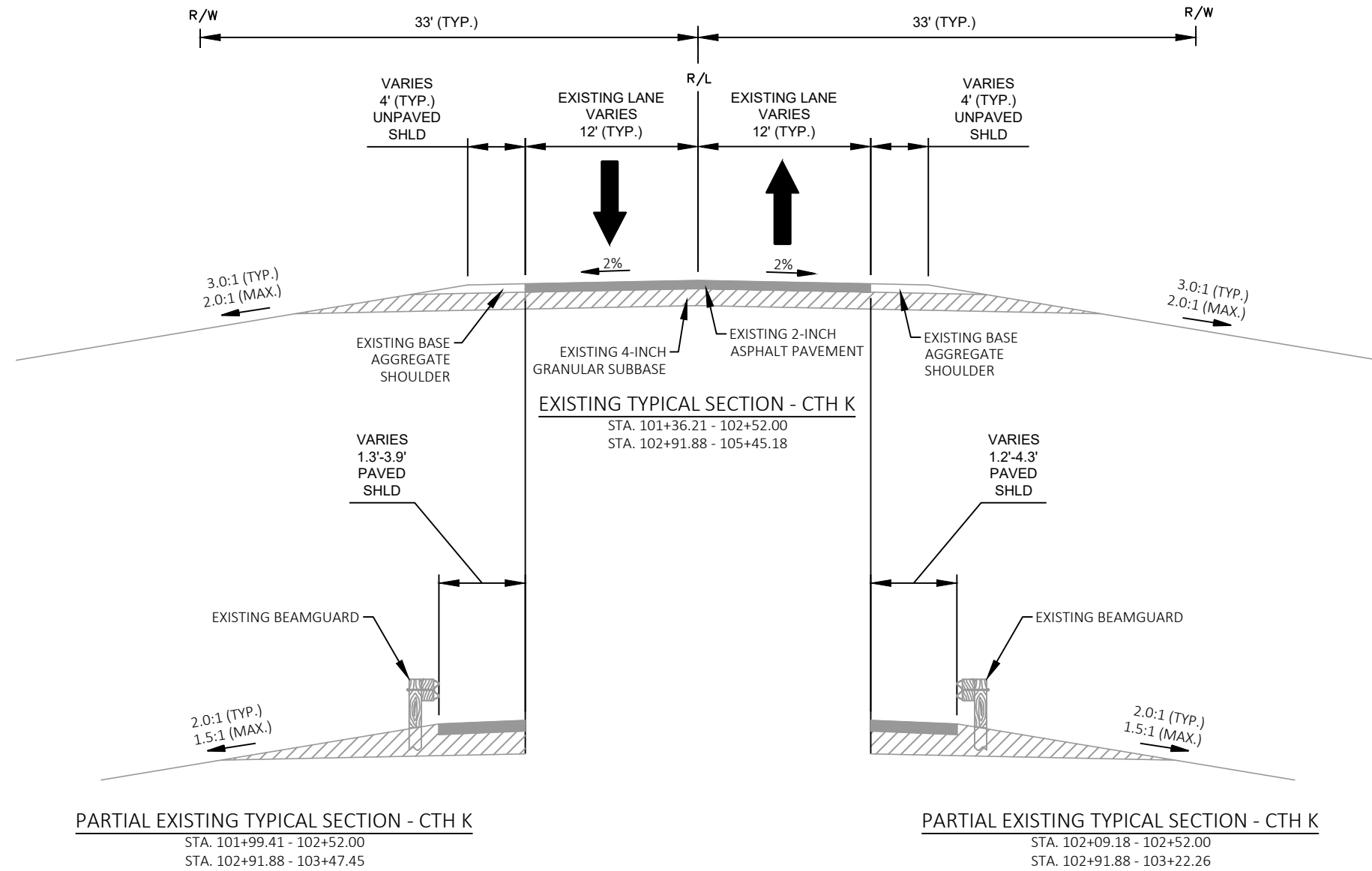
DUNN COUNTY
 JOHN SWORSKI
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 MENOMONIE, WI 54751
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 jsworski@co.dunn.wi.us

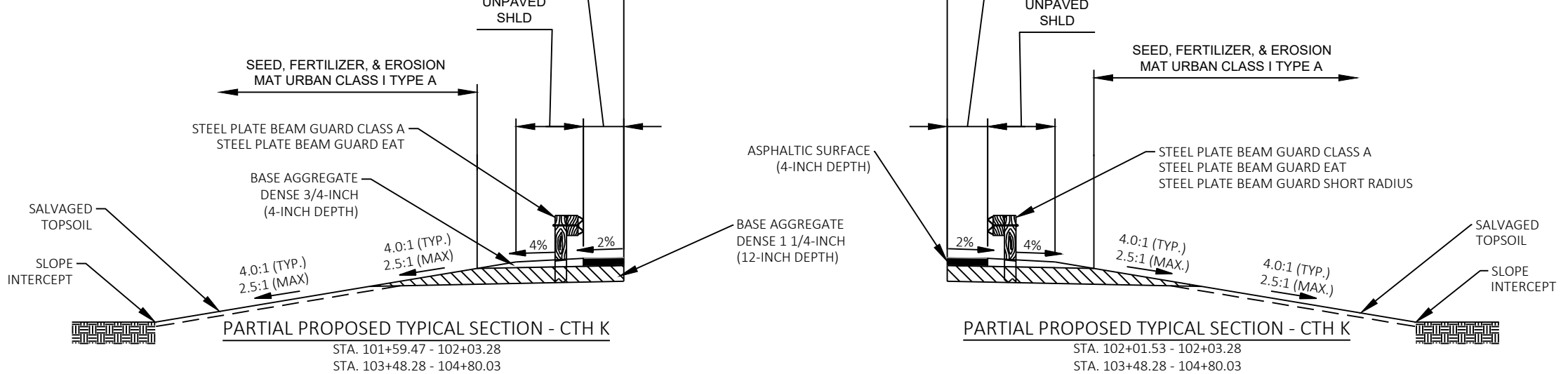
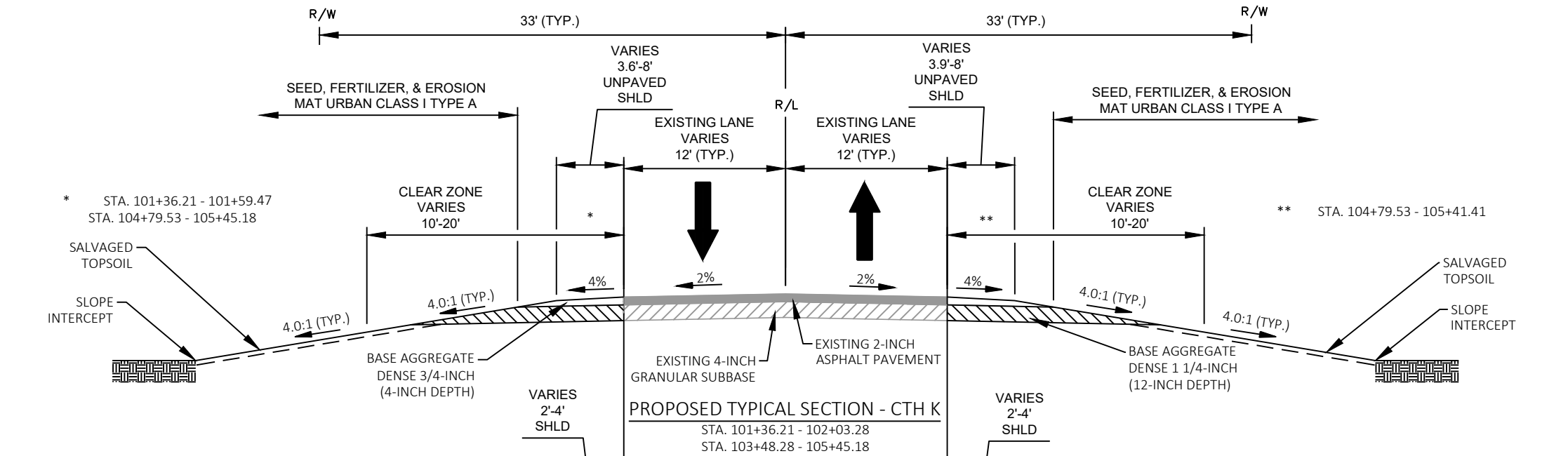
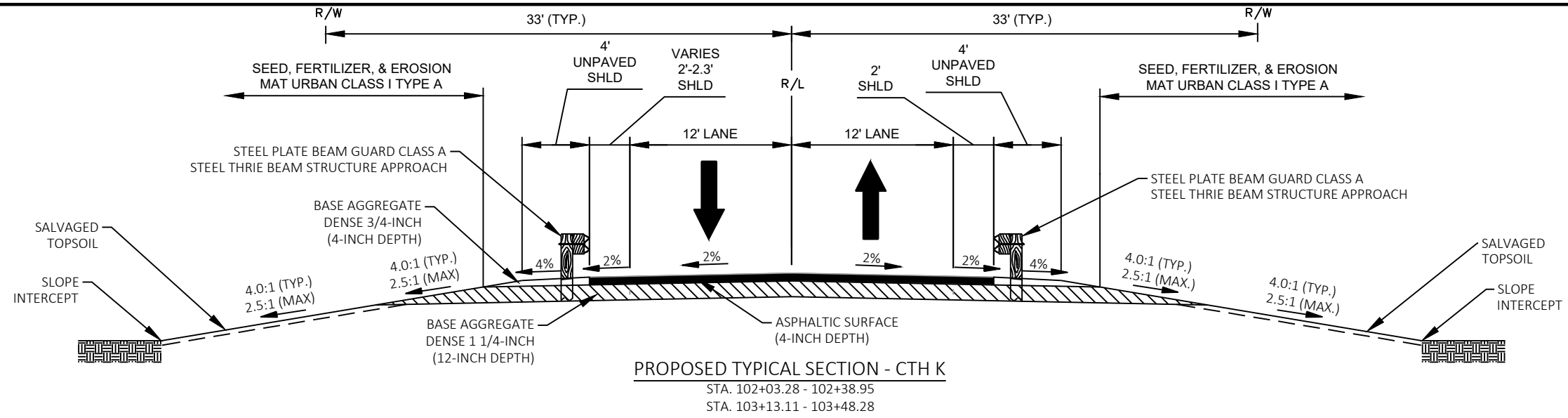
ENGINEER / SUPERINTENDENT

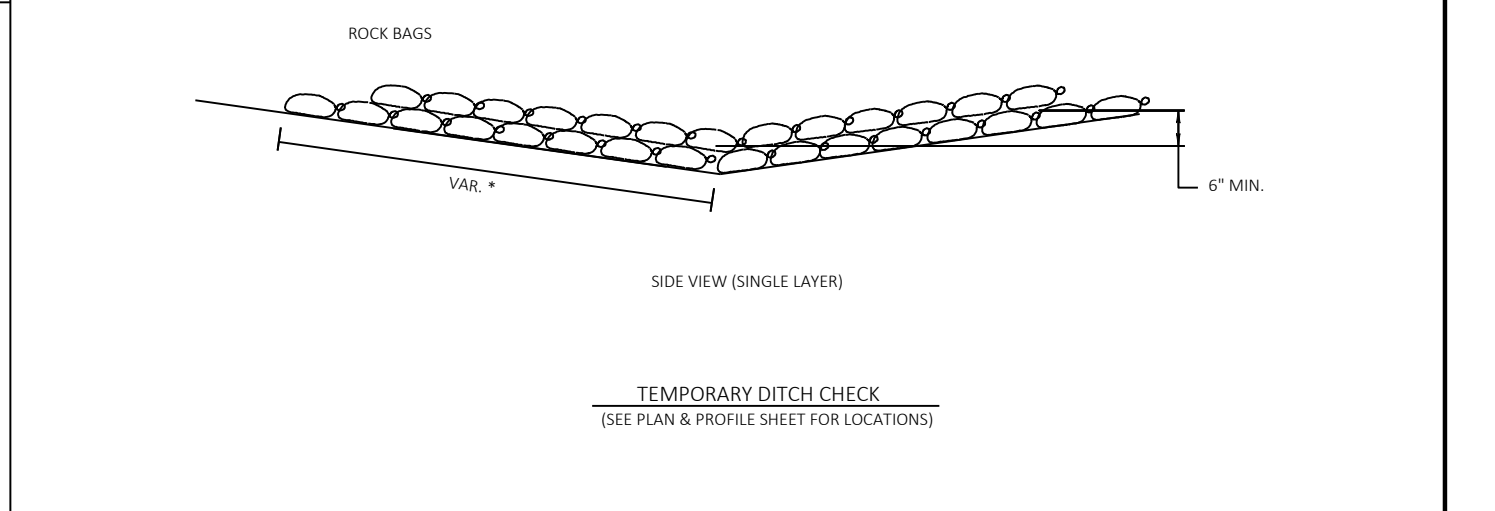
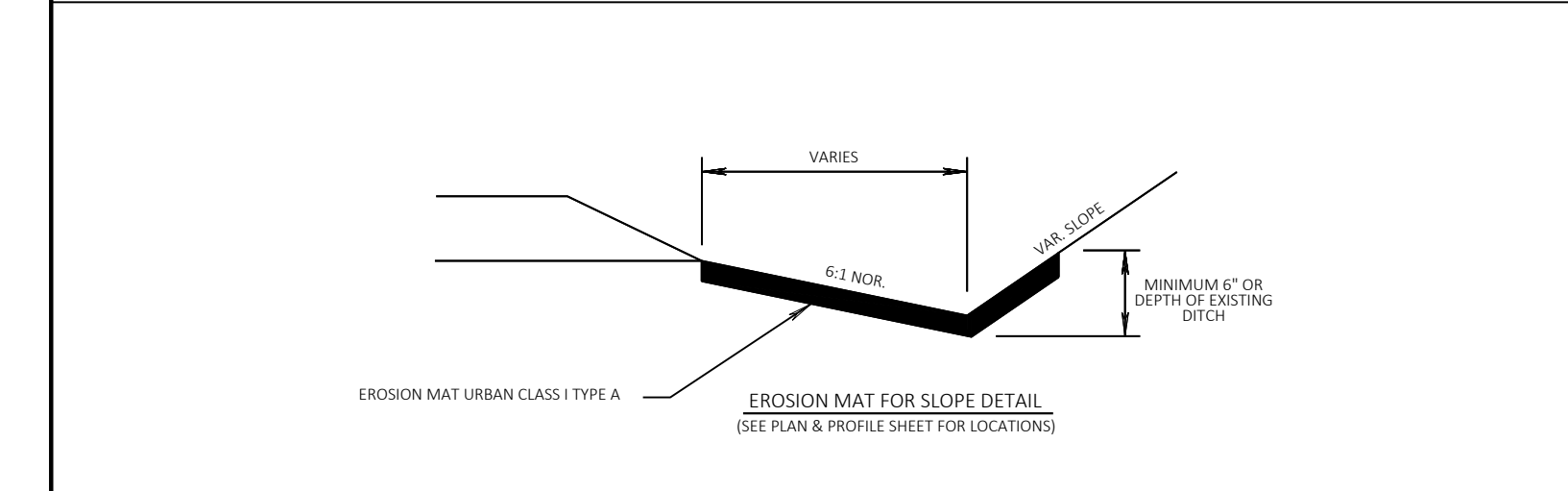
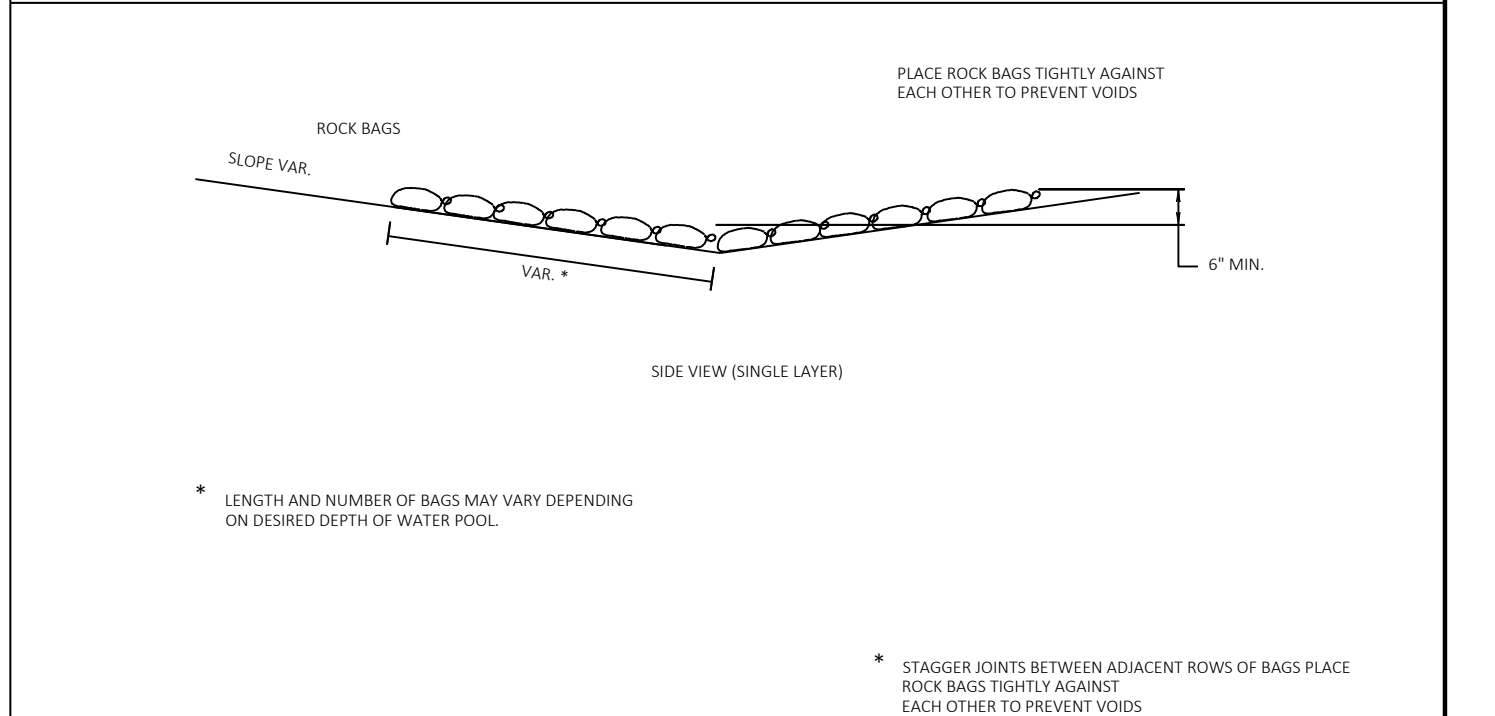
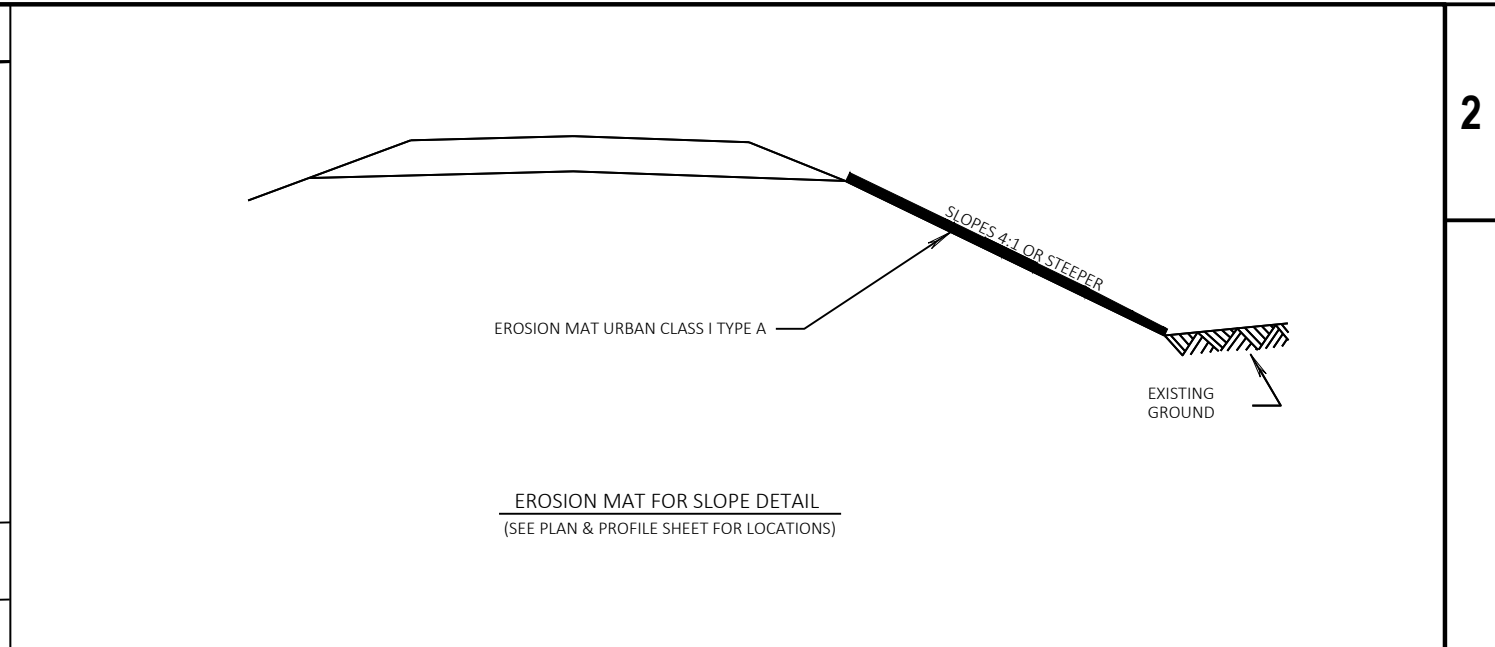
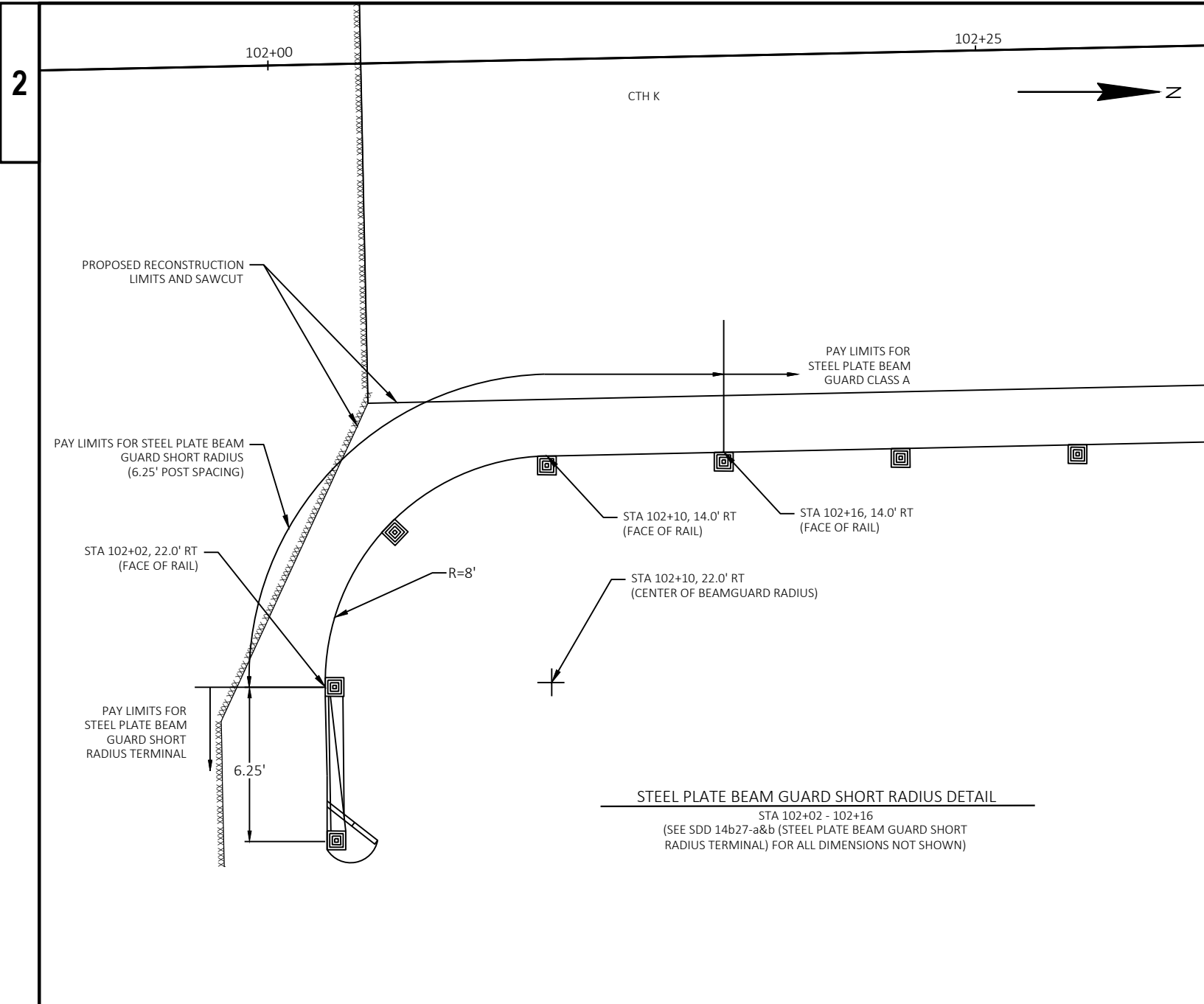
DUNN COUNTY
 DUSTIN BINDER
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 dbinder@co.dunn.wi.us

WISC. DEPT OF NATURAL RESOURCES

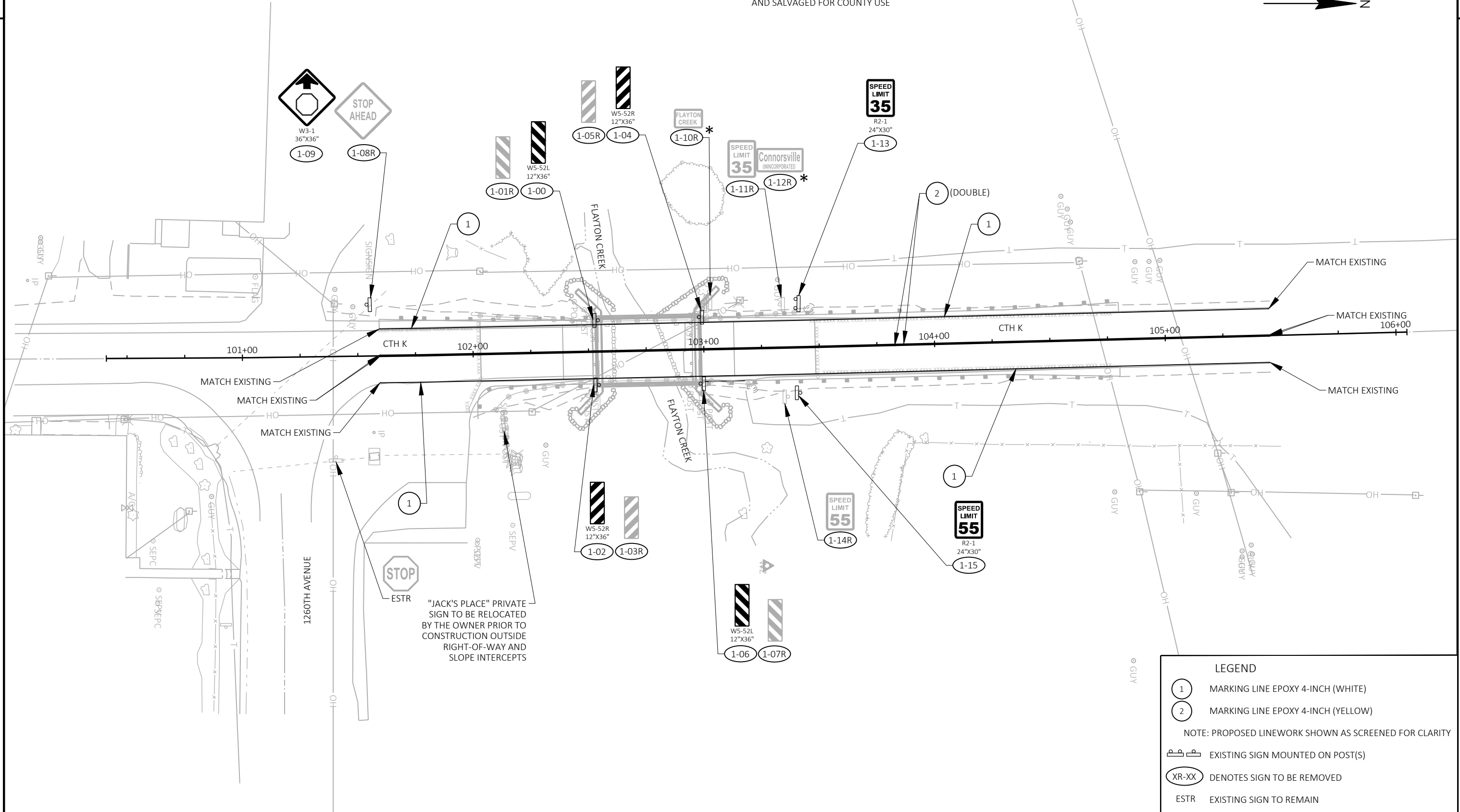
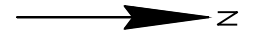
NW REGION
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* EXISTING SIGNS TO BE REMOVED AND SALVAGED FOR COUNTY USE



"JACK'S PLACE" PRIVATE SIGN TO BE RELOCATED BY THE OWNER PRIOR TO CONSTRUCTION OUTSIDE RIGHT-OF-WAY AND SLOPE INTERCEPTS





LEGEND

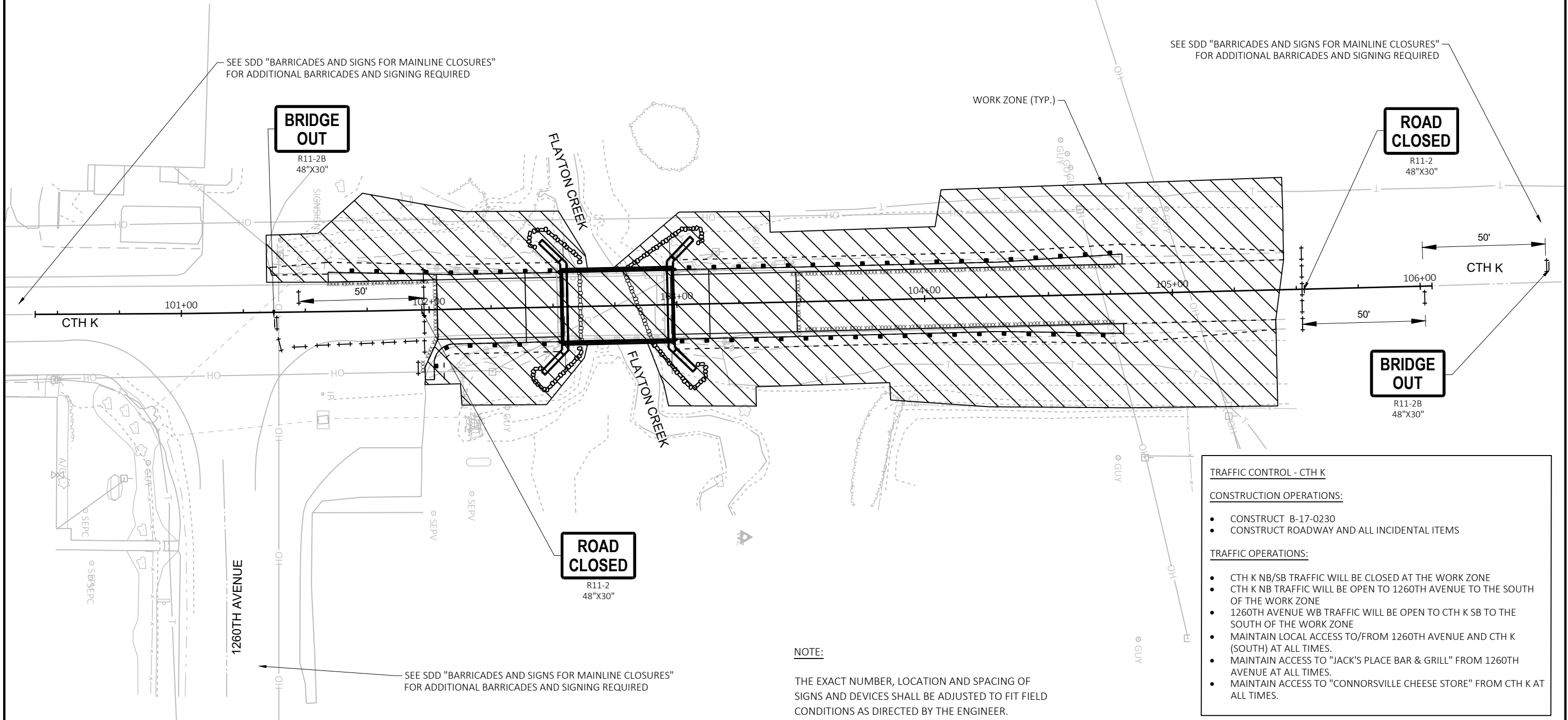
- ① MARKING LINE EPOXY 4-INCH (WHITE)
- ② MARKING LINE EPOXY 4-INCH (YELLOW)
- NOTE: PROPOSED LINework SHOWN AS SCREENED FOR CLARITY
- EXISTING SIGN MOUNTED ON POST(S)
- DENOTES SIGN TO BE REMOVED
- ESTR EXISTING SIGN TO REMAIN

GENERAL NOTES FOR TRAFFIC CONTROL

- 1) THE EXACT NUMBER, LOCATION AND SPACING OF SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
- 2) ALL SIGNS ARE 48" X 48" UNLESS NOTED.
- 3) ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED, AND EQUIPPED WITH TWO TYPE "A" (LOW INTENSITY FLASHING) LIGHTS.
- 4) COUNTY IS RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL ITEMS AND DETOUR SIGNING FOR THE PROJECT DURATION ALONG THE DETOUR ROUTE. REFER TO FDM SDD 15c02-08a (BARRICADES AND SIGNS FOR MAINLINE CLOSURES) - DETAIL B FOR GUIDANCE ON SIGN PLACEMENT FOR DETOUR ROUTE.

TRAFFIC CONTROL LEGEND

-  TRAFFIC CONTROL BARRICADE TYPE III
-  TRAFFIC CONTROL BARRICADE TYPE III (WITH ATTACHED SIGN)
-  TRAFFIC CONTROL SIGNS (ON PERMANENT SUPPORT)
-  WORK AREA



NOTE:

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

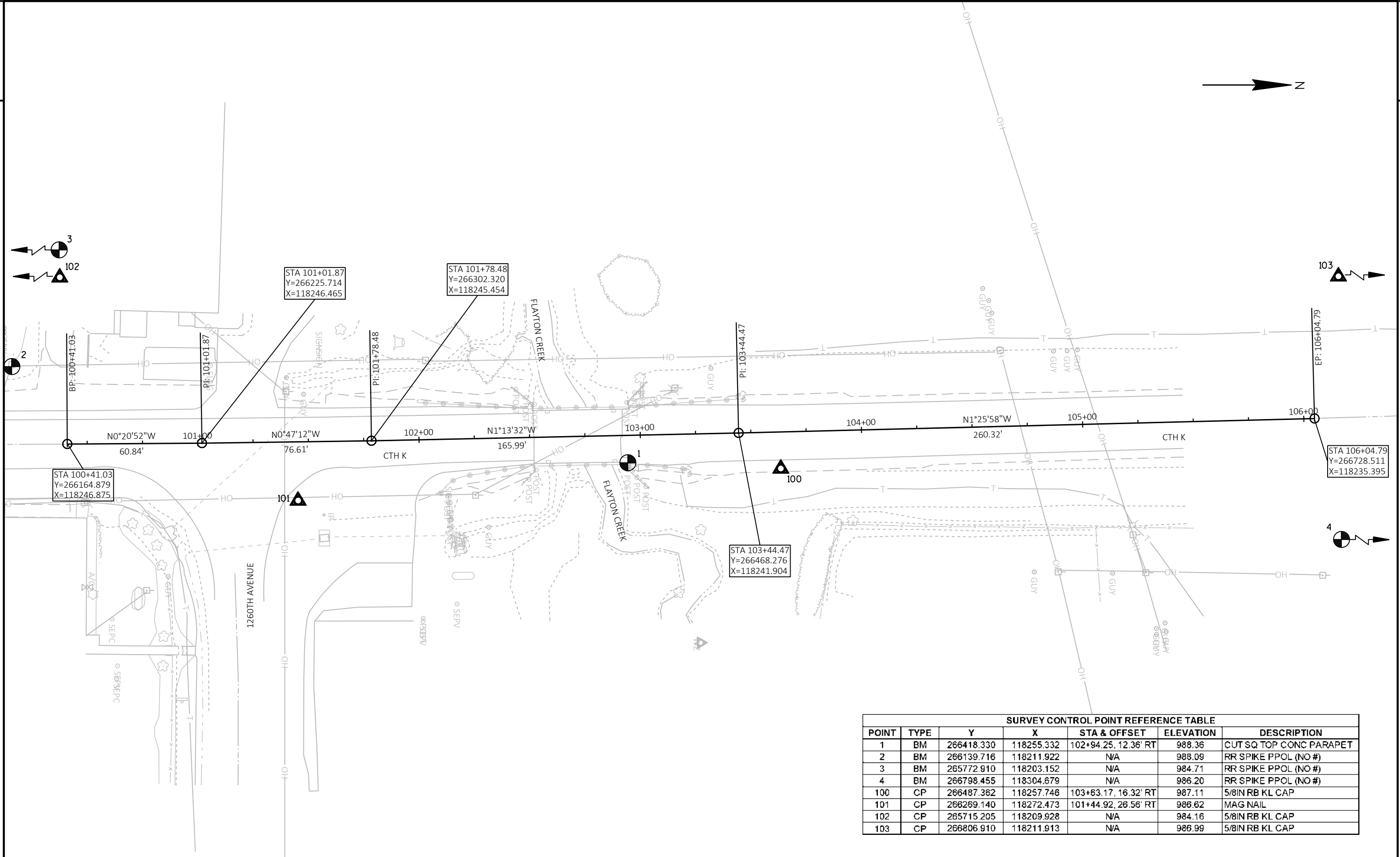
TRAFFIC CONTROL - CTH K

CONSTRUCTION OPERATIONS:

- CONSTRUCT B-17-0230
- CONSTRUCT ROADWAY AND ALL INCIDENTAL ITEMS

TRAFFIC OPERATIONS:

- CTH K NB/SB TRAFFIC WILL BE CLOSED AT THE WORK ZONE
- CTH K NB TRAFFIC WILL BE OPEN TO 1260TH AVENUE TO THE SOUTH OF THE WORK ZONE
- 1260TH AVENUE WB TRAFFIC WILL BE OPEN TO CTH K SB TO THE SOUTH OF THE WORK ZONE
- MAINTAIN LOCAL ACCESS TO/FROM 1260TH AVENUE AND CTH K (SOUTH) AT ALL TIMES.
- MAINTAIN ACCESS TO "JACK'S PLACE BAR & GRILL" FROM 1260TH AVENUE AT ALL TIMES.
- MAINTAIN ACCESS TO "CONNORSVILLE CHEESE STORE" FROM CTH K AT ALL TIMES.



SURVEY CONTROL POINT REFERENCE TABLE

POINT	TYPE	Y	X	STA & OFFSET	ELEVATION	DESCRIPTION
1	BM	266418.330	118255.332	102+94.25, 12.36' RT	988.36	CUT SQ TOP CONC PARAPET
2	BM	266139.716	118211.922	N/A	988.09	RR SPIKE PPOL (NO #)
3	BM	265772.910	118203.152	N/A	984.71	RR SPIKE PPOL (NO #)
4	BM	266798.455	118304.679	N/A	986.20	RR SPIKE PPOL (NO #)
100	CP	266487.362	118257.746	103+63.17, 16.32' RT	987.11	5/8IN RB KL CAP
101	CP	266269.140	118272.473	101+44.92, 26.56' RT	986.62	MAG NAIL
102	CP	265715.205	118209.928	N/A	984.16	5/8IN RB KL CAP
103	CP	266806.910	118211.913	N/A	986.99	5/8IN RB KL CAP

Estimate Of Quantities

8837-08-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-17-0011	EACH	1.000	1.000
0004	205.0100	Excavation Common	CY	440.000	440.000
0006	206.1000	Excavation for Structures Bridges (structure) 01. B-17-0230	LS	1.000	1.000
0008	210.1500	Backfill Structure Type A	TON	500.000	500.000
0010	213.0100	Finishing Roadway (project) 01. 8837-08-70	EACH	1.000	1.000
0012	305.0110	Base Aggregate Dense 3/4-Inch	TON	95.000	95.000
0014	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	660.000	660.000
0016	415.0060	Concrete Pavement 6-Inch	SY	13.000	13.000
0018	415.0410	Concrete Pavement Approach Slab	SY	80.000	80.000
0020	455.0605	Tack Coat	GAL	8.000	8.000
0022	465.0105	Asphaltic Surface	TON	70.000	70.000
0024	502.0100	Concrete Masonry Bridges	CY	188.000	188.000
0026	502.3200	Protective Surface Treatment	SY	234.000	234.000
0028	505.0400	Bar Steel Reinforcement HS Structures	LB	5,220.000	5,220.000
0030	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	23,430.000	23,430.000
0032	513.4061	Railing Tubular Type M	LF	95.000	95.000
0034	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000
0036	550.2104	Piling CIP Concrete 10 3/4 X 0.25-Inch	LF	1,034.000	1,034.000
0038	606.0300	Riprap Heavy	CY	79.000	79.000
0040	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0042	614.0200	Steel Thrie Beam Structure Approach	LF	82.800	82.800
0044	614.0305	Steel Plate Beam Guard Class A	LF	268.800	268.800
0046	614.0345	Steel Plate Beam Guard Short Radius	LF	18.800	18.800
0048	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	3.000	3.000
0050	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000	1.000
0052	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8837-08-70	EACH	1.000	1.000
0054	619.1000	Mobilization	EACH	1.000	1.000
0056	624.0100	Water	MGAL	26.000	26.000
0058	625.0500	Salvaged Topsoil	SY	1,200.000	1,200.000
0060	628.1504	Silt Fence	LF	950.000	950.000
0062	628.1520	Silt Fence Maintenance	LF	2,800.000	2,800.000
0064	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0066	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0068	628.2006	Erosion Mat Urban Class I Type A	SY	1,400.000	1,400.000
0070	628.7504	Temporary Ditch Checks	LF	24.000	24.000
0072	629.0210	Fertilizer Type B	CWT	1.000	1.000
0074	630.0130	Seeding Mixture No. 30	LB	23.000	23.000
0076	630.0200	Seeding Temporary	LB	35.000	35.000
0078	630.0500	Seed Water	MGAL	7.000	7.000
0080	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	7.000	7.000
0082	637.2230	Signs Type II Reflective F	SF	31.000	31.000
0084	638.2602	Removing Signs Type II	EACH	7.000	7.000
0086	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0088	642.5001	Field Office Type B	EACH	1.000	1.000
0090	643.0420	Traffic Control Barricades Type III	DAY	1,540.000	1,540.000
0092	643.0705	Traffic Control Warning Lights Type A	DAY	3,080.000	3,080.000
0094	643.0900	Traffic Control Signs	DAY	665.000	665.000
0096	643.5000	Traffic Control	EACH	1.000	1.000
0098	645.0111	Geotextile Type DF Schedule A	SY	104.000	104.000

Estimate Of Quantities

8837-08-70

Line	Item	Item Description	Unit	Total	Qty
0100	645.0120	Geotextile Type HR	SY	124.000	124.000
0102	646.1020	Marking Line Epoxy 4-Inch	LF	1,600.000	1,600.000
0104	650.4500	Construction Staking Subgrade	LF	365.000	365.000
0106	650.5000	Construction Staking Base	LF	365.000	365.000
0108	650.6500	Construction Staking Structure Layout (structure) 01. B-17-230	LS	1.000	1.000
0110	650.9910	Construction Staking Supplemental Control (project) 01. 8837-08-70	LS	1.000	1.000
0112	650.9920	Construction Staking Slope Stakes	LF	661.000	661.000
0114	690.0150	Sawing Asphalt	LF	376.000	376.000
0116	715.0502	Incentive Strength Concrete Structures	DOL	1,128.000	1,128.000
0118	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0120	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. 102+75	EACH	1.000	1.000
0122	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0124	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000
0126	SPV.0060	Special 01. Remove & Salvage Sign	EACH	2.000	2.000
0128	SPV.0090	Special 01. Flashing Stainless Steel	LF	81.000	81.000

3

3

EARTHWORK

CATEGORY	LOCATION	205.0100 Excavation Common (1)		Salvaged/ Unusable Pavement Material (4) (CY)	Available Material (5) (CY)	Reduced EBS in Fill (8) Factor 0.80 (CY)	Unexpanded Fill (CY)	Expanded Fill (10) Factor 1.25 (CY)	Mass Ordinate +/- (11) (CY)	Waste (CY)
		Cut (2) (CY)	EBS Excavation (3) (CY)							
0010	CTH K	419	21	27	393	17	281	331	62	62
		419	21	27	393	17	281	331	62	62
Total Excavation Common		440								

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns
- 2) Salvaged/Unusable Pavement Material is included in Cut
- 3) EBS Excavation to be backfilled with Select Crushed Material
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusable Pavement Material
- 6) Reduced EBS in Fill - Excavated EBS material is usable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
- 7) Expanded Fill. Factor = 1.25
- 8) 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.

BASE AGGREGATE

CATEGORY	LOCATION	O/S	305.0110	305.0120
			BASE AGGREGATE DENSE 3/4-INCH (TON)	BASE AGGREGATE DENSE 1 1/4-INCH (TON)
0010				
	101+36 - 102+53	LT	14	--
	102+02 - 102+53	RT	7	--
	102+99 - 105+41	RT	33	--
	102+99 - 105+45	LT	33	--
	101+36 - 102+39	LT/RT	--	189
	102+39 - 102+54	LT/RT	--	27
	102+98 - 103+13	LT/RT	--	27
	103+13 - 105+45	LT/RT	--	384
	103+48 - 105+45	RT	--	--
	"	LT	--	--
	UNDISTRIBUTED		7	32
PROJECT TOTAL			95	660

CONCRETE PAVEMENT ITEMS

CATEGORY	LOCATION	O/S	415.0060	415.0410
			CONCRETE PAVEMENT 6-INCH (SY)	CONCRETE PAVEMENT APPROACH SLAB (SY)
0030				
	102+39 - 102+54	LT/RT	7	40
	102+98 - 103+13	LT/RT	7	40
PROJECT TOTAL			13	80

3

HMA PAVEMENT ITEMS

CATEGORY	LOCATION	O/S	455.0605	465.0105
			TACK COAT (GAL)	ASPHALTIC SURFACE (TON)
0010	101+59 - 102+03	LT	0.4	3
	102+03 - 102+39	LT/RT	2.9	26
	103+13 - 103+48	LT/RT	2.7	25
	103+48 - 104+80	LT	1.0	8
	103+48 - 104+80	RT	1.0	8
PROJECT TOTAL			8	70

BEAM GUARD ITEMS

CATEGORY	LOCATION	O/S	614.0200	614.0305	614.0345	614.0370	614.0390
			STEEL THRIE BEAM STRUCTURE APPROACH (LF)	STEEL PLATE BEAM GUARD CLASS A (LF)	STEEL PLATE BEAM GUARD SHORT RADIUS (LF)	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL (EACH)	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL (EACH)
0010	101+59 - 102+55	LT	20.7	25.0	--	1	--
	102+02 - 102+55	RT	20.7	18.8	18.8	--	1
	102+97 - 104+80	LT	20.7	112.5	--	1	--
	102+97 - 104+80	RT	20.7	112.5	--	1	--
PROJECT TOTAL			82.8	268.8	18.8	3	1

3

WATER

CATEGORY	LOCATION	TASK	624.0100
			(MGAL)
0010	CTH K	DUST CONTROL	13
		COMPACTION	13
PROJECT TOTAL			26

LANDSCAPING

CATEGORY	LOCATION	STATION - STATION	OFFSET	625.0500	629.0210	630.0130	630.0200	630.0500
				SALVAGED TOPSOIL (SY)	FERTILIZER TYPE B (CWT)	SEEDING MIXTURE NO. 30 (LB)	SEEDING TEMPORARY (LB)	SEED WATER (MGAL)
0010	CTH K	101+35 - 105+45	LT/RT	1144	0.7	20.6	31	6.4
		UNDISTRIBUTED		56	0.3	2.4	4	0.6
PROJECT TOTAL				1,200	1.0	23.0	35	7.0

PAVEMENT MARKING

CATEGORY	LOCATION	646.1020	
		MARKING LINE EPOXY 4-INCH YELLOW (LF)	MARKING LINE EPOXY 4-INCH WHITE (LF)
0010	101+59 - 105+45	772	772
	UNDISTRIBUTED	28	28
PROJECT TOTAL		800	800

EROSION CONTROL

CATEGORY	LOCATION	STATION - STATION	O/S	628.1504	628.1520	628.2006	628.7504
				SILT FENCE (LF)	SILT FENCE MAINTENANCE (LF)	EROSION MAT URBAN CLASS I TYPE A (SY)	TEMPORARY DITCH CHECKS (LF)
0010	CTH K	101+35 - 105+45	LT/RT	755	2265	1144	--
		102+45	LT	--	--	--	8
		103+13	RT	--	--	--	8
		104+18	RT	--	--	--	8
		UNDISTRIBUTED		195	535	256	--
PROJECT TOTAL				950	2,800	1,400	24

EROSION CONTROL MOBILIZATION

CATEGORY	LOCATION	628.1905	628.1910
		MOBILIZATION EROSION CONTROL (EACH)	MOBILIZATION EMERGENCY EROSION CONTROL (EACH)
0010	CTH K	3	2
PROJECT TOTAL		3	2

3

PERMANENT SIGNING AND SIGN REMOVALS

638.2602 638.3000 634.0612 637.2230 SPV.0060.01

CATEGORY	SIGN #	APPROX. STATION	POSITION	SIGN CODE	SIGN DESCRIPTION	SIGN SIZE	REMOVING SIGNS TYPE II (EACH)	REMOVING SMALL SIGN SUPPORTS (EACH)	POSTS WOOD 4X6-INCH X 12-FT (EACH)	SIGNS TYPE II REFLECTIVE F (SF)	REMOVE & SALVAGE SIGN (EACH)	SIGN MOUNTED ON SAME POST AS	
0010	1-00	102+52	LT	W5-52L	HARZARD PANEL (LEFT)	12X36	--	--	1	3	--	--	
	1-01R	102+52	LT	--	HARZARD PANEL (LEFT)	--	1	1	--	--	--	--	
	1-02	102+52	RT	W5-52R	HARZARD PANEL (RIGHT)	12X36	--	--	1	3	--	--	
	1-03R	102+52	RT	--	HARZARD PANEL (RIGHT)	--	1	1	--	--	--	--	
	1-04	103+00	LT	W5-52R	HARZARD PANEL (RIGHT)	12X36	--	--	1	3	--	--	
	1-05R	103+00	LT	--	HARZARD PANEL (RIGHT)	--	1	1	--	--	--	--	
	1-06	103+00	RT	W5-52L	HARZARD PANEL (LEFT)	12X36	--	--	1	3	--	--	
	1-07R	103+00	RT	--	HARZARD PANEL (LEFT)	--	1	1	--	--	--	--	
	1-08R	101+55	LT	W3-1	STOP AHEAD	--	1	1	--	--	--	--	
	1-09	101+55	LT	W3-1	STOP AHEAD	36X36	--	--	1	9	--	--	
	1-10R	103+05	LT	--	FLAYTON CREEK	--	--	1	--	--	1	--	
	1-11R	103+35	LT	--	SPEED LIMIT	--	1	1	--	--	--	--	
	1-12R	103+35	LT	--	CONNORSVILLE	--	--	--	--	--	1	1-11R	
	1-13	103+40	LT	R2-1	SPEED LIMIT	24X30	--	--	1	5	--	--	
	1-14R	103+35	RT	--	SPEED LIMIT	--	1	1	--	--	--	--	
	1-15	103+40	RT	R2-1	SPEED LIMIT	24X30	--	--	1	5	--	--	
PROJECT TOTAL							7	8	7	31	2	---	

CONSTRUCTION STAKING

650.4500 650.5000 650.9910 650.9920

CATEGORY	LOCATION	STATION - STATION	SUBGRADE (LF)	BASE (LF)	SUPPLEMENTAL CONTROL (8837-08-70) (LS)	SLOPE STAKES (LF)
0010	CTH K	101+36 - 105+45	365	365	1	661
0020	B-17-230	--	--	--	--	--
PROJECT TOTAL			365	365	1	661

SAWING ASPHALT

CATEGORY	LOCATION	(LF)
0010	101+59 - 102+03	89
	103+48 - 104+80	287
PROJECT TOTAL		376

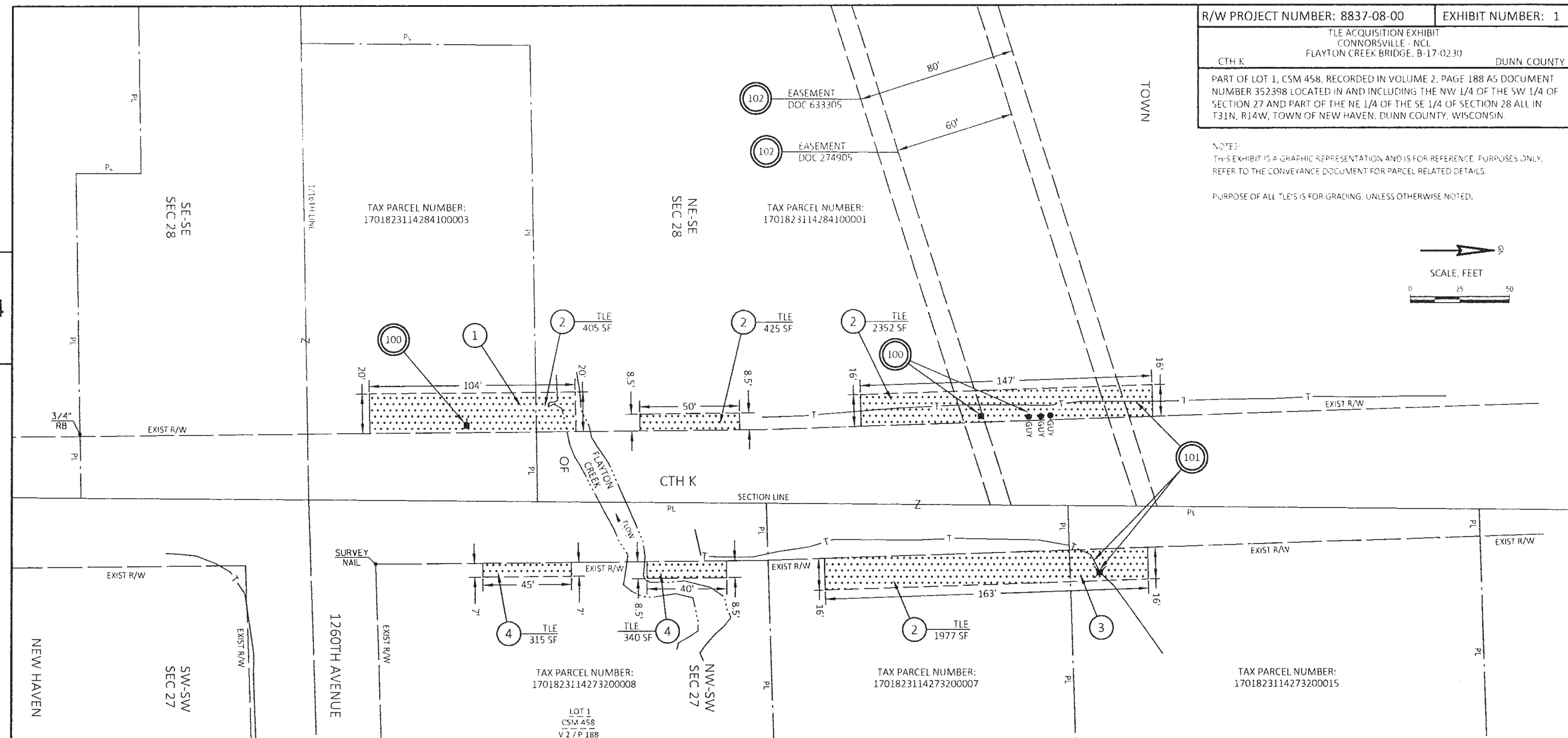
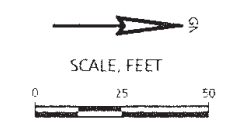
TRAFFIC CONTROL

643.0420 643.0705 643.0900

CATEGORY	STAGE	NO. OF DAYS (DAY)	BARRICADES TYPE III (EACH)	BARRICADES TYPE III (DAY)	WARNING LIGHTS TYPE A (EACH)	WARNING LIGHTS TYPE A (DAY)	SIGNS (EACH)	SIGNS (DAY)
0010	ADVANCED WARNING	77	--	--	--	--	5	385
	STAGE	70	22	1,540	44	3,080	4	280
PROJECT TOTAL		77		1,540		3,080		665

R/W PROJECT NUMBER: 8837-08-00 EXHIBIT NUMBER: 1
 TLE ACQUISITION EXHIBIT
 CONNORSVILLE - NCL
 FLAYTON CREEK BRIDGE, B-17-0230
 CTH K DUNN COUNTY
 PART OF LOT 1, CSM 458, RECORDED IN VOLUME 2, PAGE 188 AS DOCUMENT NUMBER 352398 LOCATED IN AND INCLUDING THE NW 1/4 OF THE SW 1/4 OF SECTION 27 AND PART OF THE NE 1/4 OF THE SE 1/4 OF SECTION 28 ALL IN T31N, R34W, TOWN OF NEW HAVEN, DUNN COUNTY, WISCONSIN

NOTES:
 THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.
 PURPOSE OF ALL TLE'S IS FOR GRADING, UNLESS OTHERWISE NOTED.



SCHEDULE OF LANDS & INTERESTS REQUIRED

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

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE S.F.
1	RICHARD C. MAGLER JR. AND KAREN L. FRITZ	TLE	1678
2	PAMELA NOSKO AND DONALD R. GRAMBO	TLE	5159
3	DAIRYLAND POWER COOPERATIVE	TLE	632
4	RANDY A BEYRER AND JAYME A BEYRER - VENDOR AND MLPDA, LLC - PURCHASER	TLE	655

UTILITY INTERESTS REQUIRED

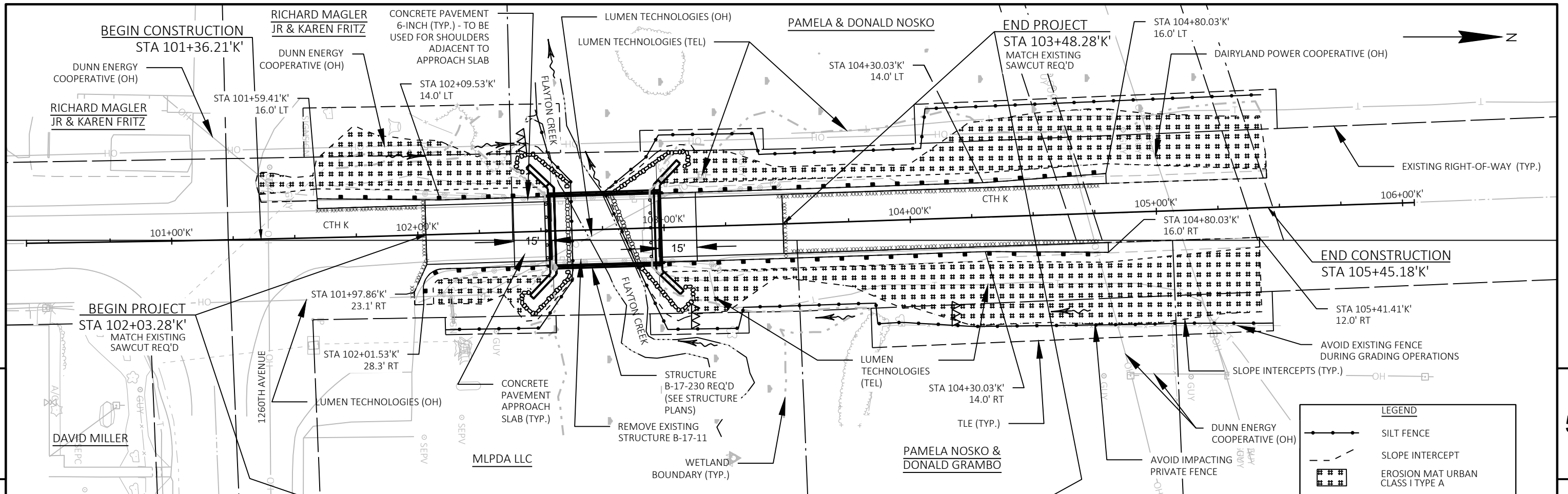
UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
100	DUNN ENERGY COOPERATIVE	TEMPORARY RELEASE OF RIGHTS
101	CENTURYLINK	TEMPORARY RELEASE OF RIGHTS
102	DAIRYLAND POWER COOPERATIVE	TEMPORARY RELEASE OF RIGHTS

EASEMENT TABLE

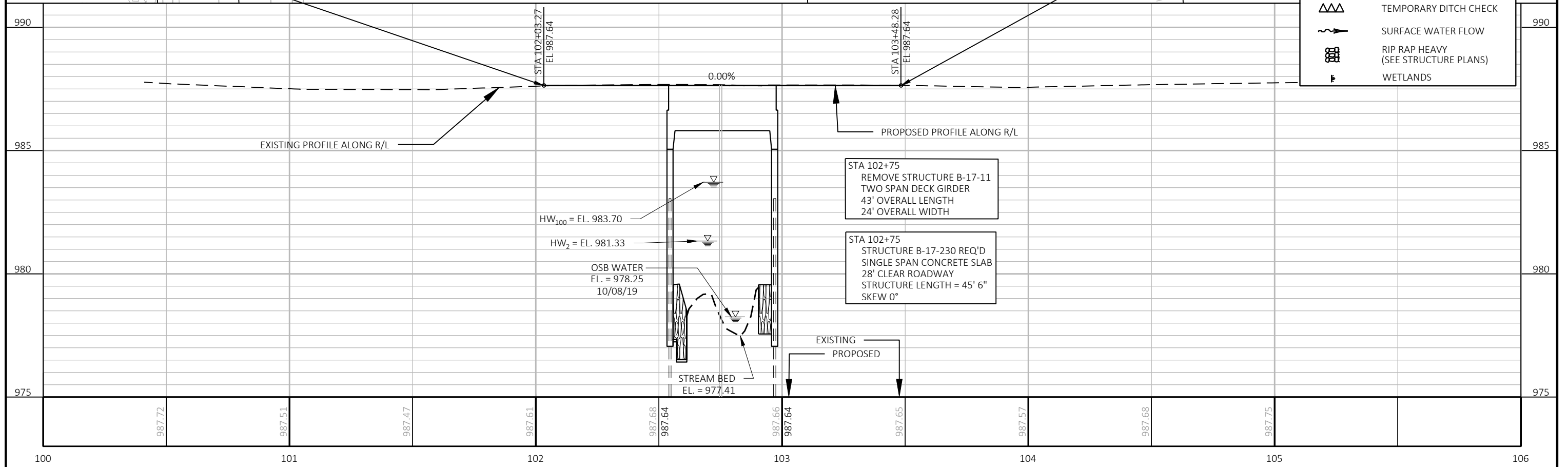
UTILITY NUMBER	OWNER	RECORDING INFORMATION	LOCATED IN R/W/ PARCEL NO
100	DUNN ENERGY COOPERATIVE	BLANKET EASEMENT - V 122 / P 187 / DOC 194590	1
100	DUNN ENERGY COOPERATIVE	BLANKET EASEMENT - DOC 568104	2
100	DUNN ENERGY COOPERATIVE	BLANKET EASEMENT - V 124 / P 461 / DOC 194561	2
101	CENTURYLINK	BLANKET EASEMENT - V 245 / P 306 / DOC 306189 AND ASSIGNMENT - V 938 / P 1 / DOC 464942	2
102	DAIRYLAND POWER COOPERATIVE	60' WIDE EASEMENT - DOC 633305	2
102	DAIRYLAND POWER COOPERATIVE	60' WIDE EASEMENT CENTERED ON POWERLINE - V 173 / P 626 / DOC 274905	2

THIS MAP IS APPROVED FOR DUNN COUNTY

SIGNATURE: *[Signature]* DATE: 3/16/21
 PRINT NAME: JOHN J. SWORSKI, HWY. COMM.



LEGEND	
	SILT FENCE
	SLOPE INTERCEPT
	EROSION MAT URBAN CLASS I TYPE A
	TEMPORARY DITCH CHECK
	SURFACE WATER FLOW
	RIP RAP HEAVY (SEE STRUCTURE PLANS)
	WETLANDS

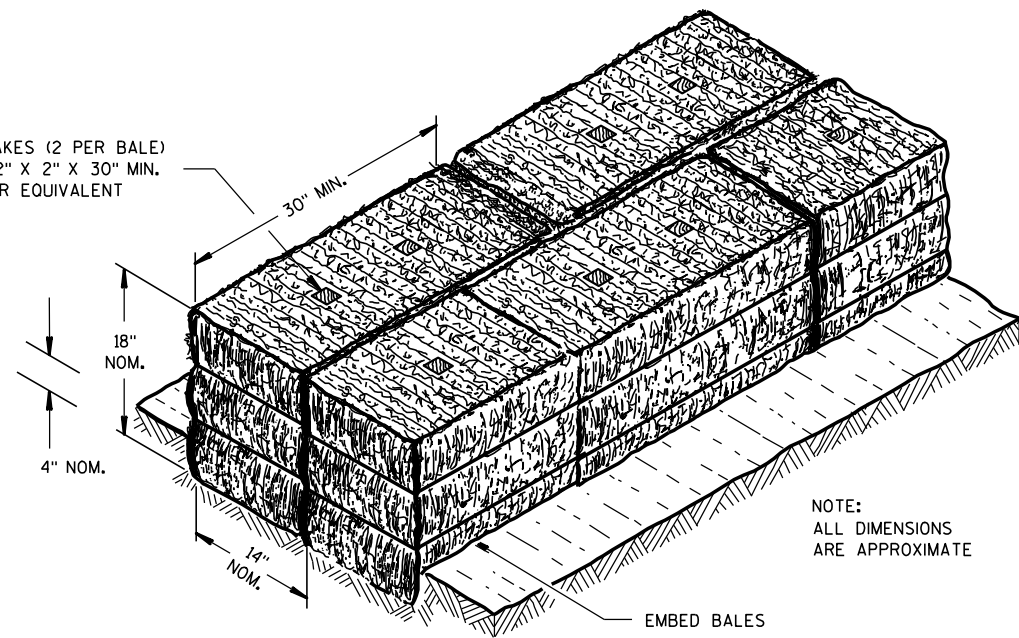


PROJECT NO: 8837-08-70	HWY: CTH K	COUNTY: DUNN	PLAN AND PROFILE: CTH K	SHEET 13 E
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Standard Detail Drawing List

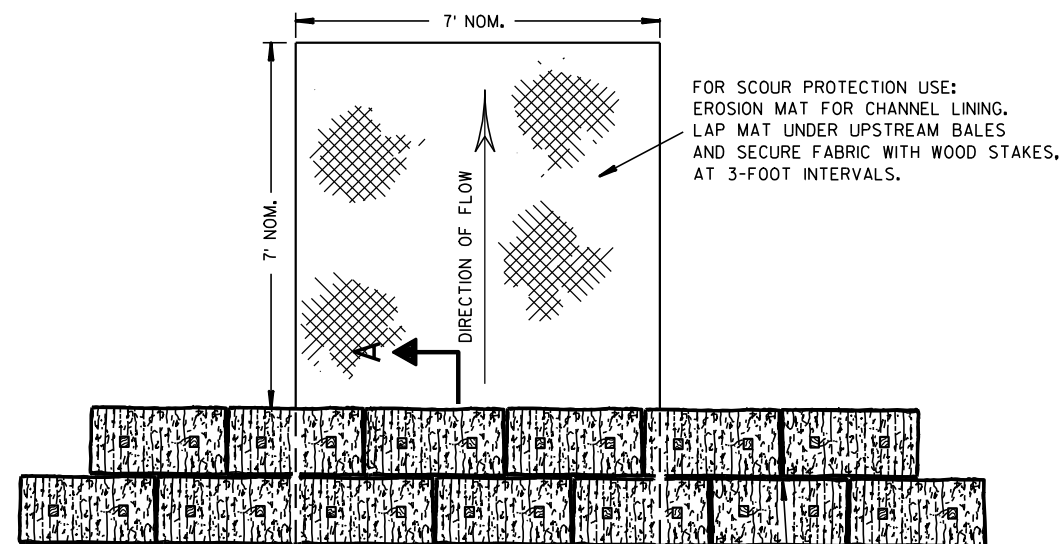
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11F	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

SECTION A-A

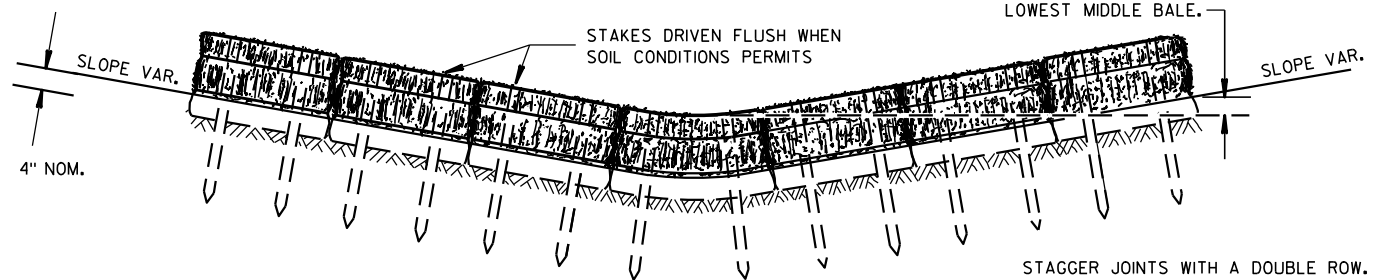


FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



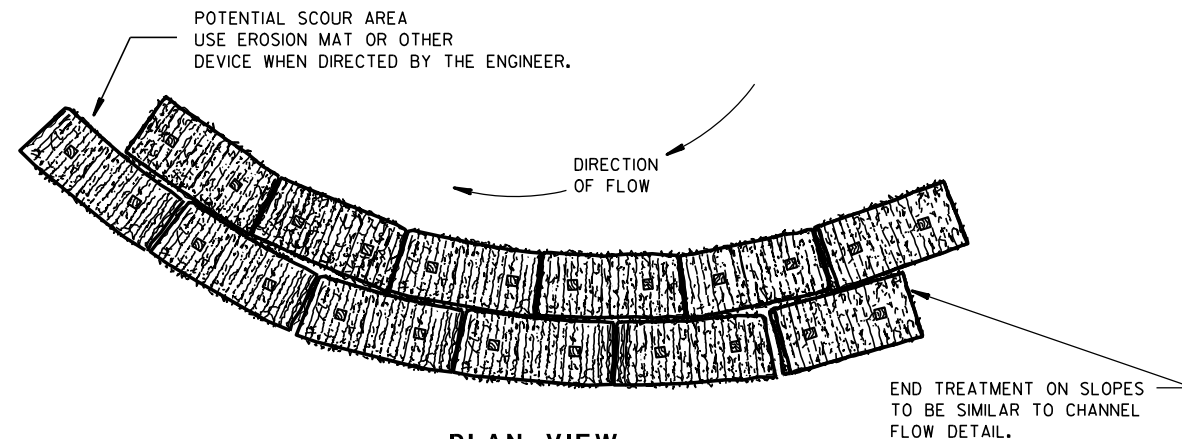
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

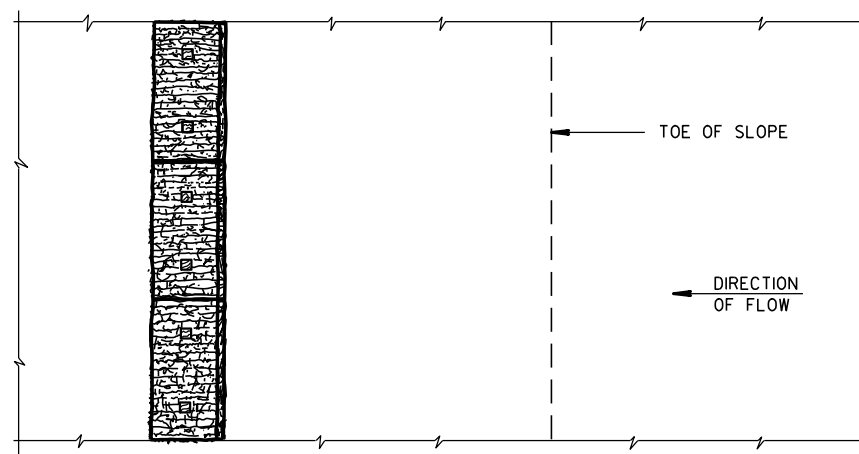
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

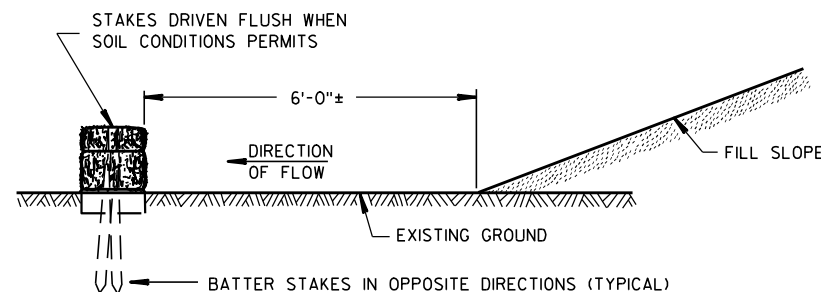


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

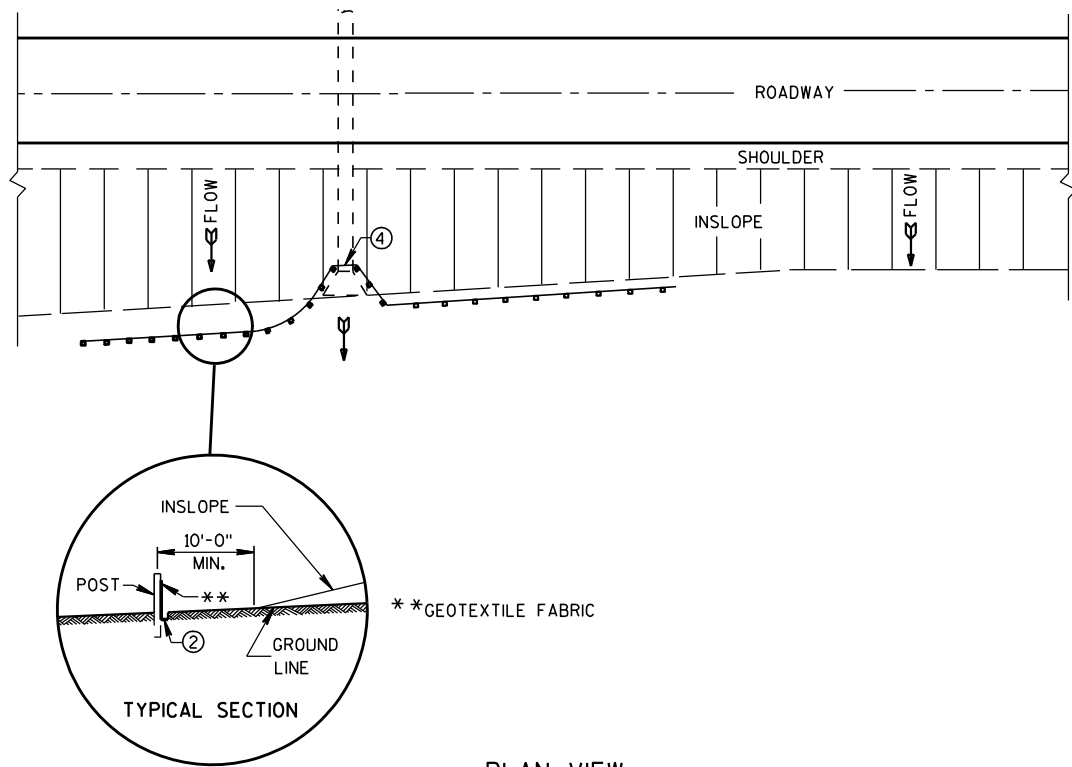
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

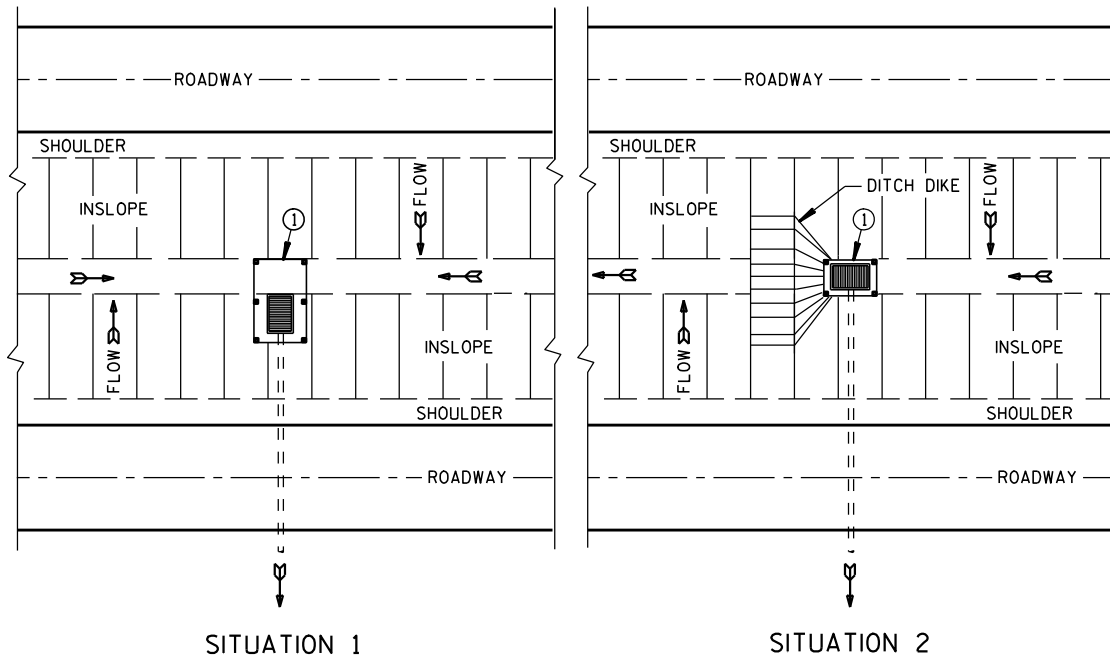
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

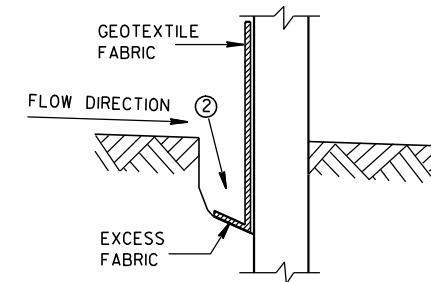


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

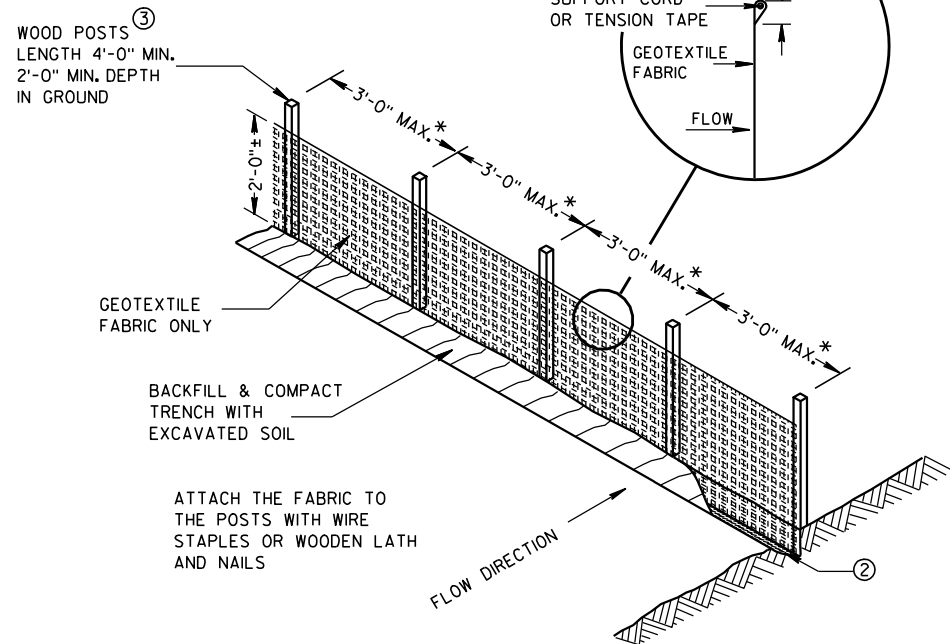
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



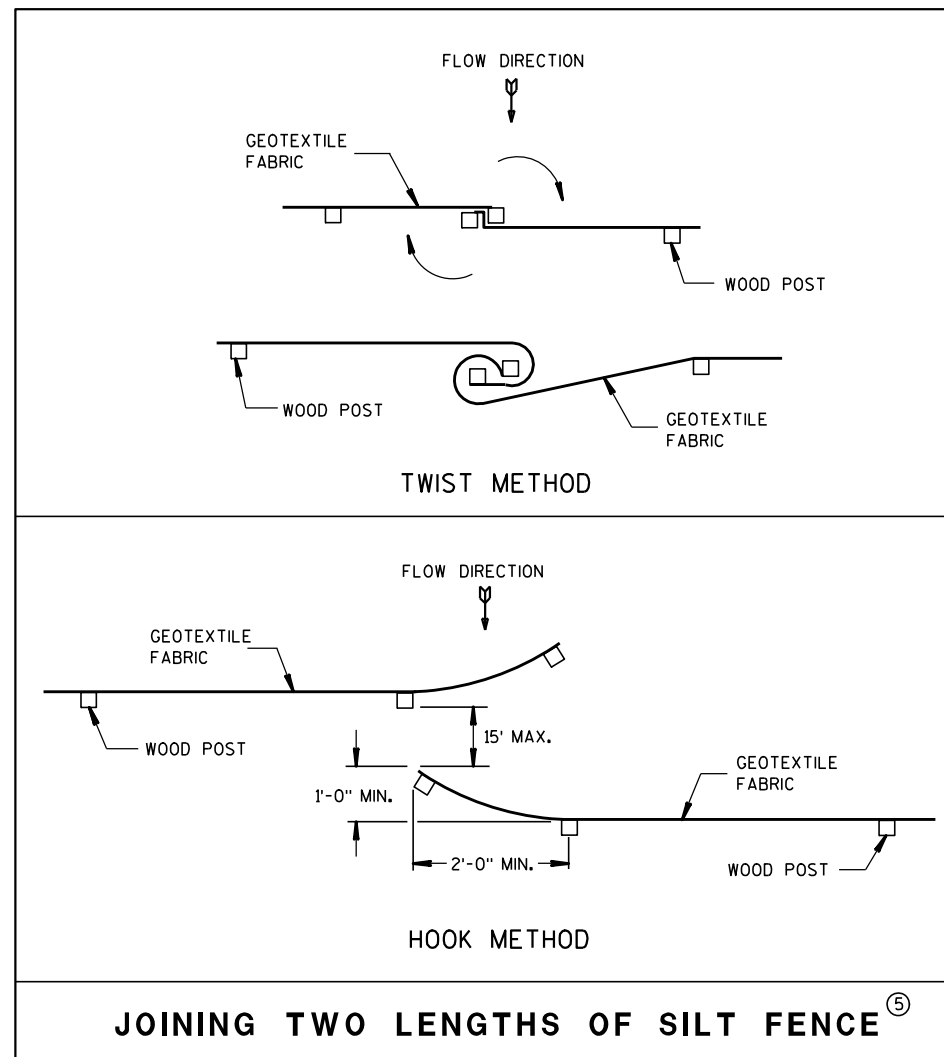
TRENCH DETAIL

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

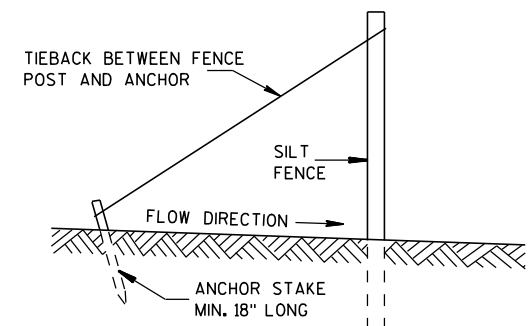


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤

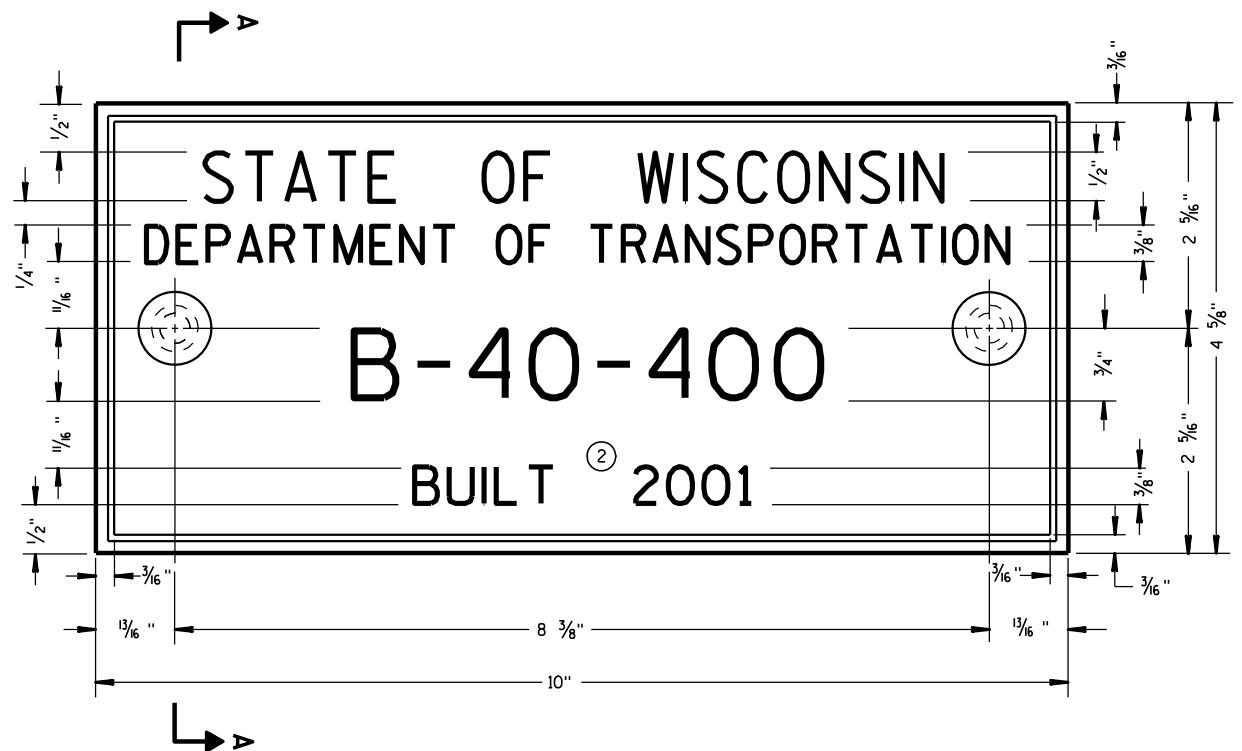


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



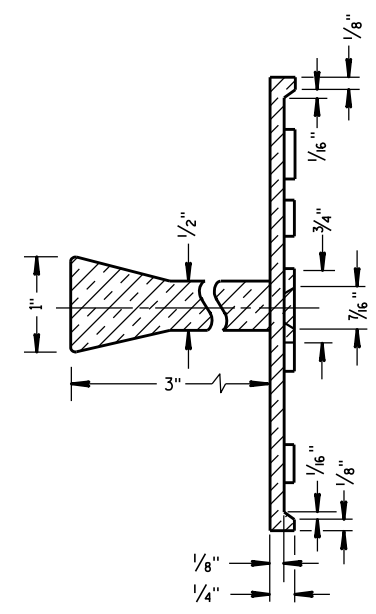
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

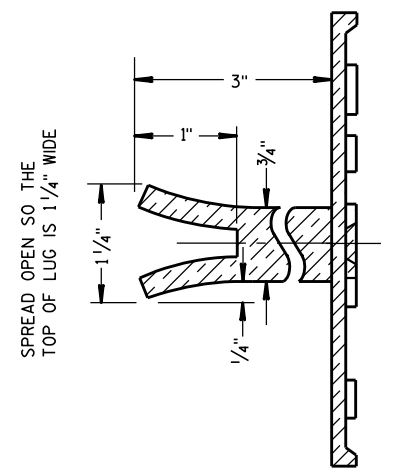
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

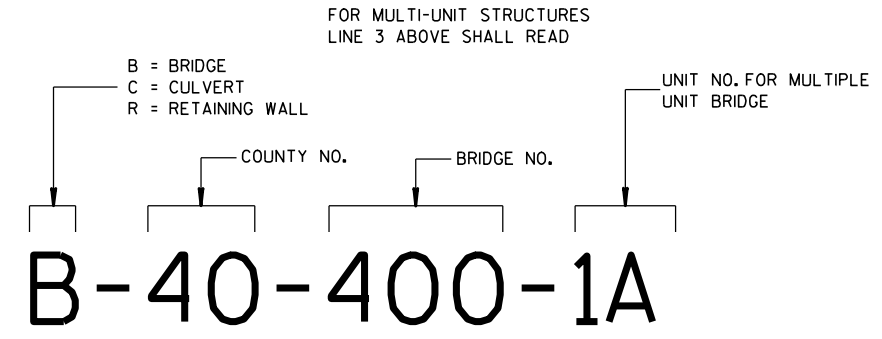
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A

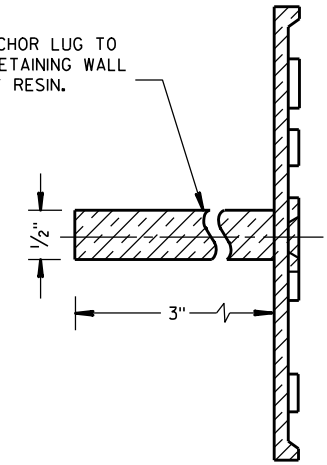


ALTERNATE LUG



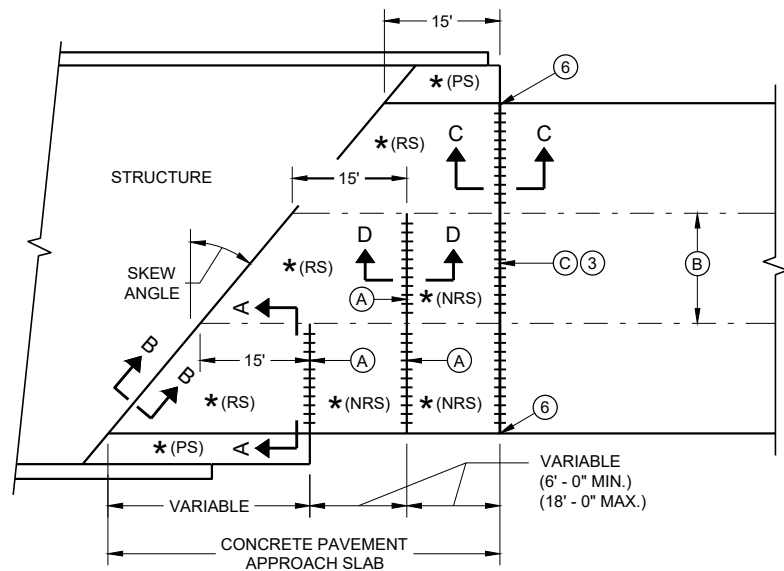
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

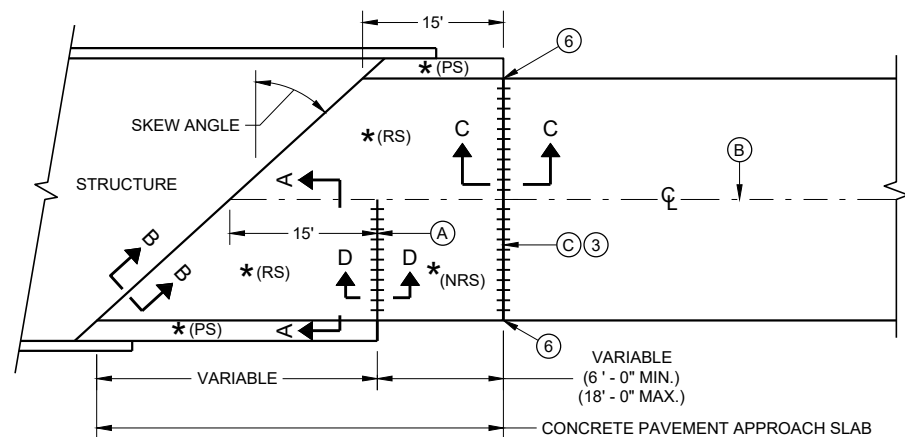


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

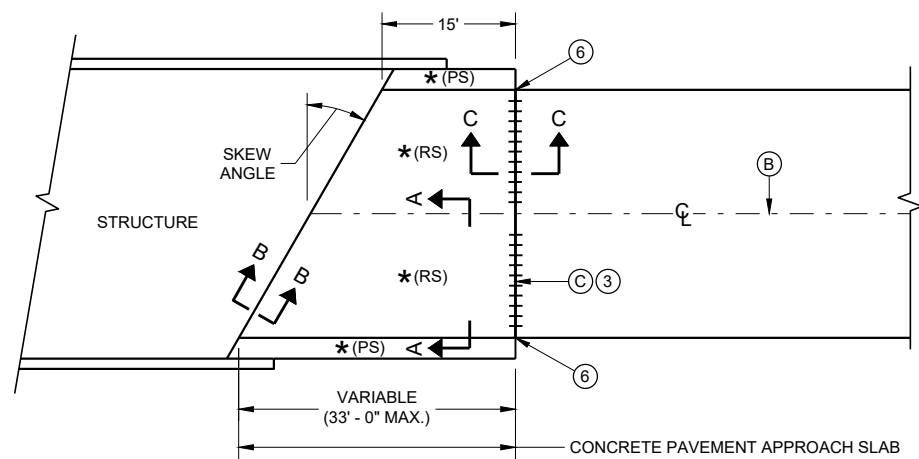
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



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

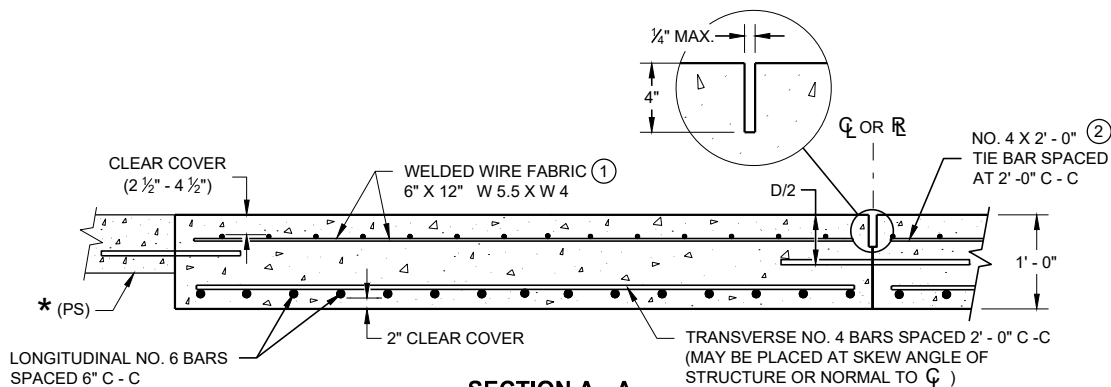


**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

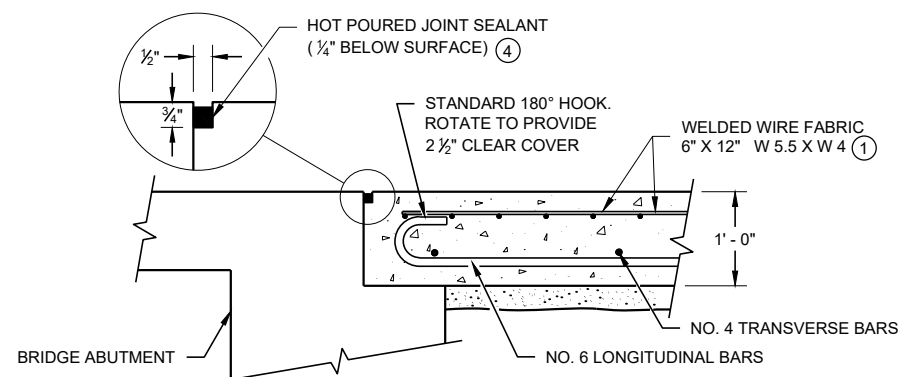


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**
APPROACH SLAB AND ADJACENT PAVEMENT

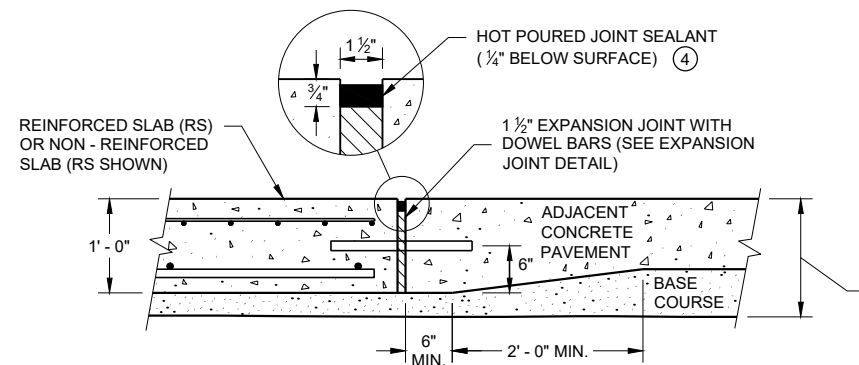
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



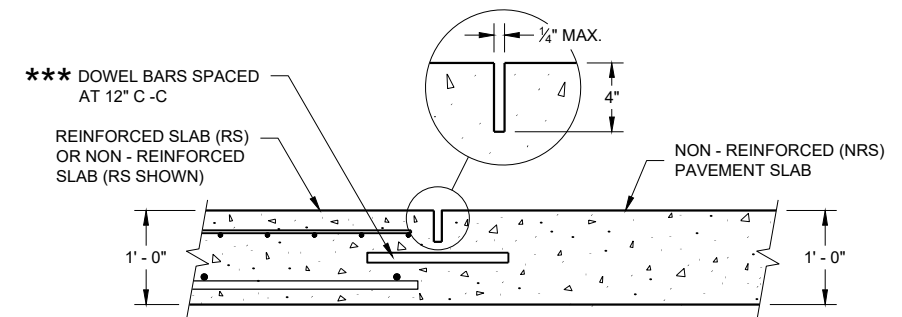
**SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT**



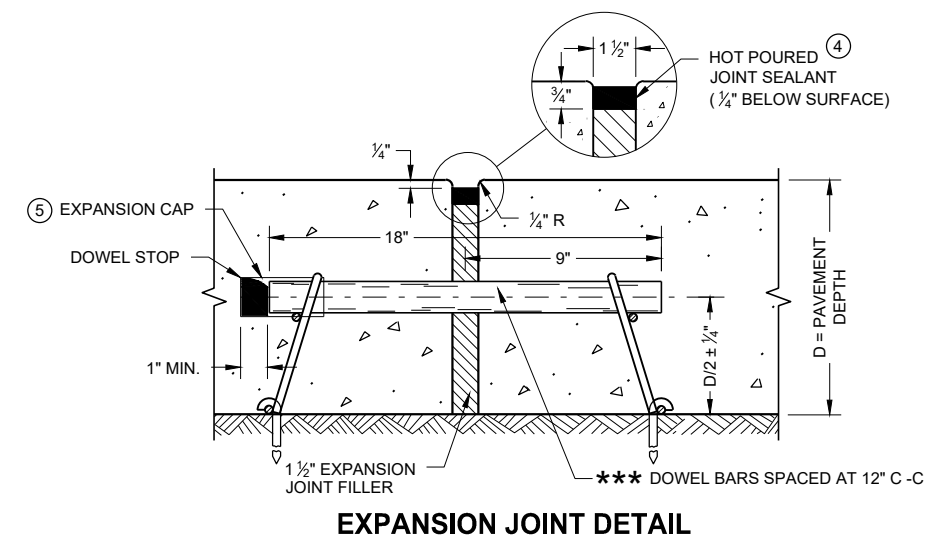
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

- THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.
- TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.
- (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 THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
 - (3) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
 - (4) USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
 - (5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
 - (6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
 - (A) STANDARD CONTRACTION JOINT NORMAL TO \perp OR \parallel .
 - (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
 - (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO \perp OR \parallel .



**SECTION D - D
CONTRACTION JOINT**



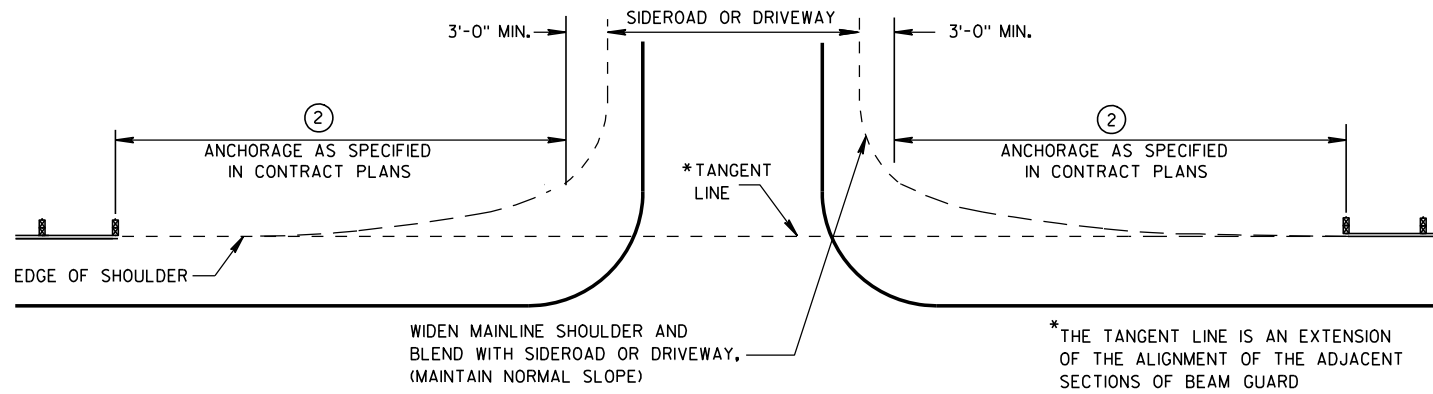
EXPANSION JOINT DETAIL

**CONCRETE PAVEMENT
APPROACH SLAB**

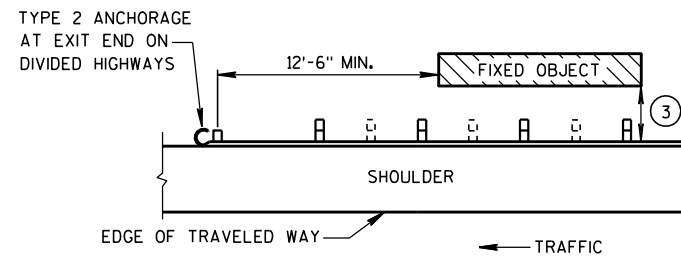
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE DATE PAVEMENT SUPERVISOR

FHWA



BEAM GUARD AT SIDEROADS OR DRIVEWAYS



**BEAM GUARD AT OBSTACLES
EXIT END - ONE WAY TRAFFIC**

GENERAL NOTES

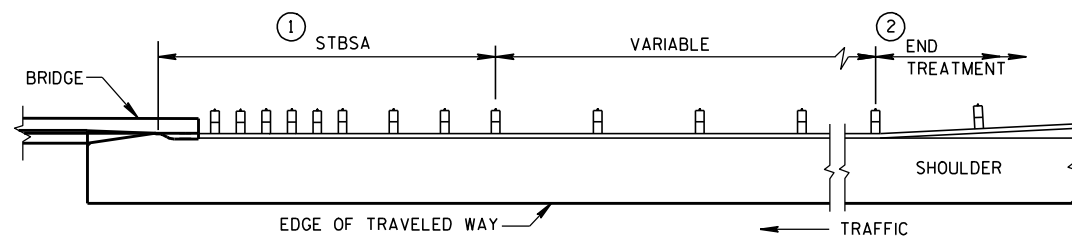
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

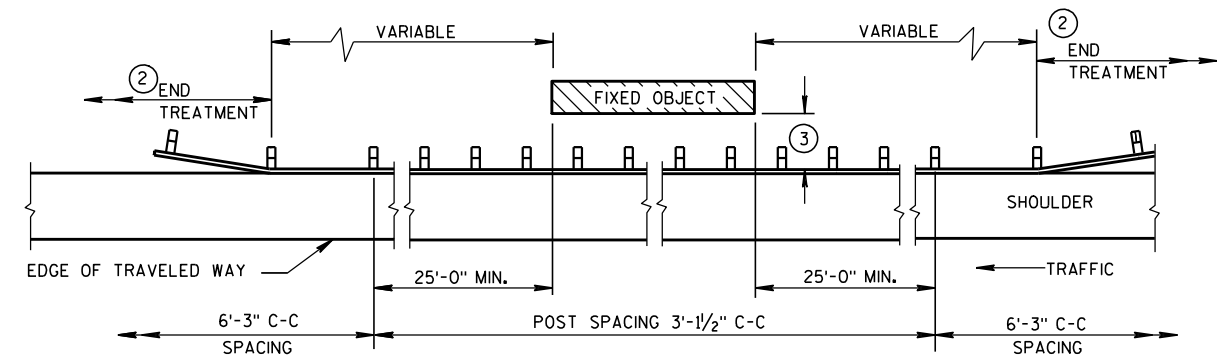
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

- ① STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- ② USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

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



BEAM GUARD AT FULL WIDTH BRIDGES

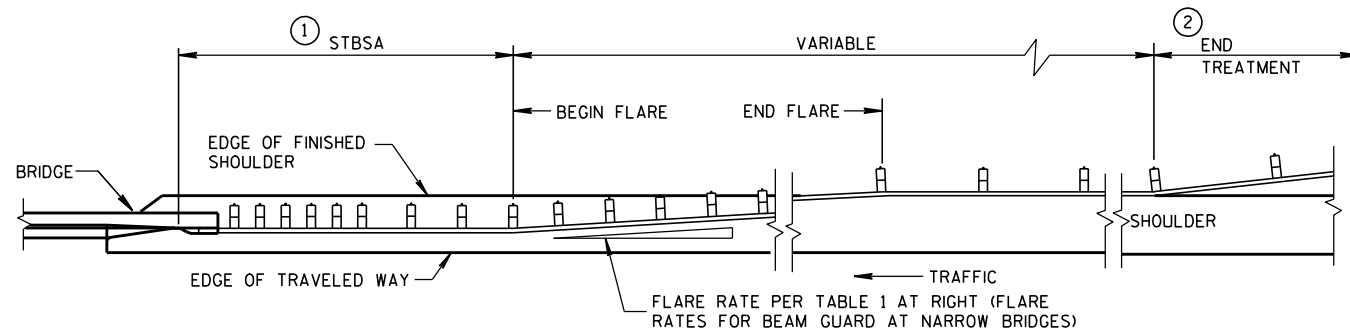


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

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

**TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES**

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



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

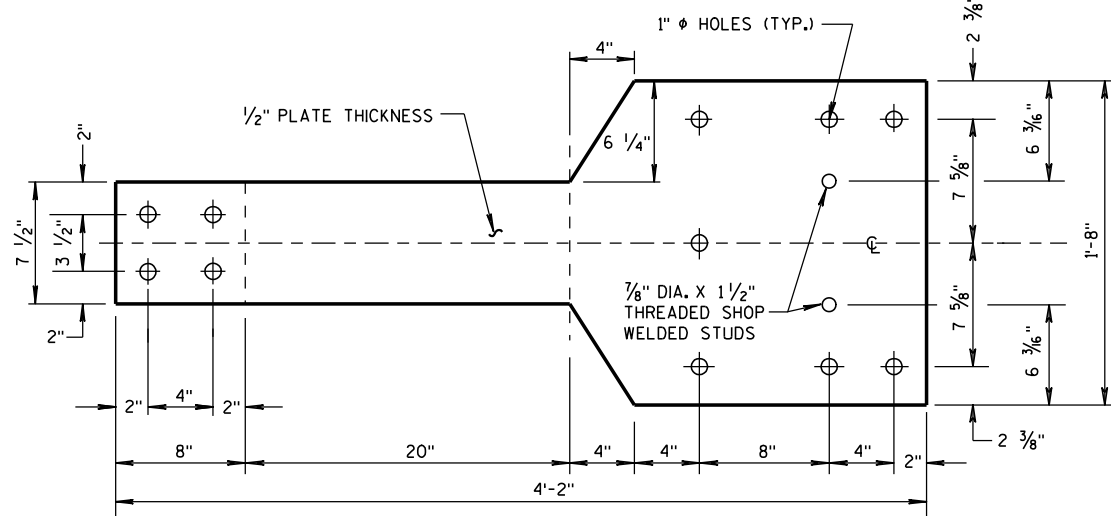
**STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

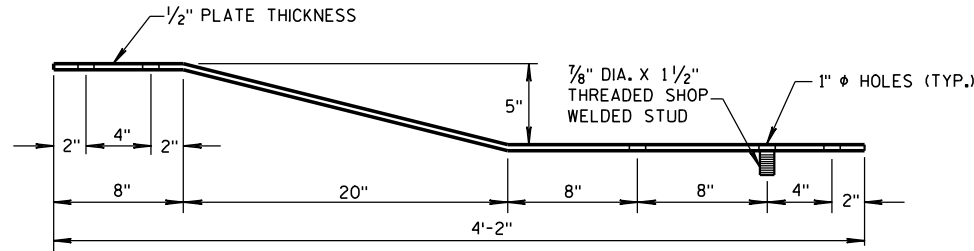
APPROVED
8-21-07 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

GENERAL NOTES

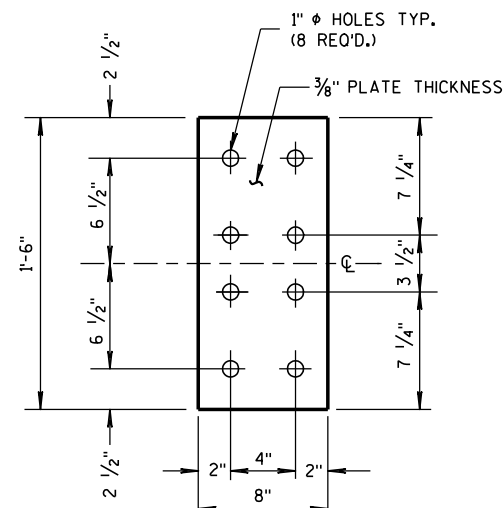
① VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL BE AS CLOSE AS FEASIBLE TO THE STEEL END POST.



FRONT VIEW

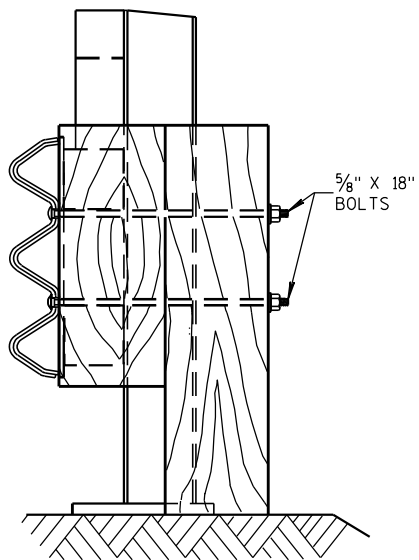


**PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"**

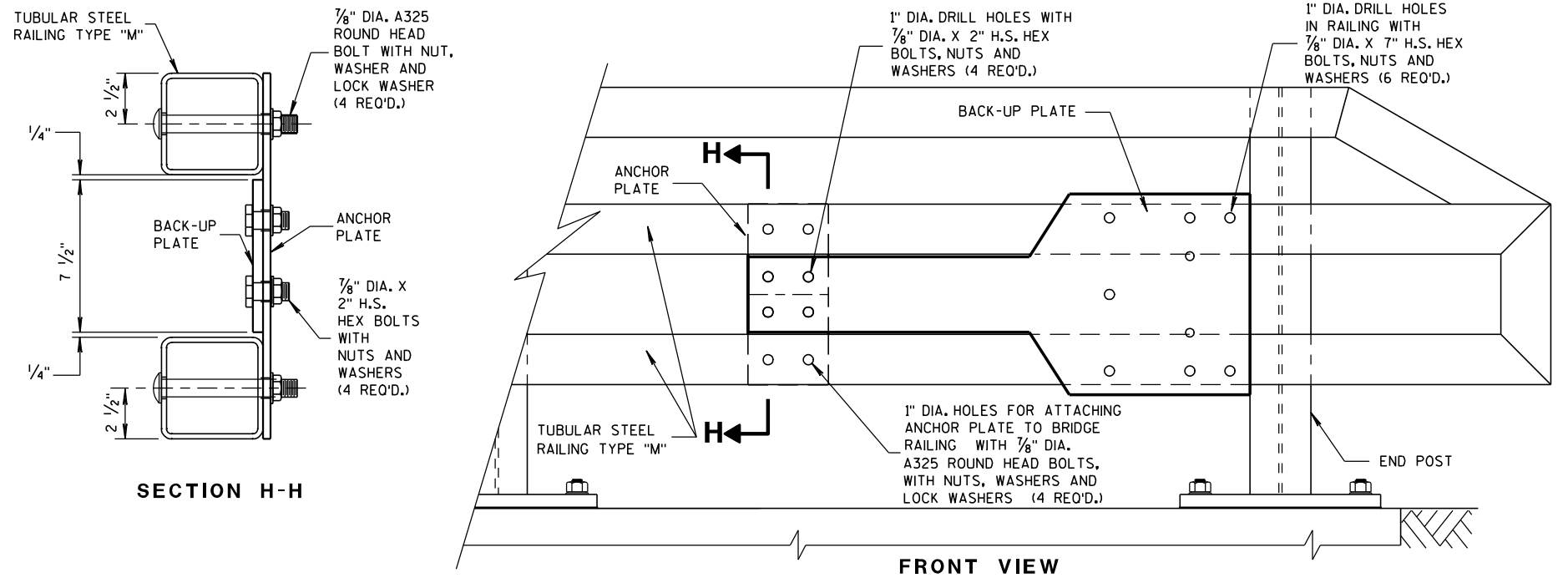


FRONT VIEW

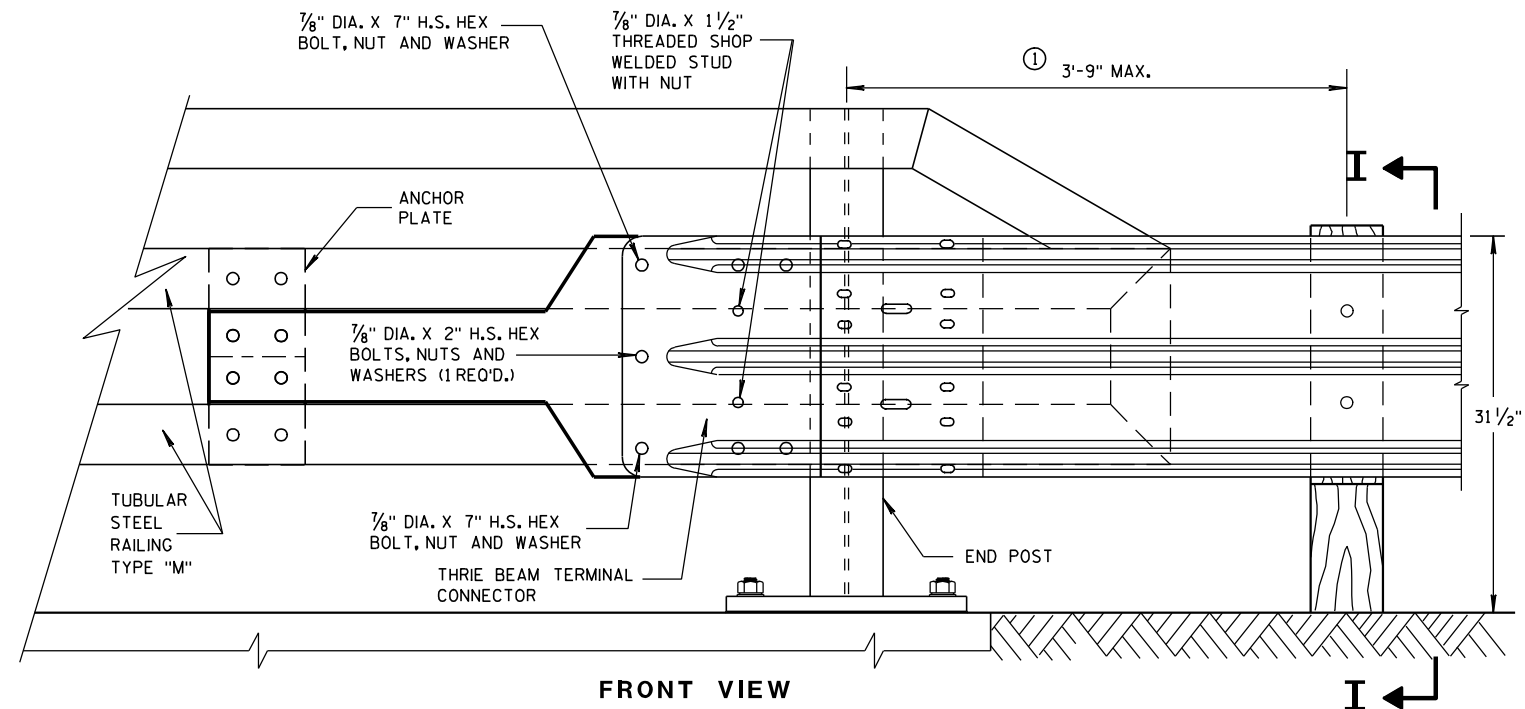
**ANCHOR
PLATE DETAIL,
TYPE "M"**



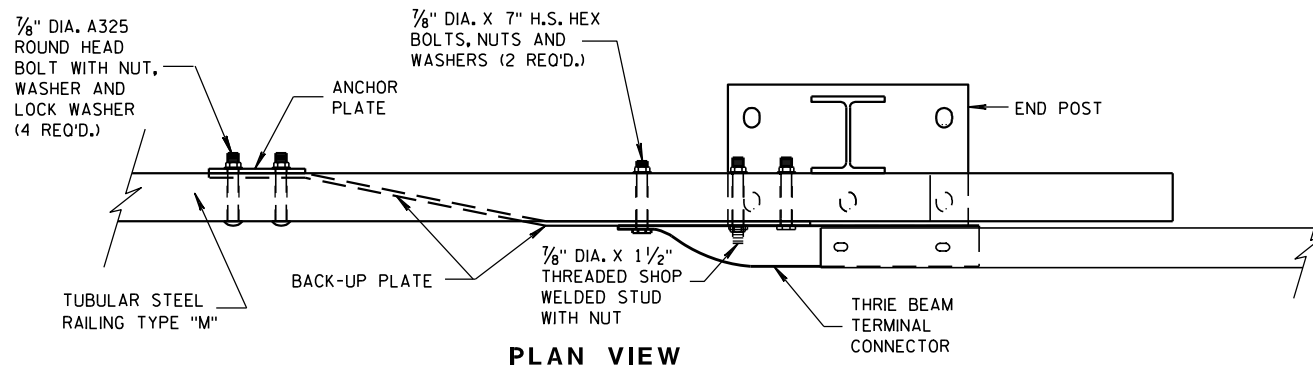
SECTION I-I



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



FRONT VIEW



PLAN VIEW

THREE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

**STEEL THREE BEAM STRUCTURE
APPROACH CONNECTION TO
BRIDGE RAILING TYPE "M"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6 1/2"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

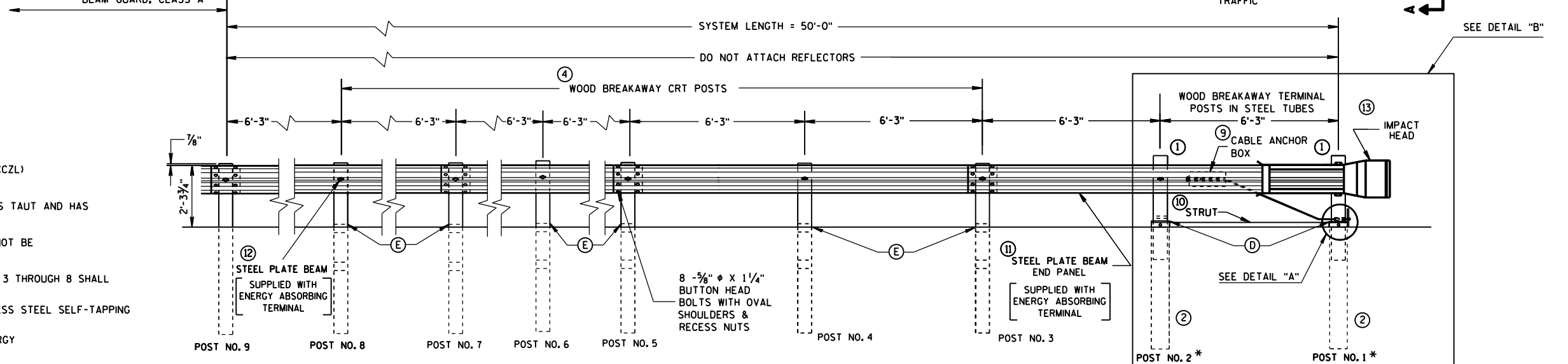
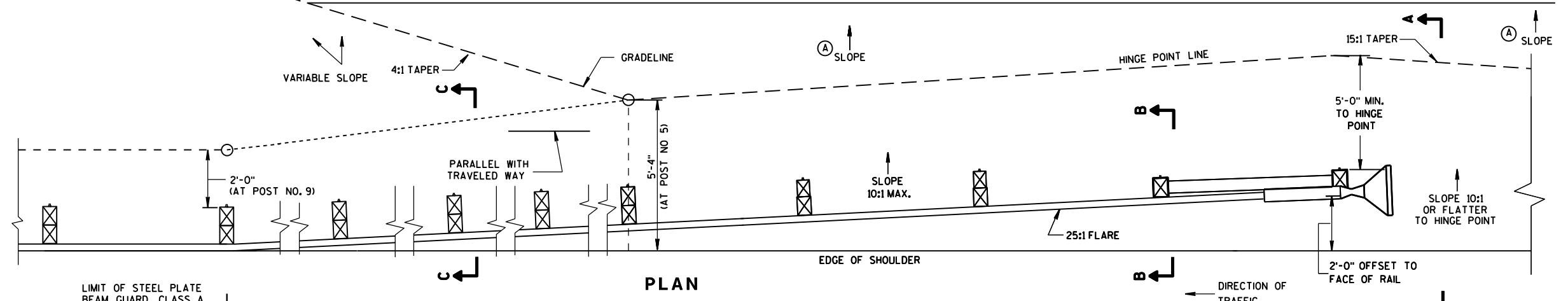
FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

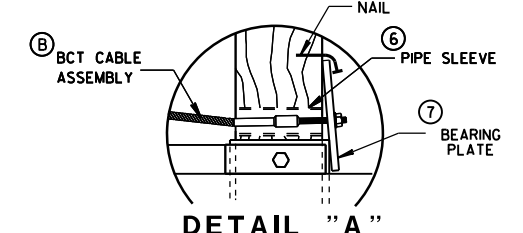
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

*DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

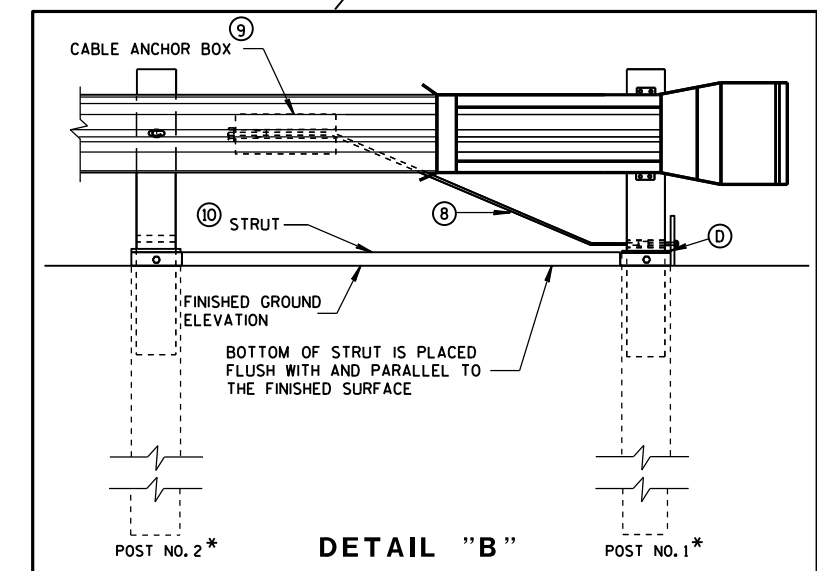
CLEAR ZONE LIMITS, EITHER AS SHOWN ELSEWHERE IN THE PLANS OR, IF NOT SHOWN ELSEWHERE IN THE PLANS, 15 FEET BEYOND THE HINGE POINT LINE



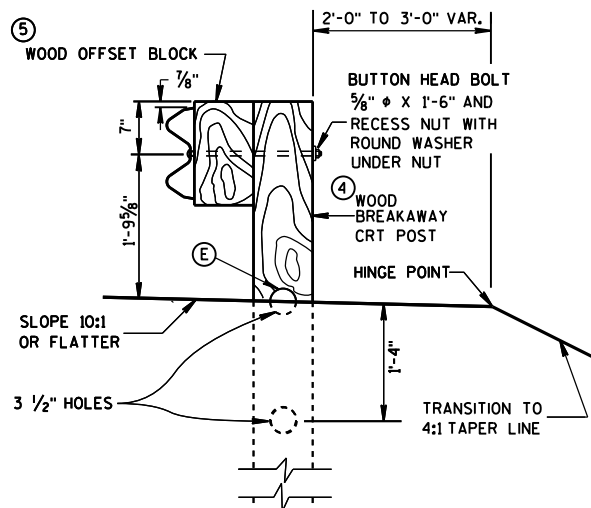
ELEVATION



DETAIL "A"

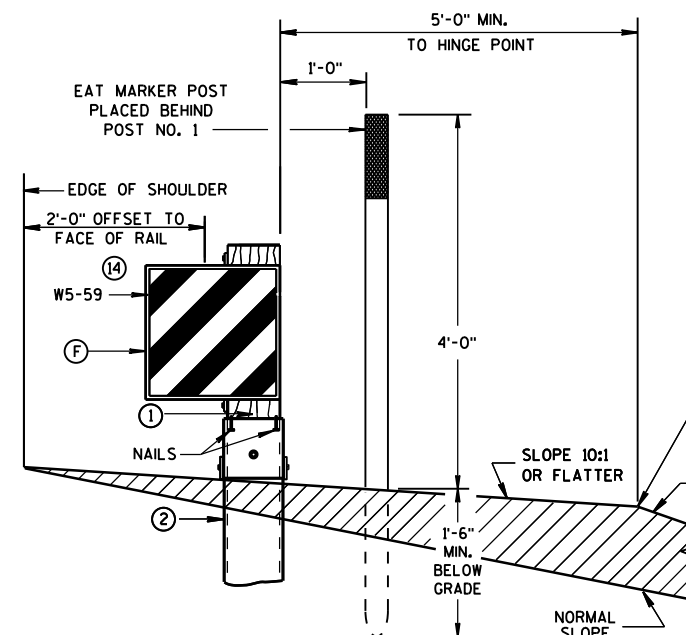


DETAIL "B"



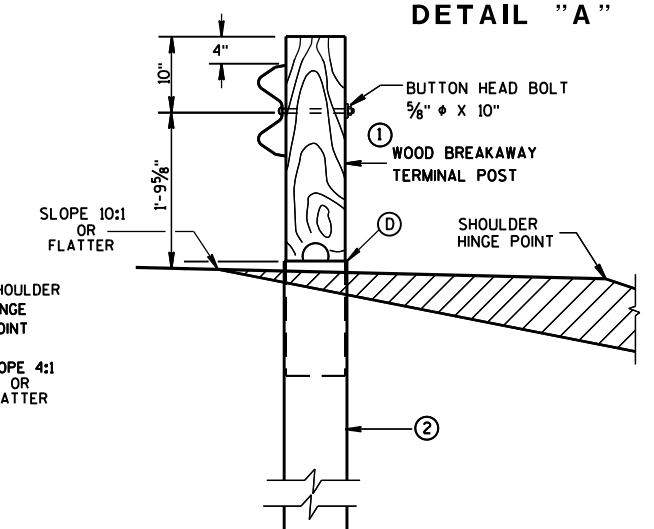
SECTION C-C

TYPICAL AT POST NOS. 6, 8



SECTION A-A

TYPICAL AT POST NO. 1*



SECTION B-B

TYPICAL AT POST NO. 2*

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

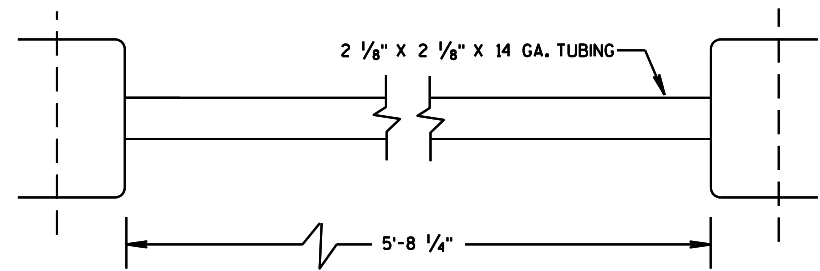
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

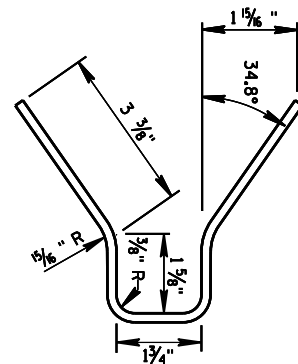
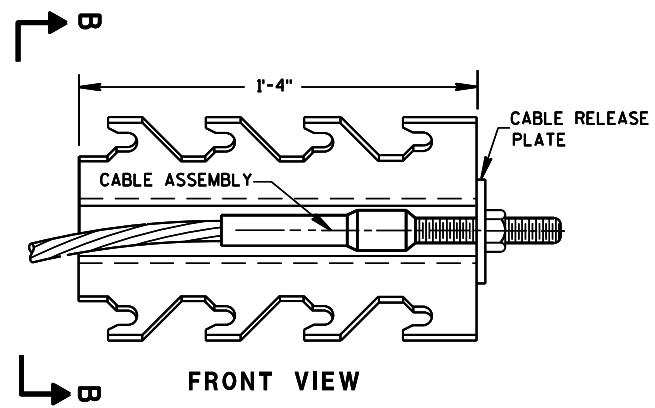
6

S.D.D. 14 B 24-9a

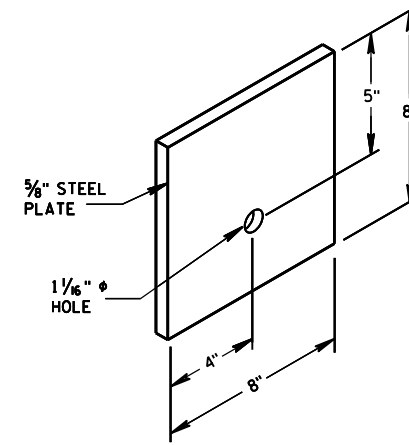
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL



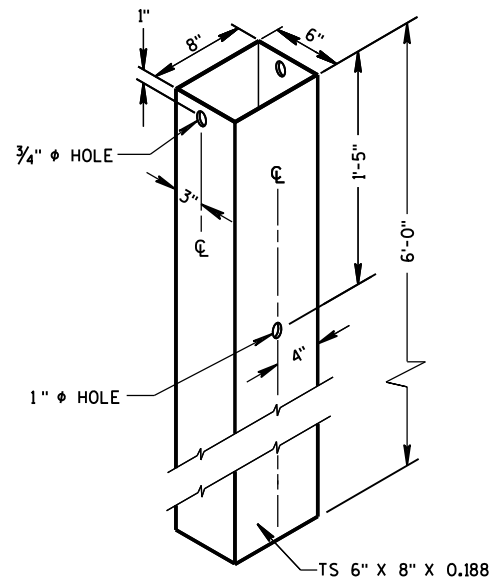
⑨ CABLE ANCHOR BOX



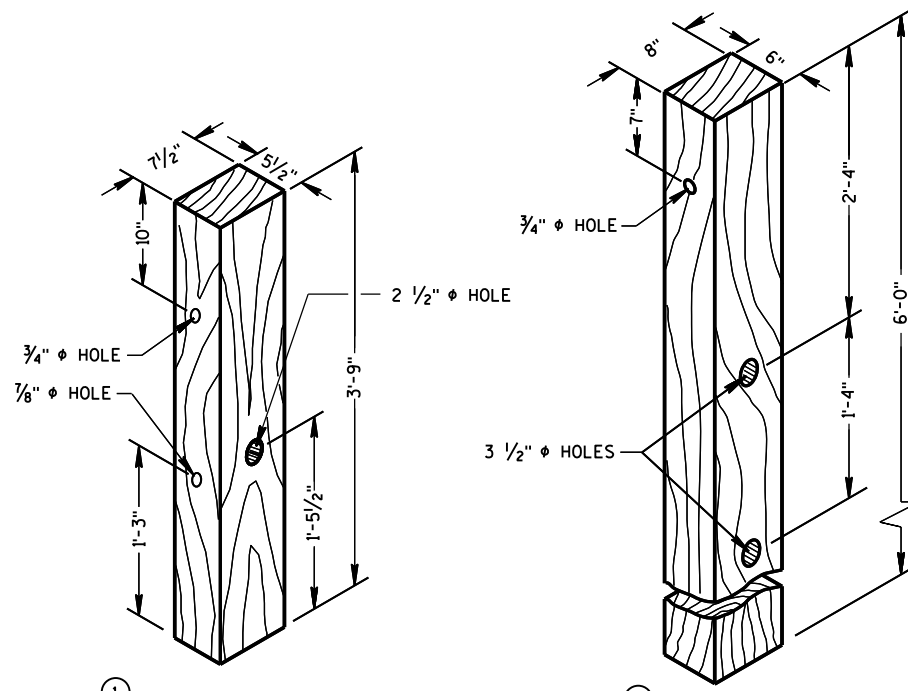
⑦ STEEL BEARING PLATE

6

6



② **72" STEEL TUBE**
(POSTS NO. 1-2)



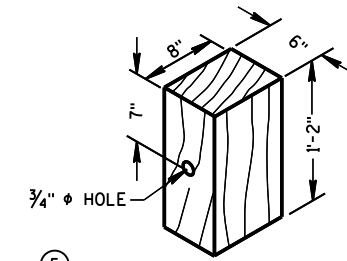
① **TERMINAL POST**

④ **CRT POST**
(POSTS NO'S 5-8)

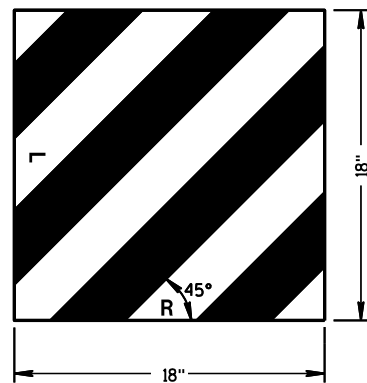
WOOD BREAKAWAY POSTS

GENERAL NOTES

WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

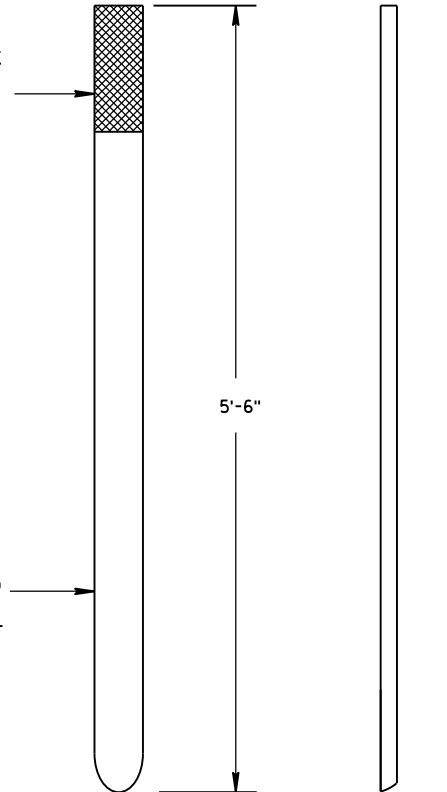


⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



⑭ **REFLECTIVE SHEETING DETAILS**

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



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST

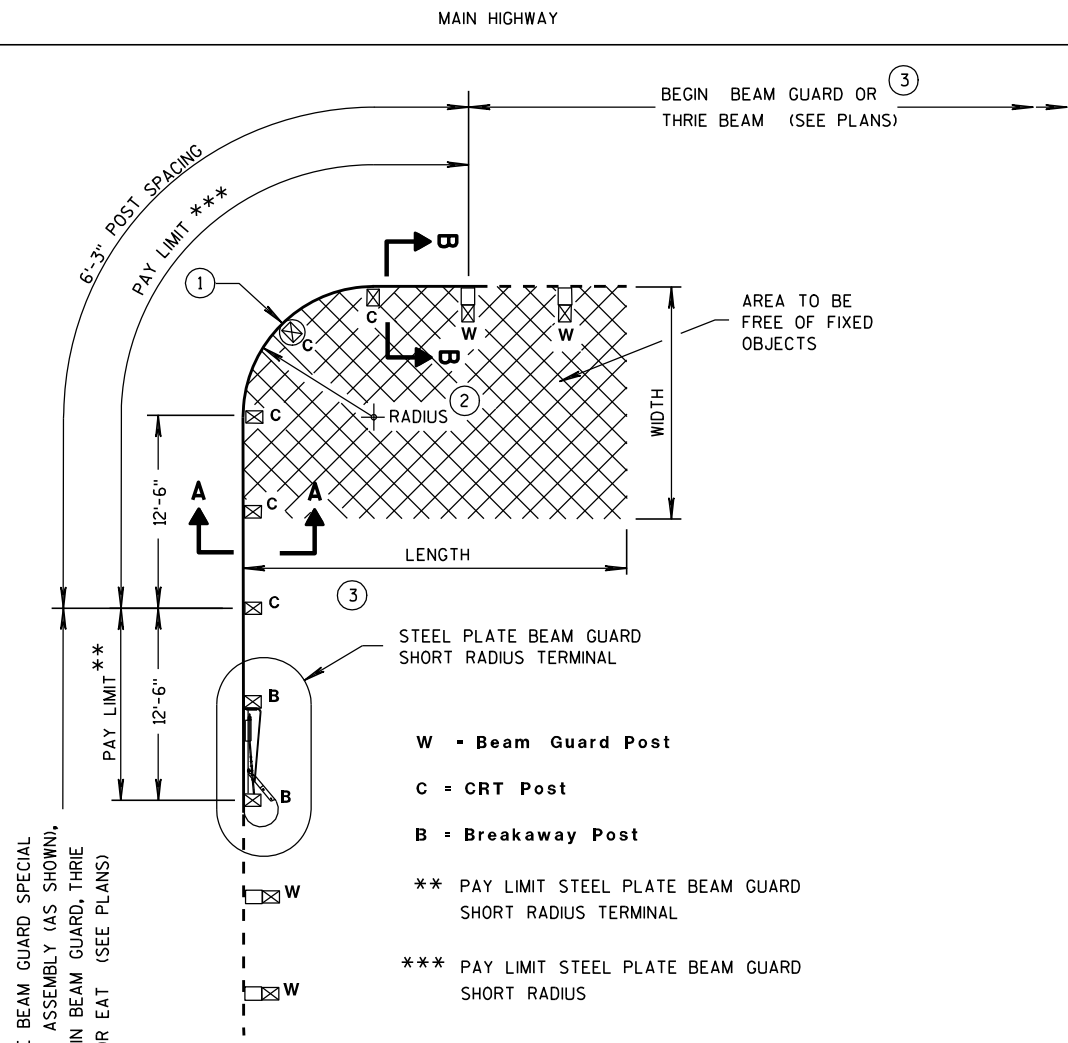
E.A.T. MARKER
POST (YELLOW)
SEE APPROVED
PRODUCTS LIST

**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

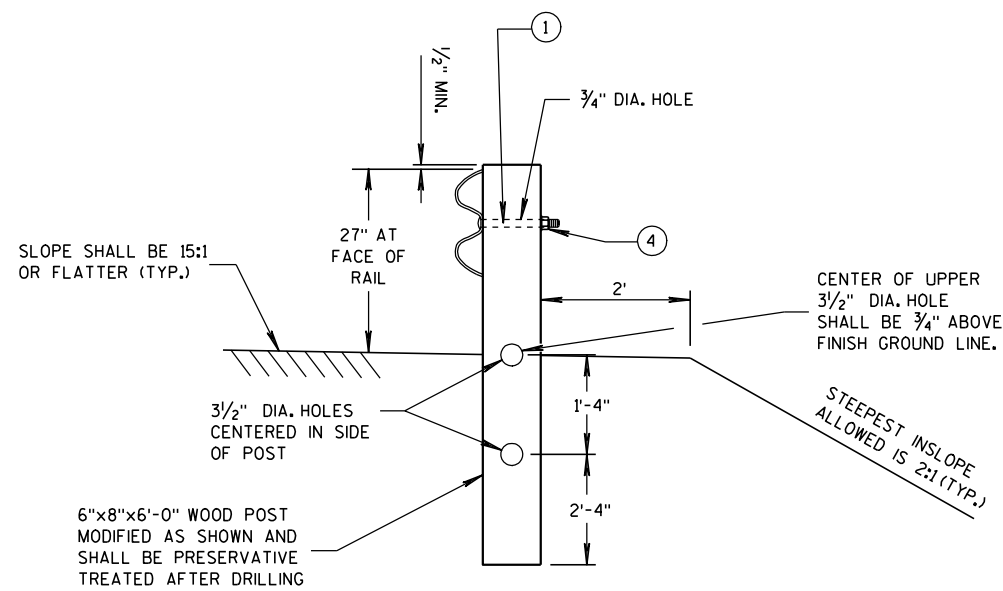
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

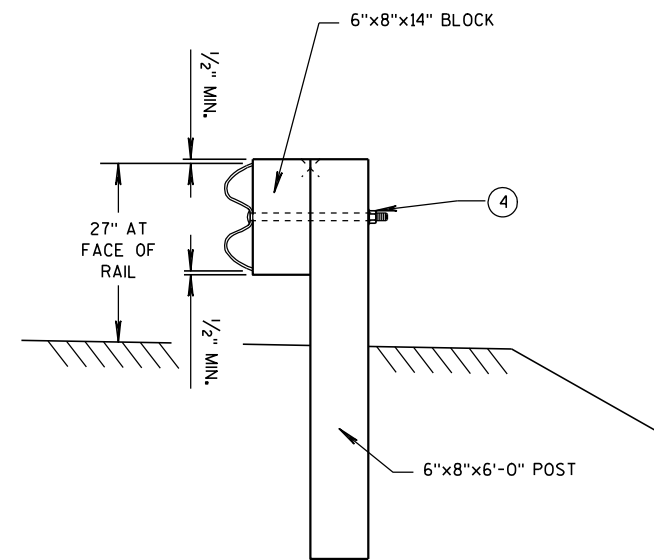
FARM ENTRANCE, FIELD ENTRANCE, DRIVEWAY,
SERVICE ROAD OR INTERSECTING ROAD



TYPICAL LAYOUT
(8' RADIUS SHOWN)



SECTION A-A
(CRT POST)



SECTION B-B
(BEAM GUARD POST)

TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

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

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

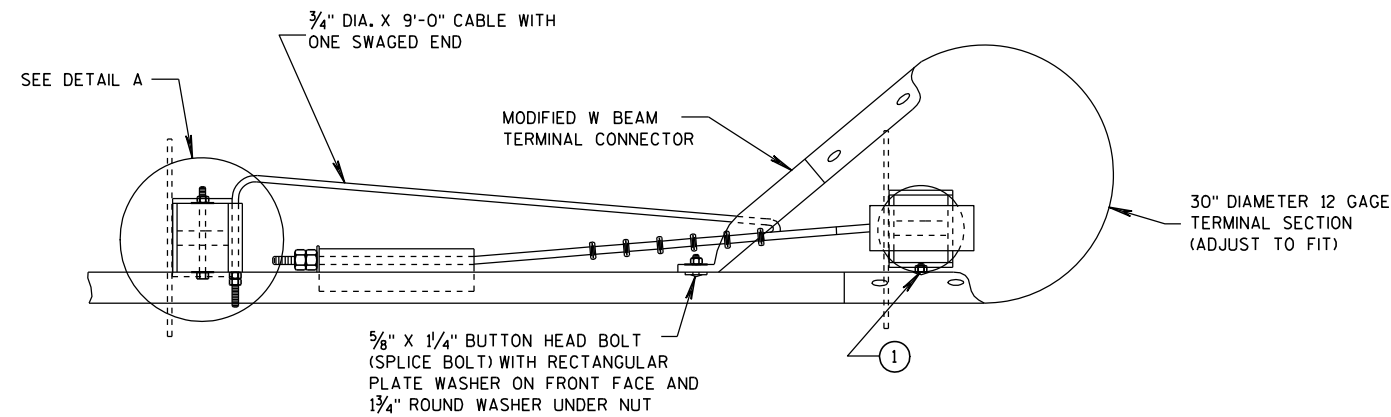
- ① ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- ② RADIUS FROM 8' - 36'. SEE PLAN.
- ③ HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- ④ 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

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

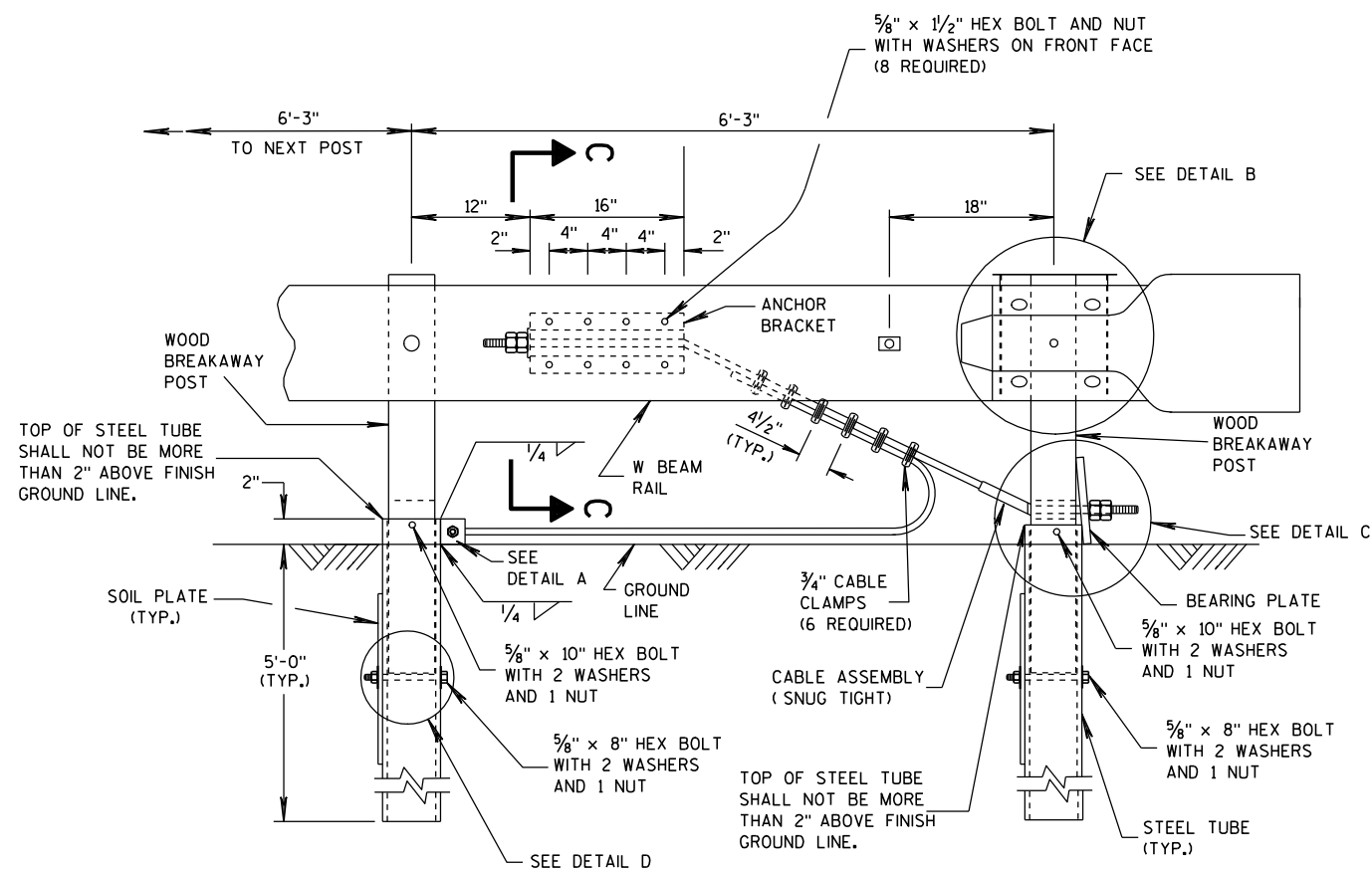
* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW



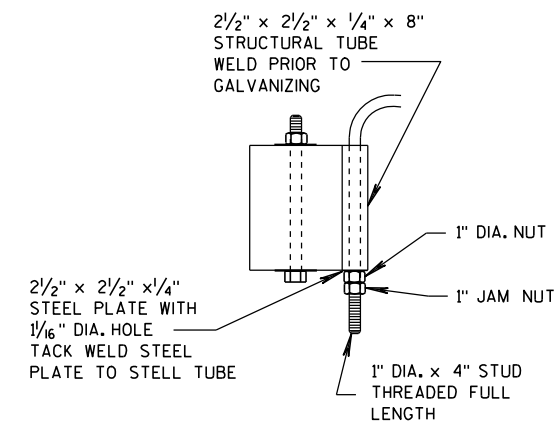
ELEVATION VIEW

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

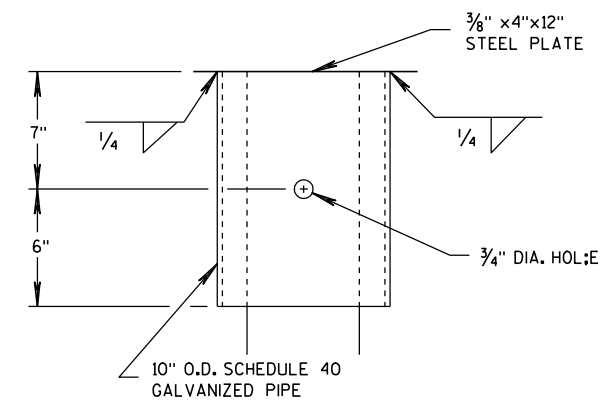
GENERAL NOTES

1 ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A 5/8" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED 3/4" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED FLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A

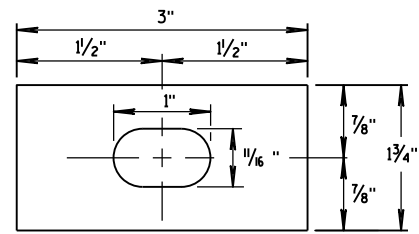


DETAIL B

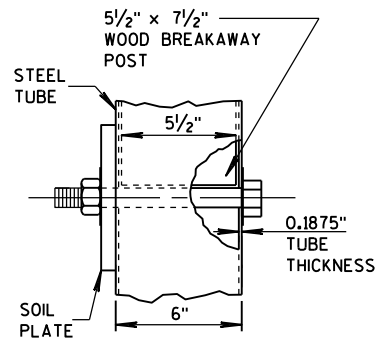
(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

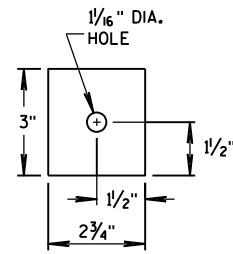
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



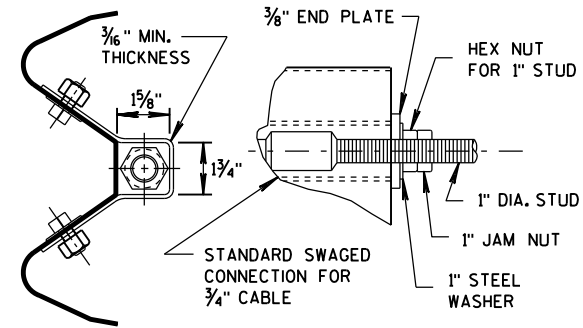
**RECTANGULAR
PLATE WASHER**



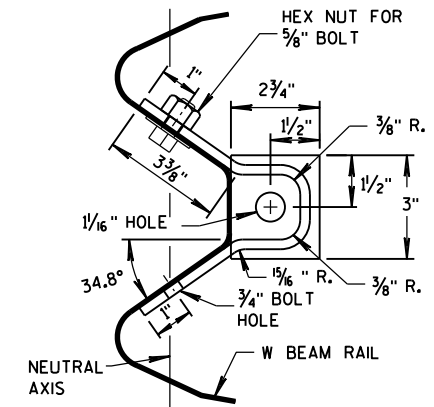
DETAIL D



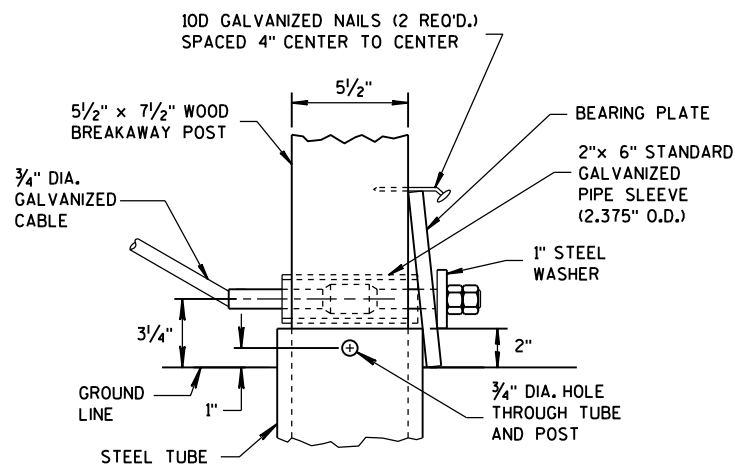
END PLATE



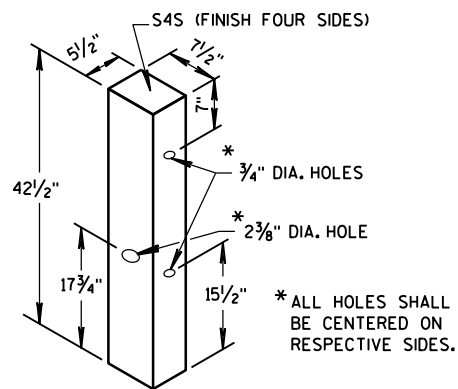
**SECTION C-C
(END PLATE REMOVED)**



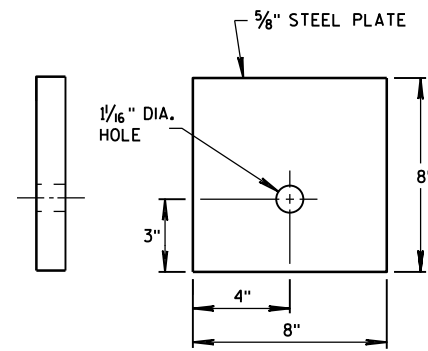
ANCHOR BRACKET



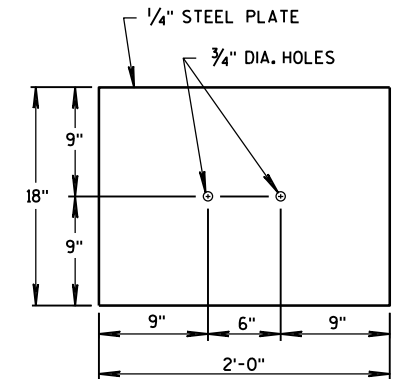
DETAIL C



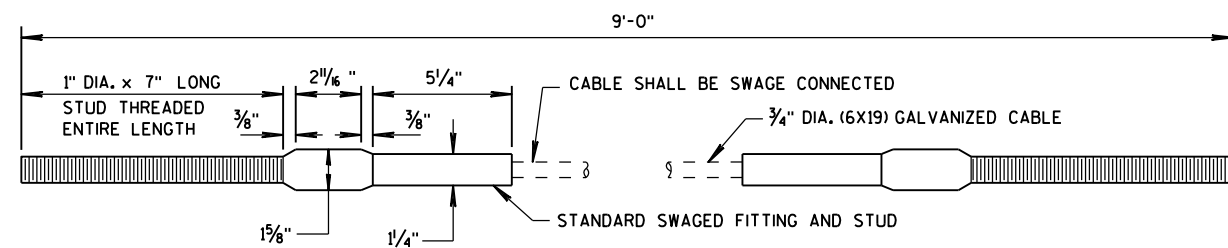
WOOD BREAKAWAY POST



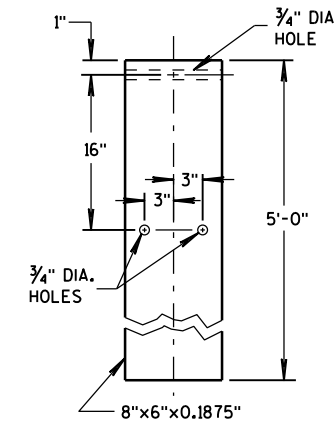
BEARING PLATE



SOIL PLATE



CABLE ASSEMBLY

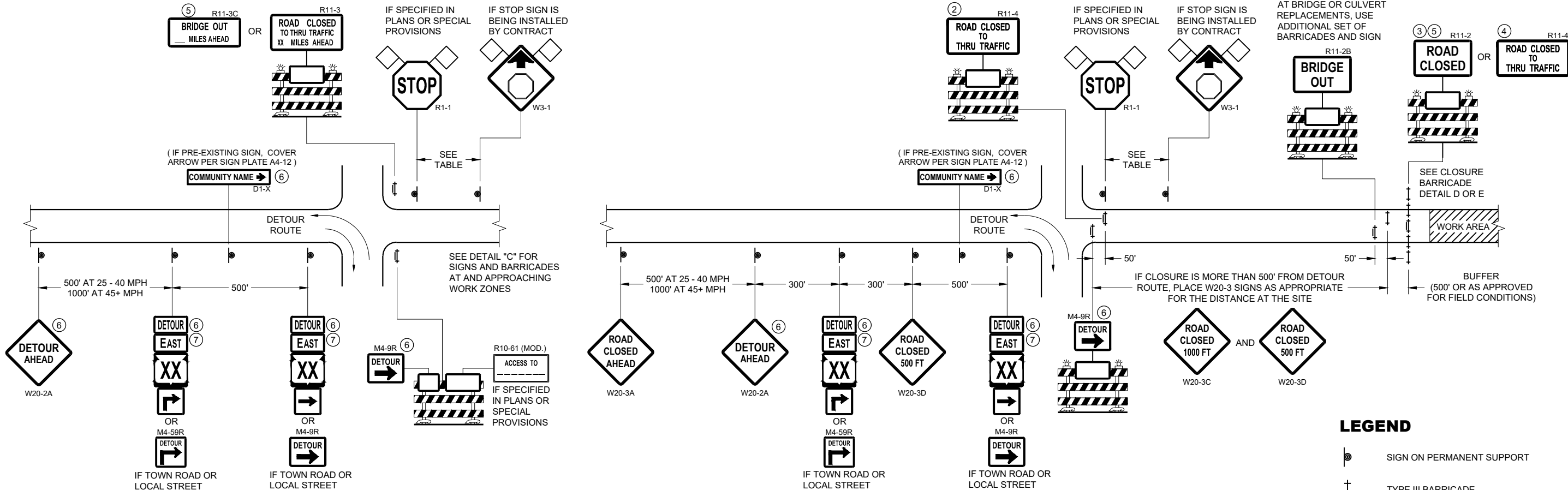


STEEL TUBE

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

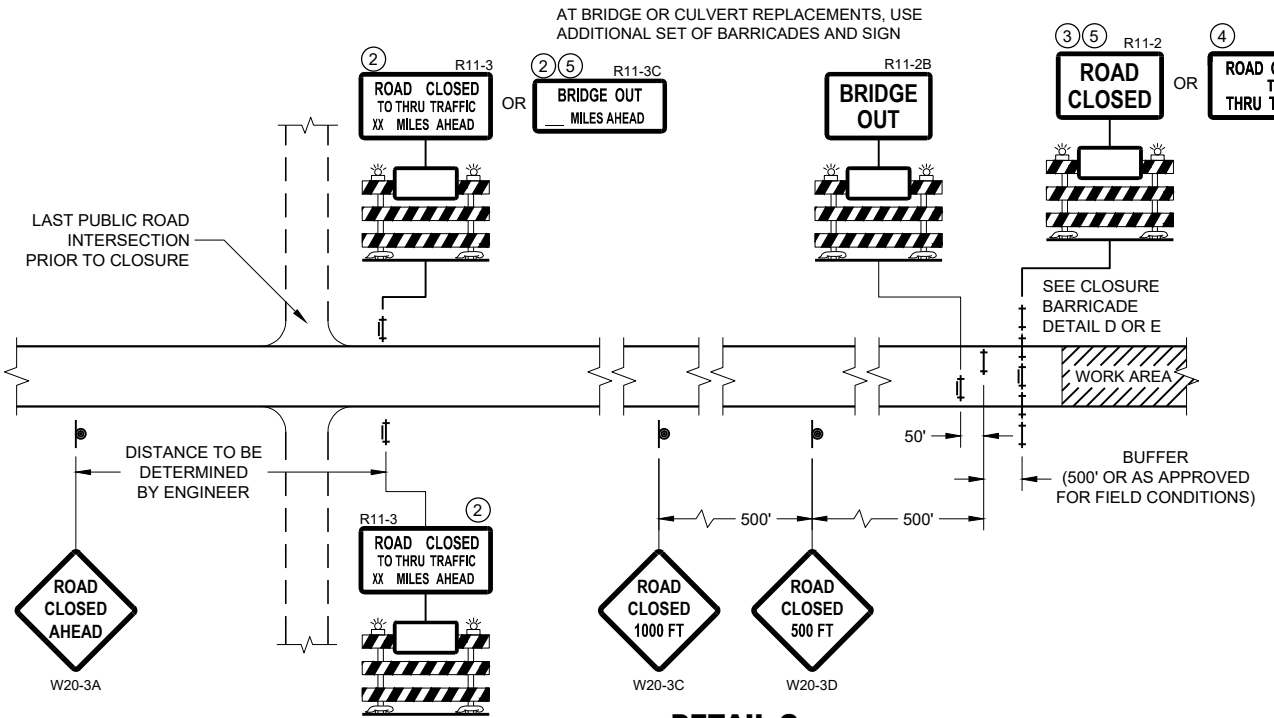
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

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

- M4 - 8
- M3 - X
- OR OR M1 - 4 M1 - 6 M1 - 5A
- OR M05 - 1 M06 - 1



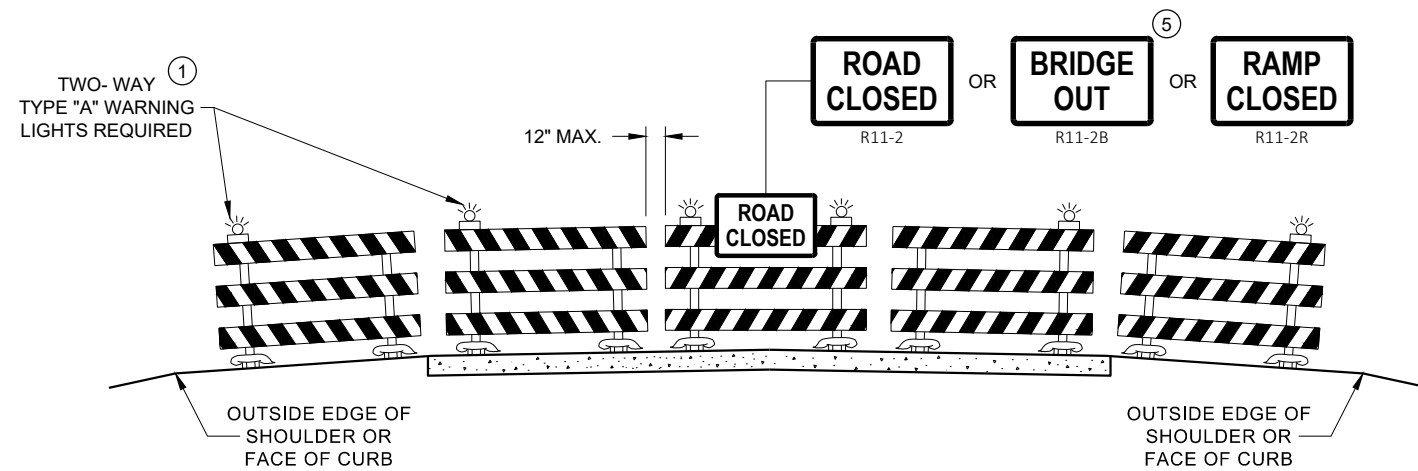
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

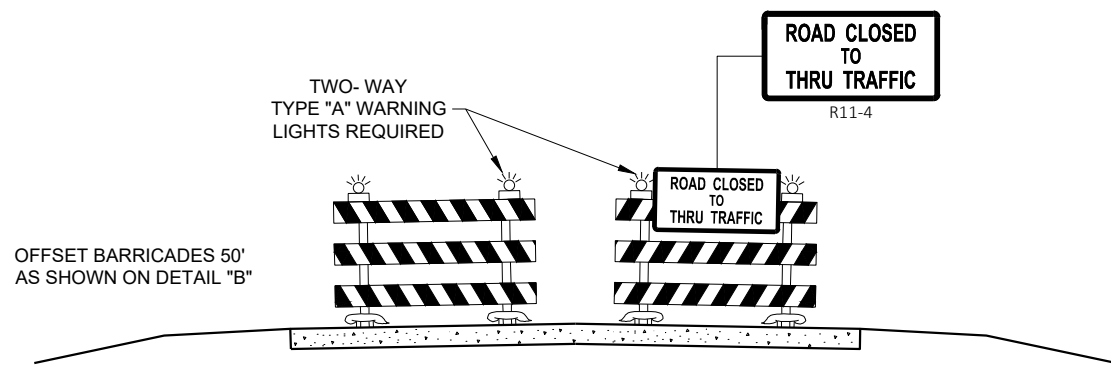
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



**DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW**



**DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

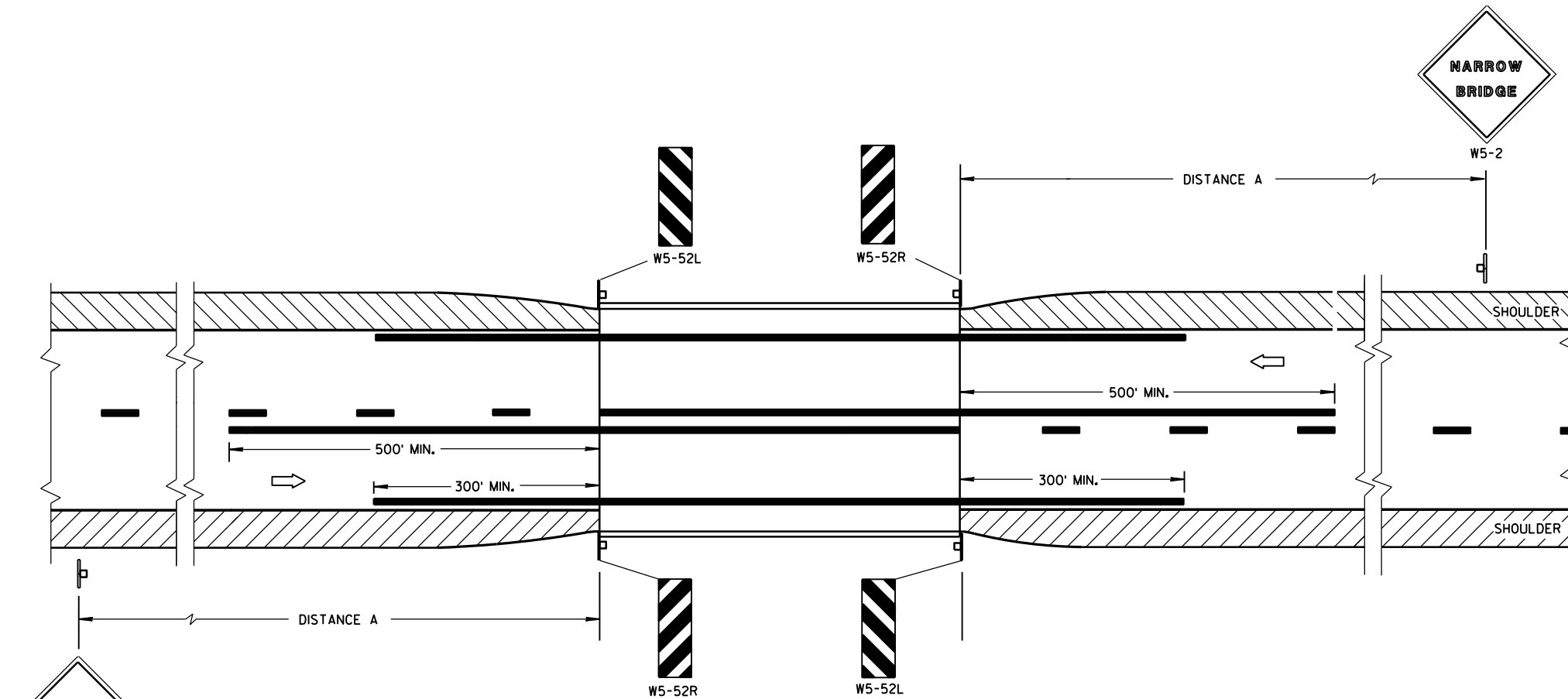
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

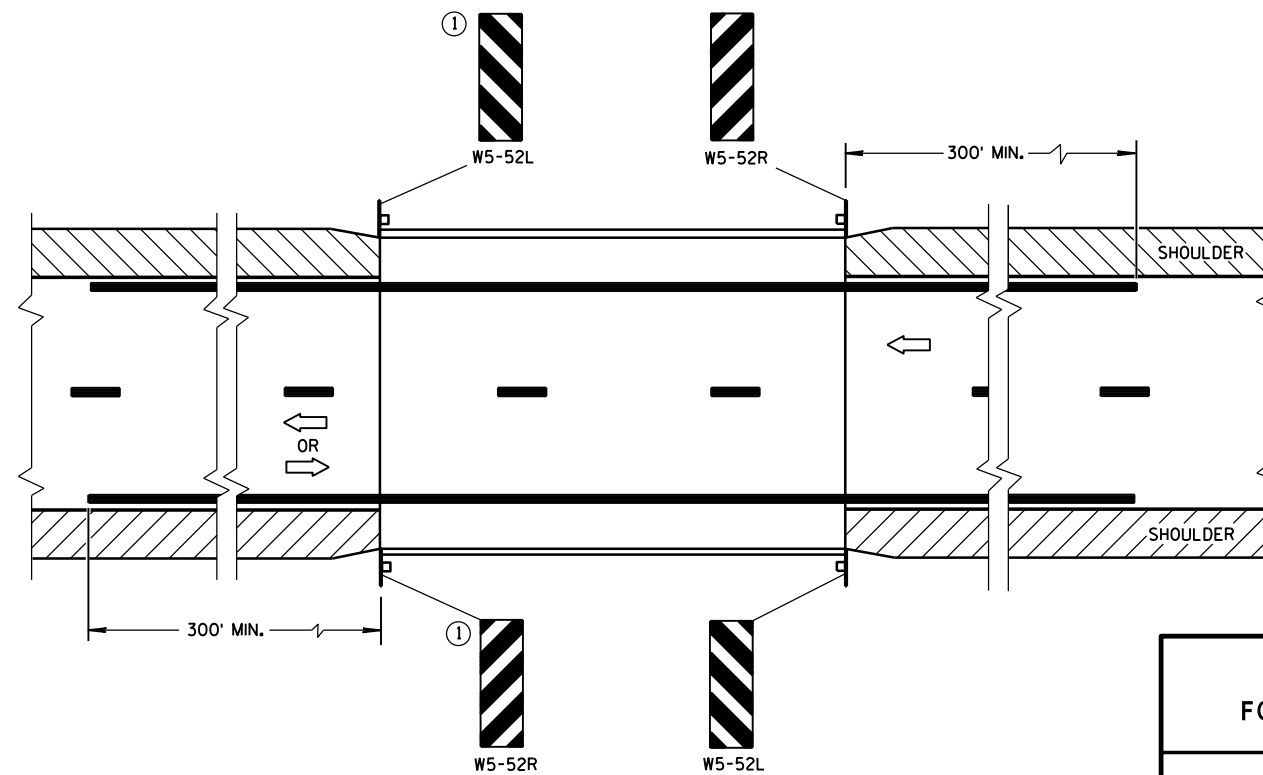
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 1

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



SITUATION 2

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

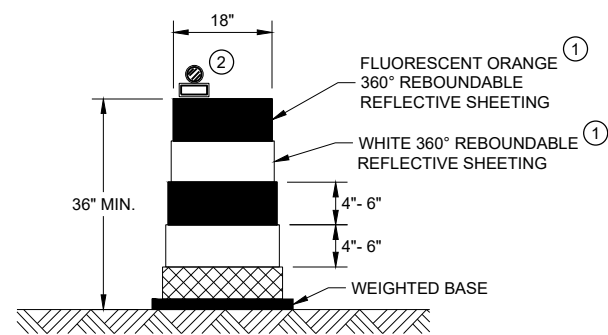
DISTANCE TABLE

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

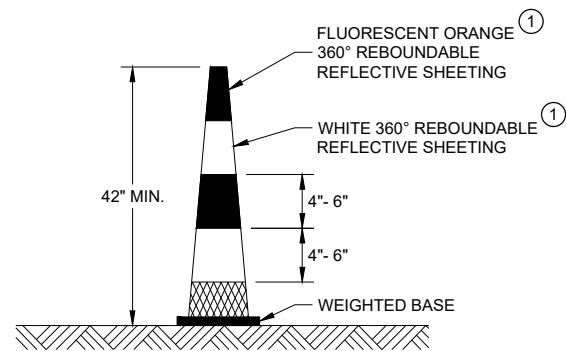
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

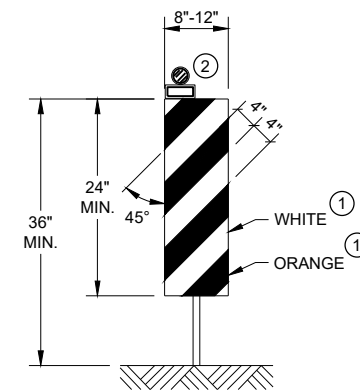


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

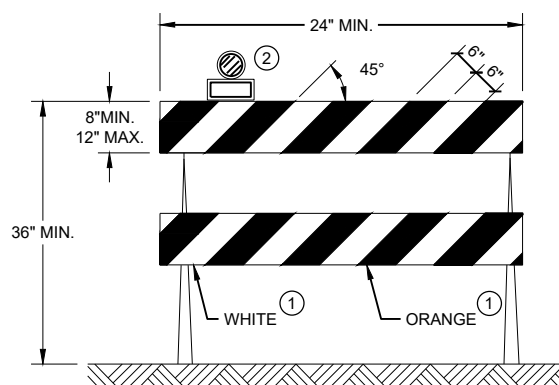


VERTICAL PANEL

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

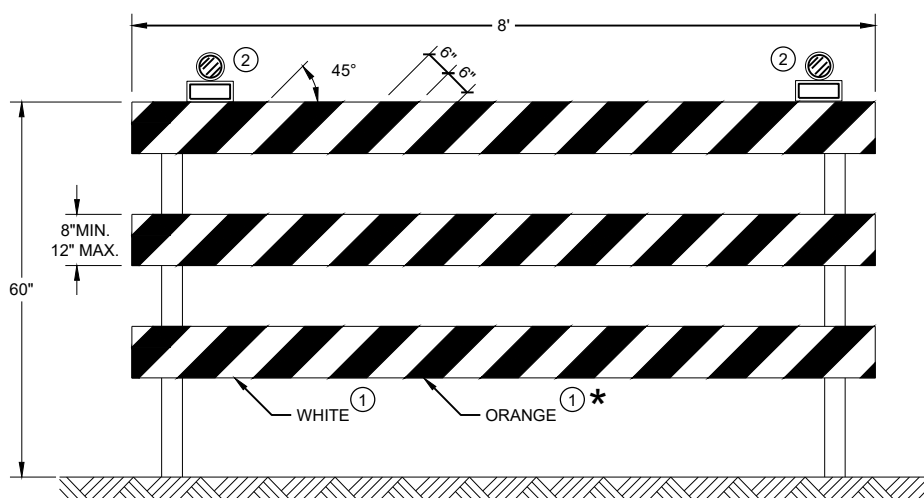
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



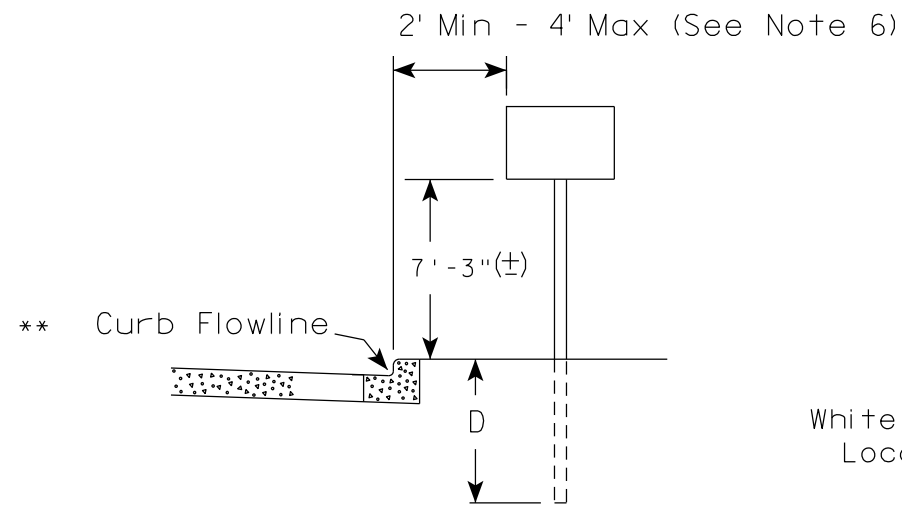
TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

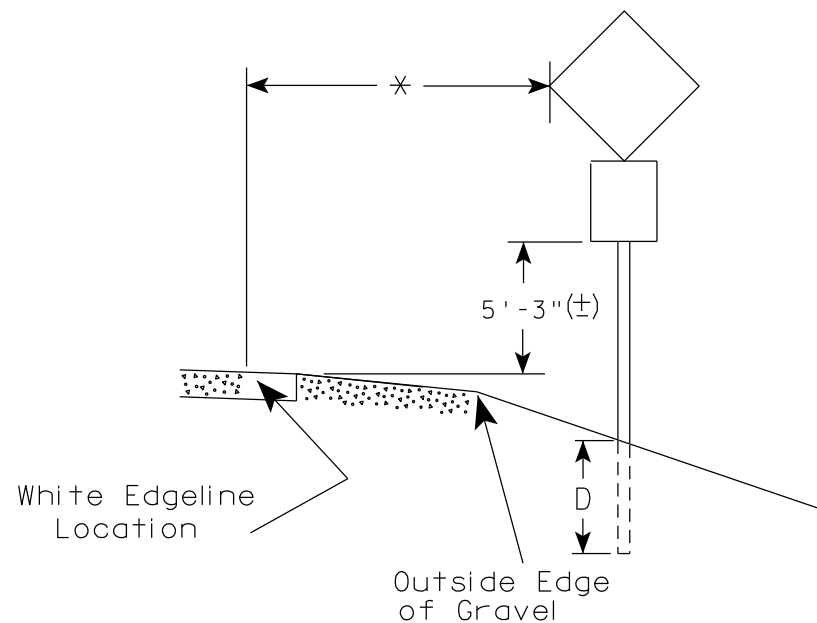
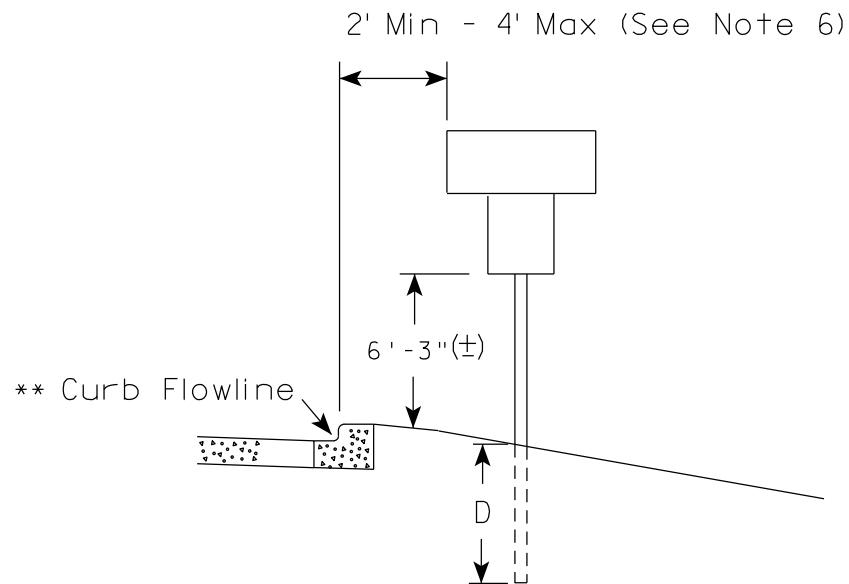
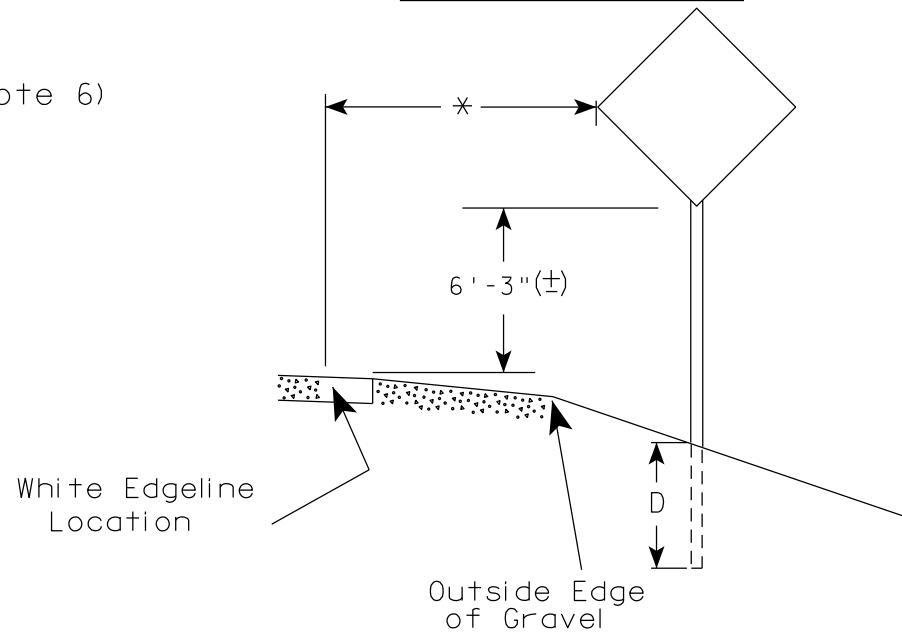
* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).
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 signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.

POST EMBEDMENT DEPTH

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

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

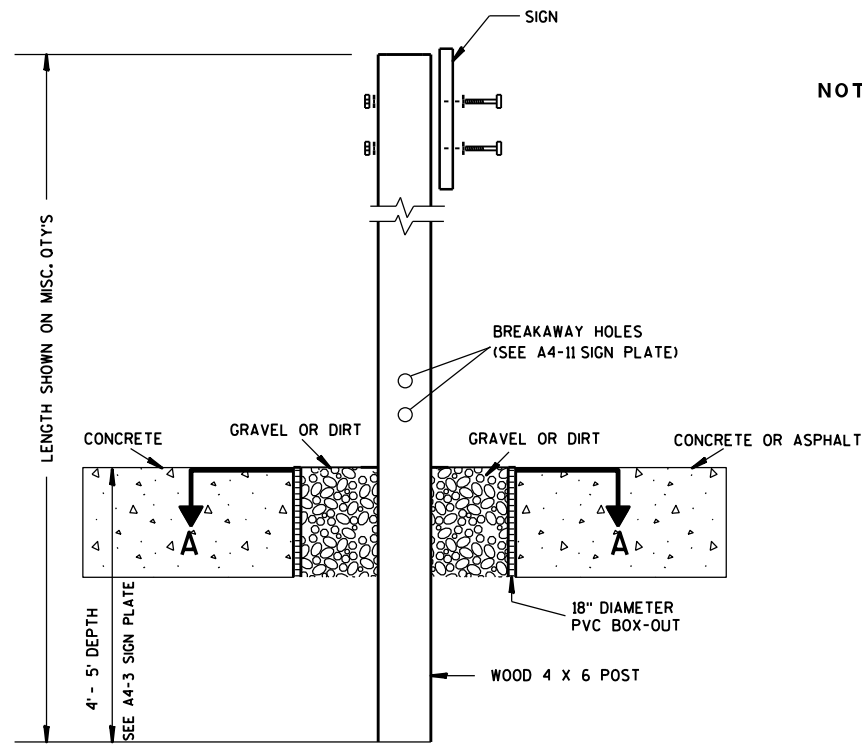
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

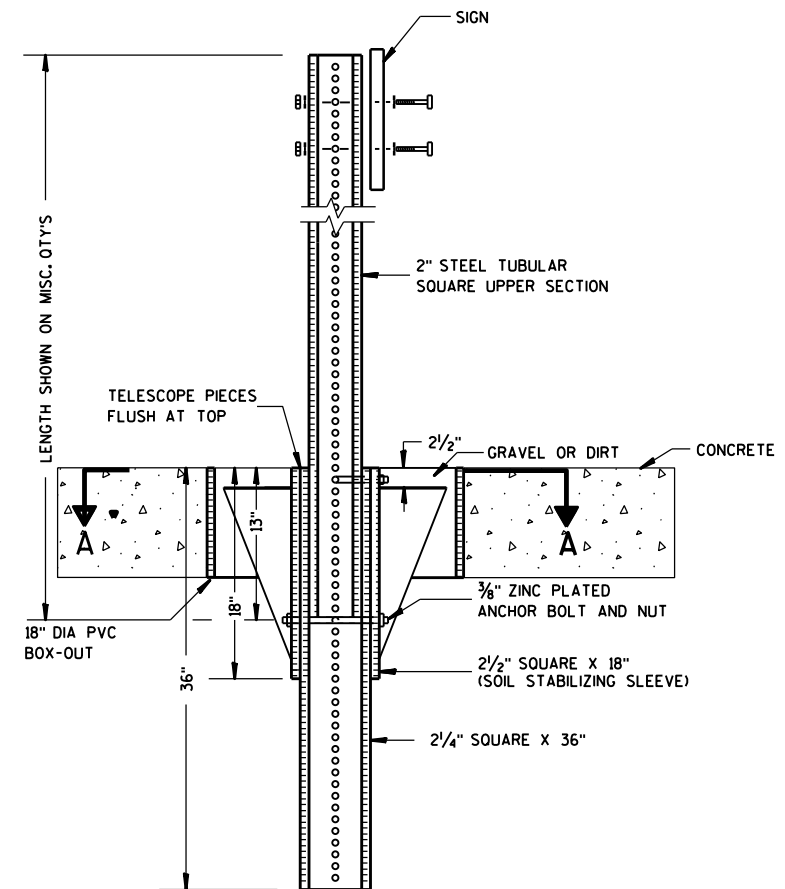
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

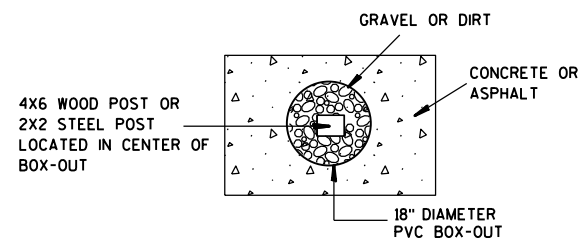
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

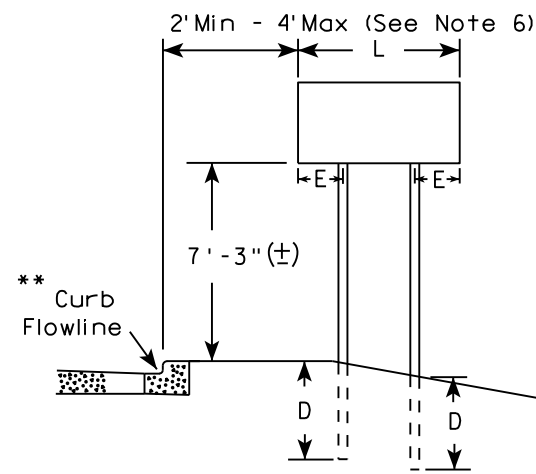
FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

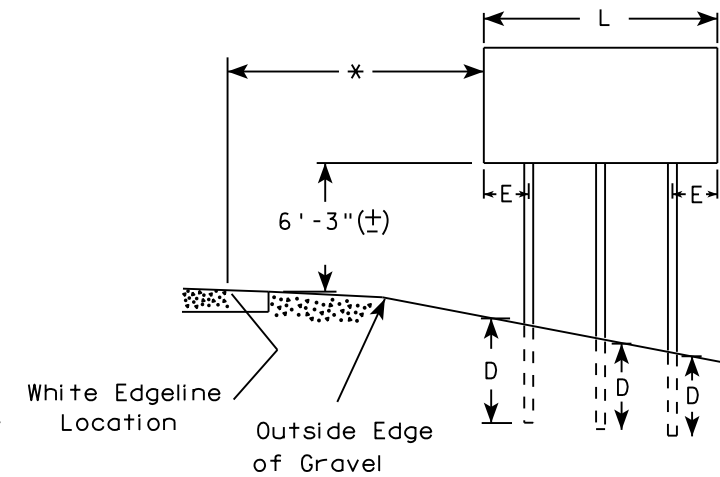
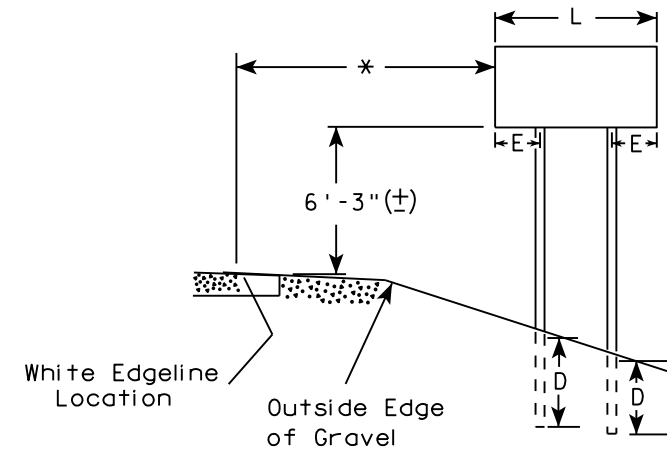
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

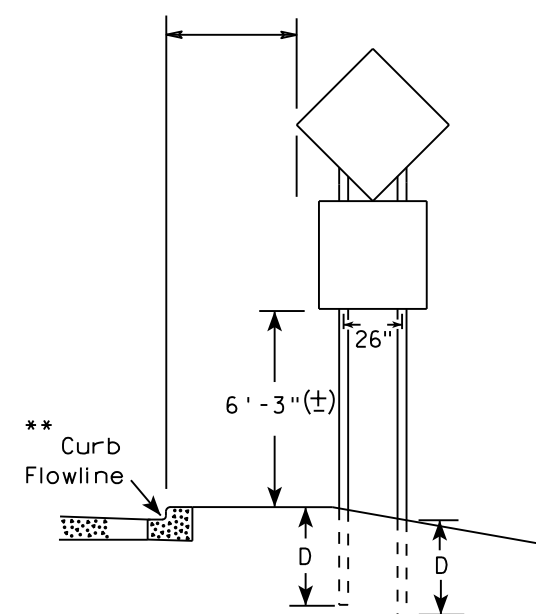
URBAN AREA



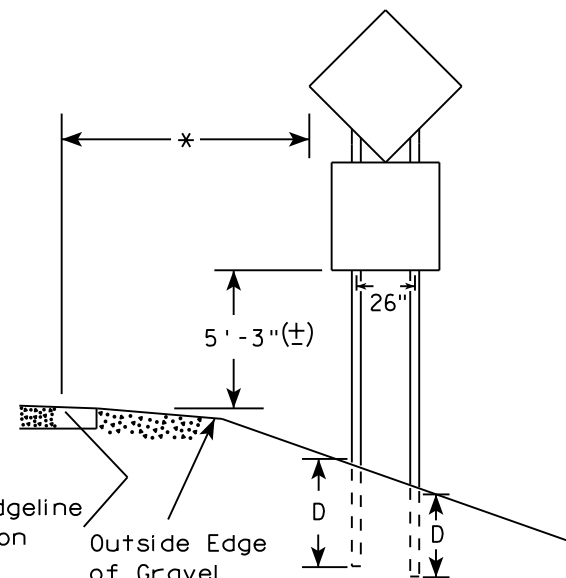
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

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

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

POST EMBEDMENT DEPTH

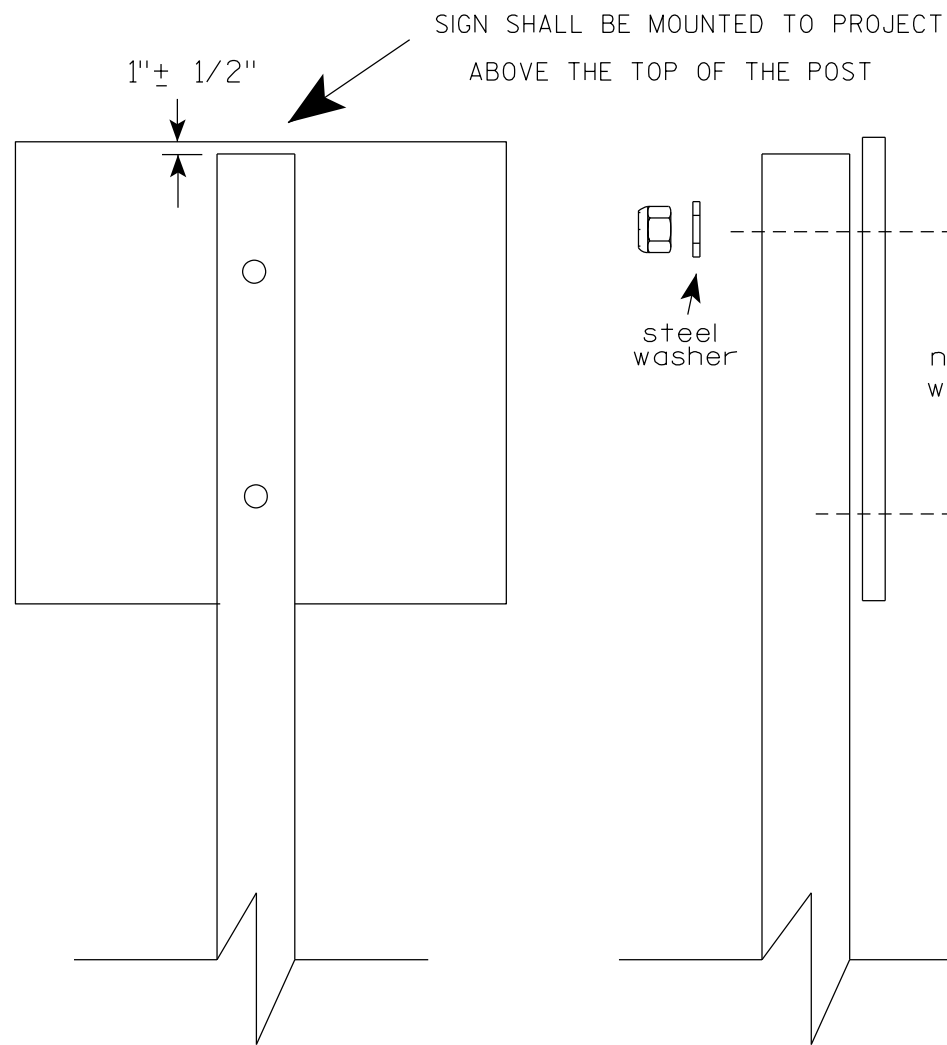
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15



SIGN SHALL BE MOUNTED TO PROJECT ABOVE THE TOP OF THE POST

1"± 1/2"

steel washer

nylon washer

steel washer

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.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

* 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

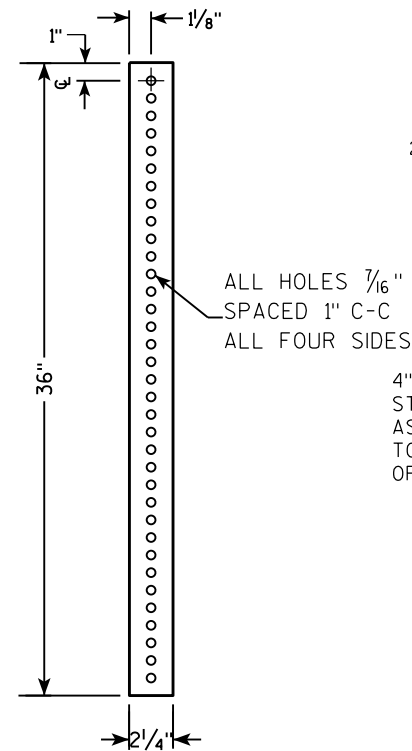
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

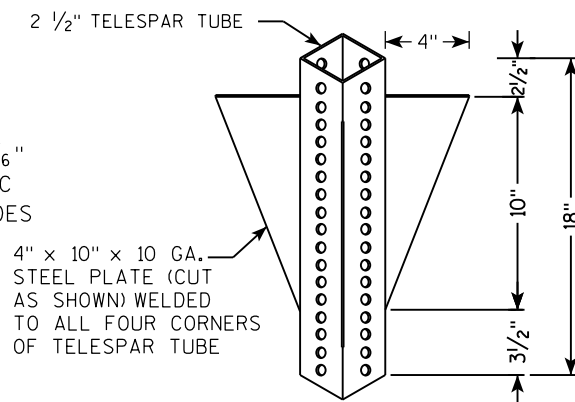
DATE 4/1/2020 PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

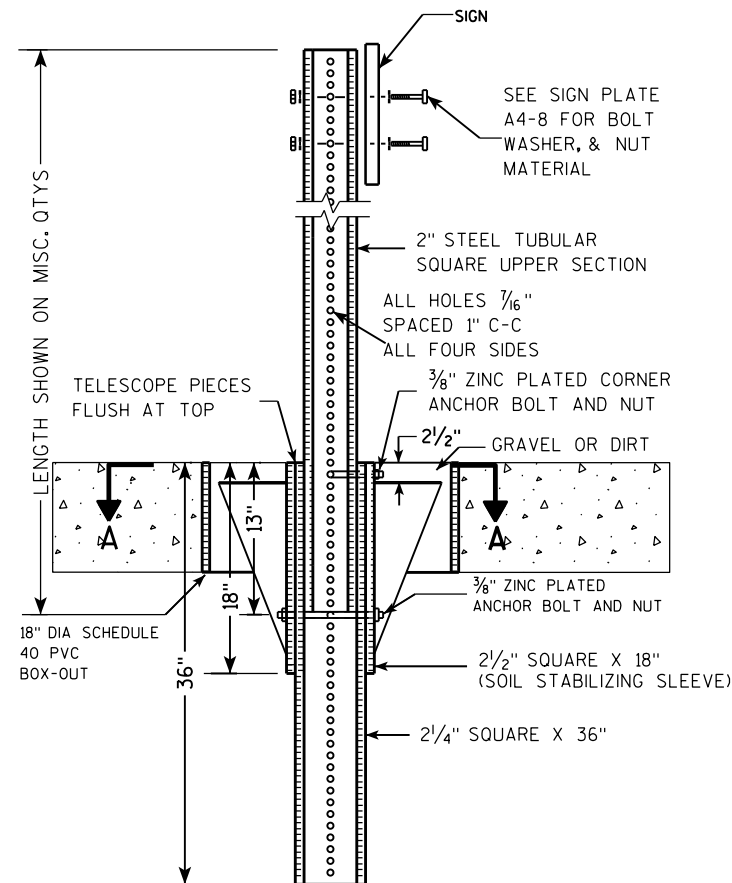
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



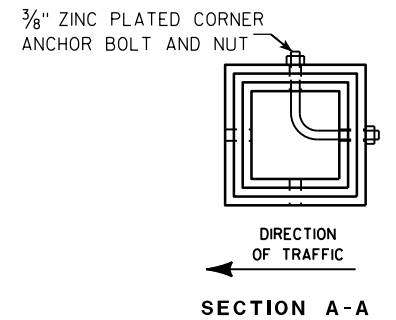
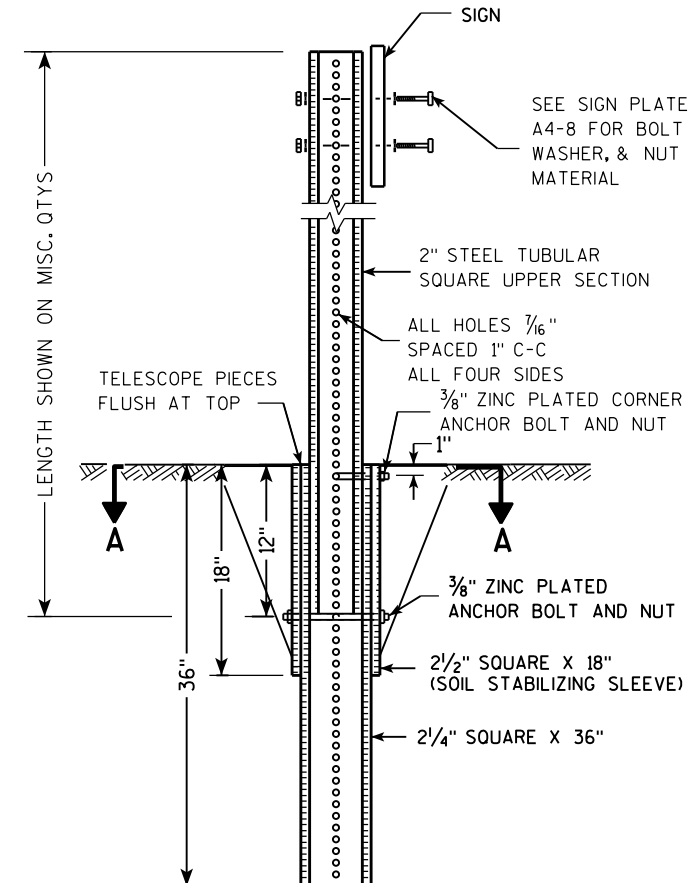
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



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



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



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

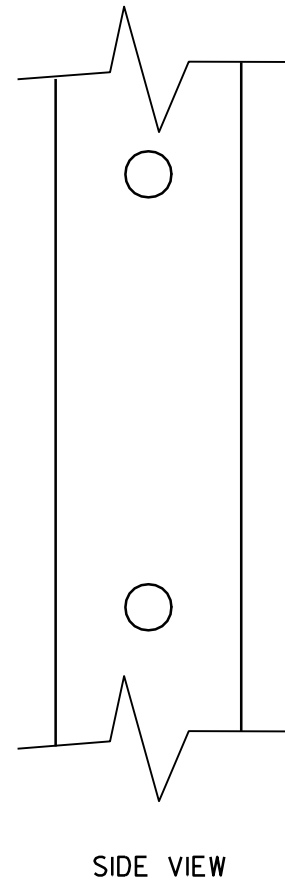
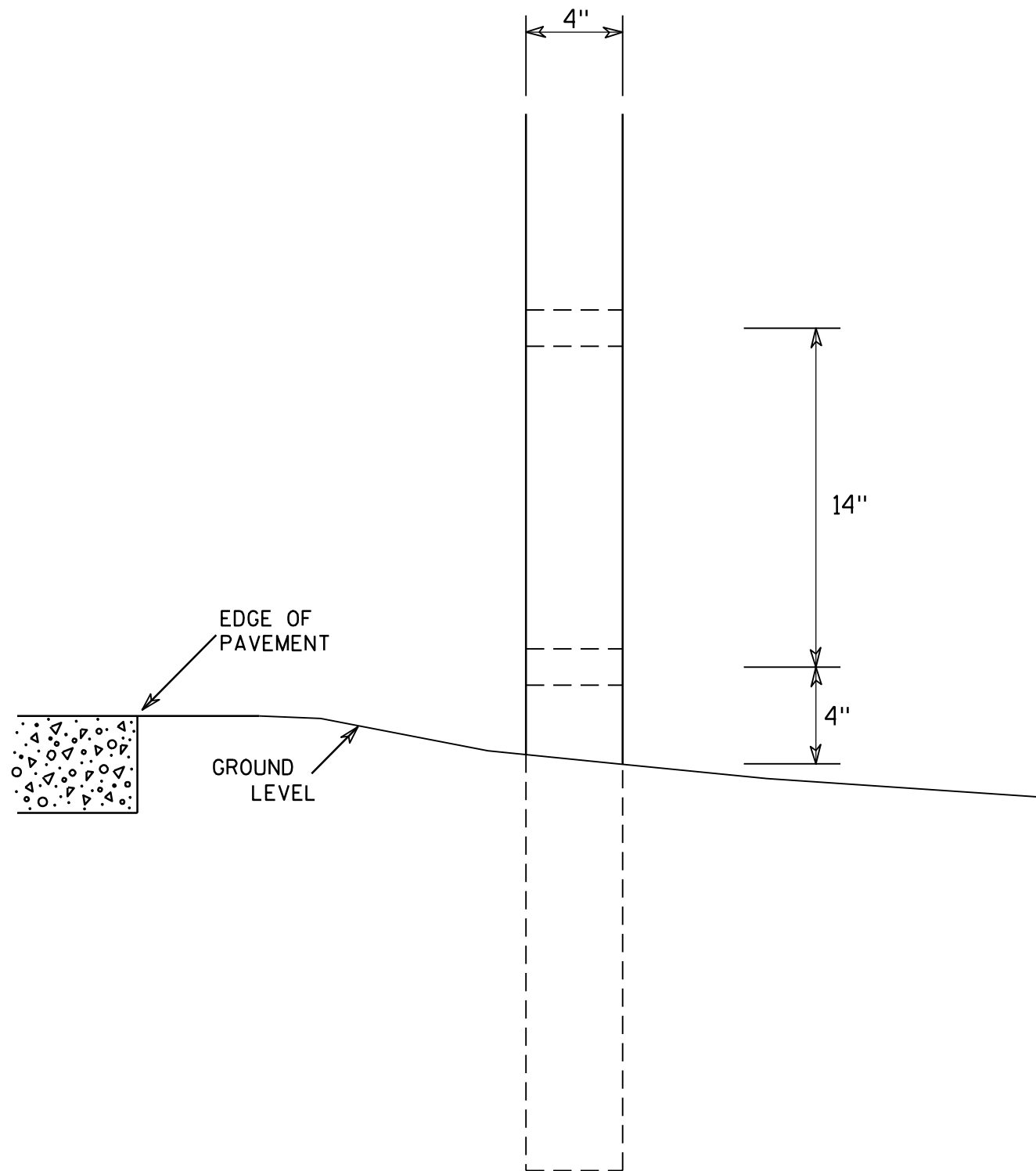
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9



GENERAL NOTES

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

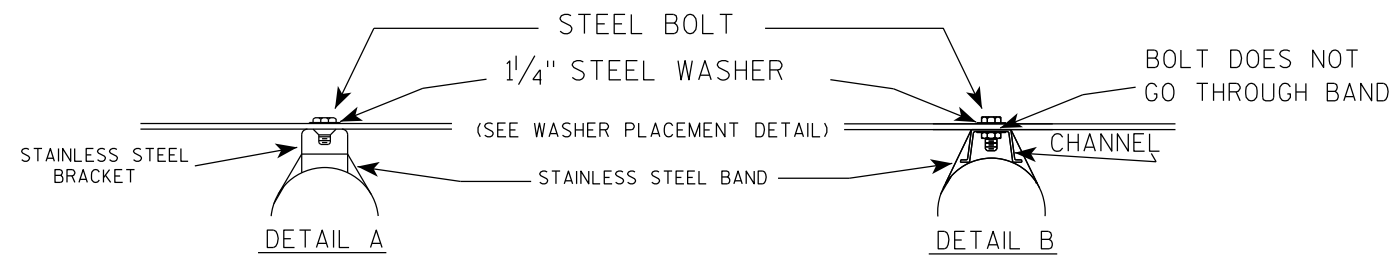
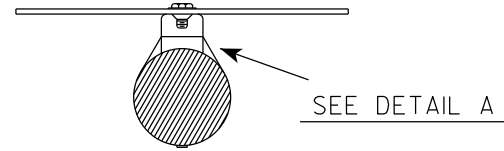
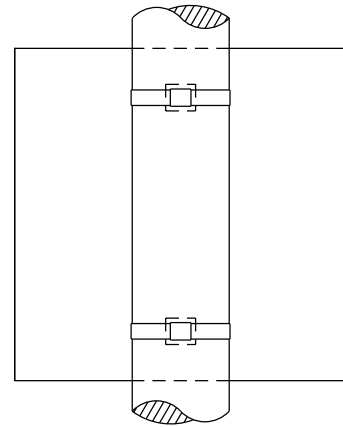
7

7

4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

BANDING

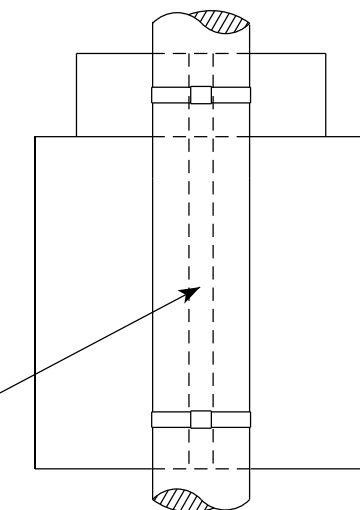
SINGLE SIGN



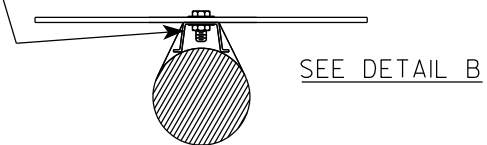
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

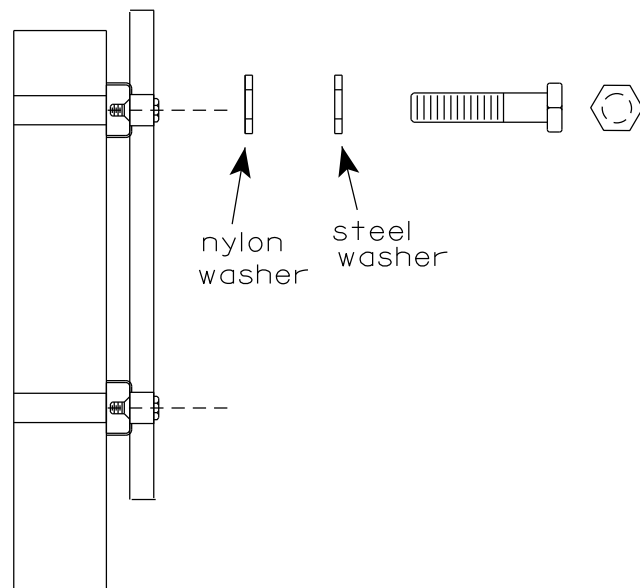
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

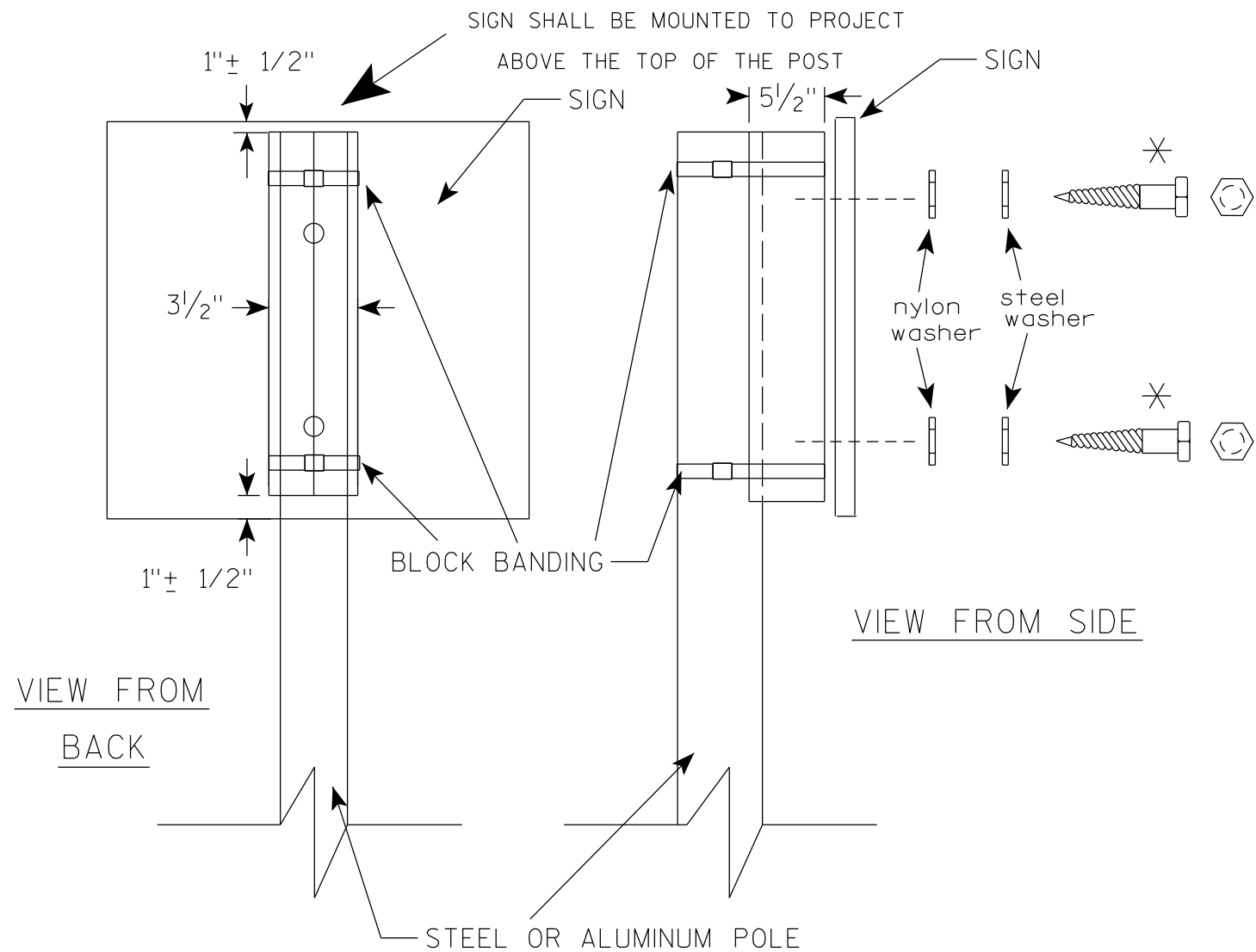


WASHER PLACEMENT



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

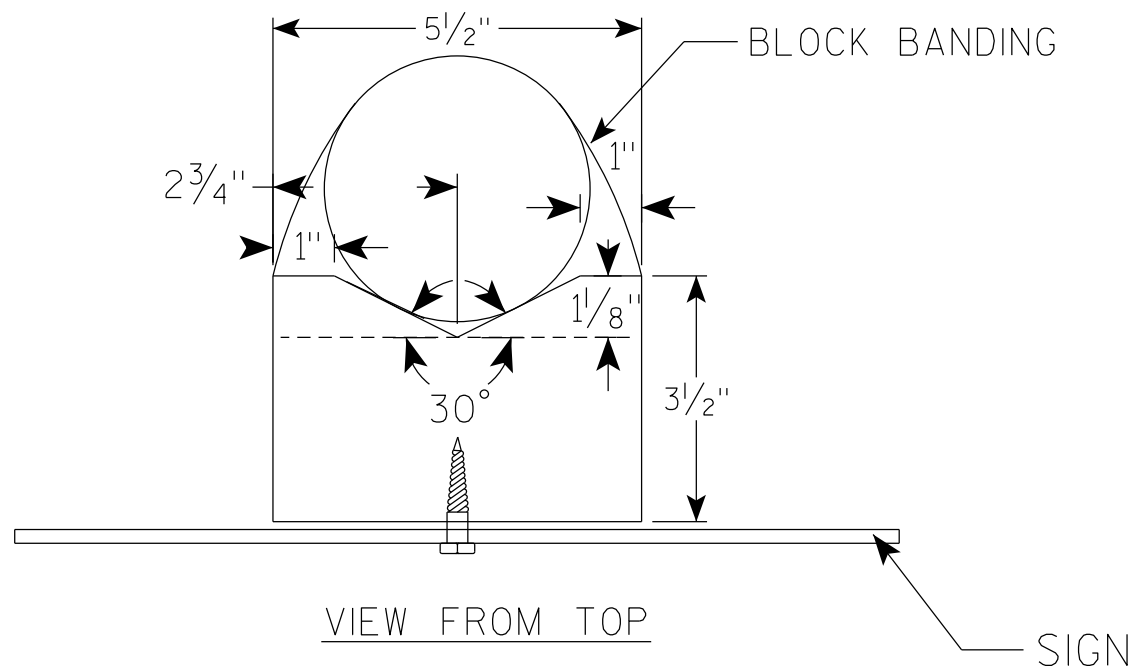
STANDARD SIGN SIGN BANDING DETAILS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-9.4



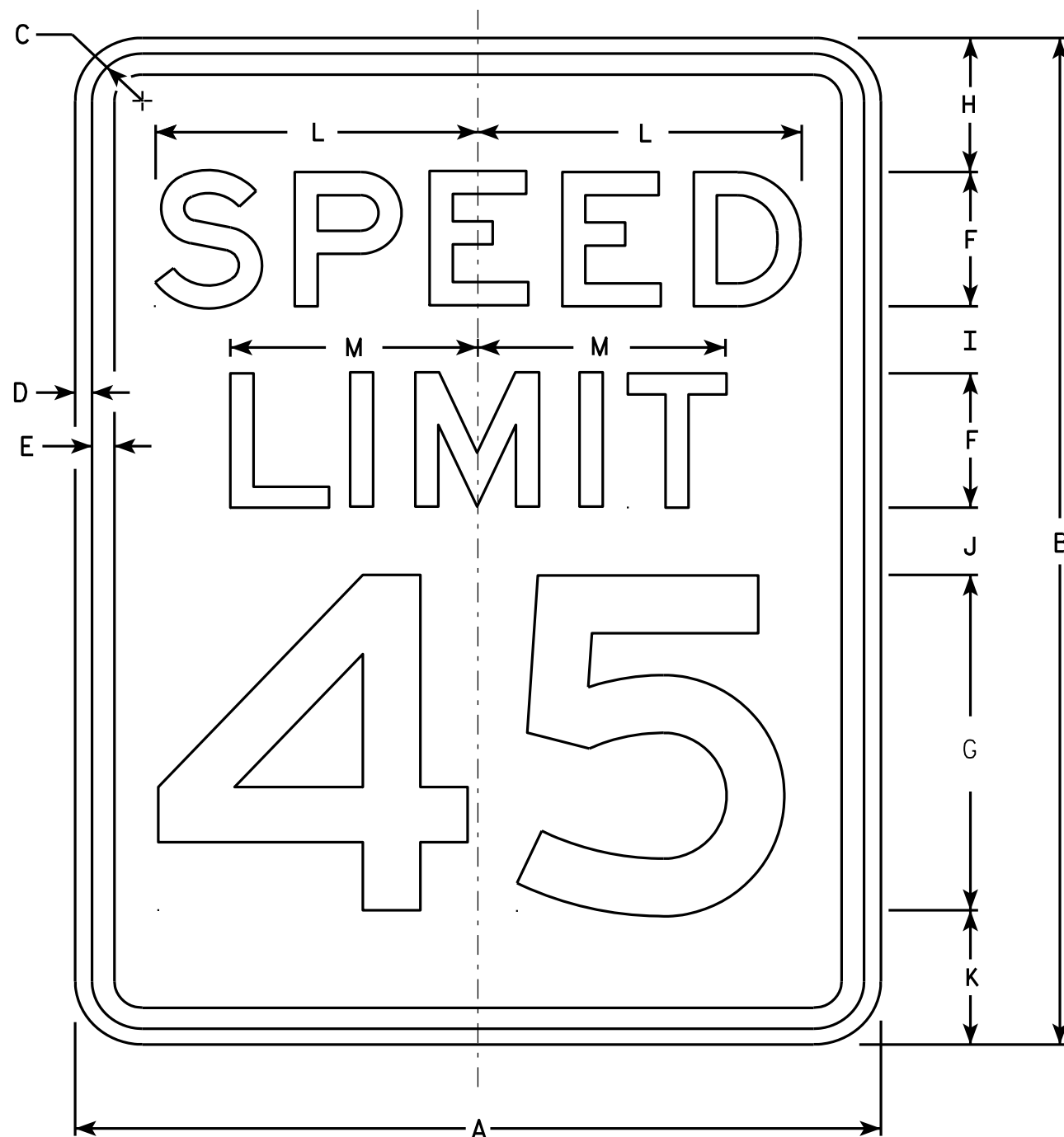
GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-10.2



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

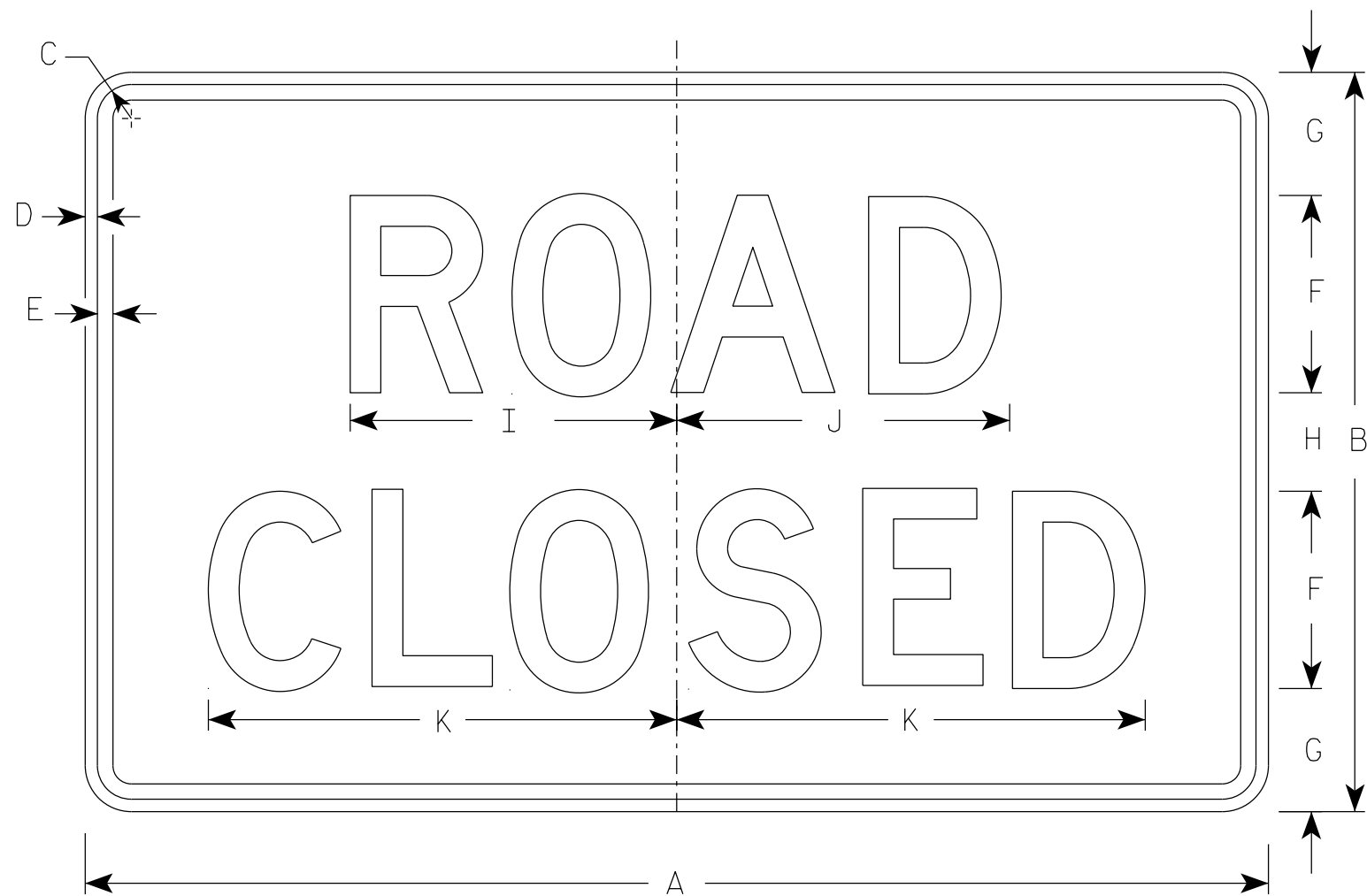
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

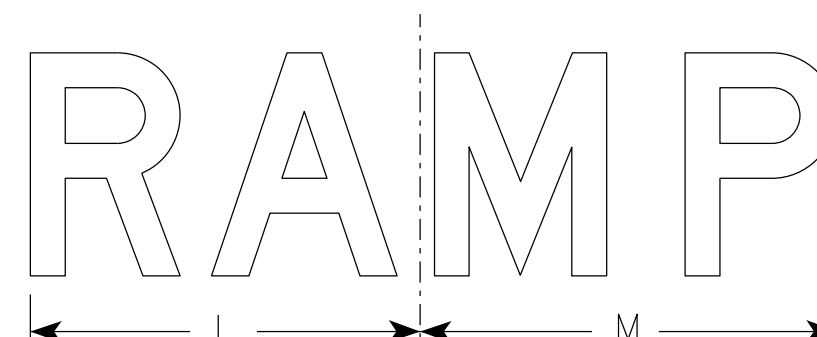
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

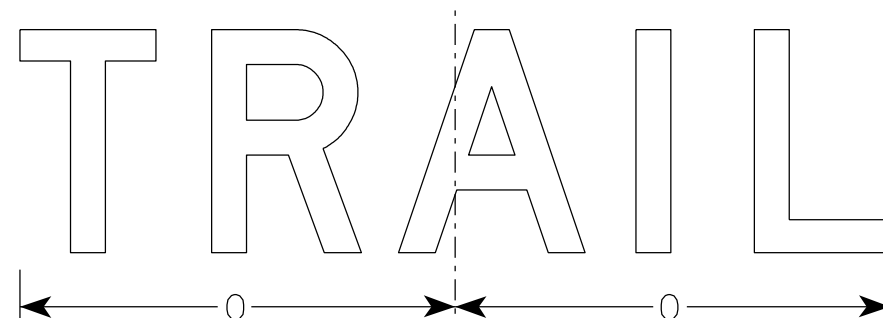
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



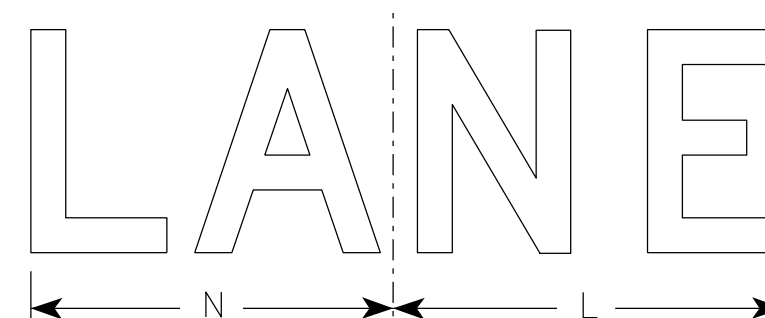
R11-2



R11-2R



R11-2T



R11-2L

NOTES

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

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

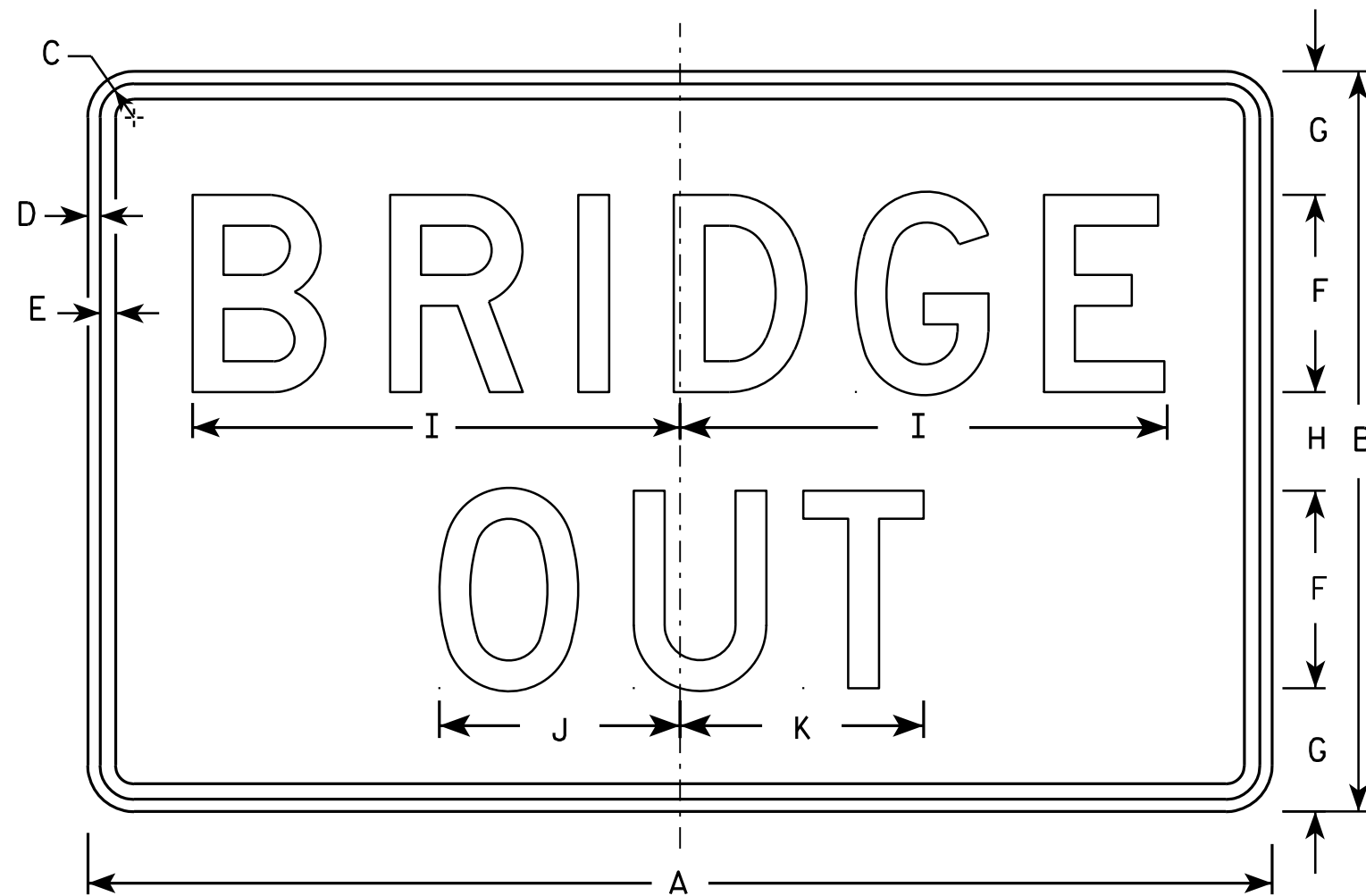
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

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

NOTES

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



R11-2B

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

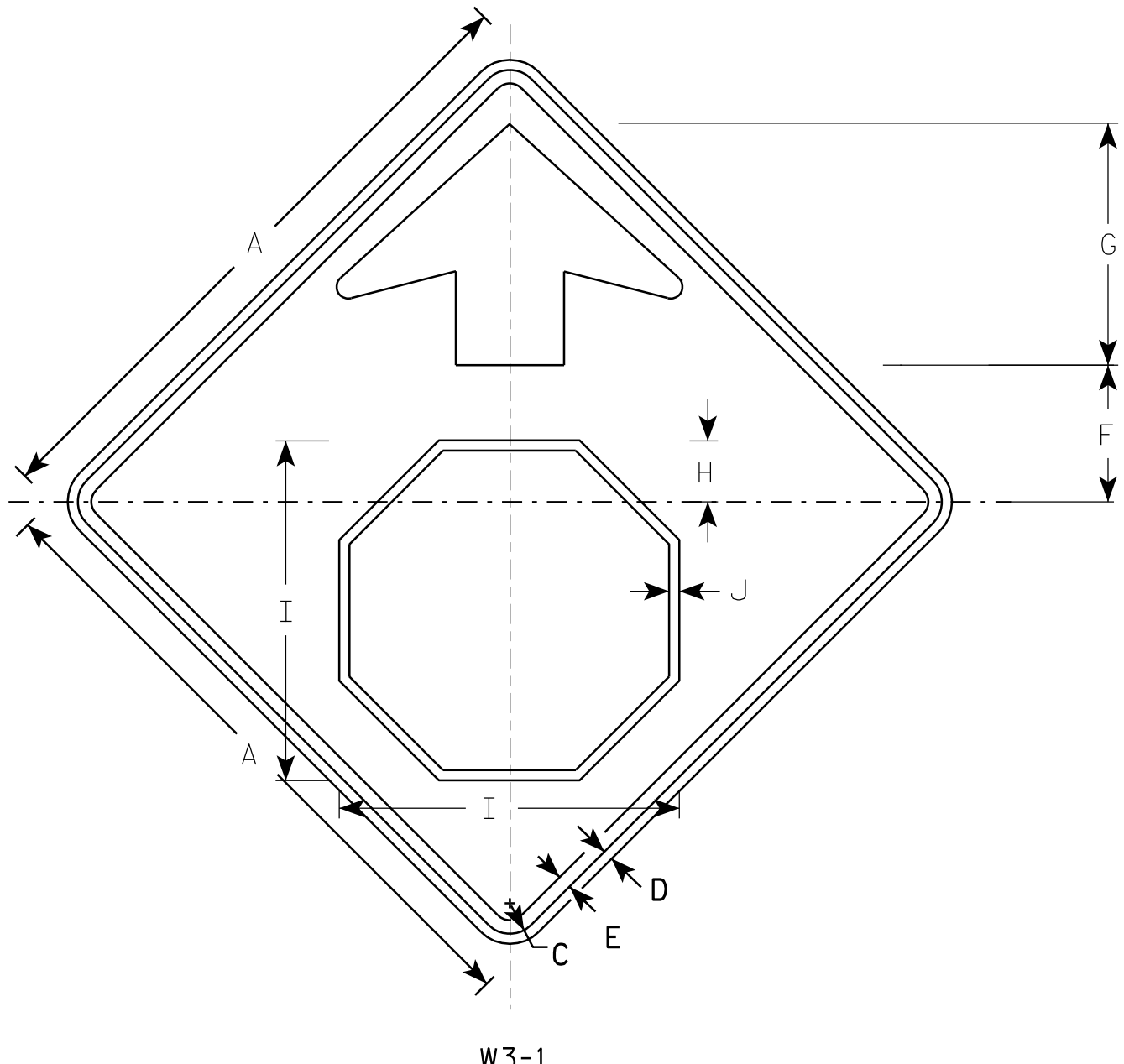
STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

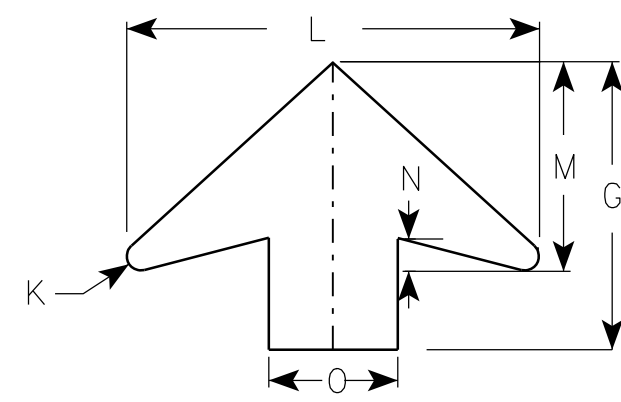
DATE 4/1/11 PLATE NO. R11-2B.2

PROJECT NO: _____ SHEET NO: _____ E



NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 Background - YELLOW
 Arrow & Border - BLACK
 Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

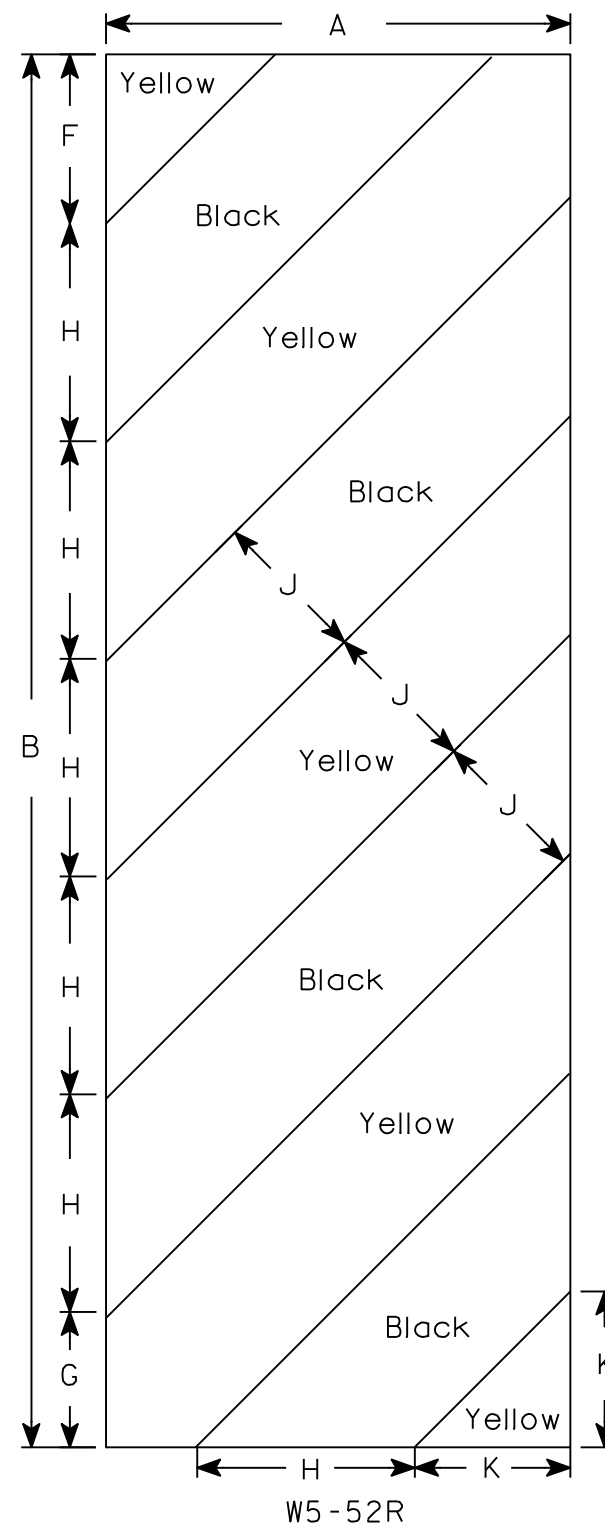
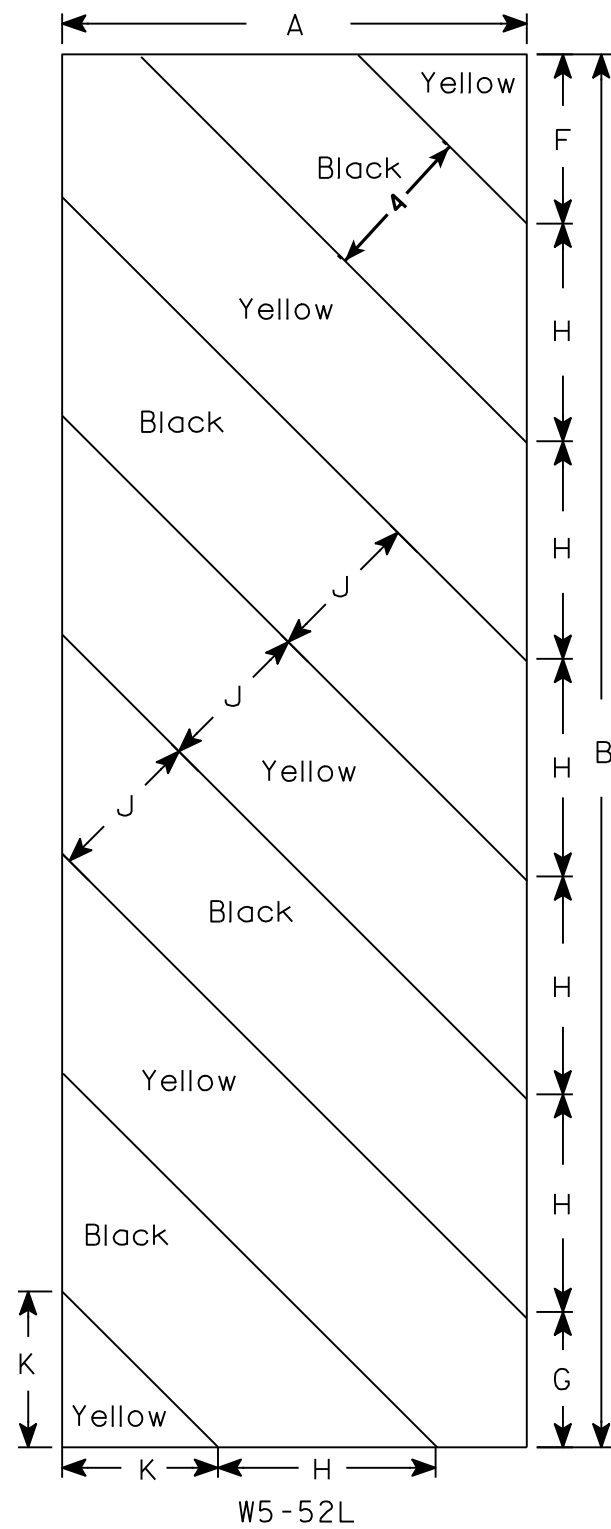
STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO: _____ SHEET NO: _____ E



NOTES

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

7

7

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

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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

DESIGN DATA

LIVE LOAD:
 DESIGN LOADING: HL-93
 INVENTORY RATING FACTOR: RF = 1.04
 OPERATING RATING FACTOR: RF = 1.35
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:

CONCRETE MASONRY BRIDGES SUPERSTRUCTURE.....f_c = 4,000 P.S.I.
 CONCRETE MASONRY BRIDGES SUBSTRUCTURE.....f_c = 3,500 P.S.I.
 BAR STEEL REINFORCEMENT HIGH STRENGTH, GRADE 60.....f_c = 60,000 P.S.I.

TRAFFIC VOLUME

CTH K
 A.A.D.T. = 600 (2020)
 A.A.D.T. = 685 (2042)
 RDS = 50 MPH

HYDRAULIC DATA

100 YEAR FREQUENCY

Q₁₀₀ = 910 C.F.S.
 VEL. = 5.30 F.P.S.
 H.W. = ELEV. 983.70
 WATERWAY AREA = 172 SQ. FT.
 DRAINAGE AREA = 7.0 SQ. MI.
 ROAD OVERTOPPING = N/A
 SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q₂ = 203 C.F.S.
 H.W.₂ ELEV. = 981.33
 VEL. = 2.10 F.P.S.

LEGEND

- ⊕ INDICATES WING NUMBER
- * PROVIDE FOR THREE BEAM GUARD RAIL ATTACHMENT

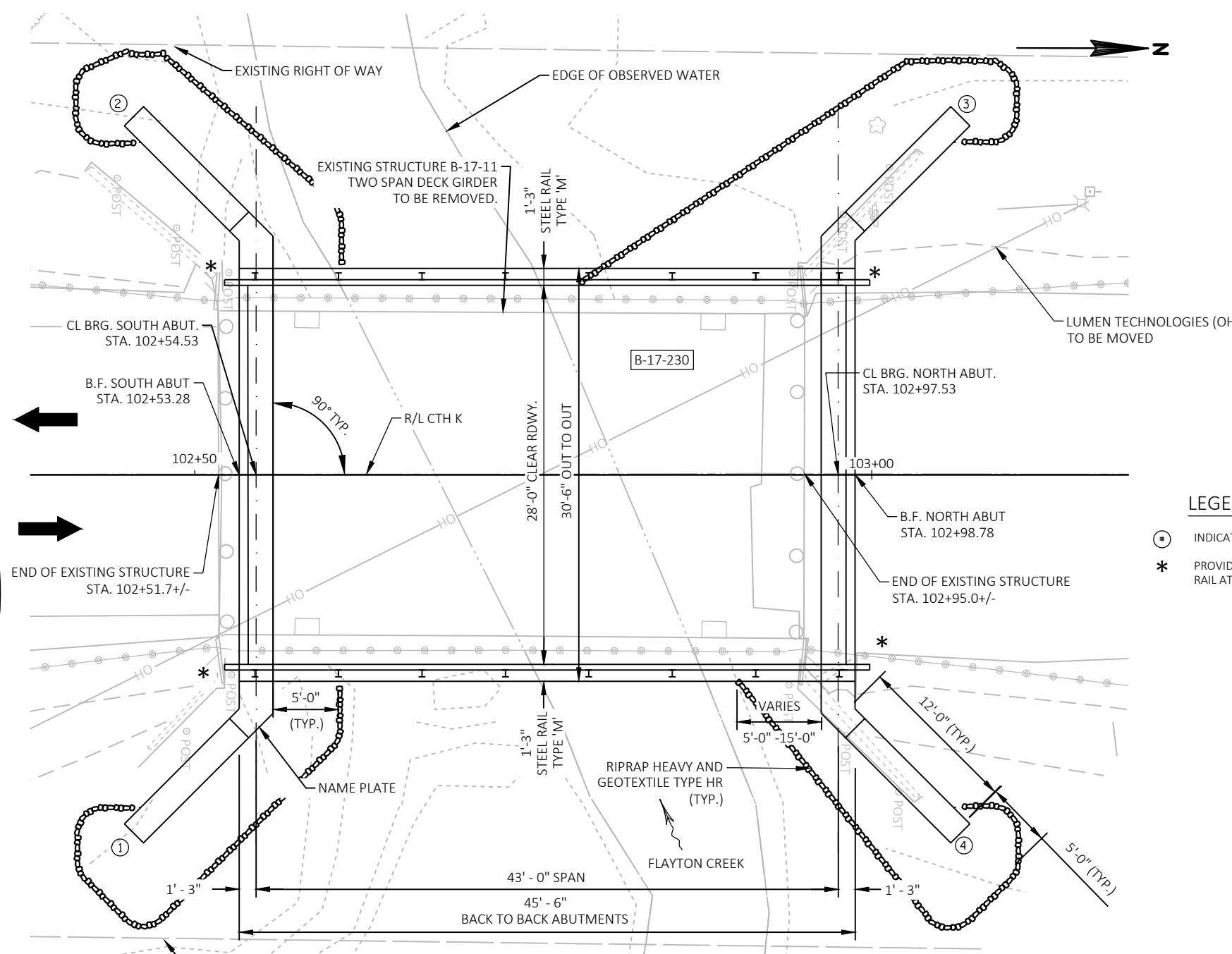
FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 10 3/4 X 0.25-INCH DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 55-FT LONG AT SOUTH ABUTMENT AND 50-FT LONG AT NORTH ABUTMENT.

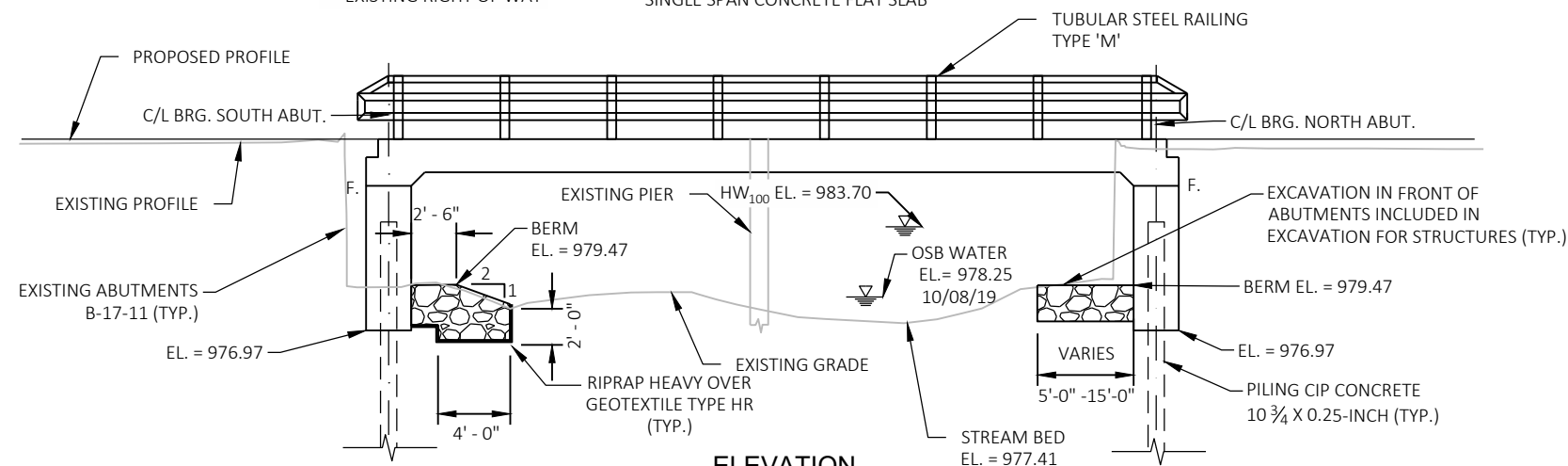
** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.50 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION, NOTES AND QUANTITIES
3. SUBSURFACE EXPLORATION
4. ABUTMENTS
5. ABUTMENT DETAILS
6. SUPERSTRUCTURE
7. SUPERSTRUCTURE DETAILS 1
8. SUPERSTRUCTURE DETAILS 2
9. TUBULAR STEEL RAILING TYPE 'M'



PLAN
 SINGLE SPAN CONCRETE FLAT SLAB



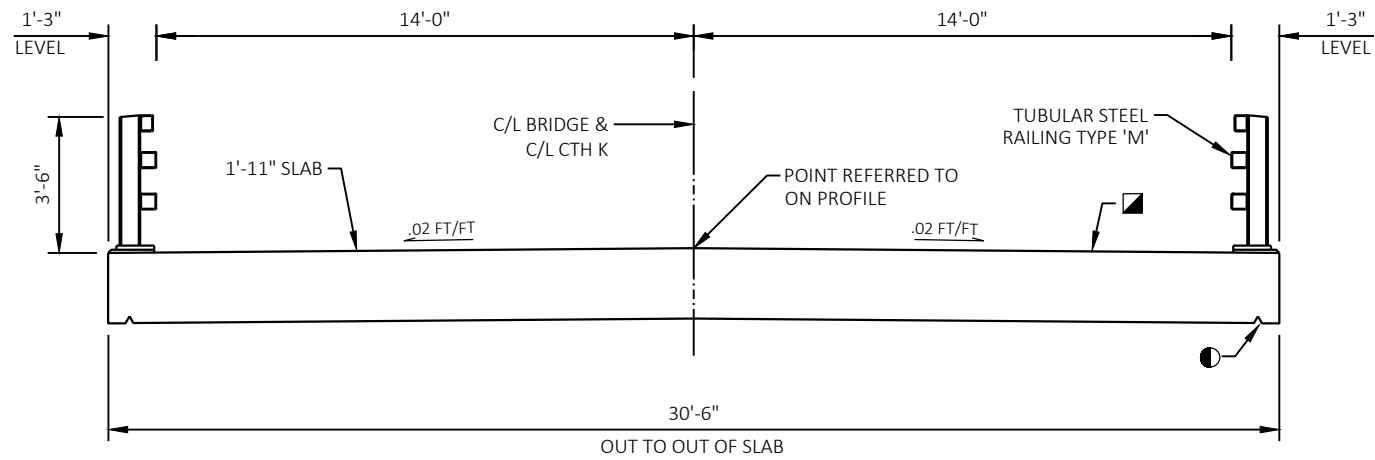
ELEVATION
 NORMAL TO CTH K LOOKING WEST



Chad Halverson
 July 26, 2021

STRUCTURE DESIGN CONTACTS
 BUREAU OF STRUCTURES:
 AARON BONK (608) 261-0261
 CONSULTANT:
 CHAD HALVERSON (608) 663-1218

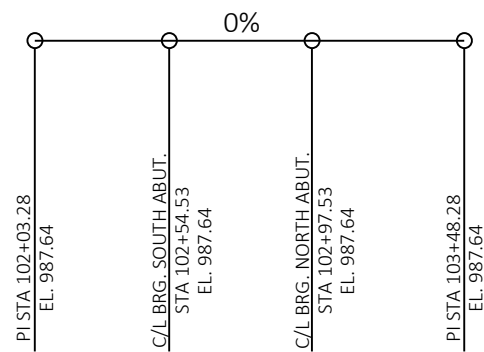
NO.	DATE	REVISION	BY
KL Engineering [A] Better Experience			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>Chad Halverson</i>	SDR	08/05/21
		CHIEF STRUCTURES DESIGN ENGINEER	DATE
STRUCTURE B-17-230			
CTH K OVER FLAYTON CREEK			
COUNTY	DUNN	TOWN/CITY/VILLAGE	CONNORSVILLE
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	CDH	DESIGN CK'D.	CAH
DRAWN BY	STD	PLANS CK'D.	CAH
GENERAL PLAN			SHEET 1 OF 9



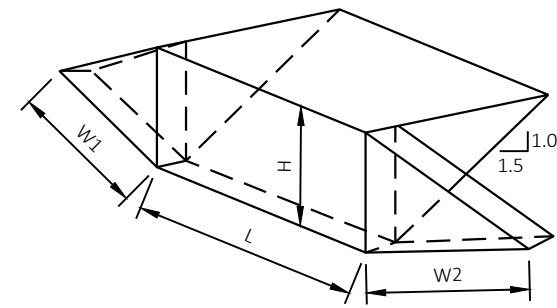
CROSS SECTION THRU BRIDGE
(LOOKING NORTH)

LEGEND

- 3/4" V-GROOVE. TERMINATE 6" FROM FRONT FACE OF ABUTMENTS.
- COAT WITH PROTECTIVE SURFACE TREATMENT AS PER THE STANDARD SPECIFICATIONS TO THE LIMITS AS NOTED IN THE GENERAL NOTES AND SHOWN ON SHEET 7.

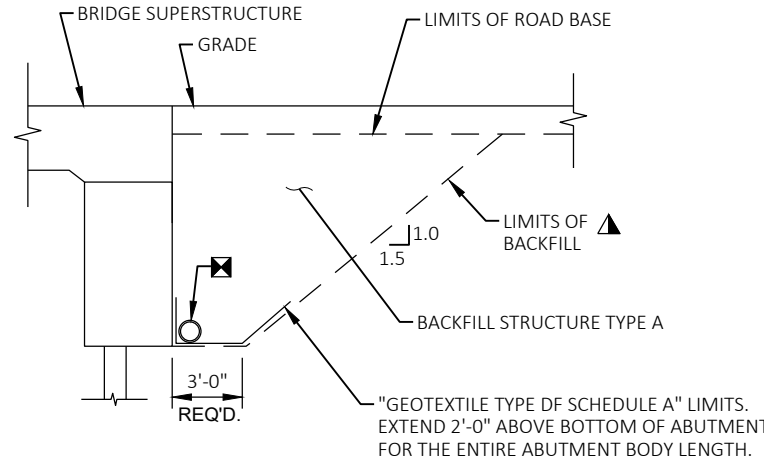


PROFILE GRADE LINE



ABUTMENT BACKFILL DIAGRAM

- L = OUT TO OUT OF ABUTMENT BODY (FT)
- H = AVERAGE ABUTMENT FILL HEIGHT (FT)
- W1 = WING 1 LENGTH (FT)
- W2 = WING 2 LENGTH (FT)
- EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
- $V_{CF} = (L)(3.0)(H) + (L)(0.5)(1.5H)(H) + (3.0)(0.5)(W1+W2)(H)$
- $V_{CY} = V_{CF} (EF)/27$
- $V_{TON} = V_{CY} (2.0)$



BACKFILL STRUCTURE LIMITS

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- THE FIRST OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.
- JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153 TYPE I, II OR III OR AASHTO DESIGNATION M213.
- SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
- THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.
- THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.
- THE EXISTING STRUCTURE B-17-11 TO BE REMOVED, IS A TWO SPAN STEEL DECK GIRDER BRIDGE, 40 FT LONG WITH A 26 FT CLEAR ROADWAY WIDTH.
- AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE TOP, SIDES AND OUTSIDE 1'-0" OF THE UNDERSIDE OF THE SLAB, TOP OF WINGS, EXPOSED FRONT FACES OF WINGS, AND TO EXPOSED ABUTMENT FACES EXTENDING TO 1'-0" IN FROM EDGE OF SLAB.
- AS ABUTMENT CONCRETE POURED UNDER WATER WILL BE ALLOWED & SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	S. ABUT	N. ABUT	SUPER.	TOTAL
203.0260	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS B-17-0011	EACH	---	---	---	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-17-230	LS	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	250	250	---	500
502.0100	CONCRETE MASONRY BRIDGES	CY	43	43	102	188
502.3200	PROTECTIVE SURFACE TREATMENT	SY	24	24	186	234
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,610	2,610	---	5,220
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,920	1,920	19,590	23,430
513.4061	RAILING TUBULAR TYPE M	LF	---	---	95	95
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	7	---	14
550.2104	PILING CIP CONCRETE 10 3/4 X 0.25-INCH	LF	542	492	---	1,034
606.0300	RIPRAP HEAVY	CY	29	50	---	79
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	80	80	---	160
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	52	52	---	104
645.0120	GEOTEXTILE TYPE HR	SY	50	74	---	124
SPV.0090	FLASHING STAINLESS STEEL	LF	---	---	81	81
NON-BID ITEMS						
	FILLER	SIZE	1/2" & 3/4"	1/2" & 3/4"		

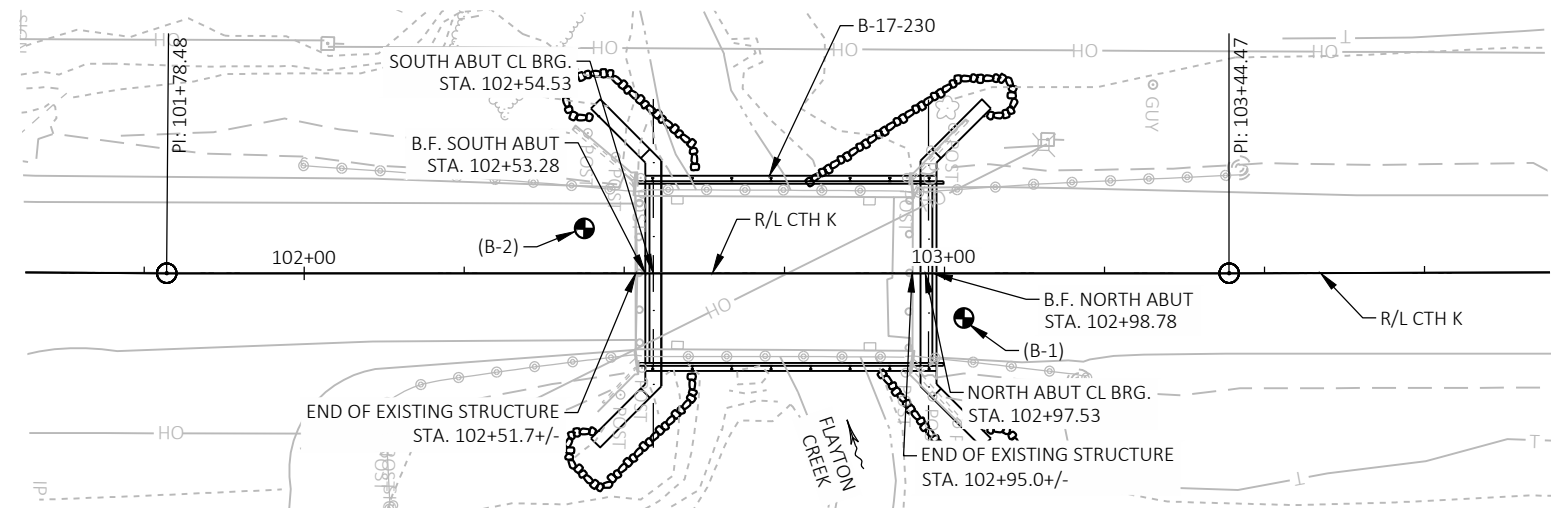
LEGEND

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 5.

BENCH MARKS

NO.	NORTHING	EASTING	DESCRIPTION	ELEV.
1	266418.3	118255.3	CUT SQ TOP CONC PARAPET	988.36
100	266487.4	118257.7	5/8IN RB KL CAP	987.11
101	266269.1	118272.5	MAG NAIL	986.62

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-230			
		DRAWN BY	PLANS CK'D.
		STD	CAH
CROSS SECTION, NOTES AND QUANTITIES			SHEET 2 OF 9



STATE PROJECT NUMBER

8837-08-70

MATERIAL SYMBOLS

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

LEGEND OF BORING

BORING # EL. STA. / OFF-SET
 ST
 (1) (2)
 0.25 17
 F-C
 COBBLE OR BOULDER
 WEATHERED LIMESTONE
 CORE RUN #1 - 24'-29'
 REC=80%, ROD=72%

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

GROUND WATER ELEVATION

∇ AT TIME OF DRILLING

 ▼ END OF DRILLING

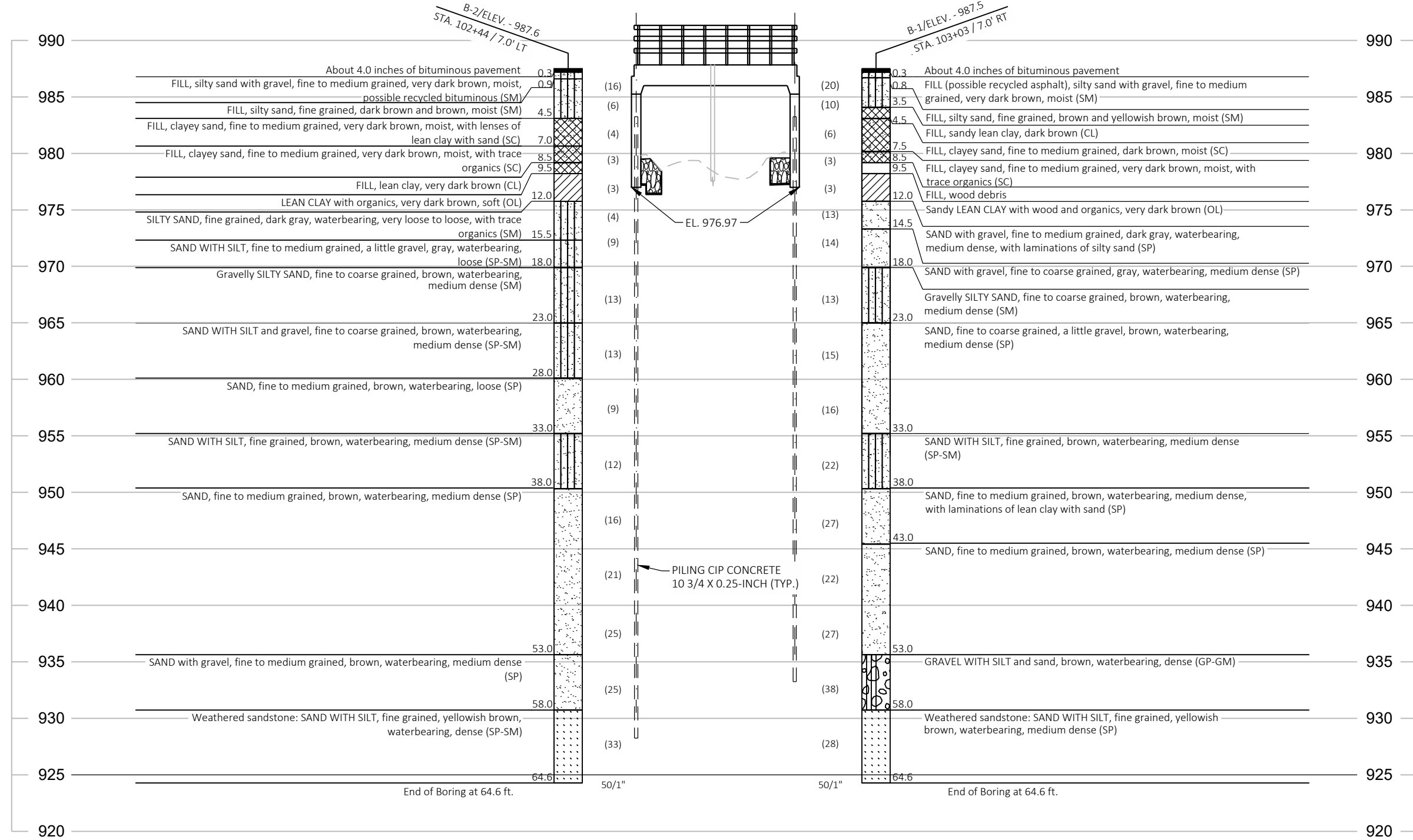
 ∇ AFTER DRILLING

ABBREVIATIONS

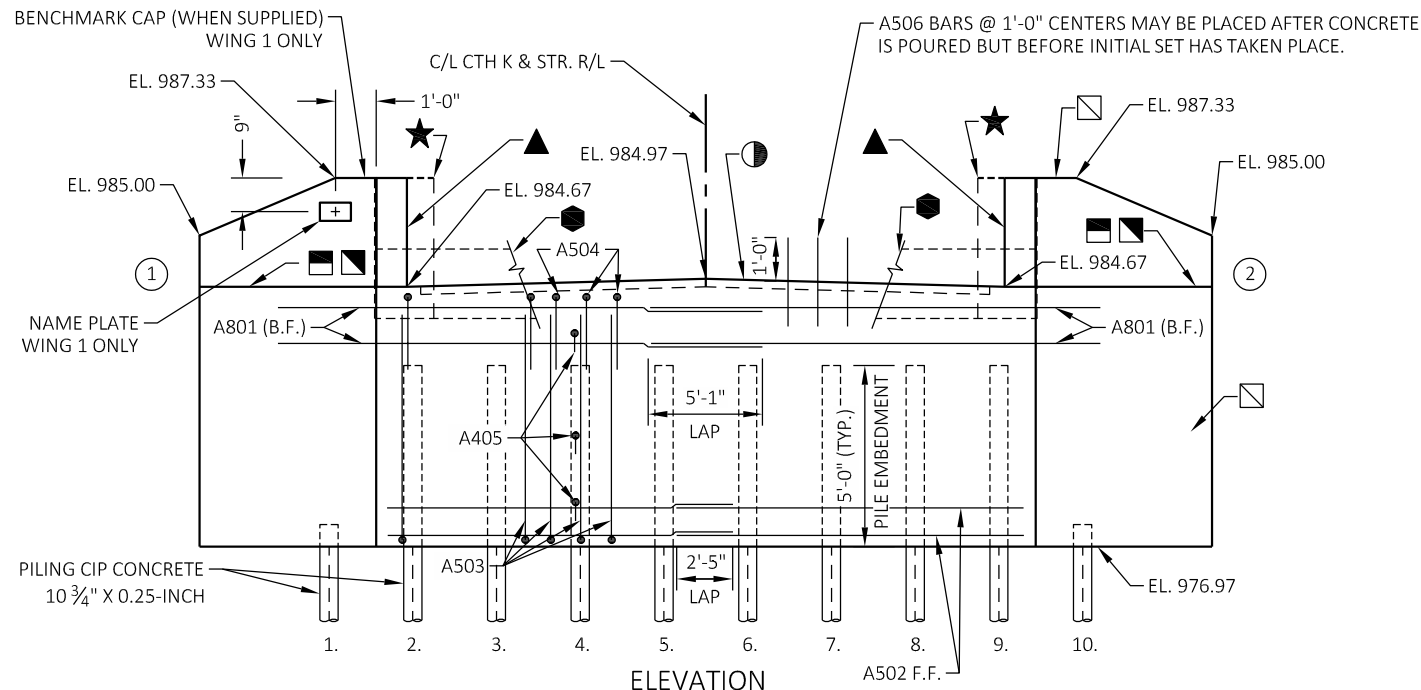
F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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



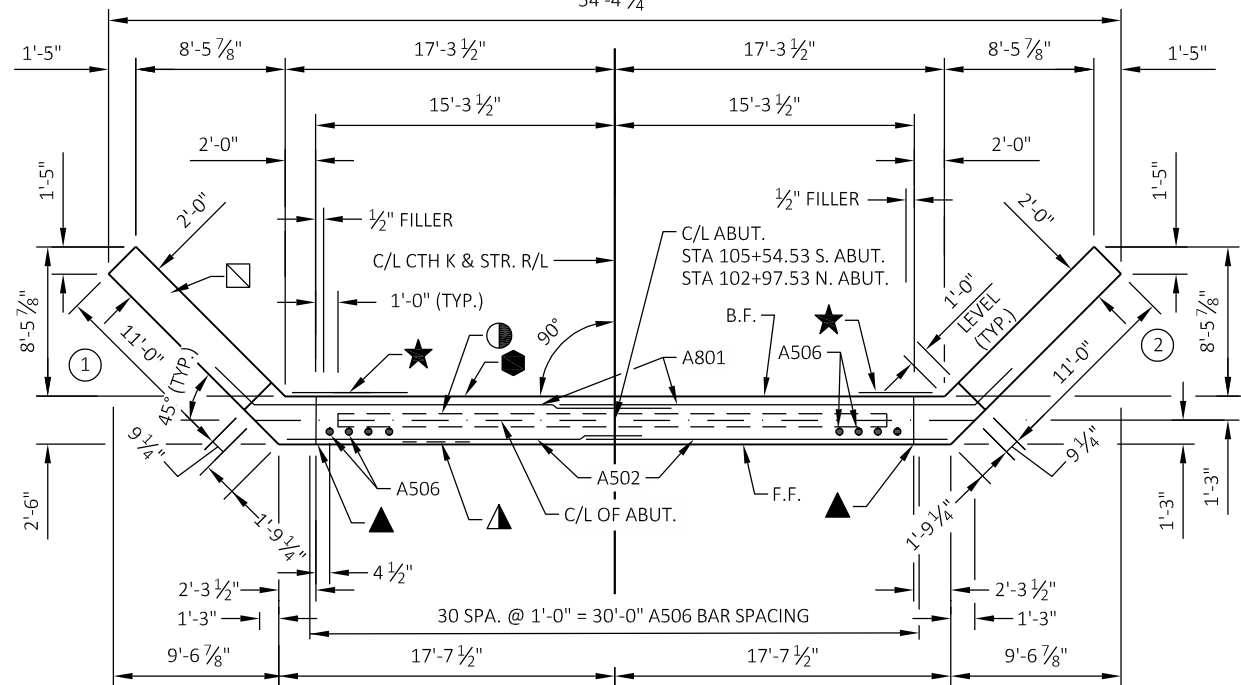
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-230			
DRAWN BY		STD	PLANS CK'D. CAH
SUBSURFACE EXPLORATION			SHEET: 3 OF 9



ELEVATION

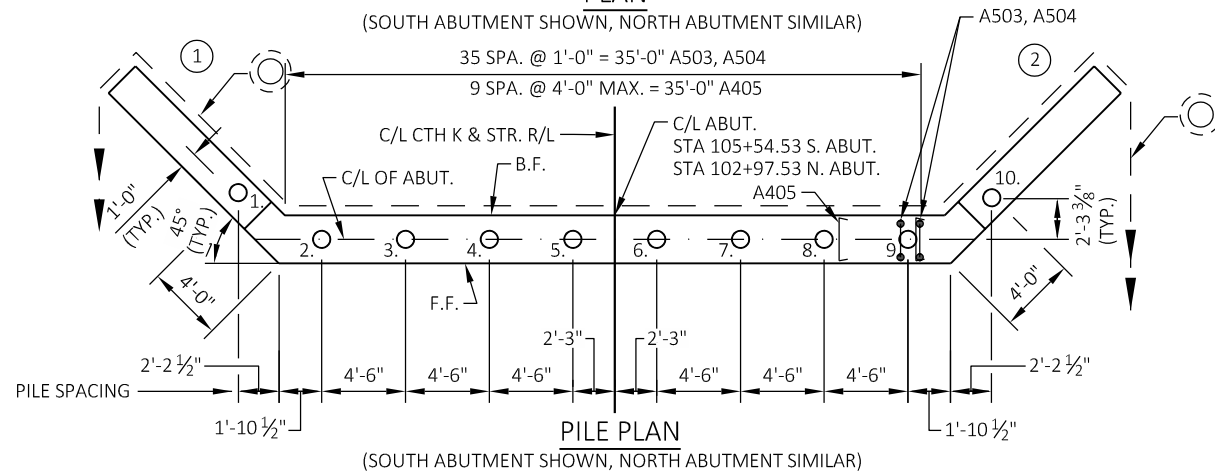
LOOKING SOUTH
(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)

54'-4 3/4"



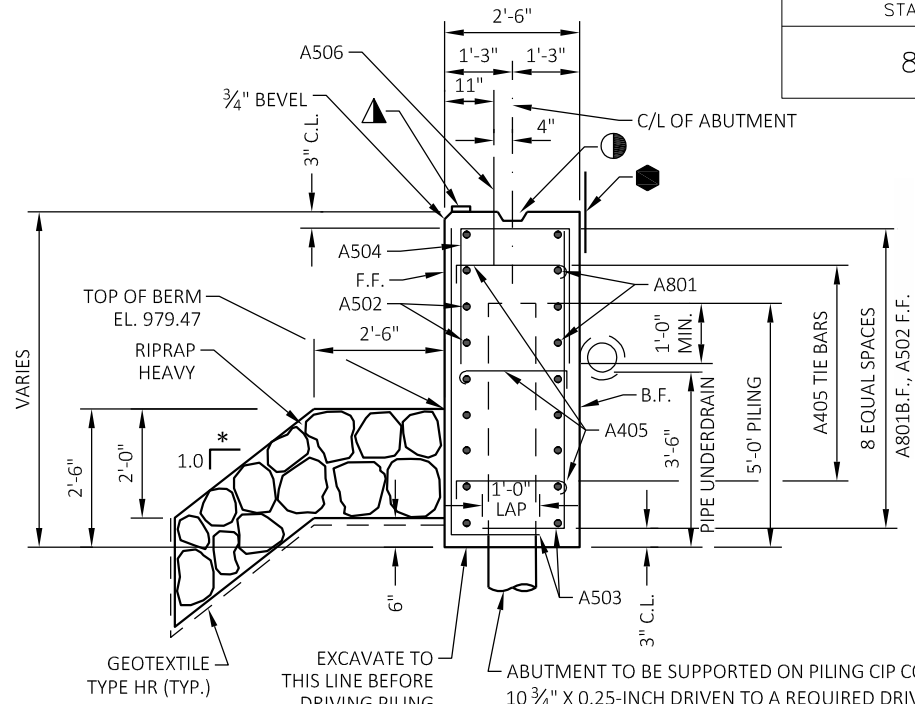
PLAN

(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)



PILE PLAN

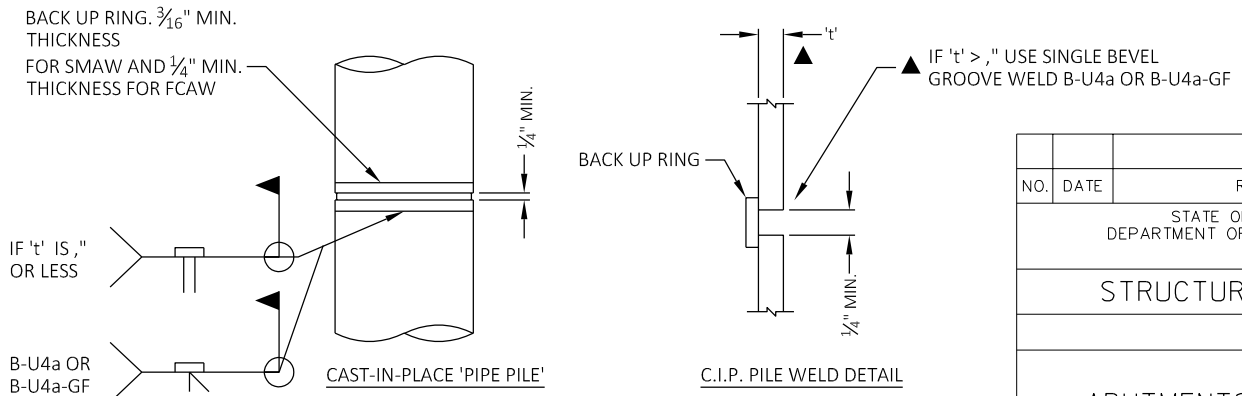
(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)



TYPICAL SECTION THRU ABUTMENT

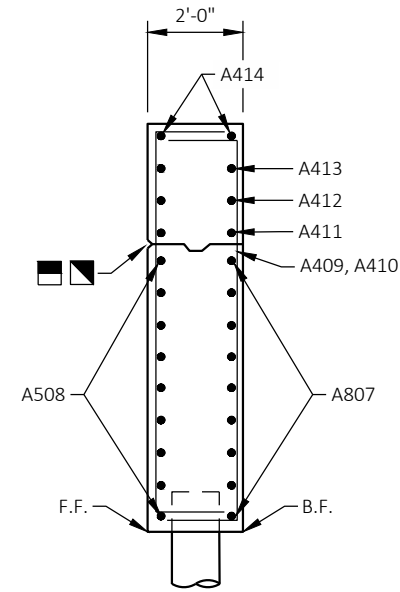
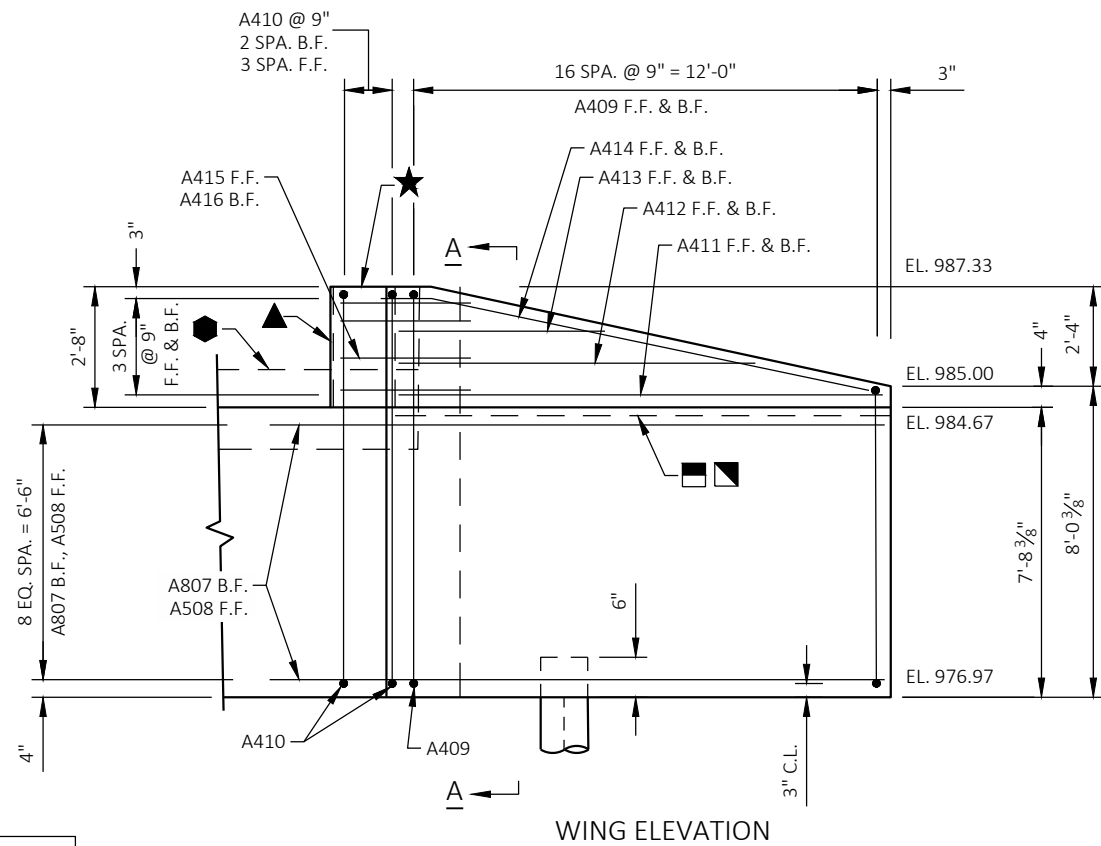
LEGEND

- KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2 X 6.
- ▲ 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).
- ▲ 4" X 3/4" FILLER. EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
- ★ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
- HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW). EXTEND BETWEEN WINGS.
- OPTIONAL KEYED CONST. JOINT ON WING IS FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE RMW ON B.F. OF WING. COST OF RMW IS INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES".
- ▣ 3/4" "V" GROOVE ON FRONT FACE OF WING WALL. REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
- PIPE UNDERDRAIN WRAPPED 6-INCH, EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT SHIELD AT ENDS OF PIPE. FOR RODENT DETAILS, SEE SHEET 5.
- ▣ PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END OF THE FRONT FACE OF ABUTMENT TO 1'-0" BEYOND HEADER.
- ⊗ - INDICATES WING NUMBER F.F. - FRONT FACE B.F. - BACK FACE CL. - CLEAR



PILE DETAILS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-230			
DRAWN BY		STD	PLANS CK'D. CAH
ABUTMENTS			SHEET 4 OF 9



SECTION A-A THRU WINGS

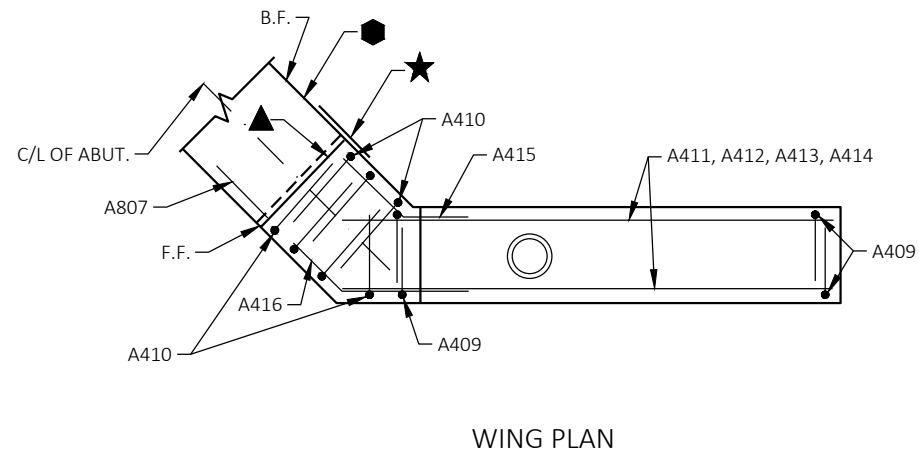
COATED = 1,920 LBS (PER ABUT)
UNCOATED = 2,610 LBS (PER ABUT)

ABUT.
BILL OF BARS

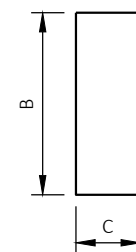
BAR MARK	NO. REQ'D. S. ABUT.	NO. REQ'D. N. ABUT.	LENGTH	COAT	BENT	BAR SERIES	LOCATION
A801	18	18	23'-10"		X		ABUT BODY - B.F. - HORIZ.
A502	18	18	18'-8"				ABUT BODY - F.F. - HORIZ.
A503	72	72	9'-2"		X		ABUT BODY - F.F. & B.F. - VERT.
A504	36	36	9'-7"		X		ABUT BODY - TOP - VERT.
A405	30	30	3'-0"		X		ABUT BODY - TIES - HORIZ.
A506	31	31	2'-0"	X			ABUT BODY - DOWELS - VERT.
A807	18	18	16'-7"	X	X		WINGS - B.F. BOTTOM - HORIZ.
A508	18	18	14'-7"	X	X		WINGS - F.F. BOTTOM - HORIZ.
A409	68	68	11'-2"	X	X	X	WINGS - F.F. & B.F. - TOP & BOTTOM - VERT.
A410	14	14	13'-4"	X	X		WINGS - F.F. & B.F. - TOP & BOTTOM - VERT.
A411	4	4	13'-2"	X			WINGS - F.F. & B.F. - HORIZ
A412	4	4	9'-6"	X			WINGS - F.F. & B.F. - HORIZ
A413	4	4	5'-10"	X			WINGS - F.F. & B.F. - HORIZ
A414	4	4	13'-0"	X	X		WINGS - F.F. & B.F. - TOP - HORIZ
A415	8	8	2'-7"	X	X		WING - B.F. - HORIZ
A416	8	8	4'-4"	X	X		WING - F.F. - HORIZ

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

SEE LEGEND ON SHEET 4 FOR DESCRIPTION OF
★ ● ◻ ◻ ▲

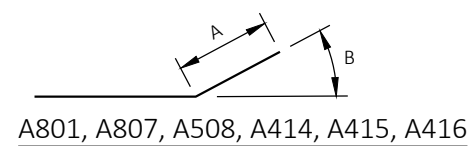


WING PLAN



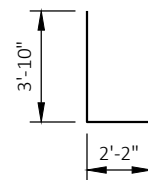
A409, A410

MARK	B	C
A409	7'-6" TO 9'-10"	1'-4"
A410	9'-10"	1'-10"

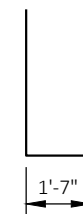


A801, A807, A508, A414, A415, A416

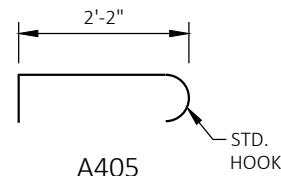
MARK	A	B
A801	1'-6"	45°
A807	1'-6"	45°
A508	1'-6"	45°
A414	2'-2"	12°
A415	10"	45°
A416	2'-1"	45°



A504



A503

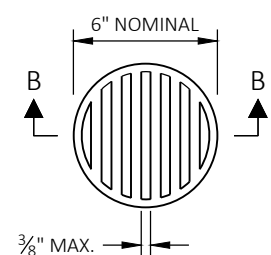


A405

BAR SERIES TABLE

BAR MARK	NUMBER	LENGTH
A409	4 SERIES OF 17	10'-0" TO 12'-4"

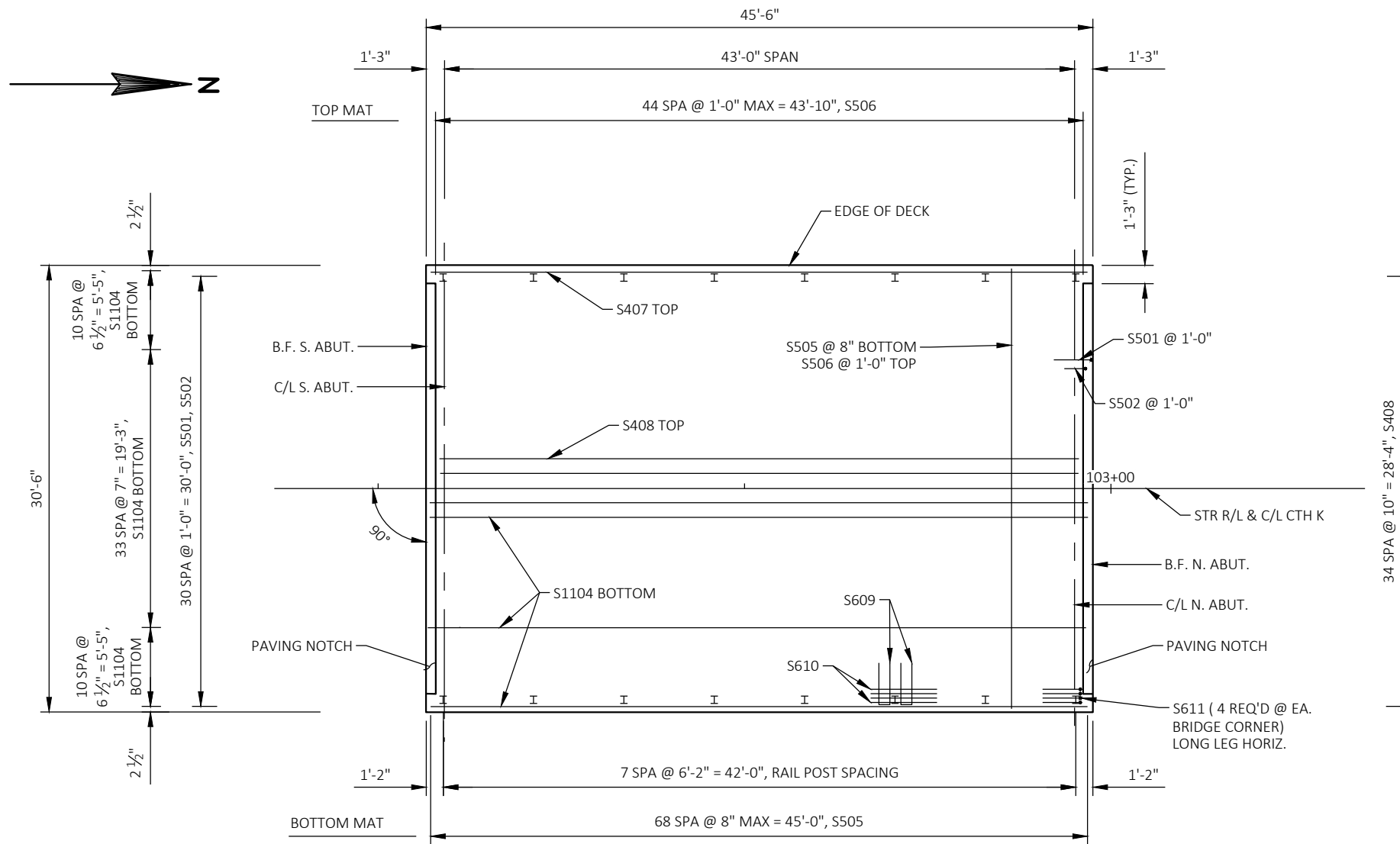
BUNDLE AND TAG EACH SERIES SEPARATELY



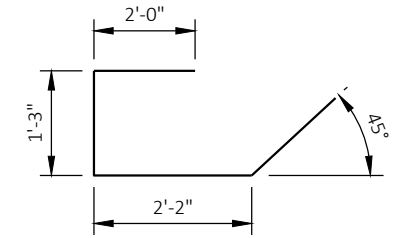
RODENT SHIELD DETAIL

*DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL. THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH". THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

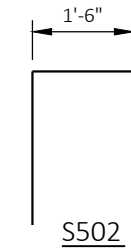
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-230			
		DRAWN BY	PLANS CK'D. CAH
ABUTMENT DETAILS		SHEET 5 OF 9	



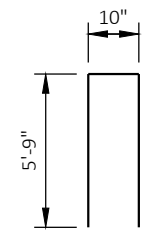
SLAB PLAN



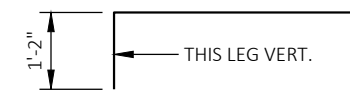
S501



S502



S609



S611

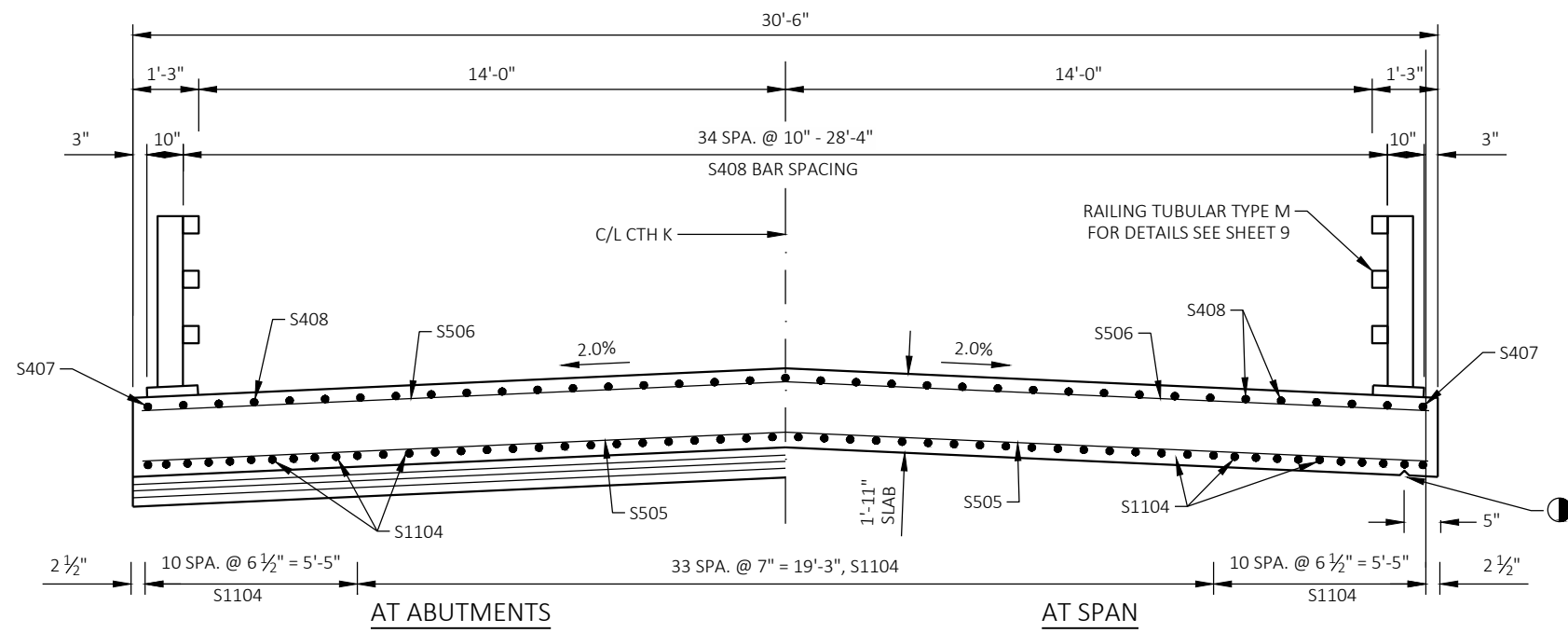
BILL OF BARS

TOTAL COATED = 19,590 LBS

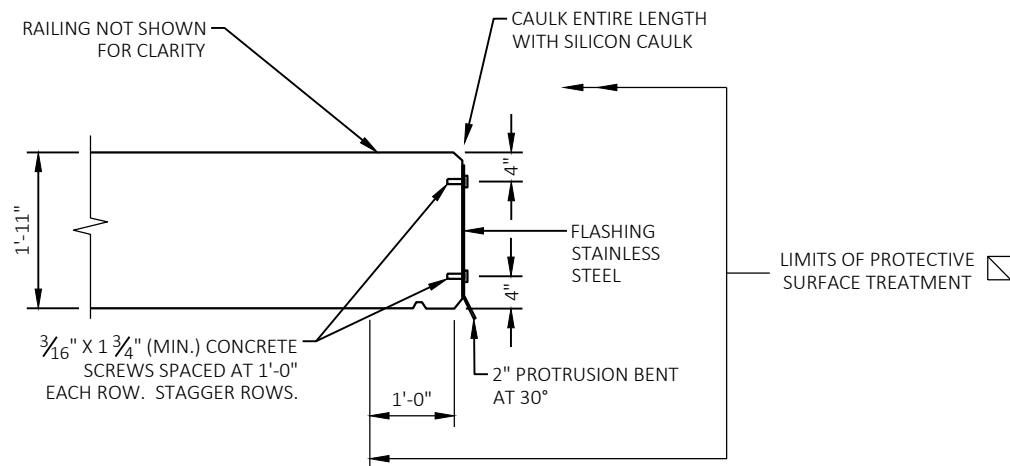
BAR MARK	NO. REQ'D.	LENGTH	COAT	BENT	LOCATION
S501	62	6'-11"	X	X	DIAPHRAGM @ ABUTS - VERT.
S502	62	3'-7"	X	X	DIAPHRAGM @ ABUTS - VERT.
S503	4	30'-2"	X		DIAPHRAGM @ ABUTS - HORIZ.
S1104	54	45'-2"	X		DECK - LONGIT. - BTM - LONGIT.
S505	69	30'-2"	X		DECK - LONGIT. - BTM - TRANS.
S506	45	30'-2"	X		DECK - LONGIT. - TOP - TRANS.
S407	2	45'-2"	X		DECK - LONGIT. - TOP - LONGIT.
S408	35	43'-10"	X		DECK - LONGIT. - TOP - LONGIT.
S609	32	12'-0"	X	X	DECK - TOP @ RAIL POST - 2 PER POST
S610	48	6'-0"	X		DECK - TOP @ RAIL POST - 4 PER POST
S611	16	6'-0"	X	X	DECK - TOP @ RAIL END POST - 4 PER POST

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-230			
DRAWN BY		STD	PLANS CK'D. CAH
SUPERSTRUCTURE			SHEET 6 OF 9



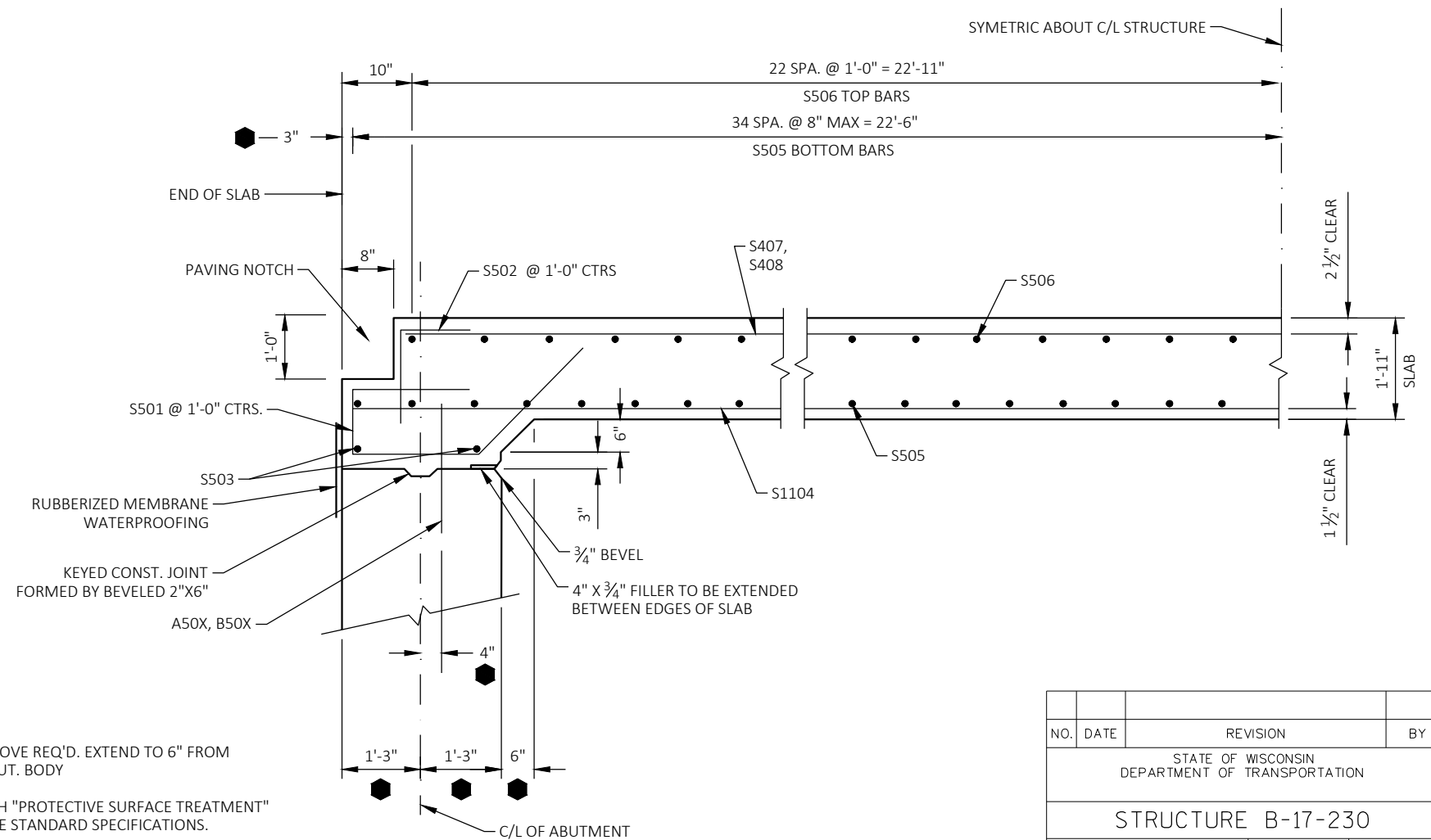
CROSS SECTION THRU BRIDGE
(LOOKING NORTH)



FLASHING DETAIL

NOTES

- THE BID ITEM "FLASHING STAINLESS STEEL" SHALL INCLUDE PROVIDING AND INSTALLING THE STAINLESS STEEL FLASHING, SILICONE CAULK, 3/16" CONCRETE SCREWS AND CLEANING THE EDGE OF THE DECK PRIOR TO ATTACHMENT OF THE FLASHING.
- FLASHING TO BE INSTALLED AFTER PROTECTIVE SURFACE TREATMENT APPLICATION.
- CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.
- EXTEND FLASHING TO B.F. OF ABUTMENT DIAPHRAGM.
- TOP OF FLASHING TO BEGIN APPROX. 1-INCH BELOW TOP OF DECK/SLAB SURFACE.
- THE FLASHING IS TO BE A CONSTANT HEIGHT BASED ON THE THINNEST SLAB DEPTH OVER THE BRIDGE LENGTH.

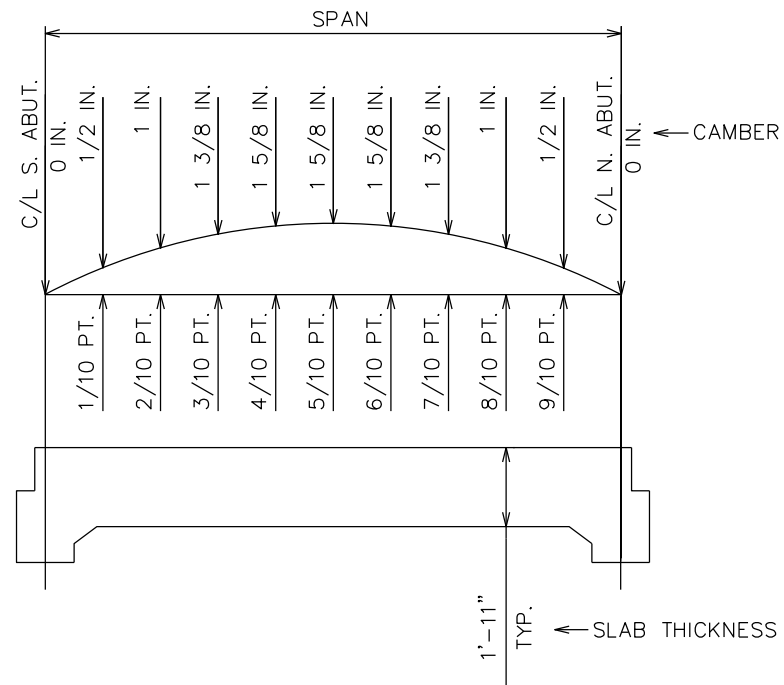


PART LONGITUDINAL SECTION

NOTES

- 3/4" V-GROOVE REQ'D. EXTEND TO 6" FROM F.F. OF ABUT. BODY
- COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS.
- DIMENSIONS ARE GIVEN NORMAL TO THE C/L OF ABUTMENTS.

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SUPERSTRUCTURE DETAILS 1			SHEET 7 OF 9



SURVEY TOP OF SLAB ELEVATIONS

	SPAN POINT	EAST EDGE OF SLAB	C/L CTH K	WEST EDGE OF SLAB
S. ABUT.	0.0			
	0.5			
N. ABUT.	1.0			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE C/L OF ABUTMENTS, AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG INSIDE FACE OF HEADERS AND STRUCTURE TANGENT LINE. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS, SIDEWALKS AND MEDIANS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED, EXCEPT FOR STAGED CONSTRUCTION.

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

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

TOP OF SLAB ELEVATIONS

(ELEVATIONS SHOWN ARE FOR EDGES AND CENTERLINE OF SLAB)

	W. Abut	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	E. Abut
Station	102+54.53	102+58.83	102+63.13	102+67.43	102+71.73	102+76.03	102+80.33	102+84.63	102+88.93	102+93.23	102+97.53
West EOD	987.34	987.34	987.34	987.34	987.34	987.34	987.34	987.34	987.34	987.34	987.34
Crown	987.64	987.64	987.64	987.64	987.64	987.64	987.64	987.64	987.64	987.64	987.64
East EOD	987.34	987.34	987.34	987.34	987.34	987.34	987.34	987.34	987.34	987.34	987.34

NOTES

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

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

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SUPERSTRUCTURE DETAILS 2			SHEET 8 OF 9

LEGEND

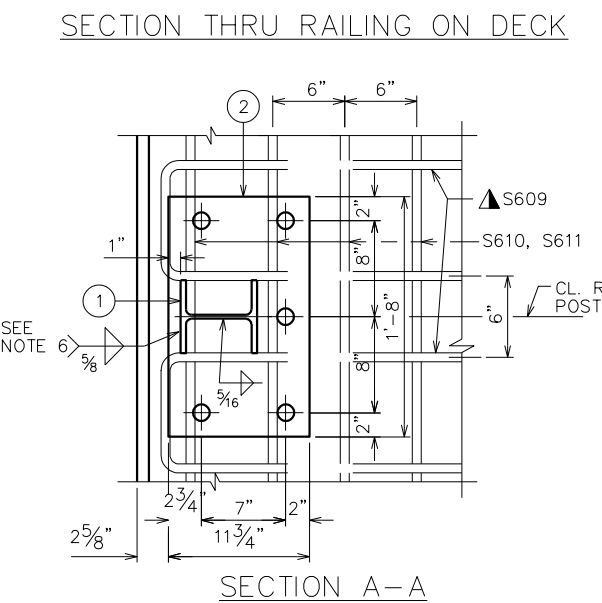
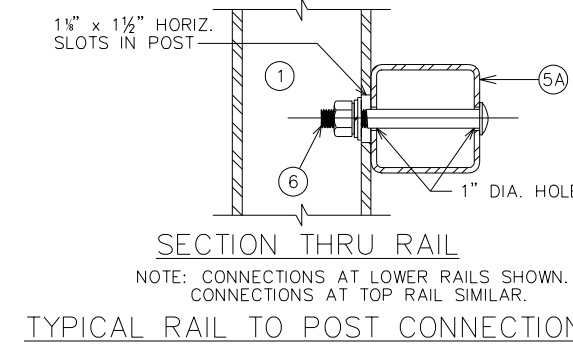
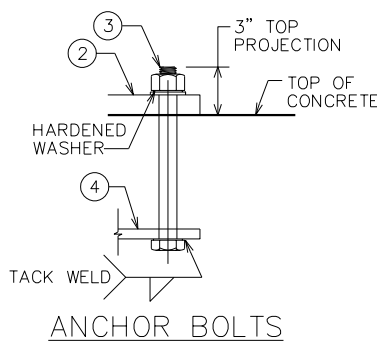
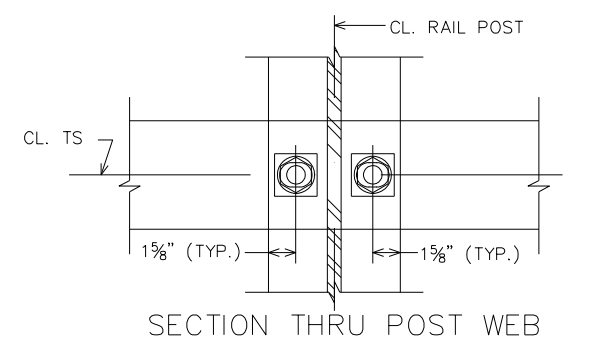
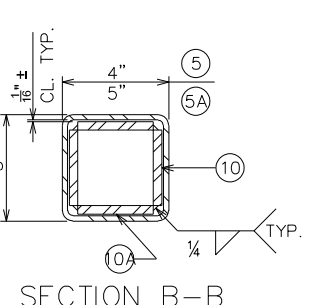
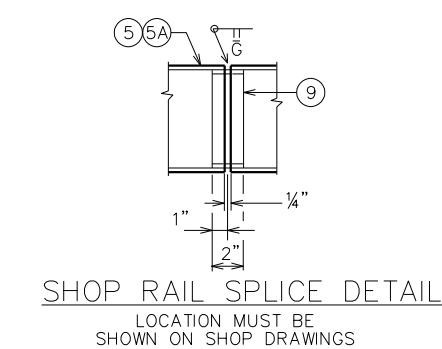
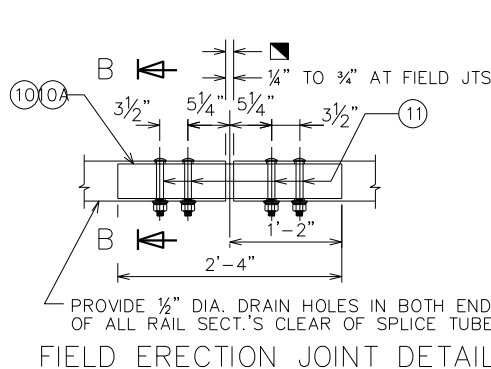
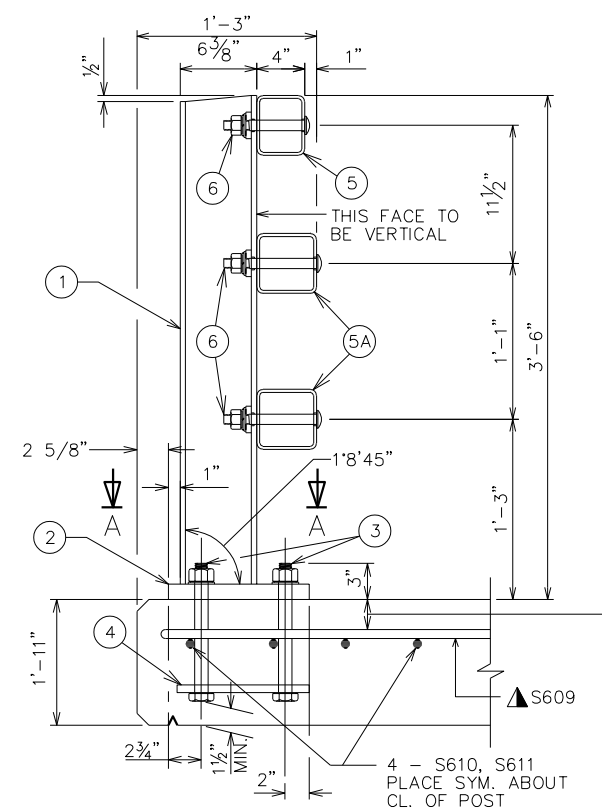
- ① W6 x 25 WITH 1 1/2" x 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 1" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.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

GENERAL NOTES

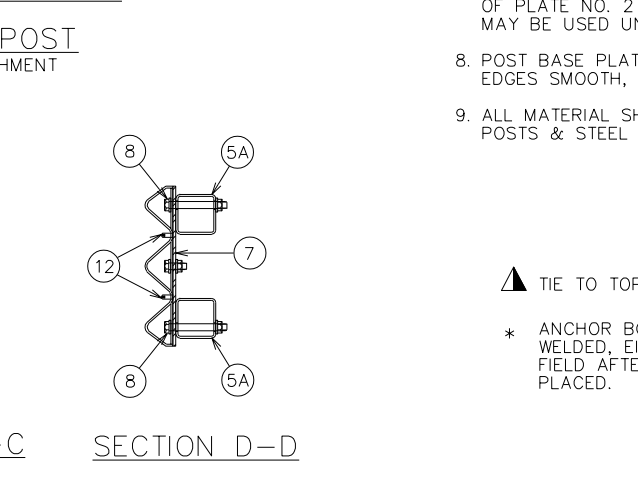
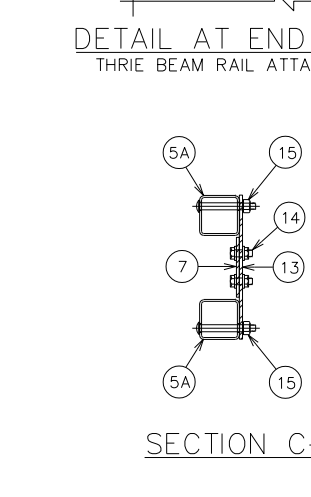
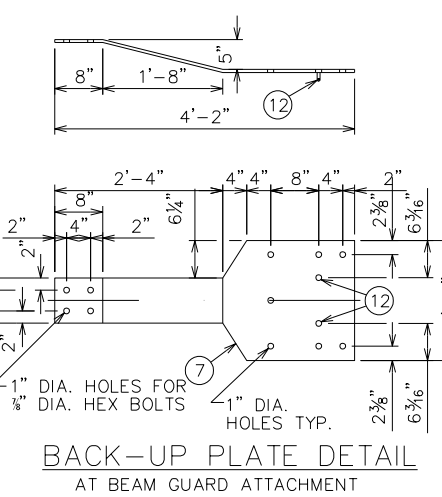
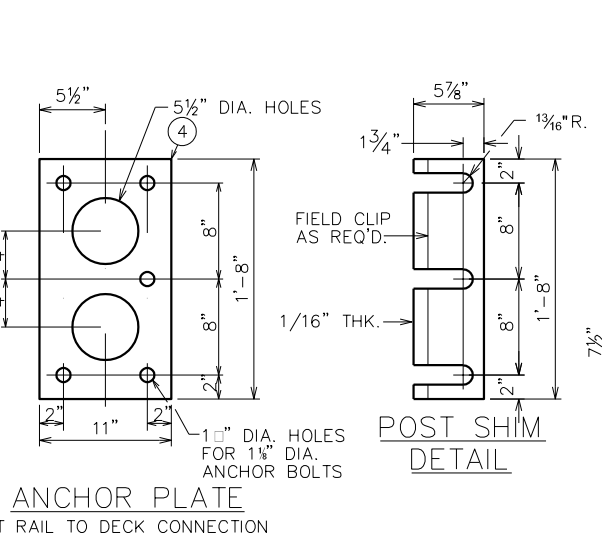
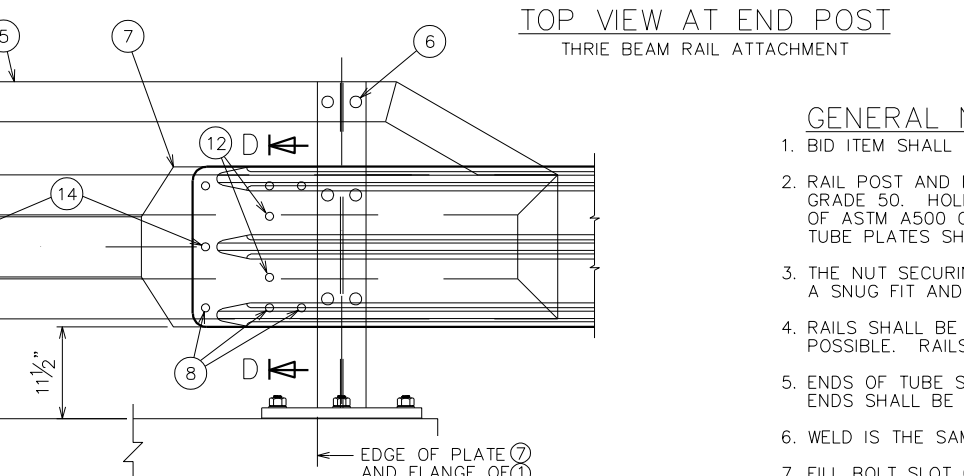
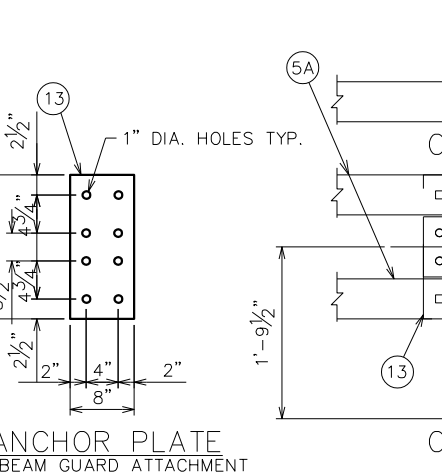
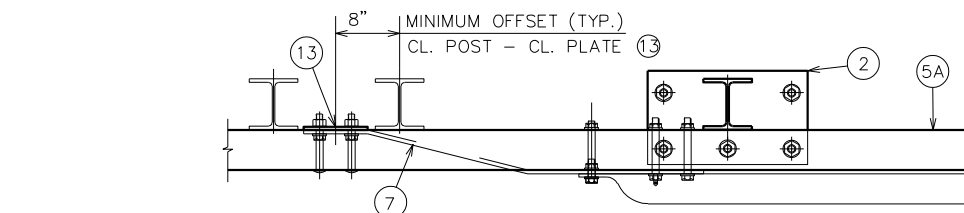
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 ksi. ANCHOR PLATES,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

▲ TIE TO TOP MAT OF STEEL.

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



2 1/2" FOR SLABS ON GIRDERS; FOR OTHER STRUCTURES, PLACE BELOW TOP MAT SLAB REINFORCEMENT.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-17-230			
		DRAWN BY	PLANS Ck'd. CAH
TUBULAR STEEL RAILING TYPE 'M'			SHEET 9 OF 9

CTH K													
STATION	Distance	Area				Incremental Volume (Unadjusted)				Cumulative Vol (CY)			Mass Ordinate Note 5
		Cut (SF)	Salvaged/Unusable Pavement Material (SF)	Fill (SF)	EBS (SF)	Cut Note 1 (CY)	Salvaged/Unusable Pavement Material Note 2 (CY)	Fill Note 3 (CY)	EBS (CY)	Cut 1.00 Note 1	Expanded Fill 1.25	Reduced EBS In Fill 0.80 Note 4	
101+36		7	1	0	0								
101+59	23	11	1	3	1	8	1	1	0	8	1	0	6
101+85	26	12	1	15	1	11	1	9	1	19	12	1	6
102+00	15	23	1	13	1	10	0	8	0	29	21	1	6
102+10	10	57	5	13	3	15	1	5	1	43	26	2	15
102+39	29	50	5	22	3	58	5	19	3	101	47	4	47
103+13	74	43	5	26	2	128	12	66	6	229	123	9	86
103+48	35	26	4	0	1	45	6	17	2	274	142	11	106
103+50	2	17	0	0	1	2	0	0	0	276	142	11	108
104+00	50	19	0	3	1	33	0	3	2	309	144	12	138
104+30	30	18	0	29	1	21	0	18	1	330	166	13	138
104+50	20	17	0	39	1	13	0	25	1	343	196	14	120
104+55	5	52	0	41	3	6	0	7	0	349	205	14	117
104+80	25	18	0	47	1	32	0	41	2	381	254	15	100
105+00	20	18	0	33	1	13	0	30	1	395	291	16	77
105+28	28	17	0	16	1	18	0	25	1	413	322	17	64
105+43	15	6	0	11	0	7	0	7	0	419	331	17	62
						419	27	281	21				

NOTES:

1-CUT

2-SALVAGED/UNSABLE PAVEMENT MATERIAL

3-FILL

4-REDUCED EBS IN FILL

5-MASS ORDINATE

CUT INCLUDES SALVAGED/UNSABLE PAVEMENT MATERIAL

THIS DOES NOT SHOW UP IN THE CROSS SECTIONS

DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME OR SELECT FILL

REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL

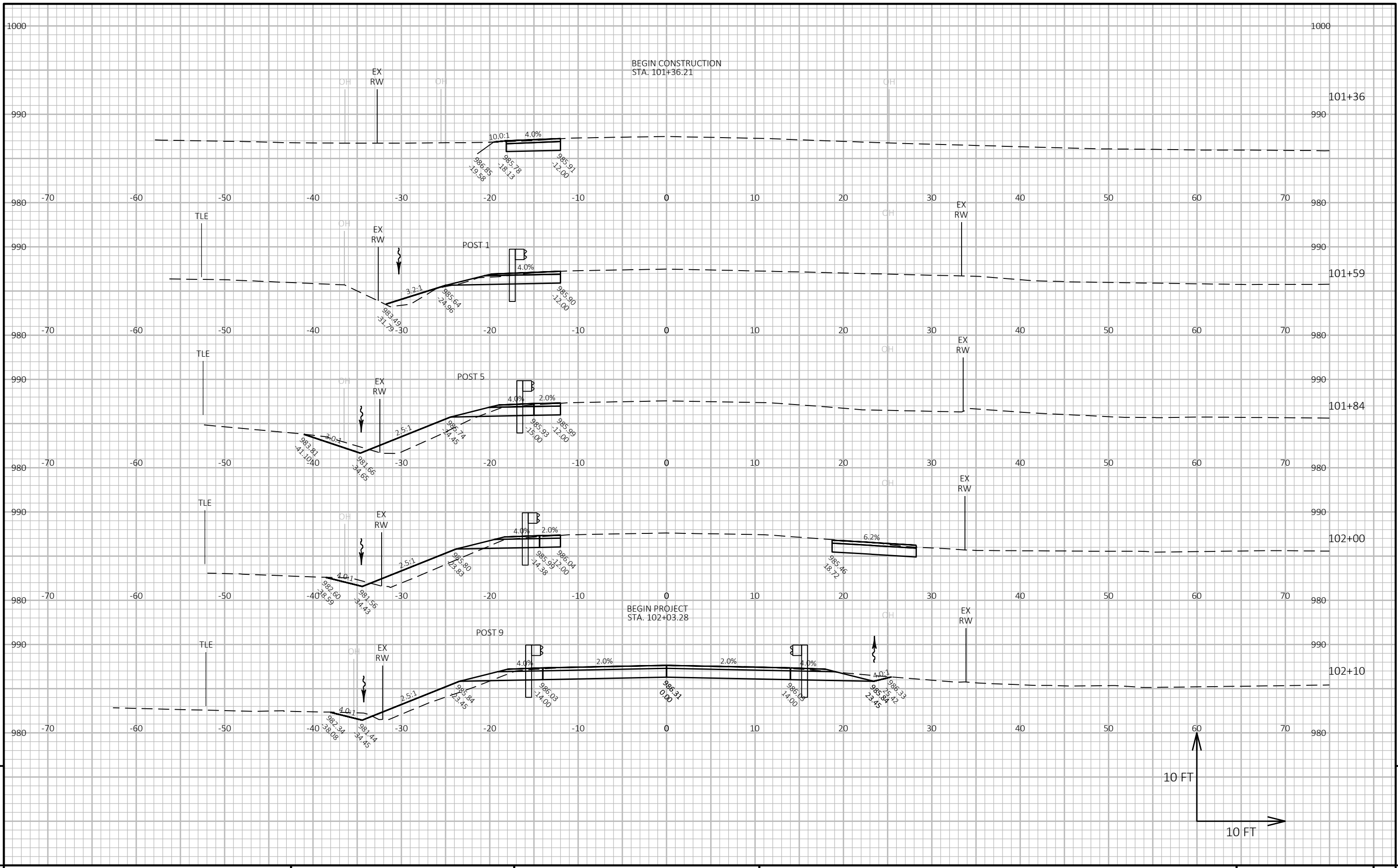
IF EBS TO BE BACKFILLED WITH OR BORRROW: CUT-(FILL * FILL FACTOR AREA UNDER INSIDE 1:1'S EXTENDED DOWN FROM SUBGRADE SHOULDER POINTS

(+) MASS ORDINATE INDICATES WASTE

(-) MASS ORDINATE INDICATES BORROW

9

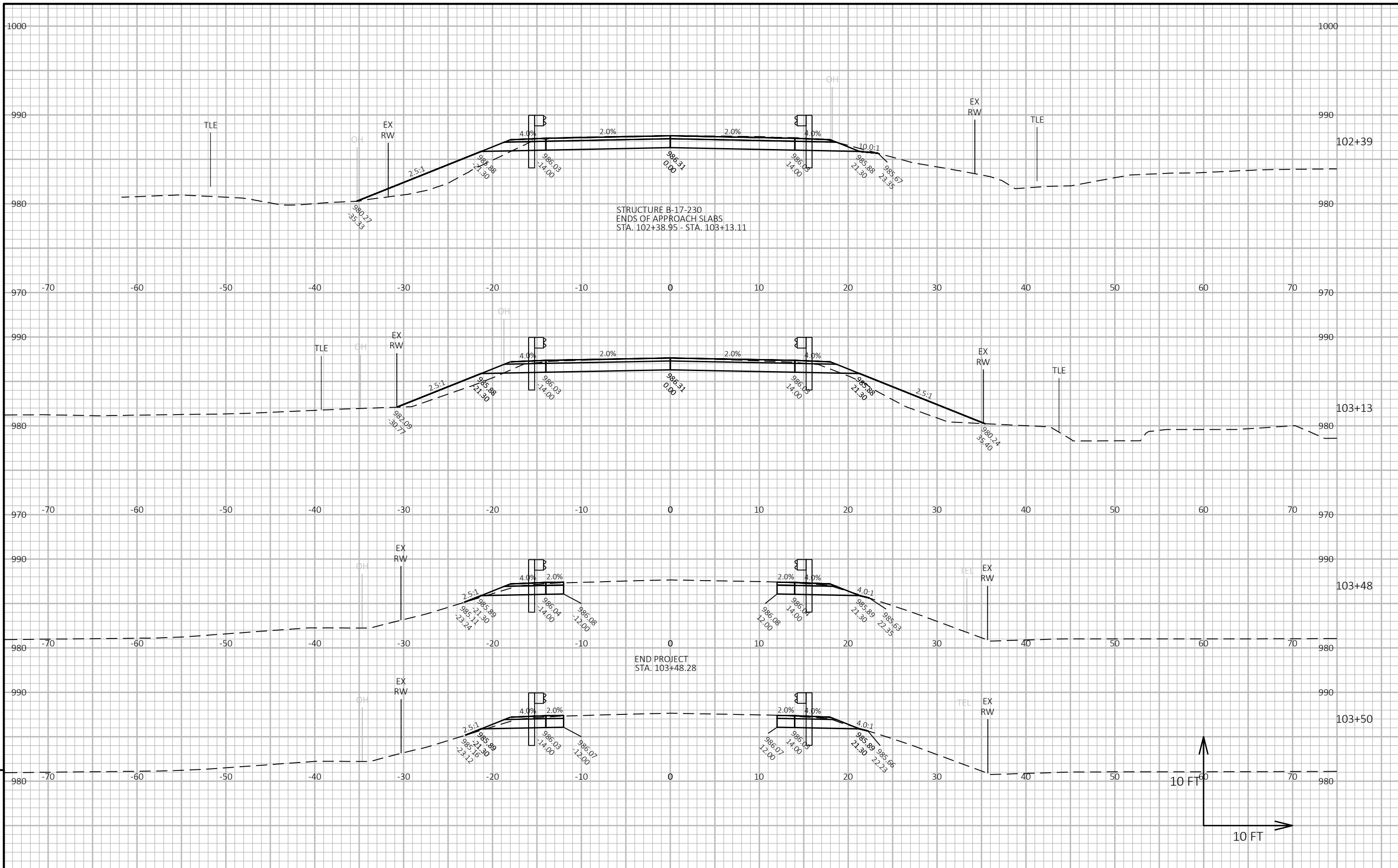
9



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PROJECT NO: 8837-08-70	HWY: CTH K	COUNTY: DUNN	CROSS SECTIONS: CTH K	SHEET 15	E
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PROJECT NO: 8837-08-70

HWY: CTH K

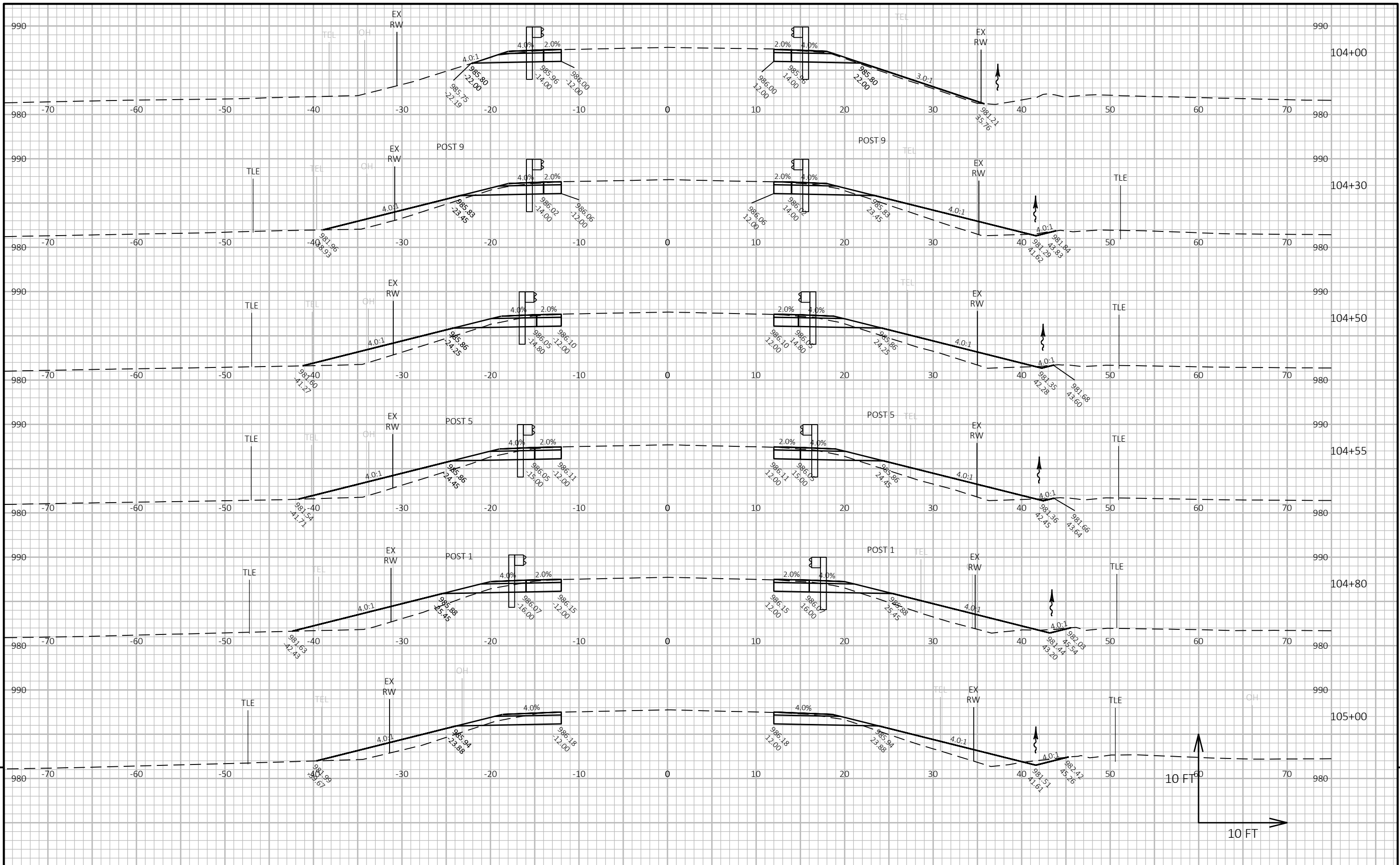
COUNTY: DUNN

CROSS SECTIONS: CTH K

SHEET

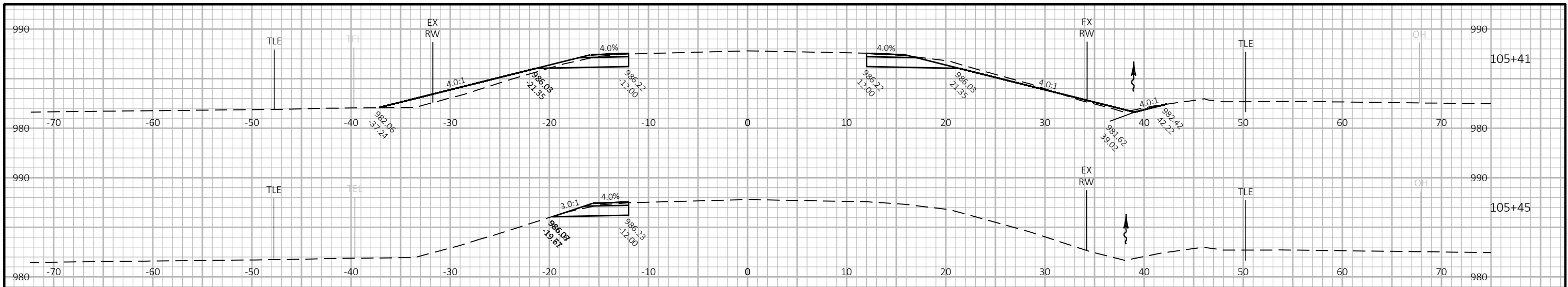
16

E

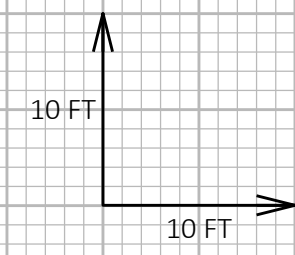


10 FT

10 FT

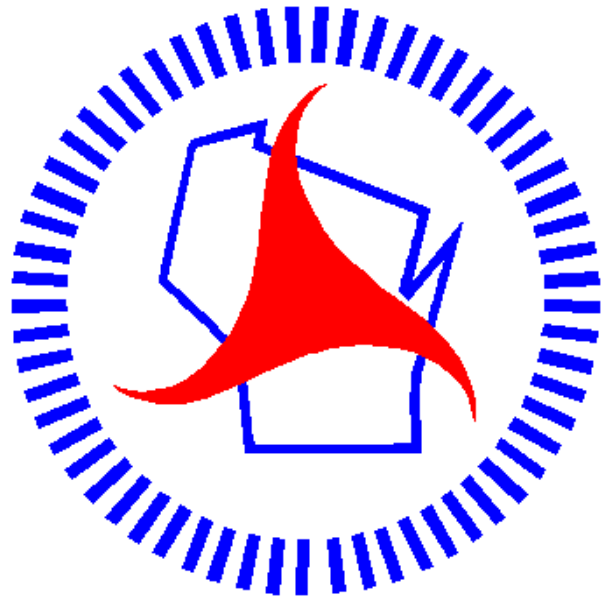


END CONSTRUCTION
STA. 105+45.18



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