

MAD JUNE 2020

PROJECT ID: 6020-04-80

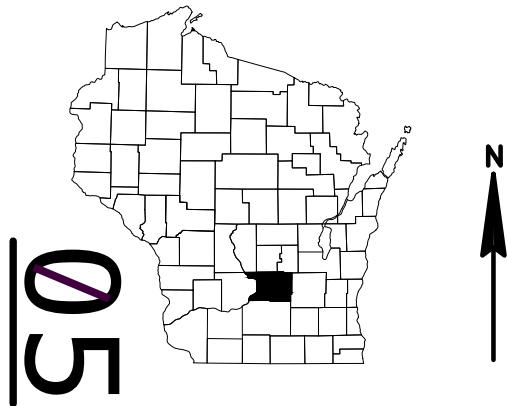
WITH: N/A

COUNTY: COLUMBIA

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	Right of Way Plan
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 = 78



DESIGN DESIGNATION

A.A.D.T.	2017	=	4100
A.A.D.T.	2041	=	4700
D.H.V.		=	526
D.D.		=	60/40
T.		=	13.0%
DESIGN SPEED		=	55 mph
ESALS		=	1,100,000

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

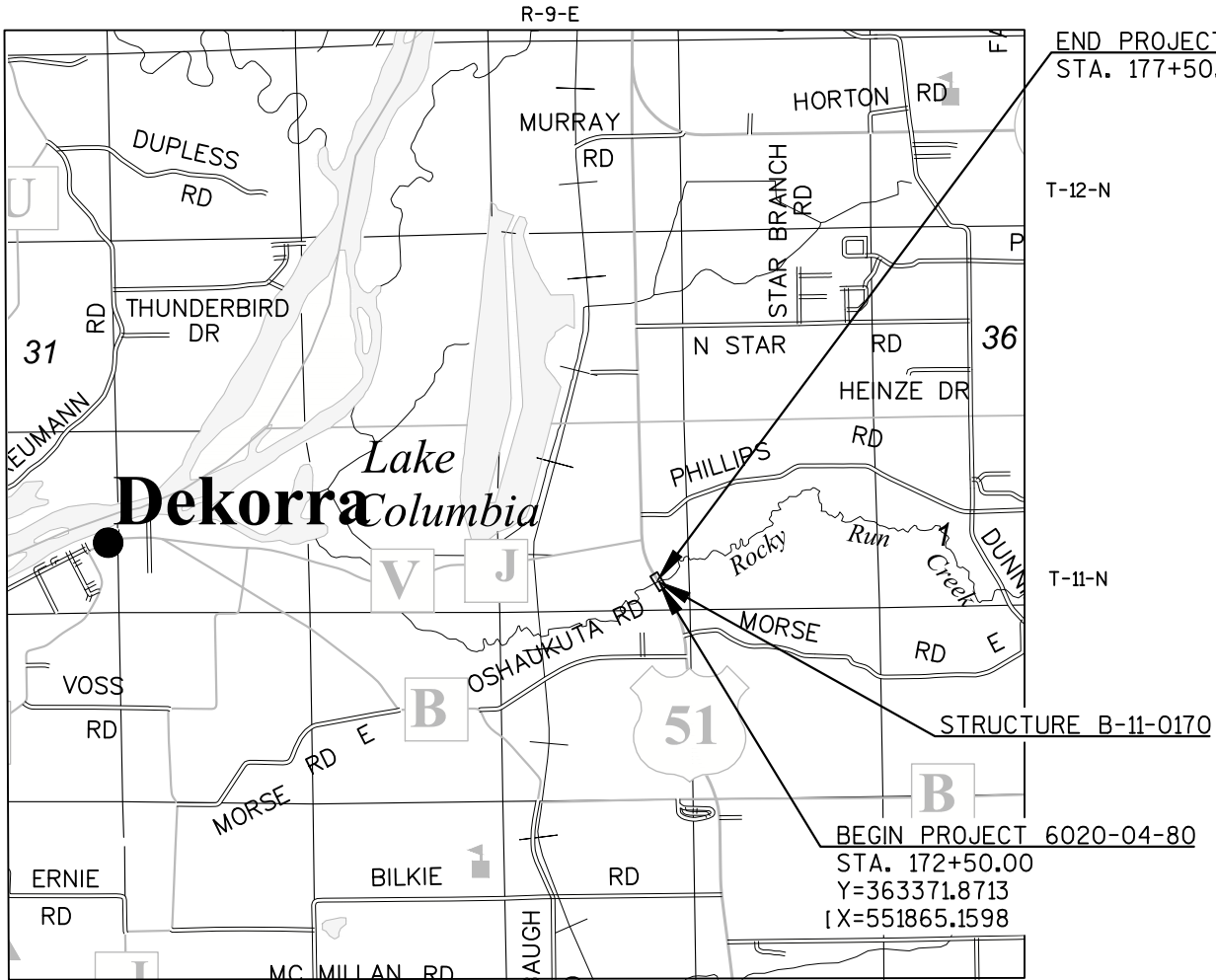
DEFOREST - PORTAGE

ROCKY RUN CREEK BRIDGE B-11-0170

USH 51

COLUMBIA COUNTY

STATE PROJECT NUMBER
6020-04-80



LAYOUT

SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.095 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, COLUMBIA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD 88 (2012).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6020-04-80	WISC 2020318	1

ORIGINAL PLANS PREPARED BY

Michael Baker

INTERNATIONAL

1/16/2020 (Date) *Susan C. Barker* (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor JT ENGINEERING, INC

Designer MICHAEL BAKER INTENATIONAL

Project Manager LALITHA BALACHANDRAN, P.E.

Regional Examiner SW REGION

Regional Supervisor WILLIAM STROBEL, P.E.

APPROVED FOR THE DEPARTMENT

DATE 01/22/2020 *Lalitha B.* (Signature)

E

UTILITY CONTACTS

MS. MARY MONTGOMERY
ALLIANT ENERGY - ELECTRICITY
200 FIRST STREET
CEDAR RAPIDS, IA 52401
PHONE (319) 786-4768
marymontgomery@alliantenergy.com

MR. KEVIN ZICKERT
CENTURYLINK - COMMUNICATION LINE
224 INDUSTRIAL DR
NORTH PRAIRIE, WI 53153
PHONE (262) 392-5200
kevin.zickert@centurylink.com

ABBREVIATIONS

AC ACRE
AGG AGGREGATE
¾ ANGLE
AE, AEW APRON ENDWALL
ASPH ASPHALTIC
A.D.T. AVERAGE DAILY TRAFFIC
A.A.D.T. ANNUAL AVERAGE DAILY TRAFFIC
B.F. BACK FACE
BM BENCHMARK
BTWN BETWEEN
CTR. CENTER
C/L CENTER LINE
¾ CENTRAL ANGLE OR DELTA
C.E. COMMERCIAL ENTRANCE
CONST. CONSTRUCTION
CMCP CORRUGATED METAL CULVERT PIPE
CMP CORRUGATED METAL PIPE
CO. COUNTY
CTH COUNTY TRUNK HIGHWAY
CR. CREEK
CABC CRUSHED AGGREGATE BASE COURSE
CY CUBIC YARD
CP CONTROL POINT OR CULVERT PIPE
C & G CURB AND GUTTER
D DEGREE OF CURVE
D.H.V. DESIGN HOURLY VOLUME
DIA. DIAMETER
D.D. DIRECTIONAL DISTRIBUTION
DISCH. DISCHARGE
DMS DYNAMIC MESSAGE SIGN
EA EACH
E EAST
EB EASTBOUND
ELEC. ELECTRIC (AL), ELEC. CABLE
EL., ELEV. ELEVATION
ESALS EQUIVALENT SINGLE AXLE LOADS
EXC. EXCAVATION
EXIST EXISTING
F.F. FACE TO FACE
FERT. FERTILIZE
F.E. FIELD ENTRANCE
F/L, F.L. FLOW LINE
GALV. GALVANIZE
H.S. HIGH STRENGTH
CWT HUNDREDWEIGHT
INL INLET
INTER. INTERSECTION
IH INTERSTATE HIGHWAY
JT. JOINT
LT LEFT
L.H.F. LEFT HAND FORWARD
L. LENGTH OF CURVE
L.F. LINEAR FOOT(FEET)

L.C. LONG CHORD
LS LUMP SUM
M.P. MARKER POST
MGAL 1000 GALLONS
N.C. NORMAL CROWN
N NORTH
NB NORTHBOUND
NOR NORMAL
NO. NUMBER
PAV'T PAVEMENT
P.L.E. PERMANENT LIMITED EASEMENT
P.C. POINT OF CURVATURE
P.I. POINT OF INTERSECTION
P.T. POINT OF TANGENCY
PCC PORTLAND CEMENT CONCRETE
P.E. PRIVATE ENTRANCE
PGL PROFILE GRADE LINE
P.L. PROPERTY LINE
R RADIUS OR RANGE
R/L REFERENCE LINE
R.C.C.P. REINFORCED CONCRETE CULVERT PIPE
REQ'D REQUIRED
RT RIGHT
R.H.F. RIGHT HAND FORWARD
R/W RIGHT OF WAY
RD. ROAD
SHLD. SHOULDER(S)
SHR. SHRINKAGE
S SOUTH
SB SOUTHBOUND
S.F. SQUARE FOOT (FEET)
SDD STANDARD DETAIL DRAWINGS
STH STATE TRUNK HIGHWAY
STA. STATION
S.E. SUPERELEVATION
S/L SURVEY LINE
SYM SYMMETRICAL
T. PERCENT TRUCKS
TEL. TELEPHONE
TEMP. TEMPORARY
T.L.E. TEMPORARY LIMITED EASEMENT
T.O.C. TOP OF CURB
TYP TYPICAL
UNCL. UNCLASSIFIED
U.G. UNDERGROUND (CABLE)
VAR VARIABLE
V.C. VERTICAL CURVE
V.P.C. VERTICAL POINT OF CURVATURE
V.P.I. VERTICAL POINT OF INTERSECTION
V.P.T. VERTICAL POINT OF TANGENCY
WT. WEIGHT
W WEST
WB WESTBOUND

ORDER OF SECTION 2 SHEETS

GENERAL NOTES/WRITTEN MATERIAL
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
EROSION CONTROL
SIGNING & PAVEMENT MARKING
DETOUR ROUTE
TRAFFIC CONTROL

WISDOT CONTACT

LALITHA BALACHANDRAN, P.E.
WISDOT SW REGION
2101 WRIGHT STREET
MADISON, WI 53704
PHONE (608) 243-3382
lalitha.balachandran@dot.wi.gov

JACOB ROCKWEILER, P.E.
WISCONSIN HEIGHT MODERNIZATION
PROGRAM MANAGER
3502 KINSMAN BLVD.
MADISON, WI 53704
PHONE (608) 243-5992
jacob.rockweiler@dot.wi.gov

DNR LIAISON

ERIC HEGGELUND
DNR SOUTH CENTRAL REGION HQ
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
PHONE (608) 275-3301
eric.heggelund@wisconsin.gov

RAILROAD CONTACT

JIM KRIEGER
CANADIAN PACIFIC
120 SOUTH 6TH STREET, SUITE 700
MINNEAPOLIS, MN 55402
PHONE (612) 330-4555
jim.krieger@cpr.ca

DESIGN CONTACT

SUE BARKER
PROJECT MANAGER
MICHAEL BAKER INTERNATIONAL
1255 FOURIER DRIVE, SUITE 100
MADISON, WI 53717
PHONE (608) 821-8712
susan.barker@mbakerintl.com

GENERAL NOTES

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.

RIGHT OF WAY LINES SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE.

PRIOR TO THE PLACEMENT OF MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.

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

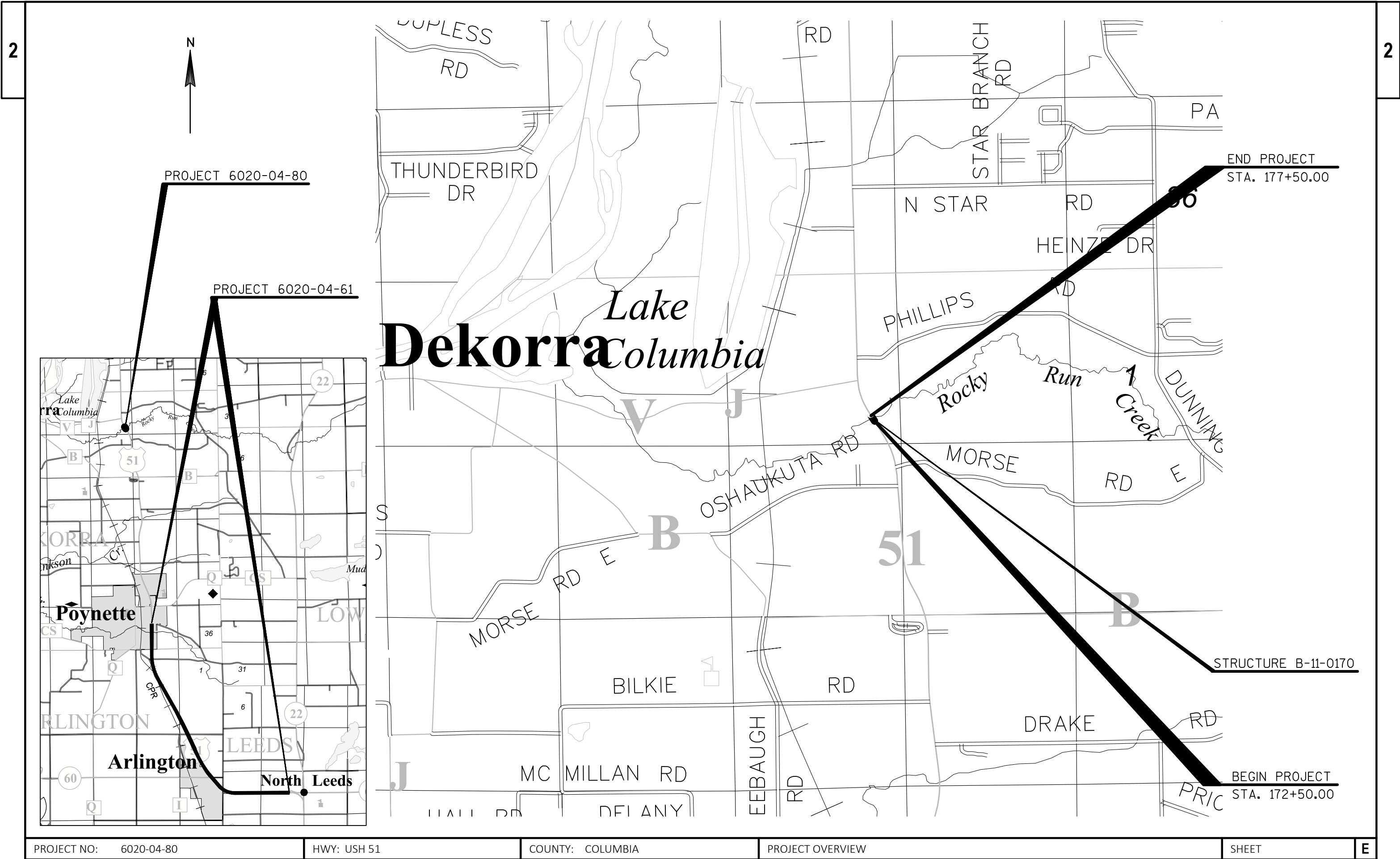
THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE OR PARKING LANE.

CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES EXCEPT DURING PAVING.

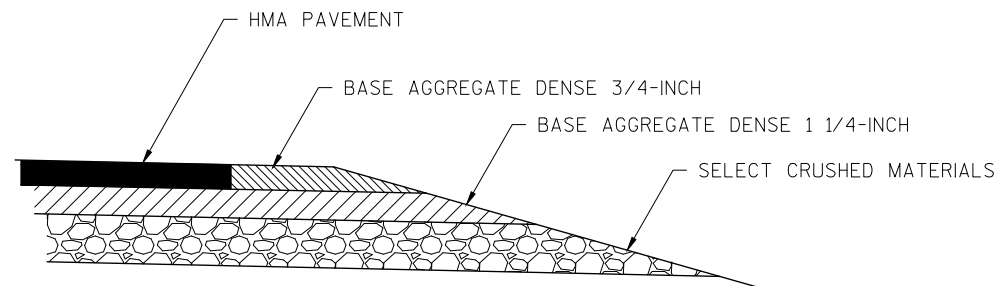
5-INCH HMA PAVEMENT SHALL BE CONSTRUCTED WITH A 2-INCH UPPER LAYER AND 3-INCH LOWER LAYER.



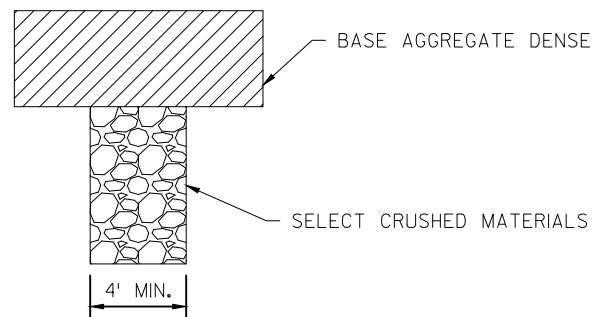
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www.DiggersHotline.com



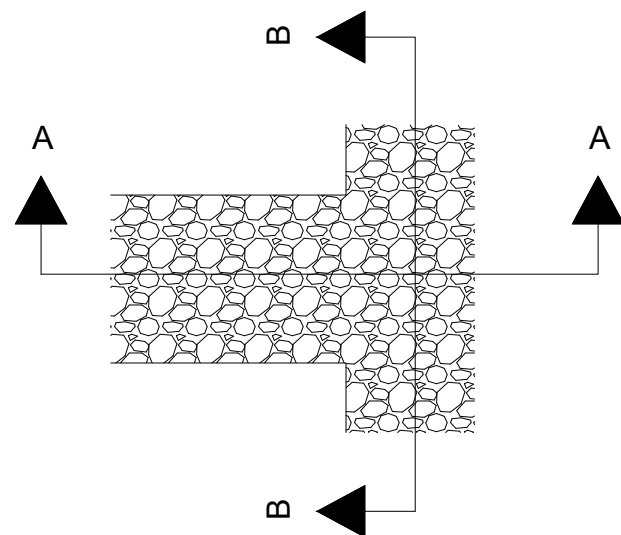
PROJECT NO: 6020-04-80	HWY: USH 51	COUNTY: COLUMBIA	PROJECT OVERVIEW	SHEET	E
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SECTION A-A

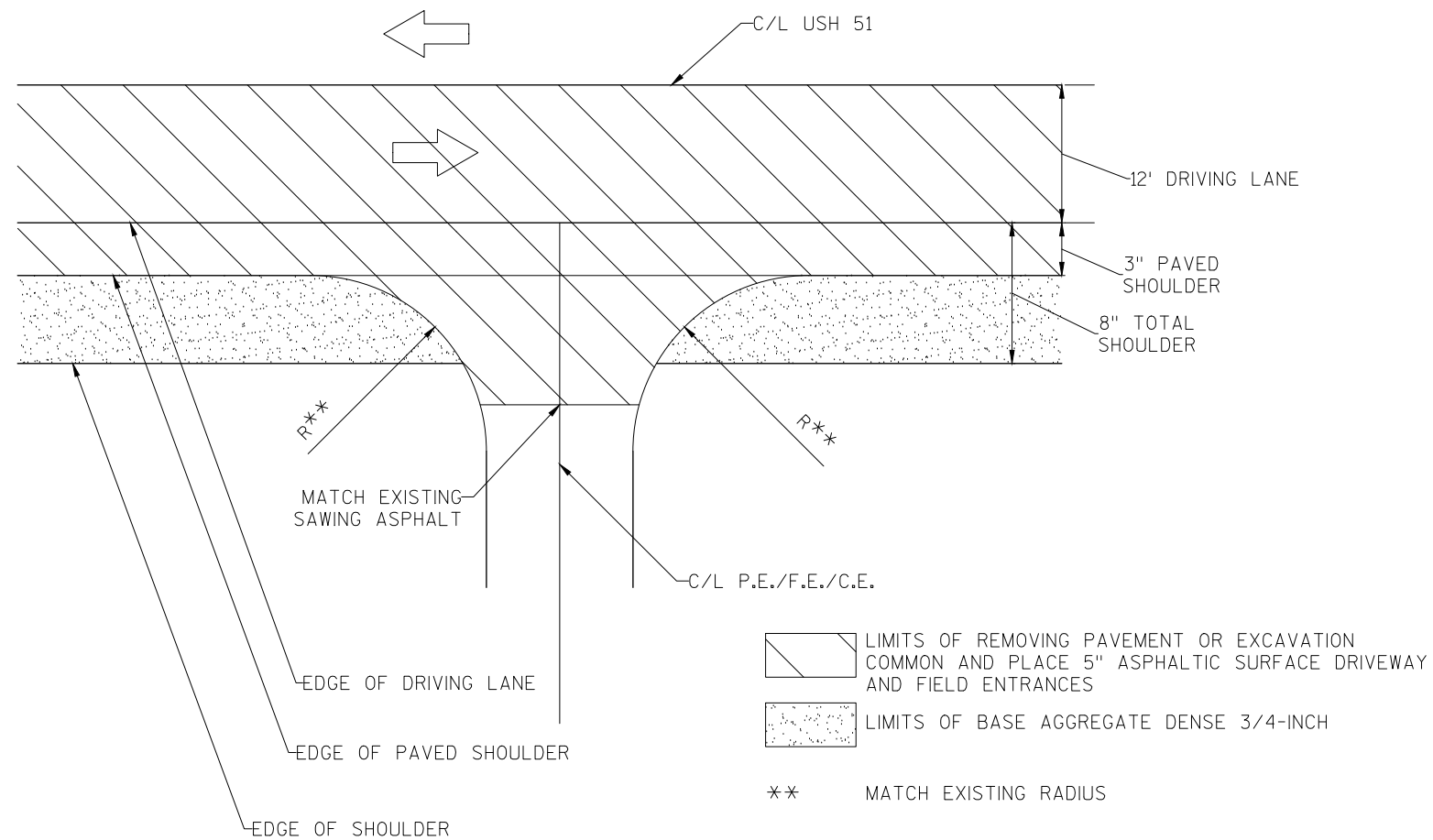


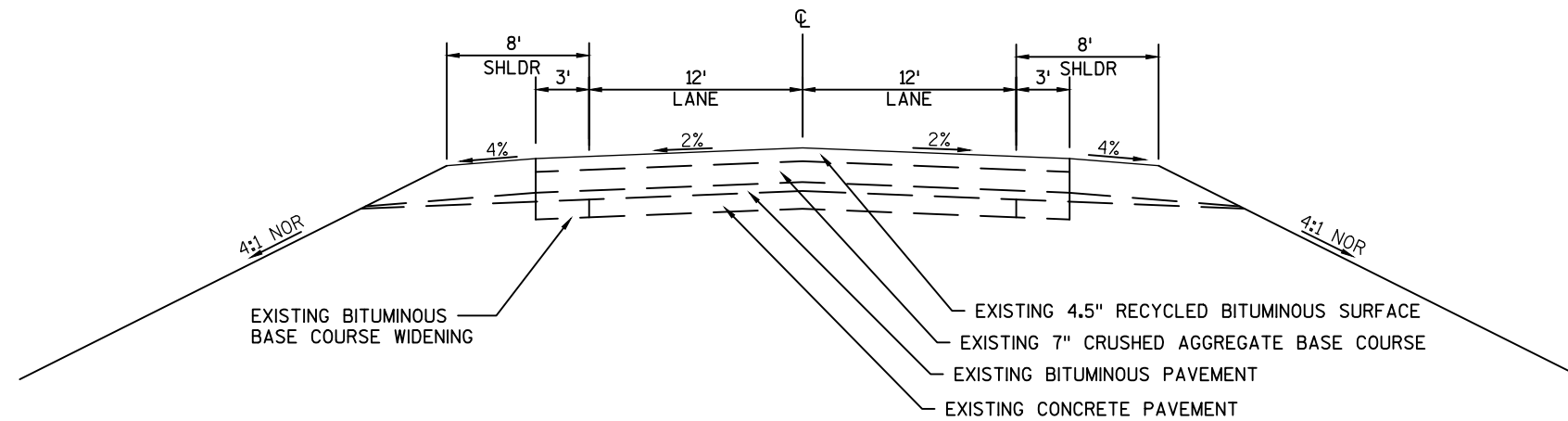
SECTION B-B



DETAIL FOR FRENCH DRAINS

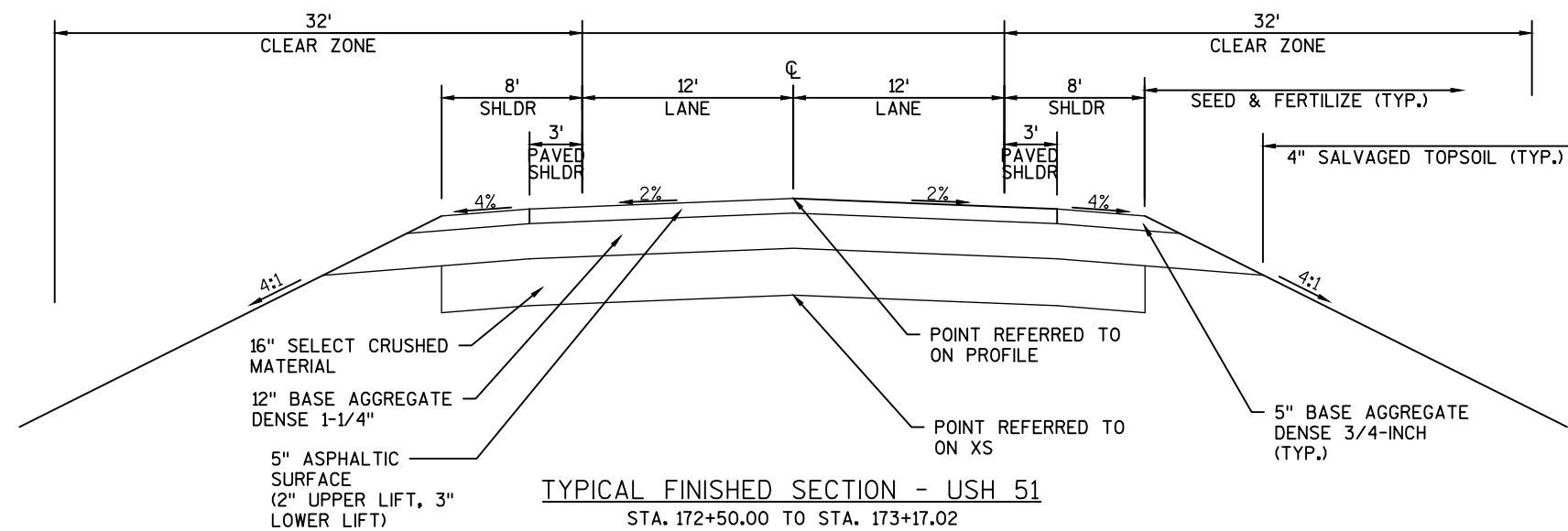
PLAN VIEW

STA. 174+75 LT/RT
STA. 176+10 LT/RTEXCAVATION REQUIRED TO CONSTRUCT FRENCH DRAINS SHALL
BE CONSIDERED INCIDENTAL TO THE ITEM SELECT CRUSHED MATERIALP.E./F.E./C.E.
DRIVEWAY DETAIL



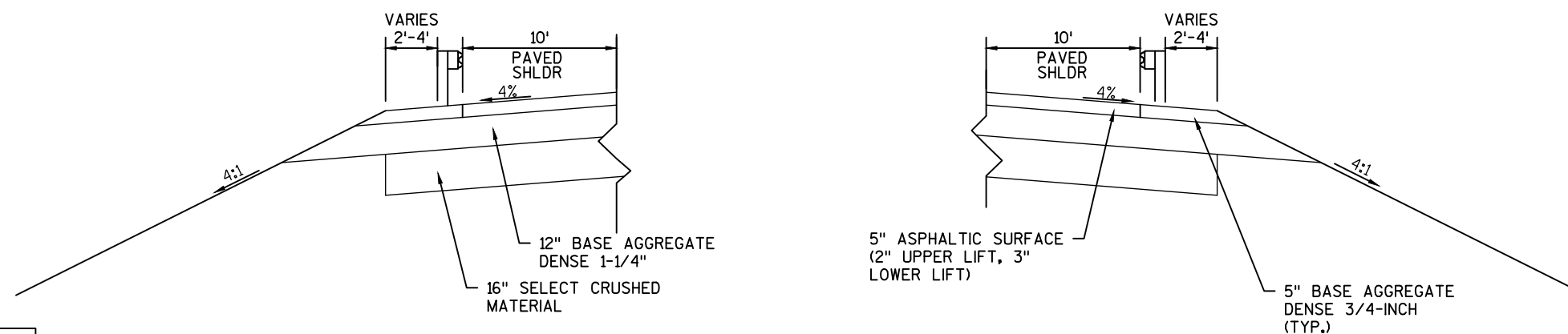
TYPICAL EXISTING SECTION - USH 51

STA. 172+50.00 TO STA. 175+05.75
STA. 175+29.25 TO STA. 177+50.00



TYPICAL FINISHED SECTION - USH 51

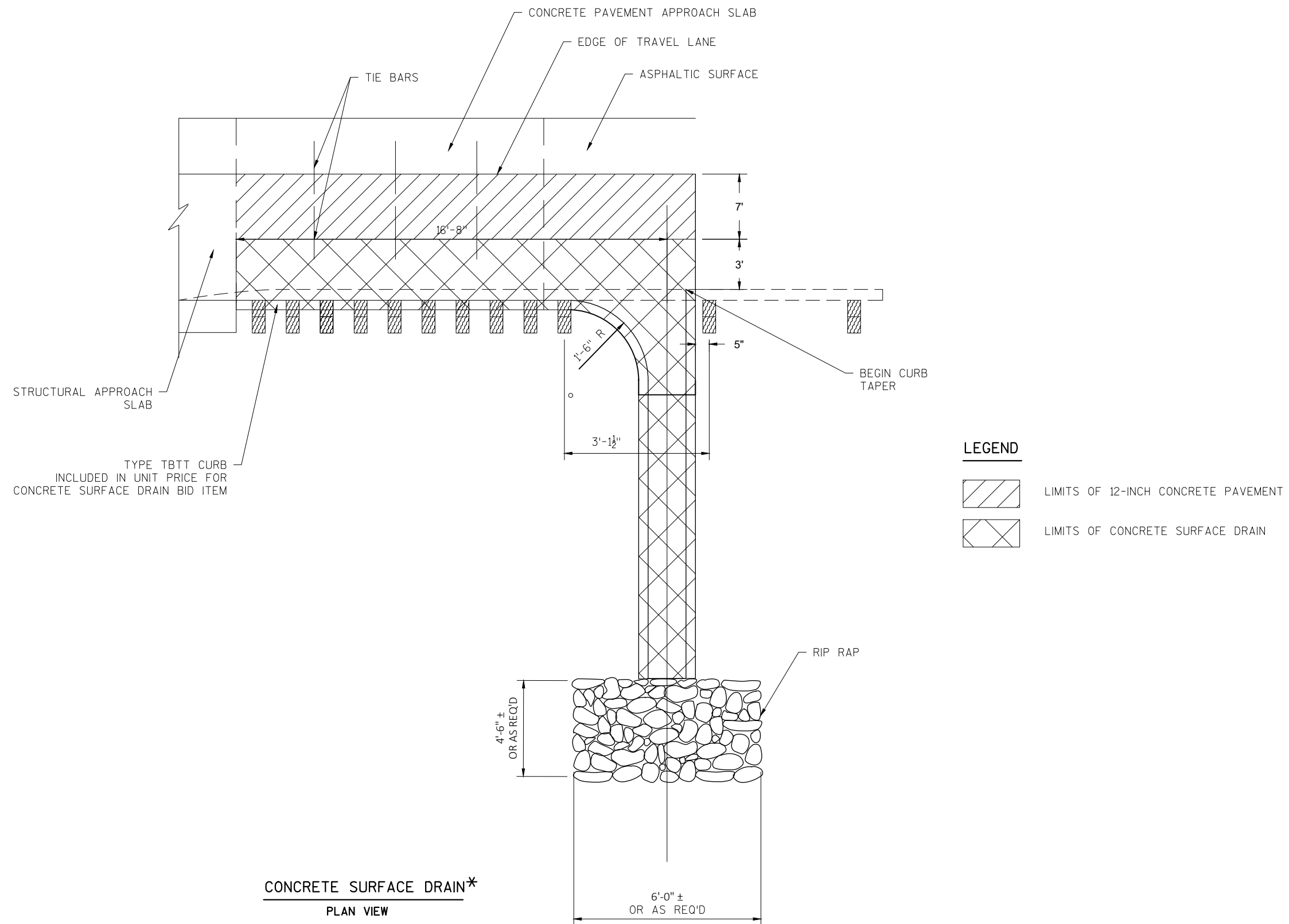
STA. 172+50.00 TO STA. 173+17.02
STA. 177+18.56 TO STA. 177+50.00



SHOULDER WIDENING AT BRIDGE APPROACH (1)

STA. 173+17.02 TO STA. 174+77.42
STA. 175+58.58 TO STA. 177+18.56

(1) SEE STANDARD DETAIL DRAWING
FOR TYPICAL SECTION THROUGH APPROACH
SLAB

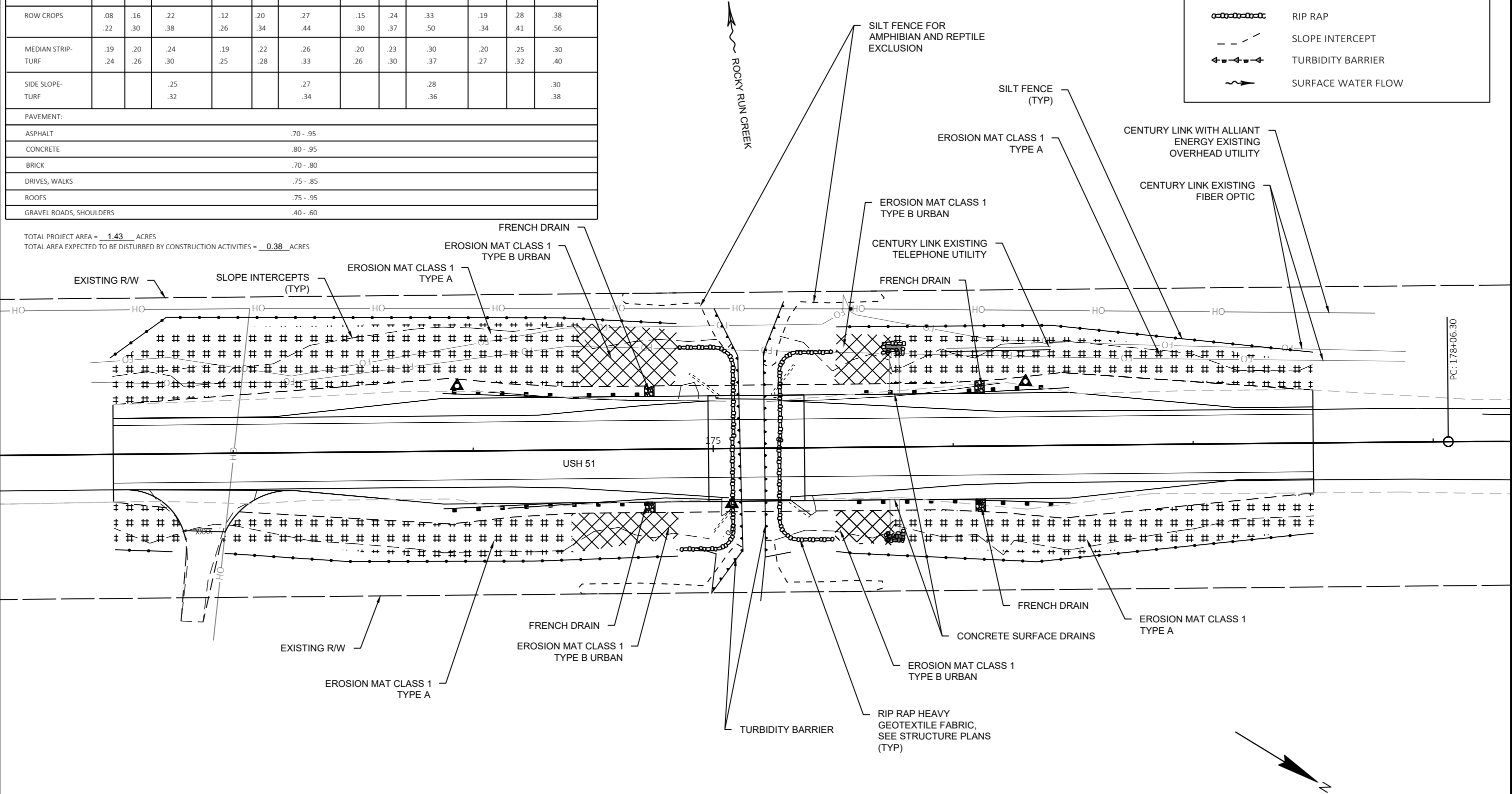


*SEE SDD CONCRETE SURFACE
DRAINS FLUME TYPE AT
STRUCTURES, TYPE B

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 1.43 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.38 ACRES



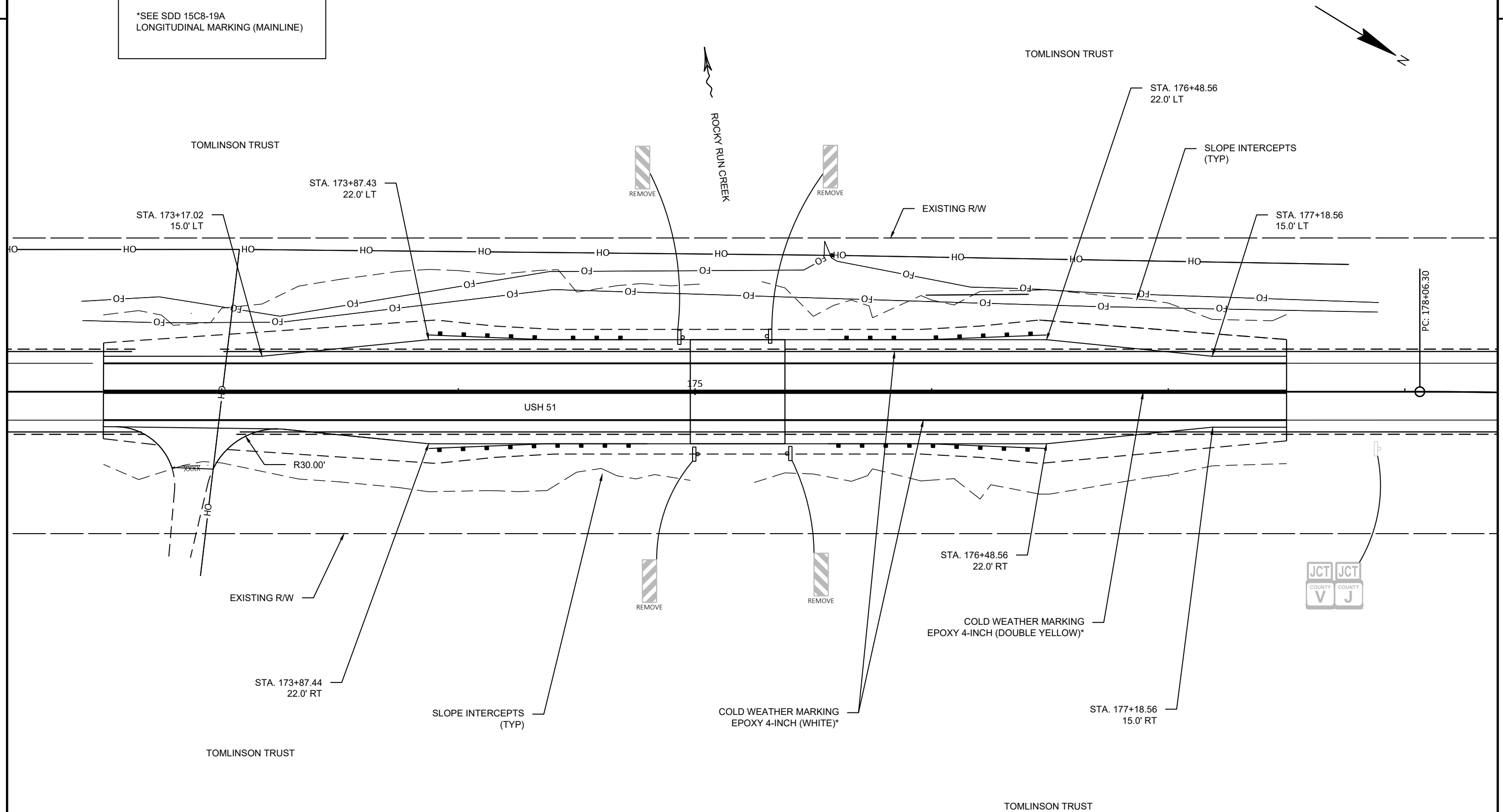
LEGEND

- ##### EROSION MAT CLASS I, TYPE A
- XXXXXX EROSION MAT CLASS I, TYPE B URBAN
- SILT FENCE
- RIP RAP
- - - SLOPE INTERCEPT
- ←-←-←-← TURBIDITY BARRIER
- ~> SURFACE WATER FLOW

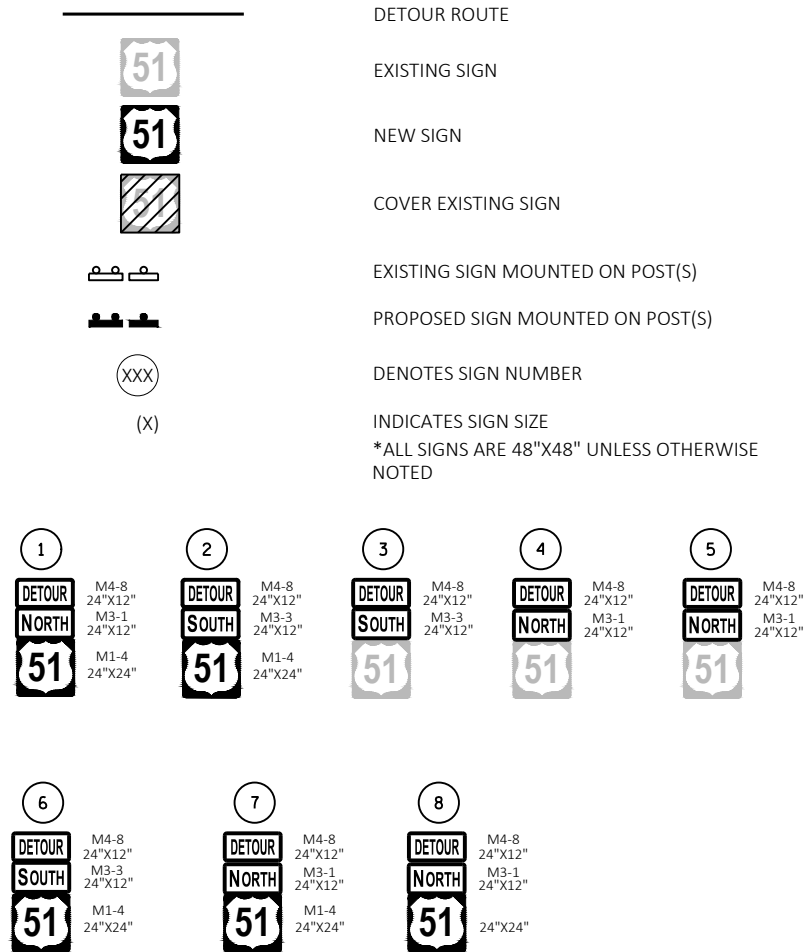
LEGEND

 REMOVING SIGNS AND SMALL SIGN SUPPORTS

*SEE SDD 15C8-19A
LONGITUDINAL MARKING (MAINLINE)



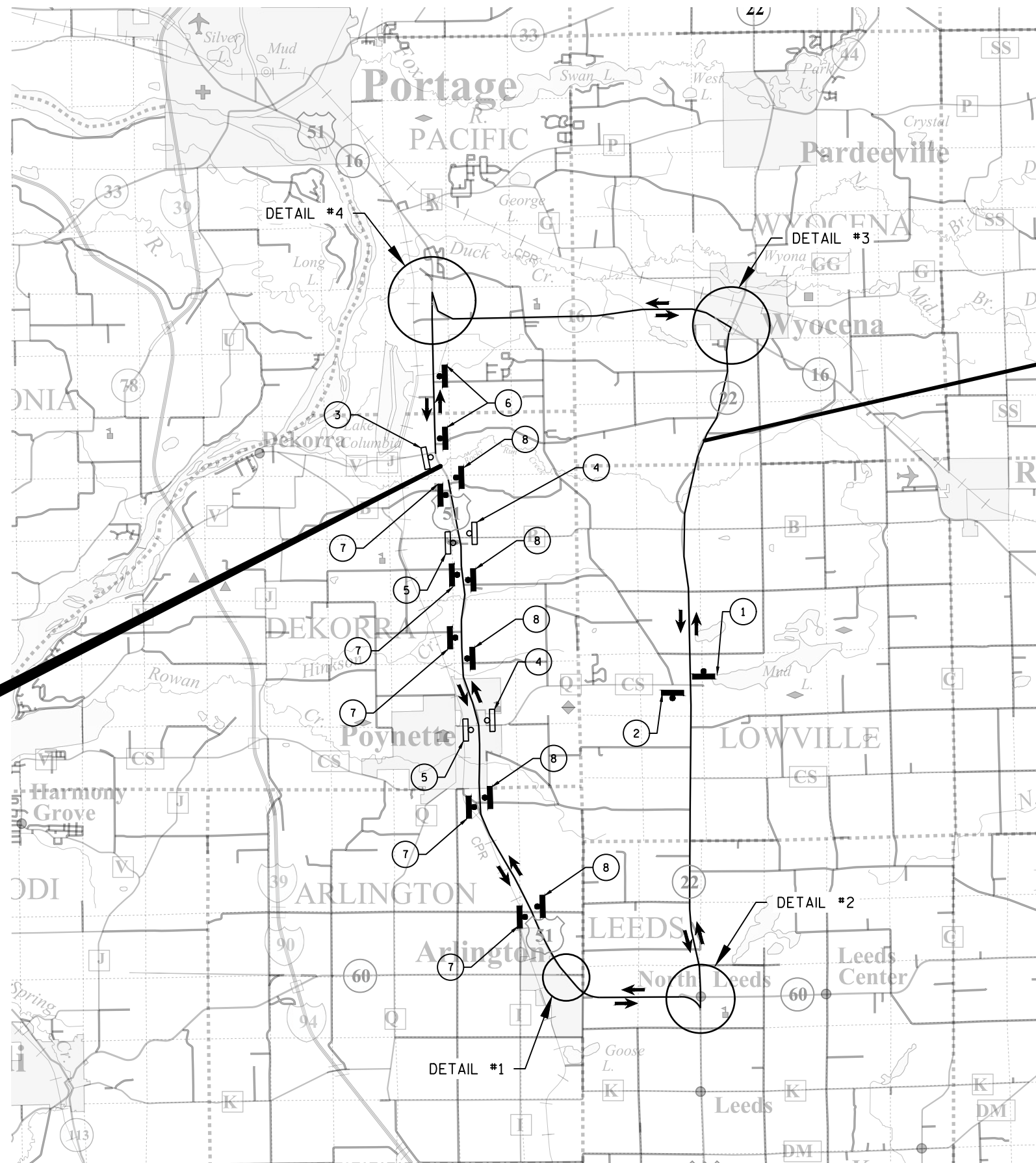
LEGEND



PROJECT LOCATION
B-11-170

NOTES

1. ALL EXISTING SIGN MESSAGES IN CONFLICT WITH TRAFFIC CONTROL SHALL BE COVERED OR REMOVED.
2. THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS. SIGNS MAY BE MOUNTED ON EXISTING POSTS, LIGHTS, OR TEMPORARY SIGN SUPPORTS AS APPROVED BY THE ENGINEER.
3. SEE SDD BARRICADES AND SIGNS FOR MAINLINE CLOSURE.



DETOUR ROUTE

LEGEND

51

51

XXX

(X)

DETOUR ROUTE

EXISTING SIGN

NEW SIGN

COVER EXISTING SIGN

EXISTING SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON TYPE III BARRICADE

DENOTES SIGN NUMBER

INDICATES SIGN SIZE*

*ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED

1

2

3

NORTH

51

DETOUR AHEAD

W20-2A

M3-1
24"X12"

M1-4
24"X24"

DETOUR

NORTH SOUTH EAST

51 51 60

M05-1R
21"X21"

M4-8
24"X12"

DETOUR

NORTH SOUTH EAST

51 51 60

M06-1
21"X21"

M4-8
24"X12"

4

5

6

7

DETOUR

NORTH

51

M4-8
24"X12"

M3-1
24"X12"

M1-4
24"X24"

WEST

60

A4-12
17.5"X17.5"

Portage

Madison
Columbus

Portage

Arlington
Sauk City

8

9

BRIDGE OUT

9 MILES AHEAD

R11-3C
60"X24"

PROJECT NO: 6020-04-80

HWY: USH 51

COUNTY: COLUMBIA

DETOUR ROUTE - DETAIL #1 USH 51/STH 60

SHEET

E

FILE NAME : C:\PWV81-LOCAL\BAKER_PROJECTS\DNA.LADZINSKI\0615693\020202_DT.DWG
LAYOUT NAME - 020203_dt

PLOT DATE : 1/14/2020 2:48 PM

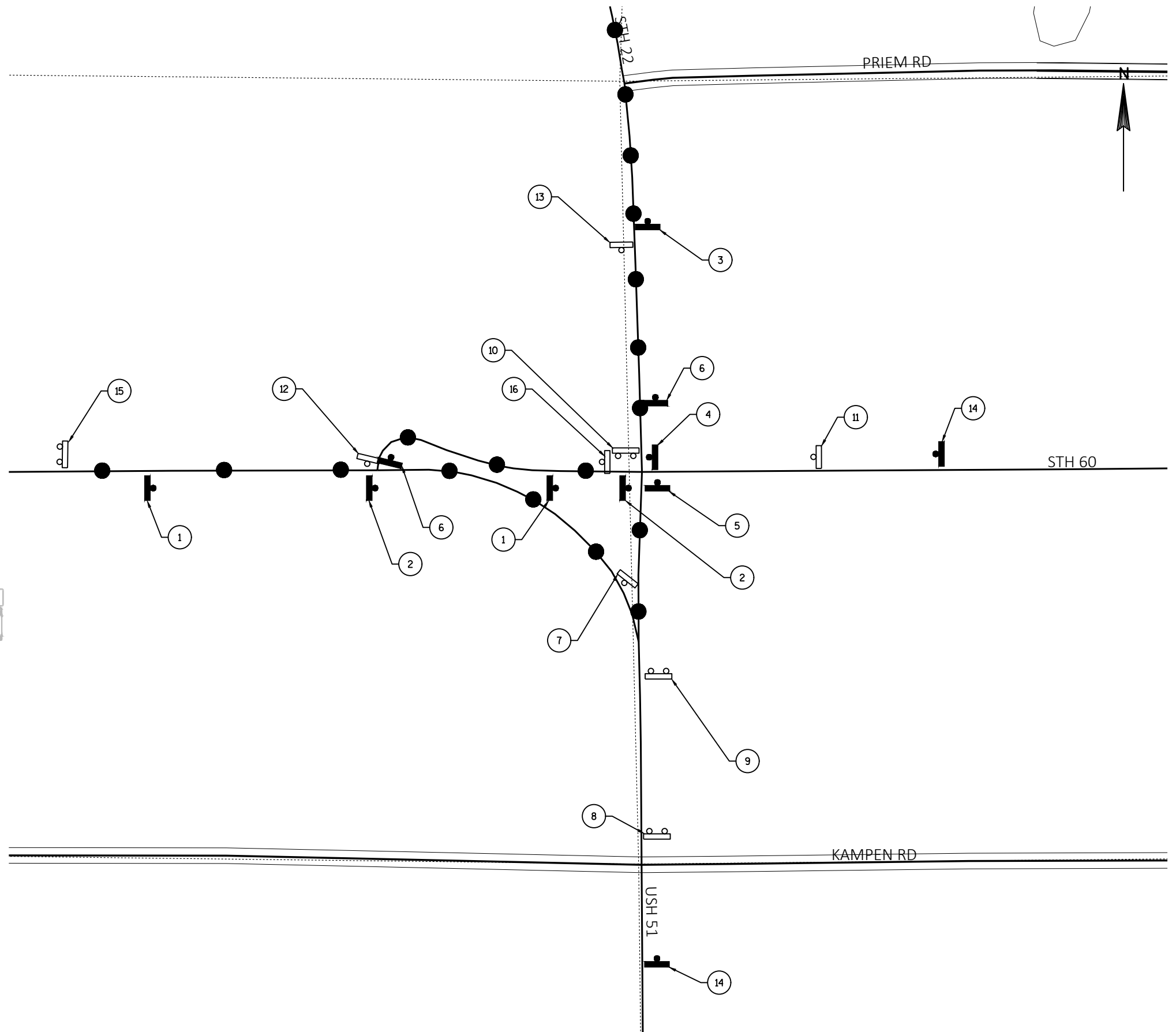
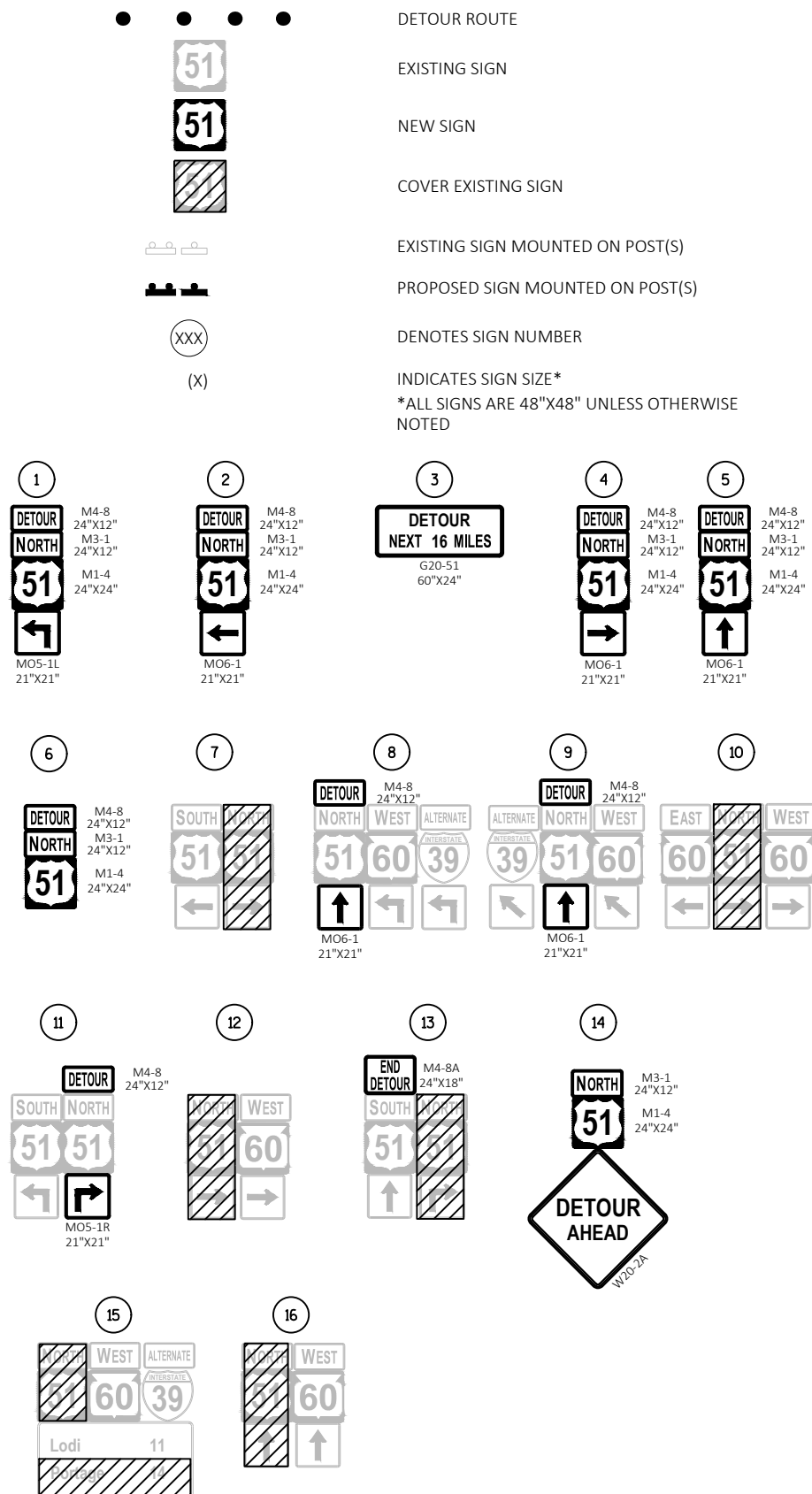
PLOT BY : LADZINSKI, DANA

PLOT NAME :

PLOT SCALE : 1 IN:750 FT

WISDOT/CADDs SHEET 42

LEGEND



PROJECT NO: 6020-04-80

HWY: USH 51

COUNTY: COLUMBIA

DETOUR ROUTE - DETAIL #2 USH 51/STH 60/STH 22

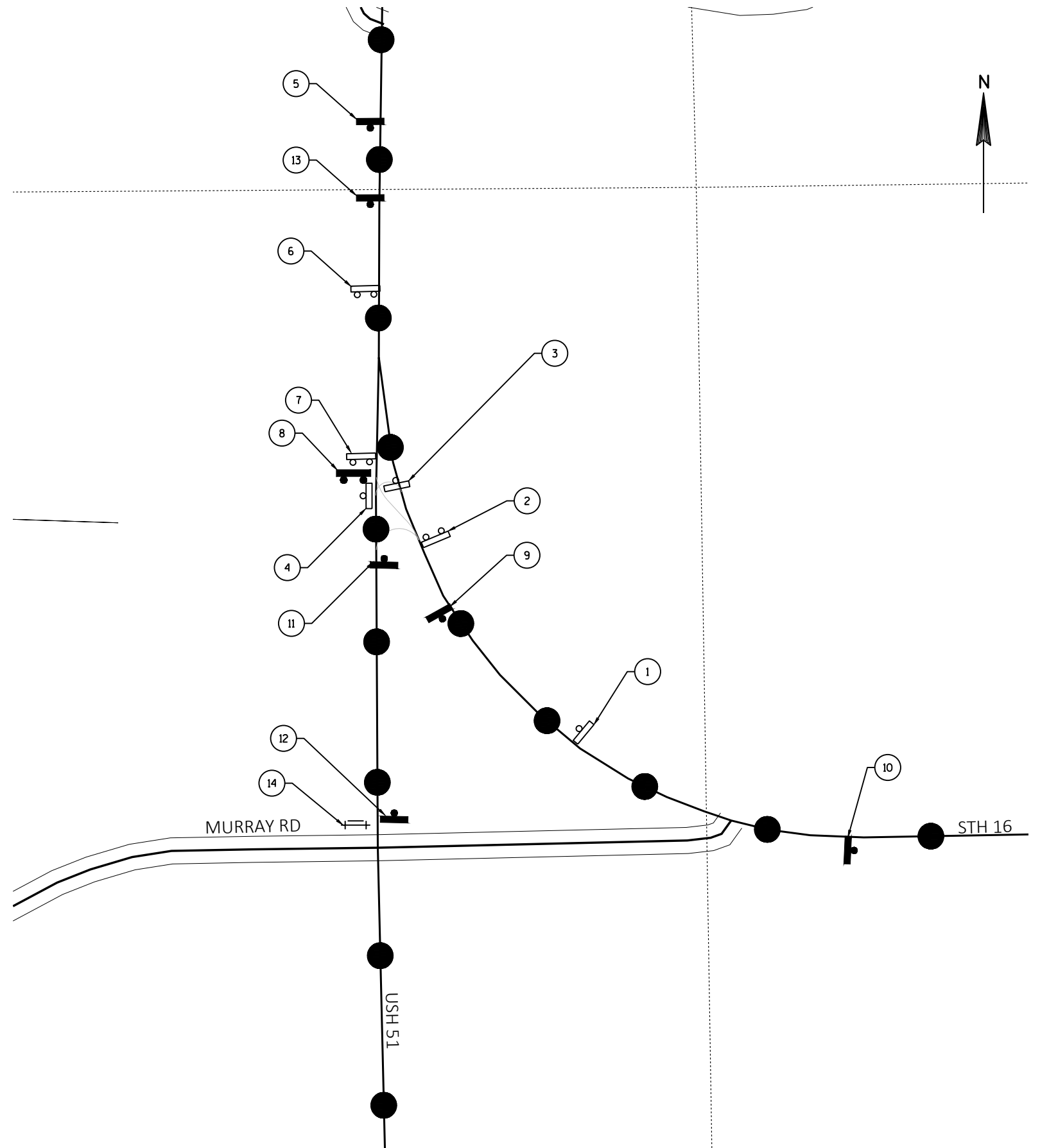
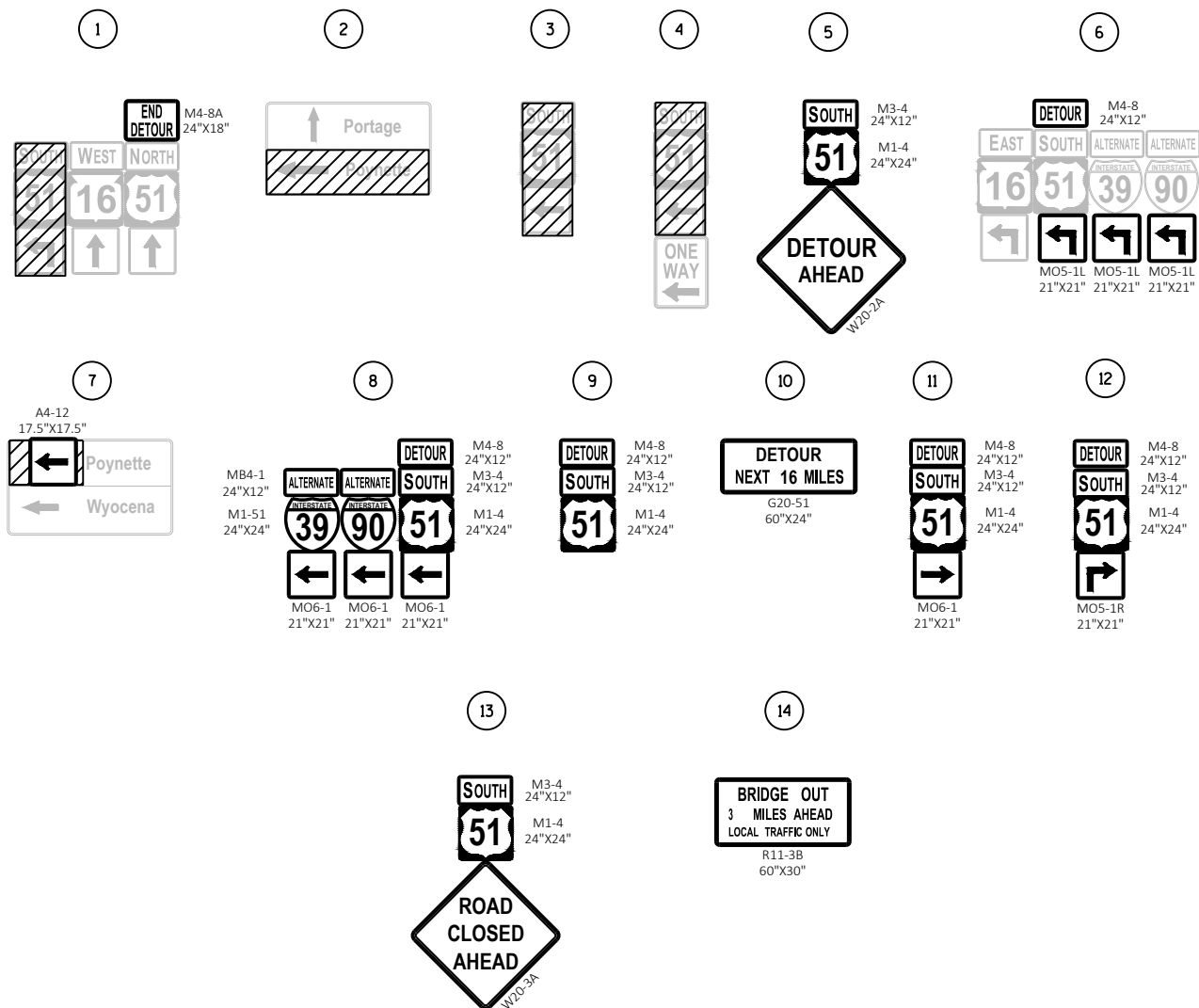
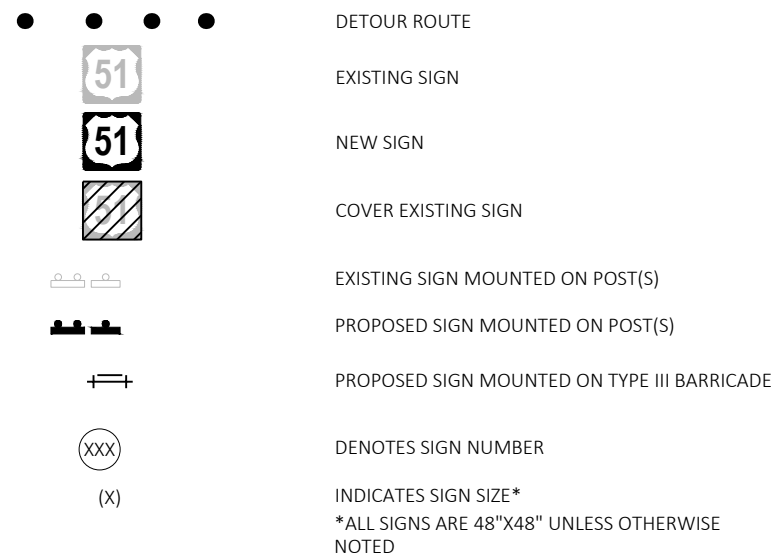
SHEET

E

*ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED



LEGEND



PROJECT NO: 6020-04-80

HWY: USH 51

COUNTY: COLUMBIA

DETOUR ROUTE - DETAIL #4 USH 51/STH 16

SHEET

E

LEGEND



PROPOSED SIGN MOUNTED ON POST(S)



DENOTES SIGN NUMBER



INDICATES SIGN SIZE



BARRICADE TYPE III



PROPOSED SIGN MOUNTED ON TYPE III BARRICADE



PORTABLE CHANGEABLE MESSAGE SIGN (PRE-WARNING)

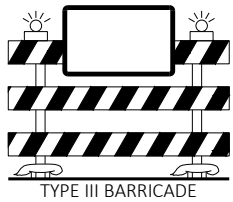
PCMS MESSAGE TO DISPLAY:

PANEL 1: "BRIDGE
CLOSED
BEGINS"
PANEL 2: "XXX (day of week)
MM-DD"

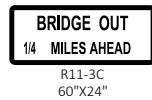
1



2



3



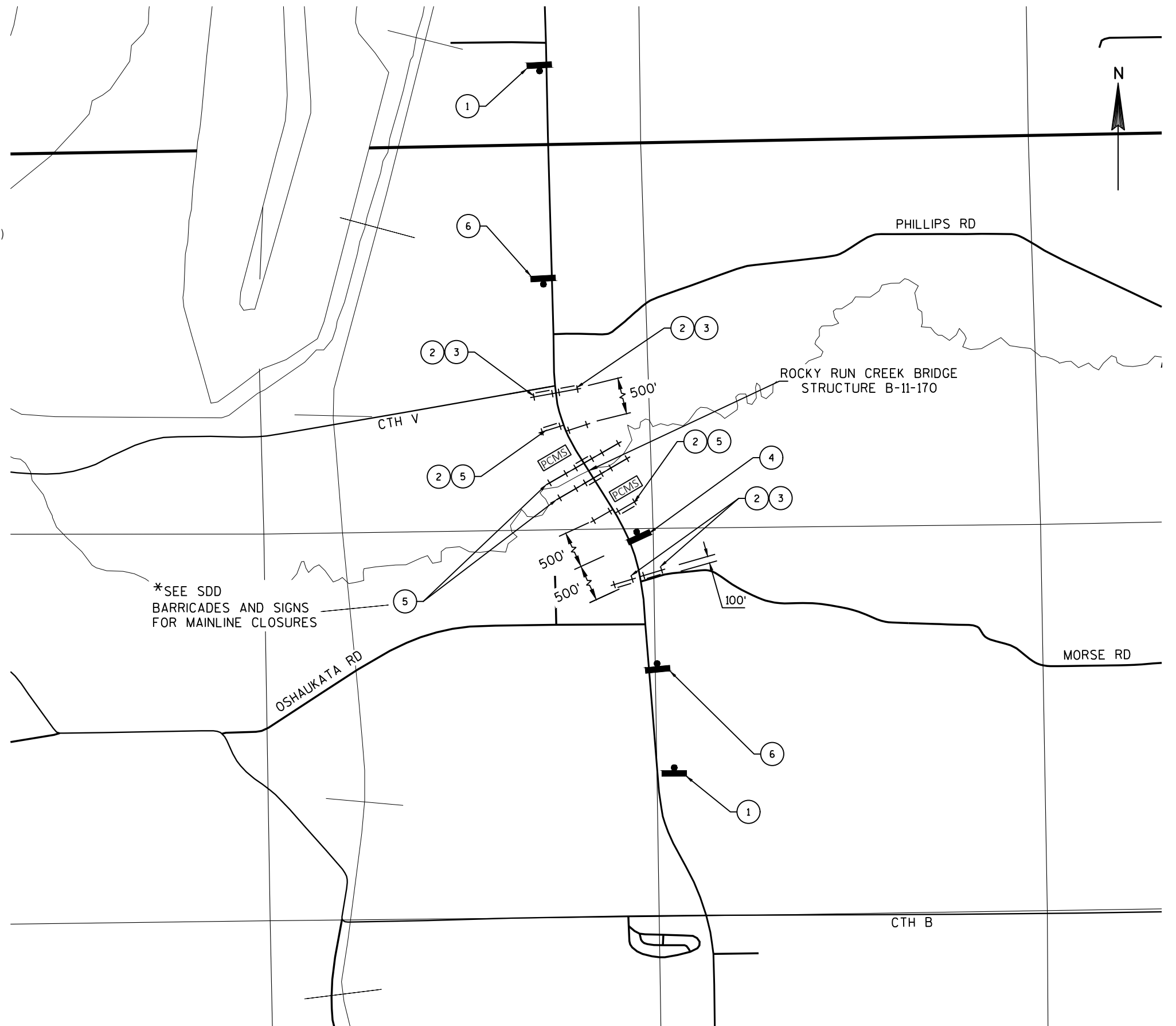
4



5



6



Estimate Of Quantities

6020-04-80					
Line	Item	Item Description	Unit	Total	Qty
0002	203.0210.S	Abatement of Asbestos Containing Material (structure) 01. B-11-862	LS	1.000	1.000
0004	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 175+20	LS	1.000	1.000
0006	204.0100	Removing Pavement	SY	1,665.000	1,665.000
0008	204.0165	Removing Guardrail	LF	400.000	400.000
0010	205.0100	Excavation Common	CY	2,137.000	2,137.000
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-11-170	LS	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	269.000	269.000
0016	213.0100	Finishing Roadway (project) 01. 6020-04-80	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	185.000	185.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,031.000	2,031.000
0022	312.0110	Select Crushed Material	TON	2,015.000	2,015.000
0024	415.0120	Concrete Pavement 12-Inch	SY	58.000	58.000
0026	415.0410	Concrete Pavement Approach Slab	SY	80.000	80.000
0028	416.1010	Concrete Surface Drains	CY	10.000	10.000
0030	450.4000	HMA Cold Weather Paving	TON	490.000	490.000
0032	455.0605	Tack Coat	GAL	102.000	102.000
0034	465.0105	Asphaltic Surface	TON	470.000	470.000
0036	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	20.000	20.000
0038	502.0100	Concrete Masonry Bridges	CY	389.000	389.000
0040	502.3200	Protective Surface Treatment	SY	424.000	424.000
0042	502.3210	Pigmented Surface Sealer	SY	81.000	81.000
0044	505.0400	Bar Steel Reinforcement HS Structures	LB	6,220.000	6,220.000
0046	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	52,580.000	52,580.000
0048	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	430.000	430.000
0050	516.0500	Rubberized Membrane Waterproofing	SY	26.000	26.000
0052	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	350.000	350.000
0054	606.0200	Riprap Medium	CY	3.000	3.000
0056	606.0300	Riprap Heavy	CY	230.000	230.000
0058	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	199.000	199.000
0060	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0062	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0064	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0066	618.0100	Maintenance And Repair of Haul Roads (project) 01. 6020-04-80	EACH	1.000	1.000
0068	619.1000	Mobilization	EACH	1.000	1.000
0070	624.0100	Water	MGAL	28.000	28.000
0072	625.0500	Salvaged Topsoil	SY	2,150.000	2,150.000
0074	628.1504	Silt Fence	LF	1,438.000	1,438.000

Estimate Of Quantities

6020-04-80

Line	Item	Item Description	Unit	Total	Qty
0076	628.1520	Silt Fence Maintenance	LF	1,438.000	1,438.000
0078	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0080	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0082	628.2002	Erosion Mat Class I Type A	SY	2,056.000	2,056.000
0084	628.2008	Erosion Mat Urban Class I Type B	SY	94.000	94.000
0086	628.6005	Turbidity Barriers	SY	213.000	213.000
0088	628.7504	Temporary Ditch Checks	LF	40.000	40.000
0090	629.0210	Fertilizer Type B	CWT	1.200	1.200
0092	630.0130	Seeding Mixture No. 30	LB	32.000	32.000
0094	630.0200	Seeding Temporary	LB	25.000	25.000
0096	630.0500	Seed Water	MGAL	25.000	25.000
0098	638.2602	Removing Signs Type II	EACH	4.000	4.000
0100	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0102	642.5001	Field Office Type B	EACH	1.000	1.000
0104	643.0300	Traffic Control Drums	DAY	70.000	70.000
0106	643.0420	Traffic Control Barricades Type III	DAY	1,242.000	1,242.000
0108	643.0705	Traffic Control Warning Lights Type A	DAY	1,932.000	1,932.000
0110	643.0900	Traffic Control Signs	DAY	14,145.000	14,145.000
0112	643.0920	Traffic Control Covering Signs Type II	EACH	37.000	37.000
0114	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0116	643.5000	Traffic Control	EACH	1.000	1.000
0118	645.0111	Geotextile Type DF Schedule A	SY	82.000	82.000
0120	645.0120	Geotextile Type HR	SY	398.000	398.000
0122	646.1020	Marking Line Epoxy 4-Inch	LF	2,000.000	2,000.000
0124	646.6464	Cold Weather Marking Epoxy 4-Inch	LF	2,000.000	2,000.000
0126	650.4500	Construction Staking Subgrade	LF	430.000	430.000
0128	650.5000	Construction Staking Base	LF	430.000	430.000
0130	650.6500	Construction Staking Structure Layout (structure) 01. B-11-170	LS	1.000	1.000
0132	650.9910	Construction Staking Supplemental Control (project) 01. 6020-04-80	LS	1.000	1.000
0134	650.9920	Construction Staking Slope Stakes	LF	430.000	430.000
0136	690.0150	Sawing Asphalt	LF	20.000	20.000
0138	690.0250	Sawing Concrete	LF	60.000	60.000
0140	715.0502	Incentive Strength Concrete Structures	DOL	2,334.000	2,334.000

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (6)	MASS ORDINATE +/- (7)	COMMENT:
			CUT (2)	EBS EXCAVATION (3)				FACTOR 1.25		
DIVISION 1	172+50 -174+77.42	USH 51	1,107	0	295	812	248	311	501	
	175+58.58 -177+50	USH 51	1,030	0	260	770	31	39	731	
DIVISION 1 SUBTOTAL			2,137	0	555	1,582	279	349	1,232	
GRAND TOTAL			2,137	0	555	1,582	279	349	1,232	
TOTAL COMMON EXC			2,137							

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL.

(4) SALVAGED/UNUSABLE CONCRETE PAVEMENT MATERIAL

5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

(6) EXPANDED FILL FACTOR = 1.25

EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR

(7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

REMOVING PAVEMENT

204.0100

REMOVING PAVEMENT

CATEGORY	STATION	-	STATION	LOCATION	(SY)	REMARKS
0010	172+50	-	175+04	USH 51	885	SOUTH OF BRIDGE
	175+29	-	177+50	USH 51	780	NORTH OF BRIDGE
TOTAL					1665	

REMOVING GUARDRAIL

204.0165

REMOVING GUARDRAIL

CATEGORY	STATION	-	STATION	LOCATION	(LF)	REMARKS
0010	174+14	-	175+03	USH 51 RT	100	SOUTH OF BRIDGE
	174+06	-	175+06	USH 51 LT	100	
	175+22	-	176+20	USH 51 LT	100	NORTH OF BRIDGE
	175+32	-	176+23	USH 51 RT	100	
TOTAL					400	

FINISHING ROADWAY

213.0100

FINISHING ROADWAY (6020-04-80)

CATEGORY	LOCATION	(EACH)	REMARKS
0010	PROJECT	1	
TOTAL		1	

BASE AGGREGATE DENSE

305.0110	305.0120	312.0110
BASE AGGREGATE DENSE 3/4-INCH	BASE AGGREGATE DENSE 1 1/4-INCH	SELECT CRUSHED MATERIAL

CATEGORY	STATION	-	STATION	LOCATION	(TON)	(TON)	(TON)	REMARKS
0010	172+50.00	-	174+62.42	USH 51 RT/LT	85	905	1050	SOUTH OF BRIDGE
	175+58.58	-	177+50.00	USH 51 RT/LT	80	765	870	NORTH OF BRIDGE
UNDISTRIBUTED					20	85	95	
TOTAL					185	1755	2015	

CONCRETE PAVEMENT APPROACH SLAB

		415.0410		415.0120			
		CONCRETE PAVEMENT		CONCRETE PAVEMENT			
		APPROACH SLAB		12-INCH			
CATEGORY	STATION	-	STATION	LOCATION	(SY)	(SY)	REMARKS
0010	174+62.42	-	174+77.42	USH 51	40	34	SOUTH APPROACH SLAB & SHOULDERS
	175+58.58	-	175+73.58	USH 51	40	24	NORTH APPROACH SLAB & SHOULDERS
TOTAL					80	58	

HMA & TACK COAT

		450.4000		455.0605		465.0105		465.0120	
		HMA COLD		TACK COAT		ASPHALTIC SURFACE		ASPHALTIC SURFACE	
		WEATHER						DRIVEWAYS AND FIELD	
		PAVING						ENTRANCES	
CATEGORY	STATION	-	STATION	LOCATION	(TON)	(GAL)	(TON)	(TON)	REMARKS
0010	172+50.00	-	174+62.42	USH 51	250	53	250		SOUTH OF BRIDGE
	175+73.58	-	177+50.00	USH 51	220	46	220		NORTH OF BRIDGE
	172+55.21	-	173+26.29	USH 51	20	4		20	DRIVEWAY RT
TOTAL					490	102	470	20	

DRAINAGE FLUMES

		416.1010	
		CONCRETE	
		SURFACE	
		DRAINS	
CATEGORY	STATION	-	LOCATION
0010	175+35	-	USH 51 LT/RT
	TOTAL		10

MGS

		614.2500		614.2610	
		MGS THRIE BEAM		MGS GUARDRAIL	
		TRANSITION		TERMINAL EAT	
CATEGORY	STATION	-	STATION	LOCATION	(LF)
0010	173+87	-	174+80	USH 51 RT	40
	173+87	-	174+80	USH 51 LT	40
	175+56	-	176+49	USH 51 LT	40
	175+56	-	176+49	USH 51 RT	40
TOTAL					160

MAINTENANCE AND REPAIR OF HAUL ROADS

618.0100

MAINTENANCE AND REPAIR OF HAUL
ROADS (6020-04-80)

CATEGORY	LOCATION	(EACH)	REMARKS
0010	PROJECT	1	
TOTAL		1	

MOBILIZATION

619.1000

MOBILIZATION

CATEGORY	LOCATION	(EACH)	REMARKS
0010	PROJECT	1	
TOTAL		1	

WATER

624.0100

WATER

CATEGORY	STATION	-	STATION	LOCATION	(MGAL)	REMARKS
0010	172+50	-	174+62.42	USH 51	15	SOUTH OF BRIDGE
	175+73.58	-	177+50		13	NORTH OF BRIDGE
TOTAL					28	

MOBILIZATIONS EROSION CONTROL ITEMS

628.1905

628.1910

MOBILIZATIONS
EROSION
CONTROL

MOBILIZATIONS
EMERGENCY
EROSION
CONTROL

CATEGORY	LOCATION	(EACH)	(EACH)	REMARKS
0010	USH 51	5	2	
TOTAL		5	2	

LANDSCAPING ITEMS

630.0200

625.0500

630.0130

629.0210

630.0500

SEEDING
TEMPORARY

SALVAGED
TOPSOIL

SEEDING
MIXTURE NO. 30

FERTILIZER TYPE B

SEED WATER

CATEGORY	STATION	-	STATION	LOCATION	(LB)	(SY)	(LB)	(CWT)	(MGAL)	REMARKS
0010				USH 51						
	172+50	-	174+80	USH 51 RT	4	352	5	0.2	4	
	172+50	-	174+80	USH 51 LT	8	668	11	0.4	8	
	175+50	-	177+50	USH 51 LT	4	365	5	0.2	4	
	175+50	-	177+50	USH 51 RT	4	335	5	0.2	4	
UNDISTRIBUTED					5	430	6	0.2	5	
TOTAL					25	2150	32	1.2	25	

FIELD OFFICE TYPE B			
642.5001			
FIELD OFFICE			
TYPE B			
CATEGORY	LOCATION	(EACH)	REMARKS
0010	PROJECT	1	
	TOTAL	1	

SAWING ITEMS				
690.0150				
SAWING				
ASPHALT				
690.0250				
SAWING				
CONCRETE				
CATEGORY	LOCATION	(LF)	(LF)	REMARKS
0010	BEGIN PROJECT		30	
	END PROJECT		30	
	STA. 172+75 RT	20		DRIVEWAY
	TOTAL	20	60	

PAVEMENT MARKING									
646.1020									
646.6464									
MARKING LINE EPOXY 4-INCH					COLD WEATHER MARKING EPOXY 4-INCH				
CATEGORY	STATION	-	STATION	LOCATION	YELLOW (LF)	WHITE (LF)	YELLOW (LF)	WHITE (LF)	REMARKS
0100	172+50	-	177+50	LT SHOULDER		500		500	
	172+50	-	177+50	RT SHOULDER		500		500	
	172+50	-	177+50	CENTER	1000		1000		DOUBLE YELLOW
					1000	1000	1000	1000	
				TOTAL		2000		2000	

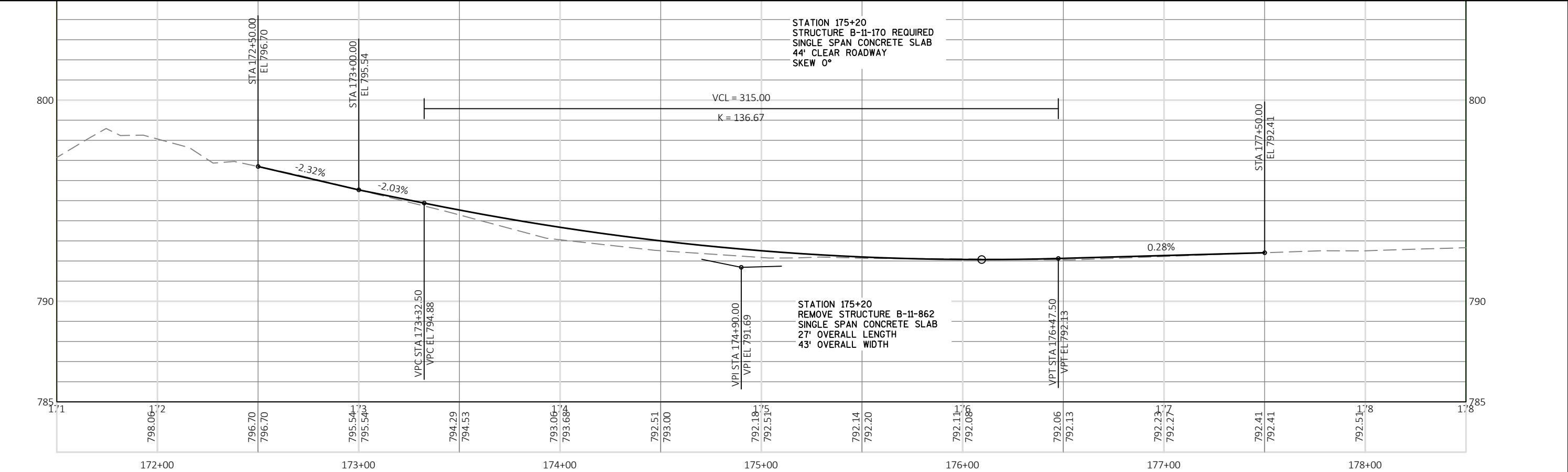
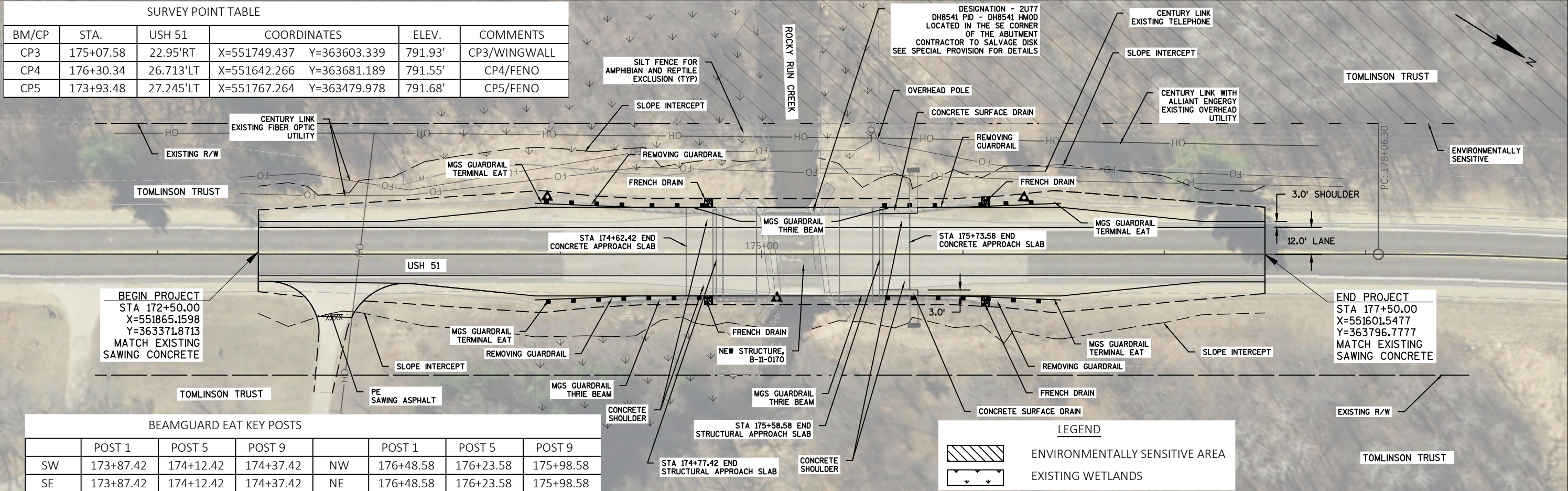
CONSTRUCTION STAKING ITEMS										
					650.4500	650.5000	650.6500	650.9910	650.9920	
					CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING STRUCTURE LAYOUT (B-11-0170)	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL	CONSTRUCTION STAKING SLOPE STAKES	
CATEGORY	STATION	-	STATION	LOCATION	(LF)	(LF)	(LS)	(LS)	(LF)	REMARKS
0010				USH 51				1		
	172+50	-	174+80	NORTH OF BRIDGE	230	230			230	
	175+50	-	177+50	SOUTH OF BRIDGE	200	200			200	
0020				USH 51			1			
TOTAL					430	430	1	1	430	

3

SIGNING						
				638.2602	638.3000	
				REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS	
CATEGORY	STATION	-	STATION	LOCATION	(EACH)	REMARKS
0010	174+90	-	175+40	USH 51 LT/RT	4	W5-52 (L/R) BRIDGE SIGNING
TOTAL					4	

*ONE CYCLE OF TRAFFIC CONTROL COVERING SIGNS TYPE II

SURVEY POINT TABLE					
BM/CP	STA.	USH 51	COORDINATES	ELEV.	COMMENTS
CP3	175+07.58	22.95'RT	X=551749.437 Y=363603.339	791.93'	CP3/WINGWALL
CP4	176+30.34	26.713'LT	X=551642.266 Y=363681.189	791.55'	CP4/FENO
CP5	173+93.48	27.245'LT	X=551767.264 Y=363479.978	791.68'	CP5/FENO



PROJECT NO: 6020-04-80

HWY: USH 51

COUNTY: COLUMBIA

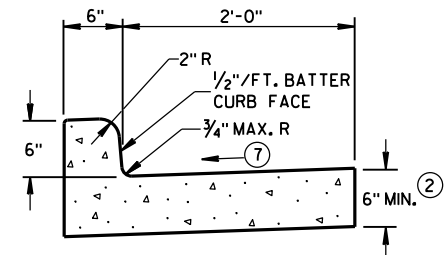
PLAN AND PROFILE: USH 51

SHEET

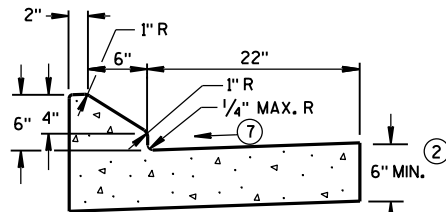
E

Standard Detail Drawing List

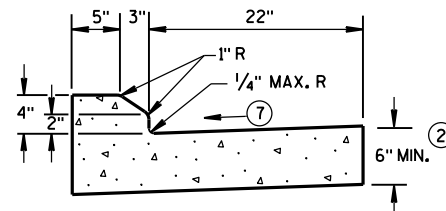
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13A03-06	CONCRETE PAVEMENT SHOULDERS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13B02-09B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C19-01	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-07C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-07F	ADVANCED WIDTH RESTRICTION SIGNING
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



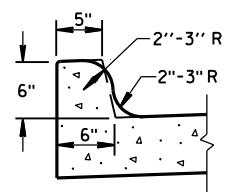
TYPES A^① & D



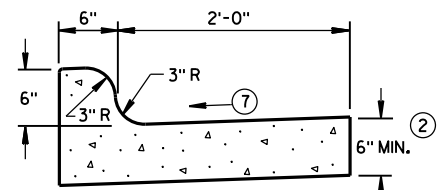
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

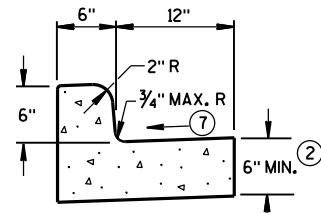


TYPES K^① & L
(OPTIONAL CURB SHAPE)



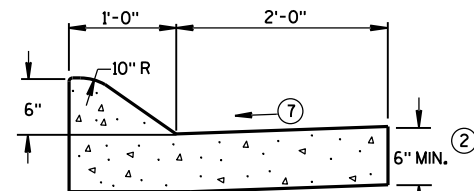
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

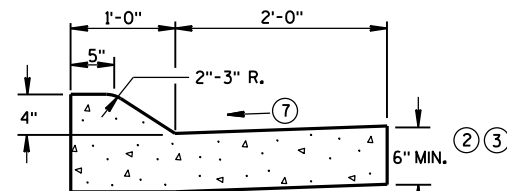


TYPES A^① & D

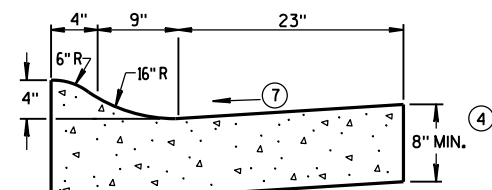
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

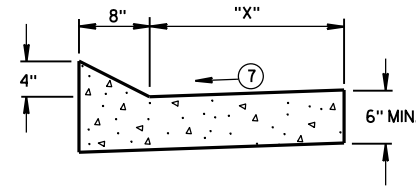


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

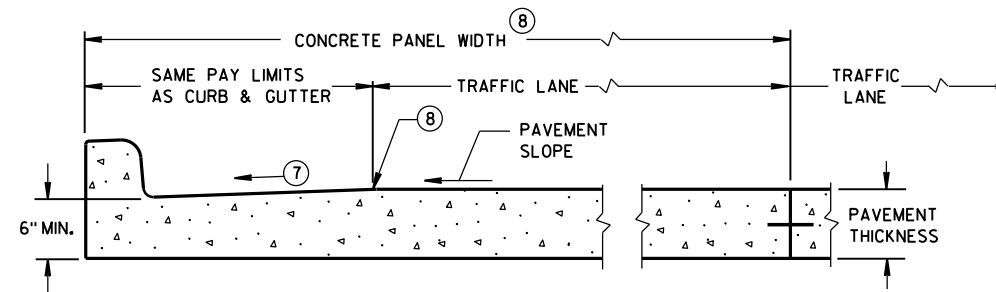
CONCRETE CURB & GUTTER 36"



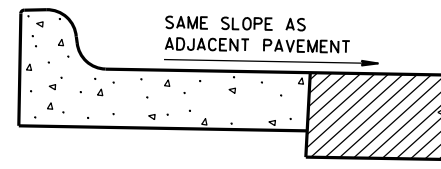
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

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



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

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

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

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

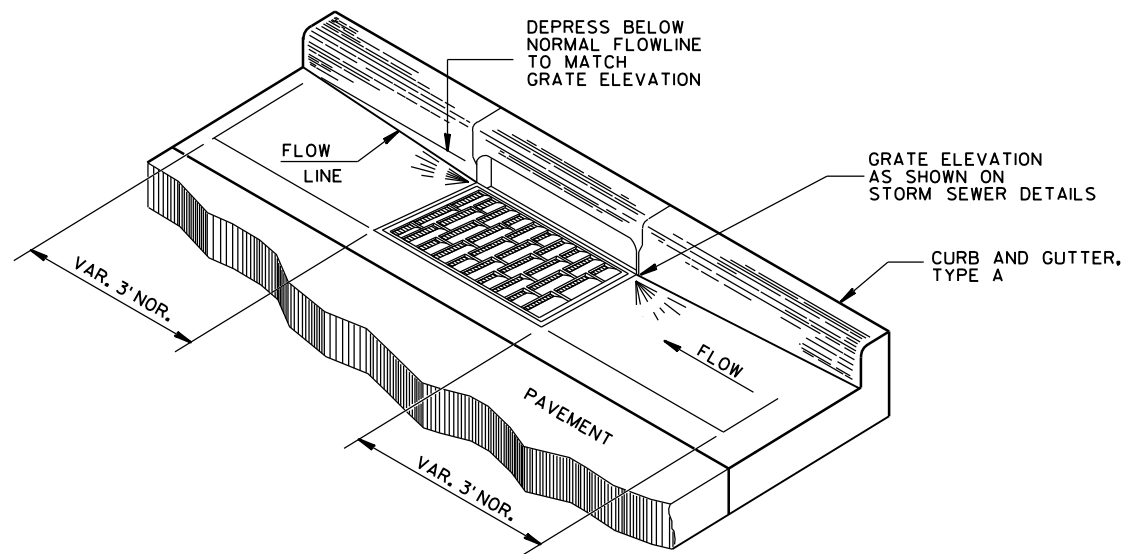
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'

* BIKE LANE IS NOT SHOWN.

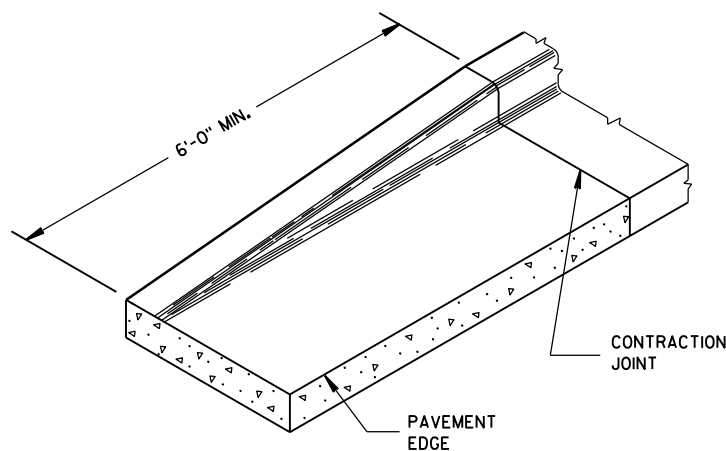
CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

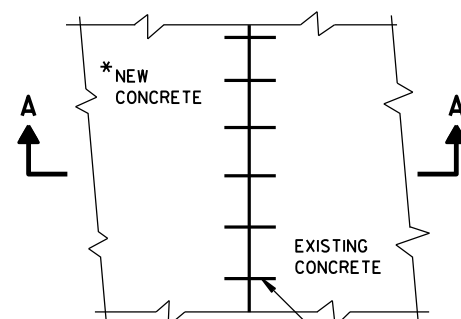


DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

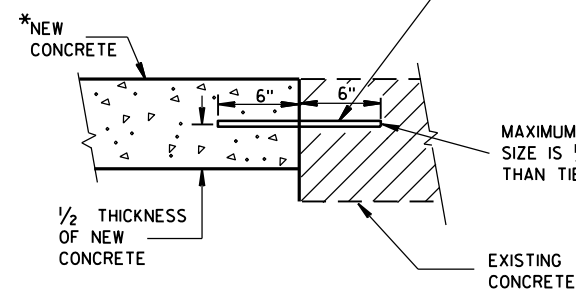


END SECTION CURB & GUTTER



PLAN VIEW

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

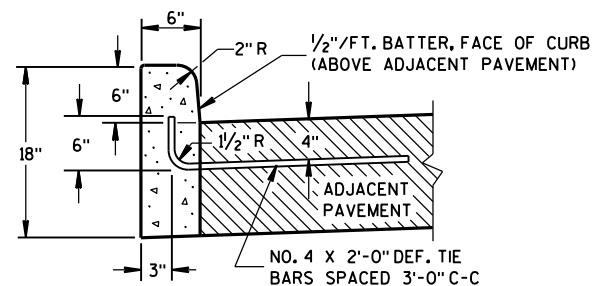


**SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT**

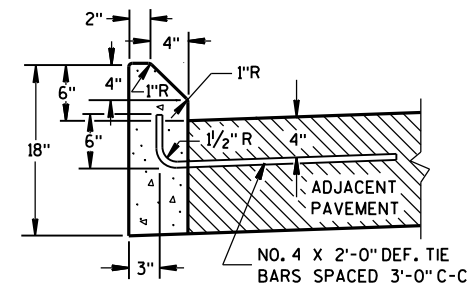
NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT.

MAXIMUM DRILL HOLE SIZE IS 1/8" GREATER THAN TIE BAR DIAMETER

EXISTING CONCRETE



TYPES A^① & D



TYPES G^① & J

GENERAL NOTES

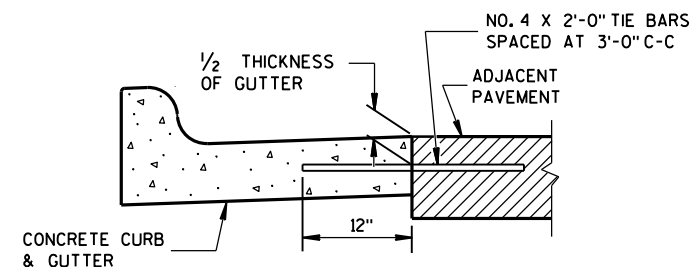
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

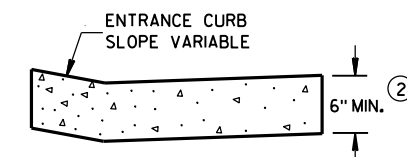
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

CONCRETE CURB



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2017

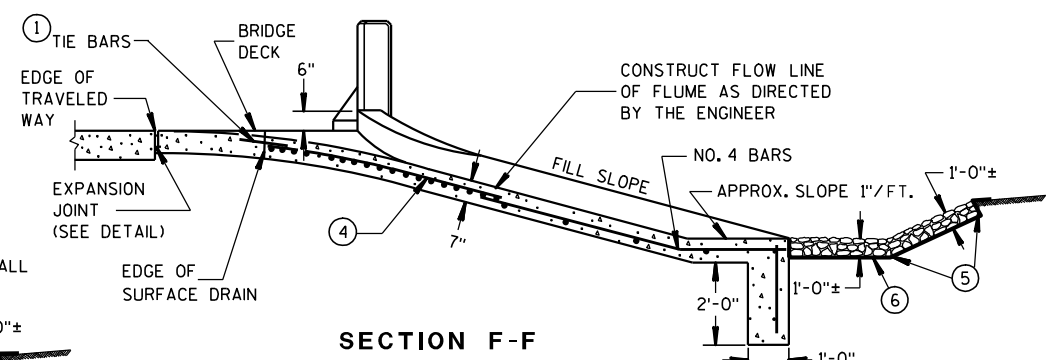
DATE

FHWA

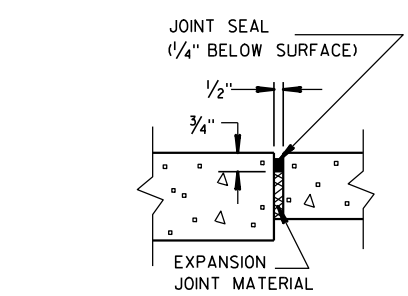
/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

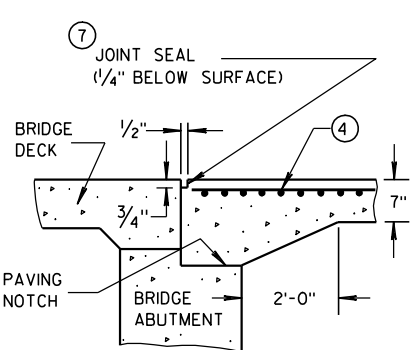
UNIT SUPERVISOR



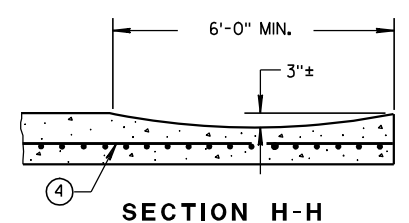
SECTION A-A



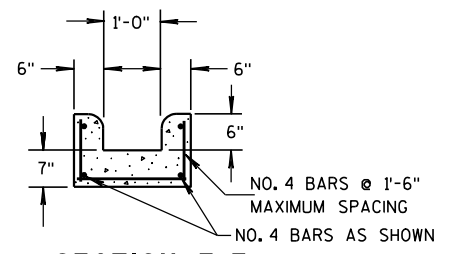
EXPANSION JOINT DETAIL



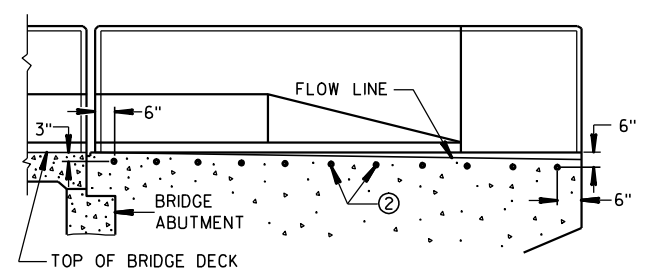
SECTION D-D



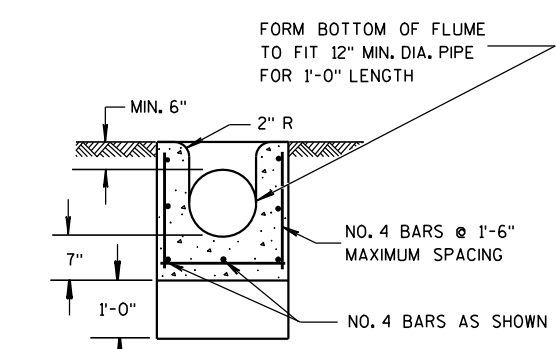
SECTION H-H



SECTION E-E



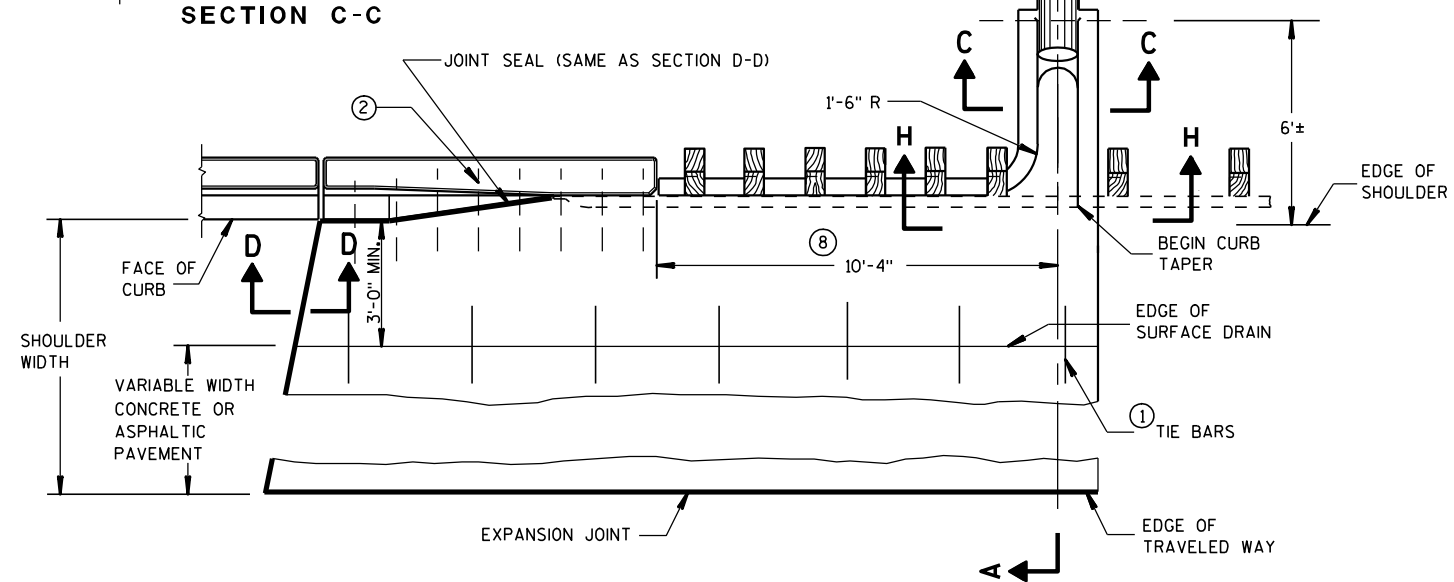
LOCATION OF TIE BARS IN WINGWALL



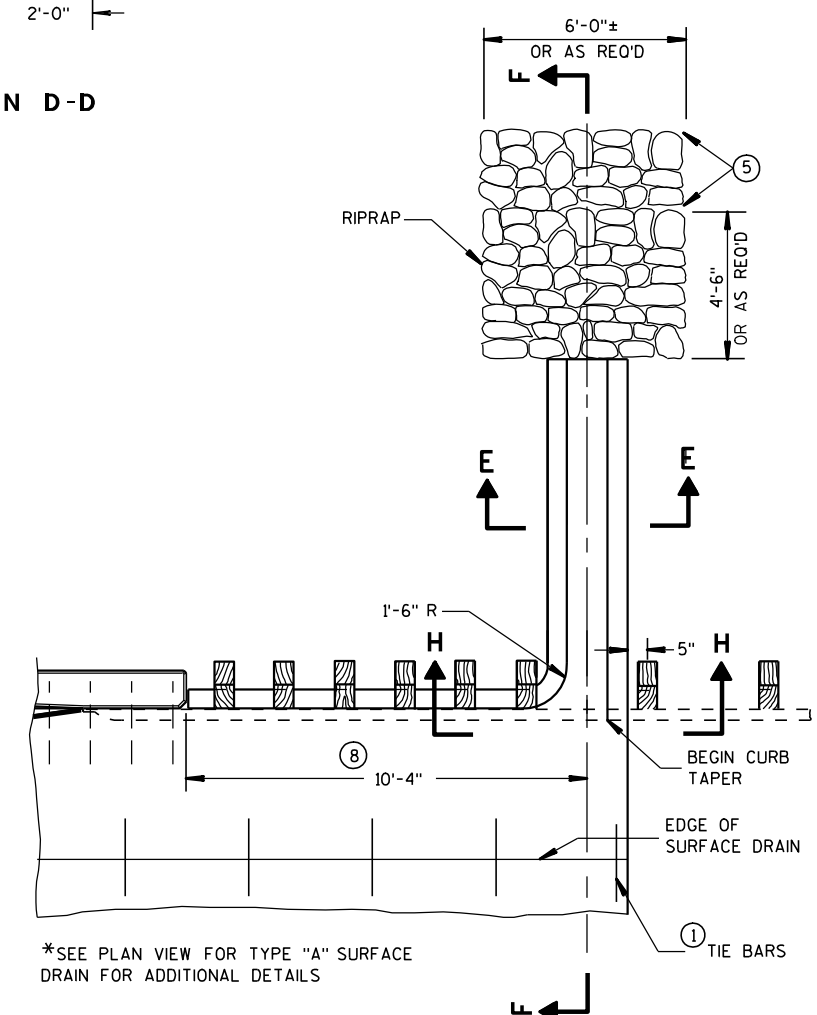
SECTION C-C

12" MIN. ADAPTER REQUIRED
ONLY FOR HELICALLY CORRUGATED, UNPERFORATED
PIPE UNDERDRAIN

③ 12" MIN. UNPERFORATED PIPE
UNDERDRAIN. PIPE TO BE
INSTALLED BEFORE CONCRETE
IS POURED



PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



* PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

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.

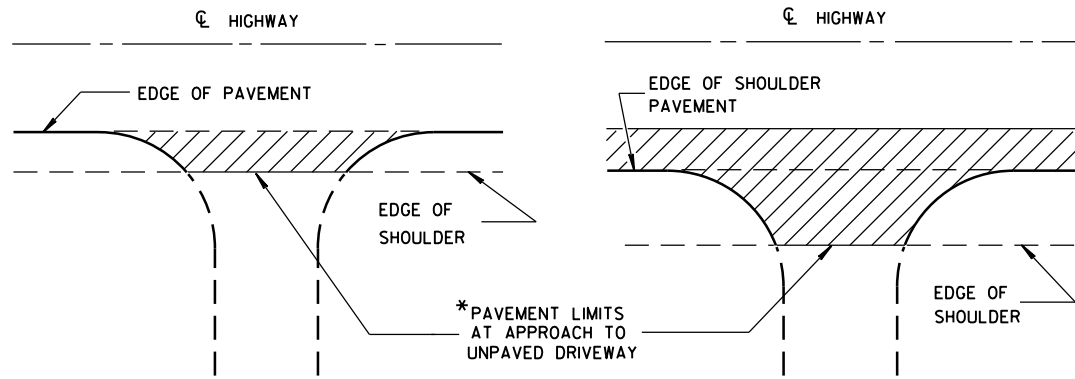
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR
UNLESS OTHERWISE SHOWN OR NOTED.

- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.
- ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑤ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑥ GEOTEXTILE FABRIC, TYPE 'R'
- ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
- ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1/2".

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED	
<u>9/4/08</u>	<u>/s/ Jerry H. Zogg</u>
DATE	ROADWAY STANDARDS DEVELOPMENT
	ENGINEER
FHWA	

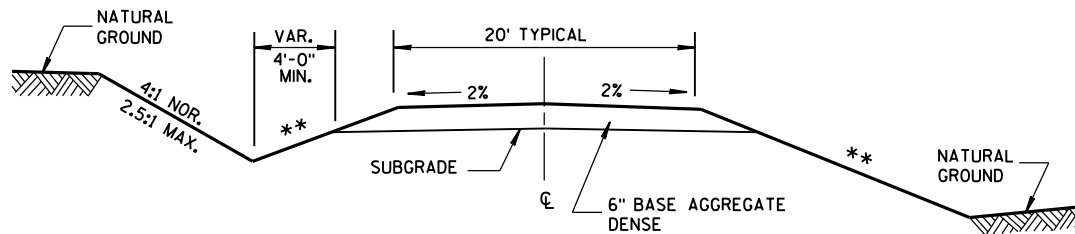


*WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

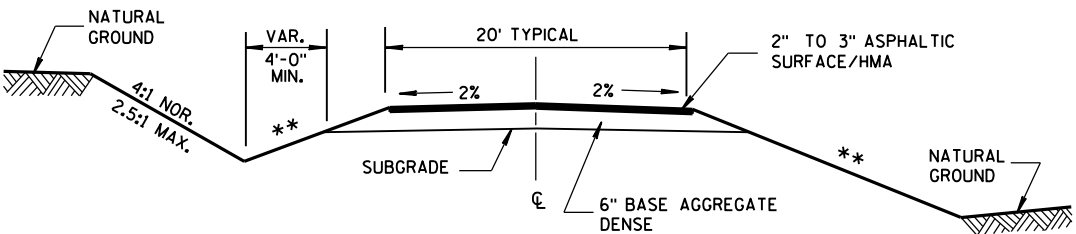
RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB & GUTTER OR SIDEWALK)



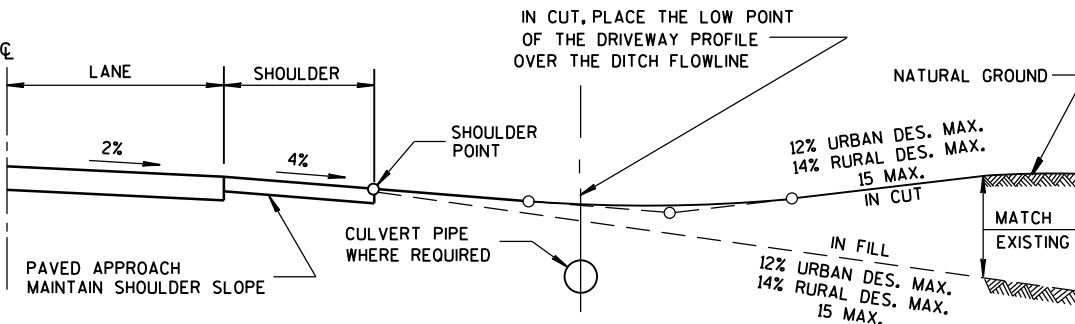
TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE

** SLOPE CAN VARY WITH SPEED. SEE 11-45-2.6.2.

POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥35 TO <60	6:1
≥60	10:1

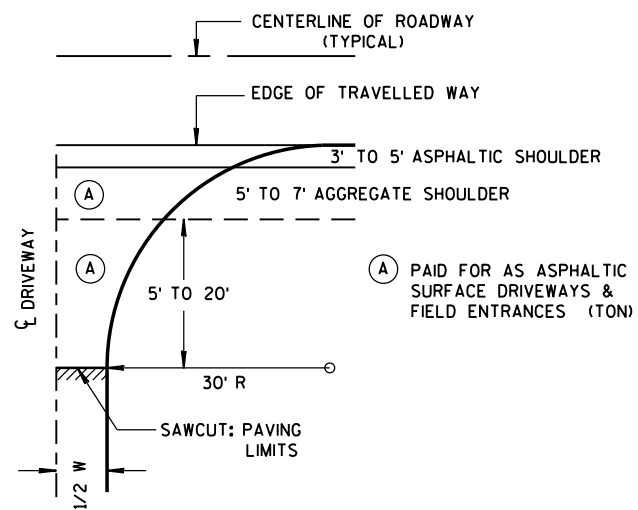


TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE



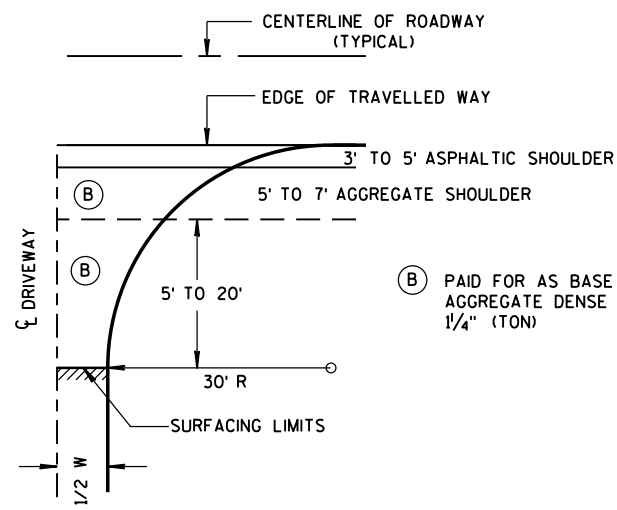
TYPICAL DRIVEWAY PROFILES

DRIVEWAYS WITHOUT CURB & GUTTER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December, 2016 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

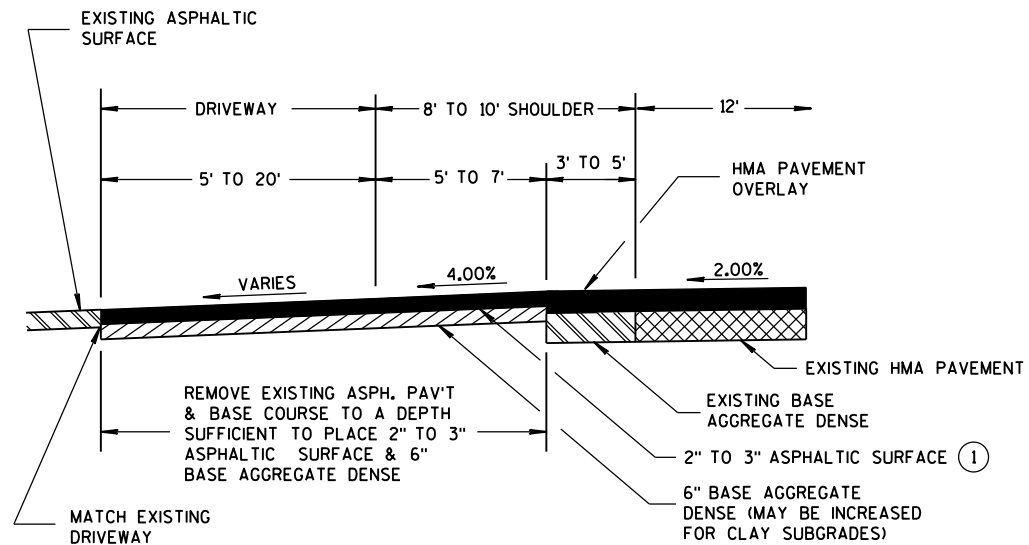


PLAN VIEW
HALF SECTION

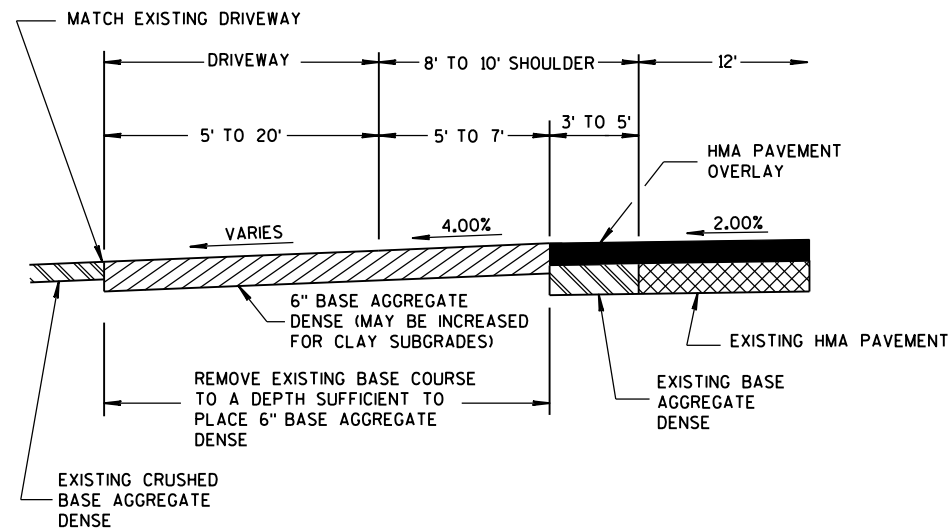
W MIN. = 16'
W MAX. = 24'



PLAN VIEW
HALF SECTION



PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS



PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

GENERAL NOTES

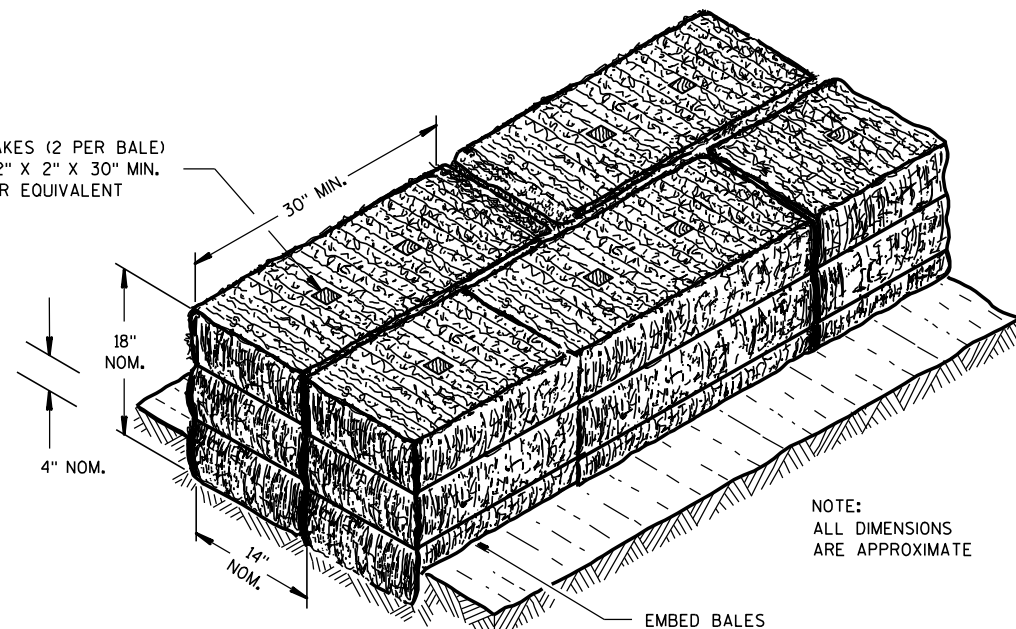
- DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

DRIVEWAYS WITHOUT
CURB & GUTTER
RESURFACING PROJECTS RURAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

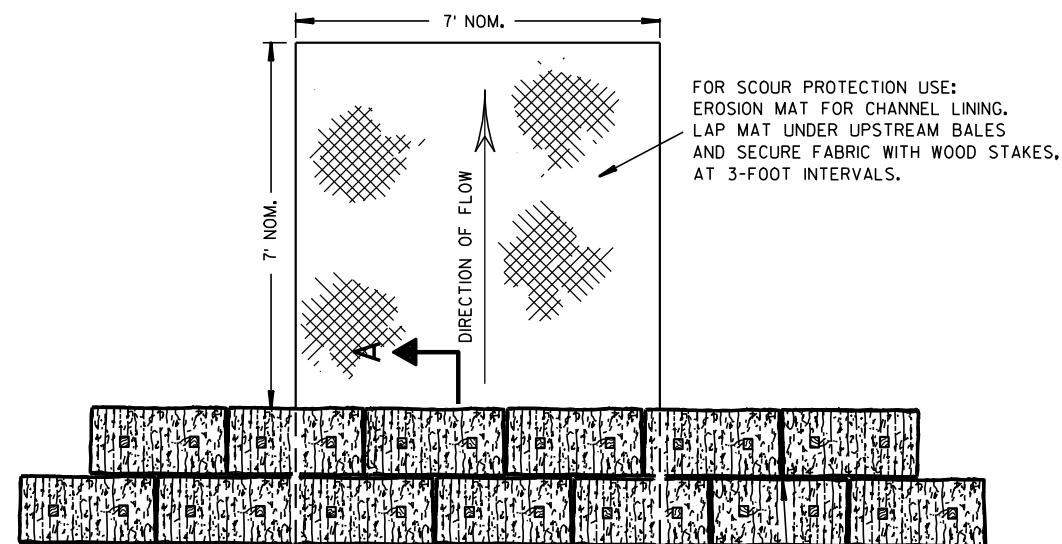
APPROVED
December, 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

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



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

SECTION A-A

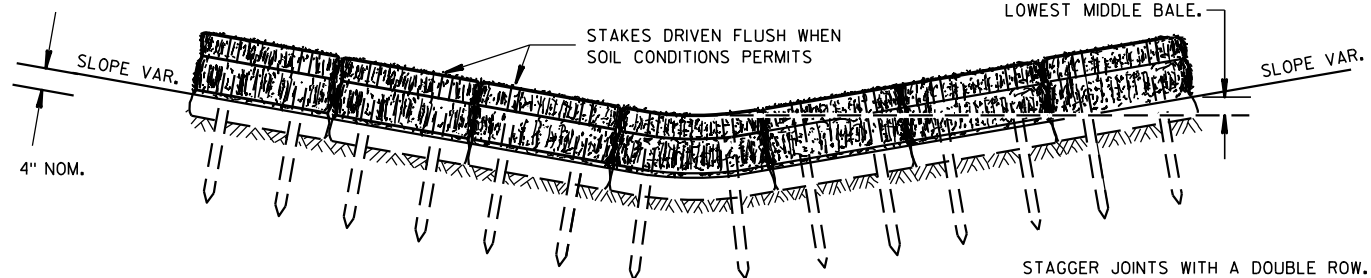


FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

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.



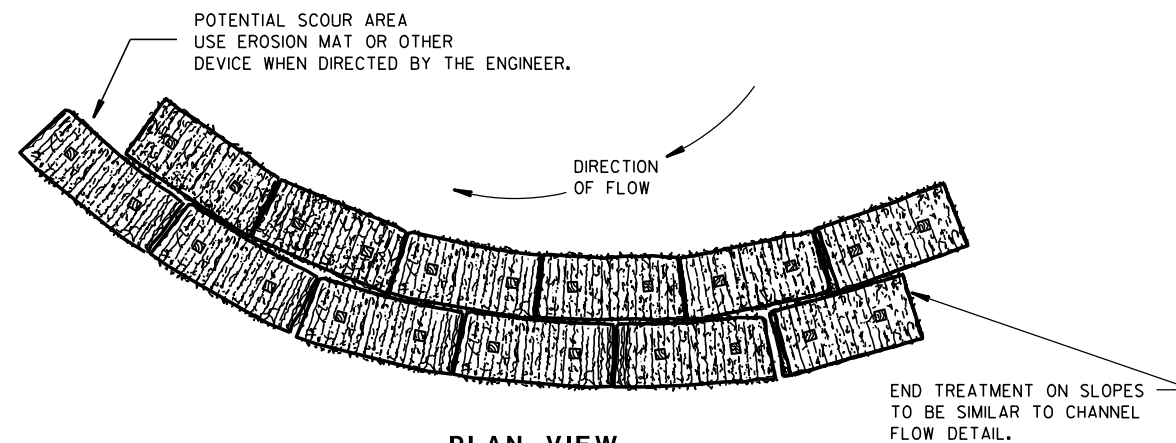
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

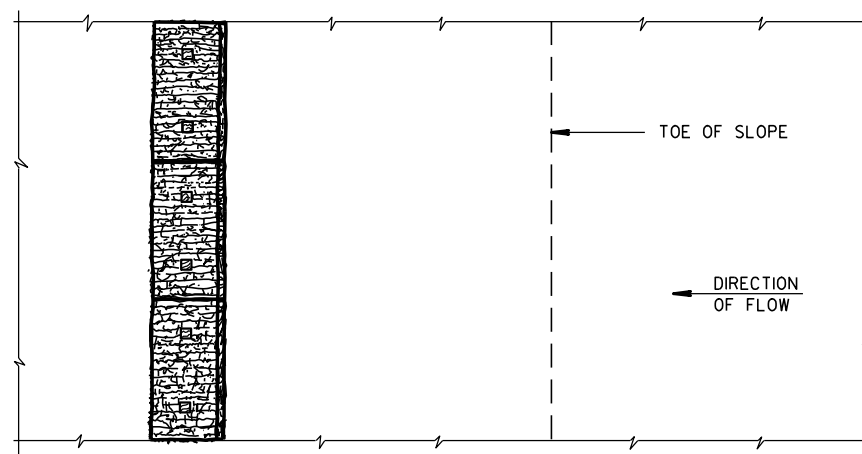
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

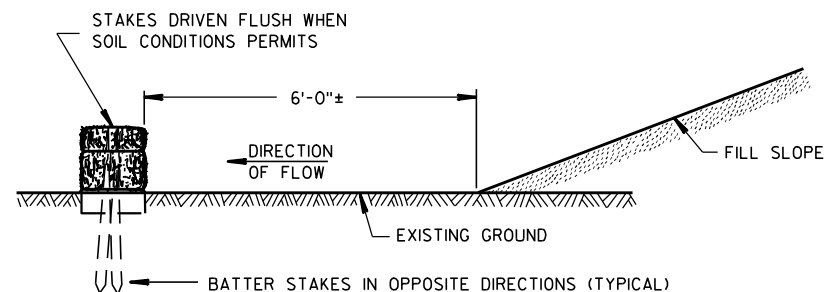


PLAN VIEW

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

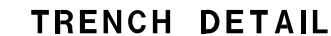
6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

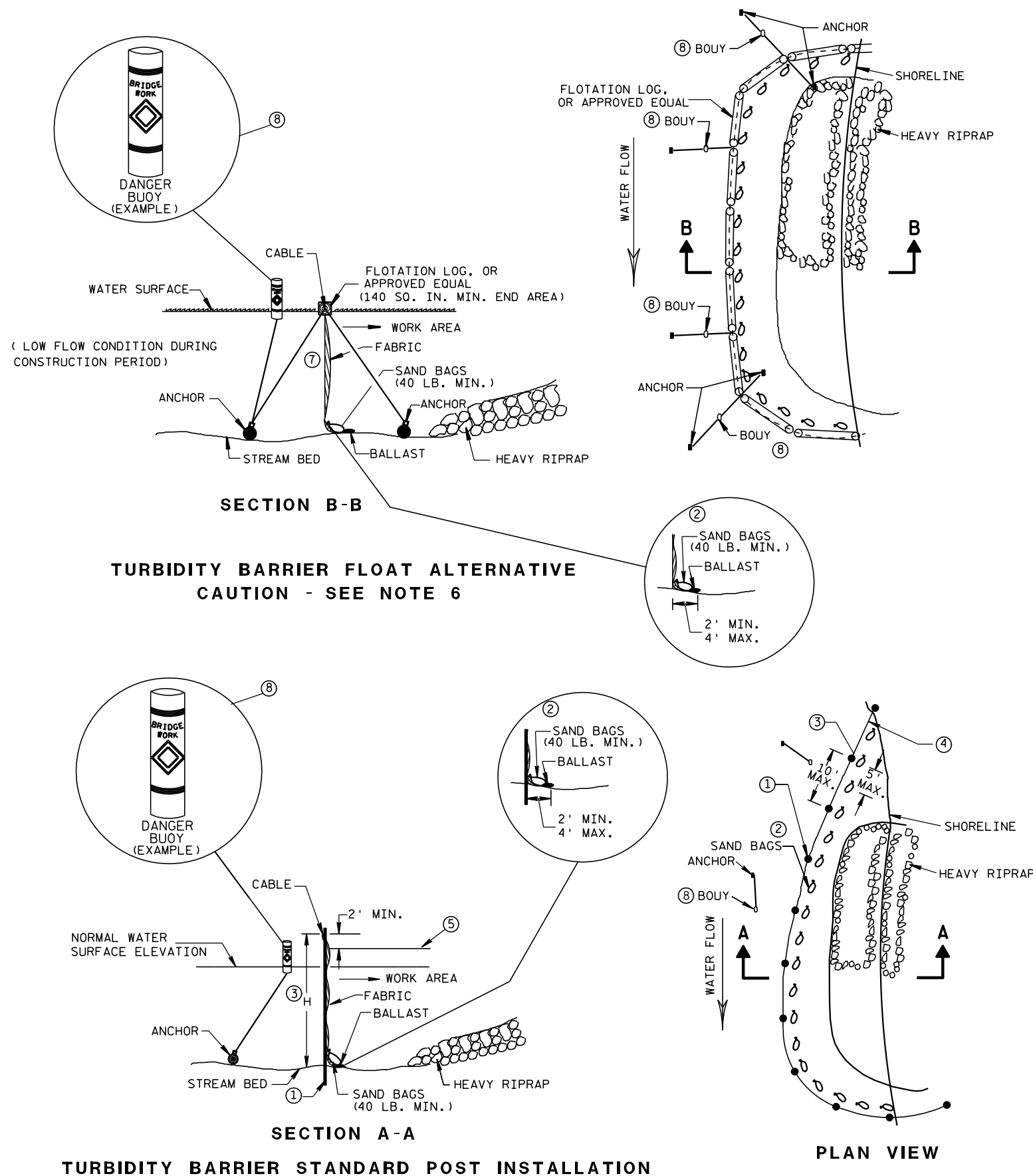
FHWA



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



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

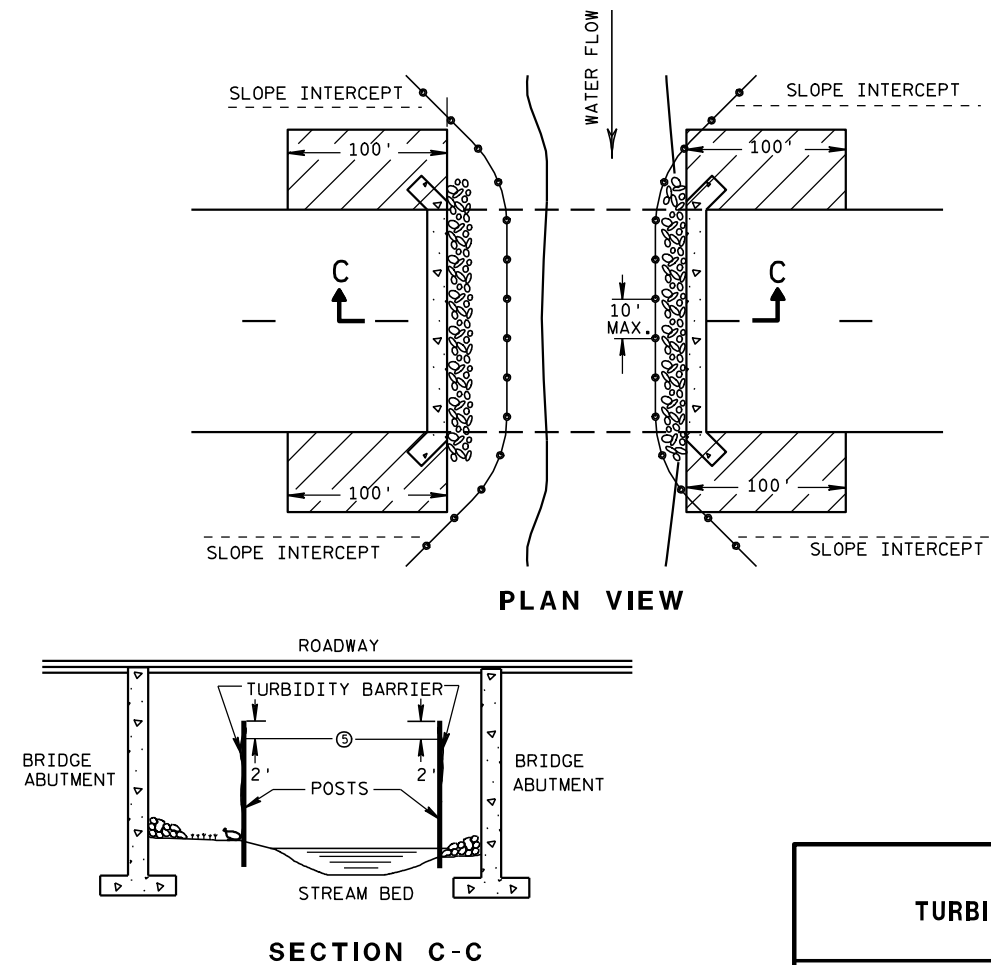


GENERAL NOTES

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

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

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



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

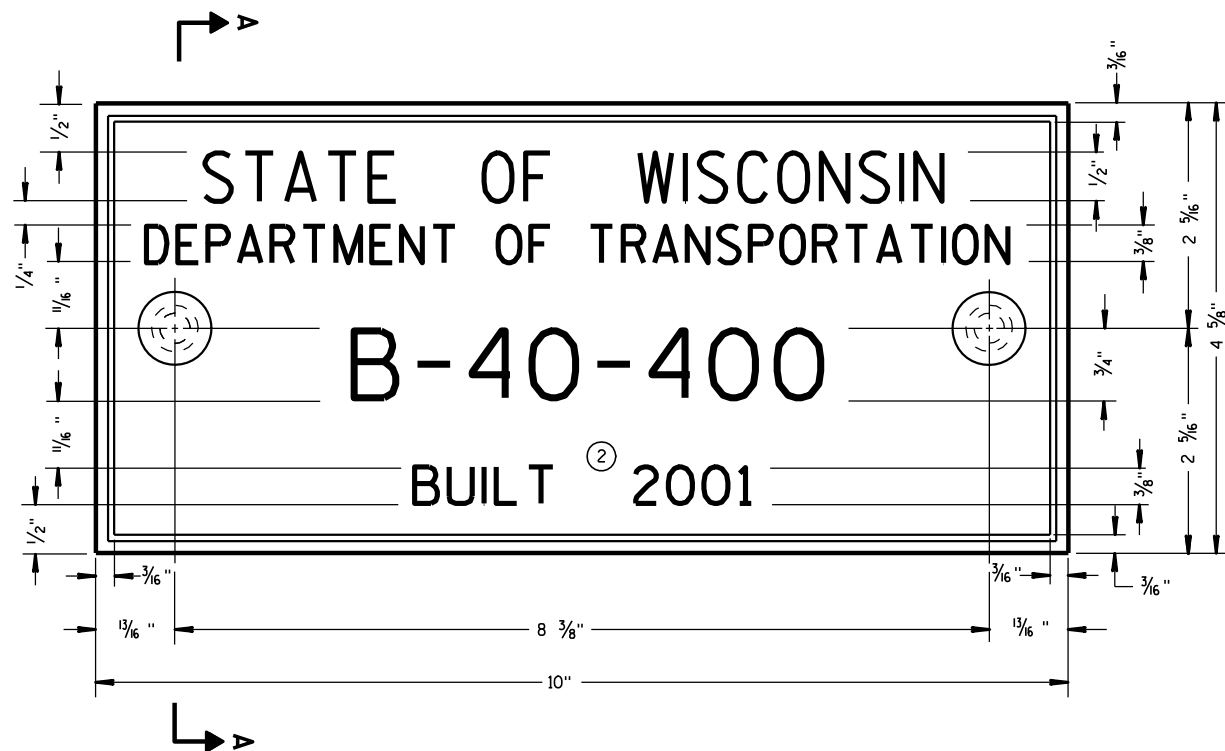
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

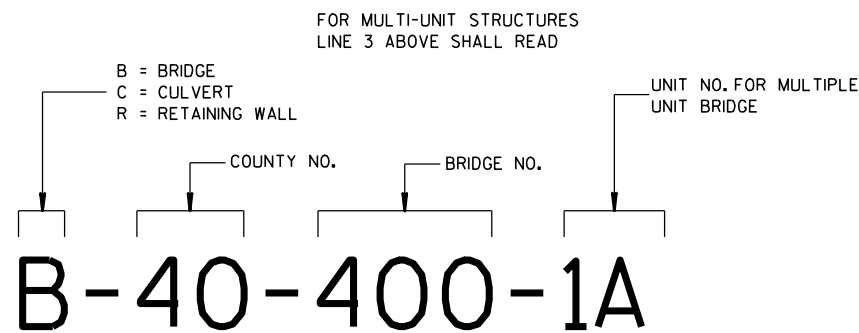
6/04/02
DATE

FHWA

/S/ Beth Connestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



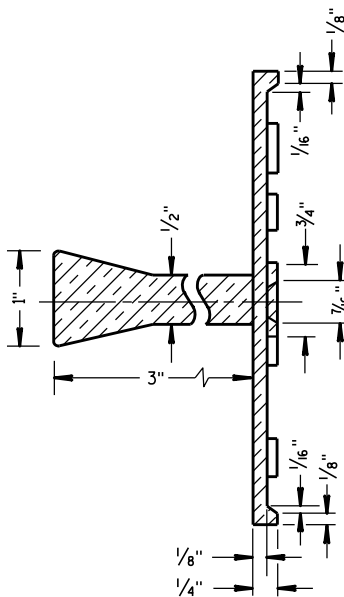
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

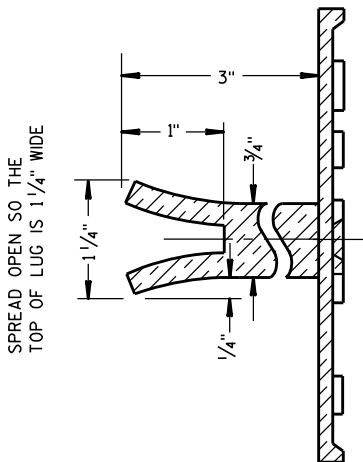
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

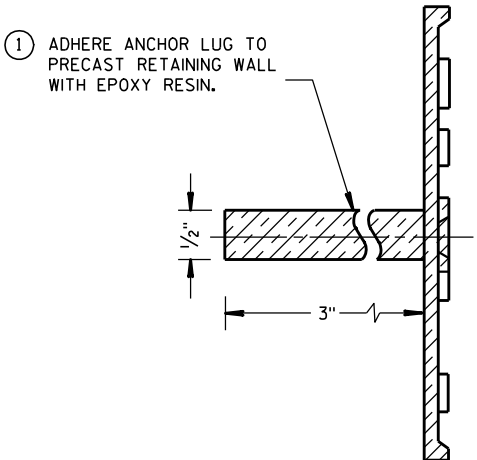
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A

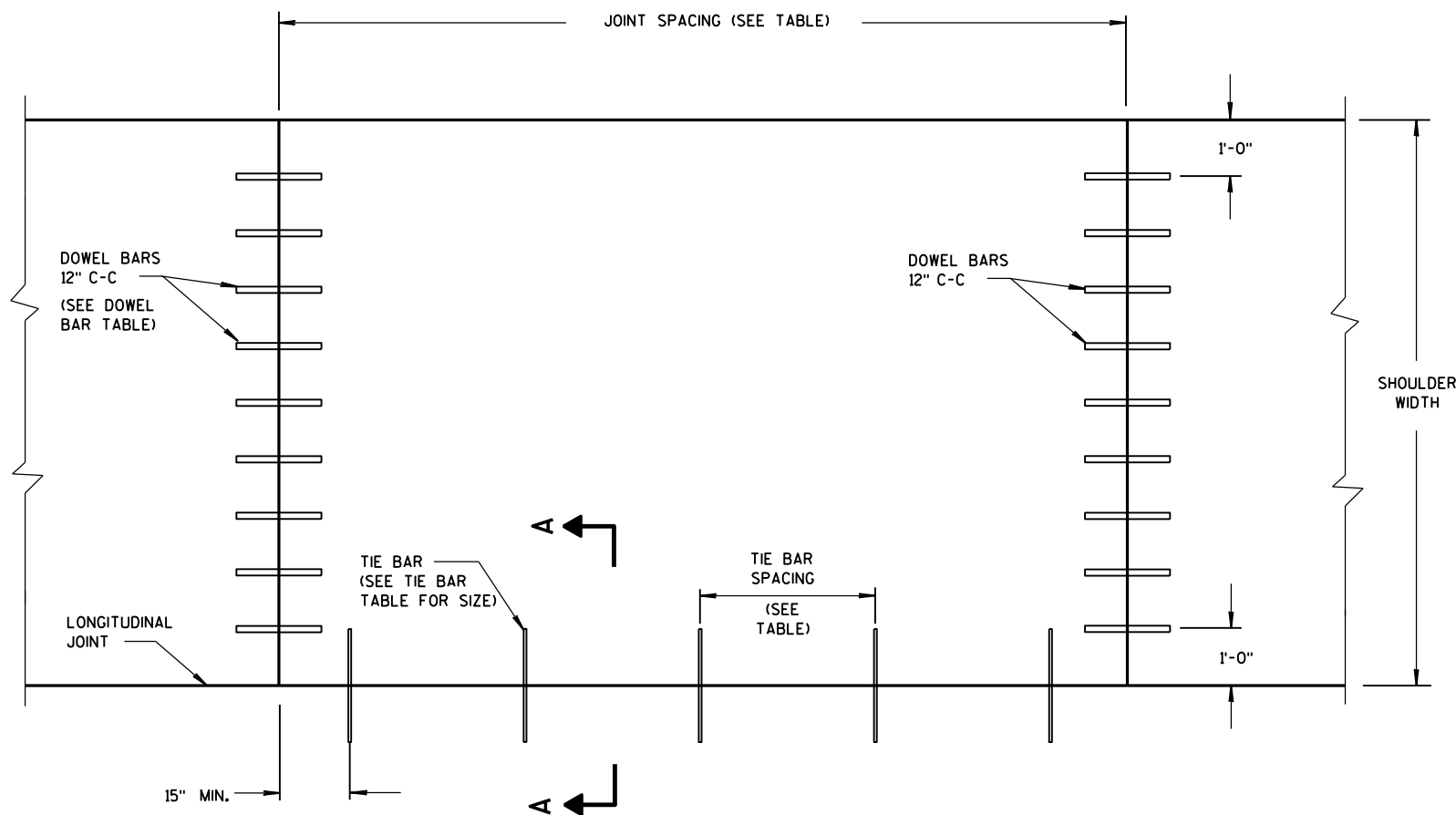


ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

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



PLAN VIEW
CONCRETE PAVEMENT SHOULDER

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

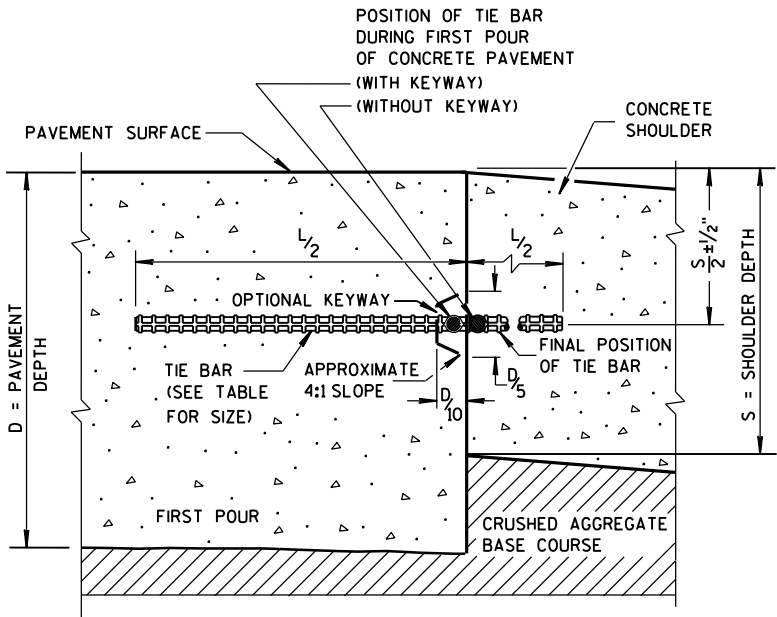
GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER***	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

*** FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

SKEWED APPROACH (PAVEMENT MORE THAN TWO LANES)

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

SKEWS $\leq 20^\circ$
(PAVEMENT WIDTH $\leq 30'$)

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 STRUCTURE OR
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 MEETING THE REQUIREMENTS OF ASTM D6690.
- 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.
- ⑦ STANDARD CONTRACTION JOINT NORMAL TO  OR .
- ⑧ STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- ⑨ 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO  OR .

SECTION D - D
CONTRACTION JOINT

EXPANSION JOINT DETAIL

MENT THICKNESS (SEE
CAL CROSS SECTION)

CONCRETE PAVEMENT

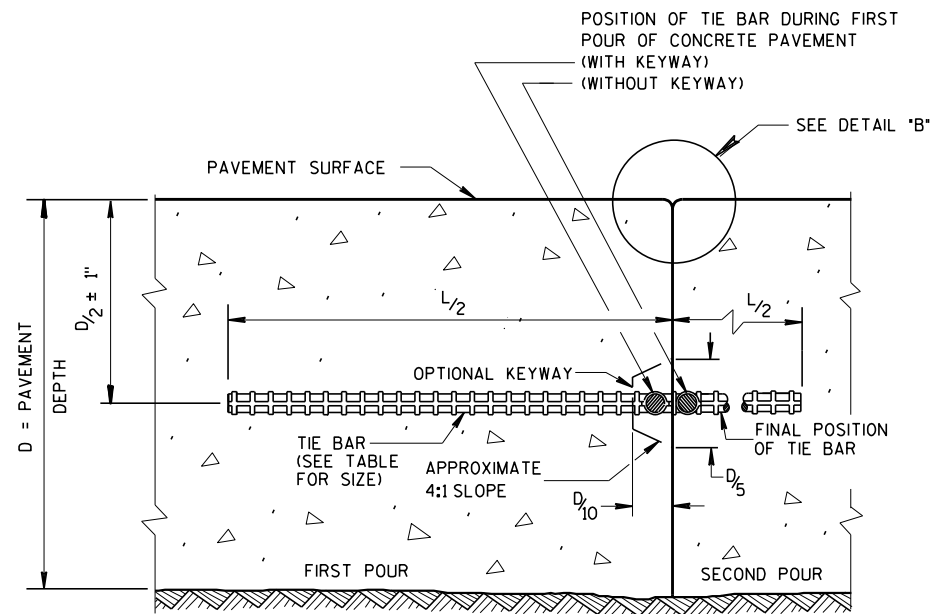
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

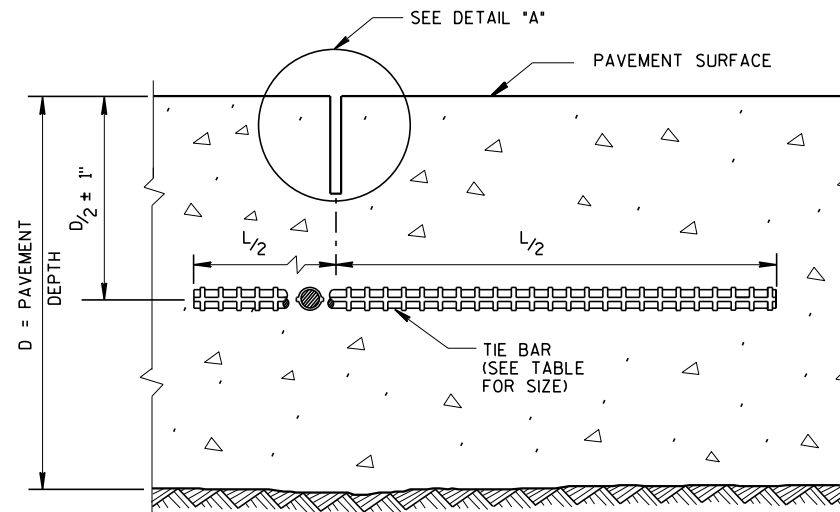
APPROVED
November 2018 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR

FHWA

PAVEMENT SUPERVISOR



CONSTRUCTION JOINT



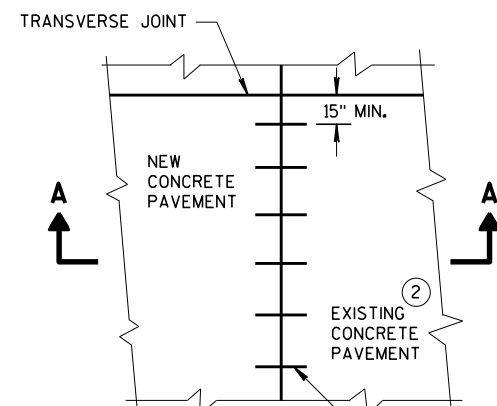
SAWED JOINT

GENERAL NOTES

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

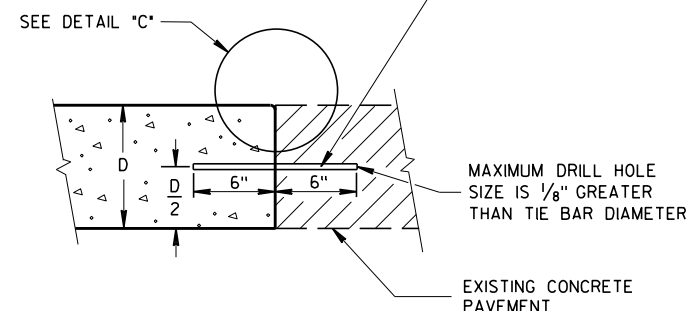
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

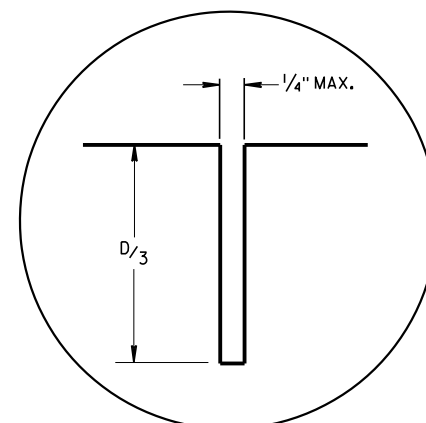


PLAN VIEW

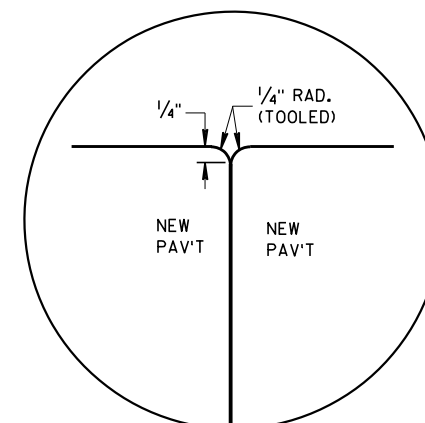
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



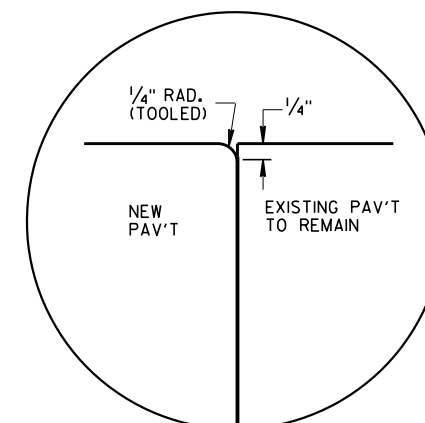
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



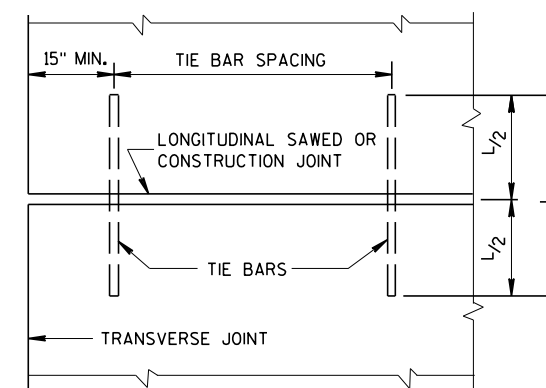
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
$< 10 \frac{1}{2}"$	NO. 4	30"	36"
$\geq 10 \frac{1}{2}"$	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



PLAN VIEW
SHOWING LOCATION OF TIE BARS

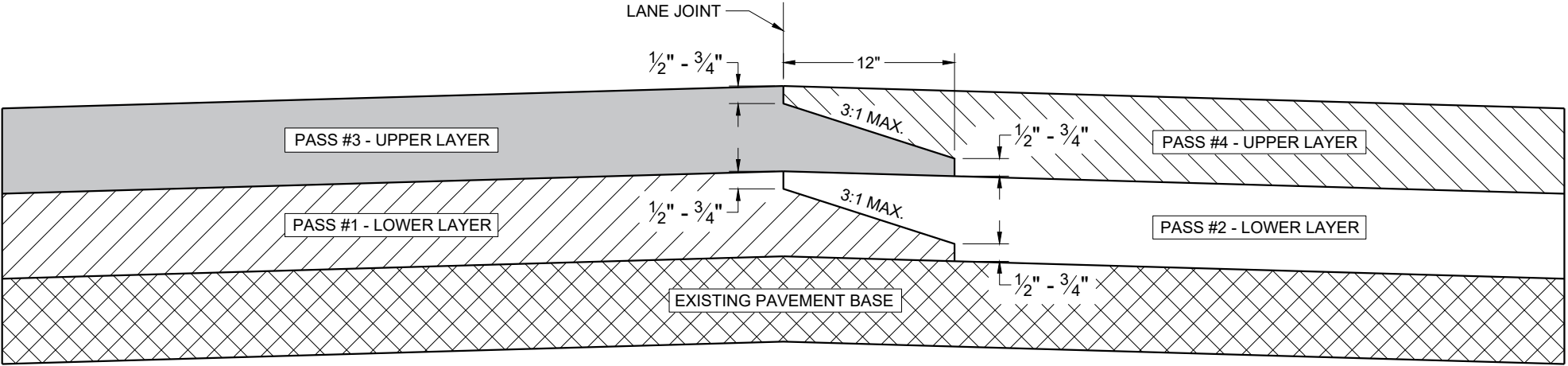
CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

CONFORM TO STANDARD SPECIFICATION 450.3.2.8



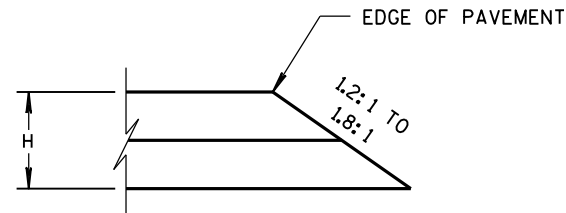
TYPICAL PAVEMENT CROSS SECTION
OF NOTCHED WEDGE LONGITUDINAL JOINTS

HMA LONGITUDINAL JOINTS

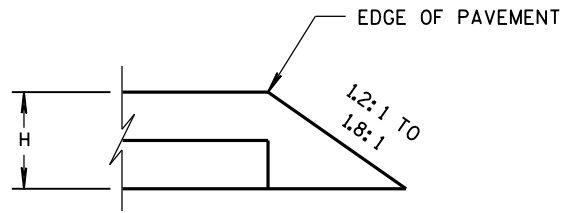
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER

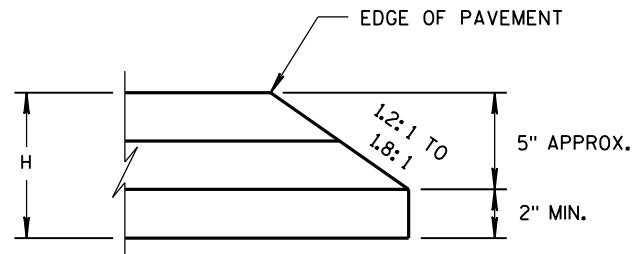
FHWA



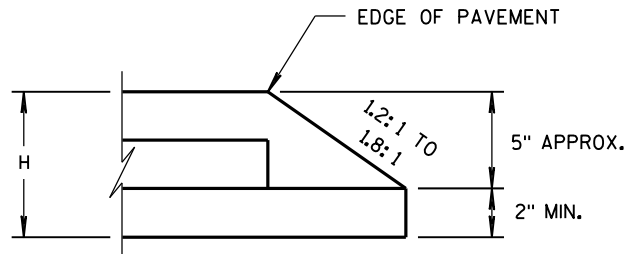
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

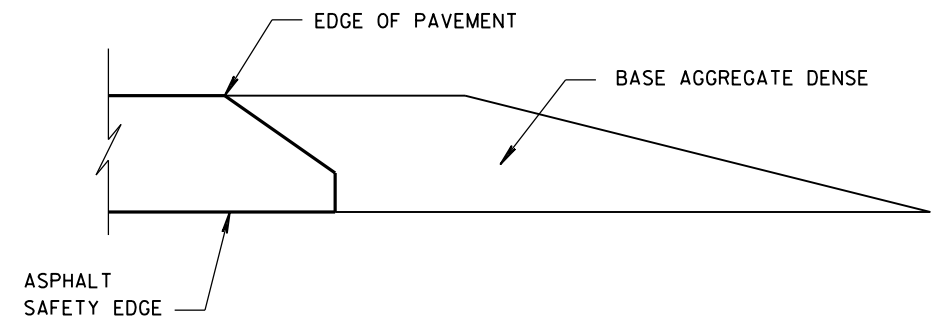


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

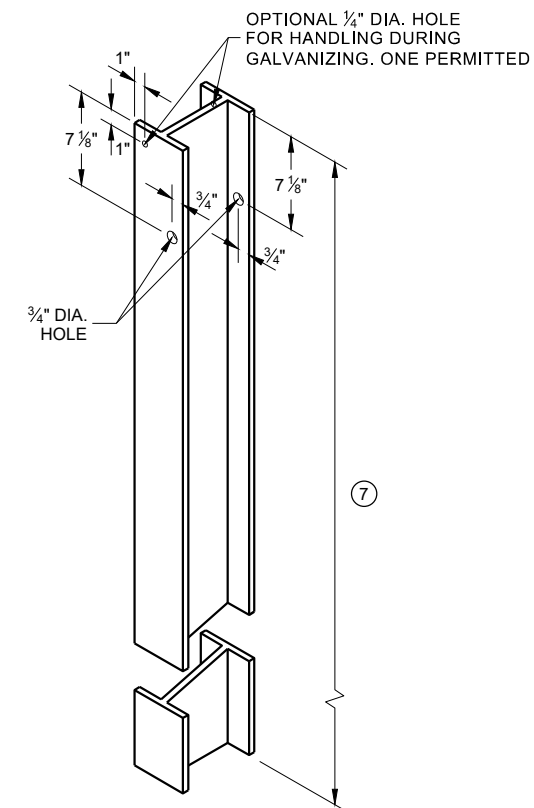
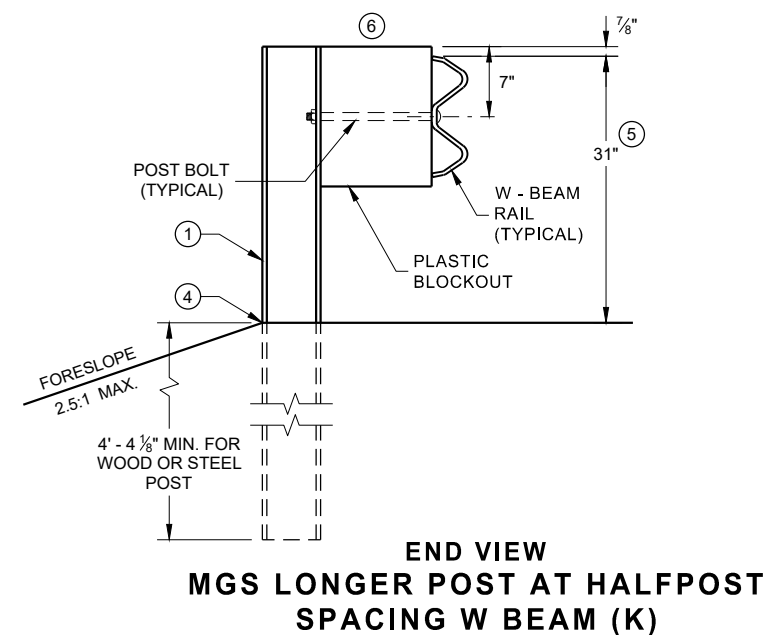
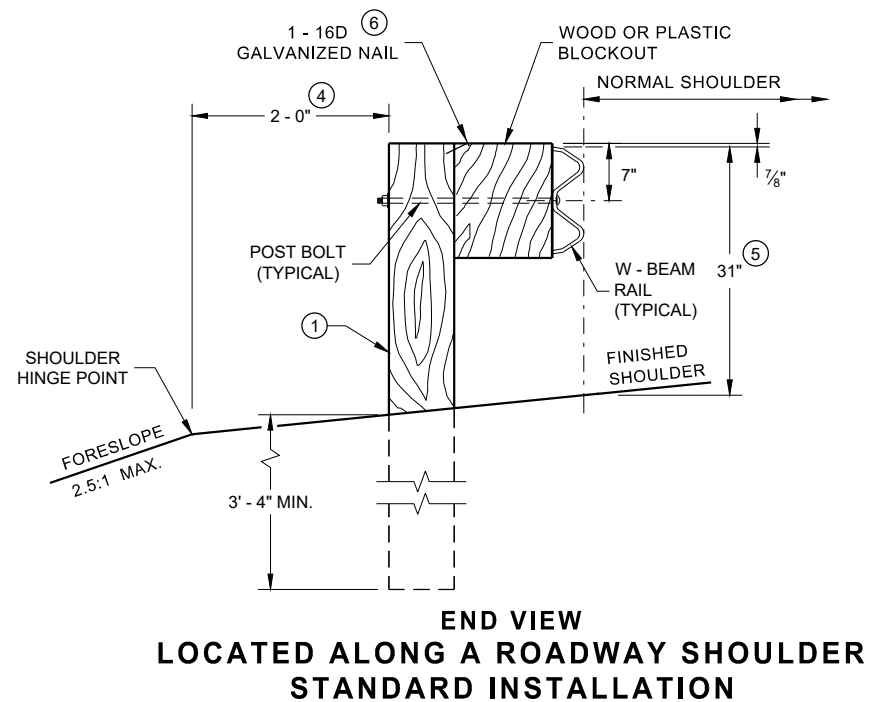
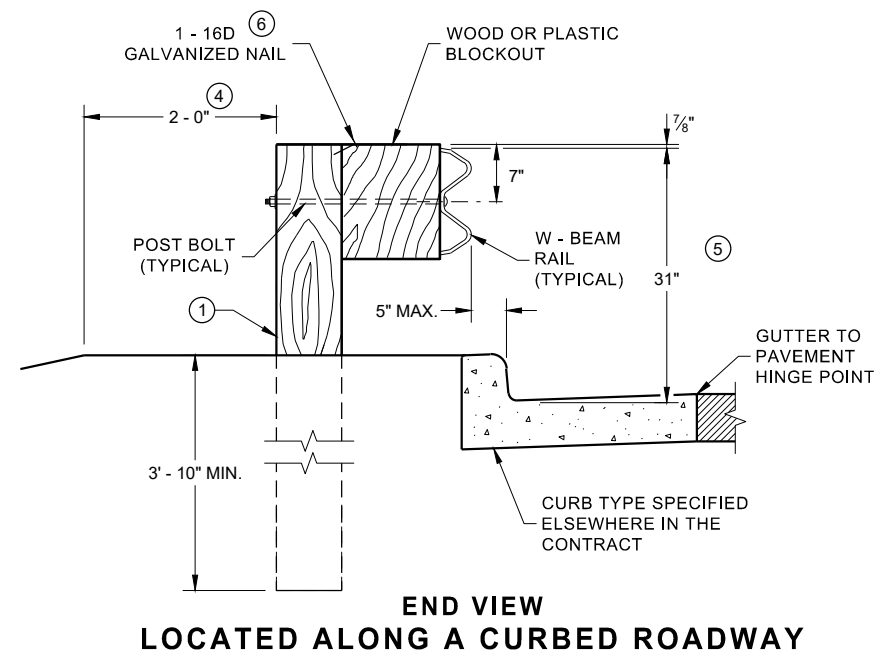
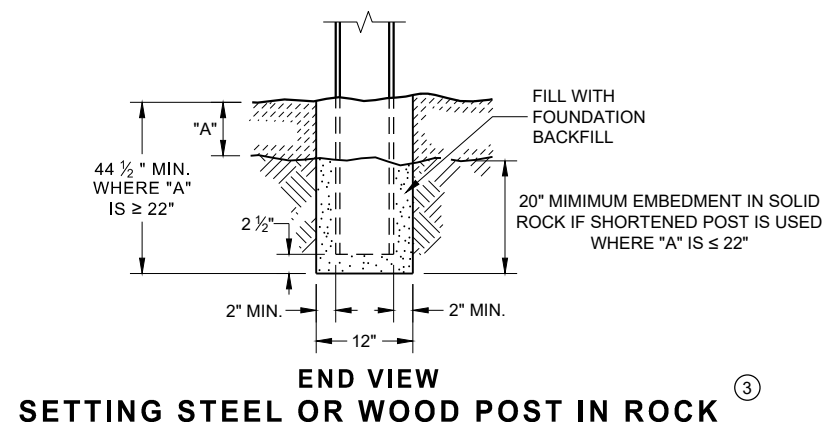
APPROVED

11/30/2012
DATE

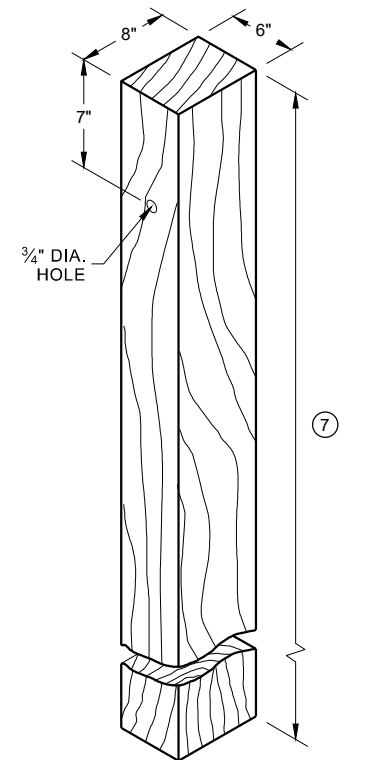
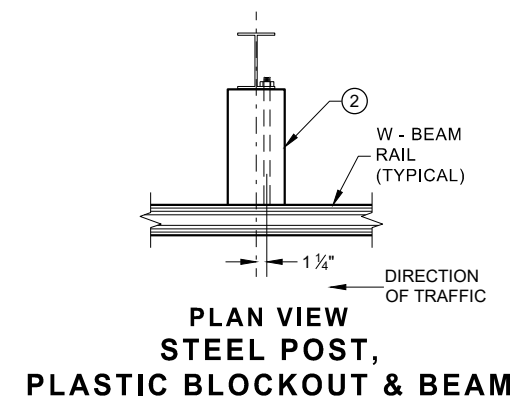
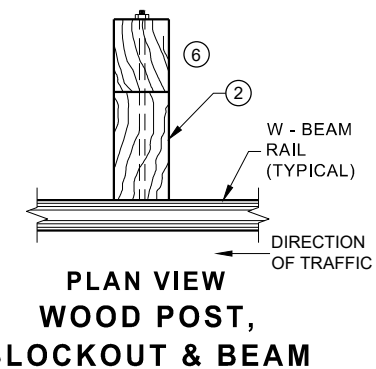
FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

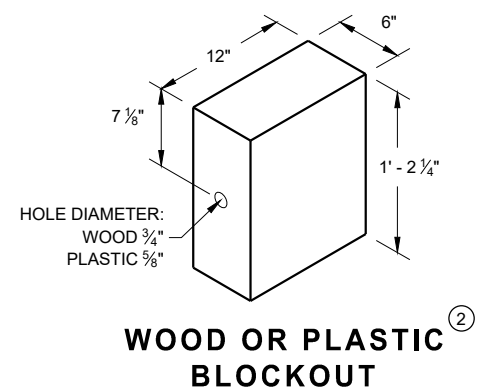
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

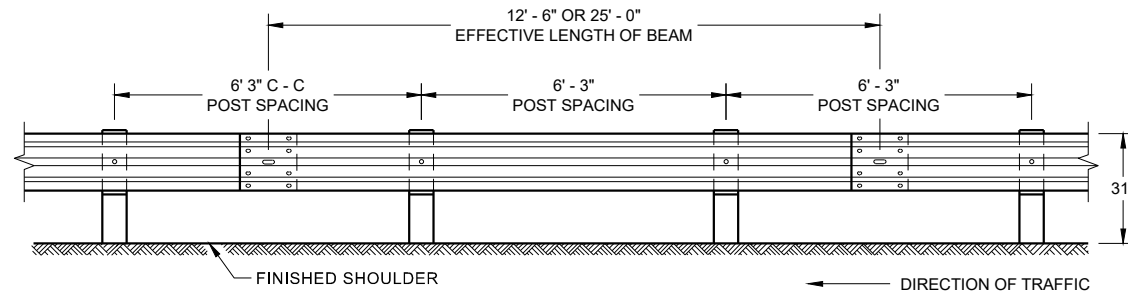


**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

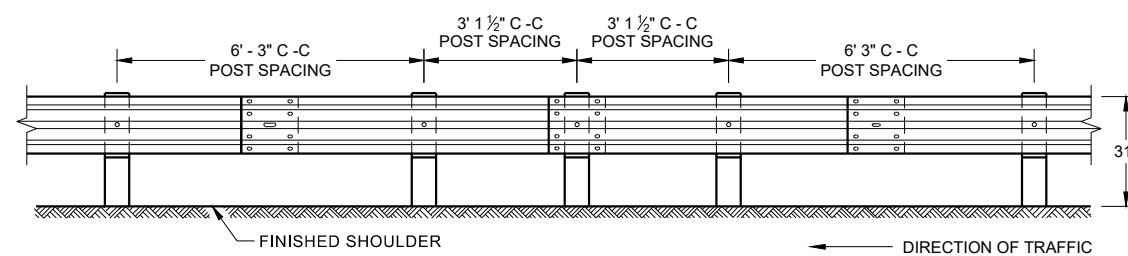


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

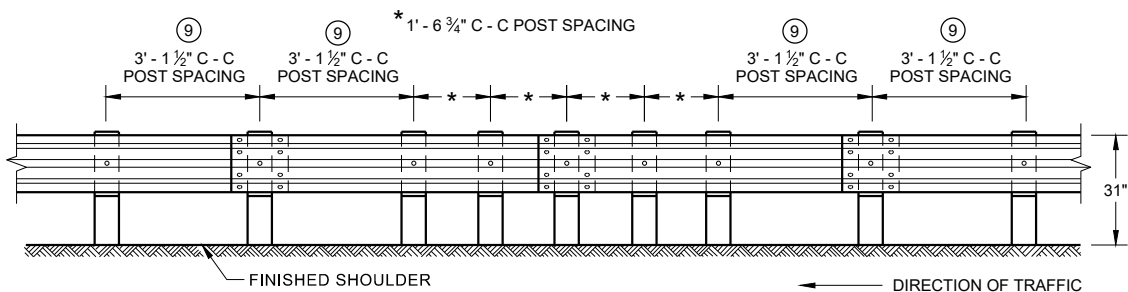




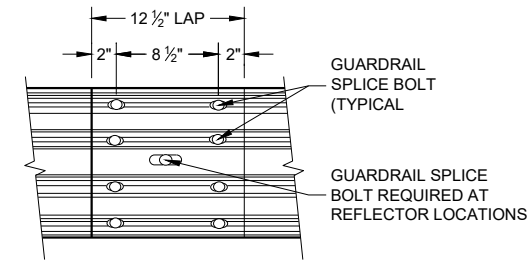
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



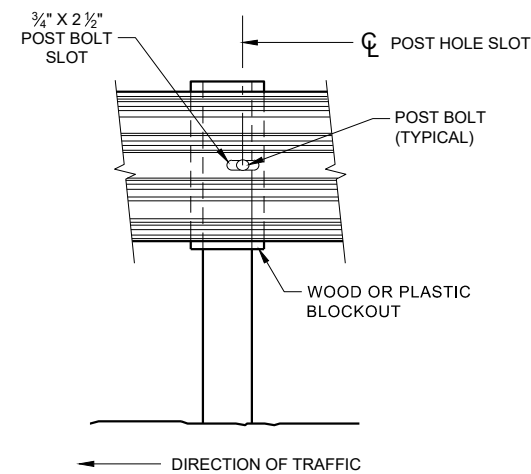
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



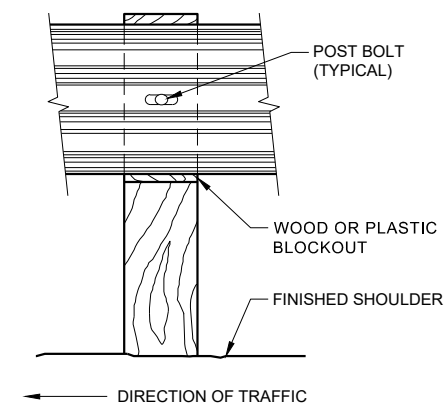
**FRONT VIEW
QUARTER POST SPACING (QS)**



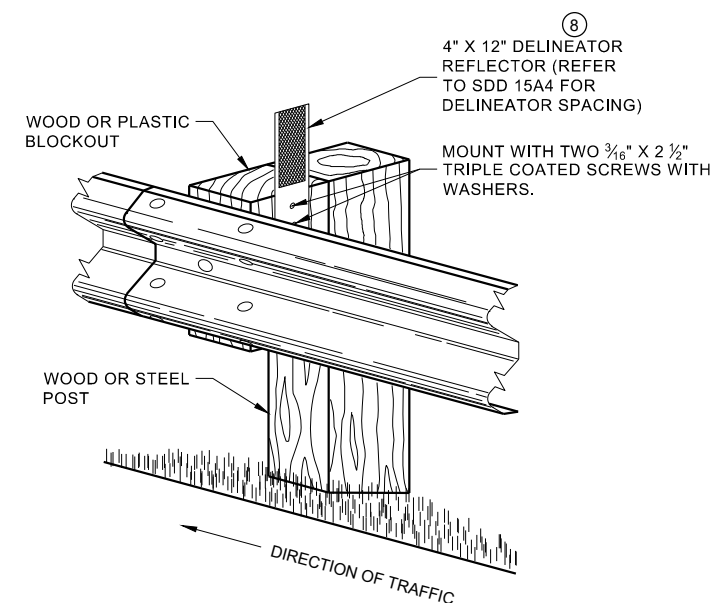
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



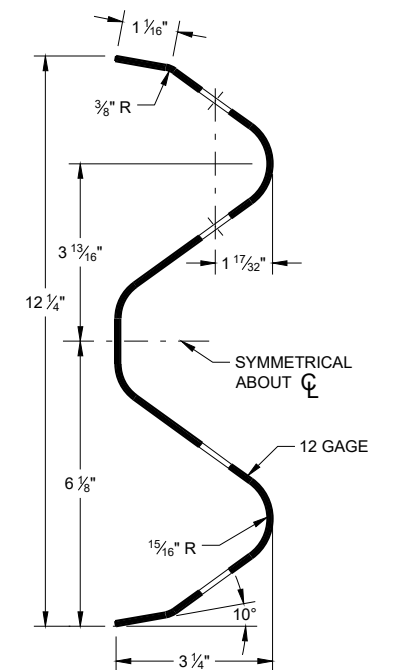
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

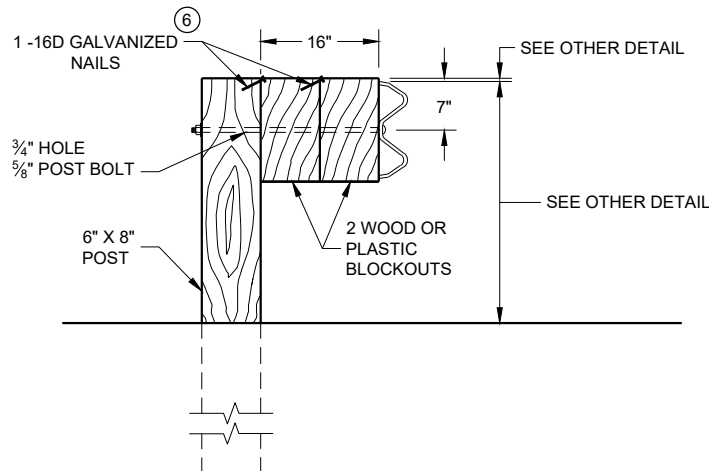
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

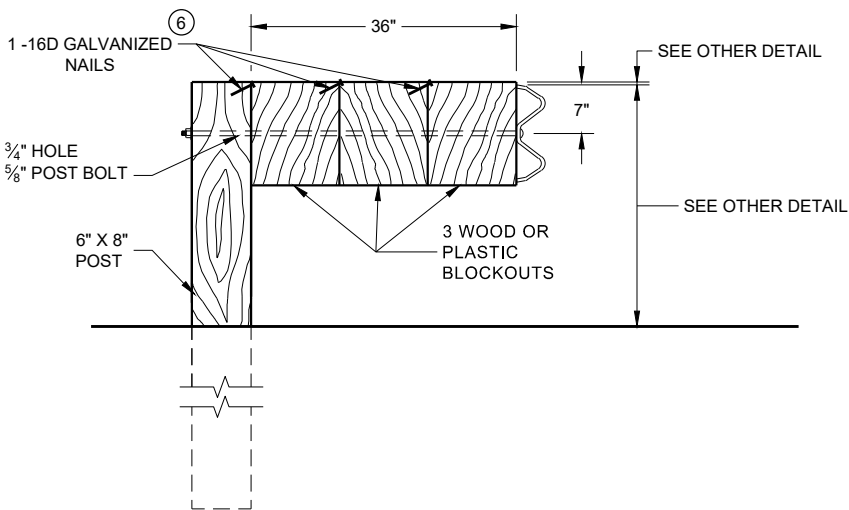
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

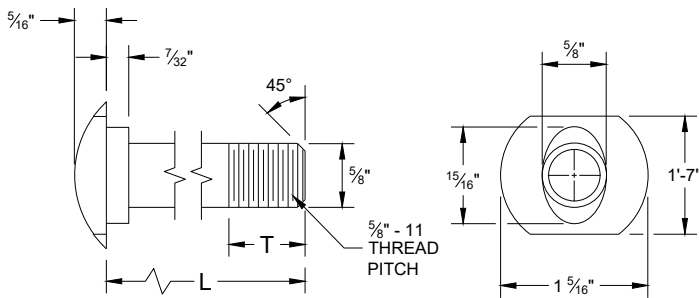
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

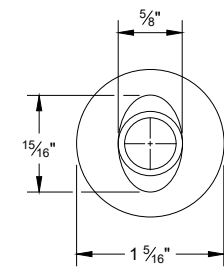
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

- NOTE:
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
 - 2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

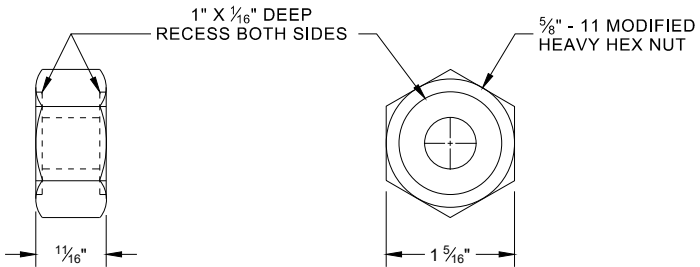


POST BOLT TABLE

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

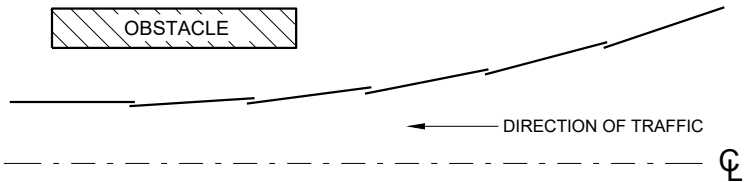


ALTERNATE BOLT HEAD

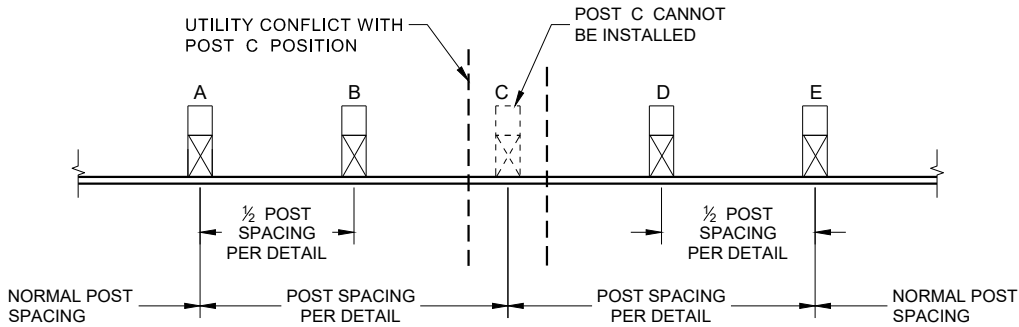


POST BOLT, SPLICE BOLT AND RECESS NUT

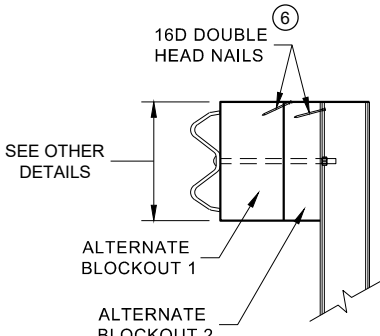
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



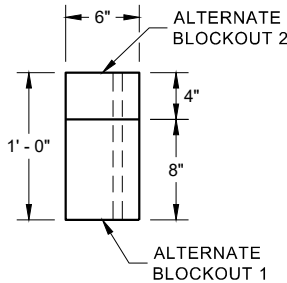
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

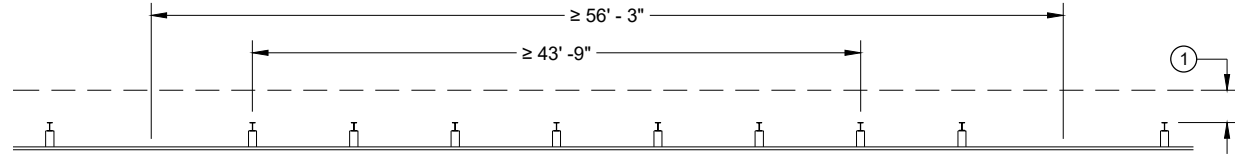


PLAN VIEW

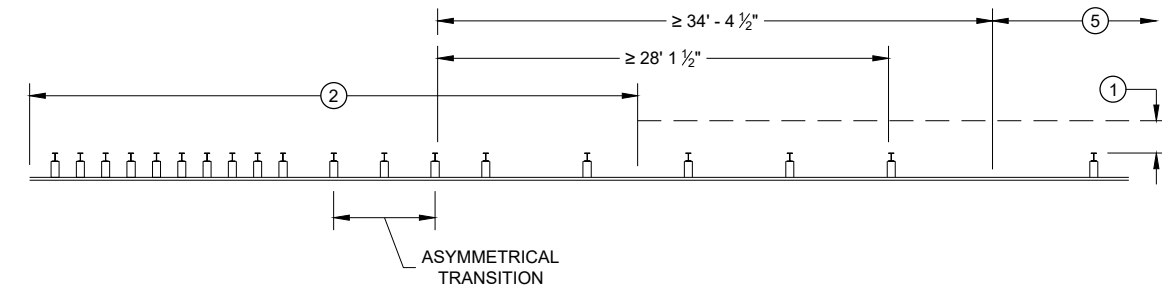
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

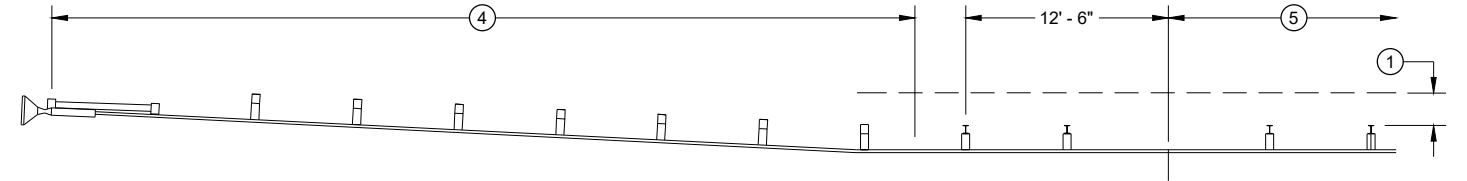
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



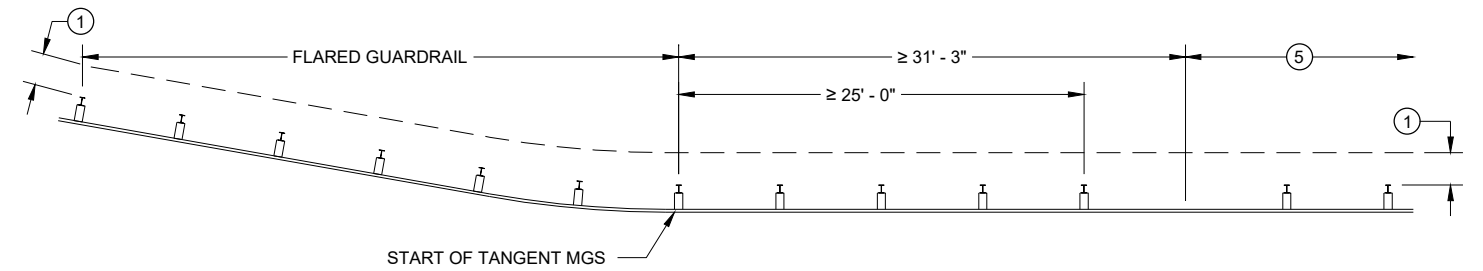
MISSING POST IN NORMAL BEAM GUARD RUN



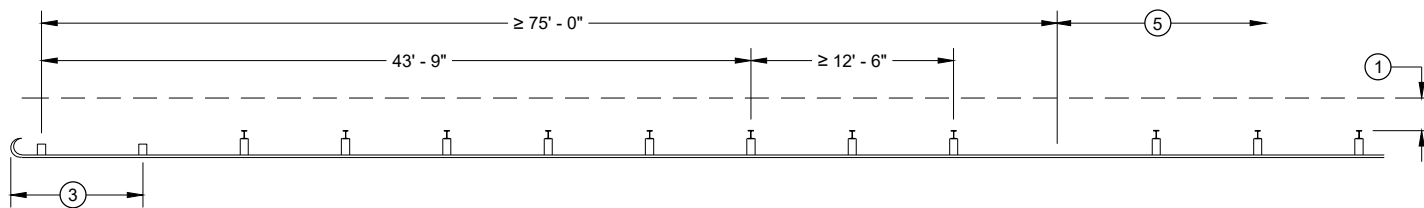
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



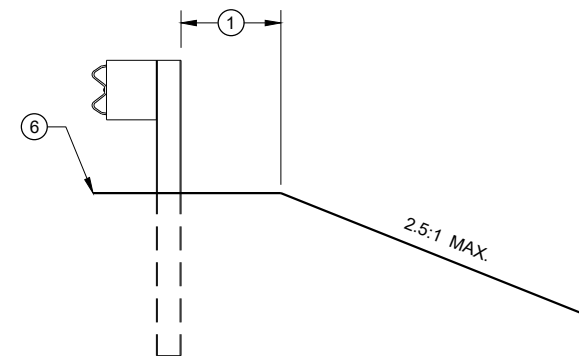
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

- (1) MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- (2) SEE SDD 14B45 FOR MORE DETAILS.
- (3) SEE SDD 14B47 FOR MORE DETAILS.
- (4) SEE SDD 14B44 FOR MORE DETAILS.
- (5) SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- (6) SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

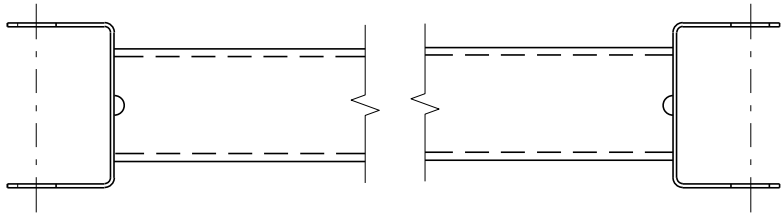
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
- (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

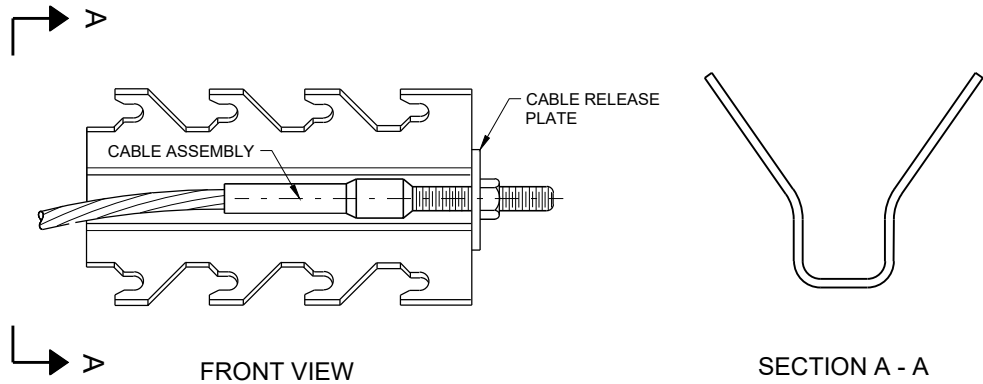


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

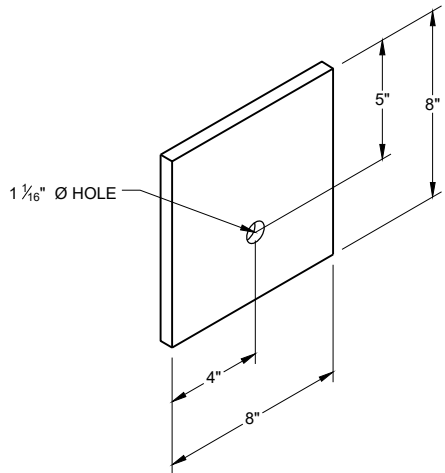


GENERIC GROUND STRUT^⑨ [Ⓔ]

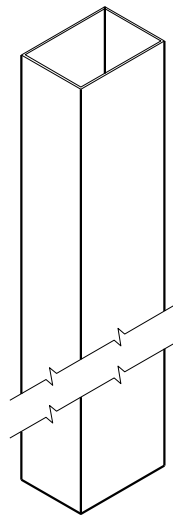
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



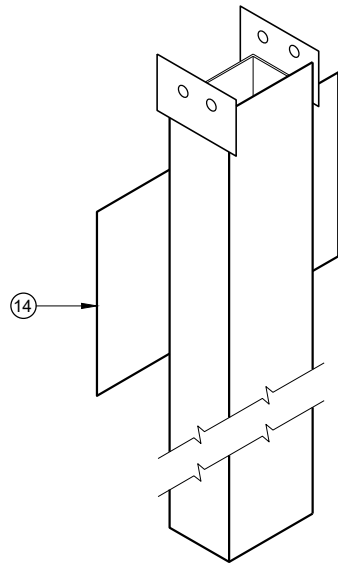
GENERIC ANCHOR CABLE BOX^⑨ [Ⓔ]



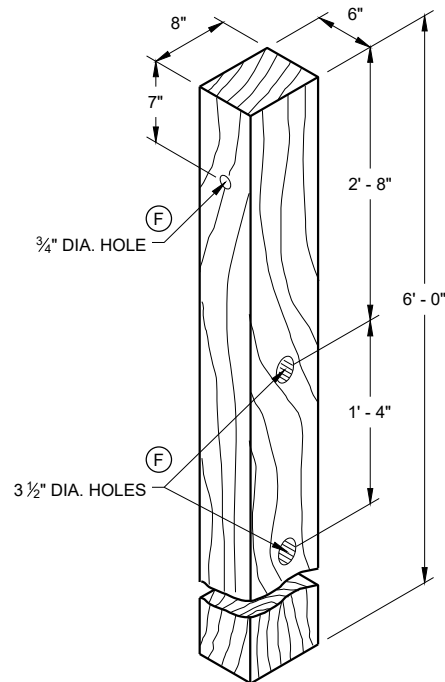
BEARING PLATE^⑥ [Ⓔ]



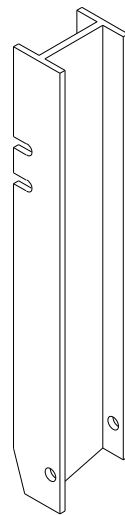
UPPER POST NO. 1 ⁽¹⁾ (E)



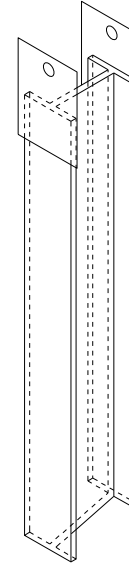
LOWER POST NO. 1 ⁽²⁾ (E)



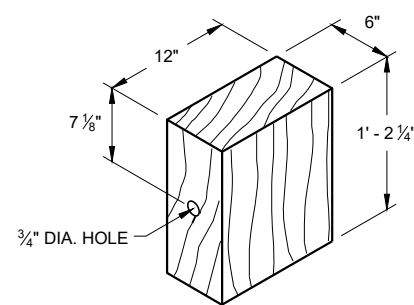
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



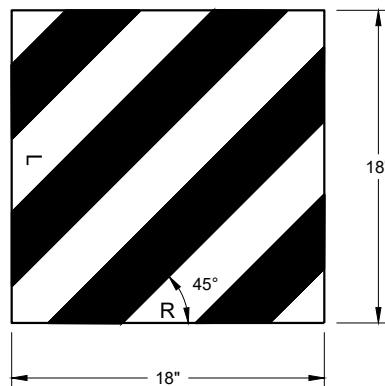
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



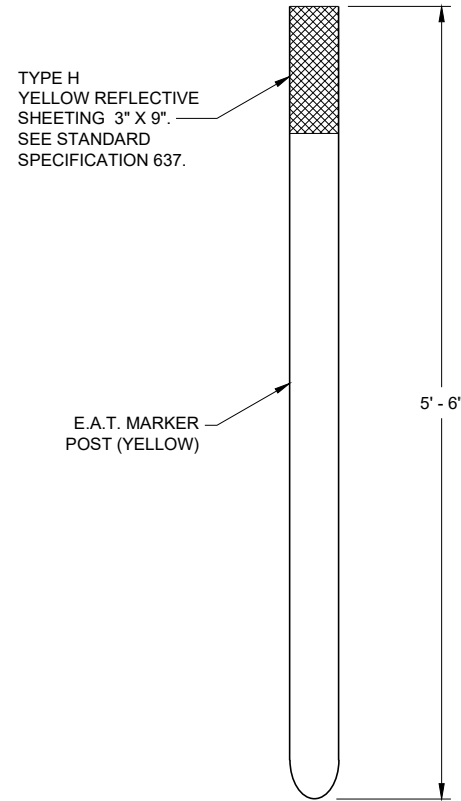
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



REFLECTIVE SHEETING DETAIL ^(E)

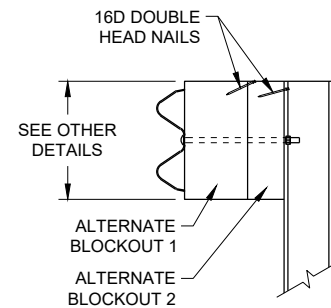


FRONT VIEW

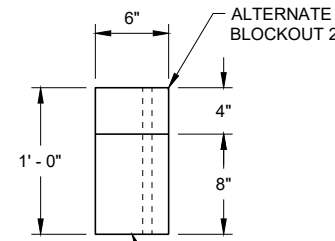


SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



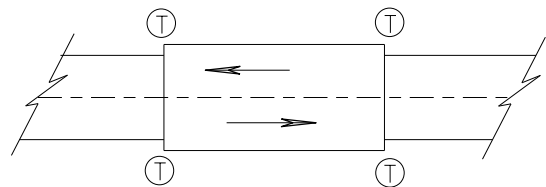
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

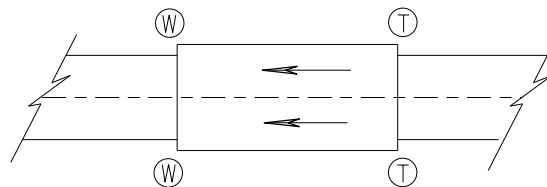
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

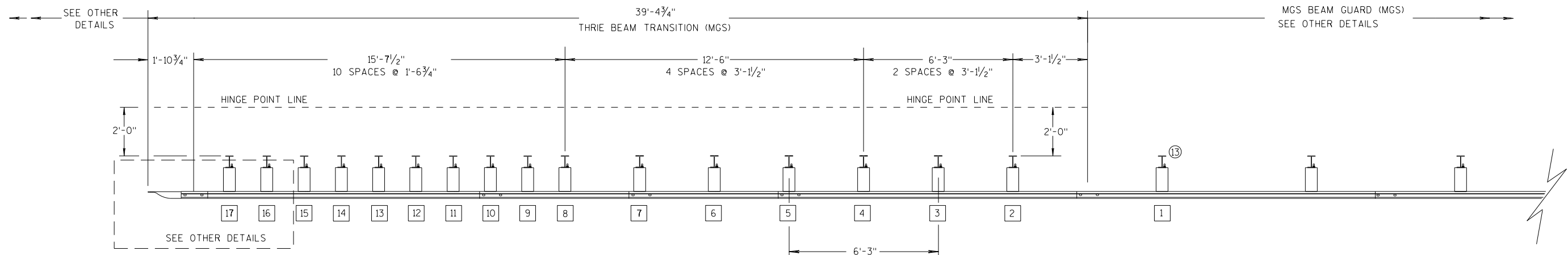
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

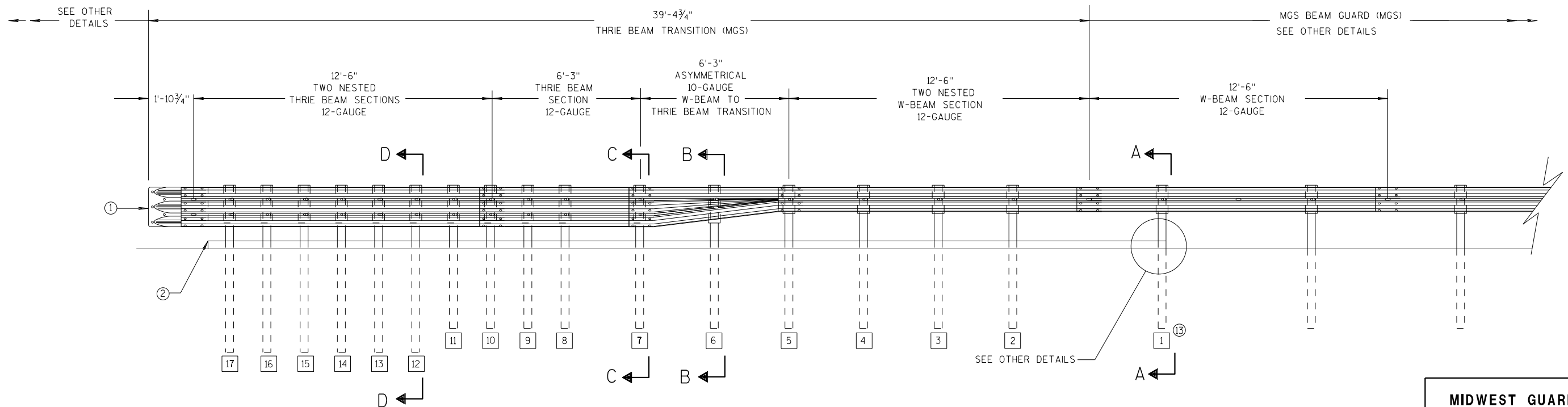
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

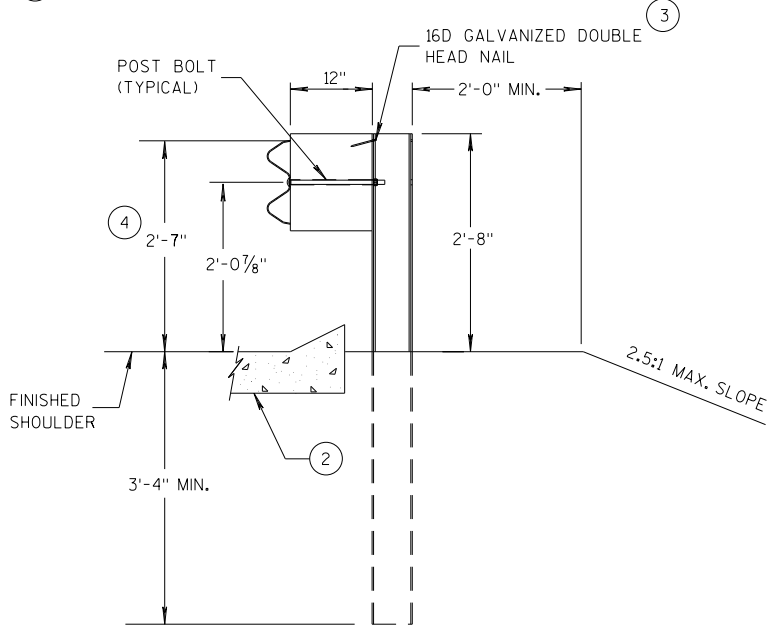
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

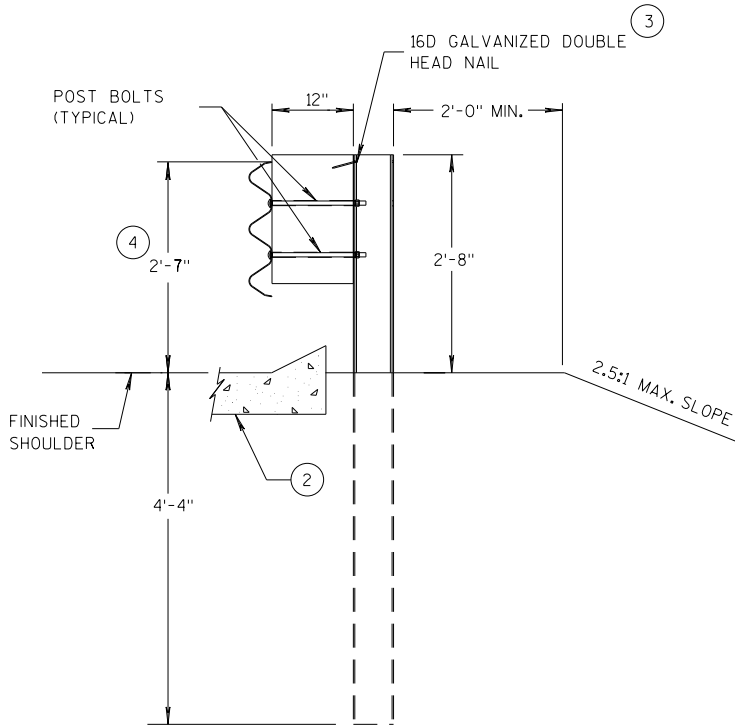
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

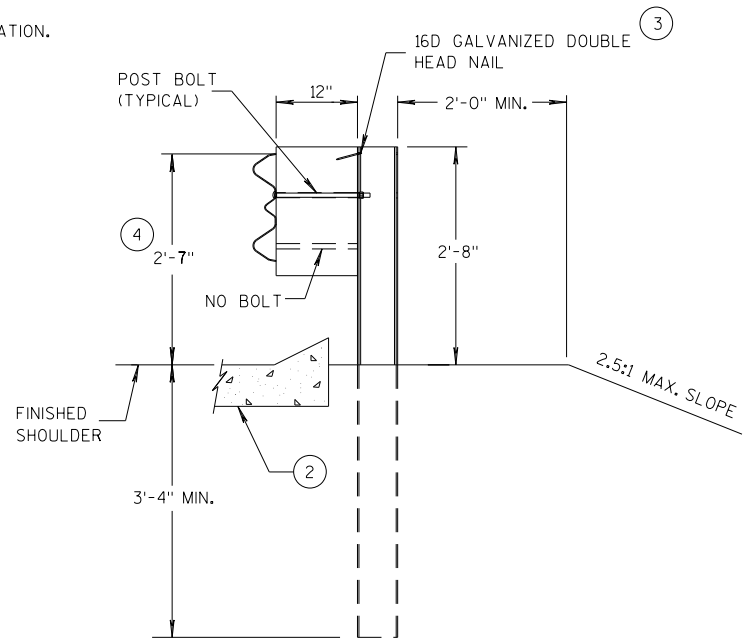
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.
- 13 STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



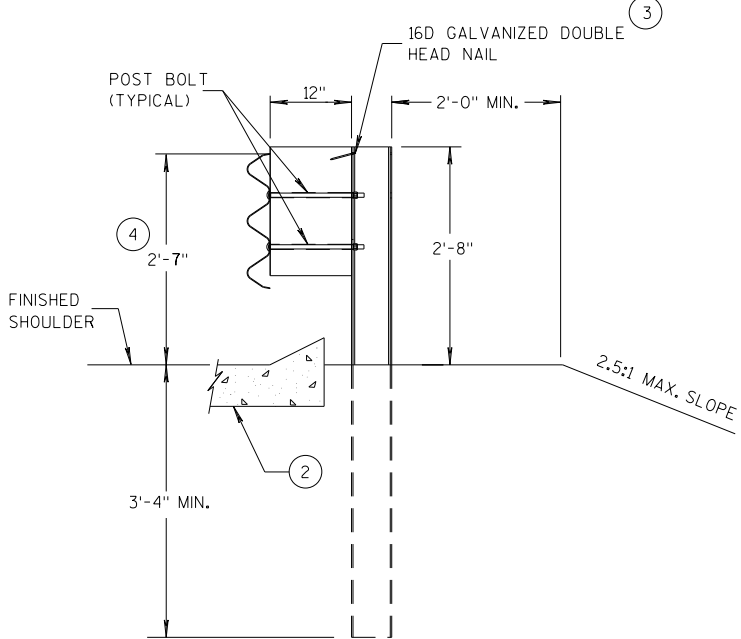
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

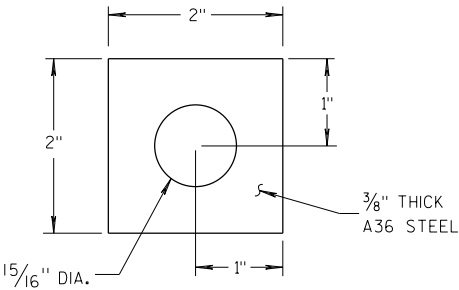
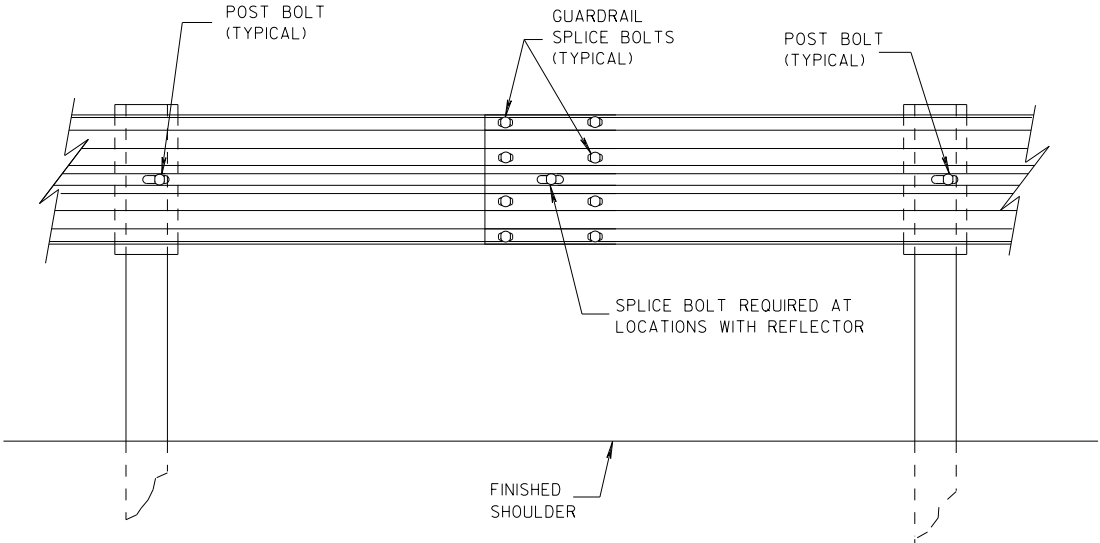
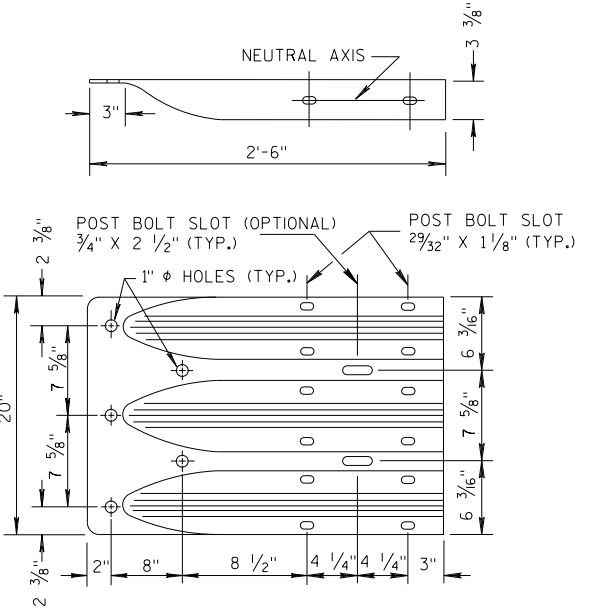


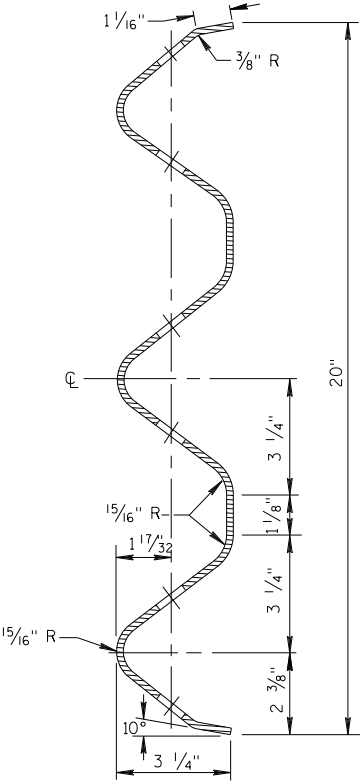
PLATE WASHER DETAIL



SPLICE DETAIL



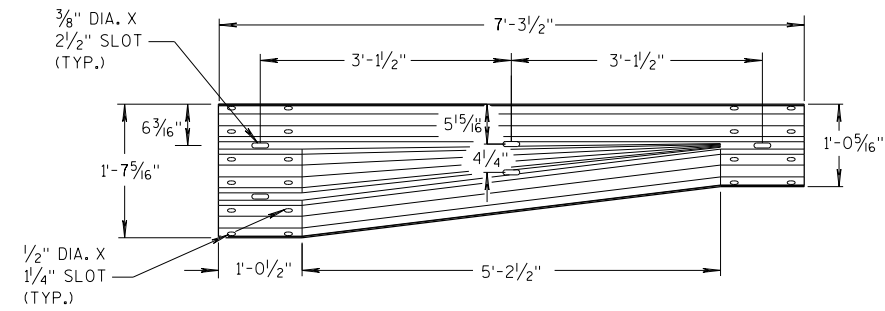
THRIE BEAM
TERMINAL CONNECTOR



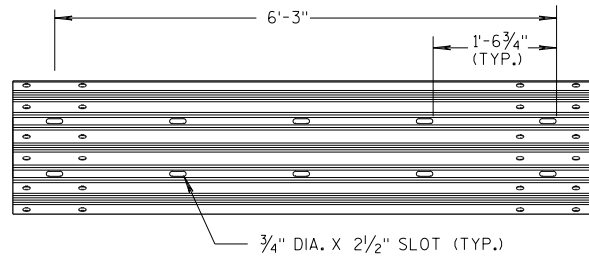
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

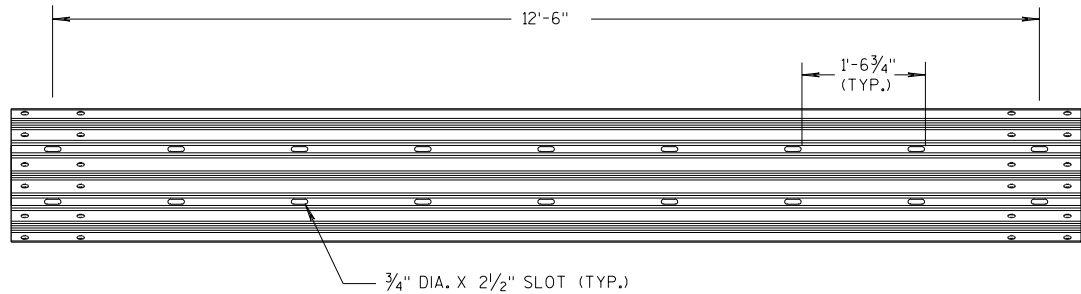
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



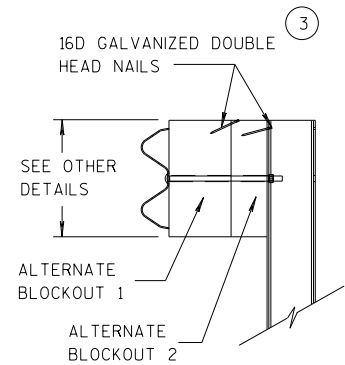
W-BEAM TO THRIE BEAM TRANSITION SECTION



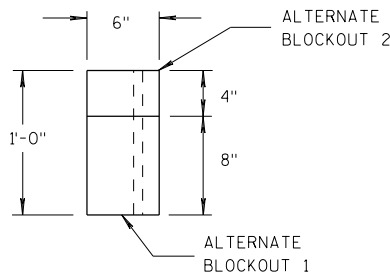
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

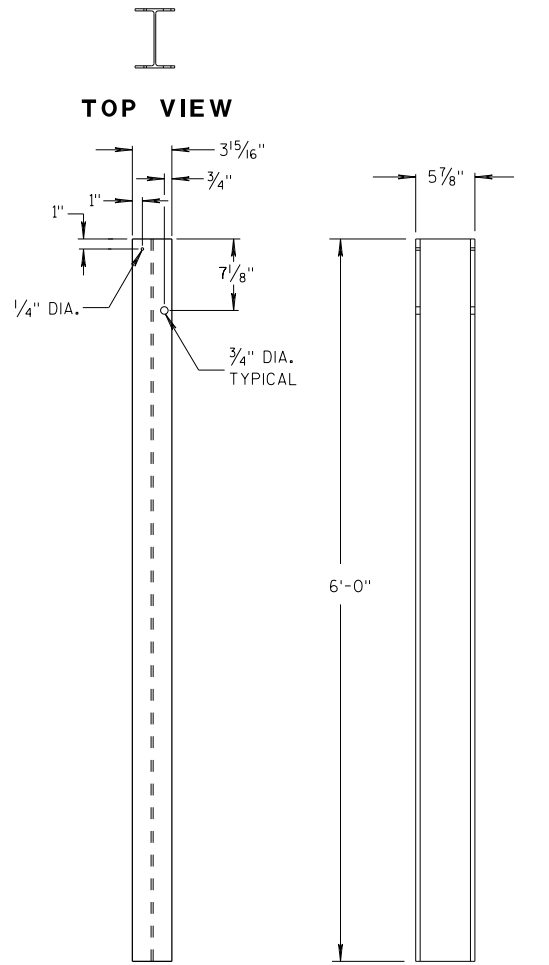


SIDE VIEW



TOP VIEW

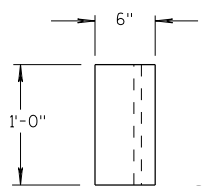
ALTERNATE WOOD BLOCKOUT DETAIL



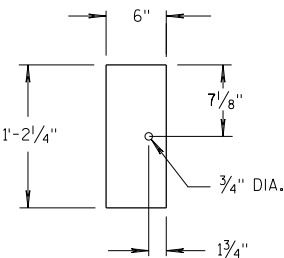
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

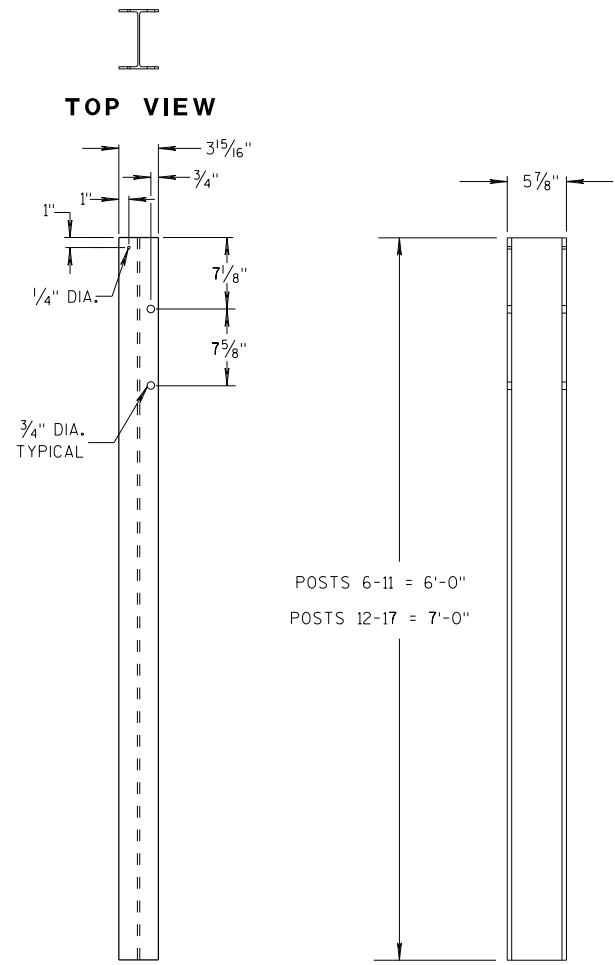


TOP VIEW



FRONT VIEW

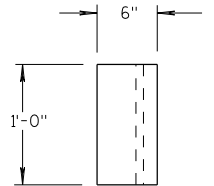
BLOCKOUT POSTS 1-5



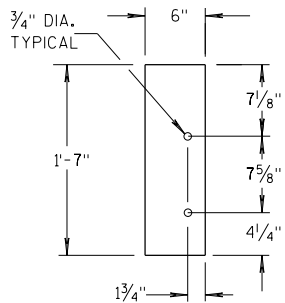
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

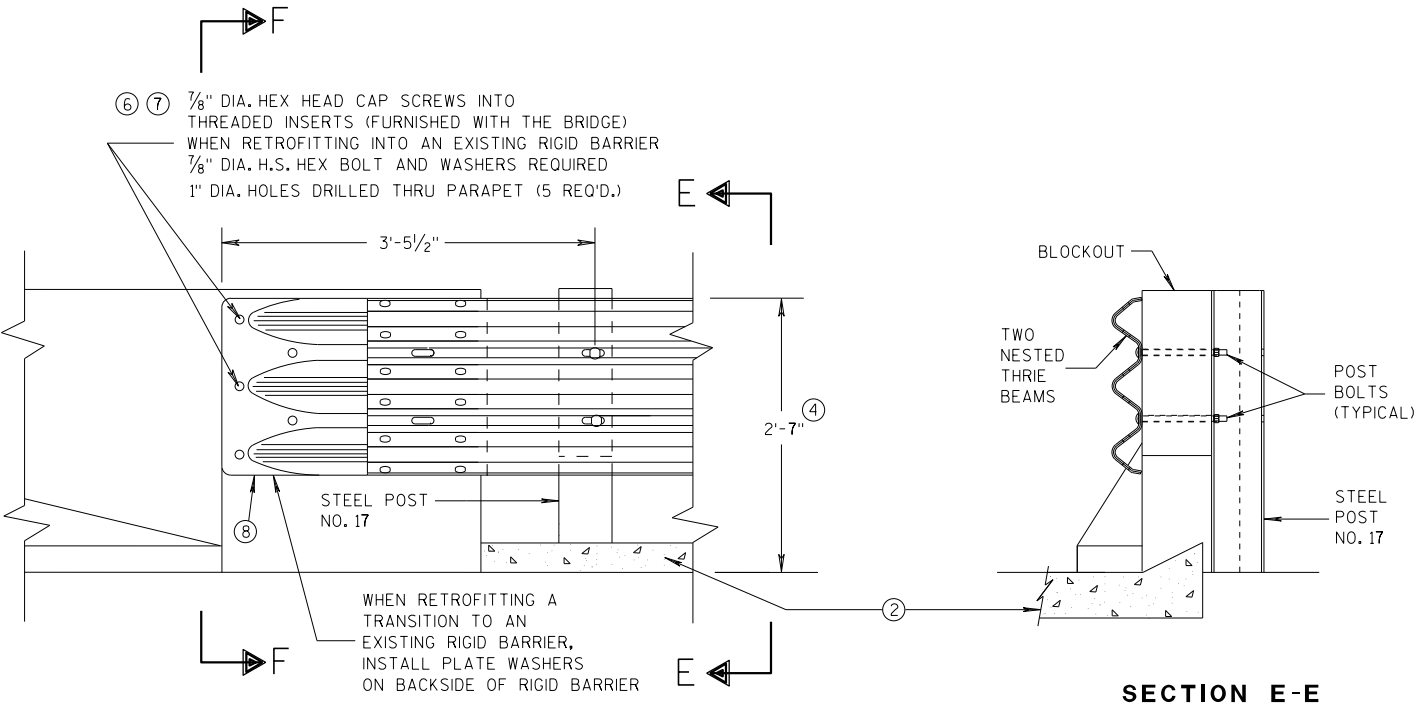
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

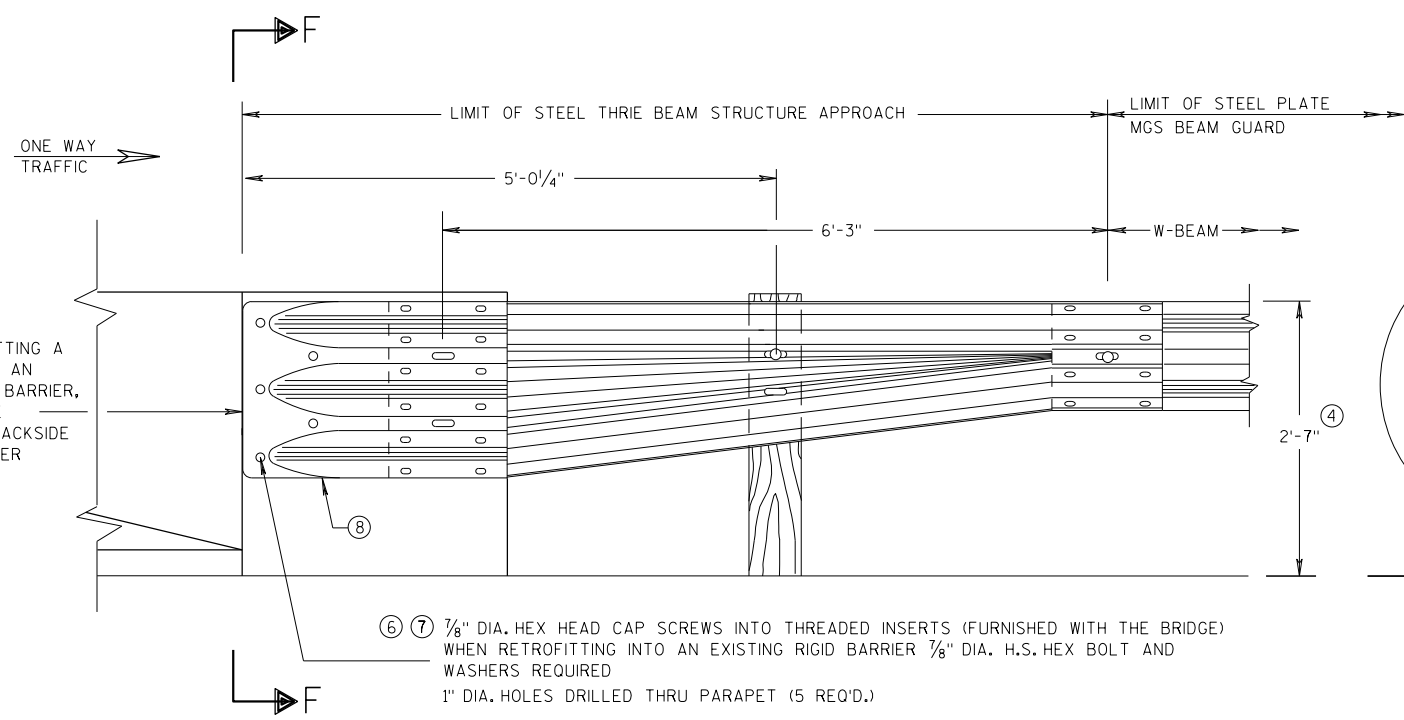
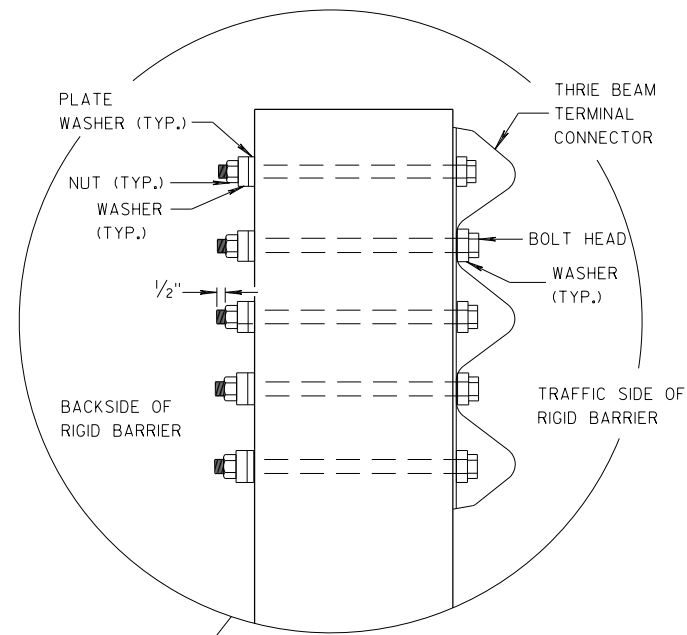
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

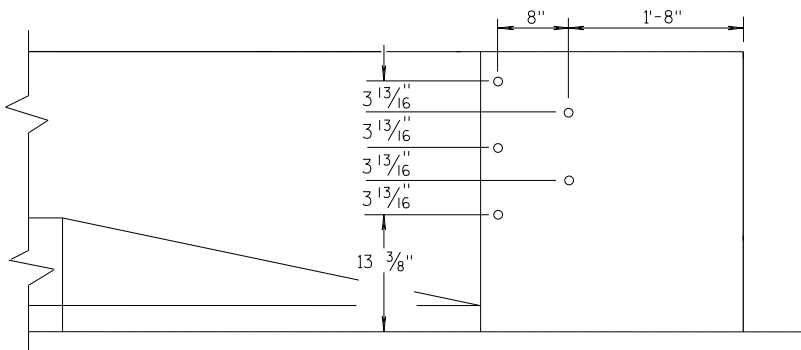


GENERAL NOTES

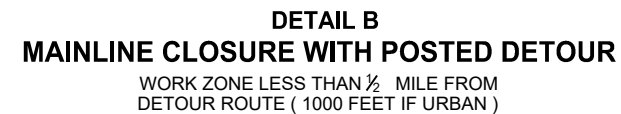
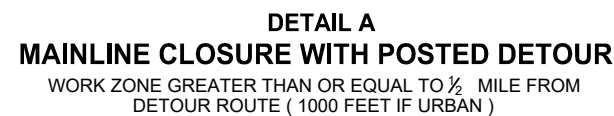
- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



SECTION F-F



MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

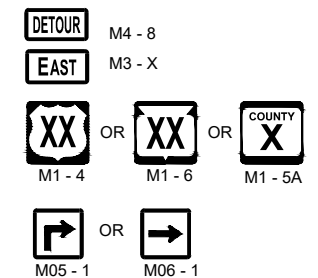


SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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



	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)



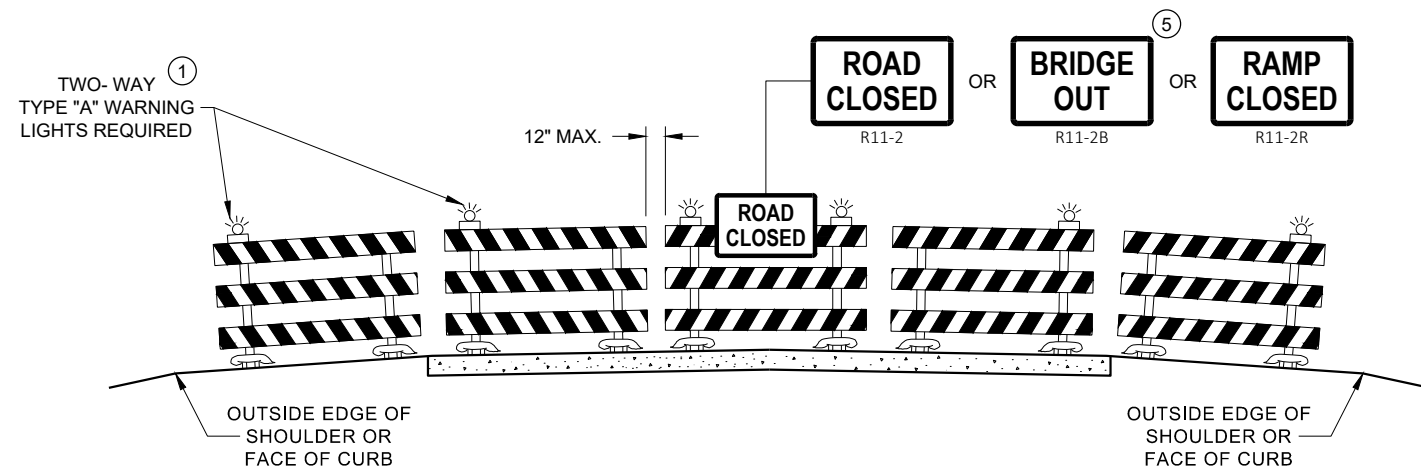
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

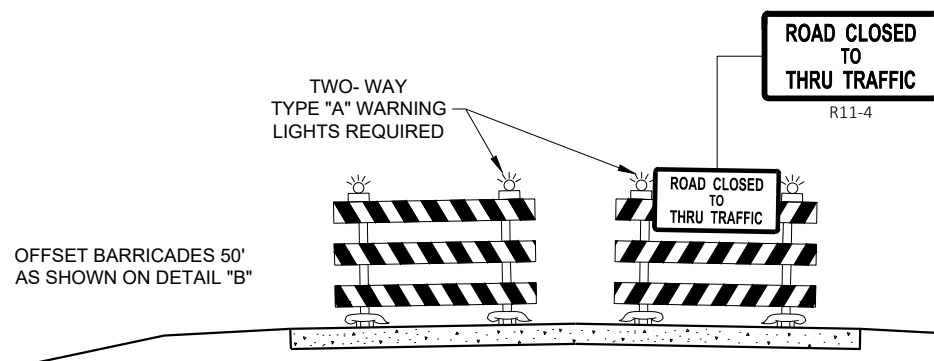
APPROVED
November 2018
DATE

/S/ Andrew Heidtke
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:

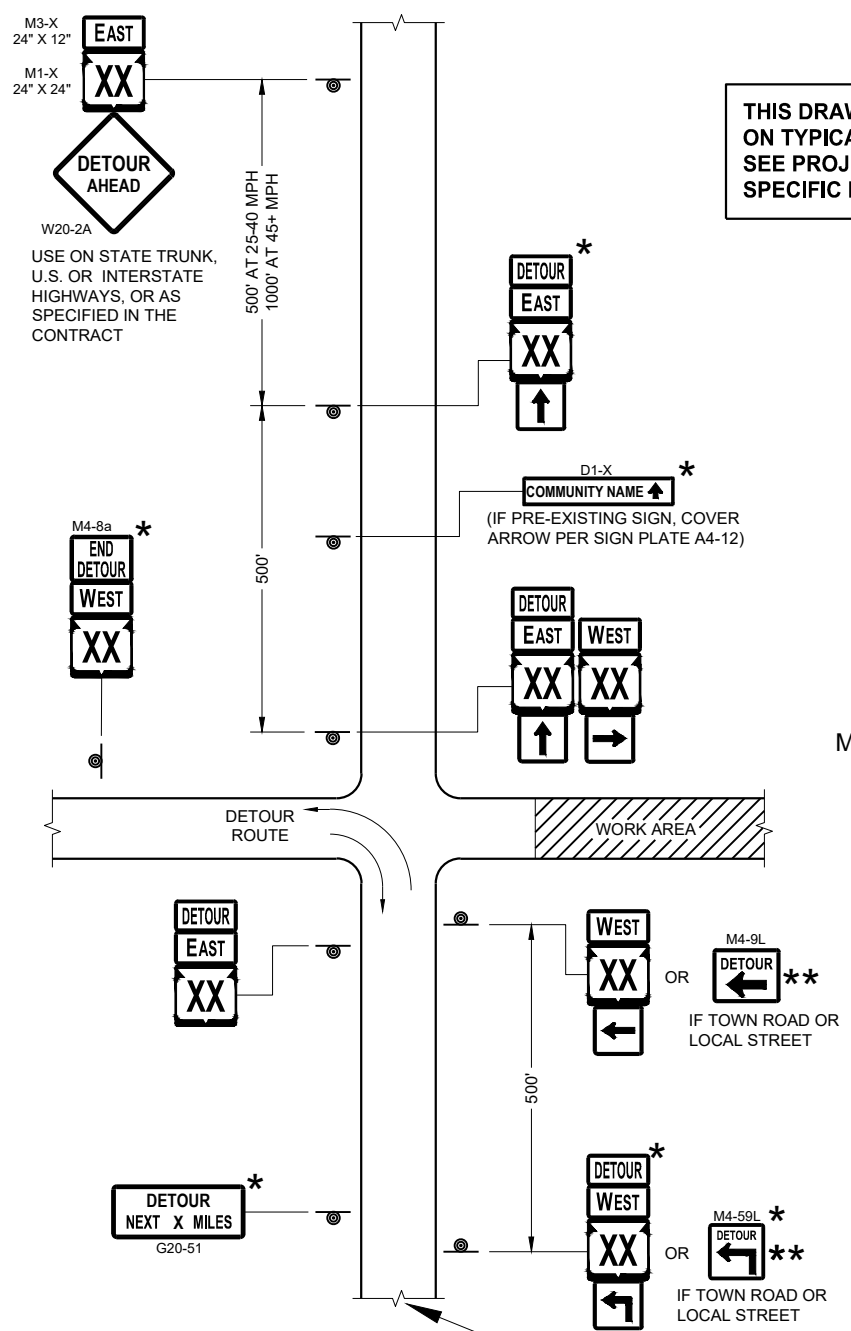
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 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
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT

DETAIL F
DETOUR SIGNING

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST M4 - 8
- DETOUR WEST M3 - X
- DETOUR AHEAD M1 - 4 OR M1 - 6 OR COUNTY M1 - 5A
- DETOUR EAST M05 - 1 OR M06 - 1 OR M06 - 1

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

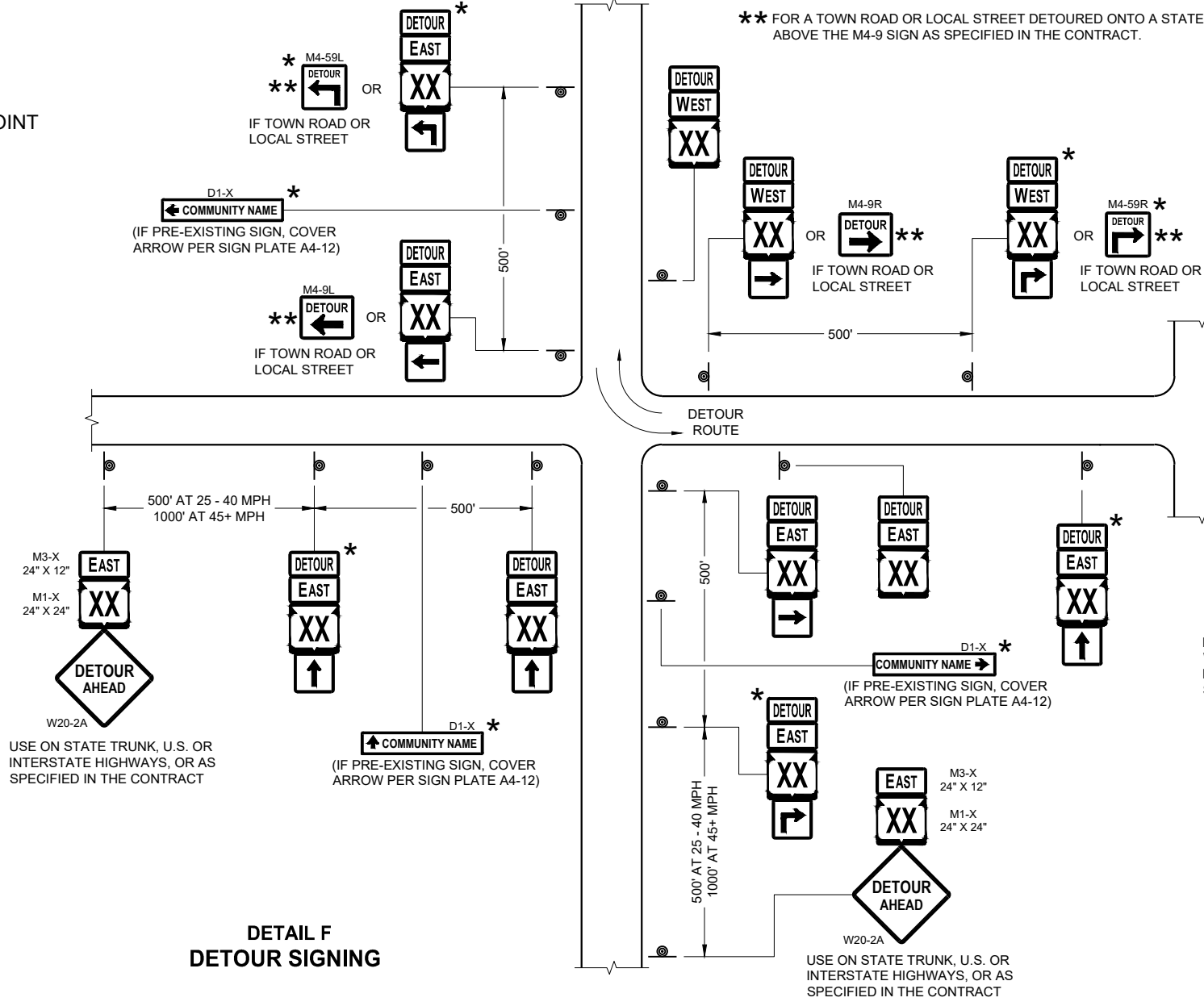
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

- 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" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-9L SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

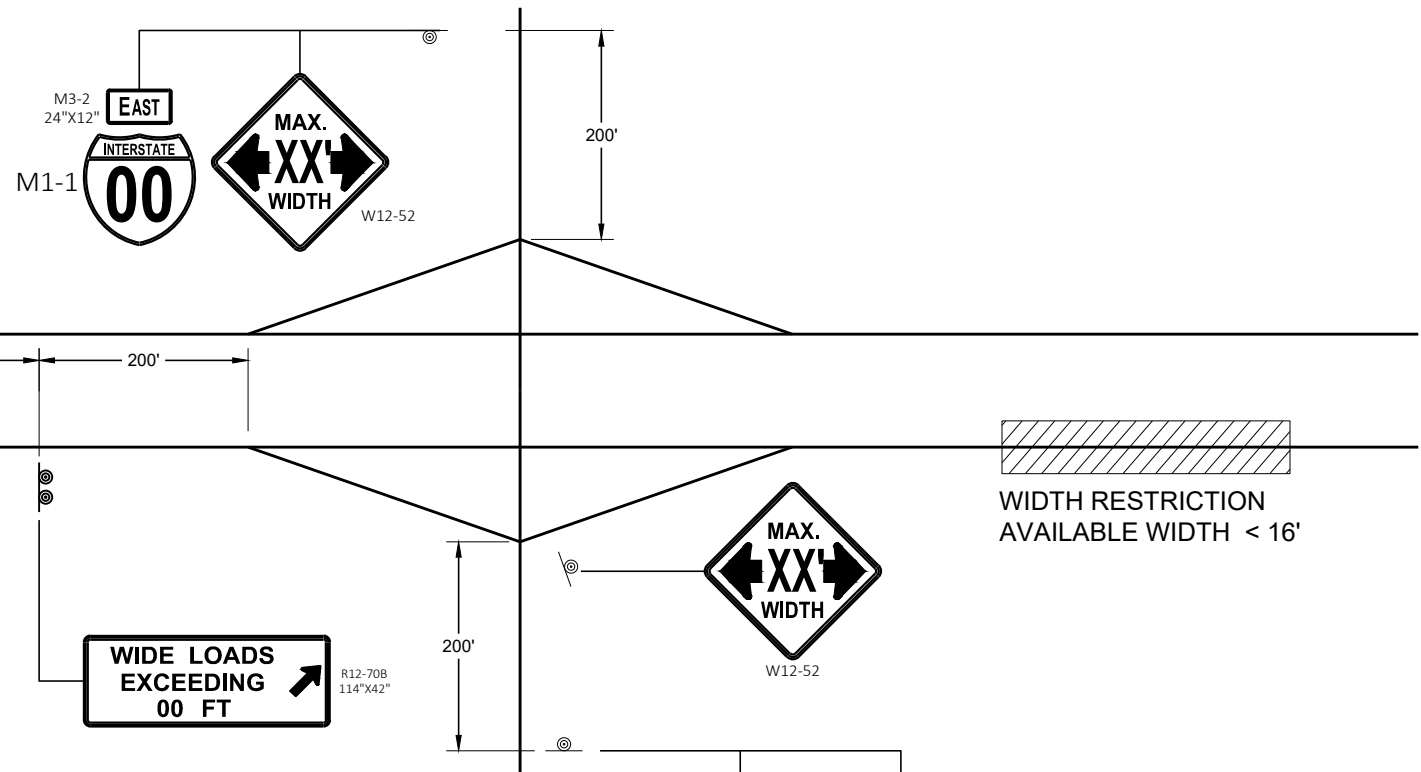


**DETOUR SIGNING
FOR MAINLINE CLOSURES**

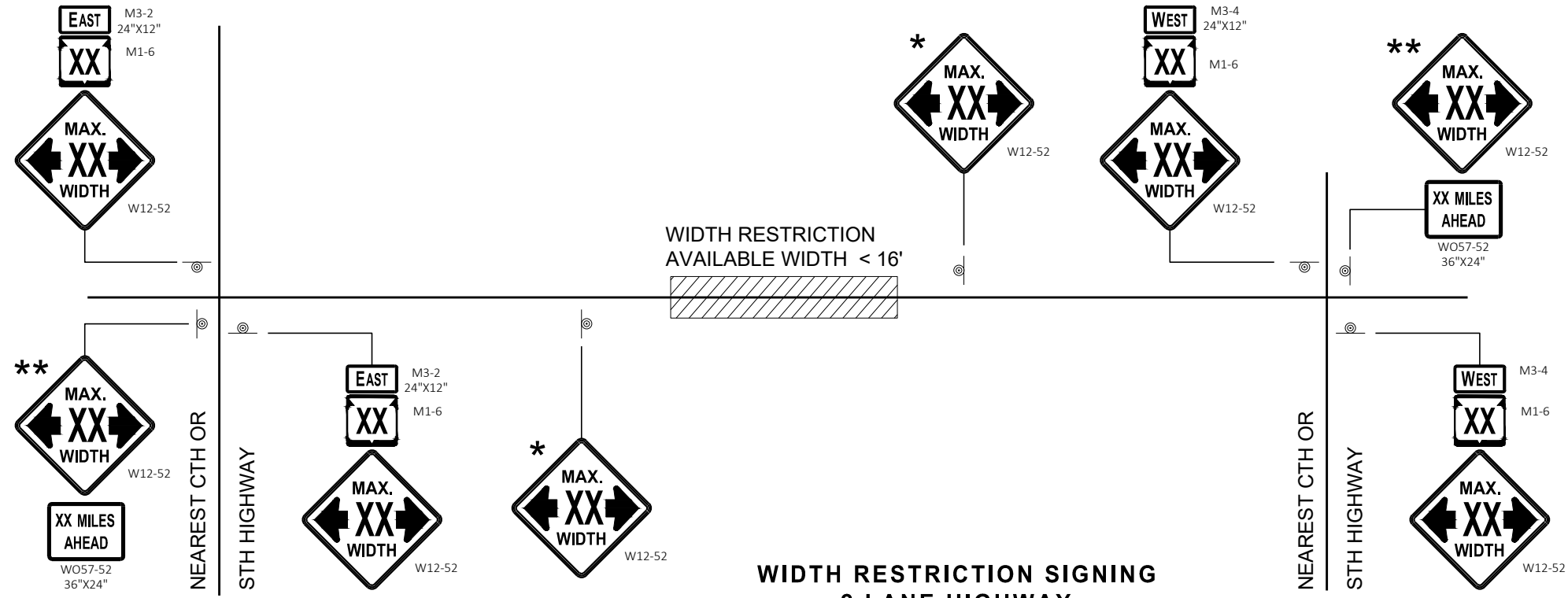
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



WIDTH RESTRICTION SIGNING



WIDTH RESTRICTION SIGNING
2 LANE HIGHWAY

LEGEND

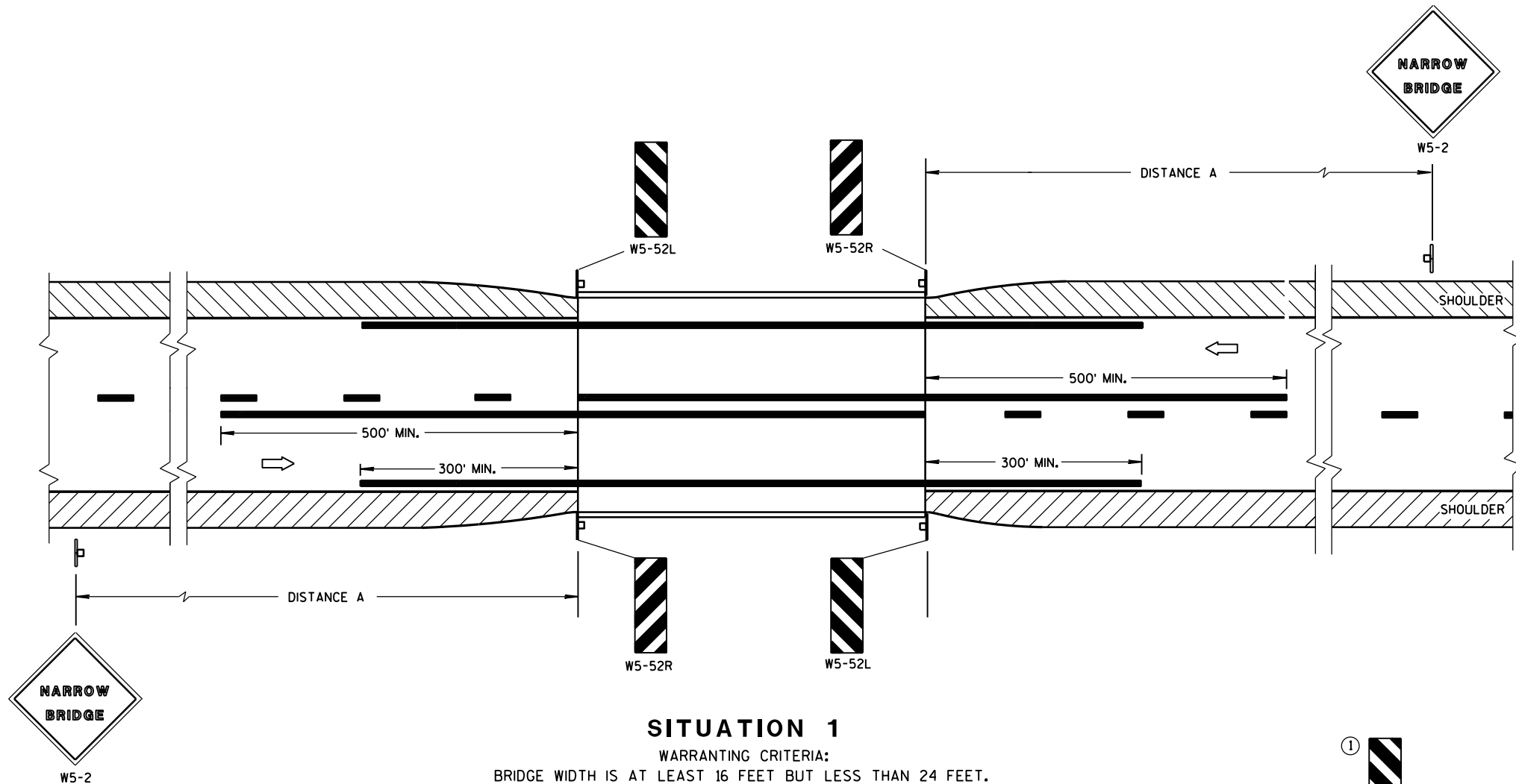
 SIGN ON PERMANENT SUPPORT

GENERAL NOTES

- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- 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.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.
- *** PLACE 500 FEET BEFORE THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.
- **** SIGN SHALL BE VISIBLE FROM ROADWAY.
- ***** ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.



ADVANCED WIDTH RESTRICTION SIGNING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2018 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



DISTANCE TABLE

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

GENERAL NOTES

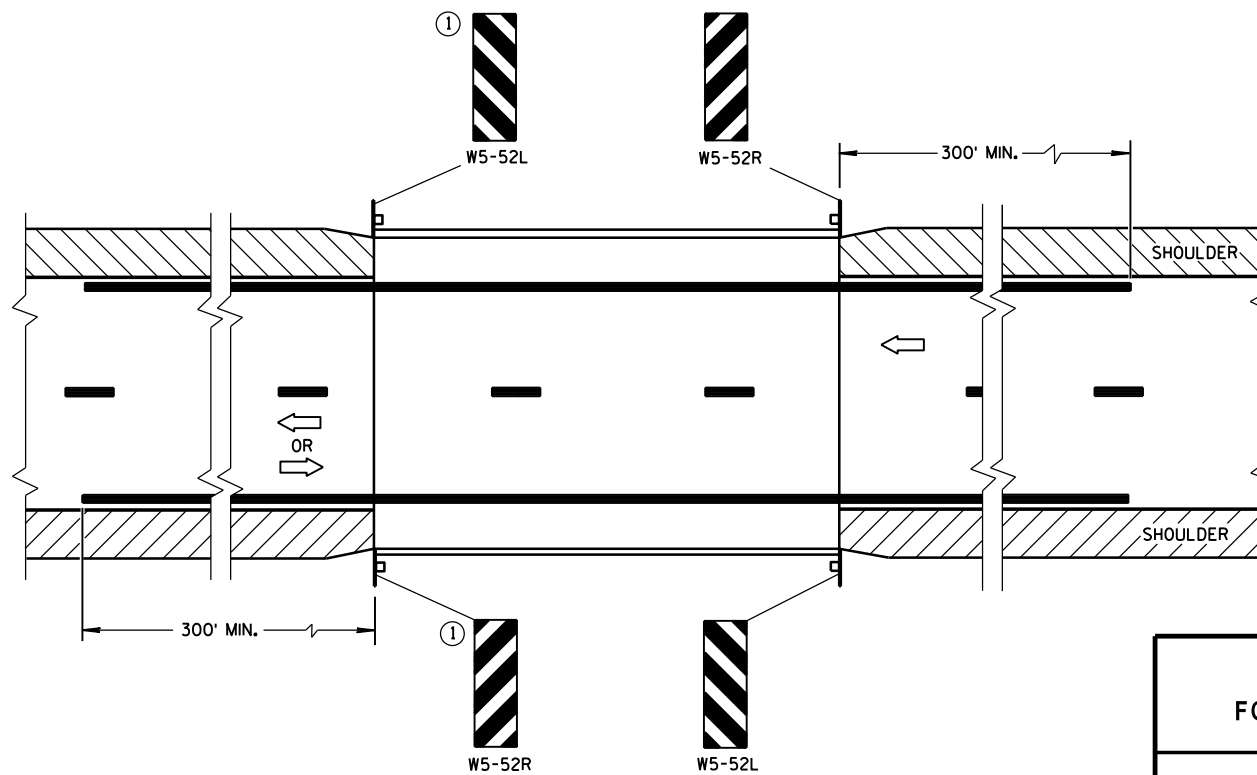
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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 2

WARRANTING CRITERIA:

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

SIGNING & MARKING FOR TWO LANE BRIDGES

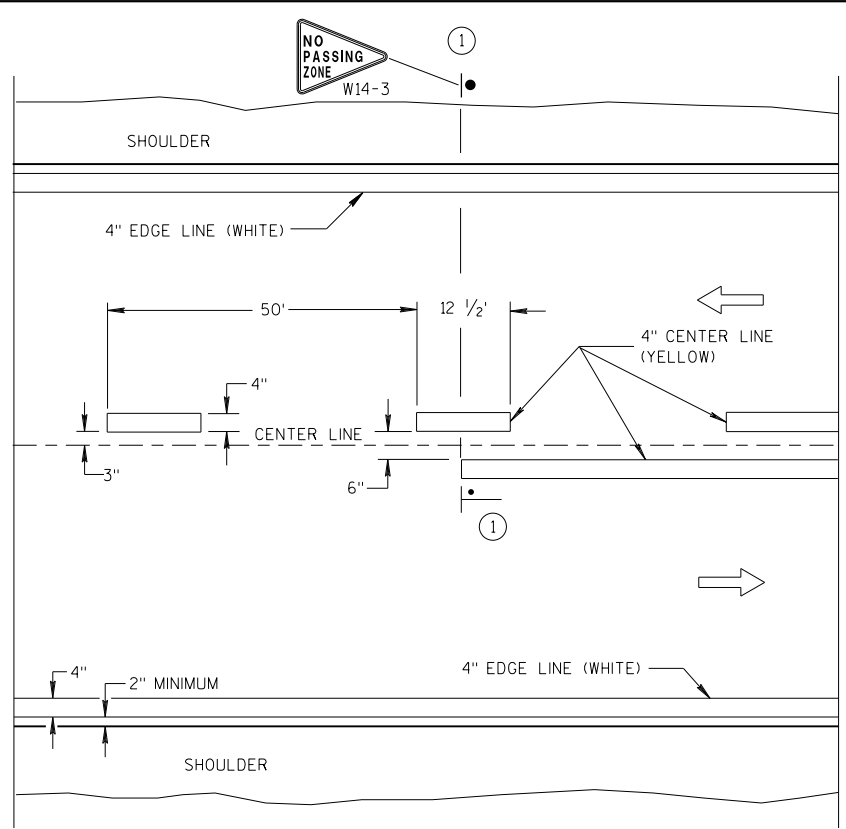
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

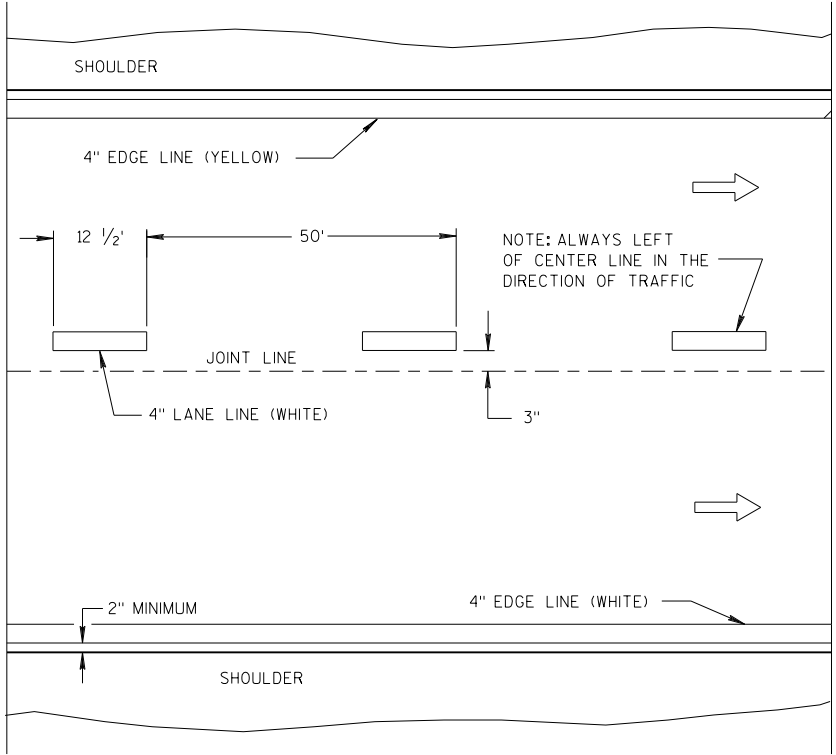
June 2017
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER

FHWA

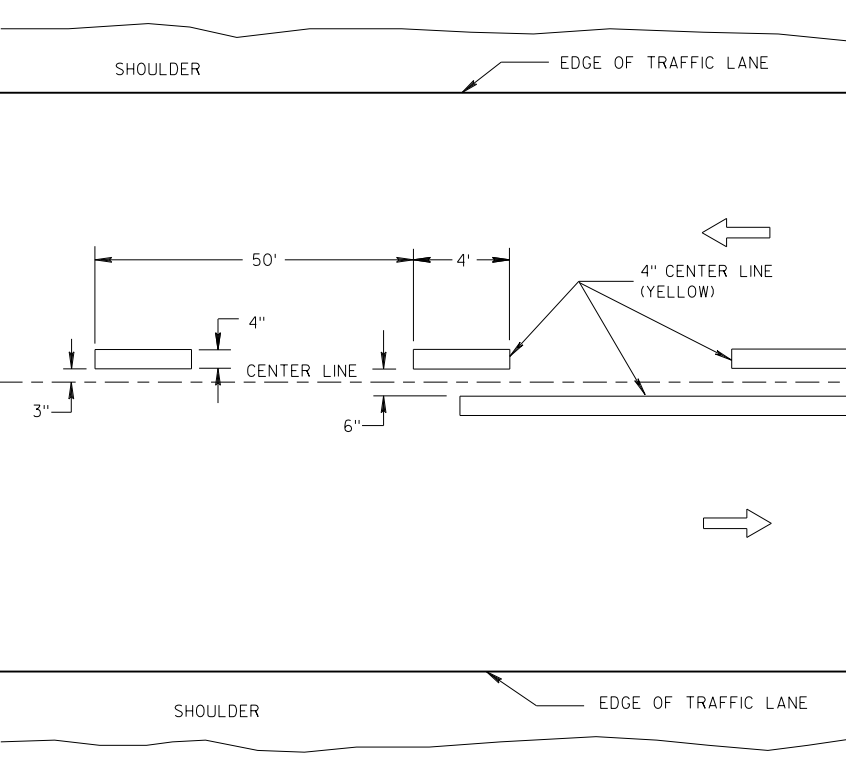


TWO WAY TRAFFIC

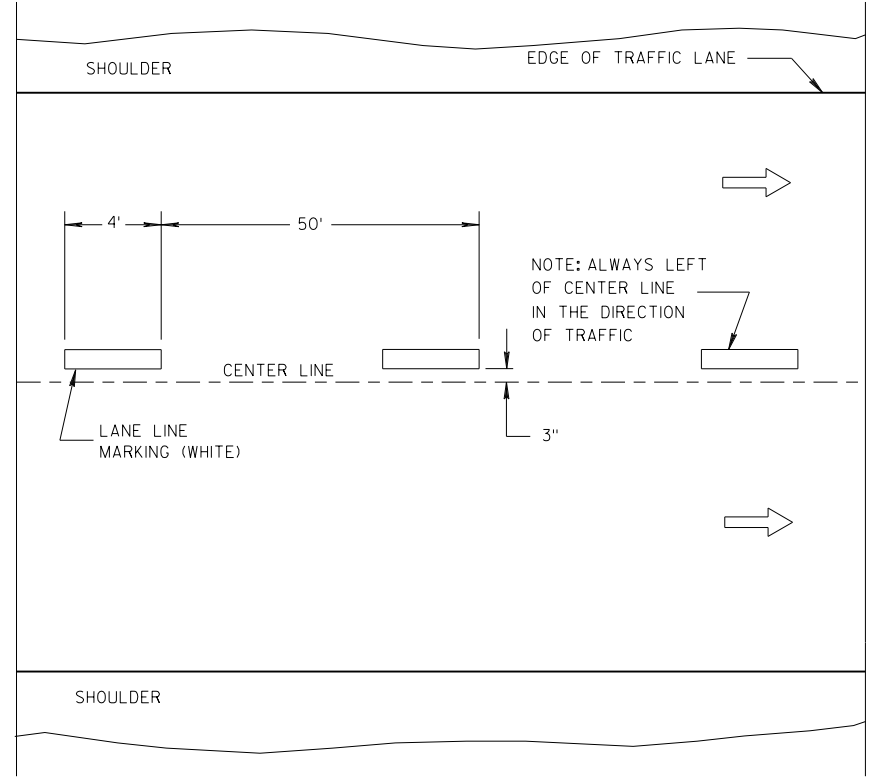


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

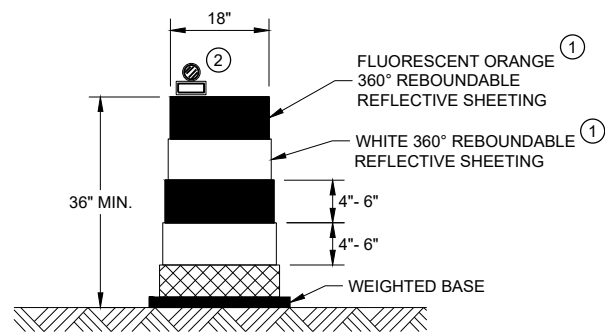
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

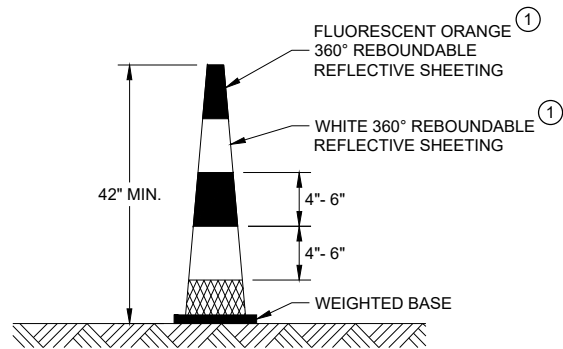
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
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DATE STATE SIGNING AND MARKING ENGINEER
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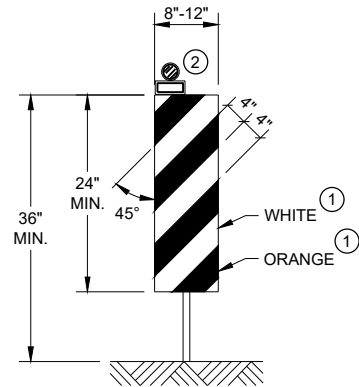


DRUM



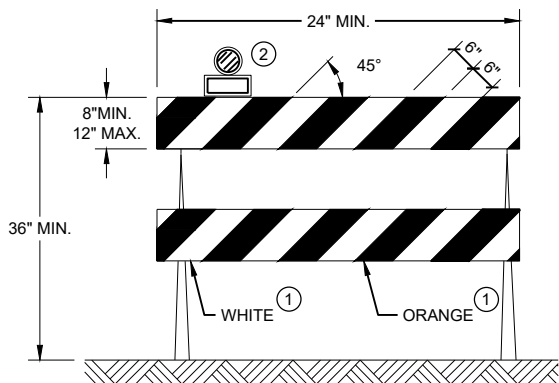
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



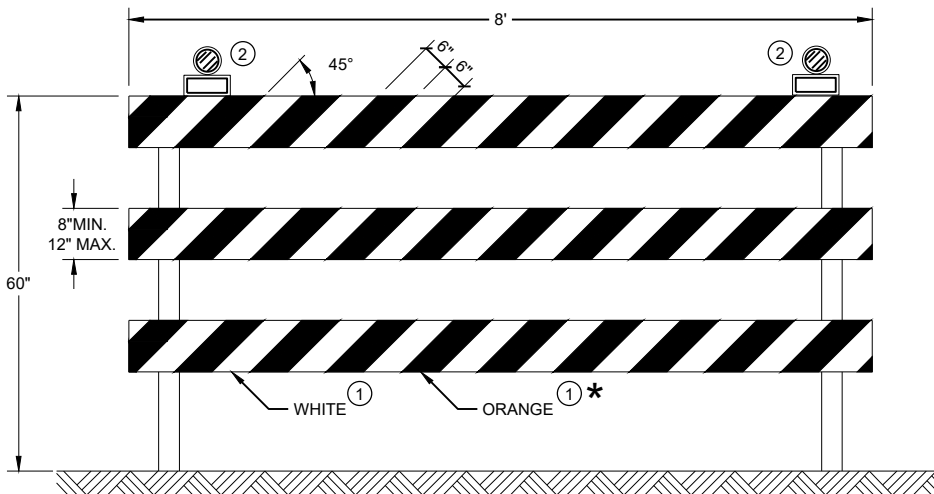
VERTICAL PANEL

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



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.

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.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

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LEGEND

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

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.

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

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

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

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

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

FLAGGING

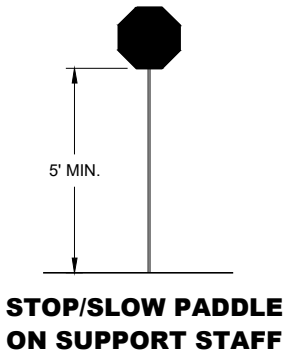
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

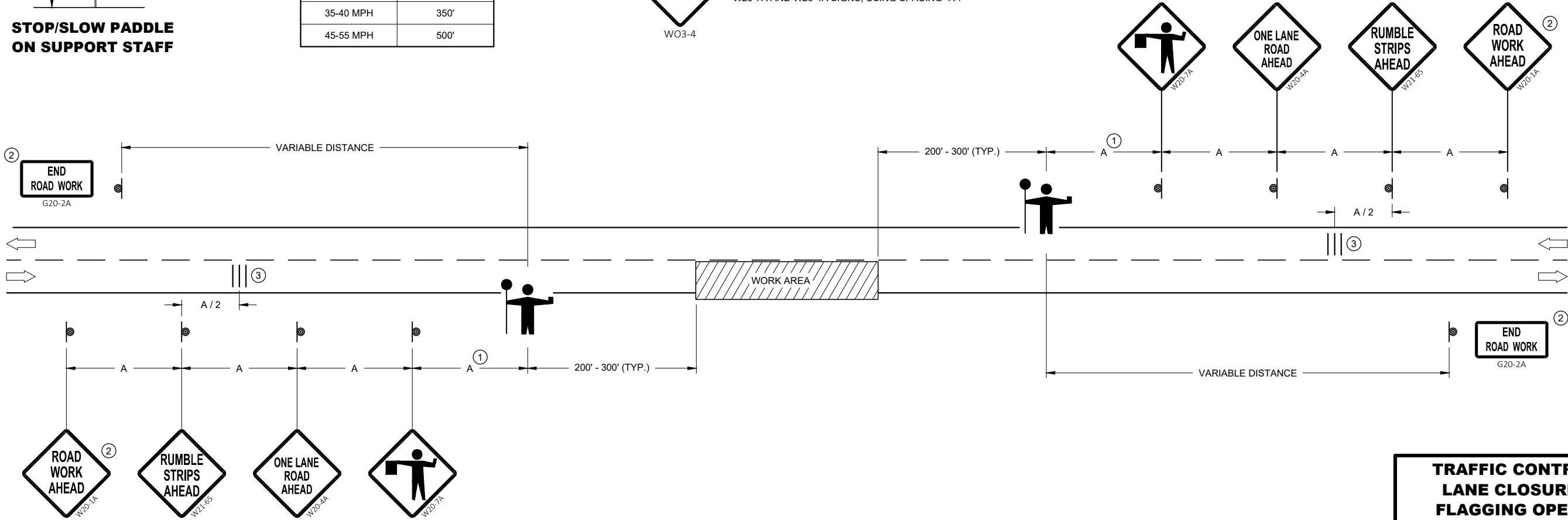


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



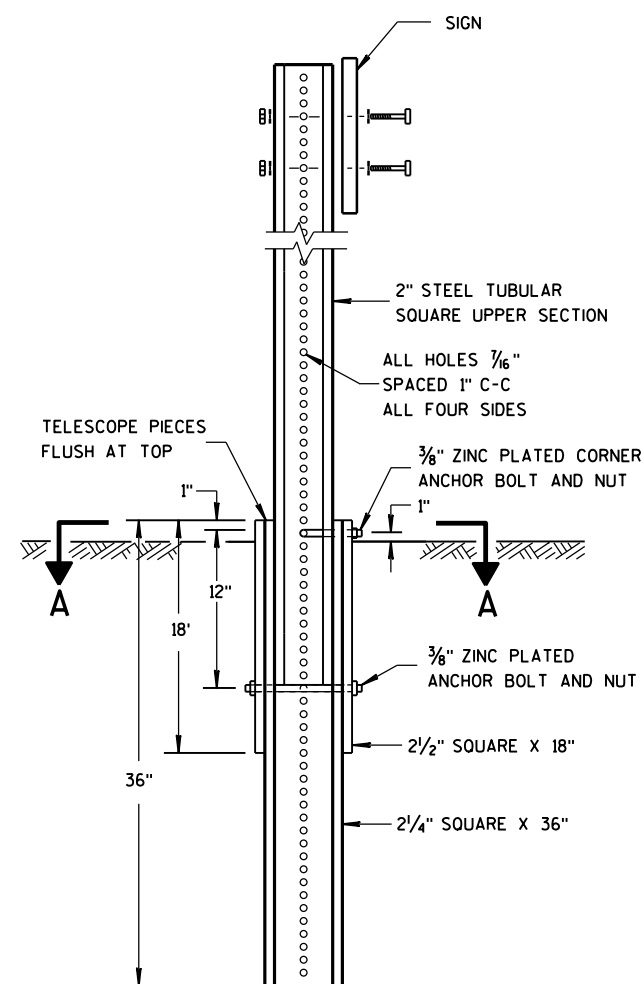
TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

**TRAFFIC CONTROL FOR
LANE CLOSURE WITH
FLAGGING OPERATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



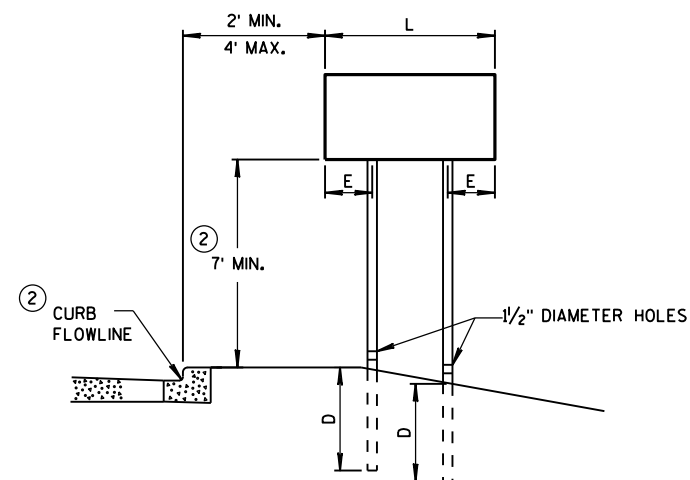
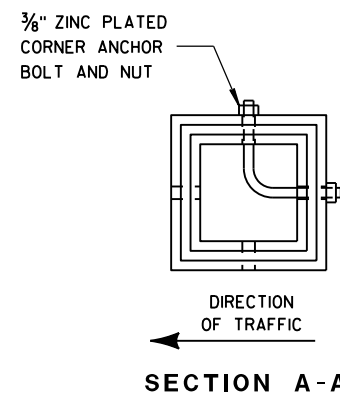
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL 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).

SIGNS LARGER THAN 27 SQ.FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

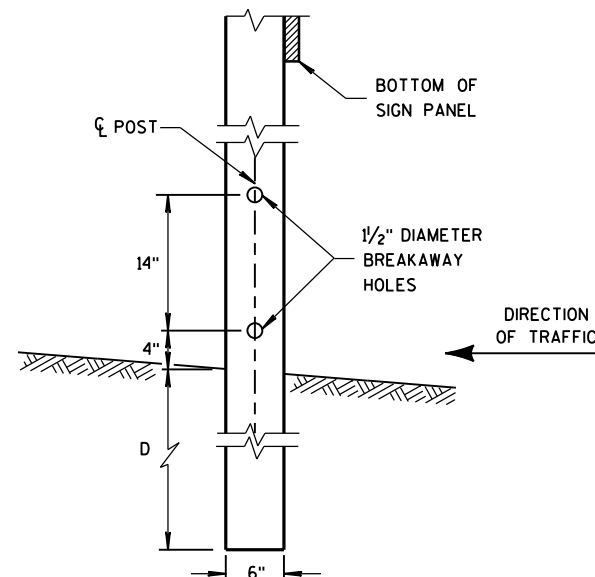


URBAN AREA

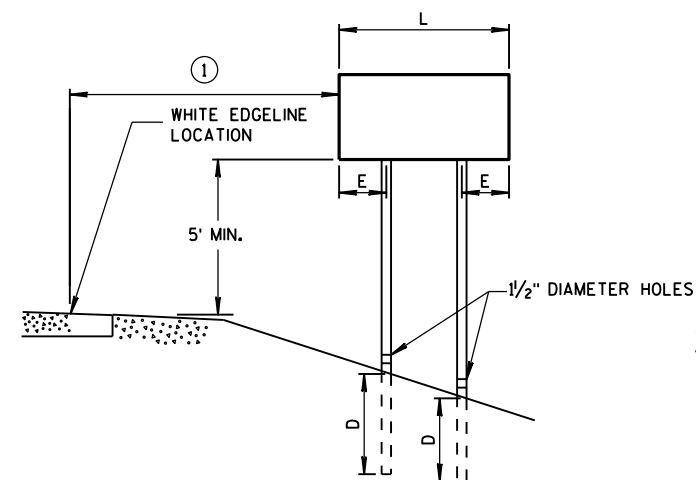
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

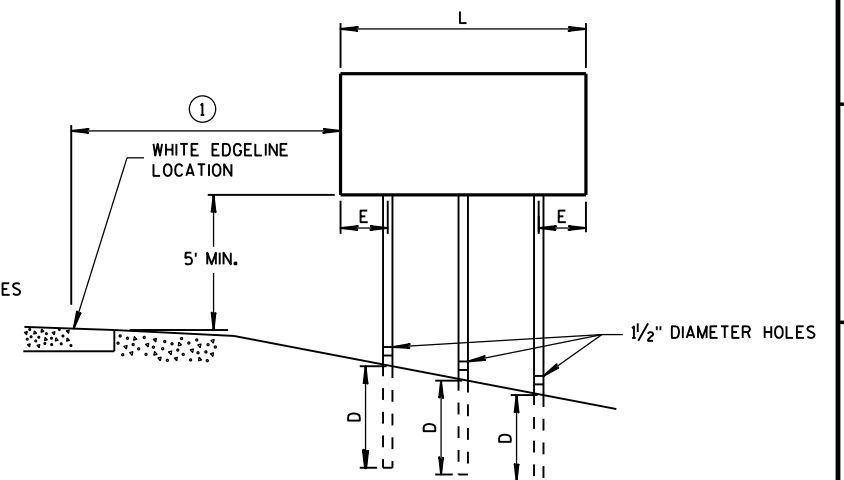
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4" x 6" WOOD POST MODIFICATION



RURAL AREA



GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

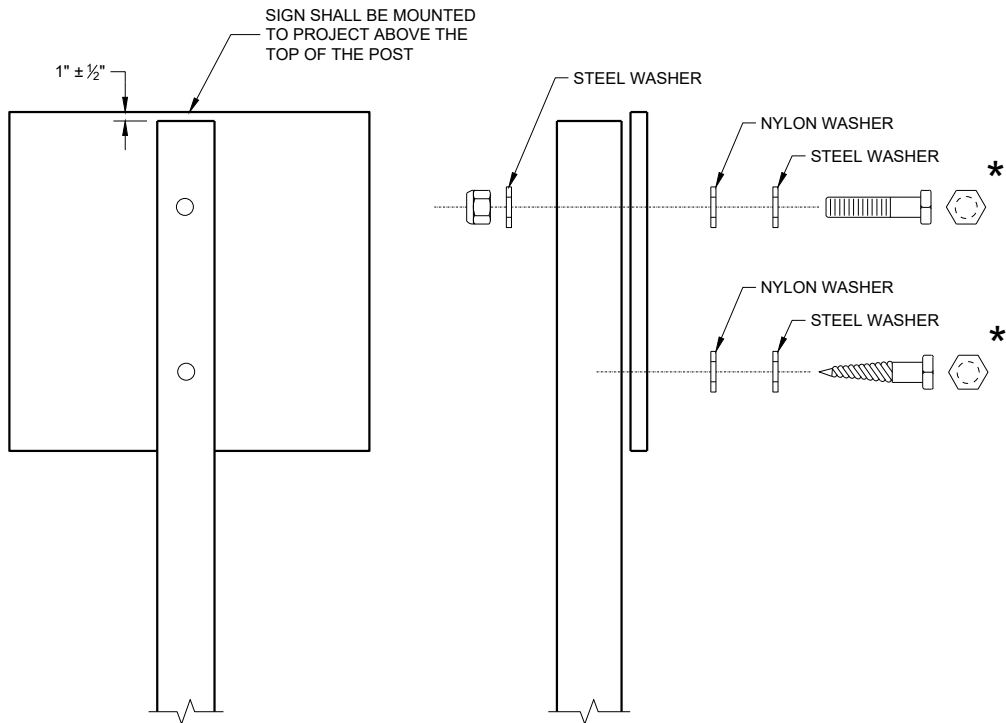
4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS
SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM
DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM
DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH
SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED
COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POST (4" x 6")
LAG SCREWS - 3/8" x 3"
MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS
RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 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 0.080 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER
THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

* PROVIDE FOR THREE BEAM
GUARD RAIL ATTACHMENT

⊖ INDICATES WING NUMBER

STATE PROJECT NUMBER

6020-04-80

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF= 1.05
OPERATING RATING FACTOR: RF= 1.37
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

MATERIAL PROPERTIES:

CONCRETE MASONRY BRIDGES:
SLAB, PARAPETS, APPROACH SLABS.....f'c = 4,000 P.S.I.
ALL OTHER (INCLUDING APPROACH SLAB FOOTING).....f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT
HIGH STRENGTH, GRADE 60.....fy = 60,000 P.S.I.
STAINLESS, GRADE 60.....fy = 60,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING,
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 170 TONS* PER
PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 25' LONG AT THE SOUTH AND NORTH ABUTMENTS.

*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.

TRAFFIC DATA

USH 51
A.A.D.T. = 4,200 (2021)
A.A.D.T. = 4,700 (2041)
R.D.S. = 55 M.P.H.

HYDRAULIC DATA

100 YEAR FREQUENCY

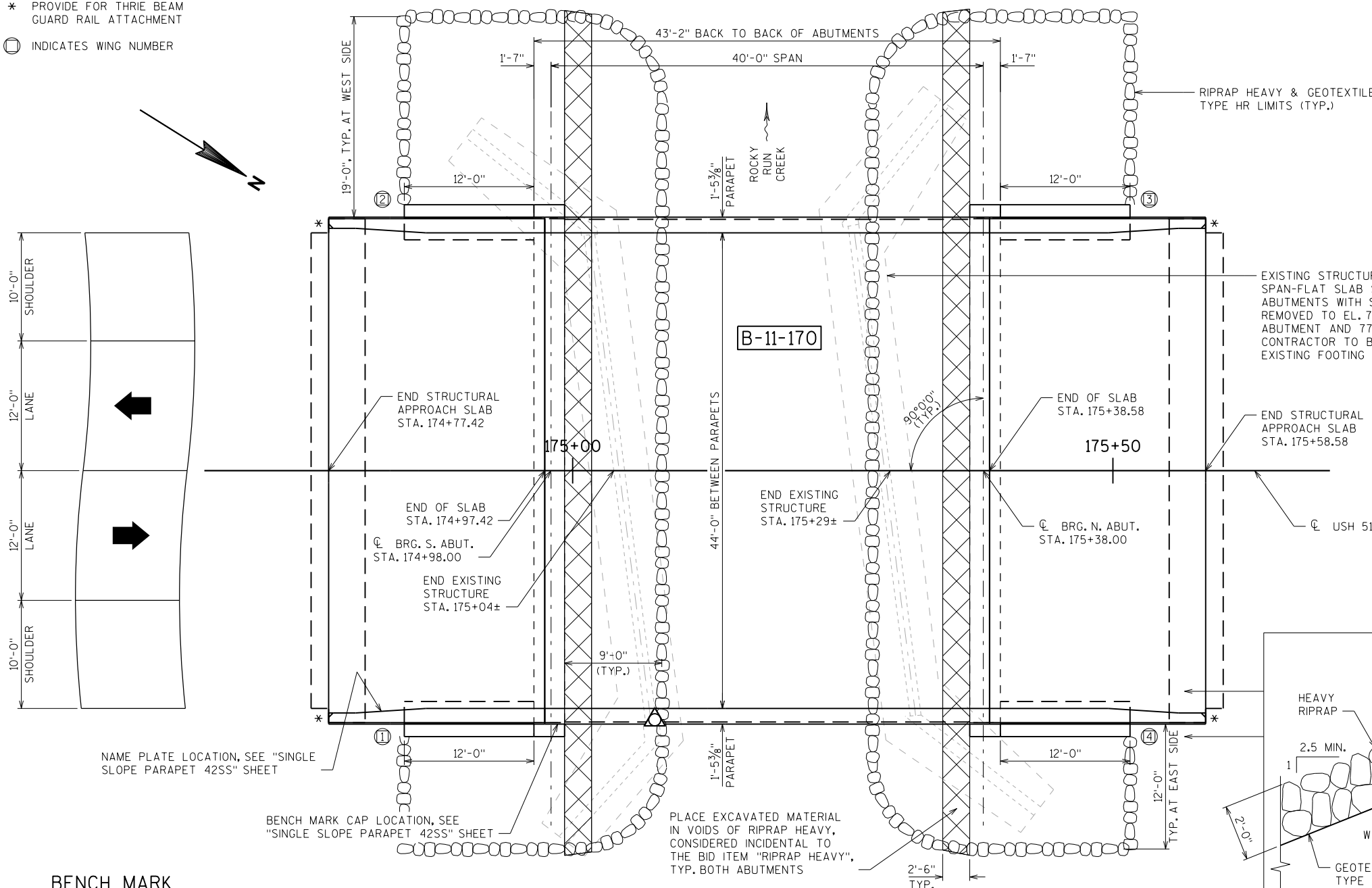
Q₁₀₀ = 900 C.F.S.
VEL₁₀₀ = 4.78 F.P.S.
HW₁₀₀ = EL. 787.44
WATERWAY AREA = 188 SQ. FT.
DRAINAGE AREA = 33.7 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q₂ = 420 C.F.S.
VEL₂ = 3.53 F.P.S.
HW₂ = EL. 785.43

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. SUPERSTRUCTURE
9. SUPERSTRUCTURE DETAILS
10. STRUCTURAL APPROACH SLABS
11. SINGLE SLOPE PARAPET 42SS

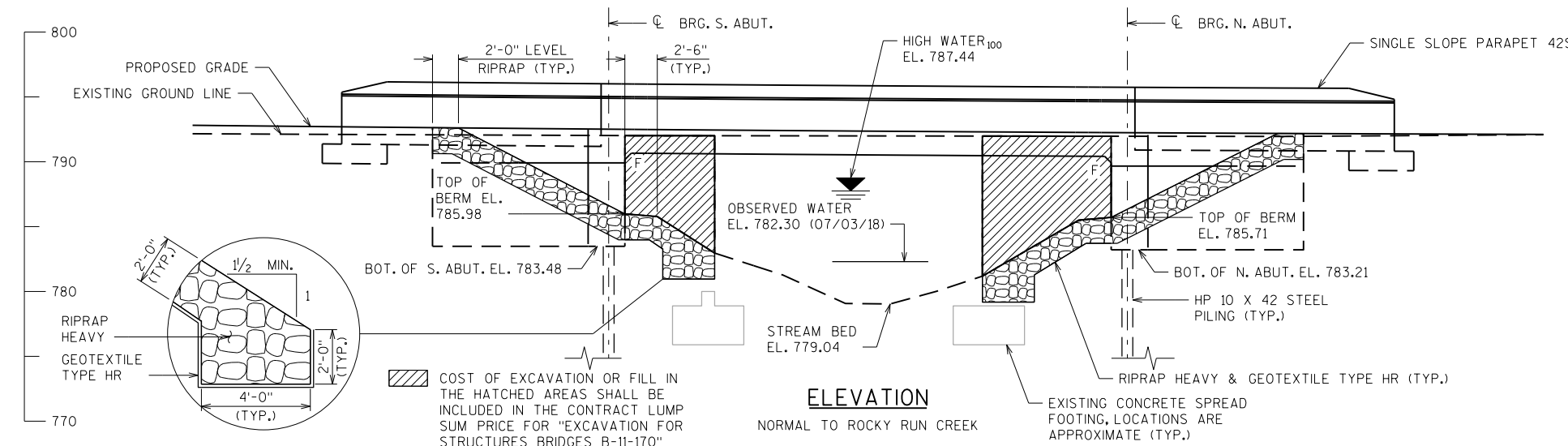


BENCH MARK

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
CP3	175+07.58	22.95' RT	EXISTING CP ON WINGWALL	791.93

PLAN

SINGLE SPAN-FLAT SLAB



ELEVATION

NORMAL TO ROCKY RUN CREEK

TYPICAL FILL SECTION AT END OF STRUCTURAL APPROACH SLABS



STRUCTURE DESIGN CONTACTS

BUREAU OF STRUCTURES:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
LINDA KRUEGER (608) 821-8704

NO.	DATE	REVISION	BY
-----	------	----------	----

Michael Baker MICHAEL BAKER INTERNATIONAL
1255 FOURIER DRIVE
SUITE 100
MADISON, WI 53717

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED *William C. Dreher* SDR **02/14/20**
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-11-170

USH 51 OVER ROCKY RUN CREEK

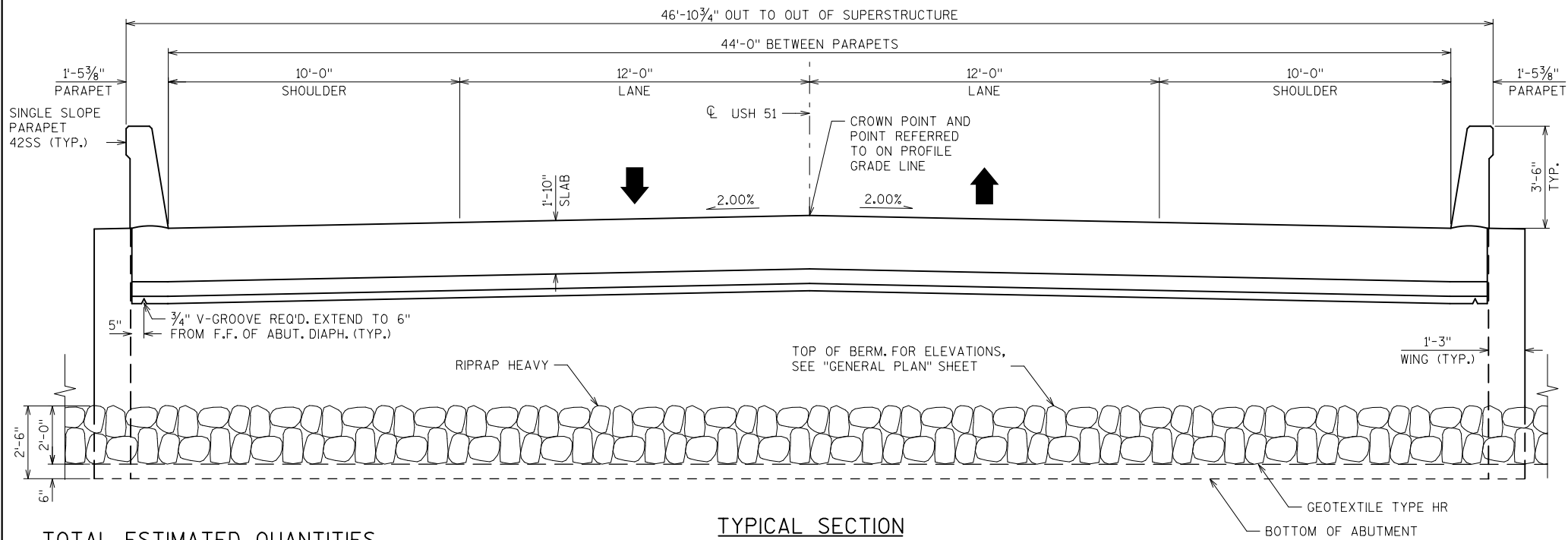
COUNTY COLUMBIA TOWN/CITY/VILLAGE DEKORRA

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY TJN DESIGN CK'D. JRS DRAWN BY TJN PLANS CK'D. JRS

GENERAL PLAN

SHEET 1 OF 11



GENERAL NOTES

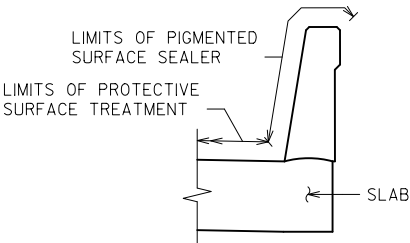
- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
- BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
- AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL. ALSO EXCLUDED IS THE "BASE AGGREGATE DENSE 1/4" AS DETAILS ON THE STRUCTURAL APPROACH SLAB SHEET.
- THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAILS SHOWN IN THE PLANS.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK AND APPROACH SLAB SURFACES INCLUDING THE PAVING NOTCH, SEE PROTECTIVE SURFACE TREATMENT DETAIL ON THIS SHEET.
- PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF THE PARAPETS, INCLUDING PARAPETS ON APPROACH SLABS, SEE DETAIL THIS SHEET.
- THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.
- SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
- THE EXISTING STRUCTURE (B-11-862) IS A SINGLE SPAN-FLAT SLAB WITH AN OVERALL LENGTH OF 27.0' AND AN OVERALL WIDTH OF 43.0'. THE ENTIRE SUPERSTRUCTURE IS TO BE REMOVED. SAWCUT AND REMOVE EXISTING CONCRETE ABUTMENTS AND WINGS TO ELEVATION 780± AT SOUTH ABUTMENT AND 779± AT NORTH ABUTMENT.
- THE EXISTING GROUND LINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR THE STRUCTURE.
- THE PROPOSED SUBSTRUCTURE UNITS ARE PARTIALLY LOCATED OVER THE EXISTING SUBSTRUCTURE UNITS. NO ADDITIONAL COMPENSATION WILL BE MADE FOR REMOVALS, DEWATERING, OR OTHER INCIDENTAL WORK REQUIRED FOR NEW SUBSTRUCTURE PLACEMENT.

TOTAL ESTIMATED QUANTITIES

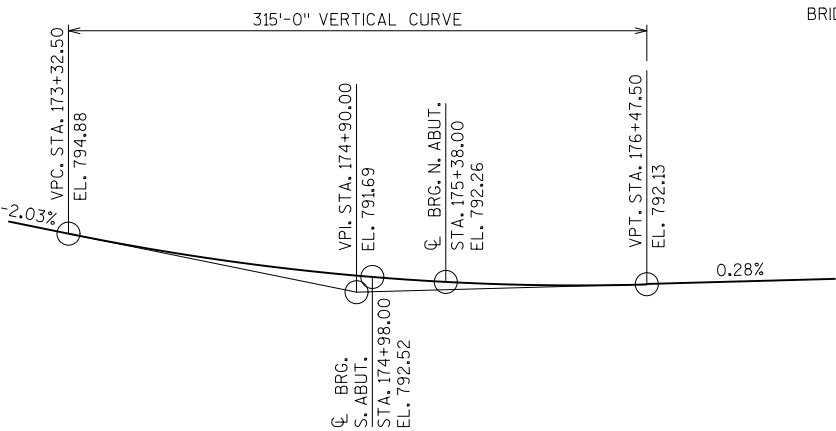
ITEM NUMBER	ITEM DESCRIPTION	UNIT	SOUTH APPROACH	SOUTH ABUTMENT	NORTH ABUTMENT	NORTH APPROACH	SUPER.	TOTAL
203.0210.S.01	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-11-862	LS	---	---	---	---	---	1
203.0600.S.01	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS 175+20	LS	---	---	---	---	---	1
206.1000.01	EXCAVATION FOR STRUCTURES BRIDGES B-11-170	LS	---	---	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	139	130	---	---	269
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	137	---	---	139	---	276
502.0100	CONCRETE MASONRY BRIDGES	CY	65	53	53	65	153	389
502.3200	PROTECTIVE SURFACE TREATMENT	SY	99	---	---	99	226	424
502.3210	PIGMENTED SURFACE SEALER	SY	20	---	---	20	41	81
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	---	3,110	3,110	---	---	6,220
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	10,890	1,690	1,690	10,890	27,420	52,580
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	---	---	---	---	430	430
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	13	13	---	---	26
550.1100	PIILING STEEL HP 10-INCH X 42 LB	LF	---	175	175	---	---	350
606.0300	RIPRAP HEAVY	CY	---	115	115	---	---	230
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---	100	99	---	---	199
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	---	2	2	---	---	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	---	41	41	---	---	82
645.0120	GEOTEXTILE TYPE HR	SY	---	189	189	---	---	378
	NON-BID ITEMS							
	FILLER	SIZE						1/2 ", 3/4 " & 1 1/2 "

LEGEND

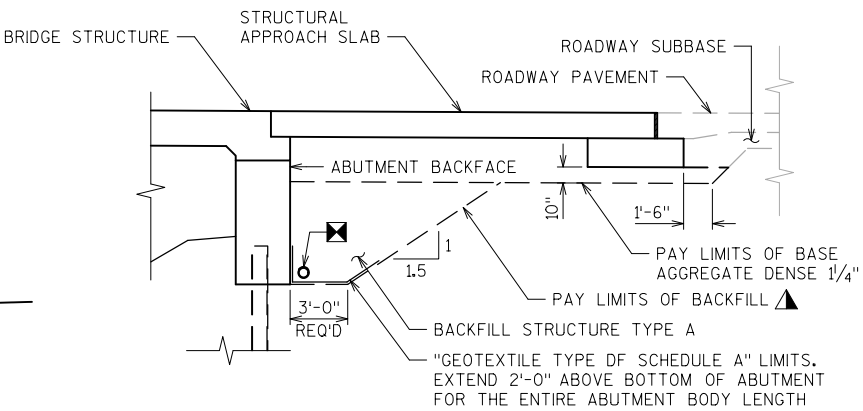
- ▲ BACKFILL PAYLIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ▣ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL, SEE "SOUTH ABUTMENT" AND "NORTH ABUTMENT" SHEETS.



PROTECTIVE SURFACE
TREATMENT DETAIL

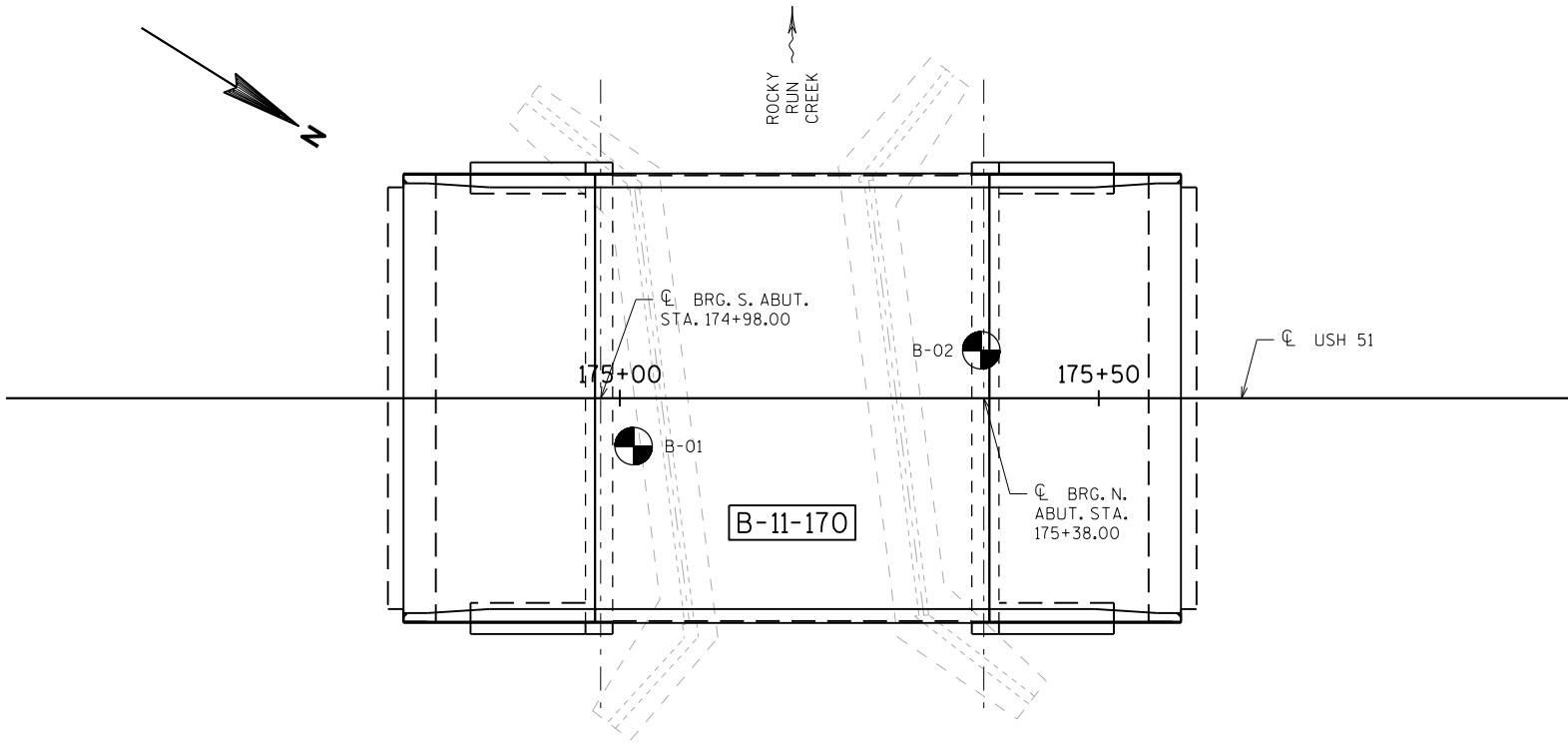


PROFILE GRADE LINE - USH 51



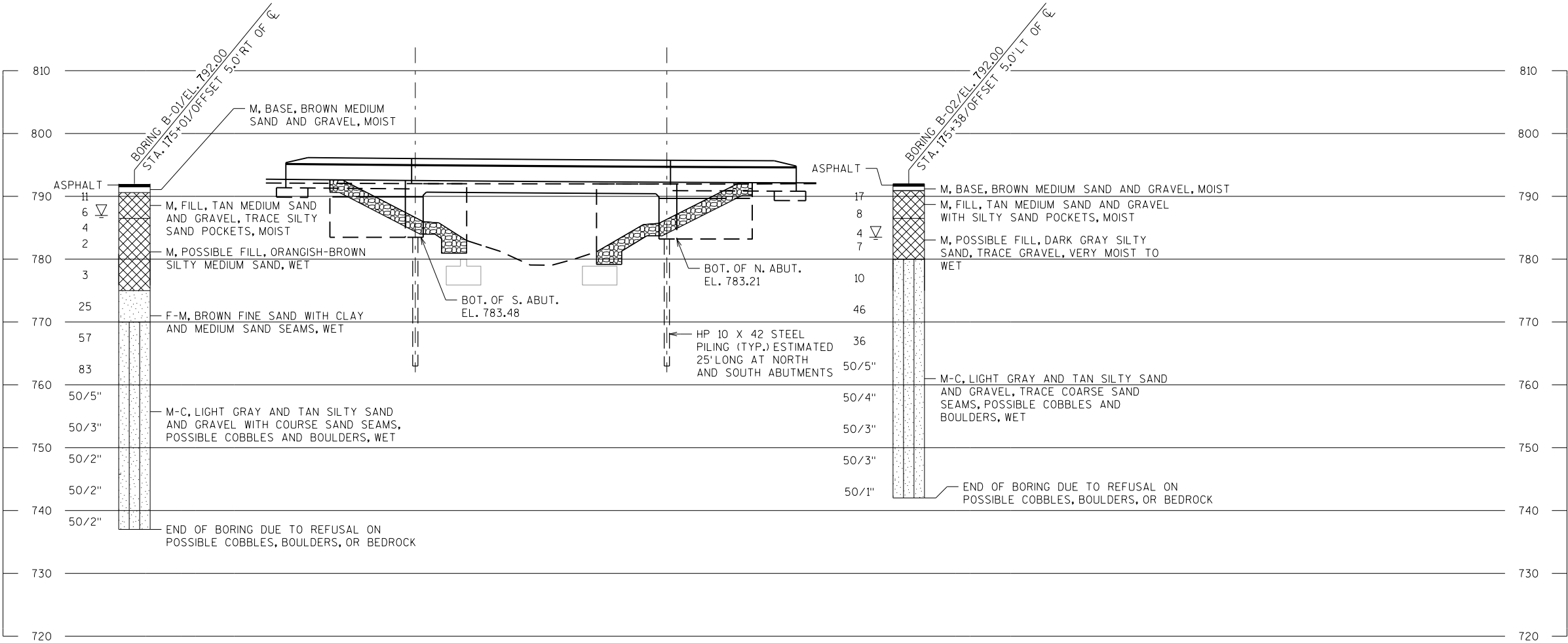
ABUTMENT BACKFILL DETAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-11-170			
		DRAWN BY TJN	PLANS CK'D. JRS
CROSS SECTION & QUANTITIES		SHEET 2 OF 11	

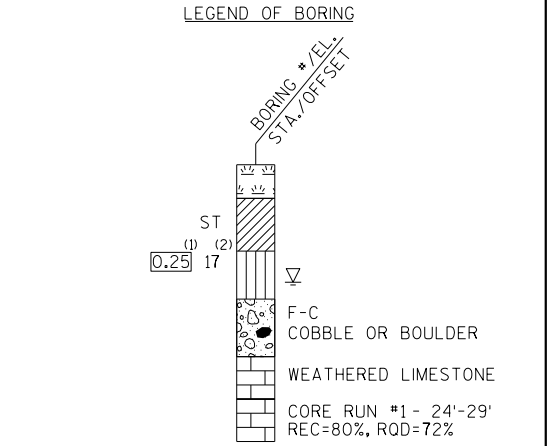


PLAN

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	09/27/2018	363588	551736
2	09/26/2018	363613	551709
BORINGS COMPLETED BY: PSI			
REPORT COMPLETED BY: PSI			
ALL COORDINATES REFERENCED TO NAD83 (2011)			



STATE PROJECT NUMBER					
6020-04-80					
MATERIAL SYMBOLS					
	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/ META



(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-11-170			
DRAWN BY		TJN	PLANS CK'D. JRS
SUBSURFACE EXPLORATION		SHEET 3 OF 11	



A01 CONST. JOINT: KEYWAY FORMED BY A BEVELED
2" X 6".

A06 SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING.
ESTIMATED 25'-0" LONG WITH A REQUIRED DRIVING
RESISTANCE OF 170 TONS PER PILE.

A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5%
MIN. TO SUITABLE DRAINAGE. RODENT SHIELD
REQUIRED.

A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL
EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER
WITH NON-STAINING GRAY NON-BITUMINOUS JOINT
SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE
OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER
LINE AT INSIDE FACE.

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING
SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

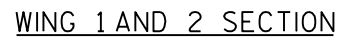
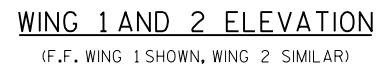
A22 A509 BARS @ 1'-0" CTRS. MAY BE PLACED AFTER
CONCRETE IS POURED BUT BEFORE INITIAL SET HAS
TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

 INDICATES WING NUMBER



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-11-170					
DRAWN BY			TJN	PLANS CK'D.	JF
SOUTH ABUTMENT			SHEET 4 OF 11		



BILL OF BARS					TOTAL COATED = 1,690 LBS	TOTAL UNCOATED = 3,110 LBS
BAR MARK	NO. REQ'D.	LENGTH	COAT	BENT	LOCATION	
A501	61	16'-10"		X	BODY - STIRRUP	
A402	7	28'-0"		X	BODY - 1 PER BODY PILE - VERTICAL	
A403	14	2'-3"			BODY - 2 PER BODY PILE - VERTICAL	
A604	11	48'-10"			BODY - HORIZONTAL - FRONT FACE, TOP, & BOT.	
A605	7	35'-0"			BODY - HORIZONTAL - BACK FACE	
A806	14	12'-11"		X	BODY - HORIZONTAL - BACK FACE	
A407	4	13'-0"			BODY - HORIZONTAL - TOP	
A508	14	6'-3"		X	BODY - VERTICAL - TOP	
A509	47	2'-0"			BODY - VERTICAL - DOWELS	
A510	26	17'-8"	X	X	WINGS 1& 2 - STIRRUP	
A511	14	14'-6"	X		WINGS 1& 2 - HORIZONTAL - FRONT FACE	
A612	18	13'-11"	X		WINGS 1& 2 - HORIZONTAL - BACK FACE	
A413	14	11'-8"	X		WINGS 1& 2 - HORIZONTAL	
A614	4	11'-8"	X		WINGS 1& 2 - HORIZONTAL	
A515	34	9'-10"	X	X	WINGS 1& 2 - VERTICAL	
A416	16	8'-2"	X		WINGS 1& 2 - VERTICAL	

 SLOPE TO DRAIN

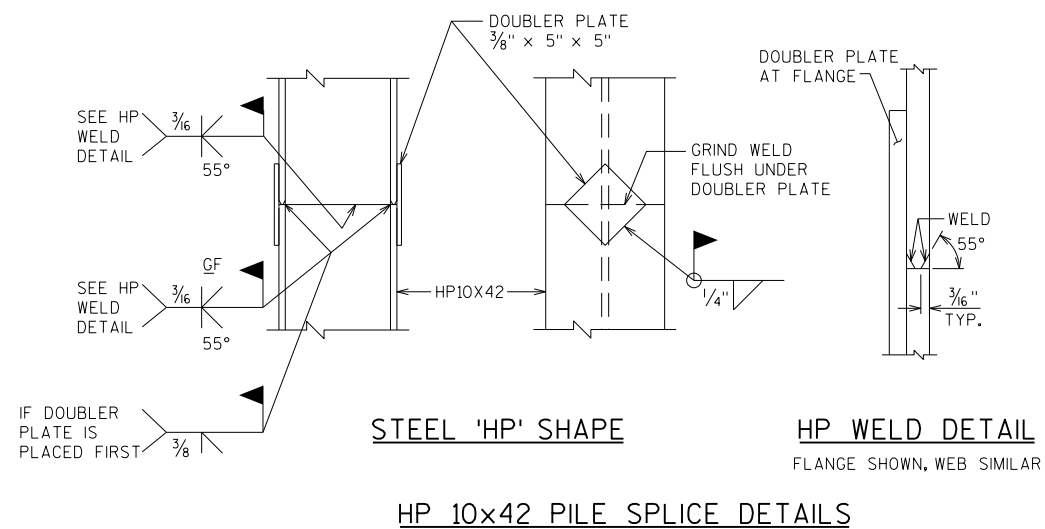
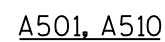
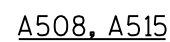
* PROJECT 2'-5" ABOVE TOP OF ABUTMENT SEAT

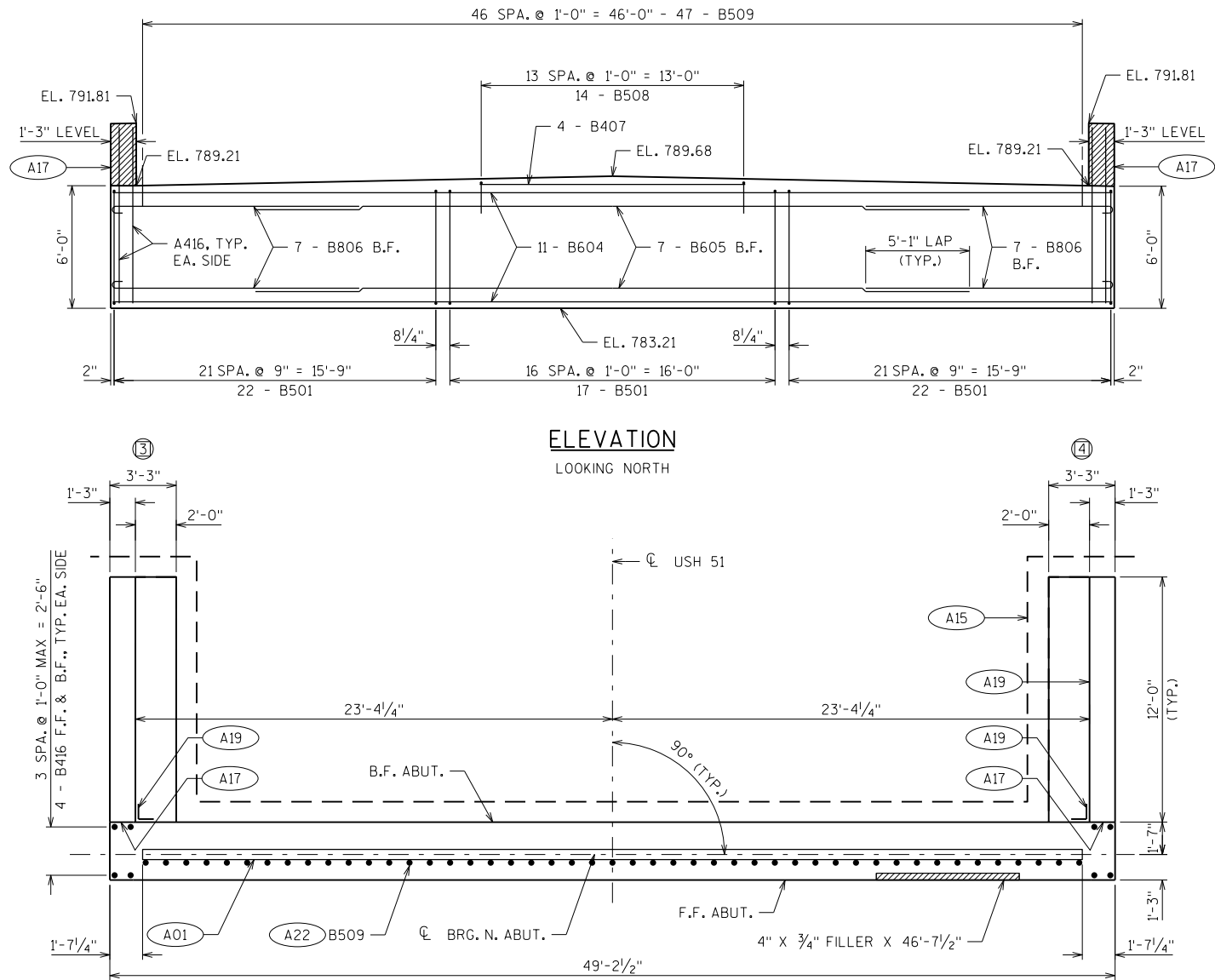
A03 OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" X 6". (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

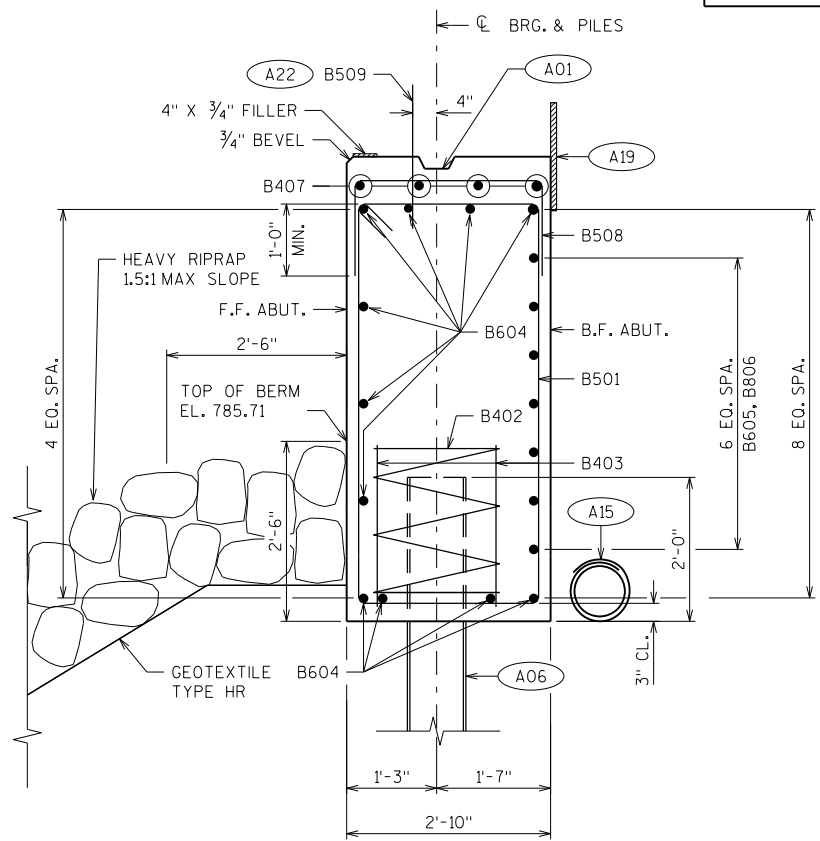
A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.





ELEVATION
LOOKING NORTH

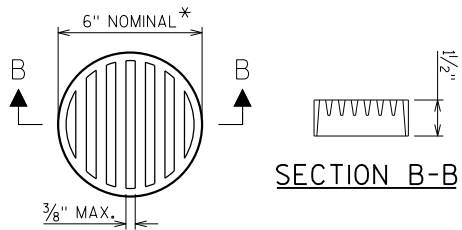
PLAN



SECTION THRU BODY

LEGEND

- A01 CONST. JOINT: KEYWAY FORMED BY A BEVELED 2" X 6".
- A06 SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING. ESTIMATED 25'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 170 TONS PER PILE.
- A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- A22 B509 BARS @ 1'-0" CTRS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- INDICATES WING NUMBER



SECTION B-B

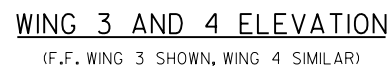
RODENT SHIELD DETAIL

* 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-11-170			
DRAWN BY		TJN	PLANS CK'D. JRS
NORTH ABUTMENT		SHEET 6 OF 11	



BILL OF BARS					TOTAL COATED = 1,690 LBS	TOTAL UNCOATED = 3,110 LBS
BAR MARK	NO. REQ'D.	LENGTH	COAT	BENT	LOCATION	
B501	61	16'-10"		X	BODY - STIRRUP	
B402	7	28'-0"		X	BODY - 1 PER BODY PILE - VERTICAL	
B403	14	2'-3"			BODY - 2 PER BODY PILE - VERTICAL	
B604	11	48'-10"			BODY - HORIZONTAL - FRONT FACE, TOP, & BOT.	
B605	7	35'-0"			BODY - HORIZONTAL - BACK FACE	
B806	14	12'-11"		X	BODY - HORIZONTAL - BACK FACE	
B407	4	13'-0"			BODY - HORIZONTAL - TOP	
B508	14	6'-3"		X	BODY - VERTICAL - TOP	
B509	47	2'-0"			BODY - VERTICAL - DOWELS	
B510	26	17'-8"	X	X	WINGS 3 & 4 - STIRRUP	
B511	14	14'-6"	X		WINGS 3 & 4 - HORIZONTAL - FRONT FACE	
B612	18	13'-11"	X		WINGS 3 & 4 - HORIZONTAL - BACK FACE	
B413	14	11'-8"	X		WINGS 3 & 4 - HORIZONTAL	
B614	4	11'-8"	X		WINGS 3 & 4 - HORIZONTAL	
B515	34	9'-10"	X	X	WINGS 3 & 4 - VERTICAL	
B416	16	8'-2"	X		WINGS 3 & 4 - VERTICAL	

▲ SLOPE TO DRAIN

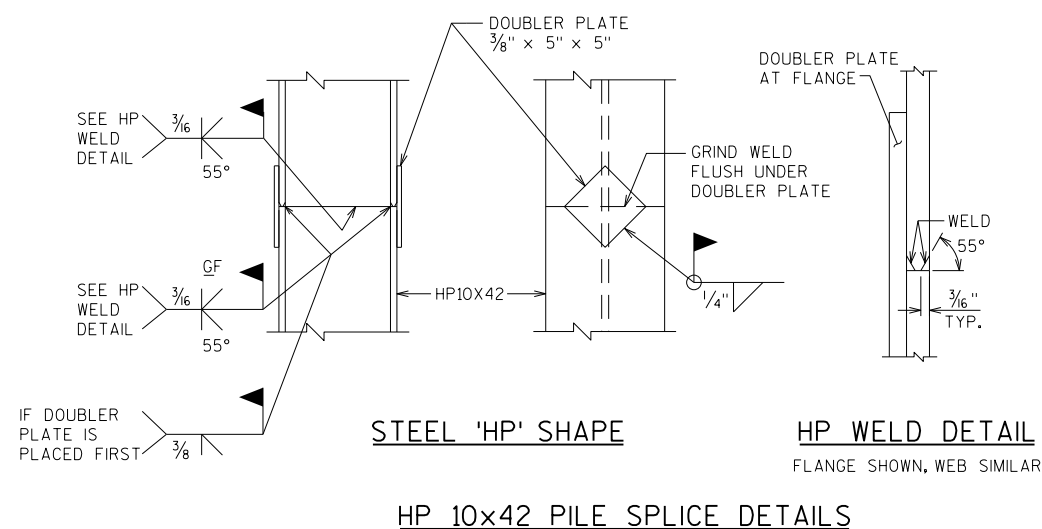
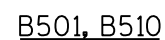
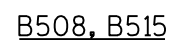
* PROJECT 2'-5" ABOVE TOP OF ABUTMENT SEAT

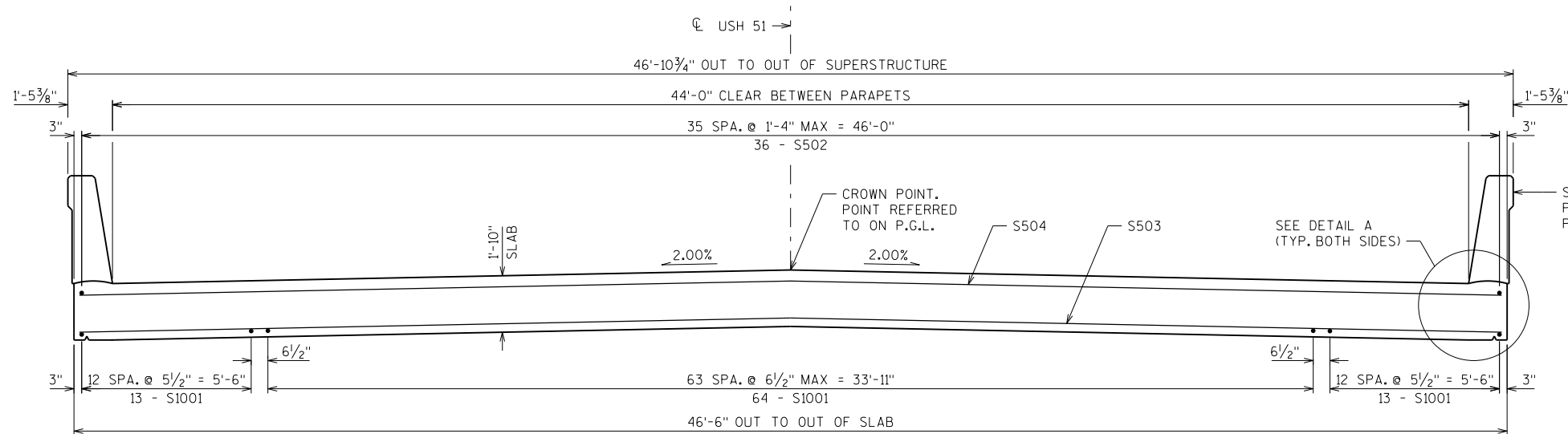
A03 OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2" X 6". (18") RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

A15 PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE, RODENT SHIELD REQUIRED.

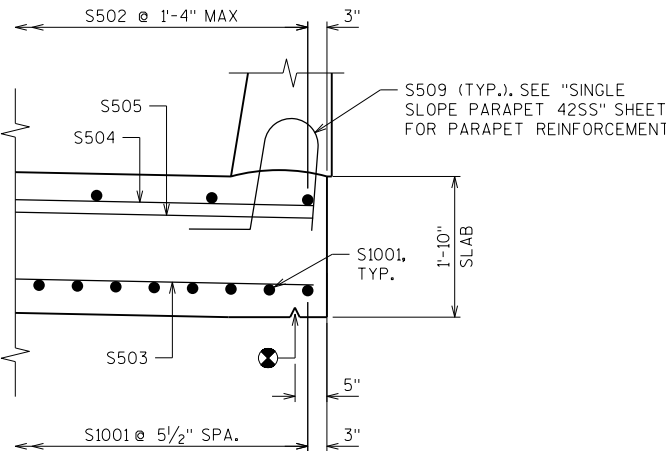
A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER, (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE), EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

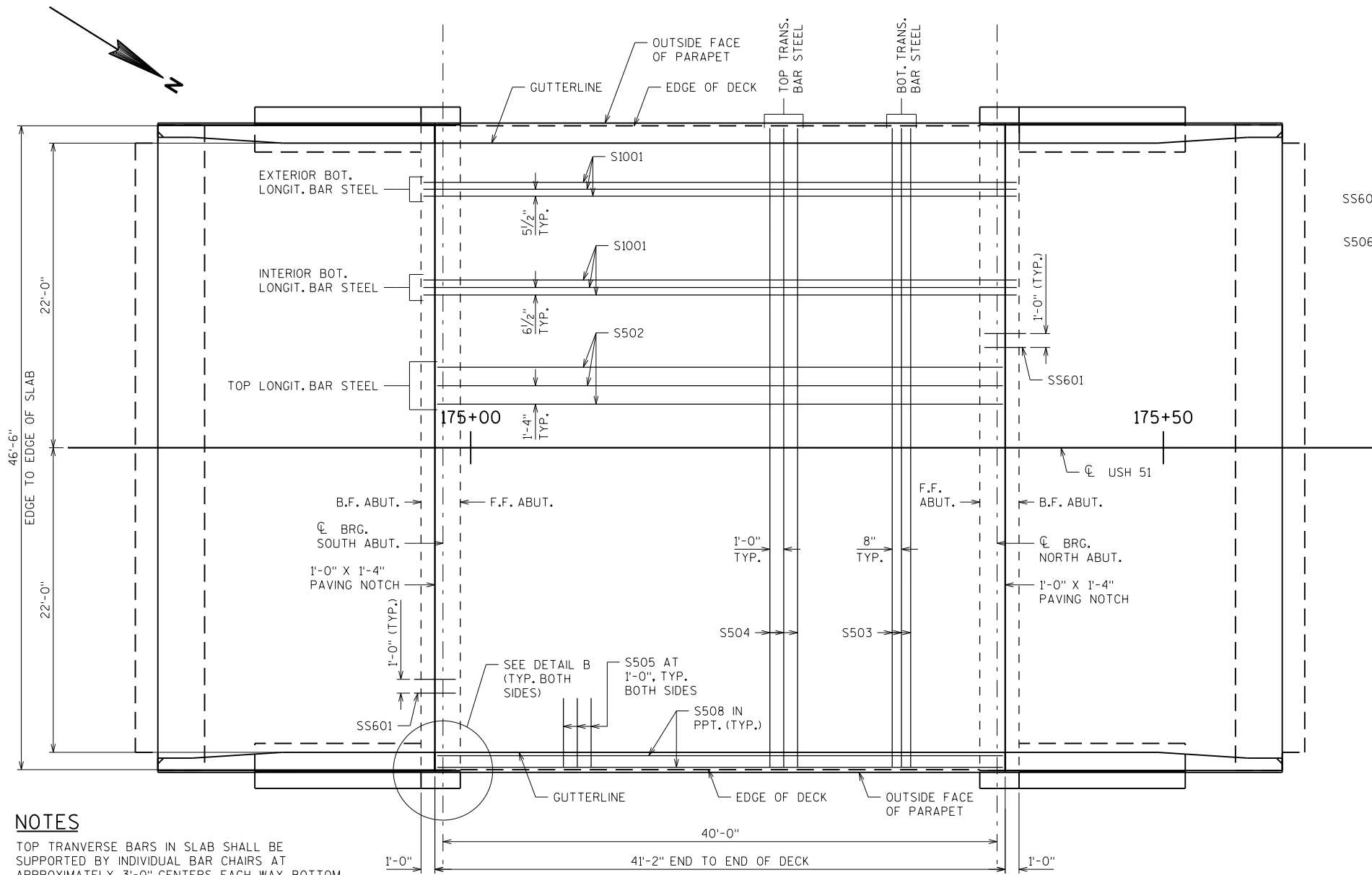




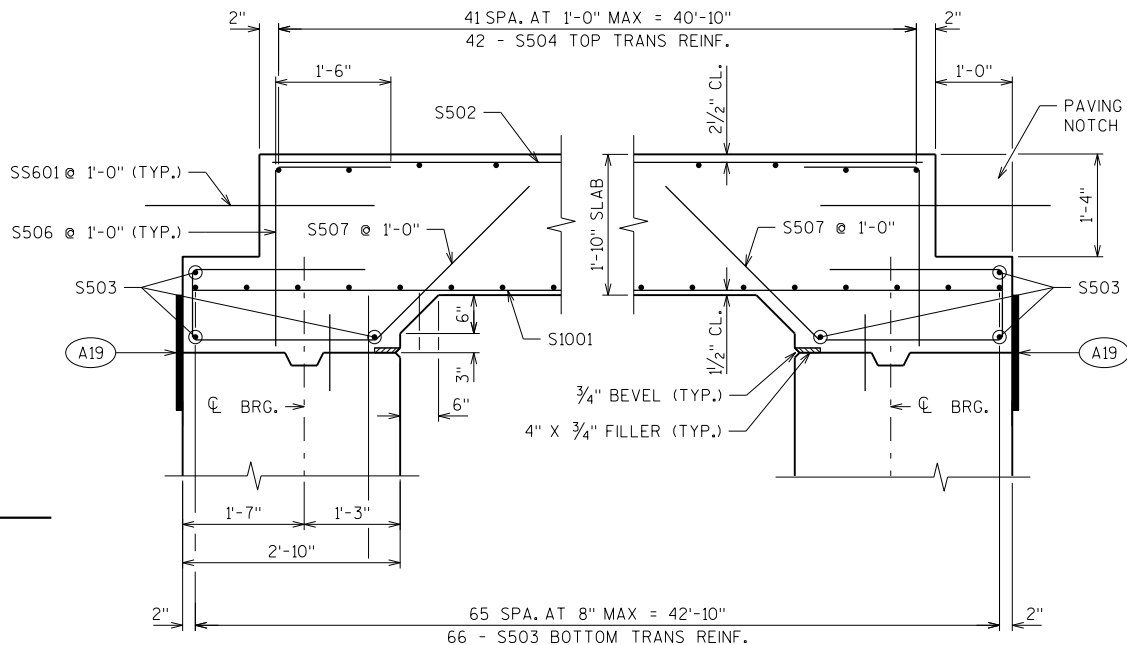
TYPICAL SECTION THRU SLAB



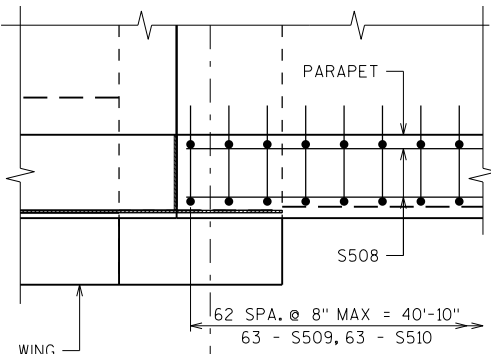
DETAIL A



PLAN



LONGITUDINAL SECTION



DETAIL B

NOTES

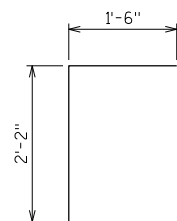
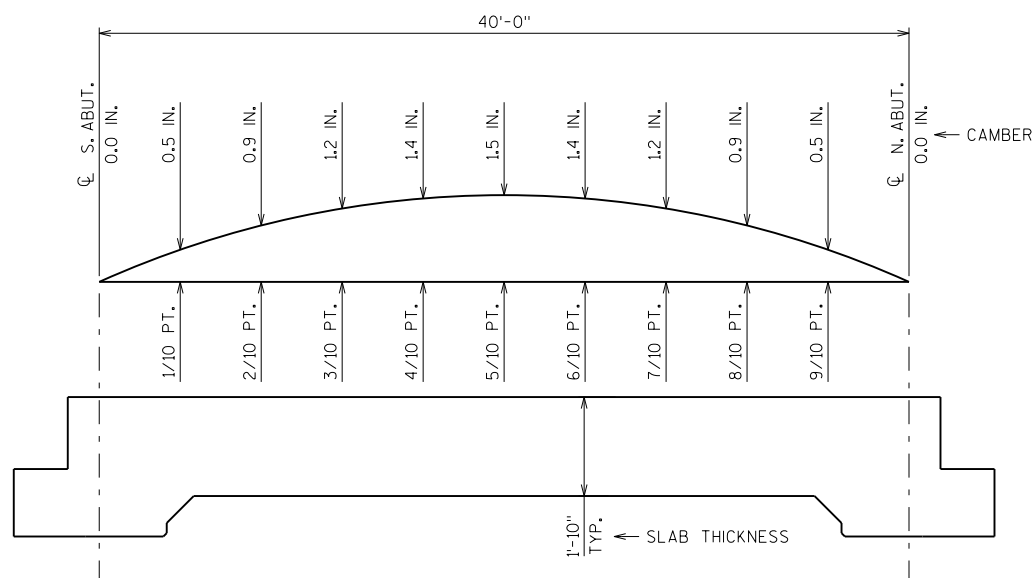
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS TO BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

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

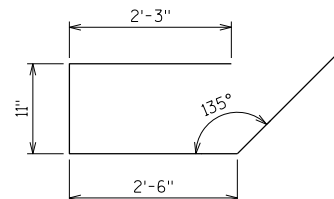
LEGEND

- A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT. (TYP) V-GROOVES ARE REQUIRED.

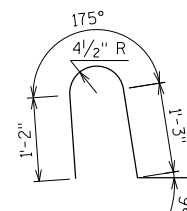
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-11-170			
DRAWN BY		TJN	PLANS CK'D. JRS
SUPERSTRUCTURE		SHEET 8 OF 11	



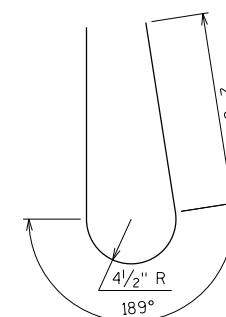
S506



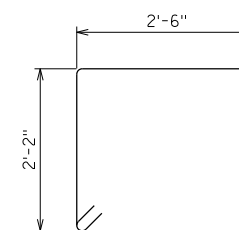
S507



S509



S510



S511

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 PLACED ON TOP OF THE SLAB SHALL BE POURED
AFTER FALSEWORK HAS BEEN RELEASED.

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	<u>TOP OF SLAB FALSEWORK ELEVATION.</u>

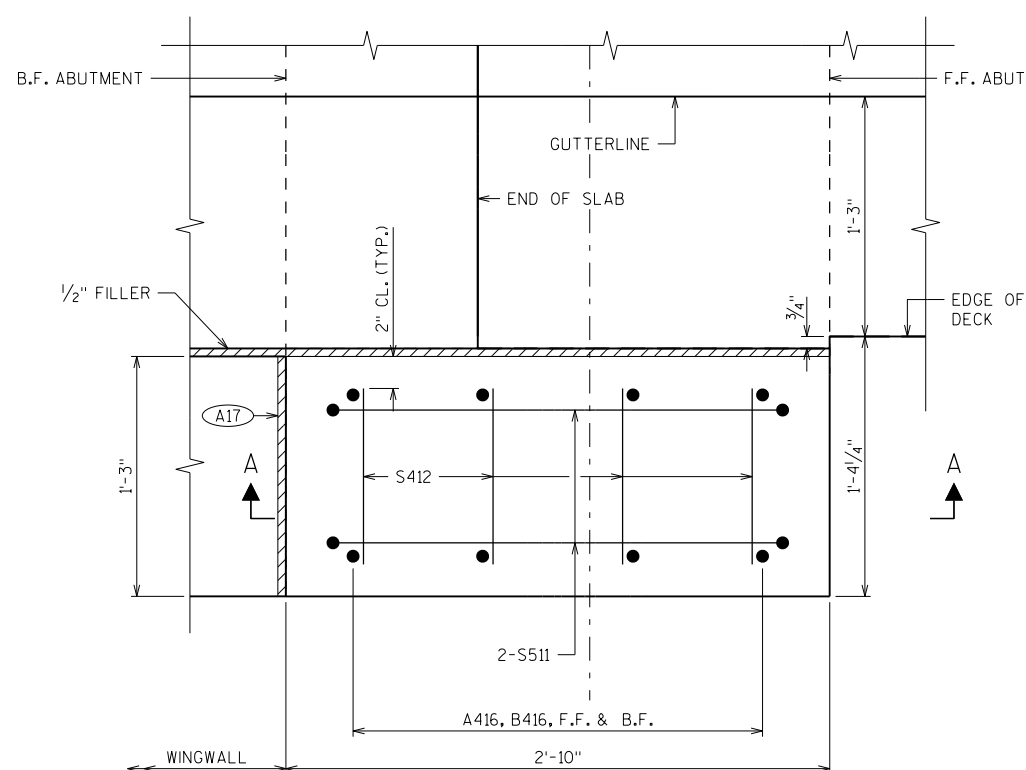
TOP OF SLAB ELEVATIONS

	℄ BRG. S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ BRG. N. ABUT.
W. EDGE OF DECK	792.09	792.06	792.03	792.00	791.97	791.94	791.92	791.89	791.87	791.84	791.82
CROWN	792.52	792.50	792.47	792.44	792.41	792.38	792.35	792.33	792.31	792.28	792.26
E. EDGE OF DECK	792.09	792.06	792.03	792.00	791.97	791.94	791.92	791.89	791.87	791.84	791.82

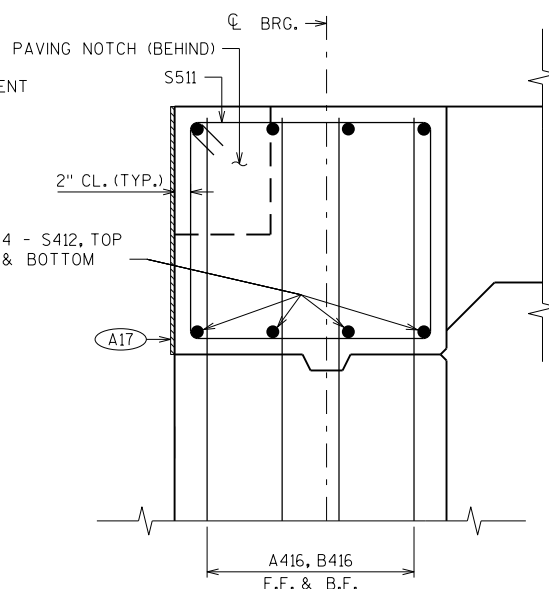
BILL OF BARS

TOTAL STAINLESS = 430 LBS
TOTAL COATED = 27,420 LBS

BAR MARK	NO. REQ'D.	LENGTH	COAT	BENT	STAINLESS STEEL	LOCATION
S1001	90	42'-10"	X			SLAB - LONGITUDINAL - BOTTOM
S502	36	40'-10"	X			SLAB - LONGITUDINAL - TOP
S503	72	46'-2"	X			SLAB - TRANSVERSE - BOTTOM
S504	42	46'-2"	X			SLAB - TRANSVERSE - TOP
S505	82	5'-0"	X			SLAB - TRANSVERSE - TOP - EDGE OF SLAB
S506	94	3'-7"	X	X		SLAB AT ABUTMENTS
S507	94	8'-0"	X	X		SLAB AT ABUTMENTS
S508	16	40'-10"	X			42SS PARAPET - HORIZONTAL
S509	126	4'-5"	X	X		42SS PARAPET - VERTICAL
S510	126	6'-8"	X	X		42SS PARAPET - VERTICAL
S511	8	10'-0"	X	X		SLAB AT ABUTMENTS - ENDS
S412	32	11"	X			SLAB AT ABUTMENTS - HORIZONTAL - ENDS
SS601	94	3'-0"			X	STRUCTURE SLAB TO APPROACH SLAB



PLAN



SECTION A-A

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

ABUTMENT END DETAIL

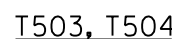
(TYP. ALL CORNERS)

SURVEY TOP OF SLAB ELEVATIONS

	SOUTH ABUTMENT	5/10 PT.	NORTH ABUTMENT
WEST GUTTER			
CROWN			
EAST GUTTER			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C OF ABUTMENTS, AND AT 1/2 PTS. TO VERIFY CAMBER, TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-11-170			
DRAWN BY		TJN	PLANS CK'D. JF
SUPERSTRUCTURE DETAILS		SHEET 9 OF 11	



T508

T806



THE EXISTING SOIL MAY REMAIN IN PLACE IF THE REGION SOILS ENGINEER DETERMINES THAT THE EXISTING SOIL BEARING PRESSURE MEETS THE REQUIREMENTS ABOVE.

APPROACH SLAB PLAN

SOUTH APPROACH SLAB SHOWN,
NORTH APPROACH SLAB SIMILAR

 CONST. JOINT - STRIKE OFF AS SHOWN
 APPLY PROTECTIVE SURFACE TREATMENT TO PAVING NOTCH SURFACES PRIOR TO POURING STRUCTURAL APPROACH SLAB.
 MEASURED NORMAL TO ABUTMENT
 STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF FOOTING.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE) EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.



FOOTING NOT SHOWN

TOTAL COATED = 19,450 LBS

BILL OF MATERIALS		TOTAL COATED = 15,150 LBS			
BAR MARK	NO. REQ'D.	LENGTH	COAT	BENT	LOCATION
T801	8	43'-8"	X		FOOTING - HORIZONTAL
T802	16	46'-3"	X		FOOTING - HORIZONTAL
T503	8	8'-10"	X	X	FOOTING - STIRRUP
T504	90	12'-2"	X	X	FOOTING - STIRRUP
T505	96	19'-8"	X		APPROACH SLAB - LONGITUDINAL - TOP
T806	156	21'-6"	X	X	APPROACH SLAB - LONGITUDINAL - BOTTOM
T507	84	46'-3"	X		APPROACH SLAB - TRANSVERSE - TOP & BOTTOM
T508	80	4'-1"	X	X	APPROACH SLAB - TRANSVERSE - TOP EDGES OF SLAB

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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-11-170			
DRAWN BY		TJN	PLANS CHK'D. JF
STRUCTURAL APPROACH SLABS		SHEET 10 OF 11	

BILL OF BARS

FOR APPROACH SLAB PARAPETS TOTAL COATED = 2,320 LBS

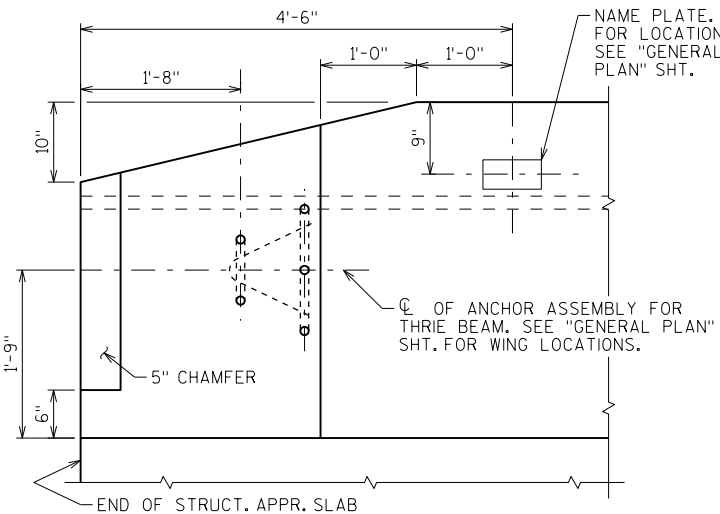
BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	34	34	4'-5"	X		PARAPET VERT.
R502	X	34	34	6'-8"	X		PARAPET VERT.
R503	X	24	24	2'-9"	X		PARAPET VERT.
R504	X	34	34	4'-4"	X		PARAPET VERT.
R505	X	10	10	6'-5"	X		PARAPET VERT.
R506	X	12	12	6'-6"	X		PARAPET VERT.
R507	X	2	2	19'-7"	X		PARAPET HORIZ.
R508	X	10	10	19'-8"			PARAPET HORIZ.
R509	X	12	12	5'-5"	X	▲	PARAPET VERT.
R510	X	4	4	19'-7"	X		PARAPET HORIZ.

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

BAR SERIES TABLE

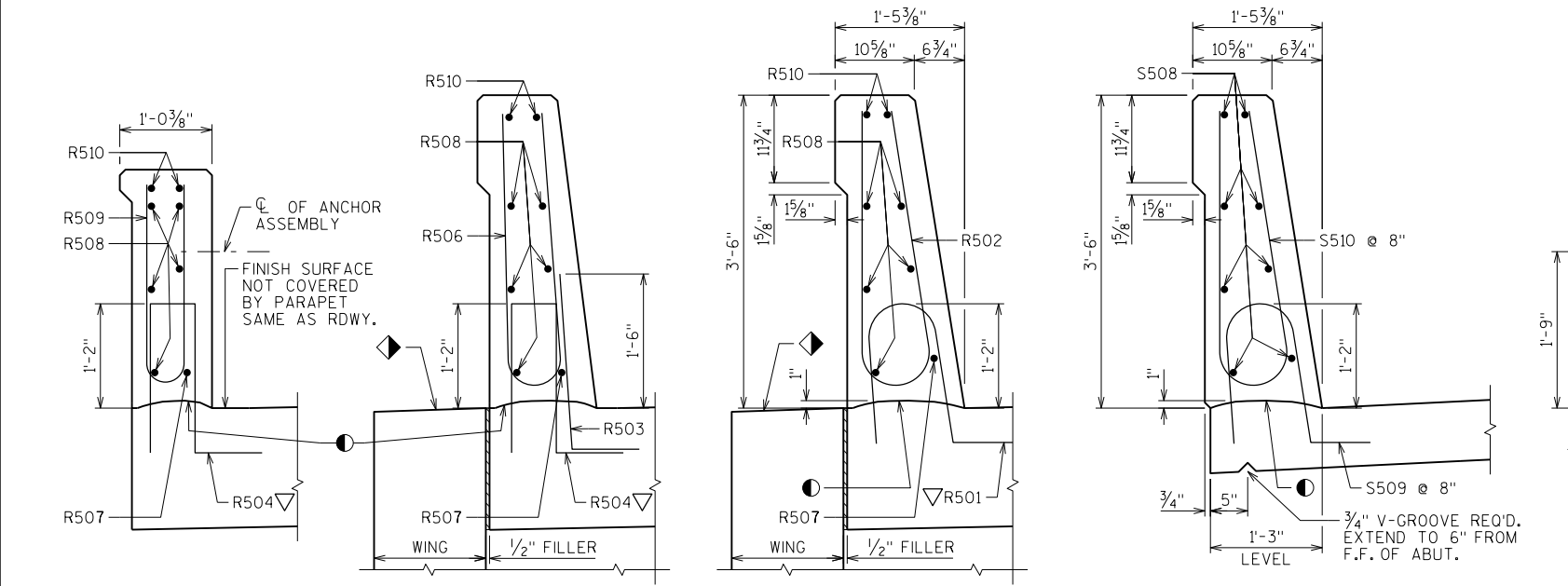
BAR MARK	NO. REQ'D	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.



PARAPET END TREATMENT DETAIL
LOOKING AT INSIDE FACE OF PARAPET

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED, RUN BAR REINF. THRU THE JOINT, LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" - V-GROOVE.

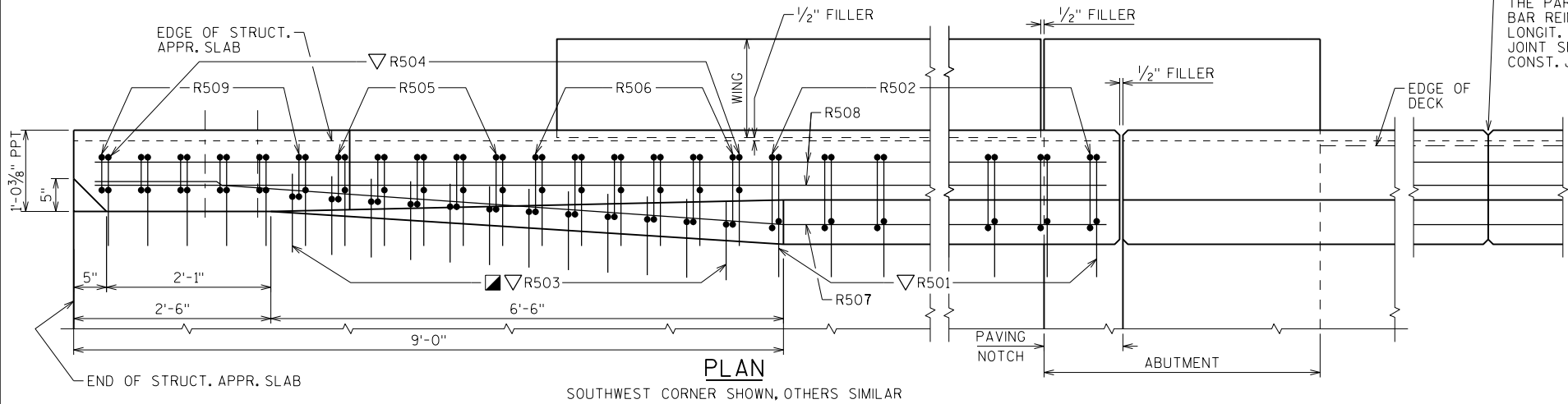


SECTION A-A

SECTION B-B

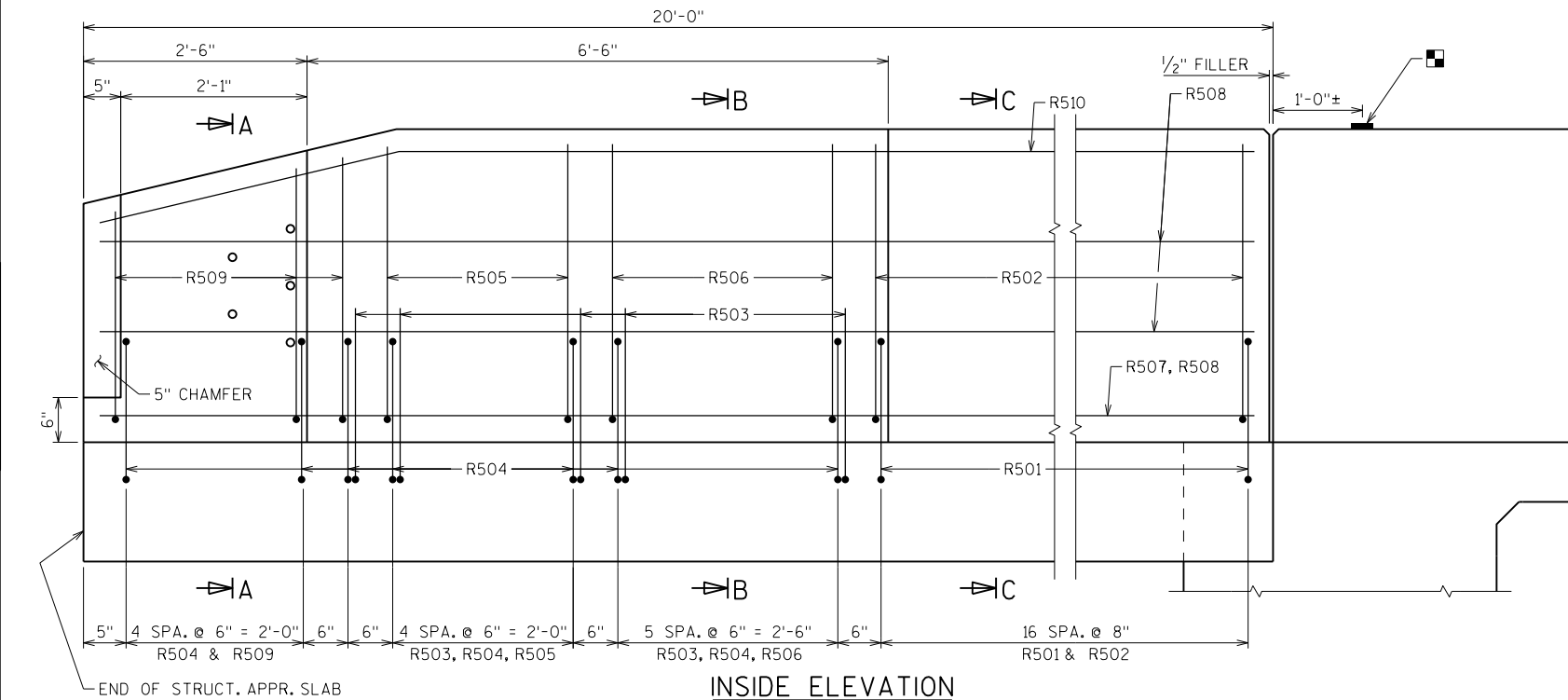
SECTION C-C

SECTION THRU PARAPET ON DECK



PLAN

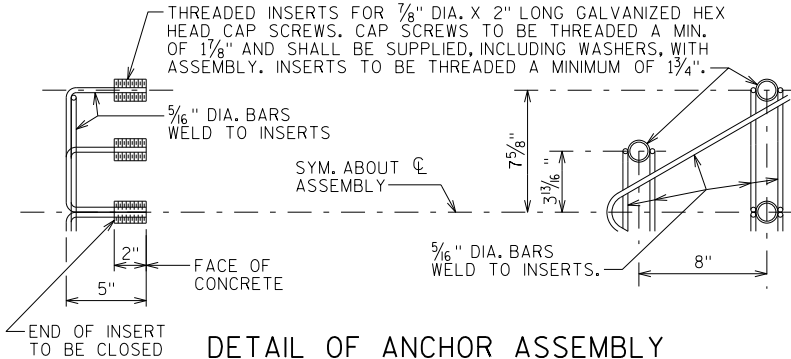
SOUTHWEST CORNER SHOWN, OTHERS SIMILAR



INSIDE ELEVATION

SOUTHWEST CORNER SHOWN, OTHERS SIMILAR
WING & STRUCTURAL APPROACH SLAB FOOTING NOT SHOWN FOR CLARITY

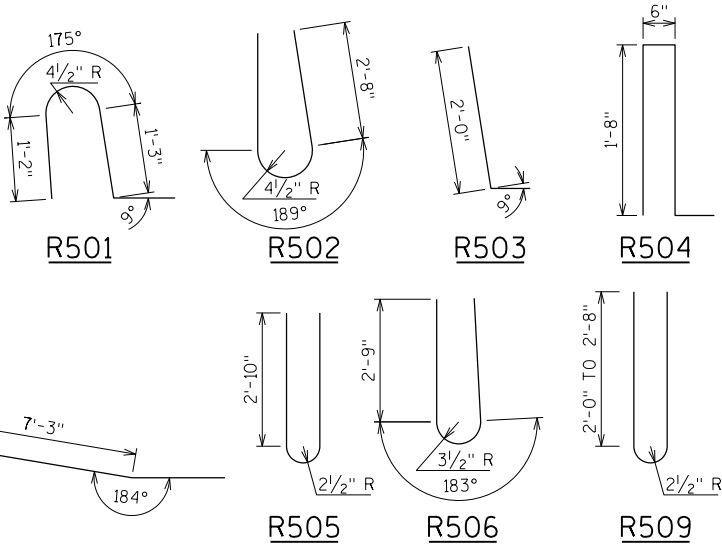
■ BENCH MARK CAP AT SOUTHWEST CORNER.



DETAIL OF ANCHOR ASSEMBLY

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

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



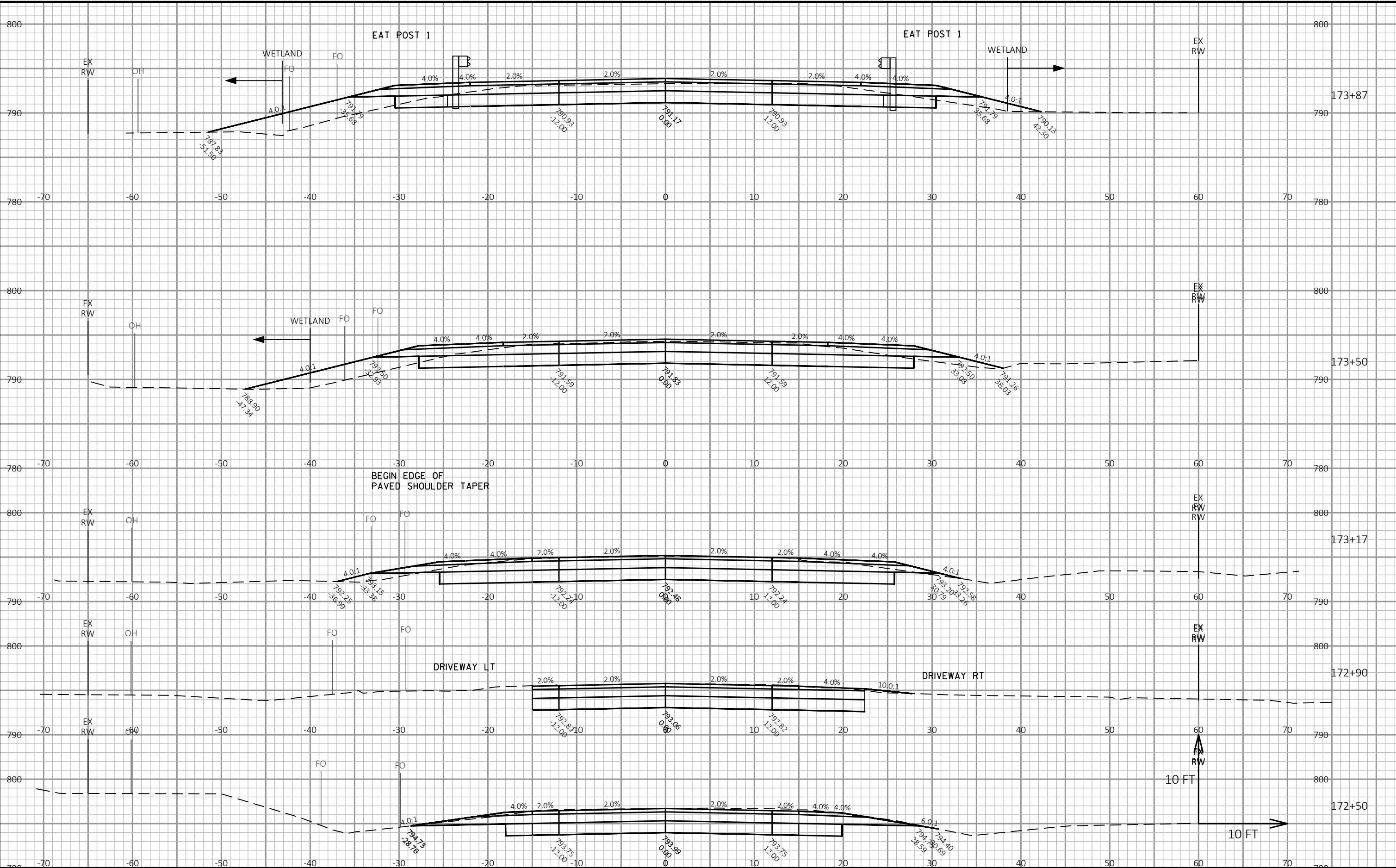
● CONST. JOINT - STRIKE OFF AS SHOWN

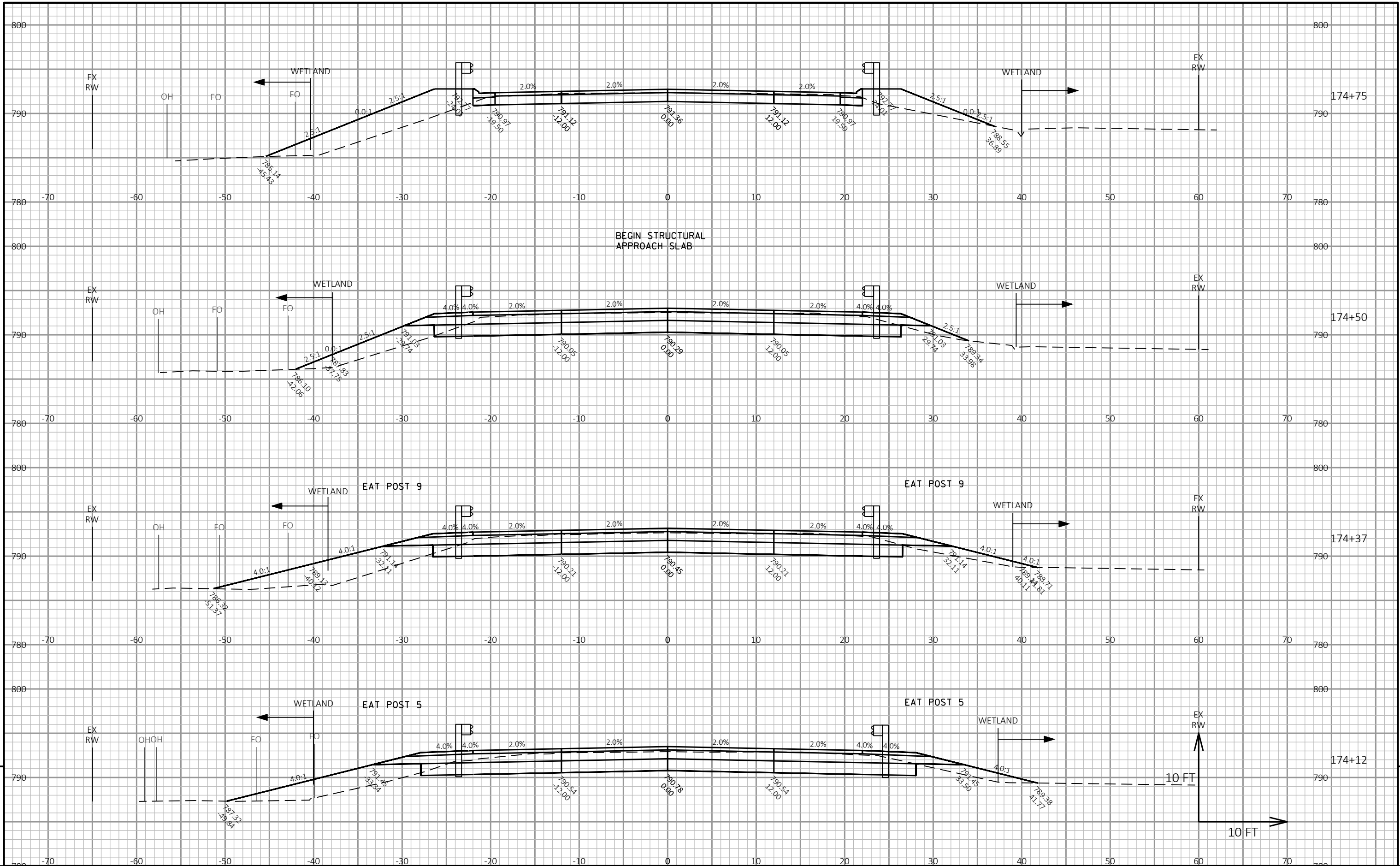
◆ SLOPE FOR DRAINAGE

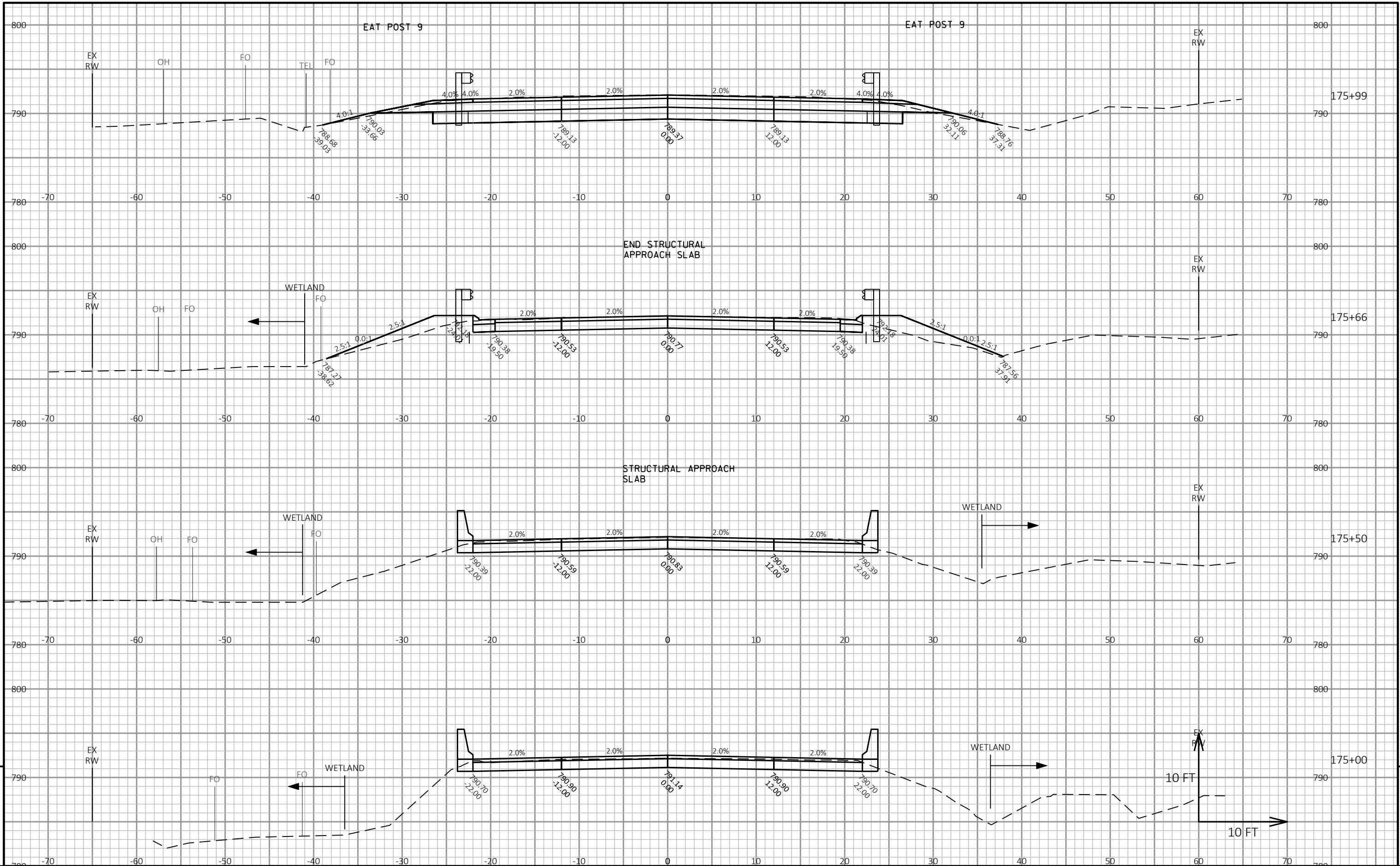
■ USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

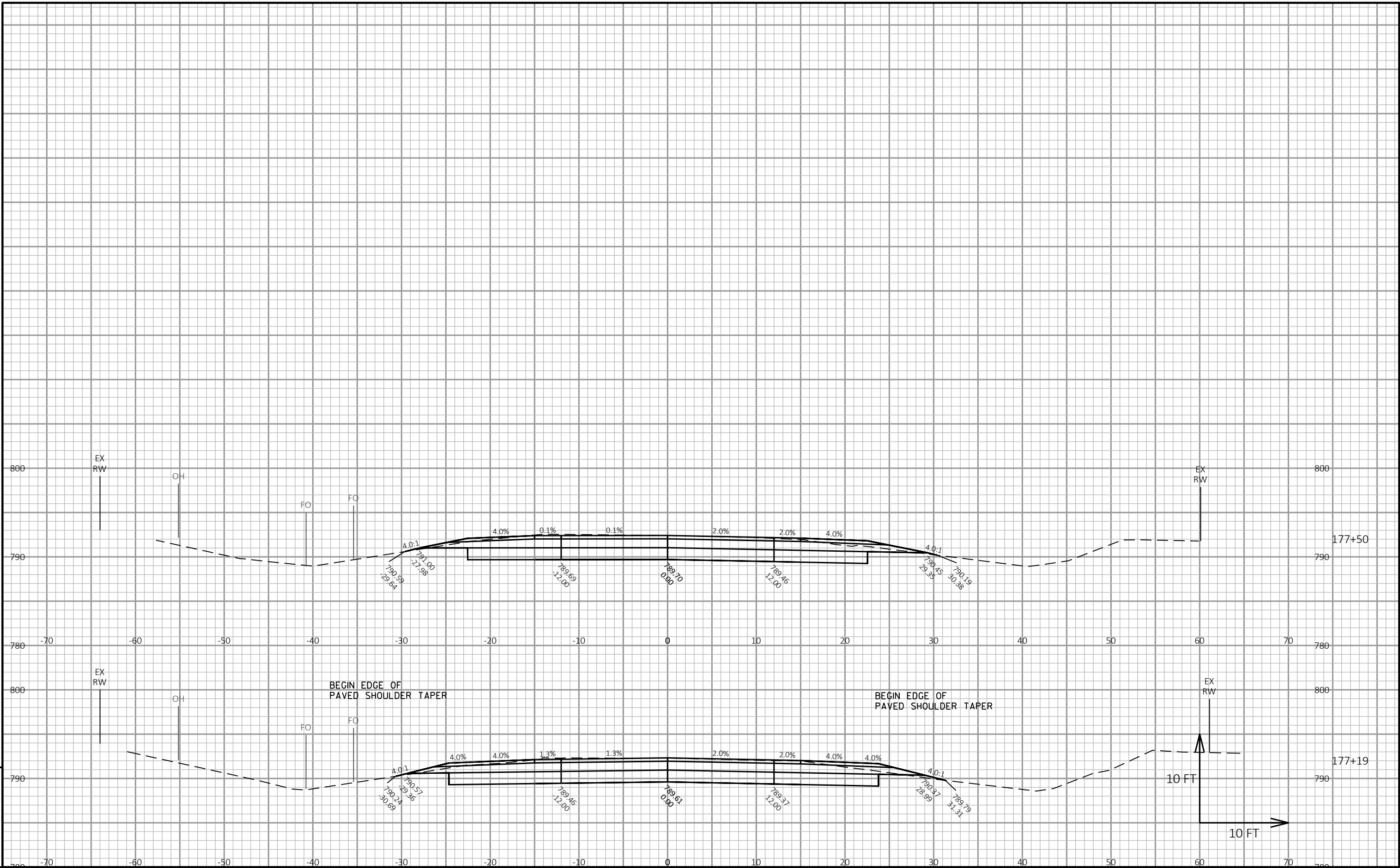
▽ R501, R503, AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

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STRUCTURE B-11-170			
DRAWN BY		TJUN	PLANS CK'D. JRS
SINGLE SLOPE PARAPET 42SS		SHEET 11 OF 11	

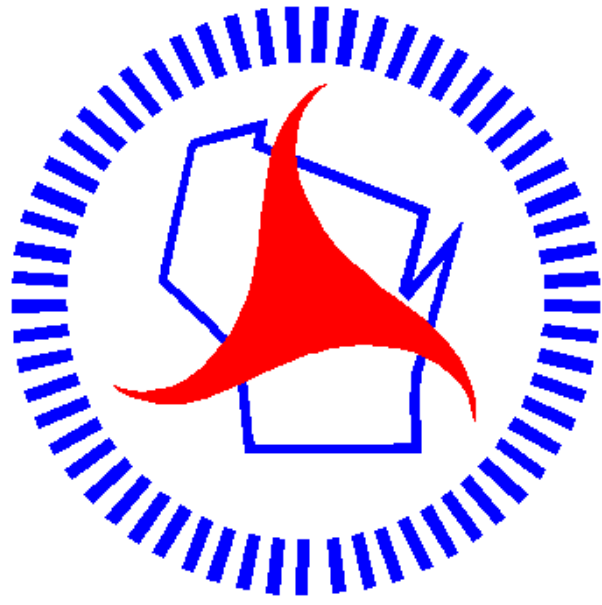








Notes



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