

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1150-76-71	WISC 2022489	1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

GREEN BAY - OCONTO

LITTLE SUAMICO RIVER BRIDGE

USH 41

OCONTO COUNTY

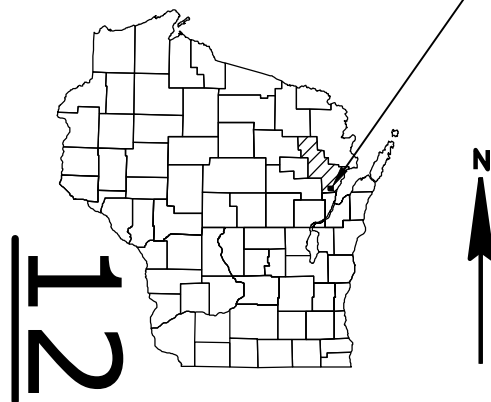
STATE PROJECT NUMBER
1150-76-71

ORDER OF SHEETS

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

TOTAL SHEETS = 118

PROJECT LOCATION



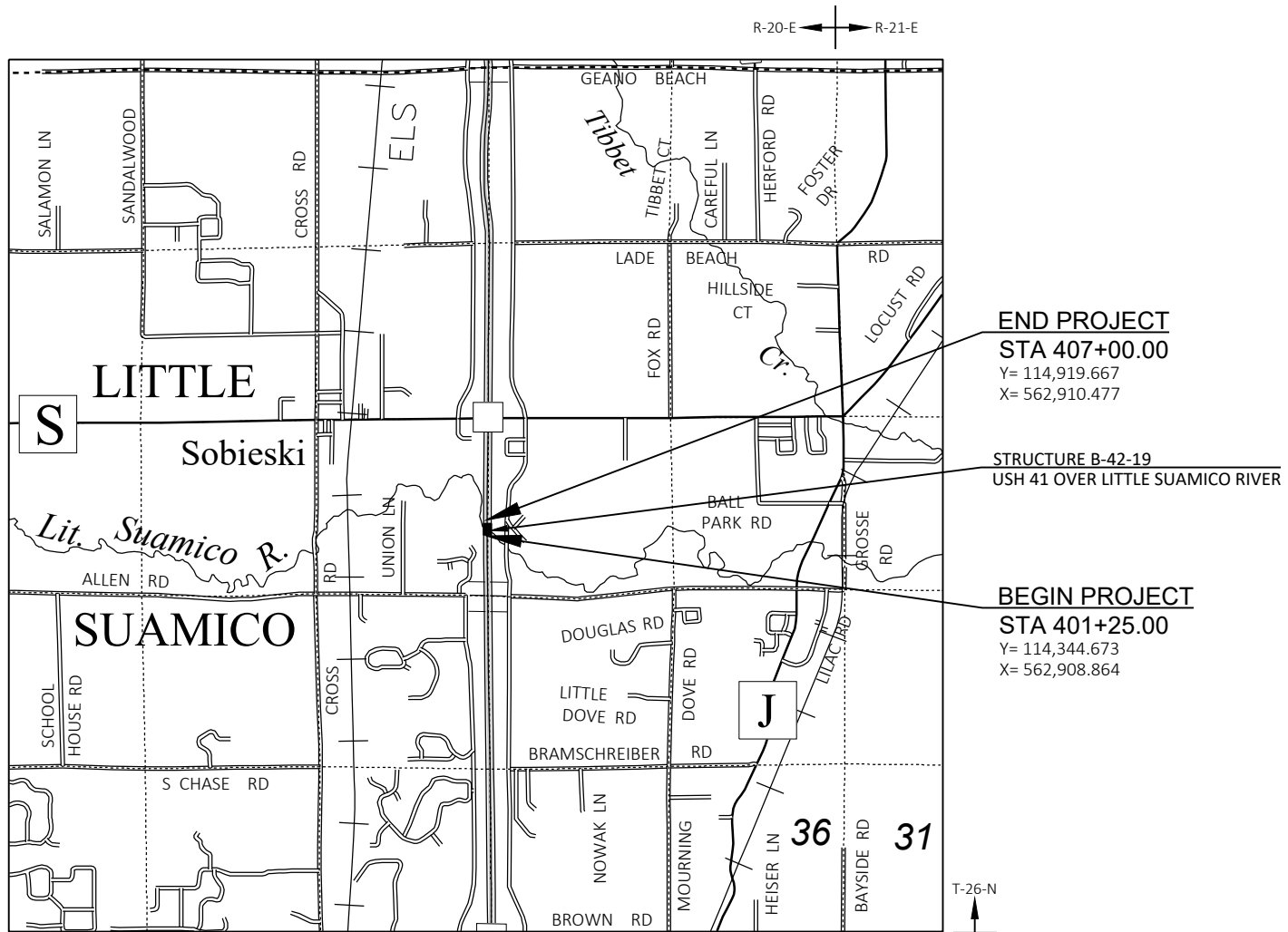
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DESIGN DESIGNATION

A.A.D.T.	2023	=	31630
A.A.D.T.	2043	=	37200
D.H.V.		=	
D.D.		=	50/50
T.		=	15.7%
DESIGN SPEED		=	70 MPH
ESALS		=	11,000,000

CONVENTIONAL SYMBOLS

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



LAYOUT
SCALE 0 1 MI.
TOTAL NET LENGTH OF CENTERLINE = 0.109 MI.

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

ORIGINAL PLANS PREPARED BY

AYRES

WISCONSIN

ANDREW A. ROWELL
E-38296
GREEN BAY WI

PROFESSIONAL ENGINEER

4/21/2022
(Date)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	Surveyor	ROBERT E. LEE
Designer	AYRES	
Project Manager	KURT VOGEL	
Regional Supervisor	BRIAN EDWARDS	

APPROVED FOR THE DEPARTMENT

DATE: 4/21/2022 (Signature)

E

PROJECT ID: 1150-76-71

COUNTRY: OCONTO

GENERAL NOTES

THERE ARE NO KNOWN UTILITY FACILITIES WITHIN THE PROJECT AREA. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THIS.

THE EXACT CONSTRUCTION LIMITS AND LOCATIONS OF ALL ENTRANCES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL TIES ON THIS PLAN ARE HORIZONTAL UNLESS DESCRIBED OTHERWISE.

BEARINGS SHOWN ON THE PLAN ARE TRUE BEARINGS.

REMOVAL OF ANY MESH OR REINFORCEMENT FOUND IN CONCRETE PAVEMENT SHALL BE INCIDENTAL TO THE REMOVING PAVEMENT ITEM.

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

PLACE EROSION CONTROL DEVICES IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER. EROSION CONTROL FEATURES ARE SHOWN AT APPROXIMATE LOCATIONS, WITH EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

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

STATIONING, DISTANCES, AND OFFSETS FOR SIGNS AND TRAFFIC CONTROL DEVICES SHOWN IN THE PLANS ARE APPROXIMATE. EXACT LOCATIONS ARE DETERMINED BY THE ENGINEER.

WISDOT WILL FURNISH A BENCHMARK MONUMENT TO BE SET BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER IN THE FIELD.

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

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 ASHWAUBENON, WI 54115
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 rowella@ayresassociates.com

ORDER OF SECTION 2 DETAIL SHEETS
 GENERAL NOTES
 PROJECT OVERVIEW
 TYPICAL SECTIONS
 CONSTRUCTION DETAILS
 REMOVALS
 PLAN DETAILS
 PLAN GRADES
 PERMANENT SIGNING/PAVEMENT MARKING
 TRAFFIC CONTROL
 ALIGNMENT PLAN



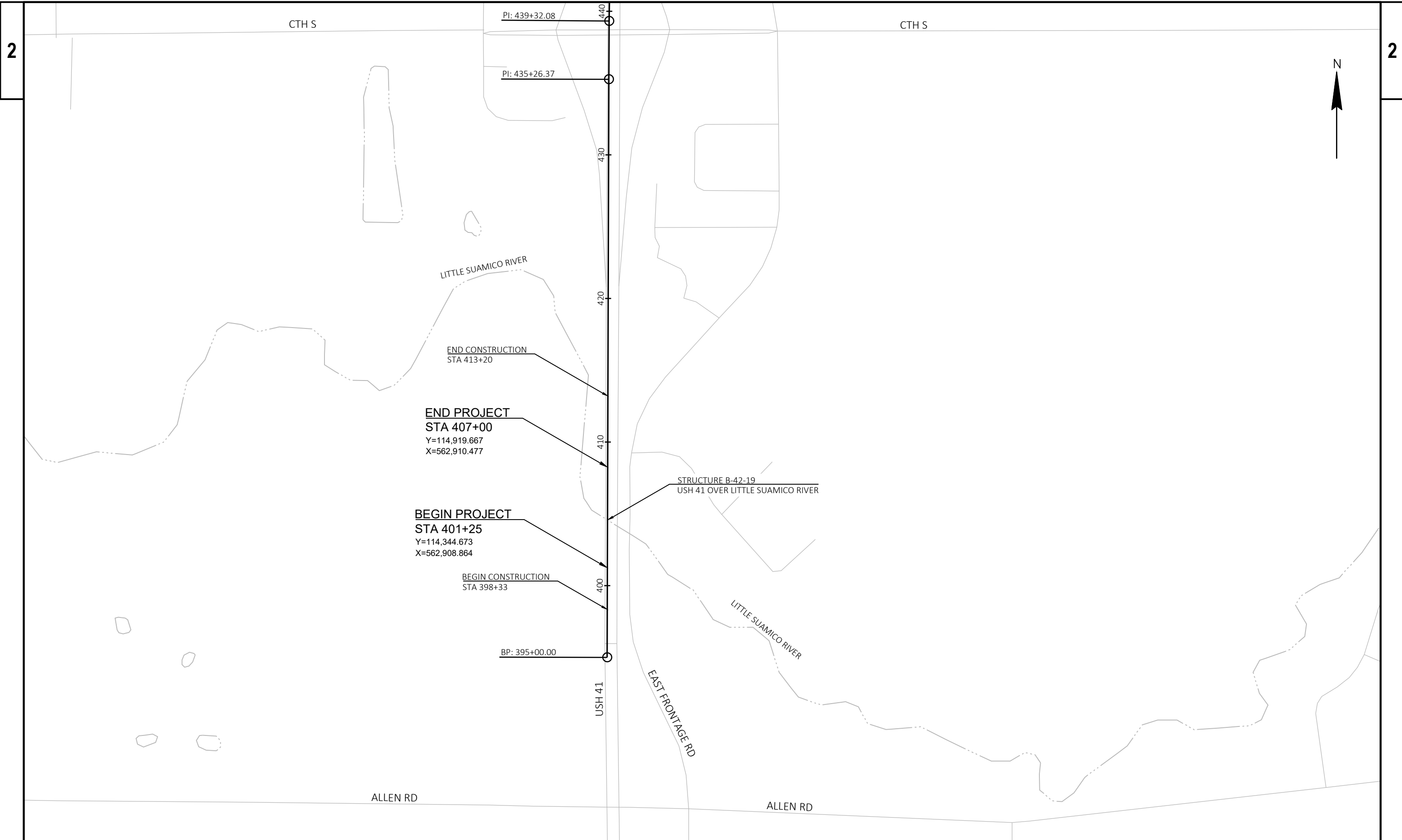
STANDARD ABBREVIATIONS

ABUT	ABUTMENT
AC	ACRE
AGG	AGGREGATE
AH	AHEAD
ET AL	AND OTHERS
BK	BACK
BLDG	BUILDING
BLK	BLOCK
BR	BRIDGE
CB	CATCH BASIN
C/L	CENTERLINE
Δ	CENTRAL ANGLE OR DELTA
CE	COMMERCIAL ENTRANCE
CONC	CONCRETE
CPCA	CULVERT PIPE CORRUGATED ALUMINUM
CPCS	CULVERT PIPE CORRUGATED STEEL
CTH	COUNTY TRUNK HIGHWAY
CR	CREEK
CP	CULVERT PIPE
C & G	CURB AND GUTTER
D	DEGREE OF CURVE
DNV	DESIGN HOURLY VOLUME
DIA	DIAMETER
DWY	DRIVEWAY
E	EAST
X	EAST COORDINATE
EB	EASTBOUND
EL OR ELEV	ELEVATION
ENT	ENTRANCE
ESALS	EQUIVALENT SINGLE AXLE LOAD
EXIST	EXISTING
F-F	FACE TO FACE
FE	FIELD ENTRANCE
FG	FINISHED GRADE
FT	FOOT
INL	INLET
INV	INVERT
IP	IRON PIPE OR PIN
LT	LEFT
L	LENGTH OF CURVE
LIN. FT OR FT.	LINEAL FOOT
MH	MANHOLE
N/C	NORMAL CROWN
NW OR N/W	NORMAL WATER
N	NORTH
Y	NORTH COORDINATE
NB	NORTHBOUND
PT	POINT
PCC	POINT OF COMPOUND CURVE
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVATURE
POC	POINT ON CURVE
POT	POINT OF TANGENT
R/L	REFERENCE LINE
REBAR	REINFORCED BAR
REQ'D.	REQUIRED
R/W	RIGHT OF WAY
R	RADIUS
S	SOUTH
SB	SOUTHBOUND
STH	STATE TRUNK HIGHWAY
STA	STATION
SS	STORM SEWER
SE	SUPERELEVATION
SURF	SURFACE
T	TANGENT
TYP	TYPICAL
WB	WESTBOUND

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	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP-TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE-TURF			.25			.27			.28			.30
			.32			.34			.36			.38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

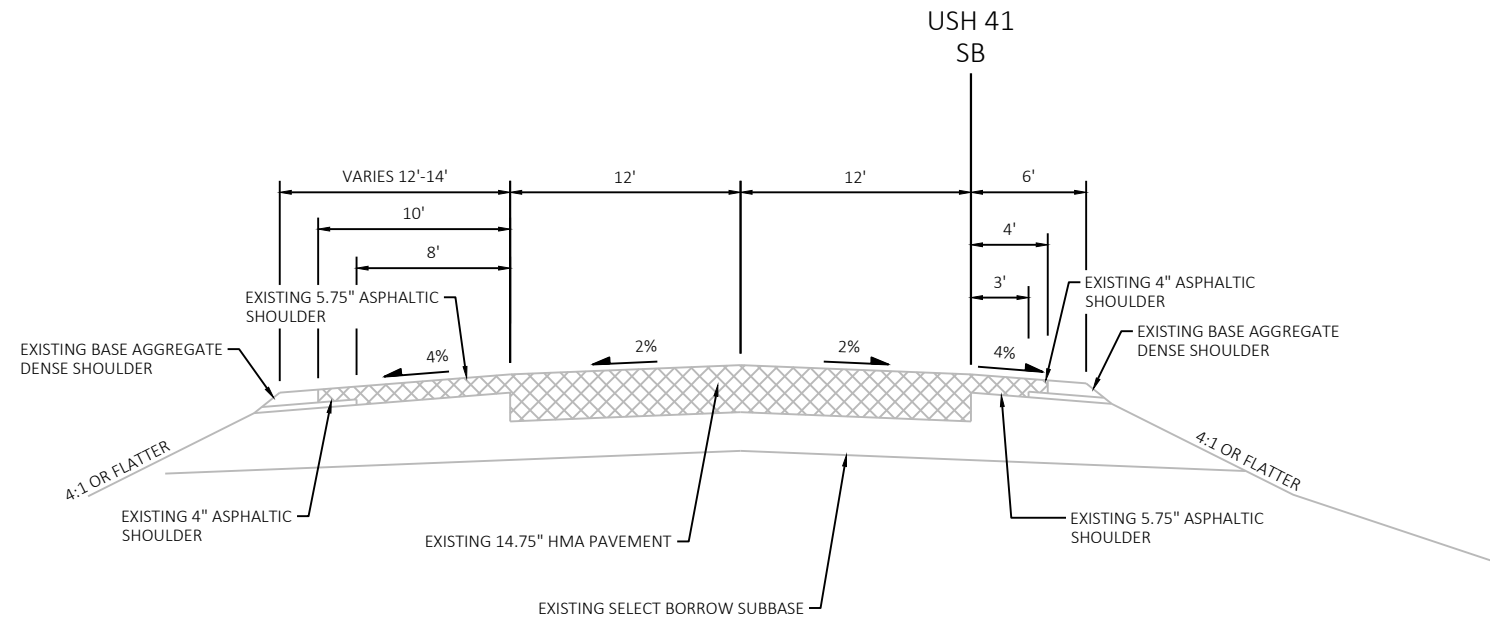
TOTAL PROJECT AREA = 0.5 ACRES
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.1 ACRES



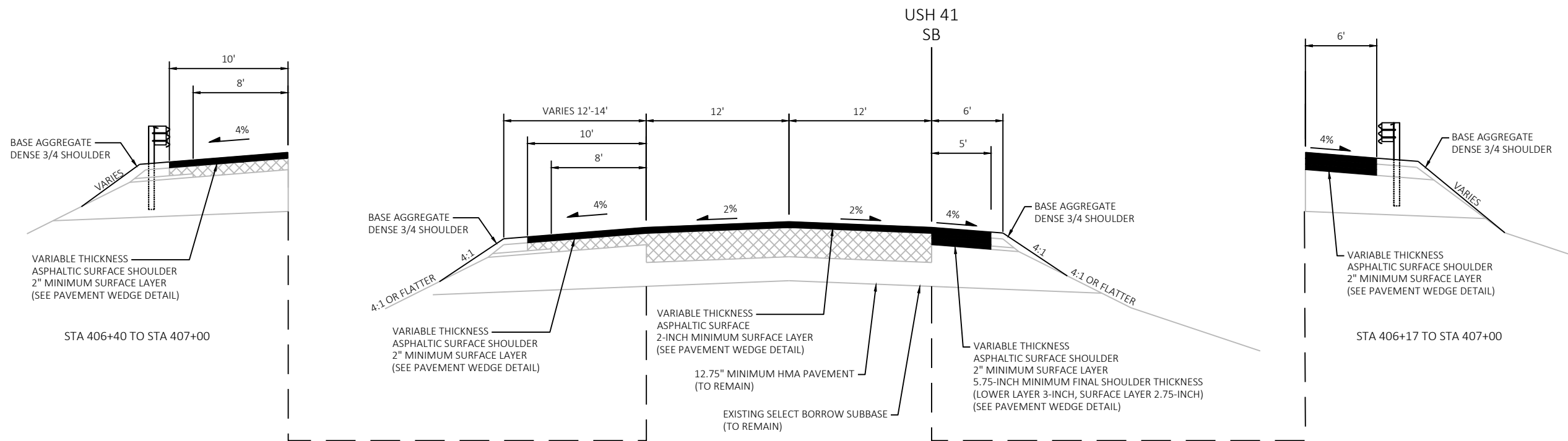
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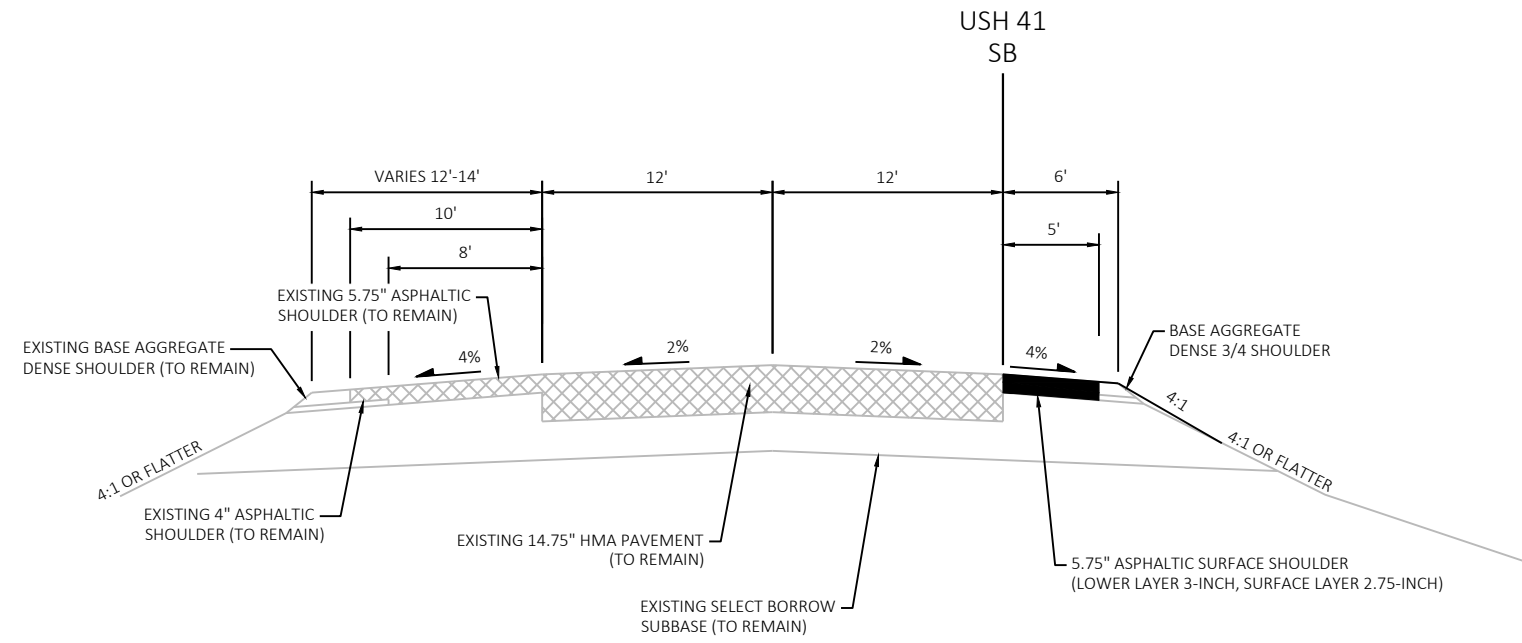
PROJECT NO: 1150-76-71	HWY: USH 41	COUNTY: OCONTO	PROJECT OVERVIEW	SHEET	E
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EXISTING TYPICAL SECTION USH 41
STA 399+24 TO STA 412+30

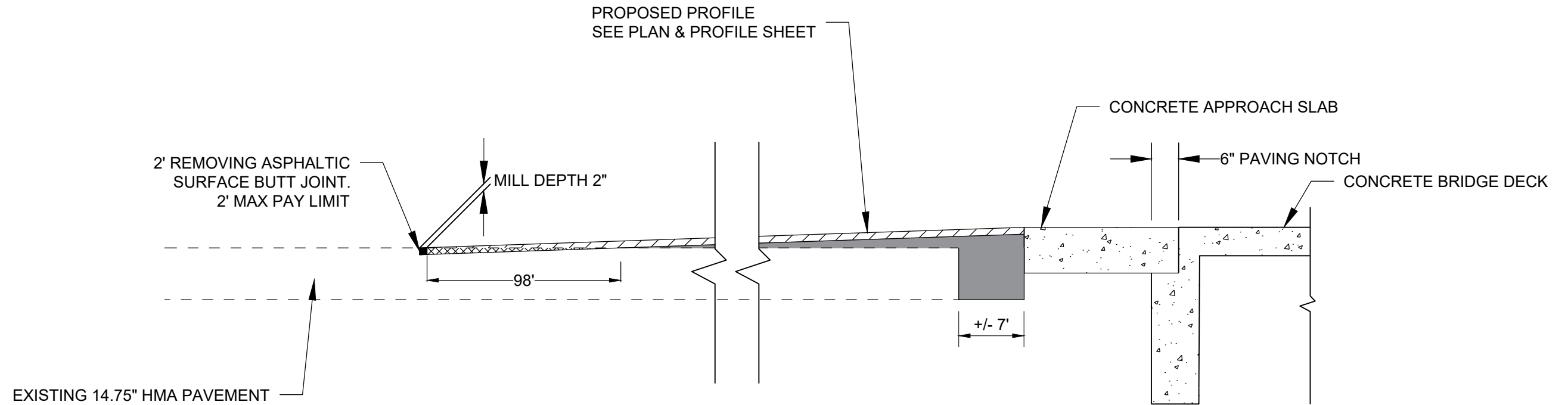





FINISHED TYPICAL SECTION USH 41
STA 401+25 TO STA 403+80
STA 405+72 TO STA 407+00



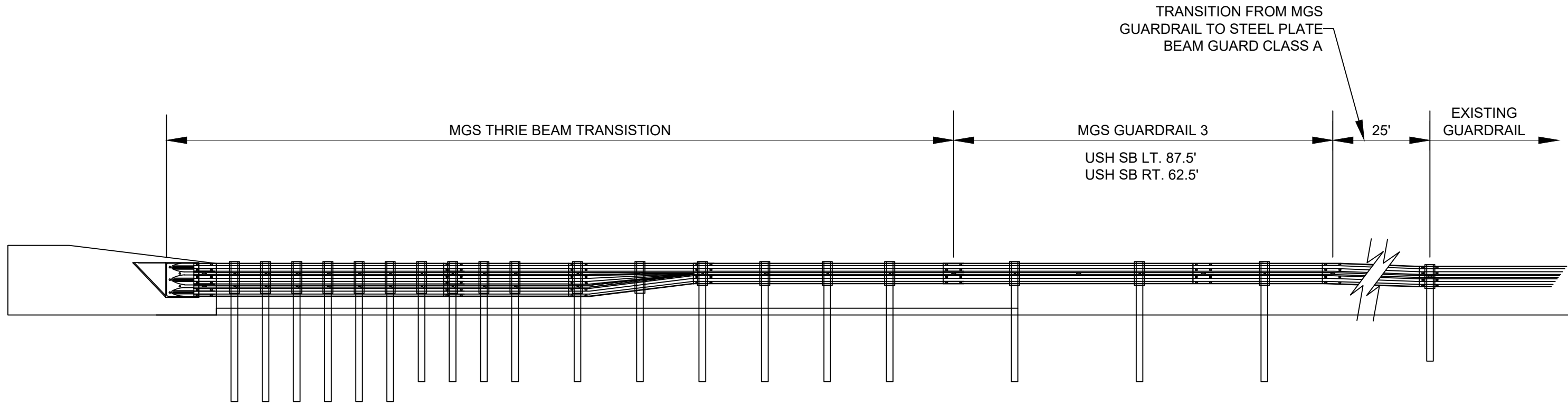
FINISHED TYPICAL SECTION USH 41

STA 399+24 TO STA 401+25
STA 407+00 TO STA 408+53

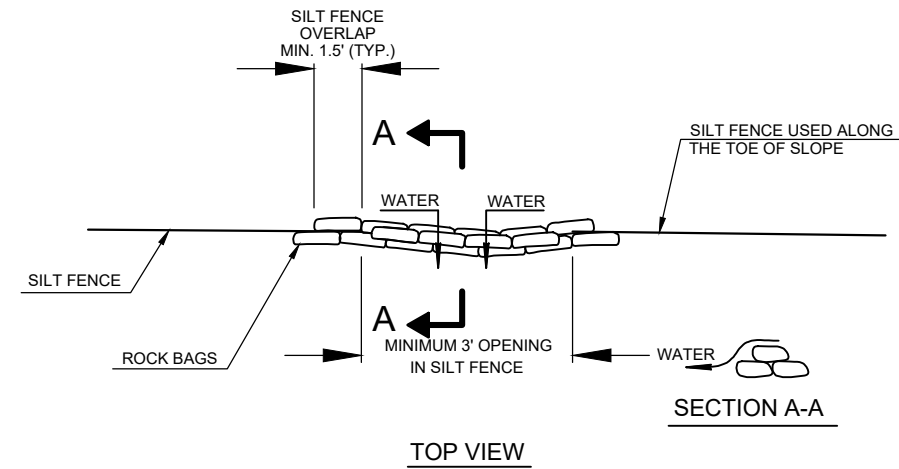


-  REMOVING ASPHALTIC SURFACE MILLING
-  PAVEMENT WEDGE (PAID AS ASPHALTIC SURFACE)
(MINIMUM LAYER THICKNESS 2.25" GRADATION 3, 1.75" GRADATION 4)
(MAXIMUM LAYER THICKNESS 3.0" GRADATION 3, 2.5" GRADATION 4)
-  TYPICAL 2" LAYER THICKNESS SURFACE (PAID AS ASPHALTIC SURFACE)

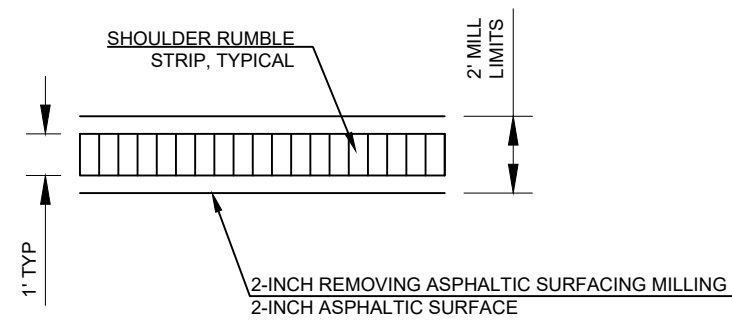
ASPHALTIC SURFACE MILLING AND PAVEMENT WEDGE DETAIL



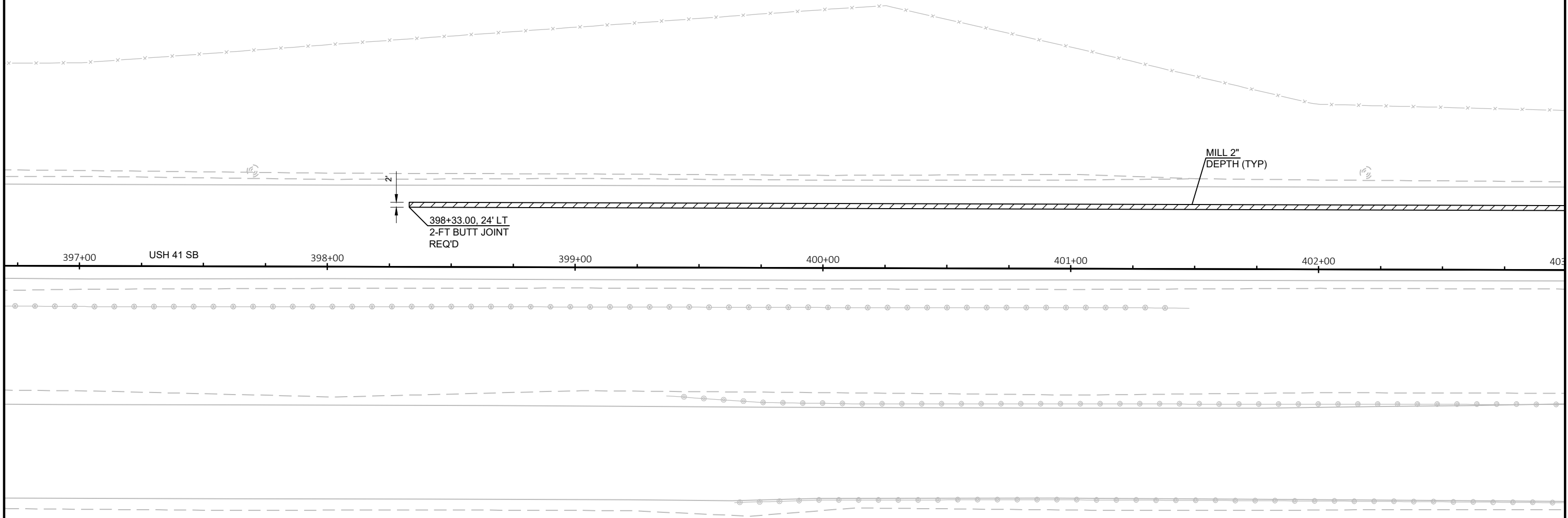
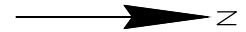
MGS GUARDRAIL TO STEEL PLATE BEAMGUARD CLASS A DETAIL












ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL
PAID AS ROCK BAGS



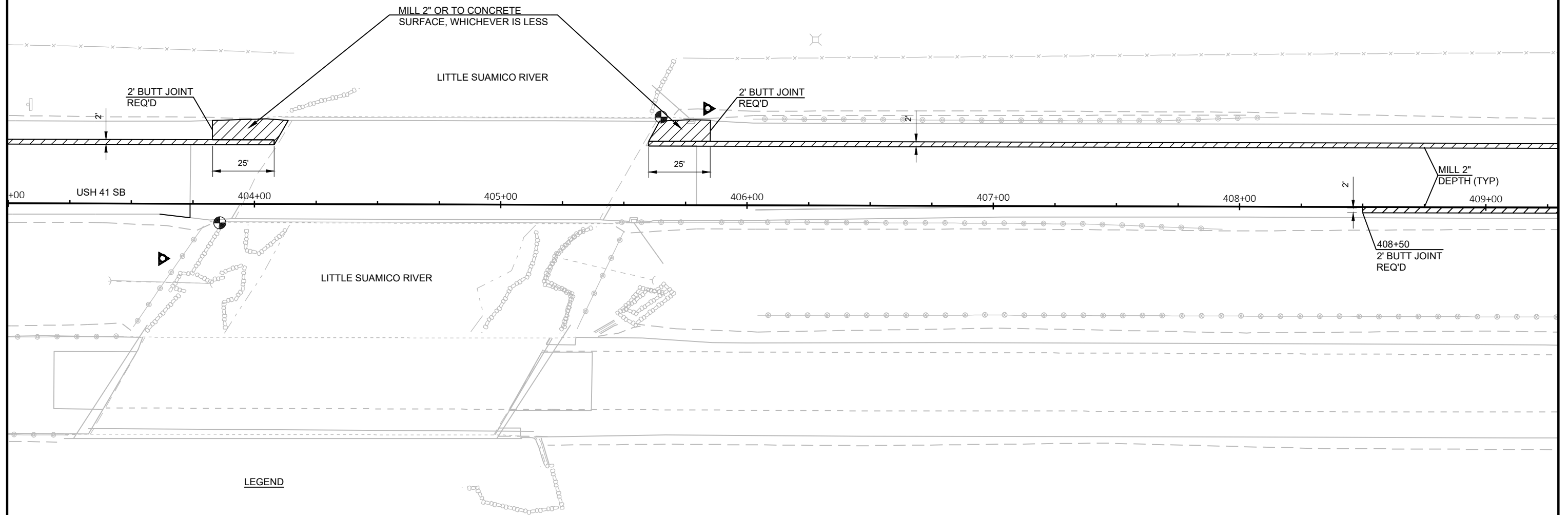
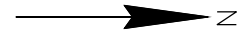
MILL & PAVE DETAIL FOR REMOVING SHOULDER RUMBLE STRIPS



LEGEND

-  REMOVING INLETS
-  REMOVING CONCRETE PAVEMENT
-  REMOVING CURB & GUTTER
-  REMOVING ASPHALTIC SURFACE MILLING
-  SAWCUT
-  REMOVING ASPHALTIC SURFACE
-  REMOVING GUARDRAIL
-  ABANDONING SEWER
-  SALVAGE AND REPLACE GUARDRAIL

PROJECT NO: 1150-76-71	HWY: USH 41	COUNTY: OCONTO	REMOVALS - STAGE 1	SHEET	E
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LEGEND

- | | | | |
|--|-------------------------------|--|------------------------------------|
| | REMOVING INLETS | | REMOVING CONCRETE PAVEMENT |
| | REMOVING CURB & GUTTER | | REMOVING ASPHALTIC SURFACE MILLING |
| | SAWCUT | | REMOVING ASPHALTIC SURFACE |
| | REMOVING GUARDRAIL | | ABANDONING SEWER |
| | SALVAGE AND REPLACE GUARDRAIL | | |

PROJECT NO: 1150-76-71

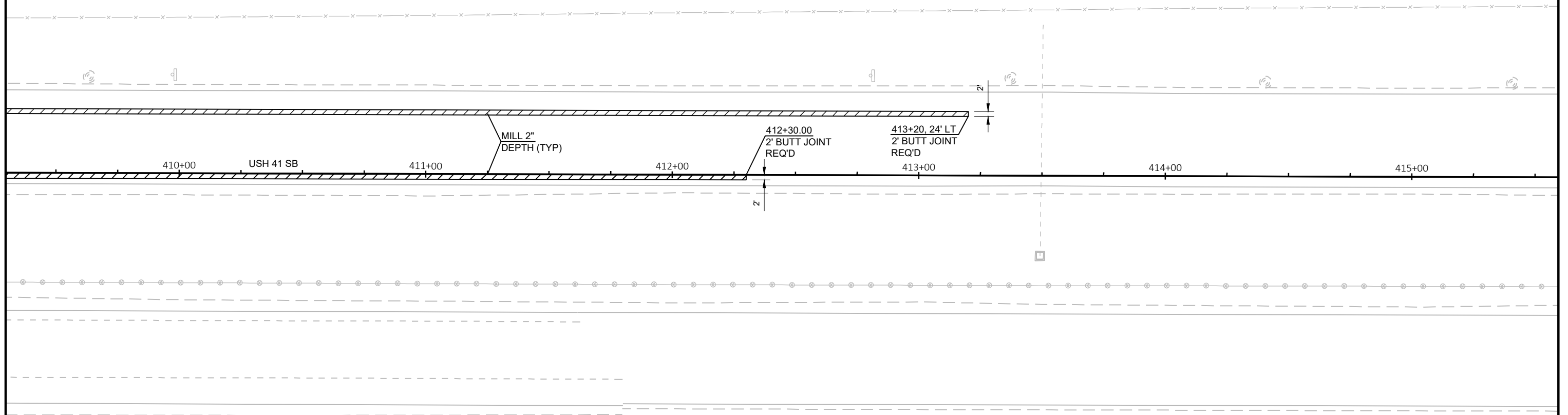
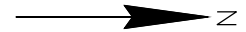
HWY: USH 41

COUNTY: OCONTO

REMOVALS - STAGE 1

SHEET

E



LEGEND

- | | | | |
|--|-------------------------------|--|------------------------------------|
| | REMOVING INLETS | | REMOVING CONCRETE PAVEMENT |
| | REMOVING CURB & GUTTER | | REMOVING ASPHALTIC SURFACE MILLING |
| | SAWCUT | | REMOVING ASPHALTIC SURFACE |
| | REMOVING GUARDRAIL | | ABANDONING SEWER |
| | SALVAGE AND REPLACE GUARDRAIL | | |

PROJECT NO: 1150-76-71

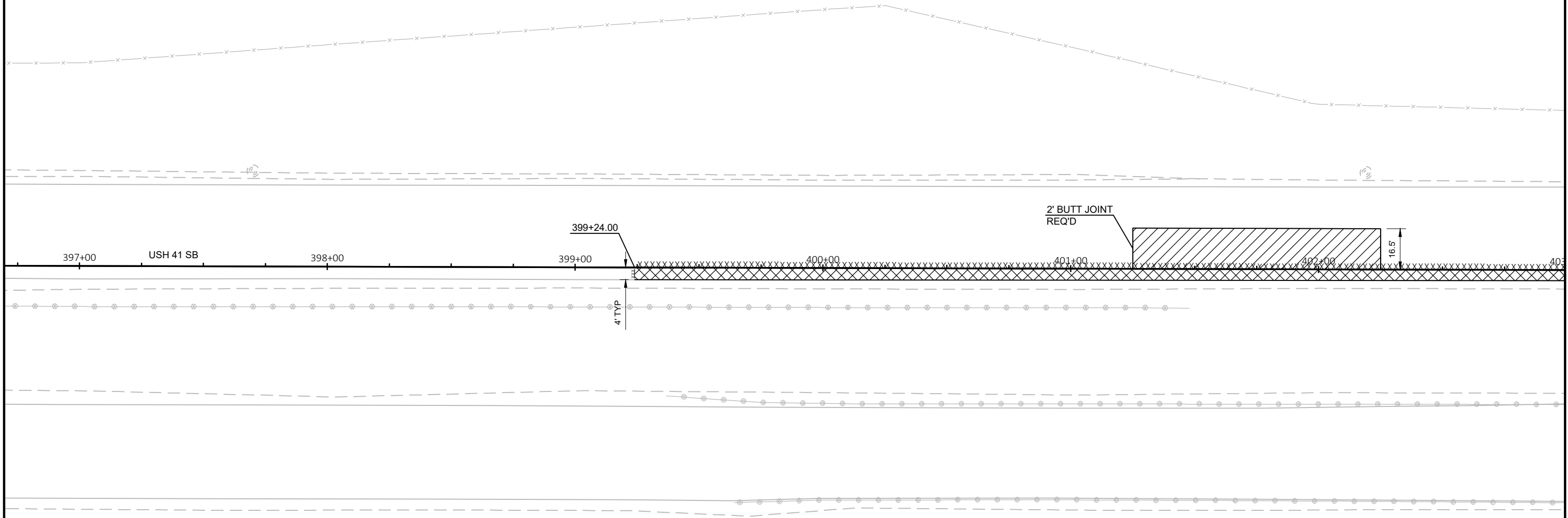
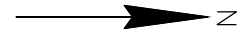
HWY: USH 41

COUNTY: OCONTO

REMOVALS - STAGE 1

SHEET

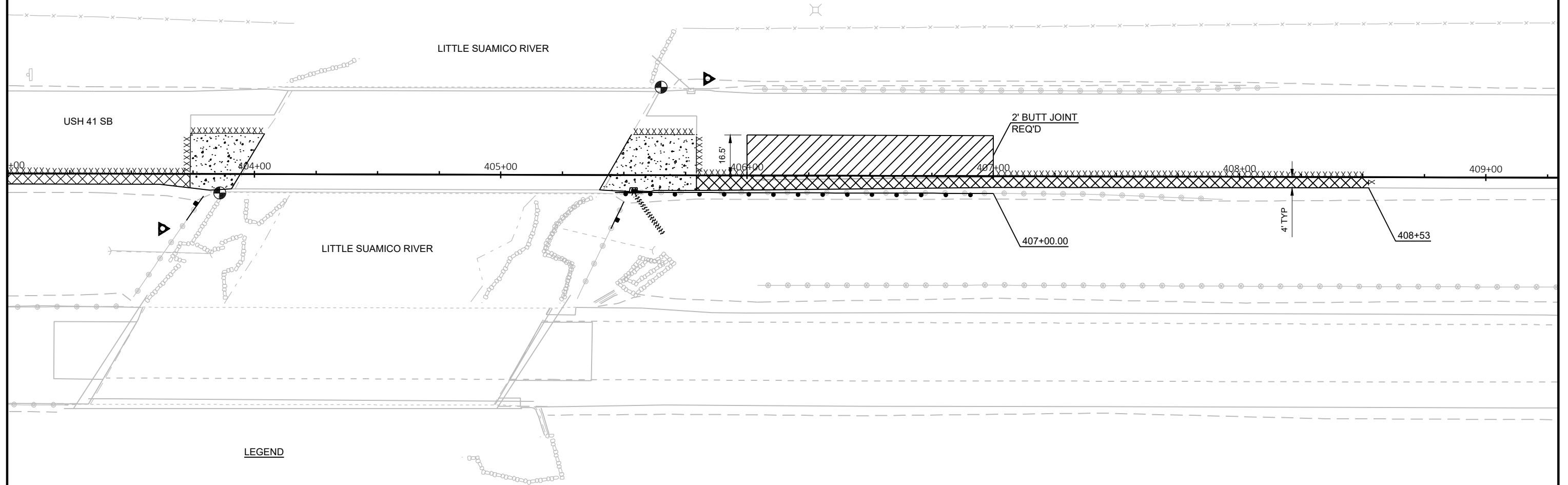
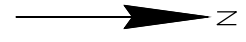
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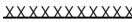




LEGEND

- REMOVING INLETS
- REMOVING CURB & GUTTER
- SAWCUT
- REMOVING GUARDRAIL
- SALVAGE AND REPLACE GUARDRAIL
- REMOVING CONCRETE PAVEMENT
- REMOVING ASPHALTIC SURFACE MILLING
- REMOVING ASPHALTIC SURFACE
- ABANDONING SEWER

PROJECT NO: 1150-76-71	HWY: USH 41	COUNTY: OCONTO	REMOVALS - STAGE 2
SHEET			E



LEGEND

- | | | | |
|---|-------------------------------|---|------------------------------------|
|  | REMOVING INLETS |  | REMOVING CONCRETE PAVEMENT |
|  | REMOVING CURB & GUTTER |  | REMOVING ASPHALTIC SURFACE MILLING |
|  | SAWCUT |  | REMOVING ASPHALTIC SURFACE |
|  | REMOVING GUARDRAIL |  | ABANDONING SEWER |
|  | SALVAGE AND REPLACE GUARDRAIL | | |

PROJECT NO: 1150-76-71

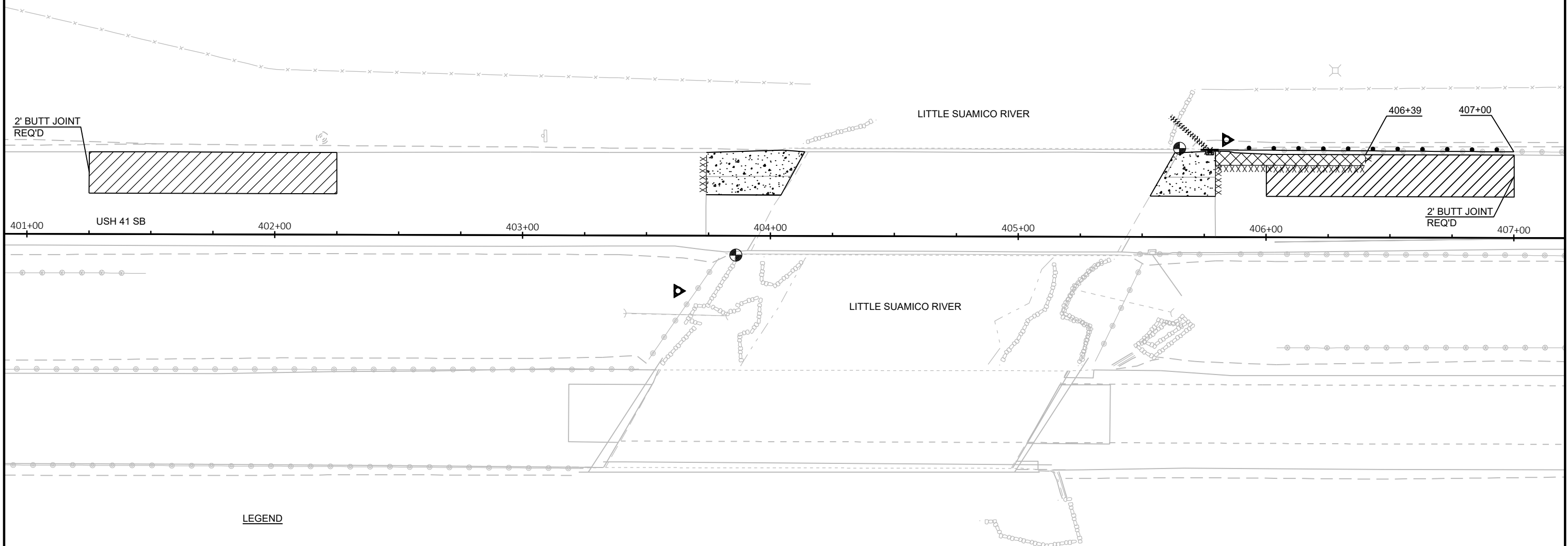
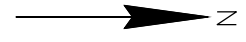
HWY: USH 41

COUNTY: OCONTO





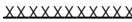




REMOVALS - STAGE 2

SHEET

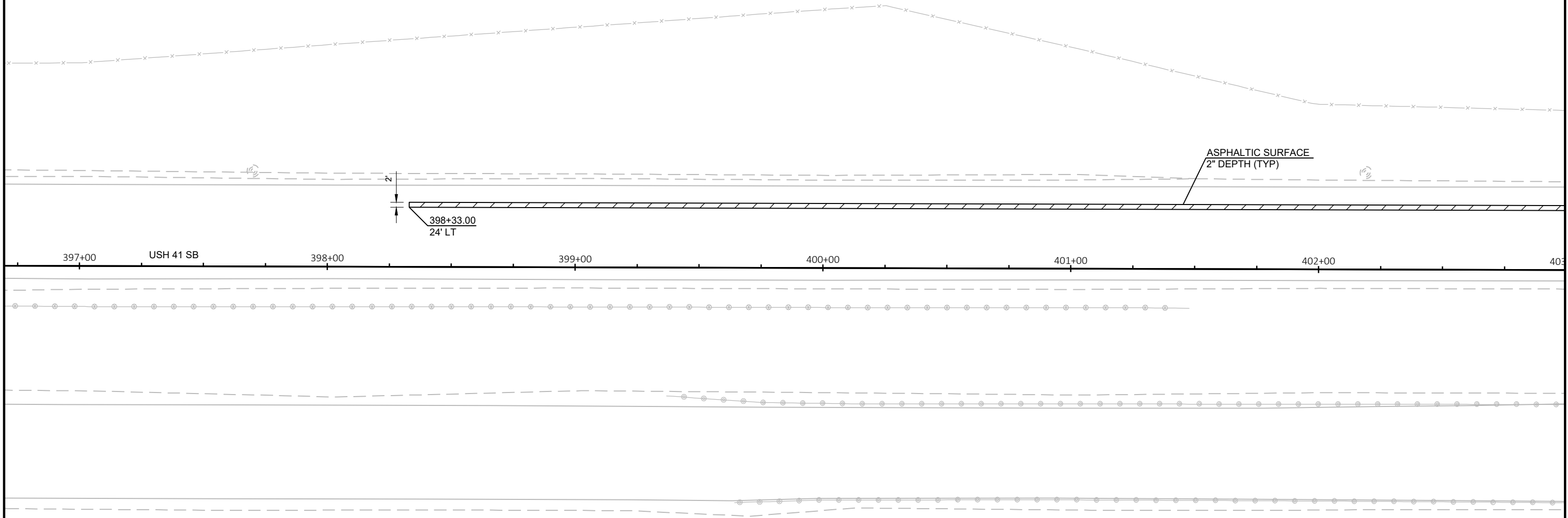
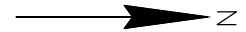
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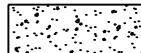



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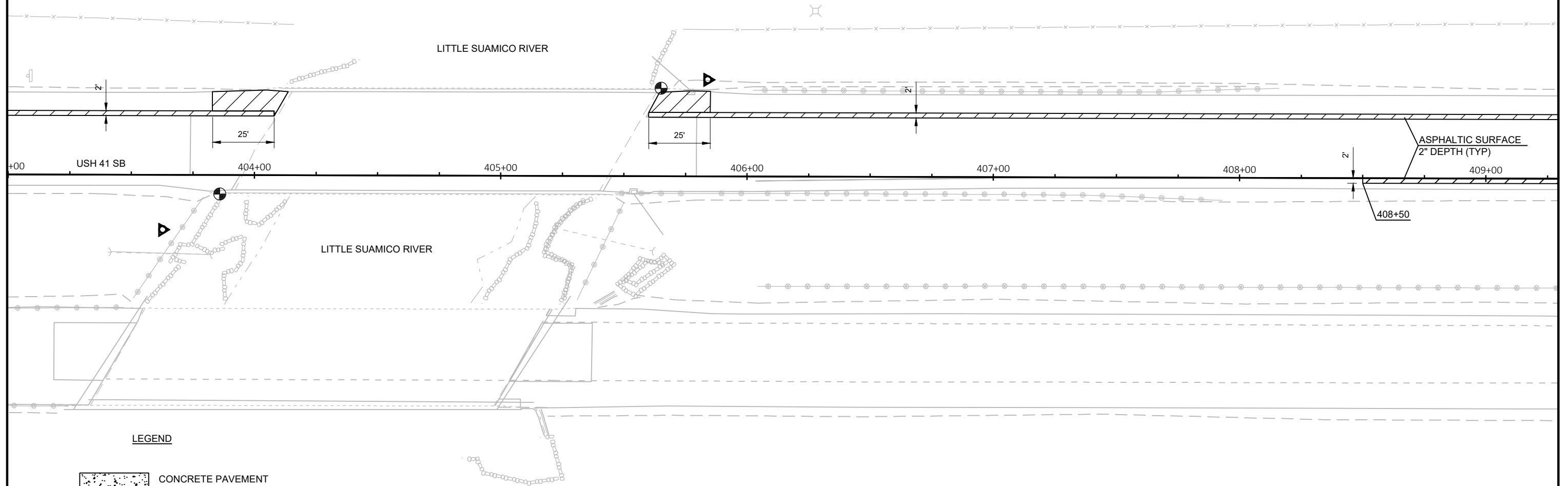
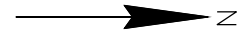
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|---|-------------------------------|---|------------------------------------|
|  | REMOVING INLETS |  | REMOVING CONCRETE PAVEMENT |
|  | REMOVING CURB & GUTTER |  | REMOVING ASPHALTIC SURFACE MILLING |
|  | SAWCUT |  | REMOVING ASPHALTIC SURFACE |
|  | REMOVING GUARDRAIL |  | ABANDONING SEWER |
|  | SALVAGE AND REPLACE GUARDRAIL | | |

PROJECT NO: 1150-76-71	HWY: USH 41	COUNTY: OCONTO	REMOVALS - STAGE 3	SHEET	E
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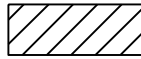




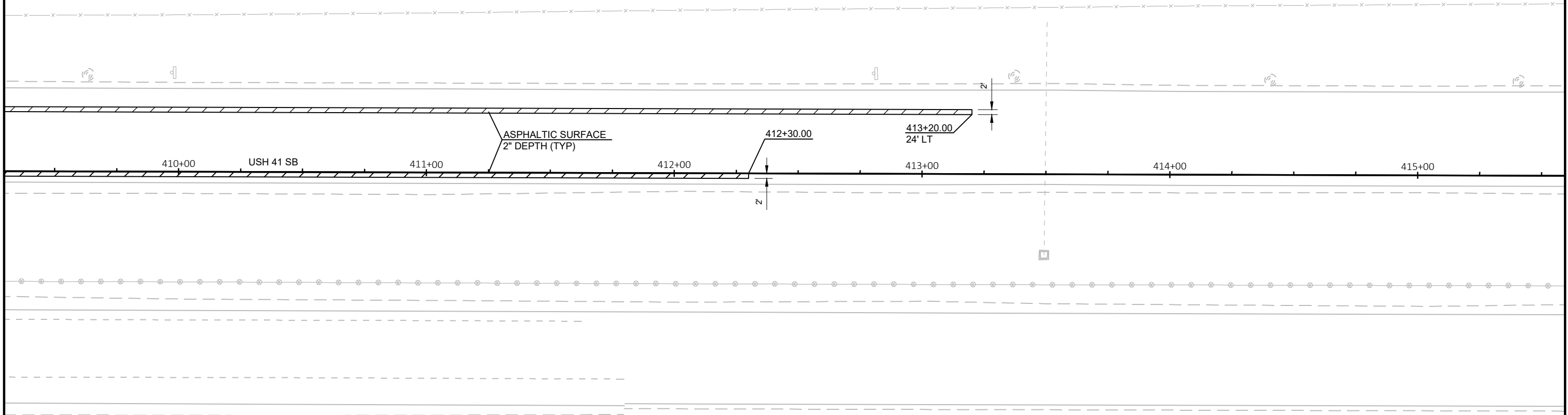
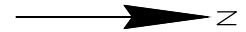
LEGEND

-  CONCRETE PAVEMENT
APPROACH SLAB
-  ASPHALTIC SURFACE,
2-INCH TYPICAL
-  ASPHALTIC SURFACE,
VARIABLE DEPTH
-  ASPHALTIC SURFACE,
SHOULDER WIDENING AREA,
VARIABLE DEPTH


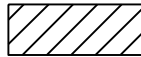




LEGEND

-  CONCRETE PAVEMENT
APPROACH SLAB
-  ASPHALTIC SURFACE,
2-INCH TYPICAL
-  ASPHALTIC SURFACE,
VARIABLE DEPTH
-  ASPHALTIC SURFACE,
SHOULDER WIDENING AREA,
VARIABLE DEPTH



LEGEND

-  CONCRETE PAVEMENT
APPROACH SLAB
-  ASPHALTIC SURFACE,
2-INCH TYPICAL
-  ASPHALTIC SURFACE,
VARIABLE DEPTH
-  ASPHALTIC SURFACE,
SHOULDER WIDENING AREA,
VARIABLE DEPTH

PROJECT NO: 1150-76-71

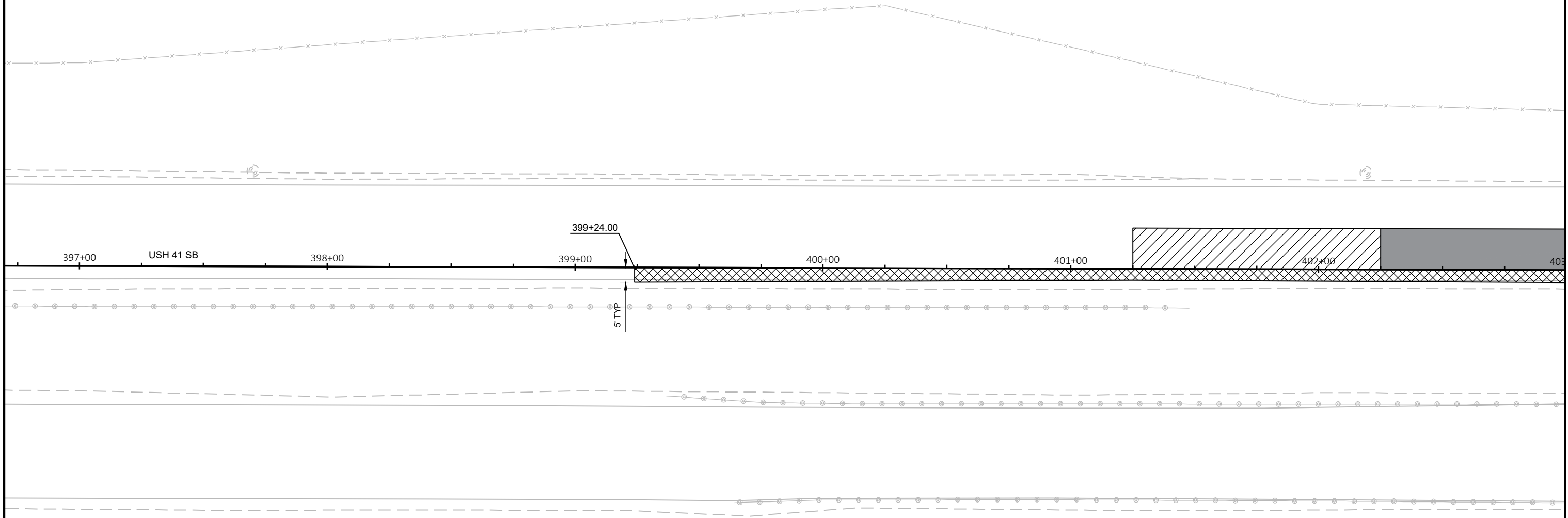
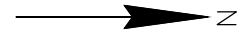
HWY: USH 41

COUNTY: OCONTO


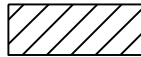


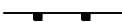
PAVING DETAILS - STAGE 1

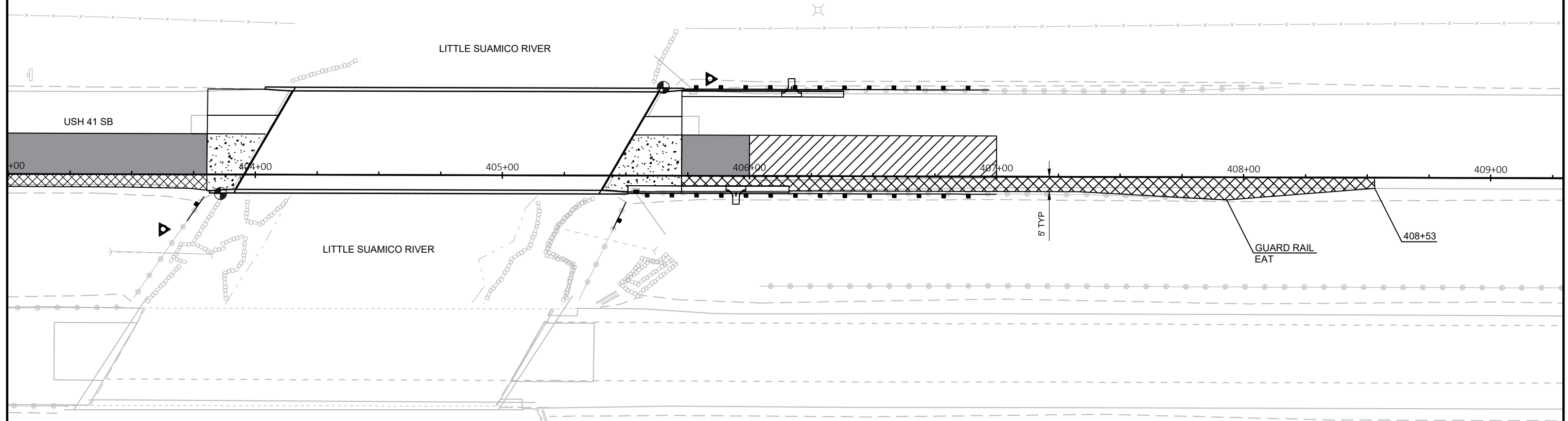
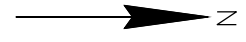
SHEET

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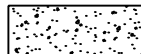



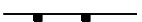


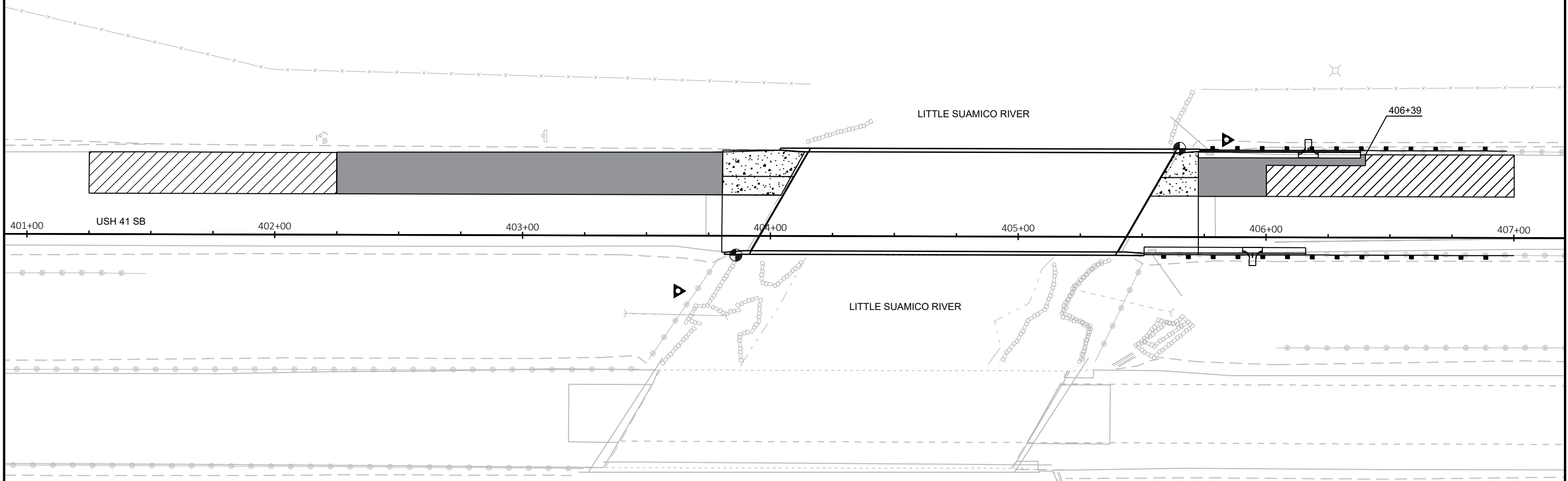
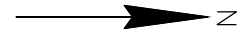
LEGEND

-  CONCRETE PAVEMENT
APPROACH SLAB
-  ASPHALTIC SURFACE,
2-INCH TYPICAL
-  ASPHALTIC SURFACE,
VARIABLE DEPTH
-  ASPHALTIC SURFACE,
SHOULDER WIDENING AREA,
VARIABLE DEPTH
-  GUARDRAIL


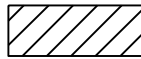


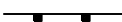


LEGEND

-  CONCRETE PAVEMENT APPROACH SLAB
-  ASPHALTIC SURFACE, 2-INCH TYPICAL
-  ASPHALTIC SURFACE, VARIABLE DEPTH
-  ASPHALTIC SURFACE, SHOULDER WIDENING AREA, VARIABLE DEPTH
-  GUARDRAIL



LEGEND

-  CONCRETE PAVEMENT
APPROACH SLAB
-  ASPHALTIC SURFACE,
2-INCH TYPICAL
-  ASPHALTIC SURFACE,
VARIABLE DEPTH
-  ASPHALTIC SURFACE,
SHOULDER WIDENING AREA,
VARIABLE DEPTH
-  GUARDRAIL

PROJECT NO: 1150-76-71

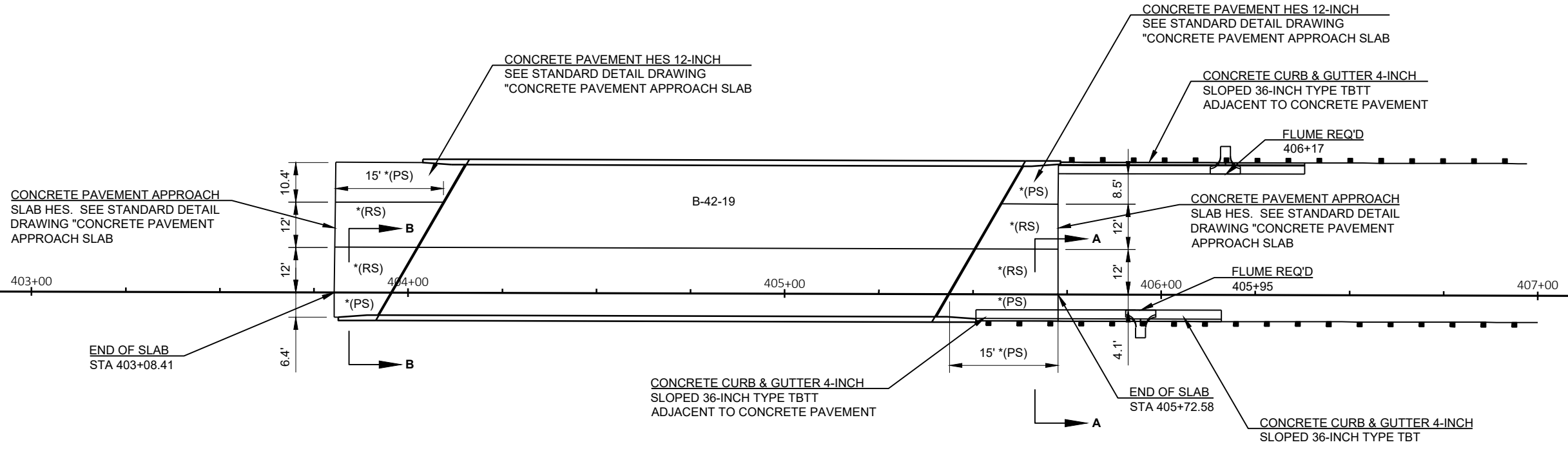
HWY: USH 41

COUNTY: OCONTO

PAVING DETAILS - STAGE 3

SHEET

E

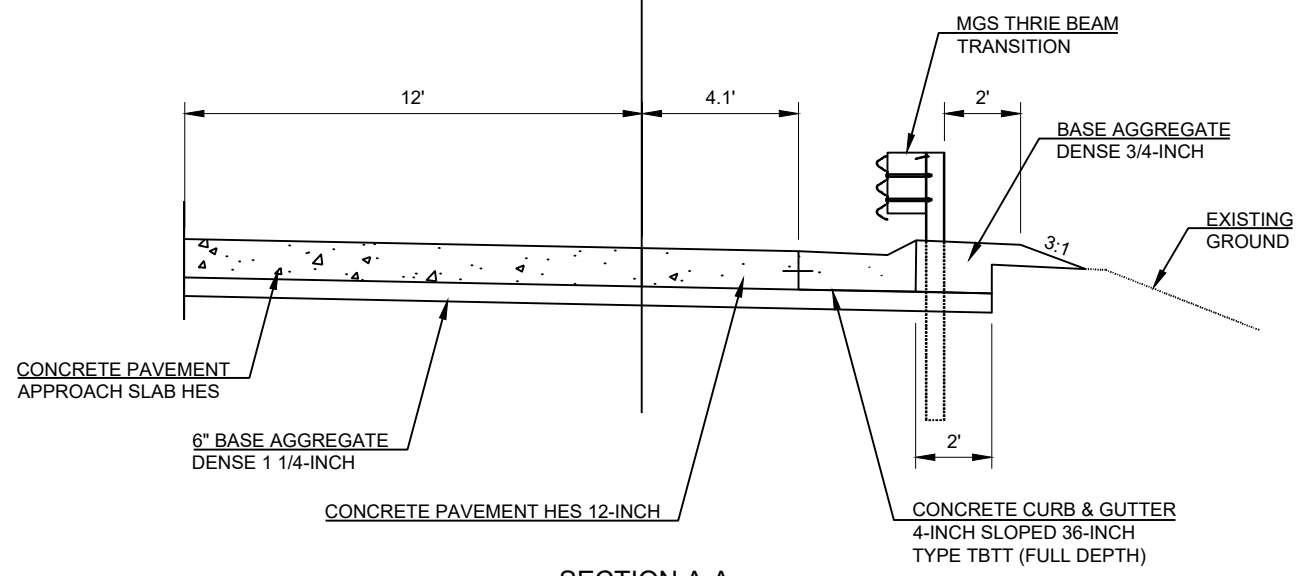


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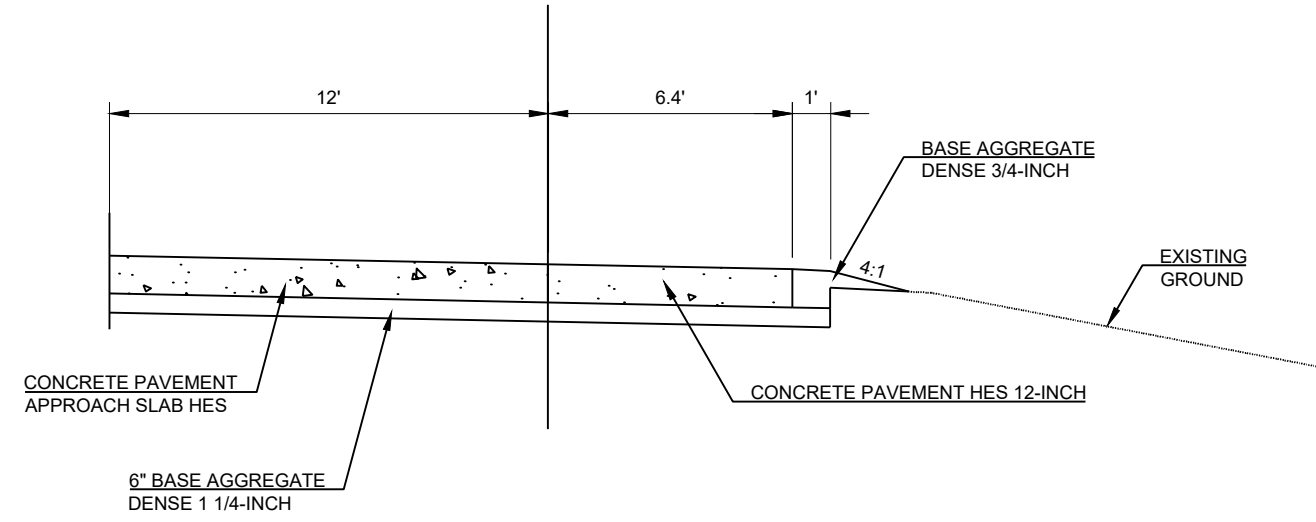
- *(RS) = REINFORCED CONCRETE SLAB
- *(PS) = PAVED CONCRETE SHOULDER

**USH 41
SB**

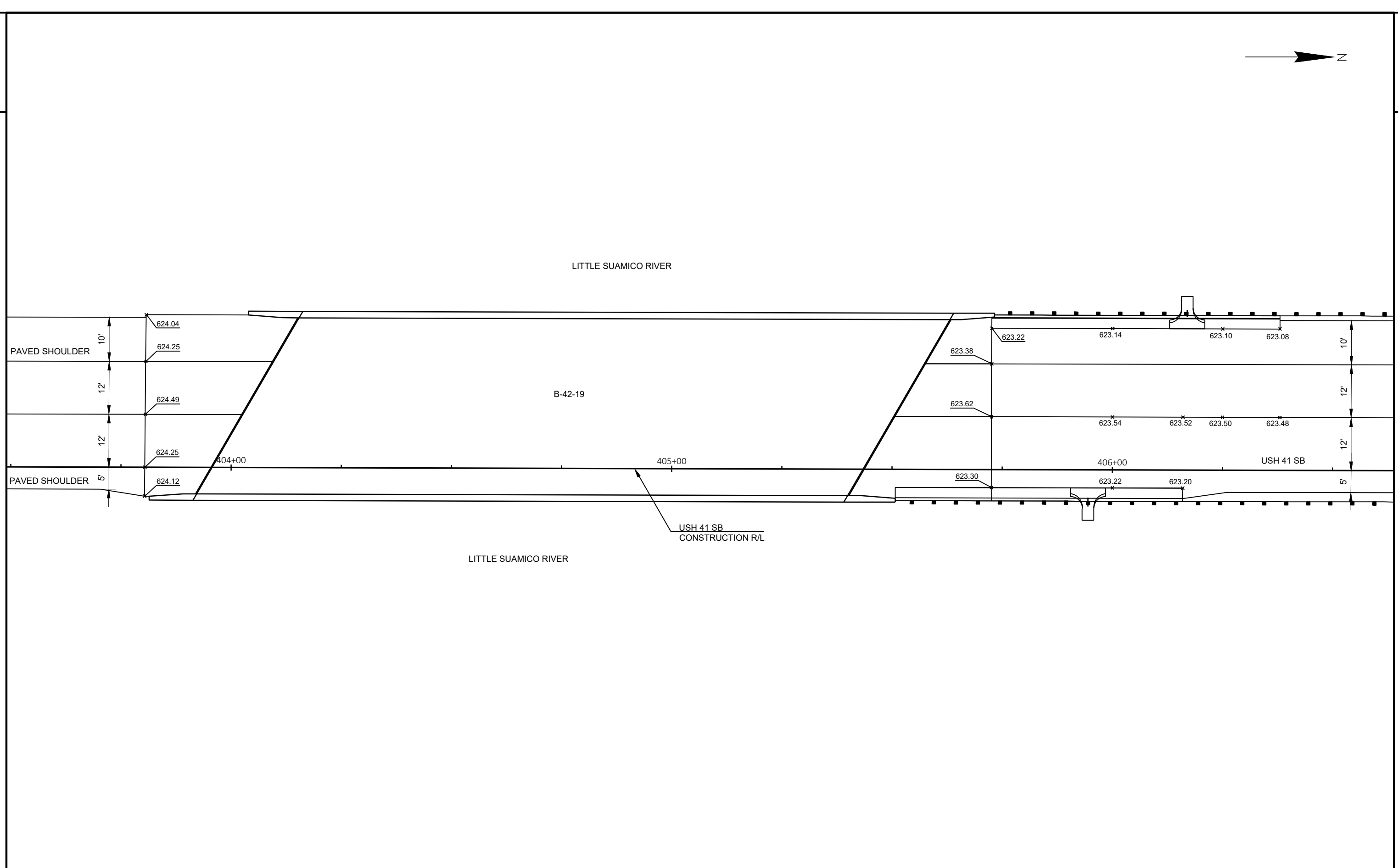
**USH 41
SB**



SECTION A-A



SECTION B-B



PROJECT NO: 1150-76-71

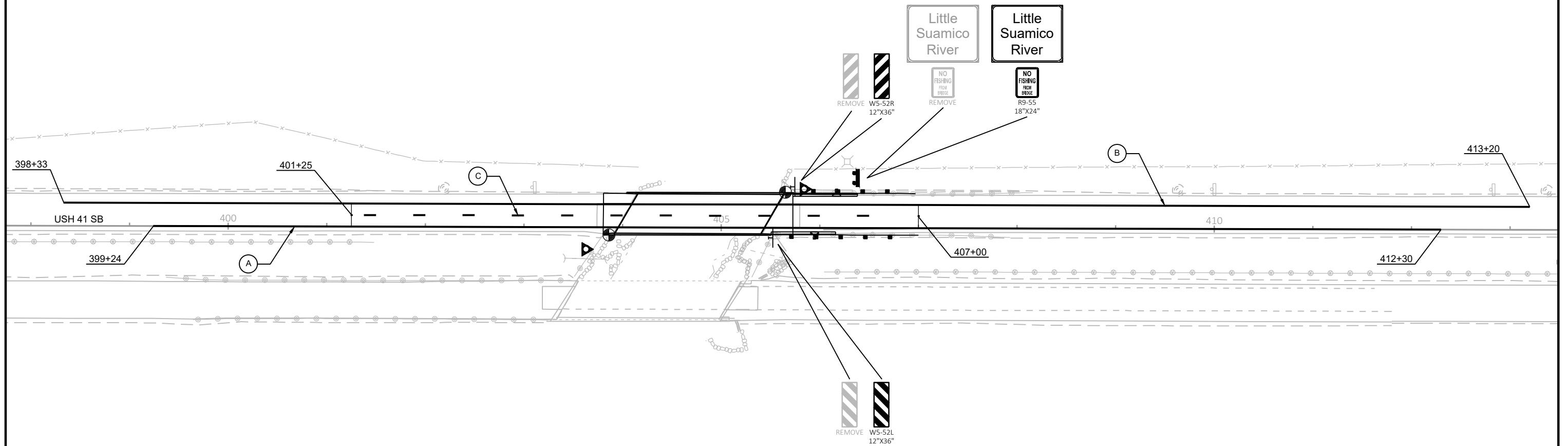
HWY: USH 41

COUNTY: OCONTO

PLAN GRADES

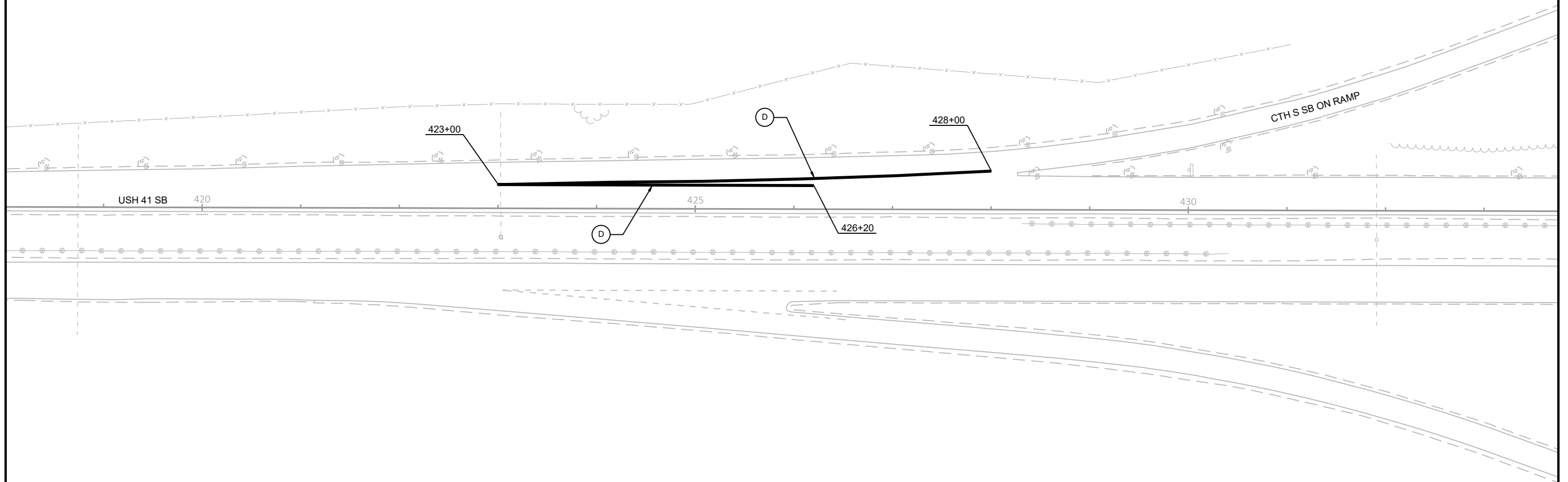
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E



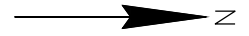
LEGEND

- (A) MARKING LINE EPOXY 4-INCH (YELLOW)
- (B) MARKING LINE EPOXY 4-INCH (WHITE)
- (C) MARKING LINE EPOXY 4-INCH (WHITE) 12.5' LINE 37.5' GAP
- (D) MARKING LINE EPOXY 8-INCH (WHITE)



LEGEND

- (A) MARKING LINE EPOXY 4-INCH (YELLOW)
- (B) MARKING LINE EPOXY 4-INCH (WHITE)
- (C) MARKING LINE EPOXY 4-INCH (WHITE) 12.5' LINE 37.5' GAP
- (D) MARKING LINE EPOXY 8-INCH (WHITE)



CTH S SB OFF RAMP

440+20

C

449+84

USH 41 SB

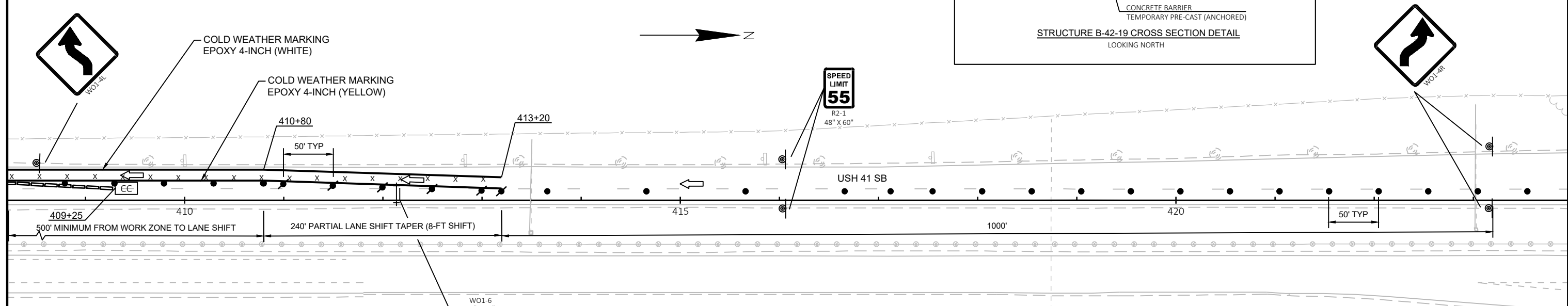
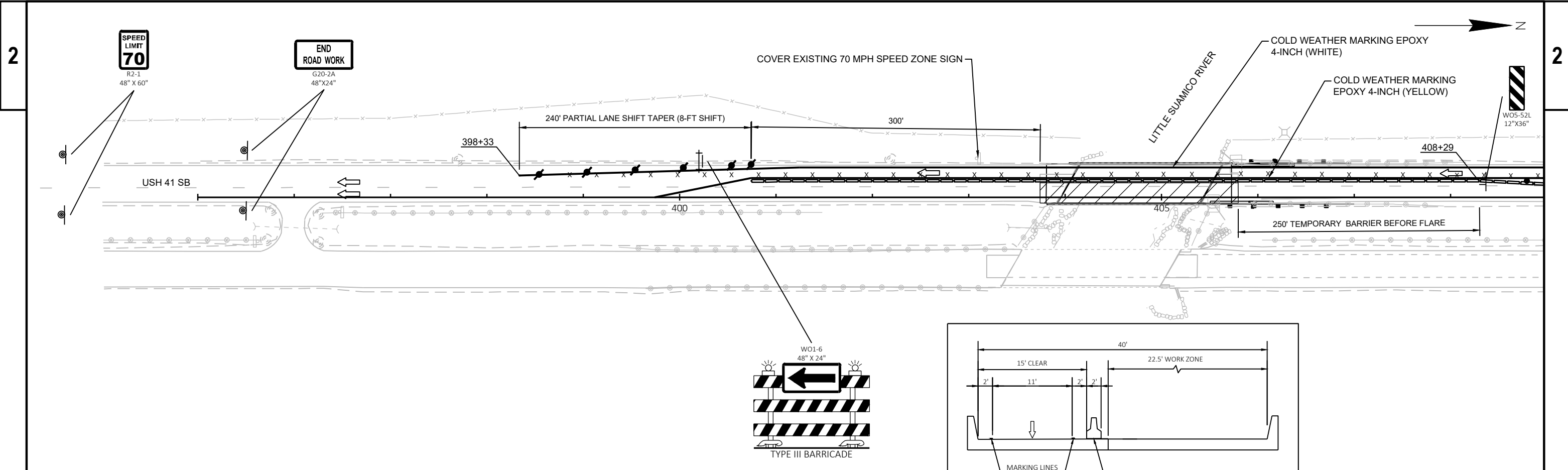
440

445

450

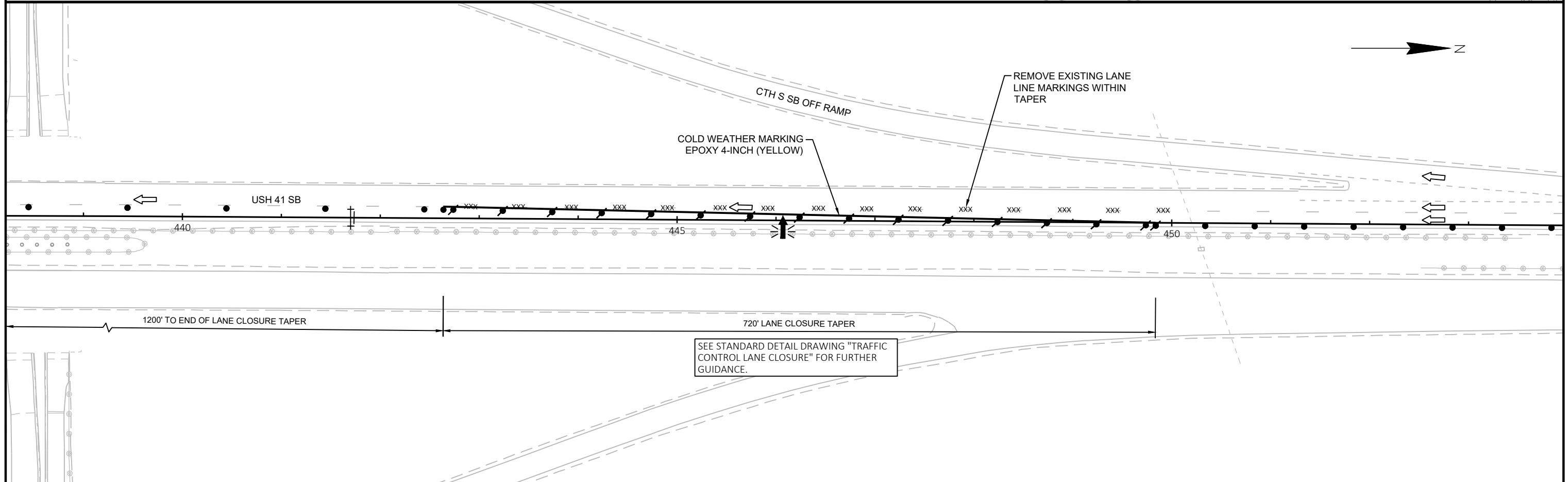
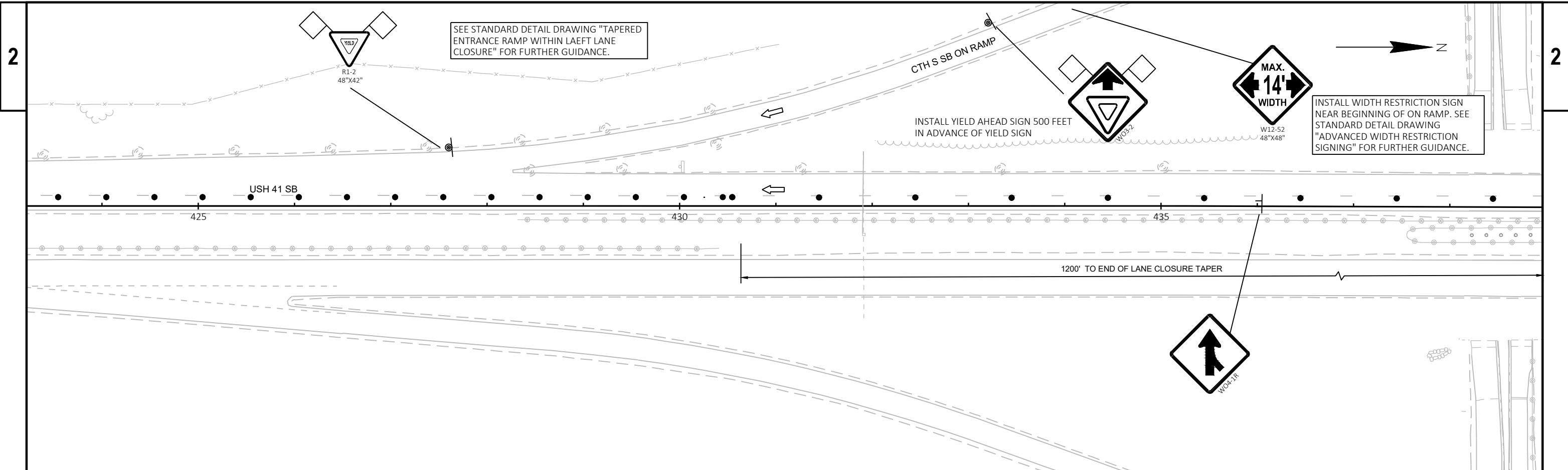
LEGEND

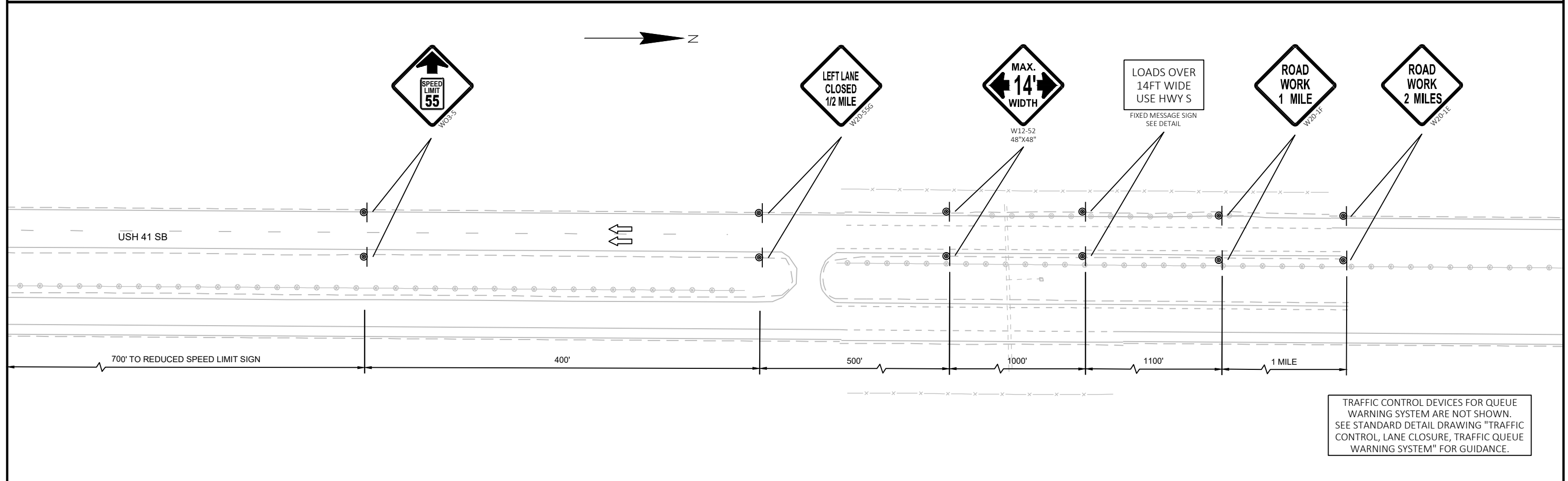
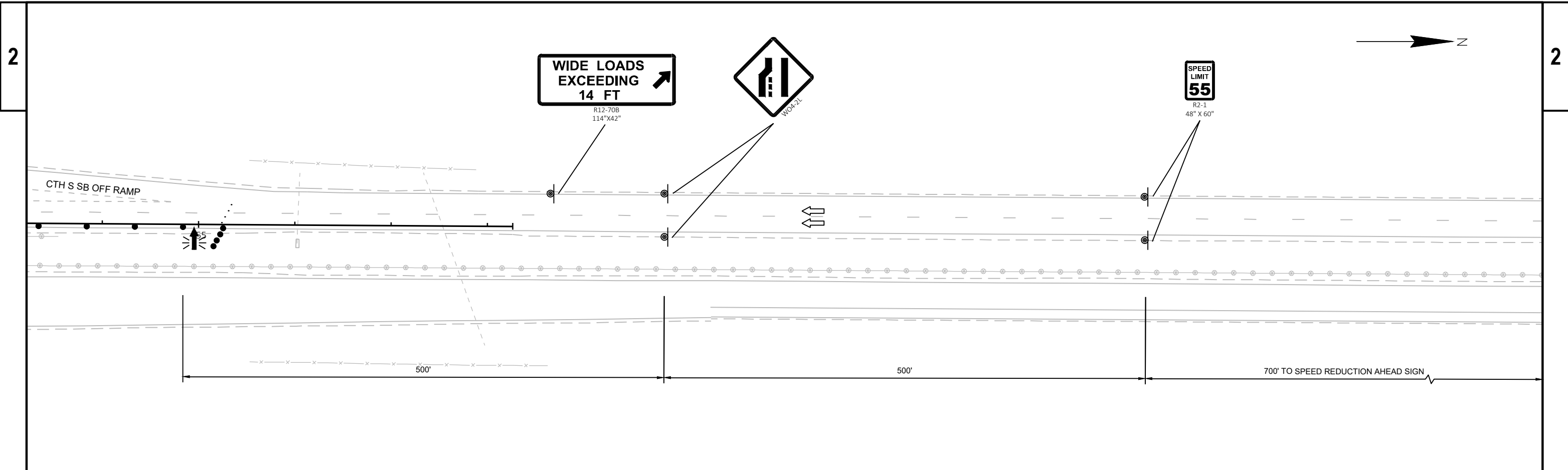
- (A) MARKING LINE EPOXY 4-INCH (YELLOW)
- (B) MARKING LINE EPOXY 4-INCH (WHITE)
- (C) MARKING LINE EPOXY 4-INCH (WHITE) 12.5' LINE 37.5' GAP
- (D) MARKING LINE EPOXY 8-INCH (WHITE)

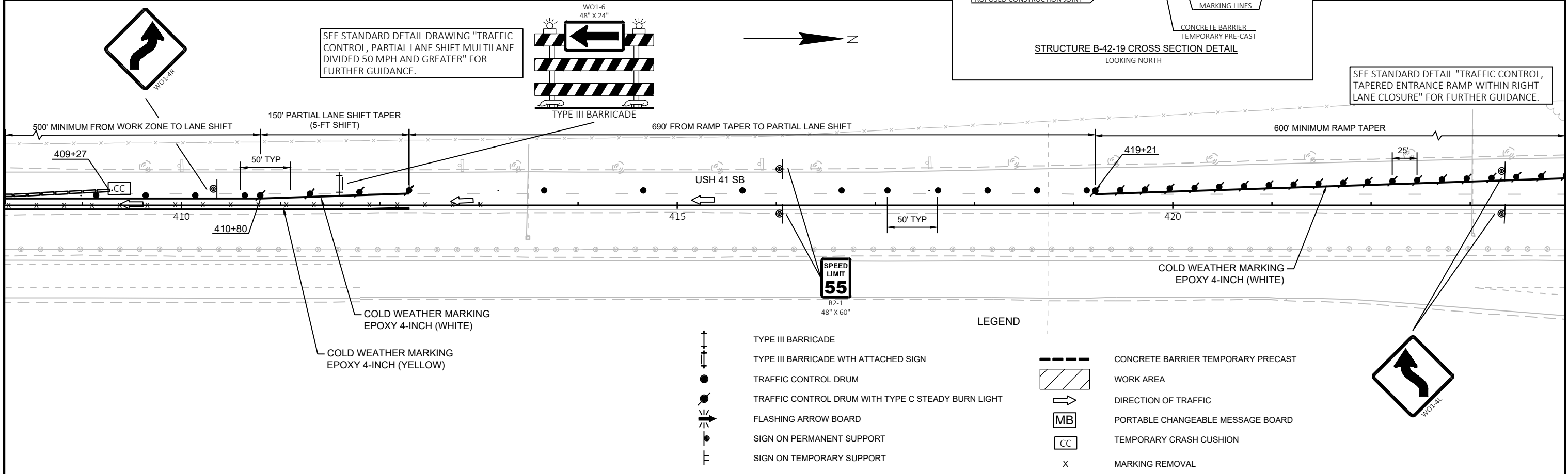
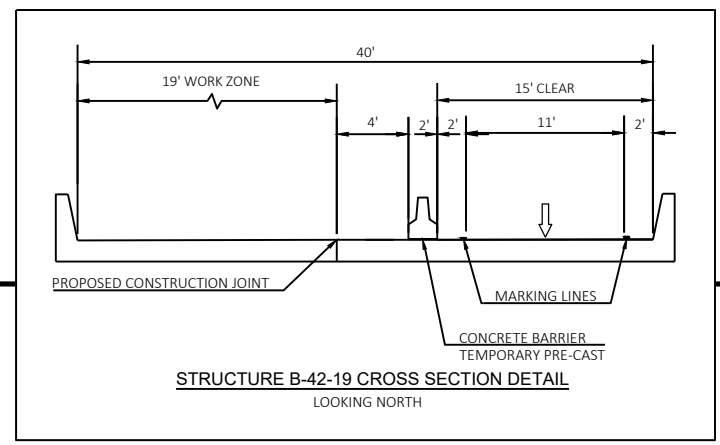
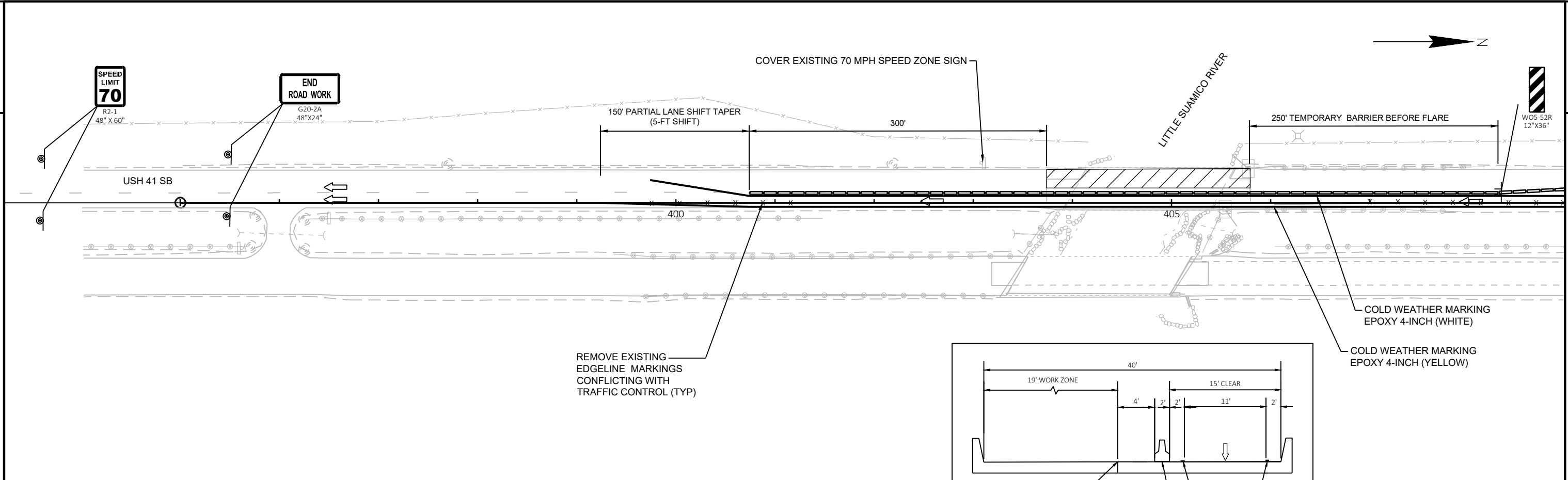


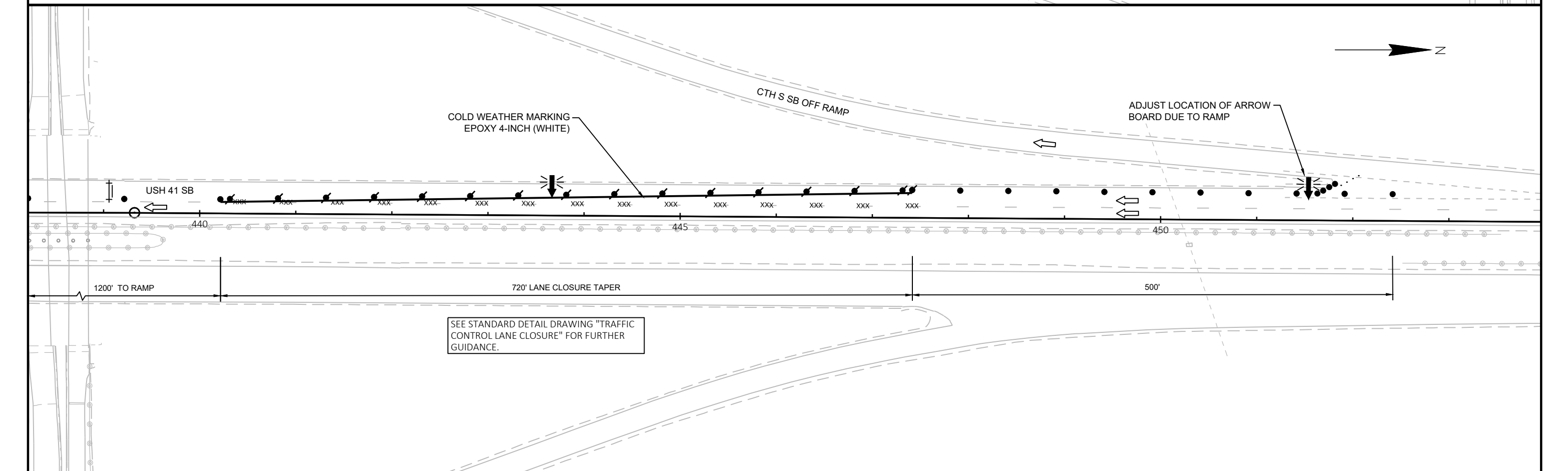
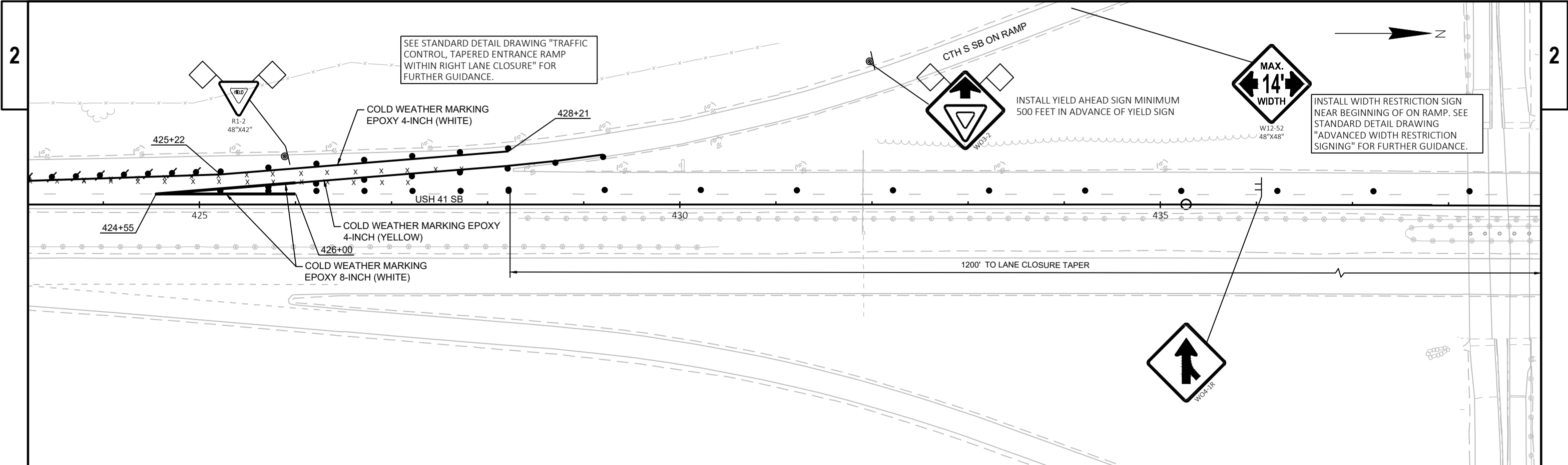
LEGEND

	TYPE III BARRICADE		CONCRETE BARRIER TEMPORARY PRECAST
	TYPE III BARRICADE WITH ATTACHED SIGN		WORK AREA
	TRAFFIC CONTROL DRUM		DIRECTION OF TRAFFIC
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT		PORTABLE CHANGEABLE MESSAGE BOARD
	FLASHING ARROW BOARD		TEMPORARY CRASH CUSHION
	SIGN ON PERMANENT SUPPORT		MARKING REMOVAL
	SIGN ON TEMPORARY SUPPORT		

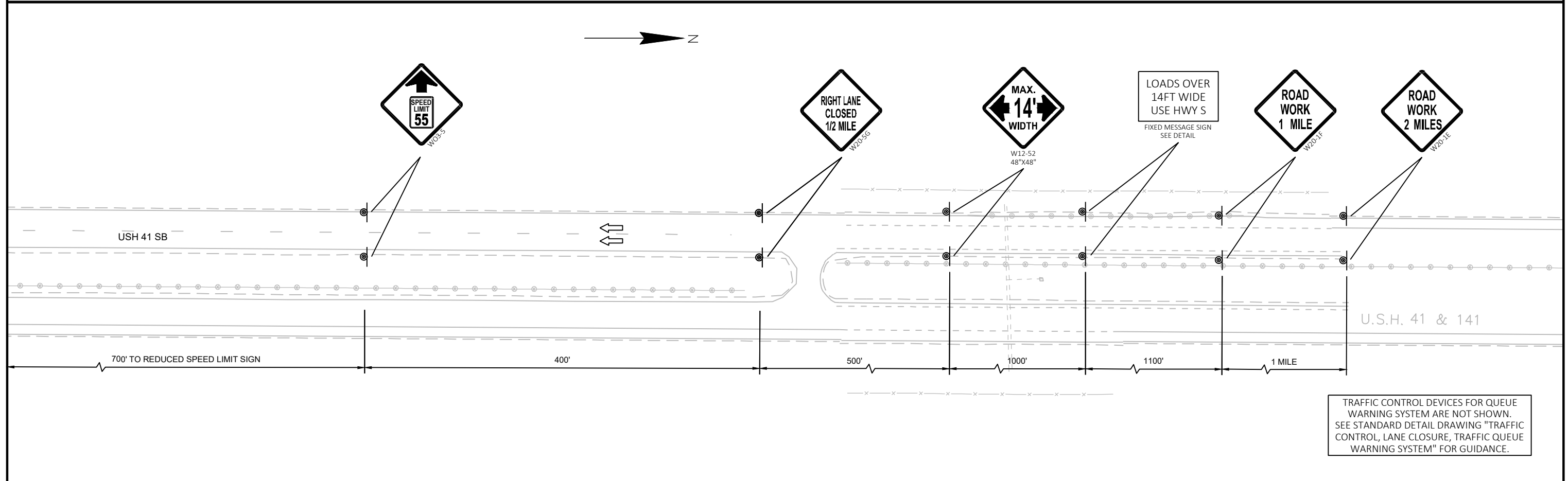
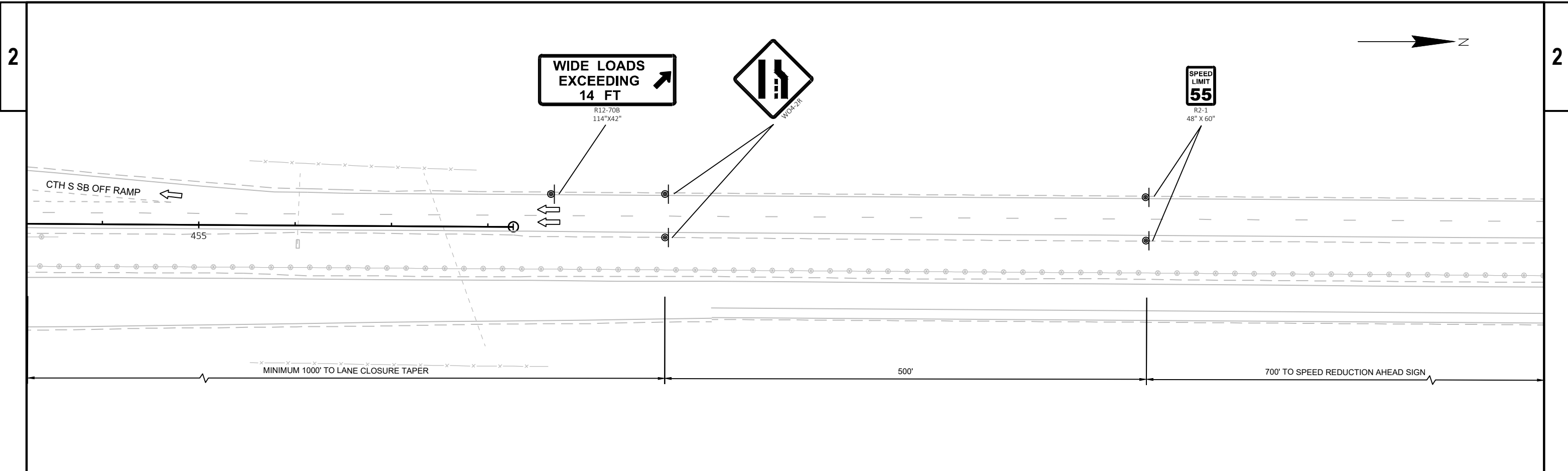








PROJECT NO: 1150-76-71	HWY: USH 41	COUNTY: OCONTO	TRAFFIC CONTROL STAGE 3	SHEET	E
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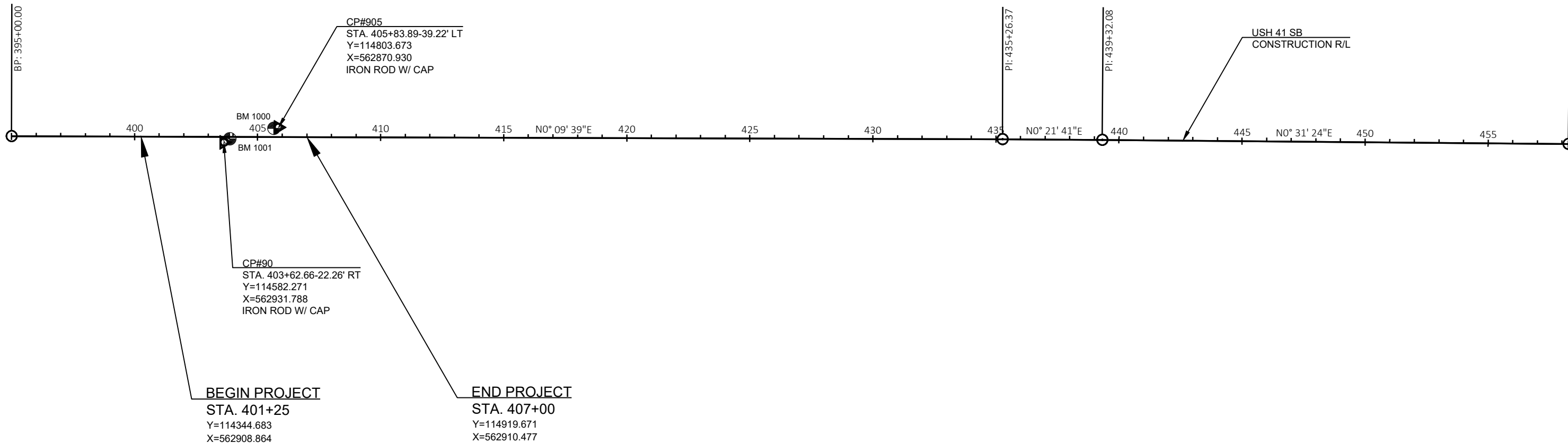
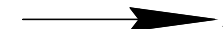


BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
1000	405+65	WDOT DISK NW PARAPET WALL-36' LT	625.56
1001	403+86	SQUARE SE PARAPET WALL-8' RT	626.10

2

2



PROJECT NO: 1150-76-71

HWY: USH 41

COUNTY: OCONTO

ALIGNMENT DIAGRAM

SHEET

E

Estimate Of Quantities

1150-76-71

Line	Item	Item Description	Unit	Total	Qty
0002	203.0270	Removing Structure Over Waterway Debris Capture (structure) 01. B-42-19	EACH	1.000	1.000
0004	204.0100	Removing Concrete Pavement	SY	275.000	275.000
0006	204.0110	Removing Asphaltic Surface	SY	395.000	395.000
0008	204.0115	Removing Asphaltic Surface Butt Joints	SY	29.000	29.000
0010	204.0120	Removing Asphaltic Surface Milling	SY	1,170.000	1,170.000
0012	204.0165	Removing Guardrail	LF	279.000	279.000
0014	204.0220	Removing Inlets	EACH	2.000	2.000
0016	204.0245	Removing Storm Sewer (size) 01. 12-INCH	LF	10.000	10.000
0018	204.0291.S	Abandoning Sewer	CY	1.000	1.000
0020	206.1000	Excavation for Structures Bridges (structure) 01. B-42-19	LS	1.000	1.000
0022	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 1150-76-71	LS	1.000	1.000
0024	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	8.000	8.000
0026	213.0100	Finishing Roadway (project) 01. 1150-76-71	EACH	1.000	1.000
0028	305.0110	Base Aggregate Dense 3/4-Inch	TON	220.000	220.000
0030	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	245.000	245.000
0032	415.1120	Concrete Pavement HES 12-Inch	SY	80.000	80.000
0034	415.1410	Concrete Pavement Approach Slab HES	SY	125.000	125.000
0036	416.1010	Concrete Surface Drains	CY	2.000	2.000
0038	450.1100.S	Asphaltic Mixture For Extreme Conditions	TON	333.000	333.000
0040	450.4000	HMA Cold Weather Paving	TON	237.000	237.000
0042	455.0605	Tack Coat	GAL	288.000	288.000
0044	465.0105	Asphaltic Surface	TON	570.000	570.000
0046	502.0100	Concrete Masonry Bridges	CY	250.000	250.000
0048	502.3101	Expansion Device	LF	95.000	95.000
0050	502.3200	Protective Surface Treatment	SY	670.000	670.000
0052	502.3210	Pigmented Surface Sealer	SY	170.000	170.000
0054	502.4106	Adhesive Anchors 3/4-inch	EACH	5.000	5.000
0056	502.4205	Adhesive Anchors No. 5 Bar	EACH	434.000	434.000
0058	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	55,550.000	55,550.000
0060	505.0904	Bar Couplers No. 4	EACH	10.000	10.000
0062	505.0905	Bar Couplers No. 5	EACH	1,061.000	1,061.000
0064	509.1500	Concrete Surface Repair	SF	100.000	100.000
0066	516.0500	Rubberized Membrane Waterproofing	SY	22.000	22.000
0068	517.0901.S	Preparation and Coating of Top Flanges (structure) 01. B-42-19	EACH	1.000	1.000
0070	517.3001.S	Structure Overcoating Cleaning and Priming (structure) 01. B-42-19	EACH	1.000	1.000
0072	517.4001.S	Containment and Collection of Waste Materials (structure) 01. B-42-19	EACH	1.000	1.000
0074	517.6001.S	Portable Decontamination Facility	EACH	1.000	1.000
0076	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	110.000	110.000
0078	601.0590	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT	LF	22.000	22.000
0080	603.8000	Concrete Barrier Temporary Precast Delivered	LF	1,716.000	1,716.000
0082	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,716.000	1,716.000
0084	603.8500	Anchoring Concrete Barrier Temporary Precast	LF	155.000	155.000
0086	603.8505	Anchoring Concrete Barrier Temporary Precast on Bridge Decks	LF	154.000	154.000
0088	606.0200	Riprap Medium	CY	4.000	4.000
0090	606.0300	Riprap Heavy	CY	30.000	30.000
0092	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0094	614.0905	Crash Cushions Temporary	EACH	2.000	2.000
0096	614.2300	MGS Guardrail 3	LF	79.000	79.000
0098	614.2500	MGS Thrie Beam Transition	LF	200.000	200.000

Estimate Of Quantities

1150-76-71

Line	Item	Item Description	Unit	Total	Qty
0100	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1150-76-71	EACH	1.000	1.000
0102	619.1000	Mobilization	EACH	1.000	1.000
0104	624.0100	Water	MGAL	6.000	6.000
0106	628.1504	Silt Fence	LF	320.000	320.000
0108	628.1520	Silt Fence Maintenance	LF	320.000	320.000
0110	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0112	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0114	628.7015	Inlet Protection Type C	EACH	4.000	4.000
0116	628.7555	Culvert Pipe Checks	EACH	10.000	10.000
0118	628.7570	Rock Bags	EACH	45.000	45.000
0120	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	2.000	2.000
0122	634.0622	Posts Wood 4x6-Inch X 22-FT	EACH	2.000	2.000
0124	637.2230	Signs Type II Reflective F	SF	6.000	6.000
0126	638.2102	Moving Signs Type II	EACH	2.000	2.000
0128	638.2602	Removing Signs Type II	EACH	2.000	2.000
0130	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0132	642.5001	Field Office Type B	EACH	1.000	1.000
0134	643.0300	Traffic Control Drums	DAY	19,250.000	19,250.000
0136	643.0420	Traffic Control Barricades Type III	DAY	525.000	525.000
0138	643.0705	Traffic Control Warning Lights Type A	DAY	1,050.000	1,050.000
0140	643.0715	Traffic Control Warning Lights Type C	DAY	6,080.000	6,080.000
0142	643.0800	Traffic Control Arrow Boards	DAY	350.000	350.000
0144	643.0900	Traffic Control Signs	DAY	5,310.000	5,310.000
0146	643.0920	Traffic Control Covering Signs Type II	EACH	2.000	2.000
0148	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0150	643.1205.S	Basic Traffic Queue Warning System	DAY	170.000	170.000
0152	643.5000	Traffic Control	EACH	1.000	1.000
0154	645.0120	Geotextile Type HR	SY	70.000	70.000
0156	646.1020	Marking Line Epoxy 4-Inch	LF	3,215.000	3,215.000
0158	646.3020	Marking Line Epoxy 8-Inch	LF	820.000	820.000
0160	646.6464	Cold Weather Marking Epoxy 4-Inch	LF	8,080.000	8,080.000
0162	646.6468	Cold Weather Marking Epoxy 8-Inch	LF	300.000	300.000
0164	646.9000	Marking Removal Line 4-Inch	LF	8,920.000	8,920.000
0166	646.9010	Marking Removal Line Water Blasting 4-Inch	LF	400.000	400.000
0168	646.9100	Marking Removal Line 8-Inch	LF	1,120.000	1,120.000
0170	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	110.000	110.000
0172	650.6500	Construction Staking Structure Layout (structure) 01. B-42-19	LS	1.000	1.000
0174	650.7000	Construction Staking Concrete Pavement	LF	45.000	45.000
0176	650.8000	Construction Staking Resurfacing Reference	LF	1,487.000	1,487.000
0178	650.9910	Construction Staking Supplemental Control (project) 01. 1150-76-71	LS	1.000	1.000
0180	690.0150	Sawing Asphalt	LF	720.000	720.000
0182	690.0250	Sawing Concrete	LF	130.000	130.000
0184	715.0502	Incentive Strength Concrete Structures	DOL	1,500.000	1,500.000
0186	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0188	999.2000.S	Installing and Maintaining Bird Deterrent System (station) 01. Sta 404+70	EACH	1.000	1.000
0190	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0192	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0194	SPV.0060	Special 01. Cleaning and Painting Bearings	EACH	10.000	10.000
0196	SPV.0060	Special 02. Temporary Support B-42-19	EACH	1.000	1.000

Estimate Of Quantities

0198	SPV.0090	Special 01. Salvage and Reinstall Guardrail	LF	24.000	1150-76-71 24.000
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REMOVING CONCRETE PAVEMENT AND CURB & GUTTER

CATEGORY	STATION	TO	STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	NOTES
STAGE 2						
0010	403+74	-	404+05	USH 41, SB	64	
0010	405+40	-	405+79	USH 41, SB	89	INCLUDES CURB & GUTTER
STAGE 2 SUBTOTALS					153	
STAGE 3						
0010	403+74	-	404+15	USH 41, SB	73	
0010	405+40	-	405+79	USH 41, SB	49	INCLUDES CURB & GUTTER
STAGE 3 SUBTOTALS					122	
TOTAL 0010					275	

REMOVING ASPHALTIC SURFACE MILLING

CATEGORY	STATION	TO	STATION	LOCATION	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY
STAGE 1						
0010	398+33	-	403+83	USH 41, SB, LT	1	122
0010	403+83	-	404+11	USH 41, SB, LT	5	30
0010	405+62	-	405+85	USH 41, SB, LT	5	24
0010	405+85	-	413+20	USH 41, SB, LT	1	163
0010	408+50	-	412+30	USH 41, SB, RT	1	85
STAGE 1 SUBTOTALS					13	424
STAGE 2						
0010	401+25	-	402+25	USH 41, SB	4	181
0010	406+00	-	407+00	USH 41, SB	4	181
STAGE 2 SUBTOTALS					8	362
STAGE 3						
0010	401+25	-	402+25	USH 41, SB	4	192
0010	406+00	-	407+00	USH 41, SB	4	192
STAGE 3 SUBTOTALS					8	384
TOTAL 0010					29	1,170

REMOVING ASPHALTIC SURFACE

CATEGORY	STATION	TO	STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY
STAGE 2					
0010	399+24	-	403+74	USH 41, SB, RT	225
0010	405+79	-	408+53	USH 41, SB, RT	138
STAGE 2 SUBTOTALS					363
STAGE 3					
0010	405+79	-	406+40	USH 41, SB, LT	32
STAGE 3 SUBTOTALS					32
TOTAL 0010					395

REMOVING DRAINAGE

CATEGORY	STATION	LOCATION	204.0220 REMOVING INLETS EACH	204.0245.01 REMOVING STORM SEWER 12-INCH LF	204.0291.5 ABANDONING SEWER CY
STAGE 2					
0010	405+54	USH 41, SB, RT	1	5	0.5
STAGE 2 SUBTOTALS			1	5	0.5
STAGE 3					
0010	405+77	USH 41, SB, LT	1	5	0.5
STAGE 3 SUBTOTALS			1	5	0.5
TOTAL 0010			2	10	1

BASE AGGREGATE DENSE

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4- INCH TON	624.0100 WATER MGAL
STAGE 2							
0010	399+24	-	403+82	USH 41, SB, RT	95	45	2
0010	405+51	-	407+00	USH 41, SB, RT	25	75	1
0010	407+00	-	408+53	USH 41, SB, RT	25	--	1
STAGE 2 SUBTOTALS					145	120	4
STAGE 3							
0010	401+25	-	404+05	USH 41, SB, RT	50	65	1
0010	405+73	-	407+00	USH 41, SB, RT	25	60	1
STAGE 3 SUBTOTALS					75	125	2
TOTAL 0010					220	245	6

CONCRETE PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	415.1120 CONCRETE PAVEMENT HES 12-INCH SY	415.1410 CONCRETE PAVEMENT APPROACH SLAB HES SY
STAGE 2						
0010	403+80	-	404+03	USH 41, SB	10	27
0010	405+40	-	405+73	USH 41, SB	17	36
STAGE 2 SUBTOTALS					27	63
STAGE 3						
0010	403+80	-	404+15	USH 41, SB	38	35
0010	405+50	-	405+73	USH 41, SB	15	27
STAGE 3 SUBTOTALS					53	62
TOTAL 0010					80	125

PREPARE FOUNDATION

CATEGORY	STATION	TO	STATION	LOCATION	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
STAGE 2					
0010	399+24	-	403+80	USH 41, SB, RT	5
0010	406+17	-	408+53	USH 41, SB, RT	3
STAGE 2 SUBTOTALS					8
TOTAL 0010					8

HMA PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	450.4000 HMA COLD WEATHER PAVING TON	450.1100.S ASPHLATIC MIXTURES FOR EXTREME CONDITIONS TON	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
STAGE 1								
0010	398+33	-	403+83	USH 41, SB, LT	15	-	9	15
0010	403+83	-	404+11	USH 41, SB, LT	5	-	3	5
0010	405+62	-	405+85	USH 41, SB, LT	5	-	2	5
0010	405+85	-	413+20	USH 41, SB, LT	20	-	12	20
0010	408+50	-	412+30	USH 41, SB, RT	10	-	6	10
STAGE 1 SUBTOTALS					55	0	32	55
STAGE 2								
0010	399+24	-	403+80	USH 41, SB, RT	-	85	36	85
0010	401+25	-	403+80	USH 41, SB	-	105	75	105
0010	403+74	-	403+80	USH 41 SB	-	8	2	8
0010	405+72	-	405+80	USH 41 SB	-	10	2	10
0010	405+72	-	407+00	USH 41 SB	-	60	36	60
0010	405+72	-	408+53	USH 41, SB, RT	-	65	27	65
STAGE 2 SUBTOTALS					0	333	178	333
STAGE 3								
0010	401+25	-	403+80	USH 41, SB	105	-	48	105
0010	403+74	-	403+80	USH 41, SB	10	-	3	10
0010	405+72	-	405+80	USH 41, SB	9	-	2	9
0010	405+72	-	407+00	USH 41, SB	58	-	25	58
STAGE 3 SUBTOTALS					182	0	78	182
TOTAL 0010					237	333	288	570

SURFACE DRAINS AND RIPRAP

CATEGORY	STATION	LOCATION	416.1010 CONCRETE SURFACE DRAINS CY	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE TYPE HR SY	REMARKS
STAGE 2						
0010	405+94	USH 41, SB, RT	1	2	5	SURFACE DRAIN PERPENDICULAR, 6-FT MAX LENGTH
		STAGE 2 SUBTOTALS	1	2	5	
STAGE 3						
0010	406+16	USH 41, SB, LT	1	2	5	SURFACE DRAIN PERPENDICULAR, 6-FT MAX LENGTH
		STAGE 2 SUBTOTALS	1	2	5	
		TOTAL 0010	2	4	10	

CONCRETE CURB & GUTTER

GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	601.0588 CONCRETE CURB & GUTTER 4- INCH SLOPED 36- INCH TYPE TBT LF	601.0590 CONCRETE CURB & GUTTER 4- INCH SLOPED 36- INCH TYPE TBTT LF
STAGE 2						
0010	405+50	-	406+16	USH 41, SB, RT	44	22
				STAGE 2 SUBTOTALS	44	22
STAGE 3						
0010	405+72	-	406+38	USH 41, SB, LT	66	-
				STAGE 3 SUBTOTALS	66	0
				TOTAL 0010	110	22

CATEGORY	STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	SPV.0090.01 SALVAGE AND REINSTALL GUARDRAIL LF
STAGE 2								
0010		403+75		USH 41, SB, RT	-	-	-	12
0010	405+46	-	407+00	USH 41, SB, RT	152	39.5	112.5	-
0010		405+47		USH 41, SB, RT	-	-	-	12
				STAGE 2 SUBTOTALS	152	39.5	112.5	24
STAGE 3								
0010	405+68	-	406+97	USH 41, SB, LT	127	39.5	87.5	-
				STAGE 3 SUBTOTALS	127	39.5	87.5	0
				TOTAL 0010	279	79	200	24

CONCRETE BARRIER TEMPORARY

CATEGORY	STATION	TO	STATION	LOCATION	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	603.8500 ANCHORING CONCRETE BARRIER TEMPORARY PRECAST LF	603.8505 ANCHORING CONCRETE BARRIER TEMPORARY PRECAST ON BRIDGE DECKS LF
STAGE 2								
0010	400+73	-	403+22	USH 41, SB	249	249	-	-
0010	403+22	-	406+31	USH 41, SB	309	309	155	154
0010	406+31	-	409+25	USH 41, SB	300	300	-	-
STAGE 2 SUBTOTALS					858	858	155	154
STAGE 3								
0010	400+73	-	403+22	USH 41, SB	249	249	-	-
0010	403+22	-	406+31	USH 41, SB	309	309	-	-
0010	406+31	-	409+27	USH 41, SB	300	300	-	-
STAGE 3 SUBTOTALS					858	858	0	0
TOTAL 0010					1,716	1,716	155	154

CRASH CUSHIONS TEMPORARY

CATEGORY	STATION	LOCATION	614.0905 CRASH CUSHIONS TEMPORARY EACH	BACK WIDTH FT	OBJECT MARKING PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS
STAGE 2									
0010	409+25	USH 41, SB	1	4	OM-3L (W5-58L)	TL-3	UNIDIRECTIONAL	RIGHT	TEMPORARY BARRIER END
STAGE 2 SUBTOTALS			1						
STAGE 3									
0010	409+27	USH 41, SB	1	4	OM-3R (W5-58R)	TL-3	UNIDIRECTIONAL	LEFT	TEMPORARY BARRIER END
STAGE 3 SUBTOTALS			1						
TOTAL 0010			2						

3

SILT FENCE

CATEGORY	STATION	TO	STATION	LOCATION	628.1504	628.1520
					SILT FENCE LF	SILT FENCE MAINTENANCE LF
STAGE 2						
0010	403+70	-	404+00	USH 41, SB, RT	40	40
0010	405+40	-	406+25	USH 41, SB, RT	65	65
STAGE 2 SUBTOTALS					105	105
STAGE 3						
0010	403+70	-	404+15	USH 41, SB, LT	50	50
0010	405+60	-	406+50	USH 41, SB, LT	100	100
0010				UNDISTRIBUTED	65	65
STAGE 3 SUBTOTALS					215	215
TOTAL 0010					320	320

INLET PROTECTION

CATEGORY	STATION	LOCATION	628.7015
			INLET PROTECTION TYPE C EACH
STAGE 2			
0010	405+54	USH 41, SB, RT	1
STAGE 2 SUBTOTALS			1
STAGE 3			
0010	405+54	USH 41, SB, LT	1
0010		UNDISTRIBUTED	2
STAGE 3 SUBTOTALS			3
TOTAL 0010			4

CULVERT PIPE CHECKS

CATEGORY	STATION	LOCATION	628.7555
			CULVERT PIPE CHECKS EACH
STAGE 2			
0010	403+40	USH 41, SB, RT	3
0010	405+62	USH 41, SB, RT	3
0010		UNDISTRIBUTED	4
STAGE 2 SUBTOTALS			10
TOTAL 0010			10

ROCK BAGS

CATEGORY	STATION	LOCATION	628.7570
			ROCK BAGS EACH
STAGE 2			
0010	405+95	USH 41, SB, RT	18
STAGE 2 SUBTOTALS			18
STAGE 3			
0010	406+17	USH 41, SB, RT	18
0010		UNDISTRIBUTED	9
STAGE 3 SUBTOTALS			27
TOTAL 0010			45

CATEGORY	STATION	LOCATION	SIGN CODE	W	X	H	634.0614	634.0622	637.2230	638.2102	638.2602	638.3000
							POSTS WOOD 4X6-INCH X 14-FT EACH	POSTS WOOD 4X6-INCH X 22-FT EACH	SIGNS TYPE II REFLECTIVE F SF	MOVING SIGNS TYPE II EACH	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH
STAGE 2												
0010	405+51	USH 41, SB, RT	W5-52L	12"	X	36"	1	-	3.00	-	1	1
STAGE 2 SUBTOTALS							1	0	3.00	0	1	1
STAGE 3												
0010	405+74	USH 41, SB, LT	W5-52R	12"	X	36"	1	-	3.00	-	1	1
0010	406+00	USH 41, SB, LT	-	-	-	-	-	2	-	2	-	-
STAGE 3 SUBTOTALS							1	2	3.00	2	1	1
TOTAL 0010							2	2	6.00	2	2	2

TRAFFIC CONTROL

CATEGORY	STAGE	DAYS	643.0300	643.0420	643.0705	643.0715	643.0800	643.0900	643.0920	643.1050	REMARKS							
			TRAFFIC CONTROL DRUMS NO.	TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A NO.	TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	TRAFFIC CONTROL ARROW BOARDS NO.	TRAFFIC CONTROL SIGNS DAY	TRAFFIC CONTROL COVERING SIGNS TYPE II NO. CYCLES	TRAFFIC CONTROL SIGNS PCMS DAY								
0010	STAGE 1	5	100	500	3	15	6	30	40	200	2	10	22	110	-	-	7	PCMS IN ADVANCE OF PROJECT
0010	STAGE 2	100	100	10,000	3	300	6	600	28	2,800	2	200	31	3,100	1	1	7	PCMS IN ADVANCE OF LANE CLOSURE
0010	STAGE 3	70	125	8,750	3	210	6	420	44	3,080	2	140	30	2,100	1	1	14	PCMS IN ADVANCE OF TRAFFIC PATTERN CHANGE, AND 7 DAYS AFTER PATTERN CHANGE NOTING CHANGE
TOTAL 0010			19,250	525	1,050	6,080	350	5,310	2	28								

3

3

3

QUEUE WARNING SYSTEM

643.1205.S				
BASIC TRAFFIC QUEUE WARNING SYSTEM				
CATEGORY	STAGE	PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)	PORTABLE TRAFFIC SENSORS (PTS)	QUEUE WARNING SYSTEM DAY
0010	STAGE 2	3	3	90
0010	STAGE 3	3	3	80
TOTAL 0010				170

MARKING LINE

CATEGORY	STATION	TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH LF	646.3020 MARKING LINE EPOXY 8-INCH LF	REMARKS
STAGE 3							
0010	398+33	-	403+80	USH 41, SB, LT	548	-	WHITE EDGELINE
0010	399+24	-	403+80	USH 41, SB, RT	458	-	YELLOW EDGELINE
0010	401+25	-	403+80	USH 41, SB	75	-	WHITE SKIPS
0010	403+80	-	405+73	USH 41, SB, LT	195	-	WHITE EDGELINE
0010	403+80	-	405+73	USH 41, SB, RT	195	-	YELLOW EDGELINE
0010	403+80	-	405+73	USH 41, SB	50	-	WHITE SKIPS
0010	405+73	-	413+20	USH 41, SB, LT	748	-	WHITE EDGELINE
0010	405+73	-	412+30	USH 41, SB, RT	658	-	YELLOW EDGELINE
0010	405+73	-	407+00	USH 41, SB	38	-	WHITE SKIPS
0010	423+00	-	428+00	USH 41, SB, LT	-	820	WHITE RAMP GORE
0010	440+20	-	449+84	USH 41, SB	250	-	WHITE SKIPS
STAGE 3 SUBTOTALS					3,215	820	
TOTAL 0010					3,215	820	

MARKING REMOVAL

CATEGORY	STATION	TO	STATION	LOCATION	646.9000 MARKING REMOVAL LINE 4-INCH LF	646.9010 MARKING REMOVAL LINE WATER BLASTING 4-INCH LF	646.9100 MARKING REMOVAL LINE 8-INCH LF	REMARKS
STAGE 2								
0010	398+33	-	413+20	USH 41, SB, LT	1,487	-	-	WHITE EDGELINE
0010	442+64	-	449+84	USH 41, SB	188	-	-	WHITE SKIPS
0010	398+33	-	400+75	USH 41, SB, LT	250	-	-	CONFLICTING COLD WEATHER WHITE EDGELINE USED IN STAGE 2
0010	442+64	-	449+84	USH 41, SB, RT	725	-	-	CONFLICTING COLD WEATHER YELLOW EDGELINE USED IN STAGE 2
STAGE 2 SUBTOTALS					2,650	0	0	
STAGE 3								
0010	399+24	-	401+25	USH 41, SB, RT	201	-	-	YELLOW EDGELINE
0010	407+00	-	412+30	USH 41, SB, RT	530	-	-	YELLOW EDGELINE
0010	423+00	-	428+00	USH 41, SB, LT	-	-	820	RAMP GORE
0010	440+20	-	442+64	USH 41, SB	64	-	-	WHITE SKIPS
0010	398+33	-	413+20	USH 41, SB, LT	820	-	-	REMAINING COLD WEATHER YELLOW EDGELINE USED IN STAGE 2
0010	399+74	-	413+20	USH 41, SB, LT	925	-	-	REMAINING COLD WEATHER WHITE EDGELINE USED IN STAGE 2
0010	403+80	-	405+80	USH 41, SB, LT	-	400	-	COLD WEATHER MARKINGS ON BRIDGE DECK AND CONCRETE APPROACH
0010	399+24	-	447+22	USH 41, SB, LT	3,730	-	300	ALL OTHER COLD WEATHER MARKING USED FOR STAGE 3
STAGE 3 SUBTOTALS					6,270	400	1,120	
TOTAL 0010					8,920	400	1,120	

3

COLD WEATHER MARKING

CATEGORY	STATION	TO	STATION	LOCATION	646.6464	646.6468	REMARKS
					COLD WEATHER MARKING EPOXY 4-INCH LF	COLD WEATHER MARKING EPOXY 8-INCH LF	
STAGE 1							
0010	408+50	-	412+30	USH 41, SB, RT	380	-	YELLOW EDGELINE
STAGE 2 SUBTOTALS					380	0	
STAGE 2							
0010	398+33	-	413+20	USH 41, SB, LT	1,495	-	WHITE EDGELINE
0010	399+74	-	413+20	USH 41, SB, LT	1,350	-	YELLOW EDGELINE
0010	442+64	-	449+84	USH 41, SB, RT	725	-	YELLOW EDGELINE
STAGE 2 SUBTOTALS					3,570	0	
STAGE 3							
0010	399+24	-	412+30	USH 41, SB, RT	1,315	-	YELLOW EDGELINE
0010	399+74	-	412+30	USH 41, SB, RT	1,265	-	WHITE EDGELINE
0010	419+21	-	428+22	USH 41, SB, LT	910	-	WHITE EDGELINE
0010	424+55	-	426+00	USH 41, SB, LT	-	300	WHITE GORE
0010	426+00	-	429+20	USH 41, SB, LT	330	-	YELLOW EDGELINE
STAGE 3 SUBTOTALS					4,130	300	
TOTAL 0010					8,080	300	

NOTE: STAGE 2 AND STAGE 3 ITEMS USED FOR STAGED TEMPORARY TRAFFIC CONTROL

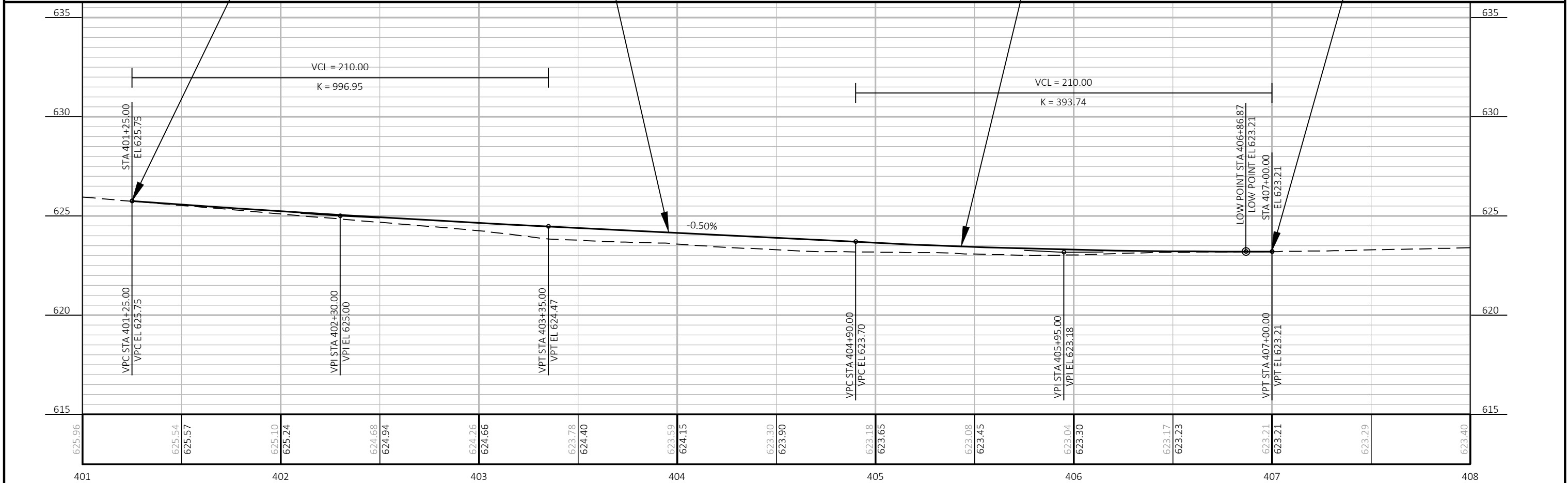
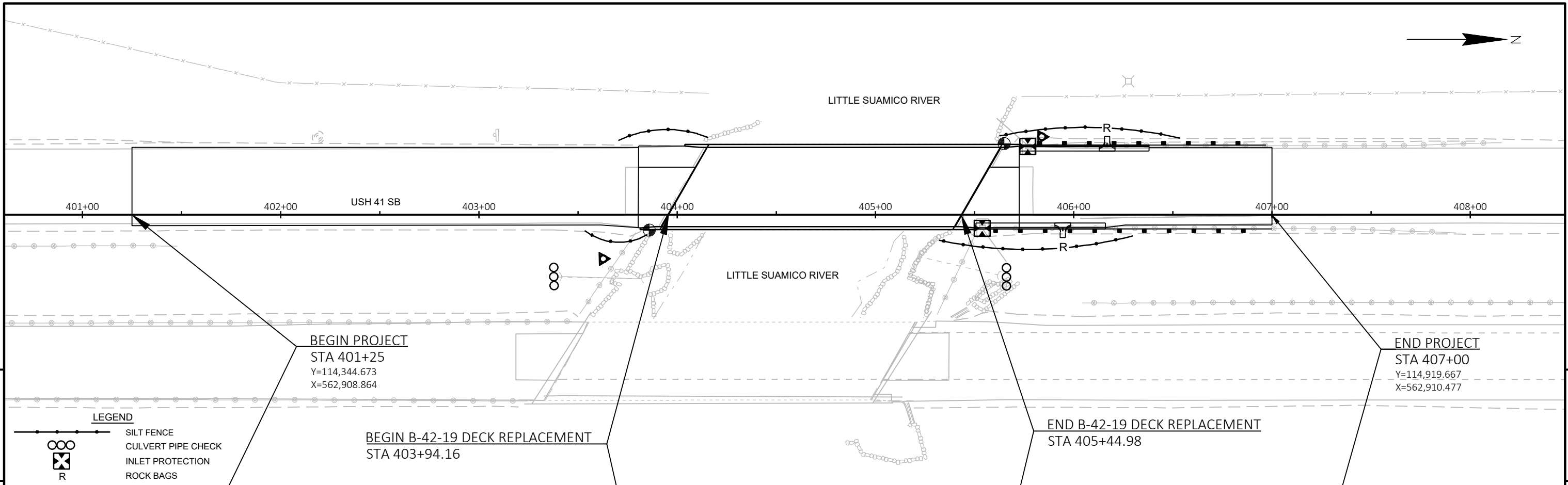
SAWING

CATEGORY	STATION	TO	STATION	LOCATION	690.0150	690.0250
					SAWING ASPHALT LF	SAWING CONCRETE LF
STAGE 2						
0010	399+24	-	403+74	USH 41, SB, RT	454	-
0010	403+74	-	404+05	USH 41, SB	-	50
0010	405+53	-	405+80	USH 41, SB	-	50
0010	405+80	-	406+18	USH 41, SB, RT	43	-
0010	407+00	-	408+53	USH 41, SB, RT	158	-
STAGE 2 SUBTOTALS					655	100
STAGE 3						
0010			403+74	USH 41, SB	-	17
0010			405+80	USH 41, SB	-	13
0010	405+80	-	406+40	USH 41, SB, LT	65	-
STAGE 3 SUBTOTALS					65	30
TOTAL 0010					720	130

3

CONSTRUCTION STAKING

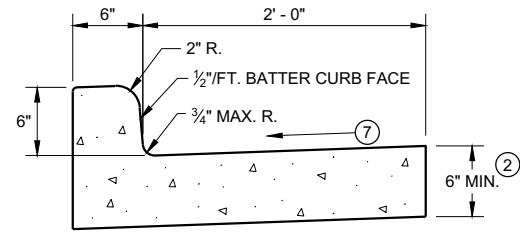
CATEGORY	STATION	TO	STATION	LOCATION	650.5500	650.6500.01	650.7000	650.8000	650.9910.01
					CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	CONSTRUCTION STAKING STRUCTURE LAYOUT (01. B-42-19) LS	CONSTRUCTION STAKING CONCRETE PAVEMENT LF	CONSTRUCTION STAKING RESURFACING REFERENCE LF	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 1150-76-71) LS
0010	398+33	-	413+20	USH 41, SB	110	1	45	1,487	1
TOTAL 0010					110	1	45	1,487	1
PROJECT TOTAL					110	1	45	1,487	1



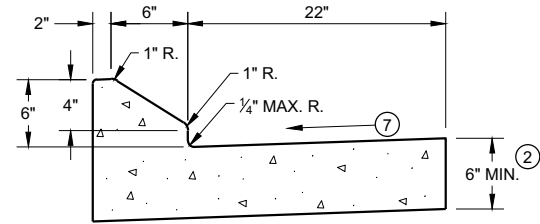
PROJECT NO: 1150-76-71	HWY: USH 41	COUNTY: OCONTO	PLAN AND PROFILE	SHEET	E
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Standard Detail Drawing List

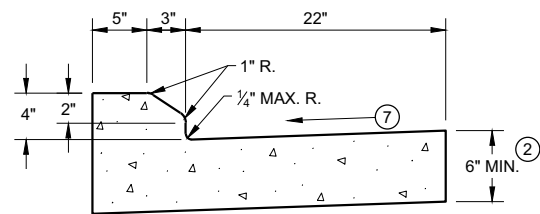
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-07A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
12A03-10	NAME PLATE (STRUCTURES)
13A03-06	CONCRETE PAVEMENT SHOULDERS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-12A	RURAL DOWELED CONCRETE PAVEMENT
13C11-12B	RURAL DOWELED CONCRETE PAVEMENT
13C19-03	HMA LONGITUDINAL JOINTS
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
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)
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D12-10A	TRAFFIC CONTROL, LANE CLOSURE
15D12-10B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D12-10D	TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM
15D15-06C	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-06D	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D40-03D	TRAFFIC CONTROL, PARTIAL LANE SHIFT MULTILANE DIVIDED 50 MPH AND GREATER



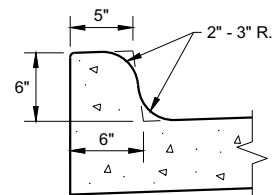
TYPES A^① & D



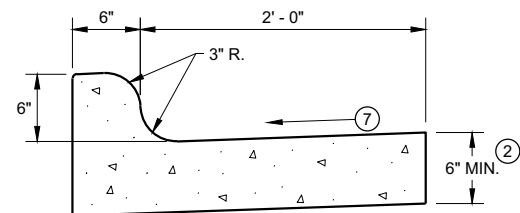
6" SLOPED CURB TYPES G^① & J



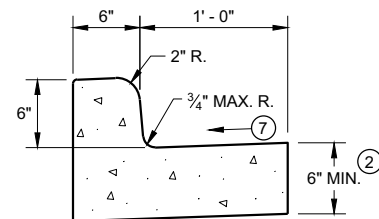
4" SLOPED CURB TYPES G^① & J



TYPES K^① & L
(OPTIONAL CURB SHAPE)

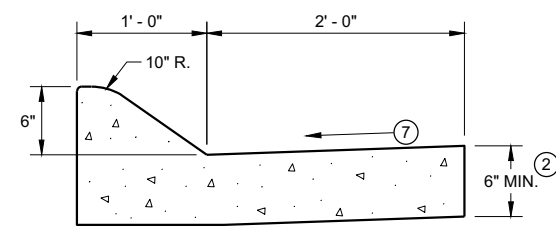


TYPES K^① & L
CONCRETE CURB AND GUTTER 30"

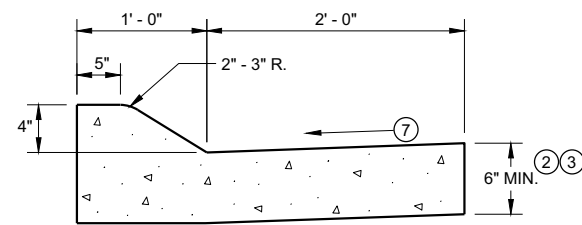


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

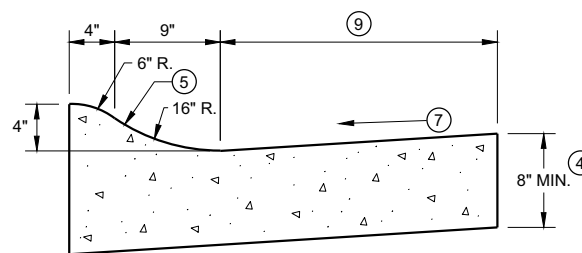


6" SLOPED CURB TYPES A^① & D



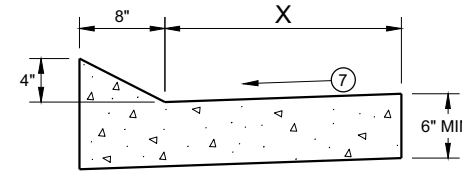
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

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

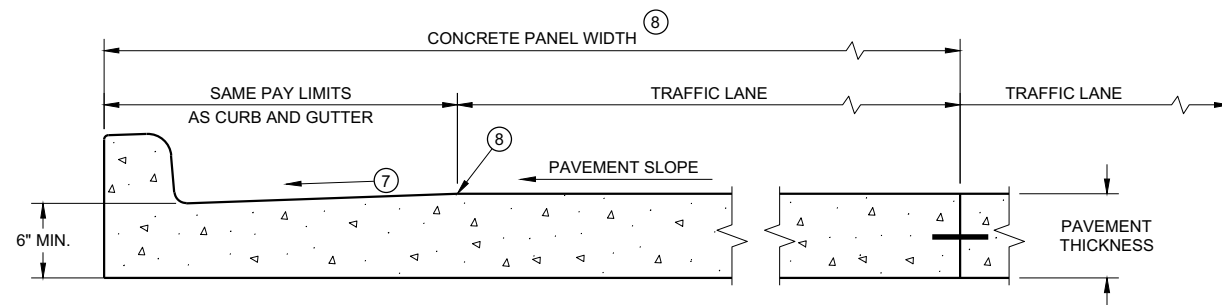


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

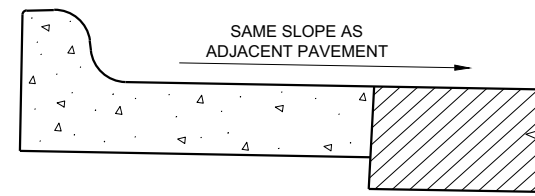
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

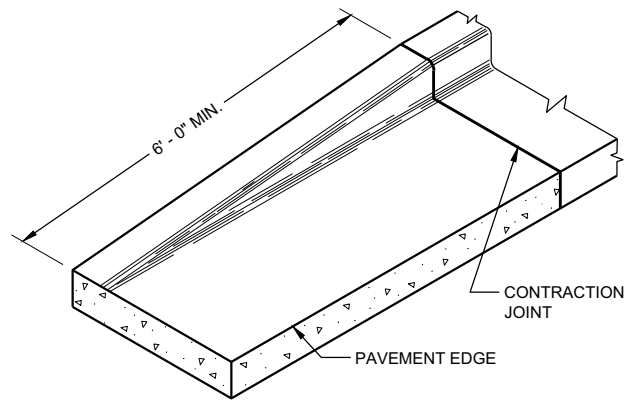
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

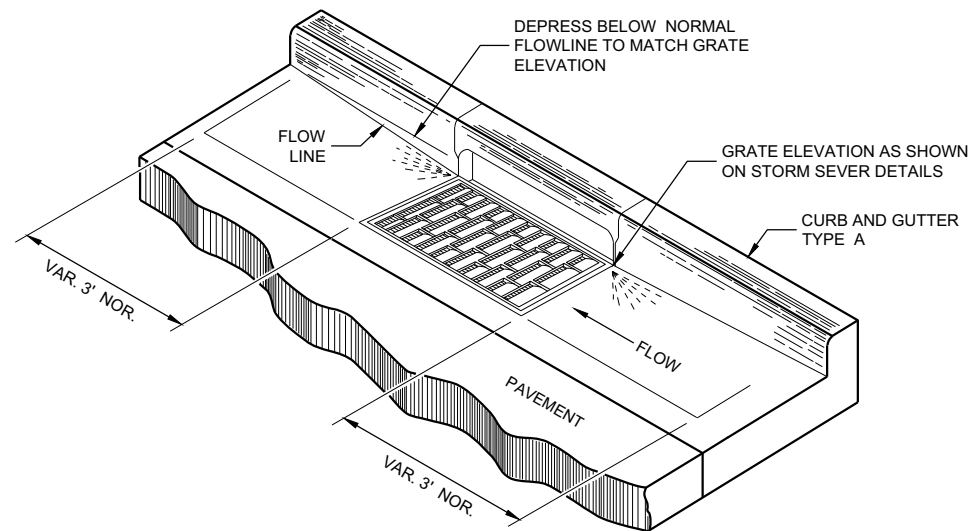
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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 GUTTERS 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 UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES 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.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES



END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

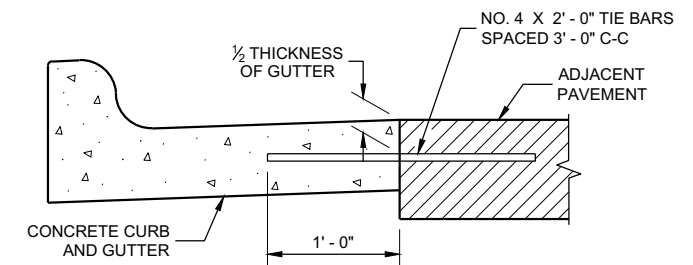
GENERAL NOTES

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

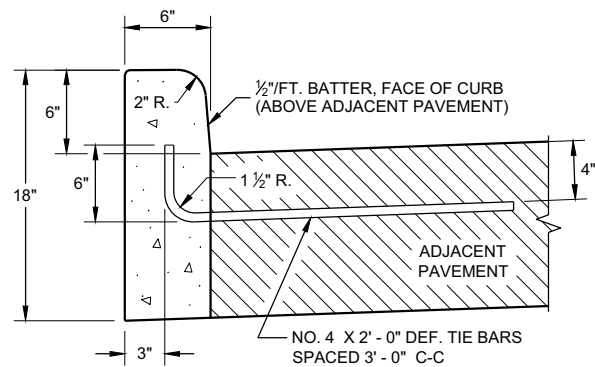
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

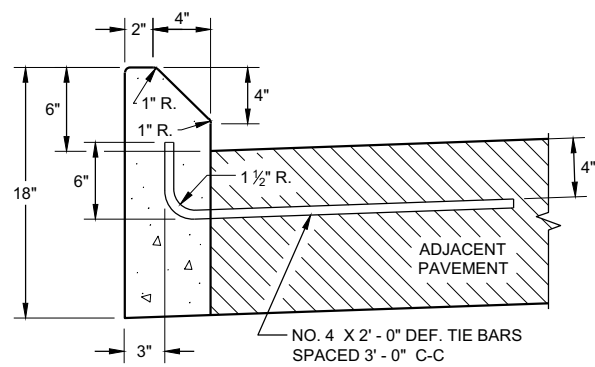
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION ①

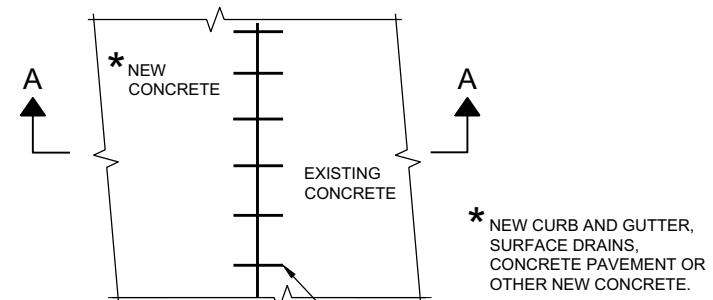


TYPES A ① & D

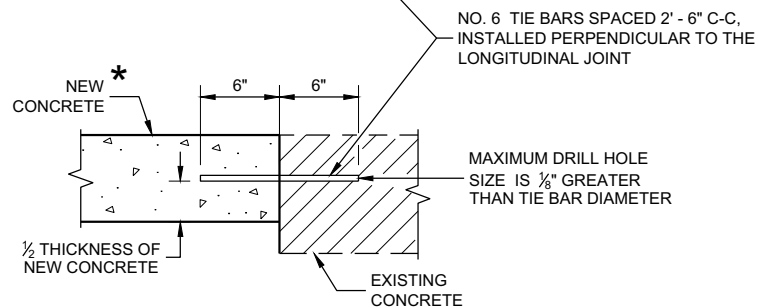


TYPES G ① & J

CONCRETE CURB

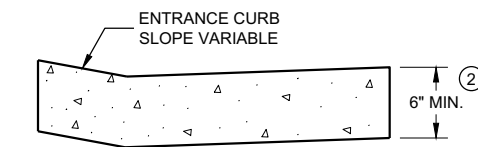


PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB ⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

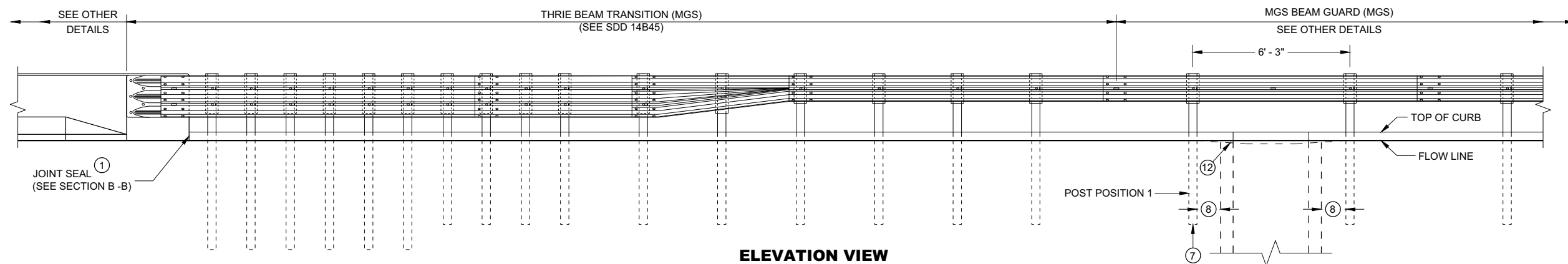
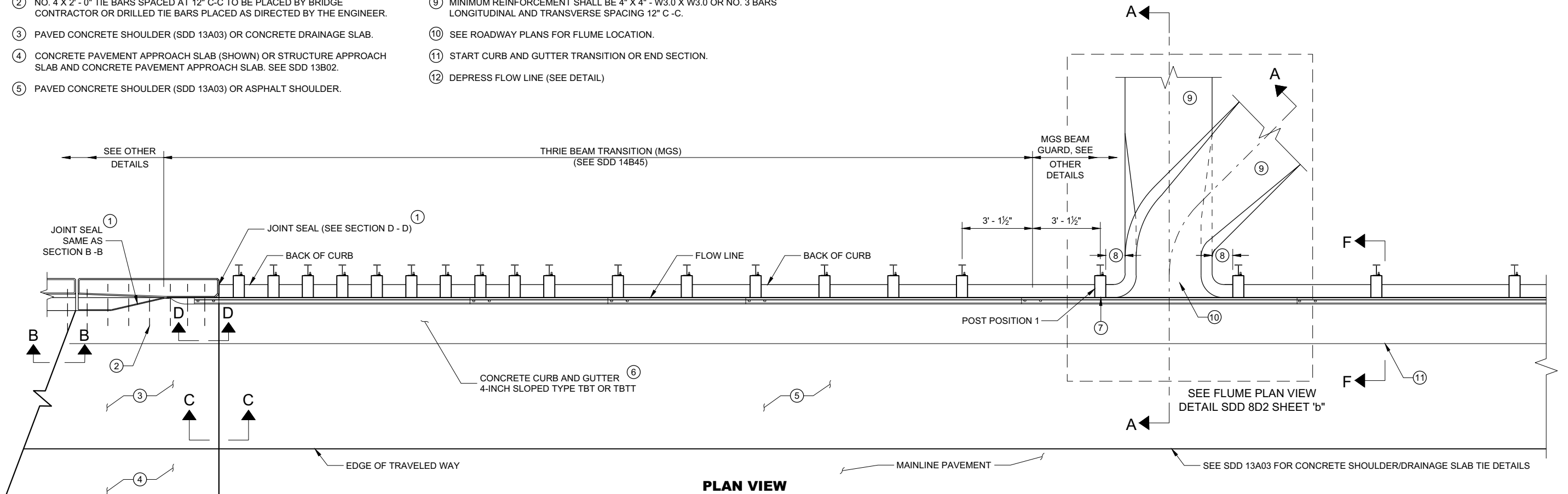
GENERAL NOTES

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

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

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)



**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

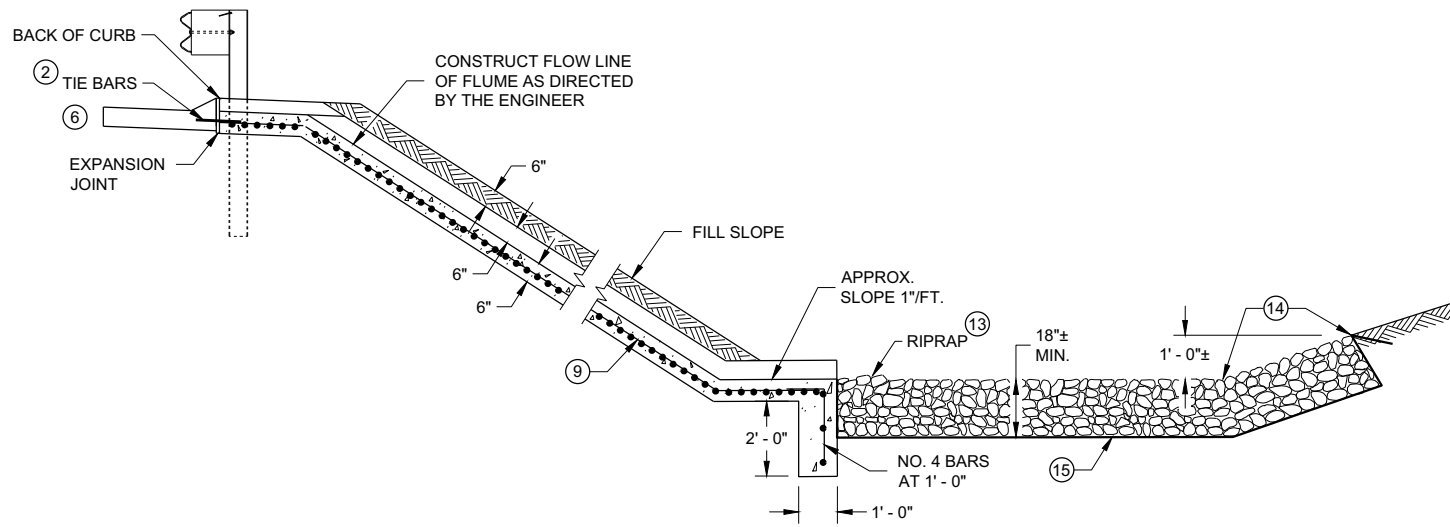
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

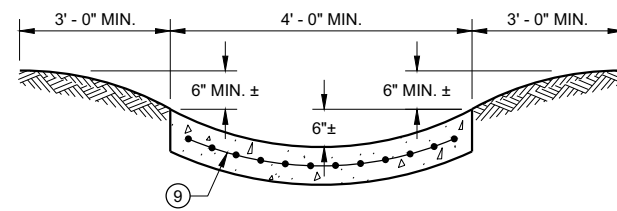
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SDD 08D02 - 07a

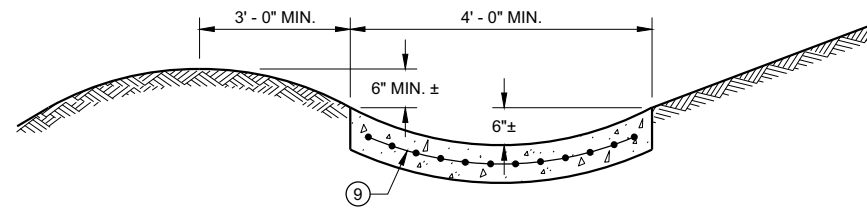
SDD 08D02 - 07a



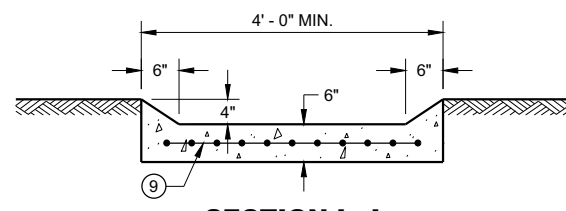
SECTION A - A



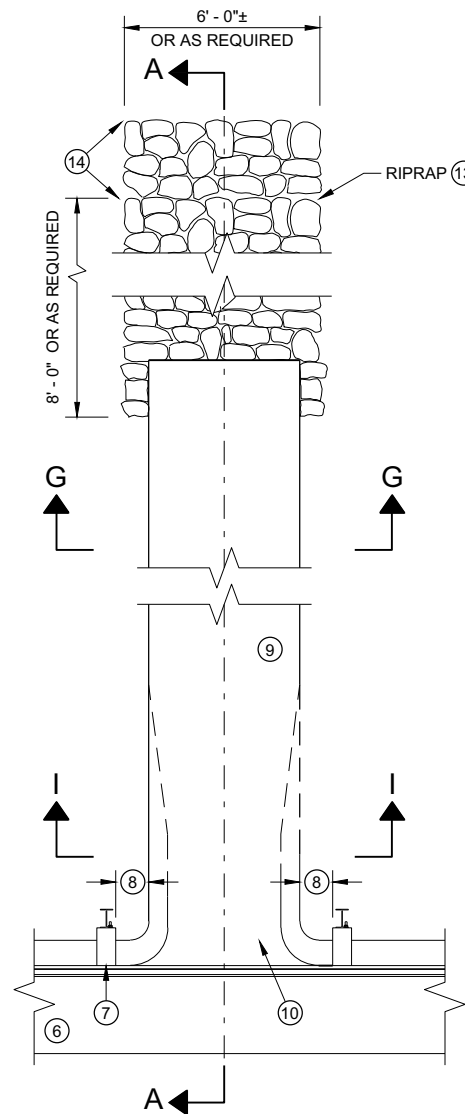
SECTION G - G



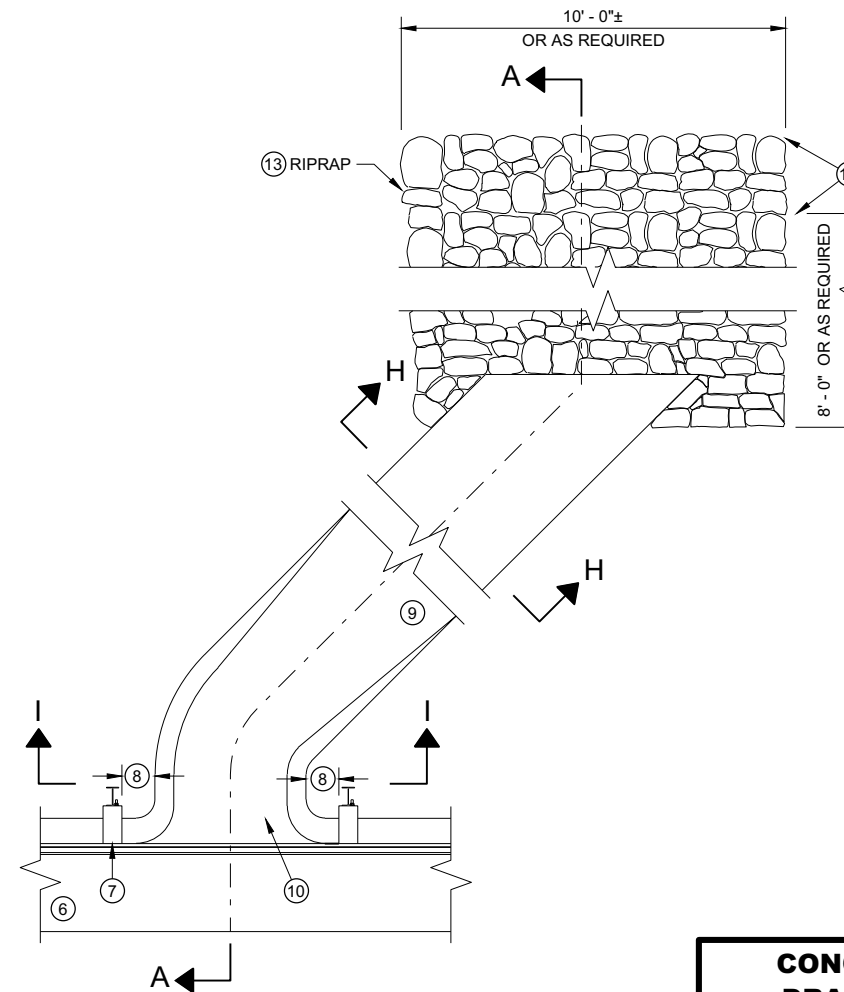
SECTION H - H



SECTION I - I



PLAN VIEW PERPENDICULAR FLUME



PLAN VIEW SKEWED FLUME

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.

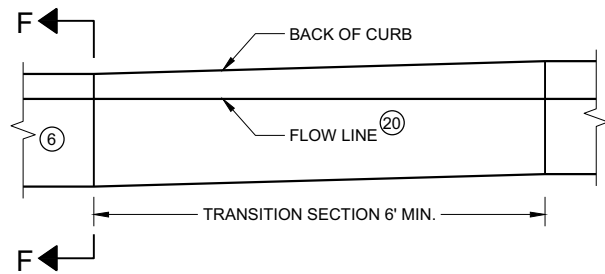
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

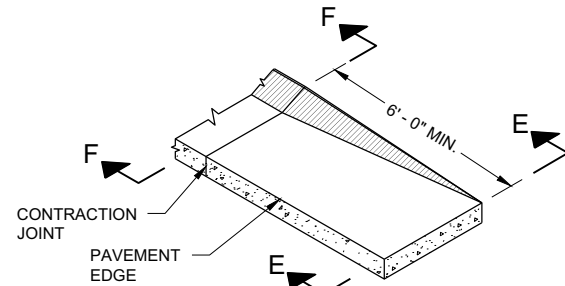
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

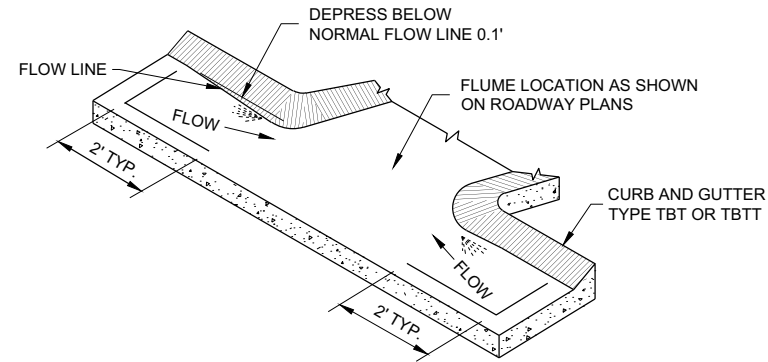
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



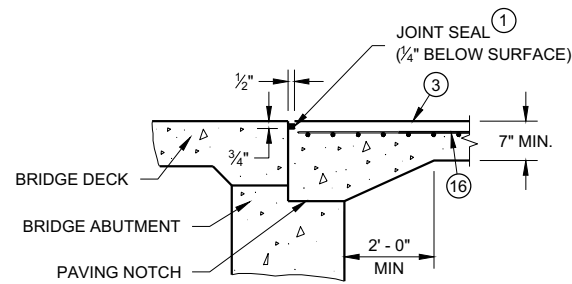
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**

GENERAL NOTES

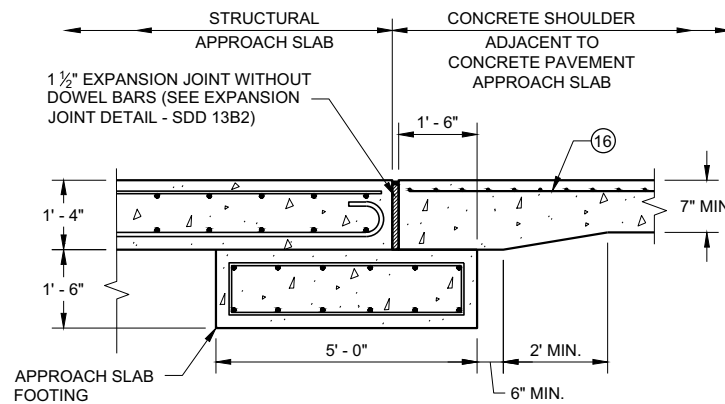
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

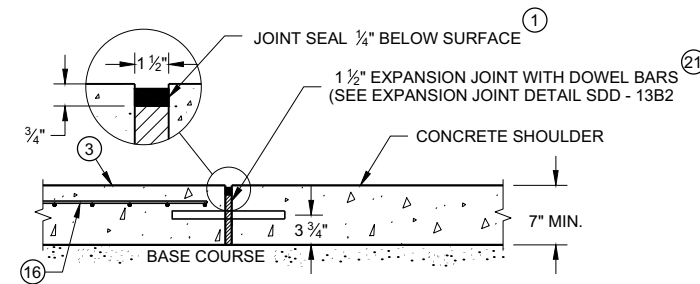
- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.
- ⑯ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑰ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑱ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑲ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑳ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ㉑ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.



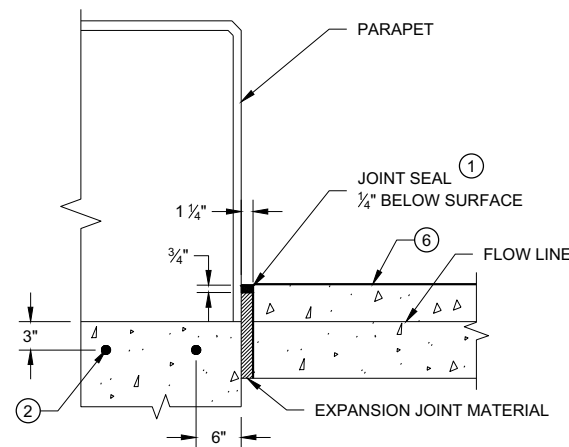
SECTION B-B



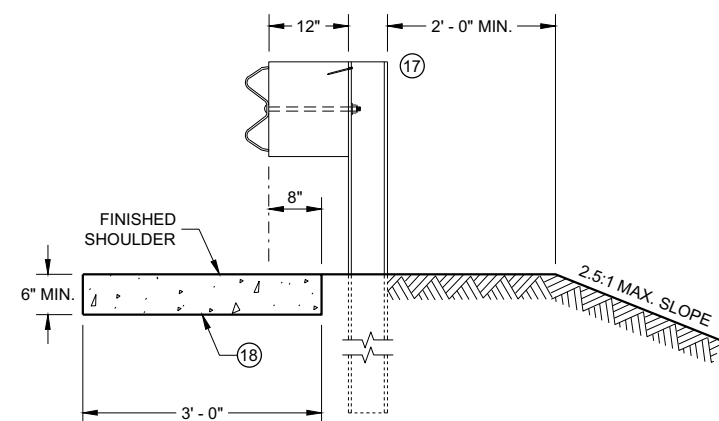
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



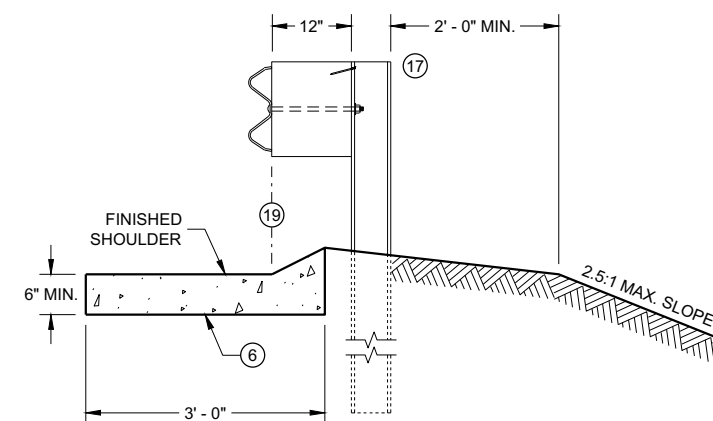
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

6

6

SDD08D02 - 07C

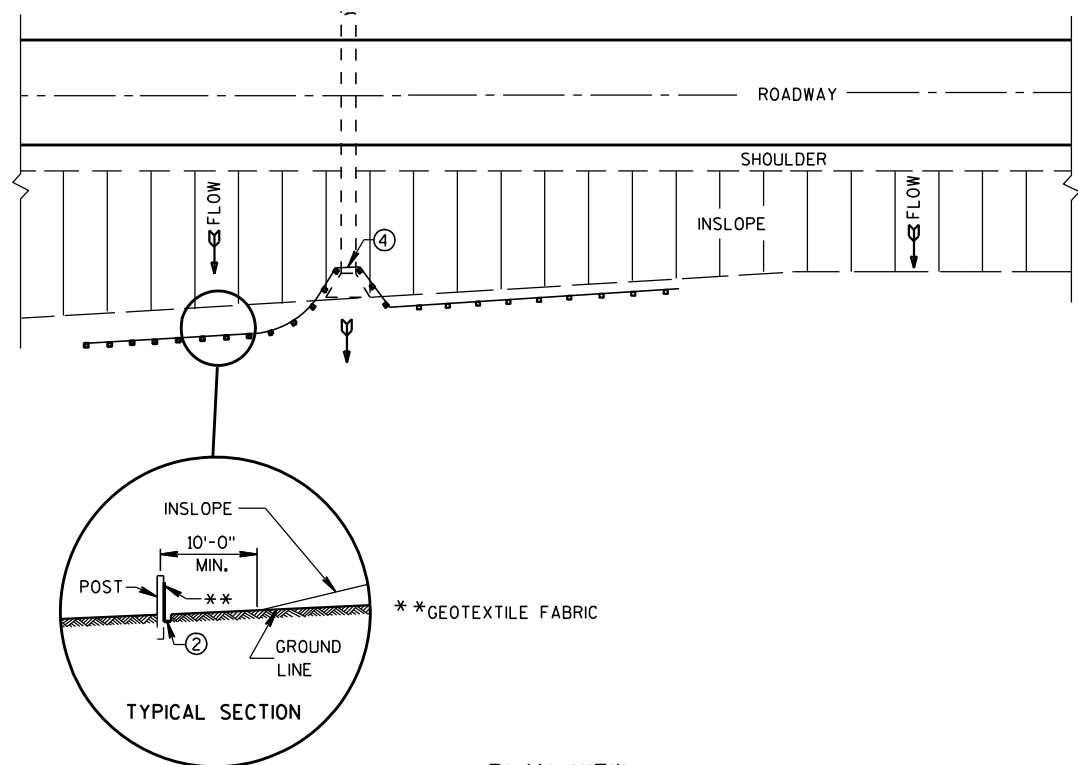
SDD08D02 - 07C

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

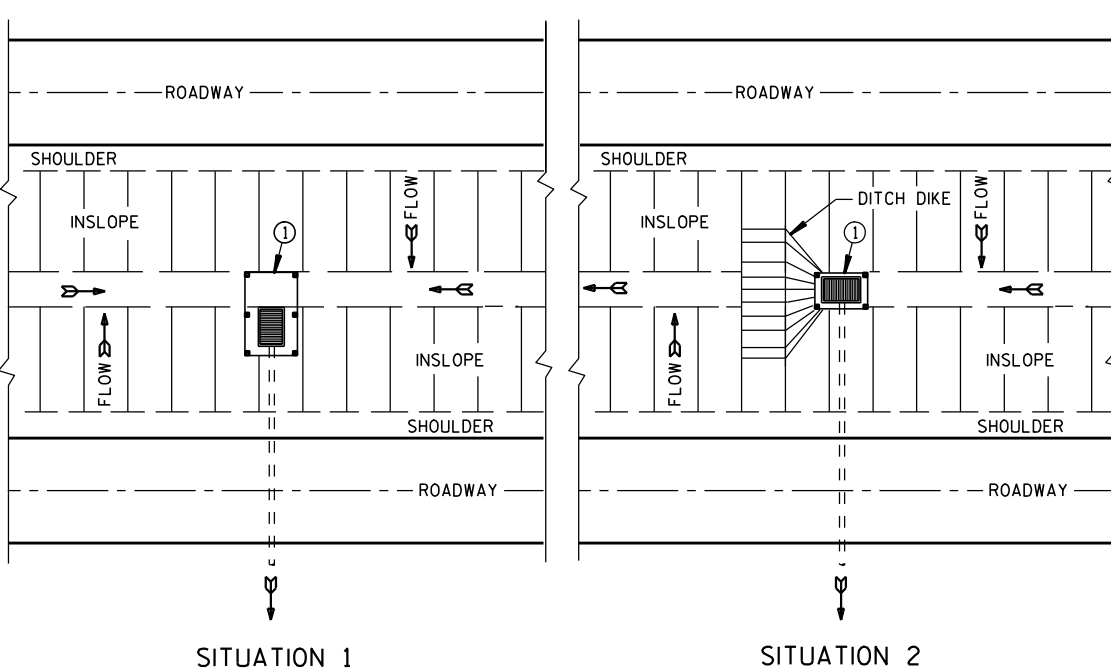
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

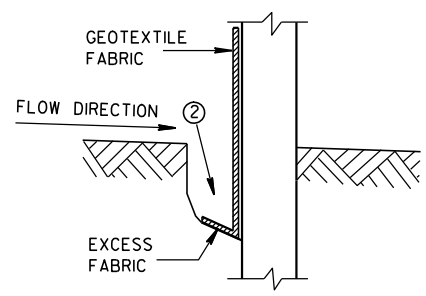


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

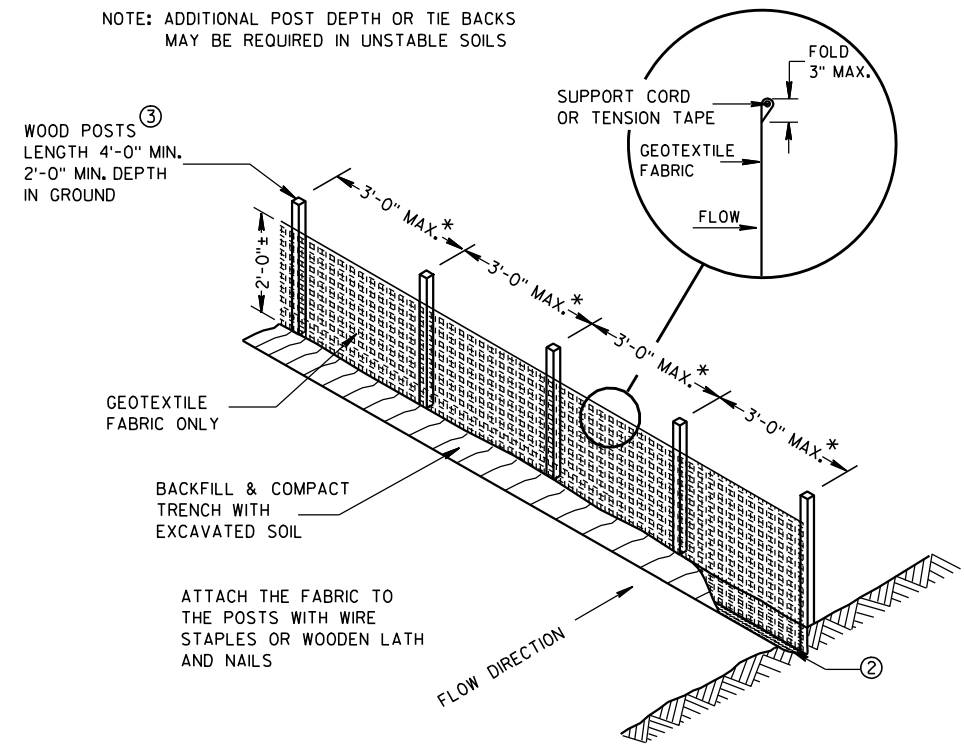
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



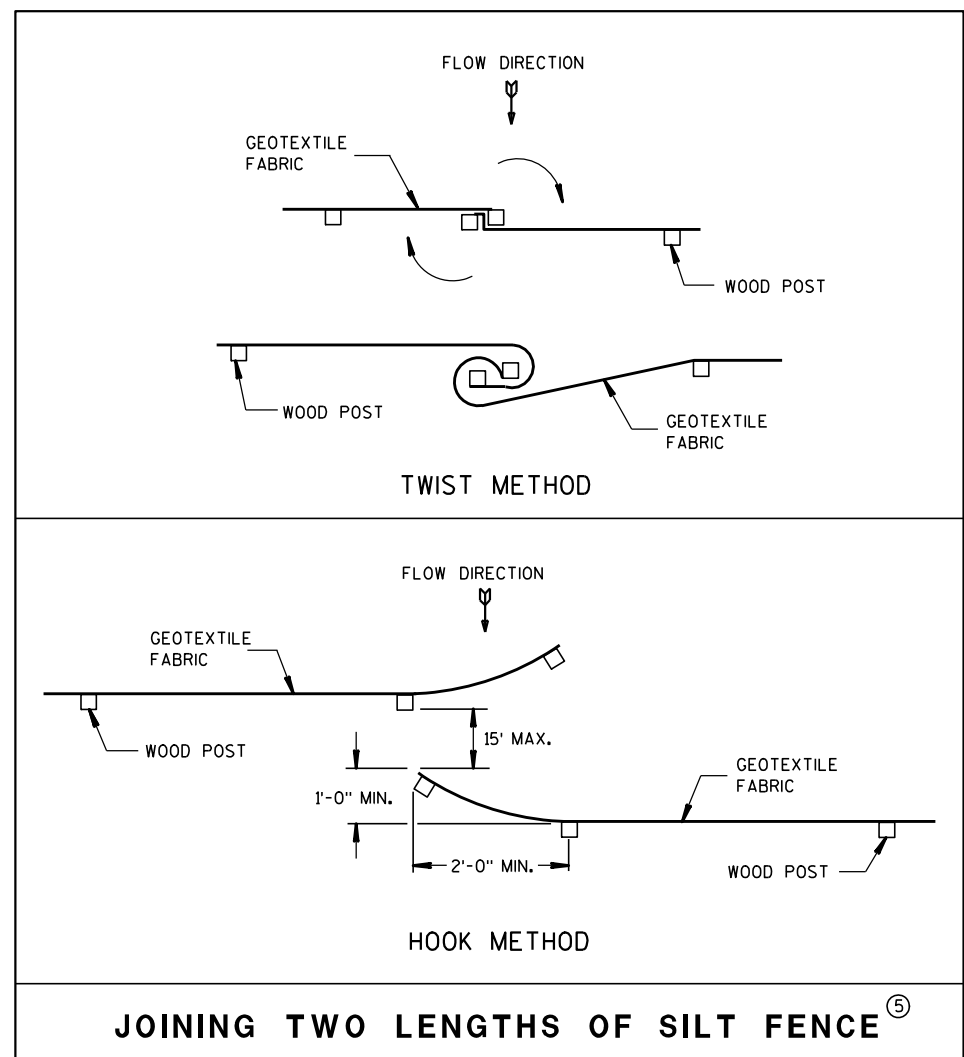
TRENCH DETAIL

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

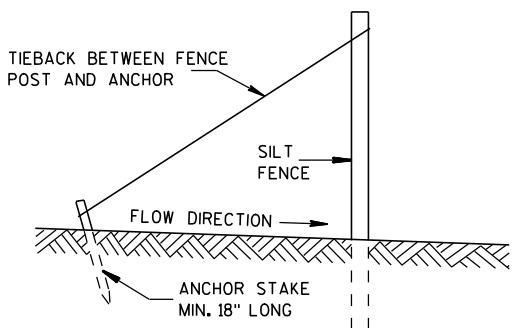


SILT FENCE

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

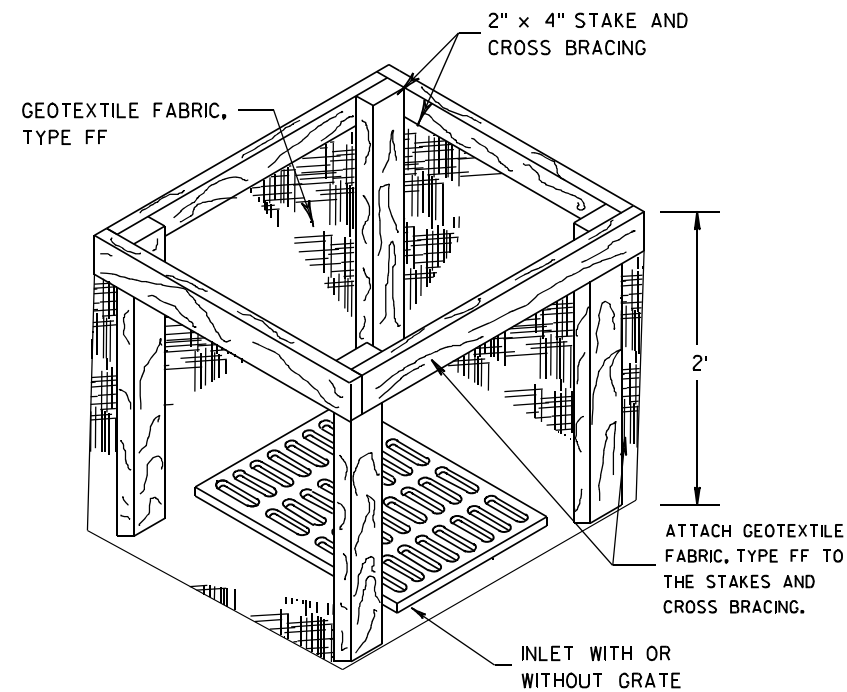
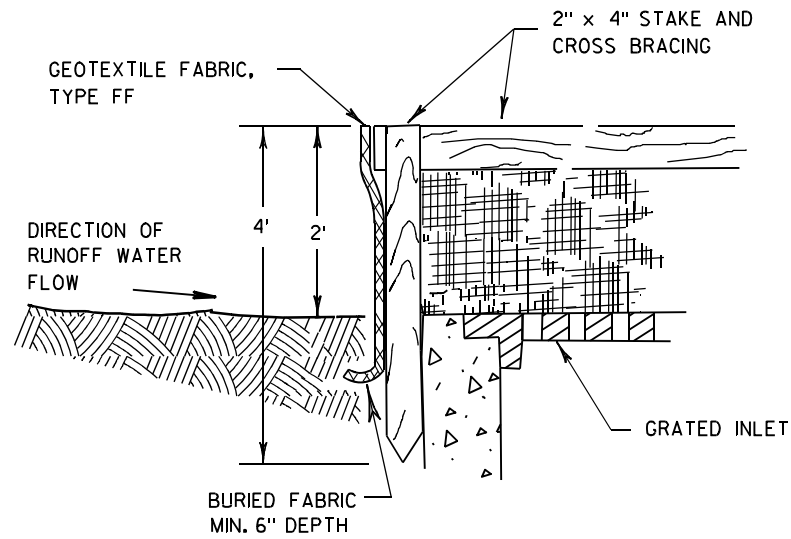


JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



INLET PROTECTION, TYPE A

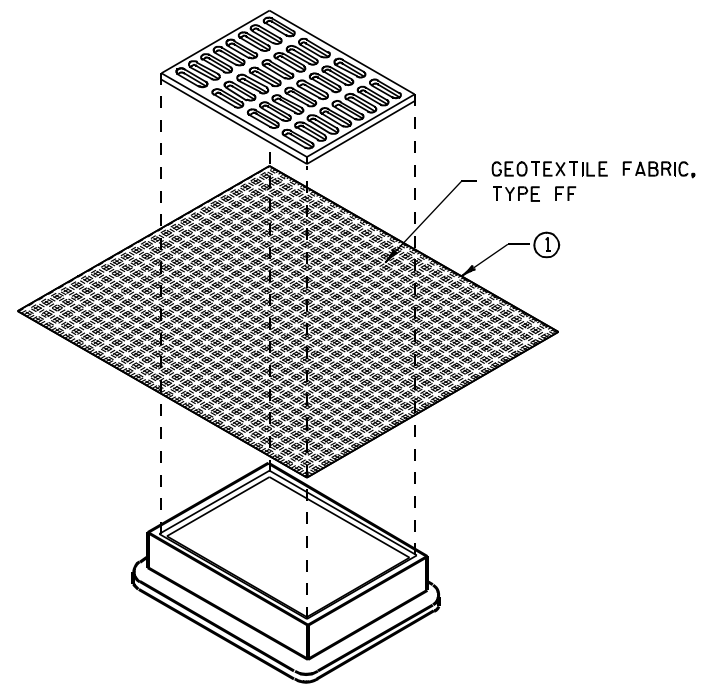
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

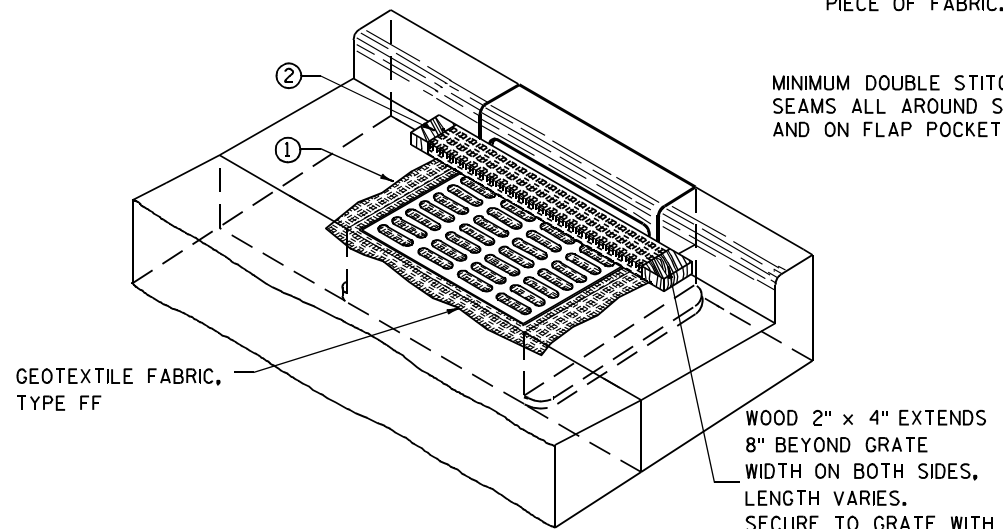
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

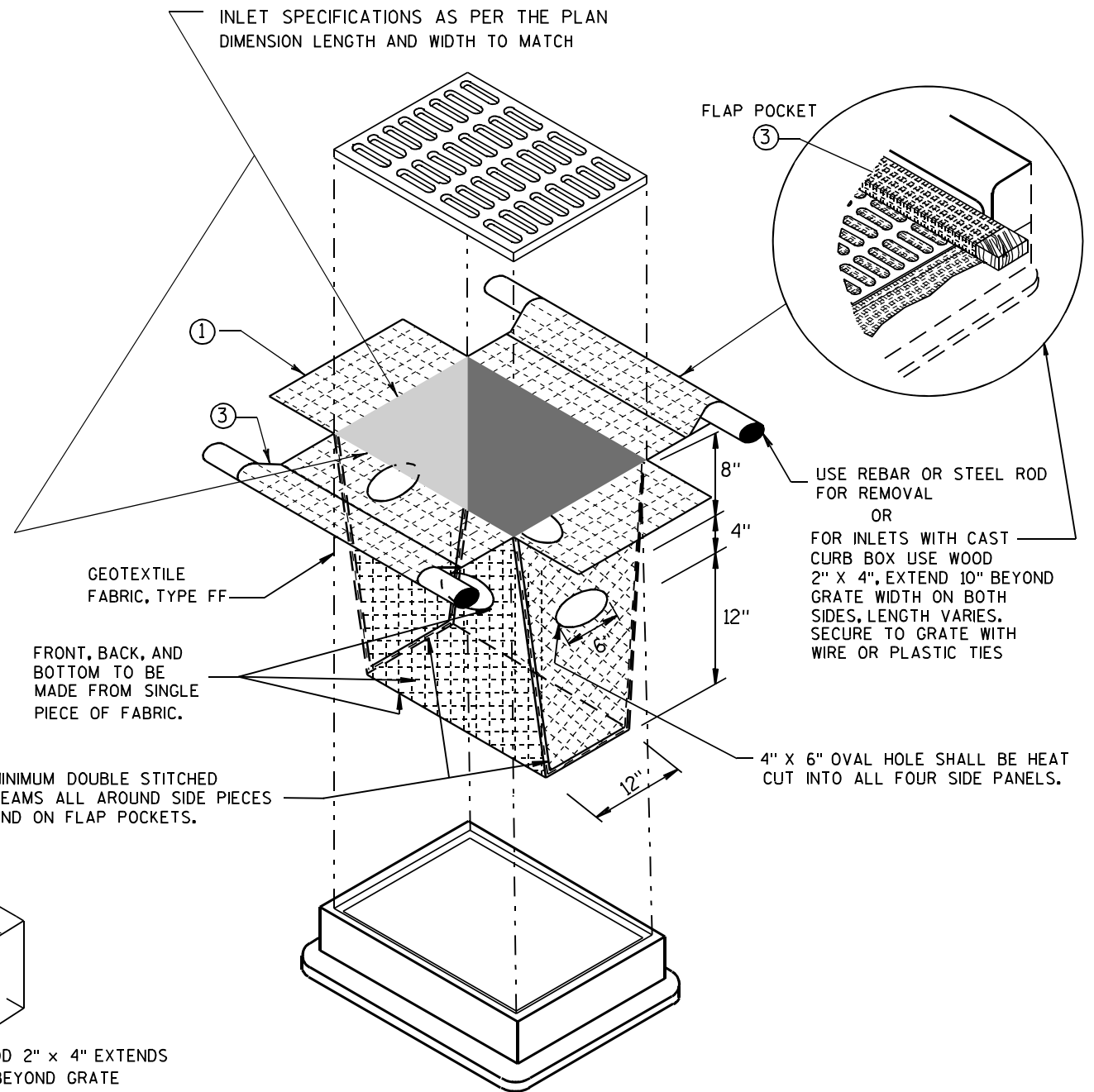
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

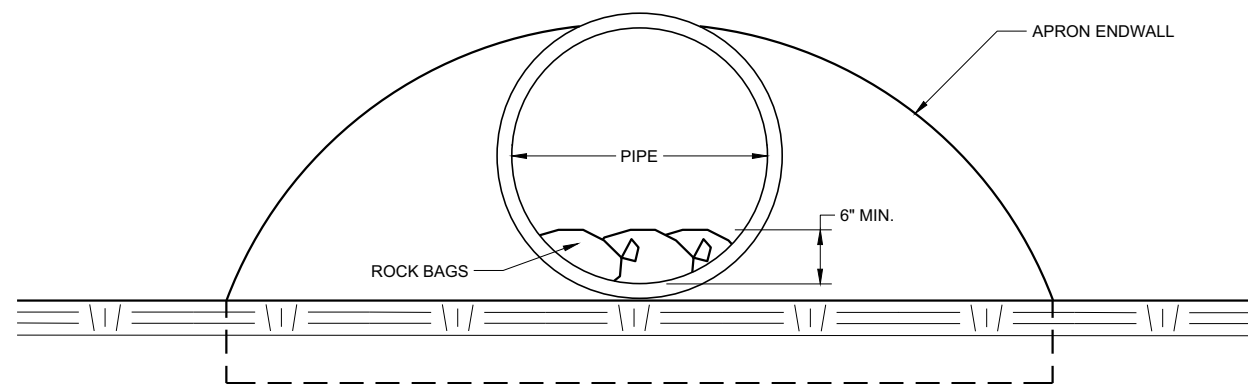
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



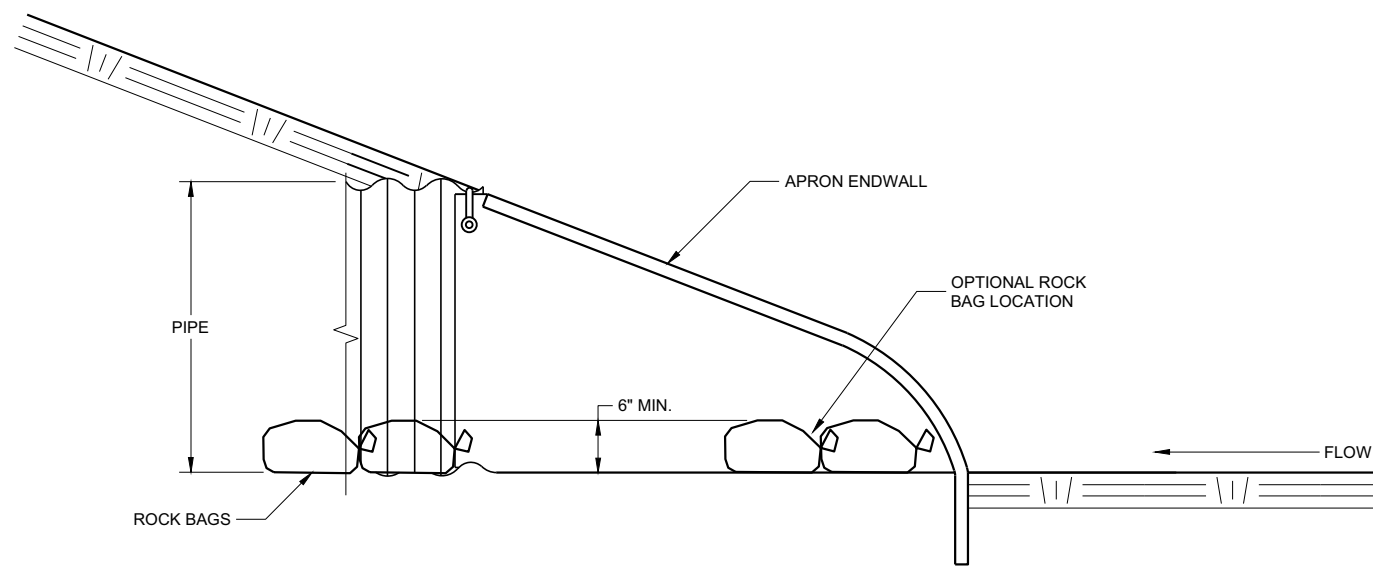
INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

INLET PROTECTION TYPE A, B, C, AND D	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/16/02 DATE	/s/ Beth Connestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



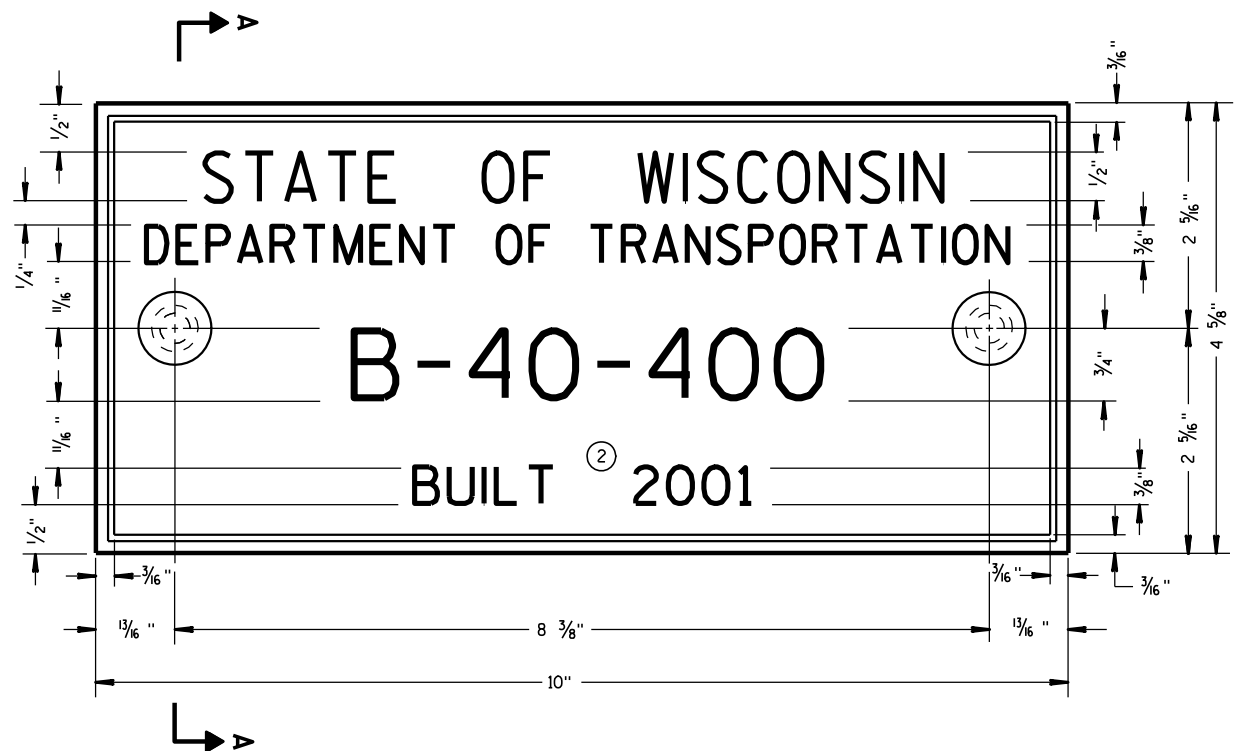
END VIEW



SIDE VIEW

CULVERT PIPE CHECK
 (INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGINEER
<small>FHWA</small>	



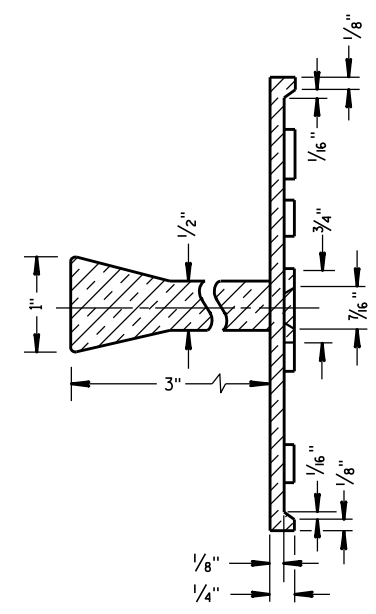
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

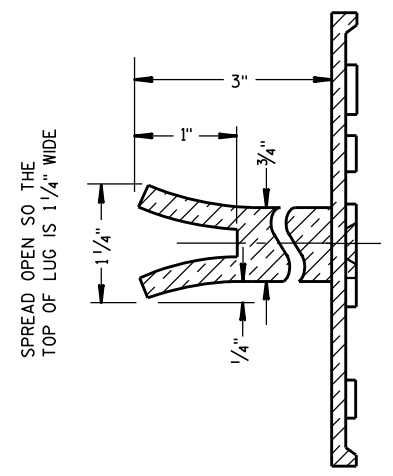
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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



SECTION A-A



ALTERNATE LUG

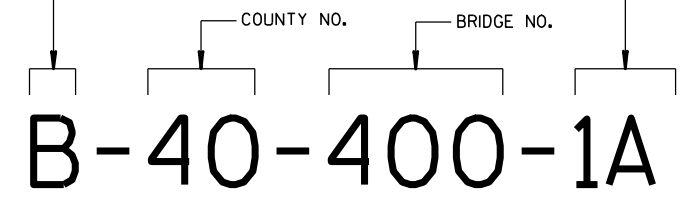
6

6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

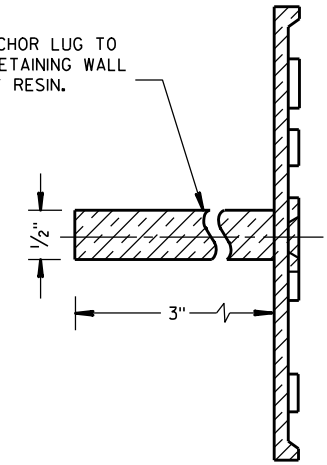
B = BRIDGE
C = CULVERT
R = RETAINING WALL

UNIT NO. FOR MULTIPLE
UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

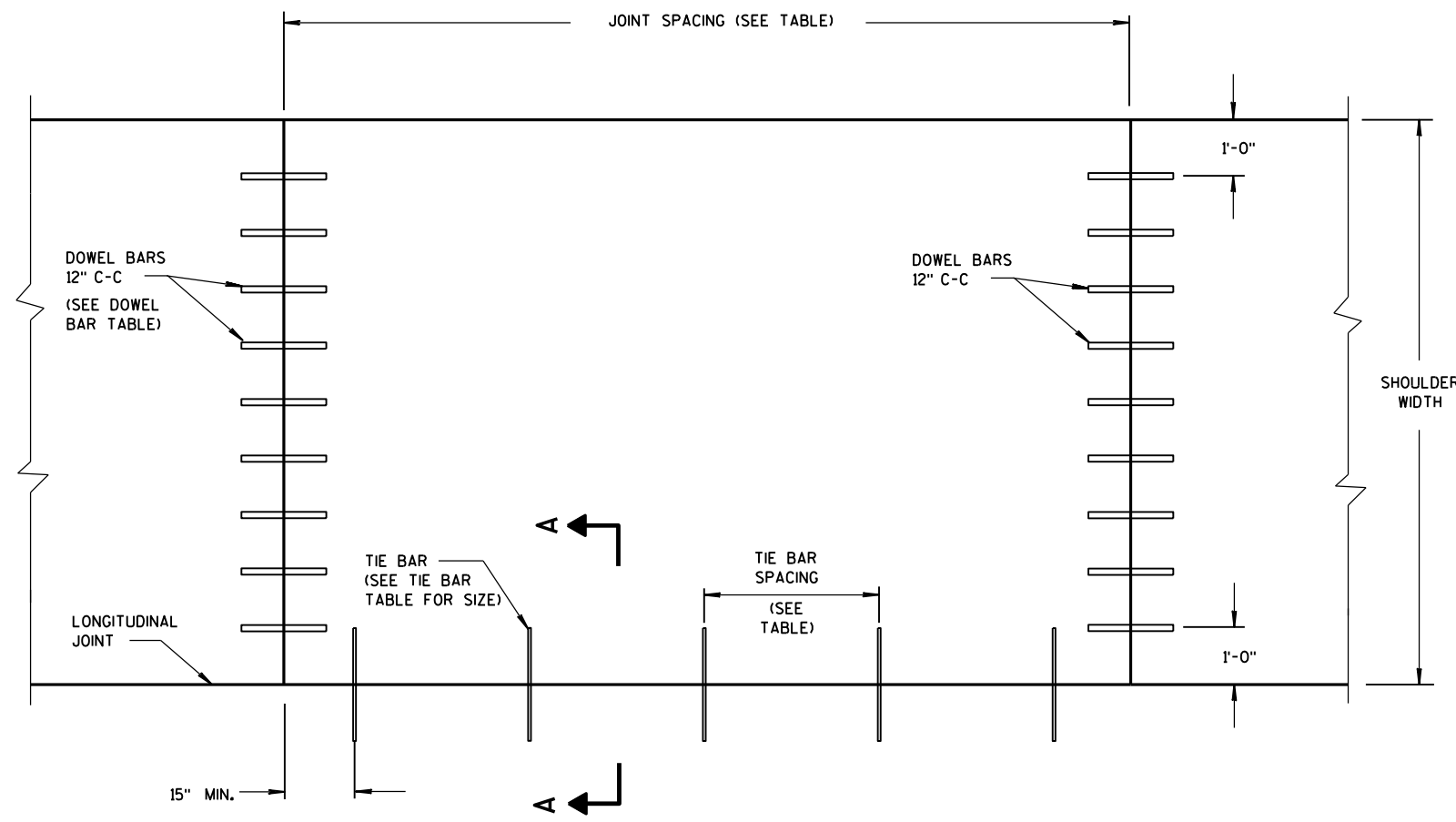


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

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



PLAN VIEW
CONCRETE PAVEMENT SHOULDER

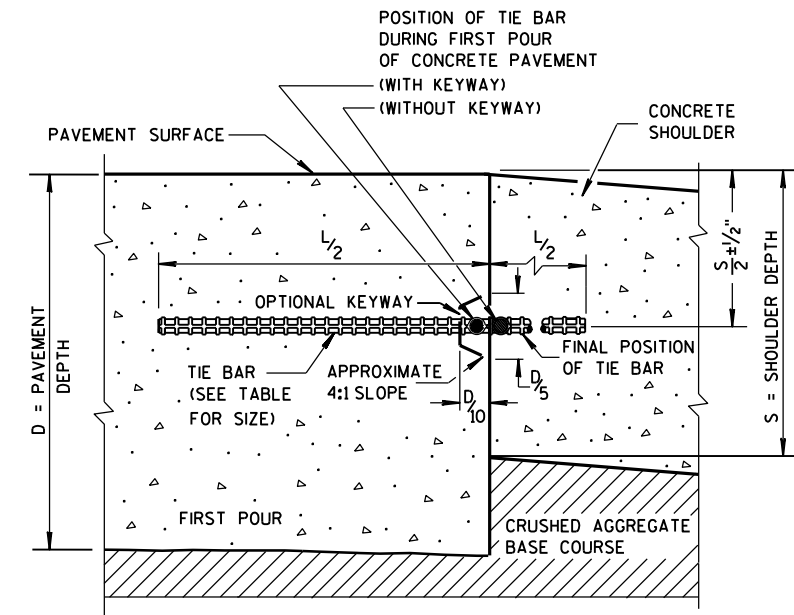
GENERAL NOTES

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

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.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

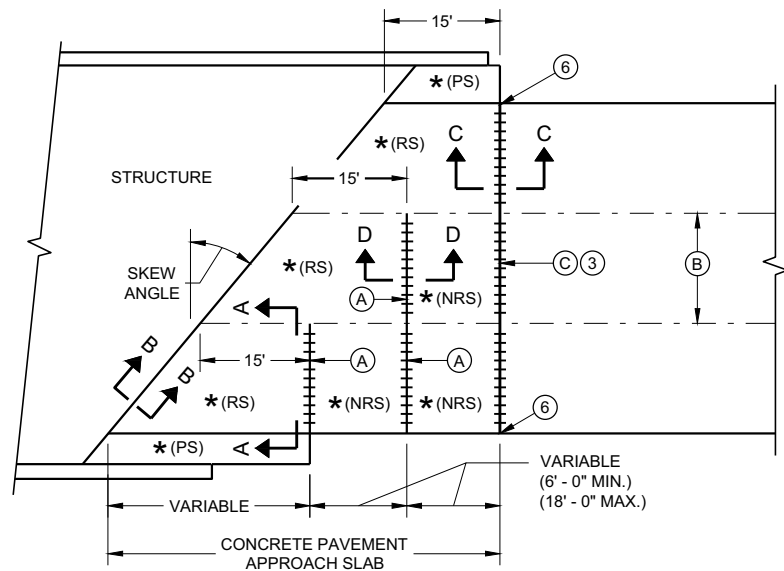
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER***	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

*** 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.

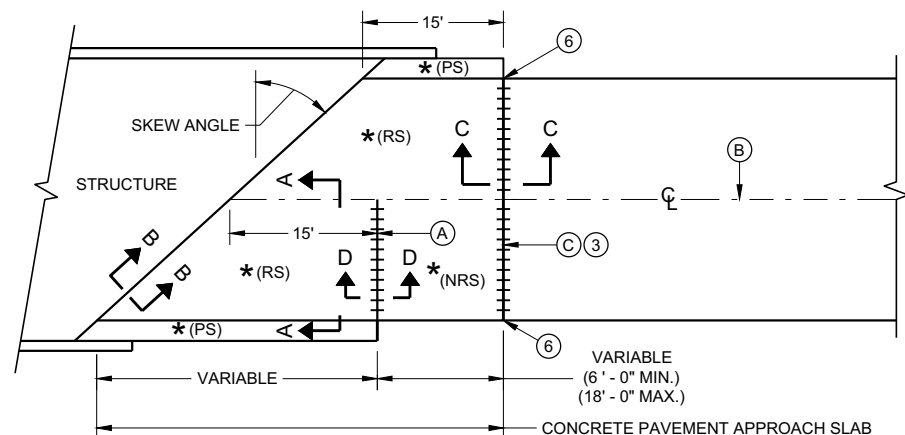
CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

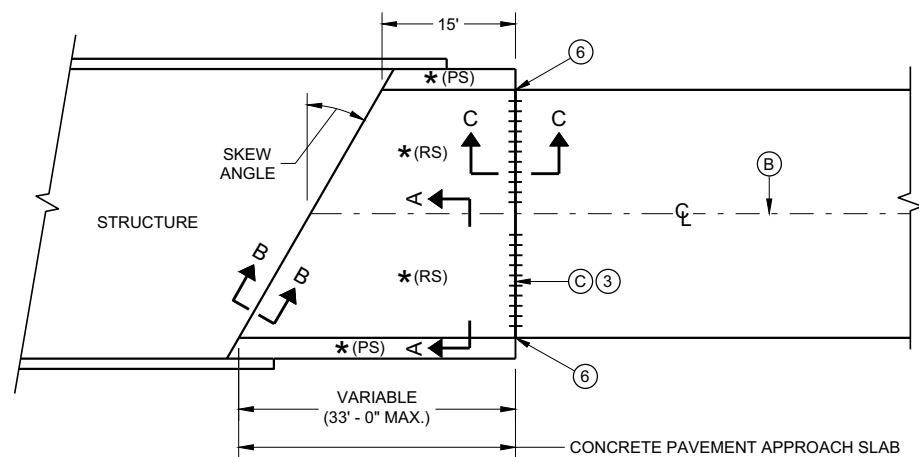
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



**SKewed Approach
(Pavement More Than Two Lanes)**

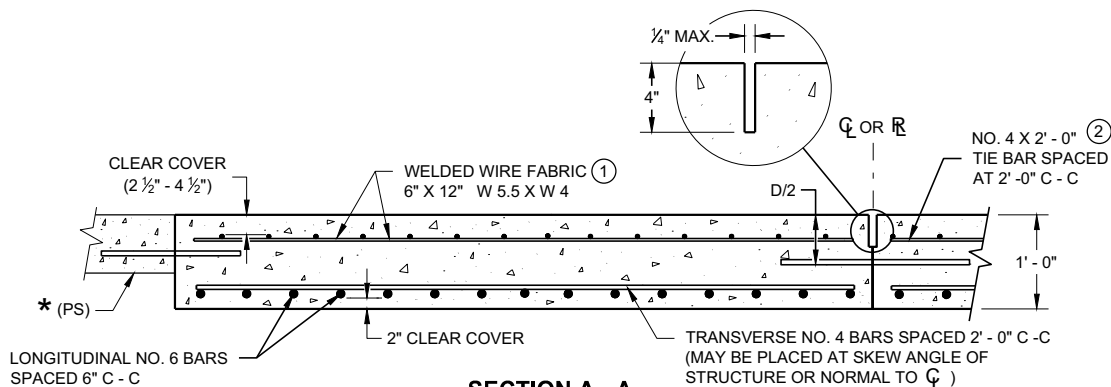


**Skews > 20°
(Pavement Width ≤ 30')**

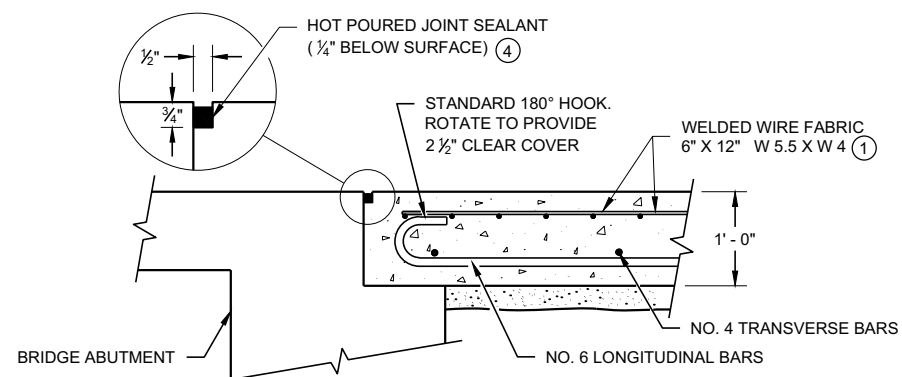


**Skews ≤ 20°
(Pavement Width ≤ 30')**
Approach Slab and Adjacent Pavement

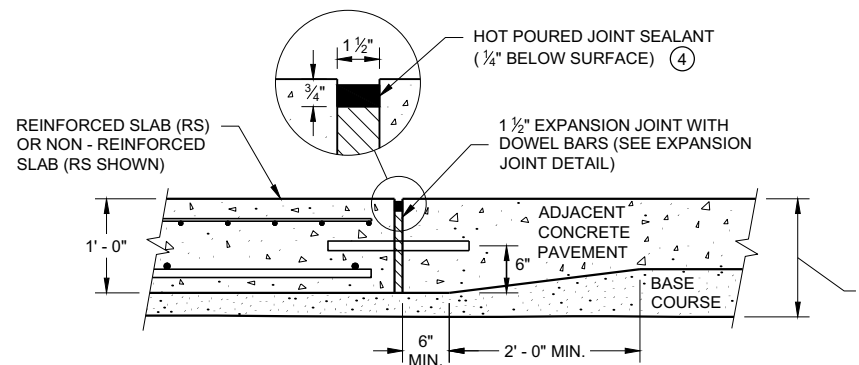
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



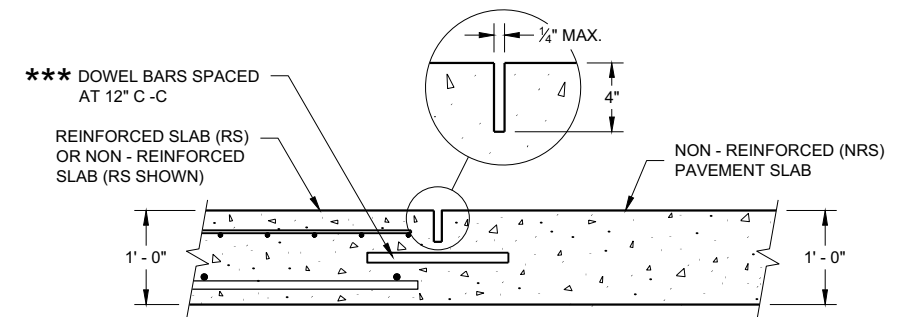
**SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT**



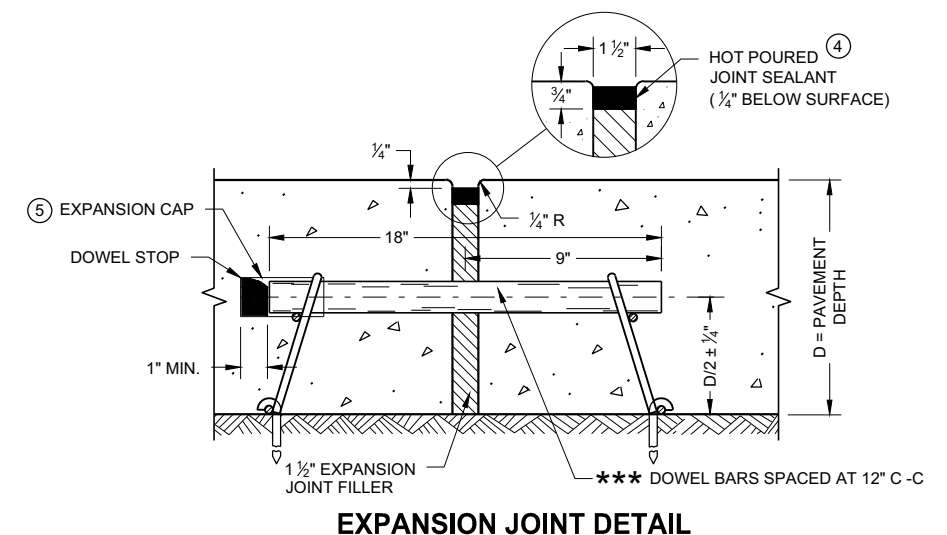
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

- THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.
- TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.
- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
 - ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
 - ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
 - ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
 - ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
 - ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
 - (A) STANDARD CONTRACTION JOINT NORMAL TO C OR R.
 - (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
 - (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO C OR R.



**SECTION D - D
CONTRACTION JOINT**



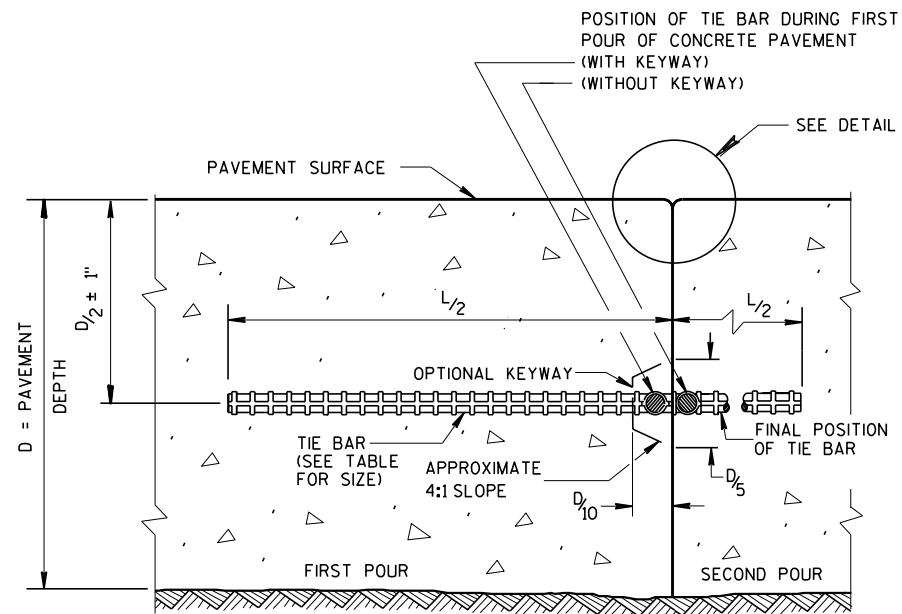
EXPANSION JOINT DETAIL

**CONCRETE PAVEMENT
APPROACH SLAB**

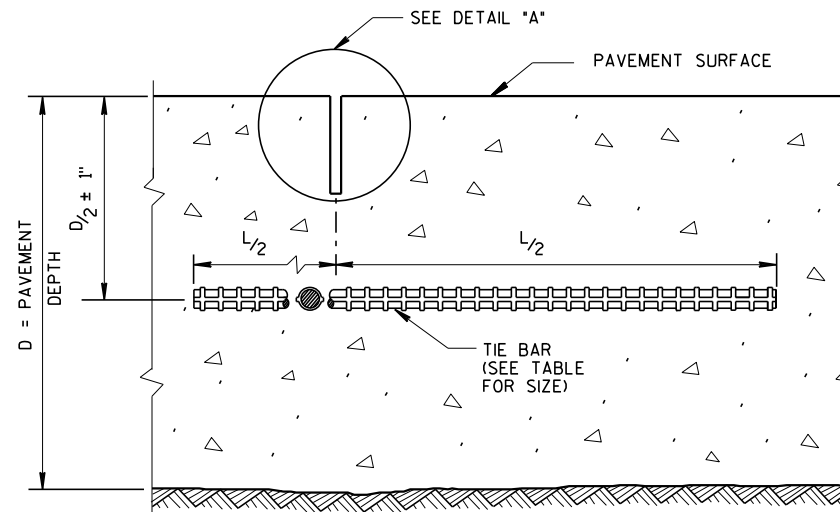
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



CONSTRUCTION JOINT



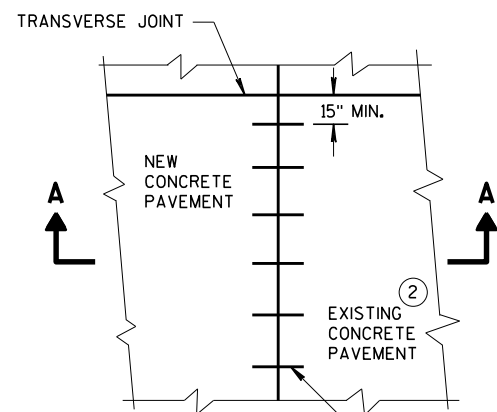
SAWED JOINT

GENERAL NOTES

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

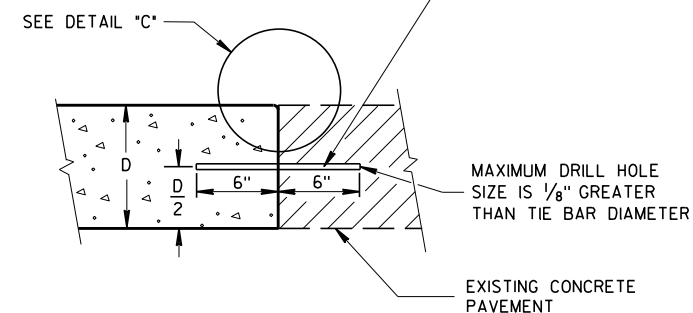
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

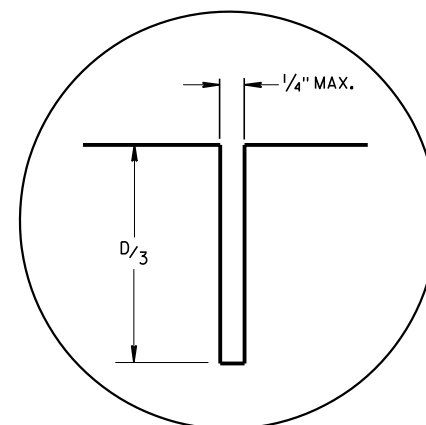


PLAN VIEW

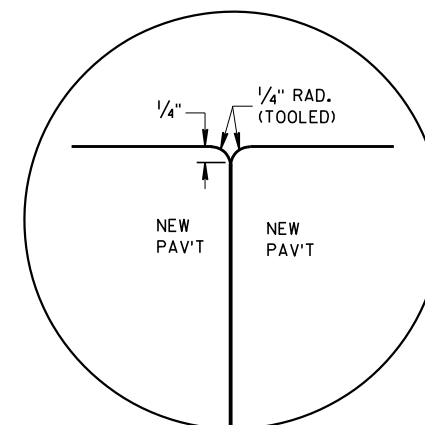
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



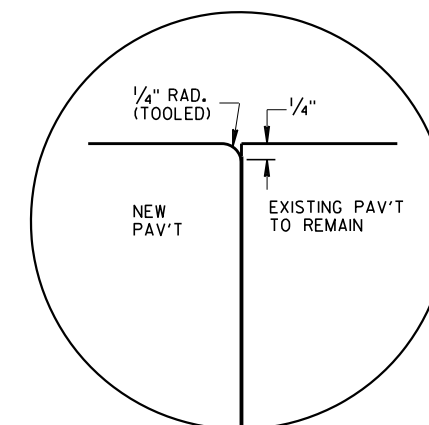
**SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT**



DETAIL "A"



DETAIL "B"



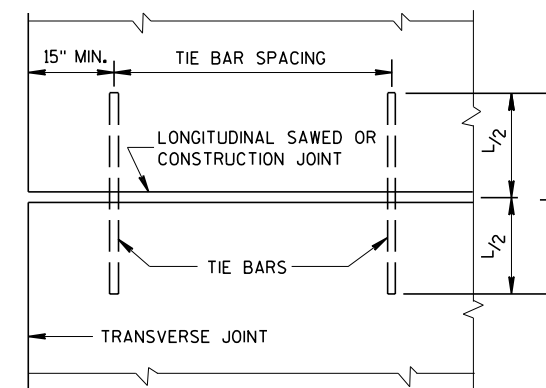
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 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.

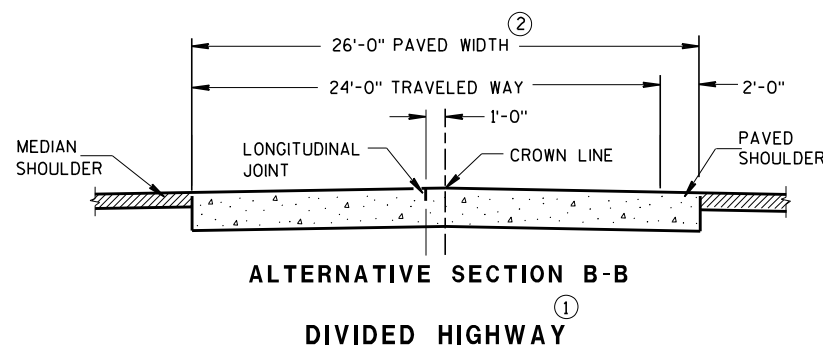
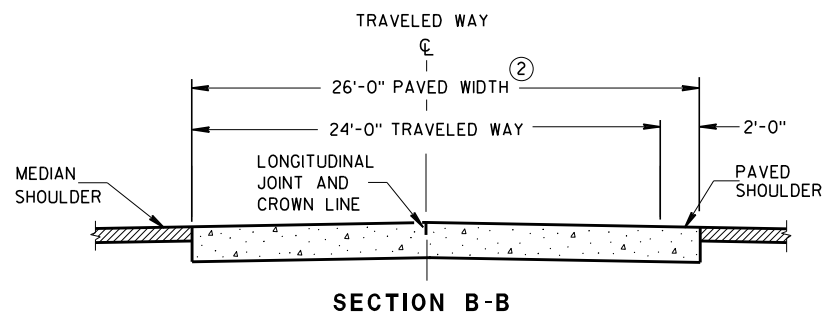
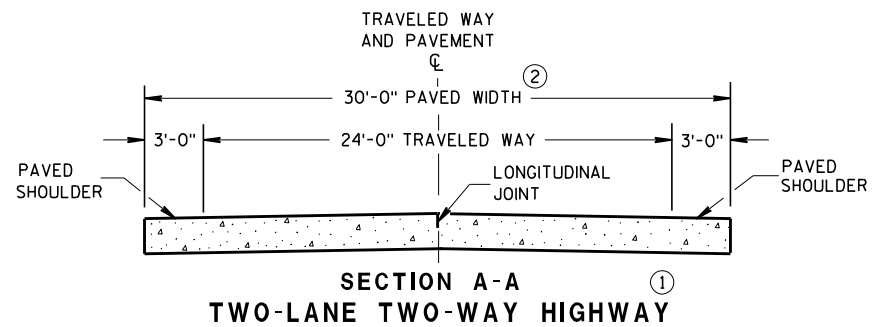


**PLAN VIEW
SHOWING LOCATION OF TIE BARS**

**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

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

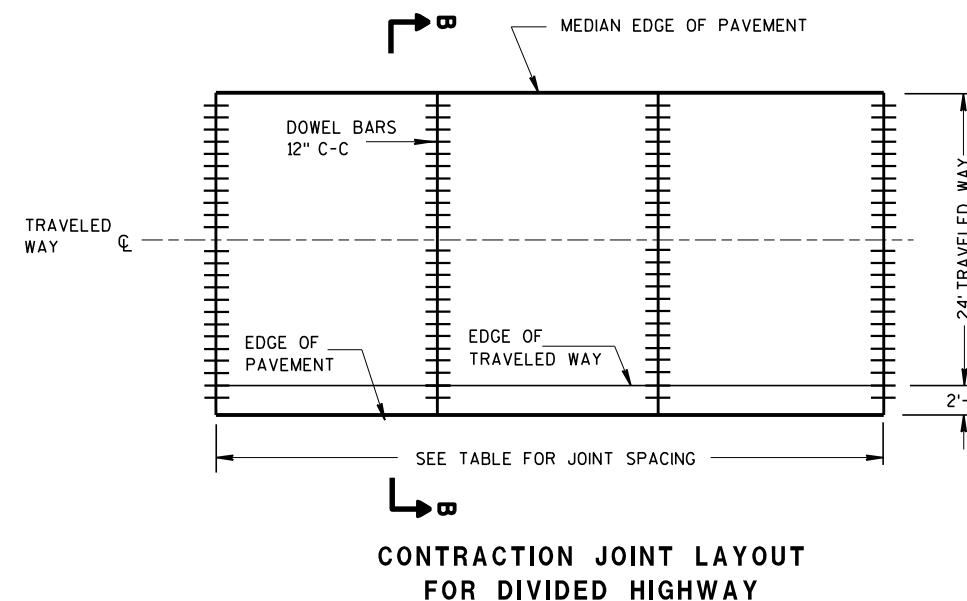
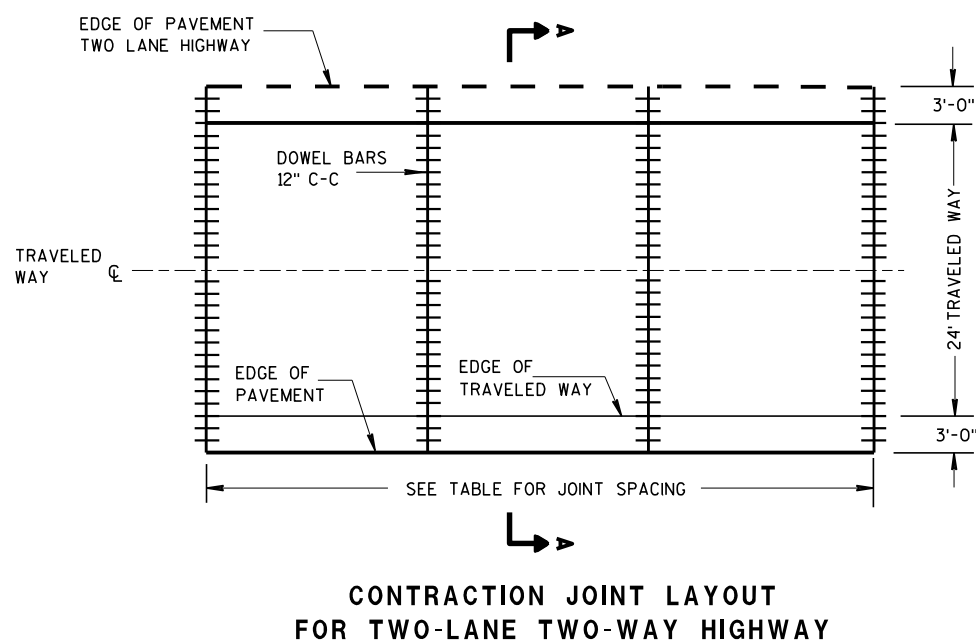
CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

- ① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.
- ② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

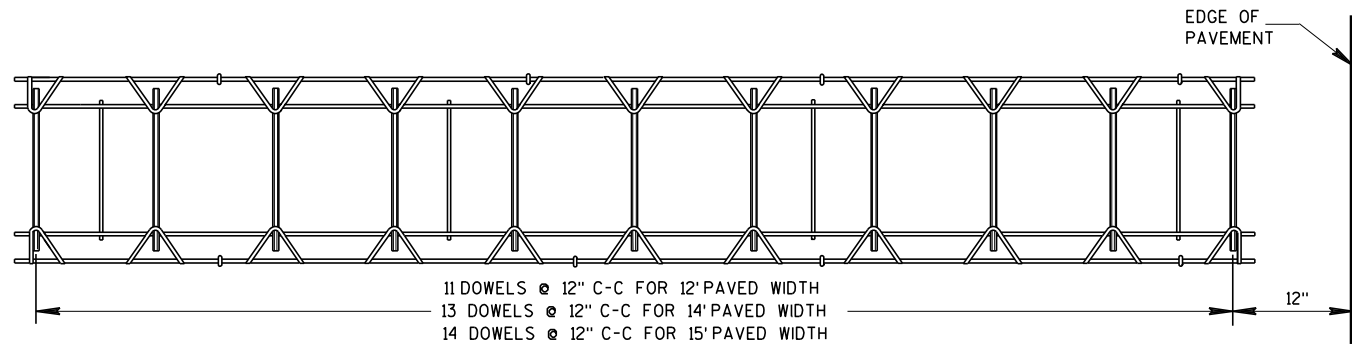
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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'

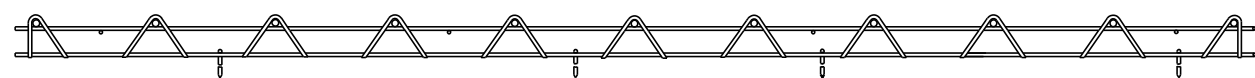


RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION



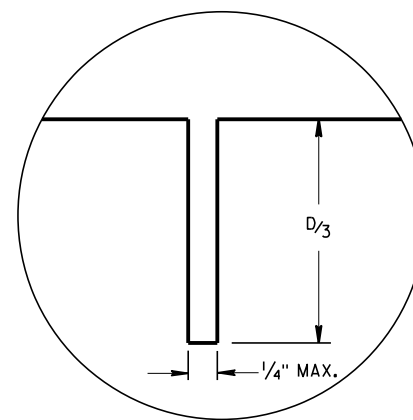
PLAN VIEW



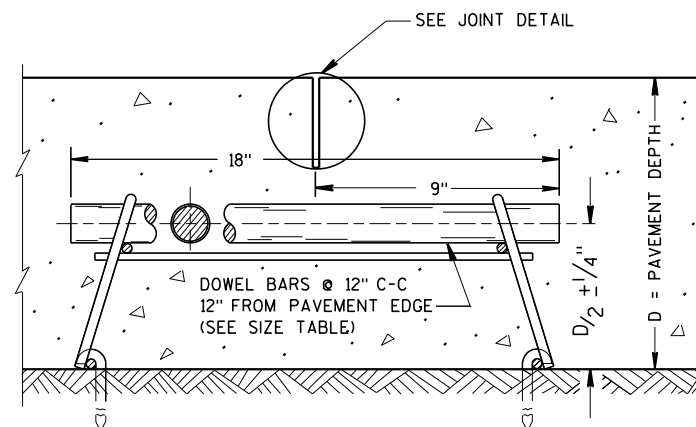
SIDE VIEW

(NORMAL TO CENTERLINE)

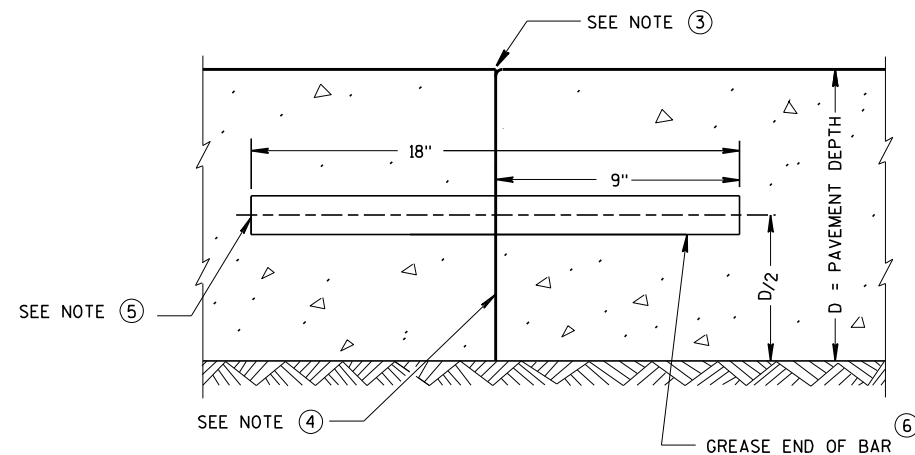
CONTRACTION JOINT DOWEL ASSEMBLY ①



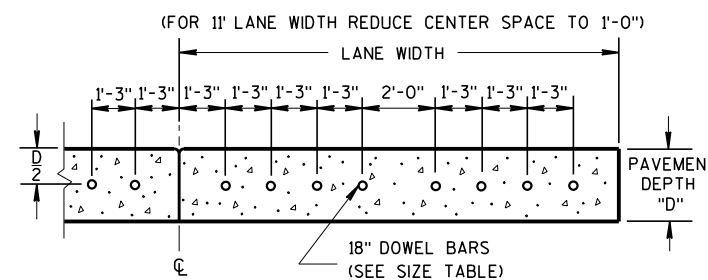
JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

GENERAL NOTES

- ① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.
- ② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
- ③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.
- ④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
- ⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.
- ⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
- ⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.

RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

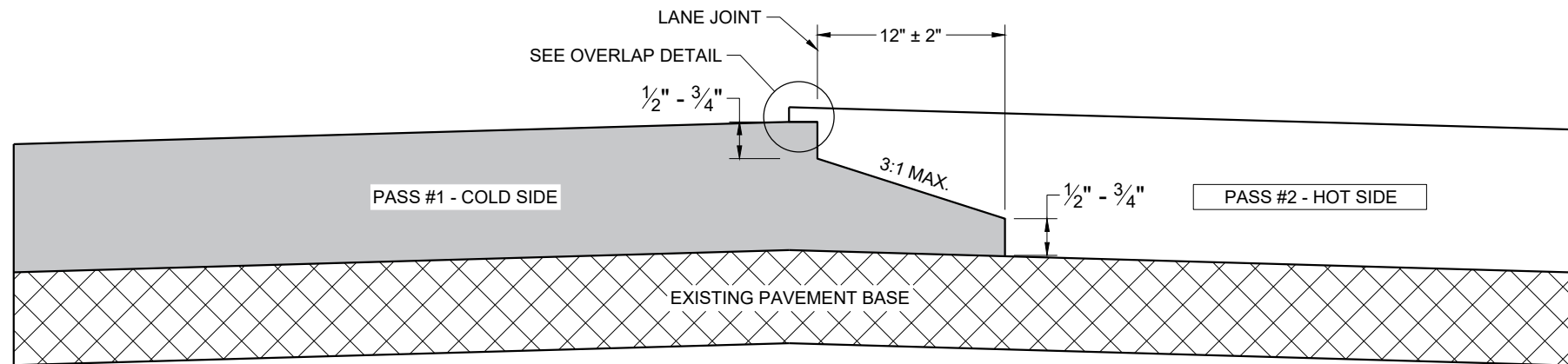
March 2018

DATE

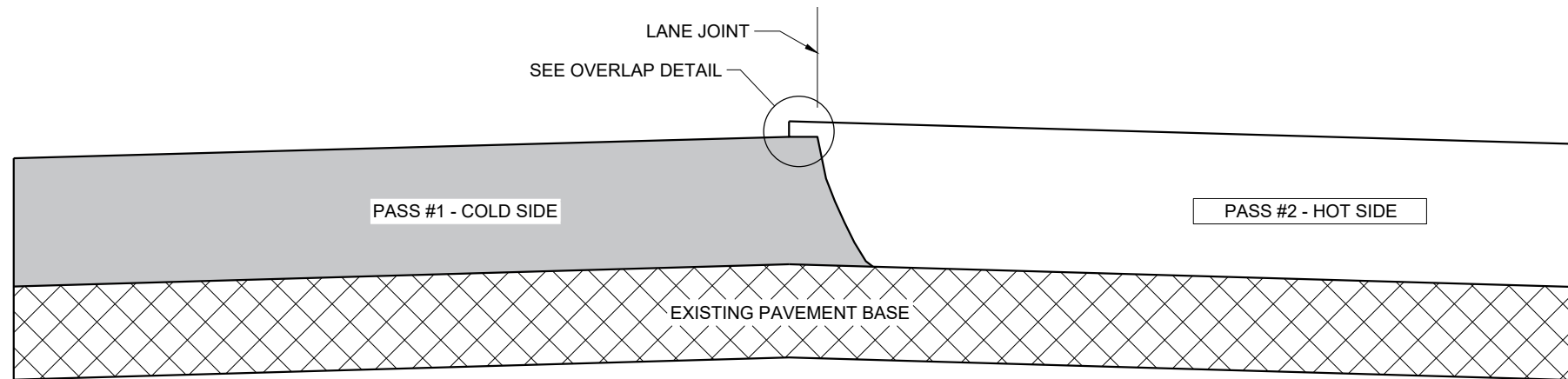
/s/ Peter Kemp, P.E.

PAVEMENT SUPERVISOR

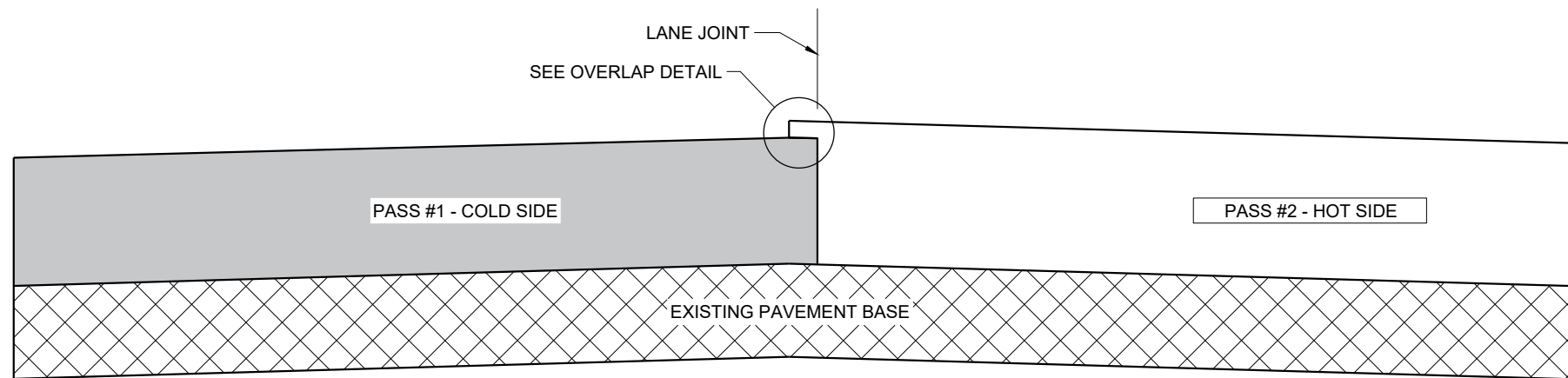
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)**

GENERAL NOTES

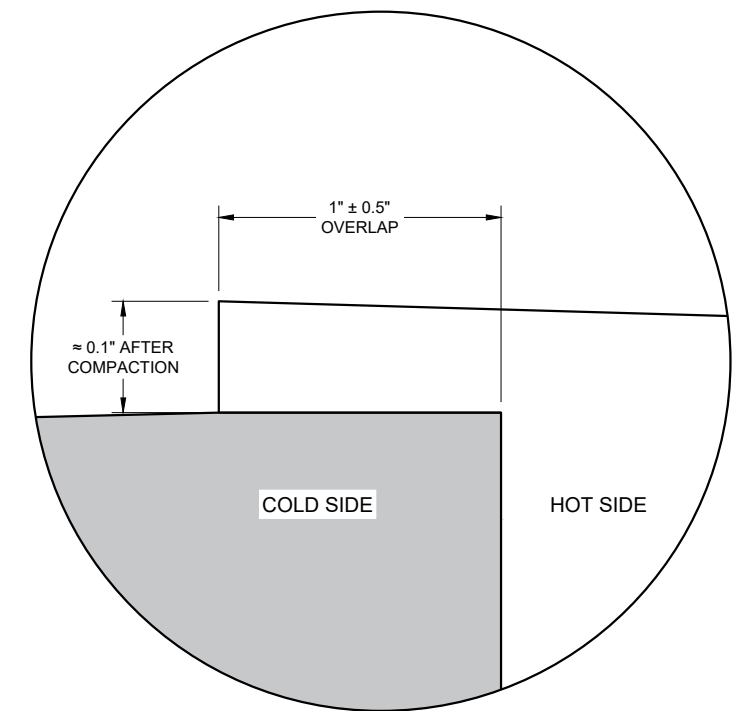
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO 2" FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



OVERLAP DETAIL (TYPICAL)

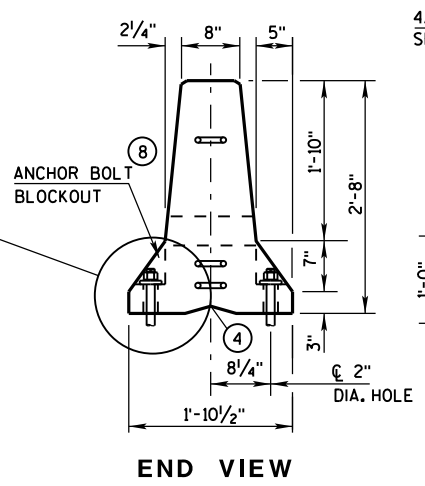
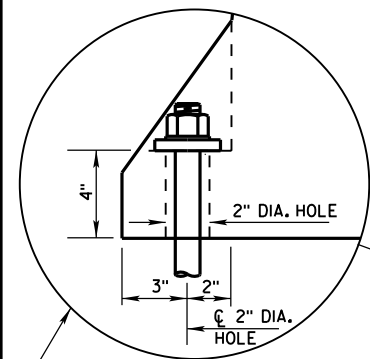
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6

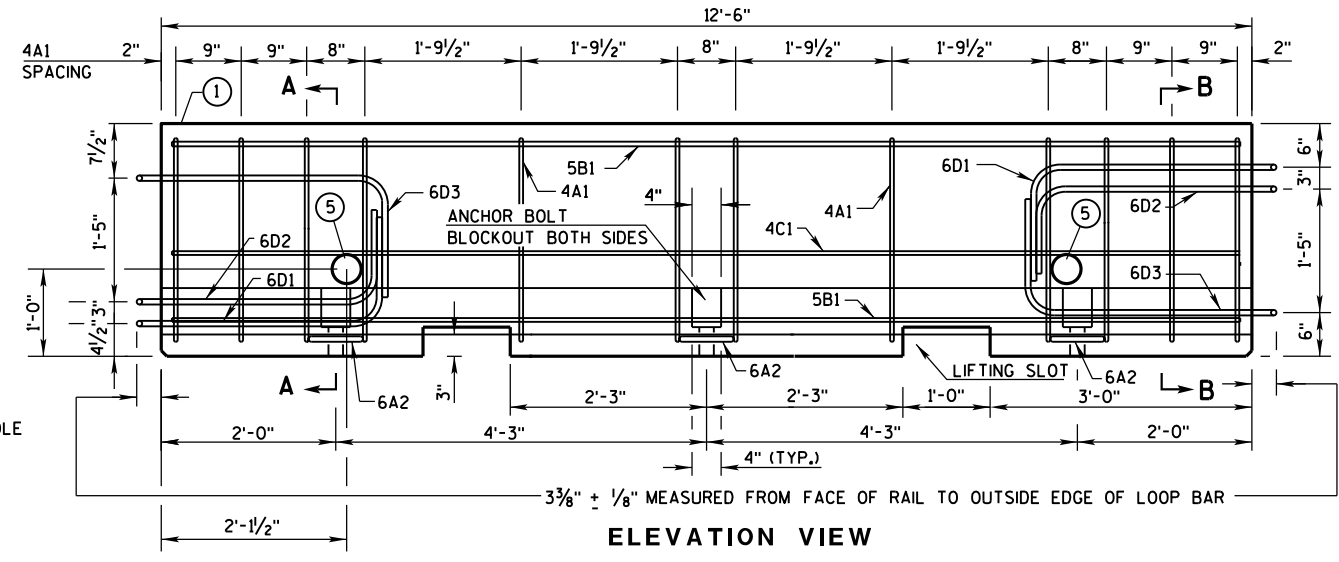
SDD 13C19 - 03

SDD 13C19 - 03

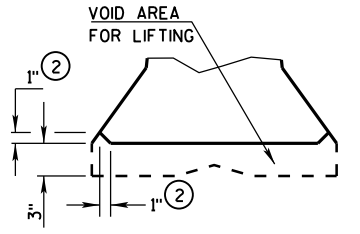
HMA LONGITUDINAL JOINTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
FHWA	



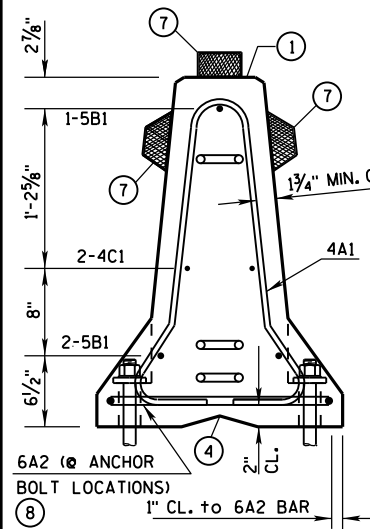
END VIEW



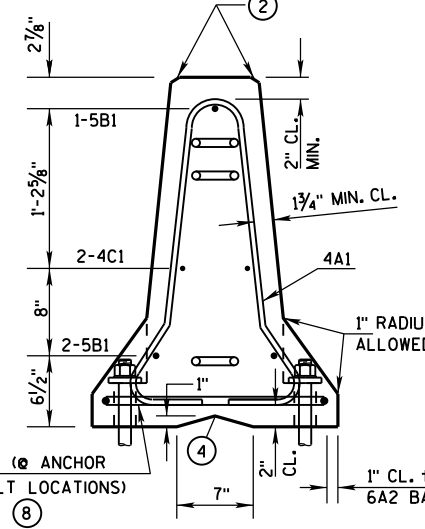
ELEVATION VIEW



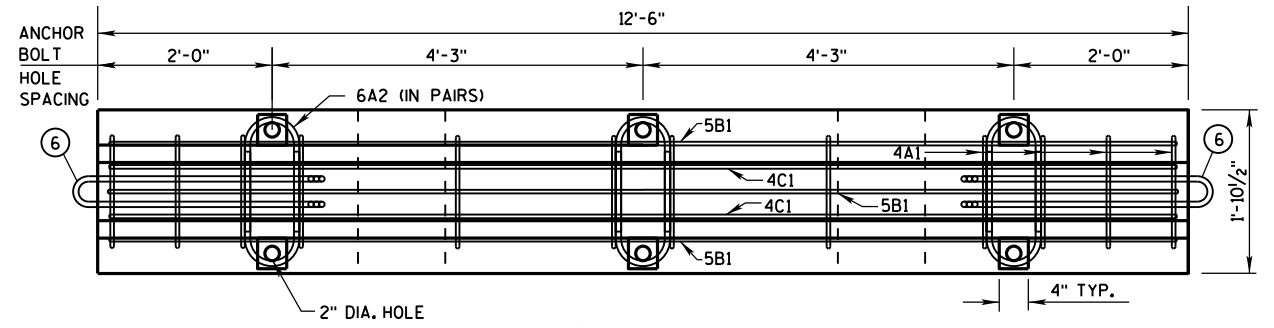
**DETAIL "B"
LIFTING SLOT DETAIL**



**SECTION A-A
(STIRRUP PLACEMENT)**



**SECTION B-B
(STIRRUP PLACEMENT)**



PLAN VIEW

DETAILS OF BARRIER SECTION

GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(d) THRU 14B7-15(i).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

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

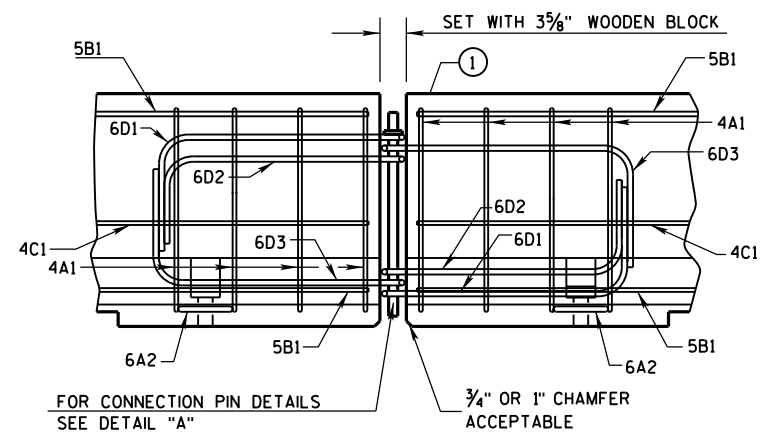
CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

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

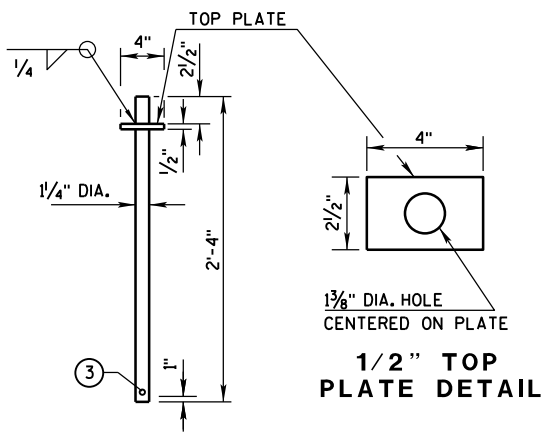
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE: WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- ④ "V" NOTCH IS OPTIONAL.
- ⑤ THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- ⑥ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- ⑦ USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- ⑧ SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.
- ⑨ 1" CHAMFER OPTIONAL.

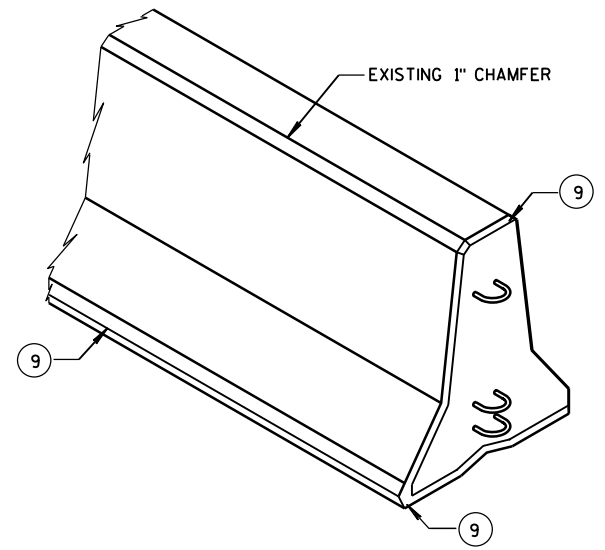
f'c = 4,000 psi



DETAILS OF BARRIER CONNECTION

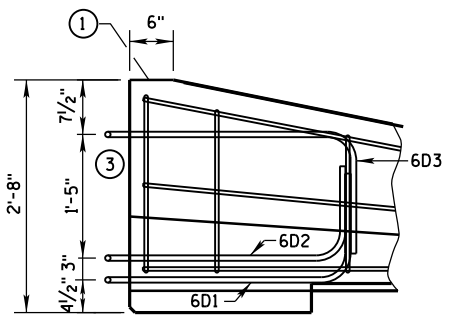
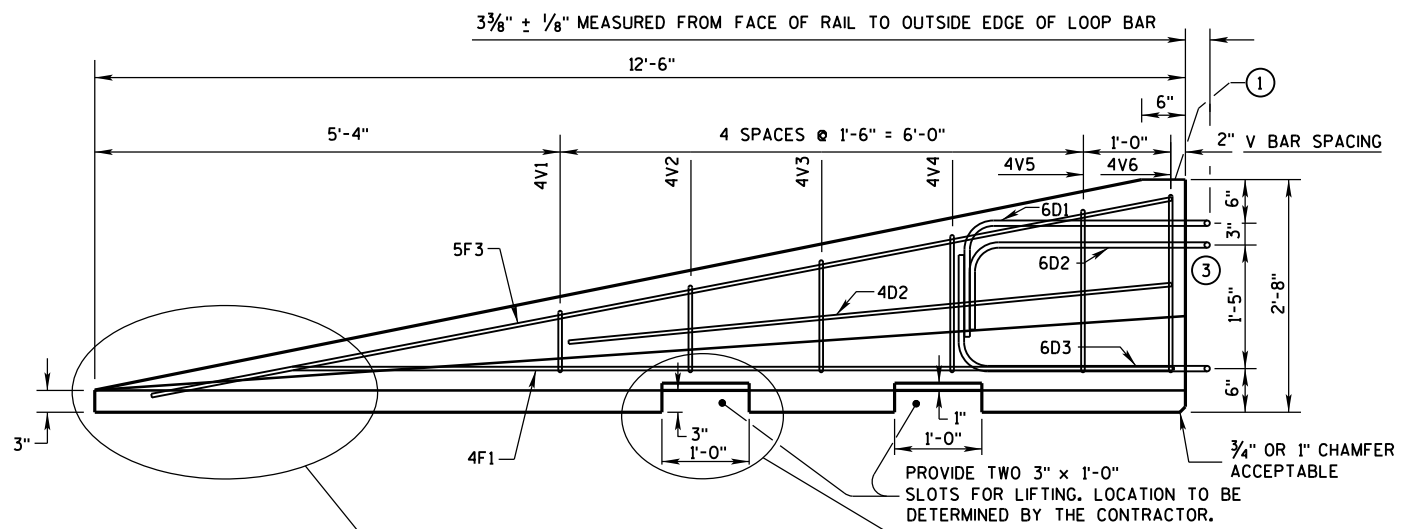


**DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))**



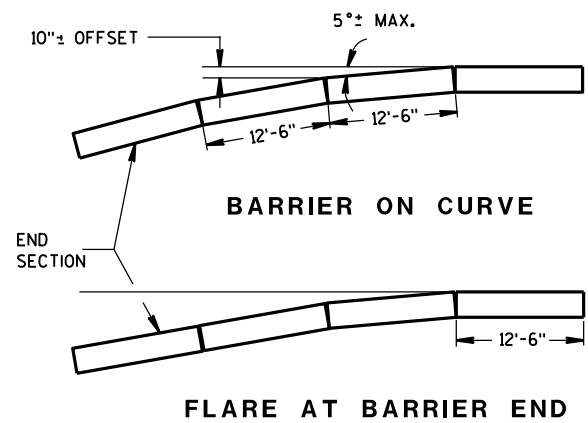
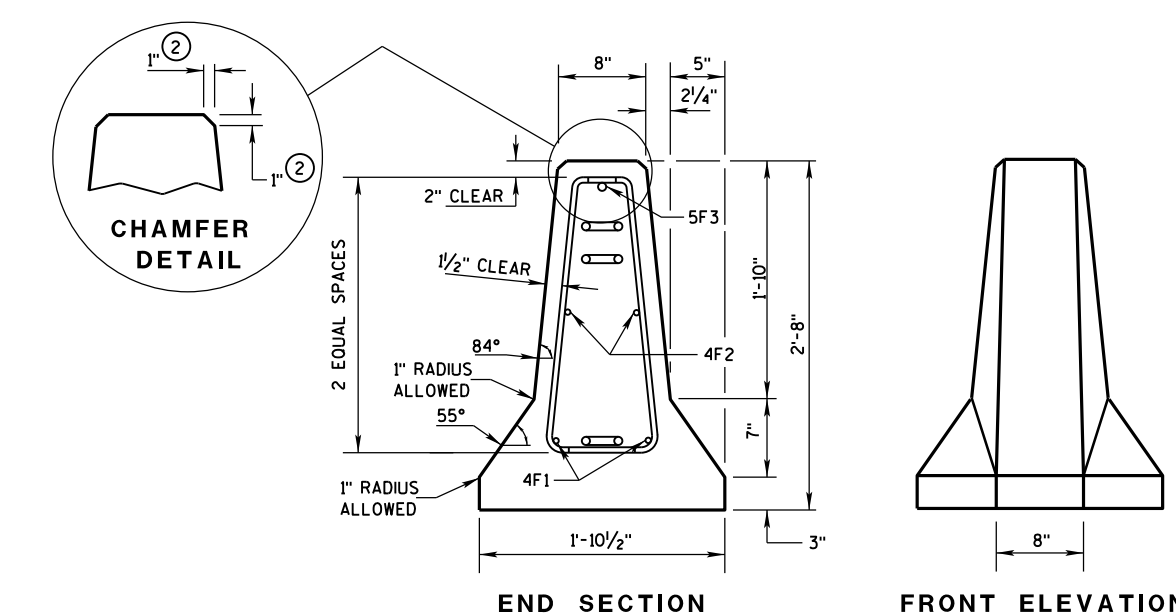
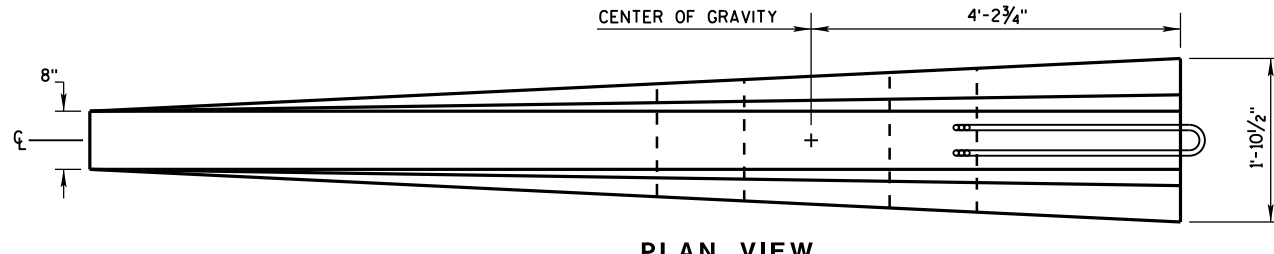
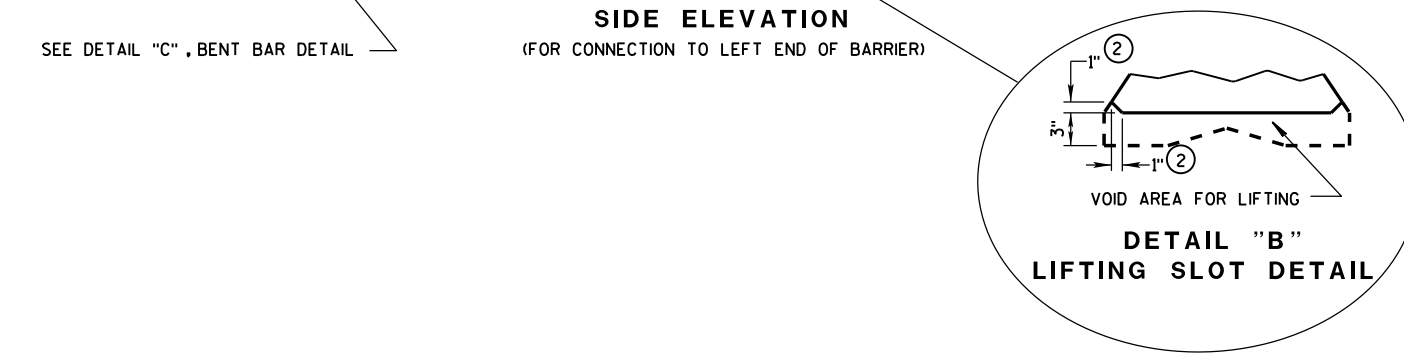
**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

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



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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

DETAILS OF BARRIER TAPER SECTION

GENERAL NOTES

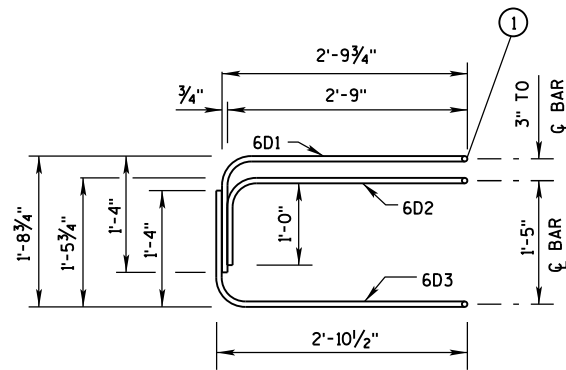
① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

**BARRIER TAPER SECTION
BILL OF MATERIALS**

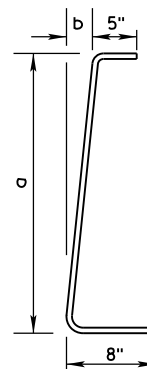
(PER 12'-6" BARRIER TAPER SECTION)

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

LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"

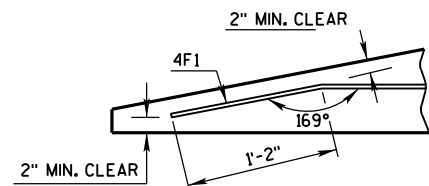


**ELEVATION
LOOP BAR ASSEMBLY**



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

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY



**DETAIL "C"
BENT BAR DETAIL**

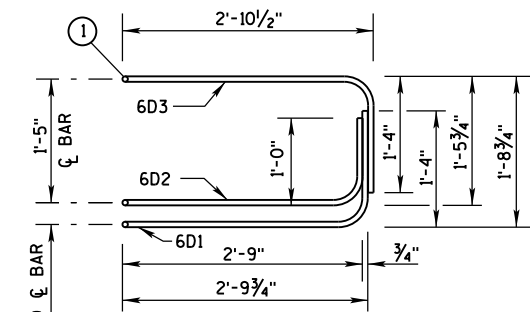
TAPER BARRIER SECTION

**BARRIER SECTION
BILL OF MATERIALS**

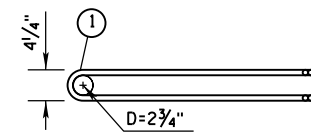
(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"

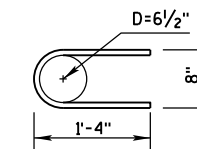
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



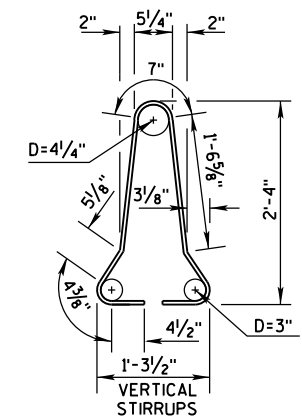
ELEVATION VIEW



**PLAN VIEW
LOOP BAR ASSEMBLY**
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2

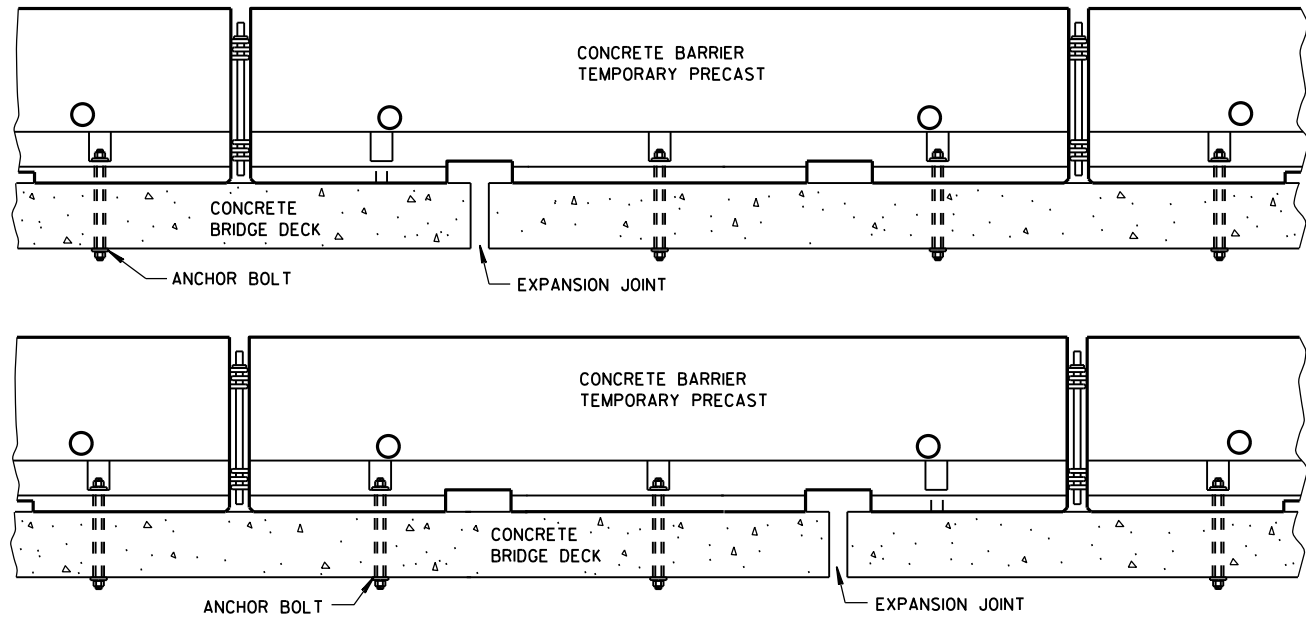


4A1

BARRIER SECTION

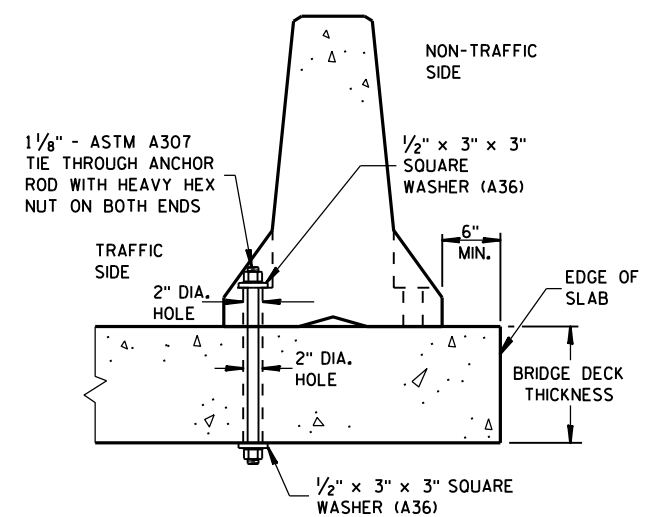
**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



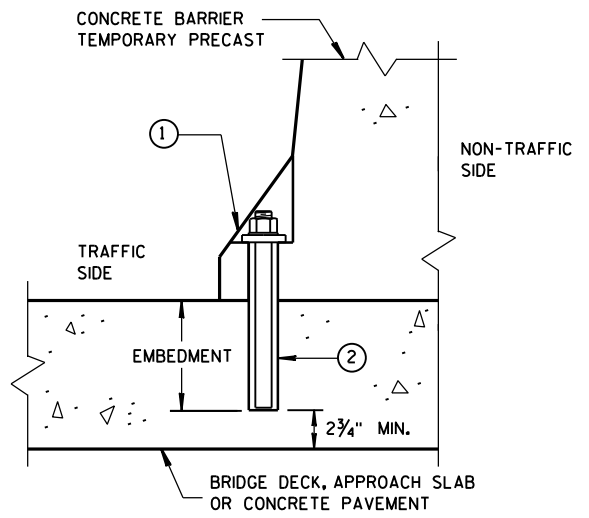
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



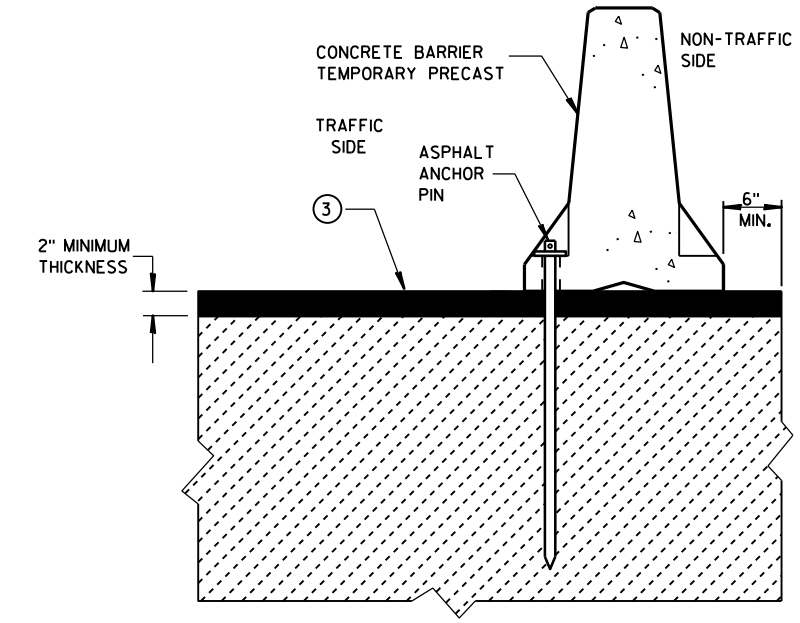
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

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

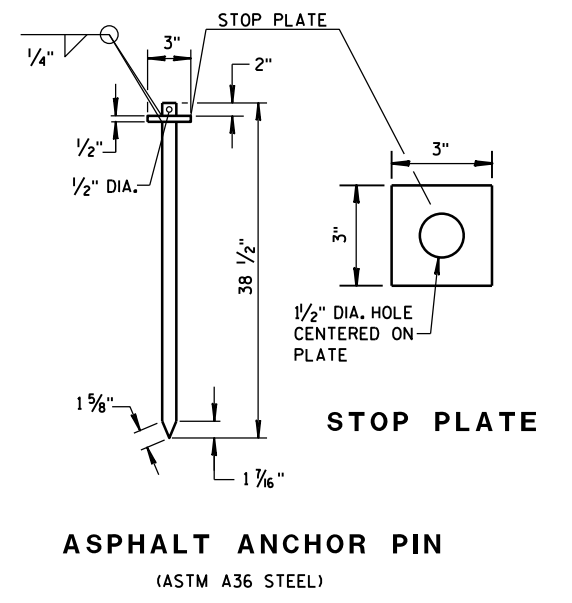


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



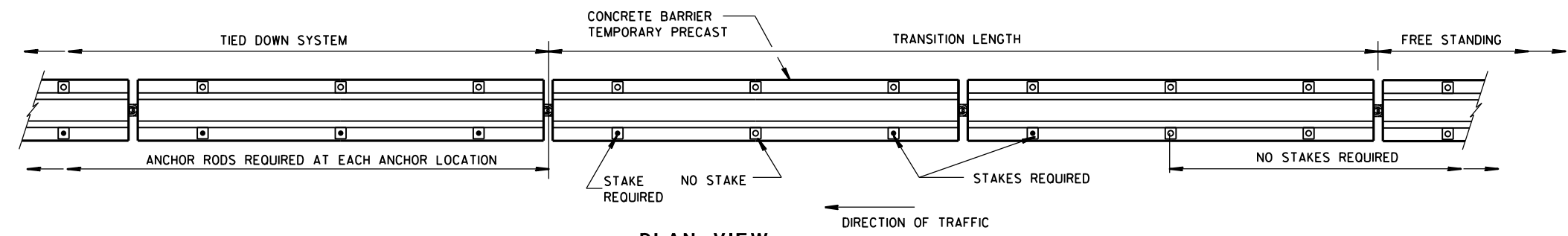
ASPHALT ANCHOR PIN (ASTM A36 STEEL)

GENERAL NOTES

SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

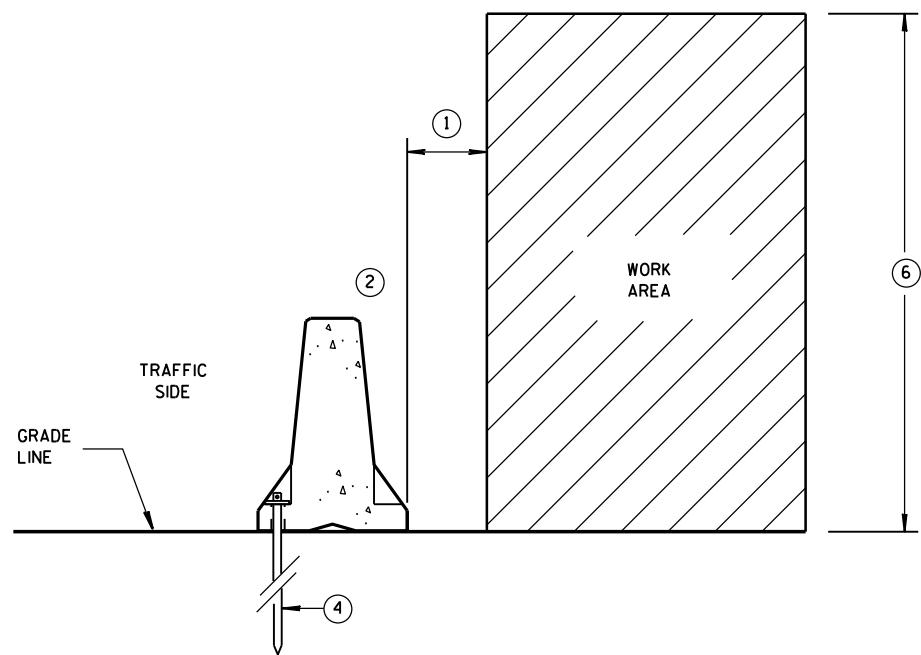
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

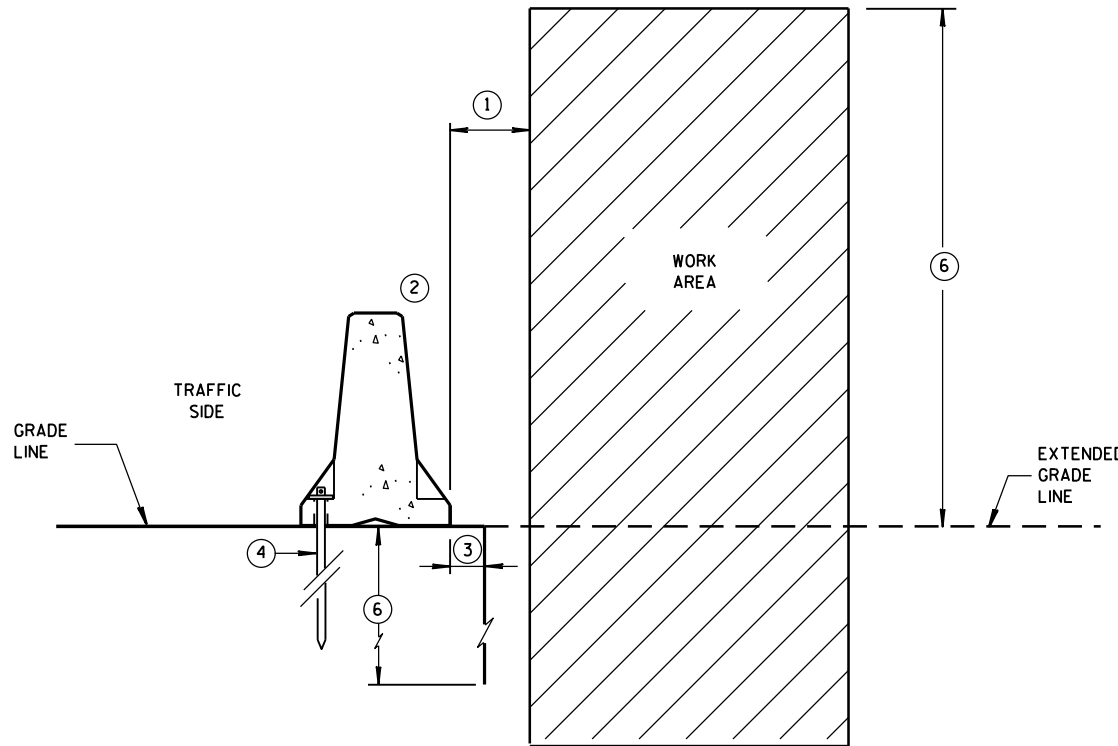
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

- ① WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
- ② OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
- ③ SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
- ④ SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
- ⑤ DEPTH OF 3 FEET OR MORE.
- ⑥ Y = 6'-6".

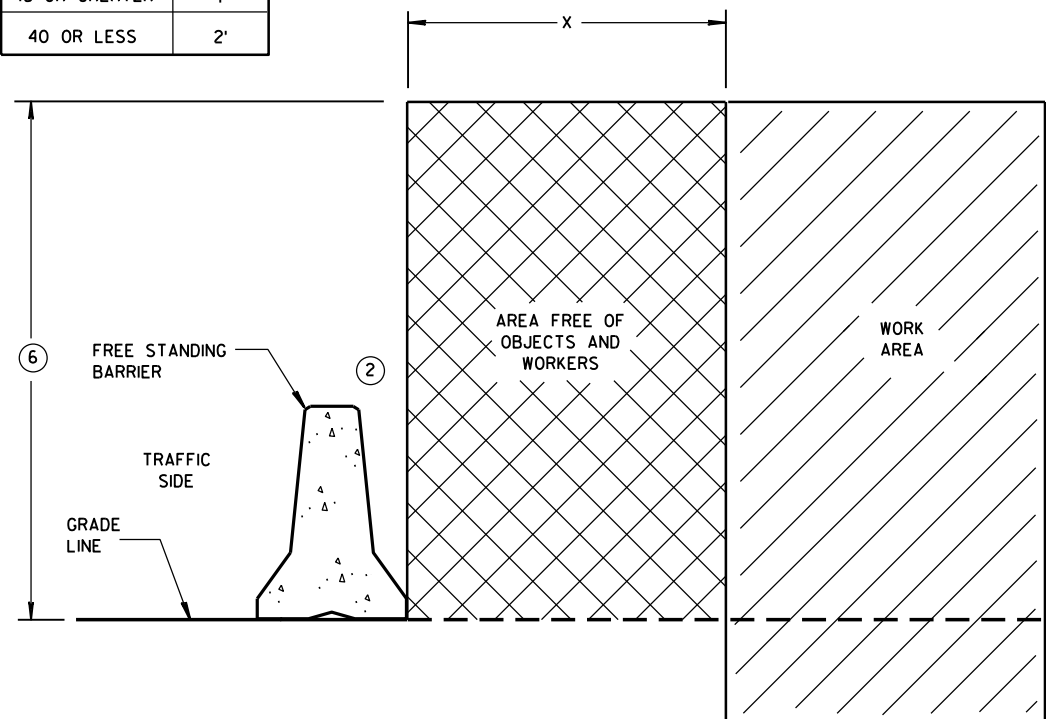


ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

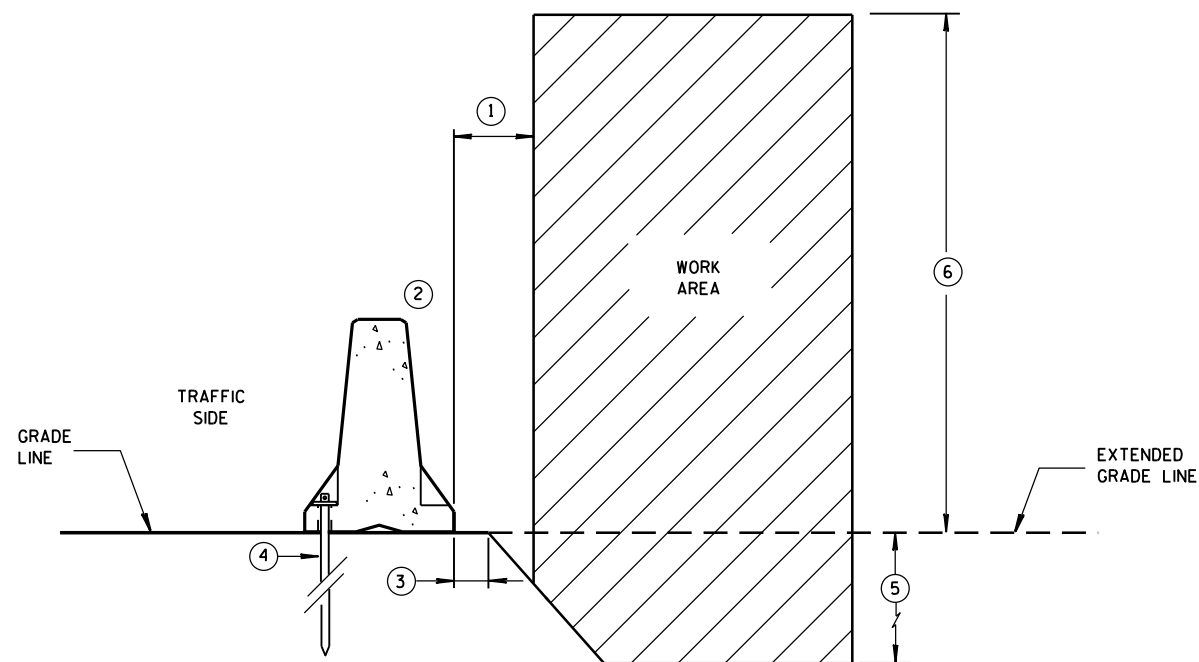


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

POSTED SPEED MPH	X
45 OR GREATER	4'
40 OR LESS	2'



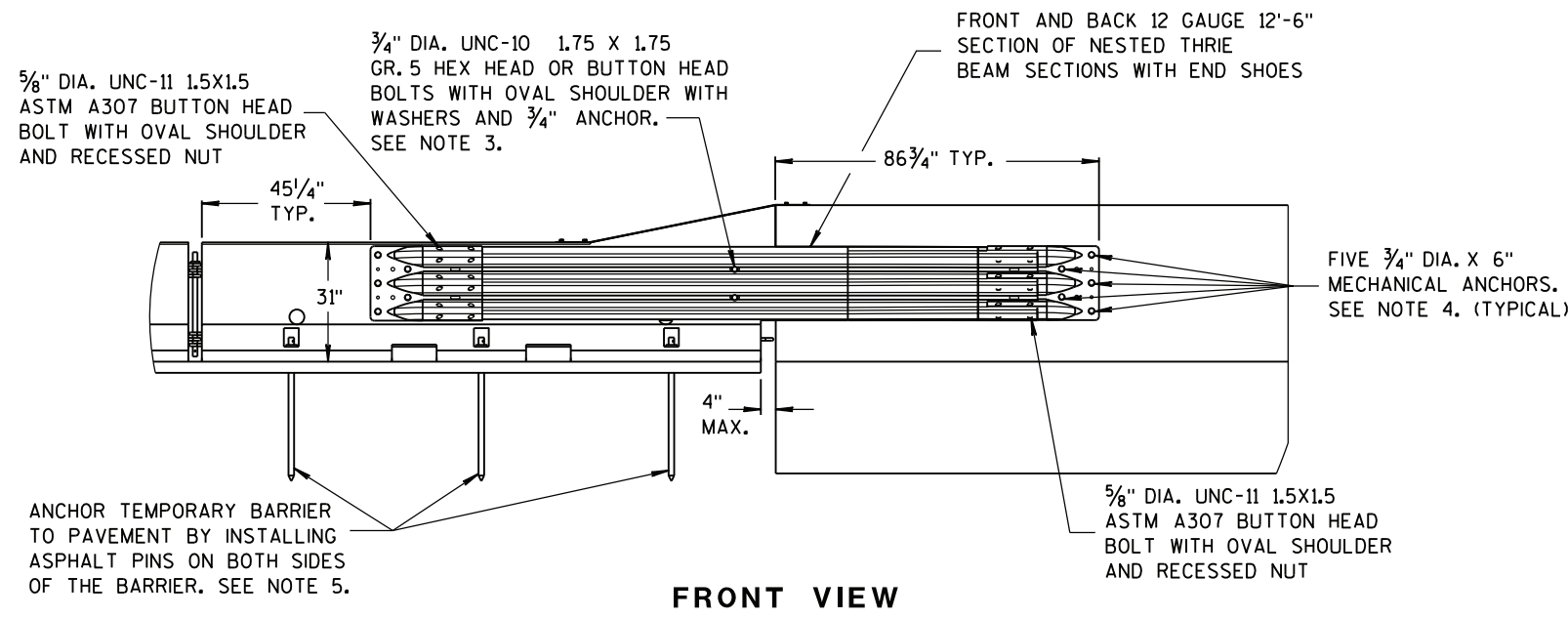
FREE STANDING BARRIER SPACE REQUIREMENTS



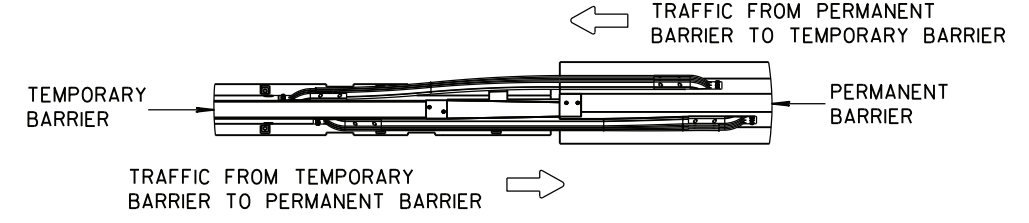
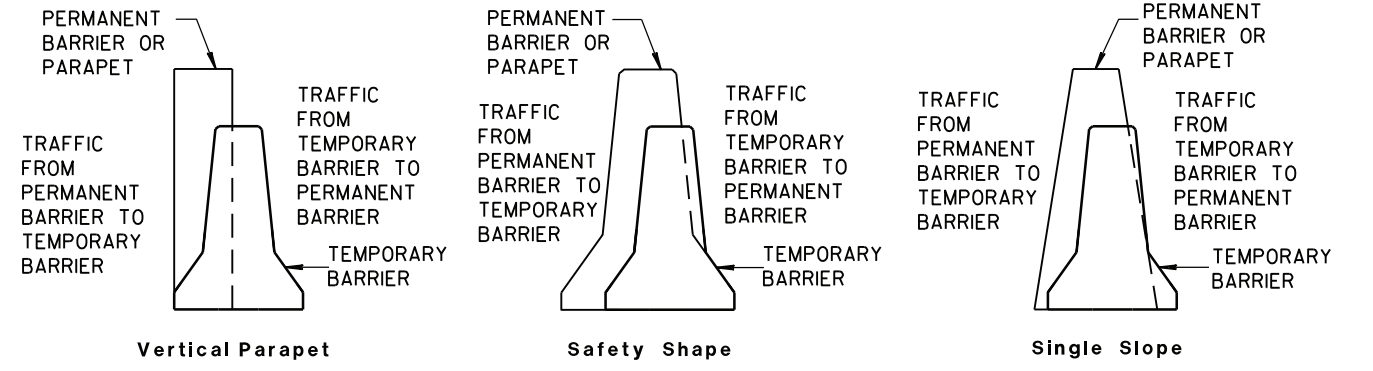
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

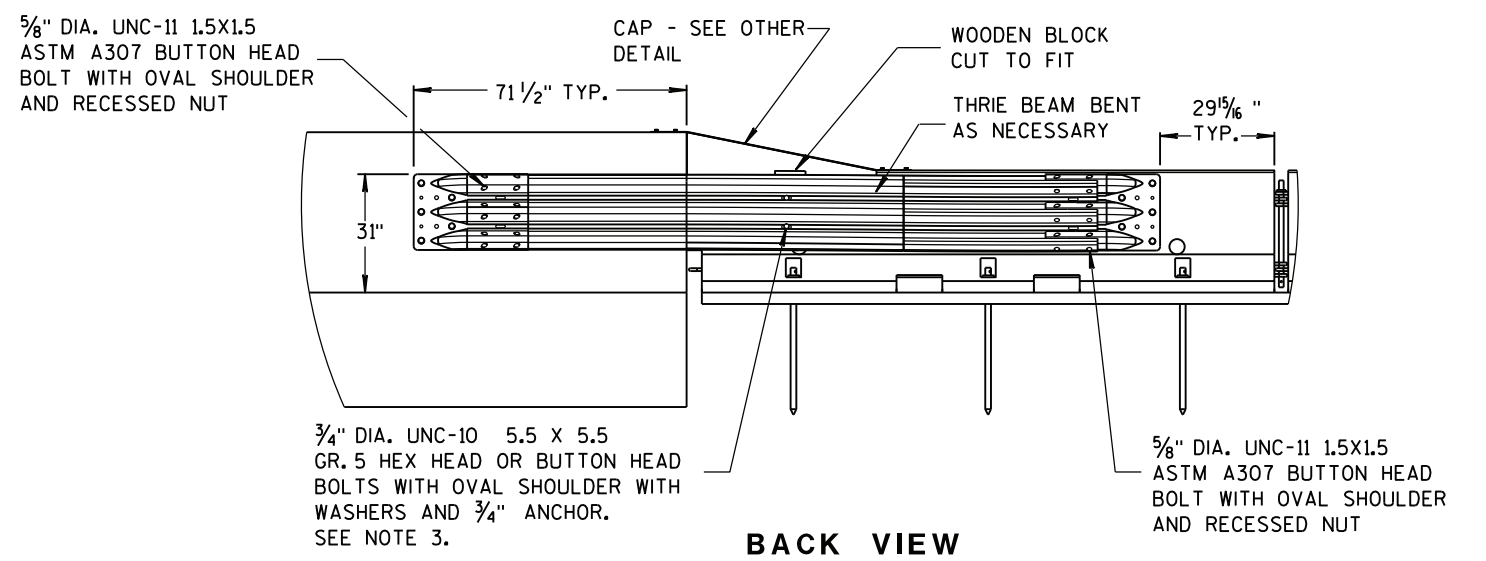


FRONT VIEW

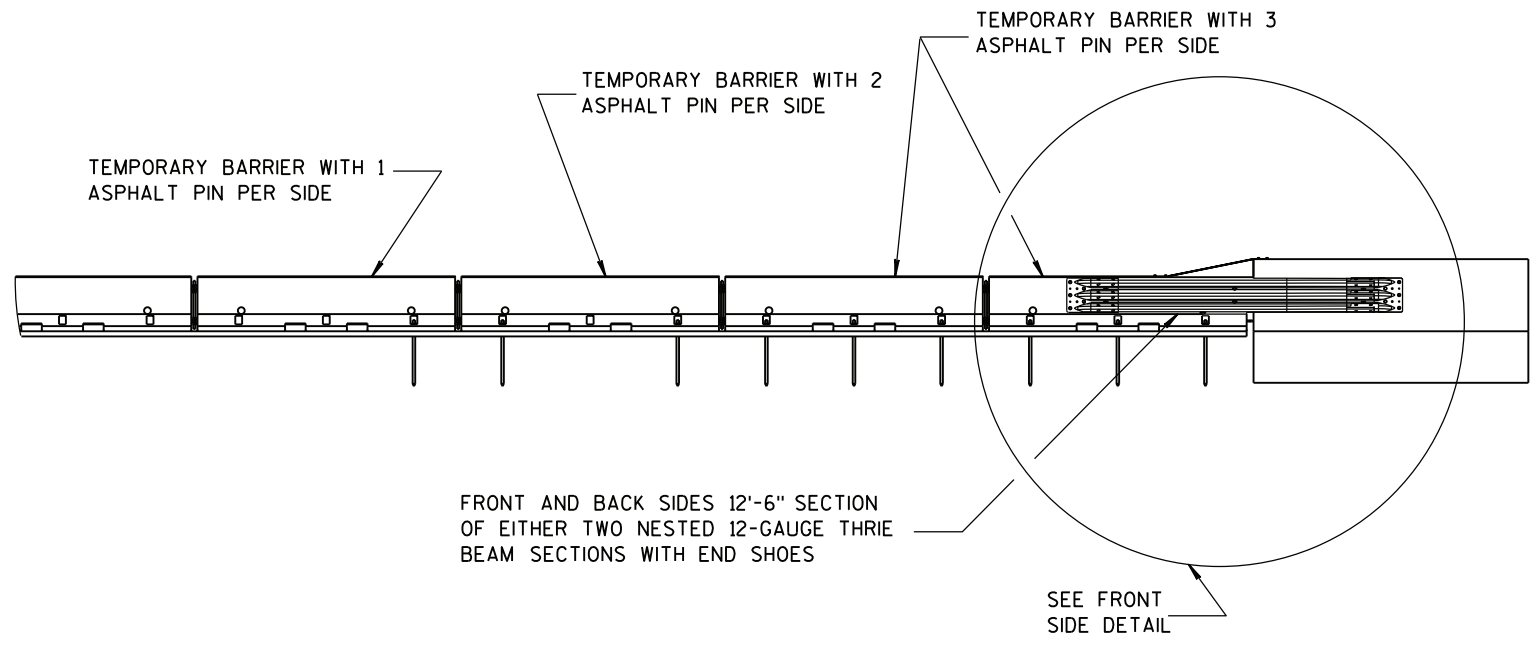


TEMPORARY BARRIER PLACEMENT FOR TRANSITION TO TIED DOWN SYSTEM

- NOTES**
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
 2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
 3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
 4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
 5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
 6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

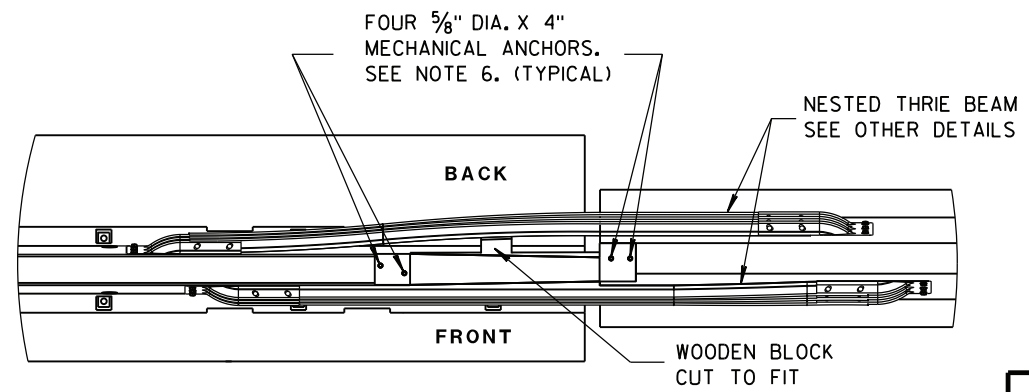


BACK VIEW



FRONT VIEW

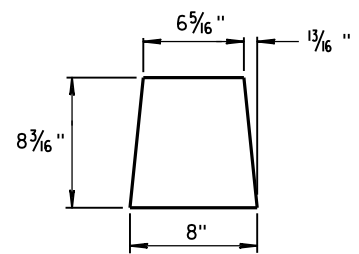
TRANSITION TO TIED DOWN SYSTEM



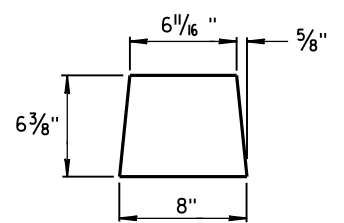
PLAN VIEW

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

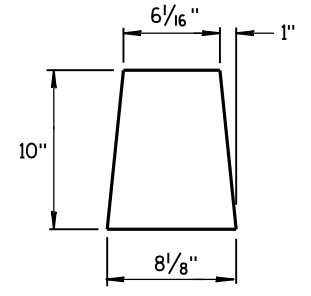
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



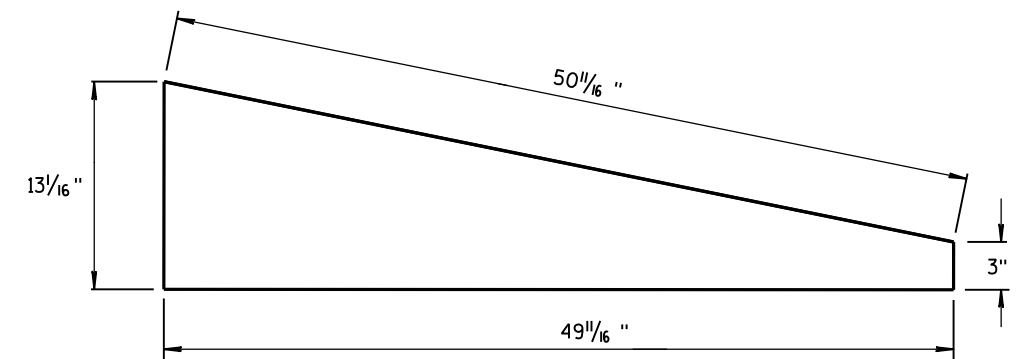
GUSSET 1



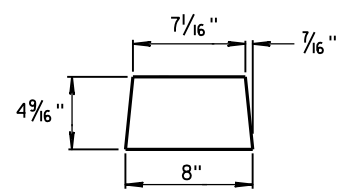
GUSSET 2



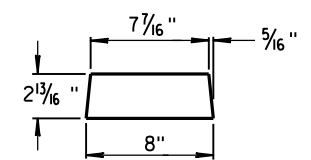
END PLATE



SIDE PLATE

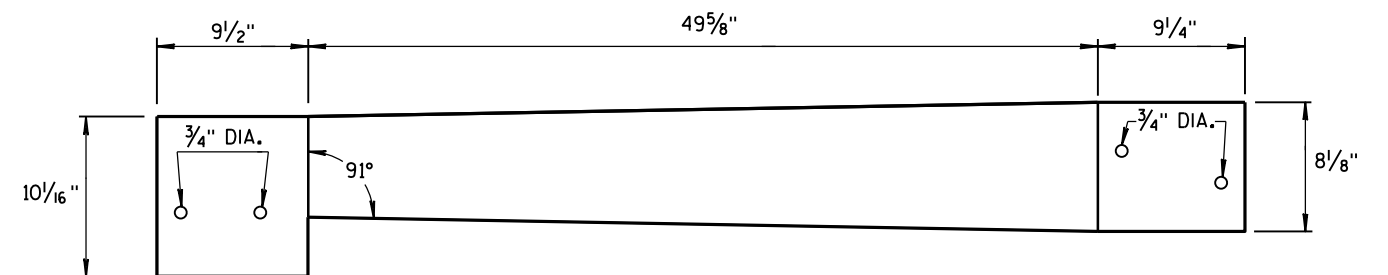


GUSSET 3

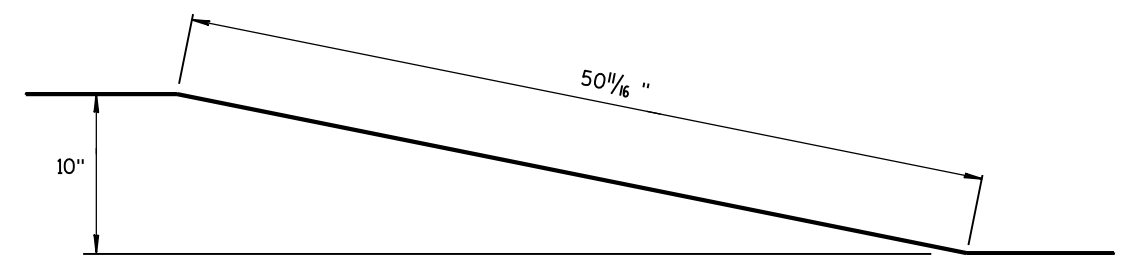


GUSSET 4

GUSSETS

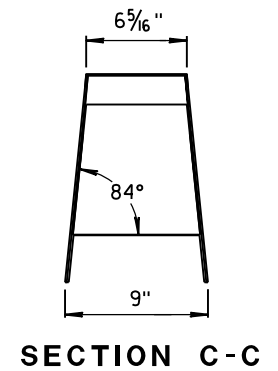
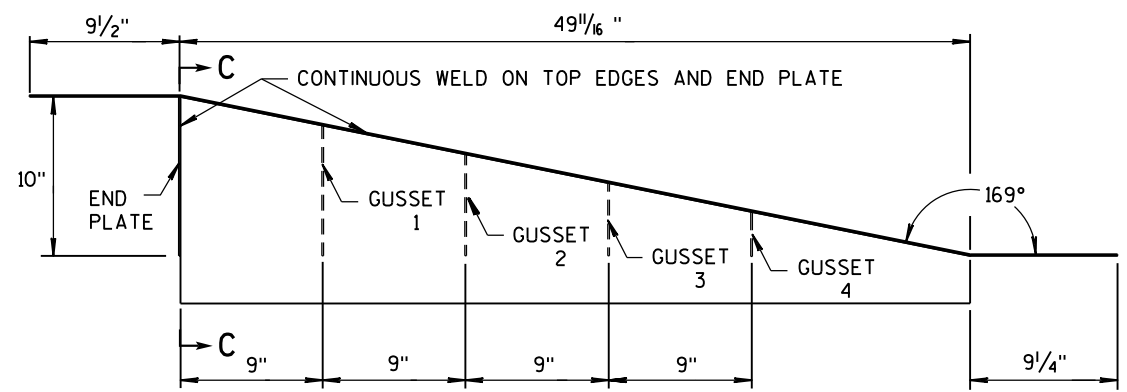
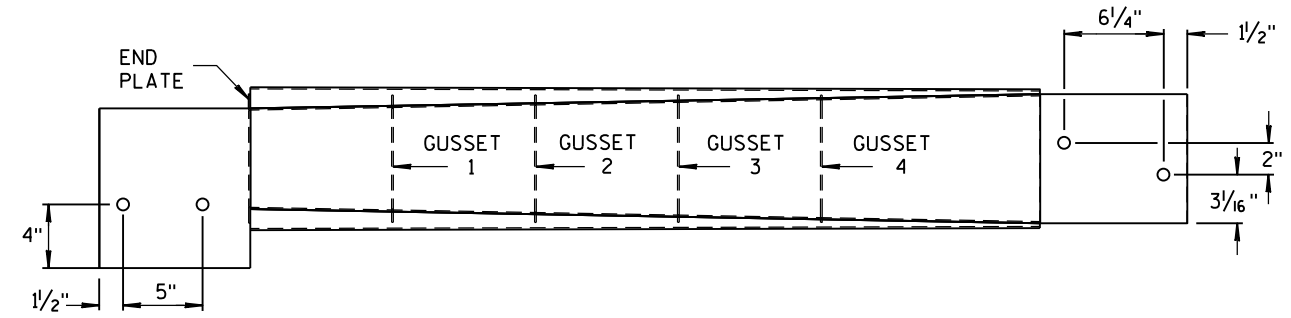


TOP PLATE



SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.



SECTION C-C

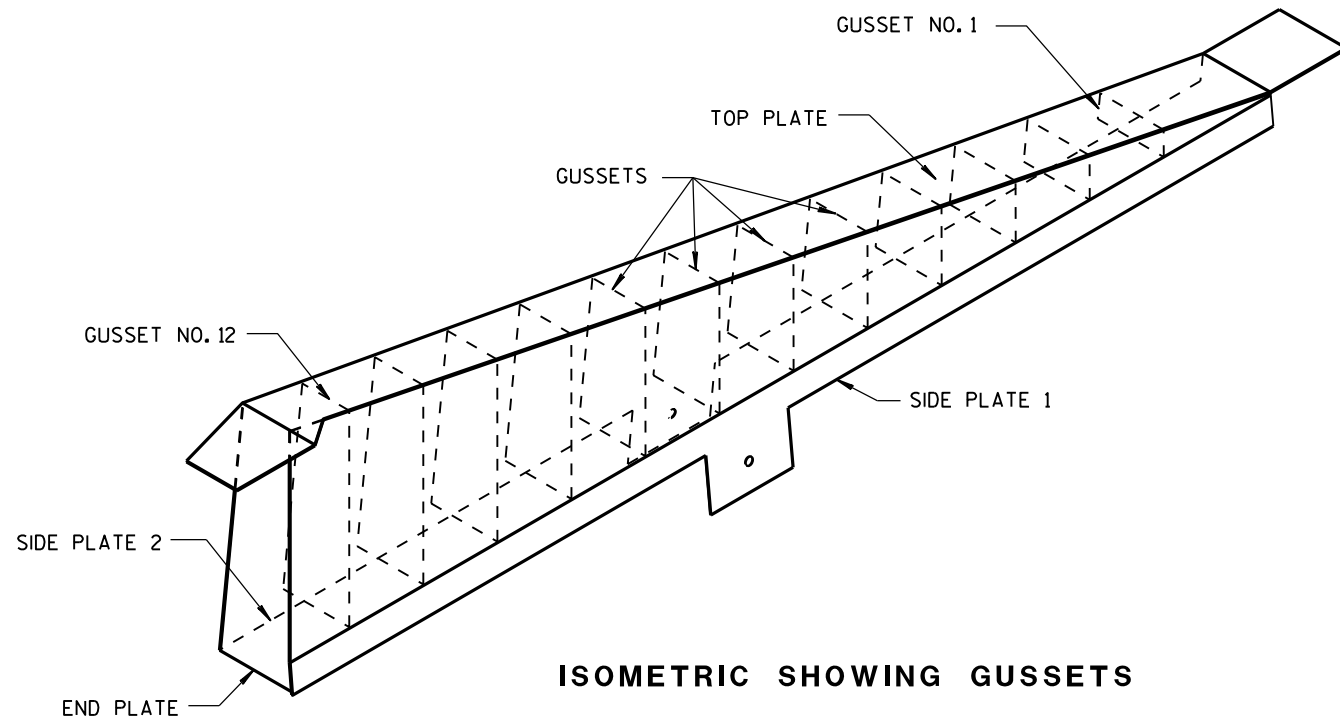
NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

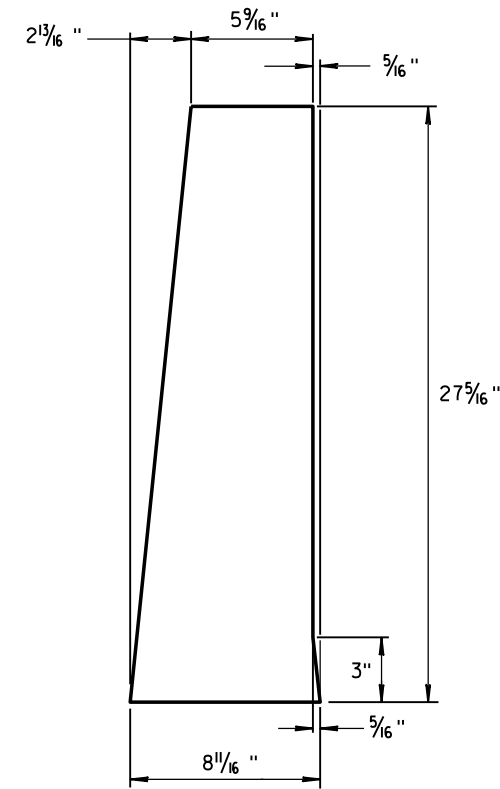
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

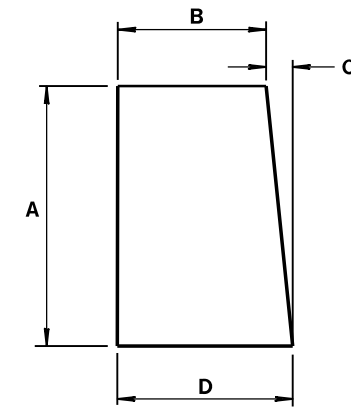


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



GUSSETS 1 - 12

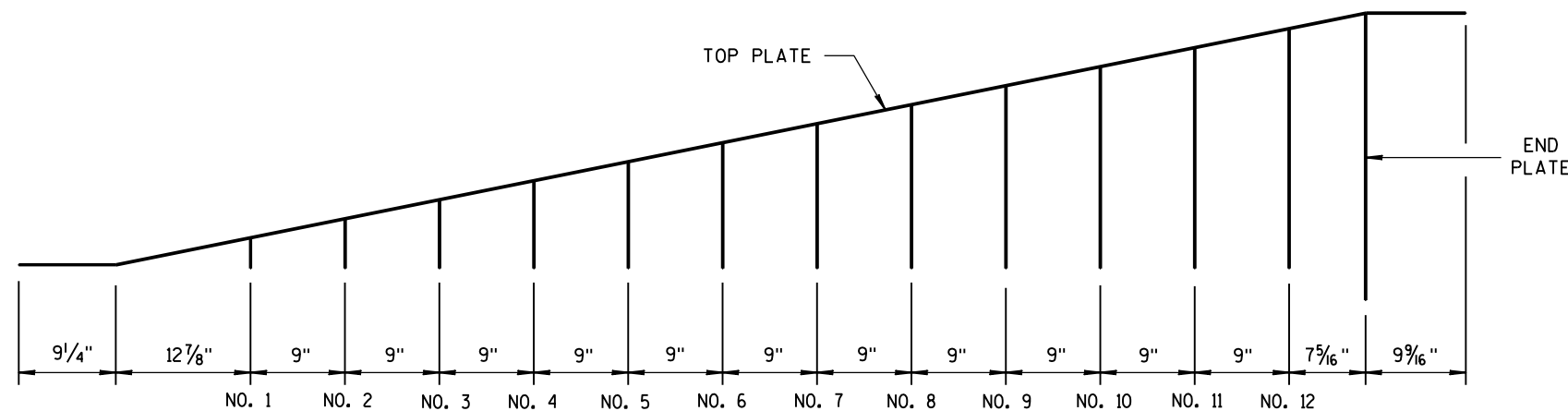
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS

GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16"	7 7/16"	1/2"	8
3	6 1/2"	7 3/8"	1 1/16"	8 1/16"
4	8 5/16"	7 3/16"	7/8"	8 1/16"
5	10 1/8"	7"	1 1/16"	8 1/16"
6	11 5/16"	6 13/16"	1 1/4"	8 1/16"
7	13 3/4"	6 5/8"	1 7/16"	8 1/16"
8	15 3/16"	6 7/16"	1 9/16"	8 1/16"
9	17 3/8"	6 1/4"	1 13/16"	8 1/16"
10	19 3/16"	6 1/16"	1 15/16"	8 1/16"
11	21"	5 7/8"	2 3/16"	8 1/16"
12	22 13/16"	5 11/16"	2 5/16"	8 1/16"

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.

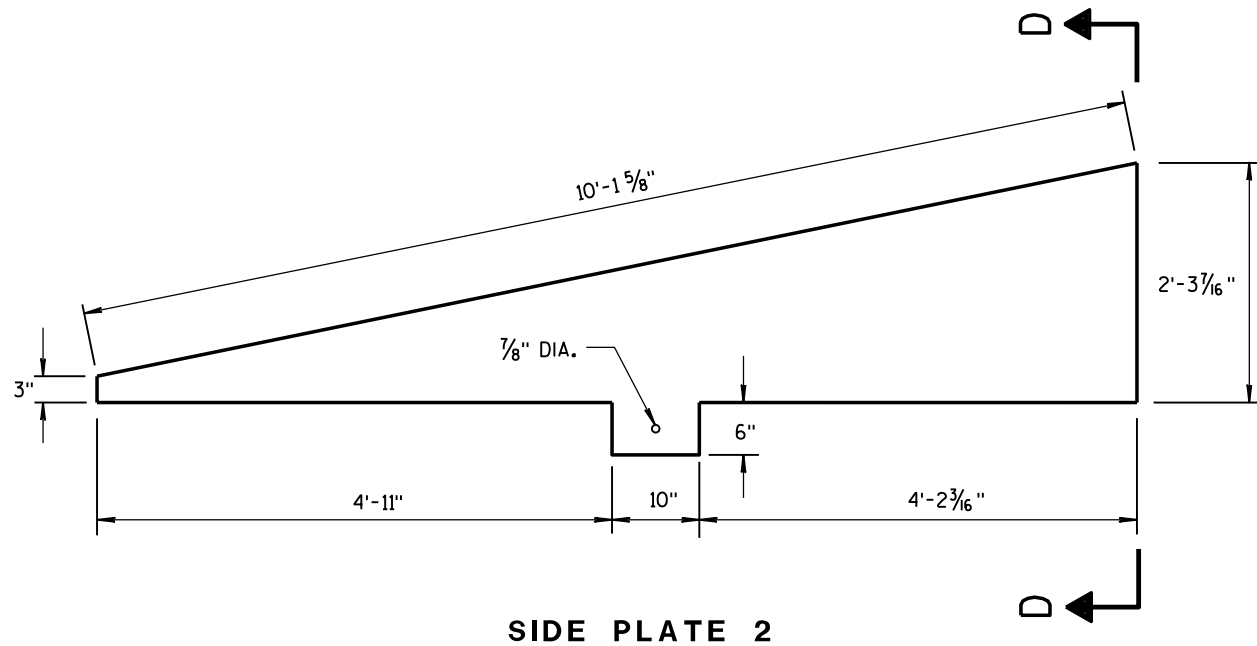


GUSSET LOCATION

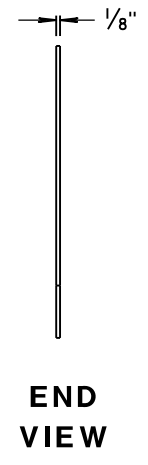
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

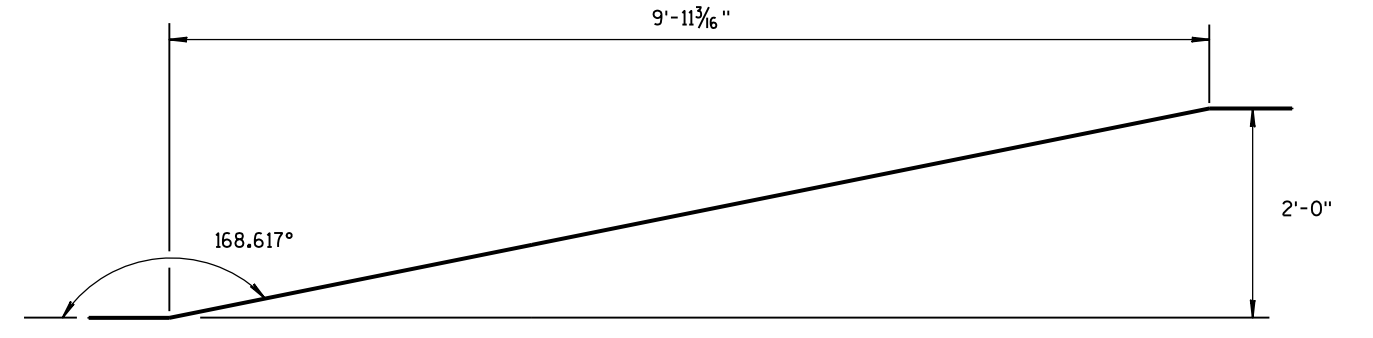
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



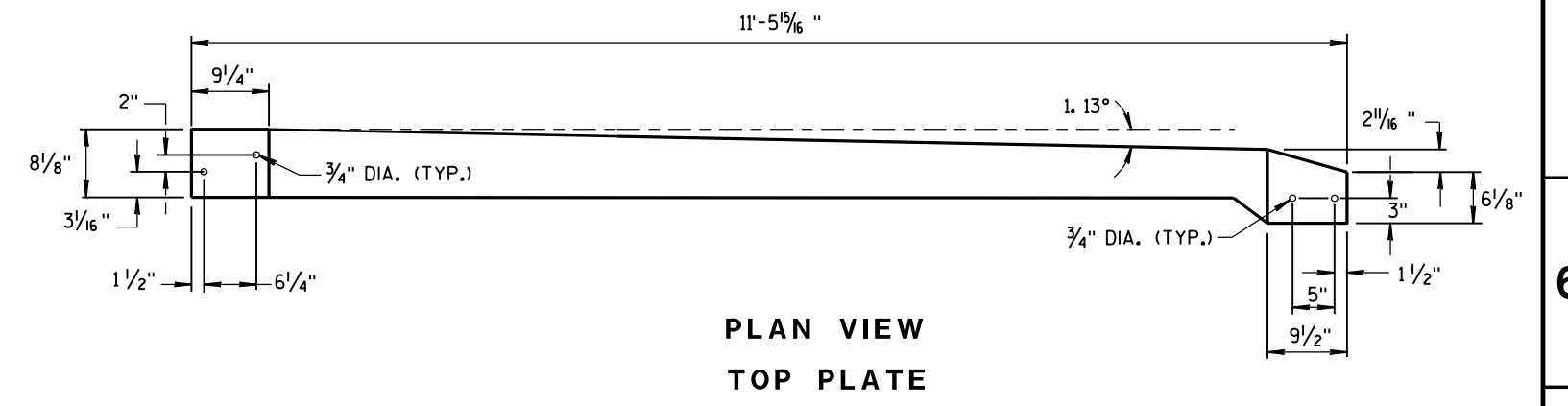
SIDE PLATE 2



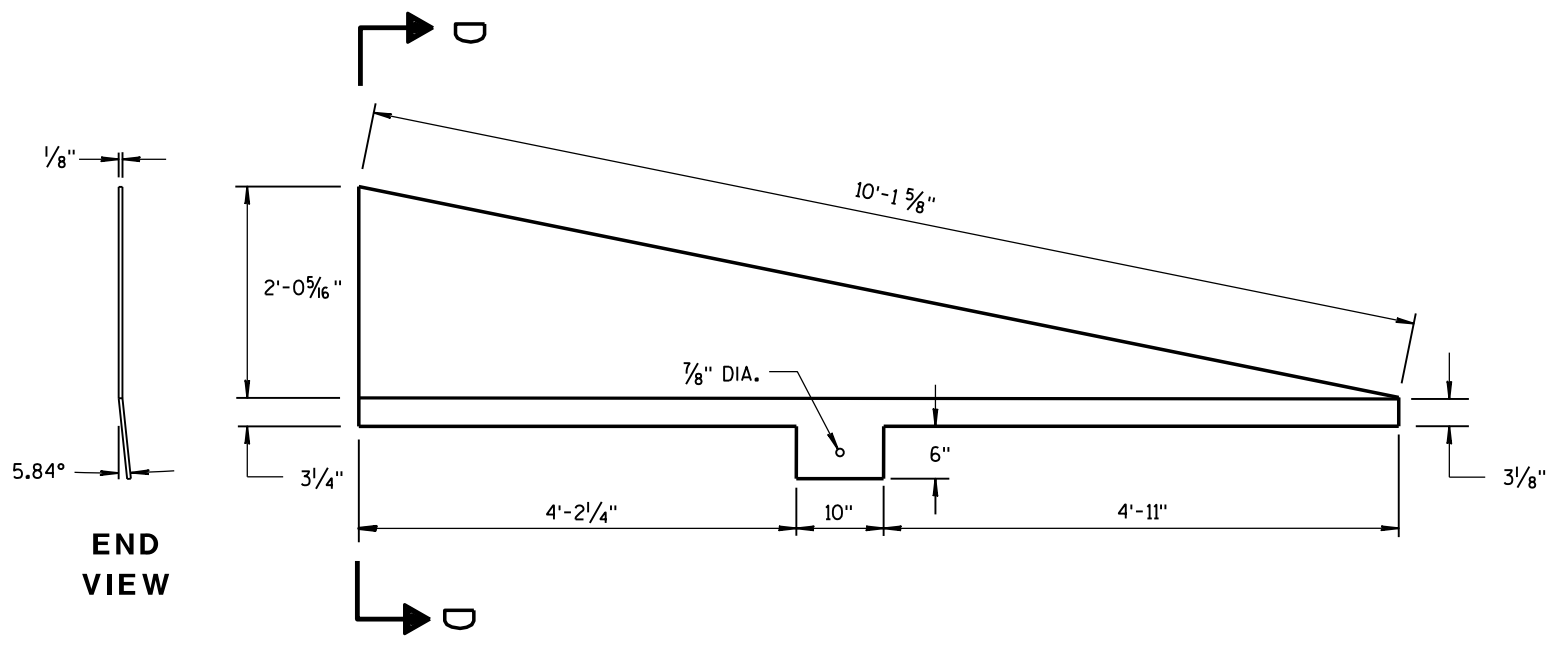
END VIEW



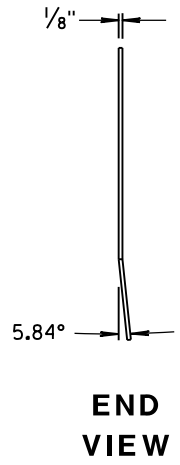
**SIDE VIEW
TOP PLATE**



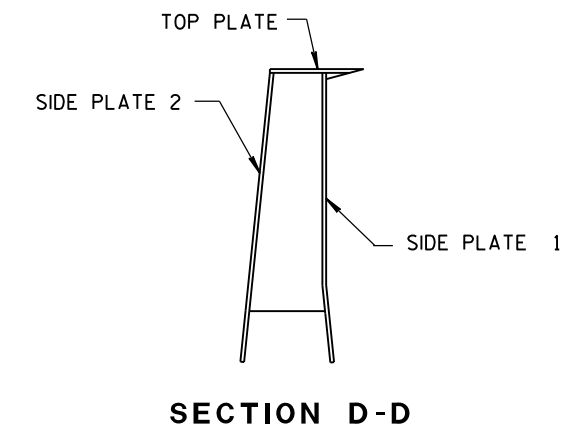
**PLAN VIEW
TOP PLATE**



SIDE PLATE 1



END VIEW



SECTION D-D

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

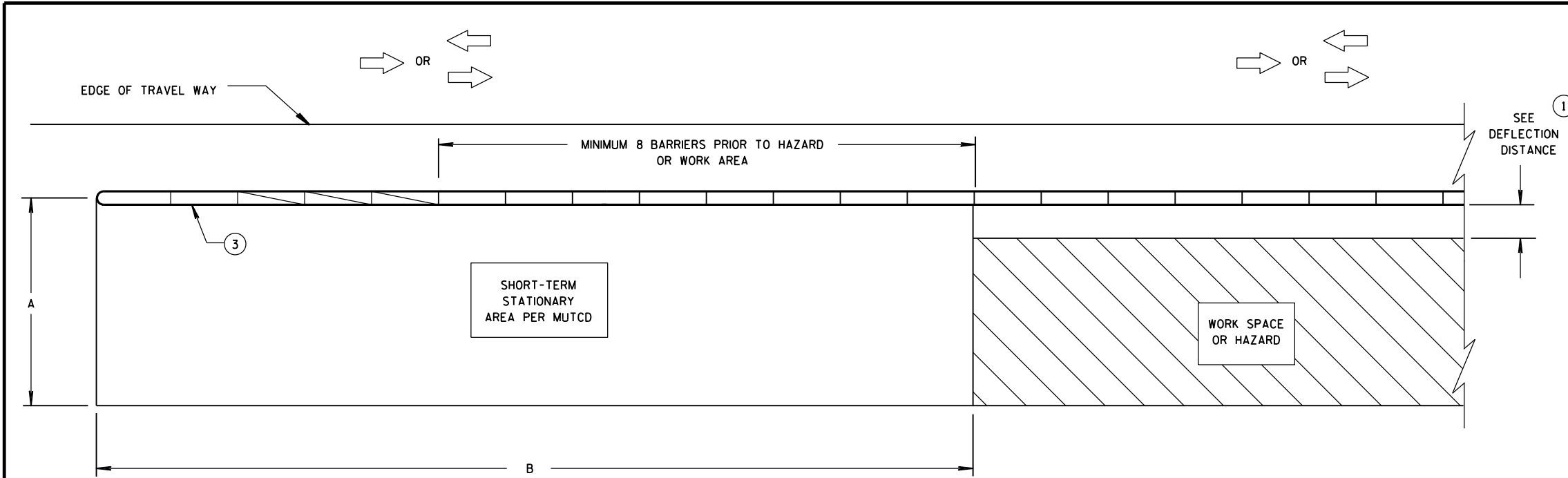
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARD DEVELOPMENT UNIT SUPERVISOR
FHWA	

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S.D.D. 14 B 7-15i

S.D.D. 14 B 7-15i



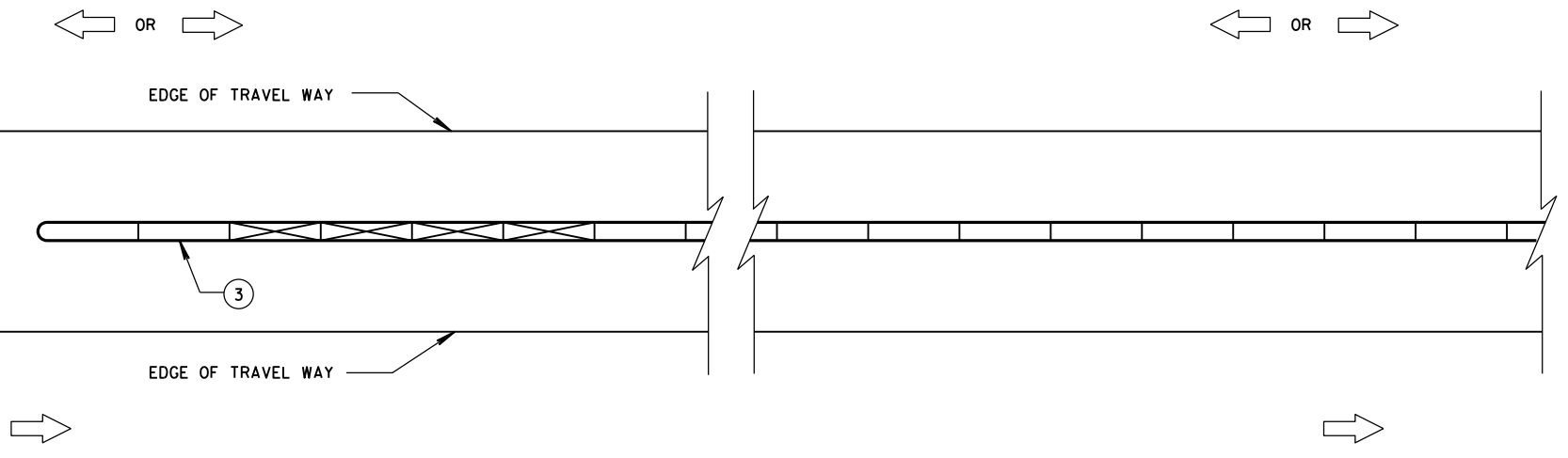
DIMENSION A TABLE ②

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER**

DIMENSION B TABLE ②

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER**

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

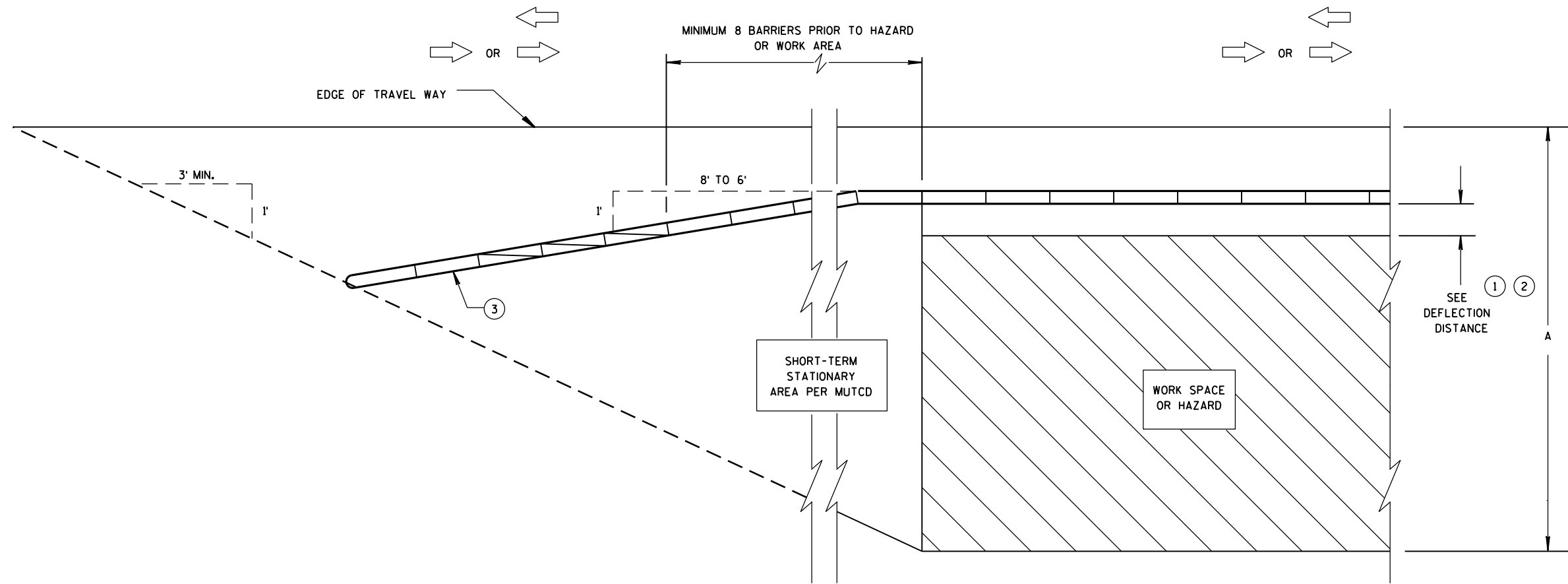
- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.
- ③ ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

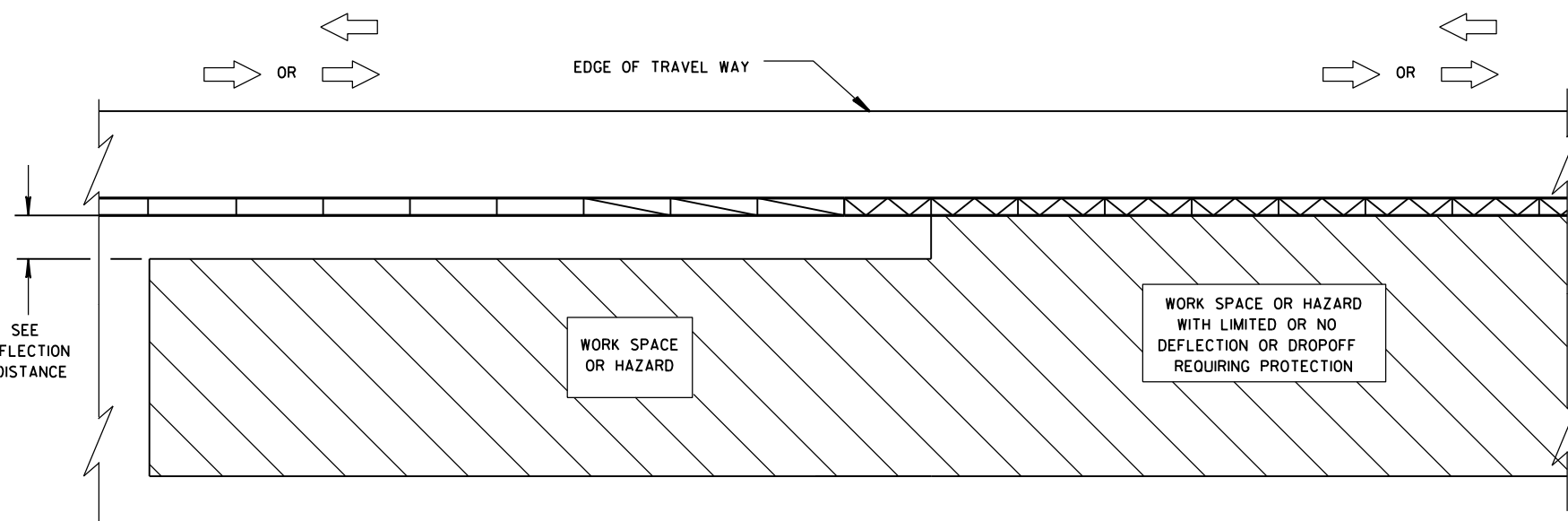
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 8-2a

S.D.D. 14 B 8-2a



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION**



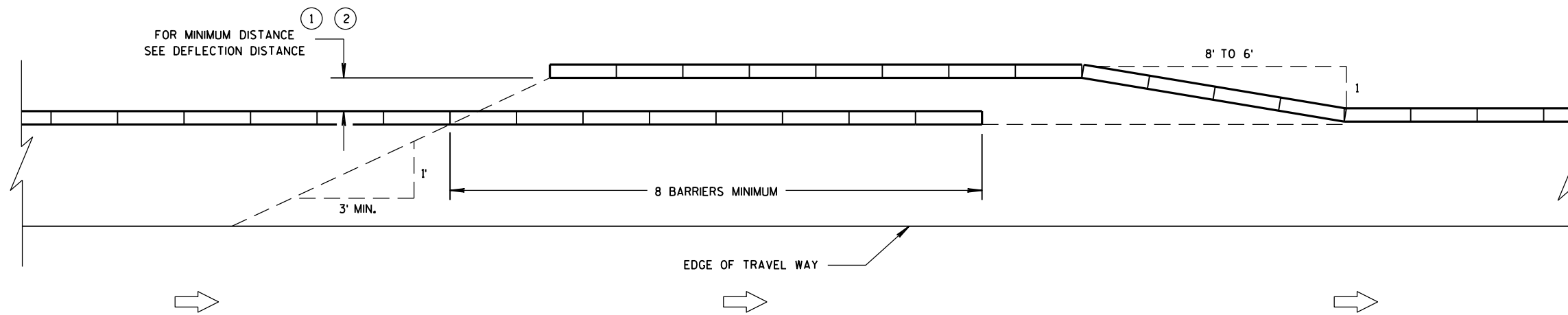
**TRANSITION FROM FREE STANDING TEMPORARY BARRIER
TO ANCHORED BARRIER**

LEGEND

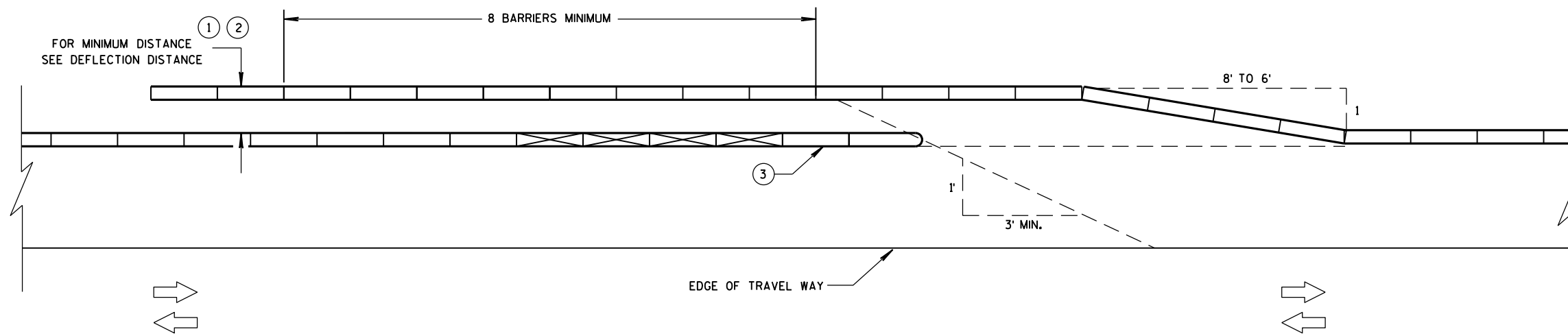
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

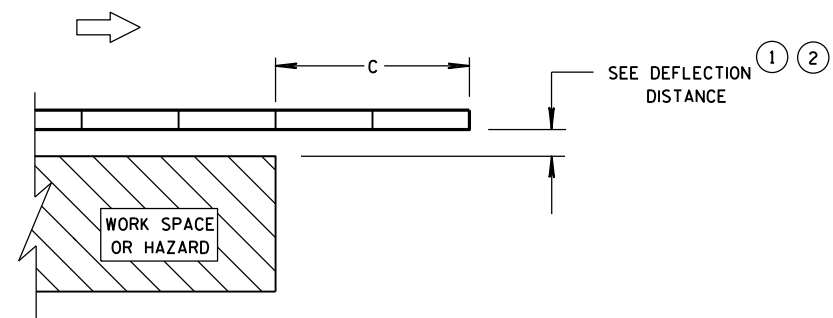
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



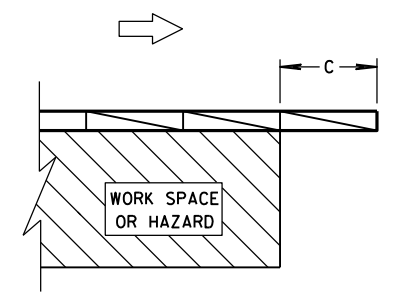
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



**ENDING TEMPORARY BARRIER
DOWNSTREAM - UNANCHORED**



**ENDING TEMPORARY BARRIER
DOWNSTREAM - ANCHORED**

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

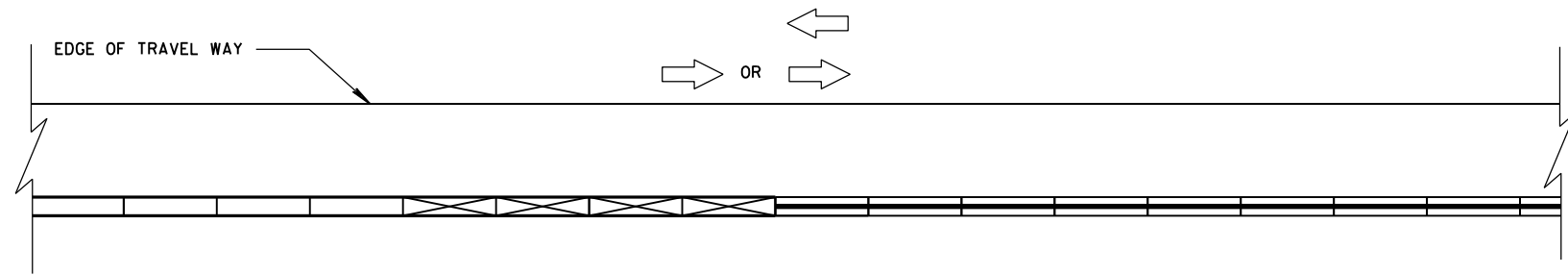
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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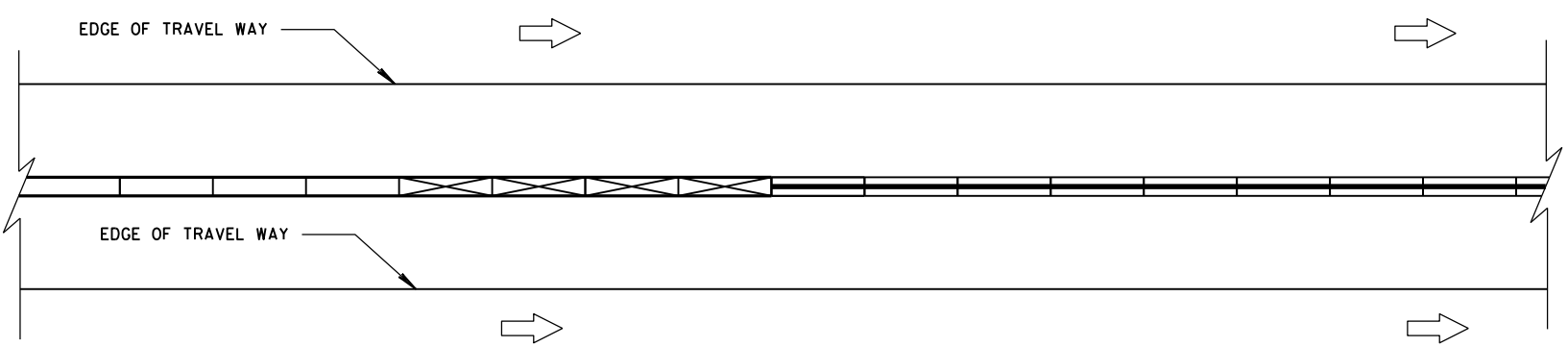
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S.D.D. 14 B 8-2c

S.D.D. 14 B 8-2c



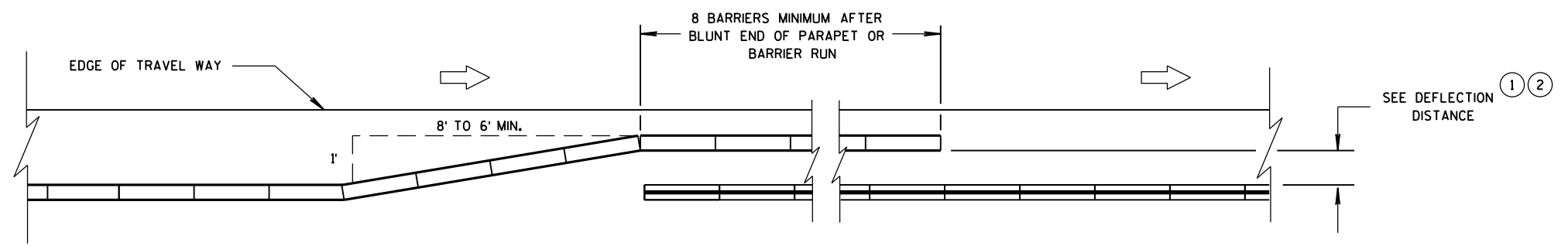
CONNECTING TEMPORARY BARRIER TO PERMANENT CONCRETE BARRIER-TRAFFIC ON ONE SIDE



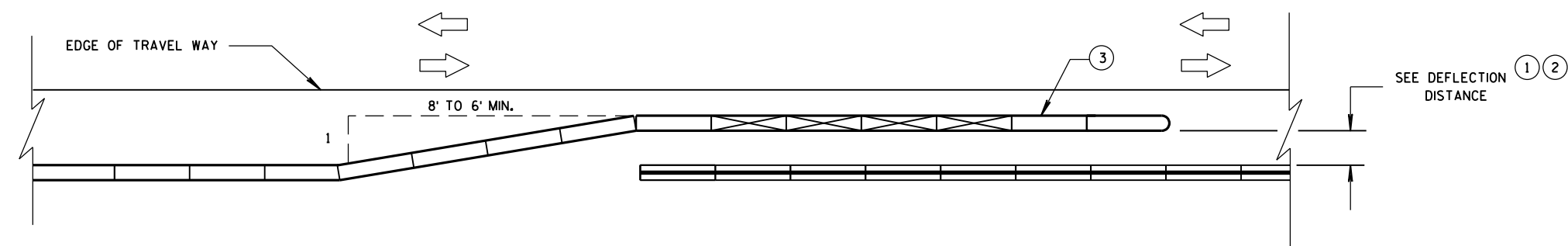
CONNECTING TEMPORARY BARRIER TO PERMANENT CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER - ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER - TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

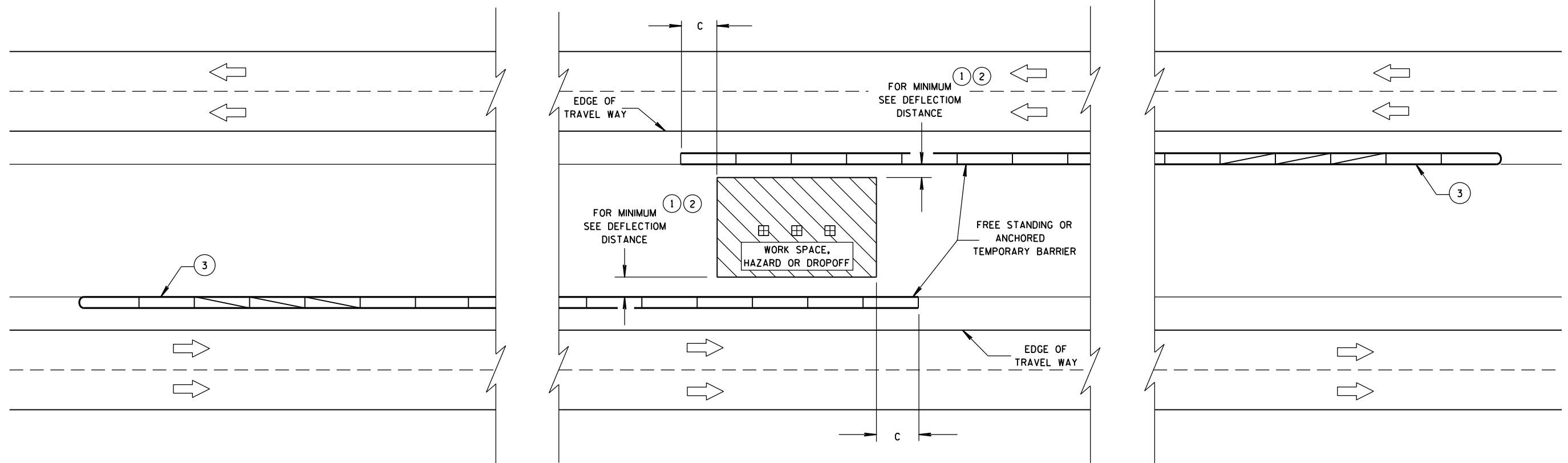
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE ²

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



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S.D.D. 14 B 8-2e

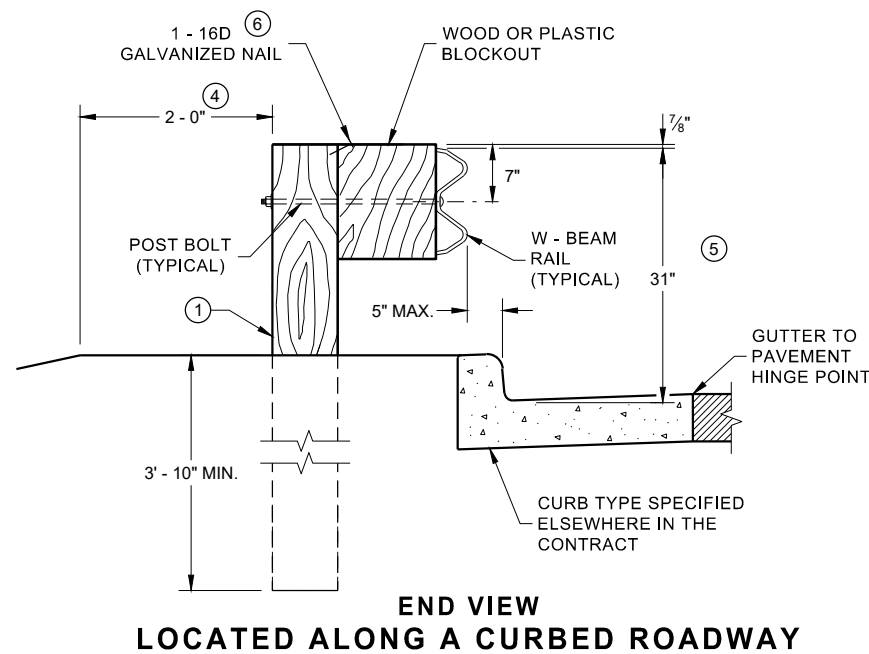
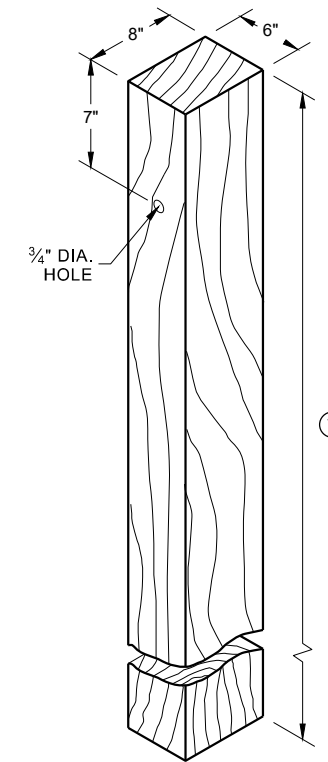
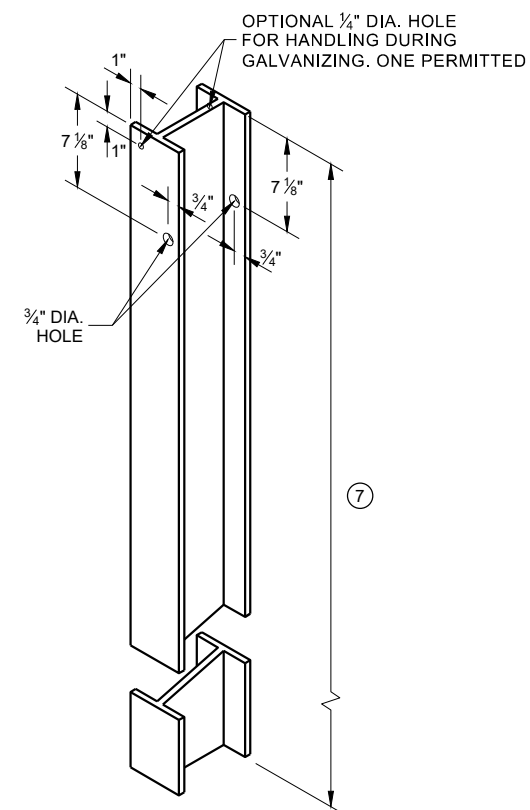
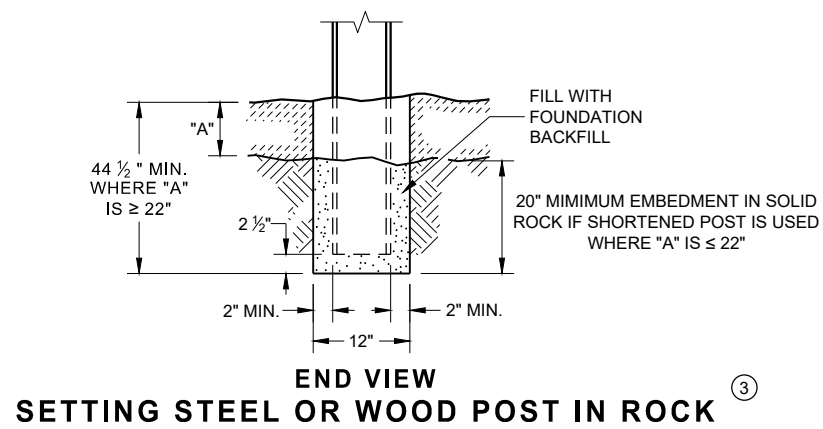
S.D.D. 14 B 8-2e

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

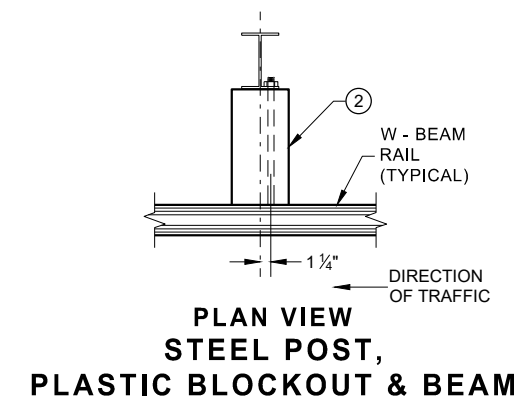
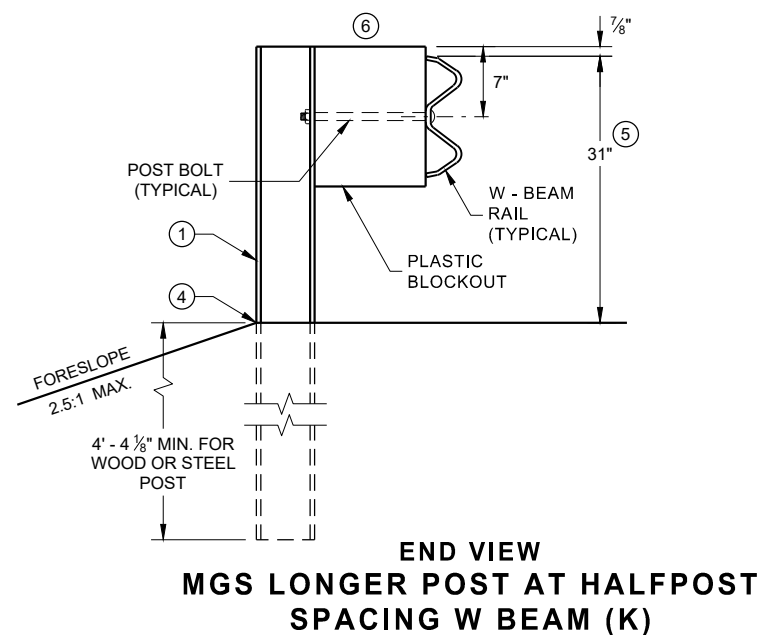
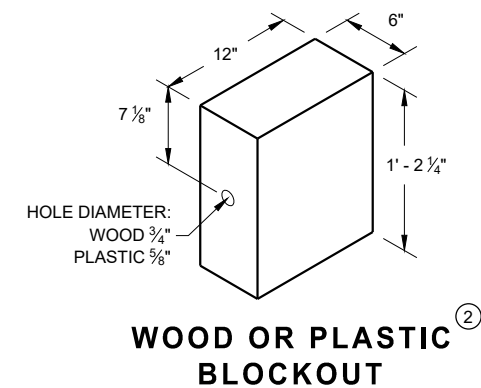
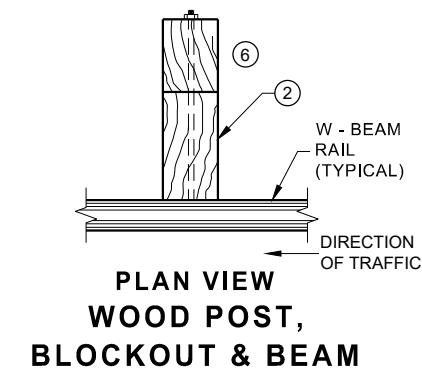
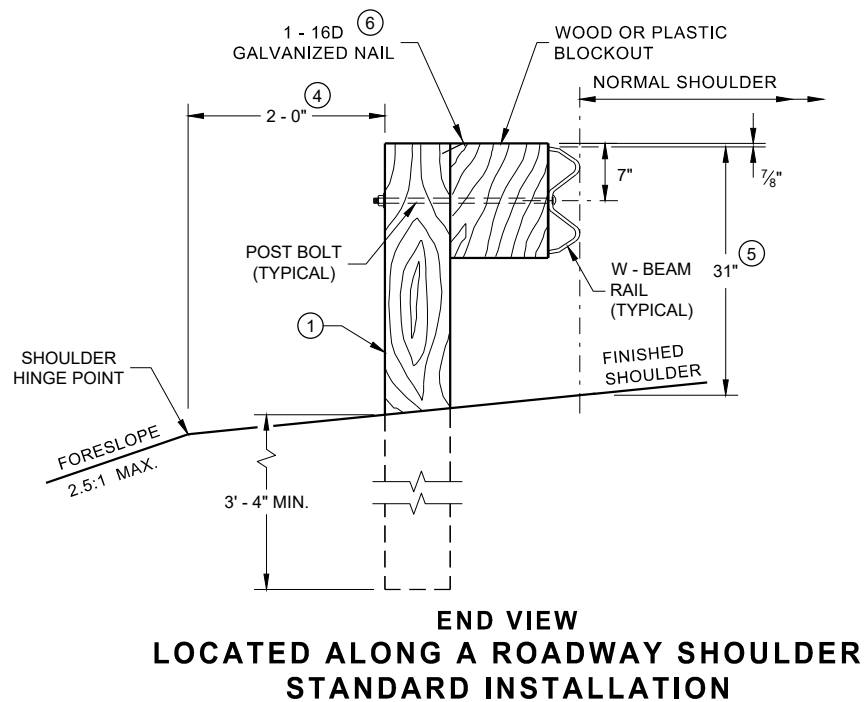
APPROVED
June, 2015 DATE /S/ Jerry H. Zogg
FHWA ROADWAY STANDARDS DEVELOPMENT ENGINEER

- 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".



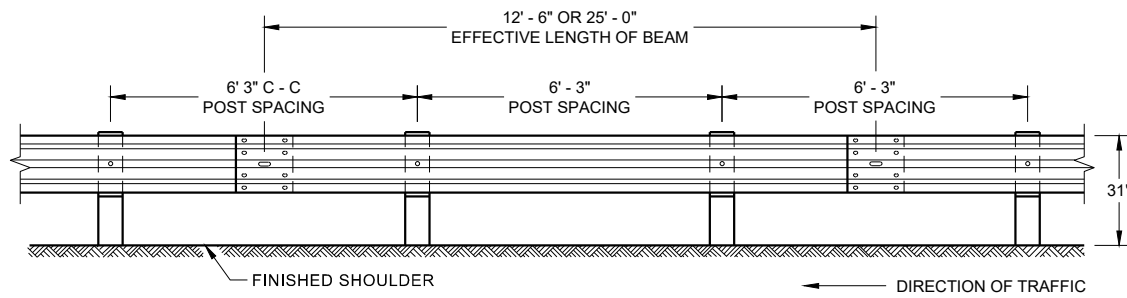
**STEEL POST & HOLE PUNCHING DETAIL
(W 6 X 9)** ①

**WOOD POST
(6" X 8") NOMINAL** ①

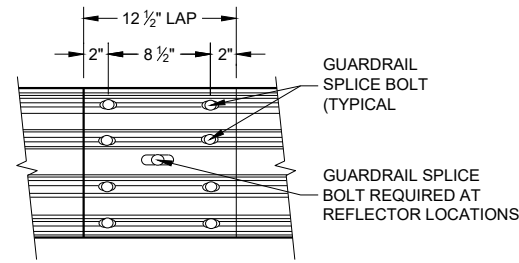


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



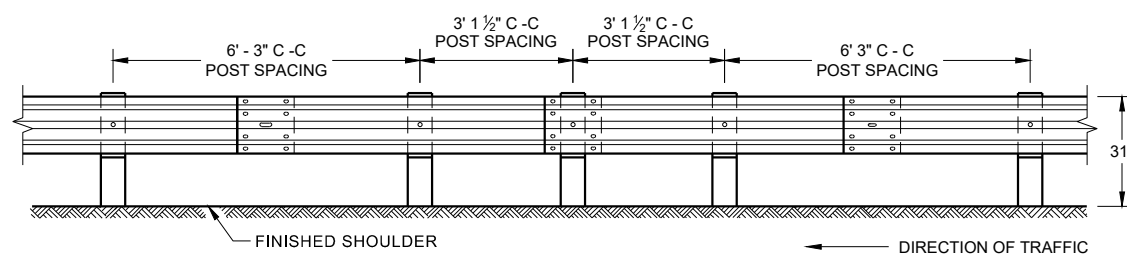
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



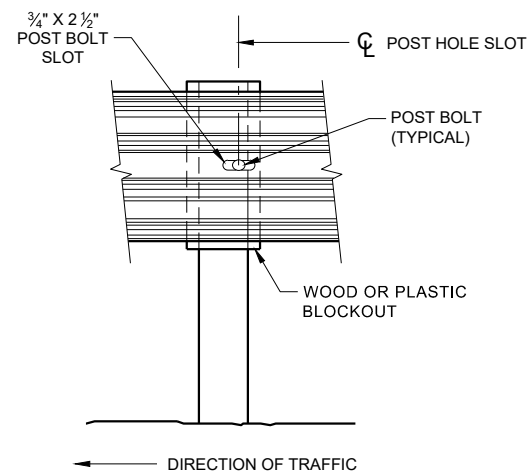
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

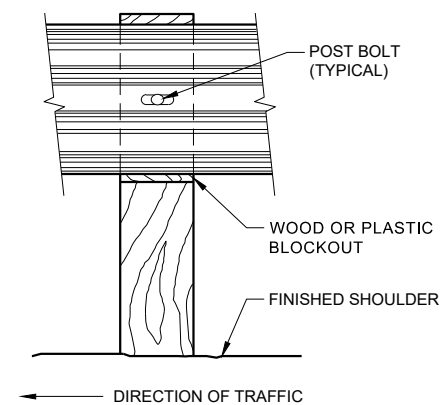
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER 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.



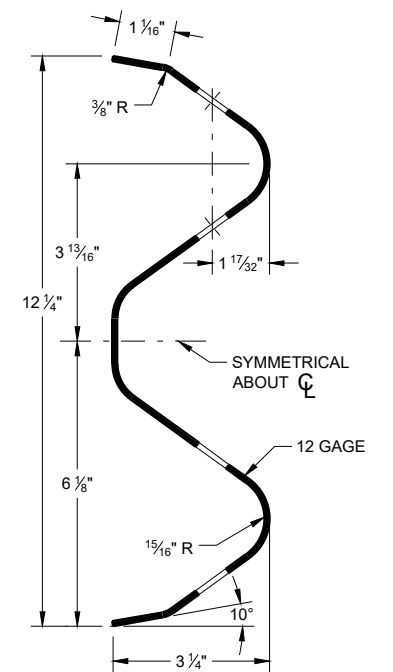
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



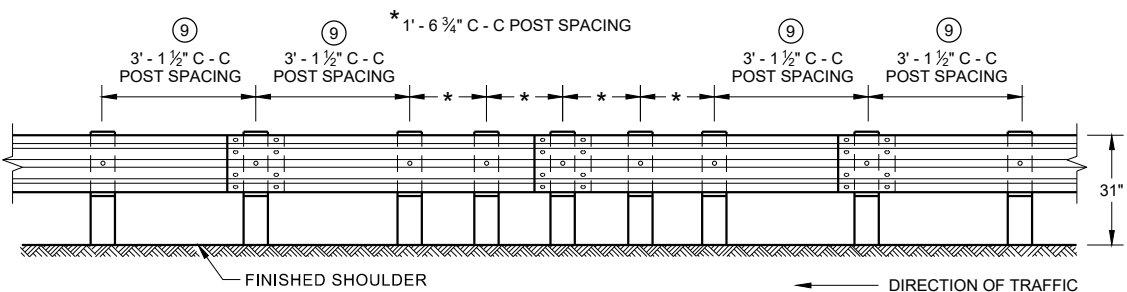
FRONT VIEW AT STEEL POST



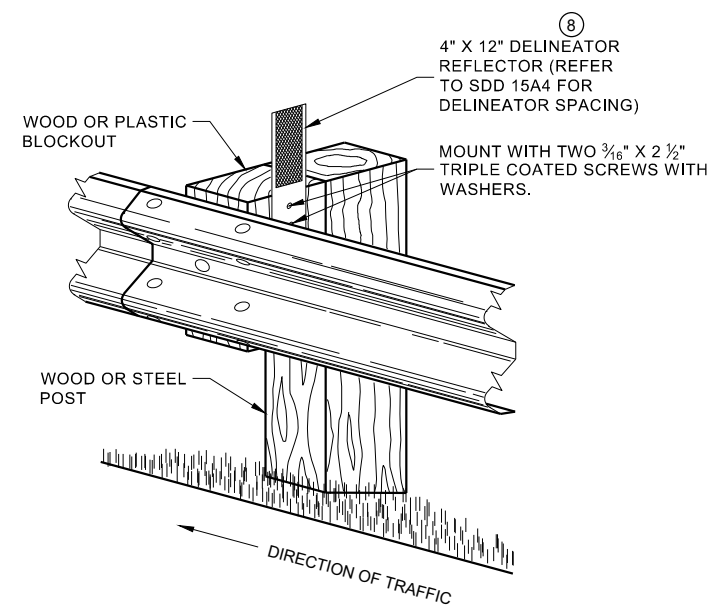
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

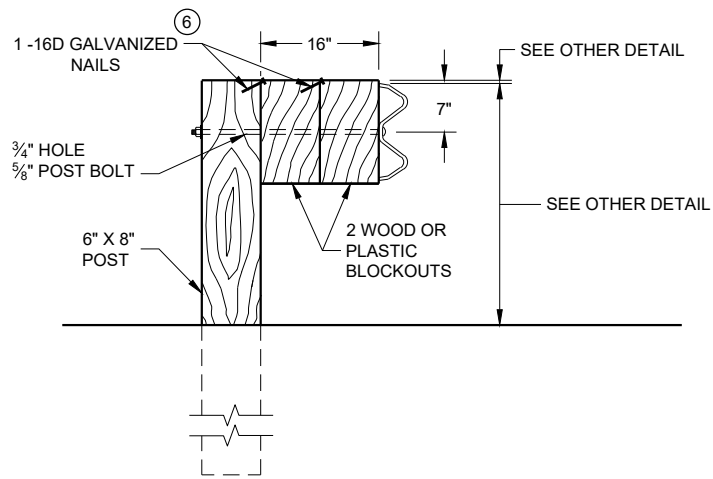
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 14B42 - 07b

SDD 14B42 - 07b

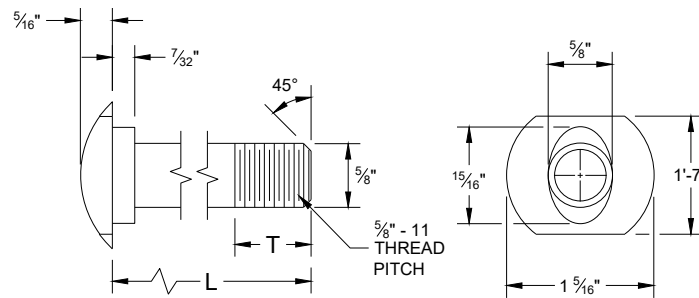


DETAIL FOR 16" BLOCKOUT DEPTH

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.

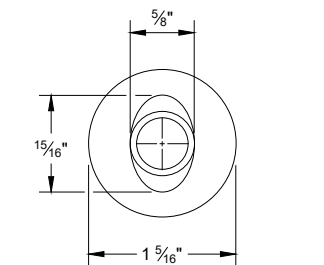
NOTE:

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.

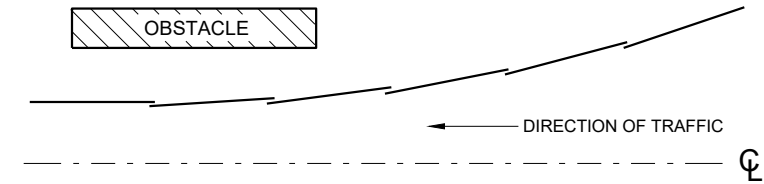


POST BOLT TABLE

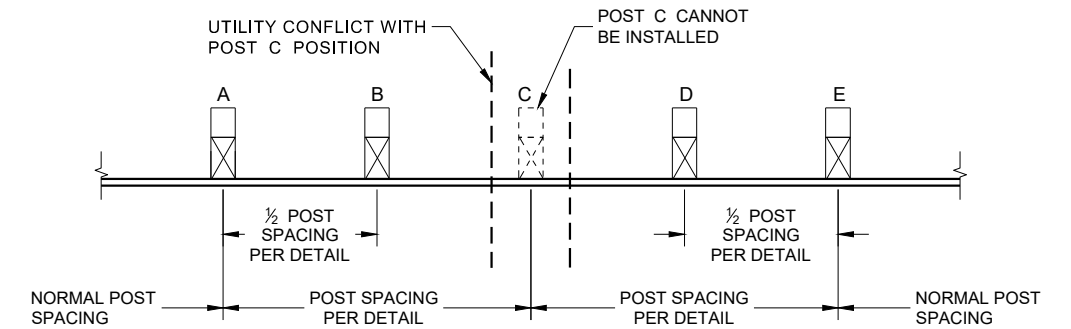
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



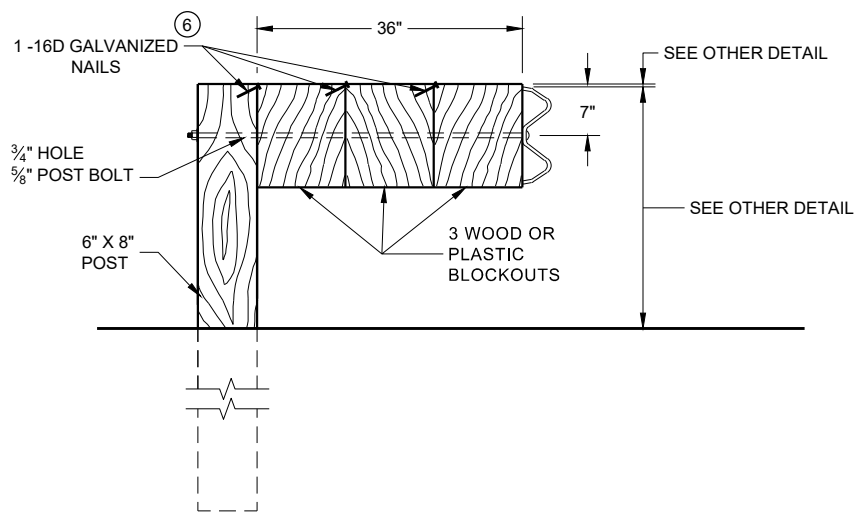
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

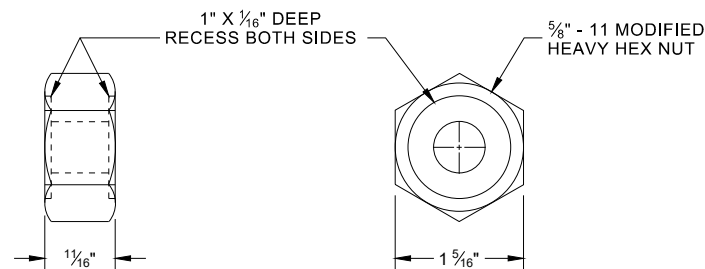


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

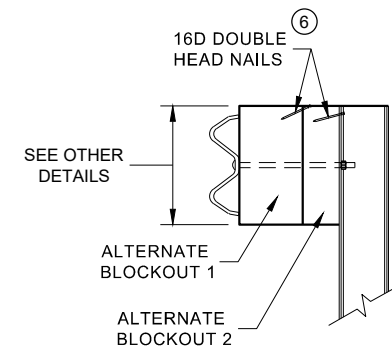


DETAIL FOR 36" BLOCKOUT DEPTH

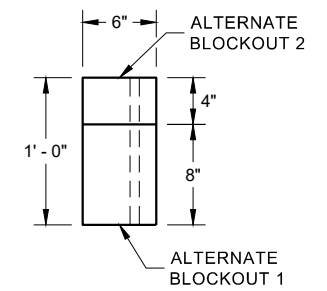
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



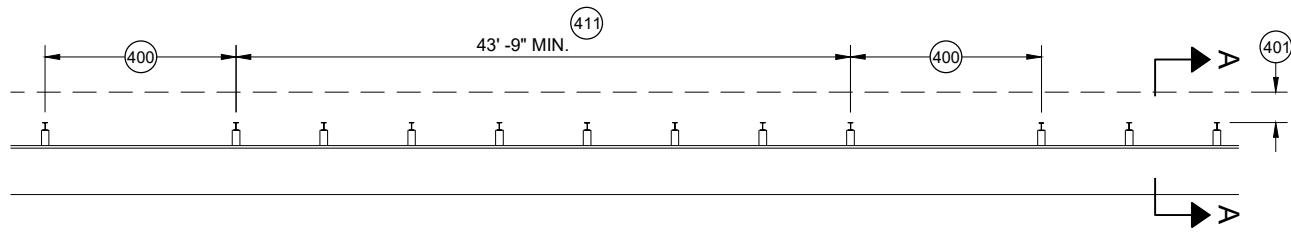
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

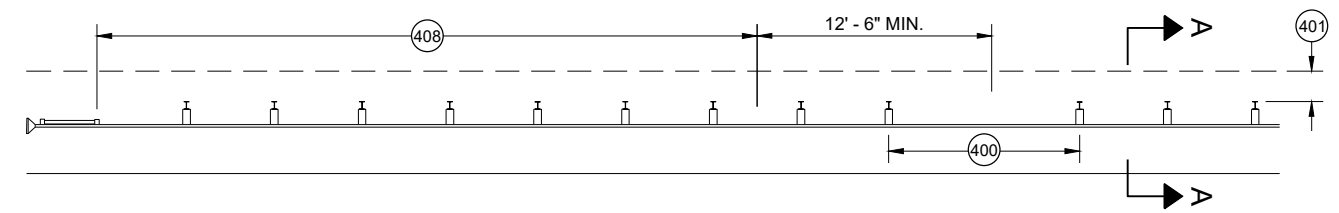
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

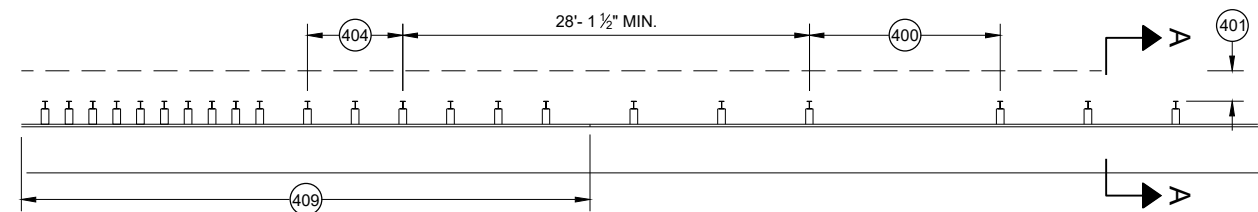
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



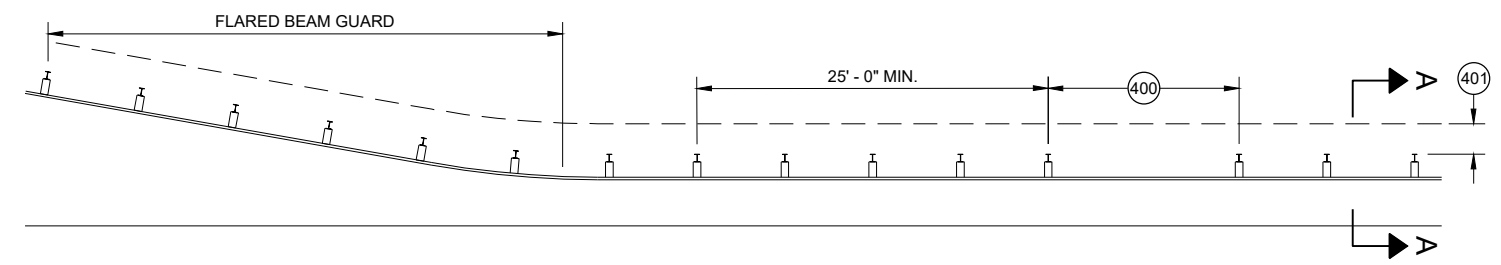
MISSING POST IN MGS GUARDRAIL



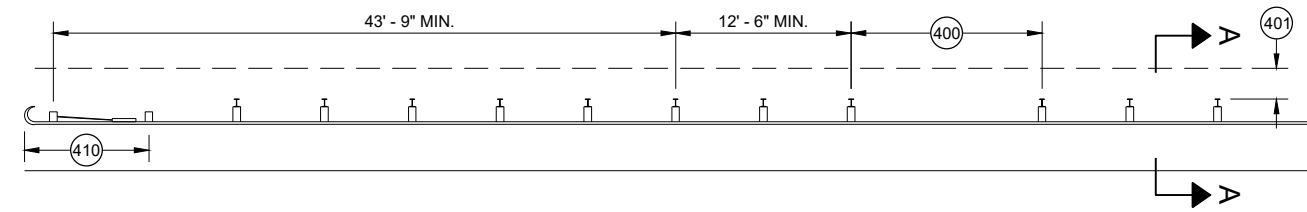
MISSING POST IN MGS GUARDRAIL NEAR EAT



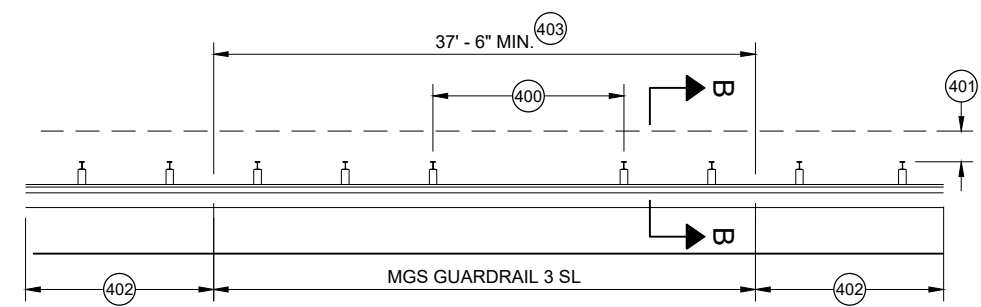
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

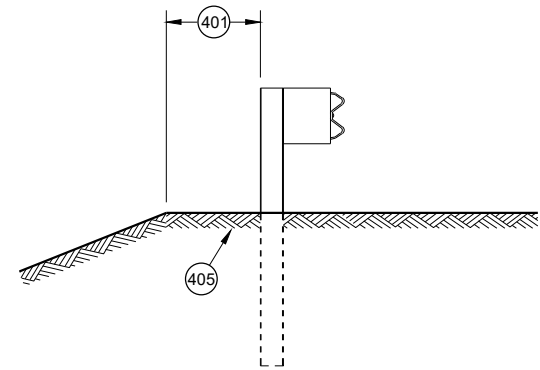


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

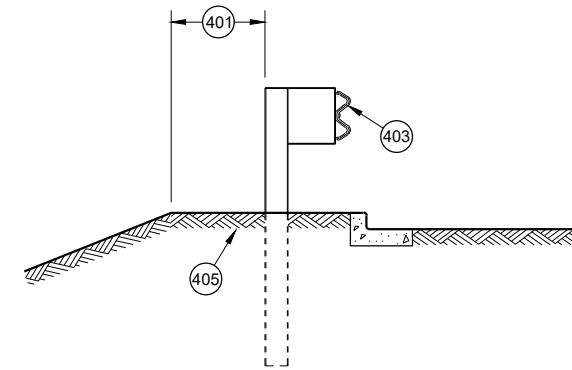


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 400 MAX SPAN 12' - 6"
- 401 2' MIN.
- 402 MGS GUARDRAIL 3
- 403 NESTING BEAM GUARD
- 404 ASYMMETRIC TRANSITION
- 405 SOIL WELL DRAINED AND COMPACTED
- 406 SEE OTHER DRAWINGS IN THIS SDD
- 407 SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- 408 SEE SDD 14B44
- 409 SEE SDD 14B45
- 410 SEE SDD 14B47
- 411 MINIMUM DISTANCE BETWEEN MISSING POST SPANS.

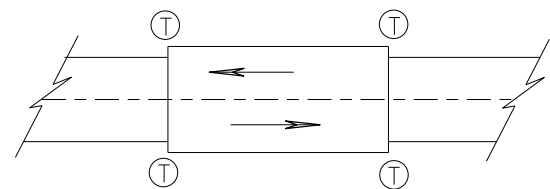


SECTION A - A

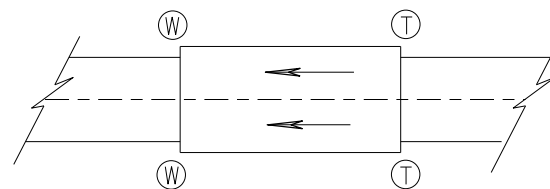


SECTION B - B

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
<small>FHWA</small>	



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

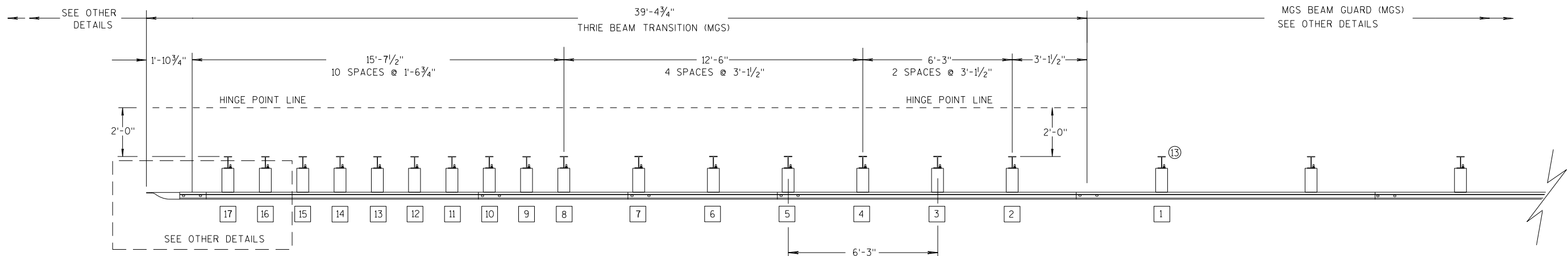
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

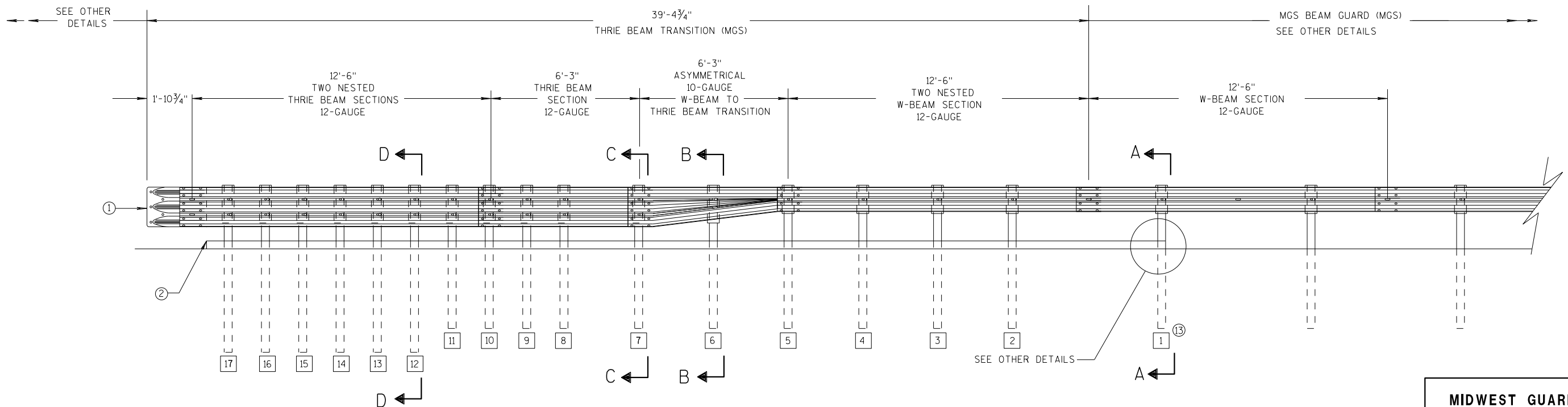
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

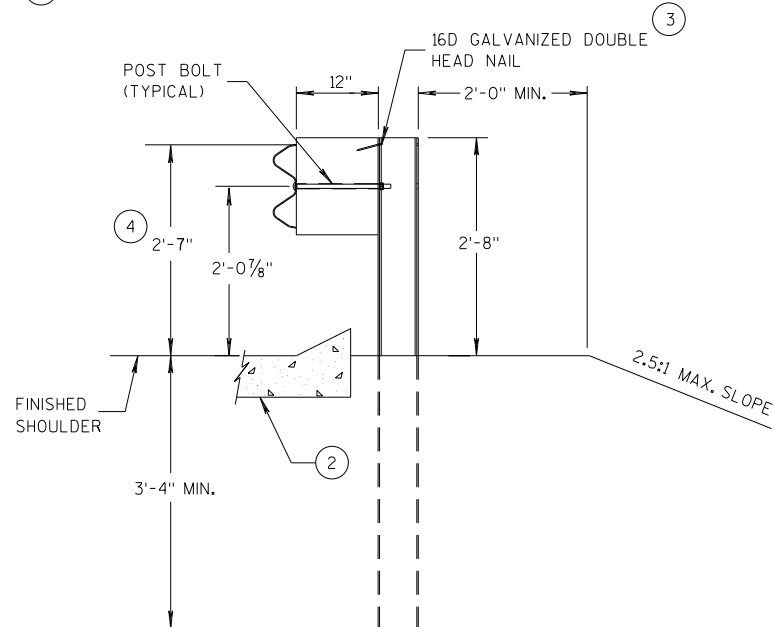
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

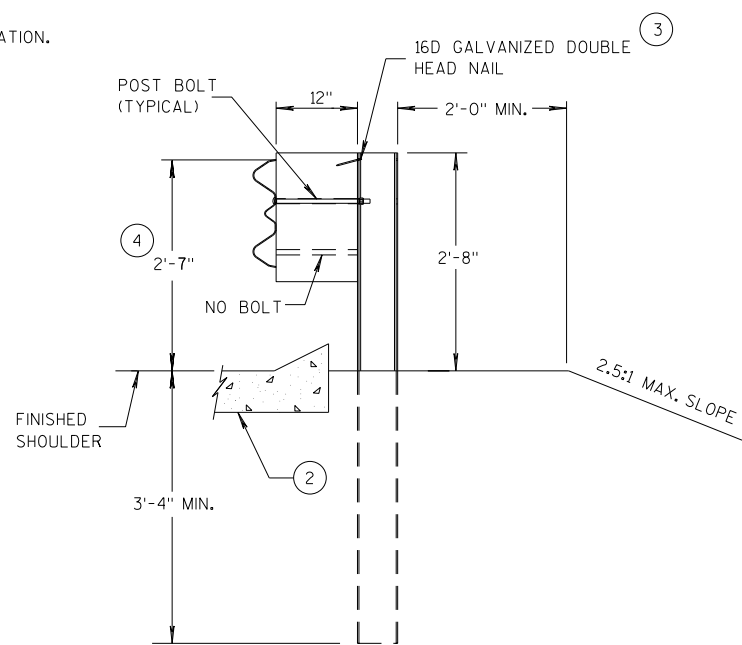
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

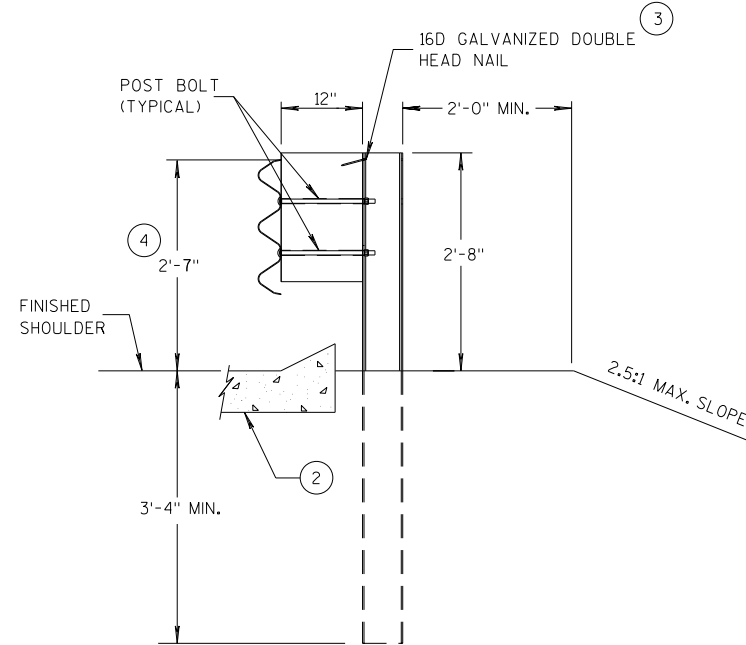
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



**SECTION C-C
POSTS 7-11**

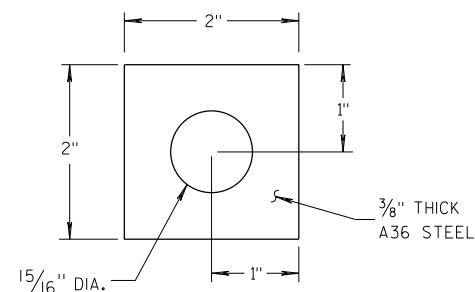
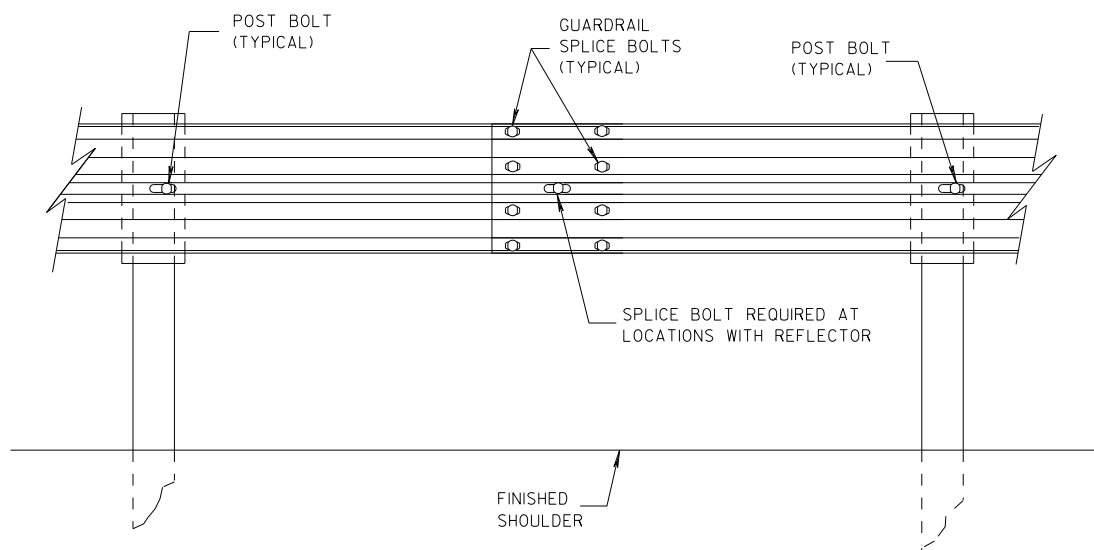
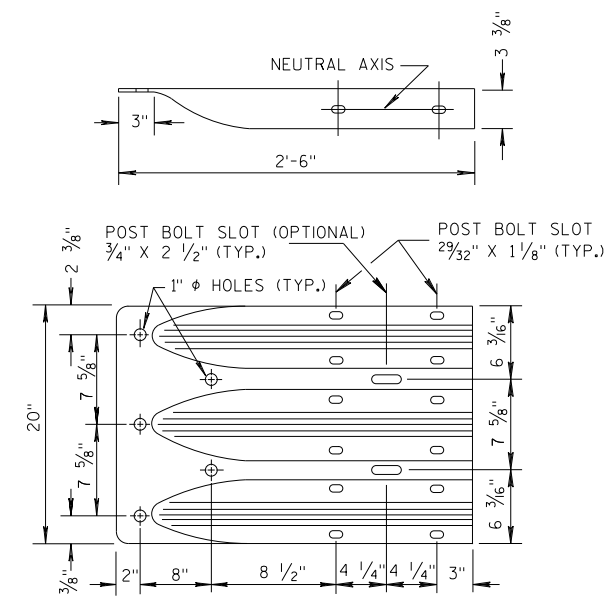


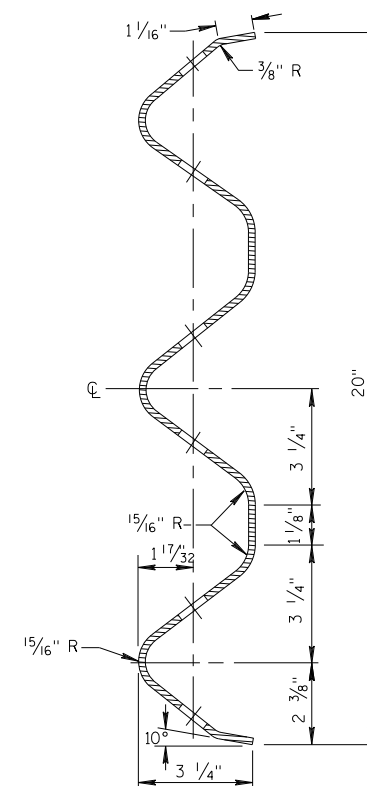
PLATE WASHER DETAIL



SPLICE DETAIL



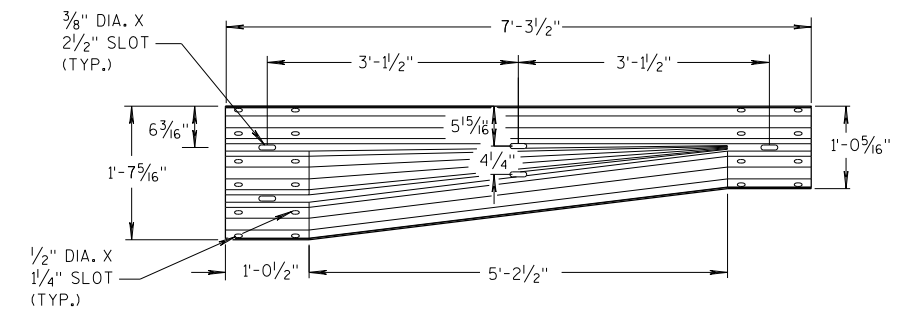
**THRIE BEAM
TERMINAL CONNECTOR**



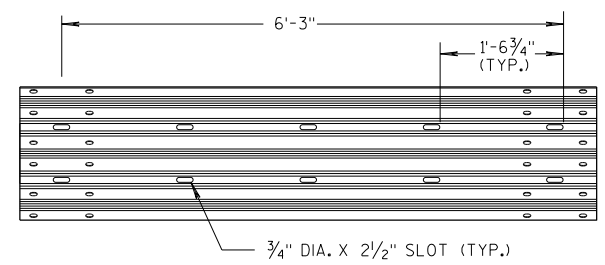
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

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

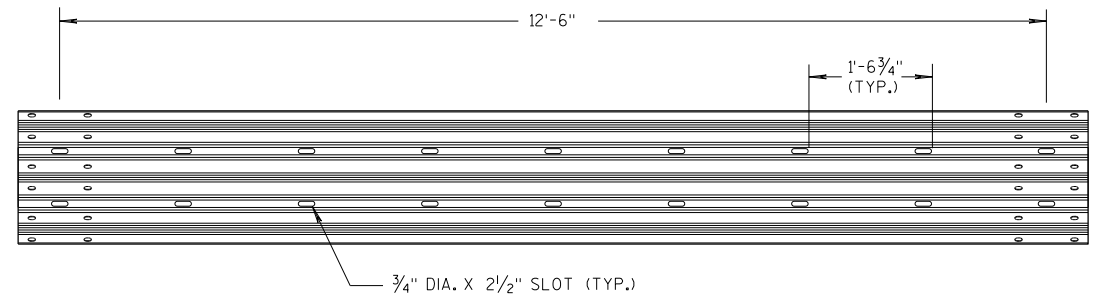
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



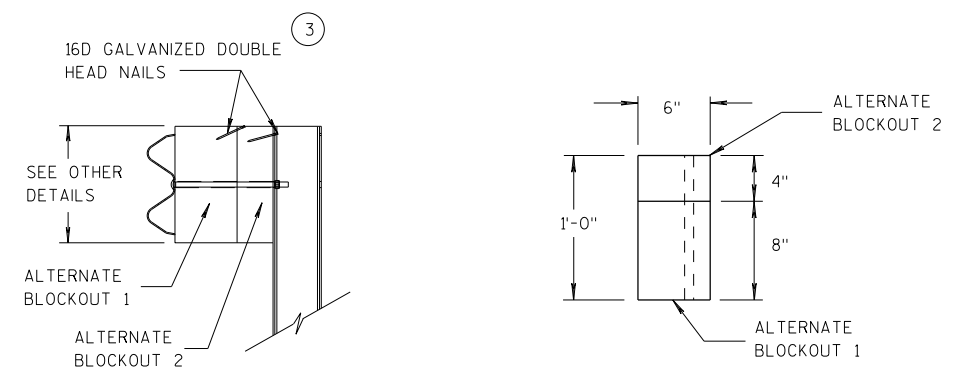
W-BEAM TO THRIE BEAM TRANSITION SECTION



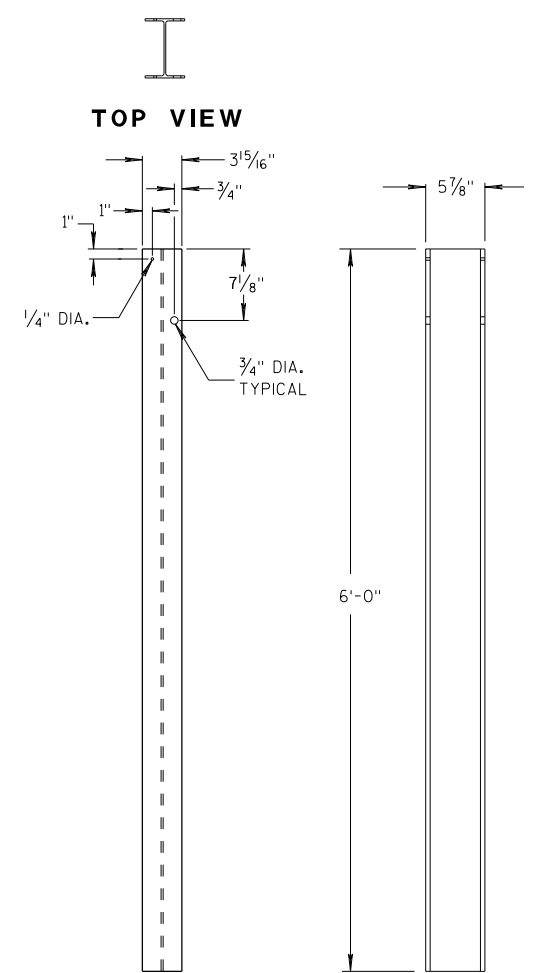
6'-3\"/>



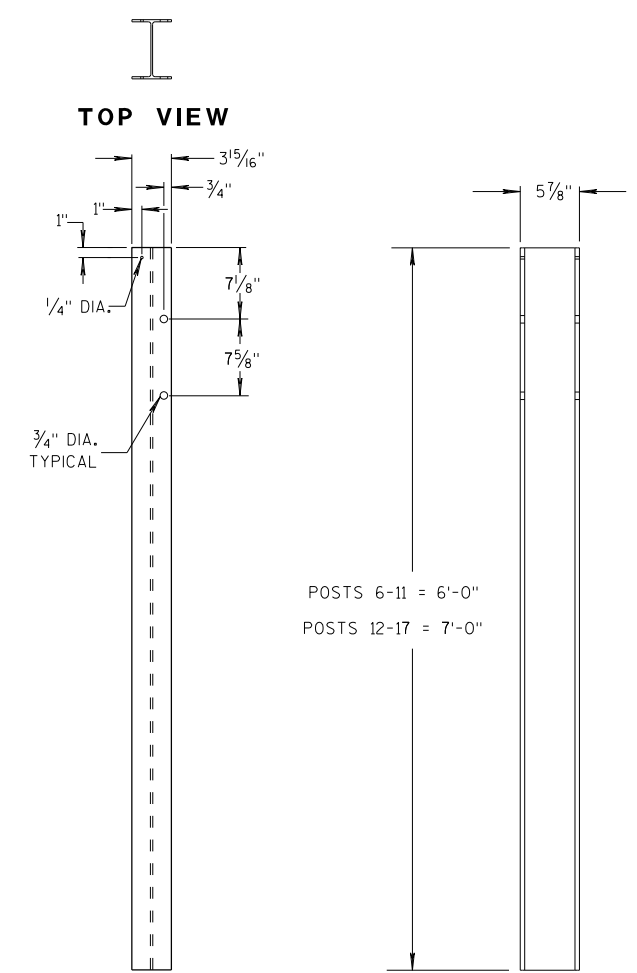
12'-6\"/>



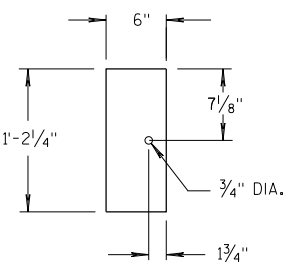
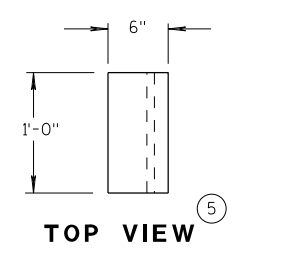
ALTERNATE WOOD BLOCKOUT DETAIL



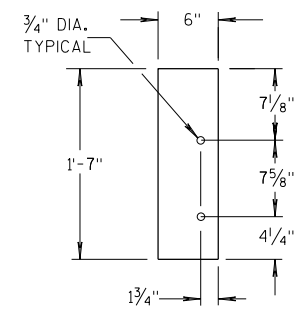
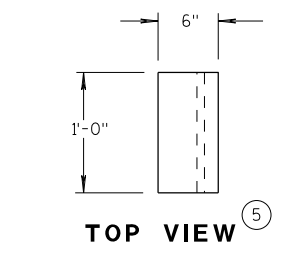
STEEL POSTS 1-5



STEEL POSTS 6-17



BLOCKOUT POSTS 1-5



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)**

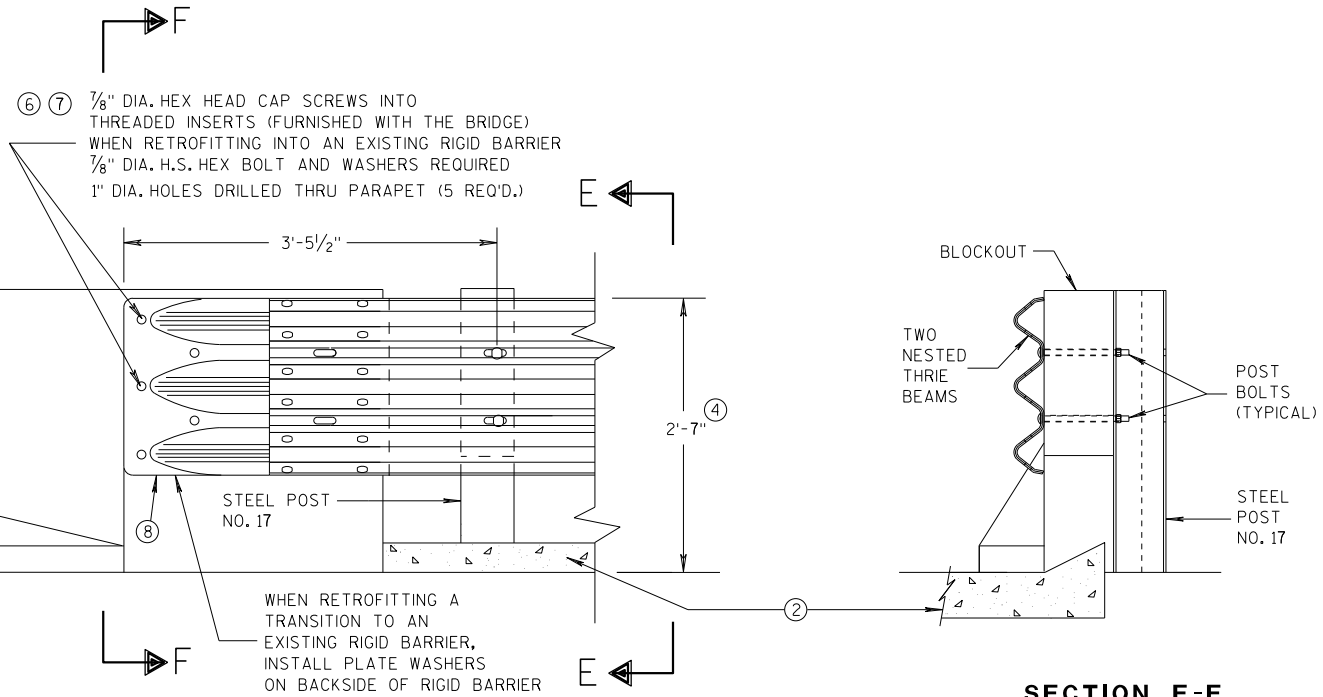
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

S.D.D. 14 B 45-5c

S.D.D. 14 B 45-5c



FRONT VIEW

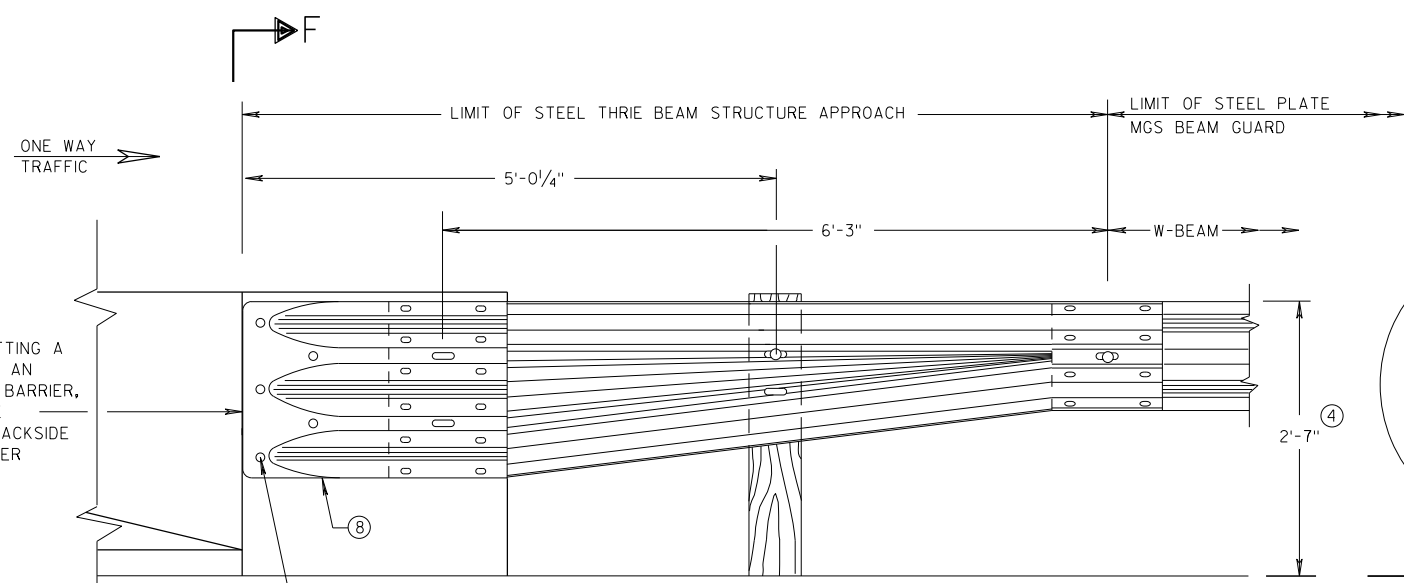
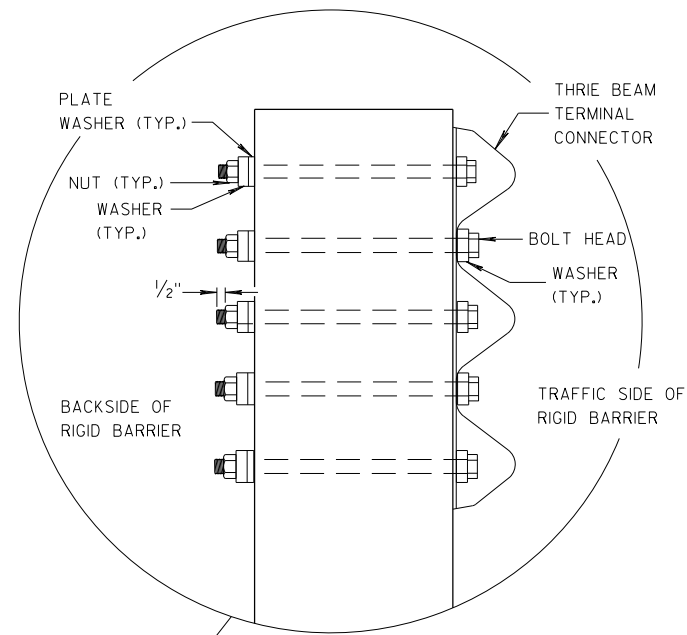
THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

SECTION E-E

GENERAL NOTES

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

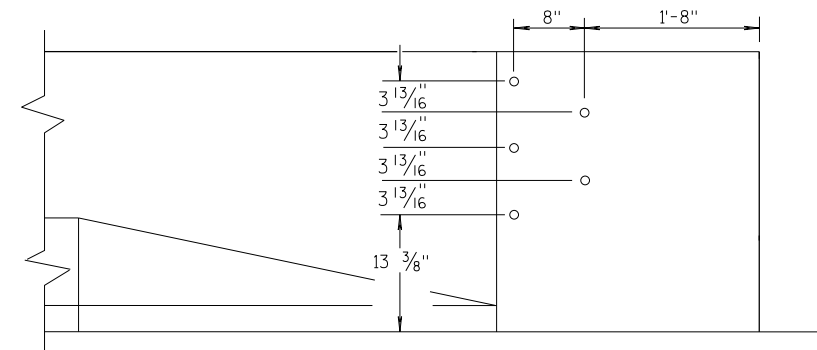
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- (4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- (6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- (7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" 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".



FRONT VIEW

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

SECTION F-F

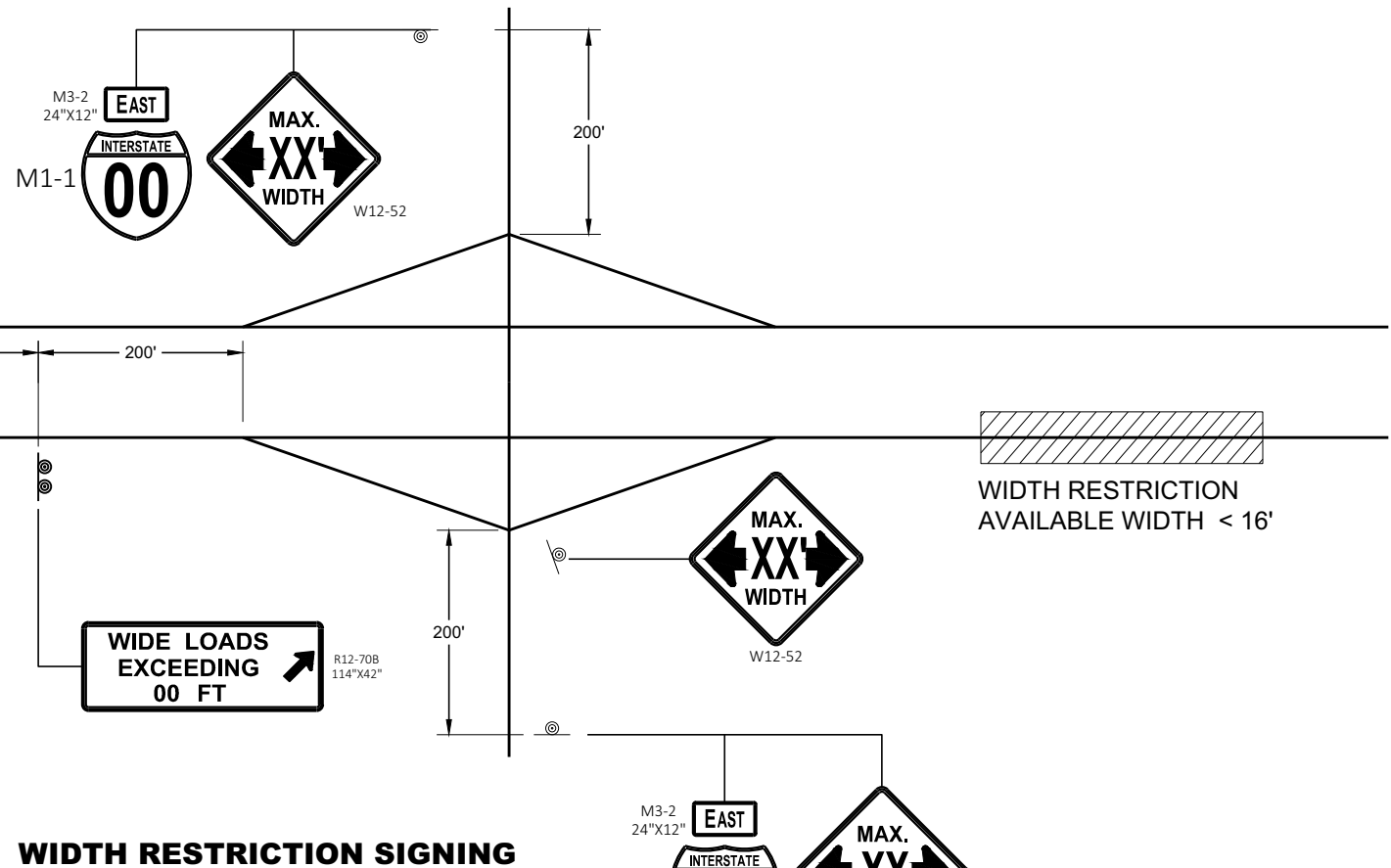


DRILL HOLE LOCATION

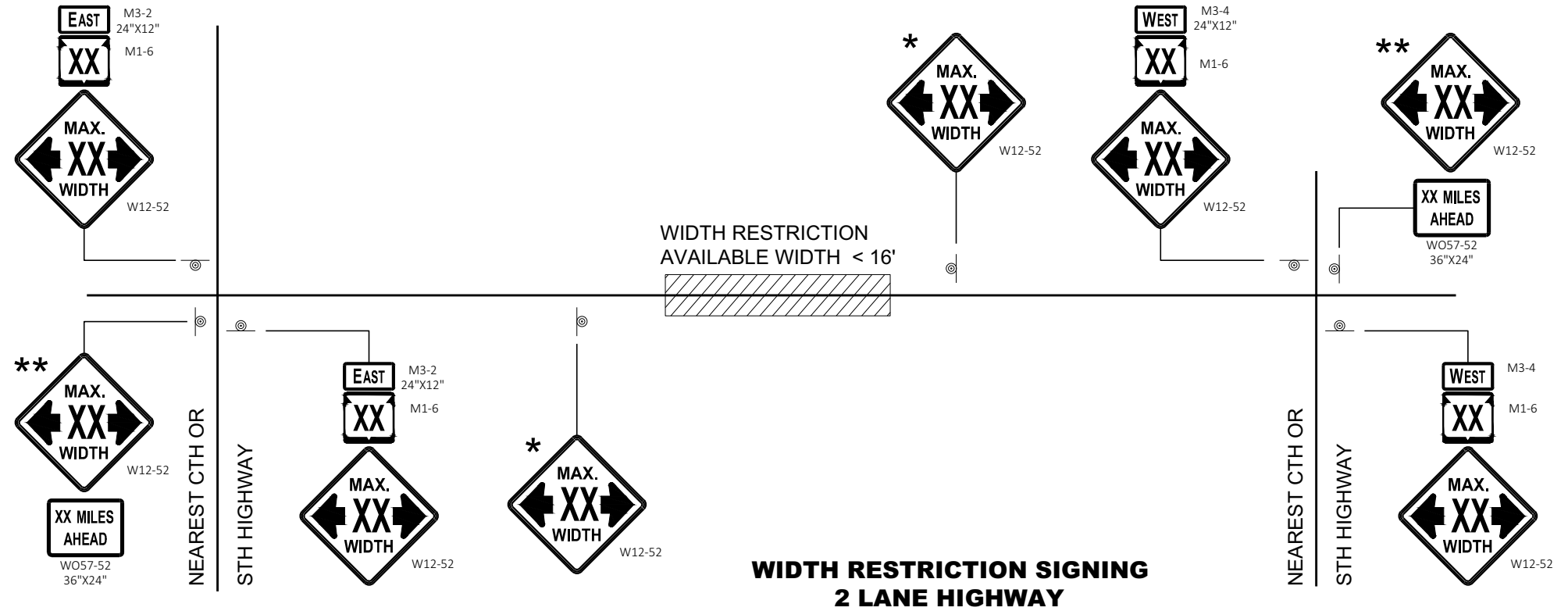
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 07/2018 /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
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 AFTER 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.

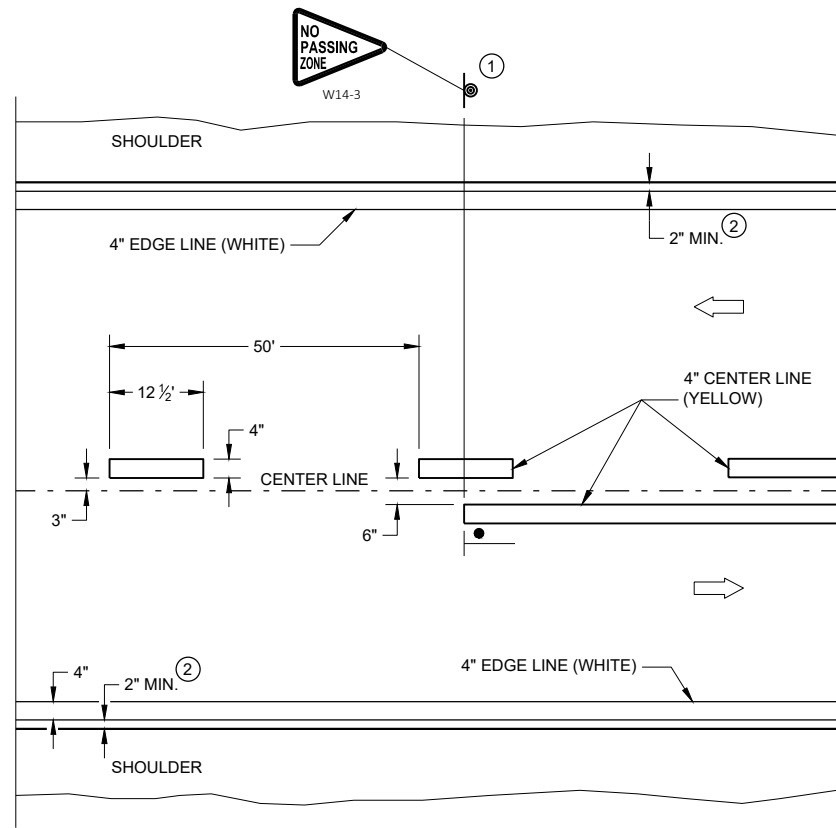


WIDTH ON SIGN TO BE APPROX. 1 - FOOT LESS THAN AVAILABLE WIDTH

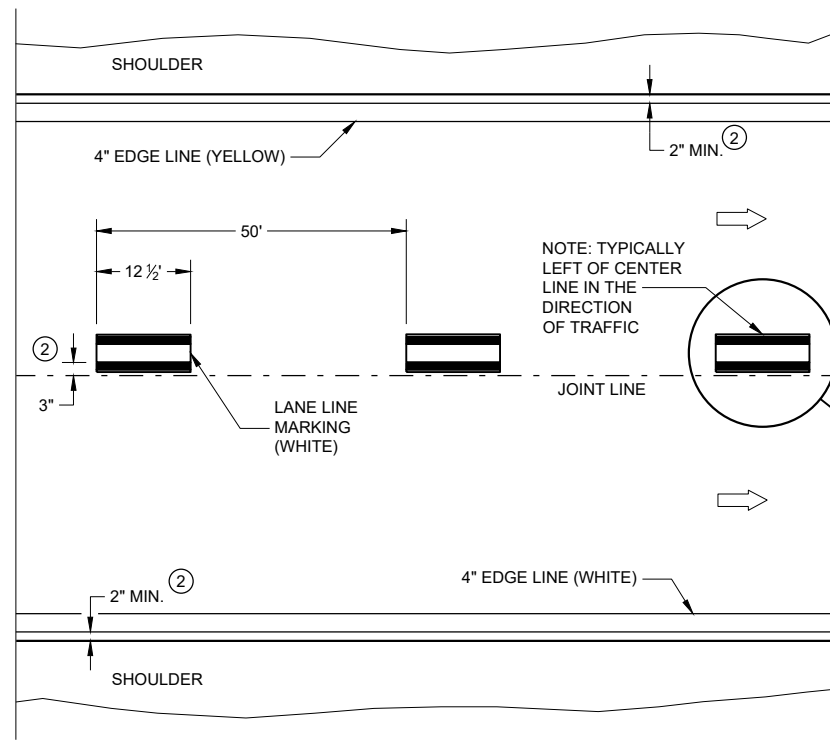
**ADVANCED WIDTH
RESTRICTION SIGNING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

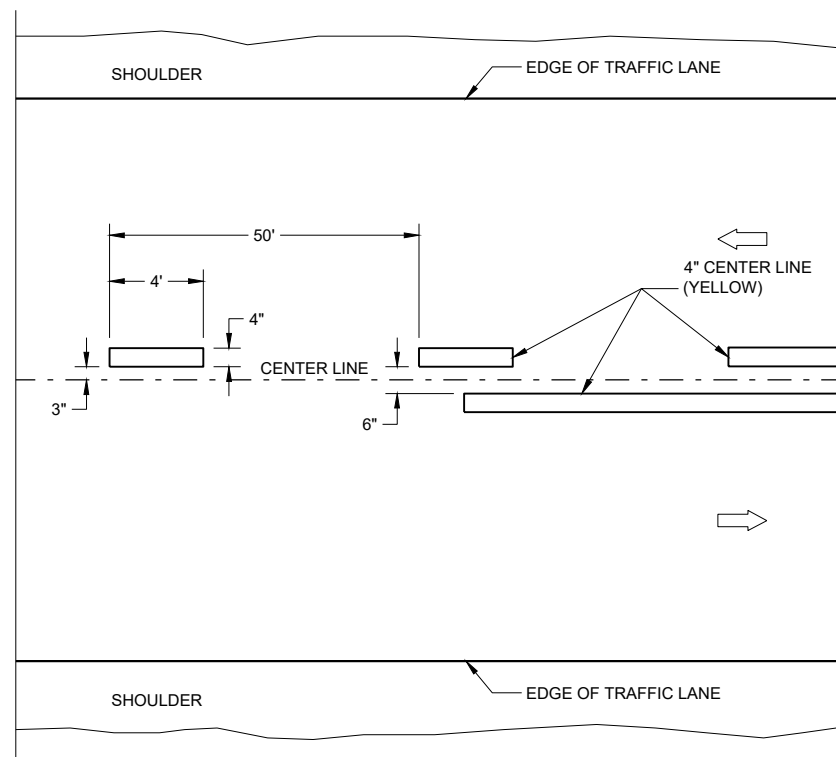


TWO WAY TRAFFIC

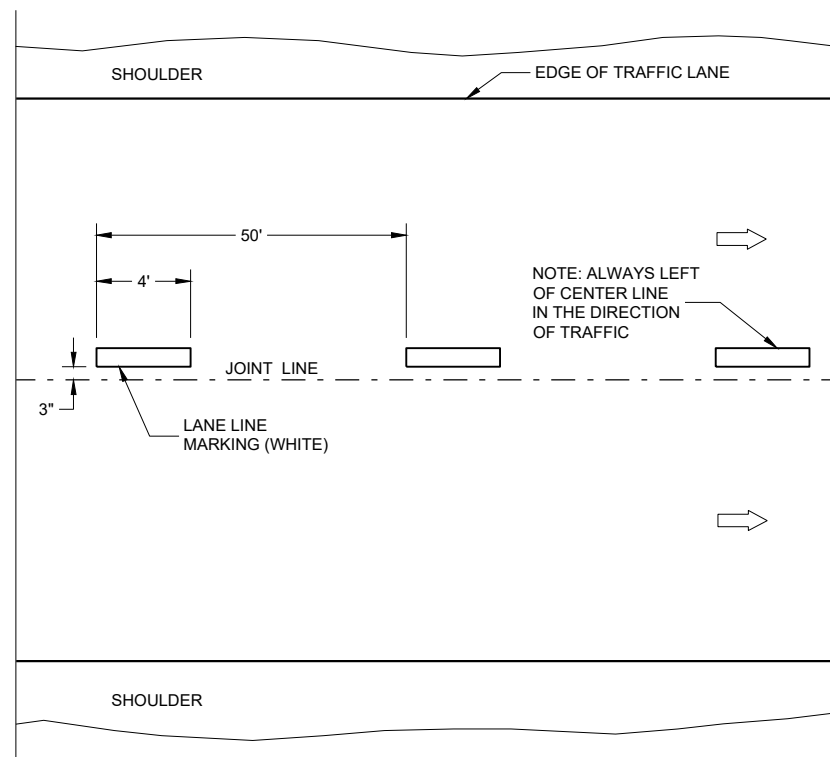


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

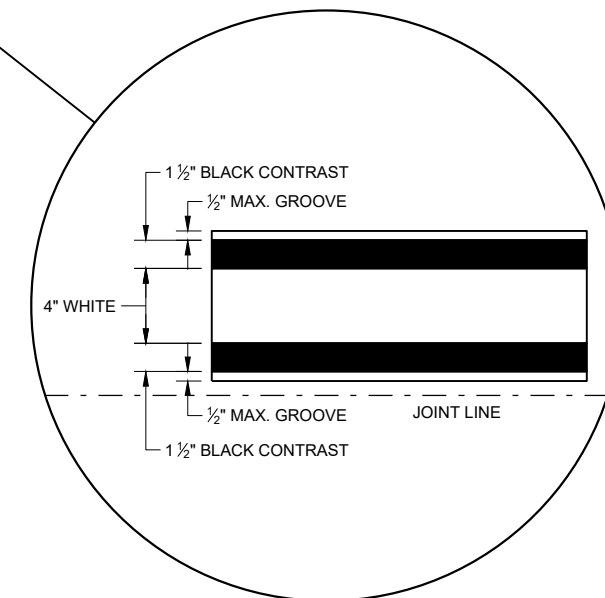
GENERAL NOTES

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
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

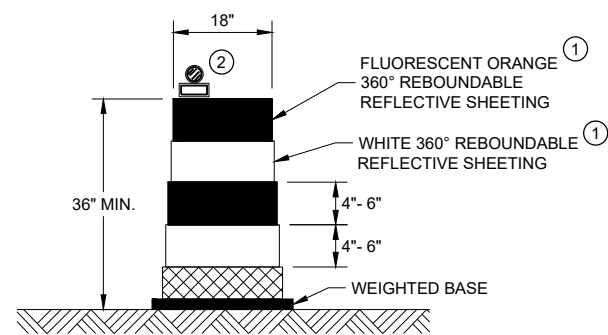
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



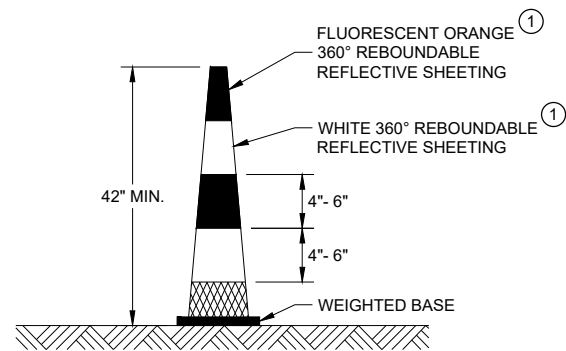
**LONGITUDINAL MARKING
(MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Matthew Rauch
DATE STATEWIDE SIGNING AND MARKING
ENGINEER

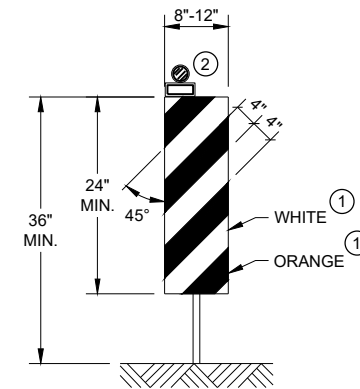


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

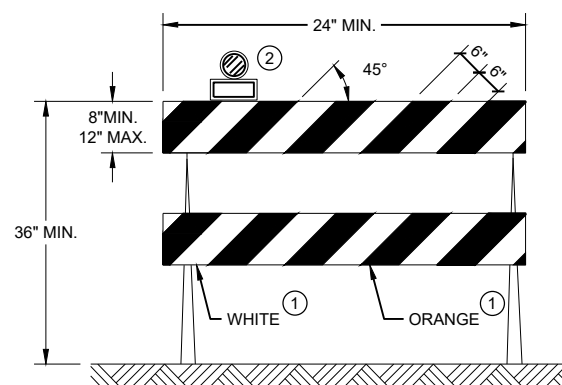


VERTICAL PANEL

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

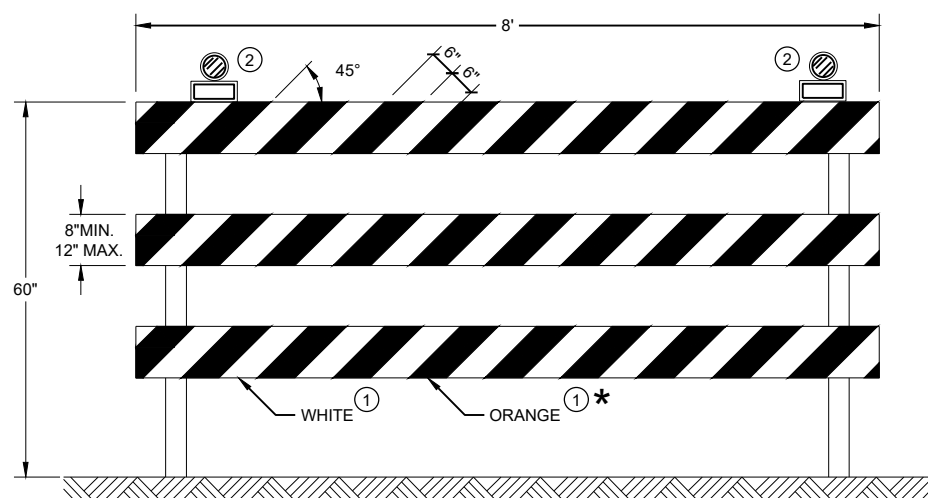
GENERAL NOTES

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.











WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

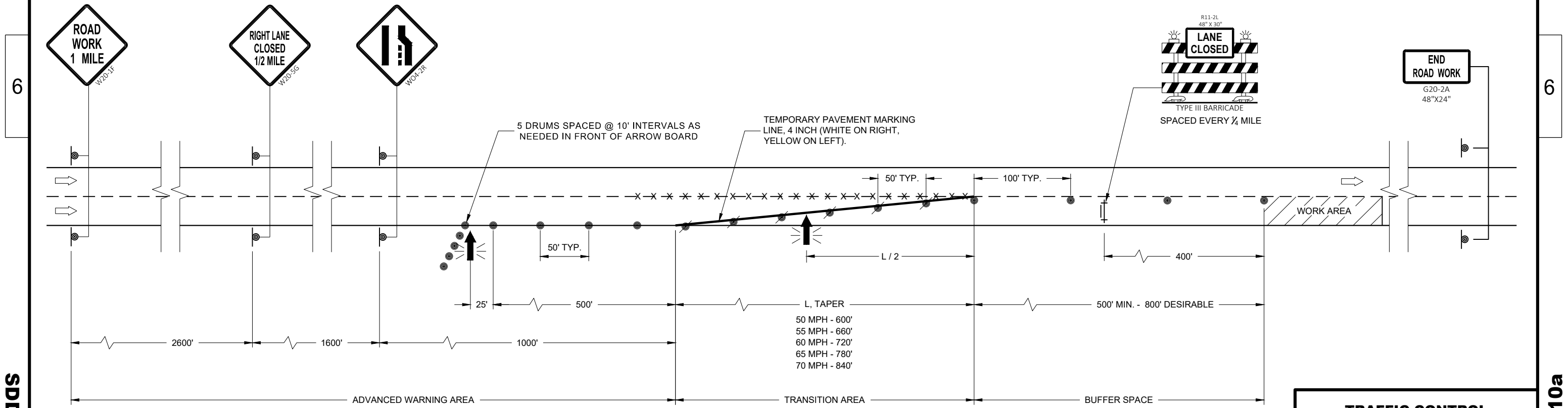
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS

NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  -X-X-X- REMOVING PAVEMENT MARKINGS
-   DIRECTION OF TRAFFIC
-  WORK AREA
-  FLASHING ARROW BOARD



TRAFFIC CONTROL LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

SDD 15D12 - 10a

SDD 15D12 - 10a

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.










WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

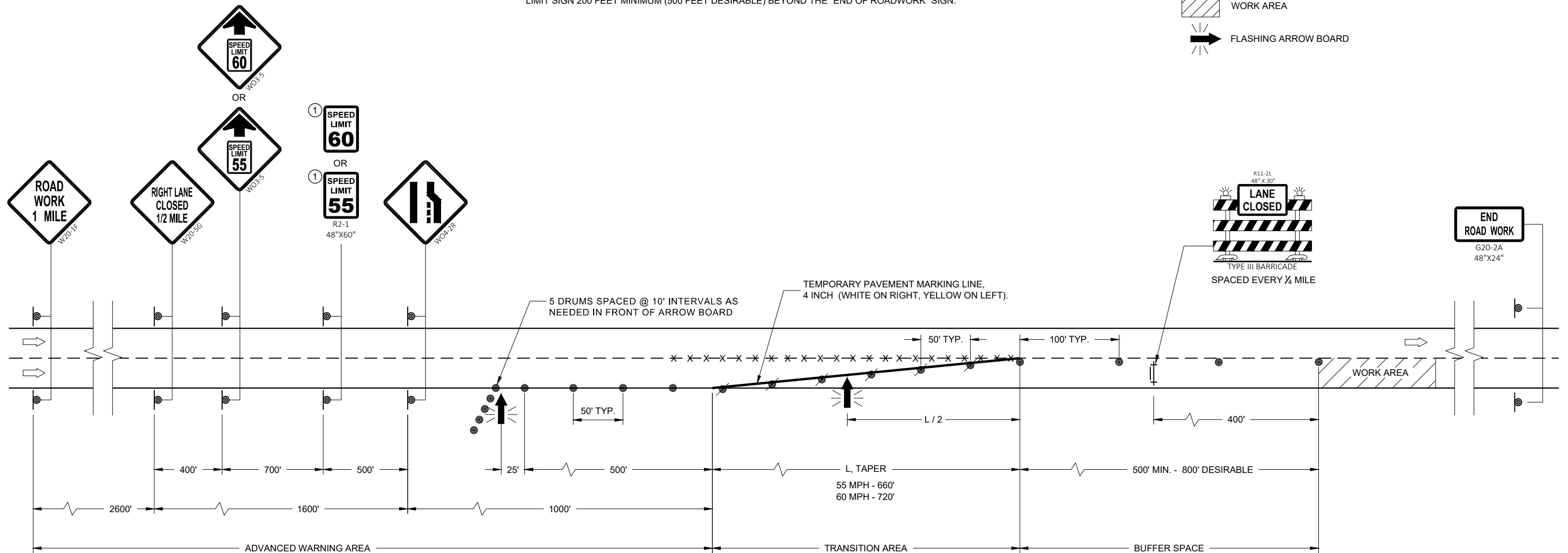
① A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIRABLE) BEYOND THE "END OF ROADWORK" SIGN.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  REMOVING PAVEMENT MARKINGS
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLASHING ARROW BOARD

6

SDD 15D12 - 10b














6

SDD 15D12 - 10b

TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  REMOVING PAVEMENT MARKINGS
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLASHING ARROW BOARD
-  PORTABLE TRAFFIC SENSOR (PTS)
-  FLASHING BEACON SIGN

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS, INCLUDING FBS AND DEVICES 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 MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS

AND NIGHTS.
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

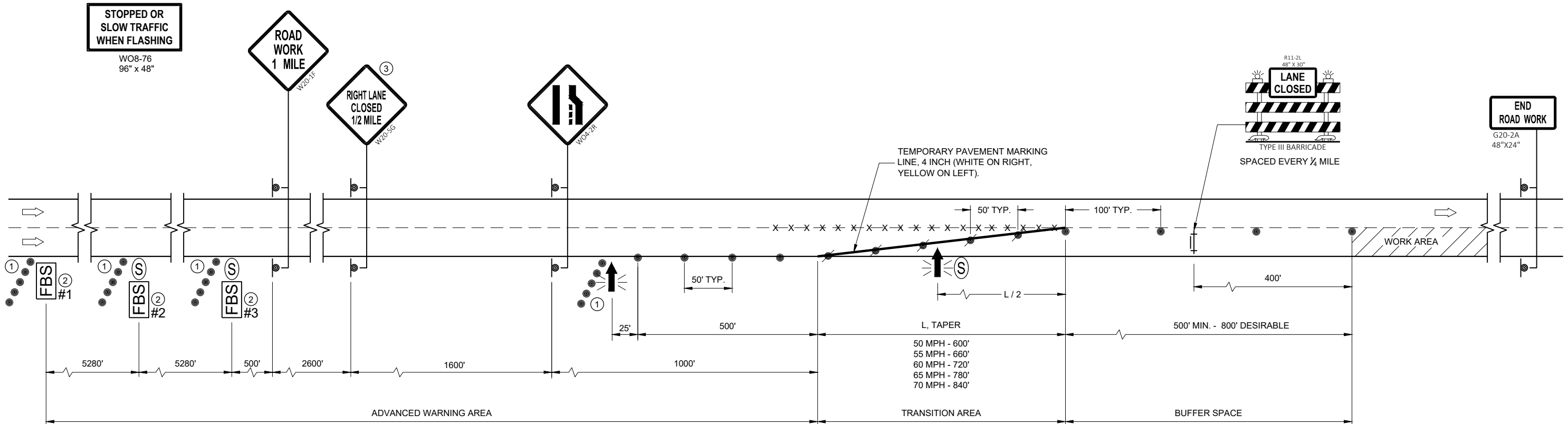
CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON THE FBS, ARROW BOARD OR OTHER TRAILER DEVICES.

- ① 5 DRUMS SPACED AT 10 FOOT INTERVALS AS NEEDED.
- ② IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE FBS ON BOTH SIDES OF THE ROADWAY.
- ③ IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN.

6

6



SDD 15D12 - 10d

SDD 15D12 - 10d









TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022 /S/ Erin Schwark
DATE WORK ZONE ENGINEER

FHWA

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  FLAGS, 16" X 16" MIN., ORANGE
-  DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

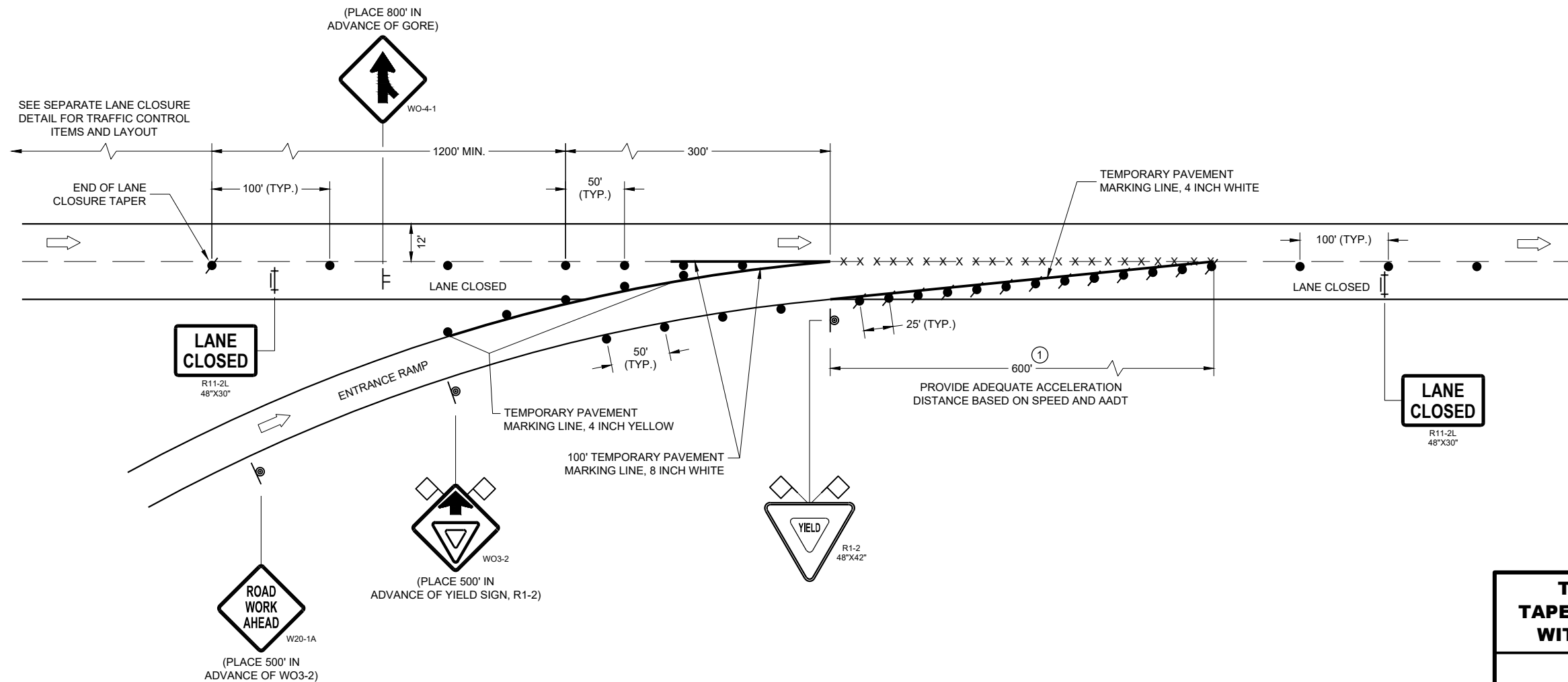
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

① CONSULT WITH REGIONAL WORK ZONE ENGINEER IF NEED TO REDUCE LENGTH EXISTS.



6








6

SDD 15D15 - 06C

SDD 15D15 - 06C

TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  FLAGS, 16" X 16" MIN., ORANGE
-  DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

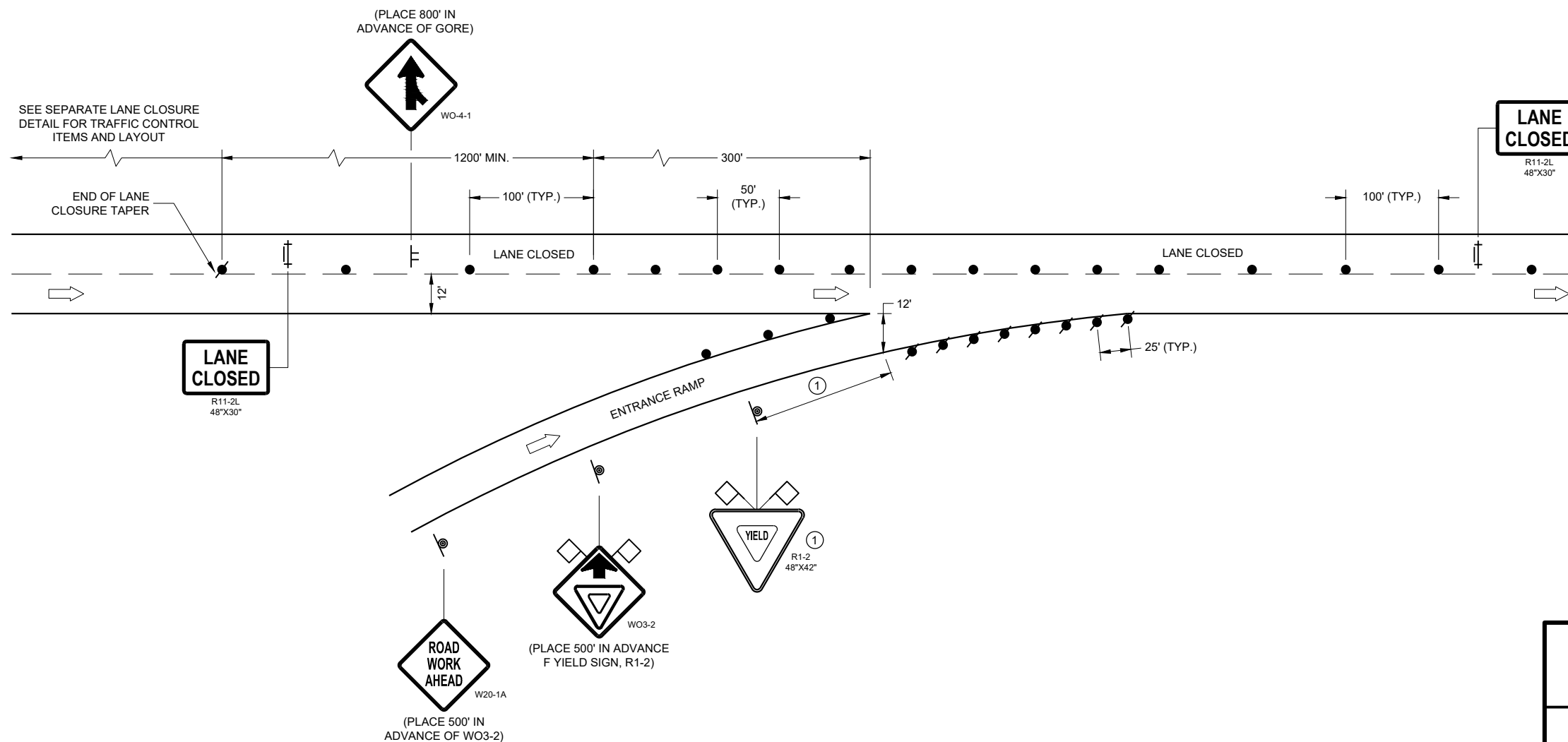
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

① PLACE YIELD SIGN TO PROVIDE ADEQUATE SIGHT DISTANCE AND ACCELERATION DISTANCE.



6

6

SDD 15D15 - 06d

SDD 15D15 - 06d

TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

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

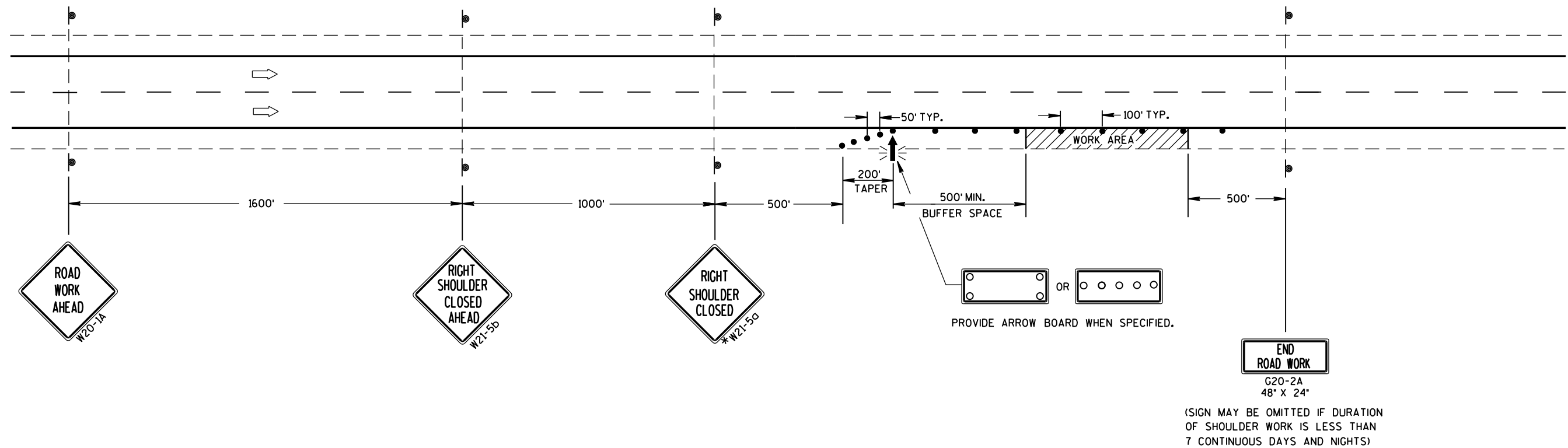
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WHEN A 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.

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-50 SIGN MAY BE OMITTED.

LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ FLASHING ARROW BOARD
- ▨ WORK AREA



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/s/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	


6

6

S.D.D. 15 D 27-3

S.D.D. 15 D 27-3

LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  REMOVE PAVEMENT MARKING

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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. NO WARNING LIGHTS SHALL BE WORKING ON ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

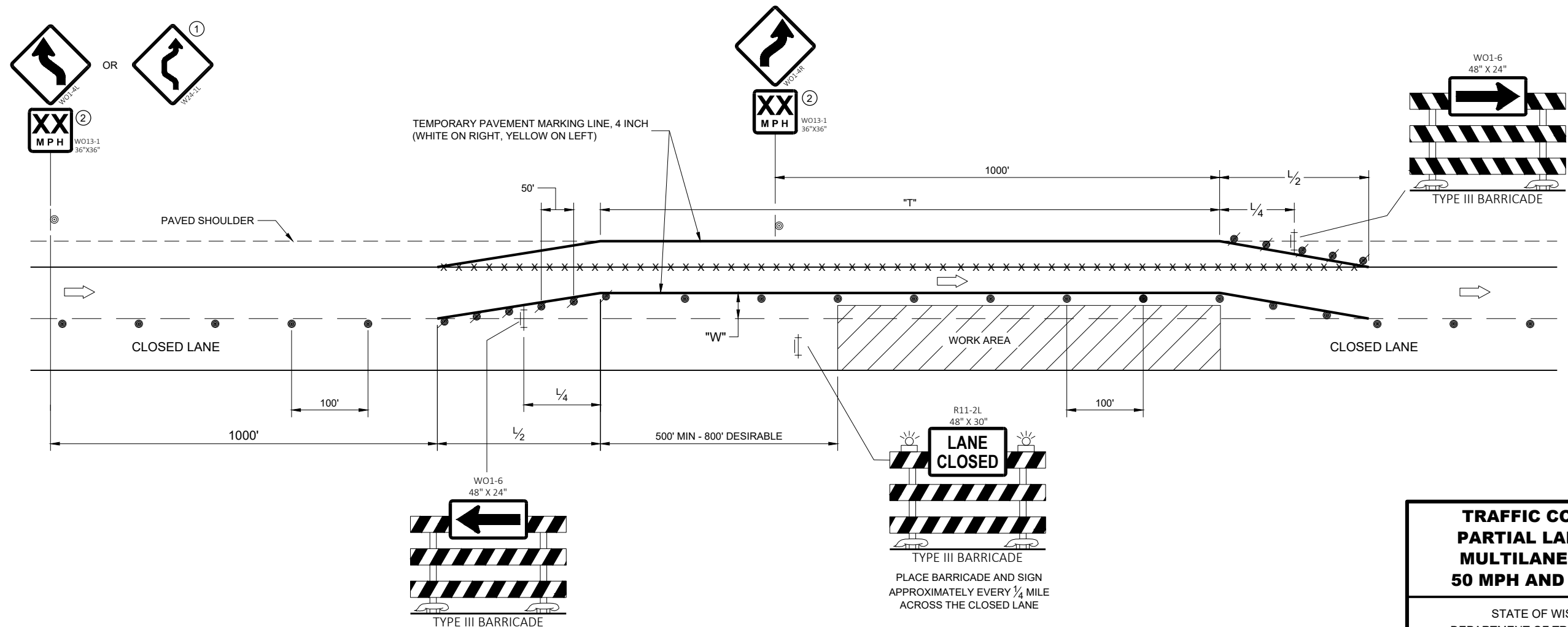
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

- ① USE ONLY WHEN T<600', OMIT WO1-4R.
- ② IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	SHIFTING TAPER 1/2								
	W, LATERAL OFFSET (FT)								
	1	2	3	4	5	6	7	8	9
50	25	50	75	100	125	150	175	200	225
55	28	55	83	110	138	165	193	220	248
60	30	60	90	120	150	180	210	240	270
65	33	65	98	130	163	195	228	260	293
70	35	70	105	140	175	210	245	280	315



**TRAFFIC CONTROL,
PARTIAL LANE SHIFT
MULTILANE DIVIDED
50 MPH AND GREATER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

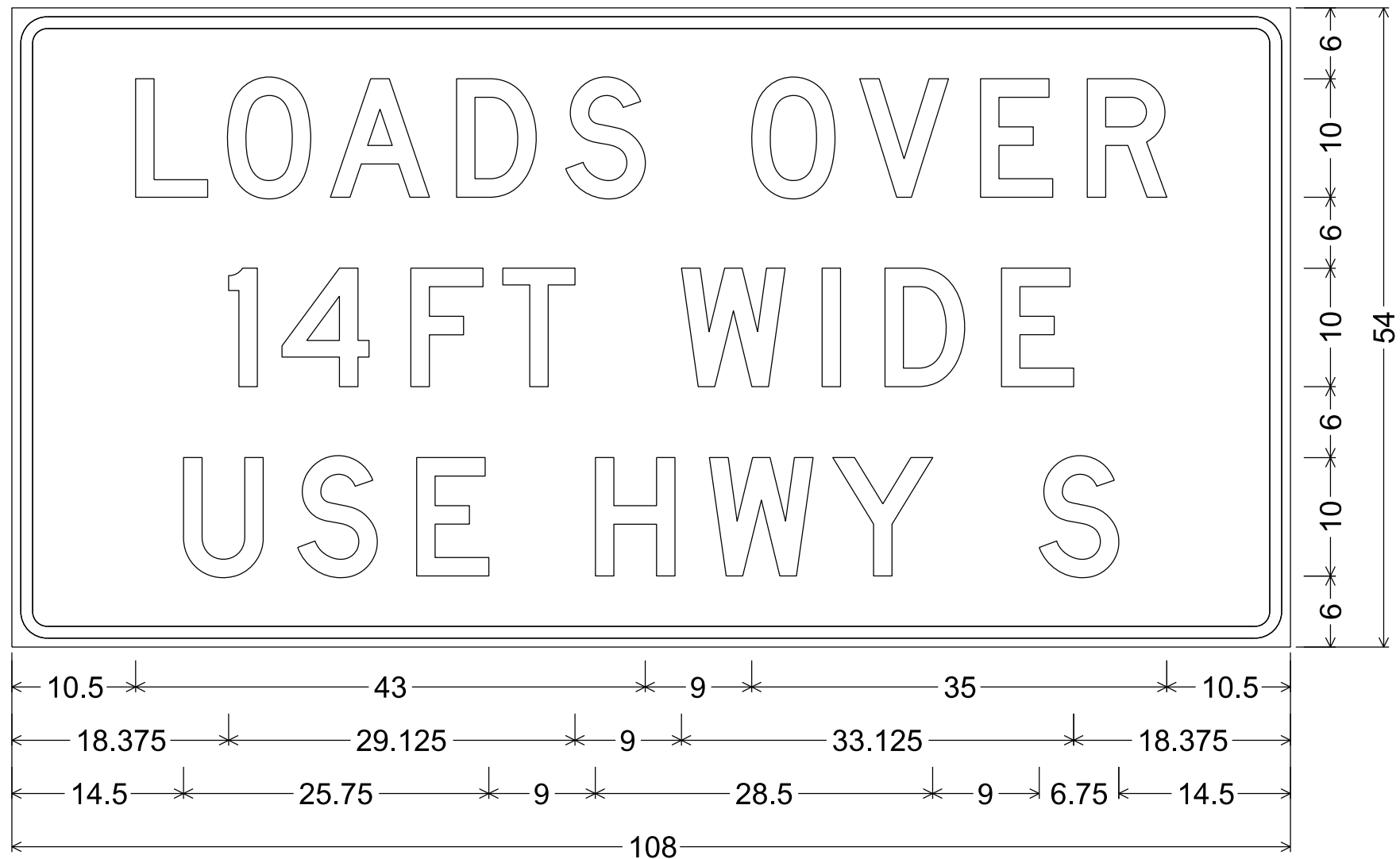
FHWA

SDD 15D40 - 03d

SDD 15D40 - 03d

NOTES

1. Fixed Message Sign - Type II Type H Reflective
2. Color:
 Background - White
 Message - Black
3. Message Series - D

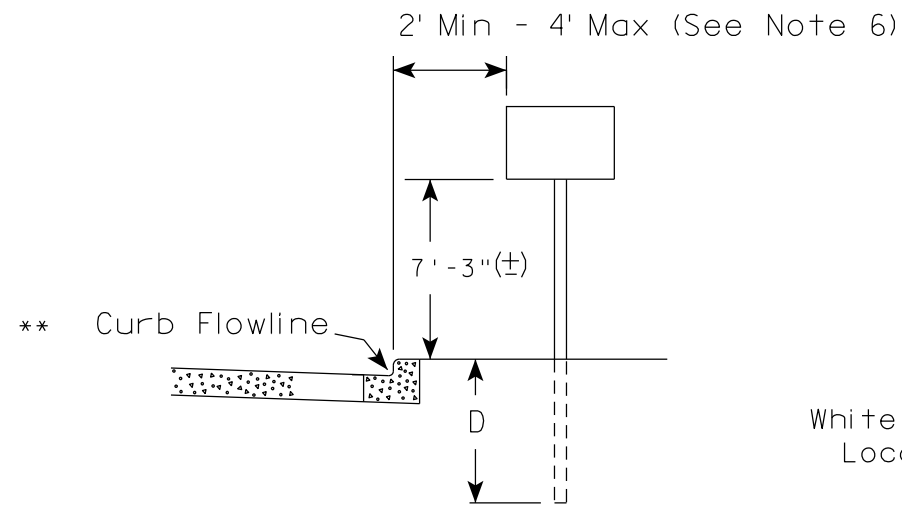


3.000" Radius, 1.000" Border, 0.750" Indent, Black on White;

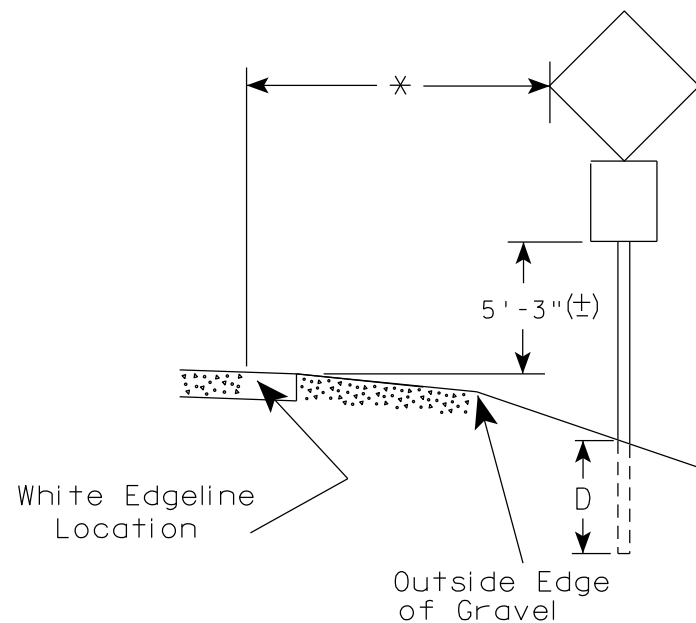
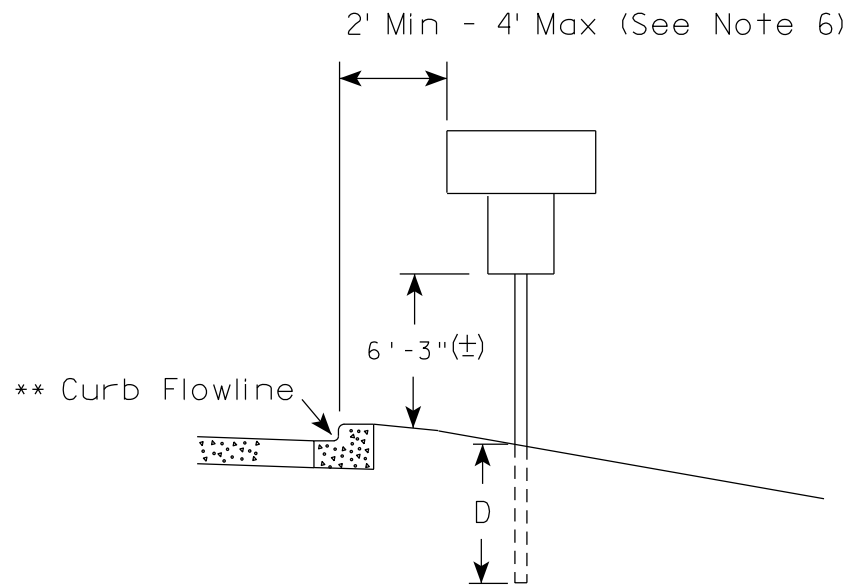
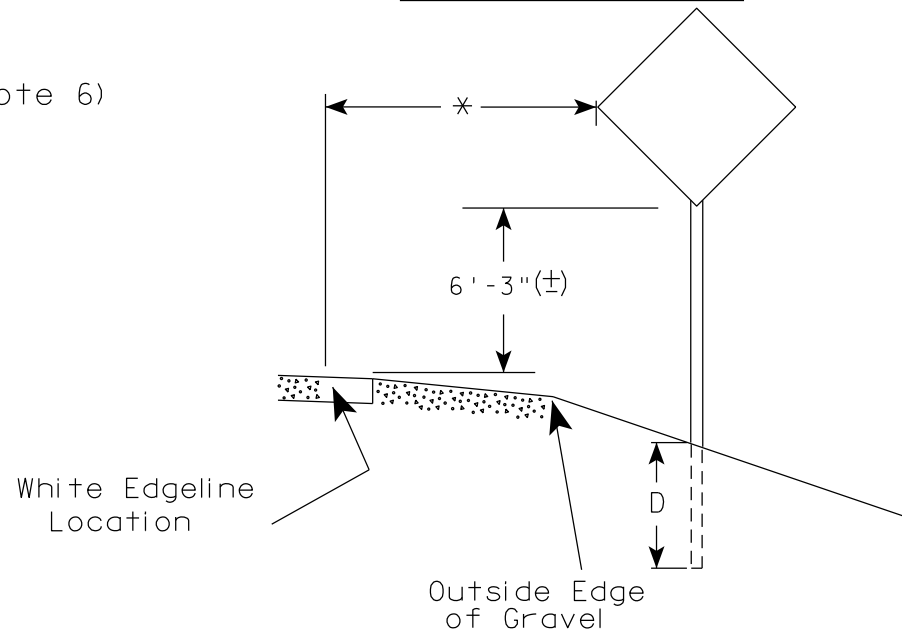
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7

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

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

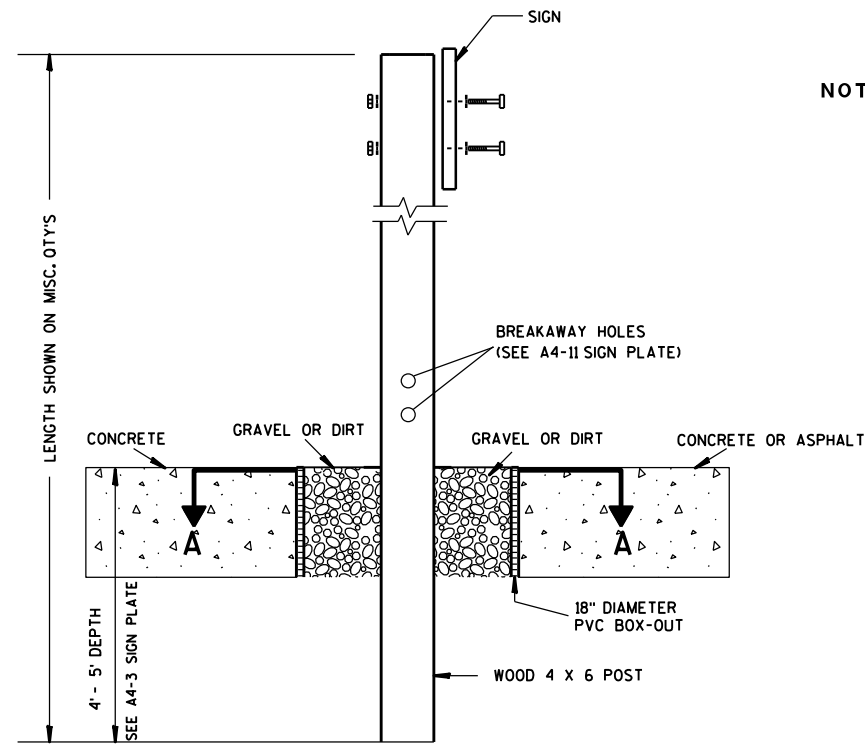
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

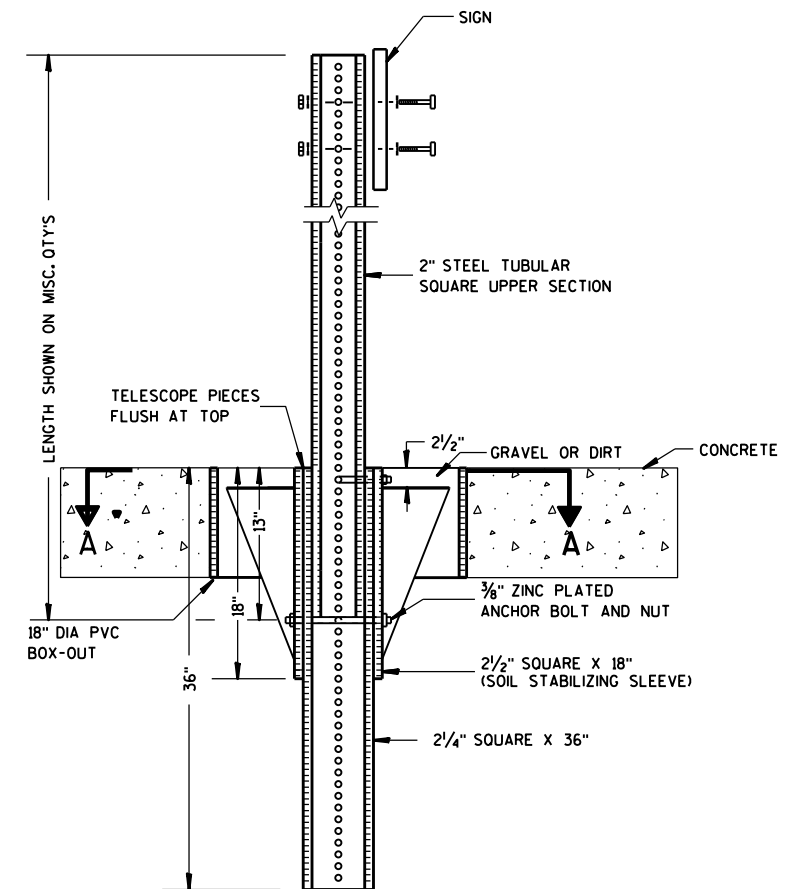
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

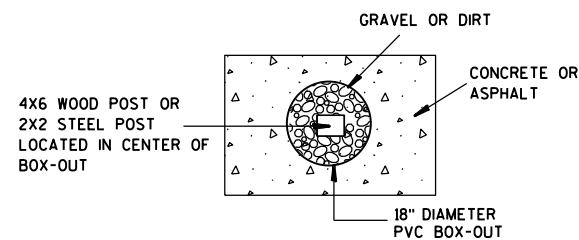
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

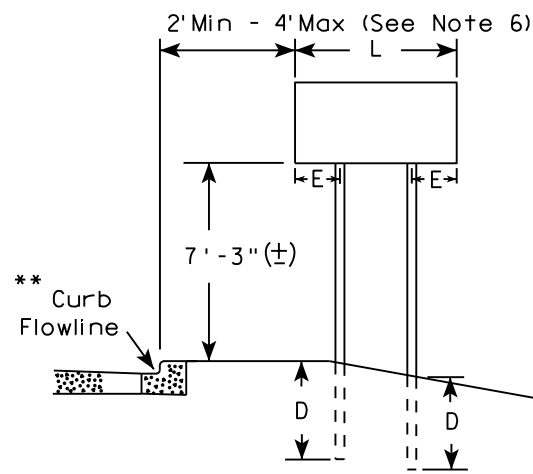
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

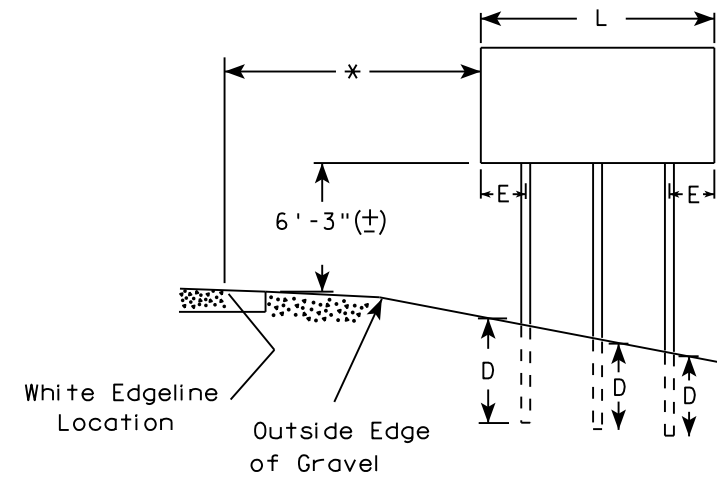
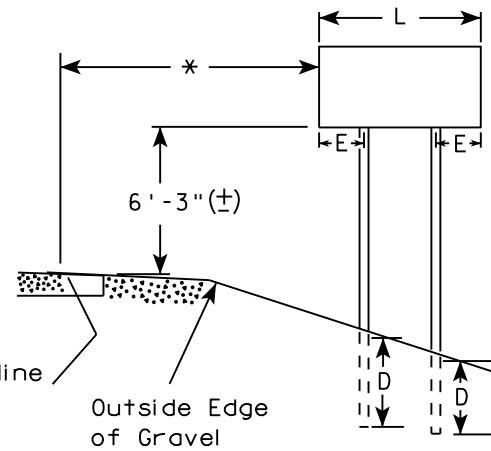
GENERAL NOTES

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

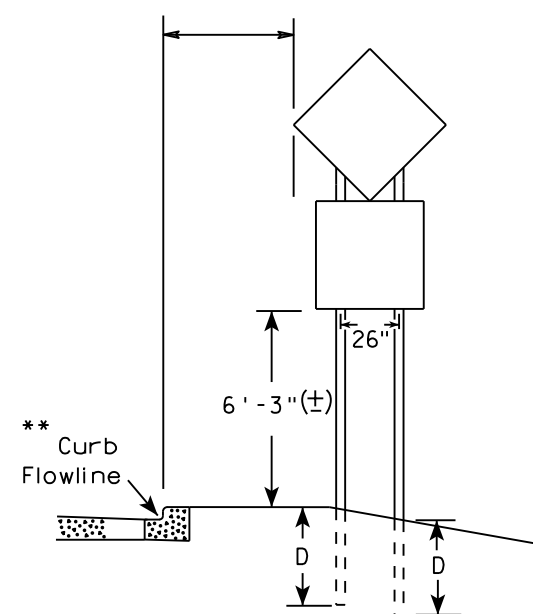
URBAN AREA



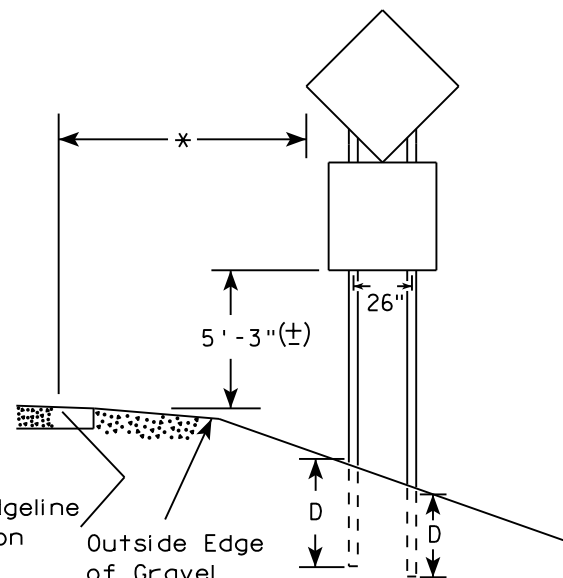
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

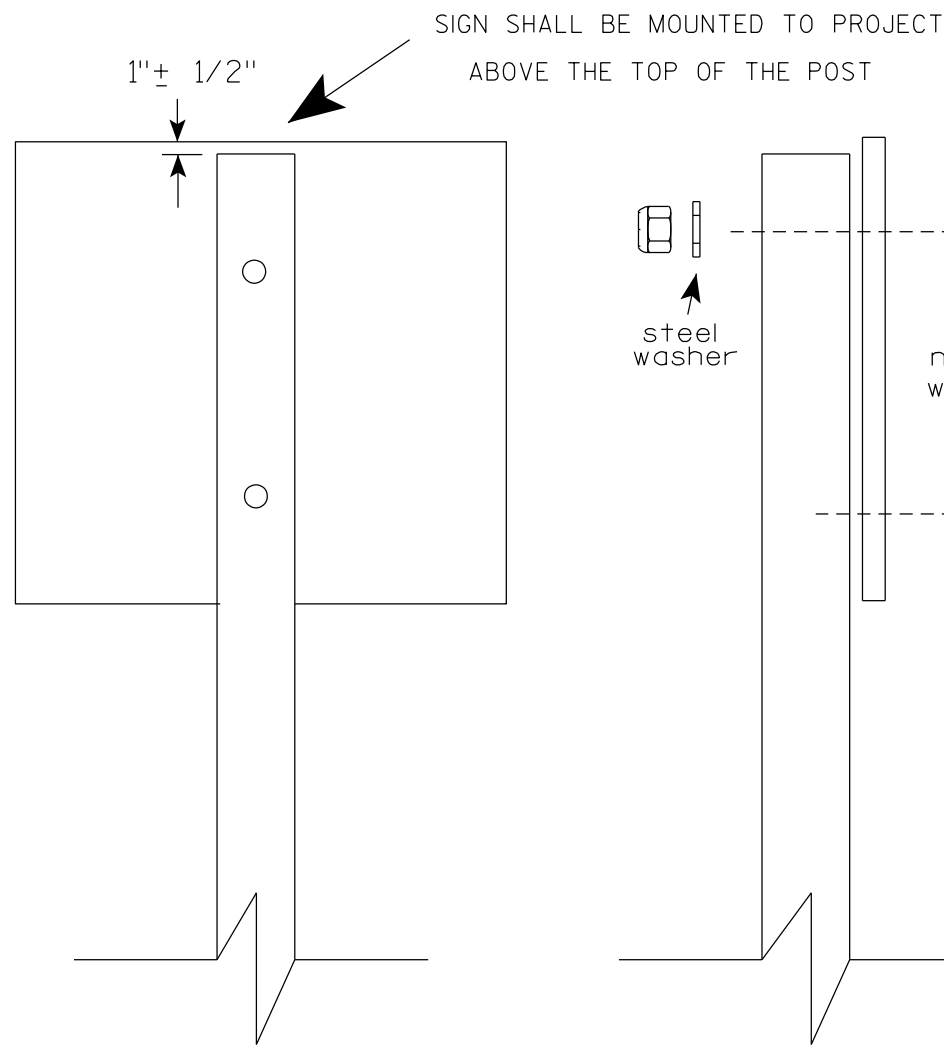
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION
 APPROVED *Matthew R. Rauch*
 For State Traffic Engineer
 DATE 8/21/17 PLATE NO. A4-4.15



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

1"± 1/2"

steel washer

nylon washer

steel washer

*

*

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

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

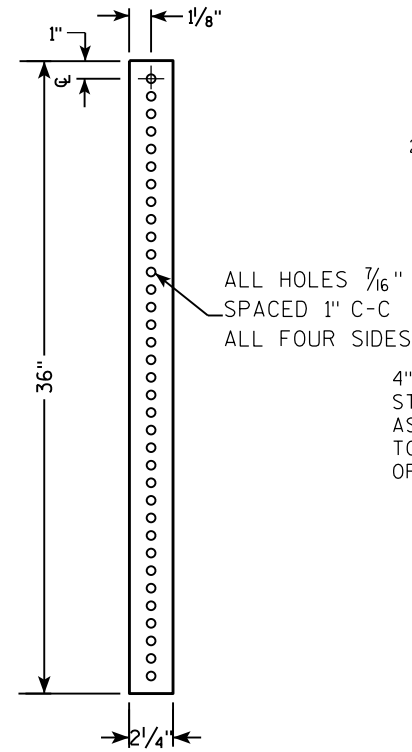
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

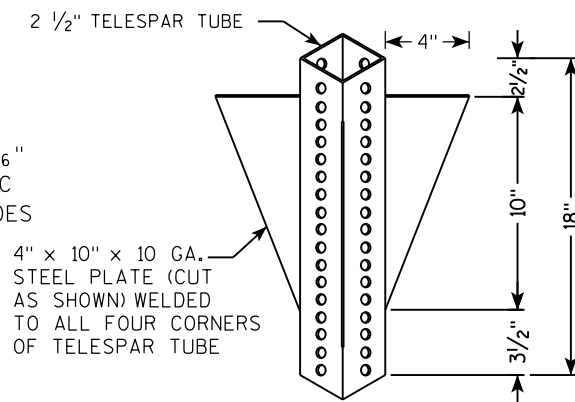
DATE 4/1/2020 PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

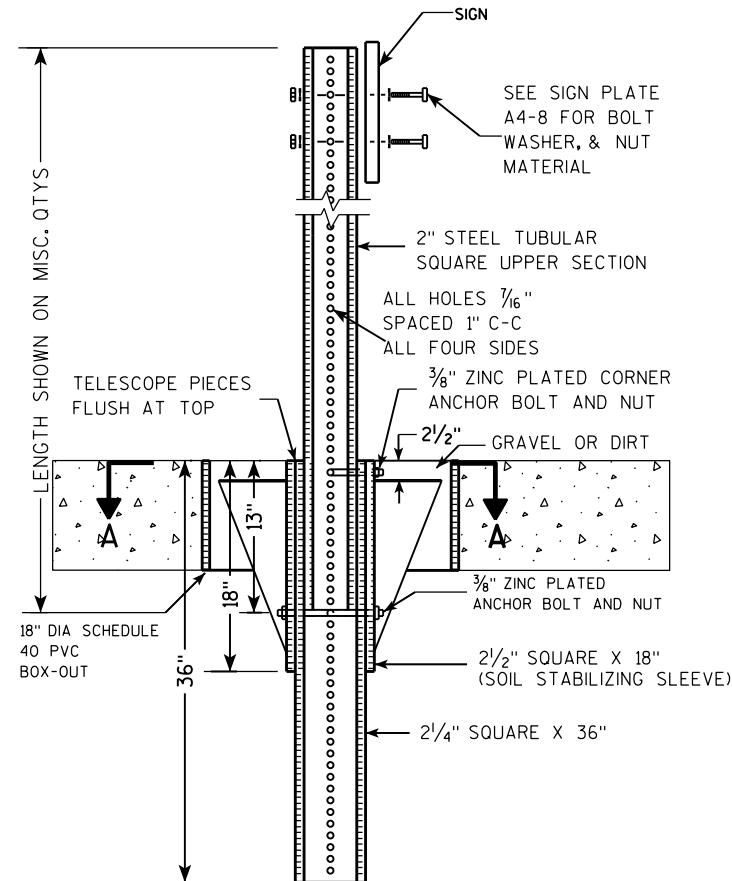
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



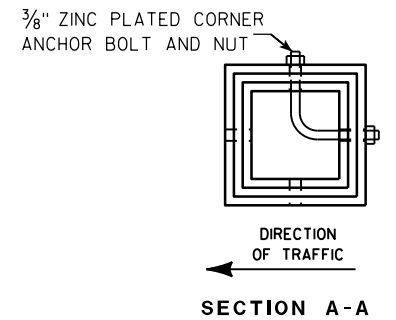
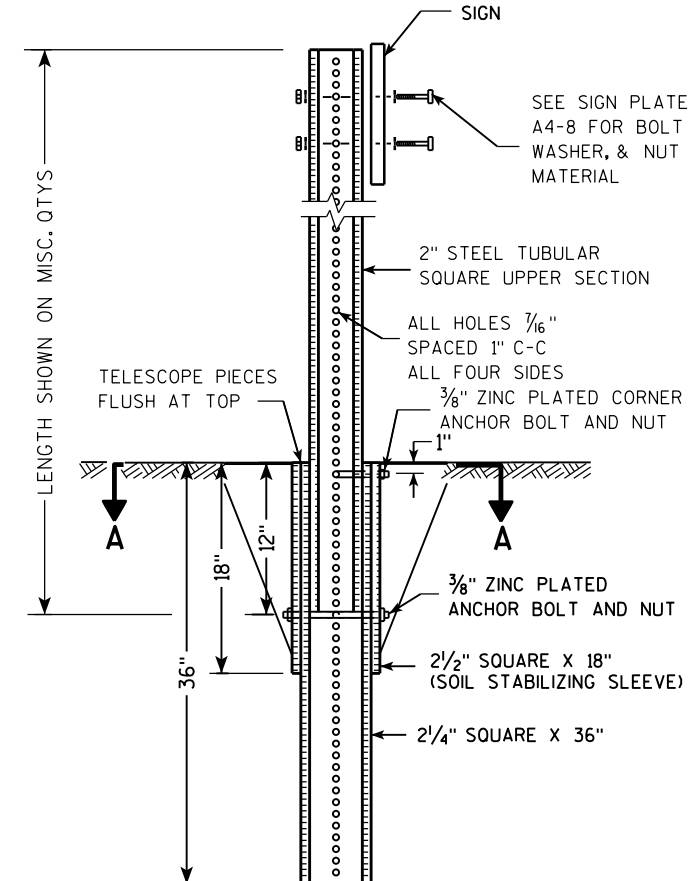
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



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



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



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

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

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

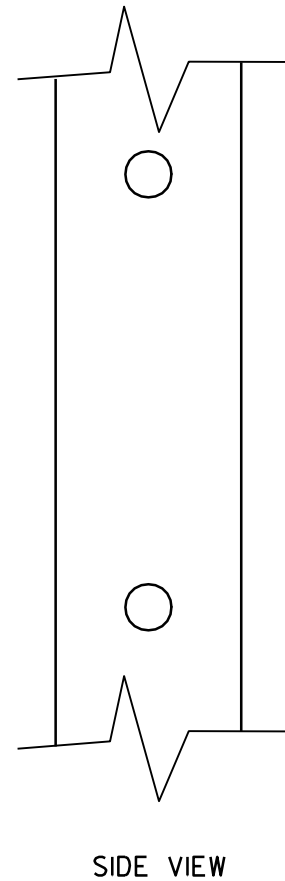
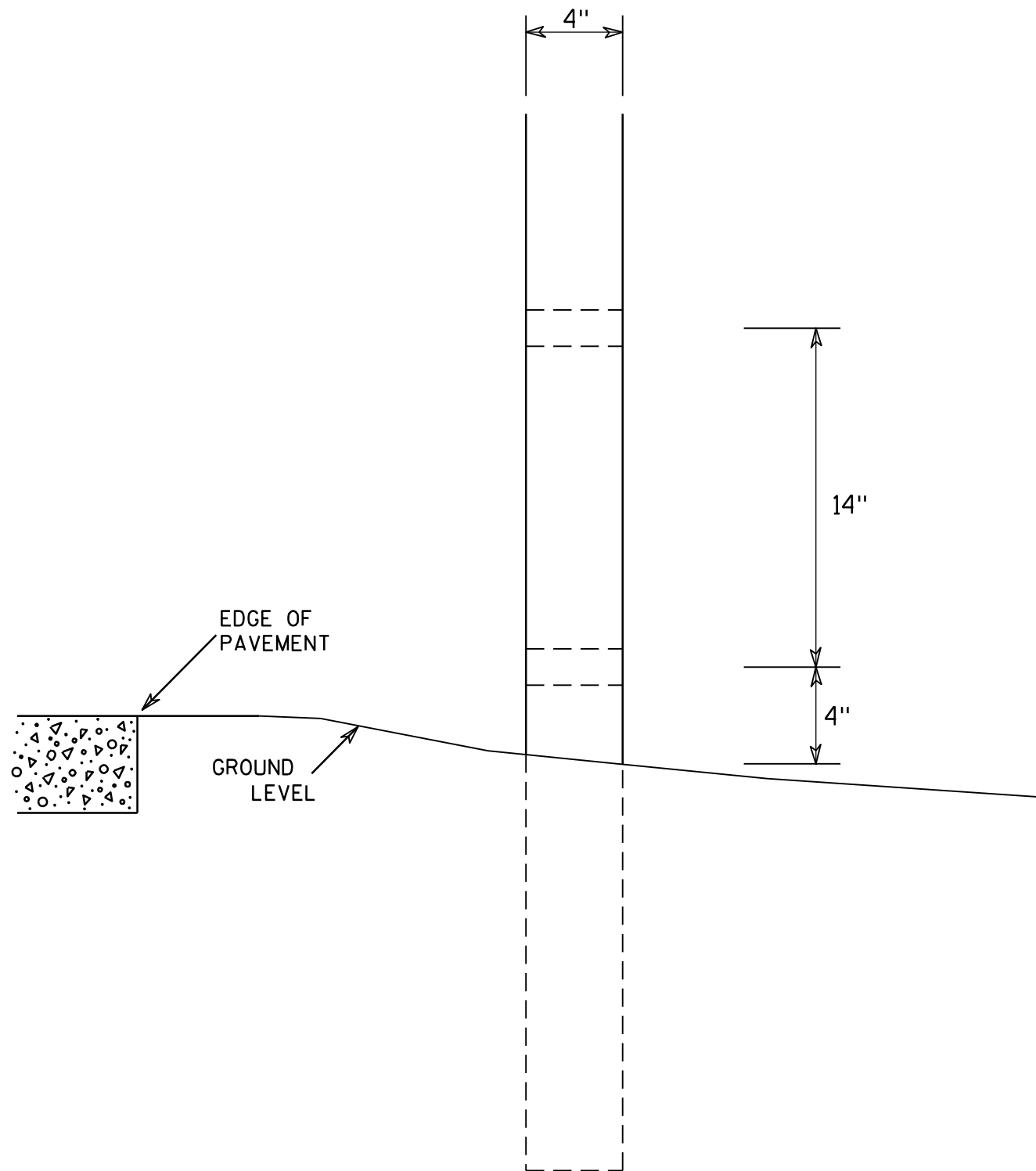
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



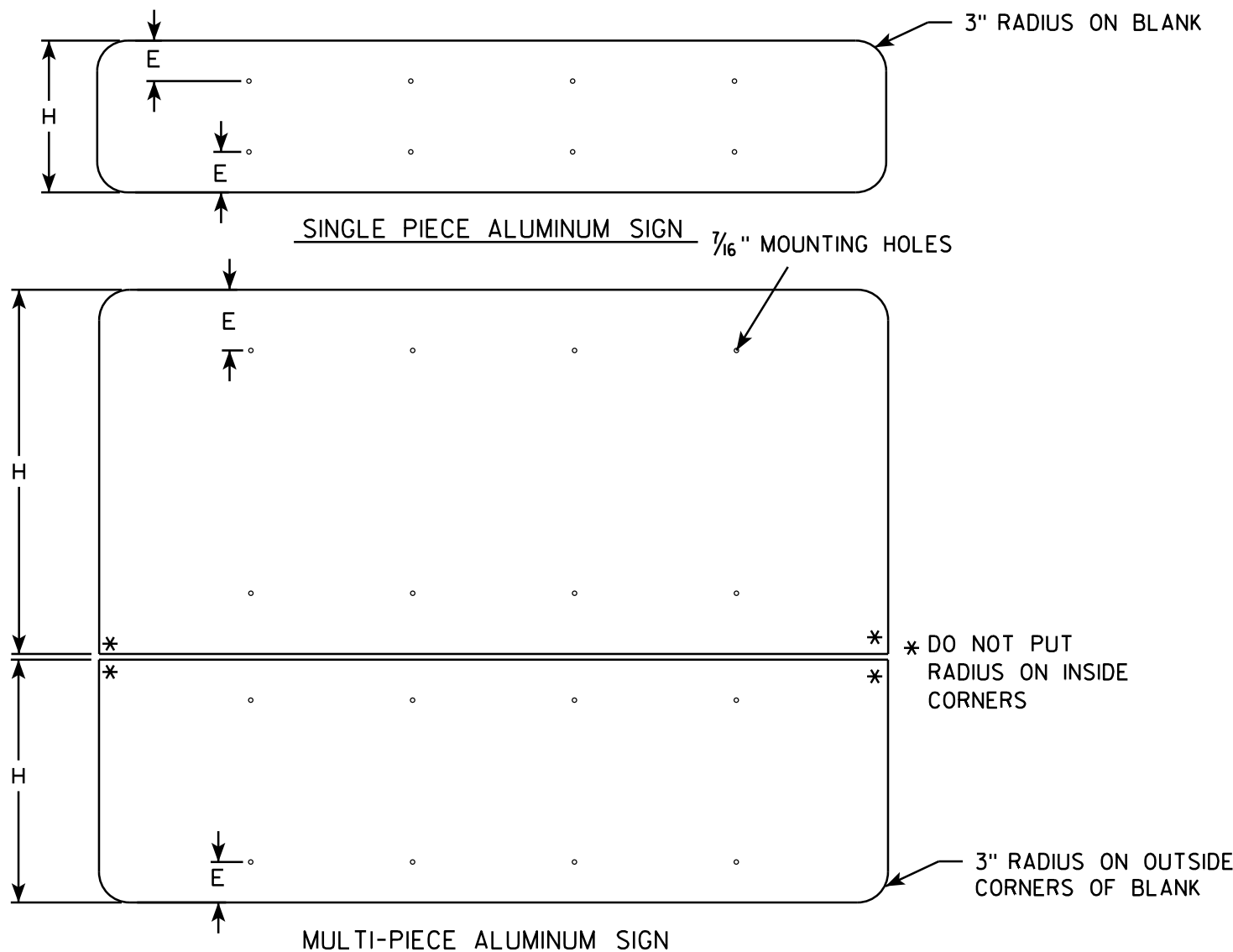
GENERAL NOTES

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

7

7

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



GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

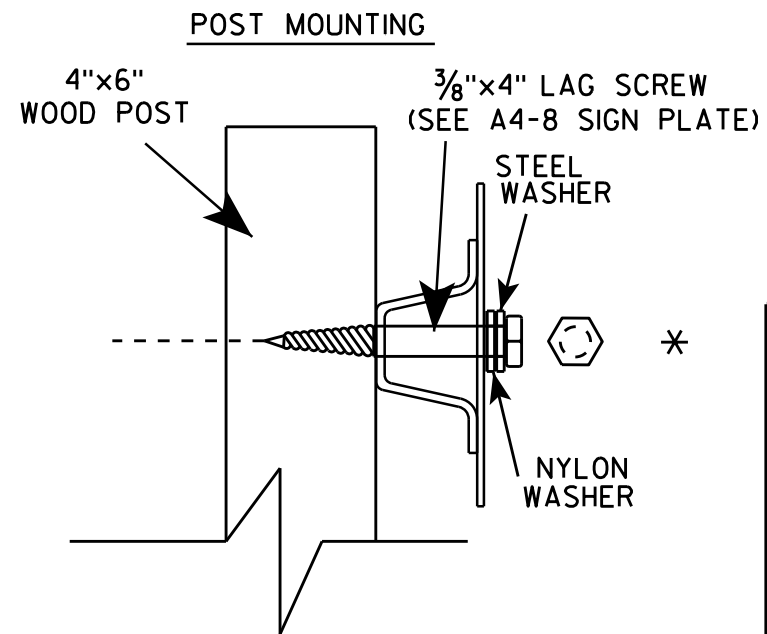
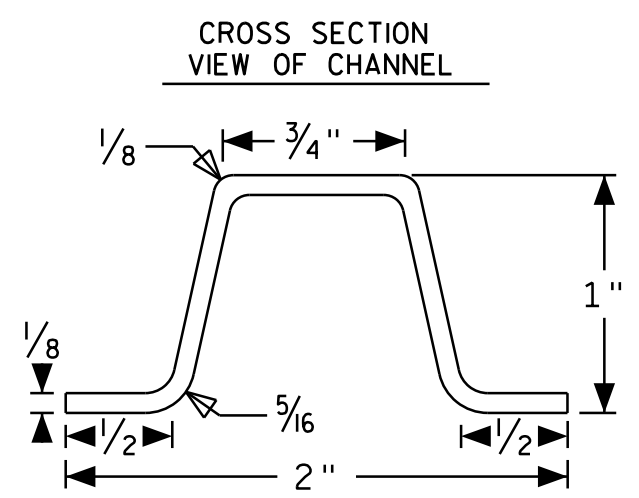
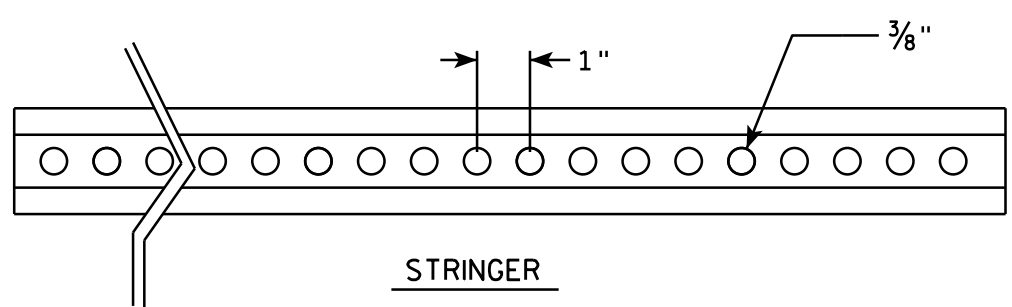
SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES
78"	72"	2	16"	15" 31" 47" 63"
84"	72"	2	17"	16 1/2" 33 1/2" 50 1/2" 67 1/2"
90"	72"	2	18"	18" 36" 54" 72"
96"	90"	2	19"	19 1/2" 38 1/2" 57 1/2" 76 1/2"
102"	90"	2	20"	21" 41" 61" 81"
108"	90"	2	21"	22 1/2" 43 1/2" 64 1/2" 85 1/2"
114"	108"	3	15"	12" 27" 42" 57" 72" 87" 102"
120"	108"	3	16"	12" 28" 44" 60" 76" 92" 108"
126"	108"	3	17"	12" 29" 46" 63" 80" 97" 114"
132"	126"	3	18"	12" 30" 48" 66" 84" 102" 120"
138"	126"	3	19"	12" 31" 50" 69" 88" 107" 126"
144"	126"	3	20"	12" 32" 52" 72" 92" 112" 132"

* DO NOT PUT RADIUS ON INSIDE CORNERS

3" RADIUS ON OUTSIDE CORNERS OF BLANK

7

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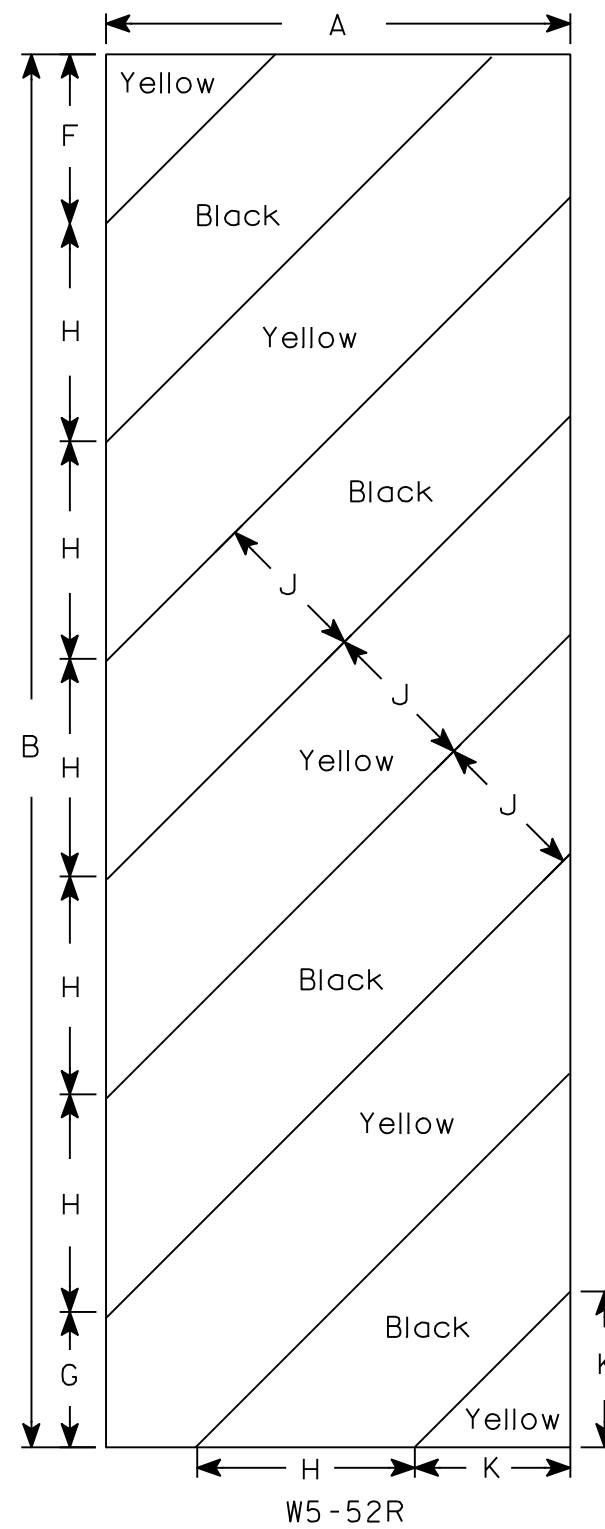
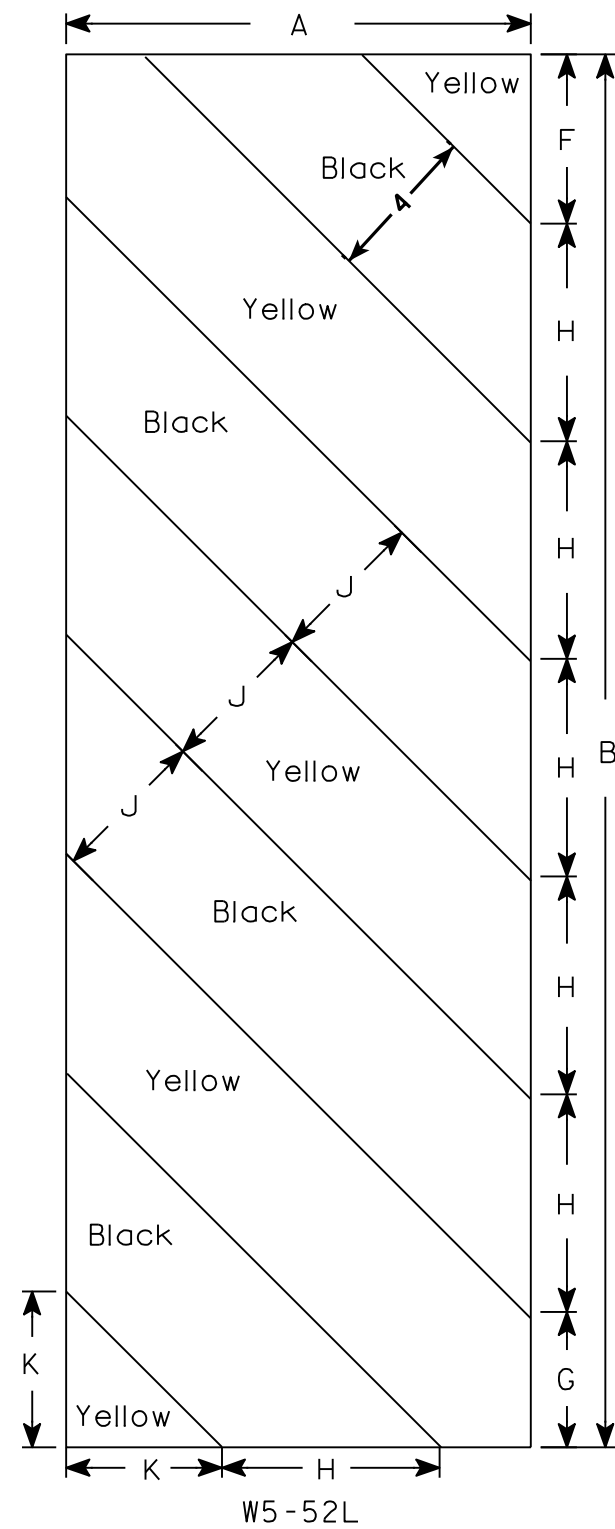


SIGN STRINGER MOUNTING REQUIREMENTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE NO. A4-18.1



NOTES

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

7

7

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

STANDARD SIGN
W5-52L & W5-52R

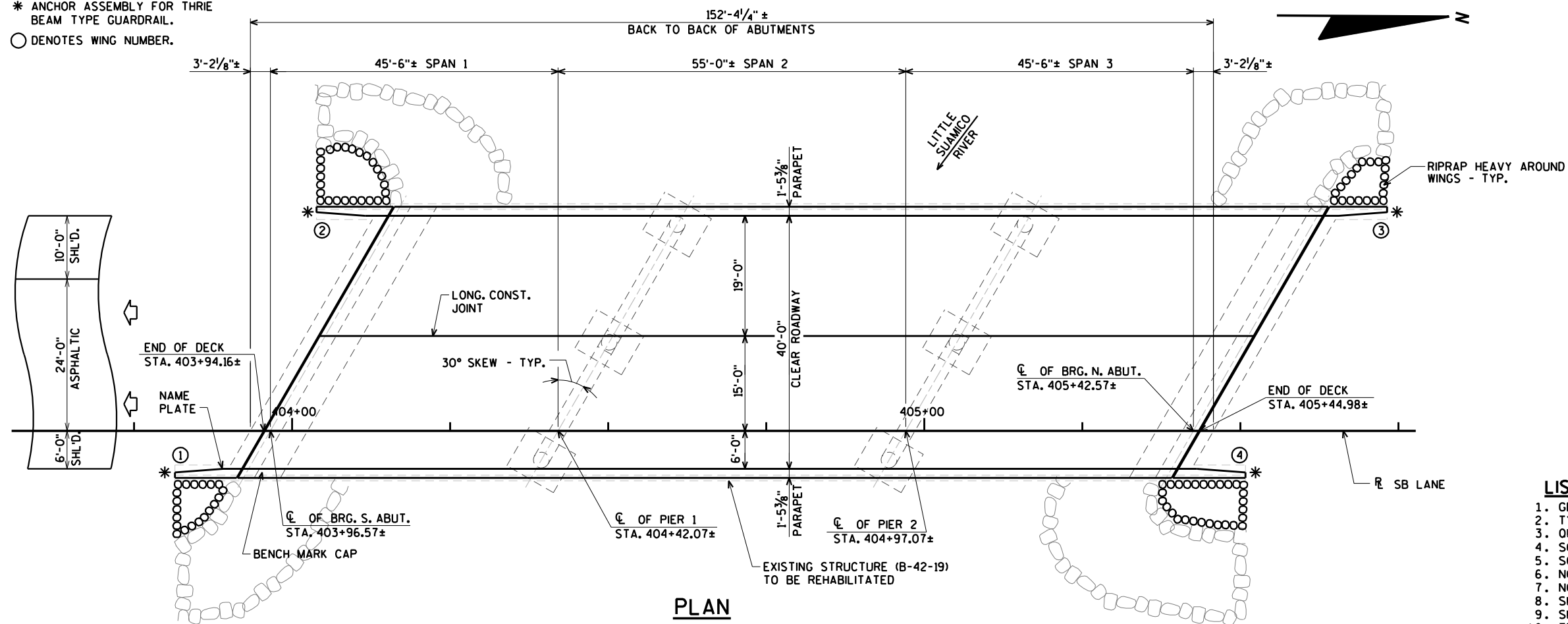
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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

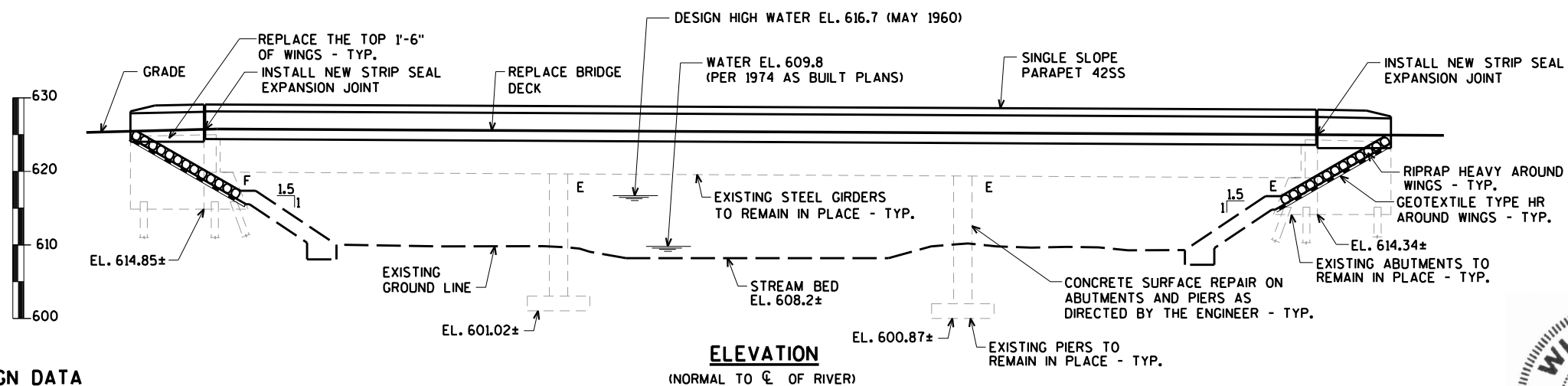
* ANCHOR ASSEMBLY FOR THREE BEAM TYPE GUARDRAIL.
○ DENOTES WING NUMBER.



PLAN
THREE-SPAN STEEL GIRDER BRIDGE
DECK REPLACEMENT

LIST OF DRAWINGS

1. GENERAL PLAN
2. TYPICAL SECTION & CONSTRUCTION STAGING
3. QUANTITIES AND NOTES
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT WING DETAILS & BILL OF BARS
6. NORTH ABUTMENT
7. NORTH ABUTMENT WING DETAILS & BILL OF BARS
8. SUPERSTRUCTURE
9. SUPERSTRUCTURE PLAN
10. TRANSVERSE DECK STEEL LAYOUT
11. BAR COUPLER DETAILS
12. SUPERSTRUCTURE BILL OF BARS AND DETAILS
13. DECK ELEVATIONS
14. TABLE OF DEFLECTIONS
15. STRIP SEAL EXPANSION DEVICE
16. COVER PLATE DETAILS
17. SINGLE SLOPE PARAPET 42SS



ELEVATION
(NORMAL TO C OF RIVER)

FOR TYPICAL SECTION
SEE SHEET 2
FOR GENERAL NOTES AND
QUANTITIES SEE SHEET 3

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HS-20
INVENTORY RATING: HS-21
OPERATING RATING: HS-28
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 240 KIPS
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:

CONCRETE MASONRY	{ SUPERSTRUCTURE	f _c =	4,000 p.s.i.
	{ ALL OTHER	f _c =	3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60)		f _y =	60,000 p.s.i.

TRAFFIC DATA:

A.A.D.T. = 31,630 (2023)
A.A.D.T. = 37,200 (2043)
R.D.S. = 70 M.P.H.



06/15/2022

BRIDGE OFFICE CONTACT:
AARON BONK
(608)-261-0261
CONSULTANT CONTACT:
ARLEN BEAUDETTE
(715)-834-3161

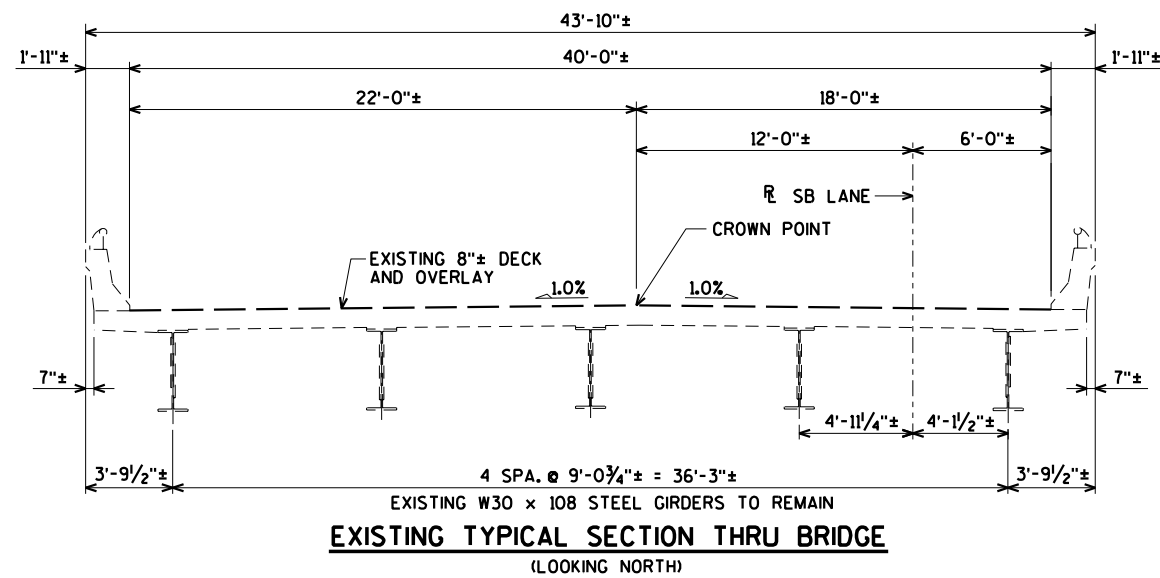
NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED		EMK	06/15/22
CHIEF STRUCTURES DESIGN ENGINEER			DATE
STRUCTURE B-42-19			
USH 41 & 141 SB OVER LITTLE SUAMICO RIVER			
COUNTY	OCONTO	TOWN/CITY/VILLAGE	LITTLE SUAMICO
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	JCK	DESIGN CK'D.	FH
DRAWN BY	CLP	PLANS CK'D.	AEB
GENERAL PLAN			SHEET 1 OF 17

3/16/2022
PENTABLE:BRReou_shd_uhll.tbl

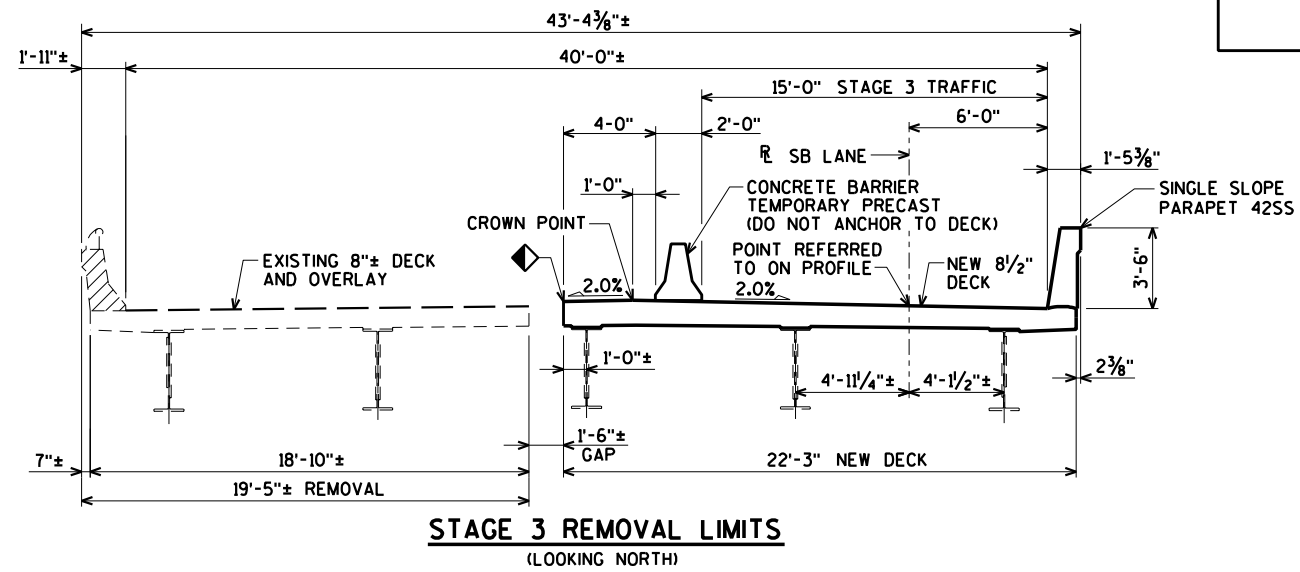
DATE:
DATE:
CHECKED BY:
BACK CHECKED BY:
CORRECTED BY:

8

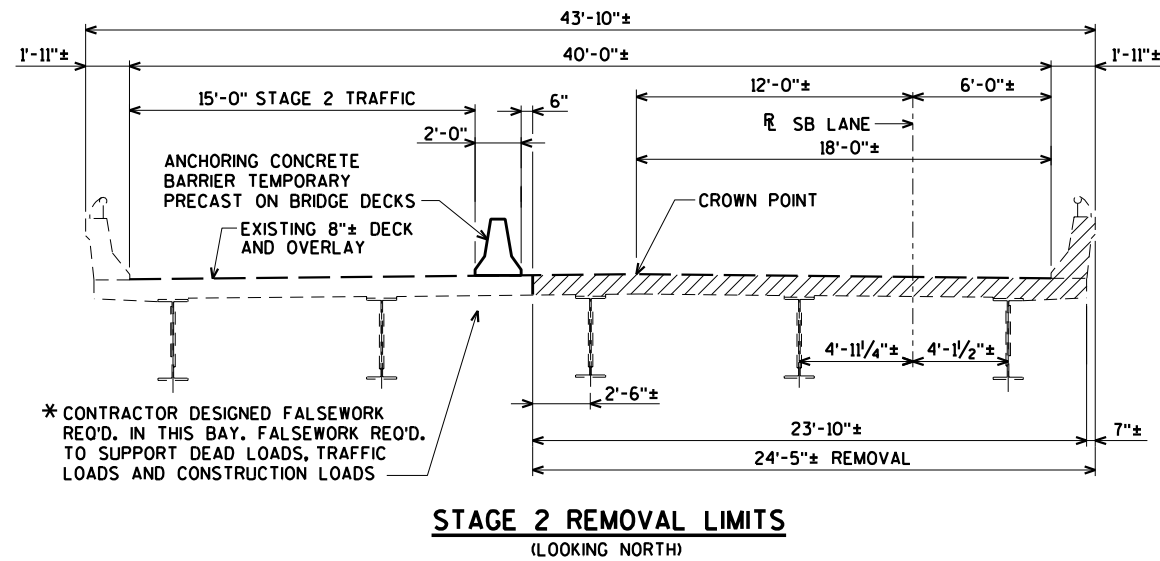
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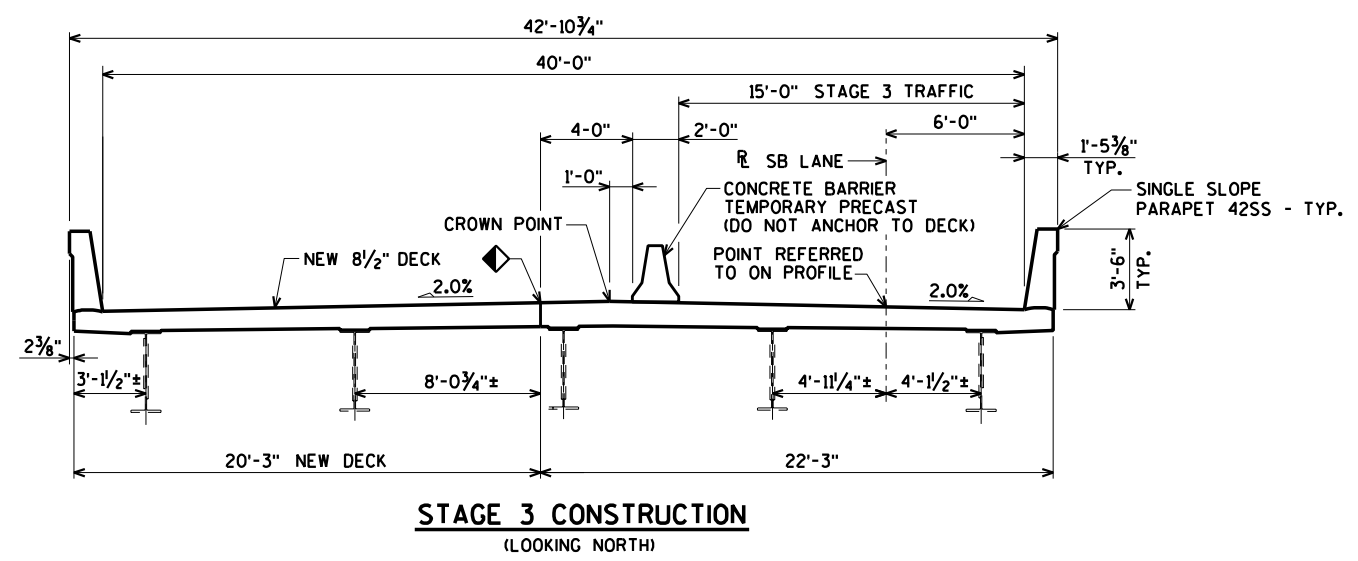
EXISTING TYPICAL SECTION THRU BRIDGE
(LOOKING NORTH)



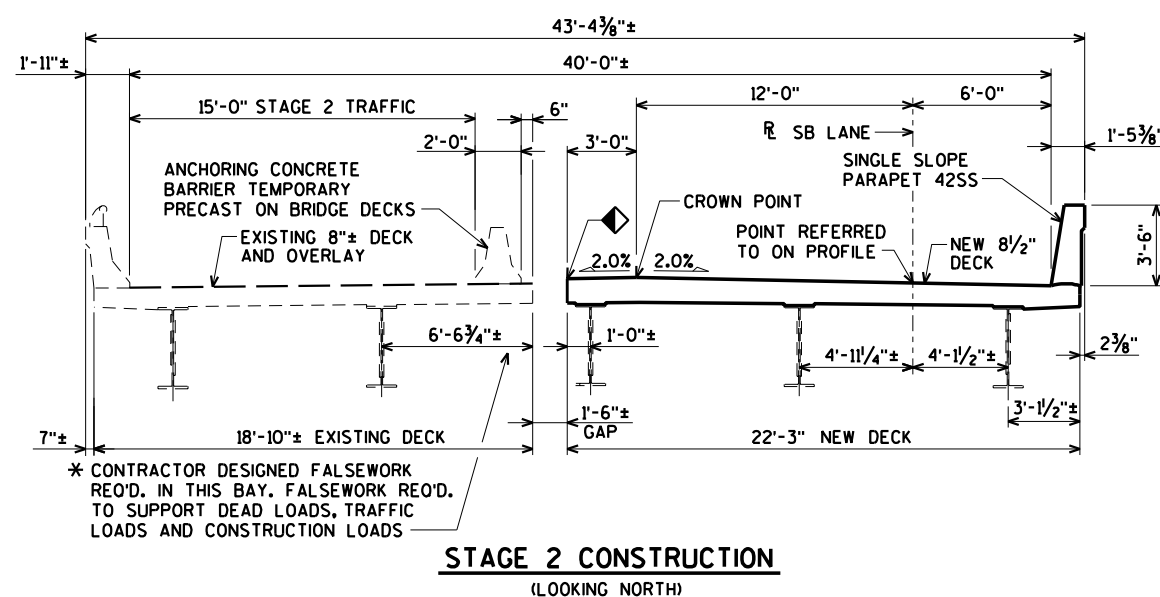
STAGE 3 REMOVAL LIMITS
(LOOKING NORTH)



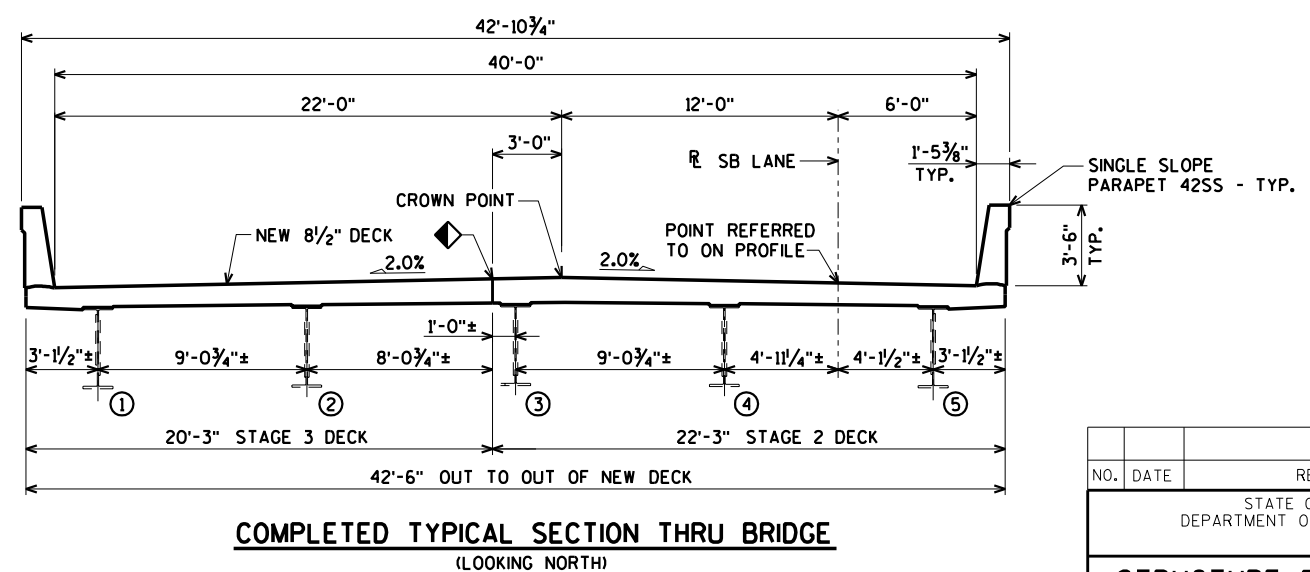
STAGE 2 REMOVAL LIMITS
(LOOKING NORTH)



STAGE 3 CONSTRUCTION
(LOOKING NORTH)



STAGE 2 CONSTRUCTION
(LOOKING NORTH)



COMPLETED TYPICAL SECTION THRU BRIDGE
(LOOKING NORTH)

* ALL MATERIAL IN THE CONTRACTOR DESIGNED FALSEWORK SHALL BE PAID AT THE UNIT PRICE BID FOR "TEMPORARY SUPPORT B-42-19", LS.

◊ LONG. CONST. JOINT

ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
DRAWN BY	CLP	PLANS CK'D.	CBM
TYPICAL SECTION & CONSTRUCTION STAGING			SHEET 2 OF 17

3/24/2022 PENTABLE:BRReou_shd_util.tbl

8

8

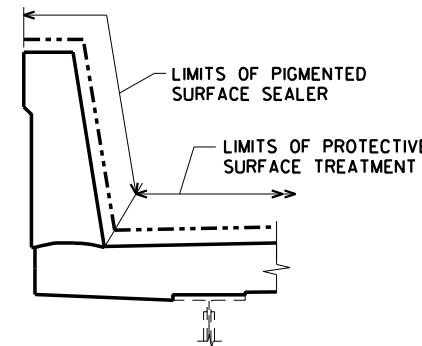
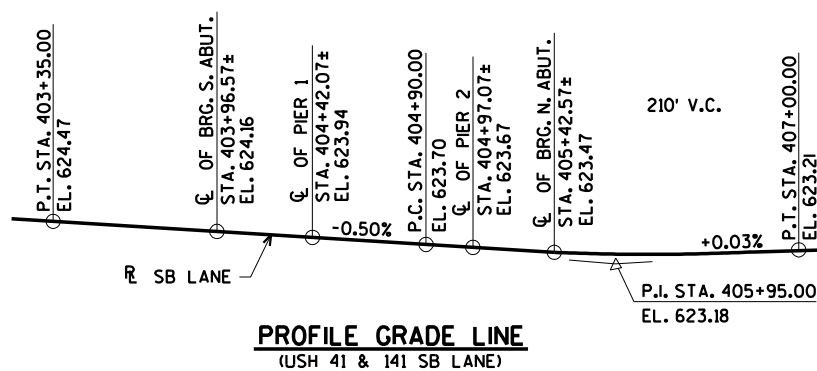
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER.	TOTAL
203.0270	REMOVING STRUCTURE OVER WATERWAY DEBRIS CAPTURE B-42-19	EACH	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-42-19	LS	-----	-----	-----	1
502.0100	CONCRETE MASONRY BRIDGES	CY	7.4	6.7	234.8	250
502.3101	EXPANSION DEVICE	LF	-----	-----	95	95
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	670	670
502.3210	PIGMENTED SURFACE SEALER	SY	-----	-----	170	170
502.4106	ADHESIVE ANCHORS 3/4-INCH	EACH	-----	-----	-----	5
502.4205	ADHESIVE ANCHORS NO. 5 BARS	EACH	217	217	-----	434
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,740	1,710	52,100	55,550
505.0904	BAR COUPLERS NO. 4	EACH	5	5	-----	10
505.0905	BAR COUPLERS NO. 5	EACH	-----	-----	1,061	1,061
** 509.1500	CONCRETE SURFACE REPAIR	SF	-----	-----	-----	100
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	11	-----	22
517.0901.S	PREPARATION AND COATING OF TOP FLANGES B-42-19	EACH	-----	-----	-----	1
517.3001.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-42-19	EACH	-----	-----	-----	1
517.4001.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-42-19	EACH	-----	-----	-----	1
517.6001.S	PORTABLE DECONTAINMENT FACILITY	EACH	-----	-----	-----	1
606.0300	RIPRAP HEAVY	CY	15	15	-----	30
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	2	-----	4
645.0120	GEOTEXTILE TYPE HR	SY	30	30	-----	60
SPV.0060.01	CLEANING AND PAINTING BEARINGS	EACH	-----	-----	-----	10
SPV.0060.02	TEMPORARY SUPPORT B-42-19	EACH	-----	-----	-----	1
	NON-BID ITEMS					
	FILLER					

** UNDISTRIBUTED AS DIRECTED BY THE ENGINEER FOR REPAIRS AT ABUTMENTS AND PIERS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
 DIMENSIONS ARE BASED ON ORIGINAL STRUCTURE PLANS.
 BAR STEEL SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
 THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.
 ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1" DEEP SAW CUT UNLESS SHOWN OR NOTED OTHERWISE.
 AT ABUTMENTS ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED. MINIMAL BACKFILL WILL BE REQUIRED AND INCLUDED IN THE ROADWAY QUANTITIES.
 VARIATIONS TO THE NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.
 THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW THE ORIGINAL CONSTRUCTION YEAR OF 1973.
 UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.
 THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.
 JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.
 THE MINIMUM CONCRETE HAUNCH SHALL BE 2" FOR DESIGN CALCULATIONS AND THE HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE DEPTH OF 6 1/2", WHICH IS THE MAXIMUM HAUNCH QUANTITY FOR WHICH THE CONTRACTOR WILL BE PAID.
 BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.
 PROTECTIVE SURFACE TREATMENT AND PIGMENTED SURFACE SEALER TO BE APPLIED AS SHOWN IN THE DETAILS ON THIS SHEET.
 THE SLOPE OF THE FILL IN FRONT OF THE WINGWALLS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET.
 ALL EXISTING STRUCTURAL STEEL 5-FEET FROM THE ENDS OF THE BRIDGE SHALL BE PAINTED. THE COLOR OF EPOXY SHALL BE 25240 AND THE URETHANE COATING MATERIAL SHALL MATCH THE COLOR NUMBER SHOWN ON THE PLANS CONFORMING TO AMS STANDARD 595A. ESTIMATED STRUCTURAL STEEL SURFACE AREA = 677 SF.
 THE EXISTING STEEL TUBULAR RAILING AND BRACKETS ARE TO BE SALVAGED. SEE SPECIAL PROVISIONS FOR EXACT DETAILS.



8

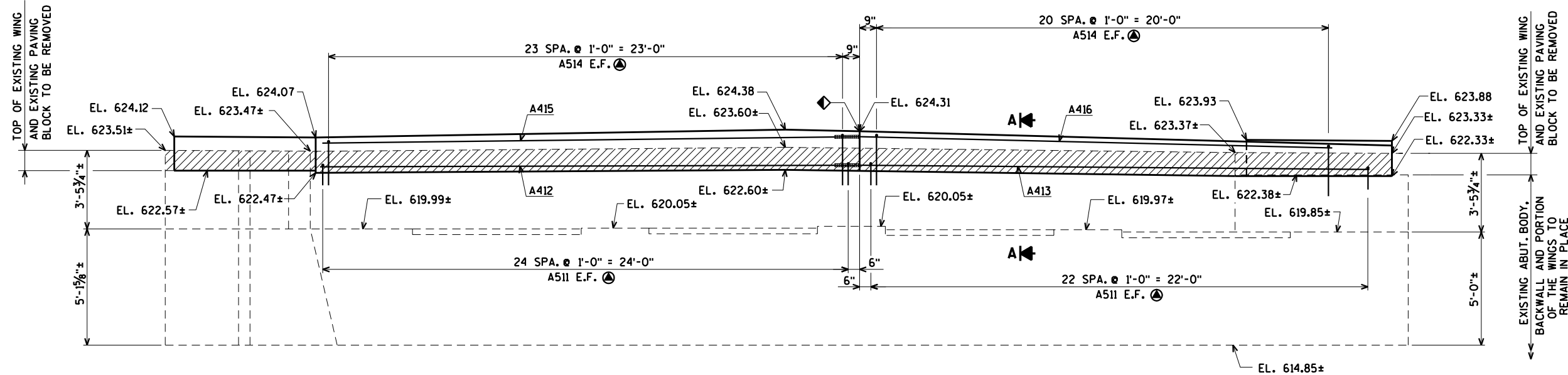
8

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
1000	405+65	WDOT DISK NW PARAPET WALL, 36' LT.	625.56
1001	403+86	SQUARE SE PARAPET WALL, 8' RT.	626.10

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
DRAWN BY		CLP	PLANS CK'D. CBM
QUANTITIES AND NOTES			SHEET 3 OF 17

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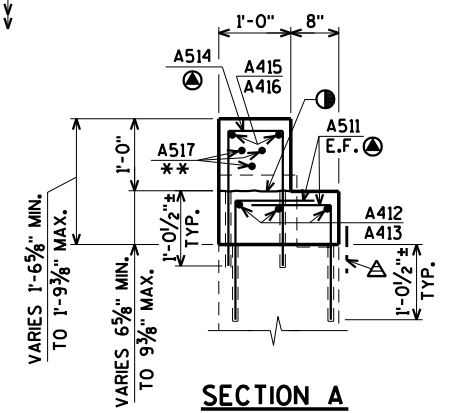
SINGLE SLOPE PARAPET 42SS
NOT SHOWN. FOR DETAILS
SEE SHEET 17



ELEVATION
(LOOKING SOUTH)

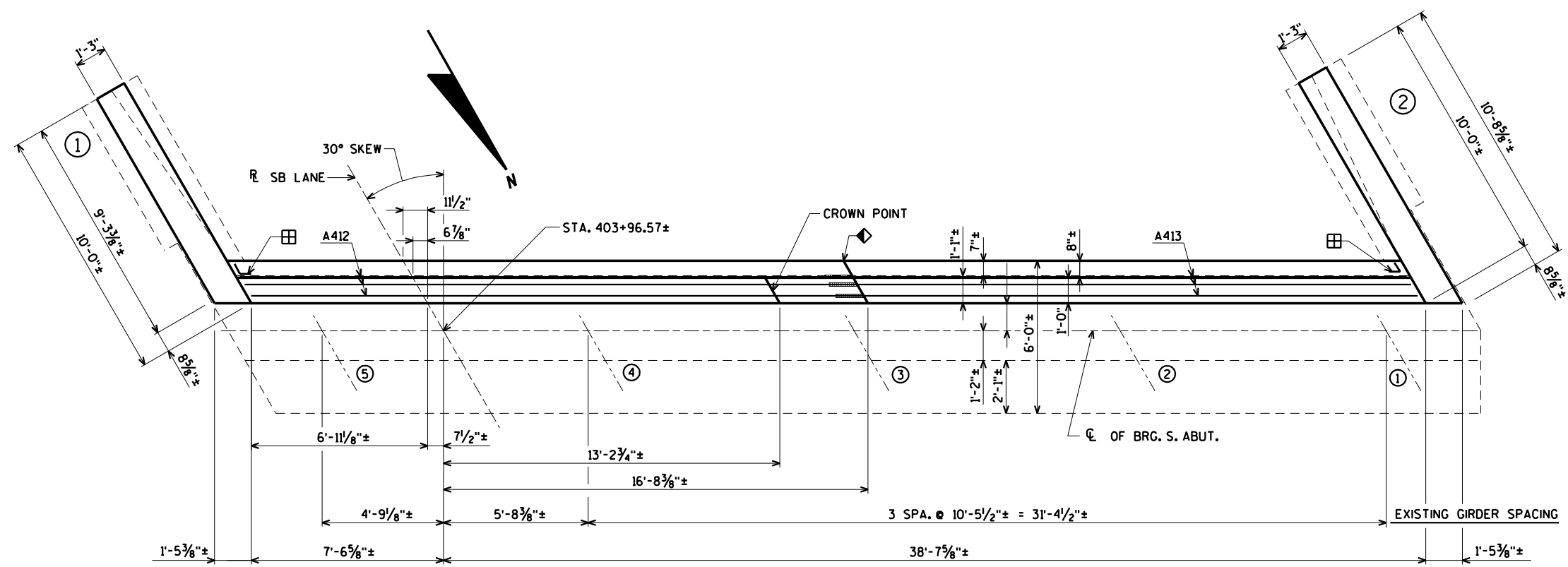
TOP OF EXISTING WING
AND EXISTING PAVING
BLOCK TO BE REMOVED

EXISTING ABUT. BODY,
BACKWALL AND PORTION
OF THE WINGS TO
REMAIN IN PLACE



SECTION A

- ** A517 HORIZ. PAVING BLOCK REINF. 8'-0" LONG WITH 1'-0" MIN. LAP
- ▲ RUBBERIZED MEMBRANE WATERPROOFING
- ① CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- ◆ LONG. CONST. JOINT
- ⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING FROM TOP OF ABUTMENT BACKWALL TO TOP OF WING.
- ⊙ ADHESIVE ANCHORS NO. 5 BAR



PLAN

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8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
DRAWN BY		CLP	PLANS CK'D. CBM
SOUTH ABUTMENT			SHEET 4 OF 17

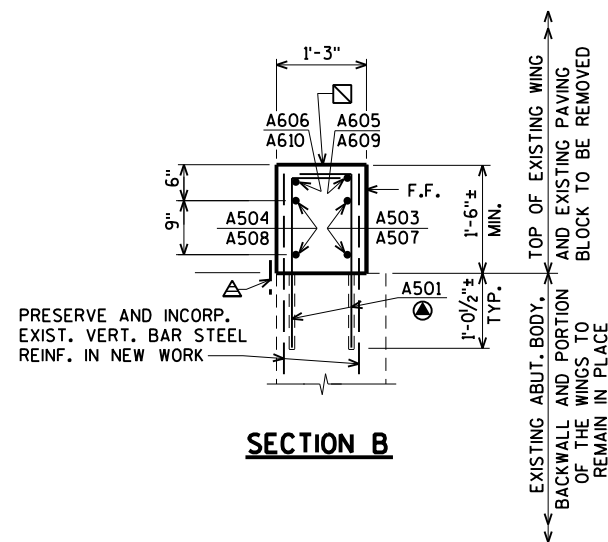
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BILL OF BARS

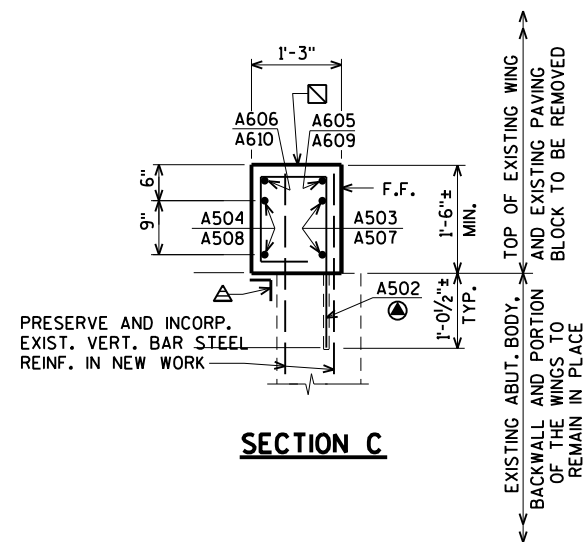
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	1,040# COATED
							LOCATION
A501	X	21	3-0	X			WINGS 1 & 2 VERT. DOWELS E.F.
A502	X	10	4-10	X			WINGS 1 & 2 VERT. DOWELS
A503	X	2	8-11				WING 1 HORIZ. F.F.
A504	X	2	9-6				WING 1 HORIZ. B.F.
A605	X	1	8-11				WING 1 HORIZ. F.F. TOP
A606	X	1	9-6				WING 1 HORIZ. B.F. TOP
A507	X	2	10-2				WING 2 HORIZ. F.F.
A508	X	2	9-8				WING 2 HORIZ. B.F.
A609	X	1	10-2				WING 2 HORIZ. F.F. TOP
A610	X	1	9-8				WING 2 HORIZ. B.F. TOP
A511	X	96	2-7	X			ABUT. BACKWALL VERT. E.F.
A412	X	3	25-3				ABUT. BACKWALL HORIZ. STAGE 2
A413	X	3	22-11				ABUT. BACKWALL HORIZ. STAGE 3
A514	X	45	4-1	X			PAVING BLOCK VERT.
A415	X	2	23-10				PAVING BLOCK HORIZ. STAGE 2
A416	X	2	21-6				PAVING BLOCK HORIZ. STAGE 3
A517	X	21	8-0				PAVING BLOCK HORIZ.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

ADHESIVE ANCHORS NO. 5 BAR



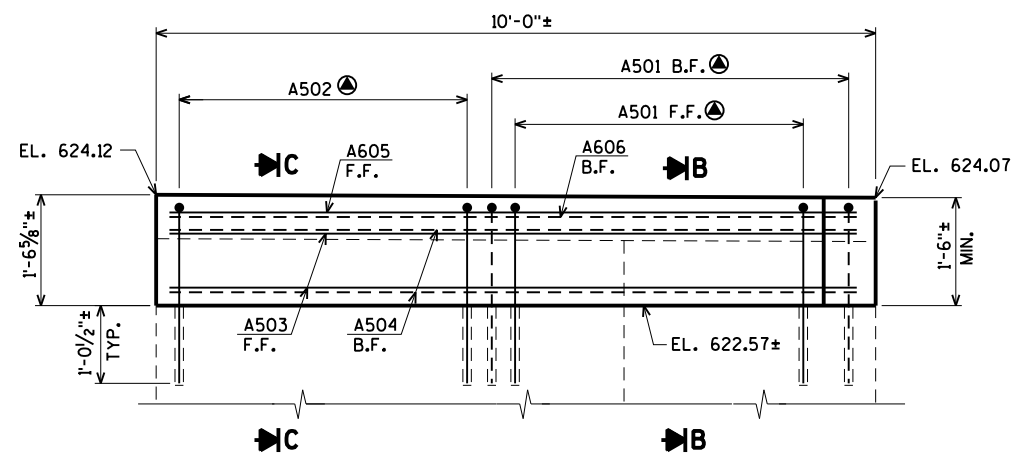
SECTION B



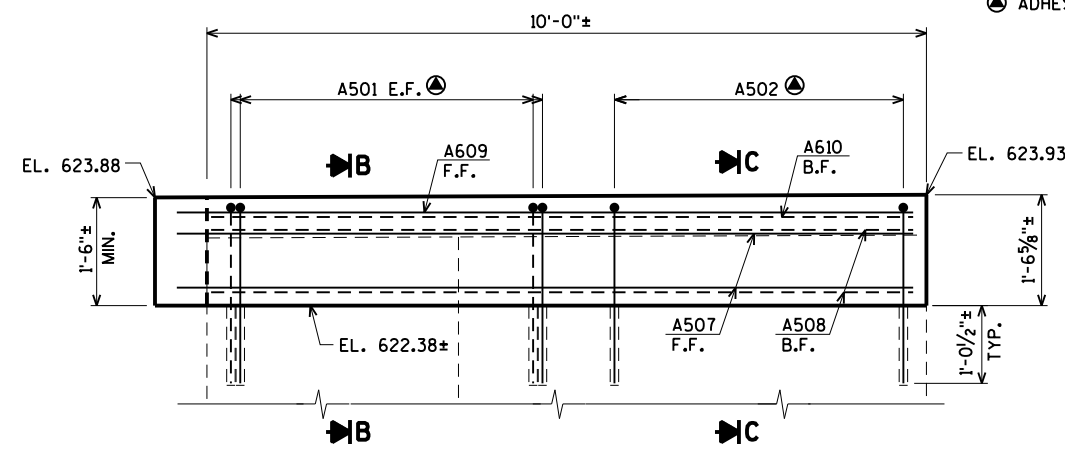
SECTION C

- ☐ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.
- △ 18" RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENT AND WINGS.

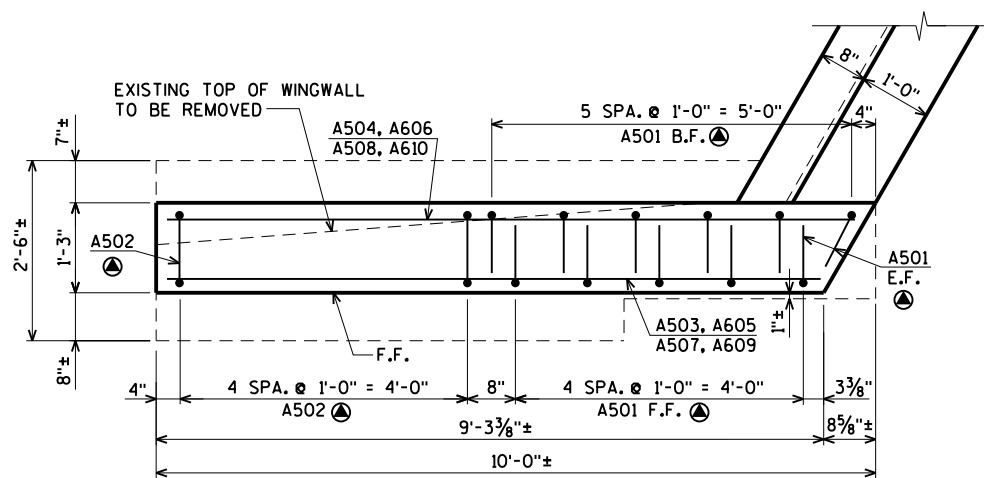
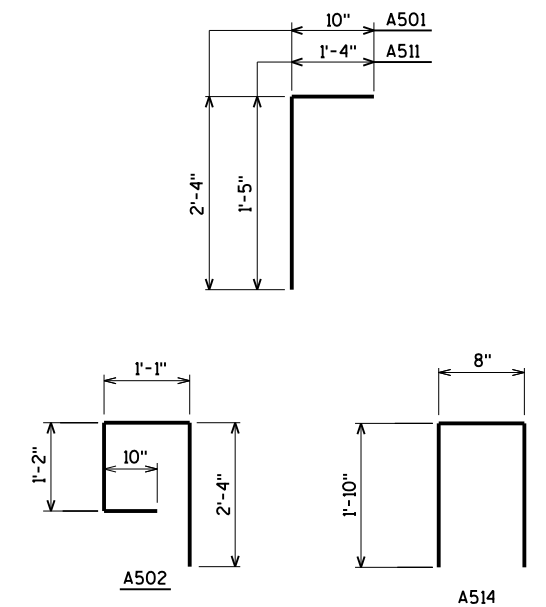
SINGLE SLOPE PARAPET 42SS NOT SHOWN. FOR DETAILS SEE SHEET 17



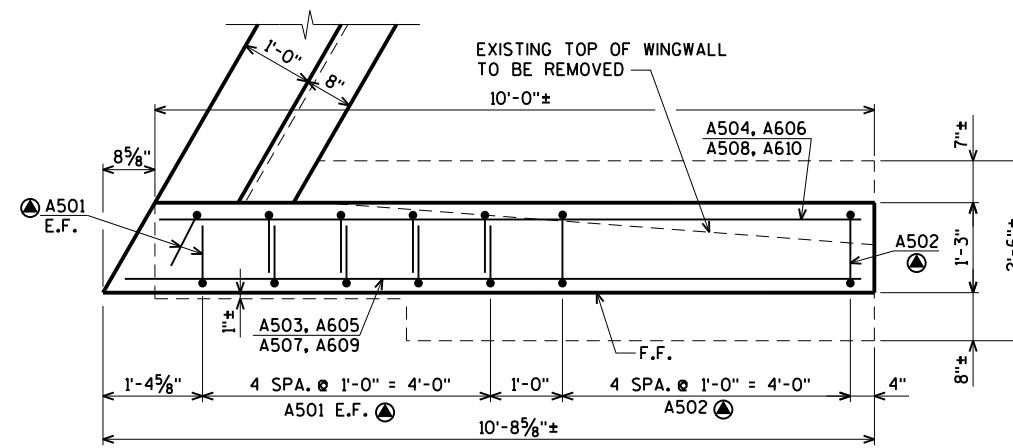
ELEVATION - WING 1



ELEVATION - WING 2



PLAN - WING 1

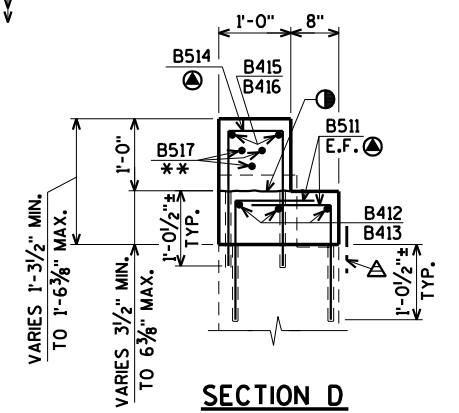
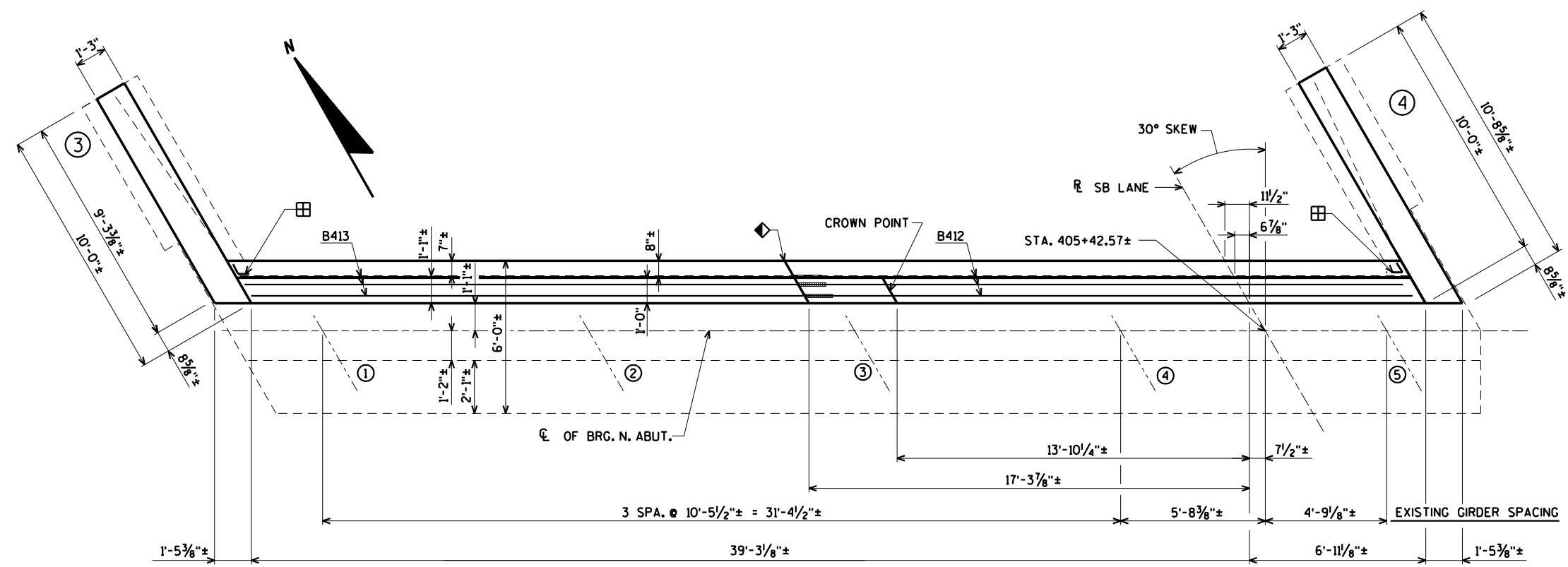
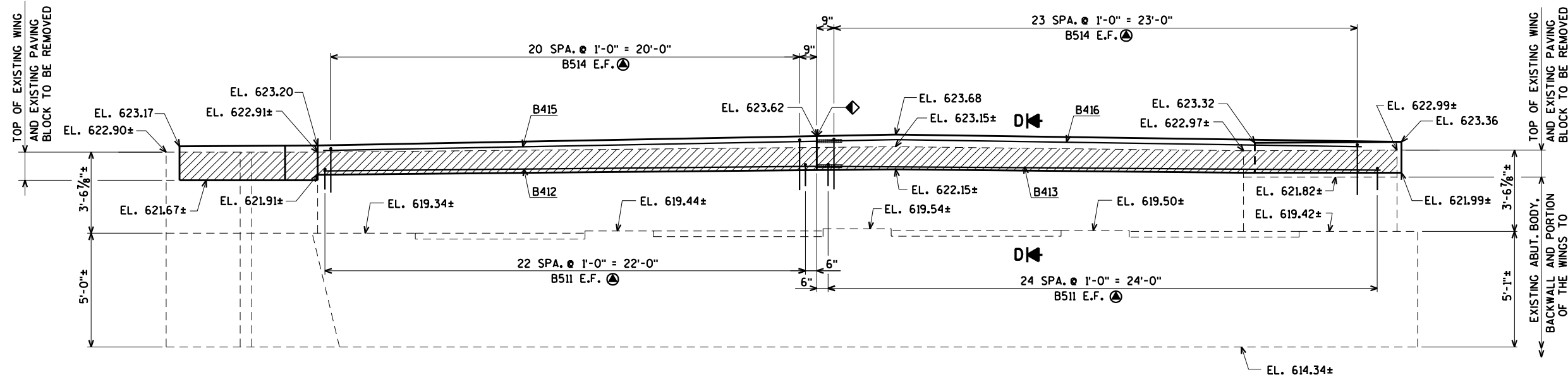


PLAN - WING 2

NO.	DATE	REVISION	BY
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STRUCTURE B-42-19			
DRAWN BY		CLP	PLANS CK'D. CBM
SOUTH ABUTMENT WING DETAILS & BILL OF BARS			SHEET 5 OF 17

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SINGLE SLOPE PARAPET 42SS
NOT SHOWN. FOR DETAILS
SEE SHEET 17



- ** B517 HORIZ. PAVING BLOCK REINF. 8'-0" LONG WITH 1'-0" MIN. LAP
- (A) RUBBERIZED MEMBRANE WATERPROOFING
- (B) CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.
- (C) LONG. CONST. JOINT
- (D) 18" RUBBERIZED MEMBRANE WATERPROOFING FROM TOP OF ABUTMENT BACKWALL TO TOP OF WING.
- (E) ADHESIVE ANCHORS NO. 5 BAR

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
DRAWN BY		CLP	PLANS CK'D. CBM
NORTH ABUTMENT			SHEET 6 OF 17

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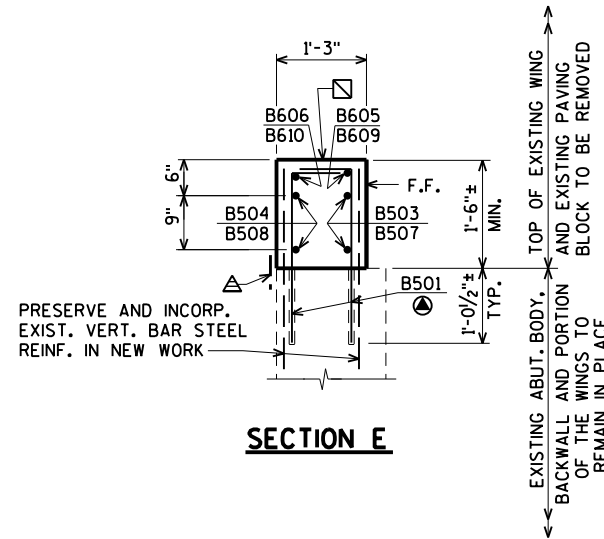
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BILL OF BARS

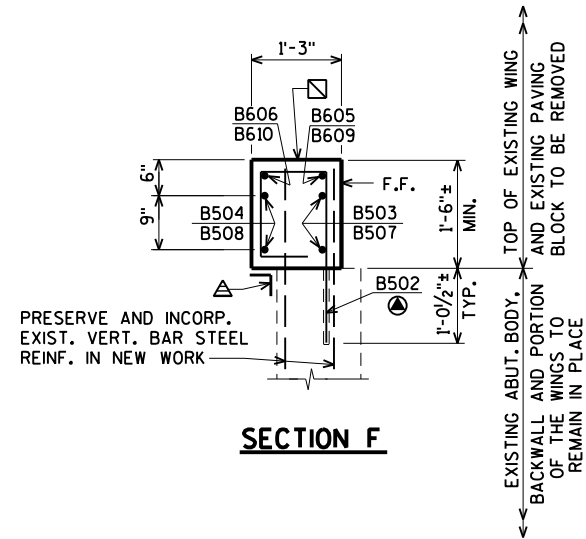
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	1010# COATED
							LOCATION
⊕ B501	X	21	3-0	X			WINGS 3 & 4 VERT. DOWELS E.F.
⊕ B502	X	10	4-10	X			WINGS 3 & 4 VERT. DOWELS
B503	X	2	8-11				WING 3 HORIZ. F.F.
B504	X	2	9-6				WING 3 HORIZ. B.F.
B605	X	1	8-11				WING 3 HORIZ. F.F. TOP
B606	X	1	9-6				WING 3 HORIZ. B.F. TOP
B507	X	2	10-2				WING 4 HORIZ. F.F.
B508	X	2	9-8				WING 4 HORIZ. B.F.
B609	X	1	10-2				WING 4 HORIZ. F.F. TOP
B610	X	1	9-8				WING 4 HORIZ. B.F. TOP
⊕ B511	X	96	2-4	X			ABUT. BACKWALL VERT. E.F.
B412	X	3	25-3				ABUT. BACKWALL HORIZ. STAGE 2
B413	X	3	22-11				ABUT. BACKWALL HORIZ. STAGE 3
⊕ B514	X	45	4-1	X			PAVING BLOCK VERT.
B415	X	2	23-10				PAVING BLOCK HORIZ. STAGE 2
B416	X	2	21-6				PAVING BLOCK HORIZ. STAGE 3
B517	X	21	8-0				PAVING BLOCK HORIZ.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

⊕ ADHESIVE ANCHORS NO. 5 BAR



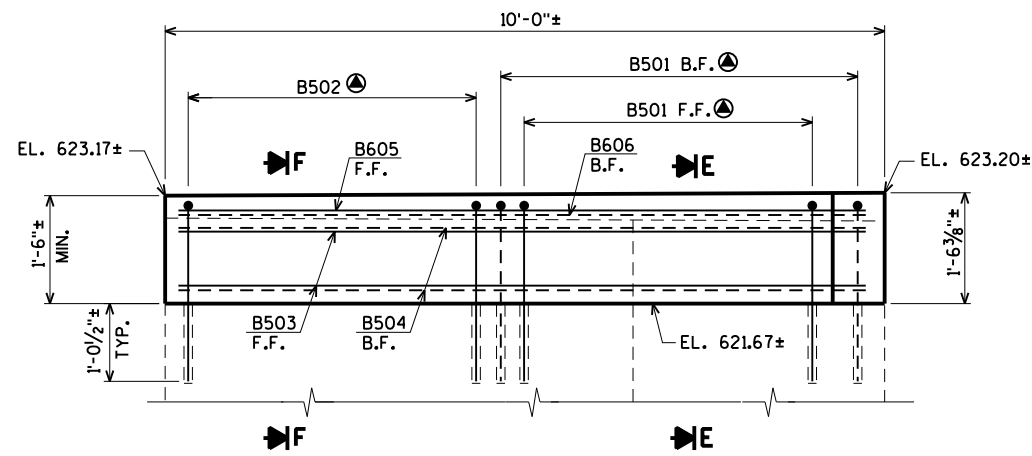
SECTION E



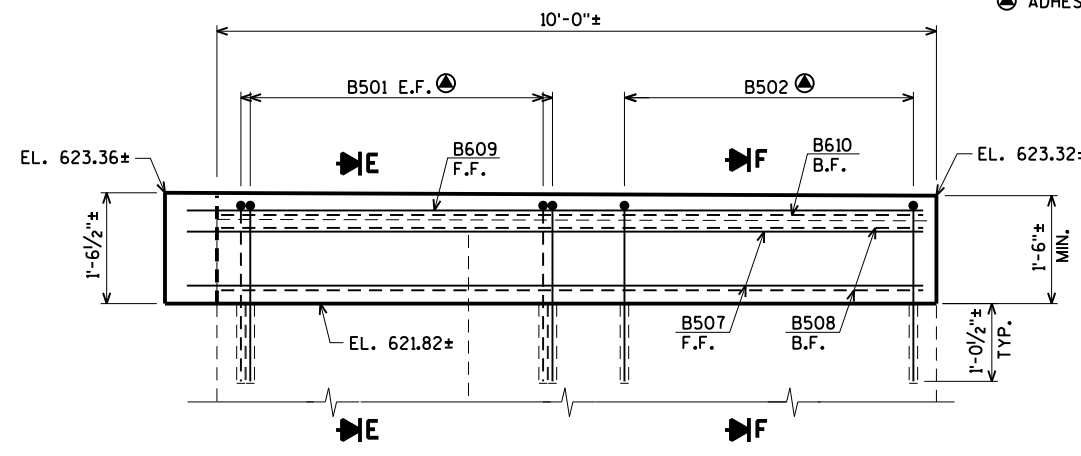
SECTION F

- ⊠ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.
- △ 18" RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENT AND WINGS.

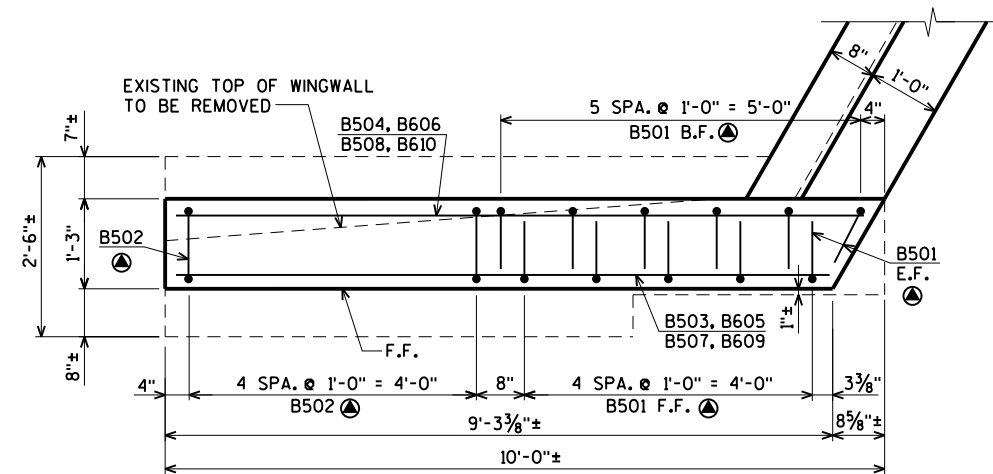
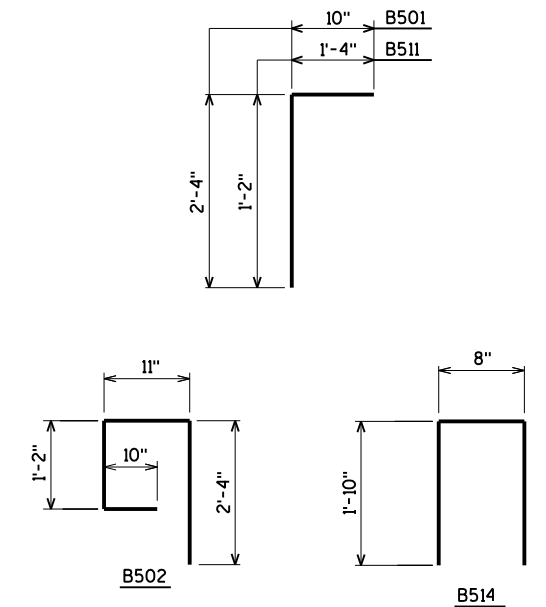
SINGLE SLOPE PARAPET 42SS NOT SHOWN. FOR DETAILS SEE SHEET 17



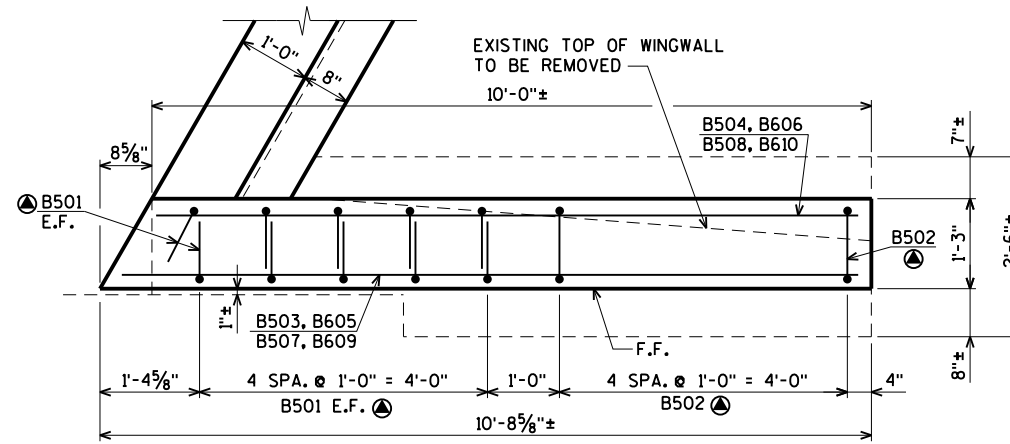
ELEVATION - WING 3



ELEVATION - WING 4



PLAN - WING 3



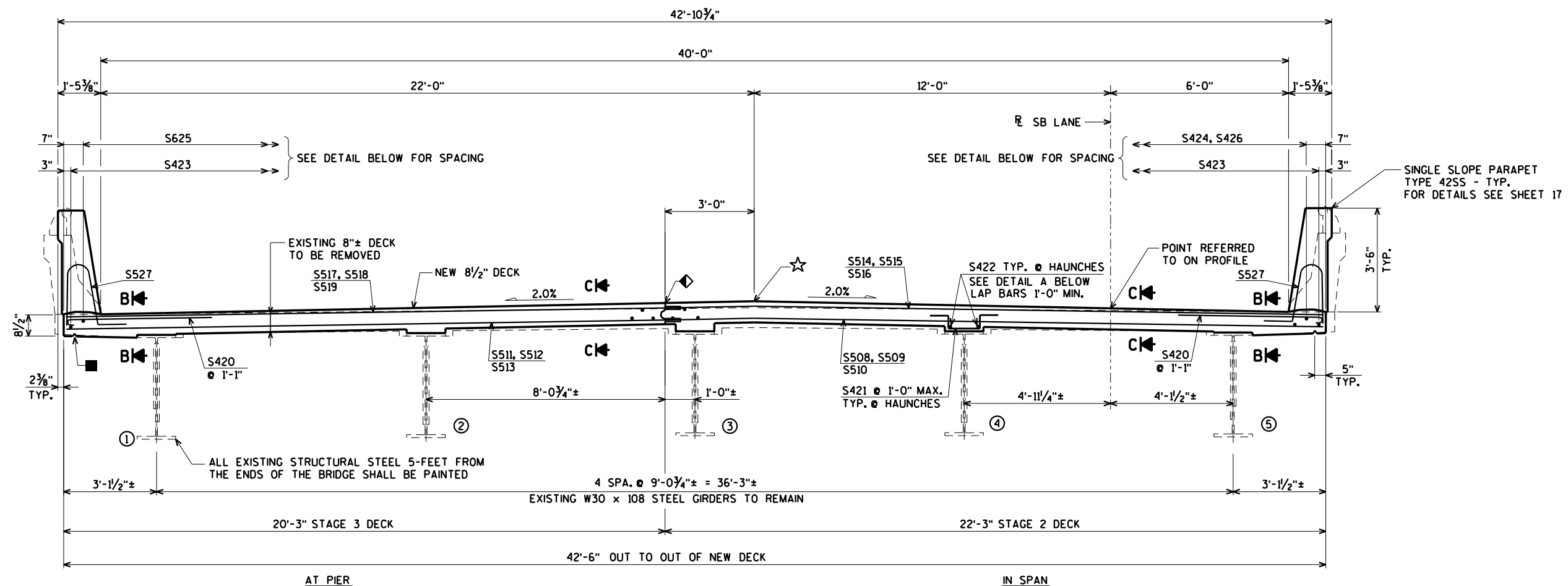
PLAN - WING 4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
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NORTH ABUTMENT WING DETAILS & BILL OF BARS			SHEET 7 OF 17

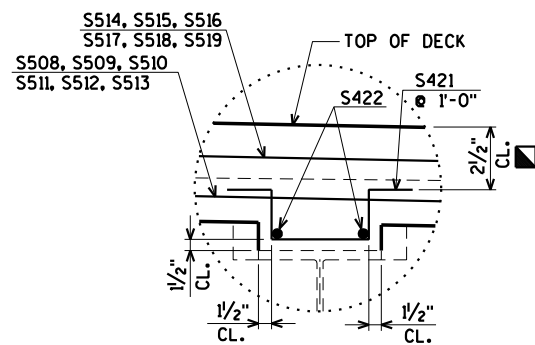
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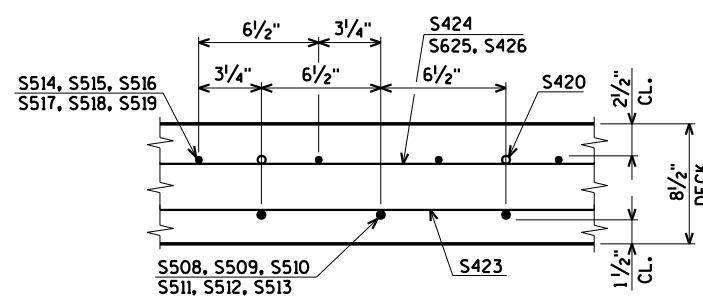


TYPICAL SECTION THRU BRIDGE
(LOOKING NORTH)

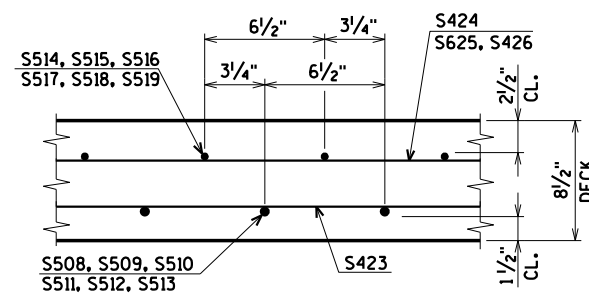


DETAIL A

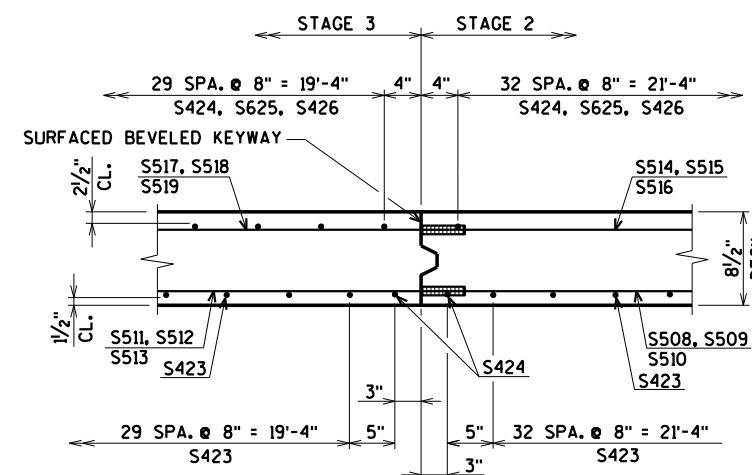
TILT S421 BARS AS REQ'D. TO MAINTAIN 2 1/2\"/>



SECTION B



SECTION C



LONGITUDINAL CONST. JOINT AND BAR COUPLER DETAIL
(LOOKING NORTH)

- ☆ CROWN POINT
- ◆ LONGIT. CONST. JOINT.
- 3/4\"/>

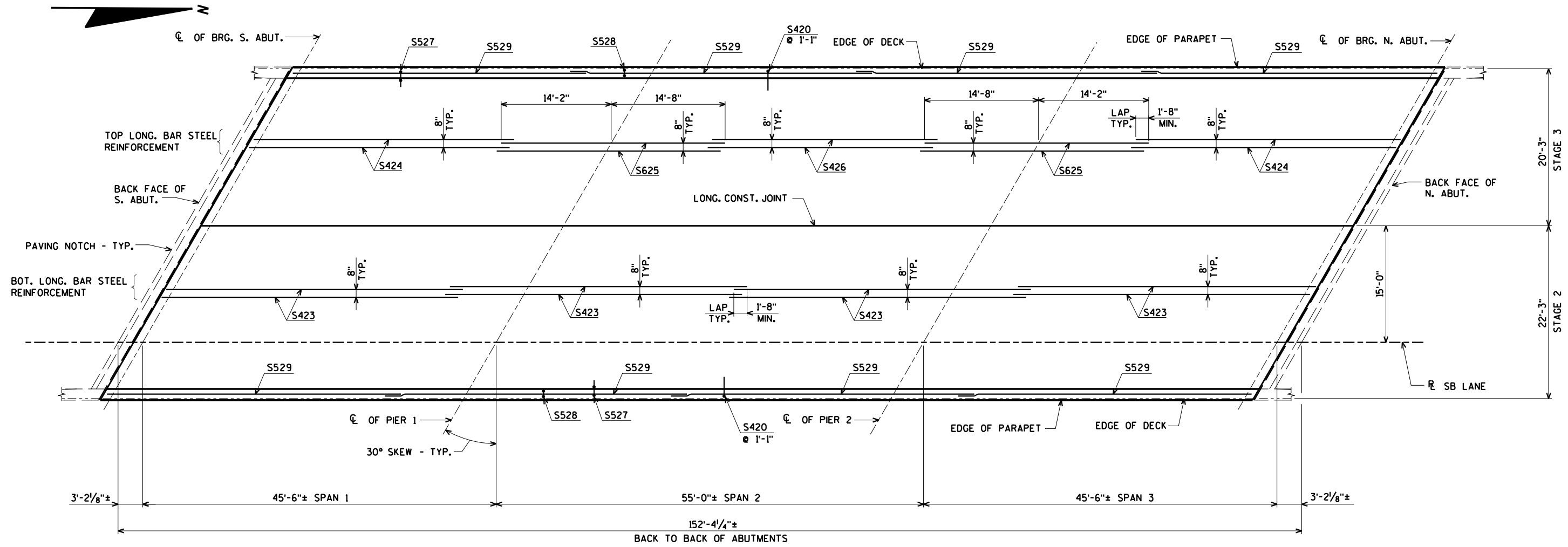
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
DRAWN BY		CLP	PLANS CK'D. CBM
SUPERSTRUCTURE			SHEET 8 OF 17

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PLAN

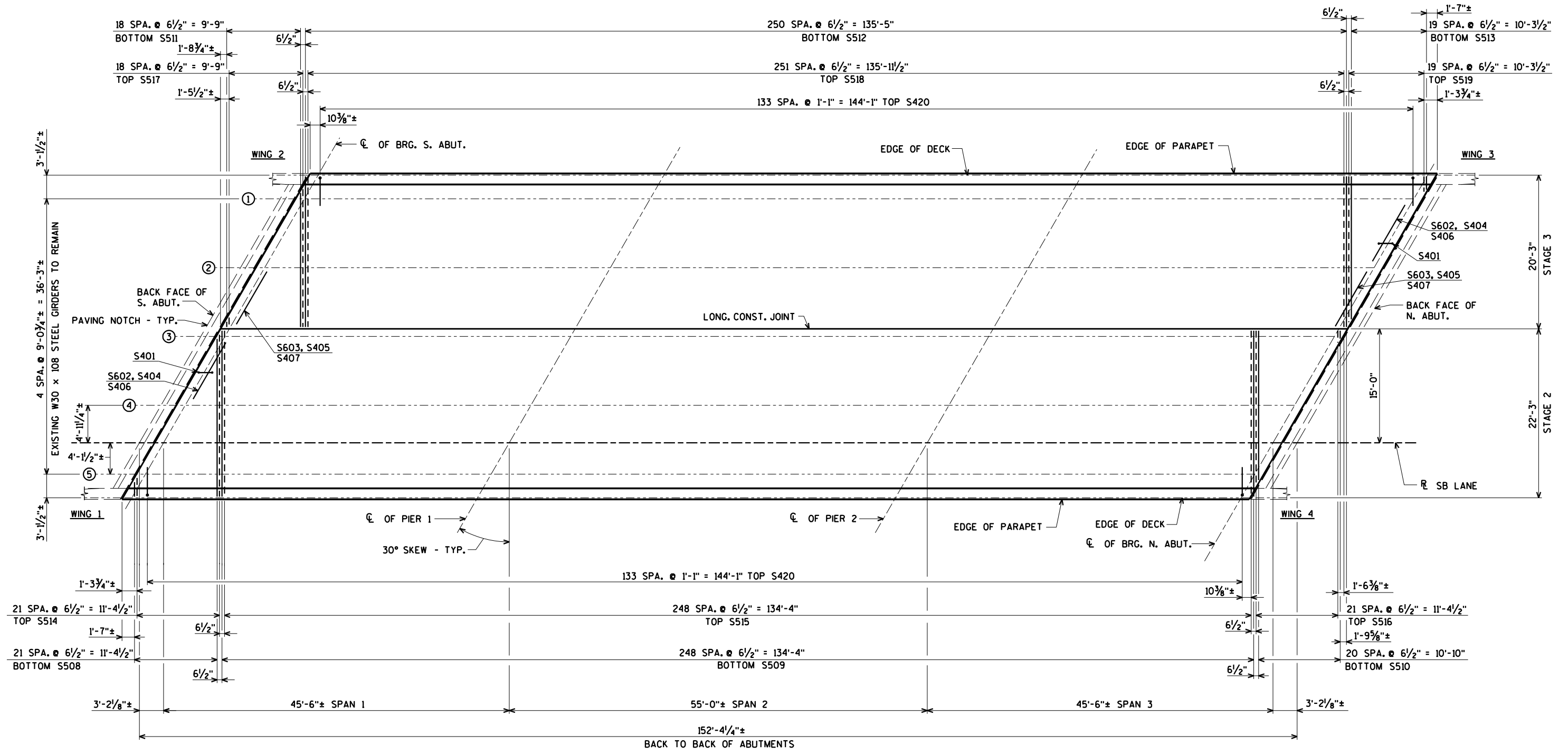
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
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SUPERSTRUCTURE PLAN			SHEET 9 OF 17

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PLAN

BAR COUPLERS FOR DETAILS SEE SHEET 11

NO.	DATE	REVISION	BY
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STRUCTURE B-42-19			
DRAWN BY	CLP	PLANS CK'D.	CBM
TRANSVERSE DECK STEEL LAYOUT			SHEET 10 OF 17

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NOTES

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL BE OF MINIMUM 60 ksi YIELD STRENGTH, AND HAVE TENSILE STRENGTH AREA EQUAL OR GREATER THAN THAT OF THE LAPPED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

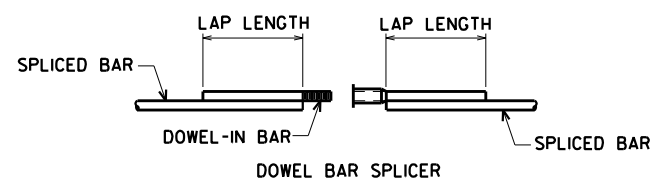
FOR DOWEL BAR SPLICERS, ALL REINFORCEMENT BARS SHALL BE LAPPED AND TIED TO THE SPLICER BARS.

SPLICER (COUPLER) ASSEMBLY IN THE DECK SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENT:

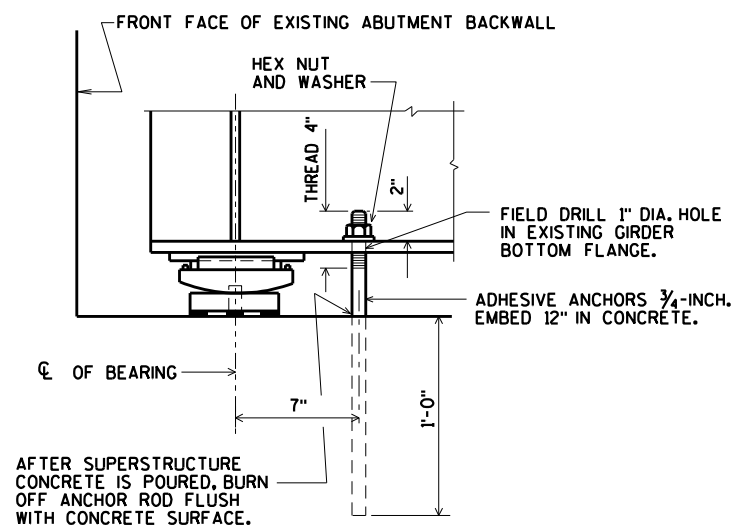
① MINIMUM CAPACITY = 1.25 x f_y x AREA OF SPLICED REINFORCEMENT BAR.

WHERE f_y = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS



ONE PIECE THREADED SPLICER

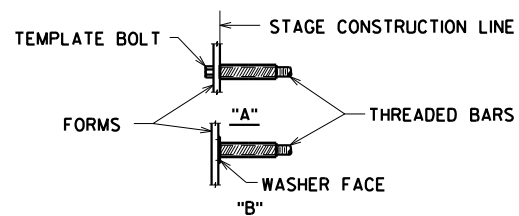
SPLICER ALTERNATIVES



AFTER SUPERSTRUCTURE CONCRETE IS POURED, BURN OFF ANCHOR ROD FLUSH WITH CONCRETE SURFACE.

TEMPORARY HOLD DOWN DEVICE

PLACE ONE ANCHOR ROD PER GIRDER AT ABUTMENT WHERE SLAB POUR TERMINATES. LOCATE 4" (NORMAL) OFF ϕ OF GIRDER. ANCHOR ROD, NUT, WASHER, AND DRILLED HOLE IN GIRDER FLANGE SHALL BE PAID FOR AS "ADHESIVE ANCHORS 3/4-INCH".



INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT
 "B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.

DOWEL BAR SPLICER LAP LENGTHS

CONCRETE UNDER BAR	BAR SIZE	4	5	6	7	8	9	10	11
12" OR LESS	f'c = 3500	1'-8"	2'-8"	3'-2"	4'-3"	5'-6"	7'-0"	8'-9"	10'-11"
	f'c = 4000	1'-8"	2'-8"	3'-2"	4'-0"	5'-2"	6'-6"	8'-3"	10'-2"
MORE THAN 12"	f'c = 3500	2'-3"	2'-11"	3'-6"	4'-8"	6'-1"	7'-10"	9'-10"	12'-1"
	f'c = 4000	2'-3"	2'-11"	3'-6"	4'-5"	5'-8"	7'-4"	9'-2"	11'-4"

BAR LENGTH COMPUTED TO ϕ LONGIT. JOINT AND SHALL BE MODIFIED IF REQ'D. TO BAR COUPLER MANUFACTURER RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED.

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
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BAR COUPLER DETAILS			SHEET 11 OF 17

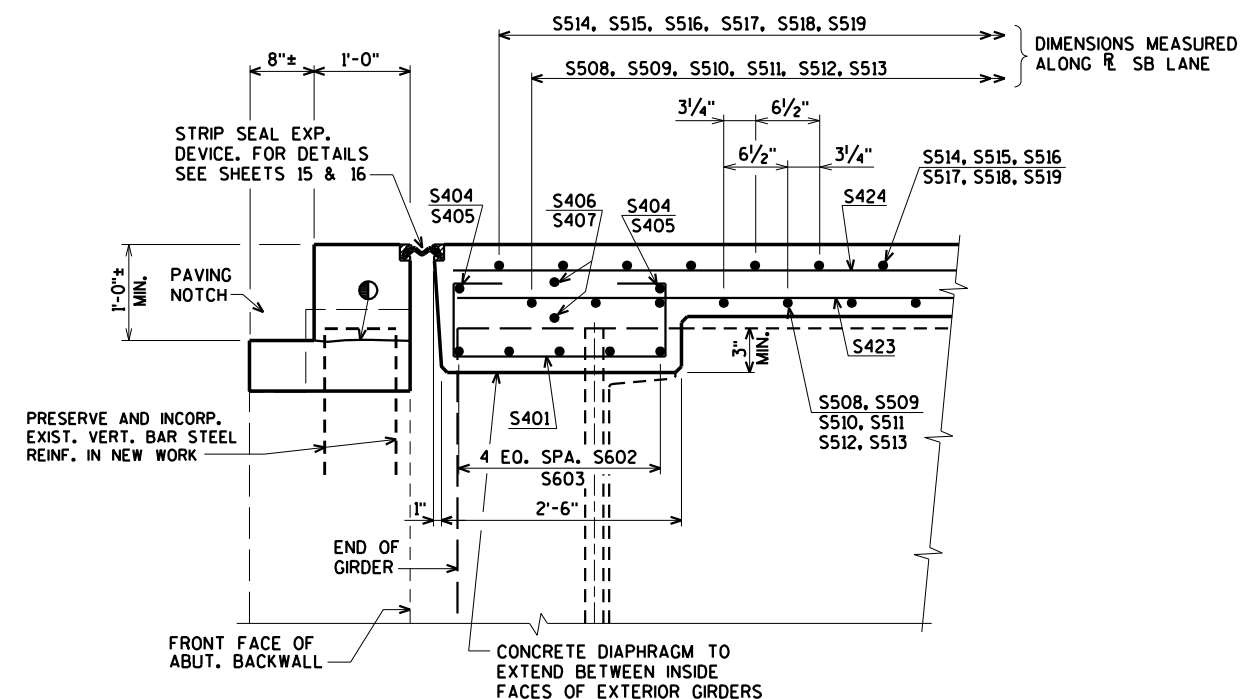
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BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D. STAGE 2	NO. REQ'D. STAGE 3	LENGTH	BENT BAR	BUNDLED	BAR SERIES	52,100* COATED	
								LOCATION	
S401	X	44	42	5-0	X			DIAPH. @ ABUT. VERT.	
S602	X	20	10	9-0				DIAPH. @ ABUT. HORIZ. BOT.	
S603	X	---	10	8-5				DIAPH. @ ABUT. HORIZ. BOT. BETWEEN GIRDERS 2 & 3	
S404	X	8	4	9-0				DIAPH. @ ABUT. HORIZ. TOP	
S405	X	---	4	8-5				DIAPH. @ ABUT. HORIZ. TOP BETWEEN GIRDERS 2 & 3	
S406	X	8	4	9-0				DIAPH. @ ABUT. HORIZ.	
S407	X	---	4	8-5				DIAPH. @ ABUT. HORIZ. BETWEEN GIRDERS 2 & 3	
S508	X	22	---	12-4			⊗	DECK TRANS. BOT. WING 1	
S509	X	249	---	21-11			⊗	DECK TRANS. BOT. EAST SIDE	
S510	X	21	---	12-2			⊗	DECK TRANS. BOT. WING 4	
S511	X	---	19	11-2			⊗	DECK TRANS. BOT. WING 2	
S512	X	---	251	19-11			⊗	DECK TRANS. BOT. WEST SIDE	
S513	X	---	20	11-1			⊗	DECK TRANS. BOT. WING 3	
S514	X	22	---	11-10			⊗	DECK TRANS. TOP WING 1	
S515	X	249	---	21-11			⊗	DECK TRANS. TOP EAST SIDE	
S516	X	22	---	12-0			⊗	DECK TRANS. TOP WING 4	
S517	X	---	19	10-8			⊗	DECK TRANS. TOP WING 2	
S518	X	---	252	19-11			⊗	DECK TRANS. TOP WEST SIDE	
S519	X	---	20	10-10			⊗	DECK TRANS. TOP WING 3	
S420	X	134	134	4-6	X			DECK TRANS. TOP @ EDGES	
S421	X	432	288	3-5	X			DECK VERT. @ BEAM HAUNCH	
S422	X	24	16	36-8				DECK LONG. @ BEAM HAUNCH	
S423	X	136	124	38-3				DECK LONG. BOT.	
S424	X	66	60	33-9				DECK LONG. TOP SPANS 1 & 3	
S625	X	66	60	28-10				DECK LONG. TOP AT PIER	
S426	X	33	30	29-0				DECK LONG. TOP SPAN 2	
S527	X	222	222	4-5	X			PARAPET VERT. @ DECK PARAPET	
S528	X	222	222	6-8	X			PARAPET VERT.	
S529	X	32	32	38-3				PARAPET HORIZ.	

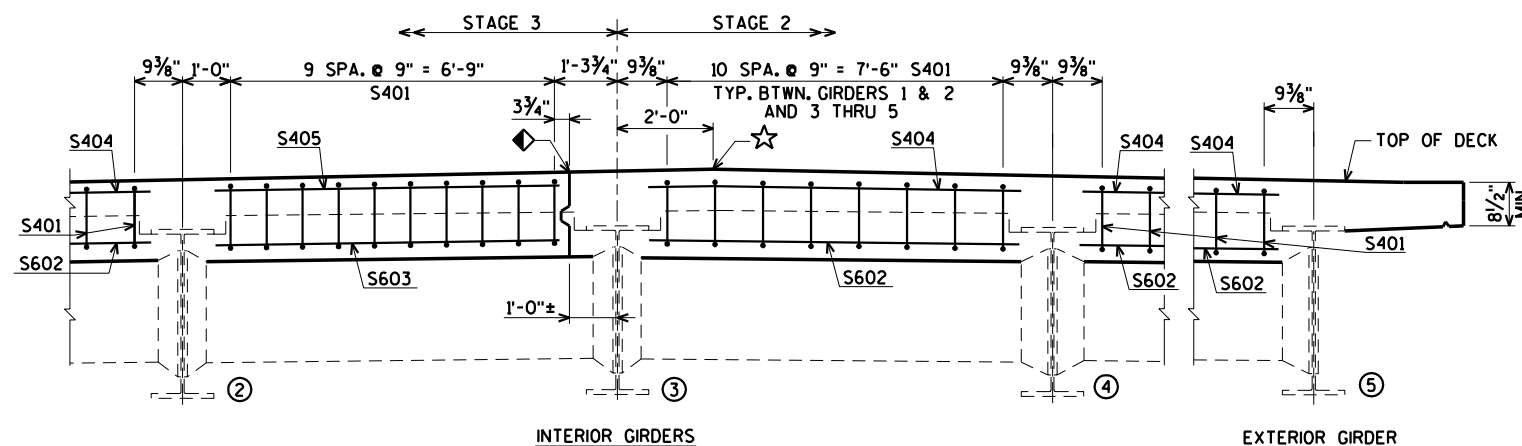
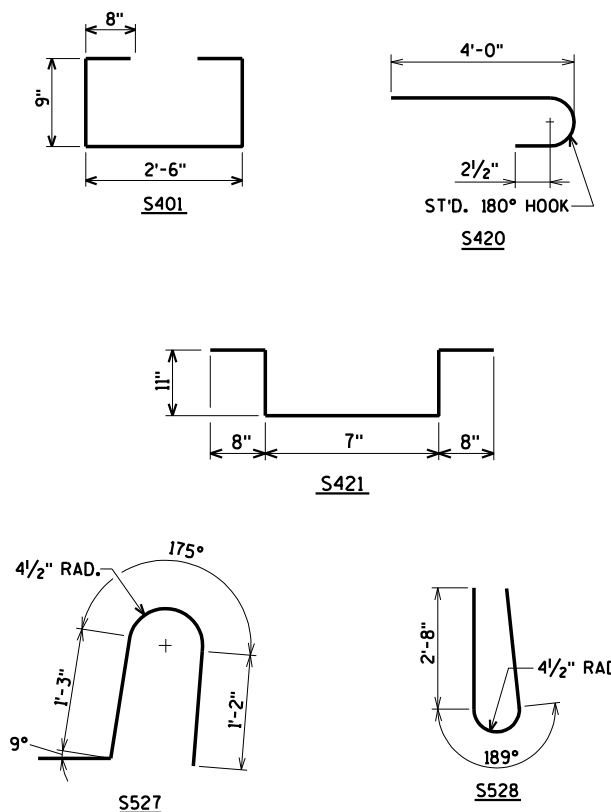
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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



PART LONGITUDINAL SECTION

① CONSTRUCTION JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.



PART TRANSVERSE SECTION AT DIAPHRAGM (LOOKING NORTH)

☆ CROWN POINT.
◆ LONGIT. CONST. JOINT.

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
S508	1 SERIES OF 22	2'-9" TO 21'-11"
S510	1 SERIES OF 21	2'-7" TO 21'-9"
S511	1 SERIES OF 19	2'-6" TO 19'-10"
S513	1 SERIES OF 20	2'-3" TO 19'-11"
S514	1 SERIES OF 22	1'-9" TO 21'-11"
S516	1 SERIES OF 23	2'-1" TO 21'-11"
S517	1 SERIES OF 19	2'-0" TO 19'-4"
S519	1 SERIES OF 20	1'-9" TO 19'-11"

BUNDLE AND TAG EACH SERIES SEPARATELY.

NO.	DATE	REVISION	BY
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STRUCTURE B-42-19			
DRAWN BY		CLP	PLANS CK'D. CBM
SUPERSTRUCTURE BILL OF BARS AND DETAILS			SHEET 12 OF 17

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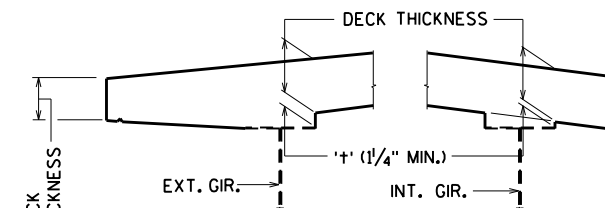
TOP OF DECK ELEVATIONS

SPAN 1	€ BRG. S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ OF PIER 1
WEST FLOWLINE	623.87	623.84	623.82	623.80	623.78	623.75	623.73	623.71	623.69	623.66	623.64
GIRDER 1	623.91	623.89	623.86	623.84	623.82	623.80	623.77	623.75	623.73	623.71	623.68
GIRDER 2	624.12	624.09	624.07	624.05	624.03	624.00	623.98	623.96	623.94	623.91	623.89
LONG. CONST. JOINT	624.32	624.30	624.27	624.25	624.23	624.21	624.18	624.16	624.14	624.12	624.09
GIRDER 3	624.32	624.30	624.28	624.26	624.23	624.21	624.19	624.16	624.14	624.12	624.10
CROWN POINT	624.37	624.35	624.32	624.30	624.28	624.26	624.23	624.21	624.19	624.17	624.14
GIRDER 4	624.25	624.22	624.20	624.18	624.16	624.13	624.11	624.09	624.07	624.04	624.02
REFERENCE LINE	624.16	624.14	624.12	624.10	624.07	624.05	624.03	624.00	623.98	623.96	623.94
GIRDER 5	624.09	624.07	624.05	624.02	624.00	623.98	623.96	623.93	623.91	623.89	623.87
EAST FLOWLINE	624.06	624.04	624.01	623.99	623.97	623.95	623.92	623.90	623.88	623.86	623.83

SPAN 2	€ OF PIER 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ OF PIER 2
WEST FLOWLINE	623.64	623.61	623.59	623.56	623.53	623.50	623.48	623.45	623.43	623.40	623.38
GIRDER 1	623.68	623.66	623.63	623.60	623.57	623.55	623.52	623.49	623.47	623.44	623.42
GIRDER 2	623.89	623.86	623.84	623.81	623.78	623.75	623.73	623.70	623.67	623.65	623.62
LONG. CONST. JOINT	624.09	624.07	624.04	624.01	623.99	623.96	623.93	623.90	623.88	623.85	623.83
GIRDER 3	624.10	624.07	624.04	624.02	623.99	623.96	623.93	623.91	623.88	623.85	623.83
CROWN POINT	624.14	624.12	624.09	624.06	624.03	624.01	623.98	623.95	623.93	623.90	623.87
GIRDER 4	624.02	623.99	623.97	623.94	623.91	623.89	623.86	623.83	623.80	623.78	623.75
REFERENCE LINE	623.94	623.91	623.88	623.86	623.83	623.80	623.77	623.75	623.72	623.69	623.67
GIRDER 5	623.87	623.84	623.81	623.78	623.76	623.73	623.70	623.68	623.65	623.62	623.59
EAST FLOWLINE	623.83	623.81	623.78	623.75	623.73	623.70	623.67	623.64	623.62	623.59	623.56

SPAN 3	€ OF PIER 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ BRG. N. ABUT.
WEST FLOWLINE	623.38	623.36	623.34	623.32	623.30	623.29	623.27	623.25	623.24	623.22	623.21
GIRDER 1	623.42	623.40	623.38	623.36	623.34	623.33	623.31	623.29	623.28	623.26	623.25
GIRDER 2	623.62	623.60	623.58	623.56	623.55	623.53	623.51	623.49	623.48	623.46	623.45
LONG. CONST. JOINT	623.83	623.80	623.78	623.77	623.75	623.73	623.71	623.69	623.68	623.66	623.64
GIRDER 3	623.83	623.81	623.79	623.77	623.75	623.73	623.71	623.69	623.68	623.66	623.65
CROWN POINT	623.87	623.85	623.83	623.81	623.79	623.77	623.76	623.74	623.72	623.71	623.69
GIRDER 4	623.75	623.73	623.71	623.69	623.67	623.65	623.63	623.61	623.60	623.58	623.56
REFERENCE LINE	623.67	623.64	623.62	623.60	623.58	623.56	623.54	623.53	623.51	623.49	623.47
GIRDER 5	623.59	623.57	623.55	623.53	623.51	623.49	623.47	623.45	623.44	623.42	623.40
EAST FLOWLINE	623.56	623.54	623.52	623.50	623.48	623.46	623.44	623.42	623.40	623.38	623.37

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION.



DECK HAUNCH DETAIL

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

TO DETERMINE 't', ELEV. OF TOP OF GIRDERS AT € OF SUBSTRUCTURE UNITS AND AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
 -TOP OF GIRDER ELEVATION
 + DEADLOAD DEFLECTION
 -DECK THICKNESS
 =HAUNCH HEIGHT 't'
 AT CENTER OF GIRDER

NOTE:
 AN AVERAGE HAUNCH ('t') OF 6 1/2" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
DRAWN BY		CLP	PLANS CK'D. AEB
DECK ELEVATIONS			SHEET 13 OF 17

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TABLE OF DEFLECTIONS

SPAN 1 DEFLECTIONS

	DEFLECTION	€ BRG. S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ OF PIER 1
GIRDER 1	CONCRETE ONLY	0.00	0.15	0.27	0.35	0.39	0.38	0.32	0.24	0.13	0.04	0.00
GIRDER 2	CONCRETE ONLY	0.00	0.15	0.28	0.36	0.40	0.39	0.33	0.24	0.13	0.04	0.00
GIRDER 3	CONCRETE ONLY	0.00	0.13	0.24	0.30	0.35	0.33	0.28	0.20	0.12	0.04	0.00
GIRDER 4	CONCRETE ONLY	0.00	0.15	0.28	0.36	0.41	0.39	0.33	0.24	0.14	0.04	0.00
GIRDER 5	CONCRETE ONLY	0.00	0.15	0.27	0.35	0.40	0.39	0.32	0.24	0.13	0.04	0.00

SPAN 2 DEFLECTIONS

	DEFLECTION	€ OF PIER 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ OF PIER 2
GIRDER 1	CONCRETE ONLY	0.00	0.04	0.14	0.25	0.33	0.37	0.33	0.25	0.14	0.04	0.00
GIRDER 2	CONCRETE ONLY	0.00	0.04	0.15	0.27	0.35	0.39	0.35	0.27	0.15	0.04	0.00
GIRDER 3	CONCRETE ONLY	0.00	0.04	0.13	0.23	0.29	0.32	0.29	0.23	0.13	0.04	0.00
GIRDER 4	CONCRETE ONLY	0.00	0.04	0.15	0.27	0.35	0.39	0.35	0.27	0.15	0.04	0.00
GIRDER 5	CONCRETE ONLY	0.00	0.04	0.15	0.26	0.34	0.38	0.34	0.26	0.15	0.04	0.00

SPAN 3 DEFLECTIONS

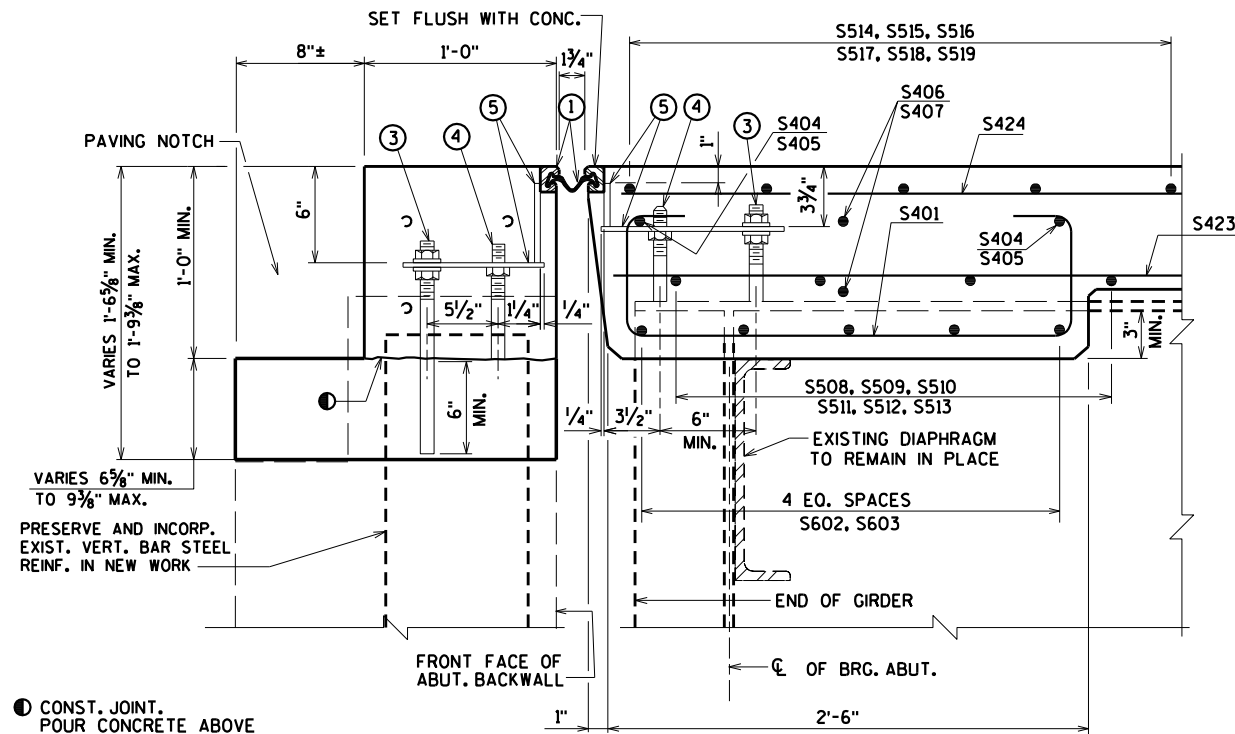
	DEFLECTION	€ OF PIER 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ BRG. N. ABUT.
GIRDER 1	CONCRETE ONLY	0.00	0.04	0.13	0.24	0.32	0.38	0.39	0.35	0.27	0.15	0.00
GIRDER 2	CONCRETE ONLY	0.00	0.04	0.13	0.24	0.33	0.39	0.40	0.36	0.28	0.15	0.00
GIRDER 3	CONCRETE ONLY	0.00	0.04	0.12	0.20	0.28	0.33	0.35	0.30	0.24	0.13	0.00
GIRDER 4	CONCRETE ONLY	0.00	0.04	0.14	0.24	0.33	0.39	0.41	0.36	0.28	0.15	0.00
GIRDER 5	CONCRETE ONLY	0.00	0.04	0.13	0.24	0.32	0.39	0.40	0.35	0.27	0.15	0.00

DEFLECTIONS ARE GIVEN IN INCHES.
 NEGATIVE DEFLECTION VALUE DENOTES AN UPWARD DEFLECTION.
 DEFLECTIONS ARE THEORETICAL AND MAY VARY IN THE FIELD.

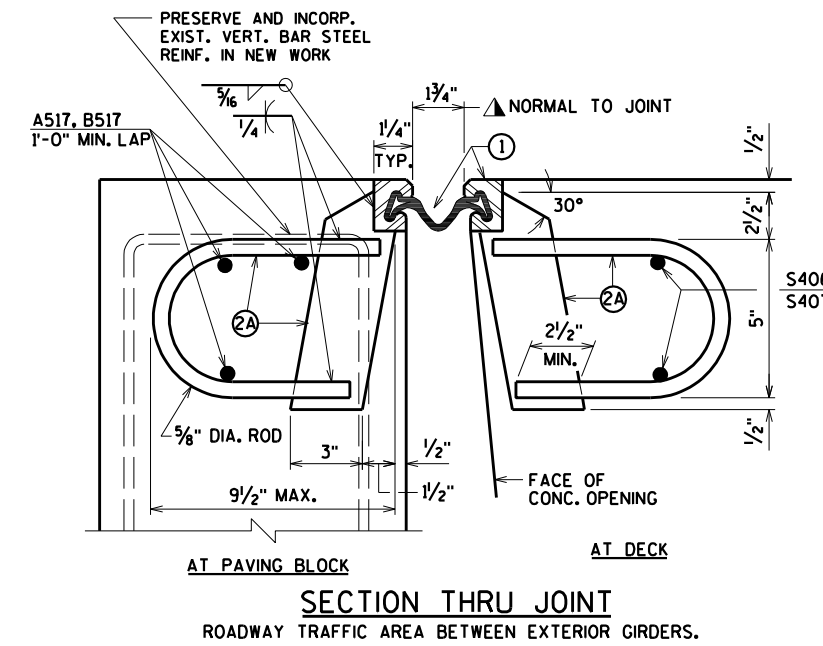
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
DRAWN BY		CLP	PLANS CK'D. AEB
TABLE OF DEFLECTIONS			SHEET 14 OF 17

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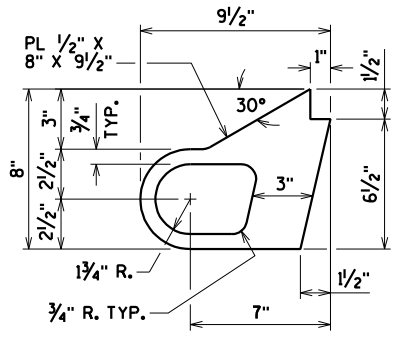
SECTION THRU JOINT AT ABUTMENT
NORMAL TO ϕ SUBSTRUCTURE



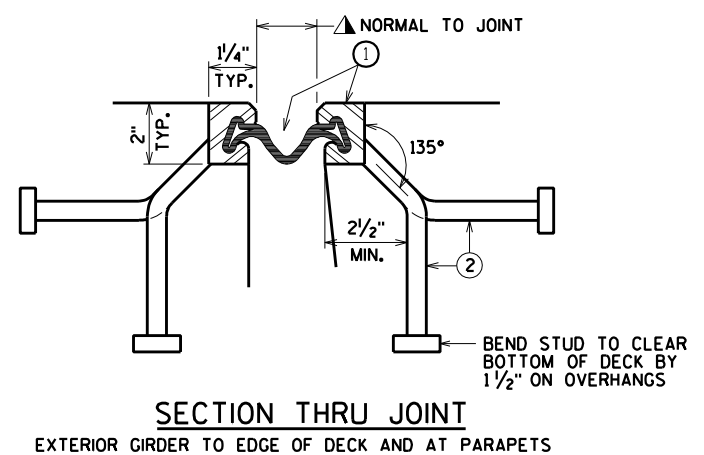
SECTION THRU JOINT
ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.

- LEGEND**
- ① NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING AT 1 1/4". JOINT OPENING GIVEN NORMAL TO JOINT.
 - ② STUDS 5/8" DIA. X 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
 - ②A 1/2" THICK ANCHOR PLATE WITH 5/8" DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
 - ③ 3/4" DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
 - ④ 3/4" DIA. THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
 - ⑤ FABRICATE SUPPORT FROM 3" X 1/2" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2" DIA. HOLE FOR NO. 3 AND 1" DIA. HOLE FOR NO. 4.
 - ⑥ GALVANIZED PLATE 3/8" X 10" X 2'-2" LONG WITH HOLES FOR NO. 7.
 - ⑦ 3/4" DIA. X 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
 - ⑧ 3/4" DIA. X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
 - ⑨ 3/4" DIA. X 2 1/4" GALVANIZED THREADED COUPLING.
 - ⑪ 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

CONST. JOINT. POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE.



ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT
EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, ANCHOR PLATES SHALL BE PROVIDED 3" FROM EACH SIDE OF THE FIELD SPLICE. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

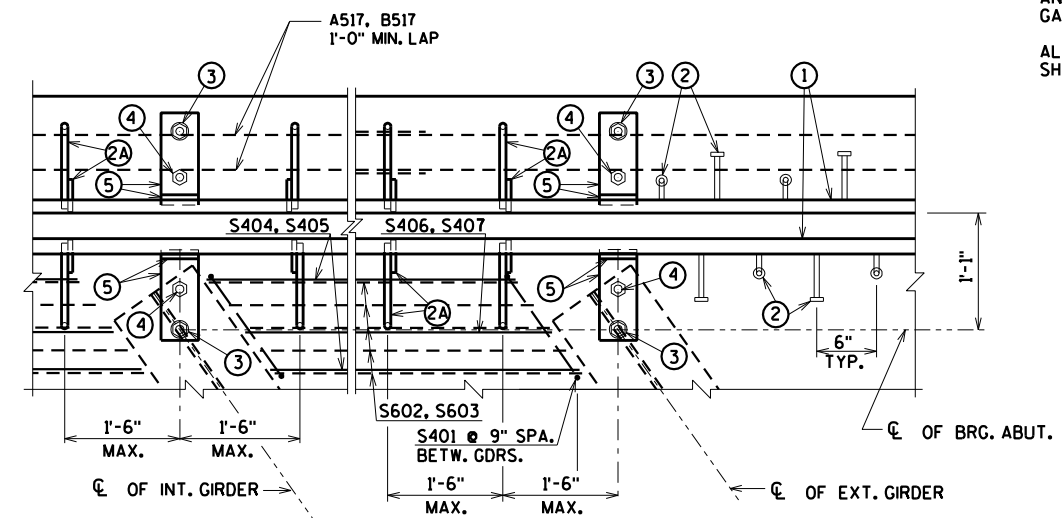
AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

ALL MATERIAL IN THE EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID AT THE UNIT PRICE BID FOR "EXPANSION DEVICE", LF.



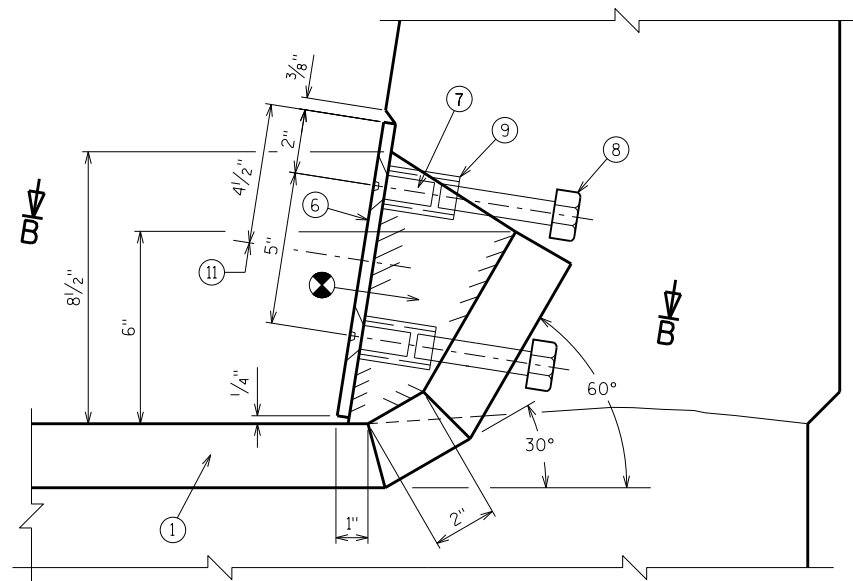
PART PLAN

8

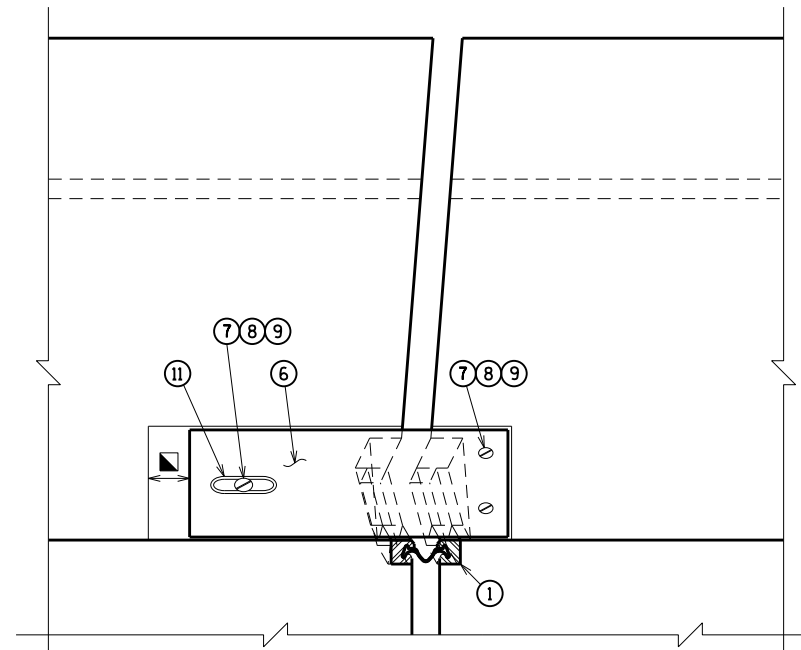
8

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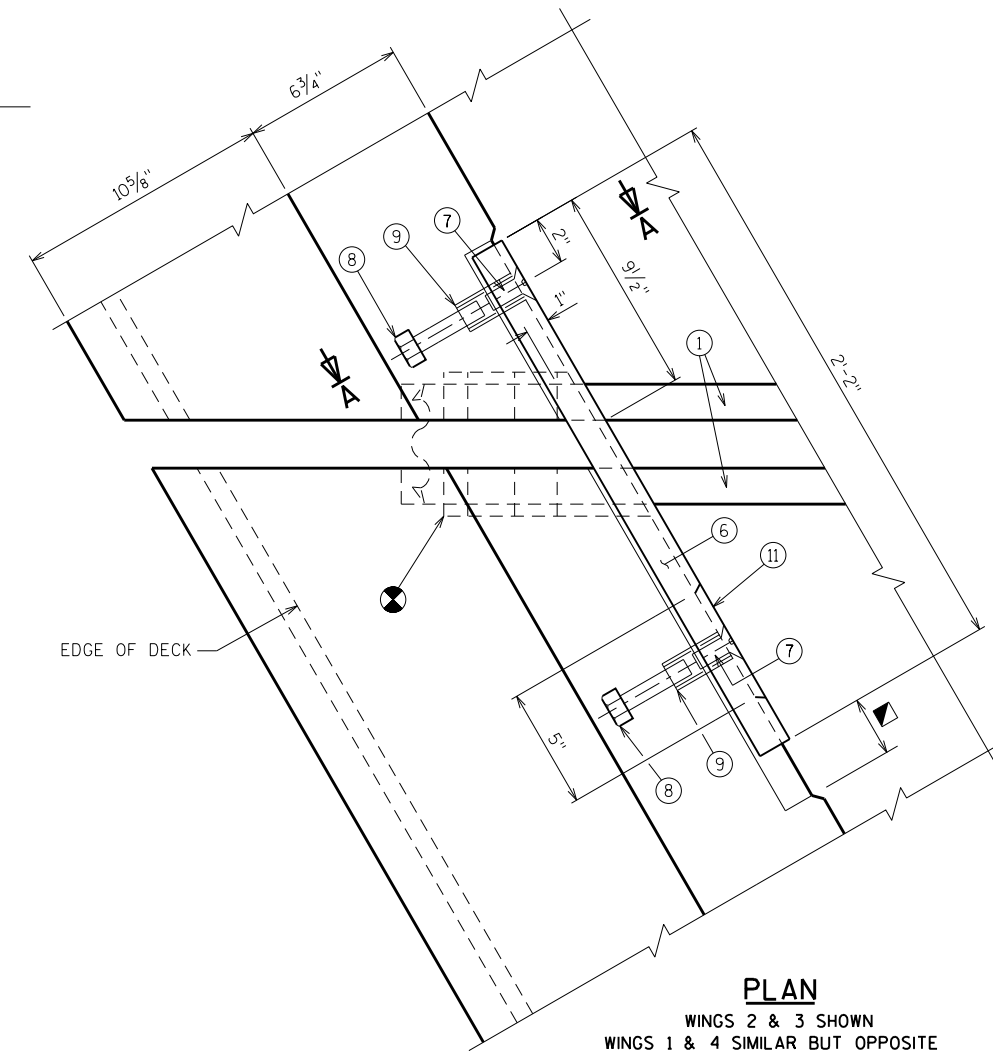
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-42-19			
DRAWN BY		CLP	PLANS CK'D. CBM
STRIP SEAL EXPANSION DEVICE			SHEET 15 OF 17



SECTION A-A

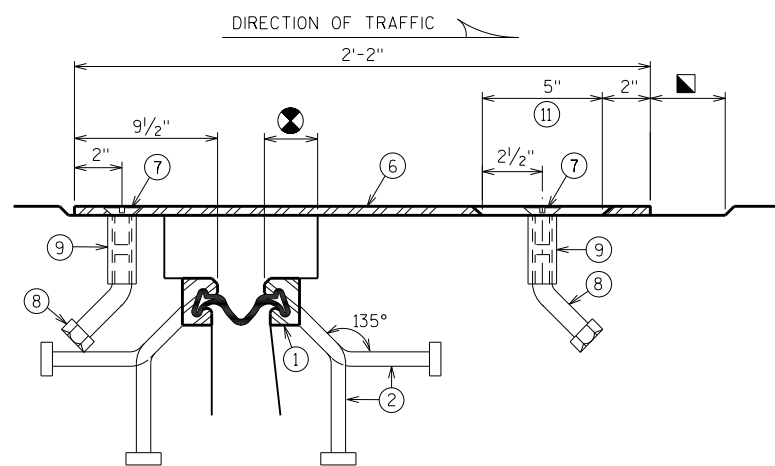


VIEW OF PARAPET PLATE FROM ROADWAY



PLAN

WINGS 2 & 3 SHOWN
WINGS 1 & 4 SIMILAR BUT OPPOSITE



SECTION B-B

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

▣ JOINT OPENING DIMENSION ALONG SKEW PLUS 1/2".

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STRUCTURE B-42-19			
DRAWN BY		CLP	PLANS CK'D. CBM
COVER PLATE DETAILS			SHEET 16 OF 17

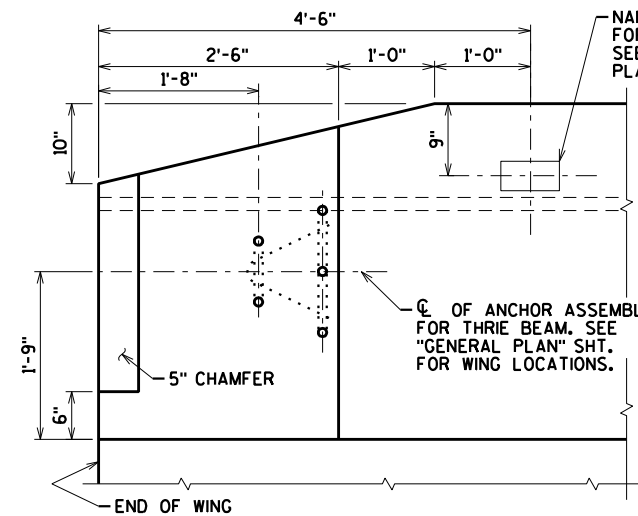
BILL OF BARS
FOR ABUTMENT PARAPETS

BAR MARK	COY	SOUTH ABUT.	NORTH ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	4	4	5'-10"	X		PARAPET VERT.
R502	X	4	4	6'-8"	X		PARAPET VERT.
R503	X	24	24	3'-0"	X		PARAPET VERT.
R504	X	34	34	5'-7"	X		PARAPET VERT.
R505	X	10	10	6'-5"	X		PARAPET VERT.
R506	X	12	12	6'-6"	X		PARAPET VERT.
R507	X	12	12	5'-5"	X	▲	PARAPET VERT.
R508	X	2	2	9'-8"	X		PARAPET HORIZ.
R509	X	4	4	9'-8"			PARAPET HORIZ. F.F.
R510	X	3	3	8'-11"			PARAPET HORIZ. B.F. WINGS 1 & 3
R511	X	3	3	10'-2"			PARAPET HORIZ. B.F. WINGS 2 & 4
R512	X	2	2	9'-8"	X		PARAPET HORIZ. TOP F.F.
R513	X	1	1	8'-11"	X		PARAPET HORIZ. TOP B.F. WINGS 1 & 3
R514	X	1	1	10'-2"	X		PARAPET HORIZ. TOP B.F. WINGS 2 & 4

BAR SERIES TABLE

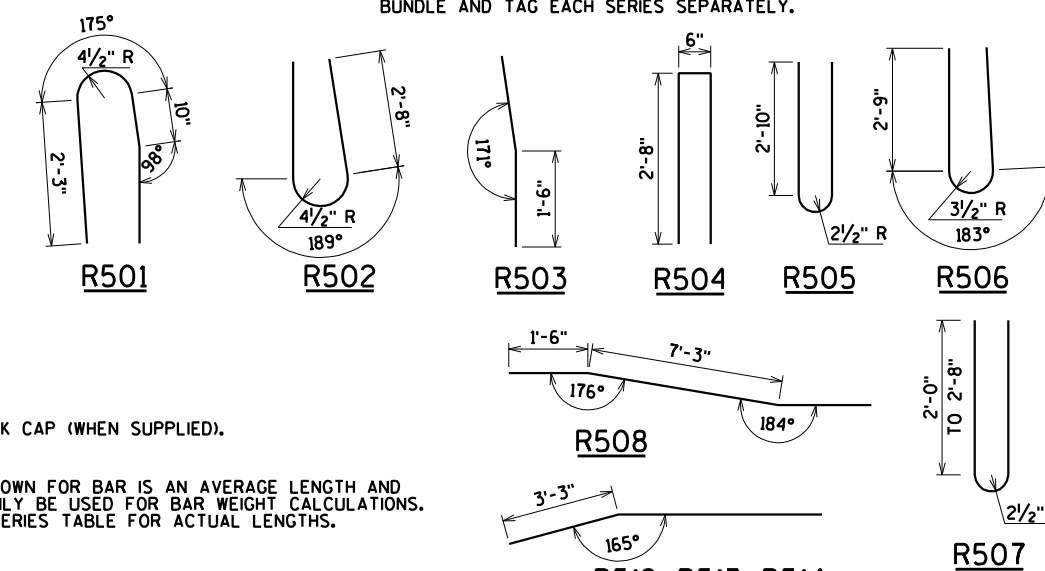
BAR MARK	NO. REO'D	LENGTH
R507	4 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.



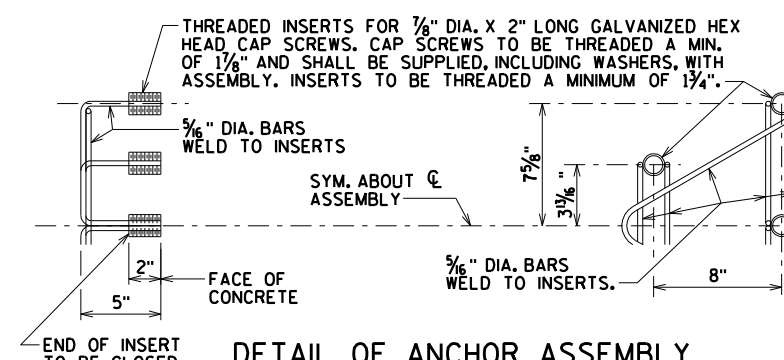
PARAPET END TREATMENT DETAIL
LOOKING AT INSIDE FACE OF PARAPET
(WINGS 2 & 4 SHOWN, WINGS 1 & 3 SIMILAR)

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.



■ BENCH MARK CAP (WHEN SUPPLIED).

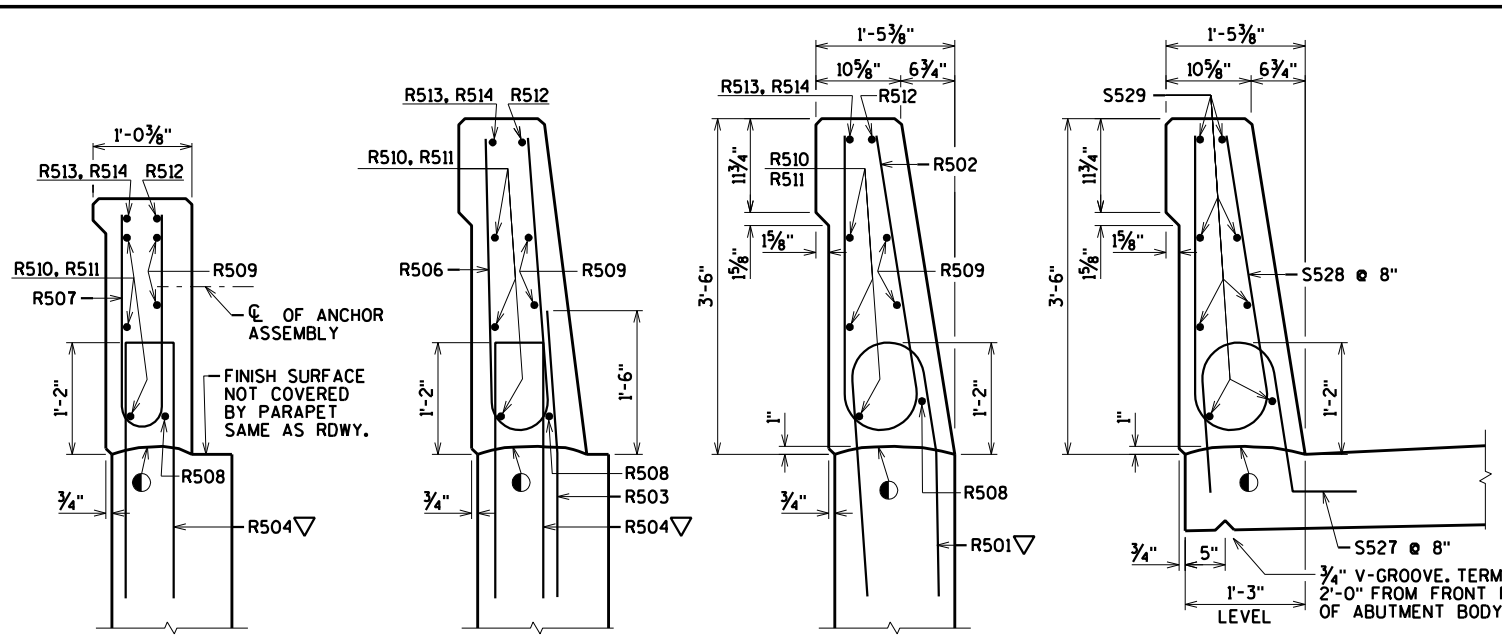
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.



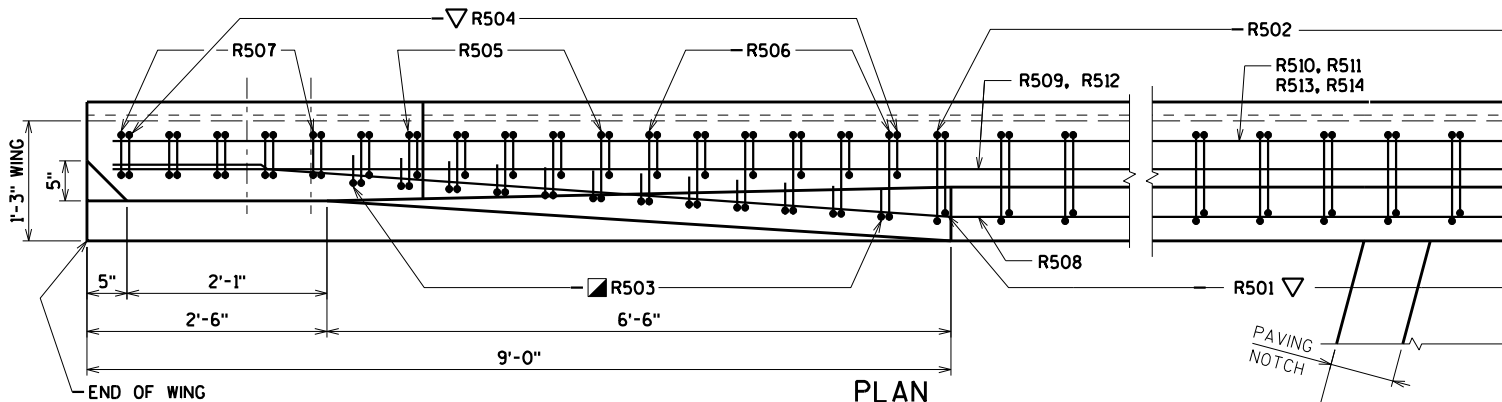
DETAIL OF ANCHOR ASSEMBLY

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.

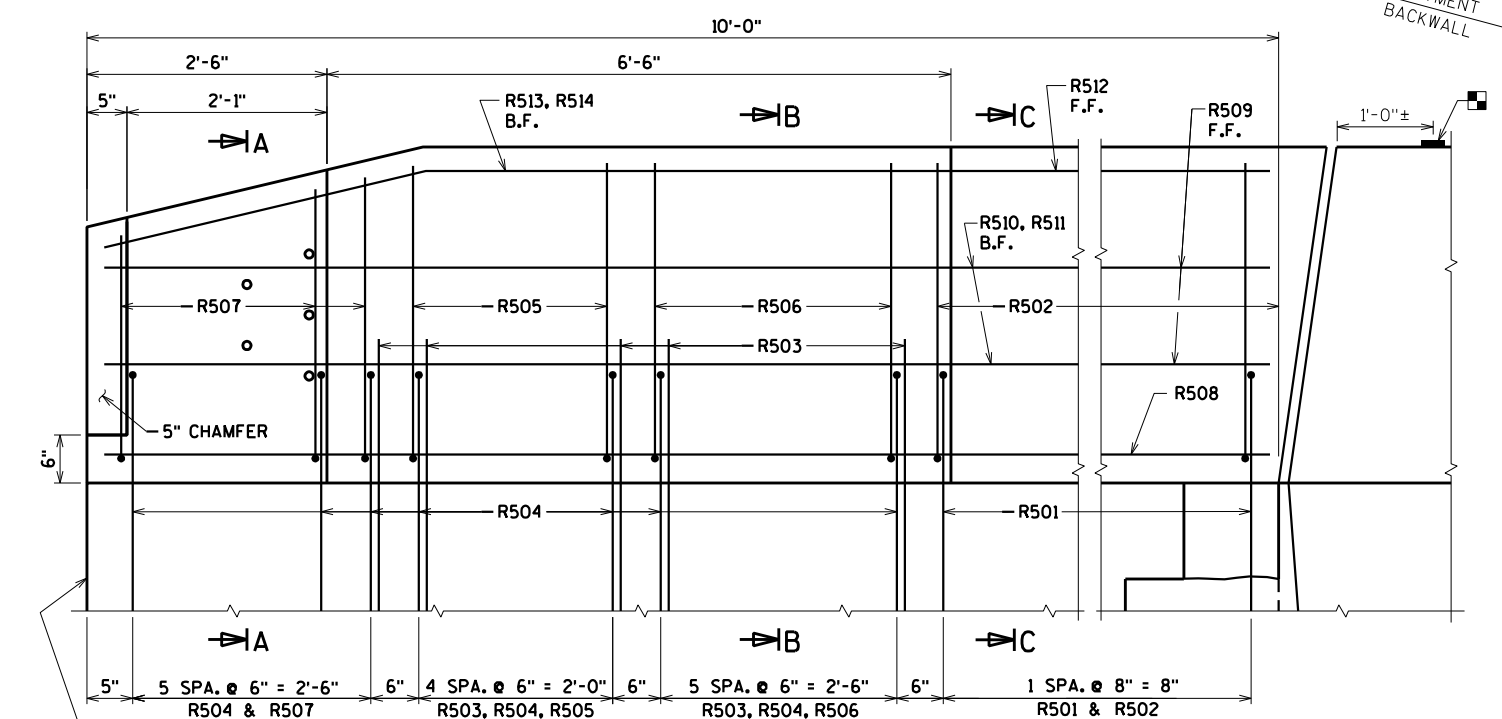
- CONST. JOINT - STRIKE OFF AS SHOWN
- R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.
- ▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.



SECTION A-A SECTION B-B SECTION C-C SECTION THRU PARAPET ON DECK



PLAN
(WING 2 & 4 SHOWN, WING 1 & 3 SIMILAR)



INSIDE ELEVATION
(WING 2 & 4 SHOWN, WING 1 & 3 SIMILAR)

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STRUCTURE B-42-19			
DRAWN BY	CLP	PLANS CK'D.	CBM
SINGLE SLOPE PARAPET 42SS			SHEET 17 OF 17

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