LAX

JUNE 2019

PROJECT ID: 1660-03-67 & 1660-03-61

COUNTY: CRAWFORD

ORDER OF SHEETS

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

TOTAL SHEETS = 84

01

DESIGN DESIGNATION 1660-03-37 & 1660-03-38

A.A.D.T.	2016	=	9800
A.A.D.T.	2026	=	7660 - 8160
D.H.V.		=	N/A
D.D.		=	N/A
T.		=	15%
DESIGN SPEED		=	55 MPH
ESALS		=	2,900,000

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (300'EB')
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1660-03-67	———	—
1660-03-61	WISC 2019521	1

MARQUETTE - PRAIRIE DU CHIEN

MISSISSIPPI RVR STRUCTURE B-12-28

USH 18
CRAWFORD COUNTY

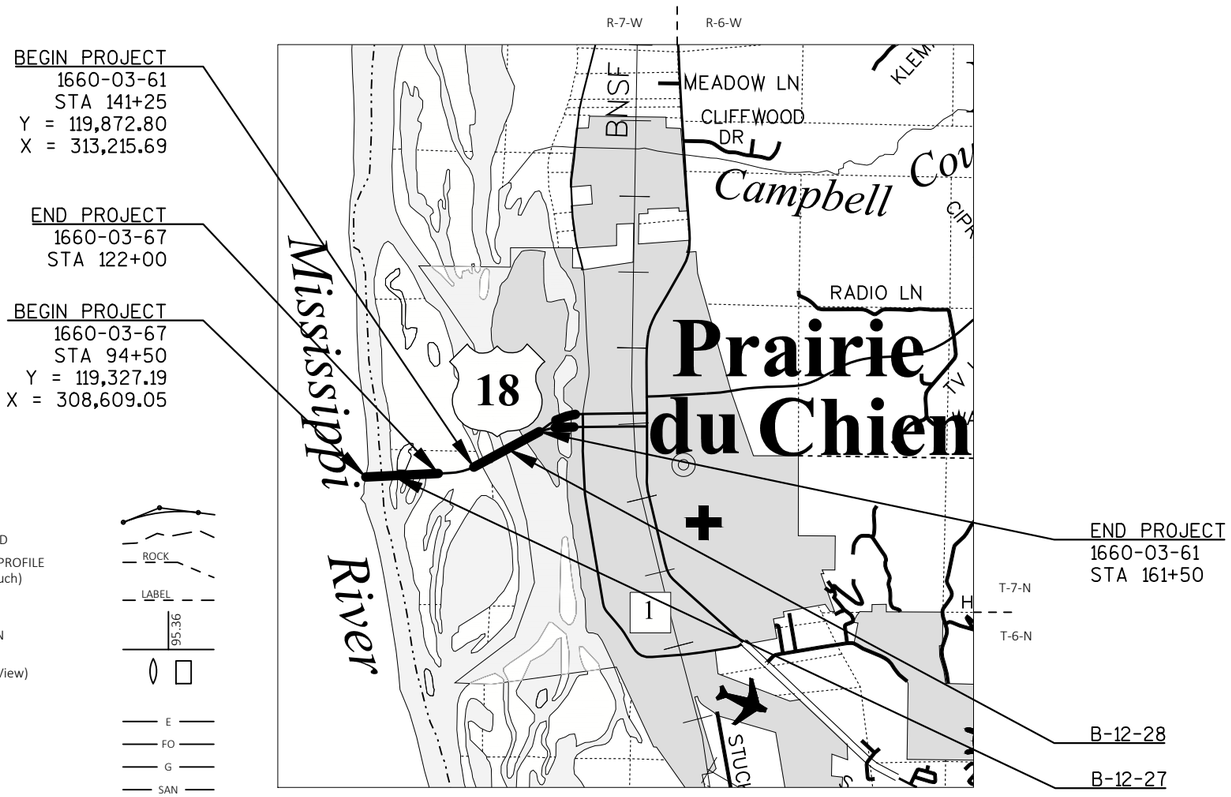
STATE PROJECT NUMBER
1660-03-61

MARQUETTE - PRAIRIE DU CHIEN

MISSISSIPPI RVR STRUCTURE B-12-27

USH 18
CRAWFORD COUNTY

STATE PROJECT NUMBER
1660-03-67



TOTAL NET LENGTH OF CENTERLINE = 0.0 MI (1660-03-67)

TOTAL NET LENGTH OF CENTERLINE = 0.0 MI (1660-03-61)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT - SW REGION
Designer	SHANE PETERSON
Project Manager	TIMOTHY MAEDKE
Regional Examiner	SW REGION
Regional Supervisor	REINY YAHNKE

APPROVED FOR THE DEPARTMENT

DATE: 3/1/19 (Signature)

E

FILE NAME : N:\PDS\C3D\16600337\SHEETSPLAN\B-12-27 & 28\010101-TI.DWG
LAYOUT NAME - 010101-ti

PLOT DATE : 3/4/2019 9:47 AM PLOT BY : PETERSON, SHANE J PLOT NAME :

WISDOT/CADDS SHEET 10

GENERAL NOTES

- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- THE ENGINEER SHALL ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH THE EXISTING UTILITY FACILITIES.
- PRIOR TO THE PLACEMENT OF MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.
- CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

DESIGN CONTACTS

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PROJECT MANAGER
PROJECT DEVELOPMENT
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(608) 789-6317

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PROJECT DESIGNER
PROJECT DEVELOPMENT
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DNR LIAISON

KAREN KALVELAGE
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST
WISCONSIN DEPT. OF NATURAL RESOURCES
WEST CENTRAL REGION
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UTILITY CONTACTS

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ceggert@mediacomcc.com

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

STANDARD ABBREVIATIONS

AC	ACRE	LS	LUMP SUM
AGG	AGGREGATE	M.P.	MARKER POST
<	ANGLE	MGAL	1000 GALLONS
ASPH.	ASPHALTIC	N.C.	NORMAL CROWN
A.D.T.	AVERAGE DAILY TRAFFIC	N	NORTH
A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC	NB	NORTHBOUND
BTWN	BETWEEN	NOR	NORMAL
CTR.	CENTER	NO.	NUMBER
C/L	CENTER LINE	PAV'T	PAVEMENT
Δ	CENTRAL ANGLE OR DELTA	P.C.	POINT OF CURVATURE
C.E.	COMMERCIAL ENTRANCE	P.I.	POINT OF INTERSECTION
CONST.	CONSTRUCTION	P.T.	POINT OF TANGENCY
CO.	COUNTY	PCC	PORTLAND CEMENT CONCRETE
CTH	COUNTY TRUNK HIGHWAY	P.L.	PROPERTY LINE
CABC	CRUSHED AGGREGATE BASE COURSE	R	RADIUS OR RANGE
CY	CUBIC YARD	R/L	REFERENCE LINE
C&G	CURB AND GUTTER	REQ'D	REQUIRED
D	DEGREE OF CURVE	RT	RIGHT
D.H.V.	DESIGN HOURLY VOLUME	R/W	RIGHT OF WAY
D.D.	DIRECTIONAL DISTRIBUTION	RD.	ROAD
EA	EACH	SHLD.	SHOULDER(S)
E	EAST	SHR.	SHRINKAGE
EB	EASTBOUND	S	SOUTH
ELEC.	ELECTRIC(AL), ELEC. CABLE	SB	SOUTHBOUND
EL., ELEV.	ELEVATION	S.F.	SQUARE FOOT (FEET)
ESALS	EQUIVALENT SINGLE AXLE LOADS	SDD	STANDARD DETAIL DRAWING(S)
EXC.	EXCAVATION	STH	STATE TRUNK HIGHWAY
EXIST	EXISTING	STA.	STATION
FERT.	FERTILIZER	S.E.	SUPERELEVATION
F/L, F.L.	FLOW LINE	S/L	SURVEY LINE
GALV.	GALVANIZE	T.	PERCENT TRUCKS
H.S.	HIGH STRENGTH	TEL.	TELEPHONE
CWT	HUNDRED WEIGHT	TEMP.	TEMPORARY
INL	INLET	TYP	TYPICAL
INTER.	INTERSECTION	U.G.	UNDERGROUND (CABLE)
JT.	JOINT	VAR	VARIABLE
LT	LEFT	Wt.	WEIGHT
L.	LENGTH OF CURVE	W	WEST
L.F.	LINEAR FOOT(FEET)	WB	WESTBOUND

ORDER OF SECTION 2 SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
TYPICAL SECTIONS - TRAFFIC CONTROL STAGING
TRAFFIC CONTROL STAGING
TRAFFIC CONTROL DETOUR SIGNING

2

STA 141+80 - 160+97
B-12-28 POLYMER MODIFIED ASPHALTIC OVERLAY
(1.5-INCH)

STA 95+85 - 121+46
B-12-27 POLYMER MODIFIED ASPHALTIC OVERLAY
(1.5-INCH)

BEGIN PROJECT
1660-03-67
STA 94+50

Marquette,
IA

STA 99+65
CANADIAN PACIFIC RAILROAD

McGregor,
IA

END PROJECT
1660-03-67
STA 122+00

BEGIN PROJECT
1660-03-68
STA 141+25

Prairie du
Chien, WI

END PROJECT
1660-03-61
STA 161+50

STA 159+65
WISCONSIN & SOUTHERN RAILROAD

SAINT
FERIOLE
ISLAND

WEST CHANNEL MISSISSIPPI RIVER

EAST CHANNEL MISSISSIPPI RIVER

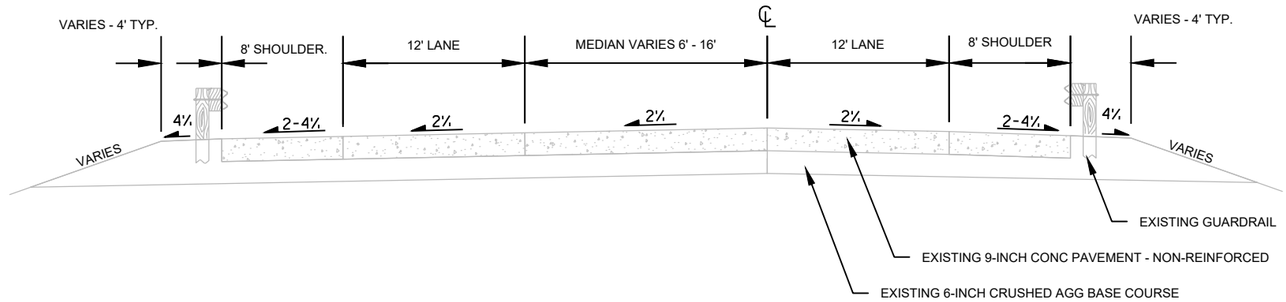
GIARD CREEK

McGregor
Lake

PROJECT NO: 1660-03-67 & 61	HWY: USH 18	COUNTY: CRAWFORD	PROJECT OVERVIEW	SHEET	E

FILE NAME : N:\PDS\C3D\16600337\SHEETSPLAN\B-12-27 & 28\020201-PO.DWG
LAYOUT NAME - 020201-po
PLOT DATE : 3/1/2019 2:13 PM PLOT BY : PETERSON, SHANE J PLOT NAME : PLOT SCALE : 1 IN:1000 FT

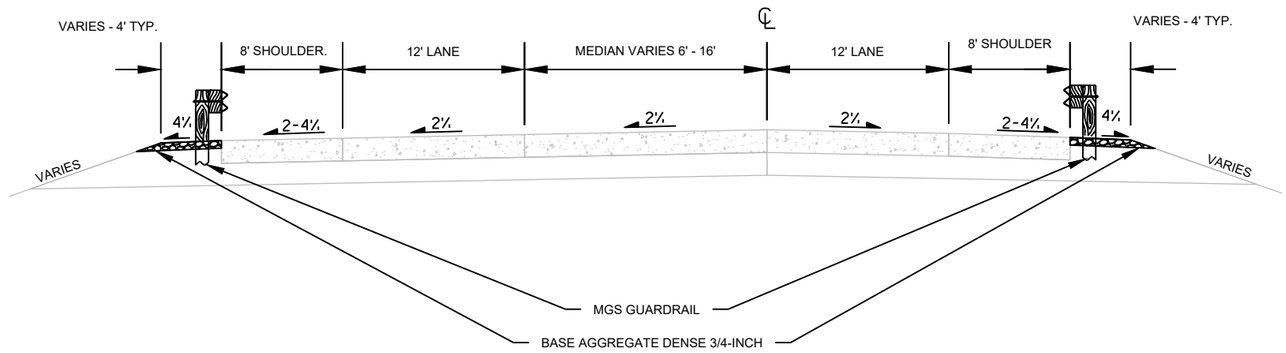
2



EXISTING TYPICAL SECTION - USH 18

STA 94+65 TO STA 95+55

WEST OF B-12-27
(LOOKING EAST)

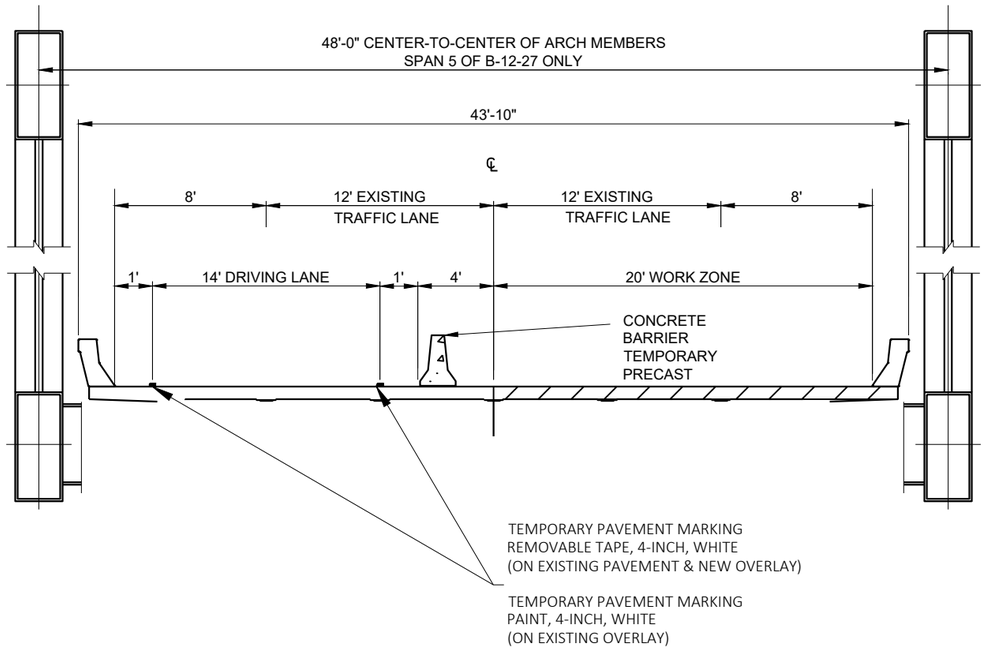


PROPOSED TYPICAL SECTION - USH 18

STA 94+65 TO STA 95+55

WEST OF B-12-27
(LOOKING EAST)

PROJECT NO: 1660-03-67	HWY: USH 18	COUNTY: CRAWFORD	TYPICAL SECTIONS	SHEET 4	E

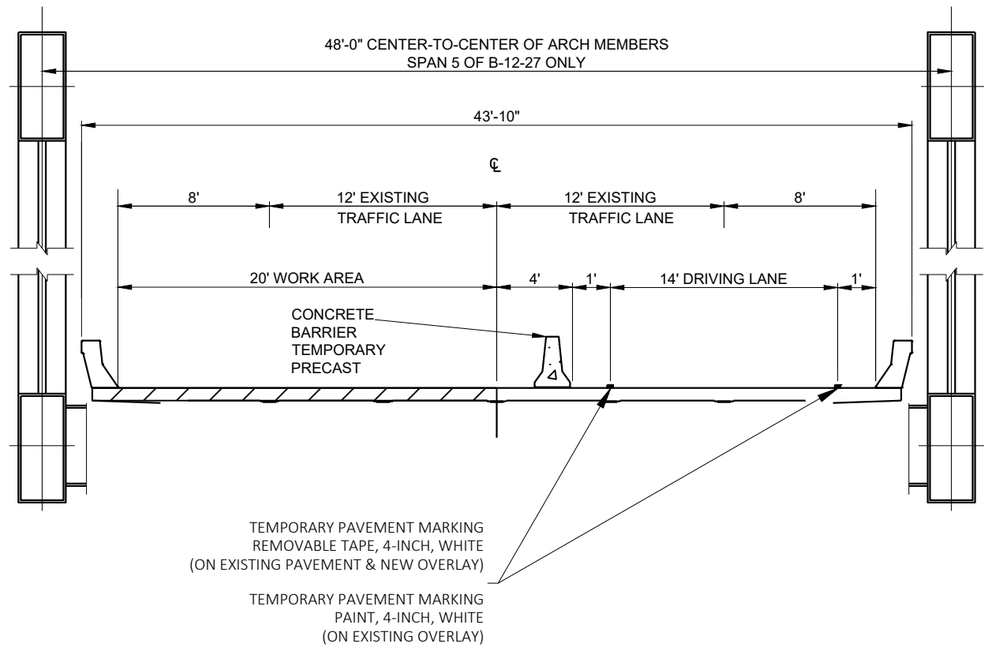


TYPICAL WORK ZONE SECTION - STAGES 1, 4, 5

LOOKING EAST, STRUCTURES B-12-27 & B-12-28

B-12-27
STAGE 1: STA 98+85 - 108+00
STAGE 4: STA 106+00 - 121+46

B-12-28
STAGE 5: STA 141+80 - 160+97



TYPICAL WORK ZONE SECTION - STAGES 2, 3, 6

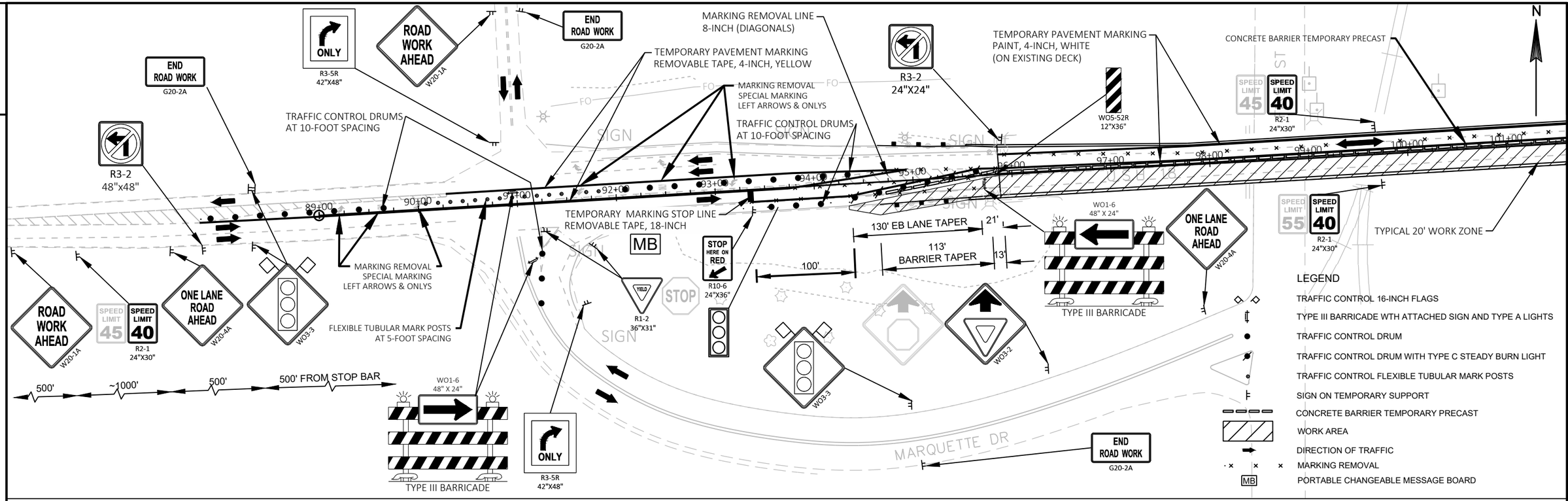
LOOKING EAST, STRUCTURES B-12-27 & B-12-28

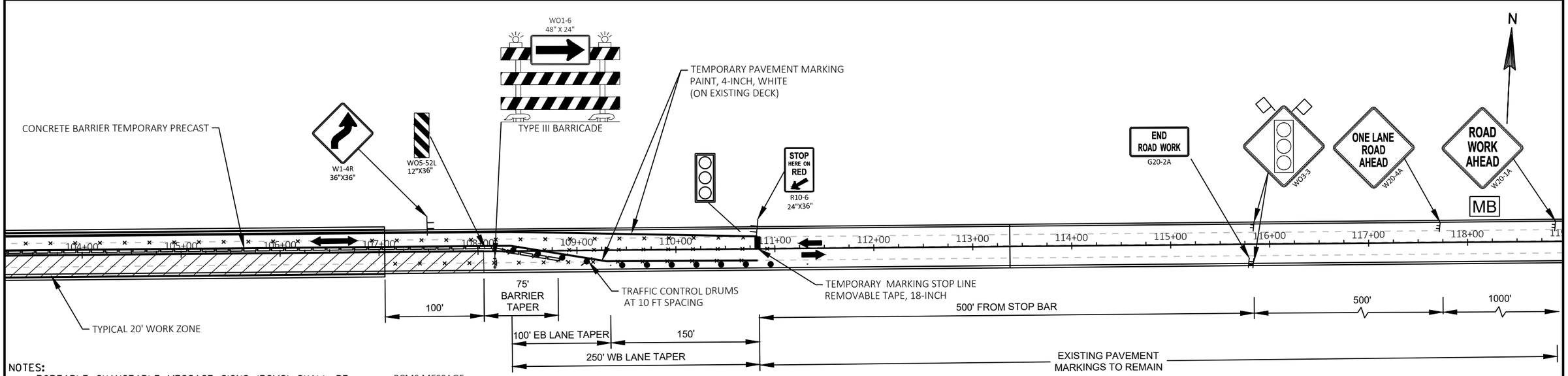
B-12-27
STAGE 2: STA 95+85 - 108+00
STAGE 3: STA 106+00 - 121+46

B-12-28
STAGE 6: STA 141+80 - 160+97

CONSTRUCTION STAGING DESCRIPTIONS

STAGE 1 = B-12-27 REPAIR WORK ON SOUTHWESTERN PORTION
STAGE 2 = B-12-27 REPAIR WORK ON NORTHWESTERN PORTION
STAGE 3 = B-12-27 REPAIR WORK ON NORTHEASTERN PORTION
STAGE 4 = B-12-27 REPAIR WORK ON SOUTHEASTERN PORTION
STAGE 5 = B-12-28 REPAIR WORK ON SOUTHERN HALF
STAGE 6 = B-12-28 REPAIR WORK ON NORTHERN HALF





NOTES:

- PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE OPERATIONAL FOR A MINIMUM OF ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
- PCMS MESSAGE SCHEDULE MAY REQUIRE ADJUSTMENT TO ACCOMMODATE CONSTRUCTION SCHEDULE. MESSAGES MUST BE APPROVED BY THE ENGINEER.
- ALL PCMS BOARDS SHALL REMAIN OPERATIONAL UNTIL PROJECT BEGINS, AS APPROVED BY THE ENGINEER.

PCMS MESSAGE

ROAD WORK
STARTS
XX/XX/XX

PROJECT NO: 1660-03-67	HWY: USH 18	COUNTY: CRAWFORD	TRAFFIC CONTROL - STAGE 1 B-12-27	SHEET 6	E

2

N

END ROAD WORK
G20-2A

ROAD WORK AHEAD
W20-1A

ONLY
R3-5R
42"X48"

END ROAD WORK
G20-2A

TEMPORARY PAVEMENT MARKING
REMOVABLE TAPE, 4-INCH, YELLOW

TEMPORARY MARKING STOP LINE
REMOVABLE TAPE, 18-INCH

R3-2
24"X24"

W1-4R
36"X36"

TEMPORARY PAVEMENT MARKING
REMOVABLE TAPE, 4-INCH, WHITE
(ON NEW OVERLAY AND EXISTING PAVEMENT)

CONCRETE BARRIER TEMPORARY PRECAST

TYPICAL 20' WORK ZONE

SPEED LIMIT 45 / SPEED LIMIT 40
R2-1
24"X30"

R3-2
48"x48"

TRAFFIC CONTROL DRUMS
AT 10-FOOT SPACING

FLEXIBLE TUBULAR MARK POSTS
AT 5-FOOT SPACING

89+00 90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00

150'
BARRIER TAPER
13'
25'
190' WB LANE TAPER
225' EB LANE TAPER

WO1-6
48" X 24"

WO5-52L
12"X36"

TYPE III BARRICADE

ONE LANE ROAD AHEAD
W20-4A

SPEED LIMIT 55 / SPEED LIMIT 40
R2-1
24"X30"

ROAD WORK AHEAD
W20-1A

SPEED LIMIT 45 / SPEED LIMIT 40
R2-1
24"X30"

ONE LANE ROAD AHEAD
W20-4A

WO3-3

YIELD
R1-2
36"X31"

STOP

STOP HERE ON RED
R10-6
24"X36"

WO3-2

500' ~1000' 500' 500' FROM STOP BAR

WO1-6
48" X 24"

TYPE III BARRICADE

ONLY
R3-5R
42"X48"

MARQUETTE DR

END ROAD WORK
G20-2A

LEGEND

- TRAFFIC CONTROL 16-INCH FLAGS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLEXIBLE TUBULAR MARK POSTS
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- MARKING REMOVAL

N

TEMPORARY PAVEMENT MARKING
REMOVABLE TAPE, 4-INCH, WHITE
(ON NEW OVERLAY)

WO1-6
48" X 24"

TYPE III BARRICADE

TEMPORARY PAVEMENT MARKING
PAINT, 4-INCH, WHITE
(ON EXISTING DECK)

WO5-52R
12"X36"

STOP HERE ON RED
R10-6
24"X36"

END ROAD WORK
G20-2A

WO3-3

ONE LANE ROAD AHEAD
W20-4A

ROAD WORK AHEAD
W20-1A

TYPICAL 20' WORK ZONE

104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00

ARCH SPAN

CONCRETE BARRIER TEMPORARY PRECAST

100'
75' BARRIER TAPER
100' WB LANE TAPER
150'
250' EB LANE TAPER

TRAFFIC CONTROL DRUMS
AT 10 FT SPACING

TEMPORARY MARKING STOP LINE
REMOVABLE TAPE, 18-INCH

500' FROM STOP BAR
500'
1000'
EXISTING PAVEMENT
MARKINGS TO REMAIN

PROJECT NO: 1660-03-67	HWY: USH 18	COUNTY: CRAWFORD	TRAFFIC CONTROL - STAGE 2 B-12-27	SHEET 7	E

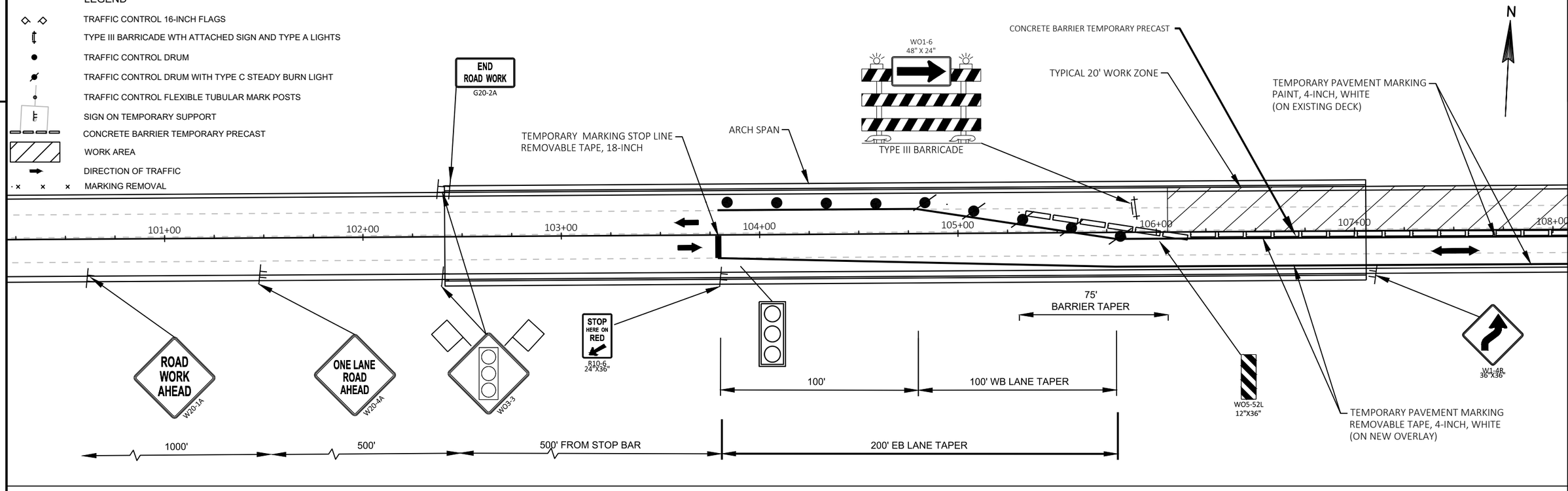
FILE NAME : N:\PDS\C3D\16600337\SHEETSPLAN\B-12-27 & 28\026101-S2 B-12-27.DWG
LAYOUT NAME - 026101-s2

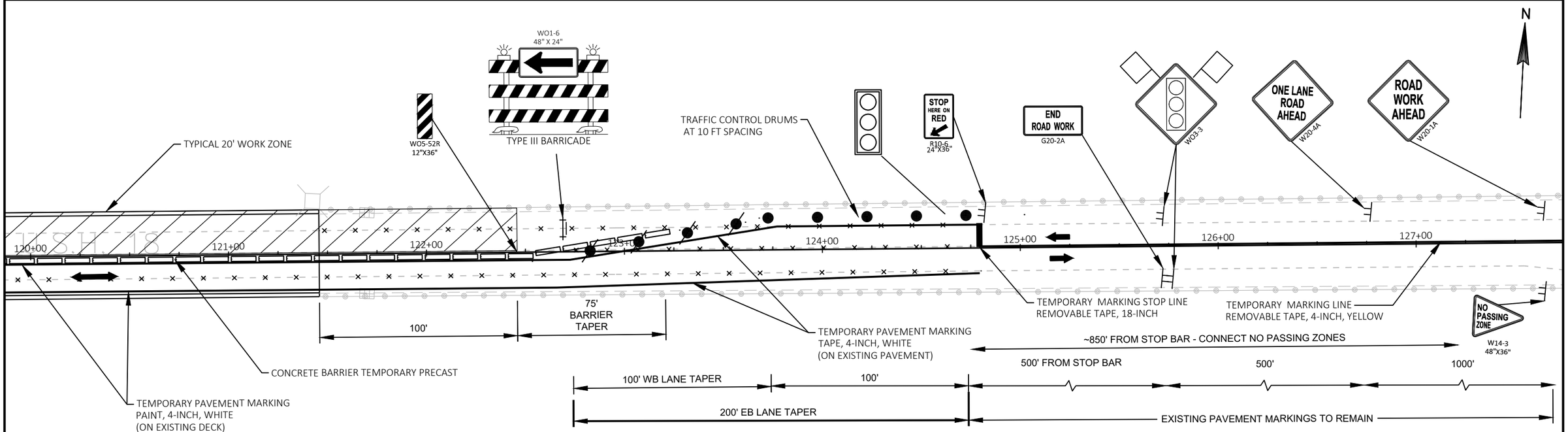
PLOT DATE : 3/4/2019 1:22 PM PLOT BY : PETERSON, SHANE J PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

LEGEND

- TRAFFIC CONTROL 16-INCH FLAGS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLEXIBLE TUBULAR MARK POSTS
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- MARKING REMOVAL





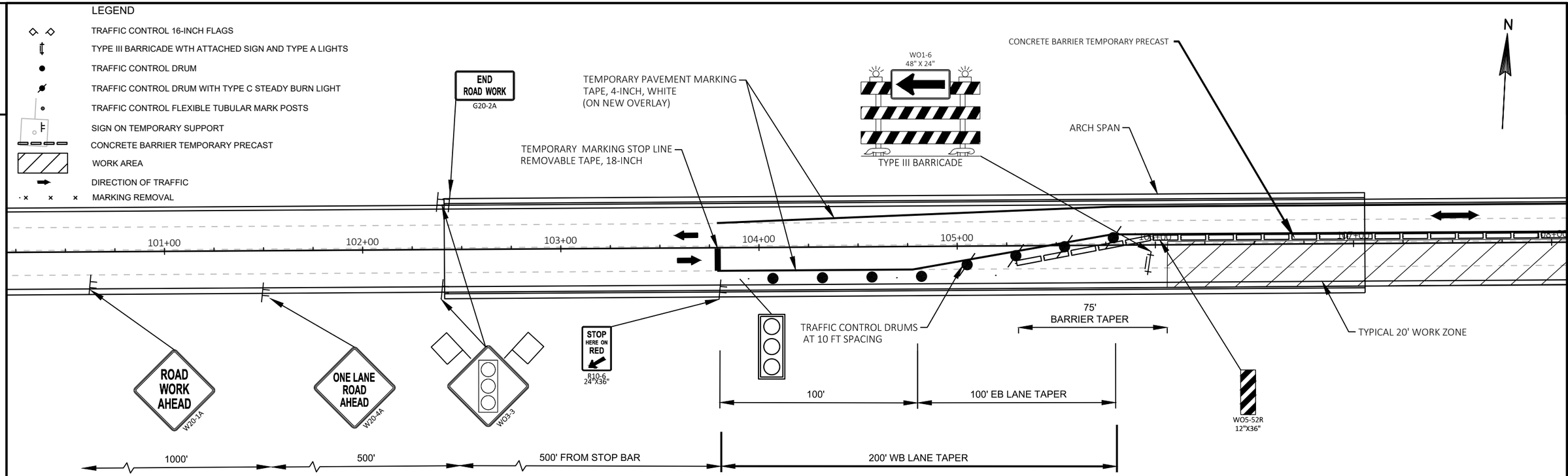
PROJECT NO: 1660-03-67	HWY: USH 18	COUNTY: CRAWFORD	TRAFFIC CONTROL - STAGE 3 B-12-27	SHEET 8	E

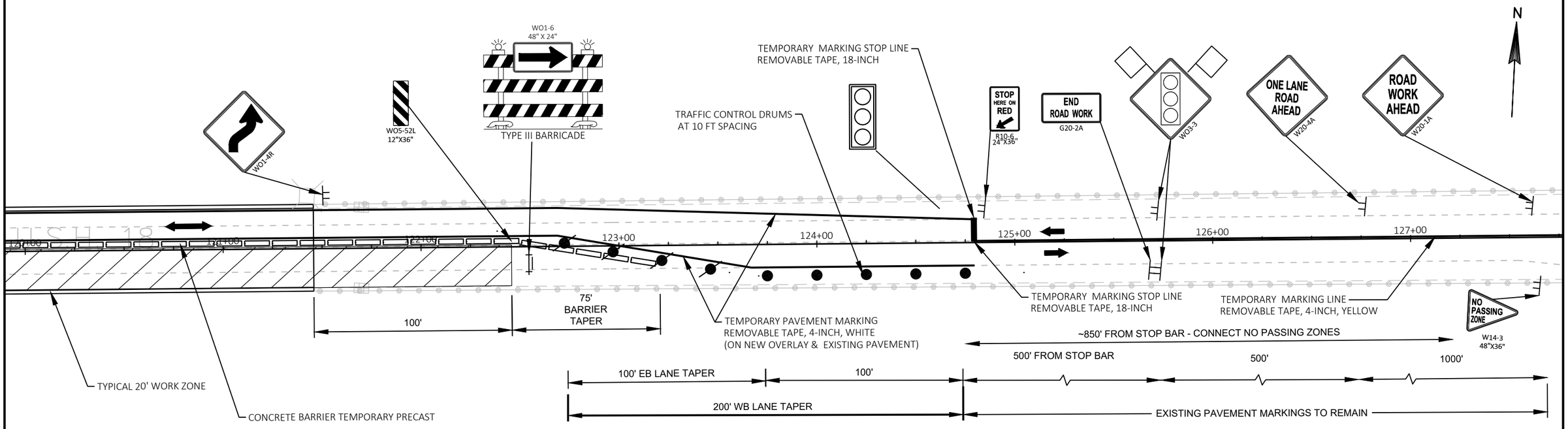
FILE NAME : N:\PDS\C3D\16600337\SHEETSPLAN\B-12-27 & 28\026201-S3 B-12-27.DWG
LAYOUT NAME - 026201-s3
PLOT DATE : 3/4/2019 1:22 PM PLOT BY : PETERSON, SHANE J PLOT NAME : PLOT SCALE : 1 IN:50 FT
WISDOT/CADDS SHEET 42

2

LEGEND

- TRAFFIC CONTROL 16-INCH FLAGS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLEXIBLE TUBULAR MARK POSTS
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- MARKING REMOVAL





PROJECT NO: 1660-03-67	HWY: USH 18	COUNTY: CRAWFORD	TRAFFIC CONTROL - STAGE 4 B-12-27	SHEET 9	E

FILE NAME : N:\PDS\C3D\16600337\SHEETSPLAN\B-12-27 & 28\026301-S4 B-12-27.DWG
LAYOUT NAME - 026301-s4

PLOT DATE : 3/4/2019 1:22 PM PLOT BY : PETERSON, SHANE J PLOT NAME : PLOT SCALE : 1 IN:50 FT

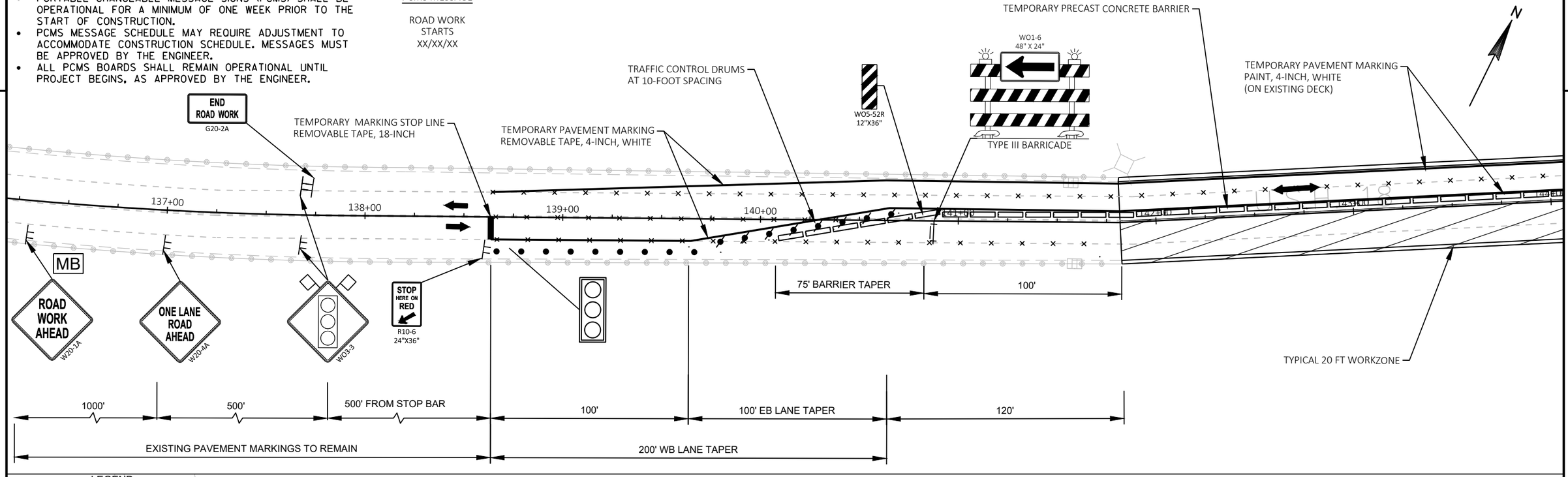
WISDOT/CADDS SHEET 42

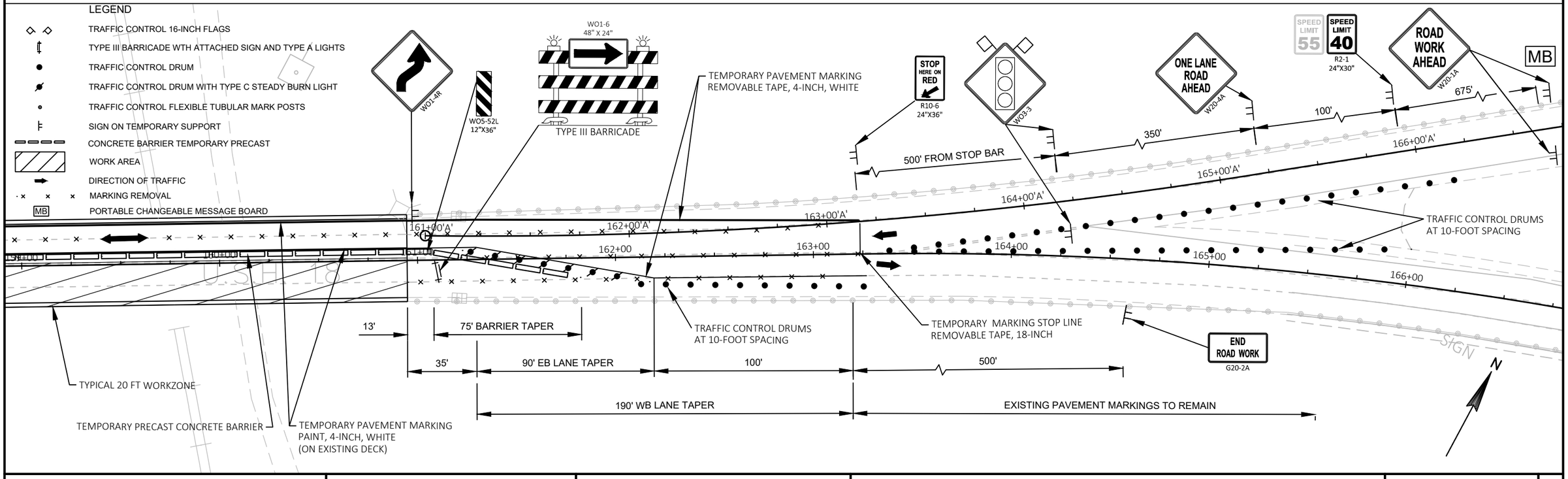
NOTES:

- PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE OPERATIONAL FOR A MINIMUM OF ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
- PCMS MESSAGE SCHEDULE MAY REQUIRE ADJUSTMENT TO ACCOMMODATE CONSTRUCTION SCHEDULE. MESSAGES MUST BE APPROVED BY THE ENGINEER.
- ALL PCMS BOARDS SHALL REMAIN OPERATIONAL UNTIL PROJECT BEGINS, AS APPROVED BY THE ENGINEER.

PCMS MESSAGE

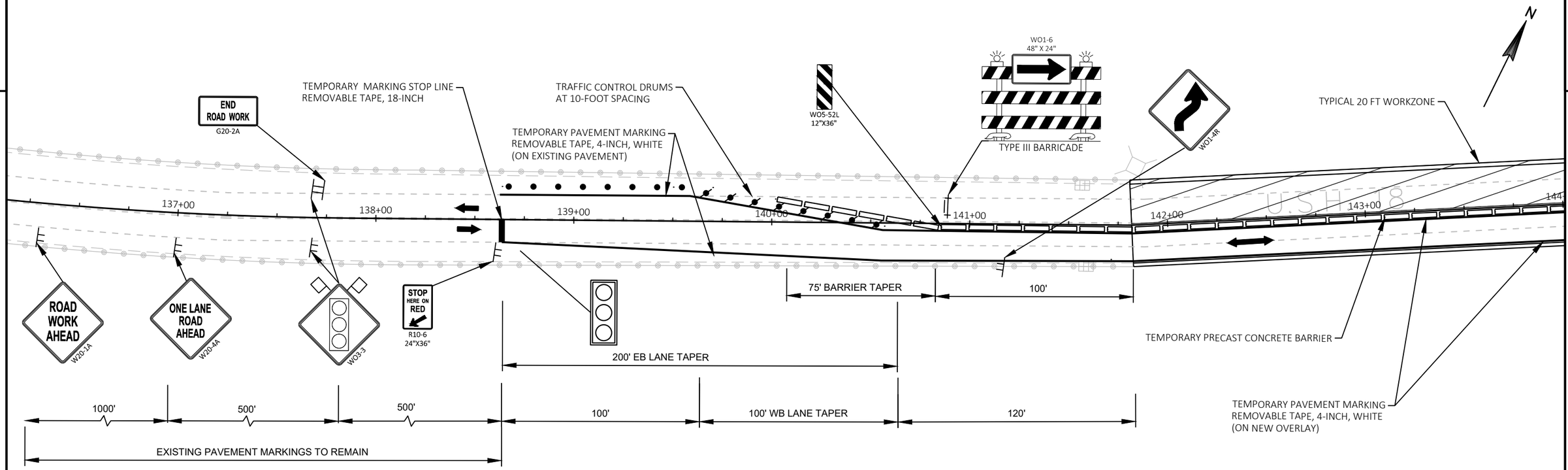
ROAD WORK
STARTS
XX/XX/XX

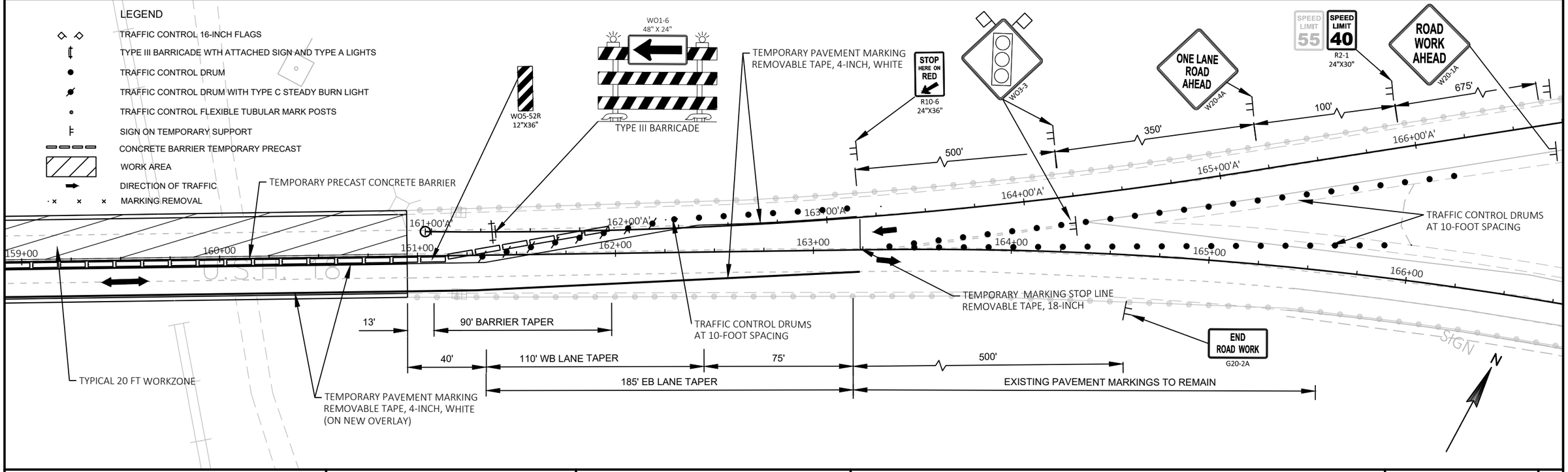




PROJECT NO: 1660-03-61	HWY: USH 18	COUNTY: CRAWFORD	TRAFFIC CONTROL - STAGE 5 B-12-28	SHEET 10	E

2





PROJECT NO: 1660-03-61	HWY: USH 18	COUNTY: CRAWFORD	TRAFFIC CONTROL - STAGE 6 B-12-28	SHEET 11	E

DETOUR SIGN INVENTORY

JCT
M2-1 or MM2-1 or MP2-1
21"X15"

DETOUR
M4-8
24"X12"

EAST
M3-2 or MM3-2 or MP3-2
24"X12"

SOUTH
M3-3 or MM3-3 or MP3-3
24"X12"

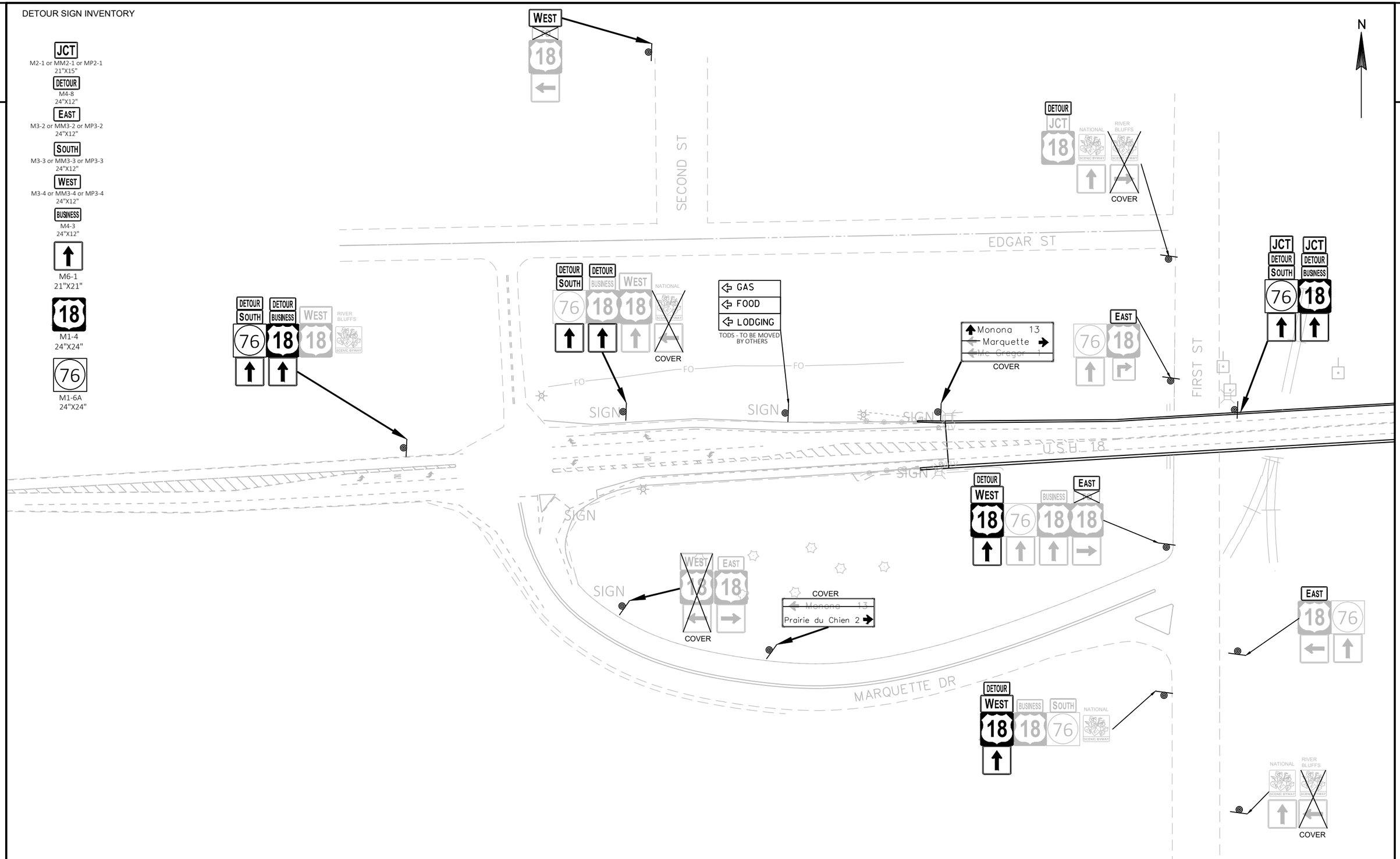
WEST
M3-4 or MM3-4 or MP3-4
24"X12"

BUSINESS
M4-3
24"X12"

M6-1
21"X21"

18
M1-4
24"X24"

76
M1-6A
24"X24"



PROJECT NO: 1660-03-67	HWY: USH 18	COUNTY: CRAWFORD	TRAFFIC CONTROL - DETOUR SIGNING STAGE 1 & 2	SHEET 12	E

FILE NAME : N:\PDS\C3D\16600337\SHEETSPLAN\B-12-27 & 28\027001-DT.DWG
LAYOUT NAME - 027001-dt

PLOT DATE : 3/4/2019 7:37 AM PLOT BY : PETERSON, SHANE J PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 42

					1660-03-61	1660-03-67
Line	**Item**	**Item Description**	**Unit**	**Total**	**Qty**	**Qty**
0002	108.3100.S	Incentive/Disincentive for Interim Completion of Work	CD	1.000		1.000
0004	203.0225.S	Debris Containment (structure) 01. B-12-27	LS	1.000		1.000
0006	203.0225.S	Debris Containment (structure) 02. B-12-28	LS	1.000	1.000	
0008	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. Station 98+85	LS	1.000		1.000
0010	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 02. Station 141+80	LS	1.000	1.000	
0012	204.0165	Removing Guardrail	LF	144.000		144.000
0014	213.0100	Finishing Roadway (project) 01. 1660-03-67	EACH	1.000		1.000
0016	213.0100	Finishing Roadway (project) 02. 1660-03-61	EACH	1.000	1.000	
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	28.000		28.000
0020	502.0100	Concrete Masonry Bridges	CY	257.000		257.000
0022	502.3210	Pigmented Surface Sealer	SY	4,058.000	1,650.000	2,408.000
0024	502.4204	Adhesive Anchors No. 4 Bar	EACH	9,846.000		9,846.000
0026	505.0400	Bar Steel Reinforcement HS Structures	LB	35,020.000		35,020.000
0028	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	26,120.000		26,120.000
0030	506.0105	Structural Steel Carbon	LB	1,100.000		1,100.000
0032	509.0301	Preparation Decks Type 1	SY	3,359.000	841.000	2,518.000
0034	509.0302	Preparation Decks Type 2	SY	1,896.000	529.000	1,367.000
0036	509.0310.S	Sawing Pavement Deck Preparation Areas	LF	33,590.000	8,410.000	25,180.000
0038	509.1500	Concrete Surface Repair	SF	1,120.000	1,044.000	76.000
0040	509.2000	Full-Depth Deck Repair	SY	671.000	73.000	598.000
0042	509.3500.S	HMA Overlay Polymer-Modified	TON	2,201.000	937.000	1,264.000
0044	509.9005.S	Removing Concrete Masonry Deck Overlay (structure) 01. B-12-27	SY	11,487.000		11,487.000
0046	509.9005.S	Removing Concrete Masonry Deck Overlay (structure) 02. B-12-28	SY	8,516.000	8,516.000	
0048	509.9025.S	Epoxy Injection Crack Repair	LF	960.000	220.000	740.000
0050	509.9026.S	Cored Holes 2-Inch Diameter	EACH	8.000	4.000	4.000
0052	509.9050.S	Cleaning Parapets	LF	9,153.000	3,873.000	5,280.000
0054	603.8000	Concrete Barrier Temporary Precast Delivered	LF	3,975.000	2,175.000	1,800.000
0056	603.8125	Concrete Barrier Temporary Precast Installed	LF	10,838.000	4,350.000	6,488.000
0058	614.2500	MGS Thrie Beam Transition	LF	78.800		78.800
0060	614.2610	MGS Guardrail Terminal EAT	EACH	2.000		2.000
0062	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1660-03-67	EACH	1.000		1.000
0064	618.0100	Maintenance And Repair of Haul Roads (project) 02. 1660-03-61	EACH	1.000	1.000	
0066	619.1000	Mobilization	EACH	1.000	0.260	0.740
0068	624.0100	Water	MGAL	0.500		0.500
0070	628.7010	Inlet Protection Type B	EACH	8.000	4.000	4.000

					1660-03-61	1660-03-67
Line	**Item**	**Item Description**	**Unit**	**Total**	**Qty**	**Qty**
0072	642.5201	Field Office Type C	EACH	1.000		1.000
0074	643.0300	Traffic Control Drums	DAY	19,370.000	7,870.000	11,500.000
0076	643.0420	Traffic Control Barricades Type III	DAY	572.000	156.000	416.000
0078	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	50.000		50.000
0080	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	40.000		40.000
0082	643.0705	Traffic Control Warning Lights Type A	DAY	1,144.000	312.000	832.000
0084	643.0715	Traffic Control Warning Lights Type C	DAY	5,320.000	1,630.000	3,690.000
0086	643.0900	Traffic Control Signs	DAY	8,230.000	1,560.000	6,670.000
0088	643.0920	Traffic Control Covering Signs Type II	EACH	22.000	2.000	20.000
0090	643.1050	Traffic Control Signs PCMS	DAY	28.000	14.000	14.000
0092	643.5000	Traffic Control	EACH	1.000	0.250	0.750
0094	646.1020	Marking Line Epoxy 4-Inch	LF	21,835.000	9,860.000	11,975.000
0096	646.3020	Marking Line Epoxy 8-Inch	LF	405.000		405.000
0098	646.5020	Marking Arrow Epoxy	EACH	6.000		6.000
0100	646.5120	Marking Word Epoxy	EACH	2.000		2.000
0102	646.7020	Marking Diagonal Epoxy 6-Inch	LF	300.000		300.000
0104	646.9000	Marking Removal Line 4-Inch	LF	8,900.000	3,815.000	5,085.000
0106	646.9100	Marking Removal Line 8-Inch	LF	200.000		200.000
0108	646.9300	Marking Removal Special Marking	EACH	6.000		6.000
0110	649.0105	Temporary Marking Line Paint 4-Inch	LF	10,315.000	3,830.000	6,485.000
0112	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	16,440.000	6,030.000	10,410.000
0114	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	72.000	24.000	48.000
0116	653.0210	Junction Boxes 10x10x6-Inch	EACH	4.000		4.000
0118	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-12-27	LS	1.000		1.000
0120	661.0100	Temporary Traffic Signals for Bridges (structure) 02. B-12-28	LS	1.000	1.000	
0122	715.0502	Incentive Strength Concrete Structures	DOL	1,542.000		1,542.000
0124	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	600.000	600.000	
0126	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	400.000	400.000	
0128	SPV.0035	Special 01. Concrete Masonry Deck Repair - High Early Strength	CY	360.000	85.000	275.000
0130	SPV.0060	Special 01. Bearing Repairs B-12-27	EACH	2.000		2.000
0132	SPV.0060	Special 02. Parapet Cover Plates	EACH	8.000		8.000
0134	SPV.0060	Special 03. Cleaning And Painting Bearings	EACH	16.000	4.000	12.000
0136	SPV.0090	Special 01. Haunch Removal B-12-27	LF	1,310.000		1,310.000
0138	SPV.0105	Special 01. Strip Seal Gland Replacement B-12-27	LS	1.000		1.000
0140	SPV.0105	Special 02. Pier Cap Repairs B-12-27	LS	1.000		1.000
0142	SPV.0105	Special 03. Pier Cap Repairs B-12-28	LS	1.000	1.000	
0144	SPV.0105	Special 04. Parapet Cover Plate Fastener Repairs	LS	1.000	1.000	

						1660-03-61	1660-03-67
Line	**Item**		**Item Description**	**Unit**	**Total**	**Qty**	**Qty**
0146	SPV.0105	Special	05. Access Hatch Repairs	LS	1.000	1.000	
0148	SPV.0165	Special	01. Partial Parapet Removal	SF	10,000.000		10,000.000
0150	SPV.0180	Special	01. Abutment Seat Cleaning And Sealing	SY	46.000	22.000	24.000

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REMOVING GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	204.0165 LF	REMARKS
0010	94+86	-	95+58	LT	72	B-12-27 NW
0010	94+86	-	95+58	RT	72	B-12-27 SW
			1660-03-67 TOTAL 0010		144	

GUARDRAIL SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	MGS THRIE BEAM TRANSITION 614.2500 LF	MGS GUARDRAIL TERMINAL EAT 614.2610 EACH	REMARKS
0010	94+65	-	95+58	LT	39.4	1	B-12-27 NW QUADRANT
0010	94+65	-	95+58	RT	39.4	1	B-12-27 SW QUADRANT
			1660-03-67 TOTAL 0010		78.8	2	

BASE AGGREGATE DENSE 3/4-INCH

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 TON	REMARKS
0010	94+25	-	95+55	LT	14	B-12-27 GUARDRAIL SECTION
0010	94+25	-	95+55	RT	14	B-12-27 GUARDRAIL SECTION
			1660-03-67 TOTAL 0010		28	

WATER

CATEGORY	STATION	TO	STATION	LOCATION	624.0100 MGAL	REMARKS
0010	94+25	-	95+55	LT	0.25	SHOULDER COMPACTION
0010	94+25	-	95+55	RT	0.25	SHOULDER COMPACTION
			1660-03-67 TOTAL 0010		0.5	

CONCRETE BARRIER TEMPORARY PRECAST

CATEGORY	STATION	TO	STATION	LOCATION	DELIVERED 603.8000 LF	INSTALLED 603.8125 LF	REMARKS
0010	94+75	-	109+00	LT	1425	1425	B-12-27 STAGE 1
0010	94+37	-	109+00	RT	38	1463	B-12-27 STAGE 2
0010	105+25	-	123+25	RT	337	1800	B-12-27 STAGE 3
0010	105+25	-	123+25	LT		1800	B-12-27 STAGE 4
			1660-03-67 TOTAL 0010		1800	6488	
0010	140+00	-	161+75	LT	2175	2175	B-12-28 STAGE 5
0010	140+00	-	161+75	RT		2175	B-12-28 STAGE 6
			1660-03-61 TOTAL 0010		2175	4350	
			CONSTRUCTION TOTAL 0010		3975	10838	

INLET PROTECTION

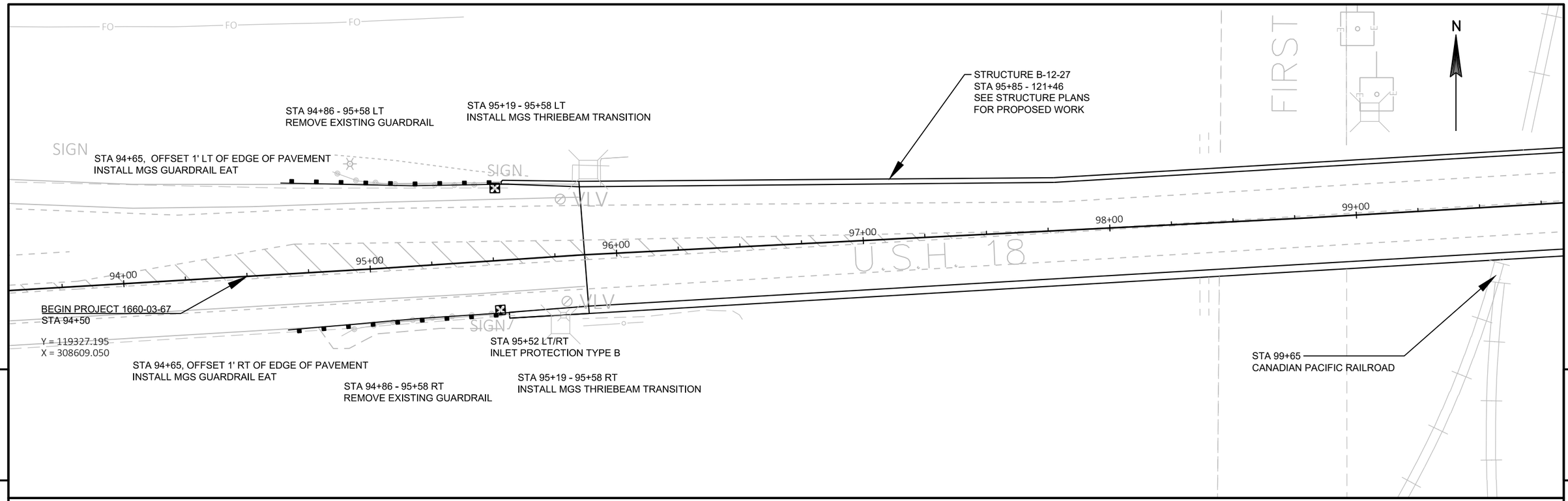
CATEGORY	STATION	LOCATION	TYPE B 628.7010 EACH	REMARKS
0010	95+52	LT	1	B-12-27 EB APPROACH SLAB
0010	95+52	RT	1	B-12-27 EB APPROACH SLAB
0010	121+70	LT	1	B-12-27 WB APPROACH SLAB
0010	121+70	RT	1	B-12-27 WB APPROACH SLAB
	1660-03-67 TOTAL 0010		4	
0010	141+60	LT	1	B-12-28 EB APPROACH SLAB
0010	141+60	RT	1	B-12-28 EB APPROACH SLAB
0010	161+22	LT	1	B-12-28 WB APPROACH SLAB
0010	161+22	RT	1	B-12-28 WB APPROACH SLAB
	1660-03-61 TOTAL 0010		4	
	CONSTRUCTION TOTAL 0010		8	

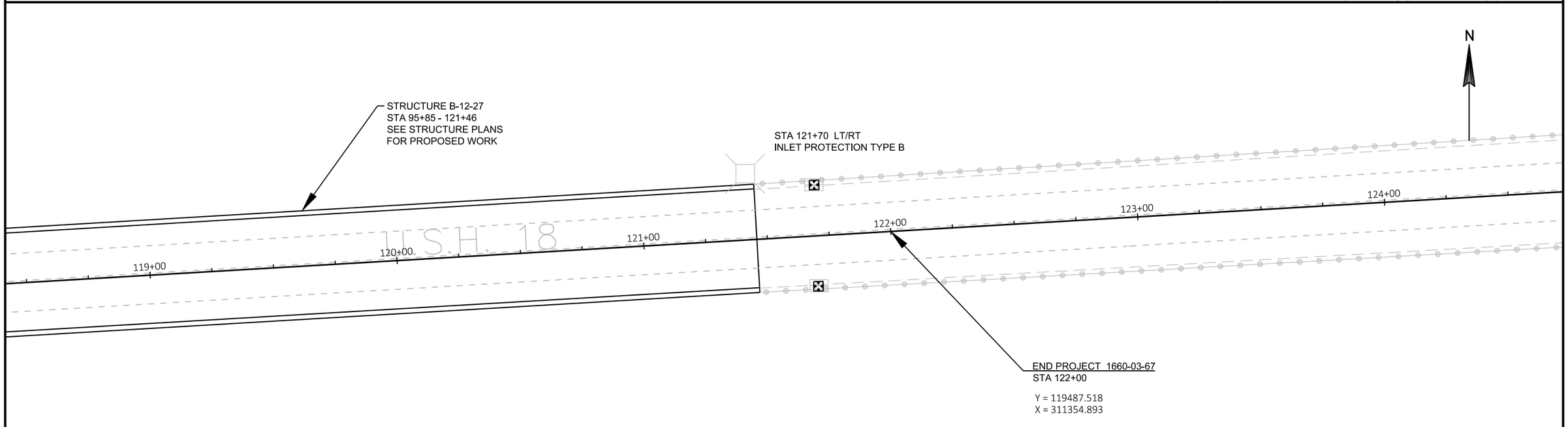
TRAFFIC CONTROL SUMMARY

STAGE	SIGN DESCRIPTION	SIGN CODE	CALENDAR DAYS	EST. NO. OF DRUMS	DRUMS 643.0300 DAY	NO. OF BARRICADES	BARRICADES TYPE III 643.0420 DAY	FLEXIBLE TUBULAR MARKER POSTS 643.0500 EACH	FLEXIBLE TUBULAR MARKER BASES 643.0600 EACH	NO. OF TYPE A LIGHTS	WARNING LIGHTS TYPE A 643.0705 DAY	NO. OF TYPE C LIGHTS	WARNING LIGHTS TYPE C 643.0715 DAY	NO. OF SIGNS	SIGNS 643.0900 DAY	COVERING SIGNS TYPE II 643.0920 EACH	NO. OF CYCLES	SIGNS PCMS 643.1050 DAY	TRAFFIC CONTROL (PROJECT) 643.5000 EACH
PRECONSTRUCTION	PCMS		7	10	70							10	70					14	0.75
ALL STAGES	SPEED LIMIT AHEAD 45 MPH	W03-5														1	1		
	SPEED LIMIT 40 MPH	R2-1	138											4	552	4	1		
	ROAD WORK AHEAD	W20-1A	138											3	414				
	END ROAD WORK	G20-2A	138											4	552				
	ONE LANE ROAD AHEAD	W20-4A	138											2	276				
	WORK ZONE SIGNAL AHEAD	W03-3	138											4	552				
	ARROW RIGHT	WO1-6	138			1	138			2	276			1	138				
	STOP HERE ON RED	R10-6	138											2	276				
	ARROW LEFT	W01-6	138			1	138			2	276			1	138				
	CLEARANCE STRIPER DOWN RIGHT	WO5-52L	138											1	138				
	CLEARANCE STRIPER DOWN LEFT	WO5-52R	138											1	138				
	RIGHT REVERSE CURVE	WO1-4R	138											1	138				
STAGE 1 & 2 DETOUR	ONE LANE ROAD AHEAD	W20-4A	70											1	70				
	NO LEFT TURNS	R3-2	70	50	3500			40	40					2	140				
	WORK ZONE SIGNAL AHEAD	W03-3	70											1	70				
	RIGHT TURN ONLY	R3-5R	70											2	140				
	ARROW RIGHT	WO1-6	70			2	140			4	280			2	140				
	JCT - JCT DETOUR - DETOUR SOUTH - BUSINESS 76 - 18 [UA] - [UA]	SEE DETOUR PLAN	70											10	700				
	DETOUR - DETOUR SOUTH - BUSINESS 76 - 18 [UA] - [UA]	SEE DETOUR PLAN	70											13	910	3	1		
	[UA] MONONA 13 ~~[LA]~~ MARQUETTE [RA]		70											2	140	3	1		
	~~[LA]~~[UA] MC GREGOR ~~1~~ 5																		
	WEST 18 [LEFT ARROW]	SEE DETOUR PLAN														1	1		
	DETOUR WEST 18 [UA]	SEE DETOUR PLAN	70											8	560	2	1		
	EAST [~~T0~~]		70											3	210	1	1		
	WEST [~~T0~~]		70											1	70	1	1		
	JCT DETOUR WEST 18	SEE DETOUR PLAN	70											2	140				
	SCENIC BYWAY															3	1		
	~~[LA] MONONA 13~~ PRAIRIE DU CHIEN 2 [RA]		70													1	1		
STAGE 1	[WORK ZONE TAPERS]		36	55	1980							25	900						
STAGE 2	[WORK ZONE TAPERS]		34	75	2550							30	1020						
STAGE 3	[WORK ZONE TAPERS]		34	50	1700							25	850						
	NO PASSING ZONE	W14-3	34											1	34				
STAGE 4	[WORK ZONE TAPERS]		34	50	1700							25	850						
	NO PASSING ZONE	W14-3	34											1	34				
	[UNDISTRIBUTED]							10											
	1660-03-67 TOTAL 0010		290	11500	4	416	50	40	8	832	115	3690	73	6670	20		14	0.75
PRECONSTRUCTION	PCMS		7	10	70							10	70					14	0.25
ALL STAGES	SPEED LIMIT 40 MPH	R2-1	78											2	156	2	1		
	ROAD WORK AHEAD	W20-1A	78											2	156				
	ONE LANE ROAD AHEAD	W20-4A	78											2	156				
	WORK ZONE SIGNAL AHEAD	W03-3	78											4	312				
	STOP HERE ON RED	R10-6	78											2	156				
	CLEARANCE STRIPER DOWN RIGHT	WO5-52L	78											1	78				
	CLEARANCE STRIPER DOWN LEFT	WO5-52R	78											1	78				
	RIGHT REVERSE CURVE	WO1-4R	78											2	156				
	ARROW LEFT/RIGHT	W01-6	78			2	156			4	312			2	156				
	END ROAD WORK	G20-2A	78											2	156				
STAGE 5	[WORK ZONE TAPERS]		39	100	3900							20	780						
STAGE 6	[WORK ZONE TAPERS]		39	100	3900							20	780						
	1660-03-61 TOTAL 0010		210	7870	2	156			4	312	50	1630	20	1560	2		14	0.25
	CONSTRUCTION TOTAL 0010		500	19370	6	572	50	40	12	1144	165	5320	93	8230	22		28	1

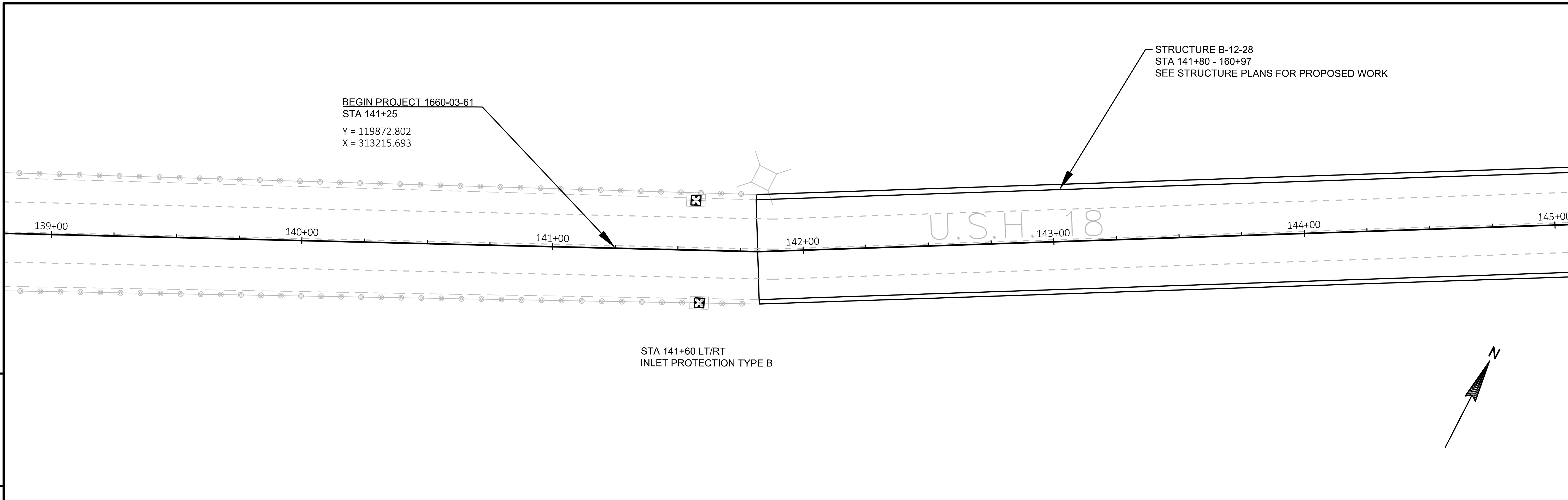
PAVEMENT MARKING SUMMARY

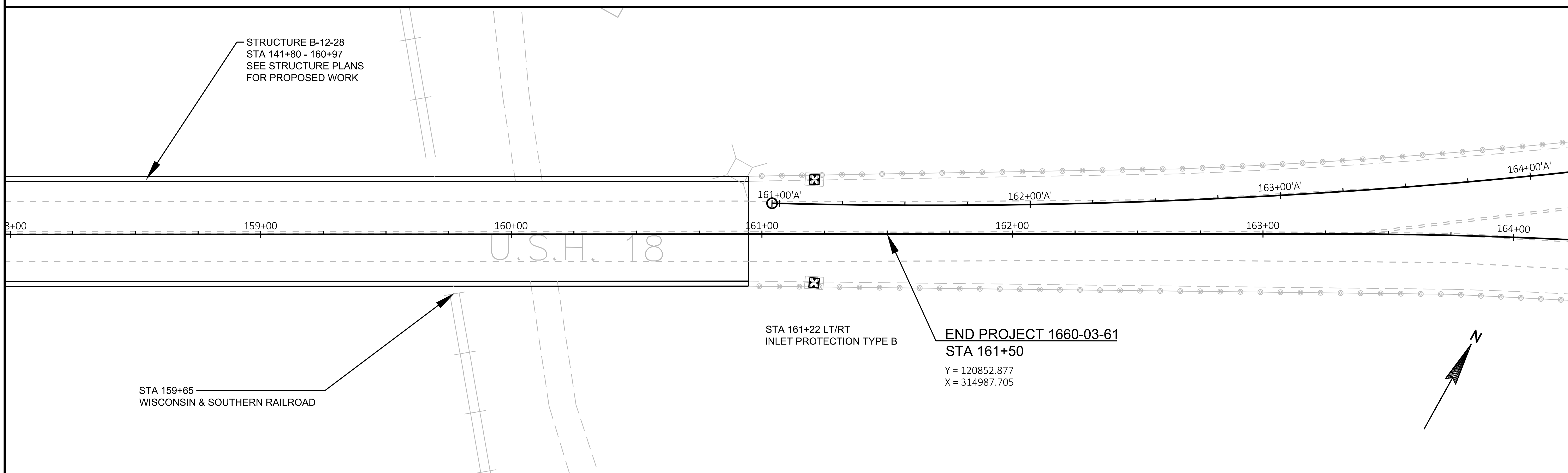
STATION	TO	STATION	LOCATION	MARKING LINE EPOXY 4-INCH 646.1020 LF	MARKING LINE EPOXY 8-INCH 646.3020 LF	MARKING ARROW EPOXY 646.5020 EACH	MARKING WORD EPOXY 646.5120 EACH	MARKING DIAGONAL EPOXY 6-INCH 646.7020 LF	MARKING REMOVAL LINE 4-INCH 646.9000 LF	MARKING REMOVAL LINE 8-INCH 646.9100 LF	MARKING REMOVAL SPECIAL MARKING 646.9300 EACH	TEMPORARY MARKING LINE PAINT 4-INCH 649.0105 LF	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH 649.0150 LF	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH 649.0850 LF	REMARKS
88+00	-	95+85	LT/RT						425	200			1185		STAGE 1 - YELLOW EDGELINE & DIAGONALS
89+00	-	93+25	LT/RT								6				STAGE 1 - LEFT ARROWS & ONLYS
95+85	-	111+00	LT/RT						1535			2845	155		STAGE 1 - WHITE EDGELINE
108+25	-	111+00	CL						530						STAGE 1 - YELLOW CENTERLINE
93+35	-	111+00	ML											24	STAGE 1 & 2 - STOP BARS
93+75	-	94+60	LT/RT										70		STAGE 2 - YELLOW EDGELINE ADJUSTMENT
93+35	-	111+00	LT/RT						625			760	2715		STAGE 2 - WHITE EDGELINE
103+75	-	124+75	LT/RT						1380			2880	1225		STAGE 3 - WHITE EDGELINE
122+75	-	133+50	CL						255				850		STAGE 3 & 4 - YELLOW CENTERLINE
103+75	-	124+75	ML											24	STAGE 3 & 4 - STOP BARS
103+75	-	124+75	LT/RT						335				4210		STAGE 4 - WHITE EDGELINE
91+50	-	124+75	LT/RT	6650											FINAL - WHITE EDGELINE
89+00	-	93+25	LT/RT			6	2								FINAL - LEFT & RIGHT ARROWS & ONLYS
91+40	-	93+80	LT/RT		405										FINAL - LEFT & RIGHT TURN LANES
93+00	-	97+80	MEDIAN	1255				300							FINAL - YELLOW EDGELINE & DIAGONALS
97+80	-	107+05	CL	1850											FINAL - YELLOW CENTERLINE - DOUBLE YELL
107+05	-	121+50	CL	1810											FINAL - YELLOW CENTERLINE - SOLID - DAS
121+50	-	124+75	CL	410											FINAL - YELLOW CENTERLINE - DASH - SOLI
1660-03-67 TOTAL 0010				11975	405	6	2	300	5085	200	6	6485	10410	48	
138+60	-	163+25	LT						2465			1915	550		STAGE 5 - WHITE EDGELINE
139+60	-	162+25	RT						550			1915	550		STAGE 5 - WHITE EDGELINE
138+60	-	163+25	CL						800						STAGE 5 - YELLOW CENTERLINE
138+60	-	163+25	LT										2465		STAGE 6 - WHITE EDGELINE
138+60	-	163+25	RT										2465		STAGE 6 - WHITE EDGELINE
138+60	-	163+25	ML											24	STAGE 5 & 6 - STOP BARS
138+60	-	163+25	LT	2465											FINAL - WHITE EDGELINE
138+60	-	163+25	RT	2465											FINAL - WHITE EDGELINE
138+60	-	163+25	CL	4930											FINAL - DOUBLE YELLOW CENTERLINE
1660-03-61 TOTAL 0010				9860					3815			3830	6030	24	
CONSTRUCTION TOTAL 0010				21835	405	6	2	300	8900	200	6	10315	16440	72	





PROJECT NO: 1660-03-67 & 61	HWY: USH 18	COUNTY: CRAWFORD	PLAN: STRUCTURE B-12-27	SHEET 19	E

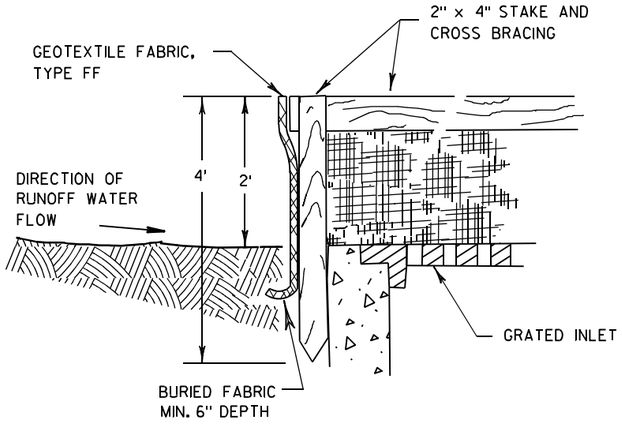


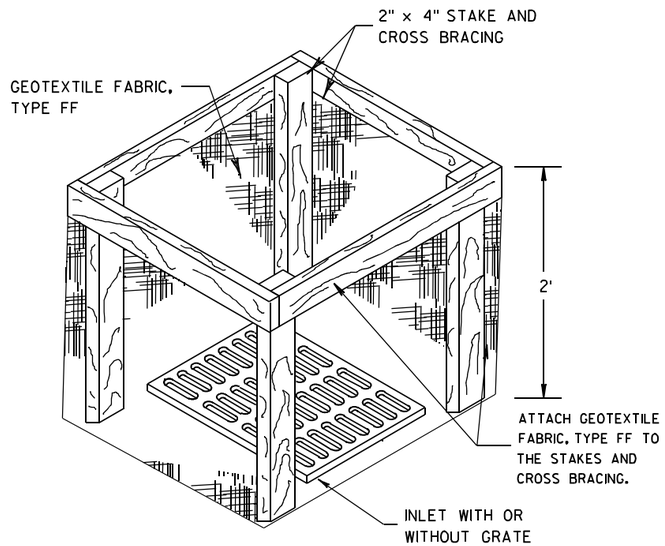


PROJECT NO: 1660-03-67 & 61	HWY: USH 18	COUNTY: CRAWFORD	PLAN: STRUCTURE B-12-28	SHEET 20	E

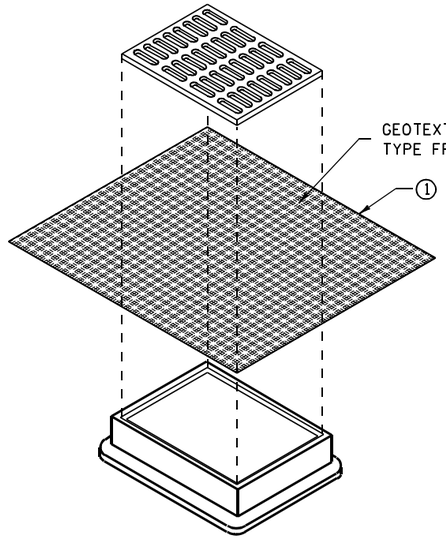
Standard Detail Drawing List

08E10-02	INLET PROTECTION TYPE A, B, C AND D
09G02-05A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-05C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
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"
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C07-14B	PAVEMENT MARKING WORDS
15C07-14C	PAVEMENT MARKING ARROWS
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C08-19C	PAVEMENT MARKING (TURN LANES)
15C11-07A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-05A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D33-05	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



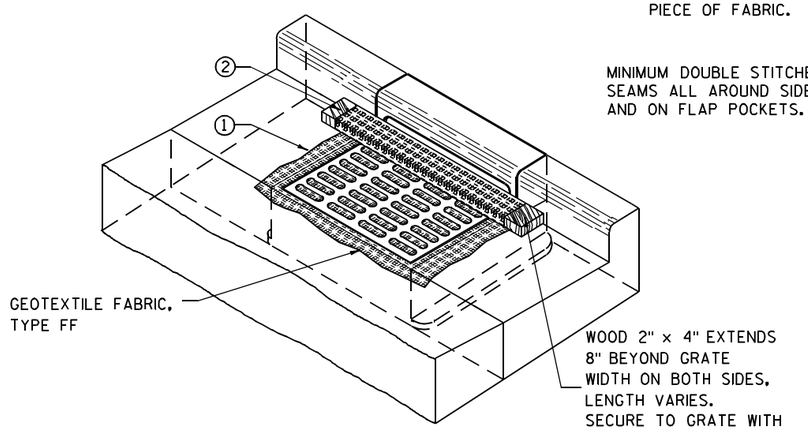


INLET PROTECTION, TYPE A

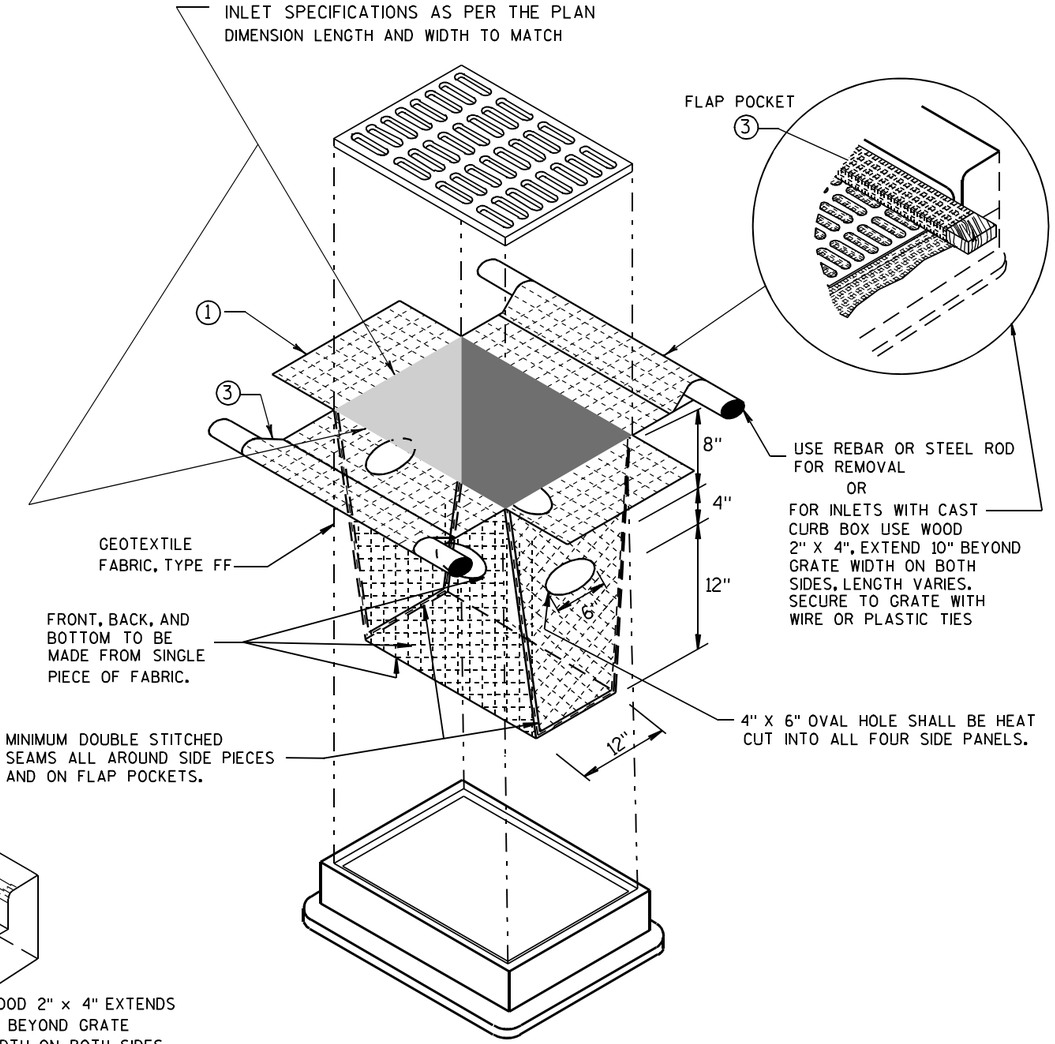


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

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.

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 A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

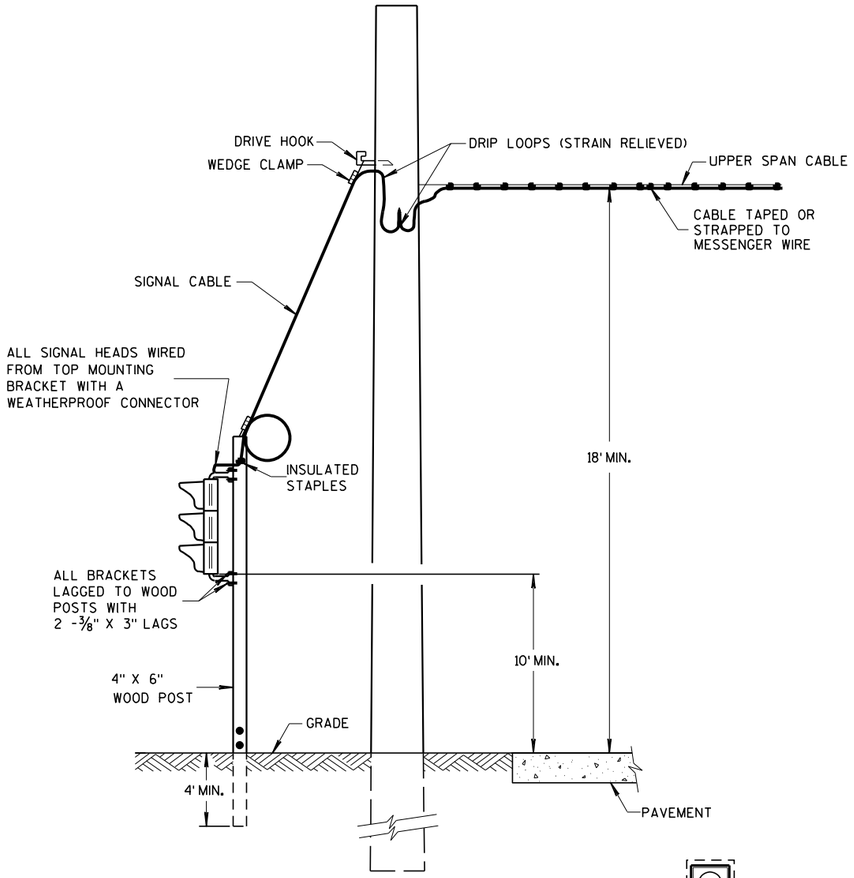
FHWA

6

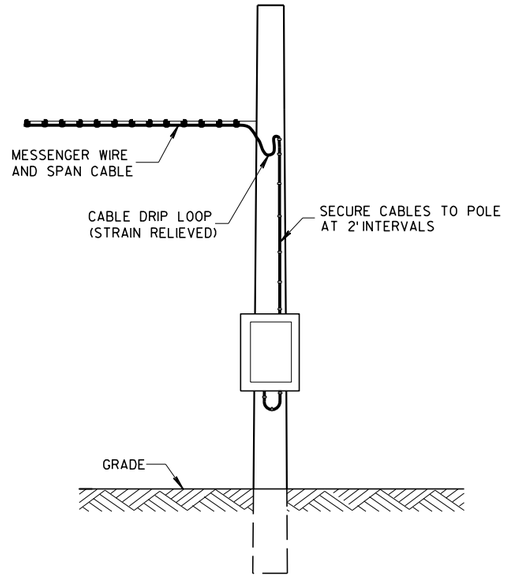
S.D.D. 8 E 10-2

6

S.D.D. 8 E 10-2



TYPICAL DROP TO TRAFFIC SIGNAL FACE



POLE MOUNT CABINET INSTALLATION

GENERAL NOTES

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

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAYBE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY POLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAM GUARD, ETC.).

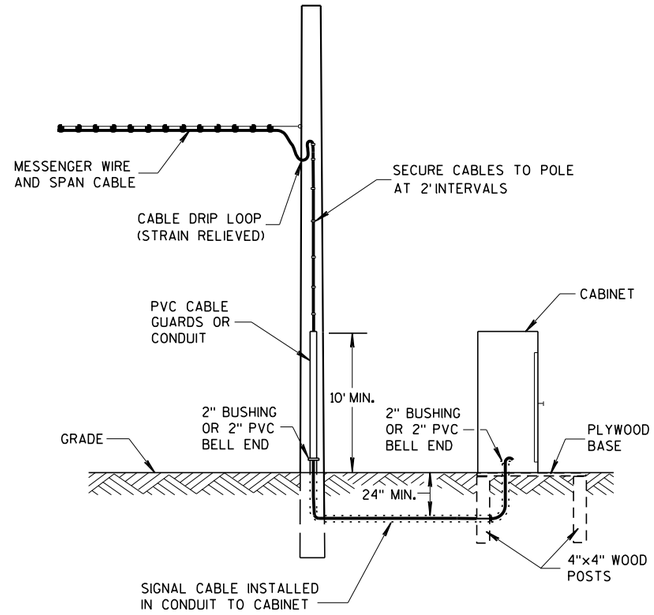
WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.

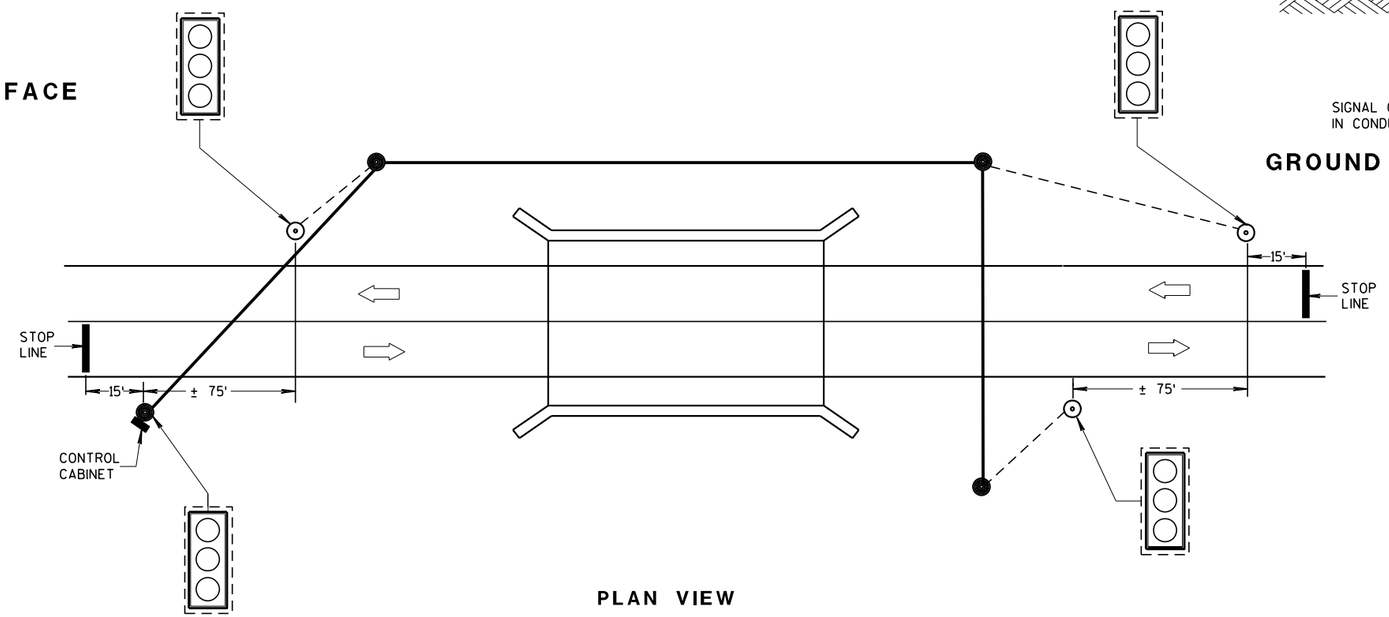
SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



GROUND MOUNT CABINET INSTALLATION

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT

**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.



PLAN VIEW

TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

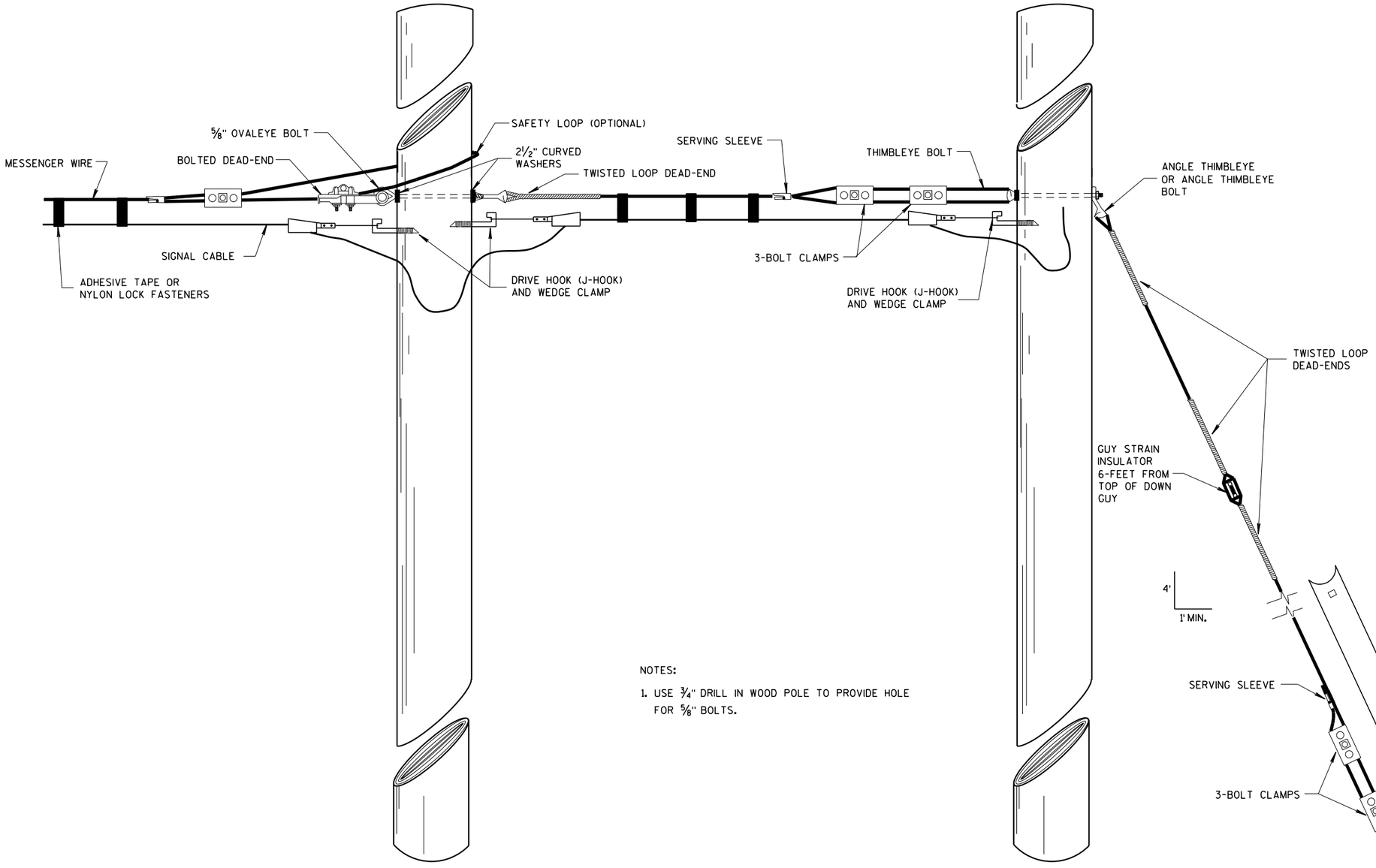
- WOOD POLE (NON-BREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- LED TRAFFIC SIGNAL FACE WITH BACKPLATE (3-12")
- DIRECTION OF TRAFFIC

MINIMUM POLE LENGTHS	CLASS	MINIMUM BURIAL DEPTHS
25 FEET	V	5 FEET
30 FEET	V	6 FEET
35 FEET	IV	7 FEET
40 FEET	IV	8 FEET
45 FEET	IV	9 FEET

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICA
FHWA



SPAN WIRE POLE

GUY POLE

NOTES:

1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICA
FHWA

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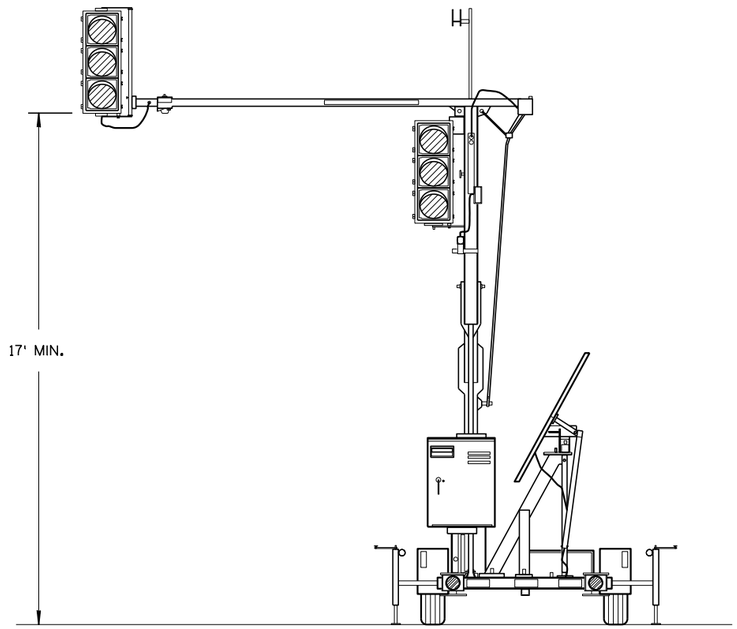
S.D.D. 9 G 2-5b

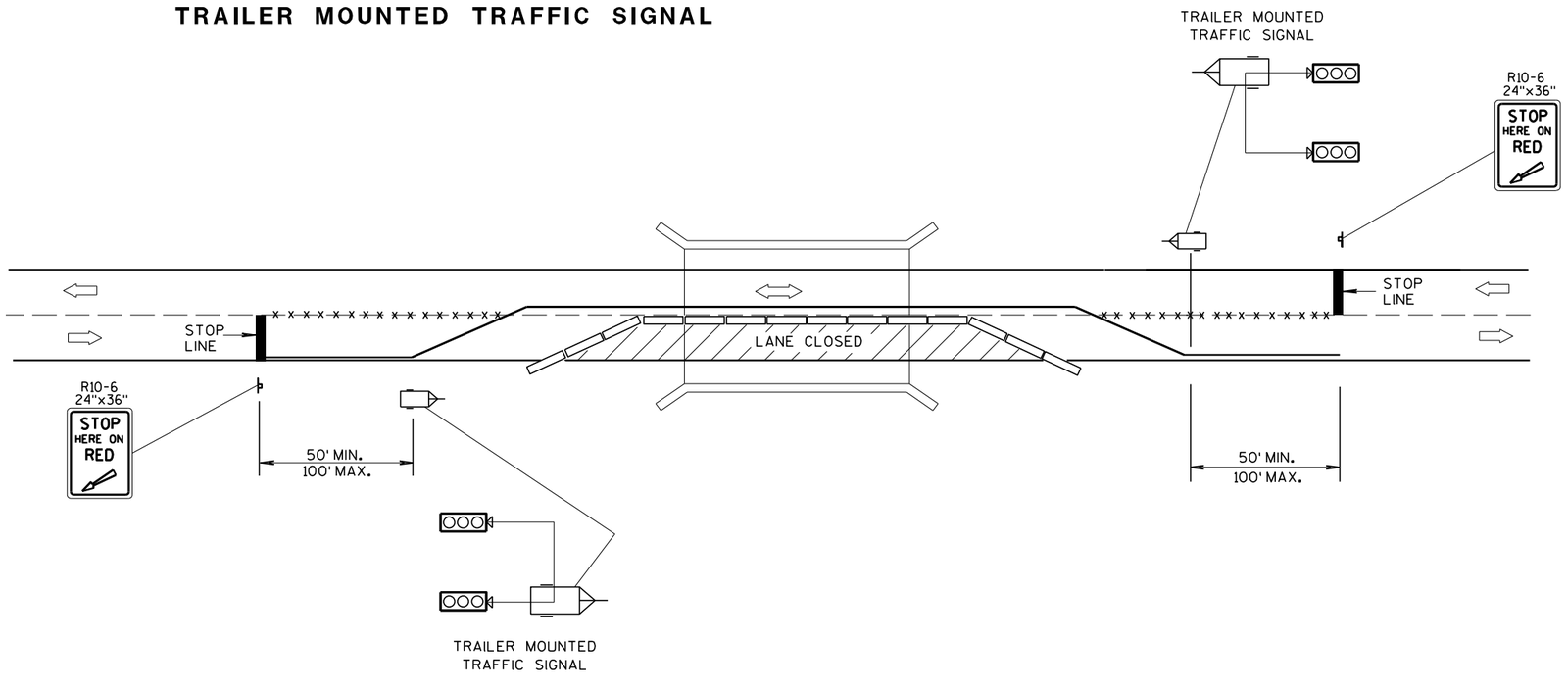


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL 25 R
FHWA

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S.D.D. 9 G 2-5c

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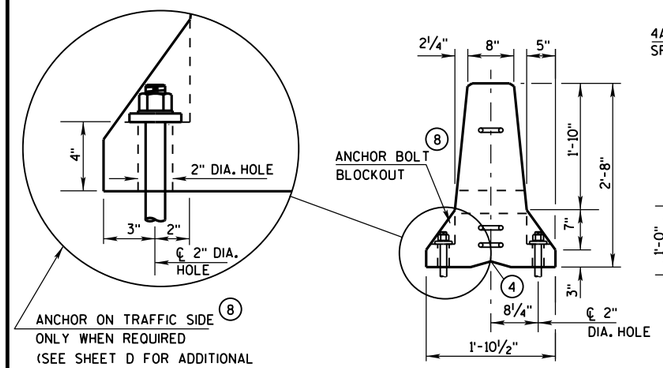
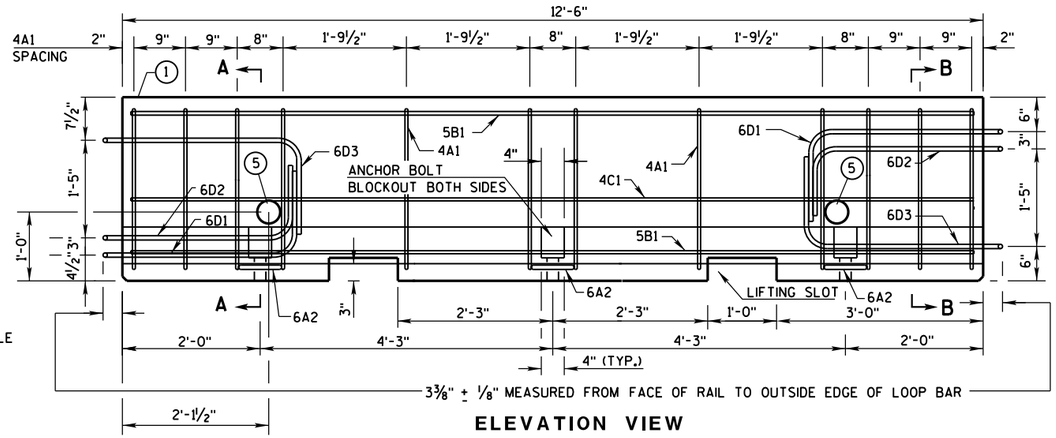
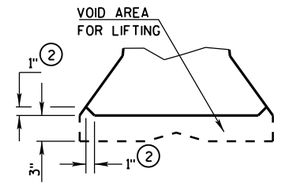
S.D.D. 9 G 2-5c



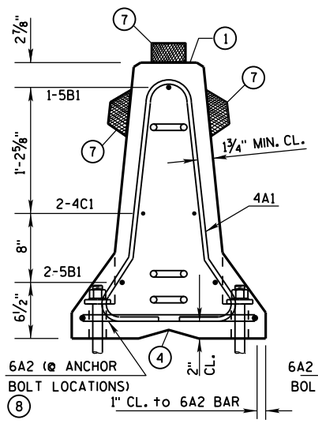
END VIEW



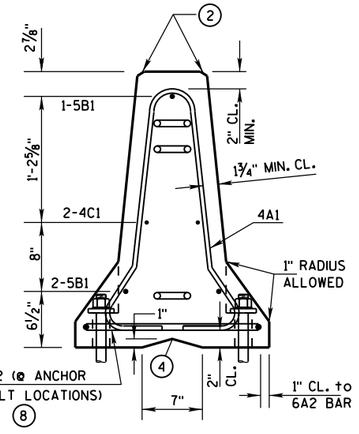
ELEVATION VIEW



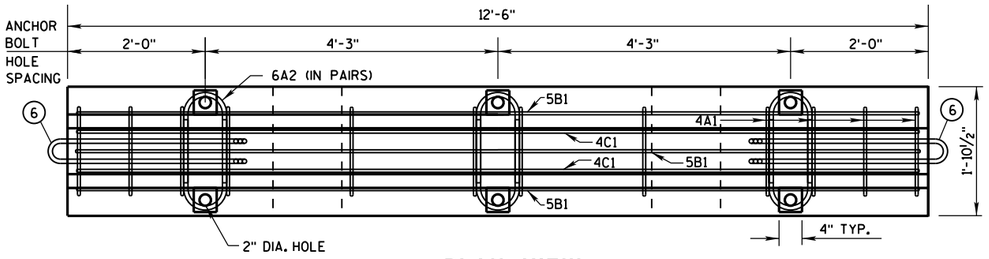
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

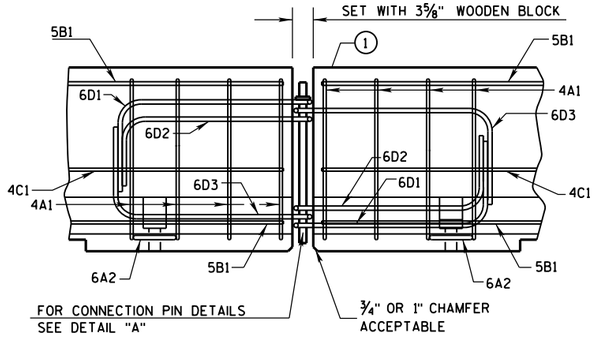


SECTION B-B
(STIRRUP PLACEMENT)

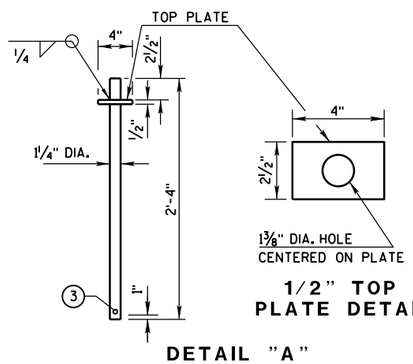


PLAN VIEW

DETAILS OF BARRIER SECTION

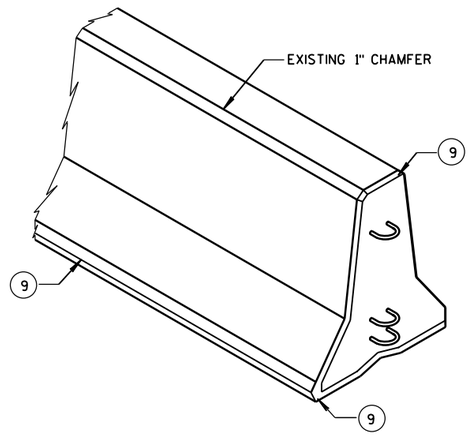


DETAILS OF BARRIER CONNECTION



1/2" TOP
PLATE DETAIL

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



GENERAL NOTES

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

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 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 ¾" 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 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" 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: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" 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 MANUFACTURES 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.

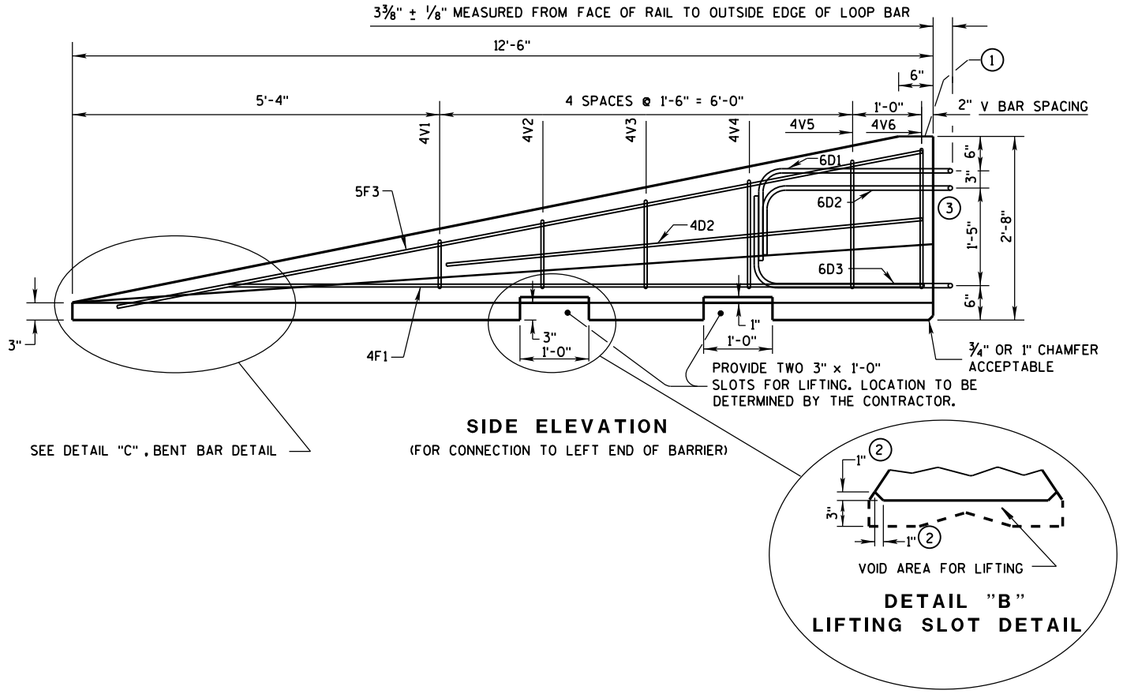
(8) SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.

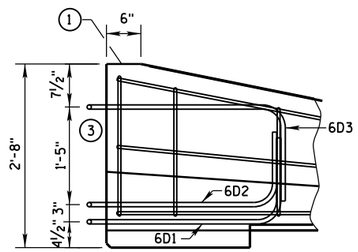
(9) 1" CHAMFER OPTIONAL.

f'c = 4,000 psi

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

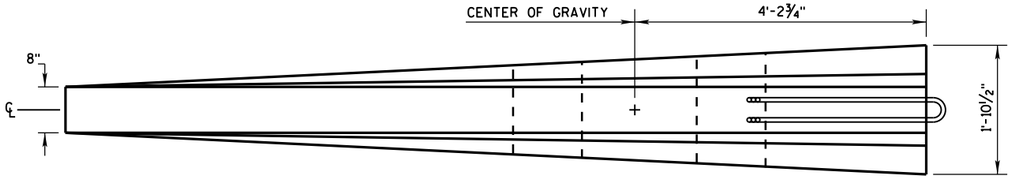
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 26

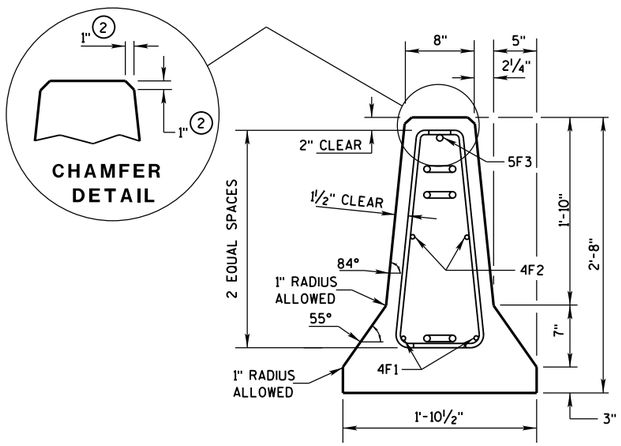


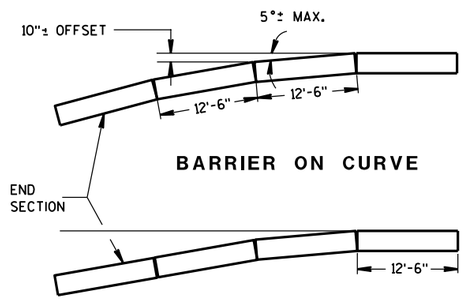


GENERAL NOTES

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

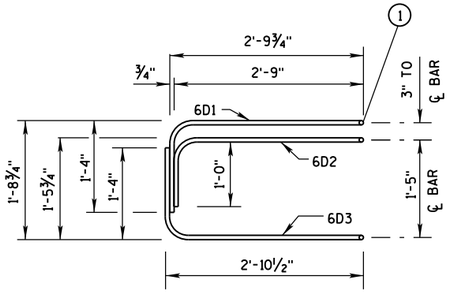
6

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

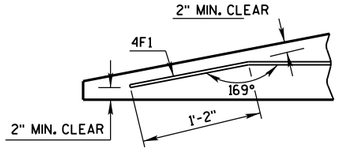
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

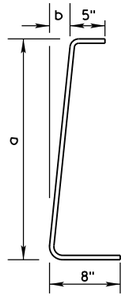
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

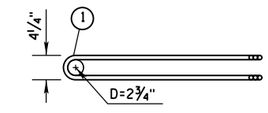
GENERAL NOTES

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

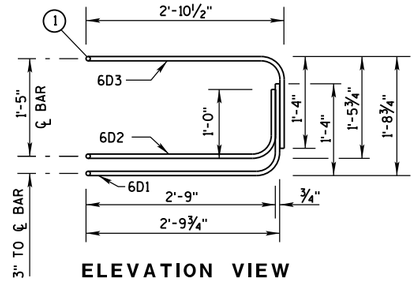
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

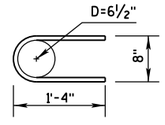
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



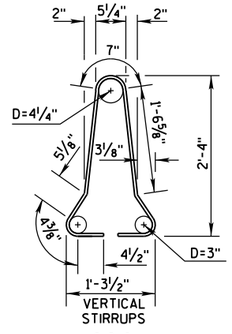
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2



4A1

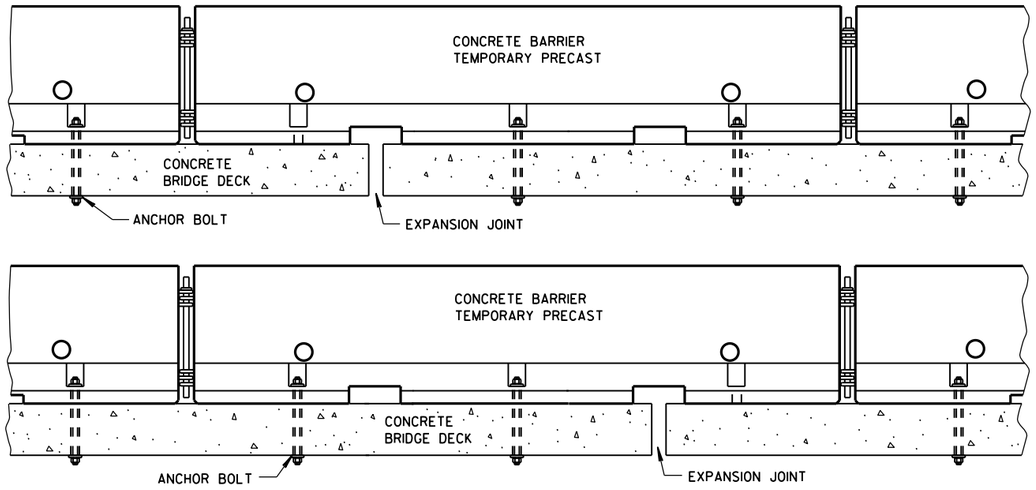
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



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.)

GENERAL NOTES

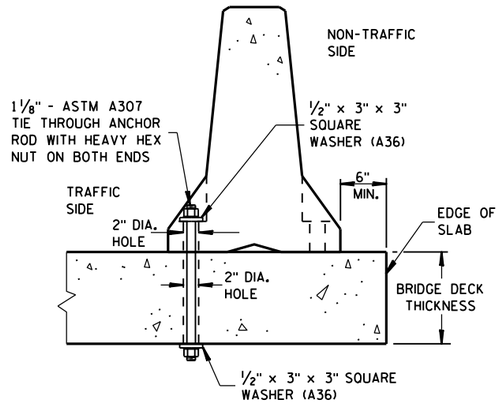
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

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

(1) 1⅛" DIAMENTER A307 THREADED ROD. ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL. ASTM A563A HEAVY HEX NUT.

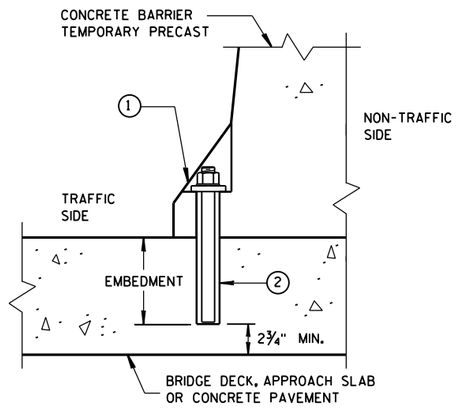
(2) ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

(3) ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THAN DRIVE ASPHALT ANCHOR PIN.



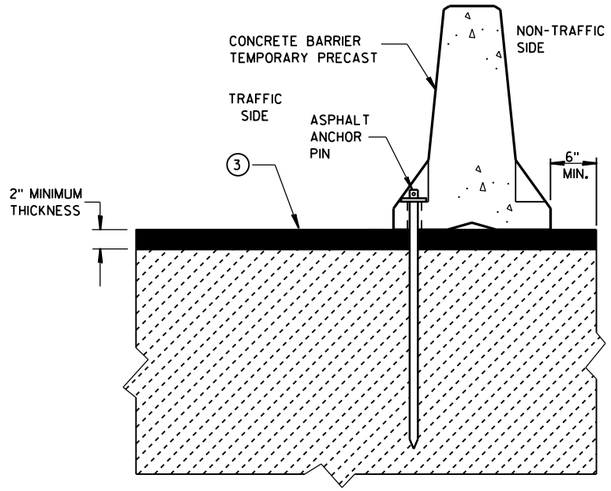
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

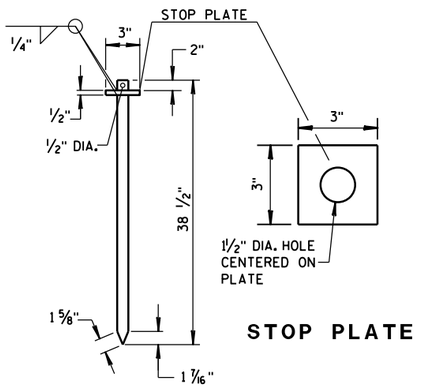


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



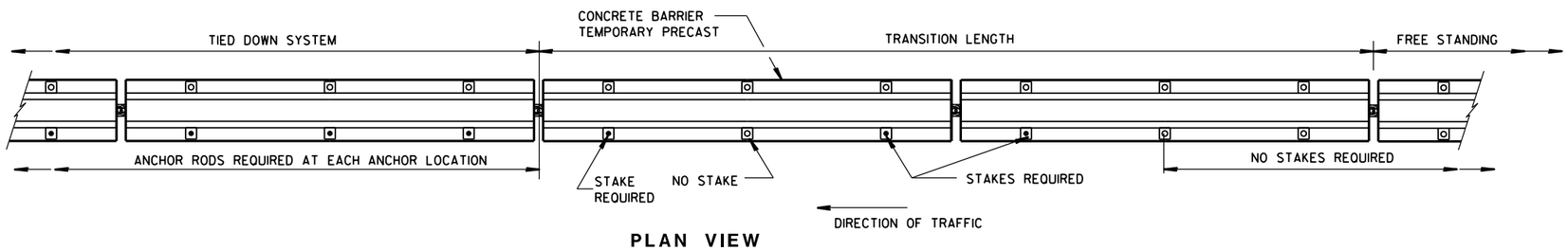
STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



STOP PLATE

ASPHALT ANCHOR PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

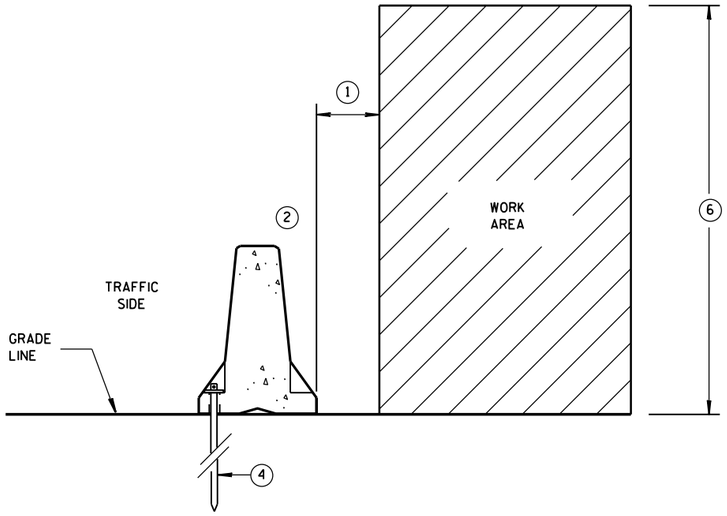
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

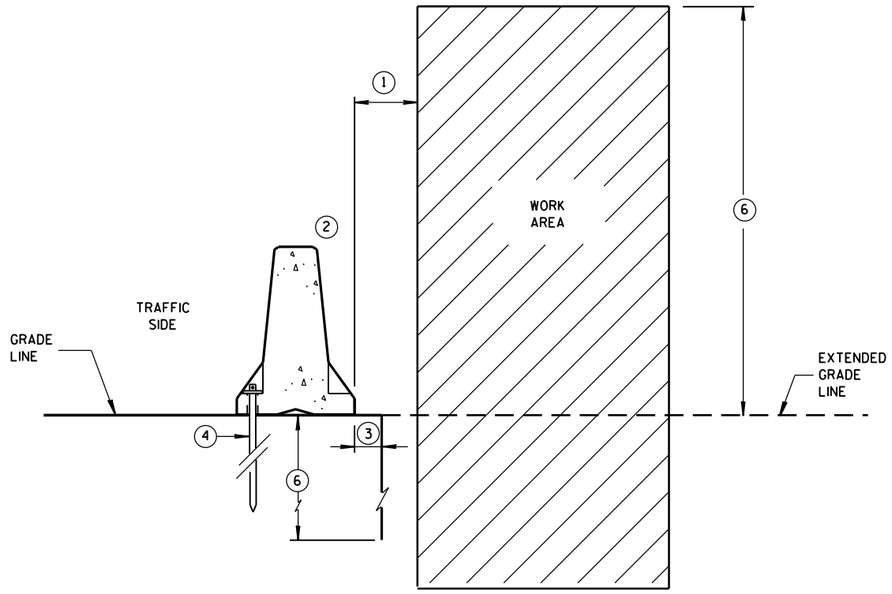
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

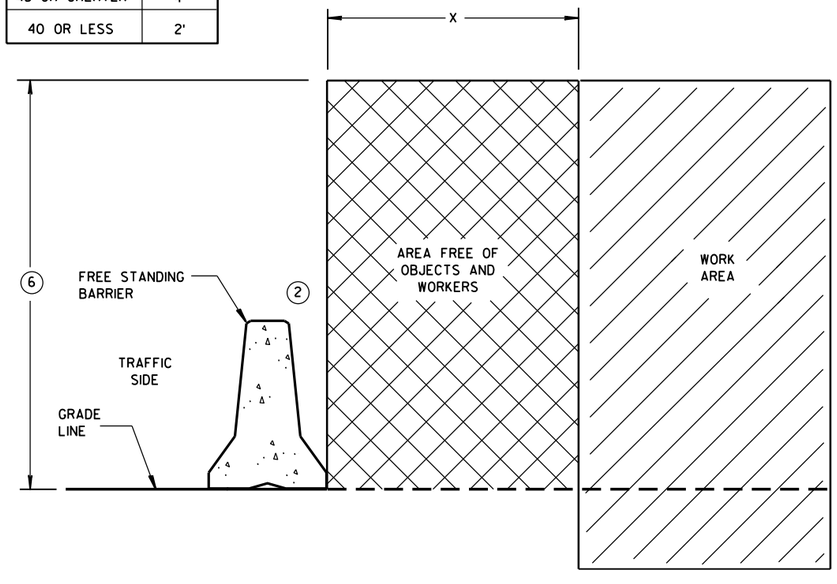


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

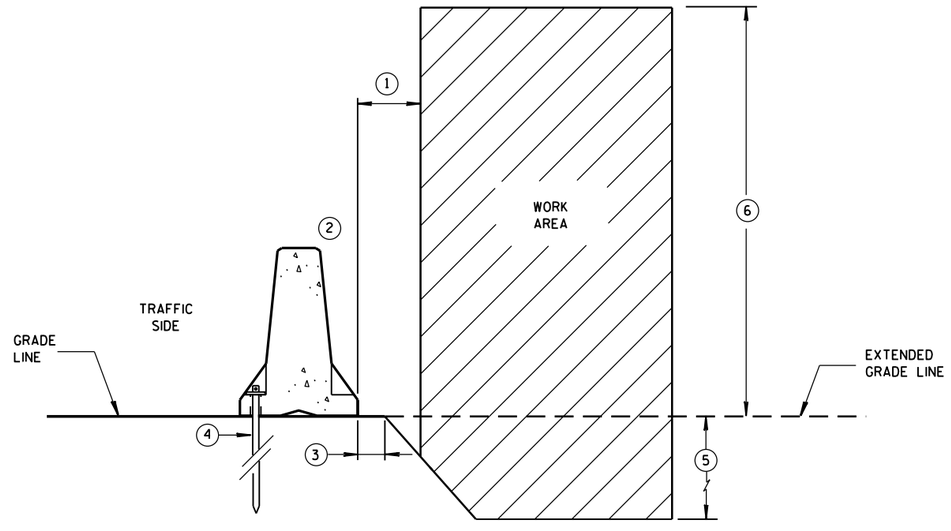
GENERAL NOTES

1. WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR 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".

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 TRANSPOI

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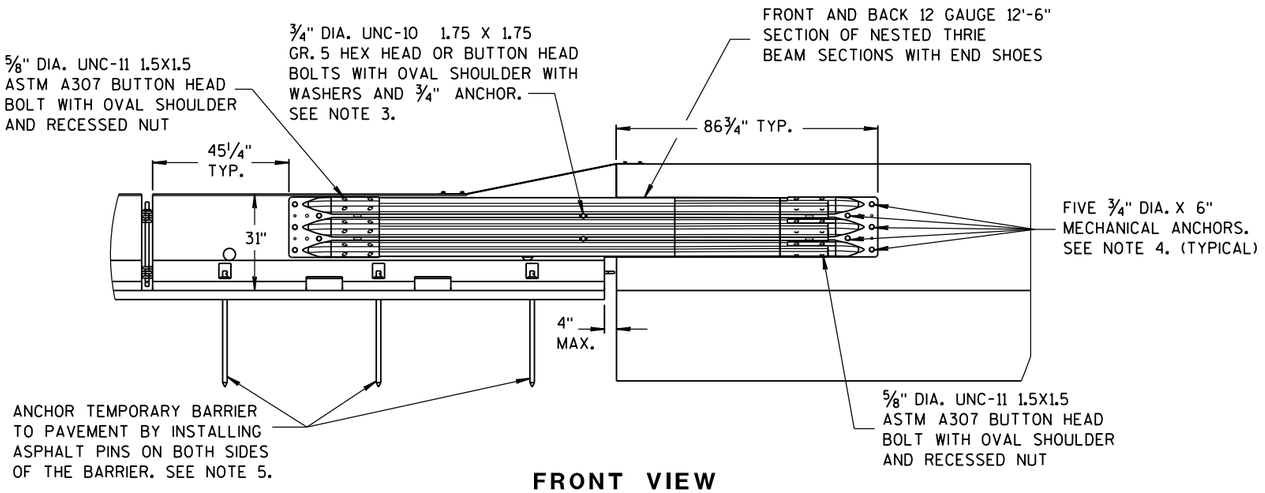
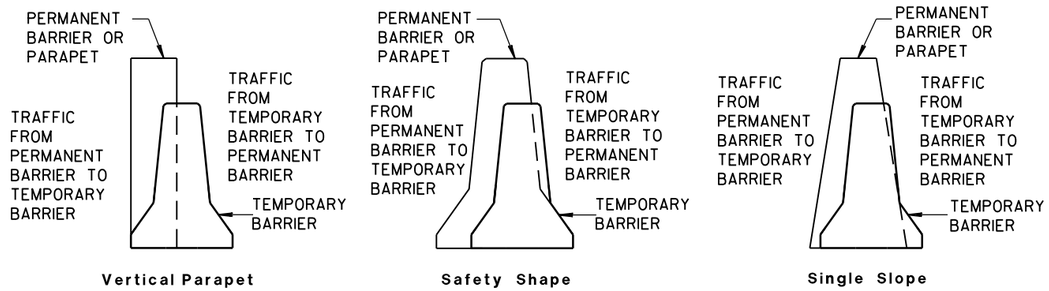
S.D.D. 14 B 7-15e



FRONT VIEW

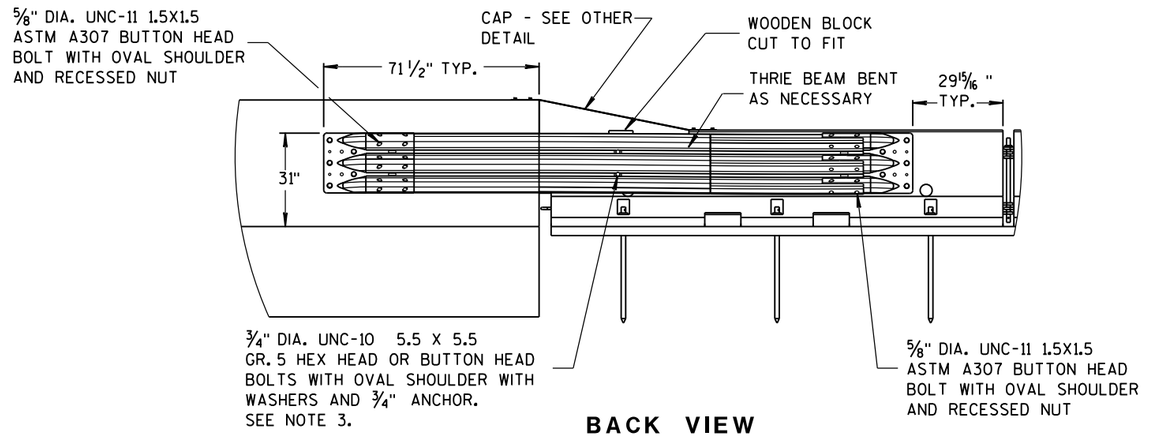


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

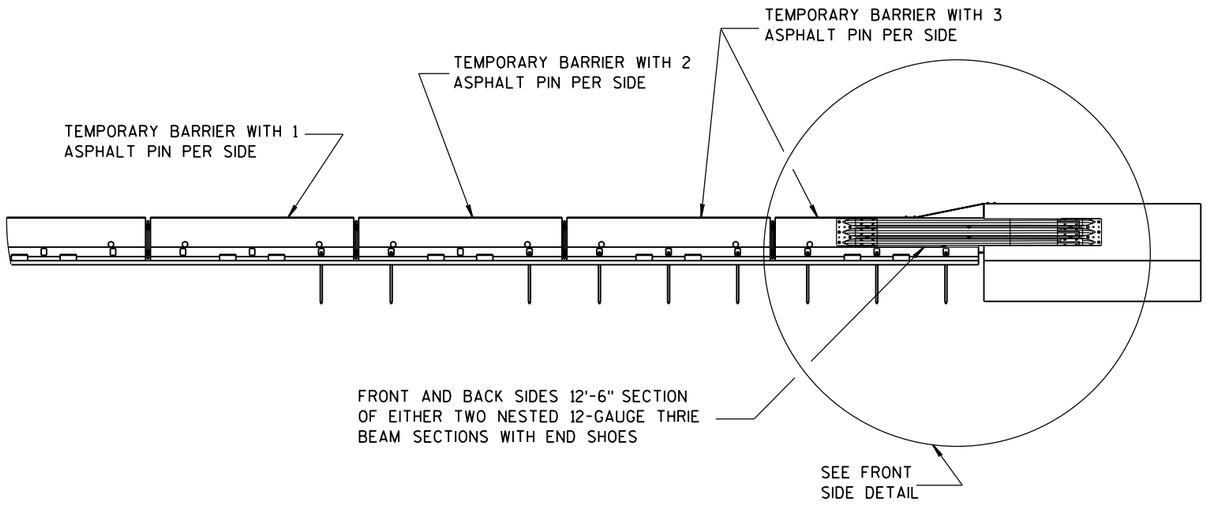
NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS REGARDLESS OF TRAFFIC.

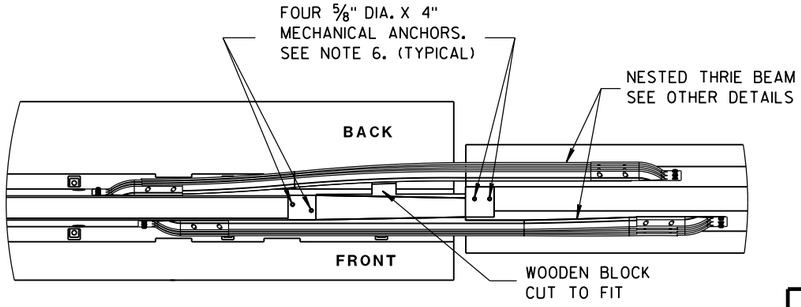
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 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



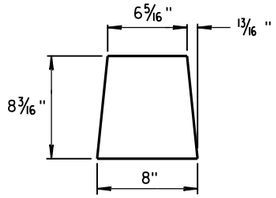
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

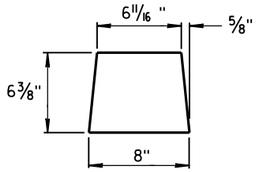
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

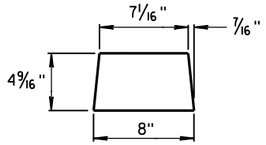
6
S.D.D. 14 B 7-15f



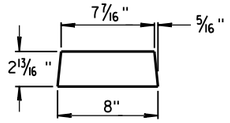
GUSSET 1



GUSSET 2

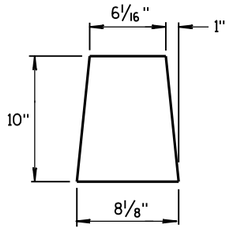


GUSSET 3

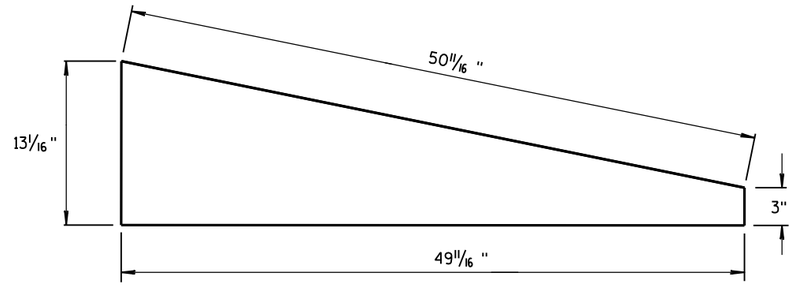


GUSSET 4

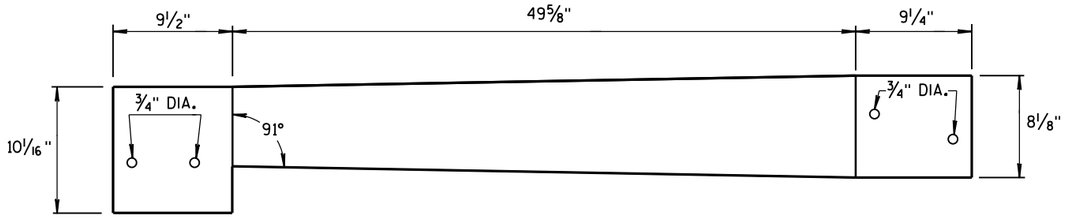
GUSSETS

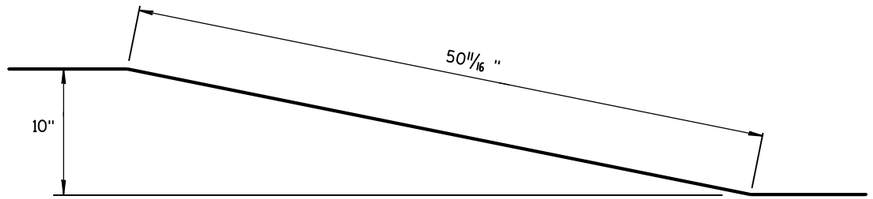


END PLATE



SIDE PLATE

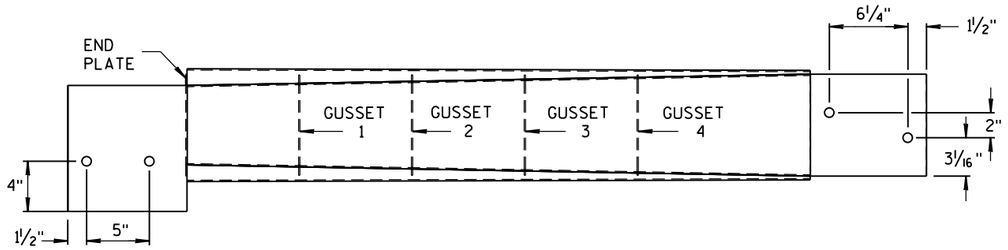


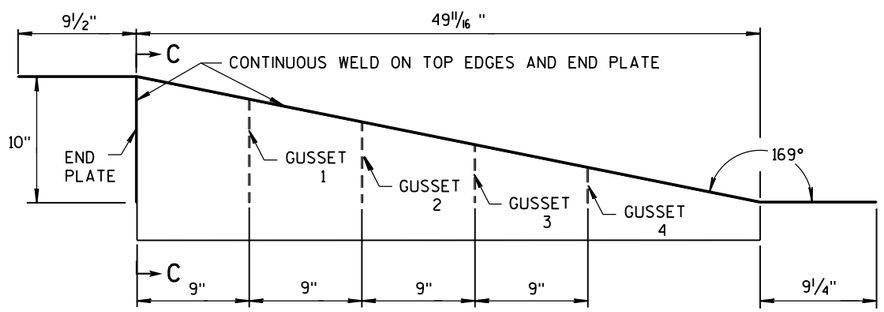


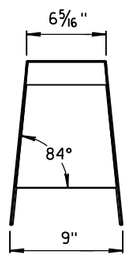
TOP PLATE

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 TRANSPOI

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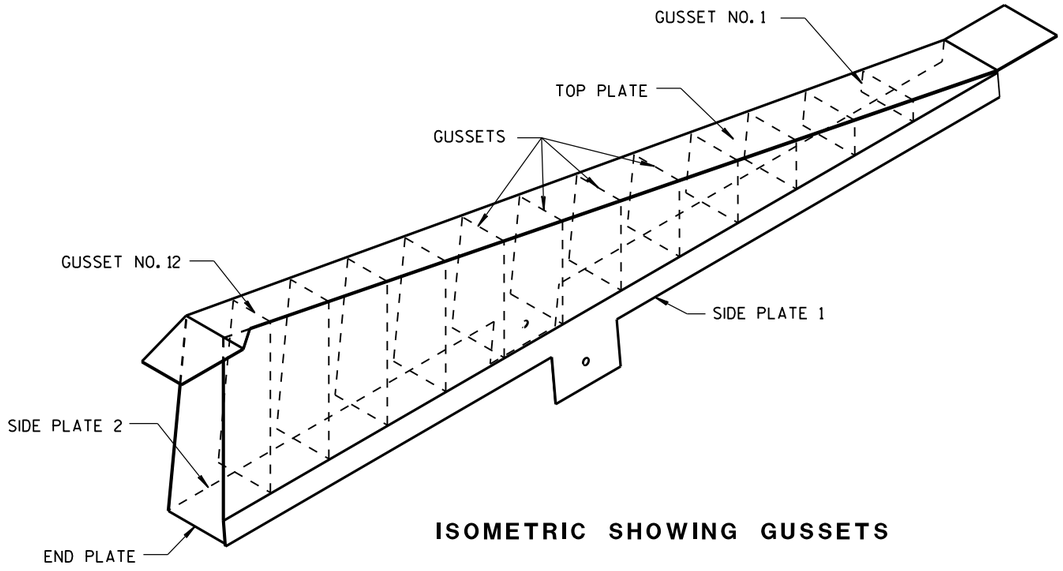
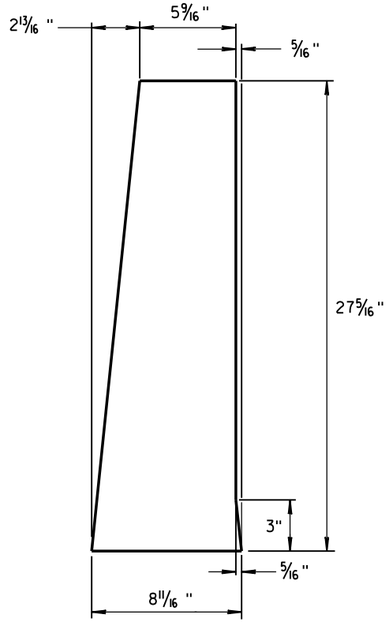
S.D.D. 14 B 7-15g

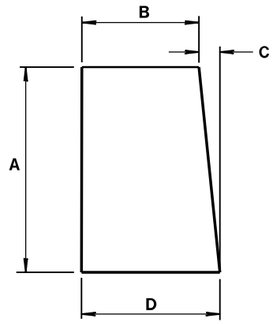


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



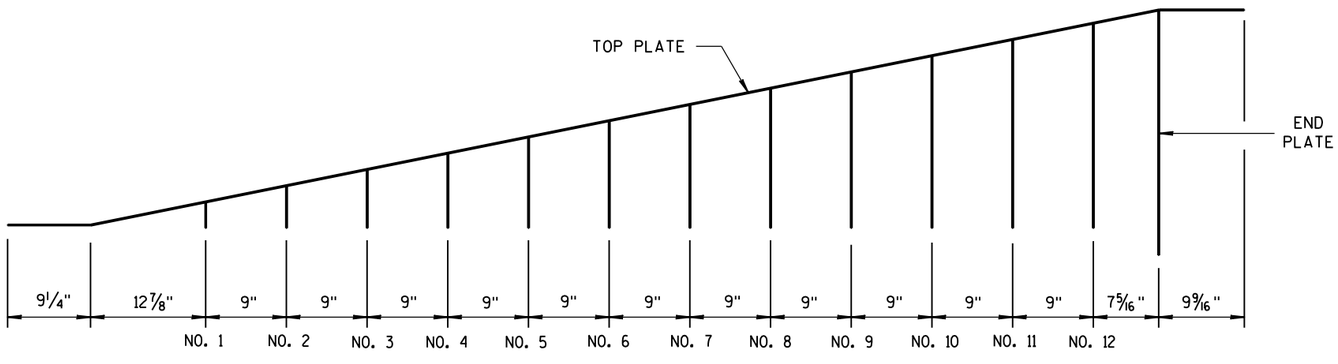
GUSSETS 1 - 12

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 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	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 15/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	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 TRANSPOI

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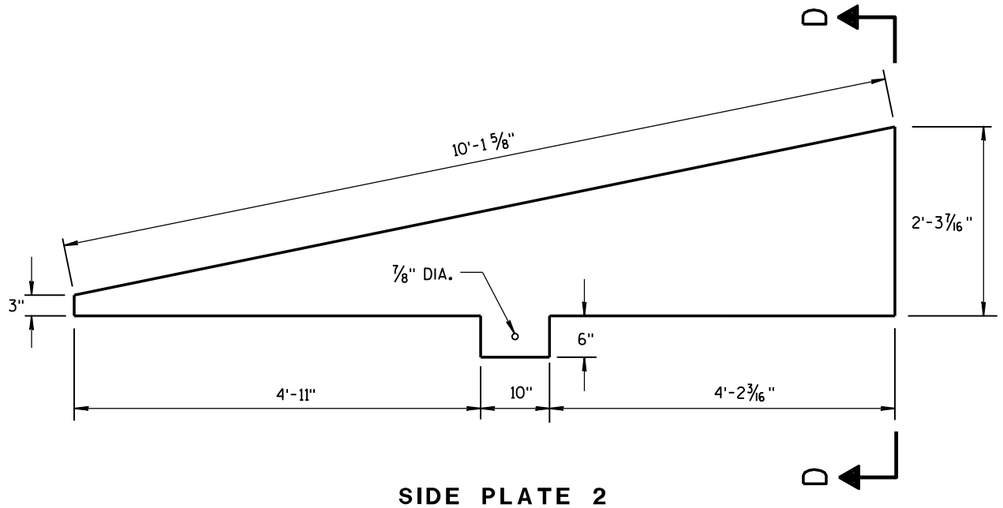
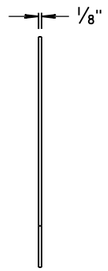
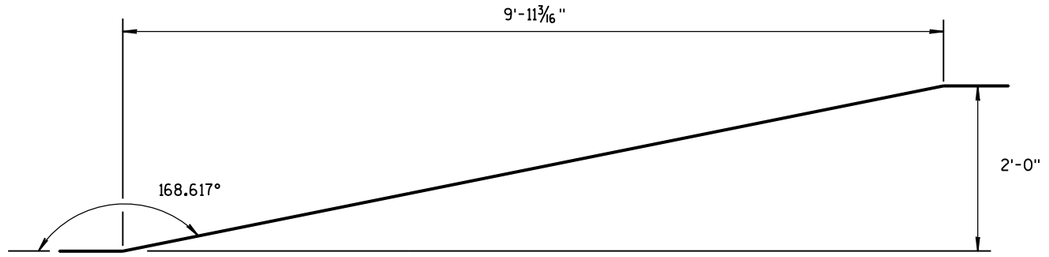
S.D.D. 14 B 7-15h



SIDE PLATE 2

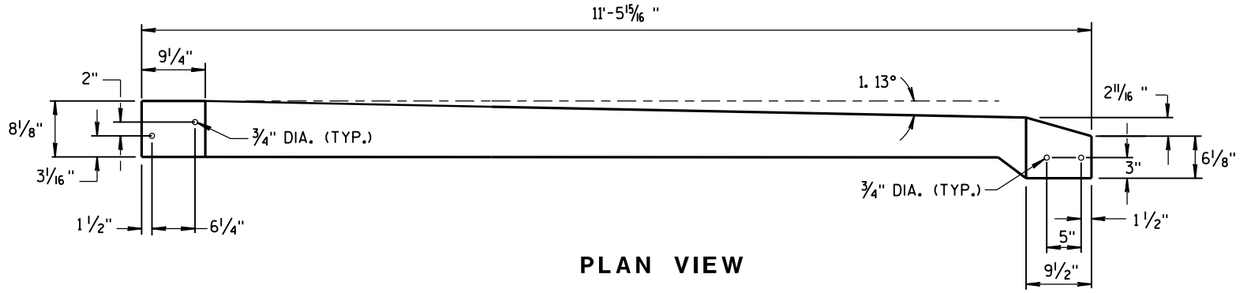


END VIEW



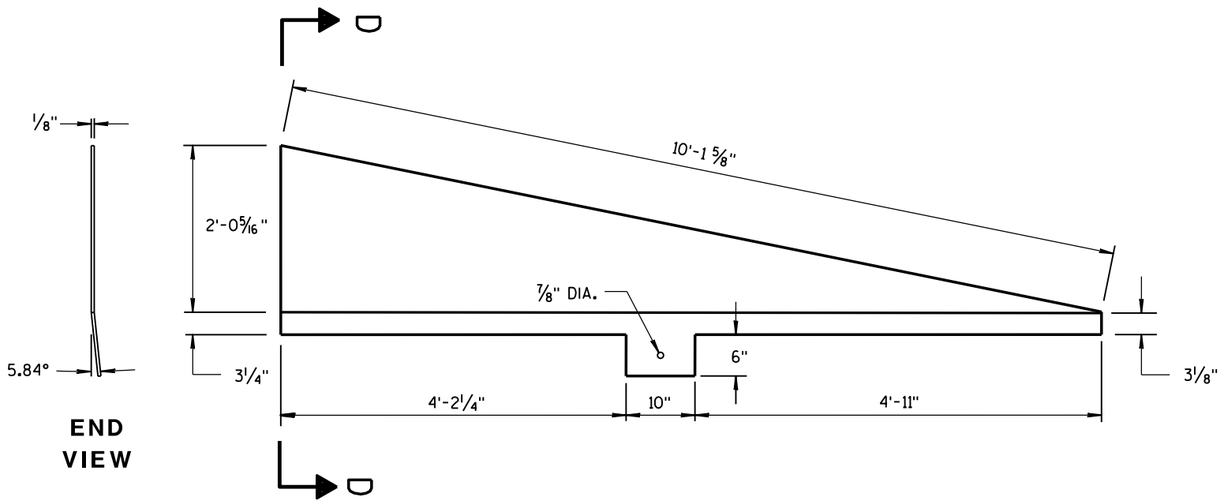
SIDE VIEW

TOP PLATE



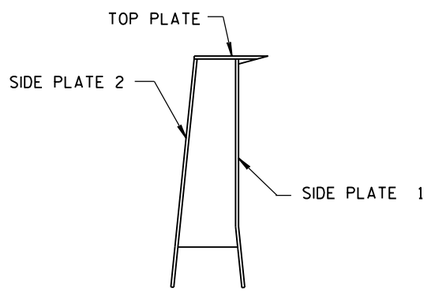
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



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 STANDARDS DEVELOPMENT ENGINEER

FHWA

6

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

6

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

(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.

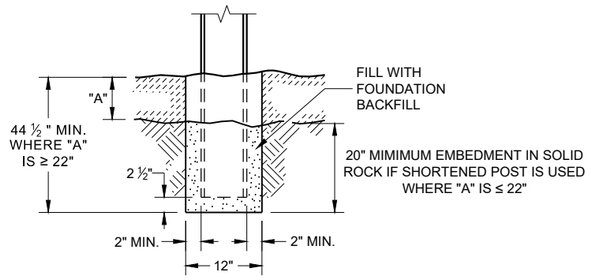
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

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

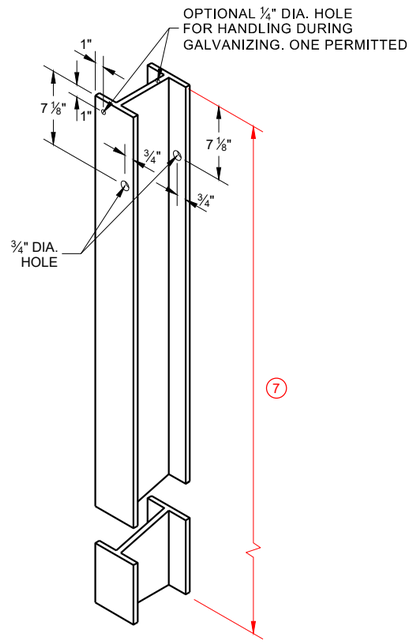
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

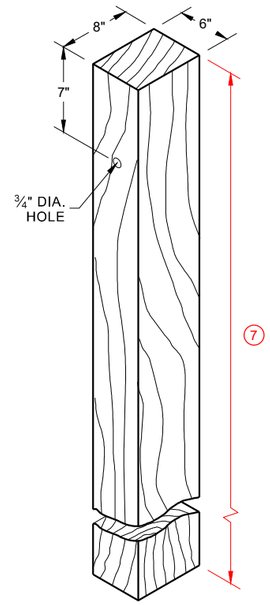
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



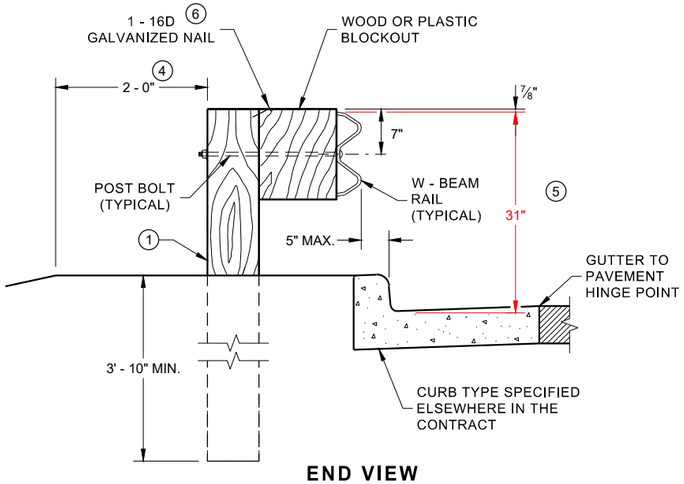
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



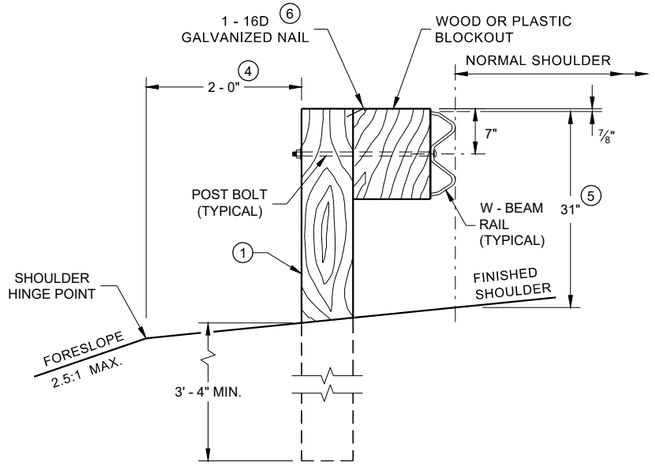
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



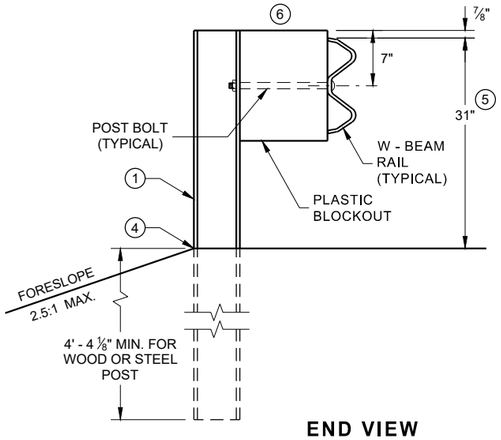
WOOD POST (6" X 8") NOMINAL (1)



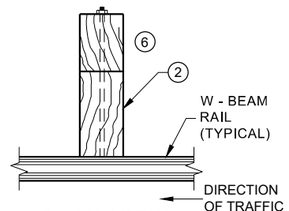
END VIEW
LOCATED ALONG A CURBED ROADWAY



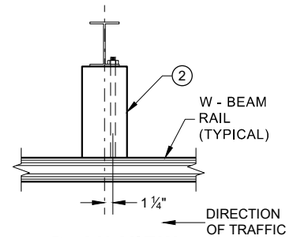
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



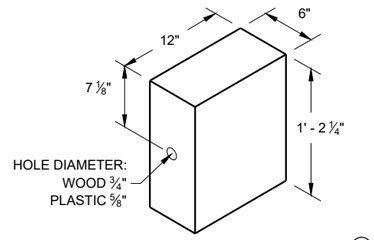
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B42 - 06a

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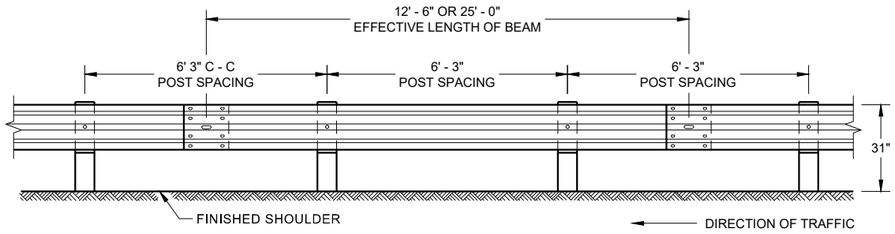
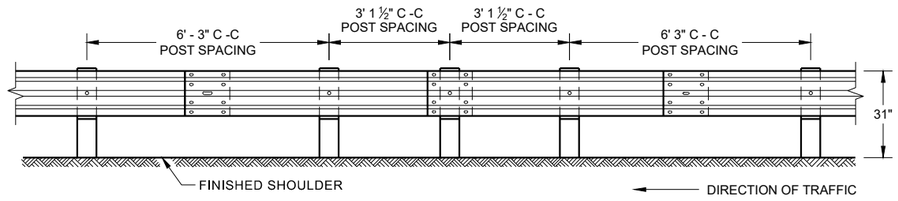
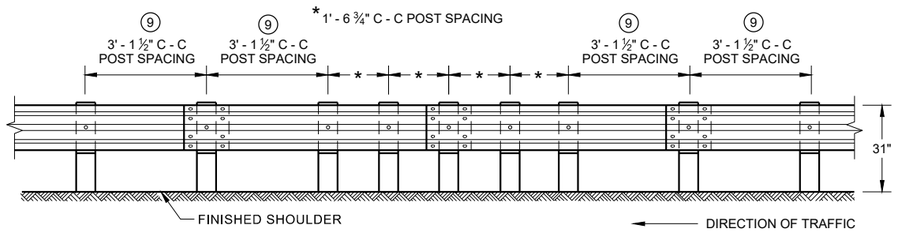


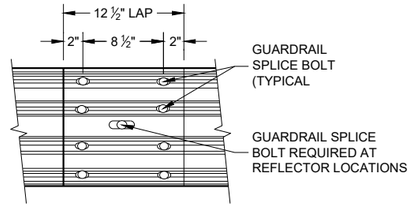
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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



FRONT VIEW
QUARTER POST SPACING (QS)



FRONT VIEW
MID-SPAN BEAM SPLICE

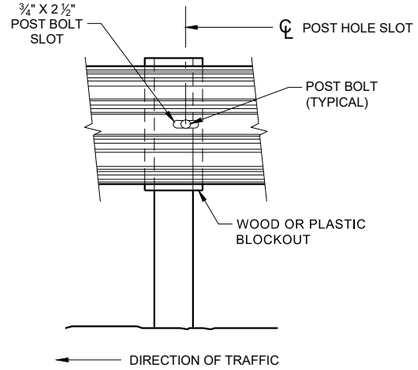
GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

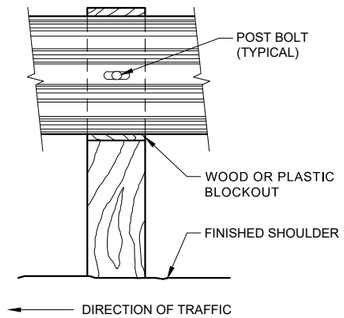
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ¾" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

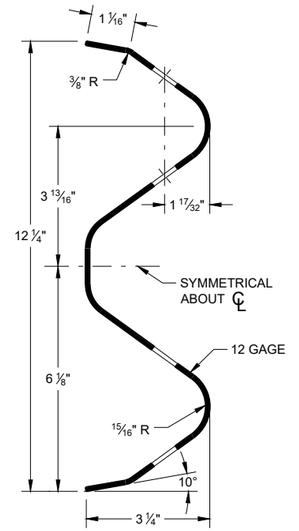
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



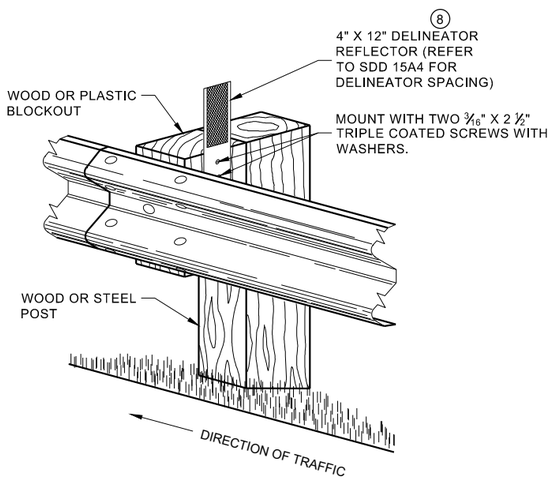
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL

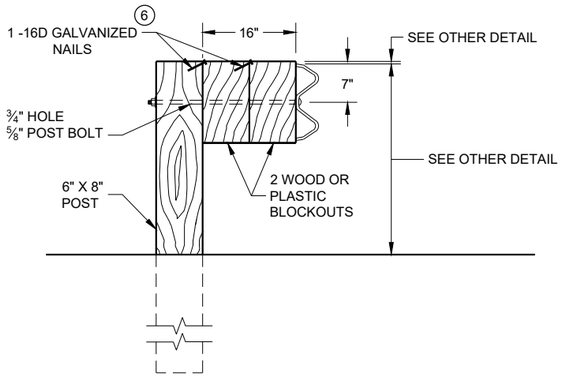


ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B42 - 06b

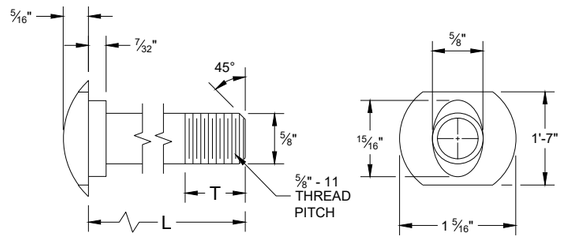


DETAIL FOR 16" BLOCKOUT DEPTH

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.

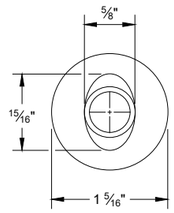
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

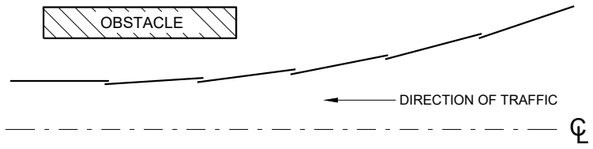


POST BOLT TABLE

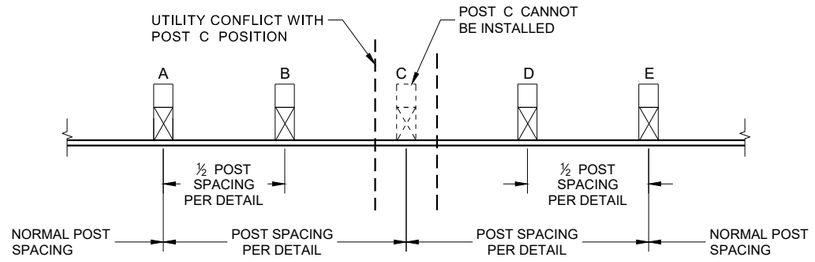
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



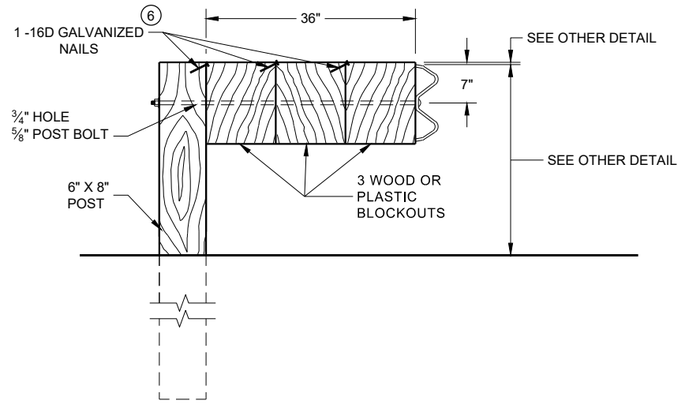
ALTERNATE BOLT HEAD



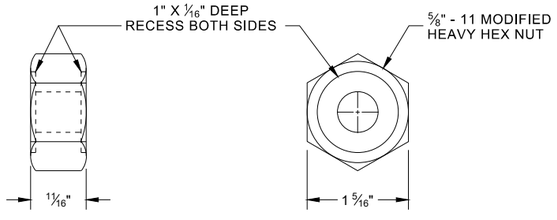
PLAN VIEW
BEAM LAPPING DETAIL



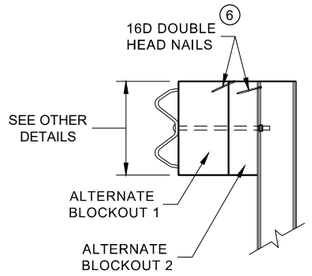
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



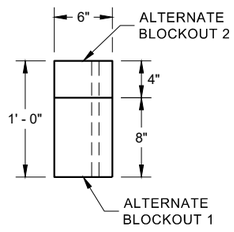
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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.

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

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

(D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

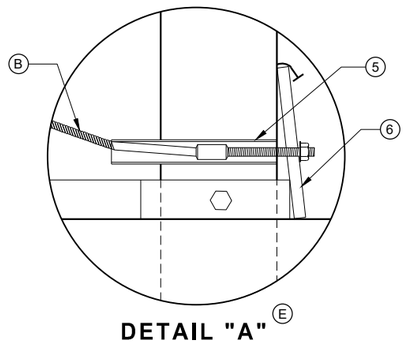
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

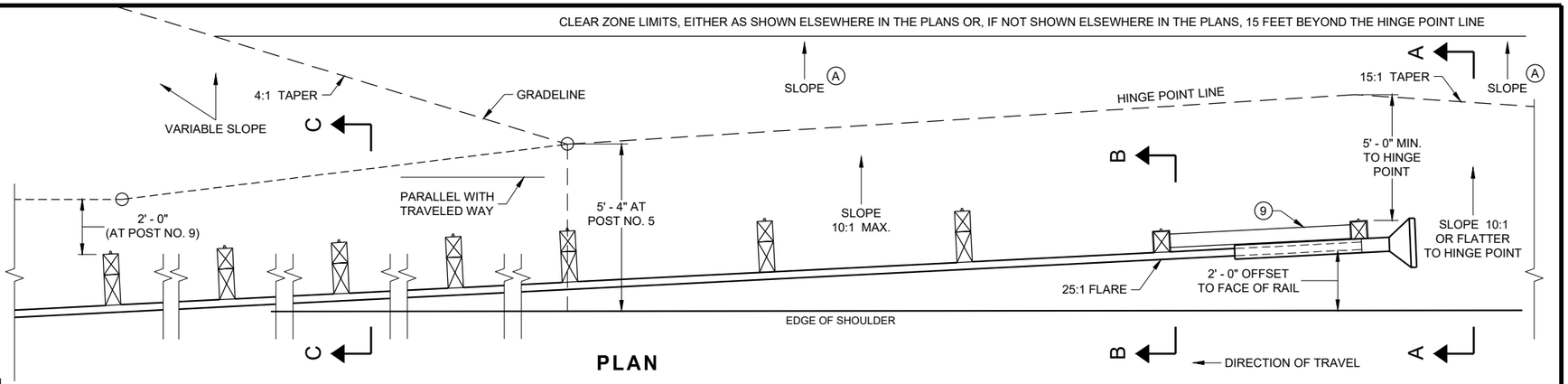
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

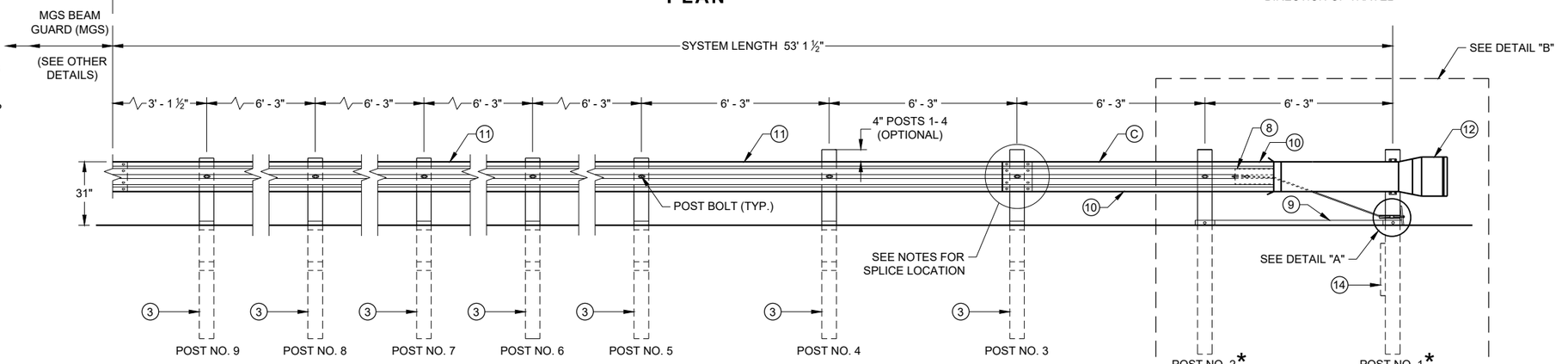
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



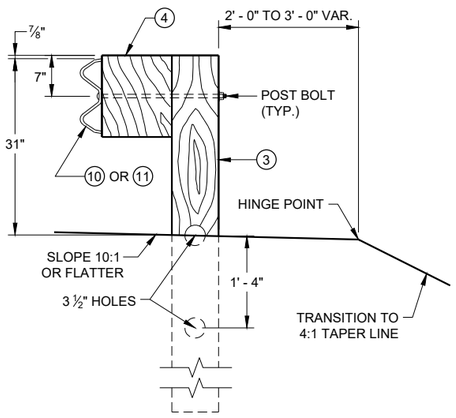
DETAIL "A" (E)



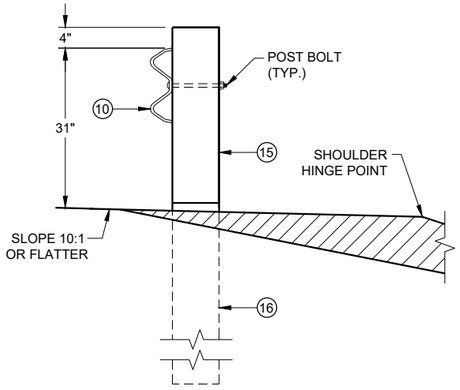
PLAN



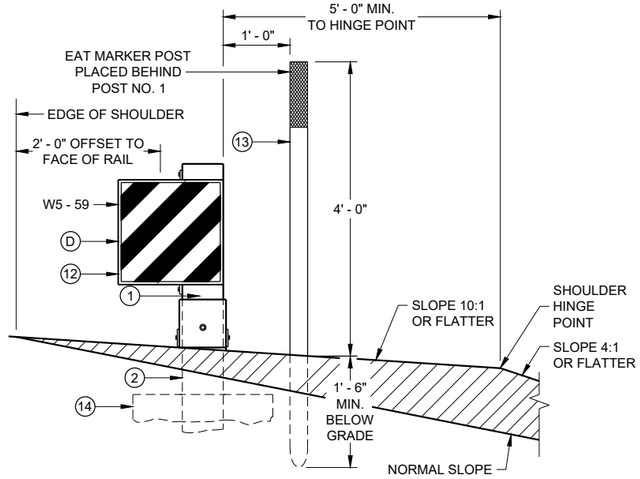
ELEVATION



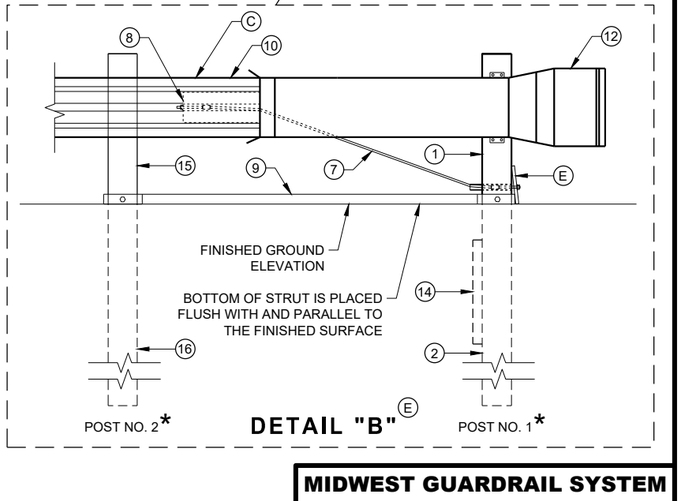
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

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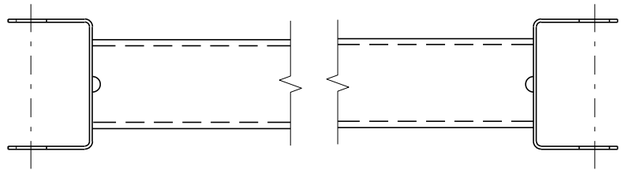
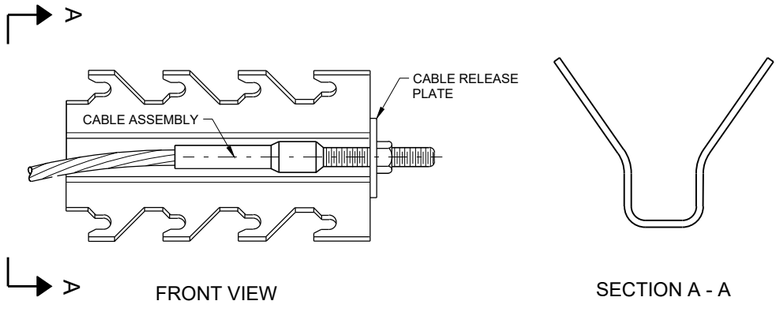


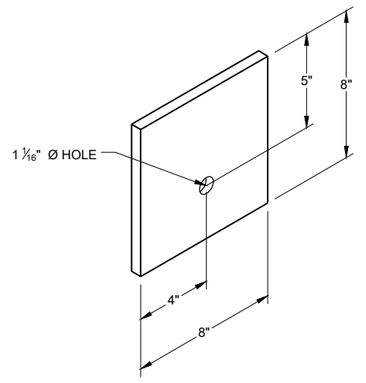
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

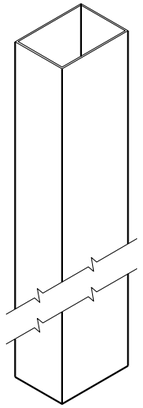
6

SDD 14B45 - 04b

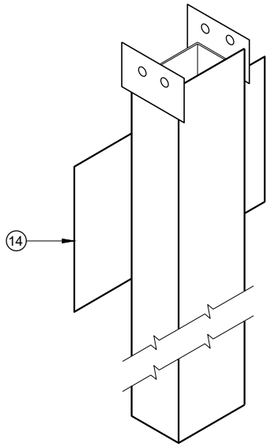
SDD 14B45 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

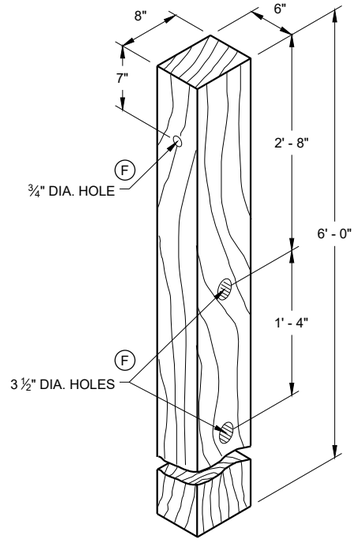
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



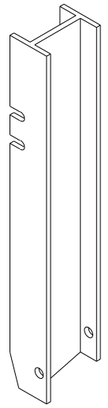
UPPER POST NO. 1 (1) (E)



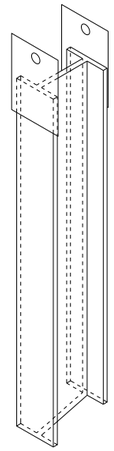
LOWER POST NO. 1 (2) (E)



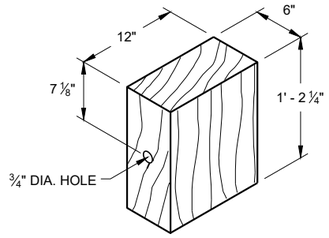
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



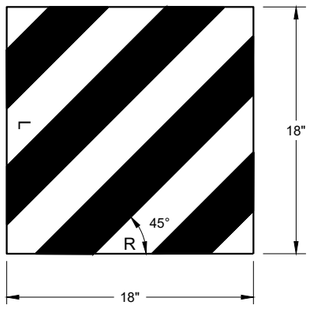
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)



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



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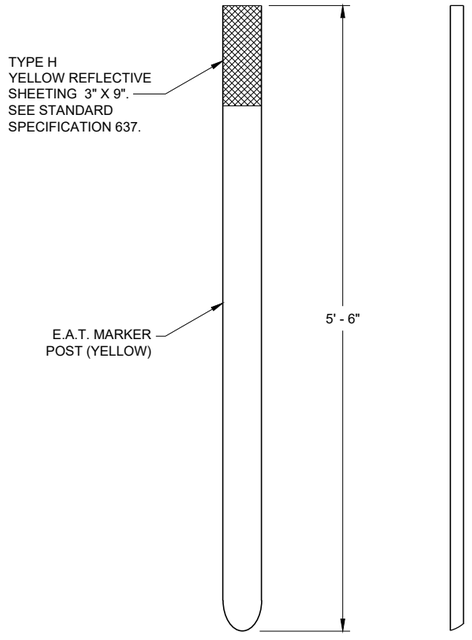
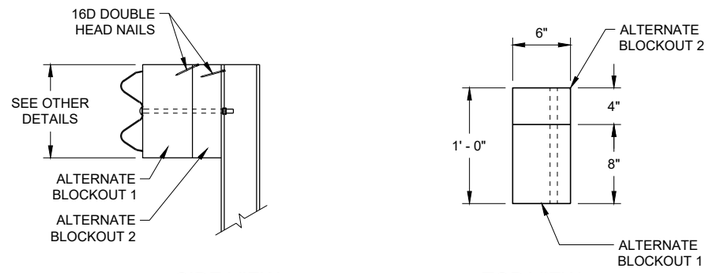
REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

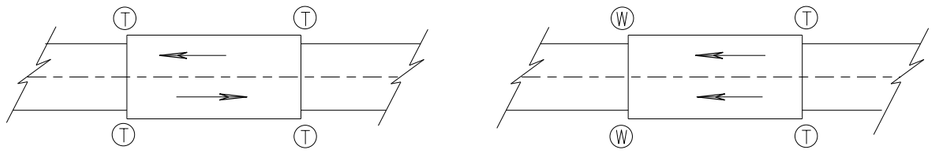
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR

FHWA

6

SDD 14B44 - 04c



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 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

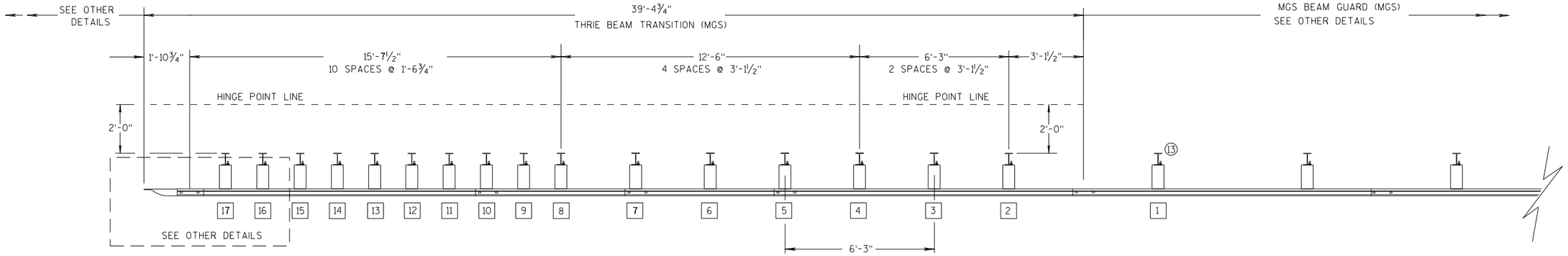
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

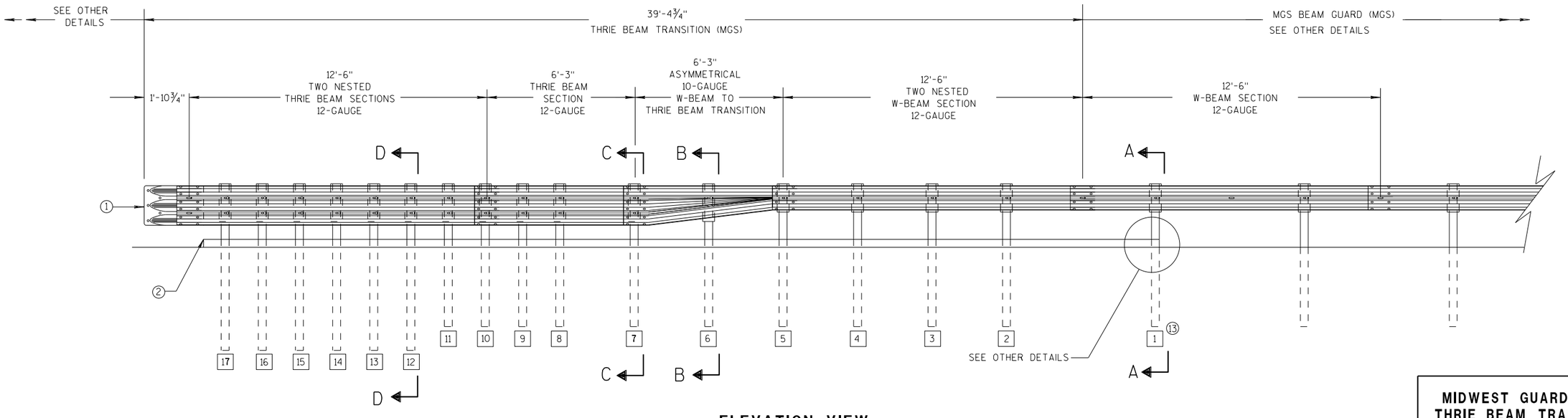
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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 TRANSPOR

6

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

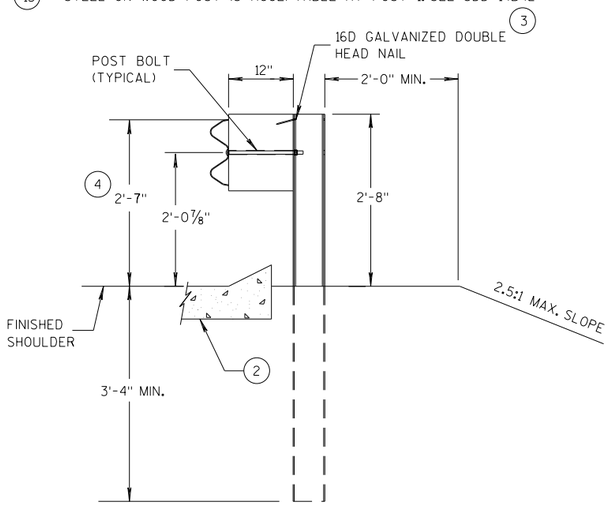
GENERAL NOTES

(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.

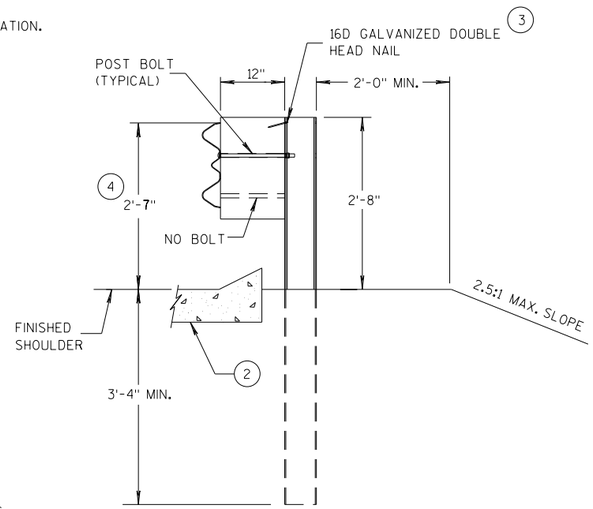
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



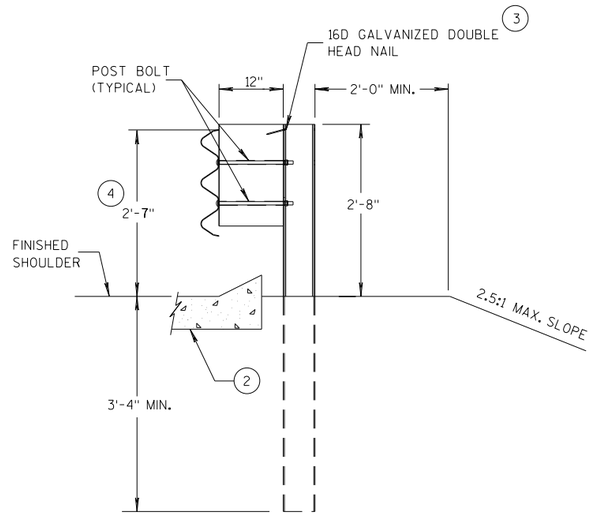
SECTION A-A (13)

POSTS 1-5



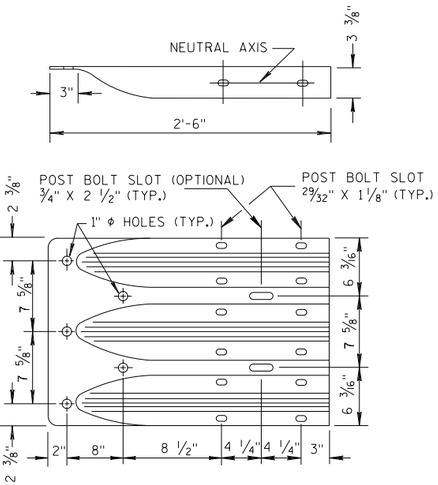
SECTION B-B

POST 6

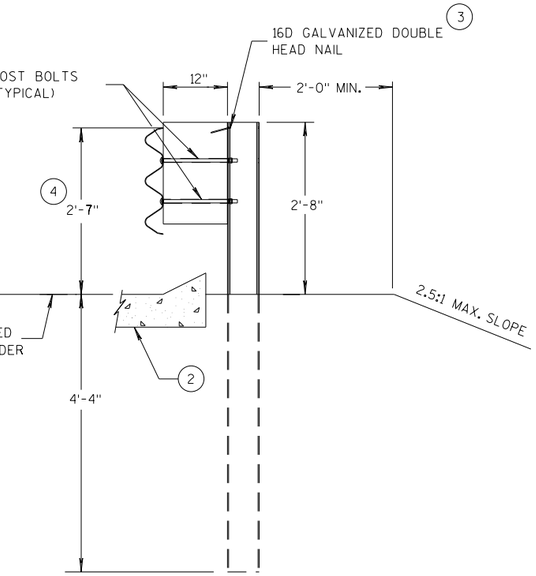


SECTION C-C

POSTS 7-11

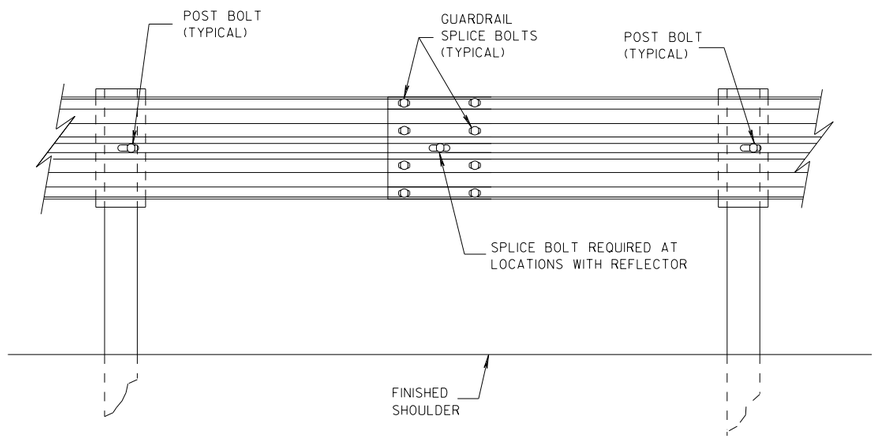


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

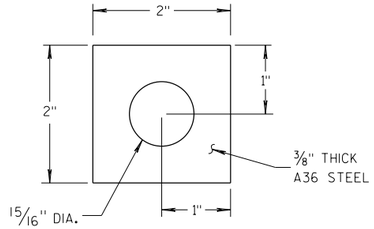
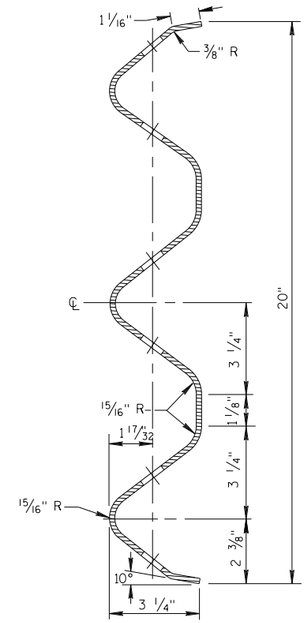


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

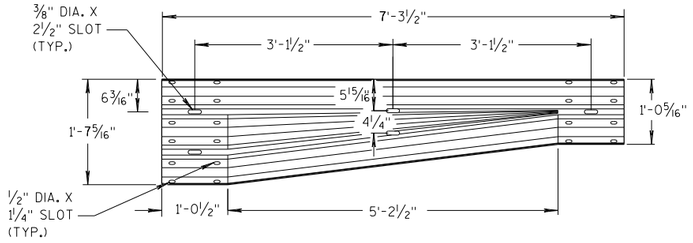
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 42

6

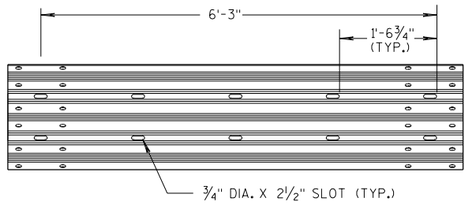
S.D.D. 14 B 45-5b

6

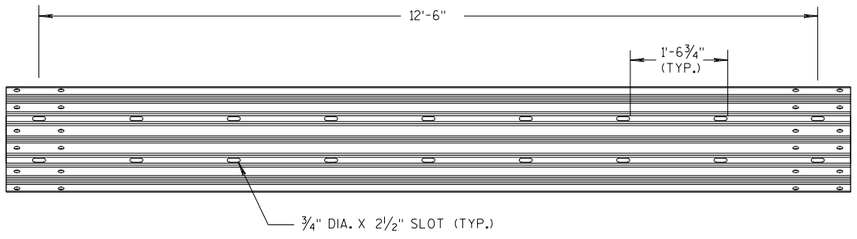
S.D.D. 14 B 45-5b



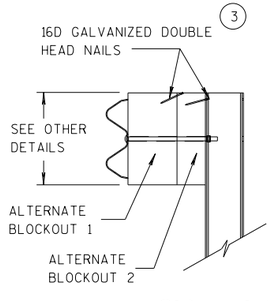
W-BEAM TO THRIE BEAM TRANSITION SECTION



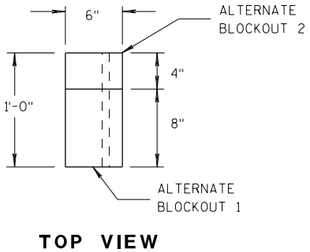
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

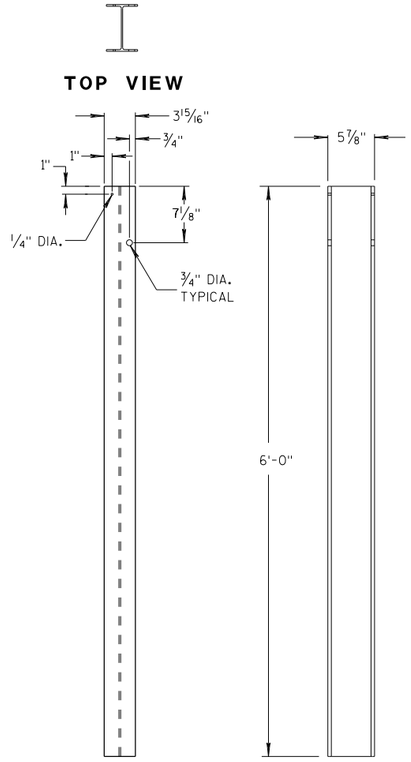


SIDE VIEW



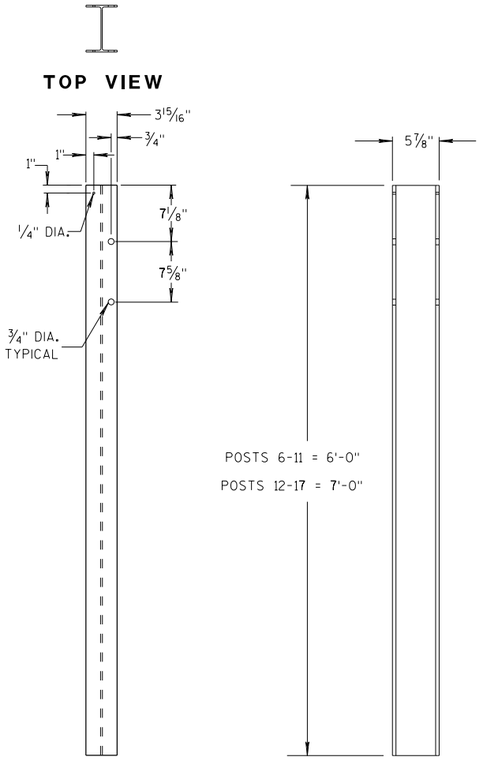
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



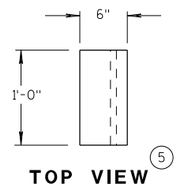
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

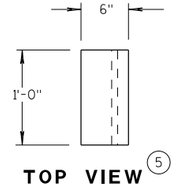


FRONT VIEW SIDE VIEW

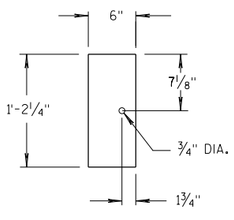
STEEL POSTS 6-17



TOP VIEW (5)

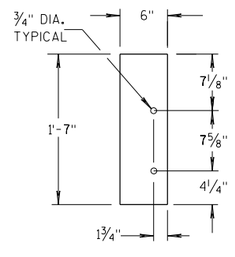


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

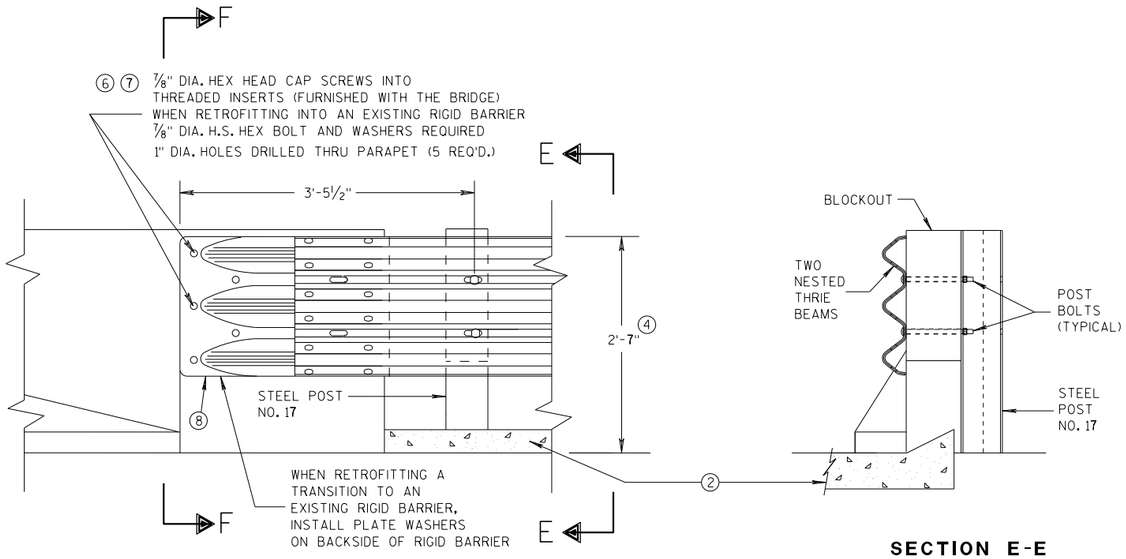
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 14 B 45-5c



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

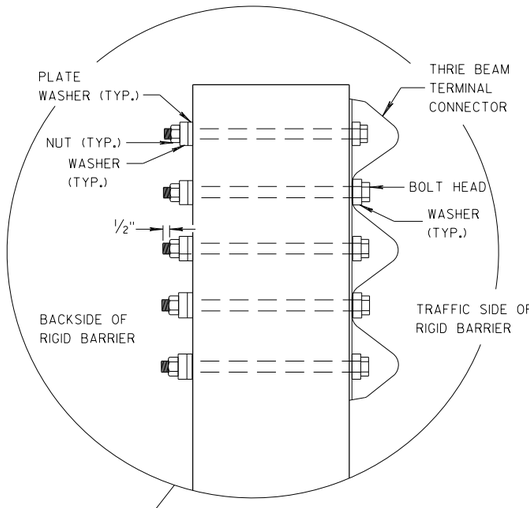
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

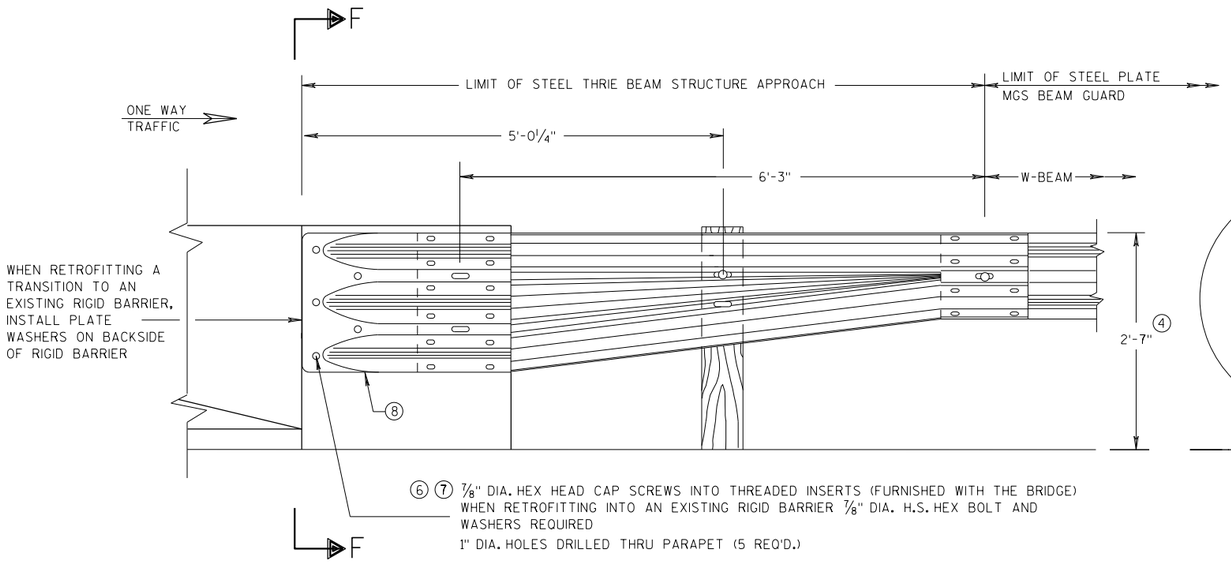
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

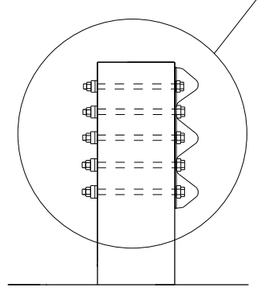
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

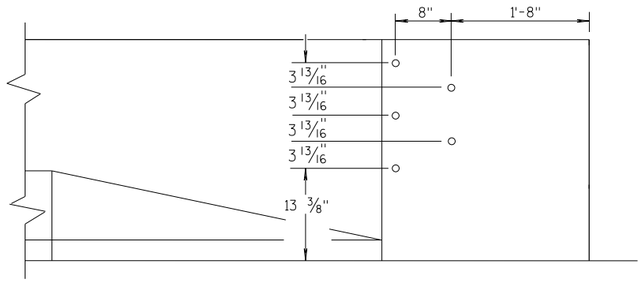




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 DATE
/S/ Rodney Taylor
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S.D.D. 14 B 45-5d

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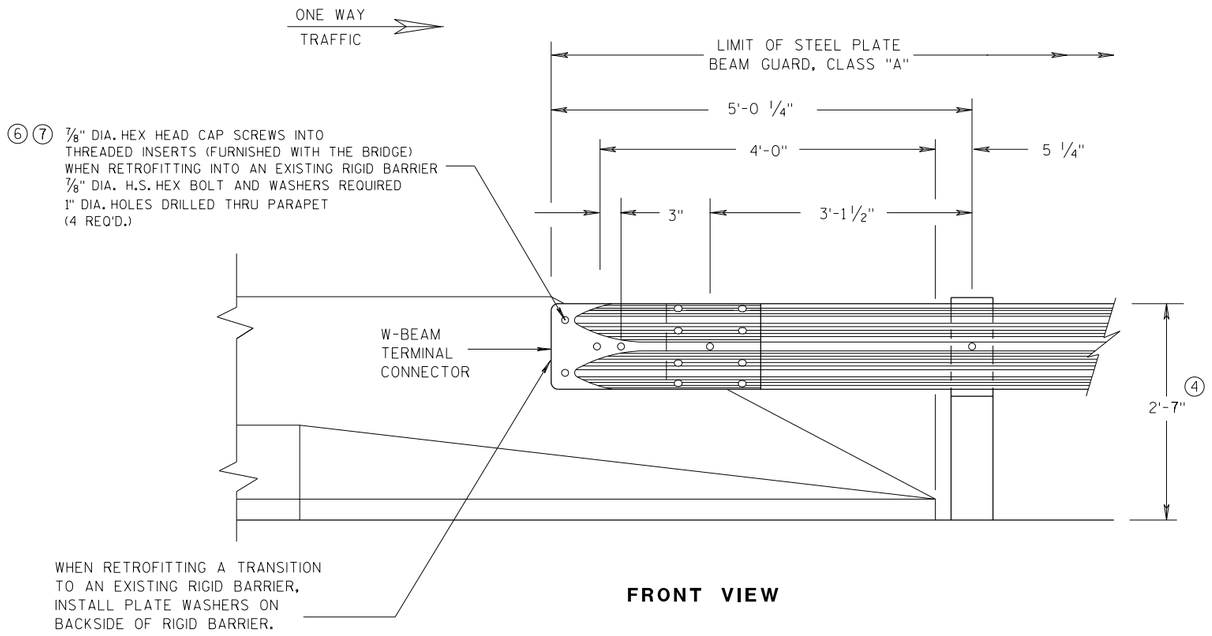


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

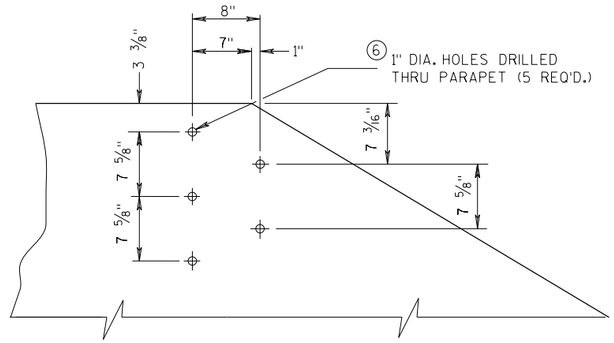
GENERAL NOTES

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

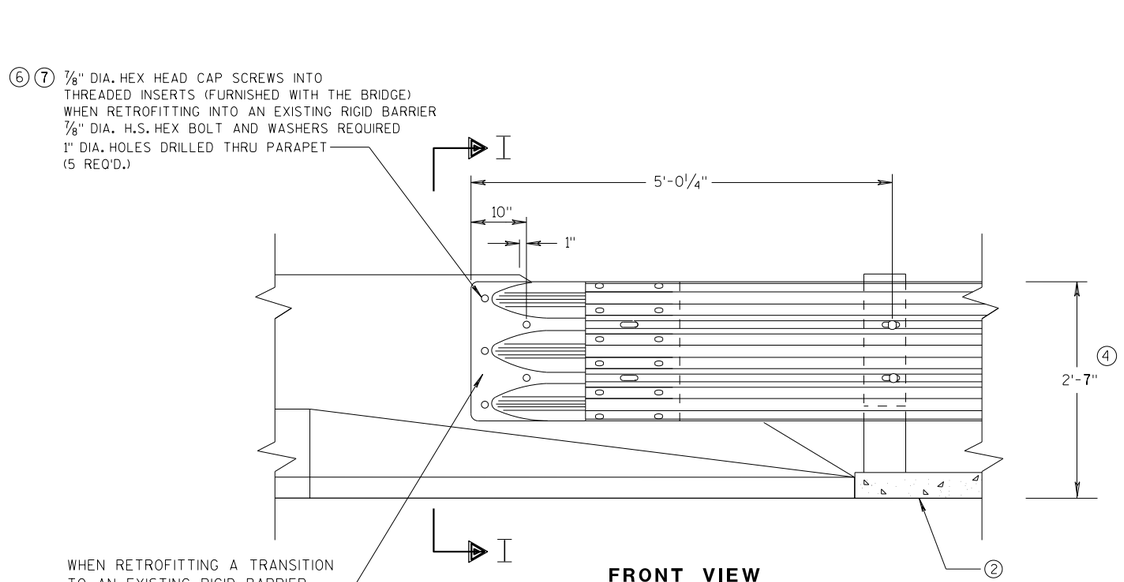
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

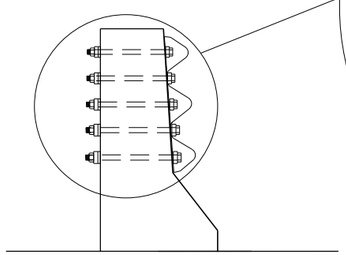
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



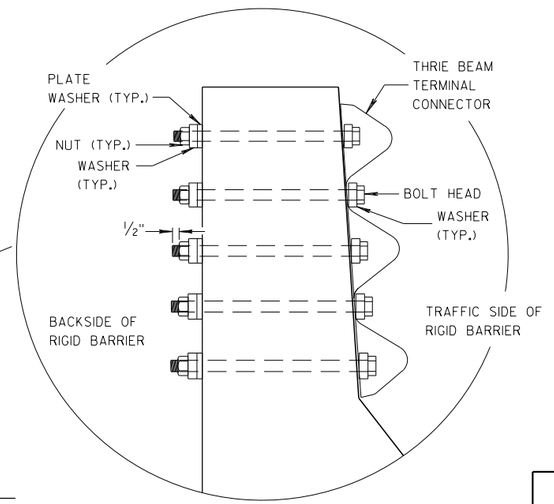
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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FHWA

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

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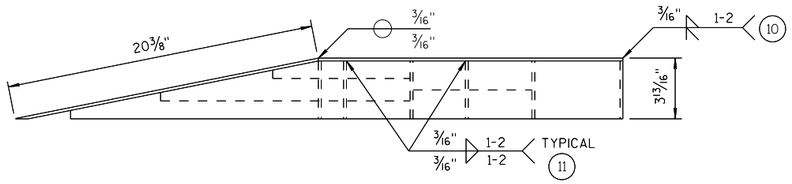
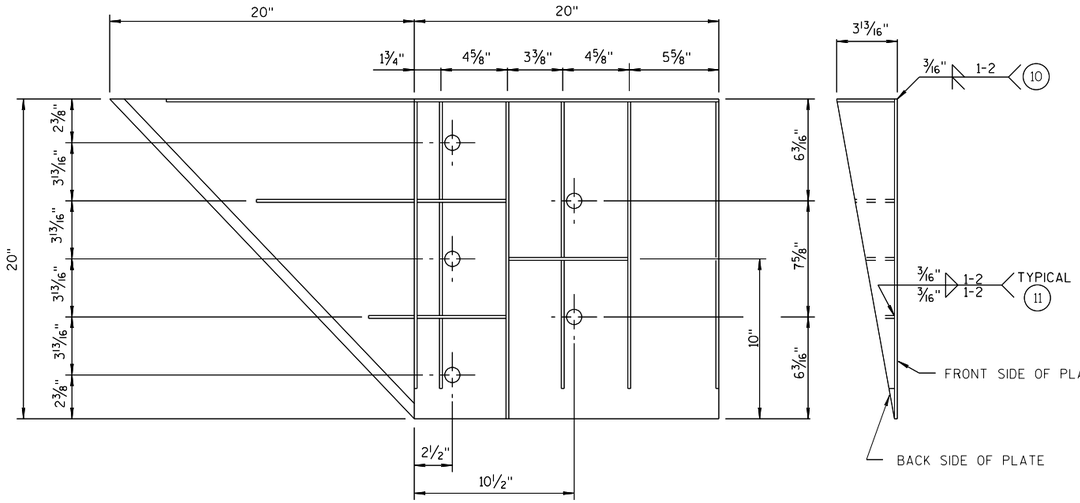
S.D.D. 14 B 45-5f





WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

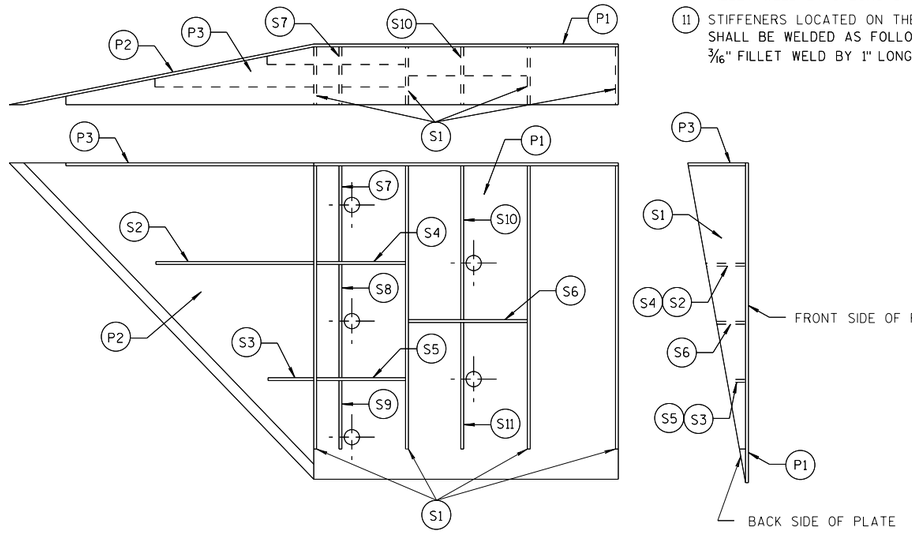


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

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

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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FHWA

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UNIT SUPERVI

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

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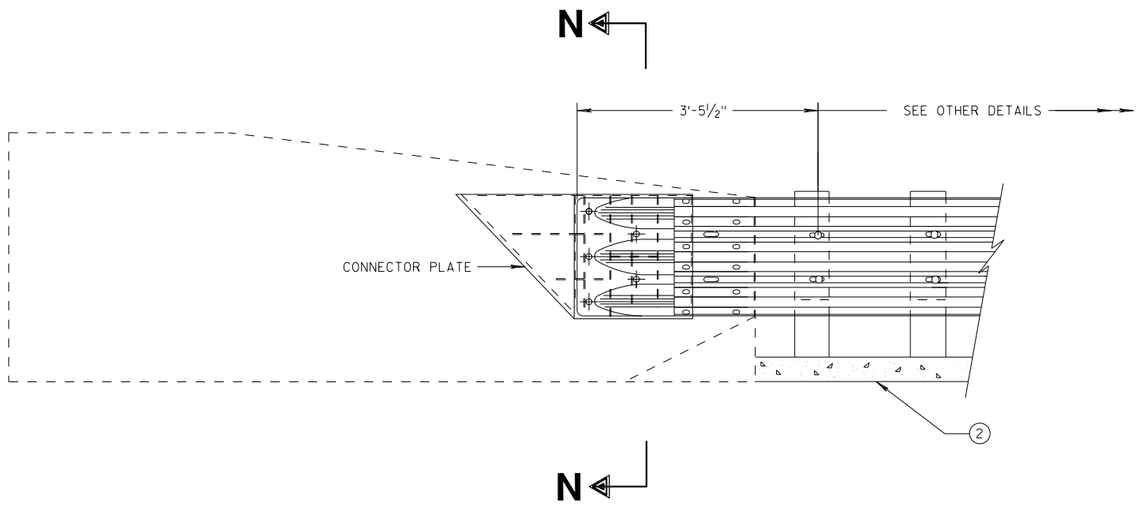
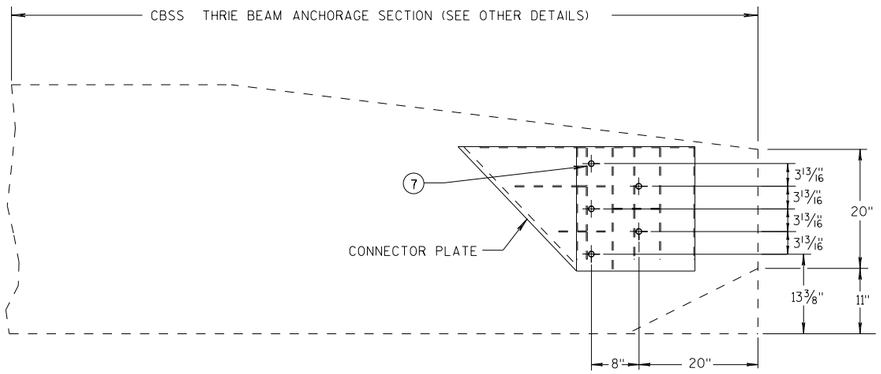
S.D.D. 14 B 45-5i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



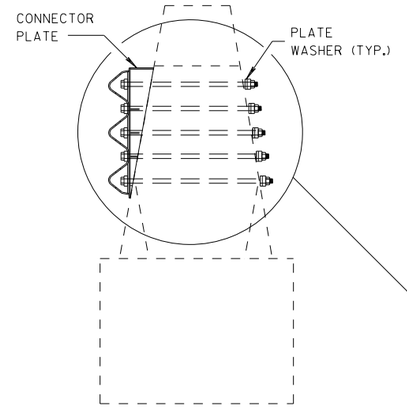
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

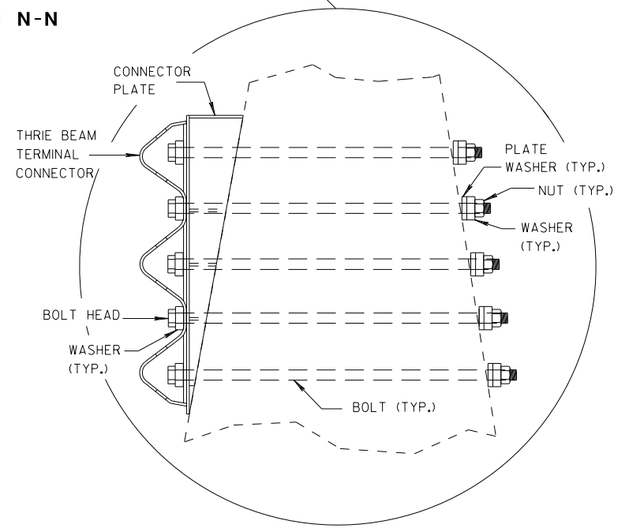
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(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 ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DI
UNIT SUPERVIS

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

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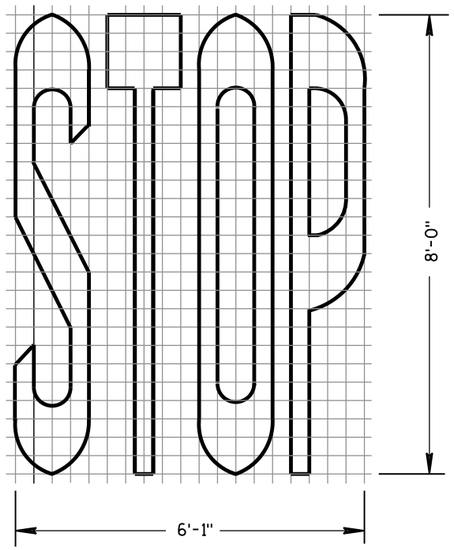
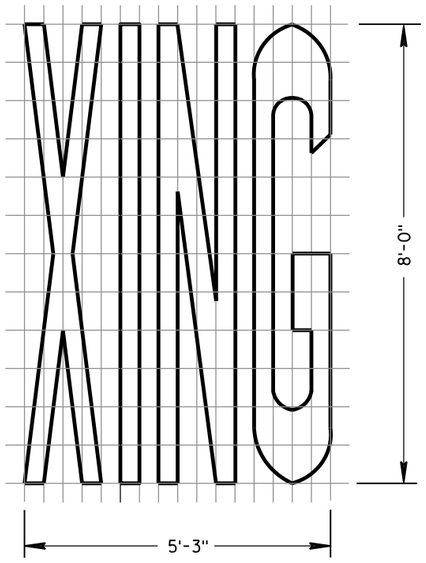
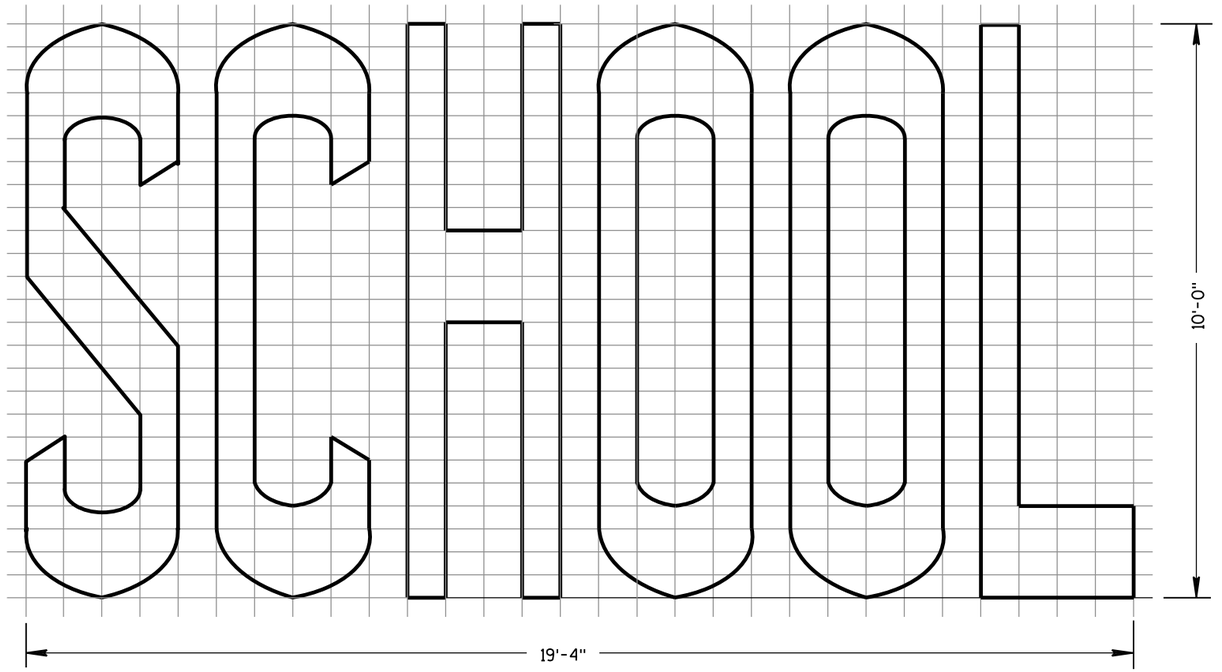
S.D.D. 14 B 45-5j

GENERAL NOTES

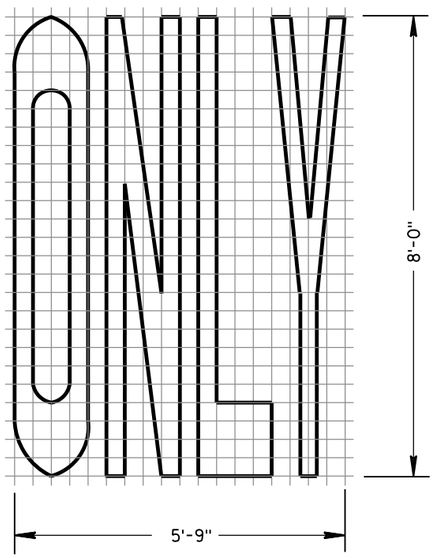
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

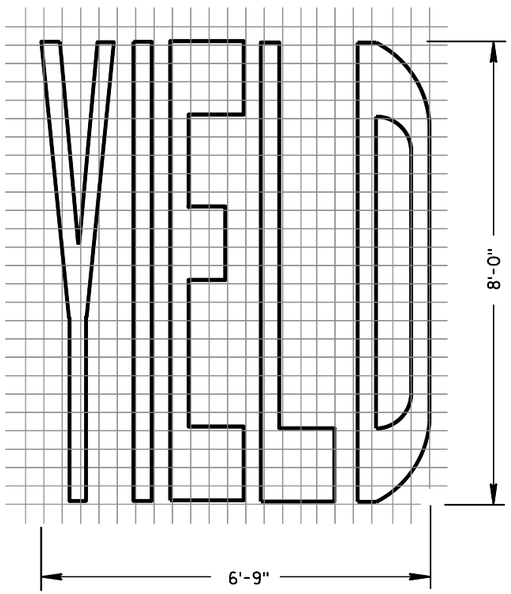


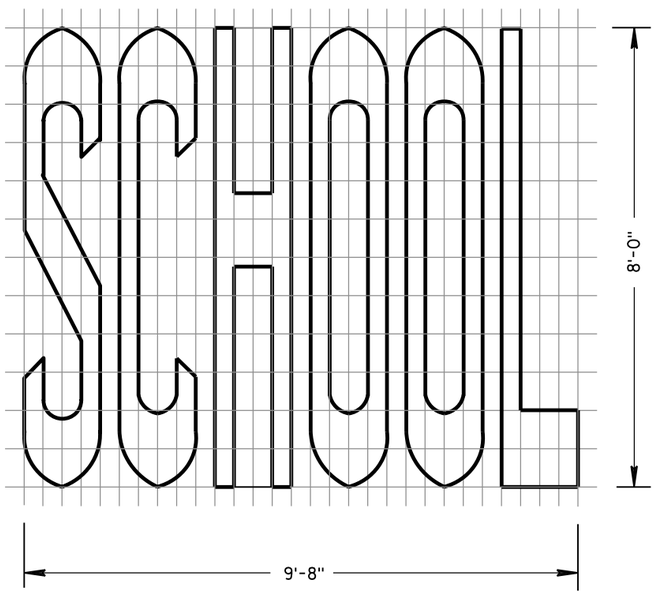




TWO-LANE







SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARK
EER
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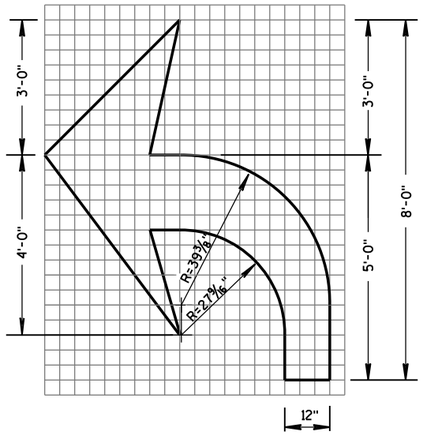
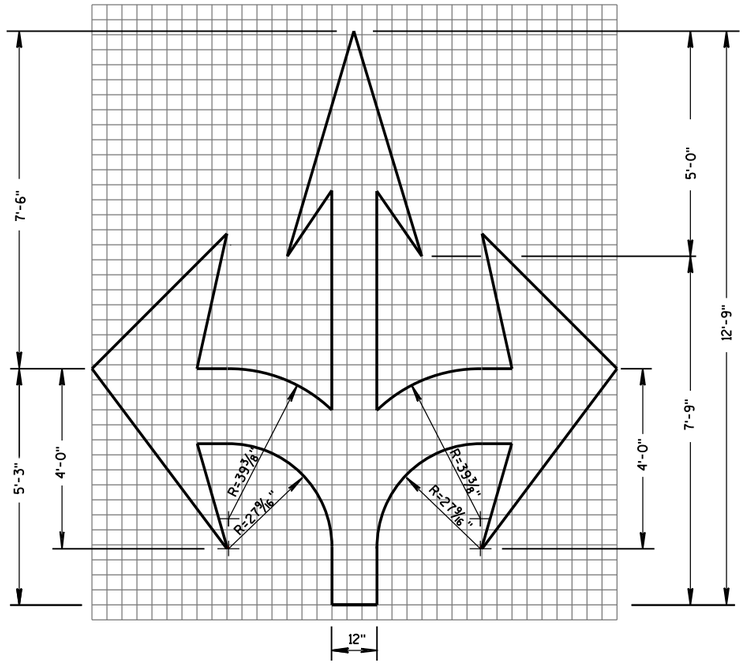
S.D.D. 15 C 7-14b

GENERAL NOTES

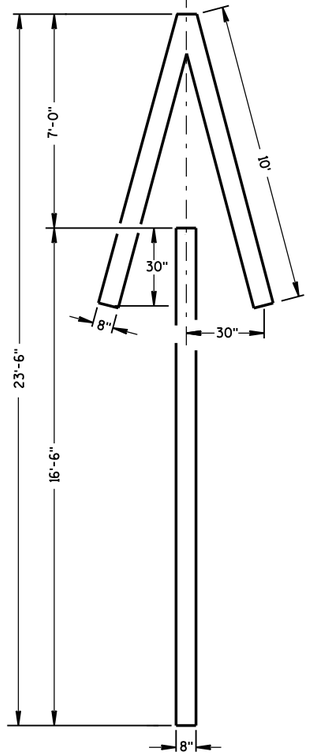
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



TYPE 2



TYPE 6



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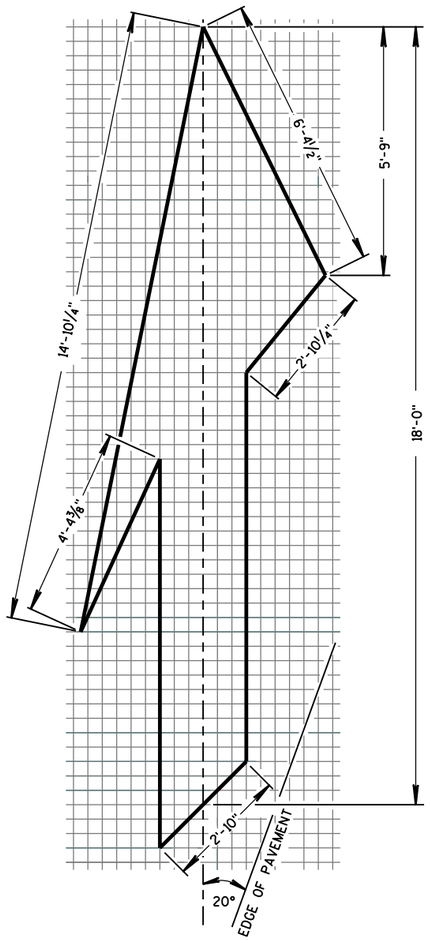
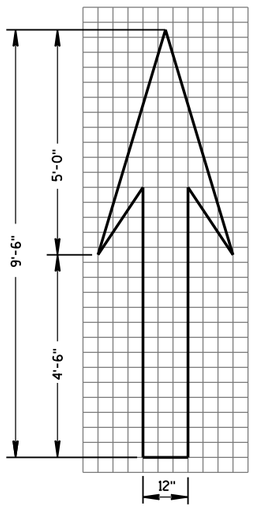
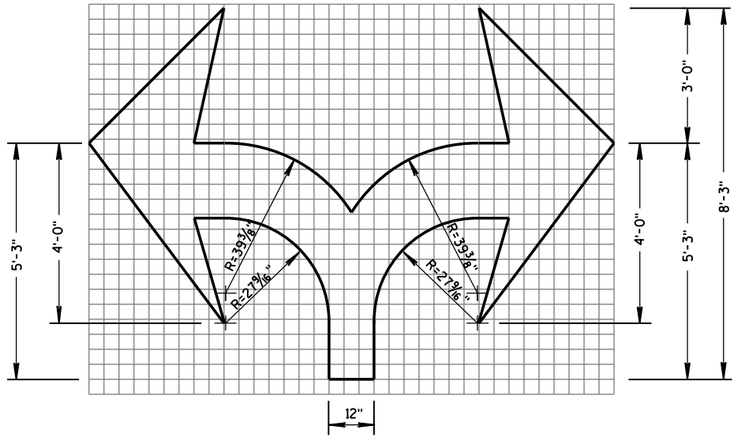


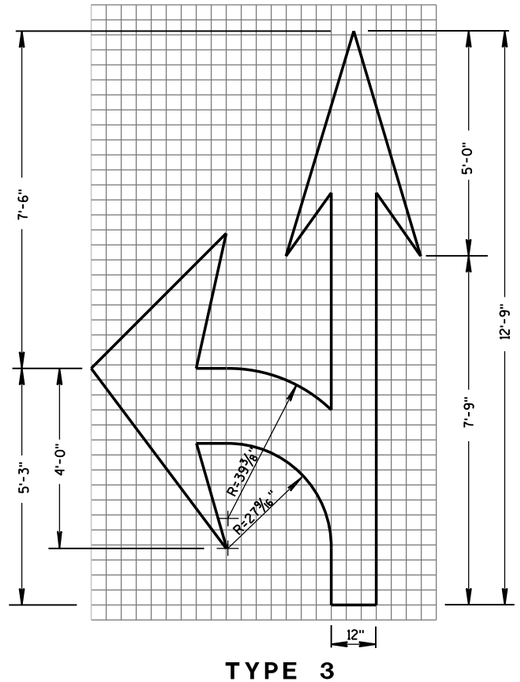
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]NEER
FHWA

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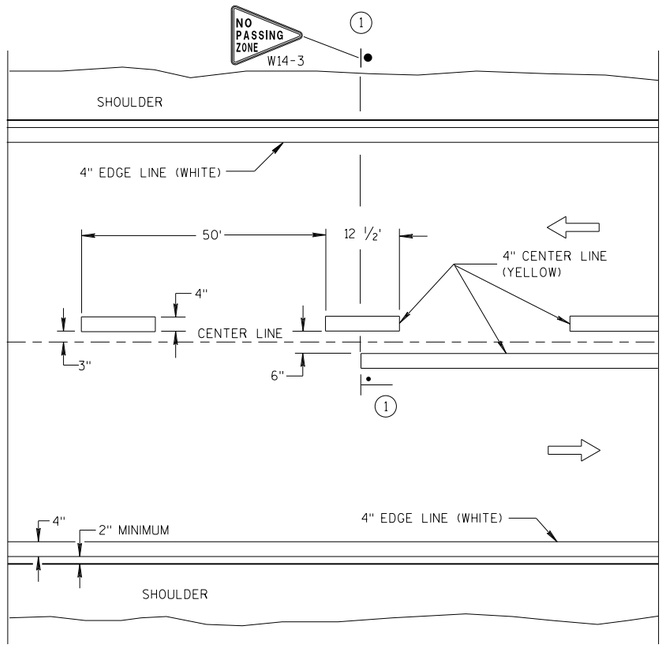
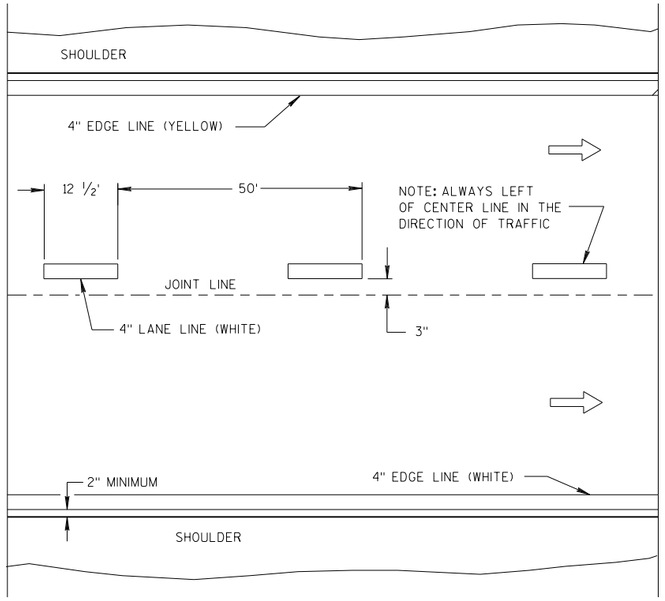
S.D.D. 15 C 7-14c



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

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

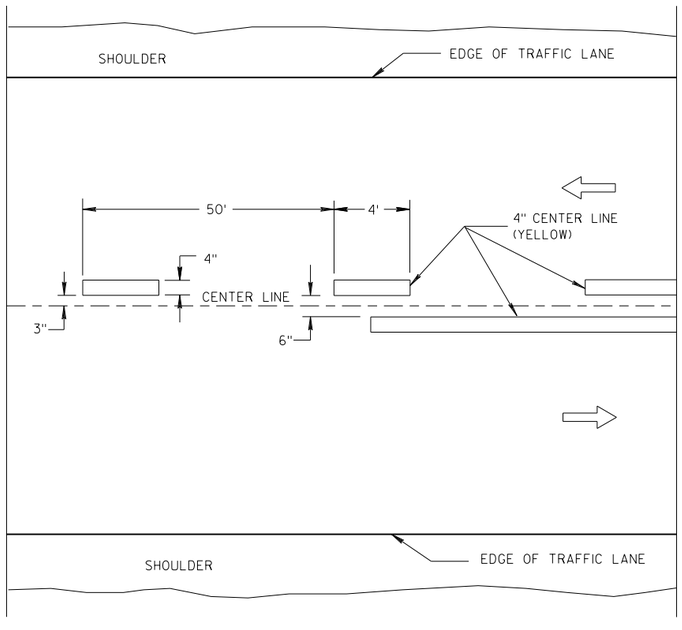
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

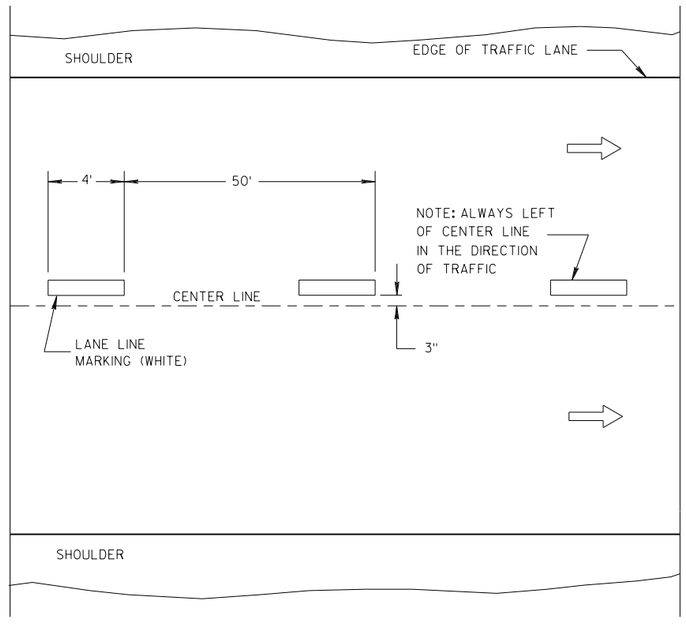
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 DATE

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

FHWA

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S.D.D. 15 C 8-19a

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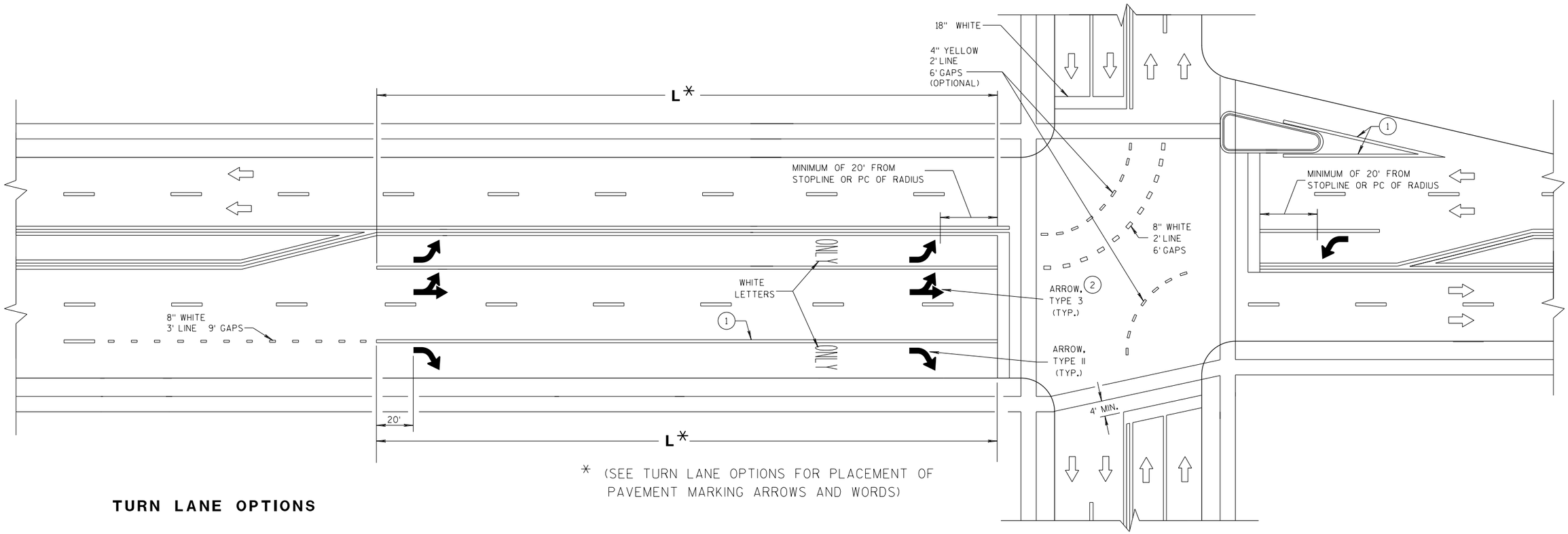
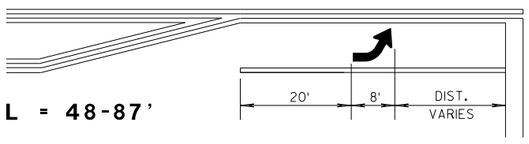
S.D.D. 15 C 8-19a



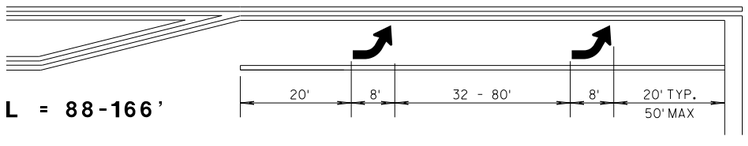
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

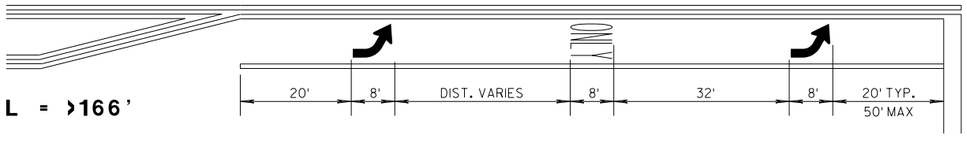
LENGTH OF TURN BAY (**L**) OF 0-47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48-87'



L = 88-166'



L = >166'

GENERAL NOTES

1. 8" WHITE
2. QUANTITY AND LOCATION OF TYPE 3 ARROW ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION, THE ARROWS AND ONLY MARKING ARE ELIMINATED.

⇨ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

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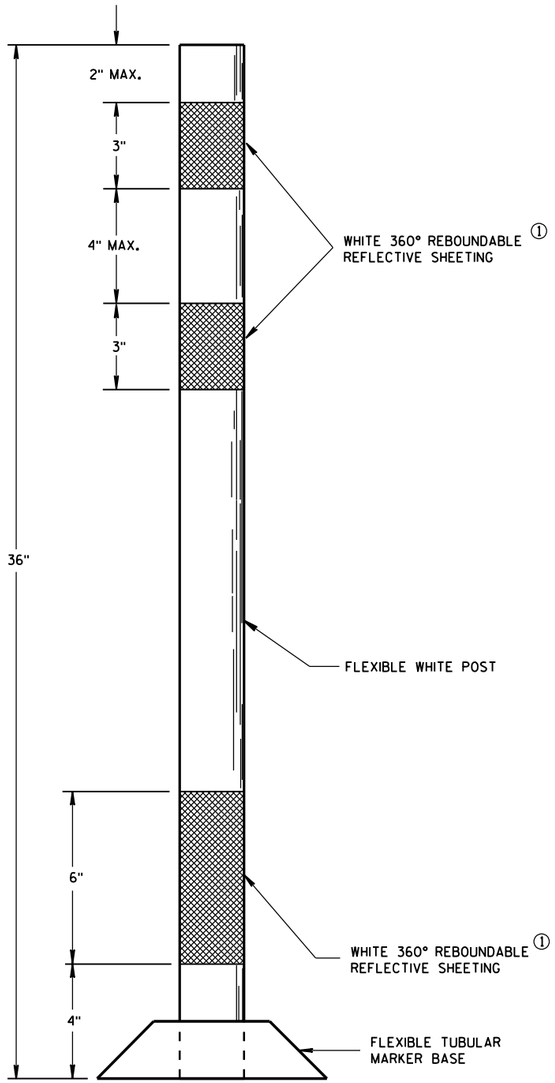
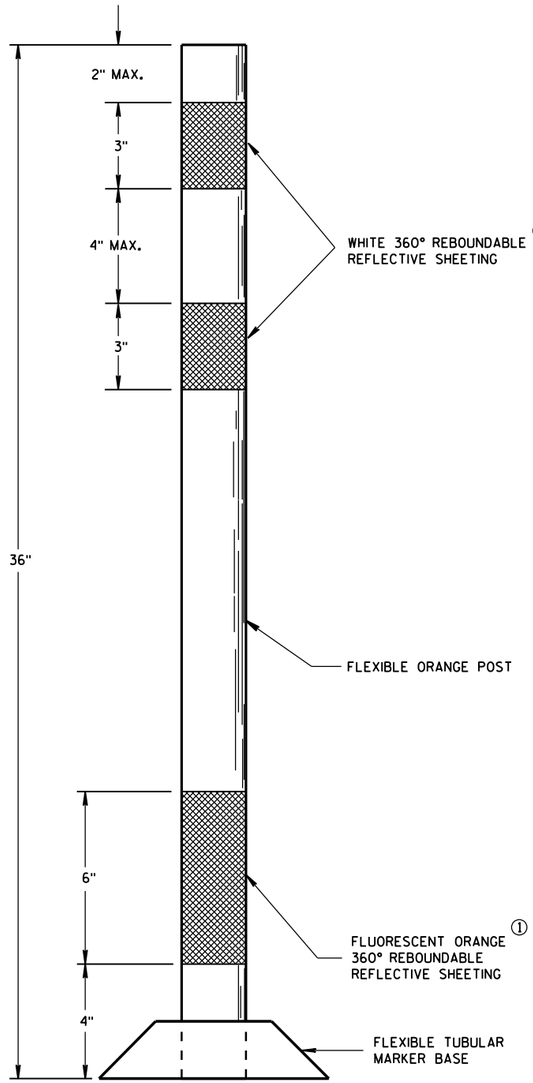
S.D.D. 15 C 8-19c



FLEXIBLE
TUBULAR MARKER POST
PERMANENT CROSSOVER



FLEXIBLE
TUBULAR MARKER POST
WORK ZONE

GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

CHANNELIZING DEVICES
FLEXIBLE TUBULAR MARKER POST

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Andrew Heldtke — WORK ZONE ENGR
FHWA

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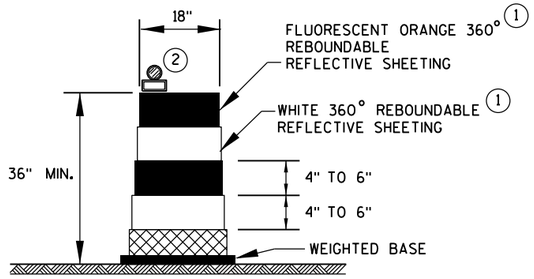
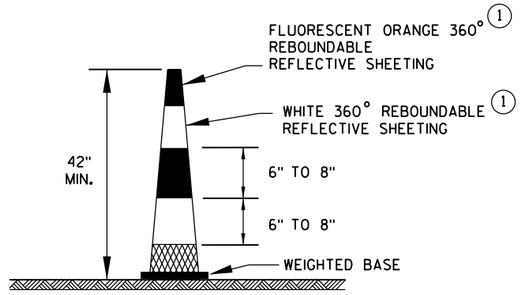
S.D.D. 15 C 11-7a



DRUM

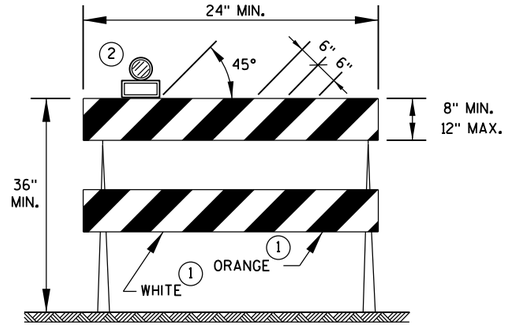


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

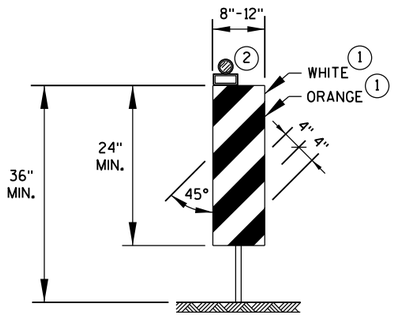
GENERAL NOTES

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.



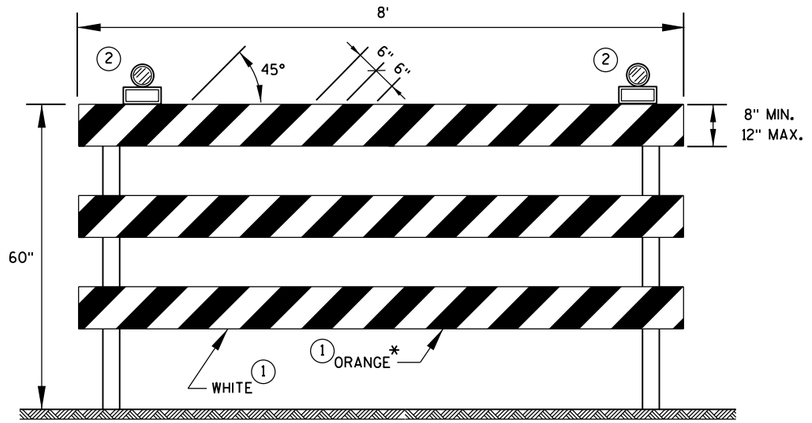
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 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

June 2017 — DATE

/S/ Andrew Heidtke — WORK ZONE ENG

FHWA

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S.D.D. 15 C 11-7b

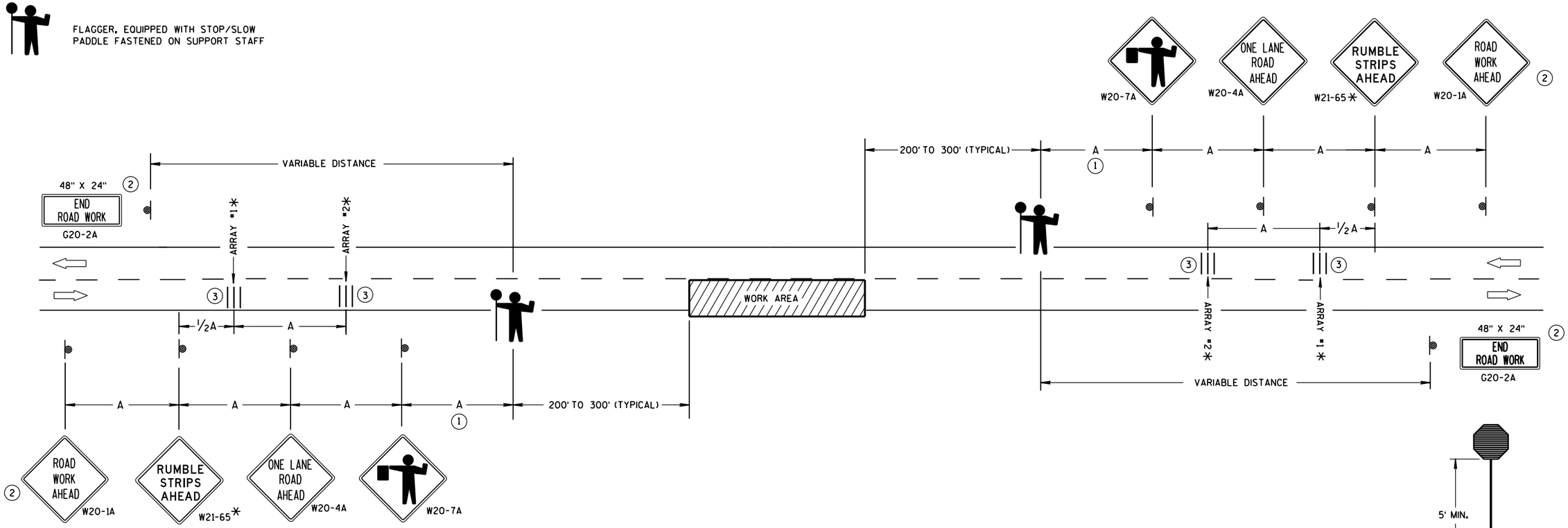
LEGEND

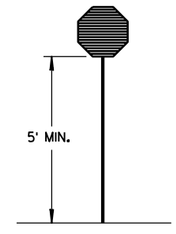
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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

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





STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

GENERAL NOTES

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

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

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

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

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

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

* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

(1) FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

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

(3) EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Andrew Heldtke — WORK ZONE ENG
FHWA

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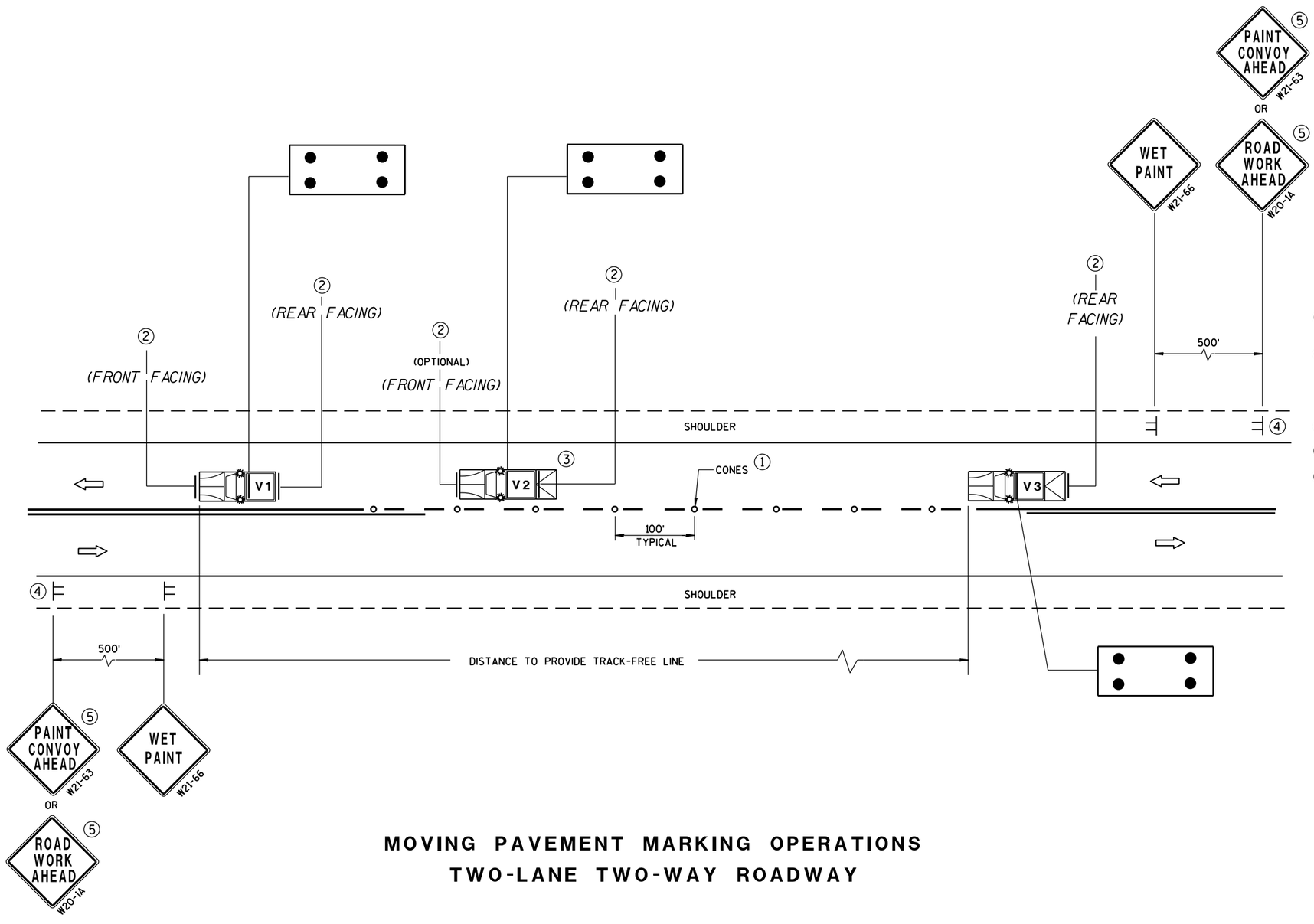
S.D.D. 15 C 12-6

S.D.D. 15 C 12-6



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

(1) CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

(2) USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64 OR WET PAINT W21-64

(3) OPTIONAL TRUCK-MOUNTED ATTENUATOR.

(4) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

(5) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

- **V1** LEAD VEHICLE
- **V2** SHADOW VEHICLE
- **V3** TRAIL VEHICLE WITH TMA
- **TMA** TRUCK-MOUNTED ATTENUATOR
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONES
- FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
Sept., 2017 DATE	/S/ Andrew Heldtke WORK ZONE ENGR
FHWA	55

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S.D.D. 15 C 19-5a

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLAGS, 16" X 16" MIN. (ORANGE)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- ASPHALTIC PAVEMENT WIDENING
- CONCRETE BARRIER TEMPORARY PRECAST
- TEMPORARY SIGNAL. SEE SDD 09G02 FOR EXACT PLACEMENT

1. 500 FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY 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.
2. USE 300 FOOT SPACING IF THE PRE - CONSTRUCTION REGULATORY SPEED IS 35 MPH OR LESS.
3. DIMENSION DETERMINED BY CBTP TAPER FROM EDGE LINE TO TANGENT SECTION OF THE ROAD.
4. TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18 - INCH.
5. 700 FOOT TEMPORARY MARKING DOUBLE YELLOW LINE 4 - INCH. WHEN THE DISTANCE FOR THE PRECEDING NO - PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.
6. SEE SDD 15C02 - SHEET "F" FOR ADVANCED WIDTH RESTRICTION SIGNING.

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

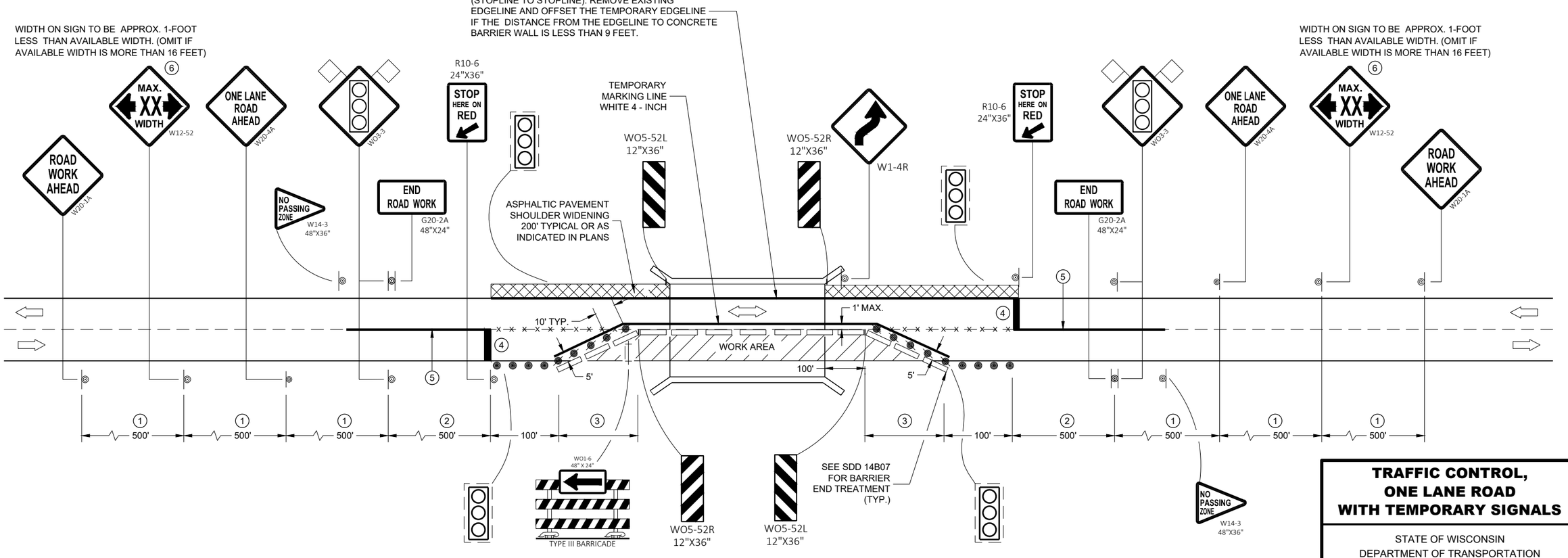
THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.



TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

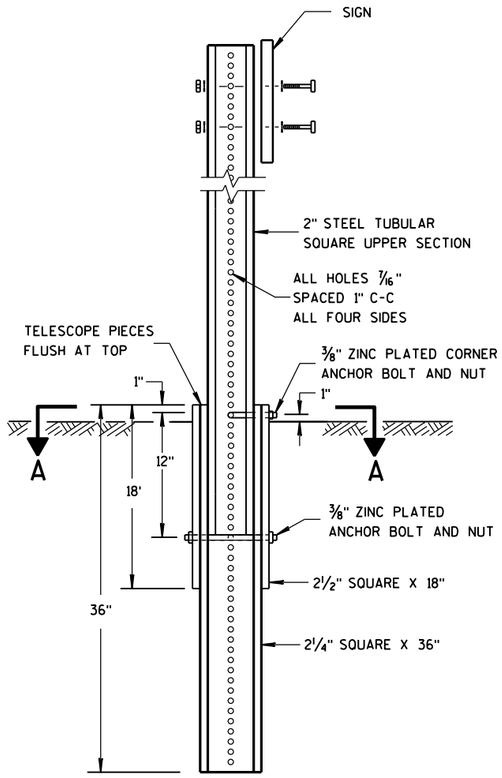
APPROVED
November 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

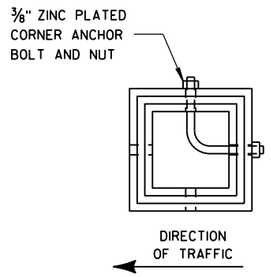
FHWA

SDD 15D33 - 05

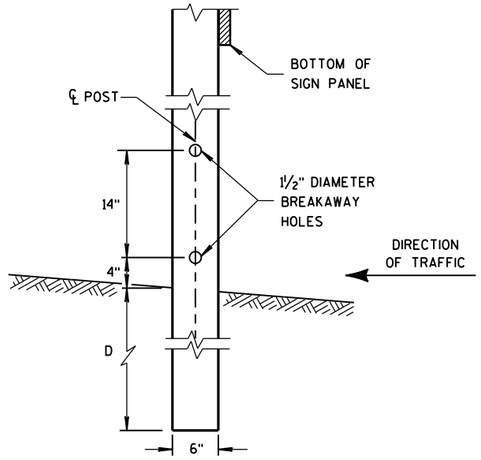
SDD 15D33 - 05



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



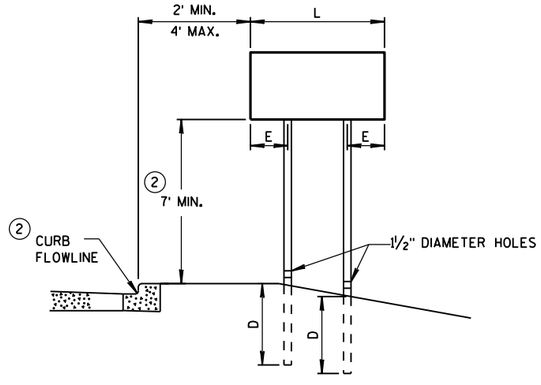
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

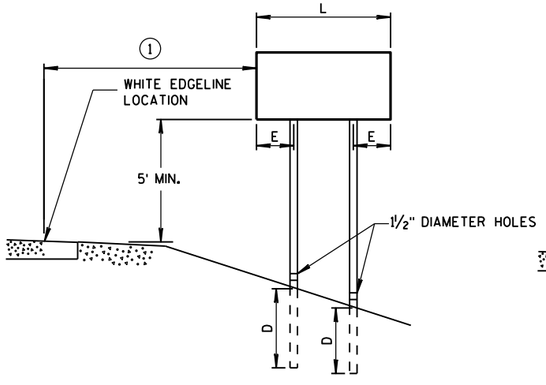
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

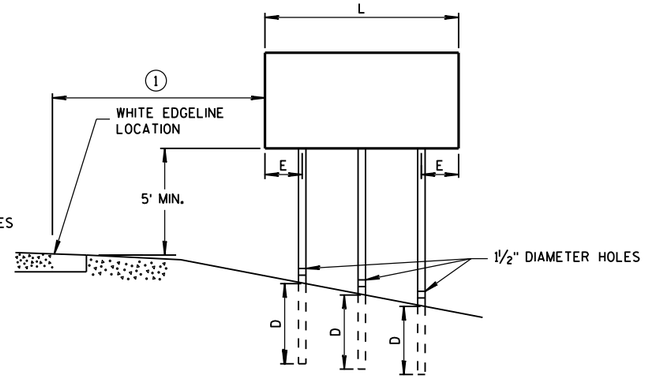
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

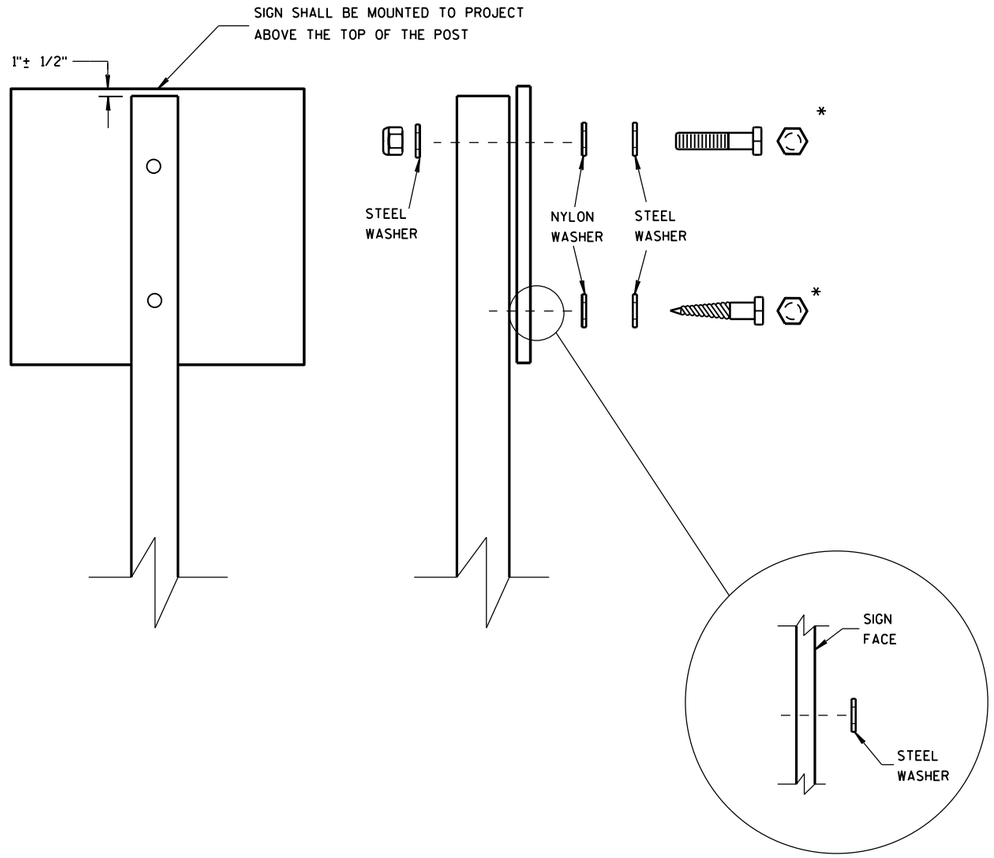
POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

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

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

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

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

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

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

WASHERS (ALL POSTS) -

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

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

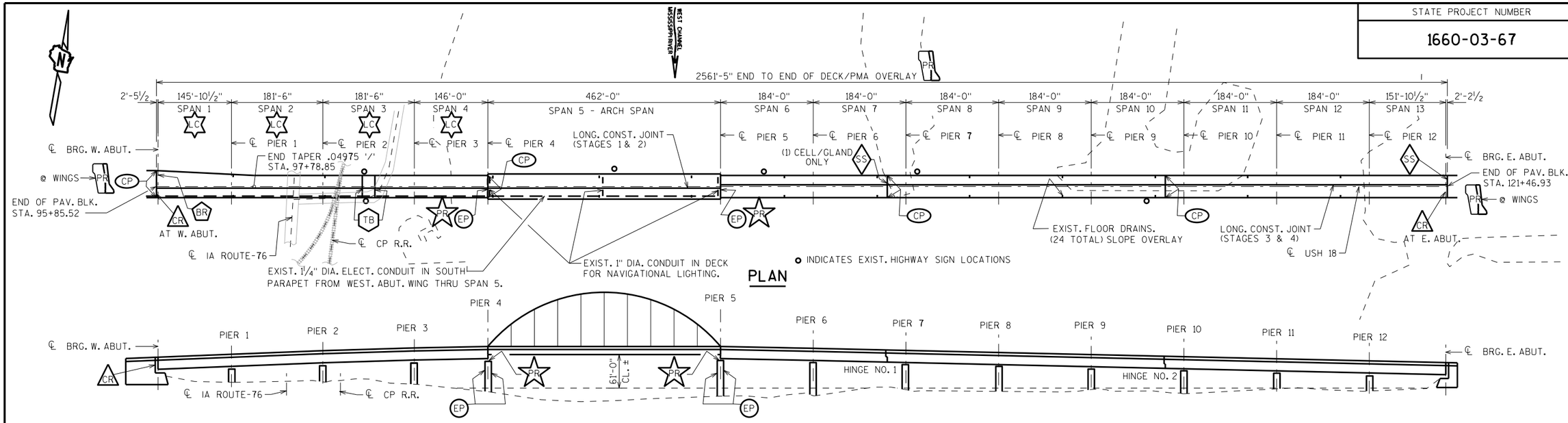
June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENG

FHWA

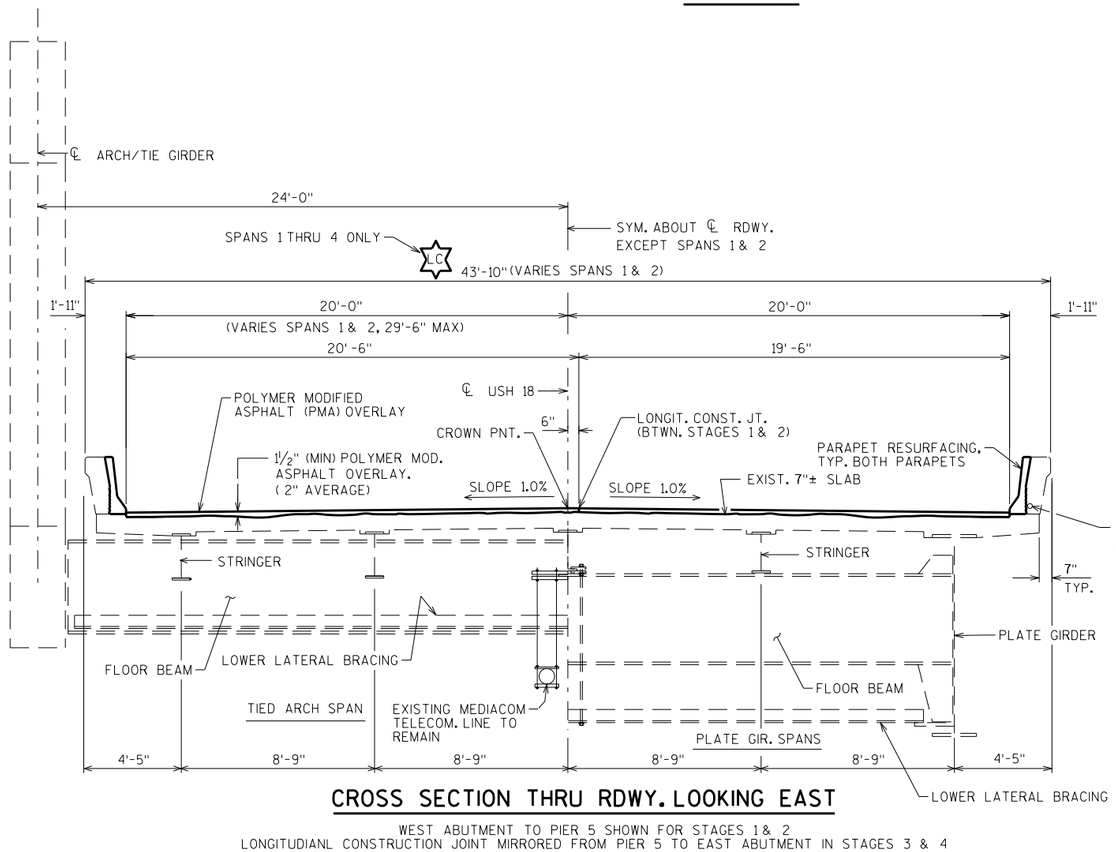
STATE PROJECT NUMBER

1660-03-67



PLAN

ELEVATION



CROSS SECTION THRU RDWY. LOOKING EAST

WEST ABUTMENT TO PIER 5 SHOWN FOR STAGES 1 & 2
LONGITUDIANL CONSTRUCTION JOINT MIRRORED FROM PIER 5 TO EAST ABUTMENT IN STAGES 3 & 4

REHABILITATION LEGEND

- CR — CONCRETE SURFACE REPAIRS
- PR — PARAPET RESURFACING
- EP — EPOXY CRACK INJECTION AT PIER WALLS
- CP — REPLACE PARAPET COVER PLATES
- PR — PIER CAP CLEANING, REPAIR GROUTING, & SEALING
- LC — REMOVE LOOSE CONCRETE AT STRINGER/GIRDER HAUNCHES (SPANS 1 THRU 4 ONLY)
- BR — BEARING REPAIRS
- TB — TEMPORARY BRACING OF GIRDER TOP FLANGE (IN SPAN 3 NEAR MID-SPAN, SEE "REMOVAL AND STAGING DETAILS 1" SHT.)
- SS — REMOVE AND REPLACE TORN STRIP SEAL GLAND (EXISTING SEAL IS D.S. BROWN- A2R-400, 41'-0"± LENGTH @ E. ABUT.) (EXISTING SEAL IS WATSON-BOWMAN-ACME SE-300, 41'-0"± LENGTH @ MODULAR JOINT IN SPAN 7)

DESIGN DATA

LIVE LOAD:

DESIGN RATING: HS-20
INVENTORY RATING: HS-17
OPERATIONAL RATING: HS- 28
MAXIMUM STANDARD PERMIT VEHICLE LOAD: 230 (KIPS)

MATERIAL PROPERTIES:

CONCRETE MASONRY ——— f'c = 4,000 P.S.I.
BAR STEEL REINFORCEMENT: GRADE 60 ——— fy = 60,000 P.S.I.
STRUCTURAL CARBON STEEL: ASTM A709, GRADE 36 ——— Fy = 36,000 P.S.I.
HIGH STRENGTH STRUCTURAL STEEL: ASTM A709, GRADE 50 ——— Fy = 50,000 P.S.I.

TRAFFIC VOLUME

USH 18

ADT = 9,600 (2016)
R.D.S. = 50 M.P.H.

STRUCTURE DESIGN CONTACTS:

CHRISTOPHER DOLL (608) 266-3229
LAURA SHADEWALD (608) 267-9592

LIST OF DRAWINGS

1. PMA OVERLAY
2. REMOVAL AND STAGING DETAILS 1
3. REMOVAL AND STAGING DETAILS 2
4. QUANTITIES AND NOTES
5. SURFACE REPAIR DETAILS
6. PARAPET RESURFACING 1
7. PARAPET RESURFACING 2
8. PARAPET RESURFACING 3
9. PARAPET COVER PLATES
10. FULL DEPTH DECK REPAIR DETAILS
11. BEARING REPAIR DETAILS
12. PIER CAP REPAIRS
13. DECK CONDITION SURVEY - W. ABUT. TO PIER 4
14. DECK CONDITION SURVEY - PIER 4 TO PIER 8
15. DECK CONDITION SURVEY - PIER 8 TO E. ABUT.

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 3/28/19
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-12-27

USH 18-STH 60 OVER IA-76/CP RR/MISSISSIPPI RIVER

COUNTY	TOWN
CRAWFORD	BRIDGEPORT

DESIGN SPEC. REHABILITATION - N/A

DESIGNED BY	CAD	DESIGNED CK'D.	ABS	DRAWN BY	CAD	PLANS CK'D.	JLR

PMA OVERLAY

SHEET 1 OF 15

59

I.D. 1660-03-37A DATE: FEB 2019

SCALE = 100.00

8

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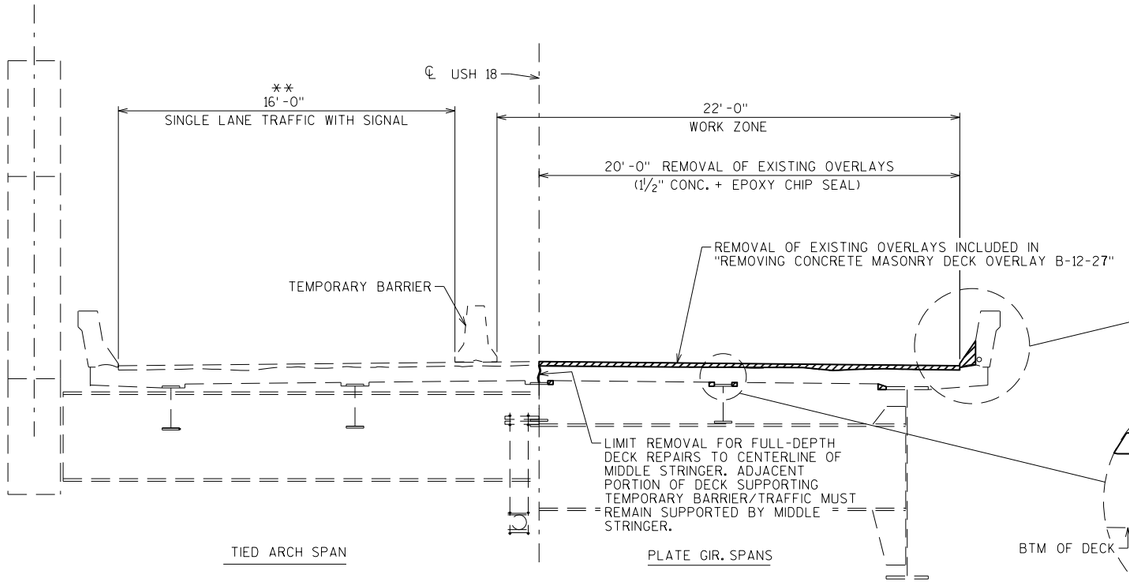
STATE PROJECT NUMBER

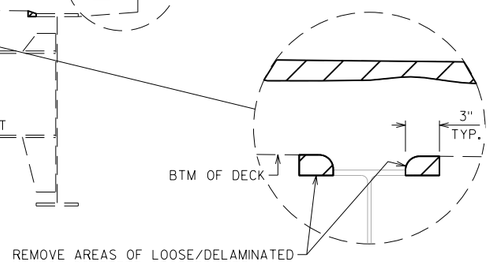
1660-03-67



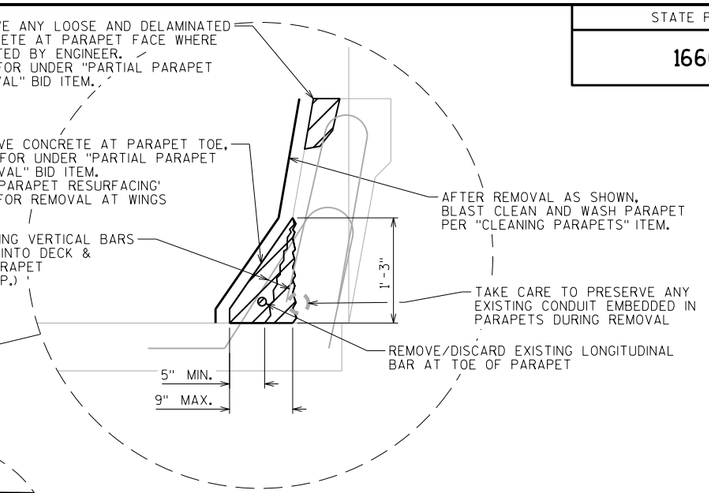
STAGES 1 & 4- REMOVAL SECTION

(LOOKING EAST)

NOTE:
STAGE 1 INCLUDES WEST HALF OF BRIDGE (W. ABUT. TO PIER 5)
STAGE 4 INCLUDES EAST HALF OF BRIDGE (PIER 5 TO E. ABUT.)



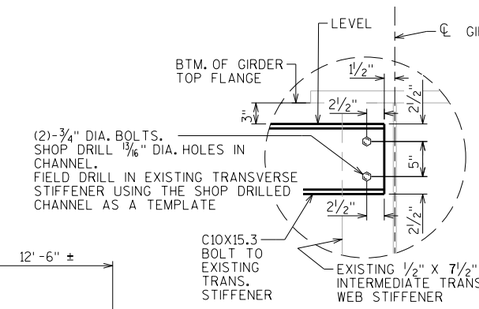
REMOVE AREAS OF LOOSE/DELAMINATED HAUNCH CONCRETE AT STRINGERS AND GIRDERS IN SPANS 1 THRU 4 AS DIRECTED BY ENGINEER. PAID FOR UNDER "HAUNCH REMOVAL B-12-27" ITEM



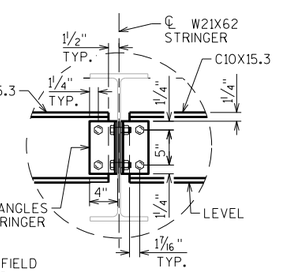
PARAPET PARTIAL REMOVAL DETAIL

DELAMINATED HAUNCH REMOVAL

NOTE:
HAUNCH REMOVAL MAY OCCUR IN ANY STAGE, PROVIDED REMOVAL OPERATIONS DO NOT INTERFERE WITH THE MAINTENANCE OF TRAFFIC.

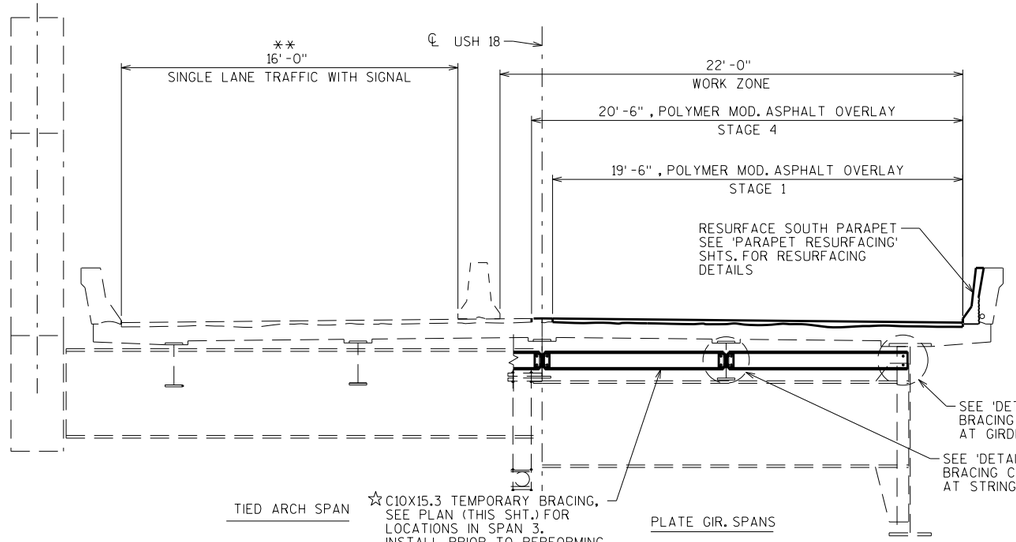


DETAIL A



DETAIL B

NOTE:
PLACE FULLY TENSIONED A325 BOLTS IN HOLES IN STRINGER WEB UPON REMOVAL OF THE TEMPORARY BRACING



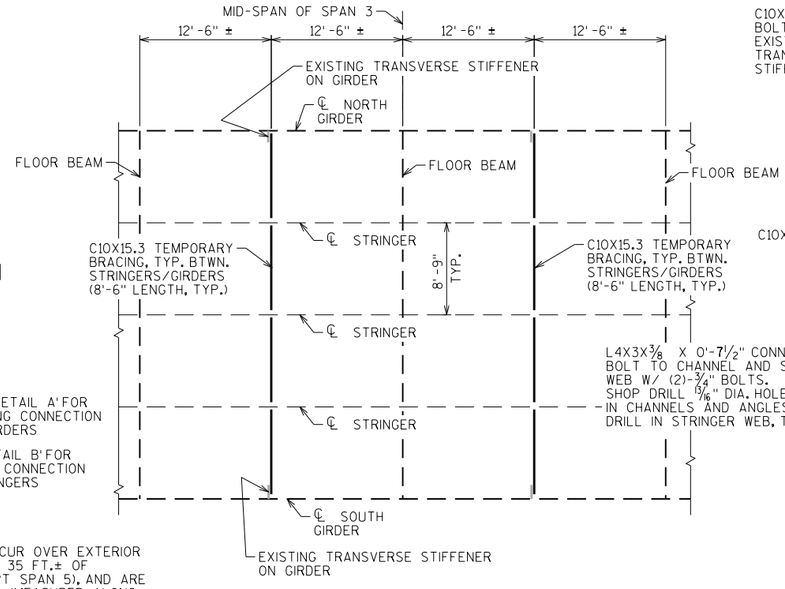
☆ C10X15.3 TEMPORARY BRACING, SEE PLAN (THIS SHT.) FOR LOCATIONS IN SPAN 3. INSTALL PRIOR TO PERFORMING CONCRETE DECK REMOVAL FOR FULL DEPTH DECK REPAIRS. PAID FOR UNDER "STRUCTURAL STEEL CARBON" ITEM.

STAGES 1&4 - OVERLAY/CONSTRUCTION

(LOOKING EAST)

NOTE:
STAGE 1 INCLUDES WEST HALF OF BRIDGE (W. ABUT. TO PIER 5)
STAGE 4 INCLUDES EAST HALF OF BRIDGE (PIER 5 TO E. ABUT.)

☆ WHERE FULL DEPTH REPAIRS OCCUR OVER EXTERIOR GIRDERS NEAR MID-SPAN (WITHIN 35 FT.± OF MIDSPAN FOR ALL SPANS, EXCEPT SPAN 5), AND ARE GREATER THAN 12'-0" IN LENGTH (MEASURED ALONG THE LONGITIDUNAL AXIS OF THE BRIDGE), TEMPORARY BRACING OF THE GIRDER TOP FLANGE MAY BE REQUIRED. BASED ON THE DECK CONDITION SURVEYS, BRACING IS ANTICIPATED TO BE NEEDED IN SPAN 3 ONLY. IF IT IS DETERMINED THAT OTHER REPAIR AREAS FALL WITHIN THE ABOVE DEFINED CRITERIA, CONTACT THE STRUCTURES DESIGN SECTION FOR DIRECTION PRIOR TO PERFORMING REMOVAL IN THESE AREAS.



PART FRAMING PLAN SHOWING LOCATION OF TEMPORARY BRACING IN SPAN 3

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

DRAWN BY CAD | PLANS CK'D. JLR

REMOVAL AND STAGING DETAILS 1

SHEET 2

60

SCALE = 3.50

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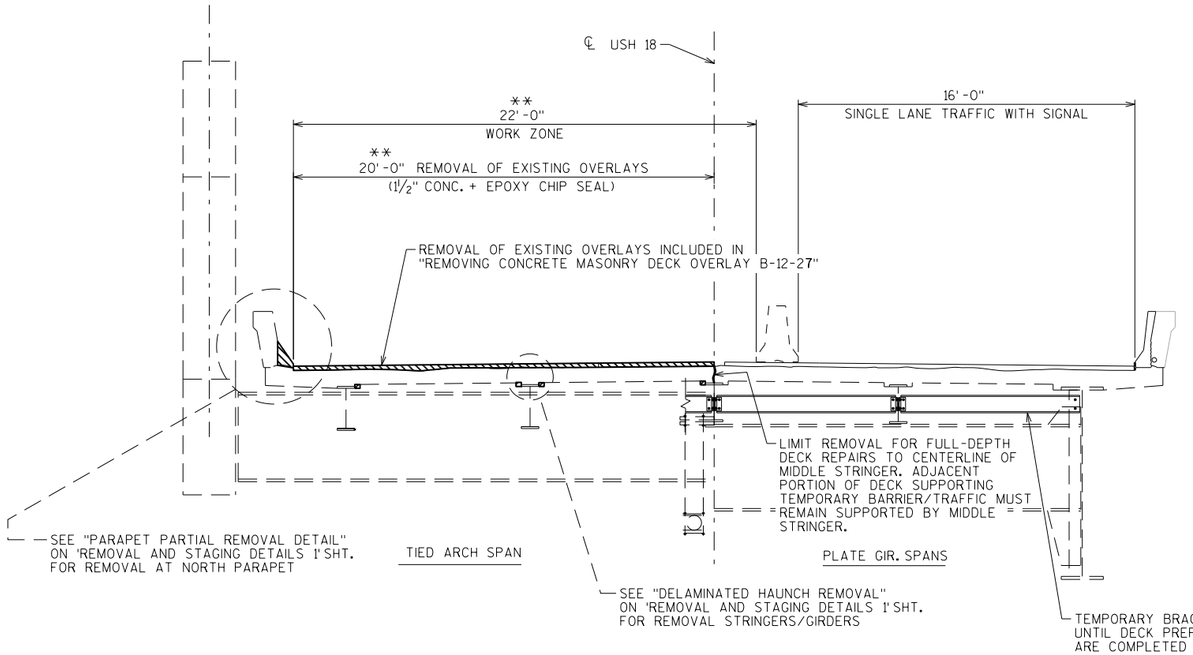
8

STATE PROJECT NUMBER

1660-03-67

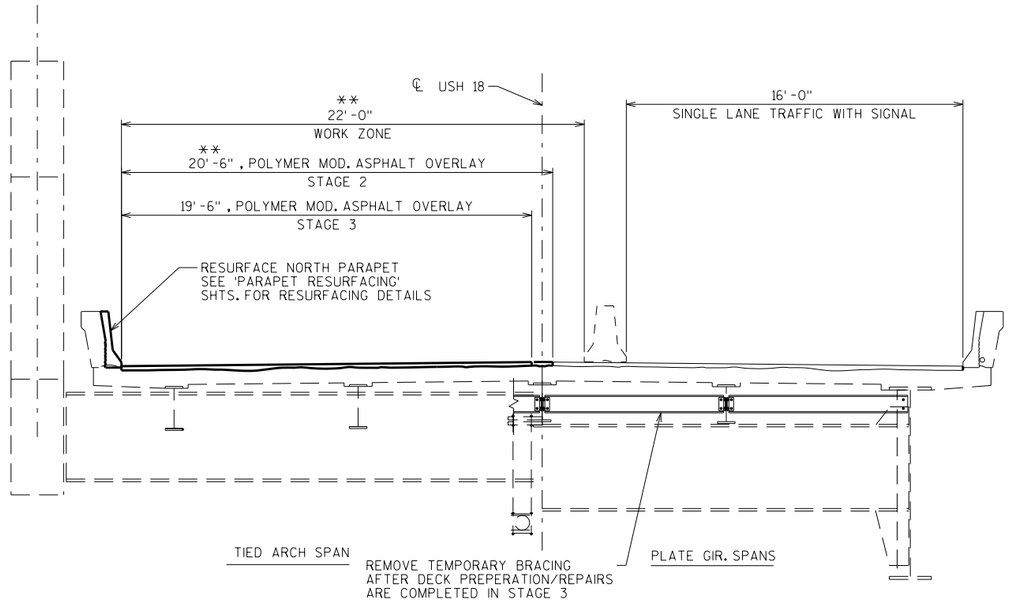
** MIN./VARIES IN SPANS 1 & 2



STAGES 2 & 3 - REMOVAL SECTION

(LOOKING EAST)

NOTE:
STAGE 2 INCLUDES WEST HALF OF BRIDGE (W. ABUT. TO PIER 5)
STAGE 3 INCLUDES EAST HALF OF BRIDGE (PIER 5 TO E. ABUT.)



STAGES 2 & 3 - OVERLAY/CONSTRUCTION

(LOOKING EAST)

NOTE:
STAGE 2 INCLUDES WEST HALF OF BRIDGE (W. ABUT. TO PIER 5)
STAGE 3 INCLUDES EAST HALF OF BRIDGE (PIER 5 TO E. ABUT.)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

DRAWN BY CAD | PLANS CK'D. JLR

REMOVAL AND STAGING DETAILS 2

SHEET 3

61

SCALE = 3.50

STATE PROJECT NUMBER

1660-03-67

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	PIER 4	PIER 5	EAST ABUT.	TOTALS
	203.0225.S	DEBRIS CONTAINMENT B-12-27	LS	———	———	———	———	———	1
	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 95+85	LS	———	———	———	———	———	1
	502.0100	CONCRETE MASONRY BRIDGES	CY	257	———	———	———	———	257
	502.3210	PIGMENTED SURFACE SEALER	SY	2,408	———	———	———	———	2,408
	502.4204	ADHESIVE ANCHORS NO. 4 BAR	EACH	9,846	———	———	———	———	9,846
	505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	35,020	———	———	———	———	35,020
	505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	26,120	———	———	———	———	26,120
	506.0105	STRUCTURAL STEEL CARBON	LB	1,100	———	———	———	———	1,100
★	509.0301	PREPARATION DECKS TYPE 1	SY	2,518	———	———	———	———	2,518
★	509.0302	PREPARATION DECKS TYPE 2	SY	1,367	———	———	———	———	1,367
	509.0310.S	SAWING PAVEMENT DECK PREPARATION AREAS	LF	25,180	———	———	———	———	25,180
★	509.1500	CONCRETE SURFACE REPAIR	SF	———	36	———	———	40	76
★	509.2000	FULL-DEPTH DECK REPAIR	SY	598	———	———	———	———	598
	509.3500.S	HMA OVERLAY POLYMER-MODIFIED	TON	1,264	———	———	———	———	1,264
★	509.9005.S	REMOVING CONCRETE MASONRY DECK OVERLAY B-12-27	SY	11,487	———	———	———	———	11,487
	509.9025.S	EPOXY INJECTION CRACK REPAIR	LF	———	———	400	340	———	740
	509.9026.S	CORED HOLES 2-INCH DIAMETER	EACH	———	———	2	2	———	4
★	509.9050.S	CLEANING PARAPETS	LF	5,280	———	———	———	———	5,280
	653.0210	JUNCTION BOXES 10X10X6-INCH	EACH	4	———	———	———	———	4
	SPV.0035	CONCRETE MASONRY DECK REPAIR - HIGH EARLY STRENGTH	CY	275	———	———	———	———	275
	SPV.0060	BEARING REPAIRS B-12-27	EACH	———	2	———	———	———	2
	SPV.0060	PARAPET COVER PLATES	EACH	8	———	———	———	———	8
	SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	———	2	4	4	2	12
★	SPV.0090	HAUNCH REMOVAL B-12-27	LF	1,310	———	———	———	———	1,310
	SPV.0105	STRIP SEAL GLAND REPLACEMENT B-12-27	LS	———	———	———	———	———	1
★	SPV.0105	PIER CAP REPAIRS B-12-27	LS	———	———	———	———	———	1
★	SPV.0165	PARTIAL PARAPET REMOVAL	SF	10,000	———	———	———	———	10,000
	SPV.0180	ABUTMENT SEAT CLEANING AND SEALING	SY	———	13	———	———	11	24

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE COLOR OF THE FINISH EPOXY TOP COAT SHALL BE BLUE, (FEDERAL STANDARD COLOR NO. 25240) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

ALL FIELD CONNECTIONS SHALL BE MADE WITH ¾" DIAMETER A325 HIGH-TENSILE STRENGTH BOLTS UNLESS OTHERWISE SHOWN OR NOTED.

AREAS OF "PREPARATION DECKS TYPE 1" SHALL BE DEFINED BY A SAW CUT.

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL-DEPTH DECK REPAIR AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY DECK REPAIR - HIGH EARLY STRENGTH".

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "HMA OVERLAY POLYMER-MODIFIED".

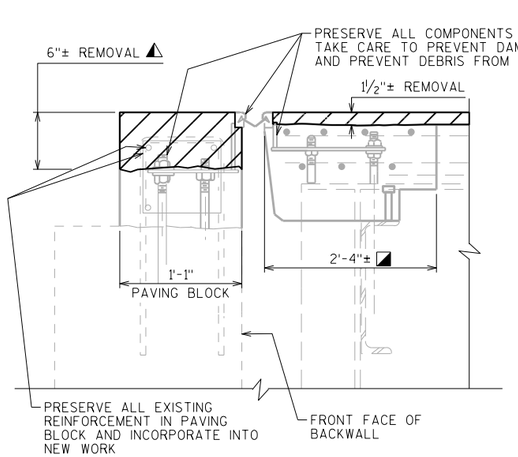
THE PLAN QUANTITY FOR THE BID ITEM "HMA OVERLAY POLYMER-MODIFIED" IS BASED ON THE AVERAGE OVERLAY THICKNESS.

CONTACT THE BUREAU OF STRUCTURES BEFORE PLACEMENT OF OVERLAY IF THE AVERAGE THICKNESS OF THE NEW OVERLAY WILL EXCEED THE AVERAGE OVERLAY SHOWN ON THE PLANS BY MORE THAN ½".

THE EXISTING OVERLAYS (EPOXY CHIP SEAL AND CONCRETE) SHALL BE REMOVED FROM THE BRIDGE DECK UNDER BID ITEM "REMOVING CONCRETE MASONRY DECK OVERLAY".

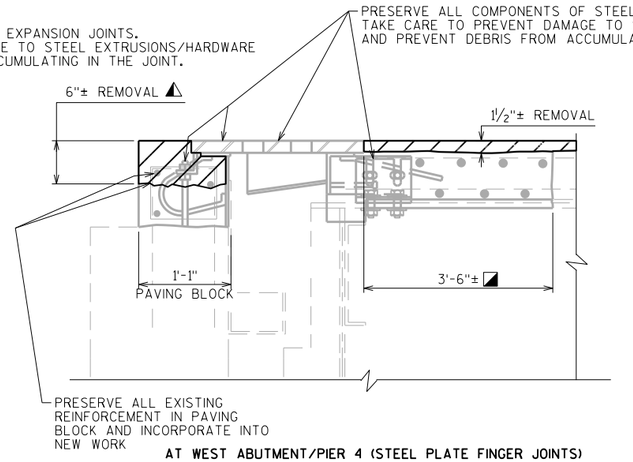
★ REMOVAL, DEBRIS CONTAINMENT, AND DISPOSAL OF EXISTING STRUCTURE INCLUDED WITHIN THESE ITEMS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN SPECIAL PROVISION "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 95+85".

CLEAN AND PAINT EXISTING BEARINGS AT BOTH ABUTMENTS AND PIERS 4 & 5 UNDER THE "CLEANING AND PAINTING BEARINGS" ITEM AS DIRECTED BY ENGINEER.



AT EAST ABUTMENT/PIER 5 (STRIP SEALS)

(ABUT. SHOWN, DETAIL SIMILAR AT PIER 5 W/ NO PAVING BLOCK)

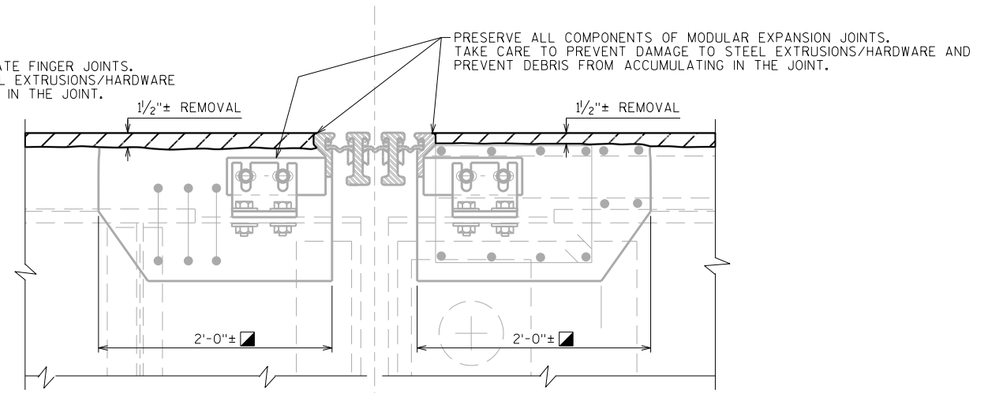


AT WEST ABUTMENT/PIER 4 (STEEL PLATE FINGER JOINTS)

(ABUT. SHOWN, DETAIL SIMILAR AT PIER 4 W/ NO PAVING BLOCK)

OVERLAY REMOVAL DETAILS AT ABUTMENT/PIER JOINTS

NOTE:
AT ABUTMENT PAVING BLOCKS, IF EXISTING BAR STEEL REINFORCEMENT IS SEVERLY CORRODED OR DAMAGED DURING CONCRETE REMOVAL, REPLACE WITH EPOXY BARS OR EPOXY ANCHORED BARS OF THE SAME SIZE. EMBED 1'-6" INTO EXISTING CONCRETE. WORK TO BE PAID UNDER "REMOVING OLD STRUCTURE OVER WATERWAY" ITEM.



OVERLAY REMOVAL DETAILS AT HINGE/IN-SPAN JOINTS

◪ EXISTING OVERLAY MAY BE MONOLITHIC WITH DECK/DIAPHRAGM CONCRETE IN THESE AREAS. REMOVAL INCLUDED IN "REMOVING CONCRETE MASONRY DECK OVERLAY B-12-27"

◭ REMOVAL SHALL BE INCLUDED IN "REMOVING OLD STRUCTURE OVER WATERWAY" ITEM. REPLACE REMOVED PAVING BLOCK CONCRETE WITH "CONCRETE MASONRY DECK REPAIR" CONCRETE, FULL-HEIGHT (NO POLYMER-MODIFIED ASPHALT OVERALY AT PAVING BLOCK)

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

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QUANTITIES AND NOTES

SHEET 4

62

8

8

SCALE = 1.00

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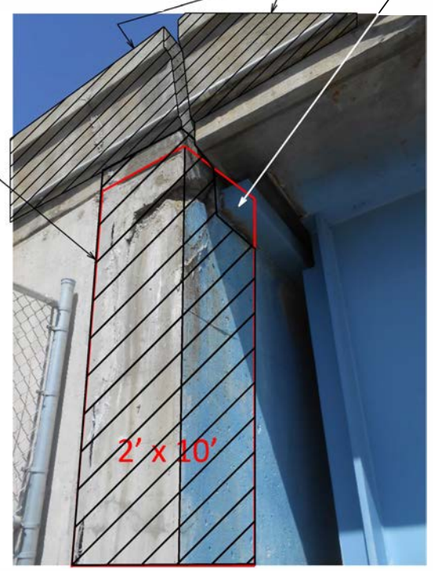
PIER 5

PIER 4

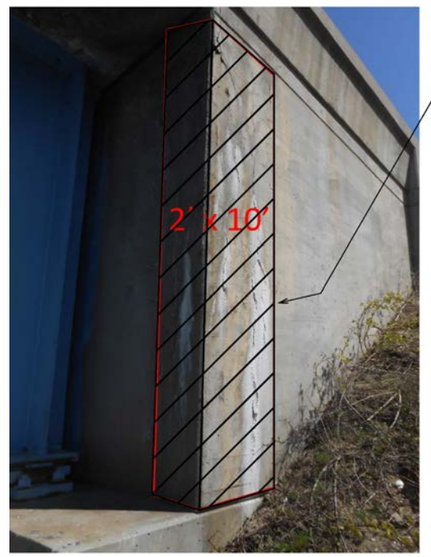
EPOXY CRACK SEALING AT PIERS 4 & 5



SOUTH CORNER OF WEST ABUTMENT BACKWALL

NORTH CORNER OF WEST ABUTMENT BACKWALL

NORTH CORNER OF EAST ABUTMENT BACKWALL



SOUTH CORNER OF EAST ABUTMENT BACKWALL

SURFACE REPAIRS AT ABUTMENTS

NOTES

THIS SHEET DEPICTS THE GENERAL TYPES AND LOCATIONS OF REPAIRS, AND MAY NOT BE ALL INCLUSIVE. QUANTITIES SHOWN ON SHT. 4 ARE APPROXIMATE. ADDITIONAL REPAIRS MAY BE REQUIRED DURING CONSTRUCTION AND SHOULD BE PERFORMED AS DIRECTED BY THE FIELD ENGINEER.

ALL SURFACE REPAIR AREAS SHALL BE DEFINED BY ½" MIN. SAWCUT.

CONTRACTOR SHALL EMPLOY METHODS TO PREVENT REMOVED CONCRETE MATERIAL FROM ENTERING THE WATERWAY.

AFTER CONCRETE SURFACE REPAIRS, BLAST CLEAN AND WASH ABUTMENT SEATS AND SEAL SURFACE WITH BRIDGE SEAT PROTECTION. PAID FOR UNDER "ABUTMENT SEAT CLEANING AND SEALING". SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

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SURFACE REPAIR DETAILS

SHEET 5

63

SCALE = 1.00

8

8

STATE PROJECT NUMBER

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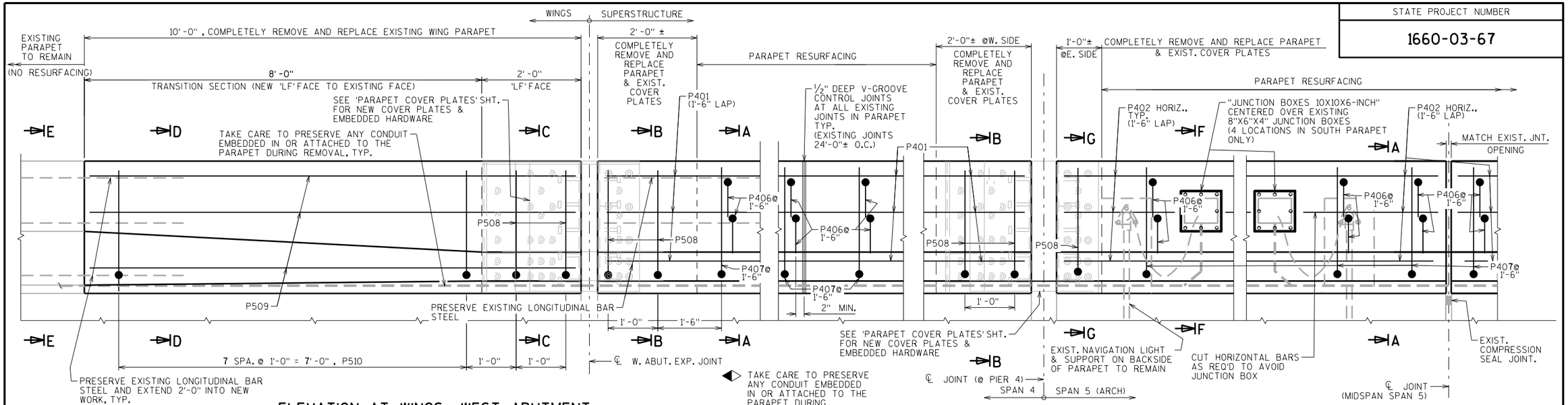
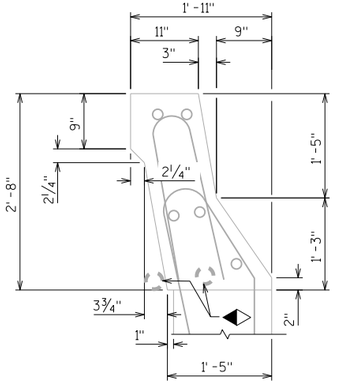


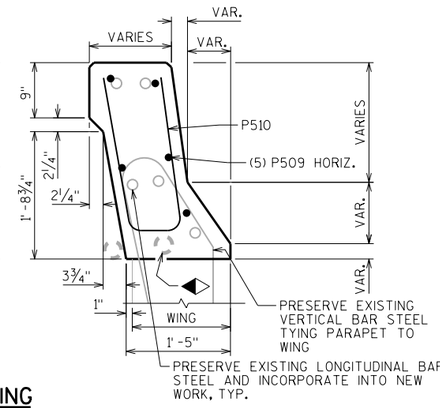
ELEVATION AT WINGS- WEST ABUTMENT

AT PIER 4 JOINT

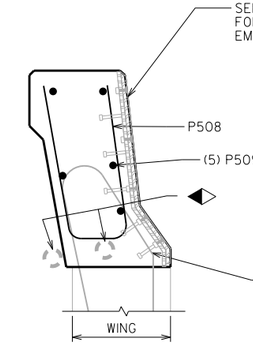
AT MIDSPAN OF SPAN 5 JOINT



SECTION E-E - EXISTING

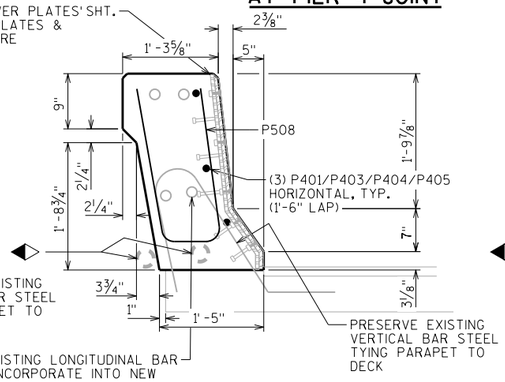


SECTION D-D

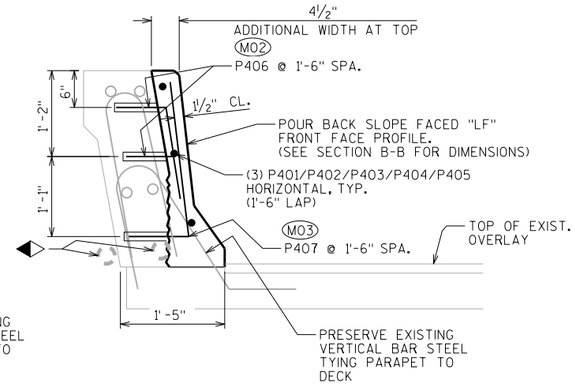


SECTION C-C

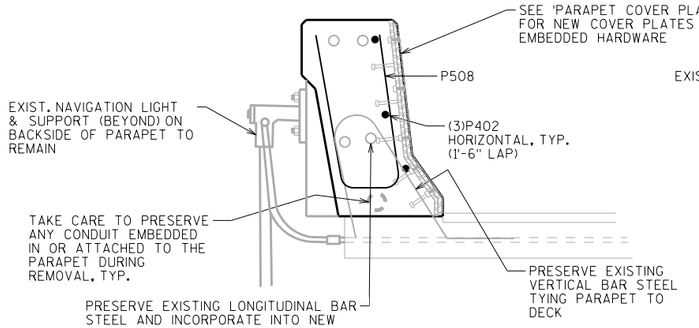
(FOR DIMENSIONS SEE SECTION B-B)



SECTION B-B

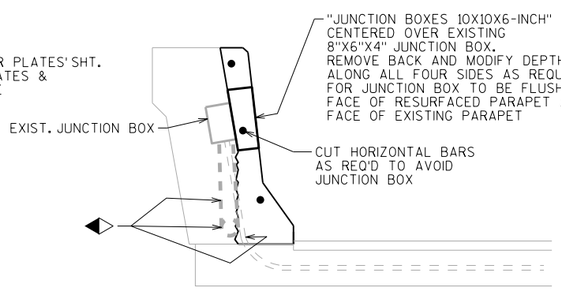


SECTION A-A - RESURFACING DETAIL SECTION



SECTION G-G

(FOR DIMENSIONS SEE SECTION B-B)



SECTION F-F

(AT JUNCTION BOXES)
4 LOCATIONS IN SOUTH PARAPET:
(1) IN SPAN 3 NEAR PIER 2
(3) IN SPAN 5

PARAPET NOTES

SEE "REMOVAL AND STAGING DETAILS 1" SHT. FOR PARTIAL PARAPET REMOVAL REQUIRED PRIOR TO RESURFACING.

SECTIONS OF COMPLETE PARAPET REMOVAL SHALL BE INCLUDED IN "REMOVING OLD STRUCTURE OVER WATERWAY" ITEM. PARTIAL REMOVAL OF PARAPET IN RESURFACING AREAS SHALL BE INCLUDED IN "PARTIAL PARAPET REMOVAL" ITEM. AT COMPLETE PARAPET REMOVAL LOCATIONS, DEFINE REMOVAL AT THE TOP AND BACK FACE OF THE PARAPET WITH A ½" MIN. SAW CUT.

AFTER REMOVAL AND PRIOR TO RESURFACING, PARAPETS SHALL BE CLEANED PER "CLEANING PARAPETS" ITEM.

KEEP EXISTING SURFACE OF PARAPET CONTINUOUSLY WET FOR A PERIOD OF 2 HOURS BEFORE PLACING RESURFACING CONCRETE.

CURE RESURFACING CONCRETE IN ACCORDANCE WITH ANY OF THE METHODS IDENTIFIED IN SECTION 502.3.8.2.4(2) OF THE STANDARD SPECIFICATIONS. USE "PIGMENTED SURFACE SEALER" AS THE CURING COMPOUND IF CURING UNDER THE 'IMPERVIOUS COATING METHOD'.

ALL PARAPET CONCRETE SHALL BE PAID FOR UNDER "CONCRETE MASONRY BRIDGES" ITEM.

PRIOR TO PLACING RESURFACING CONCRETE OF ANY SUBSTANTIAL AMOUNT, A TEST SECTION OF 25'-0"± SHALL BE MADE FOR REVIEW BY THE ENGINEER. TEST SECTION WILL BE USED TO VERIFY THE MIX DESIGN CHOSEN AND METHODS EMPLOYED PRODUCE A UNIFORM, WELL CONSOLIDATED SURFACE FREE OF SUBSTANTIAL VOIDS AND SURFACE IRREGULARITIES.

OPTIONAL VERTICAL CONSTRUCTION JOINTS IN THE RESURFACING CONCRETE MAY BE USED AND SHALL ALIGN WITH THE EXISTING JOINTS IN THE PARAPETS. DEFINE JOINTS WITH ½" DEEP V-GROOVES AND RUN BAR STEEL THRU JOINT AND LAP WITH ADJACENT LONGITUDINAL REINFORCEMENT A MINIMUM OF 1'-6".

(M02) ADHESIVE ANCHORS NO. 4 BAR. EMBED 6" IN CONCRETE.

(M03) ADHESIVE ANCHORS NO. 4 BAR. EMBED 6" MIN. IN CONCRETE. INCREASE EMBEDMENT AS REQ'D TO MAINTAIN 1½" CLEAR COVER AT FRONT FACE.

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

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PARAPET RESURFACING 1

SHEET 6

64

SCALE = 1.00

8

8

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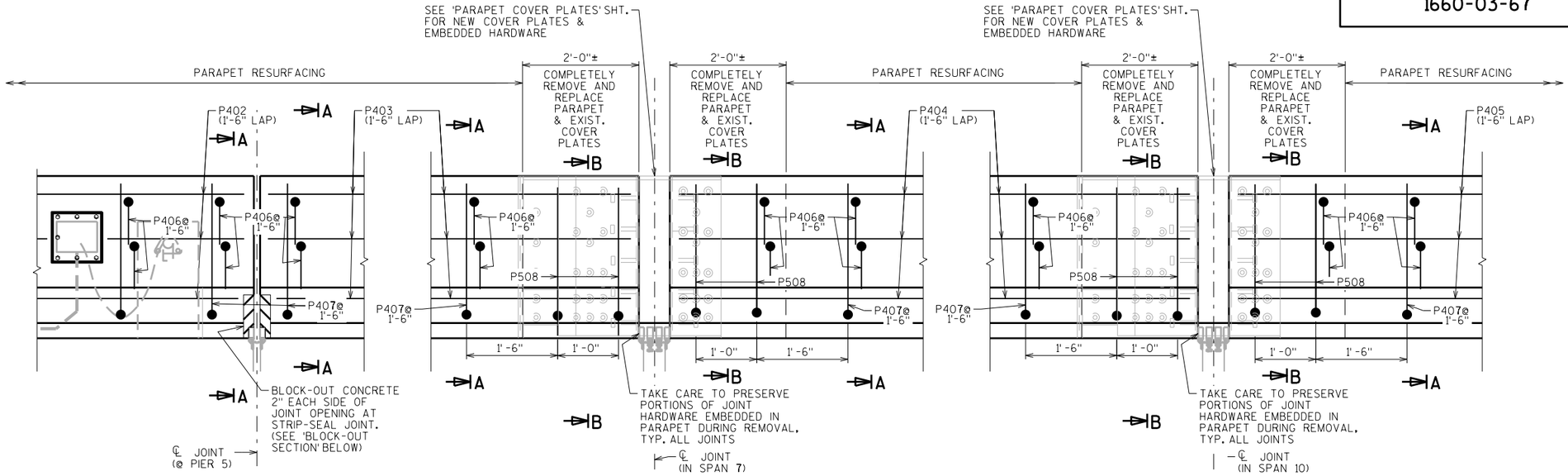


AT PIER 5 JOINT

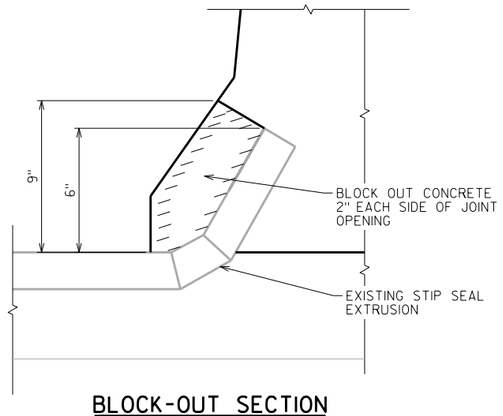
(SEE PREVIOUS SHEET FOR SECTION A-A)

AT IN-SPAN MOD. JOINT -SPAN 7

(SEE PREVIOUS SHEET FOR SECTION A-A & B-B)

AT IN-SPAN MOD. JOINT -SPAN 10

(SEE PREVIOUS SHEET FOR SECTIONS A-A & B-B)



BLOCK-OUT SECTION

8

8

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

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PARAPET RESURFACING 2

SHEET 7

65

SCALE = 1.00

STATE PROJECT NUMBER

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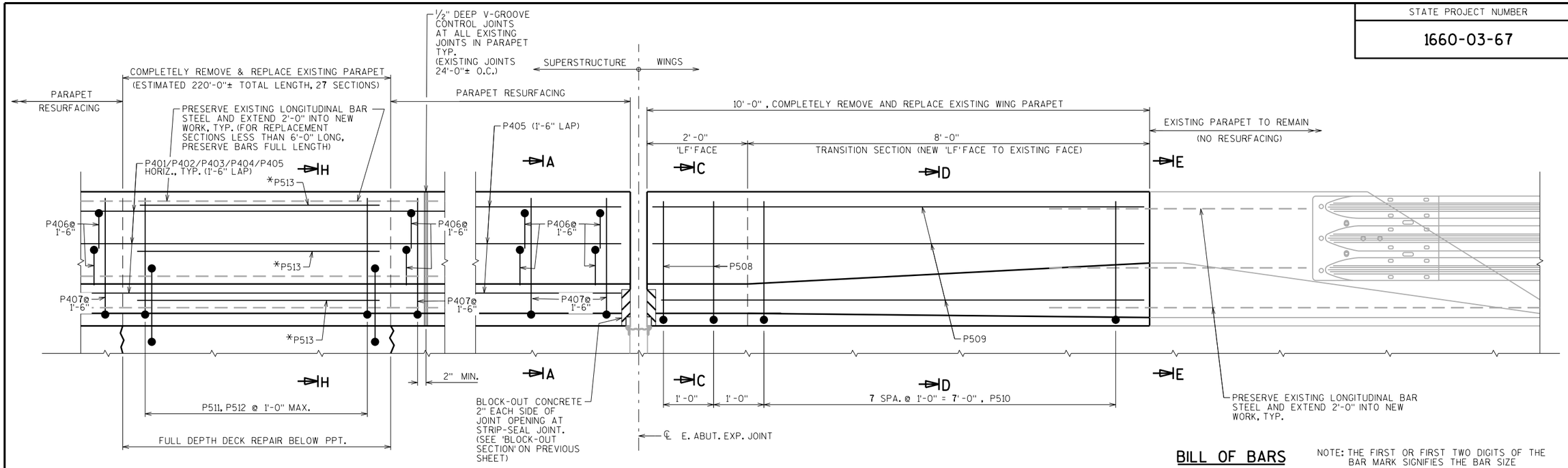
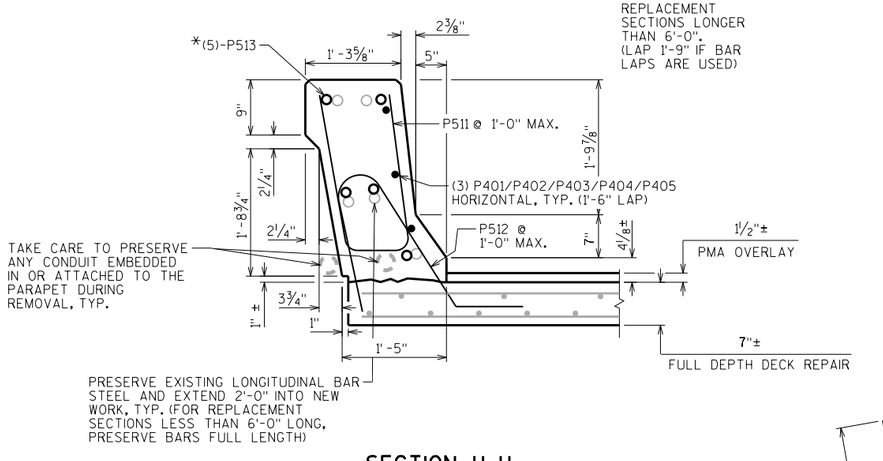


ELEVATION AT FULL DEPTH DECK REPAIRS/ FULL PARAPET REPLACEMENT

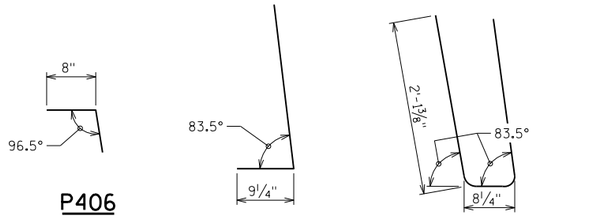
* ONLY REQUIRED IN REPLACEMENT SECTIONS LONGER THAN 6'-0". (LAP 1'-9" IF BAR LAPS ARE USED)

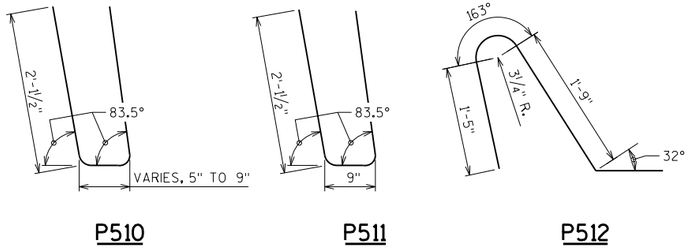


SECTION H-H

ELEVATION AT WINGS- EAST ABUTMENT

(SEE 'PARAPET RESURFACING 1' SHEET FOR SECTIONS A-A, C-C, D-D, & E-E)





BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

	BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
	P401	X	138	30'-0"			LONG. - SPANS 1 THRU 4
	P402	X	108	27'-0"			LONG. - SPAN 5
	P403	X	72	30'-0"			LONG. - SPANS 6 TO JOINT SPAN 7
	P404	X	120	29'-0"			LONG. - JOINT SPAN 7 TO JOINT SPAN 10
	P405	X	120	29'-5"			LONG. - JOINT SPAN 10 THRU SPAN 13
M02	P406	X	6564	1'-3"	X		PARAPET RESURFACING MASONRY ANCHORS
M03	P407	X	3282	2'-9"	X		PARAPET RESURFACING MASONRY ANCHORS
	P508	X	34	4'-8"	X		VERTICAL AT JOINTS/COVER PLATES
	P509	X	20	9'-6"			WING PARAPETS- HORIZ.
⚠	P510	X	32	4'-7"	X		WING PARAPETS -VERT.
	P511	X	247	4'-9"	X		VERT. AT REPLACEMENT SECTIONS
	P512	X	247	4'-10"	X		PPT. TO DECK VERT. @ REPLACEMENT SECT.
⬬	P513	X	5	150'-0"			HORIZ. AT REPLACEMENT SECTIONS

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

⬬ LENGTH SHOWN FOR BAR IS THE ESTIMATED TOTAL LENGTH OF ALL REPLACEMENT SECTIONS (10± SECTIONS > 6'-0") AND IS ONLY USED TO DETERMINE THE ESTIMATED QUANTITIES. ACTUAL LENGTHS AND QUANTITY TO BE DETERMINED BY THE CONTRACTOR AND BE VERIFIED BY THE FIELD ENGINEER.

M02 ADHESIVE ANCHORS NO. 4 BAR. EMBED 6" IN CONCRETE.

M03 ADHESIVE ANCHORS NO. 4 BAR. EMBED 6" MIN. IN CONCRETE. INCREASE EMBEDMENT AS REQ'D TO MAINTAIN 1½" CLEAR COVER AT FRONT FACE.

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
P510	4 SERIES OF 8	4'-5" TO 4'-9"

BUNDLE AND TAG EACH SERIES SEPARATELY.

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PARAPET RESURFACING 3

SHEET 8

66

SCALE = 1.00

8

8

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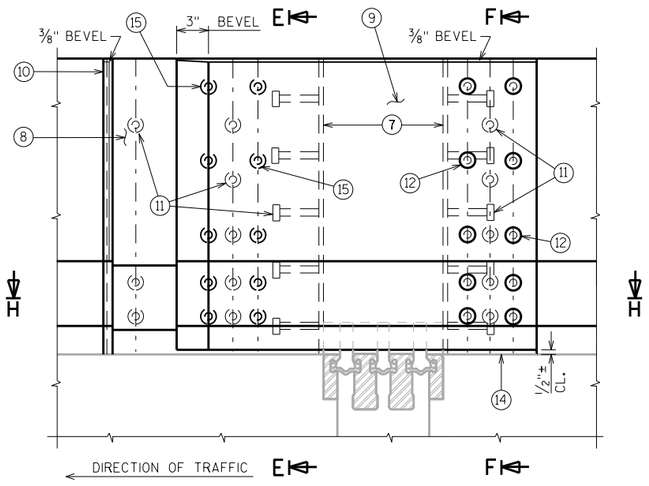
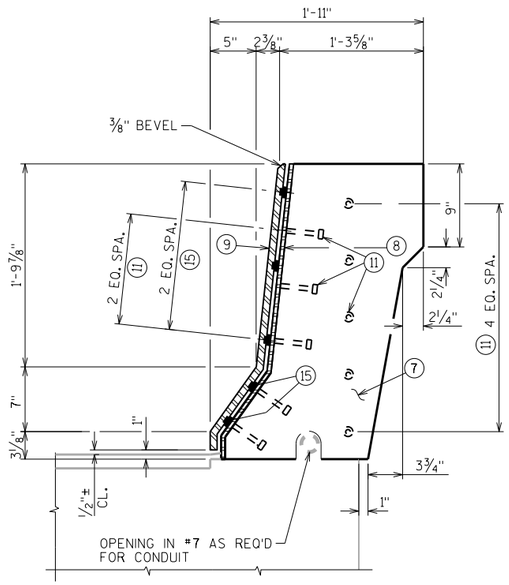
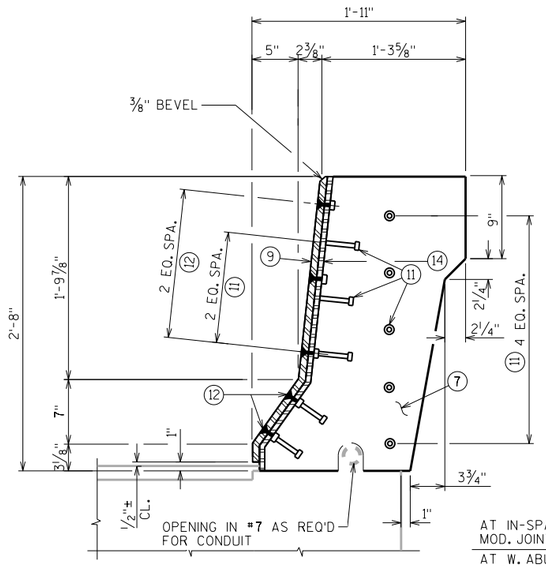


ELEVATION OF PARAPET

(IN-SPAN MODULAR JOINT SHOWN, OTHERS SIMILAR)



SECTION E-E



SECTION F-F

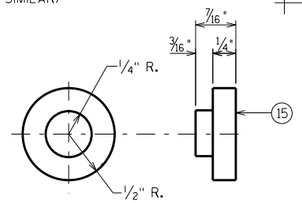
NOTES

NO PROTRUSIONS PERMITTED ON PARAPET ROADWAY FACE

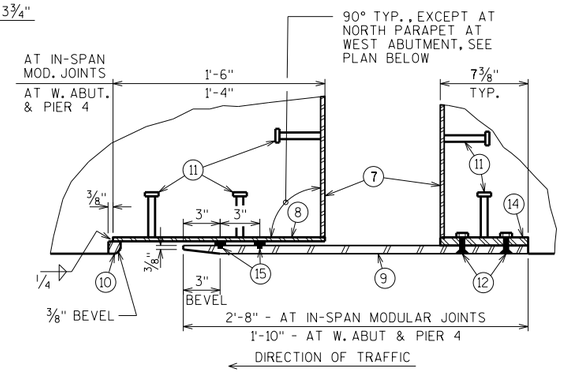
SANDBLAST BARS AND PLATES AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERICAL BLAST CLEANING". AFTER BLAST CLEANING, THIS ASSEMBLY SHALL BE HOT DIPPED GALVANIZED.

COST OF FURNISHING & PLACING THE EXPANSION JOINT PARAPET COVER PLATES AND ALL ASSOCIATED HARDWARE SHALL BE PAID FOR UNDER THE "PARAPET COVER PLATES" ITEM.

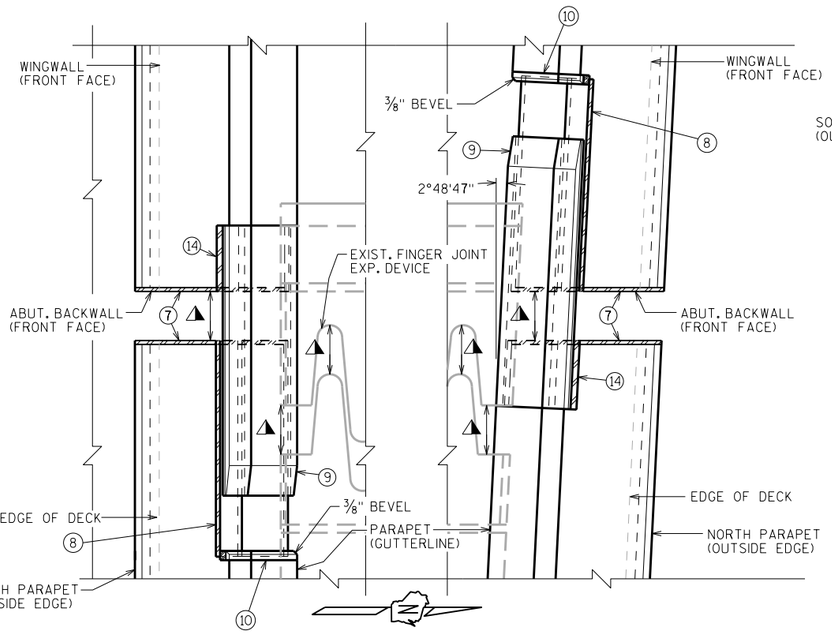
EACH LOCATION AN OUTSIDE COVER PLATE, #9 , IS PROVIDED SHALL CONSTITUTE A SINGLE UNIT FOR PAYMENT. ALL OTHER PLATES AND ASSOCIATED HARDWARE REQUIRED TO COMPLETE THE ASSEMBLY AT EACH LOCATION ARE INCLUDED IN THIS SINGLE UNIT.



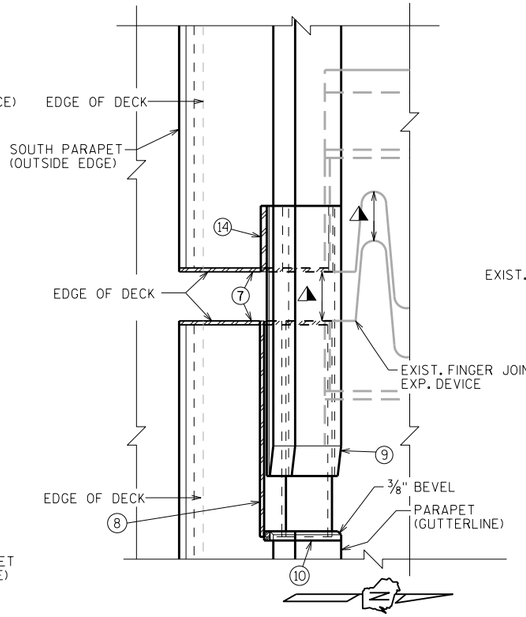
ADIPRENE BUTTON DETAIL



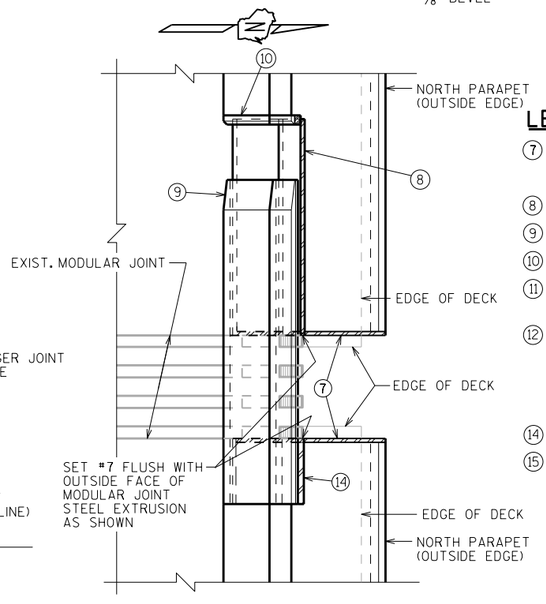
SECTION H-H



PLAN OF PARAPETS - WEST ABUT. JOINT



PLAN OF PARAPET - PIER 4 JOINT



PLAN OF PARAPET - IN-SPAN MODULAR JOINTS

LEGEND

(7) 3/8" BULKHEAD PLATE. WELD TO NO. 1, NO. 8 AND NO. 14. WHEN CONDUIT IS PRESENT IN PARAPET OR SIDEWALK, ACCOMMODATE FOR BY PROVIDING OPENING IN NO. 7.

(8) INSIDE PLATE. FABRICATE FROM 3/8" PLATE.

(9) OUTSIDE PLATE. FABRICATE FROM 5/8" PLATE.

(10) 7/8" SQUARE BAR. WELD TO NO. 8 AS SHOWN.

(11) 3/4" ϕ X 3" LONG STUDS. WELD TO NO. 8 , NO. 7 & NO. 14 AS SHOWN.

(12) 3/4" ϕ X 2" STAINLESS STEEL(S.S.) FLAT CTSK. SOCKET HEAD CAP SCREWS WITH ANTI-SEIZE LUBRICANT AND S.S. NUT. RECESS 1/16" BELOW PLATE SURFACE. TACK WELD S.S. NUT TO #14 AFTER GALVANIZING. PROVIDE PLASTIC CAP ON BACK SIDE OF NUT TO PREVENT CONCRETE INTRUSION.

(14) INSIDE PLATE. FABRICATE FROM 5/8" PLATE.

(15) ADIPRENE BUTTON. SEE DETAIL. SET IN OUTSIDE PLATE.

△ MATCH EXISTING JOINT OPENING WHEN PLACING COVER PLATES

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PARAPET COVER PLATES

SHEET 9

67

JTMODCVR2
7-10

SCALE = 1.00

8

8

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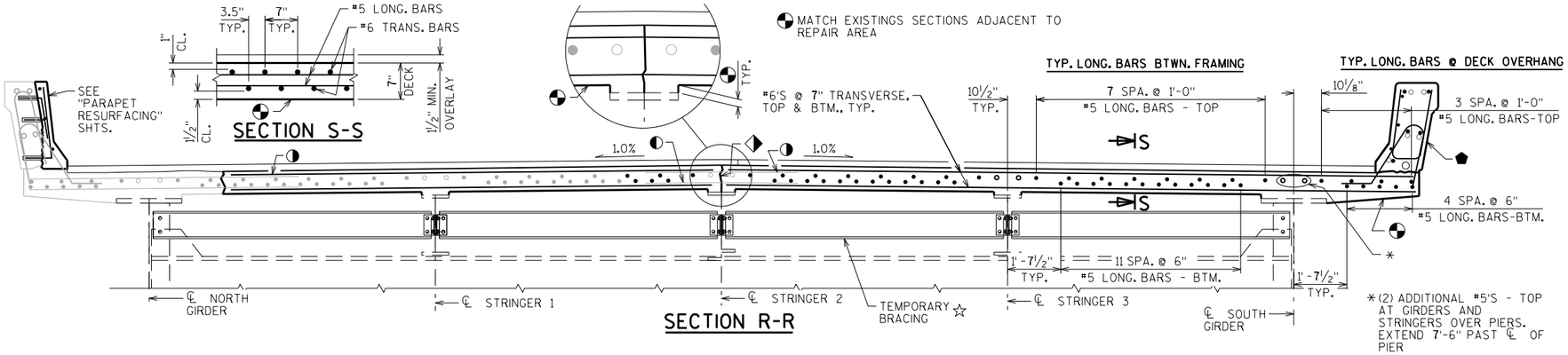
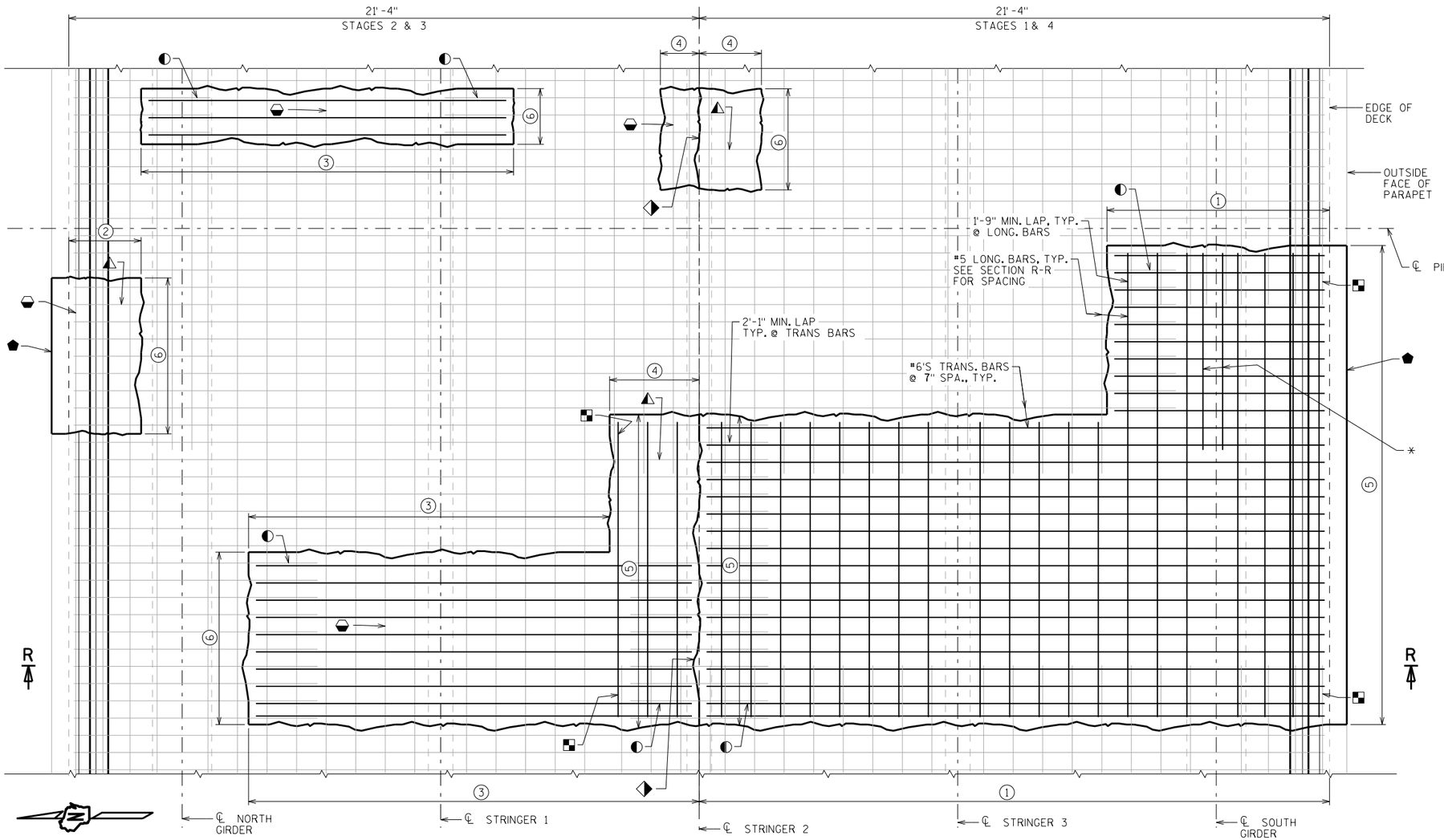




PLAN - EXAMPLE FULL DEPTH DECK REPAIRS

(TOP MAT OF REINFORCEMENT SHOWN, BOTTOM MAT SIMILAR)

◐ PRESERVE EXIST. TRANSVERSE REINFORCEMENT, & EXTEND 2'-4" MIN. INTO REPAIR AREA

◪ PRESERVE EXIST. LONGITUDINAL REINFORCEMENT, & EXTEND 2'-0" MIN. INTO REPAIR AREA

◭ COMPLETELY PRESERVE EXIST. TRANSVERSE REINFORCEMENT

◒ COMPLETELY PRESERVE EXIST. LONGITUDINAL REINFORCEMENT

◆ APPLY LIQUID OR OTHER BOND BREAKER TO EXISTING DECK AT STAGED CONSTRUCTION JOINT WHERE REMOVAL OF ADJACENT EXISTING DECK IS ANTICIPATED IN THE NEXT STAGE, INCIDENTAL TO "FULL-DEPTH DECK REPAIR" ITEM.

NOTES

NEW REINFORCEMENT IN FULL DEPTH DECK REPAIR AREAS SHALL BE UN-COATED BARS AND BE PAID FOR UNDER "BAR STEEL REINFORCEMENT HS STRUCTURES" ITEM.

CONTRACTOR TO DETERMINE LENGTHS OF BAR REINFORCEMENT REQUIRED BASED ON ACTUAL REPAIR AREAS DEFINED/ENCOUNTERED IN THE FIELD.

QUANTITY OF "BAR STEEL REINFORCEMENT HS STRUCTURES" SHOWN IN ESTIMATED QUANTITIES TABLE ON SHT. 4 IS BASED ON THE FOLLOWING REINFORCEMENT DENSITIES AND THE AREAS IDENTIFIED AS "FULL DEPTH REPAIR" IN "DECK CONDITION SURVEY":

- 7.85 LB/SF FOR REPAIR AREAS REQUIRING BOTH NEW TRANSVERSE AND LONGITUDINAL REINFORCEMENT
- 5.15 LB/SF FOR REPAIR AREAS REQUIRING ONLY NEW TRANSVERSE REINFORCEMENT

ACTUAL QUANTITIES REQUIRED SHALL BE DETERMINED BY THE CONTRACTOR AND BE VERIFIED BY THE FIELD ENGINEER. QUANTITY SHALL BE DETERMINED BASED ON THE ACTUAL REINFORCEMENT PLACED IN EACH REPAIR AREA, AND NO ALLOTMENT WILL BE GIVEN FOR WASTE.

⬟ WHERE FULL DEPTH DECK REPAIRS ARE REQUIRED BELOW PARAPETS, COMPLETELY REMOVE PARAPET ABOVE, AND REPLACE WITH NEW SECTION AFTER FULL DEPTH REPAIR IS COMPLETED. SEE "PARAPET RESURFACING 2" SHT. FOR REPLACEMENT SECTION DETAILS AND REINFORCEMENT.

☆ WHERE FULL DEPTH REPAIRS OCCUR OVER EXTERIOR GIRDERS NEAR MID-SPAN (WITHIN 35 FT.± OF MIDSPAN FOR ALL SPANS, EXCEPT SPAN 5), AND ARE GREATER THAN 12'-0" IN LENGTH (MEASURED ALONG THE LONGITIDUNAL AXIS OF THE BRIDGE), TEMPORARY BRACING OF THE GIRDER TOP FLANGE MAY BE REQUIRED. BASED ON THE DECK CONDITION SURVEYS, BRACING IS ANTICIPATED TO BE NEEDED IN SPAN 3 ONLY (SEE 'REMOVAL AND STAGING DETAILS 1' SHT, FOR DETAILS). IF IT IS DETERMINED THAT OTHER REPAIR AREAS FALL WITHIN THE ABOVE DEFINED CRITERIA, CONTACT THE STRUCTURES DESIGN SECTION FOR DIRECTION PRIOR TO PERFORMING REMOVAL IN THESE AREAS.

FULL DEPTH DECK REPAIR LEGEND

(1) WIDTH OF REPAIR INCLUDES EXTERIOR DECK OVERHANG & IS GREATER THAN 3'-0" WIDE
- EXTEND EXISTING TRANSVERSE REINFORCEMENT 2'-4" INTO REPAIR AREA.
- PROVIDE NEW TRANSVERSE REINFORCEMENT TO MATCH EXISTING. LAP 2'-1" MIN. WITH EXISTING REINFORCEMENT PRESERVED & EXTEND TO 2" CLEAR EDGE OF DECK.

(2) WIDTH OF REPAIR INCLUDES EXTERIOR DECK OVERHANG & IS LESS THAN 3'-0" WIDE
-COMPLETELY PRESERVE EXISTING TRANSVERSE REINFORCEMENT. RE-TIE AS REQUIRED AND INCORPORATE INTO REPAIR.

(3) WIDTH OF REPAIR AT INTERIOR SECTION IS GREATER THAN 6'-0" WIDE
- EXTEND EXISTING TRANSVERSE REINFORCEMENT 2'-4" INTO REPAIR AREA AT BOTH SIDES.
- PROVIDE NEW TRANSVERSE REINFORCEMENT TO MATCH EXISTING. LAP 2'-1" MIN. WITH EXISTING REINFORCEMENT.

(4) WIDTH OF REPAIR AT INTERIOR SECTION IS LESS THAN 6'-0" WIDE
-COMPLETELY PRESERVE EXISTING TRANSVERSE REINFORCEMENT. RE-TIE AS REQUIRED AND INCORPORATE INTO REPAIR.

(5) LENGTH OF REPAIR IS GREATER THAN 6'-0" LONG
- EXTEND EXISTING LONGITUDINAL REINFORCEMENT 2'-0" INTO REPAIR AREA AT BOTH SIDES.
- PROVIDE NEW LONGITUDINAL REINFORCEMENT TO MATCH EXISTING. LAP 1'-9" MIN. WITH EXISTING REINFORCEMENT.

(6) LENGTH OF REPAIR IS LESS THAN 6'-0" LONG
-COMPLETELY PRESERVE EXISTING LONGITUDINAL REINFORCEMENT. RE-TIE AS REQUIRED AND INCORPORATE INTO REPAIR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

DRAWN BY CAD | PLANS CK'D. JLR

FULL DEPTH DECK REPAIR DETAILS

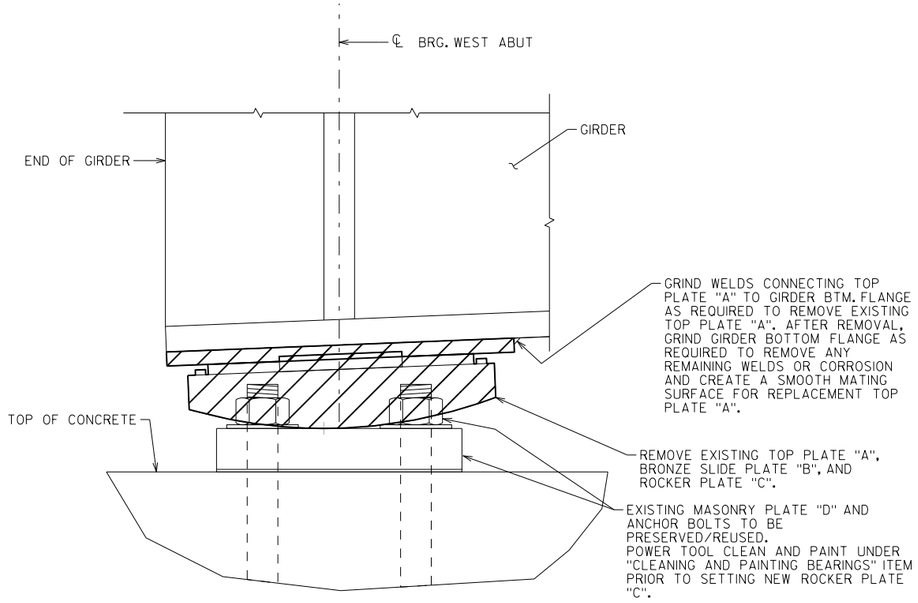
SHEET 10

68

SCALE = 2.00

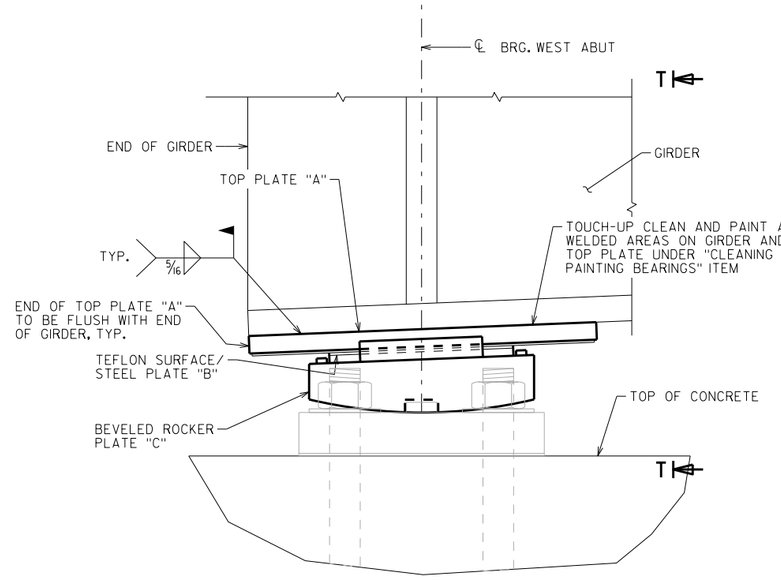
STATE PROJECT NUMBER

1660-03-67



BEARING REMOVAL DETAIL

(TYPICAL AT WEST ABUTMENT BEARINGS, 2 LOCATIONS TOTAL)



REPLACEMENT EXPANSION BEARING ASSEMBLY

(TYPICAL AT WEST ABUTMENT BEARINGS, 2 LOCATIONS TOTAL)

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ OF GIRDER AND ℄ OF BEARING.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

ALL MATERIAL IN BEARINGS, EXCLUDING STAINLESS STEEL SHEET AND TEFLON SURFACE SHALL CONFORM TO ASTM A709 GRADE 50W.

ALL WORK AND MATERIAL FOR BEARING REPAIRS, INCLUDING JACKING OF THE STRUCTURE AS REQUIRED TO PERFORM THE WORK AND REMOVAL OF EXISTING BEARING COMPONENTS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING REPAIRS B-12-27", EACH.

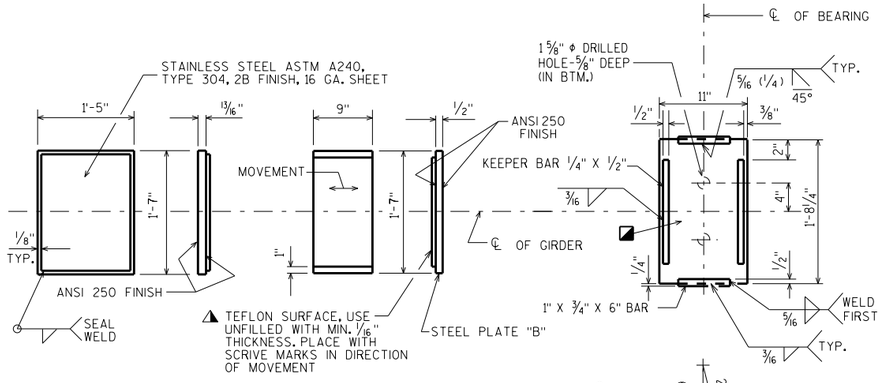
TOP PLATE "A" AND STEEL PLATE "B" SHALL BE SHOP PAINTED. USE A WELDABLE PRIMER ON TOP PLATE "A". ROCKER PLATE "C" SHALL BE GALVANIZED. DO NOT PAINT STAINLESS STEEL OR TEFLON SURFACES.

⊛ FINISH SURFACES TO ANSI 250.

◪ PROVIDE A METHOD FOR HANDLING ROCKER PLATE "C" DURING GALVANIZING.

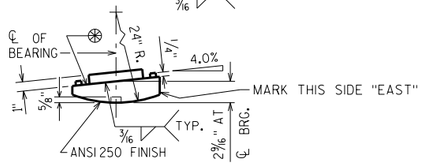
◭ BOND STEEL PLATE "B" AND TEFLON WITH ADHESIVE MATERIAL MEETING REQUIREMENTS FOUND IN THE STANDARD SPECIFICATION.

AT INSTALLATION, ENSURE STAINLESS STEEL SLIDING FACE OF THE UPPER ELEMENT AND THE TFE SLIDING FACE OF THE LOWER ELEMENT HAVE THE SURFACE FINISH SPECIFIED AND ARE CLEAN AND FREE OF ALL DUST, MOISTURE, AND OTHER FOREIGN MATTER.



TOP PLATE "A"

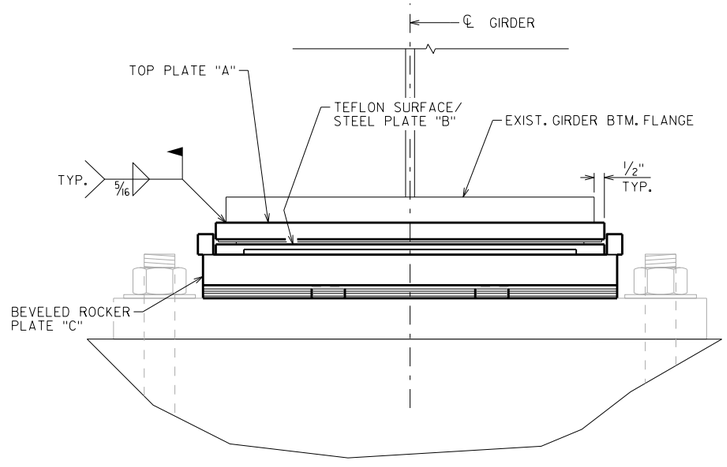
TEFLON SURFACE ON PLATE "B"



BEVELED ROCKER PLATE "C"

EXPANSION BEARING

REPLACEMENT EXPANSION BEARING



SECTION T-T

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

DRAWN BY CAD | PLANS CK'D. JLR

BEARING REPAIR DETAILS

SHEET 11

69

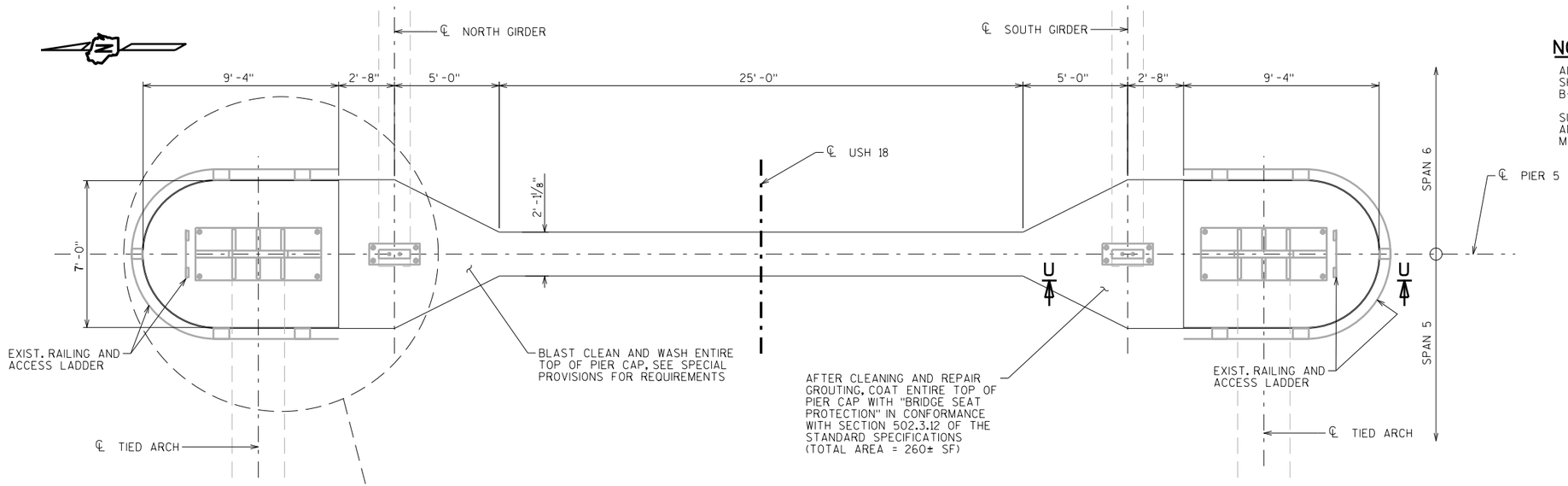
SCALE = 0.30

8

8

STATE PROJECT NUMBER

1660-03-67



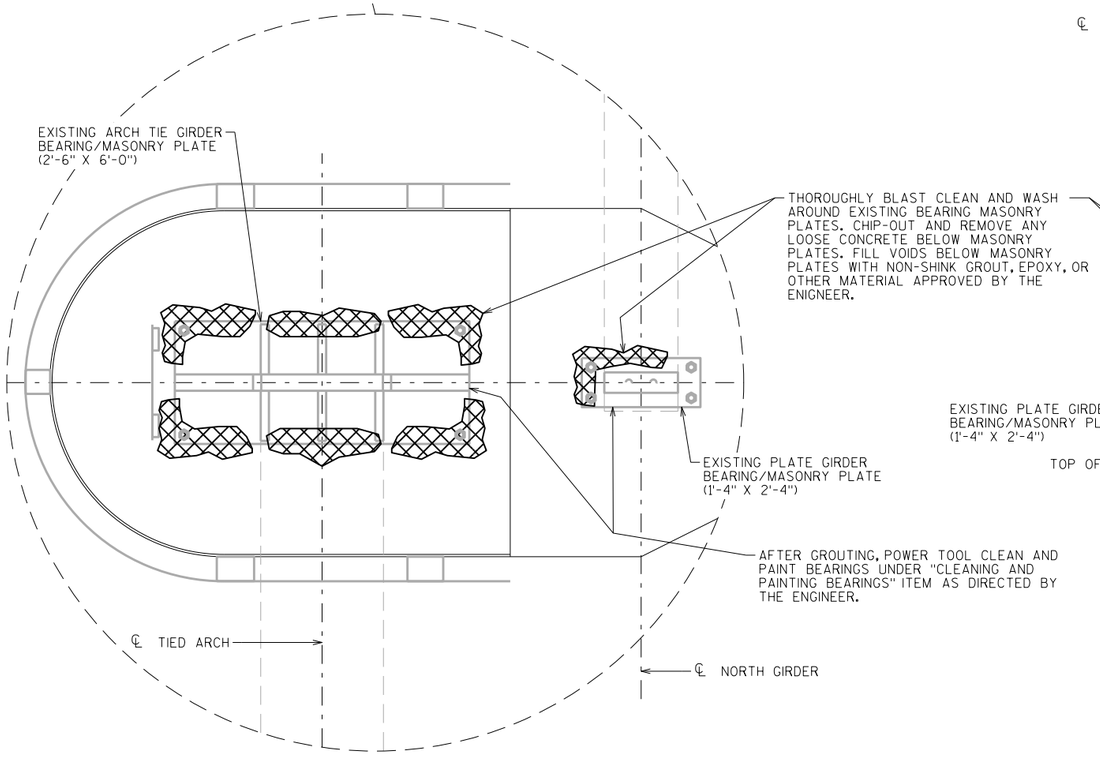
PLAN - PIER CAP REPAIRS AT PIERS 4 & 5

(PIER 5 SHOWN, PIER 4 SIMILAR/MIRRORED)

NOTES

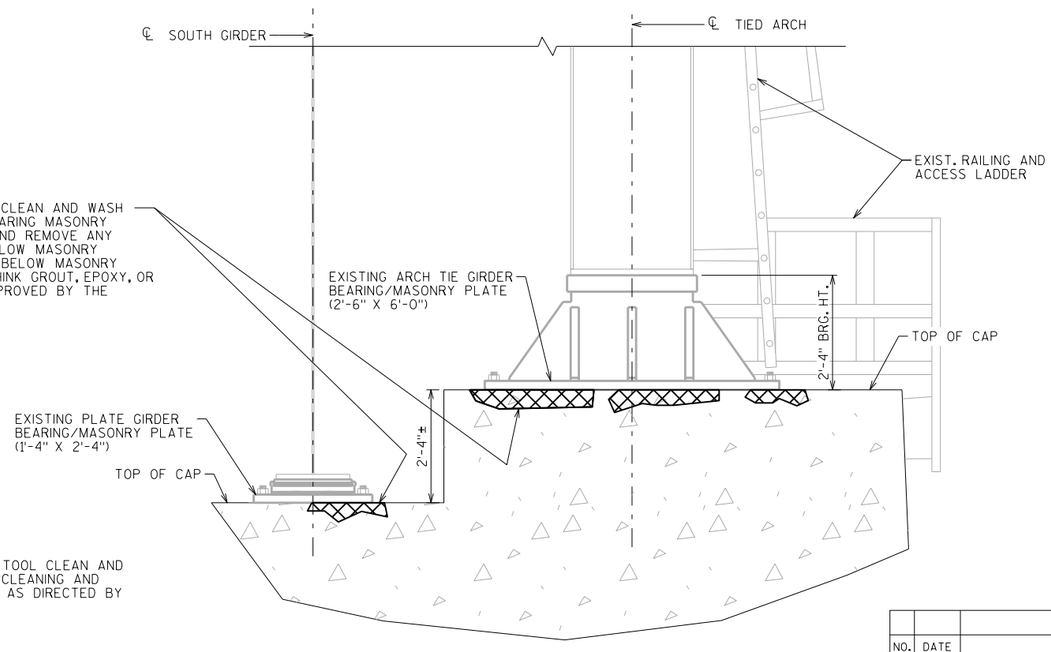
ALL WORK AND MATERIALS SHOWN FOR PIER CAP REPAIRS SHALL BE INCLUDED IN BID ITEM "PIER CAP REPAIRS B-12-27", UNLESS NOTED OTHERWISE.

SUBMIT TO ENGINEER FOR APPROVAL THE PROPOSED METHOD AND MATERIAL FOR GROUTING/FILLING VOIDS BENEATH MASONRY PLATES.



REPAIR GROUTING BELOW BEARING MASONRY PLATES

(NORTH END SHOWN, SOUTH END SIMILAR)



SECTION U-U

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

DRAWN BY CAD | PLANS CK'D. JLR

PIER CAP REPAIRS

SHEET 12

70

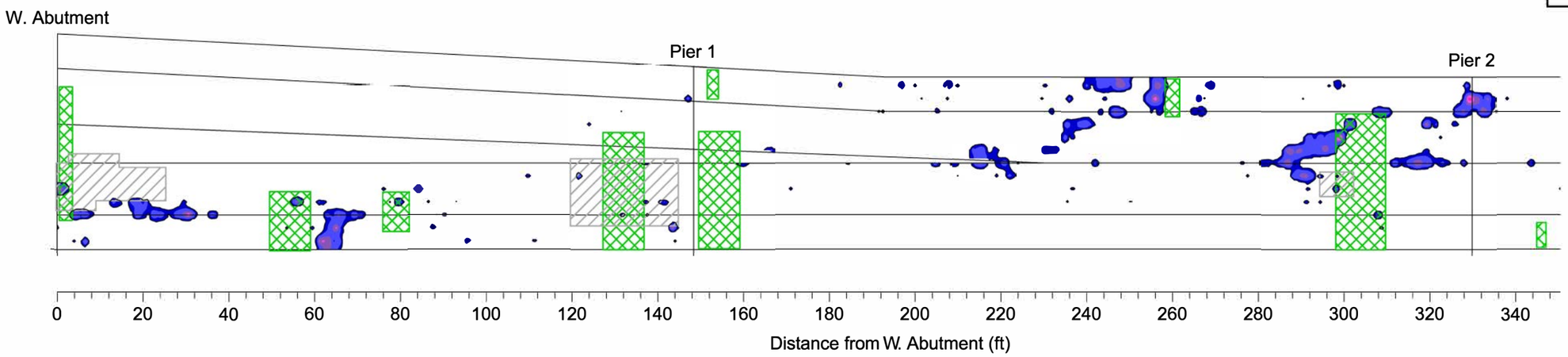
SCALE = 3.00

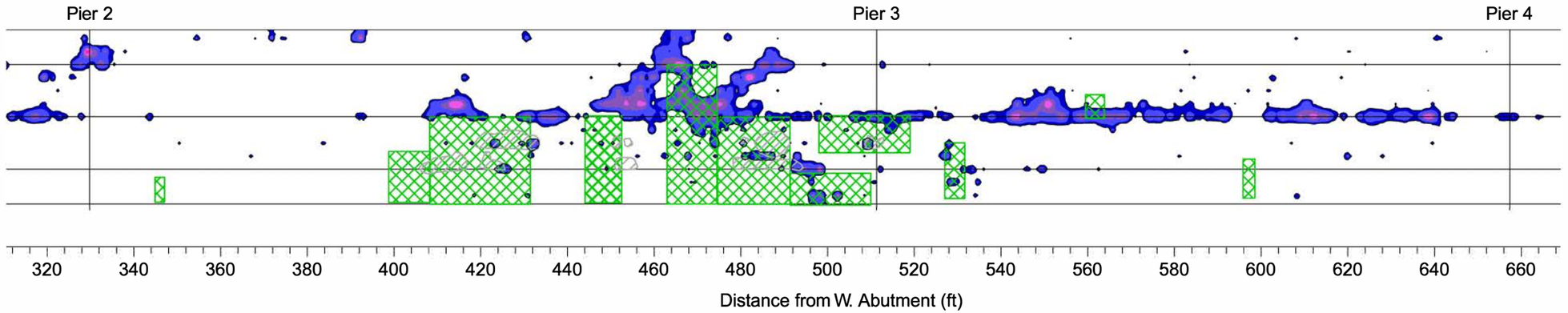
8

8

STATE PROJECT NUMBER

1660-03-67





CONDITIONS LEGEND

REBAR-LEVEL DETERIORATION DETECTED BY GPR

TYPE 1 DECK PREP. AREAS

TYPE 2 DECK PREP. AREAS

INCREASING SEVERITY →

EXISTING PATCHING

FULL-DEPTH REPAIR AREAS

N

NOTES

DECK SURVEY IS SHOWN FOR INFORMATION PURPOSES ONLY AND MAY NOT BE ALL INCLUSIVE. ADDITIONAL PATCHING/PREPARATION MAY BE REQUIRED AND SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER.

GPR= GROUND PENETRATING RADAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

DRAWN BY CAD | PLANS CK'D. JLR

DECK CONDITION SURVEY - W. ABUT. TO PIER 4

SHEET 13

71

SCALE = 13.60

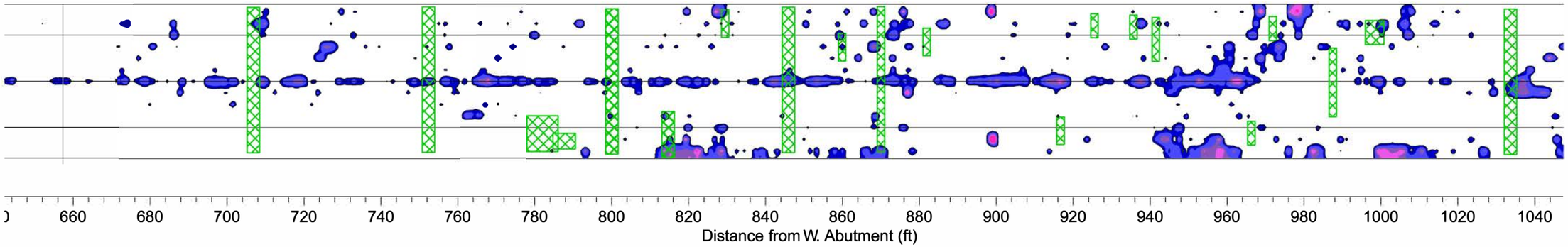
8

8

STATE PROJECT NUMBER

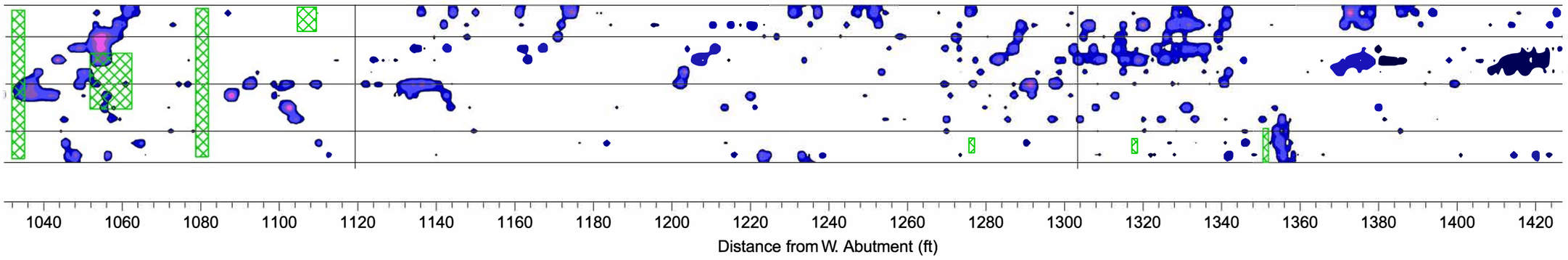
1660-03-67

Pier 4



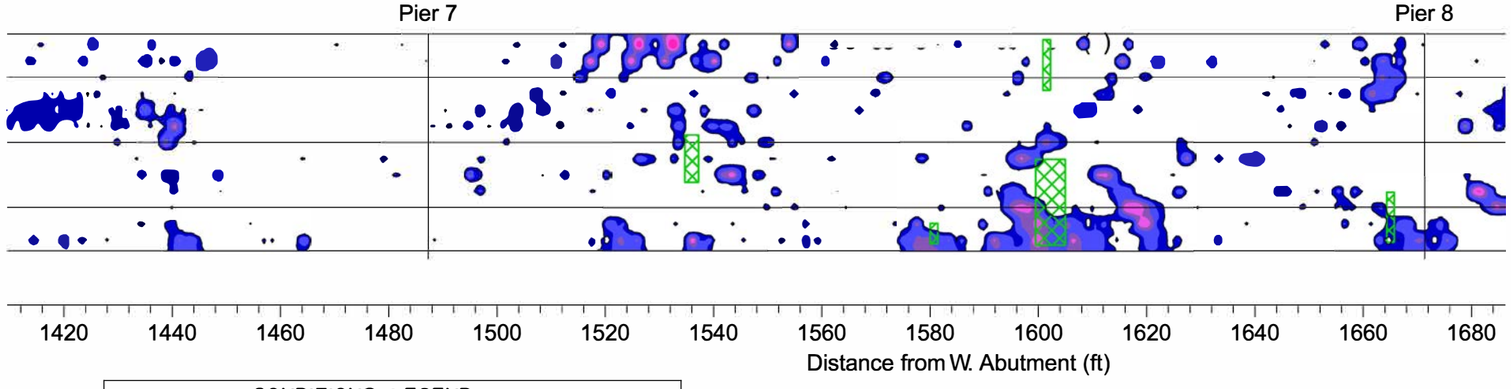
Pier 5

Pier 6



Pier 7

Pier 8



CONDITIONS LEGEND

REBAR-LEVEL DETERIORATION DETECTED BY GPR

TYPE 1 DECK PREP. AREAS

TYPE 2 DECK PREP. AREAS

INCREASING SEVERITY →

EXISTING PATCHING

FULL-DEPTH REPAIR AREAS

NOTES

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GPR= GROUND PENETRATING RADAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

DRAWN BY CAD | PLANS CK'D. JLR

DECK CONDITION SURVEY - PIER 4 TO PIER 8

SHEET 14

72

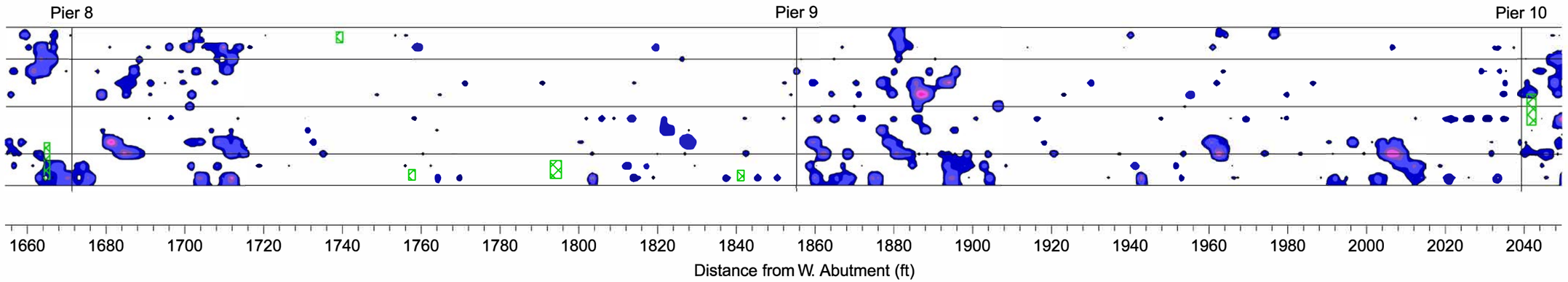
SCALE = 13.60

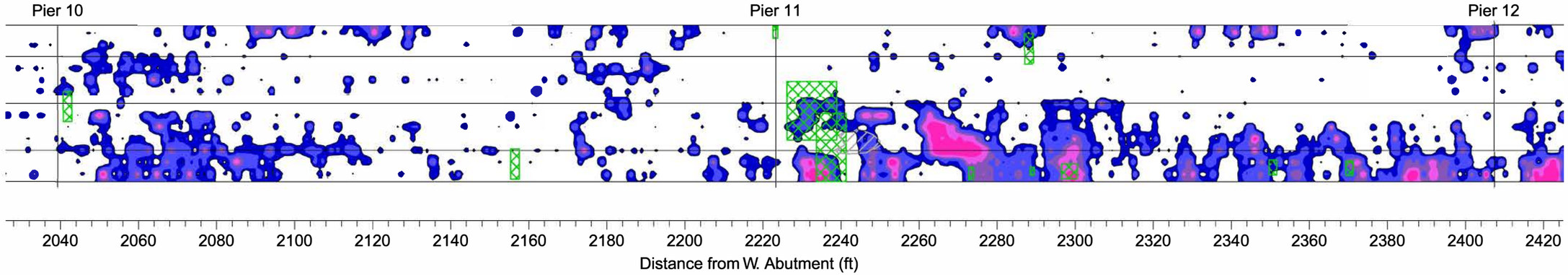
8

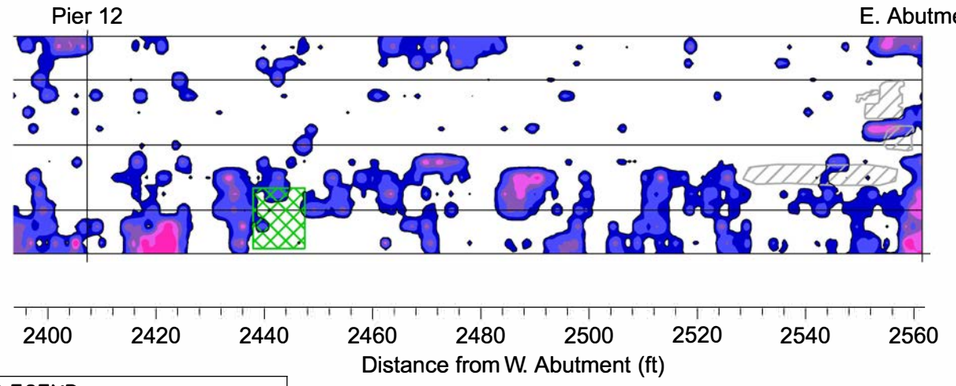
8

STATE PROJECT NUMBER

1660-03-67







CONDITIONS LEGEND

REBAR-LEVEL DETERIORATION DETECTED BY GPR

TYPE 1 DECK PREP. AREAS

TYPE 2 DECK PREP. AREAS

INCREASING SEVERITY →

EXISTING PATCHING

FULL-DEPTH REPAIR AREAS

N

NOTES

DECK SURVEY IS SHOWN FOR INFORMATION PURPOSES ONLY AND MAY NOT BE ALL INCLUSIVE. ADDITIONAL PATCHING/PREPARATION MAY BE REQUIRED AND SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER.

GPR= GROUND PENETRATING RADAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-27

DRAWN BY CAD | PLANS CK'D. JLR

DECK CONDITION SURVEY - PIER 8 TO E. ABUT.

SHEET 15

73

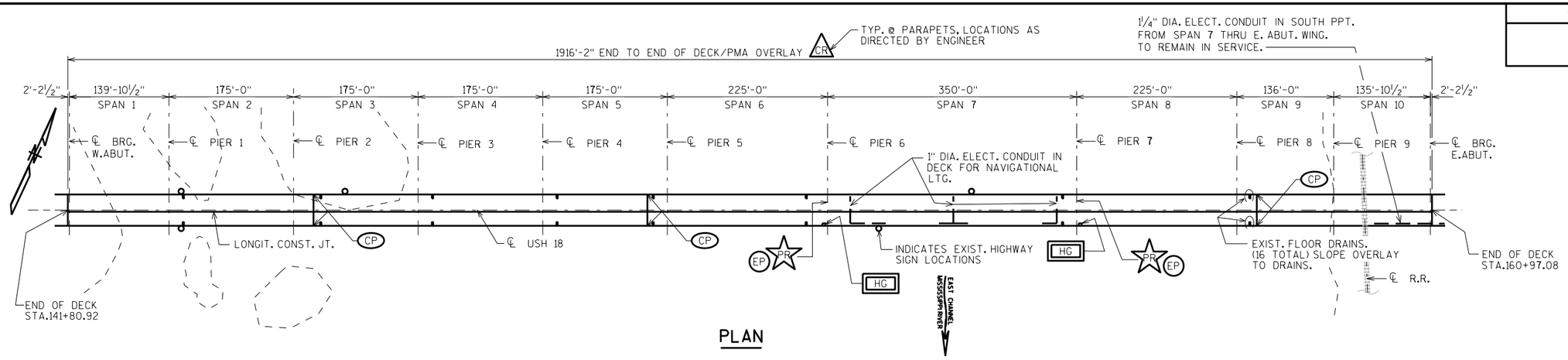
SCALE = 13.60

8

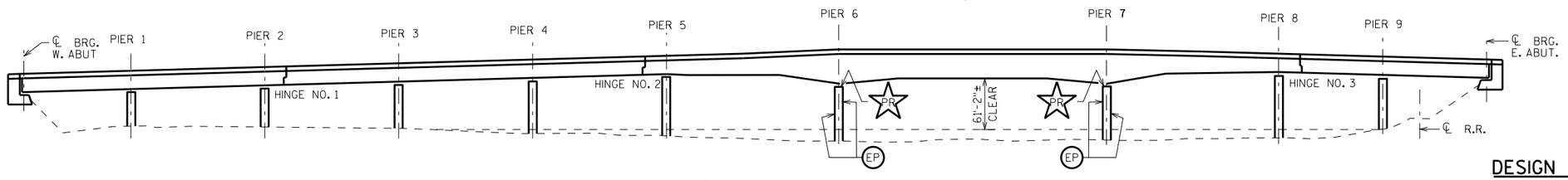
8

STATE PROJECT NUMBER

1660-03-61



PLAN



ELEVATION

REHABILITATION LEGEND

- CR — CONCRETE SURFACE REPAIRS
- EP — EPOXY CRACK INJECTION AT PIER WALLS
- CP — REPLACE/TIGHTEN PARAPET COVER PLATE FASTENERS
- PR — PIER CAP CLEANING, REPAIR GROUTING, & SEALING
- HG — RAISE ACCESS HATCHES & REPLACE ACCESS HATCH GASKETS NEAR PIERS 6 & 7
  - -EXISTING ACCESS HATCHES/MANHOLES ARE CATALOG NO. R-6665-3CH BY NEENAH FOUNDRY COMPANY

DESIGN DATA

LIVE LOAD:

DESIGN RATING: HS-20
INVENTORY RATING: HS-17
OPERATIONAL RATING: HS- 28
MAXIMUM STANDARD PERMIT VEHICLE LOAD: 230 (KIPS)

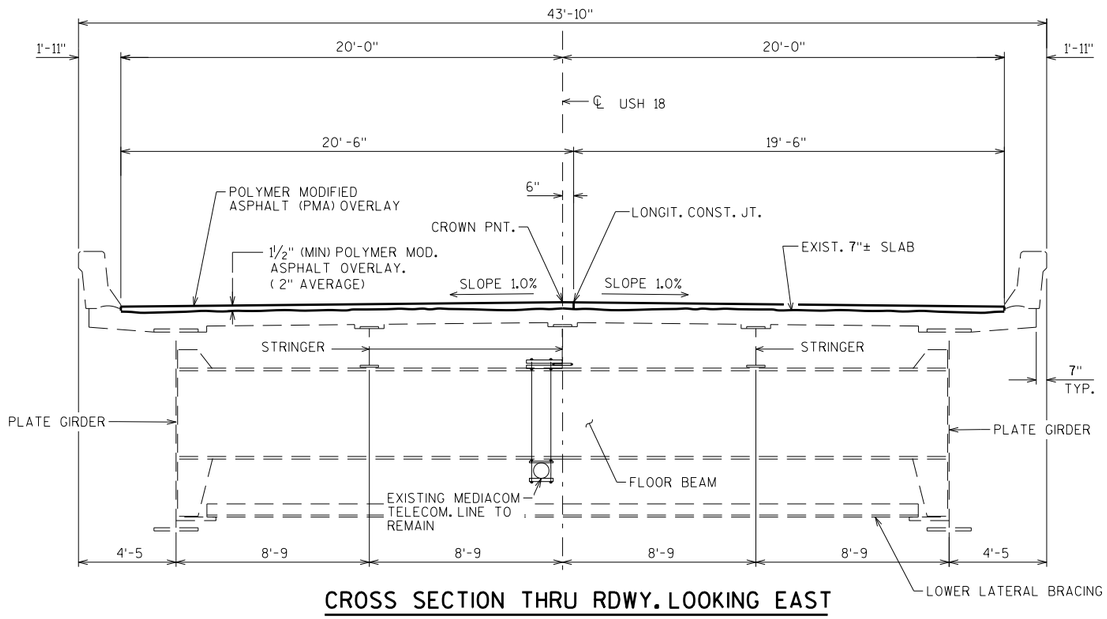
MATERIAL PROPERTIES:

CONCRETE MASONRY ——— f'c = 4,000 P.S.I.
BAR STEEL REINFORCEMENT:
GRADE 60 ——— fy = 60,000 P.S.I.
STRUCTURAL CARBON STEEL:
ASTM A709, GRADE 36 ——— Fy = 36,000 P.S.I.
HIGH STRENGTH STRUCTURAL STEEL:
ASTM A709, GRADE 50 ——— Fy = 50,000 P.S.I.

TRAFFIC VOLUME

USH 18

ADT = 9,600 (2016)
R.D.S. = 50 M.P.H.



CROSS SECTION THRU RDWY. LOOKING EAST

LIST OF DRAWINGS

1. PMA OVERLAY
2. REMOVAL AND STAGING DETAILS 1
3. REMOVAL AND STAGING DETAILS 2
4. QUANTITIES AND NOTES
5. SURFACE REPAIR DETAILS
6. PIER CAP REPAIRS
7. ACCESS HATCH REPAIRS
8. DECK CONDITION SURVEY - W. ABUT. TO PIER 6
9. DECK CONDITION SURVEY - PIER 6 TO E. ABUT.

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES
WISCONSIN DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher LLS 3/28/19
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-12-28

USH 18 - STH 60 OVER CP RR & MISSISSIPPI RIVER

COUNTY	CITY
CRAWFORD	PRAIRIE DU CHIEN

DESIGN SPEC. REHABILITATION - N/A

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
CAD	ADS	CAD	JLR

PMA OVERLAY

SHEET 1 OF 9

74

I.D. 1660-03-38B

DATE: FEB. 2019

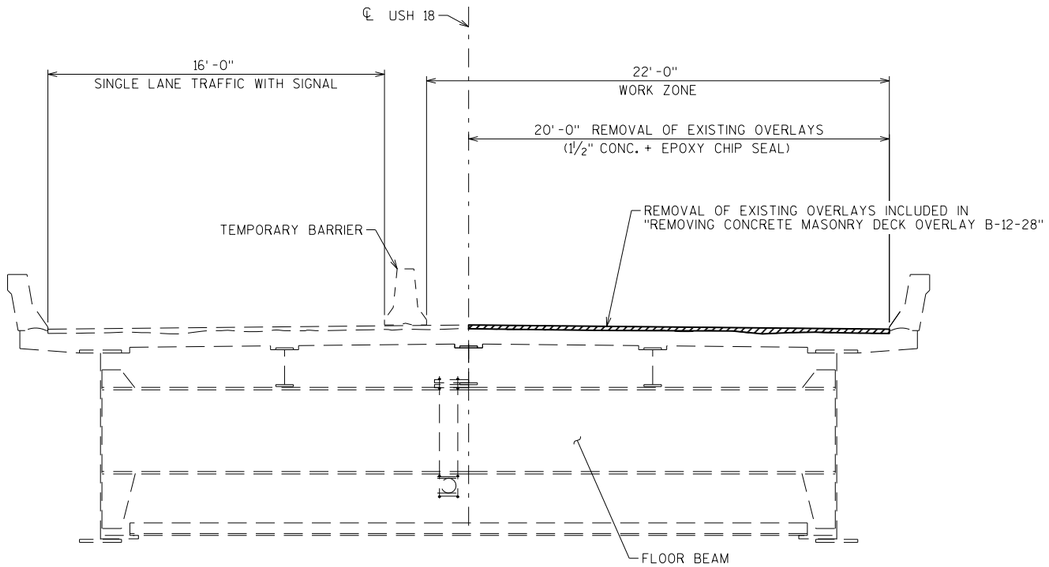
SCALE = 80.00

8

8

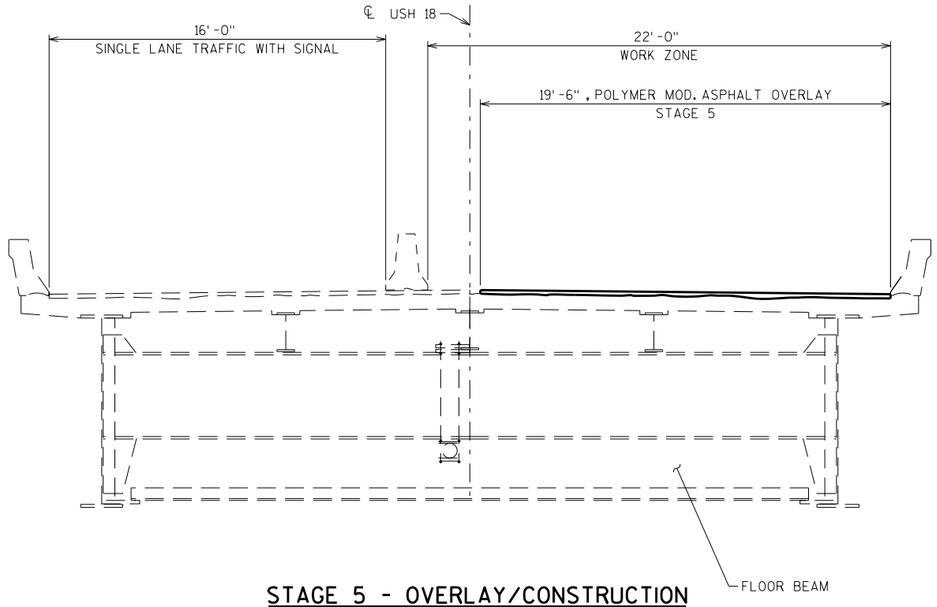
STATE PROJECT NUMBER

1660-03-61



STAGE 5 - REMOVAL SECTION

(LOOKING EAST)



STAGE 5 - OVERLAY/CONSTRUCTION

(LOOKING EAST)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-28

DRAWN BY CAD | PLANS CK'D. JLR

REMOVAL AND STAGING DETAILS 1

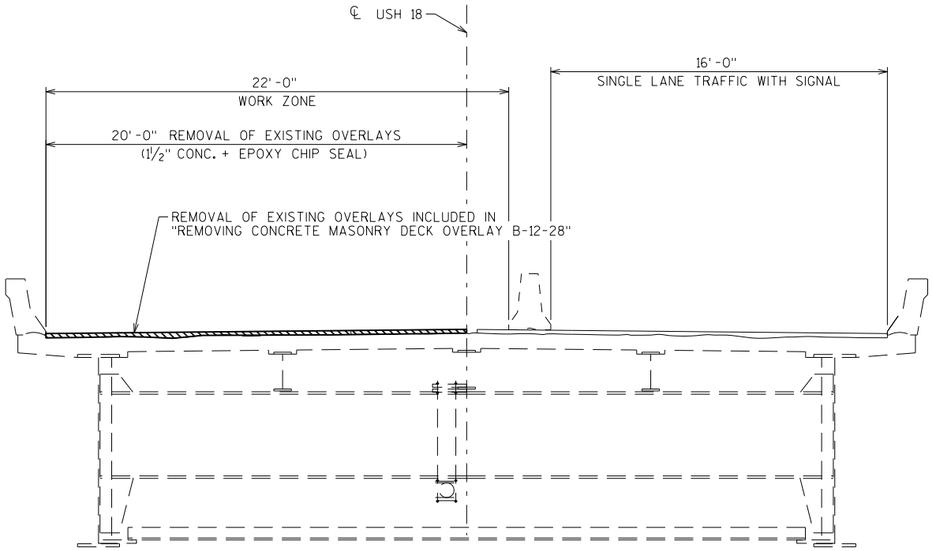
SHEET 2

75

SCALE = 3.50

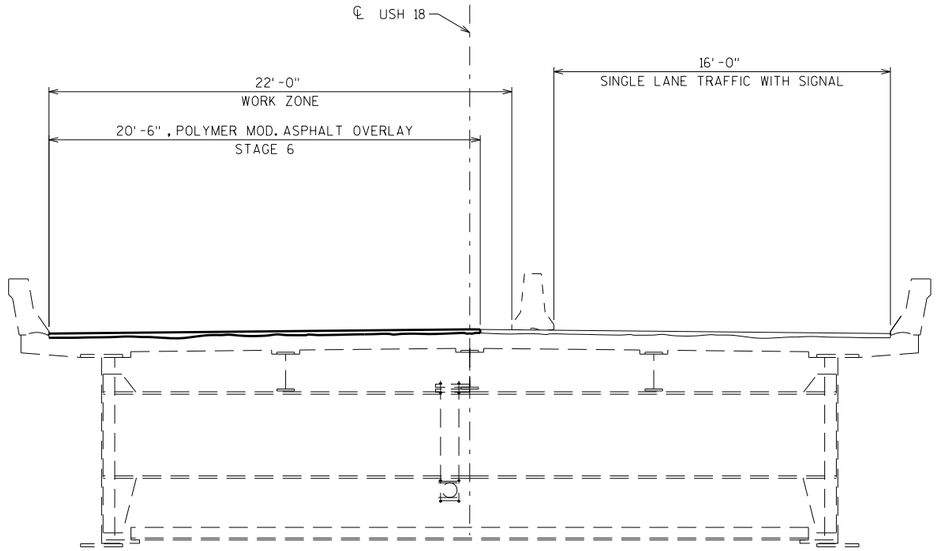
STATE PROJECT NUMBER

1660-03-61



STAGE 6 - REMOVAL SECTION

(LOOKING EAST)



STAGE 6 - OVERLAY/CONSTRUCTION

(LOOKING EAST)

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-28

DRAWN BY CAD | PLANS CK'D. JLR

REMOVAL AND STAGING DETAILS 2

SHEET 3

76

SCALE = 3.50

STATE PROJECT NUMBER

1660-03-61

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	PIER 6	PIER 7	EAST ABUT.	TOTALS
	203.0225.S	DEBRIS CONTAINMENT B-12-28	LS	———	———	———	———	———	1
	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 141+80	LS	———	———	———	———	———	1
	502.3210	PIGMENTED SURFACE SEALER	SY	1,650	———	———	———	———	1,650
★	509.0301	PREPARATION DECKS TYPE 1	SY	841	———	———	———	———	841
★	509.0302	PREPARATION DECKS TYPE 2	SY	529	———	———	———	———	529
	509.0310.S	SAWING PAVEMENT DECK PREPARATION AREAS	LF	8,410	———	———	———	———	8,410
★	509.1500	CONCRETE SURFACE REPAIR	SF	924	32	44	6	38	1044
★	509.2000	FULL-DEPTH DECK REPAIR	SY	73	———	———	———	———	73
	509.3500.S	HMA OVERLAY POLYMER-MODIFIED	TON	937	———	———	———	———	937
★	509.9005.S	REMOVING CONCRETE MASONRY DECK OVERLAY B-12-28	SY	8,516	———	———	———	———	8,516
	509.9025.S	EPOXY INJECTION CRACK REPAIR	LF	———	———	120	100	———	220
	509.9026.S	CORED HOLES 2-INCH DIAMETER	EACH	———	———	2	2	———	4
★	509.9050.S	CLEANING PARAPETS	LF	3,873	———	———	———	———	3,873
	SPV.0035	CONCRETE MASONRY DECK REPAIR - HIGH EARLY STRENGTH	CY	85	———	———	———	———	85
	SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	———	———	2	2	———	4
★	SPV.0105	PIER CAP REPAIRS B-12-28	LS	———	———	———	———	———	1
	SPV.0105	PARAPET COVER PLATE FASTENER REPAIRS	LS	———	———	———	———	———	1
	SPV.0105	ACCESS HATCH REPAIRS	LS	———	———	———	———	———	1
	SPV.0180	ABUTMENT SEAT CLEANING AND SEALING	SY	———	11	———	———	11	22

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE COLOR OF THE FINISH EPOXY TOP COAT SHALL BE BLUE, (FEDERAL STANDARD COLOR NO. 25240) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

ALL FIELD CONNECTIONS SHALL BE MADE WITH ¾" DIAMETER A325 HIGH-TENSILE STRENGTH BOLTS UNLESS OTHERWISE SHOWN OR NOTED.

AREAS OF "PREPARATION DECKS TYPE 1" SHALL BE DEFINED BY A SAW CUT.

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, AND FULL-DEPTH DECK REPAIR AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY DECK REPAIR - HIGH EARLY STRENGTH".

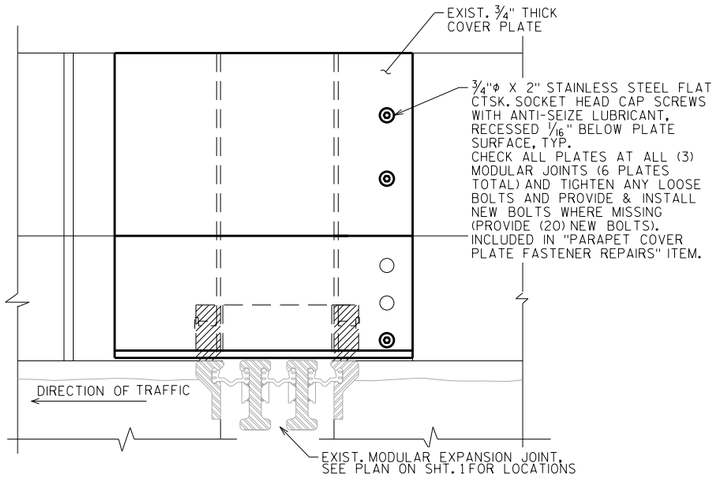
ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "HMA OVERLAY POLYMER-MODIFIED".

THE PLAN QUANTITY FOR THE BID ITEM "HMA OVERLAY POLYMER-MODIFIED" IS BASED ON THE AVERAGE OVERLAY THICKNESS.

CONTACT THE BUREAU OF STRUCTURES BEFORE PLACEMENT OF OVERLAY IF THE AVERAGE THICKNESS OF THE NEW OVERLAY WILL EXCEED THE AVERAGE OVERLAY SHOWN ON THE PLANS BY MORE THAN ½".

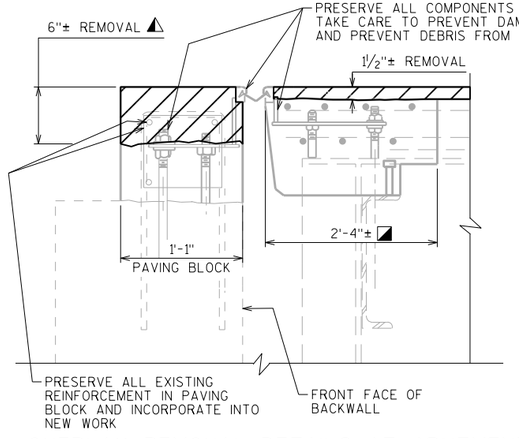
THE EXISTING OVERLAYS (EPOXY CHIP SEAL AND CONCRETE) SHALL BE REMOVED FROM THE BRIDGE DECK UNDER BID ITEM "REMOVING CONCRETE MASONRY DECK OVERLAY".

★ REMOVAL, DEBRIS CONTAINMENT, AND DISPOSAL OF EXISTING STRUCTURE INCLUDED WITHIN THESE ITEMS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN SPECIAL PROVISION "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 141+80".



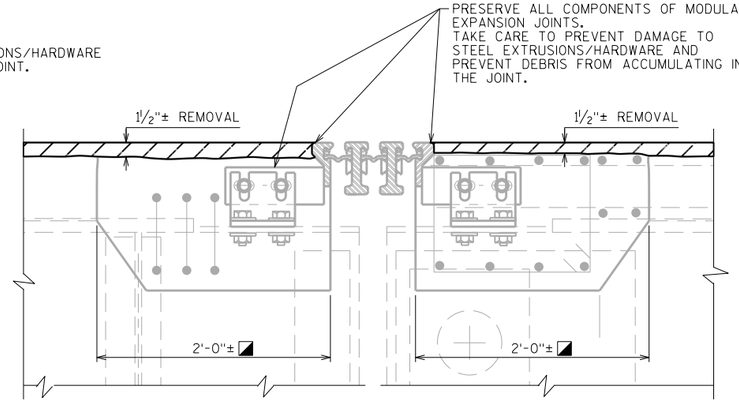
PARAPET COVER PLATE FASTENERS AT MODULAR JOINTS

(ELEVATION VIEW)



OVERLAY REMOVAL DETAILS AT ABUTMENTS

NOTE:
AT ABUTMENT PAVING BLOCKS, IF EXISTING BAR STEEL REINFORCEMENT IS SEVERLY CORRODED OR DAMAGED DURING CONCRETE REMOVAL, REPLACE WITH EPOXY BARS OR EPOXY ANCHORED BARS OF THE SAME SIZE. EMBED 1'-6" INTO EXISTING CONCRETE. WORK TO BE PAID UNDER "REMOVING OLD STRUCTURE OVER WATERWAY" ITEM.



OVERLAY REMOVAL DETAILS AT HINGE/IN-SPAN JOINTS

◪ EXISTING OVERLAY MAY BE MONOLITHIC WITH DECK/DIAPHRAGM CONCRETE IN THESE AREAS. REMOVAL INCLUDED IN "REMOVING CONCRETE MASONRY DECK OVERLAY B-12-28"

◭ REMOVAL SHALL BE INCLUDED IN "REMOVING OLD STRUCTURE OVER WATERWAY" ITEM. REPLACE REMOVED PAVING BLOCK CONCRETE WITH "CONCRETE MASONRY DECK REPAIR - HIGH EARLY STRENGTH" CONCRETE, FULL-HEIGHT (NO POLYMER-MODIFIED ASPHALT OVERALY AT PAVING BLOCK)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-28

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QUANTITIES AND NOTES

SHEET 4

77

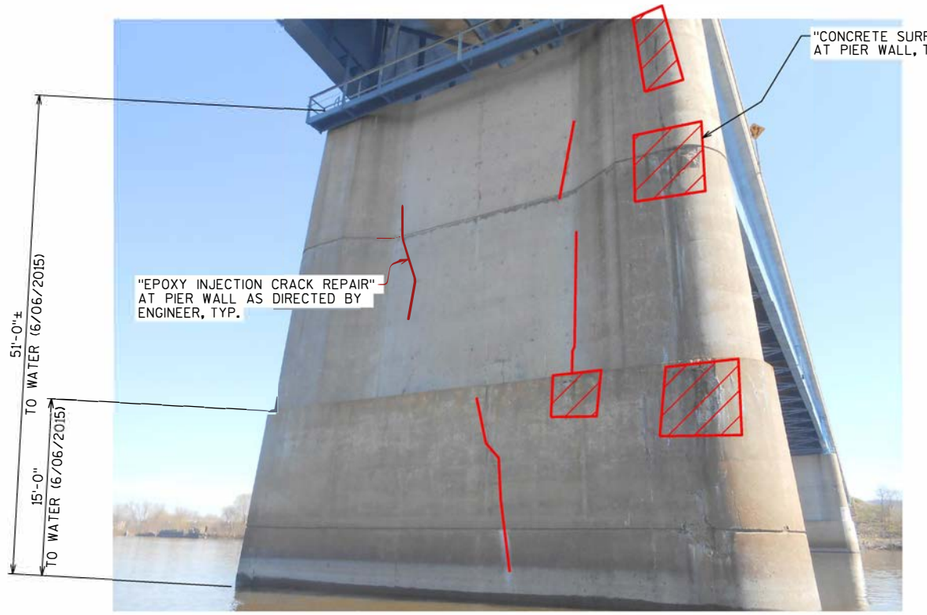
SCALE = 1.00

8

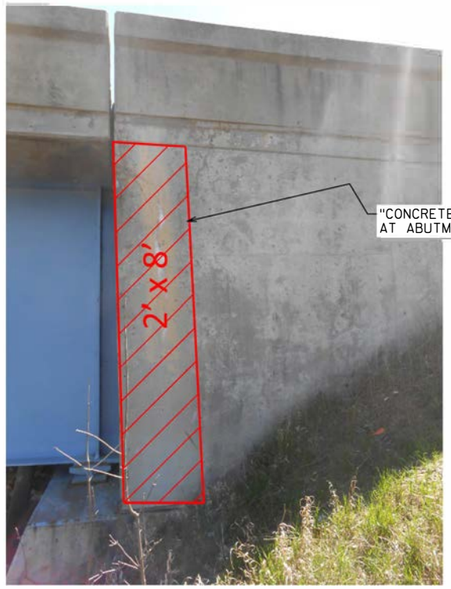
8

STATE PROJECT NUMBER

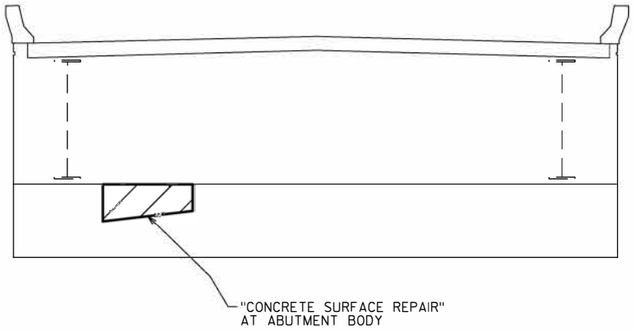
1660-03-61



PIER 6



TYPICAL AT ALL ABUTMENT BACKWALL CORNERS
(4 CORNERS TOTAL)

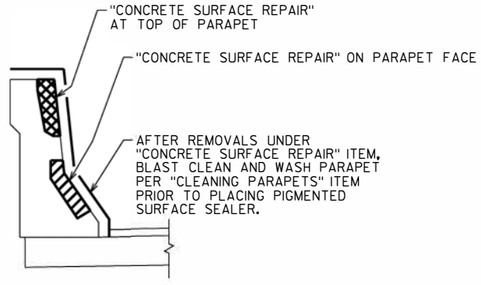


EAST ABUTMENT BODY

PIER 7

SURFACE REPIARS & EPOXY CRACK SEALING AT PIERS 6 & 7

SURFACE REPAIRS AT ABUTMENTS



NOTES

THIS SHEET DEPICTS THE GENERAL TYPES AND LOCATIONS OF REPAIRS, AND MAY NOT BE ALL INCLUSIVE. QUANTITIES SHOWN ON SHT. 4 ARE APPROXIMATE. ADDITIONAL REPAIRS MAY BE REQUIRED DURING CONSTRUCTION AND SHOULD BE PERFORMED AS DIRECTED BY THE FIELD ENGINEER.

ALL SURFACE REPAIR AREAS SHALL BE DEFINED BY ½" MIN. SAWCUT.

CONTRACTOR SHALL EMPLOY METHODS TO PREVENT REMOVED CONCRETE MATERIAL FROM ENTERING THE WATERWAY.

AFTER CONCRETE SURFACE REPAIRS, BLAST CLEAN AND WASH ABUTMENT SEATS AND SEAL SURFACE WITH BRIDGE SEAT PROTECTION. PAID FOR UNDER "ABUTMENT SEAT CLEANING AND SEALING". SEE SPECIAL PROVISIONS FOR REQUIREMENTS.

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-12-28

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SURFACE REPAIR DETAILS

SHEET 5

78

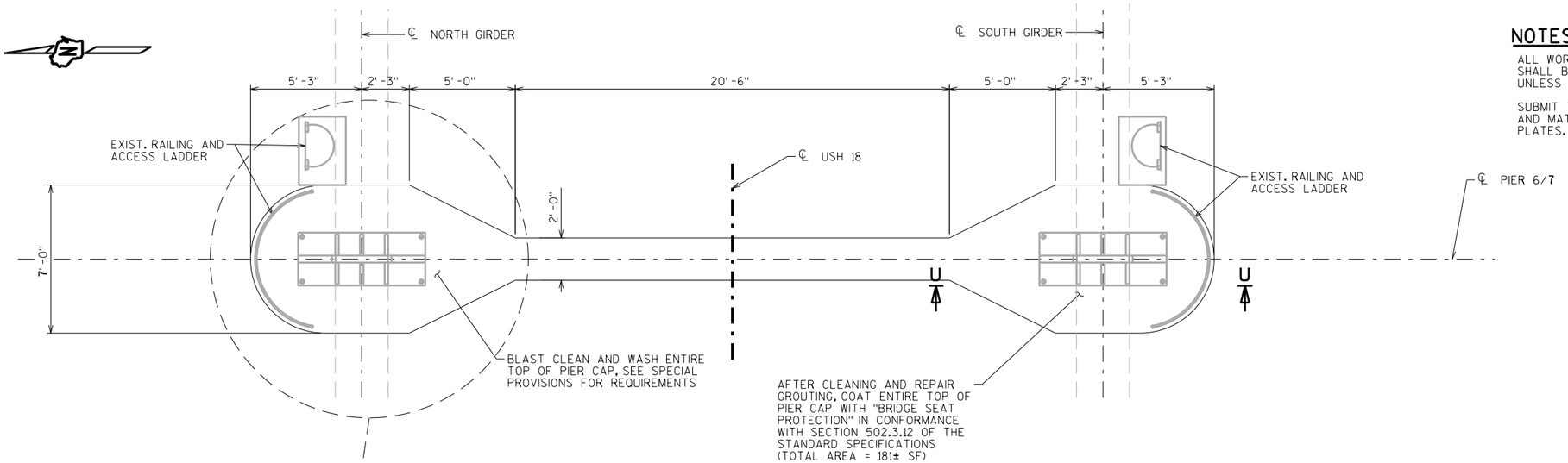
SCALE = 1.00

8

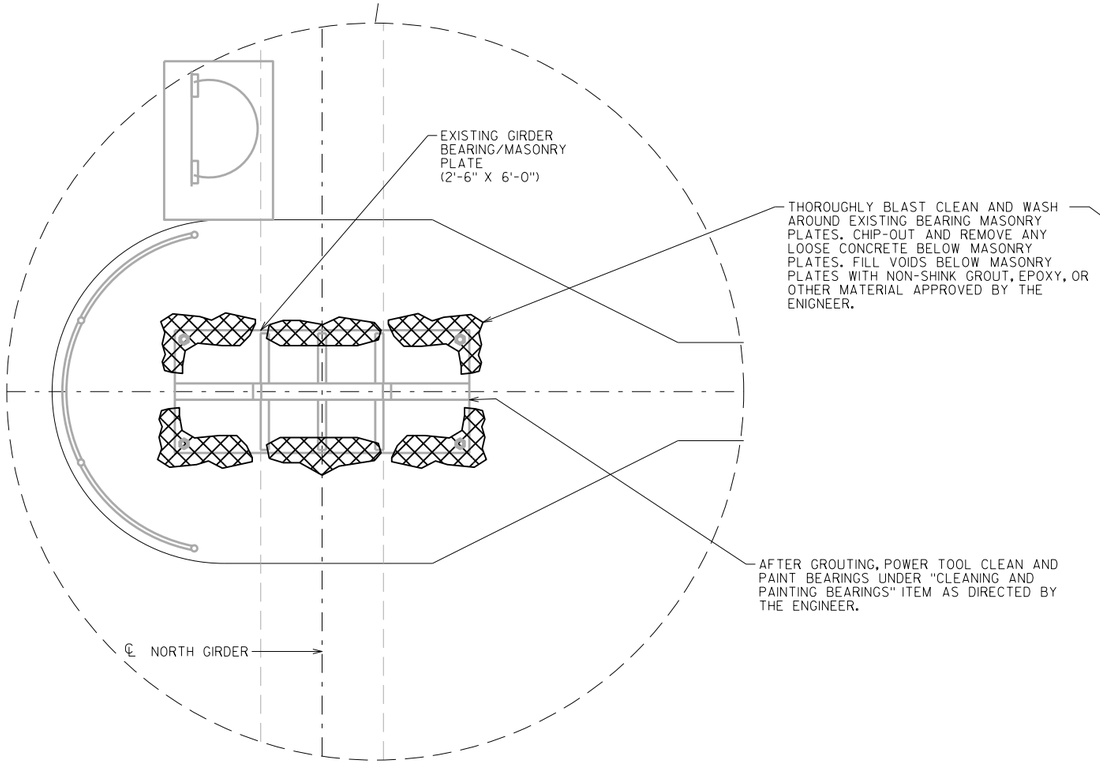
8

STATE PROJECT NUMBER

1660-03-61

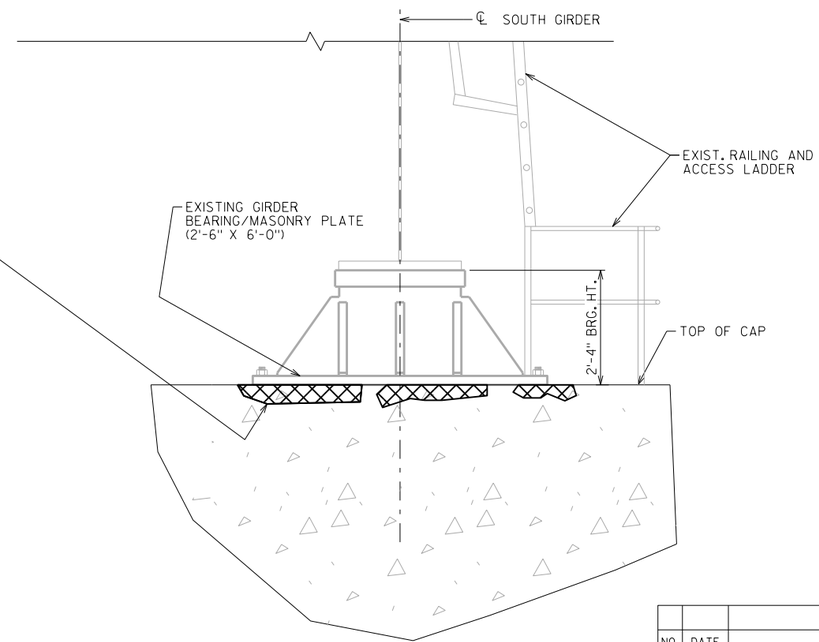


PLAN - PIER CAP REPAIRS AT PIERS 6 & 7



REPAIR GROUTING BELOW BEARING MASONRY PLATES

(NORTH END SHOWN, SOUTH END SIMILAR)



SECTION U-U

NOTES

ALL WORK AND MATERIALS SHOWN FOR PIER CAP REPAIRS SHALL BE INCLUDED IN BID ITEM "PIER CAP REPAIRS B-12-28", UNLESS NOTED OTHERWISE.

SUBMIT TO ENGINEER FOR APPROVAL THE PROPOSED METHOD AND MATERIAL FOR GROUTING/FILLING VOIDS BENEATH MASONRY PLATES.

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-12-28

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PIER CAP REPAIRS

SHEET 6

79

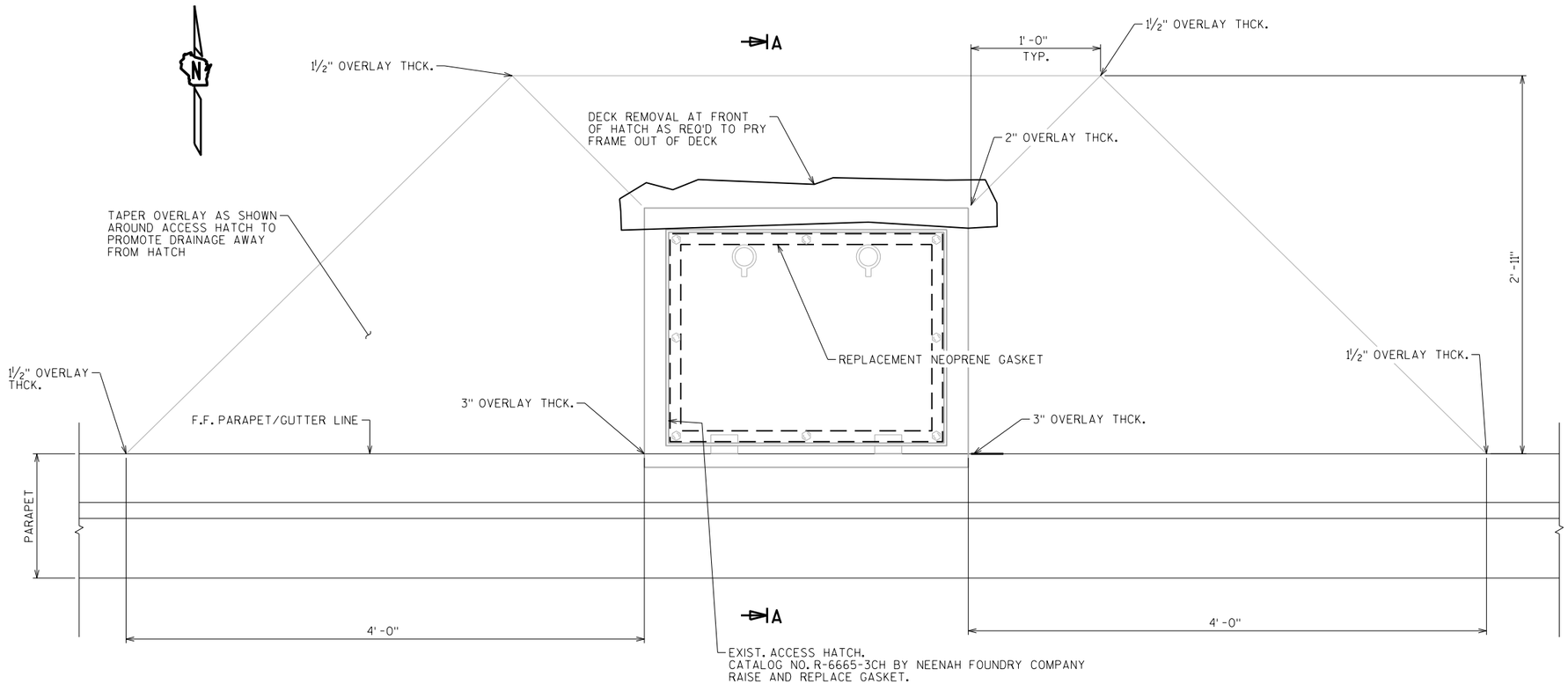
8

8

SCALE = 3.00

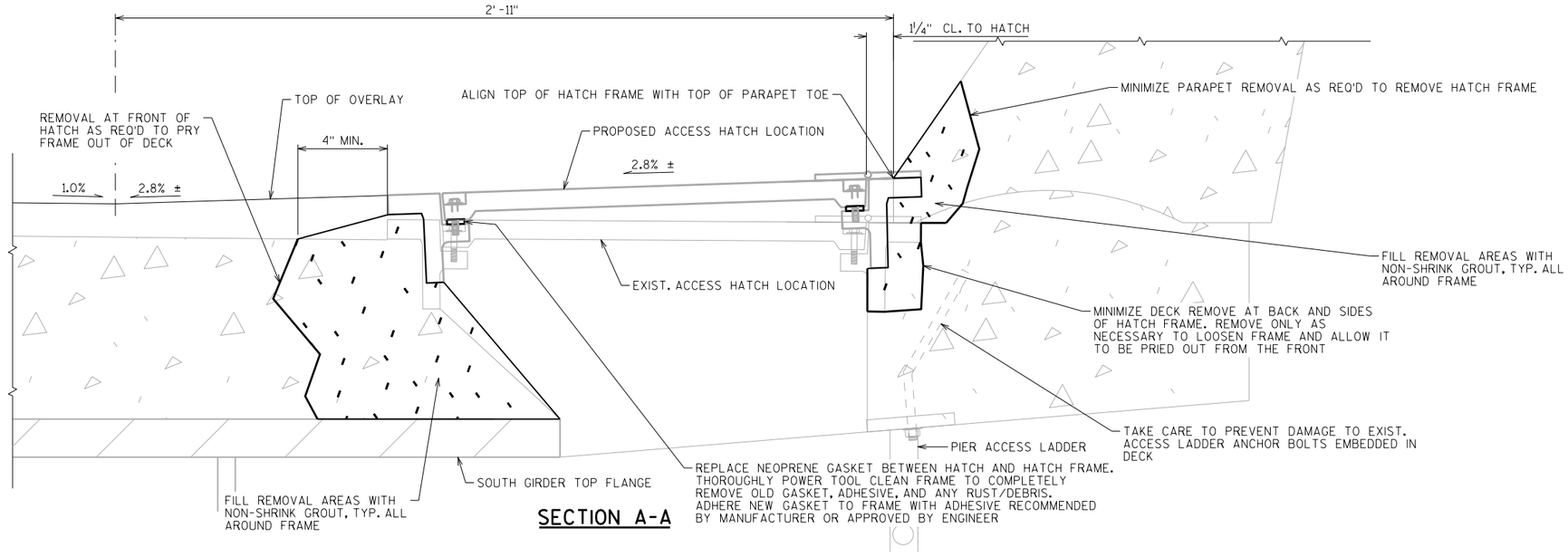
STATE PROJECT NUMBER

1660-03-61



PLAN - ACCESS HATCH REPAIR

(TYPICAL AT 2 ACCESS HATCH LOCATIONS, NEAR PIERS 6 & 7)



SECTION A-A

NOTES

ALL WORK AND MATERIALS SHOWN SHALL BE INCLUDED IN BE ITEM "ACCESS HATCH REPAIRS".

FURNISH NON-SHINK GROUT FROM THE DEPARTMENT'S APPROVED LIST.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-28

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ACCESS HATCH REPAIRS

SHEET 7

80

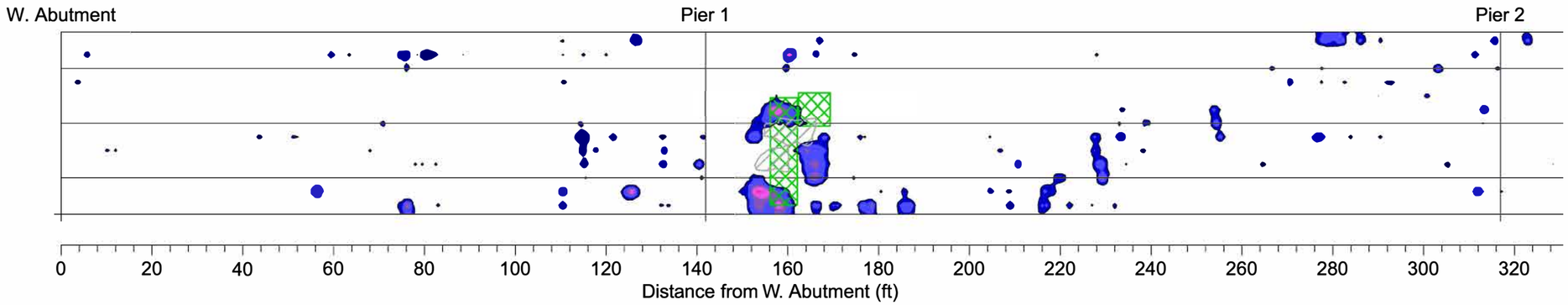
SCALE = 0.50

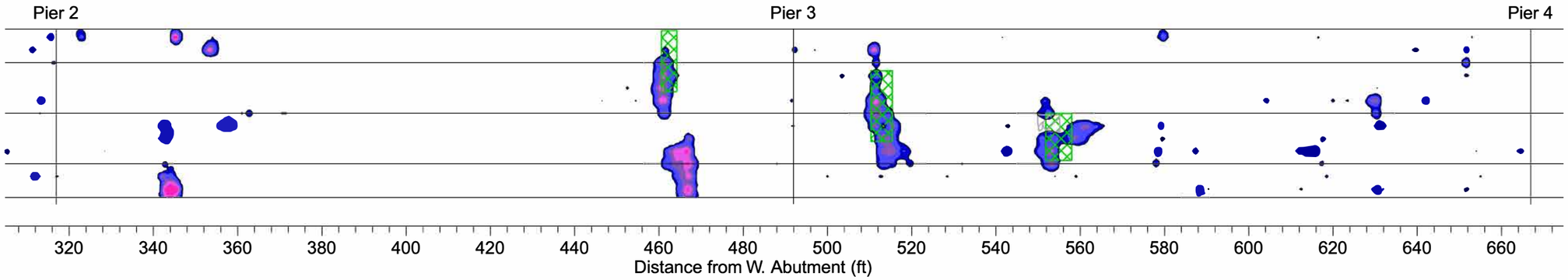
8

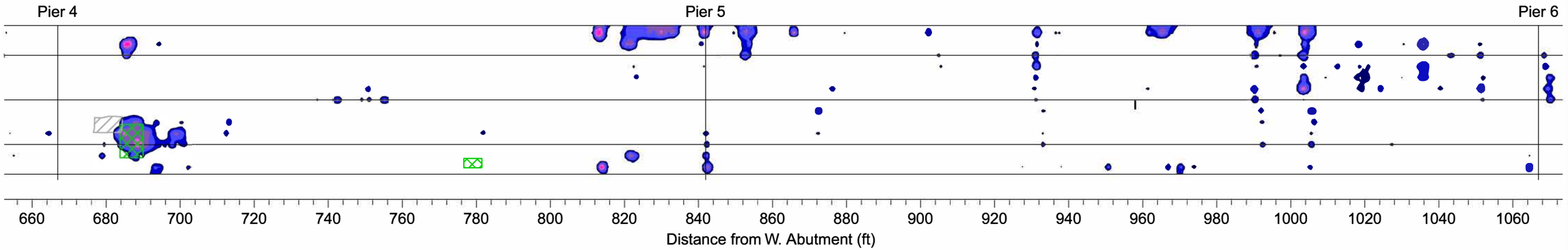
8

STATE PROJECT NUMBER

1660-03-61







8

8

CONDITIONS LEGEND

REBAR-LEVEL DETERIORATION DETECTED BY GPR

TYPE 1 DECK PREP. AREAS

TYPE 2 DECK PREP. AREAS

INCREASING SEVERITY →

EXISTING PATCHING

FULL-DEPTH REPAIR AREAS

N

NOTES

DECK SURVEY IS SHOWN FOR INFORMATION PURPOSES ONLY AND MAY NOT BE ALL INCLUSIVE. ADDITIONAL PATCHING/PREPARATION MAY BE REQUIRED AND SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER.

GPR= GROUND PENETRATING RADAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-28

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DECK CONDITION SURVEY - W. ABUT. TO PIER 6

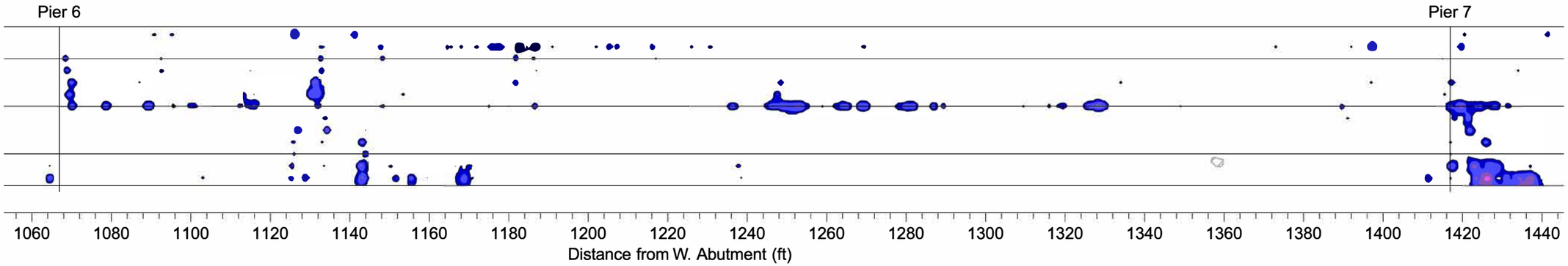
SHEET 8

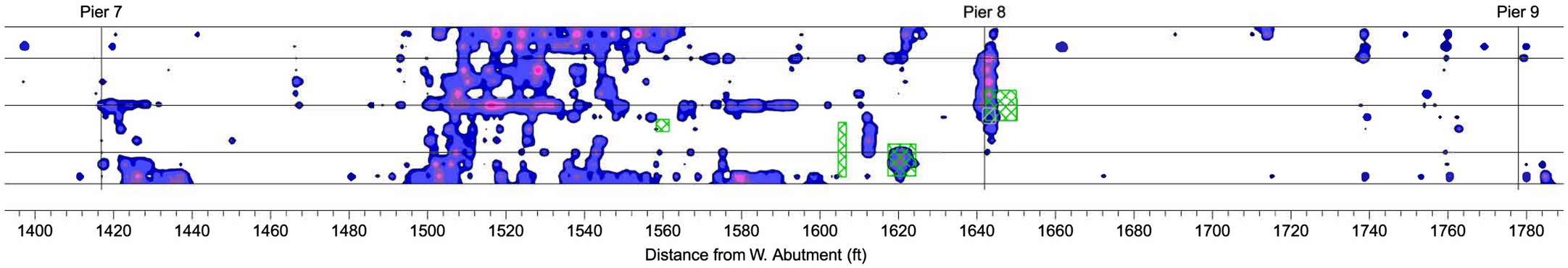
81

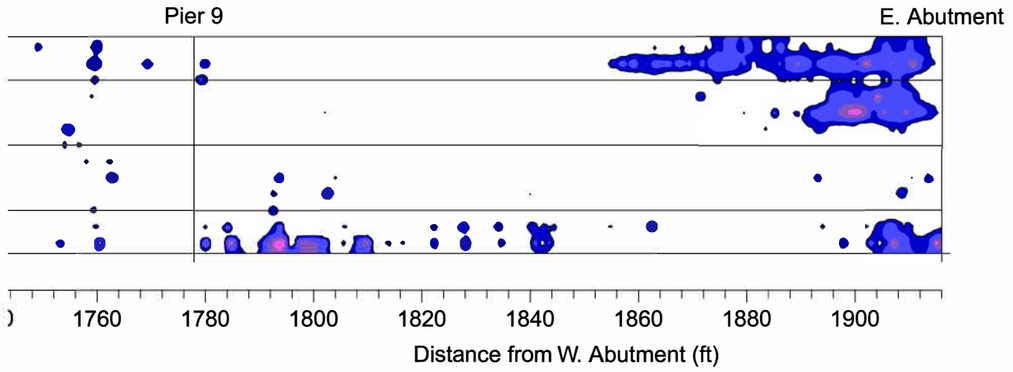
SCALE = 13.60

STATE PROJECT NUMBER

1660-03-61







CONDITIONS LEGEND

REBAR-LEVEL DETERIORATION DETECTED BY GPR

TYPE 1 DECK PREP. AREAS

TYPE 2 DECK PREP. AREAS

INCREASING SEVERITY →

EXISTING PATCHING

FULL-DEPTH REPAIR AREAS

NOTES

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GPR= GROUND PENETRATING RADAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-28

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DECK CONDITION SURVEY - PIER 6 TO E. ABUT.

SHEET 9

82

8

8

SCALE = 13.60

Notes

Wisconsin Department of Transportation

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