LAX

MARCH 2022

PROJECT ID: 1016-05-64

COUNTY: JUNEAU

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1016-05-64	———	—

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MAUSTON - WISCONSIN DELLS

24TH AVENUE STRUCTURE B-29-24

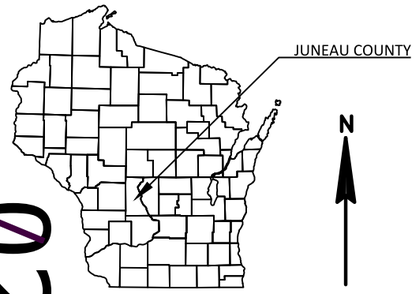
IH 90/94

JUNEAU COUNTY

STATE PROJECT NUMBER
1016-05-64

ORDER OF SHEETS

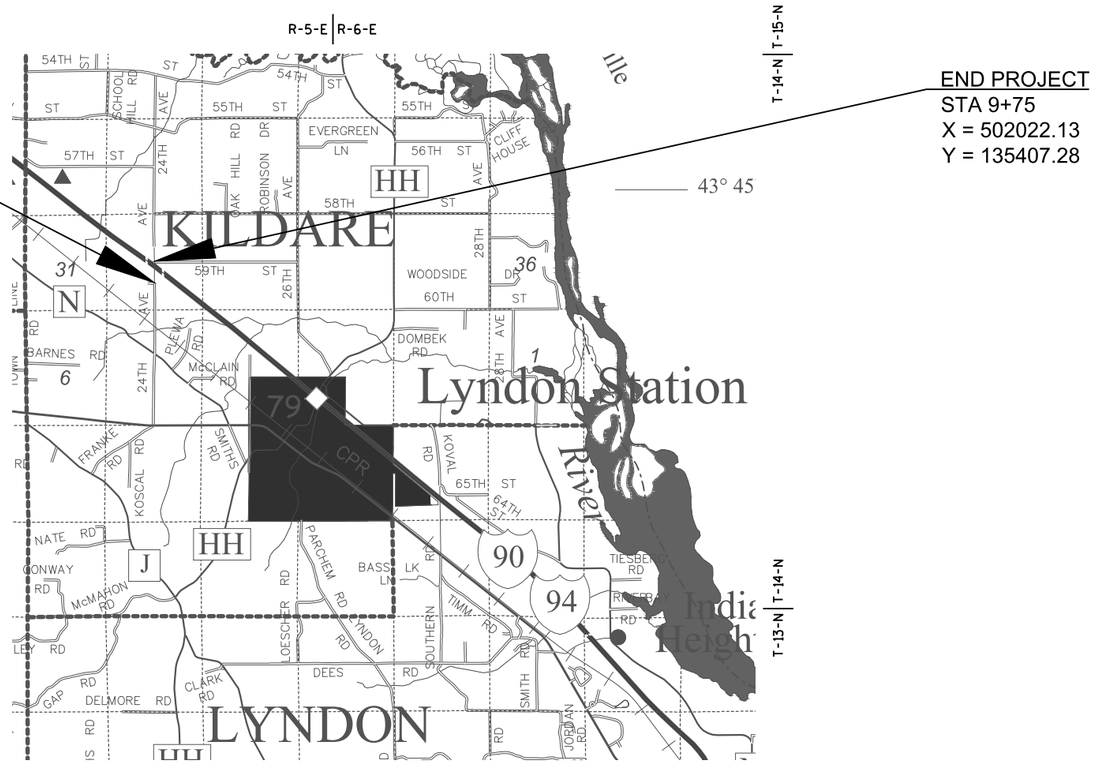
TOTAL SHEETS = 50



02

BEGIN PROJECT
STA 5+00
X = 502022.13
Y = 135194.93

END PROJECT
STA 9+75
X = 502022.13
Y = 135407.28



LAYOUT

SCALE 0 2.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), JUNEAU COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

DESIGN DESIGNATION 1016-05-64

			IH 90/94	24TH AVE
A.A.D.T.	2022	=	37,360	100
A.A.D.T.	2042	=	44,100	140
D.H.V.		=	3,300	10
D.D.		=	58/42	50/50
T.		=	35.3%	40.0%
DESIGN SPEED		=	70 MPH	55 MPH
ESALS		=	30,000,000	

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

PREPARED BY

Surveyor	WISDOT
Designer	SAM KUBE
Project Manager	JOHN BAINTER
Regional Examiner	SW REGION
Regional Supervisor	JIM SAVOLDELLI

APPROVED FOR THE DEPARTMENT

DATE: 10/21/2021 (Signature)

E

FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160534\DESIGN\C3D\SHEETSPLAN\010101_TI.DWG PLOT DATE : 10/20/2021 11:01 AM PLOT BY : KUBE, SAMUEL J PLOT NAME :

GENERAL NOTES

- THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE OR PARKING LANE.
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN. HMA WILL BE PAVED IN TWO 1.75 IN LIFTS
- TACK SHALL BE APPLIED AT A RATE OF 0.05 GAL/SY BETWEEN NEW HMA LAYERS AND 0.07 GAL/SY ON MILLED SURFACE
- CONCTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY THIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.
- DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED AND COVERED WITH E-MAT AS DIRECTED BY THE ENGINEER.

UTILITY CONTACTS

WILLIAM KOENIG – JMC ENGINEERS
AT&T LEGACY - COMMUNICATION LINE
110 N MAIN ST
CULVER, IL 46511
(608) 628-0575 mobile
wekoenig@att.net

DOUG VOSBERG
ATC MANAGEMENT, INC. - ELECTRICITY/TRANSMISSION
2489 RINDEN RD
COTTAGE GROVE, WI 53527
(608) 877-7650
dvosberg@atcllc.com

JERALD MOORE
FRONTIER COMMUNICATIONS OF WI LLC - COMMUNICATION LINE
2222 W WISCONSIN ST
PORTAGE, WI 53901
(608) 742-9507 office
(608) 346-0353 mobile
jerald.r.moore@ftr.com

OTHER CONTACTS

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WISDOT – COMMUNICATION LINE
433 W ST PAUL AVE
MILWAUKEE, WI 53203
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pkutz@hntb.com

DESIGN CONTACTS

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PROJECT DESIGNER
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DNR LIAISON

KAREN KALVELAGE
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST
WISCONSIN DEPT. OF NATURAL RESOURCES
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LA CROSSE, WI 54601
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karen.kalvelage@wisconsin.gov

ORDER OF SECTION 2 SHEETS

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

STANDARD ABBREVIATIONS

AC	ACRE
AGG	AGGREGATE
<	ANGLE
AE, AEW	APRON ENDWALL
ASPH.	ASPHALTIC
A.D.T.	AVERAGE DAILY TRAFFIC
A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC
B.F.	BACK FACE
BM	BENCHMARK
BTWN	BETWEEN
CTR.	CENTER
C/L	CENTER LINE
Δ	CENTRAL ANGLE OR DELTA
C.E.	COMMERCIAL ENTRANCE
CONST.	CONSTRUCTION
CMCP	CORRUGATED METAL CULVERT PIPE
CMP	CORRUGATED METAL PIPE
CO.	COUNTY
CTH	COUNTY TRUNK HIGHWAY
CR.	CREEK
CABC	CRUSHED AGGREGATE BASE COURSE
CY	CUBIC YARD
CP	CONTROL POINT OR CULVERT PIPE
C&G	CURB AND GUTTER
D	DEGREE OF CURVE
D.H.V.	DESIGN HOURLY VOLUME
DIA.	DIAMETER
D.D.	DIRECTIONAL DISTRIBUTION
DISCH.	DISCHARGE
DMS	DYNAMIC MESSAGE SIGN
EA	EACH
E	EAST
EB	EASTBOUND
ELEC.	ELECTRIC(AL), ELEC. CABLE
EL., ELEV.	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC.	EXCAVATION
EXIST	EXISTING
F.F.	FACE TO FACE
FERT.	FERTILIZER
F.E.	FIELD ENTRANCE
F/L, F.L.	FLOW LINE
GALV.	GALVANIZE
H.S.	HIGH STRENGTH
CWT	HUNDRED WEIGHT
INL	INLET
INTER.	INTERSECTION
IH	INTERSTATE HIGHWAY
JT.	JOINT
LT	LEFT
L.H.F.	LEFT HAND FORWARD
L.	LENGTH OF CURVE
L.F.	LINEAR FOOT(FEET)
LC.	LONG CHORD
LS	LUMP SUM
M.P.	MARKER POST
MGAL	1000 GALLONS
N.C.	NORMAL CROWN
N	NORTH
NB	NORTHBOUND
NOR	NORMAL
NO.	NUMBER
PAV'T	PAVEMENT
P.L.E.	PERMANENT LIMITED EASEMENT
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
PCC	PORTLAND CEMENT CONCRETE
P.E.	PRIVATE ENTRANCE
PGL	PROFILE GRADE LINE
P.L.	PROPERTY LINE
R	RADIUS OR RANGE
R/L	REFERENCE LINE
R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
REQ'D	REQUIRED
RT	RIGHT
R.H.F.	RIGHT HAND FORWARD
R/W	RIGHT OF WAY
RD.	ROAD
SHLD.	SHOULDER(S)
SHR.	SHRINKAGE
S	SOUTH
SB	SOUTHBOUND
S.F.	SQUARE FOOT (FEET)
SDD	STANDARD DETAIL DRAWING(S)
STH	STATE TRUNK HIGHWAY
STA.	STATION
S.E.	SUPERELEVATION
S/L	SURVEY LINE
SYM	SYMMETRICAL
T.	PERCENT TRUCKS
TEL.	TELEPHONE
TEMP.	TEMPORARY
T.L.E.	TEMPORARY LIMITED EASEMENT
T.O.C.	TOP OF CURB
TYP	TYPICAL
UNCL.	UNCLASSIFIED
U.G.	UNDERGROUND (CABLE)
VAR	VARIABLE
V.C.	VERTICAL CURVE
V.P.C.	VERTICAL POINT OF CURVATURE
V.P.I.	VERTICAL POINT OF INTERSECTION
V.P.T.	VERTICAL POINT OF TANGENCY
Wt.	WEIGHT
W	WEST
WB	WESTBOUND

2

N

BEGIN CONSTRUCTION
STA 1385+35

END PROJECT
STA 9+75

ALIGNMENT

59th ST

KILDARE

LEMONWEIR

IH 90/94

IH 90/94

1390A

1390

1395

1395

24TH AVE

BEGIN PROJECT
STA 5+00

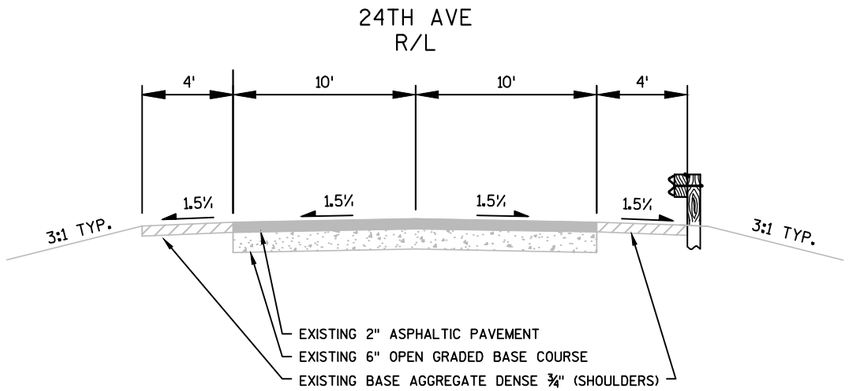
END CONSTRUCTION
STA 1395+35

LYNDON STATION

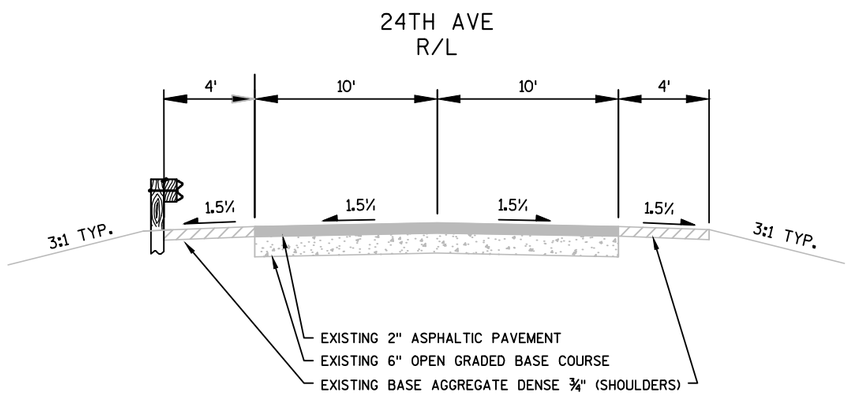
PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160534\DESIGN\C3D\SHEETSPLAN\OVERVIEW.DWG
LAYOUT NAME - Plan 1 IN 100 FT

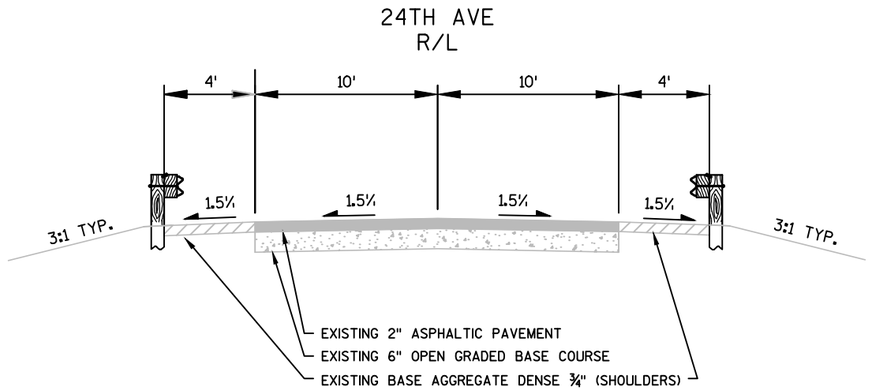
PLOT DATE : 10/20/2021 2:30 PM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:100 FT



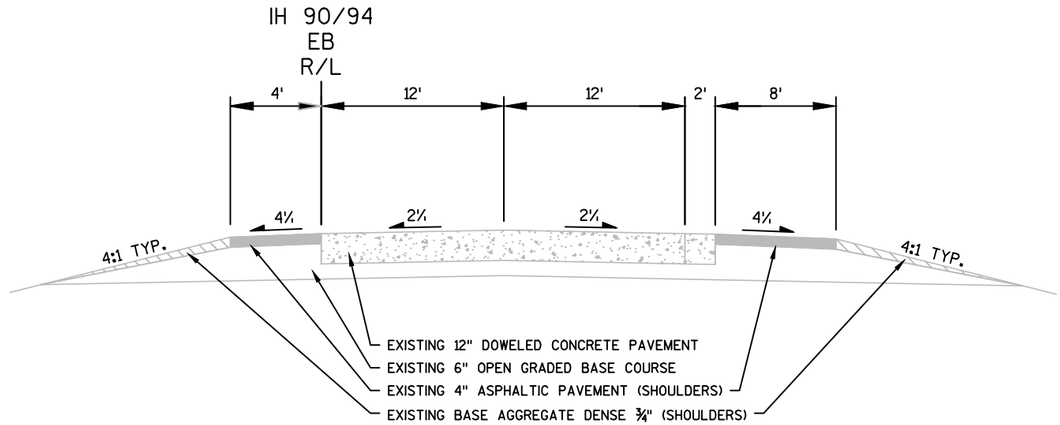
TYPICAL EXISTING SECTION
STA 5+00 - STA 5+29
STA 9+02 - STA 9+19



TYPICAL EXISTING SECTION
STA 6+24 - STA 6+46
STA 9+40 - STA 9+75



TYPICAL EXISTING SECTION
STA 5+29 - STA 6+24
STA 9+19 - STA 9+40



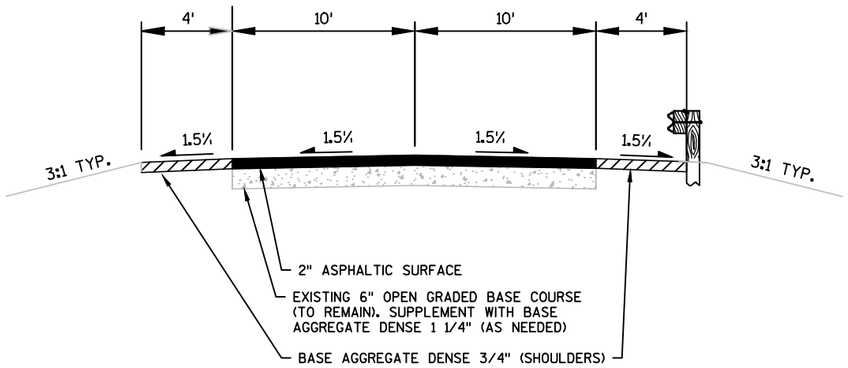
TYPICAL EXISTING MAINLINE TANGENT SECTION
STA 1385+35 - STA 1395+35
IH 90/94 WB IS MIRROR IMAGE OF SECTION SHOWN ABOVE

NOT TO SCALE

PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	TYPICAL SECTIONS	SHEET 4	E

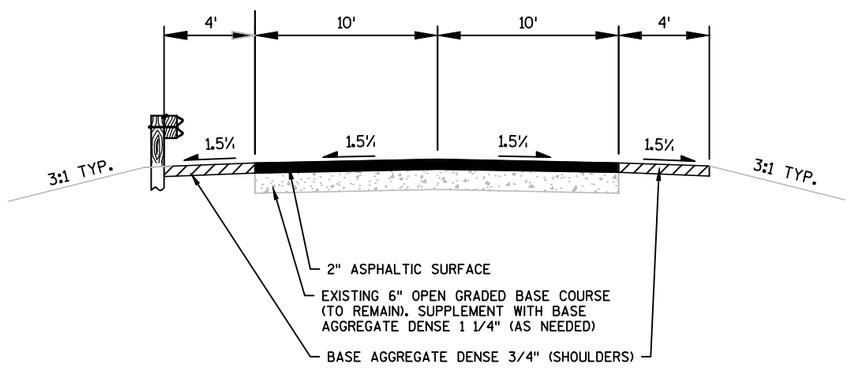
2

24TH AVE
R/L



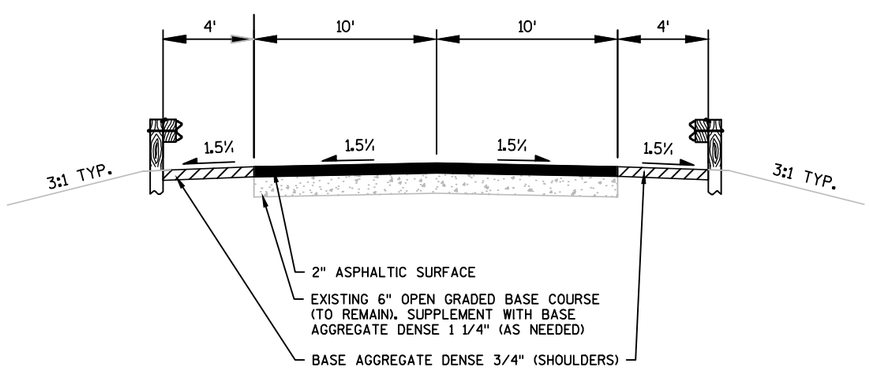
TYPICAL PROPOSED SECTION
STA 5+00 - STA 5+29
STA 9+02 - STA 9+19

24TH AVE
R/L



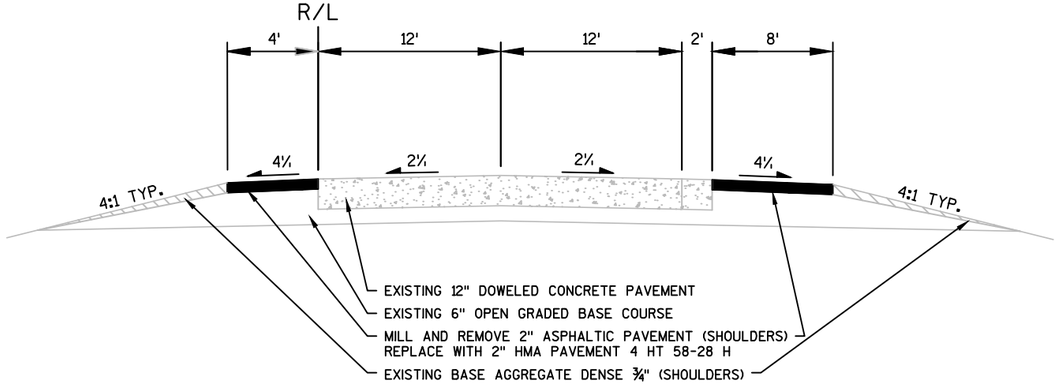
TYPICAL PROPOSED SECTION
STA 6+24 - STA 6+46
STA 9+40 - STA 9+75

24TH AVE
R/L



TYPICAL PROPOSED SECTION
STA 5+29 - STA 6+24
STA 9+19 - STA 9+40

IH 90/94
EB
R/L

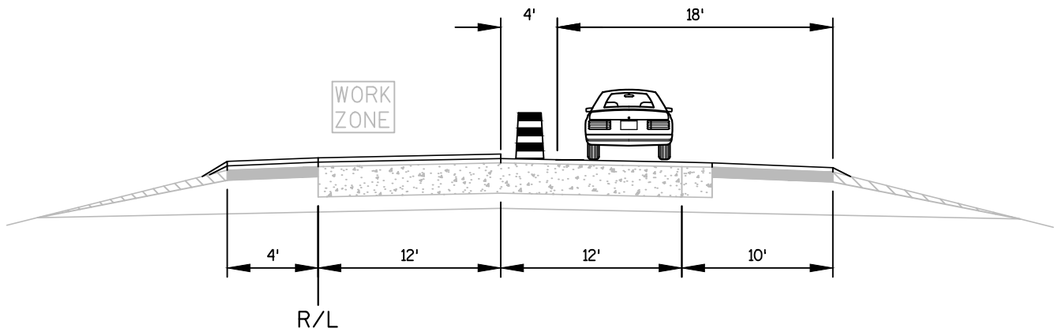


TYPICAL PROPOSED MAINLINE TANGENT SECTION
STA 1385+35 - STA 1395+35
IH 90/94 WB IS MIRROR IMAGE OF SECTION SHOWN ABOVE

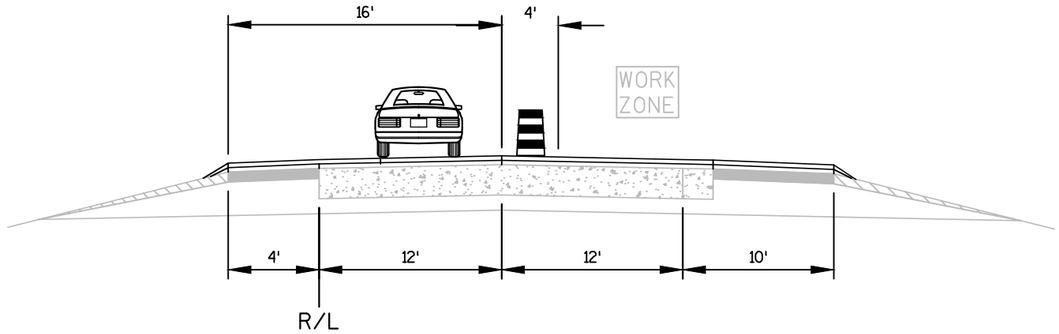
NOT TO SCALE

PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	TYPICAL SECTIONS	SHEET 5	E

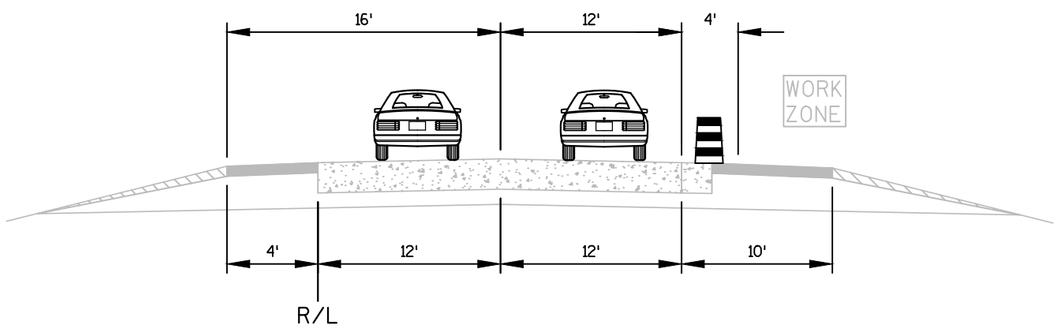
FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160534\DESIGN\C3D\SHEETSPLAN\020301_TS34.DWG PLOT DATE : 1/6/2022 3:55 PM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



TYPICAL SECTION: MEDIAN LANE CLOSED



TYPICAL SECTION: OUTSIDE LANE CLOSED



TYPICAL SECTION: OUTSIDE SHOULDER CLOSED

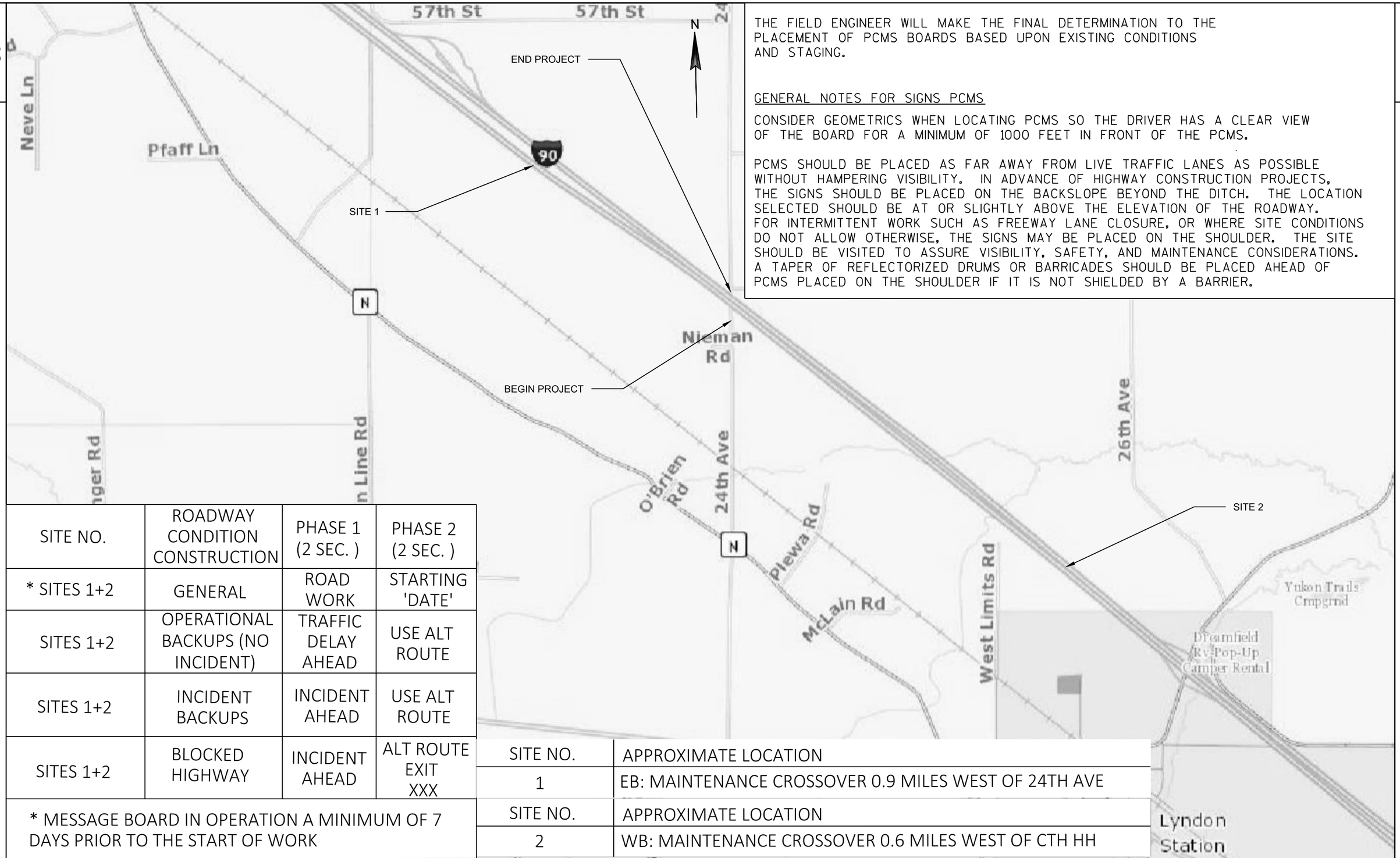
2

THE FIELD ENGINEER WILL MAKE THE FINAL DETERMINATION TO THE PLACEMENT OF PCMS BOARDS BASED UPON EXISTING CONDITIONS AND STAGING.

GENERAL NOTES FOR SIGNS PCMS

CONSIDER GEOMETRICS WHEN LOCATING PCMS SO THE DRIVER HAS A CLEAR VIEW OF THE BOARD FOR A MINIMUM OF 1000 FEET IN FRONT OF THE PCMS.

PCMS SHOULD BE PLACED AS FAR AWAY FROM LIVE TRAFFIC LANES AS POSSIBLE WITHOUT HAMPERING VISIBILITY. IN ADVANCE OF HIGHWAY CONSTRUCTION PROJECTS, THE SIGNS SHOULD BE PLACED ON THE BACKSLOPE BEYOND THE DITCH. THE LOCATION SELECTED SHOULD BE AT OR SLIGHTLY ABOVE THE ELEVATION OF THE ROADWAY. FOR INTERMITTENT WORK SUCH AS FREEWAY LANE CLOSURE, OR WHERE SITE CONDITIONS DO NOT ALLOW OTHERWISE, THE SIGNS MAY BE PLACED ON THE SHOULDER. THE SITE SHOULD BE VISITED TO ASSURE VISIBILITY, SAFETY, AND MAINTENANCE CONSIDERATIONS. A TAPER OF REFLECTORIZED DRUMS OR BARRICADES SHOULD BE PLACED AHEAD OF PCMS PLACED ON THE SHOULDER IF IT IS NOT SHIELDED BY A BARRIER.



SITE NO.	ROADWAY CONDITION CONSTRUCTION	PHASE 1 (2 SEC.)	PHASE 2 (2 SEC.)
* SITES 1+2	GENERAL	ROAD WORK	STARTING 'DATE'
SITES 1+2	OPERATIONAL BACKUPS (NO INCIDENT)	TRAFFIC DELAY AHEAD	USE ALT ROUTE
SITES 1+2	INCIDENT BACKUPS	INCIDENT AHEAD	USE ALT ROUTE
SITES 1+2	BLOCKED HIGHWAY	INCIDENT AHEAD	ALT ROUTE EXIT XXX

* MESSAGE BOARD IN OPERATION A MINIMUM OF 7 DAYS PRIOR TO THE START OF WORK

SITE NO.	APPROXIMATE LOCATION
1	EB: MAINTENANCE CROSSOVER 0.9 MILES WEST OF 24TH AVE
SITE NO.	APPROXIMATE LOCATION
2	WB: MAINTENANCE CROSSOVER 0.6 MILES WEST OF CTH HH

PROJECT NO: 1016-05-64	HWY: IH 90	COUNTY: JUNEAU	ADVANCED WARNING	SHEET 7	E

2

N

IH 90/94

B-29-24

7+00

6+00

24TH AVE

FENCE WOVEN WIRE 4.5'

SEE STRUCTURE PLANS

ASPHALTIC FLUME WITH MEDIUM RIPRAP
6+36 LT

4" SLOPED CURB TYPE D
STA 6+36 - STA 6+46 LT

STEEL PLATE BEAM GUARD CLASS A AND
STEEL THRIE BEAM STRUCTURE APPROACH
STA 5+79 - STA 6+46 LT

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL
POST 1: STA 5+29, 15' LT

BP: 5+00.00

BEGIN PROJECT
STA 5+00

FENCE WOVEN WIRE 4.5'

ASPHALTIC FLUME WITH MEDIUM RIPRAP
6+14 RT

4" SLOPED CURB TYPE D
STA 6+14 - STA 6+24 RT

STEEL PLATE BEAM GUARD CLASS A AND
STEEL THRIE BEAM STRUCTURE APPROACH
STA 5+50 - STA 6+24 RT

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL
POST 1: STA 5+00, 15' RT

PROPOSED BEAM GUARD

PROPOSED R/W FENCE

SAWING ASPHALT

REMOVING ASPHALTIC SURFACE

NOTES:
INSTALL SILT FENCE ALONG EXISTING BEAM GUARD PRIOR TO REMOVAL. RESTORE AROUND BEAM GUARD WITH SALVAGED TOPSOIL, SEEDING MIXTURE NO. 20, FERTILIZER TYPE B AND EROSION MAT TYPE B.

TIGER STRIPE SIGNS TO BE REMOVED PRIOR TO STRUCTURE WORK AND REINSTALLED UPON COMPLETION

PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	PLAN VIEW	SHEET 8	E

FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160534\DESIGN\C3D\SHEETSPLAN\34PLAN.DWG
LAYOUT NAME - Plan 1 IN 100 FT
PLOT DATE : 10/25/2021 8:09 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : Custom
WISDOT/CADDS SHEET 42

2

N

STEEL PLATE BEAM GUARD CLASS A AND
STEEL THRIE BEAM STRUCTURE APPROACH
STA 9+19 - STA 9+65

24TH AVE

END PROJECT
STA 9+75

STEEL PLATE BEAM GUARD CLASS A AND
STEEL THRIE BEAM STRUCTURE APPROACH
STA 9+12 - STA 9+58 RT

FENCE WOVEN WIRE 4.5'

EP: 9+75.04

ASPHALTIC FLUME WITH MEDIUM RIPRAP
9+22 RT

4" SLOPED CURB TYPE D
STA 9+12 - STA 9+22 RT

FENCE WOVEN WIRE 4.5'

ASPHALTIC FLUME WITH MEDIUM RIPRAP
9+29 LT

4" SLOPED CURB TYPE D
STA 9+19 - STA 9+29 LT

9+00

8+00

7+00

B-29-24

1390A

1390

SEE STRUCTURE PLANS

IH 90/94

PROPOSED BEAM GUARD

PROPOSED R/W FENCE

SAWING ASPHALT

REMOVING ASPHALTIC
SURFACE

NOTES:
INSTALL SILT FENCE ALONG EXISTING BEAM GUARD PRIOR TO REMOVAL. RESTORE AROUND BEAM GUARD WITH SALVAGED TOPSOIL, SEEDING MIXTURE NO. 20, FERTILIZER TYPE B AND EROSION MAT TYPE B.

TIGER STRIPE SIGNS TO BE REMOVED PRIOR TO STRUCTURE WORK AND REINSTALLED UPON COMPLETION

ELECTRIC FENCE, LOCATED AT THE NE CORNER OF B-29-24, TO REMAIN

PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	PLAN VIEW	SHEET 9	E

FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160534\DESIGN\C3D\SHEETSPLAN\34PLAN.DWG
LAYOUT NAME - Layout2-Plan 1 IN 100 FT
PLOT DATE : 10/25/2021 8:09 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : Custom
WISDOT/CADDS SHEET 42

1016-05-64

Line	Item	Item Description	Unit	Total	Qty
0002	204.0110	Removing Asphaltic Surface	SY	270.000	270.000
0004	204.0120	Removing Asphaltic Surface Milling	SY	2,660.000	2,660.000
0006	204.0165	Removing Guardrail	LF	333.000	333.000
0008	204.0170	Removing Fence	LF	279.000	279.000
0016	213.0100	Finishing Roadway (project) 01. 1016-05-64	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	14.000	14.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	20.000	20.000
0024	455.0605	Tack Coat	GAL	146.000	146.000
0026	460.2000	Incentive Density HMA Pavement	DOL	500.000	500.000
0028	460.7424	HMA Pavement 4 HT 58-28 H	TON	300.000	300.000
0030	465.0105	Asphaltic Surface	TON	31.000	31.000
0032	465.0315	Asphaltic Flumes	SY	20.000	20.000
0034	465.0400	Asphaltic Shoulder Rumble Strips	LF	4,000.000	4,000.000
0038	502.3101	Expansion Device 01. B-29-24	LF	62.000	62.000
0044	502.3200	Protective Surface Treatment	SY	41.000	41.000
0046	502.3210	Pigmented Surface Sealer	SY	11.000	11.000
0050	502.4205	Adhesive Anchors No. 5 Bar	EACH	78.000	78.000
0052	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	2,800.000	2,800.000
0066	509.1000	Joint Repair	SY	33.000	33.000
0068	509.1500	Concrete Surface Repair	SF	301.000	301.000
0070	509.2100.S	Concrete Masonry Deck Repair	CY	12.000	12.000
0072	513.9006.S	Removing and Resetting Tubular Railing (structure) 01. B-29-24	EACH	1.000	1.000
0080	517.3001.S	Structure Overcoating Cleaning and Priming (structure) 01. B-29-24	EACH	1.000	1.000
0086	517.4001.S	Containment and Collection of Waste Materials (structure) 01. B-29-24	EACH	1.000	1.000
0092	601.0553	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	LF	40.000	40.000
0094	606.0200	Riprap Medium	CY	4.000	4.000
0100	614.0200	Steel Thrie Beam Structure Approach	LF	84.000	84.000
0102	614.0305	Steel Plate Beam Guard Class A	LF	150.000	150.000
0104	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	2.000	2.000
0112	616.0100	Fence Woven Wire (height) 01. 4.5 FEET	LF	279.000	279.000
0114	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1016-05-64	EACH	1.000	1.000
0118	619.1000	Mobilization	EACH	0.500	0.500
0120	624.0100	Water	MGAL	15.000	15.000
0122	625.0500	Salvaged Topsoil	SY	150.000	150.000
0124	628.1504	Silt Fence	LF	350.000	350.000
0126	628.1520	Silt Fence Maintenance	LF	350.000	350.000
0128	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0130	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0132	628.2004	Erosion Mat Class I Type B	SY	150.000	150.000
0134	629.0210	Fertilizer Type B	CWT	3.000	3.000
0136	630.0120	Seeding Mixture No. 20	LB	4.000	4.000
0138	630.0500	Seed Water	MGAL	3.000	3.000
0140	638.2102	Moving Signs Type II	EACH	6.000	6.000
0142	642.5001	Field Office Type B	EACH	0.500	0.500
0144	643.0300	Traffic Control Drums	DAY	1,300.000	1,300.000
0146	643.0420	Traffic Control Barricades Type III	DAY	1,030.000	1,030.000
0148	643.0705	Traffic Control Warning Lights Type A	DAY	620.000	620.000
0150	643.0715	Traffic Control Warning Lights Type C	DAY	2,060.000	2,060.000
0152	643.0800	Traffic Control Arrow Boards	DAY	30.000	30.000

1016-05-64

Line	Item	Item Description	Unit	Total	Qty
0154	643.0900	Traffic Control Signs	DAY	965.000	965.000
0156	643.1050	Traffic Control Signs PCMS	DAY	15.000	15.000
0158	643.5000	Traffic Control	EACH	0.500	0.500
0162	645.0120	Geotextile Type HR	SY	12.000	12.000
0164	650.9910	Construction Staking Supplemental Control (project) 01. 1016-05-64	LS	1.000	1.000
0168	690.0150	Sawing Asphalt	LF	73.000	73.000
0174	SPV.0060	Special 01. Cleaning and Painting Bearings	EACH	8.000	8.000

STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF	REMARKS
5+00	-	6+24	RIGHT	124	SOUTH OF B-29-24
5+29	-	6+46	LEFT	117	SOUTH OF B-29-24
9+12	-	9+58	RIGHT	46	NORTH OF B-29-24
9+19	-	9+65	LEFT	46	NORTH OF B-29-24
			TOTAL 0010	333	

204.0170

REMOVING FENCE

STATION	TO	STATION	LOCATION	LF	REMARKS
			SOUTH OF B-49-24	30	LEFT
			SOUTH OF B-49-24	91	RIGHT
			NORTH OF B-29-24	102	LEFT
			NORTH OF B-29-24	56	RIGHT
			TOTAL 0010	279	

BASE AGG ITEMS

STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
5+76	-	6+43	SOUTH OF B-29-24	6	10	-
9+25	-	9+75	NORTH OF B-29-24	6	10	-
	-		UNDISTRIBUTED	2	-	15
			TOTAL 0010	14	20	15

3

3

ASPHALT ITEMS

STATION	TO	STATION	LOCATION	204.0110 REMOVING ASLPHALTIC SURFACE SY	204.0120 REMOVING ASLPHALTIC SURFACE MILLING SY	455.0605 TACK COAT GAL	460.7424 HMA PAVEMENT 4 HT 58-28 H TON	465.0105 ASPHALTIC SURFACE TON	465.0400 ASPHALTIC SHOULDER RUMBLE STRIPS LF	REMARKS
5+76	-	6+43	SOUTH OF B-29-24	130	-	7	-	15	-	
9+25	-	9+75	NORTH OF B-29-24	140	-	7	-	16	-	
1385+35	-	1395+35	INSIDE SHOULDER	-	440	22	50	-	1000	EB IH 90/94
1385+35	-	1395+35	OUTSIDE SHOULDER	-	890	44	100	-	1000	EB IH 90/94
1385+35	-	1395+35	INSIDE SHOULDER	-	440	22	50	-	1000	WB IH 90/94
1385+35	-	1395+35	OUTSIDE SHOULDER	-	890	44	100	-	1000	WB IH 90/94
			TOTAL 0010	270	2,660	146	300	31	4,000	

ASPHALTIC FLUMES

STATION	LOCATION	465.0315 ASPHALTIC FLUMES SY	606.0200 RIPRAP MEDIUM CY	645.012 GEOTEXTILE FABRIC TYPE HR SY	REMARKS
6+14	RIGHT	5	1	3	SE CORNER OF BRIDGE
6+36	LEFT	5	1	3	SW CORNER OF BRIDGE
9+22	RIGHT	5	1	3	NE CORNER OF BRIDGE
9+29	LEFT	5	1	3	NW CORNER OF BRIDGE
	TOTAL 0010	20	4	12	

STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
5+00	SOUTH OF B-29-24	20	
9+75	NORTH OF B-29-24	29	
1385+35	IH 90 EB	8	OUTSIDE SHOULDER
1385+35	IH 90 EB	4	INSIDE SHOULDER
1395+35	IH 90 WB	8	OUTSIDE SHOULDER
1395+35	IH 90 WB	4	INSIDE SHOULDER
	TOTAL 0010	73	

GUARDRAIL ITEMS

STATION	TO	STATION	LOCATION	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL EACH
5+00	-	6+24	RIGHT	50	21	1
5+29	-	6+46	LEFT	50	21	1
9+12	-	9+58	RIGHT	25	21	-
9+19	-	9+65	LEFT	25	21	-
			TOTAL 0010	150	84	2

FENCE

LOCATION	616.0100 FENCE WOVEN WIRE (4.5 FEET) LF	REMARKS
SOUTH OF B-49-24	30	LEFT
SOUTH OF B-49-24	91	RIGHT
NORTH OF B-29-24	102	LEFT
NORTH OF B-29-24	56	RIGHT
TOTAL 0010	279	

3

LANDSCAPING ITEMS

STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2004 EROSION MAT CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0500 SEED WATER MGAL	REMARKS
5+00	-	6+24	RIGHT	50	125	125	-	-	50	1	1	1	
5+29	-	6+46	LEFT	50	125	125	-	-	50	1	1	1	
			UNDISTRIBUTED	50	100	100	2	1	50	1	1	1	
			TOTAL 0010	150	350	350	2	1	150	3	4	3	

TRAFFIC CONTROL ITEMS

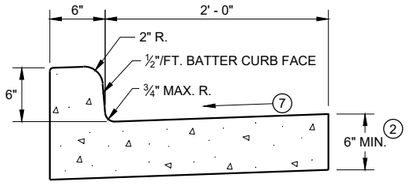
LOCATION	DAYS	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0800 TRAFFIC CONTROL ARROW BOARDS DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	REMARKS
SOUTH OF B-29-24	50.00	500	500	250	1,000	0	400	0	
NORTH OF B-29-24	50.00	500	500	250	1,000	0	400	0	
IH 90/94	15.00	300	30	120	60	30	165	15	
TOTAL 0010		1,300	1,030	620	2,060	30	965	15	

STATION	TO	STATION	LOCATION	601.0553 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D LF	REMARKS
6+14	-	6+24	RIGHT	10	SE CORNER OF BRIDGE
6+36	-	6+46	LEFT	10	SW CORNER OF BRIDGE
9+12	-	9+22	RIGHT	10	NE CORNER OF BRIDGE
9+19	-	9+29	LEFT	10	NW CORNER OF BRIDGE
			TOTAL 0010	40	

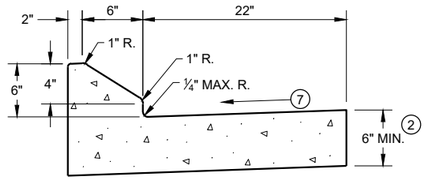
STATION	LOCATION	638.2102 MOVING SIGNS TYPE II EACH	REMARKS
5+00	RIGHT	1	
5+29	LEFT	1	
6+24	RIGHT	1	SE CORNER OF BRIDGE
6+46	LEFT	1	SW CORNER OF BRIDGE
9+12	RIGHT	1	NE CORNER OF BRIDGE
9+19	LEFT	1	NW CORNER OF BRIDGE
	TOTAL 0010	6	

Standard Detail Drawing List

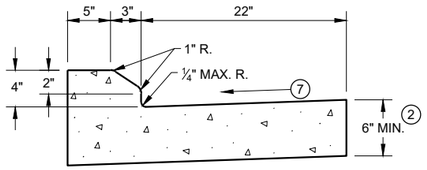
08D01-22A	CONCRETE CURB & GUTTER
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11C	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15D12-09B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



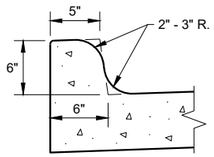
TYPES A[1] & D



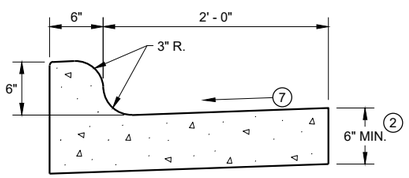
6" SLOPED CURB TYPES G[1] & J



4" SLOPED CURB TYPES G[1] & J

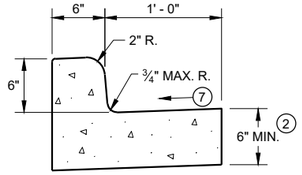


TYPES K[1] & L
(OPTIONAL CURB SHAPE)



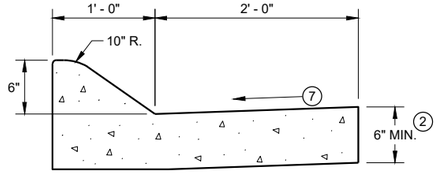
TYPES K[1] & L

CONCRETE CURB AND GUTTER 30"



TYPES A[1] & D

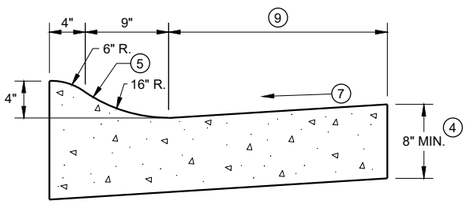
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A[1] & D

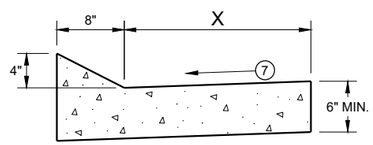
4" SLOPED CURB TYPES A[1] & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R[1] & T

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

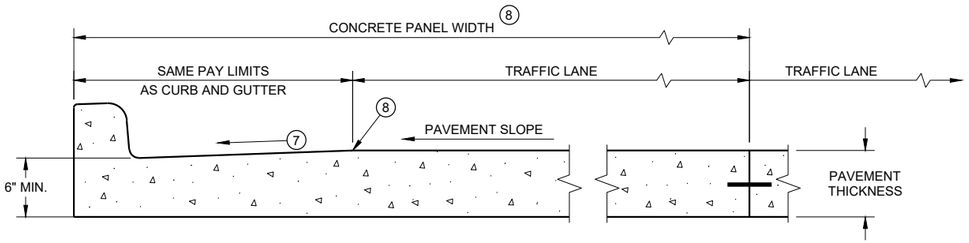


TYPES TBT & TBTT[1]

CONCRETE CURB AND GUTTER

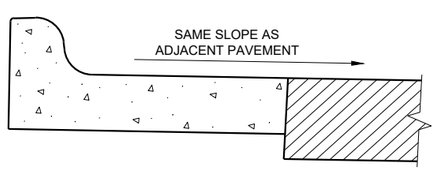
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

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

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

1. TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
2. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
3. USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
4. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
5. UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
6. WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
7. USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
8. INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
9. CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
   CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

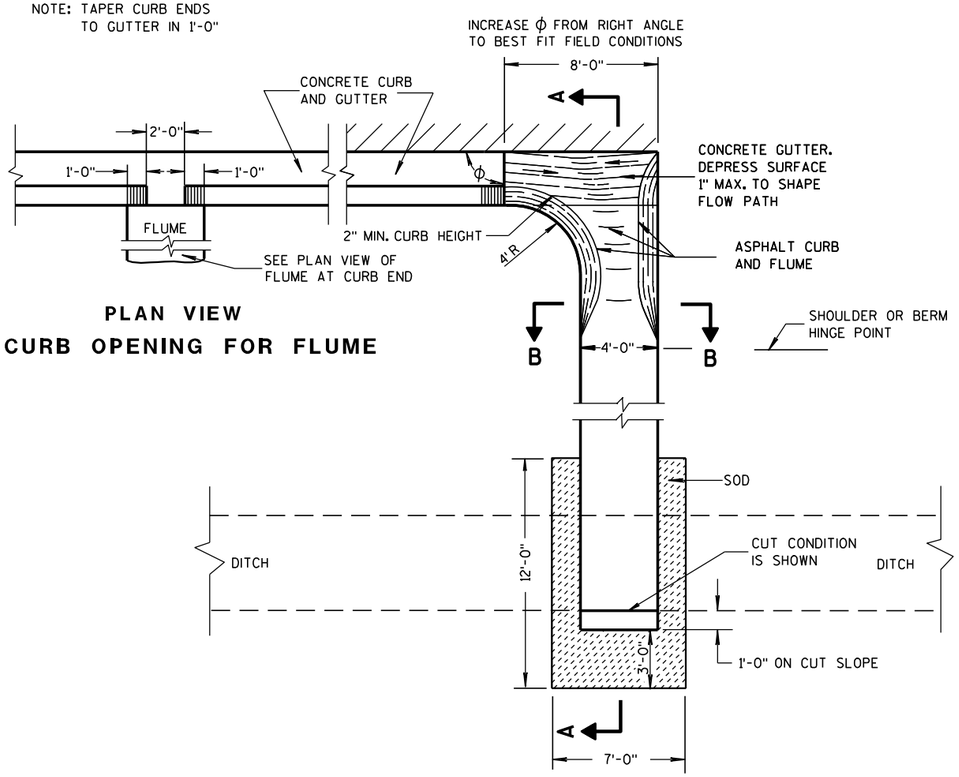
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

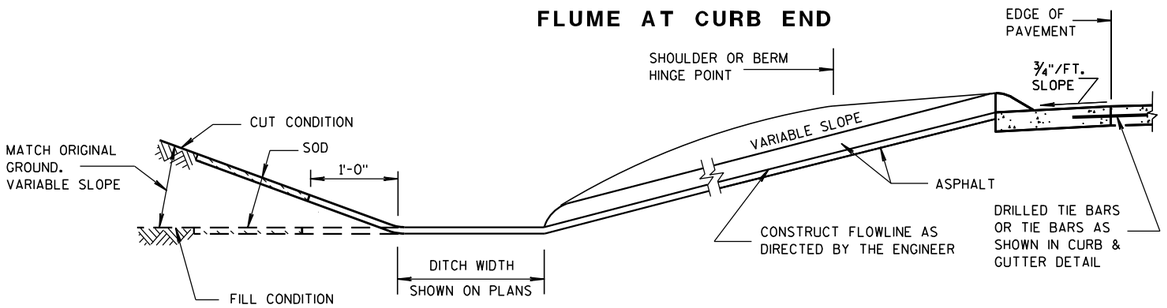
SDD 08D01 - 22a
SDD 08D01 - 22a

ASPHALTIC FLUME

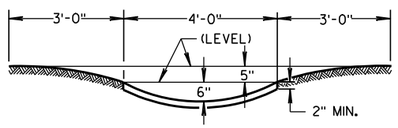


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

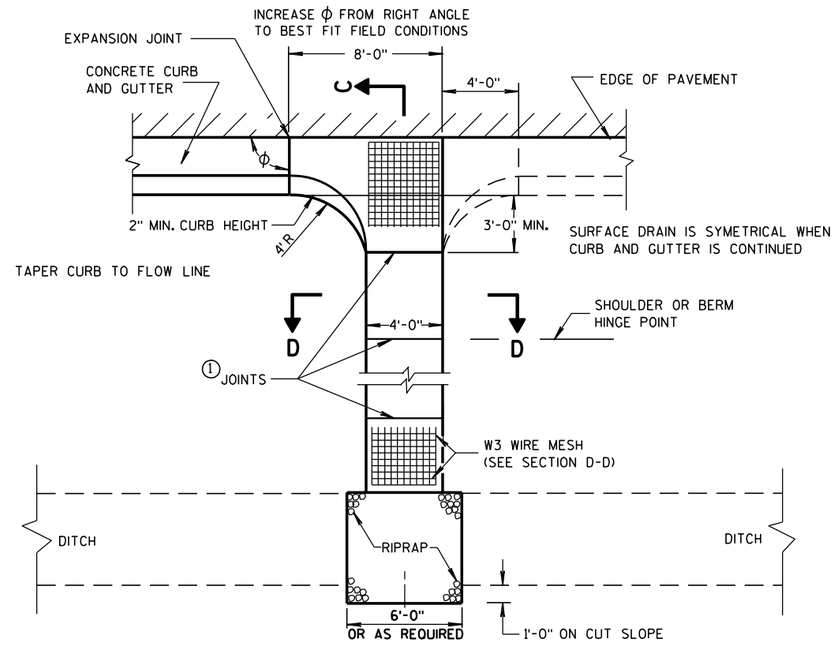
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE ⅛ TO ¼ INCH WIDE BY 1½ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

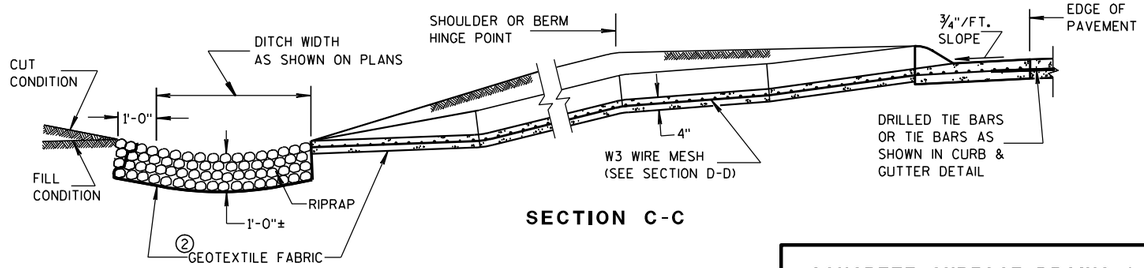
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

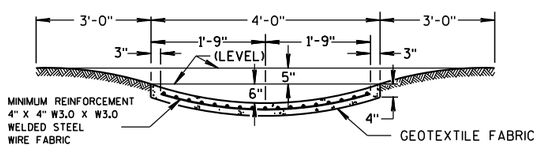
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT

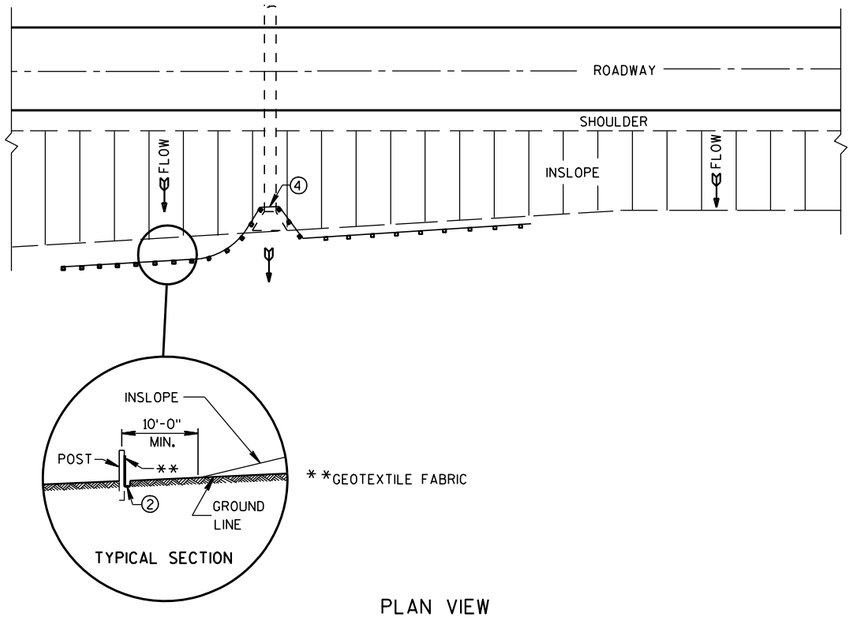
FHWA

6

S.D.D. 8 D 4-5

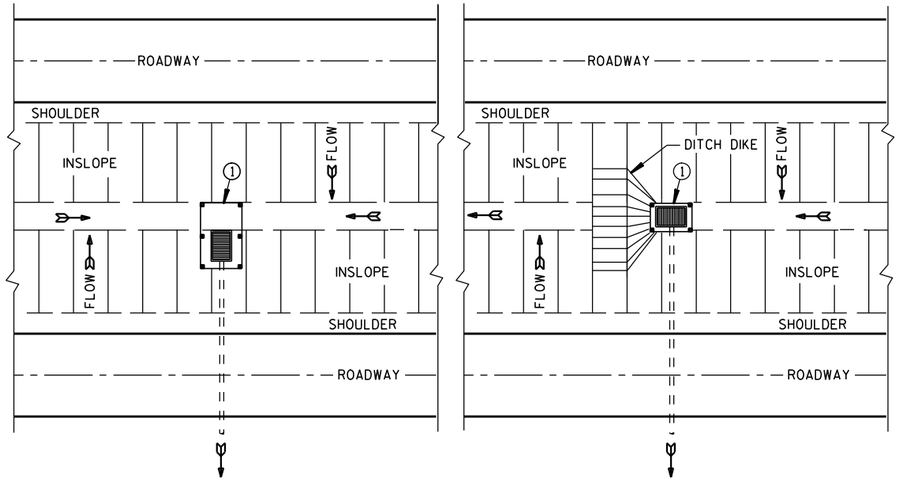
6

S.D.D. 8 D 4-5



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



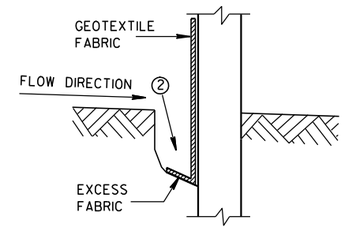
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

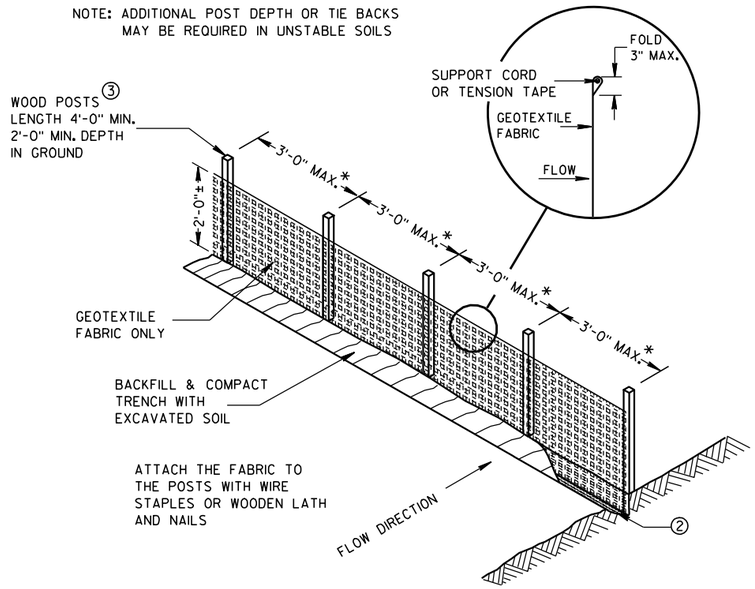
GENERAL NOTES

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

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

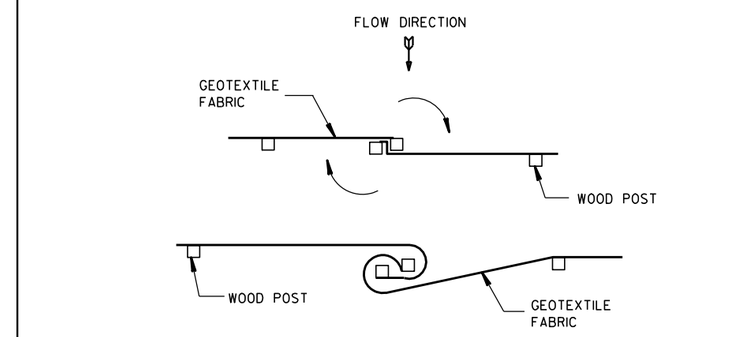


TRENCH DETAIL

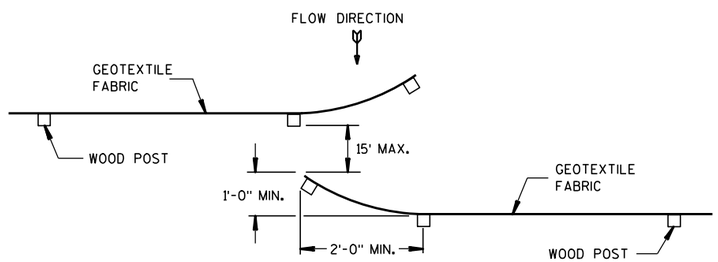


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

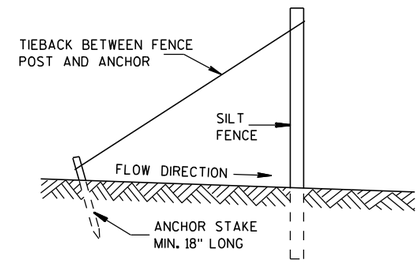


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

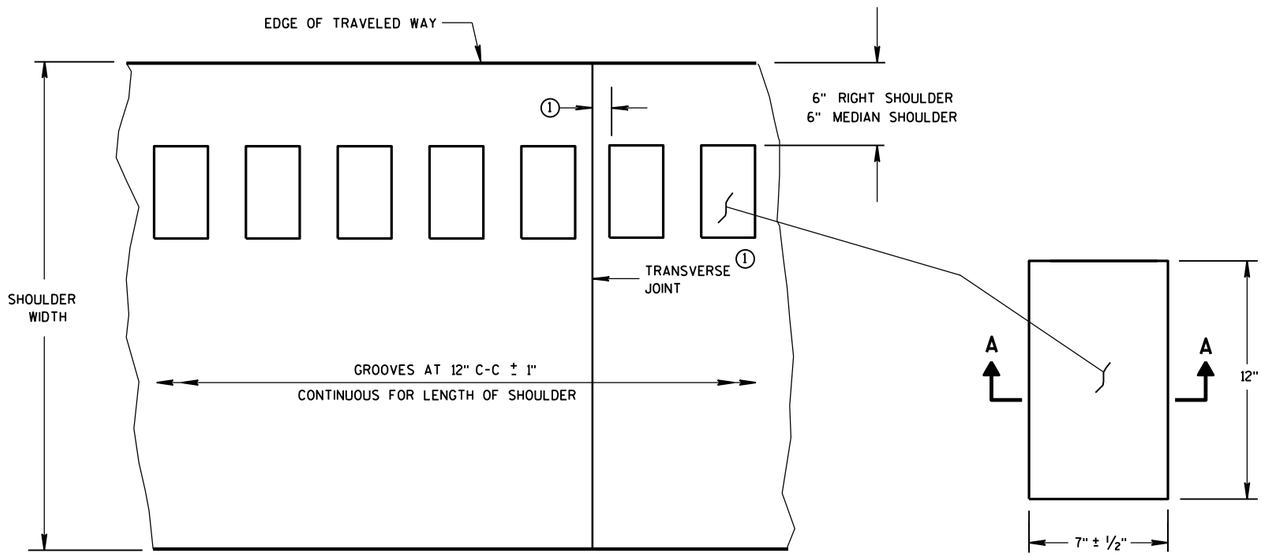
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

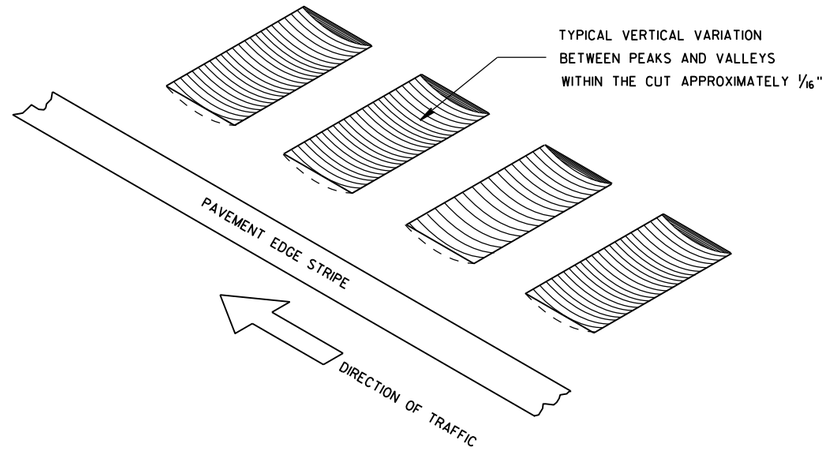
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

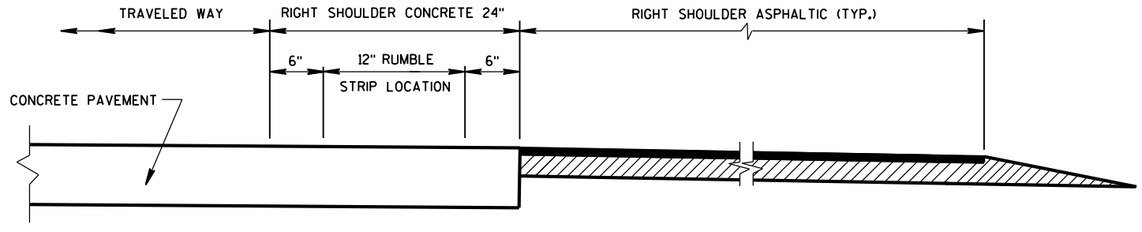
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

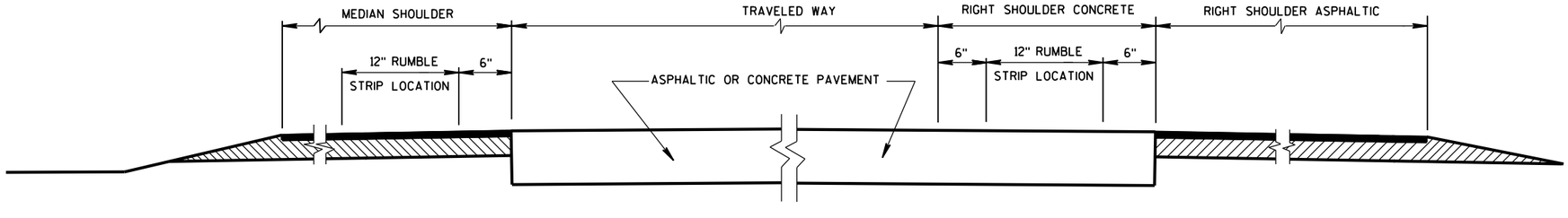
(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



ISOMETRIC



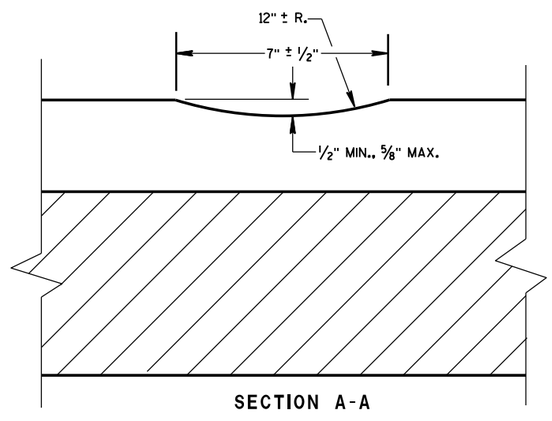
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

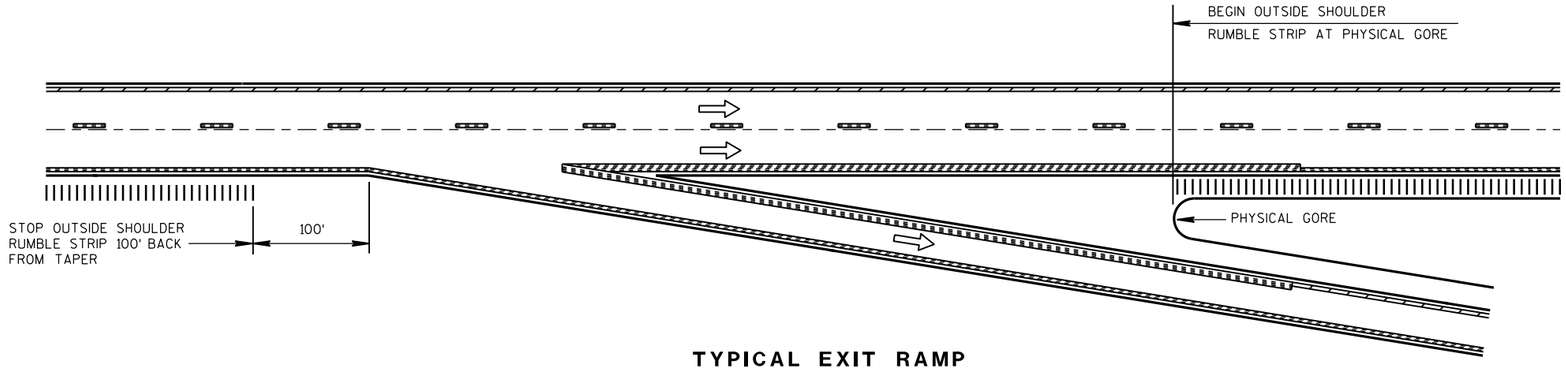
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 13 A 5-5a

6

S.D.D. 13 A 5-5a



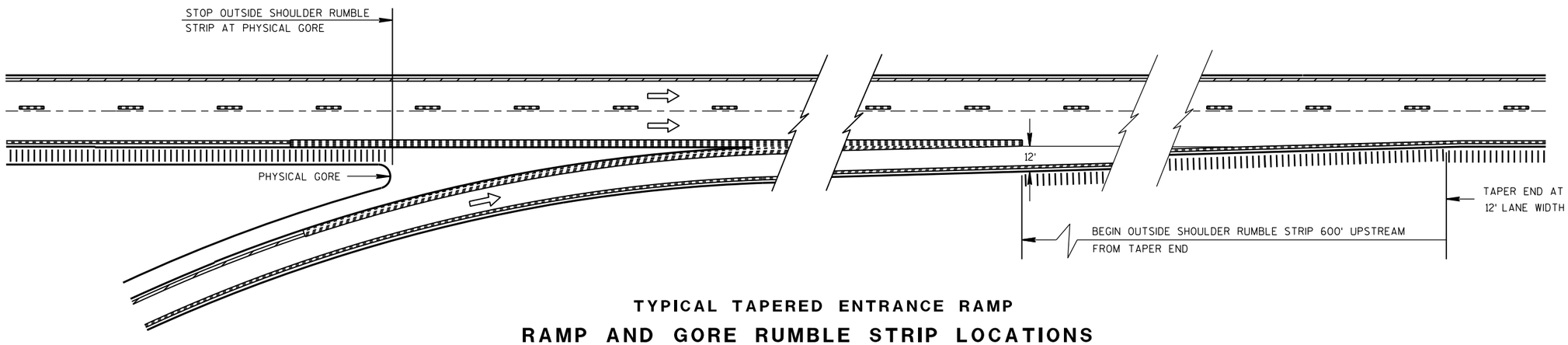
TYPICAL EXIT RAMP

NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

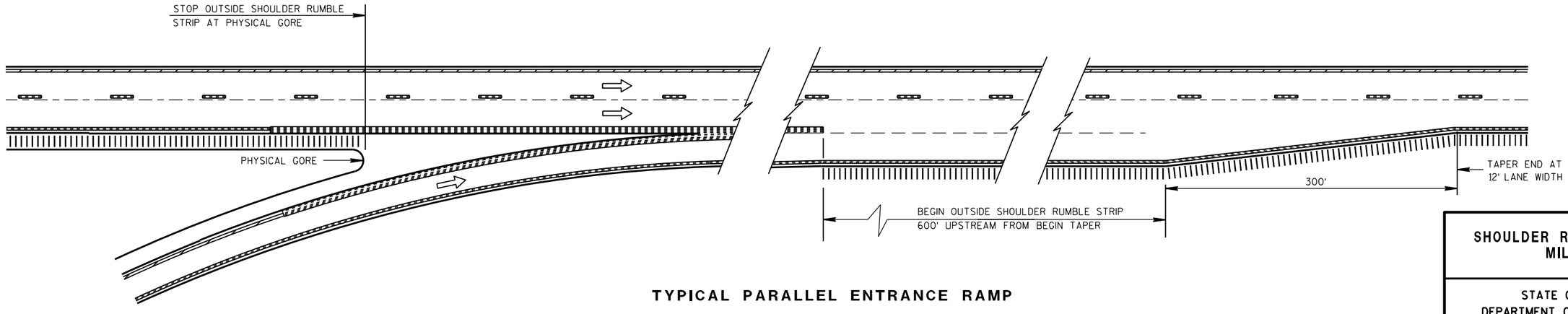
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/17/2012
DATE

/S/ Jerry H. Zoga
ROADWAY STANDARDS ENGINEER

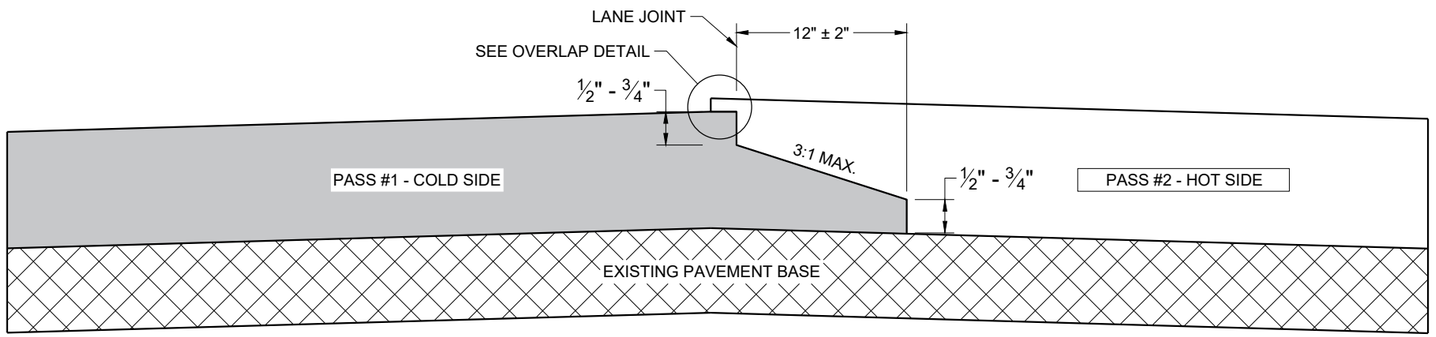
FHWA

6

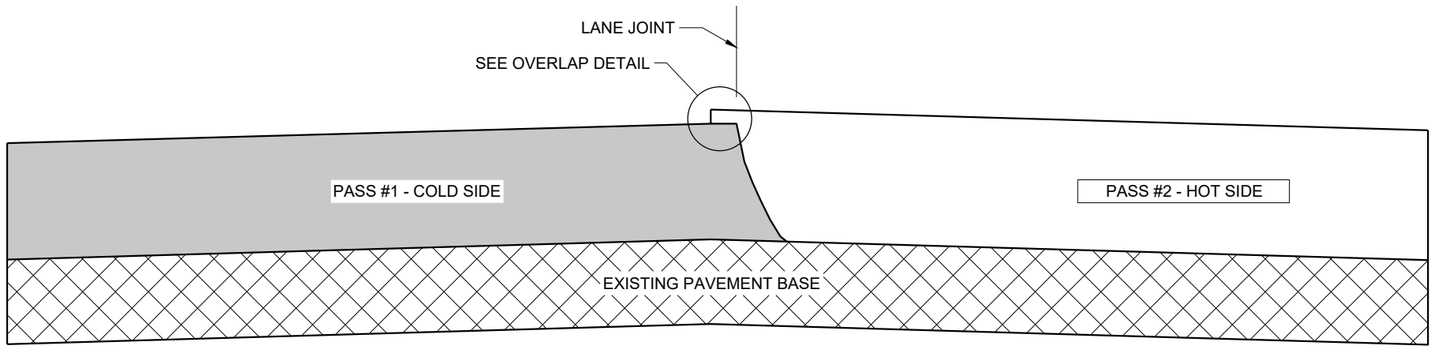
S.D.D. 13 A 5-5b

6

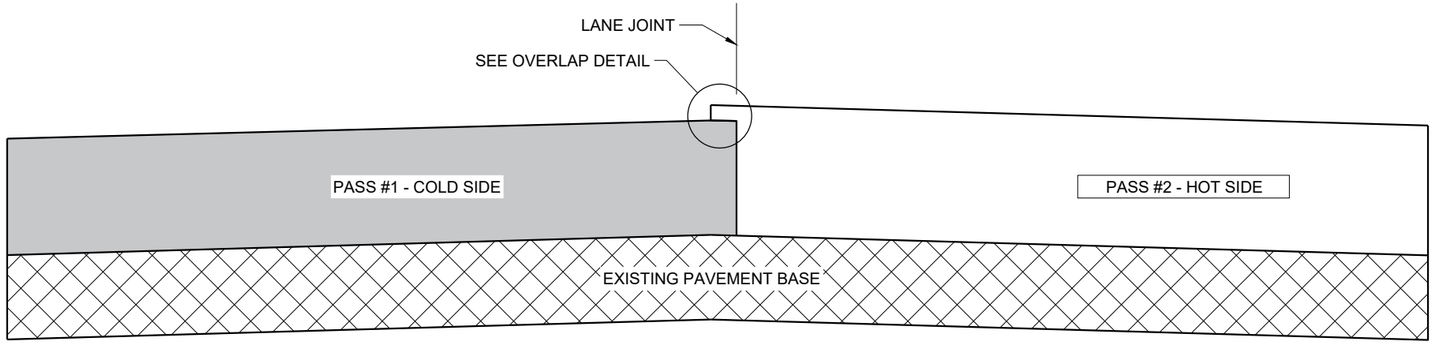
S.D.D. 13 A 5-5b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

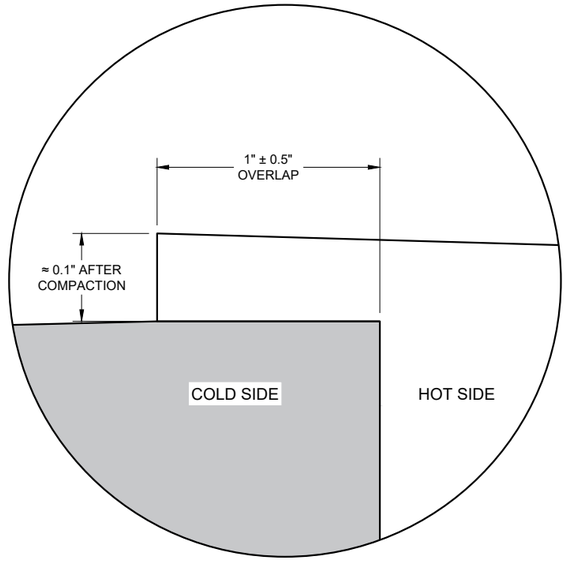
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

6

SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

GENERAL NOTES

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

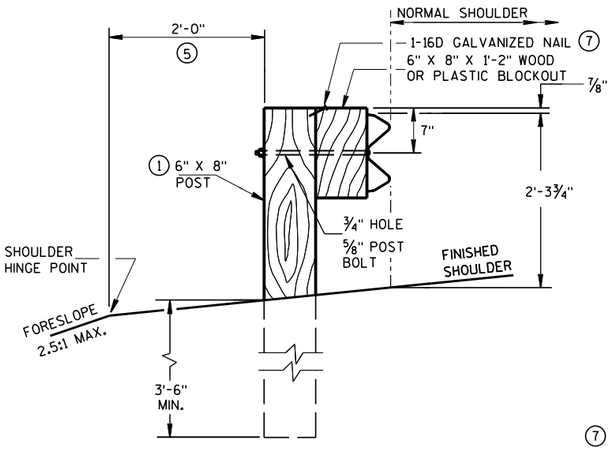
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

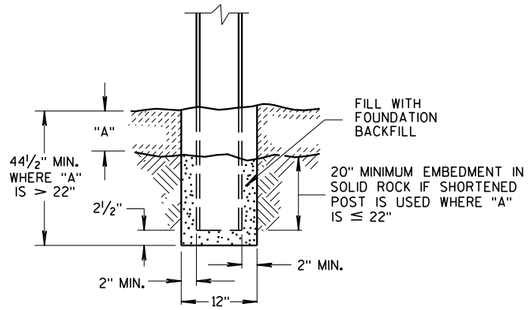
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

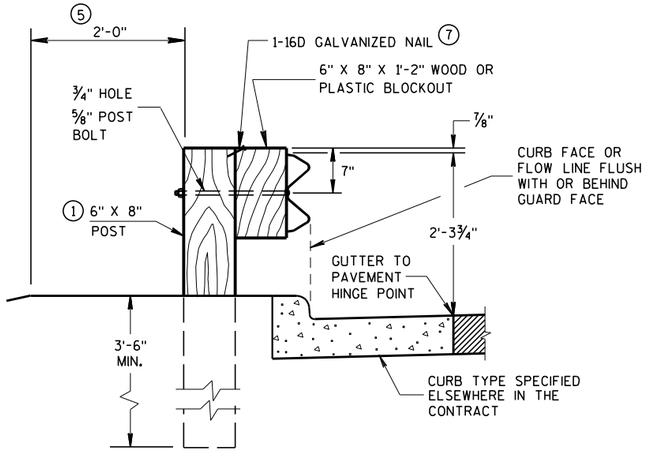
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



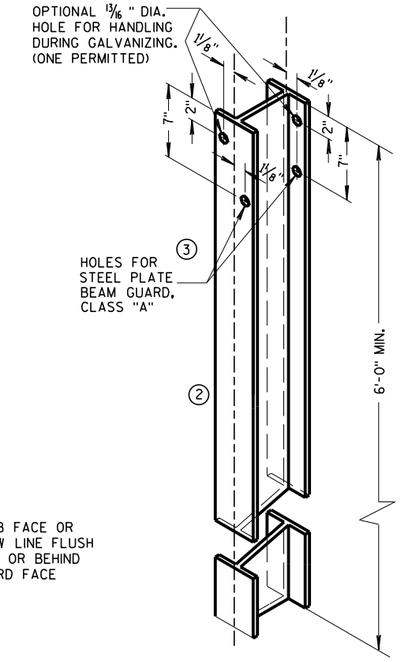
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)

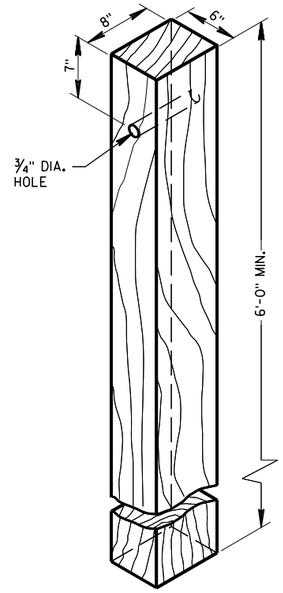


END VIEW
LOCATED ALONG A CURBED ROADWAY

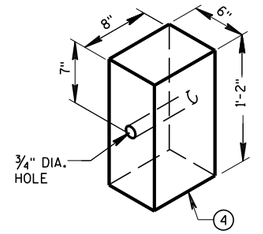


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

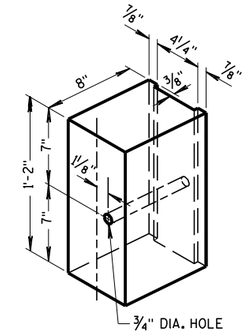
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



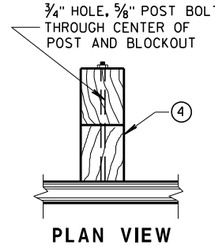
WOOD POST
(6"X8") NOMINAL



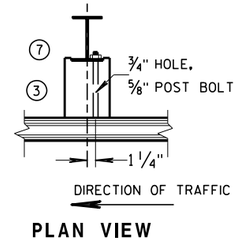
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



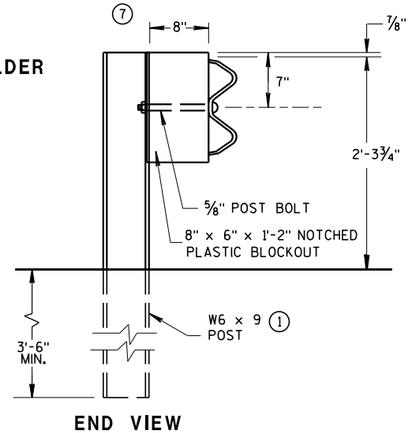
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



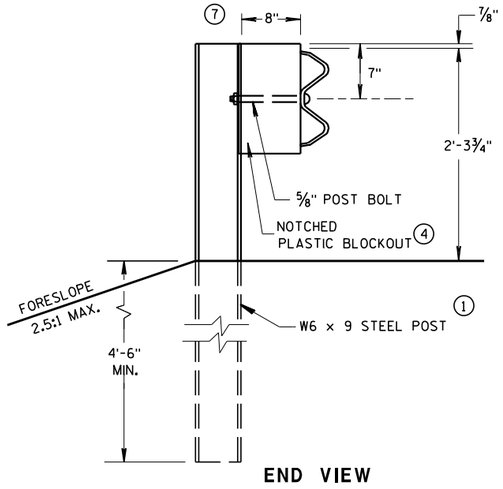
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



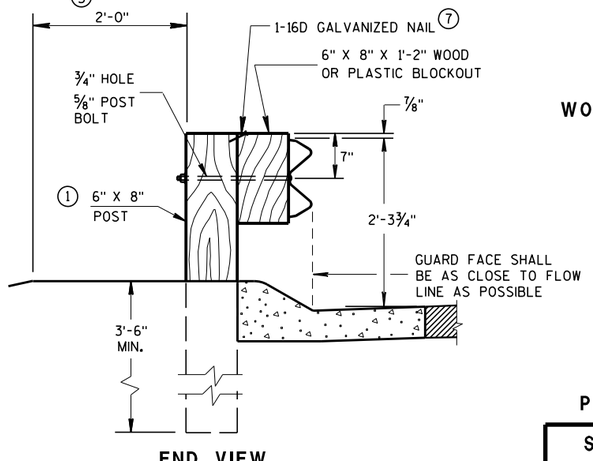
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

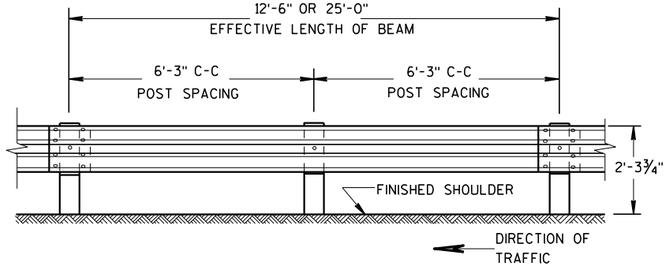
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

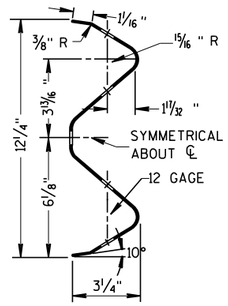
S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a

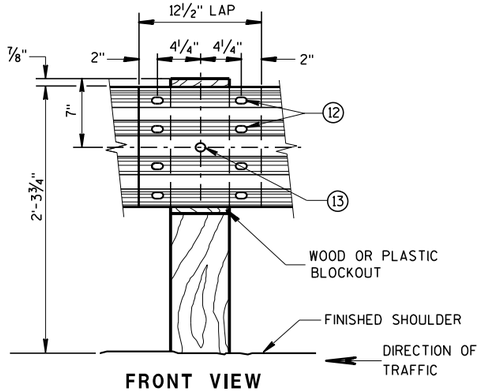


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

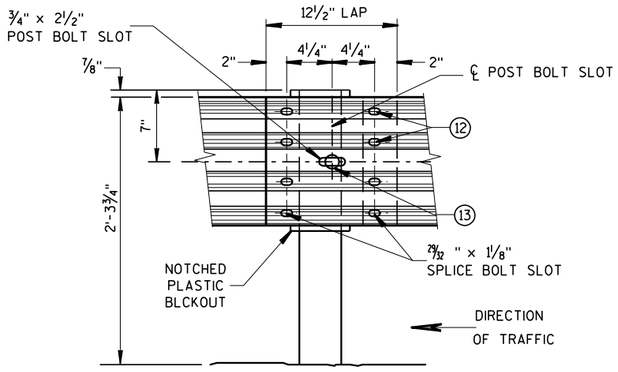
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

(12) 8 -5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.

FRONT VIEW

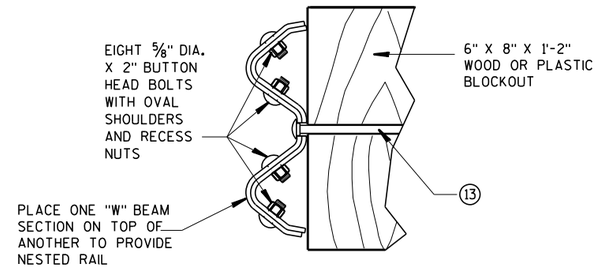
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

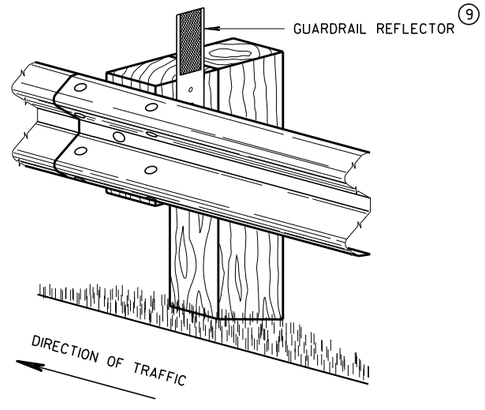
TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD



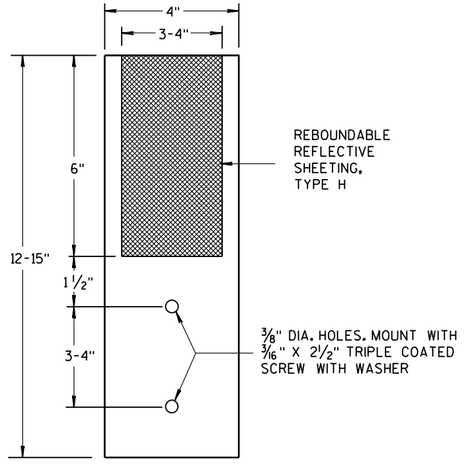
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



4" X 12" GUARDRAIL REFLECTOR DETAIL AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCO 23
DEPARTMENT OF TRANSPORTATION

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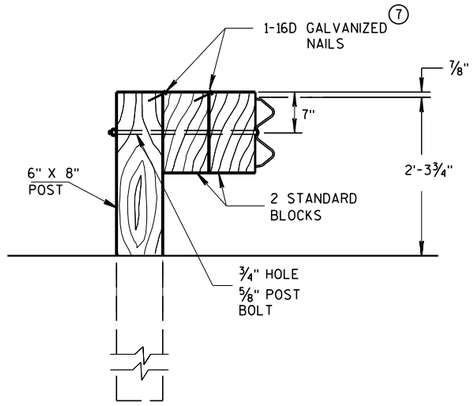
S.D.D. 14 B 15-11b

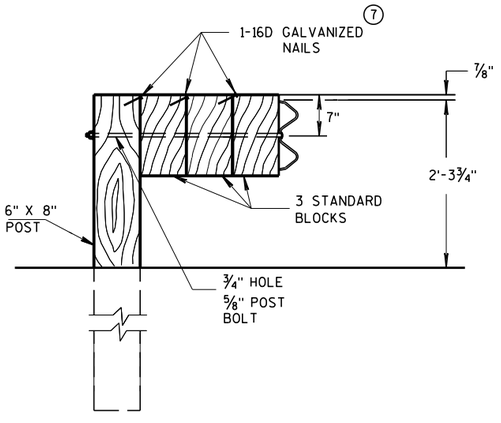
6

S.D.D. 14 B 15-11b



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

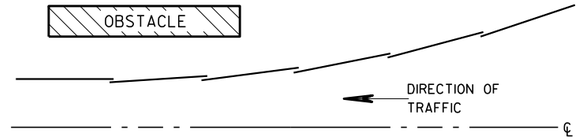


DETAIL FOR TRIPLE BLOCKS

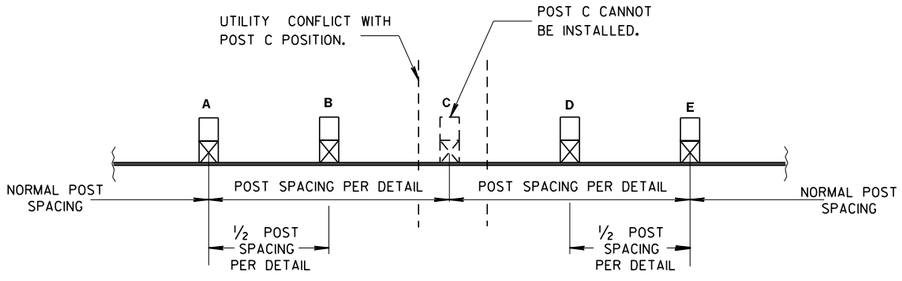
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.



PLAN VIEW
BEAM LAPPING DETAIL



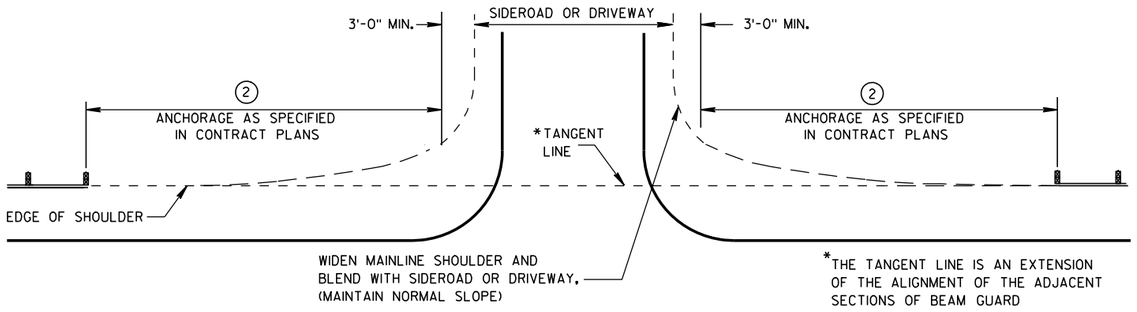
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

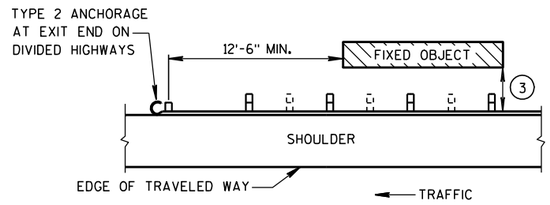
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

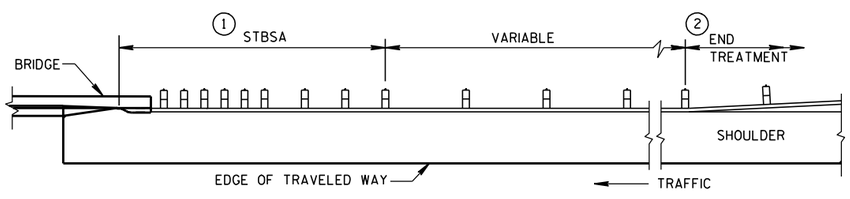
S.D.D. 14 B 15-11c



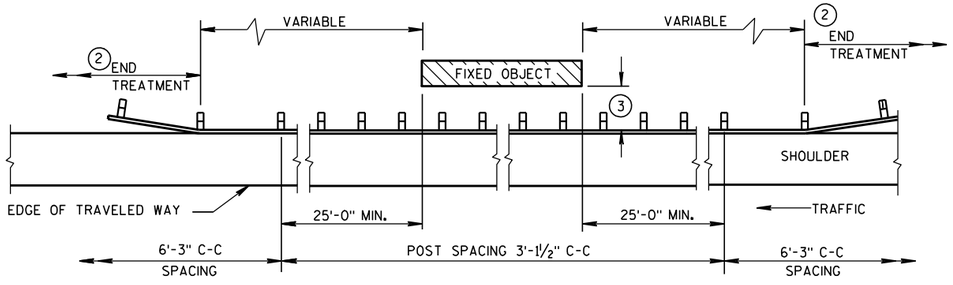
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

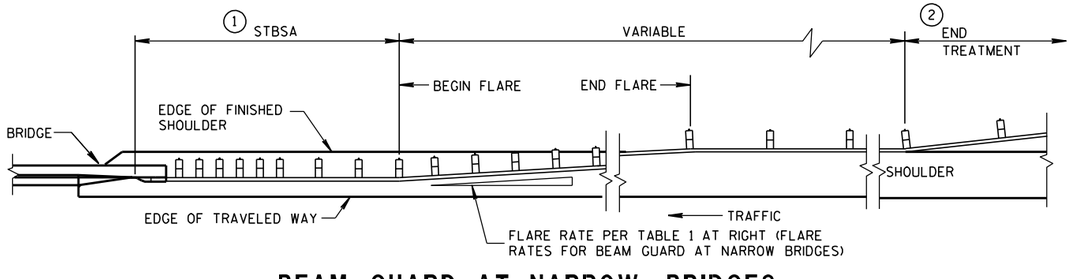


BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

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



BEAM GUARD AT NARROW BRIDGES

(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

GENERAL NOTES

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

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

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

(1) STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.

(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3)

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1½"
4'-6"	6' - 3"

TABLE 1
FLARE RATES FOR BEAM GUARD AT NARROW BRIDGES

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-21-07
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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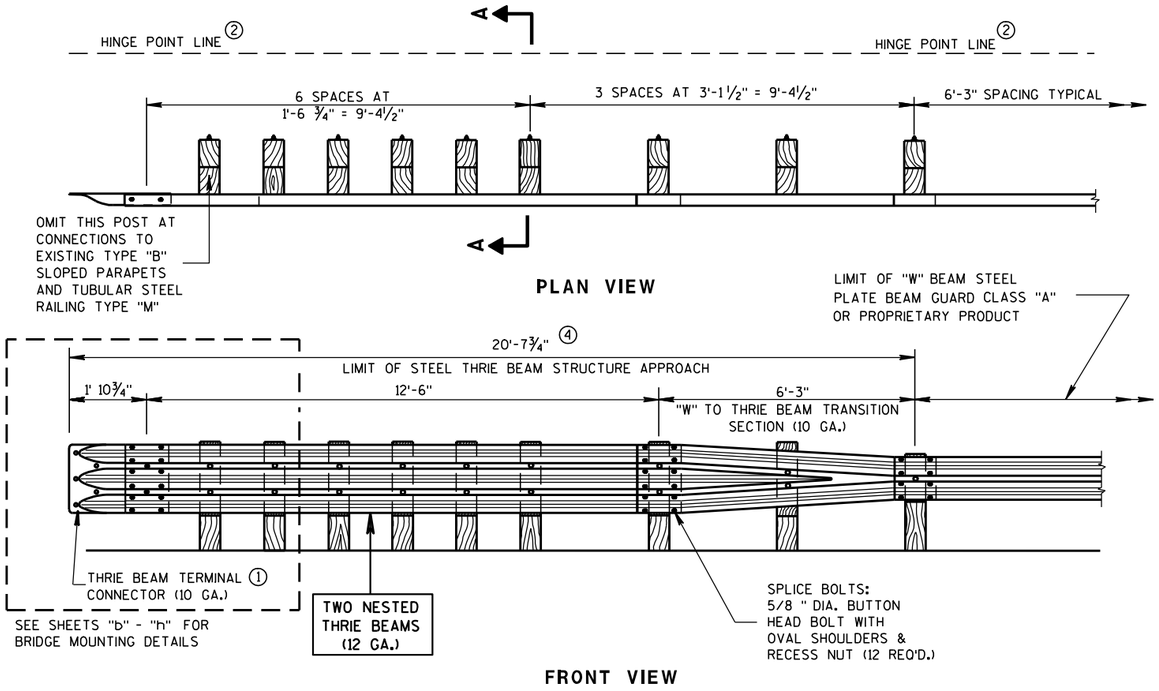


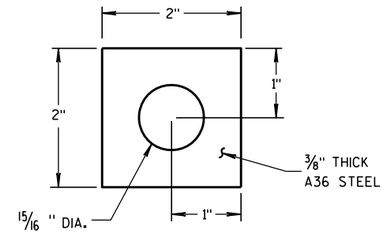


PLATE WASHER DETAIL

GENERAL NOTES

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

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

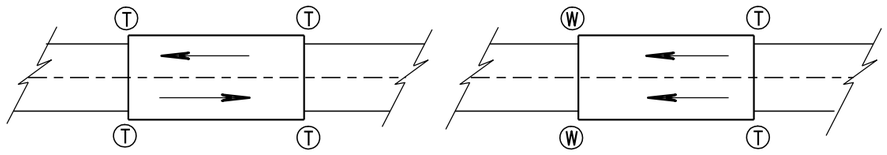
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



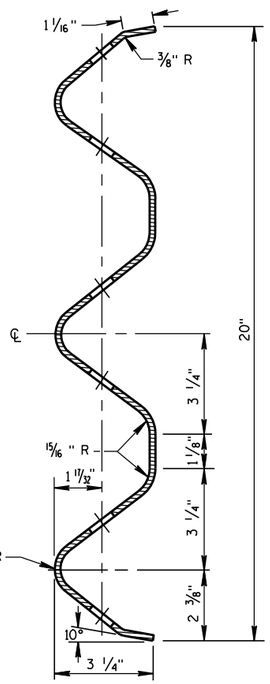
TWO WAY TRAFFIC

ONE WAY TRAFFIC

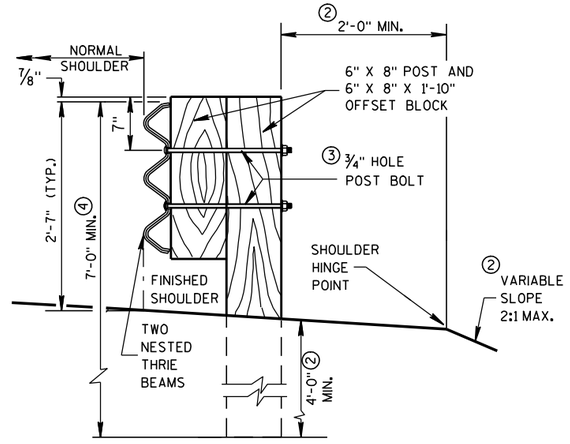
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

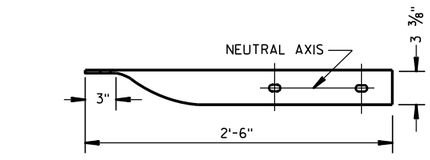
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

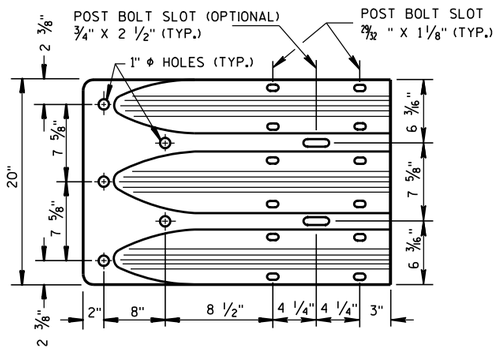


SECTION THRU THRIE BEAM RAIL ELEMENT

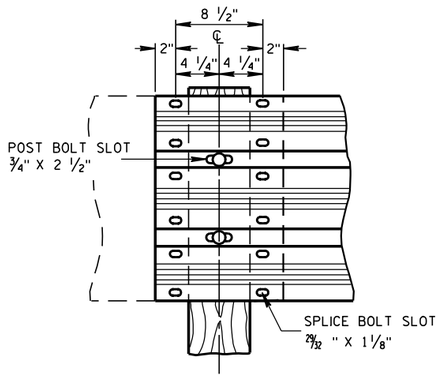


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

FHWA

GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

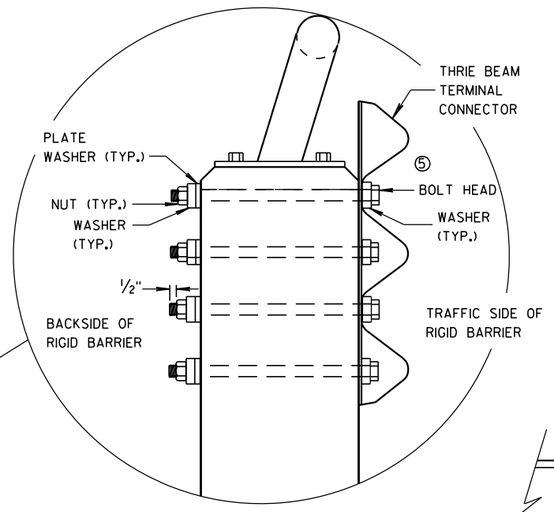
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. 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.

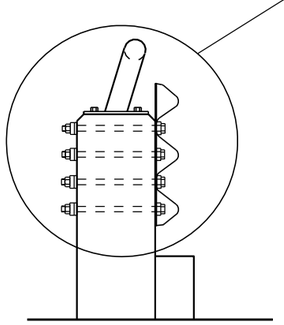
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

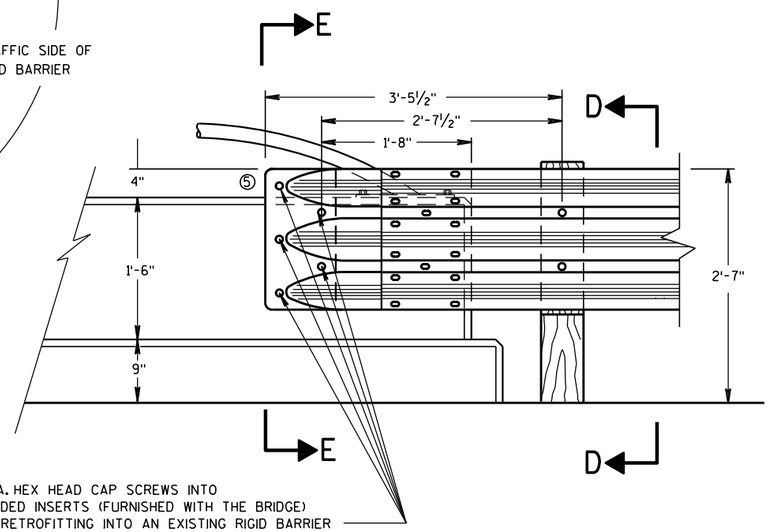
⑤ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.



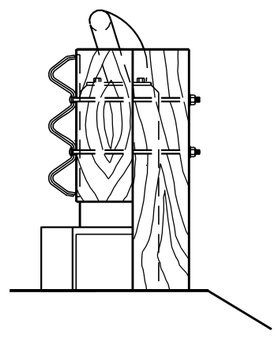


SECTION E-E



① ② 7/8" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER
7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

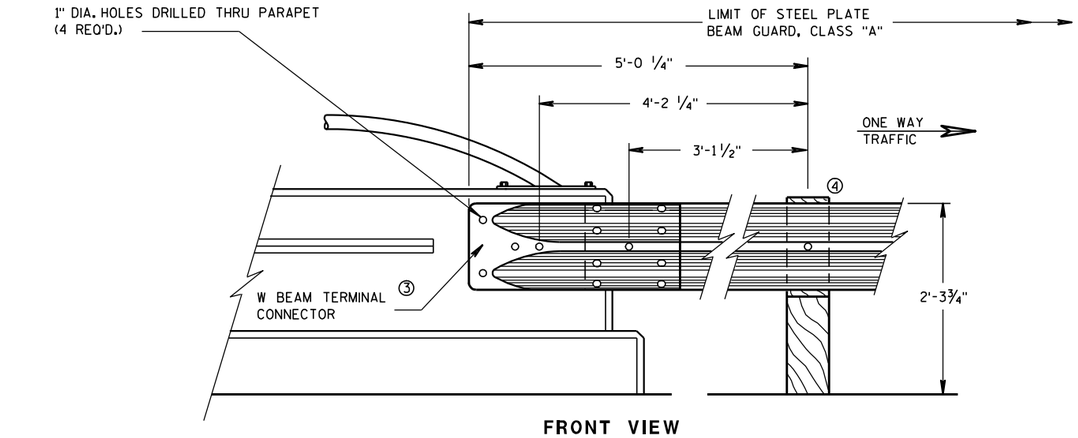
FRONT VIEW



SECTION D-D

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

① ② 7/8" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER
7/8" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER
7/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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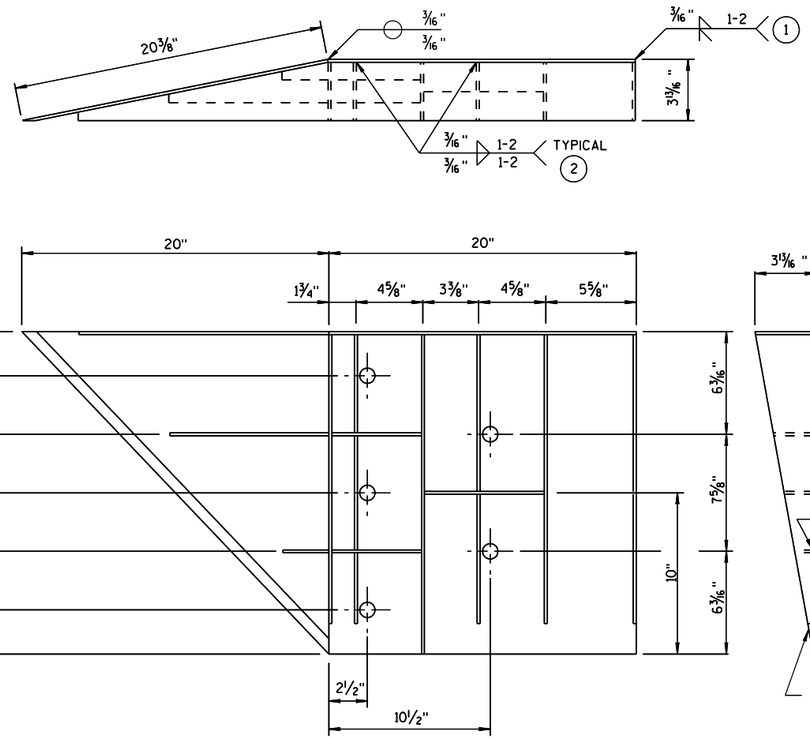

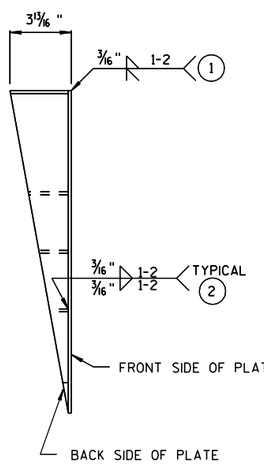

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

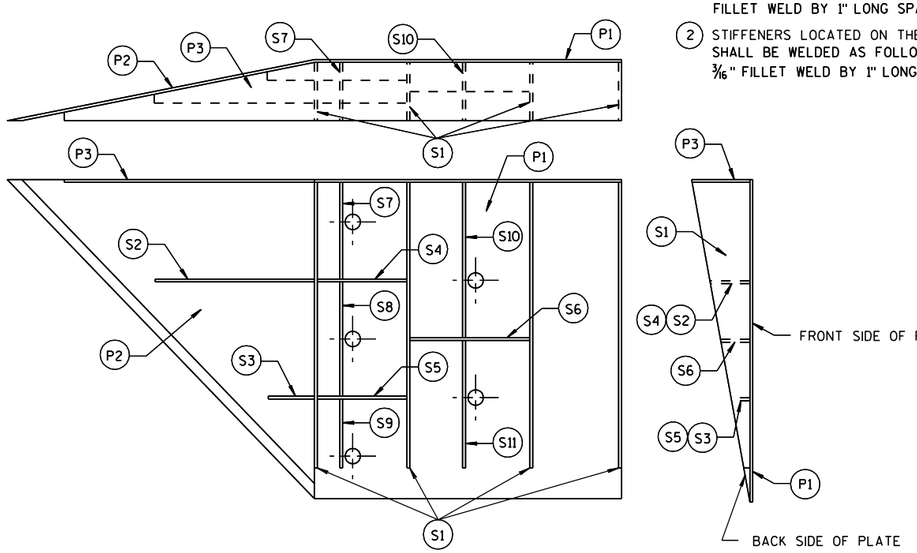

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE ⅜" THICK.

ALL STIFFENERS ARE ¼" 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.

① STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND ⅜" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

② STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
⅜" 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"	⅜"
P2	1		20" x 20" x 28⁹⁄₁₆"	⅜"
P3	1		39" x 3⅝" x 20" x 19⁵⁄₁₆"	⅜"
S1	4		18⁷⁄₁₆" x 3⅝" x 18¾"	¼"
S2	1		10¼" x 2⁷⁄₁₆" x 10⅜" x ½"	¼"
S3	1		3" x 1⅛" x 3⅛" x ½"	¼"
S4	1		6⅛" x 2⅞"	¼"
S5	1		6⅛" x 1⅛"	¼"
S6	1		7¾" x 1¾"	¼"
S7	1		2⁹⁄₁₆" x 6" x 3⅝" x 5⅞"	¼"
S8	1		1⁵⁄₃₂" x 7½" x 2½" x 7⅜"	¼"
S9	1		6⅛" x 6⅜" x 1³⁄₃₂"	¼"
S10	1		1⅞" x 9⅞" x 3⅝" x 9¹¹⁄₁₆"	¼"
S11	1		8½" x 8¾" x 1¹³⁄₁₆"	¼"

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6½"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

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

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

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

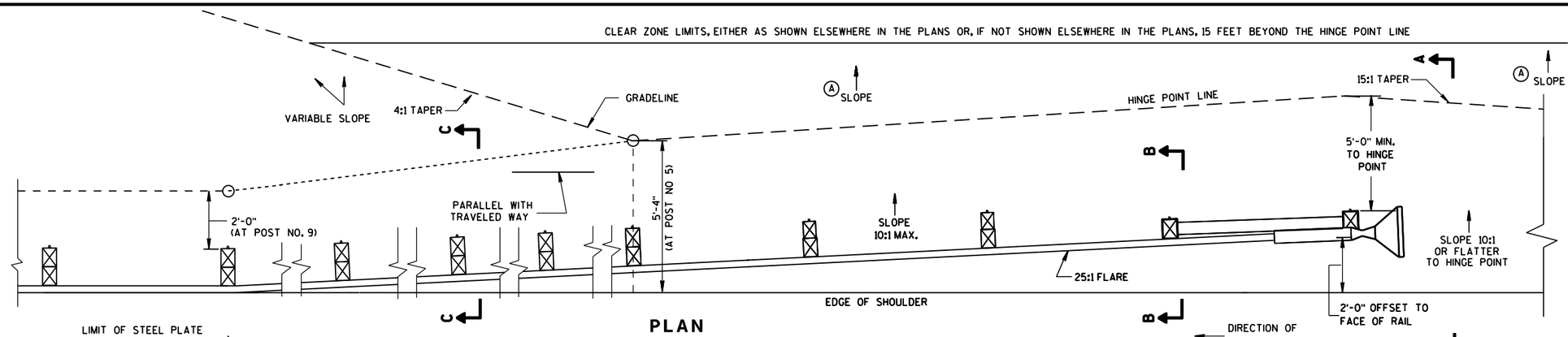
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

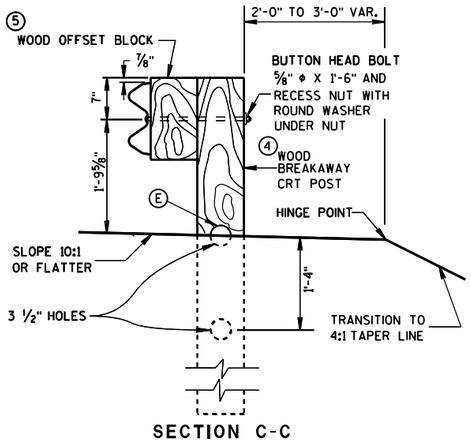
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

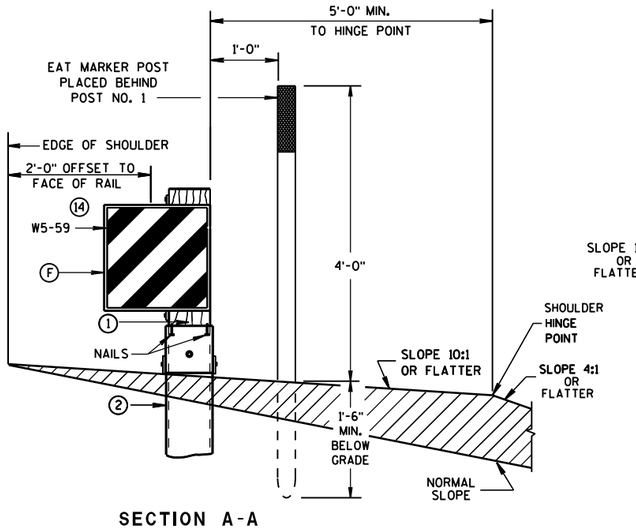
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

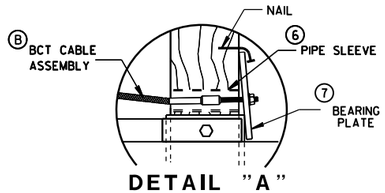
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

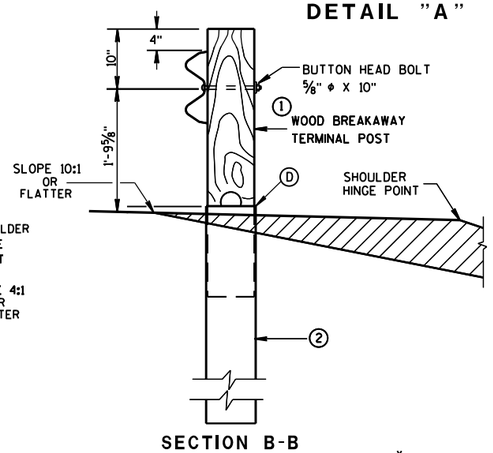
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

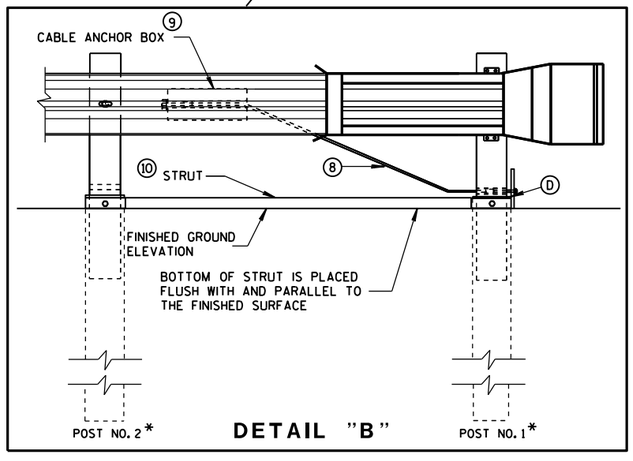












STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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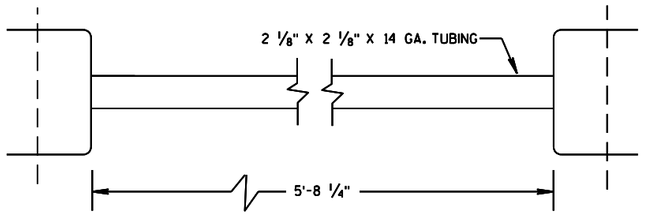
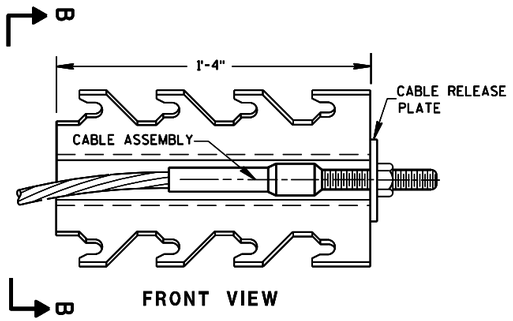
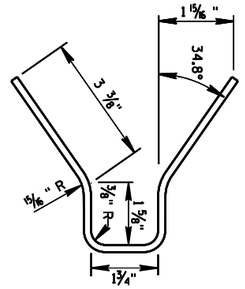
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL

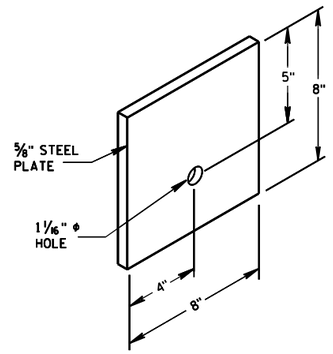


FRONT VIEW



SECTION B-B

⑨ CABLE ANCHOR BOX



⑦ STEEL BEARING PLATE

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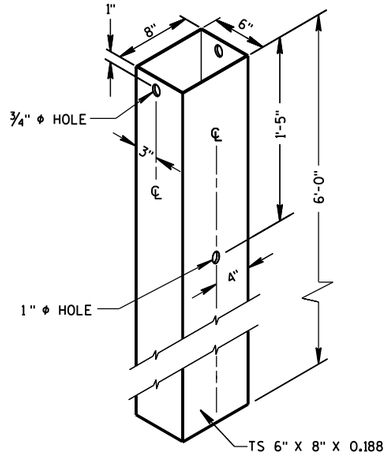
6

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

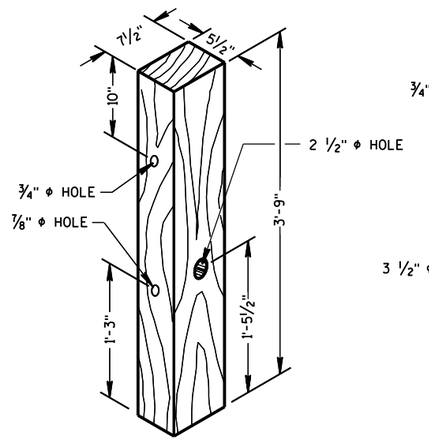
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

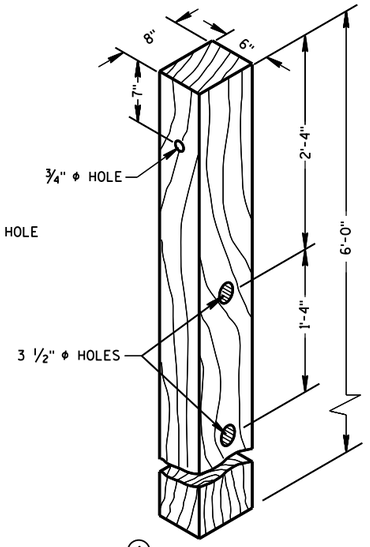
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



② 72" STEEL TUBE
(POSTS NO. 1-2



① TERMINAL POST

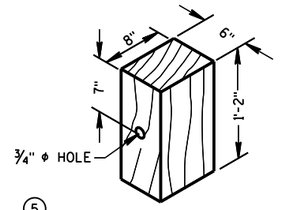


④ CRT POST
(POSTS NO'S 5-8)

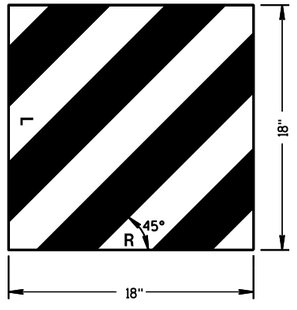
WOOD BREAKAWAY POSTS

GENERAL NOTES

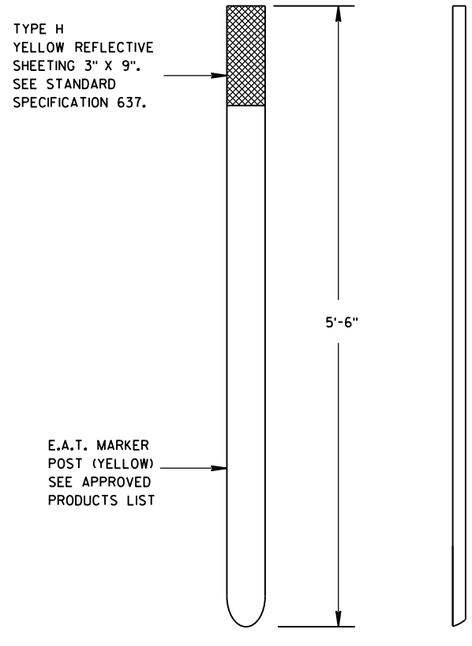
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



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



⑭ REFLECTIVE SHEETING DETAILS



E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS
UNIT SUPERV...

31

ENT

6

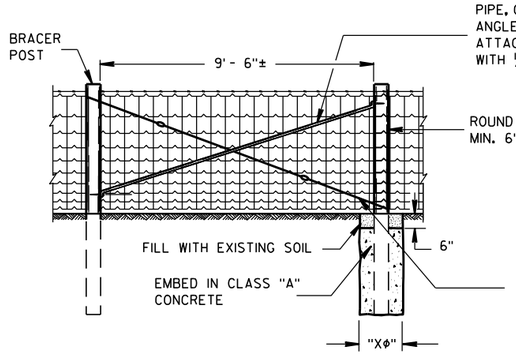
S.D.D. 14 B 24-9c

6

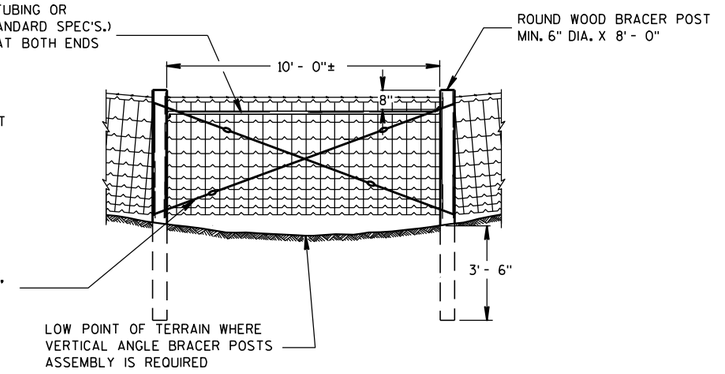
S.D.D. 14 B 24-9c

NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY



VERTICAL ANGLE BRACER POSTS ASSEMBLY

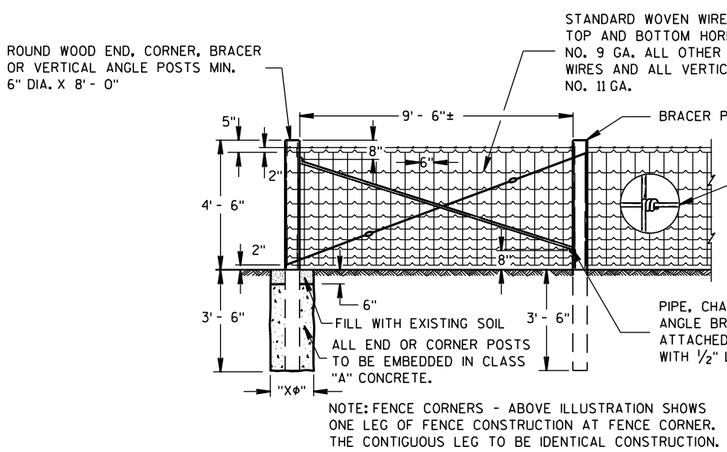
GENERAL NOTES

"XΦ" = DIAMETER OF THE POST PLUS 12".

FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

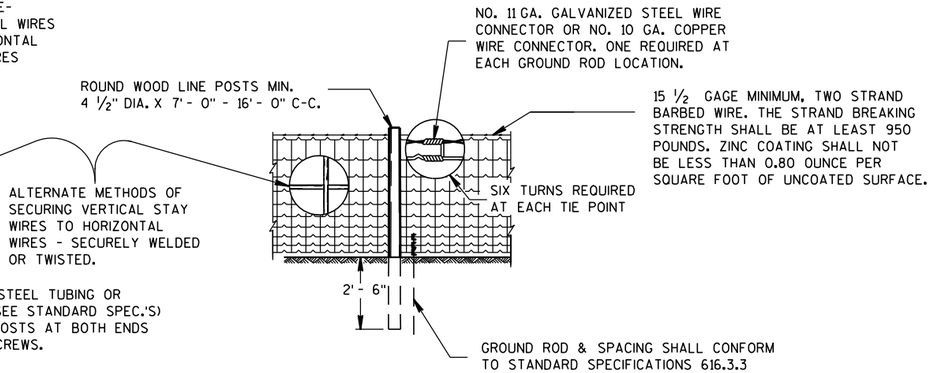
DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.



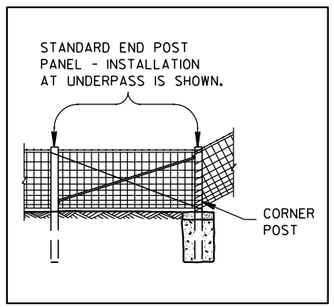
NOTE: FENCE CORNERS - ABOVE ILLUSTRATION SHOWS ONE LEG OF FENCE CONSTRUCTION AT FENCE CORNER. THE CONTIGUOUS LEG TO BE IDENTICAL CONSTRUCTION.

END OR CORNER POSTS ASSEMBLY

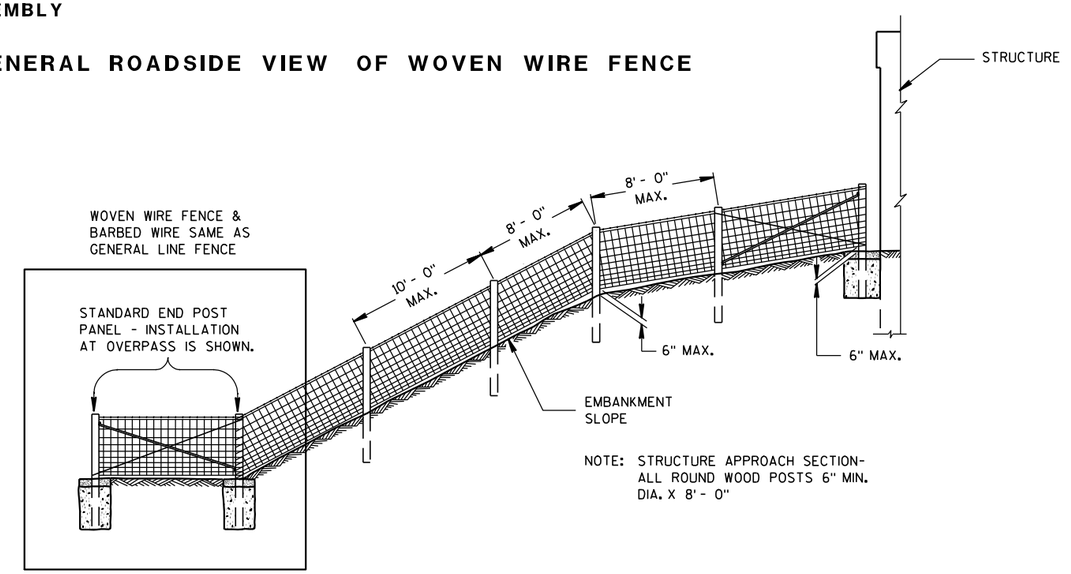


LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE



NOTE: STRUCTURE APPROACH SECTION- ALL ROUND WOOD POSTS 6" MIN. DIA. X 8' - 0"

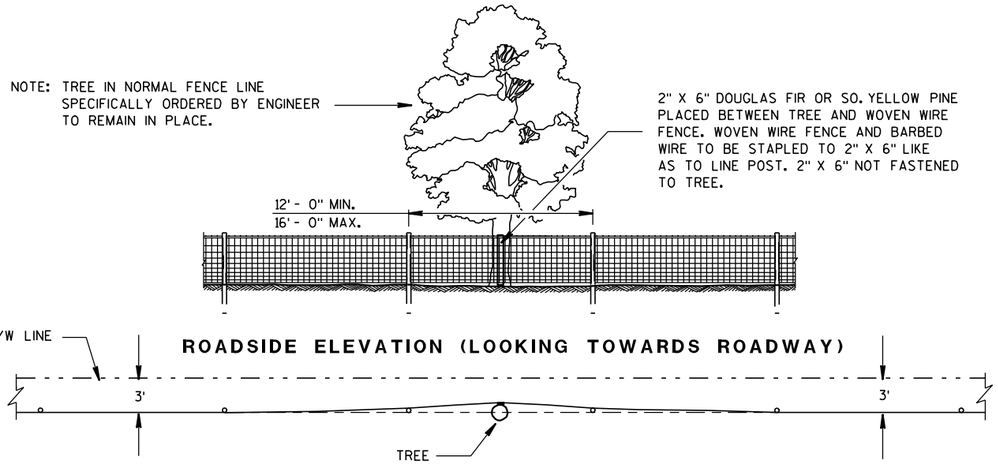
FENCE DESIGN AT STRUCTURE APPROACH

FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

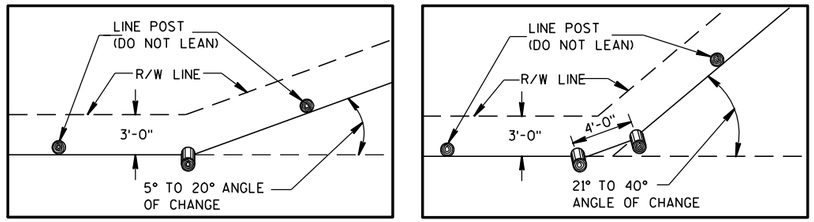
6

S.D.D. 15 B 1-8a



PLAN VIEW

FENCE DESIGN AT TREES REMAINING IN NORMAL FENCE LINE



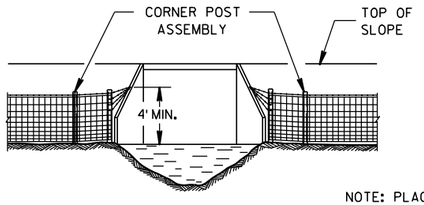
PLAN VIEW
SINGLE POST CORNER

PLAN VIEW
DOUBLE POST CORNER

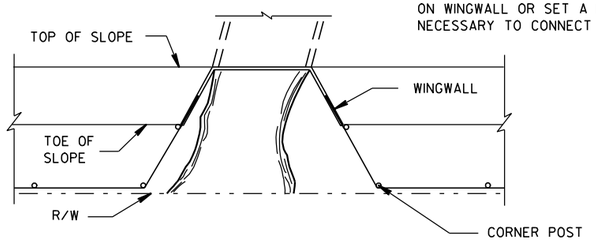
RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

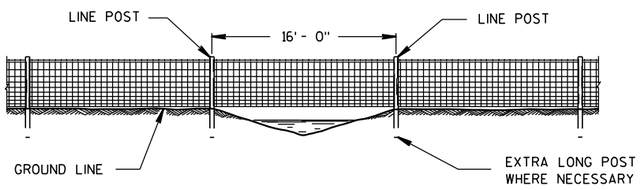
WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



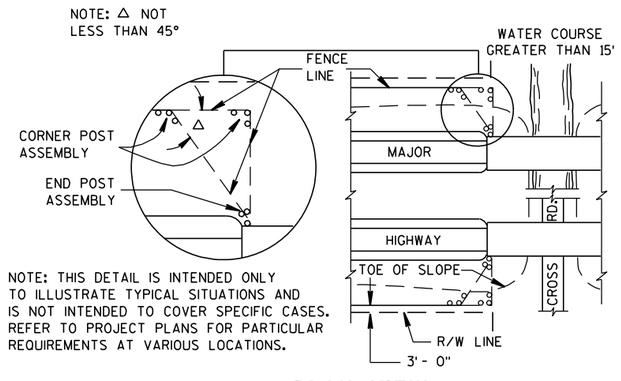
NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



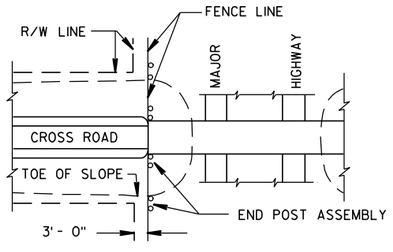
FENCE INSTALLATION TO WINGWALLS



FENCE CONSTRUCTION OVER STREAM COURSES OF 15 FT. OR LESS IN WIDTH



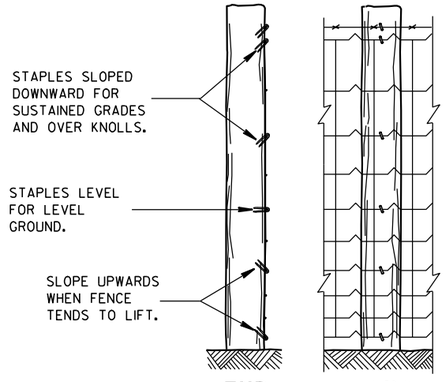
PLAN VIEW
MAJOR HIGHWAY OVERPASS OR STREAM COURSE CROSSING OF GREATER THAN 15 FT. IN WIDTH



PLAN VIEW
MAJOR HIGHWAY UNDERPASS

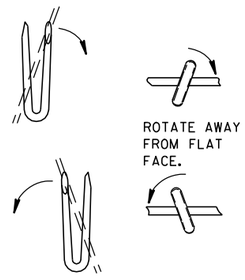
FENCE LOCATION AT STRUCTURES

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.



END ELEVATION **FARM SIDE ELEVATION**

FENCE MOUNTING DETAIL



LINE POST

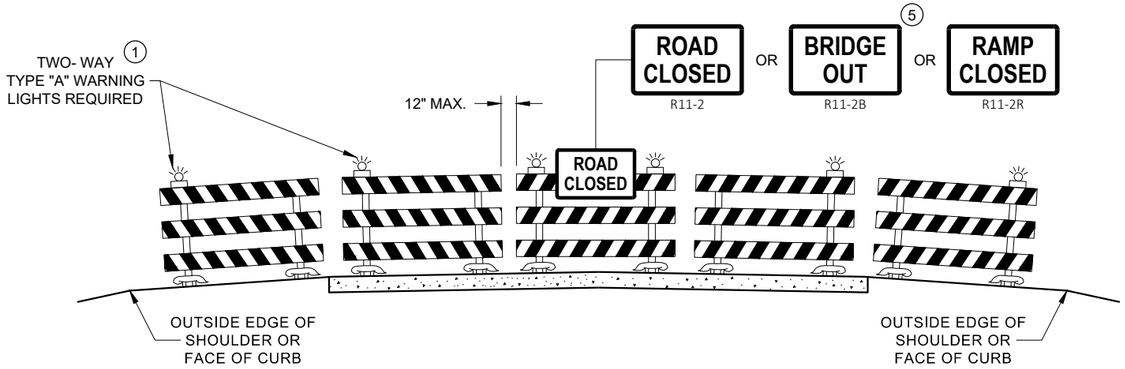
FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

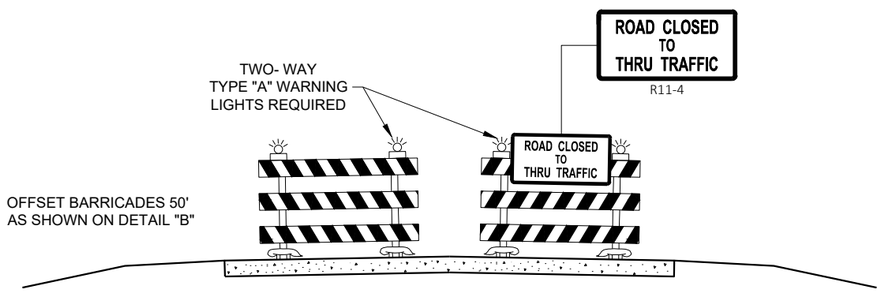
APPROVED
4/4/2008 — DATE
/S/ Jerry H. ---
ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 15 B 1-8b



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 15C02 - 08b

6

SDD 15C02 - 08b

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

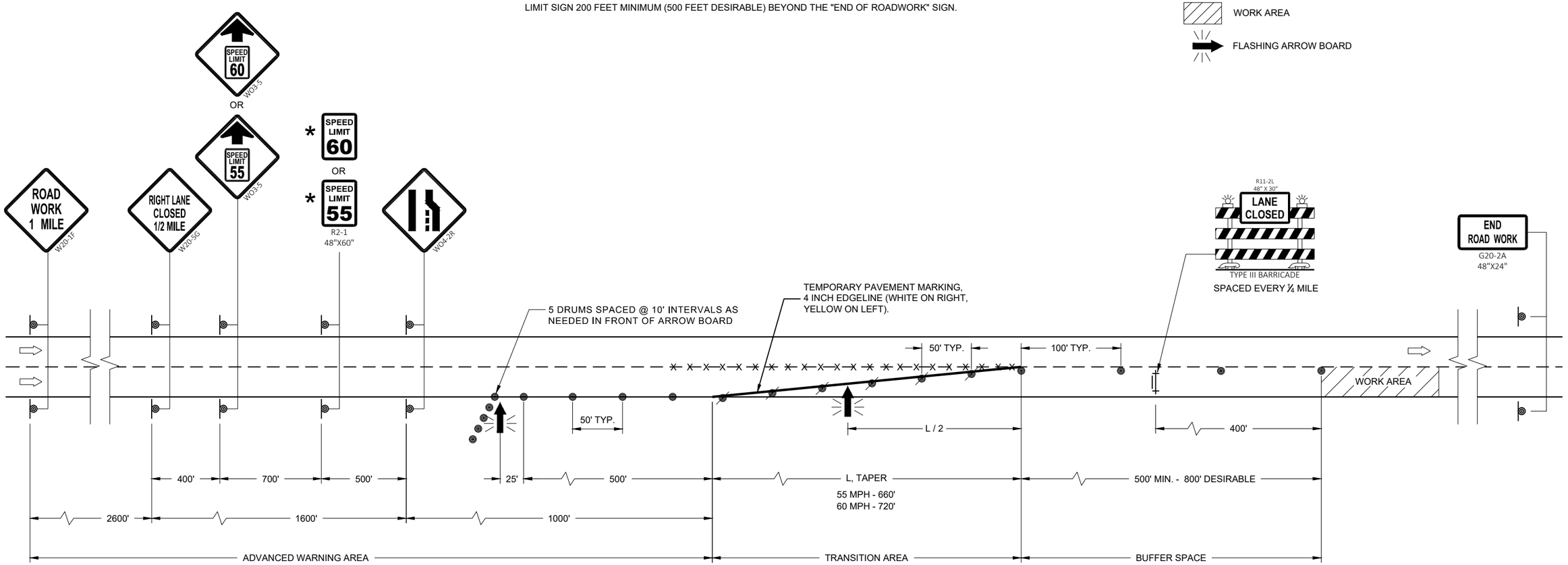
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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

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

LEGEND

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



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15D12 - 09b

SDD 15D12 - 09b

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- DIRECTION OF TRAFFIC
- WORK ZONE

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

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

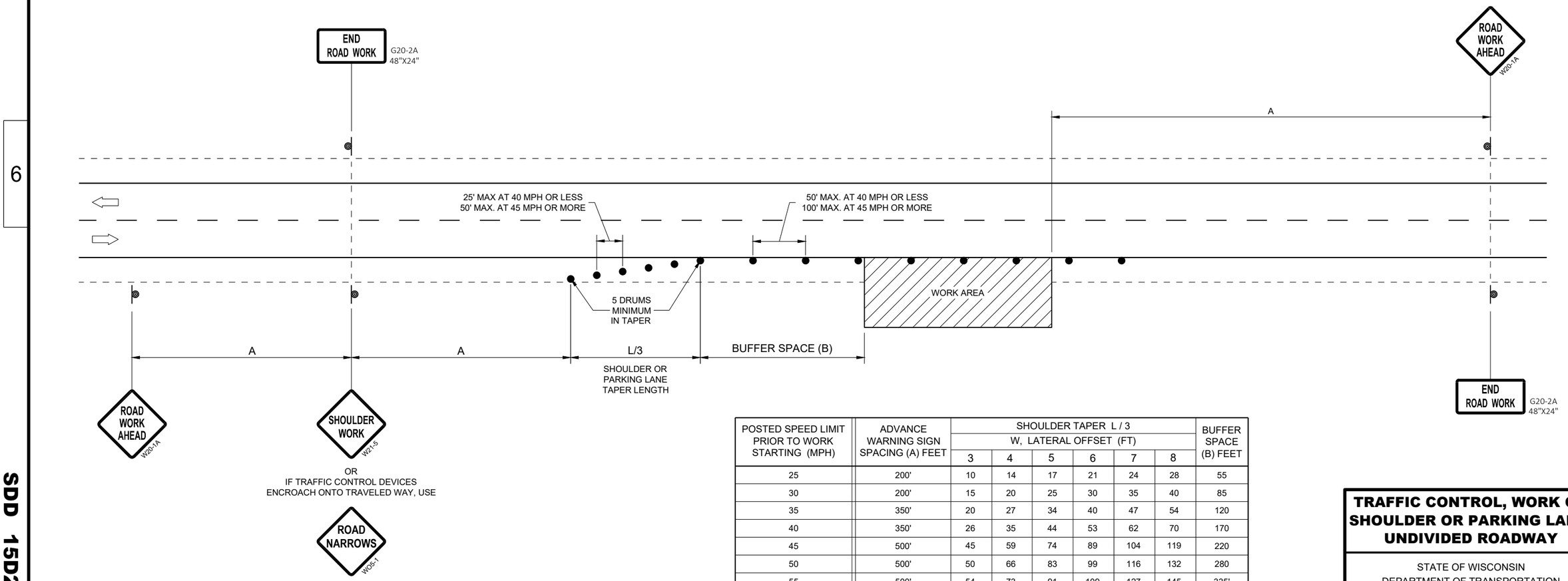
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

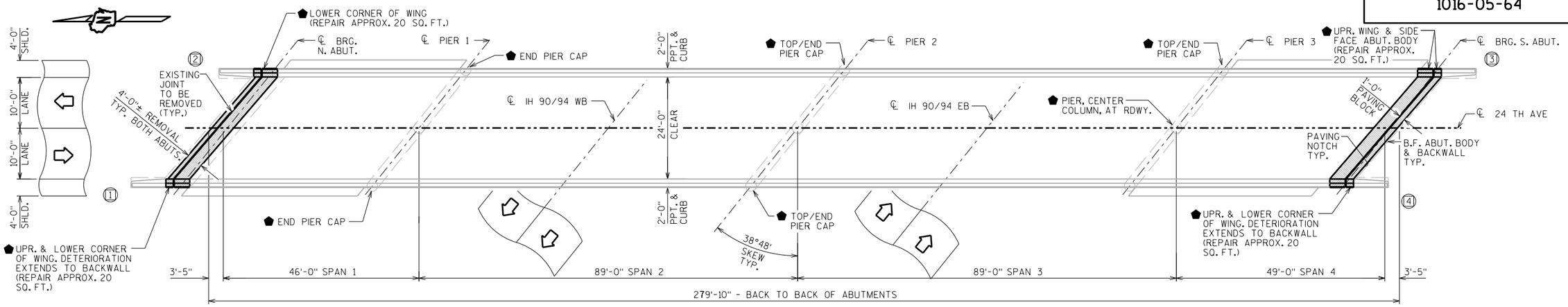
FHWA

6

SDD 15D28 - 04

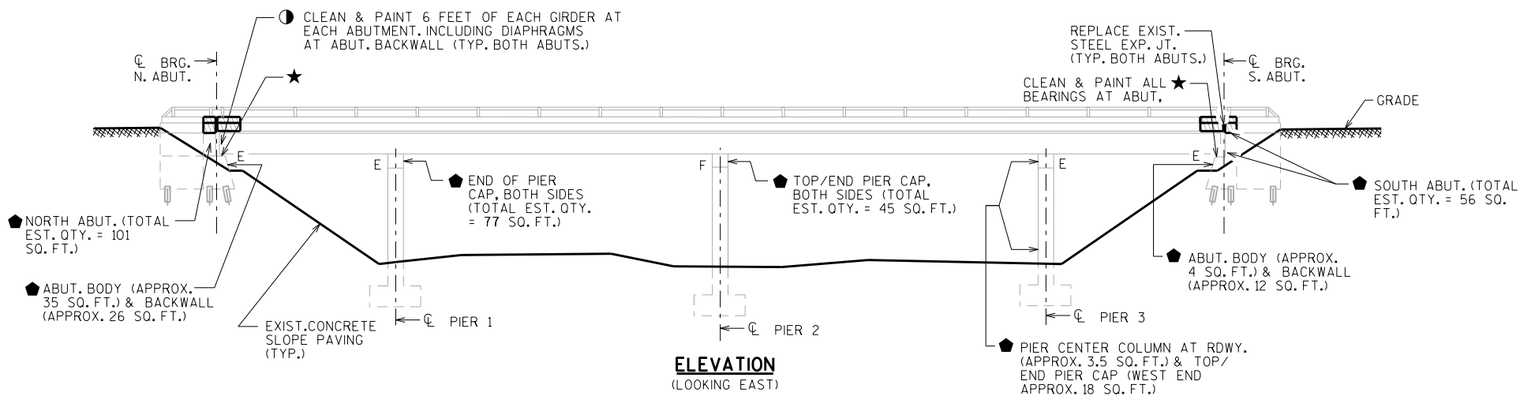
STATE PROJECT NUMBER

1016-05-64



PLAN

4 SPAN - STEEL GIRDERS



ELEVATION

(LOOKING EAST)

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.

SURFACE OF STEEL, AFTER CLEANING, TO MEET CLEANLINESS STANDARD SSPC-SP3. THE COLOR OF PAINT IS GRAY (AMS COLOR NO. 26293) OR SIMILAR COLOR APPROVED BY ENGINEER.

ANY EXCAVATION NECESSARY TO COMPLETE THE JOINT REPAIR AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "JOINT REPAIR".

ANY EXCAVATION NECESSARY TO COMPLETE SURFACE REPAIR TO ABUT BODY & WINGS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE SURFACE REPAIR".

AT JOINT REPAIR AREAS, PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF NEW DECK SURFACE, INCLUDING VERTICAL & HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT BACKWALL.

AT JOINT REPAIR AREAS, PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF NEW CURB & PARAPETS.

REMOVE EXISTING RAILING ON THE REMOVED LENGTH OF DECK & ABUT. WING PARAPETS. BID ITEM "REMOVING & RESETTING TUBULAR RAILING B-29-24" INCLUDES TEMPORARILY REMOVING & RESETTING EXISTING ALUMINUM POSTS AND TUBES AFTER REPLACEMENTS ARE COMPLETED. NEW ANCHOR BOLTS & SHIMS REQUIRED IN DECK REMOVAL LIMITS ALSO INCLUDED IN BID ITEM "REMOVING & RESETTING TUBULAR RAILING B-29-24".

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF BOTH ABUTMENTS BELOW EXPANSION DEVICES.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

DESIGN DATA

LIVE LOAD:

INVENTORY RATING: HS-13
OPERATING RATING: HS-28
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 190 (KIPS)
(10/17/2017 RATING, FROM HSI)

MATERIAL PROPERTIES:

CONCRETE MASONRY - ALL	f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60	fy = 60,000 P.S.I.
STRUCTURAL CARBON STEEL (A.S.T.M. A709 GRADE 36)	fy = 36,000 P.S.I.

TRAFFIC VOLUME

24 TH AVENUE	I.H. 90/94
A.D.T. = 155 (2008)	A.D.T. = 35,333 (2016)
R.D.S. = 55 MPH	R.D.S. = 70 MPH

LEGEND

★ CLEAN & PAINT ALL BEARINGS AT EACH ABUTMENT.

⬟ CONCRETE SURFACE REPAIR REQUIRED. LOCATIONS NOTED ON THIS SHEET MAY NOT BE ALL INCLUSIVE. QUANTITIES SHOWN ON SHEET 2 ARE APPROXIMATE. ADDITIONAL REPAIRS MAY BE REQUIRED DURING CONSTRUCTION AND SHOULD BE PERFORMED AS DIRECTED BY THE FIELD ENGINEER.

◑ CLEAN & PAINT AS DIRECTED BY ENGINEER, UNDER BID ITEM "STRUCTURE OVERCOATING CLEANING AND PRIMING B-29-24".

◯ INDICATES WING NUMBER ON EXIST. STRUCTURE

LIST OF DRAWINGS

STRUCTURE DESIGN CONTACTS:

ALEXANDER CRABTREE (608) 266-3686
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

WISCONSIN DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURES

ACCEPTED _____ LLS 1/20/22
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-29-24

24TH AVE OVER IH 90/94

COUNTY JUNEAU | CITY LYDON STATION

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
ARC	MWB	MJH	ARC

GENERAL PLAN

SHEET 1 OF 7

37

I.D. 1016-05-34A DATE: JAN 2022

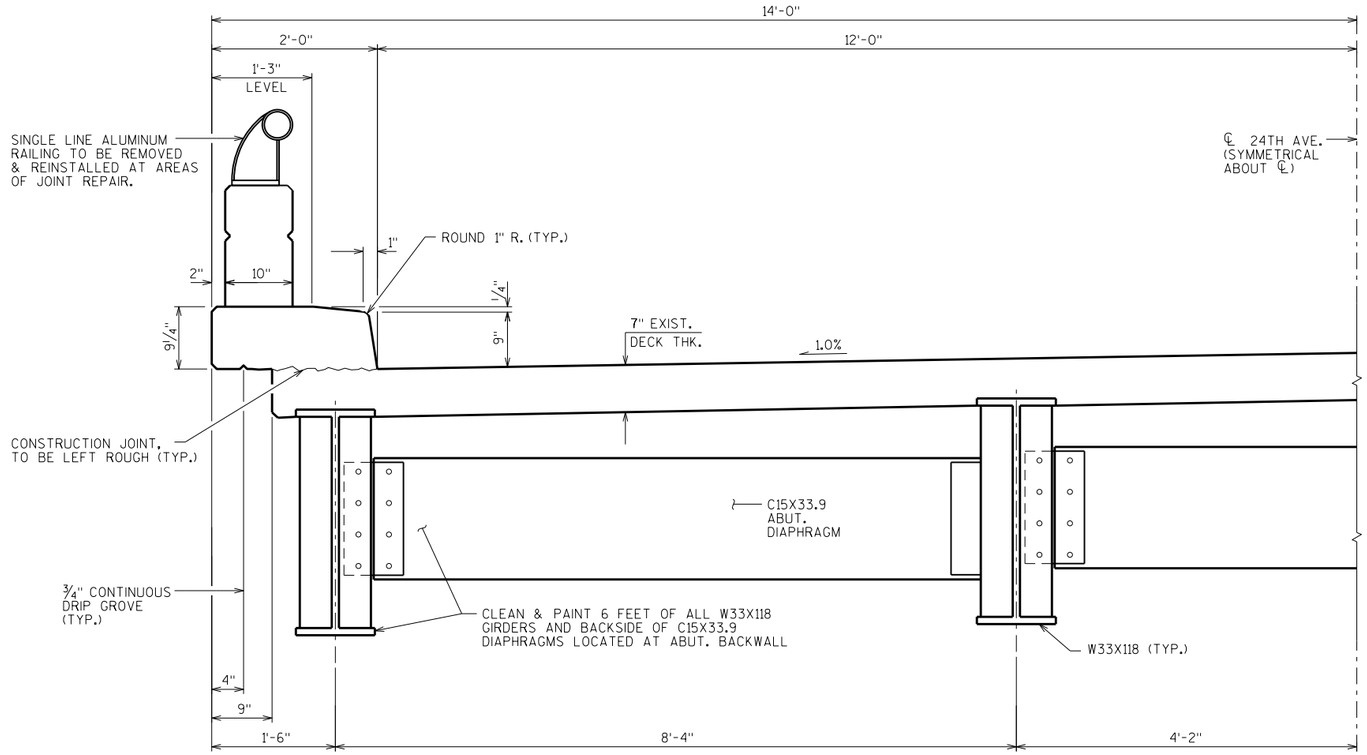
SCALE = 12.00

8

8

STATE PROJECT NUMBER

1016-05-64



HALF CROSS SECTION THRU ROADWAY

(LOOKING NORTH)

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	NORTH ABUT.	PIER 1	PIER 2	PIER 3	SOUTH ABUT.	TOTALS
	502.3101	EXPANSION DEVICE B-29-24	LF	———	31	———	———	———	31	62
	502.3200	PROTECTIVE SURFACE TREATMENT	SY	41	———	———	———	———	———	41
	502.3210	PIGMENTED SURFACE SEALER	SY	11	———	———	———	———	———	11
	502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	———	39	———	———	———	39	78
	505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	———	1,400	———	———	———	1,400	2,800
	509.1000	JOINT REPAIR	SY	33	———	———	———	———	———	33
	509.1500	CONCRETE SURFACE REPAIR	SF	———	101	77	45	22	56	301
	509.2100.S	CONCRETE MASONRY DECK REPAIR	CY	12	———	———	———	———	———	12
	513.9006.S	REMOVING AND RESETTING TUBULAR RAILING B-29-24	EACH	1	———	———	———	———	———	1
☆	517.3001.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-29-24	EACH	1	———	———	———	———	———	1
	517.4001.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-29-24	EACH	1	———	———	———	———	———	1
	SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	———	4	———	———	———	4	8
		NON-BID ITEMS								
		BRIDGE SEAT PROTECTION	LS	———	———	———	———	———	———	1

☆ ESTIMATED PAINTING AREA IS 560 SF

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-24

DRAWN BY MJH | PLANS CK'D. ARC

CROSS SECTION & QUANTITIES

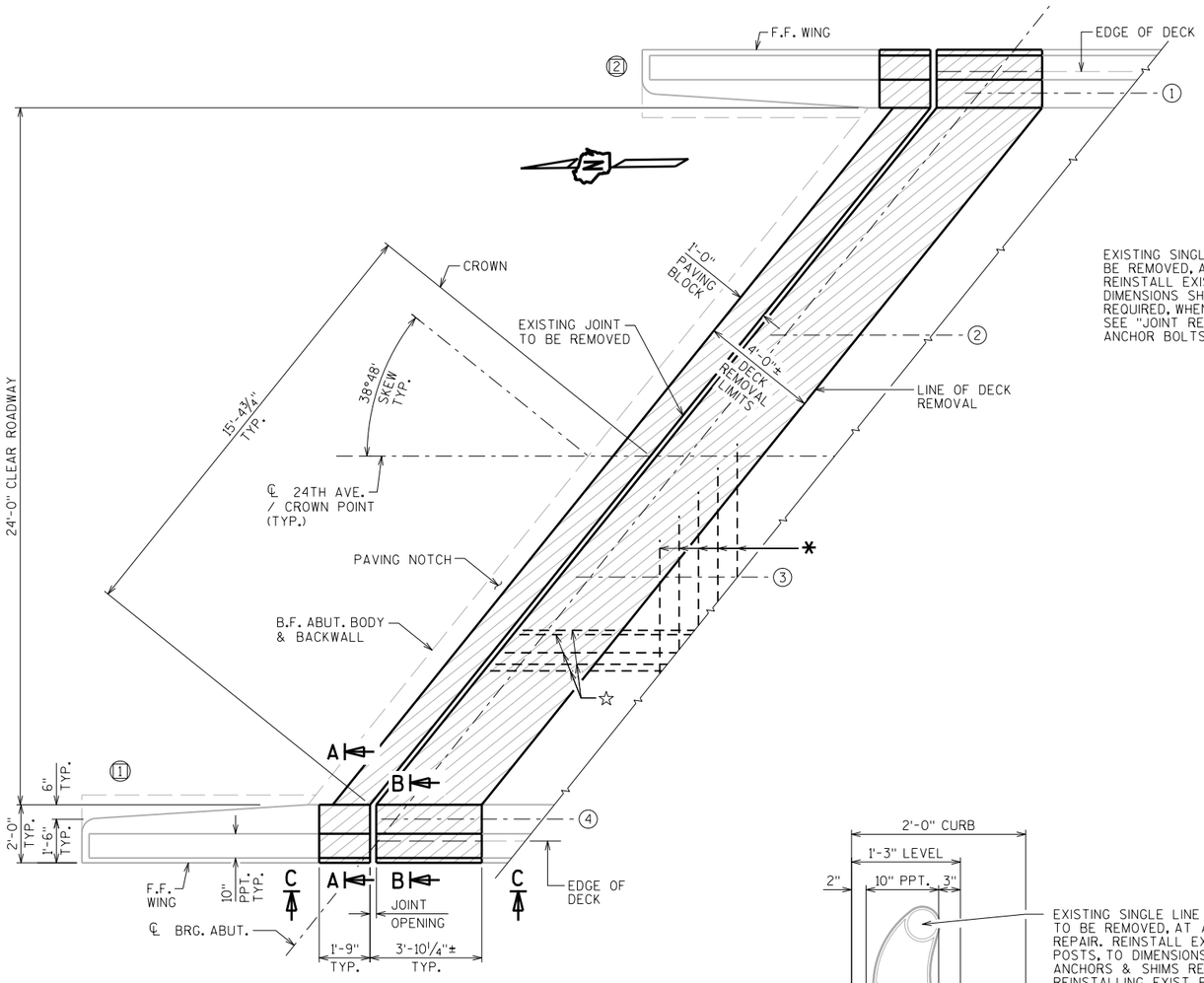
SHEET 2

38

SCALE = 8.00

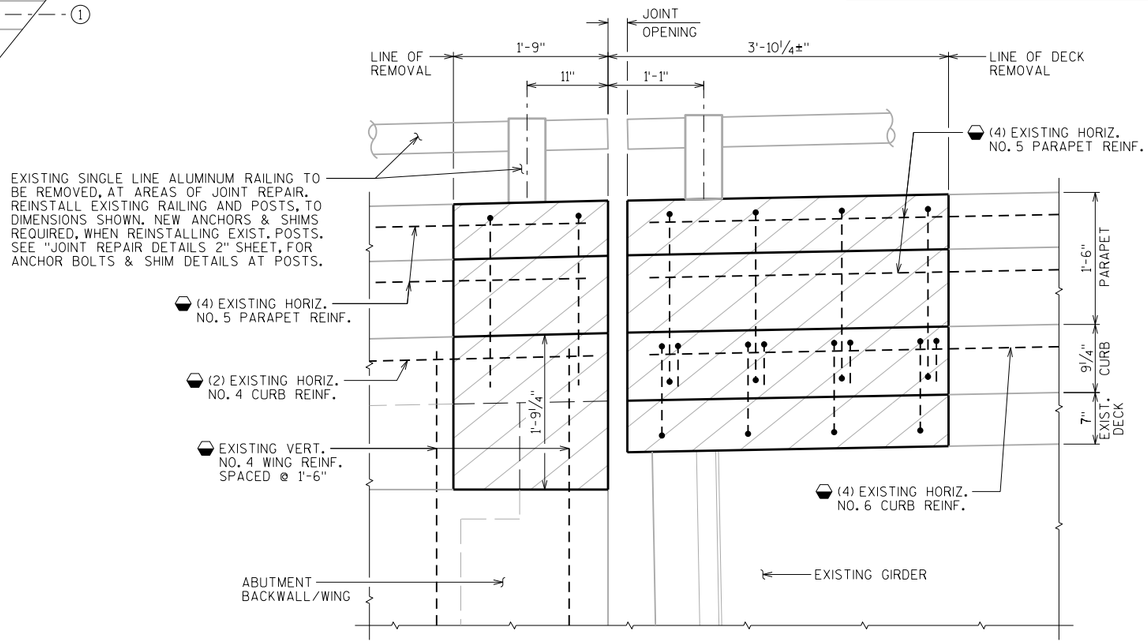
STATE PROJECT NUMBER

1016-05-64



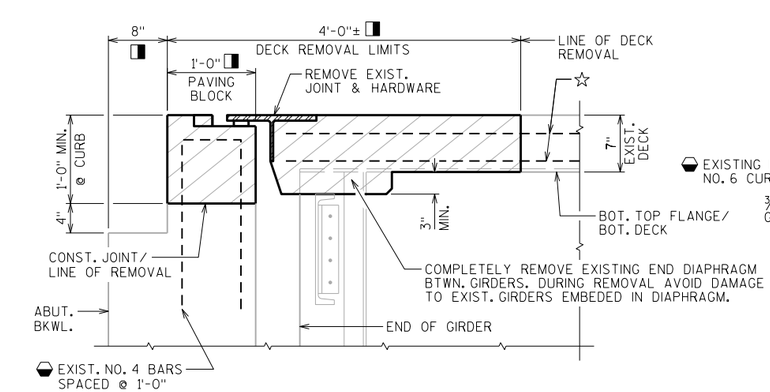
JOINT REMOVAL PLAN

(NORTH ABUT. SHOWN - SOUTH ABUT. SIMILAR)



SECTION C-C

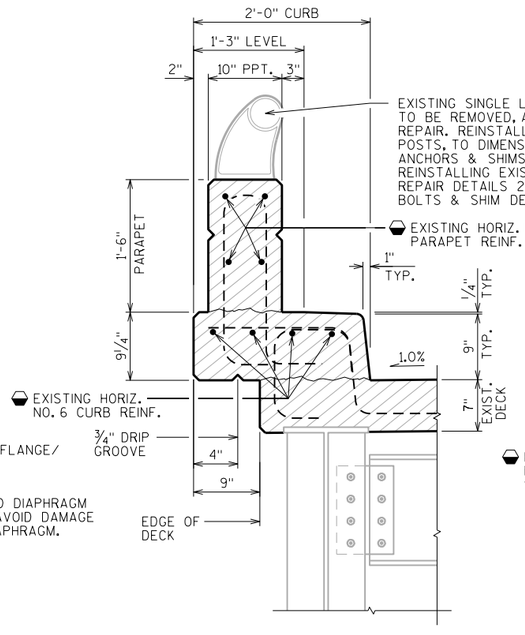
(WING 1 SHOWN - ALL OTHER WINGS SIMILAR)



JOINT REMOVAL SECTION

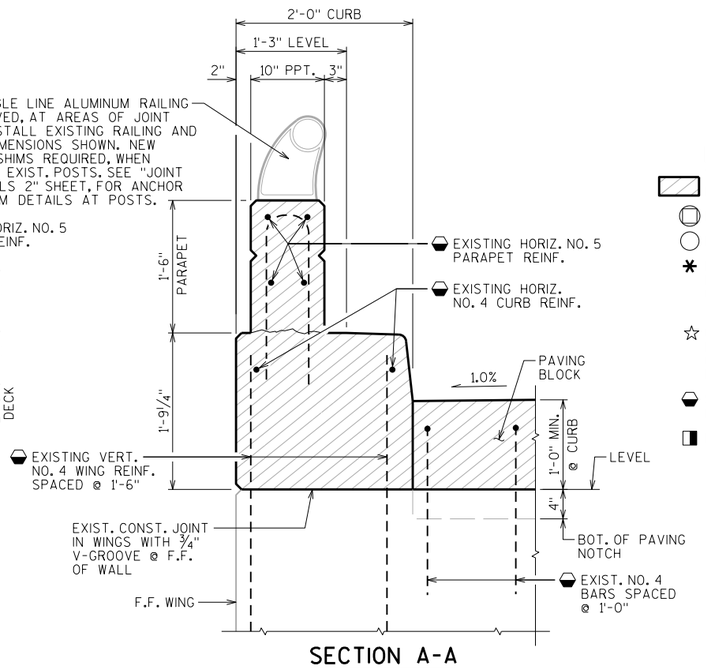
NORMAL TO ℄ OF SUBSTRUCTURE

(EXISTING DECK SIDE HARDWARE NOT SHOWN FOR CLARITY)



SECTION B-B

(SHOWING REMOVAL AT DECK SIDE OF JOINT)



SECTION A-A

(SHOWING REMOVAL AT PAVING BLOCK SIDE OF JOINT)

LEGEND

- INDICATES REMOVAL LIMITS
- INDICATES WING NUMBER
- DENOTES EXISTING GIRDER NUMBER
- ✱ EXISTING TOP & BOTTOM TRANSVERSE DECK REINFORCEMENT, PLACED NORMAL TO GIRDERS (@ 8" SPACING). SAVE & INCORPORATE 1'-6" MIN. NEW TRANSVERSE REINF. TO BE PLACED ALONG SKEW.
- ☆ CLEAN, STRAIGHTEN & INCORPORATE EXIST. LONGIT. DECK, CURB AND PARAPET REINF. INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENTS ARE VIOLATED.
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- DIMENSION MEASURED NORMAL TO ℄ SUBSTRUCT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-24

DRAWN BY MJH | PLANS CK'D. ARC

JOINT REPAIR REMOVAL DETAILS

SHEET 3

39

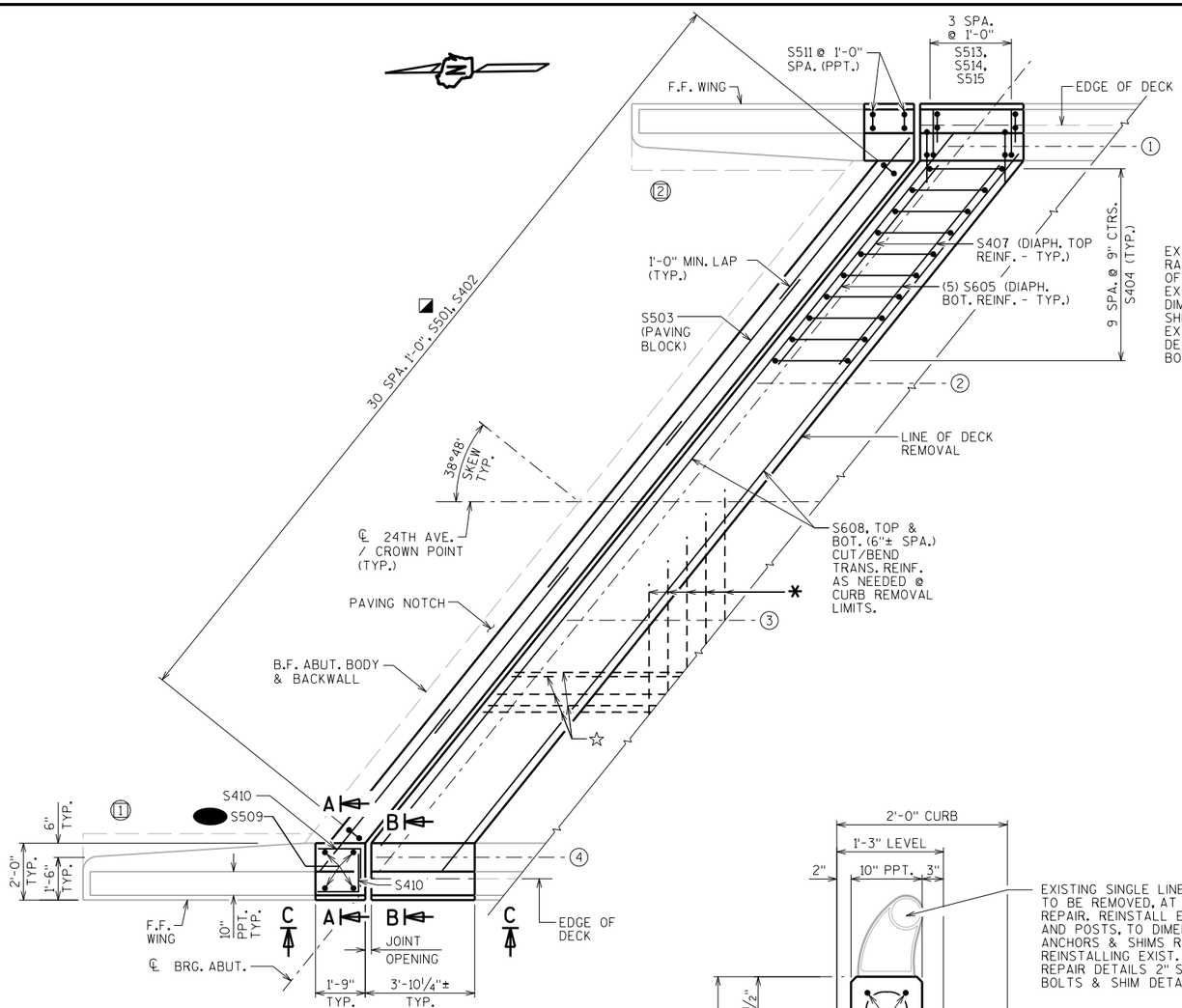
SCALE = 2.50

8

8

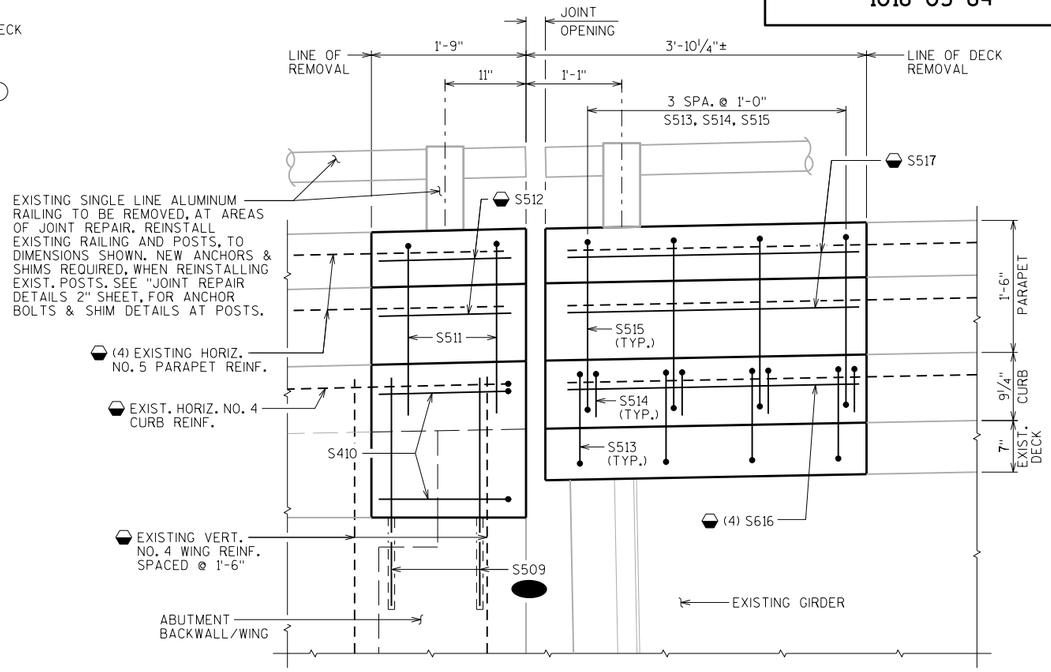
STATE PROJECT NUMBER

1016-05-64



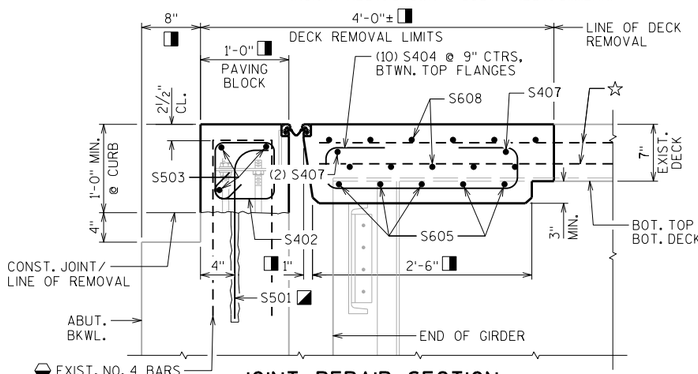
JOINT REPAIR PLAN

(NORTH ABUT. SHOWN - SOUTH ABUT. SIMILAR)



SECTION C-C

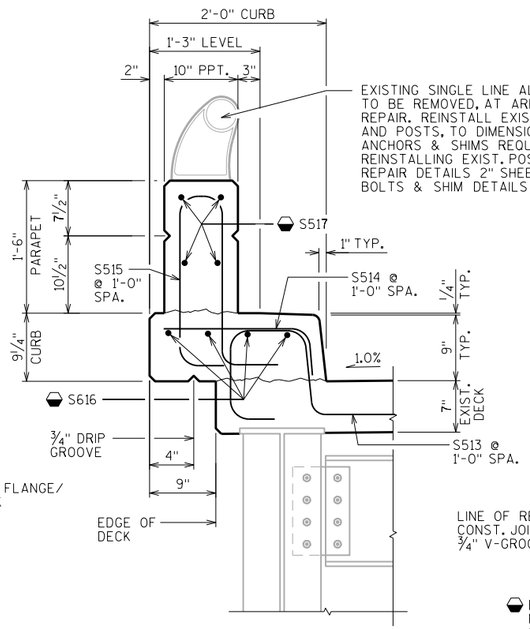
(WING 1 SHOWN - ALL OTHER WINGS SIMILAR)



JOINT REPAIR SECTION

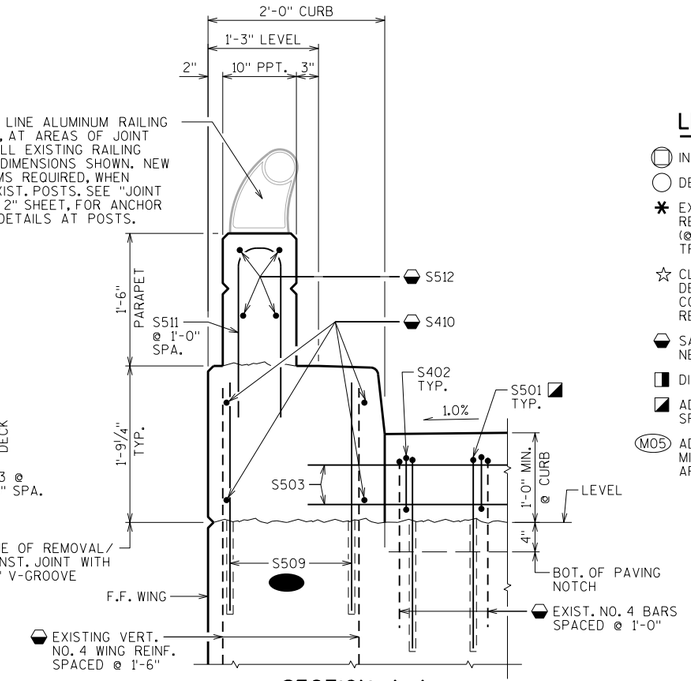
NORMAL TO ℄ OF SUBSTRUCTURE

(DECK SIDE HARDWARE NOT SHOWN FOR CLARITY)



SECTION B-B

(DECK REINF. NOT SHOWN FOR CLARITY)



SECTION A-A

LEGEND

- ⬭ INDICATES WING NUMBER
- ◯ DENOTES EXISTING GIRDER NUMBER
- ✱ EXISTING TOP & BOTTOM TRANSVERSE DECK REINFORCEMENT, PLACED NORMAL TO GIRDERS (@ 8" SPACING). SAVE & INCORPORATE 1'-6" MIN. NEW TRANSVERSE REINF. TO BE PLACED ALONG SKEW.
- ☆ CLEAN, STRAIGHTEN & INCORPORATE EXIST. LONGIT. DECK, CURB AND PARAPET REINF. INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENTS ARE VIOLATED.
- ⬬ SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- ◨ DIMENSION MEASURED NORMAL TO ℄ SUBSTRUCT.
- ◪ ADHESIVE ANCHOR S501. EMBED 1'-0" IN CONCRETE. SPACE AT 1'-0". TURN LEG AS NECESSARY TO FIT.
- (M05) ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE IS 3¾". ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-24

DRAWN BY MJH | PLANS CK'D. ARC

JOINT REPAIR DETAILS 1

SHEET 4

40

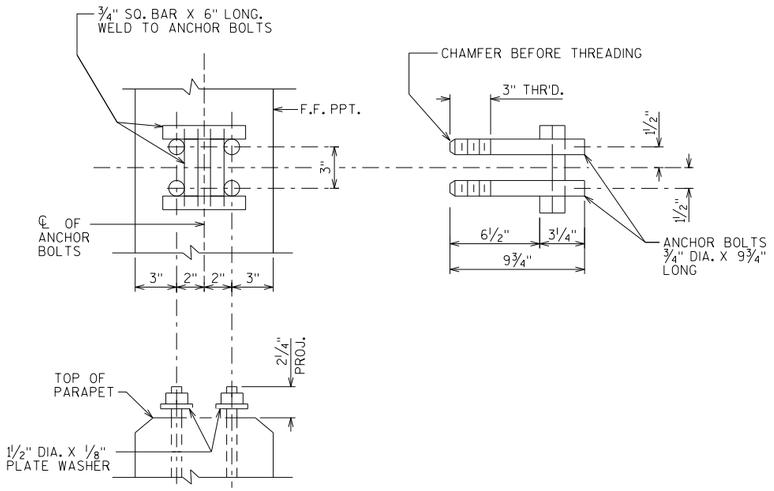
SCALE = 2.50

8

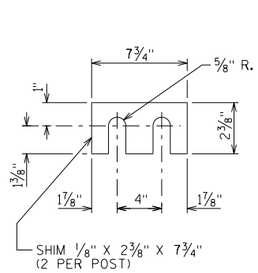
8

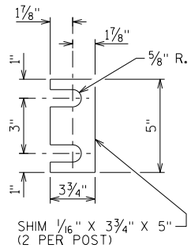
STATE PROJECT NUMBER

1016-05-64



ANCHOR BOLTS AT POSTS





POST SHIM DETAILS

BILL OF BARS

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

	BAR MARK	COAT	NO. REQ'D. NORTH ABUT.	NO. REQ'D. SOUTH ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
◪	S501	X	31	31	2'-6"	X		PAVING BLOCK-VERT.-ANCHOR
	S402	X	31	31	3'-2"	X		PAVING BLOCK-VERT.-STIRRUPS
	S503	X	15	15	7'-6"			PAVING BLOCK-HORIZ.
	S404	X	30	30	4'-8"	X		DIAPHRAGM-VERT.
	S605	X	15	15	9'-0"			DIAPHRAGM-HORIZ.-BOT.
	——	–	NOT	USED	——	–		——
	S407	X	9	9	9'-0"			DIAPHRAGM-HORIZ.-TOP
	S608	X	11	11	33'-4"			DECK-TRANS.
(M05)	S509	X	8	8	2'-7"			WING/CURB-VERT.-ANCHOR
	S410	X	8	8	2'-9"	X		WING/CURB-HORIZ.
	S511	X	4	4	6'-0"	X		CURB/PARAPET-VERT.
	S512	X	8	8	1'-6"			WING-PARAPET-HORIZ.
	S513	X	8	8	4'-3"	X		DECK/CURB-VERT.
	S514	X	8	8	2'-0"	X		CURB-VERT.
	S515	X	8	8	5'-6"	X		CURB/PARAPET-VERT.
	S616	X	8	8	3'-4"			CURB-HORIZ.
	S517	X	8	8	3'-4"			PARAPET-HORIZ.

LEGEND

◪ ADHESIVE ANCHOR S501. EMBED 1'-0" IN CONCRETE. SPACE AT 1'-0". TURN LEG AS NECESSARY TO FIT.

(M05) ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE IS 3 3/4". ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

NOTES

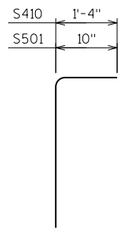
ANCHOR BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

SHIMS SHALL CONFORM TO SAME MATERIAL AS POSTS.

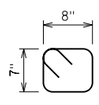
RAILING POSTS SHALL BE SET NORMAL TO GRADE LINE.

SHIMS SHALL BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

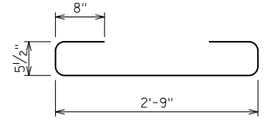
FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.



S501, S410



S402



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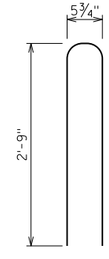

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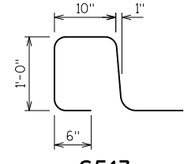

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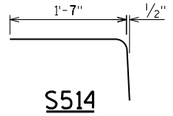

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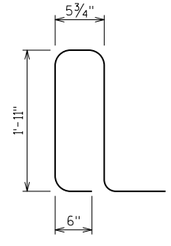


S515

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-24

DRAWN BY MJH | PLANS CK'D. ARC

JOINT REPAIR DETAILS 2

SHEET 5

41

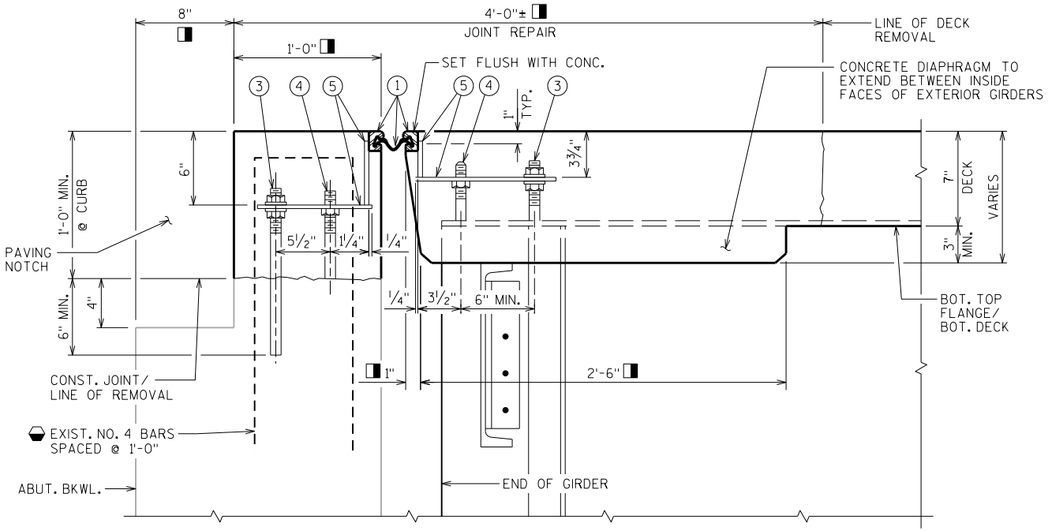
SCALE = 1.00

8

8

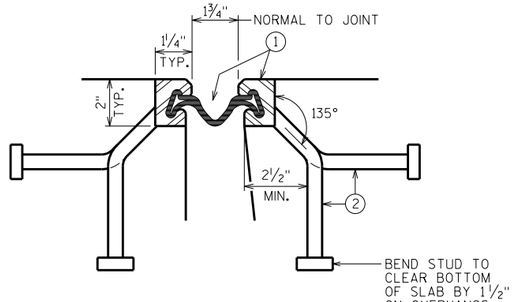
STATE PROJECT NUMBER

1016-05-64



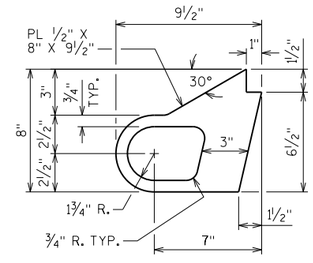
SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE

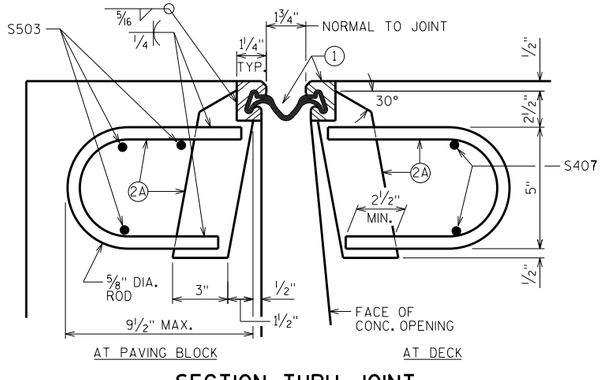


SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS & CURBS

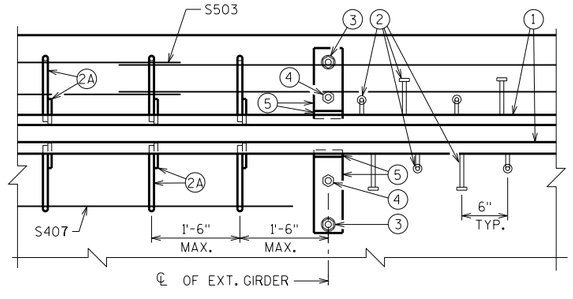


ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN

LEGEND

1. NEOPRENE STRIP SEAL (4"-INCH) AND STEEL EXTRUSIONS.
2. STUDS 5/8" DIA. X 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
2A. ½" THICK ANCHOR PLATE WITH 5/8" DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
3. ¾" DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. ¾" DIA. THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" X ½" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" DIA. HOLE FOR NO. 3 & 1" DIA. HOLE FOR NO. 4.
6. CURB COVER PLATE ⅜" X 2'-2" X LIMITS SHOWN. BEND PLATE DOWN THE FACE OF CURB WITH HOLES FOR NO. 7. GALVANIZE PLATE.
7. ¾" DIA. X 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾" DIA. X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾" DIA. X 2¼" GALVANIZED THREADED COUPLING.
10. 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

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

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

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

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

ALL MATERIAL IN THE EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID AT THE UNIT PRICE BID FOR "EXPANSION DEVICE B-29-24", LF.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-24

DRAWN BY MJH | PLANS CK'D. ARC

EXPANSION DEVICE

SHEET 6

42

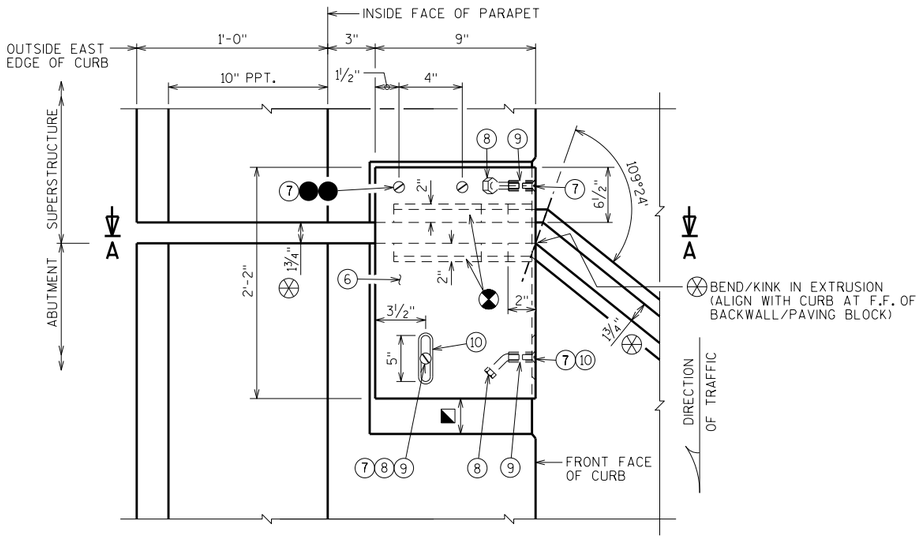
SCALE = 1.00

8

8

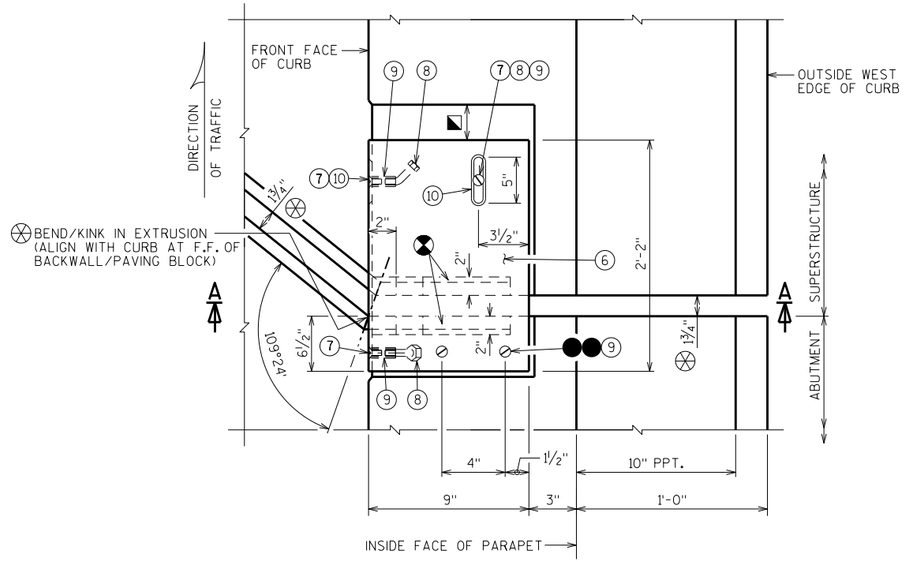
STATE PROJECT NUMBER

1016-05-64



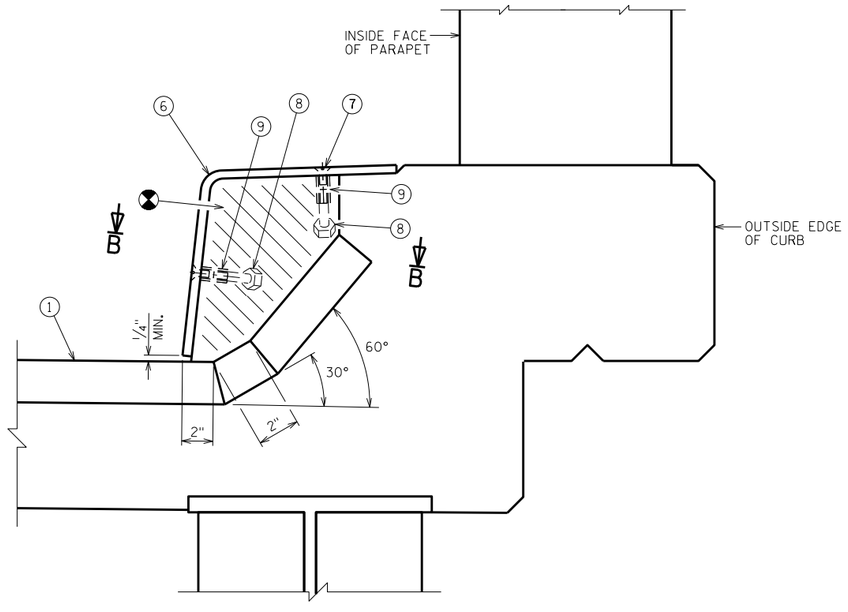
PLAN AT CURB COVER PLATE

(N. ABUTMENT, EAST EDGE OF DECK SHOWN)

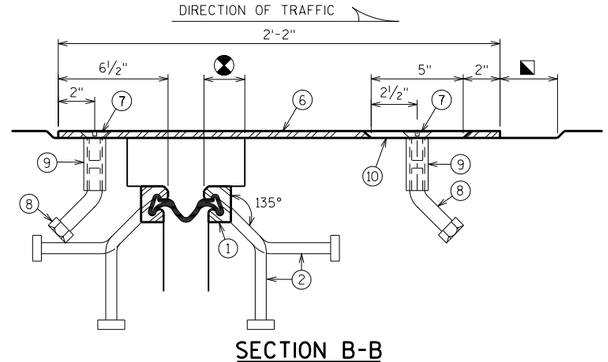


PLAN AT CURB COVER PLATE

(N. ABUTMENT, WEST SIDE EDGE OF DECK SHOWN)



SECTION A-A



SECTION B-B

LEGEND

- KINK IN EXTRUSION PROVIDED TO MAINTAIN THE SAME JOINT OPENING WITHIN SQUARED OFF CURB, AS MEASURED NORMAL TO THE JOINT OPENING ALONG THE SKEW.
- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- JOINT OPENING DIMENSION ALONG SKEW PLUS ½".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-24

DRAWN BY MJH | PLANS CK'D. ARC

CURB COVER PLATE DETAILS

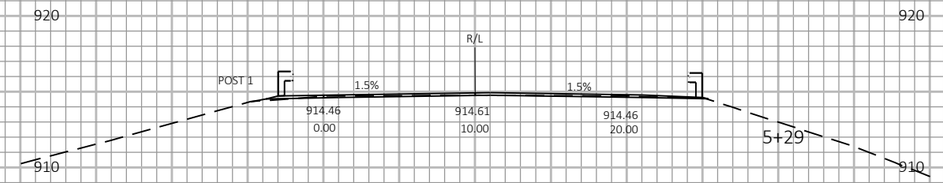
SHEET 7

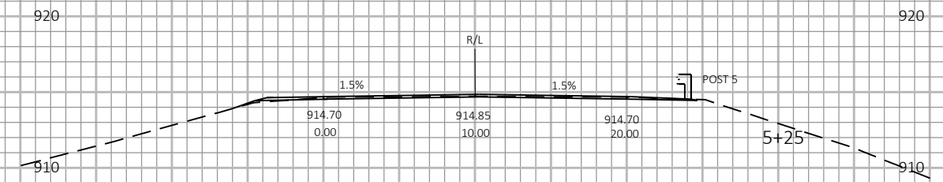
43

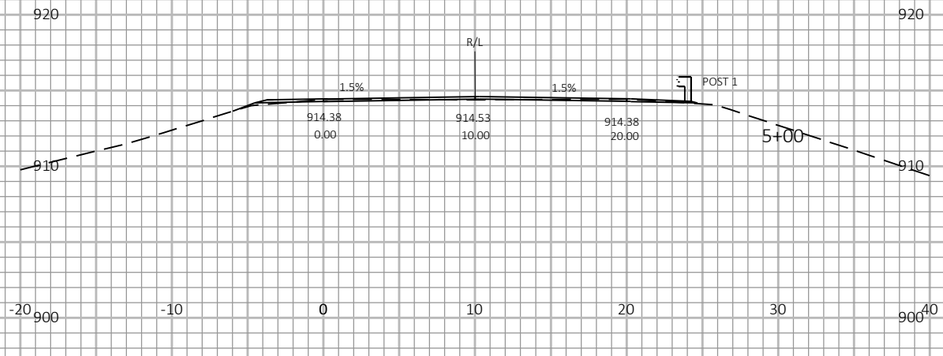
SCALE = 1.00

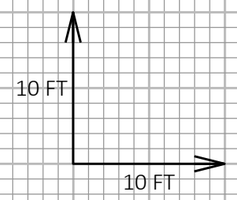
8

8









9

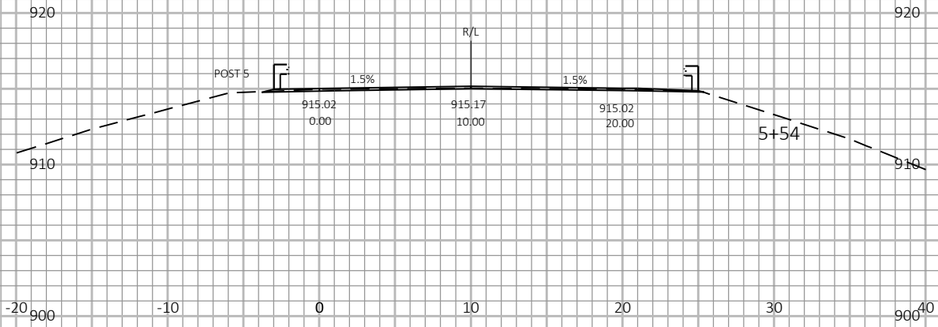
9

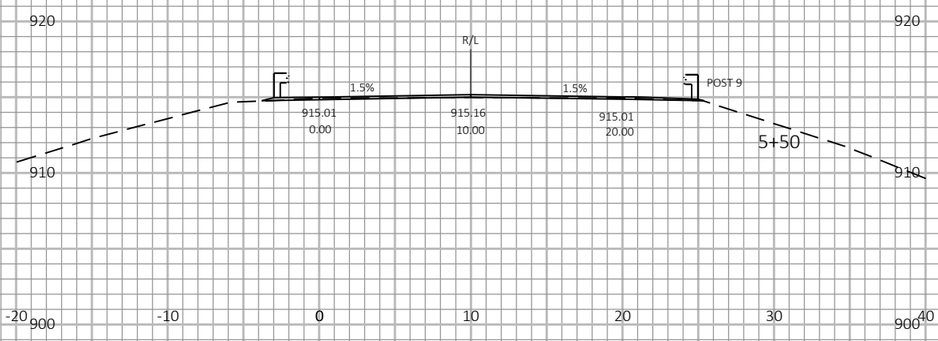
PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: 24TH AVENUE	SHEET 44	E

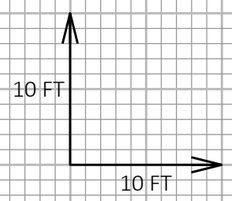
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160534\SHEETSPLAN\CROSS-SECT - LATEST.DWG
LAYOUT NAME - 7

PLOT DATE : 2/2/2021 12:06 PM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49







9

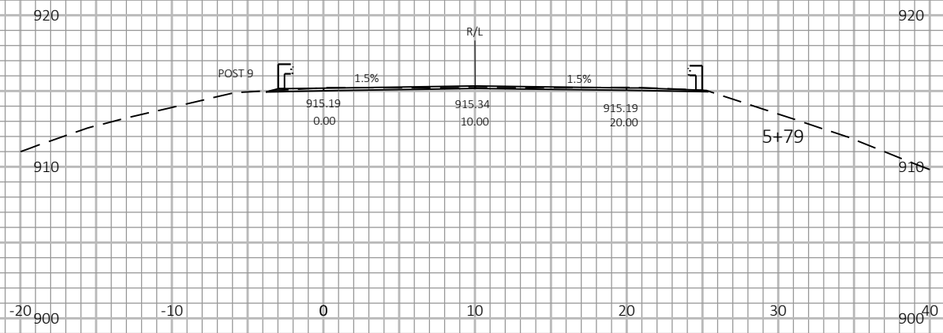
9

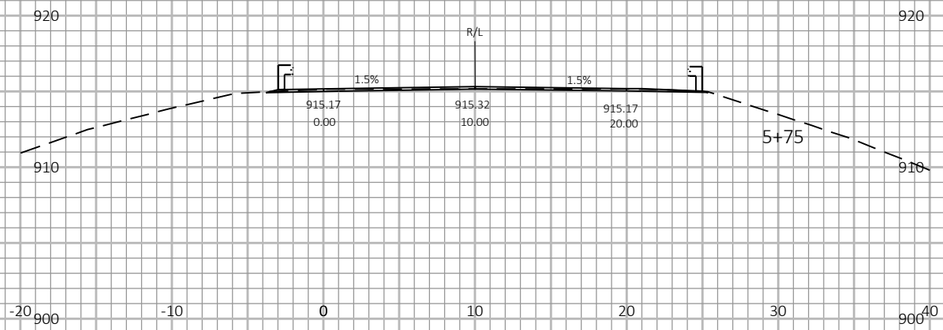
PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: 24TH AVENUE	SHEET 45	E

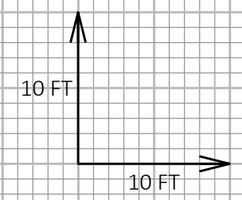
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160534\SHEETSPLAN\CROSS-SECT - LATEST.DWG
LAYOUT NAME - 8

PLOT DATE : 2/2/2021 12:06 PM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49







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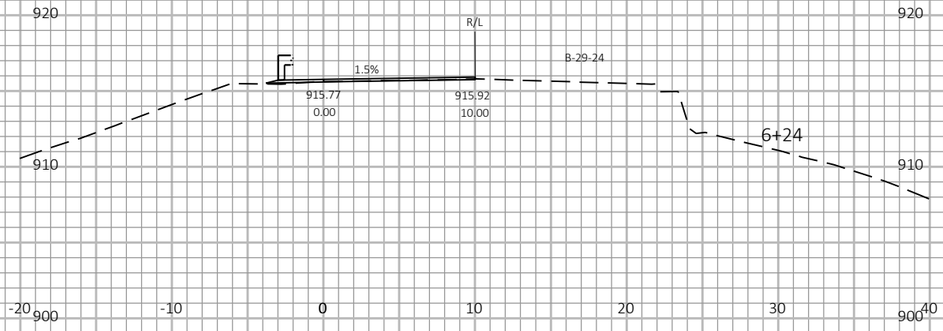
9

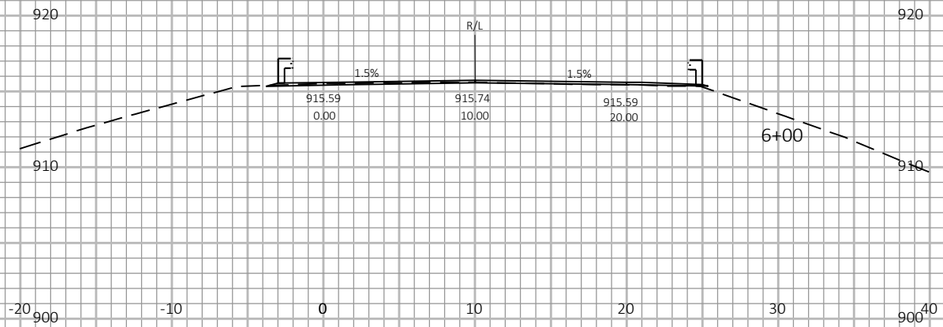
PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: 24TH AVENUE	SHEET 46	E

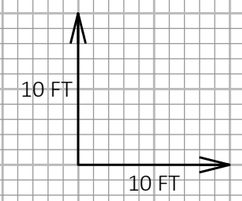
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160534\SHEETSPLAN\CROSS-SECT - LATEST.DWG
LAYOUT NAME - 9

PLOT DATE : 2/2/2021 12:06 PM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49







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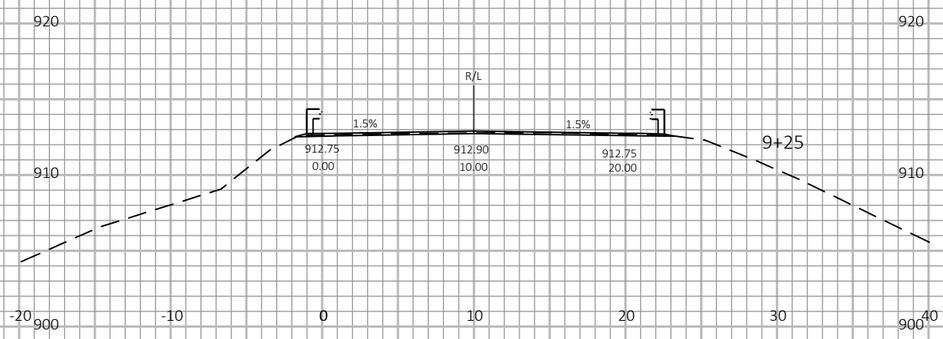
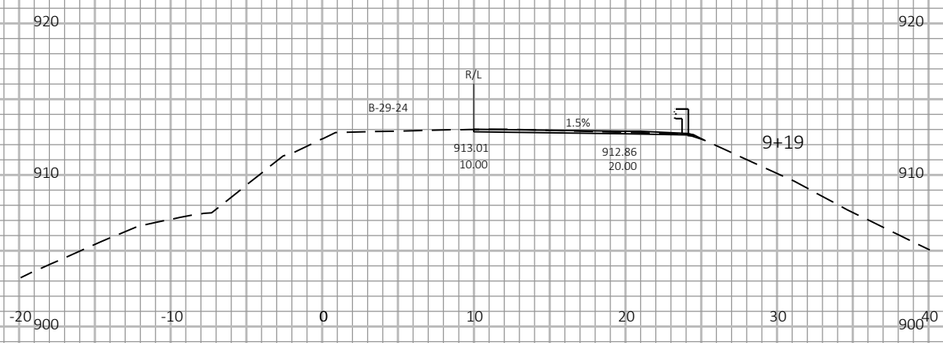
PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: 24TH AVENUE	SHEET 47	E

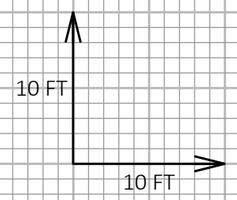
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160534\SHEETSPLAN\CROSS-SECT - LATEST.DWG
LAYOUT NAME - 10

PLOT DATE : 2/2/2021 12:07 PM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49







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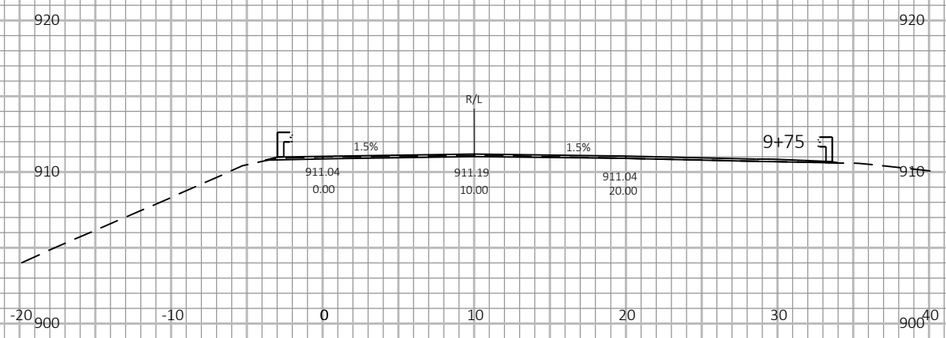
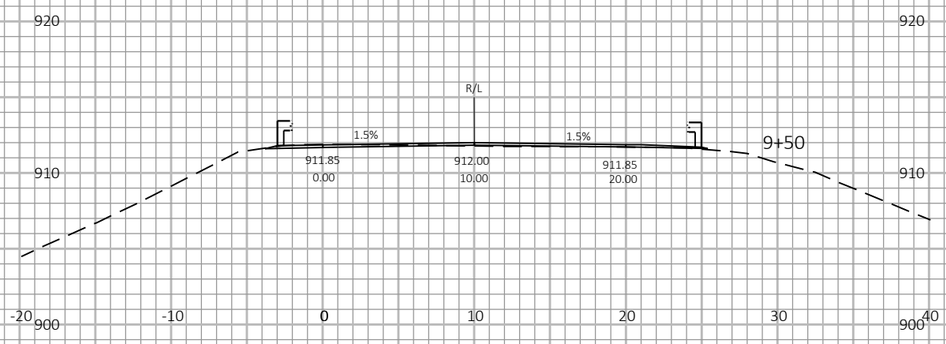
PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: 24TH AVENUE	SHEET 48	E

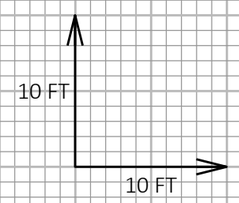
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160534\SHEETSPLAN\CROSS-SECT - LATEST.DWG
LAYOUT NAME - 11

PLOT DATE : 2/2/2021 12:07 PM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49







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PROJECT NO: 1016-05-64	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: 24TH AVENUE	SHEET 49	E

FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160534\SHEETSPLAN\CROSS-SECT - LATEST.DWG
LAYOUT NAME - 12

PLOT DATE : 2/2/2021 12:07 PM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

LAX

MARCH 2022

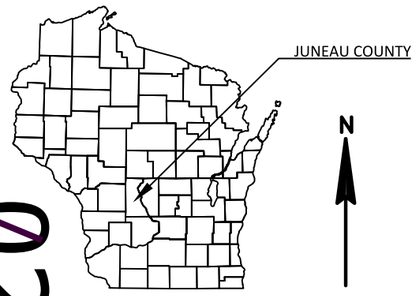
PROJECT ID: 1016-05-66

WITH: 1016-05-64

COUNTY: JUNEAU

ORDER OF SHEETS

TOTAL SHEETS = 68



02

DESIGN DESIGNATION 1016-05-64

			IH 90/94	24TH AVE
A.A.D.T.	2022	=	37,360	100
A.A.D.T.	2042	=	44,100	140
D.H.V.		=	3,300	10
D.D.		=	58/42	50/50
T.		=	35.3%	40.0%
DESIGN SPEED		=	70 MPH	55 MPH
ESALS		=	30,000,000	

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

MAUSTON - WISCONSIN DELLS

KOVAL ROAD BRIDGES B-29-21 AND B-29-22

IH 90/94

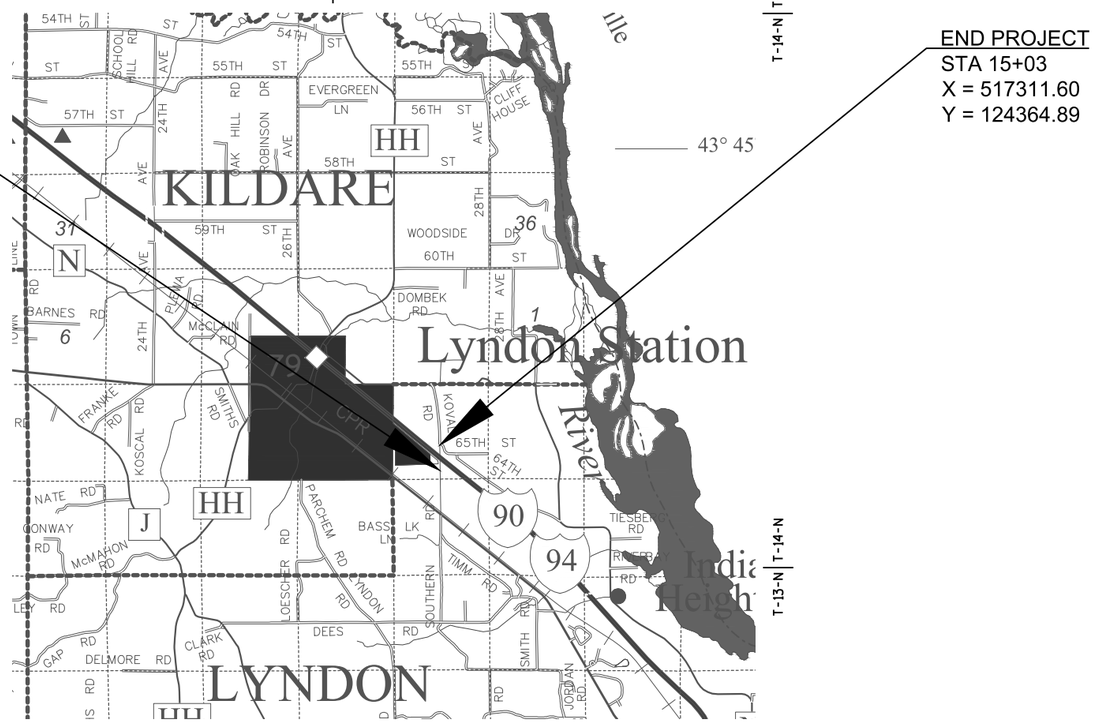
JUNEAU COUNTY

STATE PROJECT NUMBER
1016-05-66

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1016-05-66	———	—

BEGIN PROJECT
STA 5+00
X = 517311.60
Y = 123515.47

END PROJECT
STA 15+03
X = 517311.60
Y = 124364.89



LAYOUT

SCALE 0 2.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), JUNEAU COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	SAM KUBE
Project Manager	JOHN BAINTER
Regional Examiner	SW REGION
Regional Supervisor	JIM SAVOLDELLI

APPROVED FOR THE DEPARTMENT

DATE: 10/21/2021 (Signature)

E

FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160536\DESIGN\C3D\SHEETSPLAN\010101_TI36.DWG PLOT DATE : 10/20/2021 11:06 AM PLOT BY : KUBE, SAMUEL J PLOT NAME :

GENERAL NOTES

- THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE OR PARKING LANE.
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN. HMA WILL BE PAVED IN TWO 1.75 IN LIFTS
- TACK SHALL BE APPLIED AT A RATE OF 0.05 GAL/SY BETWEEN NEW HMA LAYERS AND 0.07 GAL/SY ON MILLED SURFACE
- CONCTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY THIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.
- DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED AND COVERED WITH E-MAT AS DIRECTED BY THE ENGINEER.

UTILITY CONTACTS

WILLIAM KOENIG – JMC ENGINEERS
AT&T LEGACY - COMMUNICATION LINE
110 N MAIN ST
CULVER, IL 46511
(608) 628-0575 mobile
wekoenig@att.net

DOUG VOSBERG
ATC MANAGEMENT, INC. - ELECTRICITY/TRANSMISSION
2489 RINDEN RD
COTTAGE GROVE, WI 53527
(608) 877-7650
dvosberg@atcllc.com

OTHER CONTACTS

PAUL KUTZ
WISDOT – COMMUNICATION LINE
433 W ST PAUL AVE
MILWAUKEE, WI 53203
(414) 410-6854
pkutz@hntb.com

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

DESIGN CONTACTS

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3550 MORMON COULEE RD
LA CROSSE, WI 54601
(608) 785-9729
john.bainter@dot.wi.gov

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PROJECT DESIGNER
WISDOT SW REGION
3550 MORMON COULEE RD
LA CROSSE, WI 54601
(608) 387-3829
samuel.kube@dot.wi.gov

DNR LIAISON

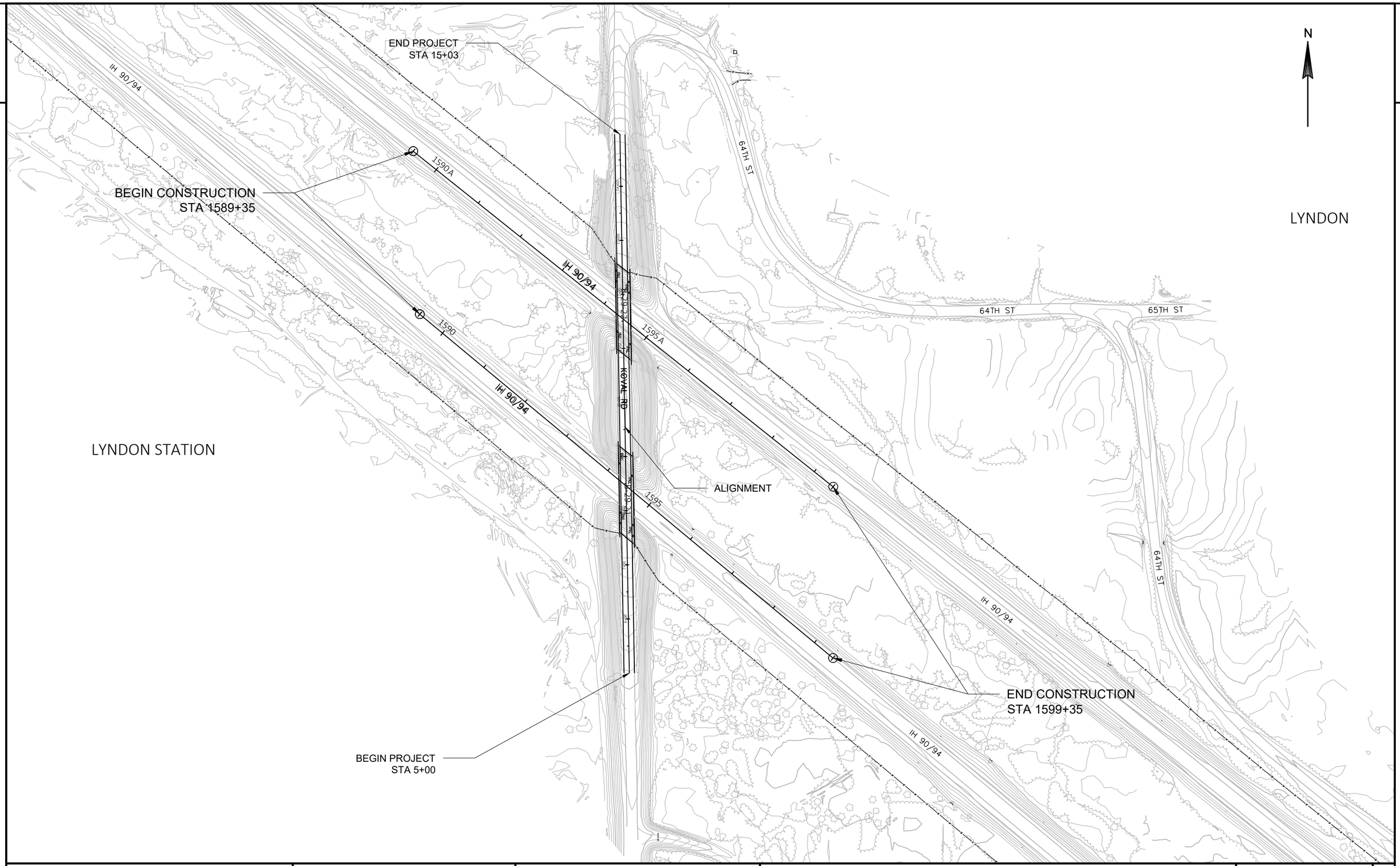
KAREN KALVELAGE
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST
WISCONSIN DEPT. OF NATURAL RESOURCES
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
(608) 785-9115
karen.kalvelage@wisconsin.gov

ORDER OF SECTION 2 SHEETS

STANDARD ABBREVIATIONS

AC	ACRE
AGG	AGGREGATE
<	ANGLE
AE, AEW	APRON ENDWALL
ASPH.	ASPHALTIC
A.D.T.	AVERAGE DAILY TRAFFIC
A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC
B.F.	BACK FACE
BM	BENCHMARK
BTWN	BETWEEN
CTR.	CENTER
C/L	CENTER LINE
Δ	CENTRAL ANGLE OR DELTA
C.E.	COMMERCIAL ENTRANCE
CONST.	CONSTRUCTION
CMCP	CORRUGATED METAL CULVERT PIPE
CMP	CORRUGATED METAL PIPE
CO.	COUNTY
CTH	COUNTY TRUNK HIGHWAY
CR.	CREEK
CABC	CRUSHED AGGREGATE BASE COURSE
CY	CUBIC YARD
CP	CONTROL POINT OR CULVERT PIPE
C&G	CURB AND GUTTER
D	DEGREE OF CURVE
D.H.V.	DESIGN HOURLY VOLUME
DIA.	DIAMETER
D.D.	DIRECTIONAL DISTRIBUTION
DISCH.	DISCHARGE
DMS	DYNAMIC MESSAGE SIGN
EA	EACH
E	EAST
EB	EASTBOUND
ELEC.	ELECTRIC(AL), ELEC. CABLE
EL., ELEV.	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC.	EXCAVATION
EXIST	EXISTING
F.F.	FACE TO FACE
FERT.	FERTILIZER
F.E.	FIELD ENTRANCE
F/L, F.L.	FLOW LINE
GALV.	GALVANIZE
H.S.	HIGH STRENGTH
CWT	HUNDRED WEIGHT
INL	INLET
INTER.	INTERSECTION
IH	INTERSTATE HIGHWAY
JT.	JOINT
LT	LEFT
L.H.F.	LEFT HAND FORWARD
L.	LENGTH OF CURVE
L.F.	LINEAR FOOT(FEET)
LC.	LONG CHORD
LS	LUMP SUM
M.P.	MARKER POST
MGAL	1000 GALLONS
N.C.	NORMAL CROWN
N	NORTH
NB	NORTHBOUND
NOR	NORMAL
NO.	NUMBER
PAV'T	PAVEMENT
P.L.E.	PERMANENT LIMITED EASEMENT
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
PCC	PORTLAND CEMENT CONCRETE
P.E.	PRIVATE ENTRANCE
PGL	PROFILE GRADE LINE
P.L.	PROPERTY LINE
R	RADIUS OR RANGE
R/L	REFERENCE LINE
R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
REQ'D	REQUIRED
RT	RIGHT
R.H.F.	RIGHT HAND FORWARD
R/W	RIGHT OF WAY
RD.	ROAD
SHLD.	SHOULDER(S)
SHR.	SHRINKAGE
S	SOUTH
SB	SOUTHBOUND
S.F.	SQUARE FOOT (FEET)
SDD	STANDARD DETAIL DRAWING(S)
STH	STATE TRUNK HIGHWAY
STA.	STATION
S.E.	SUPERELEVATION
S/L	SURVEY LINE
SYM	SYMMETRICAL
T.	PERCENT TRUCKS
TEL.	TELEPHONE
TEMP.	TEMPORARY
T.L.E.	TEMPORARY LIMITED EASEMENT
T.O.C.	TOP OF CURB
TYP	TYPICAL
UNCL.	UNCLASSIFIED
U.G.	UNDERGROUND (CABLE)
VAR	VARIABLE
V.C.	VERTICAL CURVE
V.P.C.	VERTICAL POINT OF CURVATURE
V.P.I.	VERTICAL POINT OF INTERSECTION
V.P.T.	VERTICAL POINT OF TANGENCY
Wt.	WEIGHT
W	WEST
WB	WESTBOUND

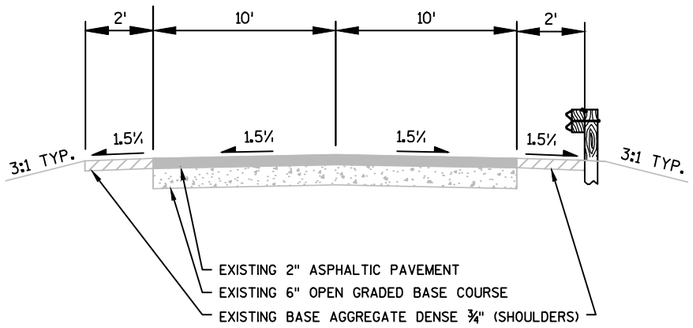
2



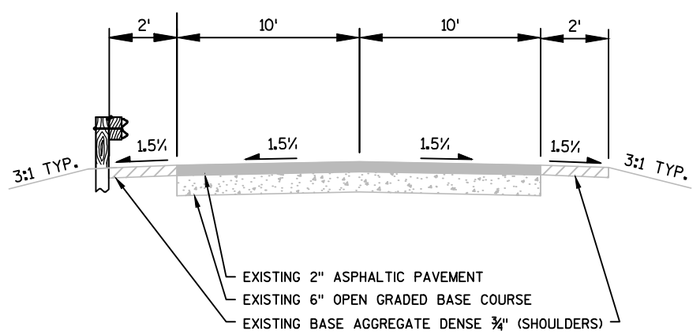
PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160536\DESIGN\C3D\SHEETSPLAN\36OVERVIEW.DWG
LAYOUT NAME - Plan 1 IN 100 FT

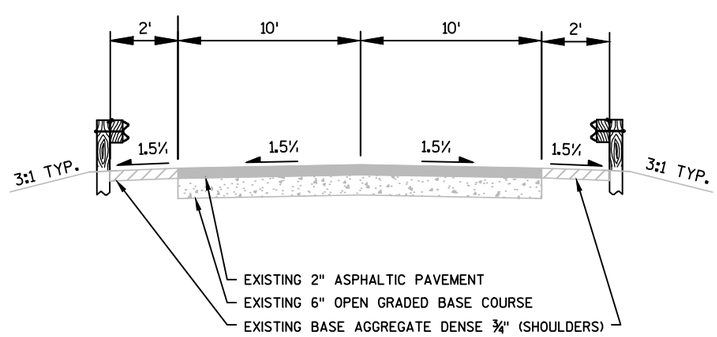
PLOT DATE : 10/20/2021 2:30 PM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : Custom



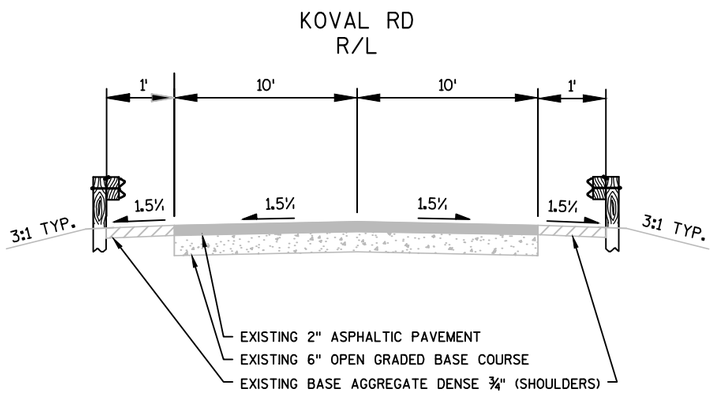
TYPICAL EXISTING SECTION
STA 5+00 - STA 5+07
STA 9+03 - STA 9+23
STA 12+44 - STA 12+63



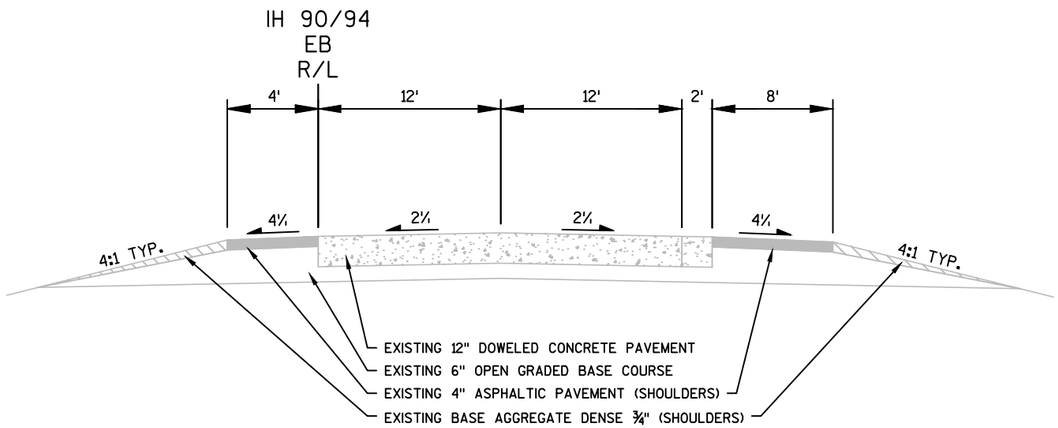
TYPICAL EXISTING SECTION
STA 7+39 - STA 7+62
STA 10+82 - STA 11+04
STA 14+96 - STA 15+03



TYPICAL EXISTING SECTION
STA 5+07 - STA 7+39
STA 12+63 - STA 14+96



TYPICAL EXISTING SECTION
STA 9+23 - STA 10+82

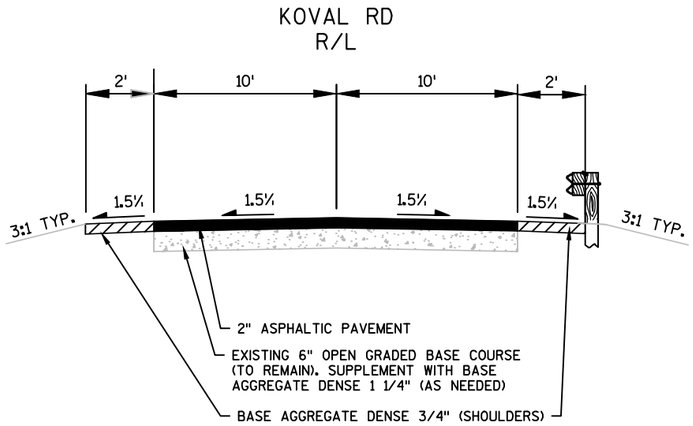


TYPICAL EXISTING MAINLINE TANGENT SECTION
STA 1589+35 - STA 1599+35
IH 90/94 WB IS MIRROR IMAGE OF SECTION SHOWN ABOVE

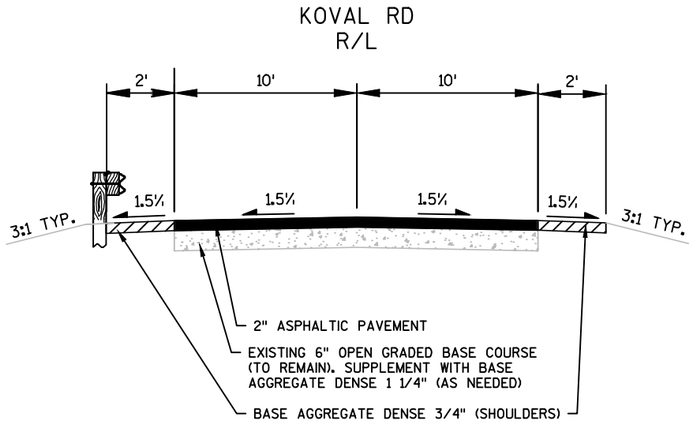
NOT TO SCALE

PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	TYPICAL SECTIONS	SHEET 4	E

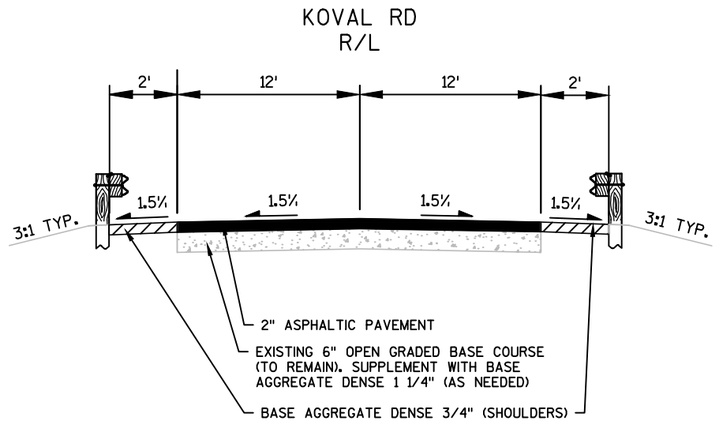
FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160536\DESIGN\C3D\SHEETSPLAN\020301_TS36.DWG PLOT DATE : 10/22/2021 10:24 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



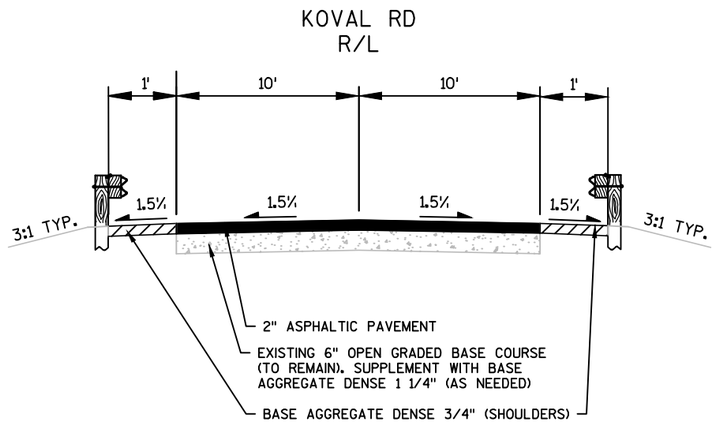
TYPICAL PROPOSED SECTION
STA 5+00 - STA 5+07
STA 9+03 - STA 9+23
STA 12+44 - STA 12+63



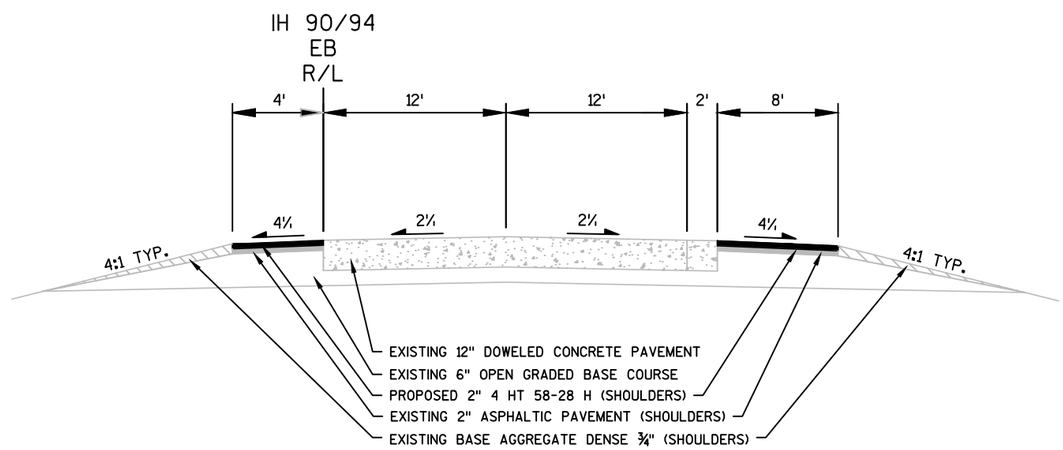
TYPICAL PROPOSED SECTION
STA 7+39 - STA 7+62
STA 10+82 - STA 11+04
STA 14+96 - STA 15+03



TYPICAL PROPOSED SECTION
STA 5+07 - STA 7+39
STA 12+63 - STA 14+96



TYPICAL PROPOSED SECTION
STA 9+23 - STA 10+82

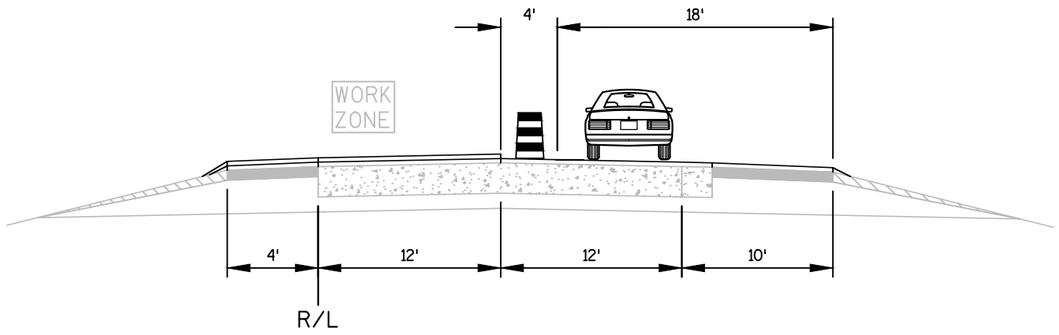


TYPICAL PROPOSED MAINLINE TANGENT SECTION
STA 1589+35 - STA 1599+35
IH 90/94 WB IS MIRROR IMAGE OF SECTION SHOWN ABOVE

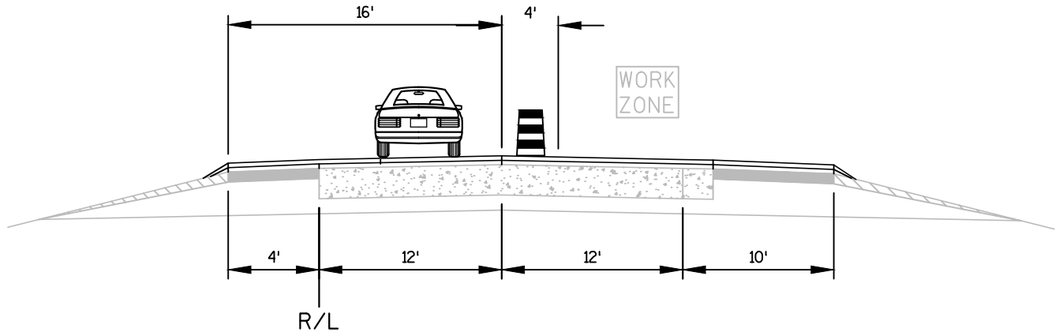
NOT TO SCALE

PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	TYPICAL SECTIONS	SHEET 5	E

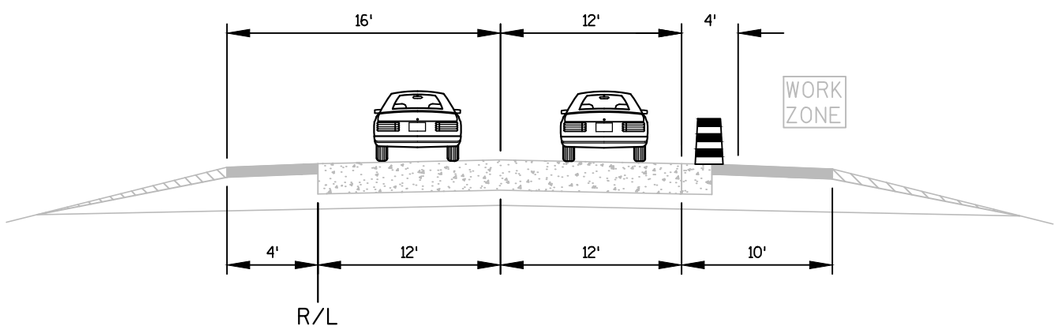
FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160536\DESIGN\C3D\SHEETSPLAN\020301_TS36.DWG PLOT DATE : 10/22/2021 10:41 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



TYPICAL SECTION: MEDIAN LANE CLOSED



TYPICAL SECTION: OUTSIDE LANE CLOSED



TYPICAL SECTION: OUTSIDE SHOULDER CLOSED

2

NOT TO SCALE

PROJECT NO: 1016-05-66	HWY: IH 90	COUNTY: JUNEAU	TRAFFIC CONTROL STAGING	SHEET 6	E

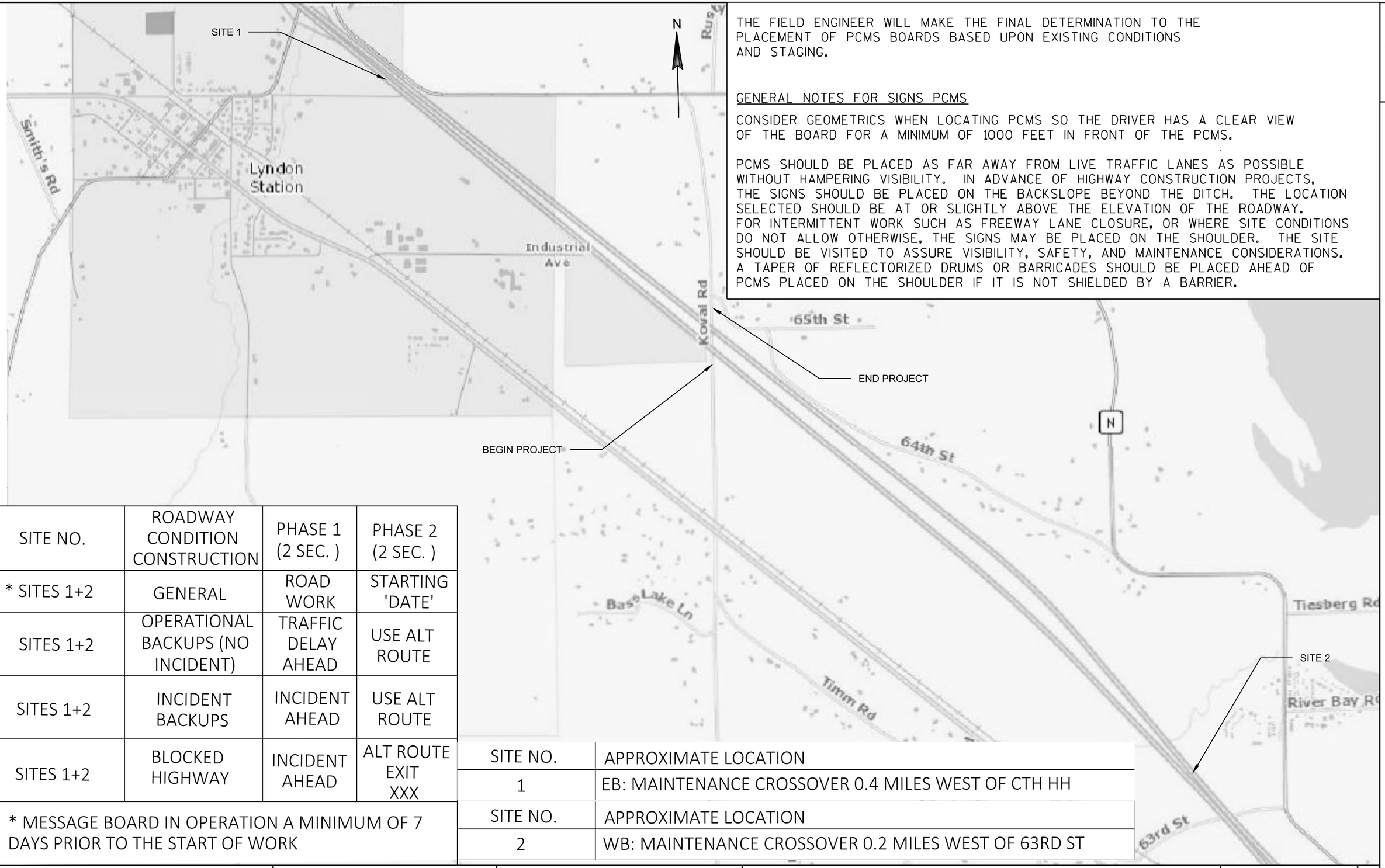
2

THE FIELD ENGINEER WILL MAKE THE FINAL DETERMINATION TO THE PLACEMENT OF PCMS BOARDS BASED UPON EXISTING CONDITIONS AND STAGING.

GENERAL NOTES FOR SIGNS PCMS

CONSIDER GEOMETRICS WHEN LOCATING PCMS SO THE DRIVER HAS A CLEAR VIEW OF THE BOARD FOR A MINIMUM OF 1000 FEET IN FRONT OF THE PCMS.

PCMS SHOULD BE PLACED AS FAR AWAY FROM LIVE TRAFFIC LANES AS POSSIBLE WITHOUT HAMPERING VISIBILITY. IN ADVANCE OF HIGHWAY CONSTRUCTION PROJECTS, THE SIGNS SHOULD BE PLACED ON THE BACKSLOPE BEYOND THE DITCH. THE LOCATION SELECTED SHOULD BE AT OR SLIGHTLY ABOVE THE ELEVATION OF THE ROADWAY. FOR INTERMITTENT WORK SUCH AS FREEWAY LANE CLOSURE, OR WHERE SITE CONDITIONS DO NOT ALLOW OTHERWISE, THE SIGNS MAY BE PLACED ON THE SHOULDER. THE SITE SHOULD BE VISITED TO ASSURE VISIBILITY, SAFETY, AND MAINTENANCE CONSIDERATIONS. A TAPER OF REFLECTORIZED DRUMS OR BARRICADES SHOULD BE PLACED AHEAD OF PCMS PLACED ON THE SHOULDER IF IT IS NOT SHIELDED BY A BARRIER.



SITE NO.	ROADWAY CONDITION CONSTRUCTION	PHASE 1 (2 SEC.)	PHASE 2 (2 SEC.)
* SITES 1+2	GENERAL	ROAD WORK	STARTING 'DATE'
SITES 1+2	OPERATIONAL BACKUPS (NO INCIDENT)	TRAFFIC DELAY AHEAD	USE ALT ROUTE
SITES 1+2	INCIDENT BACKUPS	INCIDENT AHEAD	USE ALT ROUTE
SITES 1+2	BLOCKED HIGHWAY	INCIDENT AHEAD	ALT ROUTE EXIT XXX

* MESSAGE BOARD IN OPERATION A MINIMUM OF 7 DAYS PRIOR TO THE START OF WORK

SITE NO.	APPROXIMATE LOCATION
1	EB: MAINTENANCE CROSSOVER 0.4 MILES WEST OF CTH HH
SITE NO.	APPROXIMATE LOCATION
2	WB: MAINTENANCE CROSSOVER 0.2 MILES WEST OF 63RD ST

FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160534\DESIGN\C3D\SHEETSPLAN\021002_CD.DWG
LAYOUT NAME - 83
PLOT DATE : 10/25/2021 2:00 PM PLOT BY : KUBE, SAMUEL J PLOT NAME : ----------
WISDOT/CADDS SHEET 42

2

N

B-29-21

INL

00+8

1595

FENCE WOVEN WIRE 4.5'

SEE STRUCTURE PLANS

FENCE WOVEN WIRE 4.5'

00+7

KOVAL RD

6+00

MGS GUARDRAIL 3 AND MGS
THRIE BEAM TRANSITION
STA 5+57 - STA 7+53

MGS GUARDRAIL 3 AND MGS
THRIE BEAM TRANSITION
STA 5+50 - STA 7+34

MGS GUARDRAIL
TERMINAL EAT
POST 1: STA 5+07, 15' LT

BP: 5+00.00

MGS GUARDRAIL
TERMINAL EAT
POST 1: STA 5+00, 15' RT

PROPOSED BEAM GUARD

PROPOSED R/W FENCE

SAWING ASPHALT

REMOVING ASPHALTIC
SURFACE

BEGIN PROJECT
STA 5+00

RIPPLE RD

SOUTH

NOTES:
INSTALL SILT FENCE ALONG EXISTING BEAM GUARD PRIOR TO REMOVAL. RESTORE AROUND BEAM GUARD WITH SALVAGED TOPSOIL, SEEDING MIXTURE NO. 20, FERTILIZER TYPE B AND EROSION MAT TYPE B.

TIGER STRIPE SIGNS TO BE REMOVED PRIOR TO STRUCTURE WORK AND REINSTALLED UPON COMPLETION

PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	PLAN VIEW	SHEET 8	E

FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160536\DESIGN\C3D\SHEETSPLAN\36PLAN.DWG
LAYOUT NAME - Plan 1 IN 100 FT
PLOT DATE : 10/25/2021 8:22 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : Custom
WISDOT/CADDS SHEET 42

2

2

N

IH 90/94

B-29-22

SEE STRUCTURE PLANS

1595A

ASPHALTIC FLUME WITH MEDIUM RIPRAP
10+85 LT

4" SLOPED CURB TYPE D
STA 10+85 - STA 11+01 LT

MGS GUARDRAIL 3 AND MGS
THRIE BEAM TRANSITION
STA 9+31 - STA 10+96 LT

ASPHALTIC FLUME WITH MEDIUM RIPRAP
10+69 RT

4" SLOPED CURB TYPE D
STA 10+69 - STA 10+85 RT

MGS GUARDRAIL 3 AND MGS
THRIE BEAM TRANSITION
STA 9+12 - STA 10+73 RT

ASPHALTIC FLUME WITH MEDIUM RIPRAP
9+38 LT

4" SLOPED CURB TYPE D
STA 9+22 - STA 9+38 LT

ASPHALTIC FLUME WITH MEDIUM RIPRAP
9+22 RT

4" SLOPED CURB TYPE D
STA 9+06 - STA 9+22 RT

B-29-21

SEE STRUCTURE PLANS

REMOVING ASPHALTIC SURFACE

PROPOSED BEAM GUARD

PROPOSED R/W FENCE

NOTES:
INSTALL SILT FENCE ALONG EXISTING BEAM GUARD PRIOR TO REMOVAL. RESTORE AROUND BEAM GUARD WITH SALVAGED TOPSOIL, SEEDING MIXTURE NO. 20, FERTILIZER TYPE B AND EROSION MAT TYPE B.

PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	PLAN VIEW	SHEET 9	E

2

END PROJECT
STA 15+03

EP: 15+02.69

MGS GUARDRAIL
TERMINAL EAT
POST 1: STA 15+03, 15' LT

MGS GUARDRAIL
TERMINAL EAT
POST 1: STA 14+97, 15' RT

MGS GUARDRAIL 3 AND MGS
THRIE BEAM TRANSITION
STA 12+73 - STA 14+53 LT

MGS GUARDRAIL 3 AND MGS
THRIE BEAM TRANSITION
STA 12+51 - STA 14+47 RT

ASPHALTIC FLUME WITH MEDIUM RIPRAP
10278 LT

4" SLOPED CURB TYPE D
STA 12+62 - STA 12+78 LT

FENCE WOVEN WIRE 4.5'

ASPHALTIC FLUME WITH MEDIUM RIPRAP
12+62 RT

4" SLOPED CURB TYPE D
STA 12+46 - STA 12+62 RT

FENCE WOVEN WIRE 4.5'

SEE STRUCTURE PLANS

KOVAL RD

64TH ST

IH 90/94

B-29-22

15+00

14+00

13+00

12+00

N

PROPOSED BEAM GUARD

PROPOSED R/W FENCE

SAWING ASPHALT

REMOVING ASPHALTIC
SURFACE

NOTES:
INSTALL SILT FENCE ALONG EXISTING BEAM GUARD PRIOR TO REMOVAL. RESTORE AROUND BEAM GUARD WITH SALVAGED TOPSOIL, SEEDING MIXTURE NO. 20, FERTILIZER TYPE B AND EROSION MAT TYPE B.

TIGER STRIPE SIGNS TO BE REMOVED PRIOR TO STRUCTURE WORK AND REINSTALLED UPON COMPLETION

PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	PLAN VIEW	SHEET 10	E

FILE NAME : C:\BOXDRV\BOX\DTSD-PROJECTS-PUBLIC\SWR-PROJECTS-STATE\DESIGN\10160536\DESIGN\C3D\SHEETSPLAN\36PLAN.DWG
LAYOUT NAME - Layout3-Plan 1 IN 100 FT
PLOT DATE : 10/25/2021 8:22 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : Custom
WISDOT/CADDS SHEET 42

1016-05-66

Line	Item	Item Description	Unit	Total	Qty
0002	204.0110	Removing Asphaltic Surface	SY	660.000	660.000
0004	204.0120	Removing Asphaltic Surface Milling	SY	2,660.000	2,660.000
0006	204.0165	Removing Guardrail	LF	1,282.000	1,282.000
0008	204.0170	Removing Fence	LF	257.000	257.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-29-21	LS	1.000	1.000
0012	206.1000	Excavation for Structures Bridges (structure) 02. B-29-22	LS	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	156.000	156.000
0018	213.0100	Finishing Roadway (project) 02. 1016-05-66	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	12.000	12.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	35.000	35.000
0024	455.0605	Tack Coat	GAL	152.000	152.000
0026	460.2000	Incentive Density HMA Pavement	DOL	500.000	500.000
0028	460.7424	HMA Pavement 4 HT 58-28 H	TON	300.000	300.000
0030	465.0105	Asphaltic Surface	TON	73.000	73.000
0032	465.0315	Asphaltic Flumes	SY	30.000	30.000
0034	465.0400	Asphaltic Shoulder Rumble Strips	LF	4,000.000	4,000.000
0036	502.0100	Concrete Masonry Bridges	CY	44.000	44.000
0040	502.3101	Expansion Device 02. B-29-21	LF	64.000	64.000
0042	502.3101	Expansion Device 03. B-29-22	LF	64.000	64.000
0044	502.3200	Protective Surface Treatment	SY	85.000	85.000
0046	502.3210	Pigmented Surface Sealer	SY	58.000	58.000
0048	502.4110	Adhesive Anchors 1 1/4-inch	EACH	32.000	32.000
0050	502.4205	Adhesive Anchors No. 5 Bar	EACH	408.000	408.000
0052	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	10,520.000	10,520.000
0054	506.6000	Bearing Assemblies Expansion (structure) 01. B-29-21	EACH	8.000	8.000
0056	506.6000	Bearing Assemblies Expansion (structure) 02. B-29-22	EACH	8.000	8.000
0058	506.7050.S	Removing Bearings (structure) 02. B-29-21	EACH	8.000	8.000
0060	506.7050.S	Removing Bearings (structure) 03. B-29-22	EACH	8.000	8.000
0062	509.0301	Preparation Decks Type 1	SY	2.000	2.000
0064	509.0310.S	Sawing Pavement Deck Preparation Areas	LF	24.000	24.000
0066	509.1000	Joint Repair	SY	50.000	50.000
0068	509.1500	Concrete Surface Repair	SF	131.000	131.000
0070	509.2100.S	Concrete Masonry Deck Repair	CY	22.000	22.000
0074	513.9006.S	Removing and Resetting Tubular Railing (structure) 02. B-29-21	EACH	1.000	1.000
0076	513.9006.S	Removing and Resetting Tubular Railing (structure) 03. B-29-22	EACH	1.000	1.000
0078	516.0500	Rubberized Membrane Waterproofing	SY	32.000	32.000
0082	517.3001.S	Structure Overcoating Cleaning and Priming (structure) 02. B-29-21	EACH	1.000	1.000
0084	517.3001.S	Structure Overcoating Cleaning and Priming (structure) 03. B-29-22	EACH	1.000	1.000
0088	517.4001.S	Containment and Collection of Waste Materials (structure) 02. B-29-21	EACH	1.000	1.000
0090	517.4001.S	Containment and Collection of Waste Materials (structure) 03. B-29-22	EACH	1.000	1.000
0092	601.0553	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	LF	96.000	96.000
0094	606.0200	Riprap Medium	CY	6.000	6.000
0096	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	286.000	286.000
0098	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	8.000	8.000
0106	614.2300	MGS Guardrail 3	LF	925.000	925.000
0108	614.2500	MGS Thrie Beam Transition	LF	156.000	156.000
0110	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0112	616.0100	Fence Woven Wire (height) 01. 4.5 FEET	LF	257.000	257.000
0116	618.0100	Maintenance And Repair of Haul Roads (project) 02. 1016-05-66	EACH	1.000	1.000

1016-05-66

Line	Item	Item Description	Unit	Total	Qty
0118	619.1000	Mobilization	EACH	0.500	0.500
0120	624.0100	Water	MGAL	15.000	15.000
0122	625.0500	Salvaged Topsoil	SY	510.000	510.000
0124	628.1504	Silt Fence	LF	1,695.000	1,695.000
0126	628.1520	Silt Fence Maintenance	LF	1,695.000	1,695.000
0128	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0130	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0132	628.2004	Erosion Mat Class I Type B	SY	660.000	660.000
0134	629.0210	Fertilizer Type B	CWT	8.000	8.000
0136	630.0120	Seeding Mixture No. 20	LB	17.000	17.000
0138	630.0500	Seed Water	MGAL	8.000	8.000
0140	638.2102	Moving Signs Type II	EACH	4.000	4.000
0142	642.5001	Field Office Type B	EACH	0.500	0.500
0144	643.0300	Traffic Control Drums	DAY	1,300.000	1,300.000
0146	643.0420	Traffic Control Barricades Type III	DAY	1,030.000	1,030.000
0148	643.0705	Traffic Control Warning Lights Type A	DAY	620.000	620.000
0150	643.0715	Traffic Control Warning Lights Type C	DAY	2,060.000	2,060.000
0152	643.0800	Traffic Control Arrow Boards	DAY	30.000	30.000
0154	643.0900	Traffic Control Signs	DAY	965.000	965.000
0156	643.1050	Traffic Control Signs PCMS	DAY	15.000	15.000
0158	643.5000	Traffic Control	EACH	0.500	0.500
0160	645.0111	Geotextile Type DF Schedule A	SY	122.000	122.000
0162	645.0120	Geotextile Type HR	SY	18.000	18.000
0166	650.9910	Construction Staking Supplemental Control (project) 02. 1016-05-66	LS	1.000	1.000
0168	690.0150	Sawing Asphalt	LF	72.000	72.000
0170	715.0502	Incentive Strength Concrete Structures 01. B-29-21	DOL	300.000	300.000
0172	715.0502	Incentive Strength Concrete Structures 02. B-29-22	DOL	300.000	300.000

STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF
5+00	-	7+34	RIGHT	234
5+07	-	7+53	LEFT	246
9+12	-	10+73	RIGHT	161
9+31	-	10+96	LEFT	165
12+51	-	14+97	RIGHT	246
12+73	-	15+03	LEFT	230
			TOTAL 0010	1,282

LOCATION	204.0170 REMOVING FENCE LF	REMARKS
SOUTH OF B-29-21	48	LEFT
SOUTH OF B-29-21	80	RIGHT
NORTH OF B-29-22	78	LEFT
NORTH OF B-29-22	51	RIGHT
TOTAL 0010	257	

3

BASE AGG ITEMS

STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 3/4-INCH TON	624.0100 WATER MGAL
6+93	-	7+59	SOUTH OF B-29-21	3	10	-
9+22	-	11+01	BETWEEN STRUCTURES	4	15	-
12+62	-	13+12	NORTH OF B-29-22	3	10	-
			UNDISTRIBUTED	2	-	15
			TOTAL 0010	12	35	15

LOCATION	616.0100 FENCE WOVEN WIRE (4.5 FEET) LF	REMARKS
SOUTH OF B-29-21	48	LEFT
SOUTH OF B-29-21	80	RIGHT
NORTH OF B-29-22	78	LEFT
NORTH OF B-29-22	51	RIGHT
TOTAL 0010	257	

STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
5+00	SOUTH OF B-29-21	24	
15+03	NORTH OF B-29-22	24	
1589+35	IH 90 EB	8	OUTSIDE SHOULDER
1589+35	IH 90 EB	4	INSIDE SHOULDER
1599+35	IH 90 WB	8	OUTSIDE SHOULDER
1599+35	IH 90 WB	4	INSIDE SHOULDER
	TOTAL 0010	72	

ASPHALT ITEMS

STATION	TO	STATION	LOCATION	204.0110 REMOVING ASLPHALTIC SURFACE SY	204.0120 REMOVING ASLPHALTIC SURFACE MILLING SY	455.0605 TACK COAT GAL	460.7424 HMA PAVEMENT 4 HT 58-28 H TON	465.0105 ASPHALTIC SURFACE TON	465.0400 ASPHALTIC SHOULDER RUMBLE STRIPS LF	REMARKS
6+93	-	7+59	SOUTH OF B-29-21	130	-	6	-	14	-	
9+22	-	11+01	BETWEEN STRUCTURES	400	-	20	-	45	-	
12+62	-	13+12	NORTH OF B-29-22	130	-	6	-	14	-	
1589+35	-	1599+35	INSIDE SHOULDER	-	440	20	50	-	1,000	EB IH 90/94
1589+35	-	1599+35	OUTSIDE SHOULDER	-	890	40	100	-	1,000	EB IH 90/94
1589+35	-	1599+35	INSIDE SHOULDER	-	440	20	50	-	1,000	WB IH 90/94
1589+35	-	1599+35	OUTSIDE SHOULDER	-	890	40	100	-	1,000	WB IH 90/94
			TOTAL 0010	660	2,660	152	300	73	4,000	

MGS ITEMS

STATION	TO	STATION	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	REMARKS
5+00	-	7+34	RIGHT	145	39	1	
5+07	-	7+53	LEFT	157	39	1	
9+12	-	10+73	RIGHT	161	0	0	
9+31	-	10+96	LEFT	164	0	0	
12+51	-	14+97	RIGHT	156	39	1	
12+73	-	15+03	LEFT	142	39	1	
			TOTAL 0010	925	156	4	

ASPHALT FLUMES

STATION	LOCATION	465.0315 ASPHALTIC FLUMES SY	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY	REMARKS
9+22	RIGHT	5	1	3	NE CORNER OF B-29-21
9+38	LEFT	5	1	3	NW CORNER OF B-29-21
10+69	RIGHT	5	1	3	SE CORNER OF B-29-22
10+85	LEFT	5	1	3	SW CORNER OF B-29-22
12+62	RIGHT	5	1	3	NE CORNER OF B-29-22
12+78	LEFT	5	1	3	NW CORNER OF B-29-22
	TOTAL 0010	30	6	18	

3

3

LANDSCAPING ITEMS

STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2004 EROSION MAT CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0500 SEED WATER MGAL	REMARKS
5+00	-	7+34	RIGHT	80	235	235	-	-	80	1	2	1	
5+07	-	7+53	LEFT	90	250	250	-	-	90	1	3	1	
9+12	-	10+73	RIGHT	60	165	165	-	-	60	1	2	1	
9+31	-	10+96	LEFT	60	165	165	-	-	60	1	2	1	
12+51	-	14+97	RIGHT	90	250	250	-	-	90	1	3	1	
12+73	-	15+03	LEFT	80	230	230	-	-	80	1	2	1	
			UNDISTRIBUTED	50	400	400	2	1	200	2	4	2	
			TOTAL 0010	510	1,695	1,695	2	1	660	8	17	8	

TRAFFIC CONTROL ITEMS

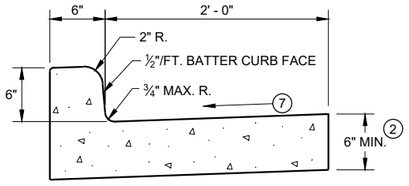
LOCATION	DAYS	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0800 TRAFFIC CONTROL ARROW BOARDS DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	REMARKS
SOUTH OF B-29-21	60.00	500	500	250	1,000	0	400	0	
NORTH OF B-29-22	60.00	500	500	250	1,000	0	400	0	
IH 90/94	15.00	300	30	120	60	30	165	15	
TOTAL 0010		1,300	1,030	620	2,060	30	965	15	

STATION	TO	STATION	LOCATION	601.0553 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D LF	REMARKS
9+06	-	9+22	RIGHT	16	NE CORNER OF B-29-21
9+22	-	9+38	LEFT	16	NW CORNER OF B-29-21
10+69	-	10+85	RIGHT	16	SE CORNER OF B-29-22
10+85	-	11+01	LEFT	16	SW CORNER OF B-29-22
12+46	-	12+62	RIGHT	16	NE CORNER OF B-29-22
12+62	-	12+78	LEFT	16	NW CORNER OF B-29-22
			TOTAL 0010	96	

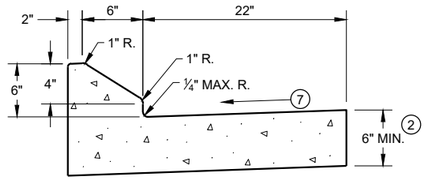
STATION	LOCATION	638.2102 MOVING SIGNS TYPE II EACH	REMARKS
7+34	RIGHT	1	SE CORNER OF B-29-21
7+53	LEFT	1	SW CORNER OF B-29-22
12+51	RIGHT	1	NE CORNER OF B-29-22
12+73	LEFT	1	NW CORNER OF B-29-23
	TOTAL 0010	4	

Standard Detail Drawing List

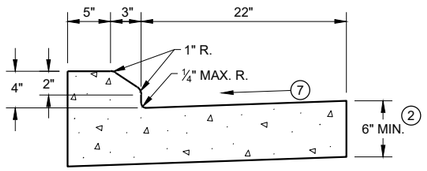
08D01-22A	CONCRETE CURB & GUTTER
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11C	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15D12-09B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



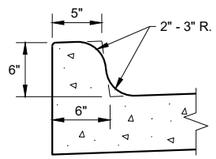
TYPES A (1) & D



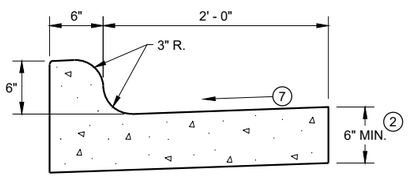
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

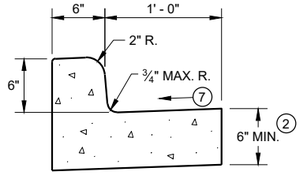


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



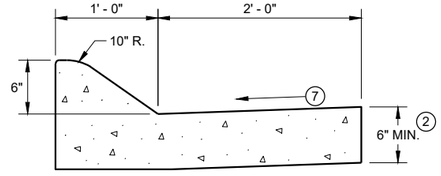
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

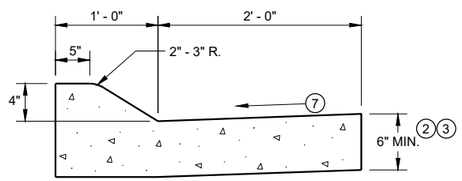


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

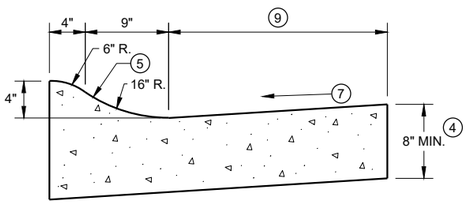


6" SLOPED CURB TYPES A (1) & D



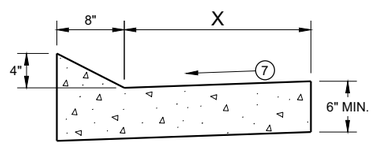
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

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

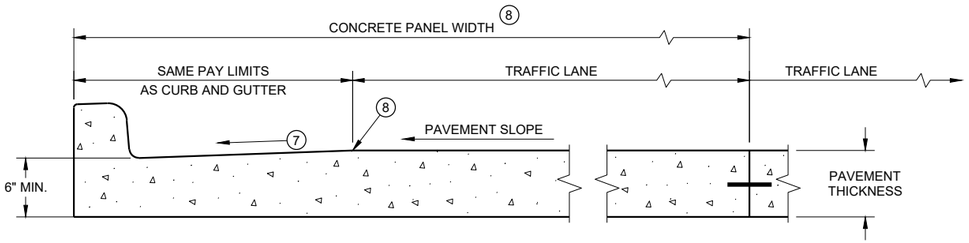


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

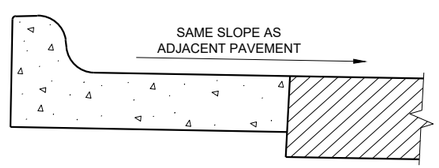
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

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

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

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(3) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

(9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

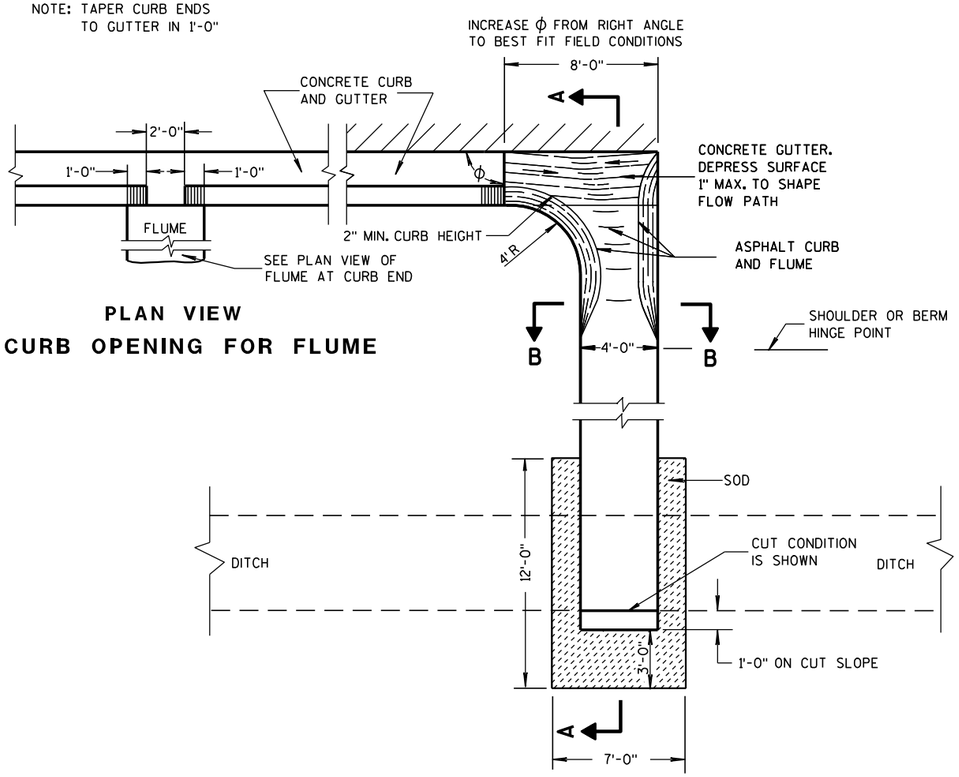
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

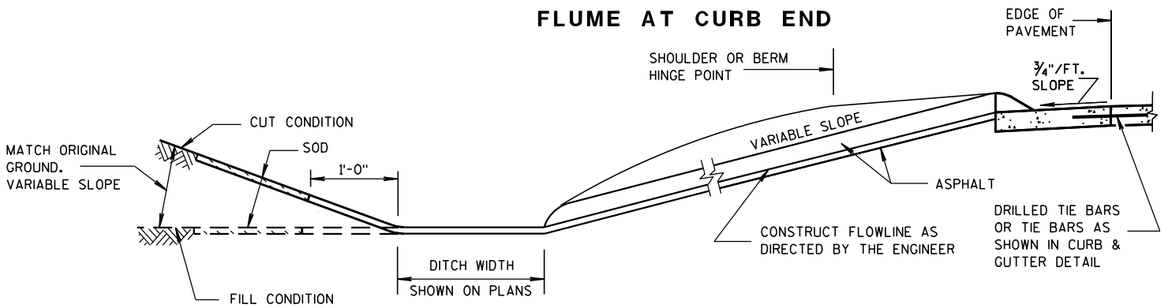
SDD 08D01 - 22a

ASPHALTIC FLUME

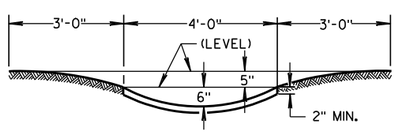


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

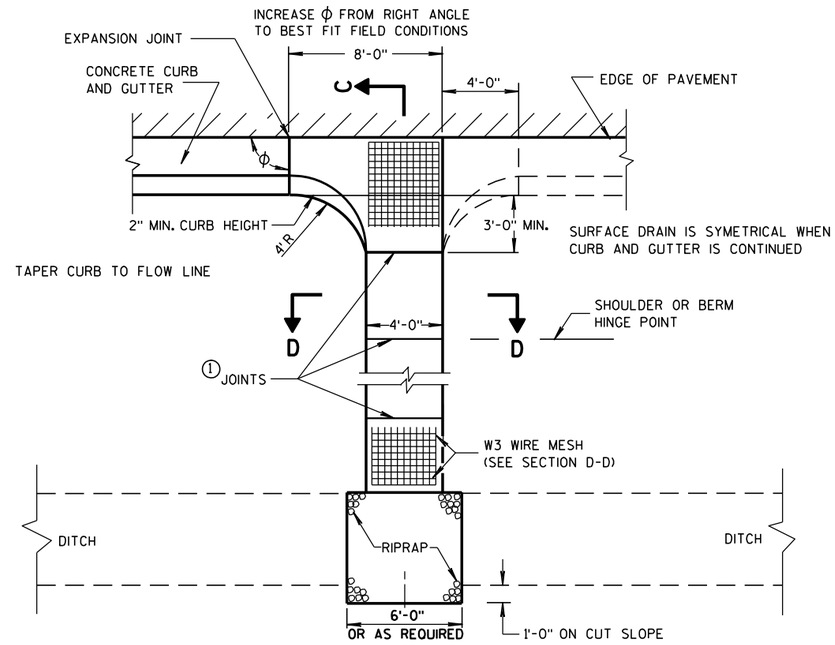
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

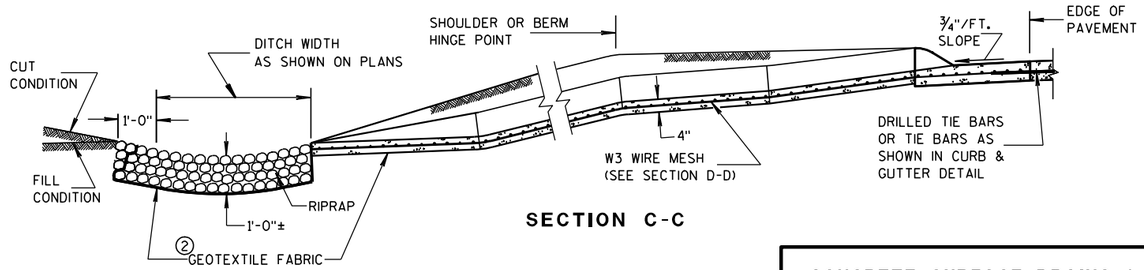
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

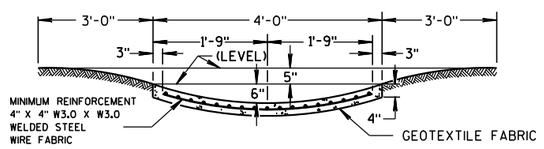
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT

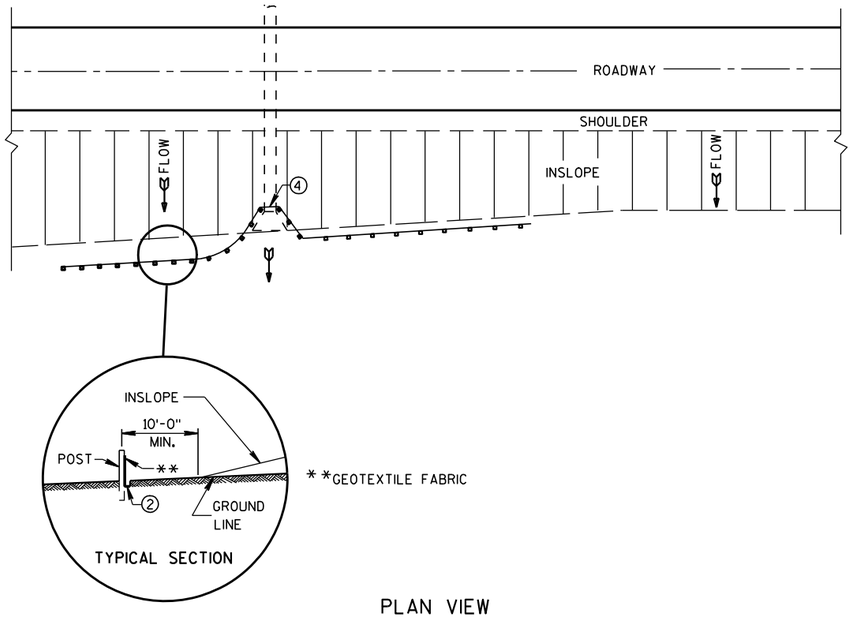
FHWA

6

S.D.D. 8 D 4-5

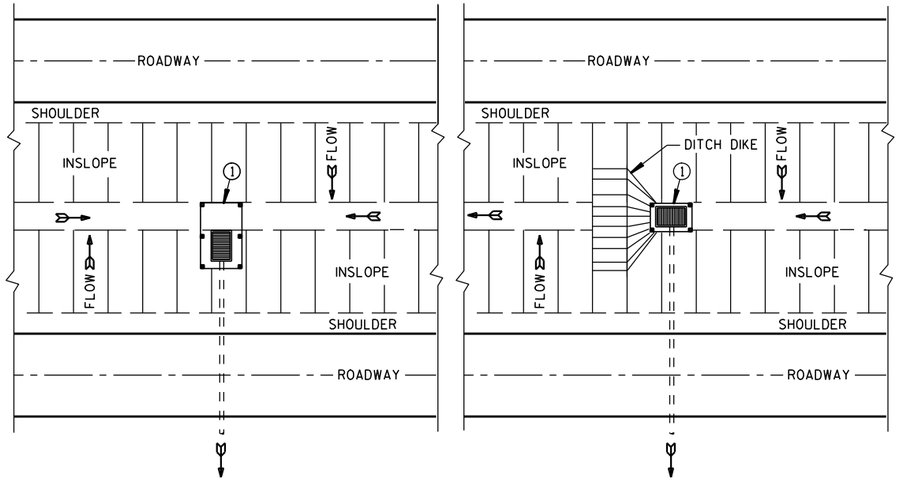
6

S.D.D. 8 D 4-5



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



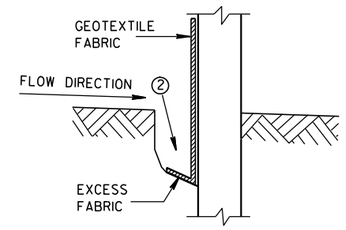
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

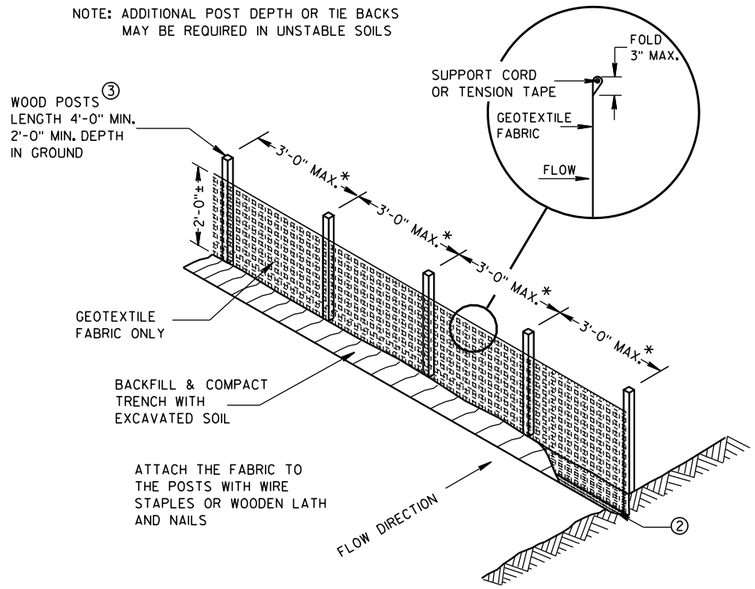
GENERAL NOTES

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

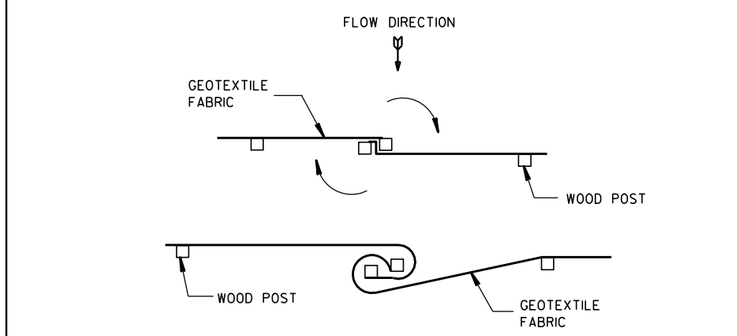
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



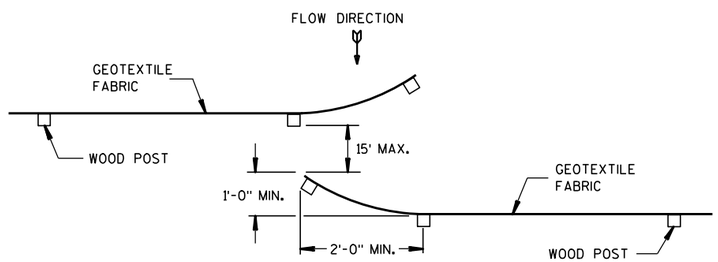
TRENCH DETAIL



SILT FENCE

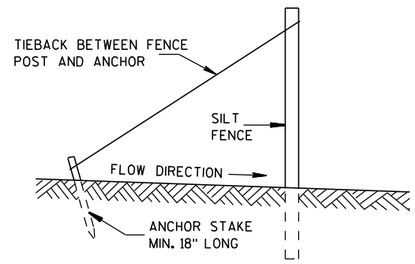


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

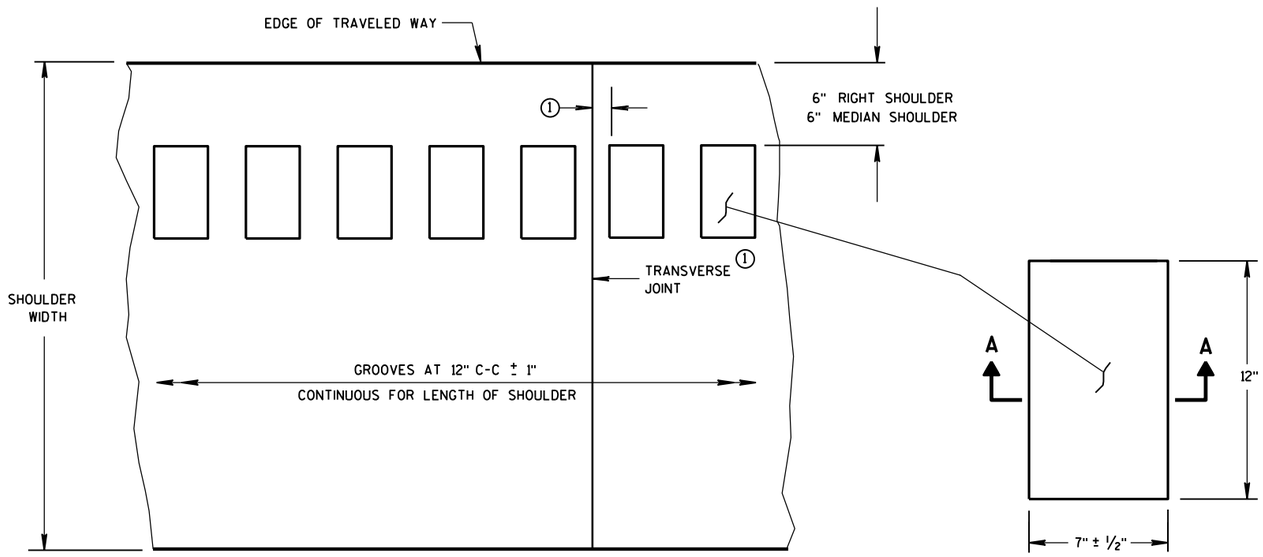
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

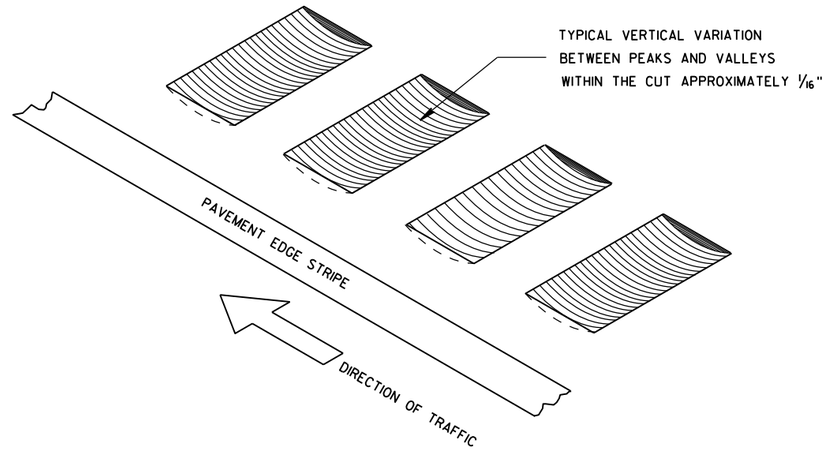
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

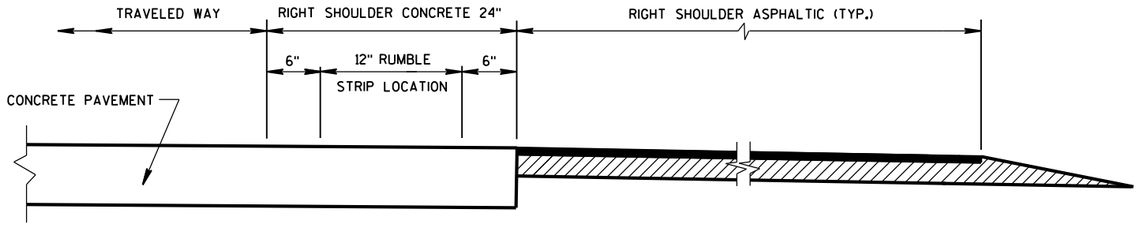
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

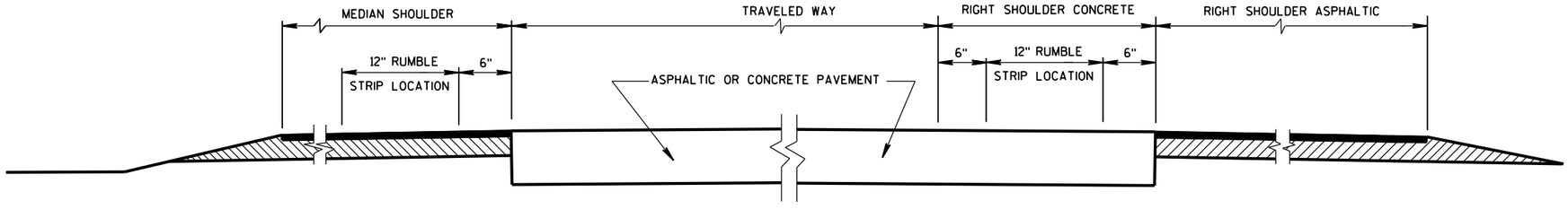
(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



ISOMETRIC



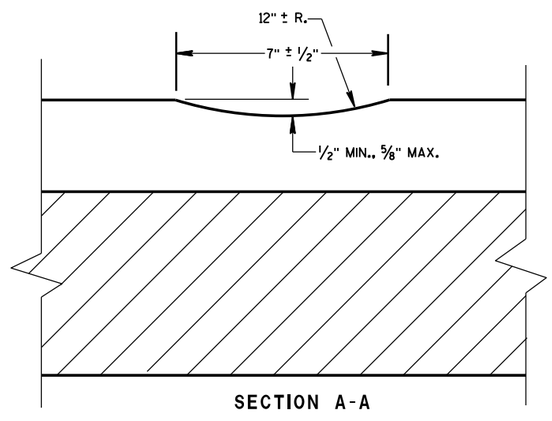
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

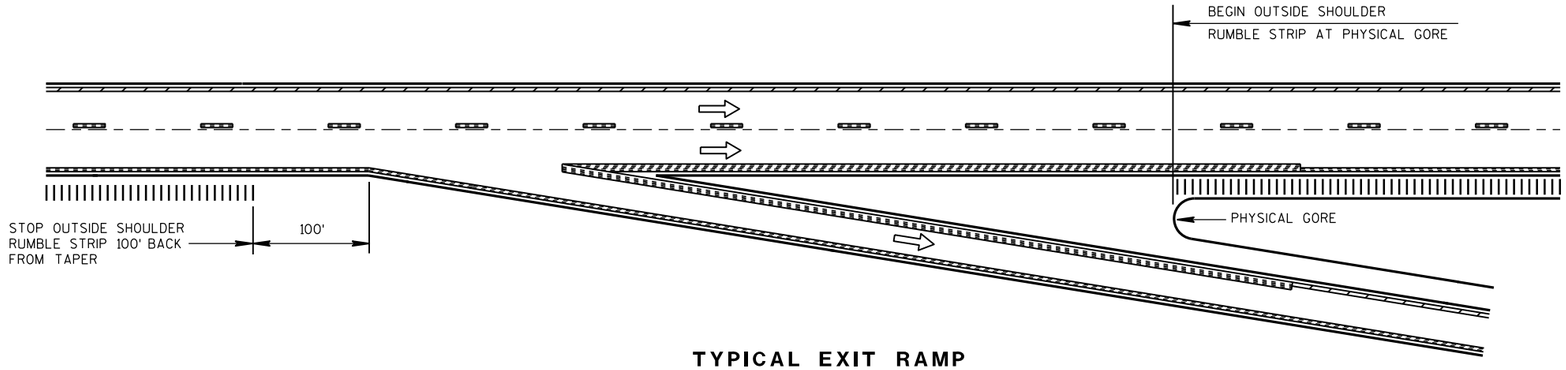
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 13 A 5-5a

6

S.D.D. 13 A 5-5a



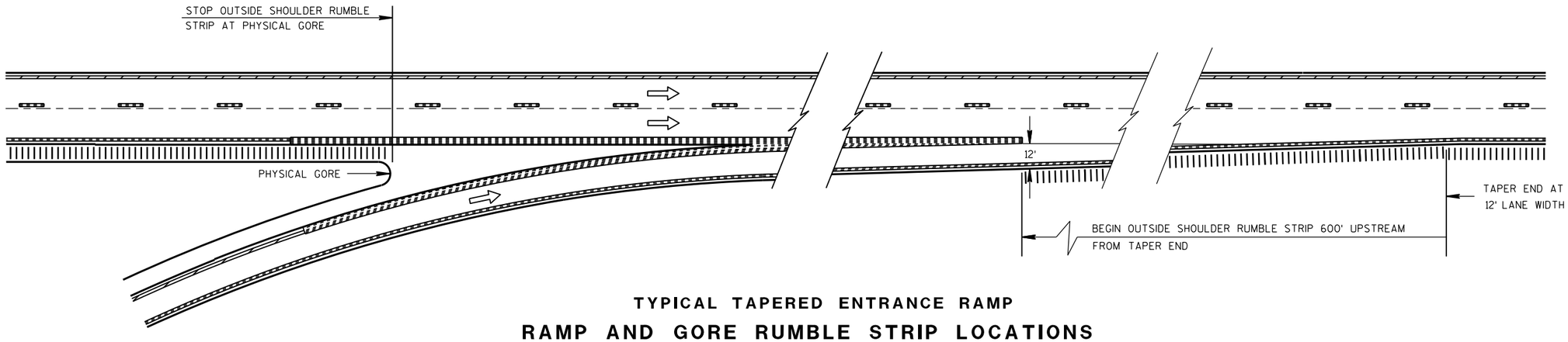
TYPICAL EXIT RAMP

NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

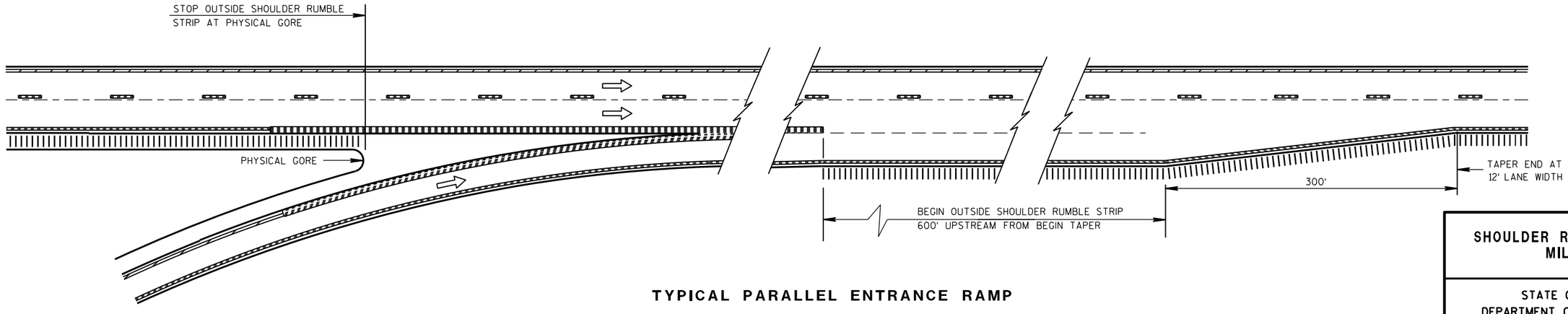
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

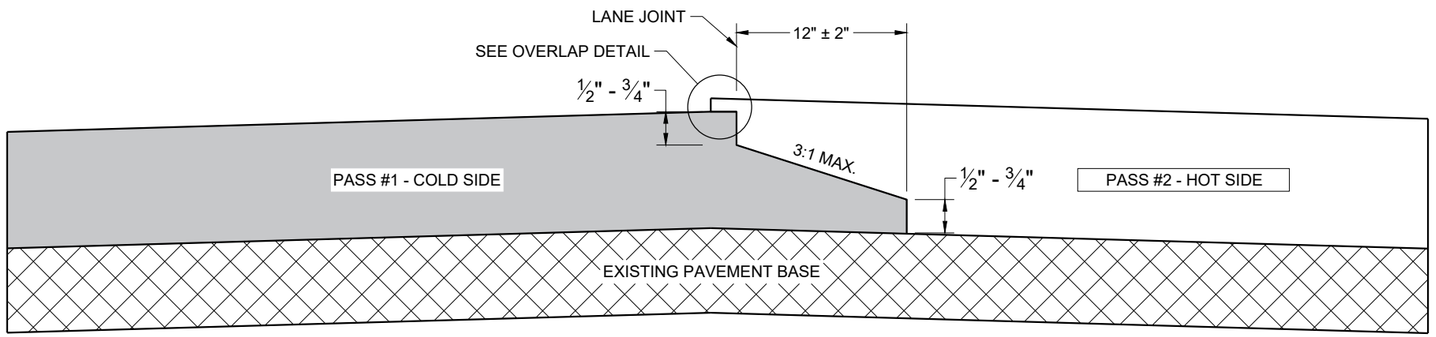
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

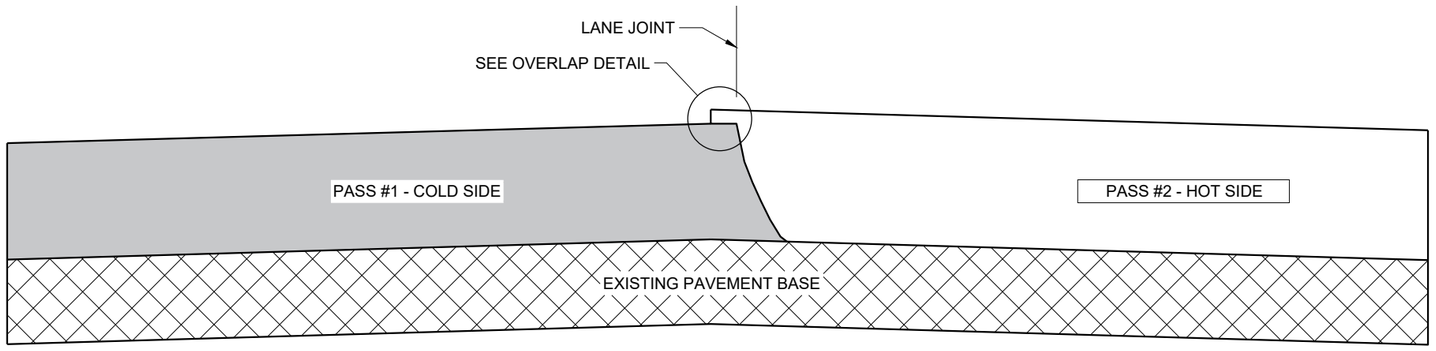
APPROVED
12/17/2012 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS ENGINEER
FHWA

6

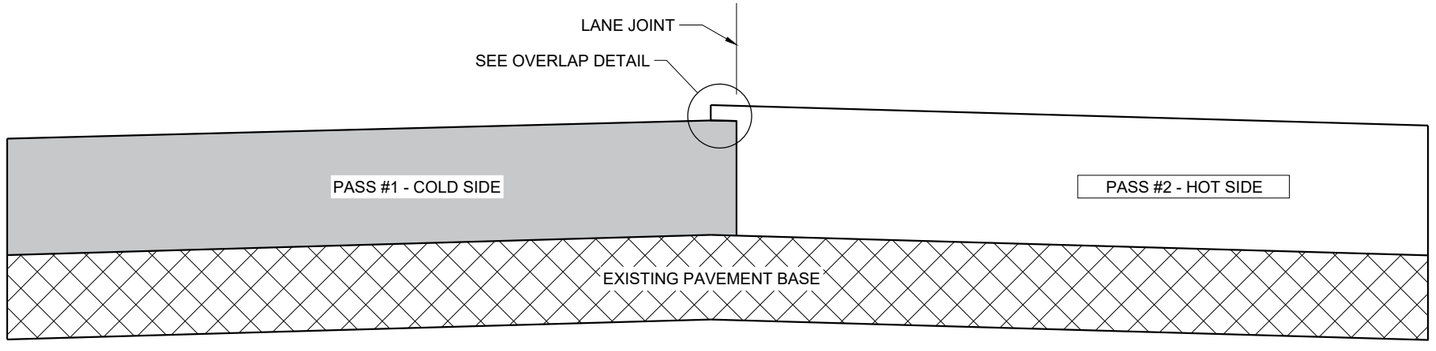
S.D.D. 13 A 5-5b



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

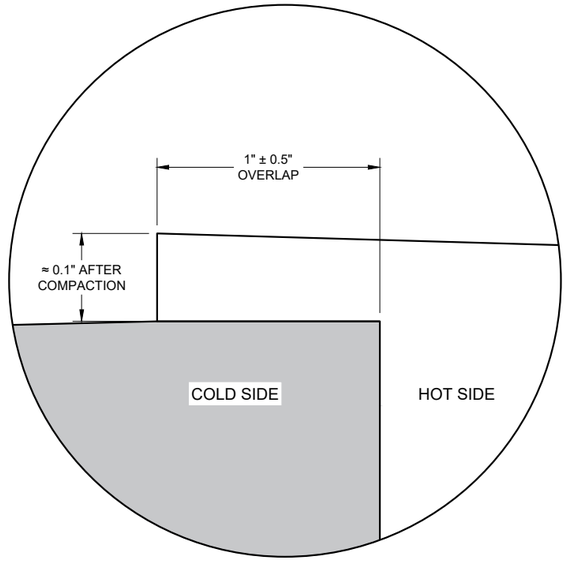
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

6

SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020
DATE

/S/ Steven Hefel
HMA PAVEMENT ENGIN

FHWA

GENERAL NOTES

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

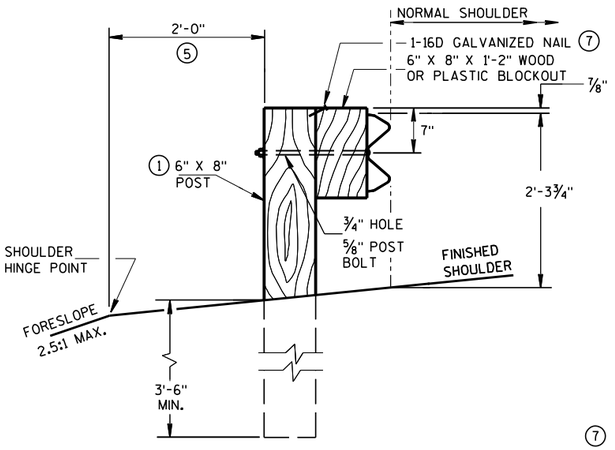
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

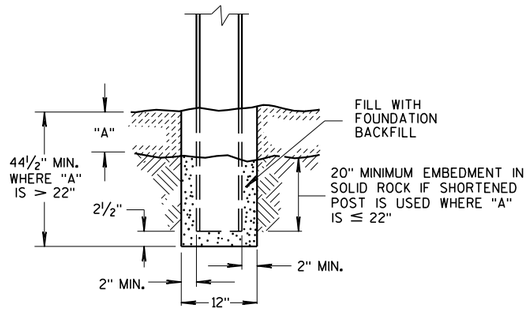
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

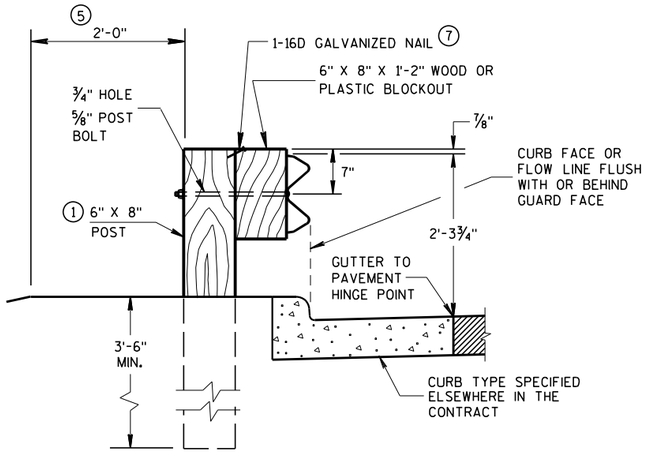
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



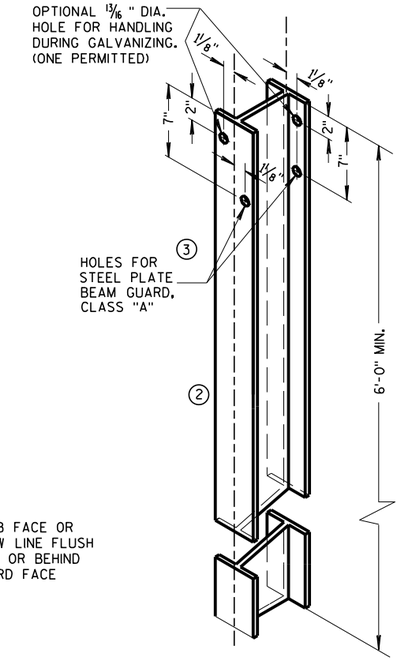
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)

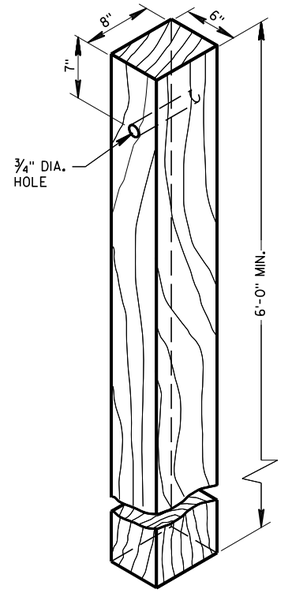


END VIEW
LOCATED ALONG A CURBED ROADWAY

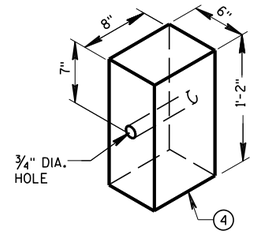


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

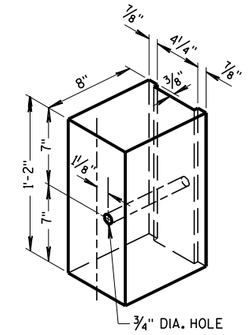
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



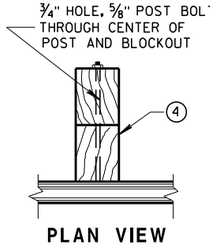
WOOD POST
(6"X8") NOMINAL



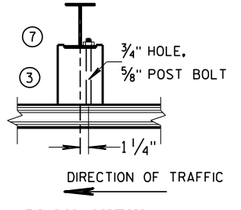
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



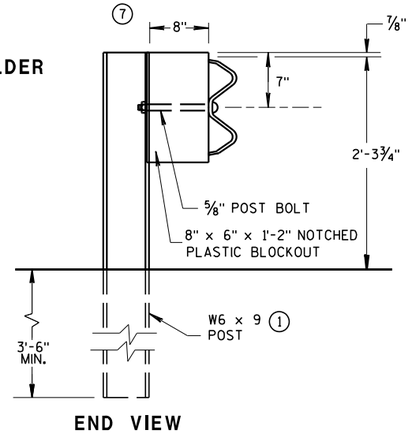
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



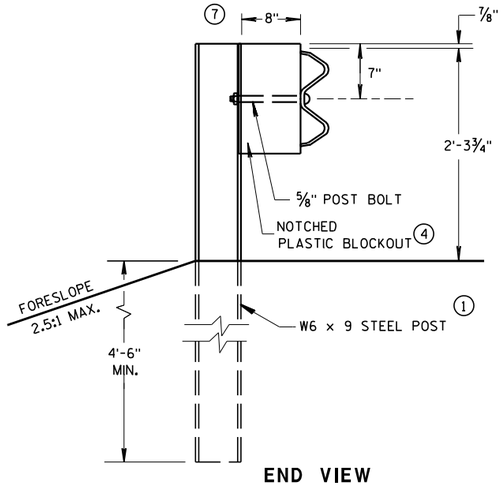
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



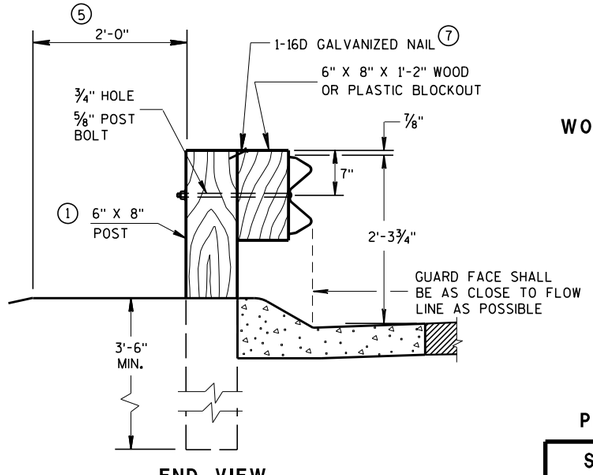
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

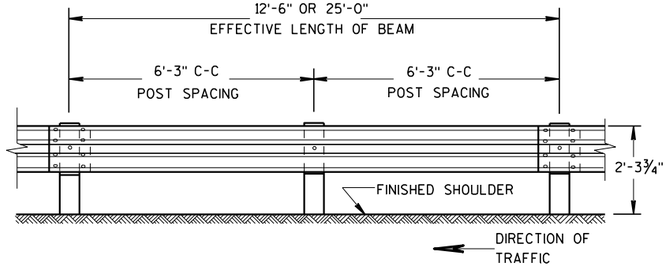
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

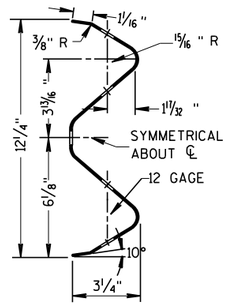
S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a

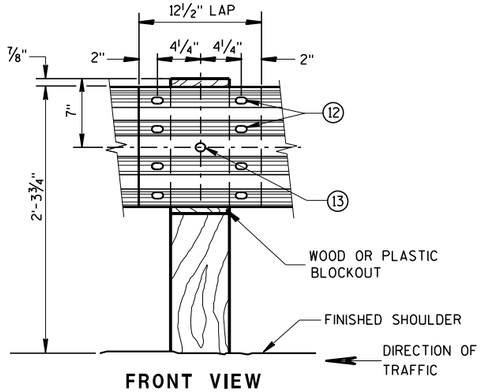


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

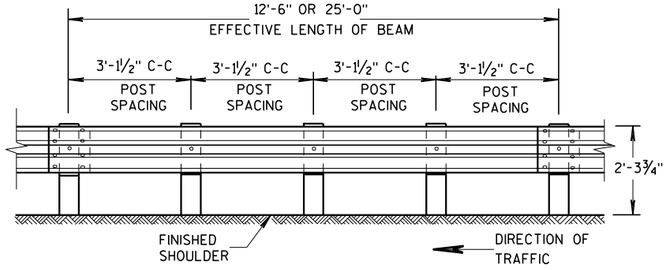
GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

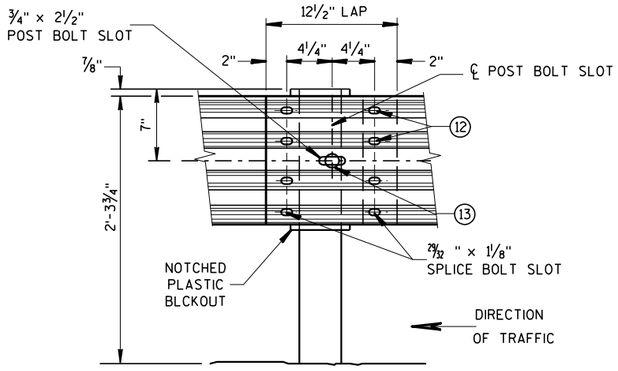
(12) 8 -5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



FRONT VIEW

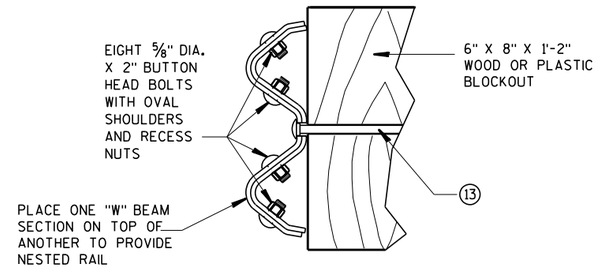
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

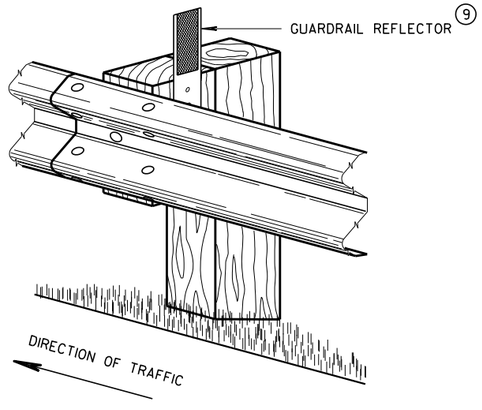
TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD



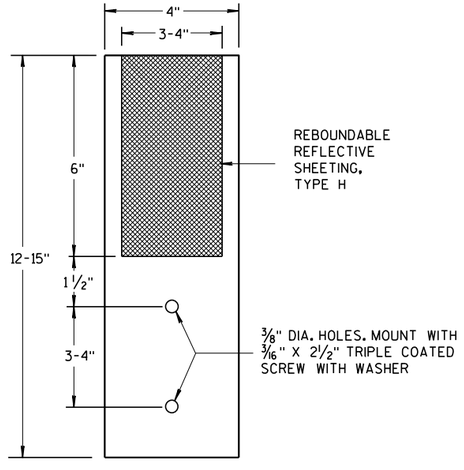
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



4" X 12" GUARDRAIL REFLECTOR DETAIL AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

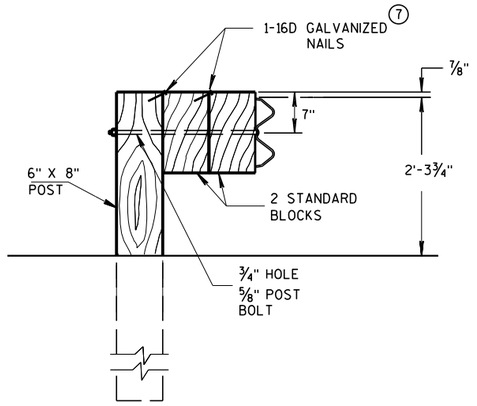
STATE OF WISCO 24
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 15-11b

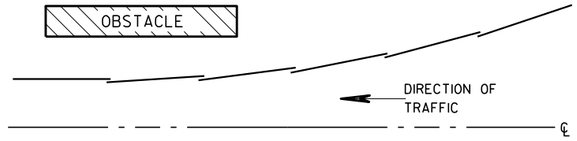
6

S.D.D. 14 B 15-11b

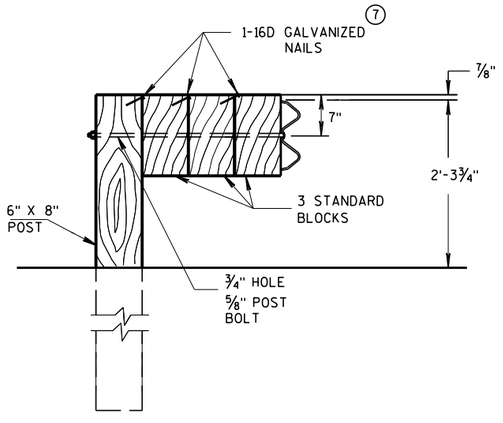


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

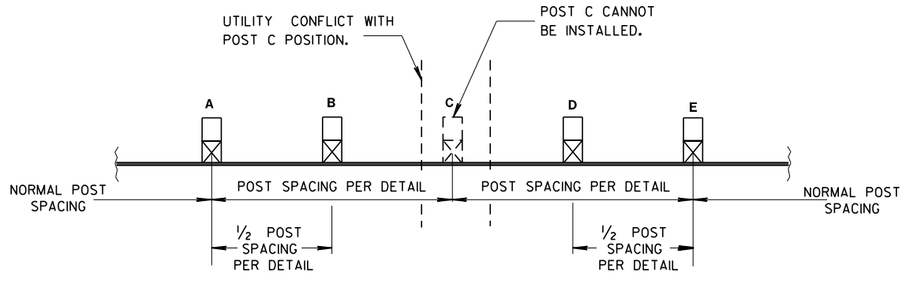


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

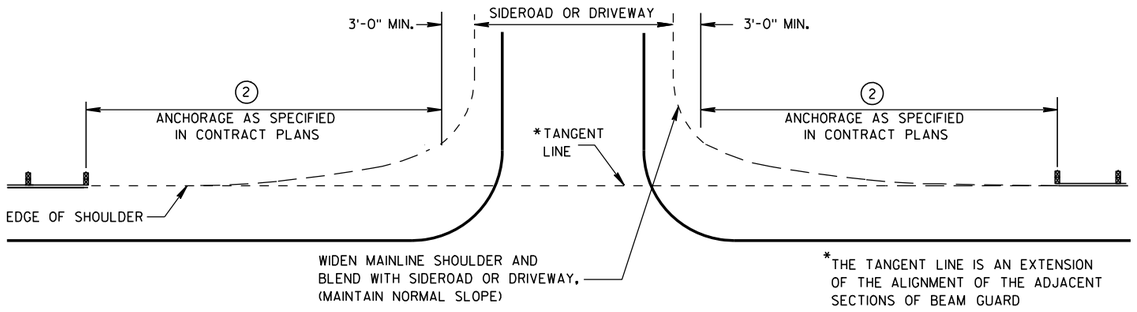
NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.

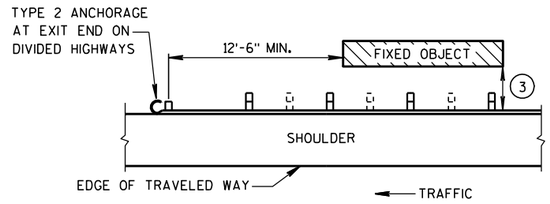
STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

GENERAL NOTES

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

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

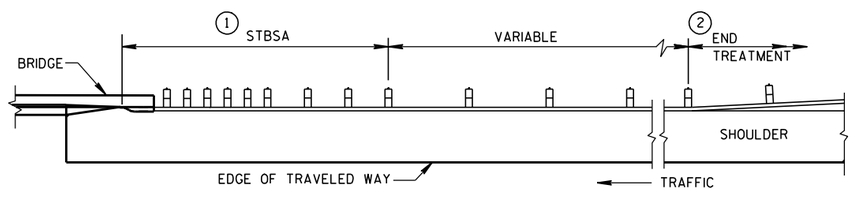
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.

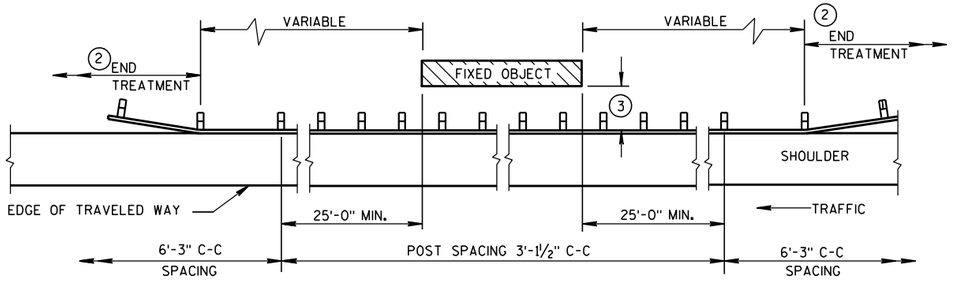
(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3)

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1½"
4'-6"	6' - 3"

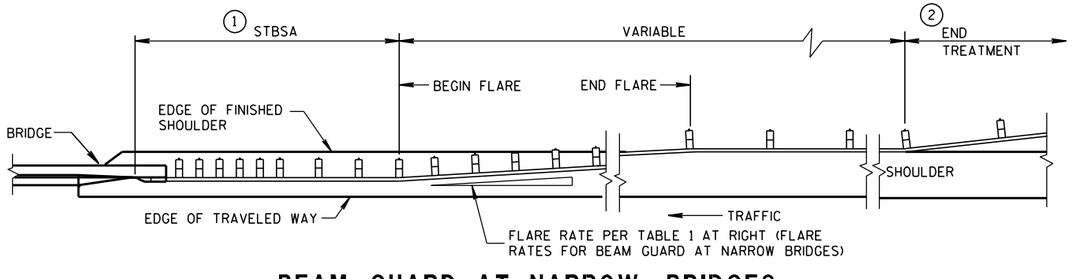


BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

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



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

TABLE 1
FLARE RATES FOR BEAM GUARD AT NARROW BRIDGES

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

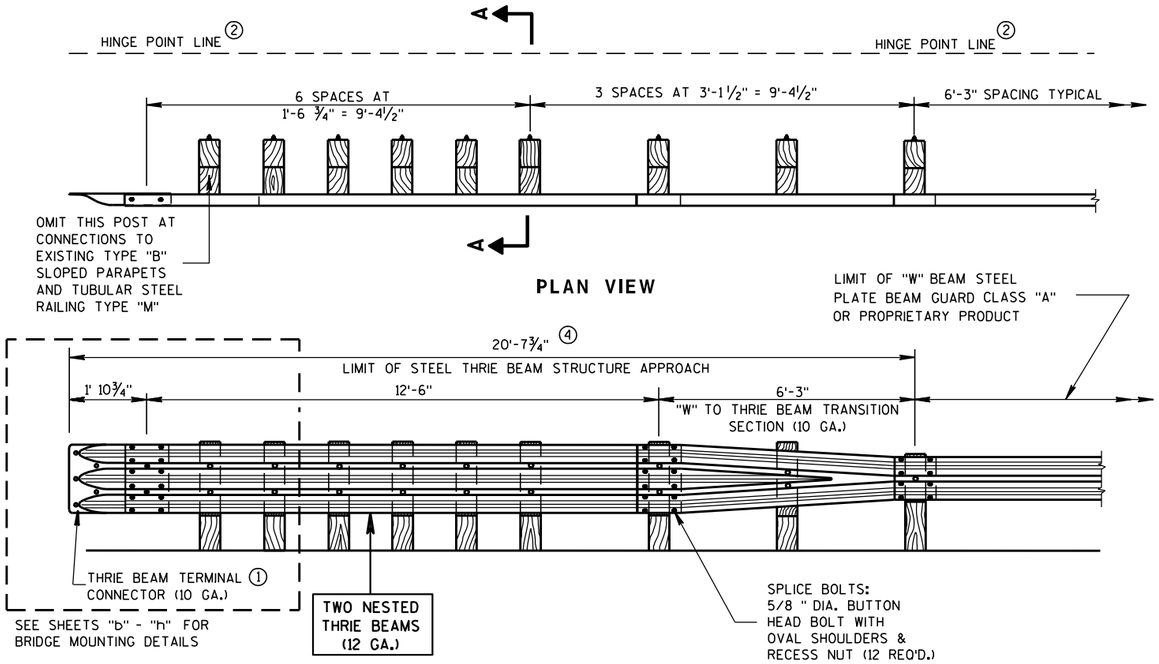
STEEL PLATE BEAM GUARD CLASS "A" AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 14 B 18-6a



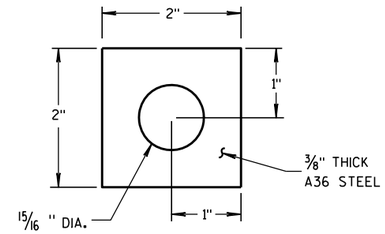


PLATE WASHER DETAIL

GENERAL NOTES

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

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

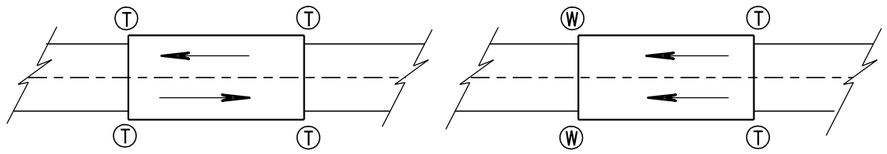
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



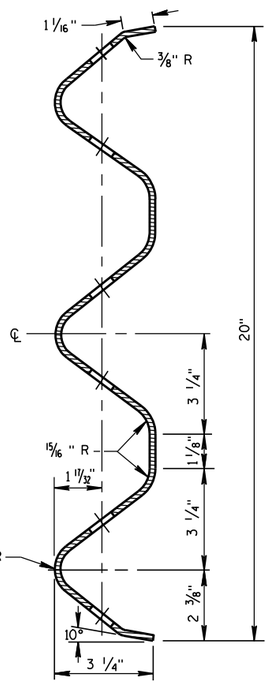
TWO WAY TRAFFIC

ONE WAY TRAFFIC

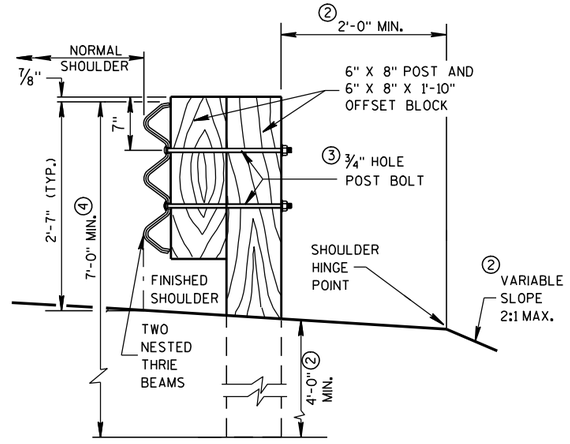
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

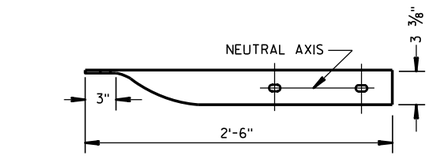
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

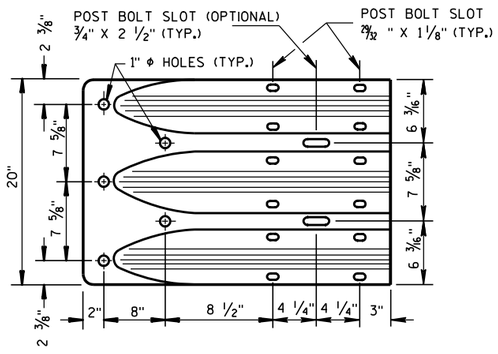


SECTION THRU THRIE BEAM RAIL ELEMENT

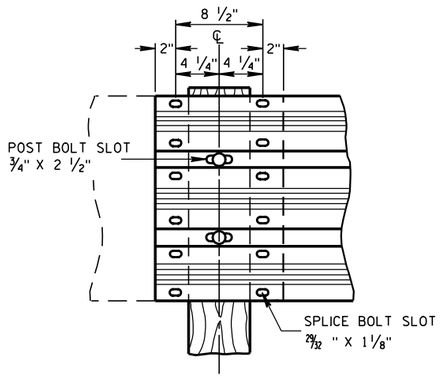


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

FHWA

GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

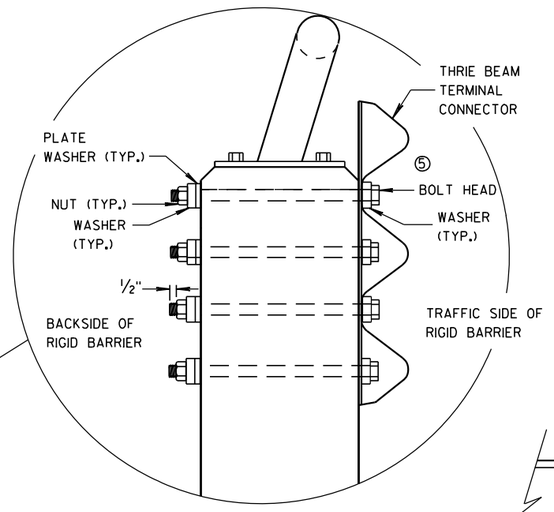
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. 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.

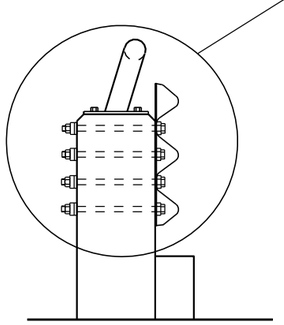
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

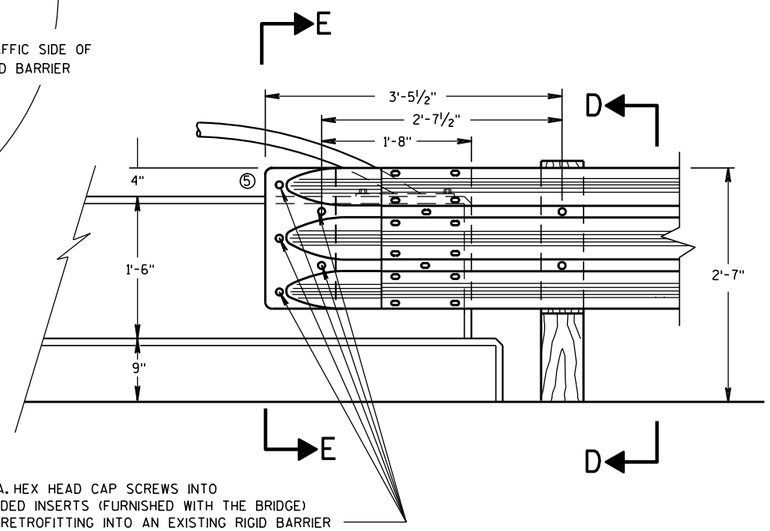
⑤ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.





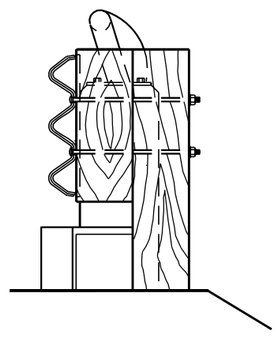
SECTION E-E



① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

FRONT VIEW

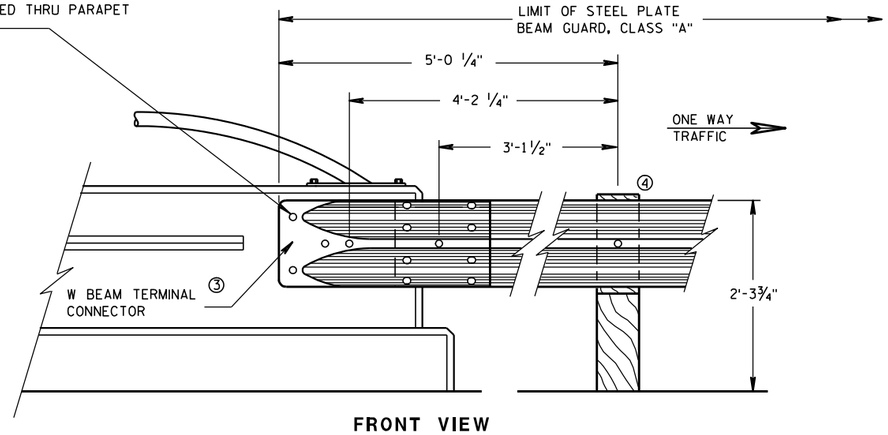


SECTION D-D

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 14 B 20-11c

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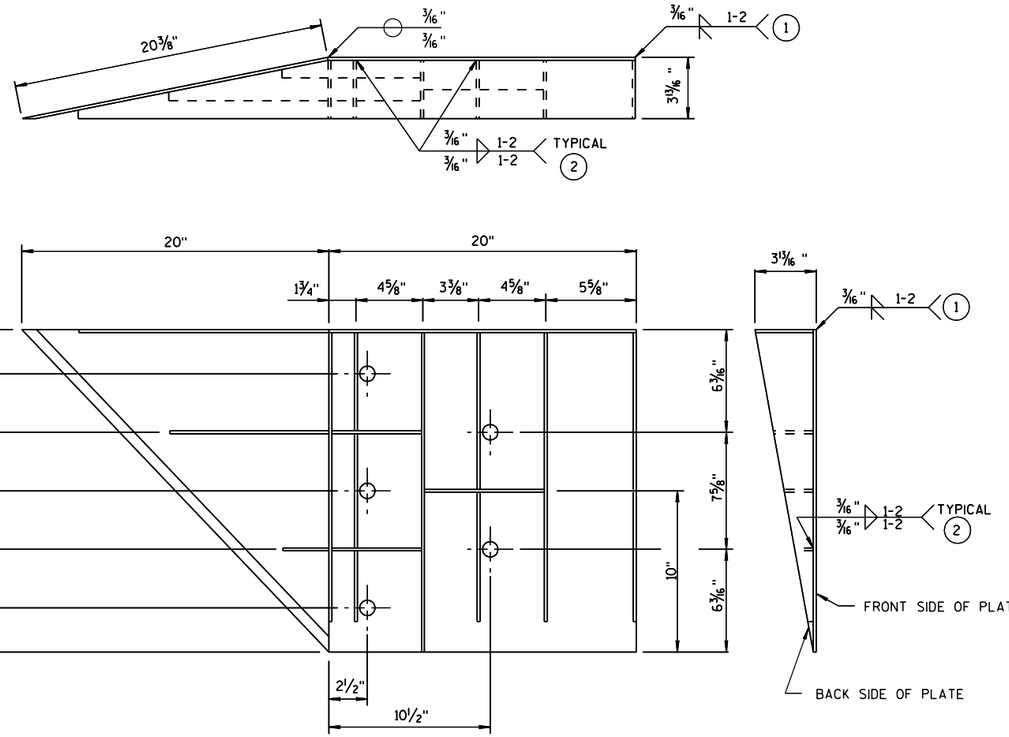
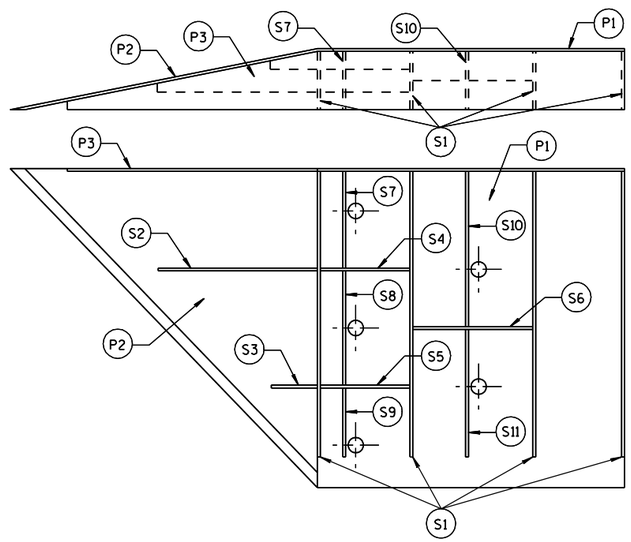


WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)



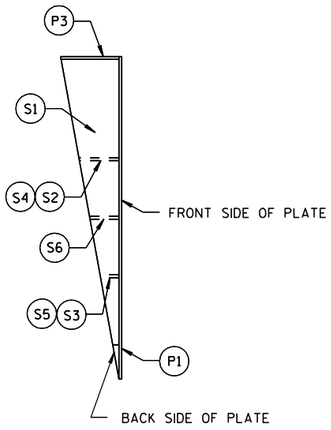


PLATE AND STIFFENER IDENTIFICATION

(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.

(1) 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.

(2) 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"

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 14 B 20-11g

6

S.D.D. 14 B 20-11g

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6½"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

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

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

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

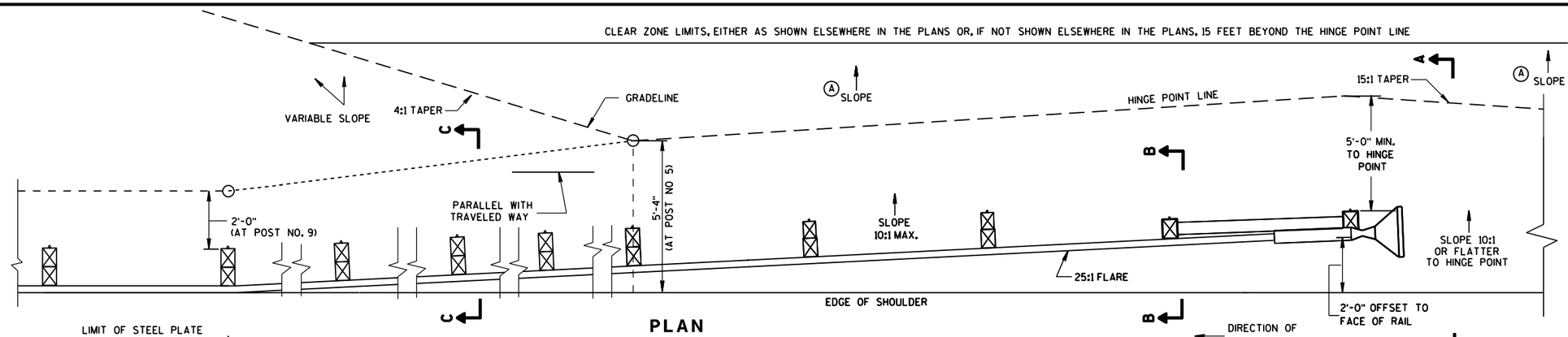
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

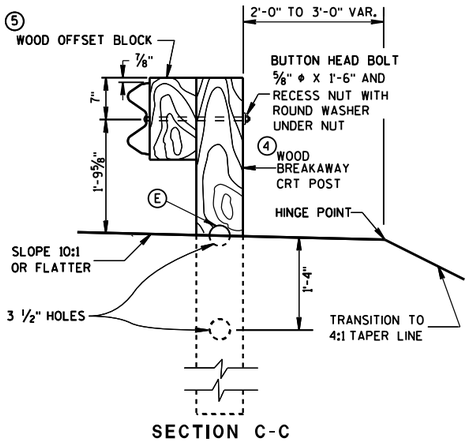
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

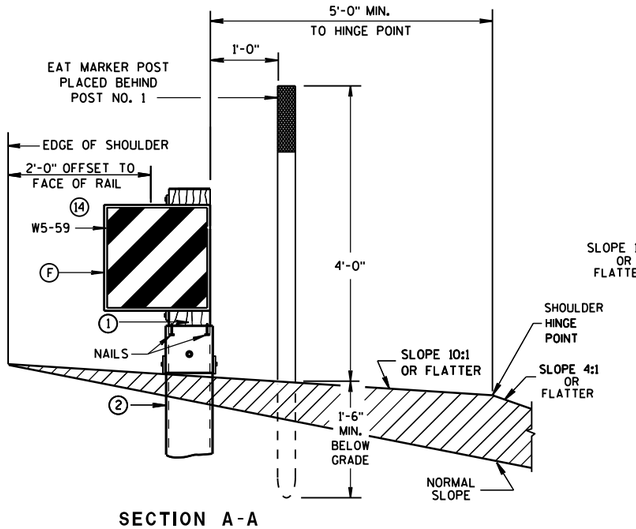
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

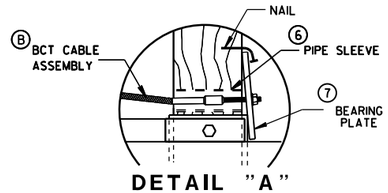




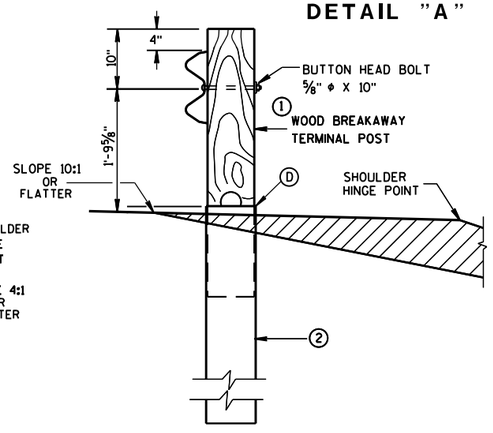
SECTION C-C
TYPICAL AT POST NOS. 6, 8



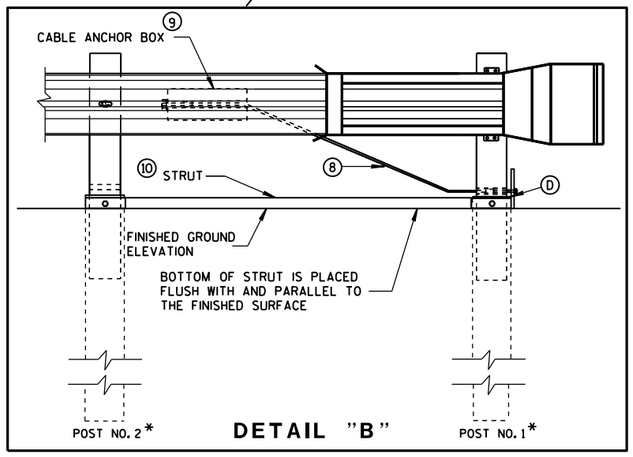
SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



SECTION B-B
TYPICAL AT POST NO. 2*



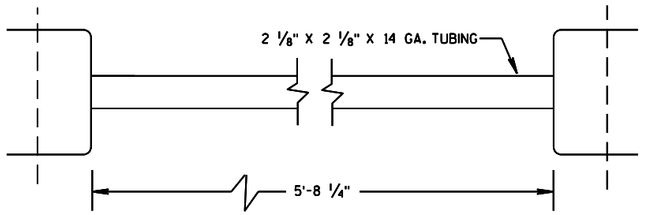
DETAIL "B"

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

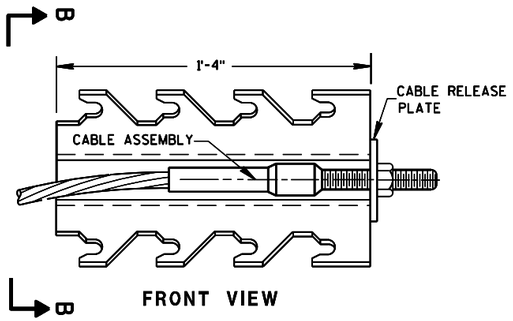
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

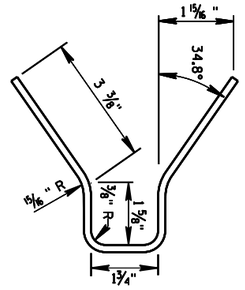
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL

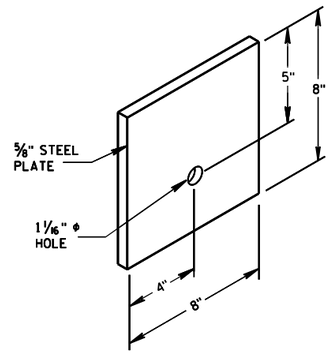


FRONT VIEW



SECTION B-B

⑨ CABLE ANCHOR BOX



⑦ STEEL BEARING PLATE

6

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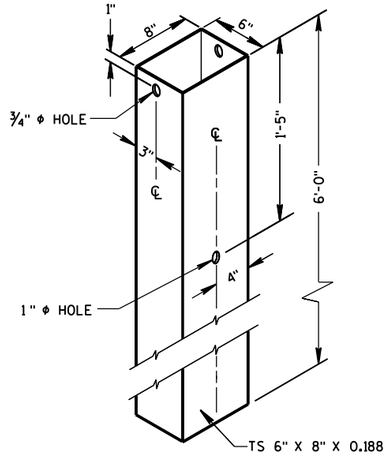
S.D.D. 14 B 24-9b

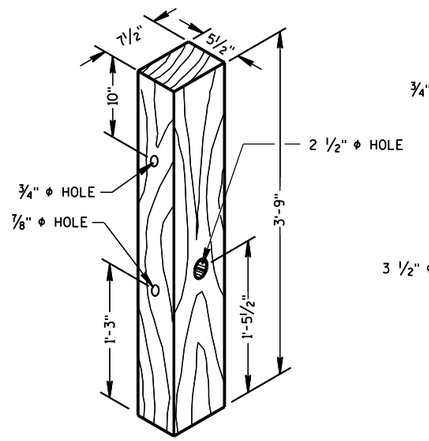
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

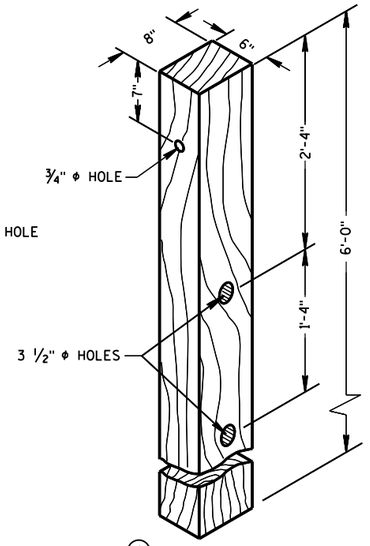
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



② 72" STEEL TUBE
(POSTS NO. 1-2



① TERMINAL POST

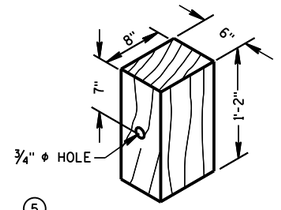


④ CRT POST
(POSTS NO'S 5-8)

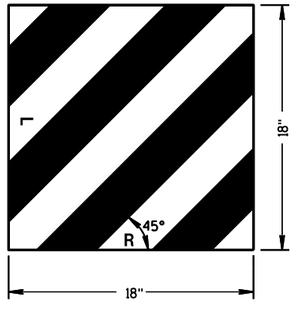
WOOD BREAKAWAY POSTS

GENERAL NOTES

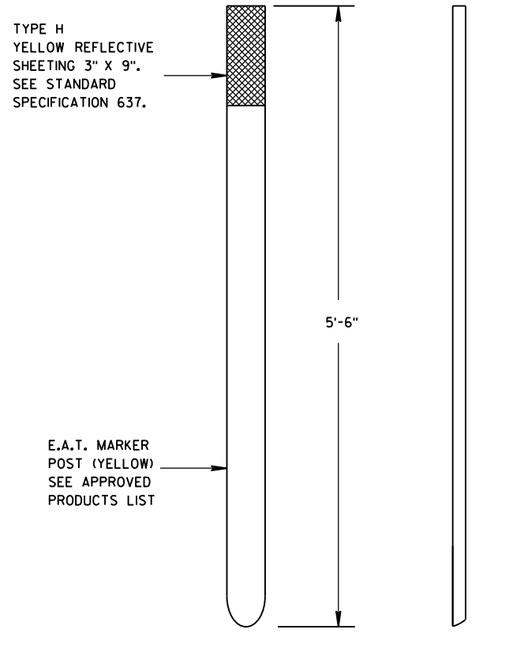
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



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



⑭ REFLECTIVE SHEETING DETAILS



E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS
UNIT SUPERV...

32

ENT

6

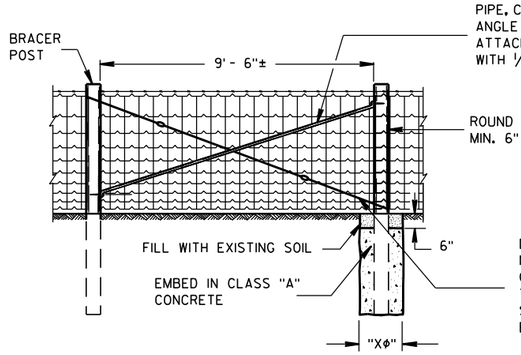
S.D.D. 14 B 24-9c

6

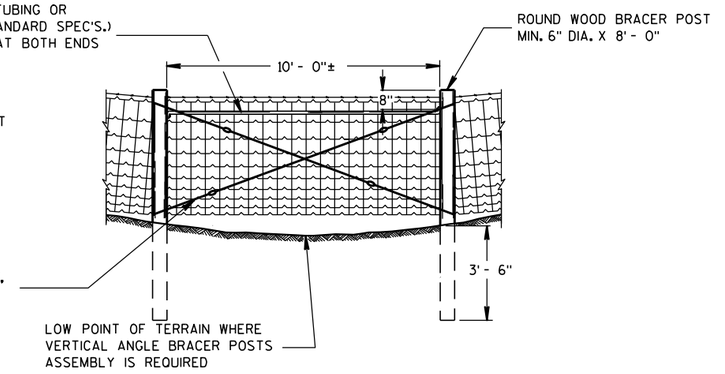
S.D.D. 14 B 24-9c

NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY



VERTICAL ANGLE BRACER POSTS ASSEMBLY

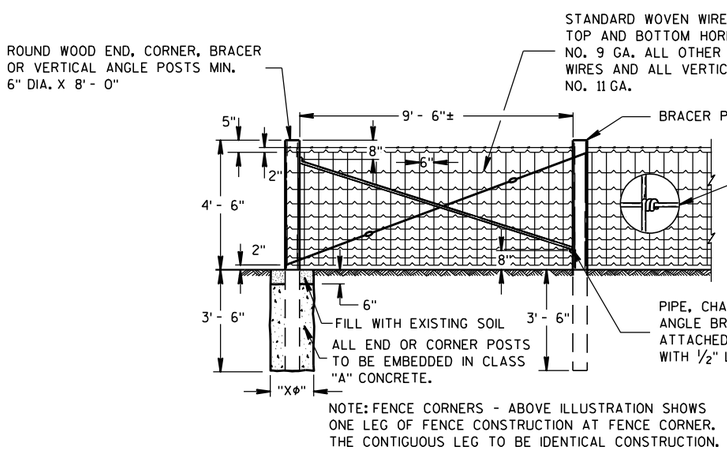
GENERAL NOTES

"XΦ" = DIAMETER OF THE POST PLUS 12".

FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

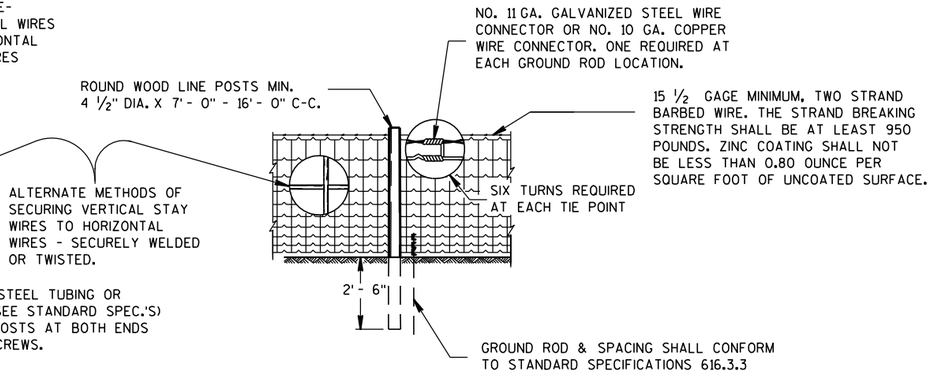
DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.



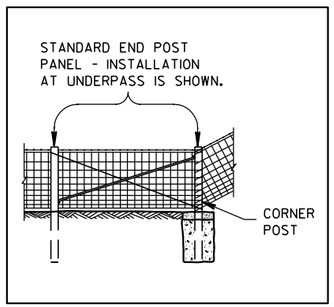
NOTE: FENCE CORNERS - ABOVE ILLUSTRATION SHOWS ONE LEG OF FENCE CONSTRUCTION AT FENCE CORNER. THE CONTIGUOUS LEG TO BE IDENTICAL CONSTRUCTION.

END OR CORNER POSTS ASSEMBLY

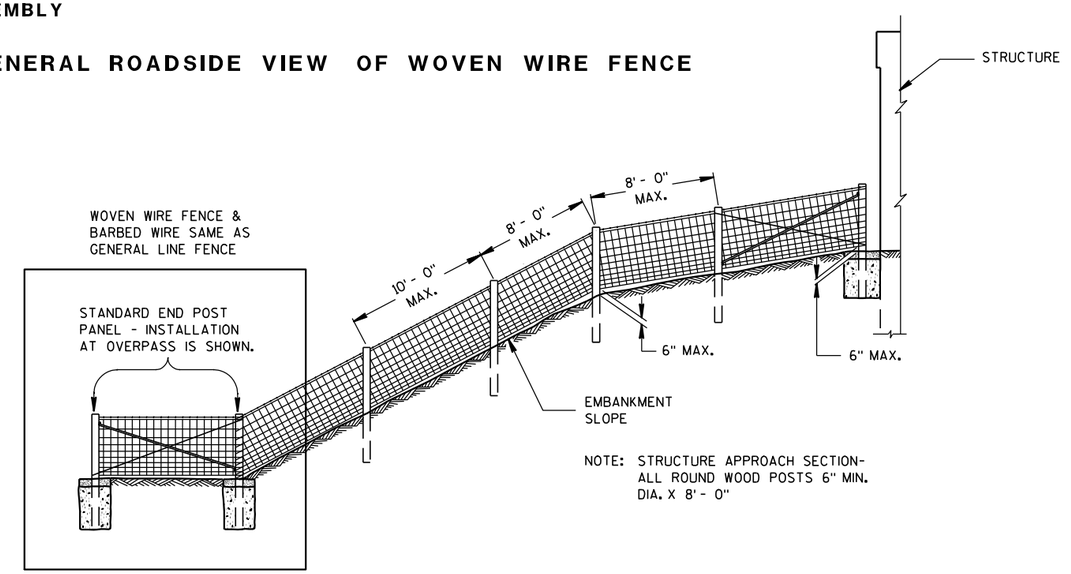


LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE



NOTE: STRUCTURE APPROACH SECTION- ALL ROUND WOOD POSTS 6" MIN. DIA. X 8' - 0"

FENCE DESIGN AT STRUCTURE APPROACH

FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 15 B 1-8a

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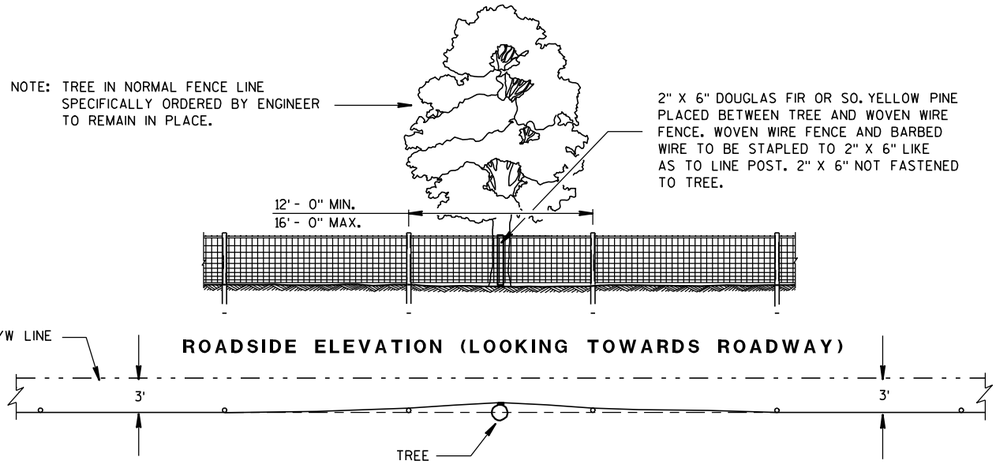
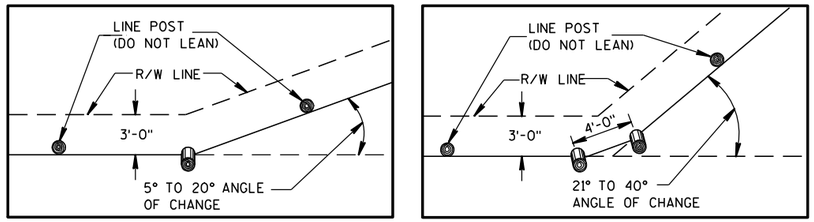
S.D.D. 15 B 1-8a



PLAN VIEW

FENCE DESIGN AT TREES REMAINING IN NORMAL FENCE LINE



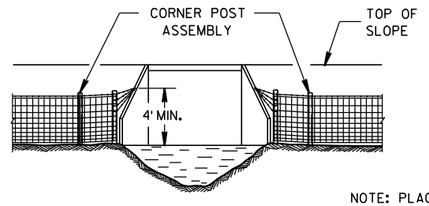
PLAN VIEW SINGLE POST CORNER

PLAN VIEW DOUBLE POST CORNER

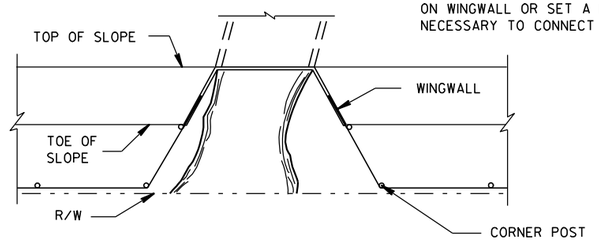
RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

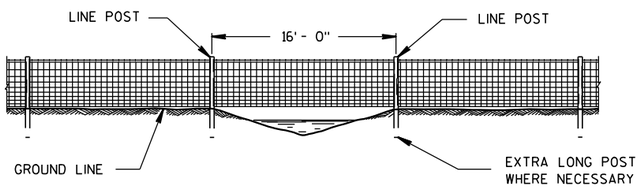
WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



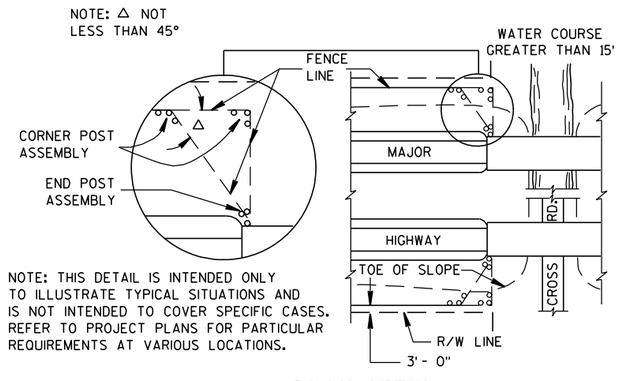
NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



FENCE INSTALLATION TO WINGWALLS

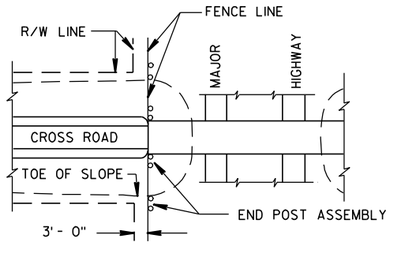


FENCE CONSTRUCTION OVER STREAM COURSES OF 15 FT. OR LESS IN WIDTH



PLAN VIEW

MAJOR HIGHWAY OVERPASS OR STREAM COURSE CROSSING OF GREATER THAN 15 FT. IN WIDTH

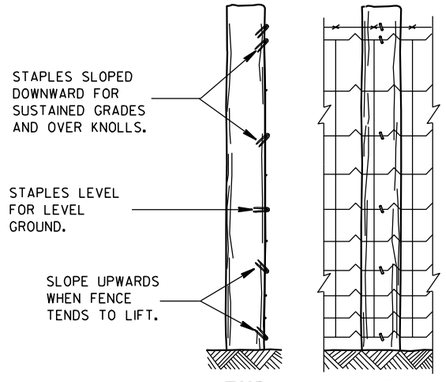


PLAN VIEW

MAJOR HIGHWAY UNDERPASS

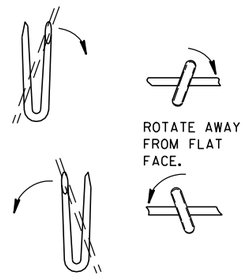
FENCE LOCATION AT STRUCTURES

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.



END ELEVATION **FARM SIDE ELEVATION**

FENCE MOUNTING DETAIL



LINE POST

FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/4/2008 DATE
/S/ Jerry H. ---- ROADWAY STANDARDS ENGINEER
FHWA

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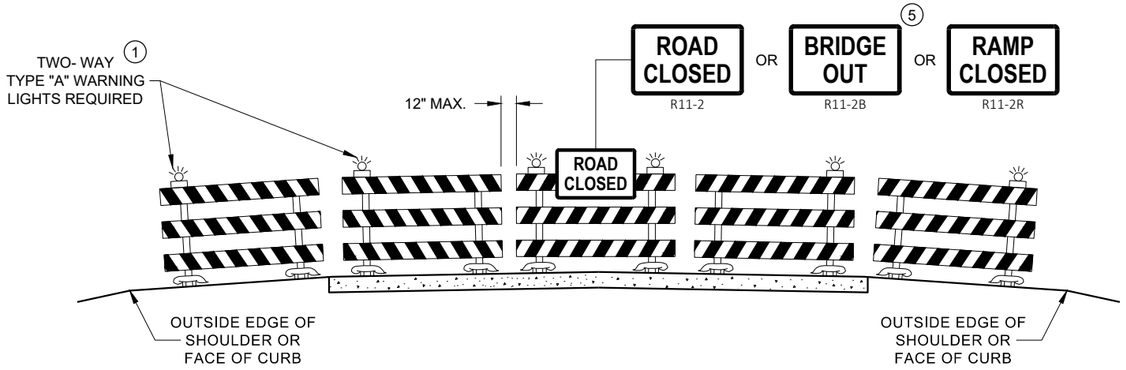
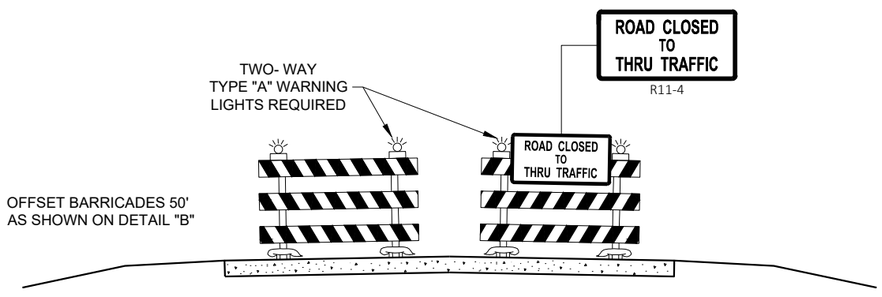
S.D.D. 15 B 1-8b



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 15C02 - 08b

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SDD 15C02 - 08b

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

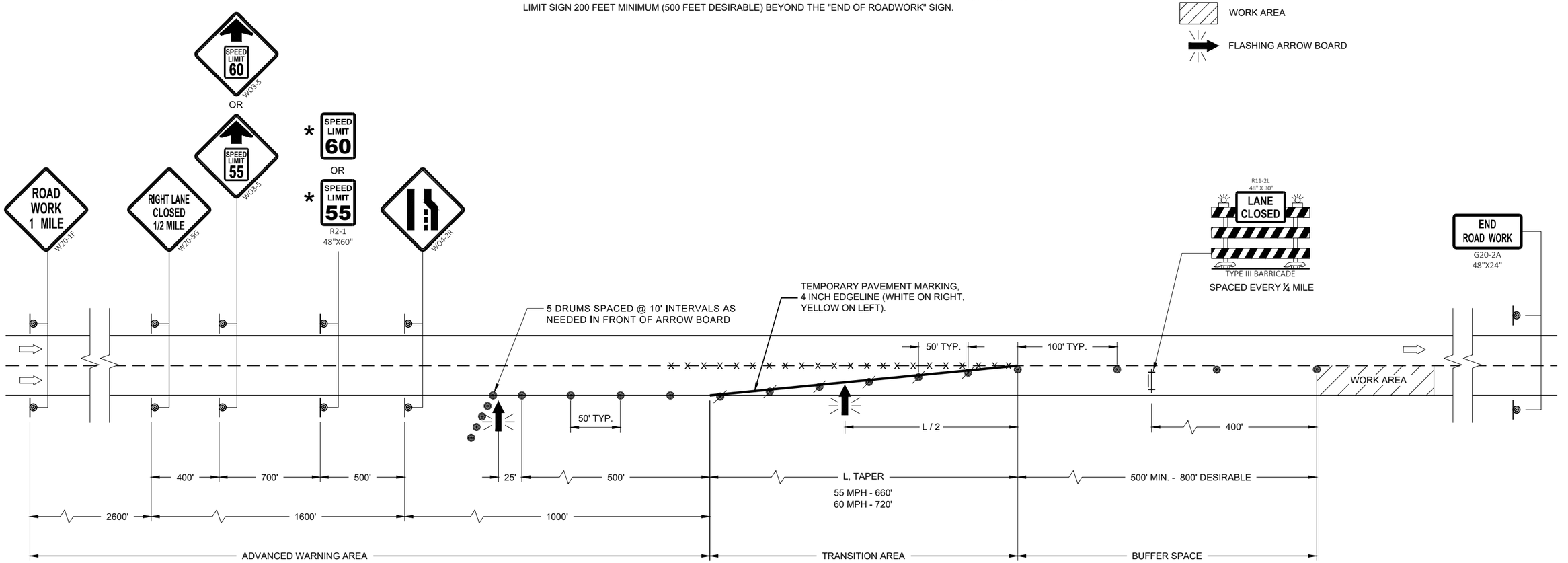
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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

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

LEGEND

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



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

SDD 15D12 - 09b

SDD 15D12 - 09b

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- DIRECTION OF TRAFFIC
- WORK ZONE

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

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

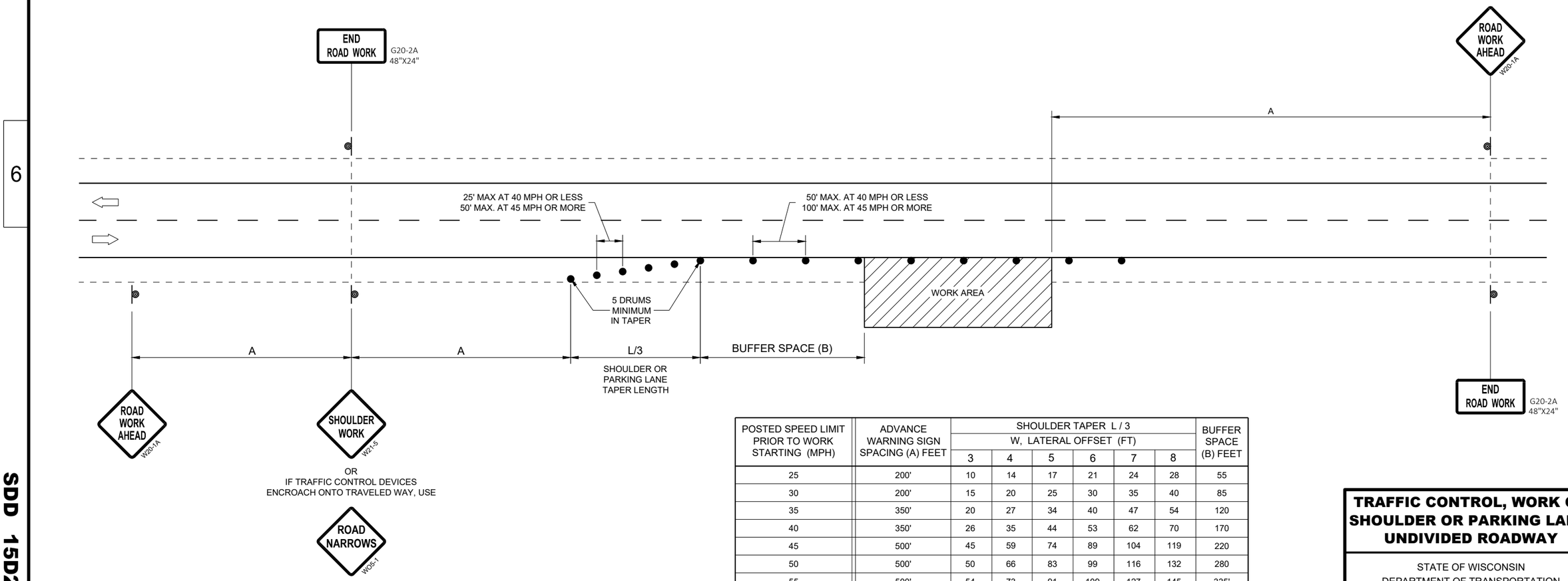
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

FHWA

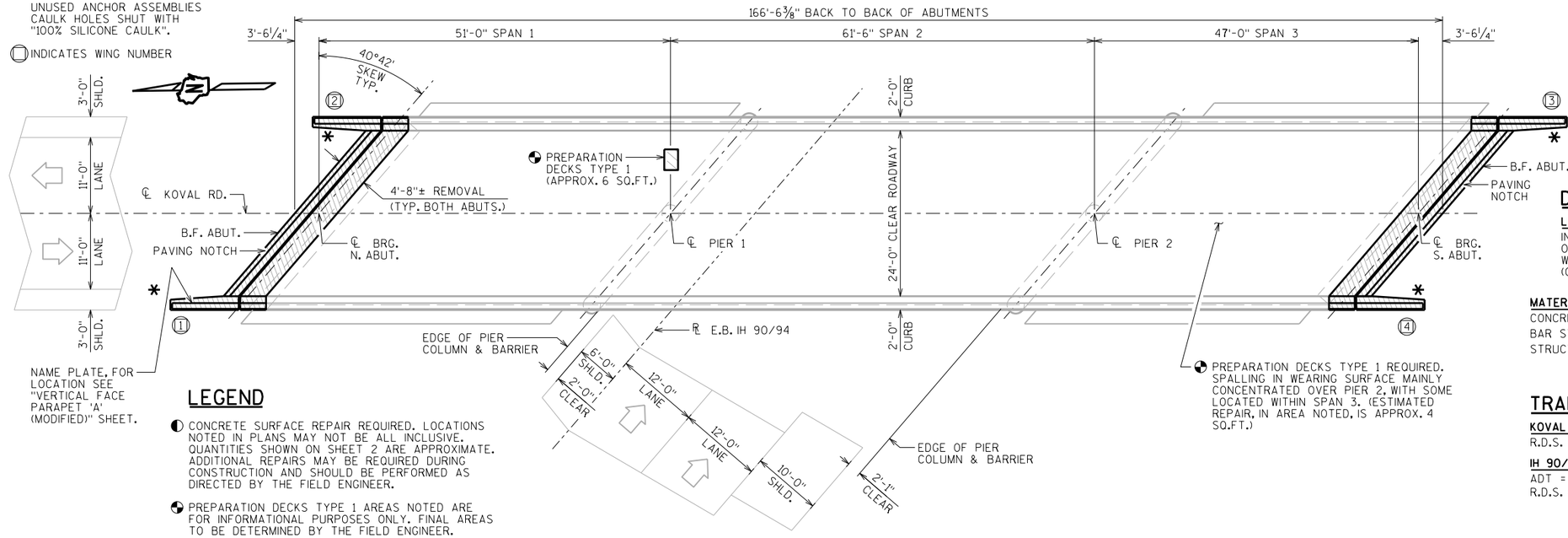
SDD 15D28 - 04

SDD 15D28 - 04

STATE PROJECT NUMBER
1016-05-66

* PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

(1) INDICATES WING NUMBER



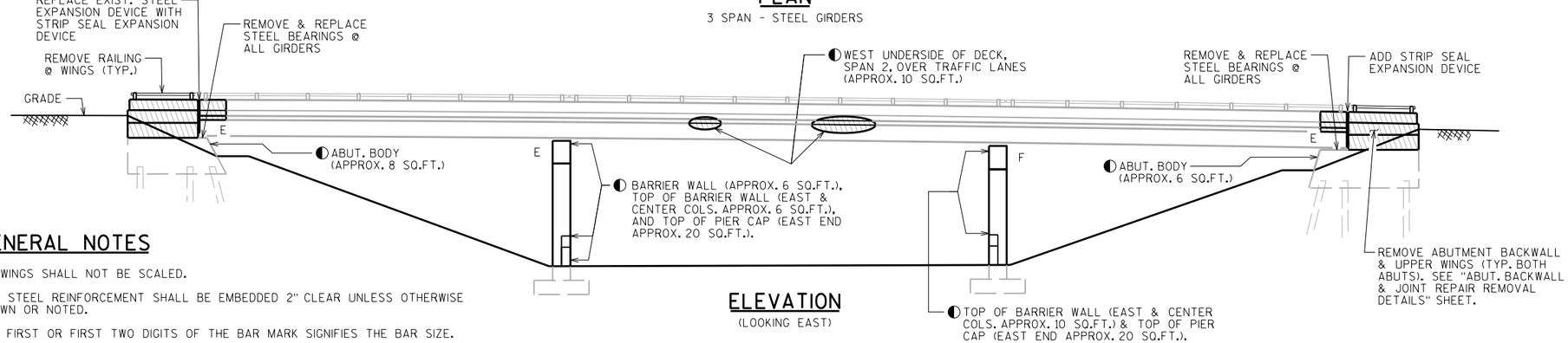
LEGEND

◐ CONCRETE SURFACE REPAIR REQUIRED. LOCATIONS NOTED IN PLANS MAY NOT BE ALL INCLUSIVE. QUANTITIES SHOWN ON SHEET 2 ARE APPROXIMATE. ADDITIONAL REPAIRS MAY BE REQUIRED DURING CONSTRUCTION AND SHOULD BE PERFORMED AS DIRECTED BY THE FIELD ENGINEER.

◔ PREPARATION DECKS TYPE 1 AREAS NOTED ARE FOR INFORMATIONAL PURPOSES ONLY. FINAL AREAS TO BE DETERMINED BY THE FIELD ENGINEER.

PLAN

3 SPAN - STEEL GIRDERS



ELEVATION

(LOOKING EAST)

DESIGN DATA

LIVE LOAD:

INVENTORY RATING: HS-09
OPERATING RATING: HS-16
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 110 (KIPS)
(08/09/2011 RATING, FROM HSI)

MATERIAL PROPERTIES:

CONCRETE MASONRY - ALL ——— f'c = 3,500 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.

TRAFFIC VOLUME

KOVAL ROAD
R.D.S. = 55 M.P.H.

IH 90/94
ADT = 44,190 (2042)
R.D.S. = 70 M.P.H.

LIST OF DRAWINGS

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.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-29-21" SHALL BE THE EXISTING GROUNDLINE.

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

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

AT JOINT REPAIR AREAS, PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF NEW DECK SURFACE, INCLUDING VERTICAL & HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT BACKWALL & DIAPHRAGMS.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF NEW CURB & PARAPETS, INCLUDING CURB AND PARAPETS ON WINGS. ALSO APPLY PIGMENTED SURFACE SEALER TO END OF CURB & PARAPET AT WING TIP.

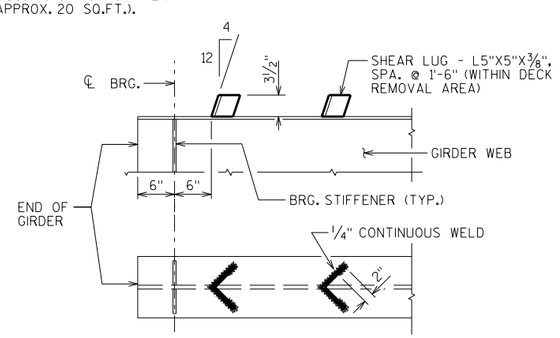
REMOVE EXISTING RAILING ON THE REMOVED LENGTH OF DECK & ABUT. WING PARAPETS. BID ITEM "REMOVING & RESETTING TUBULAR RAILING B-29-21" INCLUDES TEMPORARILY REMOVING & RESETTING EXISTING ALUMINUM POSTS AND TUBES AFTER REPLACEMENTS ARE COMPLETED. NEW ANCHOR BOLTS & SHIMS REQUIRED IN DECK REMOVAL LIMITS ALSO INCLUDED IN BID ITEM "REMOVING & RESETTING TUBULAR RAILING B-29-21".

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF BOTH ABUTMENTS BELOW EXPANSION DEVICES.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

CLEAN & PAINT ABUTMENT END DIAPHRAGMS, AT BACKWALL. SURFACE OF DIAPHRAGM, AFTER CLEANING, TO MEET CLEANLINESS STANDARD SSPC-SP3. THE COLOR OF PAINT IS GRAY (AMS STANDARD COLOR NO. 26293) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1962.



SHEAR LUG DETAIL

(TYP. ALL GIRDERS @ EACH ABUTMENT)

(MATERIAL - STRUCTURAL STEEL CARBON)

STRUCTURE DESIGN CONTACTS:

ALEXANDER CRABTREE (608) 266-3686
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED LLS 1/20/22
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-29-21

KOVAL RD. OVER E.B. IH 90/94

COUNTY	CITY
JUNEAU	LYNDON STATION

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
ARC	MWB	ARC	MWB

GENERAL PLAN

SHEET 1 OF 10

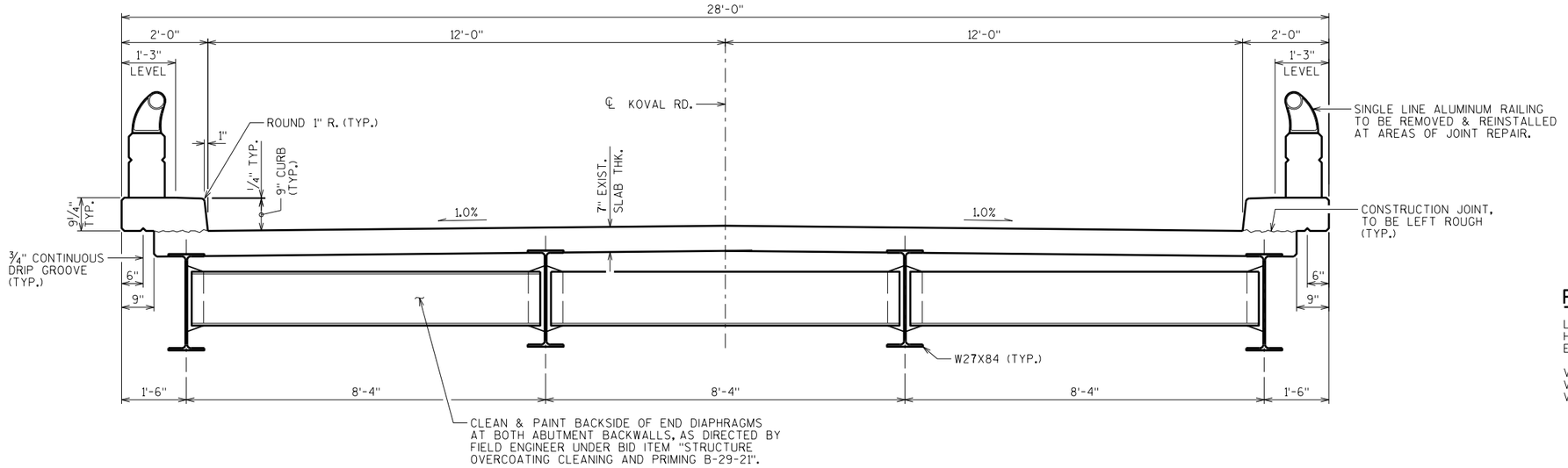
38

I.D. 1016-05-36A DATE: JAN 2022

SCALE = 9.00

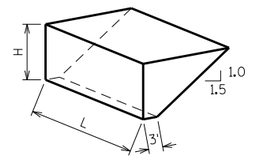
STATE PROJECT NUMBER

1016-05-66



CROSS SECTION THRU ROADWAY

(LOOKING NORTH)



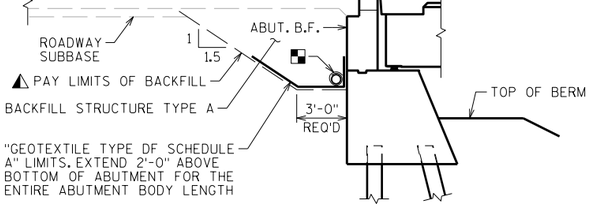
ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)
V_{CY} = V_{CF} (EF)/27
V_{TON} = V_{CY} (2.0)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	NORTH ABUT.	PIER 1	PIER 2	SOUTH ABUT.	TOTALS
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-29-21	LS	———	———	———	———	———	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	———	40	———	———	40	80
502.0100	CONCRETE MASONRY BRIDGES	CY	———	11	———	———	11	22
502.3101	EXPANSION DEVICE B-29-21	LF	———	32	———	———	32	64
502.3200	PROTECTIVE SURFACE TREATMENT	SY	43	———	———	———	———	43
502.3210	PIGMENTED SURFACE SEALER	SY	29	———	———	———	———	29
502.4110	ADHESIVE ANCHORS 1 1/4-INCH	EACH	———	8	———	———	8	16
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	———	102	———	———	102	204
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,220	1,540	1,530	———	———	5,290
506.6000	BEARING ASSEMBLIES EXPANSION B-29-21	EACH	———	4	———	———	4	8
506.7050.S	REMOVING BEARINGS B-29-21	EACH	———	4	———	———	4	8
509.0301	PREPARATION DECKS TYPE 1	SY	2	———	———	———	———	2
509.0310.S	SAWING PAVEMENT DECK PREPARATION AREAS	LF	24	———	———	———	———	24
509.1000	JOINT REPAIR	SY	25	———	———	———	———	25
509.1500	CONCRETE SURFACE REPAIR	SF	10	8	32	30	6	86
509.2100.S	CONCRETE MASONRY DECK REPAIR	CY	11	———	———	———	———	11
513.9006.S	REMOVING AND RESETTING TUBULAR RAILING B-29-21	EACH	1	———	———	———	———	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	8	———	———	8	16
☆ 517.3001.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-29-21	EACH	1	———	———	———	———	1
517.4001.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-29-21	EACH	1	———	———	———	———	1
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	72	———	———	72	144
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	———	2	———	———	2	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	———	31	———	———	31	62
	NON-BID ITEMS							
	BRIDGE SEAT PROTECTION	LS	———	———	———	———	———	1

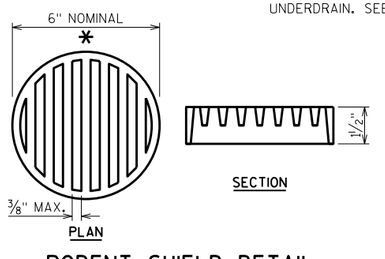
☆ ESTIMATED PAINTING AREA IS 83 SF



TYPICAL SECTION THRU ABUTMENTS

⚠ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

▪ PIPE UNDERDRAIN WRAPPED (6 INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL THIS SHEET.



RODENT SHIELD DETAIL

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

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

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-21

DRAWN BY ARC | PLANS CK'D. MWB

CROSS SECTION & QUANTITIES

SHEET 2

39

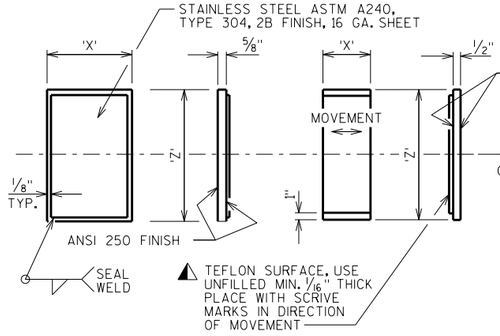
SCALE = 1.50

8

8

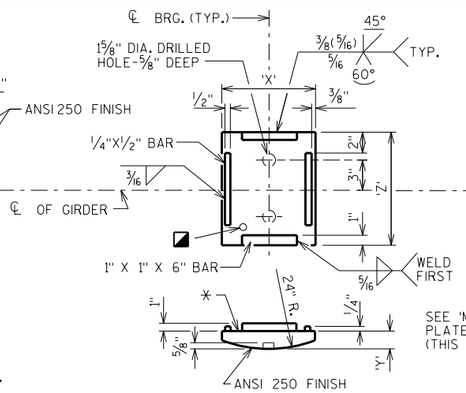
STATE PROJECT NUMBER

1016-05-66



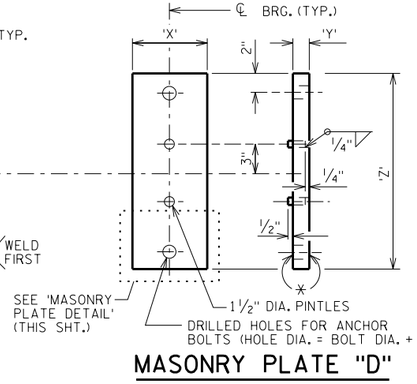
TOP PLATE "A"

TEFLON SURFACE ON PLATE "B"



ROCKER PLATE "C"

EXPANSION BEARING



MASONRY PLATE "D"

BEARING TABLE

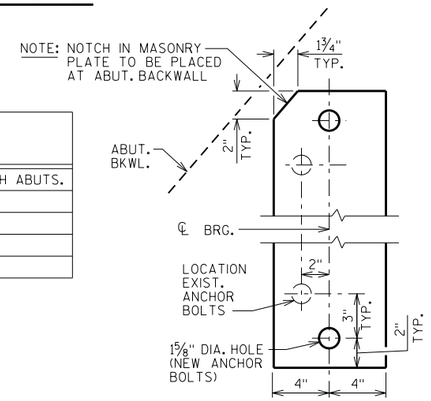
	PLATE "A"		PLATE "B"		PLATE "C"			PLATE "D"			ANCHOR BOLT DIA.	ANCHOR BOLT LENGTH	NO. OF BRG'S REQ'D.	LOCATION
	'X'	'Z'	'X'	'Z'	'X'	'Y'	'Z'	'X'	'Y'	'Z'				
EXPANSION BEARING	9"	10 3/4"	5"	10 3/4"	7"	1 1/16"	1'-1"	8"	1 1/2"	2'-0 1/2"	1 1/4"	1'-5"	8	ALL BEARINGS @ BOTH ABUTS.

°F	NORTH ABUT.	SOUTH ABUT.
30	1/8"	1/16"
35	1/16"	1/16"
45	0"	0"
55	-1/16"	-1/16"
65	-3/16"	-1/8"
75	-1/4"	-1/8"
85	-5/16"	-3/16"
90	-3/8"	-1/4"

◪ BEARING OFFSET TABLE

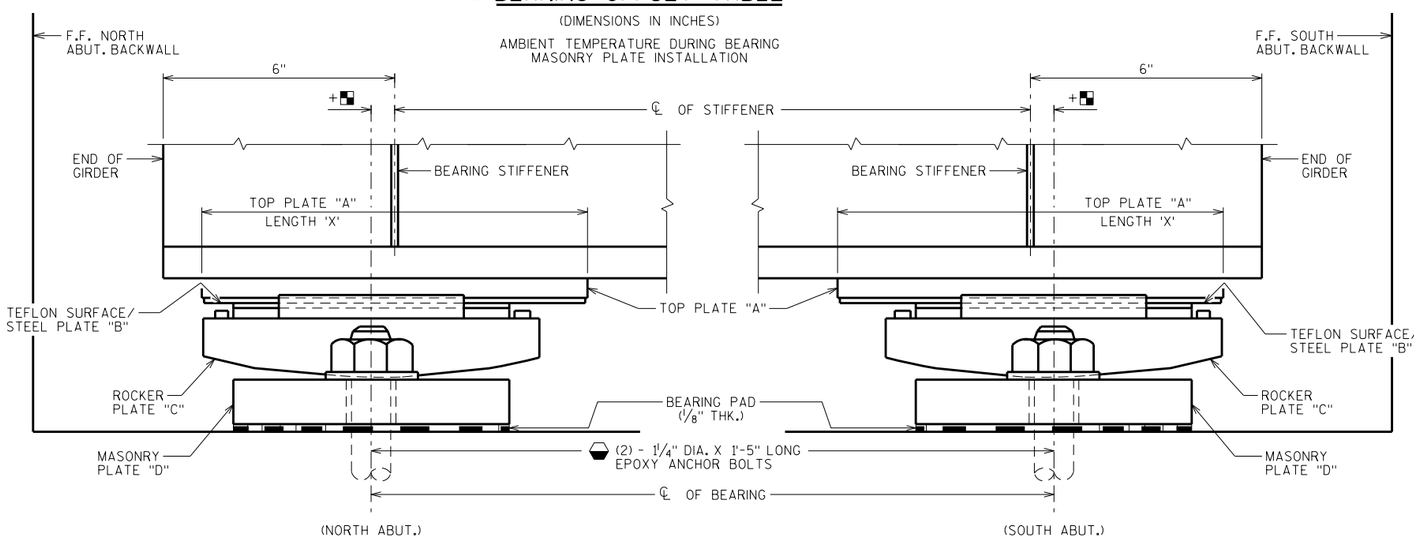
(DIMENSIONS IN INCHES)

AMBIENT TEMPERATURE DURING BEARING MASONRY PLATE INSTALLATION



MASONRY PLATE DETAIL

(ALL GIRDERS, BOTH ABUTS.)



EXPANSION BEARING ASSEMBLY DETAIL AT ABUTS.

(LOOKING EAST)

BEARING NOTES

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.

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

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES, BUT EXCLUDING STAINLESS STEEL SHEET, TEFLON SURFACE, PINTELS, ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES AND BEARING PADS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES EXPANSION B-29-21", EACH.

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

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

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.

PROVIDE 1/8" THICK BEARING PAD SAME SIZE AS PLATE "D" FOR EACH BEARING.

⬭ ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. PROJECT ANCHOR BOLTS, MASONRY PLATE "D" THICKNESS + 2 1/4", ABOVE TOP OF CONCRETE. ANCHOR BOLTS SHALL BE PAID FOR AS "ADHESIVE ANCHORS 1 1/4-INCH" AND BE EPOXY ANCHORED.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING.

CHAMFER TOP OF PINTLES 1/8". DRILL HOLES FOR ALL PINTLES IN MASONRY PLATE "D" FOR A DRIVING FIT.

STEEL PINTLES SHALL CONFORM TO ASTM A449 OR ASTM A572 GRADE 50.

ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM F1554 GRADE 50, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

PLACE SHIM PLATES BETWEEN BEARING PAD AND MASONRY PLATE "D". PLATES SHALL HAVE 'X' AND 'Z' DIMENSIONS THAT MATCH MASONRY PLATE "D".

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

✳ FINISH THESE SURFACES ANSI 250 FINISH IF 'Y' DIM. IS GREATER THAN 2".

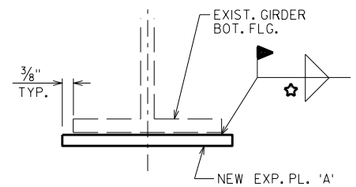
◭ BOND STEEL PLATE "B" AND TEFLON WITH ADHESIVE MATERIAL MEETING THE REQUIREMENTS FOUND IN THE STANDARD SPECIFICATION.

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, OR ANY OTHER FOREIGN MATTER.

✩ TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED	∓ MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	5/16"
OVER 1 1/2" TO 2 1/4"	3/8"

∓ EXCEPT THAT WELD SIZE SHALL NOT EXCEED THICKNESS OF THINNER PART JOINED.



BEARING REPLACEMENT DETAILS

REMOVE EXIST. EXPANSION BEARINGS AND EXISTING ANCHOR BOLTS FLUSH WITH CONCRETE BEARING SURFACE AND GRIND SMOOTH.

REMOVE EXISTING TOP PLATE AND REPLACE WITH NEW PLATE "A" FOR EXPANSION BEARING.

PAID FOR AS BID ITEM "REMOVING BEARINGS B-29-21"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-21

DRAWN BY ARC | PLANS CK'D. MWB

BEARING REPLACMENT DETAILS

SHEET 3

40

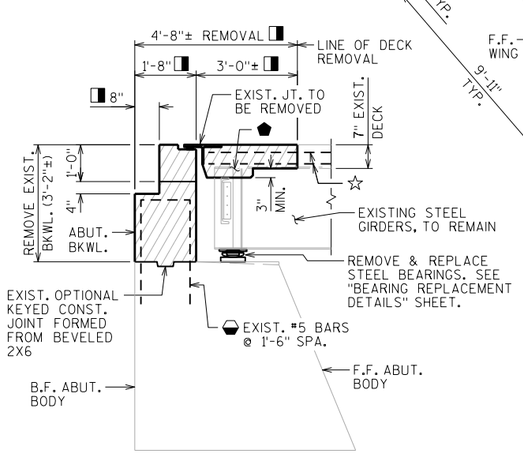
SCALE = 1.00

8

8

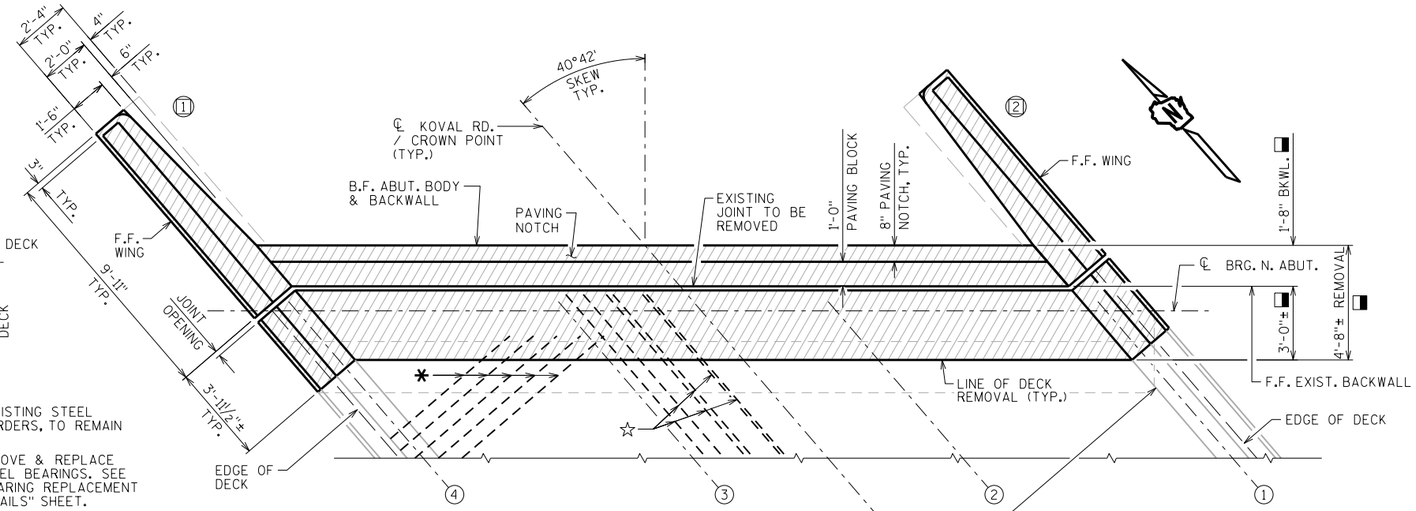
STATE PROJECT NUMBER

1016-05-66

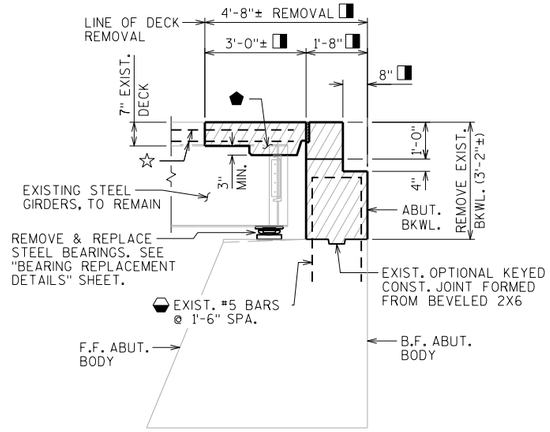


SECTION THRU NORTH ABUTMENT

NORMAL TO ℄ OF SUBSTRUCTURE (LOOKING EAST)

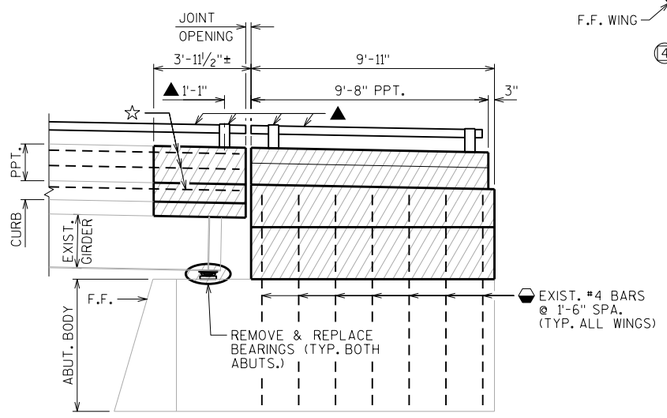


ABUTMENT & JOINT REMOVAL PLAN



SECTION THRU SOUTH ABUTMENT

NORMAL TO ℄ OF SUBSTRUCTURE (LOOKING EAST)



ABUTMENT UPPER WING REMOVAL

(WING 4 SHOWN - ALL OTHER WINGS SIMILAR)

LEGEND

- INDICATES REMOVAL LIMITS
- INDICATES WING NUMBER
- DENOTES EXISTING GIRDER NUMBER
- ✱ EXISTING TRANSVERSE DECK REINFORCEMENT, PLACED NORMAL TO GIRDERS (@ 7½" SPACING). SAVE & INCORPORATE 1'-6" MIN. NEW TRANSVERSE REINF. TO BE PLACED ALONG SKEW.
- ☆ CLEAN, STRAIGHTEN & INCORPORATE EXIST. LONGIT. DECK, CURB AND PARAPET REINF. INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENTS ARE VIOLATED.
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- DIMENSION MEASURED NORMAL TO ℄ SUBSTRUCT.
- ▲ EXISTING SINGLE LINE ALUMINUM RAILING TO BE REMOVED, AT ABUT. WINGS & AREA OF JOINT REPAIR. REINSTALL EXISTING RAILING AND POSTS ON SUPERSTRUCTURE ONLY. NEW ANCHORS & SHIMS REQUIRED, WHEN REINSTALLING EXIST. POSTS. SEE "JOINT REPAIR DETAILS" SHEET, FOR ANCHOR BOLTS & SHIM DETAILS.
- ⬟ COMPLETELY REMOVE EXISTING CONCRETE END DIAPHRAGM BTWN. GIRDERS. DURING REMOVAL, AVOID DAMAGE TO EXIST. GIRDERS & SHEAR LUGS EMBEDED IN CONCRETE. REPLACE DAMAGED SHEAR LUGS AS PER DETAIL SHOWN ON "GENERAL PLAN" SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-21

DRAWN BY ARC | PLANS CK'D. MWB

ABUT. BACKWALL & JOINT REPAIR REMOVAL DETAILS

SHEET 4

41

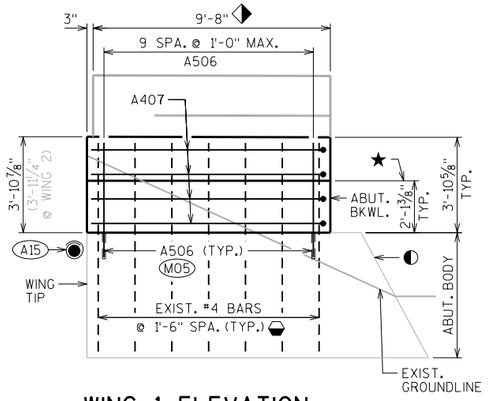
8

8

SCALE = 3.00

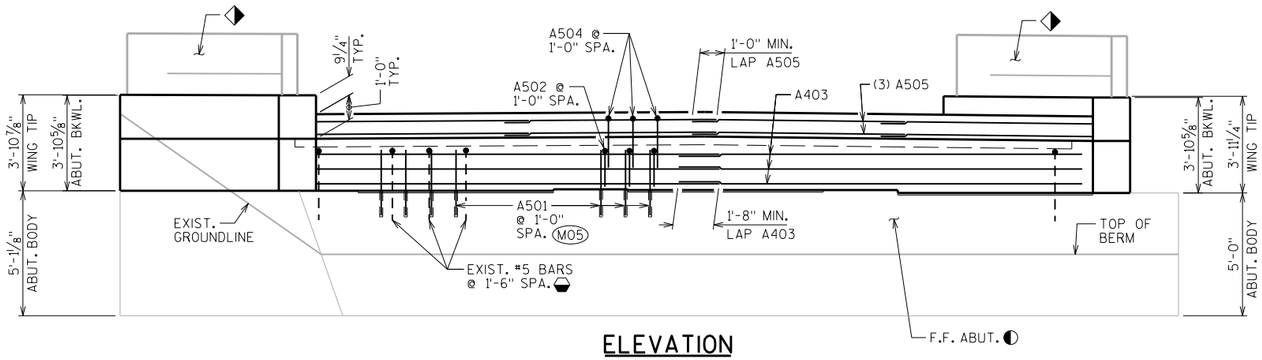
STATE PROJECT NUMBER

1016-05-66



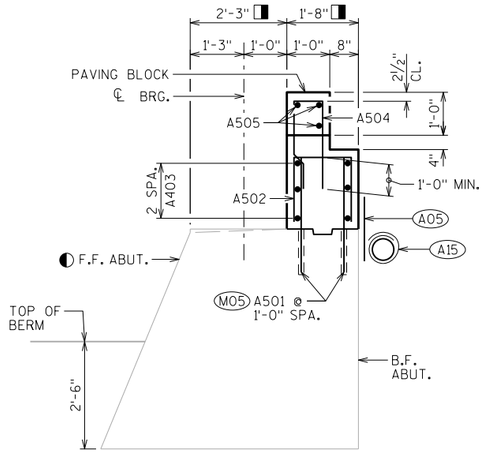
WING 1 ELEVATION

(WING 2 SIMILAR)



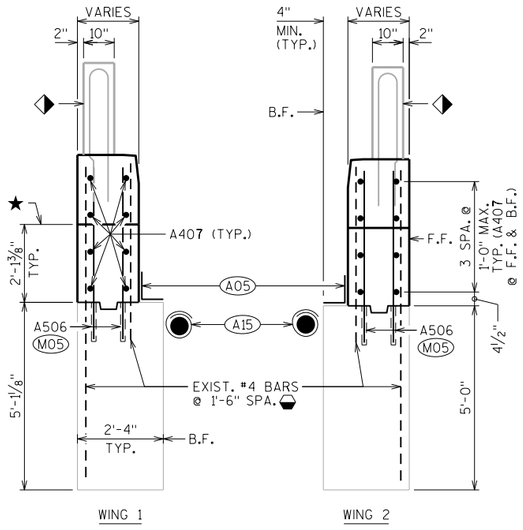
ELEVATION

(LOOKING NORTH)

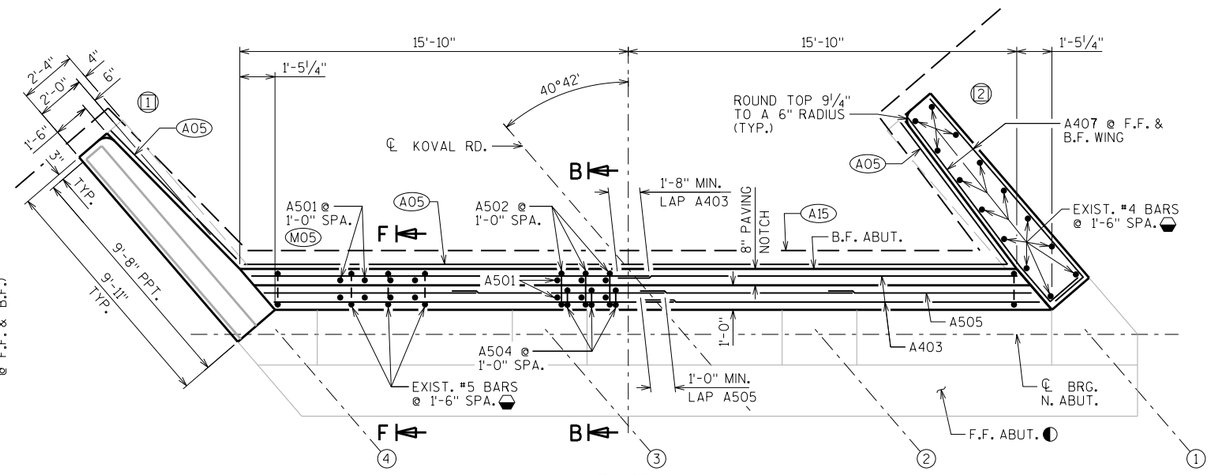


SECTION B-B

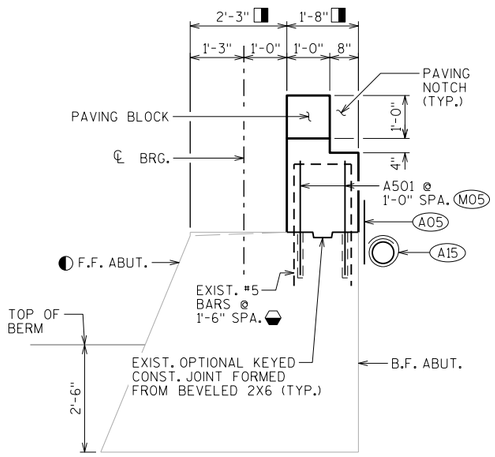
(SHOWING BACKWALL REINFORCEMENT)



SECTION THRU WINGS



PLAN



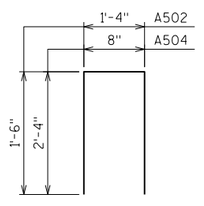
SECTION F-F

(SHOWING EPOXY ANCHORS)

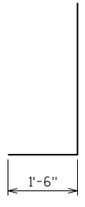
BILL OF BARS

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
M05	A501	X	62	2'-8"			ANCHOR - BODY TO BACKWALL - VERT.
	A502	X	31	4'-1"	X		ABUT. BACKWALL - VERT.
	A403	X	12	16'-6"			ABUT. BACKWALL - HORIZ.
	A504	X	31	5'-1"	X		PAVING BLOCK - VERTICAL
	A505	X	12	8'-8"			PAVING BLOCK - HORIZ.
M05	A506	X	40	4'-8"			ANCHOR - WINGS - VERT.
	A407	X	16	11'-0"	X		UPPER WING - HORIZ.



A502, A504



A407

LEGEND

- INDICATES WING NUMBER
- DENOTES EXISTING GIRDER NUMBER
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- DIMENSION MEASURED NORMAL TO ℄ SUBSTRUCT.
- ★ OPTIONAL CONST. JOINT - IF USED, LEAVE SURFACE ROUGHENED; PROVIDE 1" V-GROOVE IN F.F. OF WINGWALL; & PLACE 18" MEMBRANE WATERPROOFING ALONG THE ENTIRE LONGIT. JOINT AT BACKFACE. THE MEMBRANE WATERPROOFING SEALING AT OPTIONAL JOINT IS INCIDENTAL TO CONCRETE MASONRY BID ITEM.
- ◐ 8 SQ. FT. OF CONCRETE SURFACE REPAIR ESTIMATED ON ABUTMENT BODY. ACTUAL AREA & LOCATIONS OF SURFACE REPAIR TO BE DETERMINED BY PROJECT ENGINEER.
- ◆ SEE "VERTICAL FACE PARAPET 'A' (MODIFIED)" SHEET FOR REVISED PPT. CONSTRUCTION DIMS. & REINF.
- (A05) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON "CROSS-SECTION & QUANTITIES" SHEET.
- (M05) ADHESIVE ANCHORS NO. 5 BAR, EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE IS 3¾". ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-21

DRAWN BY: ARC | PLANS CK'D.: MWB

NORTH ABUT. BACKWALL & WING REPAIR DETAILS

SHEET 5

42

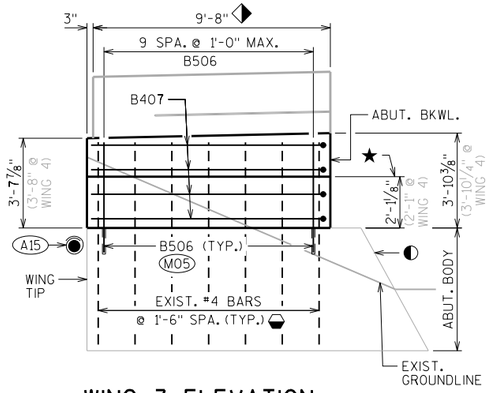
SCALE = 3.00

8

8

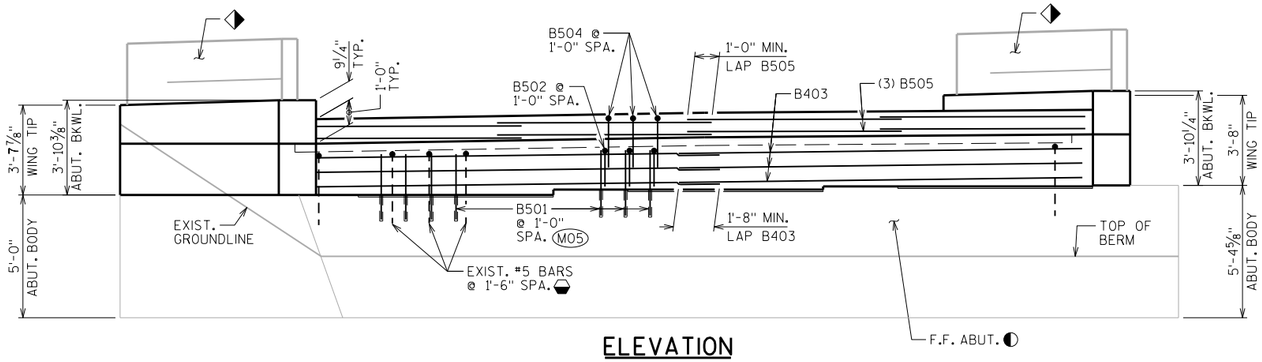
STATE PROJECT NUMBER

1016-05-66



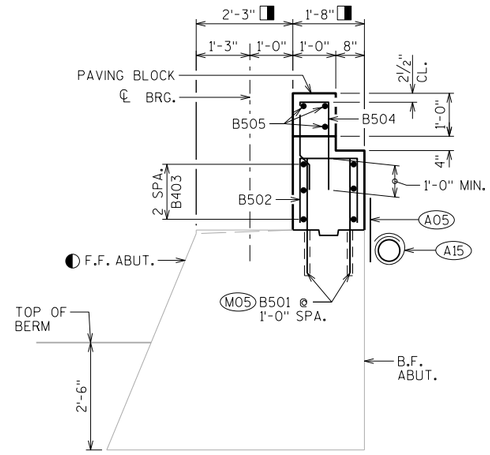
WING 3 ELEVATION

(WING 4 SIMILAR)



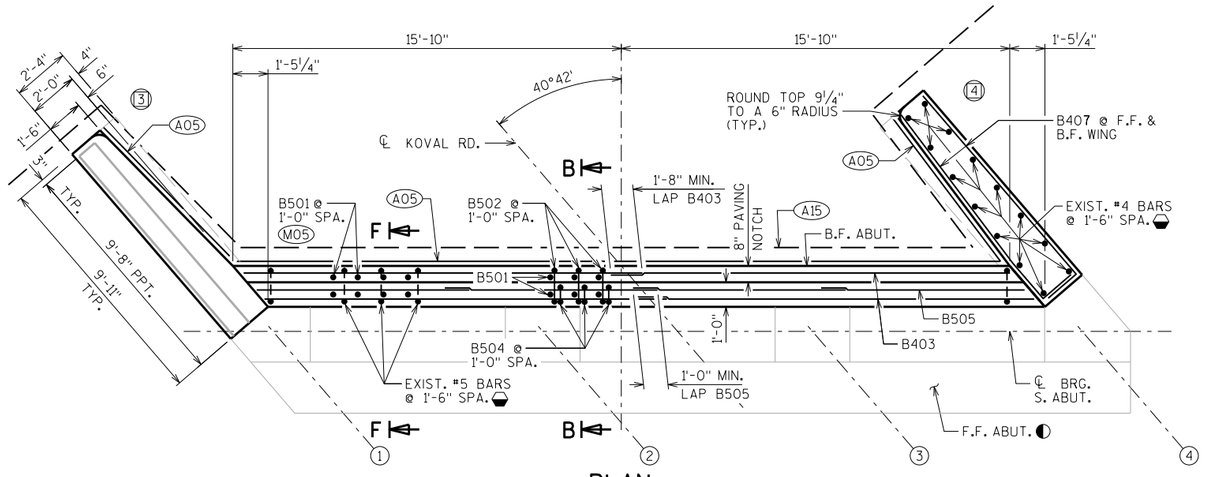
ELEVATION

(LOOKING SOUTH)

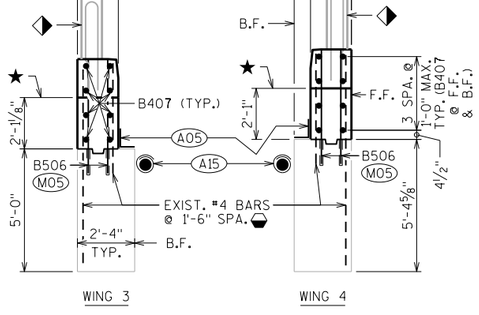


SECTION B-B

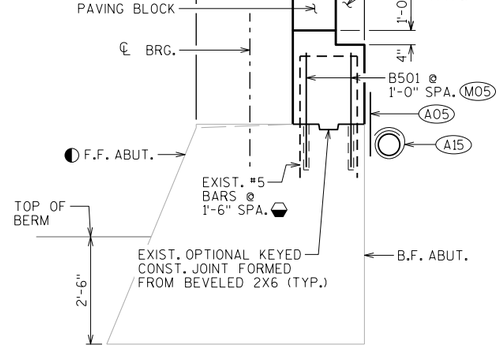
(SHOWING BACKWALL REINFORCEMENT)



PLAN



SECTION THRU WINGS



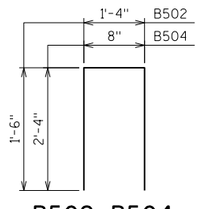
SECTION F-F

(SHOWING EPOXY ANCHORS)

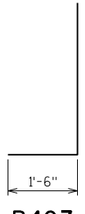
BILL OF BARS

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
M05	B501	X	62	2'-8"			ANCHOR - BODY TO BACKWALL - VERT.
	B502	X	31	4'-1"	X		ABUT. BACKWALL - VERT.
	B403	X	12	16'-6"			ABUT. BACKWALL - HORIZ.
	B504	X	31	5'-1"	X		PAVING BLOCK - VERTICAL
	B505	X	12	8'-8"			PAVING BLOCK - HORIZ.
M05	B506	X	40	4'-6"			ANCHOR - WINGS - VERT.
	B407	X	16	11'-0"	X		UPPER WING - HORIZ.



B502, B504



B407

LEGEND

- INDICATES WING NUMBER
- DENOTES EXISTING GIRDER NUMBER
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- DIMENSION MEASURED NORMAL TO ℄ SUBSTRUCT.
- ★ OPTIONAL CONST. JOINT - IF USED, LEAVE SURFACE ROUGHENED; PROVIDE 1" V-GROOVE IN F.F. OF WINGWALL; & PLACE 18" MEMBRANE WATERPROOFING ALONG THE ENTIRE LONGIT. JOINT AT BACKFACE. THE MEMBRANE WATERPROOFING SEALING AT OPTIONAL JOINT IS INCIDENTAL TO CONCRETE MASONRY BID ITEM.
- ◐ 6 SQ. FT. OF CONCRETE SURFACE REPAIR ESTIMATED ON ABUTMENT BODY. ACTUAL AREA & LOCATIONS OF SURFACE REPAIR TO BE DETERMINED BY PROJECT ENGINEER.
- ◈ SEE "VERTICAL FACE PARAPET 'A' (MODIFIED)" SHEET FOR REVISED PPT. CONSTRUCTION DIMS. & REINF.
- (A05) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON "CROSS-SECTION & QUANTITIES" SHEET.
- (M05) ADHESIVE ANCHORS 5/8-INCH. EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE IS 3¾". ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-21

DRAWN BY ARC | PLANS CK'D. MWB

SOUTH ABUT. BACKWALL & WING REPAIR DETAILS

SHEET 6

43

8

8

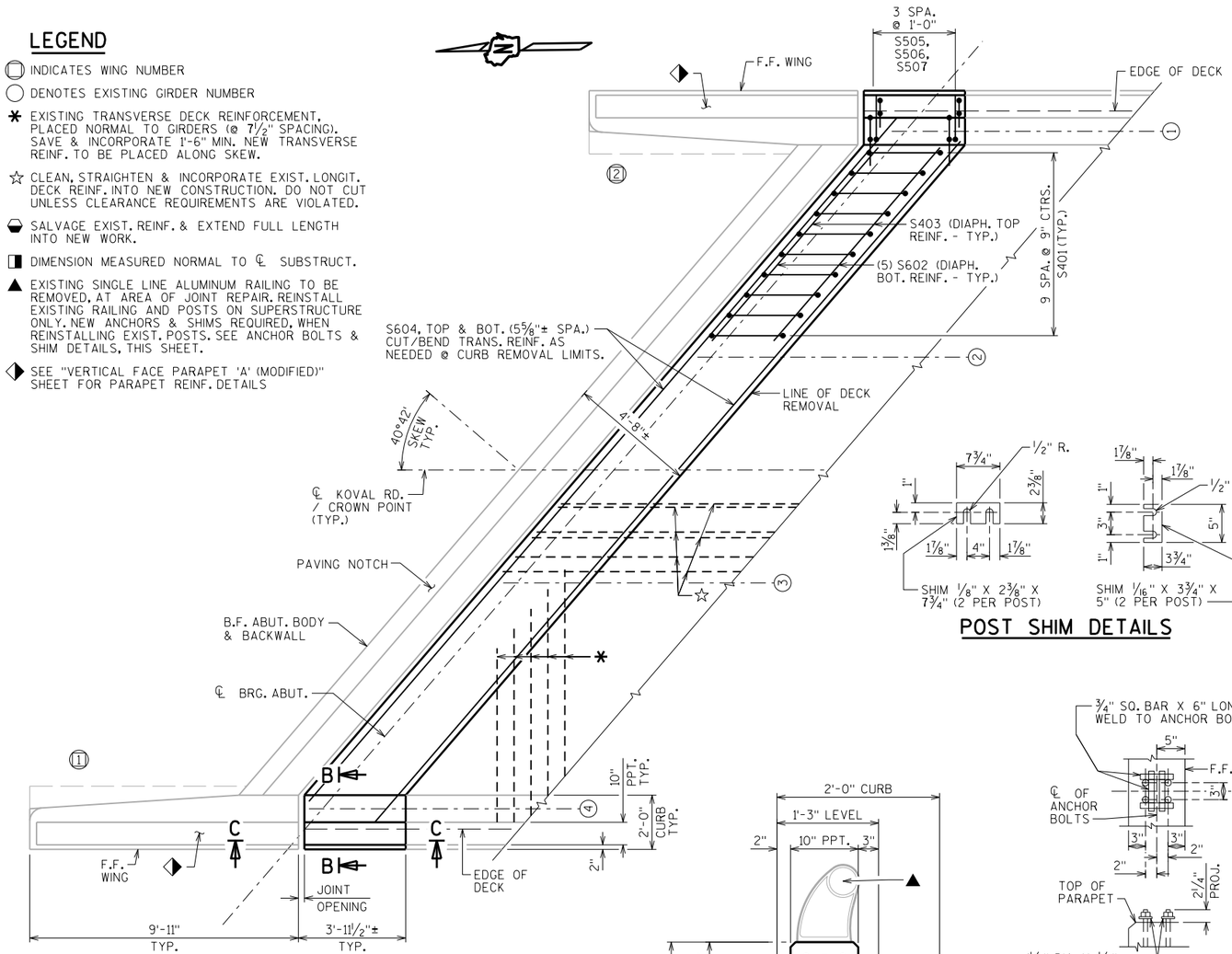
SCALE = 3.00

STATE PROJECT NUMBER

1016-05-66

LEGEND

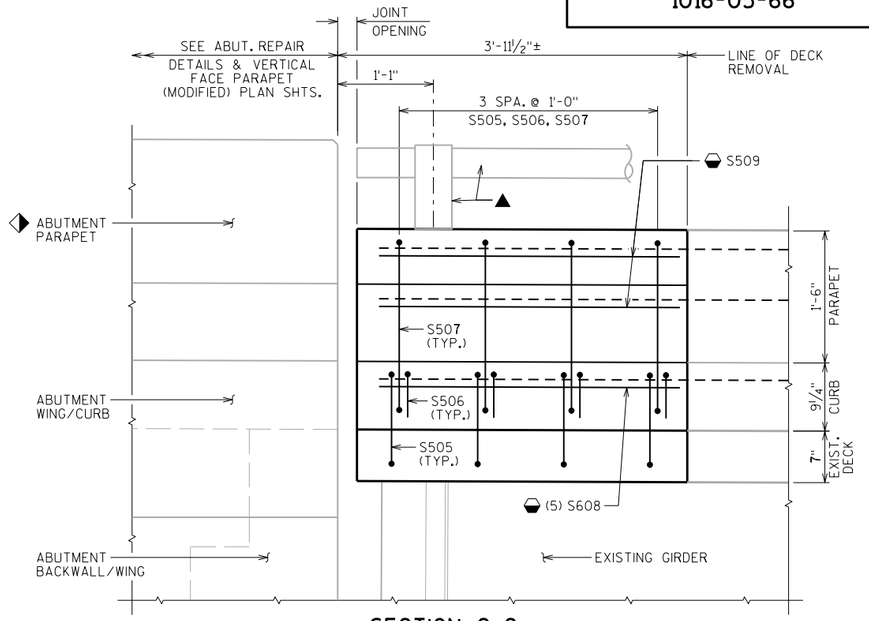
- INDICATES WING NUMBER
- DENOTES EXISTING GIRDER NUMBER
- ✱ EXISTING TRANSVERSE DECK REINFORCEMENT, PLACED NORMAL TO GIRDERS (@ 7½" SPACING). SAVE & INCORPORATE 1'-6" MIN. NEW TRANSVERSE REINF. TO BE PLACED ALONG SKEW.
- ☆ CLEAN, STRAIGHTEN & INCORPORATE EXIST. LONGIT. DECK REINF. INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENTS ARE VIOLATED.
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- DIMENSION MEASURED NORMAL TO ℄ SUBSTRUCT.
- ▲ EXISTING SINGLE LINE ALUMINUM RAILING TO BE REMOVED, AT AREA OF JOINT REPAIR. REINSTALL EXISTING RAILING AND POSTS ON SUPERSTRUCTURE ONLY. NEW ANCHORS & SHIMS REQUIRED, WHEN REINSTALLING EXIST. POSTS. SEE ANCHOR BOLTS & SHIM DETAILS, THIS SHEET.
- SEE "VERTICAL FACE PARAPET 'A' (MODIFIED)" SHEET FOR PARAPET REINF. DETAILS



JOINT REPAIR PLAN

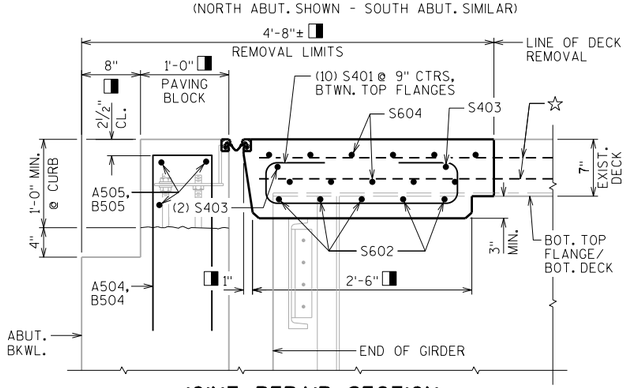
(NORTH ABUT. SHOWN - SOUTH ABUT. SIMILAR)

POST SHIM DETAILS



SECTION C-C

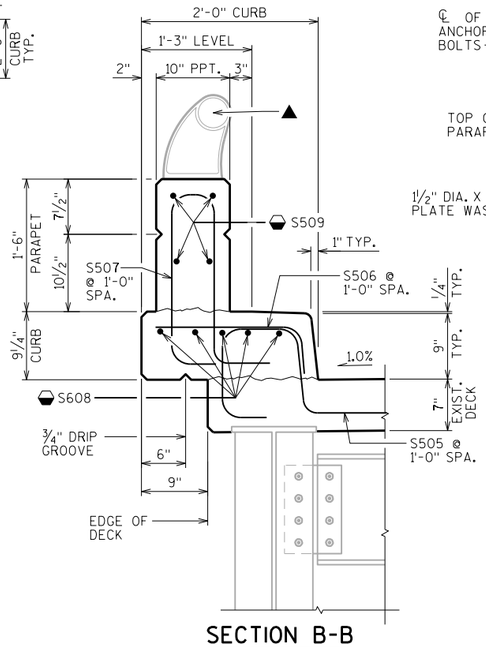
(WING 1 SHOWN - ALL OTHER WINGS SIMILAR)



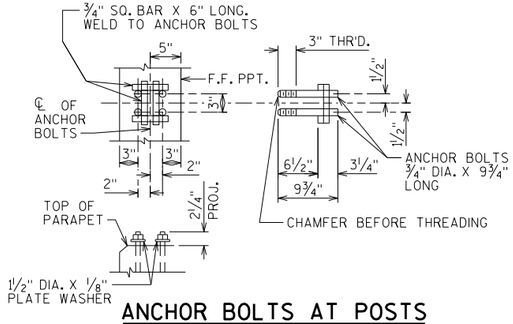
JOINT REPAIR SECTION

NORMAL TO ℄ OF SUBSTRUCTURE

(DECK SIDE HARDWARE NOT SHOWN FOR CLARITY)



SECTION B-B



ANCHOR BOLTS AT POSTS

NOTES

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

SHIMS SHALL CONFORM TO SAME MATERIAL AS POSTS.

RAILING POSTS SHALL BE SET NORMAL TO GRADE LINE.

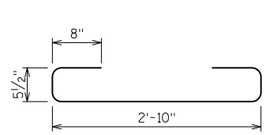
SHIMS SHALL BE USED UNDER POSTS AND END PLATES WHERE REQ'D. FOR ALIGNMENT.

FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

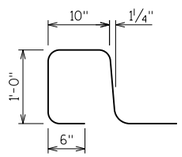
BILL OF BARS

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

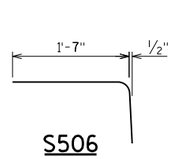
BAR MARK	COAT	NO. REQ'D. NORTH ABUT.	NO. REQ'D. SOUTH ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	30	30	4'-9"	X		DIAPHRAGM-VERT.
S602	X	15	15	9'-5"			DIAPHRAGM-HORIZ.-BOT.
S403	X	9	9	9'-5"			DIAPHRAGM-HORIZ.-TOP
S604	X	11	11	34'-3"			DECK-TRANS.
S505	X	8	8	4'-0"	X		DECK/CURB-VERT.
S506	X	8	8	2'-0"	X		DECK/CURB-VERT.
S507	X	8	8	5'-6"	X		CURB/PARAPET-VERT.
S608	X	10	10	3'-6"			CURB-HORIZ.
S509	X	8	8	3'-6"			PARAPET-HORIZ.



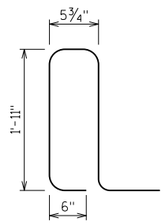
S401



S505



S506



S507

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-21

DRAWN BY ARC | PLANS CK'D. MWB

JOINT REPAIR DETAILS

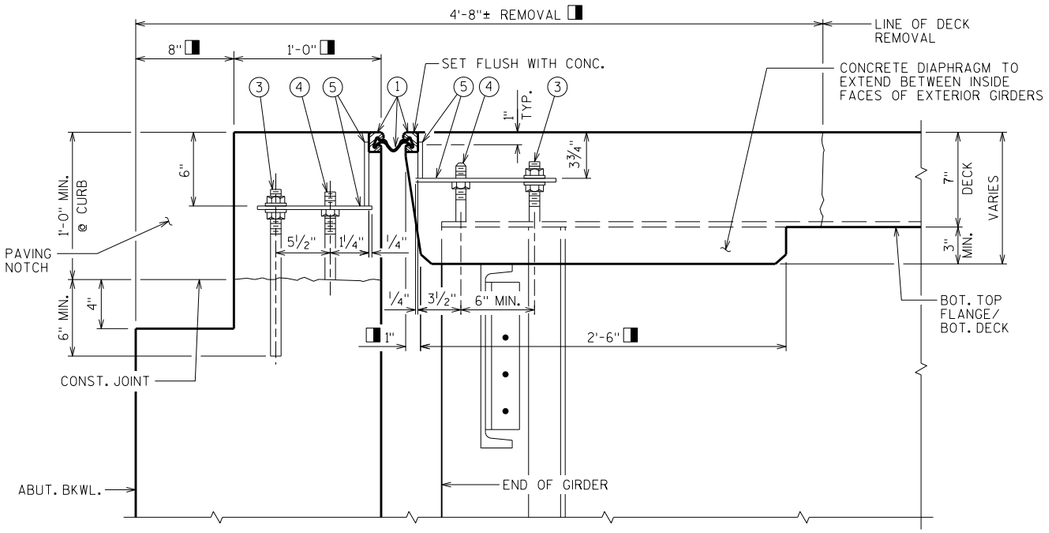
SHEET 7

44

SCALE = 2.50

8

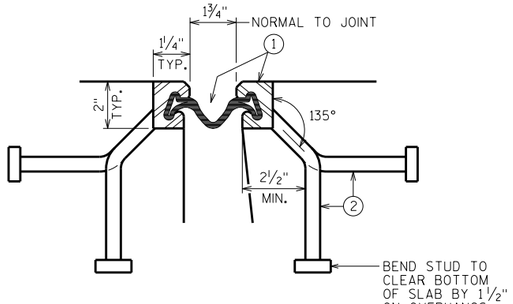
8



SECTION THRU JOINT AT ABUTMENT

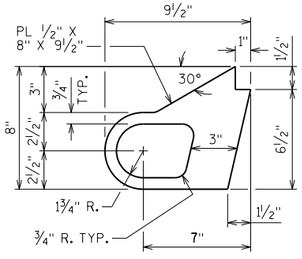
NORMAL TO ℄ SUBSTRUCTURE

(ONLY EXPANSION JOINT HARDWARE SHOWN FOR CLARITY)

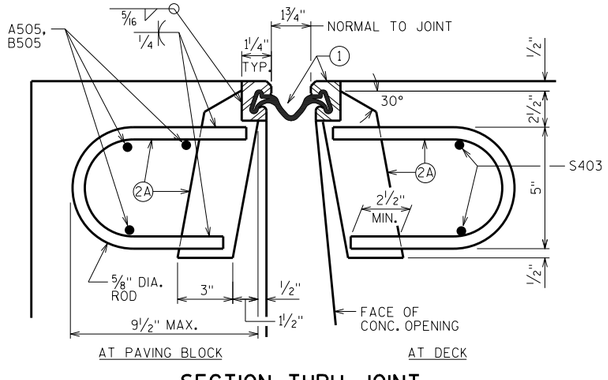


SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS & CURBS

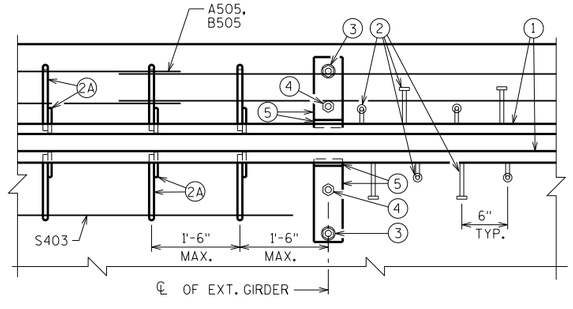


ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN

LEGEND

1. NEOPRENE STRIP SEAL (4"-INCH) AND STEEL EXTRUSIONS.
2. STUDS ⅝" DIA. X 6¾" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
2A. ½" THICK ANCHOR PLATE WITH ⅝" DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
3. ¾" DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. ¾" DIA. THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" X ½" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" DIA. HOLE FOR NO. 3 & 1" DIA. HOLE FOR NO. 4.
6. CURB COVER PLATE ⅜" X 2'-2" X LIMITS SHOWN. BEND PLATE DOWN THE FACE OF CURB WITH HOLES FOR NO. 7. GALVANIZE PLATE.
7. ¾" DIA. X 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾" DIA. X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾" DIA. X 2¼" GALVANIZED THREADED COUPLING.
10. 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

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

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

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

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

ALL MATERIAL IN THE EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID AT THE UNIT PRICE BID FOR "EXPANSION DEVICE B-29-21, LF.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-21

DRAWN BY ARC | PLANS CK'D. MWB

EXPANSION DEVICE

SHEET 8

45

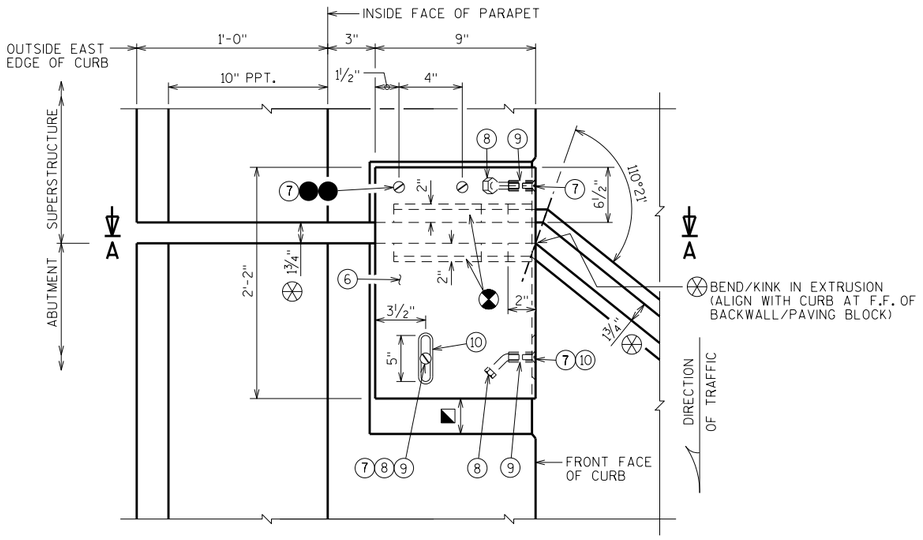
8

8

SCALE = 1.00

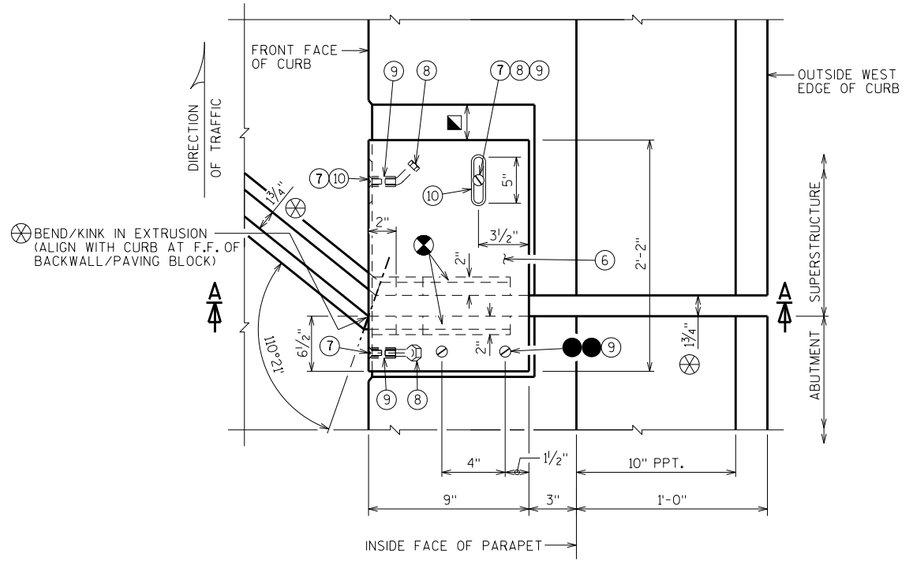
STATE PROJECT NUMBER

1016-05-66



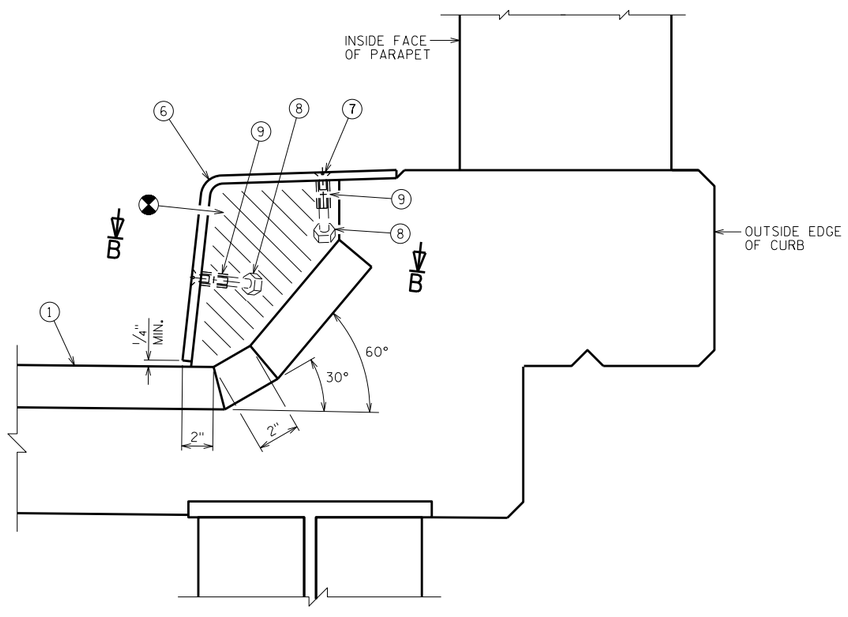
PLAN AT CURB COVER PLATE

(N. ABUTMENT, EAST EDGE OF DECK SHOWN)

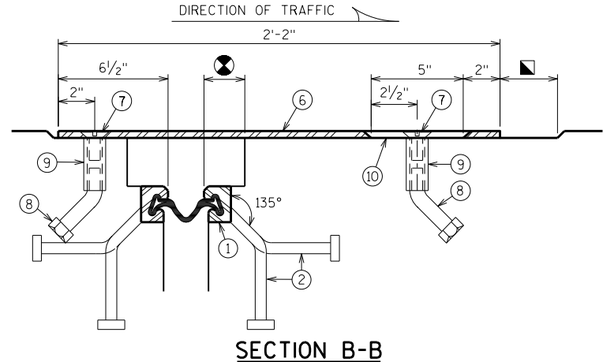


PLAN AT CURB COVER PLATE

(N. ABUTMENT, WEST SIDE EDGE OF DECK SHOWN)



SECTION A-A



SECTION B-B

LEGEND

- KINK IN EXTRUSION PROVIDED TO MAINTAIN THE SAME JOINT OPENING WITHIN SQUARED OFF CURB, AS MEASURED NORMAL TO THE JOINT OPENING ALONG THE SKEW.
- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- JOINT OPENING DIMENSION ALONG SKEW PLUS ½".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-21

DRAWN BY ARC | PLANS CK'D. MWB

CURB COVER PLATE DETAILS

SHEET 9

46

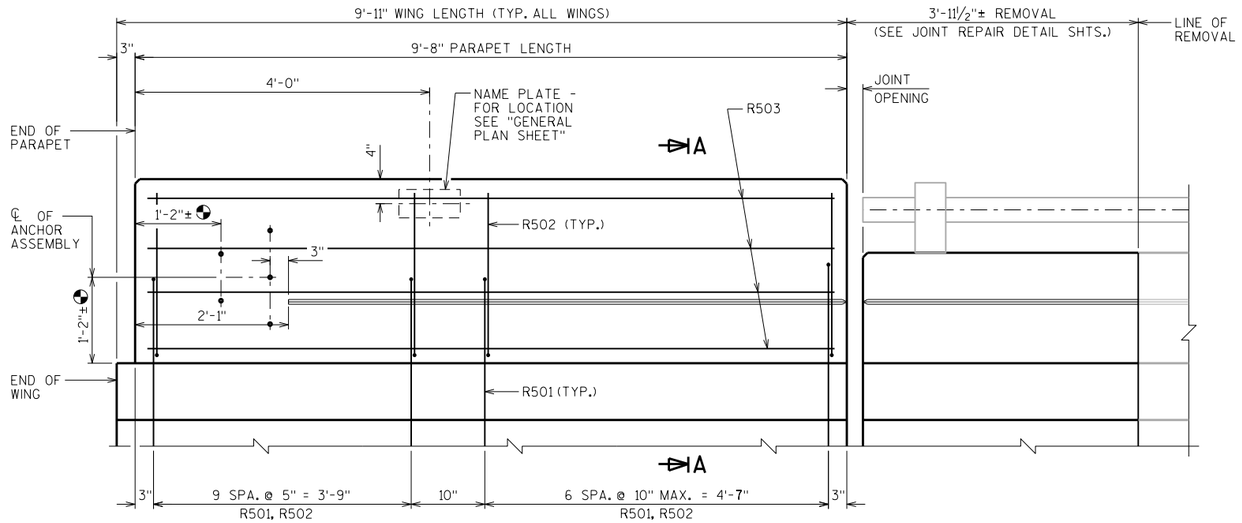
SCALE = 1.00

8

8

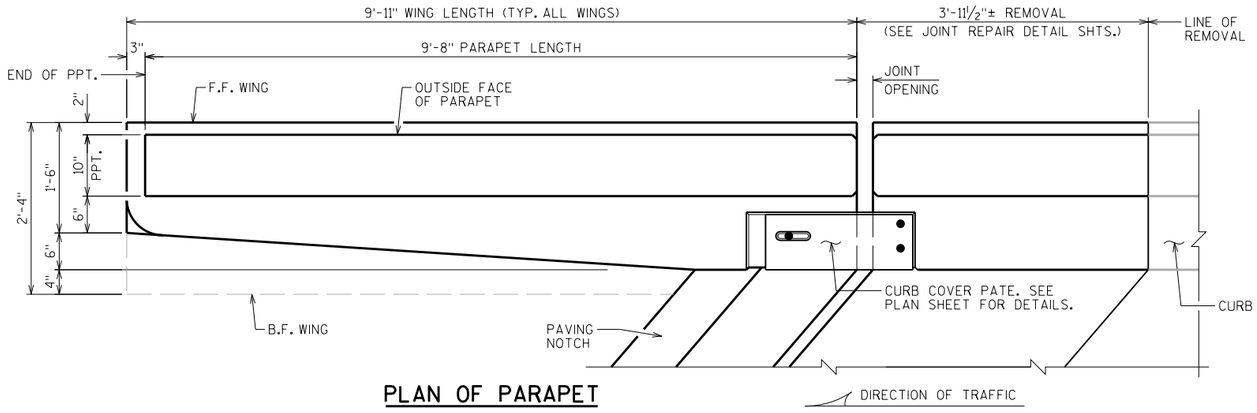
STATE PROJECT NUMBER

1016-05-66



INSIDE ELEVATION OF ABUTMENT PARAPET

(WING 2 SHOWN - ALL OTHER WING PARAPETS SIMILAR)



PLAN OF PARAPET

(WING 2 SHOWN - ALL OTHER WING PARAPETS SIMILAR)

BILL OF BARS

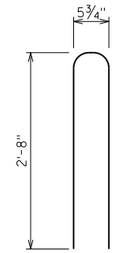
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D NORTH ABUT.	NO. REQ'D SOUTH ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	34	34	5'-7"	X		PARAPET - VERT.
R502	X	34	34	4'-7"	X		PARAPET - VERT.
R503	X	16	16	9'-4"			PARAPET - HORIZ.

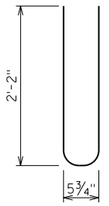
LEGEND

APPROX. LOCATION OF ANCHOR ASSEMBLY NOTED. NEW ANCHOR ASSEMBLY INSTALLED IN PARAPET TO MATCH EXISTING LOCATION.

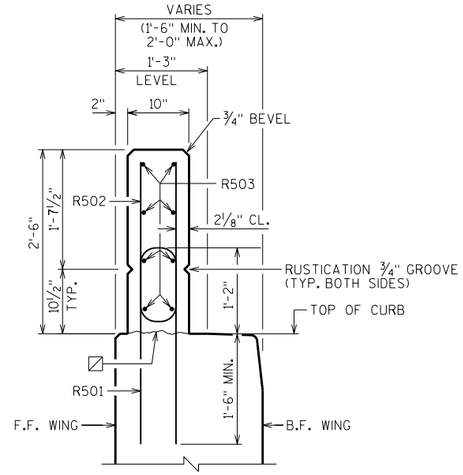
HORIZ. CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH.



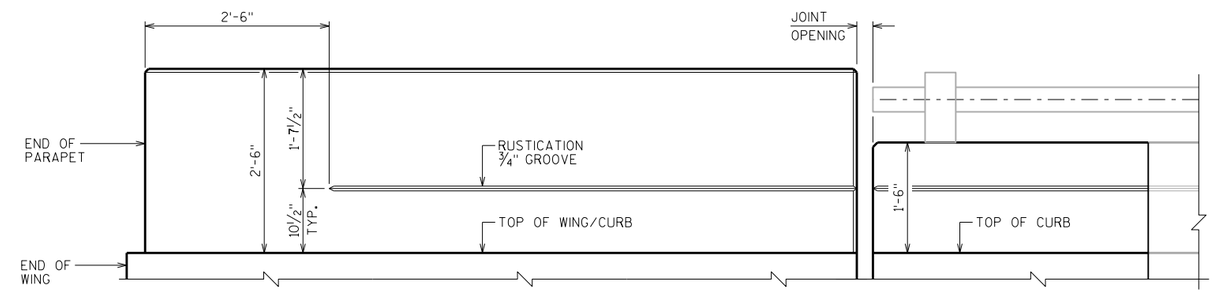
R501



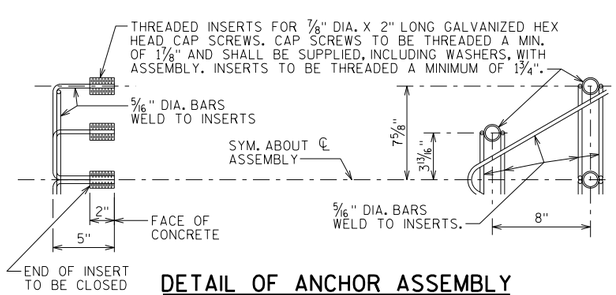
R502



SECTION A-A



OUTSIDE FACE OF PARAPET



DETAIL OF ANCHOR ASSEMBLY

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-21

DRAWN BY ARC | PLANS CK'D. MWB

VERTICAL FACE PARAPET 'A' (MODIFIED)

SHEET 10

47

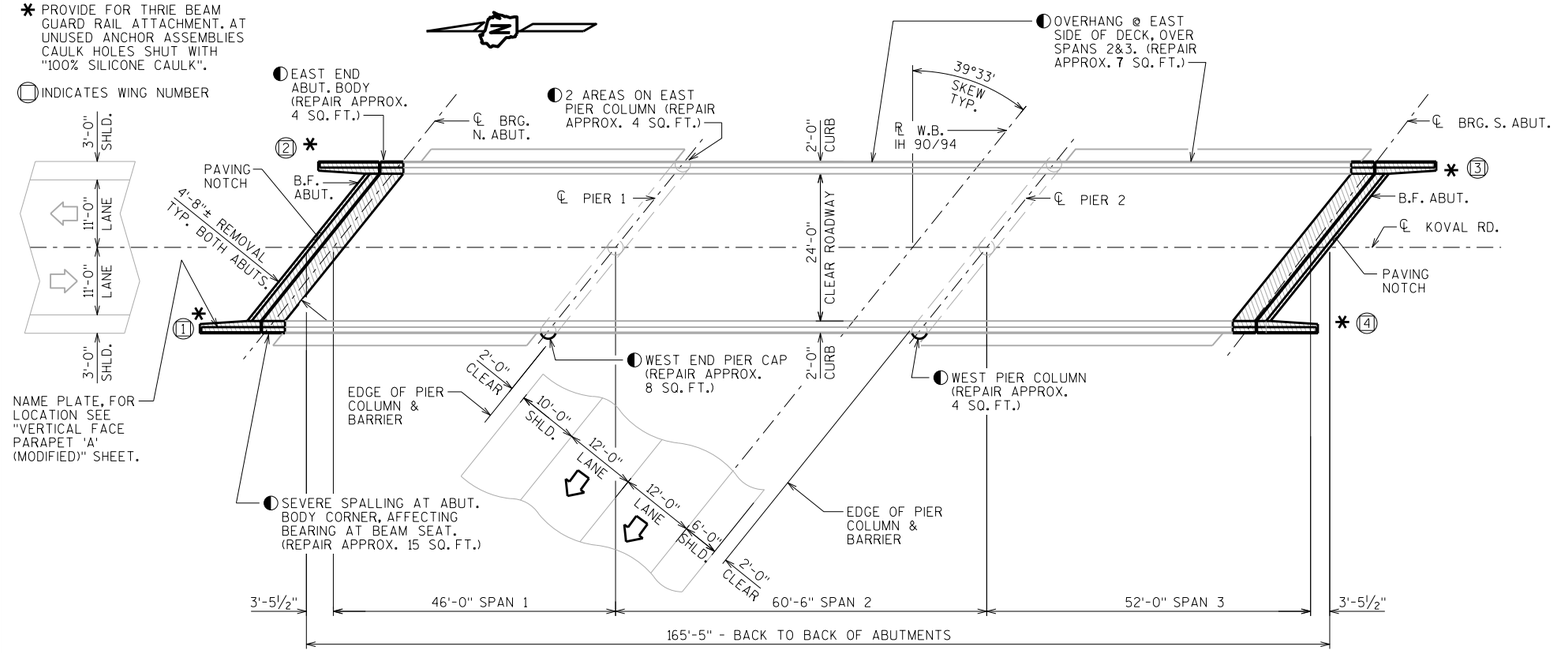
SCALE = 1.00

8

8

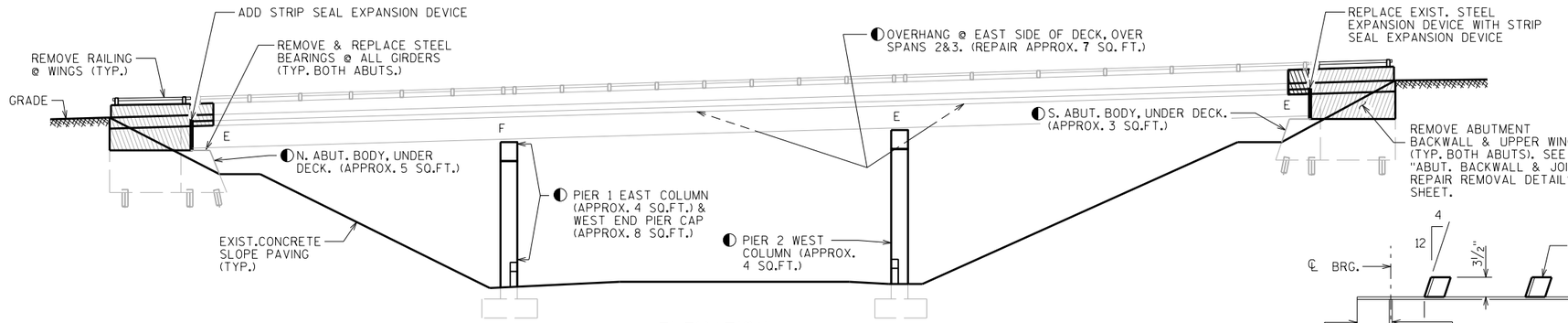
STATE PROJECT NUMBER

1016-05-66



PLAN

3 SPAN - STEEL GIRDERS



ELEVATION

NORMAL TO IH 90/94

DESIGN DATA

LIVE LOAD:

INVENTORY RATING: HS-09
OPERATING RATING: HS-16
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 110 (KIPS)
(08/09/2011 RATING, FROM HSI)

MATERIAL PROPERTIES:

CONCRETE MASONRY - ALL ——— f'c = 3,500 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.

TRAFFIC VOLUME

KOVAL ROAD

R.D.S. = 55 M.P.H.

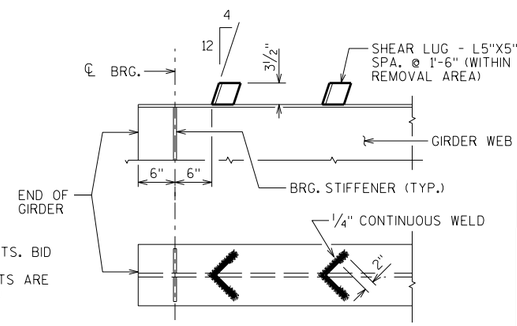
IH 90/94

ADT = 44,190 (2042)
R.D.S. = 70 M.P.H.

LEGEND

◐ CONCRETE SURFACE REPAIR REQUIRED. LOCATIONS NOTED IN PLANS MAY NOT BE ALL INCLUSIVE. QUANTITIES SHOWN ON SHEET 2 ARE APPROXIMATE. ADDITIONAL REPAIRS MAY BE REQUIRED DURING CONSTRUCTION AND SHOULD BE PERFORMED AS DIRECTED BY THE FIELD ENGINEER.

LIST OF DRAWINGS



SHEAR LUG DETAIL

(TYP. ALL GIRDERS @ EACH ABUTMENT)

(MATERIAL - STRUCTURAL STEEL CARBON)

STRUCTURE DESIGN CONTACTS:

ALEXANDER CRABTREE (608) 266-3686
LAURA SHADEWALD (608) 267-9592

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.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-29-22" SHALL BE THE EXISTING GROUNDLINE.

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

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

AT JOINT REPAIR AREAS, PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF NEW DECK SURFACE, INCLUDING VERTICAL & HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT BACKWALL & DIAPHRAGMS.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF CURB & PARAPETS, INCLUDING CURB AND PARAPETS ON WINGS. ALSO APPLY PIGMENTED SURFACE SEALER TO END OF CURB & PARAPET AT WING TIP.

GENERAL NOTES (CONT.)

REMOVE EXISTING RAILING ON THE REMOVED LENGTH OF DECK & ABUT. WING PARAPETS. BID ITEM "REMOVING & RESETTING TUBULAR RAILING B-29-22" INCLUDES TEMPORARILY REMOVING & RESETTING EXISTING ALUMINUM POSTS AND TUBES AFTER REPLACEMENTS ARE COMPLETED. NEW ANCHOR BOLTS & SHIMS REQUIRED IN DECK REMOVAL LIMITS ALSO INCLUDED IN BID ITEM "REMOVING & RESETTING TUBULAR RAILING B-29-22".

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF BOTH ABUTMENTS BELOW EXPANSION DEVICES.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

CLEAN & PAINT ABUTMENT END DIAPHRAGMS, AT BACKWALL. SURFACE OF DIAPHRAGM, AFTER CLEANING, TO MEET CLEANLINESS STANDARD SSPC-SP3. THE COLOR OF PAINT IS GRAY (AMS STANDARD COLOR NO. 26293) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1962.

NO.	DATE	REVISION	BY

WISCONSIN DEPARTMENT OF TRANSPORTATION — BUREAU OF STRUCTURES

ACCEPTED _____ LLS 1/20/22
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-29-22

KOVAL RD. OVER W.B. IH 90/94

COUNTY	TOWN
JUNEAU	LYNDON STATION

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
ARC	MWB	MJH	MWB

GENERAL PLAN

SHEET 1 OF 10

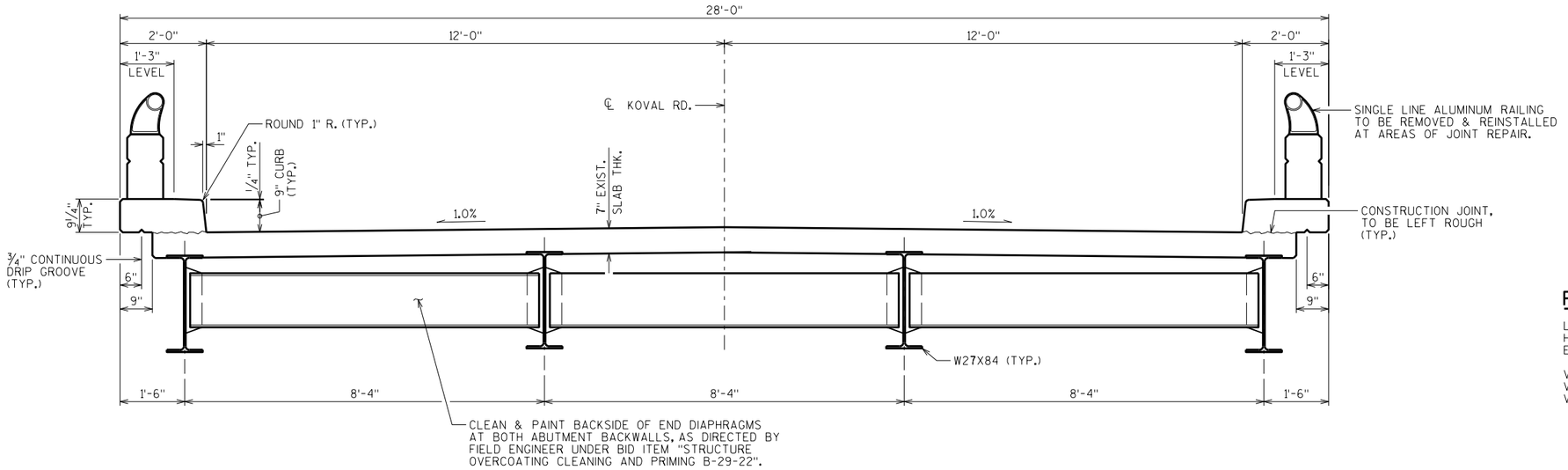
48

I.D. 1016-05-36B DATE: JAN 2022

SCALE = 12.00

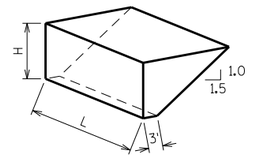
STATE PROJECT NUMBER

1016-05-66



CROSS SECTION THRU ROADWAY

(LOOKING NORTH)



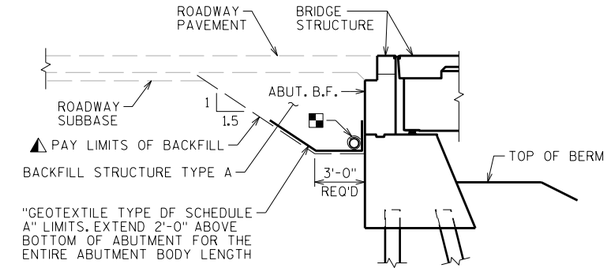
ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)
V_{CY} = V_{CF} (EF)/27
V_{TON} = V_{CY} (2.0)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	NORTH ABUT.	PIER 1	PIER 2	SOUTH ABUT.	TOTALS
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-29-22	LS	———	———	———	———	———	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	———	38	———	———	38	76
502.0100	CONCRETE MASONRY BRIDGES	CY	———	11	———	———	11	22
502.3101	EXPANSION DEVICE B-29-22	LF	———	32	———	———	32	64
502.3200	PROTECTIVE SURFACE TREATMENT	SY	42	———	———	———	———	42
502.3210	PIGMENTED SURFACE SEALER	SY	29	———	———	———	———	29
502.4110	ADHESIVE ANCHORS 1 1/4-INCH	EACH	———	8	———	———	8	16
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	———	102	———	———	102	204
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,180	1,520	———	———	1,530	5,230
506.6000	BEARING ASSEMBLIES EXPANSION B-29-22	EACH	———	4	———	———	4	8
506.7050.S	REMOVING BEARINGS B-29-22	EACH	———	4	———	———	4	8
509.1000	JOINT REPAIR	SY	25	———	———	———	———	25
509.1500	CONCRETE SURFACE REPAIR	SF	7	19	12	4	3	45
509.2100.S	CONCRETE MASONRY DECK REPAIR	CY	11	———	———	———	———	11
513.9006.S	REMOVING AND RESETTING TUBULAR RAILING B-29-22	EACH	1	———	———	———	———	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	8	———	———	8	16
☆ 517.3001.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-29-22	EACH	1	———	———	———	———	1
517.4001.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-29-22	EACH	1	———	———	———	———	1
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	71	———	———	71	142
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	———	2	———	———	2	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	———	30	———	———	30	60
	NON-BID ITEMS							
	BRIDGE SEAT PROTECTION	LS	———	———	———	———	———	1

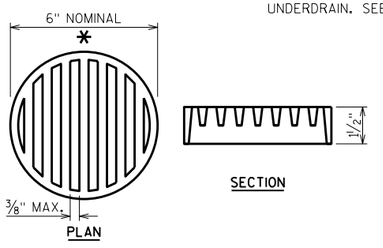
☆ ESTIMATED PAINTING AREA IS 81 SF



TYPICAL SECTION THRU ABUTMENTS

BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

PIPE UNDERDRAIN WRAPPED (6 INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL THIS SHEET.



RODENT SHIELD DETAIL

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

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

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-22

DRAWN BY MJH | PLANS CK'D. MWB

CROSS SECTION & QUANTITIES

SHEET 2

49

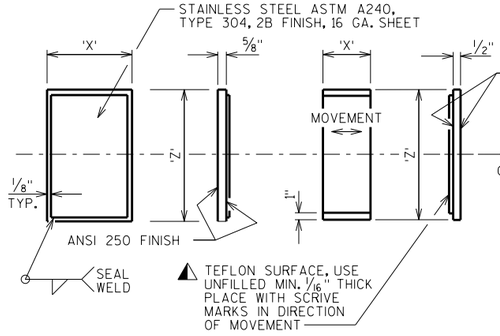
SCALE = 1.50

8

8

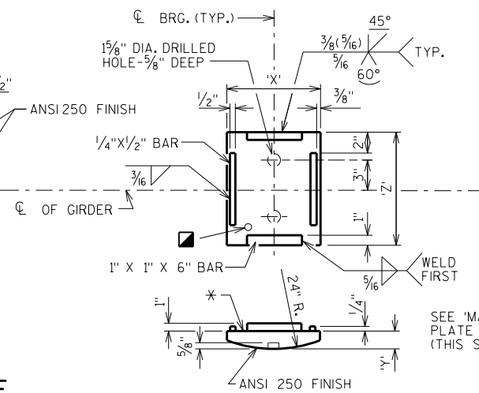
STATE PROJECT NUMBER

1016-05-66



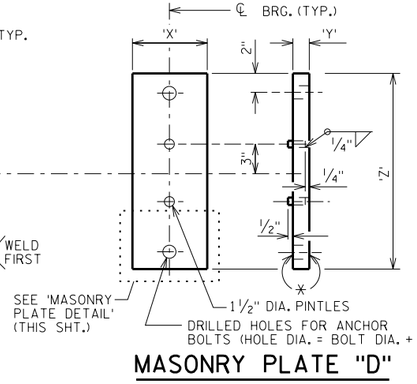
TOP PLATE "A"

TEFLON SURFACE ON PLATE "B"



ROCKER PLATE "C"

EXPANSION BEARING



MASONRY PLATE "D"

BEARING TABLE

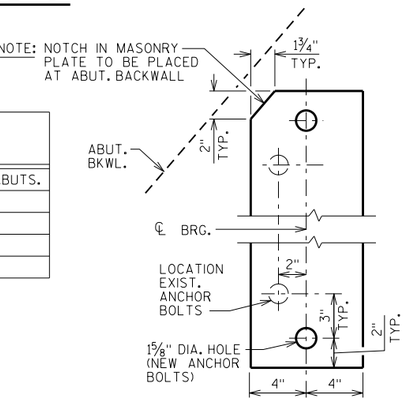
	PLATE "A"		PLATE "B"		PLATE "C"			PLATE "D"			ANCHOR BOLT DIA.	ANCHOR BOLT LENGTH	NO. OF BRG'S REQ'D.	LOCATION
	'X'	'Z'	'X'	'Z'	'X'	'Y'	'Z'	'X'	'Y'	'Z'				
EXPANSION BEARING	9"	10 3/4"	5"	10 3/4"	7"	1 1/16"	1'-1"	8"	1 1/2"	2'-0 1/2"	1 1/4"	1'-5"	8	ALL BEARINGS @ BOTH ABUTS.

°F	NORTH ABUT.	SOUTH ABUT.
30	1/16"	1/8"
35	1/16"	1/16"
45	0"	0"
55	-1/16"	-1/16"
65	-1/8"	-3/16"
75	-1/8"	-1/4"
85	-3/16"	-5/16"
90	-1/4"	-3/8"

◪ BEARING OFFSET TABLE

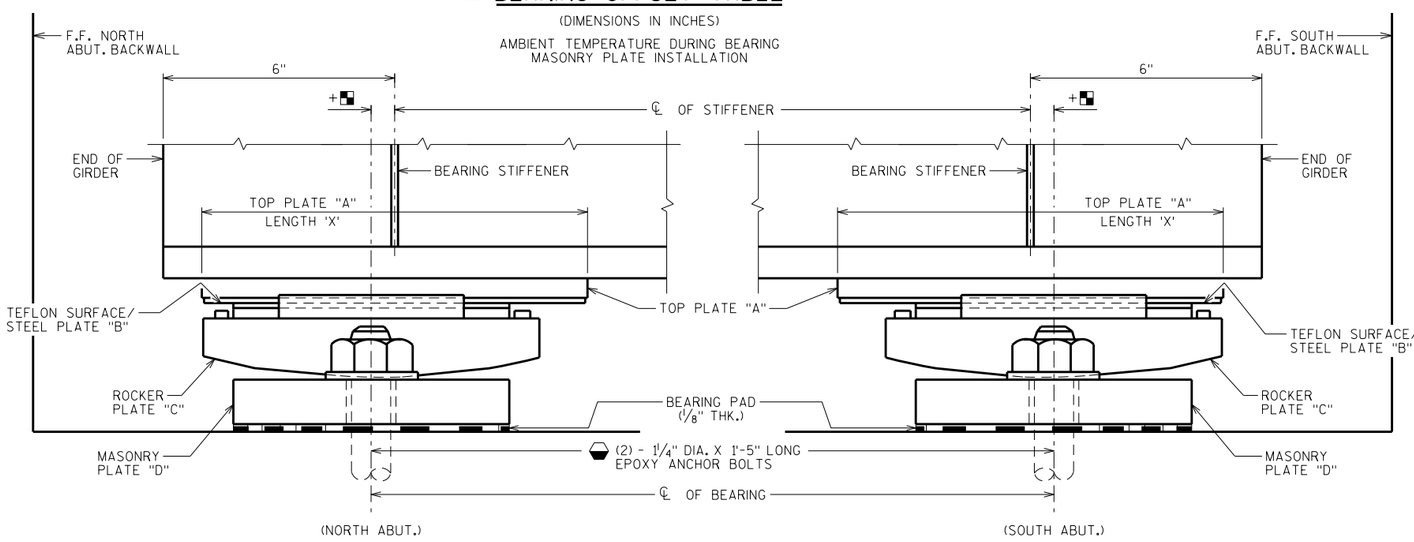
(DIMENSIONS IN INCHES)

AMBIENT TEMPERATURE DURING BEARING MASONRY PLATE INSTALLATION



MASONRY PLATE DETAIL

(ALL GIRDERS, BOTH ABUTS.)



EXPANSION BEARING ASSEMBLY DETAIL AT ABUTS.

(LOOKING EAST)

BEARING NOTES

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.

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

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES, BUT EXCLUDING STAINLESS STEEL SHEET, TEFLON SURFACE, PINTELS, ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES AND BEARING PADS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES EXPANSION B-29-22", EACH.

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

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

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.

PROVIDE 1/8" THICK BEARING PAD SAME SIZE AS PLATE "D" FOR EACH BEARING.

⬭ ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. PROJECT ANCHOR BOLTS, MASONRY PLATE "D" THICKNESS + 2 1/4", ABOVE TOP OF CONCRETE. ANCHOR BOLTS SHALL BE PAID FOR AS "ADHESIVE ANCHORS 1 1/4-INCH" AND BE EPOXY ANCHORED.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING.

CHAMFER TOP OF PINTLES 1/8". DRILL HOLES FOR ALL PINTLES IN MASONRY PLATE "D" FOR A DRIVING FIT.

STEEL PINTLES SHALL CONFORM TO ASTM A449 OR ASTM A572 GRADE 50.

ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM F1554 GRADE 50, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

PLACE SHIM PLATES BETWEEN BEARING PAD AND MASONRY PLATE "D". PLATES SHALL HAVE 'X' AND 'Z' DIMENSIONS THAT MATCH MASONRY PLATE "D".

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

✳ FINISH THESE SURFACES ANSI 250 FINISH IF 'Y' DIM. IS GREATER THAN 2".

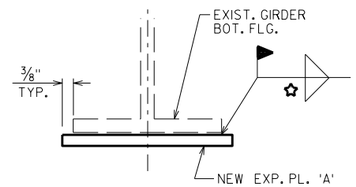
◭ BOND STEEL PLATE "B" AND TEFLON WITH ADHESIVE MATERIAL MEETING THE REQUIREMENTS FOUND IN THE STANDARD SPECIFICATION.

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, OR ANY OTHER FOREIGN MATTER.

✩ TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED	∓ MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	5/16"
OVER 1 1/2" TO 2 1/4"	3/8"

∓ EXCEPT THAT WELD SIZE SHALL NOT EXCEED THICKNESS OF THINNER PART JOINED.



BEARING REPLACEMENT DETAILS

REMOVE EXIST. EXPANSION BEARINGS AND EXISTING ANCHOR BOLTS FLUSH WITH CONCRETE BEARING SURFACE AND GRIND SMOOTH.

REMOVE EXISTING TOP PLATE AND REPLACE WITH NEW PLATE "A" FOR EXPANSION BEARING.

PAID FOR AS BID ITEM "REMOVING BEARINGS B-29-22"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-22

DRAWN BY ARC | PLANS CK'D. MWB

BEARING REPLACMENT DETAILS

SHEET 3

50

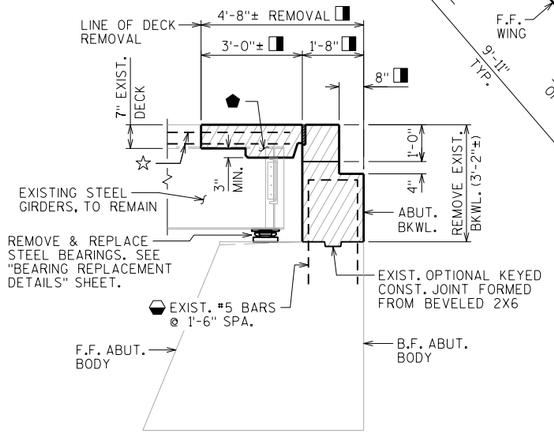
8

8

SCALE = 1.00

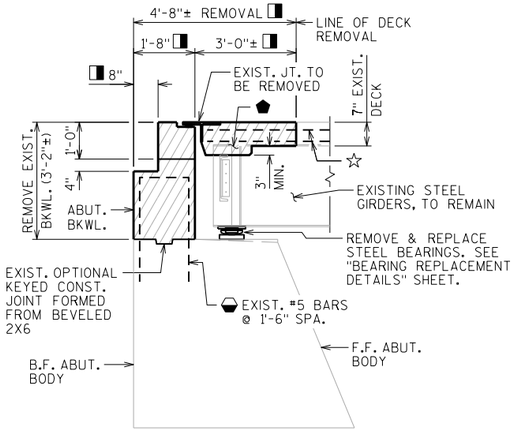
STATE PROJECT NUMBER

1016-05-66



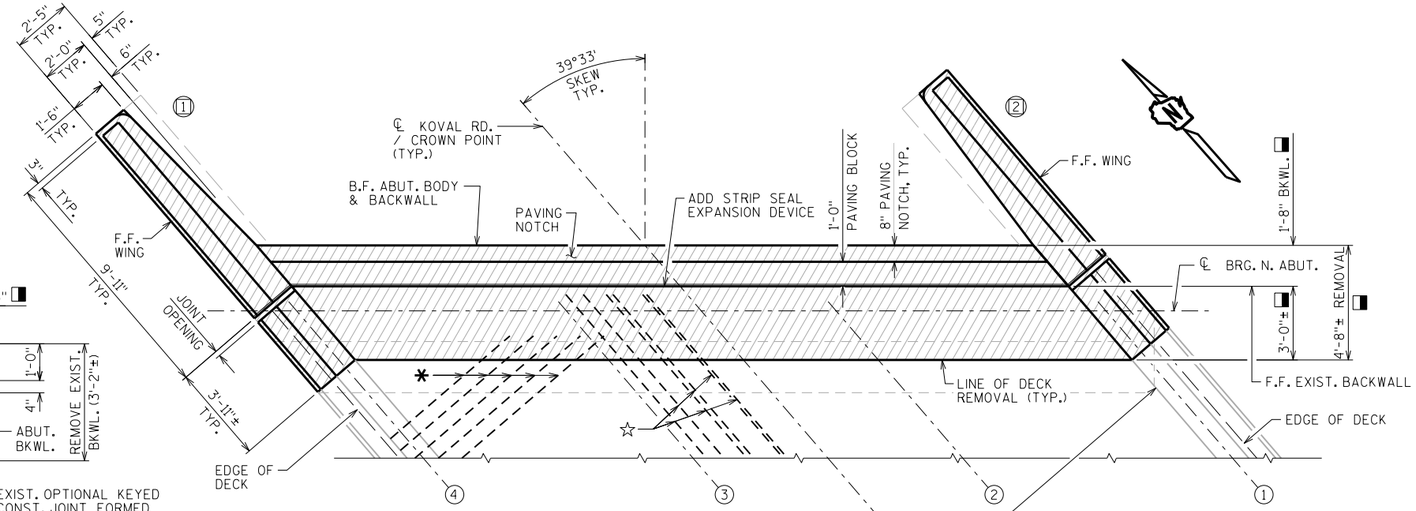
SECTION THRU NORTH ABUTMENT

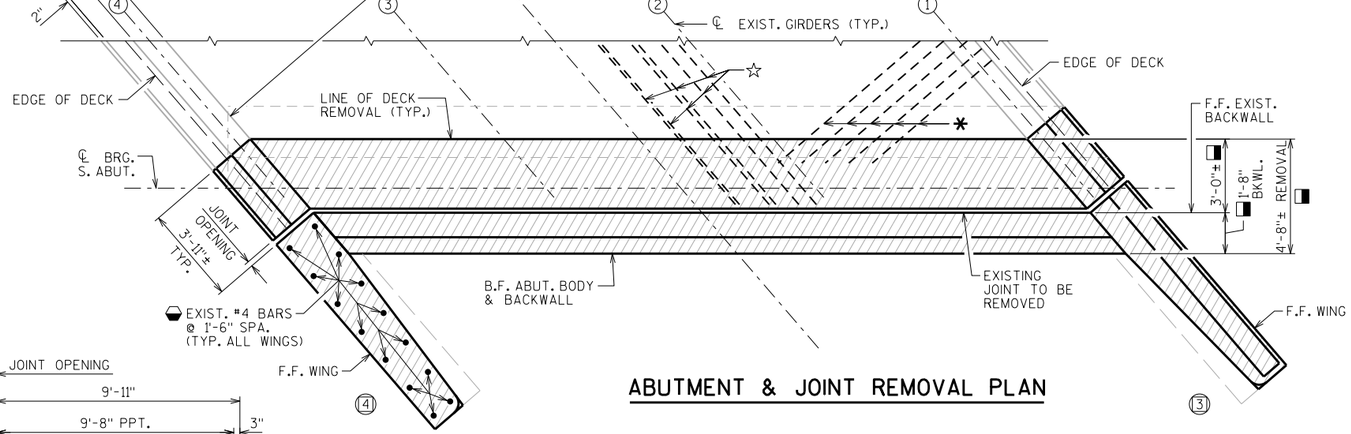
NORMAL TO ℄ OF SUBSTRUCTURE (LOOKING WEST)



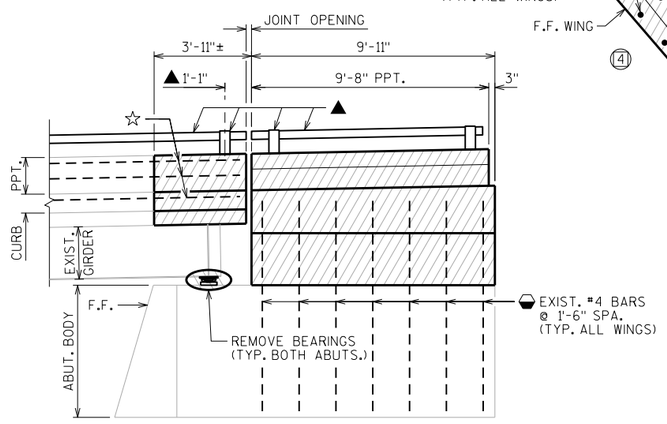
SECTION THRU SOUTH ABUTMENT

NORMAL TO ℄ OF SUBSTRUCTURE (LOOKING WEST)





ABUTMENT & JOINT REMOVAL PLAN



ABUTMENT UPPER WING REMOVAL

(WING 4 SHOWN - ALL OTHER WINGS SIMILAR)

LEGEND

- INDICATES REMOVAL LIMITS
- INDICATES WING NUMBER
- DENOTES EXISTING GIRDER NUMBER
- ✱ EXISTING TRANSVERSE DECK REINFORCEMENT, PLACED NORMAL TO GIRDERS (@ 7½" SPACING). SAVE & INCORPORATE 1'-6" MIN. NEW TRANSVERSE REINF. TO BE PLACED ALONG SKEW.
- ☆ CLEAN, STRAIGHTEN & INCORPORATE EXIST. LONGIT. DECK, CURB AND PARAPET REINF. INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENTS ARE VIOLATED.
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- DIMENSION MEASURED NORMAL TO ℄ SUBSTRUCT.
- ▲ EXISTING SINGLE LINE ALUMINUM RAILING TO BE REMOVED, AT ABUT. WINGS & AREA OF JOINT REPAIR. REINSTALL EXISTING RAILING AND POSTS ON SUPERSTRUCTURE ONLY. NEW ANCHORS & SHIMS REQUIRED, WHEN REINSTALLING EXIST. POSTS. SEE "JOINT REPAIR DETAILS" SHEET, FOR ANCHOR BOLTS & SHIM DETAILS.
- ⬟ COMPLETELY REMOVE EXISTING CONCRETE END DIAPHRAGM BTWN. GIRDERS. DURING REMOVAL, AVOID DAMAGE TO EXIST. GIRDERS & SHEAR LUGS EMBEDED IN CONCRETE. REPLACE DAMAGED SHEAR LUGS AS PER DETAIL SHOWN ON "GENERAL PLAN" SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-22

DRAWN BY ARC/MJH | PLANS CK'D. MWB

ABUT. BACKWALL & JOINT REPAIR REMOVAL DETAILS

SHEET 4

51

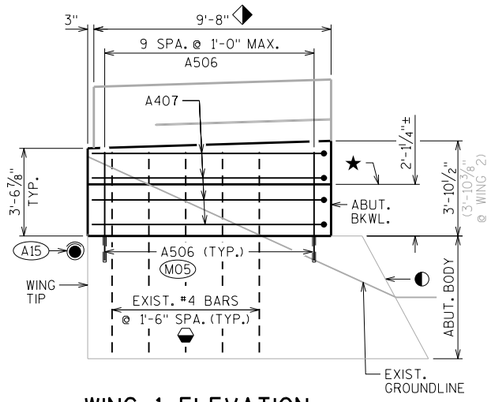
SCALE = 3.00

8

8

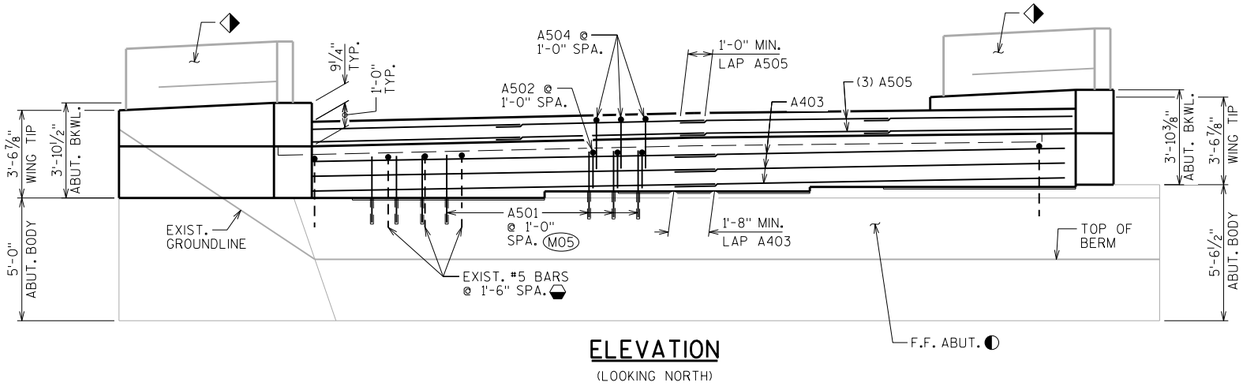
STATE PROJECT NUMBER

1016-05-66



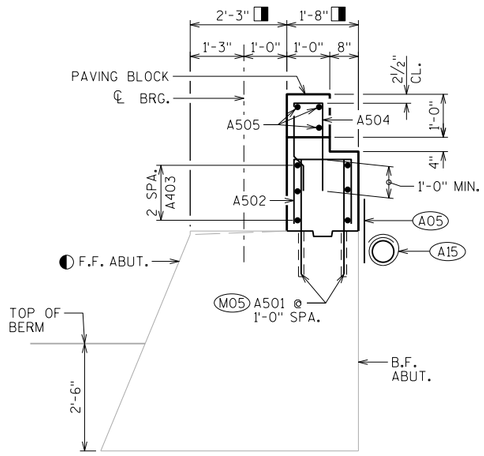
WING 1 ELEVATION

(WING 2 SIMILAR)



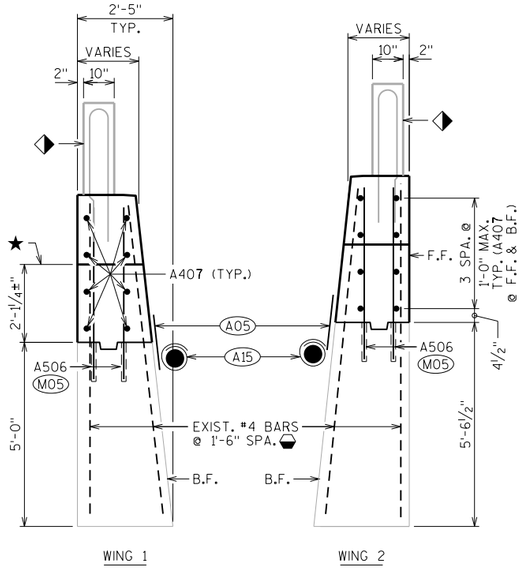
ELEVATION

(LOOKING NORTH)

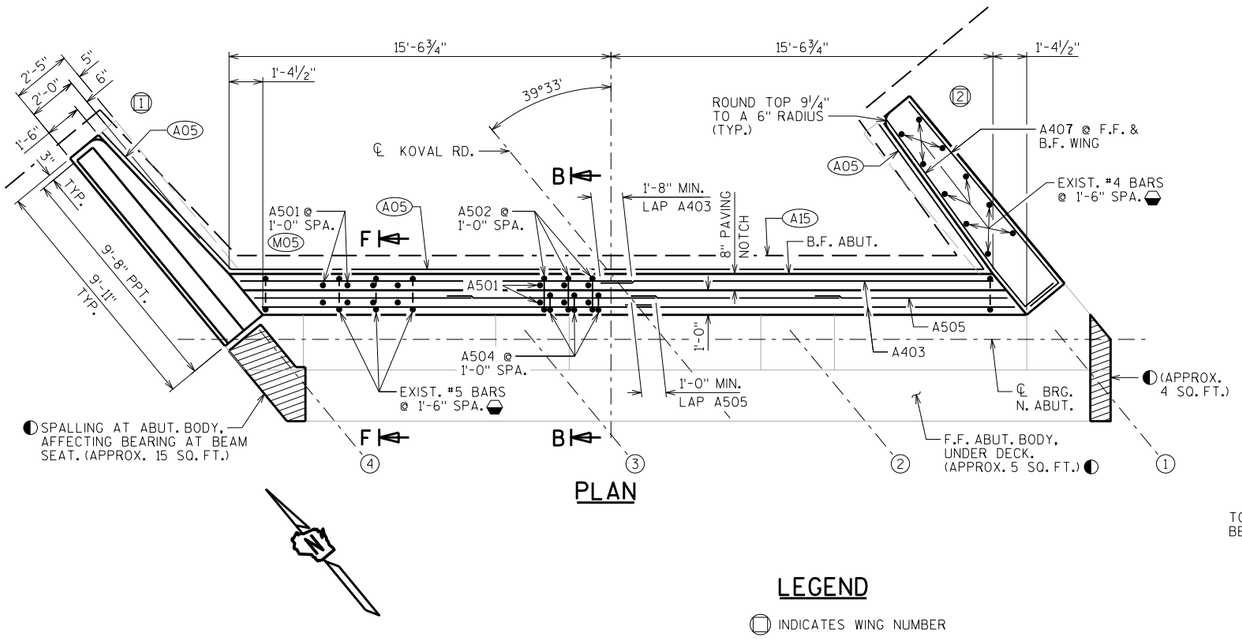


SECTION B-B

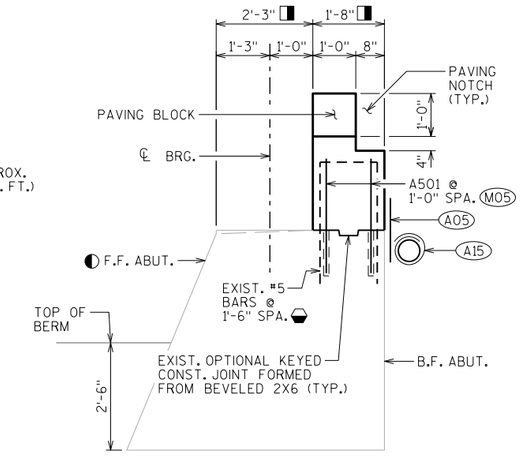
(SHOWING BACKWALL REINFORCEMENT)



SECTION THRU WINGS



PLAN



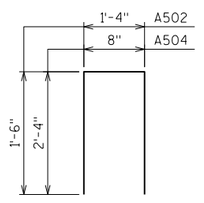
SECTION F-F

(SHOWING EPOXY ANCHORS)

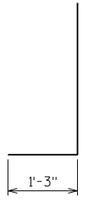
BILL OF BARS

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
M05	A501	X	62	2'-8"			ANCHOR - BODY TO BACKWALL - VERT.
	A502	X	31	4'-1"	X		ABUT. BACKWALL - VERT.
	A403	X	12	16'-3"			ABUT. BACKWALL - HORIZ.
	A504	X	31	5'-1"	X		PAVING BLOCK - VERTICAL
	A505	X	12	8'-6"			PAVING BLOCK - HORIZ.
M05	A506	X	40	4'-5"			ANCHOR - WINGS - VERT.
	A407	X	16	10'-9"	X		UPPER WING - HORIZ.



A502, A504



A407

LEGEND

- ◯ INDICATES WING NUMBER
- ◯ DENOTES EXISTING GIRDER NUMBER
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- DIMENSION MEASURED NORMAL TO ℄ SUBSTRUCT.
- ★ OPTIONAL CONST. JOINT - IF USED, LEAVE SURFACE ROUGHENED; PROVIDE 1" V-GROOVE IN F.F. OF WINGWALL; & PLACE 18" MEMBRANE WATERPROOFING ALONG THE ENTIRE LONGIT. JOINT AT BACKFACE. THE MEMBRANE WATERPROOFING SEALING AT OPTIONAL JOINT IS INCIDENTAL TO CONCRETE MASONRY BID ITEM.
- ◐ CONCRETE SURFACE REPAIR REQUIRED. ESTIMATED AREAS & LOCATIONS SHOWN. ACTUAL AREAS & LOCATIONS OF SURFACE REPAIR TO BE DETERMINED BY PROJECT ENGINEER.
- ◆ SEE "VERTICAL FACE PARAPET 'A' (MODIFIED)" SHEET FOR REVISED PPT. CONSTRUCTION DIMS. & REINF.
- (A05) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON "CROSS-SECTION & QUANTITIES" SHEET.
- (M05) ADHESIVE ANCHORS NO. 5 BAR. EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE IS 3¾". ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-22

DRAWN BY MJH/ARC | PLANS CK'D. MWB

NORTH ABUT. BACKWALL & WING REPAIR DETAILS

SHEET 5

52

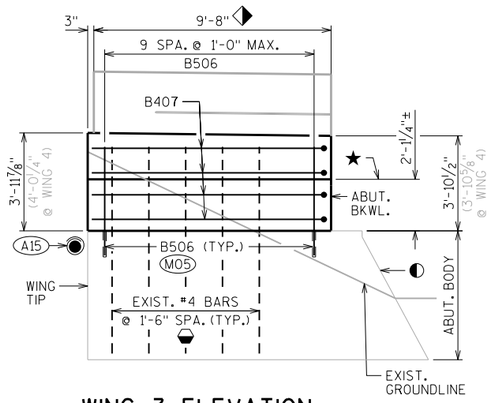
SCALE = 3.00

8

8

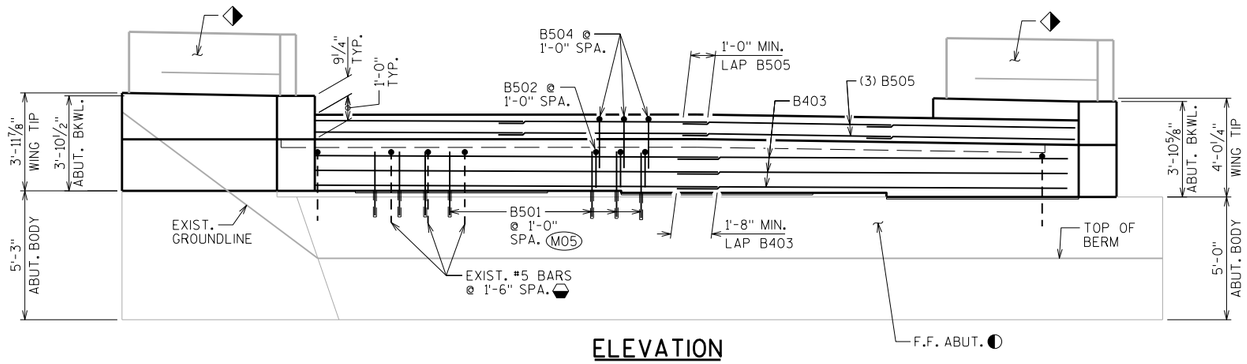
STATE PROJECT NUMBER

1016-05-66



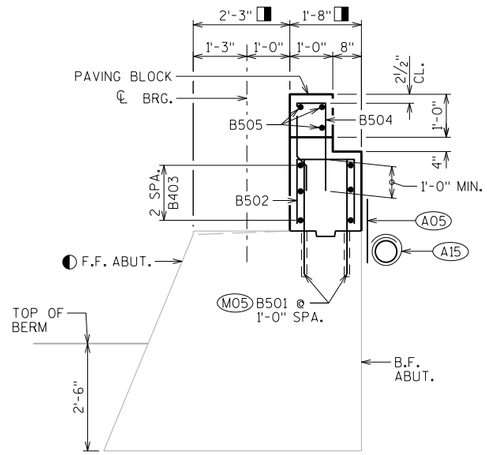
WING 3 ELEVATION

(WING 4 SIMILAR)



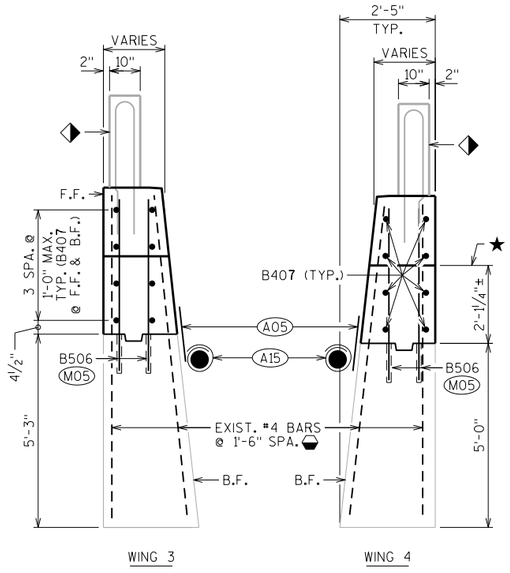
ELEVATION

(LOOKING SOUTH)

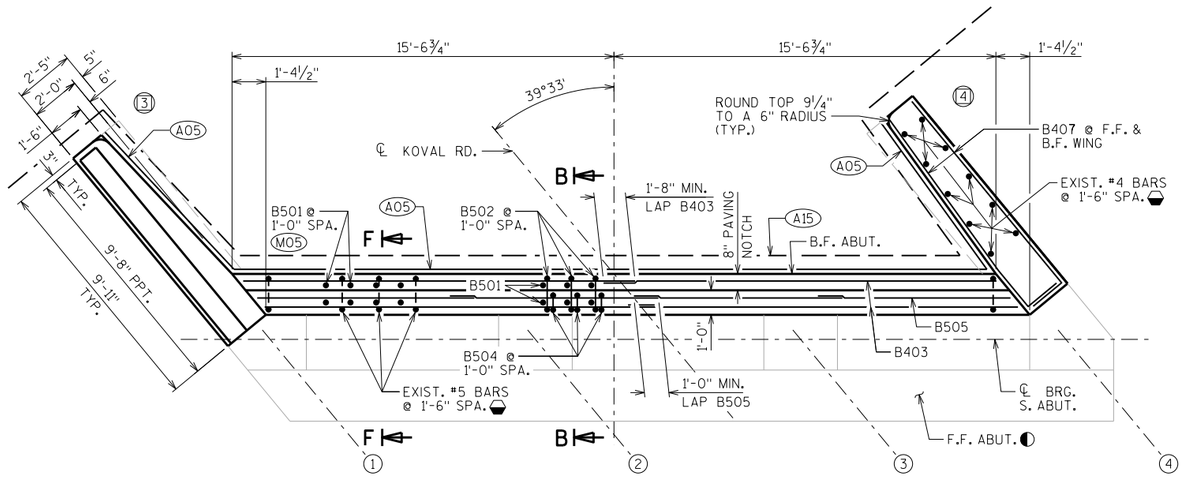


SECTION B-B

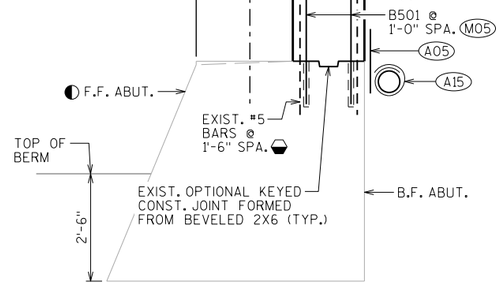
(SHOWING BACKWALL REINFORCEMENT)



SECTION THRU WINGS



PLAN



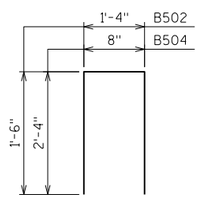
SECTION F-F

(SHOWING EPOXY ANCHORS)

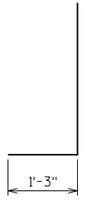
BILL OF BARS

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
M05	B501	X	62	2'-8"			ANCHOR - BODY TO BACKWALL - VERT.
	B502	X	31	4'-1"	X		ABUT. BACKWALL - VERT.
	B403	X	12	16'-3"			ABUT. BACKWALL - HORIZ.
	B504	X	31	5'-1"	X		PAVING BLOCK - VERTICAL
	B505	X	12	8'-6"			PAVING BLOCK - HORIZ.
M05	B506	X	40	4'-8"			ANCHOR - WINGS - VERT.
	B407	X	16	10'-9"	X		UPPER WING - HORIZ.



B502, B504



B407

LEGEND

- ◯ INDICATES WING NUMBER
- ◯ DENOTES EXISTING GIRDER NUMBER
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- DIMENSION MEASURED NORMAL TO ℄ SUBSTRUCT.
- ★ OPTIONAL CONST. JOINT - IF USED, LEAVE SURFACE ROUGHENED; PROVIDE 1" V-GROOVE IN F.F. OF WINGWALL; & PLACE 18" MEMBRANE WATERPROOFING ALONG THE ENTIRE LONGIT. JOINT AT BACKFACE. THE MEMBRANE WATERPROOFING SEALING AT OPTIONAL JOINT IS INCIDENTAL TO CONCRETE MASONRY BID ITEM.
- ◐ 3 SQ. FT. OF CONCRETE SURFACE REPAIR ESTIMATED ON ABUTMENT BODY. ACTUAL AREA & LOCATIONS OF SURFACE REPAIR TO BE DETERMINED BY PROJECT ENGINEER.
- ◆ SEE "VERTICAL FACE PARAPET 'A' (MODIFIED)" SHEET FOR REVISED PPT. CONSTRUCTION DIMS. & REINF.
- (A05) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE DETAIL ON "CROSS-SECTION & QUANTITIES" SHEET.
- (M05) ADHESIVE ANCHORS NO. 5 BAR. EMBED 12" IN CONCRETE. MINIMUM EDGE DISTANCE IS 3¾". ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-22

DRAWN BY MJH/ARC | PLANS CK'D. MWB

SOUTH ABUT. BACKWALL & WING REPAIR DETAILS

SHEET 6

53

SCALE = 3.00

8

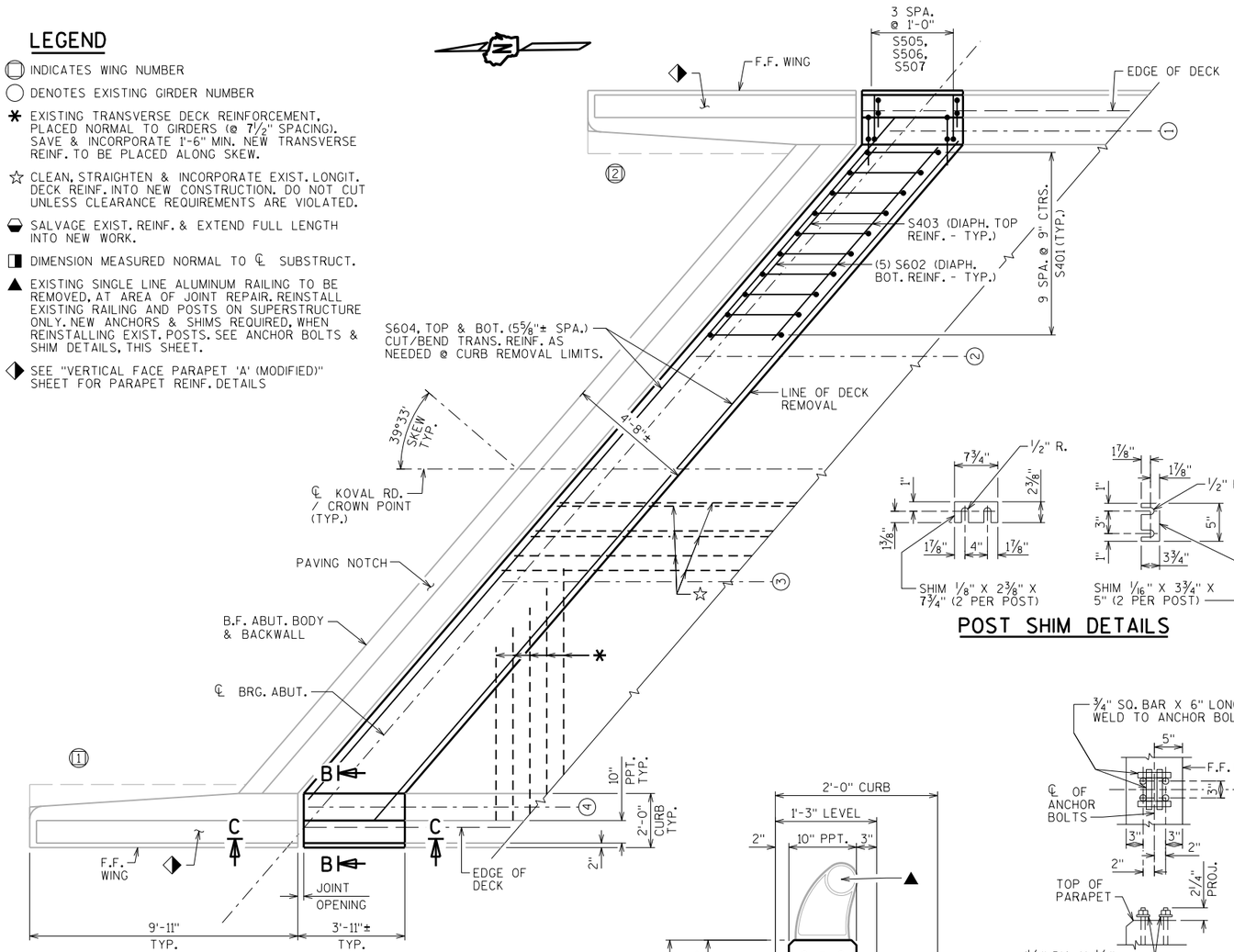
8

STATE PROJECT NUMBER

1016-05-66

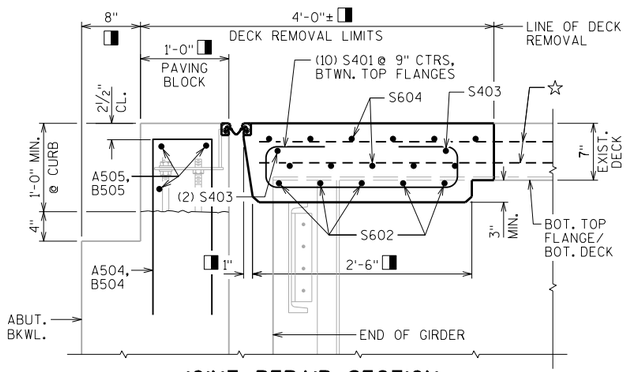
LEGEND

- INDICATES WING NUMBER
- DENOTES EXISTING GIRDER NUMBER
- ✱ EXISTING TRANSVERSE DECK REINFORCEMENT, PLACED NORMAL TO GIRDERS (@ 7½" SPACING). SAVE & INCORPORATE 1'-6" MIN. NEW TRANSVERSE REINF. TO BE PLACED ALONG SKEW.
- ☆ CLEAN, STRAIGHTEN & INCORPORATE EXIST. LONGIT. DECK REINF. INTO NEW CONSTRUCTION. DO NOT CUT UNLESS CLEARANCE REQUIREMENTS ARE VIOLATED.
- SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.
- DIMENSION MEASURED NORMAL TO ℄ SUBSTRUCT.
- ▲ EXISTING SINGLE LINE ALUMINUM RAILING TO BE REMOVED, AT AREA OF JOINT REPAIR. REINSTALL EXISTING RAILING AND POSTS ON SUPERSTRUCTURE ONLY. NEW ANCHORS & SHIMS REQUIRED, WHEN REINSTALLING EXIST. POSTS. SEE ANCHOR BOLTS & SHIM DETAILS, THIS SHEET.
- SEE "VERTICAL FACE PARAPET 'A' (MODIFIED)" SHEET FOR PARAPET REINF. DETAILS



JOINT REPAIR PLAN

(NORTH ABUT. SHOWN - SOUTH ABUT. SIMILAR)

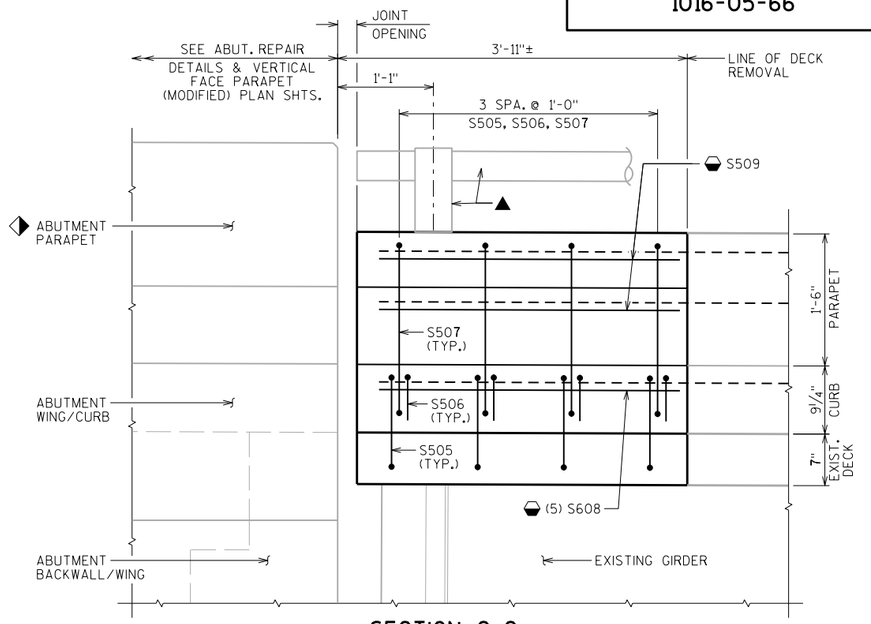


JOINT REPAIR SECTION

NORMAL TO ℄ OF SUBSTRUCTURE

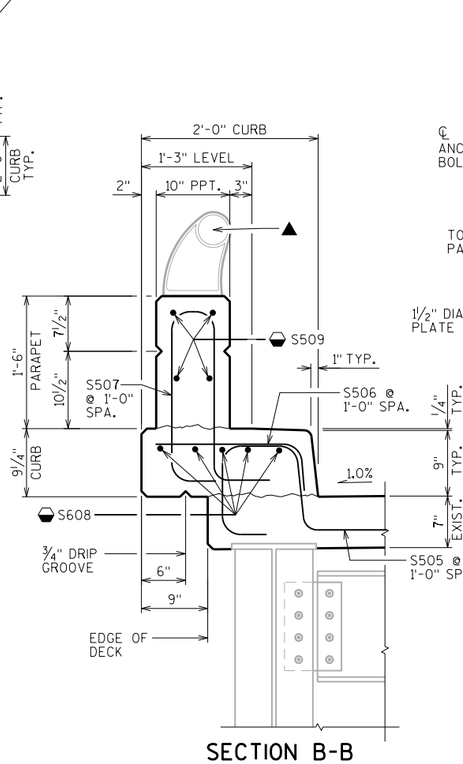
(DECK SIDE HARDWARE NOT SHOWN FOR CLARITY)

POST SHIM DETAILS

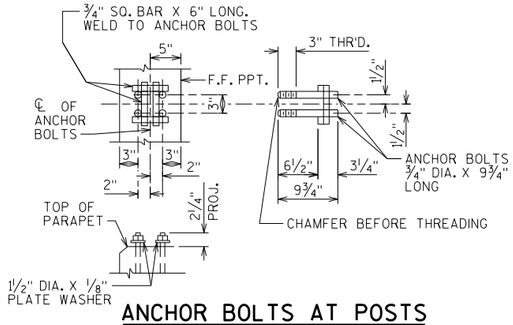


SECTION C-C

(WING 1 SHOWN - ALL OTHER WINGS SIMILAR)



SECTION B-B



ANCHOR BOLTS AT POSTS

NOTES

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

SHIMS SHALL CONFORM TO SAME MATERIAL AS POSTS.

RAILING POSTS SHALL BE SET NORMAL TO GRADE LINE.

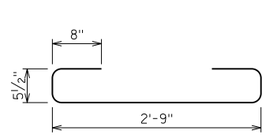
SHIMS SHALL BE USED UNDER POSTS AND END PLATES WHERE REQ'D. FOR ALIGNMENT.

FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

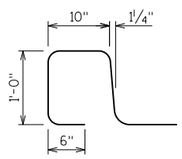
BILL OF BARS

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

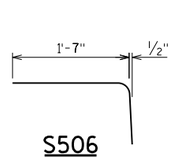
BAR MARK	COAT	NO. REQ'D. NORTH ABUT.	NO. REQ'D. SOUTH ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	30	30	4'-8"	X		DIAPHRAGM-VERT.
S602	X	15	15	9'-3"			DIAPHRAGM-HORIZ.-BOT.
S403	X	9	9	9'-3"			DIAPHRAGM-HORIZ.-TOP
S604	X	11	11	33'-8"			DECK-TRANS.
S505	X	8	8	4'-0"	X		DECK/CURB-VERT.
S506	X	8	8	2'-0"	X		DECK/CURB-VERT.
S507	X	8	8	5'-6"	X		CURB/PARAPET-VERT.
S608	X	10	10	3'-6"			CURB-HORIZ.
S509	X	8	8	3'-6"			PARAPET-HORIZ.



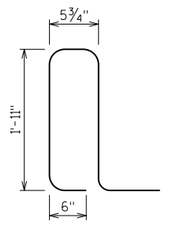
S401



S505



S506



S507

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-22

DRAWN BY ARC | PLANS CK'D. MWB

JOINT REPAIR DETAILS

SHEET 7

54

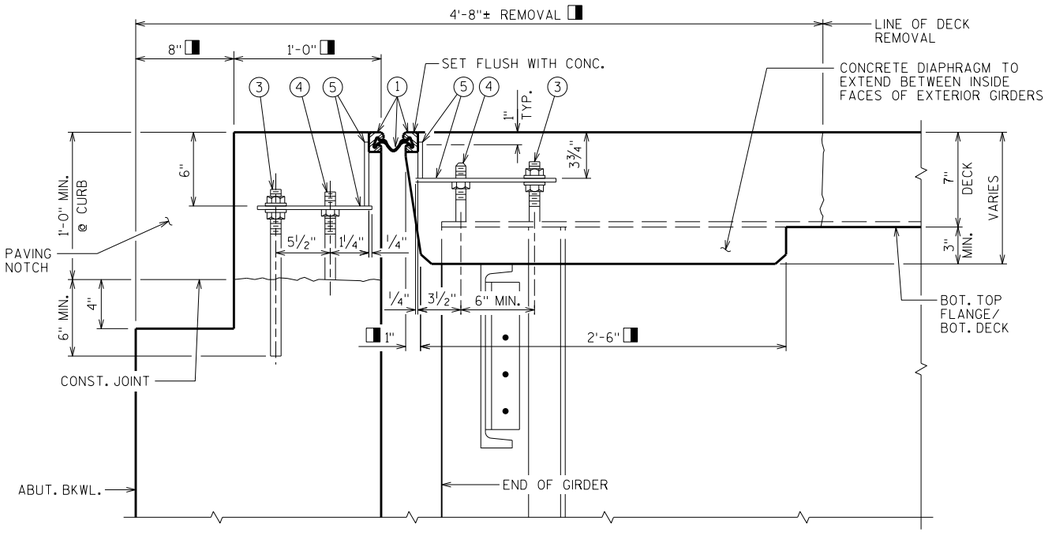
SCALE = 2.50

8

8

STATE PROJECT NUMBER

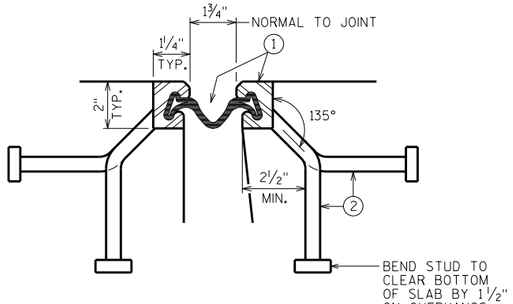
1016-05-66



SECTION THRU JOINT AT ABUTMENT

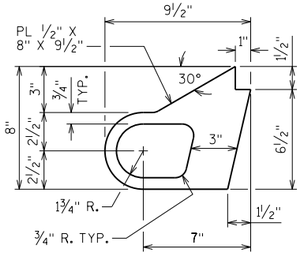
NORMAL TO ℄ SUBSTRUCTURE

(ONLY EXPANSION JOINT HARDWARE SHOWN FOR CLARITY)

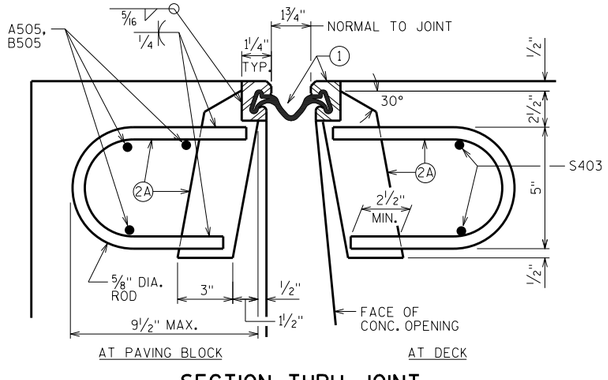


SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS & CURBS

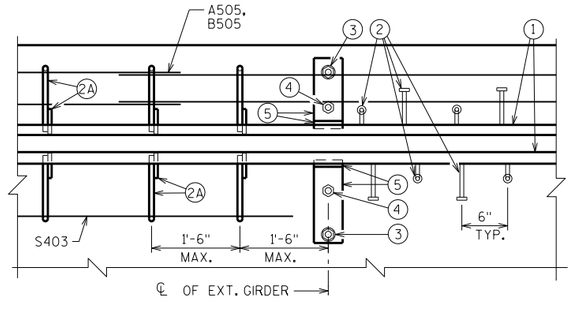


ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN

LEGEND

1. NEOPRENE STRIP SEAL (4"-INCH) AND STEEL EXTRUSIONS.
2. STUDS ⅝" DIA. X 6¾" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
2A. ½" THICK ANCHOR PLATE WITH ⅝" DIA. ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
3. ¾" DIA. THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. ¾" DIA. THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" X ½" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" DIA. HOLE FOR NO. 3 & 1" DIA. HOLE FOR NO. 4.
6. CURB COVER PLATE ⅜" X 2'-2" X LIMITS SHOWN. BEND PLATE DOWN THE FACE OF CURB WITH HOLES FOR NO. 7. GALVANIZE PLATE.
7. ¾" DIA. X 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾" DIA. X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾" DIA. X 2¼" GALVANIZED THREADED COUPLING.
10. 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

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

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

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

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

ALL MATERIAL IN THE EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID AT THE UNIT PRICE BID FOR "EXPANSION DEVICE B-29-22, LF.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-22

DRAWN BY ARC | PLANS CK'D. MWB

EXPANSION DEVICE

SHEET 8

55

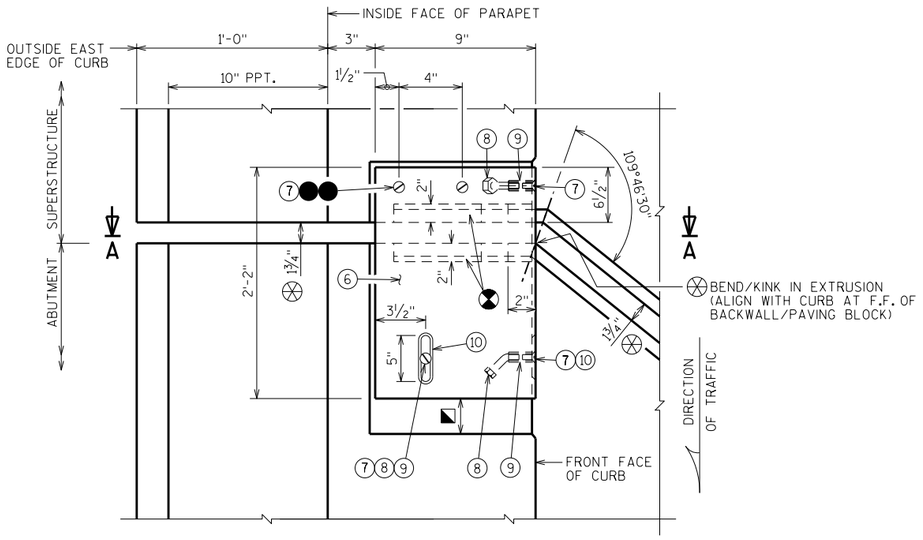
8

8

SCALE = 1.00

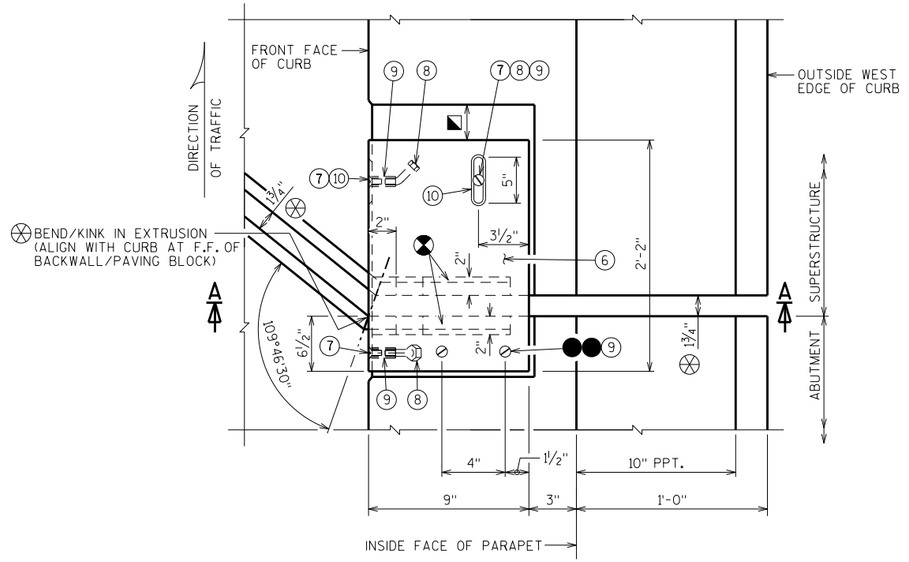
STATE PROJECT NUMBER

1016-05-66



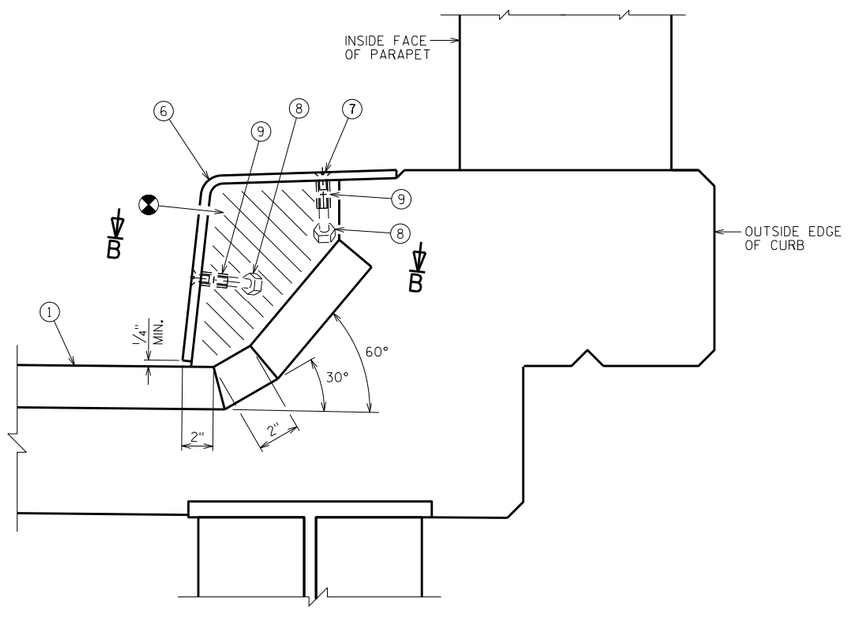
PLAN AT CURB COVER PLATE

(N. ABUTMENT, EAST EDGE OF DECK SHOWN)

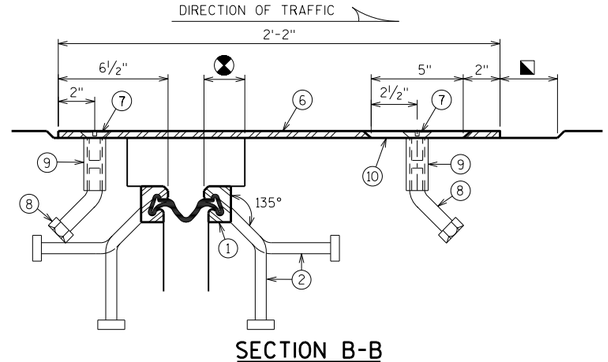


PLAN AT CURB COVER PLATE

(N. ABUTMENT, WEST EDGE OF DECK SHOWN)



SECTION A-A



SECTION B-B

LEGEND

- ⊗ KINK IN EXTRUSION PROVIDED TO MAINTAIN THE SAME JOINT OPENING WITHIN SQUARED OFF CURB, AS MEASURED NORMAL TO THE JOINT OPENING ALONG THE SKEW.
- ⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- ◪ JOINT OPENING DIMENSION ALONG SKEW PLUS ½".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-22

DRAWN BY ARC | PLANS CK'D. MWB

CURB COVER PLATE DETAILS

SHEET 9

56

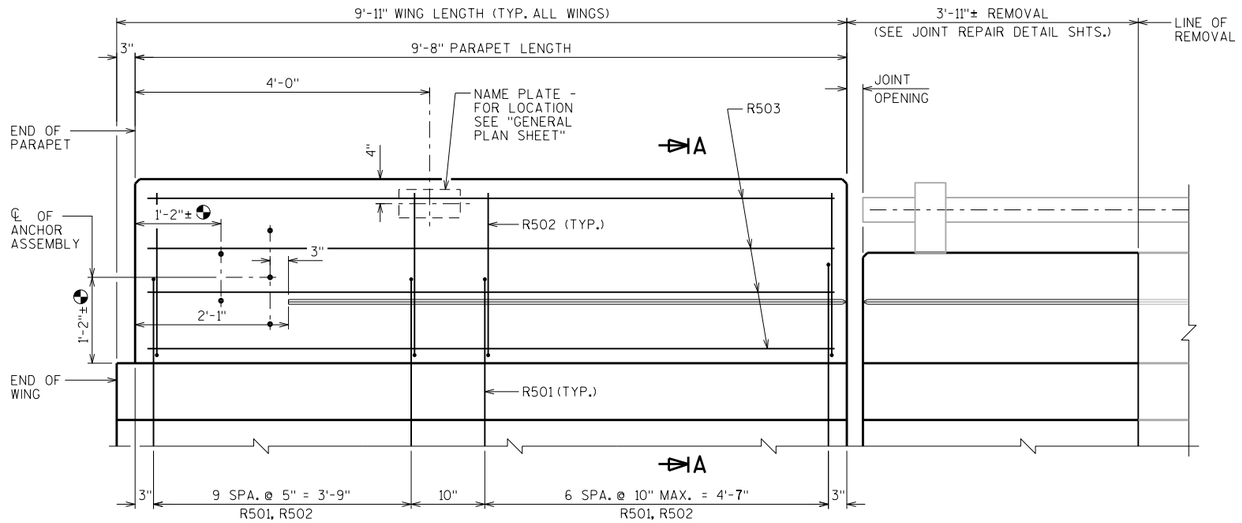
SCALE = 1.00

8

8

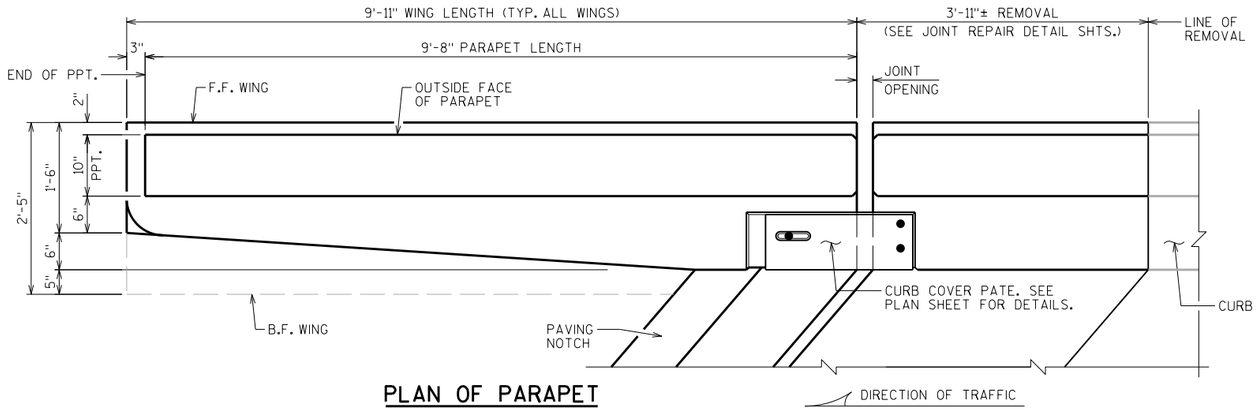
STATE PROJECT NUMBER

1016-05-66



INSIDE ELEVATION OF ABUTMENT PARAPET

(WING 2 SHOWN - ALL OTHER WING PARAPETS SIMILAR)



PLAN OF PARAPET

(WING 2 SHOWN - ALL OTHER WING PARAPETS SIMILAR)

BILL OF BARS

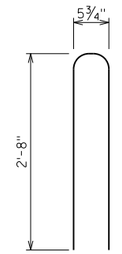
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D NORTH ABUT.	NO. REQ'D SOUTH ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	34	34	5'-7"	X		PARAPET - VERT.
R502	X	34	34	4'-7"	X		PARAPET - VERT.
R503	X	16	16	9'-4"			PARAPET - HORIZ.

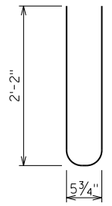
LEGEND

APPROX. LOCATION OF ANCHOR ASSEMBLY NOTED. NEW ANCHOR ASSEMBLY INSTALLED IN PARAPET TO MATCH EXISTING LOCATION.

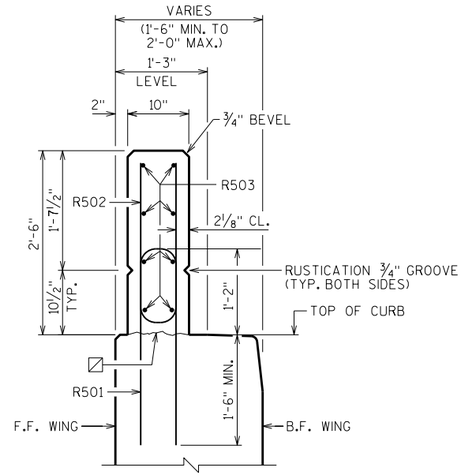
HORIZ. CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH.



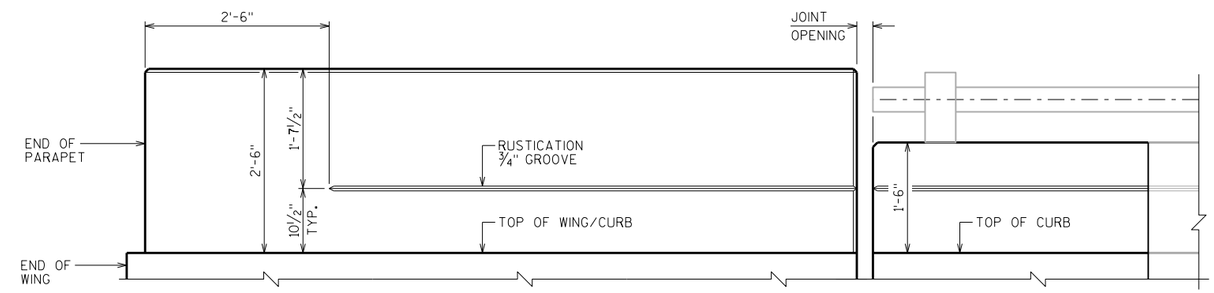
R501



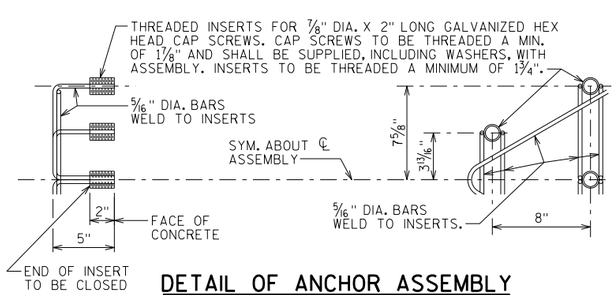
R502



SECTION A-A



OUTSIDE FACE OF PARAPET



DETAIL OF ANCHOR ASSEMBLY

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-29-22

DRAWN BY ARC | PLANS CK'D. MWB

VERTICAL FACE PARAPET 'A' (MODIFIED)

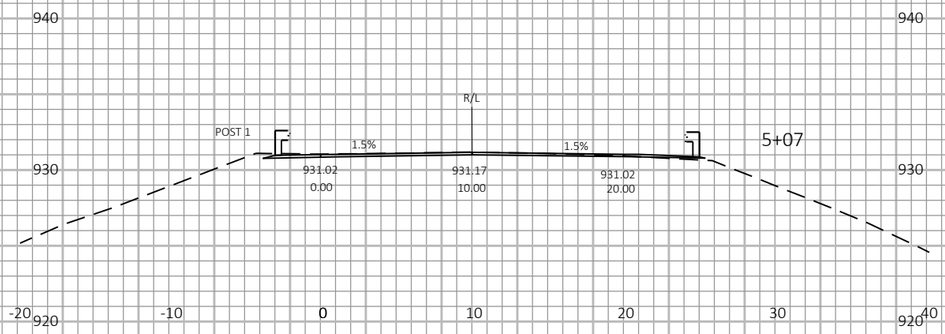
SHEET 10

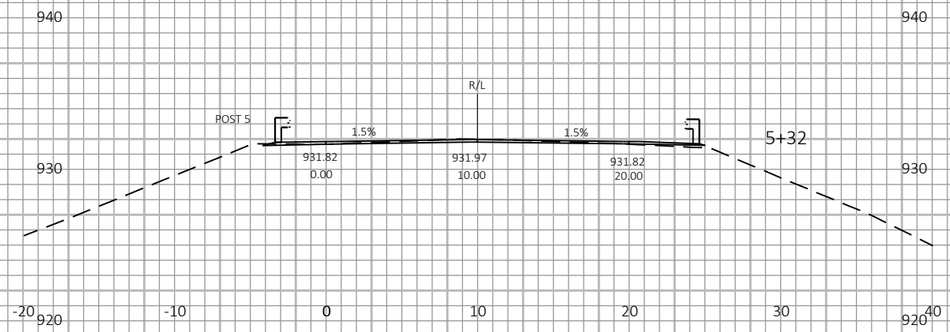
57

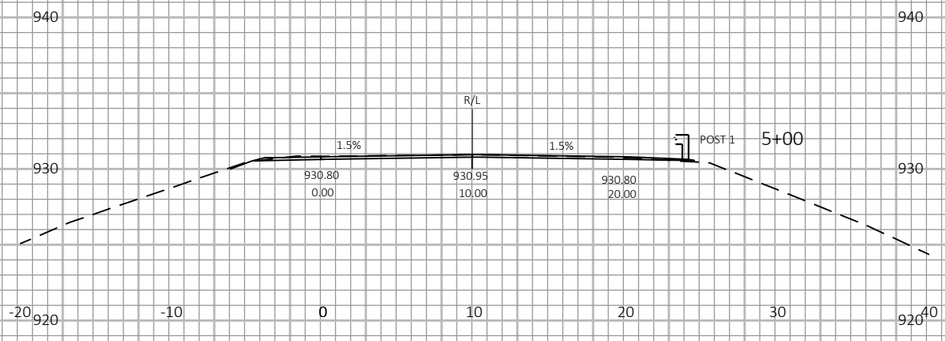
SCALE = 1.00

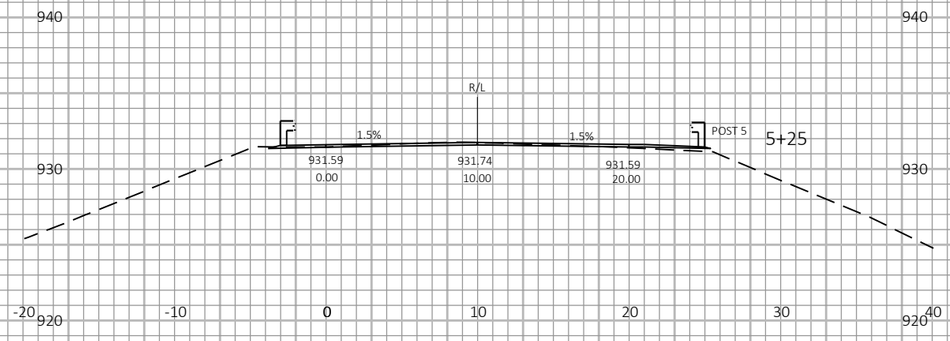
8

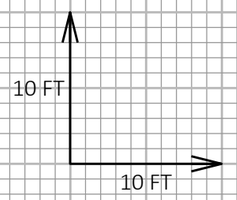
8











9

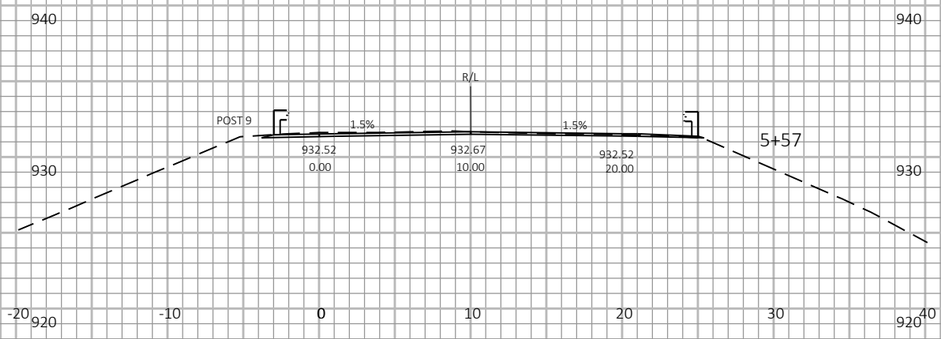
9

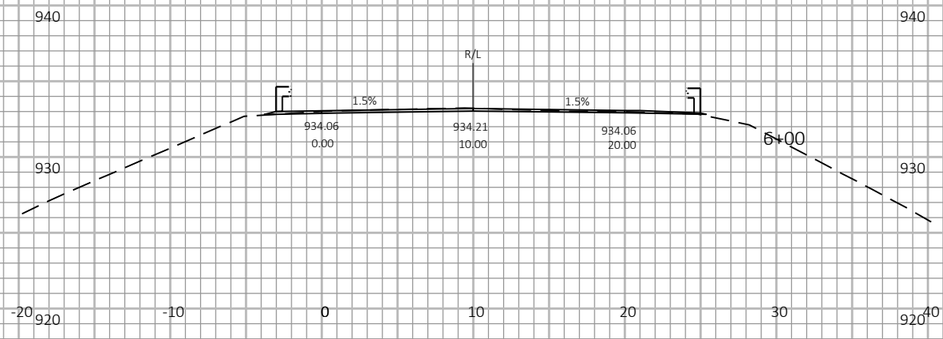
PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: KOVAL ROAD	SHEET 58	E

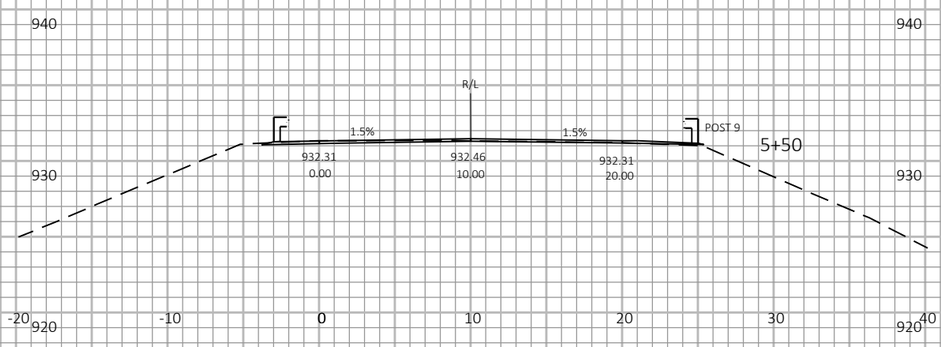
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160536\SHEETSPLAN\X-SECT - LATEST.DWG
LAYOUT NAME - 10

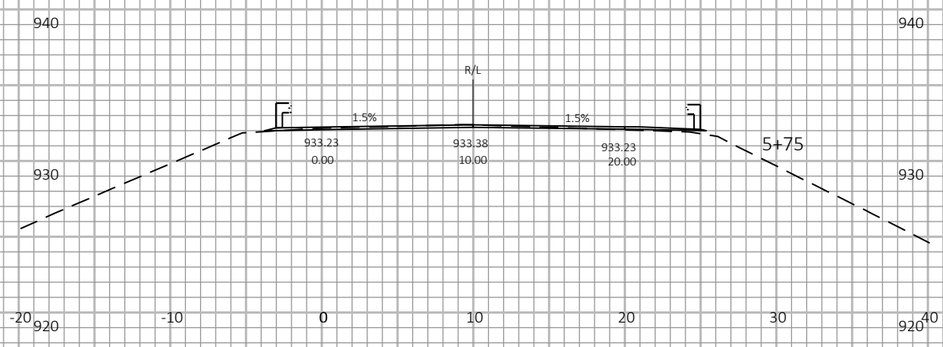
PLOT DATE : 2/4/2021 10:40 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

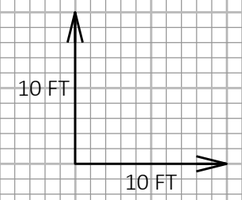
WISDOT/CADDS SHEET 49











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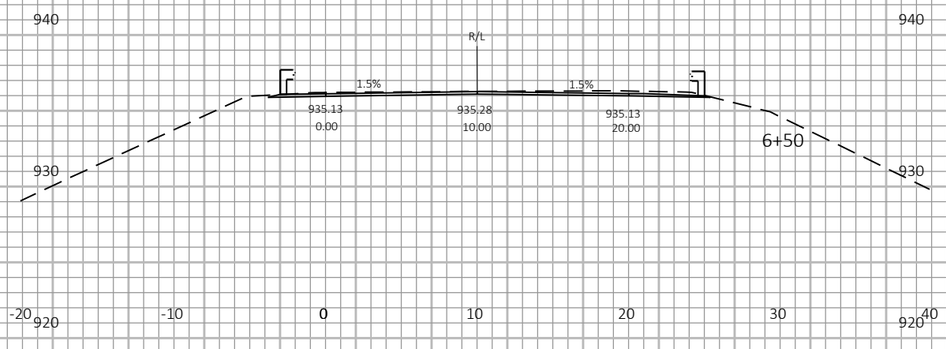
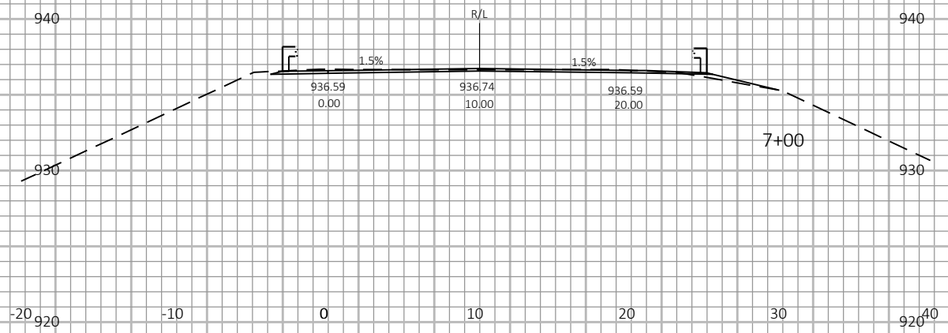
PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: KOVAL ROAD	SHEET 59	E

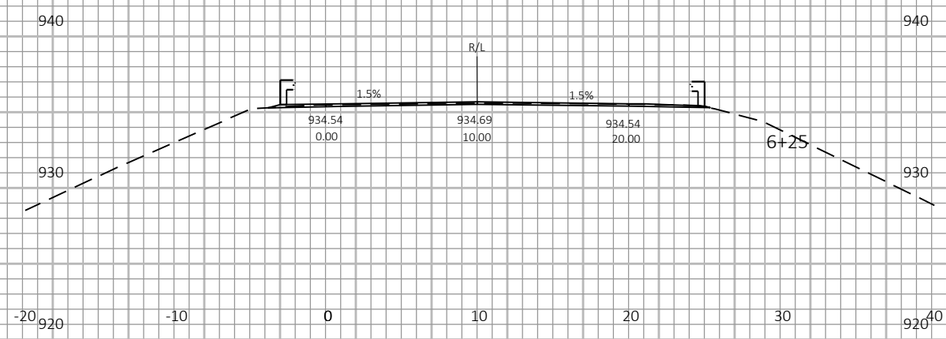
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160536\SHEETSPLAN\X-SECT - LATEST.DWG
LAYOUT NAME - 11

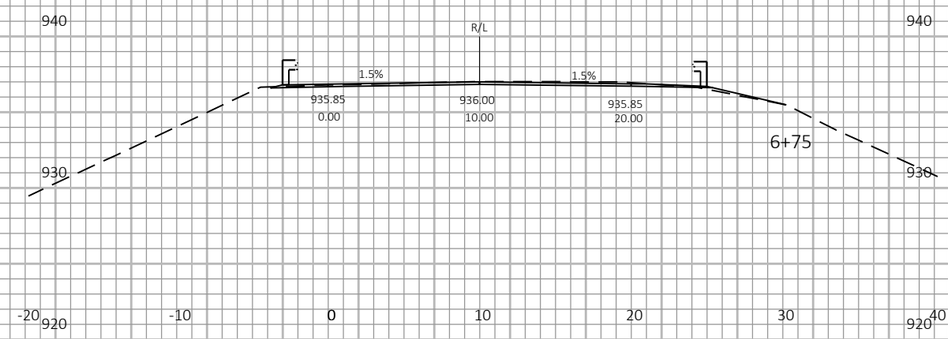
PLOT DATE : 2/4/2021 10:40 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

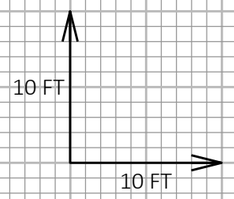
WISDOT/CADDS SHEET 49











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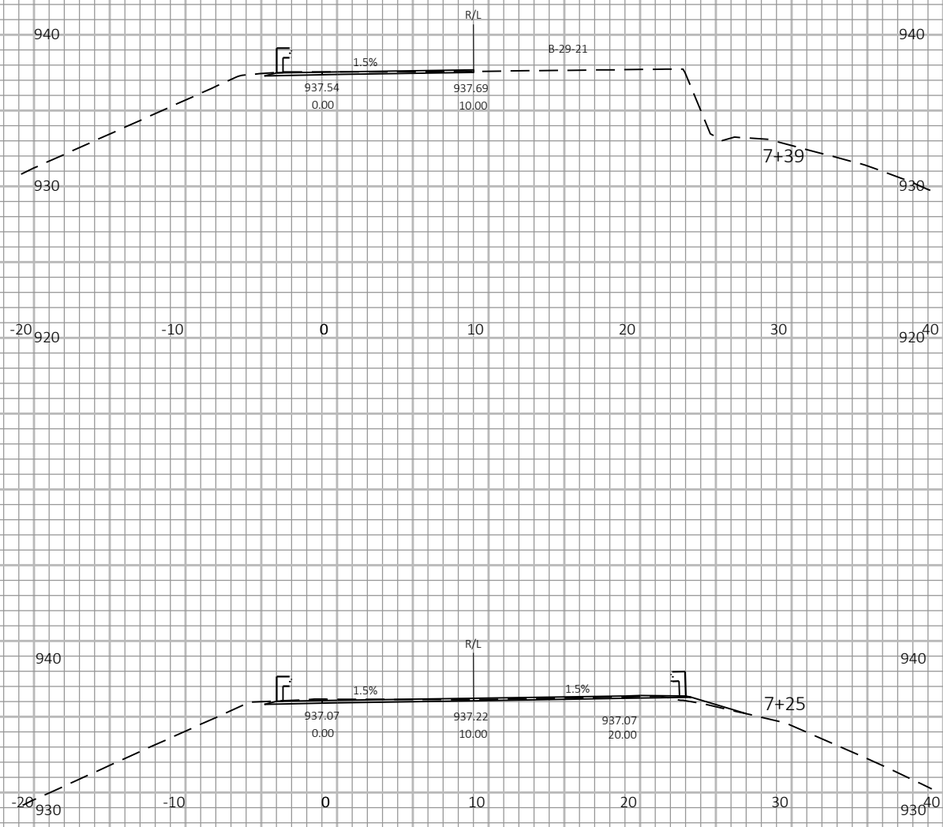
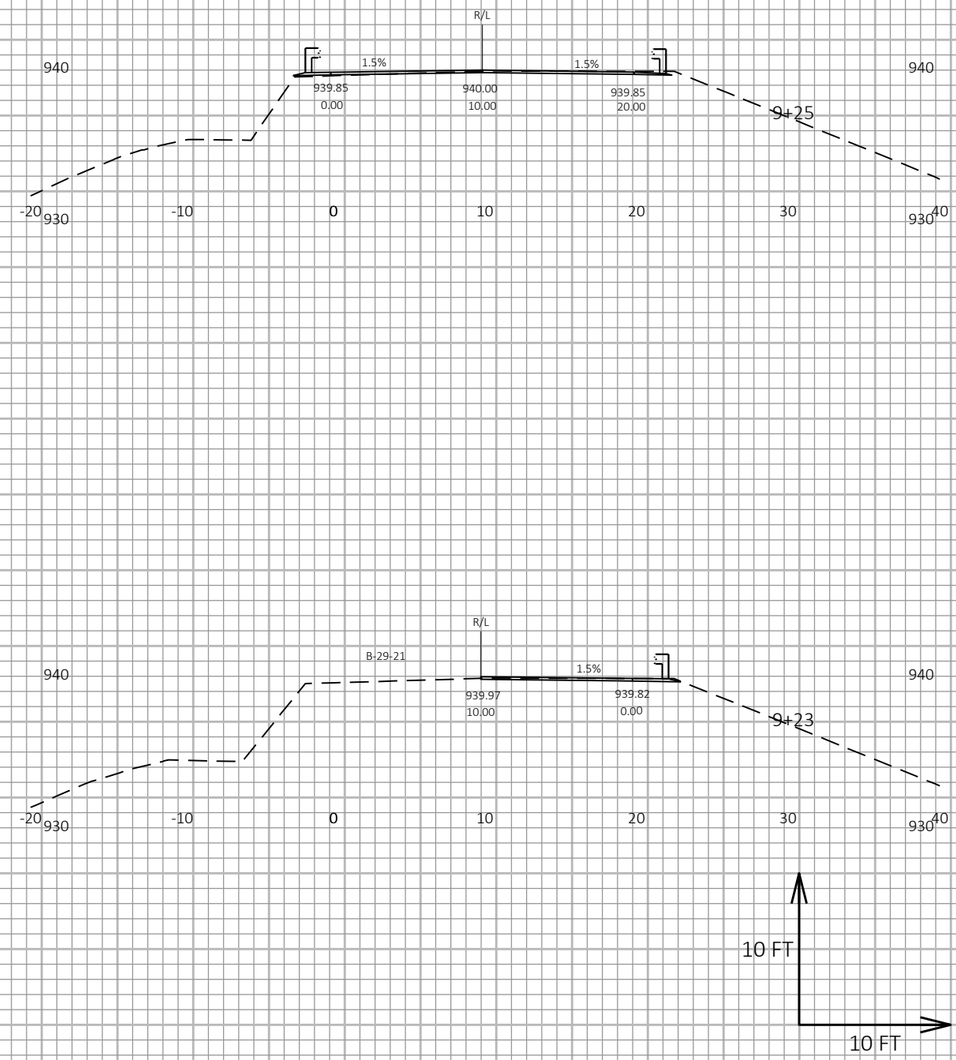
PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: KOVAL ROAD	SHEET 60	E

FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160536\SHEETSPLAN\X-SECT - LATEST.DWG
LAYOUT NAME - 12

PLOT DATE : 2/4/2021 10:40 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49





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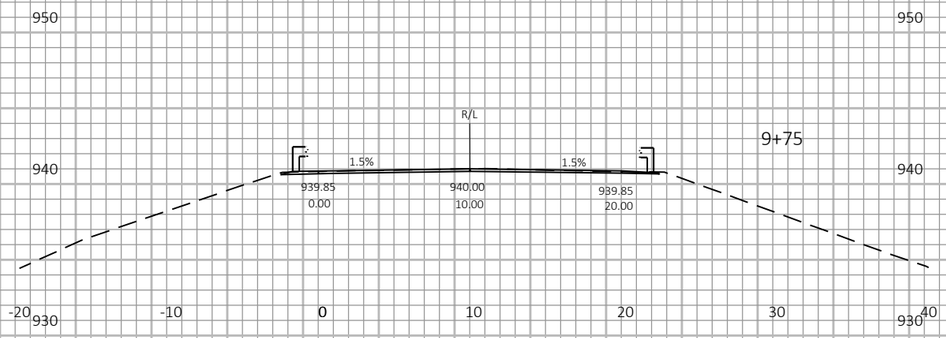
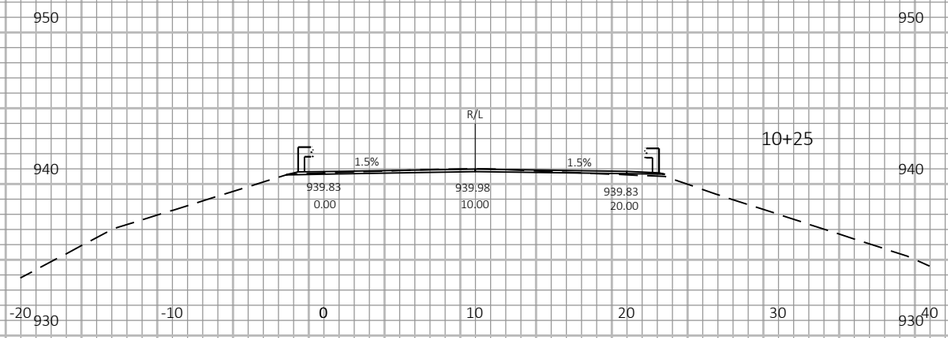
PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: KOVAL ROAD	SHEET 61	E

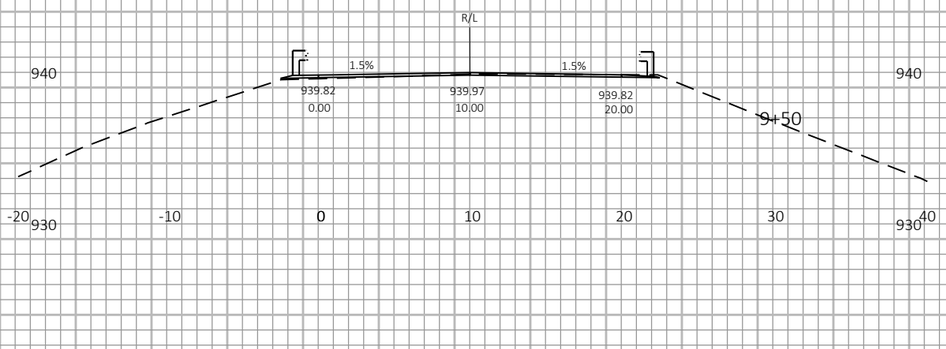
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160536\SHEETSPLAN\X-SECT - LATEST.DWG
LAYOUT NAME - 13

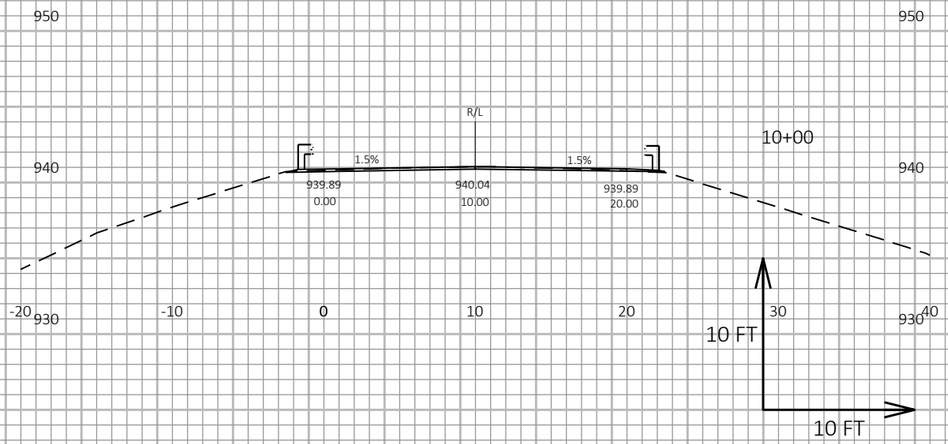
PLOT DATE : 2/4/2021 10:41 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49









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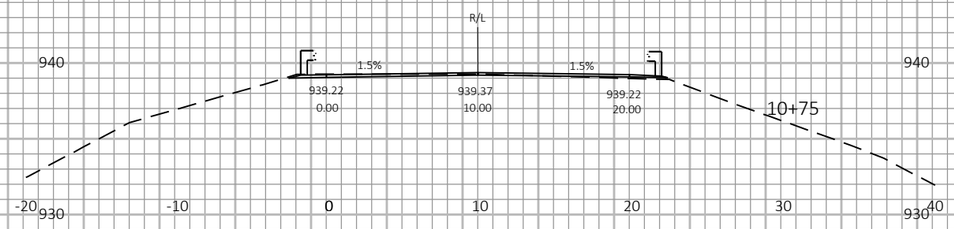
9

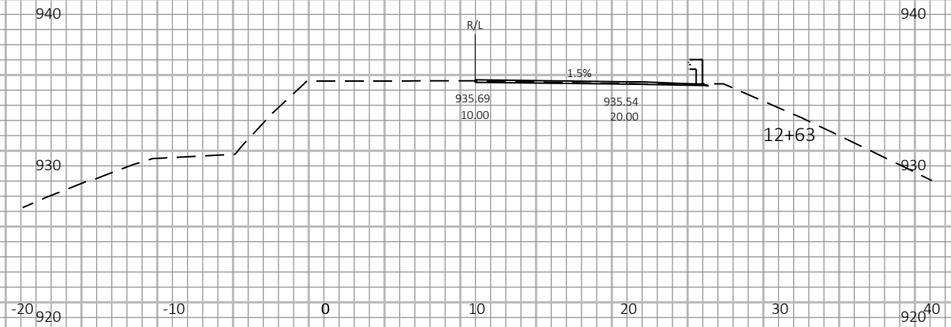
PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: KOVAL ROAD	SHEET 62	E

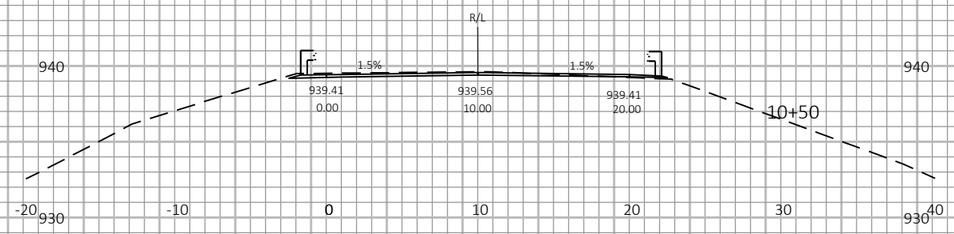
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160536\SHEETSPLAN\X-SECT - LATEST.DWG
LAYOUT NAME - 14

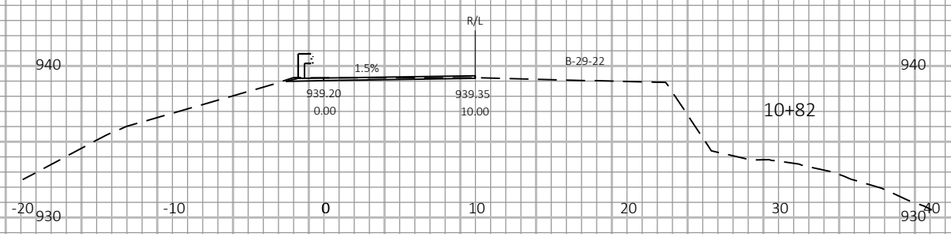
PLOT DATE : 2/4/2021 10:41 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

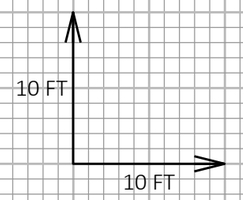
WISDOT/CADDS SHEET 49











9

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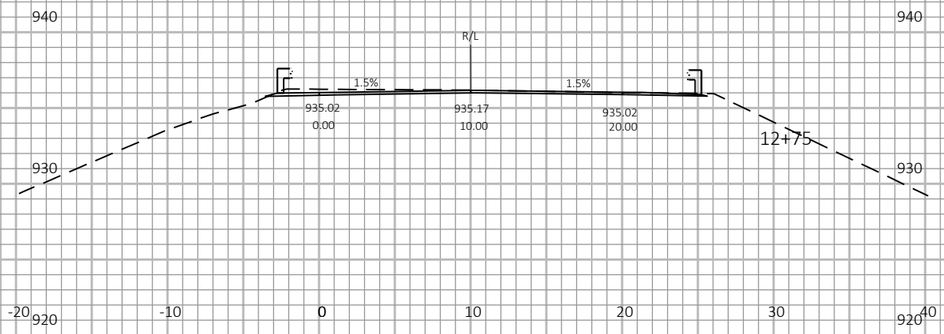
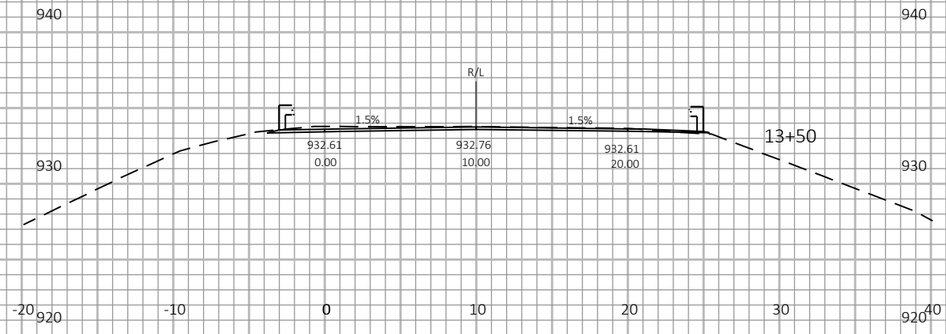
PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: KOVAL ROAD	SHEET 63	E

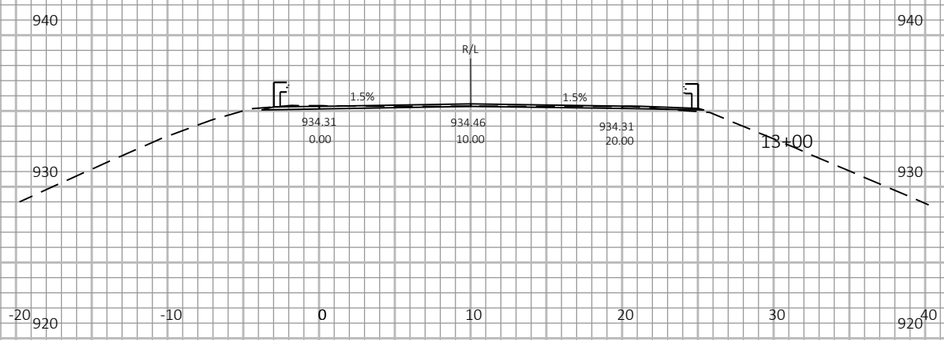
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160536\SHEETSPLAN\X-SECT - LATEST.DWG
LAYOUT NAME - 15

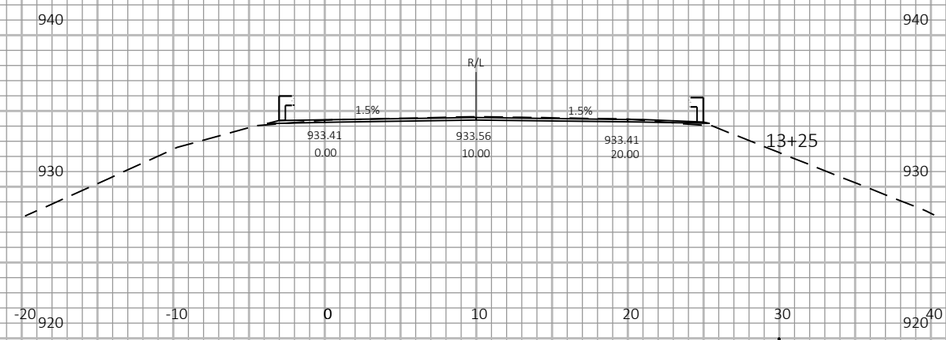
PLOT DATE : 2/4/2021 10:42 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

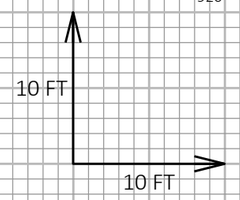
WISDOT/CADDS SHEET 49











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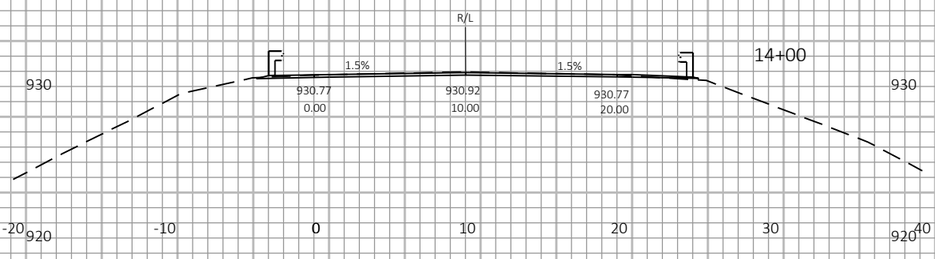
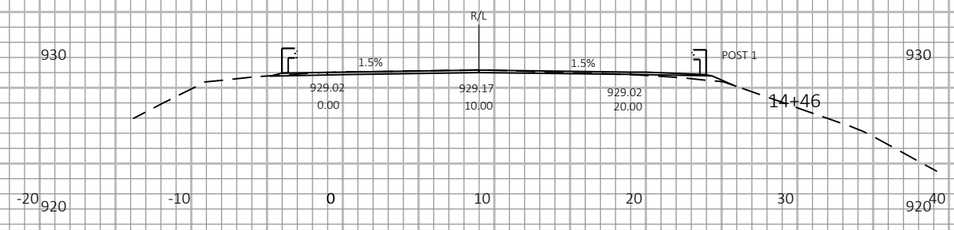
PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: KOVAL ROAD	SHEET 64	E

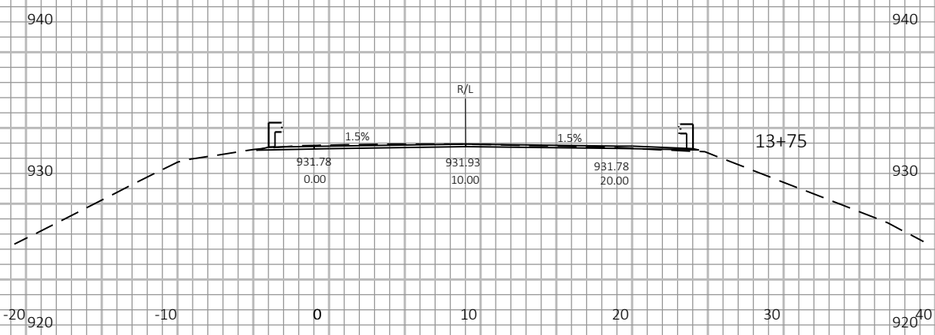
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160536\SHEETSPLAN\X-SECT - LATEST.DWG
LAYOUT NAME - 16

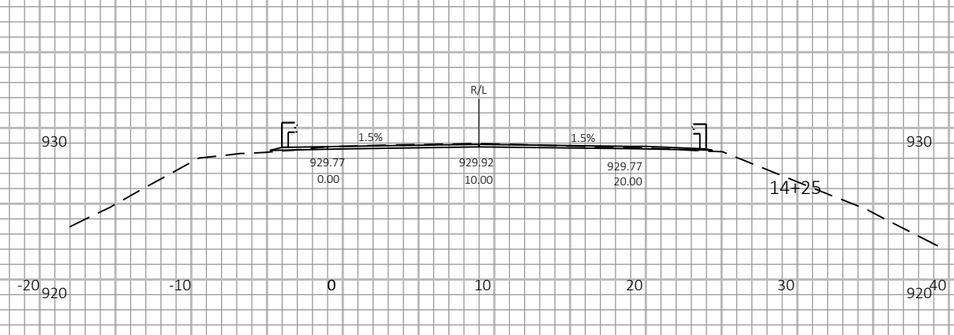
PLOT DATE : 2/4/2021 10:42 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

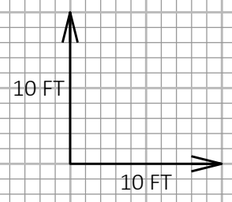
WISDOT/CADDS SHEET 49











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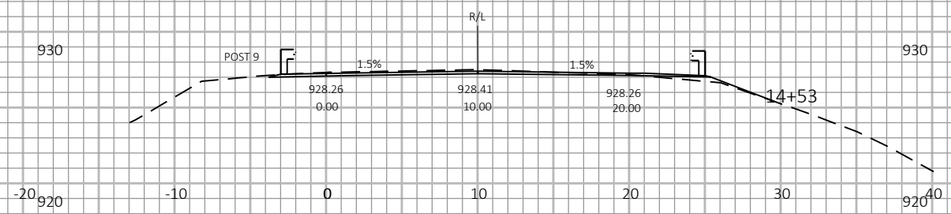
9

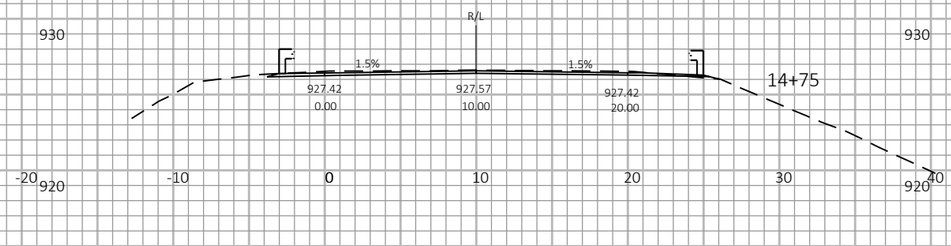
PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: KOVAL ROAD	SHEET 65	E

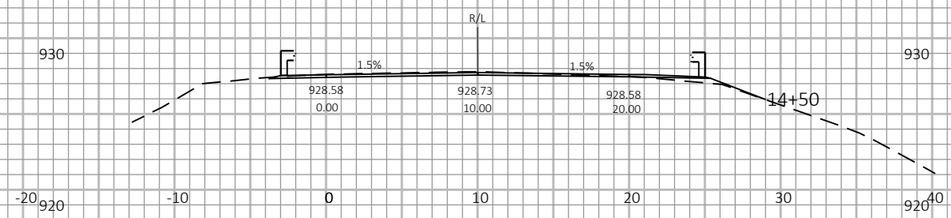
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160536\SHEETSPLAN\X-SECT - LATEST.DWG
LAYOUT NAME - 17

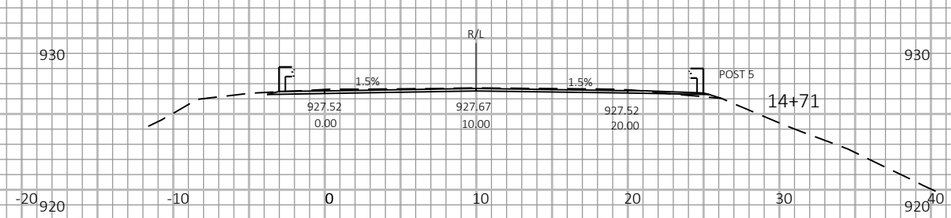
PLOT DATE : 2/4/2021 10:43 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

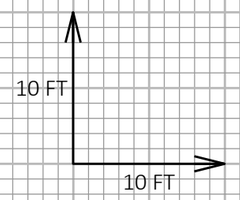
WISDOT/CADDS SHEET 49











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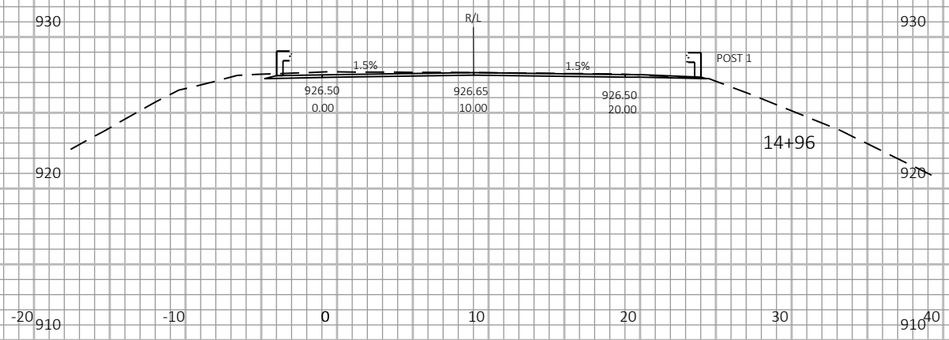
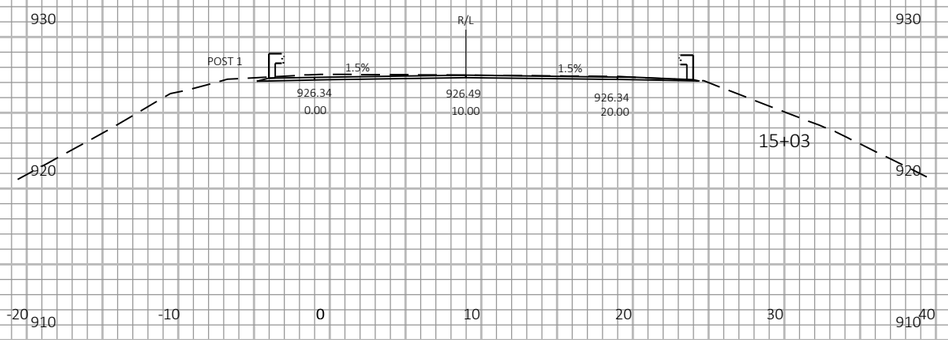
PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: KOVAL ROAD	SHEET 66	E

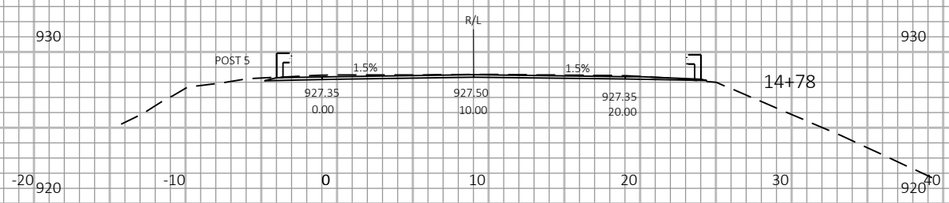
FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160536\SHEETSPLAN\X-SECT - LATEST.DWG
LAYOUT NAME - 18

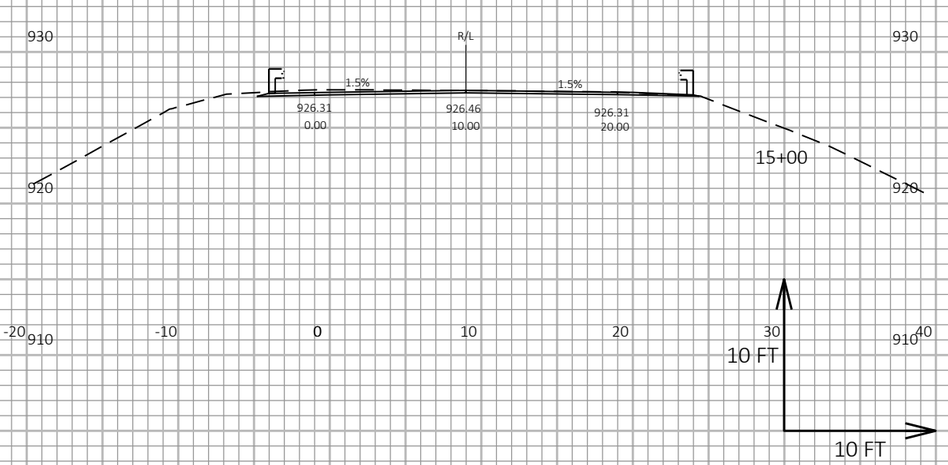
PLOT DATE : 2/4/2021 10:43 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49









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PROJECT NO: 1016-05-66	HWY: IH 90/94	COUNTY: JUNEAU	CROSS SECTIONS: KOVAL ROAD	SHEET 67	E

FILE NAME : \\LAX31FP2.DOT.STATE.WI.US\N3PUBLIC\PDS\C3D\10160536\SHEETSPLAN\X-SECT - LATEST.DWG
LAYOUT NAME - 19

PLOT DATE : 2/4/2021 10:43 AM PLOT BY : KUBE, SAMUEL J PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

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