LAX

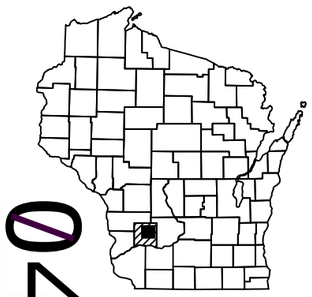
PROJECT ID: 5042-05-61

COUNTY: RICHLAND

DECEMBER 2017

ORDER OF SHEETS

TOTAL SHEETS = 124



04

N

DESIGN DESIGNATION

A.A.D.T.	2018	=	4300
A.A.D.T.	2038	=	5100
D.H.V.		=	14.7
D.D.		=	59/41
T.		=	7.9%
DESIGN SPEED		=	60 MPH
ESALS		=	1,600,000

CONVENTIONAL SYMBOLS

PLAN

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

RICHLAND CENTER – HILLSBORO

HORSE & MELANCTHON CRK STRUCS

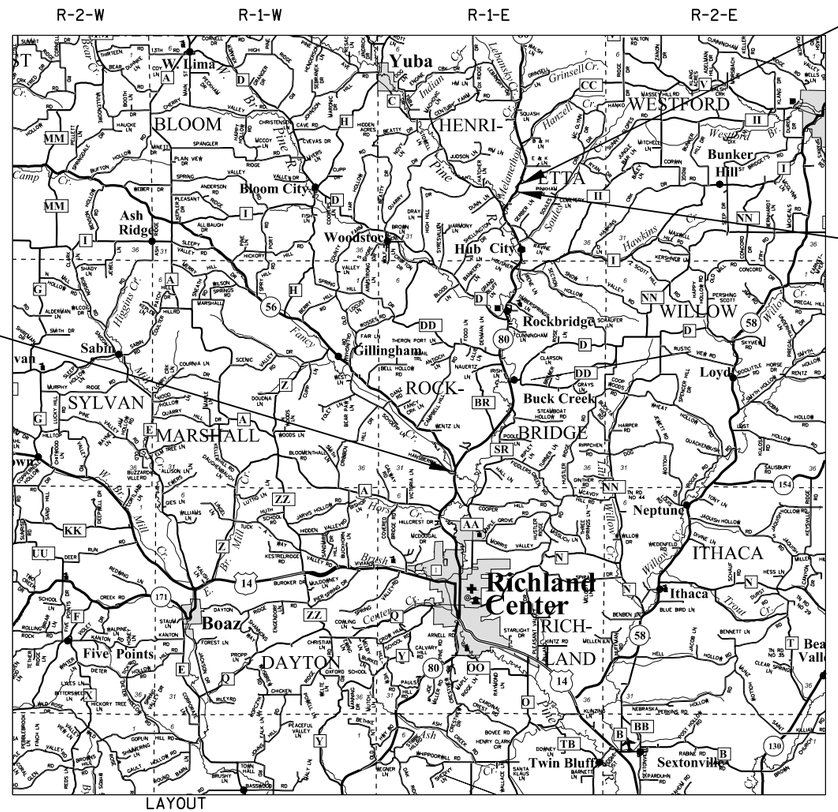
STH 80

RICHLAND COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5042-05-61	WISC 2018003	1

STATE PROJECT NUMBER
5042-05-61

STRUCTURE B-52-0047
BEGIN STATION: 90+60
X: 672761.0277
Y: 457322.4489
END STATION: 94+50



STRUCTURE B-52-0049
BEGIN STATION: 78+00
X: 683230.5420
Y: 502772.1108
END STATION: 82+80

STRUCTURE B-52-0048
BEGIN STATION: 63+28
X: 682402.8781
Y: 501577.1917
END STATION: 67+60

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, RICHLAND COUNTY, NAD83 (1991), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	CAMERON SHIFFER
Project Manager	DAN KLEINERTZ
Regional Examiner	MIKE RUD
Regional Supervisor	JOE GREGAS

APPROVED FOR THE DEPARTMENT

DATE: 7/27/2017 (Signature)

E

2

GENERAL NOTES

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

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

-ALL RADII ARE MEASURED TO EDGE OF PAVEMENT UNLESS OTHERWISE SHOWN OR NOTED ON THE PLAN.

-PRIOR TO THE PLACEMENT OF STEEL PLATE BEAM GUARD OR MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED, AND COMPACTED UNLESS SHOWN OTHERWISE.

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

-ASPHALTIC SURFACE WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

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

-TOPSOIL SHALL BE PLACED 1 INCH BELOW THE TOP OF ADJACENT CONCRETE CURBS OR SIDEWALKS.

ORDER OF SECTION 2 SHEETS

STANDARD ABBREVIATIONS

AC.	ACRE	MAX.	MAXIMUM
AGG.	AGGREGATE	MGAL	1000 GALLONS
AH	AHEAD	MIN.	MINIMUM
<	ANGLE	N.C.	NORMAL CROWN OR NO CHANGE
AE, AEW	APRON ENDWALL	N	NORTH
ASPH.	ASPHALTIC	NO.	NUMBER
A.D.T.	AVERAGE DAILY TRAFFIC	PAV'T	PAVEMENT
B.F.	BACK FACE	P.L.E.	PERMANENT LIMITED EASEMENT
BK.	BACK	P.C.	POINT OF CURVATURE
BEG.	BEGIN	P.I.	POINT OF INTERSECTION
B.M.	BENCH MARK	P.T.	POINT OF TANGENCY
C/L	CENTER LINE	V.P.C.	VERTICAL POINT OF CURVATURE
D	CENTRAL ANGLE OR DELTA	V.P.I.	VERTICAL POINT OF INTERSECTION
C.M.C.P.	CORRUGATED METAL CULVERT PIPE	V.P.T.	VERTICAL POINT OF TANGENCY
C.M.P.	CORRUGATED METAL PIPE	PCC	PORTLAND CEMENT CONCRETE
CO.	COUNTY	P.E.	PRIVATE ENTRANCE
CTH	COUNTY TRUNK HIGHWAY	P.L.	PROPERTY LINE
CR.	CREEK	R	RADIUS OR RANGE
C.A.B.C.	CRUSHED AGGREGATE BASE COURSE	R/L	REFERENCE LINE
C.Y.	CUBIC YARD	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
C.P.	CULVERT PIPE	RT	RIGHT
C. & G.	CURB AND GUTTER	REQ'D	REQUIRED
D	DEGREE OF CURVE	R.H.F.	RIGHT HAND FORWARD
D.H.V.	DESIGN HOUR VOLUME	R/W	RIGHT OF WAY
DIA.	DIAMETER	R.	RIVER
DISCH.	DISCHARGE	RD.	ROAD
EA	EACH	SHLD.	SHOULDER(S)
E	EAST	SHR.	SHRINKAGE
ELEC.	ELECTRIC(AL), ELEC. CABLE	S	SOUTH
EL., ELEV.	ELEVATION	S.F.	SQUARE FOOT (FEET)
EXC.	EXCAVATION	SDD	STANDARD DETAIL DRAWING(S)
F.F.	FACE TO FACE	STH	STATE TRUNK HIGHWAY
FERT.	FERTILIZER	STA.	STATION
F.E.	FIELD ENTRANCE	S.E.	SUPERELEVATION
F/L, F.L.	FLOW LINE	S/L	SURVEY LINE
CWT.	HUNDRED WEIGHT	T	TANGENT
INL	INLET	TEL.	TELEPHONE
INTER.	INTERSECTION	TEMP.	TEMPORARY
JT.	JOINT	T.L.E.	TEMPORARY LIMITED EASEMENT
LT	LEFT	T.O.C.	TOP OF CURB
L.H.F.	LEFT HAND FORWARD	T.	(TRUCKS) PERCENT OF
L.	LENGTH OF CURVE	TYP.	TYPICAL
L.F.	LINEAR FOOT(FEET)	UNCL.	UNCLASSIFIED
LC.	LONG CHORD	U.G.	UNDERGROUND (CABLE)
LS	LUMP SUM	V.C.	VERTICAL CURVE
M.P.	MARKER POST	W	WEST

UTILITY CONTACTS

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4902 N BILTMORE LN
MADISON, WI 53718
craighendricks@alliantenergy.com
(608) 458-8184

FRONTIER COMMUNICATIONS - COMMUNICATION LINE
RUSS RYAN
107 PLEASANTVIEW DR
PLYMOUTH, WI 53073
russell.w.ryan@ftr.com
(920) 893-7212

RICHLAND ELECTRIC COOPERATIVE - ELECTRICITY
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1027 N JEFFERSON
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lhallett@rec.coop
(608) 647-3173

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DNR CONTACT

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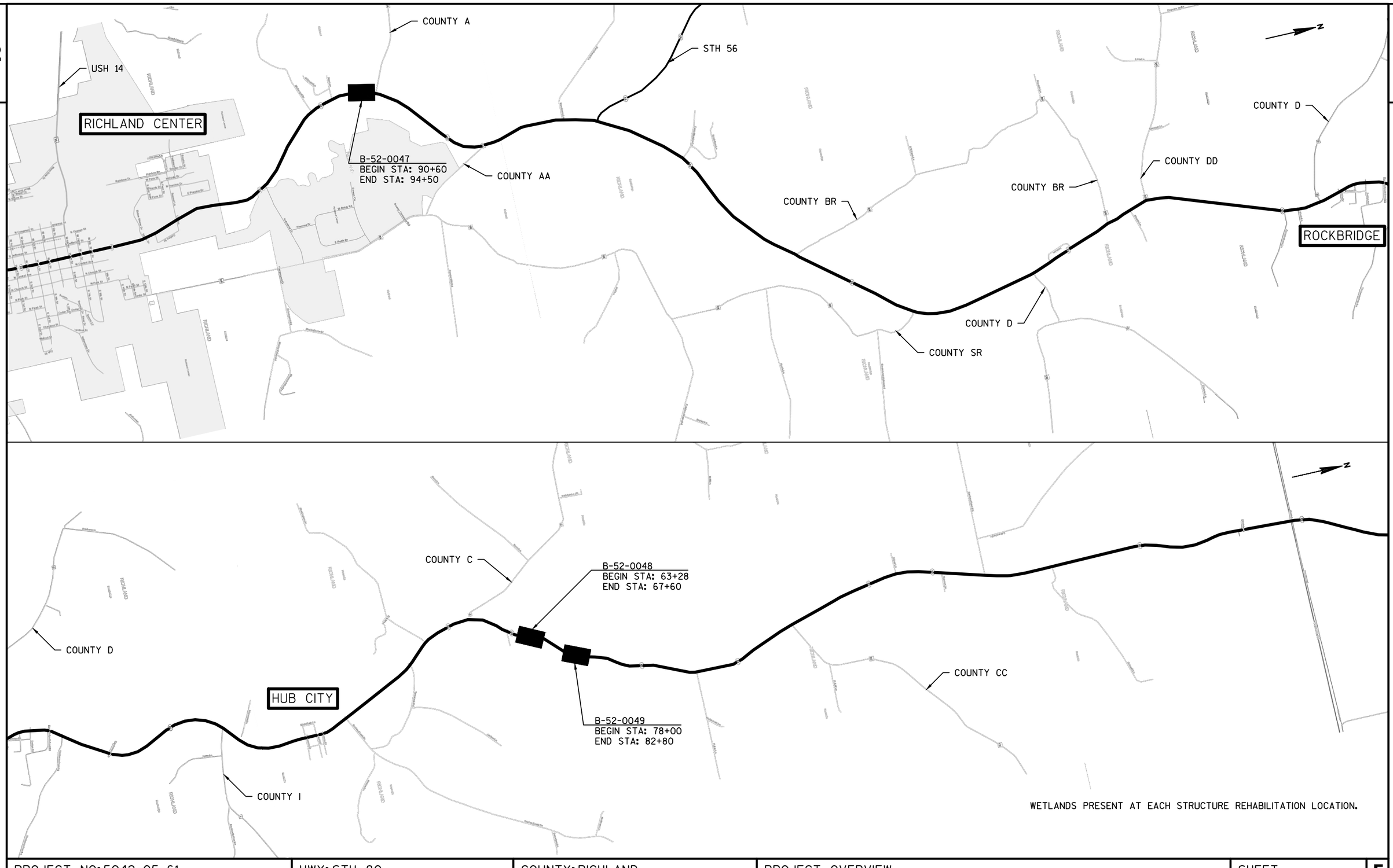
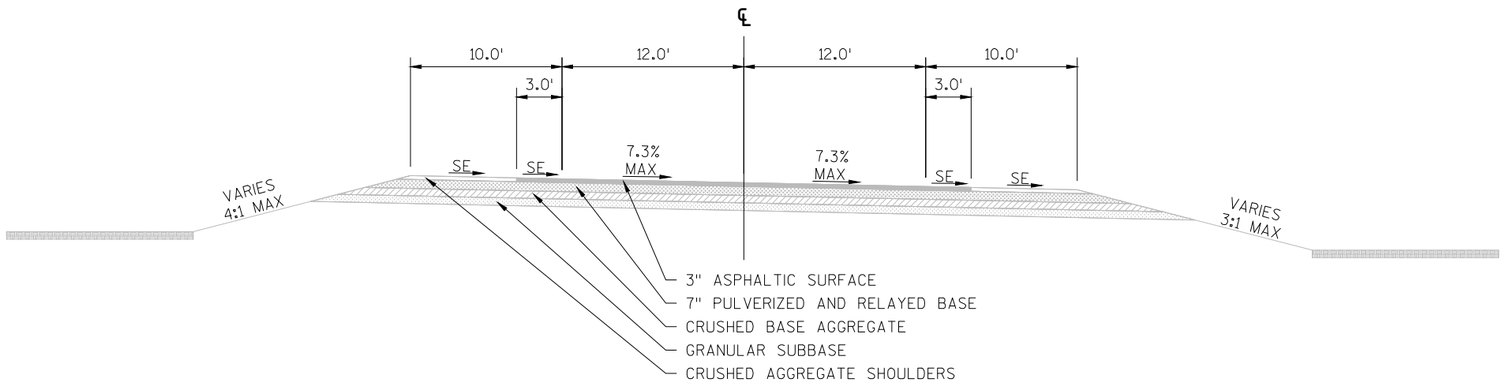
ENVIRONMENTAL ANALYSIS AND SUSTAINABALITITY
DNR SOUTH CENTRAL REGION HQ
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
Andrew.Barta@wisconsin.gov

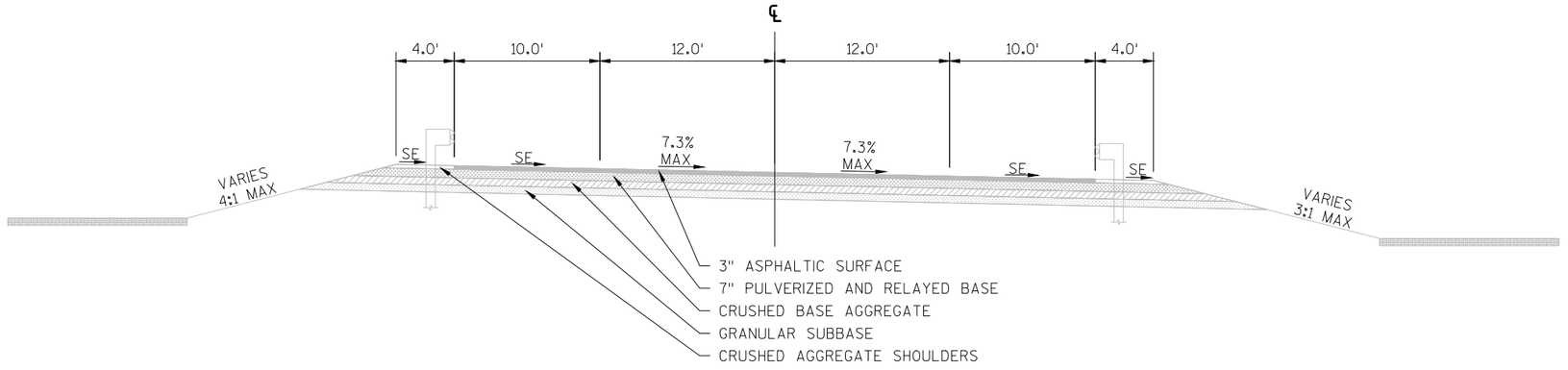


WETLANDS PRESENT AT EACH STRUCTURE REHABILITATION LOCATION.

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	PROJECT OVERVIEW	SHEET 3	E

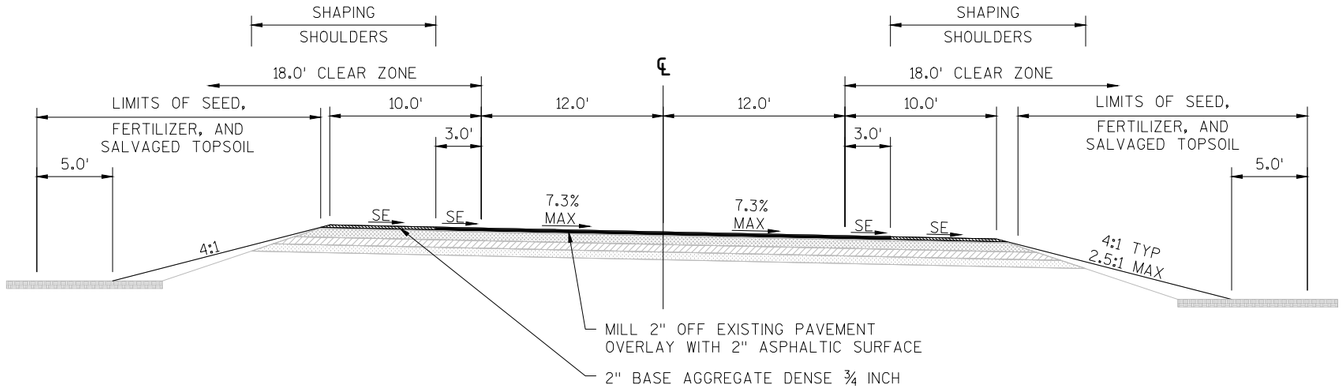


EXISTING TYPICAL SUPERELEVATED SECTION
STH 80 - B-52-0047



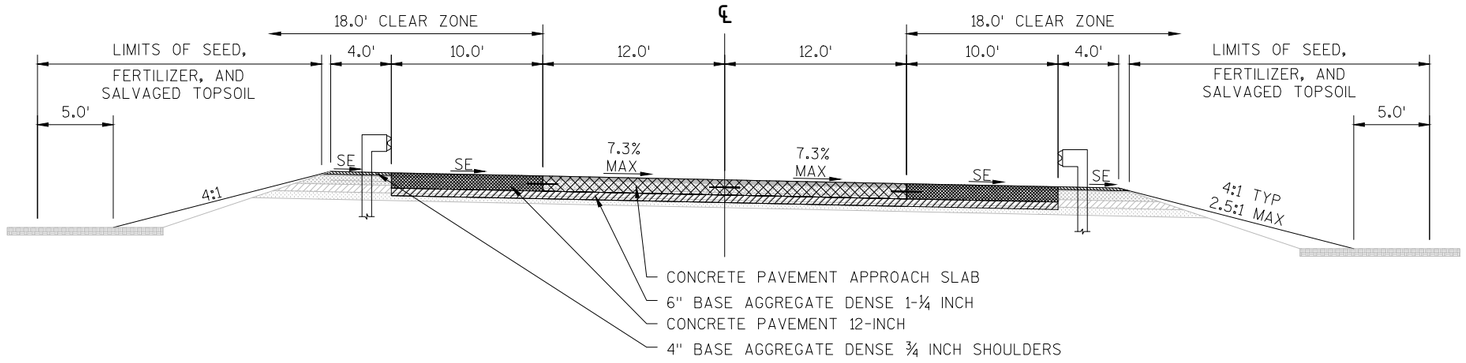
EXISTING TYPICAL SUPERELEVATED SECTION WITH BEAM GUARD
STH 80 - B-52-0047

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	TYPICAL SECTIONS	SHEET 4	E



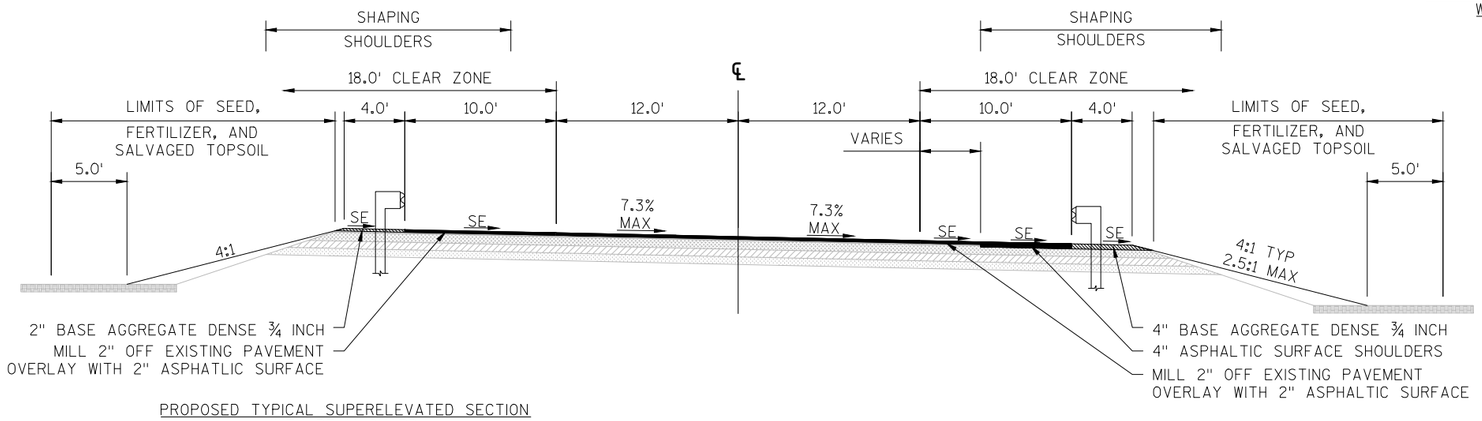
PROPOSED TYPICAL SUPERELEVATED SECTION
STH 80 - B-52-0047

LEFT STATIONING	RIGHT STATIONING
90+60 - 91+37	90+60 - 90+96
94+13 - 94+50	94+15 - 94+50



PROPOSED TYPICAL SUPERELEVATED SECTION
WITH CONCRETE APPROACH SLAB
STH 80 - B-52-0047

STATIONING
92+33 - 92+48
93+02 - 93+17



PROPOSED TYPICAL SUPERELEVATED SECTION
WITH BEAM GUARD
STH 80 - B-52-0047

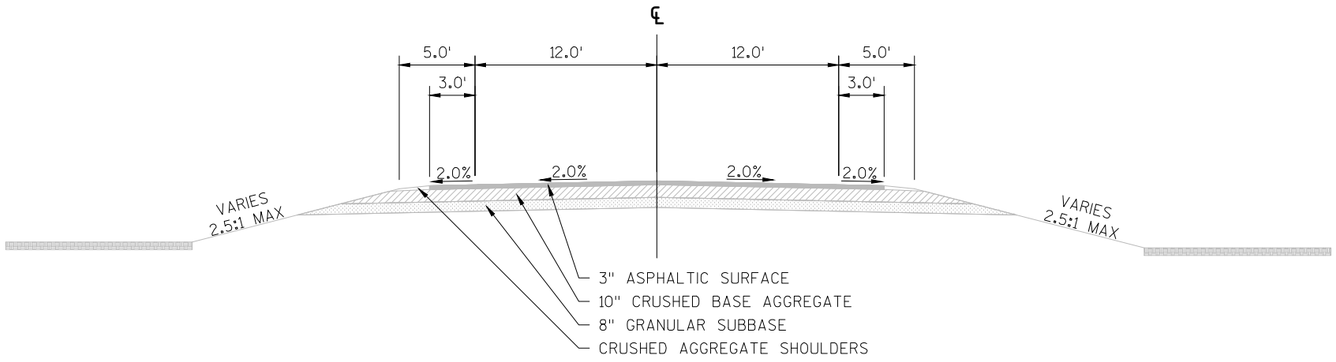
LEFT STATIONING	RIGHT STATIONING
91+96 - 92+48	91+57 - 92+48
93+02 - 93+54	93+02 - 93+55

PROPOSED TYPICAL SUPERELEVATED SECTION
WITH PAVEMENT WIDENING
STH 80 - B-52-0047

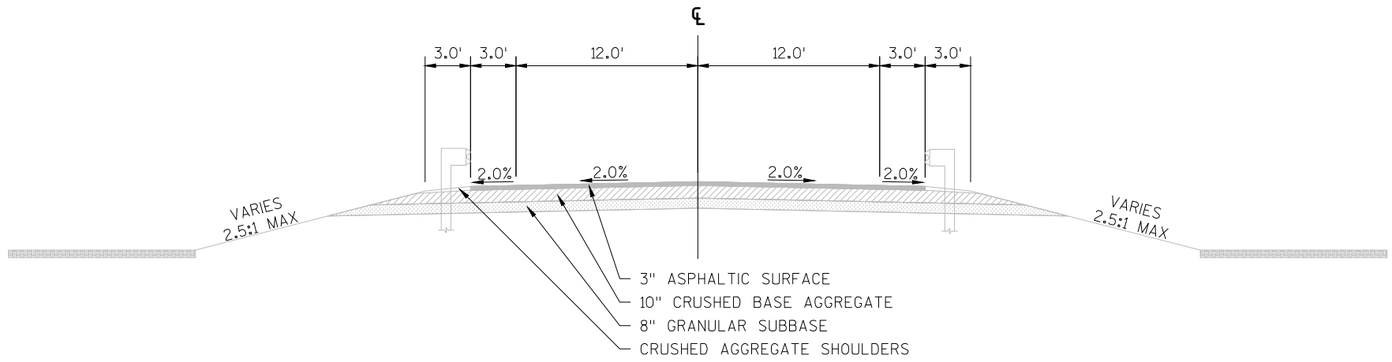
LEFT STATIONING	RIGHT STATIONING
91+37 - 91+56	90+96 - 92+17
93+95 - 94+13	93+17 - 94+16

*ITEMS OF SEED, FERTILIZER, AND SALVAGED TOPSOIL ARE INCLUDED IN ITEM 614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING.

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	TYPICAL SECTIONS	SHEET 5	E

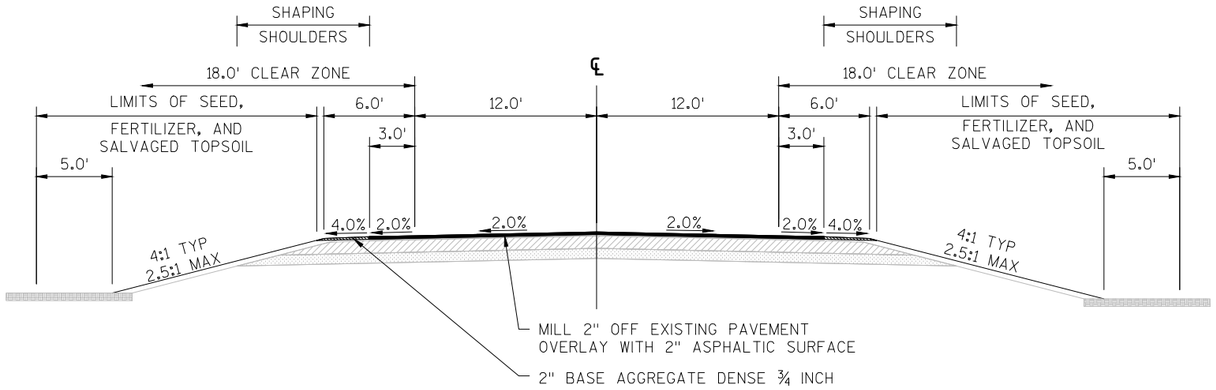


EXISTING TYPICAL TANGENT SECTION
STH 80 - B-52-0048



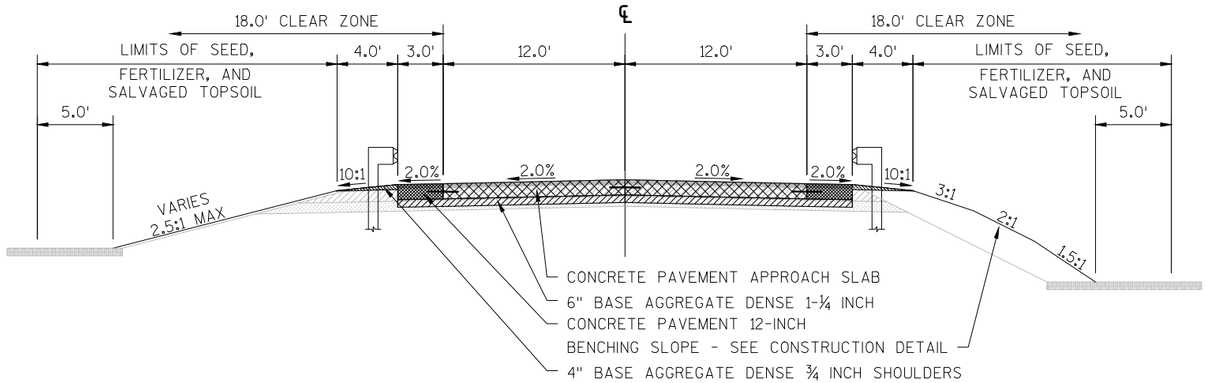
EXISTING TYPICAL TANGENT SECTION WITH BEAM GUARD
STH 80 - B-52-0048

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	TYPICAL SECTIONS	SHEET 6	E



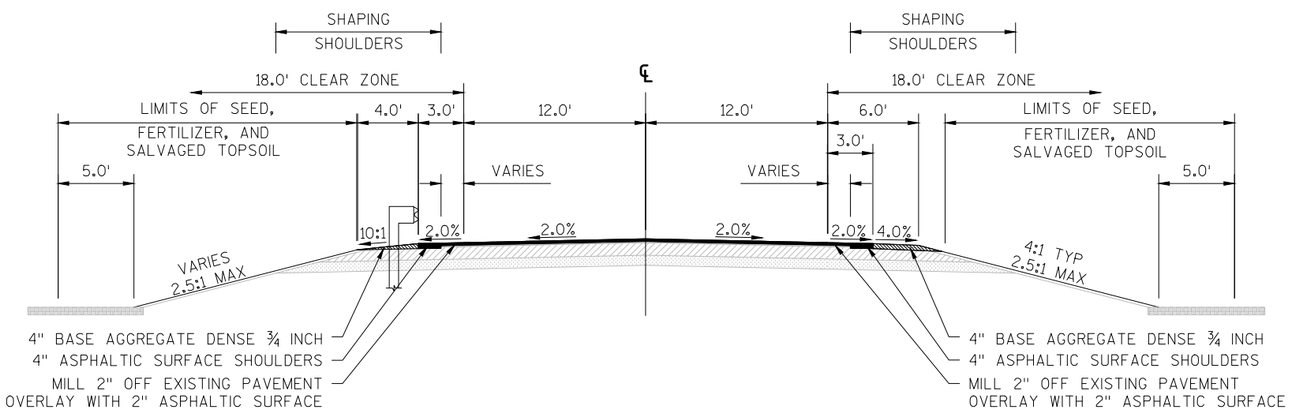
PROPOSED TYPICAL TANGENT SECTION
STH 80 - B-52-0048

LEFT STATIONING	RIGHT STATIONING
63+28 - 63+94	66+75 - 67+60
67+25 - 67+60	



PROPOSED TYPICAL TANGENT SECTION
WITH CONCRETE APPROACH SLAB AND BENCHING
STH 80 - B-52-0048

CONCRETE APPROACH SLAB STATIONING	BENCHING STATIONING
64+86 - 65+14	65+60 - 66+03
65+55 - 65+84	



PROPOSED TYPICAL TANGENT SECTION
WITH BEAM GUARD
STH 80 - B-52-0048

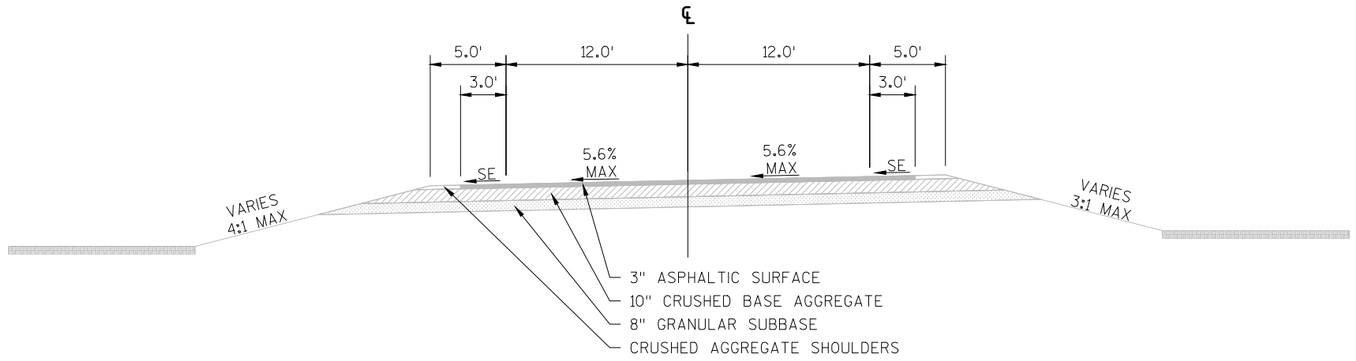
LEFT STATIONING	RIGHT STATIONING
64+48 - 65+01	64+50 - 65+13
65+57 - 66+72	65+69 - 66+22

PROPOSED TYPICAL TANGENT SECTION
WITH PAVEMENT WIDENING
STH 80 - B-52-0048

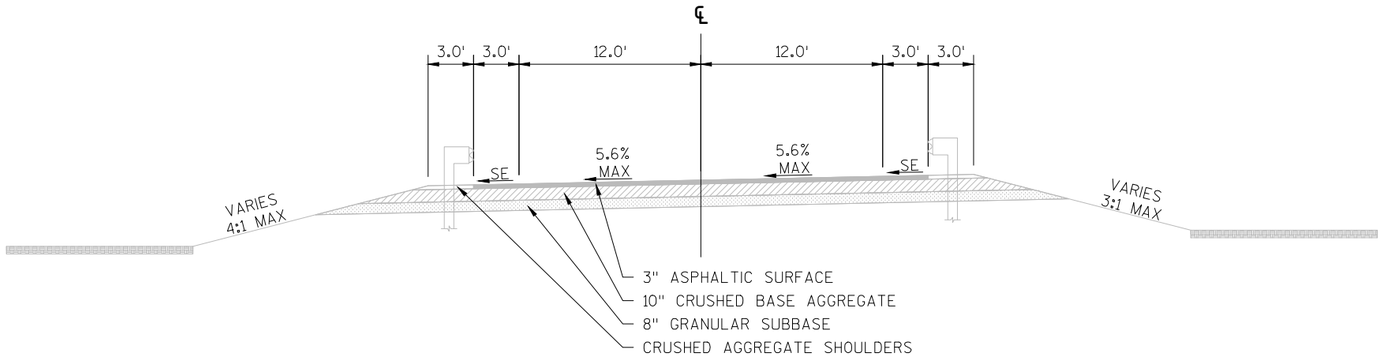
LEFT STATIONING	RIGHT STATIONING
63+28 - 64+86	63+28 - 64+70
65+84 - 67+60	66+27 - 66+75

*ITEMS OF SEED, FERTILIZER, AND SALVAGED TOPSOIL ARE INCLUDED IN ITEM 614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING.

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	TYPICAL SECTIONS	SHEET 7	E

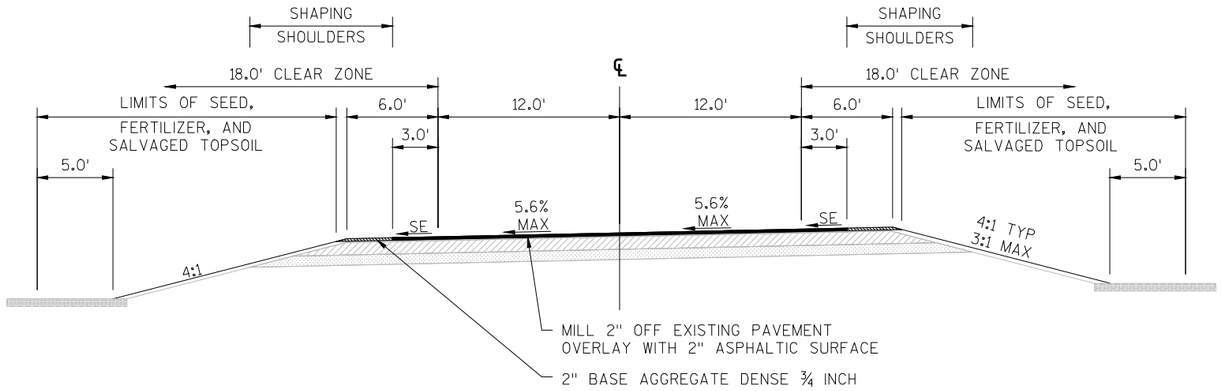


EXISTING TYPICAL SUPERELEVATED SECTION
STH 80 - B-52-0049



EXISTING TYPICAL SUPERELEVATED SECTION WITH BEAM GUARD
STH 80 - B-52-0049

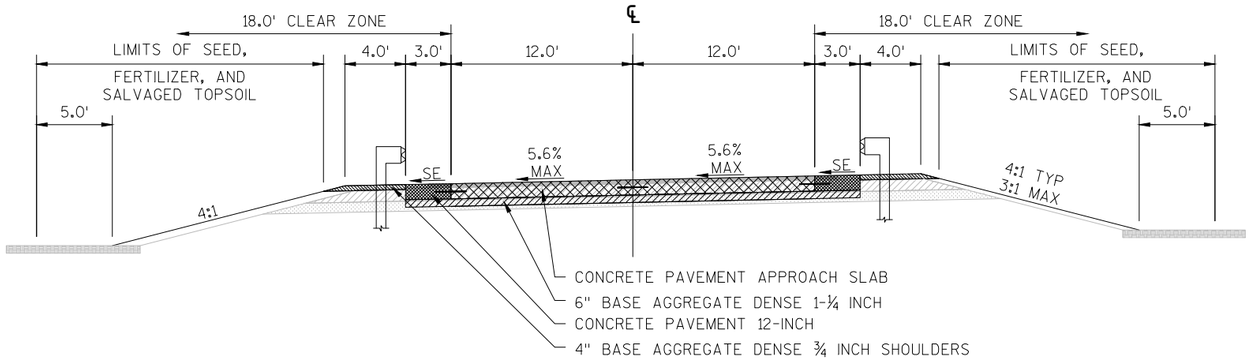
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	TYPICAL SECTIONS	SHEET 8	E



PROPOSED TYPICAL SUPERELEVATED SECTION
STH 80 - B-52-0049

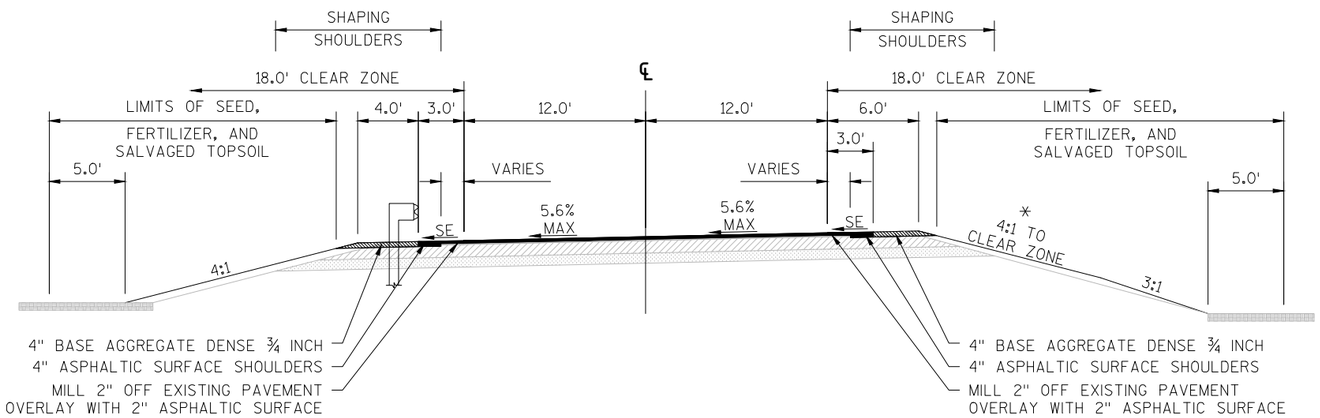
LEFT STATIONING
78+00 - 78+98
82+40 - 82+80

RIGHT STATIONING
78+00 - 78+65
81+73 - 82+80



PROPOSED TYPICAL SUPERELEVATED SECTION
WITH CONCRETE APPROACH SLAB
STH 80 - B-52-0049

STATIONING
79+90 - 80+21
80+55 - 80+83



PROPOSED TYPICAL TANGENT SECTION
WITH BEAM GUARD
STH 80 - B-52-0049

LEFT STATIONING
79+52 - 80+05
80+57 - 81+87

RIGHT STATIONING
79+17 - 80+19
80+68 - 81+21

PROPOSED TYPICAL TANGENT SECTION
WITH PAVEMENT WIDENING
STH 80 - B-52-0049

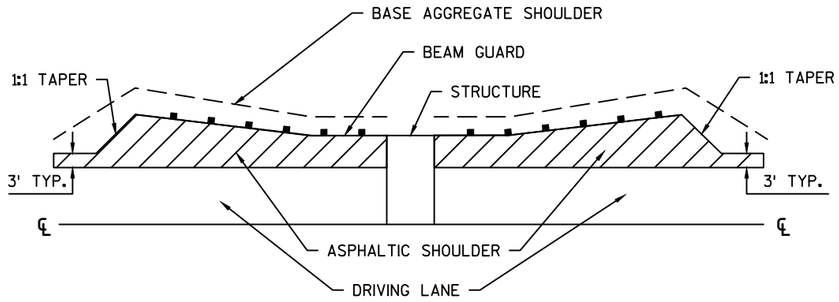
LEFT STATIONING
78+98 - 79+90
80+83 - 82+80

RIGHT STATIONING
78+00 - 79+90
80+83 - 82+80

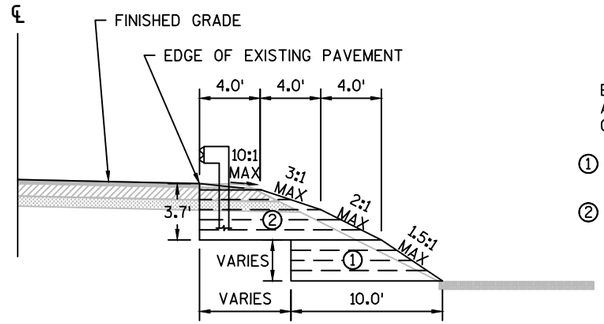
*CLEAR ZONE BREAKING SLOPE
RIGHT STATIONING
78+55 - 79+60

*ITEMS OF SEED, FERTILIZER, AND SALVAGED TOPSOIL ARE INCLUDED IN ITEM 614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING.

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	TYPICAL SECTIONS	SHEET 9	E



DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD

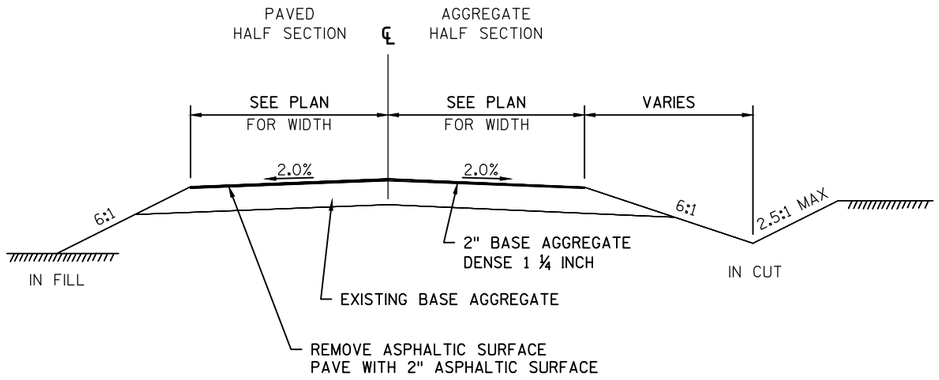


EMBANKMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SEC. 207.3.6.3 SPECIAL COMPACTION OF THE STANDARD SPECIFICATIONS.

① BACKFILL WITH SELECT BORROW.

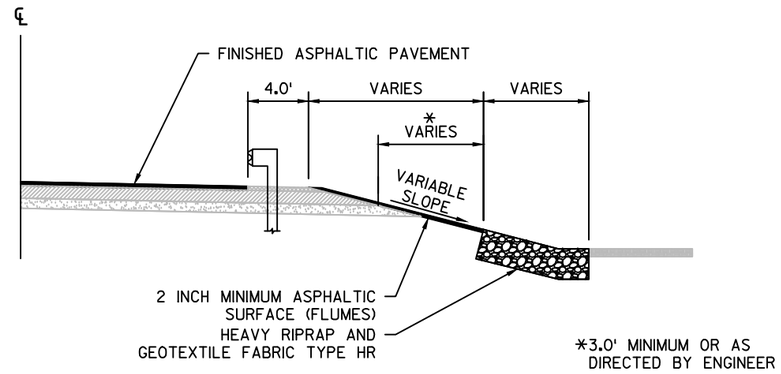
② BACKFILL WITH CLEAN FILL.

BENCHING SLOPE DETAIL
B-52-0048
65+60 - 66+03 RIGHT



TYPICAL SECTION FOR PRIVATE ENTRANCES AND FIELD ENTRANCES

NOTE:
DRIVEWAY PROFILES NOT EXPECTED TO EXCEED 10%. PLACE LOW POINT OF DRIVEWAY PROFILE OVER DITCH FLOW LINE.



ASPHALTIC SURFACE (FLUMES) DETAIL

B-52-0048	B-52-0049
64+86 - 65+01 LEFT	79+90 - 80+05 LEFT
64+98 - 65+13 RIGHT	80+04 - 80+19 RIGHT
65+57 - 65+72 LEFT	80+57 - 80+72 LEFT
65+69 - 65+84 RIGHT	80+68 - 80+83 RIGHT

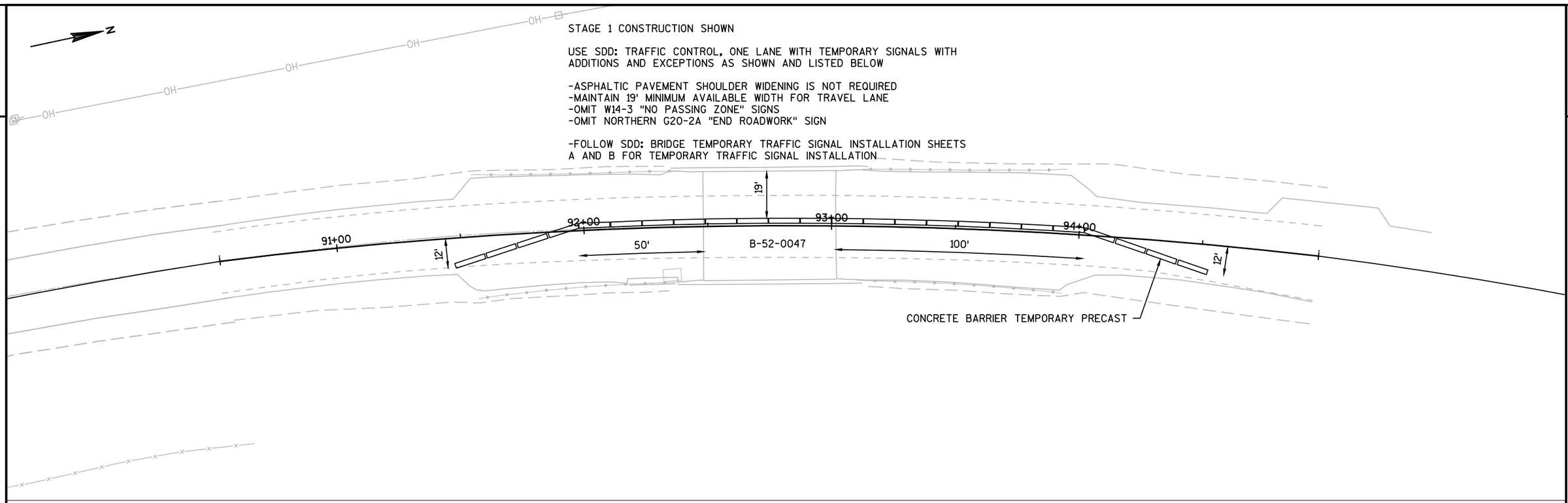
FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\021001_CD.DWG
LAYOUT NAME - 021001_CD - 021001_CD
PLOT DATE : 7/21/2017 1:31 PM PLOT BY : SHIFFER, CAMERON J PLOT NAME : PLOT SCALE : *******
WISDOT/CADDS SHEET 42

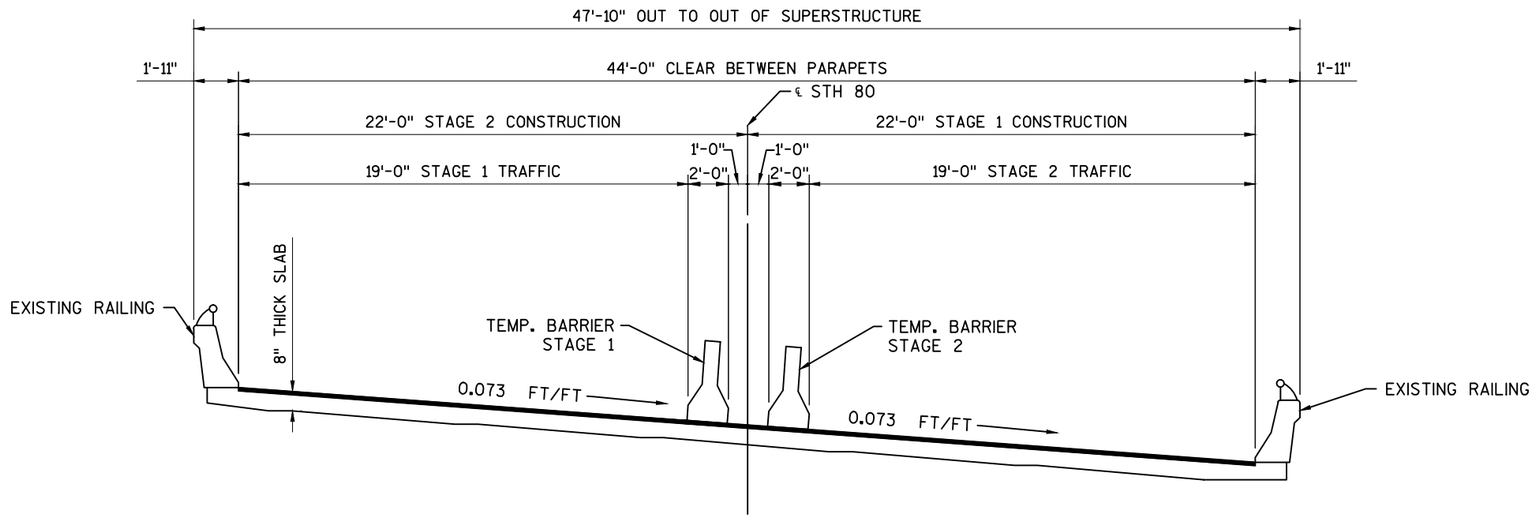
STAGE 1 CONSTRUCTION SHOWN

USE SDD: TRAFFIC CONTROL, ONE LANE WITH TEMPORARY SIGNALS WITH ADDITIONS AND EXCEPTIONS AS SHOWN AND LISTED BELOW

-ASPHALTIC PAVEMENT SHOULDER WIDENING IS NOT REQUIRED
-MAINTAIN 19' MINIMUM AVAILABLE WIDTH FOR TRAVEL LANE
-OMIT W14-3 "NO PASSING ZONE" SIGNS
-OMIT NORTHERN G20-2A "END ROADWORK" SIGN

-FOLLOW SDD: BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION SHEETS A AND B FOR TEMPORARY TRAFFIC SIGNAL INSTALLATION





B-52-0047 CROSS SECTION - LOOKING NORTH

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	TRAFFIC CONTROL PLAN: B-52-0047	SHEET 11	E

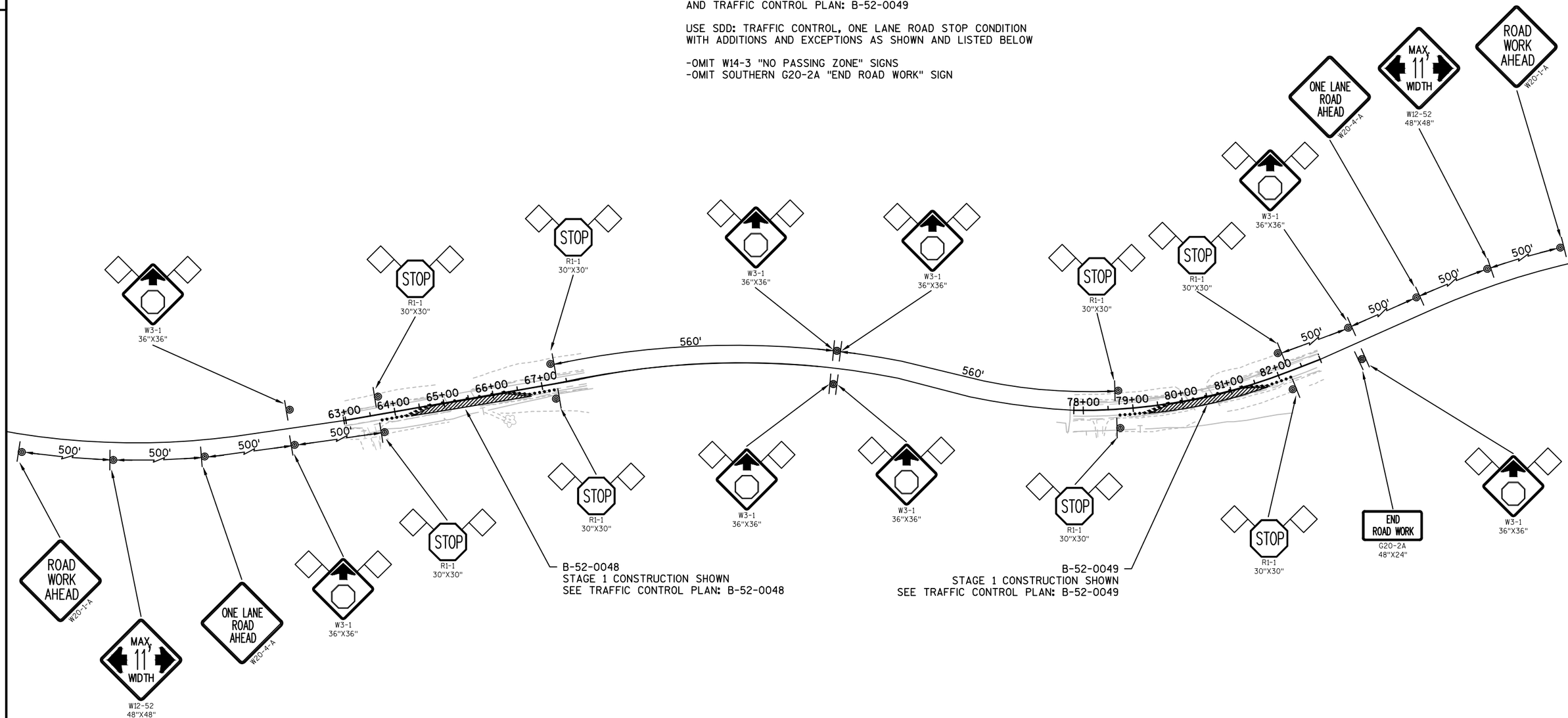
2

STAGE 1 CONSTRUCTION SHOWN

FOR ADDITIONAL DETAILS
SEE TRAFFIC CONTROL PLAN: B-52-0048
AND TRAFFIC CONTROL PLAN: B-52-0049

USE SDD: TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION
WITH ADDITIONS AND EXCEPTIONS AS SHOWN AND LISTED BELOW

-OMIT W14-3 "NO PASSING ZONE" SIGNS
-OMIT SOUTHERN G20-2A "END ROAD WORK" SIGN



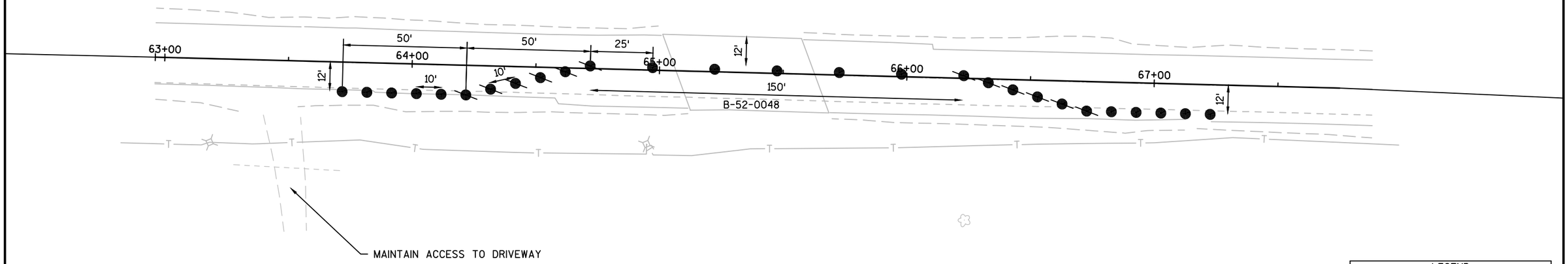
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	TRAFFIC CONTROL PLAN: B-52-0048 & B-52-0049 SIGNING	SHEET 12	E

2

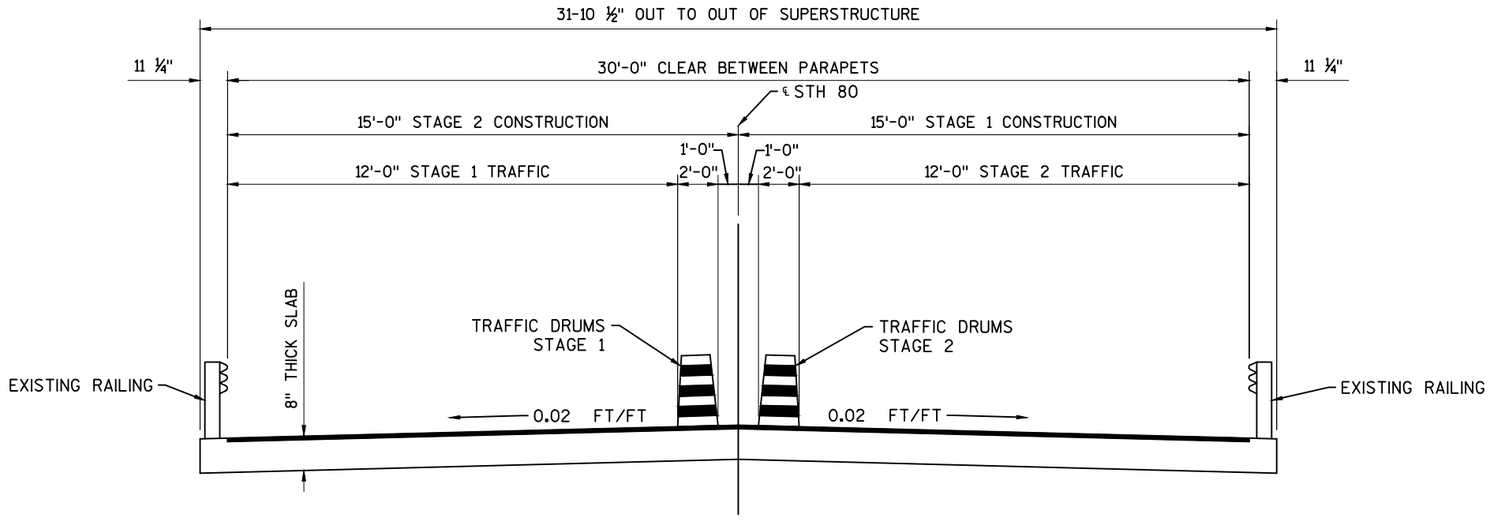
STAGE 1 CONSTRUCTION SHOWN

USE SDD: TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION
WITH ADDITIONS AND EXCEPTIONS AS SHOWN AND LISTED BELOW

-ASPHALTIC PAVEMENT SHOULDER WIDENING IS NOT REQUIRED
-MAINTAIN 11' MINIMUM AVAILABLE WIDTH FOR TRAVEL LANE



LEGEND	
●	TRAFFIC CONTROL DRUM
●—	TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT



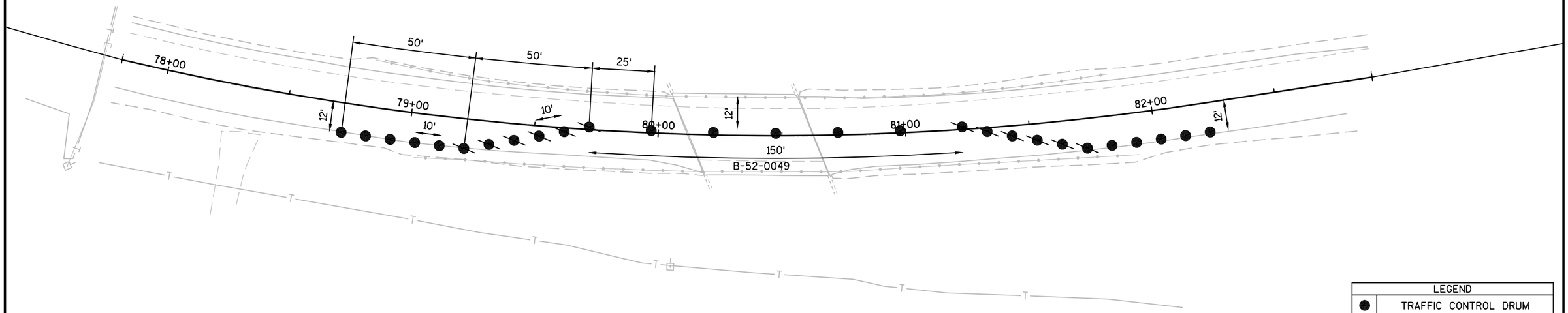
B-52-0048 CROSS SECTION - LOOKING NORTH

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	TRAFFIC CONTROL PLAN: B-52-0048	SHEET 13	E

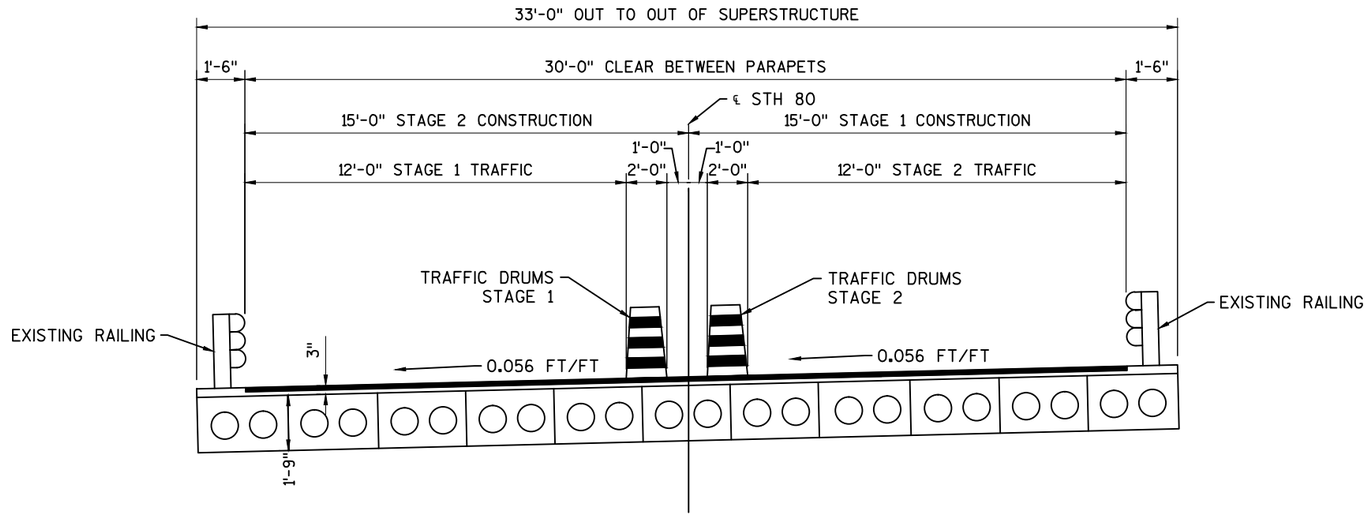
STAGE 1 CONSTRUCTION SHOWN

USE SDD: TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION
WITH ADDITIONS AND EXCEPTIONS AS SHOWN AND LISTED BELOW

-ASPHALTIC PAVEMENT SHOULDER WIDENING IS NOT REQUIRED
-MAINTAIN 11' MINIMUM AVAILABLE WIDTH FOR TRAVEL LANE

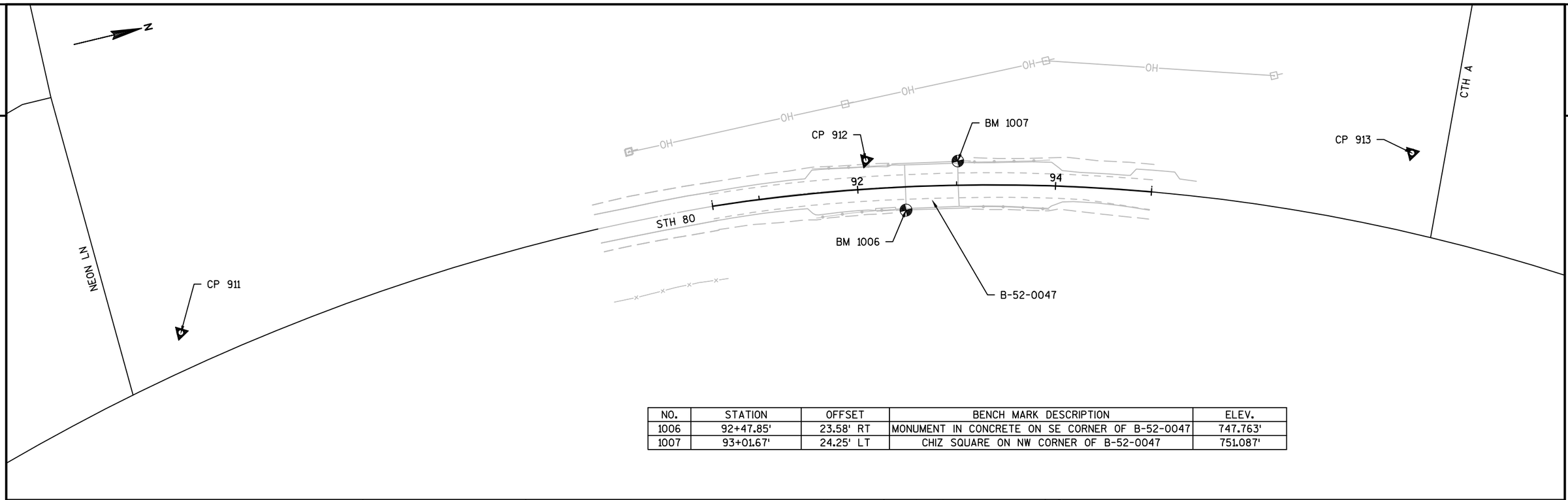


LEGEND	
●	TRAFFIC CONTROL DRUM
●	TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

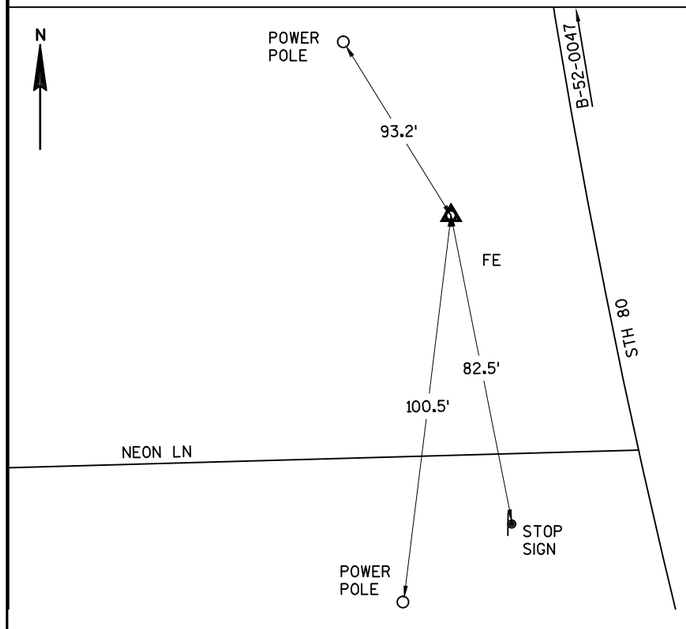


B-52-0049 CROSS SECTION - LOOKING NORTH

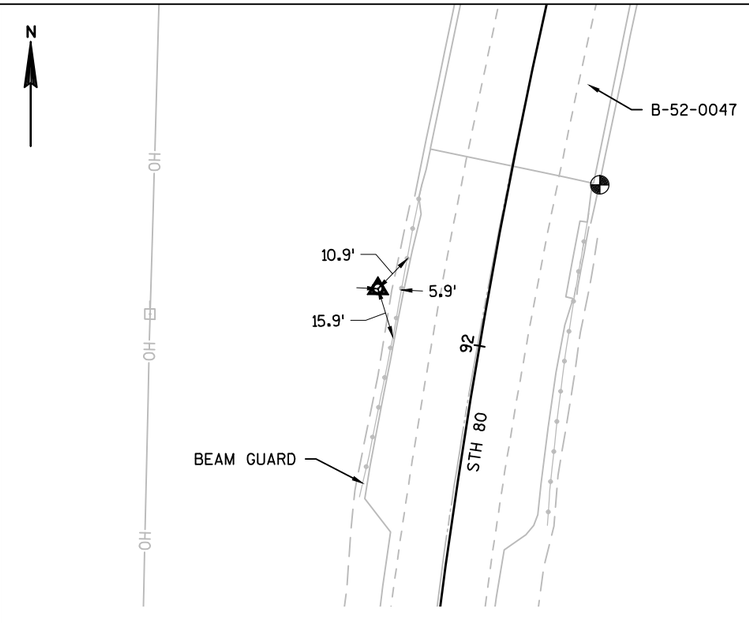
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	TRAFFIC CONTROL PLAN: B-52-0049	SHEET 14	E



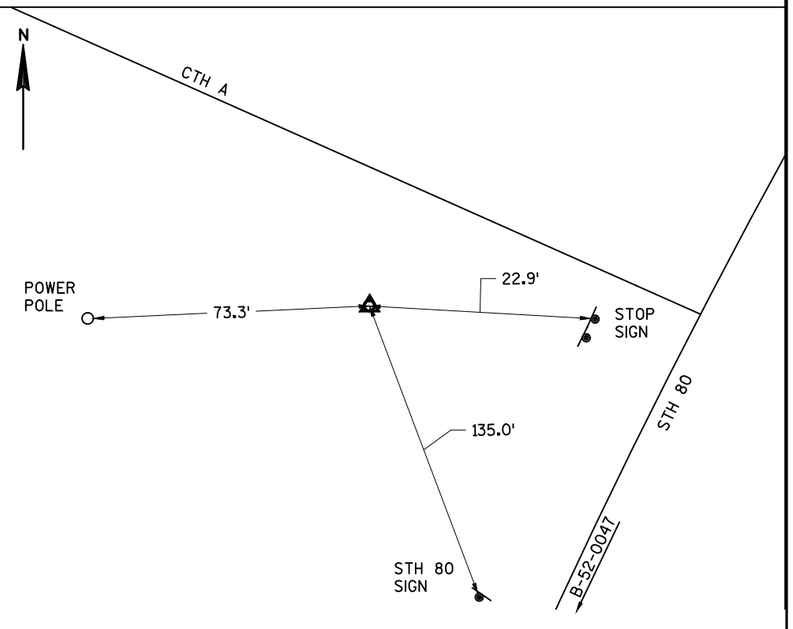
NO.	STATION	OFFSET	BENCH MARK DESCRIPTION	ELEV.
1006	92+47.85'	23.58' RT	MONUMENT IN CONCRETE ON SE CORNER OF B-52-0047	747.763'
1007	93+01.67'	24.25' LT	CHIZ SQUARE ON NW CORNER OF B-52-0047	751.087'



CONTROL POINT 911
X: 672758.4280', Y: 456762.5880', Z: 747.470'
REBAR WITH CAP
+/- 1275' SOUTH OF STH 80 AND CTH A INTERSECTION



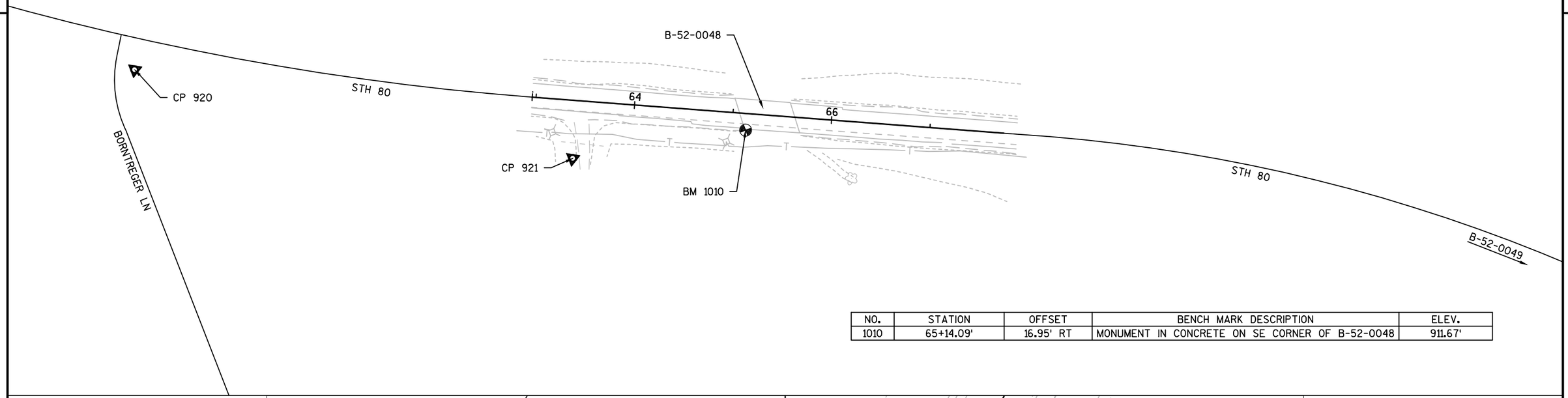
CONTROL POINT 912
X: 672751.8200', Y: 457476.2950', Z: 747.574'
REBAR WITH CAP
+/- 575' SOUTH OF STH 80 AND CTH A INTERSECTION



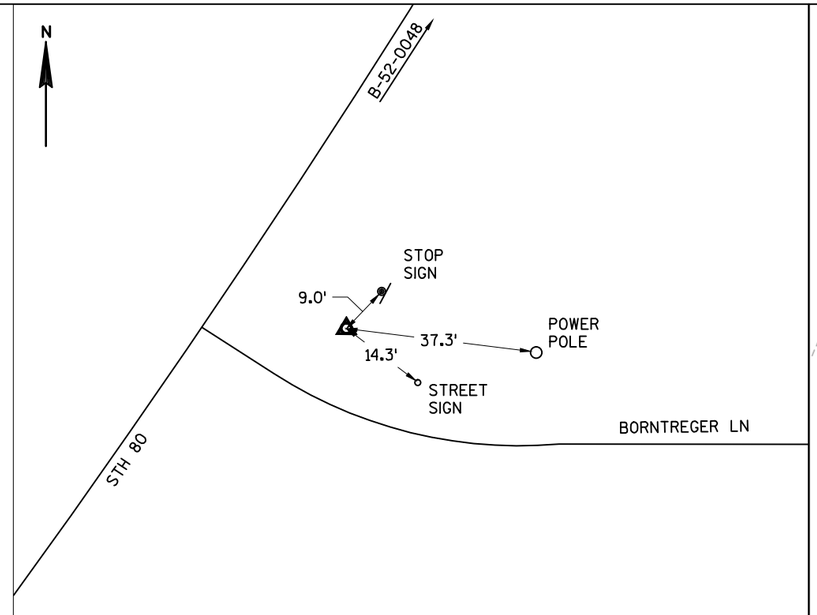
CONTROL POINT 913
X: 672874.2550', Y: 458014.4040', Z: 753.660'
REBAR WITH CAP
ON SW QUADRANT OF STH 80 AND CTH A INTERSECTION

PROJECT NO: 5042-05-81	HWY: STH 80	COUNTY: RICHLAND	CONTROL POINT DATA: B-52-0047	SHEET 15	E

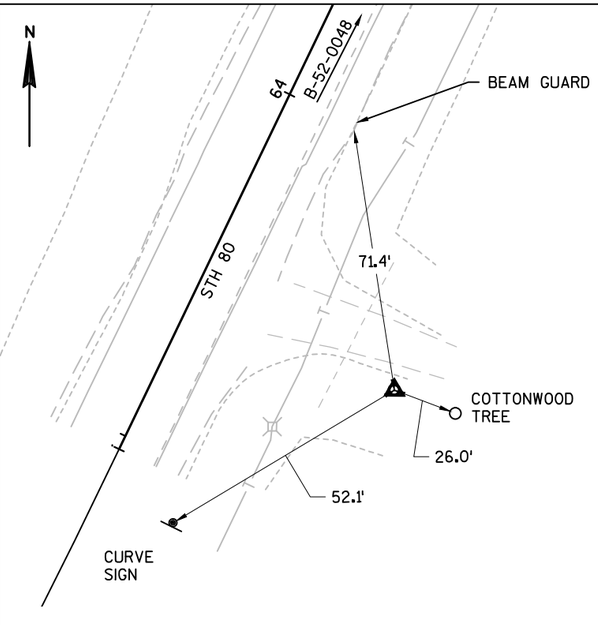
2



NO.	STATION	OFFSET	BENCH MARK DESCRIPTION	ELEV.
1010	65+14.09'	16.95' RT	MONUMENT IN CONCRETE ON SE CORNER OF B-52-0048	911.67'



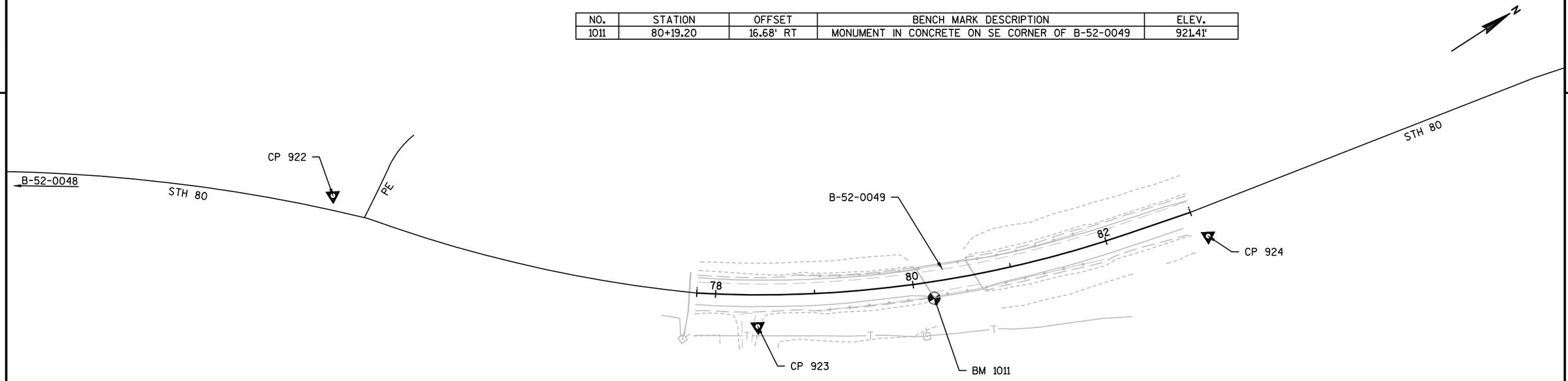
CONTROL POINT 920
X: 682218.8100', Y: 501182.5800', Z: 905.304'
REBAR WITH CAP
+/- 1250' NORTH OF STH 80 AND CTH C INTERSECTION

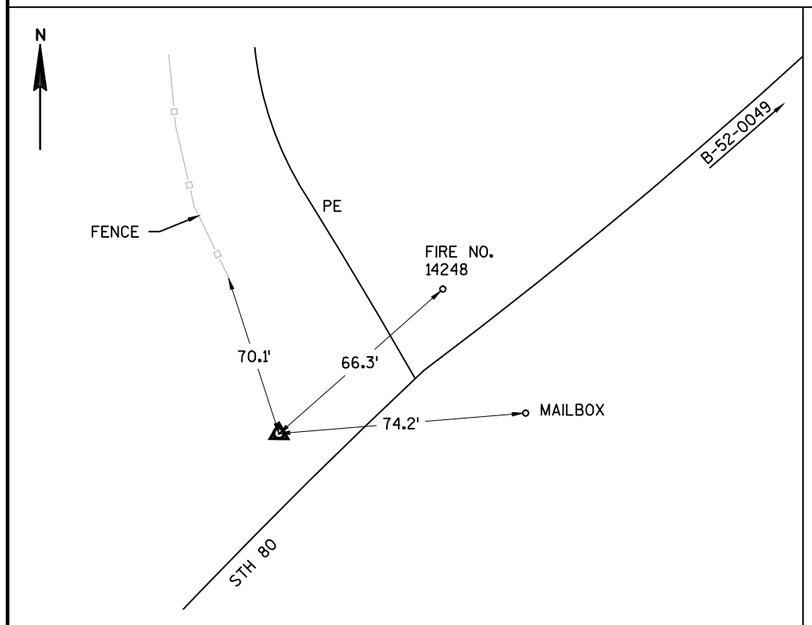


CONTROL POINT 921
X: 682461.7810', Y: 501564.3320', Z: 907.975'
REBAR WITH CAP
+/- 1700' NORTH OF STH 80 AND CTH A INTERSECTION

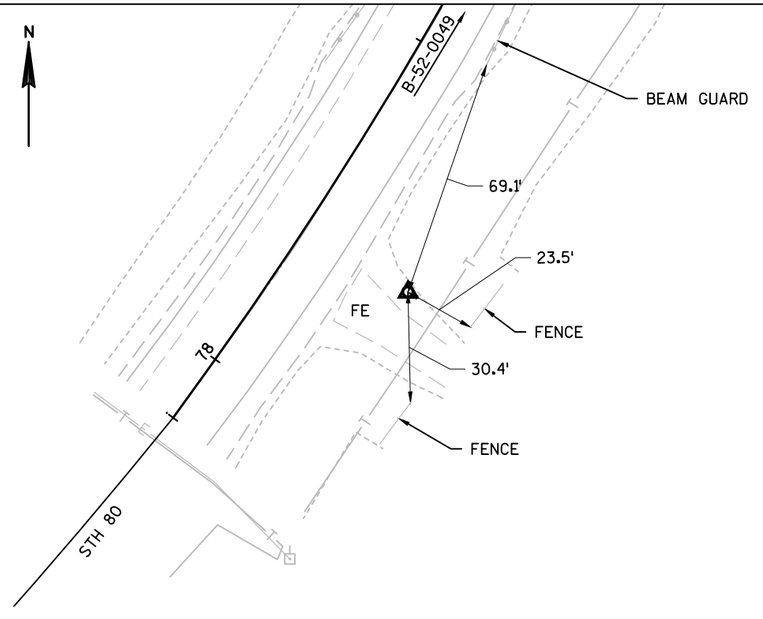
PROJECT NO: 5042-05-81	HWY: STH 80	COUNTY: RICHLAND	CONTROL POINT DATA: B-52-0048	SHEET 16	E

NO.	STATION	OFFSET	BENCH MARK DESCRIPTION	ELEV.
1011	80+19.20	16.68' RT	MONUMENT IN CONCRETE ON SE CORNER OF B-52-0049	921.41'

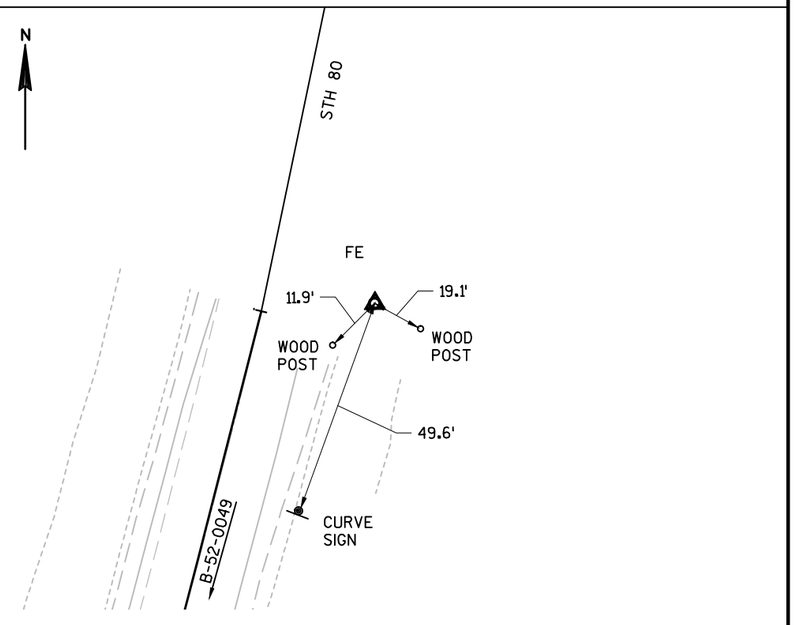




CONTROL POINT 922
X: 682937.1370', Y: 502501.3910', Z: 919.898'
REBAR WITH CAP
+/- 2750' NORTH OF STH 80 AND CTH C INTERSECTION



CONTROL POINT 923
X: 683281.3360', Y: 502790.0830', Z: 921.852'
REBAR WITH CAP
+/- 3200' NORTH OF STH 80 AND CTH C INTERSECTION



CONTROL POINT 924
X: 683451.8440', Y: 503221.7320', Z: 920.015'
REBAR WITH CAP
+/- 3650' NORTH OF STH 80 AND CTH C INTERSECTION

PROJECT NO: 5042-05-81	HWY: STH 80	COUNTY: RICHLAND	CONTROL POINT DATA: B-52-0049	SHEET 17	E

5042-05-61

Line	Item	Item Description	Unit	Total	Qty
0002	204.0110	Removing Asphaltic Surface	SY	28.000	28.000
0004	204.0120	Removing Asphaltic Surface Milling	SY	3,500.000	3,500.000
0006	204.0150	Removing Curb & Gutter	LF	21.000	21.000
0008	204.0165	Removing Guardrail	LF	1,362.000	1,362.000
0010	205.0100	Excavation Common	CY	289.000	289.000
0012	208.1100	Select Borrow	CY	84.000	84.000
0014	213.0100	Finishing Roadway (project) 01. 5042-05-61	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	378.000	378.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	157.000	157.000
0020	305.0500	Shaping Shoulders	STA	24.000	24.000
0022	415.0120	Concrete Pavement 12-Inch	SY	125.000	125.000
0024	415.0410	Concrete Pavement Approach Slab	SY	309.000	309.000
0026	450.4000	HMA Cold Weather Paving	TON	108.000	108.000
0028	455.0605	Tack Coat	GAL	246.000	246.000
0030	465.0105	Asphaltic Surface	TON	433.000	433.000
0032	465.0315	Asphaltic Flumes	SY	64.000	64.000
0034	502.3200	Protective Surface Treatment	SY	504.000	504.000
0036	502.3210	Pigmented Surface Sealer	SY	66.000	66.000
0038	509.0301	Preparation Decks Type 1	SY	13.000	13.000
0040	509.0302	Preparation Decks Type 2	SY	7.000	7.000
0042	509.0500	Cleaning Decks	SY	619.000	619.000
0044	509.1500	Concrete Surface Repair	SF	150.000	150.000
0046	509.2000	Full-Depth Deck Repair	SY	2.000	2.000
0048	509.2100.S	Concrete Masonry Deck Repair	SY	1.000	1.000
0050	509.2500	Concrete Masonry Overlay Decks	CY	30.000	30.000
0052	509.3500.S	HMA Overlay Polymer-Modified	TON	24.000	24.000
0054	509.9050.S	Cleaning Parapets	LF	155.000	155.000
0056	520.8700	Cleaning Culvert Pipes	EACH	1.000	1.000
0058	601.0584	Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type TBT	LF	16.000	16.000
0060	601.0586	Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type TBTT	LF	30.000	30.000
0062	603.8000	Concrete Barrier Temporary Precast Delivered	LF	300.000	300.000
0064	603.8125	Concrete Barrier Temporary Precast Installed	LF	600.000	600.000
0066	606.0300	Riprap Heavy	CY	94.000	94.000
0068	611.8115	Adjusting Inlet Covers	EACH	1.000	1.000
0070	614.0010	Barrier System Grading Shaping Finishing	EACH	12.000	12.000
0072	614.2300	MGS Guardrail 3	LF	412.500	412.500
0074	614.2500	MGS Thrie Beam Transition	LF	474.000	474.000
0076	614.2610	MGS Guardrail Terminal EAT	EACH	12.000	12.000

5042-05-61

Line	Item	Item Description	Unit	Total	Qty
0078	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5042-05-61	EACH	1.000	1.000
0080	619.1000	Mobilization	EACH	1.000	1.000
0082	624.0100	Water	MGAL	9.000	9.000
0084	628.1504	Silt Fence	LF	3,829.000	3,829.000
0086	628.1520	Silt Fence Maintenance	LF	3,829.000	3,829.000
0088	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0090	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0092	628.2008	Erosion Mat Urban Class I Type B	SY	544.000	544.000
0094	628.6505	Soil Stabilizer Type A	ACRE	0.200	0.200
0096	628.7015	Inlet Protection Type C	EACH	1.000	1.000
0098	628.7504	Temporary Ditch Checks	LF	100.000	100.000
0100	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	8.000	8.000
0102	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	4.000	4.000
0104	637.2230	Signs Type II Reflective F	SF	36.500	36.500
0106	638.2102	Moving Signs Type II	EACH	1.000	1.000
0108	638.2602	Removing Signs Type II	EACH	10.000	10.000
0110	638.3000	Removing Small Sign Supports	EACH	10.000	10.000
0112	642.5001	Field Office Type B	EACH	1.000	1.000
0114	643.0300	Traffic Control Drums	DAY	3,088.000	3,088.000
0116	643.0420	Traffic Control Barricades Type III	DAY	114.000	114.000
0118	643.0715	Traffic Control Warning Lights Type C	DAY	1,282.000	1,282.000
0120	643.0900	Traffic Control Signs	DAY	2,834.000	2,834.000
0122	643.5000	Traffic Control	EACH	1.000	1.000
0124	645.0120	Geotextile Type HR	SY	140.000	140.000
0126	646.1020	Marking Line Epoxy 4-Inch	LF	6,048.000	6,048.000
0128	646.9000	Marking Removal Line 4-Inch	LF	5,280.000	5,280.000
0130	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	4,680.000	4,680.000
0132	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	144.000	144.000
0134	650.9910	Construction Staking Supplemental Control (project) 01. 5042-05-61	LS	1.000	1.000
0136	650.9920	Construction Staking Slope Stakes	LF	1,200.000	1,200.000
0138	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-52-0047	LS	1.000	1.000
0140	690.0150	Sawing Asphalt	LF	383.000	383.000
0142	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0144	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,200.000	1,200.000
0146	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	600.000
0148	SPV.0060	Special 01. Embedded Galvanic Anodes	EACH	46.000	46.000
0150	SPV.0090	Special 01. Sawing Pavement Deck Preparation Areas	LF	120.000	120.000

5042-05-61

Line	Item	Item Description	Unit	Total	Qty
0152	SPV.0105	Special 01. Steel Railing Type W Rehabilitation	LS	1.000	1.000
0154	SPV.0105	Special 02. Steel Railing Type W Rehabilitation	LS	1.000	1.000
0156	SPV.0165	Special 01. Concrete Wearing Surface Preparation	SF	108.000	108.000

3

REMOVING ASPHALTIC SURFACE

CATEGORY	STATION	LOCATION	204.0110 SY	REMARKS
0010	63+51	RIGHT	28	B-52-0048 - SOUTH - PE
		TOTAL 0010	28	

REMOVING ASPHALTIC SURFACE MILLING

CATEGORY	STATION TO STATION	LOCATION	204.0120 SY	REMARKS
0010	90+60 - 92+33	MAINLINE	465	B-52-0047-SOUTH
0010	90+60 - 92+33	RIGHT	110	SHOULDER
0010	90+60 - 92+33	LEFT	135	SHOULDER
0010	93+17 - 94+50	MAINLINE	400	B-52-0047-NORTH
0010	93+17 - 94+50	RIGHT	110	SHOULDER
0010	93+17 - 94+50	LEFT	125	SHOULDER
0010	63+28 - 64+86	MAINLINE	420	B-52-0048-SOUTH
0010	63+28 - 64+86	RIGHT	10	SHOULDER
0010	63+28 - 64+86	LEFT	30	SHOULDER
0010	65+84 - 67+60	MAINLINE	470	B-52-0048-NORTH
0010	65+84 - 67+60	RIGHT	60	SHOULDER
0010	65+84 - 67+60	LEFT	5	SHOULDER
0010	78+00 - 79+90	MAINLINE	510	B-52-0049-SOUTH
0010	78+00 - 79+90	LEFT	55	SHOULDER
0010	80+83 - 82+80	MAINLINE	525	B-52-0049-NORTH
0010	80+83 - 82+80	RIGHT	20	SHOULDER
0010	80+83 - 82+80	LEFT	50	SHOULDER
		TOTAL 0010	3500	

REMOVING CURB & GUTTER

CATEGORY	STATION TO STATION	LOCATION	204.0150 LF	REMARKS
0010	92+17 - 92+38	RIGHT	21	B-52-0047-SOUTH
		TOTAL 0010	21	

REMOVING GUARDRAIL

CATEGORY	STATION TO STATION	LOCATION	204.0165 LF	REMARKS
0010	91+56 - 92+48	RIGHT	92	B-52-0047 - SOUTH
0010	91+56 - 92+48	LEFT	92	B-52-0047 - SOUTH
0010	93+02 - 93+95	RIGHT	93	B-52-0047 - NORTH
0010	93+02 - 93+95	LEFT	93	B-52-0047 - NORTH
0010	63+76 - 65+01	LEFT	125	B-52-0048 - SOUTH
0010	63+88 - 65+13	RIGHT	125	B-52-0048 - SOUTH
0010	65+57 - 66+82	LEFT	125	B-52-0048 - NORTH
0010	65+68 - 66+93	RIGHT	125	B-52-0048 - NORTH
0010	78+82 - 80+06	LEFT	124	B-52-0049 - SOUTH
0010	79+03 - 80+19	RIGHT	116	B-52-0049 - SOUTH
0010	80+57 - 81+84	LEFT	127	B-52-0049 - NORTH
0010	80+68 - 81+93	RIGHT	125	B-52-0049 - NORTH
		TOTAL 0010	1362	

SELECT BORROW

CATEGORY	STATION TO STATION	LOCATION	208.1100 CY	REMARKS
0010	65+60 - 66+03	RT	84	B-52-0048
		TOTAL 0010	84	

BASE AGGREGATE DENSE 3/4-INCH

CATEGORY	STATION TO STATION	LOCATION	305.0110 TON	REMARKS
0010	90+60 - 92+48	RIGHT	36	B-52-0047 - SOUTH
0010	90+60 - 92+48	LEFT	36	B-52-0047 - SOUTH
0010	93+02 - 94+50	RIGHT	29	B-52-0047 - NORTH
0010	93+02 - 94+50	LEFT	26	B-52-0047 - NORTH
0010	63+28 - 65+14	RIGHT	28	B-52-0048 - SOUTH
0010	63+28 - 65+02	LEFT	24	B-52-0048 - SOUTH
0010	66+06 - 67+60	RIGHT	26	B-52-0048 - NORTH
0010	65+94 - 67+60	LEFT	28	B-52-0048 - NORTH
0010	78+00 - 80+21	RIGHT	26	B-52-0049 - SOUTH
0010	78+33	RIGHT	4	B-52-0049 - SOUTH - PE
0010	78+00 - 80+07	LEFT	26	B-52-0049 - SOUTH
0010	81+05 - 82+80	RIGHT	27	B-52-0049 - NORTH
0010	80+94 - 82+80	LEFT	28	B-52-0049 - NORTH
0010		UNDISTRIBUTED	34	ESTIMATED 10%
		TOTAL 0010	378	

3

BASE AGGREGATE DENSE 1 1/4-INCH

CATEGORY	STATION TO STATION	LOCATION	305.0120 TON	REMARKS
0010	92+33 - 92+48	B-52-0047	24	SOUTH APPROACH SLAB
0010	93+02 - 93+17	B-52-0047	24	NORTH APPORACH SLAB
0010	64+86 - 65+14	B-52-0048	23	SOUTH APPROACH SLAB
0010	65+55 - 65+84	B-52-0048	24	NORTH APPORACH SLAB
0010	79+90 - 80+21	B-52-0049	25	SOUTH APPROACH SLAB
0010	80+55 - 80+83	B-52-0049	23	NORTH APPORACH SLAB
0010		UNDISTRIBUTED	14	ESTIMATED 10%
		TOTAL 0010	157	

SHAPING SHOULDERS

CATEGORY	STATION TO STATION	LOCATION	305.0500 STA	REMARKS
0010	90+60 - 92+33	LT & RT	4	B-52-0047 - SOUTH
0010	93+17 - 94+50	LT & RT	4	B-52-0047 - NORTH
0010	63+28 - 64+86	LT & RT	4	B-52-0048 - SOUTH
0010	65+84 - 67+60	LT & RT	4	B-52-0048 - NORTH
0010	78+00 - 79+90	LT & RT	4	B-52-0049 - SOUTH
0010	80+83 - 82+80	LT & RT	4	B-52-0049 - NORTH
		TOTAL 0010	24	

CONCRETE APPROACH SLAB & PAVEMENT

CATEGORY	STATION TO STATION	LOCATION	CONCRETE PAVEMENT 12-INCH 415.0120 SY	CONCRETE PAVEMENT APPROACH 415.0410 SY	REMARKS
0010	92+33 - 92+48	MAINLINE	-	41	B-52-0047 - SOUTH
0010	92+33 - 92+48	RIGHT	14	-	B-52-0047 - SOUTH
0010	92+33 - 92+48	LEFT	17	-	B-52-0047 - SOUTH
0010	93+02 - 93+17	MAINLINE	-	41	B-52-0047 - NORTH
0010	93+02 - 93+17	RIGHT	17	-	B-52-0047 - NORTH
0010	93+02 - 93+17	LEFT	17	-	B-52-0047 - NORTH
0010	64+86 - 65+14	MAINLINE	-	55	B-52-0048 - SOUTH
0010	64+86 - 65+14	RIGHT	9	-	B-52-0048 - SOUTH
0010	64+86 - 65+02	LEFT	6	-	B-52-0048 - SOUTH
0010	65+55 - 65+84	MAINLINE	-	57	B-52-0048 - NORTH
0010	65+55 - 65+84	LEFT	9	-	B-52-0048 - NORTH
0010	65+67 - 65+84	RIGHT	6	-	B-52-0048 - NORTH
0010	79+90 - 80+21	MAINLINE	-	60	B-52-0049 - SOUTH
0010	79+90 - 80+21	RIGHT	9	-	B-52-0049 - SOUTH
0010	79+90 - 80+07	LEFT	6	-	B-52-0049 - SOUTH
0010	80+55 - 80+83	MAINLINE	-	55	B-52-0049 - NORTH
0010	80+55 - 80+83	LEFT	9	-	B-52-0049 - NORTH
0010	80+66 - 80+83	RIGHT	6	-	B-52-0049 - NORTH
		TOTAL 0010	125	309	

ASPHALTIC ITEMS

CATEGORY	STATION TO STATION	LOCATION	HMA COLD WEATHER PAVING 450.4000 TON	TACK COAT 455.0605 GAL	ASPHALTIC SURFACE 465.0105 TON	REMARKS
0010	90+60 - 92+33	MAINLINE	-	33	51	B-52-0047-SOUTH
0010	90+60 - 92+33	RIGHT	-	8	19	SHOULDER WIDENING
0010	90+60 - 92+33	LEFT	-	9	15	SHOULDER WIDENING
0010	93+17 - 94+50	MAINLINE	-	28	39	B-52-0047-NORTH
0010	93+17 - 94+50	RIGHT	-	8	14	SHOULDER WIDENING
0010	93+17 - 94+50	LEFT	-	9	14	SHOULDER WIDENING
0010	63+28 - 64+86	MAINLINE	-	29	47	B-52-0048-SOUTH
0010	63+51	RIGHT	-	1	8	PRIVATE ENTRANCE
0010	63+28 - 64+86	RIGHT	-	1	7	SHOULDER WIDENING
0010	63+28 - 64+86	LEFT	-	2	7	SHOULDER WIDENING
0010	65+84 - 67+60	MAINLINE	-	33	52	B-52-0048-NORTH
0010	65+84 - 67+60	RIGHT	-	4	7	SHOULDER WIDENING
0010	65+84 - 67+60	LEFT	-	1	7	SHOULDER WIDENING
0010	78+00 - 79+90	MAINLINE	-	36	56	B-52-0049-SOUTH
0010	78+00 - 79+90	RIGHT	-	-	8	SHOULDER WIDENING
0010	78+00 - 79+90	LEFT	-	4	8	SHOULDER WIDENING
0010	80+83 - 82+80	MAINLINE	-	37	58	B-52-0049-NORTH
0010	80+83 - 82+80	RIGHT	-	1	8	SHOULDER WIDENING
0010	80+83 - 82+80	LEFT	-	4	8	SHOULDER WIDENING
0010			108	-	-	UNDISTRIBUTED
		TOTAL 0010	108	246	433	

ASPHALTIC FLUMES

CATEGORY	STATION TO STATION	LOCATION	465.0315 SY	REMARKS
0010	64+86 - 65+01	LEFT	8	B-52-0048 - SOUTH
0010	64+98 - 65+13	RIGHT	8	B-52-0048 - SOUTH
0010	65+57 - 65+72	LEFT	8	B-52-0048 - NORTH
0010	65+69 - 65+84	RIGHT	8	B-52-0048 - NORTH
0010	79+90 - 80+05	LEFT	8	B-52-0049 - SOUTH
0010	80+04 - 80+19	RIGHT	8	B-52-0049 - SOUTH
0010	80+57 - 80+72	LEFT	8	B-52-0049 - NORTH
0010	80+68 - 80+83	RIGHT	8	B-52-0049 - NORTH
		TOTAL 0010	64	

RIPRAP

CATEGORY	STATION	LOCATION	RIPRAP HEAVY 606.0300 CY	GEOTEXTILE FABRIC TYPE HR 645.0120 SY	REMARKS
0010	64+94	LEFT	10	15	B-52-0048 - SOUTH
0010	65+05	RIGHT	12	18	B-52-0048 - SOUTH
0010	65+64	LEFT	13	20	B-52-0048 - NORTH
0010	65+76	RIGHT	25	37	B-52-0048 - NORTH
0010	79+98	LEFT	4	5	B-52-0049 - SOUTH
0010	80+11	RIGHT	15	23	B-52-0049 - SOUTH
0010	80+64	LEFT	7	10	B-52-0049 - NORTH
0010	80+11	RIGHT	8	12	B-52-0049 - NORTH
		TOTAL 0010	94	140	

CLEANING CULVERT PIPES

CATEGORY	STATION	LOCATION	520.8700 EACH	REMARKS
0010	92+35	RIGHT	1	B-52-0047 - SOUTH
		TOTAL 0010	1	

ADJUSTING INLET COVERS

CATEGORY	STATION	LOCATION	611.8115 EACH	REMARKS
0010	92+35	RIGHT	1	B-52-0047 - SOUTH
		TOTAL 0010	1	

CURB AND GUTTER

CATEGORY	STATION TO STATION	LOCATION	CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE TBT 601.0584 LF	CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE TBTT 601.0586 LF	REMARKS
0010	92+17 - 92+33	RIGHT	16	-	B-52-0047 - SOUTH
0010	92+33 - 92+48	RIGHT	-	15	B-52-0047 - SOUTH
0010	93+02 - 93+17	RIGHT	-	15	B-52-0047 - NORTH
		TOTAL 0010	16	30	

WATER

CATEGORY	STATION TO STATION	LOCATION	624.0100 MGAL	REMARKS
0010	90+60 - 94+50	LEFT & RIGHT	3	B-52-0047
0010	63+28 - 67+60	LEFT & RIGHT	3	B-52-0048
0010	78+00 - 82+80	LEFT & RIGHT	3	B-52-0049
		TOTAL 0010	9	

3

BARRIER SYSTEM GRADING SHAPING FINISHING

*FOR INFORMATIONAL PURPOSES ONLY

CATEGORY	STATION TO STATION	LOCATION	614.0010 EACH	*BORROW CY	*SALVAGED TOPSOIL SY	*FERTILIZER TYPE B CWT	*SEEDING MIXTURE NO. 10 LB	REMARKS
0010	90+60 - 92+60	RIGHT	1	9	455	0.3	6.1	B-52-0047 - SOUTH
0010	90+60 - 92+60	LEFT	1	30	212	0.1	2.9	B-52-0047 - SOUTH
0010	92+90 - 94+50	RIGHT	1	44	349	0.2	4.7	B-52-0047 - NORTH
0010	92+90 - 94+50	LEFT	1	13	153	0.1	2.1	B-52-0047 - NORTH
0010	63+28 - 65+17	RIGHT	1	49	395	0.2	5.3	B-52-0048 - SOUTH
0010	63+28 - 65+08	LEFT	1	92	525	0.3	7.1	B-52-0048 - SOUTH
0010	65+50 - 67+60	LEFT	1	137	827	0.5	11.2	B-52-0048 - NORTH
0010	65+60 - 67+60	RIGHT	1	182	473	0.3	6.4	B-52-0048 - NORTH
0010	78+00 - 80+27	RIGHT	1	86	573	0.3	7.7	B-52-0049 - SOUTH
0010	78+00 - 80+15	LEFT	1	8	259	0.1	3.5	B-52-0049 - SOUTH
0010	80+50 - 82+80	LEFT	1	30	393	0.2	5.3	B-52-0049 - NORTH
0010	80+60 - 82+80	RIGHT	1	12	245	0.1	3.3	B-52-0049 - NORTH
0010		BORROW SITE	-	-	-	0.3	7.0	10% ESTIMATED
0010		UNDISTRIBUTED	-	-	1215	1.0	13.4	20% ESTIMATED
		TOTAL 0010	12	692	6074	4.0	86.0	

BEAM GUARD ITEMS

CATEGORY	STATION TO STATION	LOCATION	MGS GUARDRAIL 3 614.2300 LF	MGS THRIE BEAM TRANSITION 614.2500 LF	MGS GUARDRAIL TERMINAL EAT 614.2610 EACH	REMARKS
0010	91+06 - 92+48	RIGHT	50.0	39.5	1	B-52-0047 - SOUTH
0010	91+47 - 92+48	LEFT	12.5	39.5	1	B-52-0047 - SOUTH
0010	93+02 - 94+06	RIGHT	12.5	39.5	1	B-52-0047 - NORTH
0010	93+02 - 94+03	LEFT	12.5	39.5	1	B-52-0047 - NORTH
0010	63+72 - 65+13	RIGHT	50.0	39.5	1	B-52-0048 - SOUTH
0010	63+98 - 65+01	LEFT	12.5	39.5	1	B-52-0048 - SOUTH
0010	65+57 - 67+22	LEFT	75.0	39.5	1	B-52-0048 - NORTH
0010	65+68 - 66+72	RIGHT	12.5	39.5	1	B-52-0048 - NORTH
0010	78+68 - 80+19	RIGHT	62.5	39.5	1	B-52-0049 - SOUTH
0010	79+01 - 80+05	LEFT	12.5	39.5	1	B-52-0049 - SOUTH
0010	80+57 - 82+37	LEFT	87.5	39.5	1	B-52-0049 - NORTH
0010	80+68 - 81+70	RIGHT	12.5	39.5	1	B-52-0049 - NORTH
		TOTAL 0010	412.5	474.0	12	

TRAFFIC CONTROL

CATEGORY	LOCATION	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED 603.8000 LF	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED 603.8125 LF	TRAFFIC CONTROL DRUMS 643.0300 DAY	TRAFFIC CONTROL BARRICADES TYPE III 643.0420 DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE C 643.0715 DAY	TRAFFIC CONTROL SIGNS 643.0900 DAY	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE B-52-0047) 661.0100 LS	REMARKS
0010	B-52-0047	-	-	-	-	-	-	1	B-52-0047
0010	B-52-0047	300	300	518	19	185	315	-	STAGE 1
0010	B-52-0047	-	300	518	19	185	315	-	STAGE 2
0010	B-52-0048	-	-	486	18	216	522	-	STAGE 1
0010	B-52-0048	-	-	486	18	216	522	-	STAGE 2
0010	B-52-0049	-	-	540	20	240	580	-	STAGE 1
0010	B-52-0049	-	-	540	20	240	580	-	STAGE 2
	TOTAL 0010	300	600	3088	114	1282	2834	1	

EROSION CONTROL ITEMS

CATEGORY	STATION TO STATION	LOCATION	SILT FENCE 628.1504 LF	SILT FENCE MAINTENANCE 628.1520 LF	MOBILIZATIONS EROSION CONTROL 628.1905 EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL 628.1910 EACH	EROSION MAT URBAN CLASS I TYPE B 628.2008 SY	SOIL STABILIZER TYPE A 628.6505 ACRE	INLET PROTECTION TYPE C 628.7015 EACH	TEMPORARY DITCH CHECKS 628.7504 LF	REMARKS
0010		PROJECT	-	-	4	1	-	-	-	-	
0010	90+60 - 92+60	RIGHT	250	250	-	-	18	0.01	-	10	B-52-0047 - SOUTH
0010	90+60 - 92+60	LEFT	250	250	-	-	30	0.01	-	-	B-52-0047 - SOUTH
0010	92+35	RIGHT	-	-	-	-	-	0.01	1	-	B-52-0047 - SOUTH
0010	92+90 - 94+50	RIGHT	200	200	-	-	90	0.01	-	10	B-52-0047 - NORTH
0010	92+90 - 94+50	LEFT	200	200	-	-	16	0.01	-	-	B-52-0047 - NORTH
0010	63+28 - 63+45	RIGHT	20	20	-	-	-	0.01	-	-	B-52-0048 - SOUTH
0010	63+28 - 65+08	LEFT	200	200	-	-	21	0.02	-	10	B-52-0048 - SOUTH
0010	63+57 - 65+17	RIGHT	185	185	-	-	14	-	-	20	B-52-0048 - SOUTH
0010	65+50 - 67+60	LEFT	250	250	-	-	82	0.01	-	10	B-52-0048 - NORTH
0010	65+60 - 67+60	RIGHT	230	230	-	-	120	0.01	-	10	B-52-0048 - NORTH
0010	78+00 - 78+27	RIGHT	30	30	-	-	-	0.01	-	-	B-52-0049 - SOUTH
0010	78+00 - 80+15	LEFT	230	230	-	-	6	0.01	-	-	B-52-0049 - SOUTH
0010	78+37 - 80+27	RIGHT	235	235	-	-	15	0.01	-	10	B-52-0049 - SOUTH
0010	80+50 - 82+80	LEFT	255	255	-	-	11	0.01	-	-	B-52-0049 - NORTH
0010	80+60 - 82+80	RIGHT	250	250	-	-	12	0.03	-	-	B-52-0049 - NORTH
0010		BORROW SITE	279	279	-	-	-	-	-	-	
0010		UNDISTRIBUTED	765	765	-	-	109	0.03	-	20	
		TOTAL 0010	3829	3829	4	1	544	0.20	1	100	

3

SIGN SUMMARY

CATEGORY	SIGN NUMBER	STATION	LOCATION	SIGN CODE	DESCRIPTION	SIGN SIZE IN X IN	POSTS WOOD 4X6-INCH X 12-FT 634.0612 EACH	POSTS WOOD 4X6-INCH X 16-FT 634.0616 EACH	SIGNS TYPE II REFLECTIVE F 637.2230 SF	MOVING SIGNS TYPE II 638.2102 EACH	REMOVING SIGNS TYPE II 638.2602 EACH	REMOVING SMALL SIGN SUPPORTS 638.3000 EACH	REMARKS
0010	1-01	91+21	RIGHT	-	ALANA SPRINGS CAMPGROUND LEFT	-	-	2	-	1	-	-	B-52-0047 - SOUTH
0010	2-01	65+01	LEFT	W5-52-L	CLEARANCE STRIPER DOWN RIGHT	12 X 36	1	-	3.00	-	1	1	B-52-0048 - SOUTH
0010	2-02	65+13	RIGHT	W5-52-R	CLEARANCE STRIPER DOWN LEFT	12 X 36	1	-	3.00	-	1	1	B-52-0048 - SOUTH
0010	2-03	65+57	LEFT	W5-52-L	CLEARANCE STRIPER DOWN RIGHT	12 X 36	1	-	3.00	-	1	1	B-52-0048 - NORTH
0010	2-04	65+69	RIGHT	W5-52-R	CLEARANCE STRIPER DOWN LEFT	12 X 36	1	-	3.00	-	1	1	B-52-0048 - NORTH
0010	2-05	67+60	RIGHT	W11-6	SNOWMOBILE CROSSING	30 X 30	-	1	6.25	-	1	1	B-52-0048 - NORTH
0010	3-01	80+05	LEFT	W5-52-L	CLEARANCE STRIPER DOWN RIGHT	12 X 36	1	-	3.00	-	1	1	B-52-0049 - SOUTH
0010	3-02	80+19	RIGHT	W5-52-R	CLEARANCE STRIPER DOWN LEFT	12 X 36	1	-	3.00	-	1	1	B-52-0049 - SOUTH
0010	3-03	80+57	LEFT	W5-52-L	CLEARANCE STRIPER DOWN RIGHT	12 X 36	1	-	3.00	-	1	1	B-52-0049 - NORTH
0010	3-04	80+68	RIGHT	W5-52-R	CLEARANCE STRIPER DOWN LEFT	12 X 36	1	-	3.00	-	1	1	B-52-0049 - NORTH
0010	3-05	82+32	RIGHT	W11-6	SNOWMOBILE CROSSING	30 X 30	-	1	6.25	-	1	1	B-52-0049 - NORTH
						TOTAL 0010	8	4	36.5	1	10	10	

PAVEMENT MARKING

CATEGORY	STATION	TO STATION	LOCATION	MARKING LINE EPOXY 4-INCH 646.1020 LF	MARKING REMOVAL LINE 4-INCH 646.9000 LF	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH 649.0150 LF	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH 649.0850 LF	REMARKS
0010	90+05	- 95+45	CENTERLINE	1200	1200	-	-	B-52-0047 - DOUBLE YELLOW
0010	90+60	- 94+50	RIGHT	600	600	600	-	B-52-0047 - WHITE EDGELINES
0010	90+60	- 94+50	LEFT	600	600	600	-	B-52-0047 - WHITE EDGELINES
0010	90+60	- 94+50	MAINLINE	-	-	450	24	B-52-0047 - STAGE 1 - WHITE
0010	90+60	- 94+50	MAINLINE	-	-	450	24	B-52-0047 - STAGE 2 - WHITE
0010	63+28	- 67+60	CENTERLINE	864	720	-	-	B-52-0048 - DOUBLE YELLOW
0010	63+28	- 67+60	RIGHT	432	360	360	-	B-52-0048 - WHITE EDGELINES
0010	63+28	- 67+60	LEFT	432	360	360	-	B-52-0048 - WHITE EDGELINES
0010	63+28	- 67+60	MAINLINE	-	-	285	24	B-52-0048 - STAGE 1 - WHITE
0010	63+28	- 67+60	MAINLINE	-	-	285	24	B-52-0048 - STAGE 2 - WHITE
0010	78+00	- 82+80	CENTERLINE	960	720	-	-	B-52-0049 - DOUBLE YELLOW
0010	78+00	- 82+80	RIGHT	480	360	360	-	B-52-0049 - WHITE EDGELINES
0010	78+00	- 82+80	LEFT	480	360	360	-	B-52-0049 - WHITE EDGELINES
0010	78+00	- 82+80	MAINLINE	-	-	285	24	B-52-0049 - STAGE 1 - WHITE
0010	78+00	- 82+80	MAINLINE	-	-	285	24	B-52-0049 - STAGE 2 - WHITE
			TOTAL 0010	6048	5280	4680	144	

SAWING ASPHALT

CATEGORY	STATION	LOCATION	690.0150 LF	REMARKS
0010	90+60	MAINLINE	30	B-52-0047 - SOUTH
0010	92+33	MAINLINE	42	SOUTH APPROACH SLAB
0010	93+17	MAINLINE	44	NORTH APPROACH SLAB
0010	94+50	MAINLINE	30	B-52-0047 - NORTH
0010	63+28	MAINLINE	25	B-52-0048 - SOUTH
0010	63+51	RIGHT	12	PE
0010	64+86	MAINLINE	30	SOUTH APPROACH SLAB
0010	65+84	MAINLINE	30	NORTH APPROACH SLAB
0010	67+60	MAINLINE	27	B-52-0048 - NORTH
0010	78+00	MAINLINE	27	B-52-0049 - SOUTH
0010	79+90	MAINLINE	30	SOUTH APPROACH SLAB
0010	80+83	MAINLINE	30	NORTH APPROACH SLAB
0010	82+80	MAINLINE	26	B-52-0049 - NORTH
		TOTAL 0010	383	

CONSTRUCTION STAKING SLOPE STAKES

650.9920

CATEGORY	STATION TO STATION	LOCATION	LF	REMARKS
0010	90+60 - 94+50	CL	350	B-52-0047
0010	63+28 - 67+60	CL	400	B-52-0048
0010	78+00 - 82+80	CL	450	B-52-0049
		TOTAL 0010	1200	

Division	From / To Station	Location	Common Excavation (item #205.0100) (1)	Salvaged / Unusable Pavement Material (4)	Available Material (5)	Mass Ordinate + / - (14)	Waste	Select Borrow
			Cut (2)					***
Division 1								(item #208.1100)
B-52-0047	92+33/92+48	South Approach Slab	35	35	0	0	0	0
B-52-0047	93+02/93+17	North Approach Slab	35	35	0	0	0	0
B-52-0048	64+86/65+14	South Approach Slab	33	33	0	0	0	0
B-52-0048	65+55/65+84	North Approach Slab	34	34	0	0	0	0
B-52-0048	65+60/66+03	Benching - Right	84	0	84	84	84	84
B-52-0049	79+90/80+21	South Approach Slab	35	35	0	0	0	0
B-52-0049	80+55/80+83	North Approach Slab	33	33	0	0	0	0
Division 2 Subtotal			289	205	84	84	84	84
Grand Total			289.00	205.00	84.00	84.00	84.00	84.00

*** Estimated volume in final position (No Expansion Factor).

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100

2) Salvaged/Unsuable Pavement Material is included in Cut.

4) Salvaged/Unusable Pavement Material

5) Available Material = Cut - Salvaged/Unusuable Pavement Material

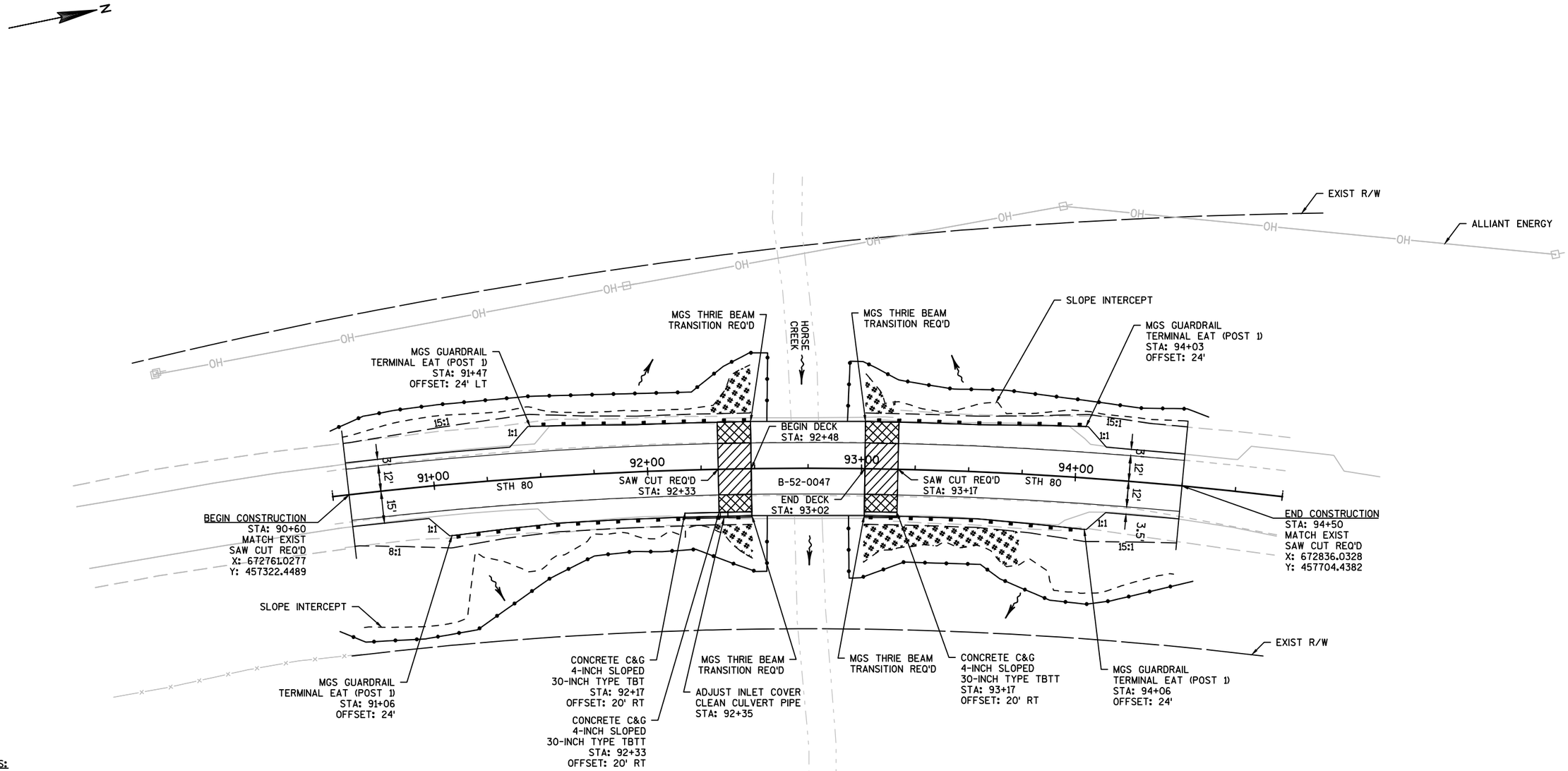
Depending on selections: **Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor**

Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor

Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor

Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor

14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.



NOTES:

-MILL 2" OFF OF EXISTING HMA APPROACHES AND SHOULDERS AND OVERLAY WITH 2" ASPHALTIC SURFACE

-EXTEND ASPHALTIC PAVEMENT TO LIMITS SHOWN

-IN AREAS OF PAVED SHOULDER WIDENING, PLACE A MINIMUM OF 3.5" ASPHALTIC SURFACE

-ALL DISTURBED AREAS NOT PROTECTED BY RIPRAP OR EROSION MAT MUST BE PROTECTED USING SOIL STABILIZER TYPE A

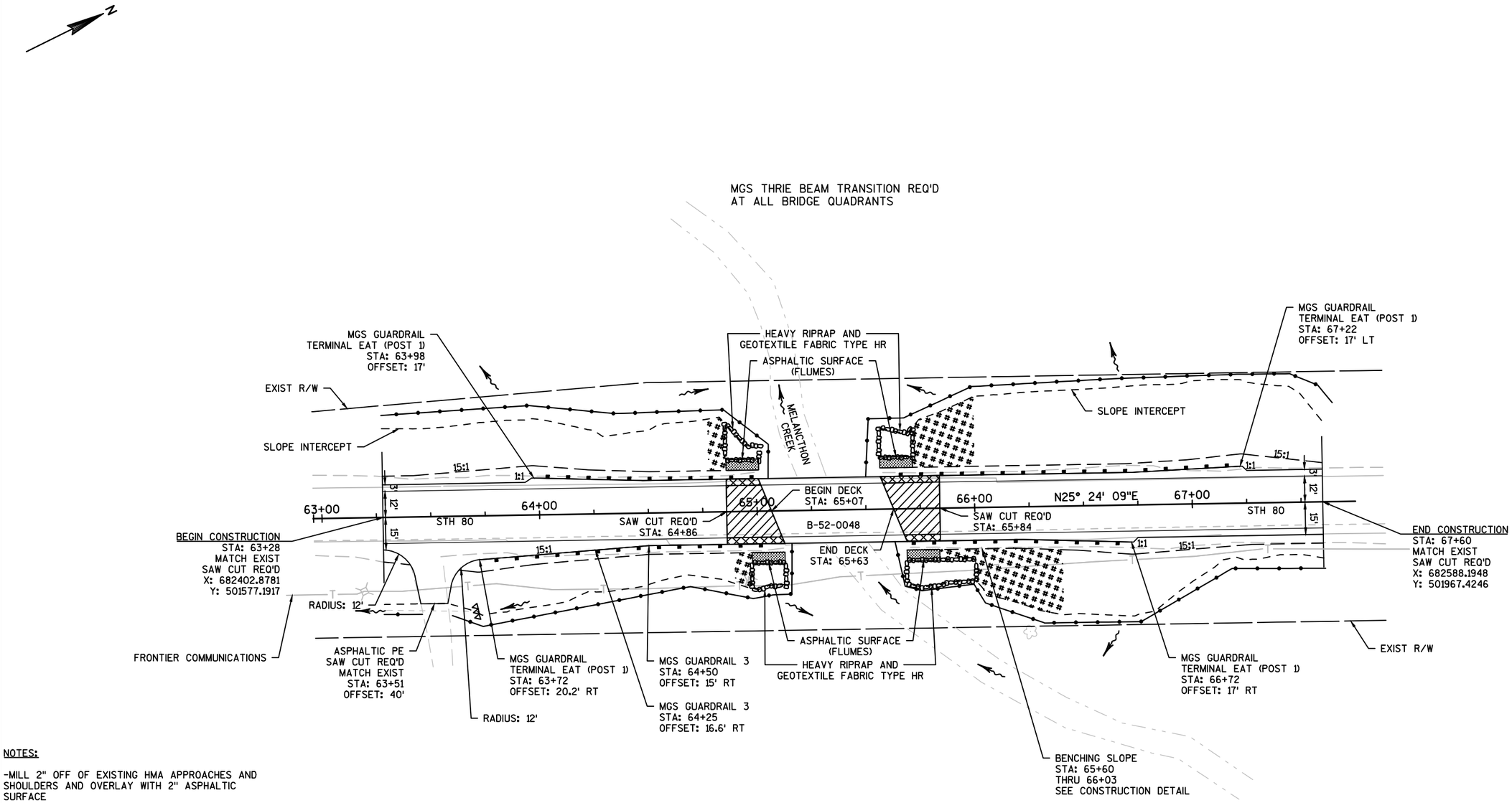
LEGEND	
	CONCRETE PAVEMENT APPROACH SLAB
	CONCRETE PAVEMENT 12-INCH
	EROSION MAT - URBAN CLASS I - TYPE B
	DIRECTION OF FLOW
	SILT FENCE

PI STA = 92+75.81
Y = 457537.489
X = 672779.284
DELTA = 13°43'22"
D = 3°05'09"
T = 223.42'
L = 444.71'
R = 1856.78'
PC STA = 90+52.39
PT STA = 94+97.10

SUPERELEVATION STATIONING STH 80			
	STATION	SE LT	SE RT
MATCH EXIST	90+60		
BEGIN FULL SE	90+92	+7.3%	-7.3%
END FULL SE	94+25	+7.3%	-7.3%
MATCH EXIST	94+50		

VERIFY MATCH POINTS IN FIELD

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	PLAN: B-52-0047	SHEET 28	E



NOTES:

-MILL 2" OFF OF EXISTING HMA APPROACHES AND SHOULDERS AND OVERLAY WITH 2" ASPHALTIC SURFACE

-EXTEND ASPHALTIC PAVEMENT TO LIMITS SHOWN

-IN AREAS OF PAVED SHOULDER WIDENING, PLACE A MINIMUM OF 3.5" ASPHALTIC SURFACE IN TWO LIFTS

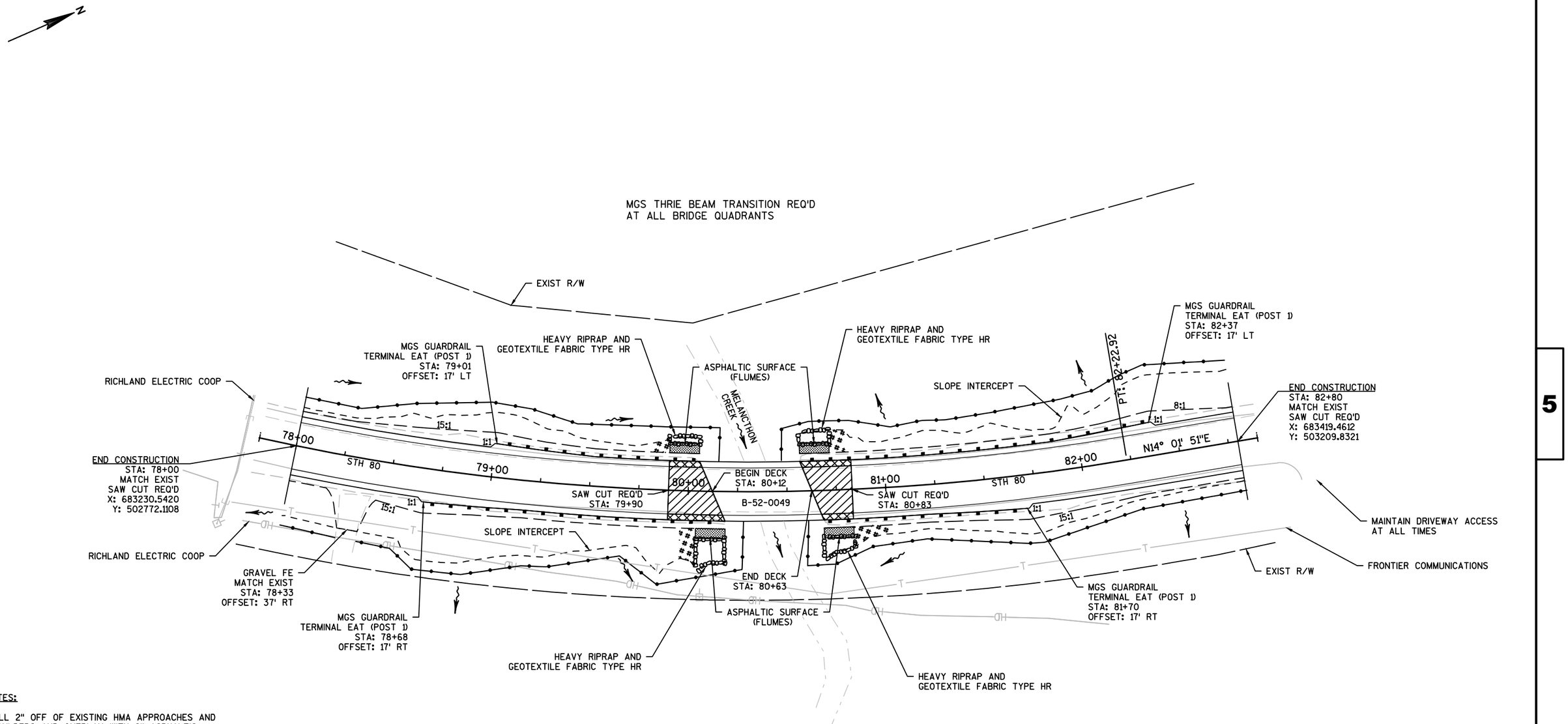
-ALL DISTURBED AREAS NOT PROTECTED BY RIPRAP OR EROSION MAT MUST BE PROTECTED USING SOIL STABILIZER TYPE A

LEGEND	
	CONCRETE PAVEMENT APPROACH SLAB
	CONCRETE PAVEMENT 12-INCH
	ASPHALTIC SURFACE (FLUMES) SEE CONSTRUCTION DETAIL
	EROSION MAT - URBAN CLASS I - TYPE B
	DIRECTION OF FLOW
	SILT FENCE
	HEAVY RIPRAP
	TEMPORARY DITCH CHECK

SUPERELEVATION STATIONING STH 80			
	STATION	SE LT	SE RT
MATCH EXIST	63+28	-2.0%	-2.0%
END NC	65+85	-2.0%	-2.0%
MATCH EXIST	67+60		

VERIFY MATCH POINTS IN FIELD

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	PLAN: B-52-0048	SHEET 29	E



NOTES:

-MILL 2" OFF OF EXISTING HMA APPROACHES AND SHOULDERS AND OVERLAY WITH 2" ASPHALTIC SURFACE.

-EXTEND ASPHALTIC PAVEMENT TO LIMITS SHOWN.

-IN AREAS OF PAVED SHOULDER WIDENING, PLACE A MINIMUM OF 3.5" ASPHALTIC SURFACE IN TWO LIFTS.

-ALL DISTURBED AREAS NOT PROTECTED BY RIPRAP OR EROSION MAT MUST BE PROTECTED USING SOIL STABILIZER TYPE A.

LEGEND	
	CONCRETE PAVEMENT APPROACH SLAB
	CONCRETE PAVEMENT 12-INCH
	ASPHALTIC SURFACE (FLUMES) SEE CONSTRUCTION DETAIL
	EROSION MAT - URBAN CLASS I - TYPE B
	DIRECTION OF FLOW
	SILT FENCE
	HEAVY RIPRAP

PI STA = 80+04.73
Y = 502937.384
X = 683351.376
DELTA = 22°05'46"
D = 5°00'00"
T = 223.74'
L = 441.93'
R = 1145.92'
PC STA = 77+80.99
PT STA = 82+22.92

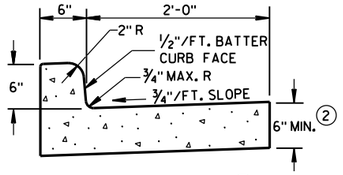
SUPERELEVATION STATIONING STH 80			
	STATION	SE LT	SE RT
MATCH EXIST	78+00		
BEGIN FULL SE	78+15	-5.6%	+5.6%
END FULL SE	81+78	-5.6%	+5.6%
MATCH EXIST	82+80		

VERIFY MATCH POINTS IN FIELD

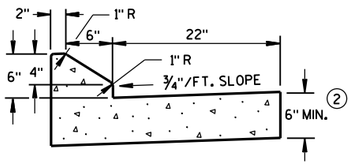
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	PLAN: B-52-0049	SHEET 30	E

Standard Detail Drawing List

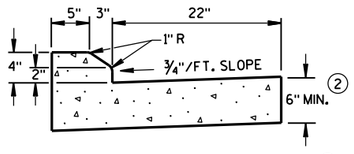
08D01-19	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09G02-04A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-04B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-04C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
13A03-06	CONCRETE PAVEMENT SHOULDERS
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13C11-11A	RURAL DOWELED CONCRETE PAVEMENT
13C11-11B	RURAL DOWELED CONCRETE PAVEMENT
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B42-04A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C06-08	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C12-05	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D32-04	TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION
15D33-04	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS



TYPES A & D ①

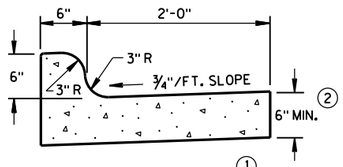


6" SLOPED CURB TYPES G & J ①

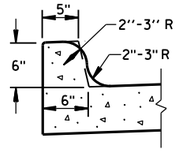


4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"

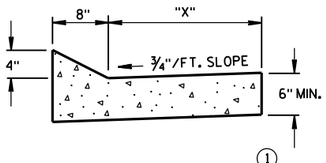


TYPES K & L ①



OPTIONAL CURB SHAPE FOR TYPES K & L ①

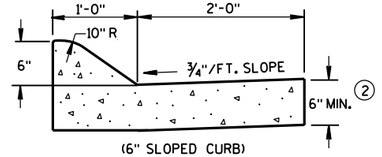
CONCRETE CURB & GUTTER 30"



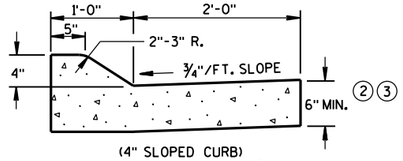
TYPES TBT & TBTT ①

CONCRETE CURB & GUTTER

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

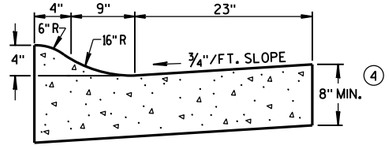


(6" SLOPED CURB)



(4" SLOPED CURB)

TYPES A & D ①



4" SLOPED CURB TYPES R & T ①⑤

CONCRETE CURB & GUTTER 36"

GENERAL NOTES

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

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

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

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

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

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

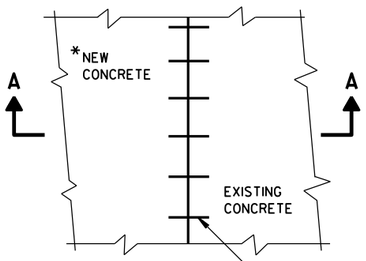
② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

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

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

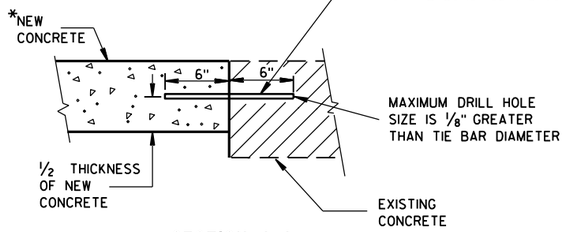
⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

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



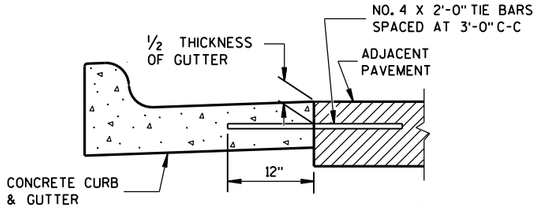
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW

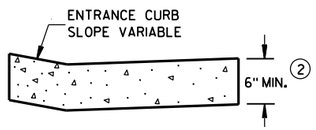


SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT

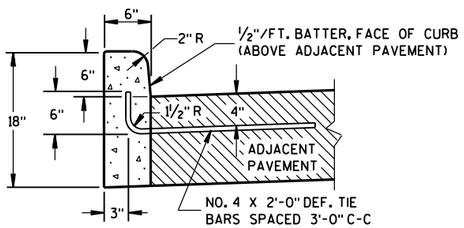


TYPICAL TIE BAR LOCATION ①

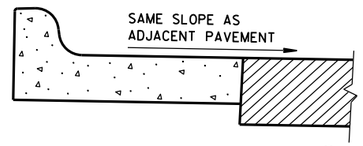


DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)

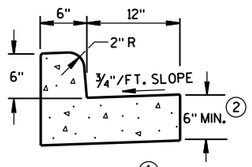


① TYPES A & D



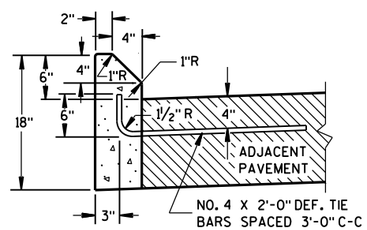
⑥ REVERSE SLOPE GUTTER

(TYPICAL FOR ALL CURB & GUTTER TYPES)



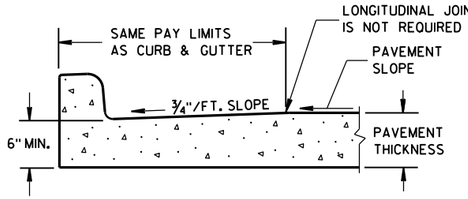
① TYPES A & D

CONCRETE CURB & GUTTER 18"

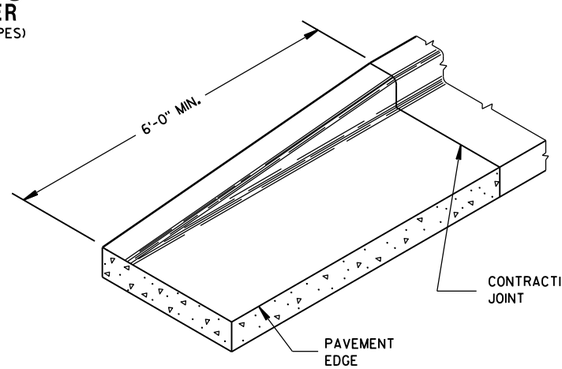


① TYPES G & J

CONCRETE CURB



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

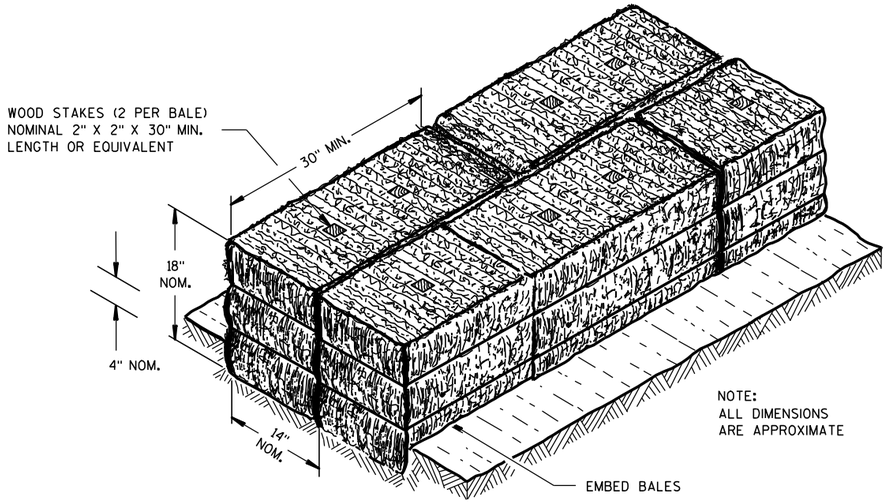
June, 2016 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

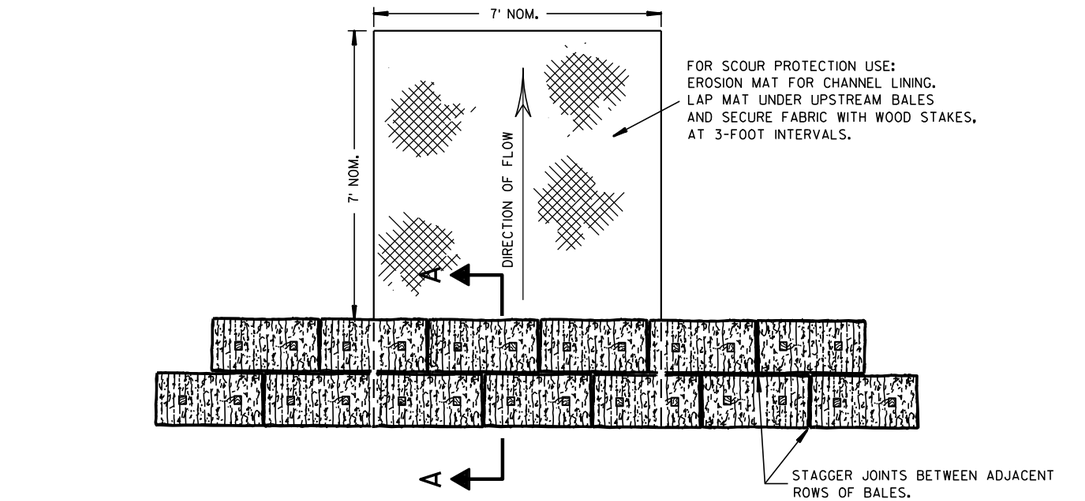
FHWA

6

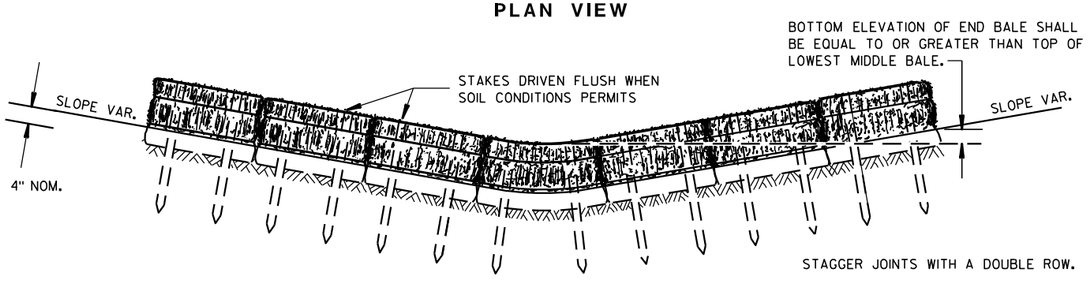
S.D.D. 8 D 1-19



SECTION A-A



PLAN VIEW



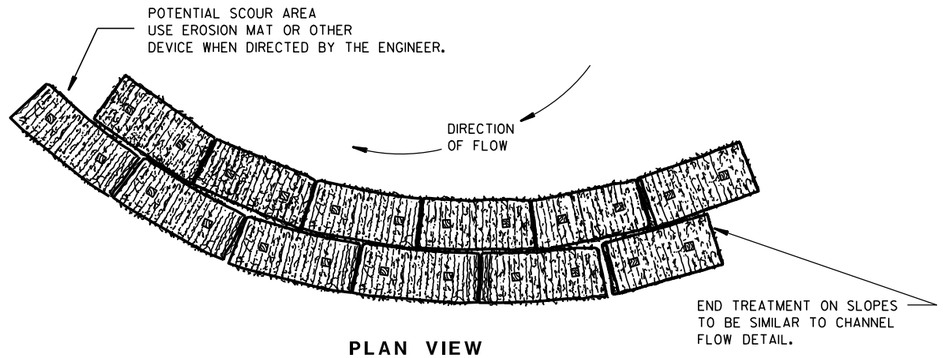
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

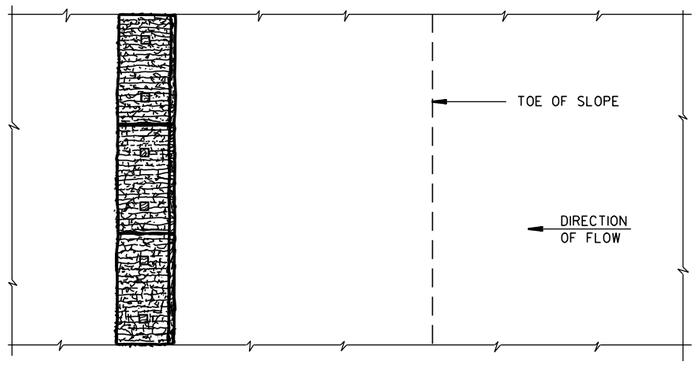
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(1) TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

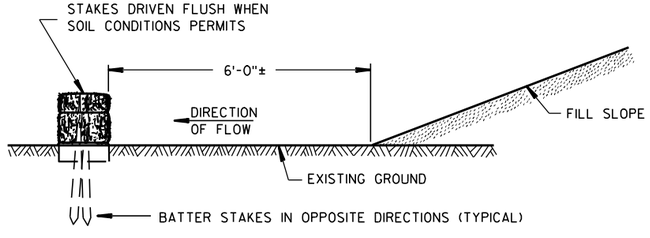


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

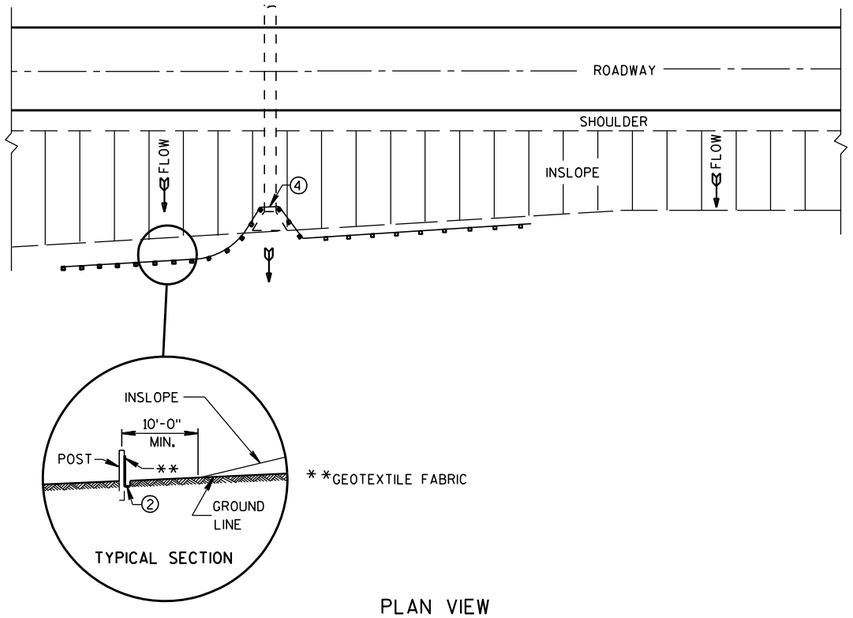
6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

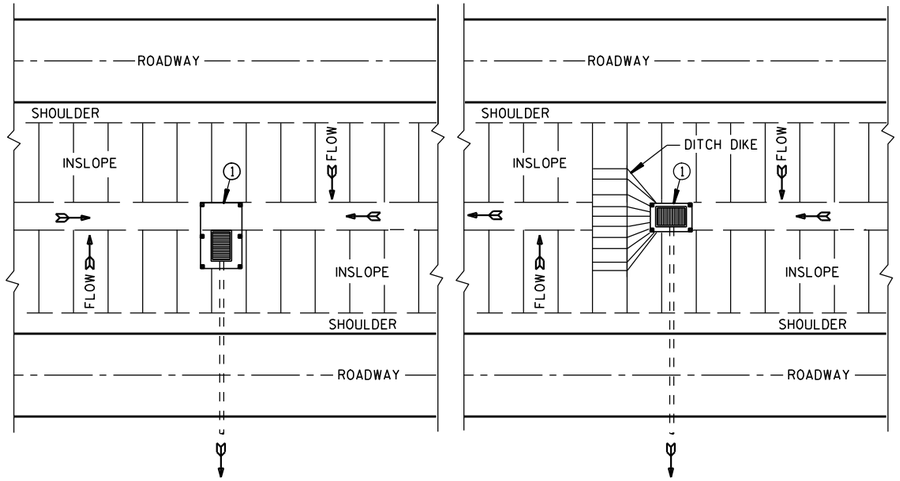
6

S.D.D. 8 E 8-3



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.

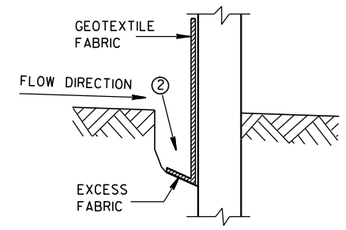
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

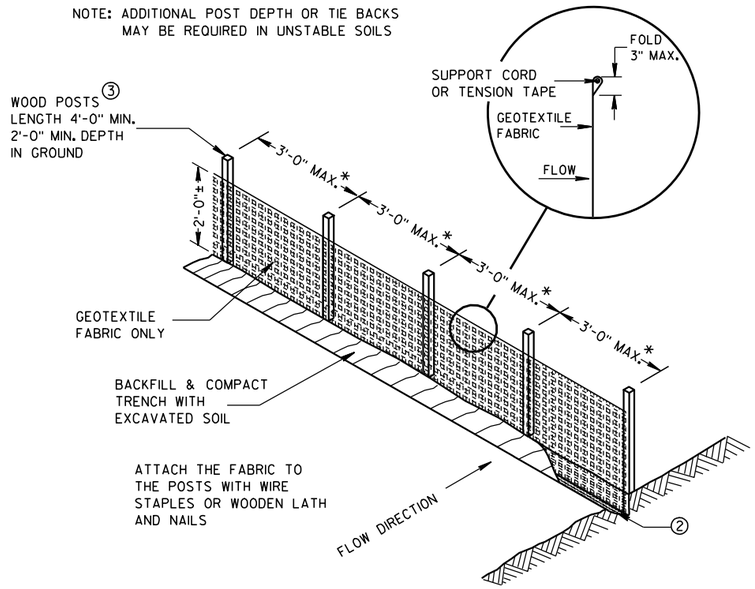
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

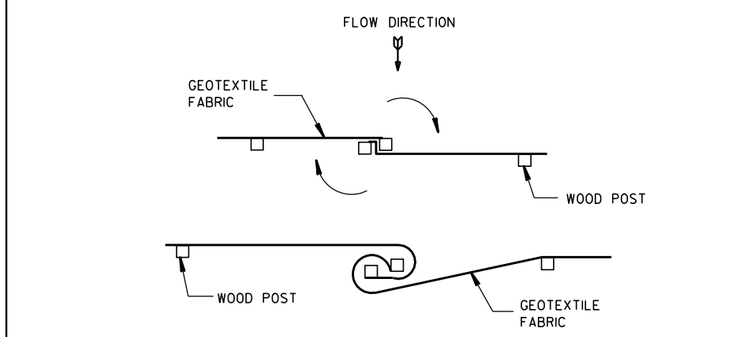
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



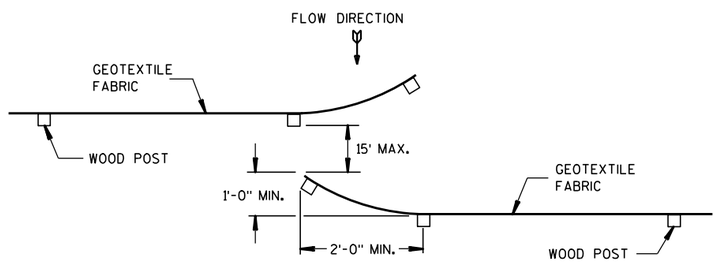
TRENCH DETAIL



SILT FENCE

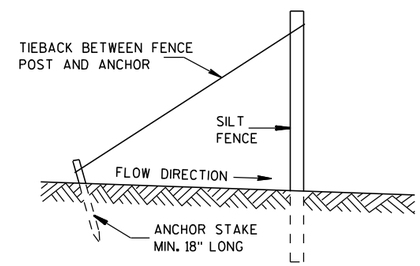


TWIST METHOD



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

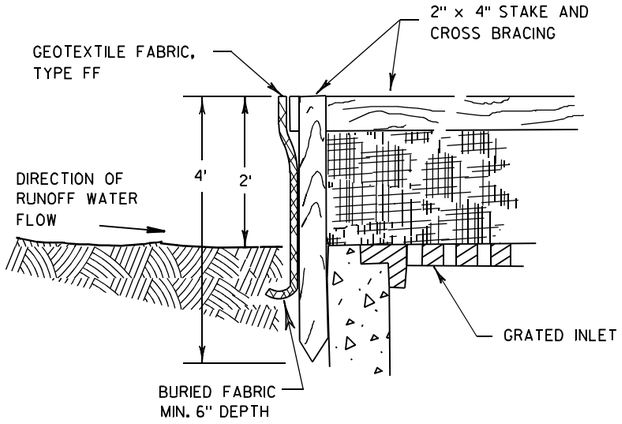
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

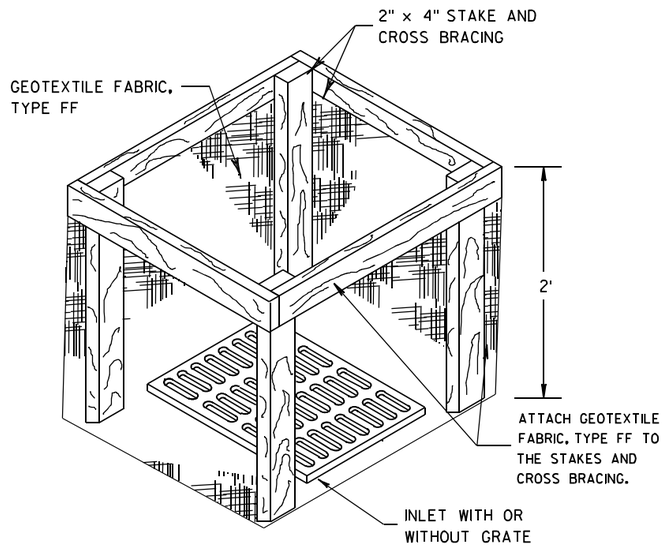
6

S.D.D. 8 E 9-6

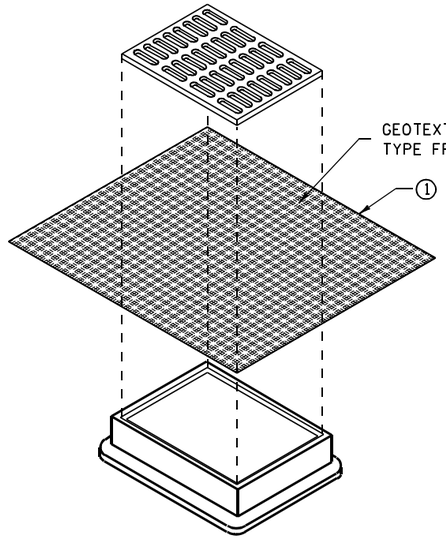
6

S.D.D. 8 E 9-6



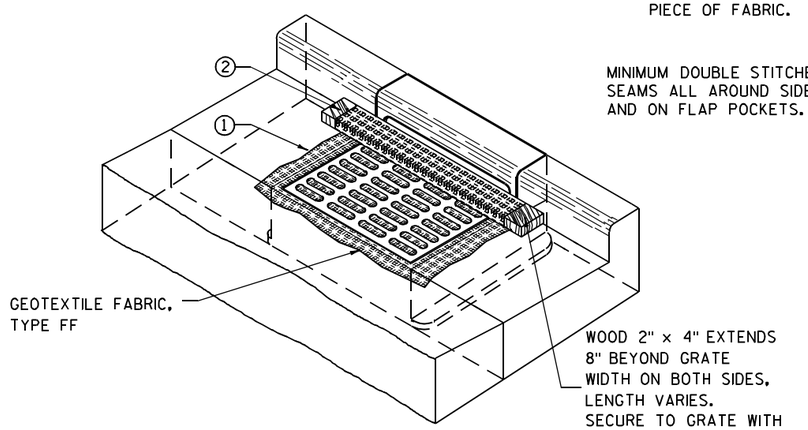


INLET PROTECTION, TYPE A

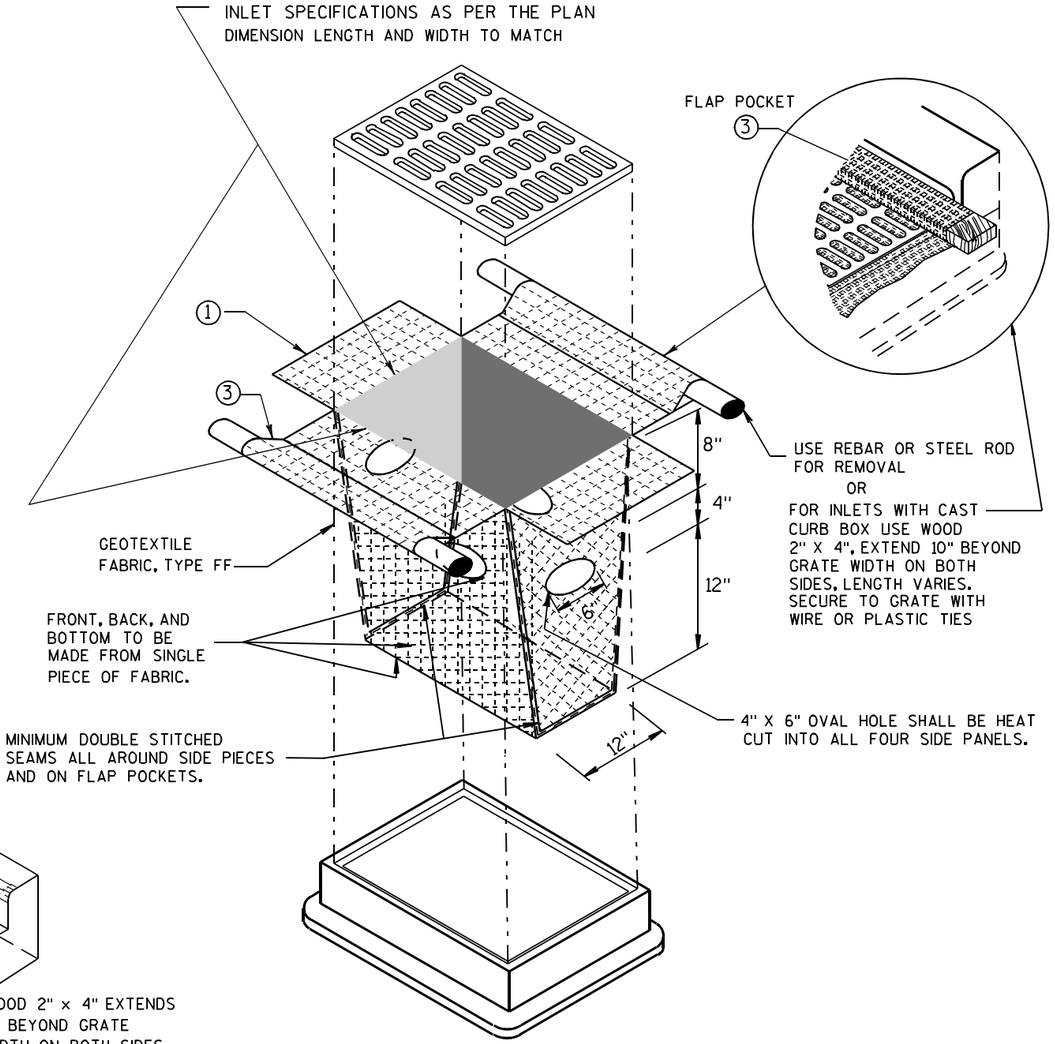


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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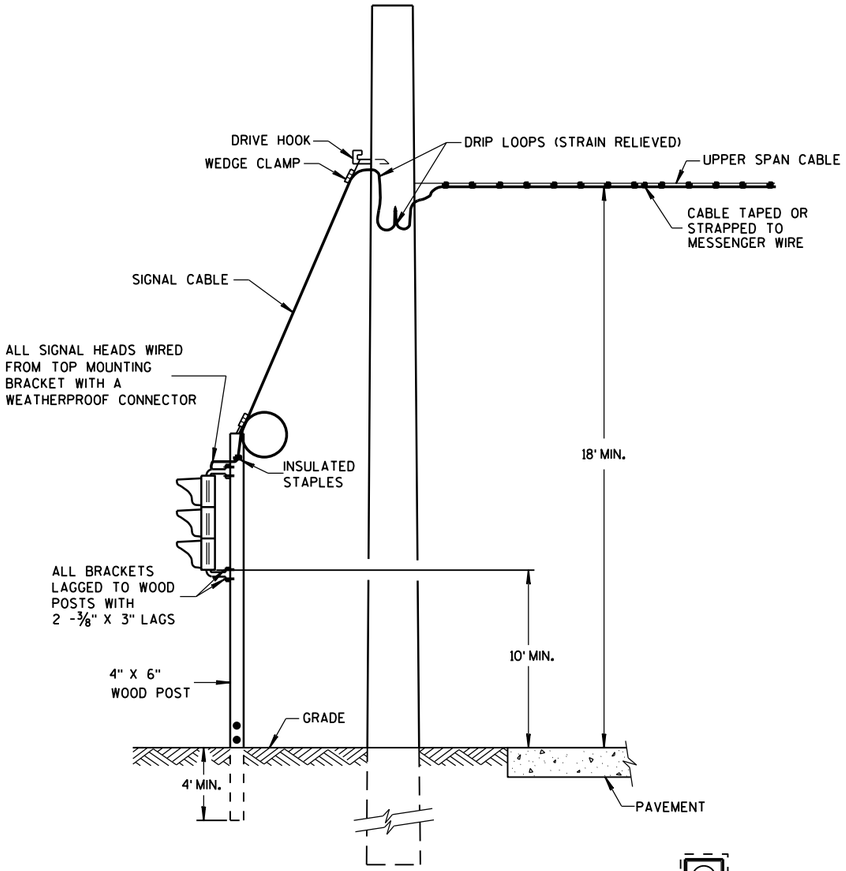
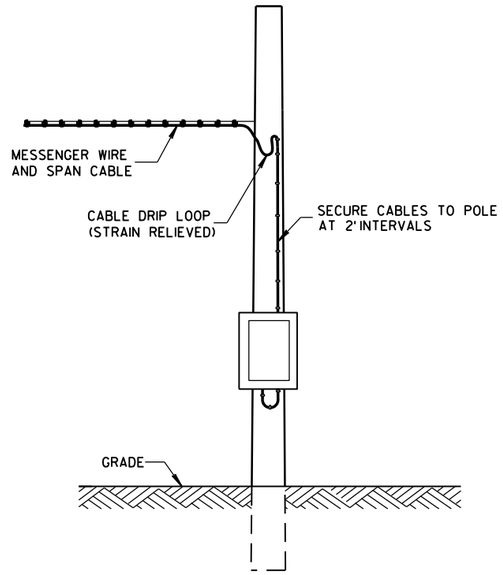
S.D.D. 8 E 10-2



TYPICAL DROP TO TRAFFIC SIGNAL FACE



POLE MOUNT CABINET INSTALLATION

GENERAL NOTES

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

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

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

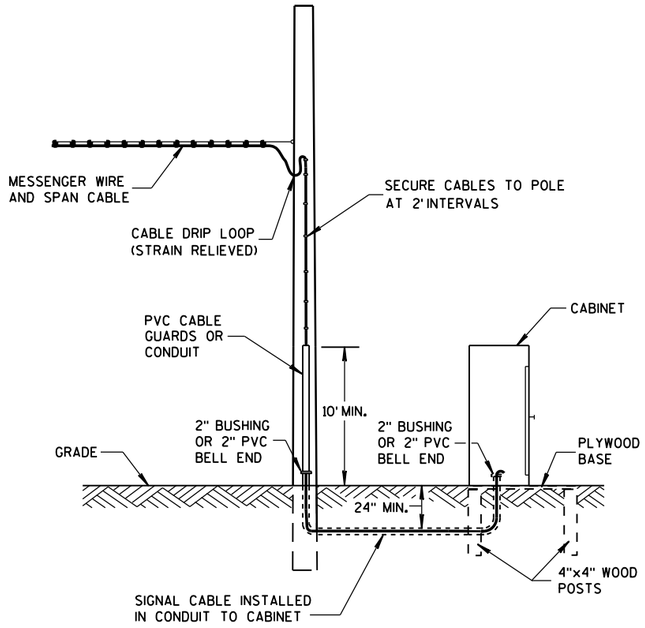
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAM GUARD, ETC.).

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

VERTICAL CLEARANCE ETC. PER NEC.

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

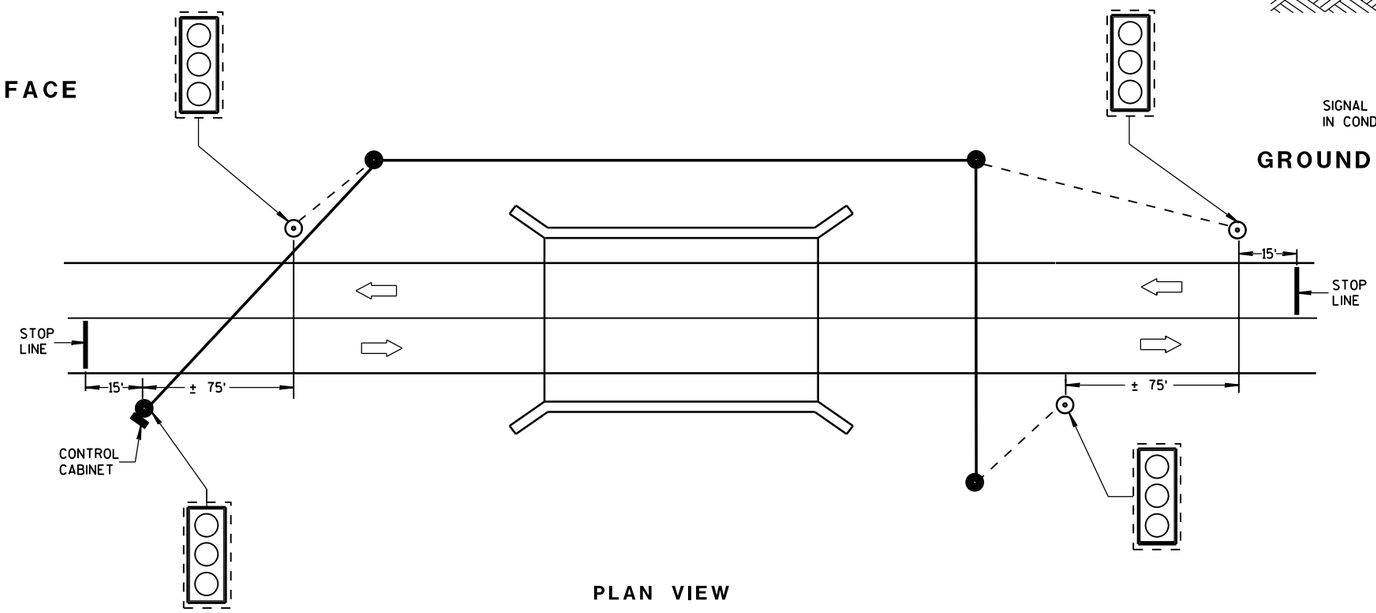
EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION

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

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



PLAN VIEW

TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

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

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

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 (DATE)
/S/ Ahmet Demirbilek (STATE ELECTRICAL)
FHWA

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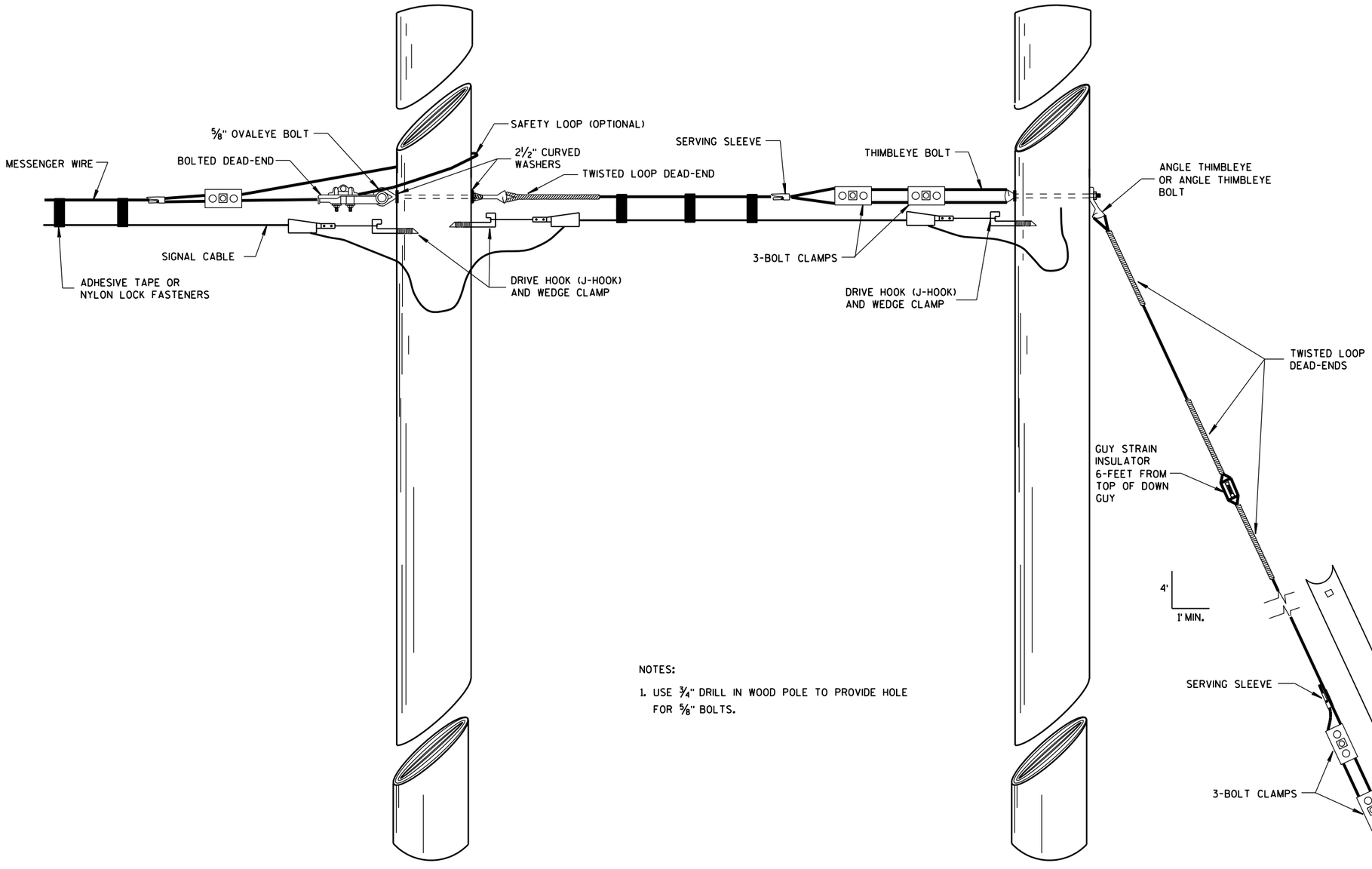

SPAN WIRE POLE

GUY POLE

NOTES:

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

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept., 2016
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

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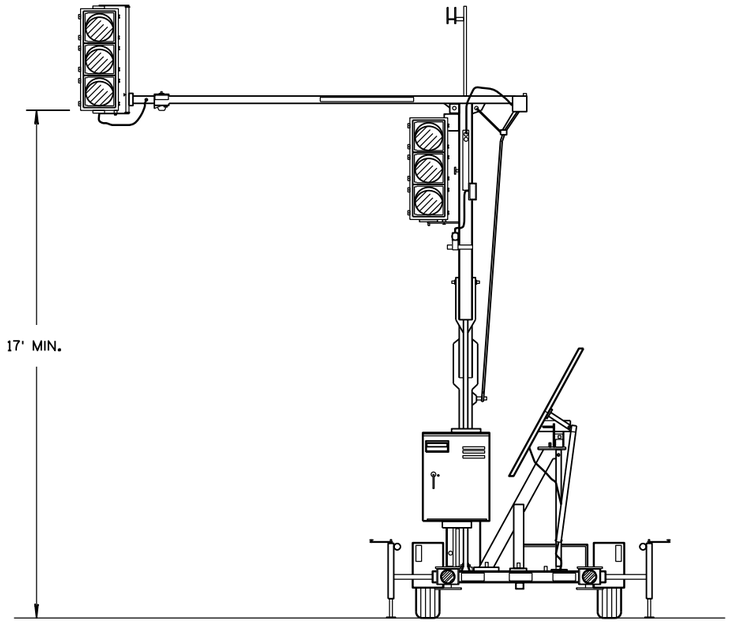
S.D.D. 9 G 2-4b

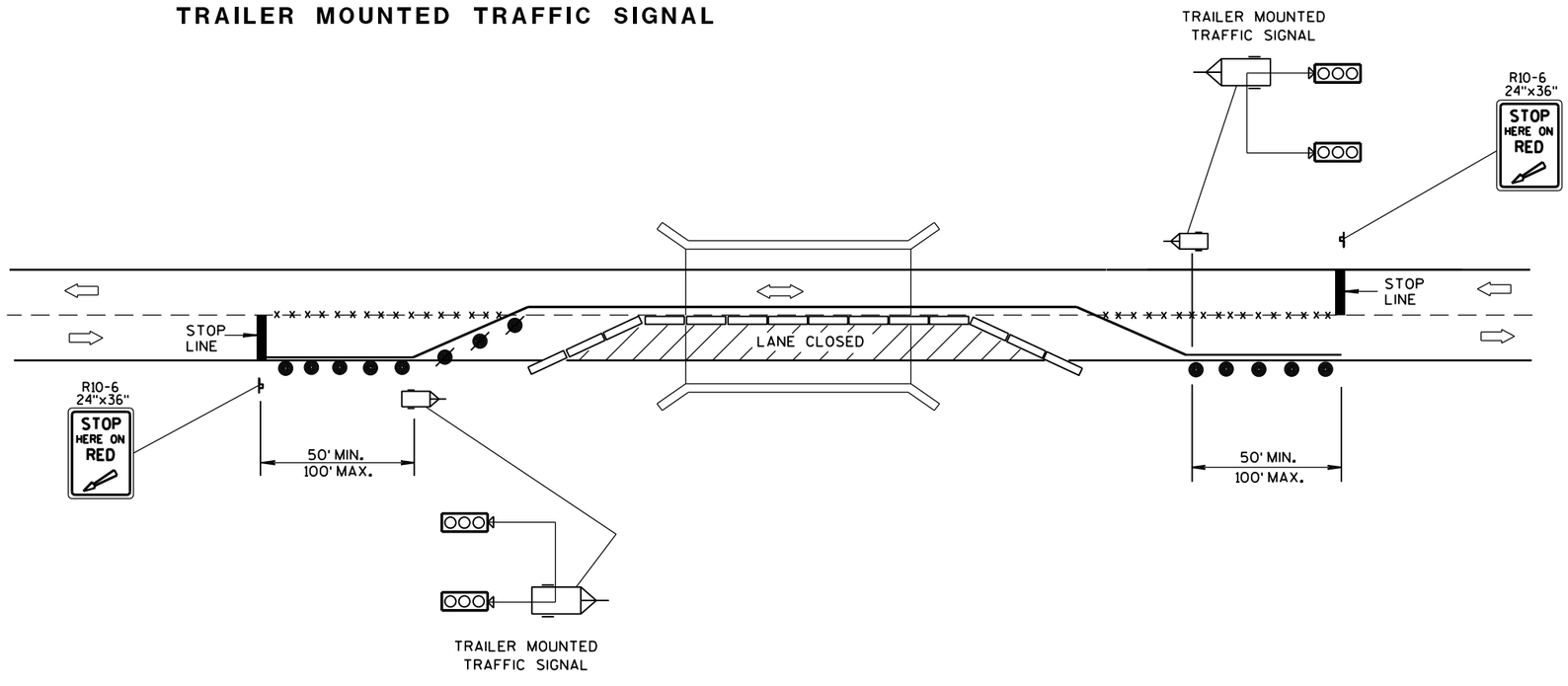


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

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



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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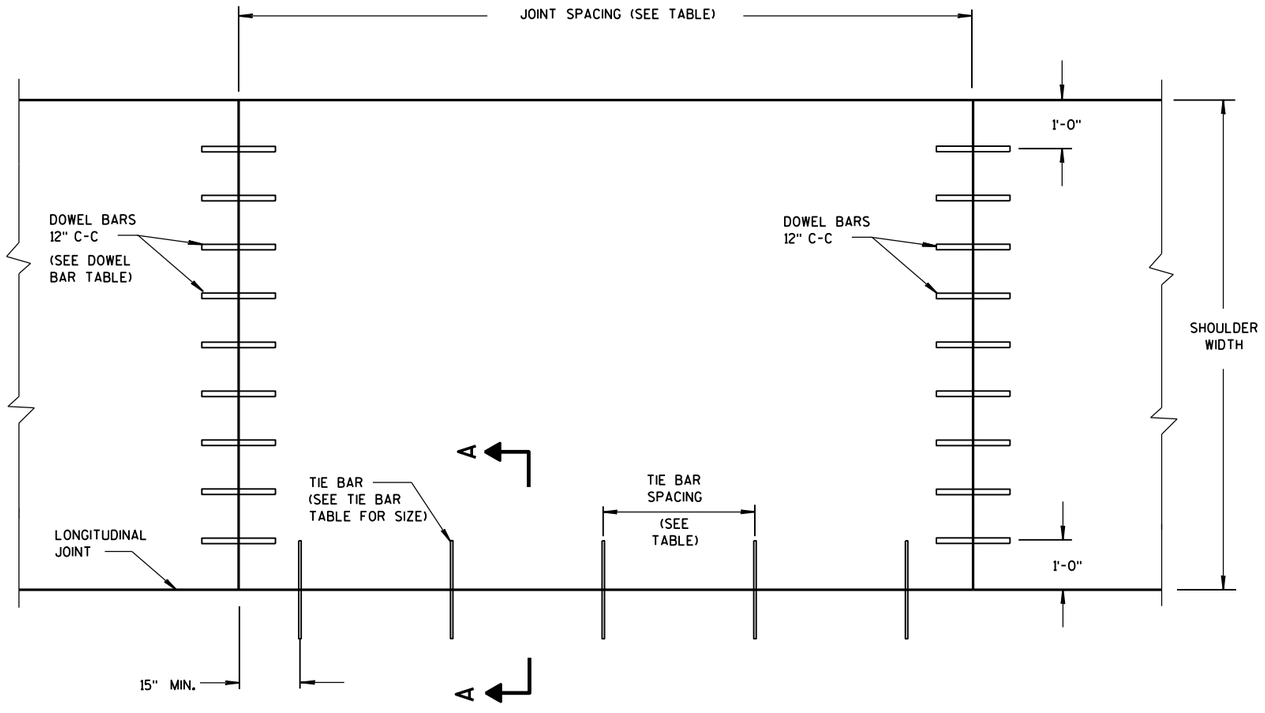
S.D.D. 9 G 2-4c



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

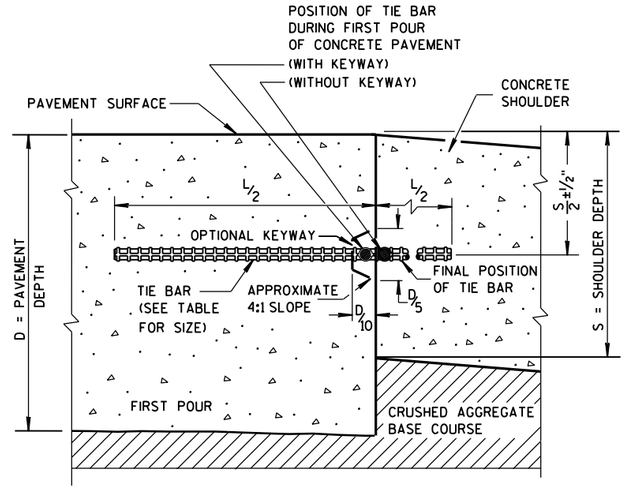
GENERAL NOTES

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

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

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

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



SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4*	30"	24"**

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

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

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER***	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

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

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 13 A 3-6

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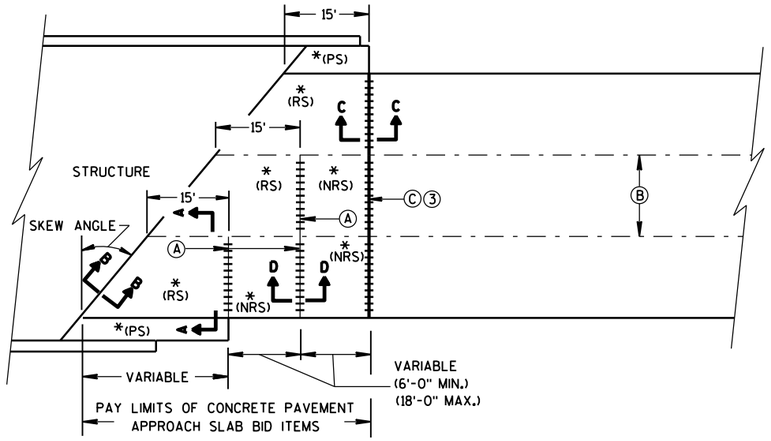
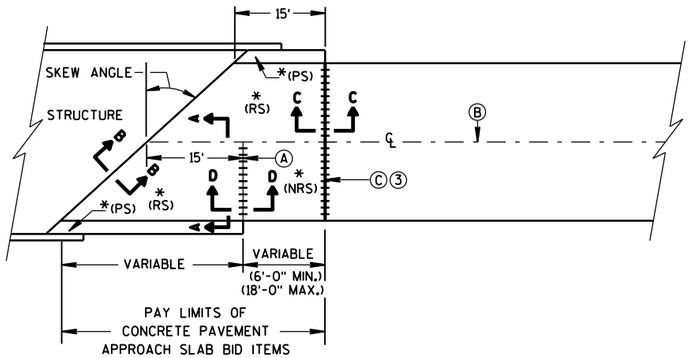
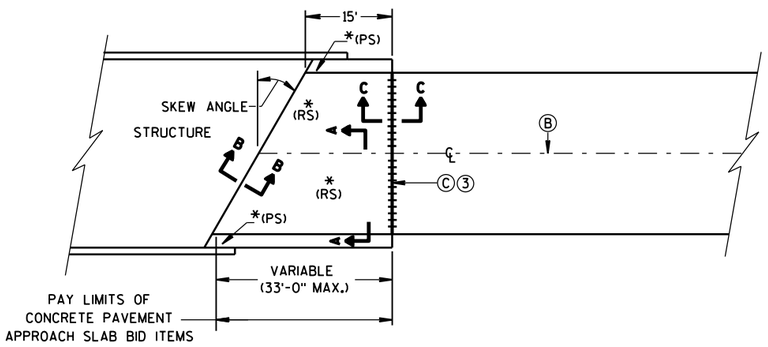
S.D.D. 13 A 3-6



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



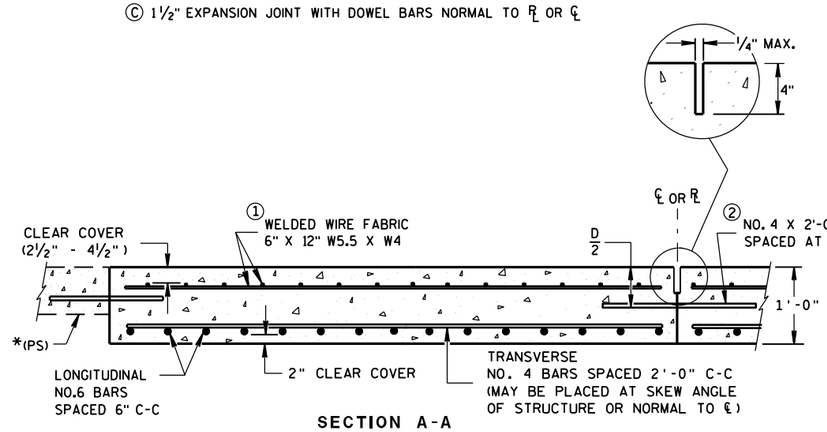
SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

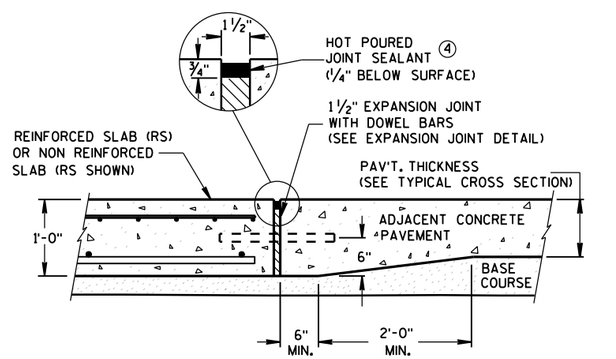
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

***STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

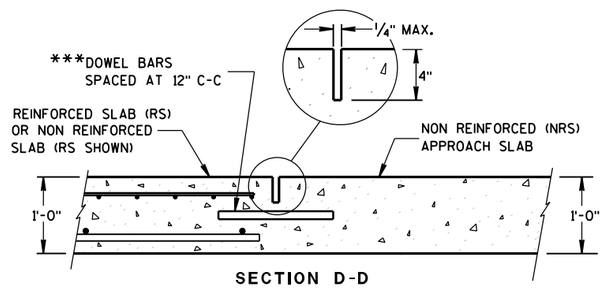
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

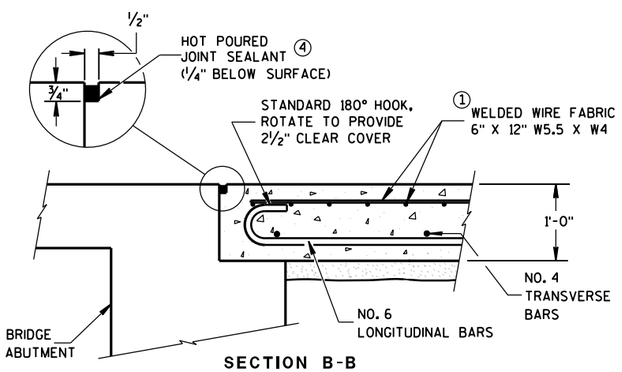
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

② THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

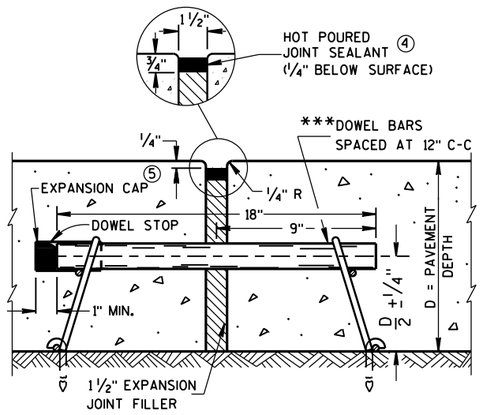
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

④ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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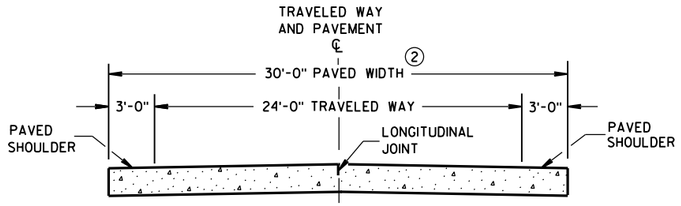
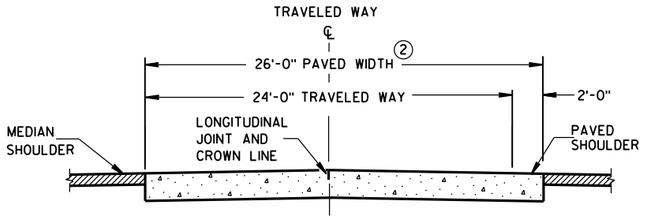
S.D.D. 13 B 2-8a

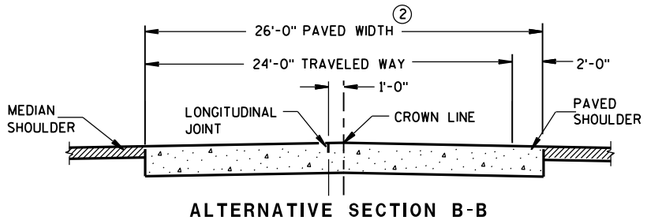


SECTION A-A ①

TWO-LANE TWO-WAY HIGHWAY



SECTION B-B



ALTERNATIVE SECTION B-B ①

DIVIDED HIGHWAY

GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

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

CONSTRUCTION JOINTS

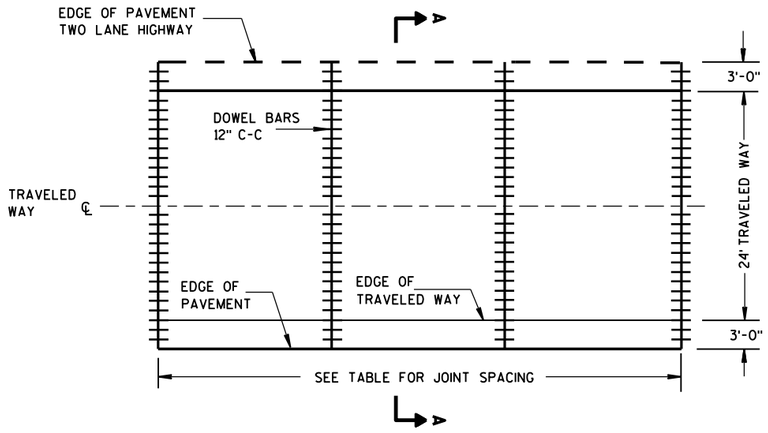
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

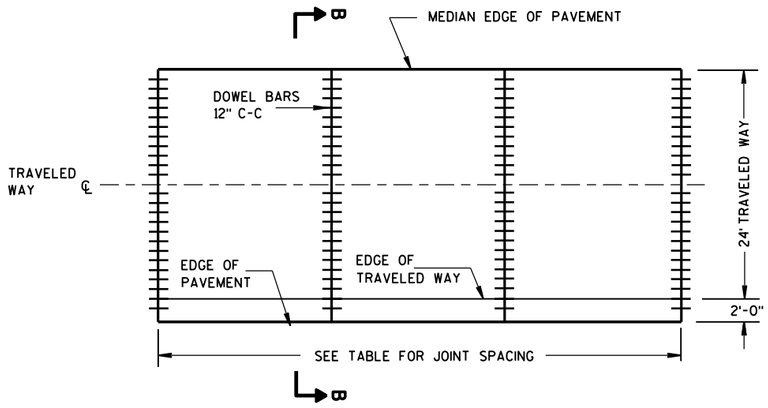
② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'



CONTRACTION JOINT LAYOUT
FOR TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT
FOR DIVIDED HIGHWAY

RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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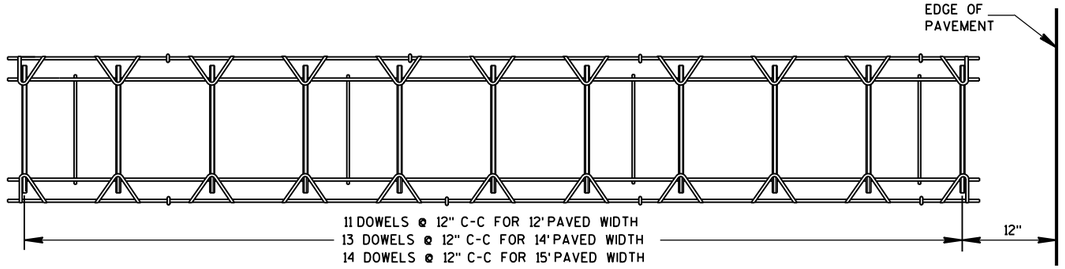
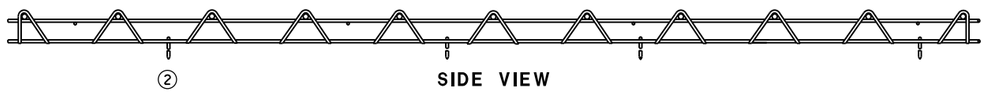


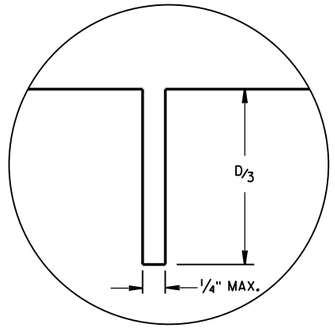
PLAN VIEW



SIDE VIEW

(NORMAL TO CENTERLINE)

CONTRACTION JOINT DOWEL ASSEMBLY ①



JOINT DETAIL

GENERAL NOTES

① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

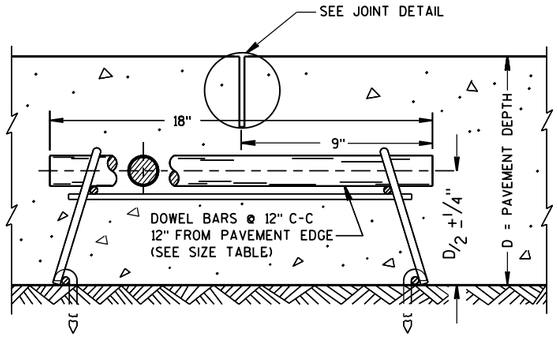
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

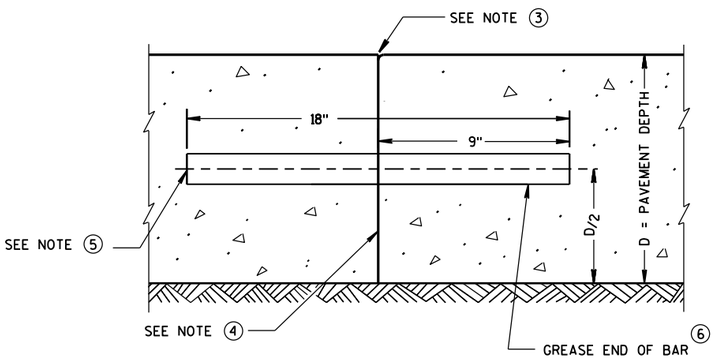
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

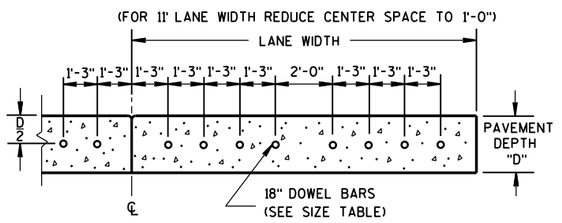
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013 DATE
/S/ Deb Bischoff PAVEMENT POLICY & DE ENGINEER
FHWA

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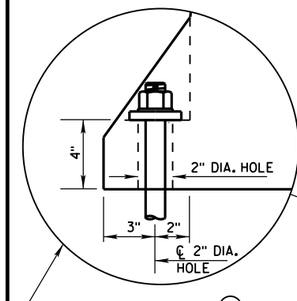
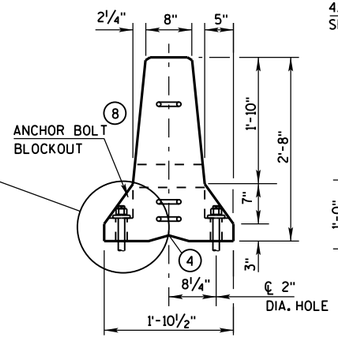
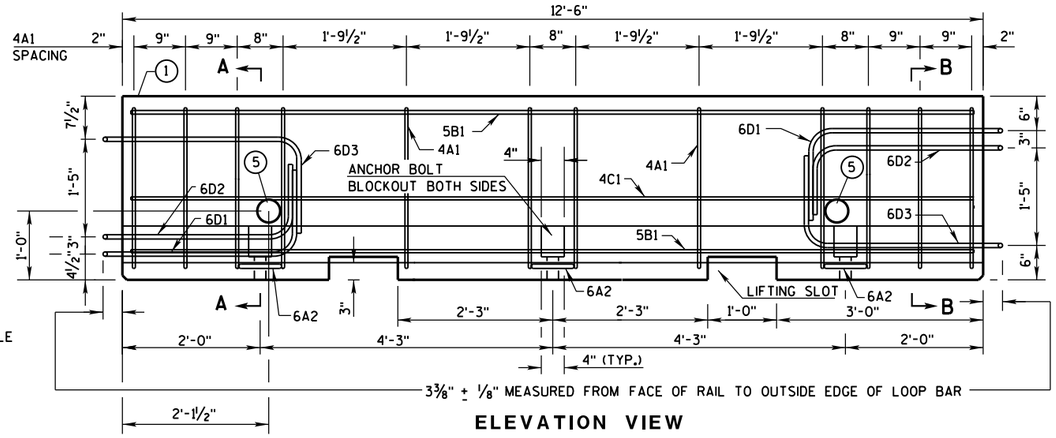
S.D.D. 13 C 11-11b



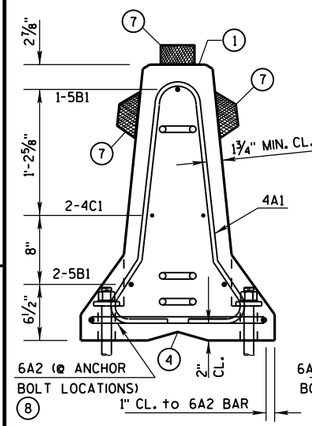
ANCHOR ON TRAFFIC SIDE ONLY WHEN REQUIRED (SEE SHEET D FOR ADDITIONAL ANCHOR DETAIL) (8)



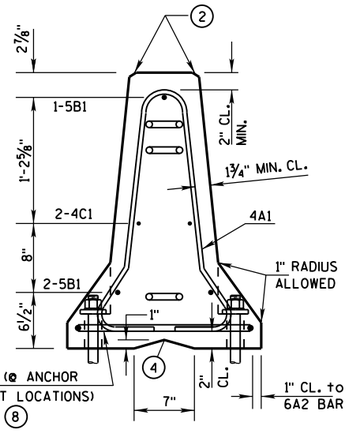
END VIEW



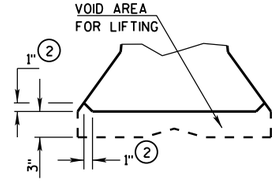
ELEVATION VIEW



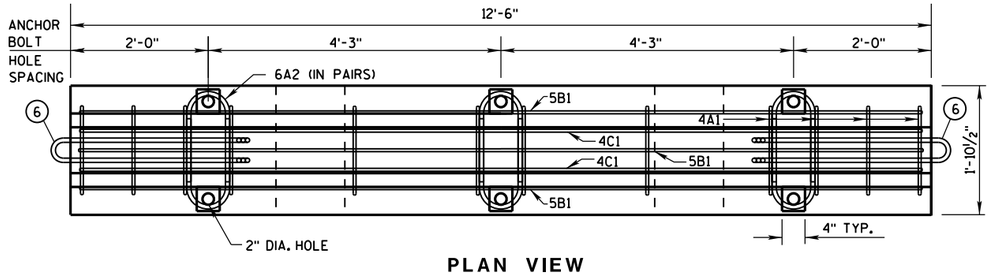
SECTION A-A
(STIRRUP PLACEMENT)



SECTION B-B
(STIRRUP PLACEMENT)

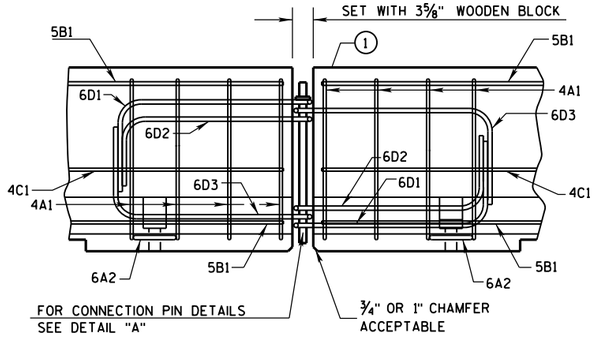


DETAIL "B"
LIFTING SLOT DETAIL

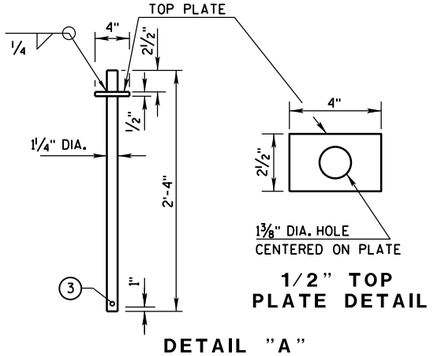


PLAN VIEW

DETAILS OF BARRIER SECTION

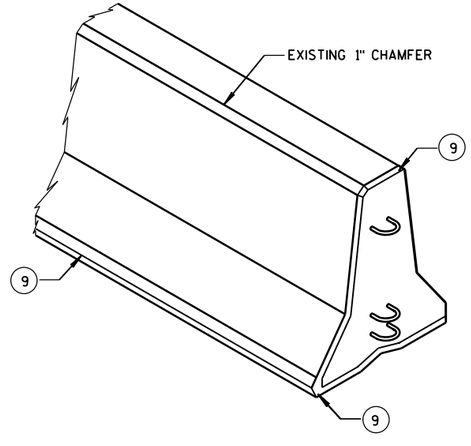


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

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



GENERAL NOTES

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

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

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

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

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

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

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

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

(8) SEE SHEET D FOR ANCHORING CRITERIA.

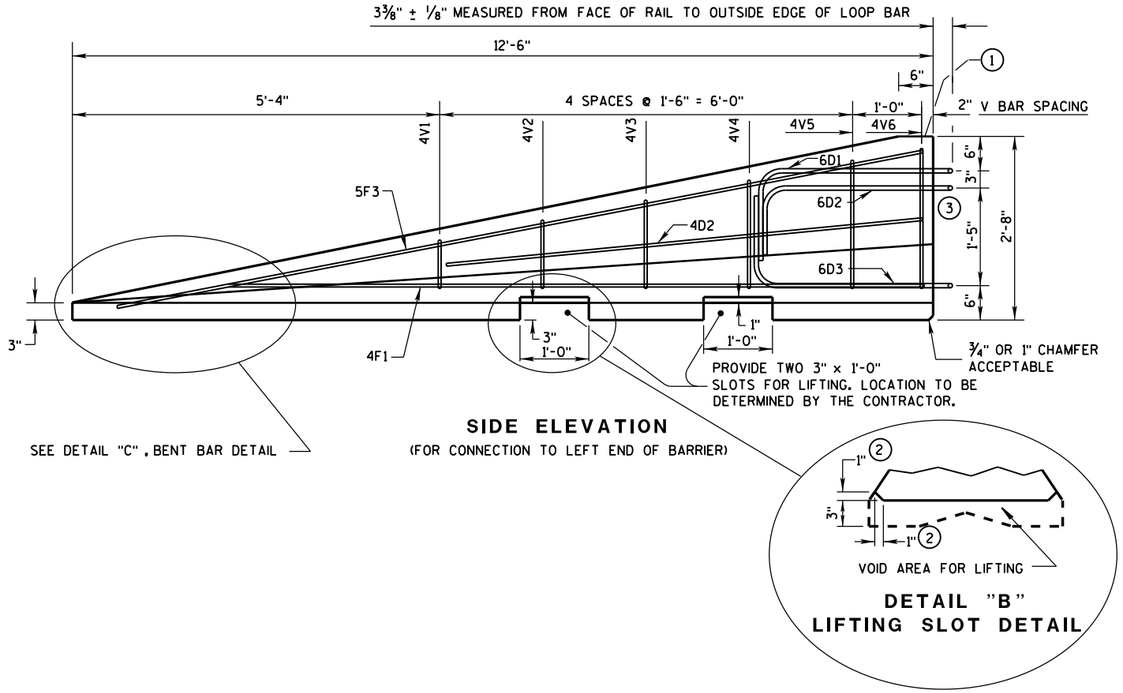
(9) 1" CHAMFER OPTIONAL.

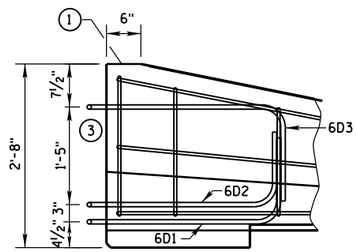
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

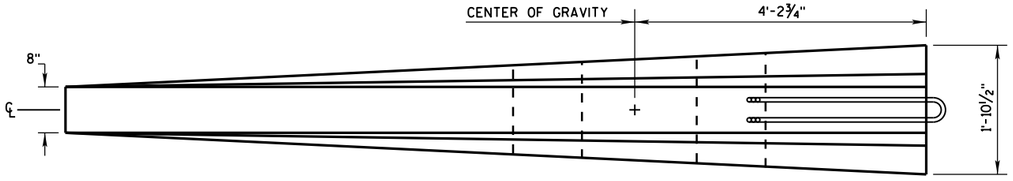
S.D.D. 14 B 7-14a

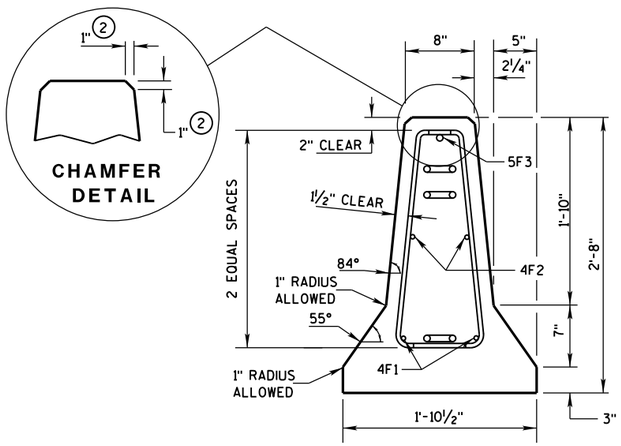


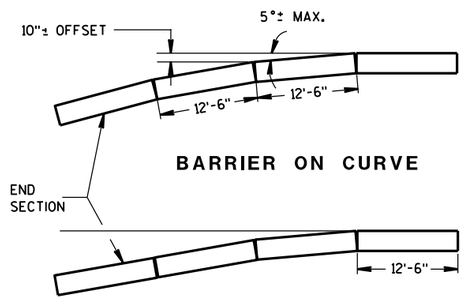


GENERAL NOTES

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







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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

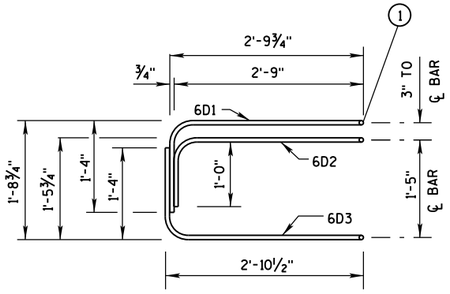
6

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

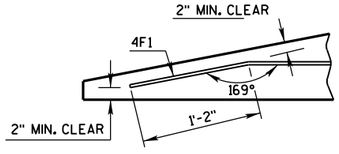
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

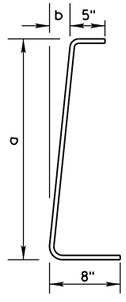
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



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

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

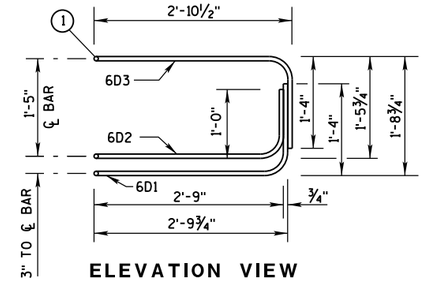
GENERAL NOTES

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

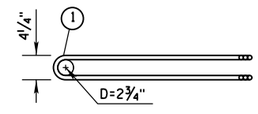
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

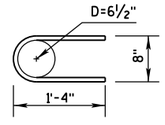
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



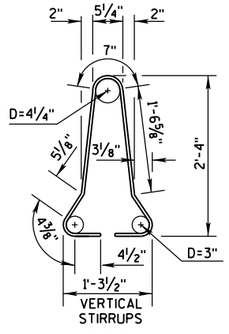
ELEVATION VIEW



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



6A2



4A1

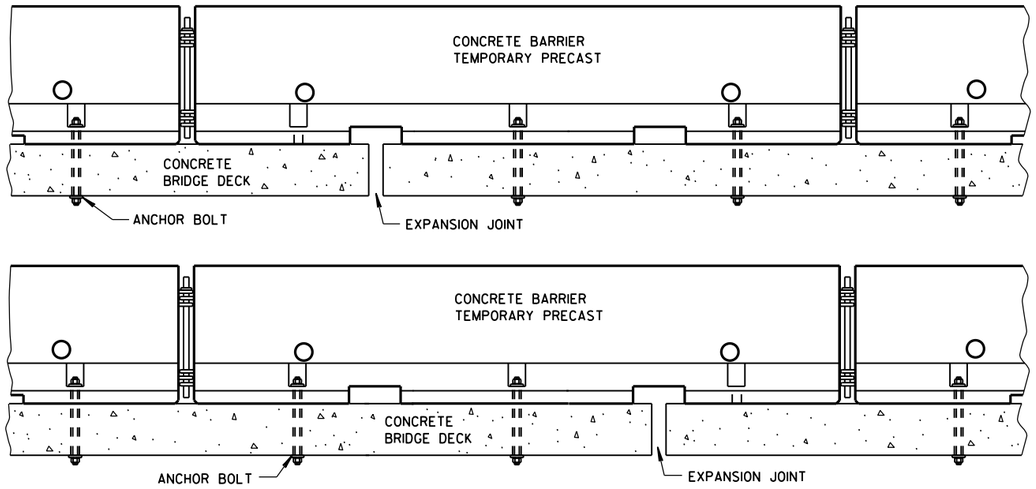
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

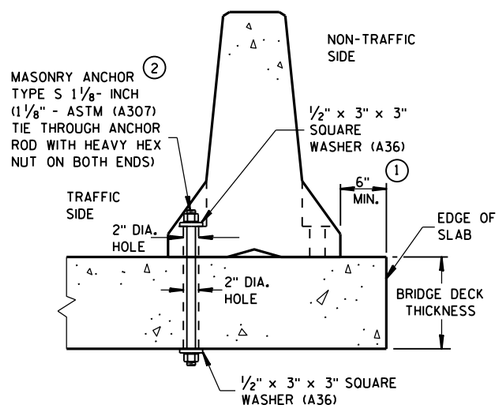
6

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



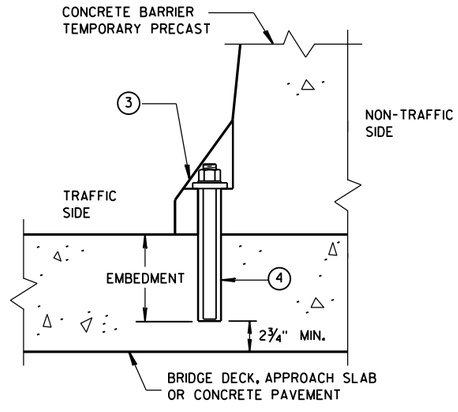
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR ② INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

① CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

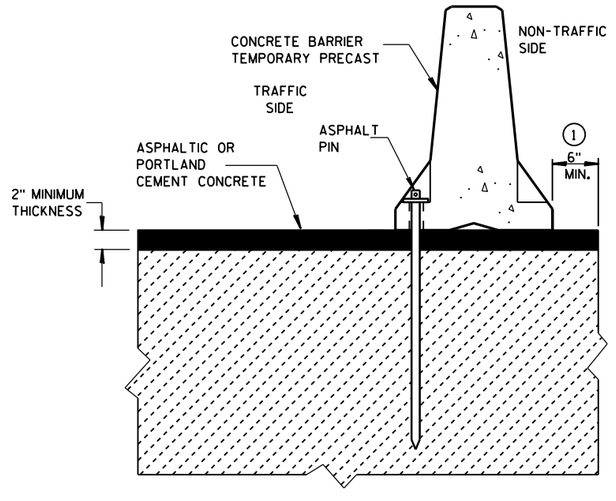
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

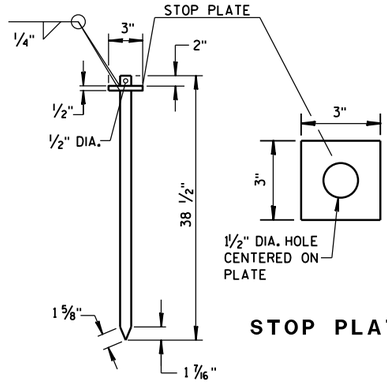
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

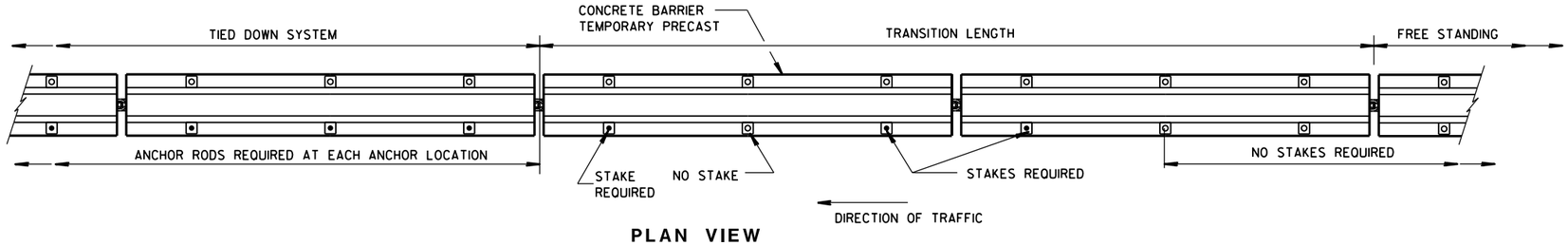
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

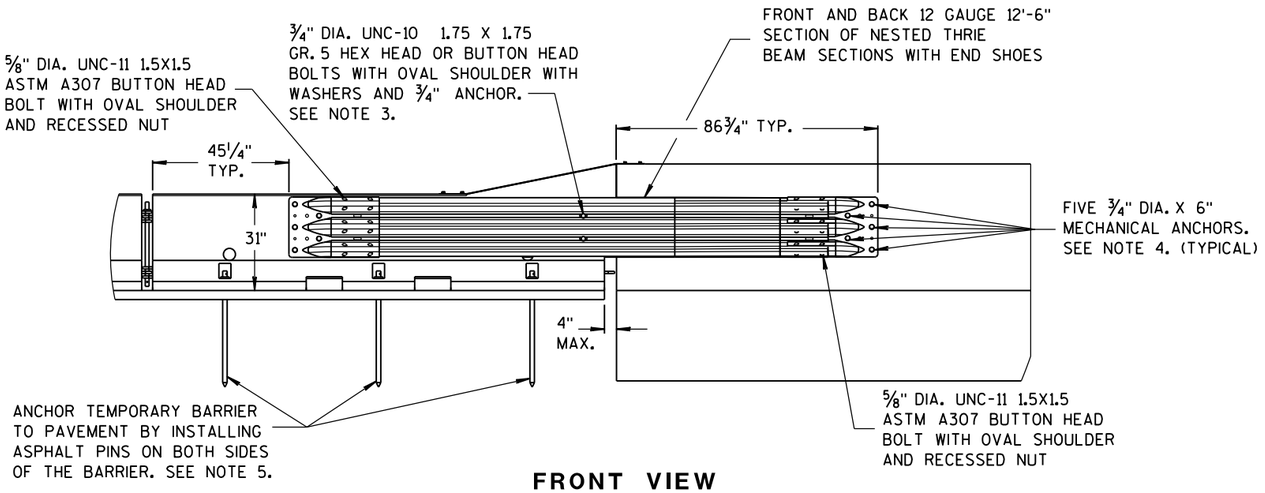
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

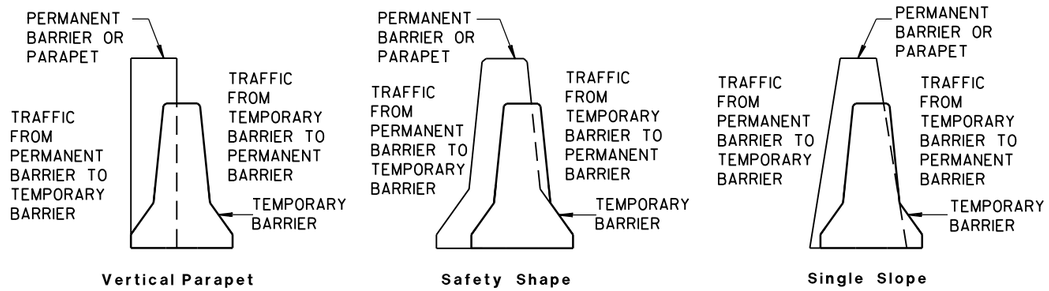
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



FRONT VIEW

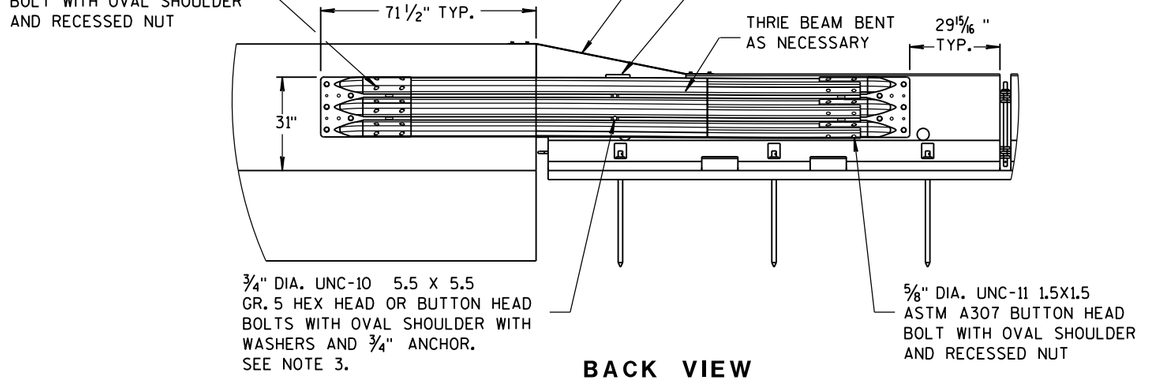


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

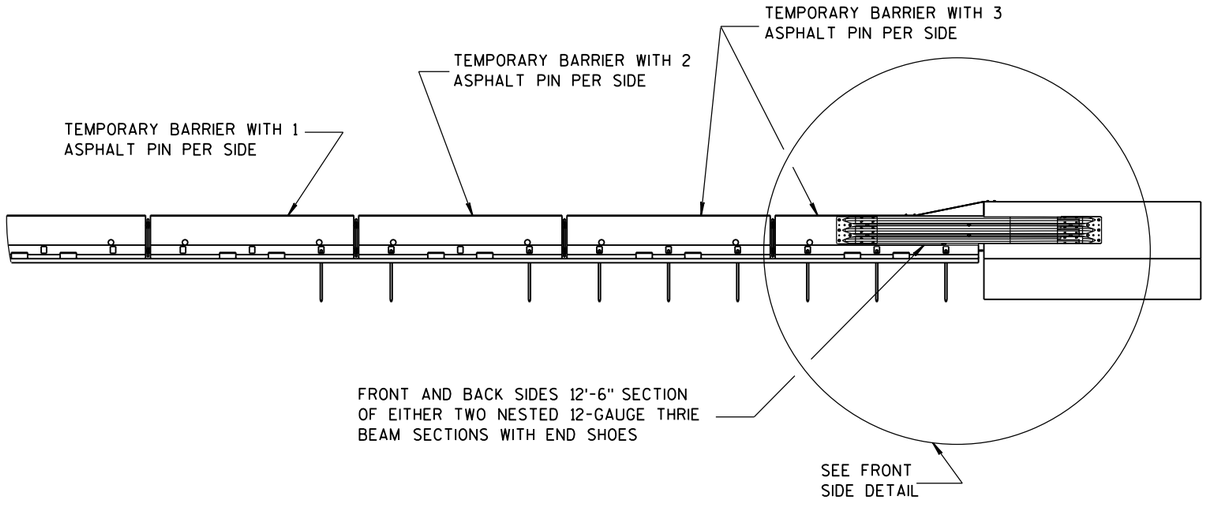
NOTES

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

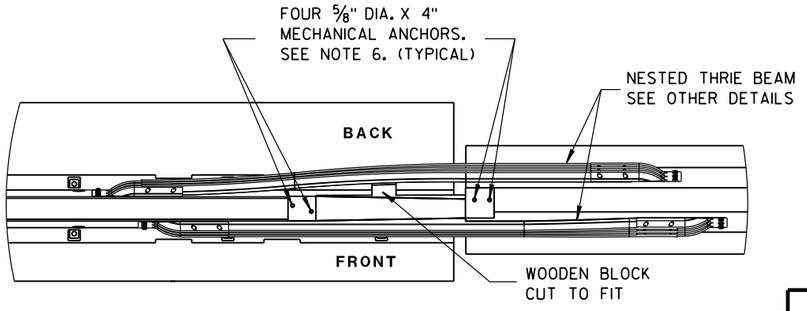
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD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



BACK VIEW



FRONT VIEW



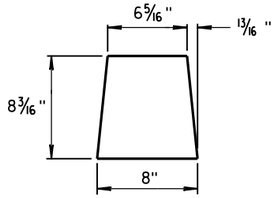
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

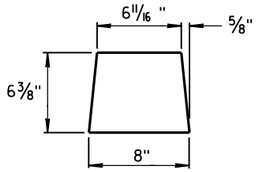
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

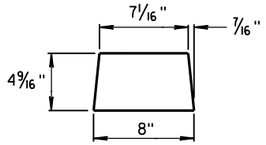
6
S.D.D. 14 B 7-14e



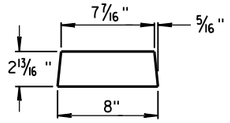
GUSSET 1



GUSSET 2

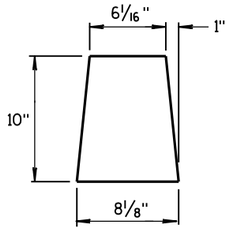


GUSSET 3

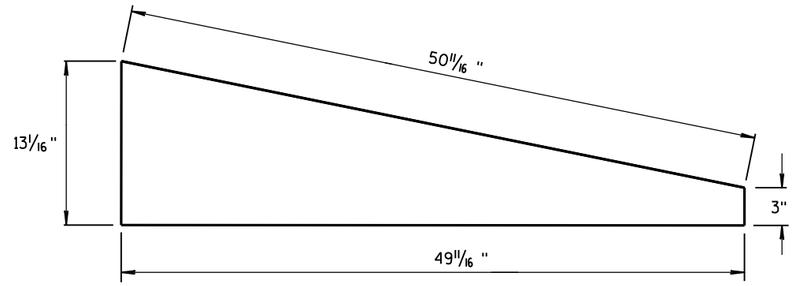


GUSSET 4

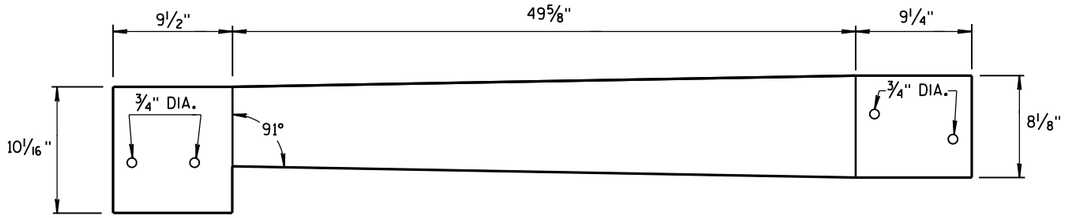
GUSSETS

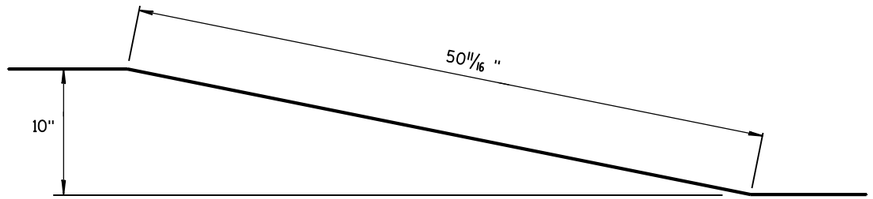


END PLATE



SIDE PLATE

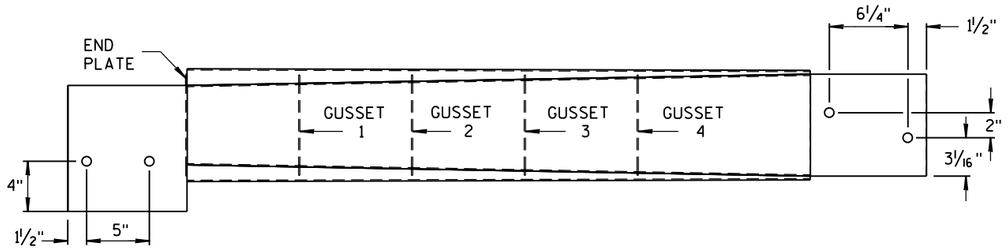


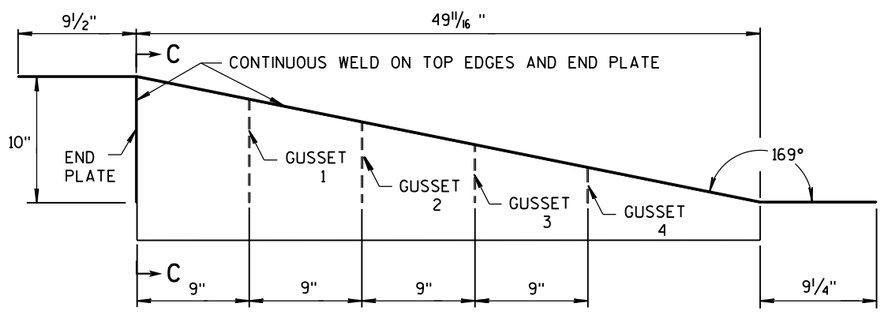


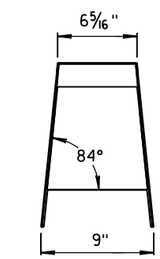
TOP PLATE

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

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







SECTION C-C

NOTES

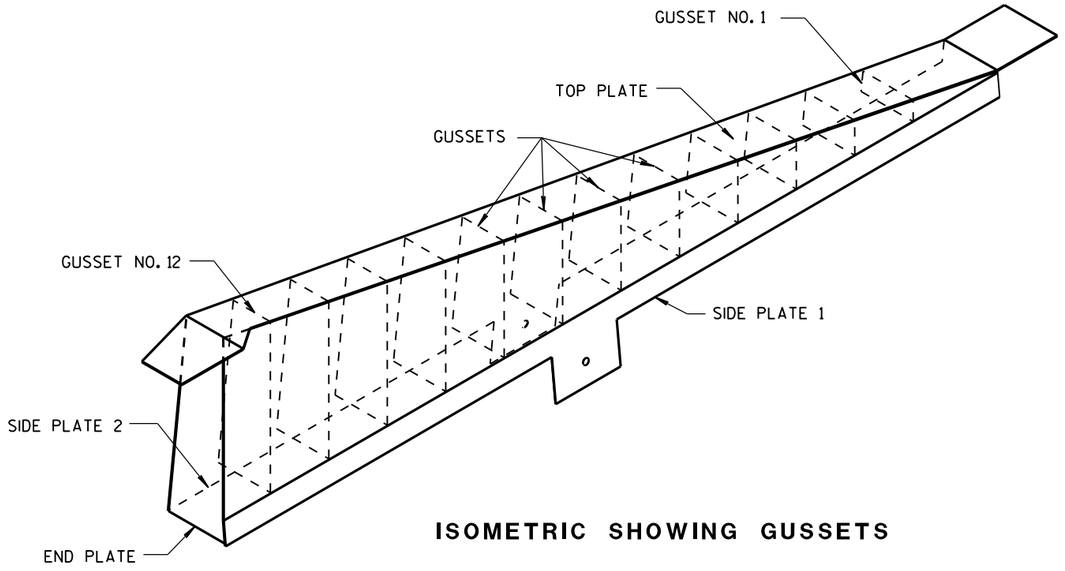
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

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

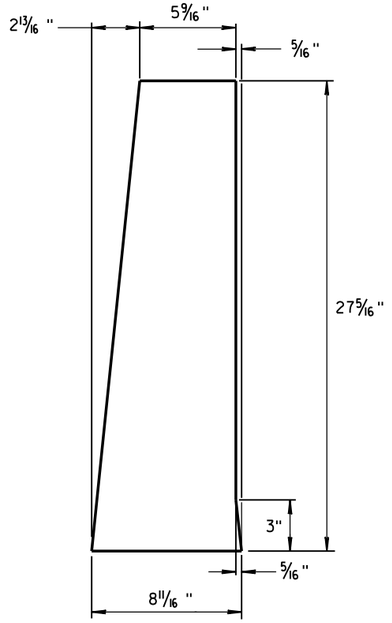
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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

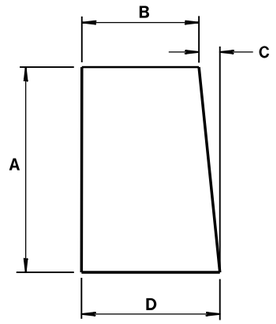


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



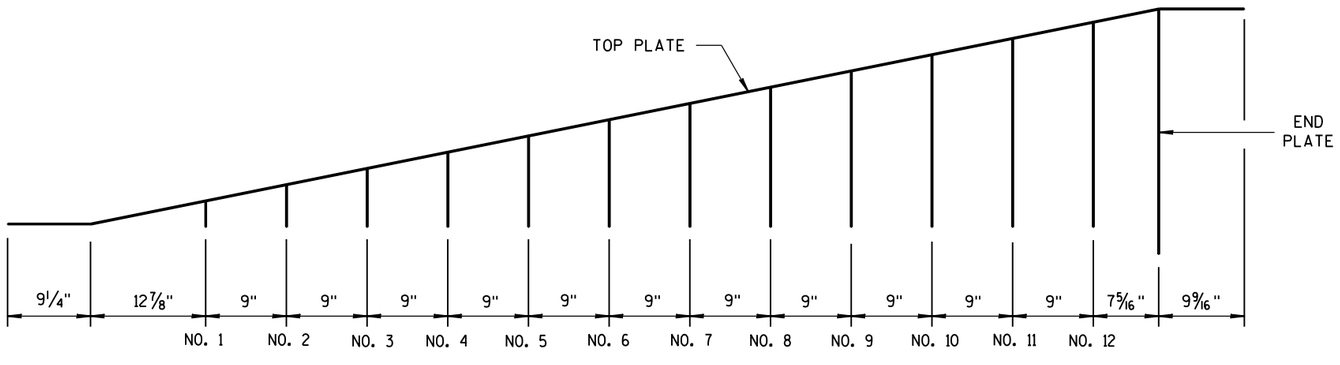
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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



GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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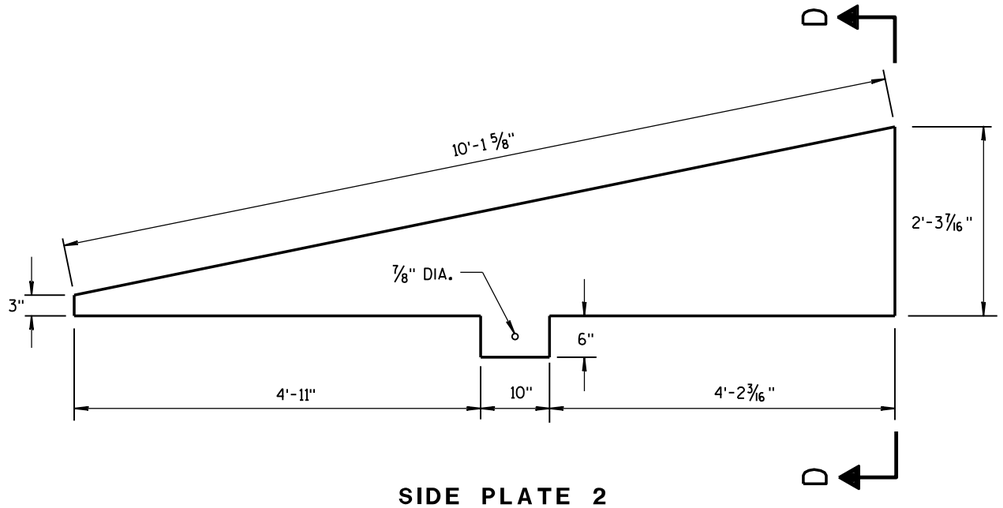
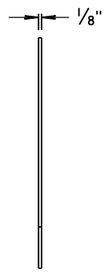
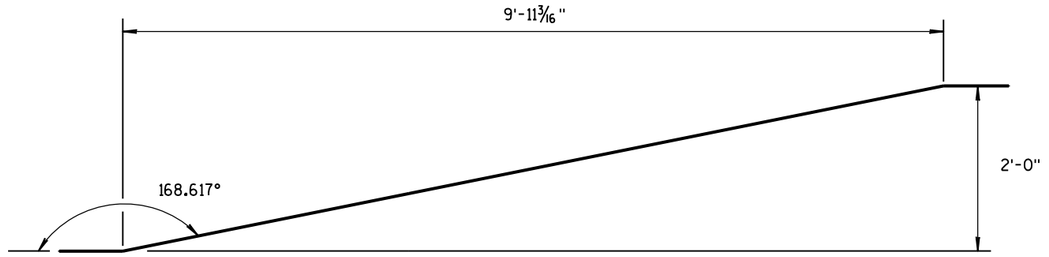
S.D.D. 14 B 7-14g



SIDE PLATE 2

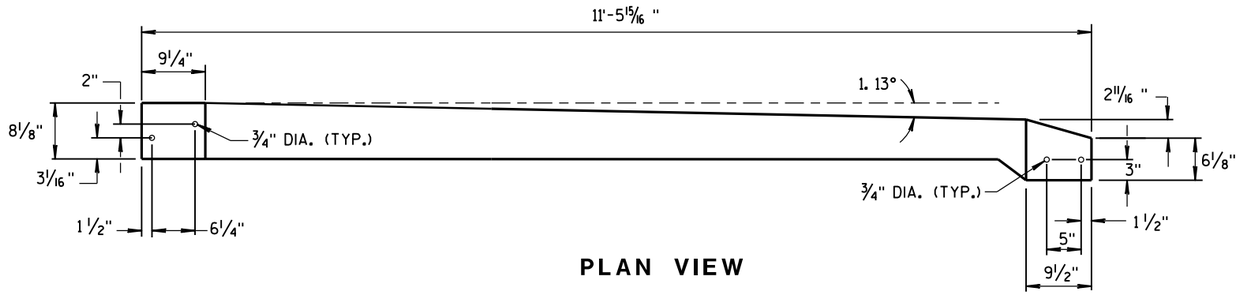


END VIEW



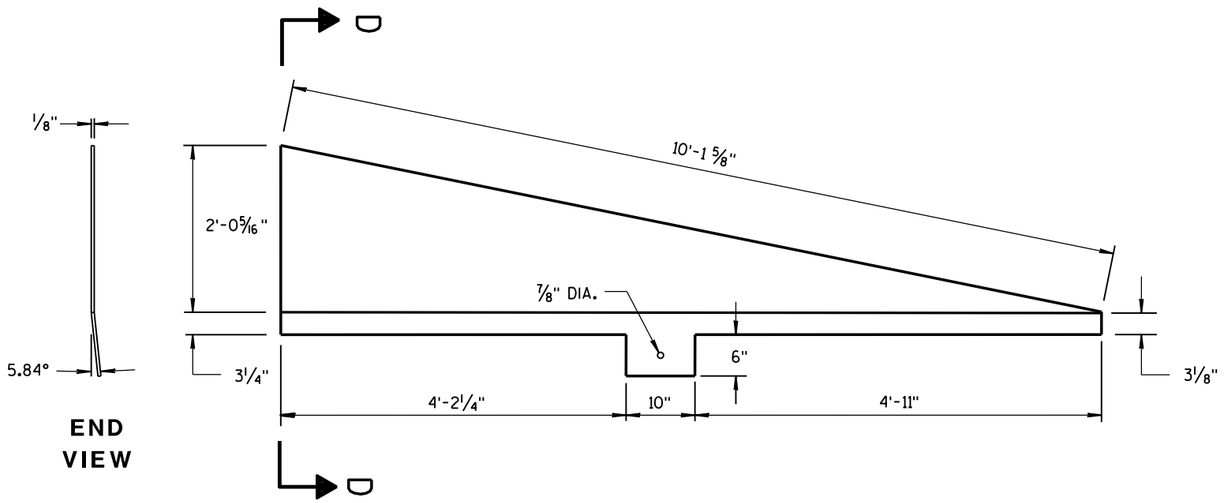
SIDE VIEW

TOP PLATE



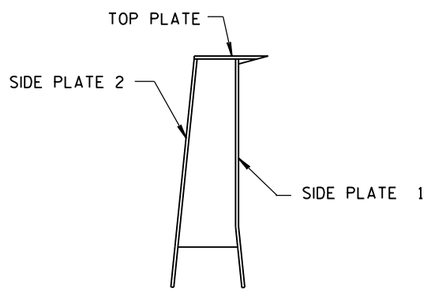
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zoaa — ROADWAY STANDARD DEVELOPMENT ENGINEER
FHWA

6

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

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

① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

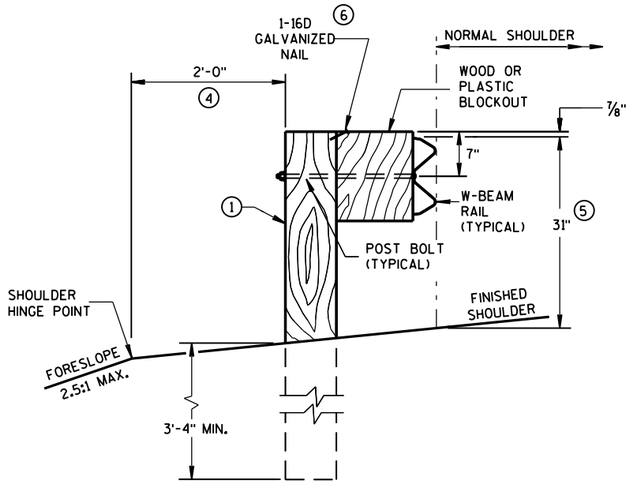
② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

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

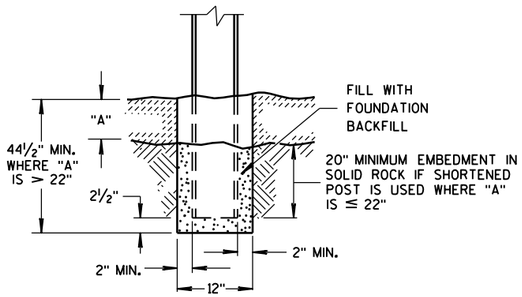
⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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



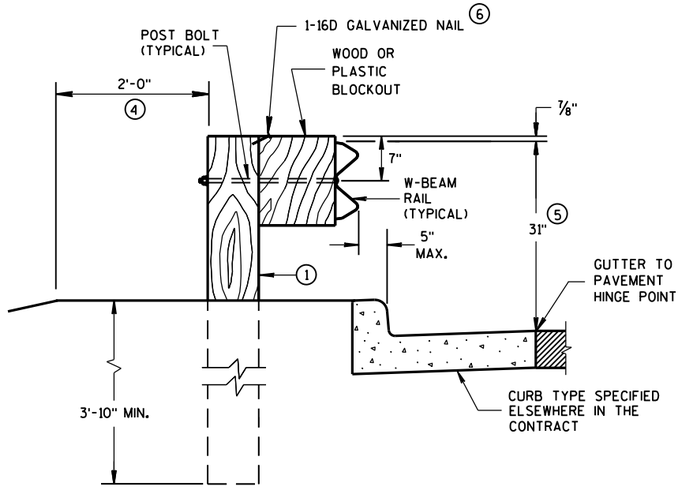
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



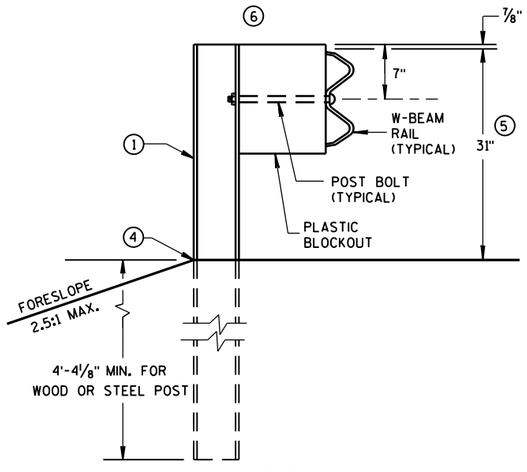
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



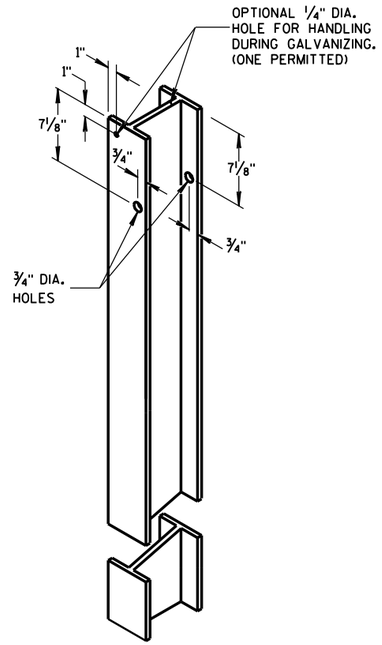
END VIEW

LOCATED ALONG A CURBED ROADWAY

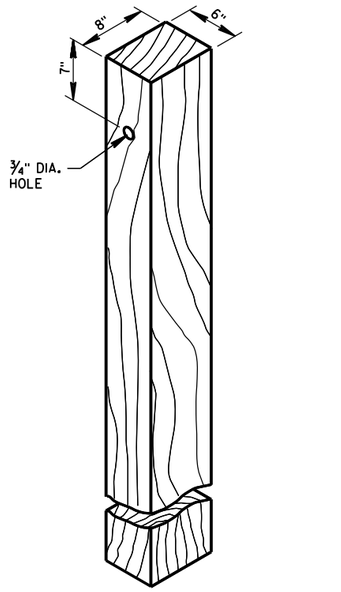


END VIEW

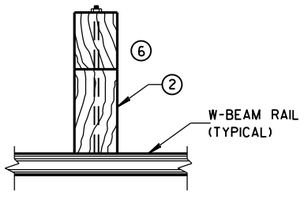
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



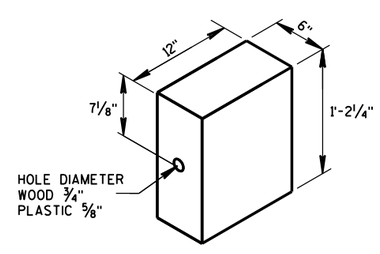
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



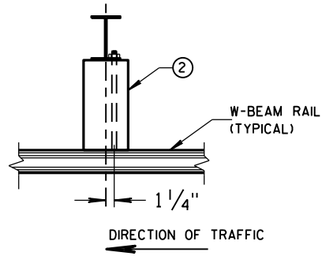
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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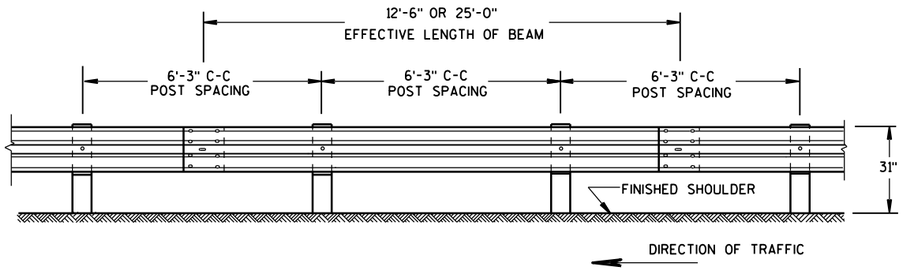
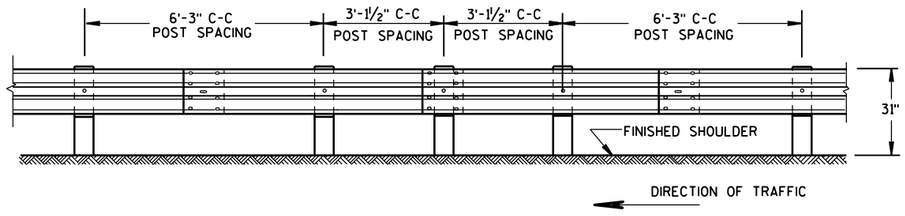


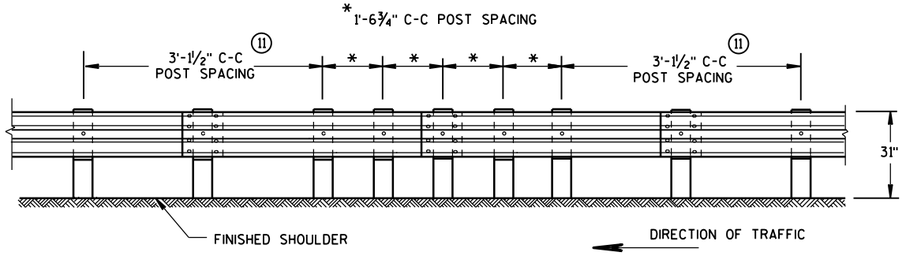
FRONT VIEW

POST SPACING STANDARD INSTALLATION



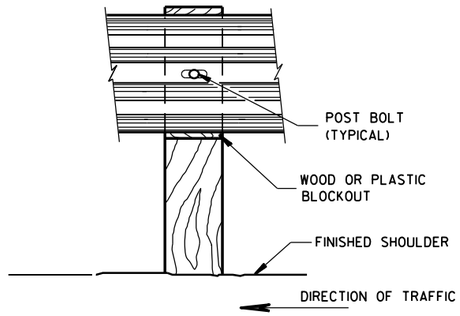
FRONT VIEW

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

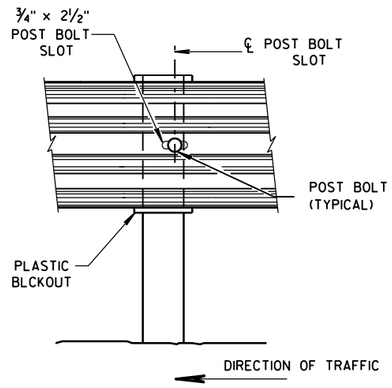


FRONT VIEW

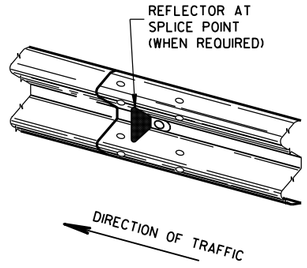
QUARTER POST SPACING (QS)

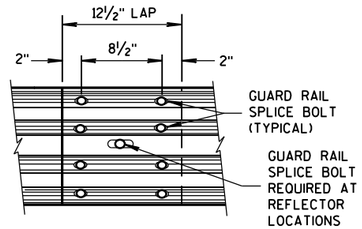


FRONT VIEW AT WOOD POST



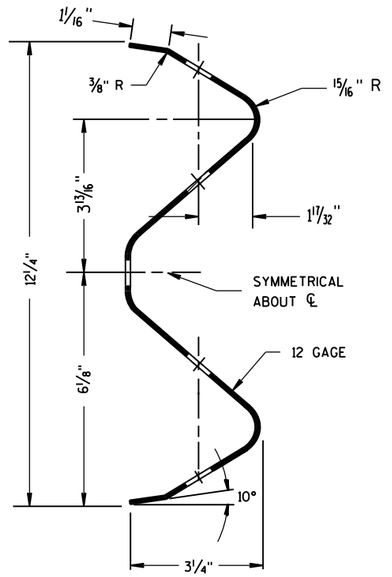
FRONT VIEW AT STEEL POST



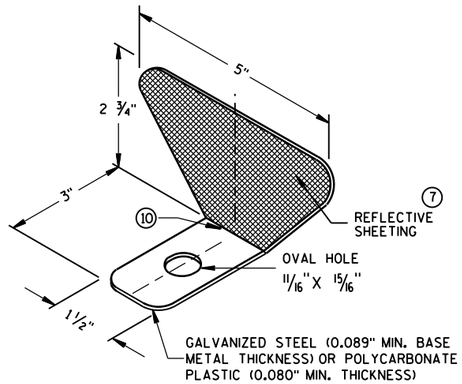


FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

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

⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

⑩ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

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

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

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

REFLECTOR SPACING ⑧

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 ⑩	

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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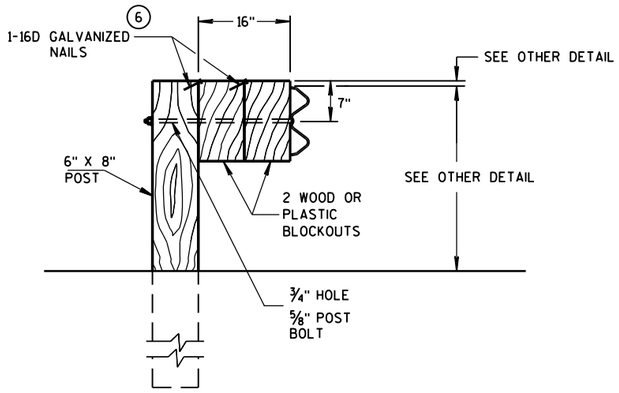
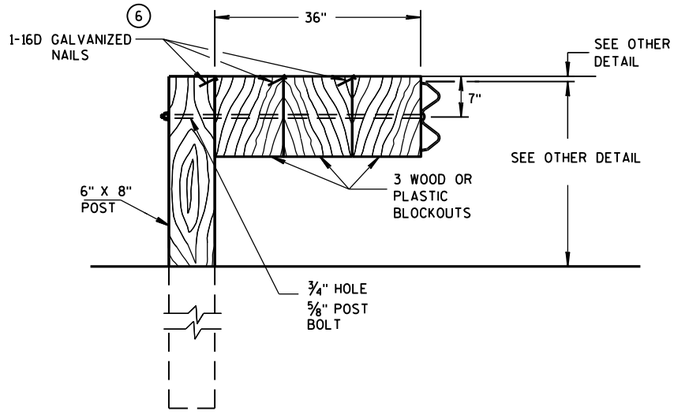
S.D.D. 14 B 42-4b



DETAIL FOR 16" BLOCKOUT DEPTH

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

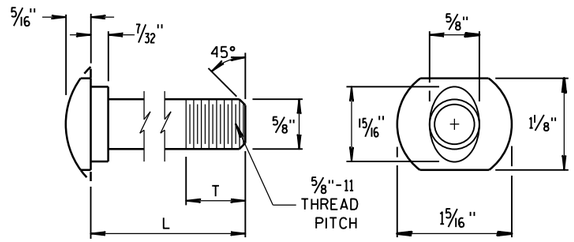


DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

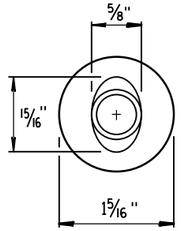
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

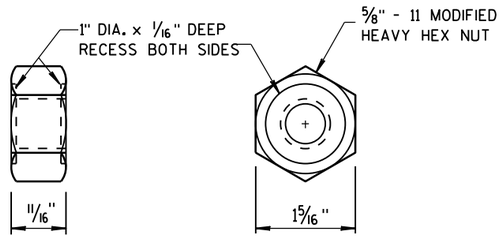


POST BOLT TABLE

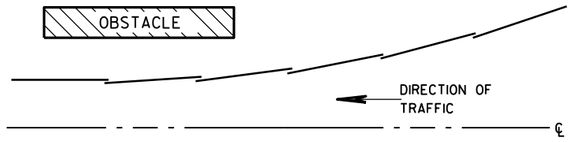
L	T (MIN.)
1¼"	1⅛"
2"	1¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

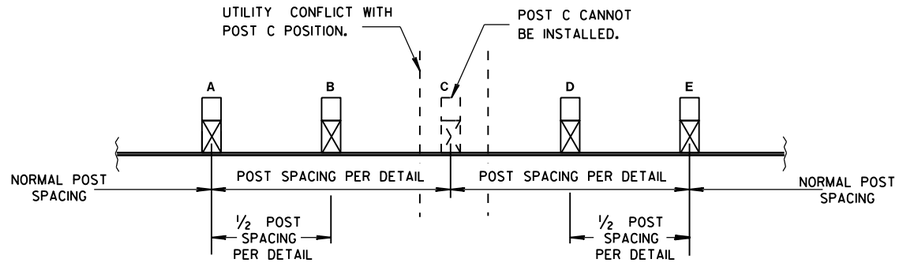


POST BOLT, SPLICE BOLT AND RECESS NUT

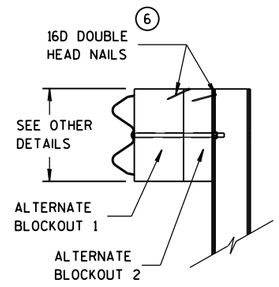


PLAN VIEW

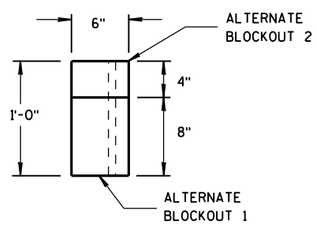
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 14 B 42-4c

GENERAL NOTES

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

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

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

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

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

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

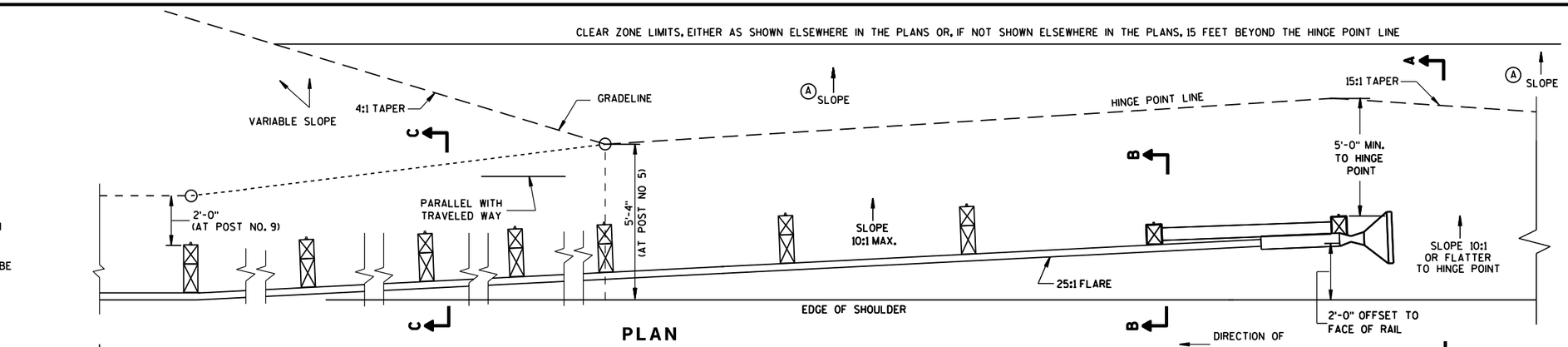
SEE SDD 14B42 FOR MORE INFORMATION.

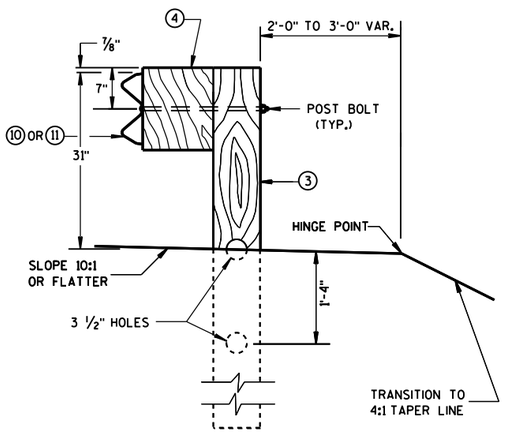
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

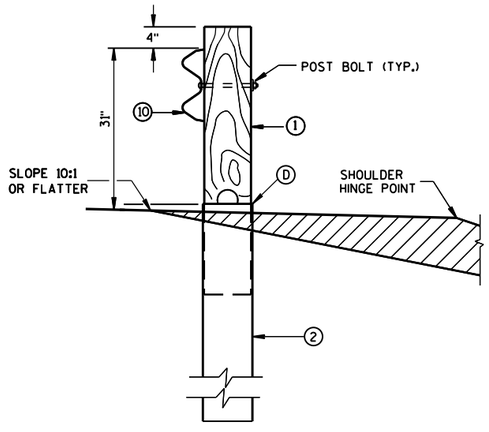
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

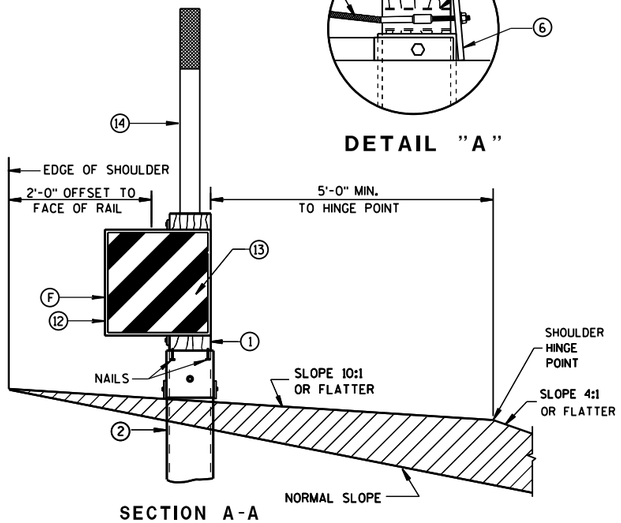




SECTION C-C
TYPICAL AT POST NOS. 3-9

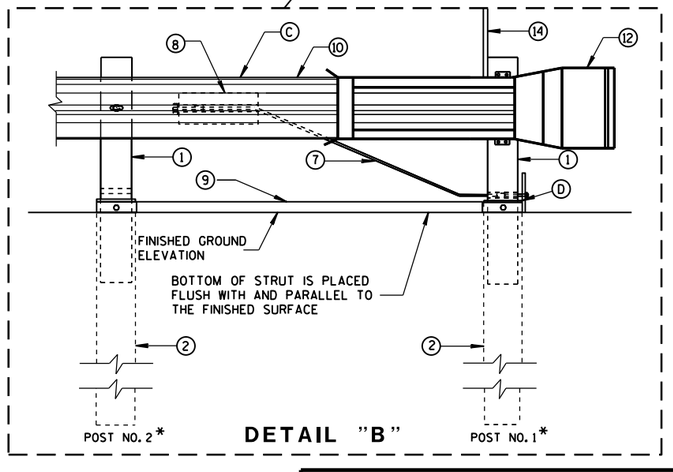


SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*

DETAIL "A"



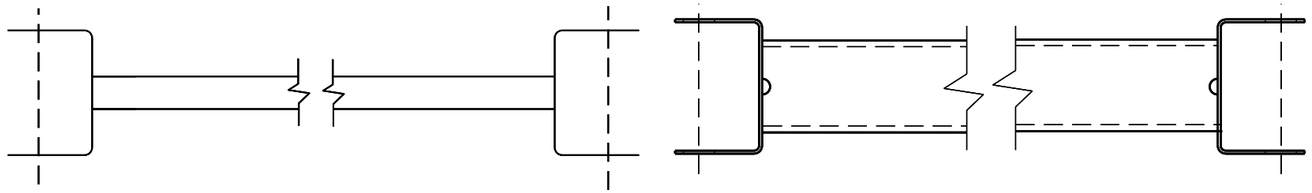
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

S.D.D. 14 B 44-2a

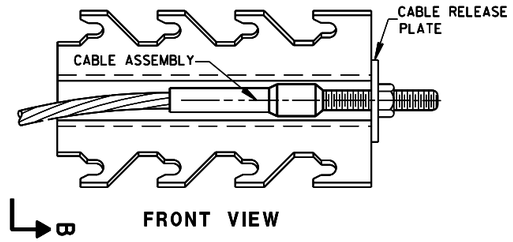
S.D.D. 14 B 44-2a



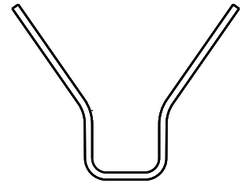
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

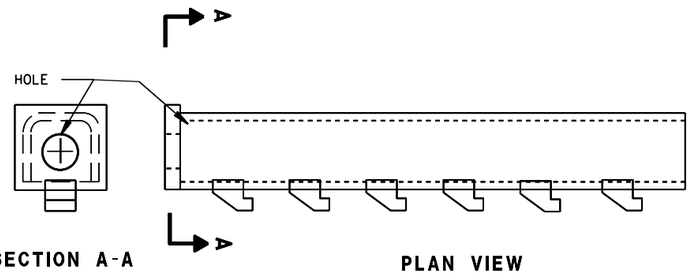
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



FRONT VIEW



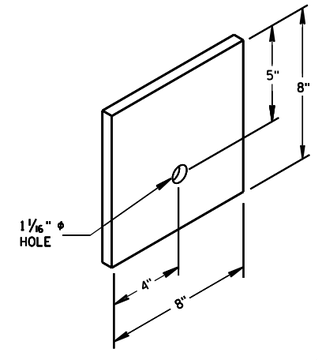
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



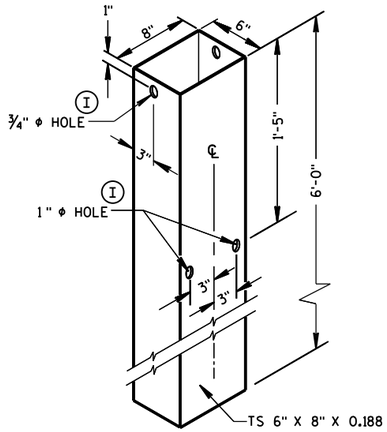
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

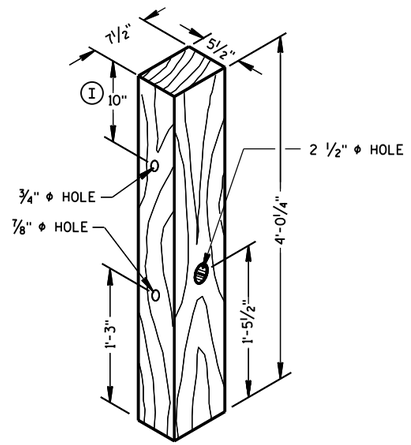
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 44-2b

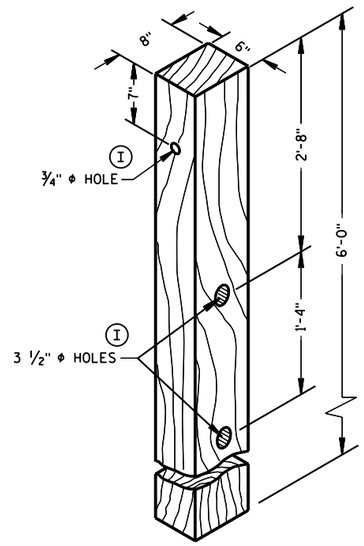


FOUNDATION TUBE (2)



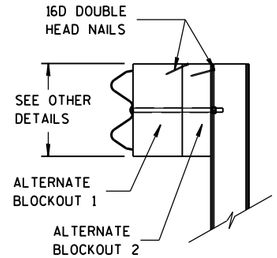
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

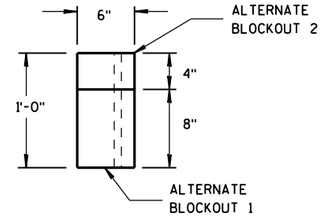


POSTS NUMBER 3-9

WOOD CRT POST (3)

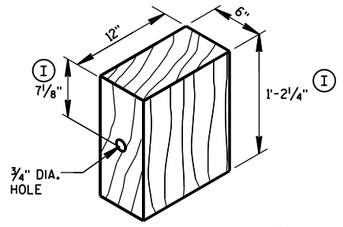


SIDE VIEW



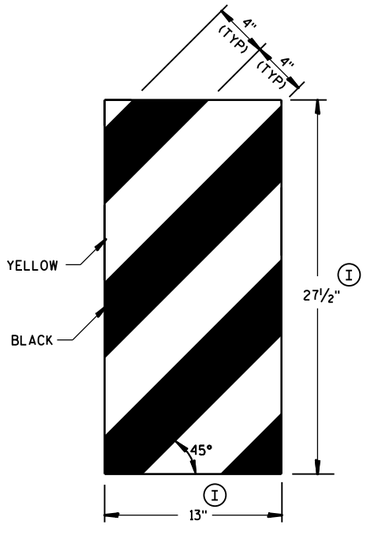
TOP VIEW

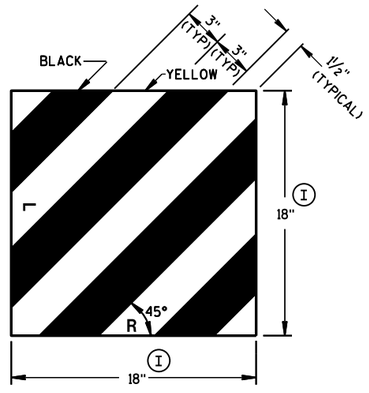
ALTERNATE WOOD BLOCKOUT DETAIL



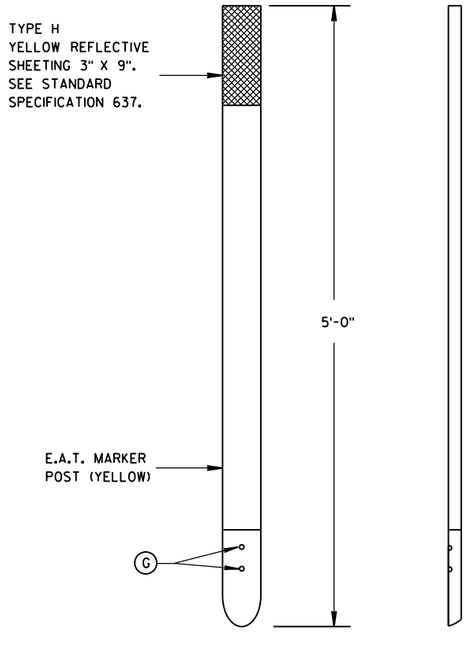
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





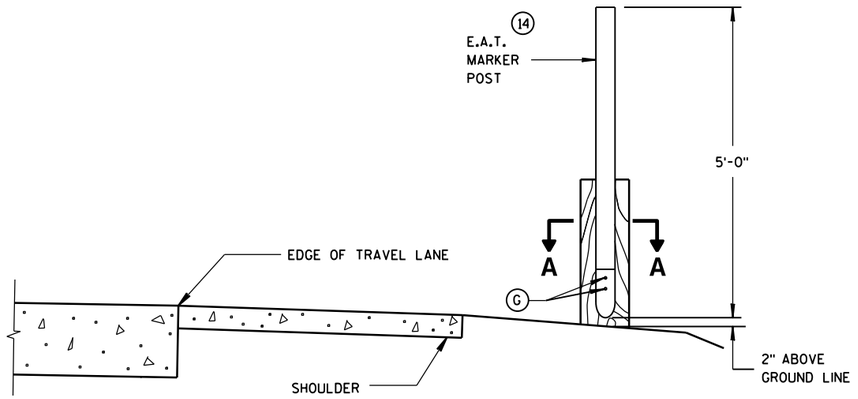
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

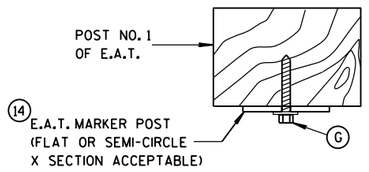
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

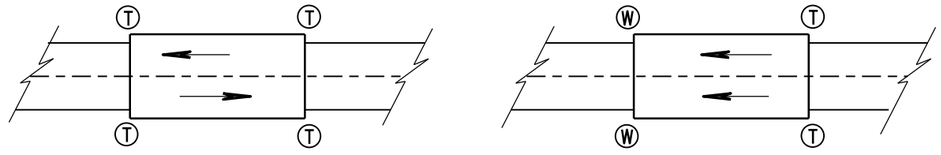
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-2c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

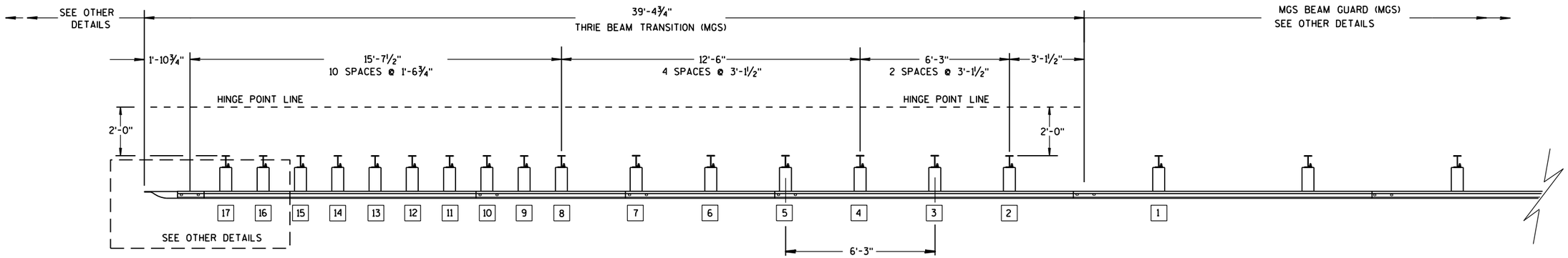
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

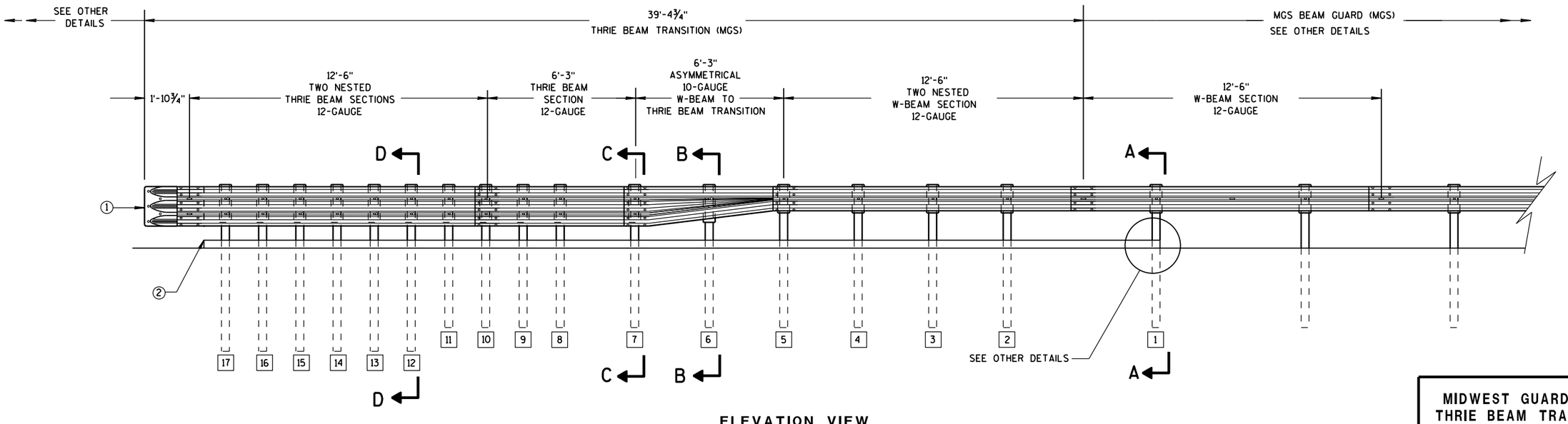
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 45-4a

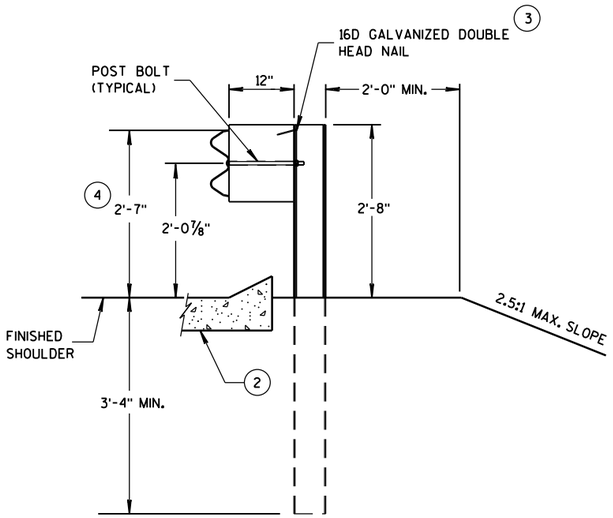
S.D.D. 14 B 45-4a

GENERAL NOTES

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

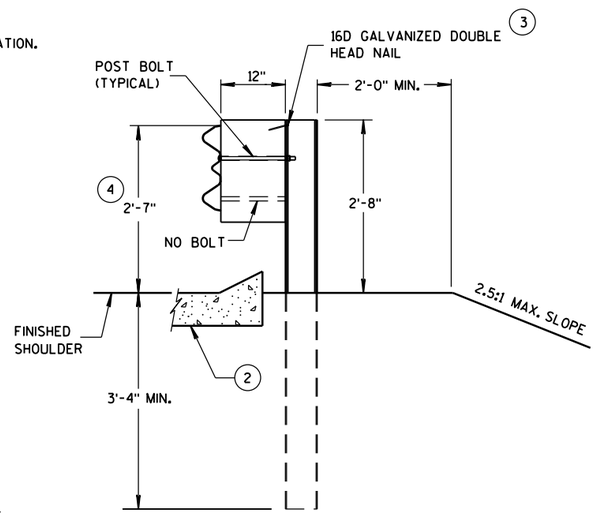
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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



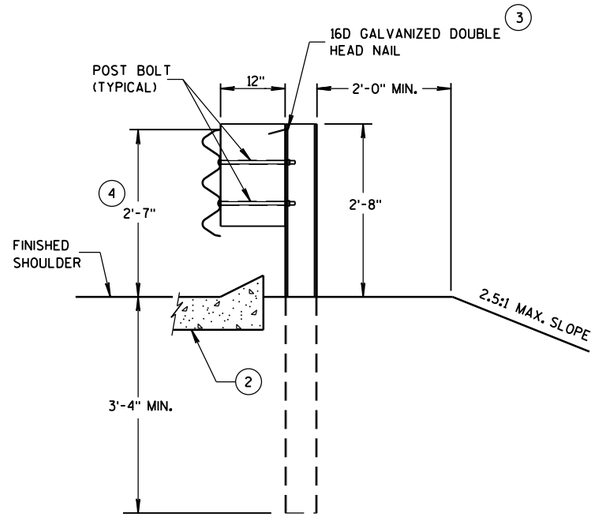
SECTION A-A

POSTS 1-5



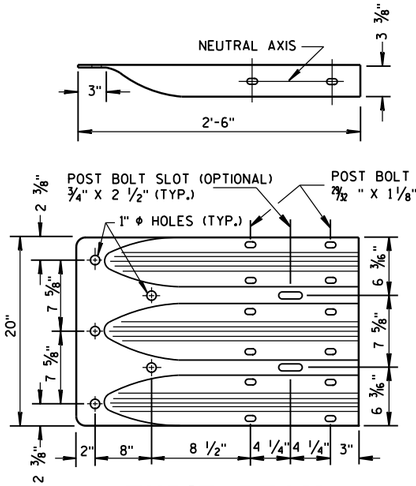
SECTION B-B

POST 6



SECTION C-C

POSTS 7-11



THRIE BEAM TERMINAL CONNECTOR

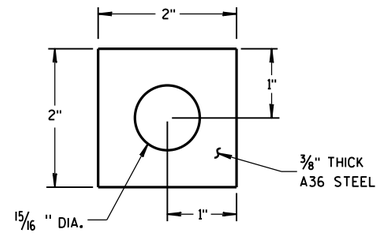
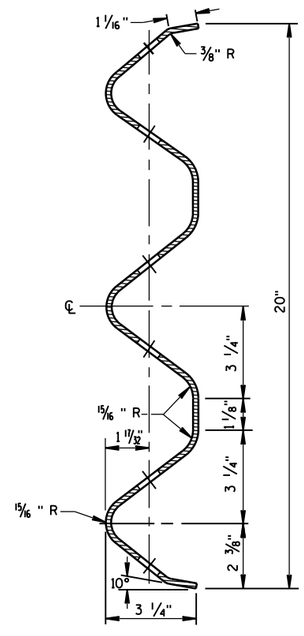
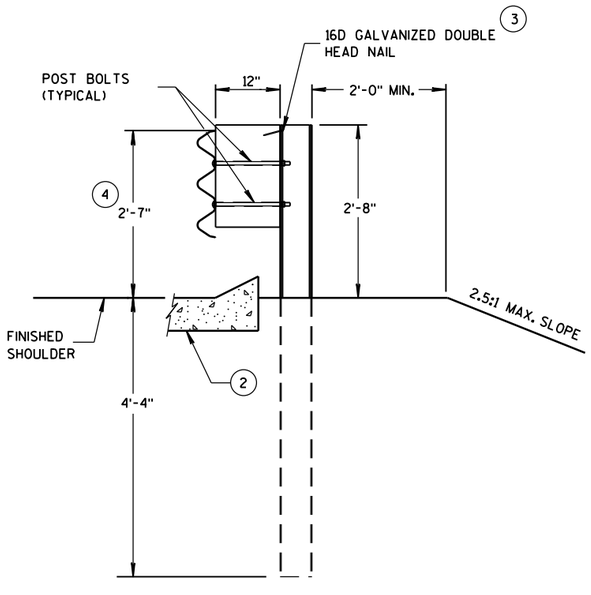


PLATE WASHER DETAIL

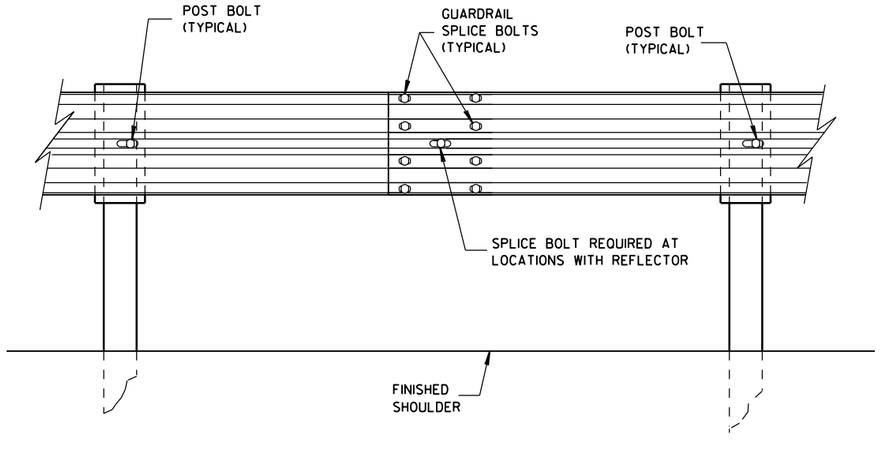


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-17



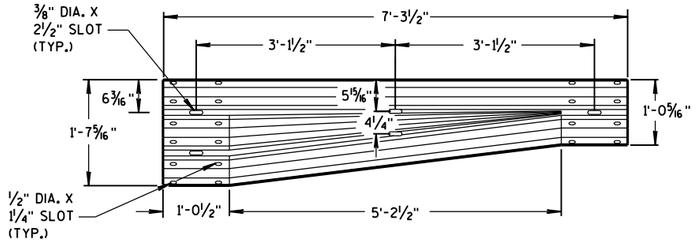
SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

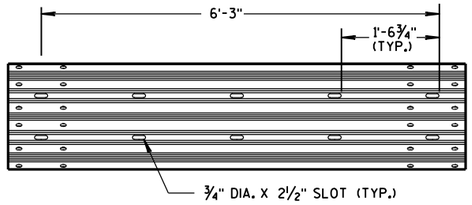
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

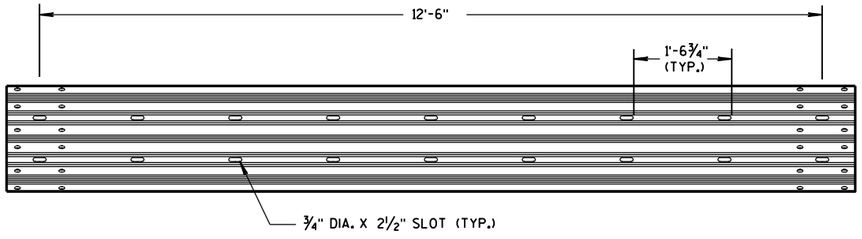
S.D.D. 14 B 45-4b



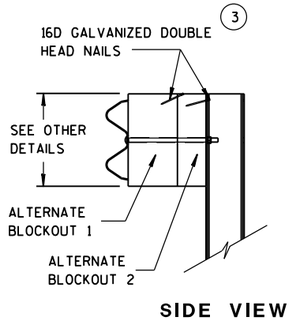
W-BEAM TO THRIE BEAM TRANSITION SECTION



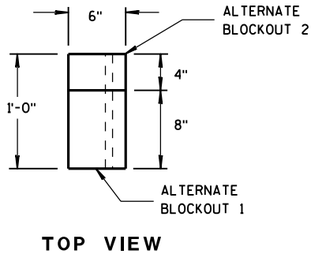
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

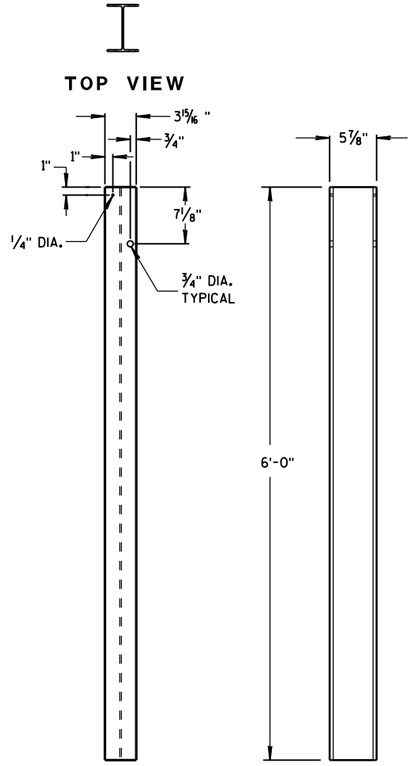


SIDE VIEW

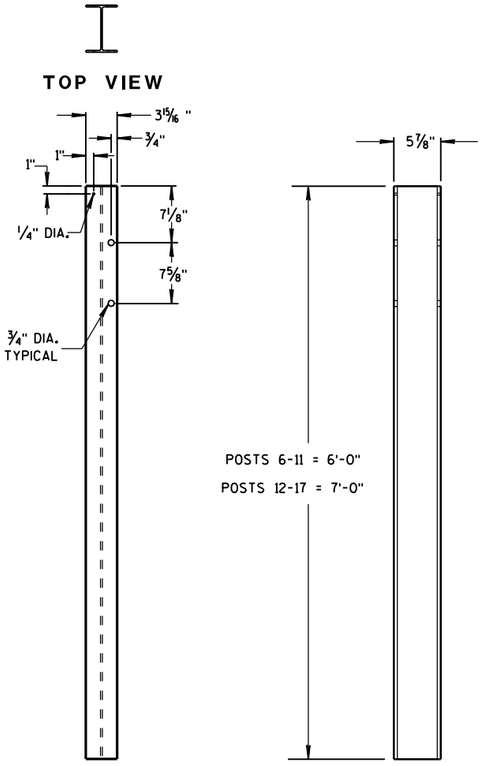


TOP VIEW

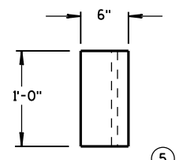
ALTERNATE WOOD BLOCKOUT DETAIL



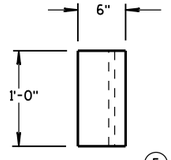
STEEL POSTS 1-5



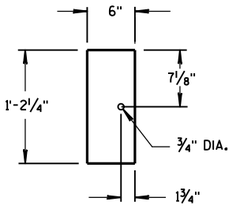
STEEL POSTS 6-17



TOP VIEW (5)

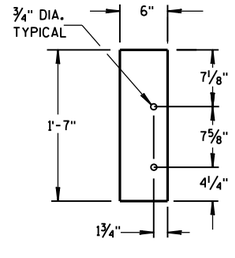


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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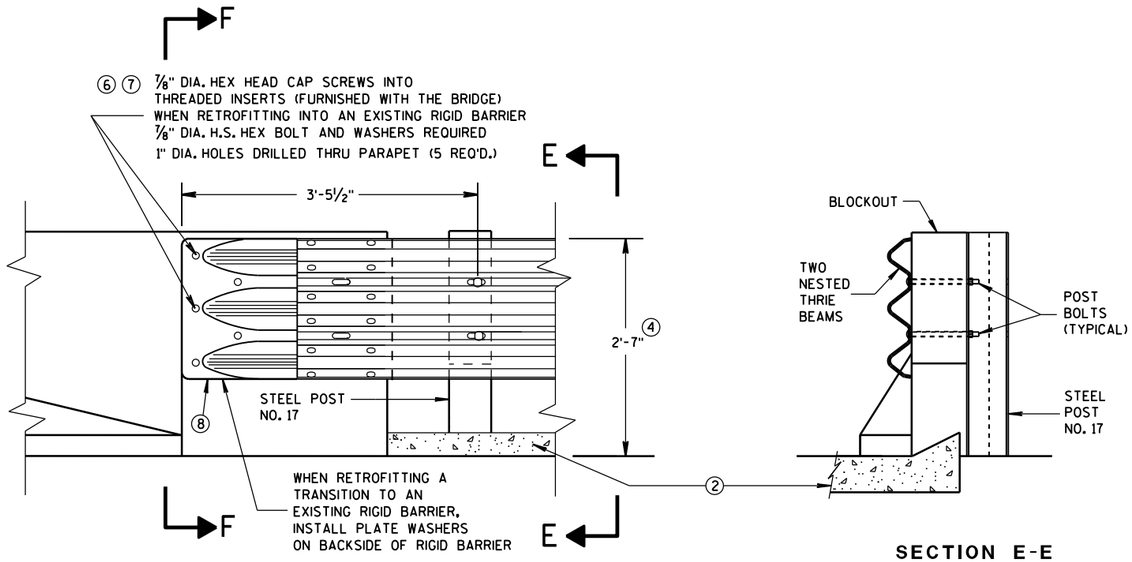


FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

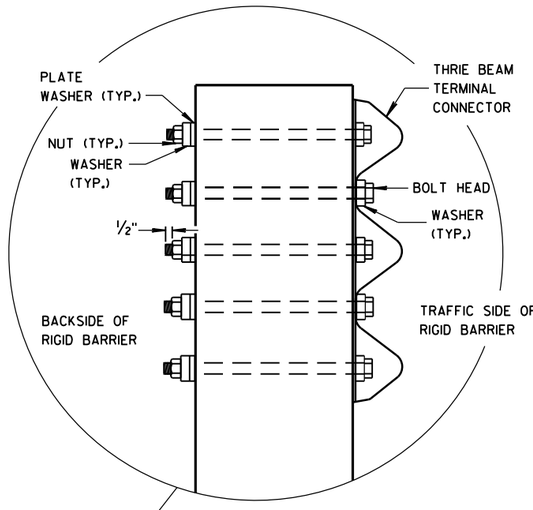
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

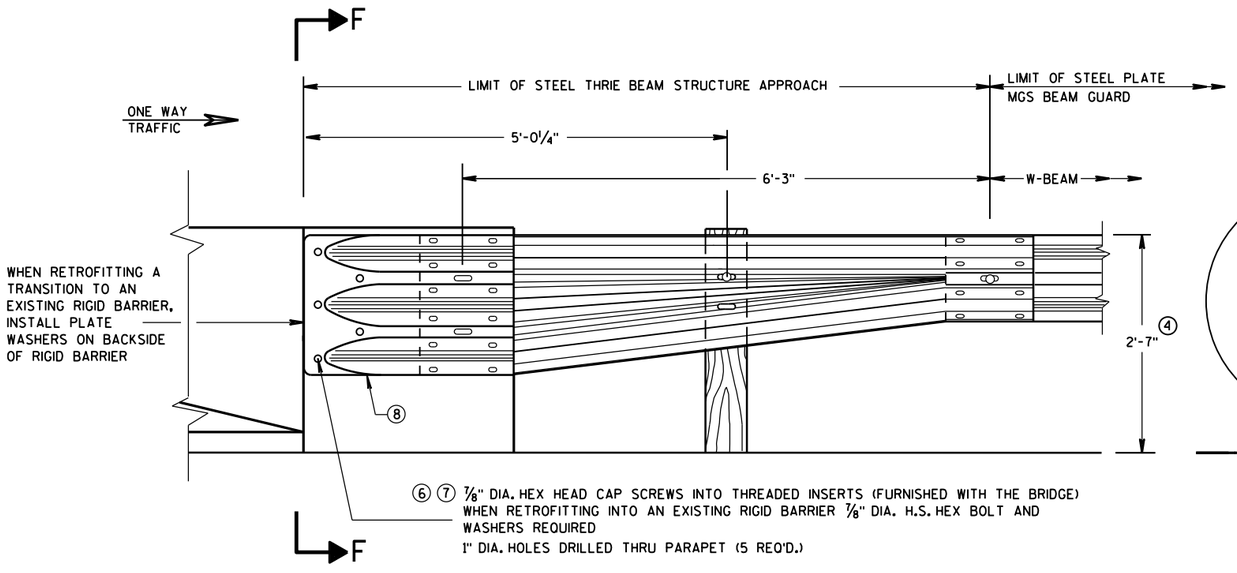
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

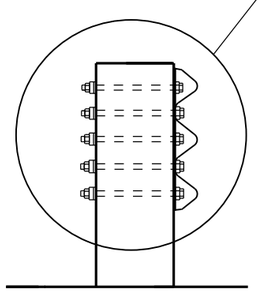
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

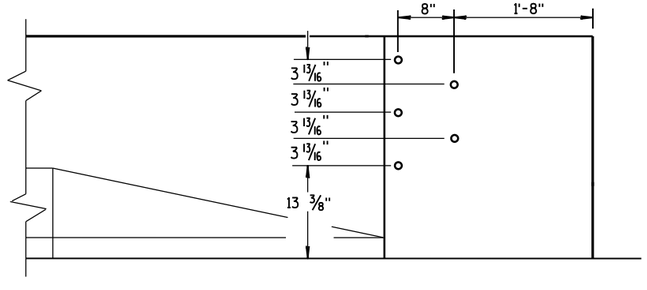




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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GENERAL NOTES

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

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

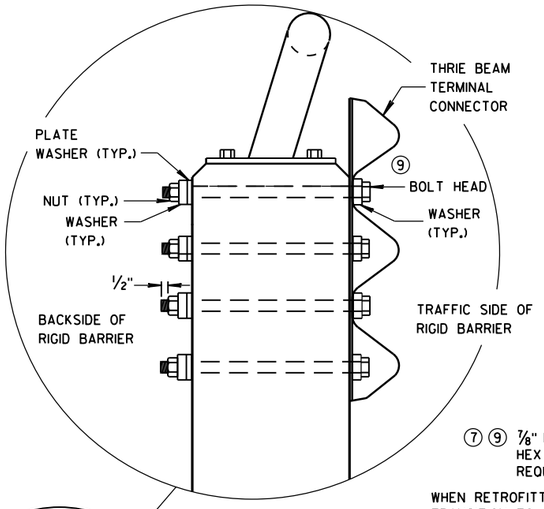
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

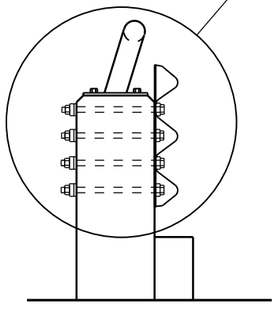
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

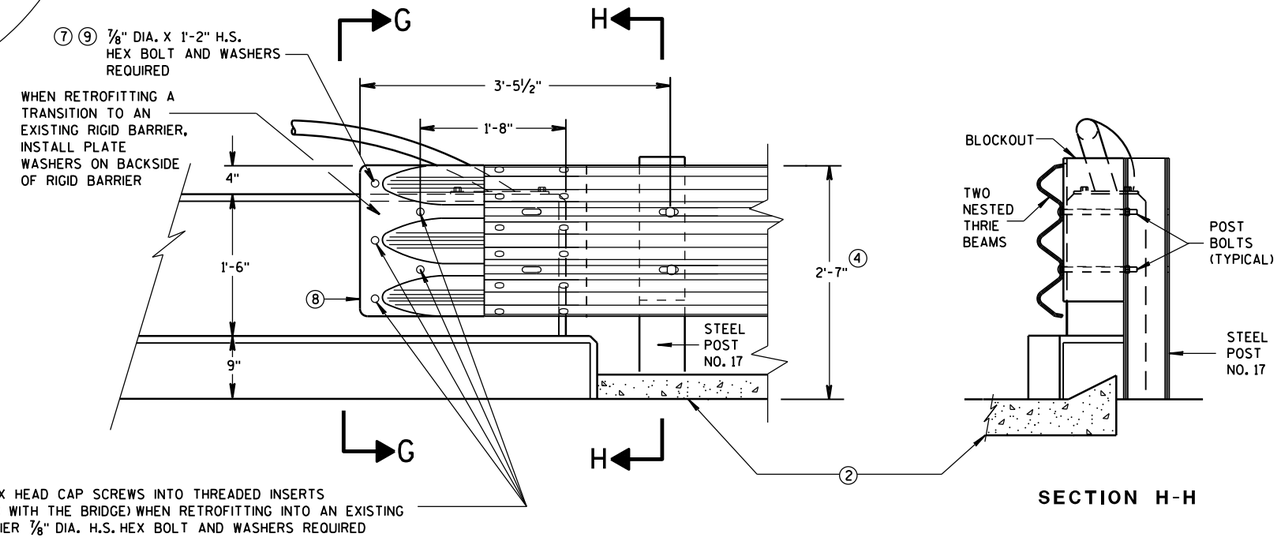
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

(9) 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.





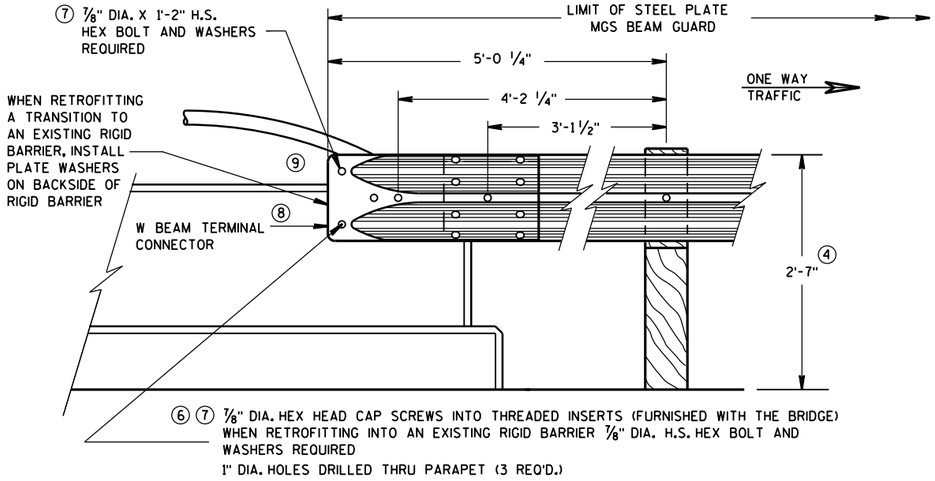
SECTION G-G



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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June, 2015 — DATE
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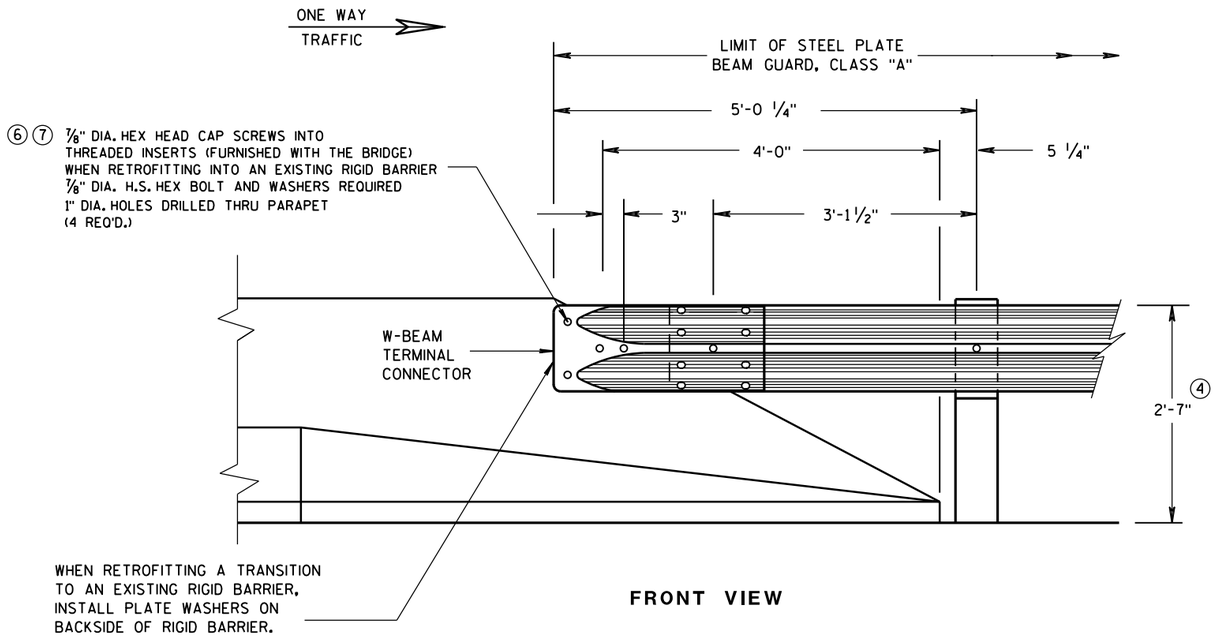


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

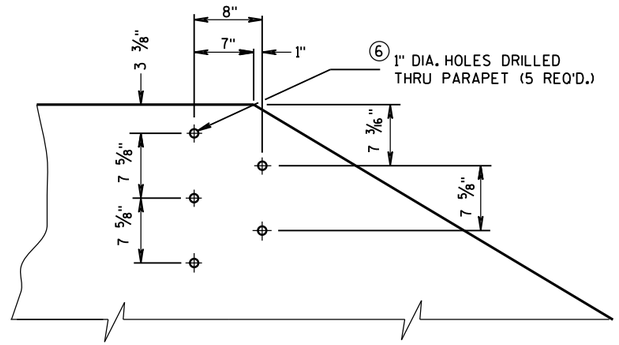
GENERAL NOTES

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

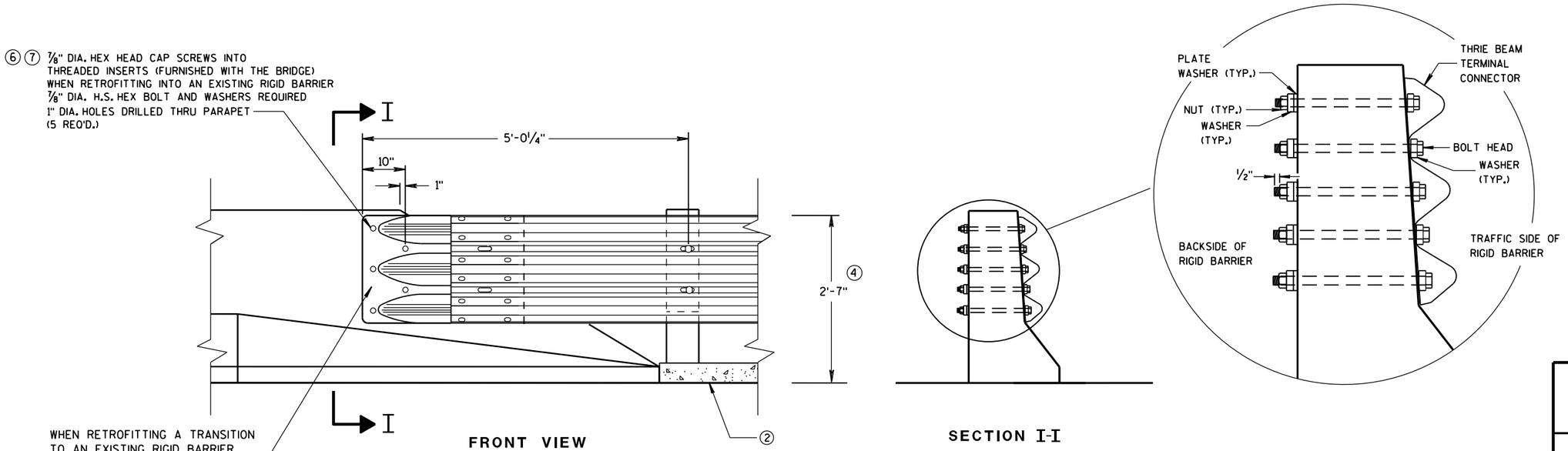
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

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



DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



FRONT VIEW

SECTION I-I

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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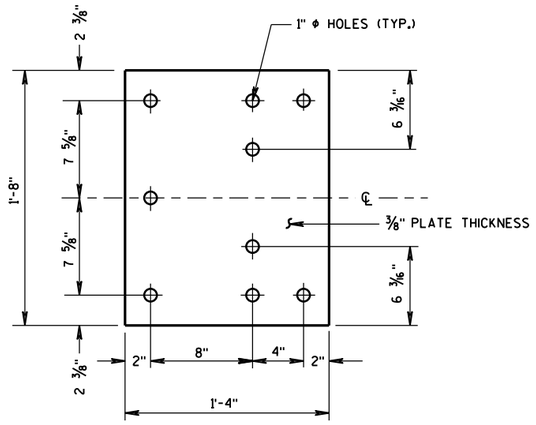
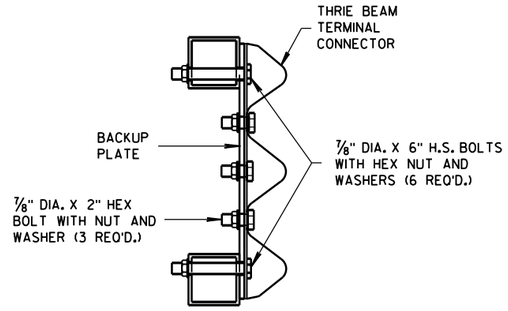
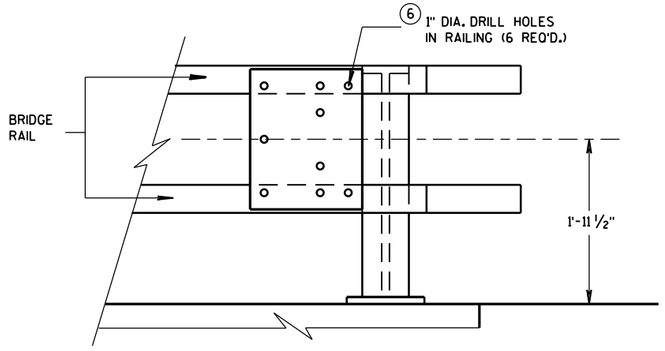


BACK-UP PLATE DETAIL



SECTION J-J

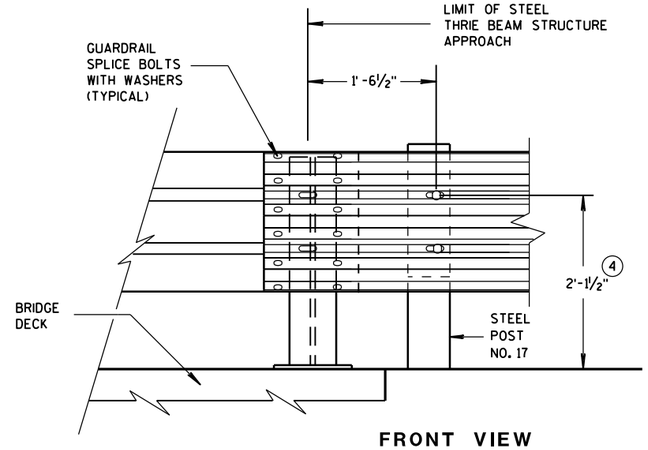


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

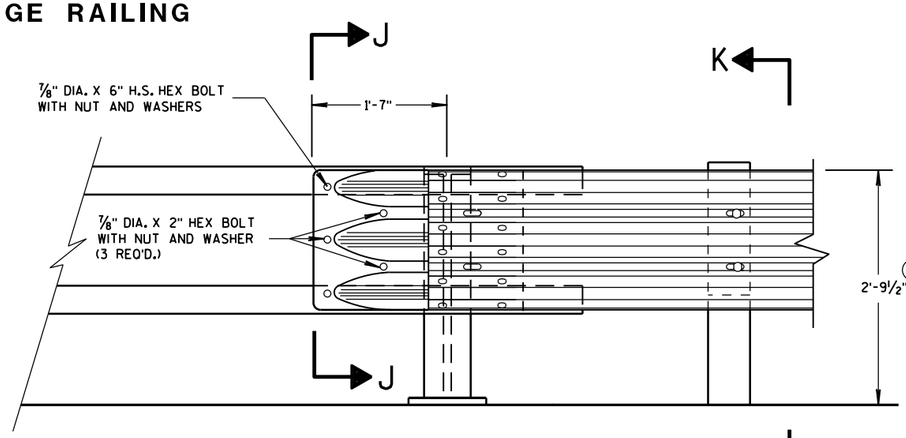
4 TOLERANCE FOR TOP OF BEAM IS ± 1".

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

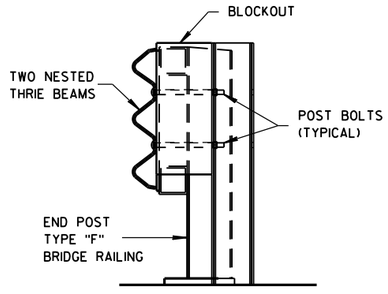


FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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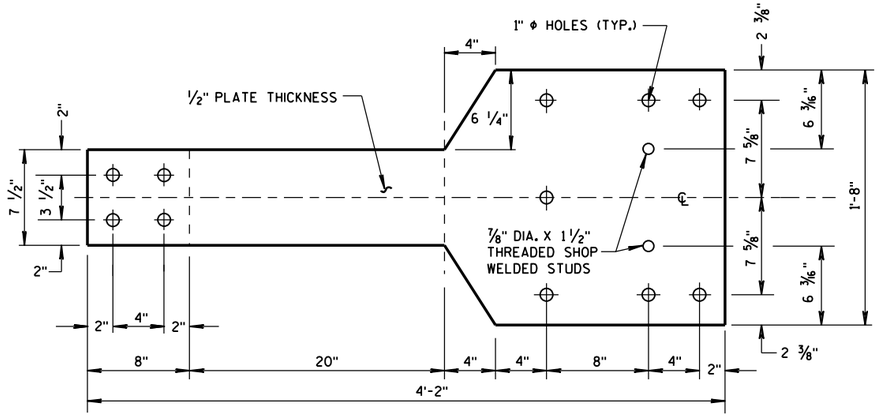
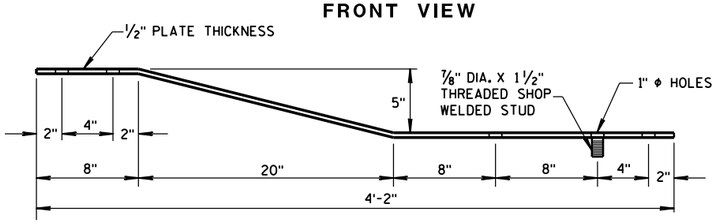
GENERAL NOTES

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

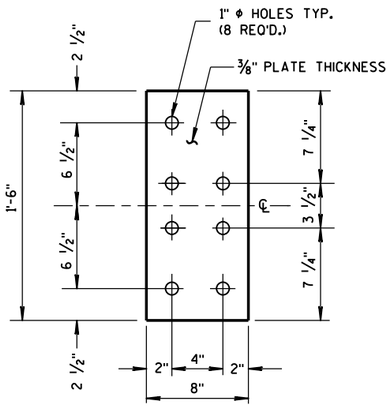


FRONT VIEW



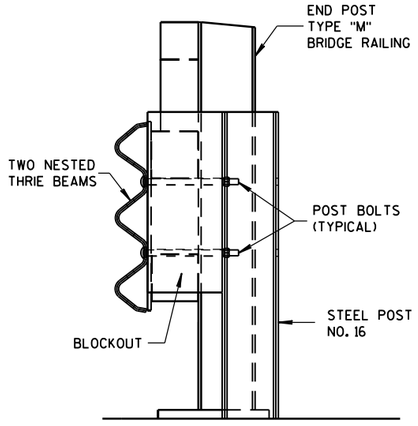
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

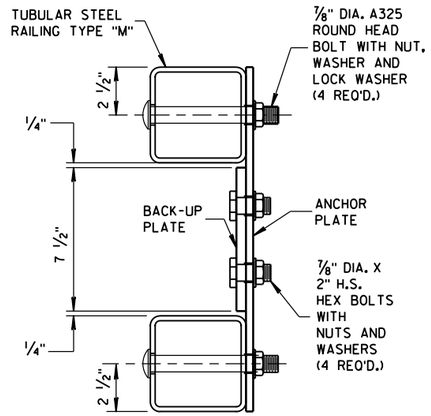


FRONT VIEW

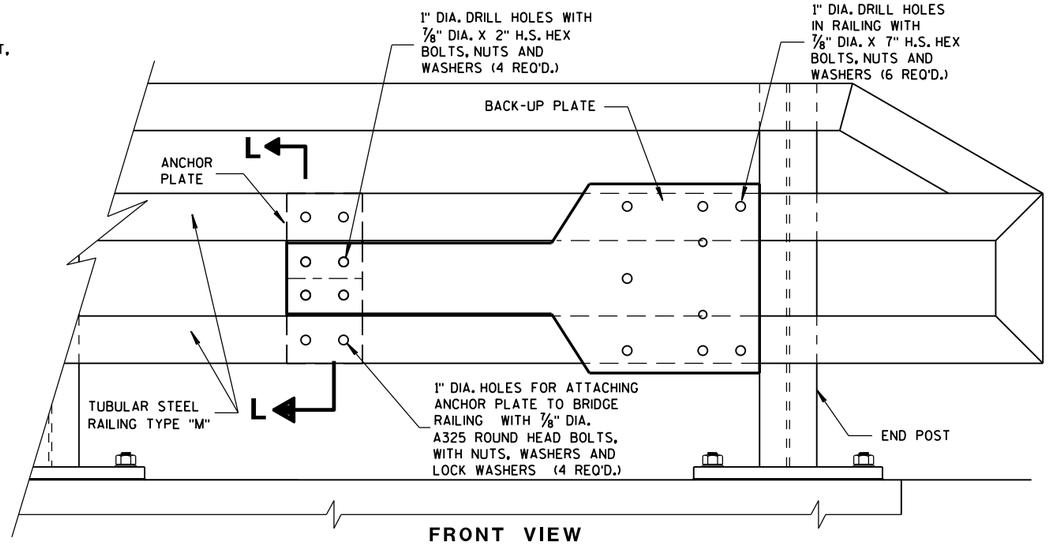
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

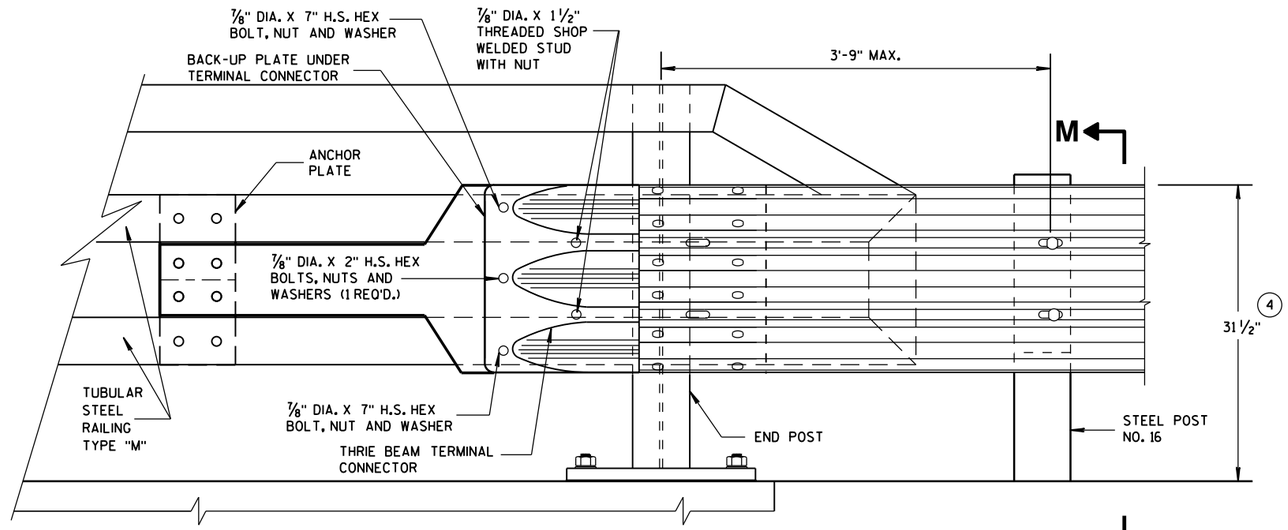


SECTION L-L

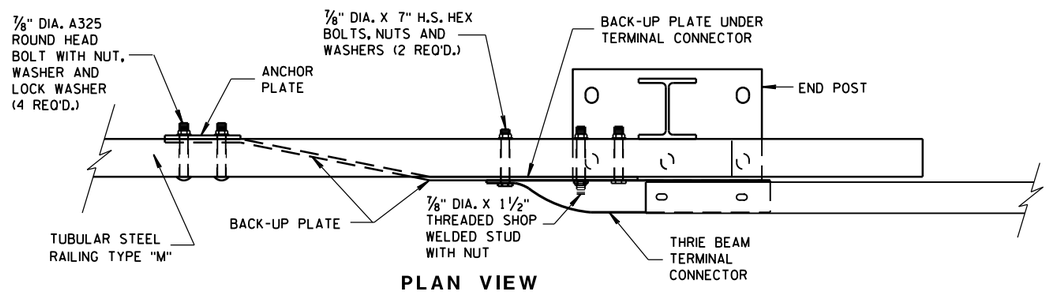


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
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June, 2015	/S/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

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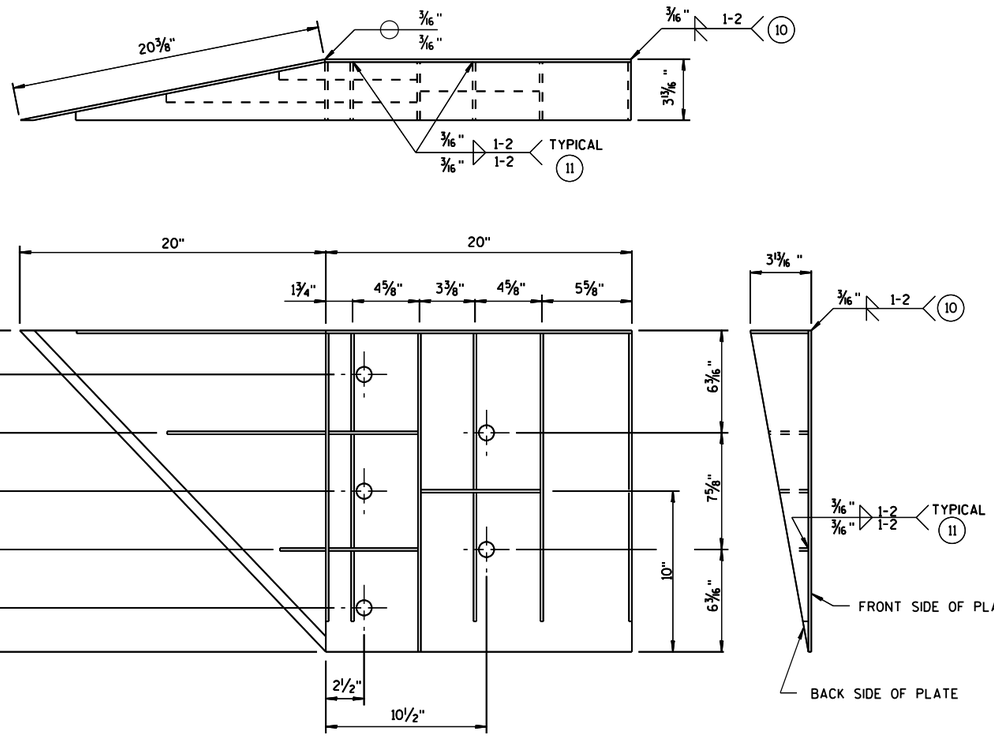

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

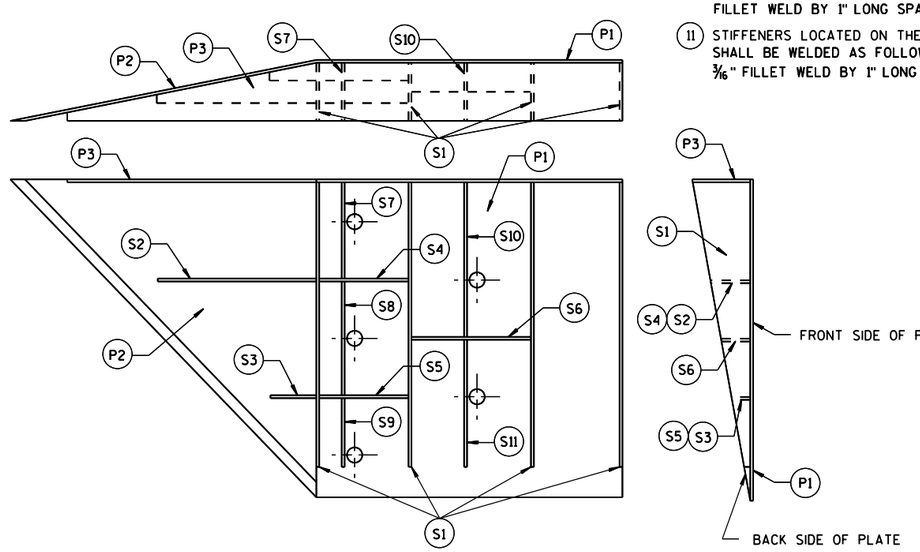

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

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

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 3/8" 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 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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June, 2015 — DATE
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FHWA

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S.D.D. 14 B 45-4i

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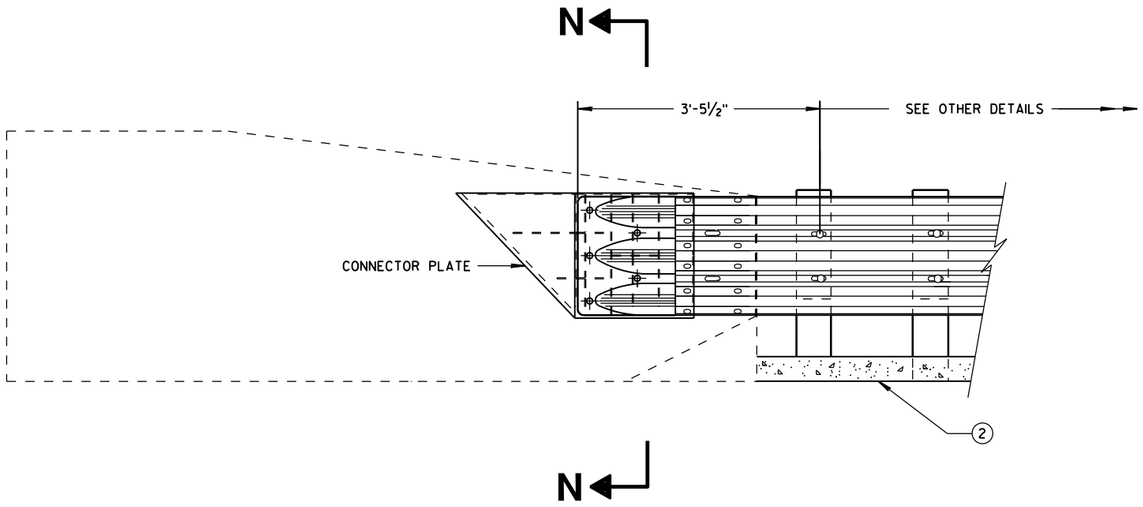
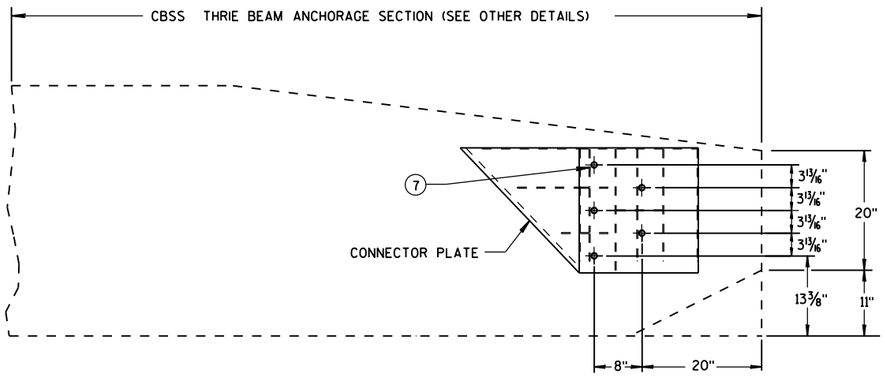


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



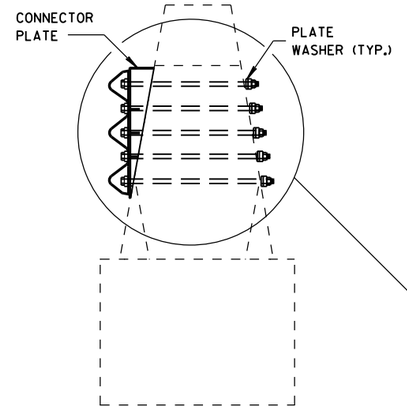
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

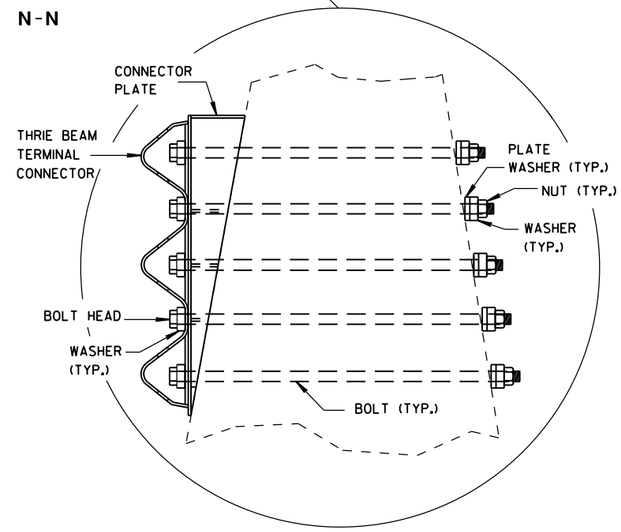
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

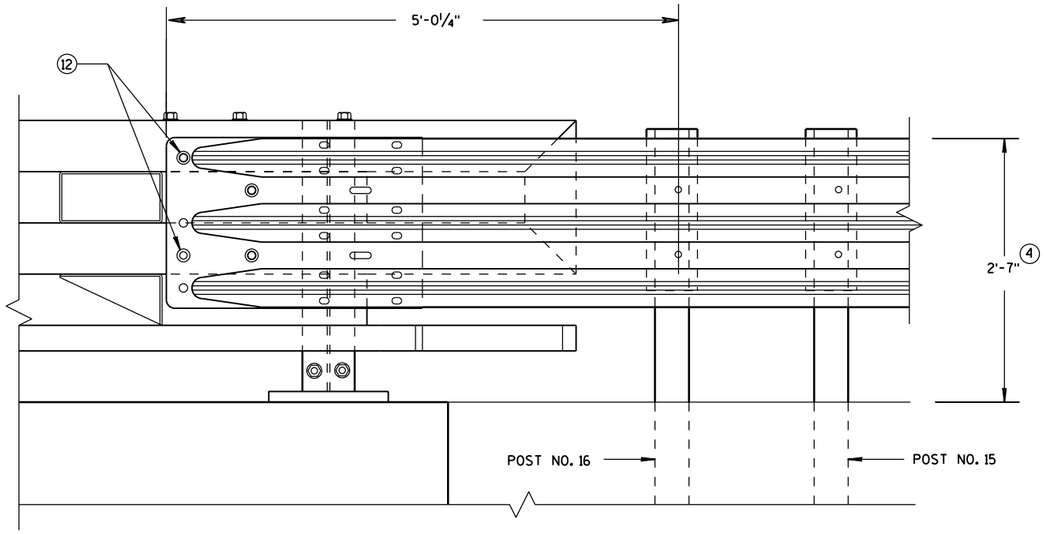
APPROVED
June, 2015 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS DEVELOPMENT ENGINEER
NT
FHWA

6

S.D.D. 14 B 45-4j

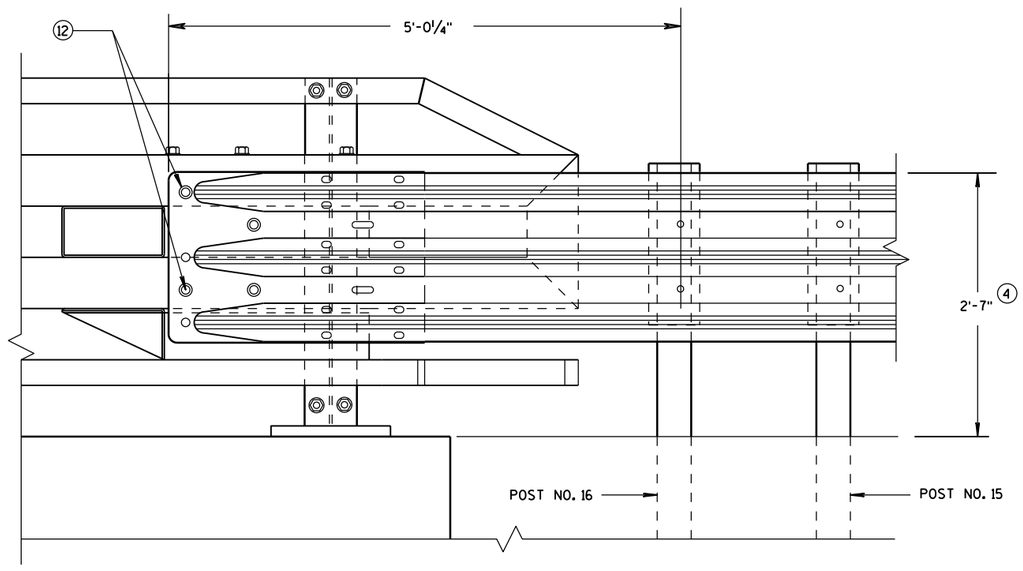
6

S.D.D. 14 B 45-4j



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

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

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND ½-INCH BEYOND NUT.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS D 67 NT
ENGINEER

FHWA

6

S.D.D. 14 B 45-4k

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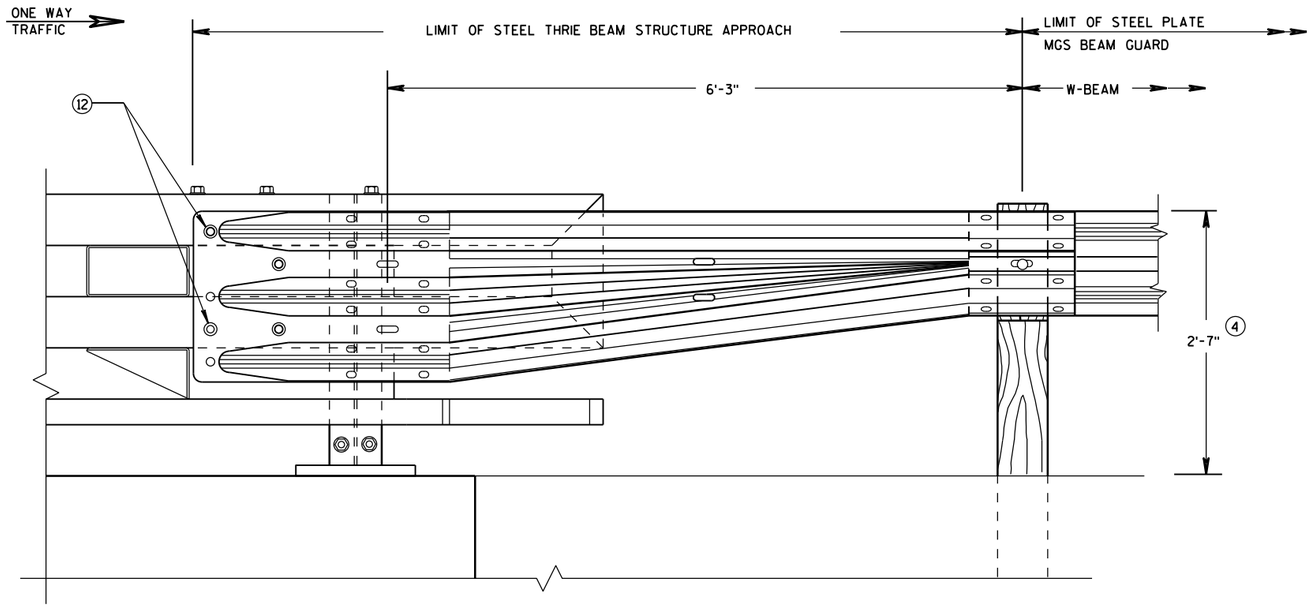
S.D.D. 14 B 45-4k



FRONT VIEW

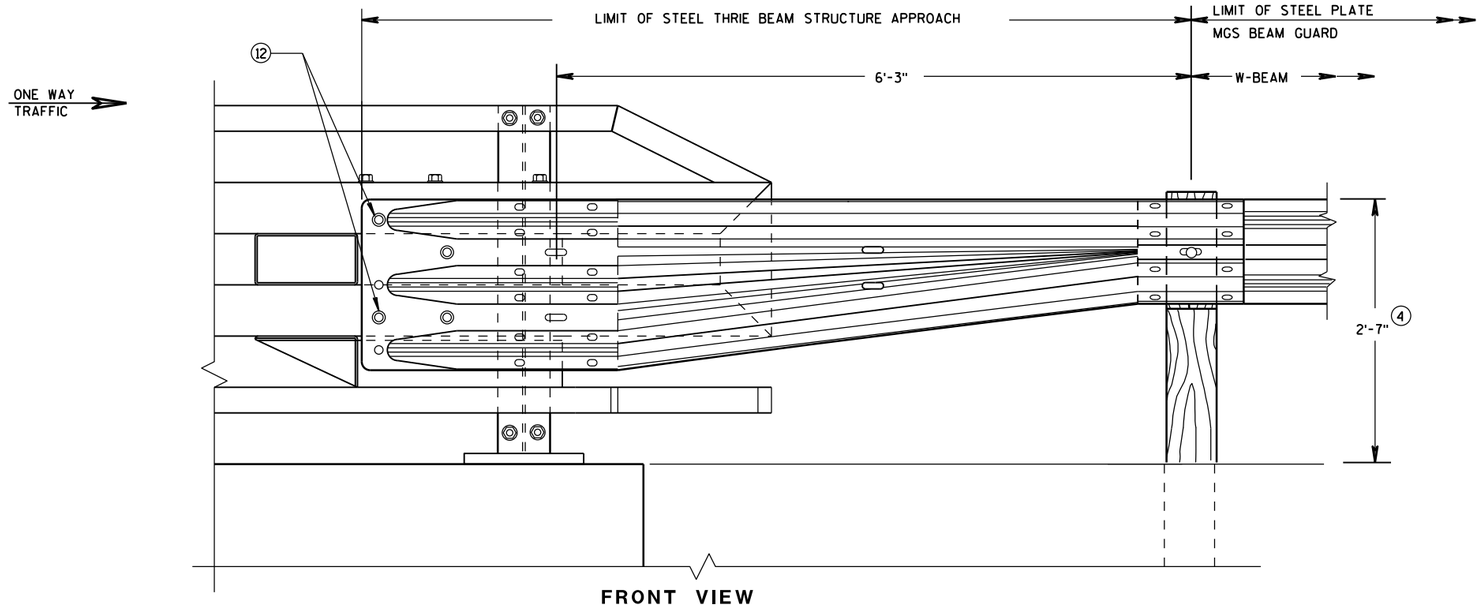
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

GENERAL NOTES

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

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND ½-INCH BEYOND NUT.



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4"

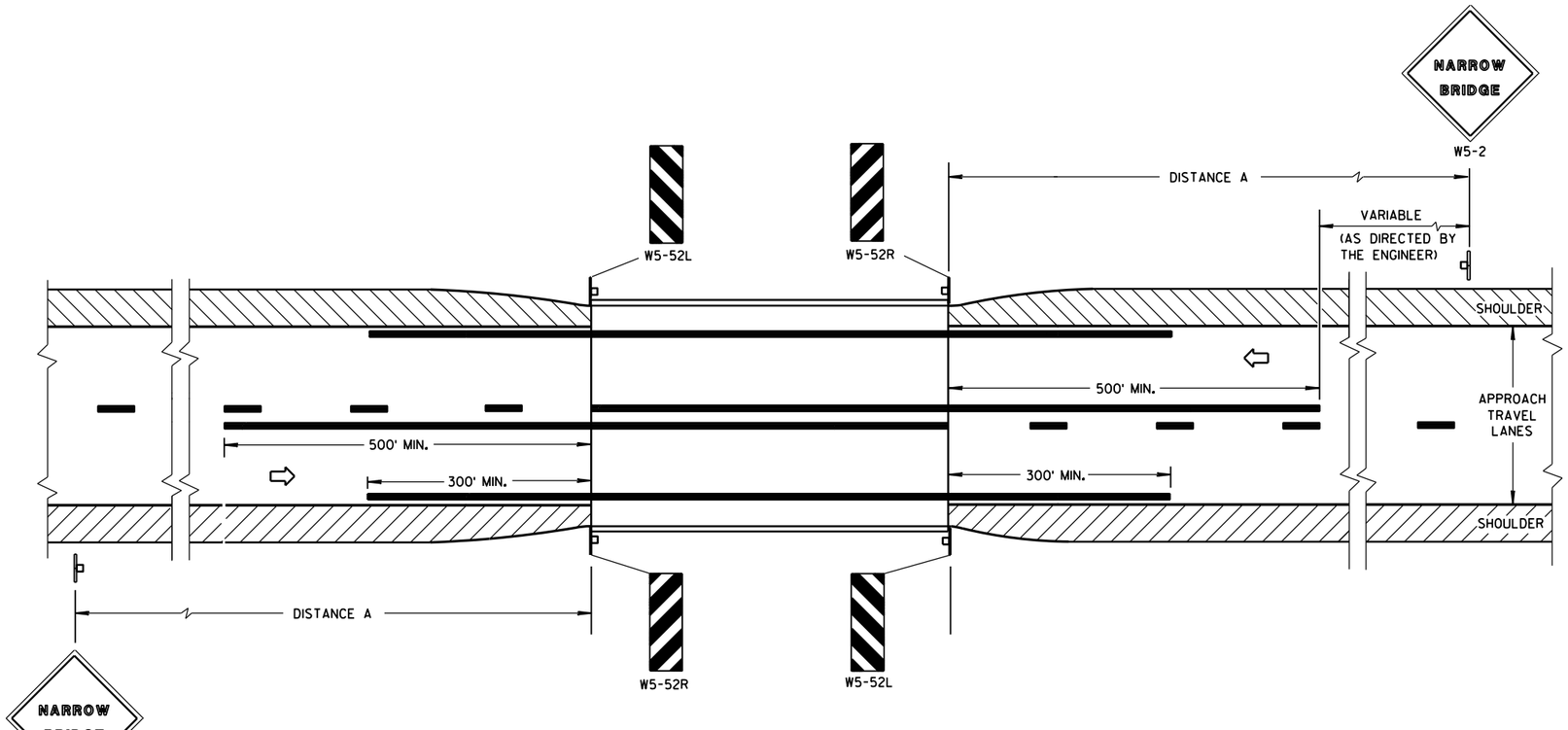
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 14 B 45-4L

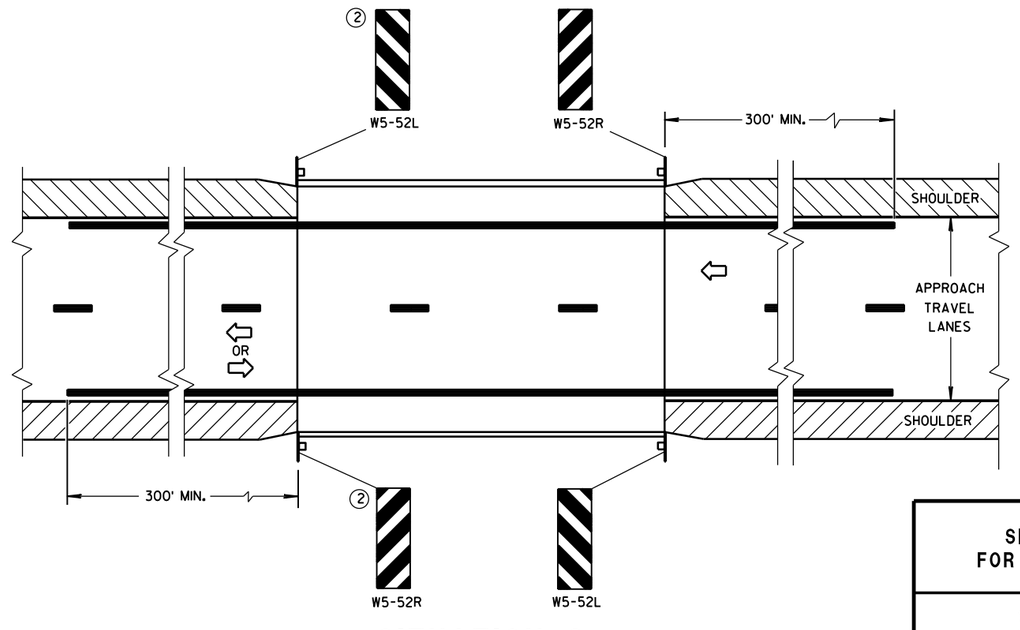


SITUATION 1

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

DISTANCE TABLE

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



SITUATION 2

WARRANTING CRITERIA:

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

GENERAL NOTES

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

① LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

② OMIT ON ONE-WAY TRAVELLED WAYS.

③ EDGE OF W5-52 SIGN SHALL BE PLACED IN LINE WITH FACE OF CURB OR PARAPET.

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

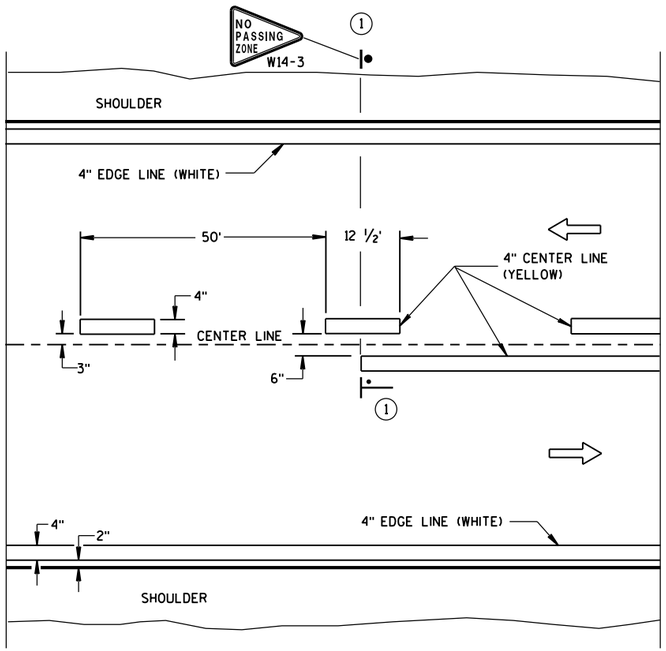
APPROVED
4-18-16 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR ... ENGINEER
FHWA

6

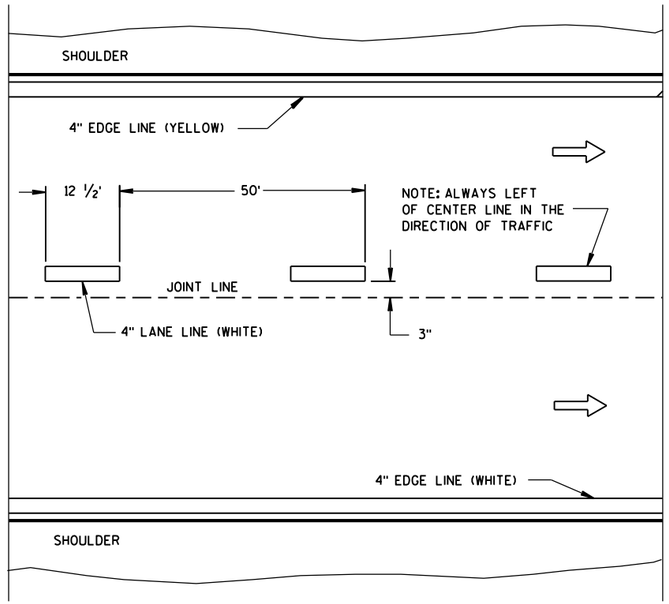
S.D.D. 15 C 6-8

6

S.D.D. 15 C 6-8



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

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

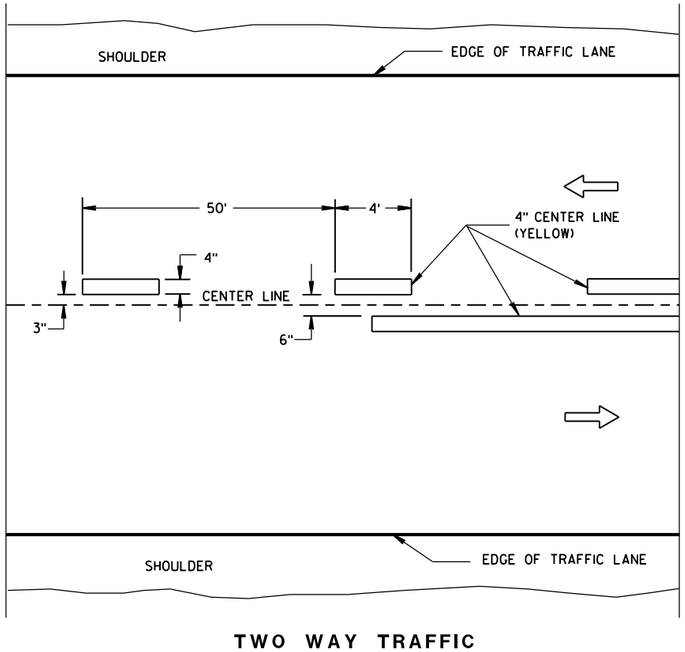
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

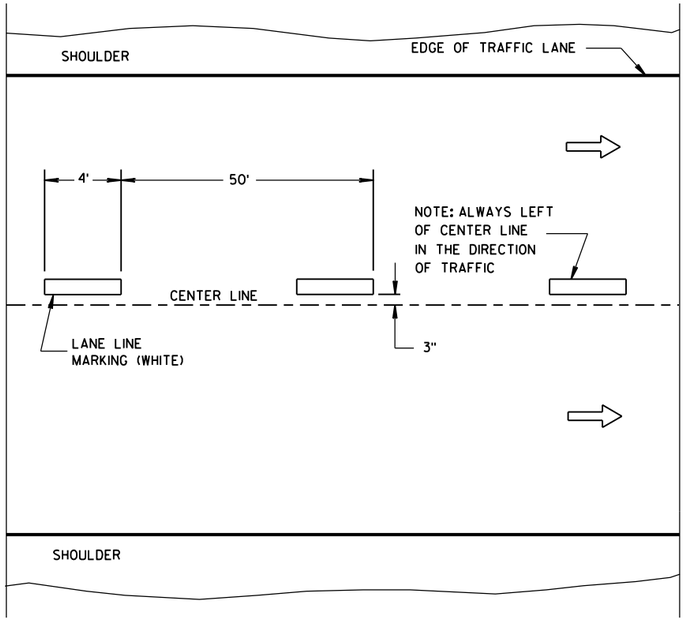
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

S.D.D. 15 C 8-17a

6

S.D.D. 15 C 8-17a

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

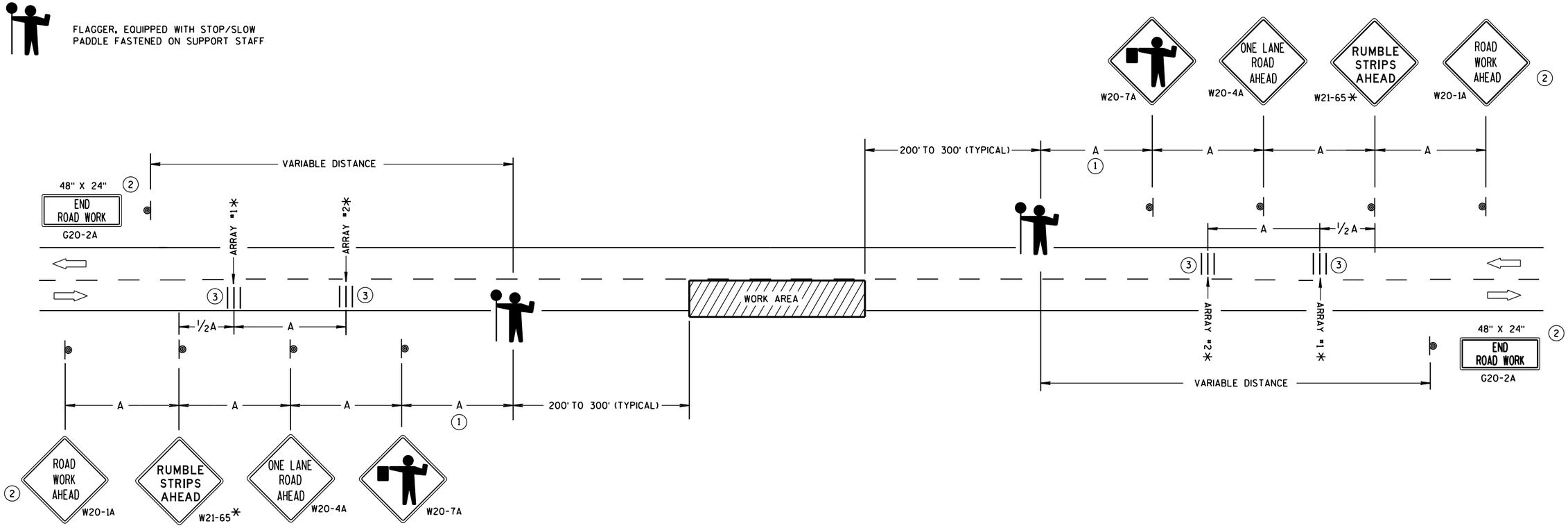
WORK AREA

FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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

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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

GENERAL NOTES

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

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

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

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

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

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

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

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

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

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

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

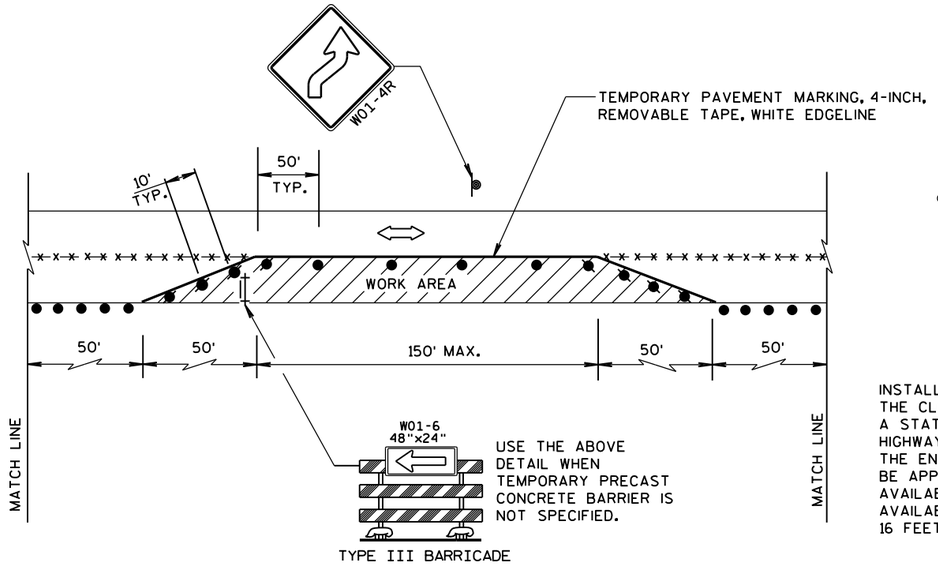
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 — /S/ Andrew Heldtke
DATE — WORK ZONE ENG
FHWA

6
S.D.D. 15 C 12-5

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC



TYPE III BARRICADE

W057-52
36"x24"

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

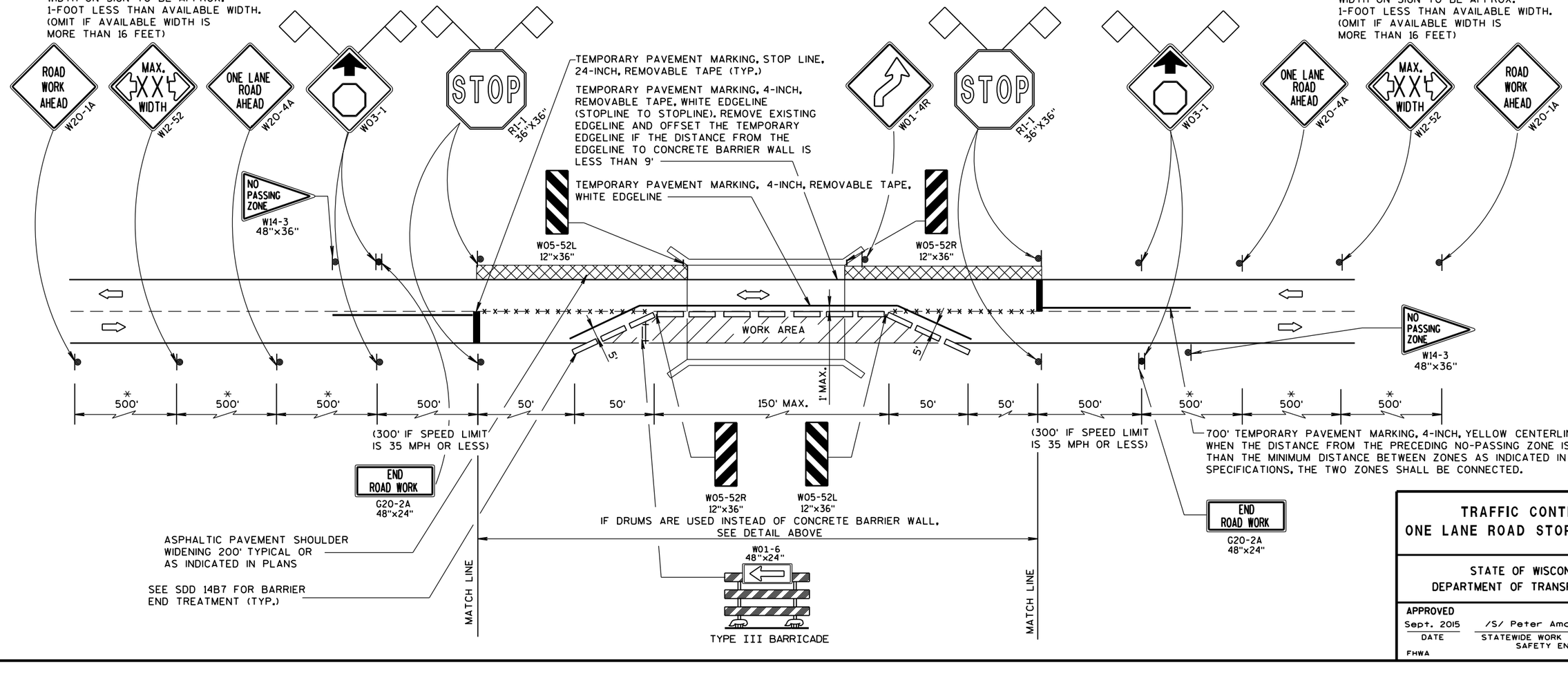
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

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

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.

WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET)



TYPE III BARRICADE

TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER — IC
FHWA

S.D.D. 15 D 32-4

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S.D.D. 15 D 32-4
6

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC
- 4" X 6" WOOD POST
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

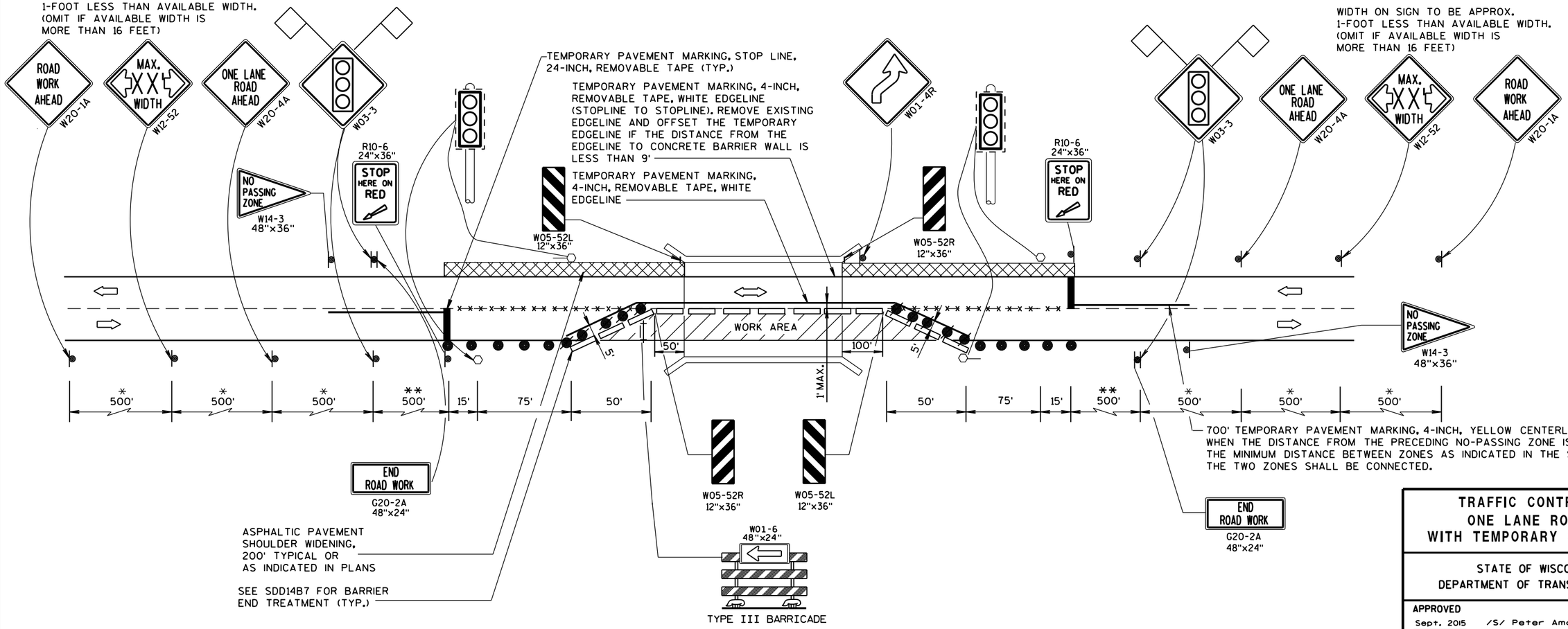
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

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

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.



TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015 — DATE

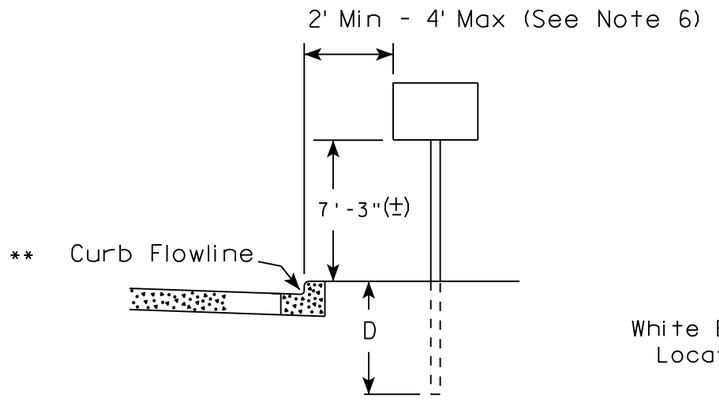
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE SAFETY ENGINEER

FHWA

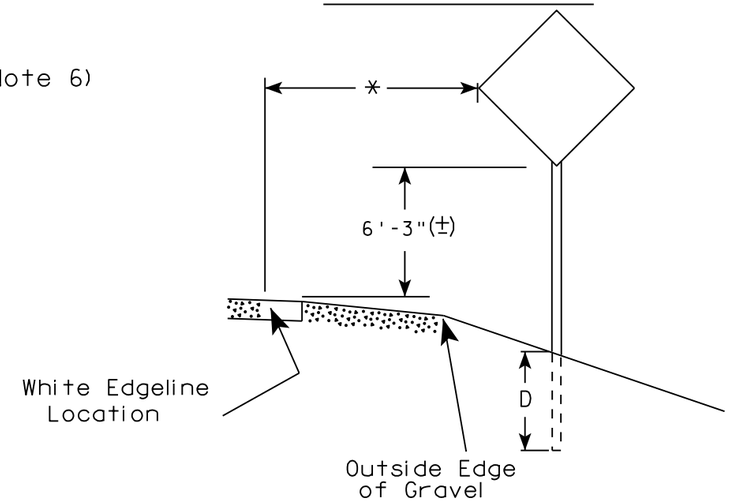
S.D.D. 15 D 33-4

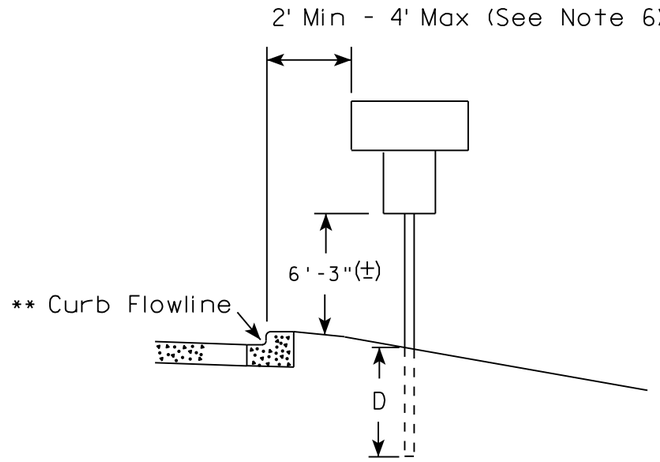
S.D.D. 15 D 33-4

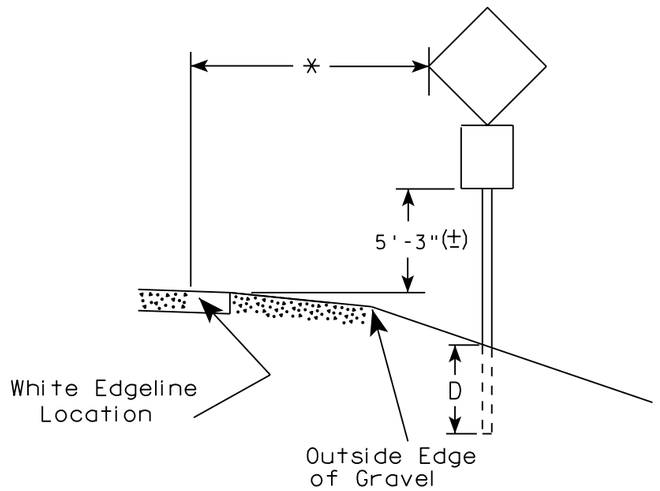
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

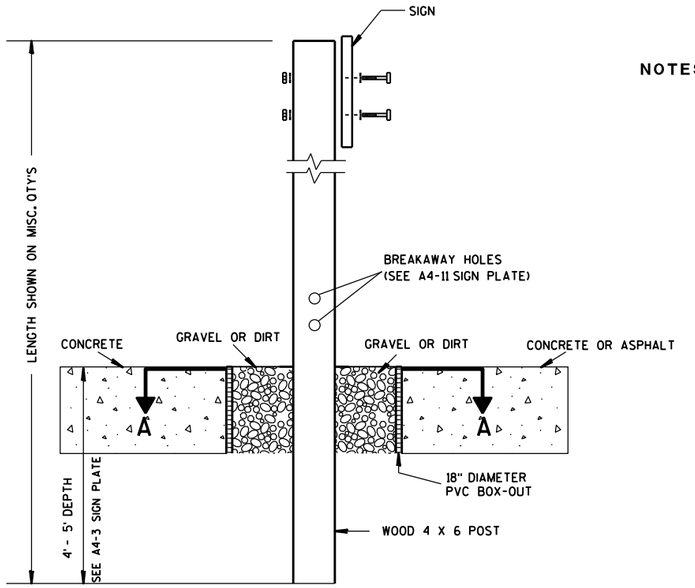
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

7 7

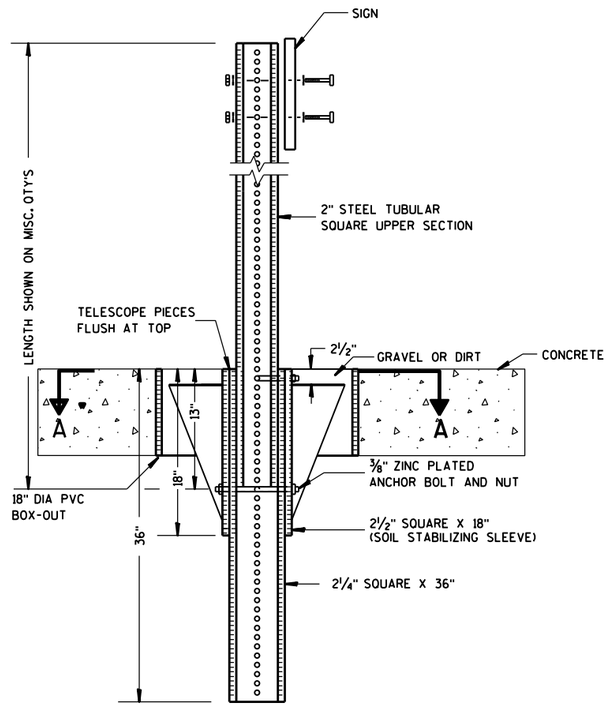
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 74	E



ELEVATION VIEW

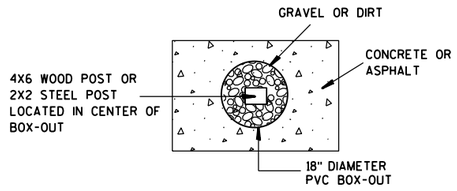
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

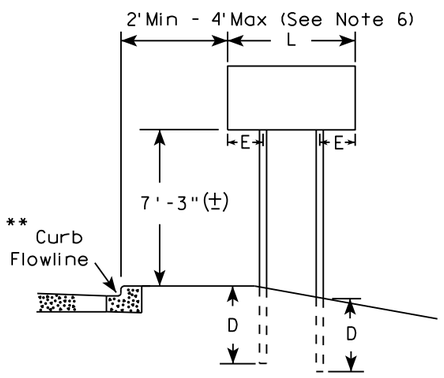
APPROVED Matthew R Rauch
for State Traffic Engineer

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

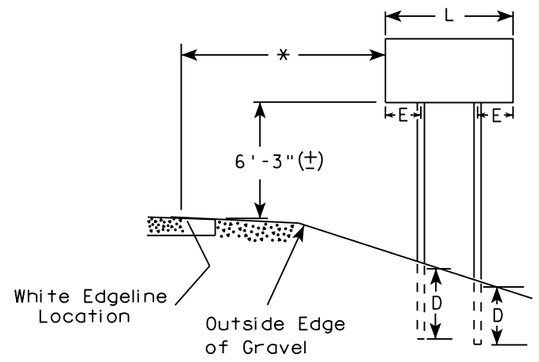
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

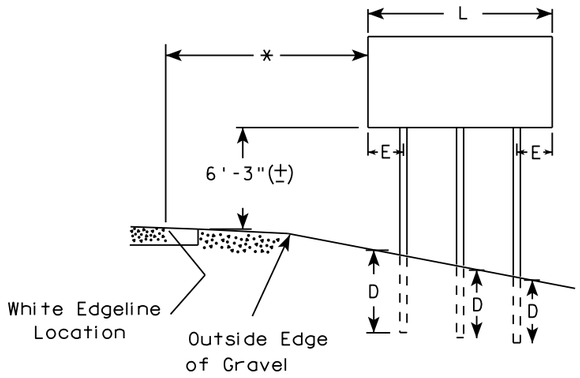
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

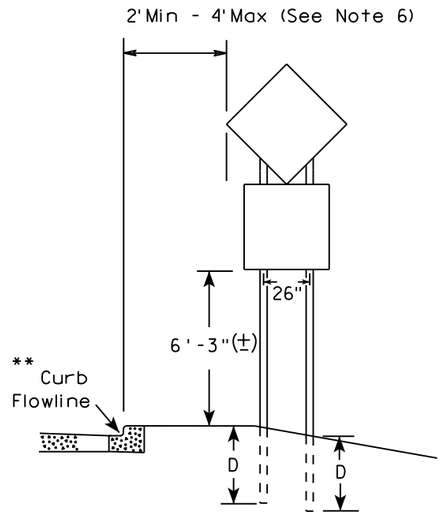
URBAN AREA



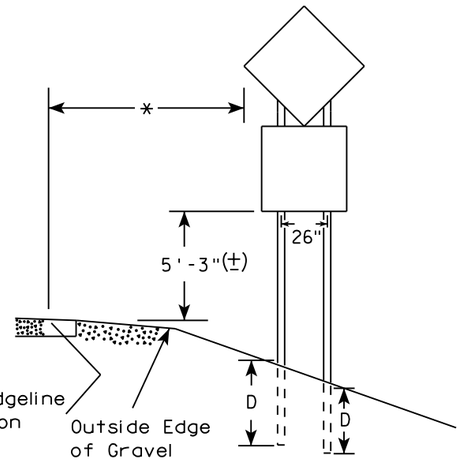
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

GENERAL NOTES

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

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

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

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

POST EMBEDMENT DEPTH

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

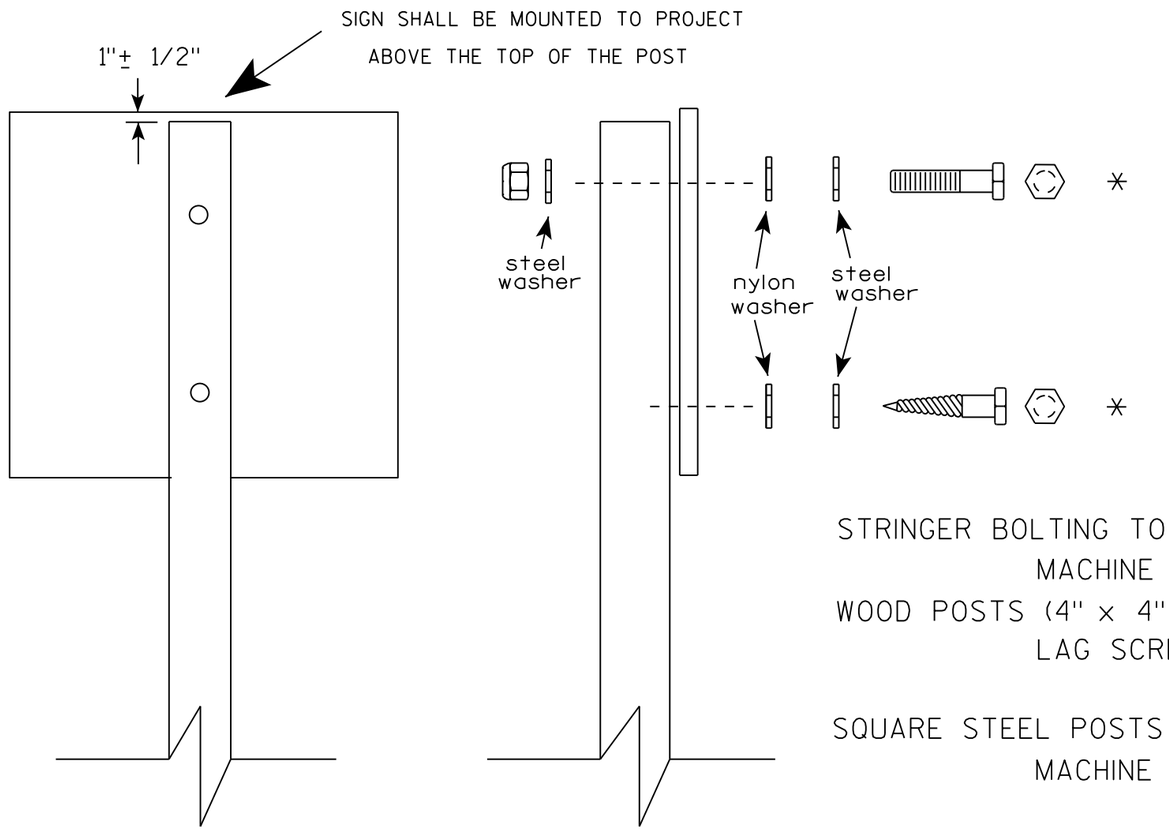
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 76	E



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

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

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

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

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

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

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

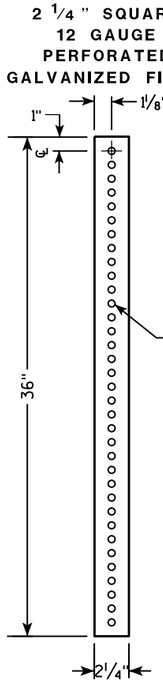
7

PROJECT NO:

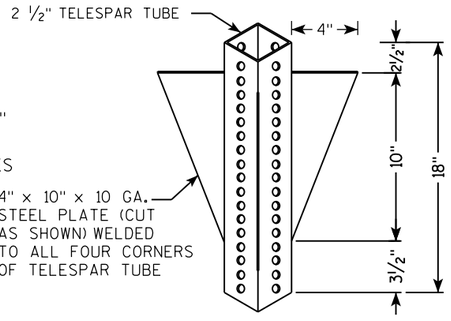
SHEET NO: E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

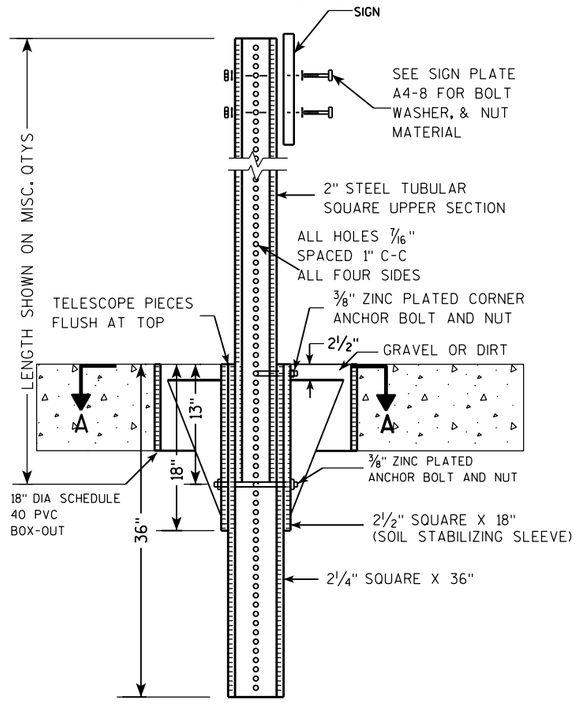
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



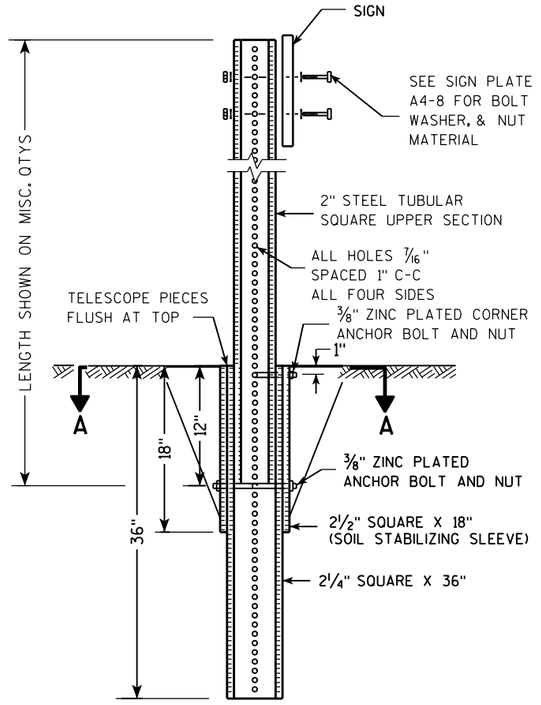
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

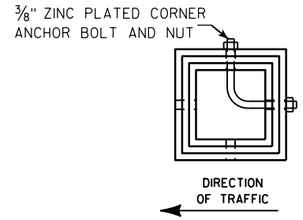


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

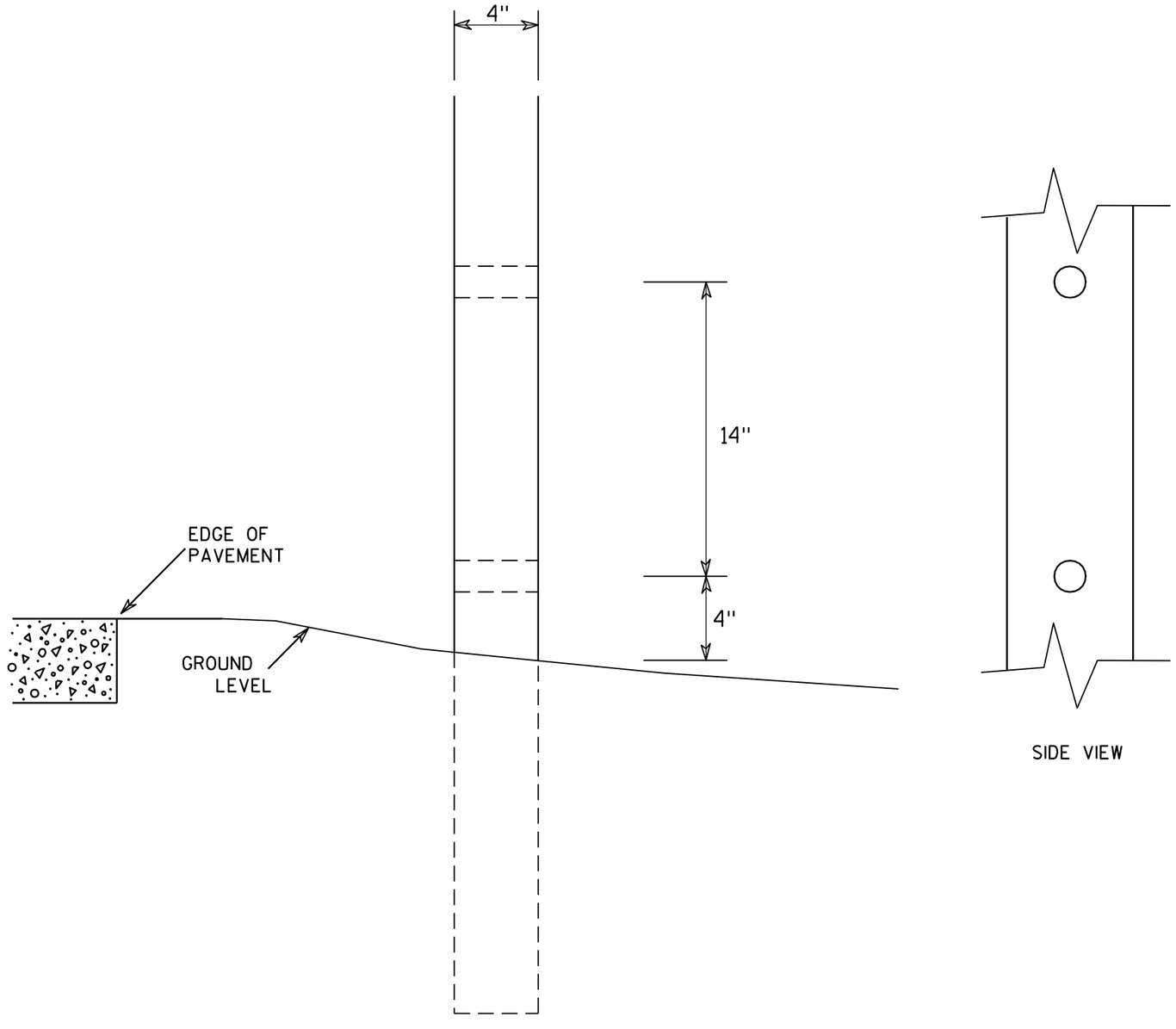
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 78 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

7

7

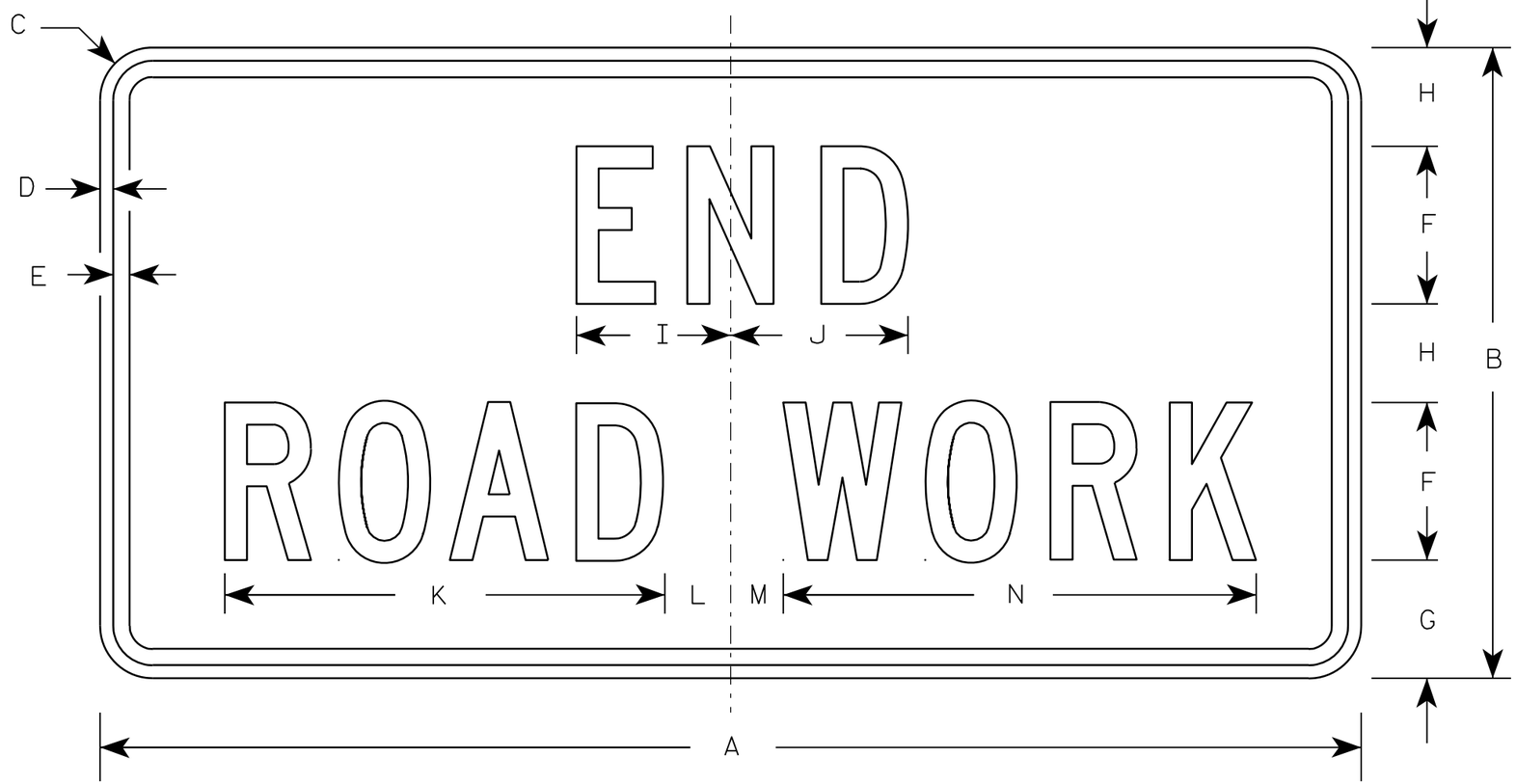
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 79	E



G20-2A

NOTES

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

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

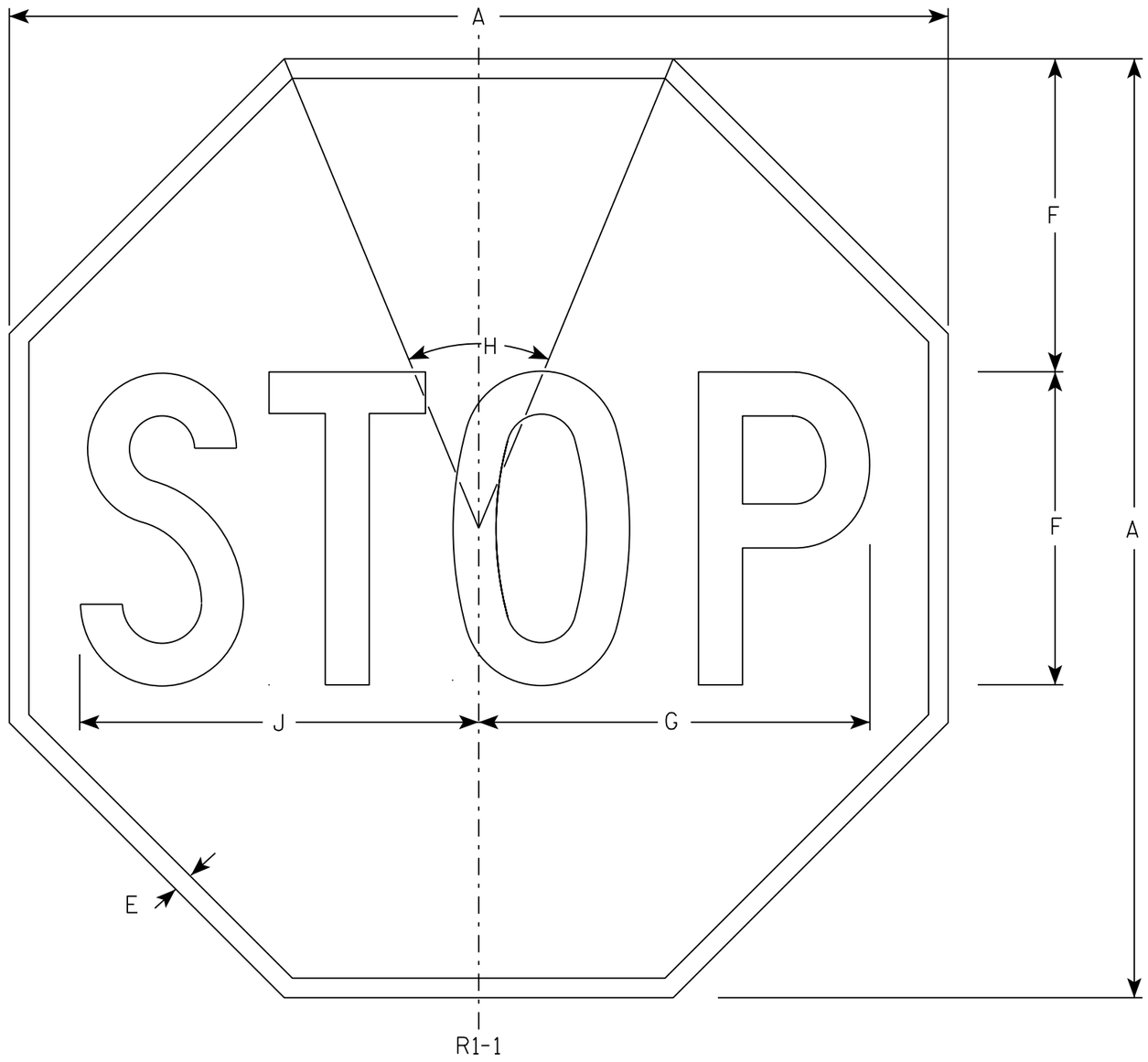
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 80	E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN

R1-1

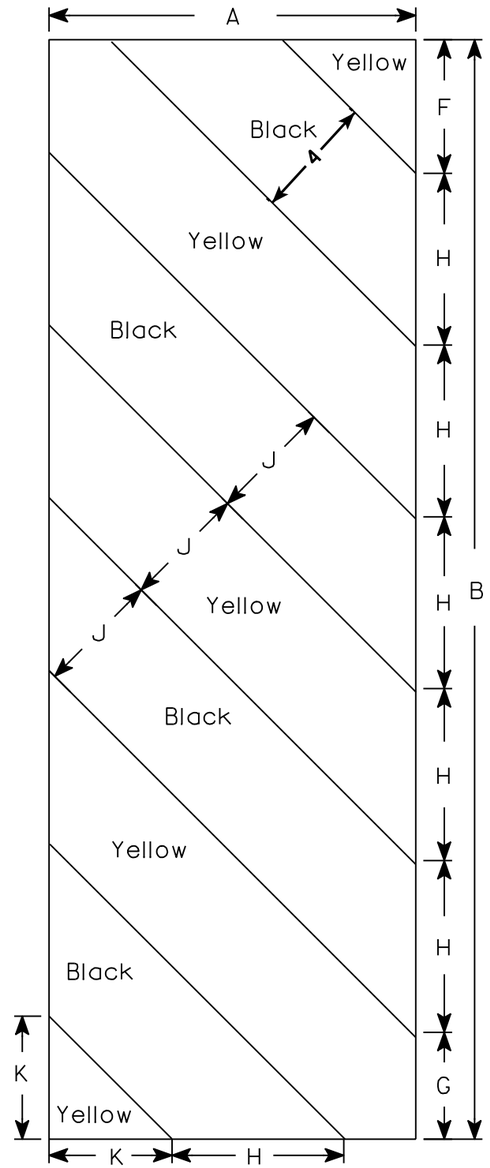
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

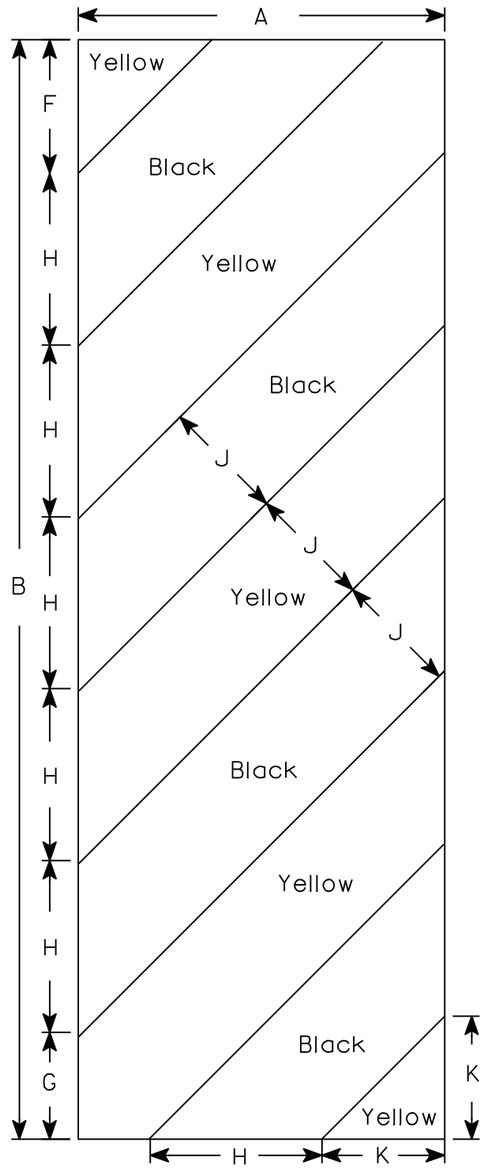
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 81	E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

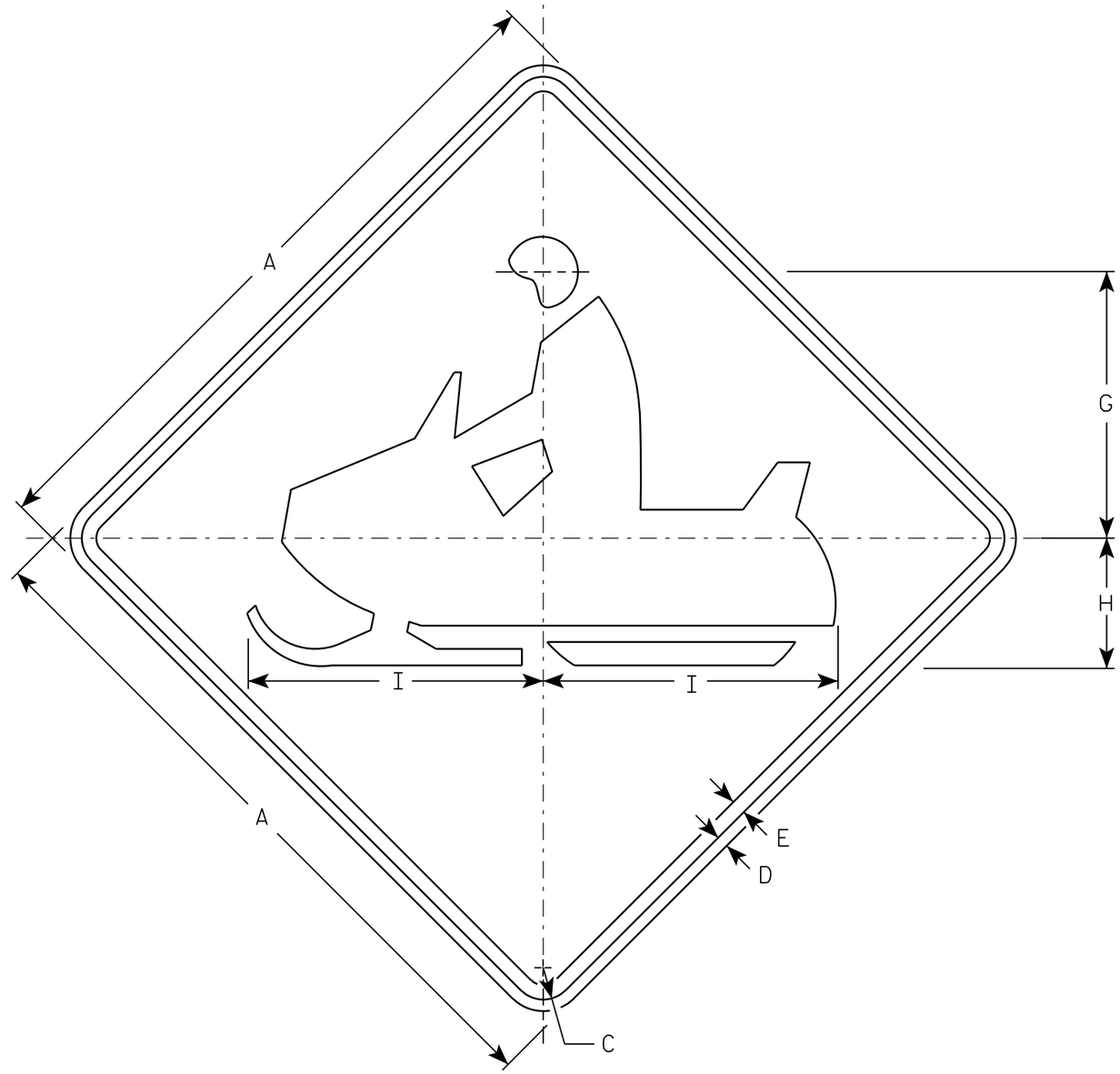
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 82 | E



W11-6

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		9 1/2	4 1/2	10 1/4																		4.0
2S	30		1 3/8	1/2	5/8		11 1/2	5 5/8	12 3/4																		6.25
2M	30		1 3/8	1/2	5/8		11 1/2	5 5/8	12 3/4																		6.25
3	36		1 5/8	5/8	3/4		14 1/8	6 3/4	15 1/4																		9.0
4	48		2 1/4	3/4	1		19	9	20 1/2																		16.0
5																											

STANDARD SIGN
W11-6

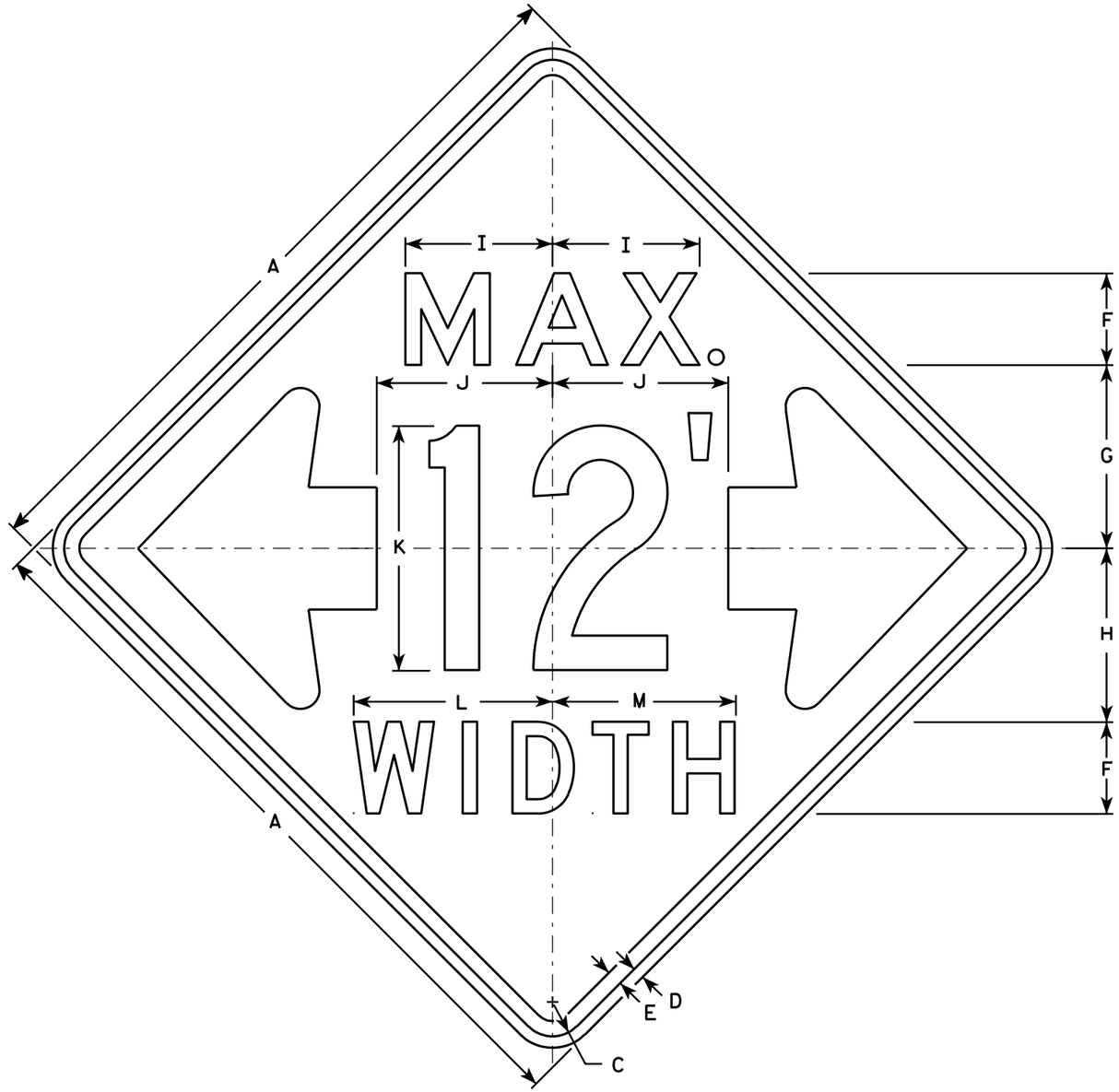
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W11-6.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 83 | E

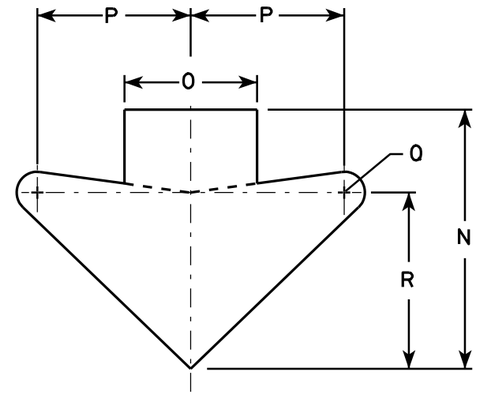
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W116.DGN PLOT DATE : 13-MAR-2013 12:57 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.954276:1.000000
WISDOT/CADDS SHEET 42



W12-52

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN
W12-52

WISCONSIN DEPT OF TRANSPORTATION

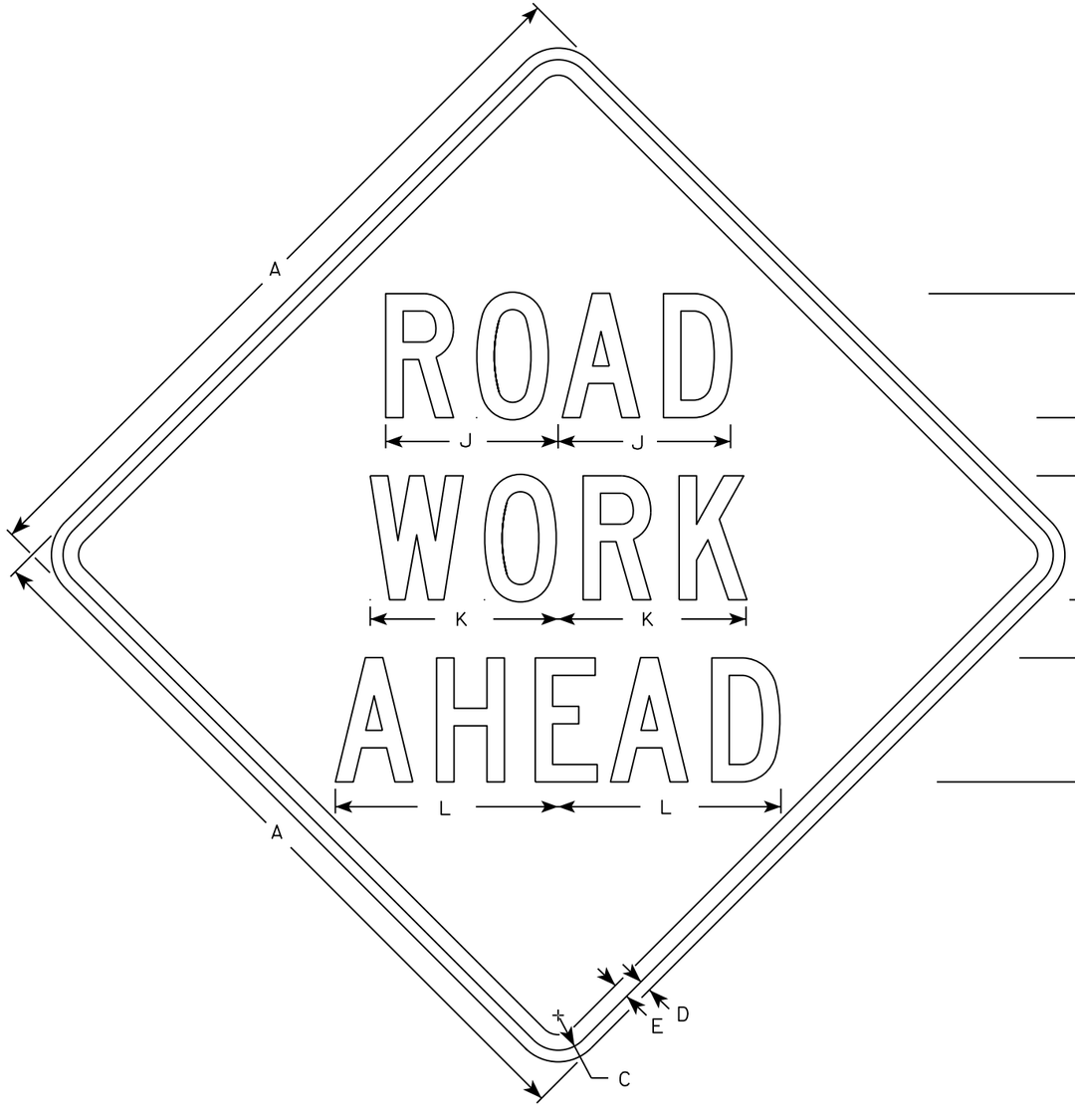
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

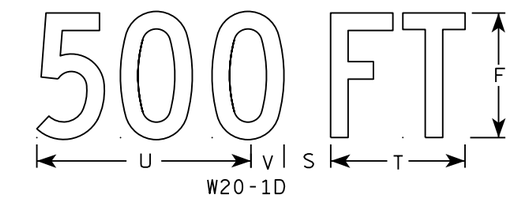
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 84 | E

7

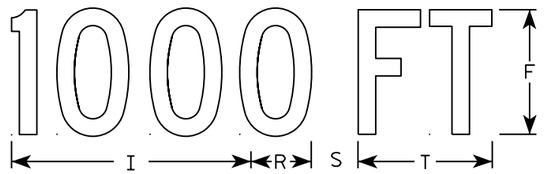
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W1252.DGN PLOT DATE : 16-MAR-2011 14:45 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.137199:1.000000
WISDOT/CADDS SHEET 42



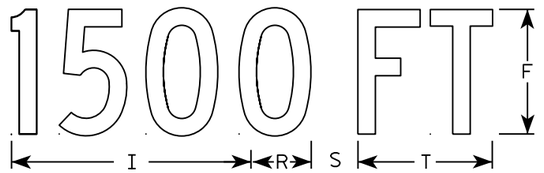
W20-1A



W20-1D

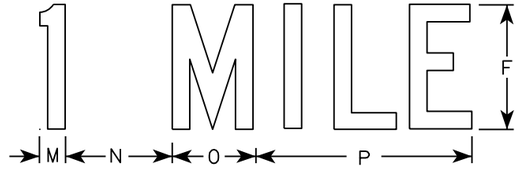


W20-1C

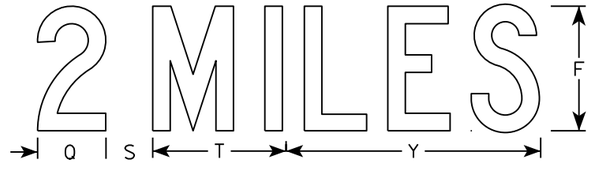


W20-1B

W20-1G



W20-1F



W20-1E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

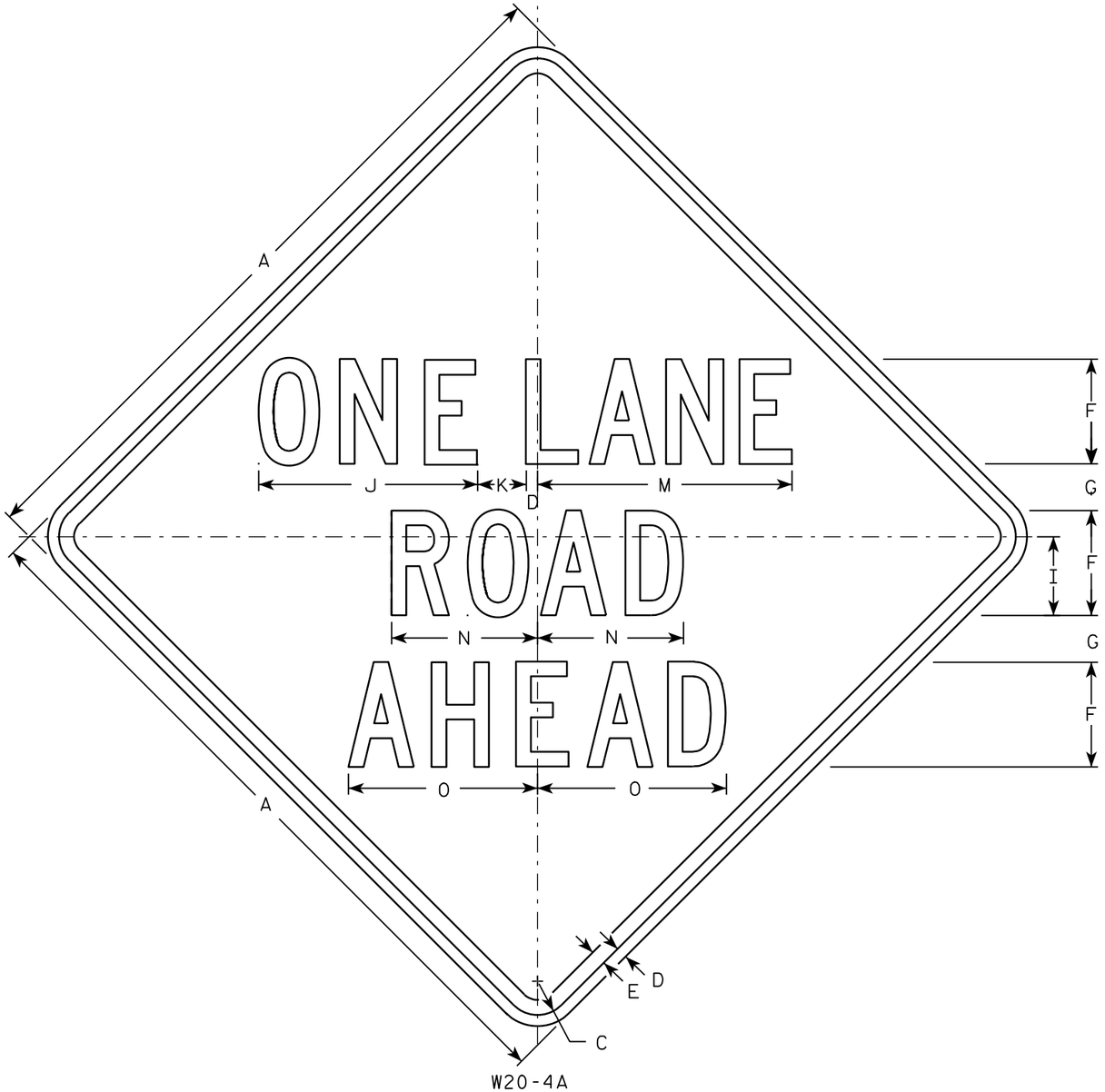
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

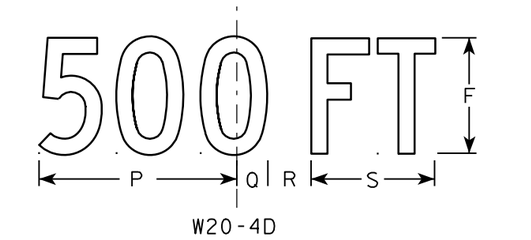
PROJECT NO:

SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$



W20-4A



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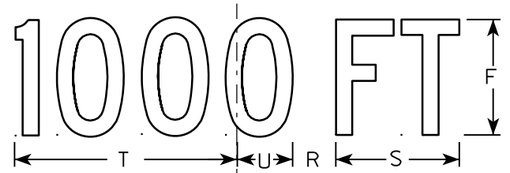
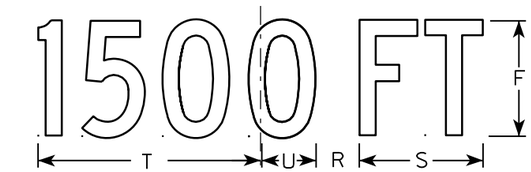
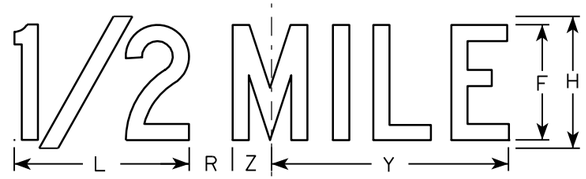


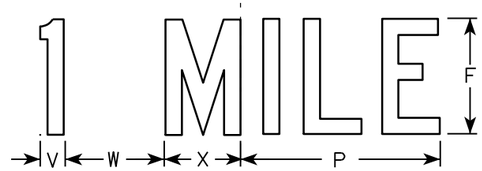
W20-4C



W20-4B



W20-4G



W20-4F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-4A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

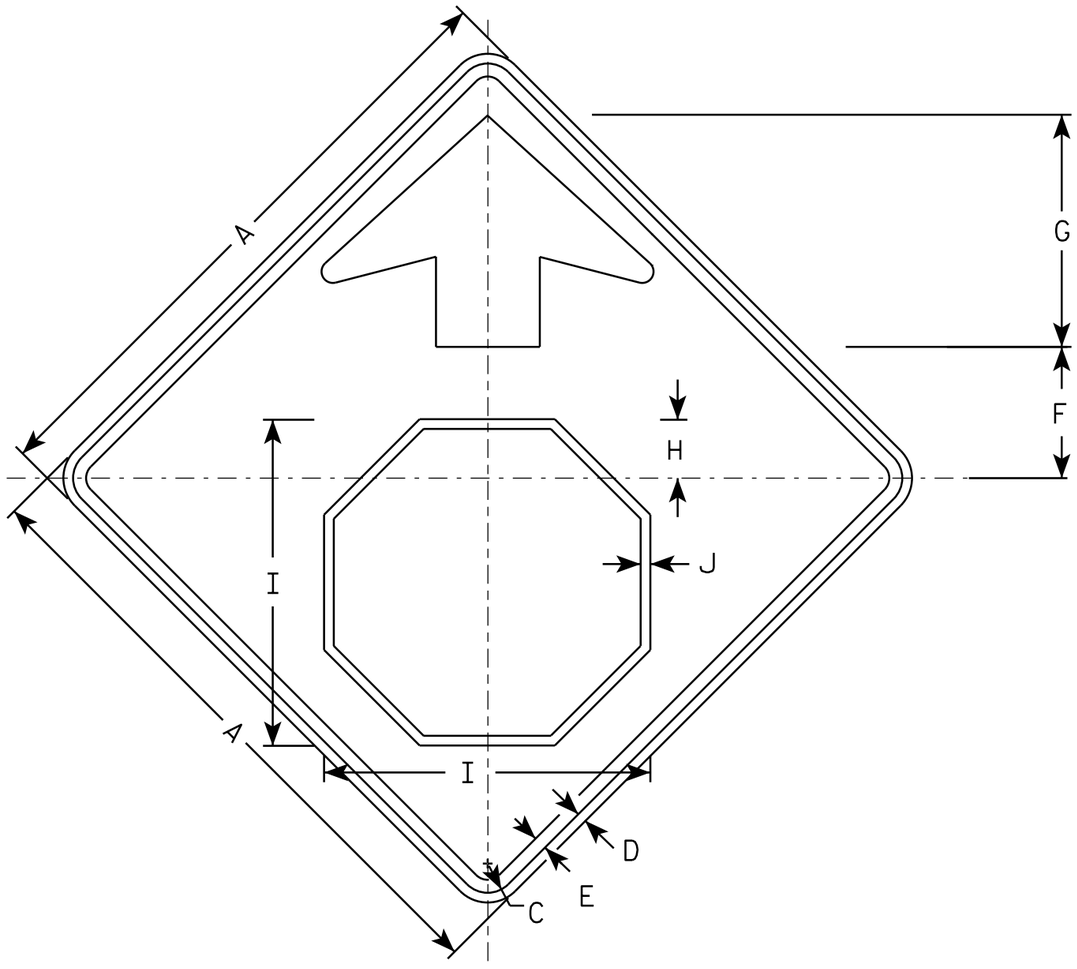
DATE 3/18/11 PLATE NO. W20-4.9

PROJECT NO:

SHEET NO: 86 E

7

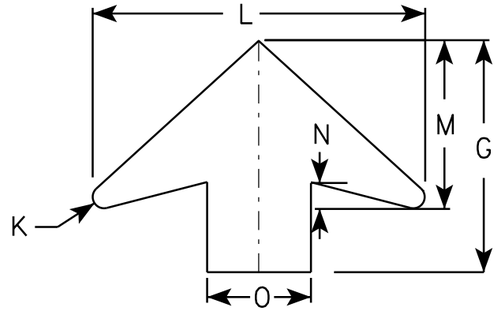
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W204.DGN PLOT DATE : 18-MAR-2011 12:11 PLOT BY : mscj9h



W03-1

NOTES

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



ARROW DETAIL

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

STANDARD SIGN
W03-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

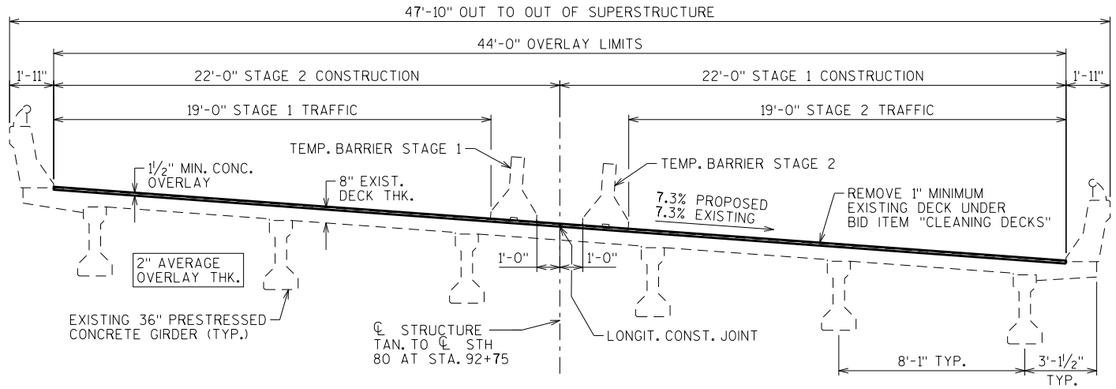
DATE 11/20/13 PLATE 87 03-1.1

PROJECT NO:

SHEET NO: E

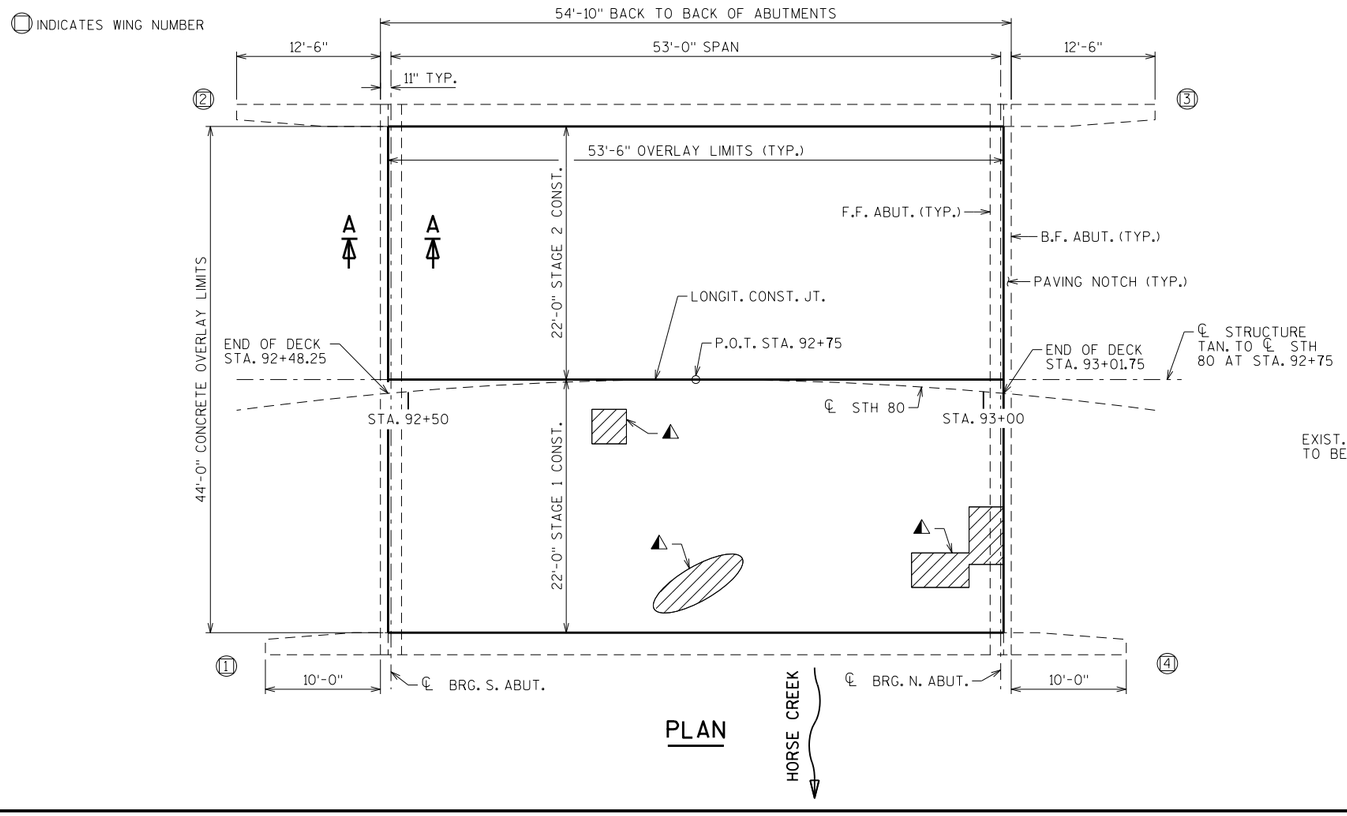
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W031.DGN PLOT DATE : 20-NOV-2013 10:54 PLOT BY : mscsja

WISDOT/CADDS SHEET 42

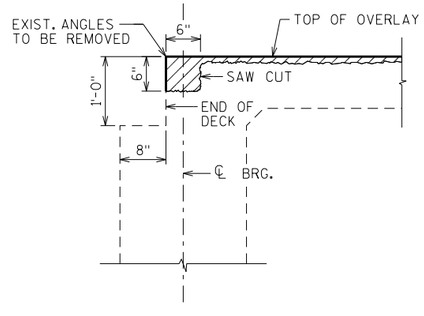


CROSS SECTION THRU ROADWAY

LOOKING NORTH



PLAN



SECTION A-A

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HS-20
INVENTORY RATING: HS-17
OPERATING RATING: HS-29
MAXIMUM STANDARD PERMIT VEHICLE LOAD: 230 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY OVERLAY DECKS ———— f`c = 4,000 P.S.I.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE INSIDE AND TOP SURFACES OF THE PARAPETS, INCLUDING PARAPETS ON WINGS.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".

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

"CONCRETE SURFACE REPAIR" REQUIRED AT SOUTH ABUTMENT AND EAST PARAPET, AND AS DIRECTED BY THE ENGINEER.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1½" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION. EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF THE EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½", CONTACT THE STRUCTURES DESIGN SECTION.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
502.3200	PROTECTIVE SURFACE TREATMENT	SY	281
502.3210	PIGMENTED SURFACE SEALER	SY	66
509.0301	PREPARATION DECKS TYPE 1	SY	8
509.0302	PREPARATION DECKS TYPE 2	SY	4
509.0500	CLEANING DECKS	SY	262
509.1500	CONCRETE SURFACE REPAIR	SF	38
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	17
509.9050.S	CLEANING PARAPETS	LF	155

LIST OF DRAWINGS

1. CONCRETE OVERLAY

STRUCTURE DESIGN CONTACT:
MICAH BROOKS (608) 266-5080
LAURA SHADEWALD (608) 267-9592

STATE PROJECT NUMBER

5042-05-61

NO.	DATE	REVISION	BY

WISCONSIN DEPARTMENT OF TRANSPORTATION

BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 8/4/17
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-52-47

STH 80 OVER HORSE CREEK

COUNTY RICHLAND | TOWN RICHLAND

DESIGN SPEC. REHABILITATION N/A

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

CONCRETE OVERLAY

SHEET 1 OF 1

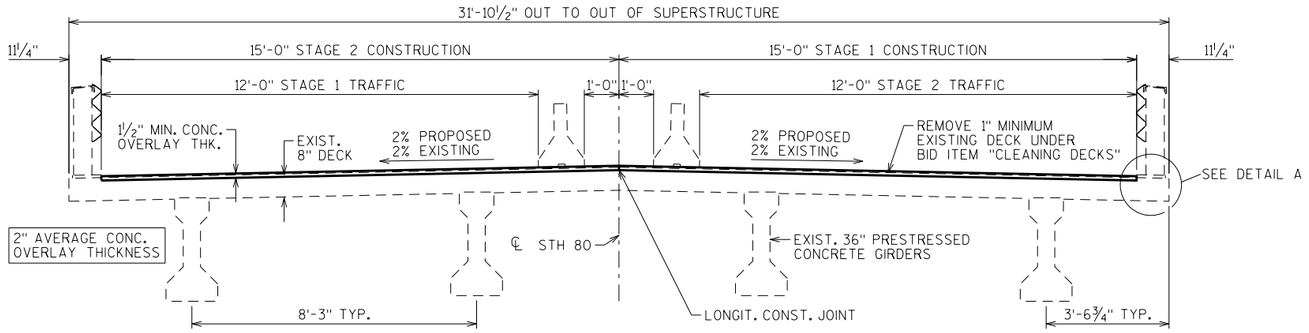
88

I.D. 5042-05-31A DATE: JUNE 2017

SCALE = 6.40

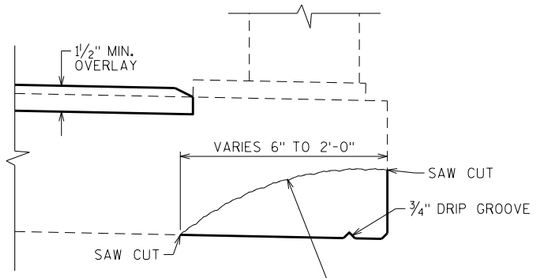
8

8

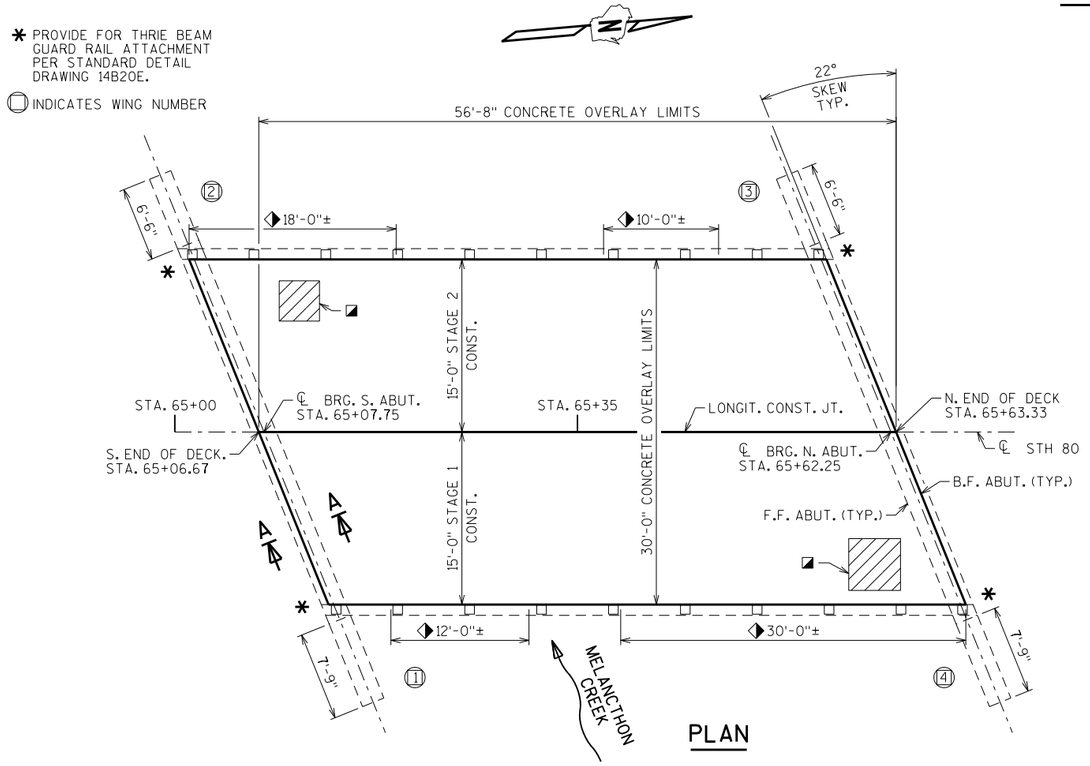


CROSS SECTION THRU ROADWAY

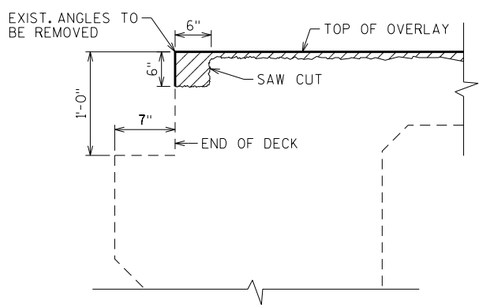
LOOKING NORTH



DETAIL A



PLAN



SECTION A-A

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HS-20
INVENTORY RATING: HS-18
OPERATING RATING: HS-32
MAXIMUM STANDARD PERMIT VEHICLE LOAD: 250 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY OVERLAY DECKS ——— f'c = 4,000 P.S.I.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY AND EXISTING DECK, AS WELL AS THE OUTSIDE EDGES OF THE DECK, AND THE OUTER 1 FOOT OF THE UNDERSIDE OF THE DECK.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS".

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

◆ "CONCRETE SURFACE REPAIR" REQUIRED AT EDGES AND UNDERSIDE OF DECK, AND AS DIRECTED BY THE ENGINEER. EXACT NUMBER AND SPACING OF ANODES TO BE DETERMINED BY THE ENGINEER.

ANY EXCAVATION REQUIRED AT THE ABUTMENTS TO COMPLETE THE OVERLAY TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1½" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION. EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF THE EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½", CONTACT THE STRUCTURES DESIGN SECTION.

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
	502.3200	PROTECTIVE SURFACE TREATMENT	SY	223
	509.0301	PREPARATION DECKS TYPE 1	SY	5
	509.0302	PREPARATION DECKS TYPE 2	SY	3
	509.0500	CLEANING DECKS	SY	189
◆	509.1500	CONCRETE SURFACE REPAIR	SF	94
	509.2000	FULL-DEPTH DECK REPAIR	SY	1
	509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	13
◆	SPV.0060	EMBEDDED GALVANIC ANODES	EACH	35
	SPV.0105	STEEL RAILING TYPE W REHABILITATION	LS	1

LIST OF DRAWINGS

1. CONCRETE OVERLAY
2. RAILING REHABILITATION
3. CATHODIC PROTECTION

STRUCTURE DESIGN CONTACT:
MICAH BROOKS (608) 266-5080
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

WISCONSIN DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 8/4/17
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-52-48

STH 80 OVER MELANCTHON CREEK

COUNTY	TOWN
RICHLAND	HENRIETTA

DESIGN SPEC. REHABILIATION N/A

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

CONCRETE OVERLAY

SHEET 1 OF 3

89

I.D. 5042-05-31B DATE: JUNE 2017

SCALE = 6.40

STATE PROJECT NUMBER

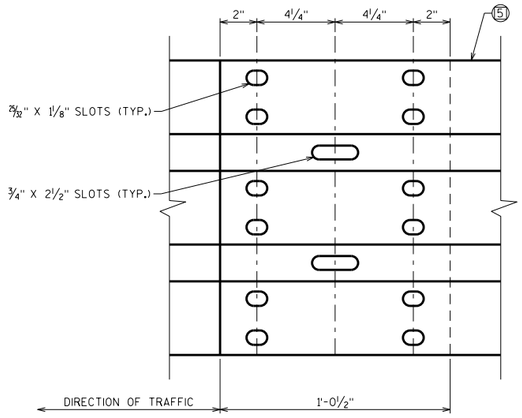
5042-05-61

8

8

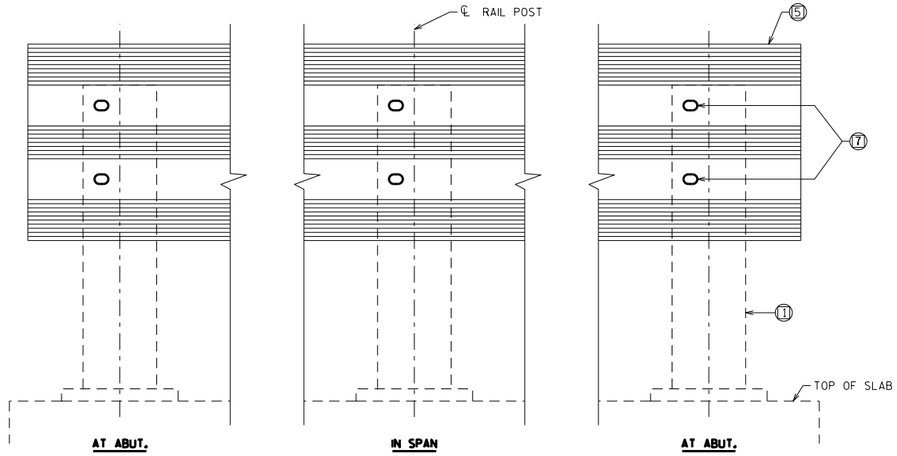
STATE PROJECT NUMBER

5042-05-61



RAIL MEMBER SPLICE

⅝" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX. NUTS AT ALL SLOTS



INSIDE ELEVATION

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BID ITEM SHALL BE "STEEL RAILING TYPE W REHABILITATION" WHICH SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY TO RAISE ITEMS NO. 2 & NO. 5 BETWEEN THE LONGIT. LIMITS OF RAILING AS SHOWN IN ELEVATION AND SHALL BE PAID FOR AS A LUMP SUM ITEM.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS OTHERWISE NOTED.

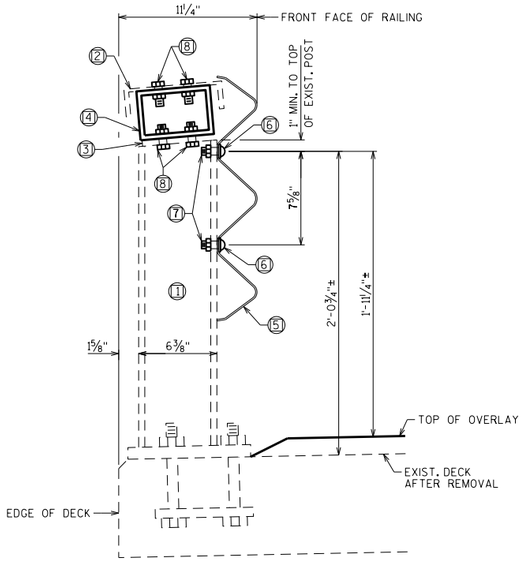
SHIM PLATES 6" X 1/16" X 6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION.

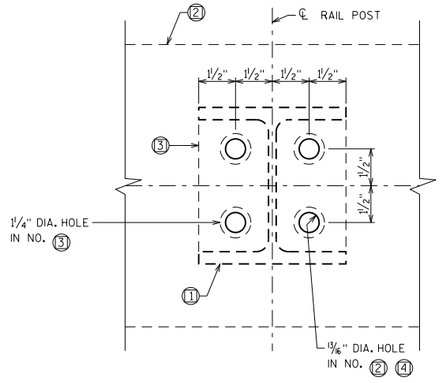
PRIOR TO GALVANIZING ALL STEEL STRUCTURAL TUBE SHALL BE GIVEN A NO. 6 BLAST CLEANING PER S.S.P.C. SPECIFICATIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

NEW BOLTS AND REFLECTORS SHALL BE FURNISHED AND USED TO RESET THE STRUCTURAL TUBES AND W-RAIL.



SECTION THRU RAILING



CHANNEL MEMBER DETAIL

AT POST CONNECTION

① EXISTING W6 X 25. DRILL TWO ¾" DIA. HOLES FOR BOLT. NO. 7. GALVANIZE ALL EXPOSED SURFACES AT NEW HOLES.

② EXISTING C8 X 11.5 WITH 13/16" DIA. HOLES. ATTACH TO NO. 4 WITH BOLTS NO. 8.

③ EXISTING PLATE ½" X 5¾" X 6" WITH 1¼" DIA. HOLES FOR BOLTS NO. 8.

④ STRUCTURAL TUBE 6" X 4" X ⅜" WITH 13/16" DIA. HOLES, 6" LONG. ATTACH TO NO. 3 WITH BOLTS NO. 8.

⑤ REINSTALL W-RAIL. ATTACH TO NO. 1 WITH BOLTS NO. 7.

⑥ 1¾" X 3" MOUNTING BOLT WASHER, EIGHT GAGE GALVANIZED.

⑦ ⅝" DIA. BUTTON HEAD RAIL MOUNTING BOLT WITH ROUND WASHER AND NUT. 2 PER POST.

⑧ ⅝" DIA. X 2" LONG HEX. BOLTS WITH NUT AND TWO WASHERS EACH. 4 BOLTS REQUIRED PER POST CONNECTION.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-52-48

DRAWN BY MWB | PLANS CK'D. SDR

RAILING REHABILITATION

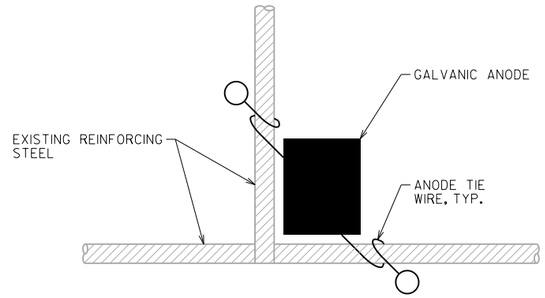
SHEET 2

90

SCALE = 0.50

STATE PROJECT NUMBER

5042-05-61



TYPICAL INSTALLATION AT BAR STEEL INTERSECTION

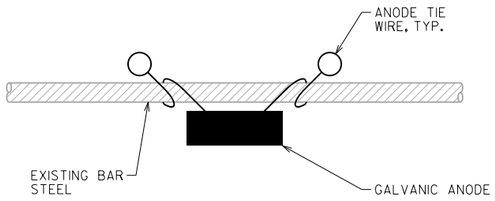
NOTE:
EXISTING REINFORCING STEEL TO BE COMPLETELY CLEANED OF CORROSIVE MATERIAL PRIOR TO INSTALLATION OF GALVANIC ANODES.

GENERAL NOTES

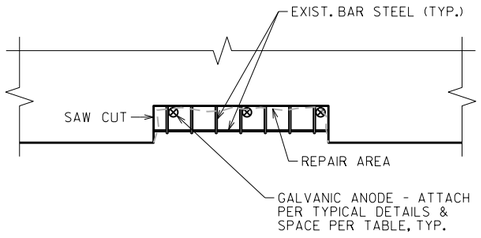
SEE SPECIAL PROVISION "EMBEDDED GALVANIC ANODES" FOR DESCRIPTION, MATERIALS, CONSTRUCTION, MEASUREMENT, AND PAYMENT INFORMATION.

LOCATIONS OF GALVANIC ANODES SHOULD BE WITHIN 6" OF THE EDGE OF THE REPAIR AREA.

AFTER PLACEMENT, GALVANIC ANODES SHOULD MAINTAIN A MINIMUM TOP COVER OF $1\frac{1}{2}$" AND A MINIMUM BOTTOM COVER OF $\frac{3}{4}$".



TYPICAL INSTALLATION FOR BAR STEEL



TYPICAL DECK REPAIR DETAIL

MAXIMUM GALVANIC ANODE SPACING

STEEL DENSITY RATIO (SQ. IN. PER FT.)	MAXIMUM ANODE SPACING (INCHES)
⩽ 0.30	24
0.31 → 0.50	20
0.51 → 0.60	18
0.61 → 0.80	16
0.81 → 0.90	15
0.91 → 1.00	14
1.01 → 1.20	12
⩾ 1.20	*

NOTES:

1) *AT STEEL DENSITY RATIOS GREATER THAN 1.20, CONSULT THE ENGINEER TO DETERMINE MAXIMUM ANODE SPACING AND ANODE LAYOUT.
2) STEEL DENSITY RATIO IS THE RATIO OF STEEL REINFORCING BAR SURFACE AREA TO EXPOSED CONCRETE SURFACE AREA WITHIN THE REPAIR AREA.
3) TABLE IS BASED ON HIGH CORROSION RISK WITHIN THE SURFACE REPAIR AREA, A MINIMUM ZINC MASS OF 38 GRAMS, AND AN APPROXIMATE SERVICE LIFE OF 10-20 YEARS.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-52-48

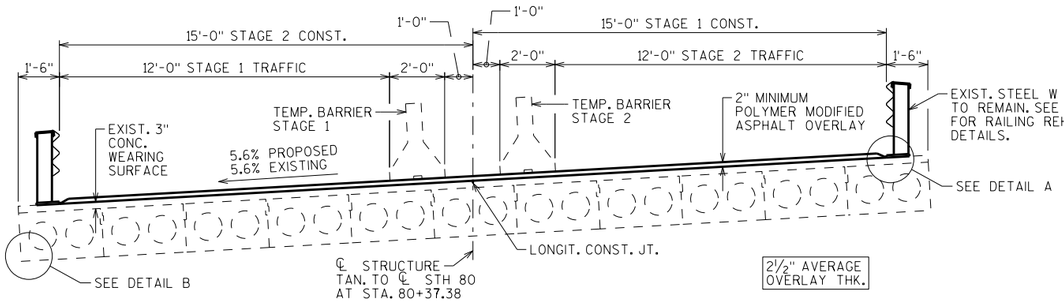
DRAWN BY MWB | PLANS CK'D. SDR

CATHODIC PROTECTION

SHEET 3

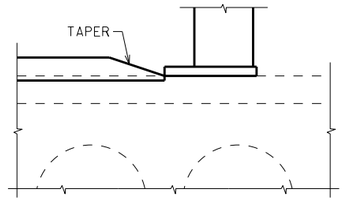
91

SCALE = 1.00

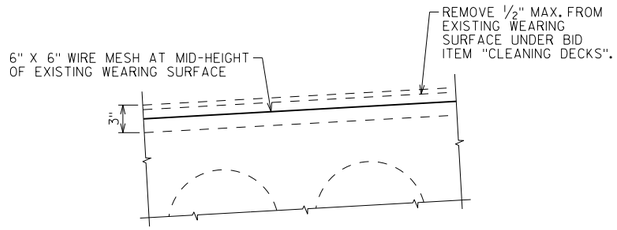


CROSS SECTION THRU ROADWAY

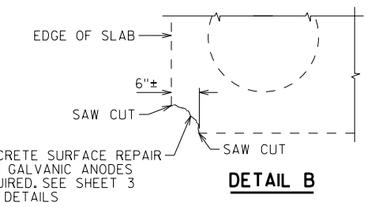
LOOKING NORTH



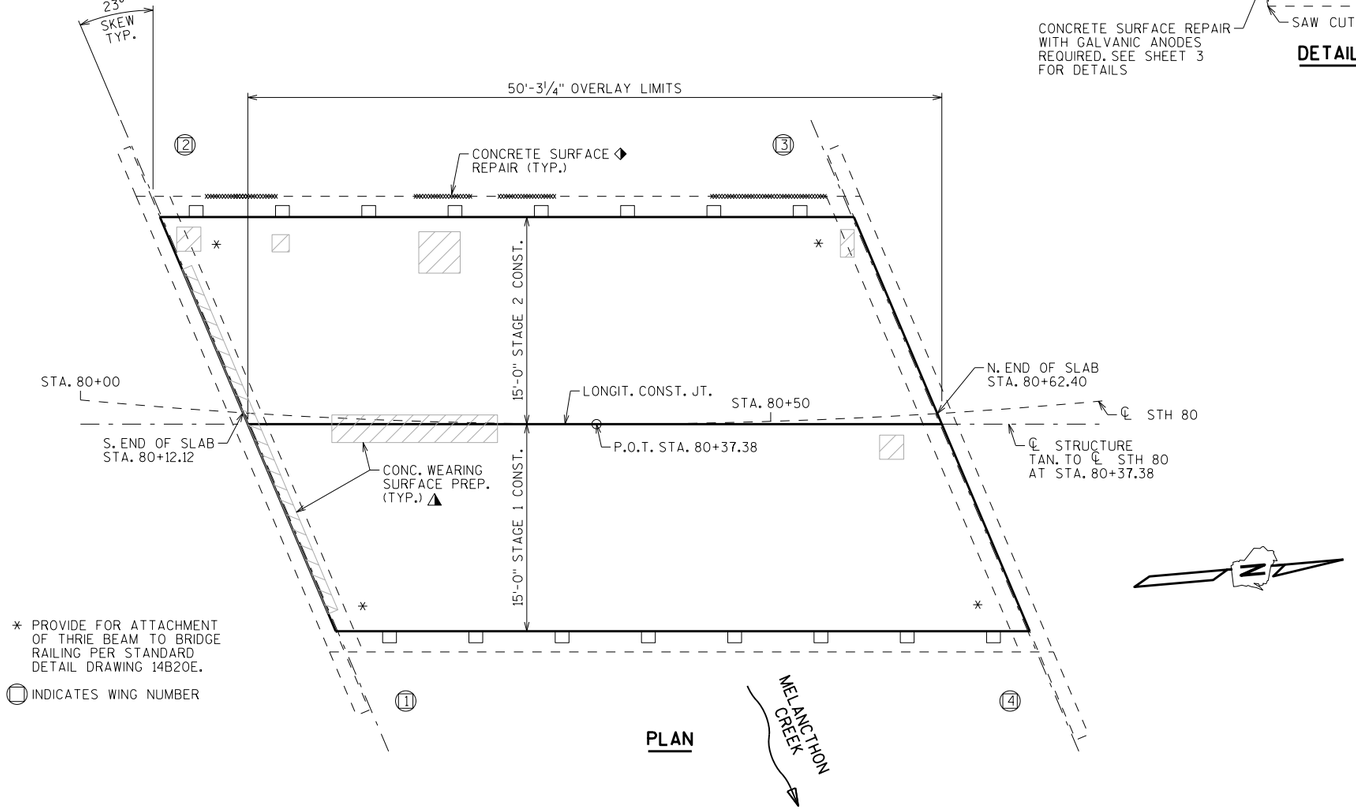
DETAIL A



WEARING SURFACE DETAIL



DETAIL B



PLAN

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HS-20
INVENTORY RATING: HS-15
OPERATING RATING: HS-25
MAXIMUM STANDARD PERMIT VEHICLE LOAD: 150 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY DECK PATCHING ——— f'c = 4,000 P.S.I.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

⚠ "CONCRETE WEARING SURFACE PREPARATION" AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE ENGINEER. WEARING SURFACE PREPARATION SHALL BE FILLED WITH "CONCRETE MASONRY DECK REPAIR".

◆ "CONCRETE SURFACE REPAIR" REQUIRED AT EDGES AND UNDERSIDE OF DECK, AND AS DIRECTED BY THE ENGINEER. EXACT NUMBER AND SPACING OF ANODES TO BE DETERMINED BY THE ENGINEER.

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

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 2" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION. EXPECTED AVERAGE OVERLAY THICKNESS IS 2½". IF THE EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½", CONTACT THE STRUCTURES DESIGN SECTION.

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

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
509.0500	CLEANING DECKS	SY	168
509.1500	CONCRETE SURFACE REPAIR	SF	18
509.2100.S	CONCRETE MASONRY DECK REPAIR	CY	1
509.3500.S	HMA OVERLAY POLYMER-MODIFIED	TON	24
SPV.0060	EMBEDDED GALVANIC ANODES	EACH	11
SPV.0090	SAWING PAVEMENT DECK PREPARATION AREAS	LF	120
SPV.0105	STEEL RAILING TYPE W REHABILITATION	LS	1
SPV.0165	CONCRETE WEARING SURFACE PREPARATION	SF	108

STRUCTURE DESIGN CONTACTS:

MICAH BROOKS (608) 266-5080
LAURA SHADEWALD (608) 267-9592

LIST OF DRAWINGS

1. POLYMER MODIFIED ASPHALT OVERLAY
2. RAILING REHABILITATION
3. CATHODIC PROTECTION

NO.	DATE	REVISION	BY

WISCONSIN DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 10/20/17
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-52-49

STH 80 OVER MELANCTHON CREEK

COUNTY RICHLAND | TOWN HENRIETTA

DESIGN SPEC. REHABILITATION N/A

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

POLYMER MODIFIED ASPHALT OVERLAY

SHEET 1 OF 3

92

I.D. 5042-05-31C DATE: OCT. 2017

SCALE = 5.33

STATE PROJECT NUMBER

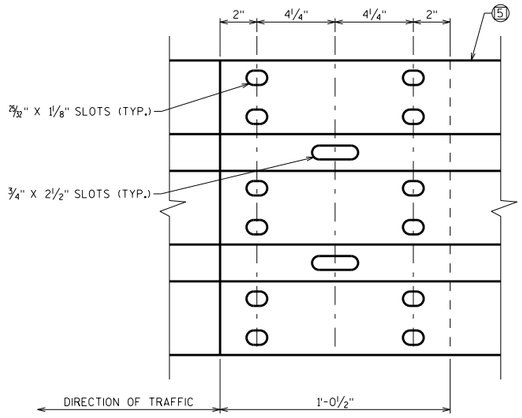
5042-05-61

8

8

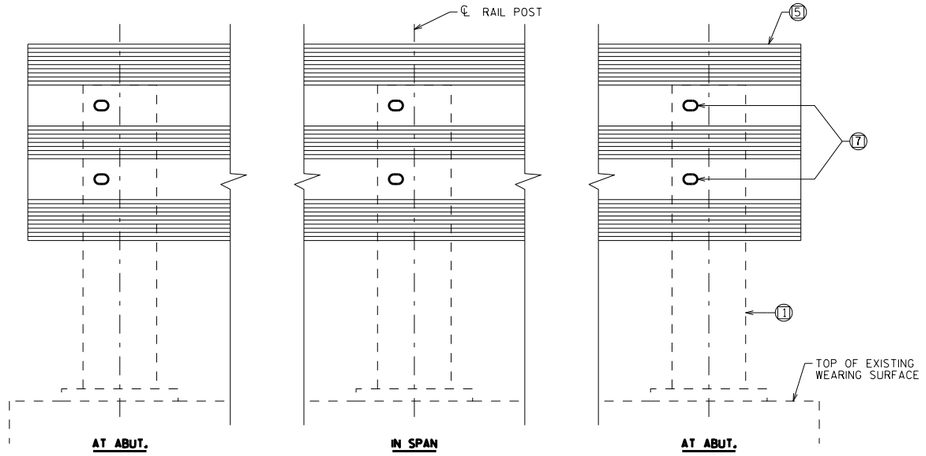
STATE PROJECT NUMBER

5042-05-61



RAIL MEMBER SPLICE

⅝" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX. NUTS AT ALL SLOTS



INSIDE ELEVATION

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BID ITEM SHALL BE "STEEL RAILING TYPE W REHABILITATION" WHICH SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY TO RAISE ITEMS NO. 2 & NO. 5 BETWEEN THE LONGIT. LIMITS OF RAILING AS SHOWN IN ELEVATION AND SHALL BE PAID FOR AS A LUMP SUM ITEM.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS OTHERWISE NOTED.

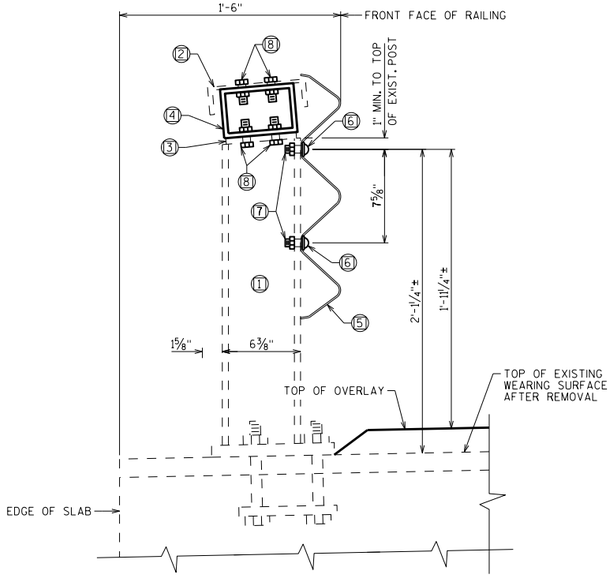
SHIM PLATES 6" X 1/16" X 6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION.

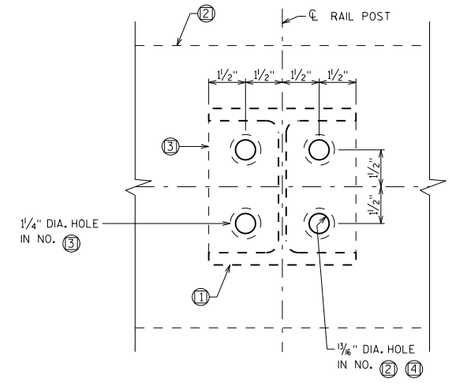
PRIOR TO GALVANIZING ALL STEEL STRUCTURAL TUBE SHALL BE GIVEN A NO. 6 BLAST CLEANING PER S.S.P.C. SPECIFICATIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

NEW BOLTS AND REFLECTORS SHALL BE FURNISHED AND USED TO RESET THE STRUCTURAL TUBES AND W-RAIL.



SECTION THRU RAILING



CHANNEL MEMBER DETAIL

AT POST CONNECTION

① EXISTING W6 X 25. DRILL TWO ¾" DIA. HOLES FOR BOLT NO. 7. GALVANIZE ALL EXPOSED SURFACES AT NEW HOLES.

② EXISTING C8 X 11.5 WITH 13/16" DIA. HOLES. ATTACH TO NO. 4 WITH BOLTS NO. 8.

③ EXISTING PLATE ½" X 5¾" X 6" WITH 1¼" DIA. HOLES FOR BOLTS NO. 8.

④ STRUCTURAL TUBE 6" X 4" X ⅜" WITH 13/16" DIA. HOLES, 6" LONG. ATTACH TO NO. 3 WITH BOLTS NO. 8.

⑤ REINSTALL W-RAIL. ATTACH TO NO. 1 WITH BOLTS NO. 7.

⑥ 1¾" X 3" MOUNTING BOLT WASHER, EIGHT GAGE GALVANIZED.

⑦ ⅝" DIA. BUTTON HEAD RAIL MOUNTING BOLT WITH ROUND WASHER AND NUT. 2 PER POST.

⑧ ⅝" DIA. X 2" LONG HEX. BOLTS WITH NUT AND TWO WASHERS EACH. 4 BOLTS REQ'D PER POST CONNECTION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-52-49

DRAWN BY MWB | PLANS CK'D. SDR

RAILING REHABILITATION

SHEET 2

93

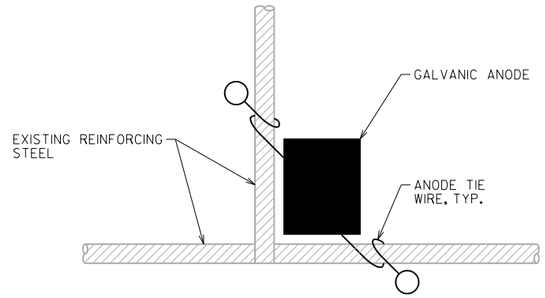
8

8

SCALE = 0.50

STATE PROJECT NUMBER

5042-05-61



TYPICAL INSTALLATION AT BAR STEEL INTERSECTION

NOTE:
EXISTING REINFORCING STEEL TO BE COMPLETELY CLEANED OF CORROSIVE MATERIAL PRIOR TO INSTALLATION OF GALVANIC ANODES.

GENERAL NOTES

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LOCATIONS OF GALVANIC ANODES SHOULD BE WITHIN 6" OF THE EDGE OF THE REPAIR AREA.

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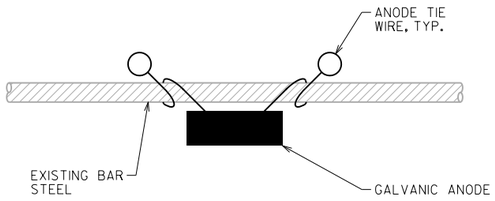
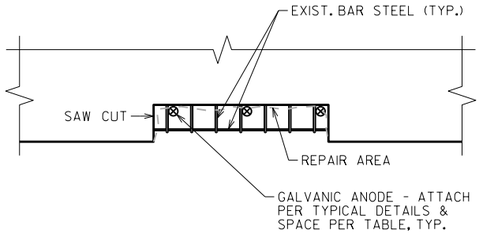


TYPICAL INSTALLATION FOR BAR STEEL



TYPICAL DECK REPAIR DETAIL

MAXIMUM GALVANIC ANODE SPACING

STEEL DENSITY RATIO (SQ. IN. PER FT.)	MAXIMUM ANODE SPACING (INCHES)
⩽ 0.30	24
0.31 → 0.50	20
0.51 → 0.60	18
0.61 → 0.80	16
0.81 → 0.90	15
0.91 → 1.00	14
1.01 → 1.20	12
⩾ 1.20	*

NOTES:

1) *AT STEEL DENSITY RATIOS GREATER THAN 1.20, CONSULT THE ENGINEER TO DETERMINE MAXIMUM ANODE SPACING AND ANODE LAYOUT.
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8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-52-49

DRAWN BY MWB | PLANS CK'D. SDR

CATHODIC PROTECTION

SHEET 3

94

SCALE = 1.00

B-52-0047 SOUTH - FOR INFORMATIONAL PURPOSES ONLY

STATION	AREA (SF)		INCR. VOL. (CY)		CUM. VOL. (CY)		
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS HAUL
					1.00	1.25	(CY)
90+60	3	0	0	0	0	0	0
90+70	3	21	1	4	1	5	-4
90+80	4	24	1	8	2	15	-13
90+90	4	22	1	8	3	26	-22
91+00	6	20	2	8	5	35	-30
91+10	7	12	2	6	8	42	-35
91+20	11	3	3	3	11	46	-35
91+30	12	3	4	1	15	47	-32
91+40	16	2	5	1	21	49	-28
91+50	11	1	5	1	26	49	-24
91+60	4	0	3	0	28	50	-21
91+70	2	0	1	0	30	50	-20
91+80	2	0	1	0	30	50	-19
91+90	2	0	1	0	31	50	-19
92+00	2	1	1	0	32	50	-18
92+10	3	0	1	0	33	50	-18
92+20	8	0	2	0	35	51	-16
92+30	8	1	3	0	38	51	-13
92+40	6	22	3	4	40	56	-16
92+48.43	4	110	2	21	42	82	-40

B-52-0047 NORTH - FOR INFORMATIONAL PURPOSES ONLY

STATION	AREA (SF)		INCR. VOL. (CY)		CUM. VOL. (CY)		
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS HAUL
					1.00	1.25	(CY)
93+01.54	2	162	0	0	0	0	0
93+10	3	31	1	30	1	38	-37
93+20	1	5	1	7	2	46	-45
93+30	1	3	0	1	2	48	-46
93+40	2	1	1	1	3	49	-46
93+50	2	2	1	0	3	50	-46
93+60	2	1	1	0	4	50	-46
93+70	2	2	1	1	5	51	-46
93+80	2	1	1	1	6	52	-46
93+90	2	3	1	1	6	53	-46
94+00	4	8	1	2	7	55	-48
94+10	7	7	2	3	9	58	-49
94+20	5	7	2	3	11	62	-50
94+30	3	6	1	3	13	65	-52
94+40	3	7	1	2	14	68	-54
94+50	3	6	1	2	15	71	-56

9

9

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	EARTHWORK SUMMARY	SHEET NO:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

B-52-0048 SOUTH - FOR INFORMATIONAL PURPOSES ONLY

STATION	AREA (SF)		INCR. VOL. (CY)		CUM. VOL. (CY)		
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS HAUL
					1.00	1.25	(CY)
63+28	1	3	0	0	0	0	0
63+30	9	13	0	1	0	1	0
63+40	14	11	4	4	5	6	-2
63+50	14	9	5	4	10	11	-1
63+60	13	10	5	3	15	15	-1
63+70	5	17	3	5	18	21	-3
63+80	2	36	1	10	19	34	-14
63+90	1	36	1	13	20	50	-31
64+00	1	37	0	14	20	67	-47
64+10	1	28	0	12	20	82	-62
64+20	1	20	0	9	21	94	-73
64+30	1	15	0	6	21	102	-81
64+40	1	15	0	5	22	108	-87
64+50	1	13	0	5	22	115	-93
64+60	1	16	0	5	22	122	-99
64+70	1	18	0	6	23	130	-107
64+80	1	28	0	9	23	140	-117
64+90	1	20	0	9	23	151	-128
64+98.3	1	20	0	6	23	159	-136
65+00	1	10	0	1	23	160	-137
65+10	0	6	0	3	24	164	-140
65+12.61	0	3	0	0	24	164	-141

B-52-0048 NORTH - FOR INFORMATIONAL PURPOSES ONLY

STATION	AREA (SF)		INCR. VOL. (CY)		CUM. VOL. (CY)		
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS HAUL
					1.00	1.25	(CY)
65+56.68	0	6	0	0	0	0	0
65+60	0	13	0	1	0	1	-1
65+70	1	6	0	3	0	6	-6
65+71.15	1	39	0	1	0	7	-7
65+80	1	41	0	13	0	23	-23
65+90	1	32	0	14	1	40	-40
66+00	1	40	0	13	1	57	-56
66+03	1	42	0	5	1	63	-62
66+10	1	49	0	12	1	77	-76
66+20	1	49	0	18	2	100	-99
66+30	1	57	0	20	2	125	-123
66+40	1	54	0	21	2	150	-148
66+50	1	50	0	19	3	175	-172
66+60	1	49	0	18	3	197	-194
66+70	1	48	0	18	4	220	-216
66+80	2	39	1	16	4	240	-236
66+90	3	31	1	13	5	256	-251
67+00	3	30	1	11	6	270	-264
67+10	2	31	1	11	7	284	-277
67+20	2	35	1	12	8	300	-292
67+30	2	24	1	11	9	313	-305
67+40	2	16	1	7	10	323	-313
67+50	2	9	1	5	10	328	-318
67+60	2	3	1	2	11	331	-320

B-52-0048 - NORTH BENCHING (RIGHT) - *ESTIMATED VOL. IN FINAL POSITION (NO EXP. FACTOR)

STATION	AREA (SF)		INCR. VOL. (CY)		CUM. VOL. (CY)		
	CUT	FILL	CUT	FILL	CUT	FILL	MASS HAUL
						*	
					1.00	1.00	(CY)
65+56.68	0	0	0	0	0	0	0
65+60	0	0	0	0	0	0	0
65+70	1	1	0	0	0	0	0
65+71.15	74	74	2	2	2	2	0
65+80	76	76	25	25	26	26	0
65+90	67	67	26	26	53	53	0
66+00	62	62	24	24	77	77	0
66+03	22	22	5	5	81	81	0
66+10	0	0	3	3	84	84	0

9

9

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	EARTHWORK SUMMARY	SHEET NO:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

B-52-0049 SOUTH - FOR INFORMATIONAL PURPOSES ONLY

STATION	AREA (SF)		INCR. VOL. (CY)		CUM. VOL. (CY)		
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS HAUL
					1.00	1.25	(CY)
78+00	2	4	0	0	0	0	0
78+10	2	2	1	1	1	1	0
78+20	3	1	1	0	2	2	0
78+30	6	0	2	0	3	2	1
78+40	6	0	2	0	5	2	3
78+50	3	2	2	0	7	2	4
78+60	2	17	1	4	8	7	1
78+70	2	35	1	10	9	19	-10
78+80	2	33	1	13	9	35	-25
78+90	2	26	1	11	10	48	-38
79+00	1	24	1	9	11	60	-49
79+10	2	18	1	8	11	70	-58
79+20	2	14	1	6	12	77	-65
79+30	2	11	1	5	13	83	-70
79+40	2	7	1	3	13	87	-73
79+50	2	6	1	2	14	90	-75
79+60	2	4	1	2	15	92	-77
79+70	3	4	1	1	16	94	-77
79+80	3	4	1	1	17	95	-78
79+90	2	6	1	2	18	98	-79
80+00	2	12	1	3	19	102	-83
80+02.9	2	13	0	1	19	103	-84
80+10	1	9	0	3	19	107	-87
80+18.83	0	18	0	4	20	112	-93

B-52-0049 NORTH - FOR INFORMATIONAL PURPOSES ONLY

STATION	AREA (SF)		INCR. VOL. (CY)		CUM. VOL. (CY)		
	CUT	FILL	CUT	FILL	CUT	EXPANDED FILL	MASS HAUL
					1.00	1.25	(CY)
80+56.7	0	2	0	0	0	0	0
80+60	1	3	0	0	0	0	0
80+70	1	3	0	1	0	2	-1
80+70.2	1	15	0	0	0	2	-2
80+80	1	6	1	4	1	7	-6
80+90	2	2	1	2	2	9	-7
81+00	2	1	1	1	2	9	-7
81+10	2	1	1	0	3	10	-7
81+20	3	1	1	1	4	11	-7
81+30	3	2	1	1	5	11	-6
81+40	2	2	1	1	6	12	-6
81+50	3	4	1	1	7	14	-7
81+60	3	5	1	2	8	16	-8
81+70	3	7	1	2	9	18	-10
81+80	3	4	1	2	10	21	-11
81+90	3	2	1	1	11	22	-12
82+00	3	5	1	1	12	24	-12
82+10	2	2	1	1	13	26	-13
82+20	2	4	1	1	14	27	-14
82+30	2	15	1	4	14	32	-17
82+40	2	15	1	6	15	39	-24
82+50	1	11	1	5	16	45	-29
82+60	1	9	1	4	16	49	-33
82+70	1	12	1	4	17	54	-37
82+80	2	11	1	4	17	59	-42

9

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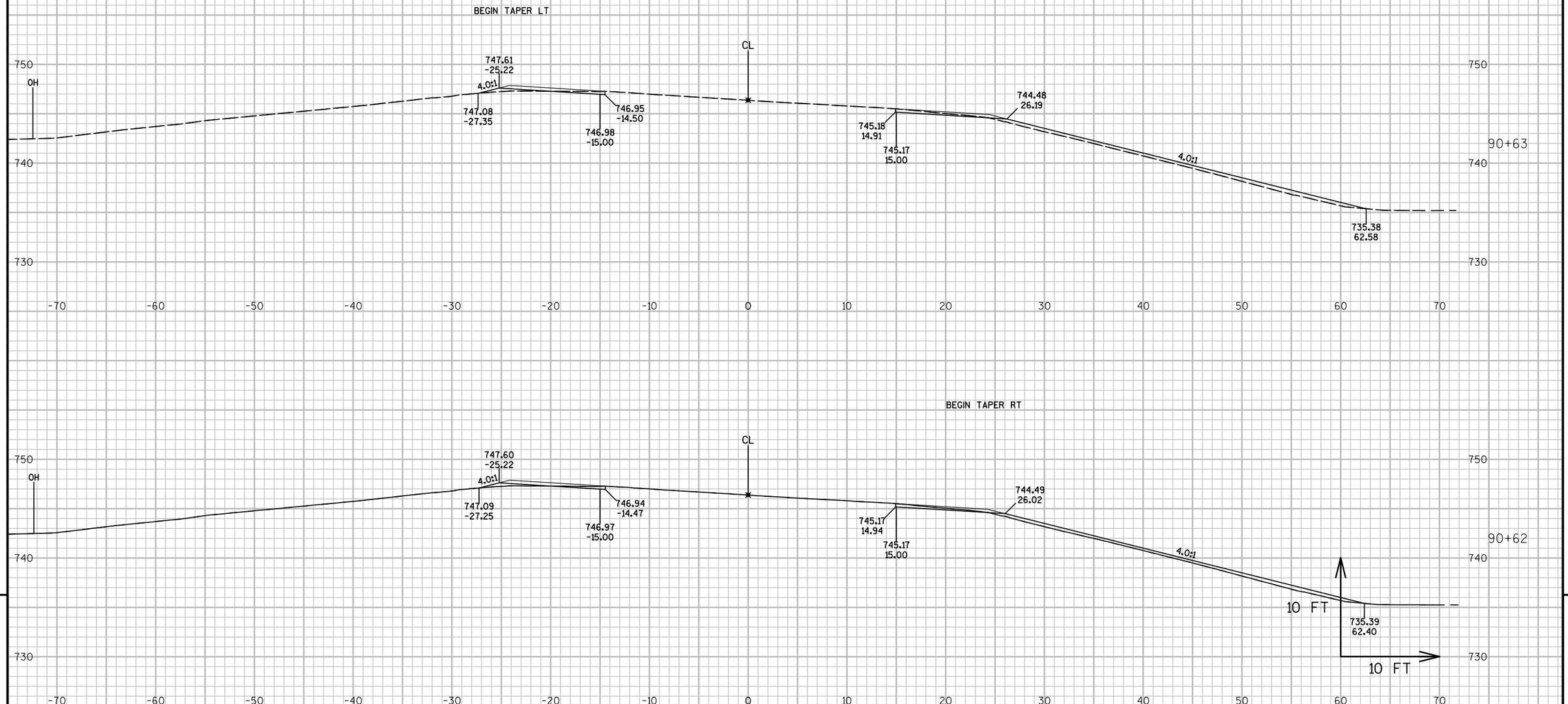
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	EARTHWORK SUMMARY	SHEET NO:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



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PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0047)	SHEET 98	E

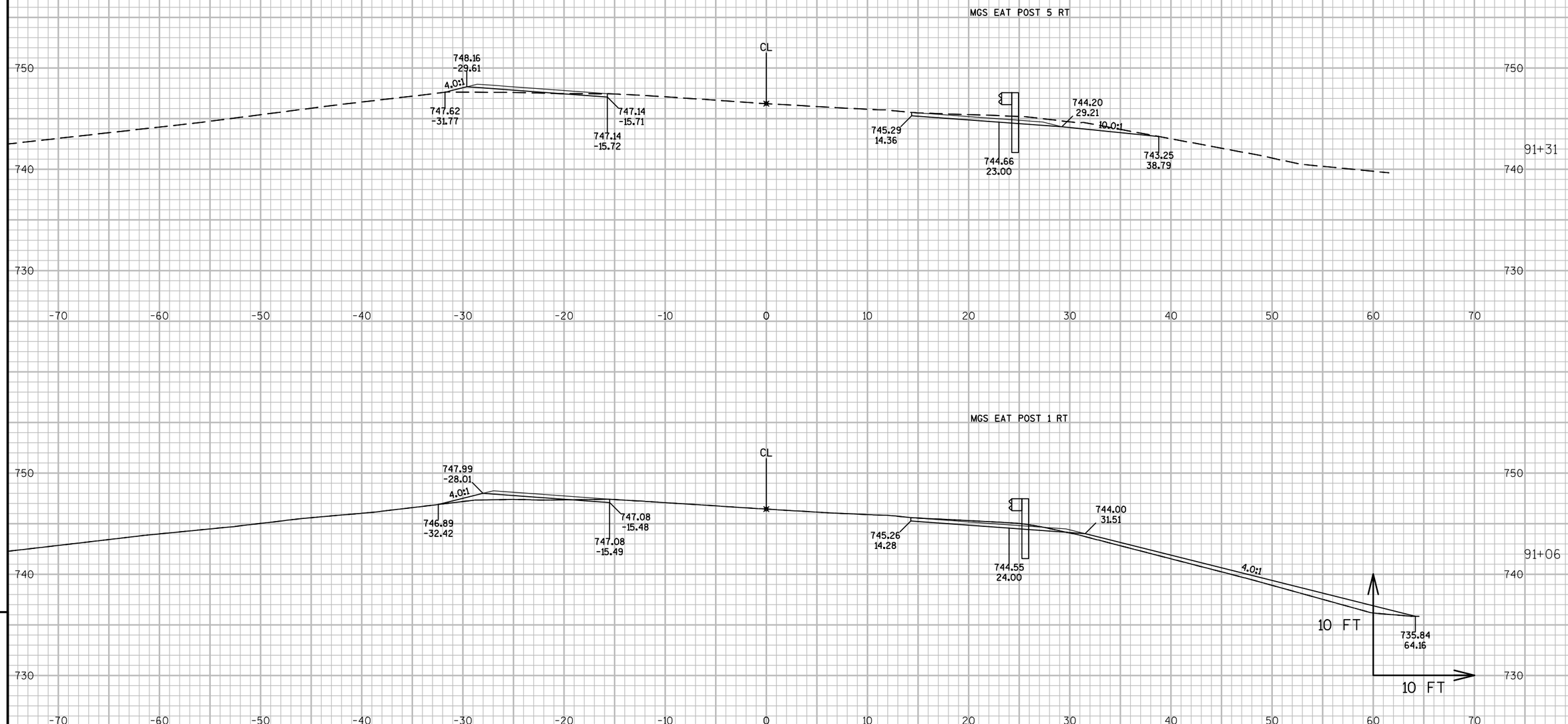
FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\090201_XS_B5247.DWG
LAYOUT NAME - 090201_XS_B520047-(1)

PLOT DATE : 7/21/2017 2:16 PM PLOT BY : SHIFFER, CAMERON J PLOT NAME : PLOT SCALE : 1 IN:10 FT

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0047)	SHEET 99	E

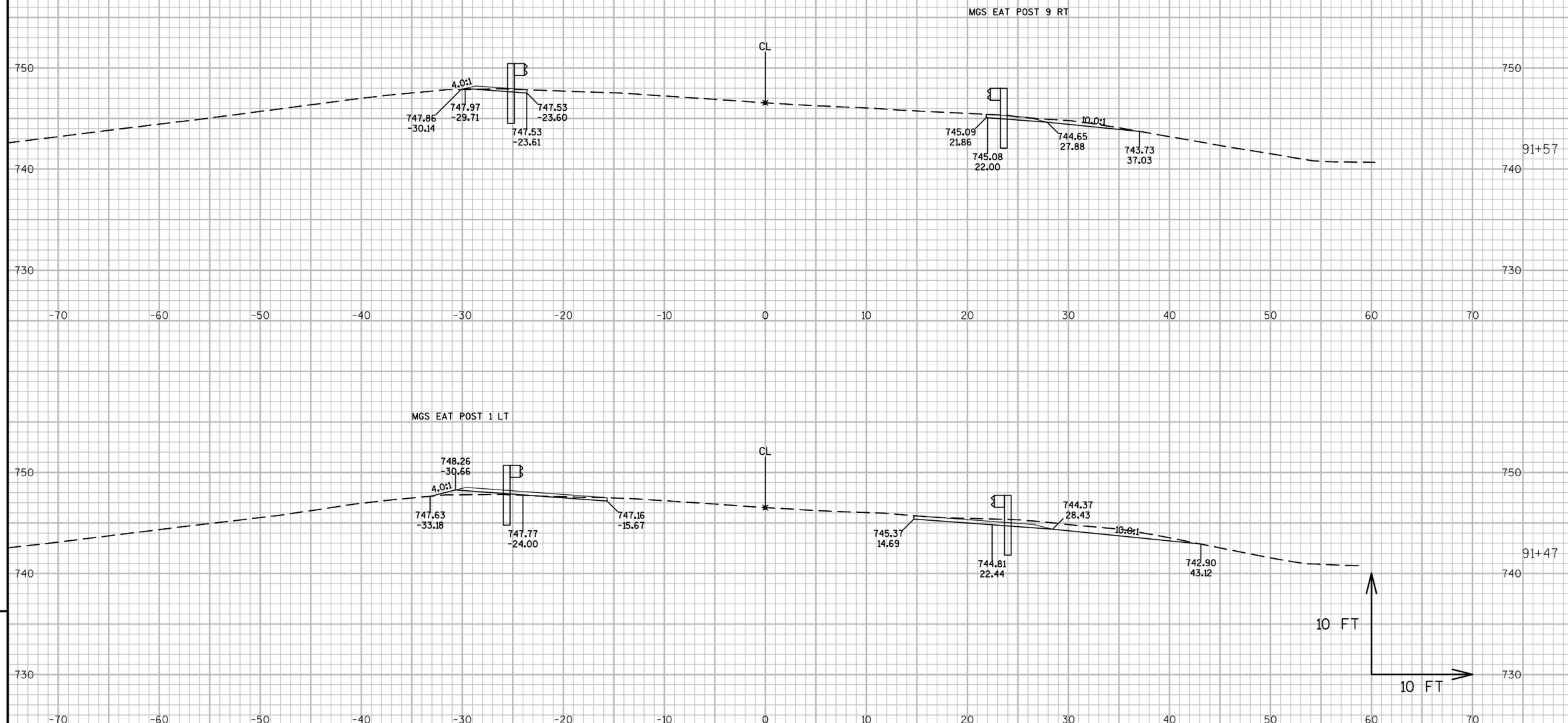
FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\090201_XS_B5247.DWG
LAYOUT NAME - 090201_XS_B520047-(2)

PLOT DATE : 7/21/2017 2:16 PM PLOT BY : SHIFFER, CAMERON J PLOT NAME : PLOT SCALE : 1 IN:10 FT

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



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PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0047)	SHEET 100	E

FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\090201_XS_B5247.DWG
LAYOUT NAME - 090201_XS_B520047-(3)

PLOT DATE : 7/21/2017 2:16 PM PLOT BY : SHIFFER, CAMERON J PLOT NAME :

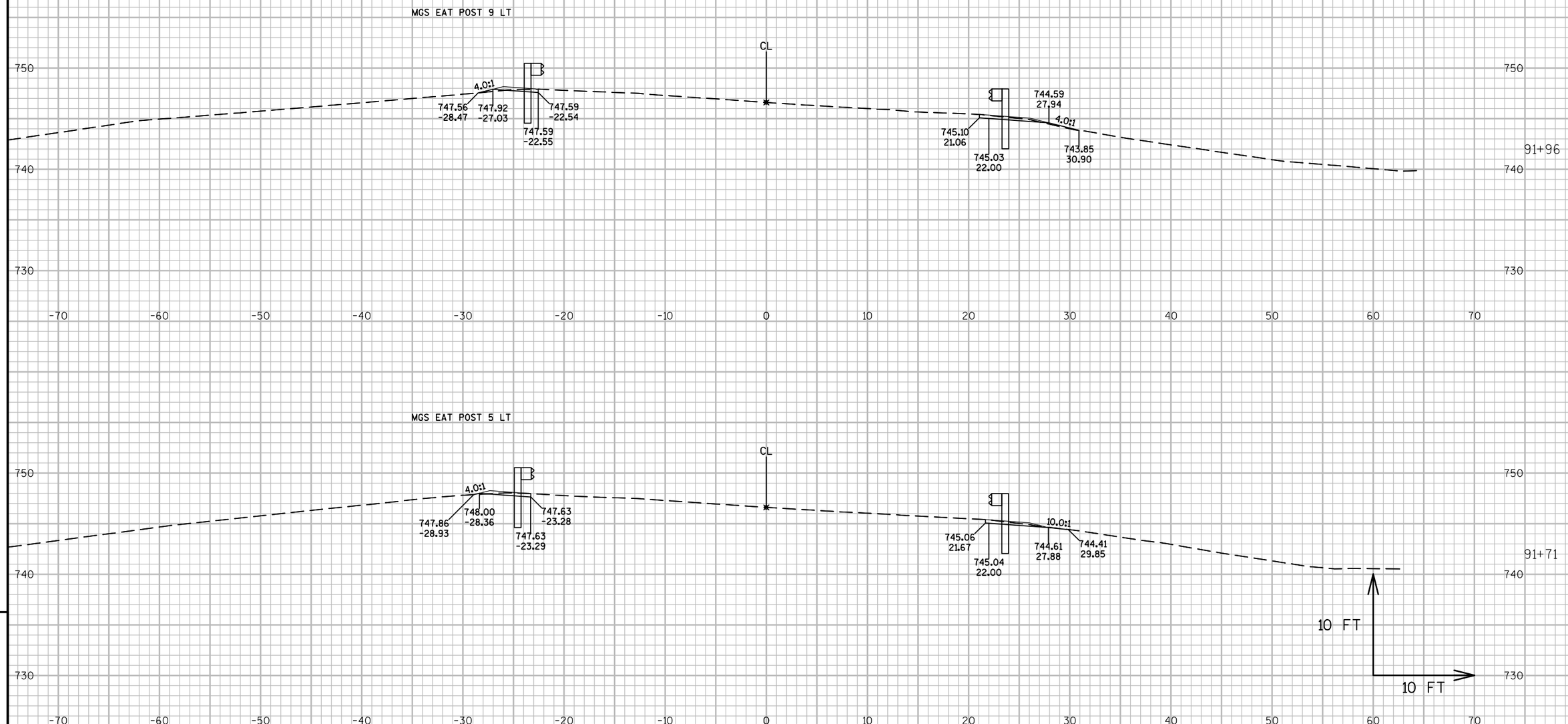
PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.

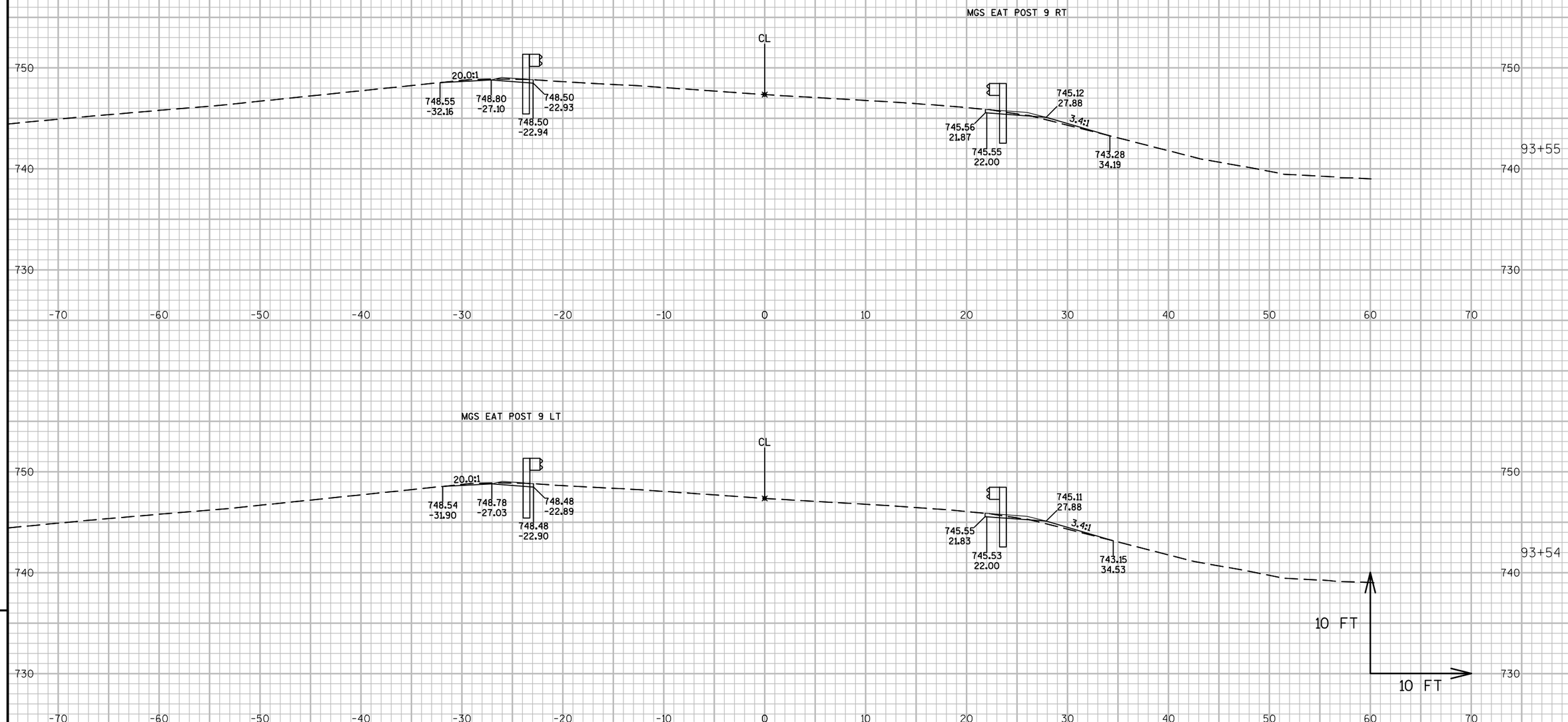


PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0047)	SHEET 101 E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



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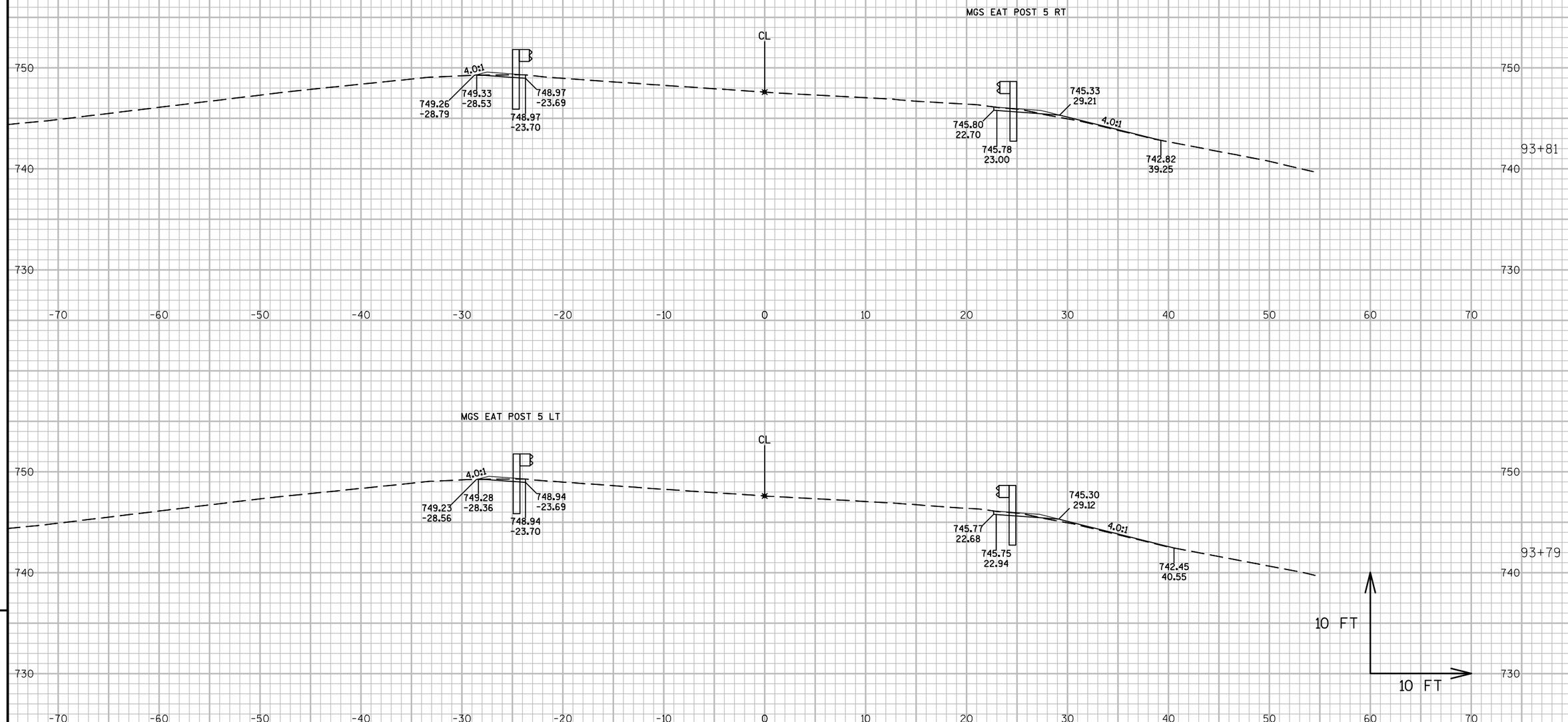
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0047)	SHEET 102	E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.

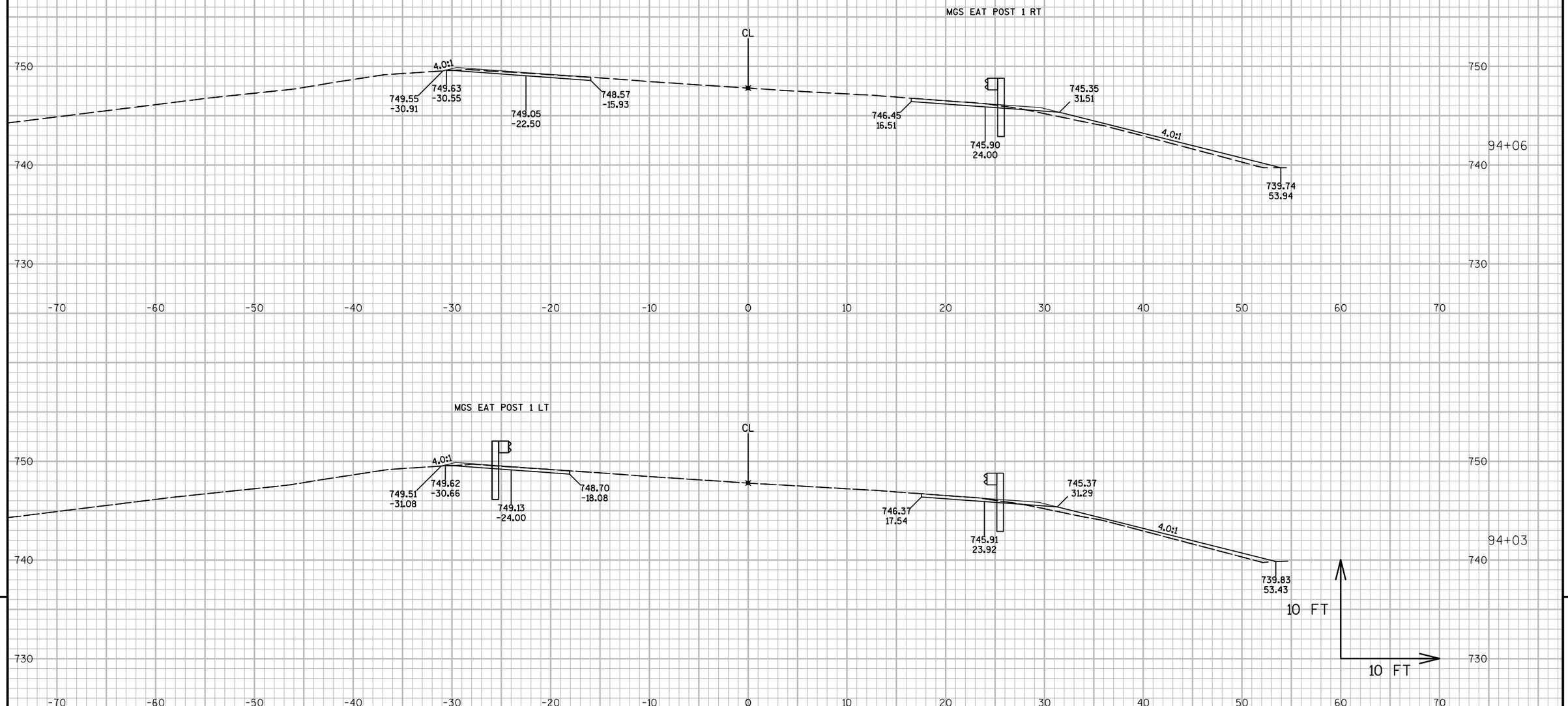


PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0047)	SHEET 103 E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



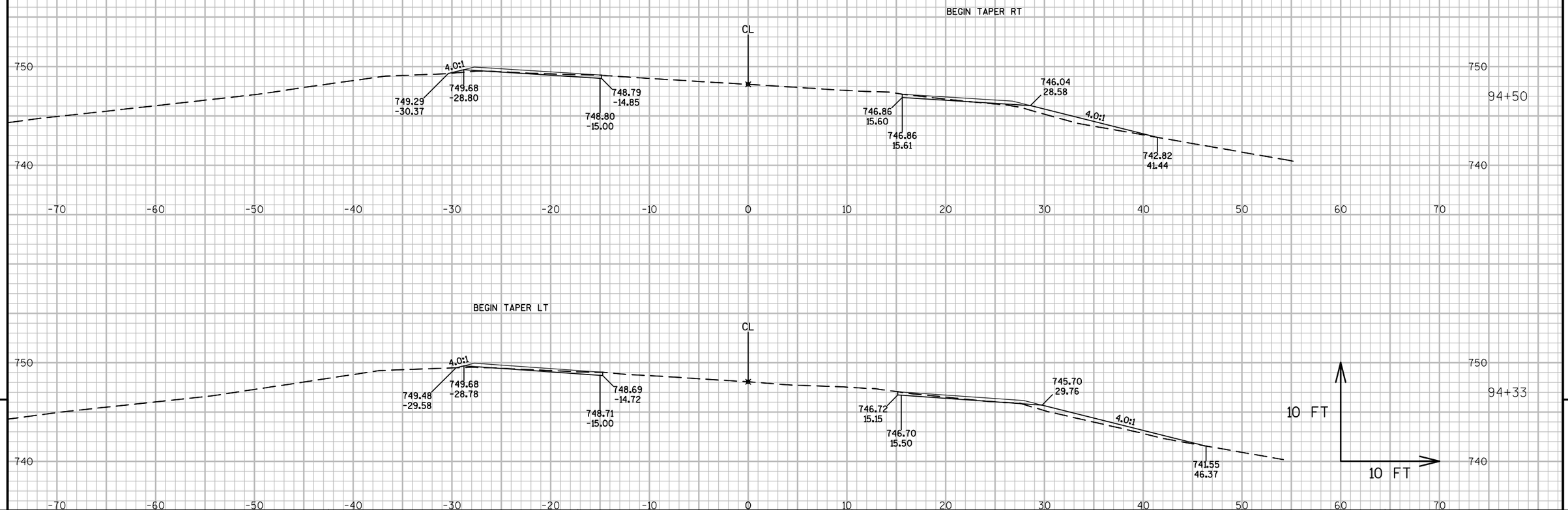
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0047)	SHEET 104 E

FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\090201_XS_B5247.DWG
LAYOUT NAME - 090201_XS_B520047-(7)
PLOT DATE : 7/21/2017 2:16 PM
PLOT BY : SHIFFER, CAMERON J PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



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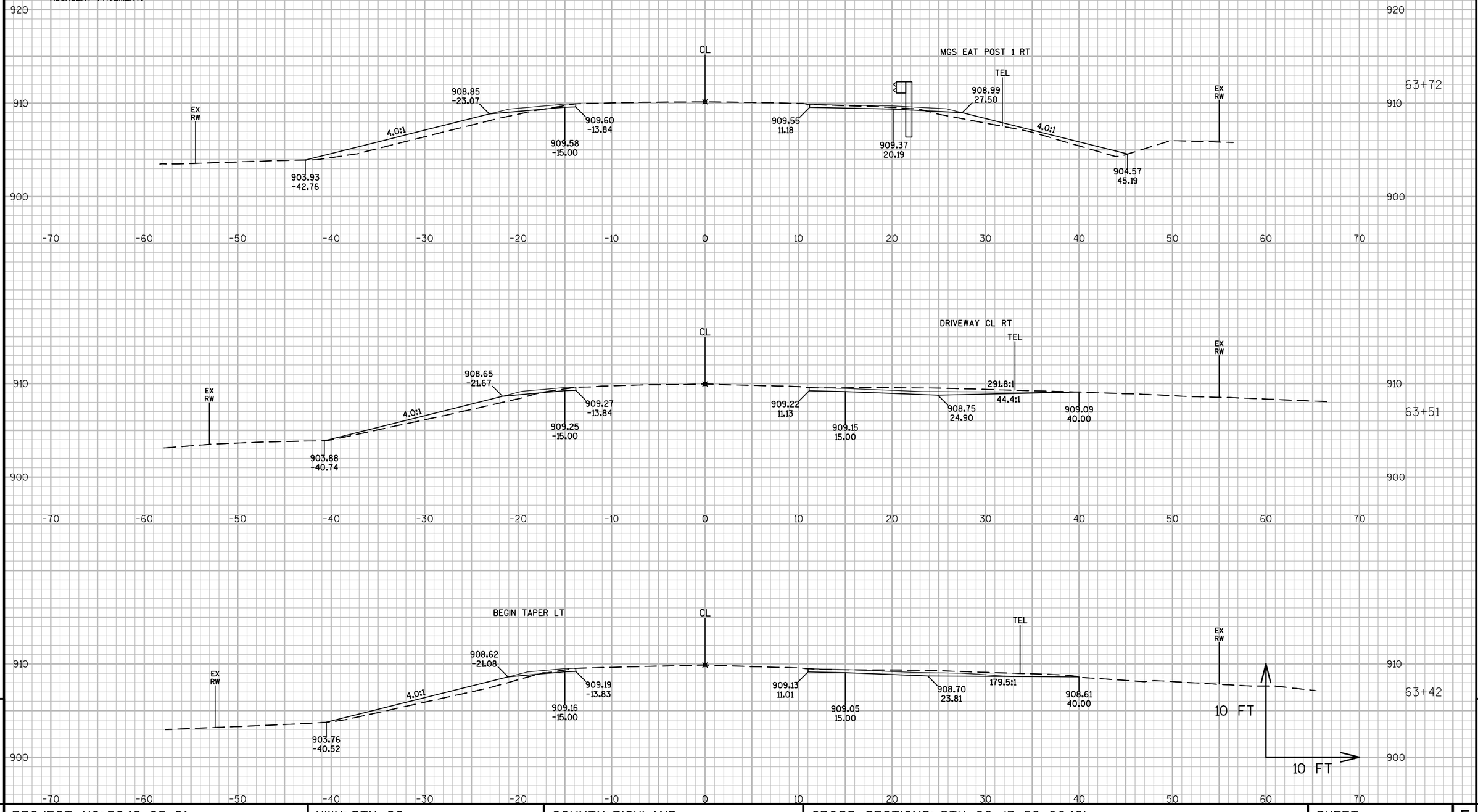
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0047)	SHEET 105	E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



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PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0048)	SHEET 106	E

FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\090201_XS_B5248.DWG
LAYOUT NAME - 090201_XS_B520048-(1)

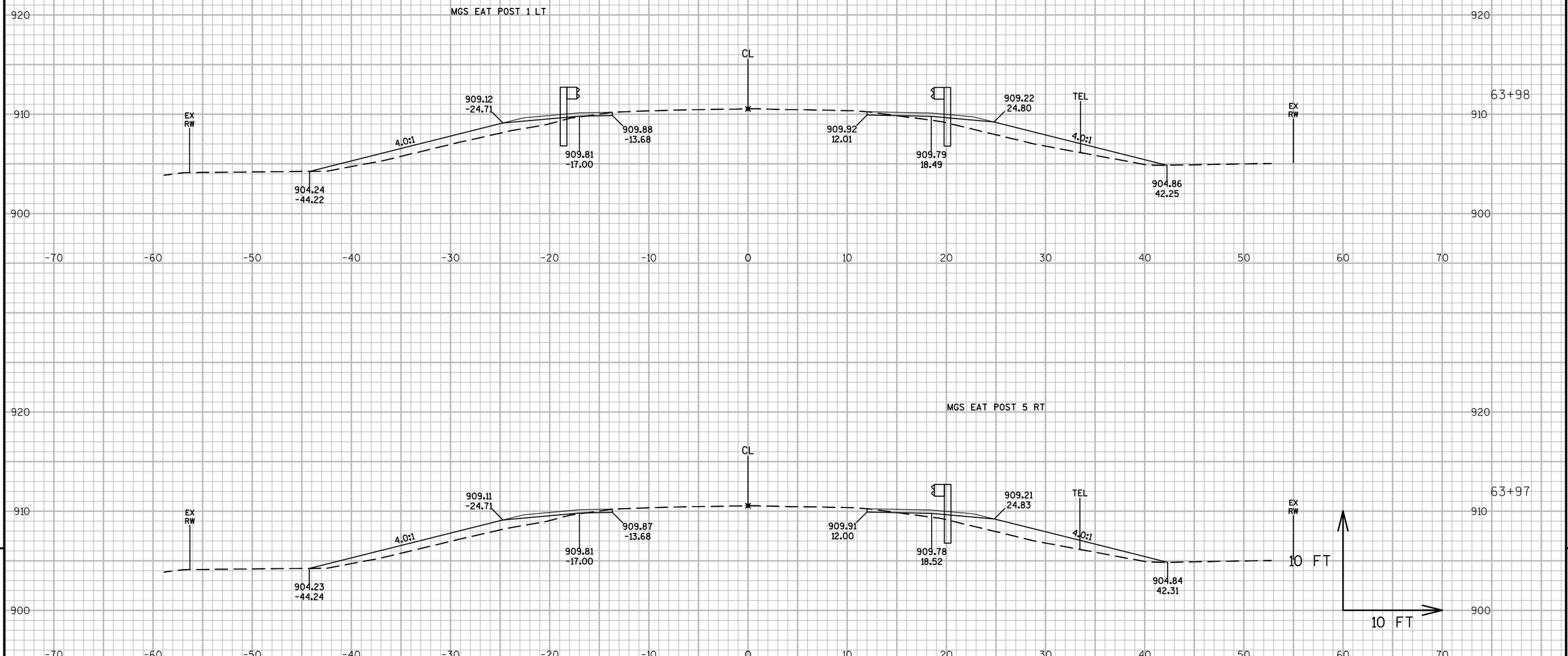
PLOT DATE : 7/21/2017 2:14 PM PLOT BY : SHIFFER, CAMERON J PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



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9

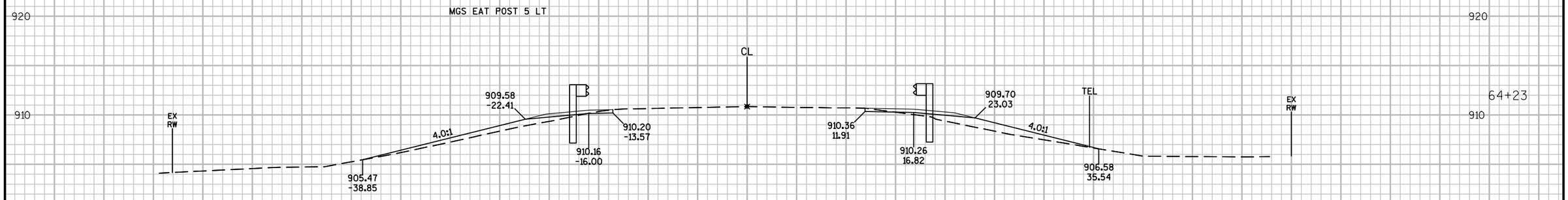
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0048)	SHEET 107	E

NOTES:

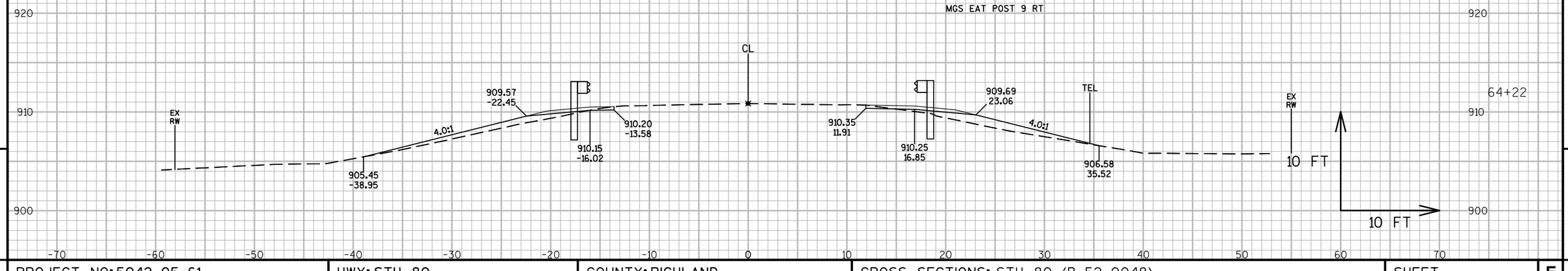
-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.

MGS EAT POST 5 LT



MGS EAT POST 9 RT



9 9

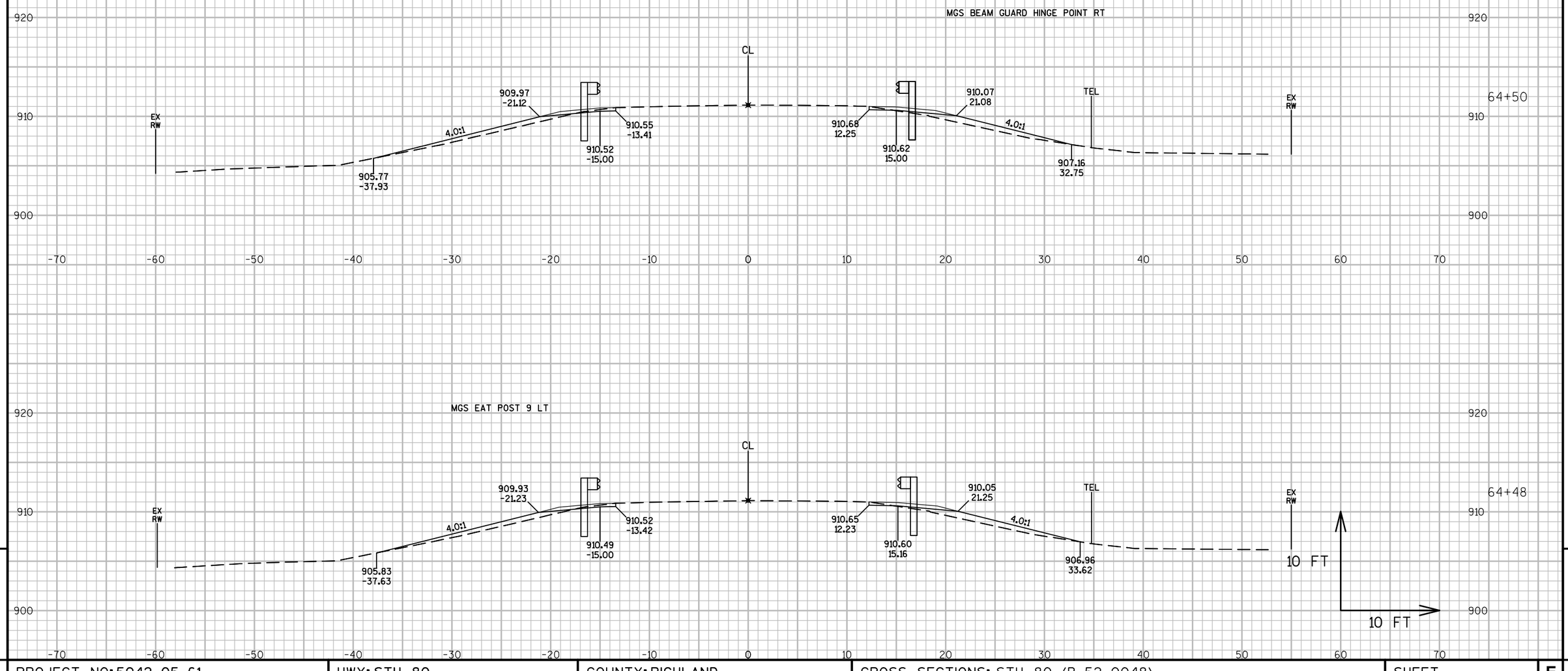
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0048)	SHEET 108	E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.

MGS BEAM GUARD HINGE POINT RT



MGS EAT POST 9 LT

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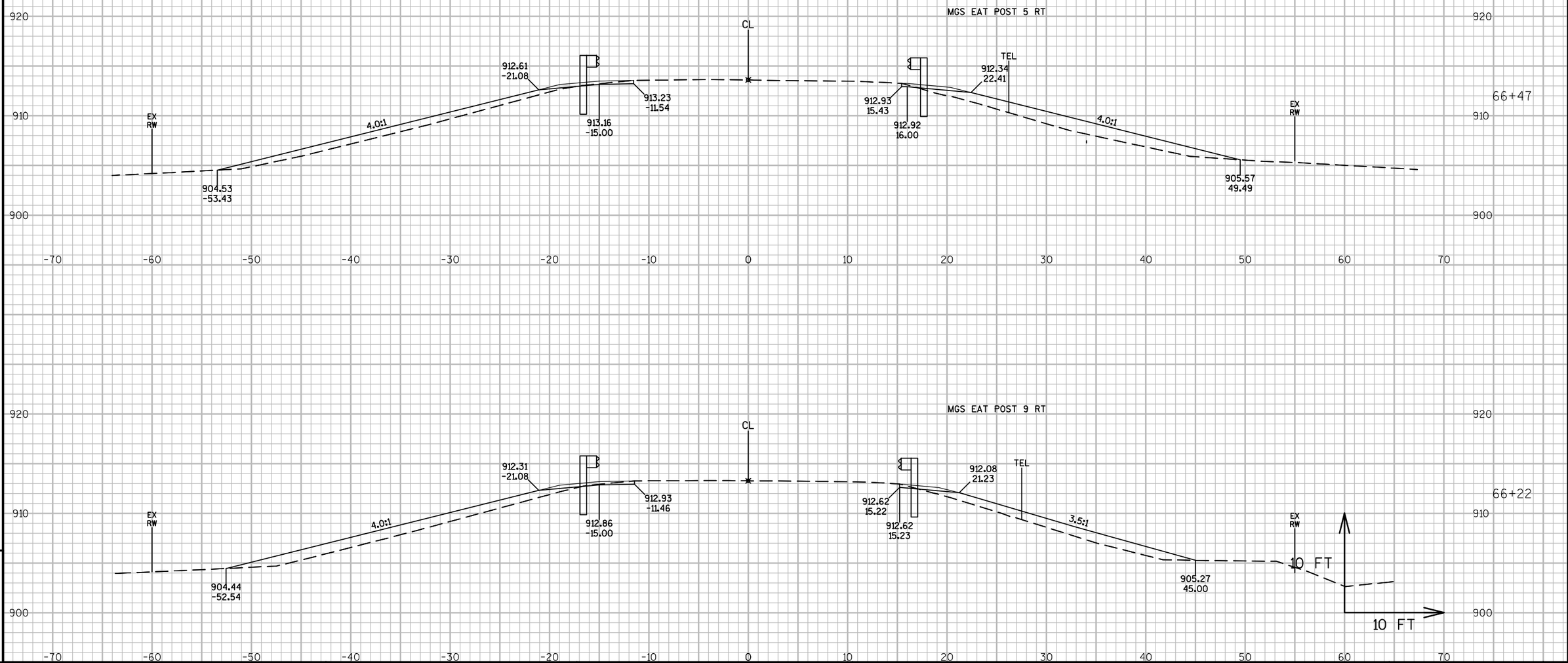
9

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0048)	SHEET 109	E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



9

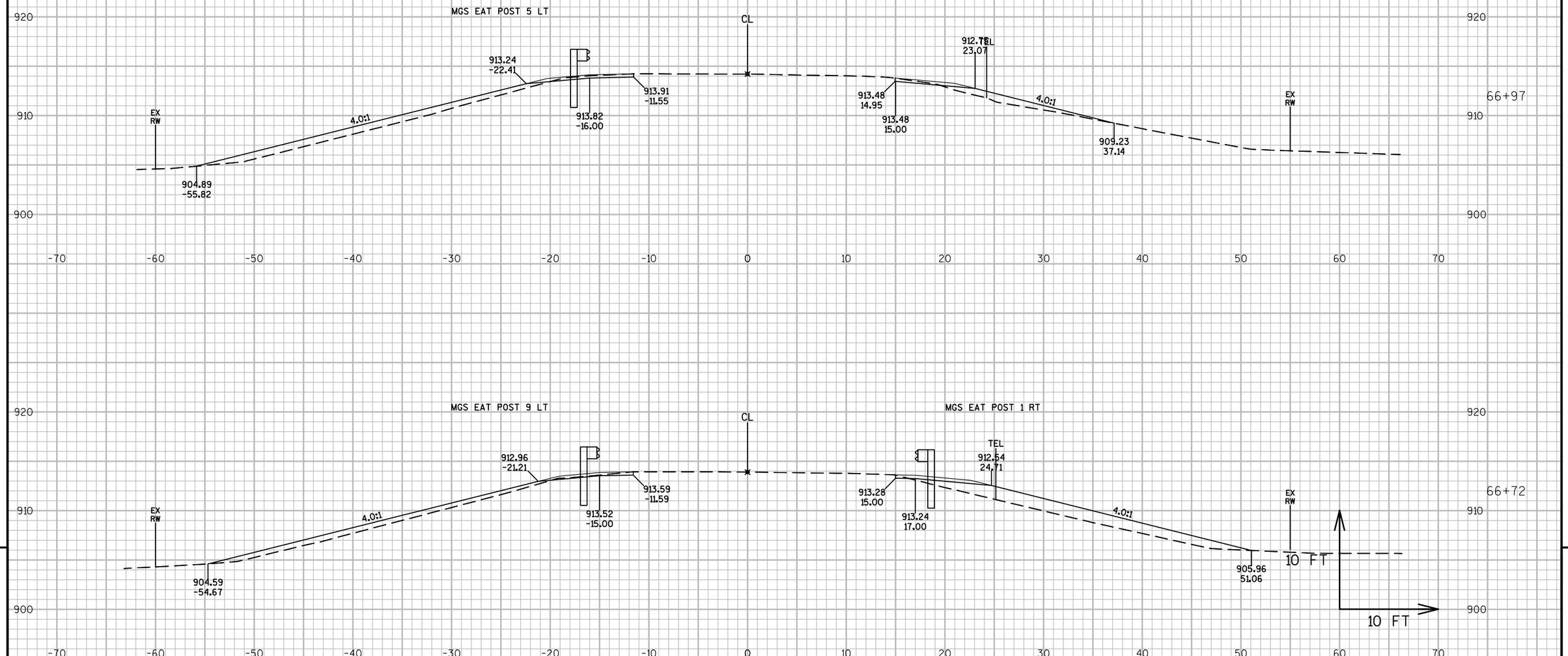
9

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0048)	SHEET 110	E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



9

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PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0048)	SHEET 111	E

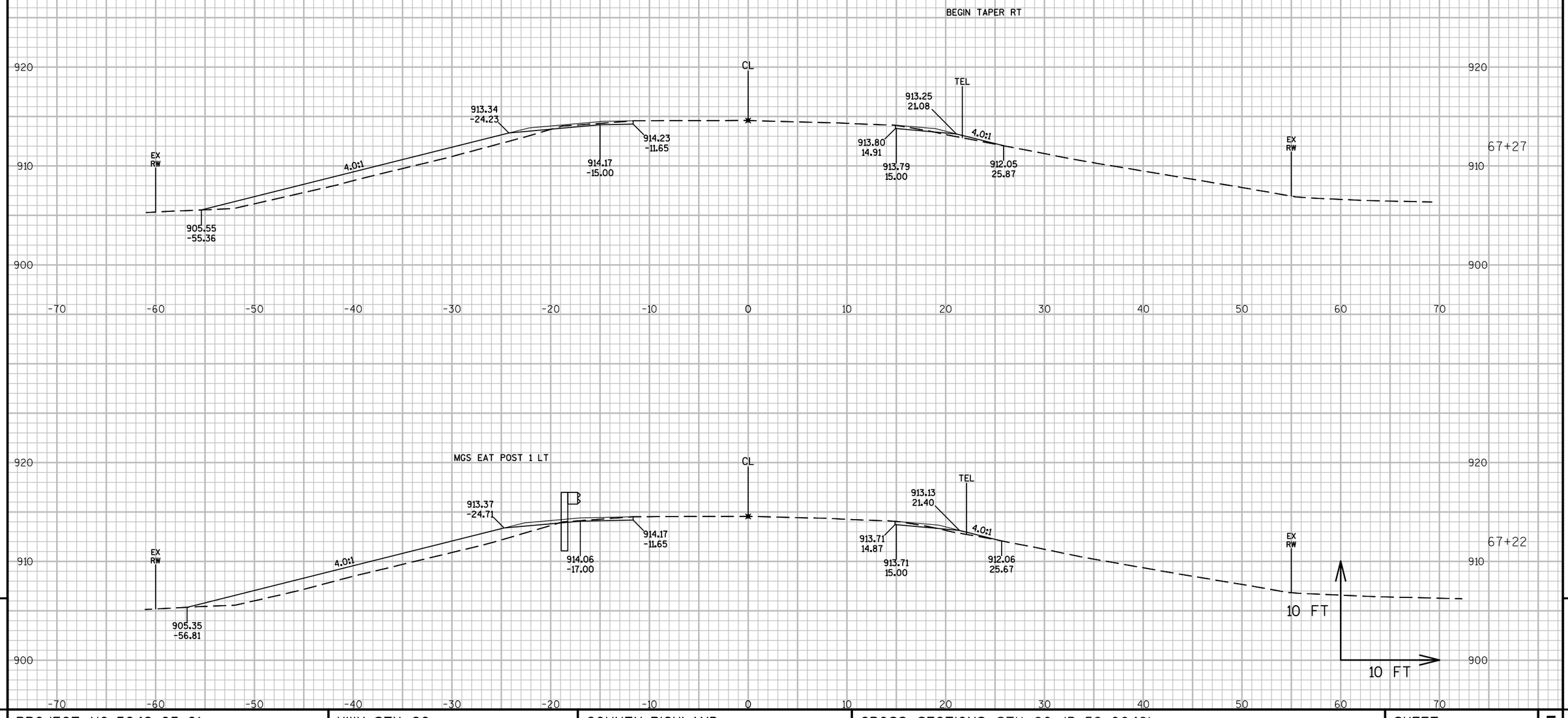
FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\090201_XS_B5248.DWG
LAYOUT NAME - 090201_XS_B520048-(6)

PLOT DATE : 7/21/2017 2:15 PM PLOT BY : SHIFFER, CAMERON J PLOT NAME : PLOT SCALE : 1 IN:10 FT

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



9

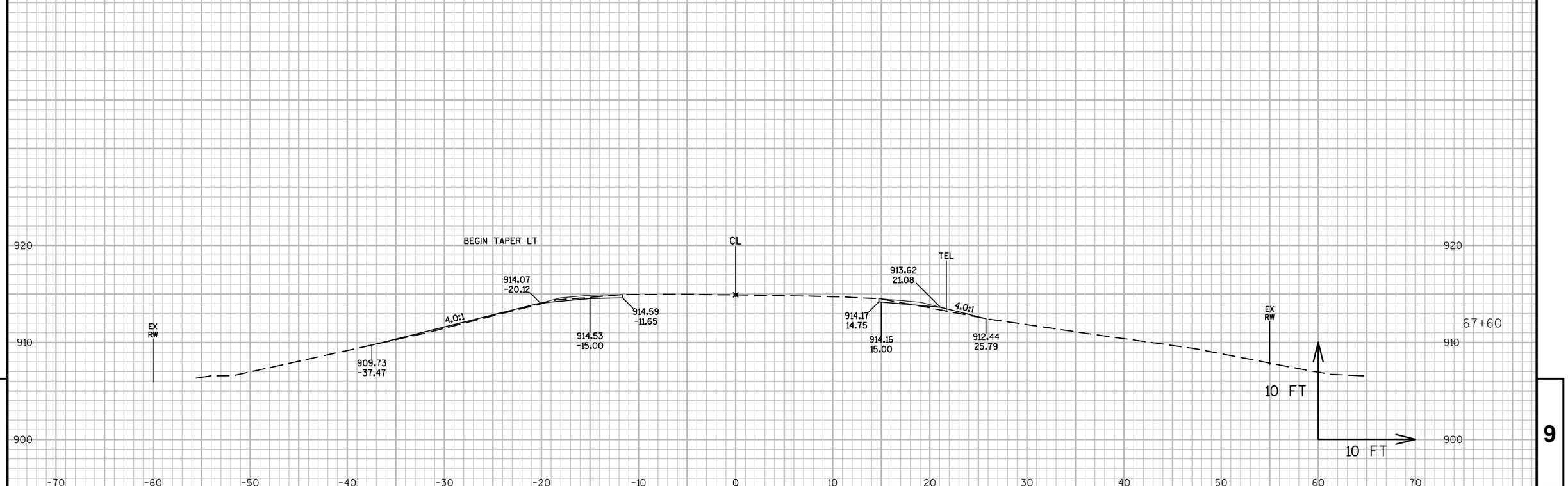
9

PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0048)	SHEET 112	E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.

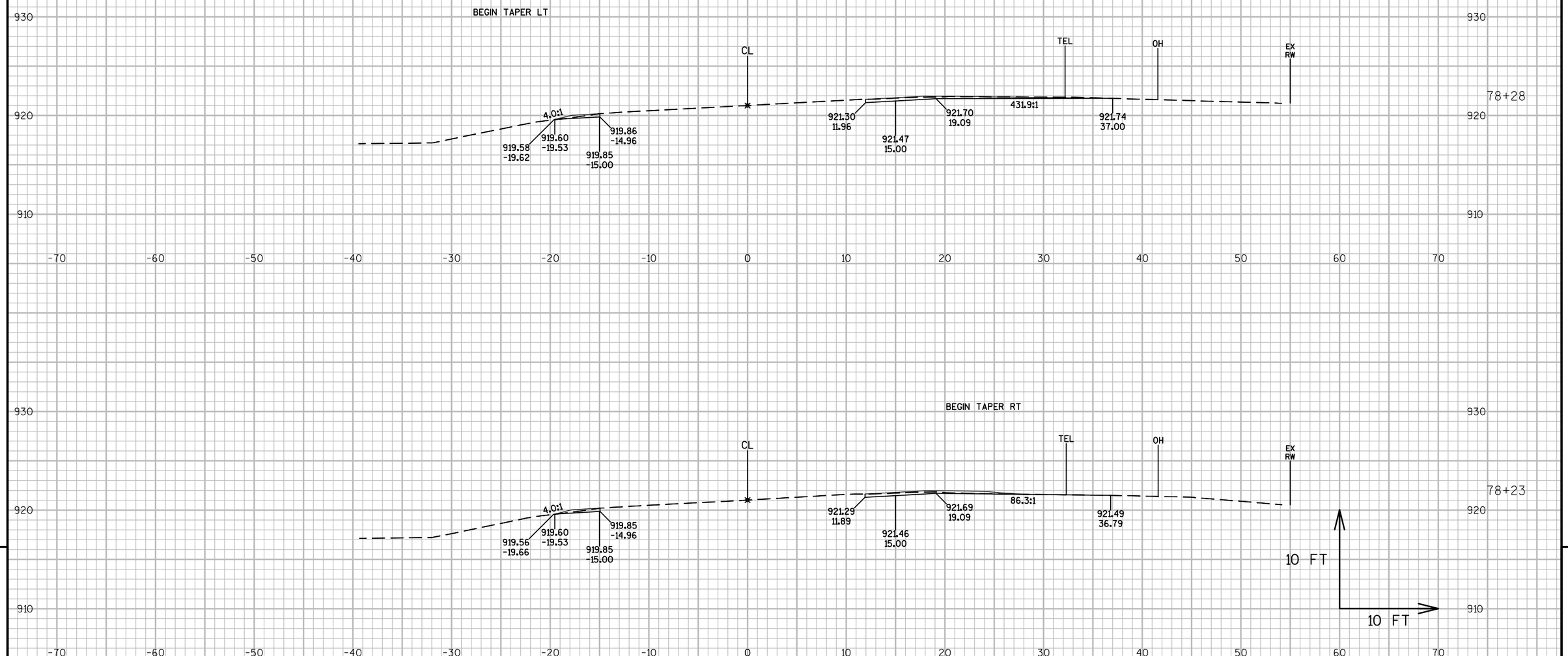


PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0048)	SHEET 113 E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



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PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0049)	SHEET 114	E

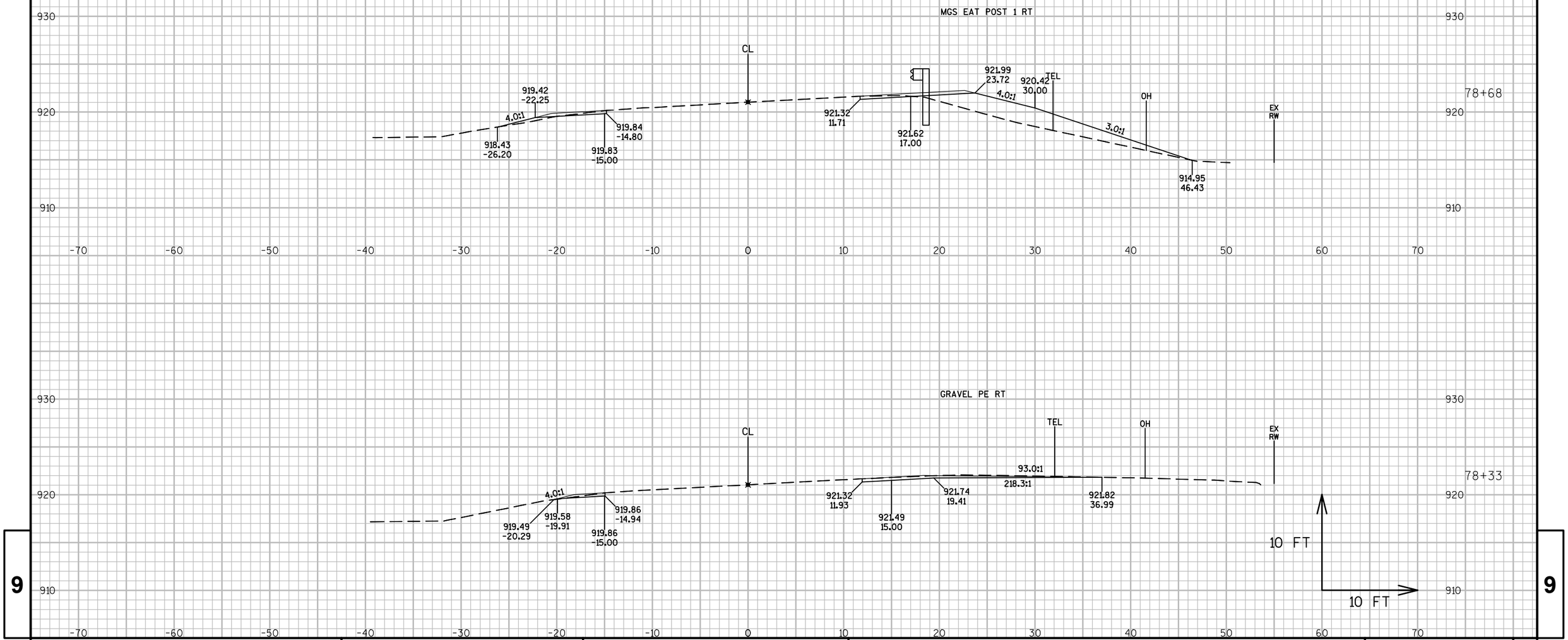
FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\090201_XS_B5249.DWG
LAYOUT NAME - 090201_XS_B520049-(1)

PLOT DATE : 7/21/2017 2:37 PM PLOT BY : SHIFFER, CAMERON J PLOT NAME : PLOT SCALE : 1 IN:10 FT

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0049)	SHEET 115	E

FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\090201_XS_B5249.DWG
LAYOUT NAME - 090201_XS_B520049-(2)

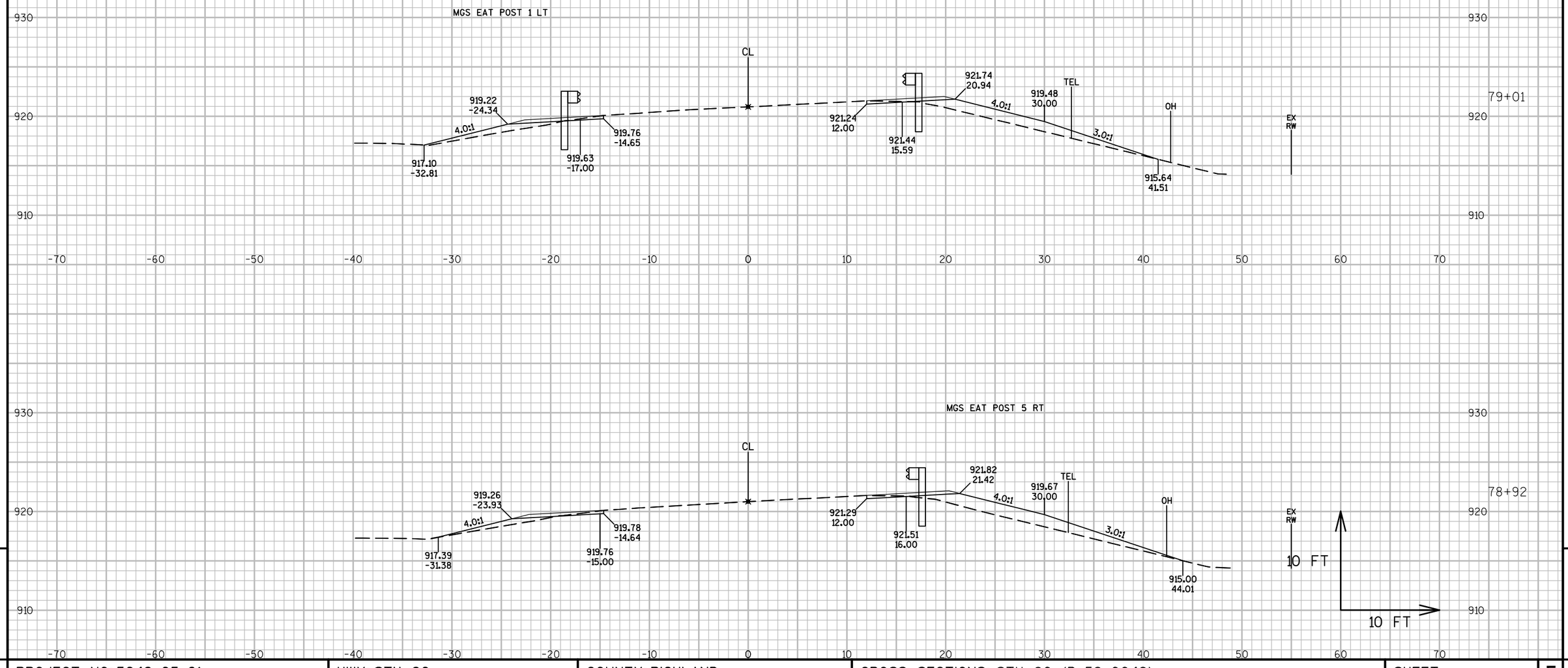
PLOT DATE : 7/21/2017 2:37 PM PLOT BY : SHIFFER, CAMERON J PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0049)	SHEET 116	E

FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\090201_XS_B5249.DWG
LAYOUT NAME - 090201_XS_B520049-(3)

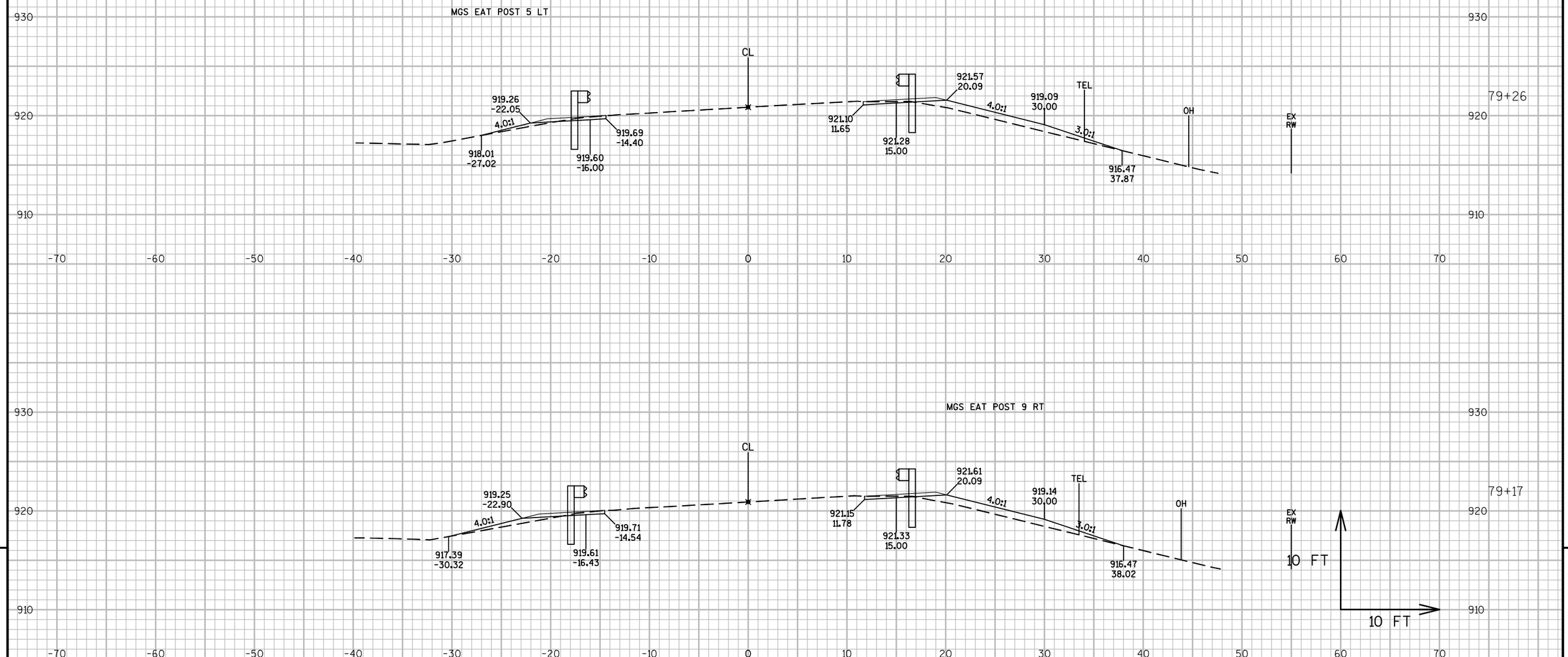
PLOT DATE : 7/21/2017 2:37 PM PLOT BY : SHIFFER, CAMERON J PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



9

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PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0049)	SHEET 117	E

FILE NAME : N:\PDS\C3D\50420531\SHEETSPLAN\090201_XS_B5249.DWG
LAYOUT NAME - 090201_XS_B520049-(4)

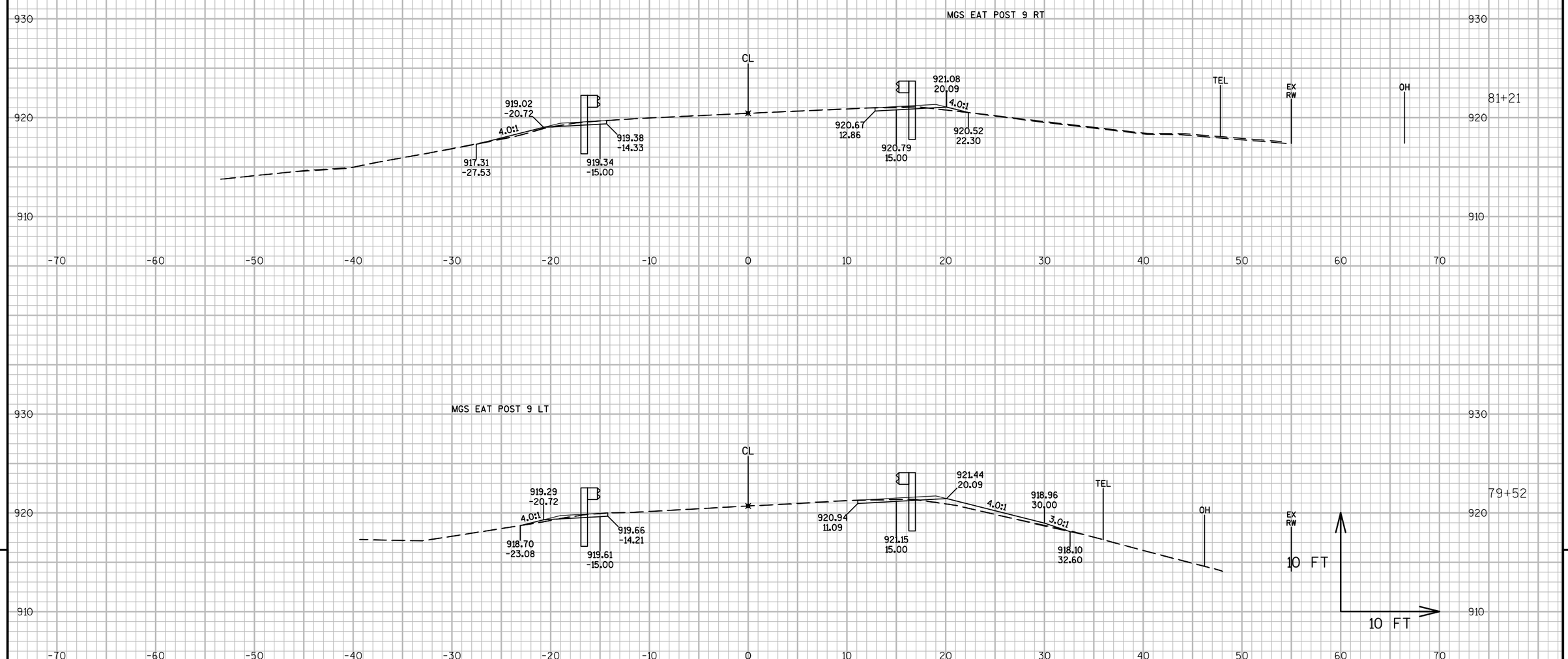
PLOT DATE : 7/21/2017 2:37 PM PLOT BY : SHIFFER, CAMERON J PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



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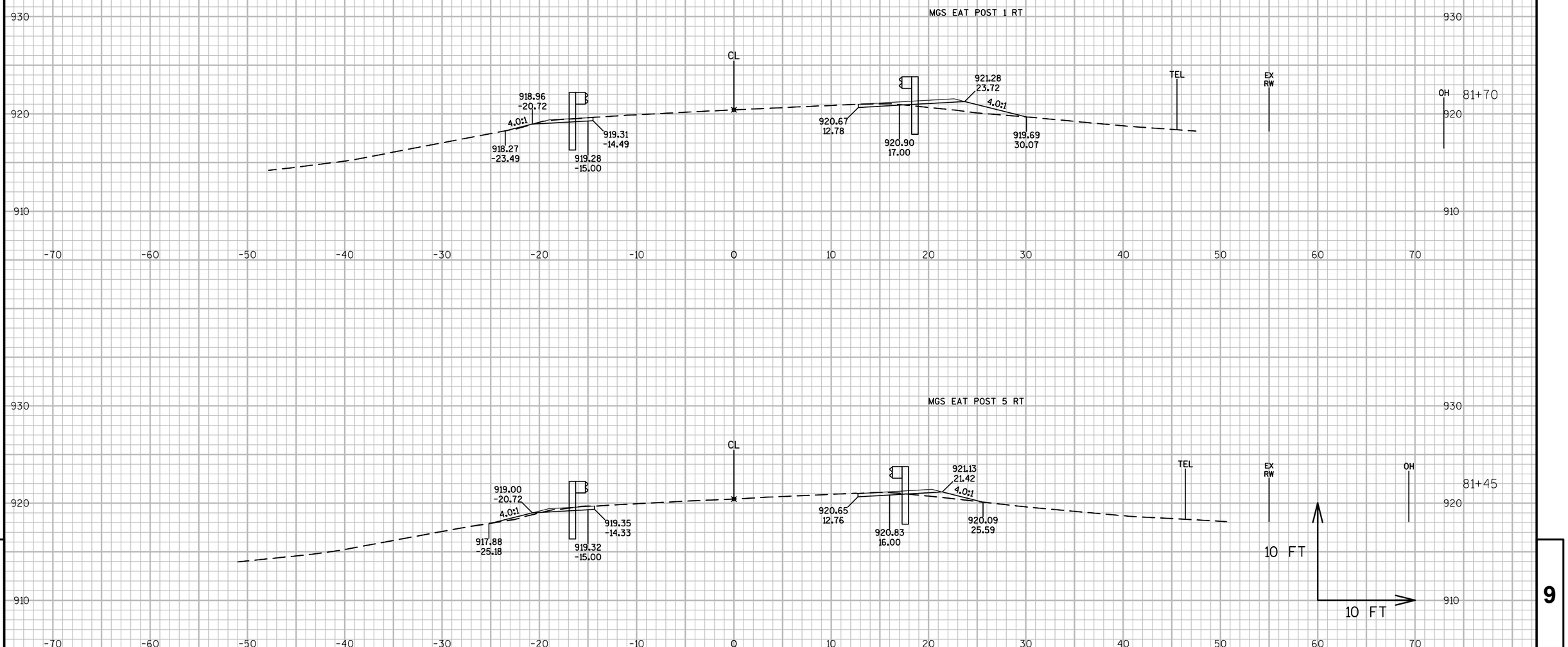
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0049)	SHEET 118	E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



9

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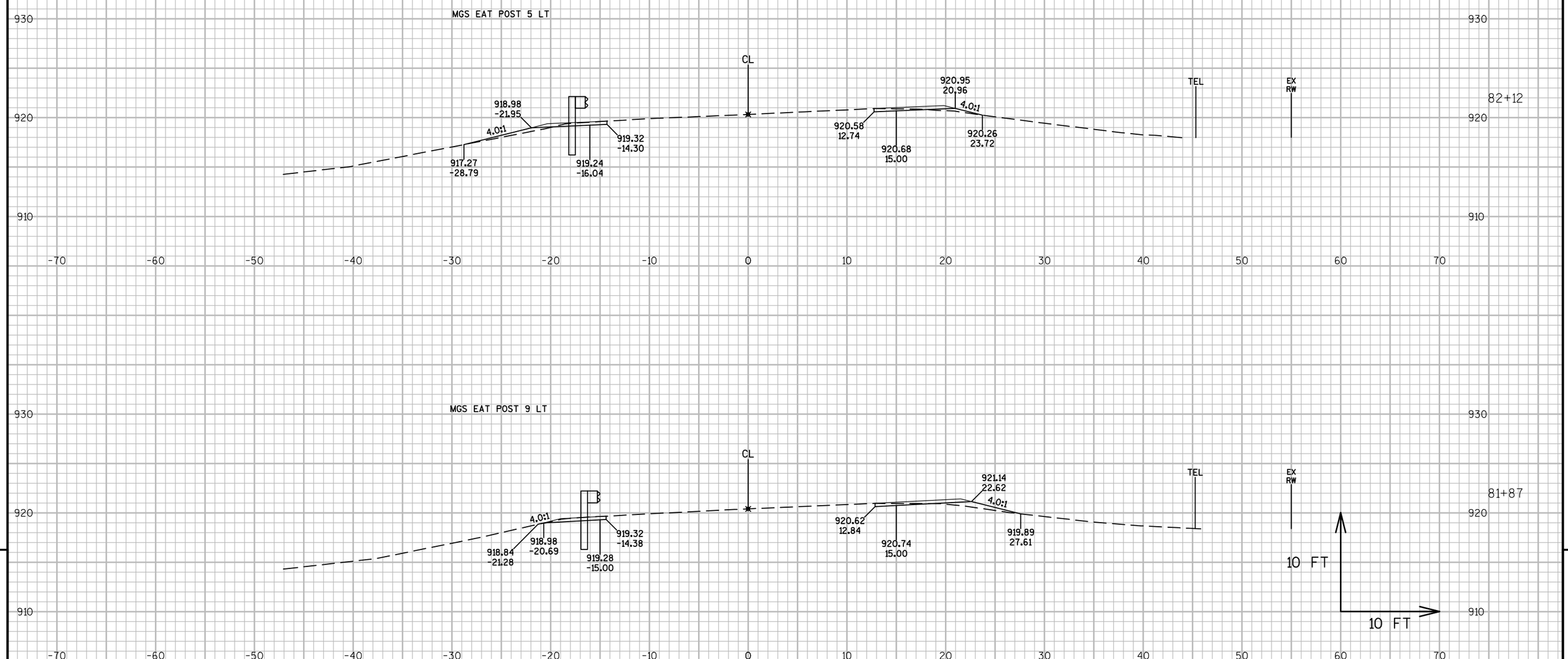
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0049)	SHEET 119	E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



9

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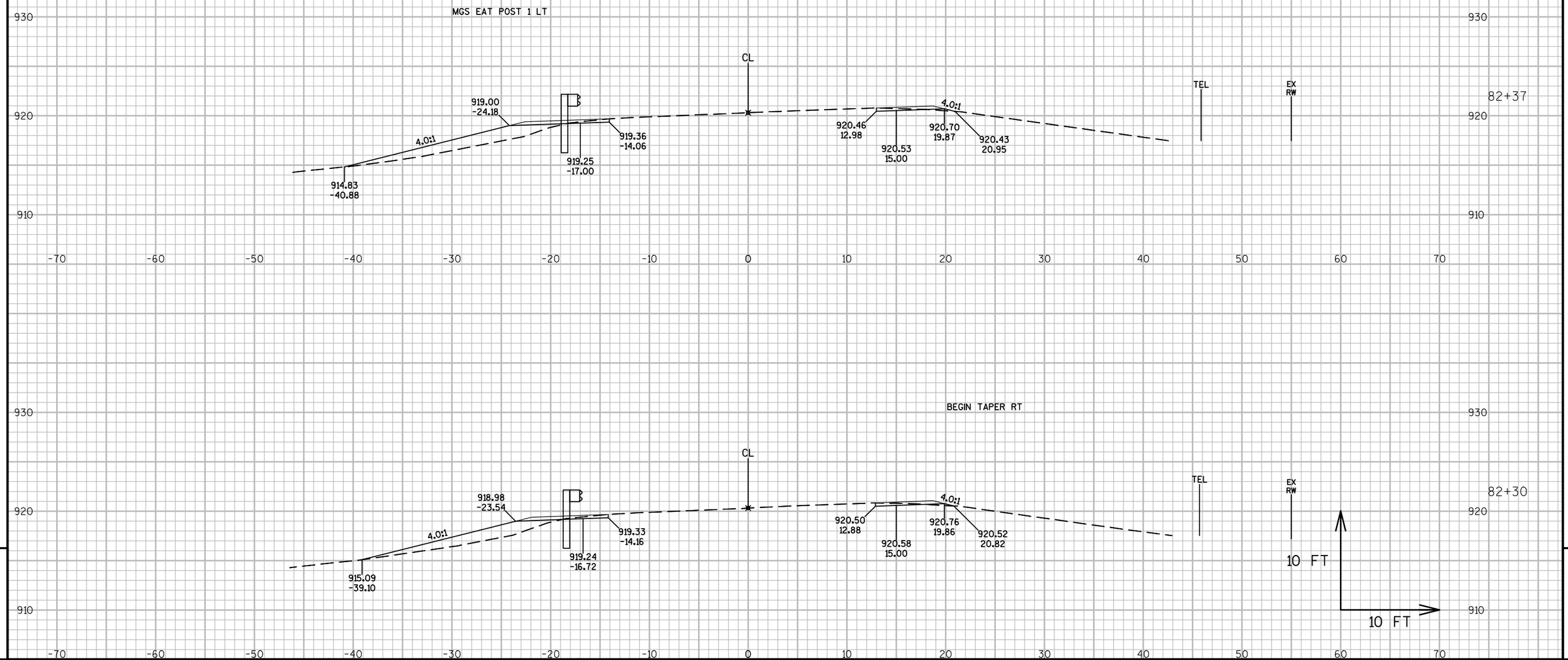
PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0049)	SHEET 120	E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.

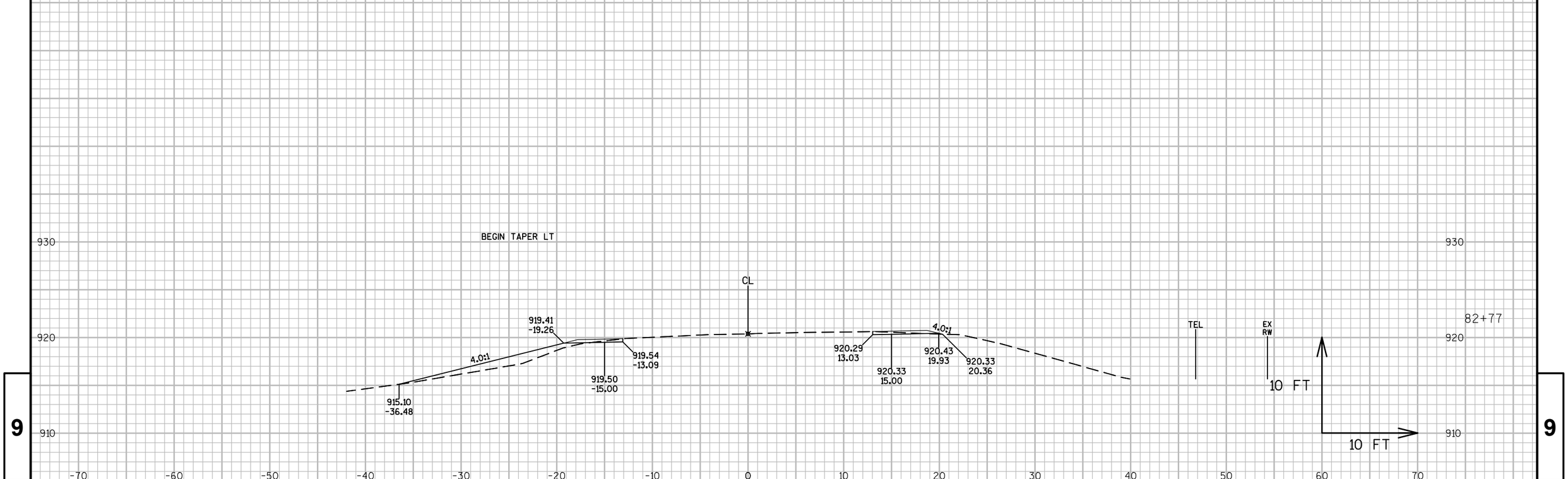


PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0049)	SHEET 121	E

NOTES:

-CROSS SECTIONS SHOW ONLY THE PROPOSED SHOULDER WORK AND DO NOT REFLECT THE 2-INCH MILLING AND OVERLAYING OF THE EXISTING PAVEMENT.

-CROSS SLOPES OF PAVED SHOULDER EXTENSIONS SHALL MATCH THE CROSS SLOPES OF THE ADJACENT PAVEMENT.



PROJECT NO: 5042-05-61	HWY: STH 80	COUNTY: RICHLAND	CROSS SECTIONS: STH 80 (B-52-0049)	SHEET 122	E

Notes

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