LAX

DECEMBER 2019

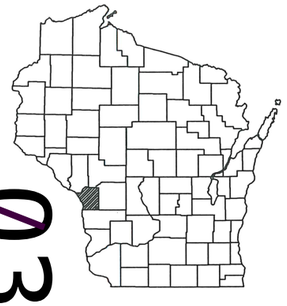
PROJECT ID: 5503-00-70

WITH: N/A

COUNTY: LA CROSSE

ORDER OF SHEETS

TOTAL SHEETS = 76



03

N

DESIGN DESIGNATION

A.A.D.T. (2020)	=	80
A.A.D.T. (2040)	=	90
D.H.V.	=	8
D.D.	=	60/40
T.	=	9.7
DESIGN SPEED	=	25 MPH
ESALS	=	15,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

- ELECTRIC (E)
- OVERHEAD UTILITY (OH)
- 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

WASHINGTON - PORTLAND

BERGE COULEE CREEK BRIDGE, B-32-0238

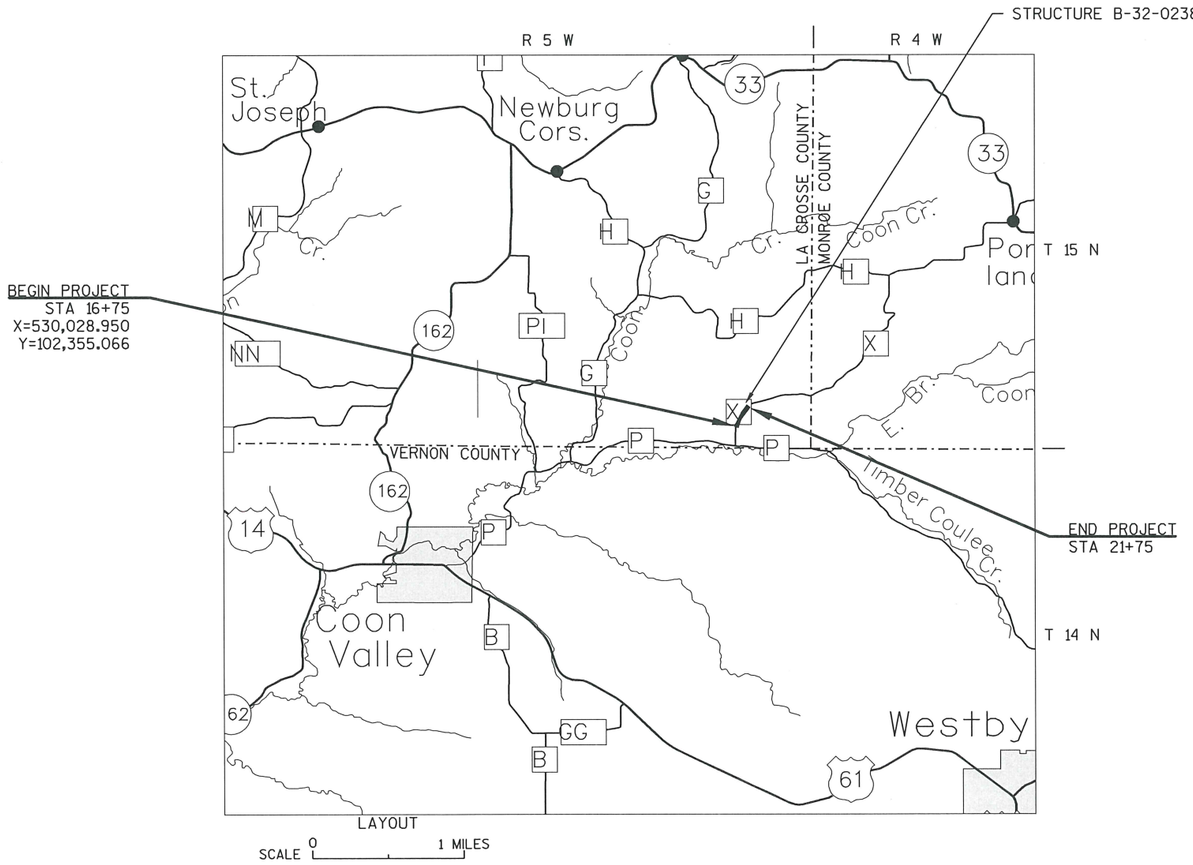
CTH X

LA CROSSE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5503-00-70	———	—

STATE PROJECT NUMBER

5503-00-70



TOTAL NET LENGTH OF CENTERLINE = 0.095 MI

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

ACCEPTED FOR
LA CROSSE COUNTY HIGHWAY DEPARTMENT

7/15/19 (DATE) (HIGHWAY COMMISSIONER)

ORIGINAL PLANS PREPARED BY

SEH

WISCONSIN
TOREY R. LEONARD
E-42982-6
HOLMEN, WI
PROFESSIONAL ENGINEER

7/15/19 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	SEH
Designer	SEH
Regional Examiner	ALEIGHA BURG
Regional Supervisor	OSCAR I. WINGER

APPROVED FOR THE DEPARTMENT

DATE: 7/17/19 (Signature)

E

STANDARD ABBREVIATIONS

ABUT	ABUTMENT
AC	ACRE
AGG	AGGREGATE
AECPRC	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
AECPCS	APRON ENDWALL FOR CULVERT PIPE CORRUGATED STEEL
ASPH	ASPHALTIC
AVG	AVERAGE
ADT	AVERAGE DAILY TRAFFIC
BF	BACK FACE
BM	BENCH MARK
BR	BRIDGE
CE	COMMERCIAL ENTRANCE
CL OR C/L OR ℄	CENTER LINE
Δ	CENTRAL ANGLE OR DELTA
CONC	CONCRETE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPCS	CULVERT PIPE CORRUGATED STEEL
CR	CREEK
CY	CUBIC YARD
C & G	CURB AND GUTTER
D	DEGREE OF CURVE
DHV	DESIGN HOUR VOLUME
DISCH	DISCHARGE
DG	DITCH GRADE
DWY	DRIVEWAY
X	EAST GRID COORDINATE
EAT	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
EOR	END POINT OF RADIUS
EL	ELEVATION
ENT	ENTRANCE
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
EXIST	EXISTING
FC	FACE OF CURB
FF	FACE TO FACE
FERT	FERTILIZE
FE	FIELD ENTRANCE
FL	FLOW LINE
FO	FIBER OPTIC
CWT	HUNDREDWEIGHT
HYD	HYDRANT
ID	INSIDE DIAMETER
INV	INVERT
IP	IRON PIPE OR PIN
LHF	LEFT-HAND FORWARD
L	LENGTH OF CURVE
LF	LINEAR FOOT
LC	LONG CHORD OF CURVE
LS	LUMP SUM
MH	MANHOLE
MOR	MID POINT OF RADIUS
MCE	MARKERS CULVERT END
NC	NORMAL CROWN
NO	NUMBER
OBLIT	OBLITERATE
PAVT	PAVEMENT
PE	PRIVATE ENTRANCE
PVRC	POINT OF VERTICAL REVERSE CURVE
QOR	QUARTER POINT OF RADIUS
R	RADIUS
REQ'D	REQUIRED
RES	RESIDENCE OR RESIDENTIAL
RHF	RIGHT-HAND FORWARD
R/W	RIGHT-OF-WAY
R	RIVER
RDWY	ROADWAY
R/L OR ℄	REFERENCE LINE
SALV	SALVAGED
SAN	SANITARY SEWER
SF	SQUARE FEET
SY	SQUARE YARD
SDD	STANDARD DETAIL DRAWINGS
STA	STATION
SS	STORM SEWER
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
SE	SUPERELEVATION RATE
TC	TOP OF CURB
T OR TN	TOWN
T	TRUCKS (PERCENT OF)
TYP	TYPICAL
VAR	VARIABLE
VC	VERTICAL CURVE
Y	NORTH GRID COORDINATE
YD	YARD

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE APPROXIMATE USGS DATUM.

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

UNLESS OTHERWISE SHOWN, DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOILED, FERTILIZED, AND SEEDED AND MULCHED.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT REMOVAL LIMITS.

THE 4" ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH 2" LOWER LAYER AND A 2" UPPER LAYER. USE 1/2" NOMINAL AGGREGATE FOR ASPHALT SURFACE.

SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IN PLACE PRIOR TO BRIDGE REMOVAL.

A CONVERSION FACTOR OF 2.1 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR BASE AGGREGATE DENSE 3/4-INCH.

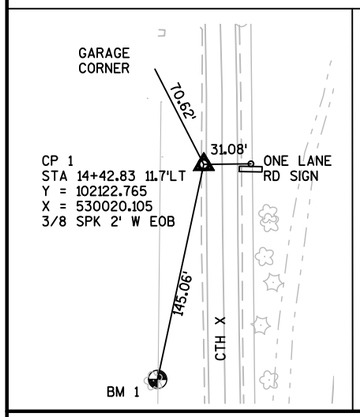
A CONVERSION FACTOR OF 2.0 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR BASE AGGREGATE DENSE 1 1/4-INCH.

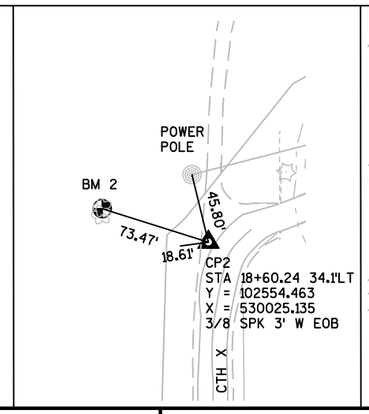
A CONVERSION FACTOR OF 112 LBS/IN/SY IS USED TO ESTIMATE QUANTITIES FOR ASPHALTIC SURFACE.

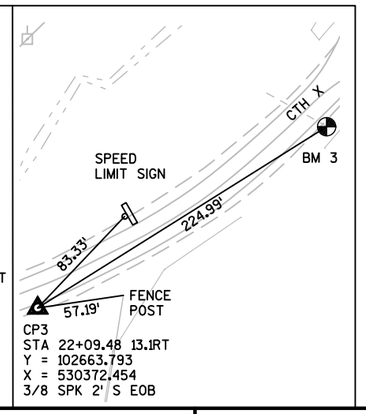
RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 1.1 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.1 ACRES







DESIGN CONSULTANT

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CHRIS BLUM, PE
clbum@sehinc.com

LA CROSSE COUNTY

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301 CARLSON ROAD
WEST SALEM, WI 54669
(608) 786-3810
RON CHAMBERLAIN, HIGHWAY COMMISSIONER
rchamberlain@lacrossecounty.org

WDNR LIAISON

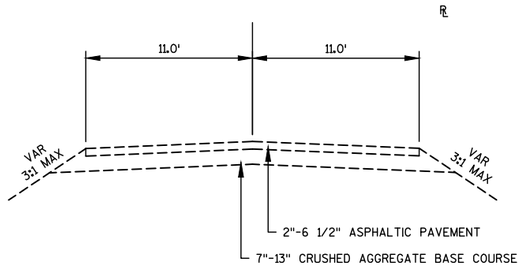
DNR SERVICE CENTER
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
(608) 785-9115
KAREN KALVELAGE
karen.kalvelage@wisconsin.gov

UTILITY CONTACTS

ELECTRIC
VERNON ELECTRIC COOPERATIVE
110 SAUGSTAD ROAD
WESTBY, WI 54667
(608)634-3121 (OFFICE)
(608)632-6003 (CELL)
COLE CARY
ccary@vernonelectric.org

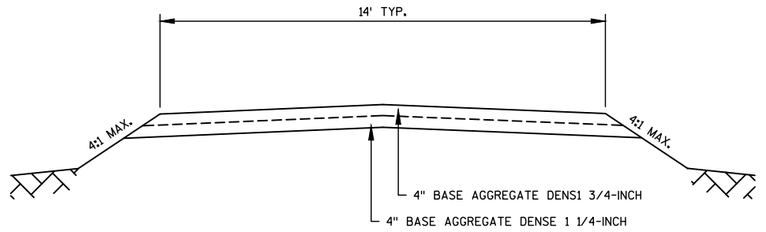
COMMUNICATIONS
COON VALLEY TELEPHONE
105 CENTRAL AVENUE
COON VALLEY, WI 54623
(608)452-3101 (OFFICE)
(608)632-0836 (CELL)
TRAVIS FRONK
cvt@mwt.net

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com
**DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMEBERS.



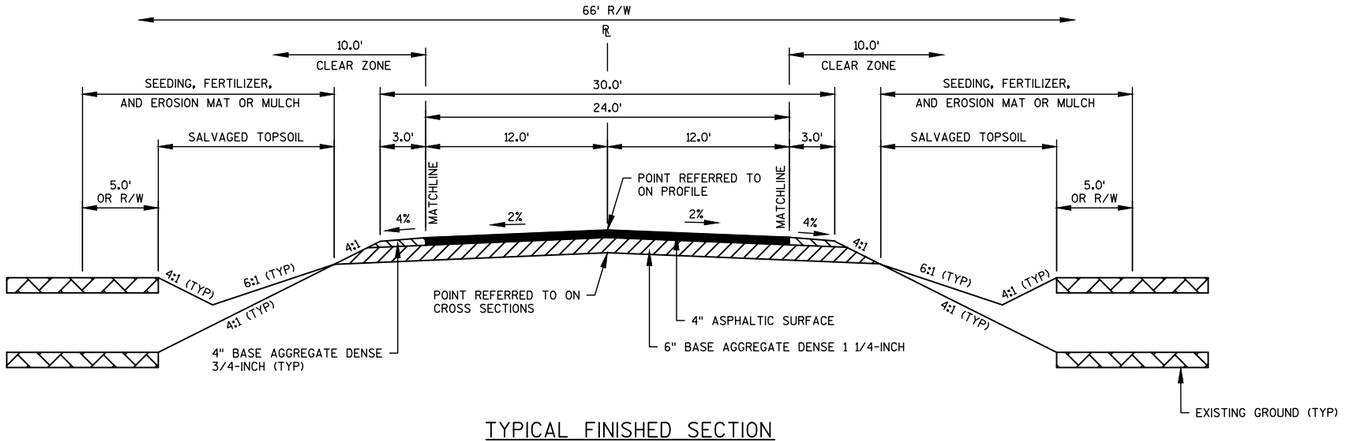
TYPICAL EXISTING SECTION

STA 16+75 TO STA 21+75



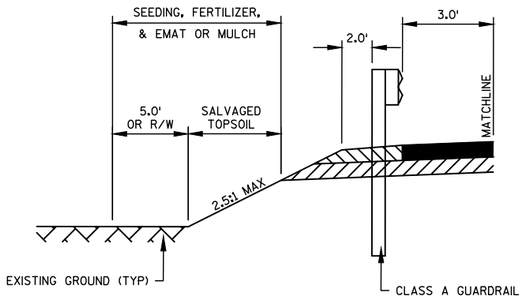
TYPICAL FINISHED SECTION

PRIVATE ENTRANCE



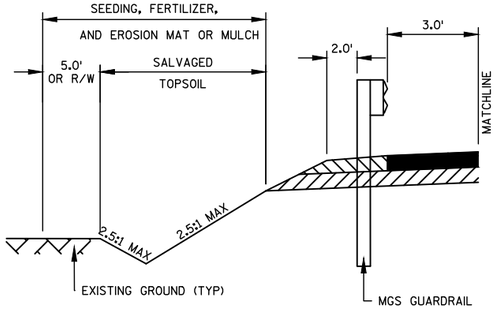
TYPICAL FINISHED SECTION

STA 16+75 TO STA 19+72
STA 20+15.58 TO STA 21+75



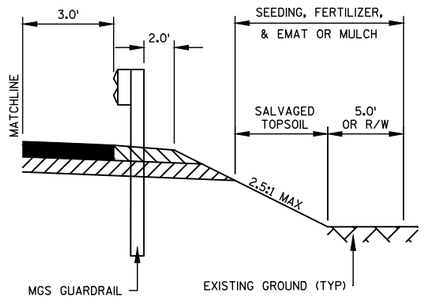
TYPICAL FINISHED HALF SECTION WITH CLASS A GUARDRAIL

STA 19+03.08 LT TO STA 19+68+76 LT



TYPICAL FINISHED HALF SECTION WITH MGS GUARDRAIL

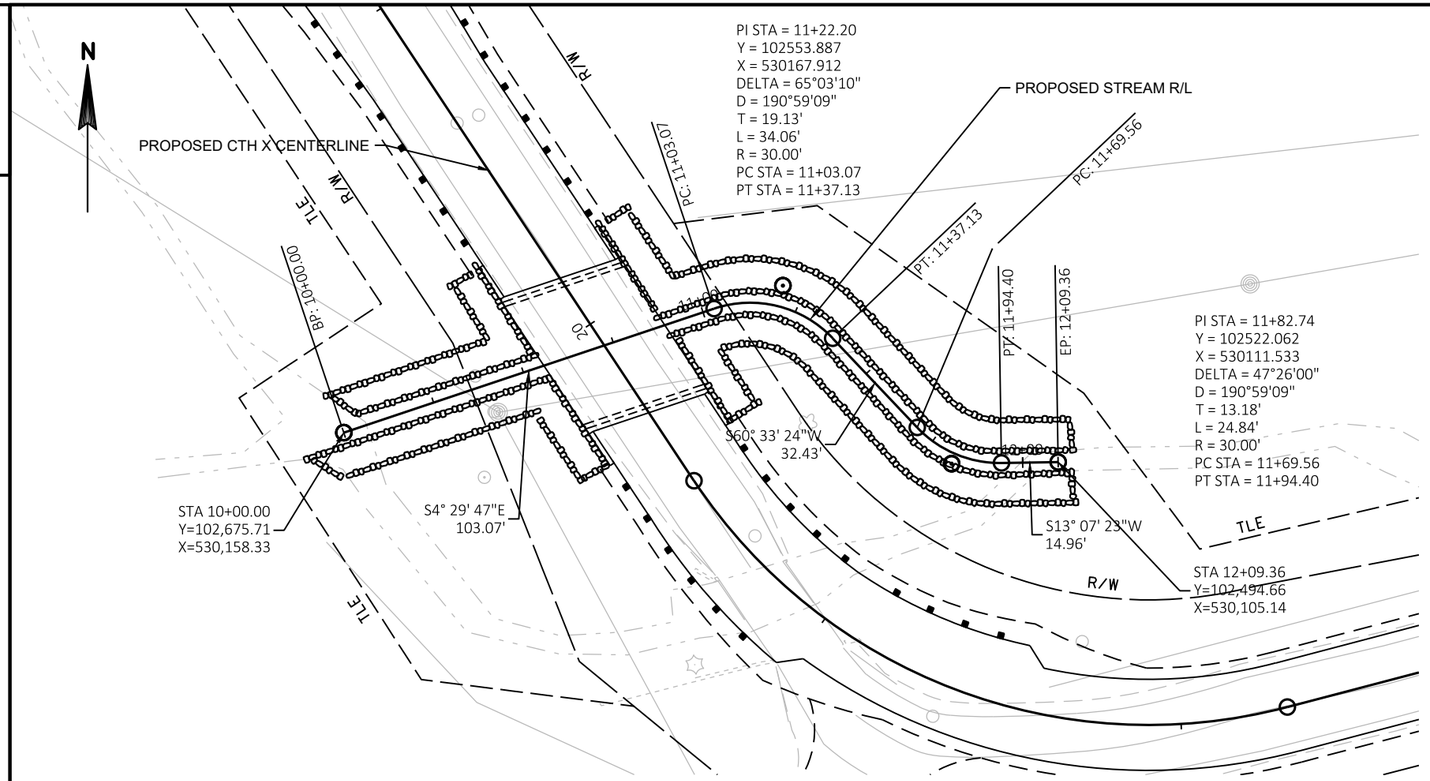
STA 20+26.03 LT TO STA 21+31.05 LT

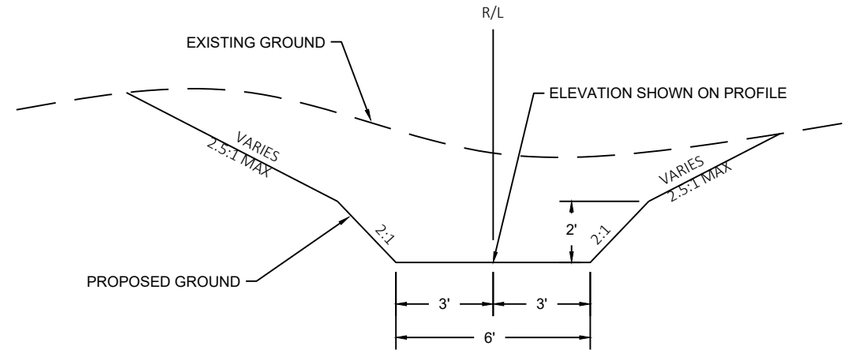


TYPICAL FINISHED HALF SECTION WITH MGS GUARDRAIL

STA 18+44.49 RT TO STA 19+60.48 RT
STA 20+17.99 RT TO STA 21+23.01 RT

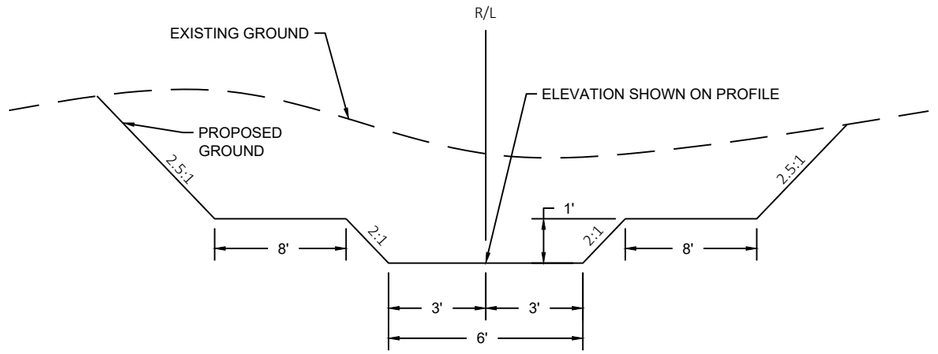
PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	TYPICAL SECTIONS	SHEET 3	E





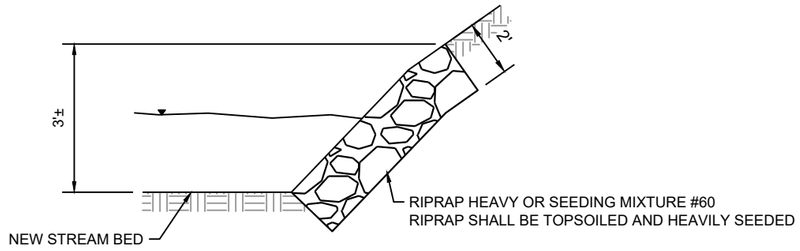
PROPOSED TYPICAL SECTION - STREAM REALIGNMENT

STA 10+00 - 10+70
STA 11+80 - 12+35



PROPOSED TYPICAL SECTION - STREAM REALIGNMENT UNDER STRUCTURE

STA 10+70 - 11+80

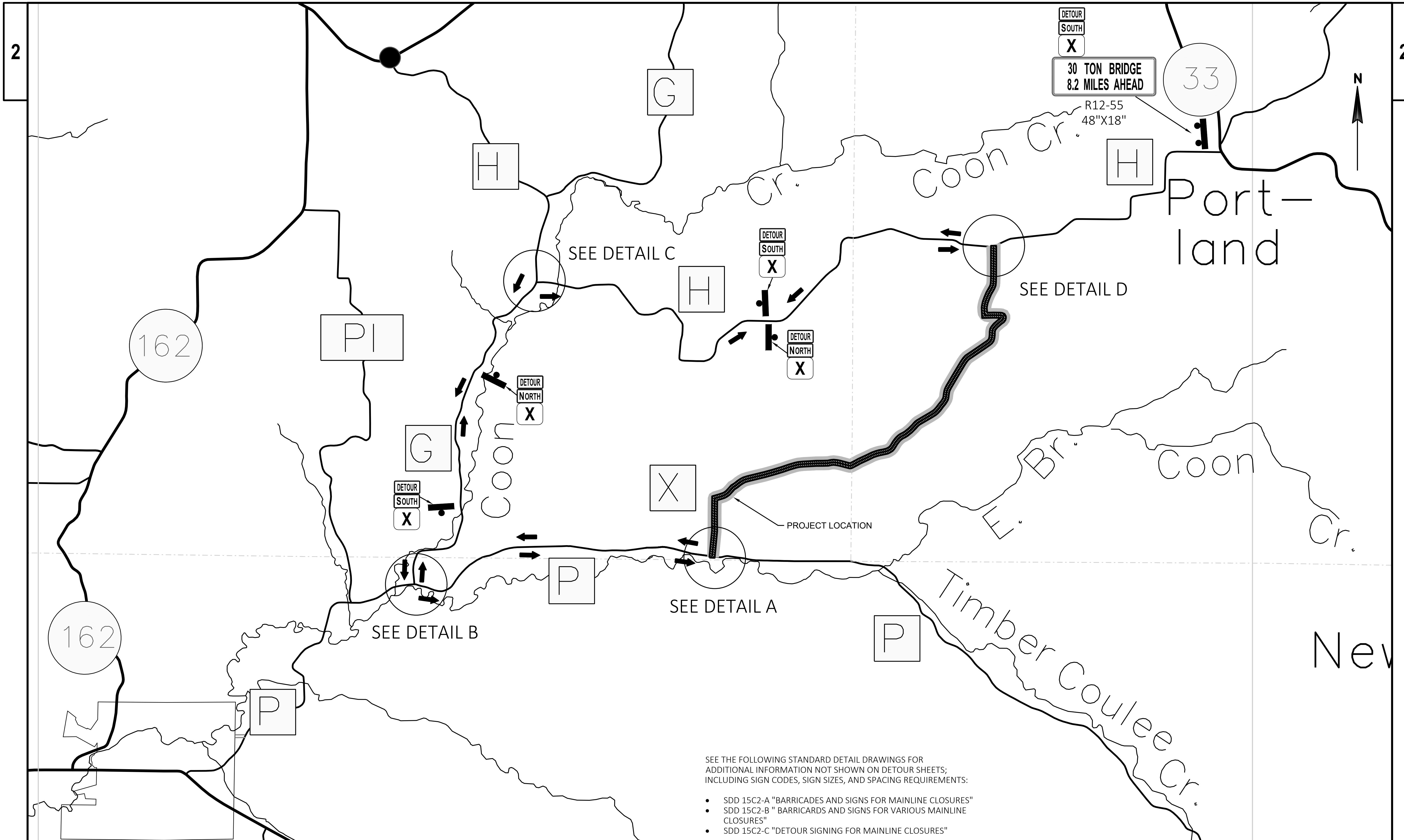


STREAM RIPRAP DETAIL

NOTES

- THE NEW STREAM CHANNEL AND BANKS SHALL BE CONSTRUCTED AS EARLY IN THE SCHEDULE AS POSSIBLE TO ALLOW SUFFICIENT STABILIZATION AND VEGETATION GROWTH WITH CONNECTION TO THE ACTIVE STREAM AS LATE AS POSSIBLE.
- THE NEW STREAM BED SHALL CONSIST OF NATIVE SOILS AND FREE OF MATERIAL SUCH AS RIPRAP OR BREAK ROCK.
- RIPRAP SHALL ONLY BE PLACED ALONG THE TOE OF THE MAIN CHANNEL AS SHOWN IN THE PLAN DETAILS AND ONLY AT LOCATIONS SHOWN. THE REMAINDER OF THE STREAM BANK IS TO BE SEEDED WITH SEEDING MIXTURE NO. 60 AND SEEDING TEMPORARY.
- APPLICATION RATES OF SEEDING MIXTURE #60 ALONG THE STREAM BANKS SHALL BE DOUBLE OF THAT SHOWN IN STANDARD SPEC 630.3.3.5.1.

PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	STREAM REALIGNMENT DETAILS	SHEET 4	E

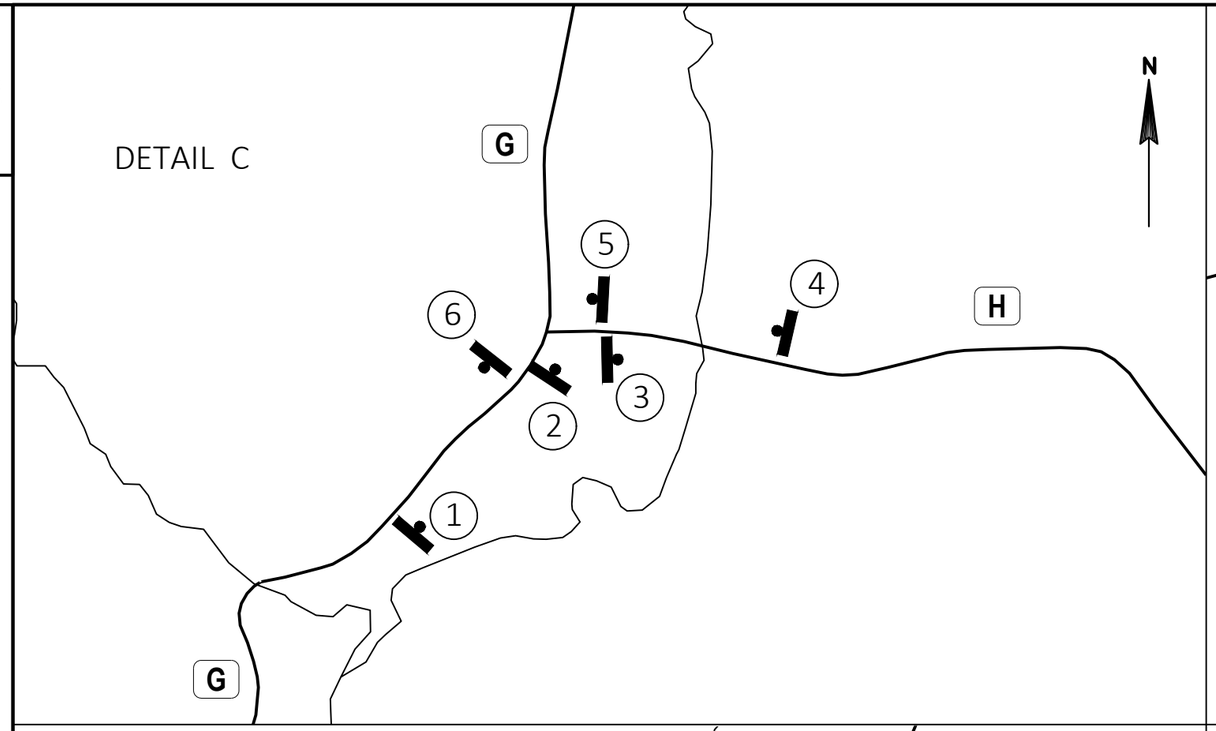


SEE THE FOLLOWING STANDARD DETAIL DRAWINGS FOR ADDITIONAL INFORMATION NOT SHOWN ON DETOUR SHEETS; INCLUDING SIGN CODES, SIGN SIZES, AND SPACING REQUIREMENTS:

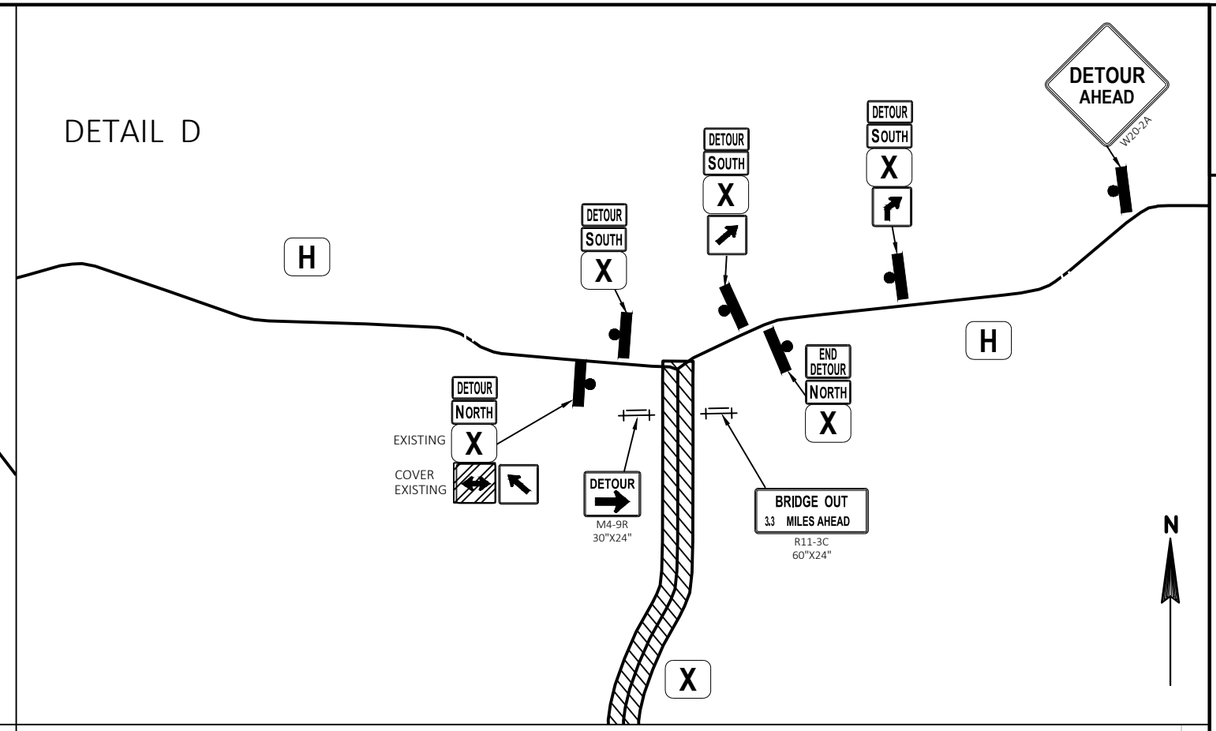
- SDD 15C2-A "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
- SDD 15C2-B " BARRICARDS AND SIGNS FOR VARIOUS MAINLINE CLOSURES"
- SDD 15C2-C "DETOUR SIGNING FOR MAINLINE CLOSURES"

PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	DETOUR SIGNING	SHEET 5	E

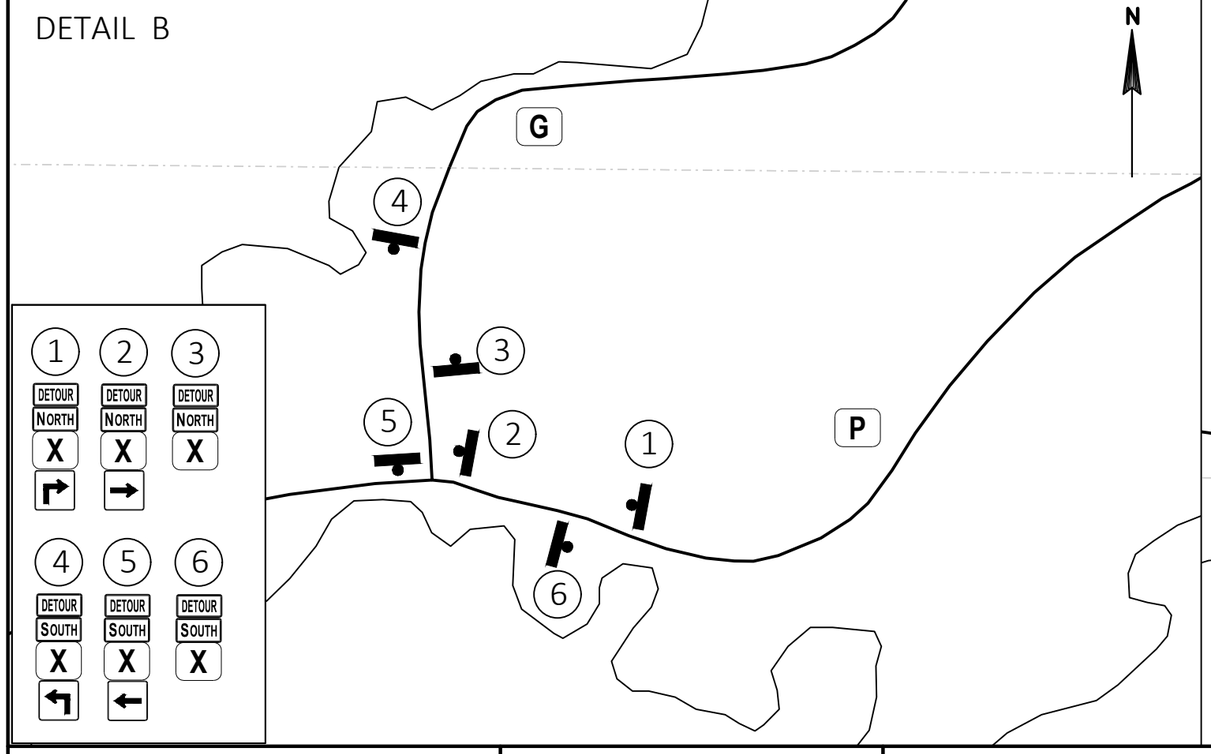
DETAIL C



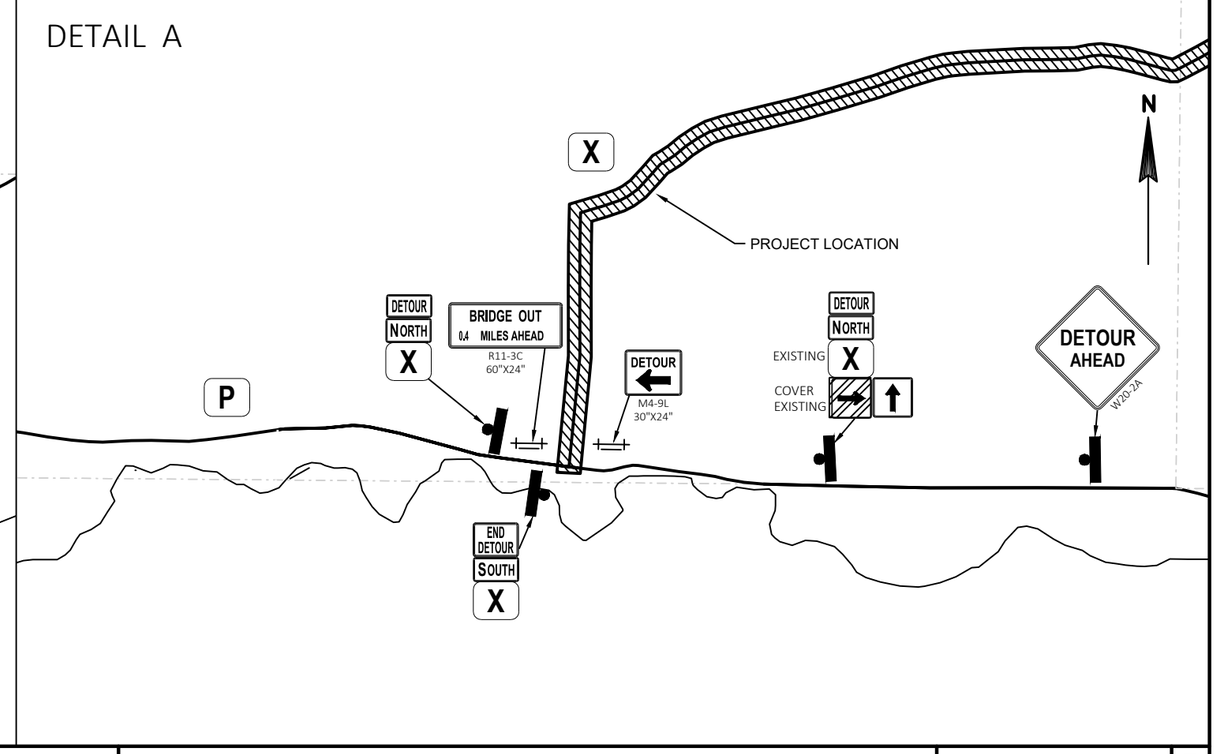
DETAIL D



DETAIL B



DETAIL A



PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	DETOUR SIGNING	SHEET 6	E

5503-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0120	Clearing	ID	60.000	60.000
0004	201.0220	Grubbing	ID	60.000	60.000
0006	203.0700.S	Removing Old Structure Over Waterway With Debris Capture System (station) 01. 19+10, 6'LT	LS	1.000	1.000
0008	204.0165	Removing Guardrail	LF	60.000	60.000
0010	205.0100	Excavation Common	CY	1,658.000	1,658.000
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-32-0238	LS	1.000	1.000
0014	208.0100	Borrow	CY	14.000	14.000
0016	210.1500	Backfill Structure Type A	TON	460.000	460.000
0018	213.0100	Finishing Roadway (project) 01. 5503-00-70	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	117.000	117.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	684.000	684.000
0024	455.0605	Tack Coat	GAL	70.000	70.000
0026	465.0105	Asphaltic Surface	TON	310.000	310.000
0028	502.0100	Concrete Masonry Bridges	CY	189.000	189.000
0030	502.3200	Protective Surface Treatment	SY	200.000	200.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	5,170.000	5,170.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	21,810.000	21,810.000
0036	513.4061	Railing Tubular Type M	LF	130.000	130.000
0038	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0040	550.0500	Pile Points	EACH	10.000	10.000
0042	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	200.000	200.000
0044	606.0300	Riprap Heavy	CY	290.000	290.000
0046	606.0600	Grouted Riprap Medium	CY	80.000	80.000
0048	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0050	614.0200	Steel Thrie Beam Structure Approach	LF	20.650	20.650
0052	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	1.000	1.000
0054	614.2300	MGS Guardrail 3	LF	37.500	37.500
0056	614.2500	MGS Thrie Beam Transition	LF	118.200	118.200
0058	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0060	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5503-00-70	EACH	1.000	1.000
0062	619.1000	Mobilization	EACH	1.000	1.000
0064	624.0100	Water	MGAL	26.000	26.000
0066	625.0500	Salvaged Topsoil	SY	2,785.000	2,785.000
0068	627.0200	Mulching	SY	2,370.000	2,370.000
0070	628.1504	Silt Fence	LF	1,135.000	1,135.000
0072	628.1520	Silt Fence Maintenance	LF	1,135.000	1,135.000
0074	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000

5503-00-70

Line	Item	Item Description	Unit	Total	Qty
0076	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0078	628.2008	Erosion Mat Urban Class I Type B	SY	515.000	515.000
0080	629.0210	Fertilizer Type B	CWT	2.050	2.050
0082	630.0120	Seeding Mixture No. 20	LB	80.000	80.000
0084	630.0160	Seeding Mixture No. 60	LB	12.000	12.000
0086	630.0200	Seeding Temporary	LB	92.000	92.000
0088	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	8.000	8.000
0090	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	2.000	2.000
0092	637.2230	Signs Type II Reflective F	SF	54.000	54.000
0094	638.2602	Removing Signs Type II	EACH	12.000	12.000
0096	638.3000	Removing Small Sign Supports	EACH	12.000	12.000
0098	642.5001	Field Office Type B	EACH	1.000	1.000
0100	643.0420	Traffic Control Barricades Type III	DAY	1,332.000	1,332.000
0102	643.0705	Traffic Control Warning Lights Type A	DAY	1,776.000	1,776.000
0104	643.0900	Traffic Control Signs	DAY	7,770.000	7,770.000
0106	643.0920	Traffic Control Covering Signs Type II	EACH	2.000	2.000
0108	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0110	643.5000	Traffic Control	EACH	1.000	1.000
0112	645.0111	Geotextile Type DF Schedule A	SY	60.000	60.000
0114	645.0120	Geotextile Type HR	SY	360.000	360.000
0116	646.1020	Marking Line Epoxy 4-Inch	LF	2,000.000	2,000.000
0118	650.4500	Construction Staking Subgrade	LF	458.000	458.000
0120	650.5000	Construction Staking Base	LF	458.000	458.000
0122	650.6500	Construction Staking Structure Layout (structure) 01. B-32-0238	LS	1.000	1.000
0124	650.9910	Construction Staking Supplemental Control (project) 01. 5503-00-70	LS	1.000	1.000
0126	650.9920	Construction Staking Slope Stakes	LF	458.000	458.000
0128	690.0150	Sawing Asphalt	LF	39.000	39.000
0130	715.0502	Incentive Strength Concrete Structures	DOL	1,134.000	1,134.000

NOTE:
ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR
ENGINEERS ESTIMATE CATEGORY 0010 UNLESS OTHERWISE NOTED.

3

201.0120 CLEARING
201.0220 GRUBBING

STATION	LOCATION	CLEARING ID	GRUBBING ID
19+17	31' LT	10	10
19+02	55' RT	14	14
19+45	33' RT	36	36
	TOTAL	60	60

204.0165 REMOVING GUARDRAIL

STATION	-	STATION	LOCATION	REMOVE GUARDRAIL LF
18+75	-	18+90	RT	16
18+93	-	19+03	LT	16
19+20	-	19+35	RT	14
19+29	-	19+42	LT	14
TOTAL				60

606.0300 RIPRAP HEAVY

STATION	-	STATION	LOCATION	RIPRAP CY (1)	COMMENTS
18+40	-	20+00	RT	140	NO GEOTEXTILE REQ'D, TO BE TOPSOILED
19+88	-	20+22	LT	60	NO GEOTEXTILE REQ'D, TO BE TOPSOILED
			TOTAL	200	

(1) - SEE STRUCTURE PLAN FOR ADDITIONAL QUANTITY.

205.0100 EXCAVATION COMMON
208.0100 BORROW

STATION	-	STATION	EXC. COMMON CY (3)	FILL CY (1)	EXPANDED FILL CY (2)	BORROW CY
16+75	-	21+75	1658	1286	1672	14
TOTAL			1658	1286	1672	14

(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY.
(2) - FILL EXPANSION 30%
(3) - EXISTING ASPHALTIC PAVEMENT IS INCLUDED IN COMMON EXCAVATION TOTALS.

614.0200 STEEL THRIE BEAM STRUCTURE APPROACH
614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STATION	-	STATION	LOCATION	THRIE BEAM LF	CLASS A EAT EACH
19+03.08	-	19+68.76	RT	20.65	1
			TOTAL	20.65	1

305.0110 BASE AGGREGATE DENSE 3/4-INCH
305.0120 BASE AGGREGATE DENSE 1 1/4-INCH
624.0100 WATER

STATION	-	STATION	BASE 3/4-INCH TON	BASE 1 1/4-INCH TON	WATER MGAL
16+75	-	19+72	57	414	15
20+14	-	21+75	37	248	9
Private Entrance			23	22	2
		TOTAL	117	684	26

455.0605 TACK COAT
465.0105 ASPHALTIC SURFACE

STATION	-	STATION	TACK COAT GAL	ASPHALTIC SURFACE TON
16+75	-	19+72	45	194
20+14	-	21+75	25	116
		TOTAL	70	310

614.2300 MGS GUARDRAIL 3
614.2500 MGS THRIE BEAM TRANSITION
614.2610 MGS GUARDRAIL TERMINAL EAT

STATION	-	STATION	LOCATION	GUARDRAIL 3 LF	THRIE BEAM TRANSITION LF	GUARDRAIL TERMINAL EAT EACH
18+44.49	-	19+60.48	RT	12.5	39.4	1
20+17.99	-	21+23.01	RT	12.5	39.4	1
20+26.03	-	21+31.05	LT	12.5	39.4	1
			TOTAL	37.5	118.2	3

NOTE:
ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEERS ESTIMATE CATEGORY 0010.

625.0500 SALVAGED TOPSOIL
627.0200 MULCHING
629.0210 FERTILIZER TYPE B
630.0120 SEEDING MIXTURE NO. 20
630.0160 SEEDING MIXTURE NO. 60
630.0200 SEEDING TEMPORARY

STATION	-	STATION	LOCATION	SALVAGED TOPSOIL SY	MULCHING SY	FERTILIZER CWT	SEEDING #20 LB	SEEDING #60 LB	SEEDING TEMPORARY LB
16+75	-	19+76	RT	590	500	0.41	18	-	18
18+56	-	21+75	RT	255	275	0.22	10	-	10
16+75	-	18+70	LT	365	465	0.30	13	-	13
18+85	-	20+05	LT	535	480	0.37	16	-	16
20+12	-	21+75	LT	185	175	0.15	7	-	7
UNDISTRIBUTED				480	475	0.35	16	-	16
			SUBTOTAL	2410	2370	1.8	80	0	80
LANDSCAPING RIPRAP STREAM BANKS									
18+40	-	20+00	RT	210	-	0.14	-	6	6
19+88	-	20+22	LT	90	-	0.06	-	3	3
UNDISTRIBUTED				75	-	0.05	-	3	3
			SUBTOTAL	375	0	0.25	0	12	12
			PROJECT TOTAL	2785	2370	2.05	80	12	92

628.1504 SILT FENCE
628.1520 SILT FENCE MAINTENANCE

STATION	-	STATION	LOCATION	FENCE LF	MAINT. LF
16+70	-	19+75	RT/LT	285	285
18+10	-	18+70	LT	75	75
18+85	-	19+87	LT	150	150
20+10	-	21+90	RT/LT	205	205
20+25	-	21+90	LT	190	190
UNDISTRIBUTED				230	230
			TOTAL	1135	1135

628.2008 EROSION MAT URBAN CLASS I TYPE B

STATION	-	STATION	LOCATION	SY
18+08	-	19+55	RT	160
20+20	-	21+25	RT	70
18+85	-	19+65	LT	115
20+25	-	21+05	LT	65
UNDISTRIBUTED				105
			TOTAL	515

628.1905 MOBILIZATIONS EROSION CONTROL
628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL

DESCRIPTION	MOBILIZATION EACH	EMERGENCY MOB. EACH
PROJECT 5503-00-70	3	3
TOTAL	3	3

NOTE:
ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEERS ESTIMATE CATEGORY 0010.

3

634.0612 POSTS WOOD 4x6-INCH X 12-FT
634.0616 POSTS WOOD 4x6-INCH X 16-FT
637.2230 SIGNS TYPE II REFLECTIVE F
638.2602 REMOVING SIGNS TYPE II
638.3000 REMOVING SMALL SIGN SUPPORTS

LOCATION	SIGN CODE	SIGN SIZE	12' WOOD POSTS EACH	16' WOOD POSTS EACH	SIGNS TYPE II REFLECTIVE F SF	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	COMMENTS
570' SOUTH OF BRIDGE	-	-	-	-	-	2	1	EXISTING CURVE AND SPEED ADVISORY
440' SOUTH OF BRIDGE	-	-	-	-	-	1	1	EXISTING ONE LANE BRIDGE SIGN
440' SOUTH OF CURVE	W1-1R	36"x36"	-	1	9.00	-	-	ROAD TURNS RIGHT WARNING
440' SOUTH OF CURVE	W13-1	24"x24"	-	-	4.00	-	-	25 MPH ADVISORY (MOUNTED BELOW W1-1R SIGN)
18+50, LT	W1-6L	48"x24"	2	-	8.00	1	2	ONE DIRECTION LARGE ARROW (REPLACEMENT)
19+00, RT	W1-6R	48"x24"	2	-	8.00	1	2	ONE DIRECTION LARGE ARROW (REPLACEMENT)
SW BRIDGE CORNER	W5-52R	12"x36"	1	-	3.00	1	1	BRIDGE HASH MARKS (REPLACEMENT)
NW BRIDGE CORNER	W5-52L	12"x36"	1	-	3.00	1	1	BRIDGE HASH MARKS (REPLACEMENT)
SE BRIDGE CORNER	W5-52L	12"x36"	1	-	3.00	1	1	BRIDGE HASH MARKS (REPLACEMENT)
NE BRIDGE CORNER	W5-52R	12"x36"	1	-	3.00	1	1	BRIDGE HASH MARKS (REPLACEMENT)
390' NORTHEAST OF BRIDGE	-	-	-	-	-	2	1	EXISTING CURVE AND SPEED ADVISORY
440' NORTHEAST OF CURVE	W1-1R	36"x36"	-	1	9.00	-	-	ROAD TURNS LEFT WARNING
440' NORTHEAST OF CURVE	W13-1	24"x24"	-	-	4.00	-	-	25 MPH ADVISORY (MOUNTED BELOW W1-1L SIGN)
525' NORTHEAST OF BRIDGE	-	-	-		-	1	1	EXISTING ONE LANE BRIDGE SIGN
TOTAL			8	2	54	12	12	

643.0900 TRAFFIC CONTROL SIGNS
643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II
643.1050 TRAFFIC CONTROL PCMS
643.5000 TRAFFIC CONTROL

DESCRIPTION	DAYS	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS DAYS	TRAFFIC CONTROL COVERING SIGNS TYPE II EACH (1)	TRAFFIC CONTROL PCMS EACH	TRAFFIC CONTROL PCMS DAYS (2)	TRAFFIC CONTROL EACH
PROJECT 5503-00-70	74	105	7770	2	2	14	1
TOTAL			7770	2		14	1

(1) - EACH LOCATION HAS ONE COVER/UNCOVER CYCLE
(2) - EACH TRAFFIC CONTROL PCMS SHALL BE IN PLACE FOR 7 DAYS PRIOR TO ROAD CLOSURE

650.4500 CONSTRUCTION STAKING SUBGRADE
650.5000 CONSTRUCTION STAKING BASE
650.9920 CONSTRUCTION STAKING SLOPE STAKES
650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 5503-00-70

STATION	-	STATION	SUBGRADE LF	BASE LF	SLOPE STAKES LF	SUPPLEMENTAL CONTROL LS
16+75	-	19+72	297	297	297	-
20+14	-	21+75	161	161	161	-
		TOTAL	458	458	458	1

643.0420 TRAFFIC CONTROL BARRICADES TYPE III
643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A

DESCRIPTION	DAYS	BARRICADES TYPE III EACH	BARRICADES TYPE III DAYS	WARNING LIGHTS TYPE A EACH	WARNING LIGHTS TYPE A DAYS
PROJECT 5503-00-70	74	18	1332	24	1776
TOTAL			1332	24	1776

646.1020 MARKING LINE EPOXY 4-INCH

STATION	-	STATION	LOCATION	WHITE SOLID LF	YELLOW SOLID LF
16+75	-	21+75	EDGELINE & CL	1000	1000
			TOTAL	2000	

690.0150 SAWING ASPHALT

STATION	LF	COMMENT
16+75	20	BEGIN PROJECT
21+75	19	END PROJECT
TOTAL	39	

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
5503-00-70		
R/W PROJECT NUMBER --	4.01	2

PLAT OF RIGHT OF WAY REQUIRED FOR

WASHINGTON - PORTLAND
BERGE COULEE CREEK BRIDGE

CTH X — LA CROSSE

CONVENTIONAL ABBREVIATIONS

ACCESS POINT/ DRIVEWAY CONNECTION	AP	RELEASE OF RIGHTS	ROR
ACCESS RIGHTS	AR	REMAINING	REM.
ACRES	AC.	RIGHT-OF-WAY	R/W
AND OTHERS	ET.AL.	SECTION	SEC.
CENTERLINE	C/L	STATION	STA.
CERTIFIED SURVEY MAP	CSM	TEMPORARY LIMITED EASEMENT	TLE
CORNER	COR.	VOLUME	V.
DOCUMENT	DOC.		
EASEMENT	EASE.	**CURVE DATA**	
HIGHWAY EASEMENT	H.E.	LONG CHORD	LCH
LAND CONTRACT	LC	LONG CHORD BEARING	LCB
MONUMENT	MON.	RADIUS	R
PAGE	P.	DEGREE OF CURVE	D
PERMANENT LIMITED EASEMENT	PLE	CENTRAL ANGLE OR DELTA	DELTA
PROPERTY LINE	PL	LENGTH OF CURVE	L
RECORDED AS	(100')	TANGENT	TAN
REFERENCE LINE	R/L		

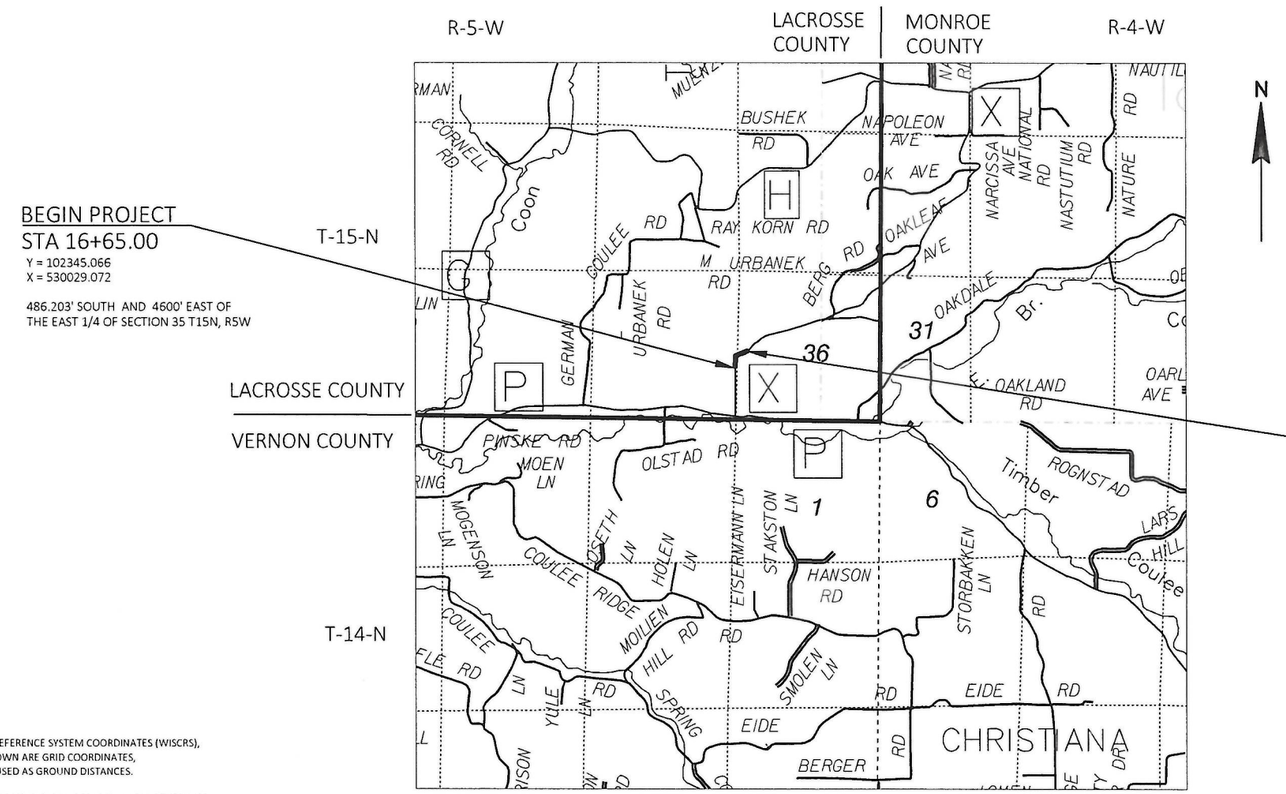
CONVENTIONAL SYMBOLS

FOUND IRON PIPE/PIN — 1" (1" UNLESS NOTED)
R/W MONUMENT — •(SET)
R/W STANDARD — ▲(SET)
SIGN — SIGN
SECTION CORNER MONUMENT
SECTION CORNER SYMBOL
FEE (HATCH VARIES)
TEMPORARY LIMITED EASEMENT
PERMANENT LIMITED EASEMENT
R/W BOUNDARY POINT — RWB20
PARCEL NUMBER — 107
UTILITY PARCEL NUMBER — 92
SIGN NUMBER (OFF PREMISE) — 21-1
BUILDING

PROPOSED R/W LINE
EXISTING H.E. LINE
PROPERTY LINE
LOT & TIE LINES
SLOPE INTERCEPTS
CORPORATE LIMITS
NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)
NO ACCESS (BY ACQUISITION)
NO ACCESS (BY STATUTORY AUTHORITY)
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
EXISTING CENTERLINE
PROPOSED REFERENCE LINE
PARALLEL OFFSET

CONVENTIONAL UTILITY SYMBOLS

	NON COMPENSABLE	COMPENSABLE
WATER	W	
GAS	G	
TELEPHONE	T	
OVERHEAD TRANSMISSION LINES	OH	
ELECTRIC	E	
CABLE TELEVISION	TV	
FIBER OPTIC	FO	
SANITARY SEWER	SAN	
STORM SEWER	SS	
POWER POLE		
TELEPHONE POLE		
TELEPHONE PEDESTAL		
ELECTRIC TOWER		



LAYOUT
SCALE 0 — 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.139

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), LA CROSSE COUNTY, NAD83 2011 IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"X24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE. ALL (TLES) ON THIS PLAT EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

ORIGINAL PLAT PREPARED BY

SEH

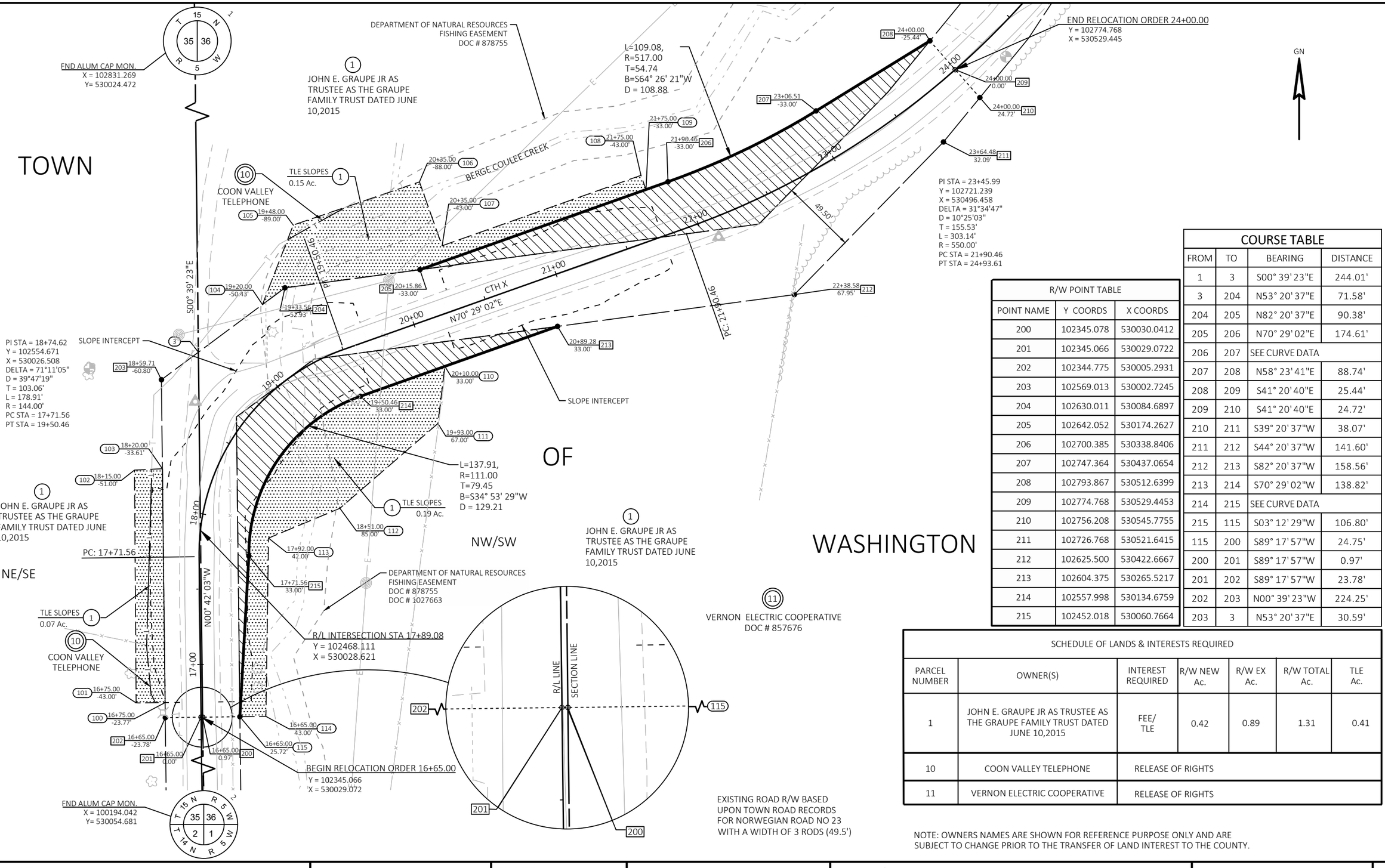
WISCONSIN
JASON L. CANCE
S-2688
CHIPPEWA FALLS WI
LAND SURVEYOR

2-11-2019 (Date) (Signature)

REVISION DATE	LA CROSSE COUNTY
	APPROVED FOR LACROSSE COUNTY DATE 2/14/19 (Signature)

FILE NAME : \\SEHLX1\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\RW\DWG\4.02.DWG
LAYOUT NAME - ****
PLOT DATE : 2/11/2019 11:08 AM PLOT BY : NICK ENGH PLOT NAME :

WISDOT/CADDS SHEET 50



R/W POINT TABLE		
POINT NAME	Y COORDS	X COORDS
200	102345.078	530030.0412
201	102345.066	530029.0722
202	102344.775	530005.2931
203	102569.013	530002.7245
204	102630.011	530084.6897
205	102642.052	530174.2627
206	102700.385	530338.8406
207	102747.364	530437.0654
208	102793.867	530512.6399
209	102774.768	530529.4453
210	102756.208	530545.7755
211	102726.768	530521.6415
212	102625.500	530422.6667
213	102604.375	530265.5217
214	102557.998	530134.6759
215	102452.018	530060.7664

COURSE TABLE			
FROM	TO	BEARING	DISTANCE
1	3	S00° 39' 23"E	244.01'
3	204	N53° 20' 37"E	71.58'
204	205	N82° 20' 37"E	90.38'
205	206	N70° 29' 02"E	174.61'
206	207	SEE CURVE DATA	
207	208	N58° 23' 41"E	88.74'
208	209	S41° 20' 40"E	25.44'
209	210	S41° 20' 40"E	24.72'
210	211	S39° 20' 37"W	38.07'
211	212	S44° 20' 37"W	141.60'
212	213	S82° 20' 37"W	158.56'
213	214	S70° 29' 02"W	138.82'
214	215	SEE CURVE DATA	
215	115	S03° 12' 29"W	106.80'
115	200	S89° 17' 57"W	24.75'
200	201	S89° 17' 57"W	0.97'
201	202	S89° 17' 57"W	23.78'
202	203	N00° 39' 23"W	224.25'
203	3	N53° 20' 37"E	30.59'

SCHEDULE OF LANDS & INTERESTS REQUIRED						
PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	R/W NEW Ac.	R/W EX Ac.	R/W TOTAL Ac.	TLE Ac.
1	JOHN E. GRAUPE JR AS TRUSTEE AS THE GRAUPE FAMILY TRUST DATED JUNE 10,2015	FEE/ TLE	0.42	0.89	1.31	0.41
10	COON VALLEY TELEPHONE	RELEASE OF RIGHTS				
11	VERNON ELECTRIC COOPERATIVE	RELEASE OF RIGHTS				

NOTE: OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSE ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTEREST TO THE COUNTY.

REVISION DATE

DATE

GRID FACTOR N/A

SCALE, FEET 0 30 60

HWY: CTH X

COUNTY: LA CROSSE

STATE R/W PROJECT NUMBER 5503-00-70

CONSTRUCTION PROJECT NUMBER 5503-00-70

PLAT SHEET 4.02

PS&E SHEET 13

E

FILE NAME : 4.02.DWG
LAYOUT NAME - RW 1 IN 50 FT

PLOT DATE : 2/11/2019 11:08 AM PLOT BY : NICK ENGH PLOT NAME : PLOT SCALE : 1IN : 60FT

WISDOT/CADDS SHEET 75

BENCHMARK TABLE			
NO.	STATION	DESCRIPTION	ELEV.
1*	13+01.38, -43.90' LT	RR SPIKE IN 36" TREE	829.02
2	18+58.66, -87.76' LT	RR SPIKE IN 18" TREE	840.97
3	24+44.95, 16.57' RT	TOP SOUTH END 15" CMP	850.24

*BM 1 NOT SHOWN ON THIS SHEET

BM 2

STEEL THRIE BEAM STRUCTURE APPROACH
STEEL PLATE BEAMGUARD CLASS A
STEEL PLATE BEAMGUARD EAT
(POST 1 STA 19+03.08, 17' LT)

P.E. (GRAVEL)

EXISTING CL

REMOVE EXISTING STRUCTURE P-32-0101

T: 19+50.46

TLE

GRAUPE FAMILY TRUST
W506 COUNTY ROAD X
CASHTON, WI 54619

NOTE:
PREVENT SEDIMENT FROM ENTERING EXISTING AND PROPOSED STREAM AT ALL TIMES. CONTRACTOR TO ADJUST EROSION CONTROL DEVICES AS NEEDED TO FIT CONSTRUCTION OPERATIONS OR AS DIRECTED BY THE ENGINEER.

PI STA = 23+45.99
Y = 102721.239
X = 530496.458
DELTA = 31°34'47"
D = 10°25'03"
T = 155.53'
L = 303.14'
R = 550.00'
PC STA = 21+90.46
PT STA = 24+93.61

SLOPE INTERCEPT (TYP)

MGS THRIE BEAM
MGS GUARDRAIL 3
MGS EAT (POST 1 STA 18+44.49, 17' RT)

MGS THRIE BEAM
MGS GUARDRAIL 3
MGS EAT (POST 1 STA 21+31.05, 17' LT)

PC: 17+71.56

PC: 21+90.46

PT: 24+93.61

19+00

20+00

21+00

22+00

23+00

24+00

18+00

17+00

16+00

N70° 29' 02"E
240.00'

COON VALLEY TELEPHONE

R/W

CTH X

BM 3

PROPOSED STRUCTURE B-32-0238

TLE

EROSION MAT URBAN CLASS I TYPE B (TYP)

PROPOSED STREAM REALIGNMENT

MGS THRIE BEAM
MGS GUARDRAIL 3
MGS EAT (POST 1 STA 21+23.01, 17' RT)

BERGE COULEE CREEK

VERNON ELECTRIC COOPERATIVE

N00° 42' 03"W
771.56'

16+00

PI STA = 18+74.62
Y = 102554.671
X = 530026.508
DELTA = 71°11'05"
D = 39°47'19"
T = 103.06'
L = 178.91'
R = 144.00'
PC STA = 17+71.56
PT STA = 19+50.46
SE = 6.00%

GRAUPE FAMILY TRUST
W506 COUNTY ROAD X
CASHTON, WI 54619

END PROJECT
STA 21+75
SAWCUT REQ'D
MATCH EXISTING

PROPOSED STRUCTURE B-32-0238
CL STRUCTURE STA 19+93.29
15° SKEW LHF
SINGLE SPAN CONCRETE SLAB
40' SPAN LENGTH
30' CLEAR WIDTH
3.0% SUPERELEVATION

VCL = 100.00
K = 34.18

VCL = 80.00
K = 42.08

VCL = 125.00
K = 25.93

STA 16+75.00
EL 833.71

VPC STA 18+26.25
VPC EL 838.94

VPI STA 18+88.75
VPI EL 841.74

VPT STA 19+51.25
VPT EL 841.52

STA 21+75.00
EL 842.13

VPC STA 20+61.86
VPC EL 841.14

VPI STA 21+01.86
VPI EL 841.00

VPT STA 21+41.86
VPT EL 841.62

VPC STA 16+77.40
VPC EL 833.75

VPI STA 17+27.40
VPI EL 834.52

VPT STA 17+77.40
VPT EL 836.76

FINISHED PROFILE @ C/L

EXISTING GROUND @ C/L

FILL EXISTING STREAM

BEGIN PROJECT
STA 16+75
SAWCUT REQ'D
MATCH EXISTING

1.55%

4.47%

-0.35%

1.55%

855 850 845 840 835 830 825 820

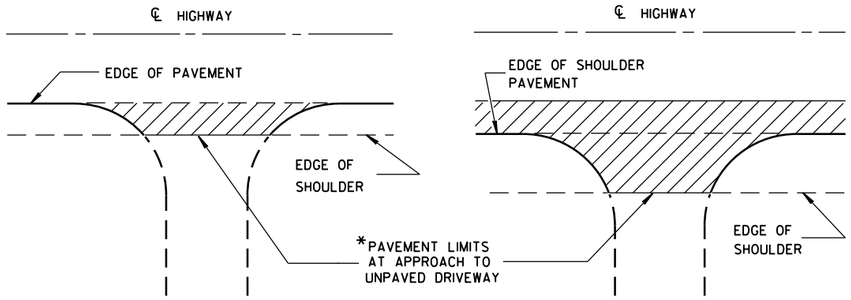
15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

832.30 832.62 832.73 833.42 834.14 834.17 835.32 835.64 836.72 837.77 837.37 839.90 834.18 841.19 840.51 841.53 840.39 841.35 840.69 841.18 841.13 841.18 841.75 841.74 842.57 843.58 844.69 846.23 849.24

PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	PLAN AND PROFILE: CTH X	SHEET 14	E

Standard Detail Drawing List

08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11F	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-07C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

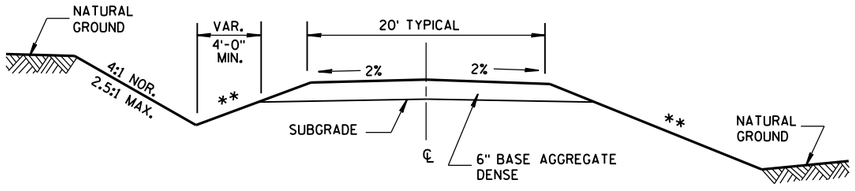


*WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

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

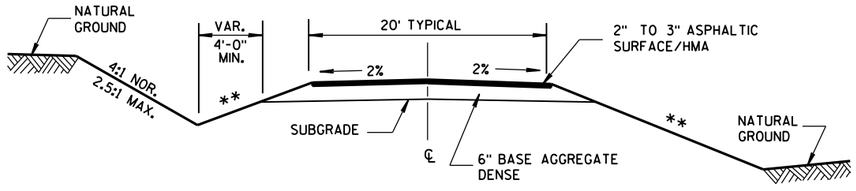


IN CUT **IN FILL**

TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE AGGREGATE SURFACE

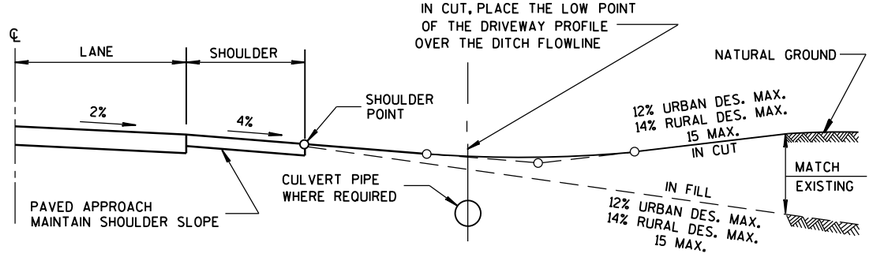
** SLOPE CAN VARY WITH SPEED. SEE 11-45-2.6.2.

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



IN CUT **IN FILL**

TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE ASPHALTIC SURFACE



TYPICAL DRIVEWAY PROFILES

DRIVEWAYS WITHOUT CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERV
ENT
FHWA

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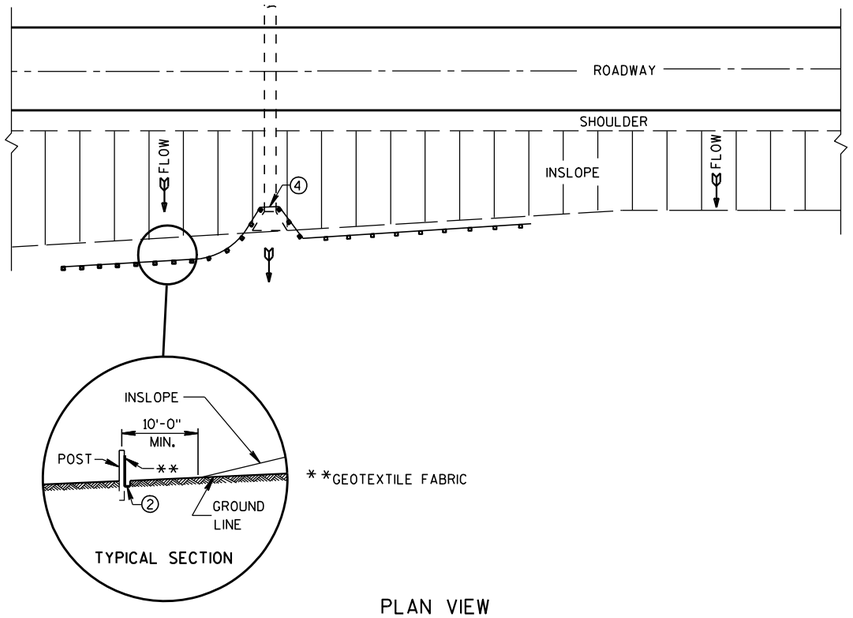
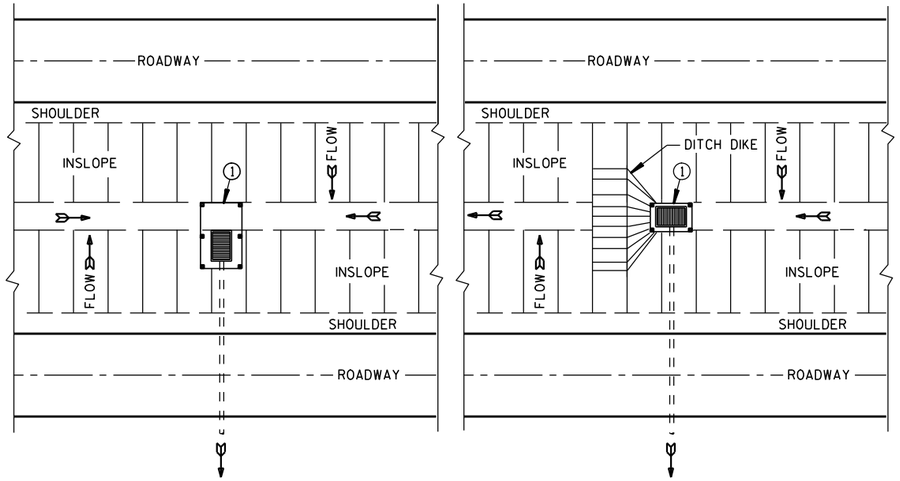
S.D.D. 8 D 21-1



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



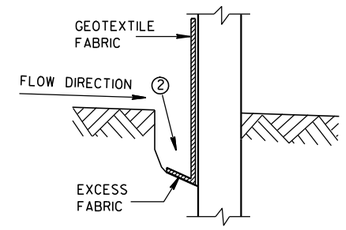
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

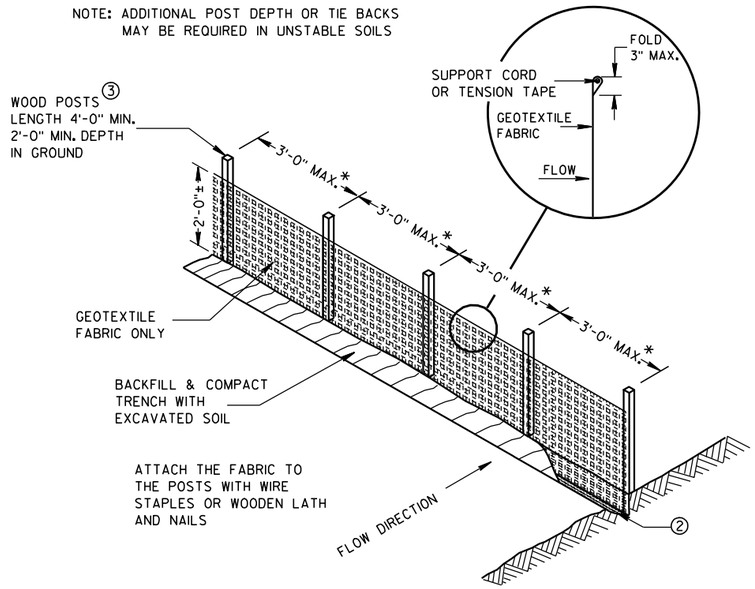
GENERAL NOTES

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

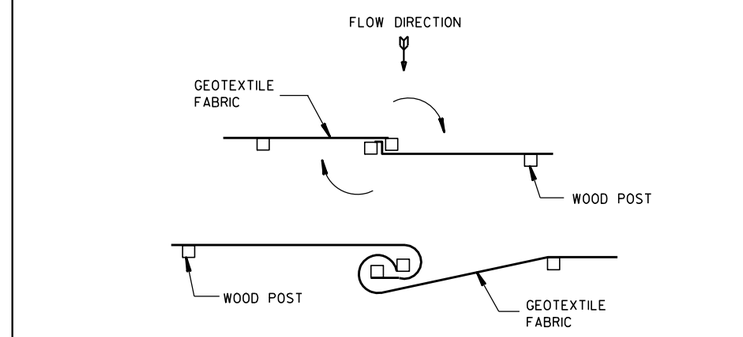
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



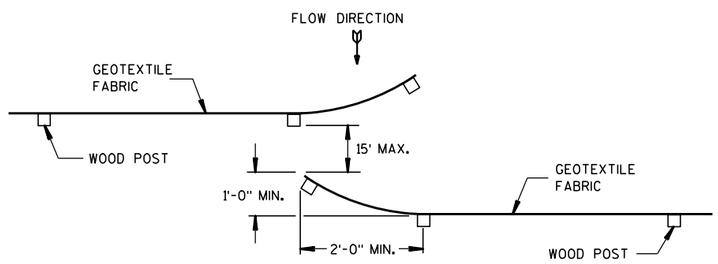
TRENCH DETAIL



SILT FENCE

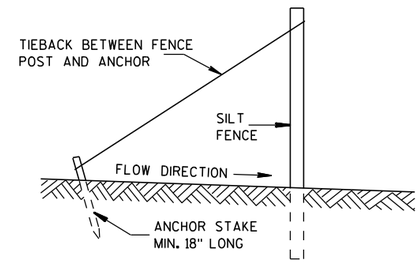


TWIST METHOD



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

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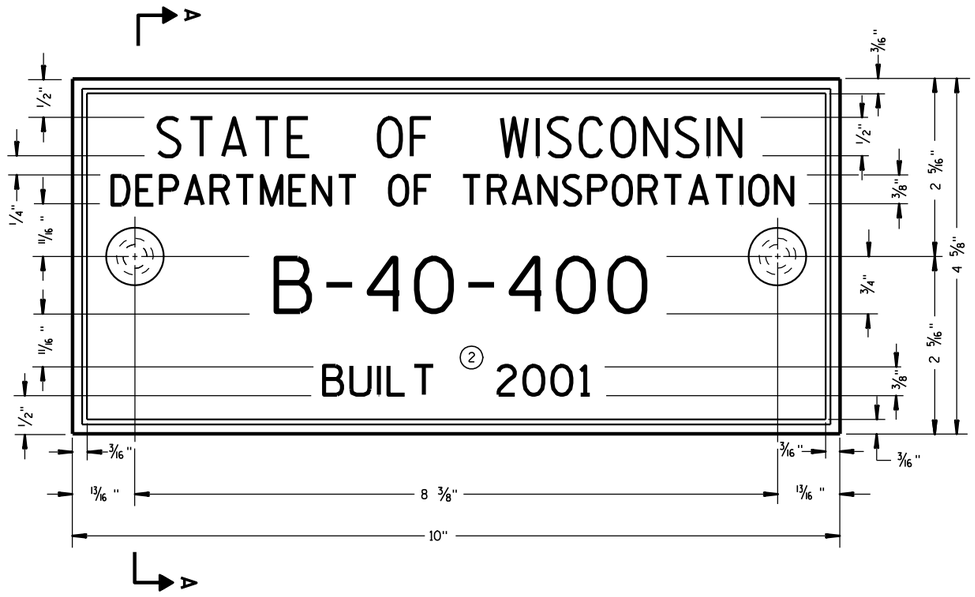
S.D.D. 8 E 9-6



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

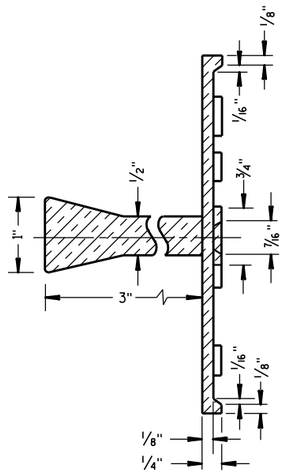
GENERAL NOTES

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

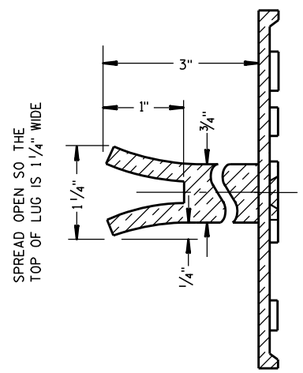
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

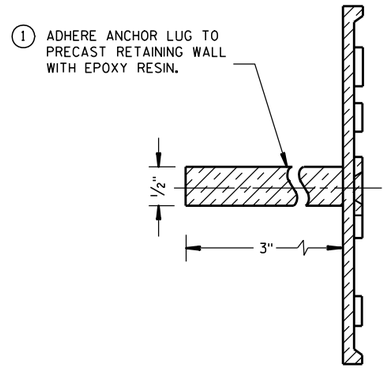
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10

GENERAL NOTES

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

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

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

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

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

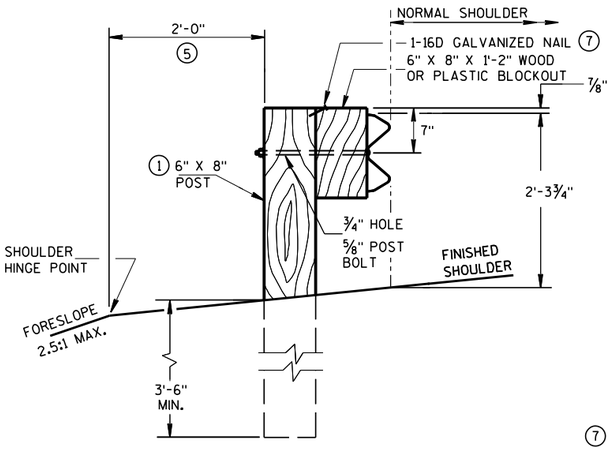
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

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

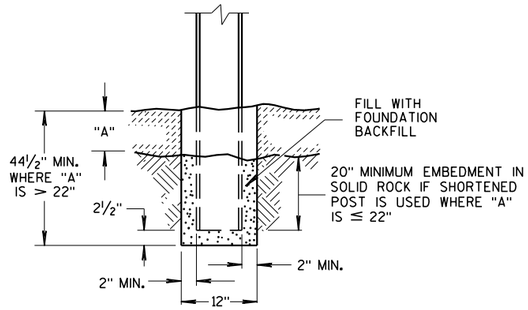
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

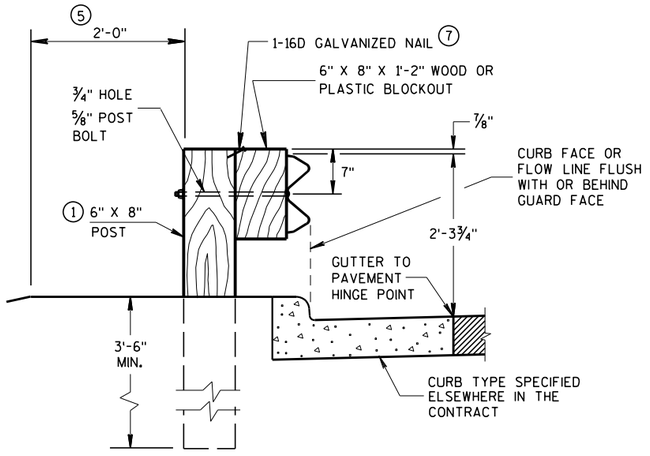
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



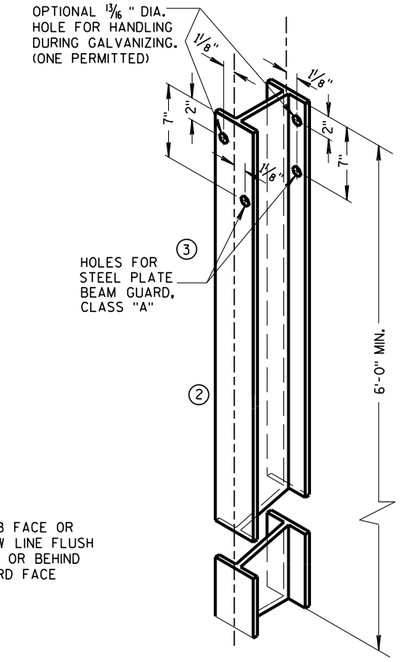
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



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

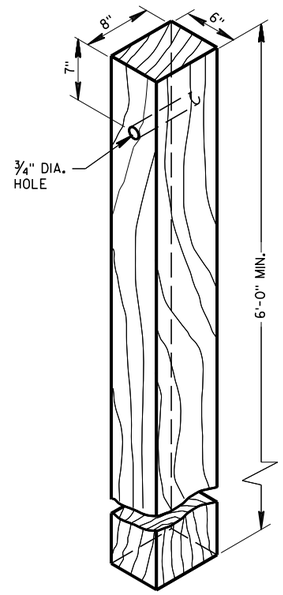


END VIEW
LOCATED ALONG A CURBED ROADWAY

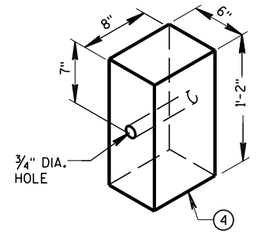


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

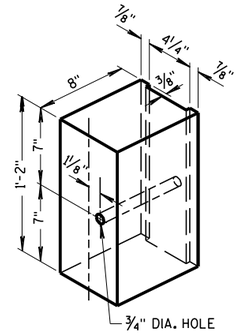
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



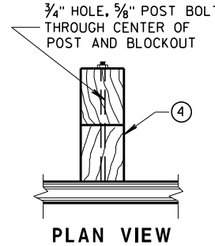
WOOD POST
(6"X8") NOMINAL



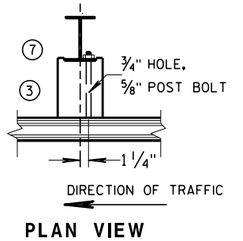
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



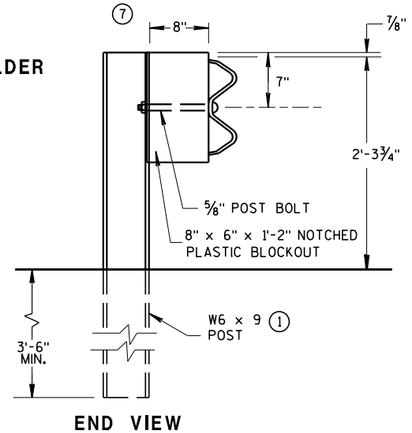
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



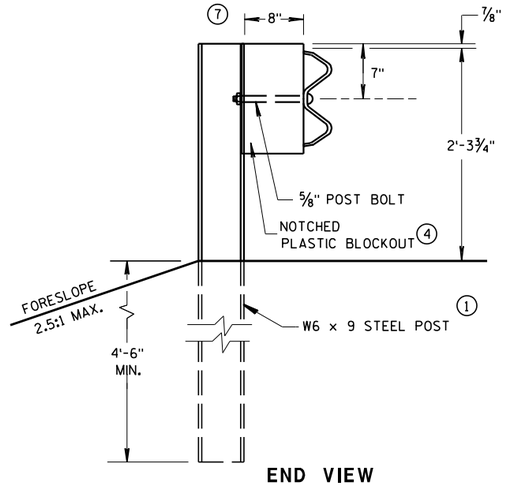
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



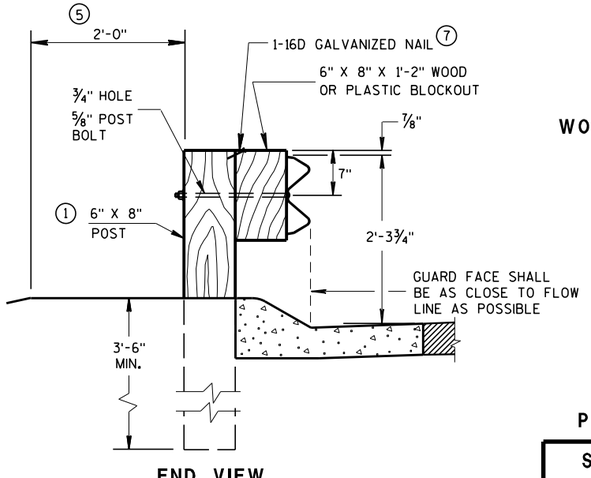
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



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



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

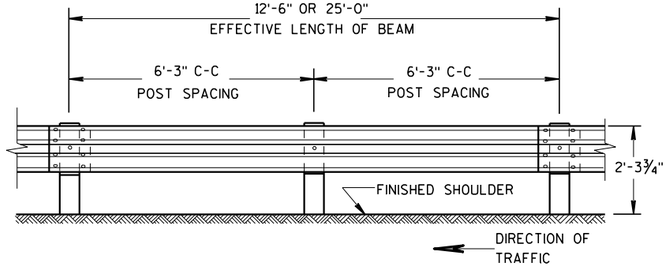
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

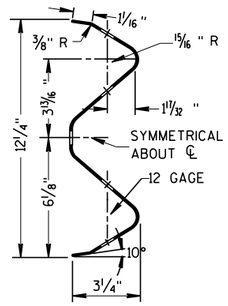
S.D.D. 14 B 15-11a

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

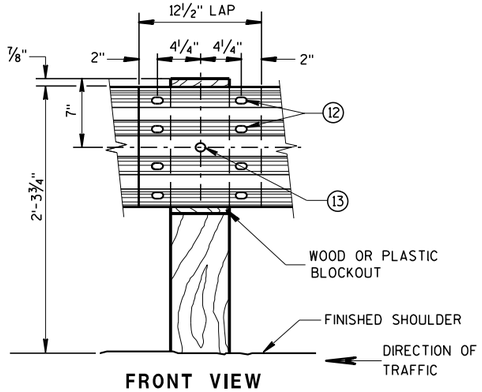


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

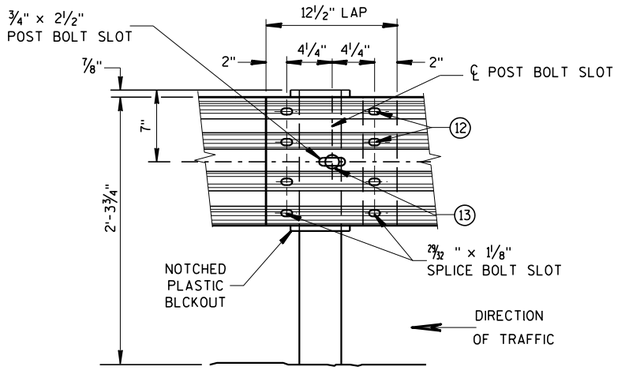
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

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

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

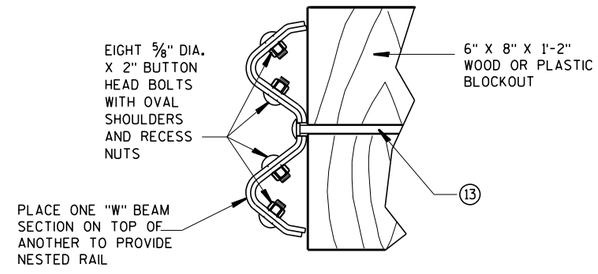
FRONT VIEW

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



FRONT VIEW

BEAM SPLICE AT STEEL POST

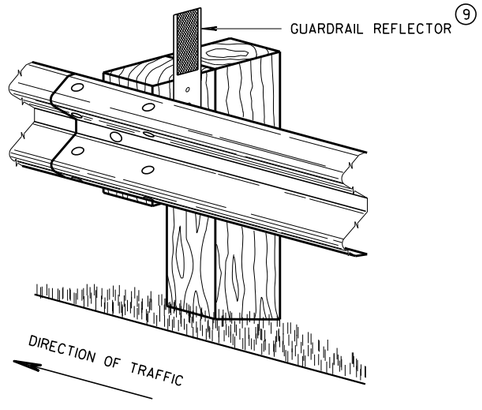


NESTED W BEAM (NW)

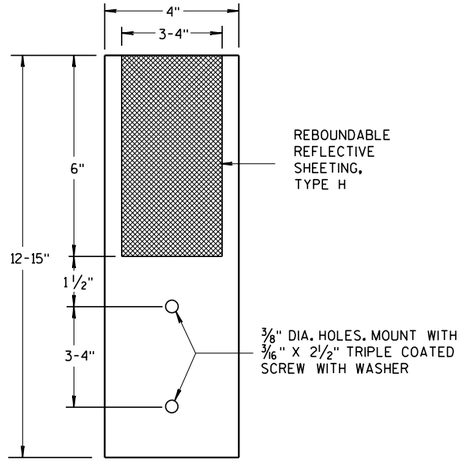
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

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



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



4"x 12" GUARDRAIL REFLECTOR

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

STATE OF WISCO 20
DEPARTMENT OF TRANSPORTATION

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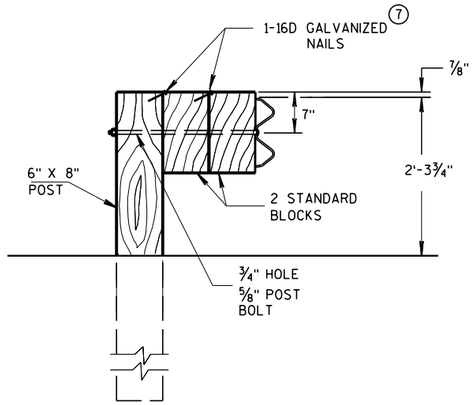
S.D.D. 14 B 15-11b

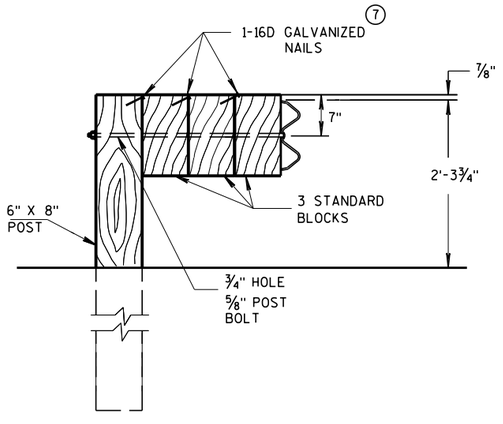
6

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



DETAIL FOR DOUBLE BLOCKS

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

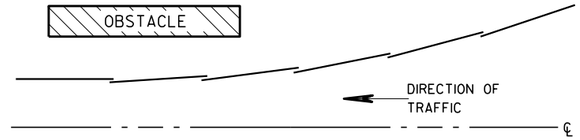


DETAIL FOR TRIPLE BLOCKS

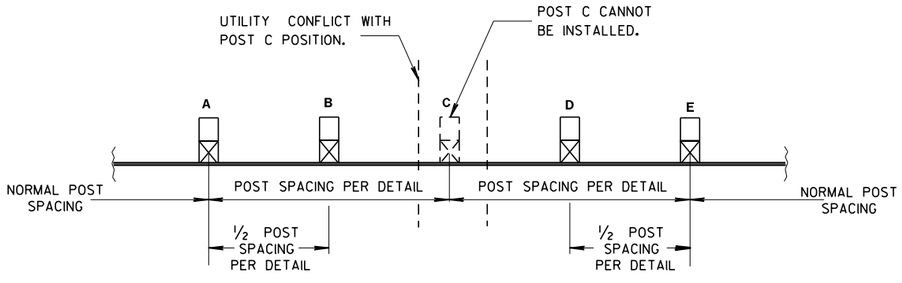
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW
BEAM LAPPING DETAIL



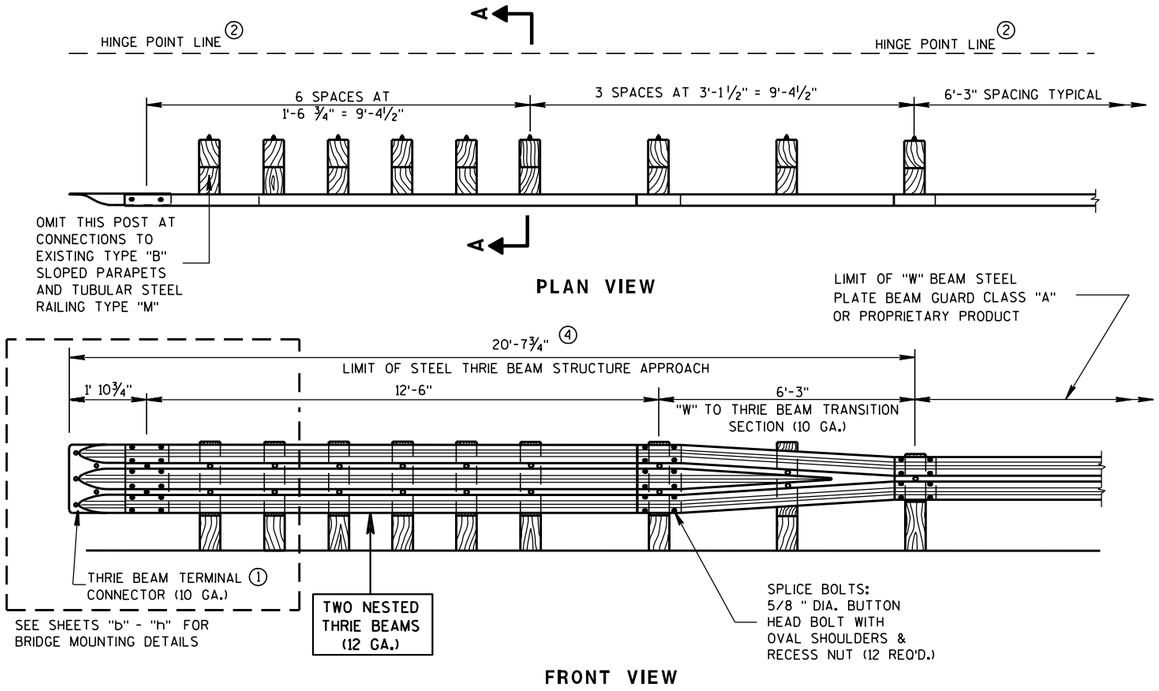
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 14 B 15-11c



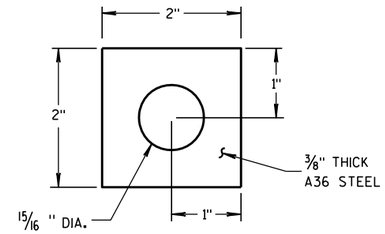


PLATE WASHER DETAIL

GENERAL NOTES

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

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

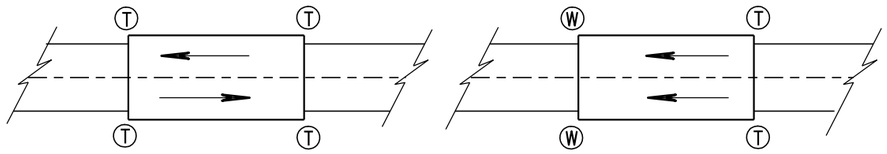
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

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

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

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



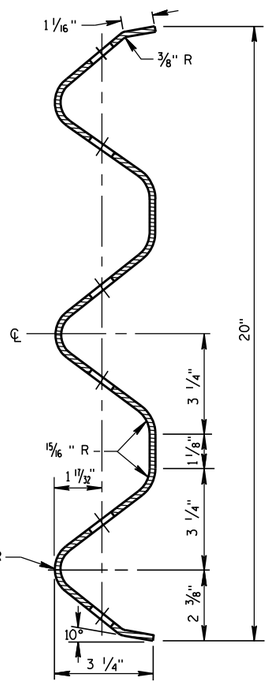
TWO WAY TRAFFIC

ONE WAY TRAFFIC

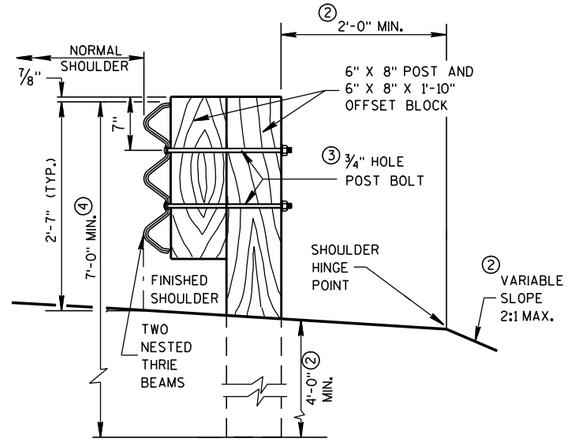
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

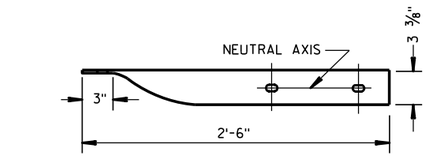
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

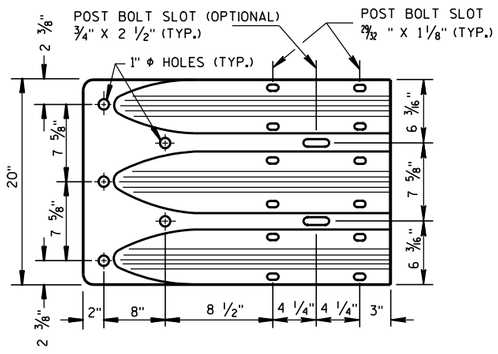


SECTION THRU THRIE BEAM RAIL ELEMENT

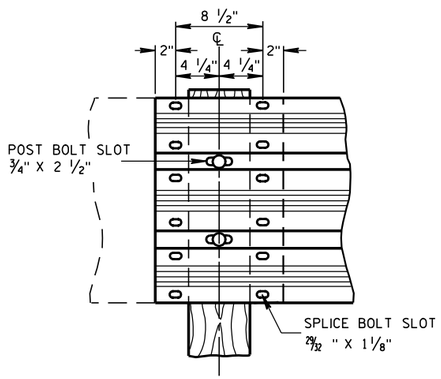


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

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FHWA

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

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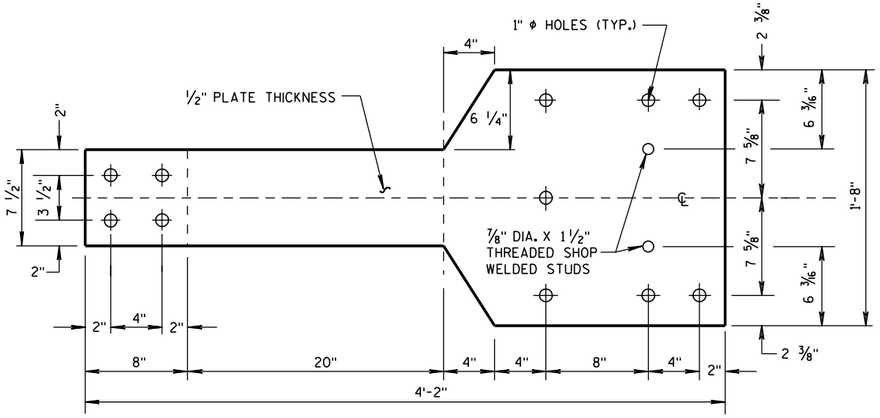
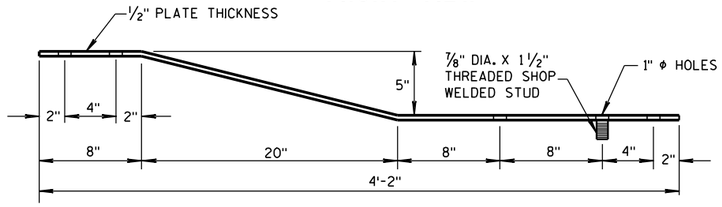
S.D.D. 14 B 20-11a

GENERAL NOTES

① VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL BE AS CLOSE AS FEASIBLE TO THE STEEL END POST.

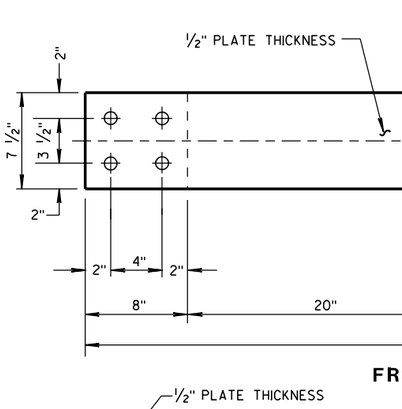


FRONT VIEW



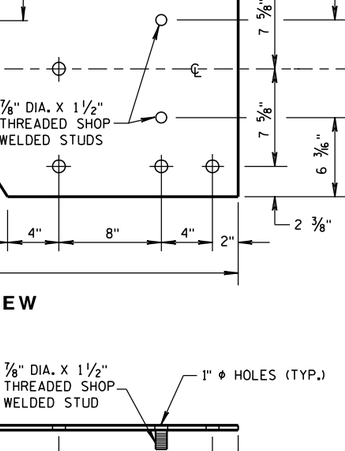
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

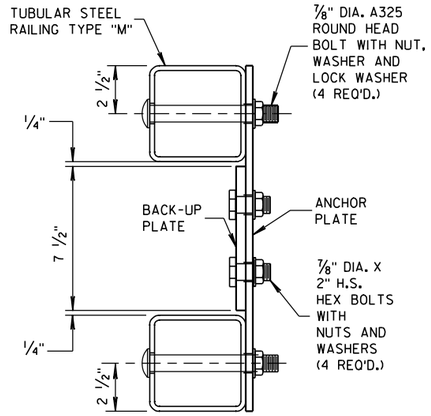


FRONT VIEW

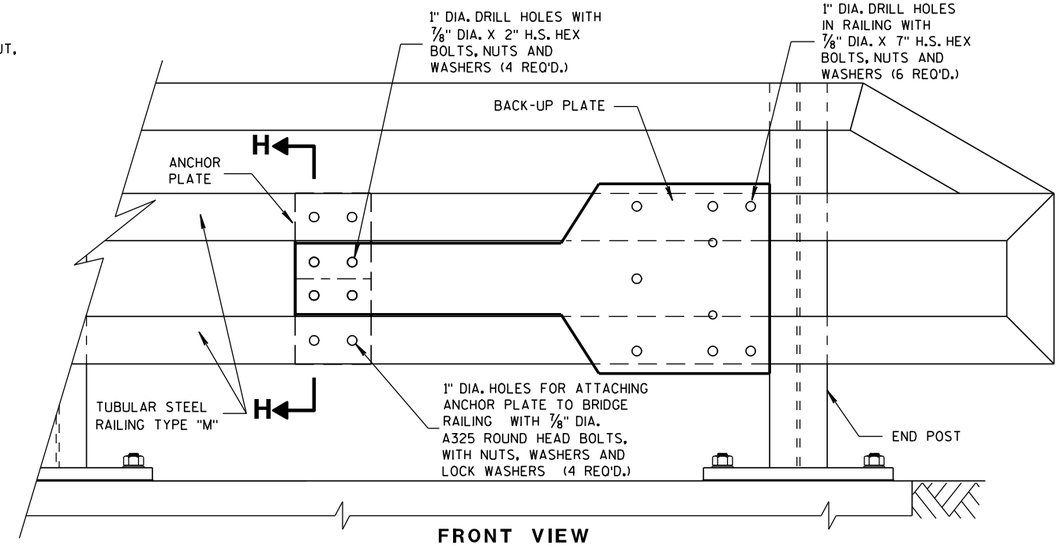
ANCHOR PLATE DETAIL, TYPE "M"



SECTION I-I

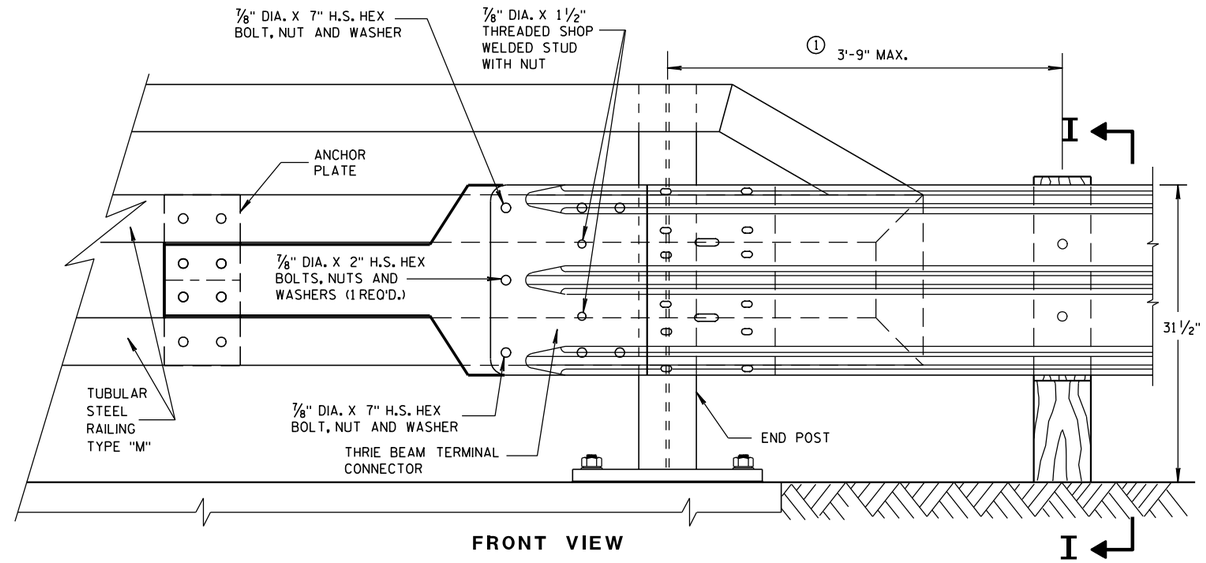


SECTION H-H

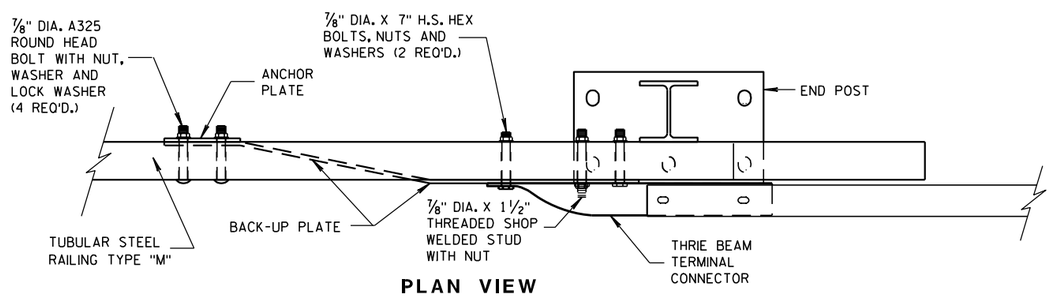


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPE "M"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER

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6

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

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GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

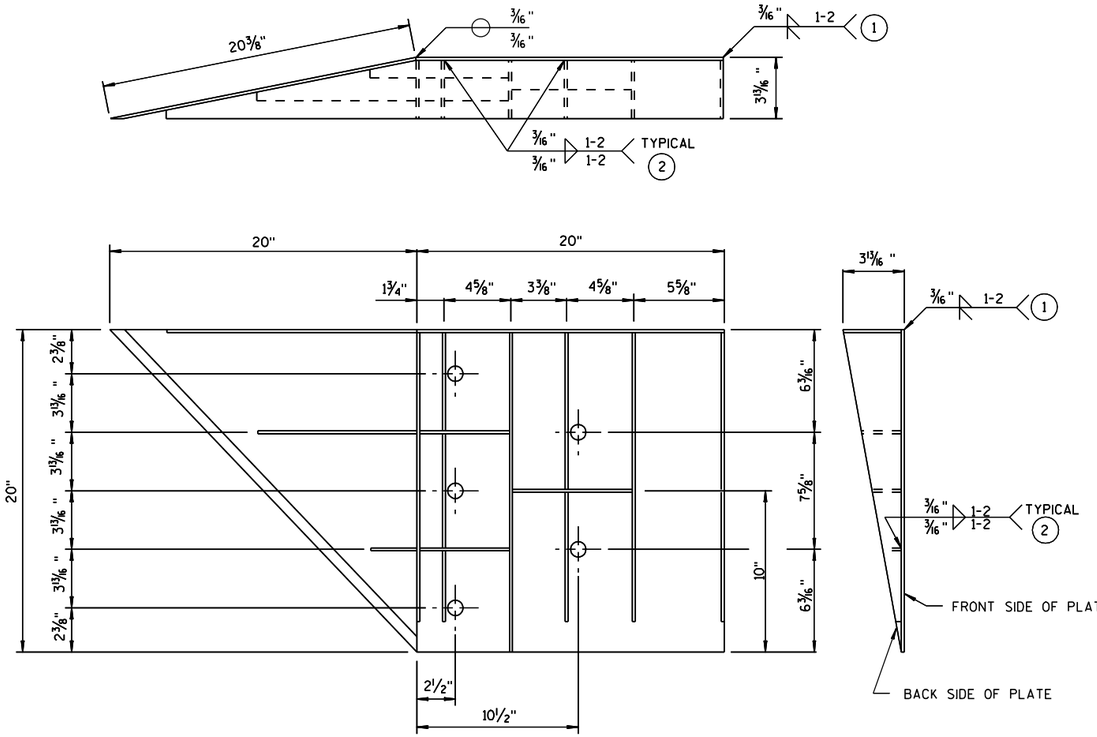
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

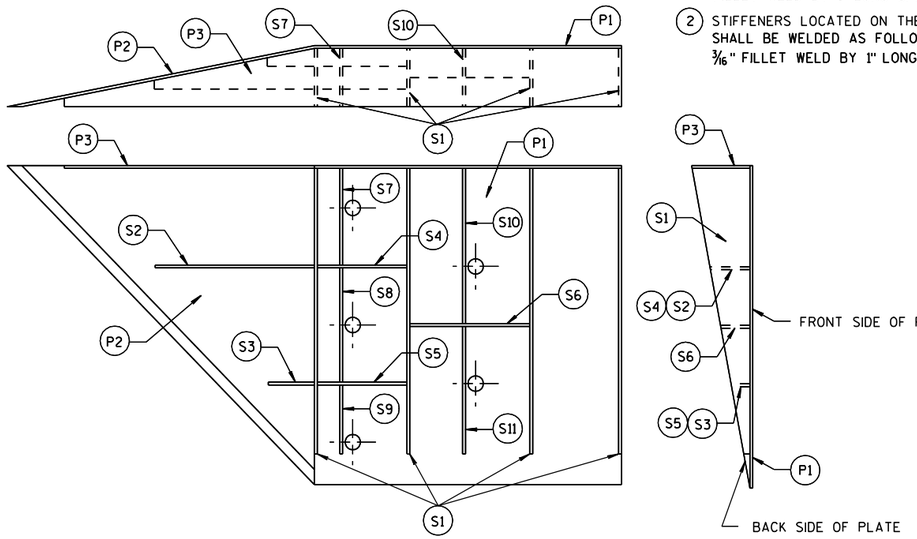


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

BILL OF MATERIALS

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

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

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

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

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

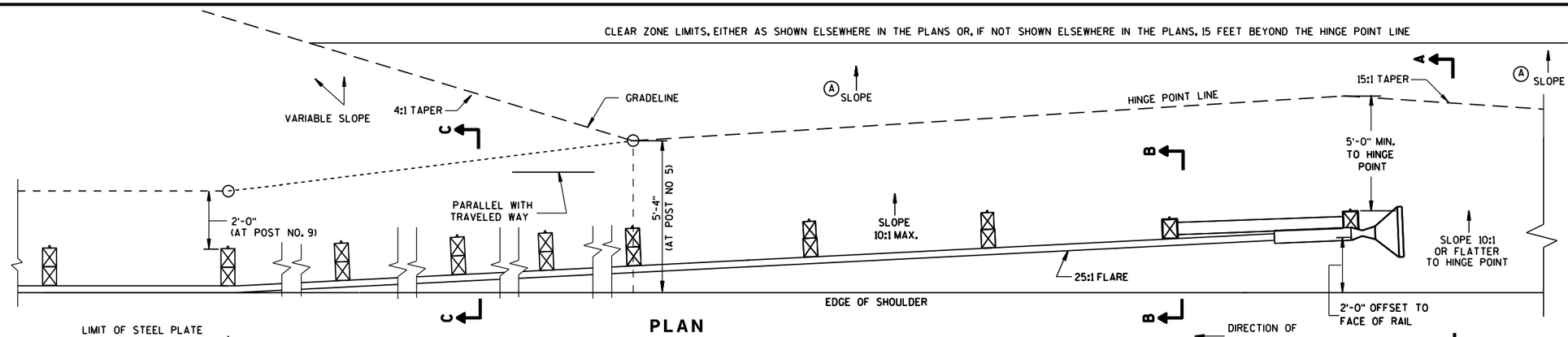
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

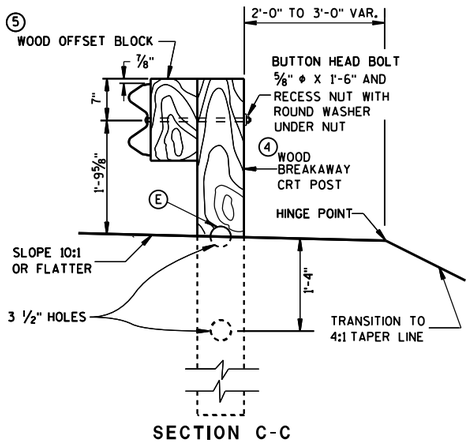
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

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

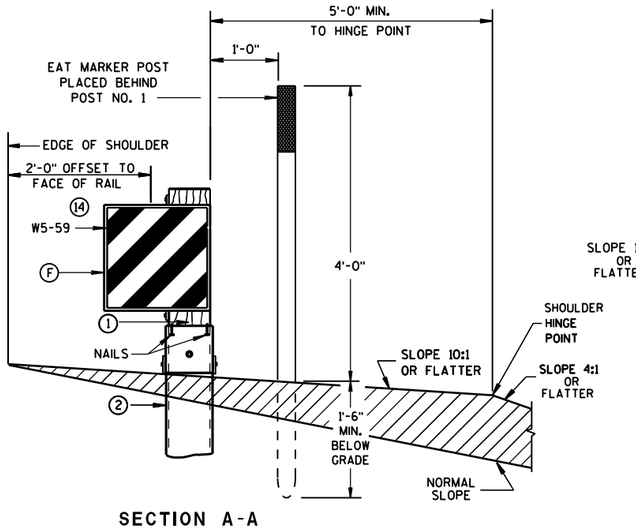
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

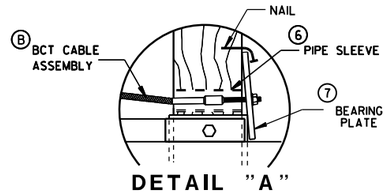




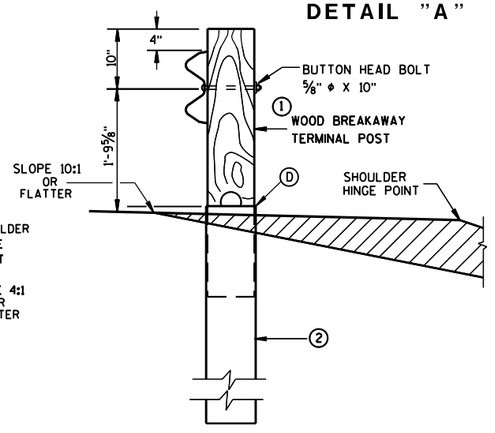
SECTION C-C
TYPICAL AT POST NOS. 6, 8



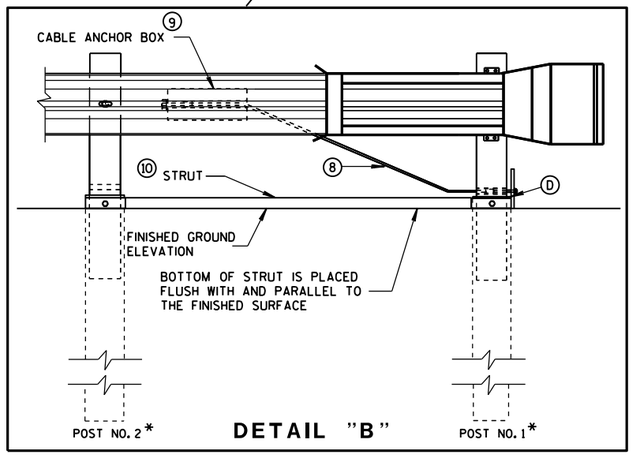
SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



SECTION B-B
TYPICAL AT POST NO. 2*



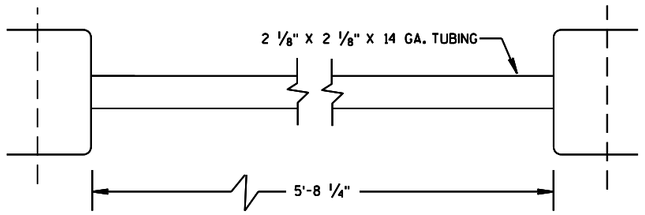
DETAIL "B"

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

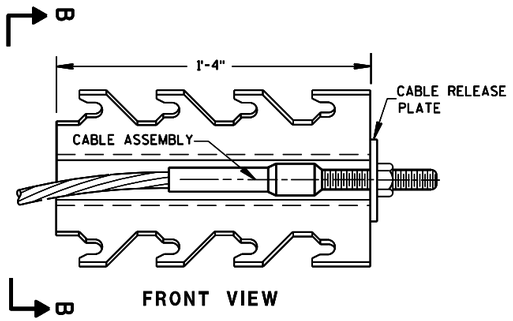
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

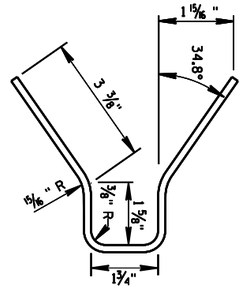
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL

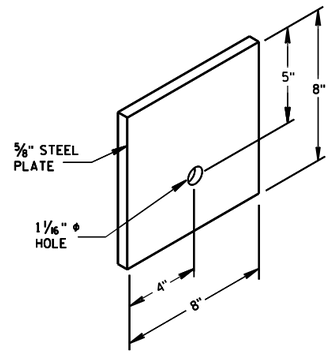


FRONT VIEW



SECTION B-B

⑨ CABLE ANCHOR BOX



⑦ STEEL BEARING PLATE

6

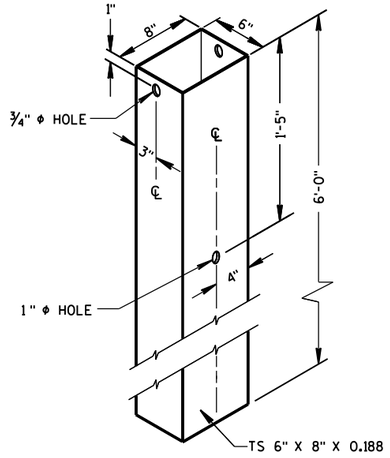
6

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

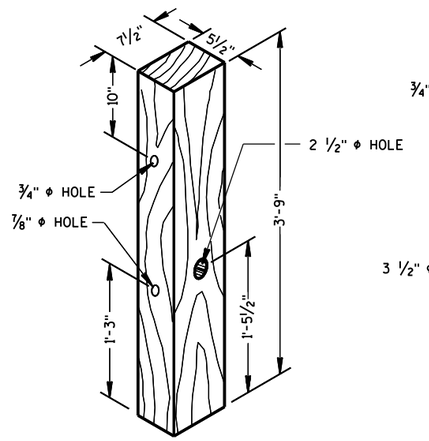
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

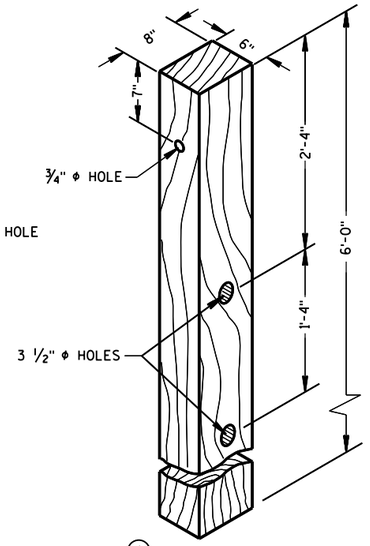
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



② 72" STEEL TUBE
(POSTS NO. 1-4



① TERMINAL POST

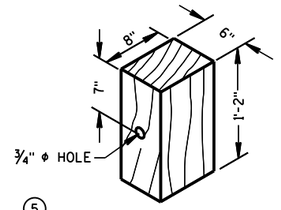


④ CRT POST
(POSTS NO'S 5-8)

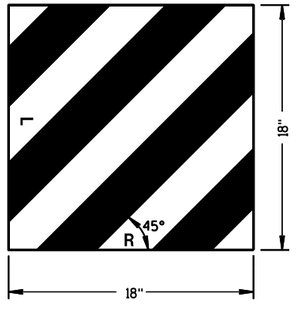
WOOD BREAKAWAY POSTS

GENERAL NOTES

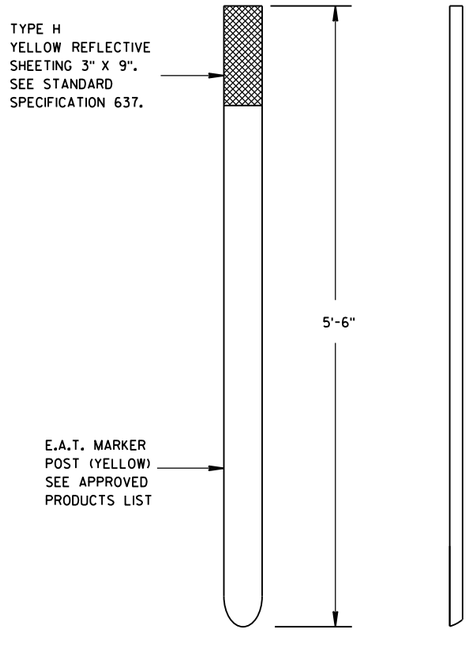
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH,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



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



⑭ REFLECTIVE SHEETING DETAILS



E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS
UNIT SUPERV

27

ENT

6

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

6

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

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

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

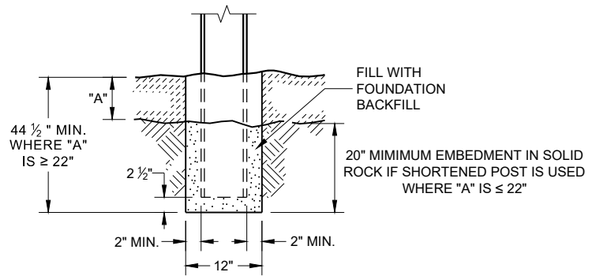
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS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

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

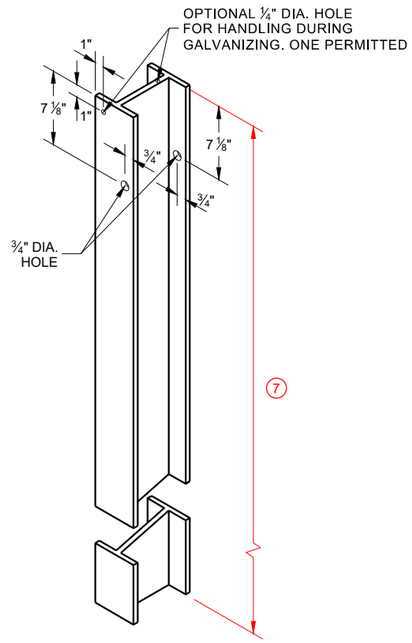
5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

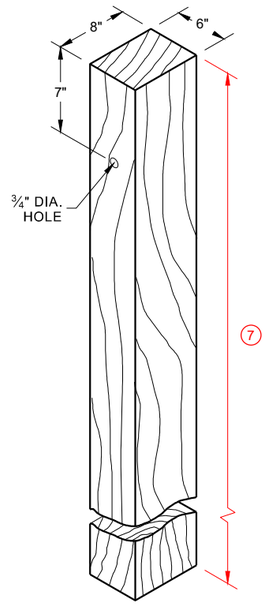
7. TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



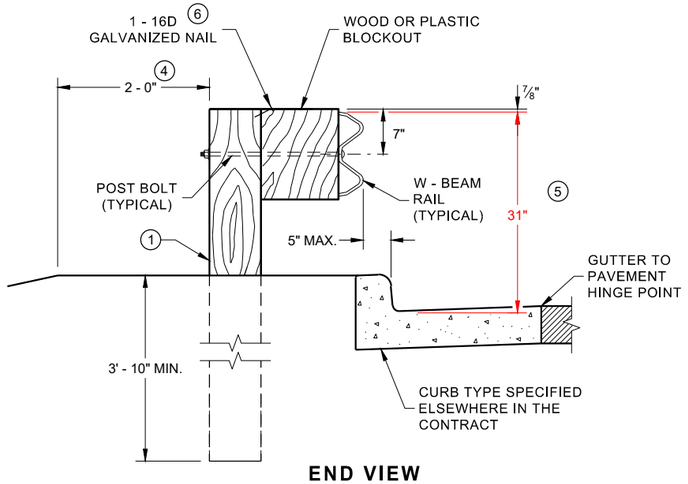
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



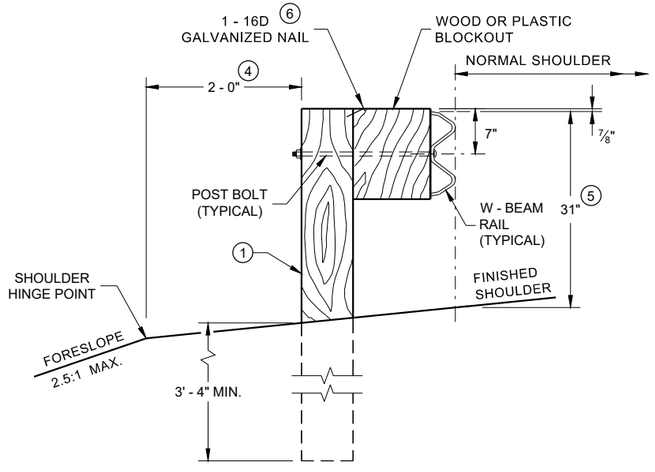
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



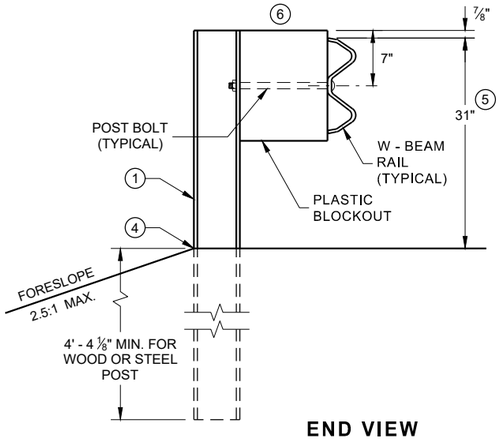
WOOD POST (6" X 8") NOMINAL (1)



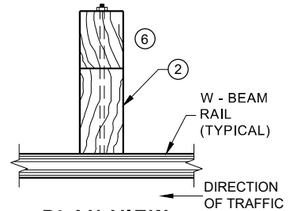
END VIEW
LOCATED ALONG A CURBED ROADWAY



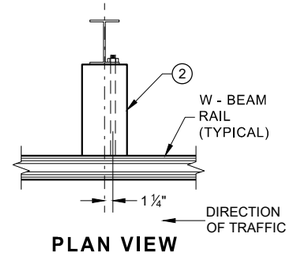
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



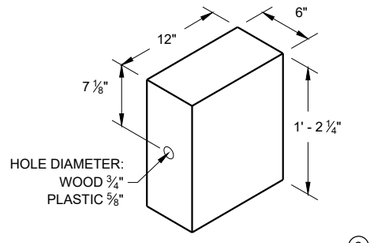
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

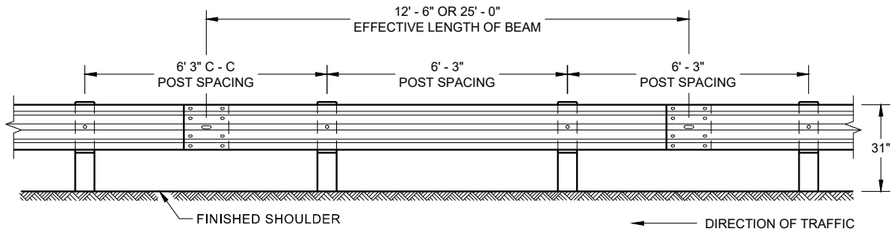
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

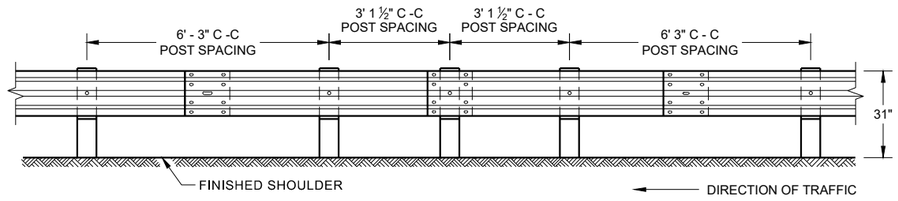
SDD 14B42 - 06a

6

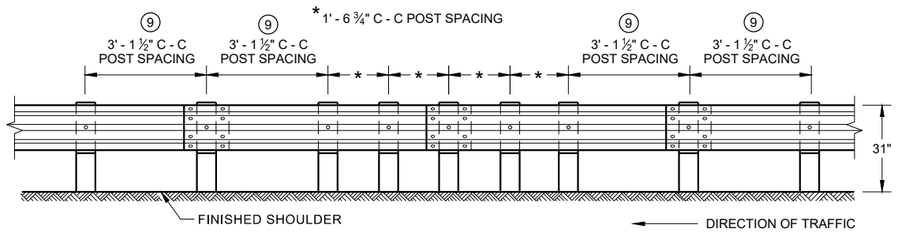
SDD 14B42 - 06a



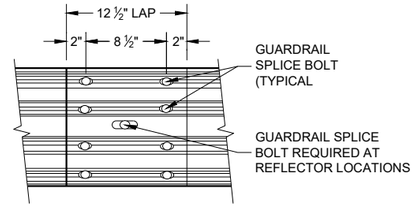
FRONT VIEW
POST SPACING STANDARD INSTALLATION



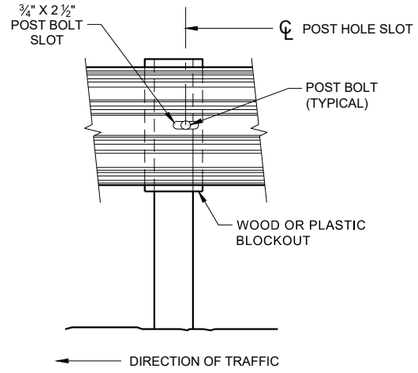
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



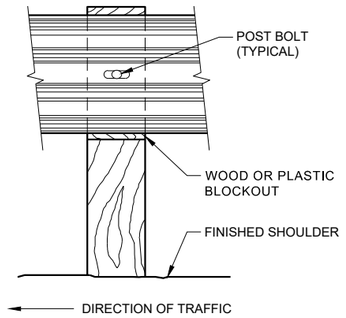
FRONT VIEW
QUARTER POST SPACING (QS)



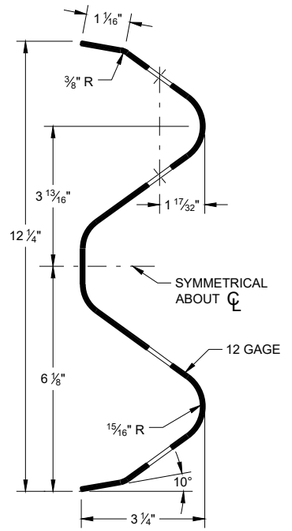
FRONT VIEW
MID-SPAN BEAM SPLICE



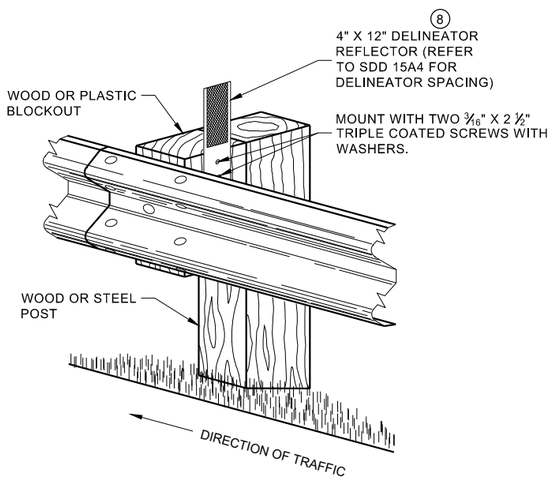
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

GENERAL NOTES

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

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

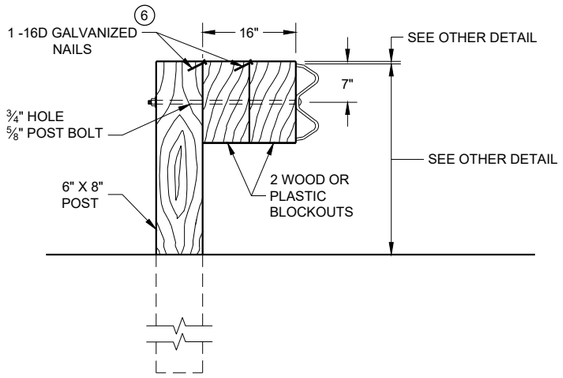
POST BOLTS ARE A ¾" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 14B42 - 06b

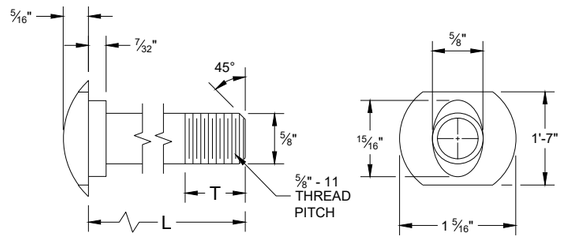


DETAIL FOR 16" BLOCKOUT DEPTH

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

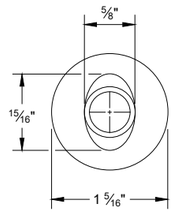
NOTE:

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

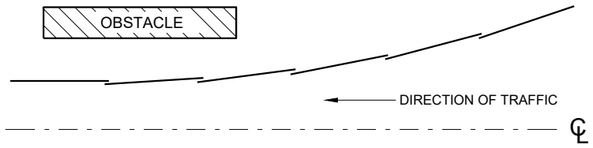


POST BOLT TABLE

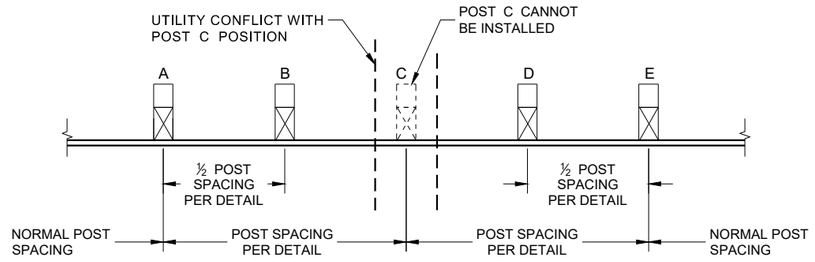
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



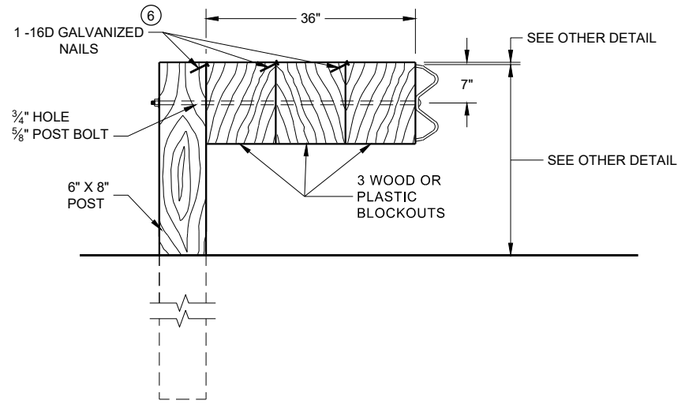
ALTERNATE BOLT HEAD



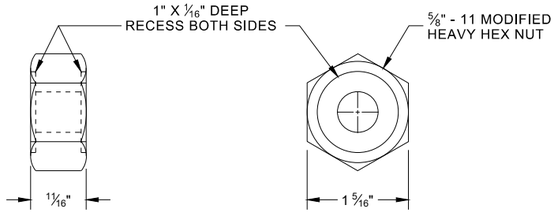
PLAN VIEW
BEAM LAPPING DETAIL



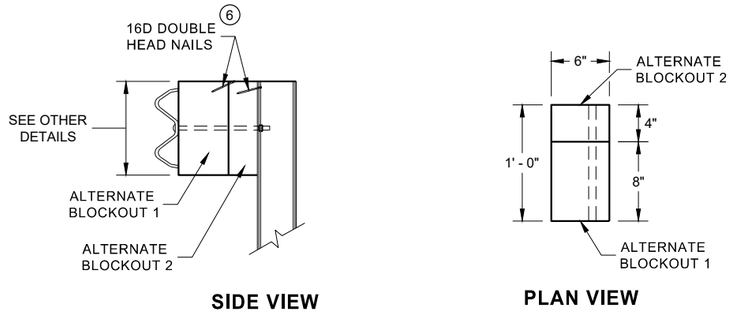
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW

PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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

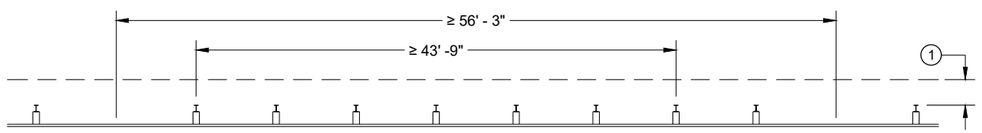
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

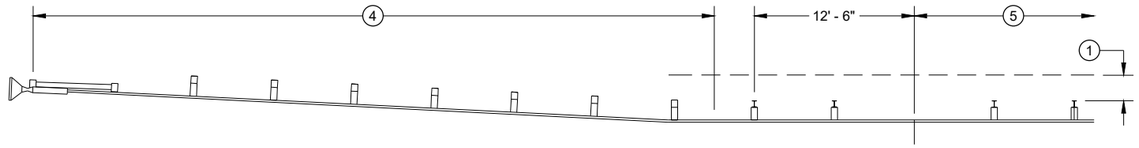
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

6

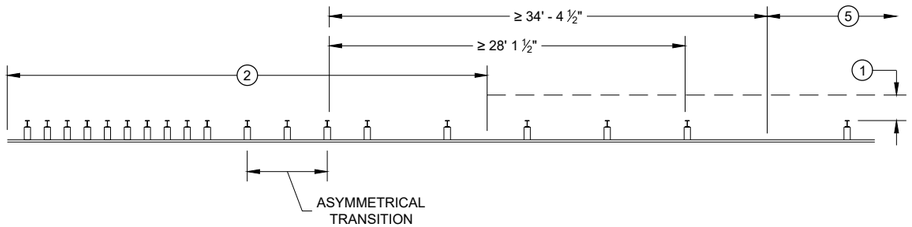
SDD 14B42 - 06c



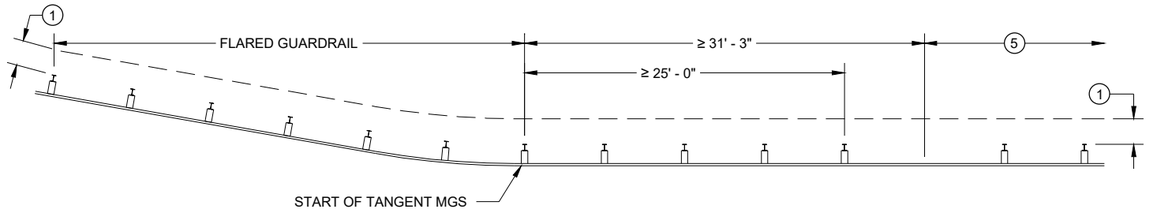
MISSING POST IN NORMAL BEAM GUARD RUN



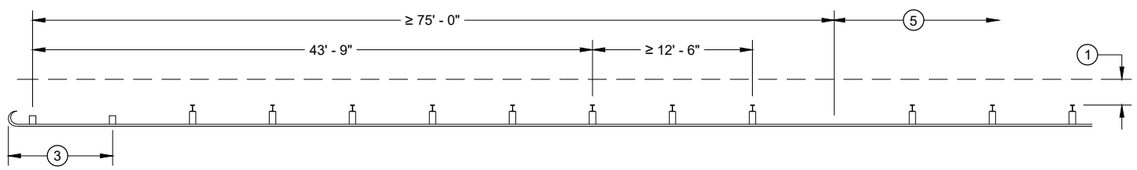
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



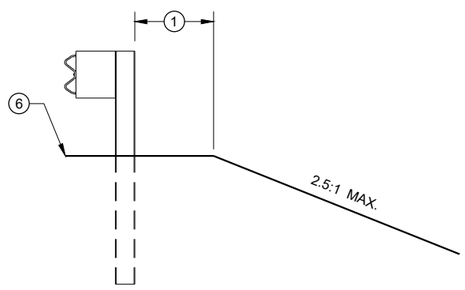
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

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

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

SDD 14B42 - 06d

SDD 14B42 - 06d

GENERAL NOTES

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

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

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

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

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

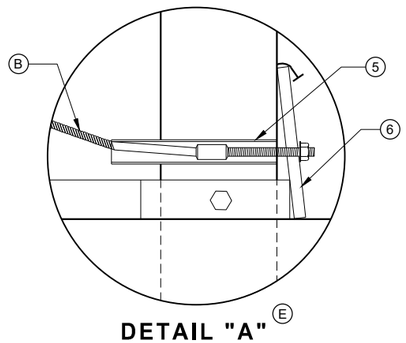
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

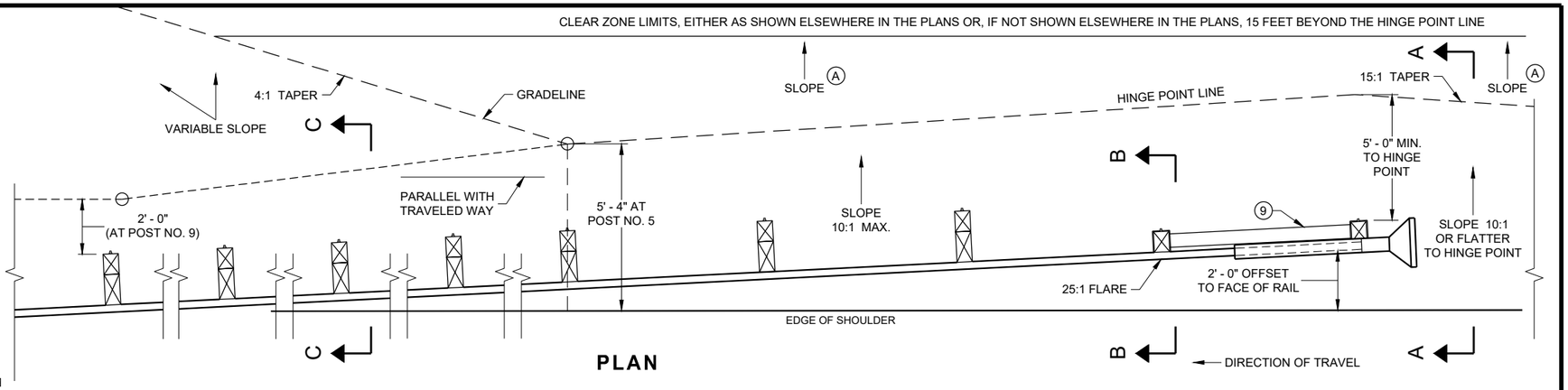
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

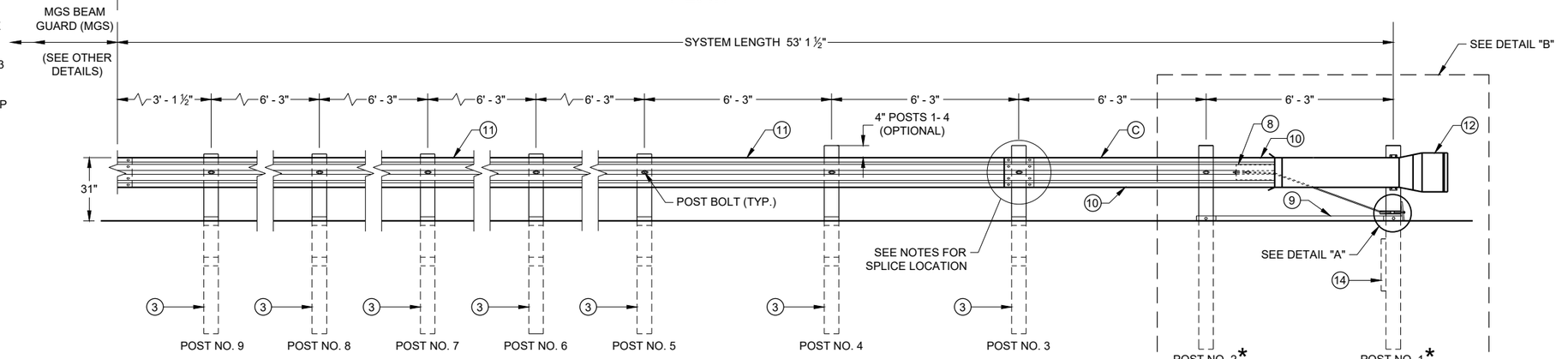
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



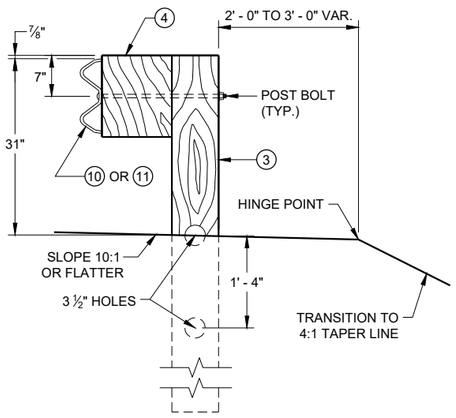
DETAIL "A" (E)



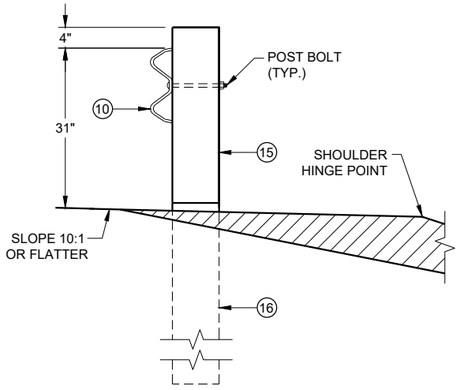
PLAN



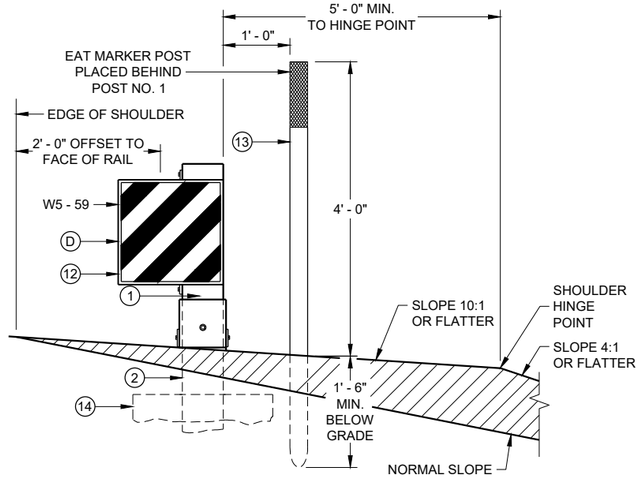
ELEVATION



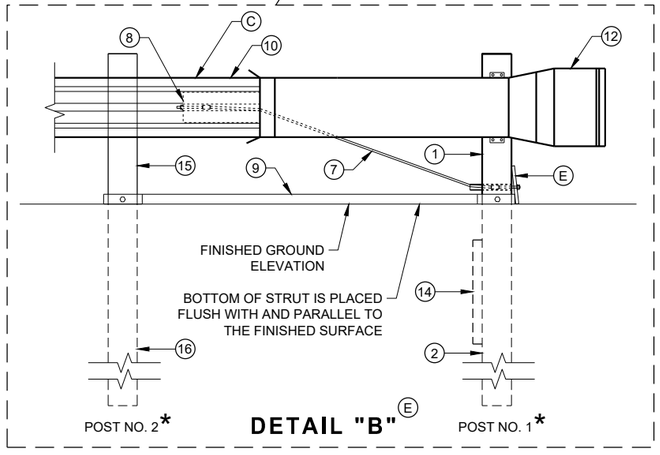
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



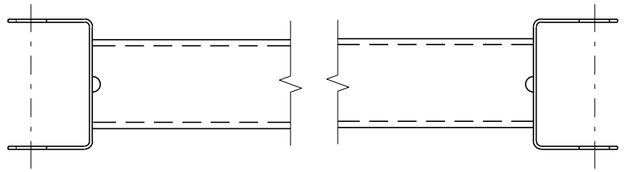
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

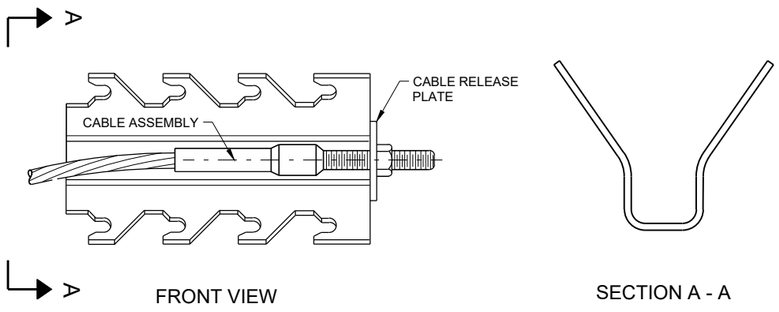
SDD 14B44 - 04a



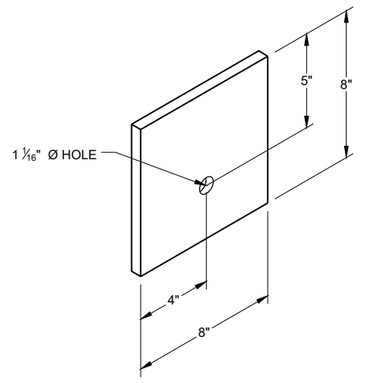
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑨ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

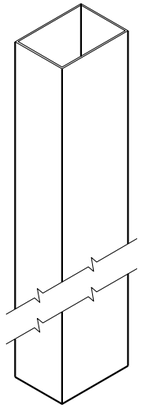
6

SDD 14B44 - 04b

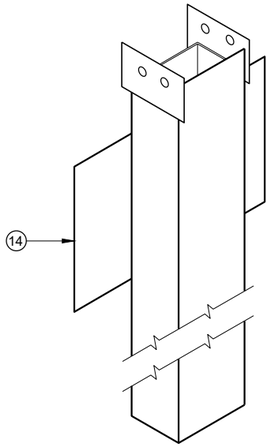
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

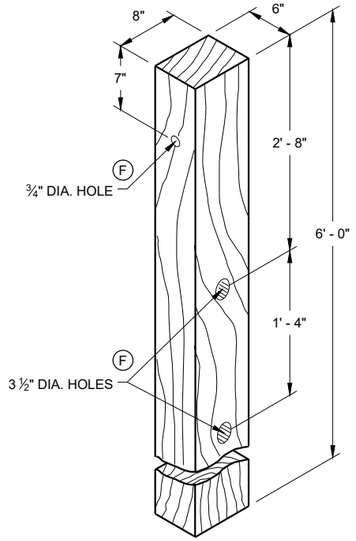
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



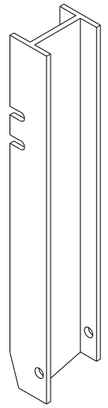
UPPER POST NO. 1 (1) (E)



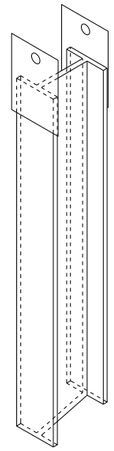
LOWER POST NO. 1 (2) (E)



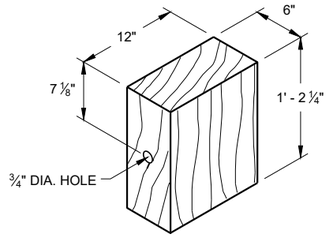
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



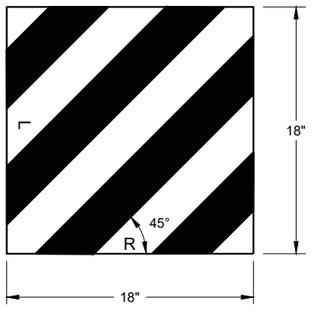
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

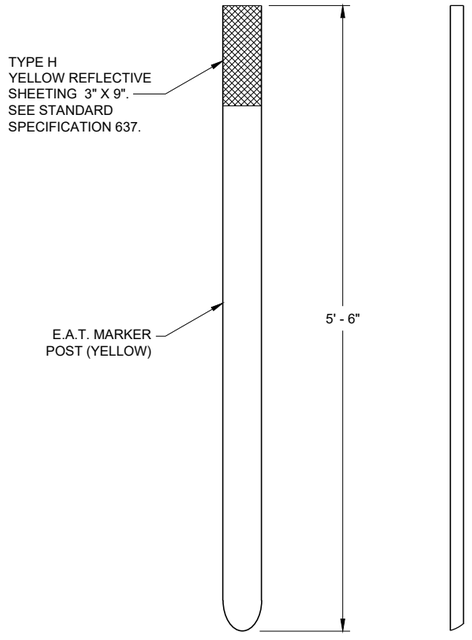


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



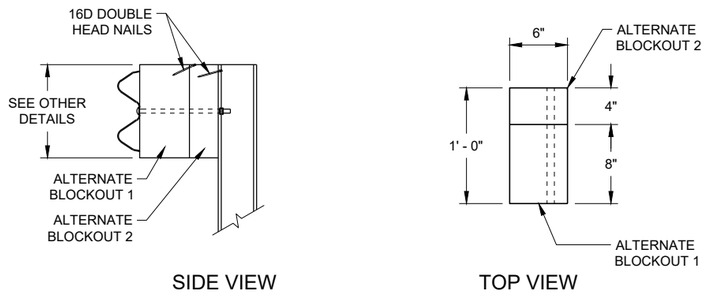
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

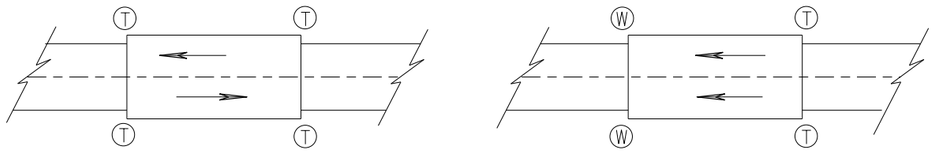
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

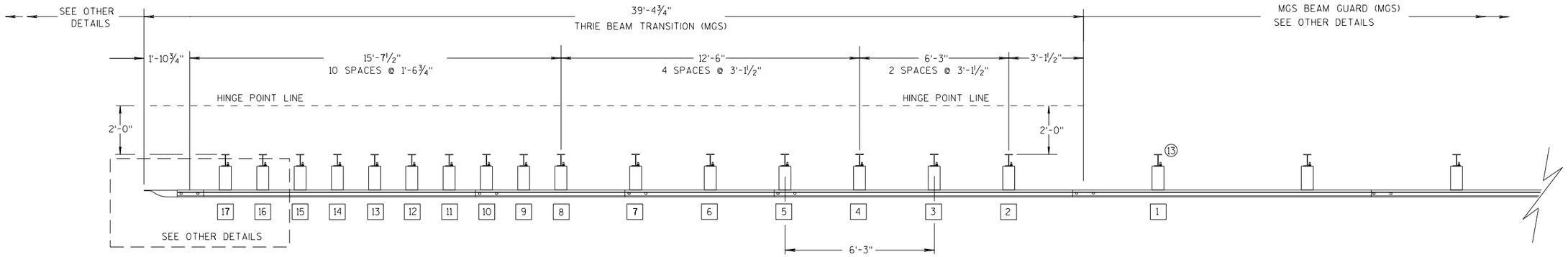
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

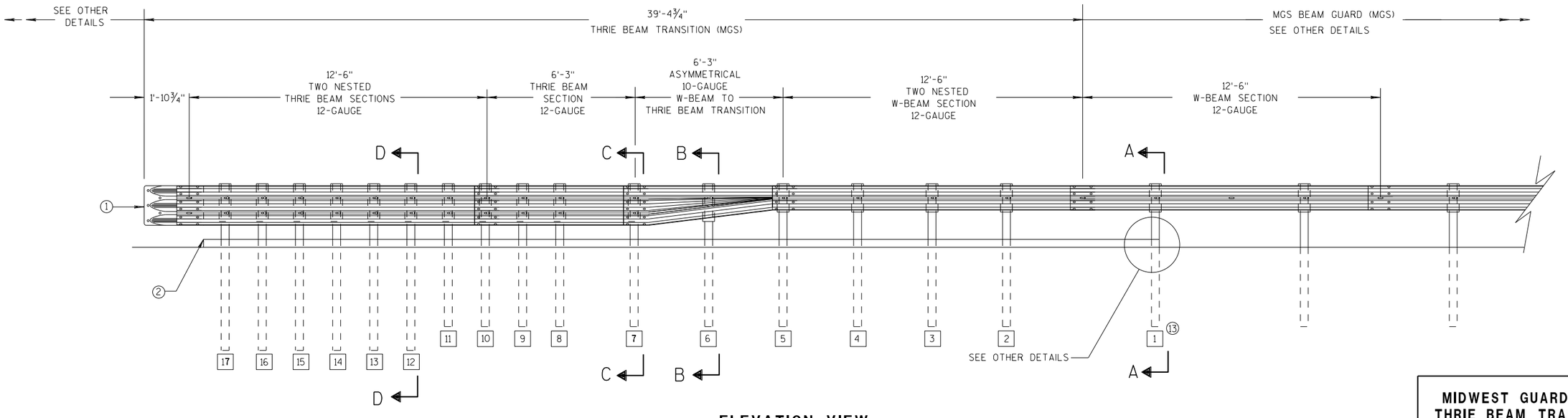
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 35

6

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

6

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

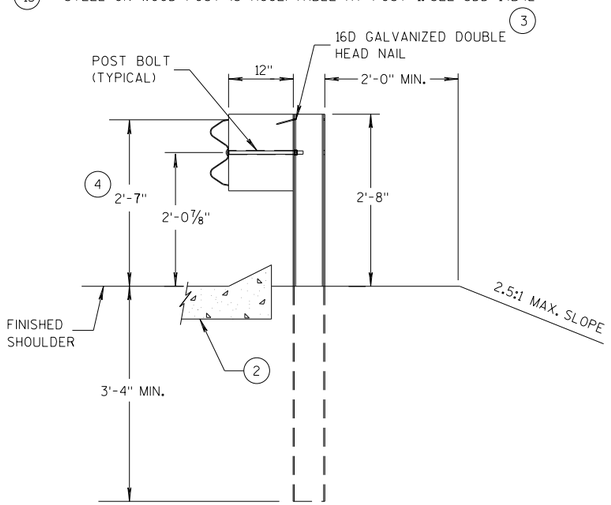
GENERAL NOTES

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

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

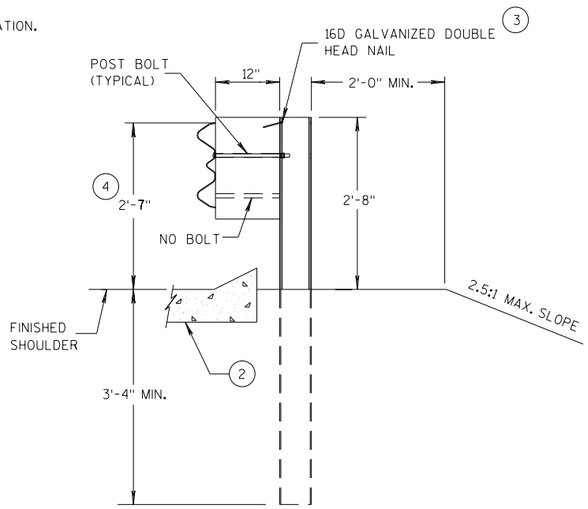
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



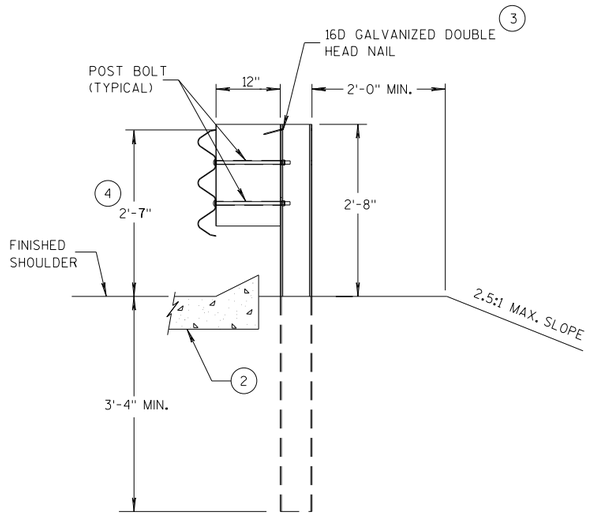
SECTION A-A (13)

POSTS 1-5



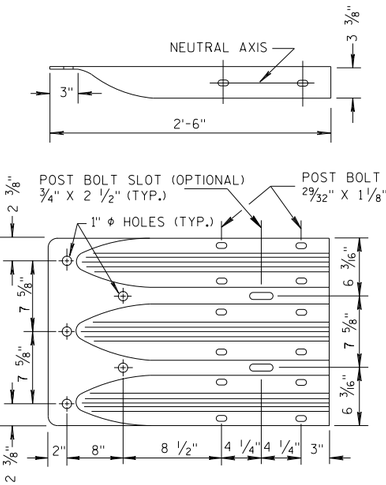
SECTION B-B

POST 6

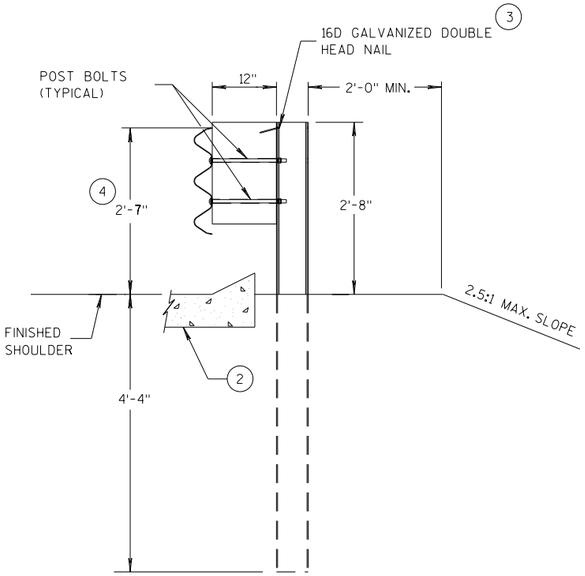


SECTION C-C

POSTS 7-11

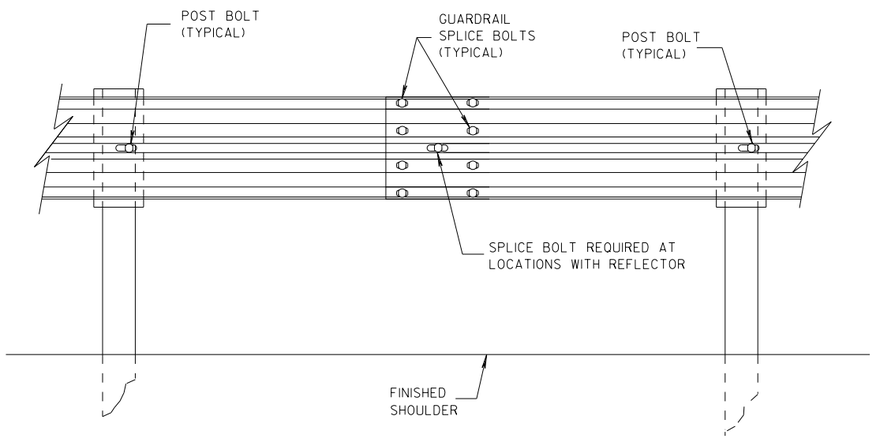


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

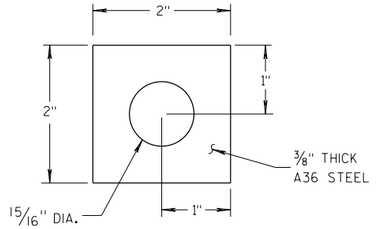
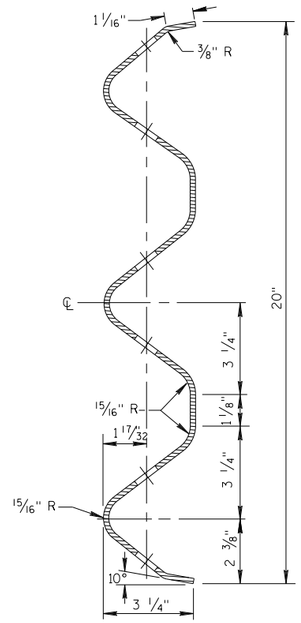


PLATE WASHER DETAIL



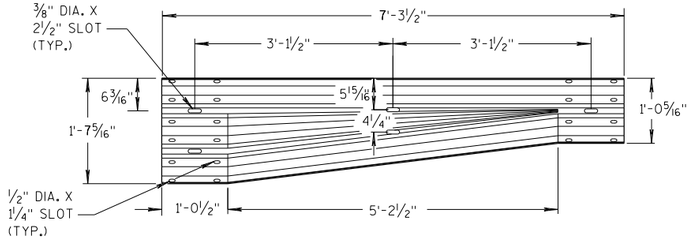
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

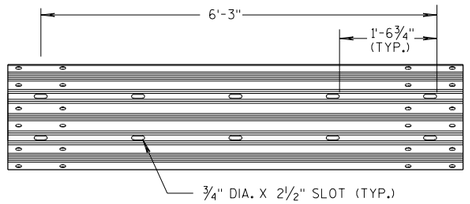
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF

6

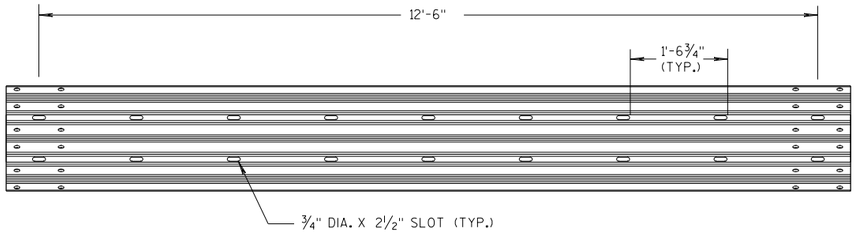
S.D.D. 14 B 45-5b



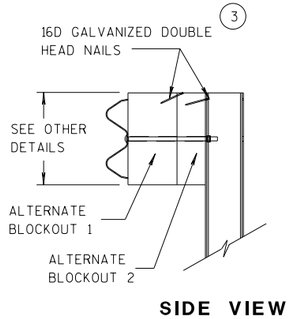
W-BEAM TO THRIE BEAM TRANSITION SECTION



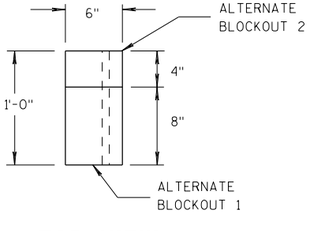
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

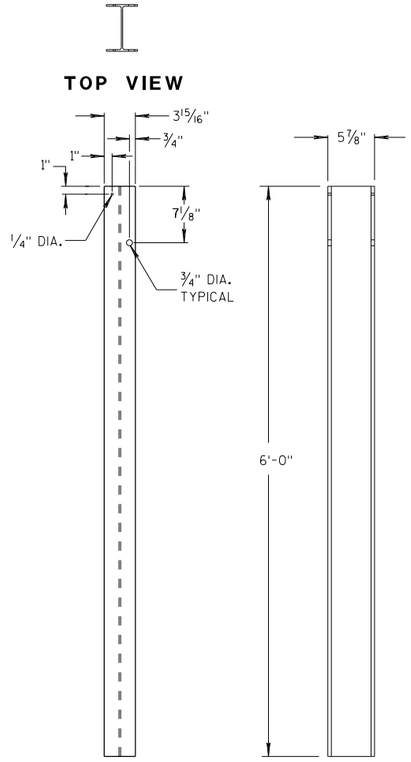


SIDE VIEW



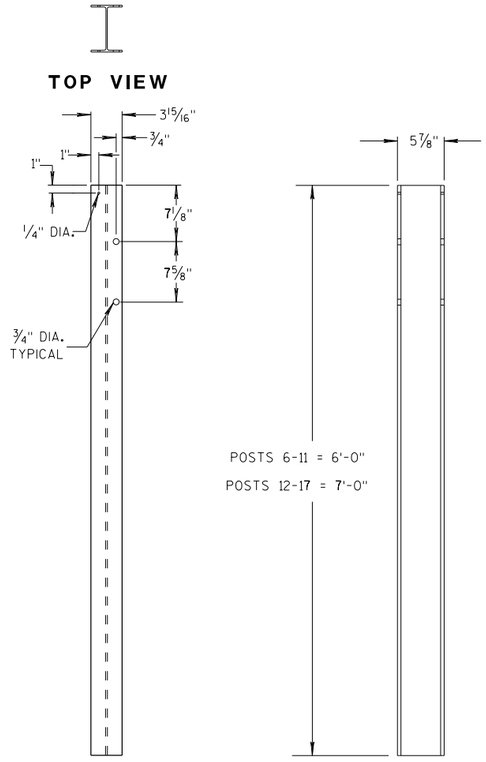
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



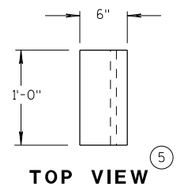
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

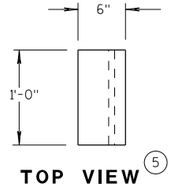


FRONT VIEW SIDE VIEW

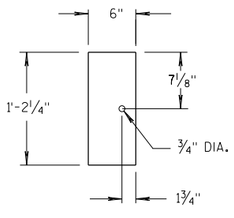
STEEL POSTS 6-17



TOP VIEW (5)

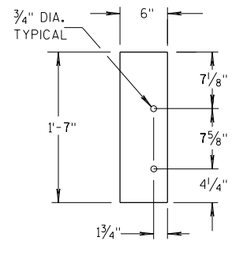


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

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

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

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

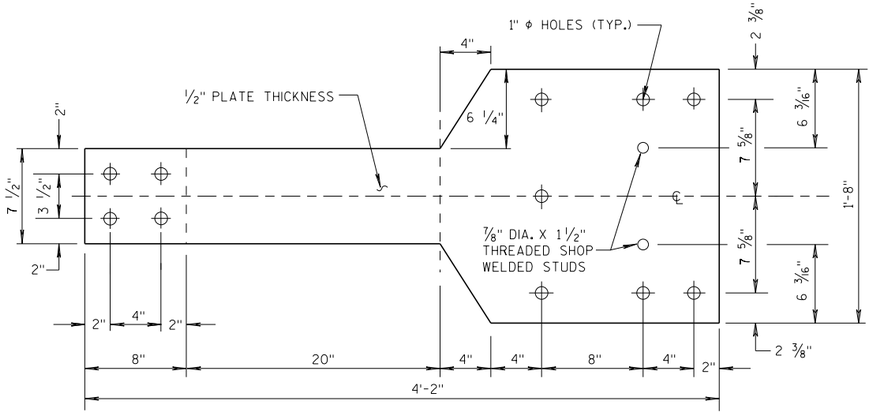
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF

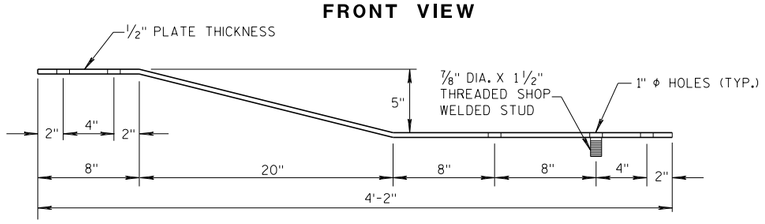
6
S.D.D. 14 B 45-5c

GENERAL NOTES

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

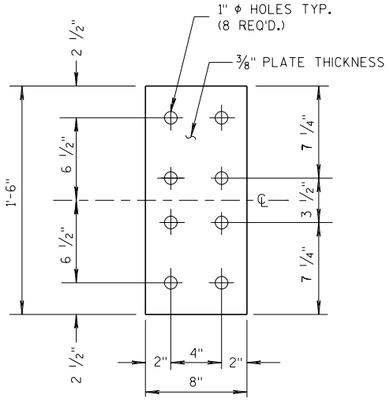


FRONT VIEW



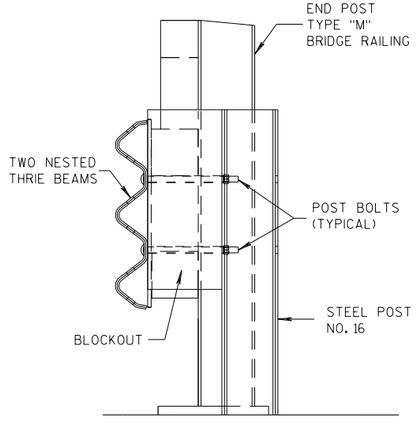
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

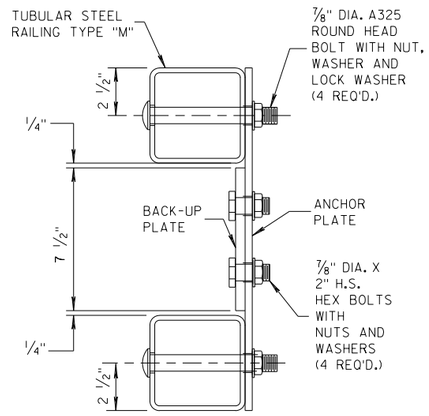


FRONT VIEW

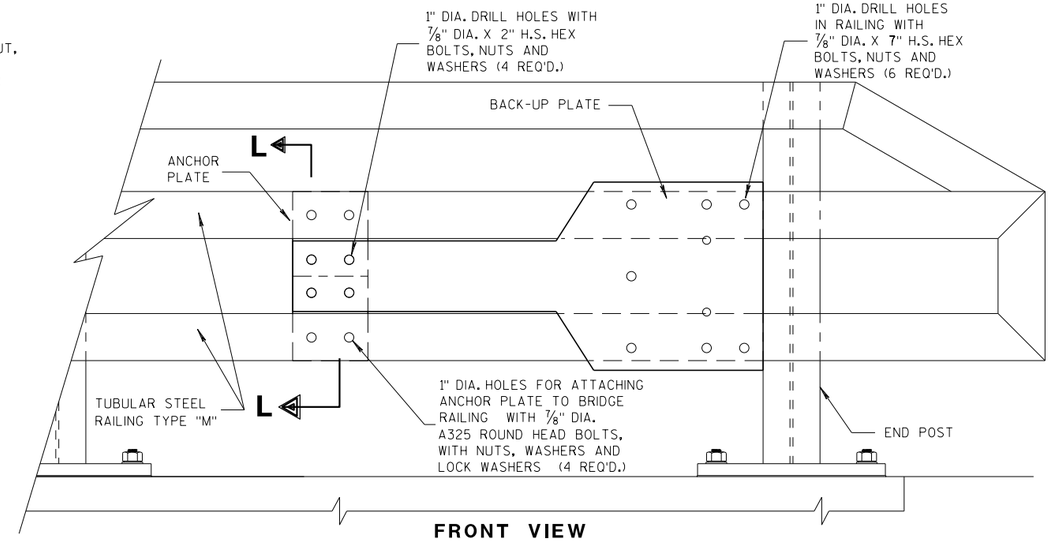
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

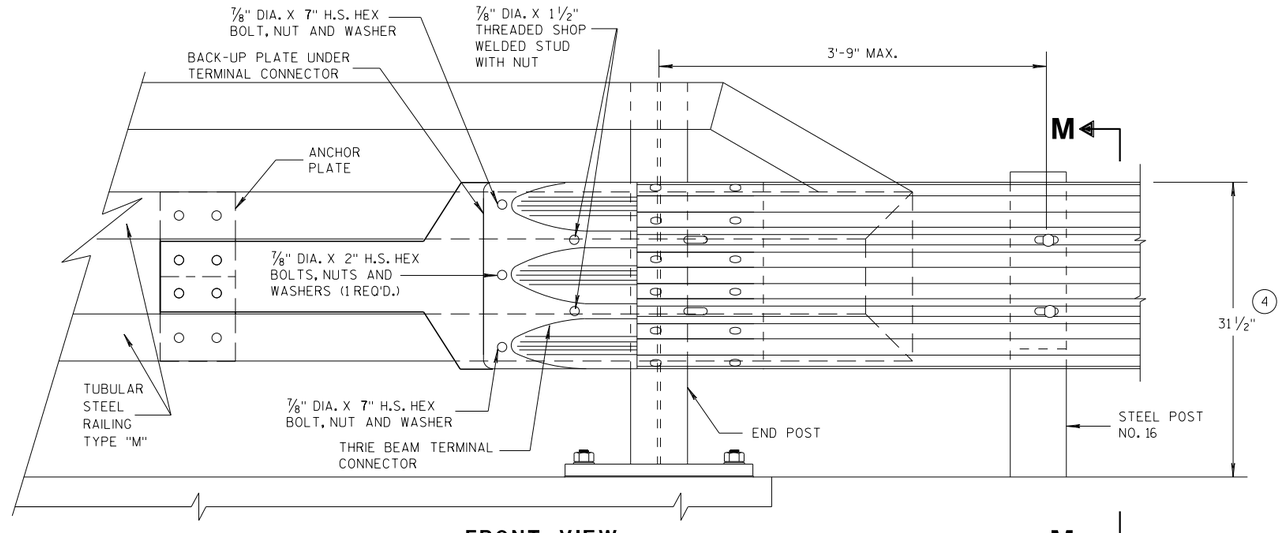


SECTION L-L

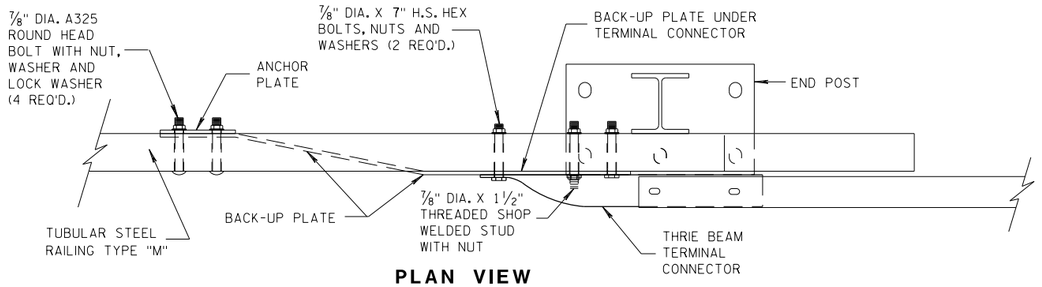


FRONT VIEW

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

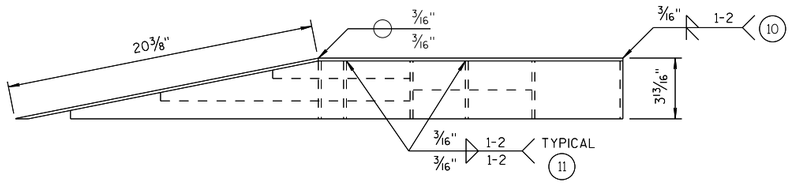
APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA

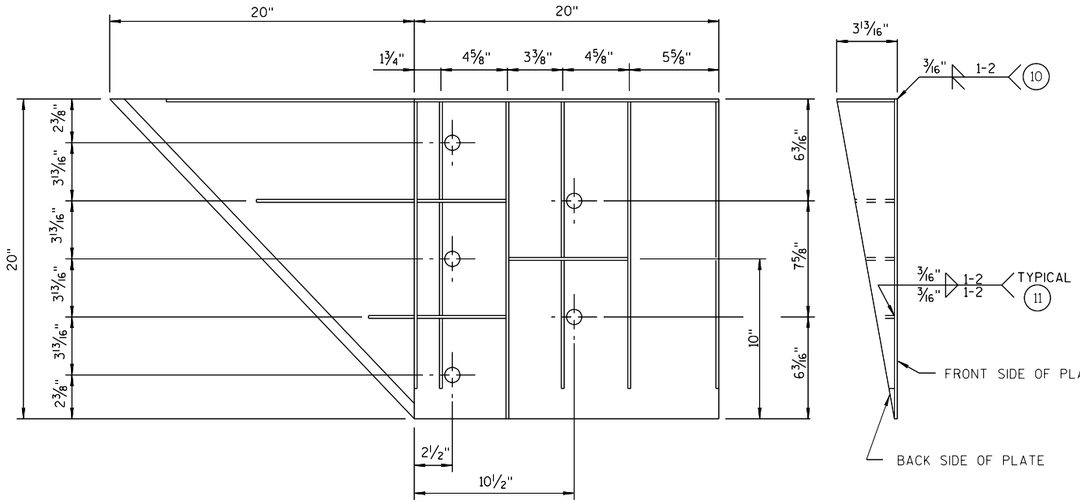
6

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

6

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





WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

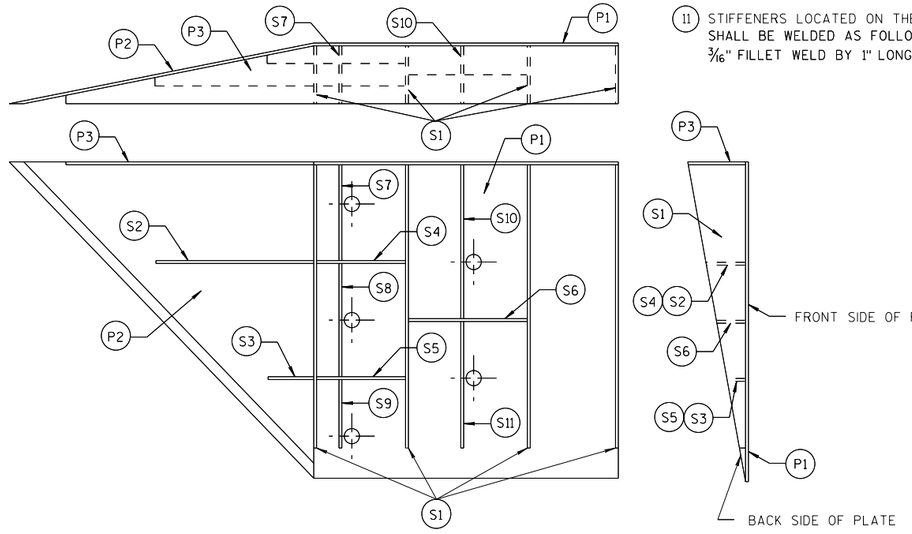


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

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

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS I
UNIT SUPERVI

6

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

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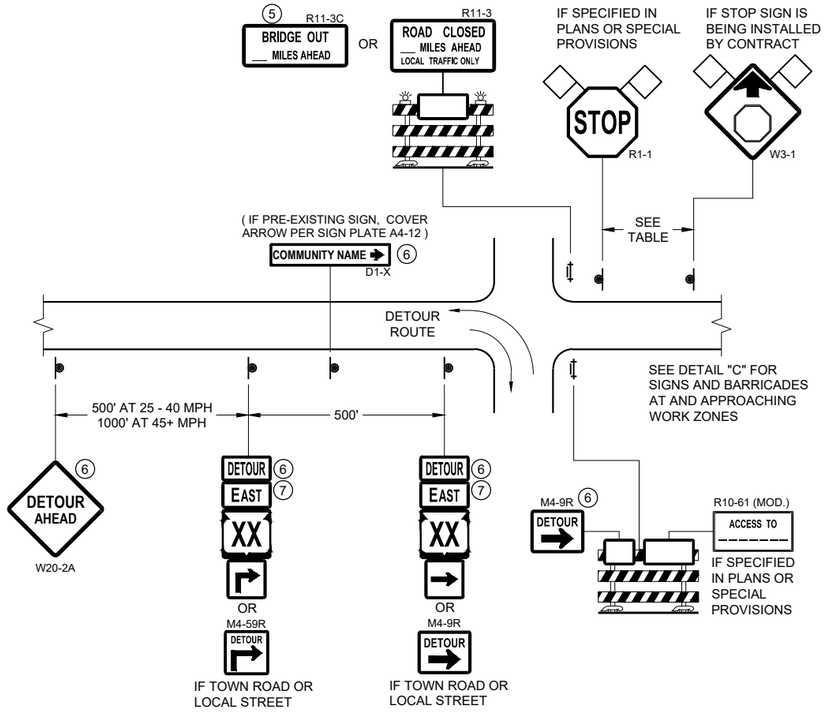
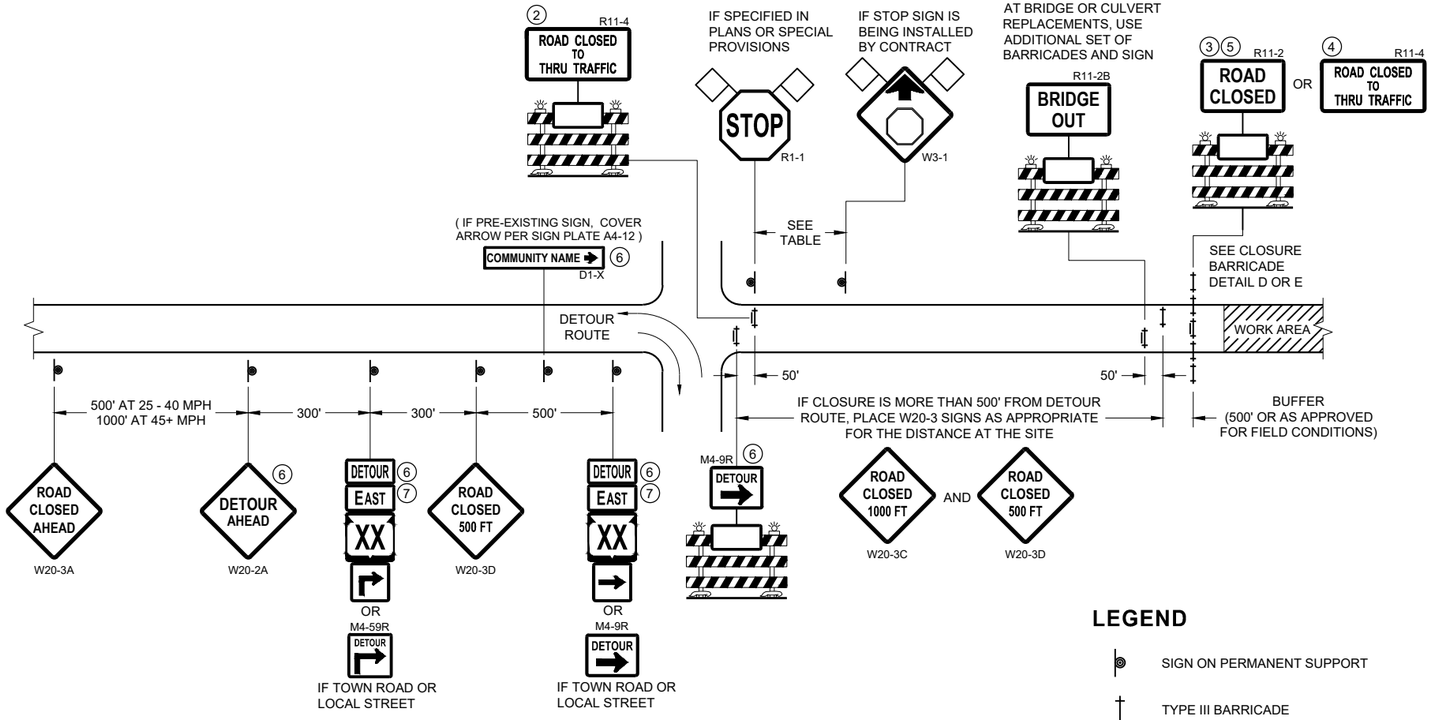
S.D.D. 14 B 45-5i



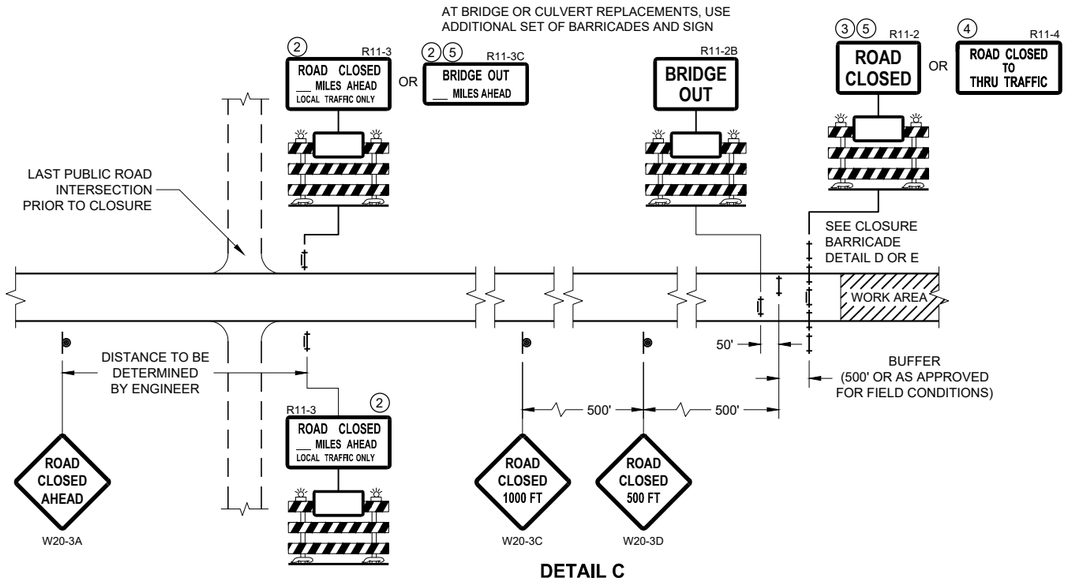


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

DETOUR M4 - 8
EAST M3 - X
XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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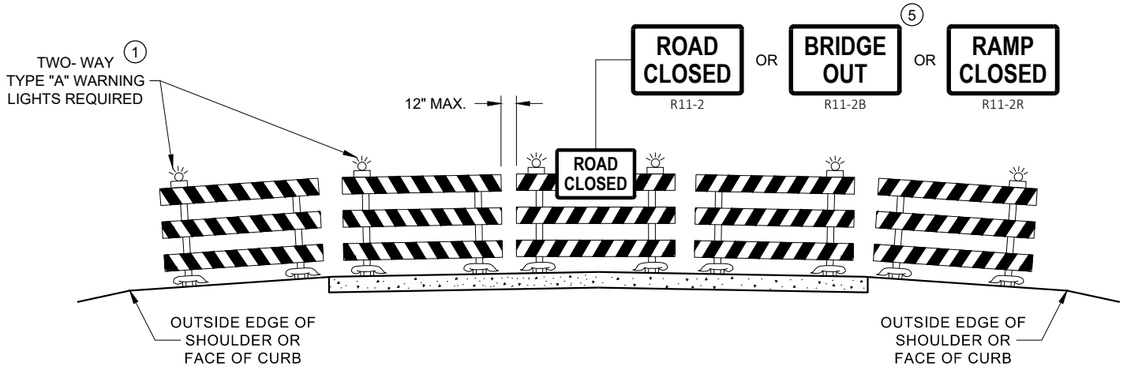
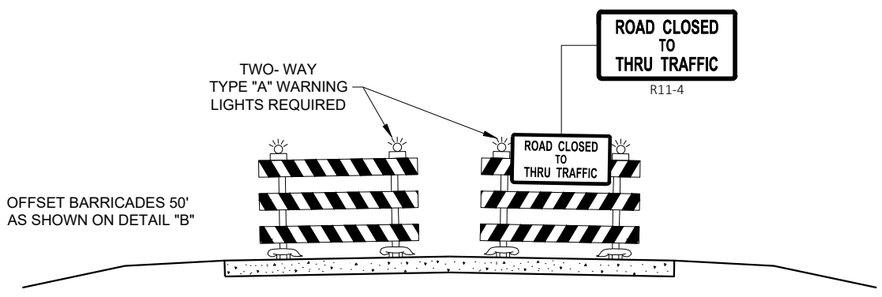
SDD 15C02 - 07a

SDD 15C02 - 07a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

LEGEND

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

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

M3-X 24" X 12"
M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

500' AT 25-40 MPH
1000' AT 45+ MPH

500'

DETOUR EAST XX *
D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

M4-8a END DETOUR WEST XX *

DETOUR EAST XX / WEST XX

DETOUR ROUTE

WORK AREA

DETOUR EAST XX

WEST XX OR M4-9L DETOUR ** IF TOWN ROAD OR LOCAL STREET

500'

DETOUR NEXT X MILES * G20-51

DETOUR WEST XX * OR M4-59L DETOUR ** IF TOWN ROAD OR LOCAL STREET

MATCH POINT

** M4-59L DETOUR OR DETOUR EAST XX * IF TOWN ROAD OR LOCAL STREET

D1-X COMMUNITY NAME * (IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

** M4-9L DETOUR OR DETOUR EAST XX * IF TOWN ROAD OR LOCAL STREET

500'

500' AT 25 - 40 MPH
1000' AT 45+ MPH

500'

M3-X 24" X 12"
M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

DETOUR EAST XX *

D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

DETOUR WEST XX

DETOUR WEST XX OR M4-9R DETOUR ** IF TOWN ROAD OR LOCAL STREET

DETOUR WEST XX * OR M4-59R * DETOUR ** IF TOWN ROAD OR LOCAL STREET

500'

DETOUR ROUTE

500'

DETOUR EAST XX

DETOUR EAST XX

DETOUR EAST XX *

D1-X COMMUNITY NAME *
(IF PRE-EXISTING SIGN, COVER ARROW PER SIGN PLATE A4-12)

PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA)

500' AT 25 - 40 MPH
1000' AT 45+ MPH

DETOUR EAST XX *

EAST XX M3-X 24" X 12" M1-X 24" X 24"
DETOUR AHEAD
W20-2A
USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT

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

DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15C02 - 07c

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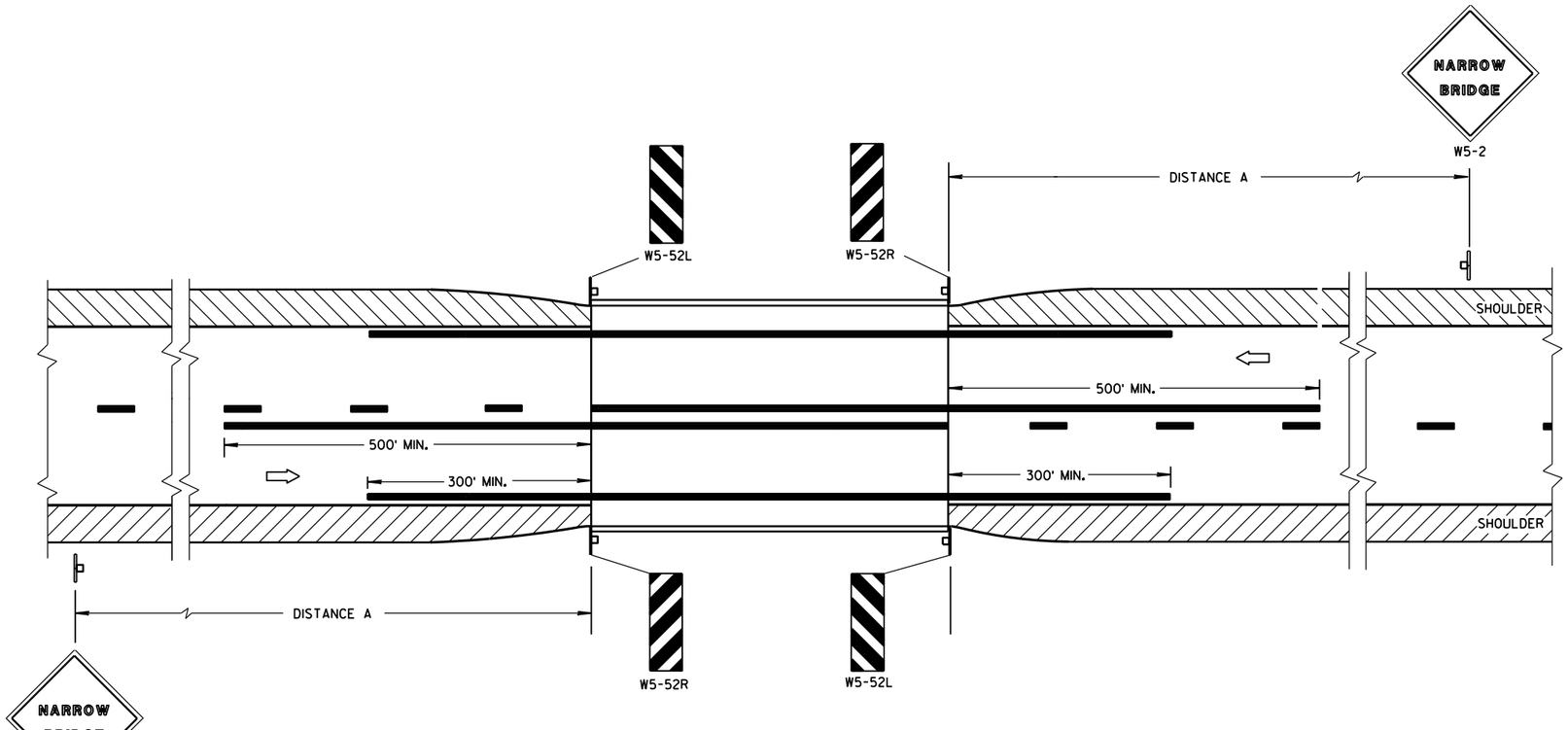
SDD 15C02 - 07c



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'

GENERAL NOTES

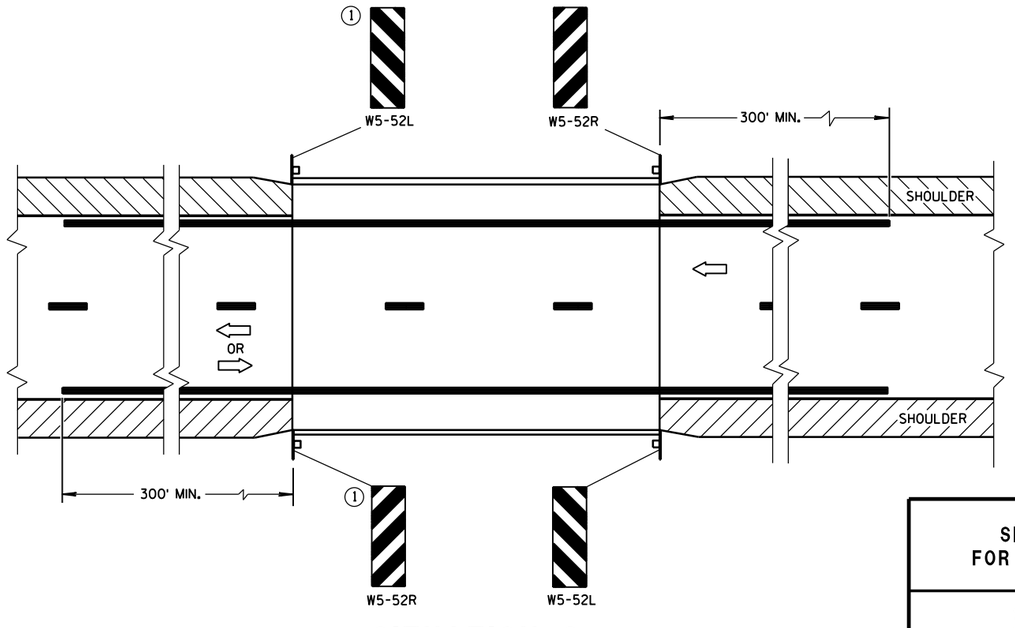
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 15 C 6-9

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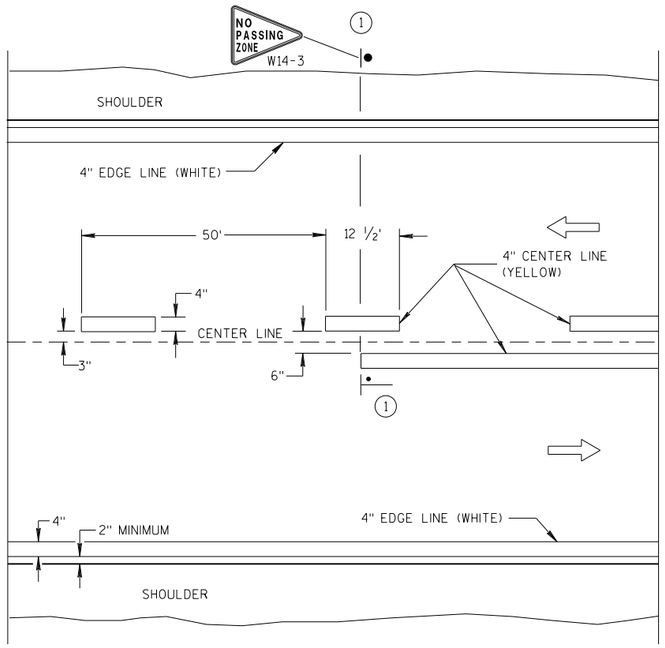
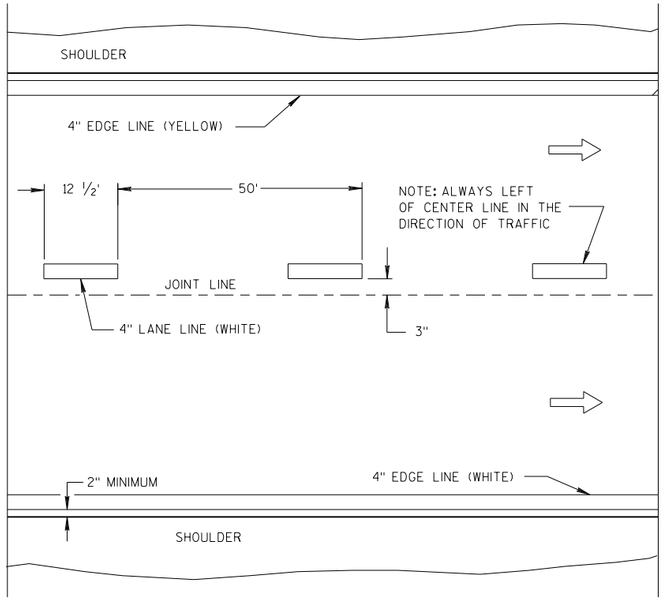
S.D.D. 15 C 6-9



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

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

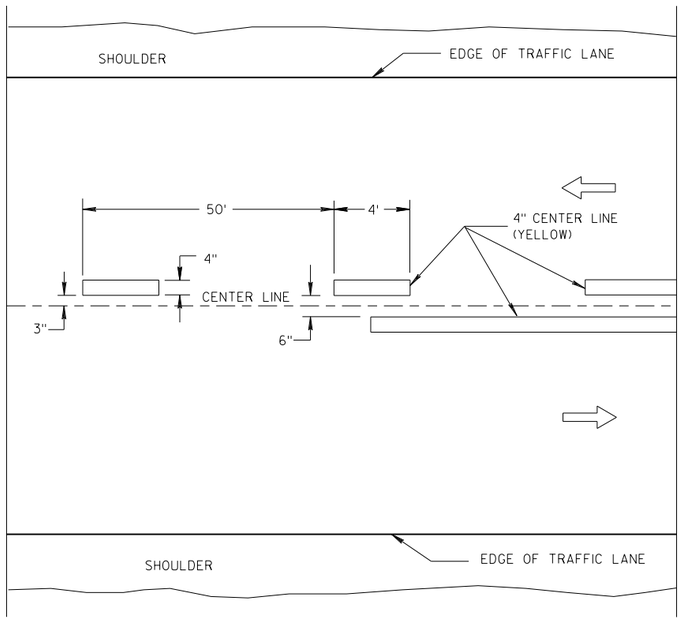
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

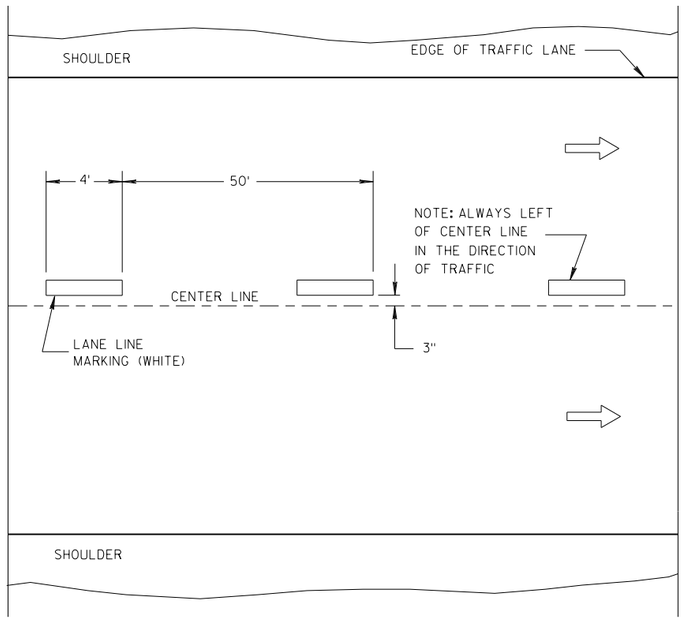
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 — DATE

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

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

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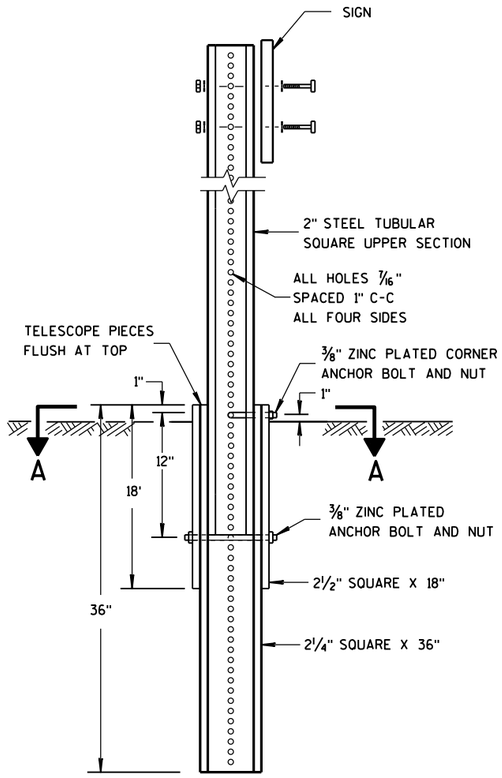
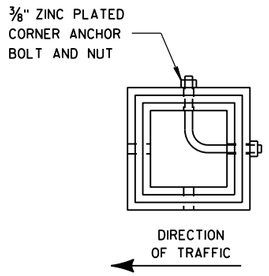
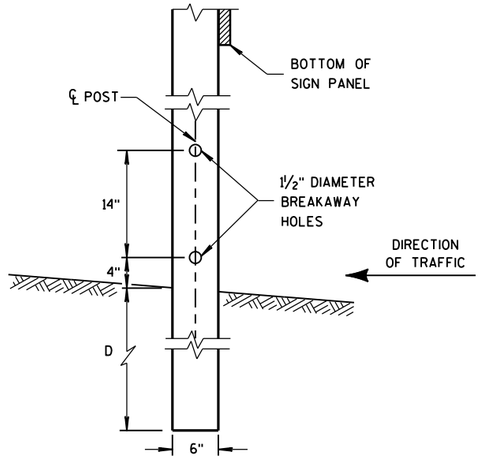
S.D.D. 15 C 8-19a



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



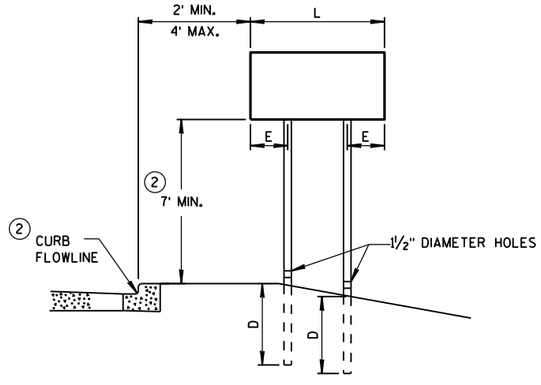
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

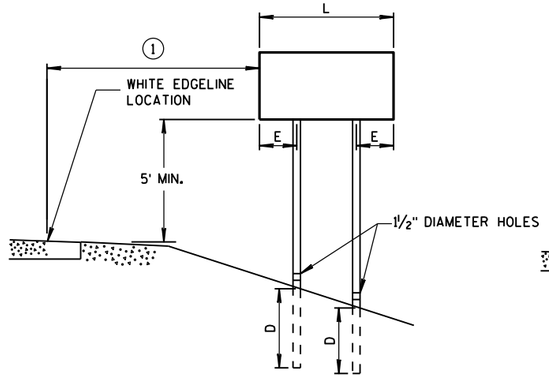
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

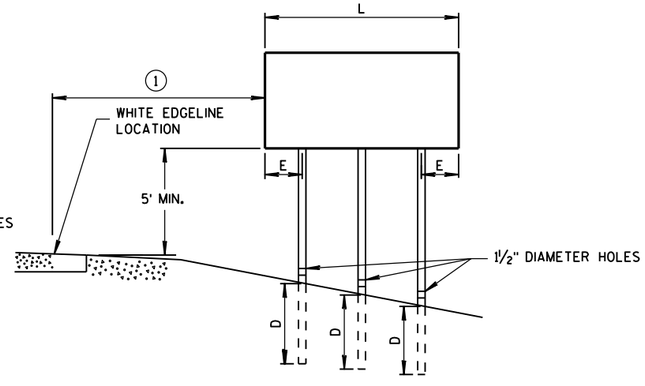
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

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

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

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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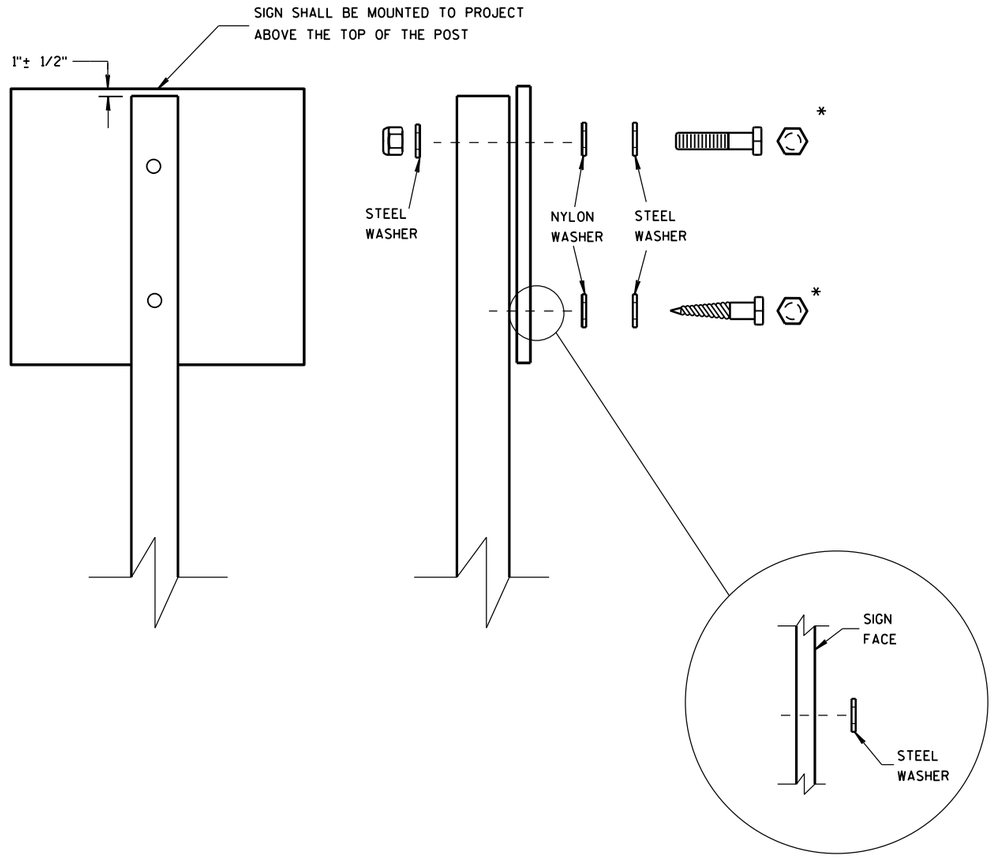
S.D.D. 15 D 38-2a
S.D.D. 15 D 38-2a



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

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

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

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

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

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

LAG SCREWS - 3/8" X 3"

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

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

6

6

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

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

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

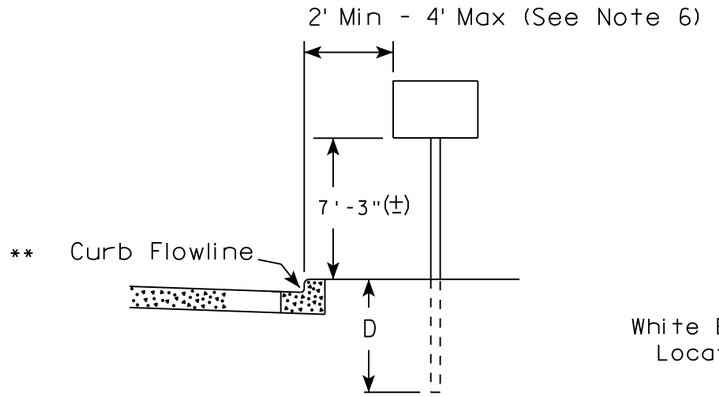
APPROVED

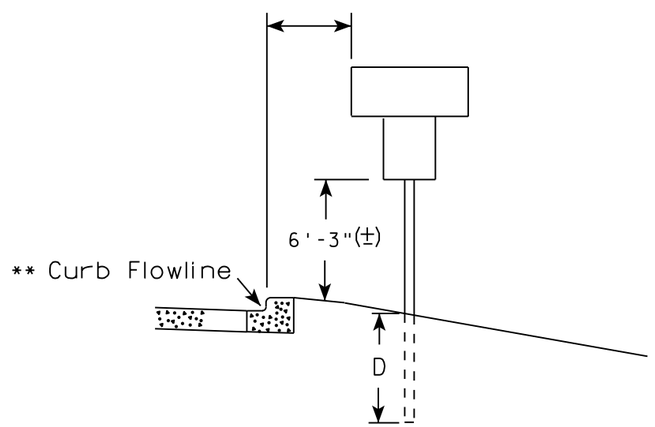
June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENG

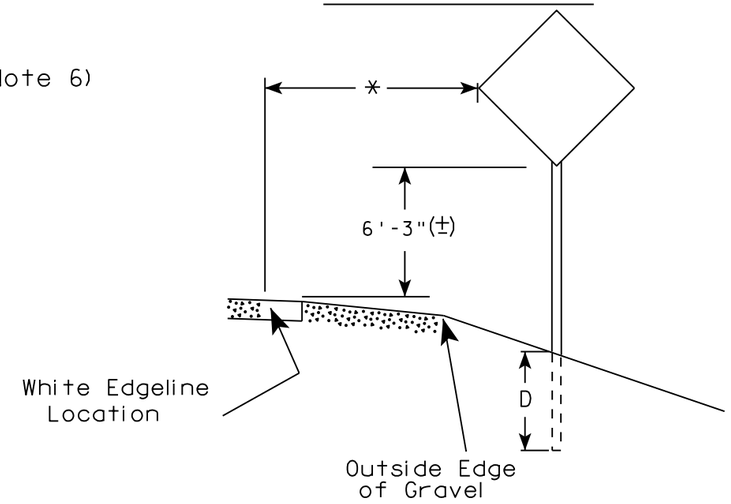
FHWA

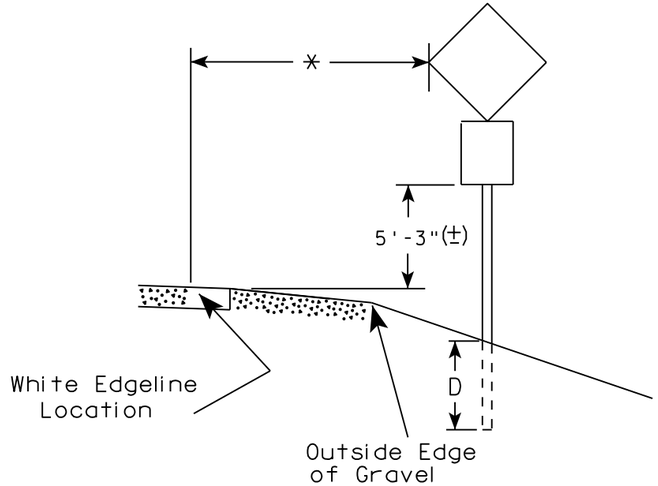
URBAN AREA





RURAL AREA (See Note 2)





GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on 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" (±).

POST EMBEDMENT DEPTH

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

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

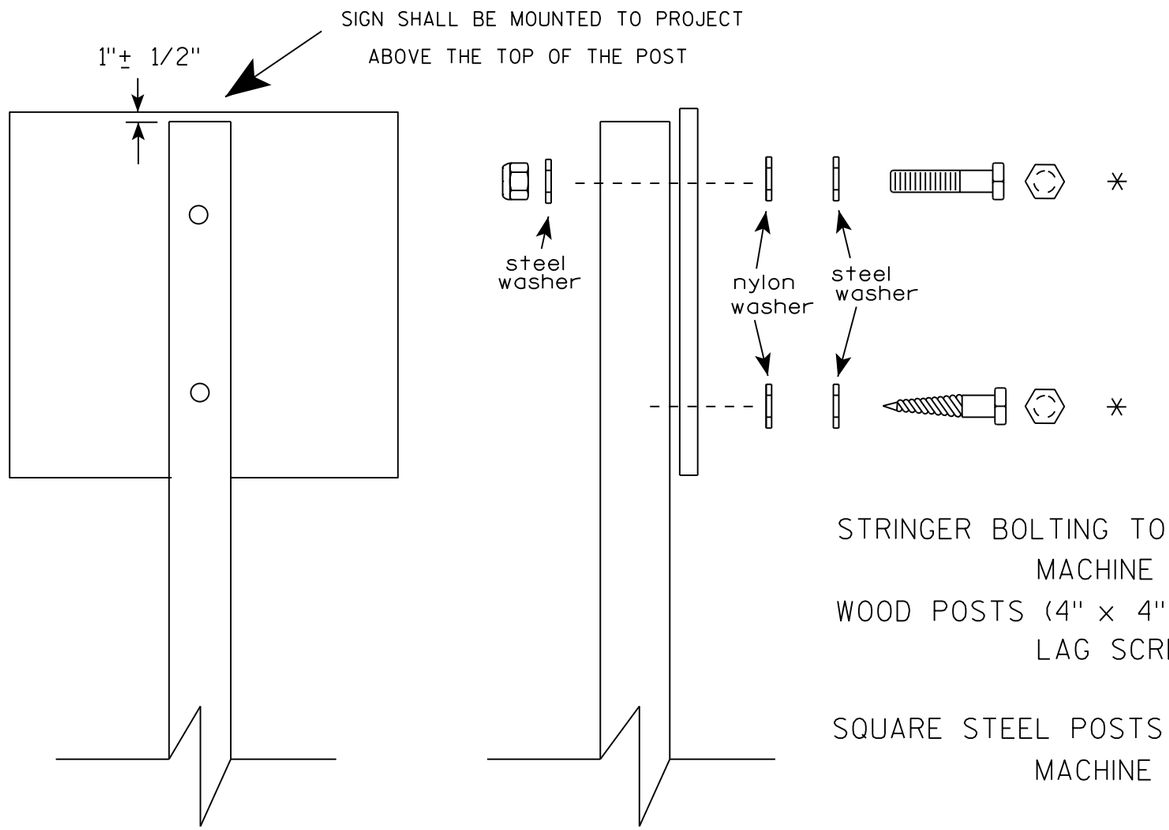
APPROVED Matthew R Rauch for State Traffic Engineer

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

7

7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 47	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

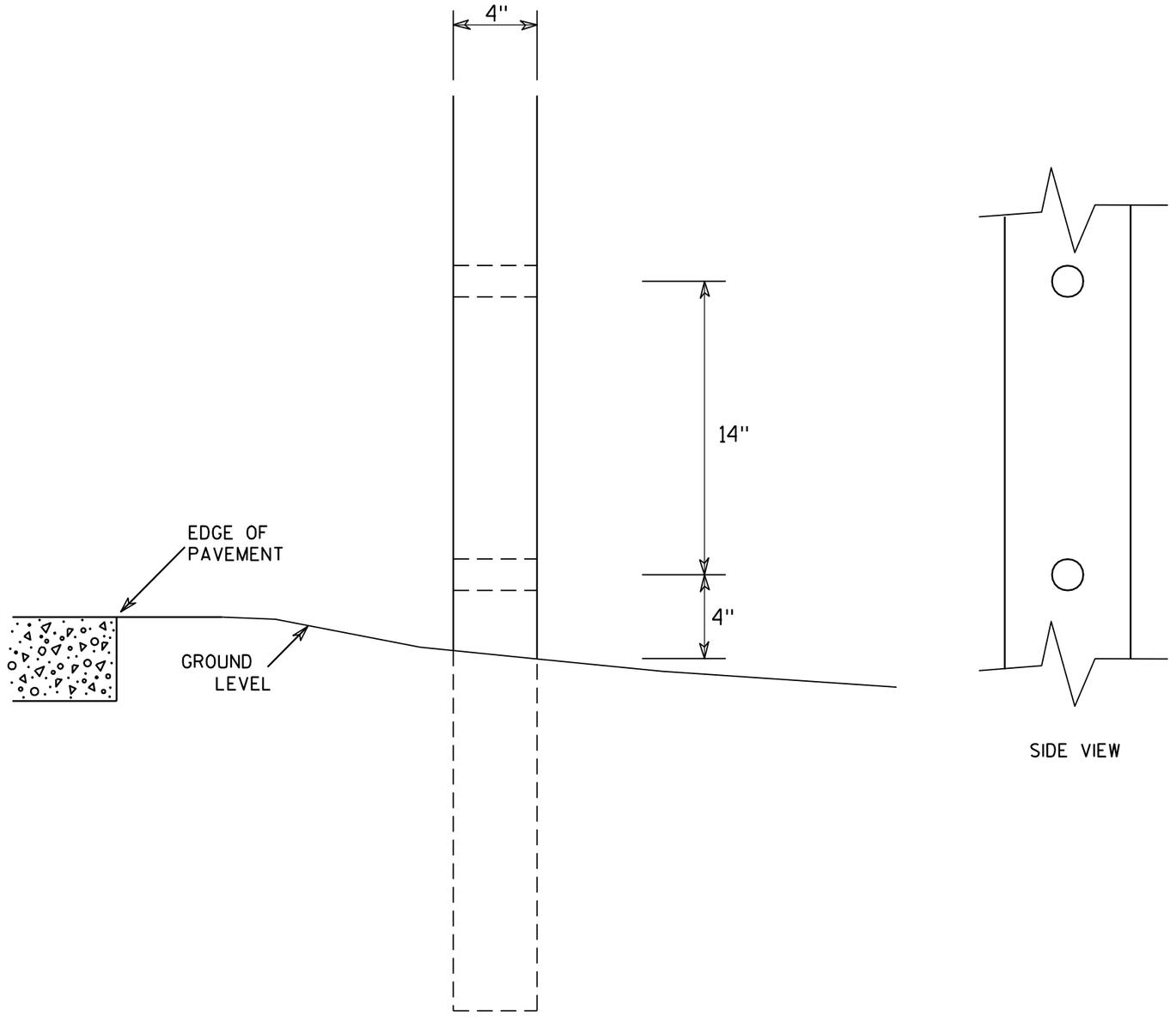
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:

SHEET NO: E



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

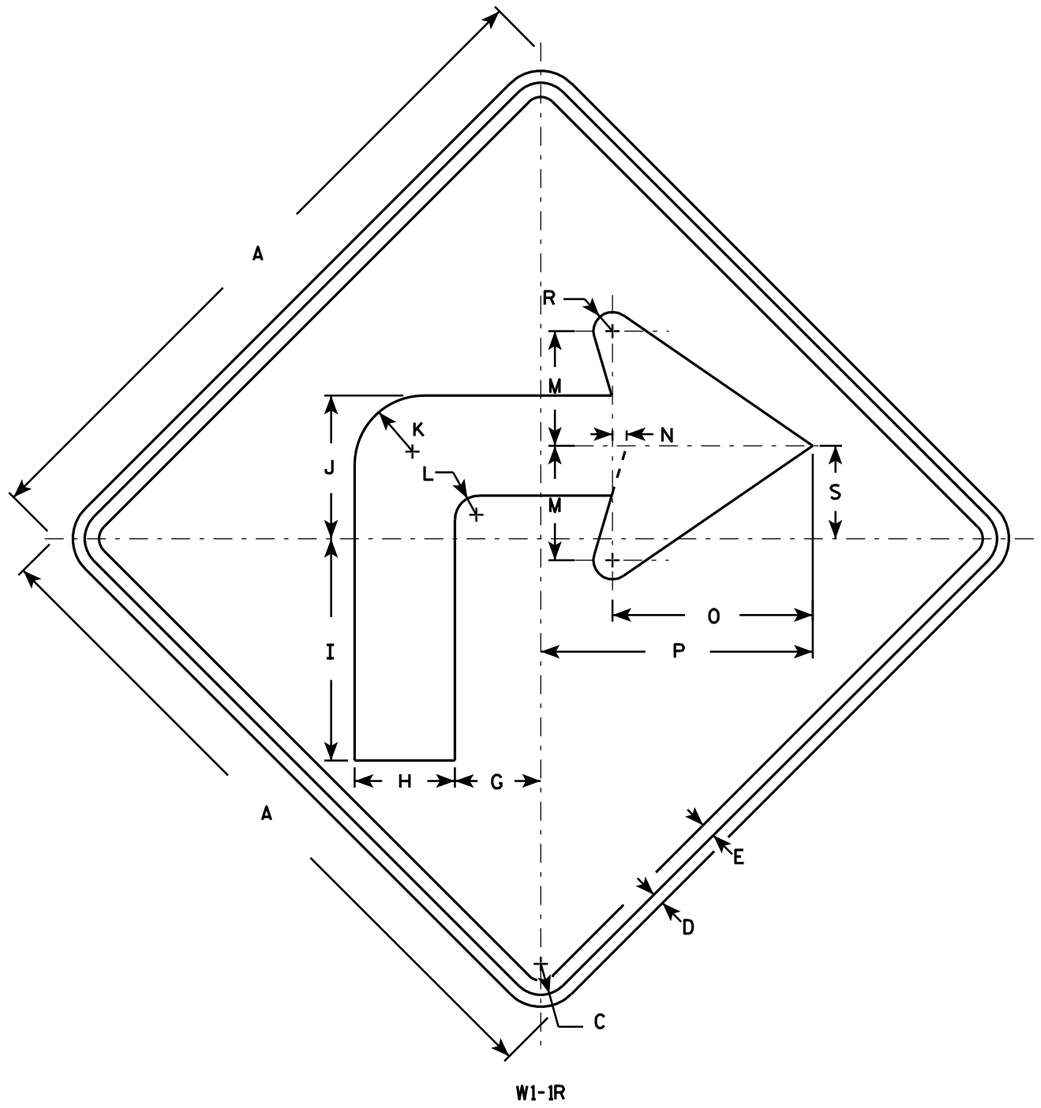
4 X 6 WOOD POST MODIFICATIONS

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: 49	E



W1-1R

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. W1-1L is the same as W1-1R except the arrow is reversed along the vertical centerline.

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		3	3 1/2	7 3/4	5	2 1/2	7/8	4	1/2	7	9 1/2		5/8	3 1/4								4.0
2S	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
2M	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
3	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
4	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0
5	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0

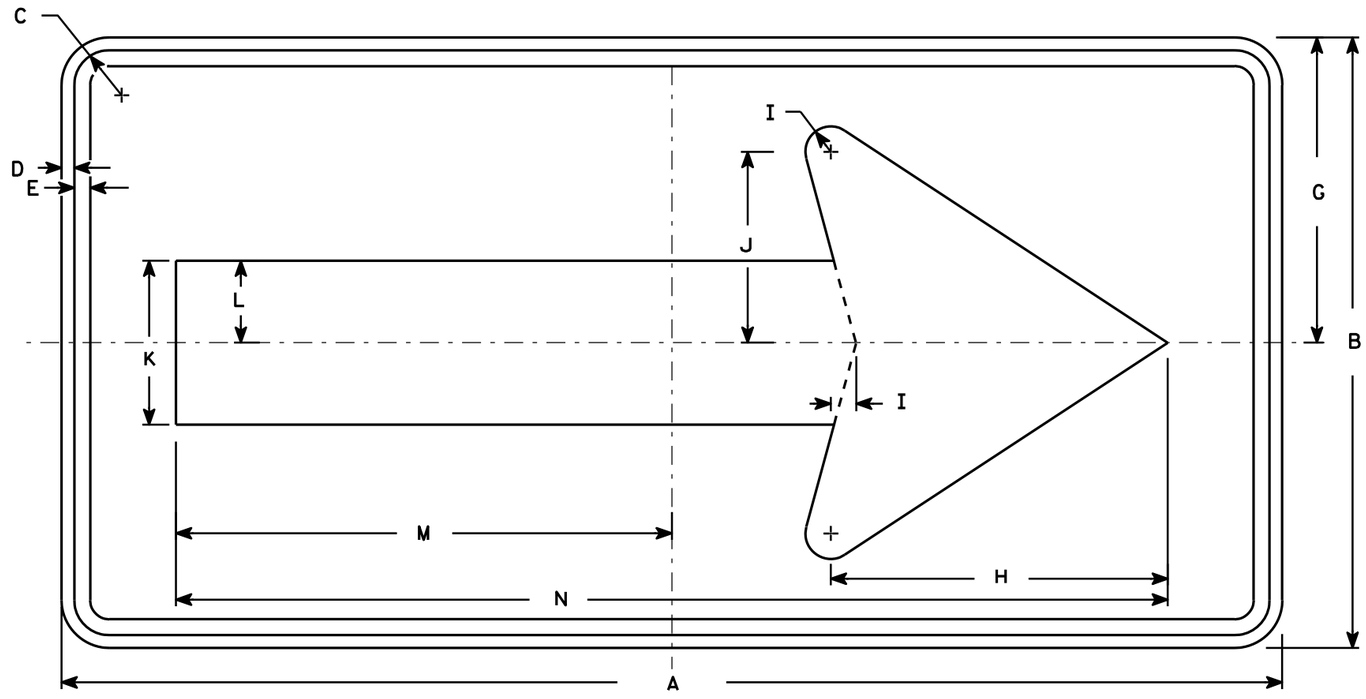
STANDARD SIGN
W1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 50 | E



W1-6

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	36	18	1 1/8	3/8	3/8		9	10	3/4	5 5/8	4 3/4	2 3/8	14 5/8	29 1/4													4.5
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	96	48	2 1/4	3/4	1		24	26 1/2	2	15	13	6 1/2	39	78													32.0

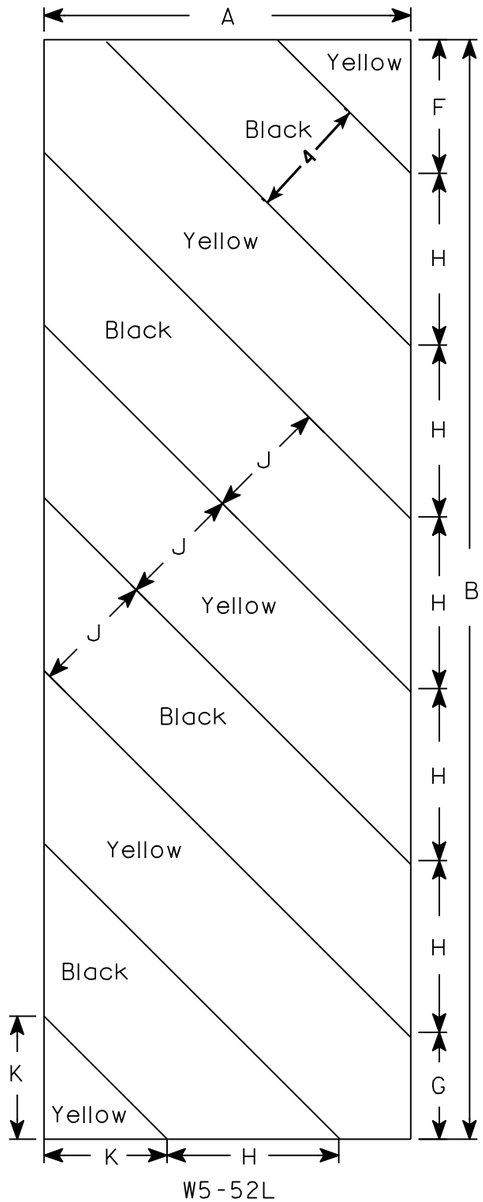
STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

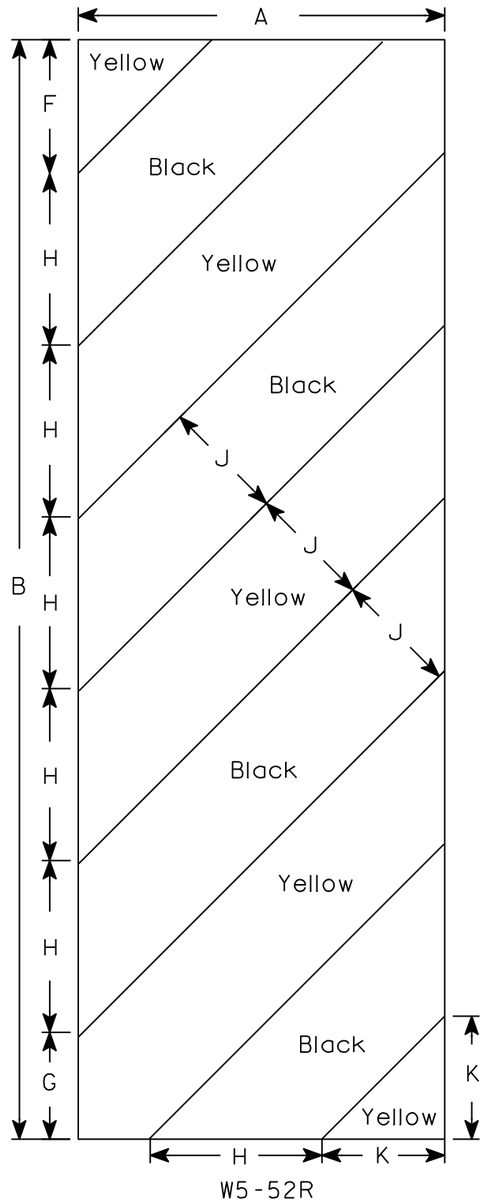
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-6.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 51



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

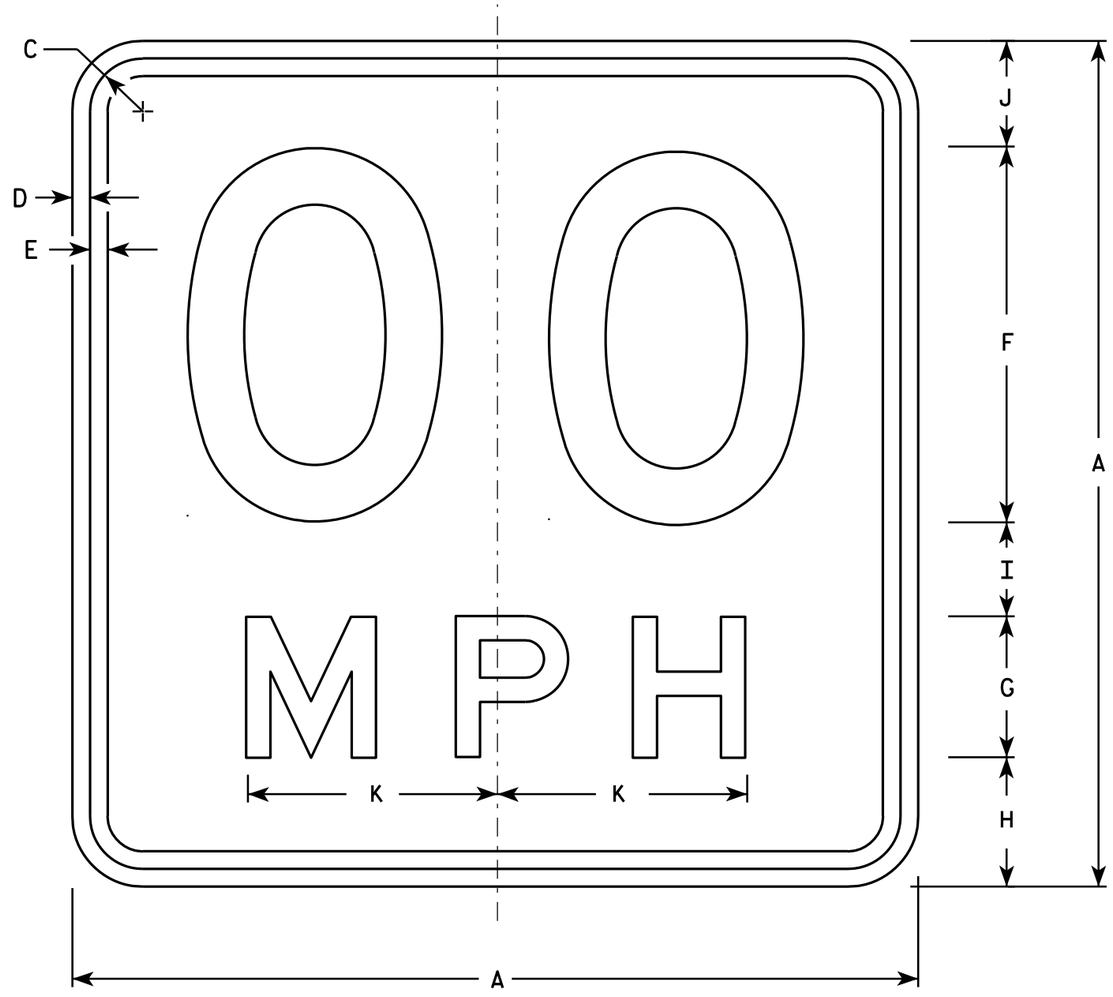
W5-52L & W5-52R

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: 52	E



W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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. Message Series - See Note 6
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. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

	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	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
	3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN
W13-1

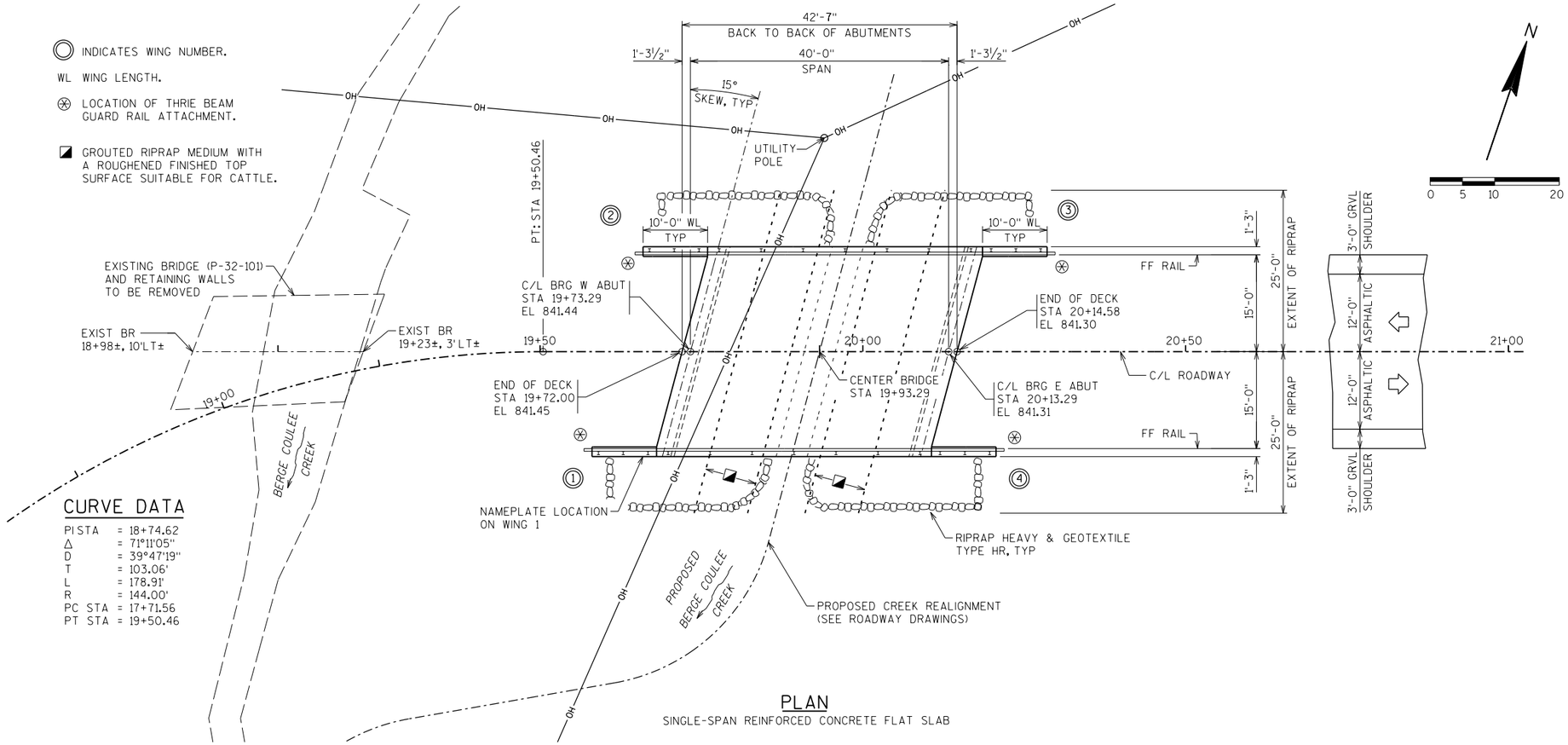
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 53	E

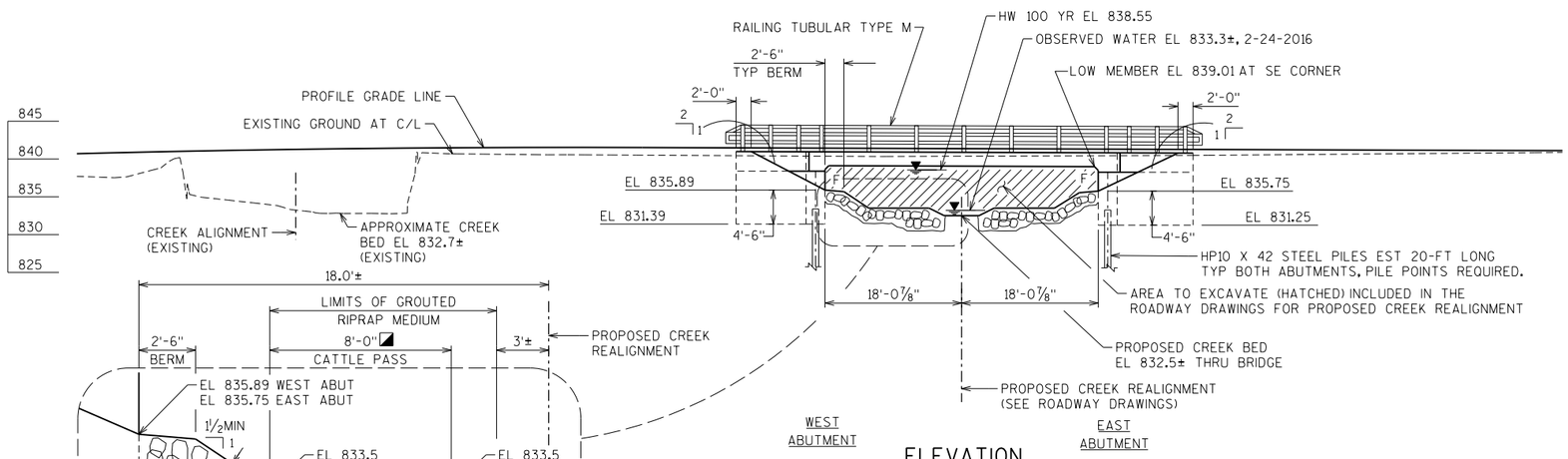
STATE PROJECT NUMBER
5503-00-70



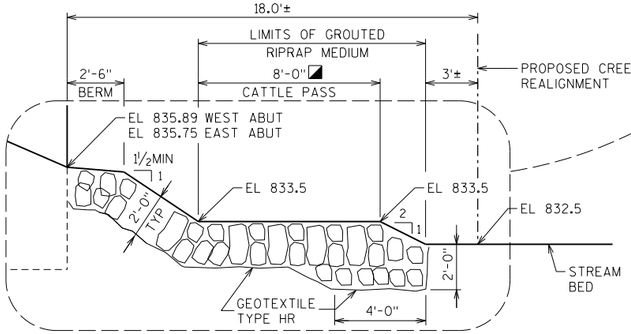
PLAN
SINGLE-SPAN REINFORCED CONCRETE FLAT SLAB

CURVE DATA

PI STA	= 18+74.62
Δ	= 71°11'05"
D	= 39°47'19"
T	= 103.06'
L	= 178.91'
R	= 144.00'
PC STA	= 17+71.56
PT STA	= 19+50.46



ELEVATION
LOOKING NORMAL TO C/L SUBSTRUCTURES



CATTLE PASS AND BERM DETAIL
TYPICAL AT BOTH ENDS OF BRIDGE (NORMAL TO CREEK)

BENCHMARK (DATUM = NAVD 88)

NO.	STATION	DESCRIPTION	ELEV
1	13+01.38, 43.90' LT	RR SPIKE IN 36" TREE	829.02
2	18+58.66, 87.76' LT	RR SPIKE IN 18" TREE	840.97
3	24+44.95, 16.57' RT	TOP SOUTH END 15" CMP	850.24

DESIGN DATA

LIVE LOAD:
- DESIGN LOADING: HL-93
- INVENTORY RATING FACTOR: RF = 1.10
- OPERATING RATING FACTOR: RF = 1.42
- WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS
- STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF
- INVENTORY AND OPERATING RATINGS DO NOT INCLUDE FUTURE WEARING SURFACE.

MATERIAL PROPERTIES:

CONCRETE MASONRY - SUPERSTRUCTURE	f'c = 4,000 psi
- ALL OTHER	f'c = 3,500 psi
HIGH STRENGTH BAR STEEL REINFORCEMENT AASHTO GRADE 60	fy = 60,000 psi

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 160 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION. ESTIMATED 20-FEET LONG AT EACH ABUTMENT. PILE POINTS REQUIRED.

*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100}	1200 CFS
Q_{100} THRU STRUCTURE	1200 CFS
VELOCITY	9.37 FPS
HIGH WATER$_{100}$ EL	838.55 FT
WATERWAY AREA	128 SQ FT
DRAINAGE AREA	3.2 SQ MI

2 YEAR FREQUENCY

Q_2	150 CFS
Q_2 HIGH WATER EL	835.48 FT
SCOUR CODE	8

TRAFFIC DATA

ADT (2020)	= 80
ADT (2040)	= 90
DHV	= 8
DD	= 60/40 %
T	= 9.7 %
DESIGN SPEED	= 25 MPH

LIST OF DRAWINGS

CHRISTOPHER J. BLUM E-33157 MADISON WI — WISCONSIN PROFESSIONAL ENGINEER

5-29-19

SEH CONTACT: CHRIS BLUM, PE, 608.620.6192

WISDOT BRIDGE OFFICE CONTACT: BILL DREHER, PE, 608.266.8489

NO.	DATE	REVISION	BY

SEH
SHORT ELLIOTT HENDRICKSON INC.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/21/19
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-32-238

CTH X OVER BERGE COULEE CREEK

COUNTY: LA CROSSE	TOWN ~~CITY/VILLAGE~~: WASHINGTON
DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS	
DESIGNED BY: CJB	DESIGN CK'D.: TN
DRAWN BY: DLF	PLANS CK'D.: CJB

GENERAL PLAN

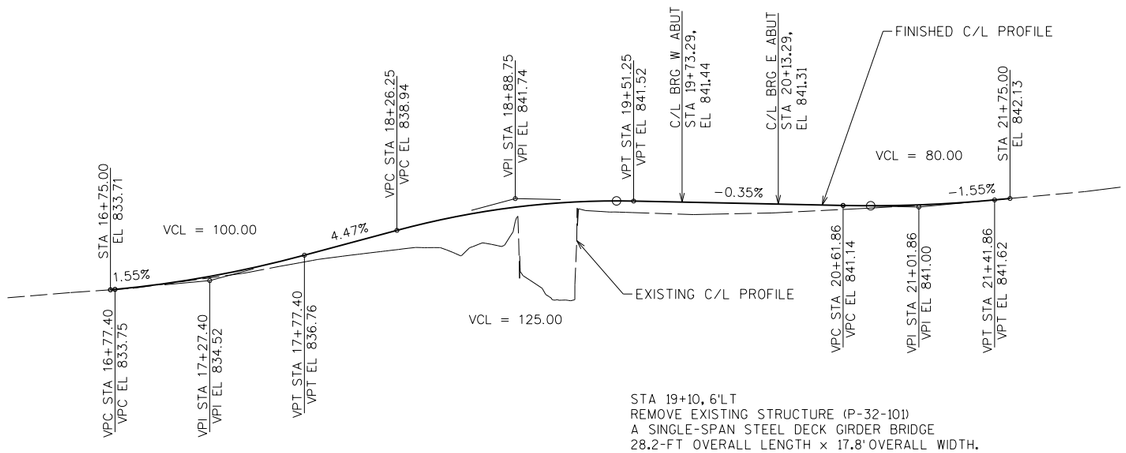
SHEET 1 OF 10
54

PLOT DATE: 5/29/2019 PLOT TIME: 11:06:15 AM
FILE NAME : S:\KOL\Lcchd\135898\5-final-dsgn\5i-drawings\20-Struct\bridge\b32238gl.dgn

8

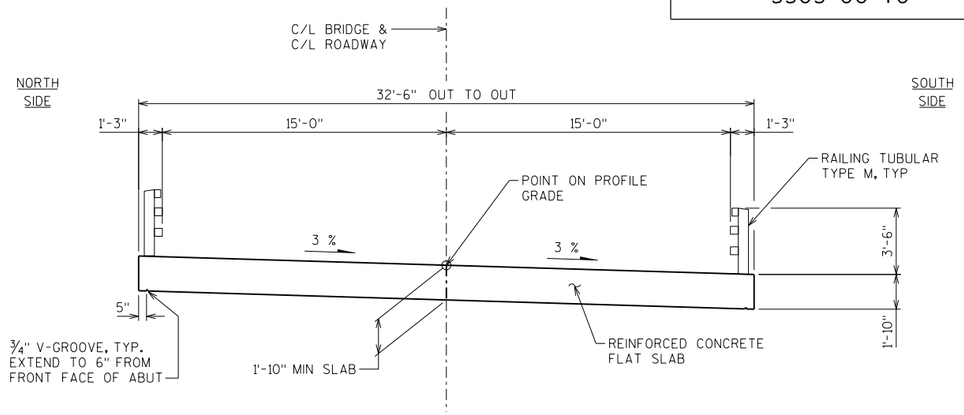
8

STATE PROJECT NUMBER
5503-00-70



STA 19+10, 6'LT
REMOVE EXISTING STRUCTURE (P-32-101)
A SINGLE-SPAN STEEL DECK GIRDER BRIDGE
28.2-FT OVERALL LENGTH x 17.8' OVERALL WIDTH.

PROFILE GRADE LINE



CROSS SECTION THRU BRIDGE

(LOOKING EAST)

TOTAL ESTIMATED QUANTITIES - B-32-238

	BID ITEM NUMBER	BID ITEMS	UNIT	WEST ABUT	EAST ABUT	SUPER	TOTALS
(4)	203.0700.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM STATION 19+10, 6'LT	LS	-	-	-	1
	206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-32-238	LS	-	-	-	1
(1)	210.1500	BACKFILL STRUCTURE TYPE A	TON	230	230	-	460
	502.0100	CONCRETE MASONRY BRIDGES	CY	45	45	99	189
	502.3200	PROTECTIVE SURFACE TREATMENT	SY	10	10	180	200
	505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2585	2585	-	5170
	505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1685	1,685	18,440	21,810
	513.4061	RAILING TUBULAR TYPE M B-32-238	LF	-	-	130	130
(6)	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	-	20
	550.0500	PILE POINTS	EACH	5	5	-	10
	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	100	100	-	200
	606.0300	RIPRAP HEAVY	CY	45	45	-	90
(5)	606.0600	GROUTED RIPRAP MEDIUM	CY	40	40	-	80
(2)	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	100	-	200
	645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	30	30	-	60
	645.0120	GEOTEXTILE TYPE HR	SY	180	180	-	360
		NON-BID ITEMS					
		FILLER	SIZE	———	———	———	½ & ¾
		NAMEPLATE	EACH	1	———	———	1

(1) A FACTOR OF 2.0 WAS USED TO CONVERT CU YDS TO TONS.

(2) INCLUDES RODENT SHIELD FOR PIPE UNDERDRAIN PER SDD 8F6-4.

(3) FURNISH AND APPLY A PROTECTIVE SURFACE TREATMENT TO THE ENTIRE TOP OF THE BRIDGE DECK, INCLUDING THE SLAB EDGE AND 1'-0" UNDER SLAB, THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

(4) INCLUDES REMOVAL OF RETAINING WALL.

(5) AT CATTLE PASS LOCATION.

(6) INCLUDES QUANTITY ON BACKFACE OF WINGS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

FOR EXISTING STRUCTURE SEE PROFILE GRADE LINE THIS SHEET.

REFER TO ROADWAY DRAWINGS FOR EXISTING UTILITY LOCATIONS.

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

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENTS DETAILS.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-ASPHALTIC JOINT SEALER (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE).

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-32-238 SHALL BE THE EXISTING GROUNDLINE.

EXCAVATION BELOW THE ABUTMENTS AND ABUTMENTS BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE QUANTITY FOR BACKFILL STRUCTURE TYPE A IS CALCULATED BASED ON THE BACKFILL STRUCTURE LIMITS DETAILS SHOWN ON SHEET 10.

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

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

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO DESIGNATION M153 TYPE 1, 2, OR 3 OR AASHTO DESIGNATION M213.

APPLY A PROTECTIVE SURFACE TREATMENT PER THE STANDARD SPECIFICATIONS AND THE SUPERSTRUCTURE DETAILS SHEET.

SEE ROADWAY PLANS FOR ADDITIONAL RIPRAP REQUIRED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-32-238

DRAWN BY DLF | PLANS CK'D. CJB

CROSS SECTION AND QUANTITIES

SHEET 2 OF 10

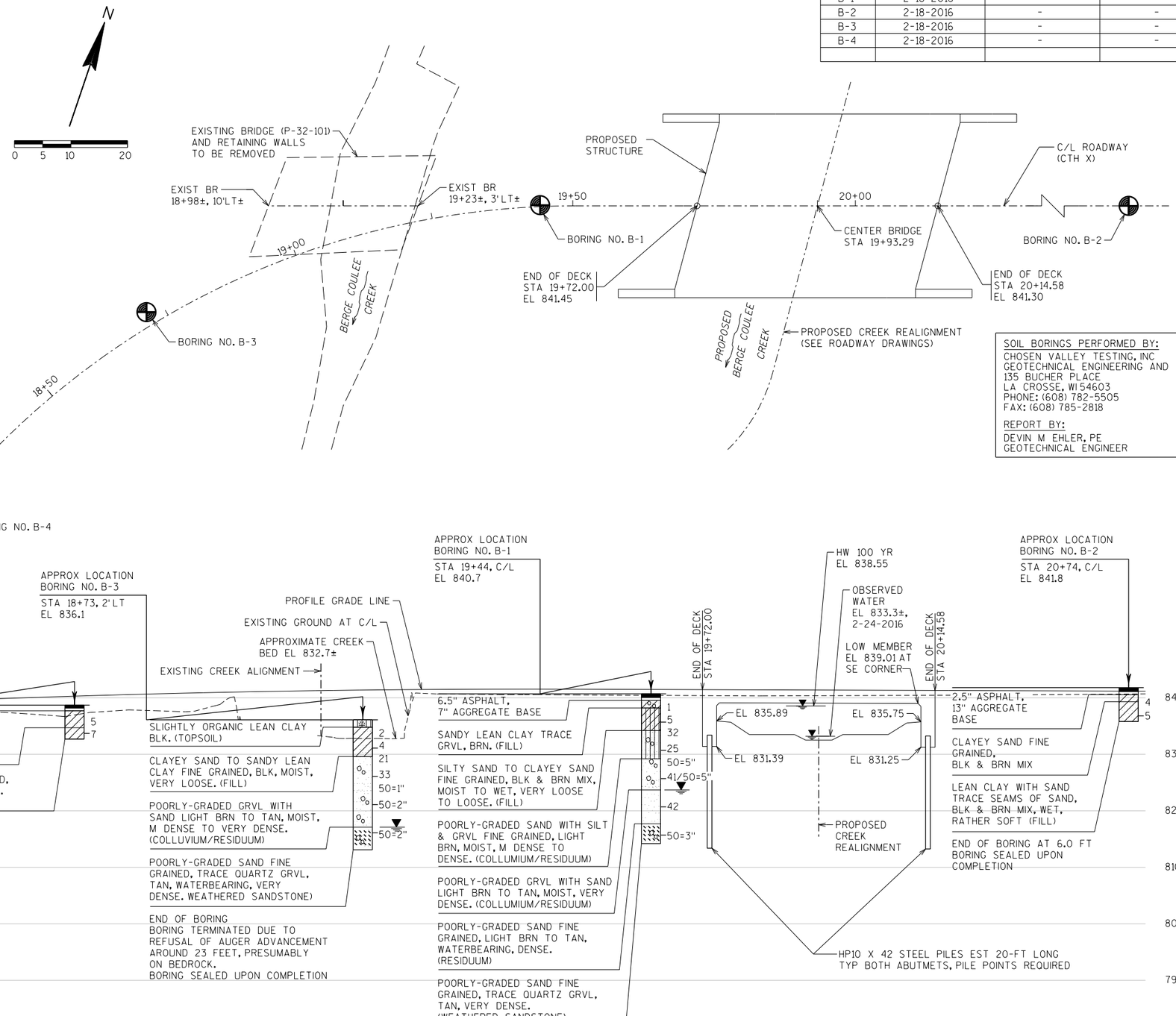
55

8

8

PLOT TIME: 11:06:15 AM
PLOT DATE: 5/29/2019
FILE NAME : S:\KO\L\Lochd\135898\5-final-dsgn\5i-drawings\20-Struct\bridge\b32238g2.dgn

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-1	2-18-2016	-	-
B-2	2-18-2016	-	-
B-3	2-18-2016	-	-
B-4	2-18-2016	-	-



SOIL BORINGS PERFORMED BY:
CHOSEN VALLEY TESTING, INC
GEOTECHNICAL ENGINEERING AND TESTING
135 BUCHER PLACE
LA CROSSE, WI 54603
PHONE: (608) 782-5505
FAX: (608) 785-2818

REPORT BY:
DEVIN M EHLER, PE
GEOTECHNICAL ENGINEER

STATE PROJECT NUMBER

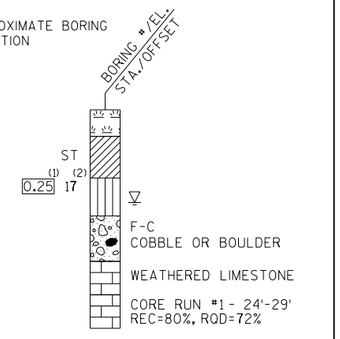
5503-00-70

MATERIAL SYMBOLS

ASPHALT, TOPSOIL, PEAT, CONCRETE, FILL, GRAVEL, SAND, CLAY, SILT, BOULDERS OR COBBLES, LIMESTONE, BEDROCK (UNKNOWN), SHALE, SANDSTONE, IGNEOUS/META

LEGEND OF BORING

= APPROXIMATE BORING LOCATION



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-32-238

DRAWN BY	DLF	PLANS CK'D.	CJB

SUBSURFACE EXPLORATION

SHEET 3 OF 10

56

8

8

PLOT DATE: 5/29/2019 PLOT TIME: 11:06:16 AM

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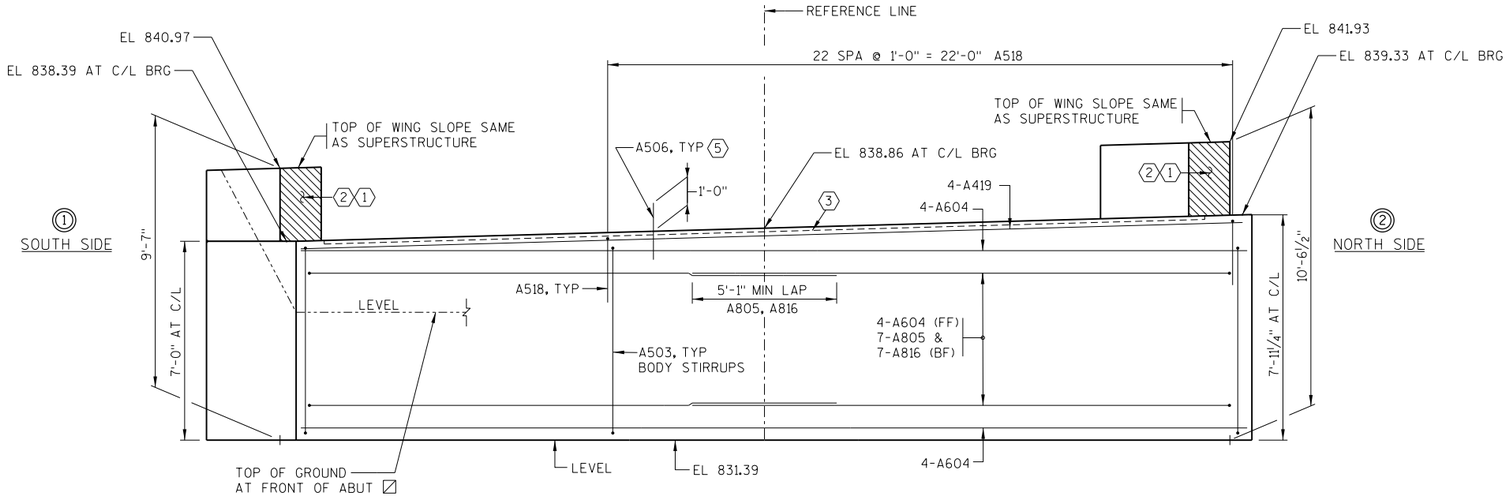
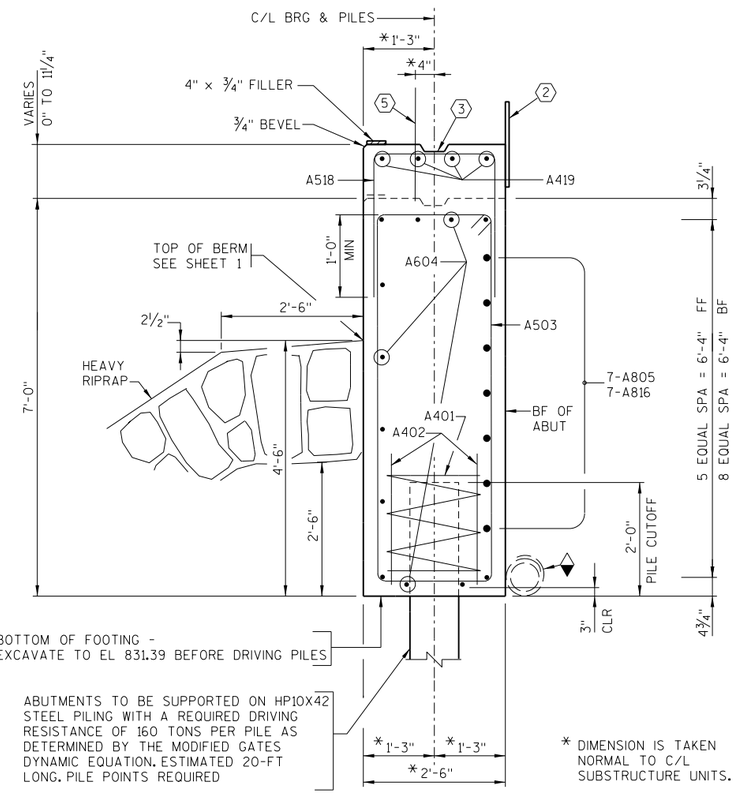
STATE PROJECT NUMBER

5503-00-70



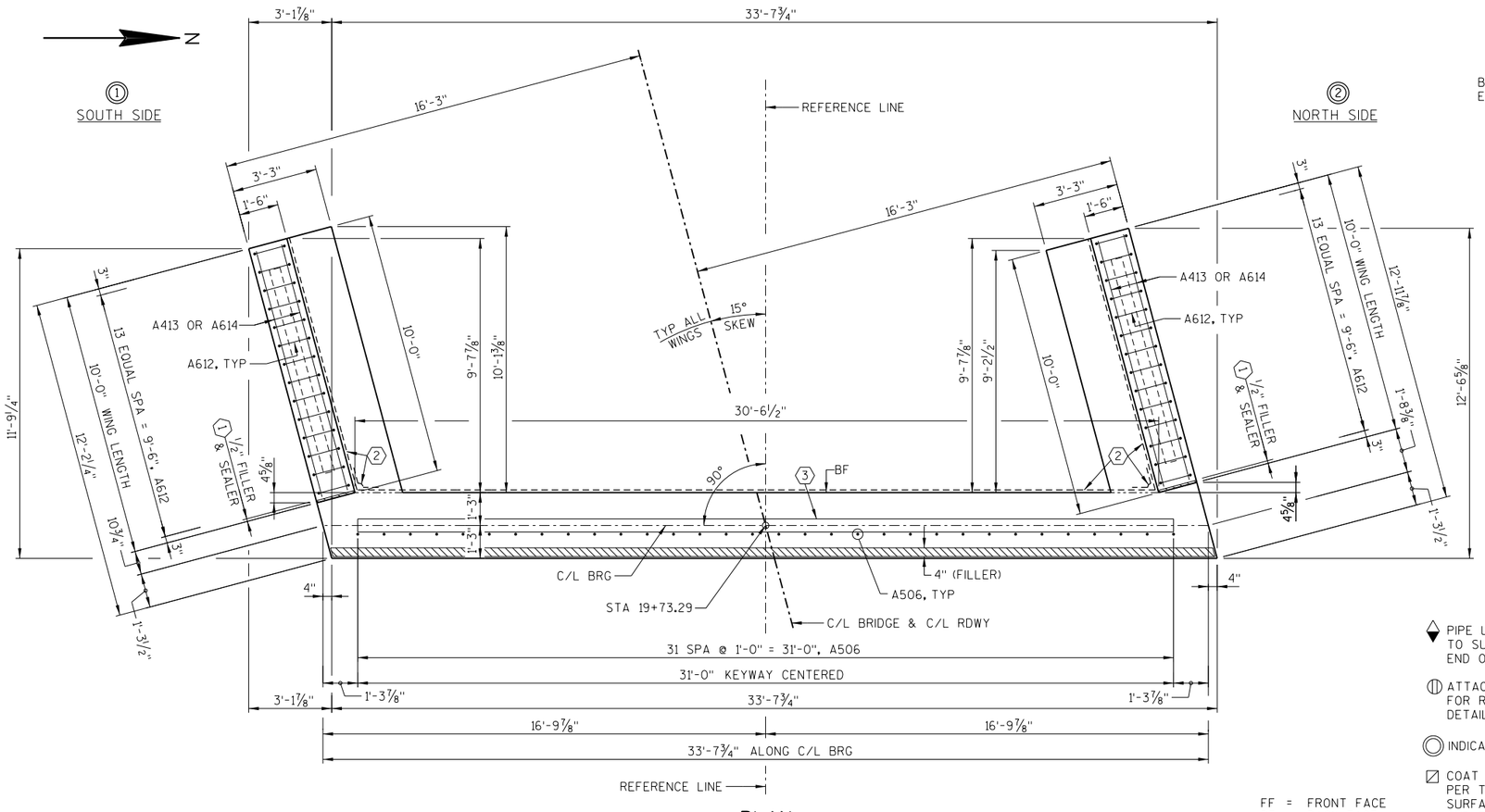
WEST FRONT ELEVATION

(PILES NOT SHOWN FOR CLARITY)



TYPICAL SECTION THRU BODY

ALL HORIZ BARS TO BE A604 UNLESS OTHERWISE SHOWN OR NOTED



PLAN

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

ABUTMENT NOTES

(1) SEAL ALL EXPOSED HORIZ. AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). FILLER INCLUDED IN WING LENGTH.

(2) 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ & VERT JOINTS ON BACKFACE. VERTICAL WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

(3) KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2" X 6".

(4) OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2" X 6" WITH MEMBRANE ON BACKFACE.

(5) A506 SPACED @ 1'-0" AS SHOWN. BARS MAY BE PLACED AFTER CONC HAS BEEN POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

◆ PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE.

◍ ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN, FOR RODENT SHIELD DETAIL SEE MISCELLANEOUS DETAILS SHEET 10.

◎ INDICATES WING NUMBER.

▨ COAT WITH PROTECTIVE SURFACE TREATMENT PER THE STANDARD SPECIFICATIONS. PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-32-238

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WEST ABUTMENT DETAILS

SHEET 4 OF 10

57

PLOT TIME: 11:06:16 AM

PLOT DATE: 5/29/2019

FILE NAME : S:\KOV\LLcchd\135898\5-final-dsgn\5i-drawings\20-Struct\bridge\b32238oi.dgn

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8

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FILE NAME : S:\KO\L\Locd\135898\5-final-dsgn\5i-drawings\20-Struct\bridge\b322382.dgn

STATE PROJECT NUMBER

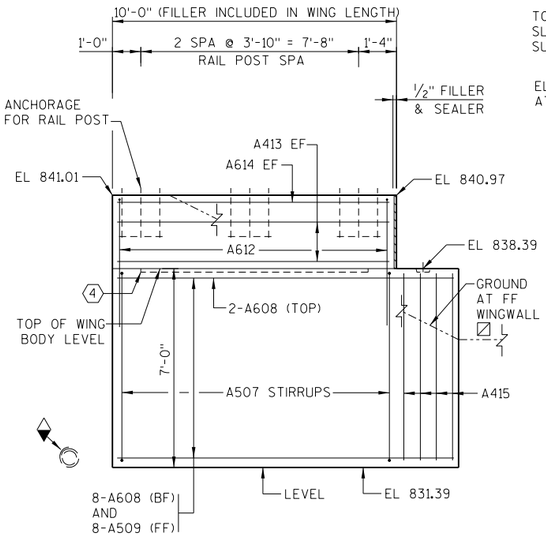
5503-00-70

NOTE: THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE ENGLISH BAR DIAMETER SIZE.

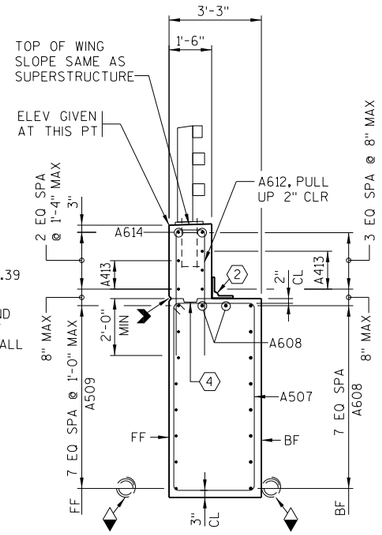
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

BILL OF BARS — WEST ABUTMENT

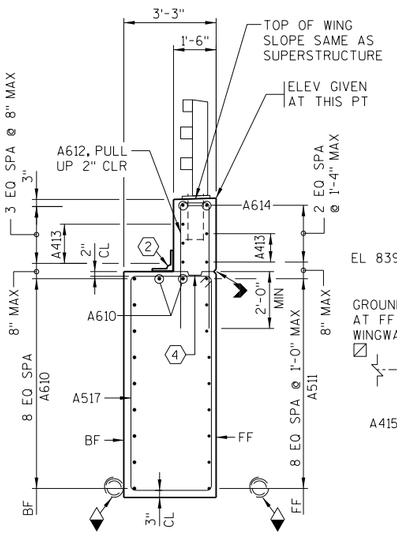
BAR MARK	COAT	NO. REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
A401		5	28 - 0		X	BODY AT PILES
A402		10	2 - 3			BODY AT PILES
A503		44	17 - 11		X	BODY STIRRUPS
A604		12	33 - 3			BODY HORIZ
A805		7	20 - 9		X	BODY HORIZ BF
A506	X	32	2 - 0			BODY DOWELS
A507	X	11	19 - 3		X	WING STIRRUPS WING 1
A608	X	10	12 - 10		X	WING HORIZ BF 1 & TOP
A509	X	8	11 - 9			WING HORIZ FF 1
A610	X	11	12 - 8		X	WING HORIZ BF 2 & TOP
A511	X	9	12 - 5			WING HORIZ FF 2
A612	X	28	9 - 10		X	WING VERT
A413	X	10	9 - 7			WING HORIZ EF
A614	X	4	9 - 7			WING HORIZ EF TOP
A415		8	6 - 5			BODY VERT ABUT ENDS
A816		7	20 - 9		X	BODY HORIZ BF
A517	X	11	21 - 3		X	WING STIRRUPS WING 2
A518		23	6 - 5		X	BODY TOP ADD
A419		4	33 - 3			BODY TOP ADD HORIZ



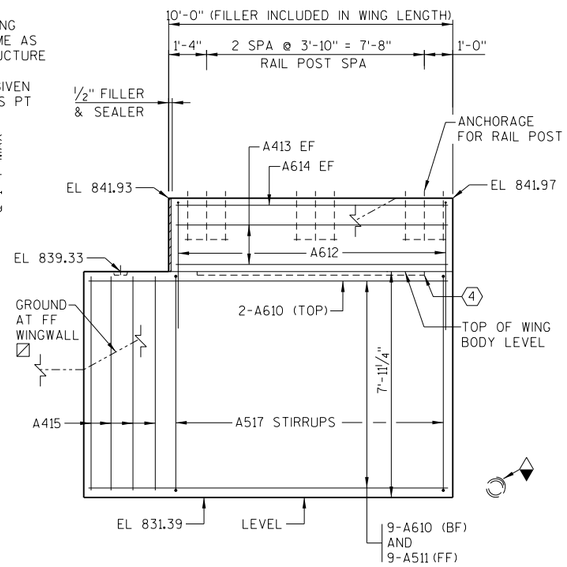
WING 1 SECTION A-A



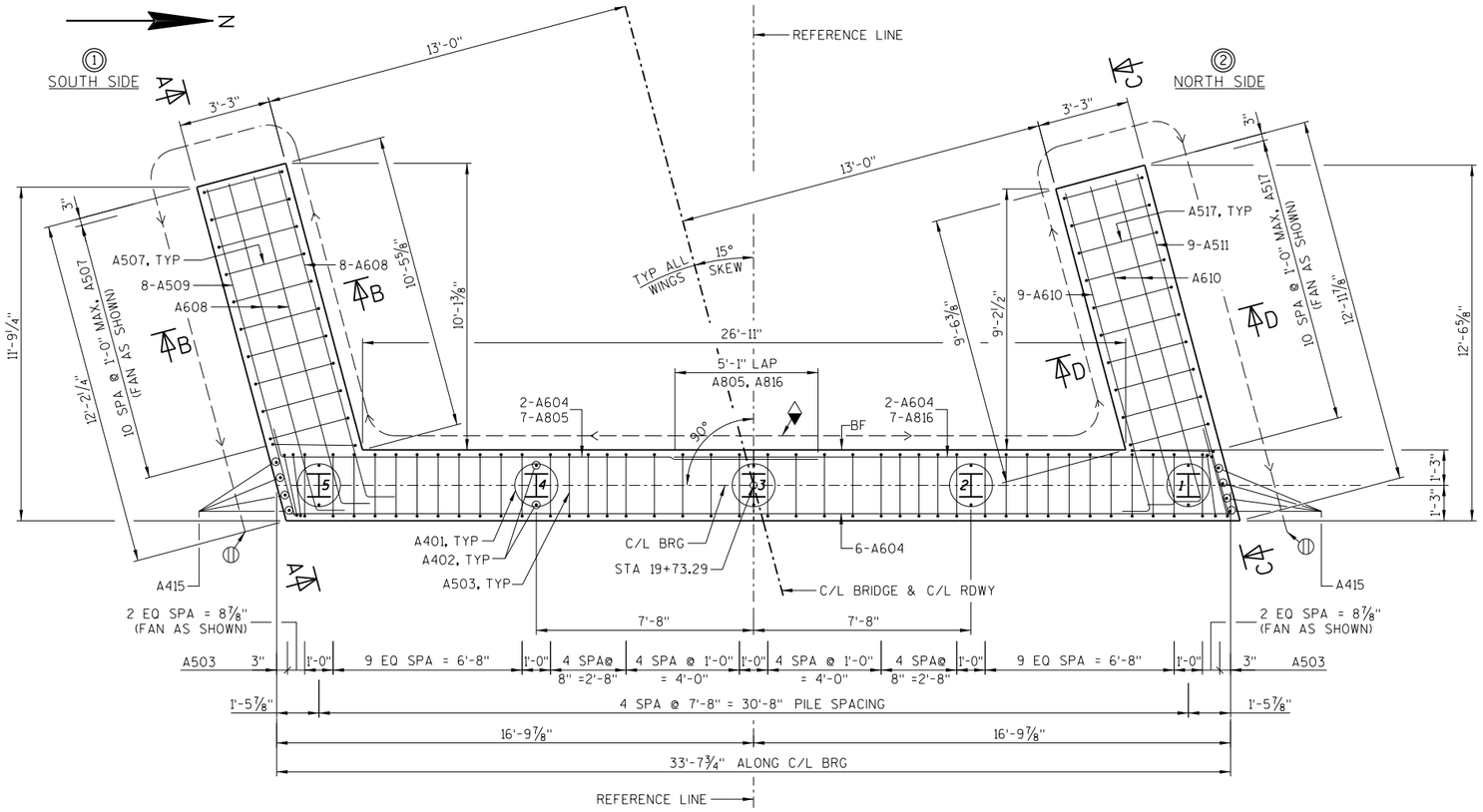
WING 1 SECTION B-B



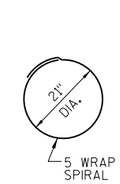
WING 2 SECTION D-D



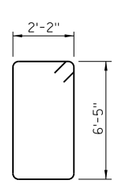
WING 2 SECTION C-C



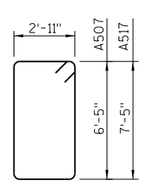
FOOTING LAYOUT



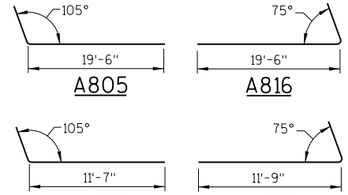
A401



A503

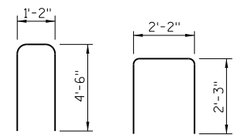


A507, A517

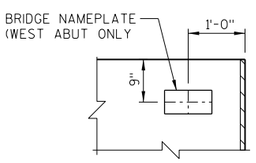


A805 A816

A608 A610



A612 A518



NAMEPLATE LOCATION DETAIL

(ON WING 1 WEST ABUTMENT ONLY)

NOTES:

SEE ABUTMENT NOTES ON SHEET 4 (② ④ ◆ ◍ ◪).

➤ ¾" V-GROOVE ON FF OF WINGWALL.

◎ INDICATES WING NUMBER.

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-32-238

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WEST ABUTMENT DETAILS

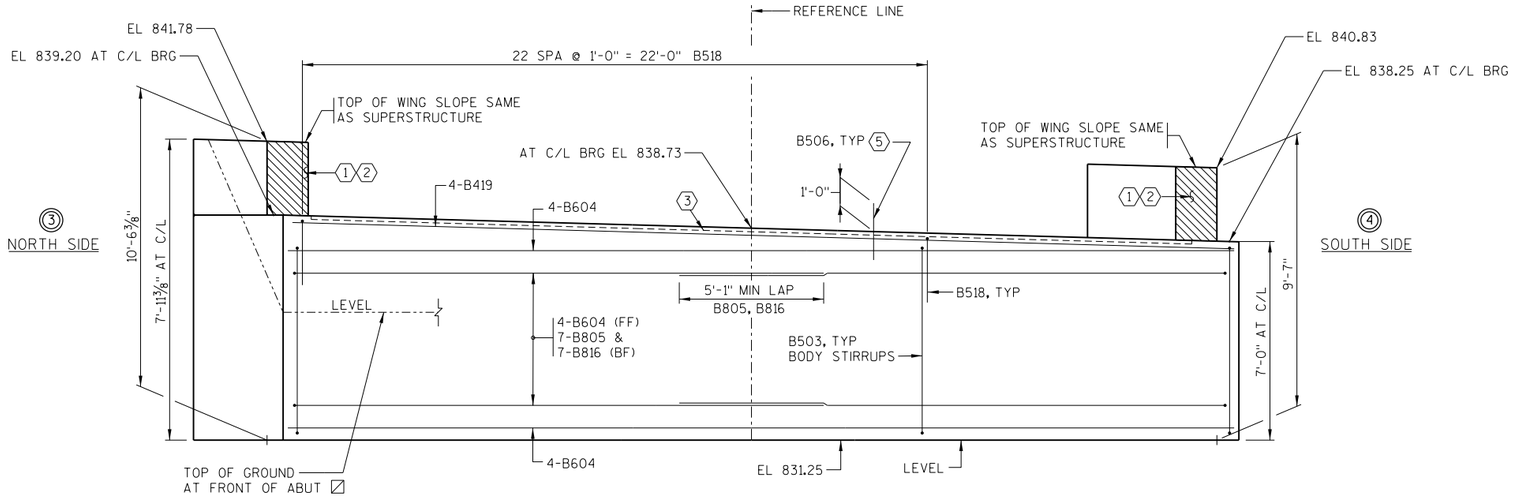
SHEET 5 OF 10

58

8

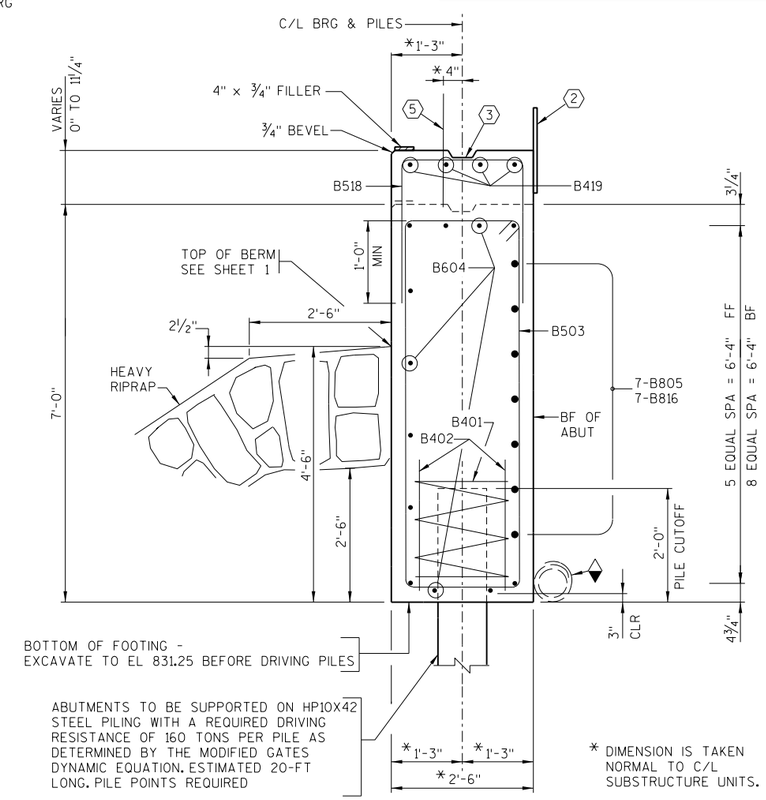
8

STATE PROJECT NUMBER
5503-00-70



EAST FRONT ELEVATION

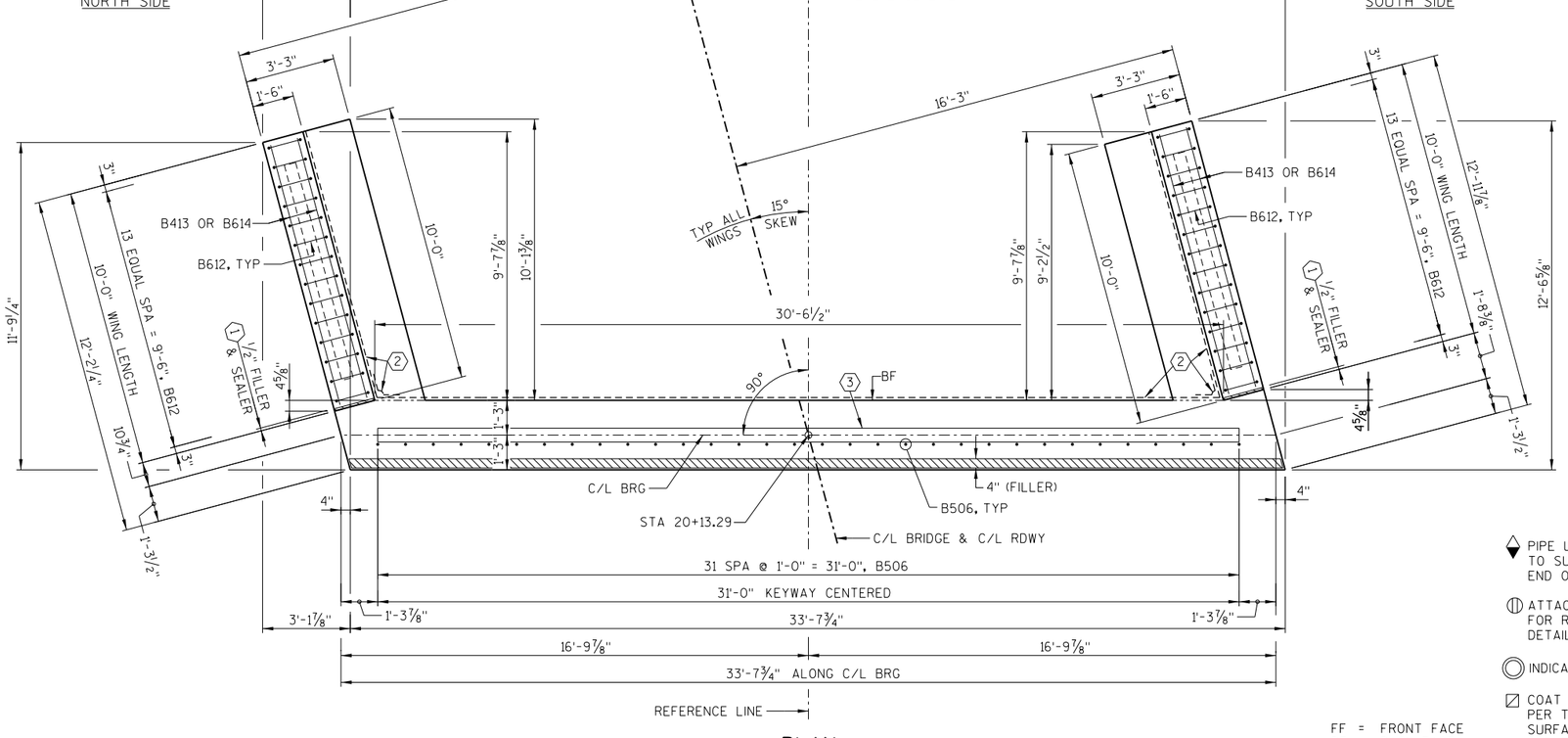
(PILES NOT SHOWN FOR CLARITY)



* DIMENSION IS TAKEN NORMAL TO C/L SUBSTRUCTURE UNITS.

TYPICAL SECTION THRU BODY

ALL HORIZ BARS TO BE B604 UNLESS OTHERWISE SHOWN OR NOTED



PLAN

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

ABUTMENT NOTES

1. SEAL ALL EXPOSED HORIZ. AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). FILLER INCLUDED IN WING LENGTH.
2. 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ & VERT JOINTS ON BACKFACE. VERTICAL WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
3. KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2" X 6".
4. OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY A BEVELED 2" X 6" WITH MEMBRANE ON BACKFACE.
5. B506 SPACED @ 1'-0" AS SHOWN. BARS MAY BE PLACED AFTER CONC HAS BEEN POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE.

ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN, FOR RODENT SHIELD DETAIL SEE MISCELLANEOUS DETAILS SHEET 10.

INDICATES WING NUMBER.

COAT WITH PROTECTIVE SURFACE TREATMENT PER THE STANDARD SPECIFICATIONS. PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-32-238

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EAST ABUTMENT DETAILS

SHEET 6 OF 10

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8

8

PLOT TIME: 11:06:17 AM
PLOT DATE: 5/29/2019
FILE NAME : S:\KOVL\Lcchd\135898\5-final-dsgn\5i-drawings\20-Struct\bridge\b32238ol.dgn

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STATE PROJECT NUMBER

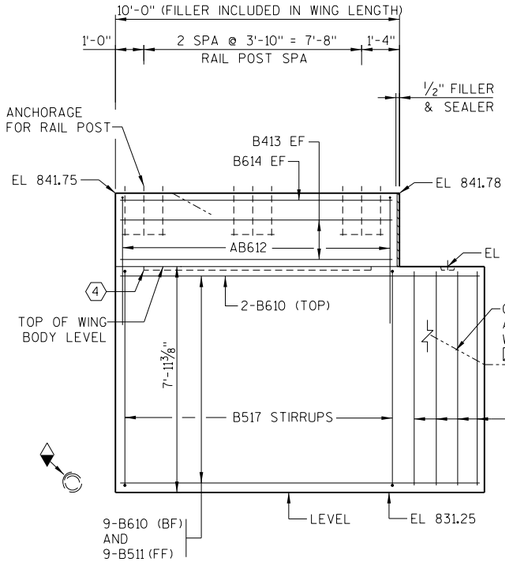
5503-00-70

NOTE: THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE ENGLISH BAR DIAMETER SIZE.

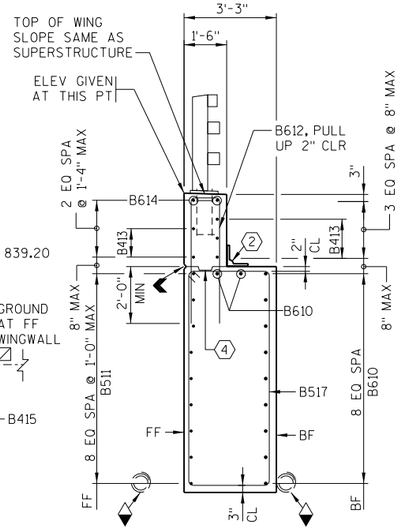
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

BILL OF BARS — EAST ABUTMENT

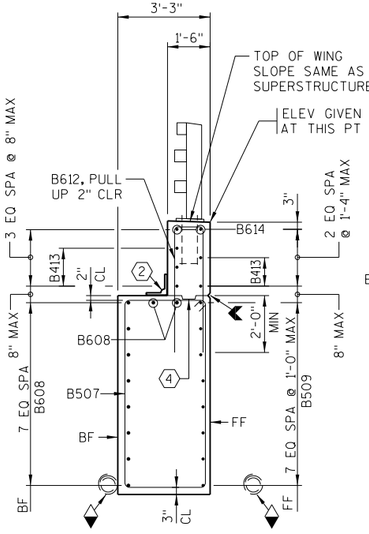
BAR MARK	COAT	NO. REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
B401		5	28 - 0		X	BODY AT PILES
B402		10	2 - 3			BODY AT PILES
B503		44	17 - 11		X	BODY STIRRUPS
B604		12	33 - 3			BODY HORIZ
B805		7	20 - 9		X	BODY HORIZ BF
B506	X	32	2 - 0			BODY DOWELS
B507	X	11	19 - 3		X	WING STIRRUPS WING 4
B608	X	10	12 - 8		X	WING HORIZ BF 4 & TOP
B509	X	8	12 - 5			WING HORIZ FF 4
B610	X	11	12 - 10		X	WING HORIZ BF 3 & TOP
B511	X	9	11 - 9			WING HORIZ FF 3
B612	X	28	9 - 10		X	WING VERT
B413	X	10	9 - 7			WING HORIZ EF
B614	X	4	9 - 7			WING HORIZ EF TOP
B415		8	6 - 5			BODY VERT ABUT ENDS
B816		7	20 - 9		X	BODY HORIZ BF
B517	X	11	21 - 3		X	WING STIRRUPS WING 3
B518		23	6 - 5		X	BODY TOP ADD
B419		4	33 - 3			BODY TOP ADD HORIZ



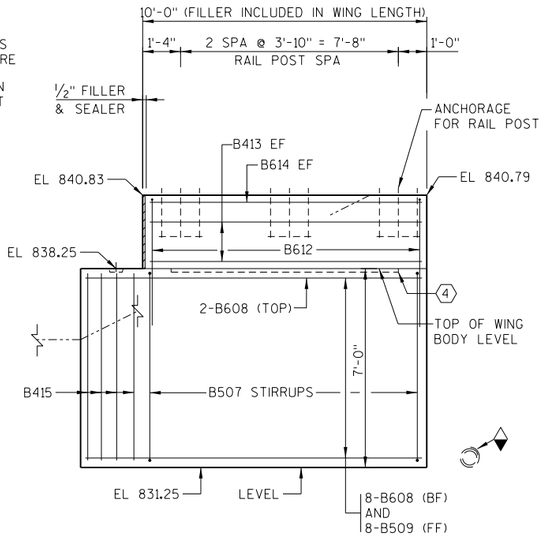
WING 3 SECTION E-E



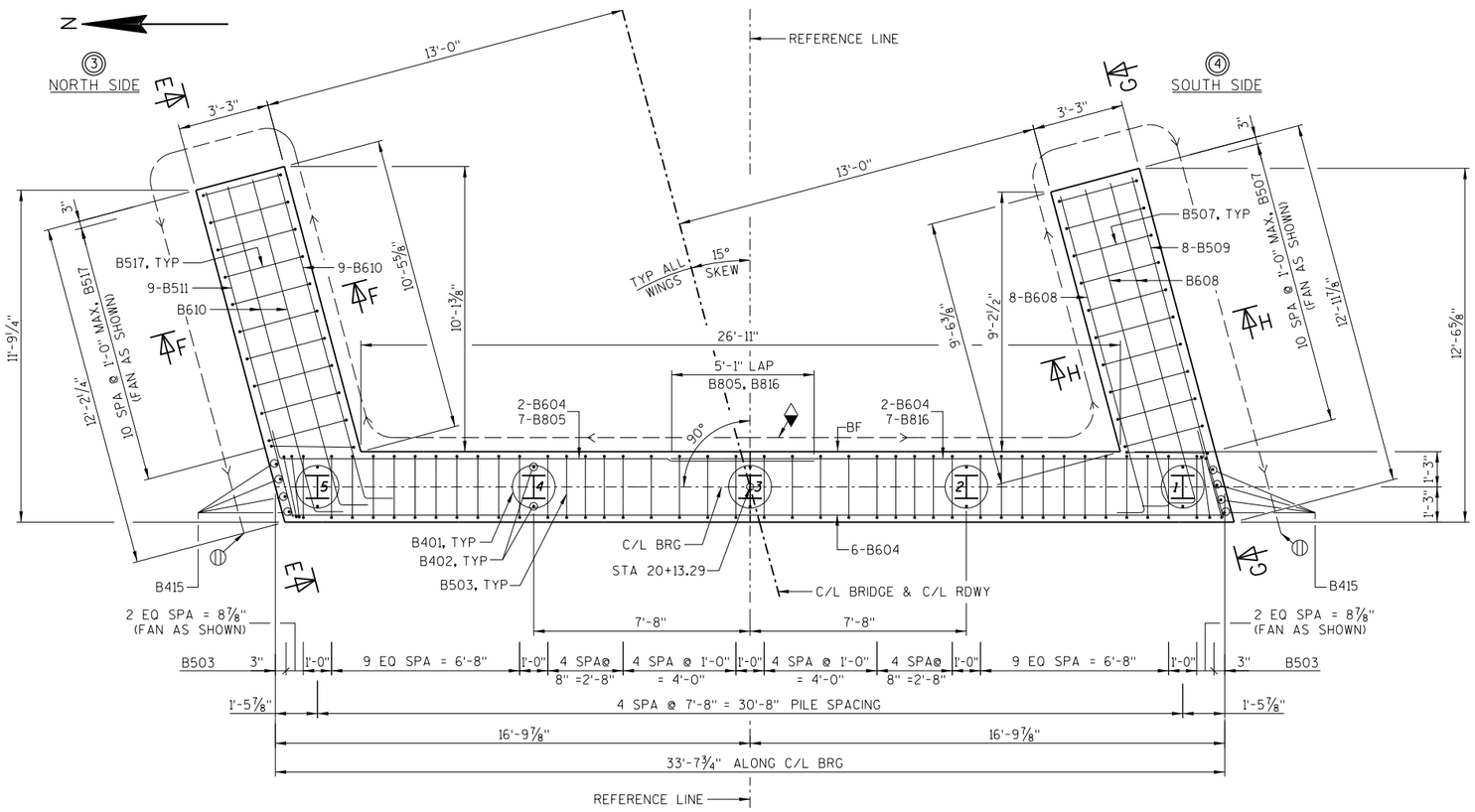
WING 3 SECTION F-F



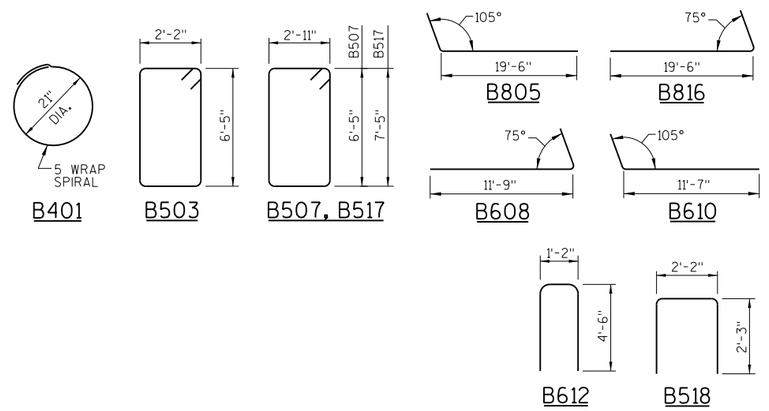
WING 4 SECTION H-H



WING 4 SECTION G-G



FOOTING LAYOUT



NOTES:

SEE ABUTMENT NOTES ON SHEET 6 (② ④ ◆ ◍ ◪).

¾" V-GROOVE ON FF OF WINGWALL.

◎ INDICATES WING NUMBER.

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-32-238

DRAWN BY DLF | PLANS CK'D. CJB

EAST ABUTMENT DETAILS

SHEET 7 OF 10

60

8

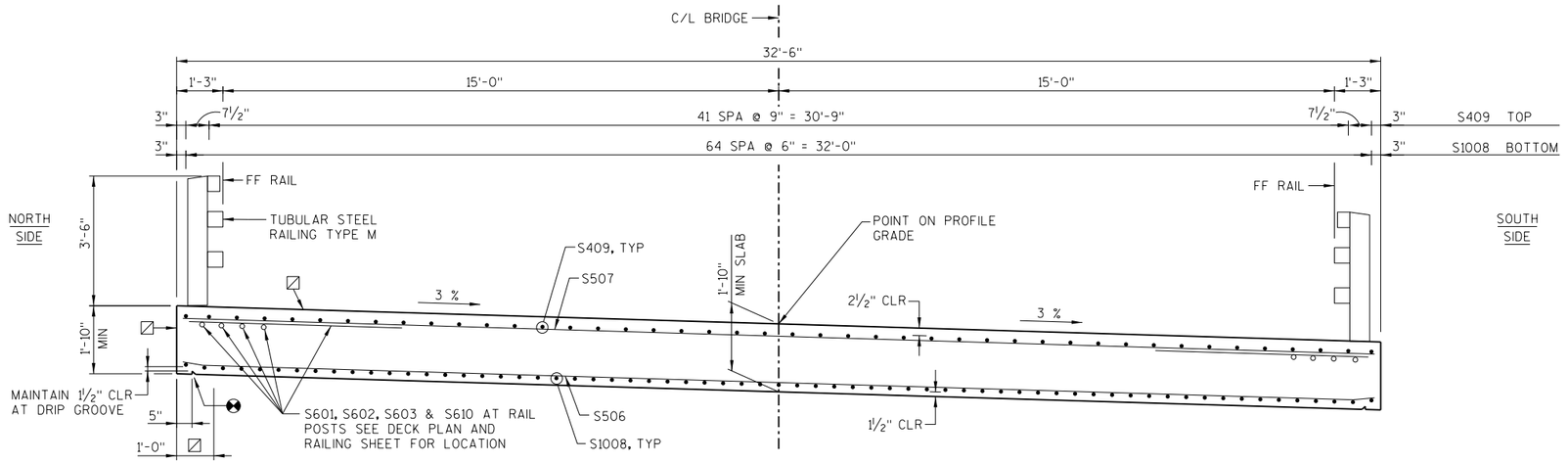
8

PLOT TIME: 11:06:17 AM
PLOT DATE: 5/29/2019
FILE NAME : S:\KOL\LCchd\135898\5-final-dsgn\5i-drawings\20-Struct\bridge\b32238sl.dgn

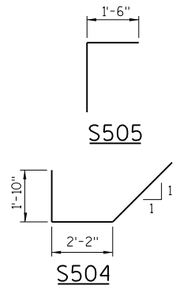
STATE PROJECT NUMBER
5503-00-70

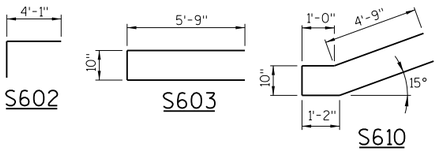
NOTE: THE FIRST ONE OR TWO DIGITS OF THE BAR MARK SIGNIFIES THE ENGLISH BAR DIAMETER SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.



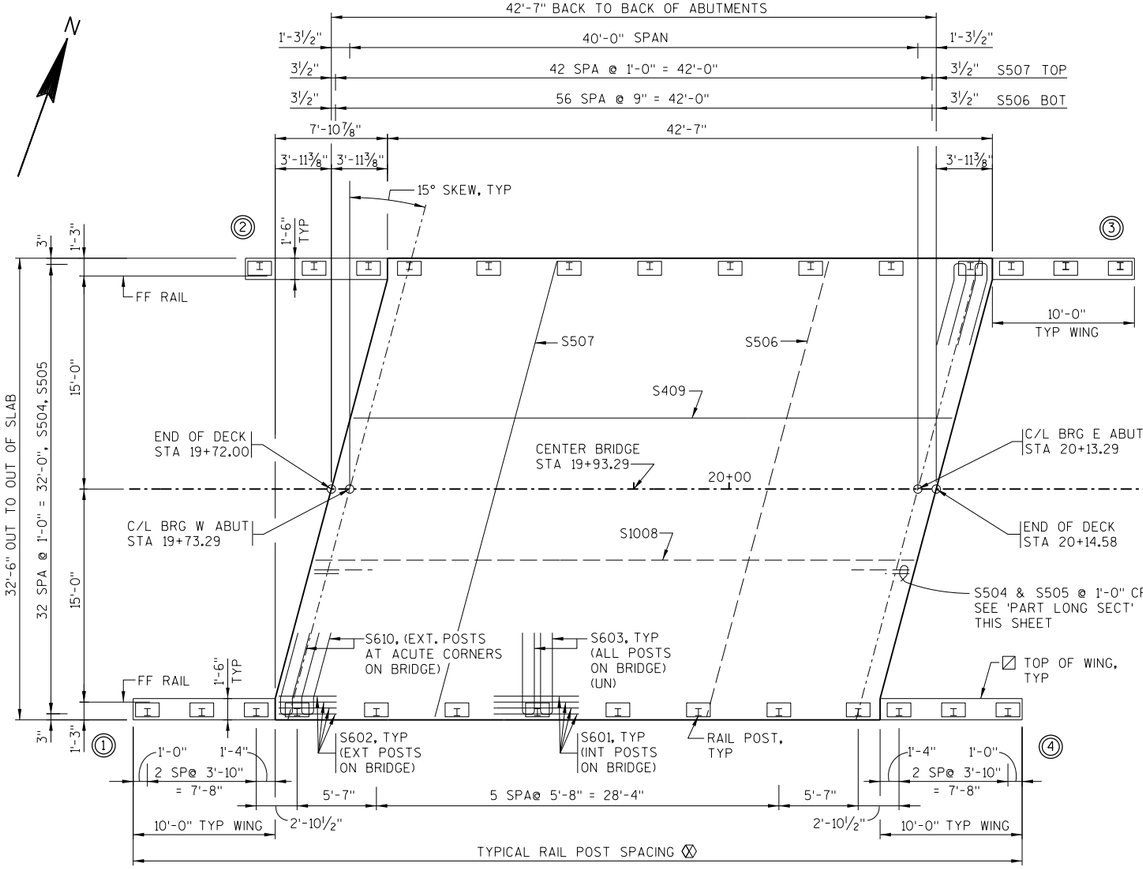
TRANSVERSE SECTION
(LOOKING EAST)



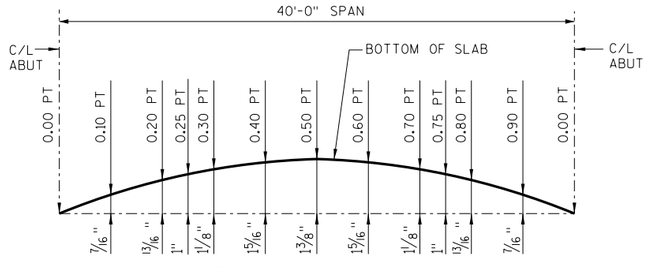


BILL OF BARS SUPERSTRUCTURE

BAR MARK	COAT	NO. REQ'D.	LENGTH (FT-IN)	BAR SERIES	BENT	LOCATION
S601	X	48	6 - 0			RAIL POST
S602	X	16	6 - 0		X	RAIL POST
S603	X	28	12 - 0		X	RAIL POST
S504	X	66	6 - 2		X	END OF DECK
S505	X	66	3 - 4		X	END OF DECK
S506	X	61	33 - 2			BOT TRANS
S507	X	43	33 - 2			TOP TRANS
S1008	X	65	42 - 2			BOT LONG
S409	X	44	42 - 2			TOP LONG
S610	X	4	12 - 0		X	RAIL POST EXT.

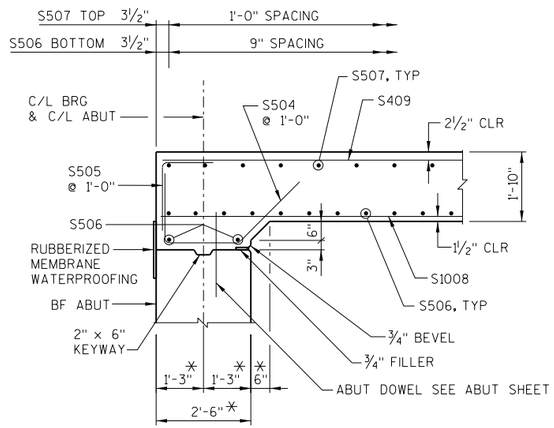


DECK PLAN



CAMBER DIAGRAM

CAMBER SPAN AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE VERTICAL ROADWAY PROFILE OR ALLOWANCE FOR FORM SETTLEMENT. DEAD LOAD DEFLECTION ONLY EQUALS APPROXIMATELY 1/3 OF CAMBER VALUES SHOWN.



AT ABUTMENTS

PARTIAL LONGITUDINAL SECTION

✳ DIMENSION IS TAKEN NORMAL TO C/L SUBSTRUCTURE UNITS

SUPERSTRUCTURE NOTES:

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

PRIOR TO RELEASING SLAB FLASEWORK, TAKE TOP OF SLAB ELEVATIONS AT C/L ABUTMENTS AND 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE LINE AND CROWN OR C/L.

TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE C/L OF SUBSTRUCTURE UNITS.

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

◓ ¾" V-GROOVE, EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT.

▨ COAT WITH PROTECTIVE SURFACE TREATMENT PER THE STANDARD SPECIFICATIONS. PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

Ⓧ TYPICAL EACH SIDE OF DECK. MEASURED ALONG EDGE OF DECK.

FF = FRONT FACE
BF = BACK FACE
EF = EACH FACE

UN = UNLESS NOTED OTHERWISE

◯ INDICATES WING NUMBER.

——— INDICATES TOP BAR STEEL REINFORCEMENT

— — — — INDICATES BOTTOM BAR STEEL REINFORCEMENT

FINAL TOP OF DECK ELEVATIONS

	SPAN										
	WEST ABUT	.1	.2	.3	.4	.5	.6	.7	.8	.9	EAST ABUT
NORTH EDGE OF DECK	841.92	841.90	841.89	841.88	841.86	841.85	841.83	841.82	841.81	841.79	841.78
C/L	841.44	841.43	841.42	841.40	841.39	841.38	841.36	841.35	841.33	841.32	841.31
SOUTH EDGE OF DECK	840.97	840.96	840.94	840.93	840.92	840.90	840.89	840.88	840.86	840.85	840.83

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

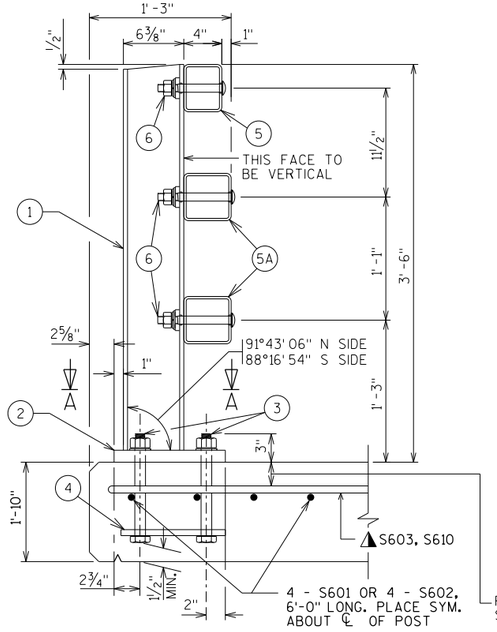
STRUCTURE B-32-238

DRAWN BY DLF | PLANS CK'D. CJB

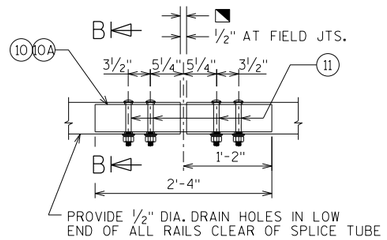
SUPERSTRUCTURE DETAILS

SHEET 8 OF 10
61

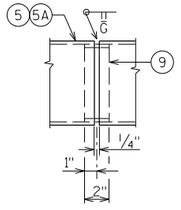
8



SECTION THRU RAILING ON DECK

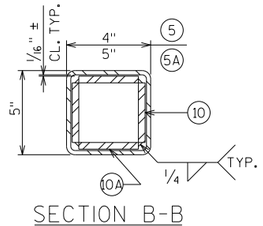


FIELD ERECTION JOINT DETAIL

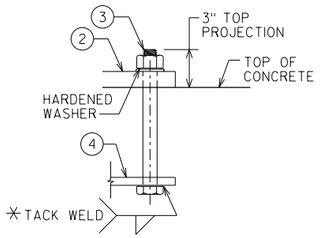


SHOP RAIL SPLICE DETAIL

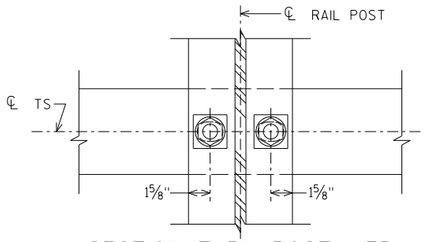
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



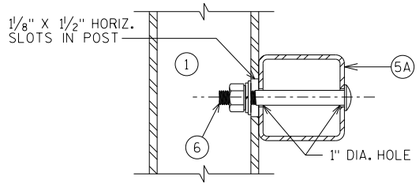
SECTION B-B



ANCHOR BOLTS



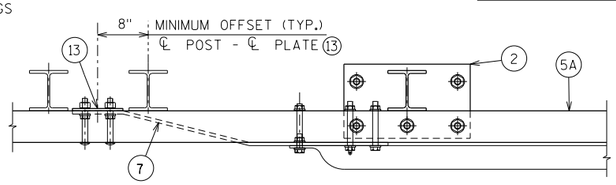
SECTION THRU POST WEB



SECTION THRU RAIL

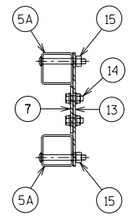
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

THRIE BEAM RAIL ATTACHMENT



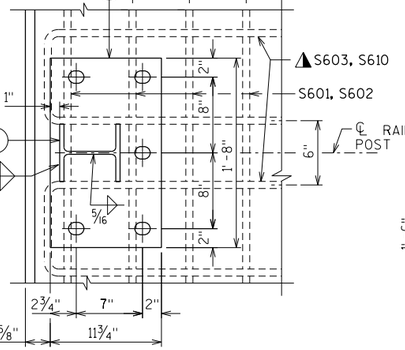
SECTION C-C

LEGEND

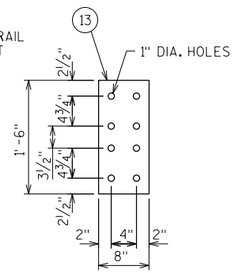
1. W6 x 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1¼" x 11¾" x 1'-8" WITH 1⅝" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
3. ASTM A449 - 1½" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10¾" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
4. ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1¾" DIA. HOLES FOR ANCHOR BOLTS NO. 3
5. TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
5A. TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
6. ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1⅝" X 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
7. ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
8. 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
9. SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".
10. ⅜" X 3⅝" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
10A. ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
11. ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.
12. ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
13. ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
14. ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
15. 1" DIA. HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

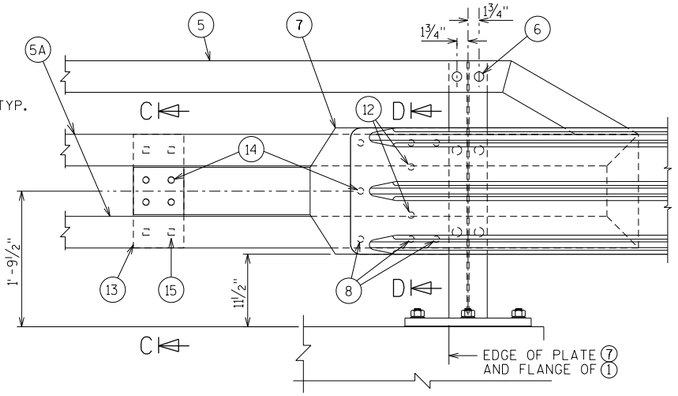
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-32-328" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.



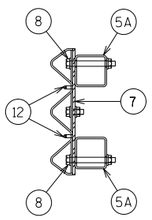
SECTION A-A



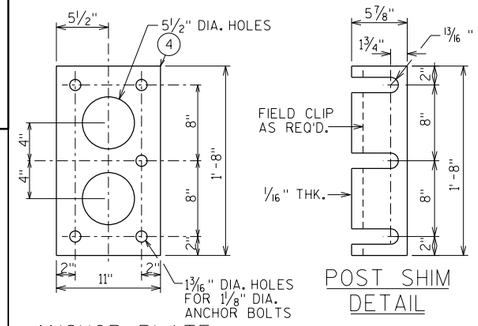
ANCHOR PLATE
AT BEAM GUARD ATTACHMENT



DETAIL AT END POST
THRIE BEAM RAIL ATTACHMENT

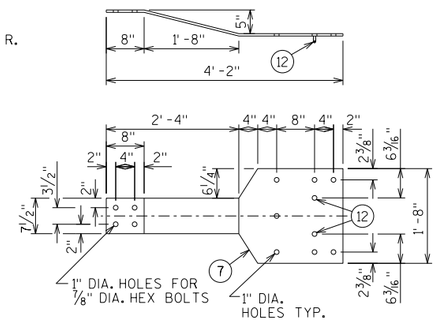


SECTION D-D

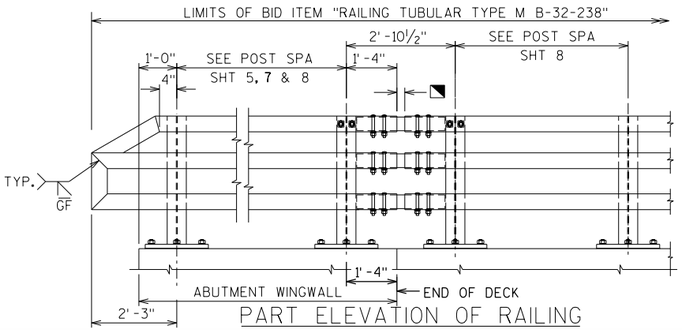


ANCHOR PLATE
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL
AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

TIE TO TOP MAT OF STEEL.

✳ FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

½" OPENING FOR A1 ABUTMENT.

SEE SHEET 5, 7 & 8 FOR RAIL POST SPACING.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-32-238

DRAWN BY DLF | PLANS CK'D. CJB

TUBULAR STEEL RAILING TYPE 'M'

SHEET 9 OF 10
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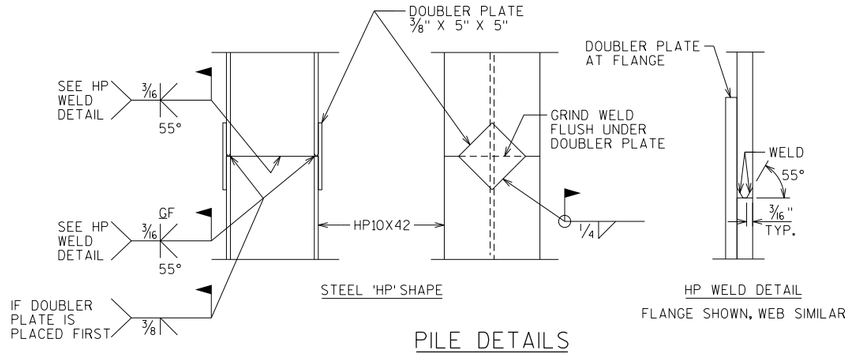
PLOT DATE: 5/29/2019
PLOT TIME: 11:06:17 AM
FILE NAME : S:\KOL\Lcchd\135898\5-final-dsgn\5i-drawings\20-Struct\bridge\b32238railm.dgn

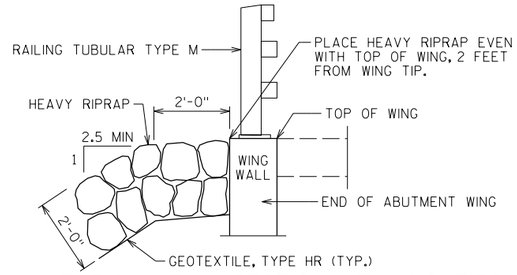


STEEL 'HP' SHAPE

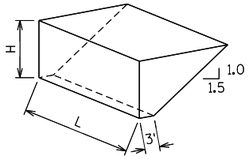
HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

PILE DETAILS

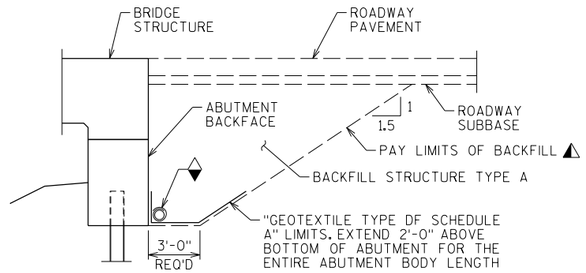


TYPICAL FILL SECTION AT WING TIPS



ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

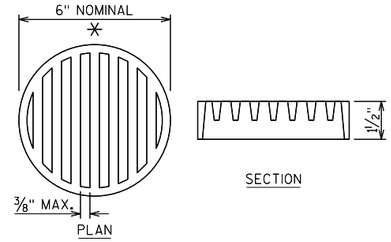
L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)
V_{CY} = V_{CF} (EF)/27
V_{TON} = V_{CY} (2.0)



TYPICAL SECTION THRU ABUTMENT

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

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



SECTION

PLAN

RODENT SHIELD DETAIL

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

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-32-238

DRAWN BY DLF | PLANS CK'D. CJB

MISCELLANEOUS DETAILS

SHEET 10 OF 10

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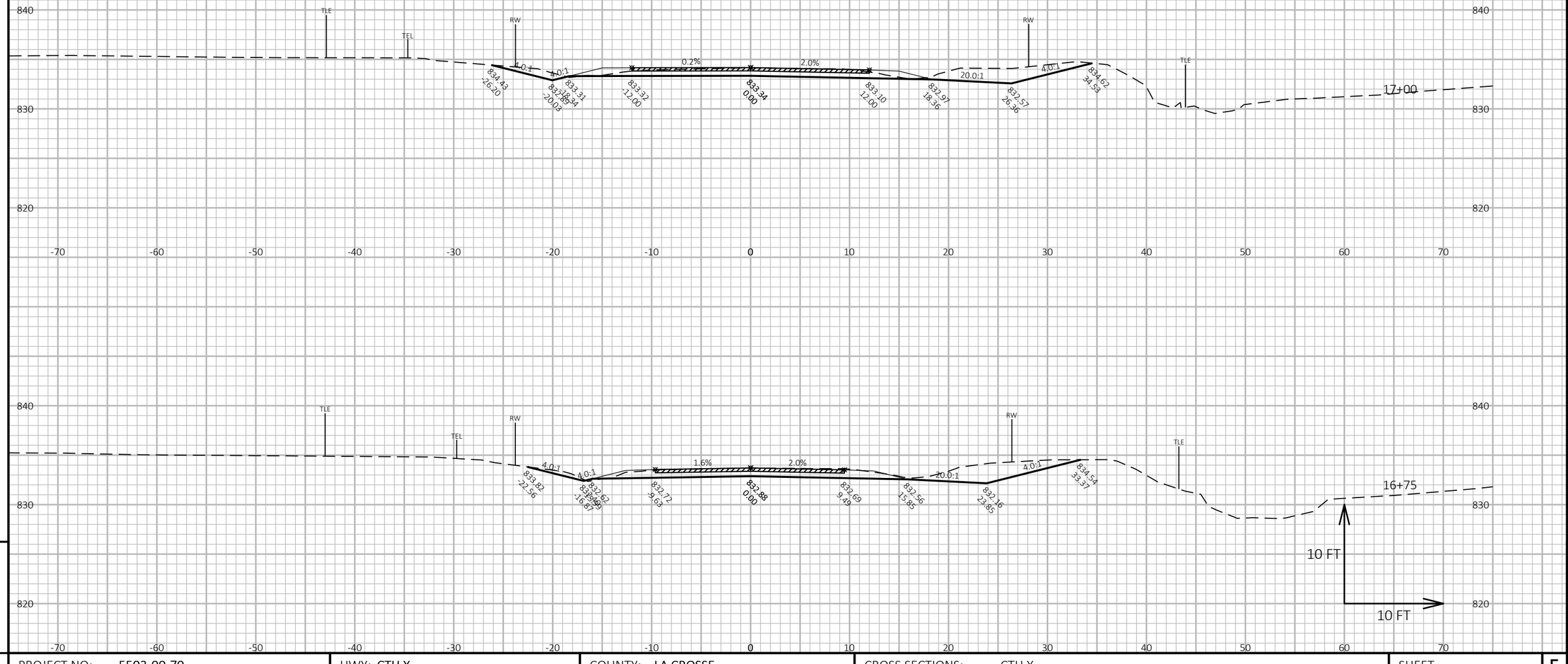
8

EARTHWORK SUMMARY

			AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		
							Expanded		
STATION	Real Station	Distance	Cut	Fill	Cut	Fill (1)	Cut 1.00	Fill 1.30 (2)	Mass Ordinate
16+75	1675.00	0.00	42.21	0.20	0	0	0	0	0
17+00	1700.00	25.00	40.93	0.10	38	0	38	0	38
17+50	1750.00	50.00	30.81	9.40	66	9	105	12	93
18+00	1800.00	50.00	5.00	36.37	33	42	138	67	71
18+50	1850.00	50.00	0.00	116.12	5	141	143	250	-108
19+00	1900.00	50.00	107.06	264.38	99	352	242	708	-466
19+50	1950.00	50.00	105.15	179.32	196	411	438	1,242	-804
20+00	2000.00	50.00	530.28	67.99	588	229	1,027	1,540	-513
20+50	2050.00	50.00	11.05	12.83	501	75	1,528	1,637	-109
21+00	2100.00	50.00	34.54	5.66	42	17	1,570	1,660	-90
21+50	2150.00	50.00	31.66	2.72	61	8	1,631	1,670	-39
21+75	2175.00	25.00	26.20	0.62	27	2	1,658	1,672	-14
TOTALS					1,658	1,286			

(1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY
(2) - FILL EXPANSION 30%
EXISTING ASPHALTIC PAVEMENT IS INCLUDED IN COMMON EXCAVATION TOTALS
EARTHWORK FOR STREAM REALIGNMENT IN INCLUDED IN TOTALS



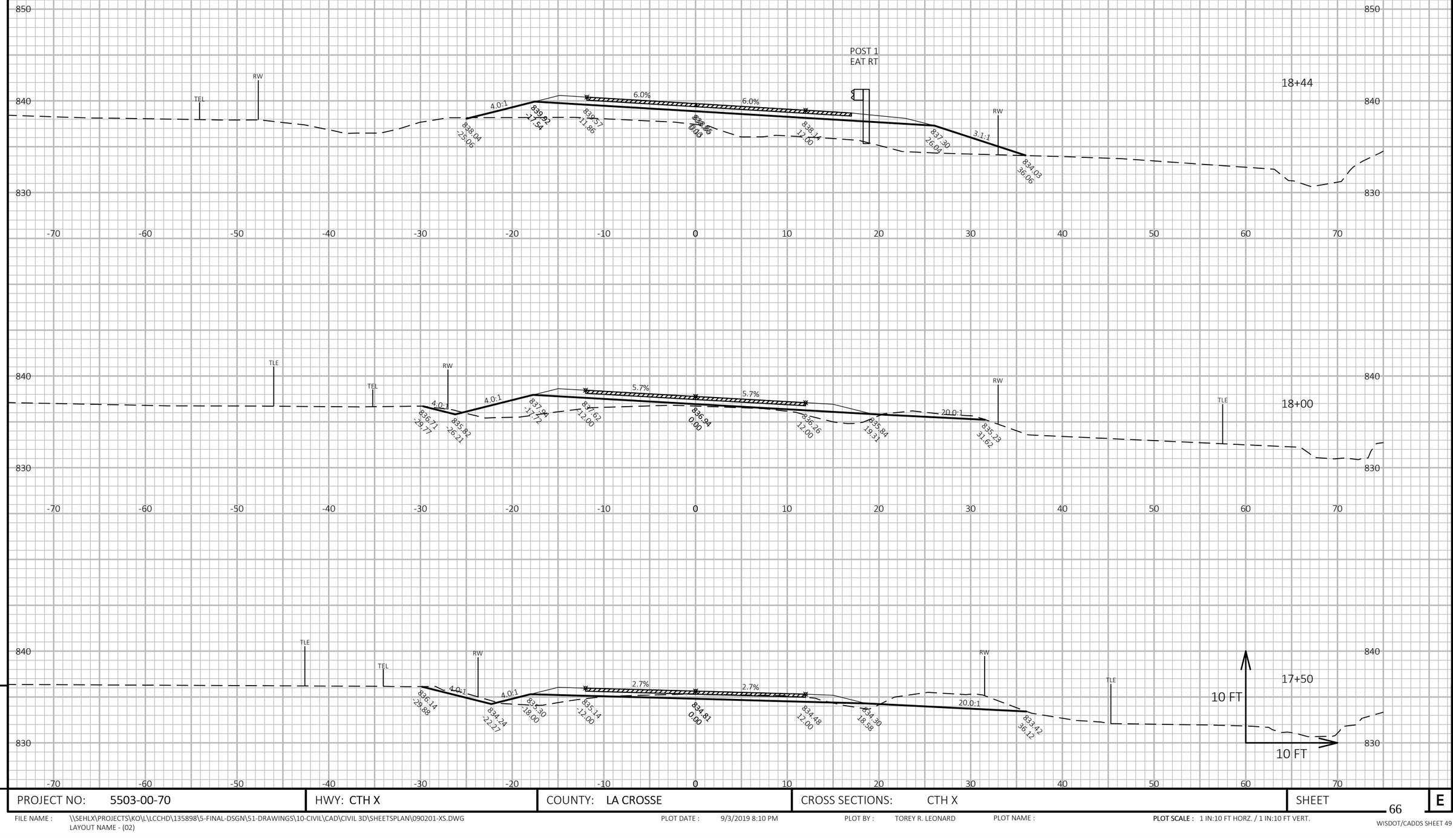
PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 65

FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (01)

PLOT DATE : 9/3/2019 8:10 PM PLOT BY : TOREY R. LEONARD PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

9 E

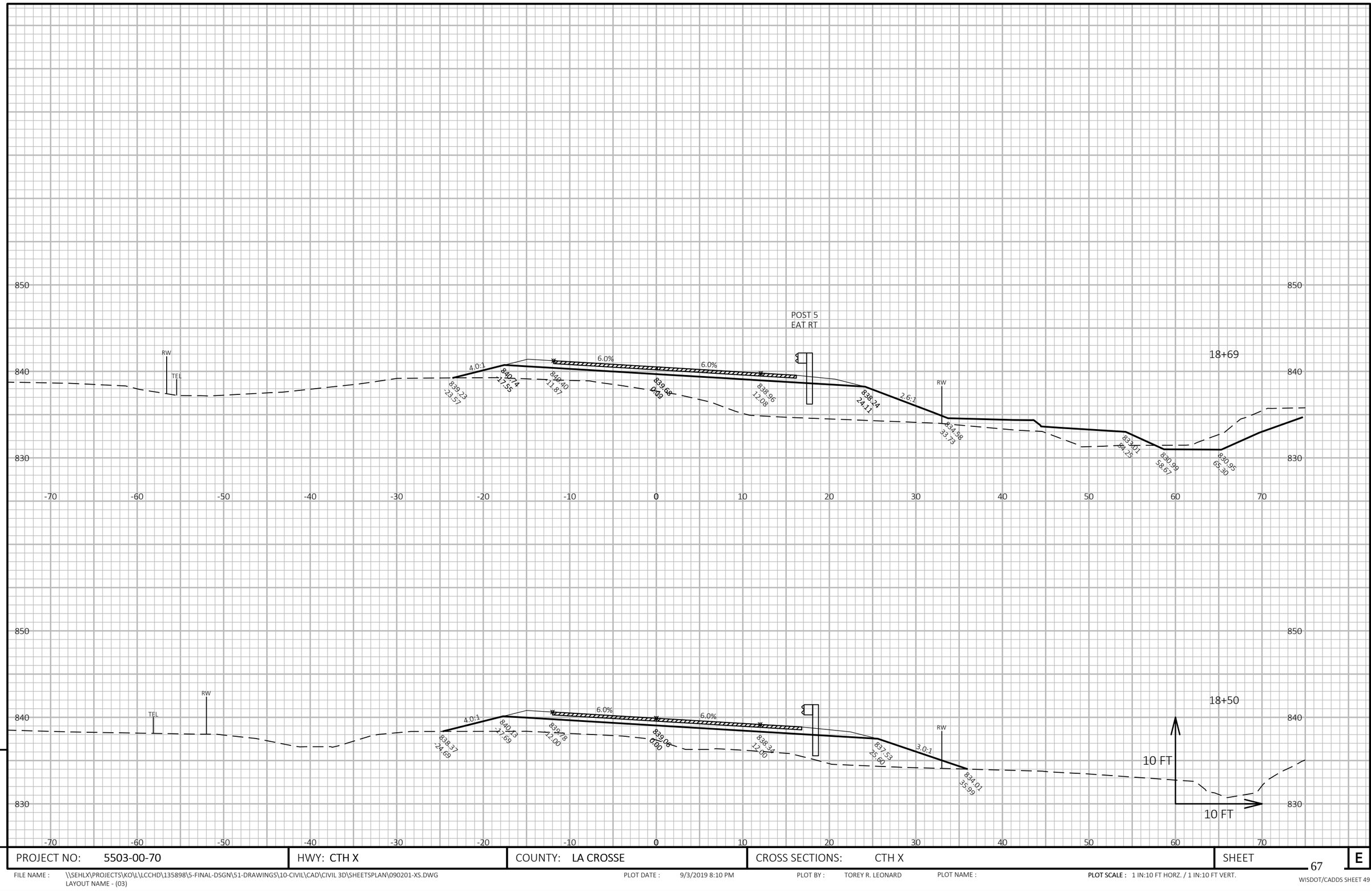


PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 66 E

FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (02)

PLOT DATE : 9/3/2019 8:10 PM PLOT BY : TOREY R. LEONARD PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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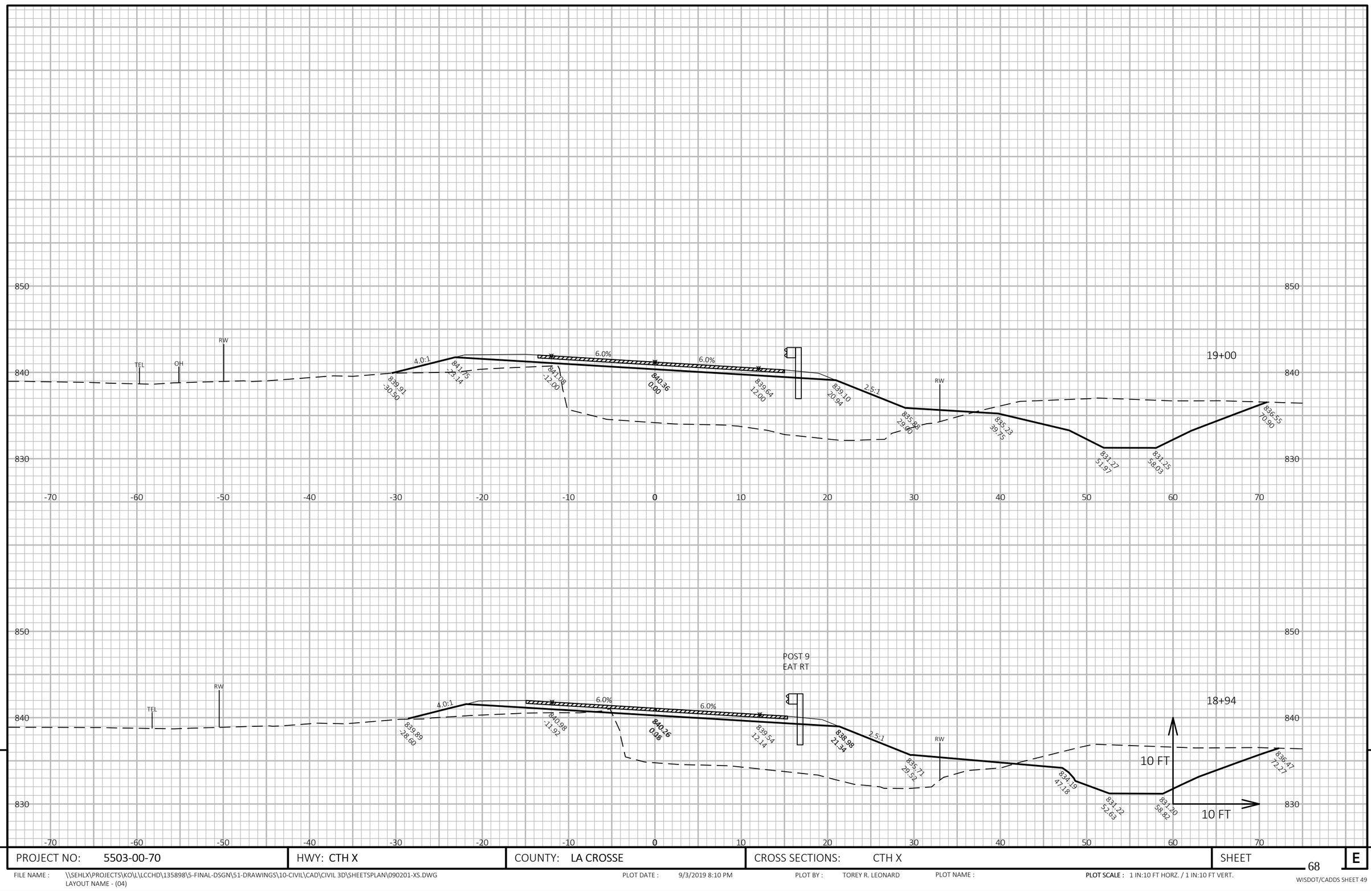
PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 67	E

FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (03)

PLOT DATE : 9/3/2019 8:10 PM PLOT BY : TOREY R. LEONARD PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



9

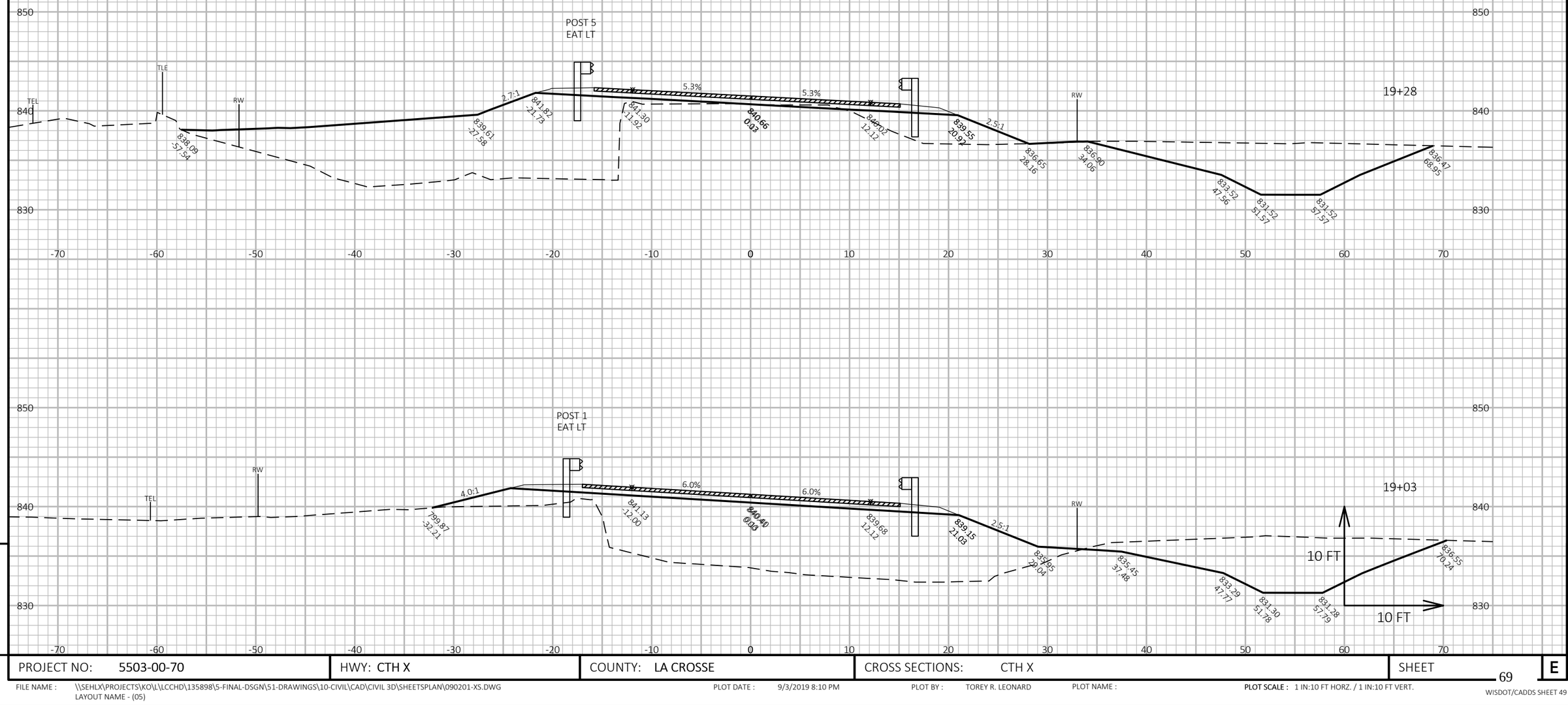
9

PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 68	E

FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (04)

PLOT DATE : 9/3/2019 8:10 PM PLOT BY : TOREY R. LEONARD PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 69	E

FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (05)

PLOT DATE : 9/3/2019 8:10 PM

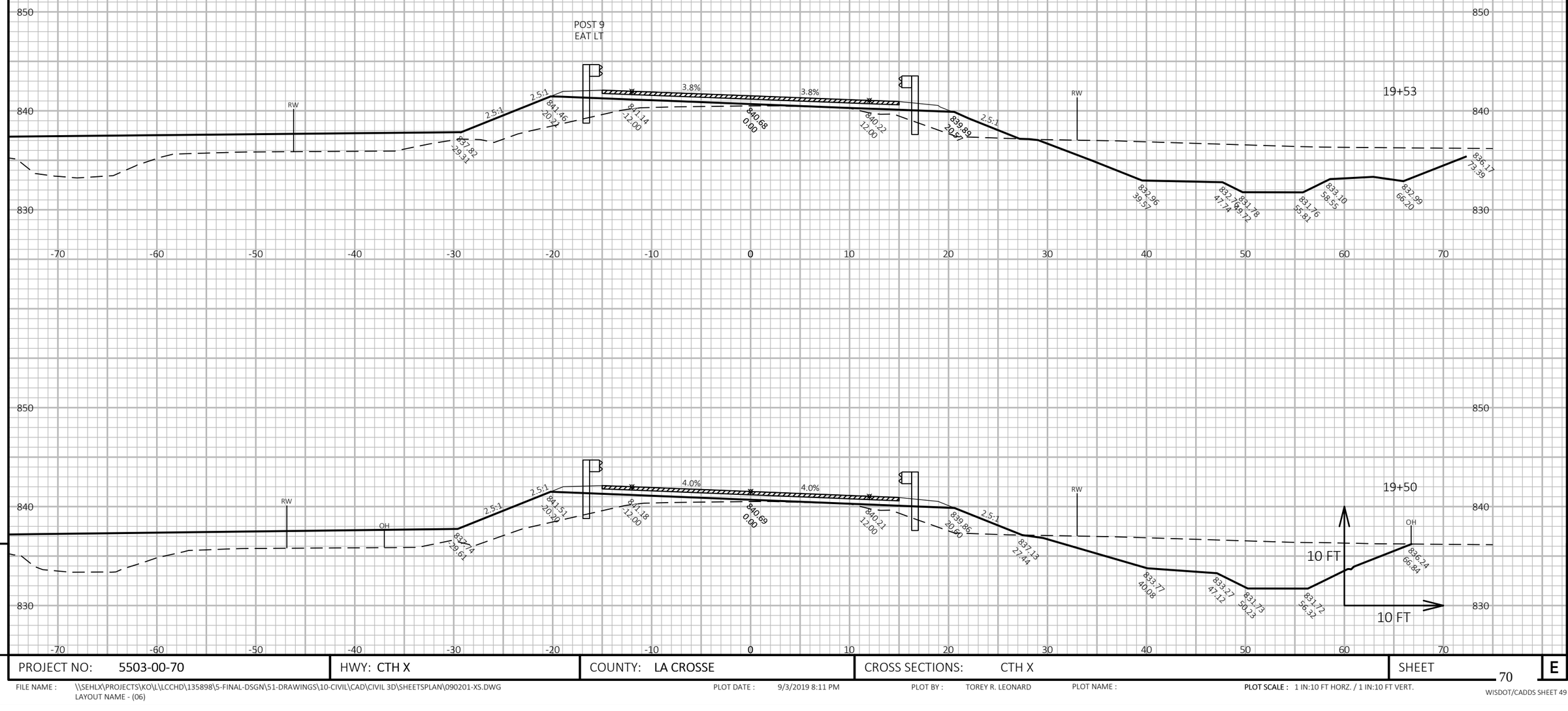
PLOT BY : TOREY R. LEONARD

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

STRUCTURE B-32-0238



9

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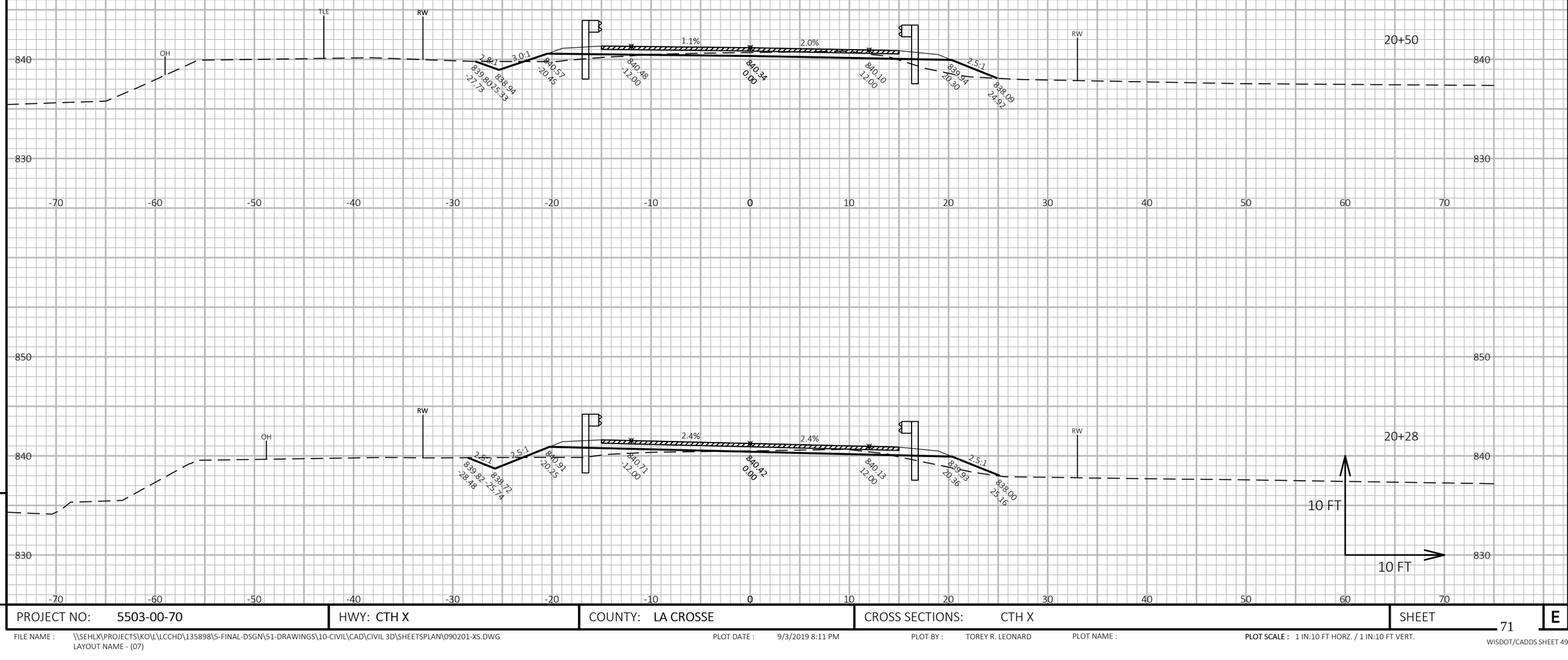
PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 70	E

FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (06)

PLOT DATE : 9/3/2019 8:11 PM PLOT BY : TOREY R. LEONARD PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



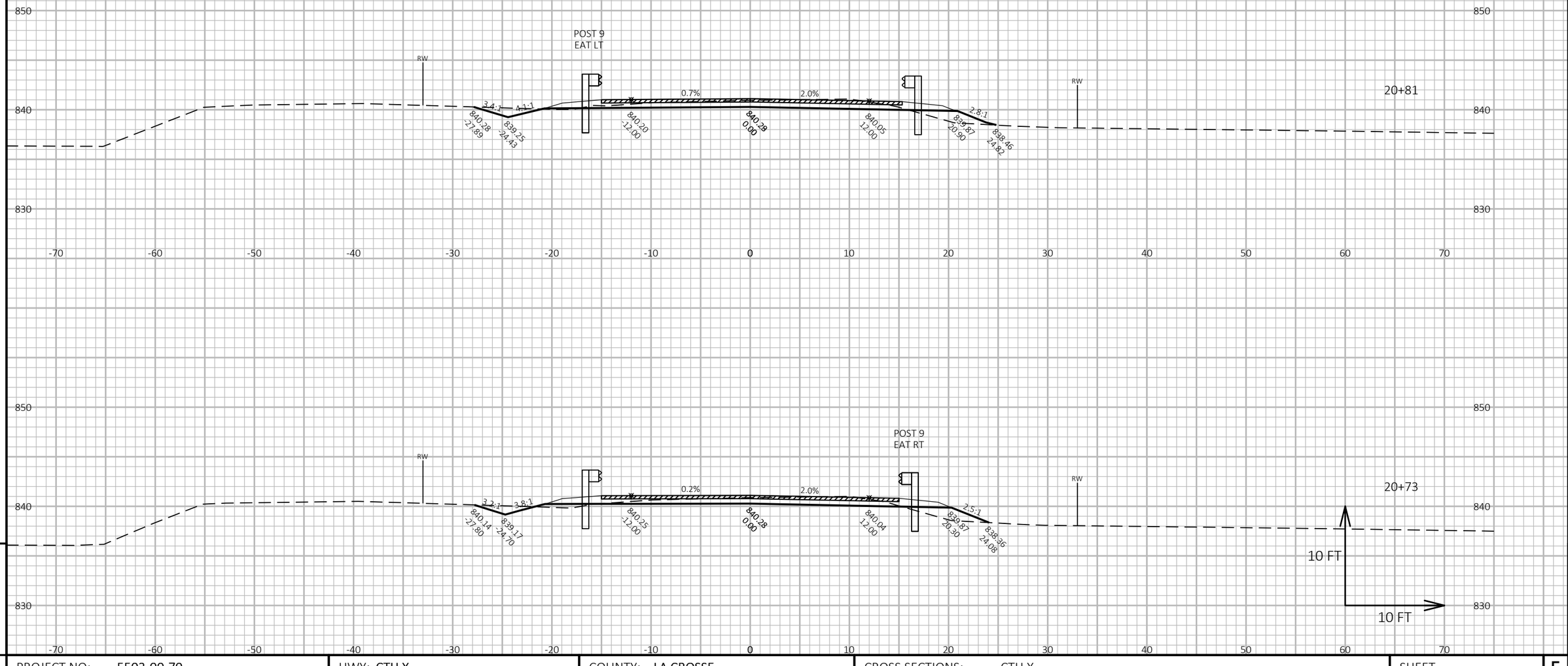
9

9

PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 71	E

FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (07)

PLOT DATE : 9/3/2019 8:11 PM PLOT BY : TOREY R. LEONARD PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 72	E

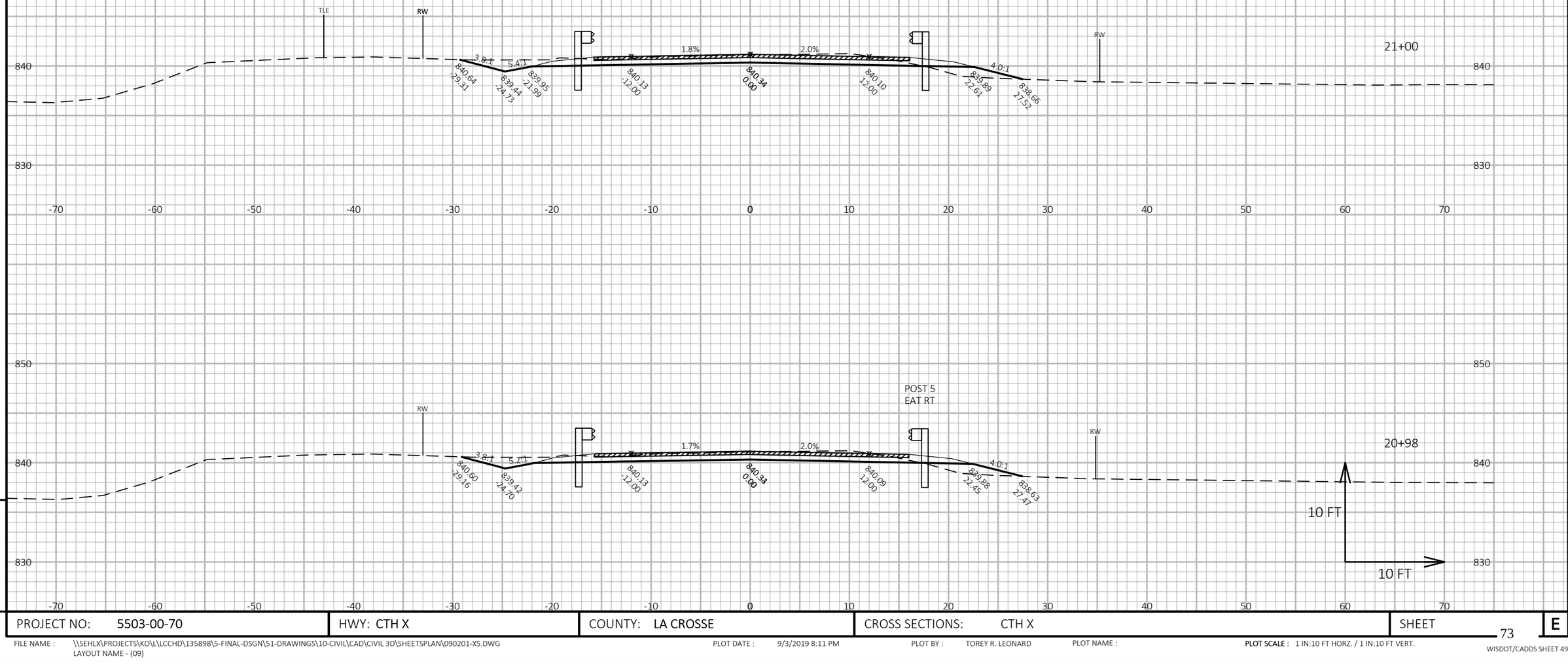
FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (08)

PLOT DATE : 9/3/2019 8:11 PM

PLOT BY : TOREY R. LEONARD

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

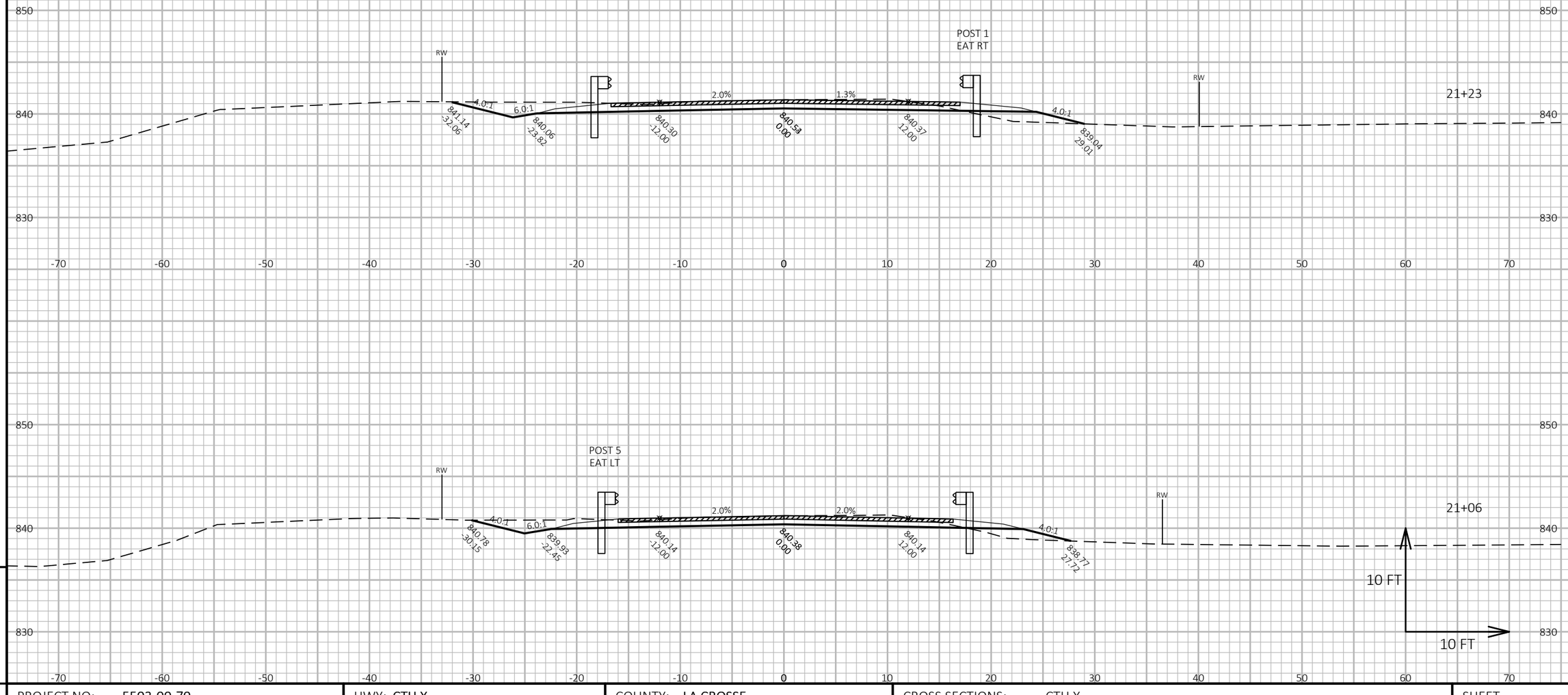


PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 73

FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (09)

PLOT DATE : 9/3/2019 8:11 PM PLOT BY : TOREY R. LEONARD PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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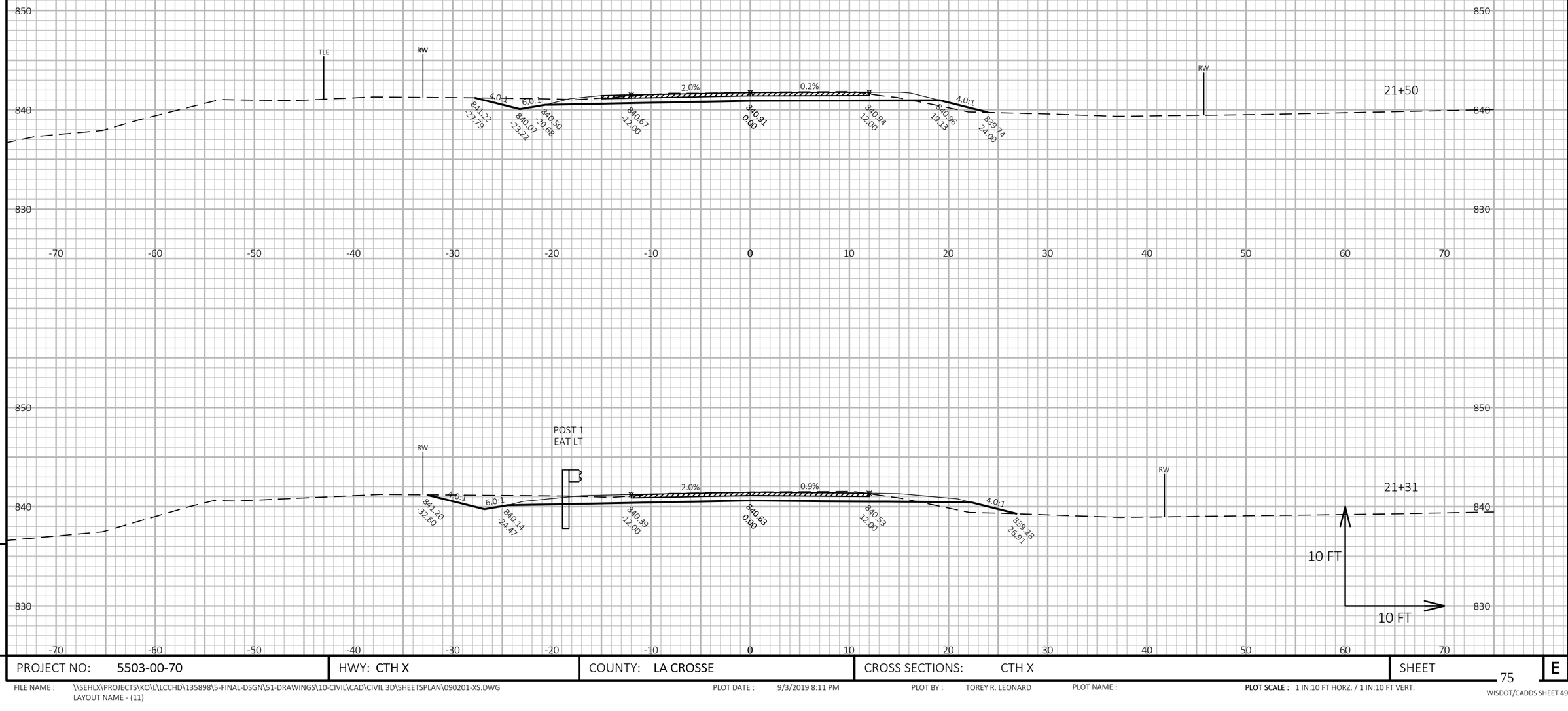
PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 74	E

FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (10)

PLOT DATE : 9/3/2019 8:11 PM PLOT BY : TOREY R. LEONARD PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.



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9

PROJECT NO: 5503-00-70	HWY: CTH X	COUNTY: LA CROSSE	CROSS SECTIONS: CTH X	SHEET 75	E

FILE NAME : \\SEHLX\PROJECTS\KO\L\LCCHD\135898\5-FINAL-DSGN\51-DRAWINGS\10-CIVIL\CAD\CIVIL 3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - (11)

PLOT DATE : 9/3/2019 8:11 PM PLOT BY : TOREY R. LEONARD PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

Wisconsin Department of Transportation

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