WKE

AUG 2018

PROJECT ID: 3840-01-72

WITH: N/A

COUNTY: WALWORTH

ORDER OF SHEETS

TOTAL SHEETS = 84

PROJECT LOCATION

05

DESIGN DESIGNATION

A.A.D.T.	2018	=	1400
A.A.D.T.	2038	=	1700
D.H.V.	2038	=	136
D.D.		=	60/40
T		=	4.7%
DESIGN SPEED		=	60 MPH
ESALS		=	120,000

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH DD

BRIDGE OVER SUGAR CREEK (B-64-180)

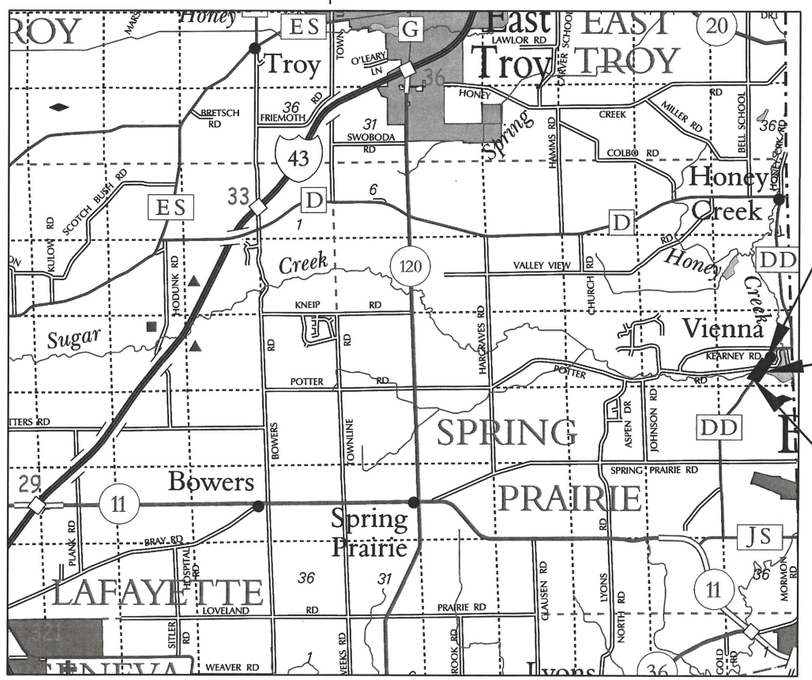
CTH DD

WALWORTH COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3840-01-72		

STATE PROJECT NUMBER

3840-01-72



END PROJECT 3840-01-72
STA. 307+00

STRUCTURE B-64-180

BEGIN PROJECT 3840-01-72
STA. 304+00
Y = 381011.329
X = 823607.052

LAYOUT
SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.057 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WALWORTH COUNTY COORDINATES, 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.

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF NAVD 88 (2012A).

ACCEPTED FOR WALWORTH COUNTY

3-27-18 DATE

COUNTY ENGINEER

ORIGINAL PLANS PREPARED BY

WISCONSIN PHILIP J. BAIN JR. E-34[illegible] WAUWATOSA, WI PROFESSIONAL ENGINEER

03/28/2018 (Date)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AYRES ASSOCIATES
Designer	AYRES ASSOCIATES
Management Consultant	DAAR ENGINEERING, INC
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 4/5/18 (Management Consultant Signature)

E

2

GENERAL NOTES

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPALITY OR PUBLIC AGENCY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

SAW CUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECTED TO ADJUSTMENT BY THE ENGINEER IN FIELD. THE LINE OF SUCH SAW CUTS WILL BE NEATLY DELINEATED THROUGH THE ASPHALT WITHOUT ANY DAMAGE TO THE REMAINING PORTION OF THE EXISTING PAVEMENT.

PROPERTY LINES AS SHOWN ARE APPROXIMATE.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER. CLEARING AND GRUBBING LIMITS TO BE MARKED BY ENGINEER.

BEARINGS SHOWN ON THIS PLAN ARE TRUE BEARINGS TO THE NEAREST SECOND.

PLACE EROSION CONTROL MEASURES AS SHOWN ON THE EROSION CONTROL PLAN. THE EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ELEVATIONS SHOWN ON THE ROADWAY CROSS SECTIONS ARE SUBGRADE ELEVATIONS.

RE-TOPSOIL GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED AND EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN (7) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED AND MULCH WITHIN 24 HOURS.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL IMMEDIATELY BE PROTECTED AGAINST EROSION WITH SILT FENCE AND TEMPORARY SEED, OR AS DIRECTED BY THE ENGINEER.

DO NOT PUMP WATER FROM THE CONSTRUCTION SITE TO A STORM WATER CONVEYANCE WITHOUT THE WATER FIRST PASSING THROUGH A SEDIMENT TRAP OR FILTER BAG IN ACCORDANCE WITH THE CONSTRUCTION DETAIL: TEMPORARY SETTLING BASIN WITH SEDIMENT BAG.

ALL HMA PAVEMENT SHALL BE CONSTRUCTED WITH THE FOLLOWING LAYERS AND GRADATIONS:

TOTAL PAVEMENT DEPTH (INCH)	LAYER DEPTH (INCH)	HMA PAVEMENT ITEM
5	UPPER: 2	4 LT 58-28 S
	LOWER: 3	3 LT 58-28 S

UTILITIES

*** WE Energies - GAS**
700 SOUTH KANE STREET
BURLINGTON, WISCONSIN 53105
ATTENTION: JACOB SPENCER
TELPHONE: 262-763-1039
E-MAIL: Jacob.spencer@we-energies.com

*** WE Energies - ELECTRIC**
500 SOUTH 116TH STREET
WEST ALLIS, WISCONSIN 53214
ATTENTION: ALEX DANTINNE
TELEPHONE: 920-621-6903
E-MAIL: alex.dantinne@we-energies.com

*** CHARTER COMMUNICATIONS**
1320 NORTH DR. MARTIN LUTHER KING JR. DRIVE
MILWAUKEE, WISCONSIN 53212
ATTENTION: STEVE CRAMER
TELEPHONE: 414-277-4045
E-MAIL: Steve.Cramer@Charter.com

*** TDS TELECOM**
16924 WEST VICTOR ROAD
NEW BERLIN, WISCONSIN 53151
ATTENTION: MATTHEW SCHULTE
TELEPHONE: 262-754-3063
E-MAIL: matt.schulte@tdstelecom.com

*-MEMBER OF DIGGERS HOTLINE

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

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .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 AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.94 ACRES
SOIL GROUP TBD

STANDARD ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC	NC	NORMAL CROWN
AC	ASPHALT CEMENT	PT	POINT OF TANGENCY
AGG	AGGREGATE	PC	POINT OF CURVATURE
ASPH	ASPHALT	PI	POINT OF INTERSECTION
BM	BENCH MARK	PE	PRIVATE ENTRANCE
C/L	CENTERLINE	R	RADIUS
CONC	CONCRETE	REM	REMOVE
CMP	CORRUGATED METAL PIPE	R/L OR RL	REFERENCE LINE
CPCS	CULVERT PIPE CORRUGATED STEEL	RCCP	REINFORCED CONCRETE CULVERT PIPE
CR.	CREEK	RCPSS	REINFORCED CONCRETE PIPE STORM SEWER
D	DEGREE OF CURVE	R.O.	RUNOUT
DHV	DESIGN HOUR VOLUME	R/W	RIGHT-OF-WAY
ESALS	EQUIVALENT SINGLE AXIS LOADS	STA	STATION
EXIST	EXISTING	SE	SUPER ELEVATION
FE	FIELD ENTRANCE	SS	STORM SEWER
HYD	HYDRANT	T	TANGENT
IP	IRON PIPE OR PIN	TEL	TELEPHONE
L	LENGTH OF CURVE	TLE	TEMPORARY LIMITED EASEMENT
LC	LONG CHORD OF CURVE	T	TRUCKS
LR	LENGTH OF RUNOFF	VC	VERTICAL CURVE
MH	MANHOLE	W	WELL

WALWORTH COUNTY PUBLIC WORKS DEPARTMENT
W4097 COUNTY ROAD NN
ELKHORN, WISCONSIN 53121
ATTENTION: JOSEPH KROLL
E-MAIL: jkroll@co.walworth.wi.us
TELEPHONE: 262-741-3441

VILLAGE OF ROCHESTER
P.O. BOX 352
ROCHESTER, WISCONSIN 53167
ATTENTION: BETTY NOVA, TOWN CLERK
E-MAIL: rochestertown@techhead2.com
TELEPHONE: 262-534-5742

CITY OF BURLINGTON, DPW
824 MILWAUKEE AVE.
BURLINGTON, WISCONSIN 53105
ATTENTION: LARRY GOBEL, SUPERVISOR
E-MAIL: dpw-burl@execpc.com
TELEPHONE: 262-763-2060

TOWN OF SPRING PRAIRIE
N6097 STH 120
BURLINGTON, WISCONSIN 53105
ATTENTION: DEBBIE COLLINS, TOWN CLERK
E-MAIL: springprairie@centurytel.net
TELEPHONE: 262-642-7477

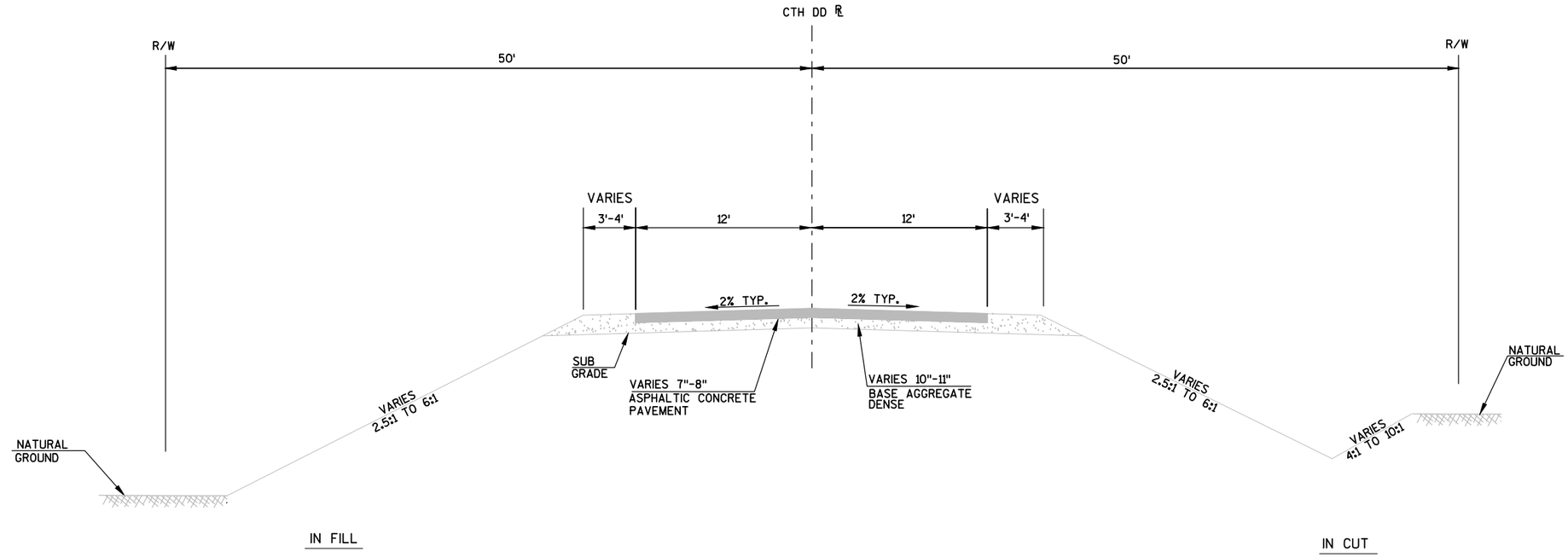
WALWORTH COUNTY SURVEYOR

SEWRPC TELEPHONE 262-953-4289
P.O. BOX 1607
WAUKESHA WI, 53187
ATTENTION: ROB MERRY
rmerry@sewrpc.org

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES TELEPHONE 262-574-2141
DNR SERVICE CENTER
141 NW BARSTOW ROOM 180
WAUKESHA, WISCONSIN 53188
ATTENTION: CRAIG WEBSTER
E-MAIL: craig.webster@wisconsin.gov

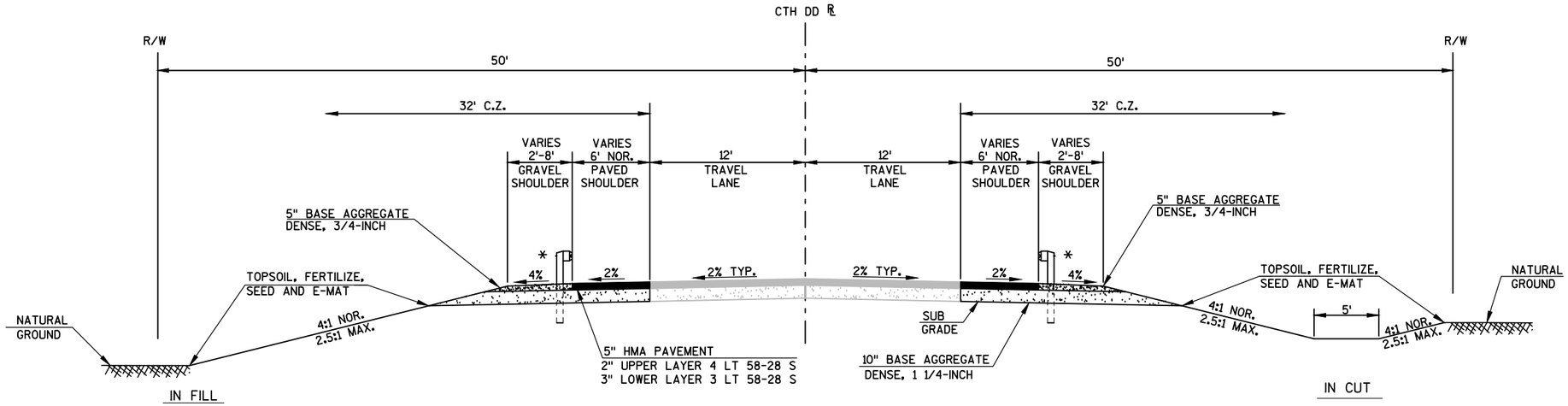
2



TYPICAL EXISTING SECTION
CTH DD

STA. 299+25 TO STA. 310+72

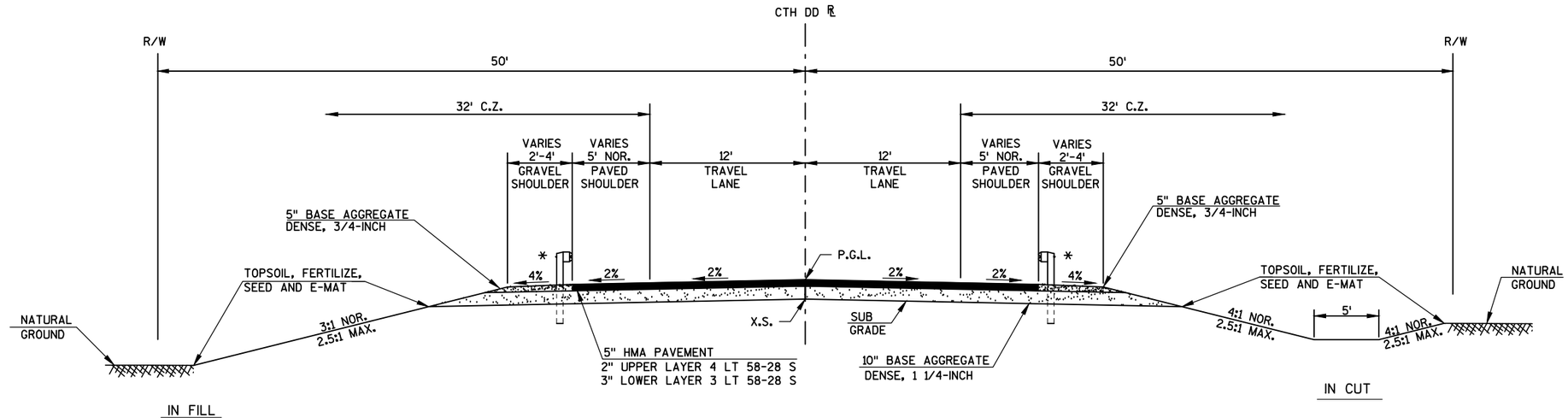
PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	TYPICAL EXISTING SECTIONS	SHEET 3	E



STA. 299+25 TO STA. 304+00 LT
STA. 307+00 TO STA. 310+72 LT

STA. 299+30 TO STA. 304+00 RT
STA. 307+00 TO STA. 309+50 RT

TYPICAL FINISHED SECTION
CTH DD



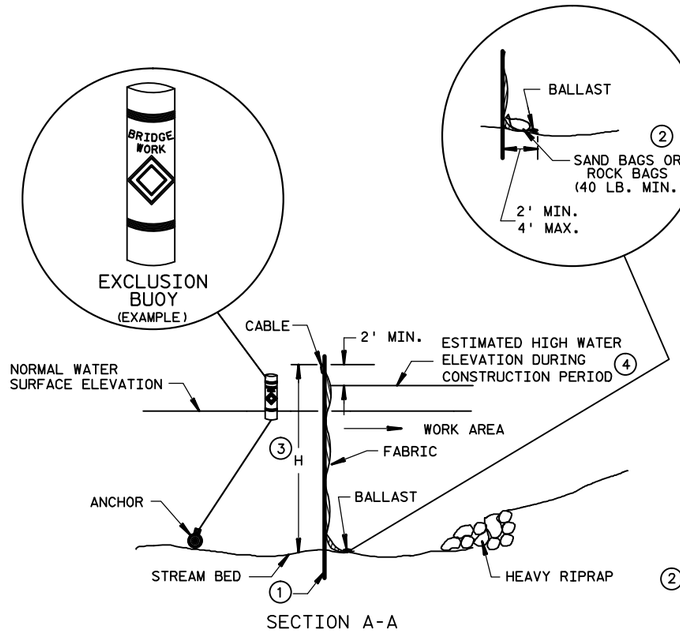
TYPICAL FINISHED SECTION
CTH DD

STA. 304+00 TO BRIDGE
BRIDGE TO STA. 307+00

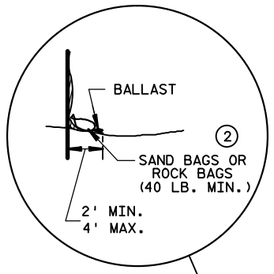
LEGEND
C.Z. = CLEAR ZONE
P.G.L = POINT REFERRED TO ON PROFILE
X.S. = POINT REFERRED TO ON CROSS SECTION

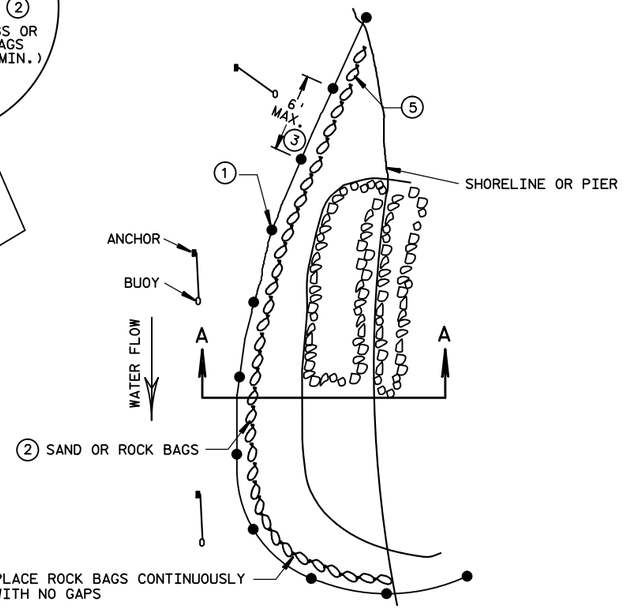
*-SEE PLAN DETAIL FOR LOCATION OF GUARD RAIL.

PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	TYPICAL FINISHED SECTIONS	SHEET 4	E



SECTION A-A



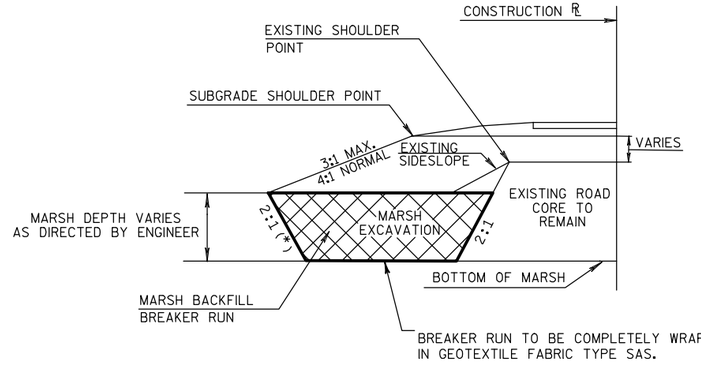


PLAN VIEW

NOTES:

1. DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
2. SAND BAGS OR ROCK BAGS (40 LB. MIN.) TO BE PLACED TOE TO TOE WITH NO GAPS ALONG TURBIDITY BARRIER INSTALLED IN WATER. INCIDENTAL TO BID ITEM TURBIDITY BARRIER
3. WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
4. ELEVATION VALUE TO BE ESTABLISHED BY THE CONTRACTOR BASED ON THE TIME OF YEAR AND DURATION OF THE ACTIVITY.
5. CONCRETE BARRIER TO BE USED IN PLACE OF SAND OR ROCK BAGS ADVERSE TO FIELD CONDITIONS. TEMPOARY CONCRETE BARRIER IS INCIDENTAL TO THE TURBIDITARY BARRIER ITEM.

TURBIDITY BARRIER DETAIL



(*) A FLATTER SLOPE MAY BE NECESSARY FOR STABILITY IN WET MARSHES AS DIRECTED BY THE ENGINEER.

TYPICAL SECTION-MARSH EXCAVATION

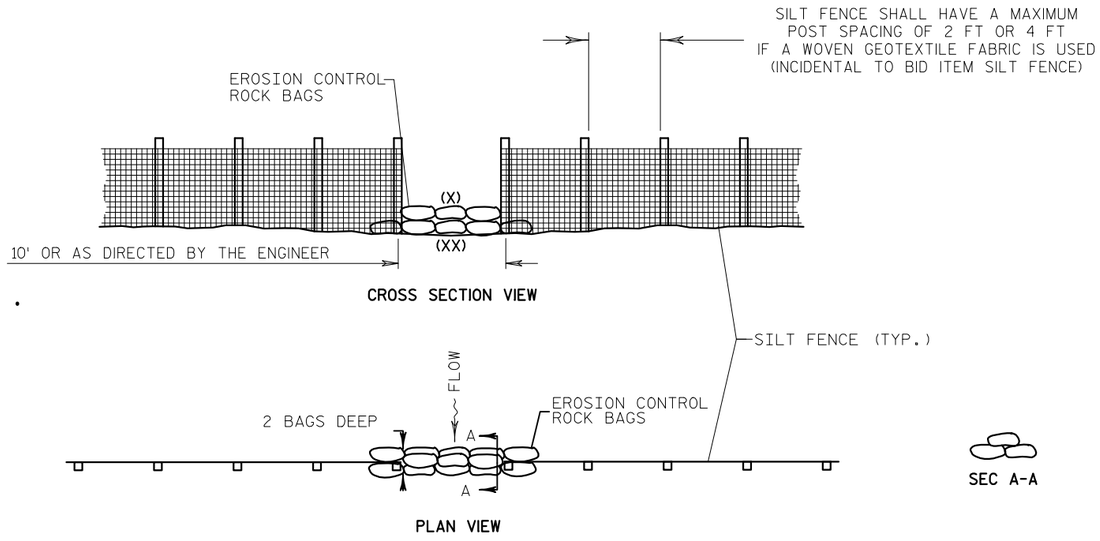
LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER

2

NOTES:

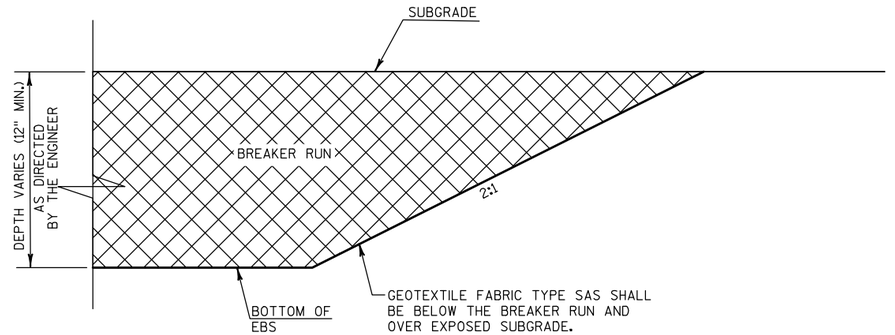
(X) OPENING TO BE PLACED AT LOW POINTS AS DIRECTED BY ENGINEER.

(XX) OPENING IN SILT FENCE NOT TO BE PLACED WITHIN 25' OF THE END OF THE SILT FENCE UNLESS DIRECTED BY THE ENGINEER.



EROSION CONTROL ROCK BAG OPENING IN SILT FENCE

LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER



(*) BREAKER RUN TO BE DAYLIGHTED AS DIRECTED BY THE ENGINEER

DETAIL FOR BACKFILL IN EBS AREAS

LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER

(SIZE TO BE DETERMINED IN FIELD AS INDICATED BELOW:)

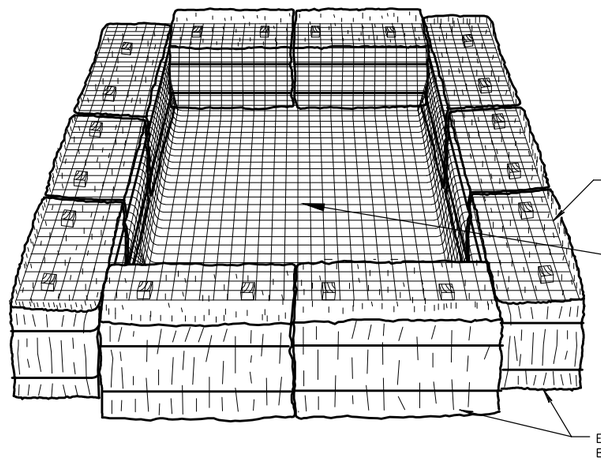
STORAGE VOLUME (C.F.) = 16 X GPM (PUMP RATE)

EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.

SOLUTION:
SV (C.F.) = 16 X 50
SV = 800 C.F.

$\frac{800 \text{ C.F.}}{1.5 \text{ FT.}}$ = 533 S.F.

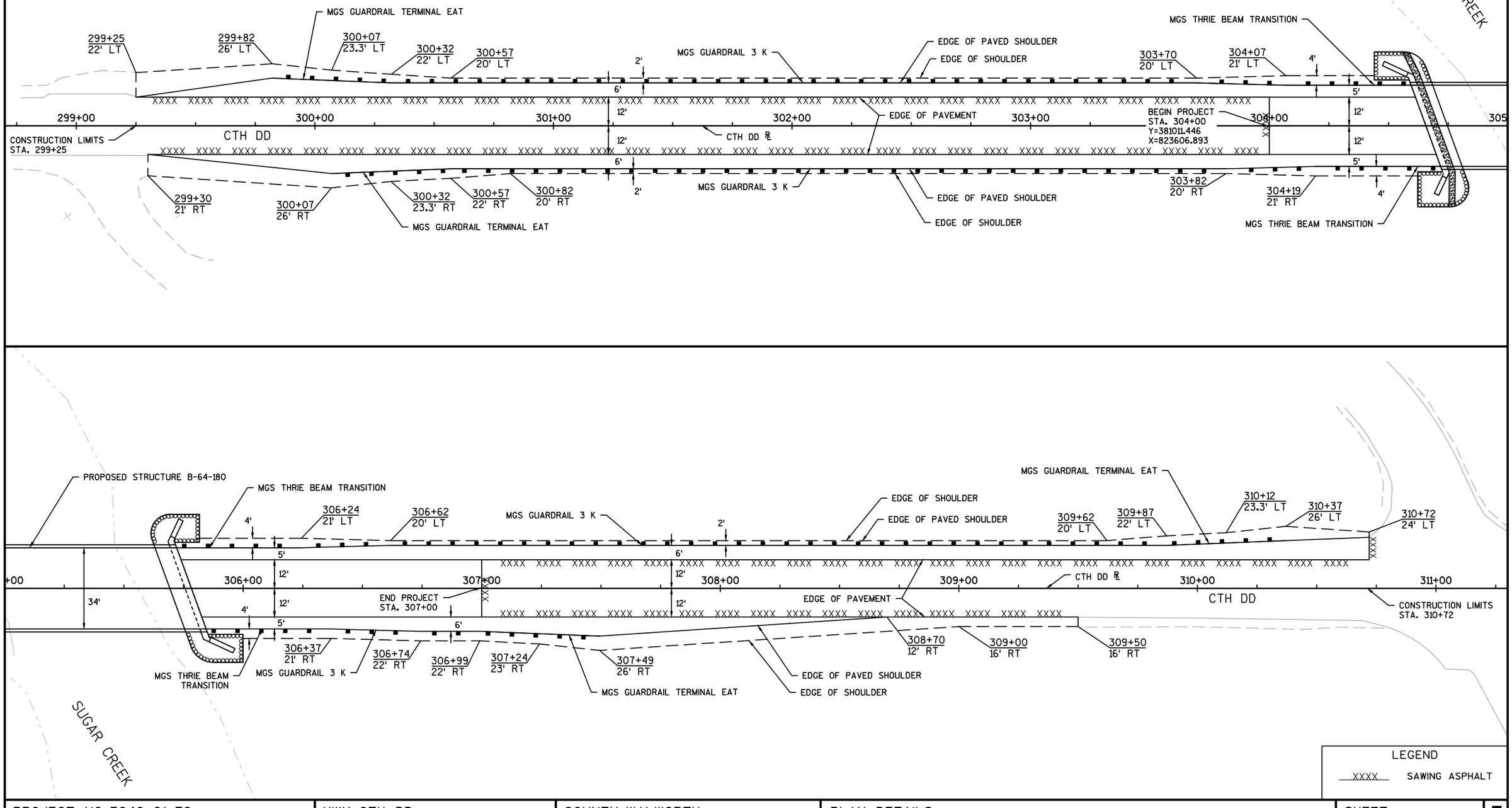
USE A 20 FT. X 27 FT. BASIN



CONTRACTOR TO PROVIDE A SEDIMENT BAG OR APPROVED EQUAL TO BE PLACED INSIDE OF BASIN. THE COST OF ALL WORK AND MATERIALS TO CONSTRUCT THE SETTLING BASIN WILL BE PAID UNDER CONTRACT BID ITEMS EROSION BALES (EACH) AND GEOTEXTILE FABRIC TYPE HR (SY). SEDIMENT BAG AND DEWATERING IS INCIDENTAL TO THE BID ITEMS THE WORK IS ASSOCIATED WITH.

TEMPORARY SETTLING BASIN WITH SEDIMENT BAG

2



PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	PLAN DETAILS	SHEET 7	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 01
PLOT DATE : 3/2/2018 1:35 PM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

NOTES:

1) SILT FENCE PLACED ALONG AND/OR WITHIN WETLAND AREAS SHALL HAVE A MAXIMUM POST SPACING OF 2-FT. OR 4-FT. IF A WOVEN GEOTEXTILE FABRIC IS USED. THIS IS INCIDENTAL TO THE SILT FENCE BID ITEM.

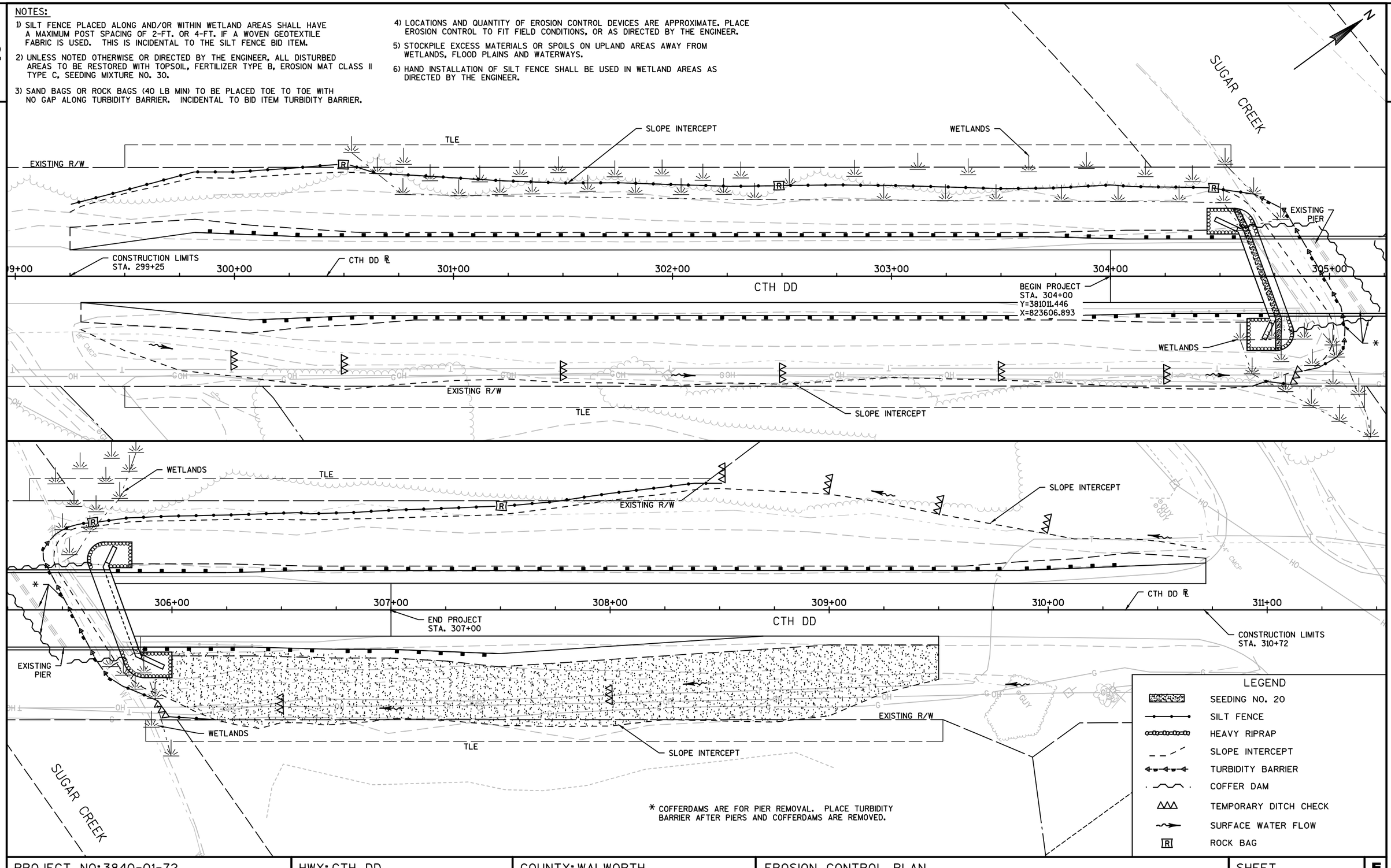
2) UNLESS NOTED OTHERWISE OR DIRECTED BY THE ENGINEER, ALL DISTURBED AREAS TO BE RESTORED WITH TOPSOIL, FERTILIZER TYPE B, EROSION MAT CLASS II TYPE C, SEEDING MIXTURE NO. 30.

3) SAND BAGS OR ROCK BAGS (40 LB MIN) TO BE PLACED TOE TO TOE WITH NO GAP ALONG TURBIDITY BARRIER. INCIDENTAL TO BID ITEM TURBIDITY BARRIER.

4) LOCATIONS AND QUANTITY OF EROSION CONTROL DEVICES ARE APPROXIMATE. PLACE EROSION CONTROL TO FIT FIELD CONDITIONS, OR AS DIRECTED BY THE ENGINEER.

5) STOCKPILE EXCESS MATERIALS OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOOD PLAINS AND WATERWAYS.

6) HAND INSTALLATION OF SILT FENCE SHALL BE USED IN WETLAND AREAS AS DIRECTED BY THE ENGINEER.



* COFFERDAMS ARE FOR PIER REMOVAL. PLACE TURBIDITY BARRIER AFTER PIERS AND COFFERDAMS ARE REMOVED.

PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	EROSION CONTROL PLAN	SHEET 8	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 01

PLOT DATE : 5/15/2018 2:21 PM PLOT BY : STEUCK, ROBERT PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

2

N

SUGAR CREEK

W5-52L
12"X36"

REMOVE

WEIGHT LIMIT 35 TONS
REMOVE

CONSTRUCTION LIMITS
STA. 299+25

99+00 300+00 301+00 302+00 303+00 304+00 305+00

4W

4YS

CTH DD

W5-52R
12"X36"

SPEED LIMIT 35
W3-5
36"X36"

REDUCED SPEED AHEAD
REMOVE

35 M.P.H.
REMOVE

REMOVE

REMOVE

W5-52R
12"X36"

WEIGHT LIMIT 35 TONS
REMOVE

REMOVE

SPEED LIMIT 55
REMOVE

SPEED LIMIT 55
R2-1
24"X30"

306+00 307+00 308+00 309+00 310+00 311+00

4W

4YS

CTH DD

CONSTRUCTION LIMITS
STA. 310+72

NO PARKING ANY TIME
REMOVE

REMOVE

W5-52L
12"X36"

NO PARKING ANY TIME
R7-1-L
18"X24"

NO PARKING ANY TIME
REMOVE

MOVE

NO PARKING ANY TIME
R7-1-R
18"X24"

SCHOOL BUS STOP AHEAD
REMOVE

S3-1
36"X36"

SUGAR CREEK

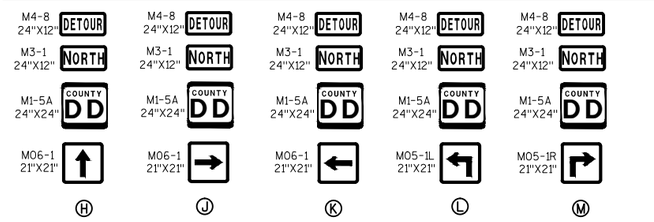
LEGEND

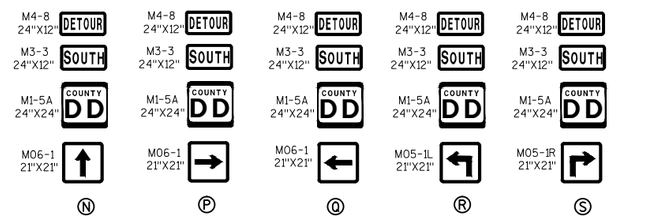
- PROPOSED SIGN
- EXISTING SIGN
- 4W — MARKING 4-INCH EPOXY (WHITE)
- 4YS — MARKING 4-INCH EPOXY (YELLOW) 12.5' SKIP 37.5 GAP

PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	PAVEMENT MARKING & SIGNING	SHEET 9	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\023201-PS.DWG
LAYOUT NAME - 01

PLOT DATE : 3/2/2018 2:44 PM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:40 FT





GENERAL NOTES

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

ANY SIGNS TEMPORARY OR EXISTING THAT CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED. THE COVERING OF WOOD POST MOUNTED SIGNS IS INCLUDED UNDER ITEM 643.0100 TRAFFIC CONTROL (PROJECT). IN LIEU OF COVERING WOOD POST MOUNTED SIGNS, THE CONTRACTOR MAY CHOOSE TO REMOVING AND REINSTALL THEM.

ALL "W" SIGNS SHALL BE 48"X48" UNLESS OTHERWISE NOTED.

IMMEDIATELY RE-ESTABLISH "STOP" SIGNS THAT ARE REMOVED FOR A CONSTRUCTION OPERATION.

PLACE PCMS 7 DAYS PRIOR TO START OF BRIDGE CLOSURE.

LEGEND

DETOUR ROUTE

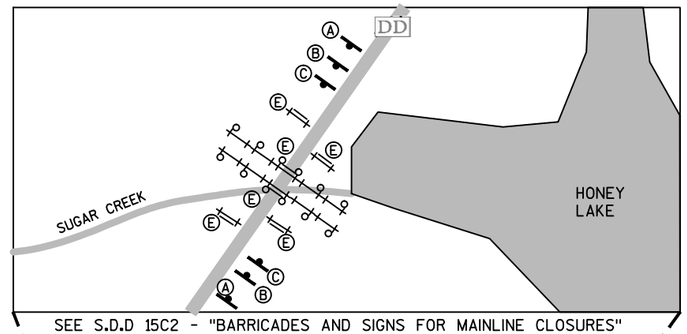
BARRICADE TYPE III WITH ATTACHED TRAFFIC CONTROL SIGN (2 WARING LIGHTS TYPE A REQ'D)

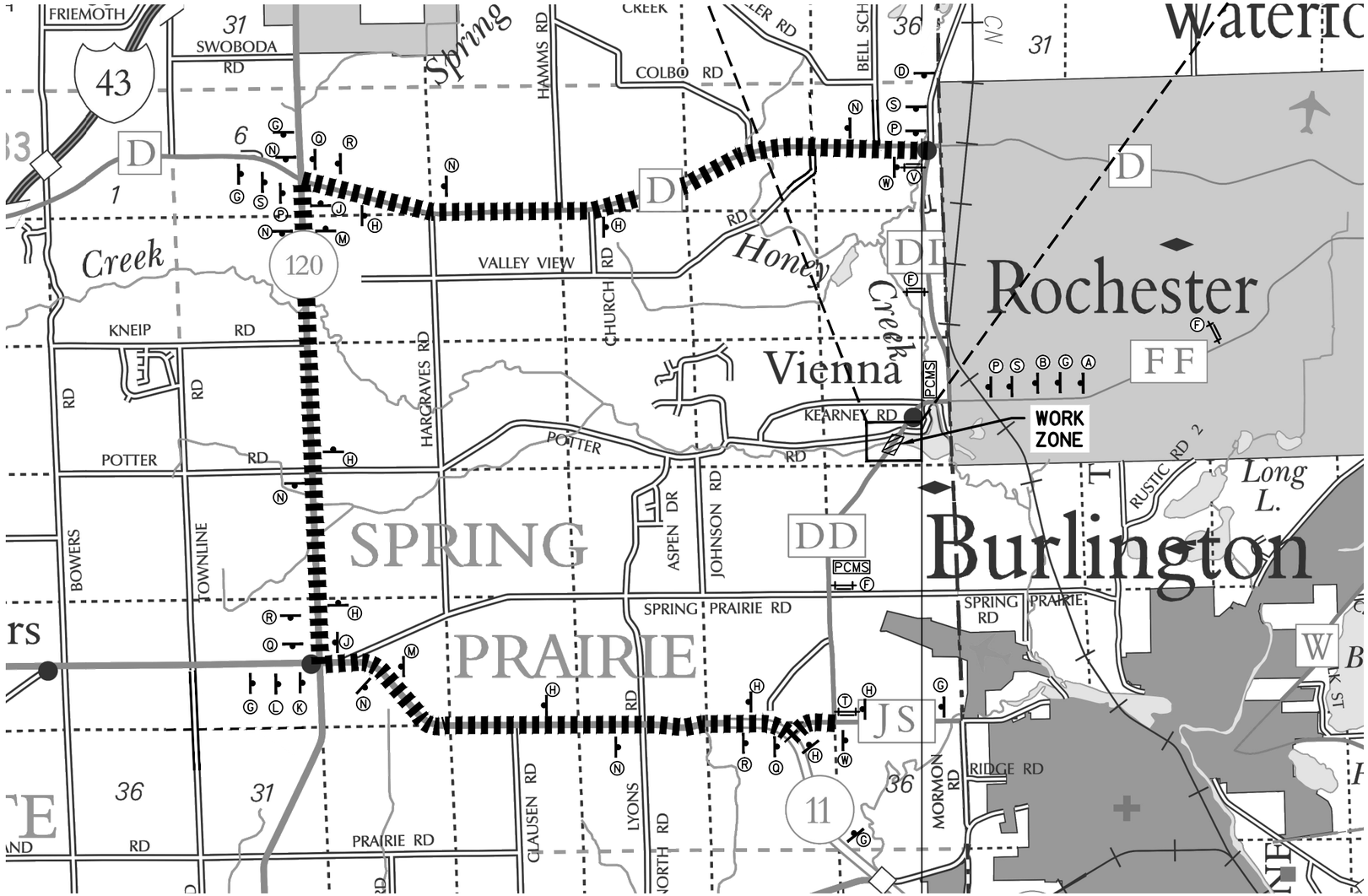
BARRICADES TYPE III WITHOUT SIGN (1 WARNING LIGHT TYPE A REQ'D)

BARRICADES TYPE III WITH ATTACHED TRAFFIC CONTROL SIGN

WOOD POST WITH ATTACHED TRAFFIC CONTROL SIGN

PCMS PORTABLE CHANGABLE MESSAGE SIGN





3840-01-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	11.000	11.000
0004	201.0205	Grubbing	STA	11.000	11.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 305+22	LS	1.000	1.000
0008	204.0165	Removing Guardrail	LF	221.000	221.000
0010	204.0185	Removing Masonry	CY	4.000	4.000
0012	205.0100	Excavation Common	CY	945.000	945.000
0014	205.0400	Excavation Marsh	CY	110.000	110.000
0016	206.1000	Excavation for Structures Bridges (structure) 01. B-64-180	LS	1.000	1.000
0018	206.5000	Cofferdams (structure) 01. B-64-180	LS	1.000	1.000
0020	208.0100	Borrow	CY	2,507.000	2,507.000
0022	210.1500	Backfill Structure Type A	TON	520.000	520.000
0024	213.0100	Finishing Roadway (project) 01. 3840-01-72	EACH	1.000	1.000
0026	305.0110	Base Aggregate Dense 3/4-Inch	TON	239.000	239.000
0028	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,670.000	1,670.000
0030	311.0110	Breaker Run	TON	520.000	520.000
0032	455.0605	Tack Coat	GAL	236.000	236.000
0034	460.2000	Incentive Density HMA Pavement	DOL	320.000	320.000
0036	460.5223	HMA Pavement 3 LT 58-28 S	TON	300.000	300.000
0038	460.5224	HMA Pavement 4 LT 58-28 S	TON	200.000	200.000
0040	502.0100	Concrete Masonry Bridges	CY	225.000	225.000
0042	502.3200	Protective Surface Treatment	SY	505.000	505.000
0044	503.0146	Prestressed Girder Type I 45W-Inch	LF	666.000	666.000
0046	505.0400	Bar Steel Reinforcement HS Structures	LB	5,640.000	5,640.000
0048	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	26,660.000	26,660.000
0050	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	12.000	12.000
0052	506.4000	Steel Diaphragms (structure) 01. B-64-180	EACH	10.000	10.000
0054	513.4061	Railing Tubular Type M (structure) 01. B-64-180	LF	230.000	230.000
0056	516.0500	Rubberized Membrane Waterproofing	SY	26.000	26.000
0058	550.0500	Pile Points	EACH	22.000	22.000
0060	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	935.000	935.000
0062	606.0300	Riprap Heavy	CY	115.000	115.000
0064	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	190.000	190.000
0066	614.2330	MGS Guardrail 3 K	LF	1,212.500	1,212.500
0068	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0070	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0072	618.0100	Maintenance And Repair of Haul Roads (project) 01. 3840-01-72	EACH	1.000	1.000
0074	619.1000	Mobilization	EACH	1.000	1.000

Line	Item	Item Description	Unit	Total	Qty
0076	625.0100	Topsoil	SY	6,681.000	6,681.000
0078	627.0200	Mulching	SY	1,000.000	1,000.000
0080	628.1104	Erosion Bales	EACH	50.000	50.000
0082	628.1504	Silt Fence	LF	1,250.000	1,250.000
0084	628.1520	Silt Fence Maintenance	LF	1,250.000	1,250.000
0086	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0088	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0090	628.2027	Erosion Mat Class II Type C	SY	6,430.000	6,430.000
0092	628.6005	Turbidity Barriers	SY	220.000	220.000
0094	628.7504	Temporary Ditch Checks	LF	266.000	266.000
0096	628.7570	Rock Bags	EACH	95.000	95.000
0098	629.0210	Fertilizer Type B	CWT	4.240	4.240
0100	630.0120	Seeding Mixture No. 20	LB	52.000	52.000
0102	630.0130	Seeding Mixture No. 30	LB	97.000	97.000
0104	630.0200	Seeding Temporary	LB	184.000	184.000
0106	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	2.000	2.000
0108	634.0812	Posts Tubular Steel 2x2-Inch X 12-FT	EACH	4.000	4.000
0110	634.0814	Posts Tubular Steel 2x2-Inch X 14-FT	EACH	3.000	3.000
0112	637.2210	Signs Type II Reflective H	SF	20.000	20.000
0114	637.2230	Signs Type II Reflective F	SF	21.000	21.000
0116	638.2102	Moving Signs Type II	EACH	1.000	1.000
0118	638.2602	Removing Signs Type II	EACH	12.000	12.000
0120	638.3000	Removing Small Sign Supports	EACH	11.000	11.000
0122	642.5001	Field Office Type B	EACH	1.000	1.000
0124	643.0300	Traffic Control Drums	DAY	1,530.000	1,530.000
0126	643.0420	Traffic Control Barricades Type III	DAY	2,907.000	2,907.000
0128	643.0705	Traffic Control Warning Lights Type A	DAY	4,590.000	4,590.000
0130	643.0900	Traffic Control Signs	DAY	26,316.000	26,316.000
0132	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0134	643.5000	Traffic Control	EACH	1.000	1.000
0136	645.0111	Geotextile Type DF Schedule A	SY	120.000	120.000
0138	645.0120	Geotextile Type HR	SY	345.000	345.000
0140	645.0140	Geotextile Type SAS	SY	450.000	450.000
0142	645.0220	Geogrid Type SR	SY	230.000	230.000
0144	646.1020	Marking Line Epoxy 4-Inch	LF	2,472.000	2,472.000
0146	646.9000	Marking Removal Line 4-Inch	LF	1,779.000	1,779.000
0148	650.4500	Construction Staking Subgrade	LF	1,034.000	1,034.000
0150	650.5000	Construction Staking Base	LF	1,034.000	1,034.000
0152	650.6500	Construction Staking Structure Layout (structure) 01. B-64-180	LS	1.000	1.000

3840-01-72

Line	Item	Item Description	Unit	Total	Qty
0154	650.9910	Construction Staking Supplemental Control (project) 01. 3840-01-72	LS	1.000	1.000
0156	650.9920	Construction Staking Slope Stakes	LF	1,034.000	1,034.000
0158	690.0150	Sawing Asphalt	LF	1,600.000	1,600.000
0160	715.0502	Incentive Strength Concrete Structures	DOL	1,350.000	1,350.000
0162	SPV.0060	Special 01. Utility Line Opening	EACH	4.000	4.000
0164	SPV.0105	Special 01. Relocate and Adjust Dry Hydrant	LS	1.000	1.000

CLEARING AND GRUBBING

STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
299+00 - 310+00	LT/RT	11	11
TOTALS		**11**	**11**

BASE AGGREGATE DENSE

STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
299+25 - 304+66	LT	62	420
299+30 - 304+66	RT	67	460
305+79 - 310+72	LT	50	390
305+79 - 309+50	RT	60	400
	TOTAL	**239**	**1,670**

3

REMOVING GUARDRAIL

STATION	TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL LF	204.0185 REMOVING MASONRY CY
303+60	-	304+60	LT	52	1
303+70	-	304+70	RT	65	1
305+70	-	306+70	LT	52	1
305+80	-	306+80	RT	52	1
		TOTALS		**221**	**4**

HMA PAVEMENT

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	460.5223 HMA PAVEMENT 3LT 58-28 S TON	460.5224 HMA PAVEMENT 4LT 58-28 S TON
299+25	-	304+66	SOUTH APPROACH LOWER LAYER	60	150	-
305+79	-	310+72	NORTH APPROACH LOWER LAYER	58	150	-
299+25	-	304+66	SOUTH APPROACH UPPER LAYER	60	-	100
305+79	-	310+72	NORTH APPROACH UPPER LAYER	58	-	100
TOTALS				**236**	**300**	**200**

MISCELLANEOUS ITEMS

LOCATION	213.0100 FINISHING ROADWAY 3840-01-72 EACH	619.1000 MOBILIZATION EACH	642.5001 FIELD OFFICE TYPE B EACH
CTH DD	1	1	1
TOTAL	**1**	**1**	**1**

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

GUARDRAIL

STATION	TO	STATION	OFFSET	614.2330 MGS GUARDRAIL 3 K LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
299+82	-	304+60	LT	387.5	39.4	1
300+07	-	304+70	RT	375.0	39.4	1
305+70	-	310+37	LT	375.0	39.4	1
305+85	-	307+49	RT	75.0	39.4	1
		TOTALS		**1,212.5**	**157.6**	**4.0**

MAINTENANCE AND REPAIR OF HAUL ROADS

LOCATION	618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS (3840-01-72) EACH
PROJECT 3840-01-72	1
TOTAL (CATEGORY 0030)	**1**

3

EARTHWORK

CATEGORY	From / To Station	Location	Excavation Common (1)		Salvaged / Unusable Pavement Material (4)	Geogrid Type SR (5)	Excavation Marsh (6)	Exp. Marsh Backfill (7)	Breaker Run (5) (10)	Breaker Run (7) (10)	Geotextile Fabric Type SAS (7)	Unexp. Fill (2)	Expanded Fill (8)	Borrow (8)	Waste (9)	Comments
			item 205.0100			item 645.0220	item 205.0400	Factor 1.50	item 311.0110	item 311.0110	item 645.0140		Factor 1.11	item 208.0100		
			Cut (2)	EBS (3)					EBS	Marsh						
			CY	CY	CY	SY	CY	CY	TON	TON	SY	CY	CY	CY	CY	
0010	299+30 to 310+72	CTH DD	825	0	134	0	0	0	0	0	0	2,259	2,507	2,507	825	
0010		UNDISTRIBUTED	0	120	0	230	110	165	220	300	450	0	0	0	230	Determined by Field Engineer
Total			945		134	230	110	165	520		450	2,259	2,507	2,507	1,055	

1) Common Excavation is the sum of the Cut and EBS columns. Item number 205.0100
2) See Earthwork Computation Table
3) Location of EBS will be determined by Field Engineer
4) Salvaged/Unsuable Pavement Material is included in Cut.
5) EBS to be backfilled with Breaker Run. Geogrid placed on exposed subgrade. See Construction Detail
6) Location of Marsh Excavation will be determined by Field Engineer. Item number 205.0400
7) Expanded Marsh Backfill Factor = 1.50. This to be backfilled with Breaker Run and wrapped in Geotextile Fabric Type SAS. See Construction Detail
8) Expanded Fill Factor = 1.11. This to be backfilled with Borrow material. Cut material may be used and shall be determined by the field engineer.
9) Waste = EBS + Marsh Excavation + Cut
10) Breaker Run estimated at 1.8 Tons/CY

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

3

TOPSOIL, FERTILIZER, AND SEED

STATION		TO STATION	LOCATION	625.0100 TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB
299+25	-	304+60	LT	1342	0.85	-	25	37
299+30	-	304+75	RT	1689	1.07	-	31	46
305+65	-	310+72	LT	1355	0.86	-	25	37
305+85	-	309+50	RT	1183	0.75	43	-	32
UNDISTRIBUTED				1112	0.71	9	16	32
TOTALS				**6,681**	**4.24**	**52**	**97**	**184**

NOTE: - FERTILIZER NOT TO BE PLACED WITHIN WETLAND AREAS.
- TEMPORARY SEEDING TO BE PLACED ONLY ON TEMPORARY STOCKPILES AND TEMPORARY EMBANKMENTS, IF NEEDED.

EROSION CONTROL MOBILIZATION

STATION	LOCATION	628.1905 MOBILIZATION EROSION CONTROL EACH	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL EACH
299+25 - 310+72	LT/RT	3	3
TOTALS		**3**	**3**

3

MULCH / EROSION MAT

STATION		TO STATION	LOCATION	627.0200 MULCHING SY	628.2027 EROSION MAT CLASS II TYPE C SY
299+25	-	304+60	LT	-	1350
299+30	-	304+75	RT	-	1690
305+65	-	310+72	LT	-	1360
305+85	-	309+50	RT	-	1190
UNDISTRIBUTED				1000	840
TOTAL				**1,000**	**6,430**

TEMPORARY SETTLING BASIN

STATION	LOCATION	628.1104 EROSION BALES EACH	645.0120* GEOTEXTILE FABRIC TYPE HR SY
UNDISTRIBUTED		50	100
TOTALS		**50**	**100**

TEMPORARY DITCH CHECK

STATION	LOCATION	628.7504 TEMPORARY DITCH CHECKS LF
300+00	RT	16
300+50	RT	17
301+50	RT	21
302+50	RT	18
303+50	RT	14
304+25	RT	12
304+80	RT	16
305+95	RT	16
306+50	RT	22
308+00	RT	20
308+50	LT	19
309+00	LT	15
309+50	LT	21
310+00	LT	15
UNDISTRIBUTED		24
TOTALS		**266**

TURBIDITY BARRIERS

STATION	OFFSET	628.6005 TURBIDITY BARRIERS SY
304+90	LT/RT	100
305+55	LT/RT	100
UNDISTRIBUTED		20
TOTALS		**220**

SILT FENCE

STATION	TO	STATION	OFFSET	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
299+25	-	300+49	LT	124	124
300+52	-	302+46	LT	194	194
302+50	-	304+44	LT	194	194
304+48	-	304+60	LT	12	12
304+55	-	304+77	RT	22	22
304+77	-	304+90	RT	12	12
305+50	-	305+68	LT	18	18
305+70	-	307+51	LT	181	181
305+75	-	305+86	RT	11	11
306+00	-	306+27	RT	27	27
307+53	-	308+52	LT	98	98
UNDISTRIBUTED				357	357
TOTALS				**1,250**	**1,250**

ROCK BAGS

STATION	LOCATION	628.7570 ROCK BAGS EACH
300+50	LT	15
302+50	LT	15
304+50	LT	15
305+60	LT	15
307+50	LT	15
UNDISTRIBUTED		20
TOTALS		**95**

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

3

PAVEMENT MARKING

STATION	TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH (WHITE) LF	646.1020 MARKING LINE EPOXY 4-INCH (YELLOW) LF	646.9000 MARKING REMOVAL LINE 4-INCH LF
299+25	-	310+72	LT/RT	2172	300	1779
		TOTALS		**2,472**		**1,779**

SAWING ASPHALT

STATION	LOCATION	690.0150 SAWING ASPHALT LF
299+25 - 304+00	LT	487
299+30 - 304+00	RT	482
307+00 - 310+72	LT	394
307+00 - 308+75	RT	187
UNDISTRIBUTED		50
TOTAL		**1600**

DRY HYDRANT

STATION	LOCATION	SPV.0105.01 RELOCATE AND ADJUST DRY HYDRANT LS
306+24	RT	1
TOTAL (CATEGORY 0030)		**1**

3

CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT (B-64-180) LS	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (3840-01-72) LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
CATEGORY 0010								
299+25	-	304+66	LT/RT	541	541	-	-	541
305+79	-	310+72	LT/RT	493	493	-	-	493
CATEGORY 0020								
			B-64-180	-	-	1	1	-
TOTAL (CATEGORY 0010)				**1,034**	**1,034**	**-**	**1**	**1,034**
TOTAL (CATEGORY 0020)				**-**	**-**	**1**	**-**	**-**

UTILITY LINE OPENING

LOCATION	SPV.0060.01 UTILITY LINE OPENING EACH
307+00 RT	1
308+00 RT	1
309+75 LT	2
TOTAL	**4**

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

SIGNS AND POSTS

STATION		SIGN CODE	SIGN #	SIGN	SIGN SIZE	634.0616 POSTS WOOD 4x6-INCHx16-FT EACH	634.0812 POSTS TUBULAR STEEL 2x2-INCHx12-FT EACH	634.0814 POSTS TUBULAR STEEL 2x2-INCHx14-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	COMMENTS
304+60	LT	W5-52L	1	BRIDGE MARKER	12" x 36"	-	1	-	-	3	-	1	1	
304+50	RT	W3-5	2	SPEED LIMIT 35 AHEAD	36" x 36"	1	-	-	-	9	-	-	-	
304+85	RT		3	REDUCED SPEED AHEAD		-	-	-	-	-	-	1	1	
304+85	RT		4	35 M.P.H.		-	-	-	-	-	-	1	-	SAME POST AS SIGN 3
304+85	RT		5	WEIGHT LIMIT 35 TONS		-	-	-	-	-	-	1	1	
304+73	RT	W5-52R	6	BRIDGE MARKER	12" x 36"	-	1	-	-	3	-	1	1	
305+75	LT	W5-52R	7	BRIDGE MARKER	12" x 36"	-	1	-	-	3	-	1	1	
306+00	LT		8	WEIGHT LIMIT 35 TONS		-	-	-	-	-	-	1	1	
305+85	RT	W5-52L	9	BRIDGE MARKER	12" x 36"	-	1	-	-	3	-	1	1	
305+85	RT	R7-1L	10	NO PARKING ANY TIME	18" x 24"	-	-	1	3	-	-	1	1	
306+62	RT		11	RUSTIC ROAD		-	-	-	-	-	1	-	-	MOUNT ABOVE SIGN 12
306+62	RT	R7-1R	12	NO PARKING ANY TIME	18" x 24"	-	-	1	3	-	-	1	1	
308+30	RT	S3-1	13	SCHOOL BUS STOP AHEAD	36" x 36"	1	-	-	9	-	-	1	1	
310+25	LT	R2-1	14	SPEED LIMIT 55	24" x 30"	-	-	1	5	-	-	1	1	
				TOTALS		**2**	**4**	**3**	**20**	**21**	**1**	**12**	**11**	

TRAFFIC CONTROL SUMMARY

LOCATION	APPROXIMATE SERVICE DAYS	643.0300 TRAFFIC CONTROL DRUMS SERVICE	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III SERVICE	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A SERVICE	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0900 TRAFFIC CONTROL SIGNS SERVICE	643.0900 TRAFFIC CONTROL SIGNS DAYS	643.1050 TRAFFIC CONTROL SIGNS PCMS SERVICE	643.1050 TRAFFIC CONTROL SIGNS PCMS DAYS	643.5000 TRAFFIC CONTROL EACH
HWY 120	153	-	-	-	-	-	-	38	5814	-	-	-
CTH D	153	-	-	-	-	-	-	35	5355	-	-	-
CTH DD	153	-	-	18	2754	28	4284	25	3825	2	14	-
HWY 11	153	-	-	-	-	-	-	48	7344	-	-	-
CTH JS	153	-	-	-	-	-	-	7	1071	-	-	-
CTH FF	153	-	-	1	153	2	306	13	1989	-	-	-
POTTER ROAD	153	-	-	-	-	-	-	2	306	-	-	-
W LAKE SHORE DRIVE	153	-	-	-	-	-	-	2	306	-	-	-
HIGHLAND TERRACE	153	-	-	-	-	-	-	2	306	-	-	-
UNDISTRIBUTED	153	10	1530	-	-	-	-	-	-	-	-	1
TOTALS			**1,530**		**2,907**		**4,590**		**26,316**		**14**	**1**

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

950132

Cab E Slide 64

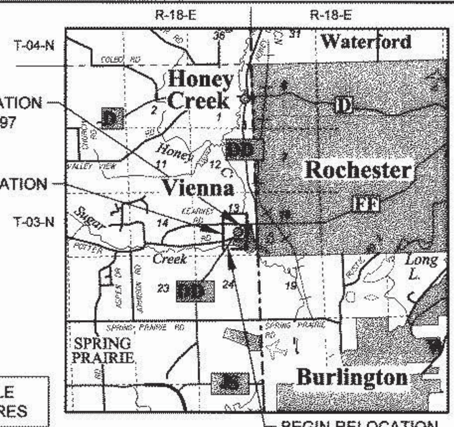
TRANSPORTATION PROJECT PLAT NO: 3840-01-00 - 4.01

THAT PART OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 AND THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 INCLUDING THAT PART OF LOT 1 AND OUTLOT 1 OF C.S.M. 2869, ALL IN SECTION 13, TOWNSHIP 03 NORTH, RANGE 18 EAST, TOWN OF SPRING PRAIRIE, WALWORTH COUNTY, WISCONSIN.

RELOCATION ORDER CTH DD - BRIDGE OVER SUGAR CREEK(B-64-180) WALWORTH COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, WALWORTH COUNTY DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 83.07 AND 83.08(a), WISCONSIN STATUTES, WALWORTH COUNTY HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE COUNTY FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF WALWORTH COUNTY, PURSUANT TO THE PROVISIONS OF SECTION 83.08 (1)(a) OR (1)(b), WISCONSIN STATUTES.



LOCATION MAP

NET CENTERLINE LENGTH 0.190 MILES

Doc # 950132
Recorded
July 18, 2017 9:53 AM
FILED
DONNA R PRUESS
REGISTER OF DEEDS
WALWORTH COUNTY, WI
Total Pages: 1

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 3840-01-00
AMENDMENT NO:___

SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE TOWN.

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	R/W NEW ACRES	R/W EXISTING ACRES	R/W TOTAL ACRES	TLE ACRES
1	CHRISTIAN J. JOHNSON & MARY KAYE JOHNSON LIVING TRUST	TLE	-----	-----	-----	0.118
2	TODD BRUESEWITZ	TLE	-----	-----	-----	0.015
3	ROBERT ANTHONY HENSIAK & LISA M. HENSIAK	FEE & TLE	-----	0.505	0.505	0.111
4	GARY A. HOSTERS	TLE	-----	-----	-----	0.071
5	HONEY LAKE PROTECTION & REHABILITATION DISTRICT	TLE	-----	-----	-----	0.082

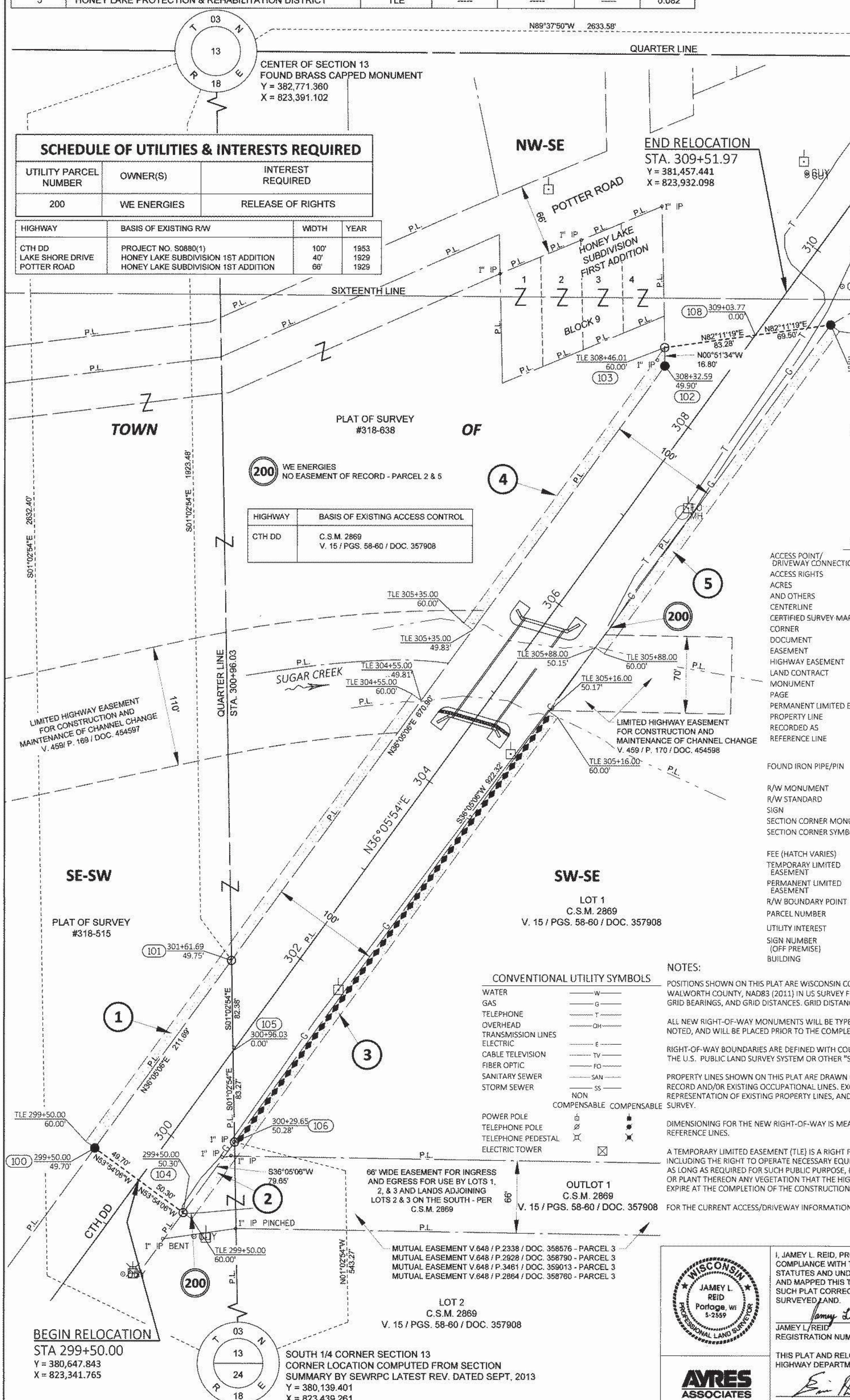
EAST 1/4 CORNER SECTION 13
FOUND BRASS CAPPED MONUMENT
Y = 382,754.380
X = 826,024.629

CENTER OF SECTION 13
FOUND BRASS CAPPED MONUMENT
Y = 382,771.360
X = 823,391.102

SCHEDULE OF UTILITIES & INTERESTS REQUIRED

UTILITY PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED
200	WE ENERGIES	RELEASE OF RIGHTS

HIGHWAY	BASIS OF EXISTING R/W	WIDTH	YEAR
CTH DD	PROJECT NO. S0880(1)	100'	1953
LAKE SHORE DRIVE	HONEY LAKE SUBDIVISION 1ST ADDITION	40'	1929
POTTER ROAD	HONEY LAKE SUBDIVISION 1ST ADDITION	66'	1929



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.		
HIGHWAY EASEMENT	H.E.		
LAND CONTRACT	LC		
MONUMENT	MON.		
PAGE	P.		
PERMANENT LIMITED EASEMENT	PLE		
PROPERTY LINE	PL		
RECORDED AS	(100')		
REFERENCE LINE	R/L		

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	DELTA
LENGTH OF CURVE	L
TANGENT	TAN

CONVENTIONAL SYMBOLS

FOUND IRON PIPE/PIN; R/W MONUMENT; R/W STANDARD; SIGN; SECTION CORNER MONUMENT; SECTION CORNER SYMBOL; FEE (HATCH VARIES); TEMPORARY LIMITED EASEMENT; PERMANENT LIMITED EASEMENT; R/W BOUNDARY POINT; PARCEL NUMBER; UTILITY INTEREST; SIGN NUMBER (OFF PREMISE); BUILDING; PROPOSED R/W LINE; EXISTING H.E. LINE; PROPERTY LINE; LOT & TIE LINES; SLOPE INTERCEPTS; CORPORATE LIMITS; NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL); ACCESS RESTRICTED (BY ACQUISITION); NO ACCESS (BY STATUTORY AUTHORITY); SECTION LINE; QUARTER LINE; SIXTEENTH LINE; EXISTING CENTERLINE; PROPOSED REFERENCE LINE; PARALLEL OFFSET

CONVENTIONAL UTILITY SYMBOLS

WATER; GAS; TELEPHONE; OVERHEAD TRANSMISSION LINES; ELECTRIC; CABLE TELEVISION; FIBER OPTIC; SANITARY SEWER; STORM SEWER; POWER POLE; TELEPHONE POLE; TELEPHONE PEDESTAL; ELECTRIC TOWER (NON COMPENSABLE / COMPENSABLE)

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), WALWORTH 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" X 24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT BY AYRES ASSOCIATES.

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.

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

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 DEEM NECESSARY OR DESIRABLE. ALL TLEs EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE WALWORTH COUNTY HIGHWAY DEPARTMENT.

WISCONSIN JAMEY L. REID Portage, WI S-2559 PROFESSIONAL LAND SURVEYOR

AYRES ASSOCIATES

I, JAMEY L. REID, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF WALWORTH COUNTY, I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT 3840-01-00-4.01 AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

Jamey L. Reid
JAMEY L. REID
REGISTRATION NUMBER: S-2559
07/07/2017
DATE

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR WALWORTH COUNTY HIGHWAY DEPARTMENT.

[signature]
7-17-17
DATE

CONTROL POINT DATA				
POINT NO.	Y	X	ELEVATION	DESCRIPTION
500	381239.158	823755.250	781.26	REBAR/CAP
501	381326.249	823819.629	782.22	REBAR/CAP
502	381423.903	823889.615	784.74	REBAR/CAP
503	381560.912	824055.843	791.37	REBAR/CAP
504	381154.436	823686.276	779.16	REBAR/CAP
505	381272.019	823954.798	781.54	REBAR/CAP
506	380725.288	823380.103	780.58	REBAR/CAP
507	380820.194	823449.594	779.39	REBAR/CAP
508	380921.886	823524.006	779.52	REBAR/CAP
509	381039.041	823646.191	779.71	REBAR/CAP

BENCHMARK DATA				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM 1	381148	823682	781.06	CHIS. SQ. ON BRIDGE
BM 2	381261	823842	779.63	SURVEY NAIL IN PPOL

*CLEARING AND GRUBBING
STA 299+00 TO STA 310+00 LT
STA 300+00 TO STA 305+00 RT

QUARTER LINE
SIXTEENTH LINE
CHRISTIAN J JOHNSON TRUST
GARY A HOSTERS
DONALD ALBRECHT
EXISTING R/W
CLEARING AND GRUBBING WITHIN SLOPE INTERCEPTS
REMOVE GUARDRAIL
WETLANDS
SLOPE INTERCEPT
TLE
STA 298+00.00 CTH DD
Y=380526.6416
X=823253.3887
STA 313+00.00 CTH DD
Y=381738.6522
X=824137.1480
CP 506
CP 507
CP 508
CP 509
BM 1
CP 504
CP 500
CP 501
CP 502
CP 503
CP 505
CTH DD
SAW CUT
CONSTRUCTION LIMITS
STA. 299+25
STA. 310+72
ADDRESS SIGNS NOT TO BE DISTURBED
MAIL BOXES NOT TO BE DISTURBED
CAUTION
BM 2
RELOCATE AND ADJUST DRY HYDRANT VERTICAL RISER
EXISTING DRY HYDRANT PIPING NOT TO BE DISTURBED
BEGIN PROJECT
STA. 304+00
Y=381011.446
X=823606.893
END PROJECT
STA. 307+00
STATE OF WISCONSIN DEPT OF NATURAL RESOURCES
TODD BRUE SEWITZ
ROBERT ANTHONY HENSIAK
SUGAR CREEK
HONEY LAKE PROTECTION AND REHABILITATION
LAWRENCE A BAUMAN
LAKESHORE DR

STA 304+00.00 EL 780.19
STA 306+50.00 EL 781.44
STA 307+00.00 EL 781.77
PROPOSED PROFILE
0.50%
0.66%
EXISTING PROFILE

STA 305+22
STRUCTURE B-64-180 REQUIRED
SINGLE SPAN, 45W" PRESTRESSED CONCRETE GIRDER
SKEW 20° RHF
34' CLEAR ROADWAY
110 FEET LONG

STA 305+22
REMOVE STRUCTURE (B-64-6)
THREE SPAN HAUNCHED SLAB
92.8 FEET LONG

HIGH WATER$_{100}$ EL. 773.4
ORDINARY HIGH WATER EL. 771.8
WATER EL. 770.3 (6-30-2016)

EXISTING ELEVATION
PROPOSED ELEVATION

790
780
770
760

298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313

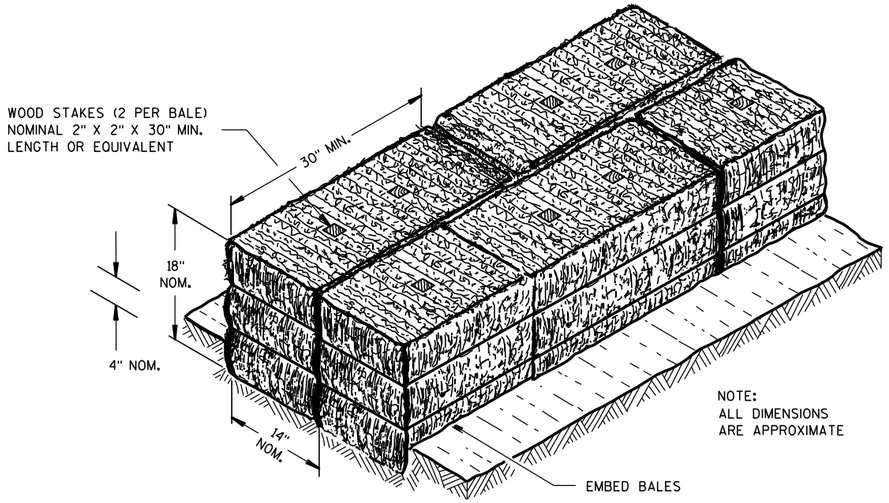
784.02 782.65 781.58 780.76 780.16 779.79 779.71 779.77 779.79 779.94 780.19 780.19 780.26 780.44 780.68 780.69 780.03 780.94 780.96 781.19 781.38 781.44 781.77 781.77 782.21 782.89 783.91 785.13 786.59 788.42 790.48 792.82 795.39

PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	PLAN AND PROFILE: CTH DD	SHEET 20	E

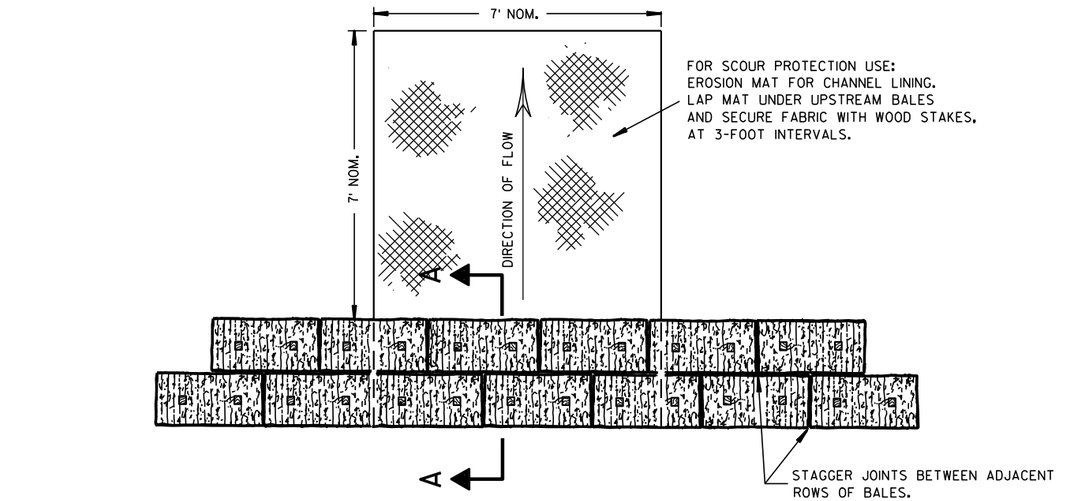
FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\050101-PP.DWG
LAYOUT NAME - 01
PLOT DATE : 5/15/2018 2:22 PM PLOT BY : STEUCK, ROBERT PLOT NAME : PLOT SCALE : 1 IN:100 FT

Standard Detail Drawing List

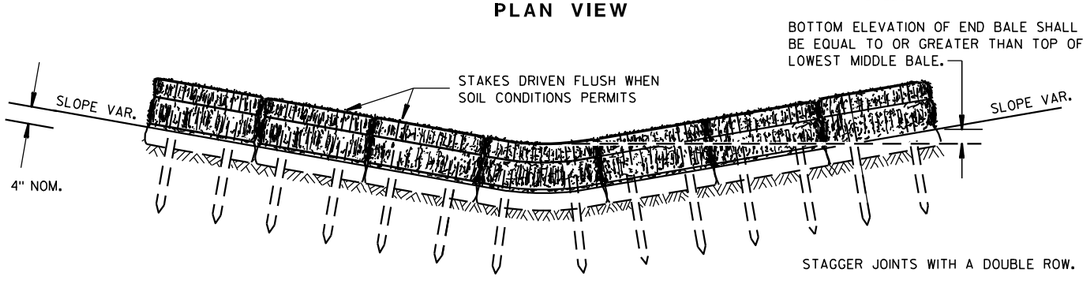
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C05-04	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



SECTION A-A



PLAN VIEW



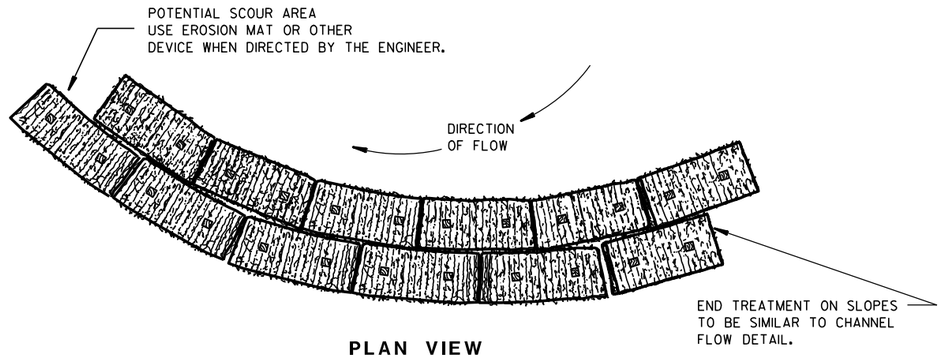
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

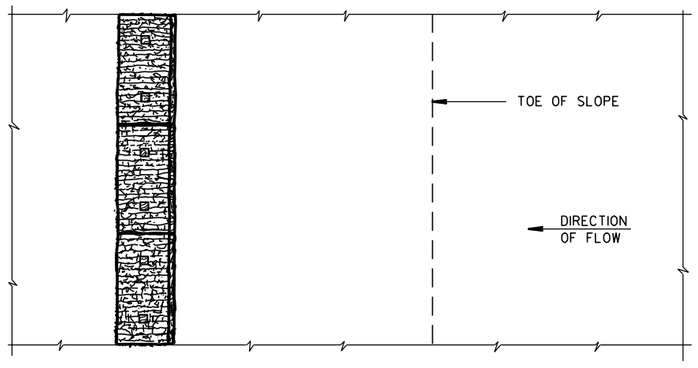
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

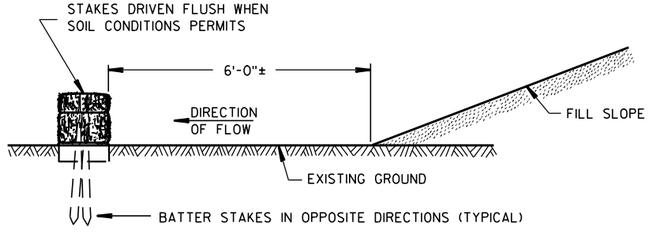


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

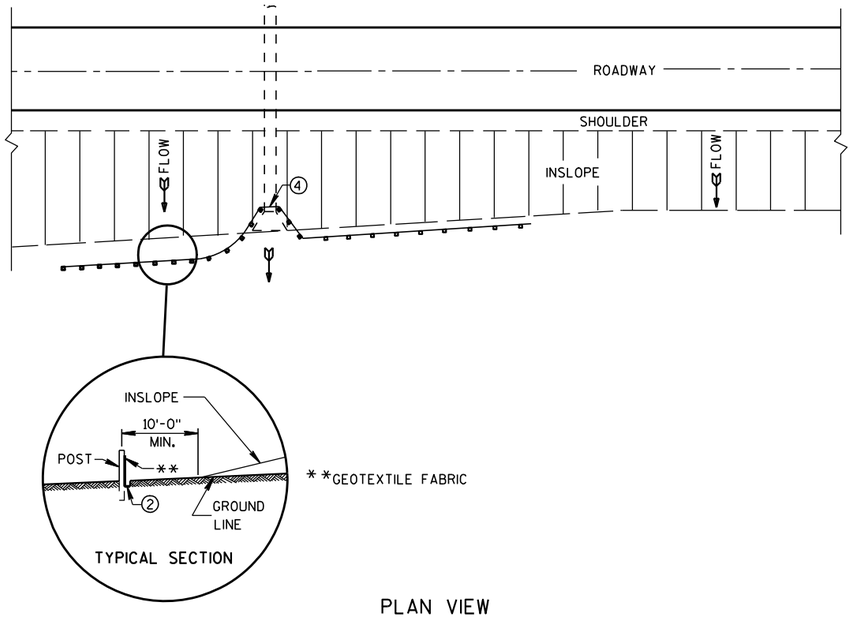
APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

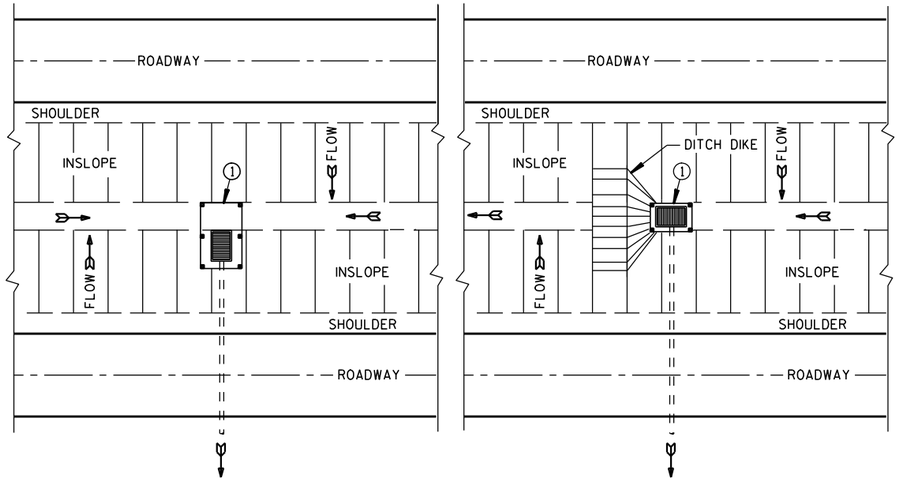
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



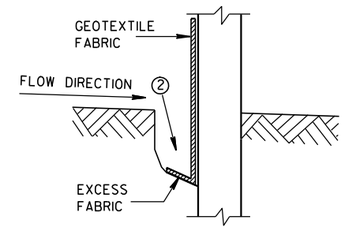
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

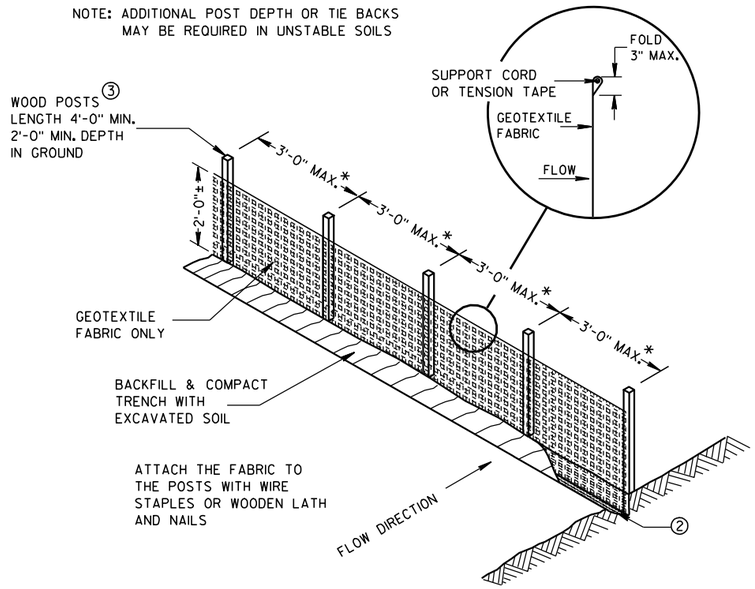
GENERAL NOTES

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

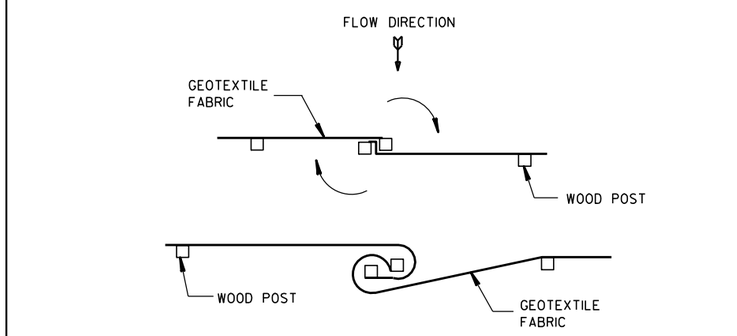
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



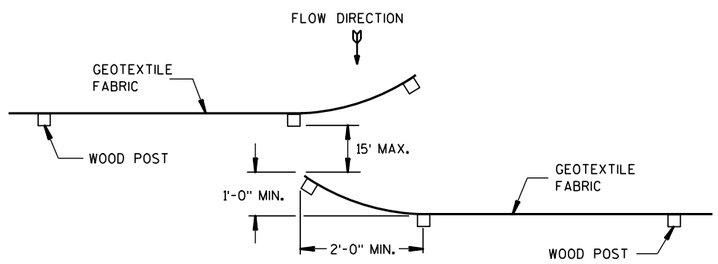
TRENCH DETAIL



SILT FENCE

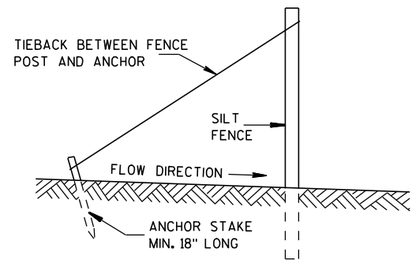


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

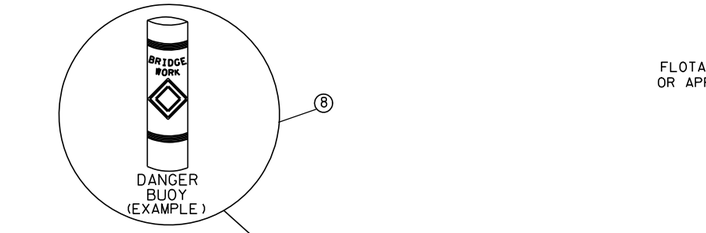
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

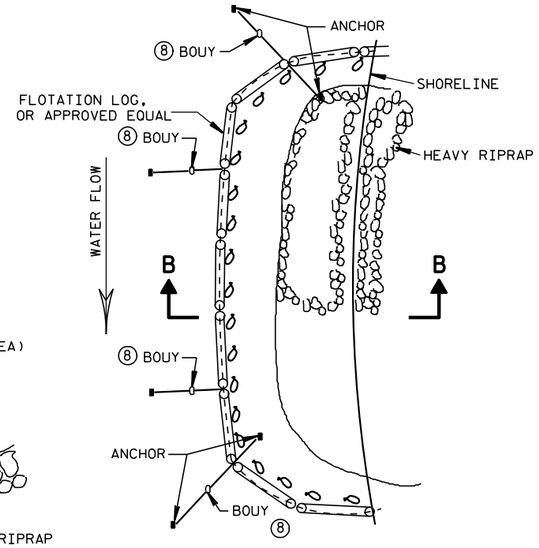
S.D.D. 8 E 9-6

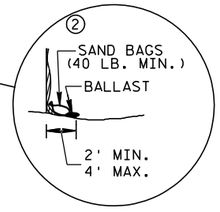
6

S.D.D. 8 E 9-6

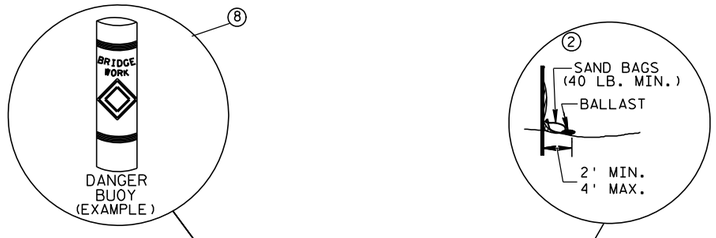


SECTION B-B

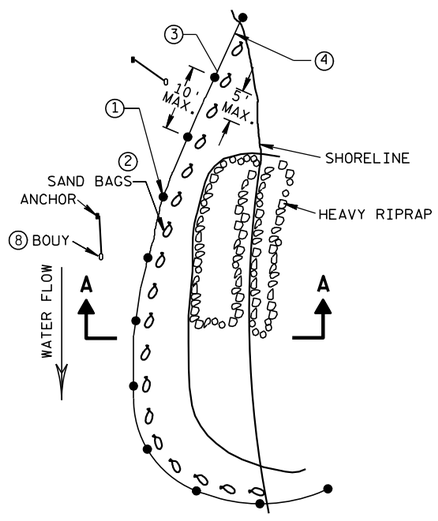




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

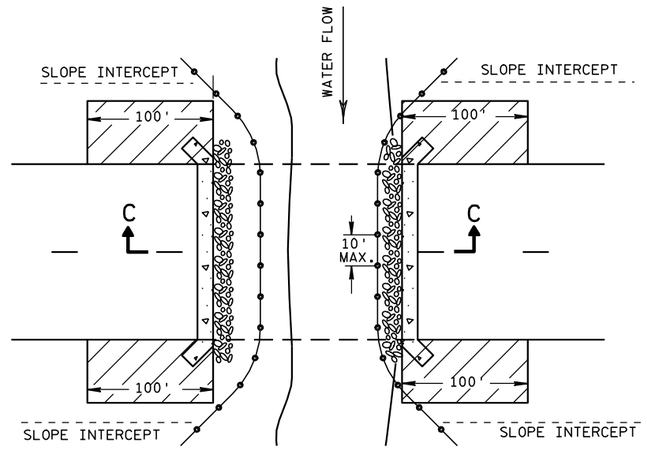
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

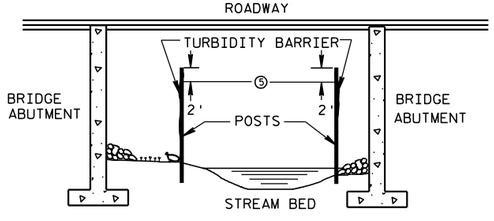
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



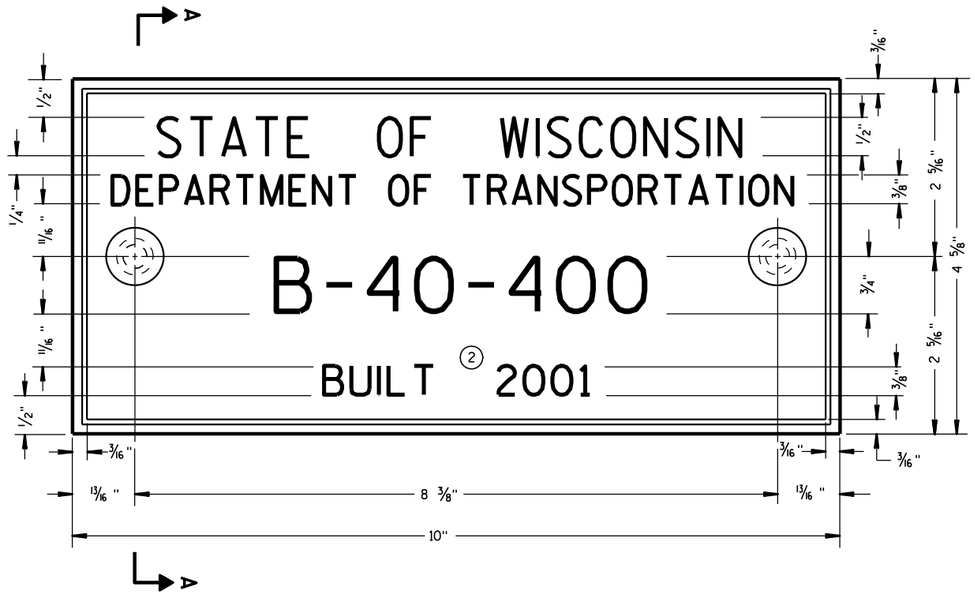
SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
6/04/02 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

6

S.D.D. 8 E 11-2



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

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

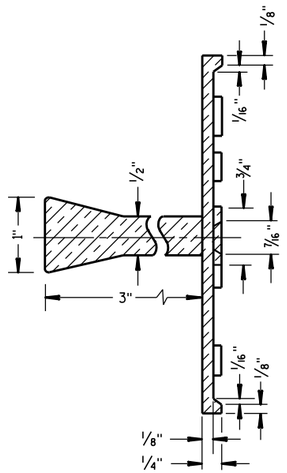
GENERAL NOTES

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.

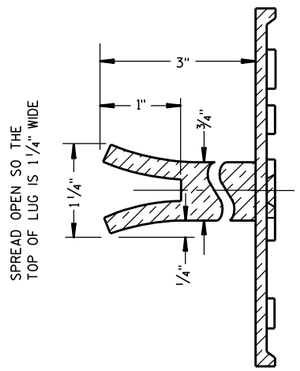
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

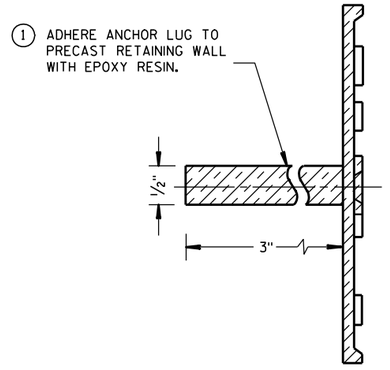
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



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 DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10

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

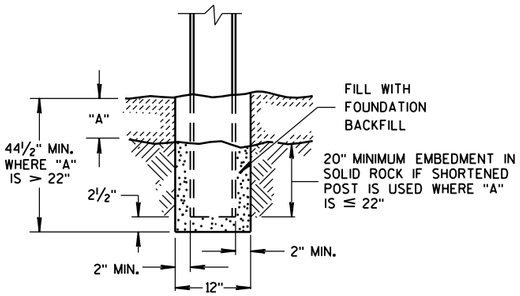
② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

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

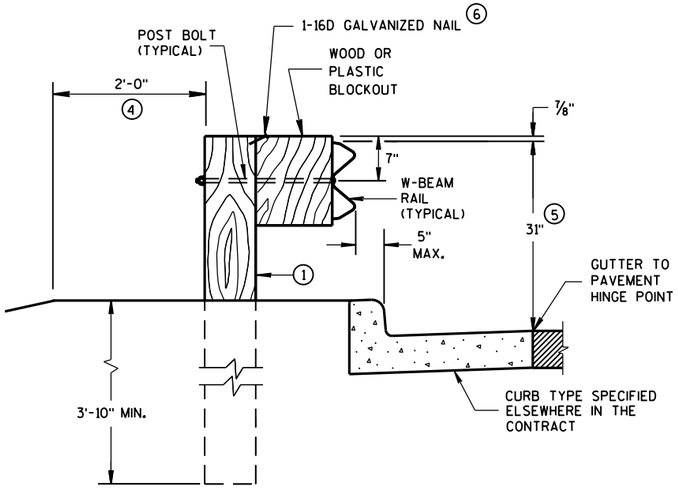
④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

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

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



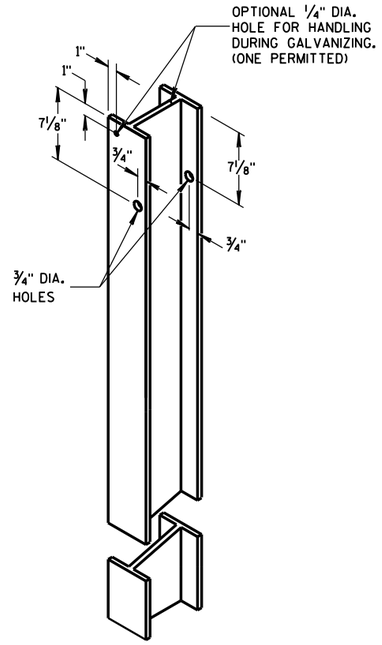
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ③



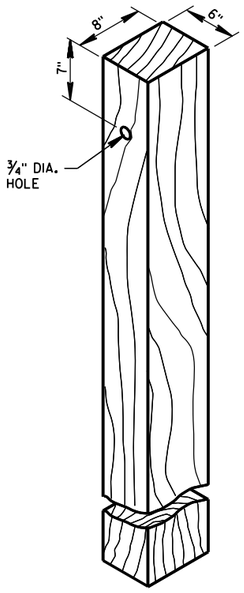
END VIEW
LOCATED ALONG A CURBED ROADWAY

END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION

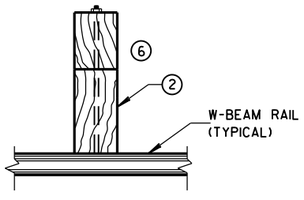
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



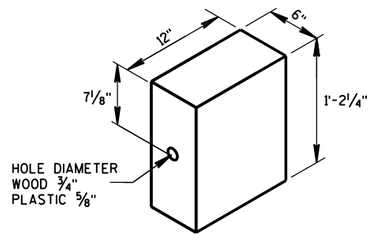
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



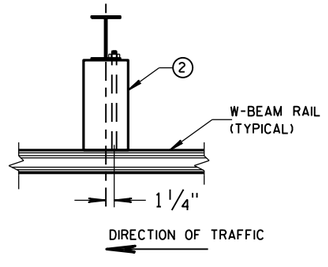
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②



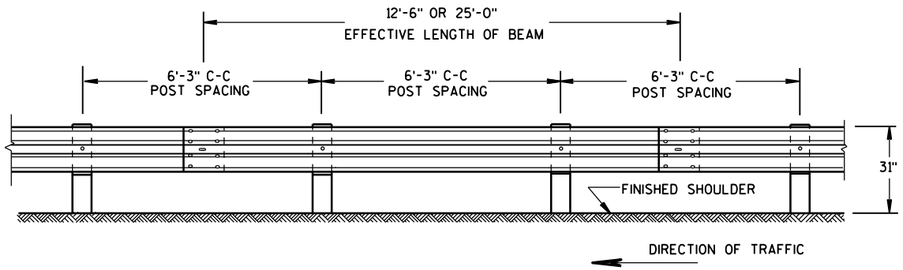
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

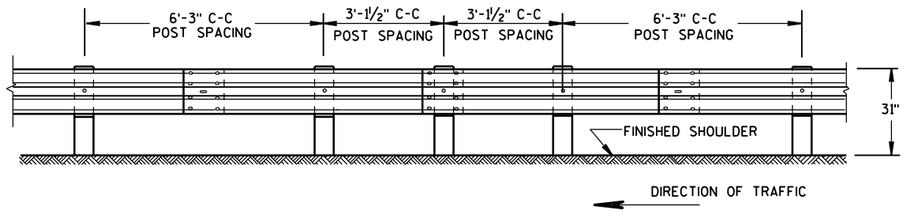
6

S.D.D. 14 B 42-5a



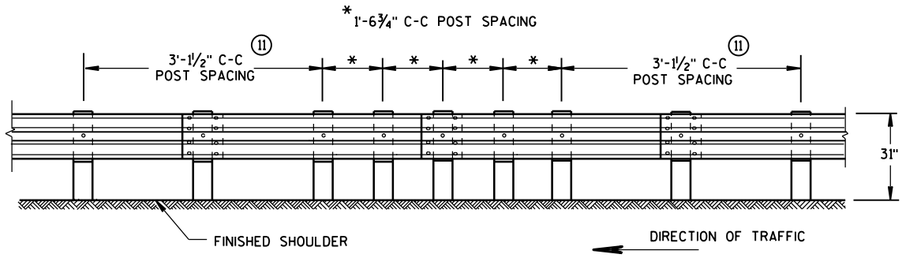
FRONT VIEW

POST SPACING STANDARD INSTALLATION



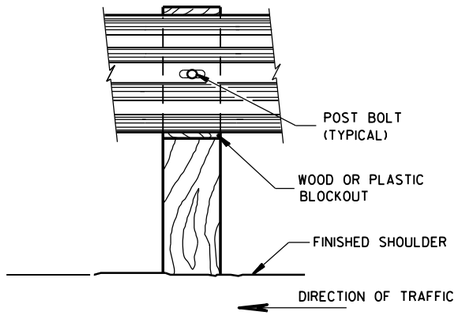
FRONT VIEW

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

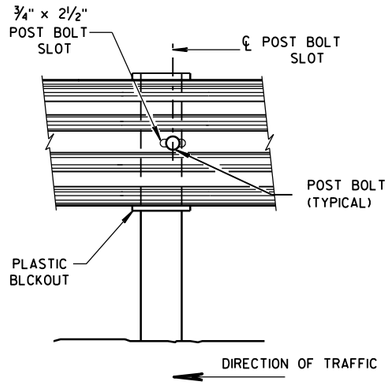


FRONT VIEW

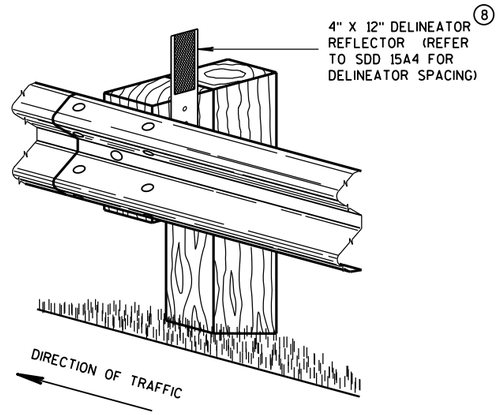
QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

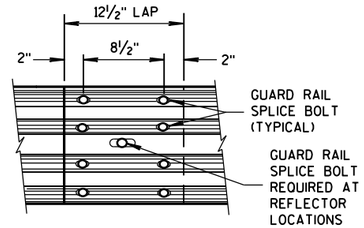
GENERAL NOTES

(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.

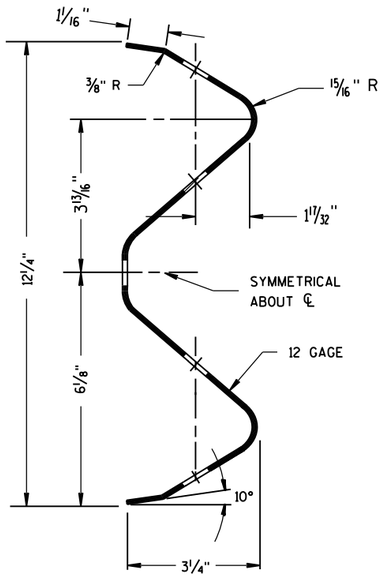
(11) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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

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



FRONT VIEW
MID-SPAN BEAM SPLICE



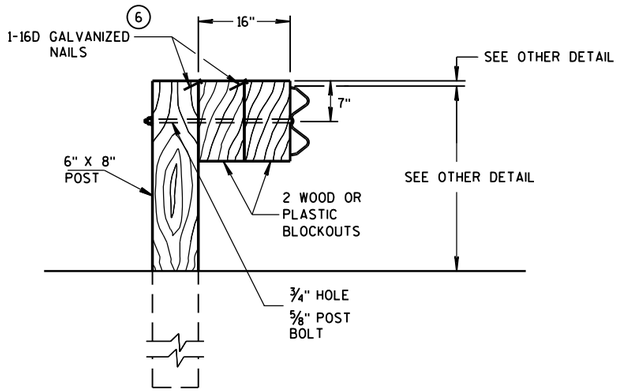
SECTION THRU W-BEAM RAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

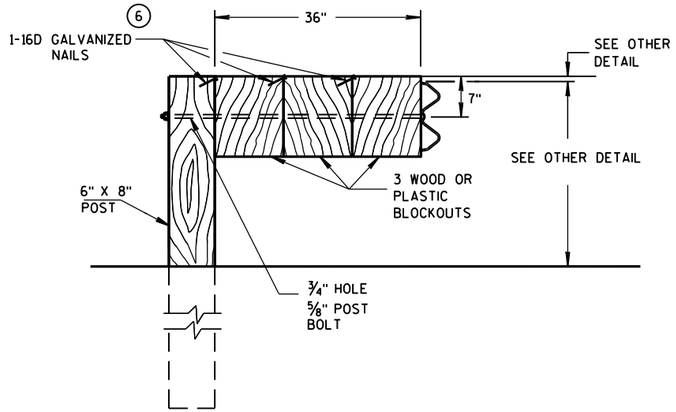
6

S.D.D. 14 B 42-5b



DETAIL FOR 16" BLOCKOUT DEPTH

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

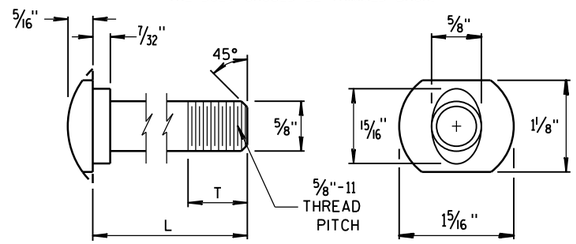


DETAIL FOR 36" BLOCKOUT DEPTH

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

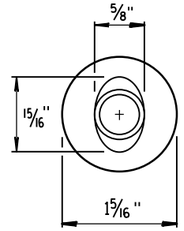
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

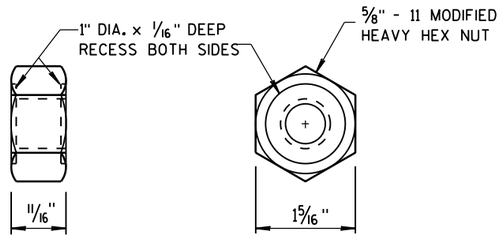


POST BOLT TABLE

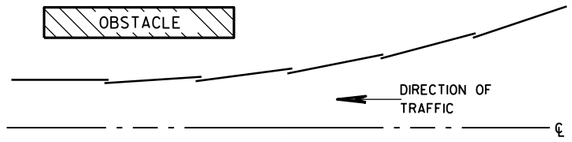
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

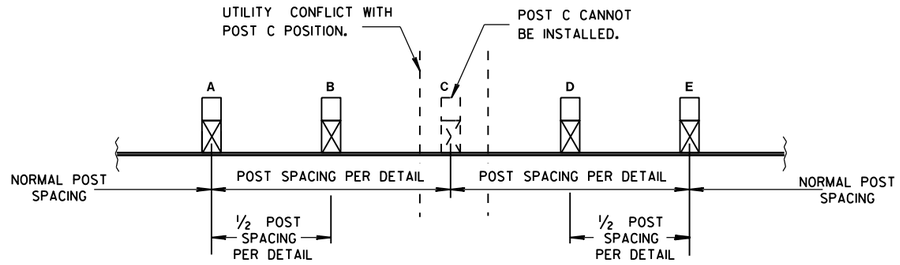


POST BOLT, SPLICE BOLT AND RECESS NUT

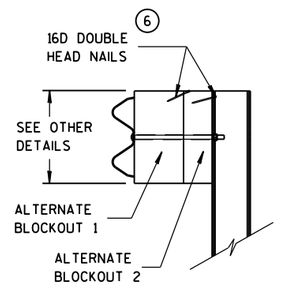


PLAN VIEW

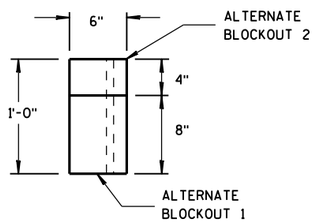
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 42-5c

GENERAL NOTES

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

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

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

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

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

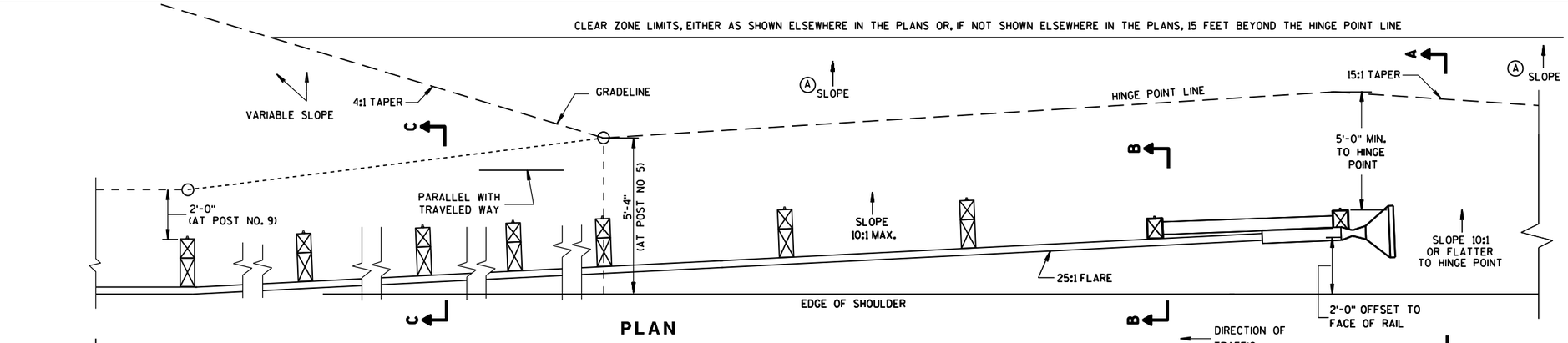
SEE SDD 14B42 FOR MORE INFORMATION.

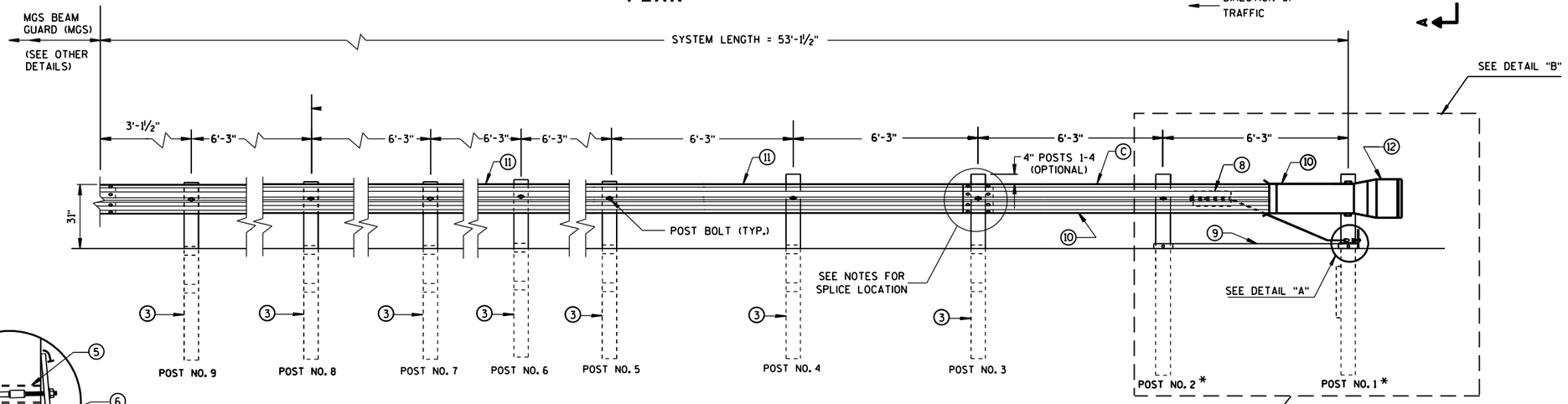
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

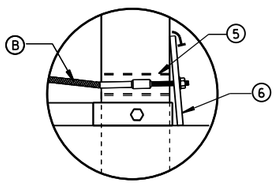
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

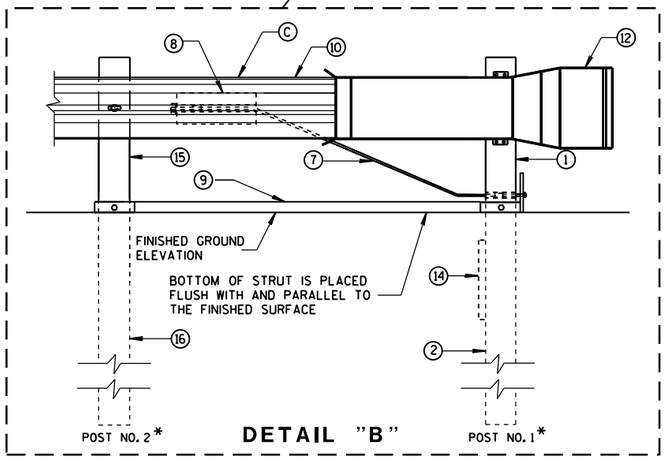
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

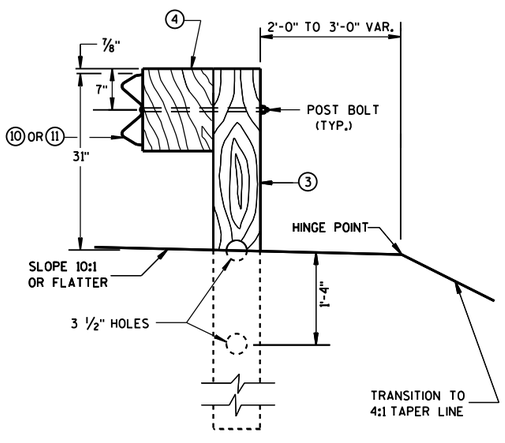
THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



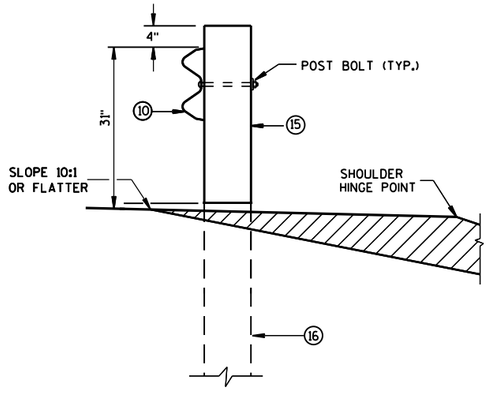




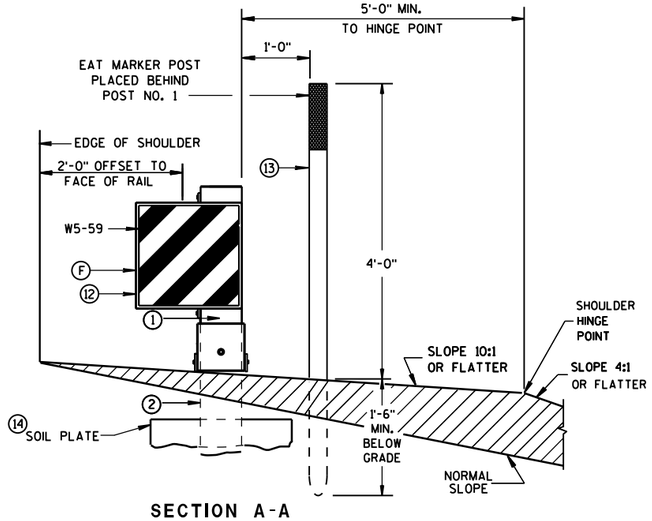




SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

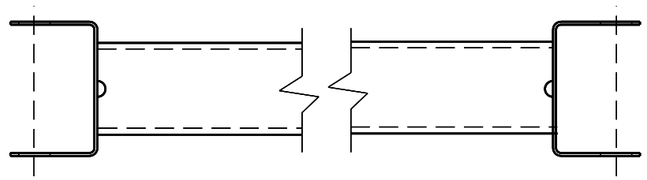
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

S.D.D. 14 B 44-3a

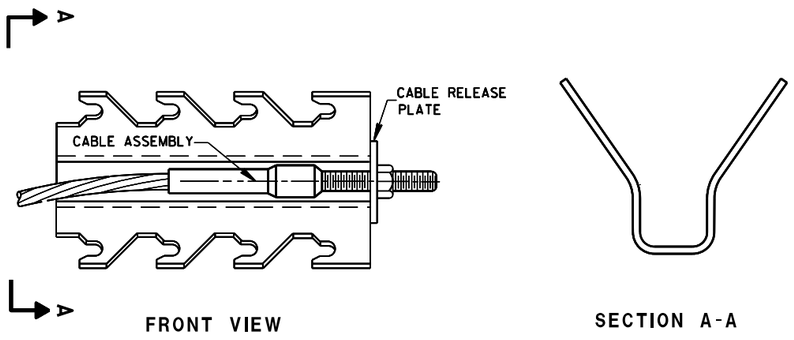
6

S.D.D. 14 B 44-3a



(9) (H)

GENERIC GROUND STRUT



FRONT VIEW

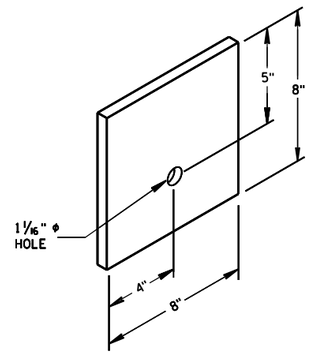
SECTION A-A

(8) (H)

GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'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



(6)

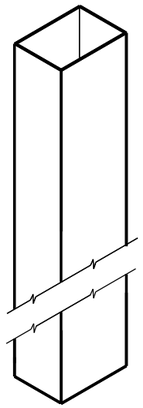
BEARING PLATE

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

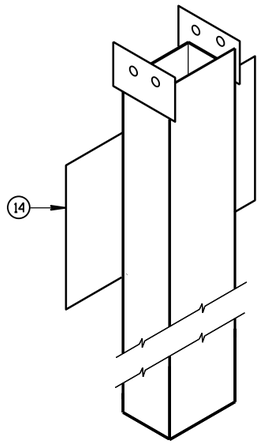
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

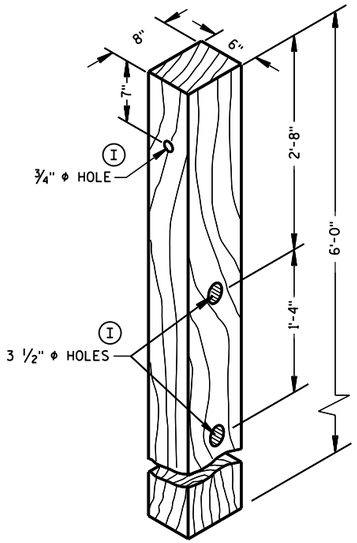
S.D.D. 14 B 44-3b



UPPER POST NO. 1 (1)

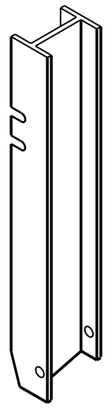


LOWER POST NO. 1 (2)

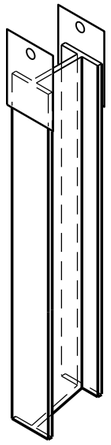


POSTS NUMBER 3-9

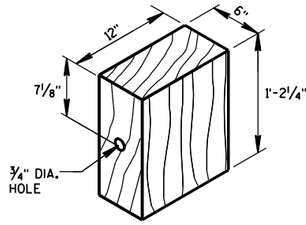
WOOD CRT POST (3)



UPPER POST NO. 2 (15)

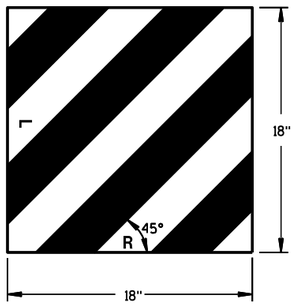


LOWER POST NO. 2 (16)



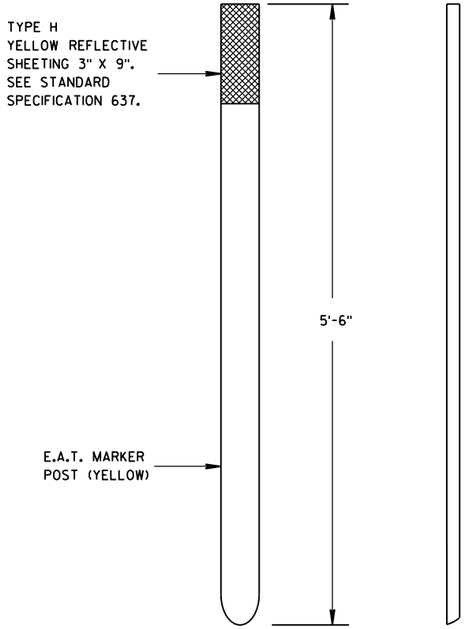
WOOD BLOCKOUT (4)

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



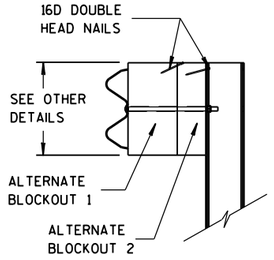
W5-59

REFLECTIVE SHEETING DETAIL (H)

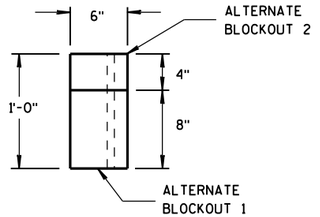


FRONT VIEW SIDE VIEW

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

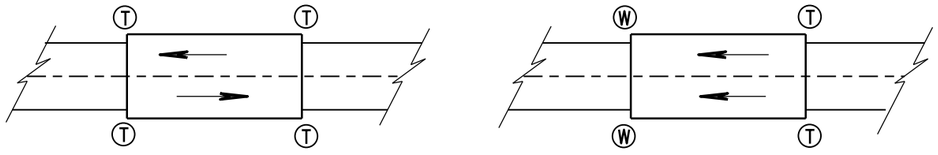
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS
UNIT SUPERVISOR

FHWA

6

S.D.D. 14 B 44-3c



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

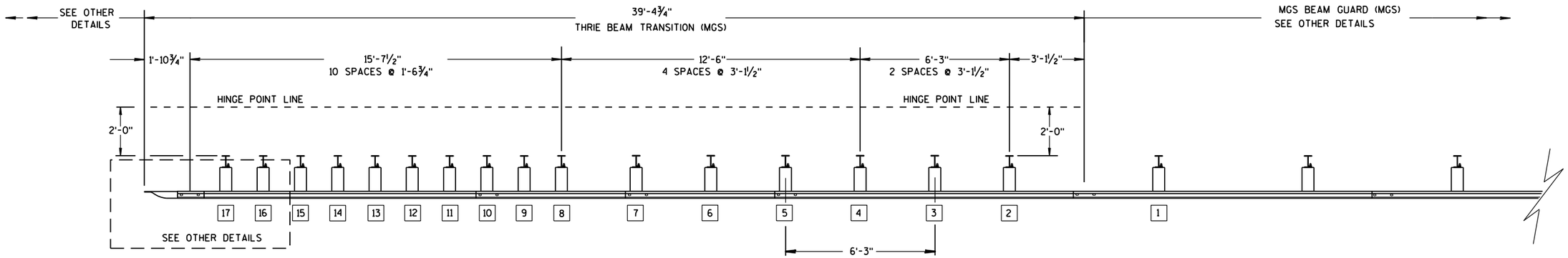
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

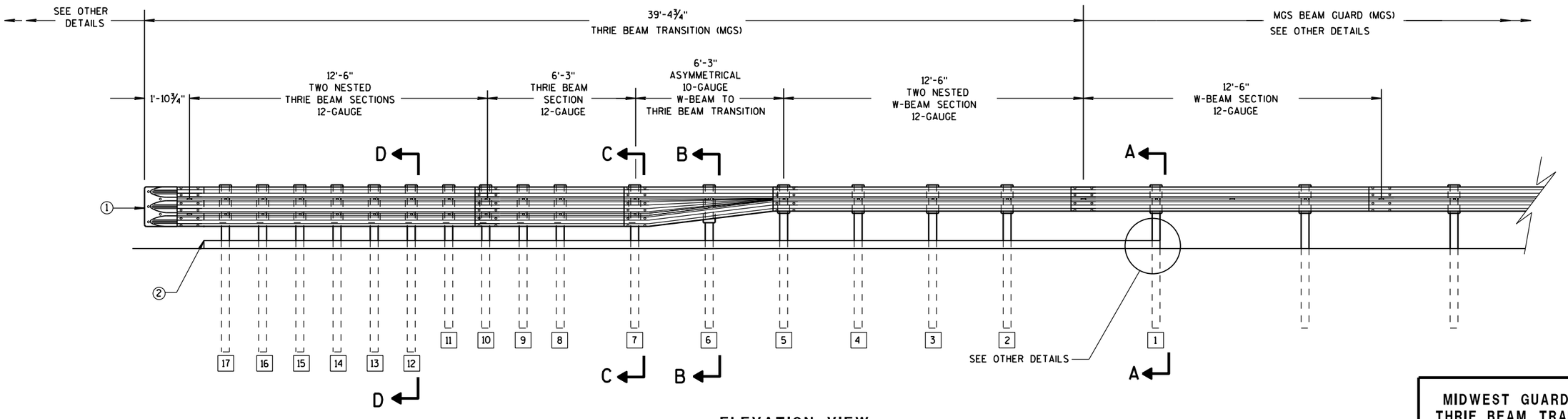
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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

6

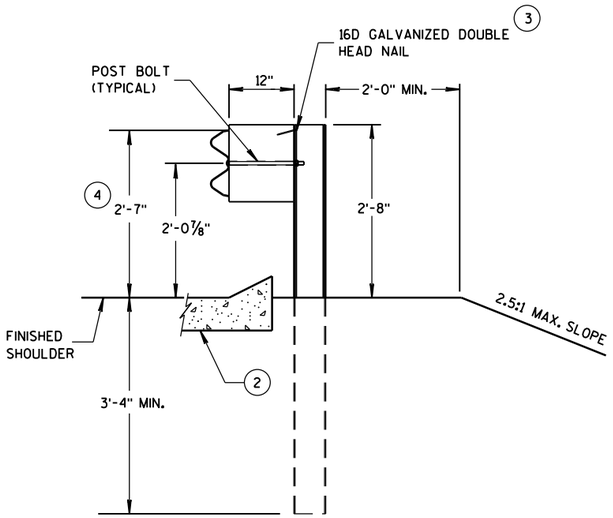
S.D.D. 14 B 45-4a

GENERAL NOTES

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

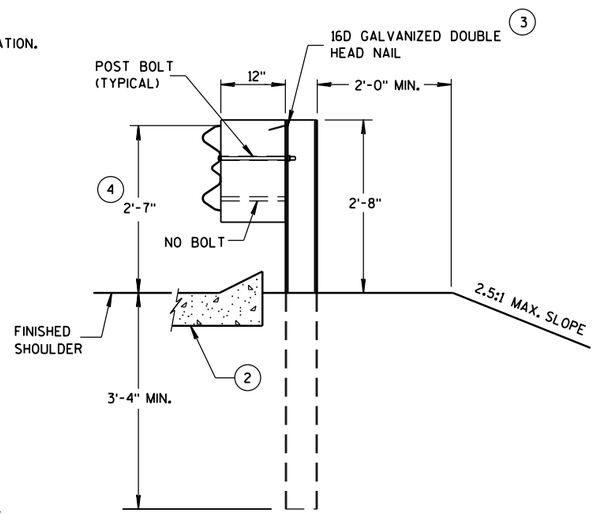
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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



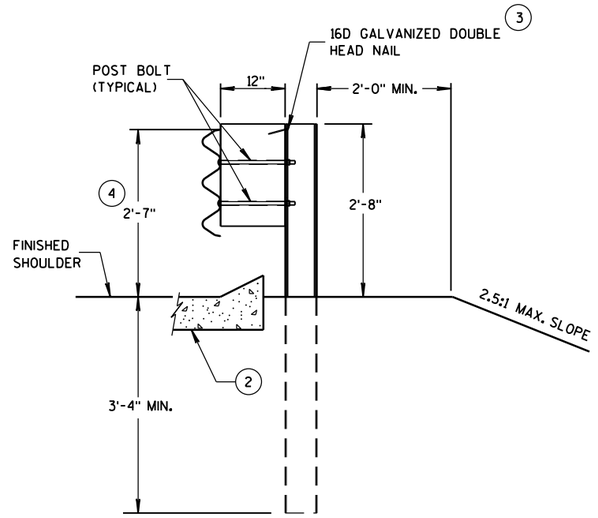
SECTION A-A

POSTS 1-5



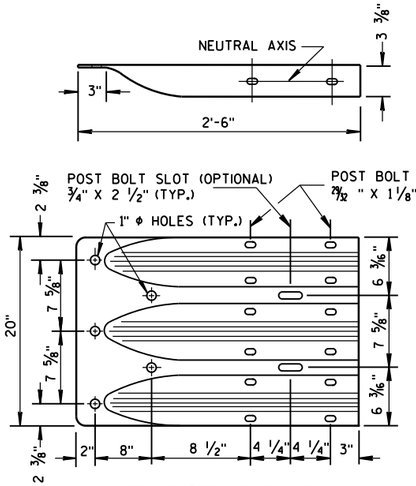
SECTION B-B

POST 6



SECTION C-C

POSTS 7-11



THRIE BEAM TERMINAL CONNECTOR

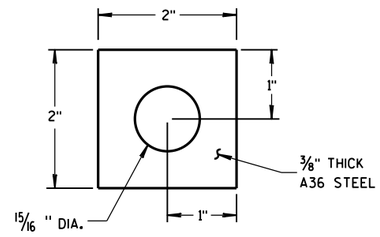
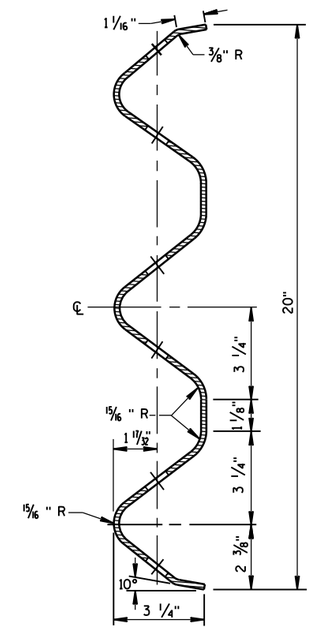
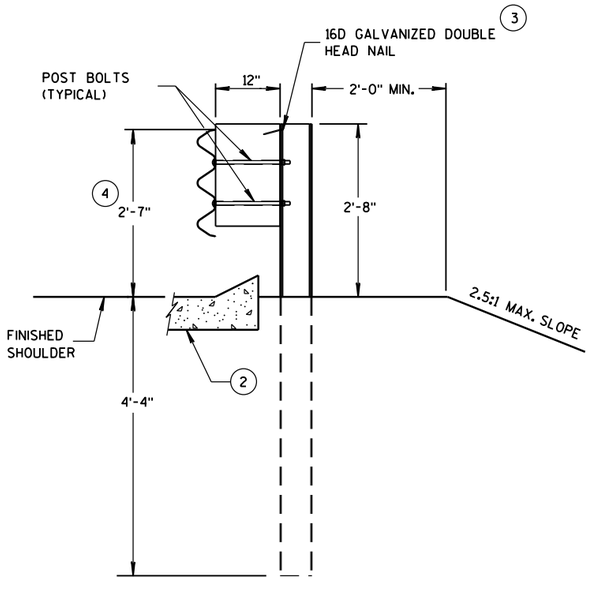


PLATE WASHER DETAIL

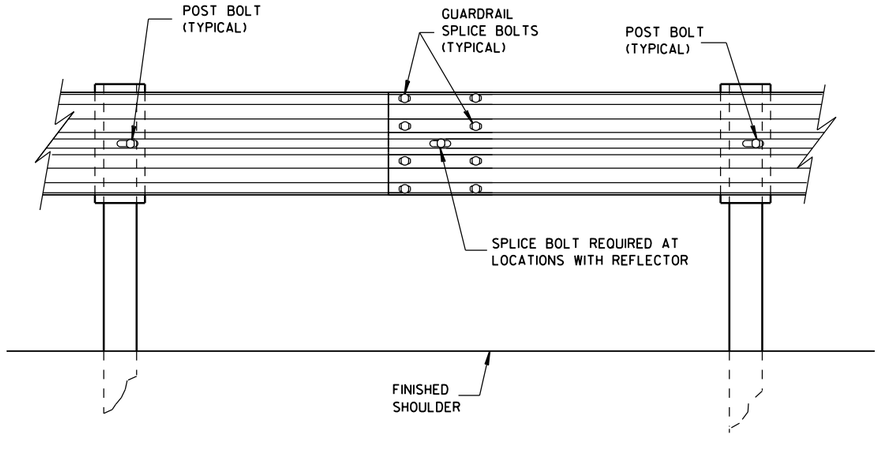


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-17



SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

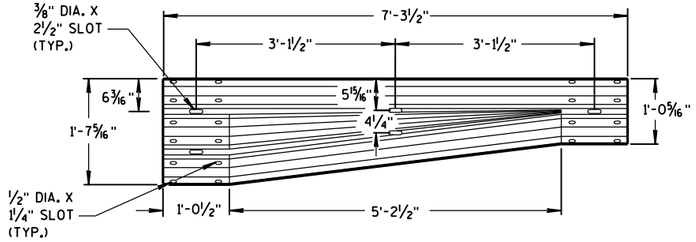
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

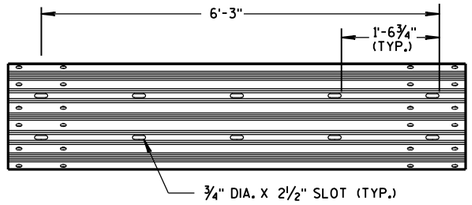
S.D.D. 14 B 45-4b

6

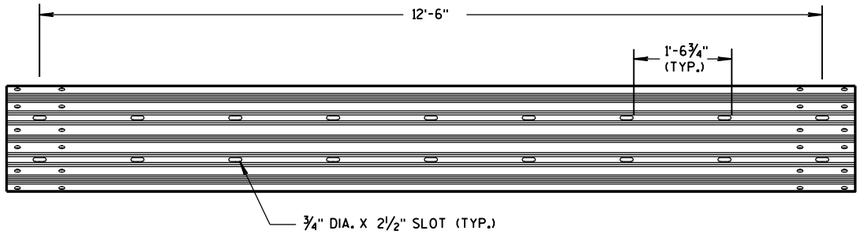
S.D.D. 14 B 45-4b



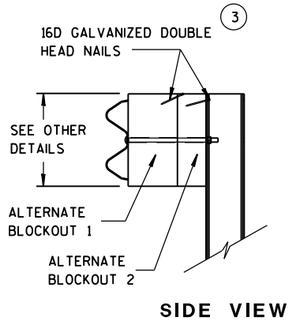
W-BEAM TO THRIE BEAM TRANSITION SECTION



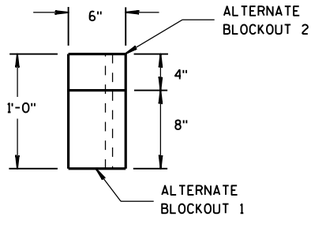
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

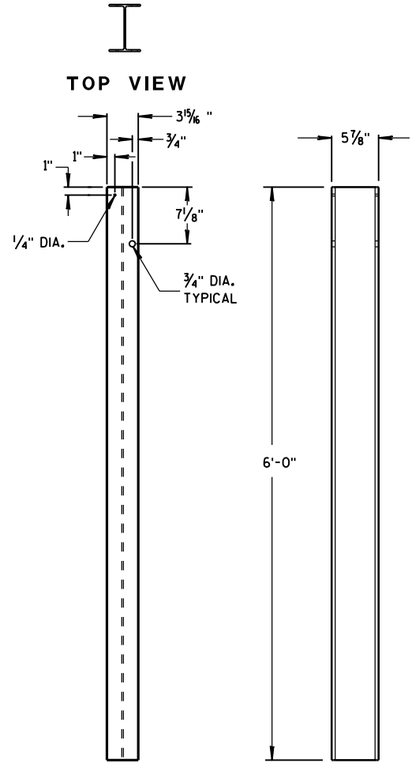


SIDE VIEW



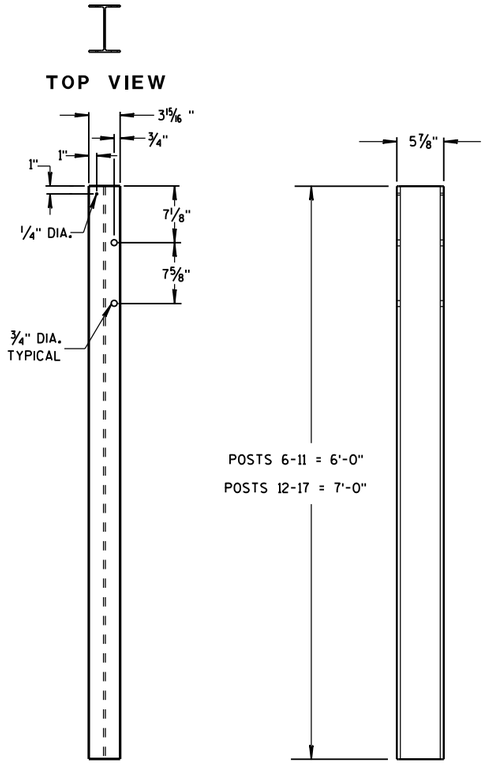
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



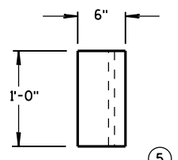
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5

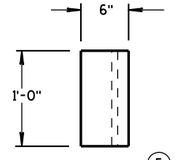


FRONT VIEW SIDE VIEW

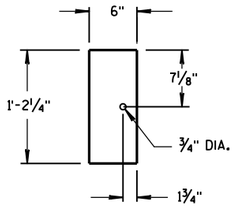
STEEL POSTS 6-17



TOP VIEW (5)

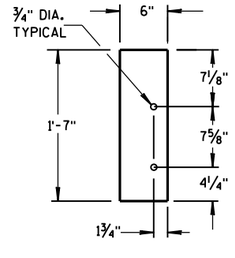


TOP VIEW (5)



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.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

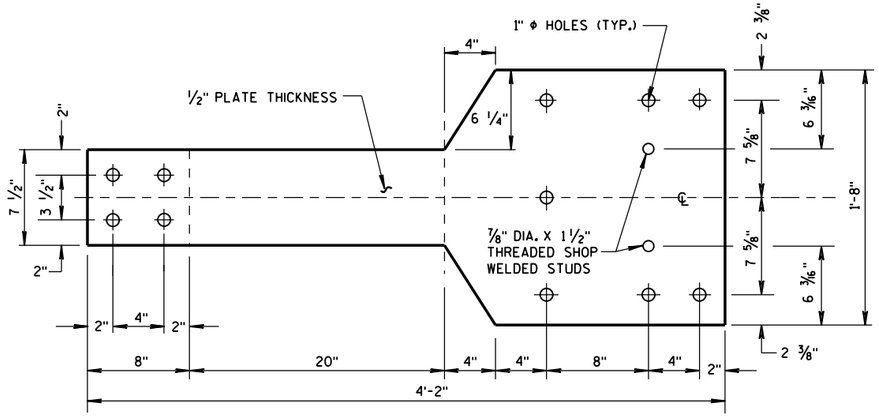
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

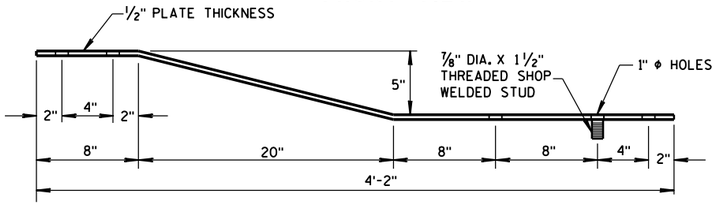
S.D.D. 14 B 45-4c

GENERAL NOTES

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

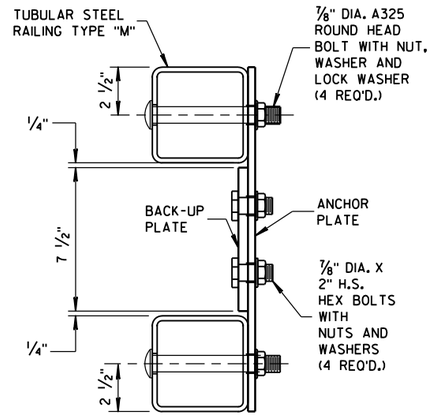


FRONT VIEW

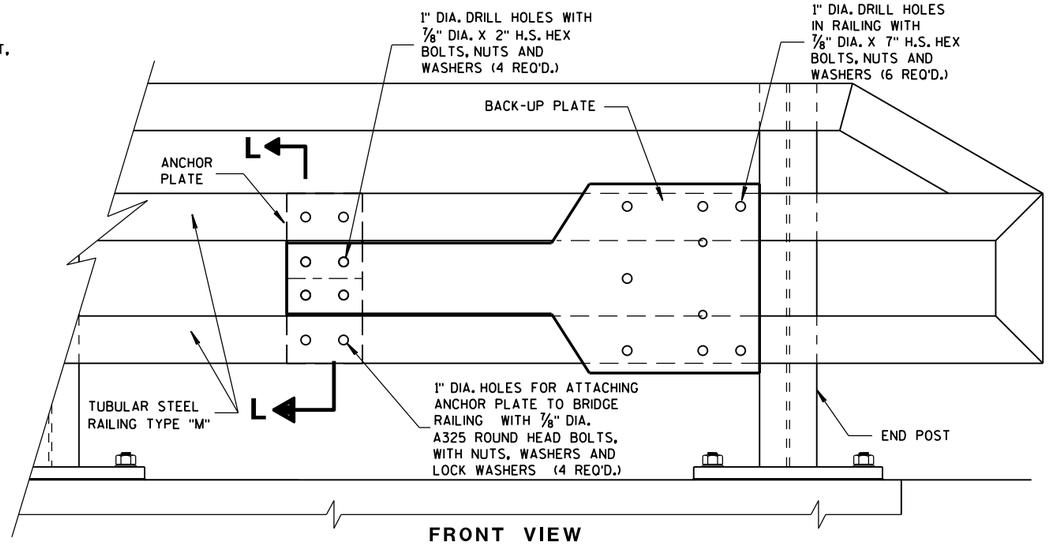


PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

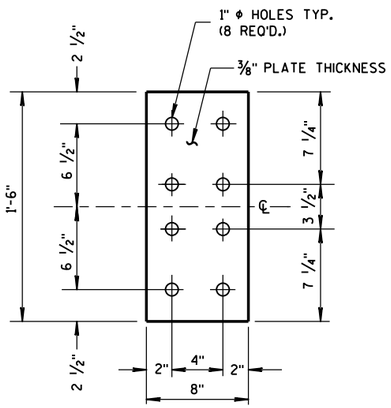


SECTION L-L



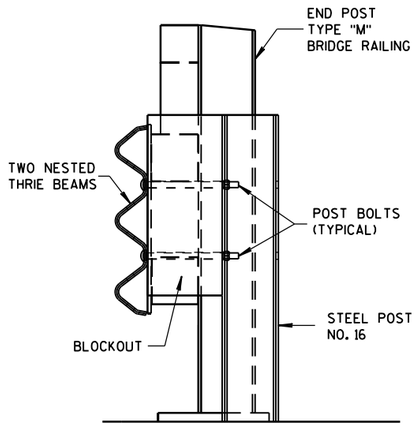
FRONT VIEW

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

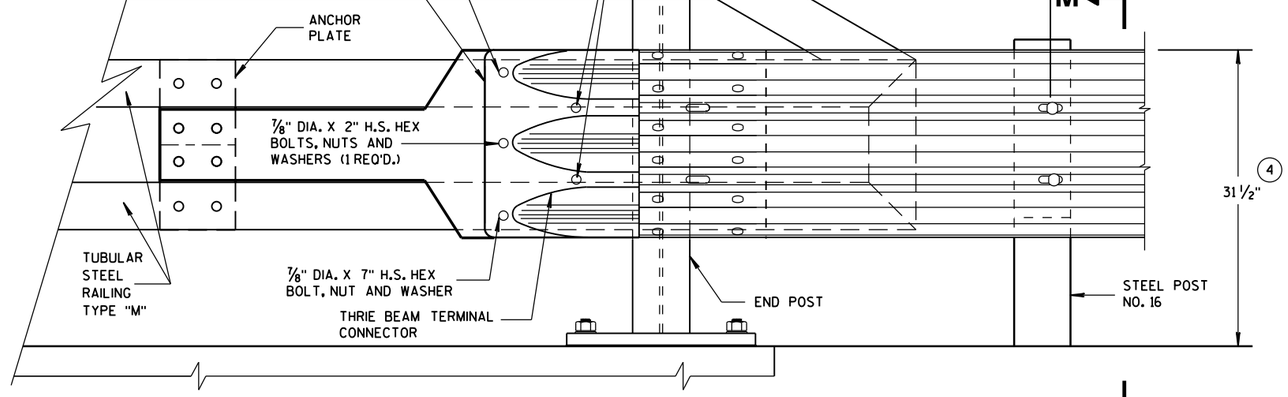


FRONT VIEW

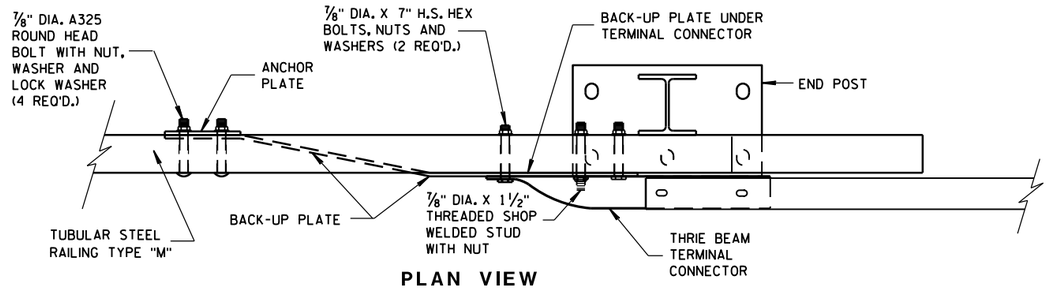
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-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

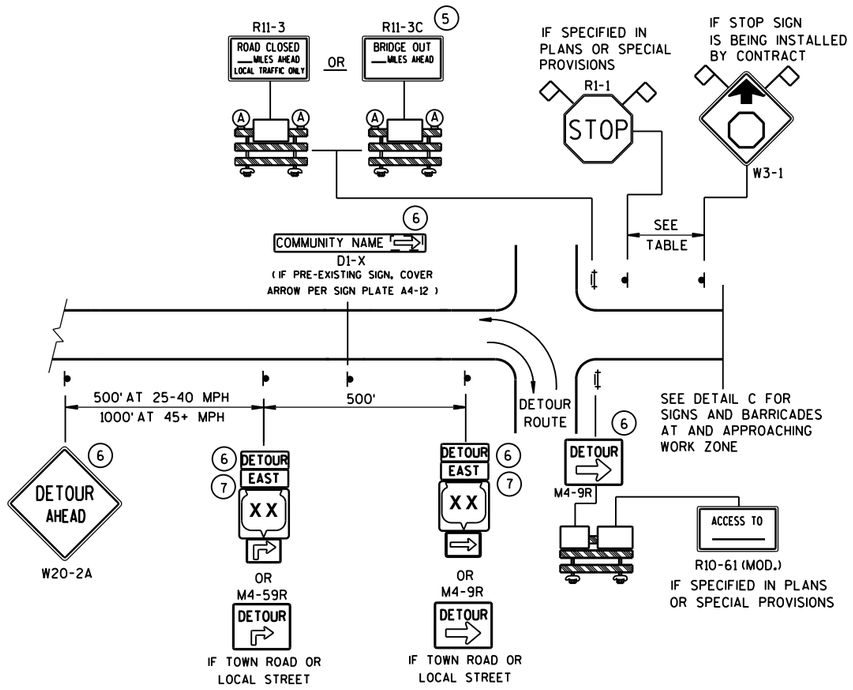
APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

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

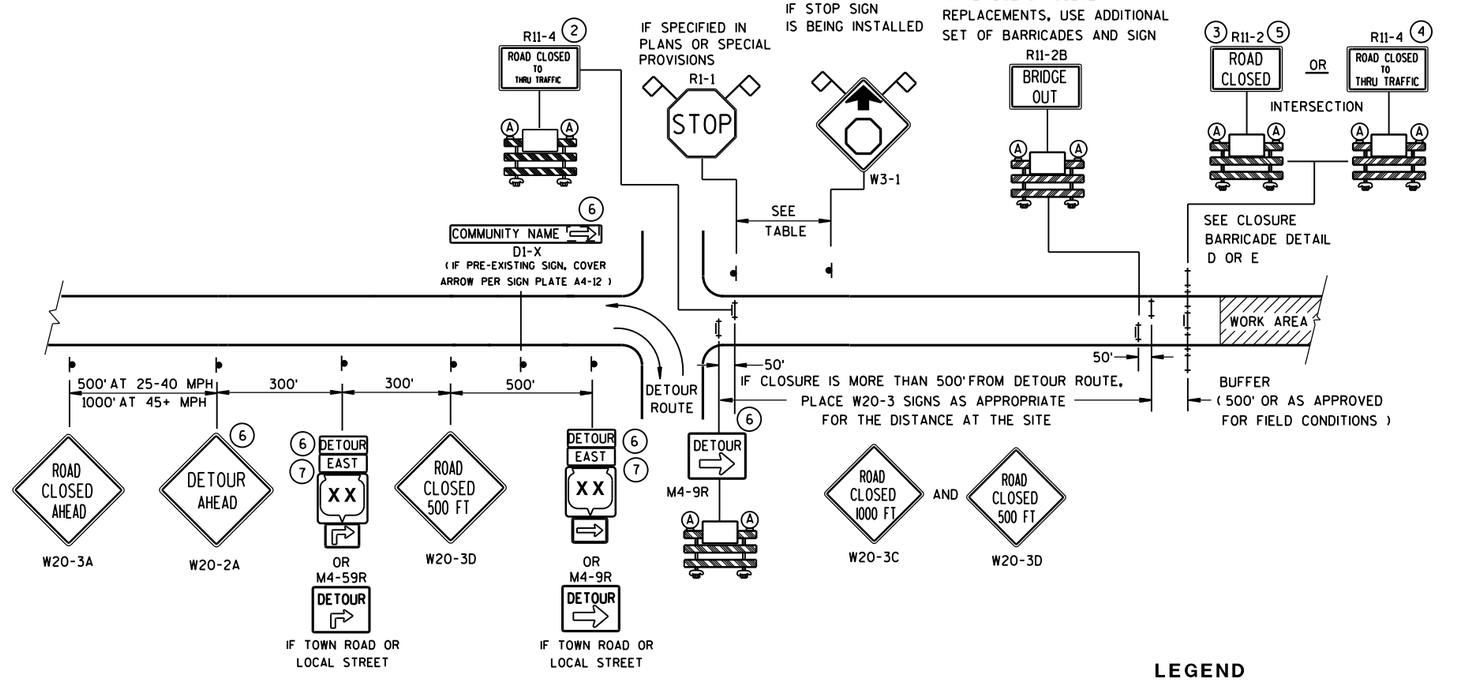
6

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



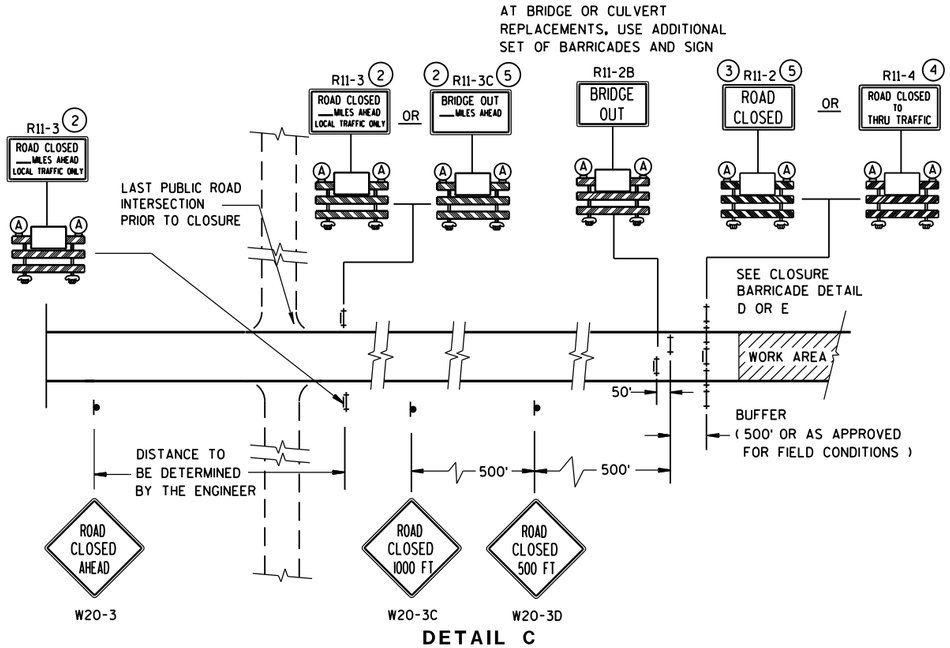
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN 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
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

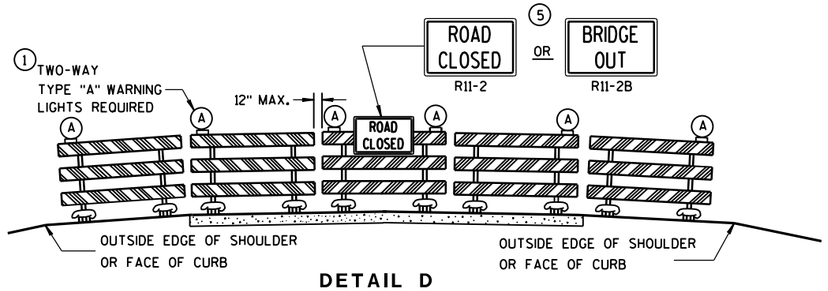
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

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

6

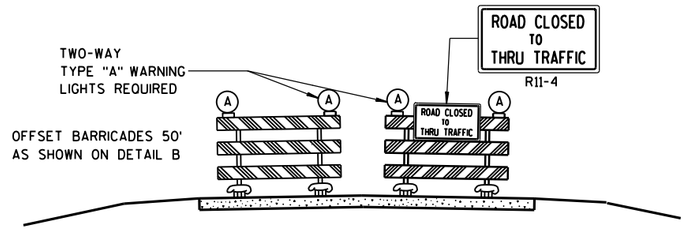
S.D.D. 15 C 2-6a



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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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, 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". (30" X 15" 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.)
- M05-1 AND M06-1 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 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 LANE 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 MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO... SAFETY ENGI... — FHWA — FIC

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S.D.D. 15 C 2-6b

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

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.

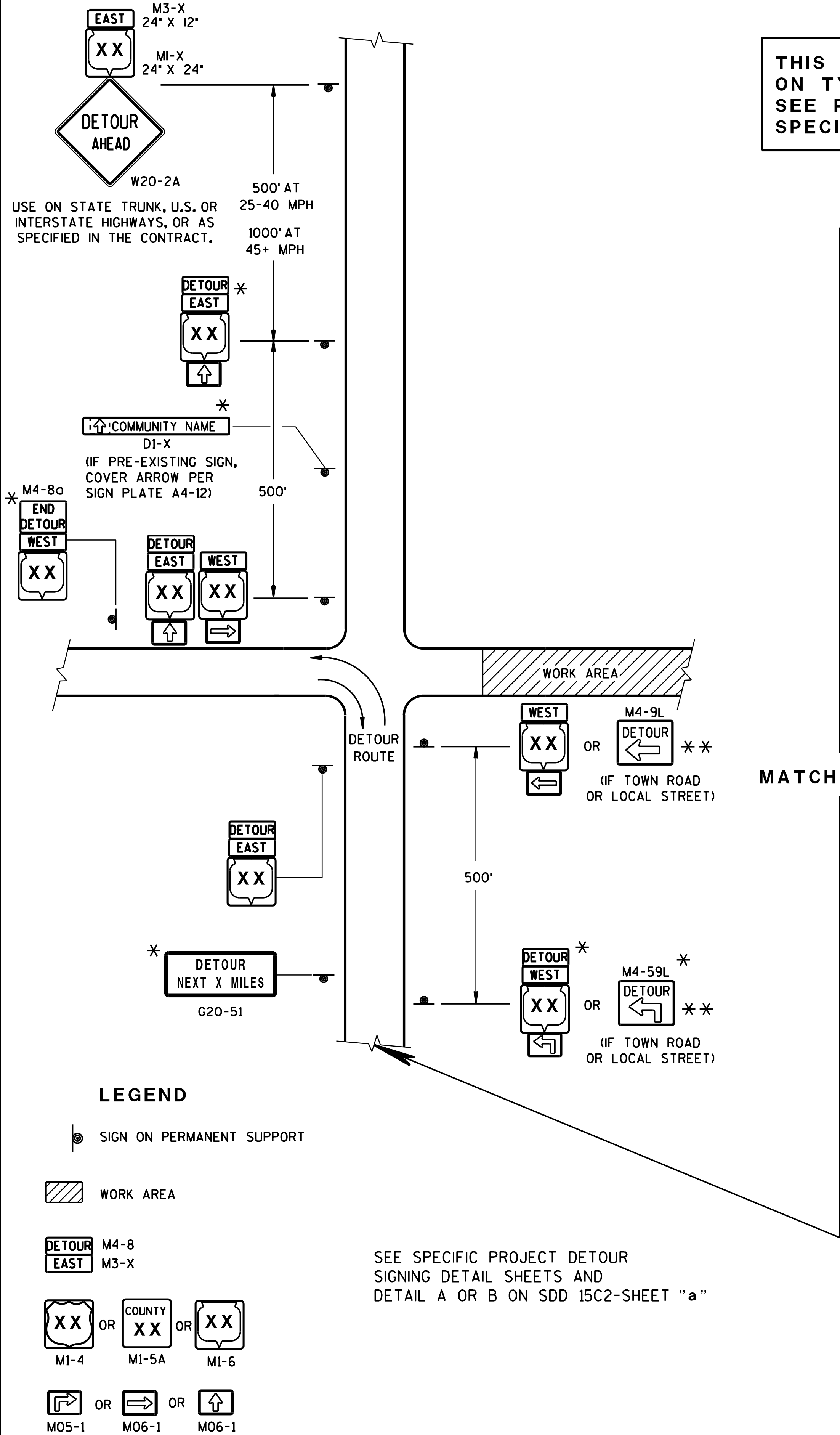
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

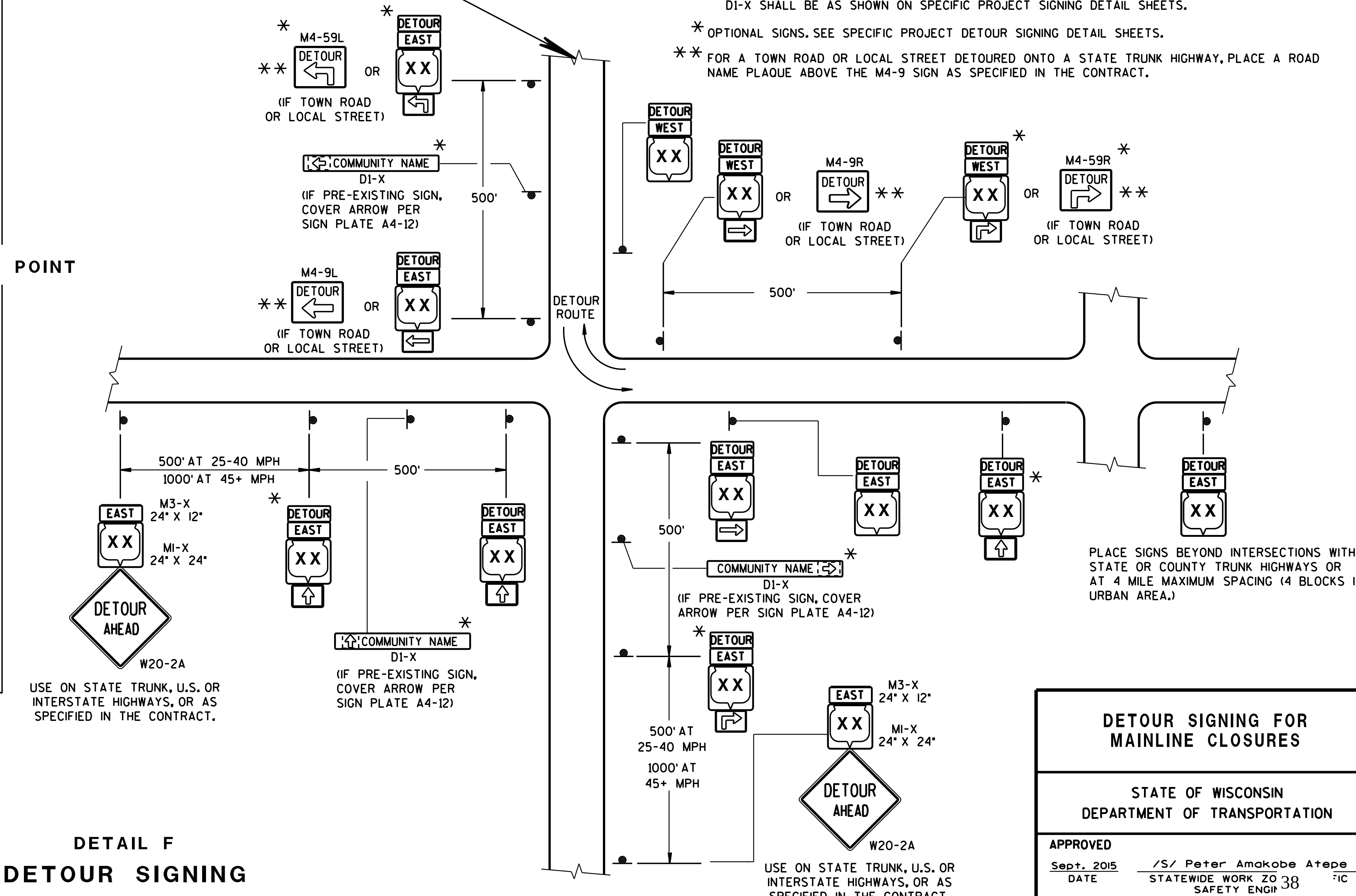
SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" 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.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 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.





DETAIL F
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

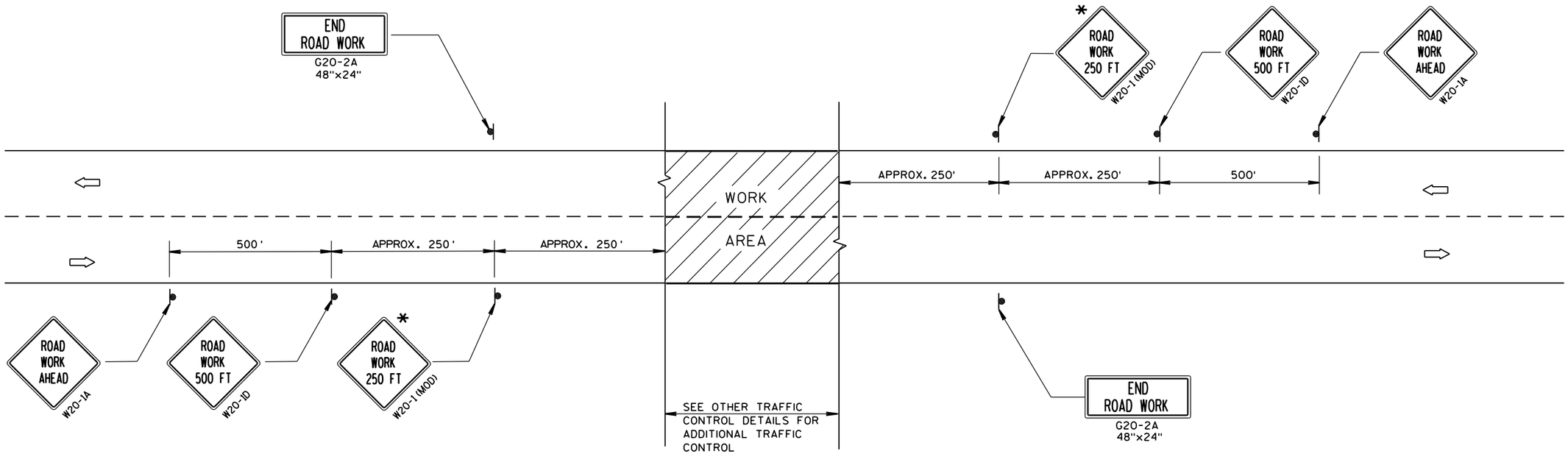
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 15 C 2-6c

TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

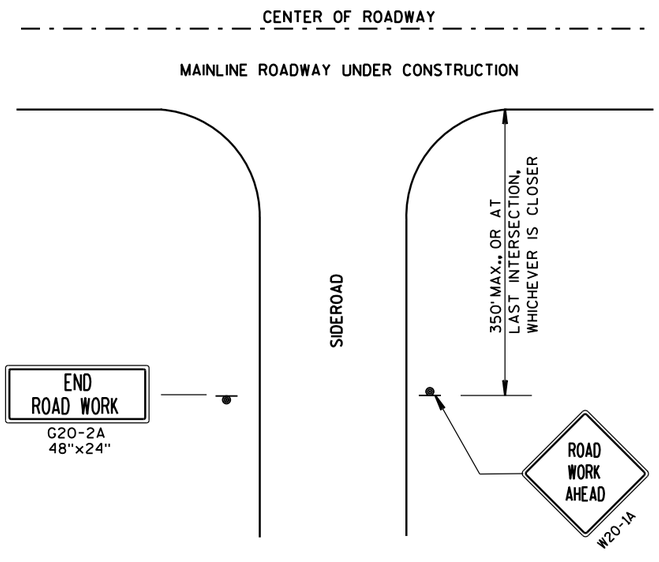
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



LEGEND

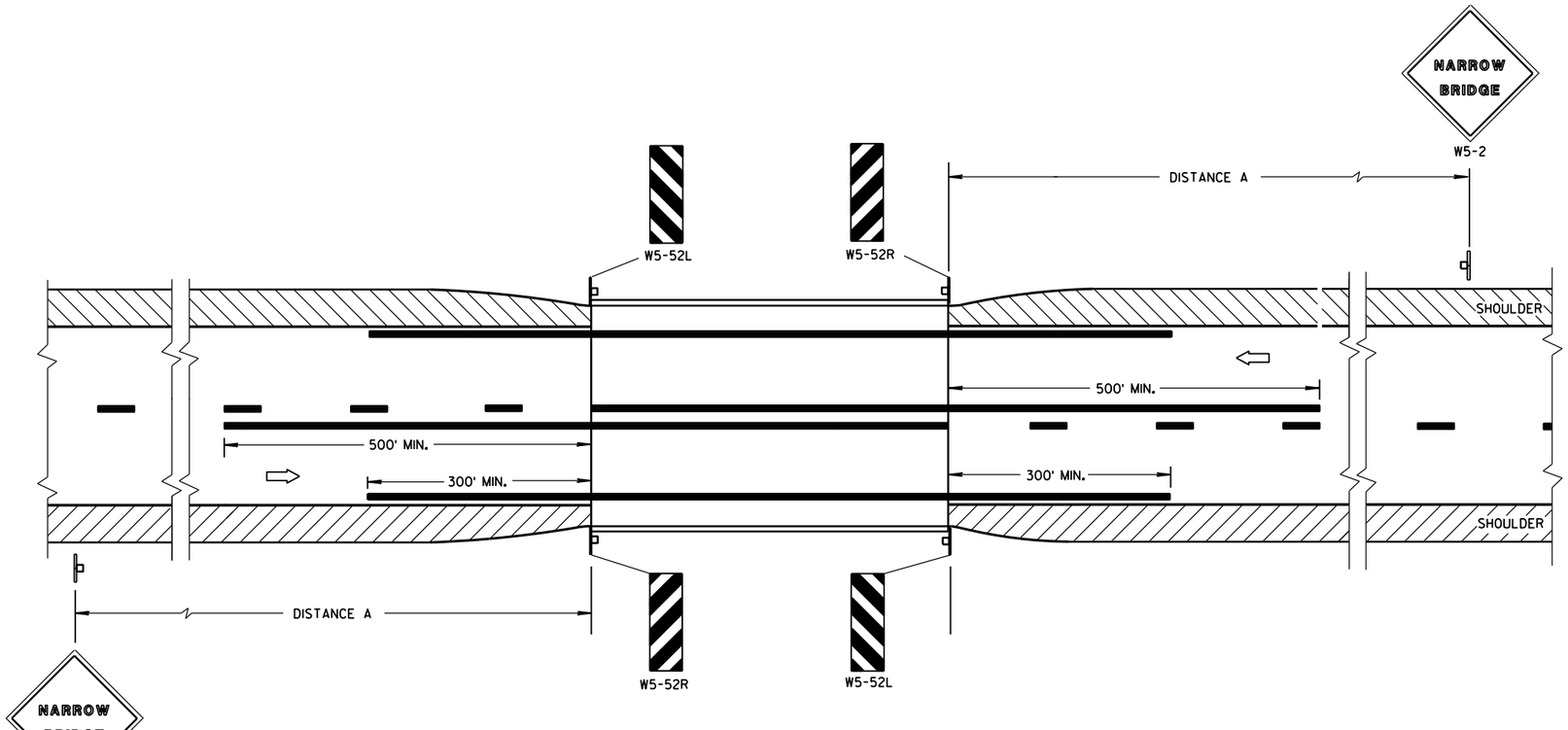
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 15 C 5-4



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

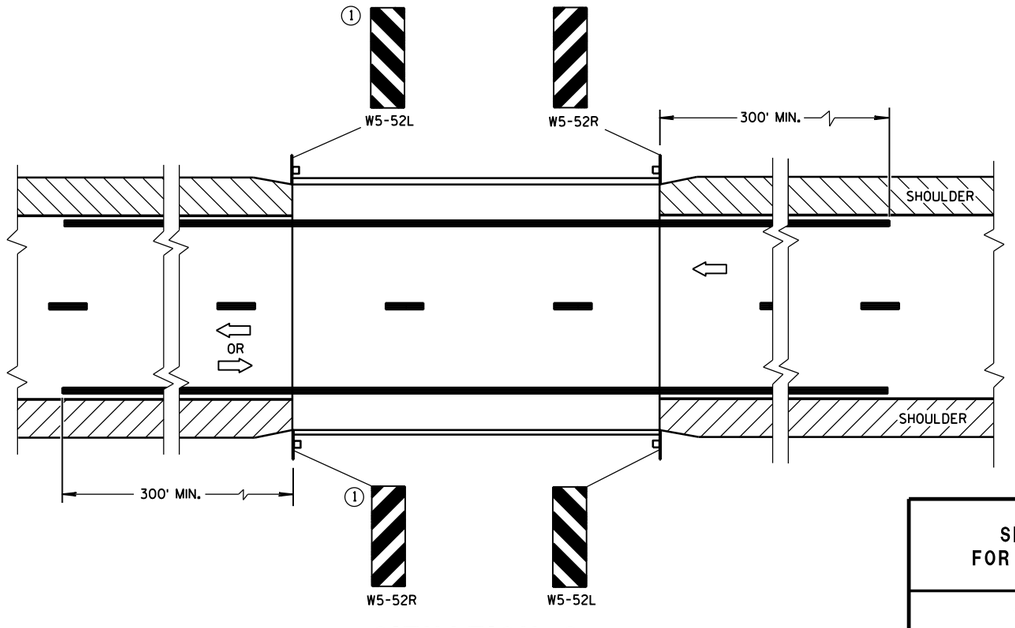
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

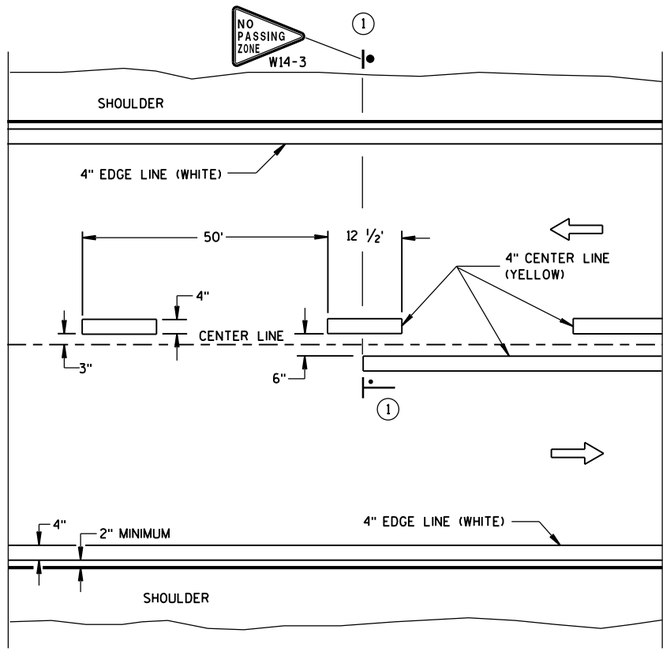
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

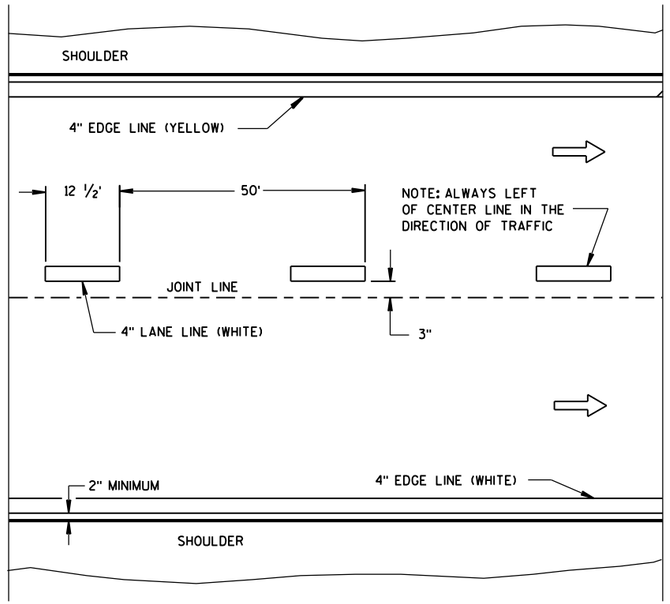
S.D.D. 15 C 6-9

6

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.

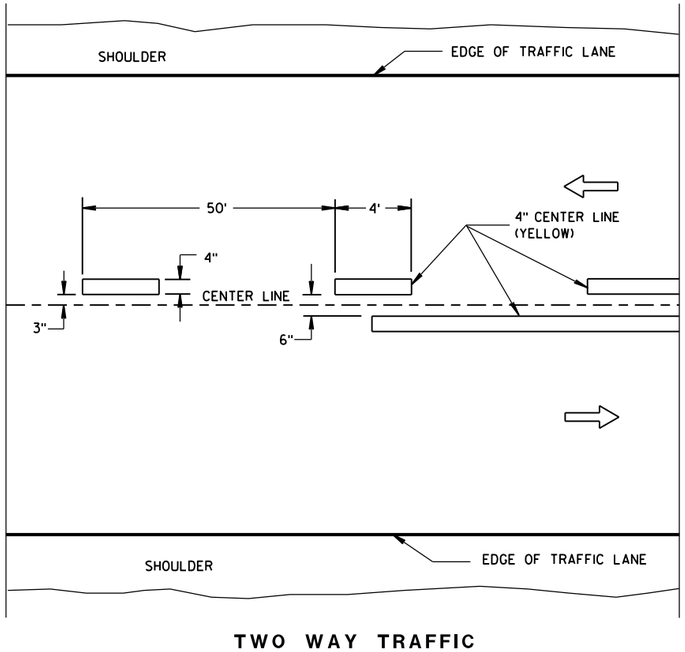
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

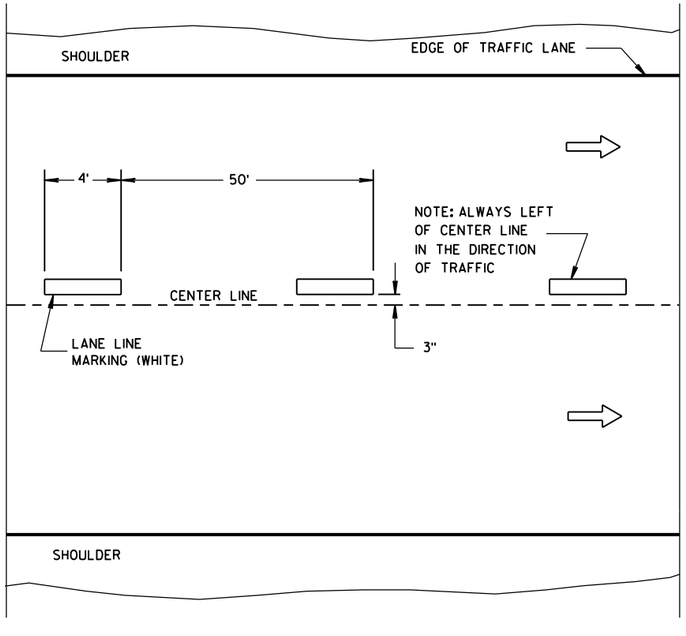
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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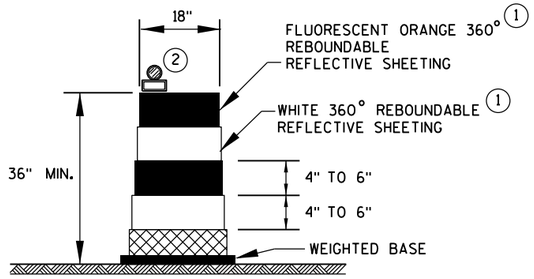
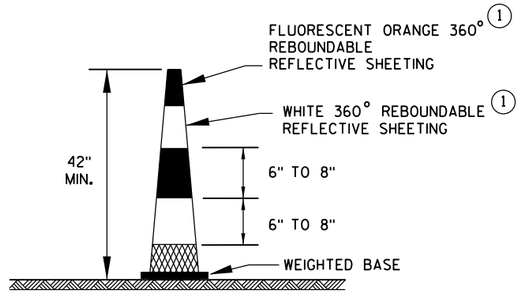
S.D.D. 15 C 8-18a



DRUM

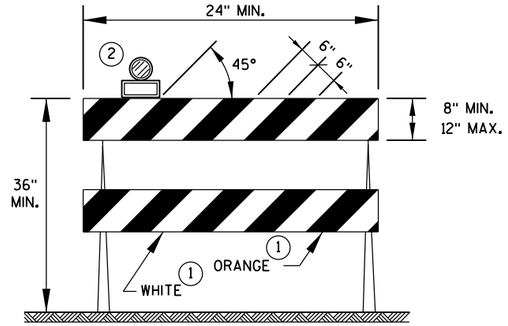


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

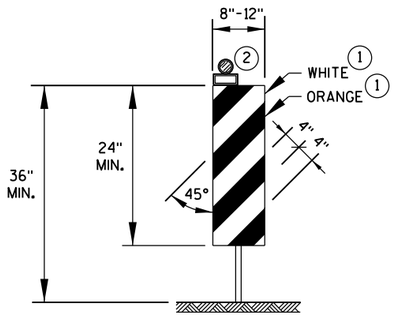
GENERAL NOTES

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



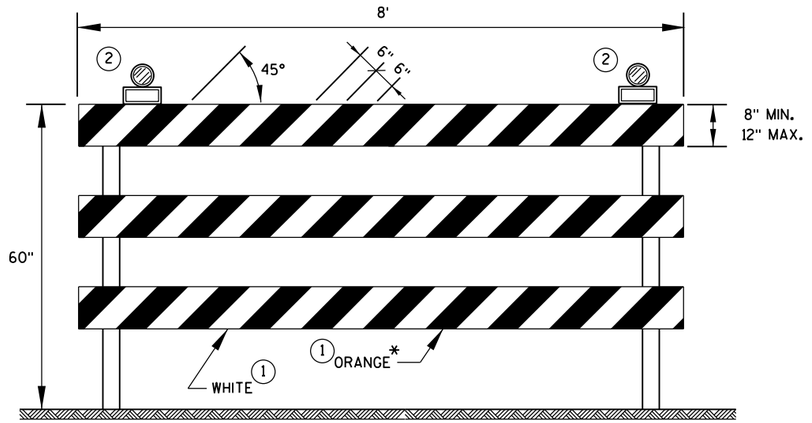
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

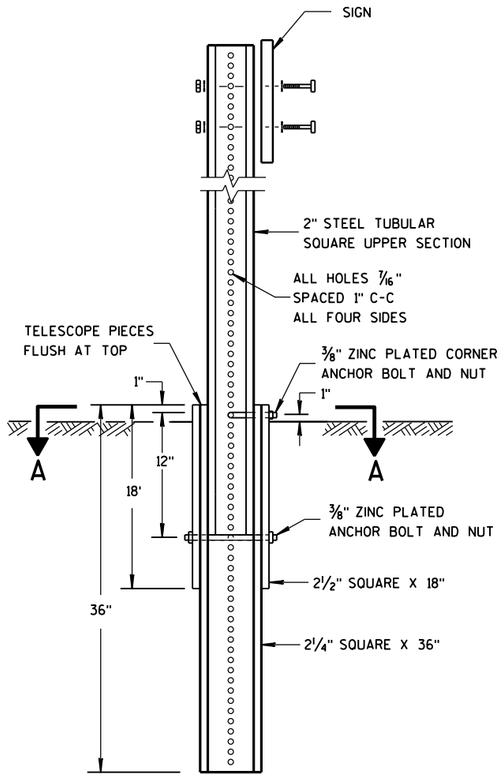
June 2017 — DATE

/S/ Andrew Heidtke — WORK ZONE ENG

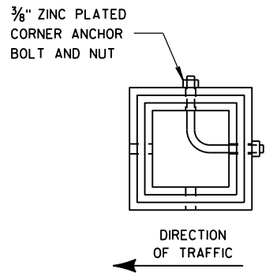
FHWA

6

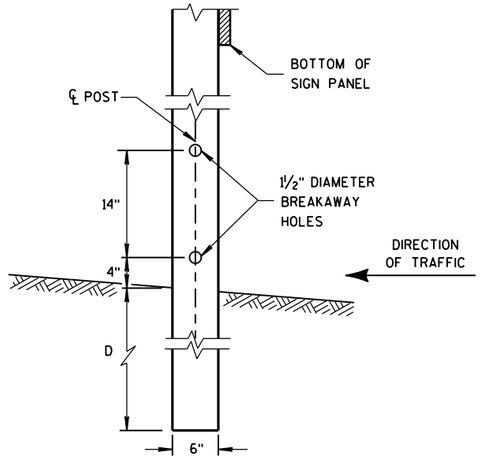
S.D.D. 15 C 11-7b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



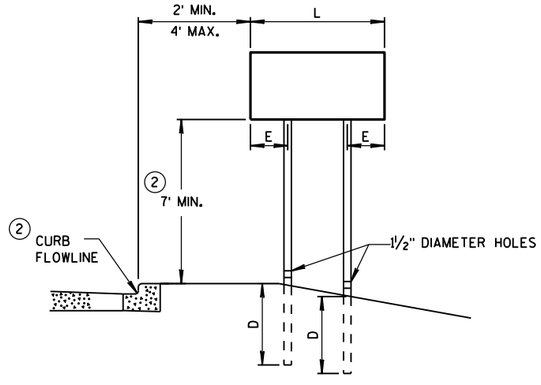
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

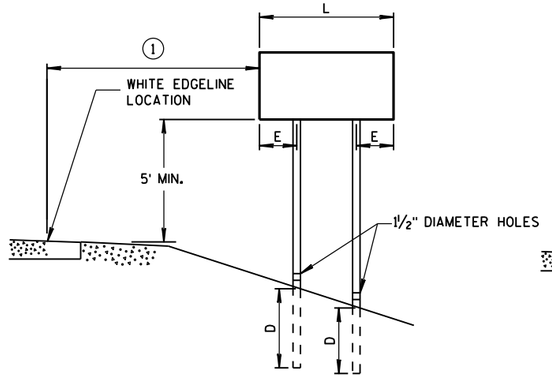
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

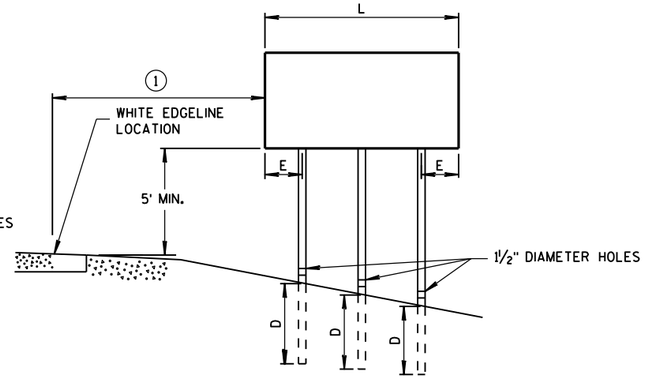
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK 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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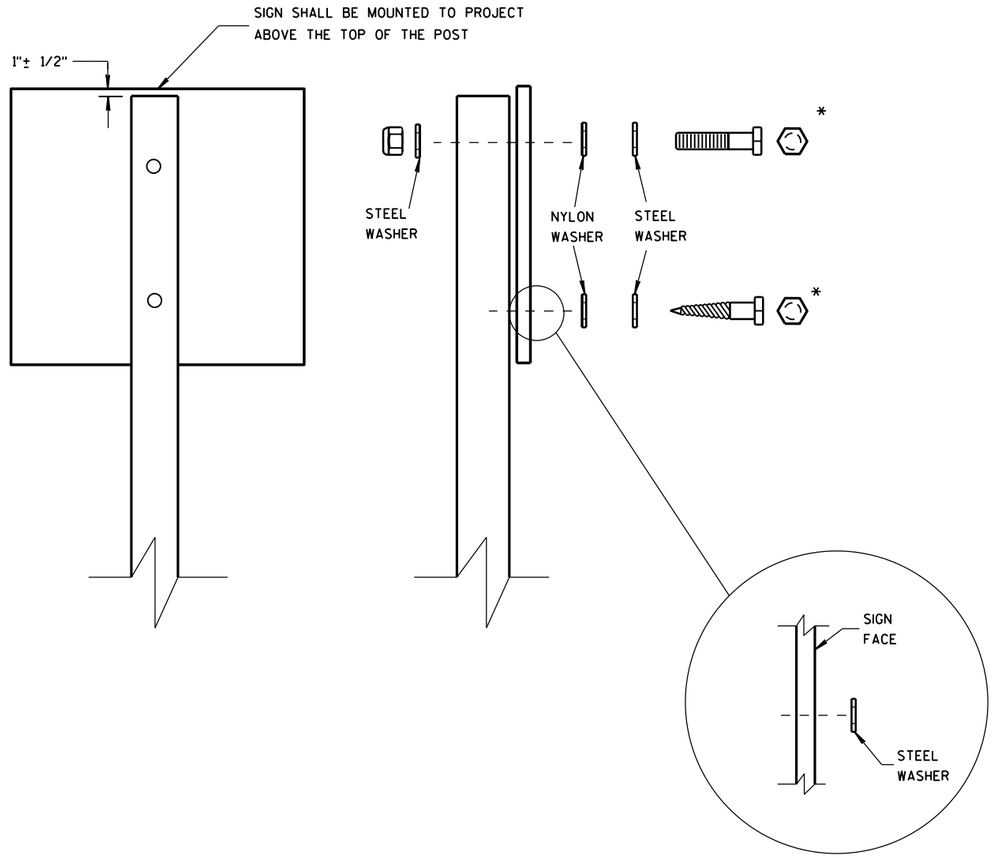
S.D.D. 15 D 38-2a
S.D.D. 15 D 38-2a



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

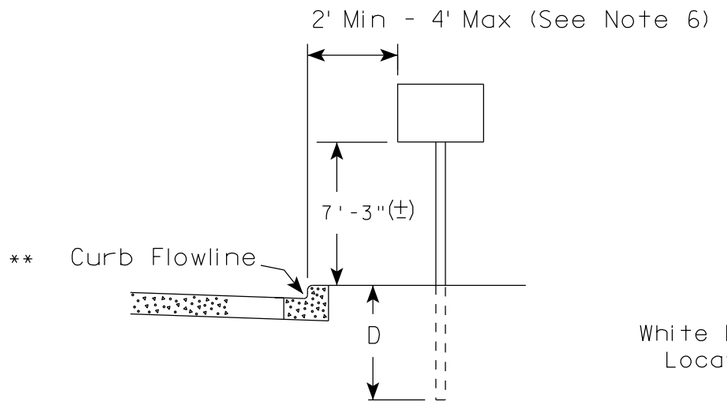
APPROVED

June 2017
DATE

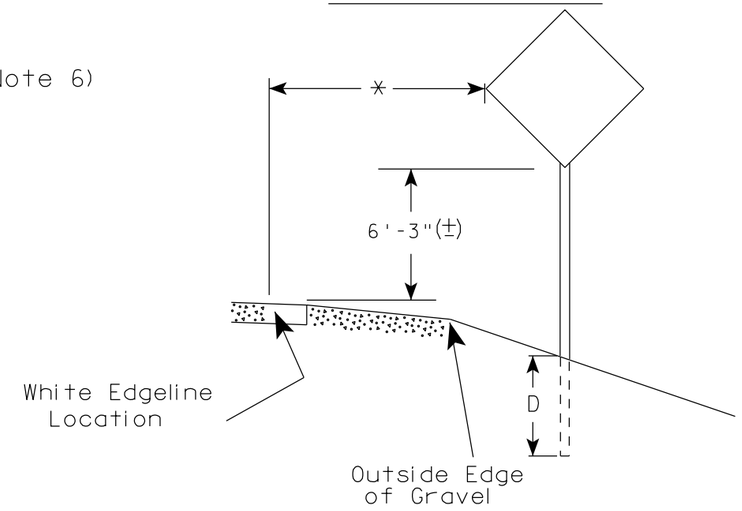
/S/ Andrew Heldtke
WORK ZONE ENG

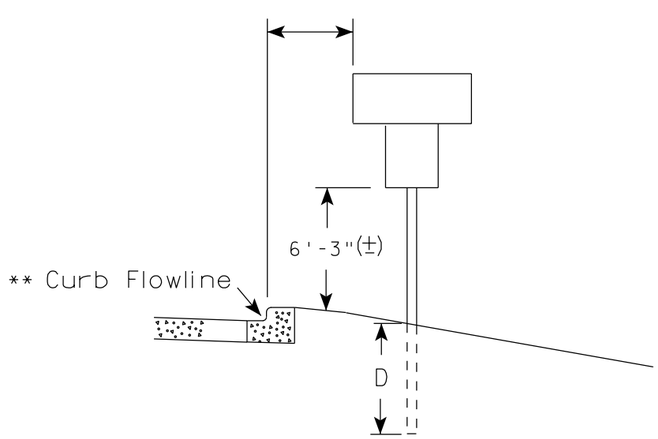
FHWA

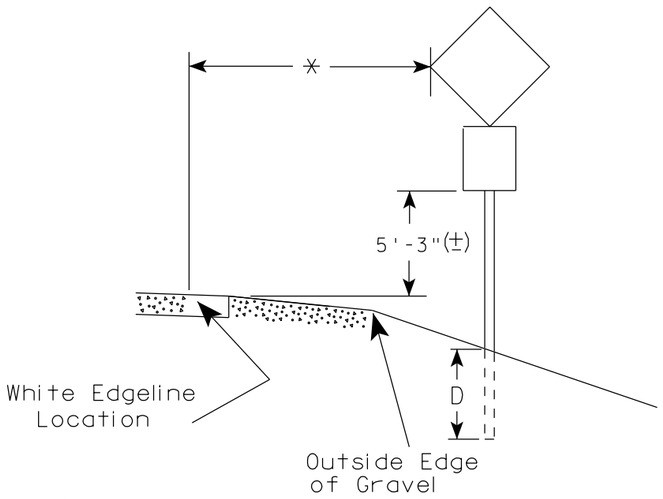
URBAN AREA



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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
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.

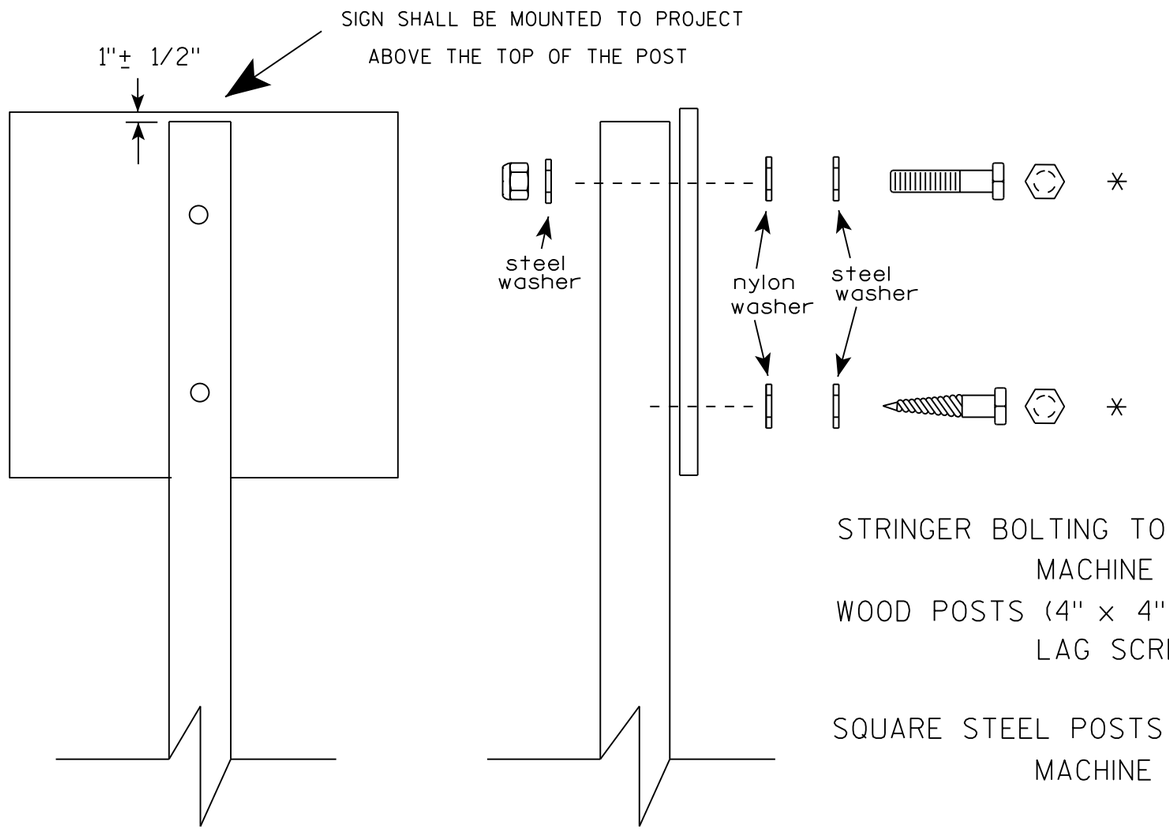
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	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

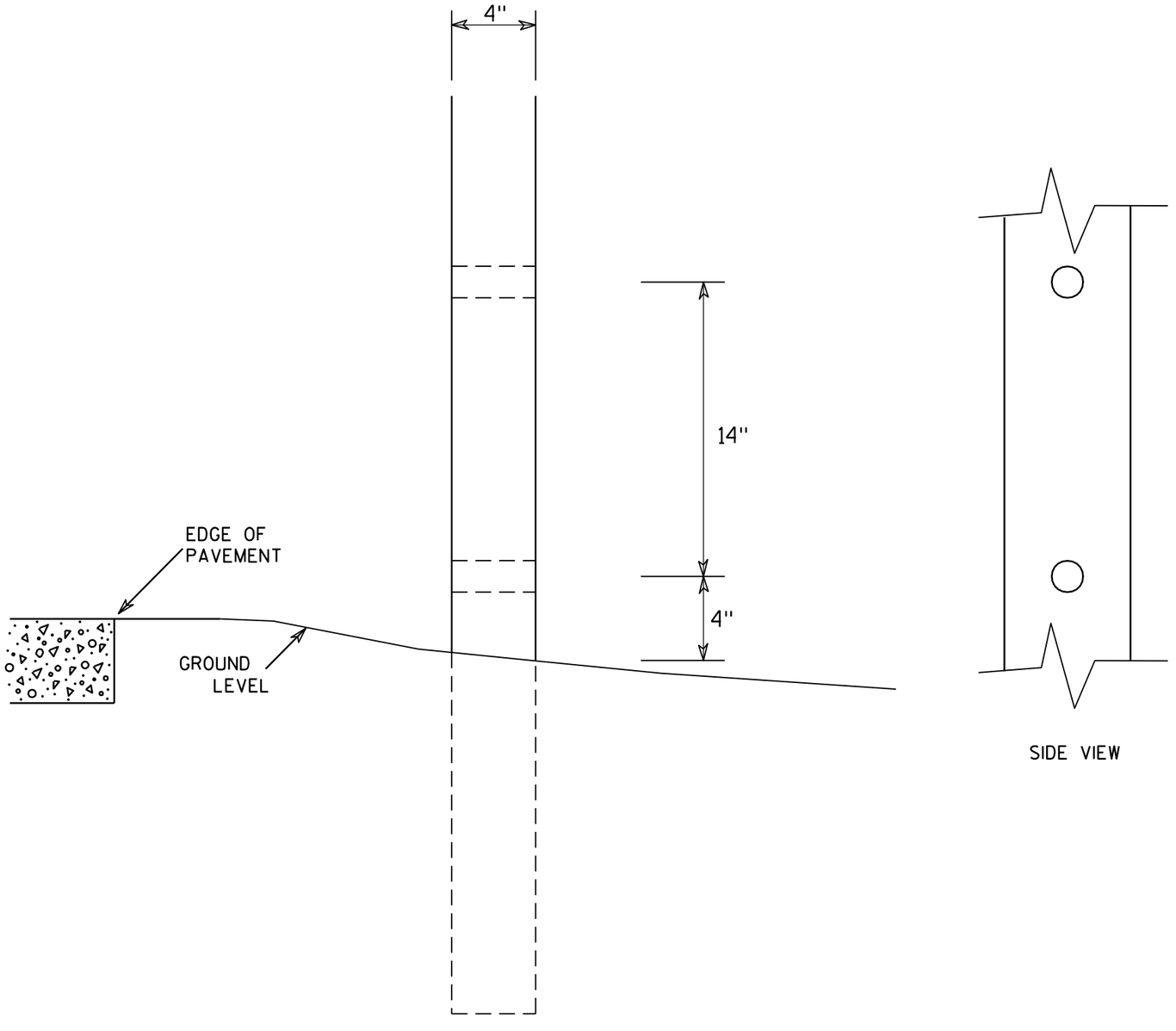
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$



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.

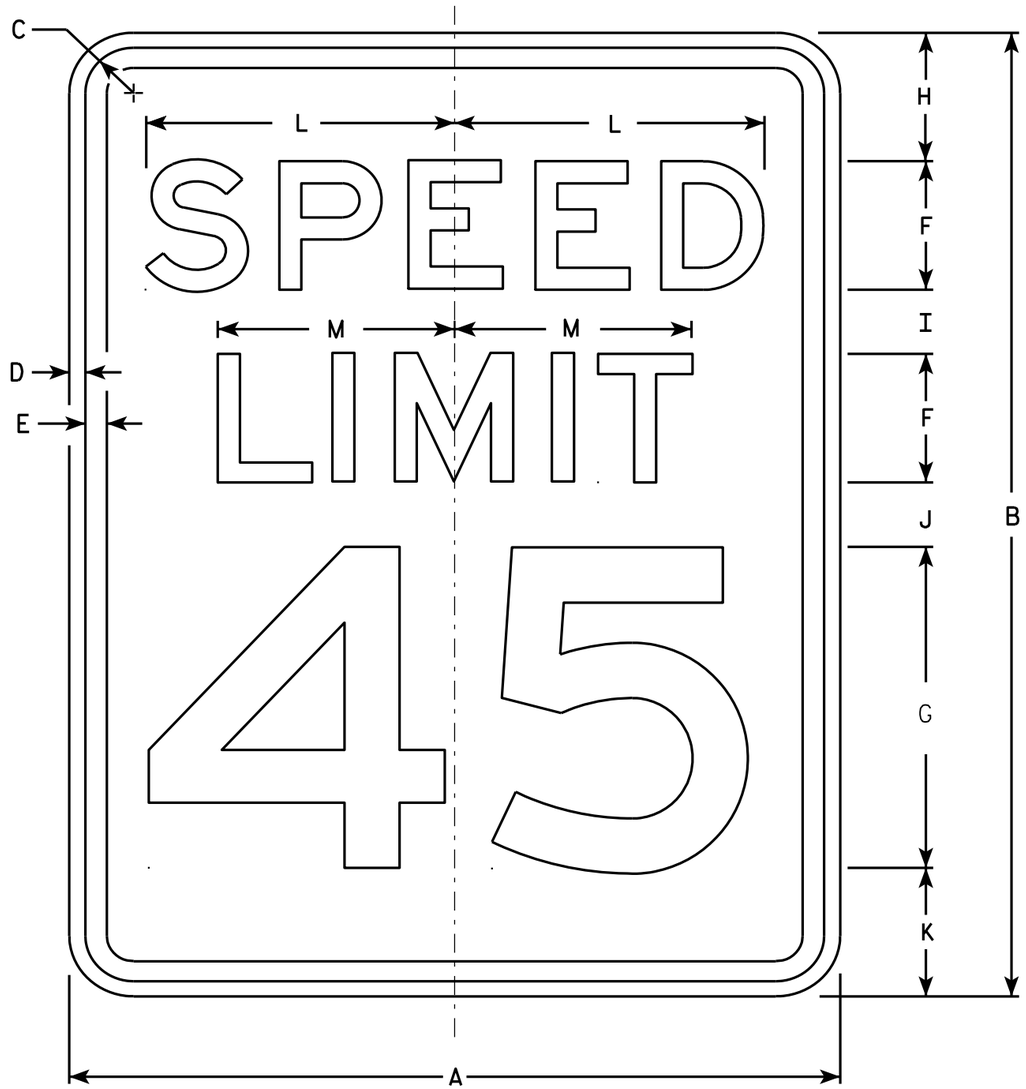
4 X 6 WOOD POST MODIFICATIONS

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: 47	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
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 adjust spacing to achieve proper balance.

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	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

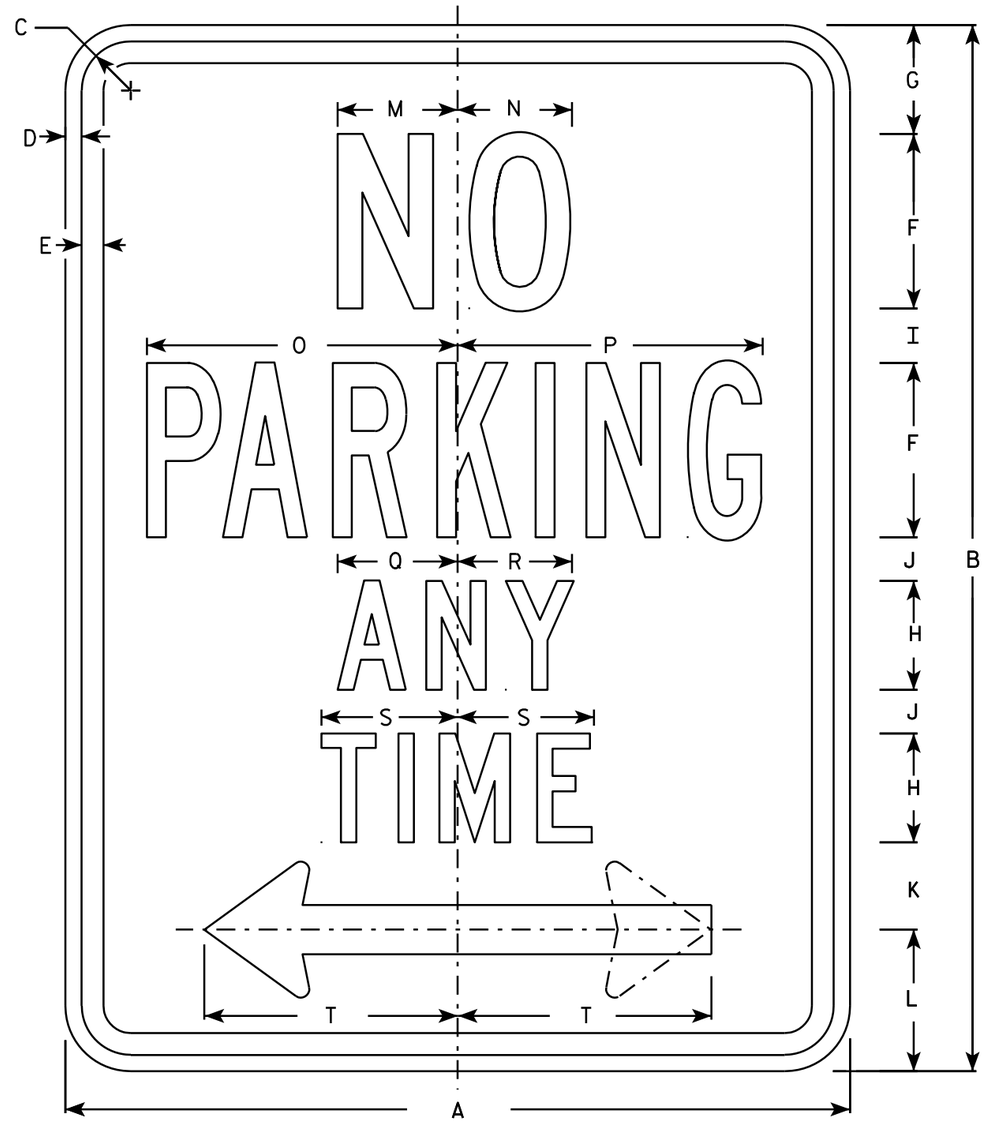
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

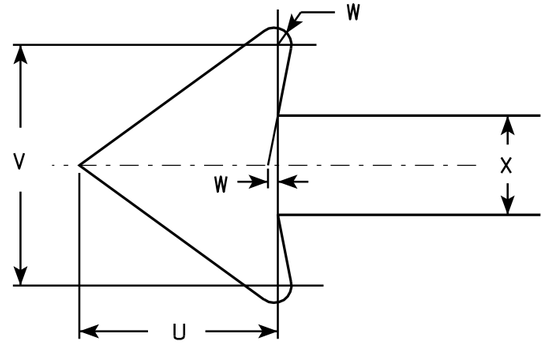
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 48	E



R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
   R7-1L (left arrow)
   R7-1R (right arrow)



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	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

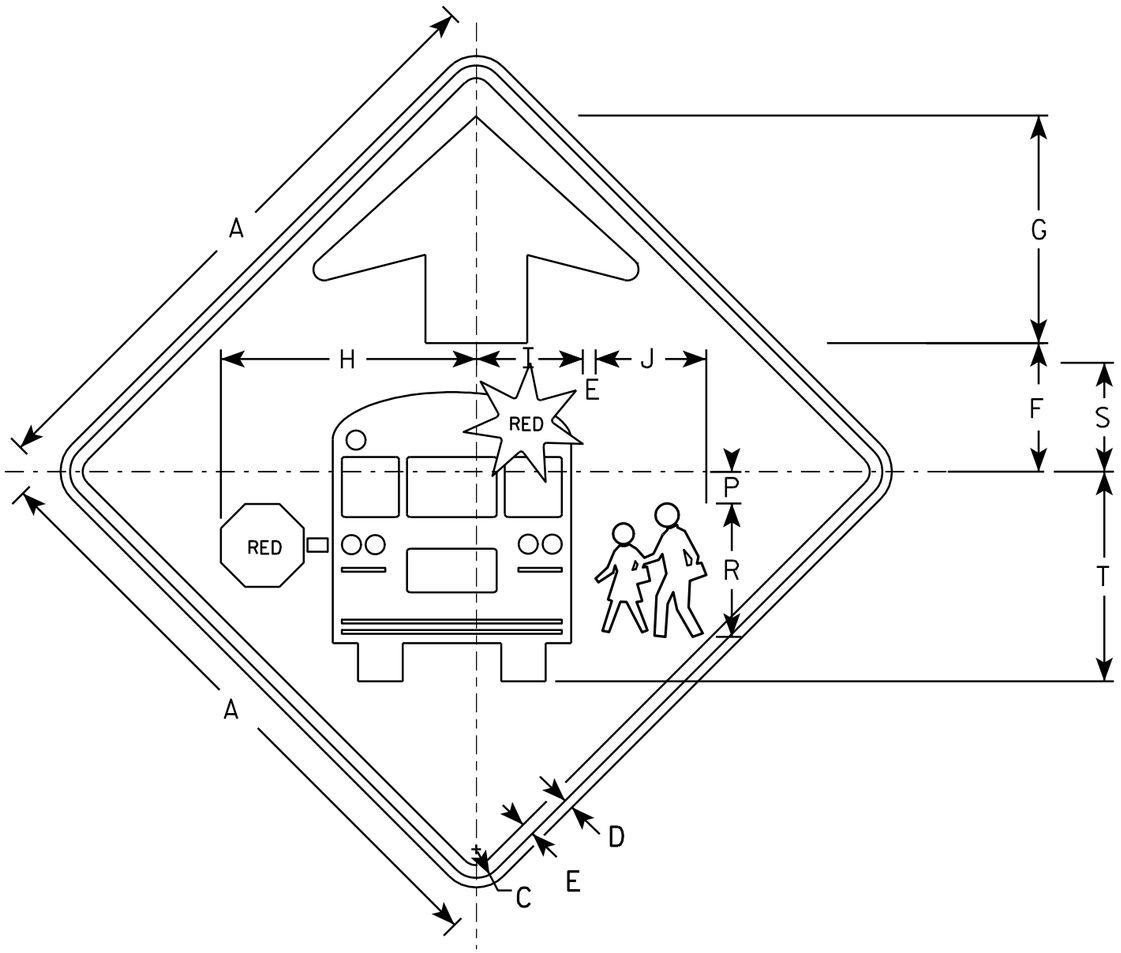
STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

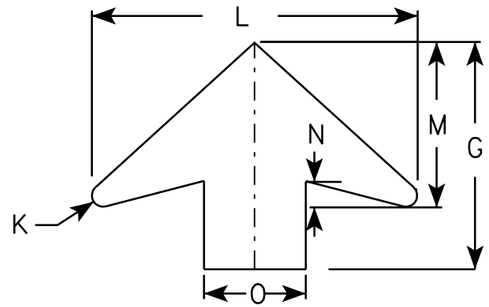
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 49	E



S3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW-GREEN
   Message - BLACK except as noted
   Circles except PEDS- RED BACKGROUND
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.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	12 1/2	5 1/4	5 1/2	1/2	16	8	1 1/4	5	1 1/2		6 5/8	5 3/8	10 3/8							6.25
2	36		1 5/8	5/8	3/4	7 1/2	13 1/2	15 1/8	6 1/4	6 1/2	5/8	19 1/4	9 3/4	1 5/8	6	1 7/8		7 7/8	6 3/8	12 3/8							9.0
3	48		2 1/4	3/4	1	10	17 7/8	20 1/8	8 3/8	8 3/4	7/8	25 5/8	13	2	8	2 1/2		10 1/2	8 1/2	16 1/2							16.0
4	48		2 1/4	3/4	1	10	17 7/8	20 1/8	8 3/8	8 3/4	7/8	25 5/8	13	2	8	2 1/2		10 1/2	8 1/2	16 1/2							16.0
5																											

STANDARD SIGN
S3-1

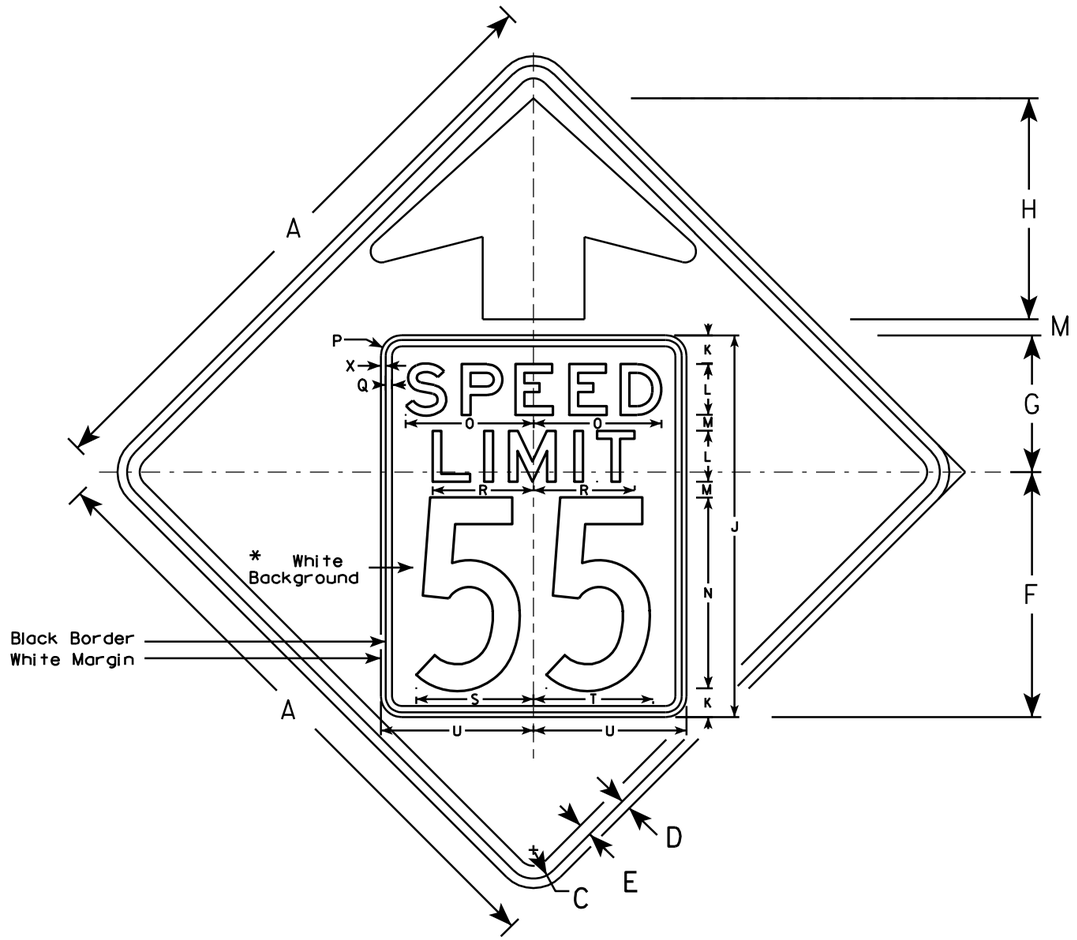
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/8/10 PLATE NO. S3-1.6

PROJECT NO:

SHEET NO: 50 E

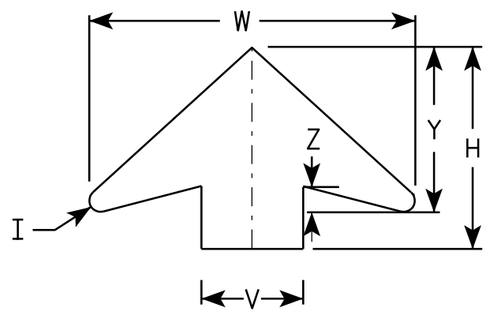


W3-5

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 - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2M	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
3	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
4	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

STANDARD SIGN
W3-5

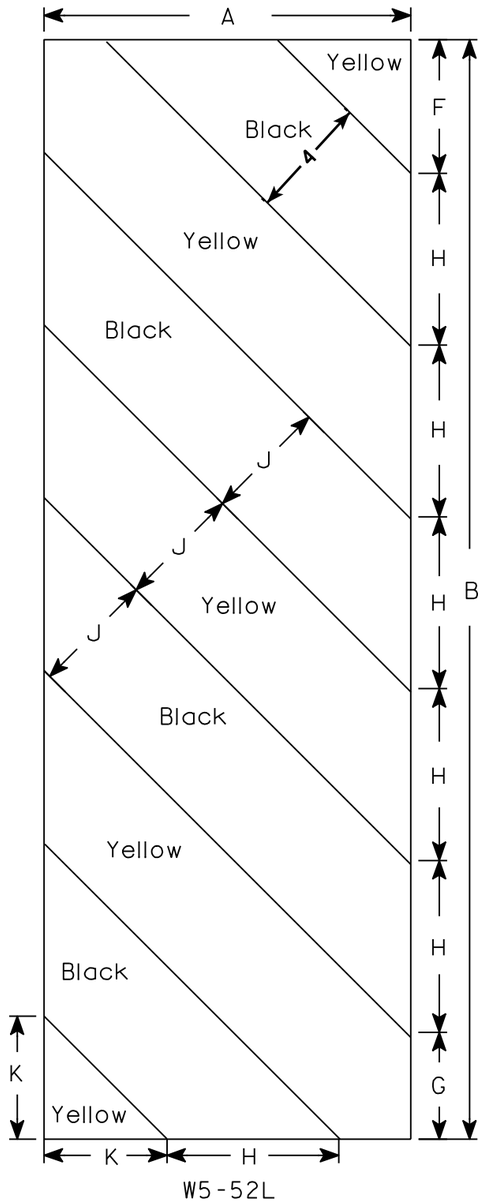
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

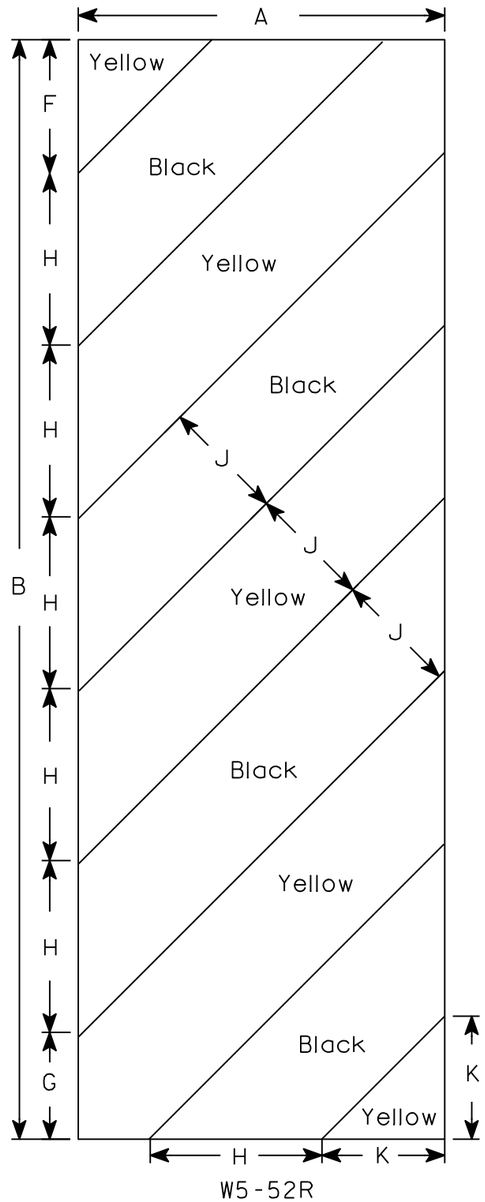
DATE 5/29/12 PLATE NO. W3-5.5

PROJECT NO:

SHEET NO: 51 E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

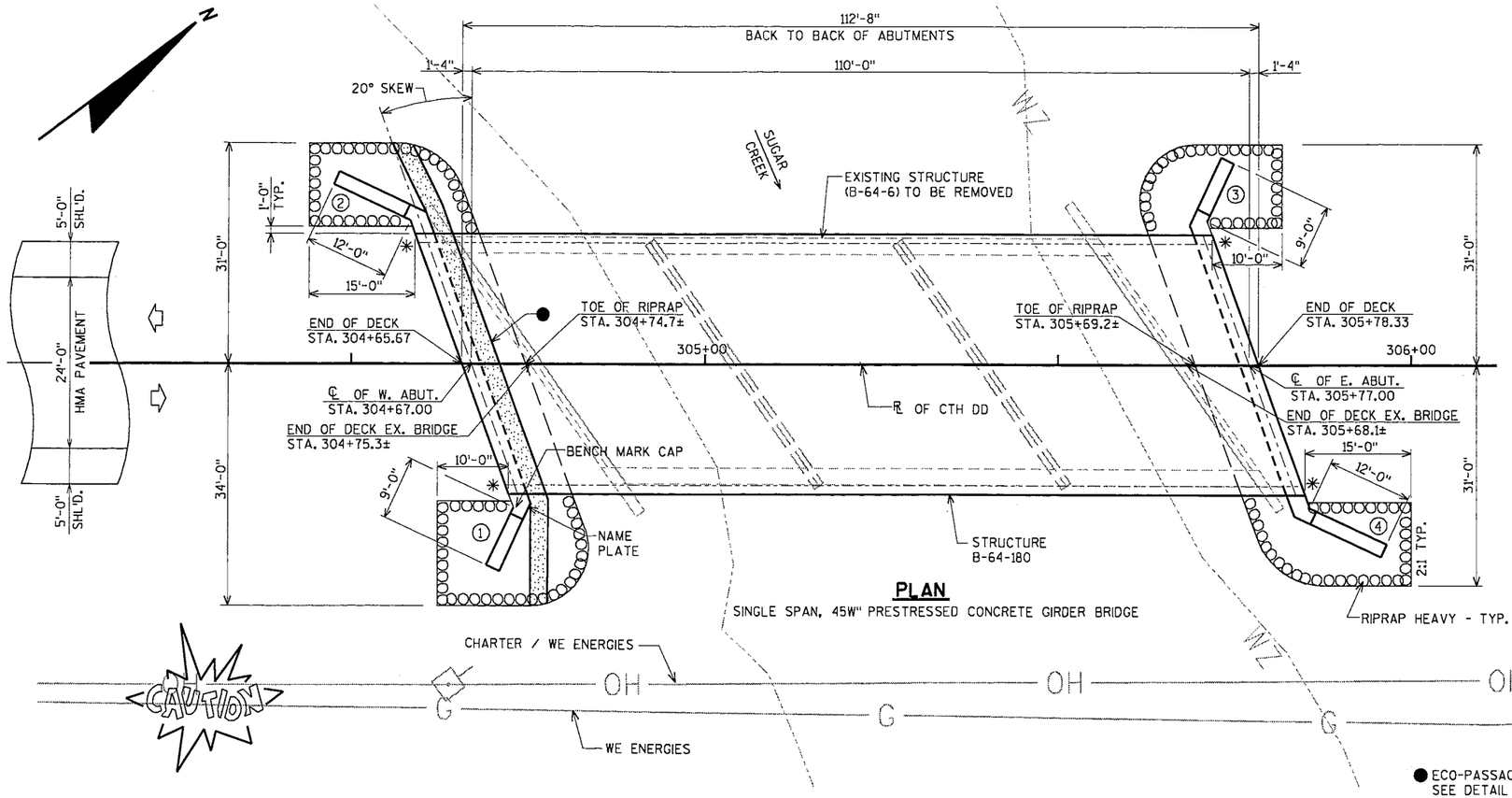
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 52	E

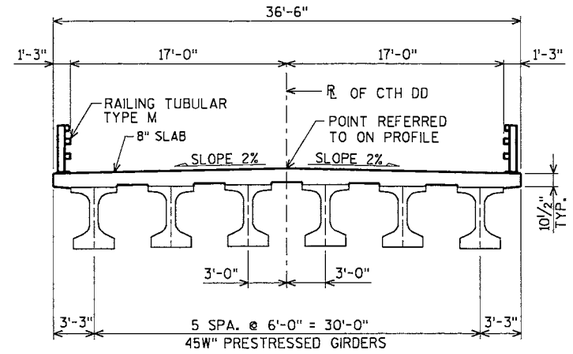
STATE PROJECT NUMBER

3840-01-72



PLAN

SINGLE SPAN, 45W" PRESTRESSED CONCRETE GIRDER BRIDGE



CROSS SECTION THRU BRIDGE

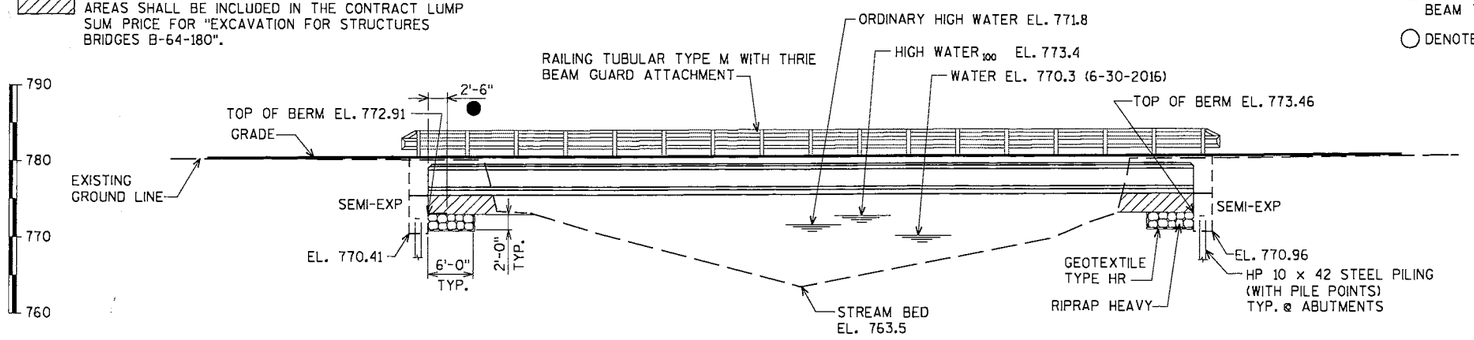
LIST OF DRAWINGS

● ECO-PASSAGE. SEE DETAIL ON SHEET 2.

✳ ANCHOR ASSEMBLY FOR THRIE BEAM TYPE GUARDRAIL.

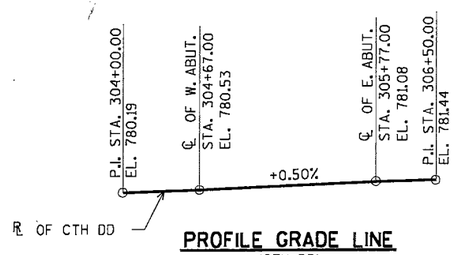
◯ DENOTES WING NUMBER.

COST OF EXCAVATION AND FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-64-180".



ELEVATION

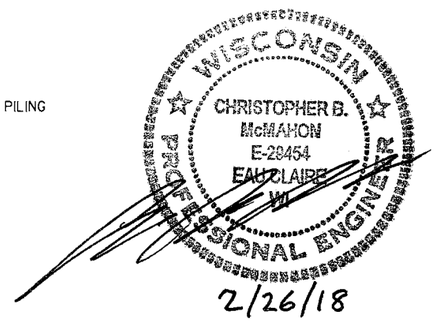
(NORMAL TO ℄ OF CREEK)



PROFILE GRADE LINE

(CTH DD)

BENCH MARK:
BM #1 CHIS. SQ.
STA. 305+54.6, 20' LT.
EL. 781.06



BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

FOR GENERAL NOTES AND DESIGN DATA SEE SHEET 2

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 05/10/18
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-64-180

CTH DD OVER SUGAR CREEK

COUNTY WALWORTH | TOWN/~~CITY/VILLAGE~~ SPRING PRAIRIE

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
AEB	JLB	CJM/CLS	CBM

GENERAL PLAN

SHEET 53 OF 17

I.D.

DATE:

DATE: 2/26/2018

PENTABLE:BReau_shd_util.tbl

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

$PRFNAME$
U:\45-0427.01 - Walworth Co - CTH DD over Sugar Creek\Structures\Final\45042701gp.dgn

8

8

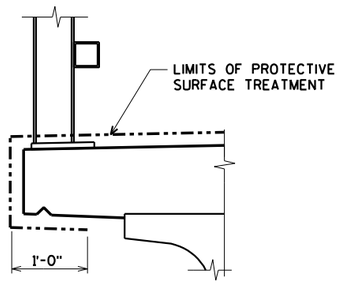
STATE PROJECT NUMBER

3840-01-72

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 305+22	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-64-180	LS	-----	-----	-----	1
☆ 206.5000	COFFERDAMS B-64-180	LS	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	260	260	-----	520
502.0100	CONCRETE MASONRY BRIDGES	CY	37	37	151	225
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	505	505
503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	-----	-----	666	666
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,820	2,820	-----	5,640
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,680	1,680	23,300	26,660
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-----	-----	12	12
506.4000	STEEL DIAPHRAGMS B-64-180	EACH	-----	-----	10	10
513.4061	RAILING TUBULAR TYPE M B-64-180	LF	-----	-----	230	230
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	13	13	-----	26
550.0500	PILE POINTS	EACH	11	11	-----	22
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	440	495	-----	935
606.0300	RIPRAP HEAVY	CY	60	55	-----	115
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	95	95	-----	190
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	60	60	-----	120
645.0120	GEOTEXTILE TYPE HR	SY	125	120	-----	245
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	1/2" & 3/4"

☆ REQUIRED TO REMOVE EXISTING PIERS. SEE EROSION CONTROL SHEETS.



PROTECTIVE SURFACE TREATMENT DETAIL

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

THE 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 ABUTMENT DETAILS.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-64-180" SHALL BE THE EXISTING GROUNDLINE.

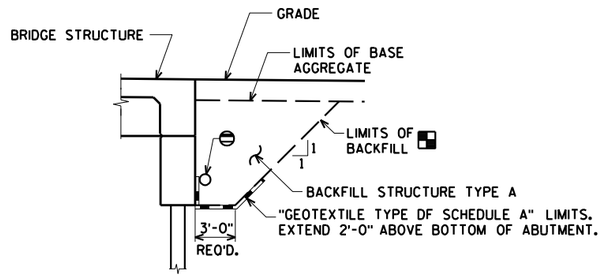
AT THE BACK FACE OF ABUTMENT, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.

THE EXISTING STRUCTURE, B-64-6, TO BE REMOVED, IS A THREE SPAN HAUNCHED SLAB BRIDGE, 92.8 FT. LONG WITH A 30 FT. CLEAR ROADWAY WIDTH.

THE HAUNCH CONCRETE QUANTITY IS BASED ON AN AVERAGE HAUNCH DEPTH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEETS.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.

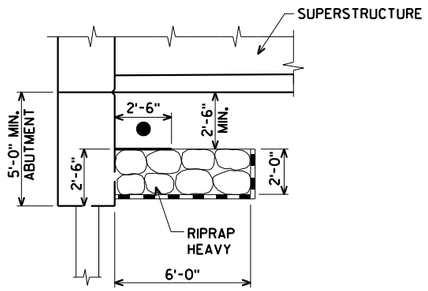
REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS INCLUDES REMOVAL OF THE EXPOSED PORTION OF EXISTING CONCRETE ABUTMENTS.



BACKFILL STRUCTURE LIMITS

▀ 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 AS DETAILED ON SHEET 7.



ECO-PASSAGE DETAIL

● ECO-PASSAGE.
FILL VOIDS IN RIPRAP HEAVY WITH TRAFFIC BOND LIMESTONE SCREENINGS 3/8-INCH TO FULLY FILL ALL VOIDS AND LEAVE, ON AVERAGE, TWO INCHES ABOVE THE LOWEST ROCK POINTS WHERE THEY ABUT EACH OTHER. PROVIDE LEVEL SURFACE OF THE ECO-PASSAGE.

THE TRANSITIONS OF THE AT-GRADE ECO-PASSAGE TO THE EDGES OF THE RIPRAP HEAVY SHALL BE GRADUAL WITH NO MORE THAN 2:1 SLOPE. TRAFFIC BOND LIMESTONE SHALL BE COMPACTED ONCE IN PLACE.

TRAFFIC BOND LIMESTONE TO BE INCIDENTAL IN THE BID ITEM "RIPRAP HEAVY".

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.09
OPERATING RATING FACTOR: 1.98
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

MATERIAL PROPERTIES:

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

45W" PRESTRESSED GIRDER
CONCRETE MASONRY ____ f'_c = 8,000 p.s.i.
STRANDS - 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF ____ = 270,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FREQUENCY	2 YEAR FREQUENCY
Q_{100} = 2,250 c.f.s.	Q_2 = 1,000 c.f.s.
VEL.= 6.0 f.p.s.	VEL.= 3.6 f.p.s.
HW_{100} = EL. 773.4	HW_2 = EL. 771.8

WATERWAY AREA = 375 sq. ft.
DRAINAGE AREA = 77.6 sq. mi.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8
DATUM = NAVD88 (2012)

FOUNDATION DATA:

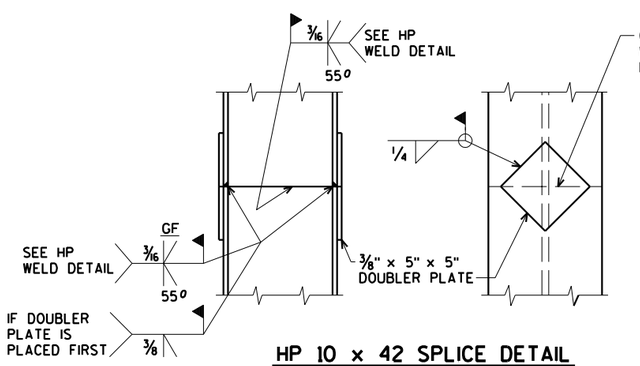
WEST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS # PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 40'-0".

EAST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS + PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 45'-0".

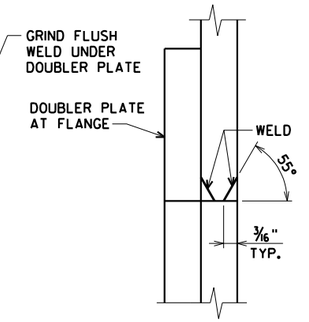
THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC DATA:

A.A.D.T. = 1,400 (2018)
A.A.D.T. = 1,700 (2038)
R.D.S. = 60 M.P.H.



HP 10 x 42 SPLICE DETAIL



HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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QUANTITIES AND NOTES

SHEET 2 OF 17
54

ORIGINAL PLANS PREPARED BY
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$PRFNAME$
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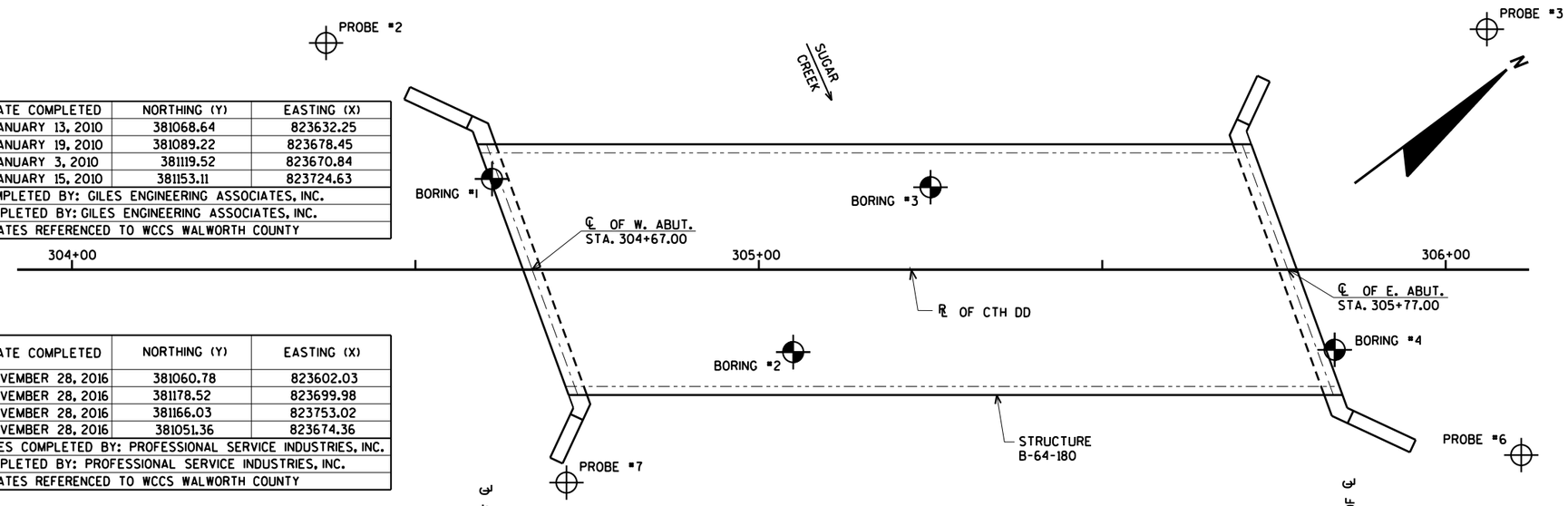
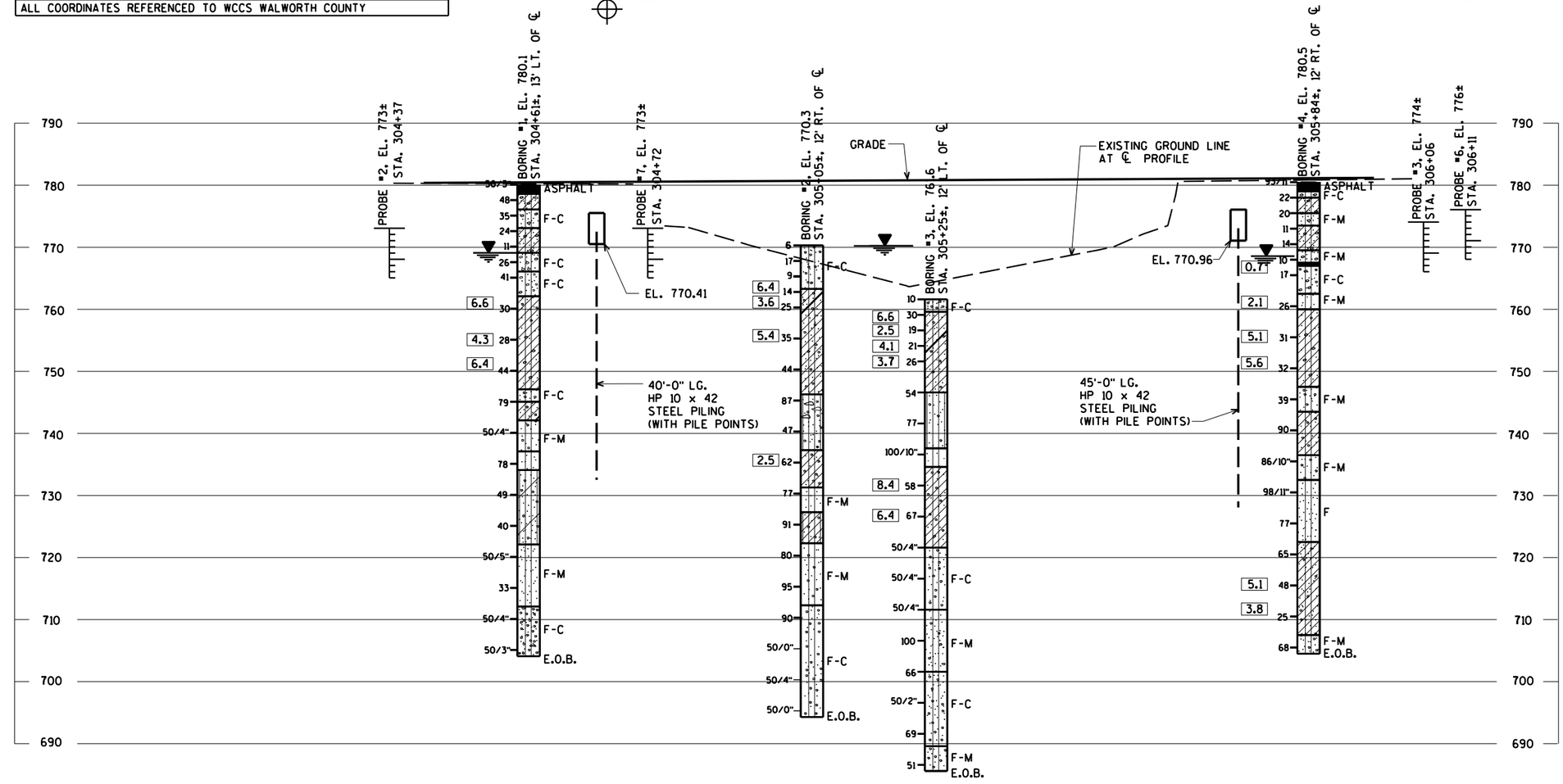
2/26/2018

PENTABLE:BReau_shd_util.tbl

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	JANUARY 13, 2010	381068.64	823632.25
2	JANUARY 19, 2010	381089.22	823678.45
3	JANUARY 3, 2010	381119.52	823670.84
4	JANUARY 15, 2010	381153.11	823724.63
BORINGS COMPLETED BY: GILES ENGINEERING ASSOCIATES, INC.			
REPORT COMPLETED BY: GILES ENGINEERING ASSOCIATES, INC.			
ALL COORDINATES REFERENCED TO WCCS WALWORTH COUNTY			

MARSH PROBE #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
2	NOVEMBER 28, 2016	381060.78	823602.03
3	NOVEMBER 28, 2016	381178.52	823699.98
6	NOVEMBER 28, 2016	381166.03	823753.02
7	NOVEMBER 28, 2016	381051.36	823674.36
MARSH PROBES COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC.			
REPORT COMPLETED BY: PROFESSIONAL SERVICE INDUSTRIES, INC.			
ALL COORDINATES REFERENCED TO WCCS WALWORTH COUNTY			





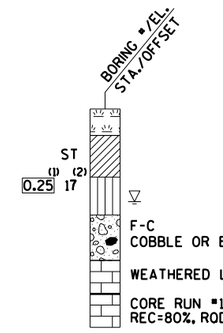
STATE PROJECT NUMBER

3840-01-72

MATERIAL SYMBOLS

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

LEGEND OF BORING



(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-64-180

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SUBSURFACE EXPLORATION

SHEET 3 OF 17
55

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1/10/2018

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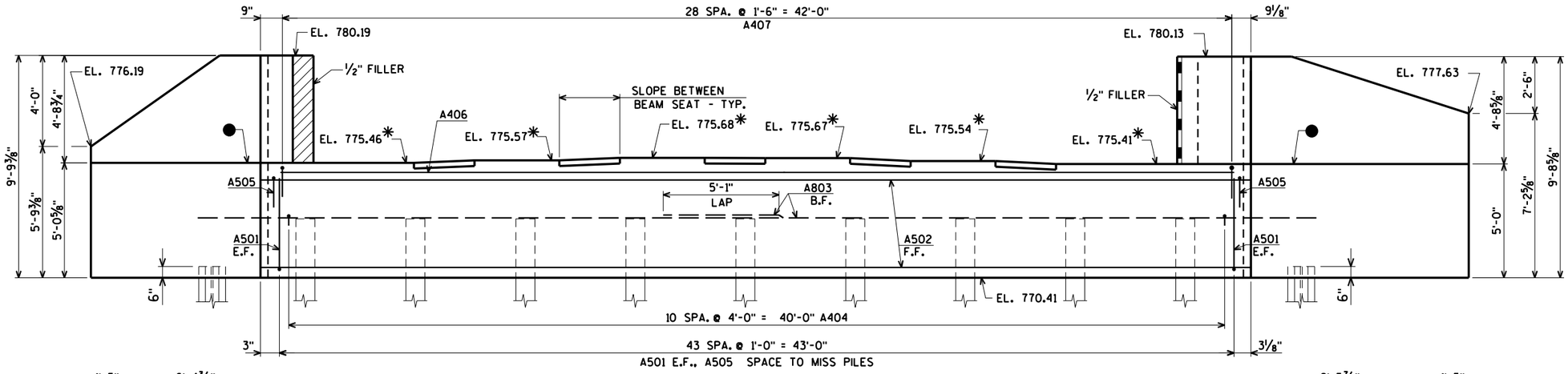
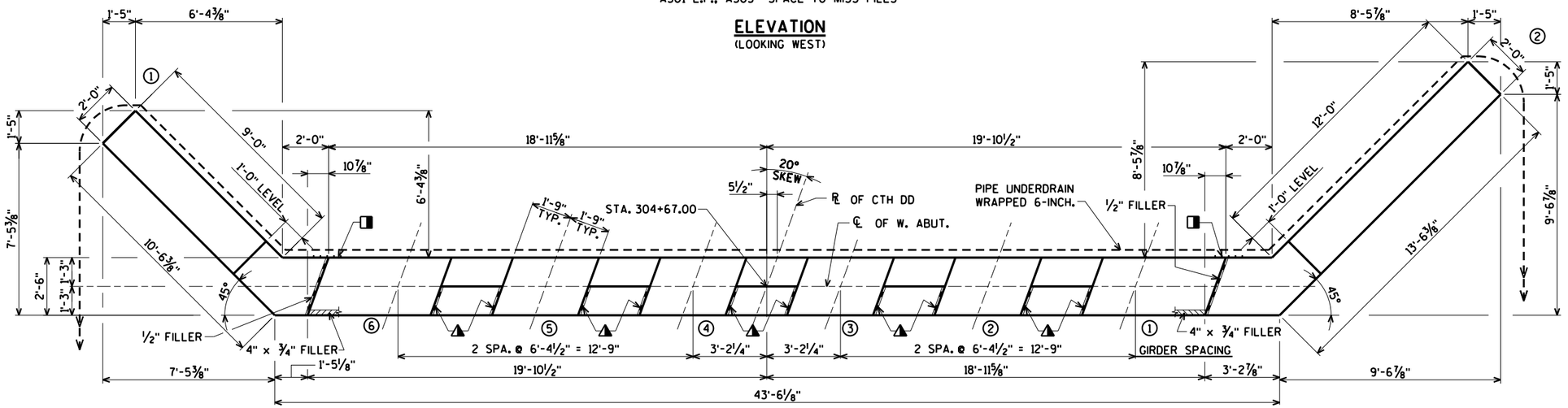
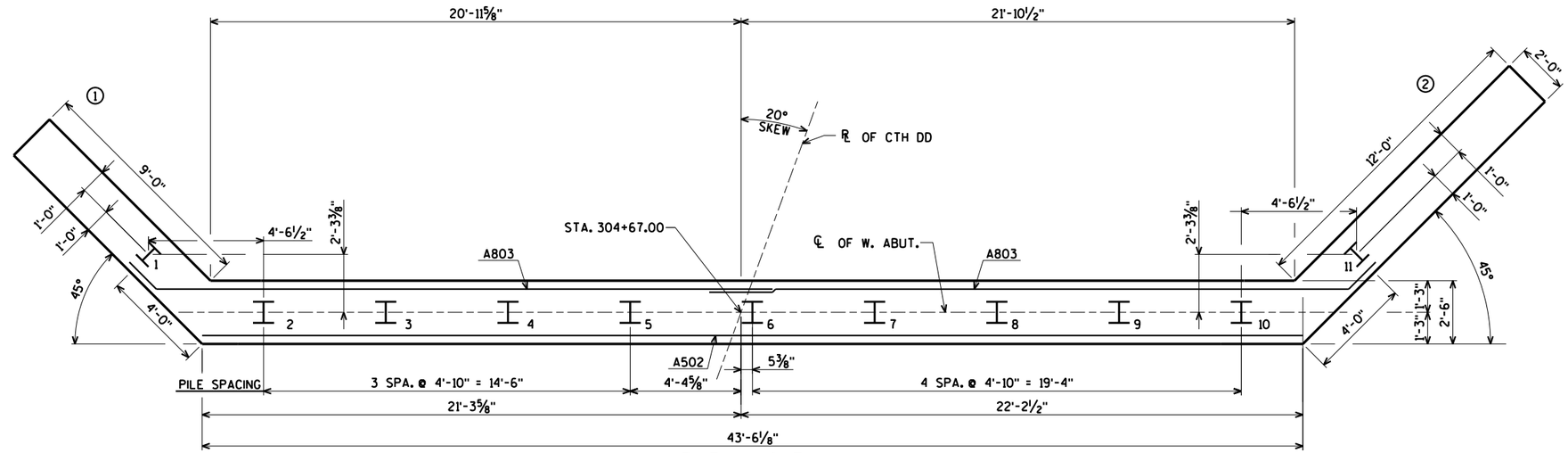


ELEVATION
(LOOKING WEST)



PLAN



PILE LAYOUT

✱ ELEVATIONS AND DIMENSIONS TAKEN AT ℄ OF ABUT.

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

▲ ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE
F.F. DENOTES FRONT FACE
E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

DRAWN BY	CJM	PLANS CK'D.	CBM

WEST ABUTMENT

SHEET 4 OF 17
56

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Eau Claire, WI 54701
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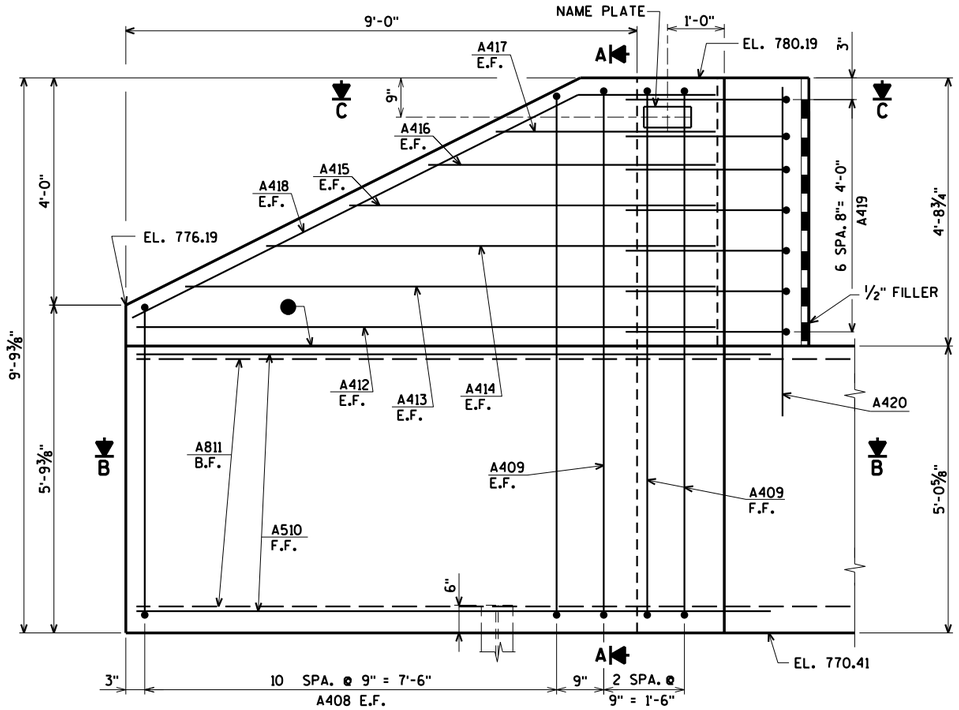
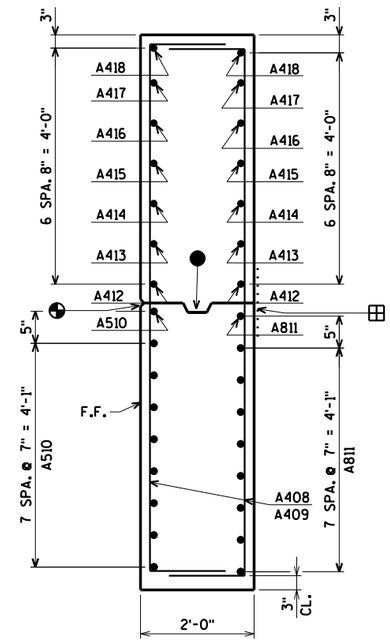
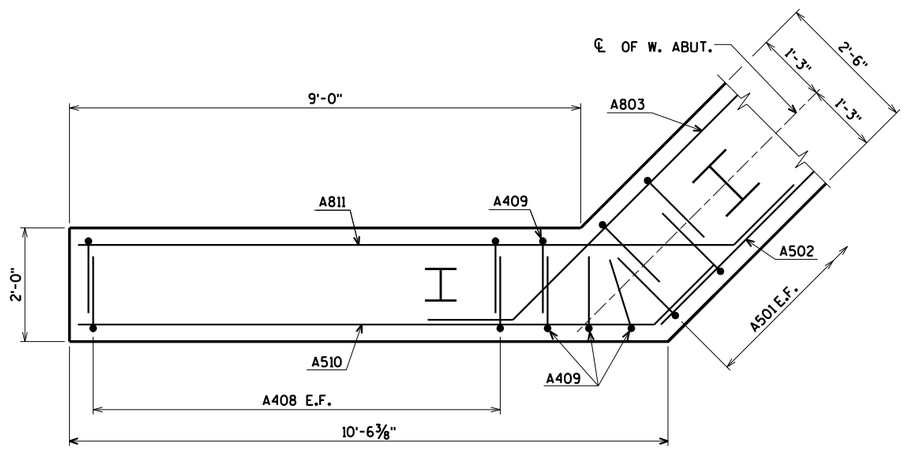


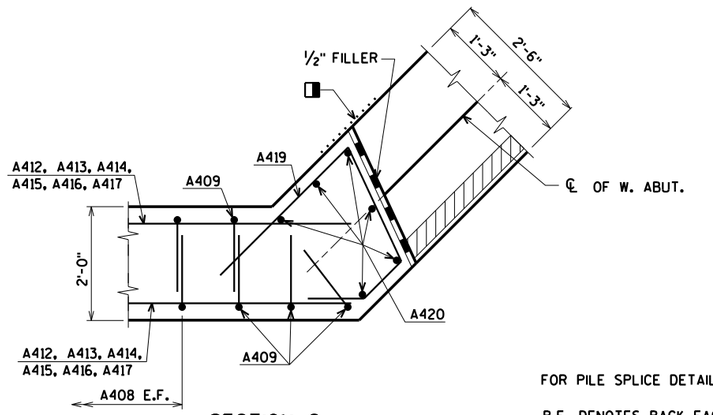
ELEVATION - WING 1



SECTION A



SECTION B



SECTION C

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6"

◔ ¾" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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WEST ABUTMENT WING 1 DETAILS

SHEET 5 OF 17
57

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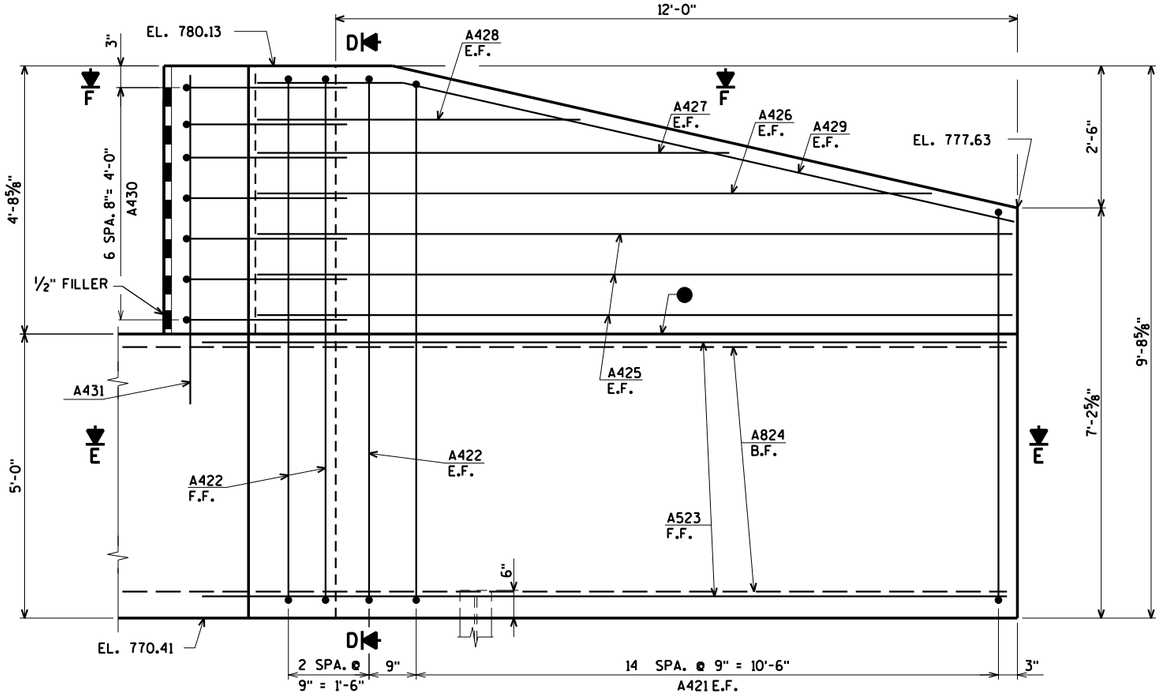
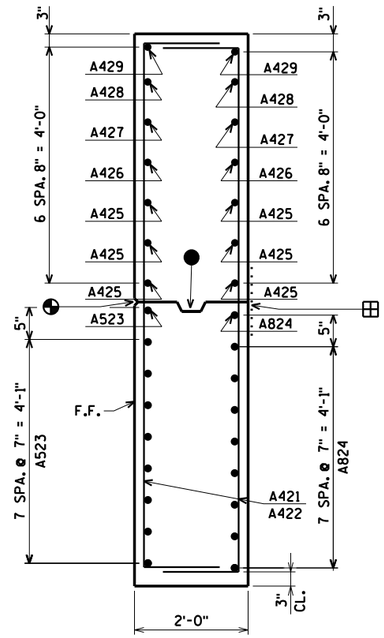
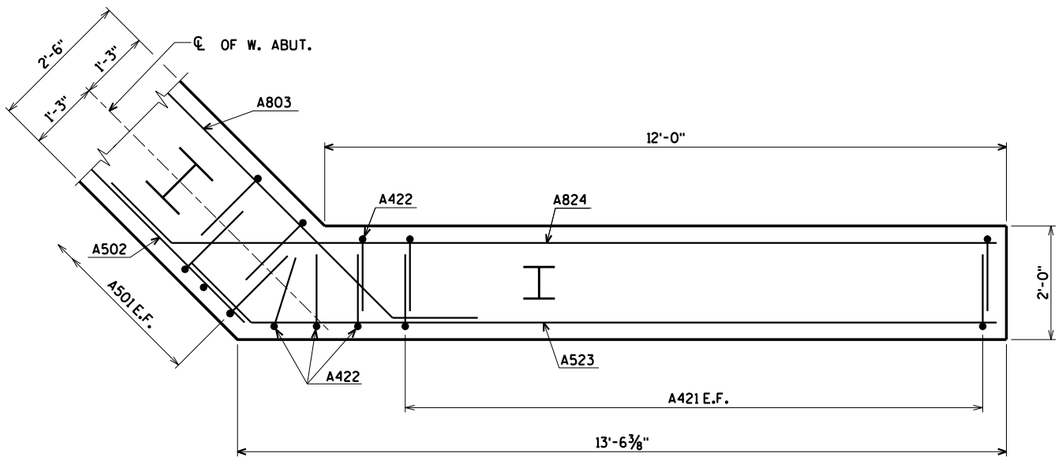


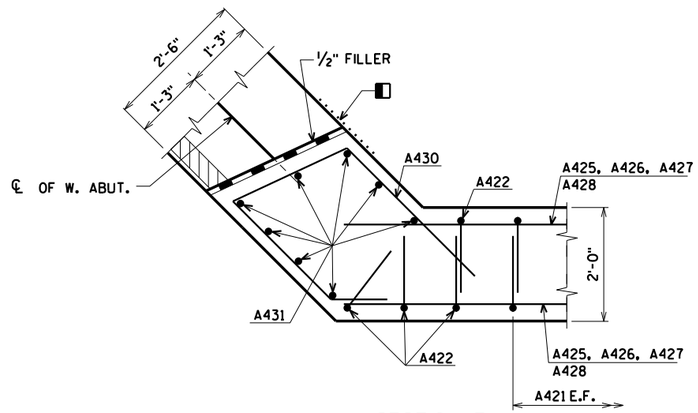
ELEVATION - WING 2



SECTION D



SECTION E



SECTION F

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6"

◓ ¾" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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WEST ABUTMENT WING 2 DETAILS

SHEET 6 OF 17
58

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STATE PROJECT NUMBER

3840-01-72

BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR	SERIES	2,820# UNCOATED 1,680# COATED LOCATION
A501		88	5-10	X			BODY VERT. E.F.
A502		9	43-2				BODY HORIZ. F.F.
A803		18	28-1	X			BODY HORIZ. B.F.
A404		33	2-9	X			BODY TIES
A505		44	7-6	X			BODY VERT. TOP
A406		2	43-2				BODY HORIZ. TOP NOTCH
A407		29	3-7	X			BODY VERT. TOP NOTCH
A408	X	22	9-9	X		⊗	WING 1 VERT. E.F.
A409	X	4	11-10	X			WING 1 VERT. E.F.
A510	X	9	11-9	X			WING 1 HORIZ. F.F.
A811	X	9	13-1	X			WING 1 HORIZ. B.F.
A412	X	2	10-2				WING 1 HORIZ. E.F.
A413	X	2	9-1				WING 1 HORIZ. E.F.
A414	X	2	7-9				WING 1 HORIZ. E.F.
A415	X	2	6-5				WING 1 HORIZ. E.F.
A416	X	2	5-1				WING 1 HORIZ. E.F.
A417	X	2	3-9				WING 1 HORIZ. E.F.
A418	X	2	11-0	X			WING 1 DIAG. E.F.
A419	X	7	7-8	X			WING 1 HORIZ.
A420	X	6	6-1				WING 1 VERT.
A421	X	30	10-5	X		⊗	WING 2 VERT. E.F.
A422	X	4	11-9	X			WING 2 VERT. E.F.
A523	X	9	14-9	X			WING 2 HORIZ. F.F.
A824	X	9	16-1	X			WING 2 HORIZ. B.F.
A425	X	6	13-2				WING 2 HORIZ. E.F.
A426	X	2	11-1				WING 2 HORIZ. E.F.
A427	X	2	8-2				WING 2 HORIZ. E.F.
A428	X	2	5-3				WING 2 HORIZ. E.F.
A429	X	2	13-5	X			WING 2 DIAG. E.F.
A430	X	7	9-6	X			WING 2 HORIZ.
A431	X	8	6-1				WING 2 VERT.

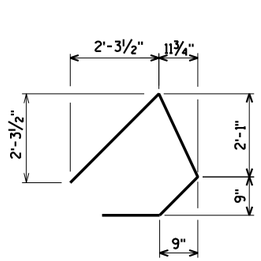
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

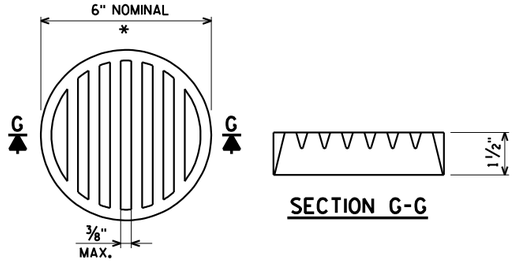
⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
A408	2 SERIES OF 11	7'-10" TO 11'-8"
A421	2 SERIES OF 15	9'-3" TO 11'-7"

BUNDLE AND TAG EACH SERIES SEPARATELY.





SECTION G-G

* 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 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 SCREEN 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 SHEET METAL SCREWS.

RODENT SHIELD DETAIL

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

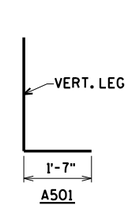
■ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

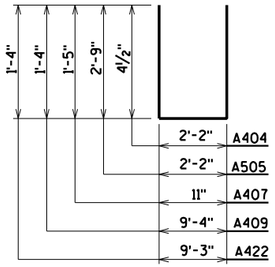
FOR PILE SPLICE DETAIL SEE SHEET 2.

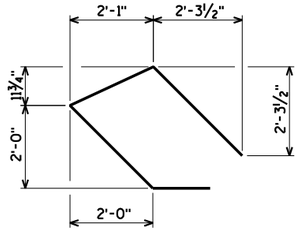
F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

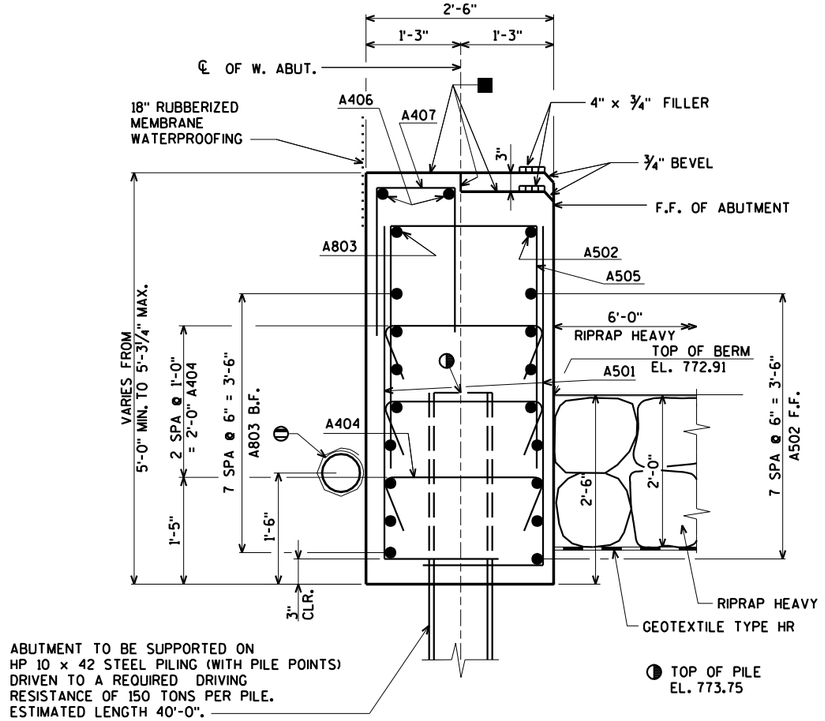
E.F. DENOTES EACH FACE





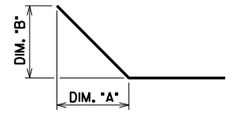


NOTE: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

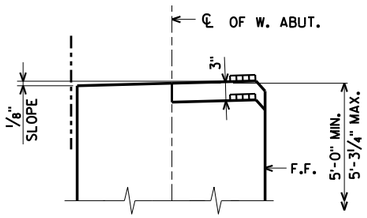


TYPICAL SECTION THRU BODY

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.



BAR NO.	DIM. "A"	DIM. "B"
A803	1'-0¾"	1'-0¾"
A510	1'-0¾"	1'-0¾"
A811	1'-0¾"	1'-0¾"
A418	8'-0"	4'-0"
A523	1'-0¾"	1'-0¾"
A824	1'-0¾"	1'-0¾"
A429	11'-0"	2'-6"



SLOPED BEAM SEAT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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WEST ABUTMENT DETAILS AND BILL OF BARS

SHEET 7 OF 17

59

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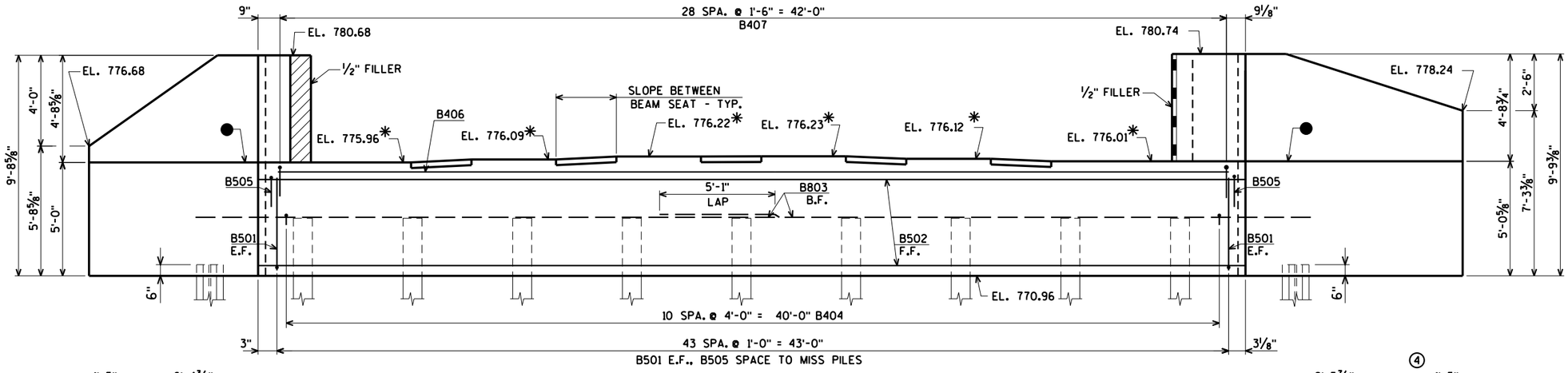
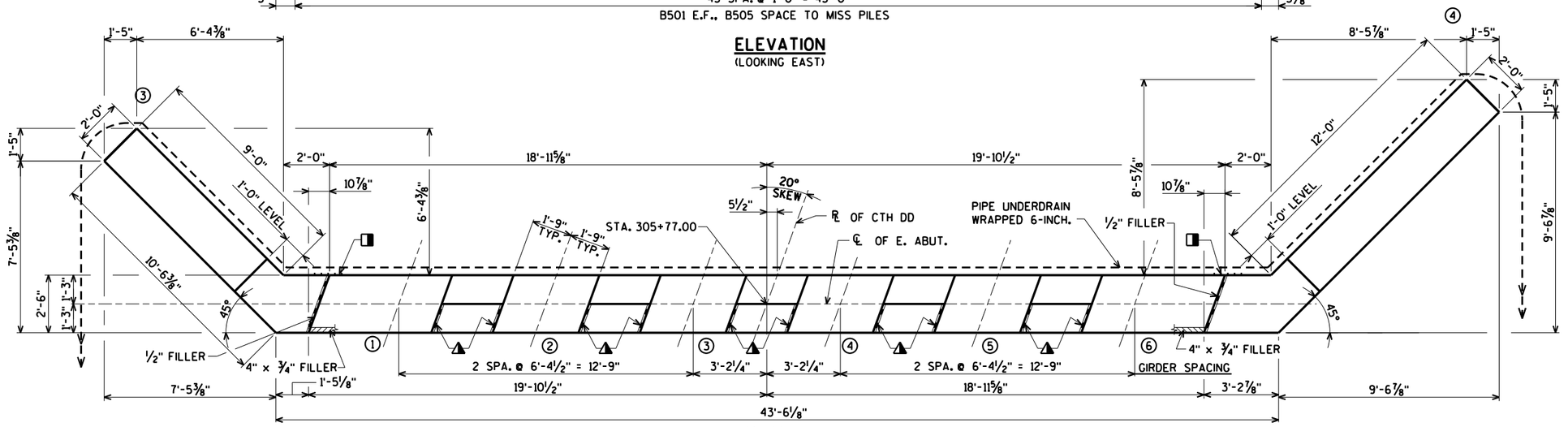
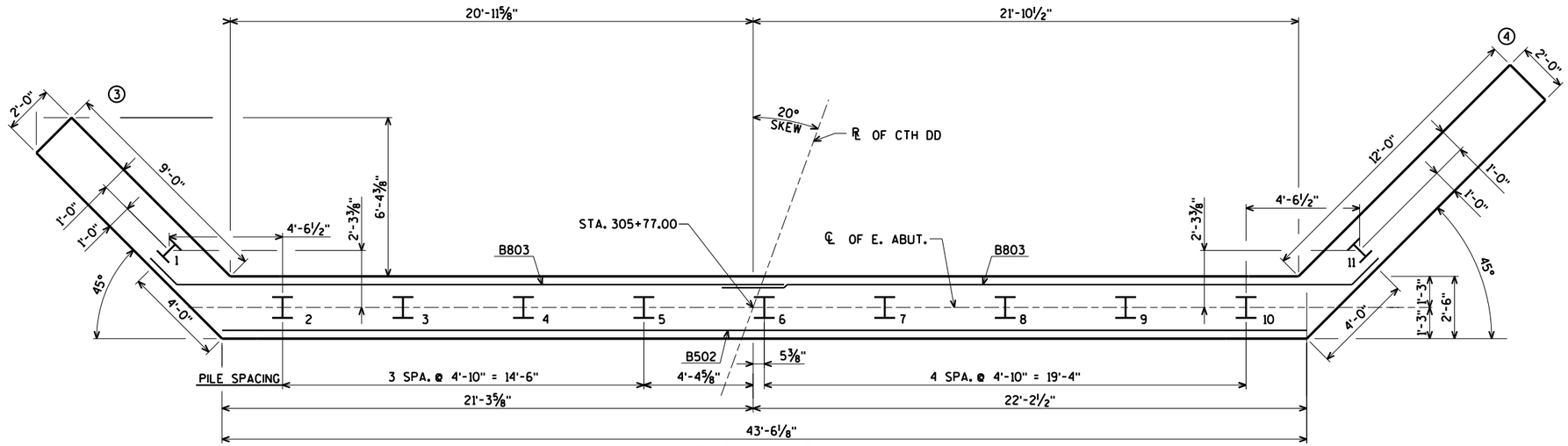


ELEVATION
(LOOKING EAST)



PLAN



PILE LAYOUT

✱ ELEVATIONS AND DIMENSIONS TAKEN AT ℄ OF ABUT.

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

▲ ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE
F.F. DENOTES FRONT FACE
E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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EAST ABUTMENT

SHEET 8 OF 17
60

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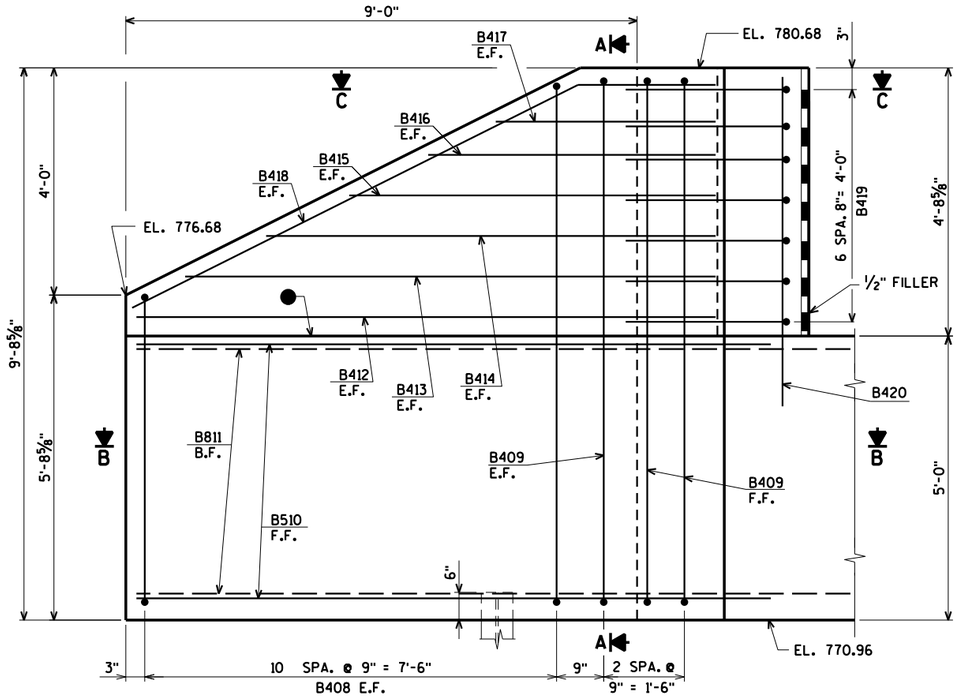
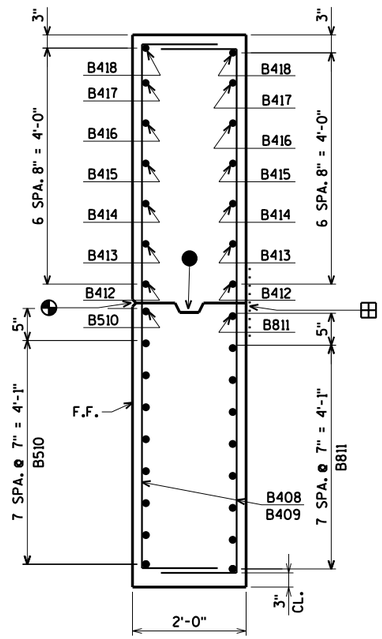
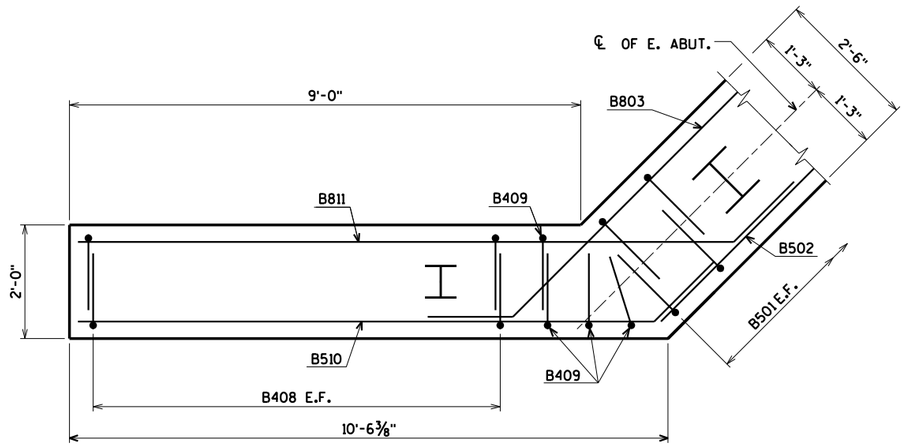


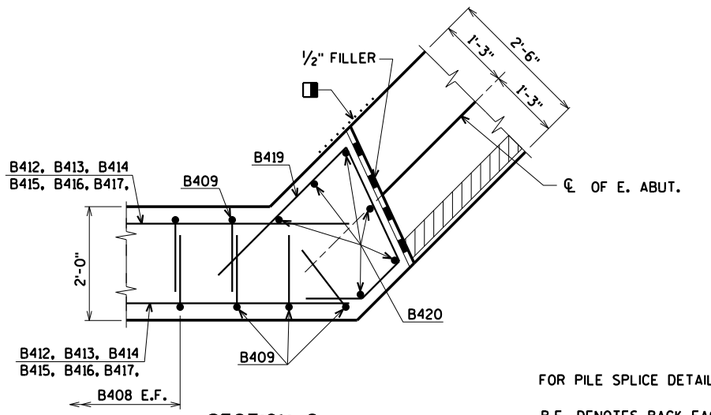
ELEVATION - WING 3



SECTION A



SECTION B



SECTION C

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6"

◔ ¾" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

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STRUCTURE B-64-180

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EAST ABUTMENT WING 3 DETAILS

SHEET 9 OF 17
61

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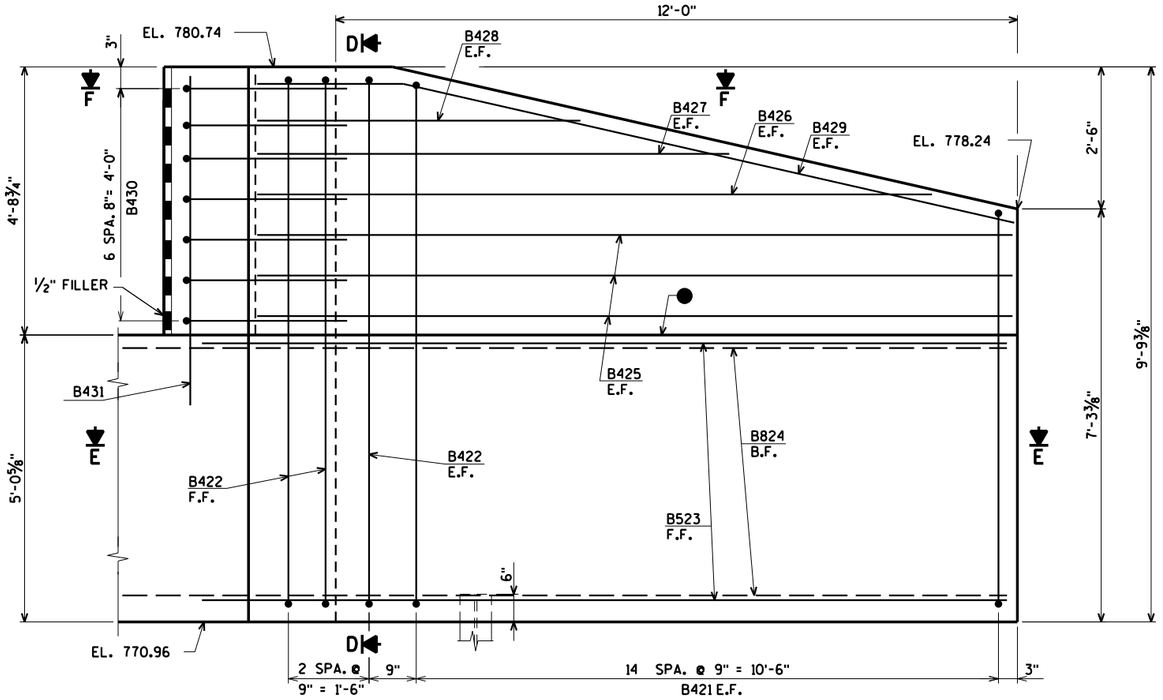
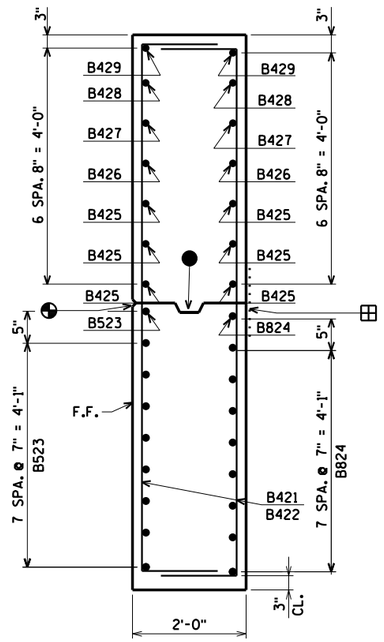
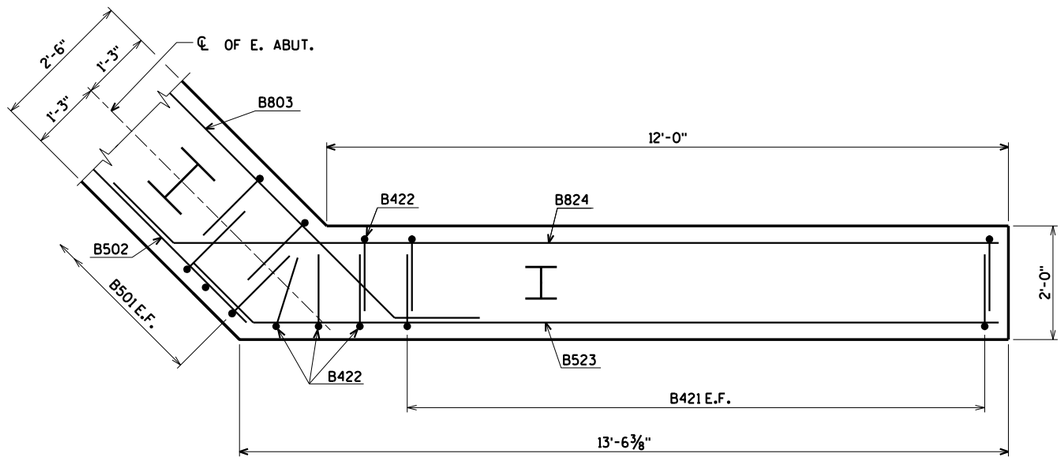


ELEVATION - WING 4



SECTION D



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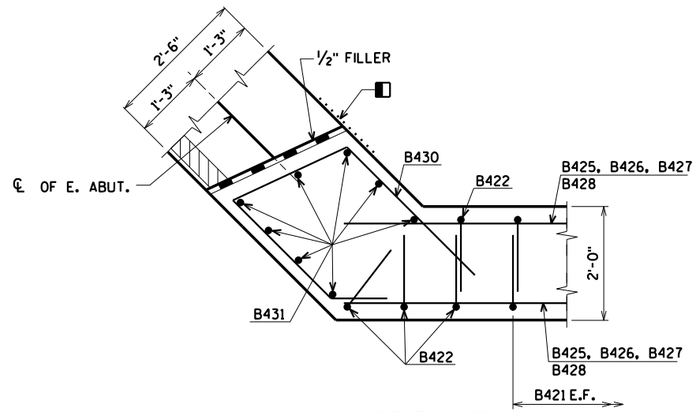

SECTION F

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6"

◔ ¾" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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EAST ABUTMENT WING 4 DETAILS

SHEET 10 OF 17
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BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR	SERIES	2,820# UNCOATED 1,680# COATED LOCATION
B501		88	5-10	X			BODY VERT. E.F.
B502		9	43-2				BODY HORIZ. F.F.
B803		18	28-1	X			BODY HORIZ. B.F.
B404		33	2-9	X			BODY TIES
B505		44	7-6	X			BODY VERT. TOP
B406		2	43-2				BODY HORIZ. TOP NOTCH
B407		29	3-7	X			BODY VERT. TOP NOTCH
B408	X	22	9-8	X		⊗	WING 3 VERT. E.F.
B409	X	4	11-9	X			WING 3 VERT. E.F.
B510	X	9	11-9	X			WING 3 HORIZ. F.F.
B811	X	9	13-1	X			WING 3 HORIZ. B.F.
B412	X	2	10-2				WING 3 HORIZ. E.F.
B413	X	2	9-1				WING 3 HORIZ. E.F.
B414	X	2	7-9				WING 3 HORIZ. E.F.
B415	X	2	6-5				WING 3 HORIZ. E.F.
B416	X	2	5-1				WING 3 HORIZ. E.F.
B417	X	2	3-9				WING 3 HORIZ. E.F.
B418	X	2	11-0	X			WING 3 DIAG. E.F.
B419	X	7	7-8	X			WING 3 HORIZ.
B420	X	6	6-1				WING 3 VERT.
B421	X	30	10-6	X		⊗	WING 4 VERT. E.F.
B422	X	4	11-10	X			WING 4 VERT. E.F.
B523	X	9	14-9	X			WING 4 HORIZ. F.F.
B824	X	9	16-1	X			WING 4 HORIZ. B.F.
B425	X	6	13-2				WING 4 HORIZ. E.F.
B426	X	2	11-1				WING 4 HORIZ. E.F.
B427	X	2	8-2				WING 4 HORIZ. E.F.
B428	X	2	5-3				WING 4 HORIZ. E.F.
B429	X	2	13-5	X			WING 4 DIAG. E.F.
B430	X	7	9-6	X			WING 4 HORIZ.
B431	X	8	6-1				WING 4 VERT.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL SEE SHEET 7.

■ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

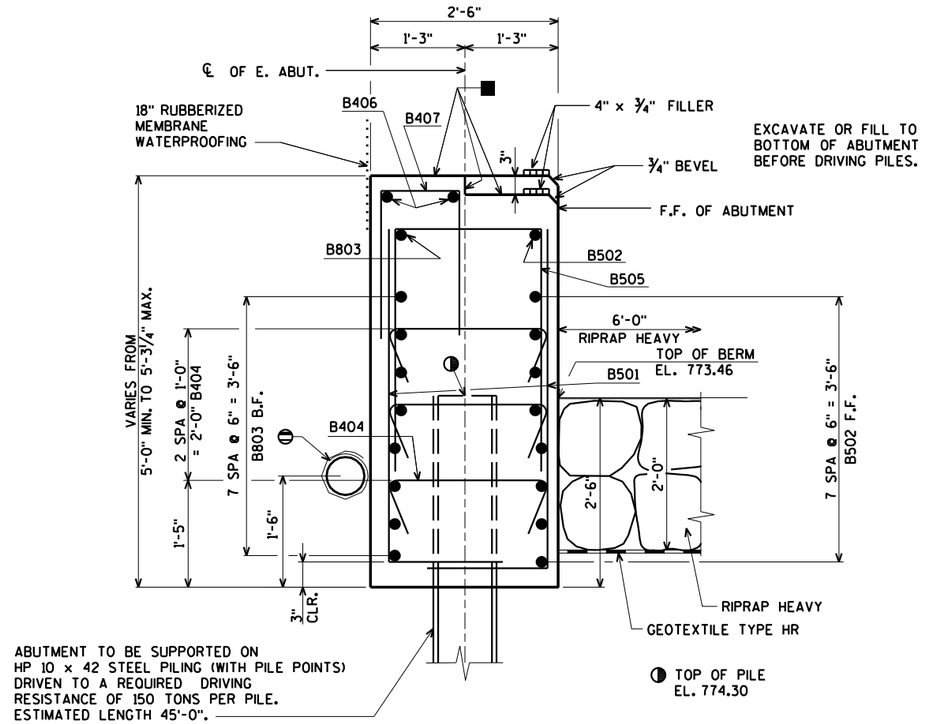
FOR PILE SPLICE DETAIL SEE SHEET 2.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

NOTE: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.



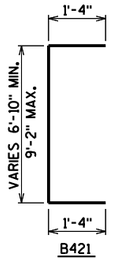
TYPICAL SECTION THRU BODY

BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
B408	2 SERIES OF 11	7'-9" TO 11'-7"
B421	2 SERIES OF 15	9'-4" TO 11'-8"

BUNDLE AND TAG EACH SERIES SEPARATELY.

B408



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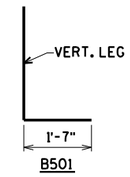

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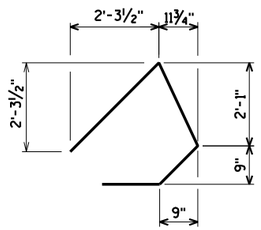

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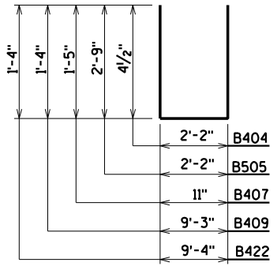
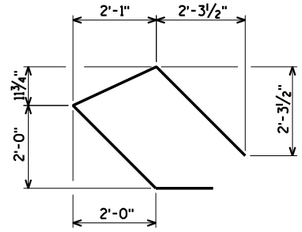
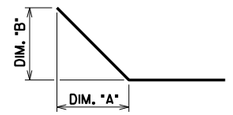
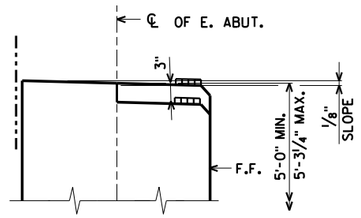




B430



BAR NO.	DIM. "A"	DIM. "B"
B803	1'-0¾"	1'-0¾"
B510	1'-0¾"	1'-0¾"
B811	1'-0¾"	1'-0¾"
B418	8'-0"	4'-0"
B523	1'-0¾"	1'-0¾"
B824	1'-0¾"	1'-0¾"
B429	11'-0"	6"



SLOPED BEAM SEAT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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EAST ABUTMENT DETAILS AND BILL OF BARS

SHEET 11 OF 17
63

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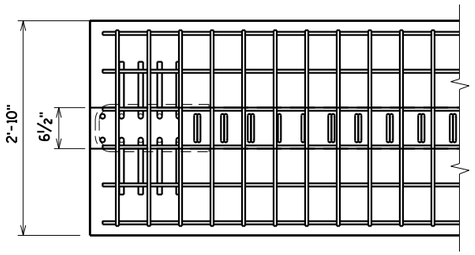
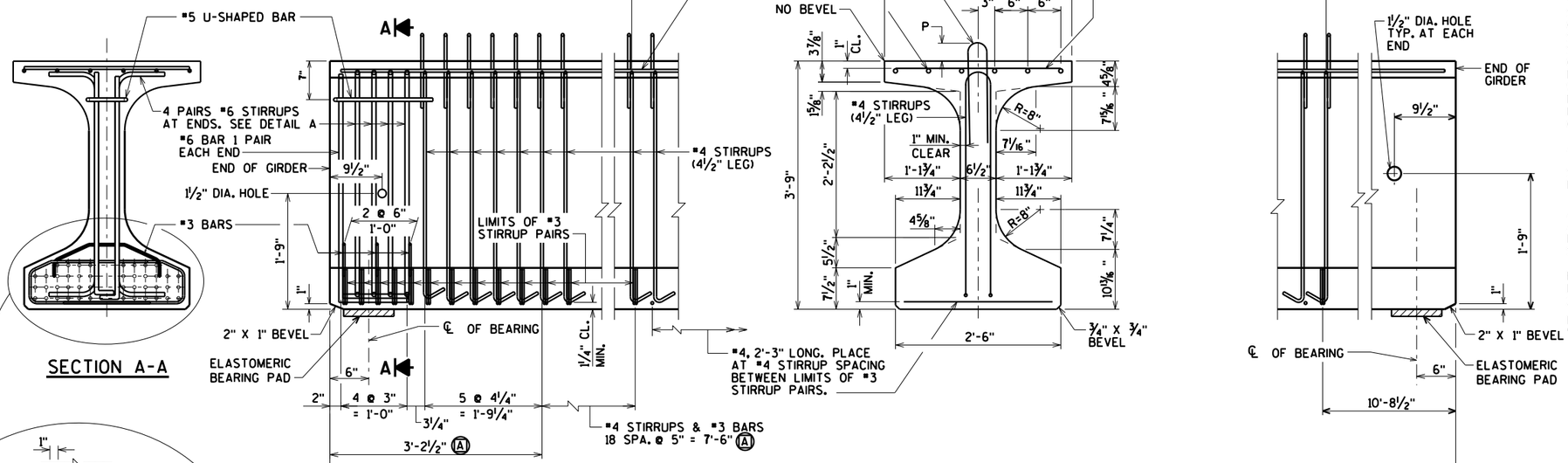


TOP FLANGE

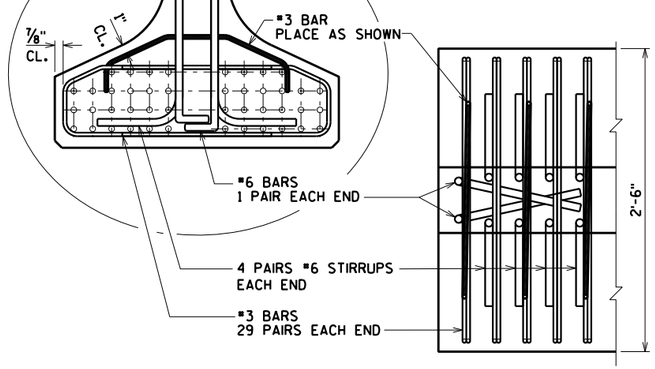


SECTION A-A

SIDE VIEW & TYP. SECTION IN SPAN

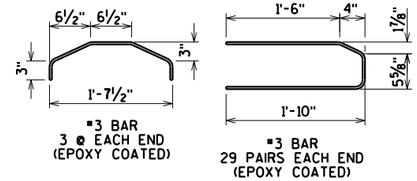
(A) DETAIL TYP. AT EACH END

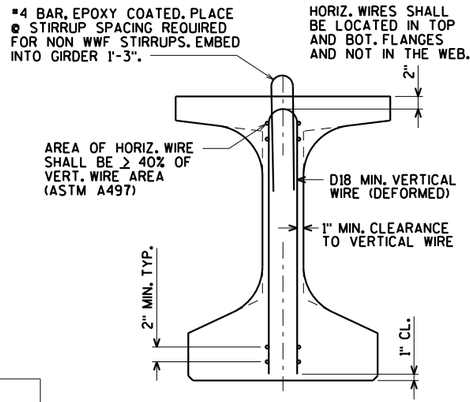
(B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 2'-4"



DETAIL A

BOTTOM FLANGE





SECTION THRU GIRDER

SHOWING WELDED WIRE FABRIC (WWF) STIRRUPS ASTM A1064 (FY = 70 KSI)

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER OR EPOXY TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECTION 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE (0.6" DIA.) -7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL INTER. DIAPHRAGM DETAILS" SHEET.

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" 1ST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	("A" (IN.)	"B" MIN. (IN.)	"B" MAX. (IN.)	"C" (IN.)	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *
1	2-5	111'-0"	0.6	1.2	1.6	1.9	2.0	1.9	1.6	1.2	0.6	8000	8.0"	6.5"	8.0"	0.6	36	6400	39	13.5	16.5	5		
1	1 & 6	111'-0"	0.7	1.3	1.8	2.2	2.3	2.2	1.8	1.3	0.7	8000	8.0"	6.5"	8.0"	0.6	36	6400	39	13.5	16.5	5		

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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45W" PRESTRESSED GIRDER DETAILS

SHEET 12 OF 17
64

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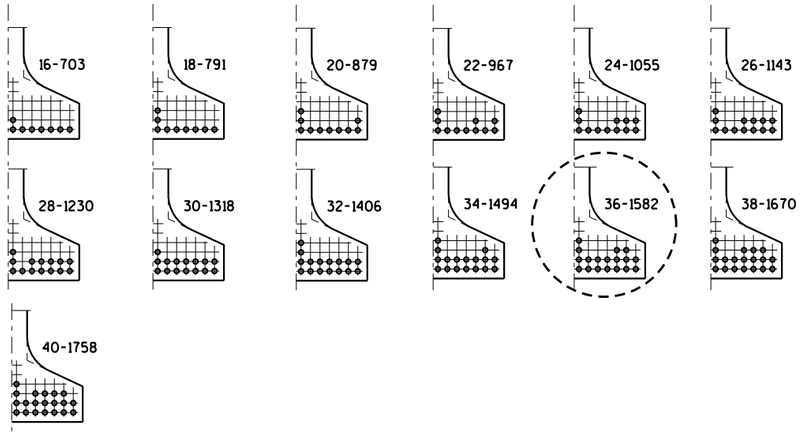
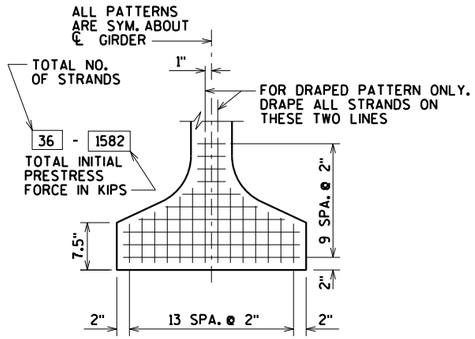
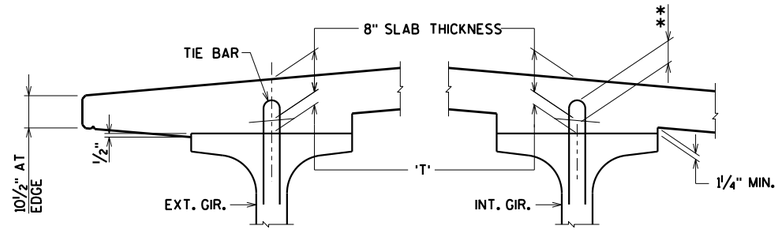


ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"ϕ STRANDS



TYP. STRAND PATTERN



SLAB HAUNCH DETAIL

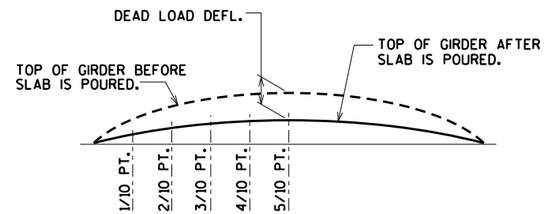
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

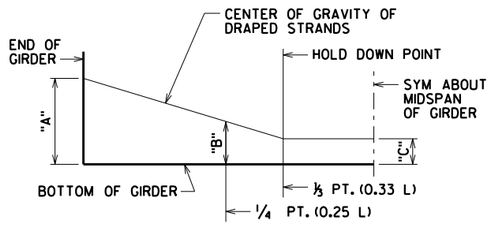
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
\- TOP OF GIRDER ELEVATION
\+ DEAD LOAD DEFLECTION
\- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 3⅜" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.)*
1	4.0

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

8

8

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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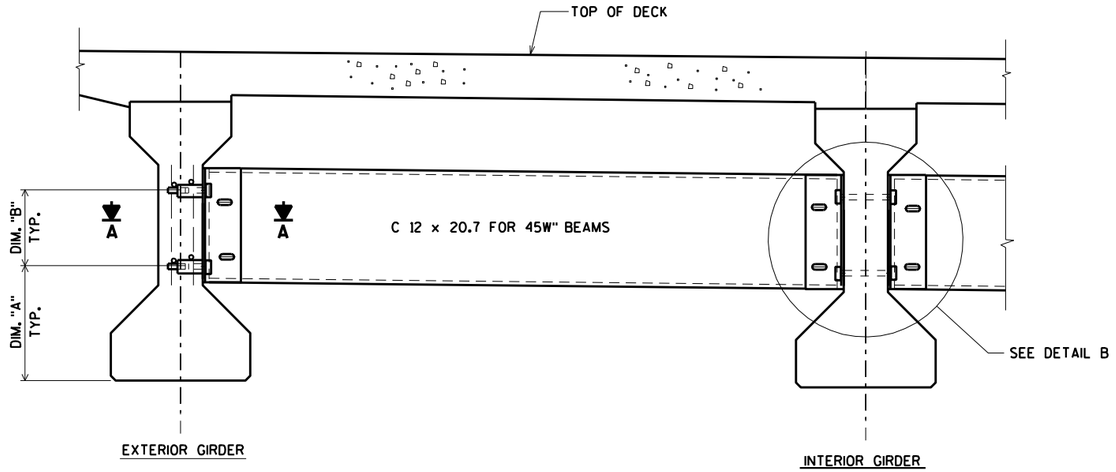
45W" PRESTRESSED GIRDER DETAILS

SHEET 13 OF 17
65

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

TABLE

GIRDER HEIGHT	DIM. "A"	DIM. "B"	DIM. "L"	*DIM. "X"
45W"	1'-9⅛"	8⅞"	1'-0½"	2¾"



NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-64-180", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

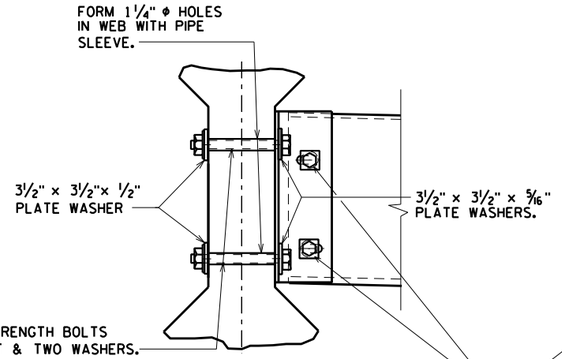
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

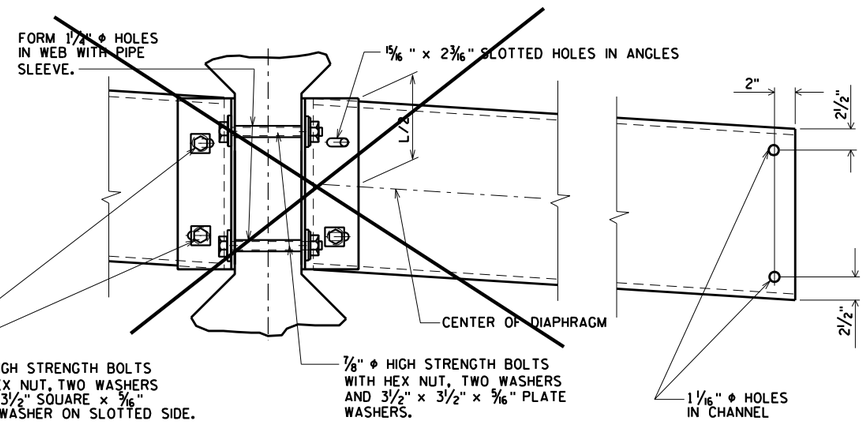
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REUOIREMENTS FOR ASTM A325 OR ASTM A449.

FOR DIAPHRAGM SPACING SEE SHEET 16.

PART TRANSVERSE SECTION AT DIAPHRAGM

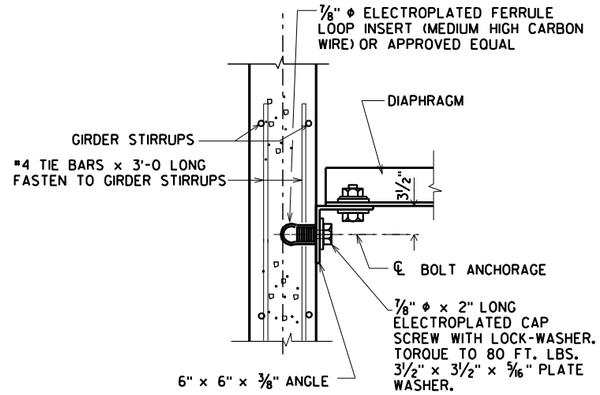


(FOR STAGGERED DIAPHRAGM)



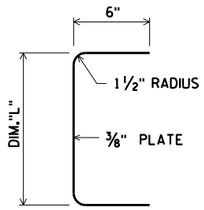
(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B



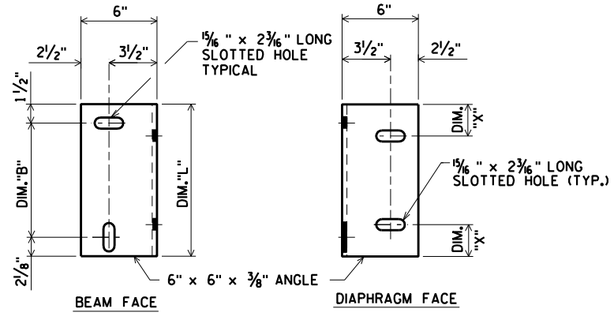
SECT. A-A

(FOR EXTERIOR ATTACHMENT)



SECTION THRU ALTERNATE DIAPHRAGM

*DIM. "X" = 2½" FOR ALTERNATE PLATE DIAPHRAGM



DIAPHRAGM SUPPORT

8

8

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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STEEL INTER. DIAPHRAGM DETAILS

SHEET 14 OF 17
66

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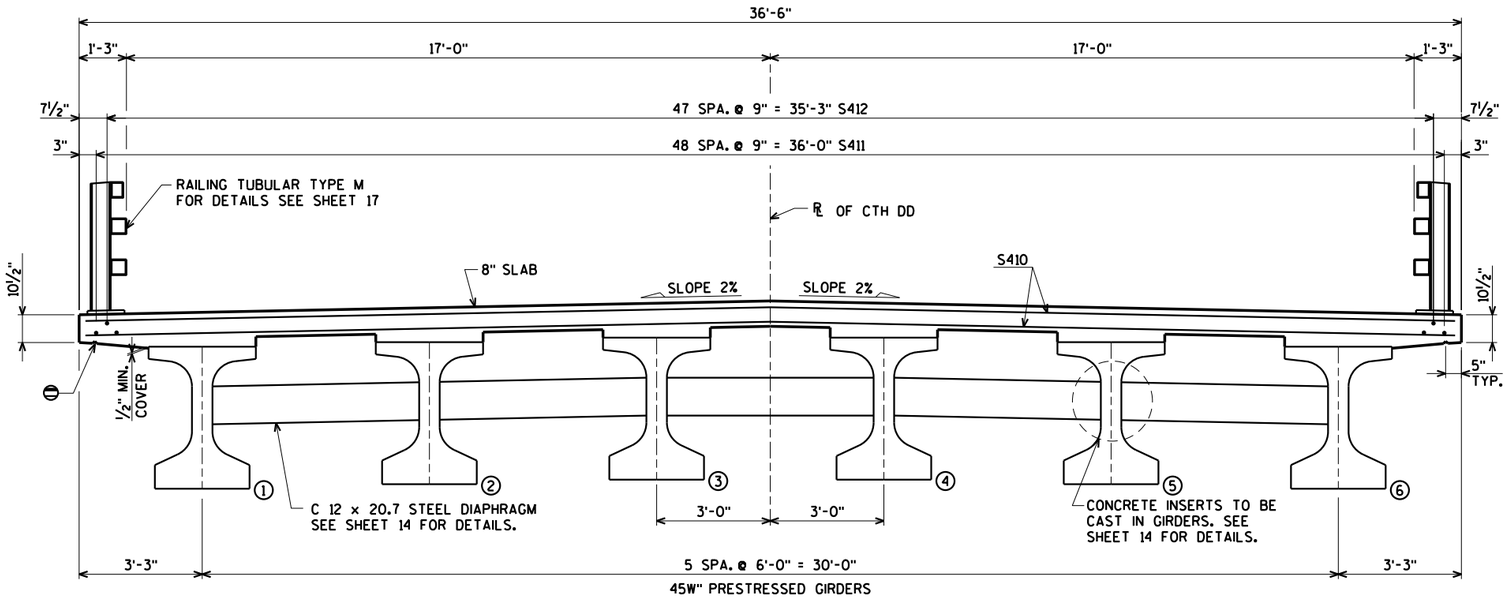


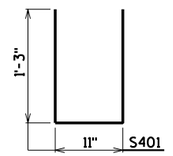
CROSS SECTION THRU BRIDGE

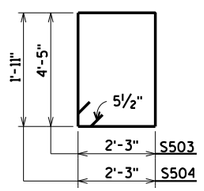
(LOOKING EAST)

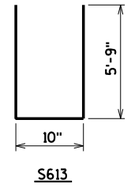
BILL OF BARS

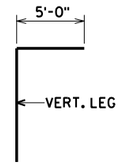
BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	23,300# COATED LOCATION
S401	X	40	3-3	X		DIAPH. @ ABUT. VERT. @ NOTCH
S402	X	20	2-3			DIAPH. @ ABUT. HORIZ. @ NOTCH
S503	X	62	14-0	X		DIAPH. @ ABUT. VERT.
S504	X	24	9-0	X		DIAPH. @ ABUT. VERT.
S605	X	12	38-5			DIAPH. @ ABUT. HORIZ.
S606	X	80	3-4			DIAPH. @ ABUT. HORIZ. BETW. GDRS.
S607	X	4	1-9			DIAPH. @ ABUT. HORIZ. @ EXT. GDRS.
S608	X	12	2-9			DIAPH. @ ABUT. HORIZ. @ EXT. GDRS.
S509	X	24	6-0			DIAPH. @ ABUT. HORIZ. THRU GDRS.
S410	X	415	38-5			SLAB TRANS. TOP & BOT.
S411	X	147	38-7			SLAB LONG. BOT.
S412	X	144	38-7			SLAB LONG. TOP
S613	X	68	12-0	X		SLAB @ INT. RAIL POSTS
S614	X	128	6-0			SLAB @ INT. RAIL POSTS
S615	X	16	6-0	X		SLAB @ END RAIL POSTS
S616	X	4	12-0	X		SLAB @ END RAIL POSTS

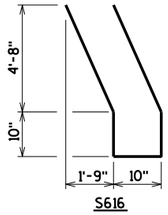
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

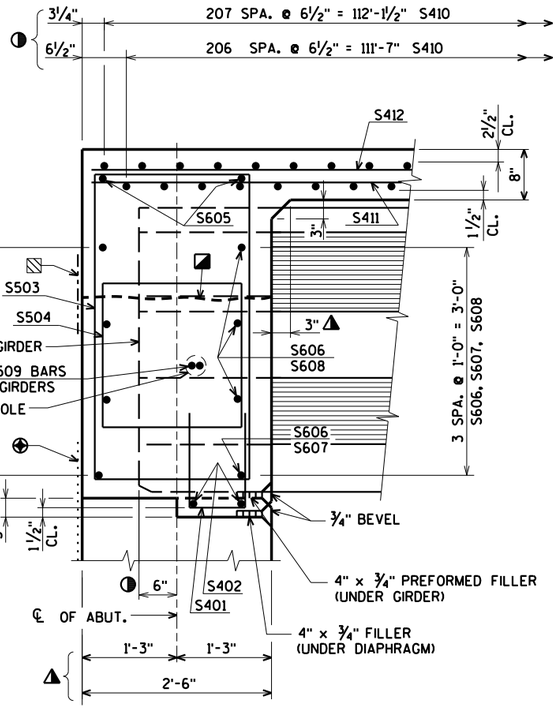




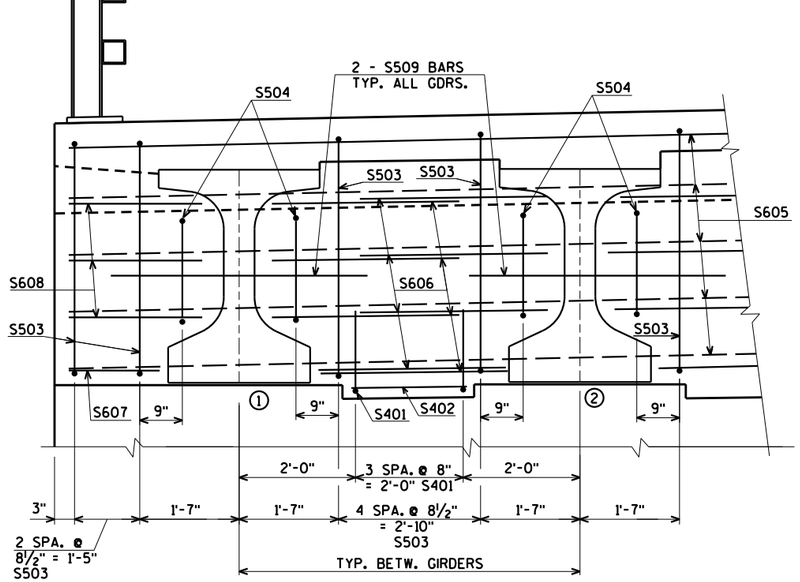








PART LONGITUDINAL SECTION



PART TRANSVERSE SECTION AT ABUTMENT DIAPHRAGM

(LOOKING EAST AT BEAMS 1 & 2, OTHER LOCATIONS SIMILAR)

- ⊖ ¾" V - GROOVE. EXTEND V - GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGMS - TYP.
- ⊕ 18" RUBBERIZED MEMBRANE WATERPROOFING
- ◑ DIMENSIONS MEASURED ALONG ℄ OF GIRDER.
- ◭ DIMENSIONS MEASURED NORMAL TO ℄ OF SUBSTRUCTURE UNIT.
- ◪ OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.
- ▨ 18" RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JT. IS USED. COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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SUPERSTRUCTURE

SHEET 15 OF 17
67

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
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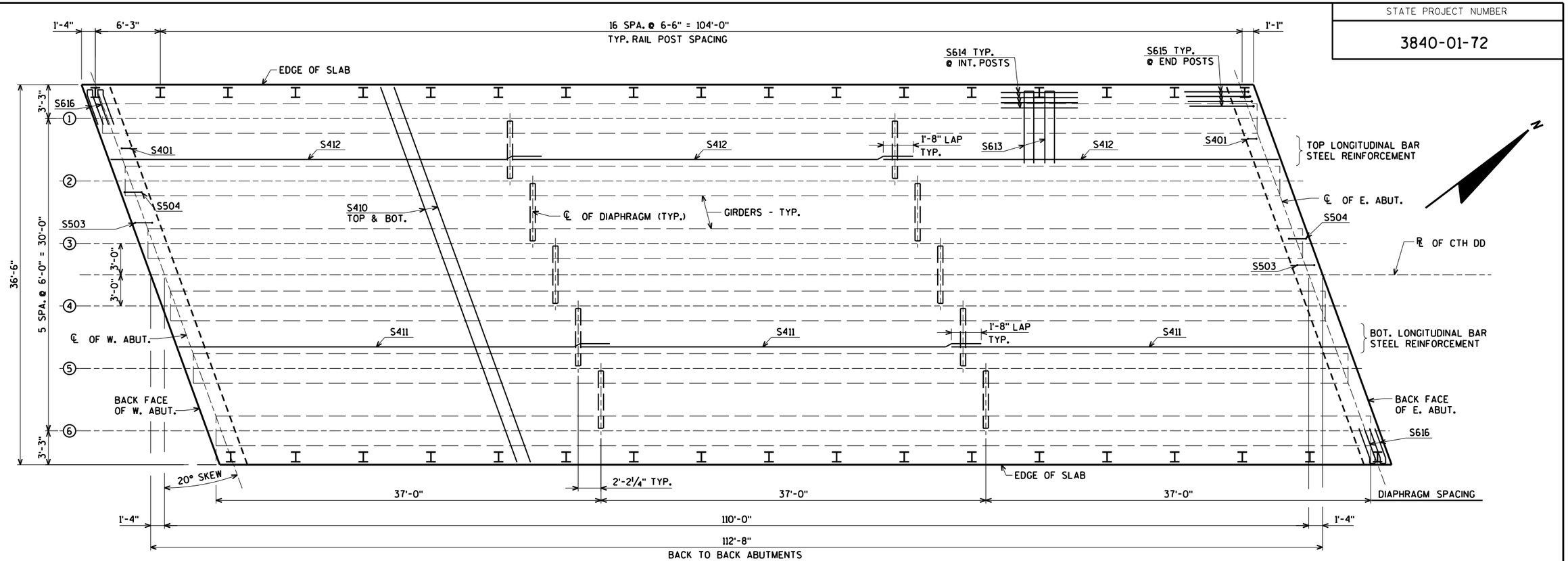
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER

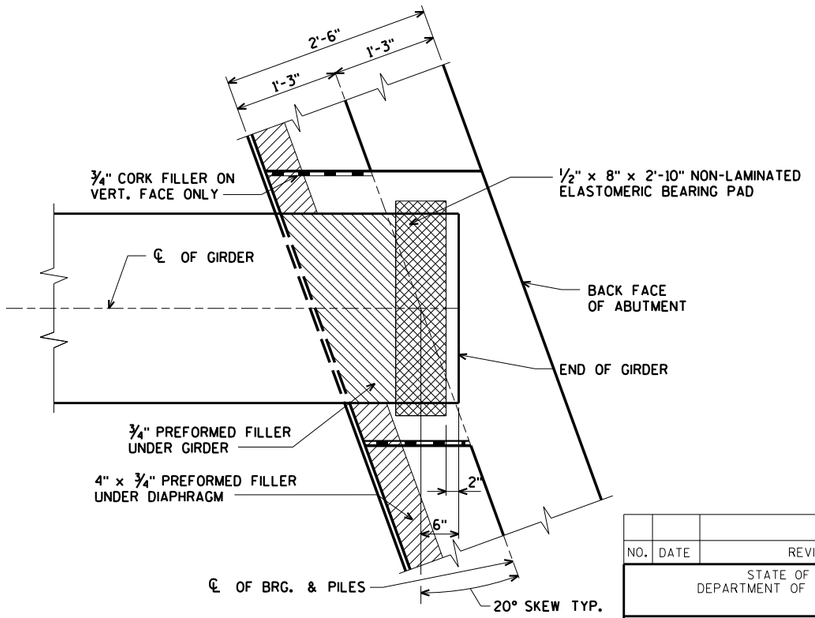
3840-01-72



PLAN

TOP OF DECK ELEVATIONS

	℄ OF W. ABUT.	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	℄ OF E. ABUT.
N. EDGE OF SLAB	780.13	780.18	780.24	780.29	780.35	780.40	780.46	780.51	780.57	780.62	780.68
GIRDER 1	780.20	780.25	780.31	780.36	780.42	780.47	780.53	780.58	780.64	780.69	780.75
GIRDER 2	780.33	780.38	780.44	780.49	780.55	780.60	780.66	780.71	780.77	780.82	780.88
GIRDER 3	780.46	780.51	780.57	780.62	780.68	780.73	780.79	780.84	780.90	780.95	781.01
℄ OF CTH DD	780.53	780.59	780.64	780.70	780.75	780.81	780.86	780.92	780.97	781.03	781.08
GIRDER 4	780.47	780.53	780.58	780.64	780.69	780.75	780.80	780.86	780.91	780.97	781.02
GIRDER 5	780.36	780.42	780.47	780.53	780.58	780.64	780.69	780.75	780.80	780.86	780.91
GIRDER 6	780.25	780.31	780.36	780.42	780.47	780.53	780.58	780.64	780.69	780.75	780.80
S. EDGE OF SLAB	780.19	780.25	780.30	780.36	780.41	780.47	780.52	780.58	780.63	780.69	780.74



BEARING PAD DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

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SUPERSTRUCTURE PLAN

SHEET 16 OF 17
68

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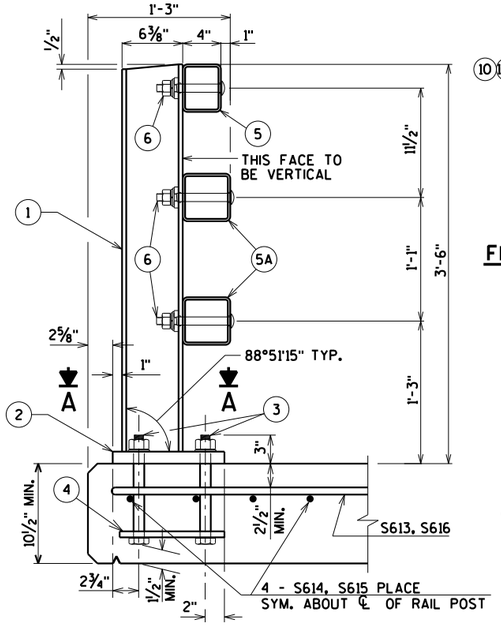
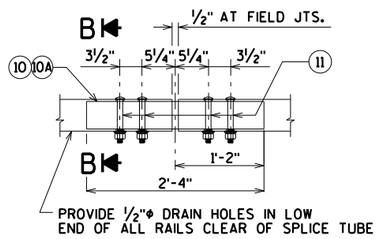
STATE PROJECT NUMBER

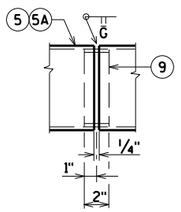
3840-01-72



SECTION THRU RAILING ON DECK

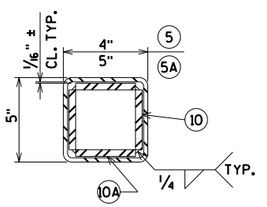


FIELD ERECTION JOINT DETAIL

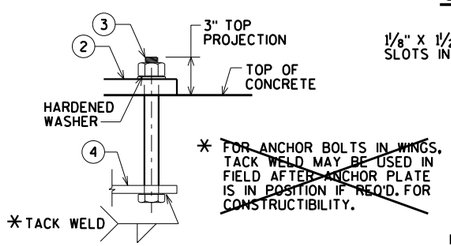


SHOP RAIL SPLICE DETAIL

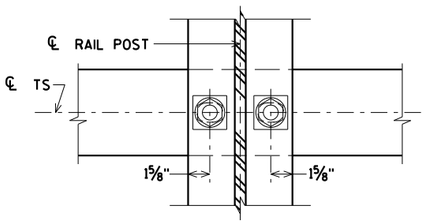
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



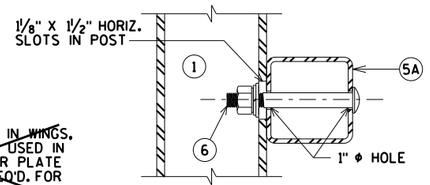
SECTION B



ANCHOR BOLTS



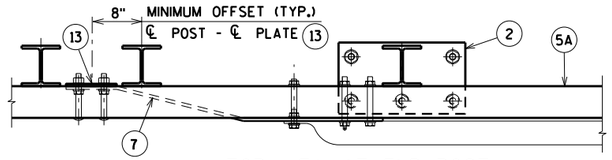
SECTION THRU POST WEB



SECTION THRU RAIL

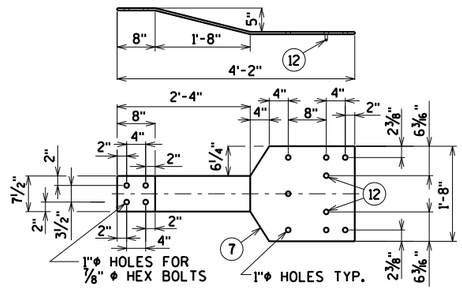
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

(THRIE BEAM RAIL ATTACHMENT)

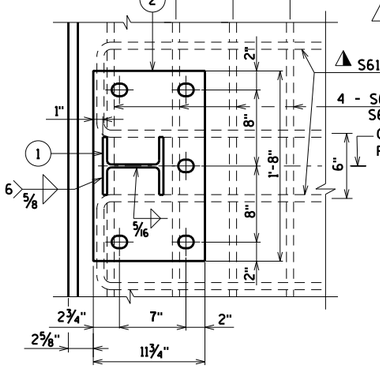


BACK-UP PLATE DETAIL

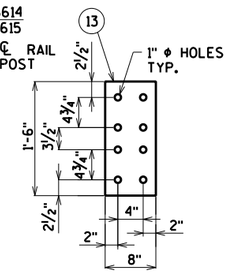
(AT BEAM GUARD ATTACHMENT)

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 - 1⅛" 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 1³⁄₁₆" 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" Φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1⅝" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS ~~AND 1⅝" 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" Φ 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.

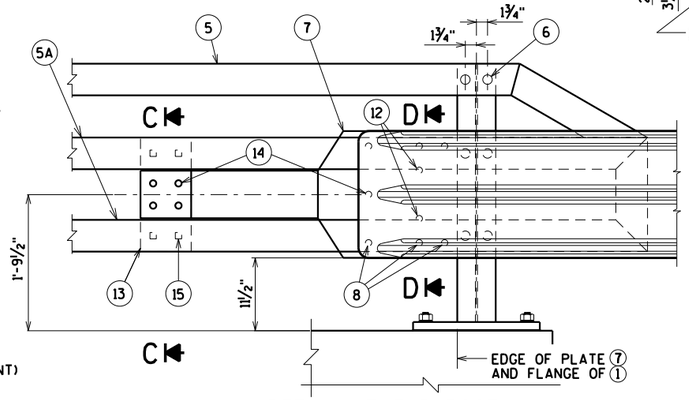


SECTION A



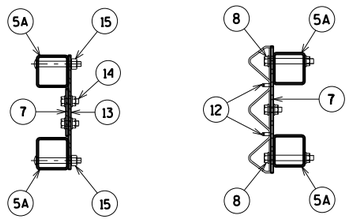
ANCHOR PLATE

(AT BEAM GUARD ATTACHMENT)



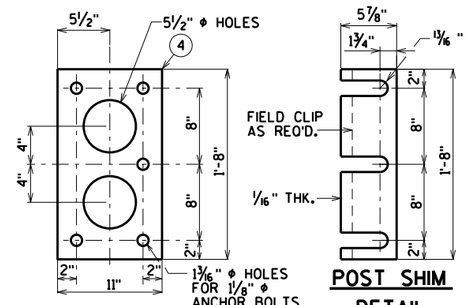
DETAIL AT END POST

(THRIE BEAM RAIL ATTACHMENT)



SECTION C

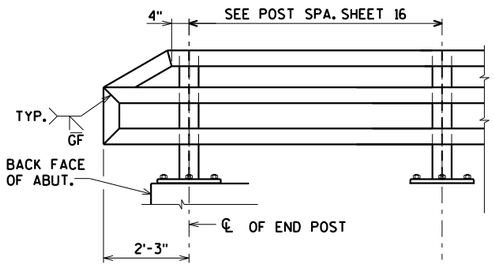
SECTION D



ANCHOR PLATE

(AT RAIL TO DECK CONNECTION)

POST SHIM DETAIL



PART ELEVATION OF RAILING

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-64-180" 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 S.S.P.C. SPECIFICATIONS.
10. ~~WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.~~
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-64-180

DRAWN BY CJM | PLANS CK'D. CBM

RAILING TUBULAR TYPE M

SHEET 17 OF 17
69

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

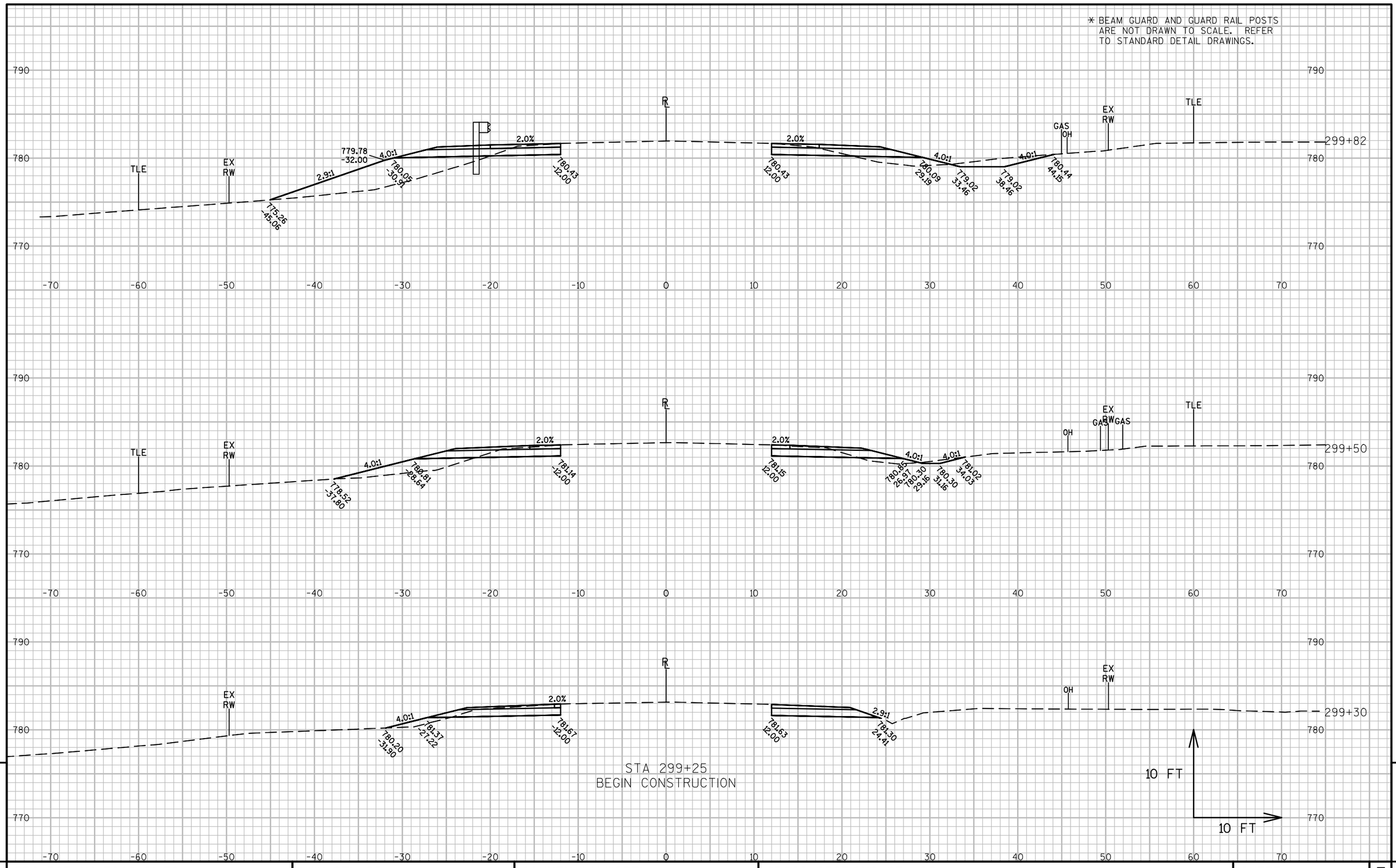
EARTHWORK STATION-BY-STATION

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Salvaged / Unusable Pave. Mat.	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Salvaged / Unusable Pave. Mat. Note 2	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Exp. Fill 1.11
CTH DD										
299+30	29930	0.00	23.34	0.00	3.01	0	0	0	0	0
299+50	29950	20.00	18.56	0.00	16.73	16	0	7	16	8
299+82	29982	32.00	21.05	0.00	49.08	23	0	39	39	51
300+00	30000	18.00	20.37	0.00	61.96	14	0	37	53	92
300+07	30007	7.00	19.61	0.00	68.88	5	0	17	58	111
300+50	30050	43.00	25.46	0.00	72.08	36	0	112	94	236
301+00	30100	50.00	18.37	0.00	56.62	41	0	119	134	368
301+50	30150	50.00	15.07	0.00	52.51	31	0	101	165	480
302+00	30200	50.00	14.09	0.00	60.02	27	0	104	192	596
302+50	30250	50.00	15.43	0.00	62.85	27	0	114	220	722
303+00	30300	50.00	15.90	0.00	46.89	29	0	102	249	835
303+50	30350	50.00	16.13	0.00	41.65	30	0	82	278	926
304+00	30400	50.00	45.95	16.08	60.56	57	15	95	336	1,031
304+45	30445	45.00	38.38	16.08	48.52	70	27	91	406	1,132
304+65	30465	20.00	15.73	8.04	23.53	20	9	27	426	1,162
STRUCTURE B-64-180										
305+80	30580		15.19	8.04	7.71	0	0	0	426	1,162
306+00	30600	20.00	31.34	16.08	29.03	17	9	14	443	1,177
306+50	30650	50.00	44.14	16.08	58.20	70	30	81	513	1,266
307+00	30700	50.00	43.96	16.08	76.47	82	30	125	595	1,405
307+50	30750	50.00	14.17	0.00	91.32	54	15	155	649	1,577
308+00	30800	50.00	17.81	0.00	107.52	30	0	184	678	1,782
308+50	30850	50.00	17.02	0.00	142.27	32	0	231	711	2,038
309+00	30900	50.00	15.39	0.00	116.31	30	0	239	741	2,304
309+50	30950	50.00	13.90	0.00	33.82	27	0	139	768	2,458
310+00	31000	50.00	10.41	0.00	6.87	23	0	38	790	2,500
310+37	31037	37.00	13.04	0.00	1.10	16	0	5	806	2,506
310+72	31072	35.00	16.53	0.00	0.00	19	0	1	825	2,507
						825	134	2,259		

NOTES:

1 Cut includes Salvaged/Unusable Pavement material
2 This does not show up in cross sections
3 Does not include Unusable Pavement Exc volume

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



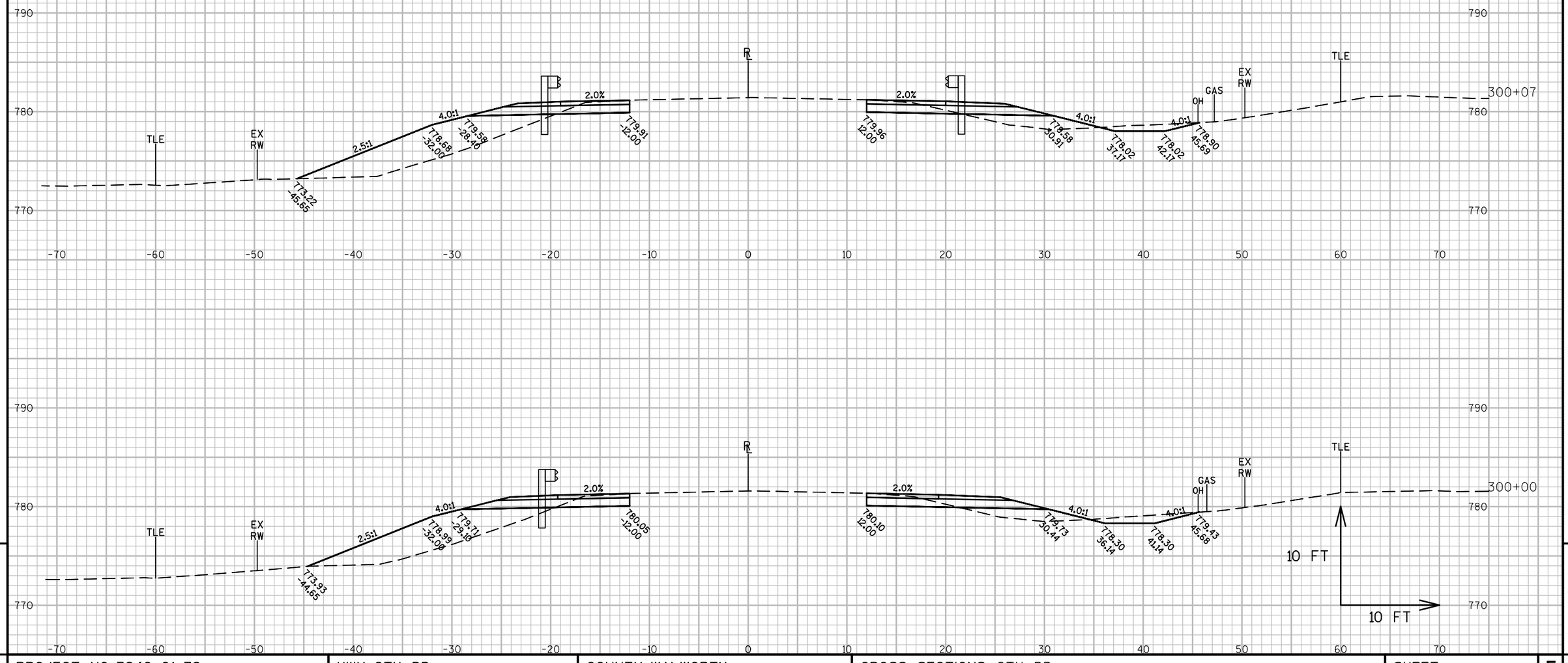
9

PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 71	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 01

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.

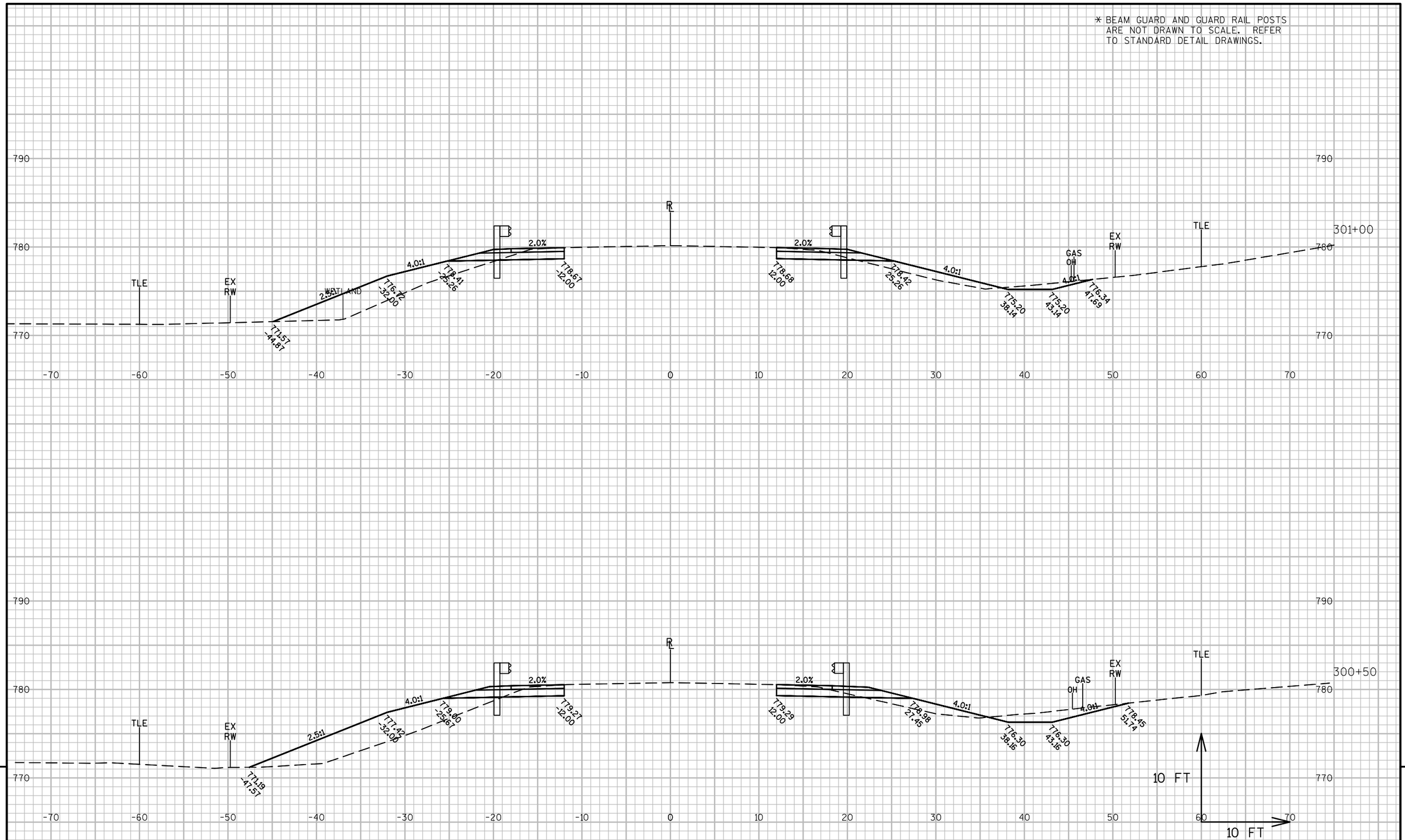


9 9

PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 72	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 02
PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



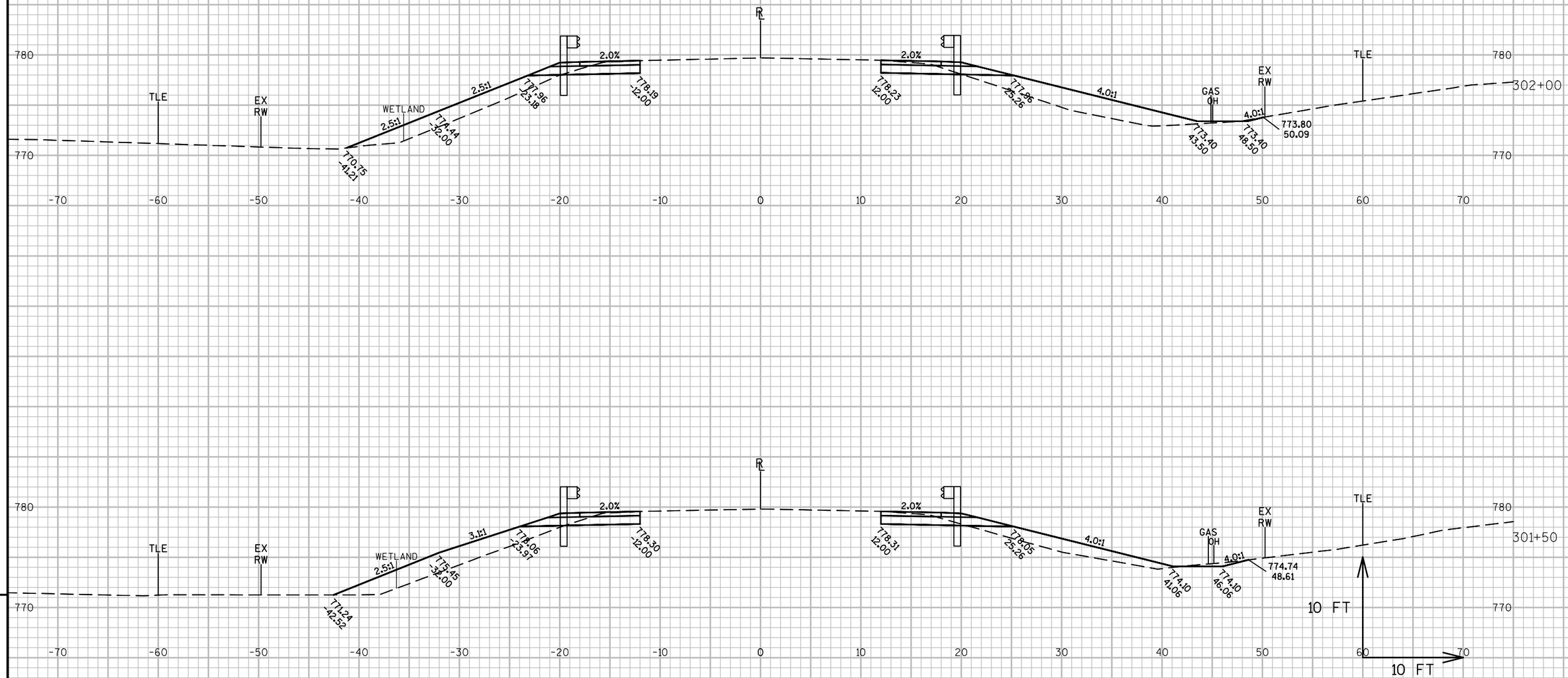
PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 73	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 03

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



9 9

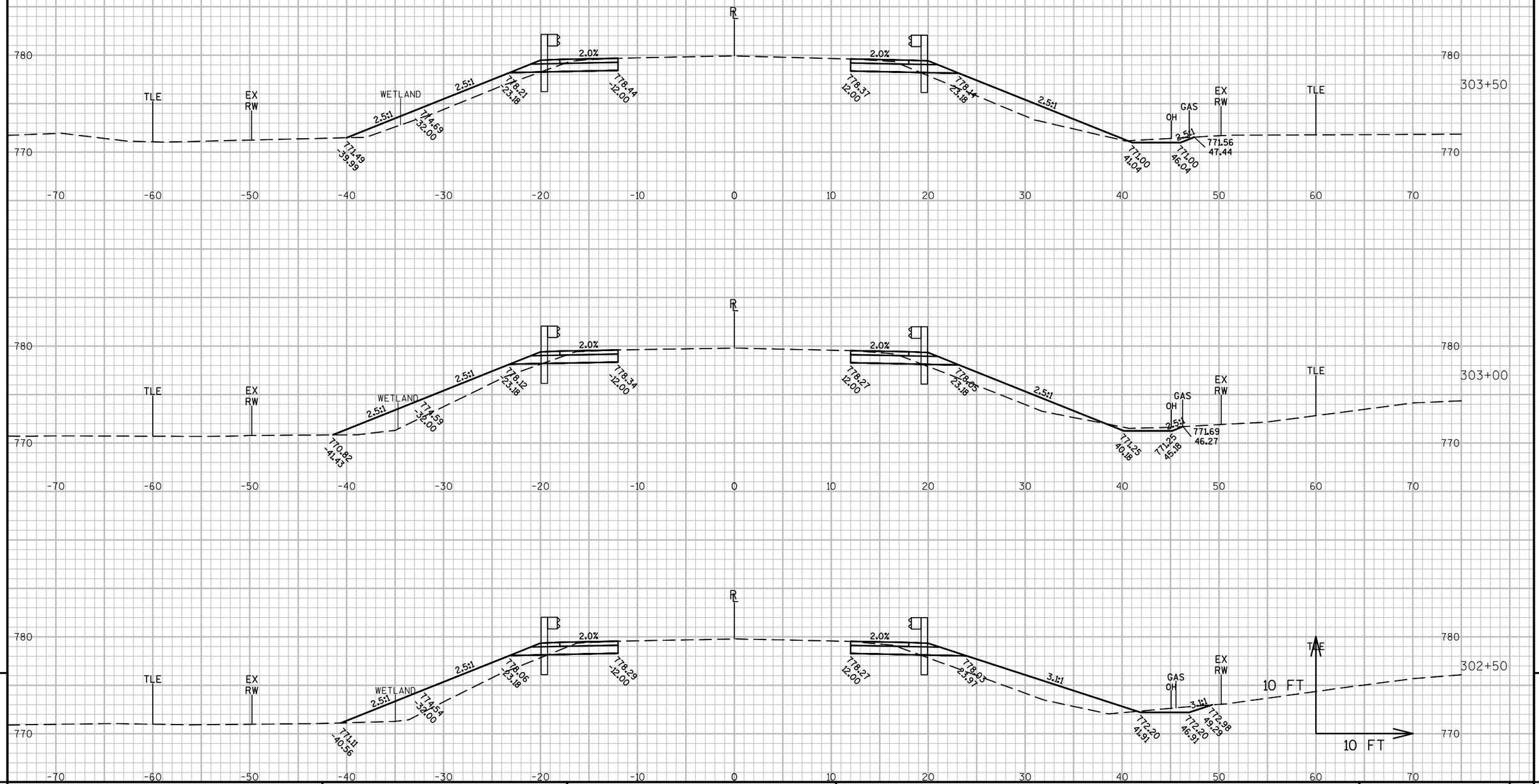
PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 74	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 04

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



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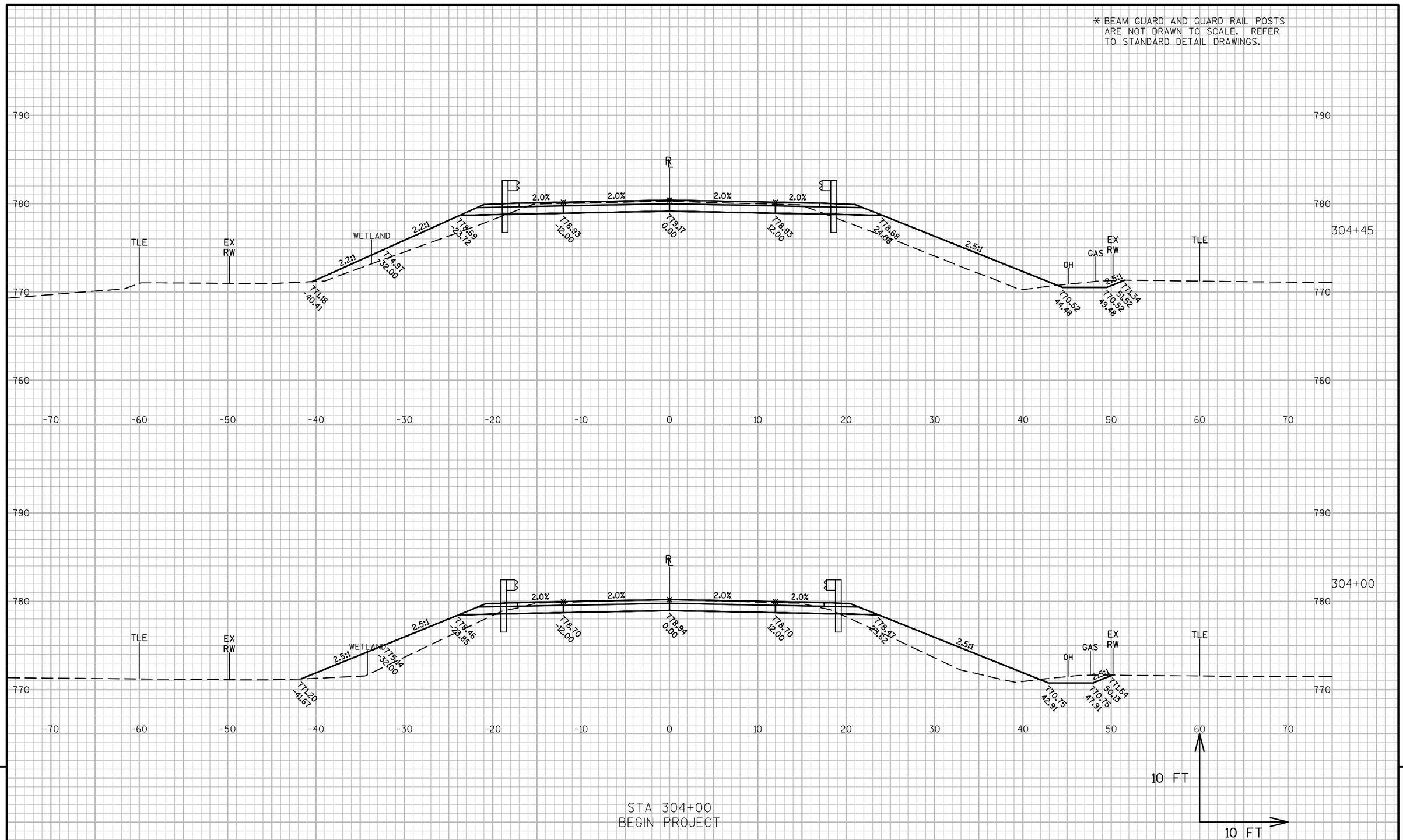
PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 75	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 05

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



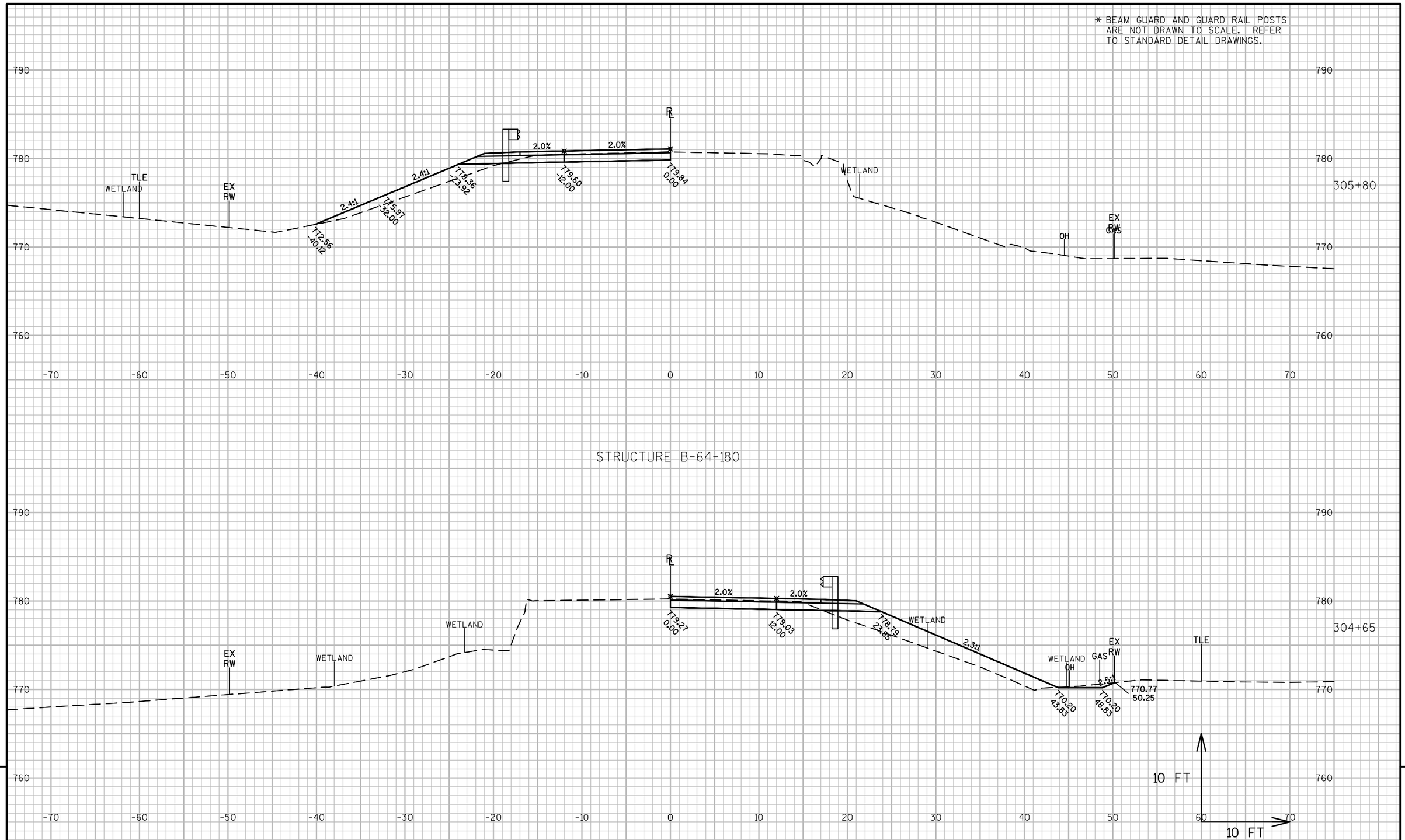
PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 76	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 06

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



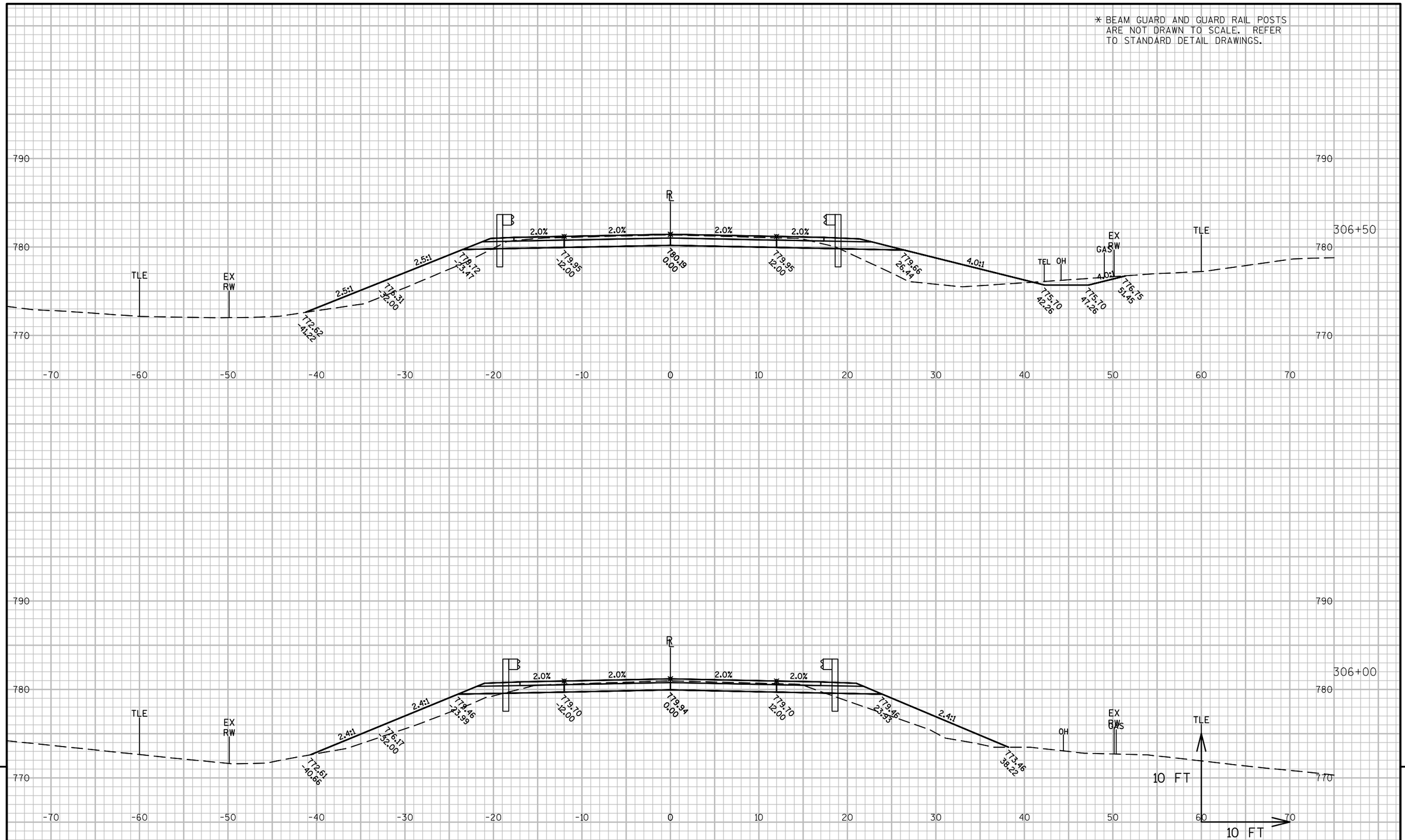
PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 77	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 07

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



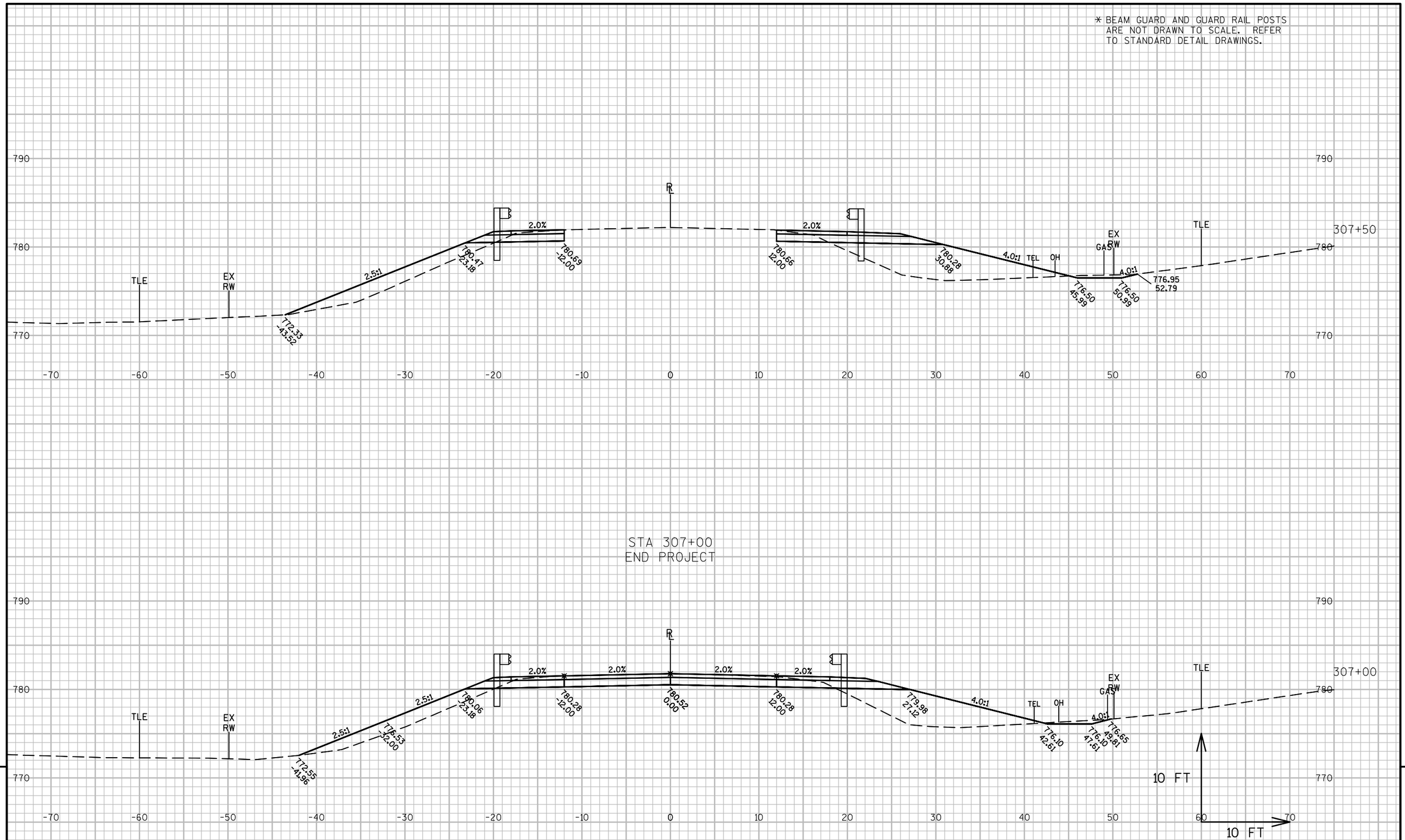
PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 78	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 08

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



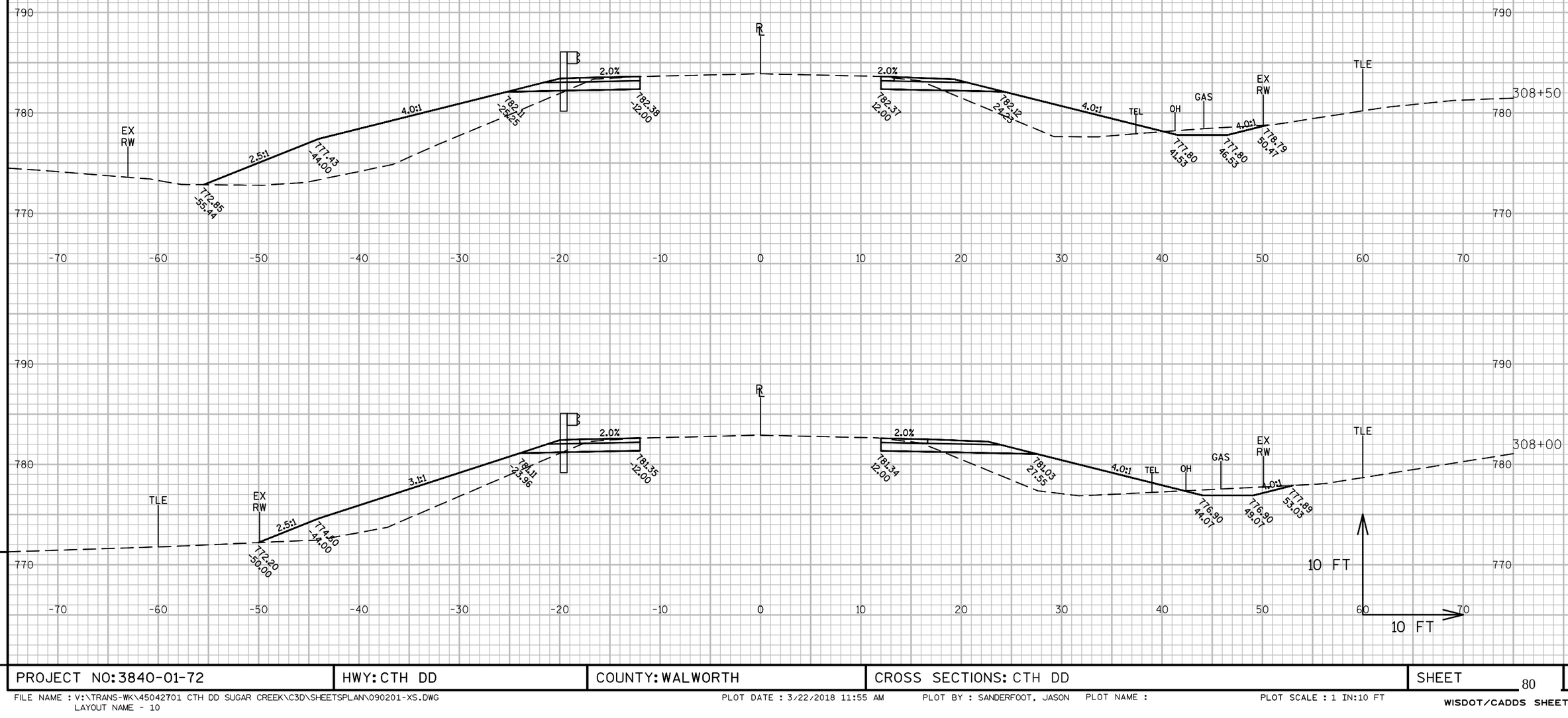
PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 79	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 09

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



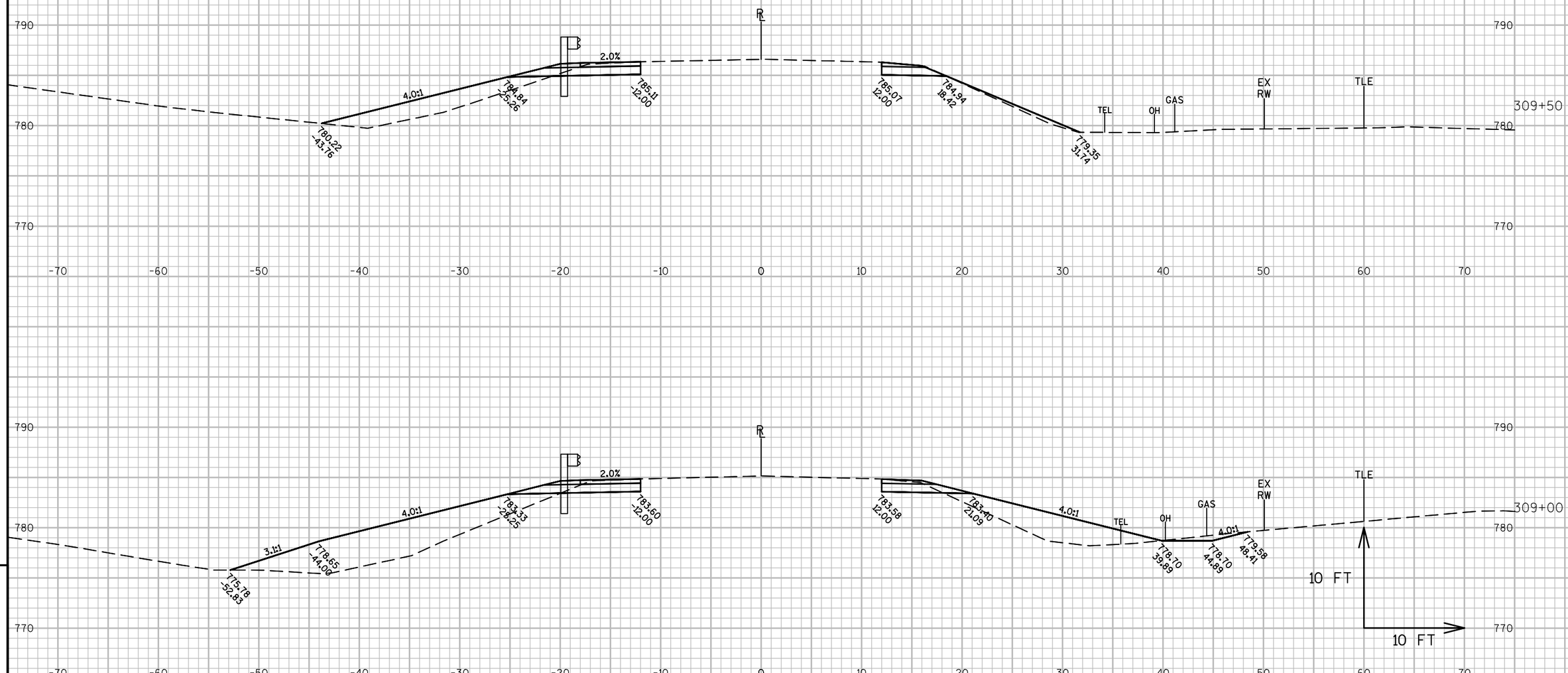
PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 80	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 10

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



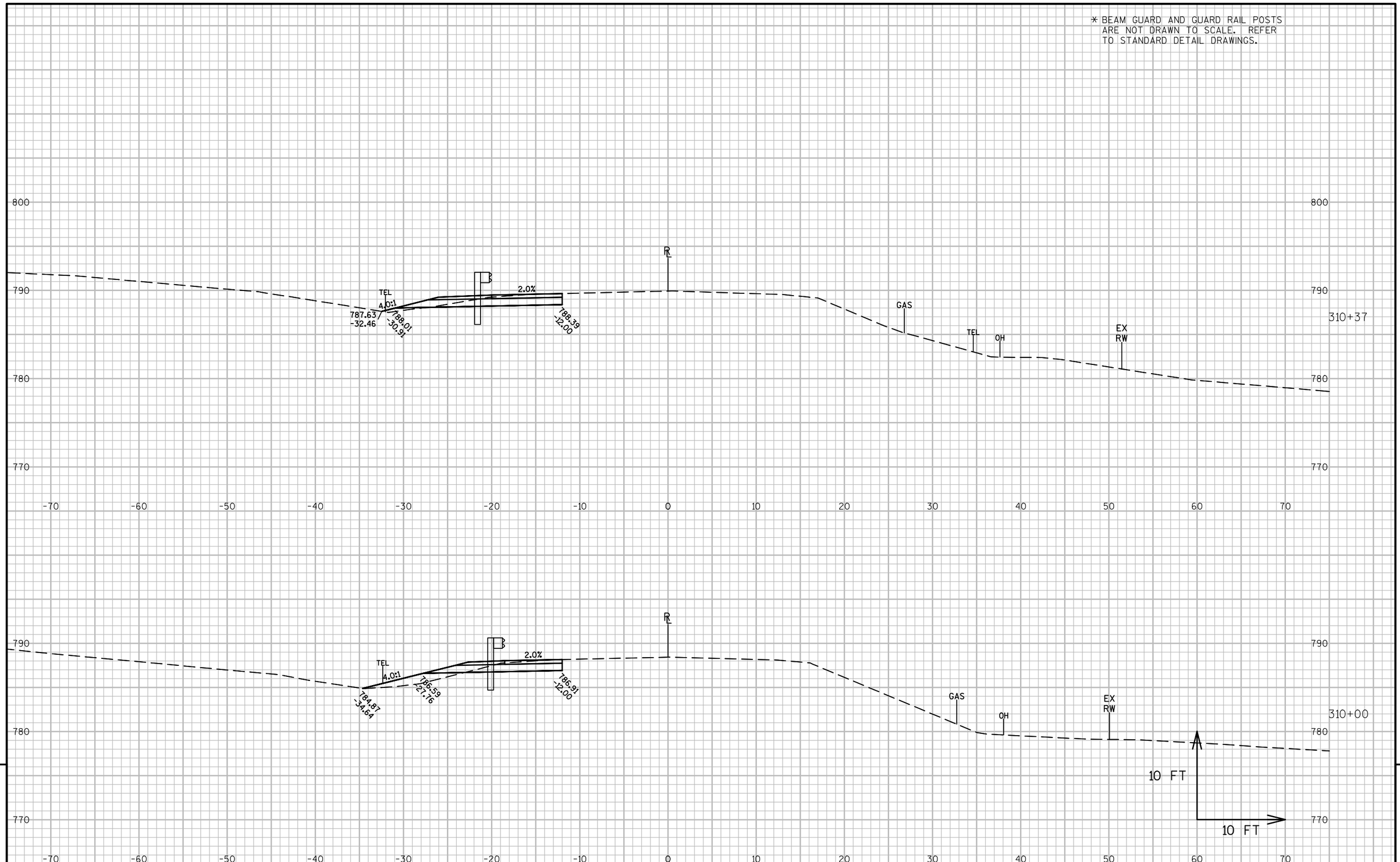
PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 81	E

FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 11

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.



PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 82	E

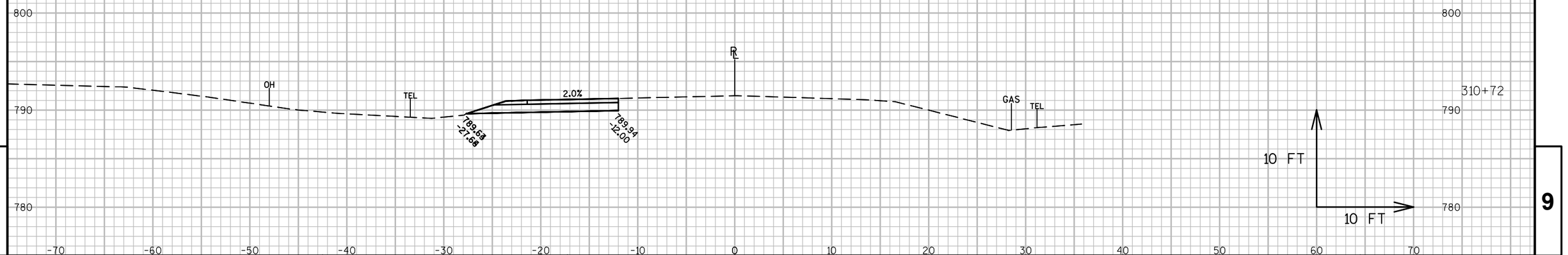
FILE NAME : V:\TRANS-WK\45042701 CTH DD SUGAR CREEK\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 12

PLOT DATE : 3/22/2018 11:55 AM PLOT BY : SANDERFOOT, JASON PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

* BEAM GUARD AND GUARD RAIL POSTS ARE NOT DRAWN TO SCALE. REFER TO STANDARD DETAIL DRAWINGS.

STA 310+72
END CONSTRUCTION



9

9

PROJECT NO: 3840-01-72	HWY: CTH DD	COUNTY: WALWORTH	CROSS SECTIONS: CTH DD	SHEET 83	E

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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