WKE MAR 2018

PROJECT ID: 2751-00-70

WITH: N/A

COUNTY: WAUKESHA

ORDER OF SHEETS

TOTAL SHEETS = 82

22

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH Q

BRIDGE OVER OCONOMOWOC RIVER (B-67-0373)

CTH Q

WAUKESHA

STATE PROJECT NUMBER
2751-00-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2751-00-70		

APPROVED FOR
WAUKESHA COUNTY
DEPARTMENT OF PUBLIC WORKS

10-9-17 Date — Director

10/9/17. Date — Engineering Services Manager

ORIGINAL PLANS PREPARED BY

GRAEF 125 S. 84TH STREET, SUITE 401 MILWAUKEE, WI 53214

10/9/17 (Date) (Signature)

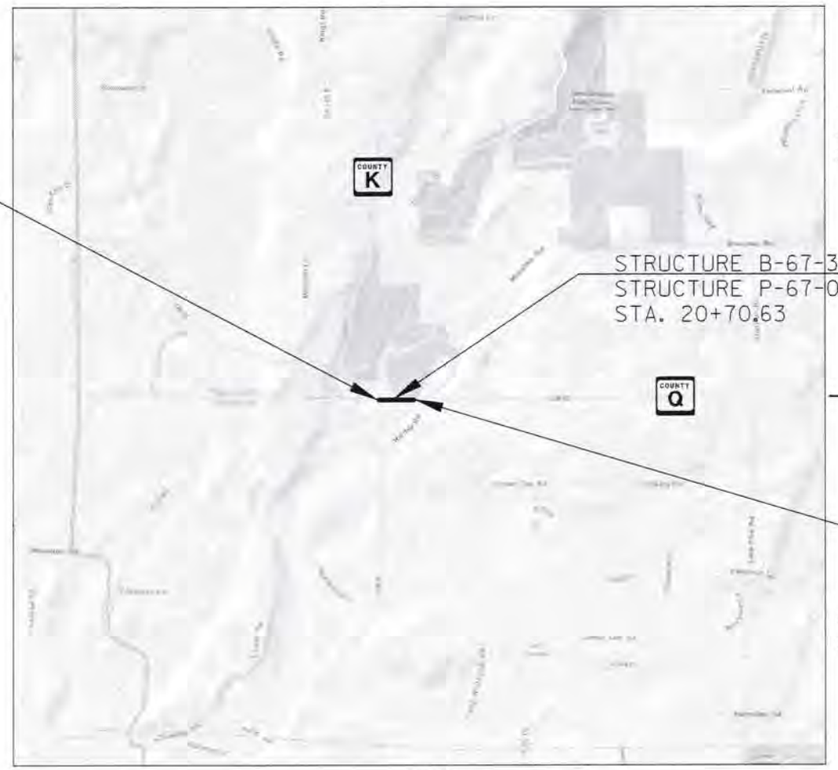
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor GRAEF
Designer GRAEF
Management Consultant DAAR CORP INC.

APPROVED FOR THE DEPARTMENT
DATE: 10/9/17 (MANAGEMENT CONSULTANT SIGNATURE)

E

R-18-E



BEGIN PROJECT
STA. 18+25.00
Y = 227,271.38
X = 654,575.76

STRUCTURE B-67-373
STRUCTURE P-67-078 TO BE REMOVED
STA. 20+70.63

END PROJECT
STA. 23+00.00

LAYOUT
SCALE 0 — 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.090

DESIGN DESIGNATION

A.A.D.T.	2018	=	3,200
A.A.D.T.	2038	=	3,700
D.H.V.		=	355
D.D.		=	60/40
T.		=	13.0%
DESIGN SPEED		=	60 MPH
ESALS		=	817,600

CONVENTIONAL SYMBOLS

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

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

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

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN 2012 VERTICAL DATUM OF 1988 NAVD88 (2012).

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM THE ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES SHALL BE BACKFILLED WITH GRANULAR BACKFILL. BACKFILL GRANULAR MATERIAL IS INCIDENTAL TO THE REMOVAL ITEM.

THE LOCATION OF KNOWN EXISTING UTILITIES IN THE VICINITY OF THE PROJECT ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITIES IN THE AREA THAT ARE NOT SHOWN.

HMA PAVEMENT, TYPE WHERE INDICATED ON THE PLANS, SHALL CONSIST OF LAYERS AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER.

6" DEPTH	4" HMA PAVEMENT 2 MT 58-28 S AS THE LOWER LAYER
	2" HMA PAVEMENT 4 MT 58-28 S AS THE UPPER LAYER

SILT FENCE SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

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

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ALL DISTURBED AREAS WITHIN 200' OF THE OCONOMOWOC RIVER SHALL BE TEMPORARILY SEEDED WITHIN ONE DAY OF THE WORK.

EROSION CONTROL BMP'S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL BMP'S SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.

STANDARD ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CP	CULVERT PIPE
CPCM	CULVERT PIPE CORRUGATED METAL
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CSCP	CORRUGATED STEEL CULVERT PIPE
CSPA	CORRUGATED STEEL PIPE ARCH
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC-YARD
D	DEGREE OF CURVE
△	DELTA
DISCH	DISCHARGE
FE	FIELD ENTRANCE
HERCP	HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
NTS	NOT TO SCALE
PAVT	PAVEMENT
PB	PULL BOX
PC	POINT-OF-CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RAD	RADIUS
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
RCHESS	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL STORM SEWER
RCPSS	REINFORCED CONCRETE PIPE - STORM SEWER
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SB	SIGNAL BASE
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TC	TOP OF CURB
TLE	TEMPORARY LIMITED EASEMENT

WAUKESHA COUNTY

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DEPT. OF NATURAL RESOURCES

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CRAIG.WEBSTER@WISCONSIN.GOV

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HIGHWAY@TOWNOFMERTON.COM

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MILWAUKEE, WI 53212
(414) 277-4045
STEVE.CRAMER@CHARTER.COM

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EMERGENCY MANAGEMENT DIRECTOR
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WEST BEND, WI 53095
(262) 338-7662
ALAN.SCHMITT@WE-ENERGIES.COM

WE ENERGIES GAS
ERIC KICKHAVER
500 S. 116TH STREET
WEST ALLIS, WI 53214
(414) 944-5917
ERIC.KICKHAVER@WE-ENERGIES.COM

WINDSTREAM KDL, INC.
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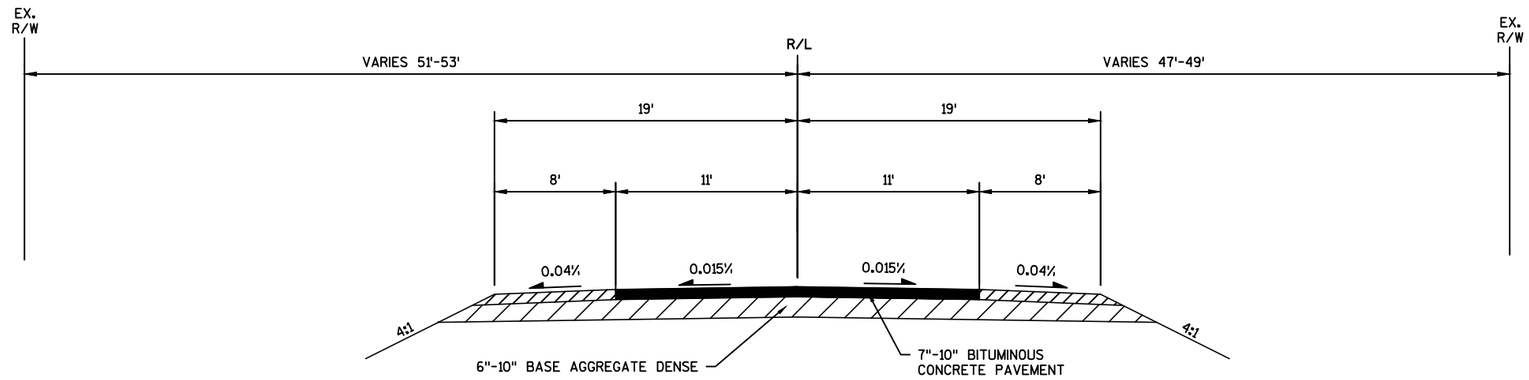
13935 BISHOPS DRIVE
BROOKFIELD, WI 53005
(262) 792-7938
MARY.B.FISHER@WINDSTREAM.COM

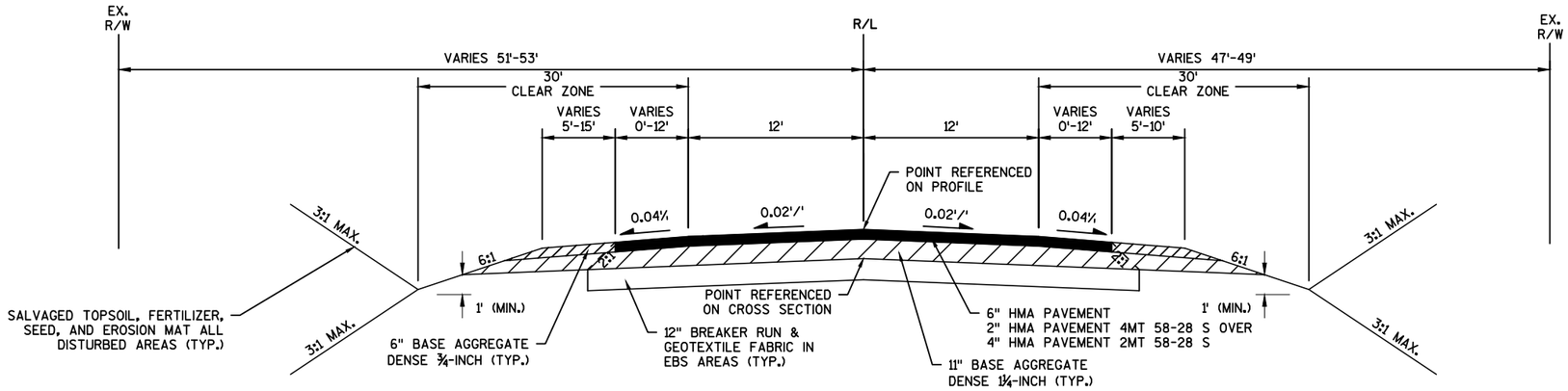
INDEX OF TYPICAL SECTION AND DETAIL SHEETS



TYPICAL EXISTING SECTION CTH Q

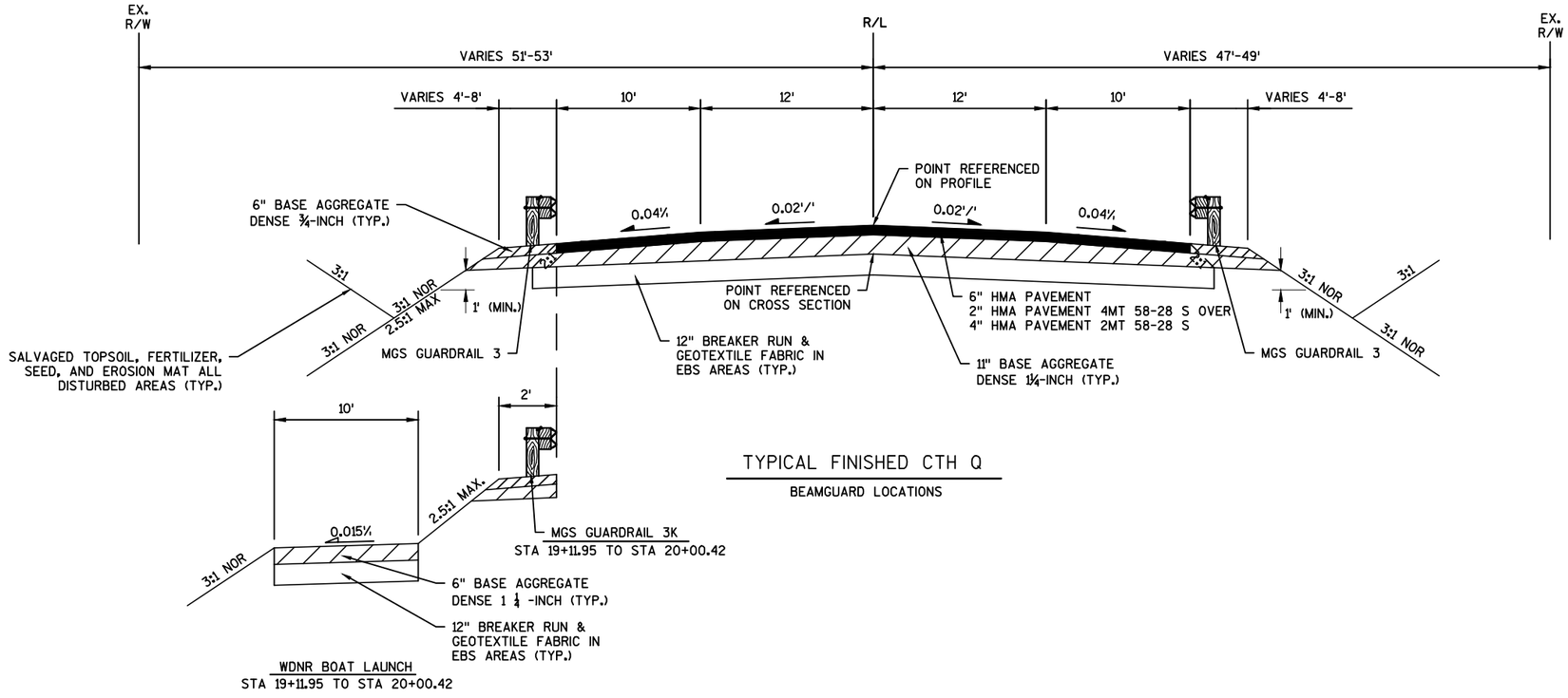
STA 18+25 TO STA 23+00

PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	PLAN: TYPICAL SECTION	SHEET 3	E



TYPICAL FINISHED CTH Q

STA 18+25 TO STA 20+51.71
AND
STA 20+89.37 TO STA. 23+00



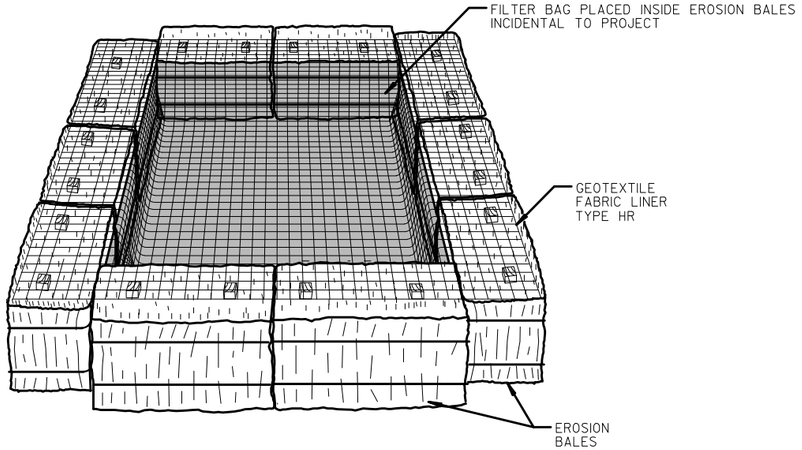
TYPICAL FINISHED CTH Q

BEAMGUARD LOCATIONS

WDNR BOAT LAUNCH
STA 19+11.95 TO STA 20+00.42

PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	PLAN: TYPICAL SECTION	SHEET 4	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\020301_TS.DWG
LAYOUT NAME - 020301_TS - 020301_TS_PROPOSED
PLOT DATE : 10/24/2017 1:54 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42



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

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

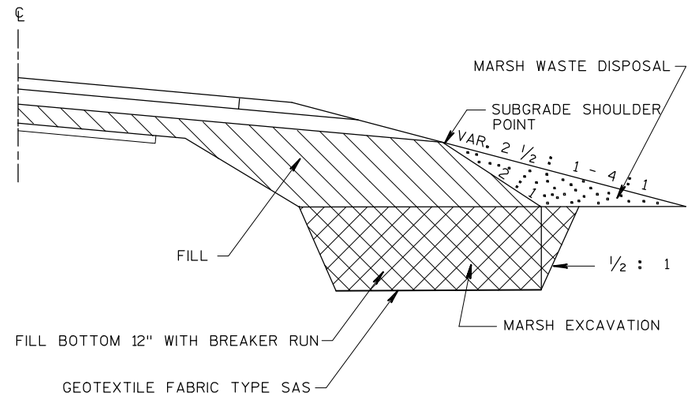
EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.

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

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

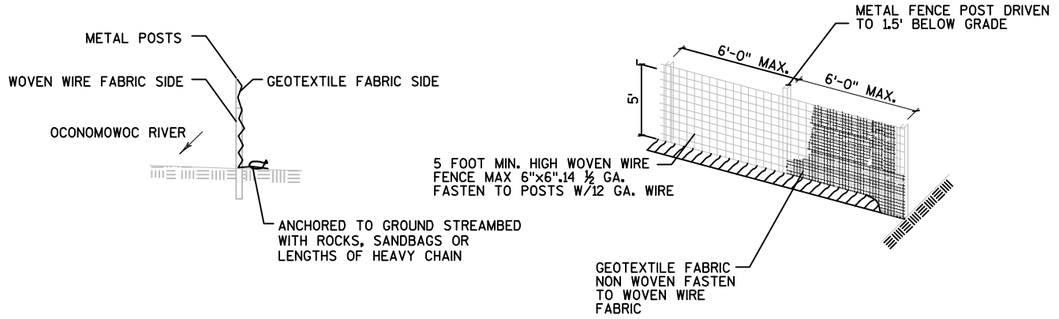
USE A 20 FT. X 27 FT. BASIN

TEMPORARY SETTLING BASIN

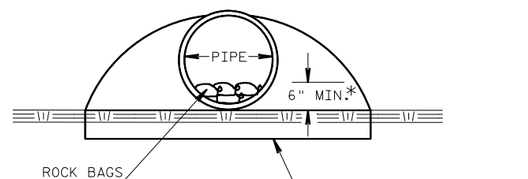


TYPICAL MARSH EXCAVATION FOR RECONSTRUCTION

2

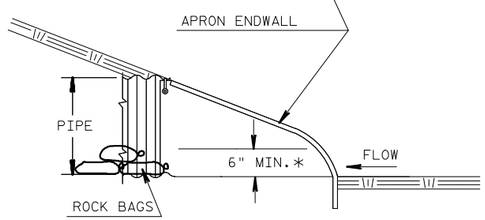


HEAVY DUTY SILT FENCE
N.T.S.



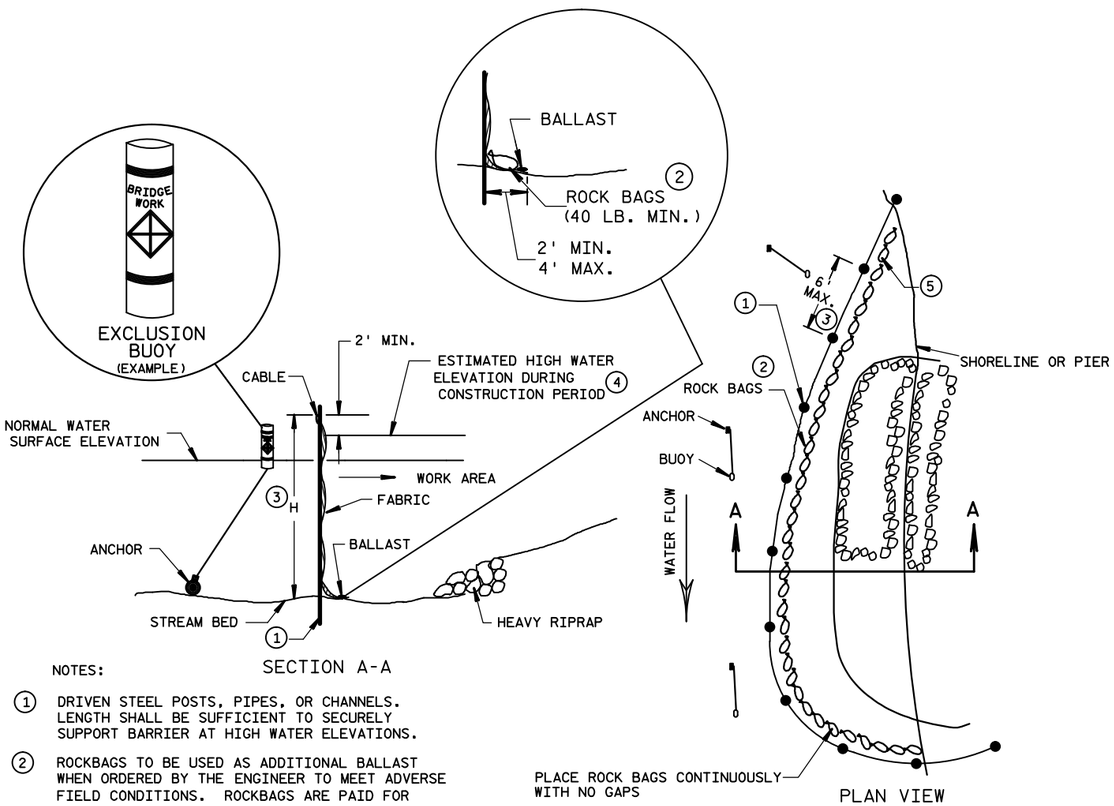
END VIEW

* OR AS DIRECTED BY THE ENGINEER



SIDE VIEW

CULVERT PIPE CHECK



NOTES:

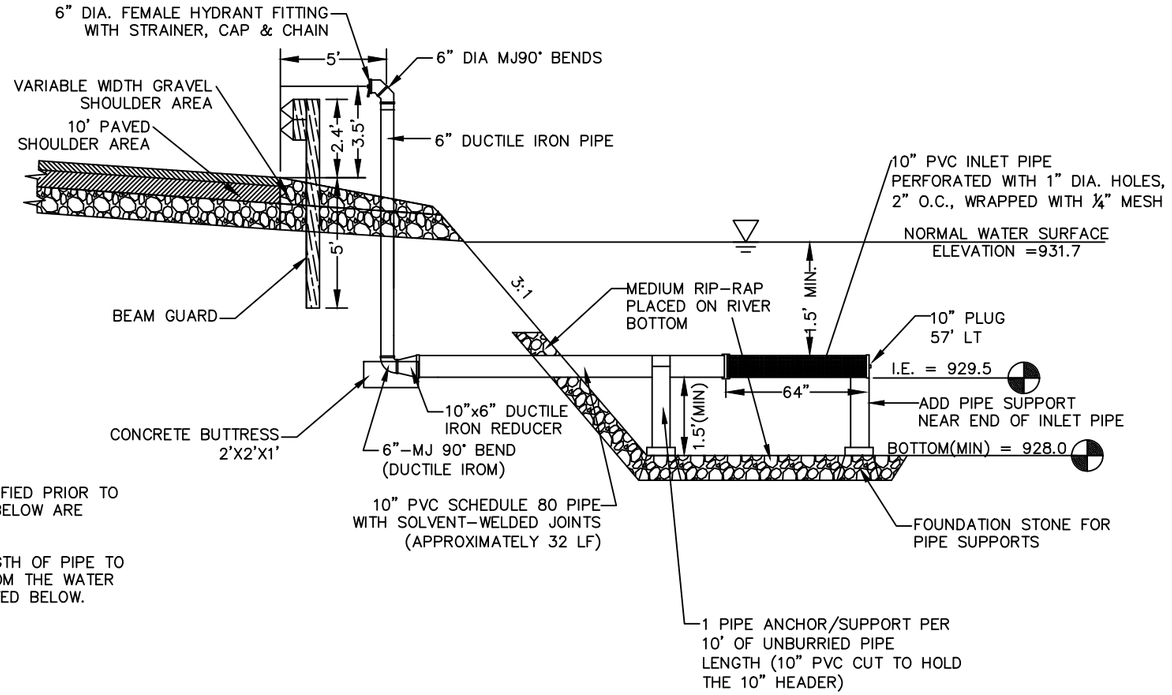
1. DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
2. ROCKBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. ROCKBAGS ARE PAID FOR SEPARATELY.
3. WHEN BARRIER HEIGHT, H, EXCEEDS 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 ROCKBAGS

   ADVERSE FIELD CONDITIONS. TEMPORARY CONCRETE BARRIER IS INCIDENTAL TO THE TURBIDITARY BARRIER ITEM.

TURBIDITY BARRIER DETAIL

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\021001_CD.DWG
LAYOUT NAME - 021001_CD - 021002_CD
PLOT DATE : 10/24/2017 1:54 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 42

2



NOTES:

1. ACTUAL RIVER DEPTHS WILL NEED TO BE VERIFIED PRIOR TO INITIATING CONSTRUCTION. ELEVATIONS LISTED BELOW ARE RECOMMENDED MINIMUMS.

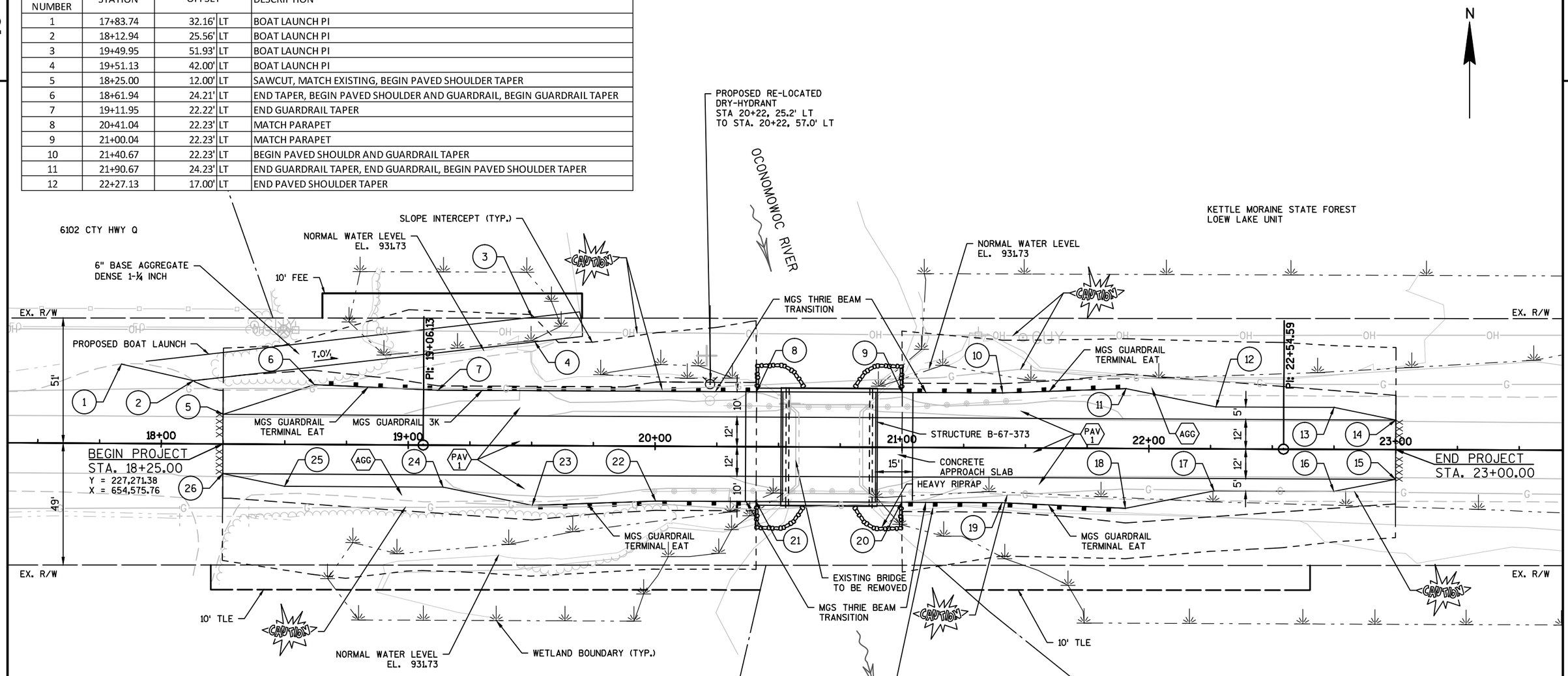
2. CONTRACTOR SHALL INSTALL SUFFICIENT LENGTH OF PIPE TO ATTAIN MINIMUM SEPARATION REQUIREMENTS FROM THE WATER SURFACE AND FROM THE RIVER BOTTOM AS LISTED BELOW.

DRY FIRE HYDRANT

TOWN OF ERIN

NOT TO SCALE

POINT NUMBER	STATION	OFFSET		DESCRIPTION
1	17+83.74	32.16'	LT	BOAT LAUNCH PI
2	18+12.94	25.56'	LT	BOAT LAUNCH PI
3	19+49.95	51.93'	LT	BOAT LAUNCH PI
4	19+51.13	42.00'	LT	BOAT LAUNCH PI
5	18+25.00	12.00'	LT	SAWCUT, MATCH EXISTING, BEGIN PAVED SHOULDER TAPER
6	18+61.94	24.21'	LT	END TAPER, BEGIN PAVED SHOULDER AND GUARDRAIL, BEGIN GUARDRAIL TAPER
7	19+11.95	22.22'	LT	END GUARDRAIL TAPER
8	20+41.04	22.23'	LT	MATCH PARAPET
9	21+00.04	22.23'	LT	MATCH PARAPET
10	21+40.67	22.23'	LT	BEGIN PAVED SHOULDR AND GUARDRAIL TAPER
11	21+90.67	24.23'	LT	END GUARDRAIL TAPER, END GUARDRAIL, BEGIN PAVED SHOULDER TAPER
12	22+27.13	17.00'	LT	END PAVED SHOULDER TAPER



POINT NUMBER	STATION	OFFSET		DESCRIPTION
13	22+75.02	17.00'	LT	BEGIN PAVED SHOULDER TAPER
14	23+00.02	12.00'	LT	END PAVED SHOULDER TAPER, SAWCUT, MATCH EXISTING
15	22+99.98	12.00'	RT	SAWCUT, MATCH EXISTING, END PAVED SHOULDER TAPER
16	22+74.97	17.00'	RT	BEGIN PAVED SHOULDER TAPER
17	22+26.51	17.00'	RT	END PAVED SHOULDER TAPER
18	21+90.67	24.23'	RT	BEGIN TAPER, END GUARDRAIL, END GUARDRAIL TAPER
19	21+40.67	22.23'	RT	BEGIN GUARDRAIL TAPER
20	21+00.04	22.23'	RT	MATCH PARAPET
21	20+41.04	22.23'	RT	MATCH PARAPET
22	20+00.42	22.23'	RT	END PAVED SHOULDER AND GUARDRAIL TAPER
23	19+50.42	24.23'	RT	BEGIN GUARDRAIL, BEGIN PAVED SHOULDER TAPER
24	19+14.22	17.00'	RT	BEGIN PAVED SHOULDER TAPER
25	18+50.07	17.00'	RT	END PAVED SHOULDER TAPER
26	18+25.00	12.00'	RT	BEGIN PAVED SHOULDER TAPER, SAWCUT, MATCH EXISTING

LEGEND

- PAV 1 — 2" HMA PAVEMENT 4LT 58-28 OVER 4" HMA PAVEMENT 2LT 58-28
- AGG — 6" BASE AGGREGATE DENSE ¾-INCH
- XXXX — SAWING ASPHALT
- 1 — POINT NUMBER

PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	PLAN DETAIL	SHEET 8	E

2

2

N

6102 CTY HWY Q

6102 CTY HWY Q

TURBIDITY BARRIER ANCHORED WITH ROCK BAGS PLACED CONTINUOUS WITH NO GAPS AT THE BASE OF THE BARRIER (TYP.)

SLOPE INTERCEPT (TYP.)

OCONOMOWOC RIVER

KETTLE MORAINE STATE FOREST
LOEW LAKE UNIT

10' FEE

HEAVY RIPRAP (TYP.)
SEE STRUCTURE PLANS

EX. R/W

EX. R/W

PROPOSED BOAT LAUNCH

PI: 20+06.13

PI: 22+54.59

TEMPORARY SETTLING BASIN.
FILTER BAG PLACED INSIDE SETTLING BASIN WITH GEOTEXTILE FABRIC TYPE HR AND EROSION BALES

COFFERDAM (TYP.)

18+00 19+00 20+00 21+00 22+00 23+00

BEGIN PROJECT
STA. 18+25.00
Y = 227,271.38
X = 654,575.76

STRUCTURE B-67-373

END PROJECT
STA. 23+00.00

EX. R/W

EXISTING BRIDGE
TO BE REMOVED

EX. R/W

10' TLE

WETLAND BOUNDARY (TYP.)

10' TLE

N96W29953
COUNTY ROAD Q

W298N9442 HARTLEY ROAD

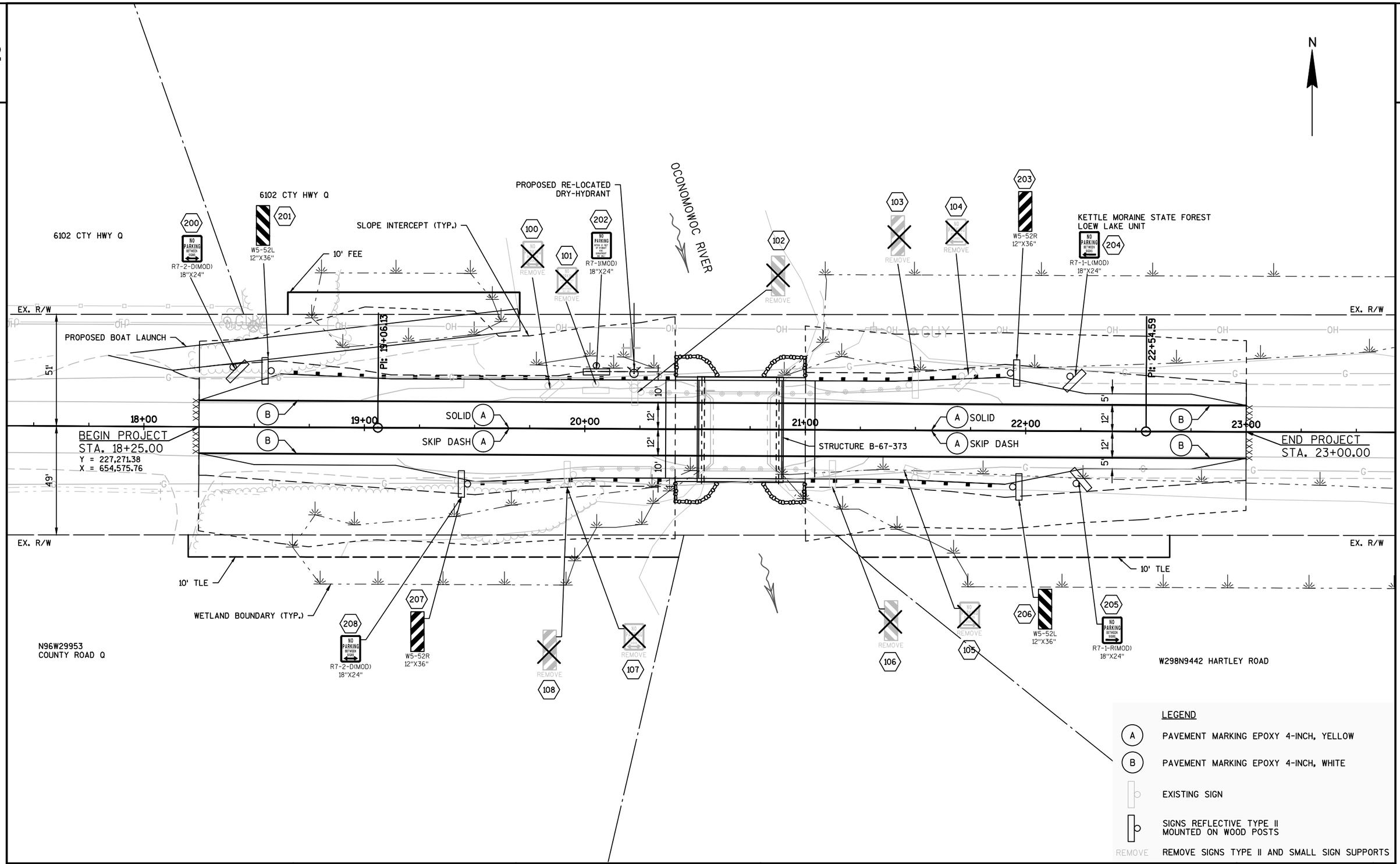
LEGEND

- EROSION MAT CLASS I TYPE B
- TURBIDITY BARRIER
- HEAVY DUTY SILT FENCE
- CULVERT PIPE CHECK
- HEAVY RIPRAP (SEE STRUCTURE PLANS FOR ADDITIONAL DETAILS)
- FLOW ARROW

PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	EROSION CONTROL PLAN	SHEET 9	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022001_EC - PLAN 1 IN 40 FT

PLOT DATE : 10/24/2017 2:01 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1 IN:40 FT

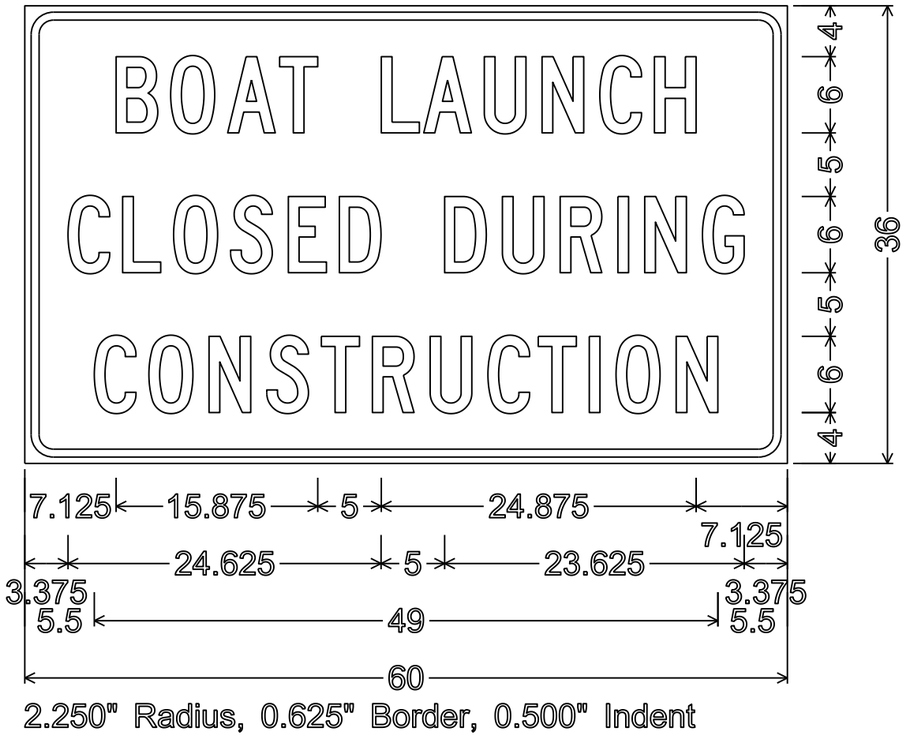


PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	PAVEMENT MARKING & PERMANENT SIGNING	SHEET 10	E

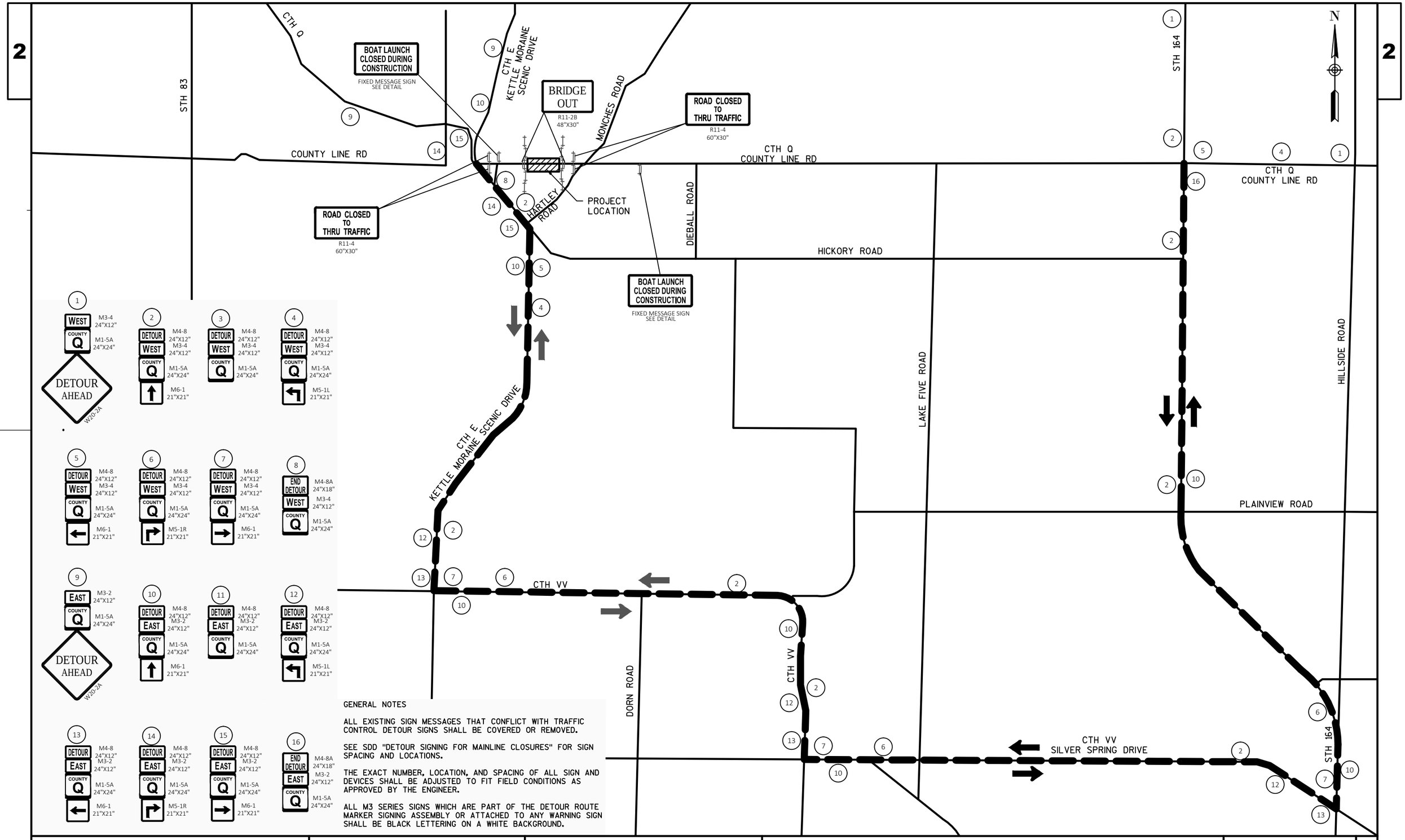
FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\023201_PS.DWG
LAYOUT NAME - 023201_PS - PLAN 1 IN 40 FT
PLOT DATE : 10/24/2017 2:05 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

NOTES

1. Fixed Message Type II Signs - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C



2.250" Radius, 0.625" Border, 0.500" Indent



GENERAL NOTES

ALL EXISTING SIGN MESSAGES THAT CONFLICT WITH TRAFFIC CONTROL DETOUR SIGNS SHALL BE COVERED OR REMOVED.

SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES" FOR SIGN SPACING AND LOCATIONS.

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

ALL M3 SERIES SIGNS WHICH ARE PART OF THE DETOUR ROUTE MARKER SIGNING ASSEMBLY OR ATTACHED TO ANY WARNING SIGN SHALL BE BLACK LETTERING ON A WHITE BACKGROUND.

PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	PLAN: DETOUR PLAN	SHEET 12	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\027001_DT.DWG
LAYOUT NAME - 027001_DT - 027001_DT (2)
PLOT DATE : 10/24/2017 2:05 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1 IN:0.5 MI
WISDOT/CADDS SHEET 42

2751-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 20+70.55	LS	1.000	1.000
0008	204.0165	Removing Guardrail	LF	239.000	239.000
0010	205.0100	Excavation Common	CY	749.000	749.000
0012	205.0400	Excavation Marsh	CY	790.000	790.000
0014	206.1000	Excavation for Structures Bridges (structure) 01. B-67-0373	LS	1.000	1.000
0016	206.5000	Cofferdams (structure) 01. B-67-0373	LS	1.000	1.000
0018	208.0100	Borrow	CY	235.000	235.000
0020	210.1500	Backfill Structure Type A	TON	586.000	586.000
0022	213.0100	Finishing Roadway (project) 01. 2751-00-70	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	207.000	207.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,713.000	1,713.000
0028	311.0110	Breaker Run	TON	755.000	755.000
0030	415.0410	Concrete Pavement Approach Slab	SY	147.000	147.000
0032	450.4000	HMA Cold Weather Paving	TON	691.000	691.000
0034	455.0605	Tack Coat	GAL	199.000	199.000
0036	460.2000	Incentive Density HMA Pavement	DOL	450.000	450.000
0038	460.6222	HMA Pavement 2 MT 58-28 S	TON	461.000	461.000
0040	460.6224	HMA Pavement 4 MT 58-28 S	TON	230.000	230.000
0042	502.0100	Concrete Masonry Bridges	CY	168.000	168.000
0044	502.3200	Protective Surface Treatment	SY	187.000	187.000
0046	502.3210	Pigmented Surface Sealer	SY	51.000	51.000
0048	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	17,660.000	17,660.000
0050	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	24.000	24.000
0052	516.0500	Rubberized Membrane Waterproofing	SY	22.000	22.000
0054	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	560.000	560.000
0056	606.0300	Riprap Heavy	CY	122.000	122.000
0058	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	210.000	210.000
0060	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0062	614.2330	MGS Guardrail 3 K	LF	100.000	100.000
0064	614.2500	MGS Thrie Beam Transition	LF	158.000	158.000
0066	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0068	618.0100	Maintenance And Repair of Haul Roads (project) 01. 2751-00-70	EACH	1.000	1.000
0070	619.1000	Mobilization	EACH	1.000	1.000
0072	624.0100	Water	MGAL	22.000	22.000
0074	625.0100	Topsoil	SY	500.000	500.000

2751-00-70

Line	Item	Item Description	Unit	Total	Qty
0076	625.0500	Salvaged Topsoil	SY	2,275.000	2,275.000
0078	627.0200	Mulching	SY	2,308.000	2,308.000
0080	628.1104	Erosion Bales	EACH	250.000	250.000
0082	628.1520	Silt Fence Maintenance	LF	971.000	971.000
0084	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0086	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0088	628.2004	Erosion Mat Class I Type B	SY	2,308.000	2,308.000
0090	628.6005	Turbidity Barriers	SY	367.000	367.000
0092	628.7555	Culvert Pipe Checks	EACH	5.000	5.000
0094	628.7560	Tracking Pads	EACH	2.000	2.000
0096	628.7570	Rock Bags	EACH	275.000	275.000
0098	629.0210	Fertilizer Type B	CWT	2.000	2.000
0100	630.0130	Seeding Mixture No. 30	LB	51.000	51.000
0102	630.0200	Seeding Temporary	LB	38.000	38.000
0104	634.0816	Posts Tubular Steel 2x2-Inch X 16-FT	EACH	8.000	8.000
0106	637.2210	Signs Type II Reflective H	SF	15.000	15.000
0108	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0110	638.2602	Removing Signs Type II	EACH	9.000	9.000
0112	638.3000	Removing Small Sign Supports	EACH	9.000	9.000
0114	642.5001	Field Office Type B	EACH	1.000	1.000
0116	643.0420	Traffic Control Barricades Type III	DAY	1,232.000	1,232.000
0118	643.0705	Traffic Control Warning Lights Type A	DAY	2,464.000	2,464.000
0120	643.0900	Traffic Control Signs	DAY	14,432.000	14,432.000
0122	643.0920	Traffic Control Covering Signs Type II	EACH	7.000	7.000
0124	643.1000	Traffic Control Signs Fixed Message	SF	30.000	30.000
0126	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0128	643.5000	Traffic Control	EACH	1.000	1.000
0130	645.0111	Geotextile Type DF Schedule A	SY	118.000	118.000
0132	645.0120	Geotextile Type HR	SY	457.000	457.000
0134	645.0140	Geotextile Type SAS	SY	1,258.000	1,258.000
0136	646.1020	Marking Line Epoxy 4-Inch	LF	1,544.000	1,544.000
0138	650.4500	Construction Staking Subgrade	LF	438.000	438.000
0140	650.5000	Construction Staking Base	LF	438.000	438.000
0142	650.6500	Construction Staking Structure Layout (structure) 01. B-67-0373	LS	1.000	1.000
0144	650.9910	Construction Staking Supplemental Control (project) 01. 2751-00-70	LS	1.000	1.000
0146	650.9920	Construction Staking Slope Stakes	LF	438.000	438.000
0148	690.0150	Sawing Asphalt	LF	48.000	48.000
0150	715.0502	Incentive Strength Concrete Structures	DOL	990.000	990.000

2751-00-70

Line	Item	Item Description	Unit	Total	Qty
0152	SPV.0090	Special 01. Heavy Duty Silt Fence	LF	971.000	971.000
0154	SPV.0090	Special 02. Prestressed Girder Box Type 17-Inch	LF	428.000	428.000
0156	SPV.0105	Special 01. Dry Fire Hydrant	LS	1.000	1.000

3

CLEARING AND GRUBBING

STREET	FROM		TO	201.0105 CLEARING STA	201.0205 GRUBBING STA
CTH Q - WEST OF BRIDGE	18+20	-	20+10	2	2
			PROJECT TOTALS	2	2

REMOVING GUARDRAIL

STATION		STATION	LOCATION	204.0165 LF
19+95	-	21+13	18' RT	118
20+28	-	21+49	17' LT	121
PROJECT TOTAL				239

3

EARTHWORK SUMMARY

Division	From/To Station	Location	Common Excavation (1)	(item # 205.0100)	Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Reduced Marsh in Fill (7)	Reduced EBS in Fill (8)	Unexpanded Fill	Expanded Fill (11)	Mass Ordinate +/- (12)	Waste	Borrow (13)	Comment:
			Cut (2)	EBS Excavation (3)			(item #205.0500)	Factor 0.60	Factor 0.90		Factor 1.20				
CATEGORY 0010 (PRIORITY 1)															
CTH Q	18+25 to 23+00	Mainline	720	0	0	720	790	474	0	795	955	-235	-	235	
* UNDISTRIBUTED		Project	0	29	0	0	0	0	26	0	0	0		-	
PROJECT TOTAL			Total Common Exc	749	0	720	790	474	26	795	955	-235	0	235	

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500
7) Reduced Marsh in Fill - Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
8) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.9
11) Expanded Fill. Factor = 1.2
Depending on selections: Expanded Fill = Unexpanded Fill * Fill Factor

12) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
13) Borrow Excavation: Borrow shall not contain organics. See Specifications for additional information. Item number 208.0100

ALL CATEGORY 0010

3

FINISHING ROADWAY

PROJECT	213.0100 EACH
PROJECT 2751-00-70	1
PROJECT TOTAL	1

BASE AGGREGATE DENSE 3/4 INCH

STREET	STATION	TO	STATION	305.0110 TON
CTH Q	18+25	-	23+00	207
			PROJECT TOTAL	207

3

BASE AGGREGATE DENSE 1-1/4 INCH

STREET	STATION	TO	STATION	305.0120 TON
CTH Q	18+25	-	23+00	1,713
			PROJECT TOTAL	1,713

BREAKER RUN

STREET	STATION	TO	STATION	311.0110 BREAKER RUN TON	645.0140 GEOTEXTILE TYPE SAS SY
CTH Q	18+25	-	23+00	705	1,175
UNDISTRIBUTED EBS				50	83
			PROJECT TOTAL	755	1,258

CONCRETE PAVEMENT APPROACH SLAB

STREET	LOCATION			415.0410 SY
CTH Q	18+25	-	23+00	147
			PROJECT TOTAL	147

ALL CATEGORY 0010

3

ASPHALTIC PAVEMENT

STREET	STATION	TO	STATION	450.4000 HMA COLD WEATHER PAVING TON	455.0605 TACK COAT GAL	460.6222 HMA PAVEMENT 2 MT 58-28 S TON	460.6224 HMA PAVEMENT 4 MT 58-28 S TON
CTH Q	18+25	-	23+00	691	199	461	230
PROJECT TOTAL				691	199	461	230

MGS GUARDRAIL

STREET	STATION	TO	STATION	614.2330 MGS GUARDRAIL 3K LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
CTH Q	18+63	-	21+79	100	158	4
PROJECT TOTAL				100	158	4

WATER

STREET	FROM		TO	624.0100 MGAL
CTH Q	18+25	-	23+00	22
			PROJECT TOTAL	22

INCENTIVE DENSITY HMA PAVEMENT

LOCATION	460.2000 DOL
PROJECT 2751-00-70	450
PROJECT TOTAL	450

MAINTENANCE AND REPAIR OF HAUL ROADS (ID 2751-00-70)

STREET	CATEGORY 0030 618.0100 EACH
CTH Q	1
PROJECT TOTAL	1

MOBILIZATION

LOCATION	619.1000 EACH
PROJECT 2751-00-70	1
PROJECT TOTAL	1

TOPSOIL SEEDING AND FERTILIZER

STREET	STATION	TO	STATION	625.0100 TOPSOIL SY	625.0500 SALVAGED TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB
CTH MM	100+72	-	110+50		1265	1	23	17
CTH MM	110+50	-	124+50		1010	1	18	14
UNDISTRIBUTED				500		0	10	8
PROJECT TOTAL				500	2,275	2	51	38

CATEGORY 0010 UNLESS OTHERWISE NOTED

3

MULCHING

STREET	FROM		TO	627.0200 SY
CTH Q - WEST OF BRIDGE	18+25	-	20+57	1,106
CTH Q - EAST OF BRIDGE	20+84.09	-	23+00	741
UNDISTRIBUTED				462
			PROJECT TOTAL	2,308

SILT FENCE

STREET	FROM		TO	628.1520 SILT FENCE MAINTENANCE LF	SPV.0090.01 HEAVY DUTY SILT FENCE LF
CTH Q - WEST OF BRIDGE	18+25	-	20+57	388	388
CTH Q - EAST OF BRIDGE	20+84.09	-	23+00	389	389
UNDISTRIBUTED				194	194
			PROJECT TOTALS	971	971

3

TEMPORARY SETTLING BASINS

STREET	FROM	TO	628.1104 EROSION BALES EACH	645.0120 GEOTEXTILE TYPE HR SY
SETTLING BASINS			200	225
UNDISTRIBUTED			50	56
	PROJECT TOTALS		250	281

EROSION MAT CLASS I TYPE B

STREET	FROM		TO	628.2004 SY
CTH Q - WEST OF BRIDGE	18+25	-	20+57	1,106
CTH Q - EAST OF BRIDGE	20+84.09	-	23+00	741
UNDISTRIBUTED				462
			PROJECT TOTAL	2,308

EROSION CONTROL MOBILIZATIONS

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT 2751-00-70	2	4
PROJECT TOTAL	2	4

CULVERT PIPE CHECKS

LOCATION	628.7555 EACH
STA. 18+05, RT	5
PROJECT TOTALS	5

TURBIDITY BARRIERS

STREET	FROM		TO	TURBIDITY BARRIERS 628.6005 SY	ROCK BAGS 628.7570 EACH
CTH Q - WEST OF BRIDGE	18+25	-	20+57	175	131
CTH Q - EAST OF BRIDGE	20+84.09	-	23+00	119	89
UNDISTRIBUTED				73	55
	PROJECT TOTALS			367	275

TRACKING PADS

STREET	628.7560 EACH
UNDISTRIBUTED	2
PROJECT TOTALS	2

ALL CATEGORY 0010

3

REMOVING SIGNS TYPE II

REMOVAL NO.	LOCATION	MESSAGE	STATION	OFFSET	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
100	CTH Q	NO PARKING BETWEEN SIGNS	19+83.23	19.4' LT	1	1
101	CTH Q	NO PARKING SIGNS	20+04.91	20.3' LT	1	1
102	CTH Q	BRIDGE HASH MARKS	20+25.39	16.7' LT	1	1
103	CTH Q	BRIDGE HASH MARKS	21+47.02	20.6' LT	1	1
104	CTH Q	NO PARKING SIGNS	21+70.88	24.8' LT	1	1
105	CTH Q	NO PARKING SIGNS	21+49.88	21.5' RT	1	1
106	CTH Q	BRIDGE HASH MARKS	21+09.62	19.9' RT	1	1
107	CTH Q	NO PARKING SIGNS	19+94.92	20.8' RT	1	1
108	CTH Q	BRIDGE HASH MARKS	19+94.92	20.8' RT	1	1
			PROJECT TOTALS		9	9

3

TYPE II SIGNS

SIGN NO.	LOCATION	STATION	OFFSET	SIGN CODE	MESSAGE	SIZE	634.0816 POSTS TUBULAR STEEL 2X2-INCH x 16 FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	637.2230 SIGNS TYPE II REFLECTIVE F SF	REMARKS
200	CTH Q	18+40.34	27.2' LT	R7-2-D(MOD)		18 x 24	1	3.0	--	
201	CTH Q	18+57.65	25.5' LT	W5-52L		12 x 36	1	--	3.0	
202	CTH Q	20+05.13	28.6' LT	R7-1(MOD)		18 x 24	1	3.0	--	
203	CTH Q	21+93.01	26.2' LT	W5-52R		12 x 36	1	--	3.0	
204	CTH Q	22+20.03	24.9' LT	R7-1-L(MOD)		18 x 24	1	3.0	--	
205	CTH Q	22+23.06	23.7' RT	R7-1-R(MOD)		18 x 24	1	3.0	--	
206	CTH Q	21+94.25	25.4' RT	W5-52L		12 x 36	1	--	3.0	
207	CTH Q	19+46.95	25.3' RT	W5-52R		12 x 36	1	--	3.0	
208	CTH Q	19+46.95	25.3' RT	R7-2-D(MOD)		18 x 24	--	3.0	--	SAME POST AS 207
					PROJECT TOTAL		8	15.0	12.0	

ALL CATEGORY 0010

3

FIELD OFFICE TYPE B

LOCATION	642.5001 EACH
PROJECT 2751-00-70	1
PROJECT TOTAL	1

MARKING LINE

STREET	LOCATION			646.1020 EPOXY 4-INCH WHITE LF	EPOXY 4-INCH YELLOW LF
CTH Q	18+25	-	23+00	950	594
PROJECT TOTAL				1,544	

3

TRAFFIC CONTROL

STREET	DAYS	643.5000 TRAFFIC CONTROL EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAYS	643.0920 TRAFFIC CONTROL COVERING SIGNS NO.	643.0920 TRAFFIC CONTROL COVERING SIGNS CYCLES	643.0920 TRAFFIC CONTROL COVERING SIGNS EACH	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS DAYS
CTH Q	88	1	14	1,232	28	2,464	164	14,432	-	-	-	30		
UNDISTRIBUTED									7	1	7		2	14
PROJECT TOTAL		1		1,232		2,464		14,432			7	30		14

CONSTRUCTION STAKING ITEMS

ITEM	QUANTITY	UNIT	DESCRIPTION	CATEGORY
650.4500	438	LF	CONSTRUCTION STAKING SUBGRADE	0010
650.5000	438	LF	CONSTRUCTION STAKING BASE	0010
650.6500	1	LS	CONSTRUCTION STAKING STRUCTURE LAYOUT B-67-0373	0020
650.9910	1	LS	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (ID 2751-00-70)	0010
650.9920	438	LF	CONSTRUCTION STAKING SLOPE STAKES	0010

SAWING ASPHALT

STREET	LOCATION	690.0150 LF
CTH Q	18+25	24
CTH Q	23+00	24
PROJECT TOTAL		48

DRY FIRE HYDRANT

STREET	CATEGORY 0030 SPV.0105.01 LS
CTH Q	1
PROJECT TOTAL	1

CATEGORY 0010 UNLESS OTHERWISE NOTED

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
2751-00-00	4.1	2

PLAT OF RIGHT OF WAY REQUIRED FOR

C.T.H. "Q"
COUNTY LINE ROAD

C.T.H. "Q" WAUKESHA CO.

CONSTRUCTION PROJECT NUMBER 2751-00-70

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE
LOT, TIE & OTHER MINOR LINES
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)
TEMPORARY LIMITED EASEMENT AREA
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING
NATIONAL GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
E=651,021.11

SECTION CORNER
NOTATION FOR COMBUSTABLE FLUIDS
NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES
BRIDGE

R/W MONUMENT
NON-MONUMENTED R/W POINT
FOUND IRON PIN
VALVE (GAS, WATER, ETC.)
SIGN
OFF-PREMISE SIGN

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE		
TELEPHONE POLE		
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)		

ACCESS CONTROLLED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)

PARCEL NUMBER 25
UTILITY NUMBER 40

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS	(100')
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RIGHT	RT
CENTERLINE	C/L	RIGHT OF WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC
CONCRETE	CONC	SEPTIC VENT	SEPV
COUNTY	CO	SQUARE FEET	SF
COUNTY TRUNK HIGHWAY	CTH	STATE TRUNK HIGHWAY	STH
DISTANCE	DIST	STATION	STA
CORNER	COR	SUBDIVISION	SUBD
DOCUMENT NUMBER	DOC	TANGENT	TAN
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED EASEMENT	TLE
GAS VALVE	GV	TRANSPORTATION PROJECT PLAT	TPP
GRID NORTH	GN	UNITED STATES HIGHWAY	USH
HIGHWAY EASEMENT	HE	VOLUME	V
IDENTIFICATION	ID		
LAND CONTRACT	LC		
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED EASEMENT	PLE		
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		

CURVE DATA

LONG CHORD	LC
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	Δ
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

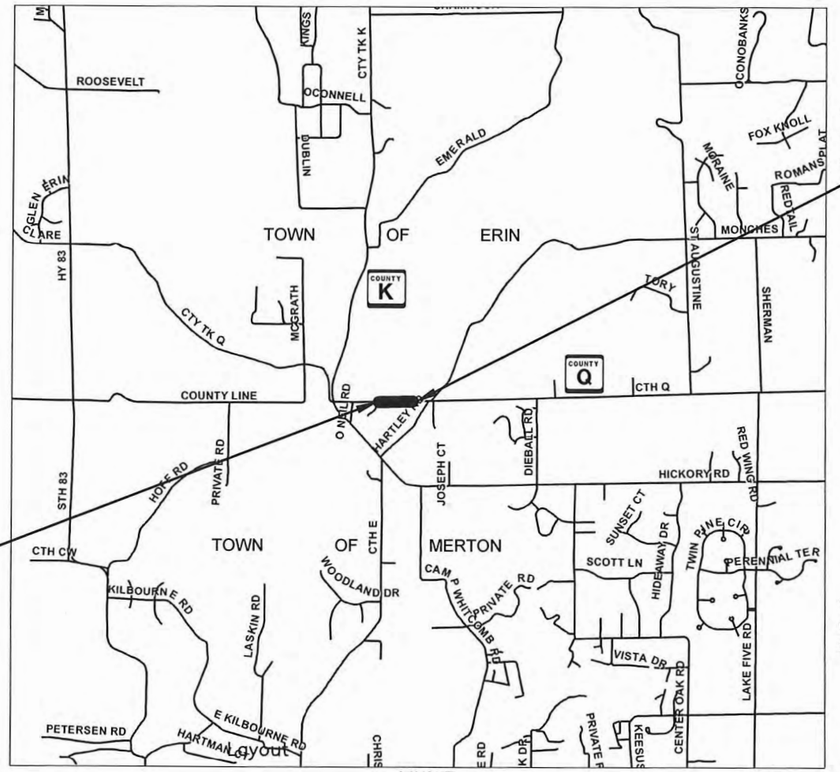
CONVENTIONAL UTILITY SYMBOLS

WATER —W—
GAS —G—
TELEPHONE —T—
OVERHEAD TRANSMISSION LINES —OH—
ELECTRIC —E—
CABLE TELEVISION —TV—
FIBER OPTIC —FO—
SANITARY SEWER —SAN—
STORM SEWER —SS—

SCHEDULE OF LANDS & INTERESTS REQUIRED

AREAS SHOWN IN THE TOTAL AREA COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

PARCEL NUMBER	SHEET NUMBER	OWNER(S)	INTEREST REQUIRED	TOTAL ACRES	R/W SQUARE FEET REQUIRED NEW	EXISTING	TOTAL	TOTAL ACRES REMAINING	P.L.E. ACRES	T.L.E. ACRES	PARCEL NUMBER
1	4.2	MARK D. OLSON & MARIANNE LAUGESEN-OLSEN	T.L.E.	2.000	--	--	--	2.000	--	0.051	1
2	4.2	GEORGE E. STROBL	T.L.E.	18.630	--	--	--	18.630		0.033	2



END RELOCATION ORDER
PROJ. I.D. 2751-00-70 STA. 23+00.00
N = 227,269.09
E = 665,050.75
669' EAST OF THE NORTHWEST CORNER OF SECTION 2, T8N, R18E.

BEGIN RELOCATION ORDER
PROJ. I.D. 2751-00-70 STA.18+25.00
N = 227,271.38
E = 654,575.76
165' EAST OF THE NORTHWEST CORNER OF SECTION 2, T8N, R18E.

TOTAL NET LENGTH OF CENTERLINE = 0.090 MI. (RURAL)

NOTES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA 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.

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

THE EXISTING HIGHWAY RIGHT OF WAY SHOWN HEREON IS BASED ON THE RIGHT OF WAY PLAT FOR C.T.H. "Q" PROJECT S0978(2) AND EXISTING CERTIFIED SURVEY MAPS OF PUBLIC RECORD.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. ALL TLEs ARE TO TERMINATE ON THE DATE THE CONSTRUCTION OF THIS PROJECT IS COMPLETED.

ORIGINAL PLAT PREPARED BY
GRAEF
MICHAEL RATZBURG S-2236 WAUKESHA, WI
WISCONSIN LAND SURVEYOR
DATE: 6/16/17 (Signature)

APPROVED FOR WAUKESHA COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 06/30/17 Allison Bussler
DIRECTOR

DATE: 06/30/17
ENGINEERING SERVICES MANAGER

REVISION DATE	STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
	APPROVED FOR THE DEPARTMENT
	DATE: N/A (Signatur

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\040401_RI.DWG PLOT DATE : 6/16/2017 7:09 AM PLOT BY : RATZBURG, MIKE PLOT NAME :

4

GN

SW. COR. OF SEC. 35, T9N, R18E

S 89°58'29"E 19.81'

NW. COR. OF SEC. 2, T8N, R18E

S 00°17'54" W 0.09'

S/L S89° 58' 29"E 917.40'

R/L S89° 42' 06"E 271.21' | PI: 19+06.13 | S89° 43' 00"E 348.46' | PI: 22+54.59 | S89° 48' 46"E 297.72' | PI: 25+52.31 | N 00°01'31" E 3.80'

SECTION/REFERENCE LINE DETAIL
N.T.S.

CONCRETE MONUMENT WITH BRASS CAP
N=227,272.47
E=654,365.87

CONCRETE MONUMENT WITH BRASS CAP
N=227,271.31
E=657,021.71

WASHINGTON COUNTY

OCONOMOWOC RIVER

P.L.

BP: 16+15.10

PI: 19+06.13

PI: 22+54.59

EP: 25+52.31

FD. 3/4" REBAR

CTH Q (COUNTY LINE ROAD)

R/W

S 89°58'29" E 2636.04'

17+00 185.21' 18+00 445.23' 19+00 20+00 21+00 22+00 23+00 24+00 LINE 25+00

SECTION

50'

S 00°01'31" W 49.03'

S 00°01'31" W 47.02'

18+20.36 R/W 49.03'

224.81

20+45.17 47.98'

21+14.41 47.68'

151.08'

22+65.49 47.01'

N 00°01'31" E 10.00'

18+20.40 59.02'

222.54'

TLE SLOPES

10'

S 13°03'37" W 10.27'

20+42.92 58.00'

SLOPE INTERCEPT (TYP.)

N 48°37'11" W 15.14'

21+25.82 57.62'

N 89°58'29" W 139.80'

TLE SLOPES

10'

S 00°01'31" W 10.00'

22+65.52 57.01'

END RELOCATION ORDER
STA. 23+00.00
N=227,269.09
E=665,050.75

CONCRETE MONUMENT WITH BRASS CAP
N=227,272.46
E=654,385.68

BEGIN RELOCATION ORDER
STA. 18+25.00
N=227,271.38
E=654,575.76

WAUKESHA COUNTY

CONCRETE MONUMENT WITH BRASS CAP
N=227,271.37
E=657,036.51

TOWN

PARCEL A
C.S.M. NO. 1351

1
MARK D OLSEN &
MARIANNE LAUGESEN-OLSEN
TAX KEY NO. MRTT 0294-990
DOC. NO. 1815160

MONCHES MILL POND

2
GEORGE E. STROBL
TAX KEY NO. MRTT 0294-992-001
DOC. NO. 2482890

P.L.

PARCEL C
C.S.M. NO. 1351

OF

NW-NW

MERTON

REVISION DATE	DATE 03/28/17	SCALE. FEET 0 50 100	HWY: CTH Q	COUNTY R/W PROJECT NUMBER 2751-00-00	PLAT SHEET 4.2	
	GRID FACTOR		COUNTY: WAUKESHA	CONSTRUCTION PROJECT NUMBER 2751-00-70	PS&E SHEET --	E

FILE NAME : 040402_RP.DWG
LAYOUT NAME - 040402_RP - 040402RP

PLOT DATE : 7/13/2017 1:42 PM PLOT BY : RATZBURG, MIKE PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 75

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
2751-00-00	4.1	2

PLAT OF RIGHT OF WAY REQUIRED FOR

C.T.H. "Q"
COUNTY LINE ROAD

C.T.H. "Q" — WASHINGTON CO.

CONSTRUCTION PROJECT NUMBER 2751-00-70

4

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE
LOT, TIE & OTHER MINOR LINES
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)
TEMPORARY LIMITED EASEMENT AREA
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING
NATIONAL GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT

SECTION CORNER
NOTATION FOR COMBUSTABLE FLUIDS — CAUTION
NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES — CAUTION
R/W MONUMENT
NON-MONUMENTED R/W POINT
FOUND IRON PIN
VALVE (GAS, WATER, ETC.) (TYPE)
SIGN
OFF-PREMISE SIGN

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE		
TELEPHONE POLE		
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)		

ACCESS CONTROLLED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)

BRIDGE
PARCEL NUMBER (25)
UTILITY NUMBER (40)

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS	(100')
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RIGHT	RT
CENTERLINE	C/L	RIGHT OF WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC
CONCRETE	CONC	SEPTIC VENT	SEPV
COUNTY	CO	SQUARE FEET	SF
COUNTY TRUNK HIGHWAY	CTH	STATE TRUNK HIGHWAY	STH
DISTANCE	DIST	STATION	STA
CORNER	COR	SUBDIVISION	SUBD
DOCUMENT NUMBER	DOC	TANGENT	TAN
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED EASEMENT	TLE
GAS VALVE	GV	TRANSPORTATION PROJECT PLAT	TPP
GRID NORTH	GN	UNITED STATES HIGHWAY	USH
HIGHWAY EASEMENT	HE	VOLUME	V
IDENTIFICATION	ID		
LAND CONTRACT	LC		
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED EASEMENT	PLE		
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		

CURVE DATA

LONG CHORD	LC
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	Δ
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

CONVENTIONAL UTILITY SYMBOLS

WATER — W
GAS — G
TELEPHONE — T
OVERHEAD TRANSMISSION LINES — OH
ELECTRIC — E
CABLE TELEVISION — TV
FIBER OPTIC — FO
SANITARY SEWER — SAN
STORM SEWER — SS

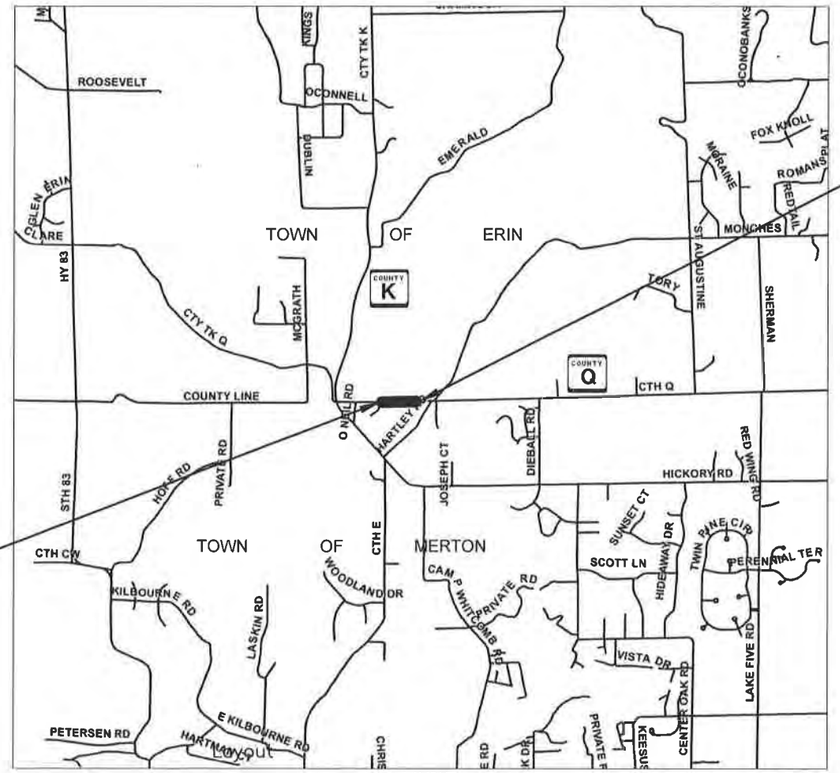
BEGIN RELOCATION ORDER

PROJ. I.D. 2751-00-70 STA.18+25.00
N = 227,271.38
E = 654,575.76
185' EAST OF THE SOUTHWEST COR. OF SECTION 35, T9N, R18E.

SCHEDULE OF LANDS & INTERESTS REQUIRED

AREAS SHOWN IN THE TOTAL AREA COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

PARCEL NUMBER	SHEET NUMBER	OWNER(S)	INTEREST REQUIRED	TOTAL ACRES	R/W SQUARE FEET REQUIRED NEW	EXISTING	TOTAL	TOTAL ACRES REMAINING	P.L.E. ACRES	T.L.E. ACRES	PARCEL NUMBER
3	4.2	William R,. Clarke & Marsha Sutton Clarke	FEE	12.950	0.024	—	0.024	12.926	—	—	1
				—							



LAYOUT
0 0.50 1.00 MILE
Scale

TOTAL NET LENGTH OF CENTERLINE = 0.090 MI. (RURAL)

END RELOCATION ORDER

PROJ. I.D. 2751-00-70 STA. 23+00.00
N = 227,269.09
E = 665,050.75
689' EAST OF THE SOUTHWEST COR. OF SECTION 35, T9N, R18E.

NOTES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA 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.

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

THE EXISTING HIGHWAY RIGHT OF WAY SHOWN HEREON IS BASED ON THE RIGHT OF WAY PLAT FOR C.T.H. "Q" PROJECT S0978(2) AND EXISTING CERTIFIED SURVEY MAPS OF PUBLIC RECORD.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. ALL TLEs ARE TO TERMINATE ON THE DATE THE CONSTRUCTION OF THIS PROJECT IS COMPLETED.

ORIGINAL PLAT PREPARED BY

GRAEF
MICHAEL J. RATZBURG S-2236 WAUKESHA, WI
LAND SURVEYOR
DATE: 9/6/17

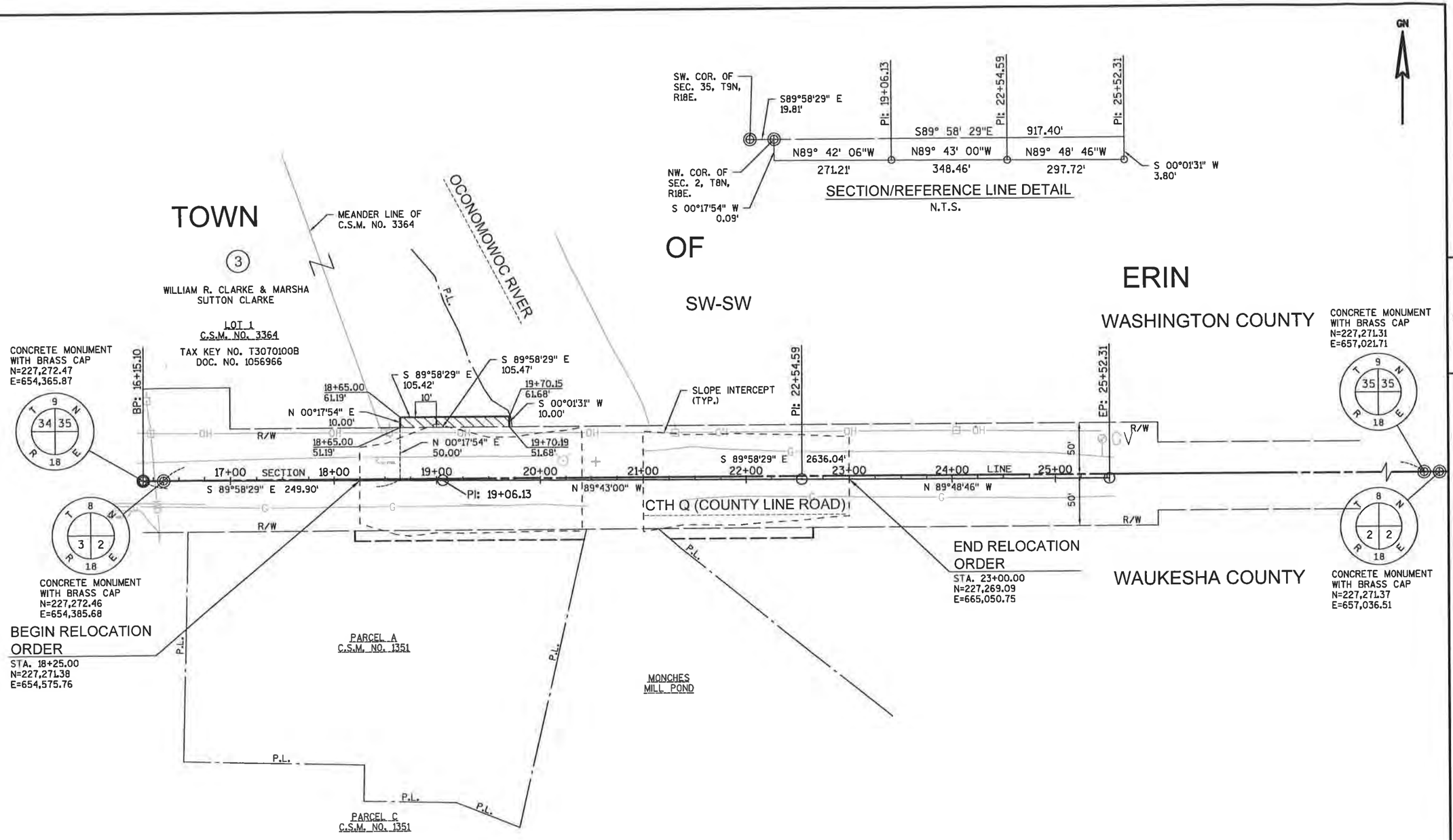
APPROVED FOR WASHINGTON COUNTY HIGHWAY DEPARTMENT

DATE: 9/7/17 — HIGHWAY COMMISSIONER

DATE: _____

REVISION DATE	STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
	APPROVED FOR THE DEPARTMENT
	DATE: _____ N/A (Signatur

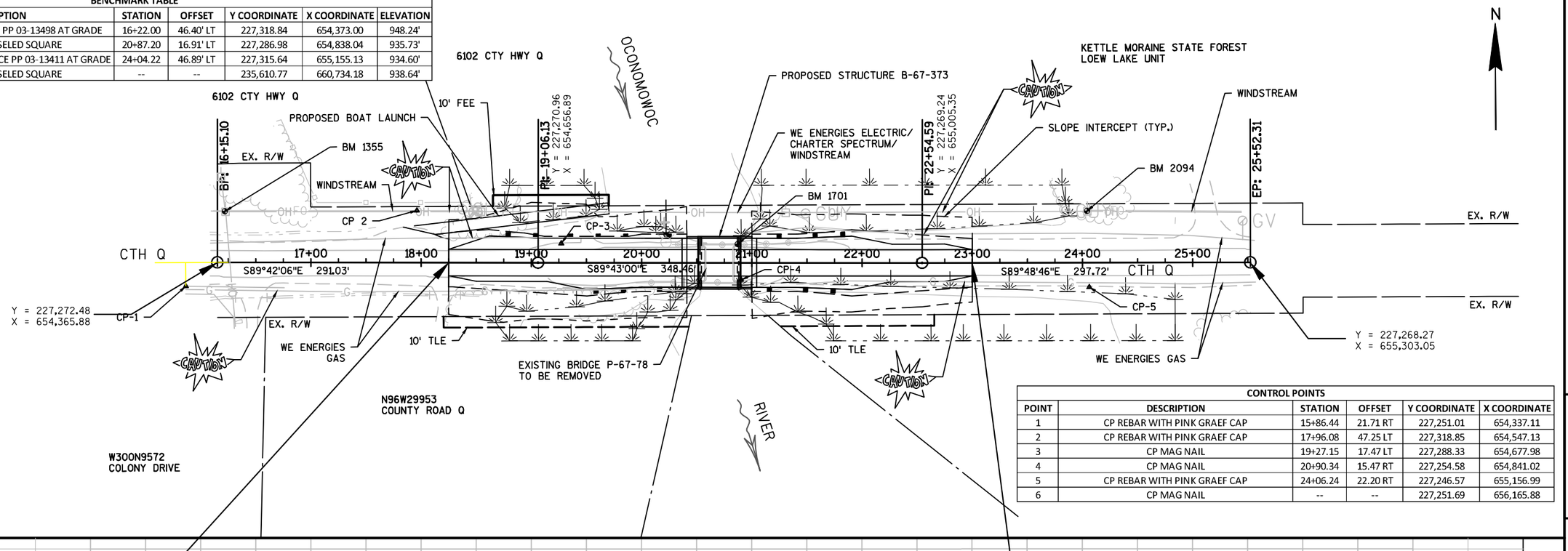
FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\040403_RI.DWG PLOT DATE : 9/5/2017 12:14 PM PLOT BY : RATZBURG, MIKE PLOT NAME :



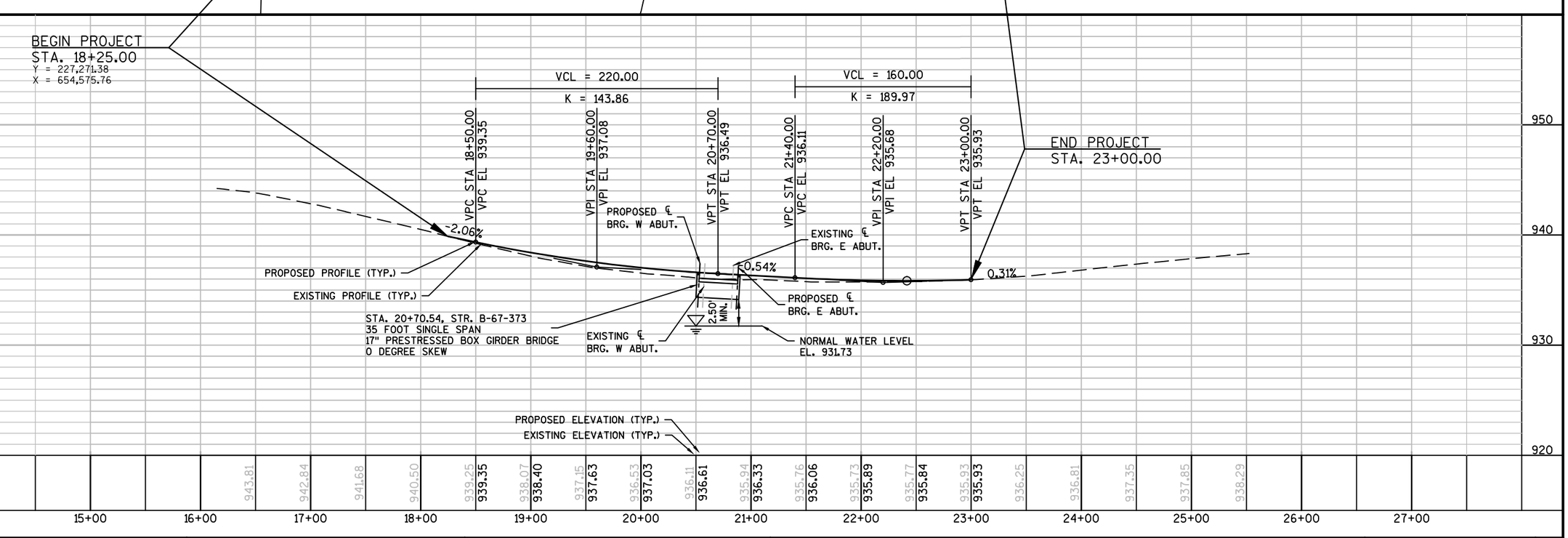
REVISION DATE	DATE 03/28/17	SCALE, FEET 0 50 100	HWY: CTH Q	COUNTY R/W PROJECT NUMBER 2751-00-00	PLAT SHEET 4.2	
	GRID FACTOR		COUNTY: WASHINGTON	CONSTRUCTION PROJECT NUMBER 2751-00-70	PS&E SHEET 25	E

FILE NAME : 040404_RP.DWG
LAYOUT NAME - 040404_RP - 040404RP
PLOT DATE : 9/5/2017 12:16 PM PLOT BY : RATZBURG, MIKE PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 75

BENCHMARK TABLE						
POINT	DESCRIPTION	STATION	OFFSET	Y COORDINATE	X COORDINATE	ELEVATION
1355	BM RR SPIKE IN SW FACE PP 03-13498 AT GRADE	16+22.00	46.40' LT	227,318.84	654,373.00	948.24'
1701	BM FOUND CHISELED SQUARE	20+87.20	16.91' LT	227,286.98	654,838.04	935.73'
2094	BM SET RR SPIKE IN SW FACE PP 03-13411 AT GRADE	24+04.22	46.89' LT	227,315.64	655,155.13	934.60'
2182	BM FOUND CHISELED SQUARE	--	--	235,610.77	660,734.18	938.64'



CONTROL POINTS					
POINT	DESCRIPTION	STATION	OFFSET	Y COORDINATE	X COORDINATE
1	CP REBAR WITH PINK GRAEF CAP	15+86.44	21.71 RT	227,251.01	654,337.11
2	CP REBAR WITH PINK GRAEF CAP	17+96.08	47.25 LT	227,318.85	654,547.13
3	CP MAG NAIL	19+27.15	17.47 LT	227,288.33	654,677.98
4	CP MAG NAIL	20+90.34	15.47 RT	227,254.58	654,841.02
5	CP REBAR WITH PINK GRAEF CAP	24+06.24	22.20 RT	227,246.57	655,156.99
6	CP MAG NAIL	--	--	227,251.69	656,165.88

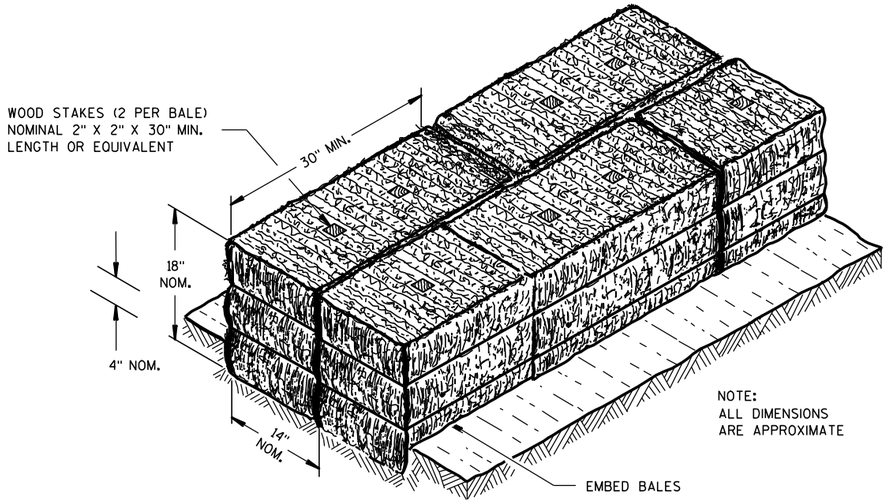


PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	PLAN AND PROFILE	SHEET 26	E

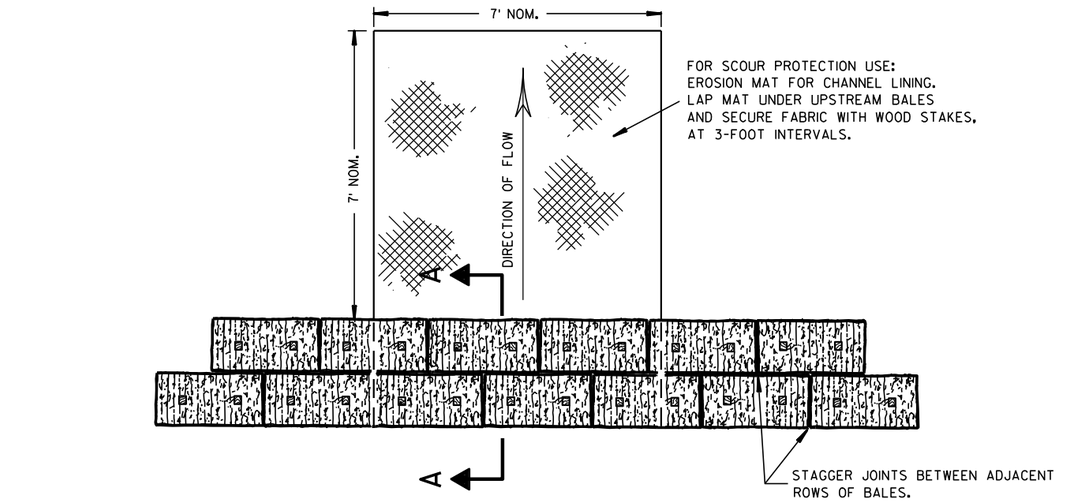
Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E14-01	TRACKING PAD
12A03-10	NAME PLATE (STRUCTURES)
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
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)
14B45-04D	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
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

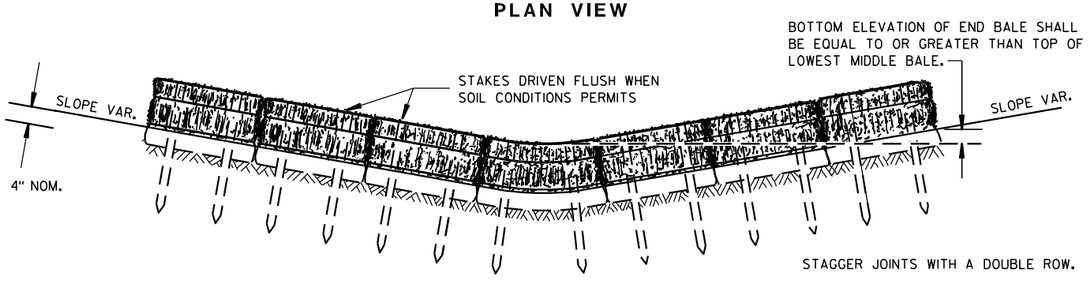
6



SECTION A-A



PLAN VIEW



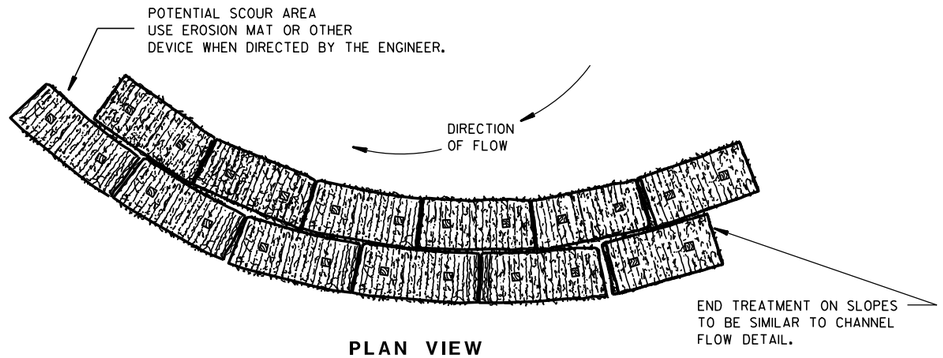
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

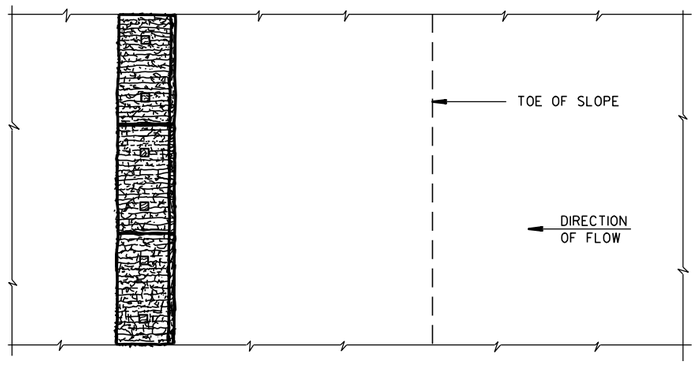
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

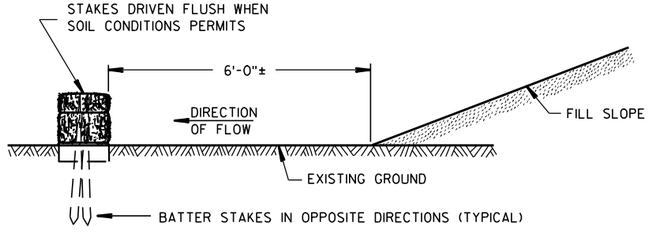


PLAN VIEW

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

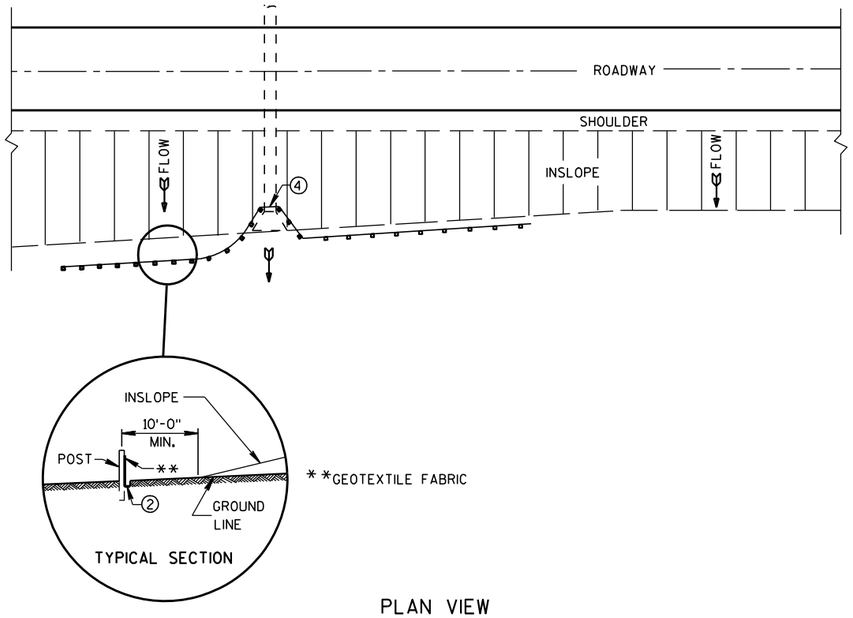
APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

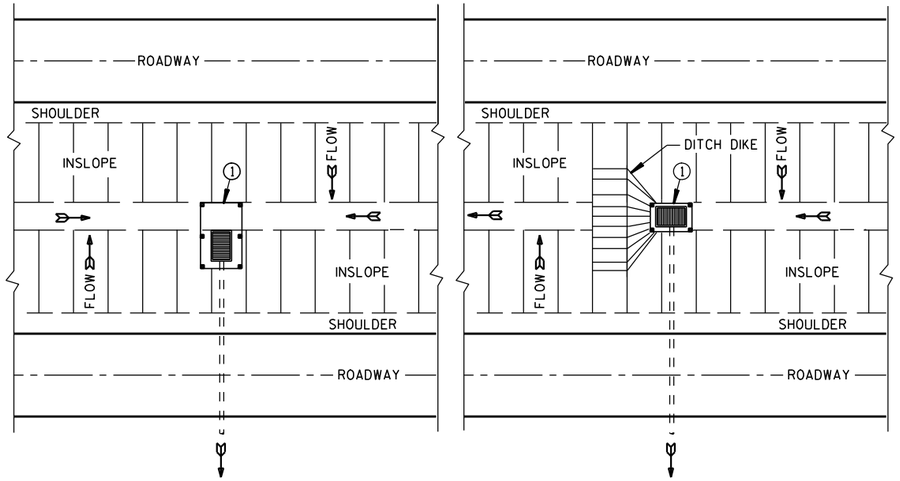
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



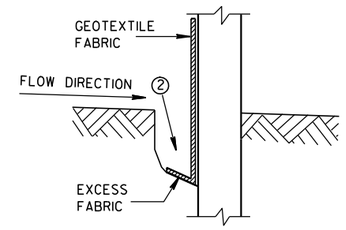
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

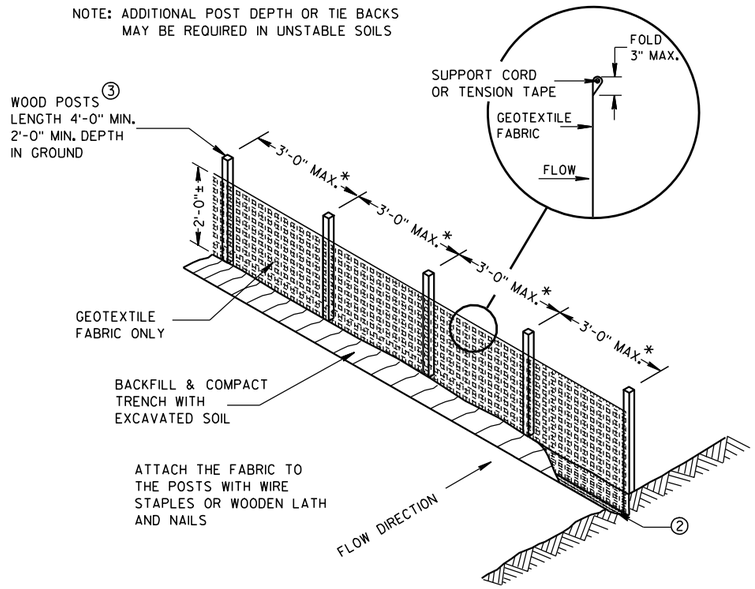
GENERAL NOTES

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

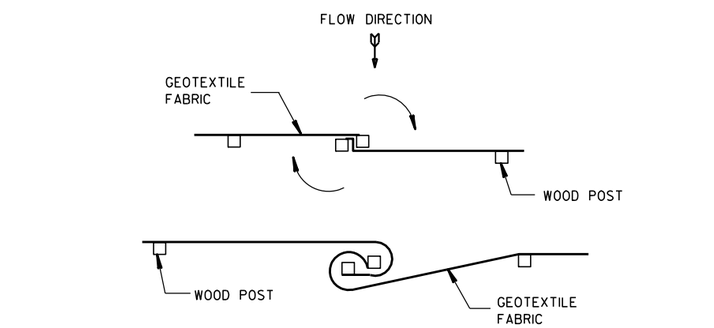
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



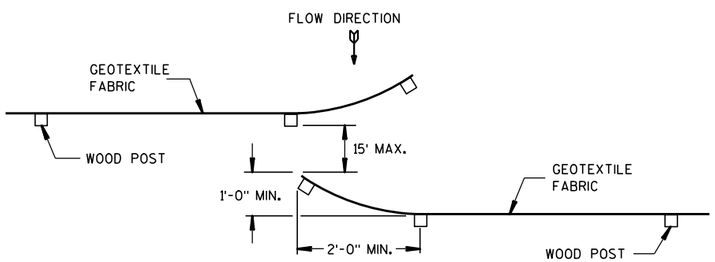
TRENCH DETAIL



SILT FENCE

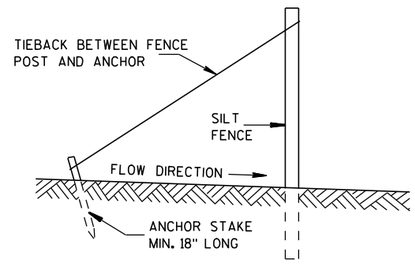


TWIST METHOD



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

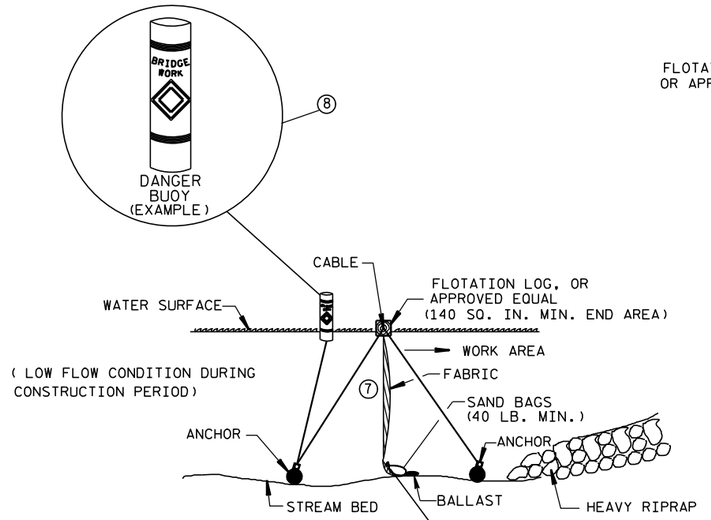
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

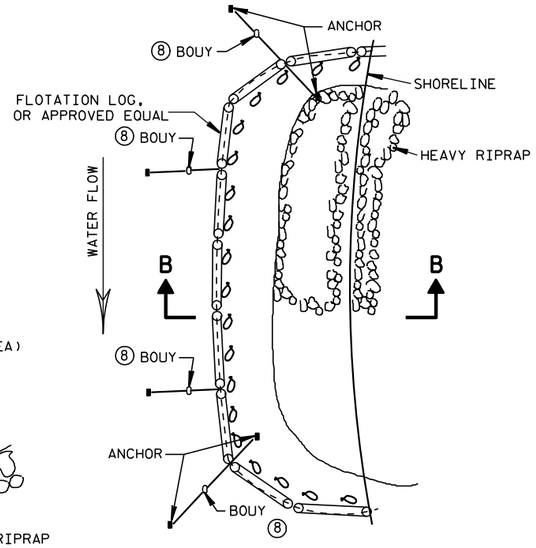
S.D.D. 8 E 9-6

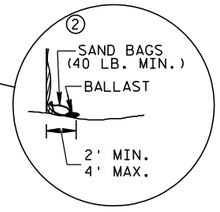
6

S.D.D. 8 E 9-6

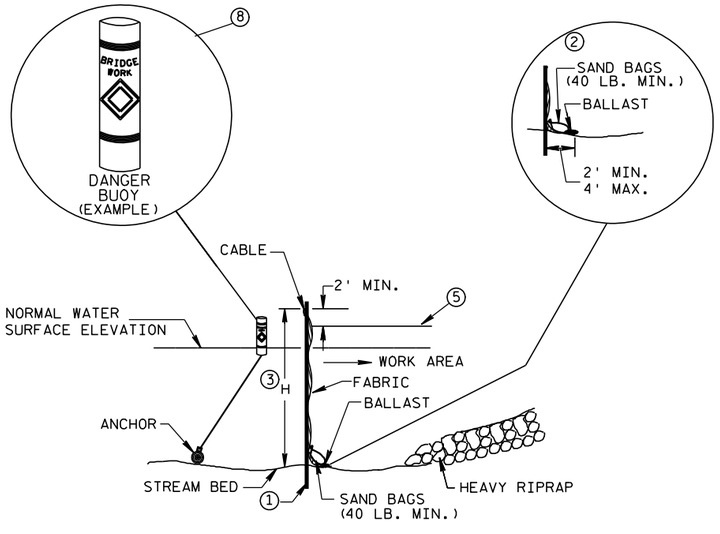


SECTION B-B

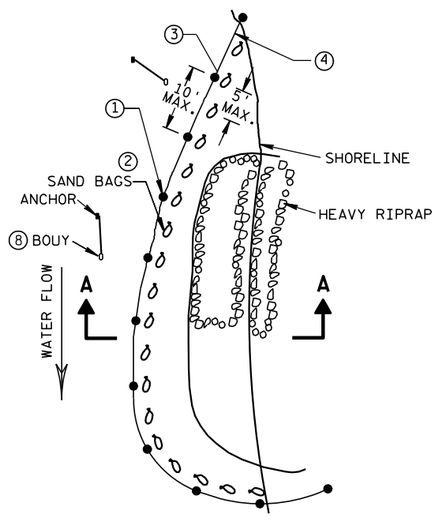




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

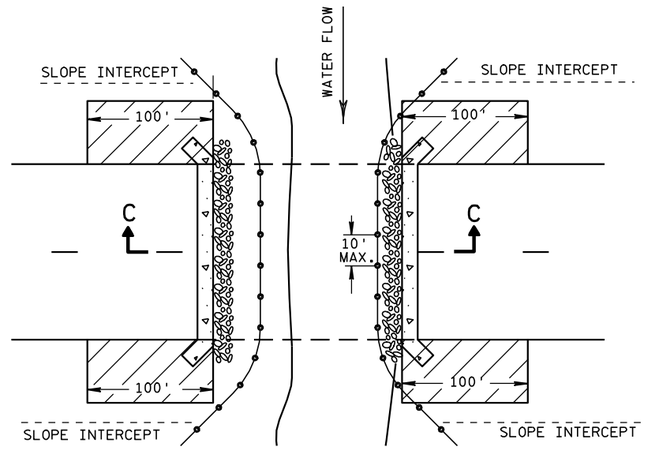
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

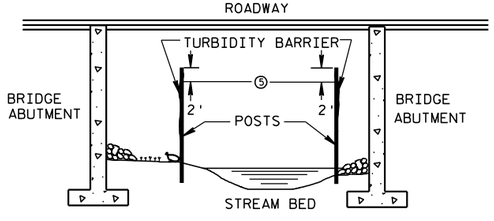
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

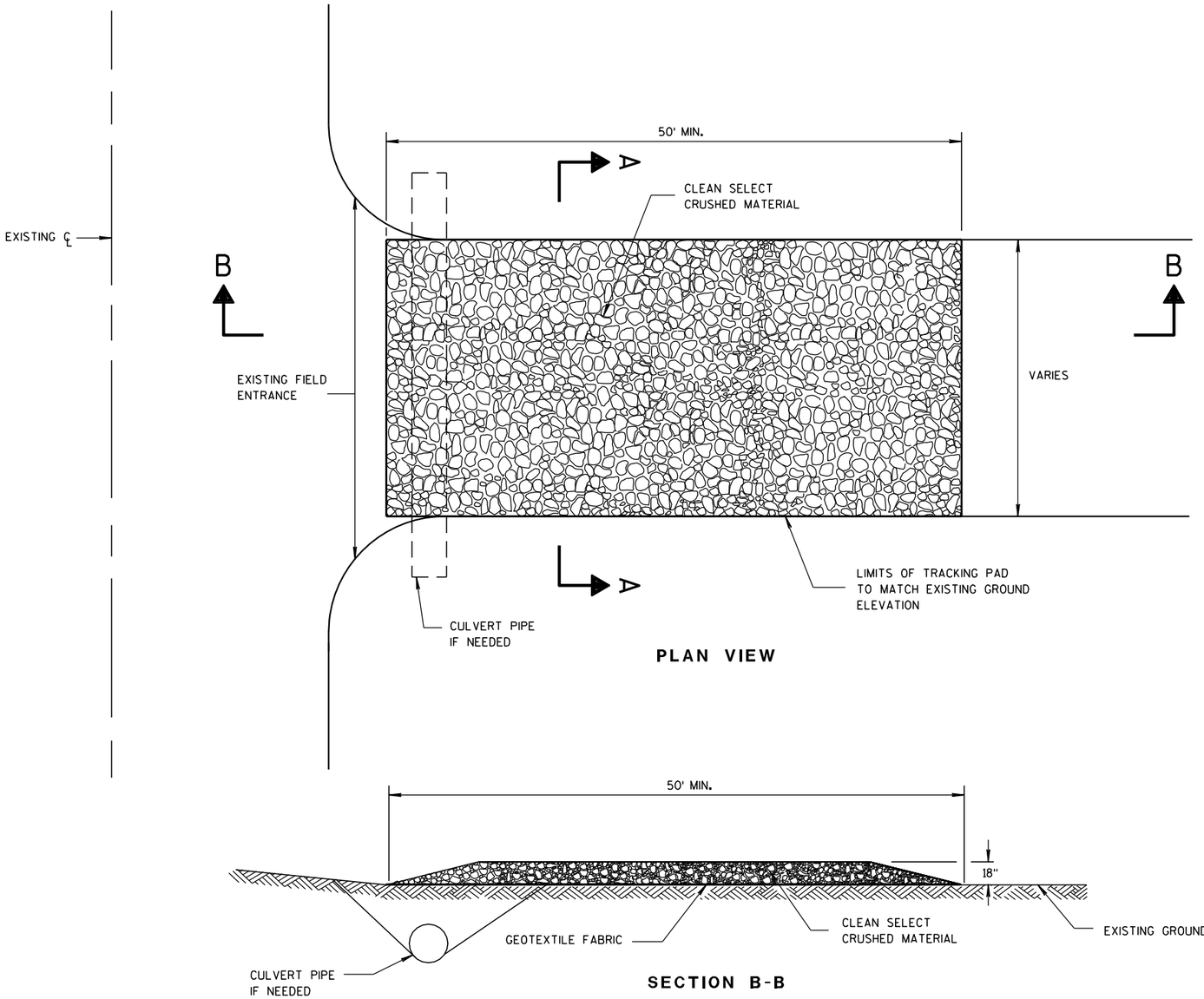
TURBIDITY BARRIER

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



PLAN VIEW

SECTION B-B

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

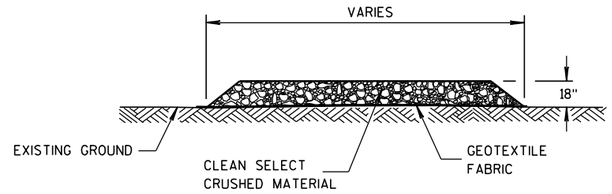
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A-A

TRACKING PAD

TRACKING PAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2011 DATE	/S/ Jerry H. Zoda ROADWAY STANDARDS ENGINEER
FHWA	ENT

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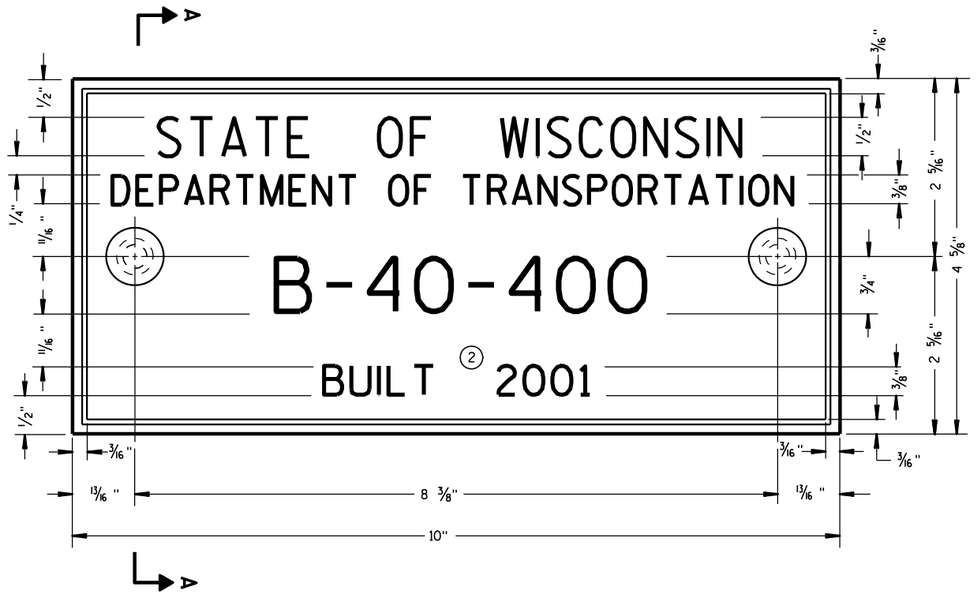
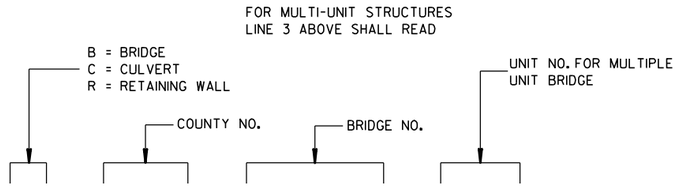
S.D.D. 8 E 14-1



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

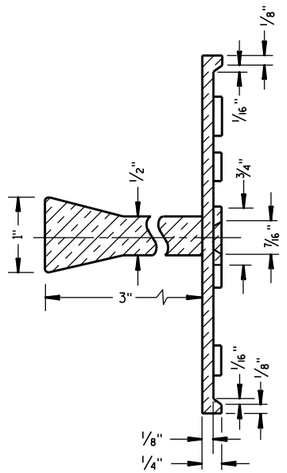
GENERAL NOTES

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.

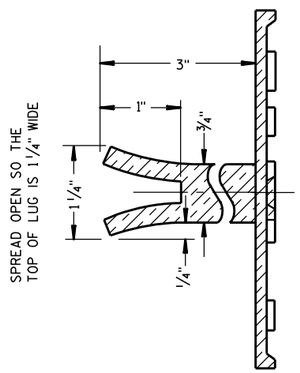
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

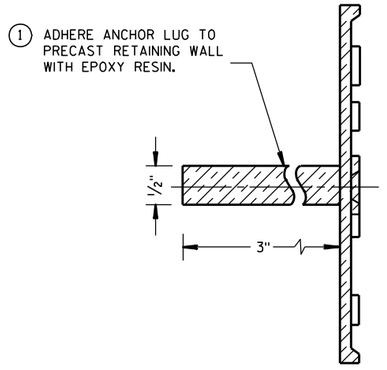
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



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 DEVELOP ENGINEER
FHWA	

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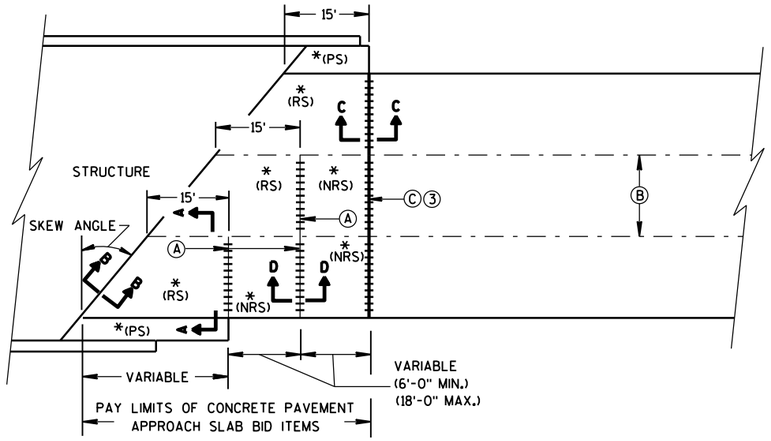
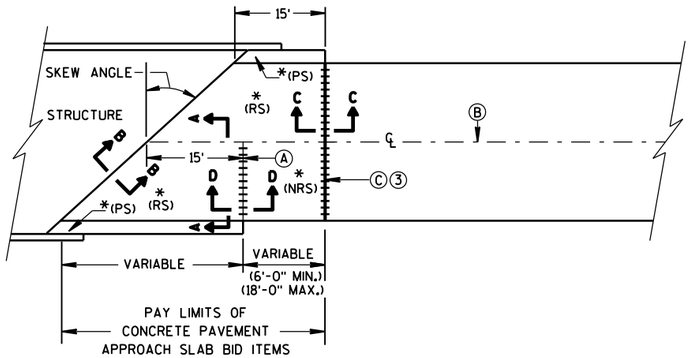
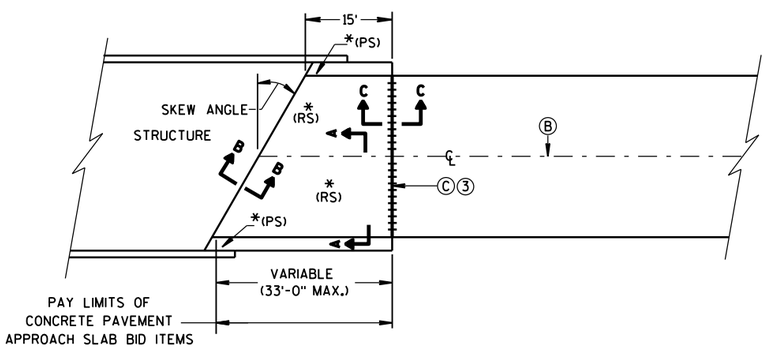
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

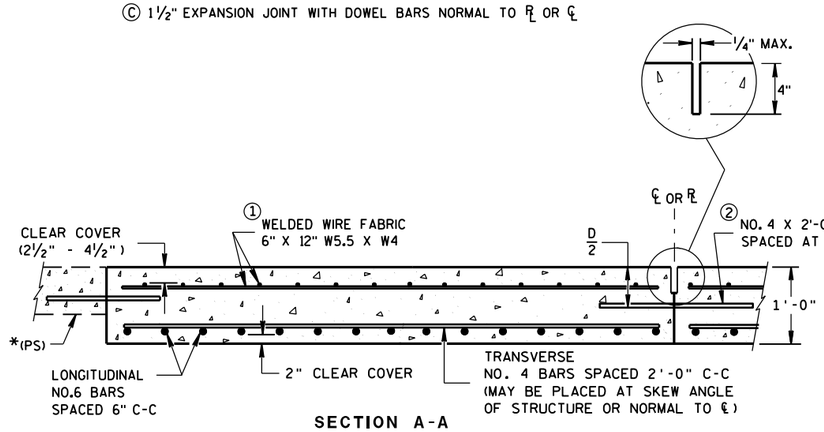
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

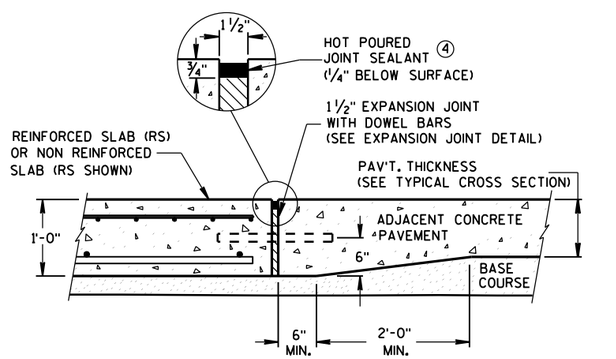
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

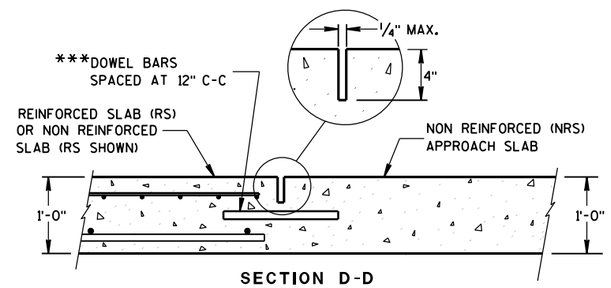
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

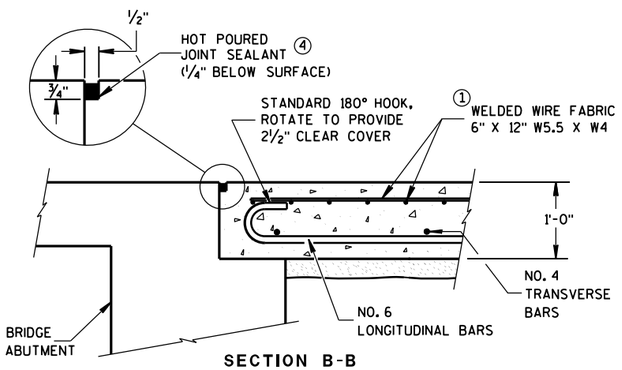
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

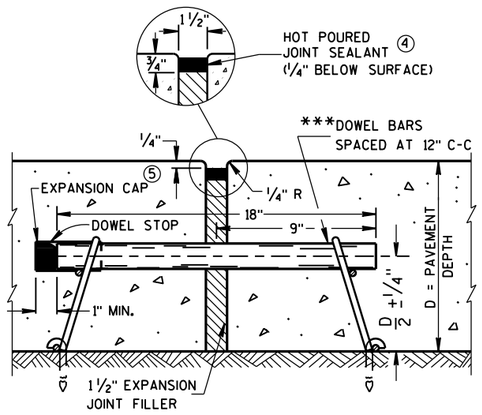
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

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

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



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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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.

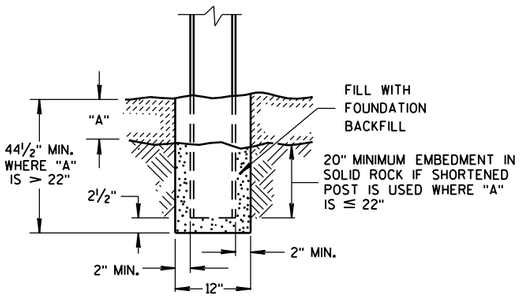
② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

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.

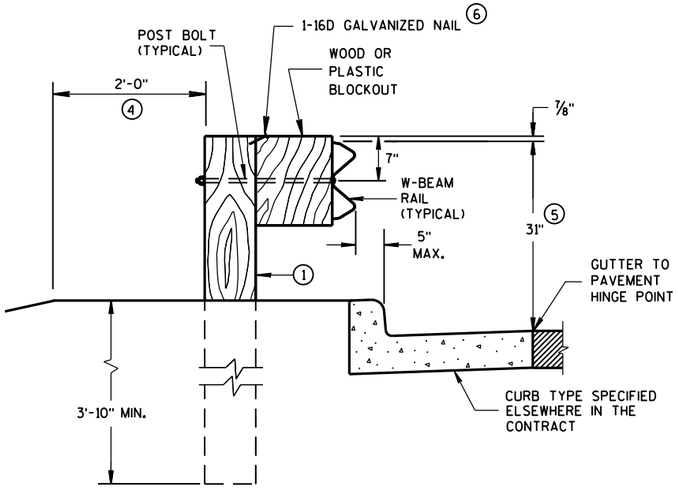
④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

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.



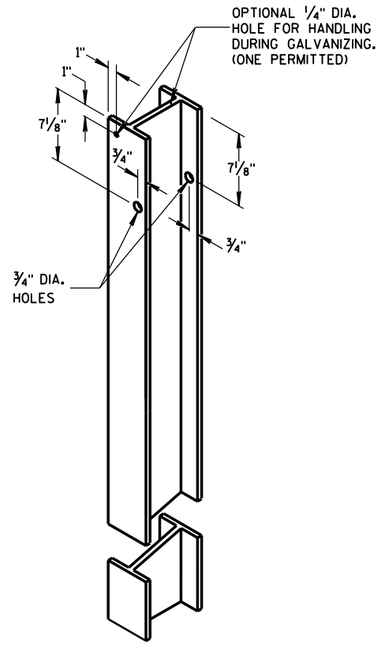
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ③



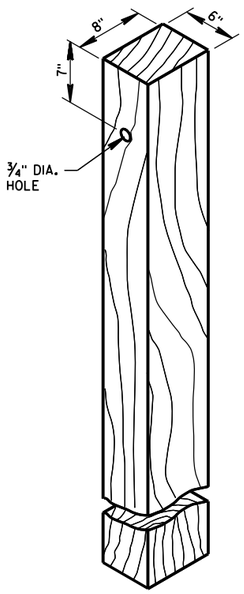
END VIEW
LOCATED ALONG A CURBED ROADWAY

END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION

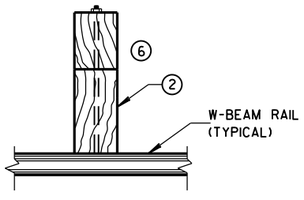
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



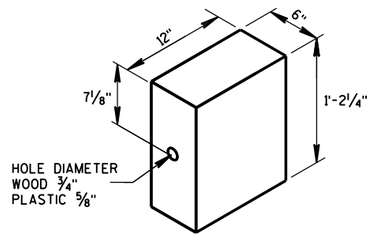
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



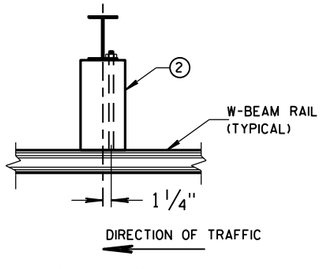
WOOD POST
(6" X 8") NOMINAL ①



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

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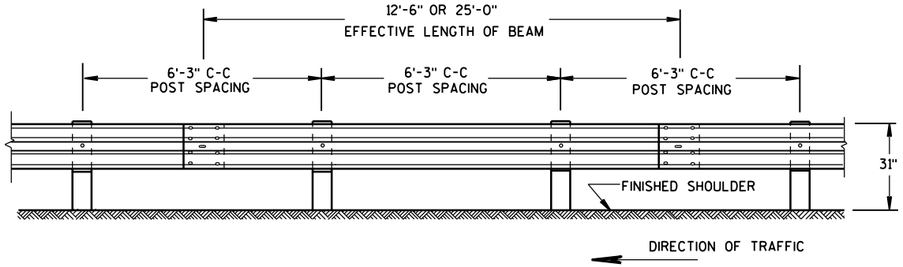
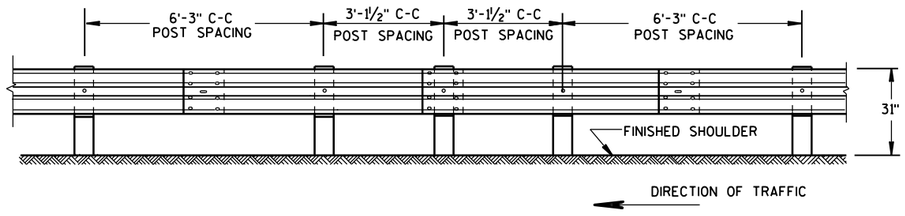


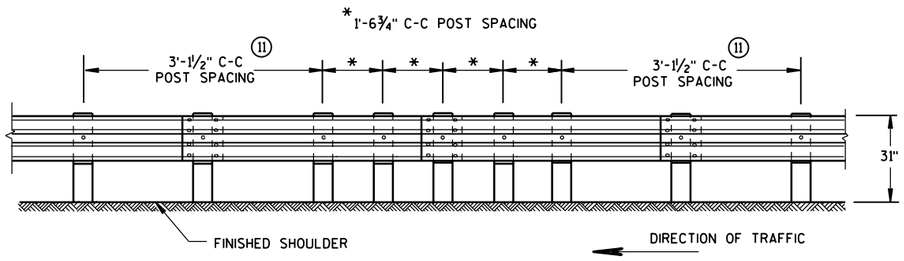
FRONT VIEW

POST SPACING STANDARD INSTALLATION



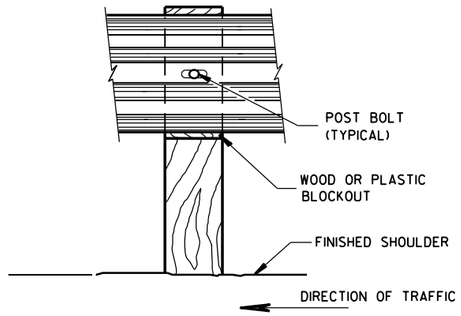
FRONT VIEW

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

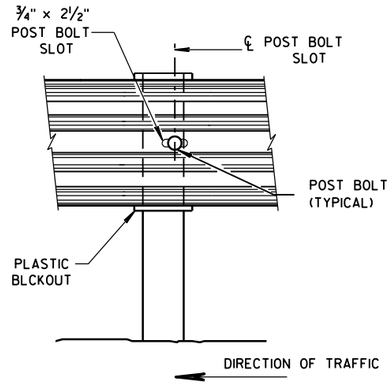


FRONT VIEW

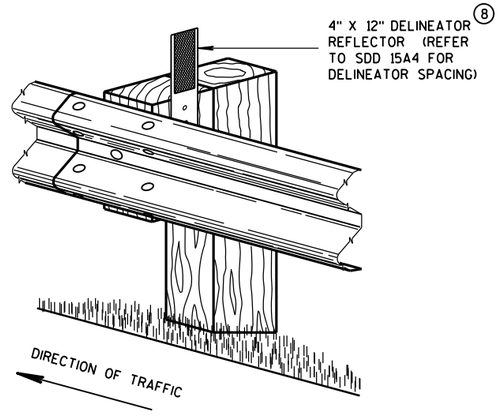
QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

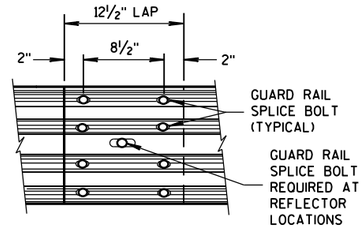
GENERAL NOTES

(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.

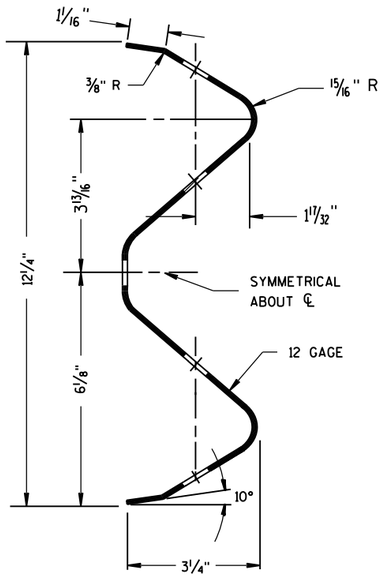
(11) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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



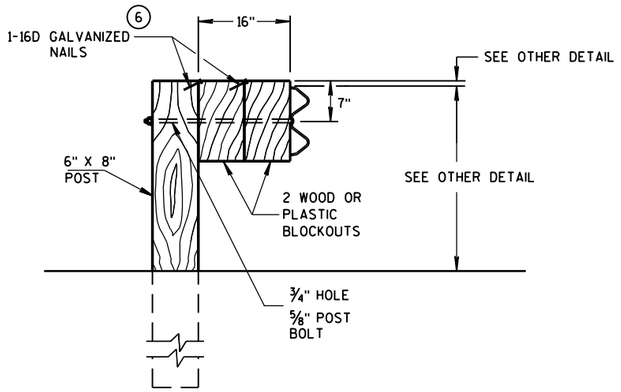
SECTION THRU W-BEAM RAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

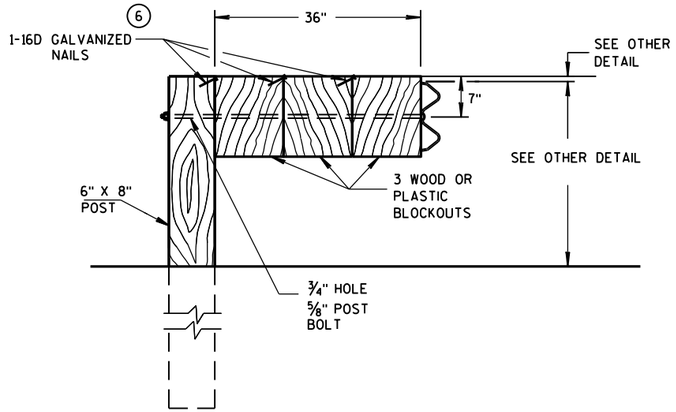
6

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.

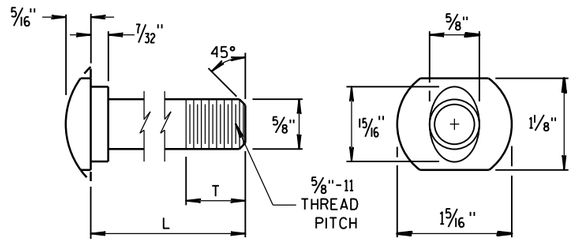


DETAIL FOR 36" BLOCKOUT DEPTH

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.

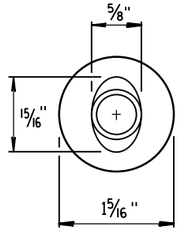
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

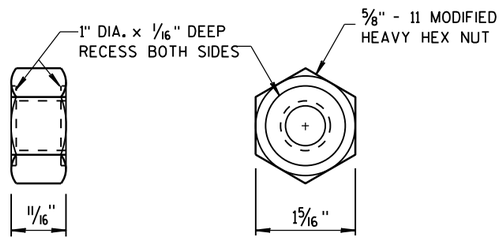


POST BOLT TABLE

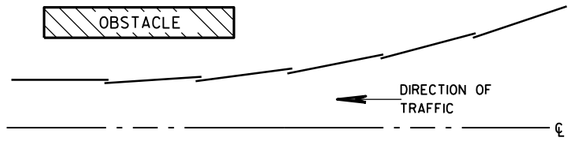
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

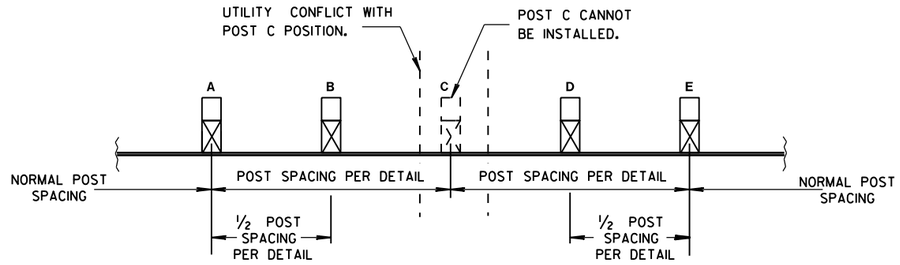


POST BOLT, SPLICE BOLT AND RECESS NUT

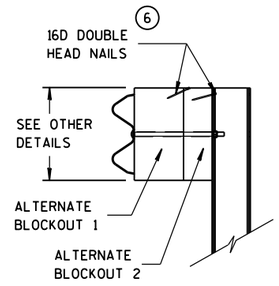


PLAN VIEW

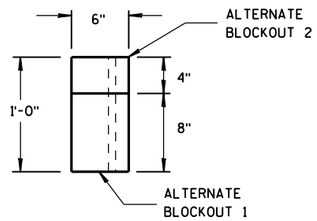
BEAM LAPPING DETAIL



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.

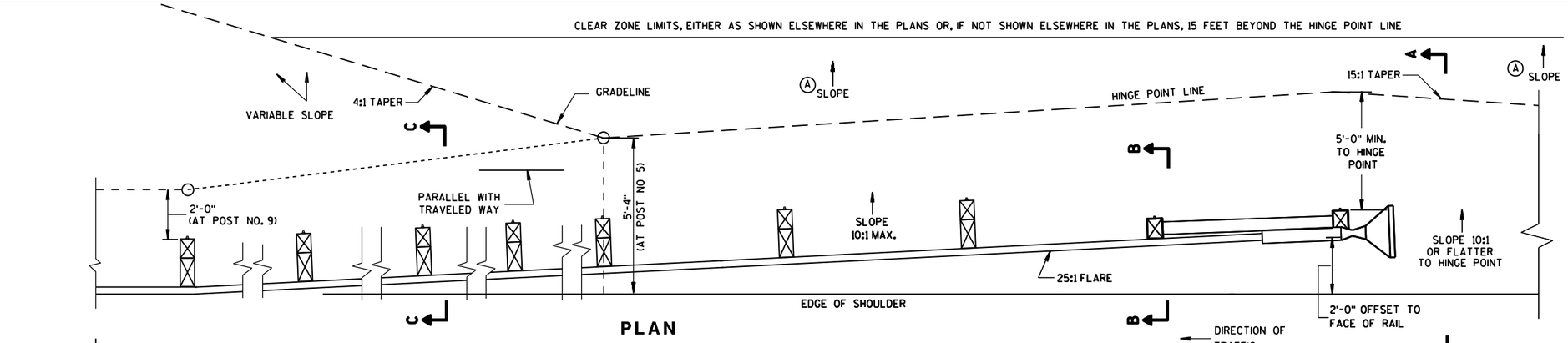
SEE SDD 14B42 FOR MORE INFORMATION.

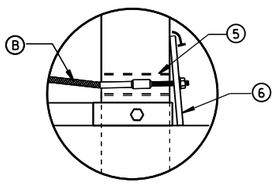
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

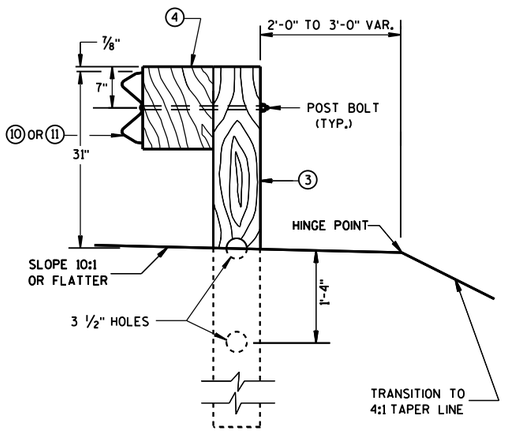
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

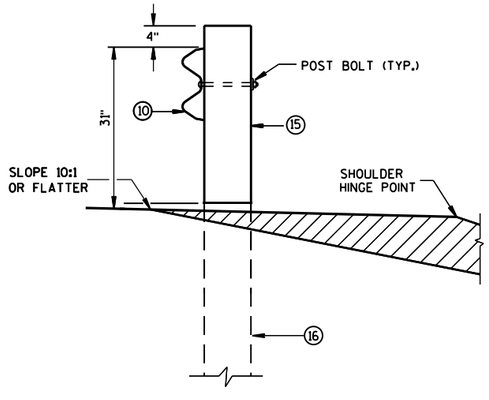
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

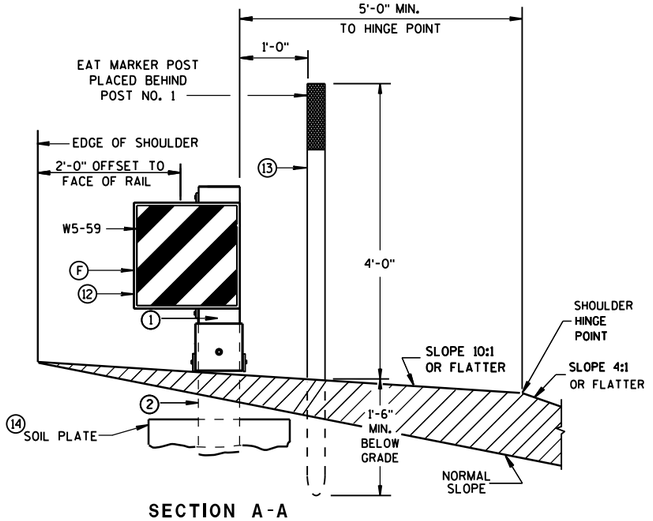
THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

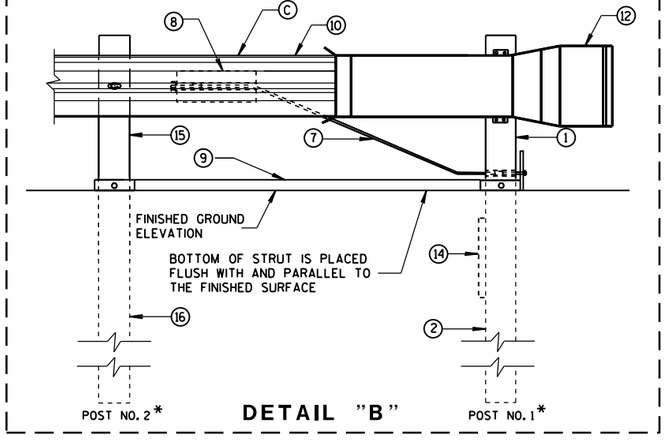








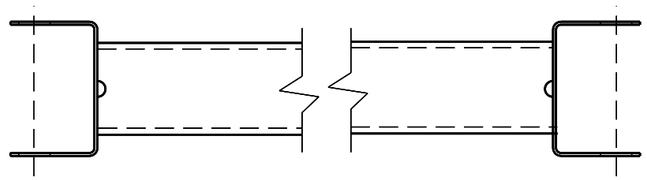




MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

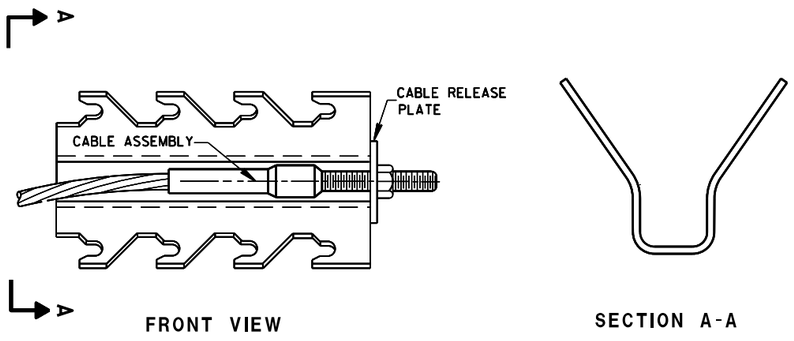
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 14 B 44-3a



(9) (H)

GENERIC GROUND STRUT



FRONT VIEW

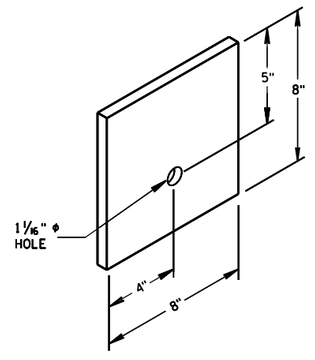
SECTION A-A

(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)

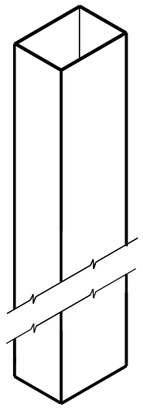
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

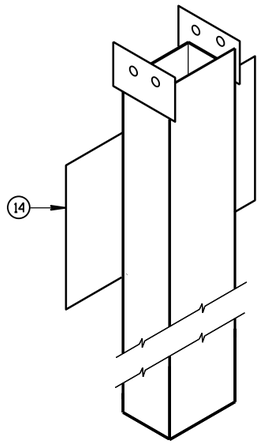
S.D.D. 14 B 44-3b

6

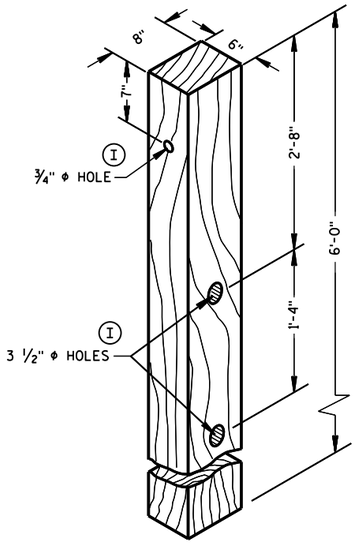
S.D.D. 14 B 44-3b



UPPER POST NO. 1 (1)

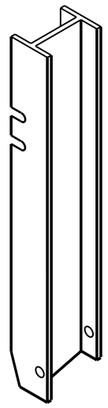


LOWER POST NO. 1 (2)

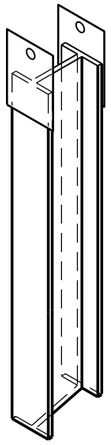


POSTS NUMBER 3-9

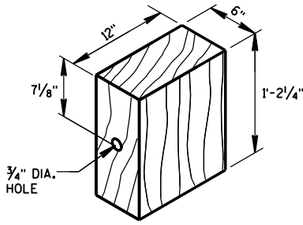
WOOD CRT POST (3)



UPPER POST NO. 2 (15)

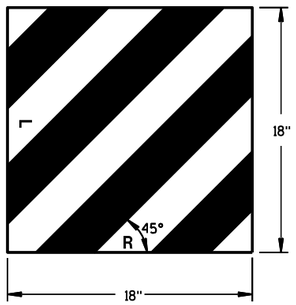


LOWER POST NO. 2 (16)



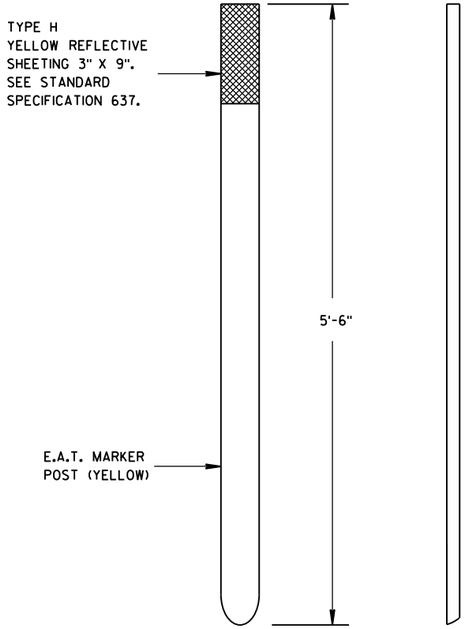
WOOD BLOCKOUT (4)

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



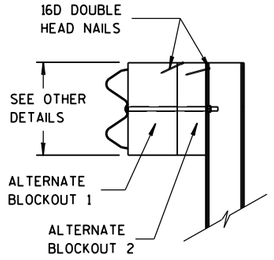
W5-59

REFLECTIVE SHEETING DETAIL (H)

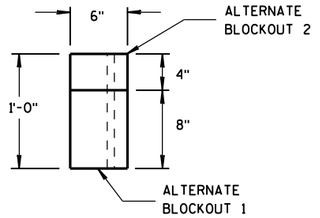


FRONT VIEW SIDE VIEW

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

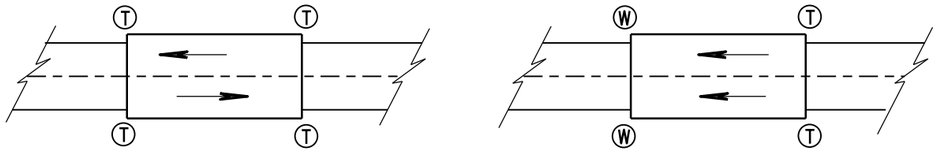
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

6

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



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

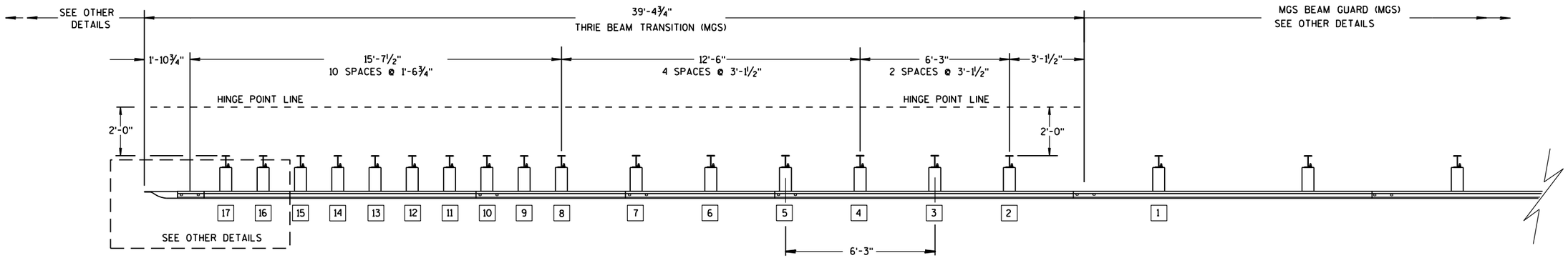
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

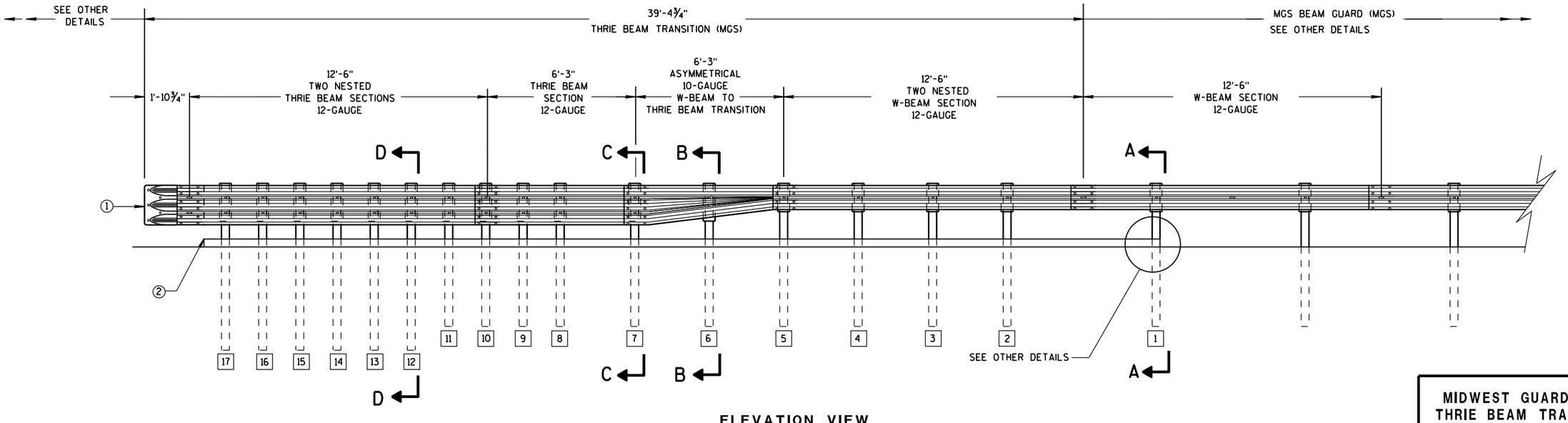
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

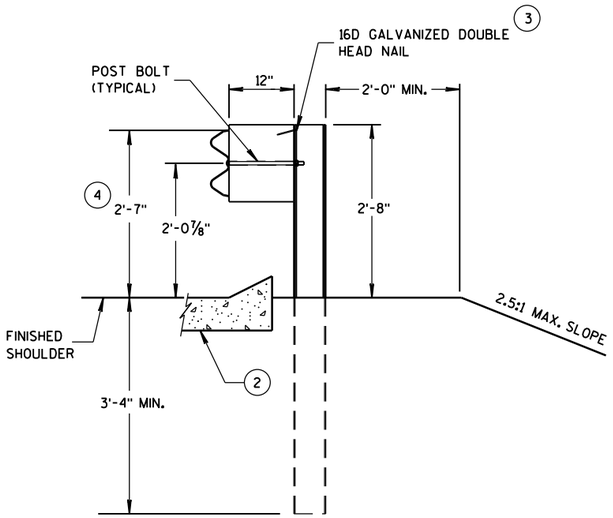
S.D.D. 14 B 45-4a

GENERAL NOTES

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

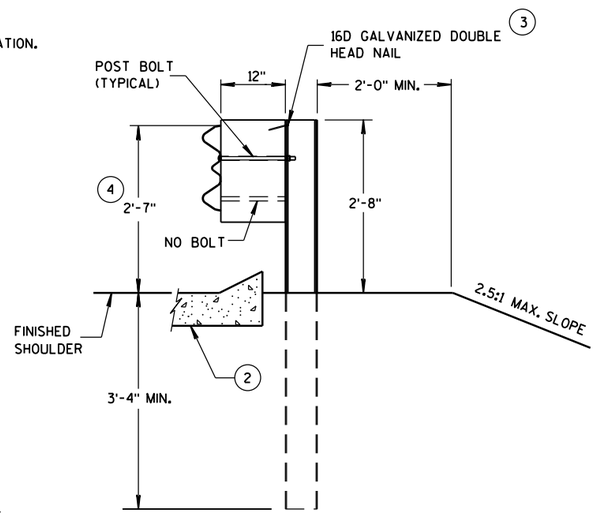
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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



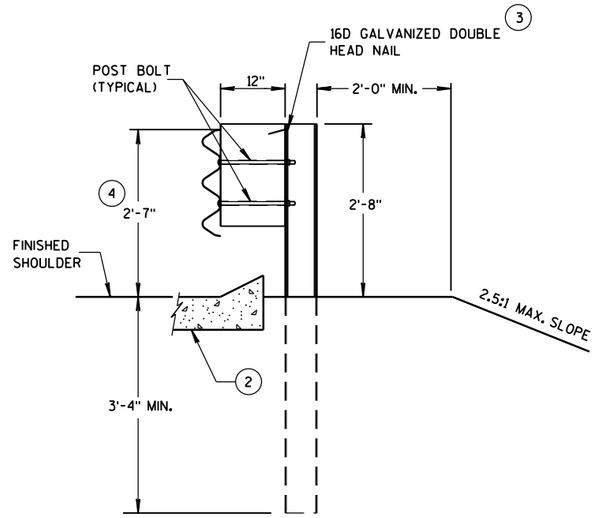
SECTION A-A

POSTS 1-5



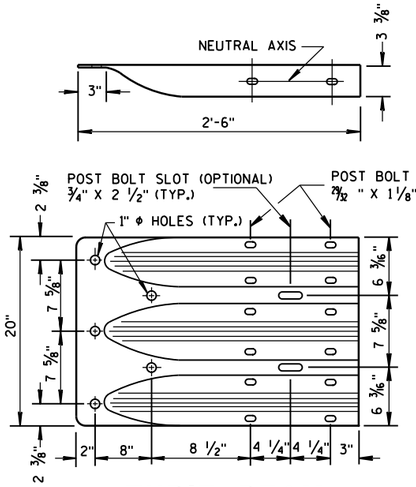
SECTION B-B

POST 6

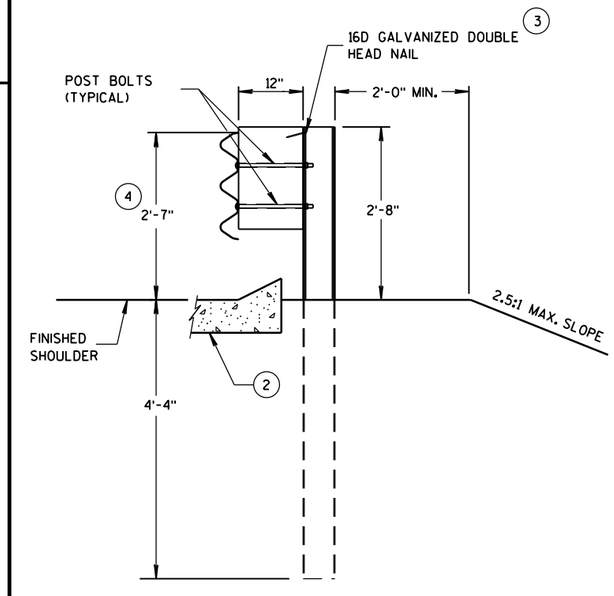


SECTION C-C

POSTS 7-11

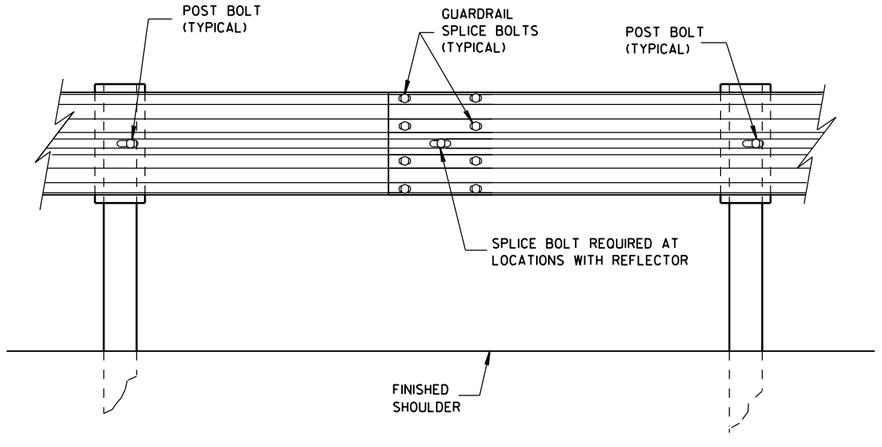


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

PLATE WASHER DETAIL

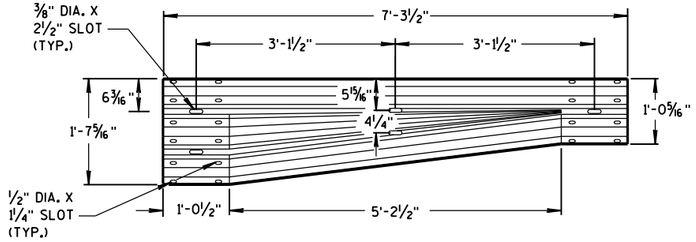
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

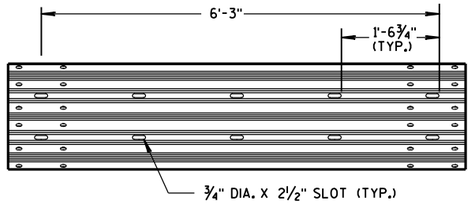
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

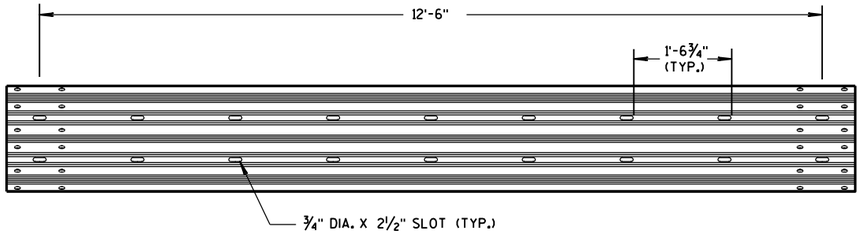
S.D.D. 14 B 45-4b



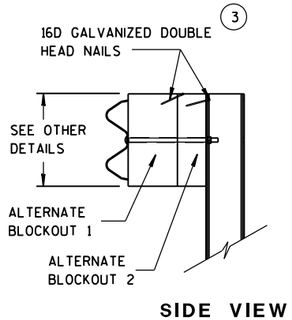
W-BEAM TO THRIE BEAM TRANSITION SECTION



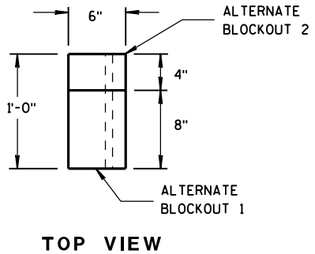
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

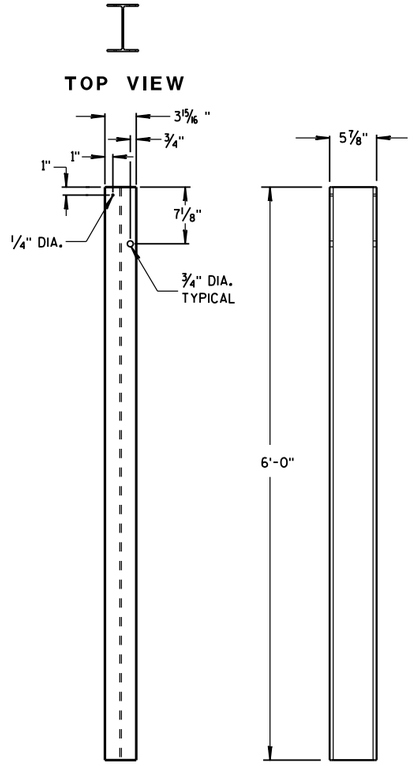


SIDE VIEW



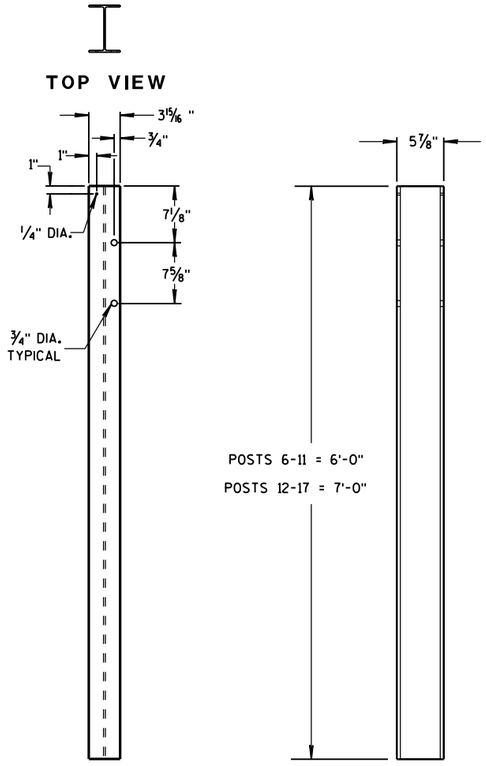
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



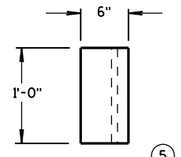
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5

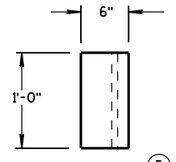


FRONT VIEW SIDE VIEW

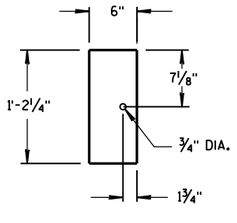
STEEL POSTS 6-17



TOP VIEW (5)

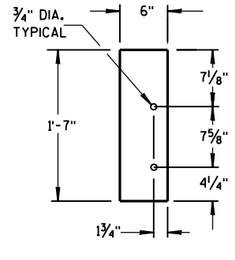


TOP VIEW (5)



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.

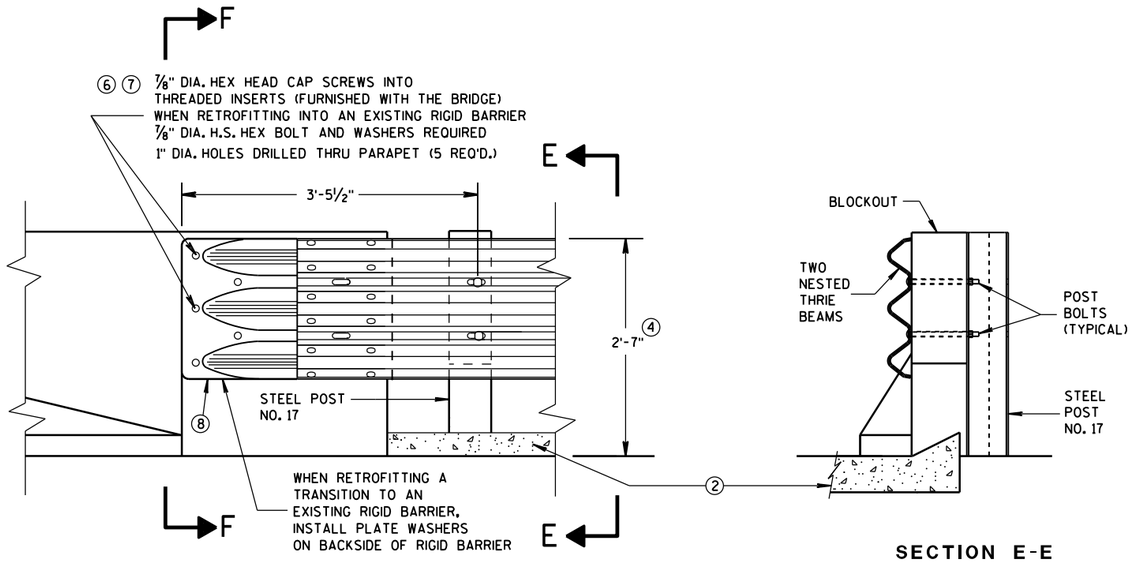
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

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

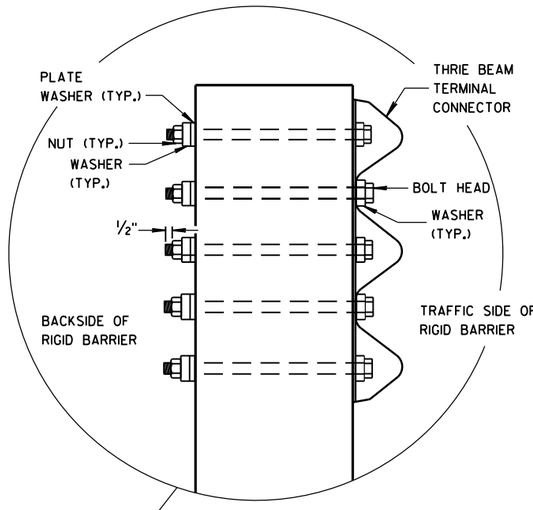
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

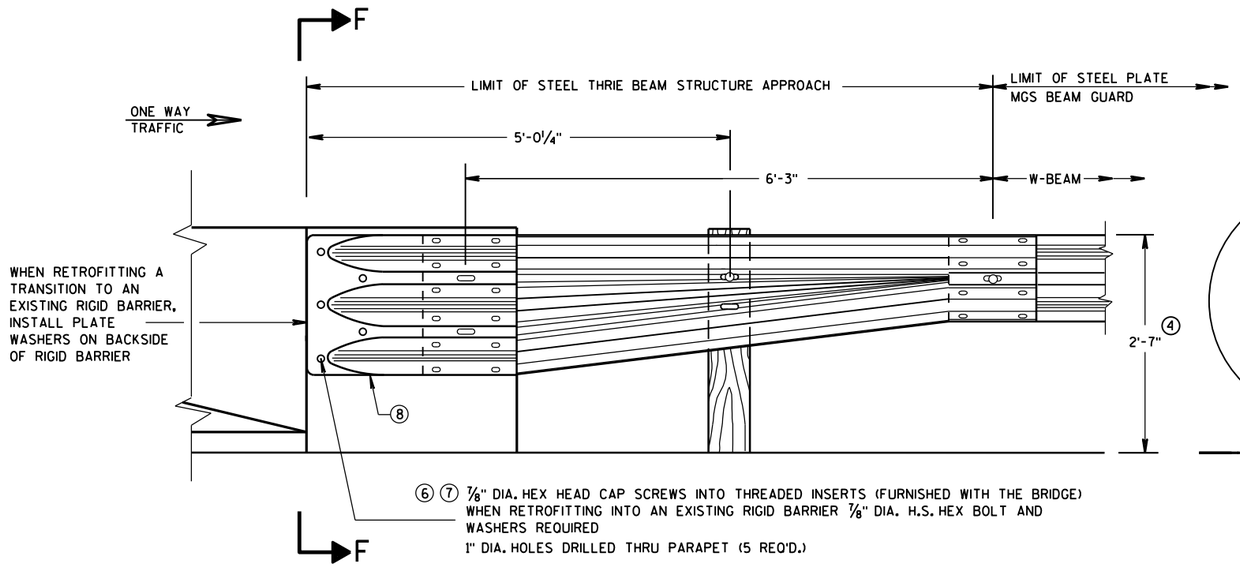
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

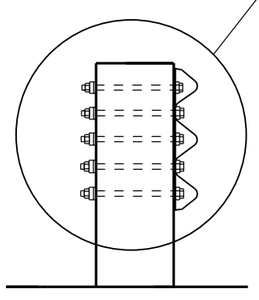
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

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

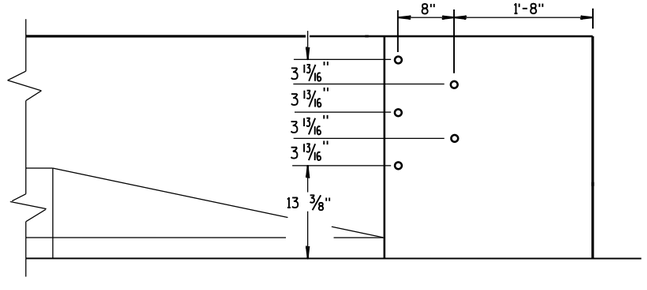




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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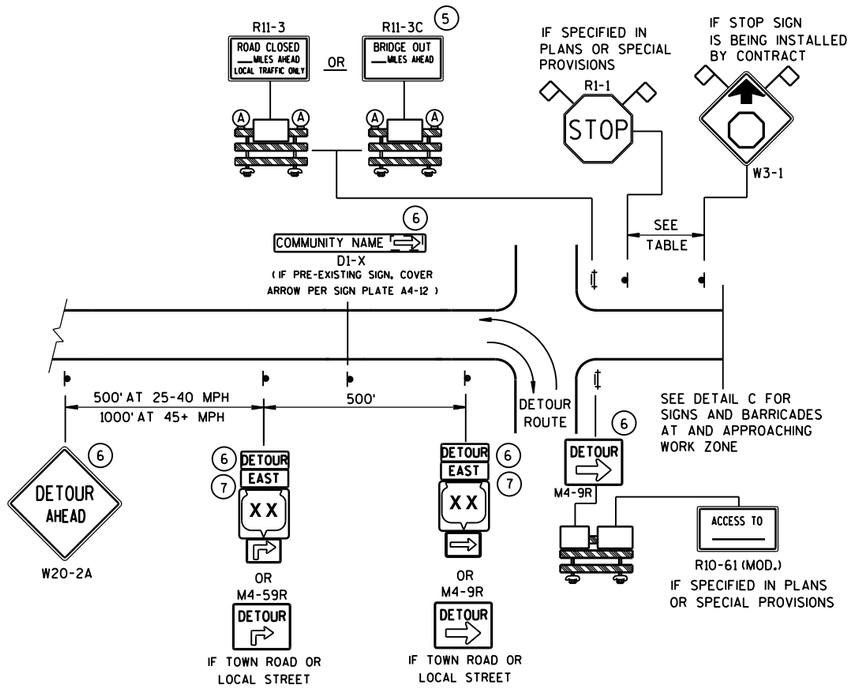
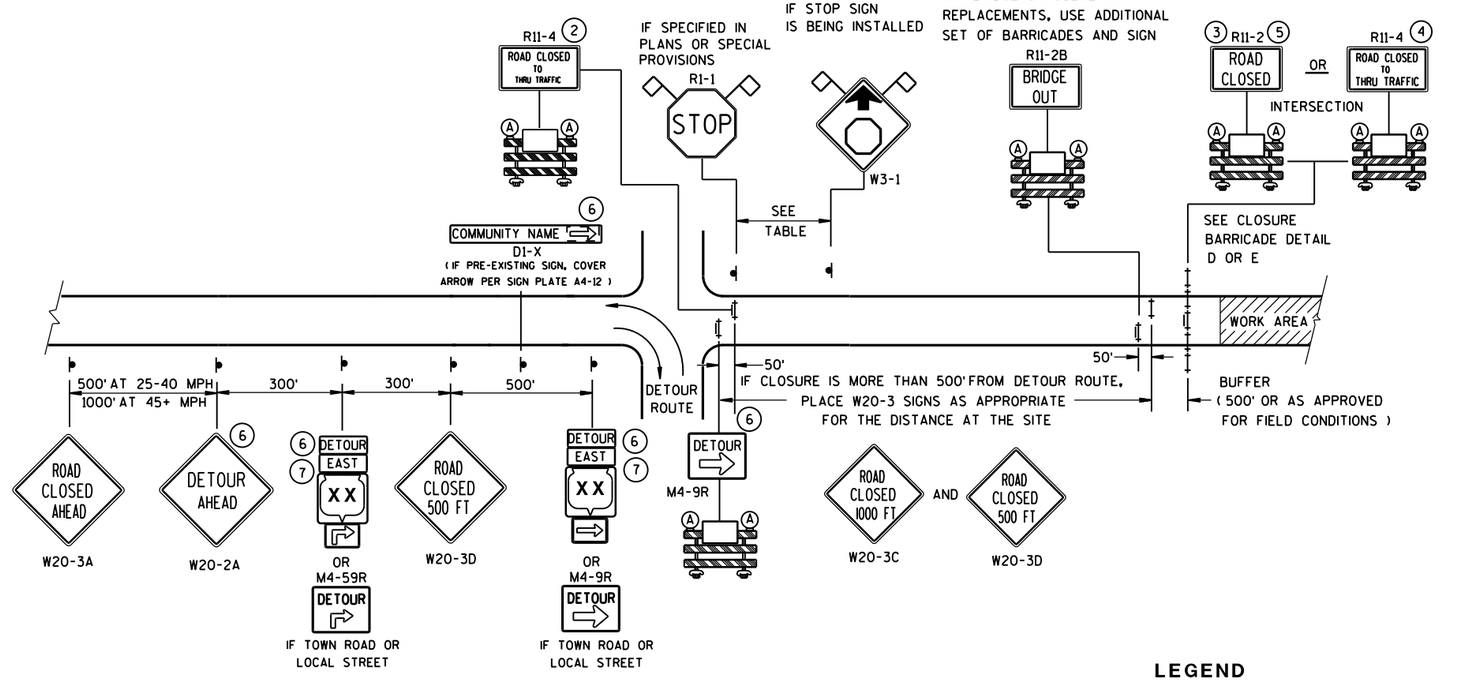
S.D.D. 14 B 45-4d



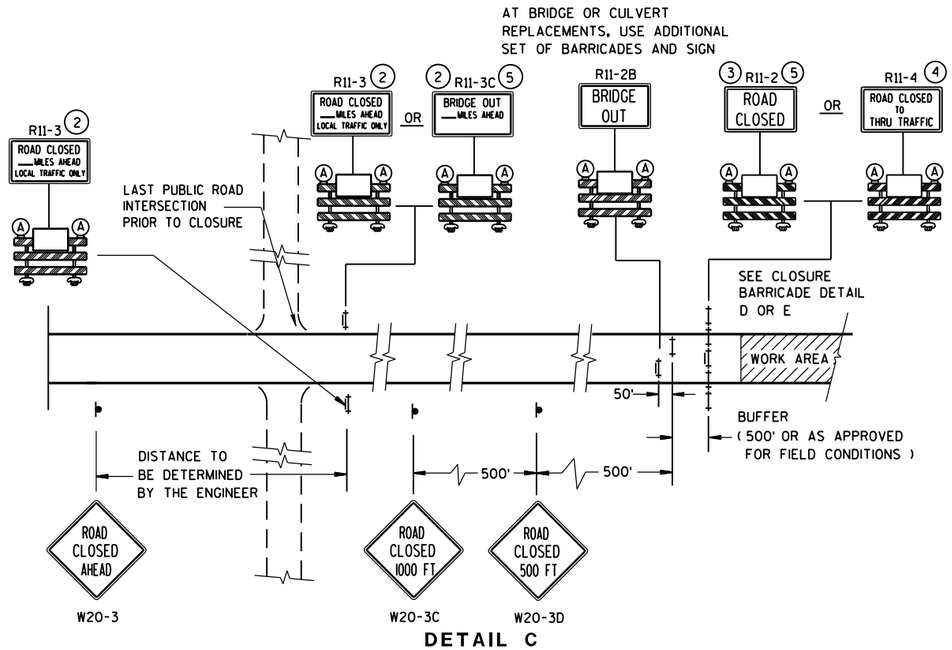
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

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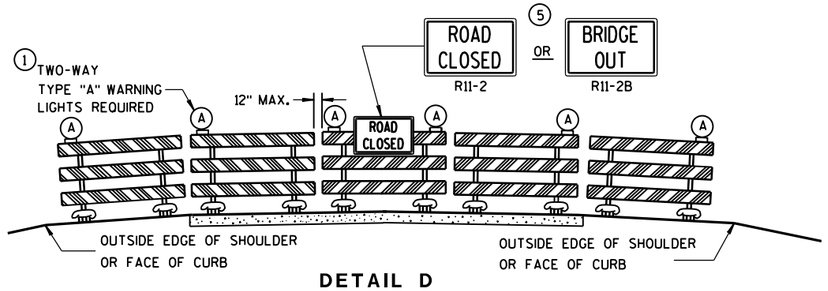
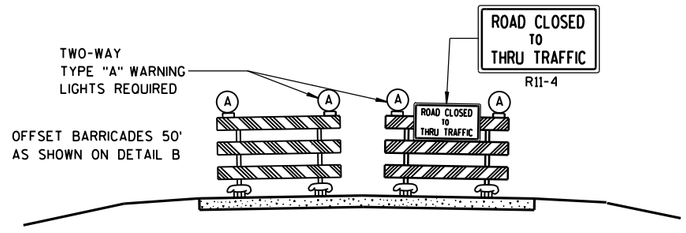
S.D.D. 15 C 2-6a



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

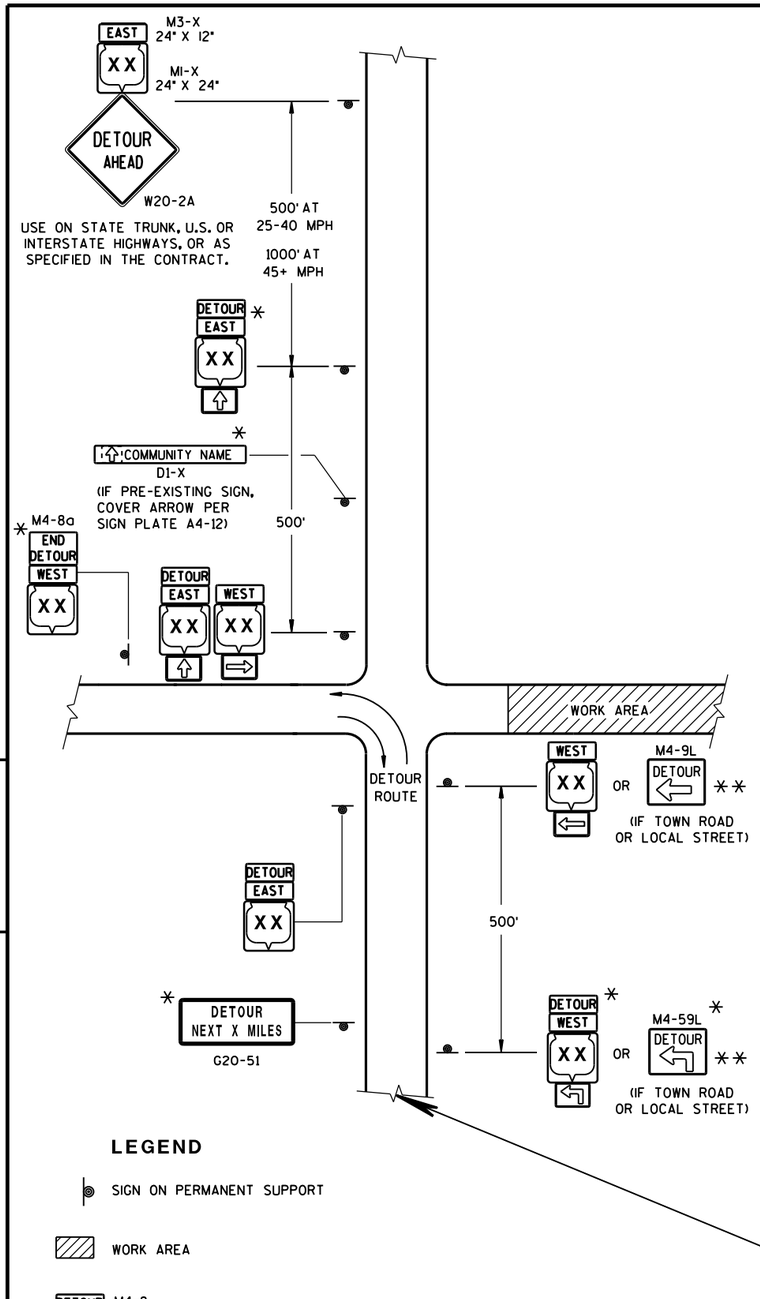
Sept. 2015 — DATE

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

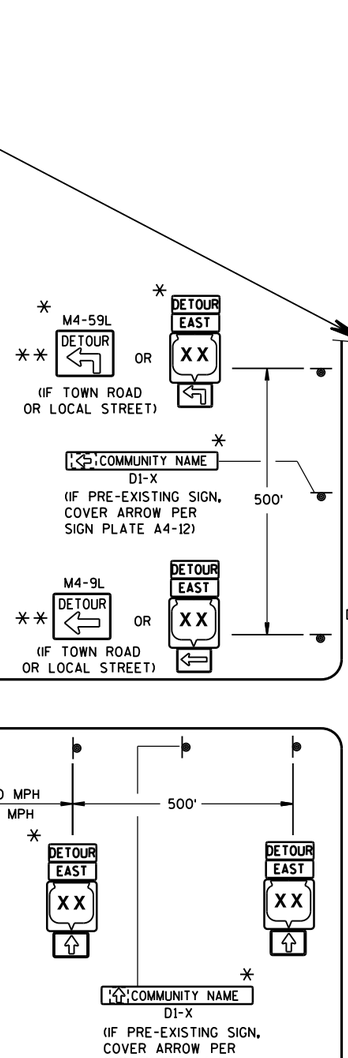
6

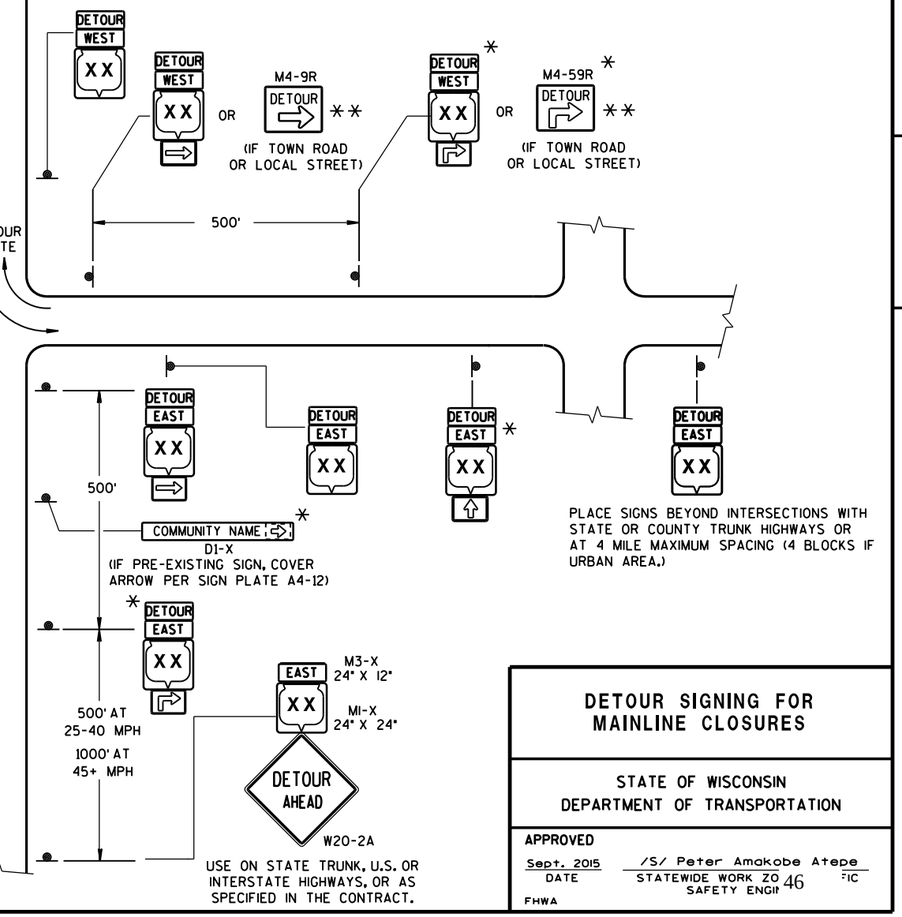
S.D.D. 15 C 2-6b

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



MATCH POINT





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.)
- MO5-1 AND MO6-1 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.

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST — M4-8 / M3-X
- XX OR COUNTY XX OR XX — M1-4 / M1-5A / M1-6
- MO5-1 OR MO6-1 OR MO6-1

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

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 ZO SAFETY ENGI FIC

FHWA

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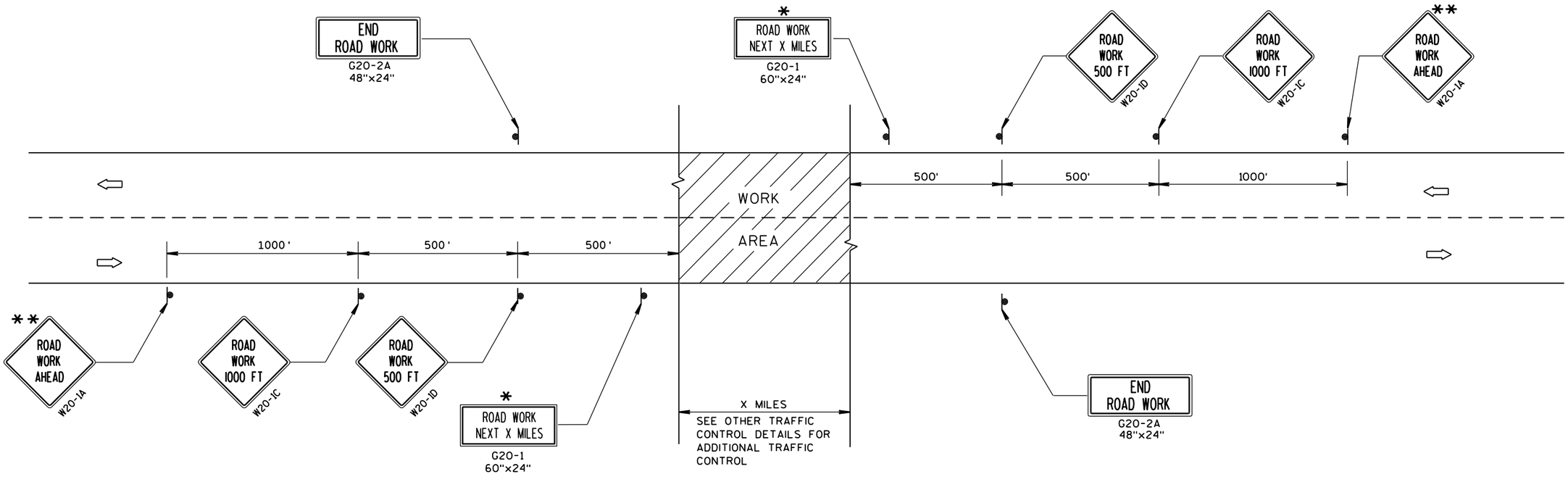
S.D.D. 15 C 2-6c



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 MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

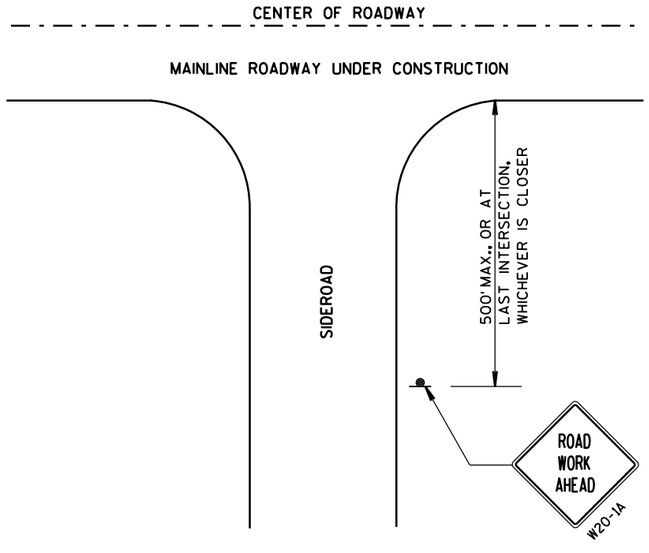
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



LEGEND

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

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

FHWA

6

S.D.D. 15 C 4-3

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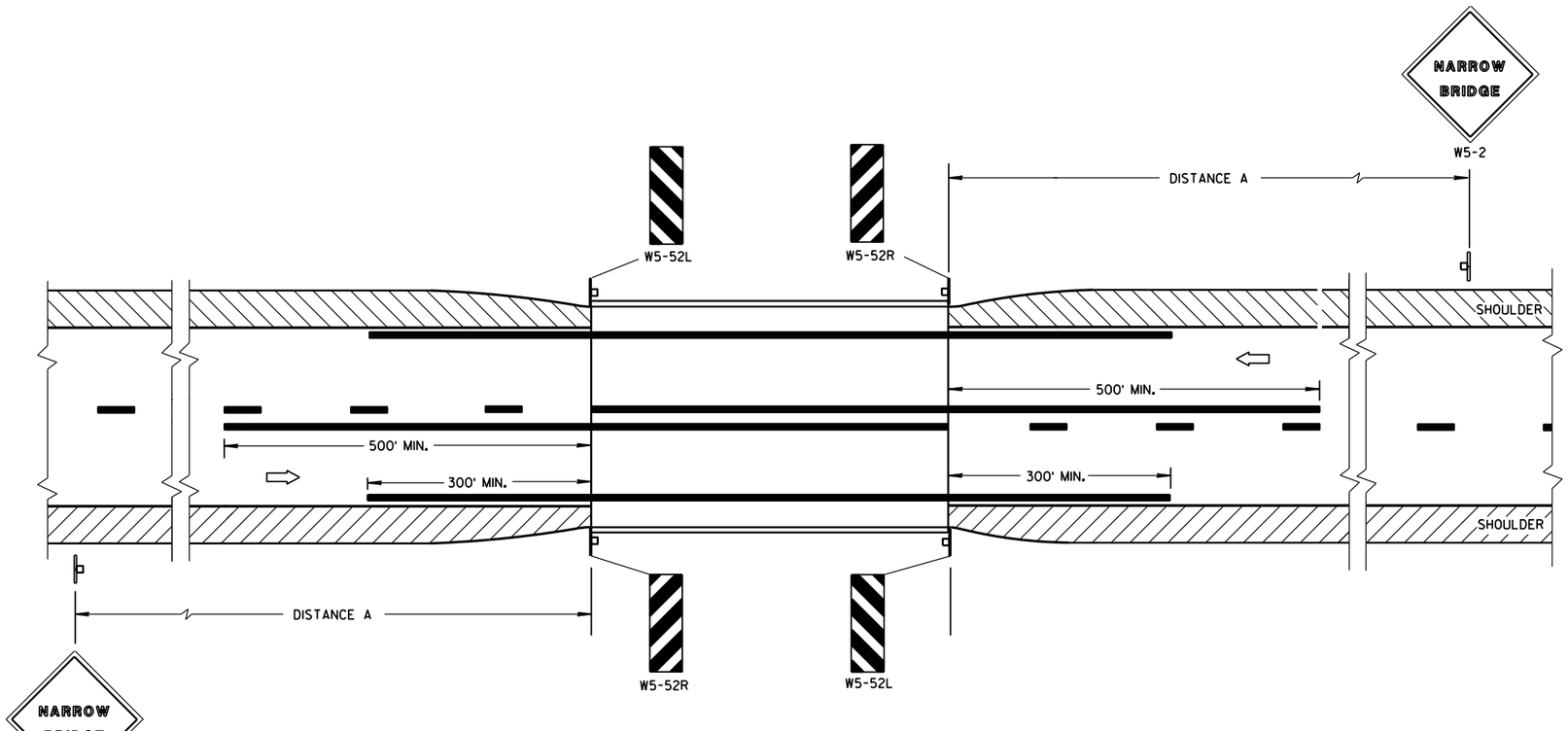
S.D.D. 15 C 4-3



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

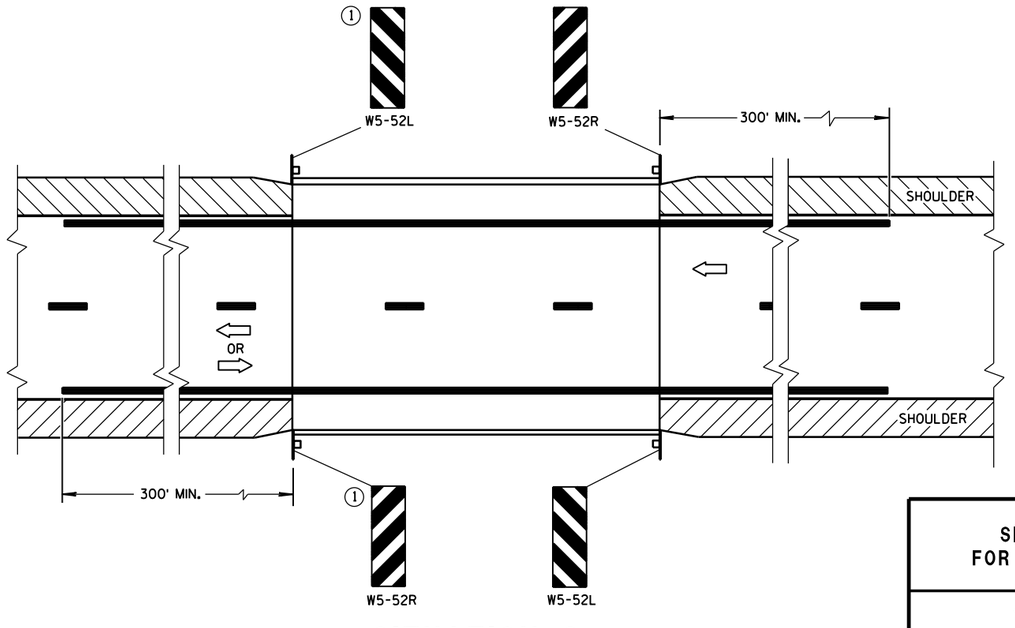
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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.

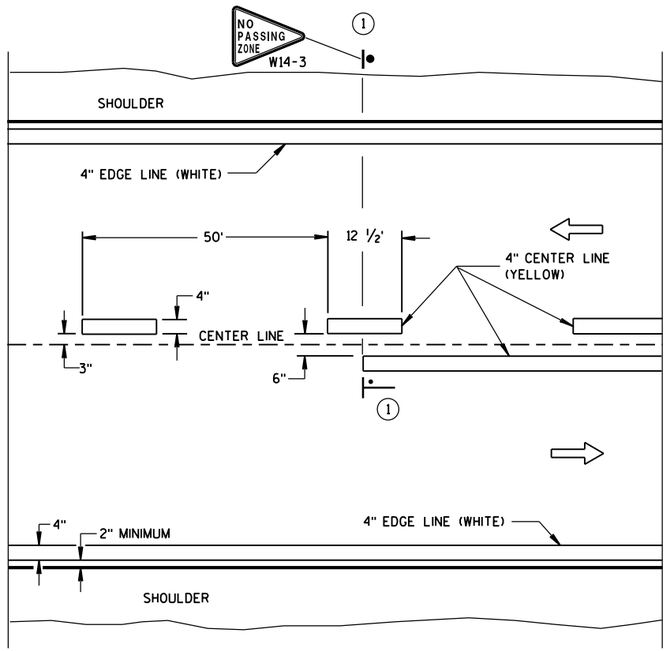
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

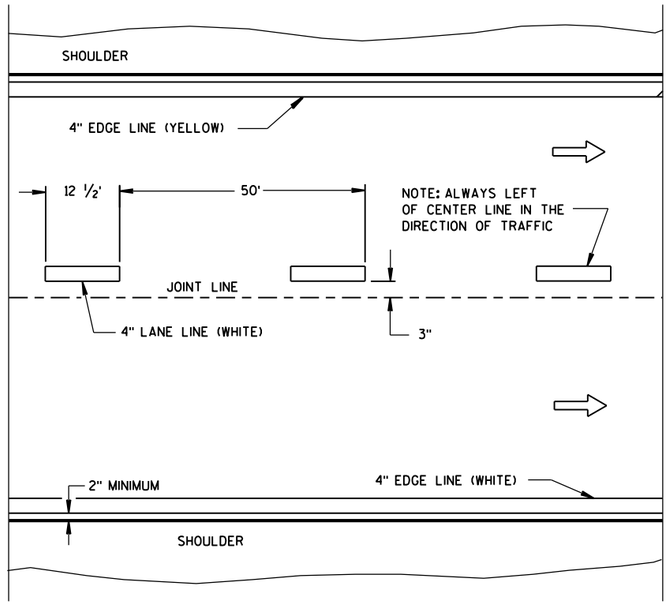
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

S.D.D. 15 C 6-9



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.

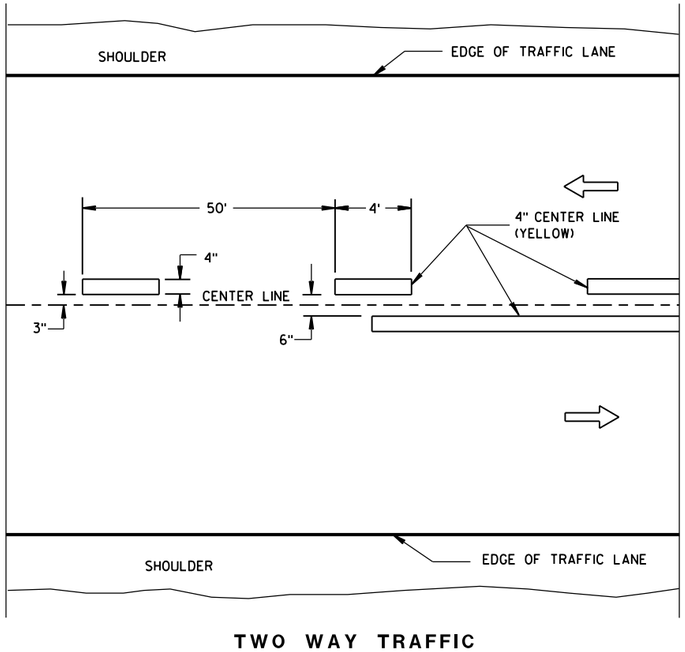
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

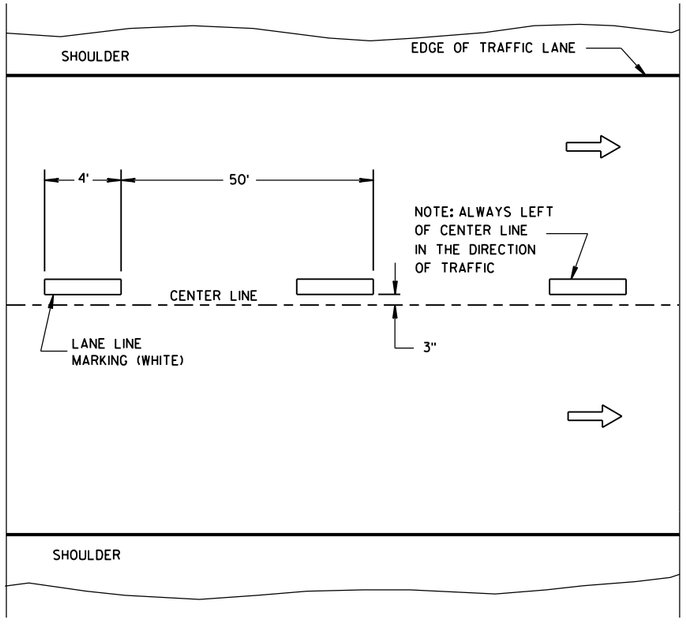
LEGEND

"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 ENGINEER)
FHWA	

LEGEND

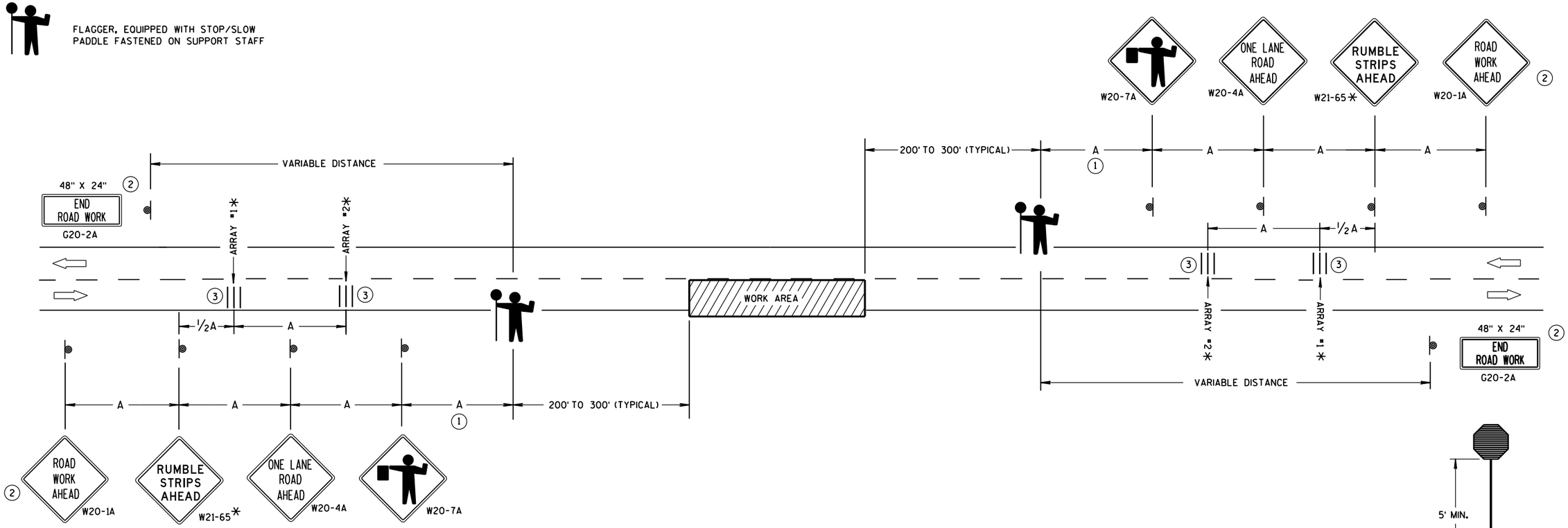
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

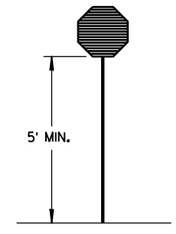
SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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

W03-4

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





STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

GENERAL NOTES

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

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

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

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

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

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

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

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

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

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

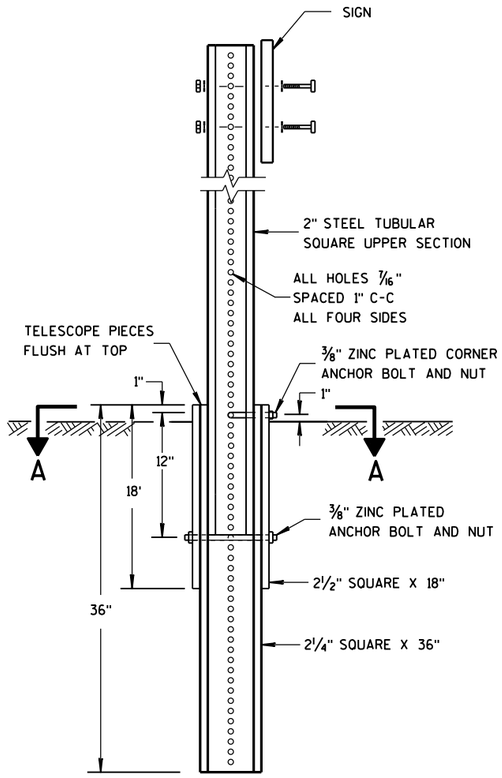
TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

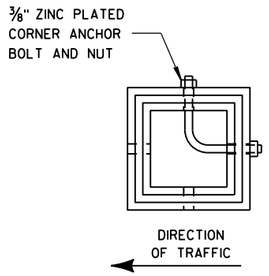
APPROVED
June 2017 — DATE
/S/ Andrew Heldtke — WORK ZONE ENG
FHWA

6

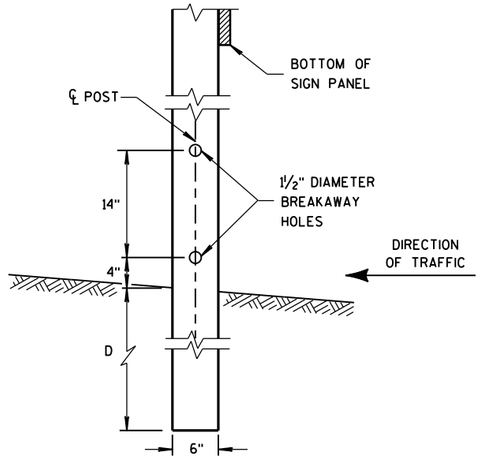
S.D.D. 15 C 12-6



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



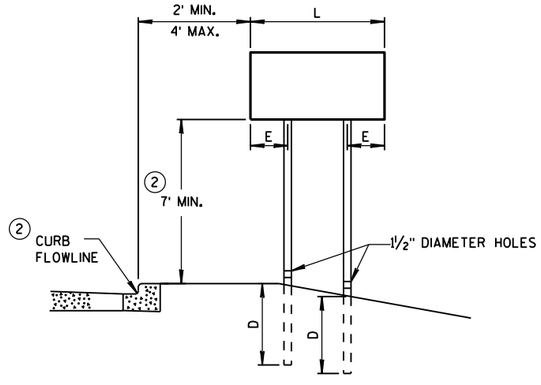
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

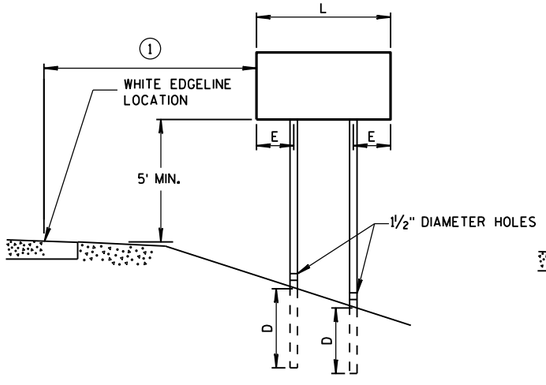
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

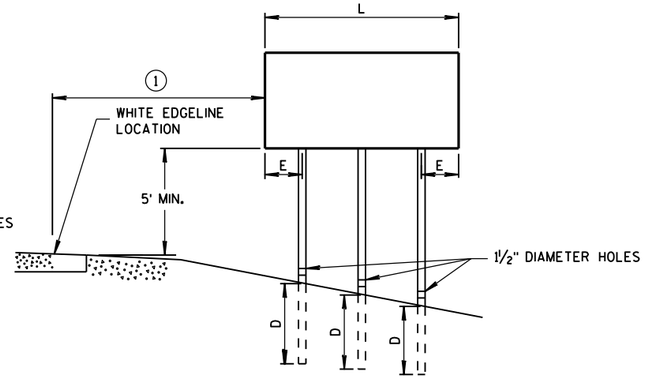
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

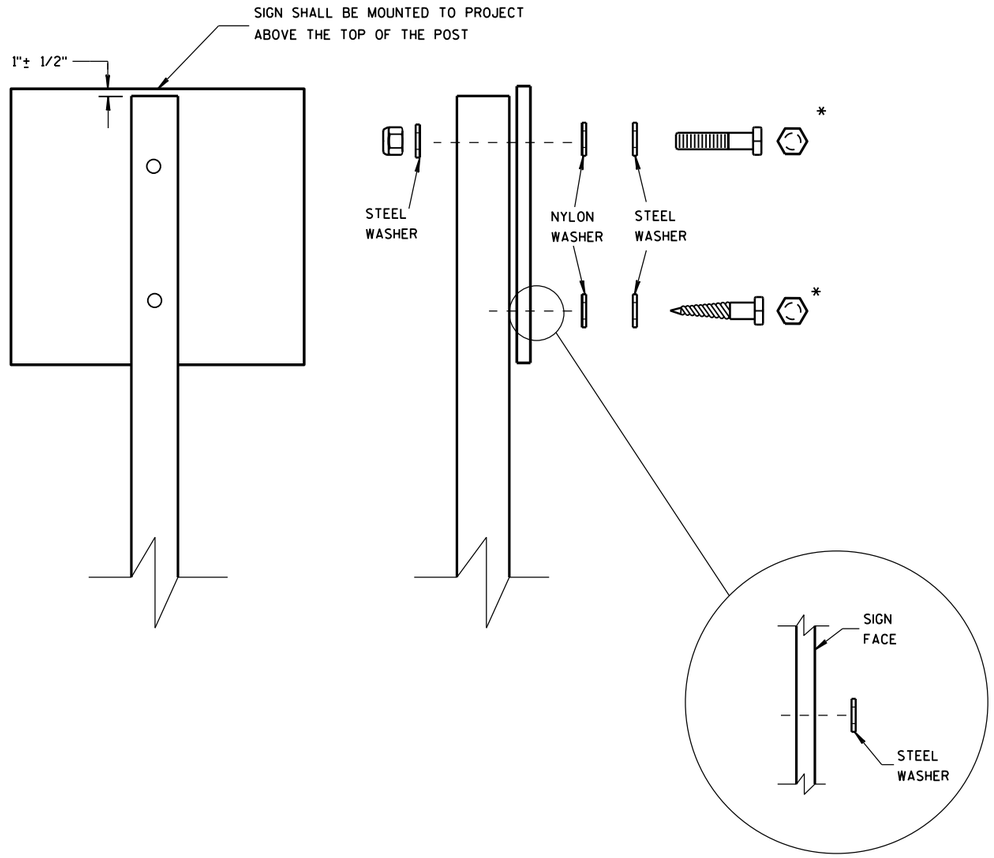
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

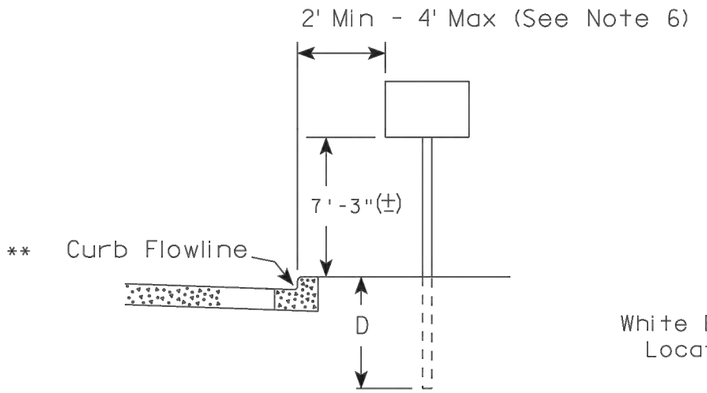
APPROVED

June 2017
DATE

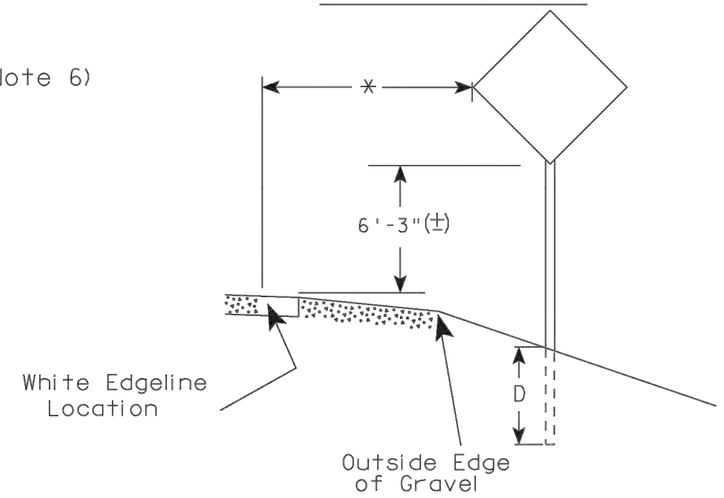
/S/ Andrew Heldtke
WORK ZONE ENG

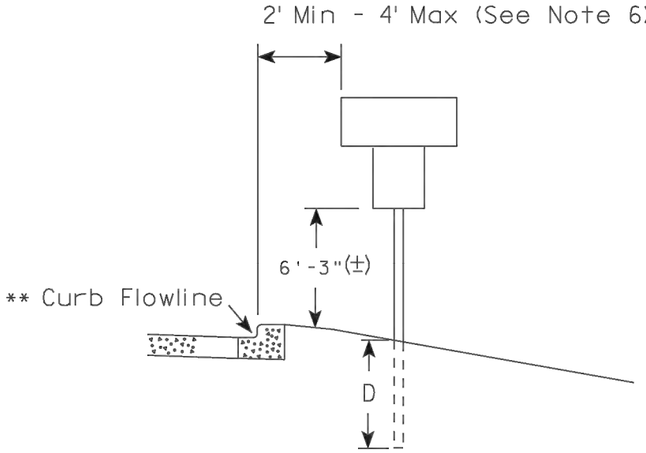
FHWA

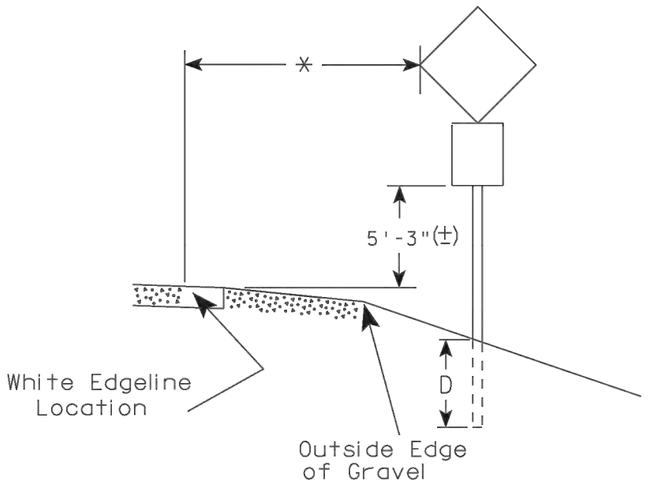
URBAN AREA



RURAL AREA (See Note 2)







** 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.

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'

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

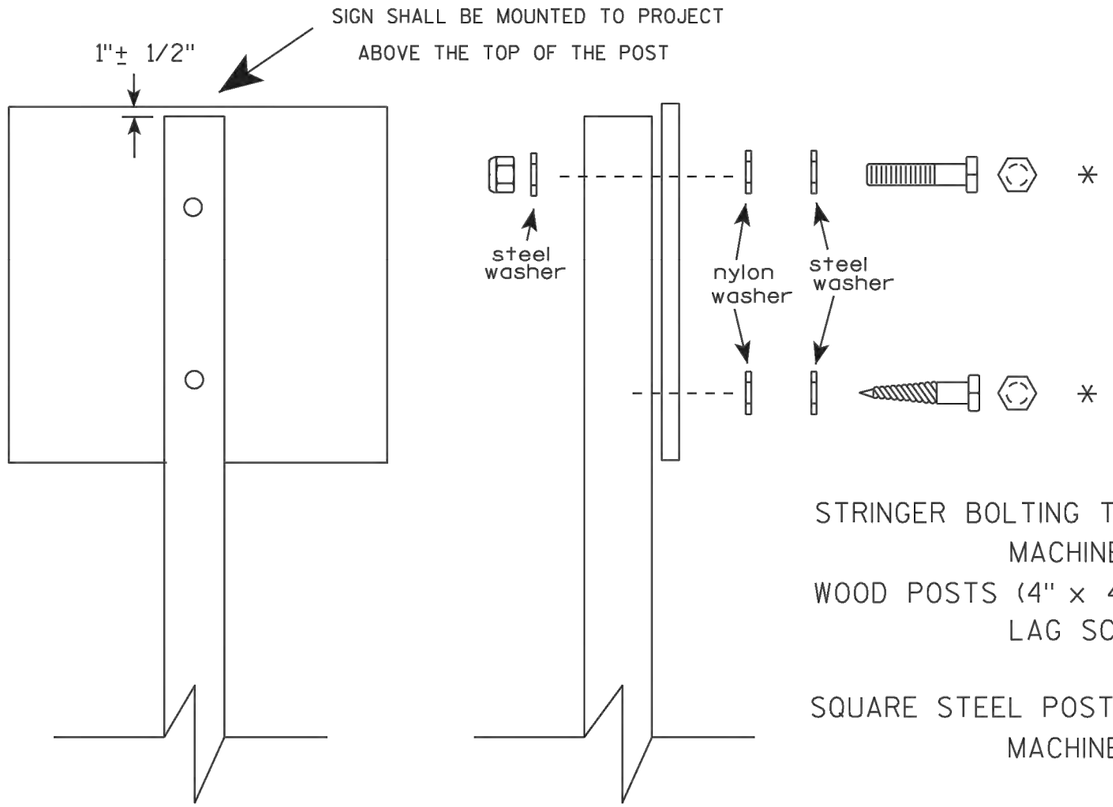
APPROVED Matthew R Rauch for State Traffic Engineer

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

PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	SIGN PLATE DETAILS	SHEET 53	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\070101_SD.DWG
LAYOUT NAME - 070101_sd
PLOT DATE : 10/24/2017 2:05 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET

7



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

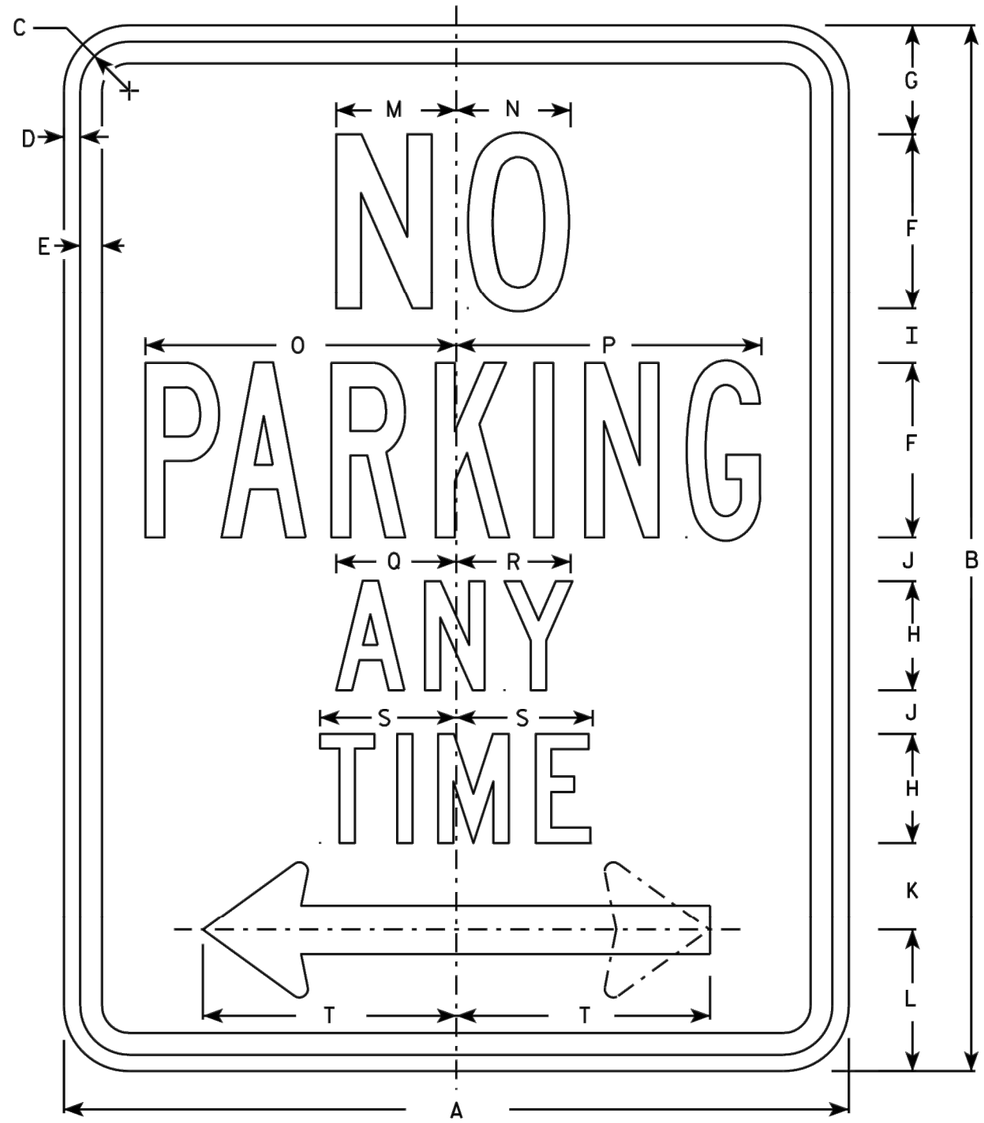
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	SIGN PLATE DETAILS	SHEET 54	E

7

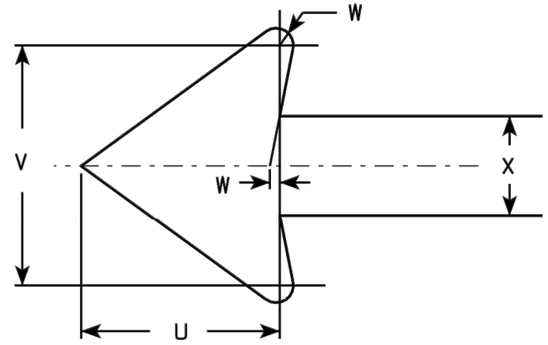
FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\070101_SD.DWG
LAYOUT NAME - 070102_sd
PLOT DATE : 10/24/2017 2:06 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET



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

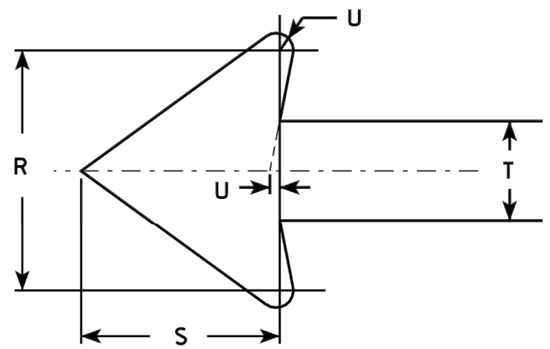
PROJECT NO: 2751-00-70 | HWY: CTH Q | COUNTY: WAUKESHA | SIGN PLATE DETAILS | SHEET 55 E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\070101_SD.DWG
LAYOUT NAME - 070103_sd
PLOT DATE : 10/24/2017 2:06 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET

R7-2 *- See Note 5

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 7
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 as required & adjust spacing to achieve proper balance.
6. R7-2D (double arrow)
   R7-2L (left arrow)
   R7-2R (right arrow)
7. Lines 1, 3 and 4 are series C, line 2 is series B.



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	1 1/2	7/8	7/8	2	2 1/2	2	2	4 7/8	4 7/8	3 7/8	1 3/4	1 1/2	3/4	1/8						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	5 7/8	2 5/8	2 1/4	1 1/8	1/4						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	7 3/4	3 1/2	3	1 1/2	1/4						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	7 3/4	3 1/2	3	1 1/2	1/4						5.0
4																											
5																											

STANDARD SIGN
R7-2

WISCONSIN DEPT OF TRANSPORTATION

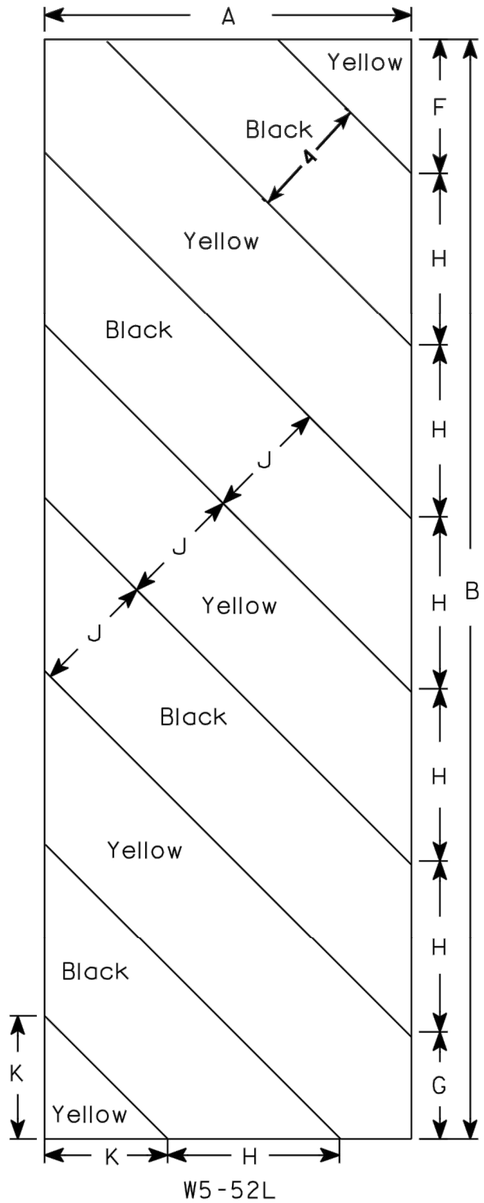
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-2.9

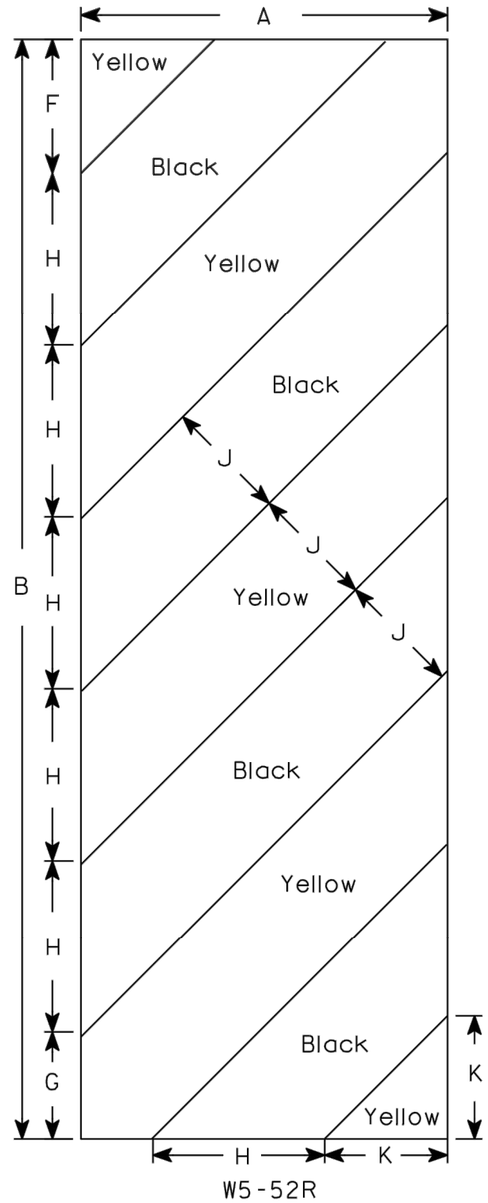
PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	SIGN PLATE DETAILS	SHEET 56	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\070101_SD.DWG
LAYOUT NAME - 070104_sd
PLOT DATE : 10/24/2017 2:06 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET

7



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																											

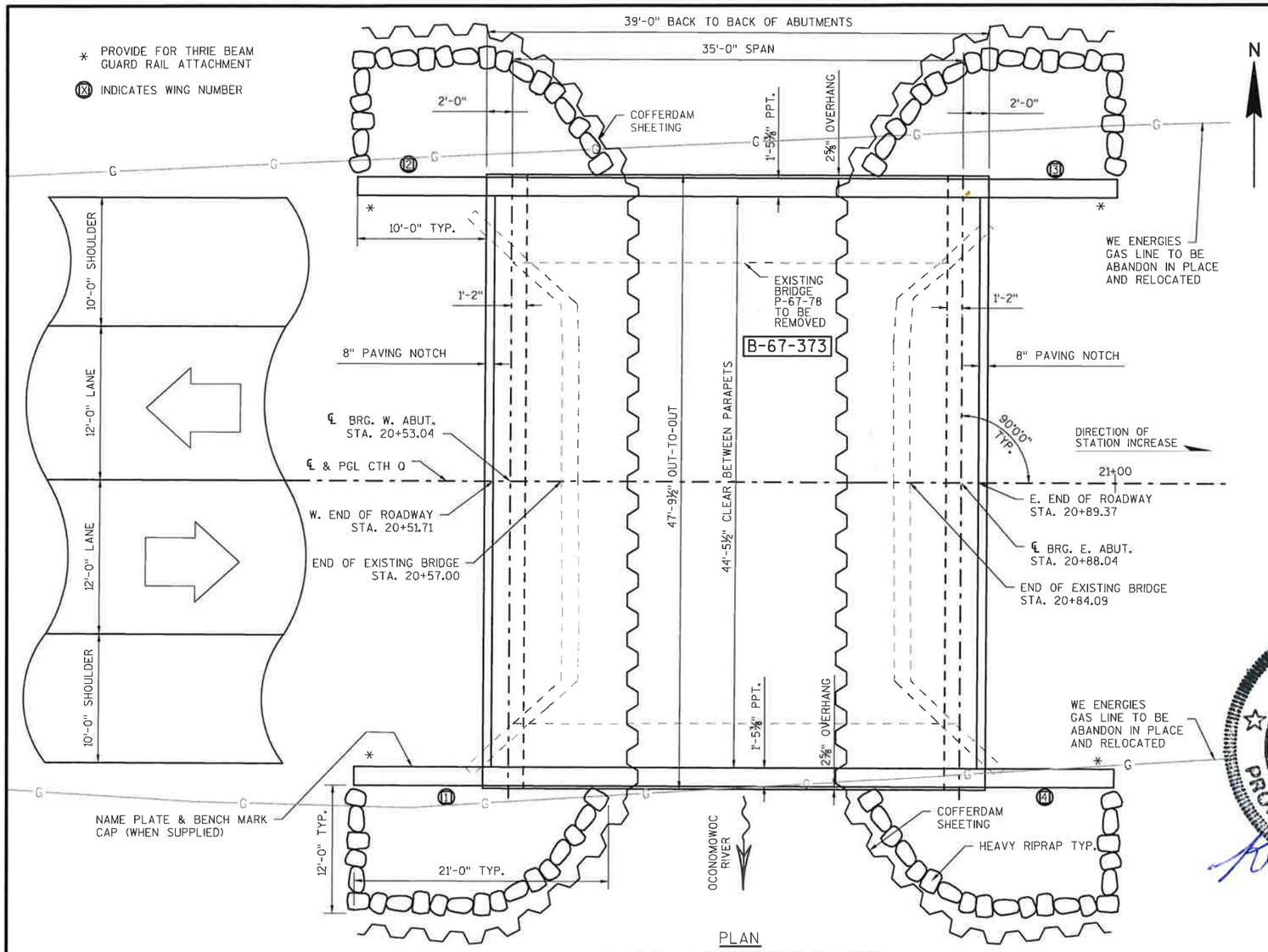
STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

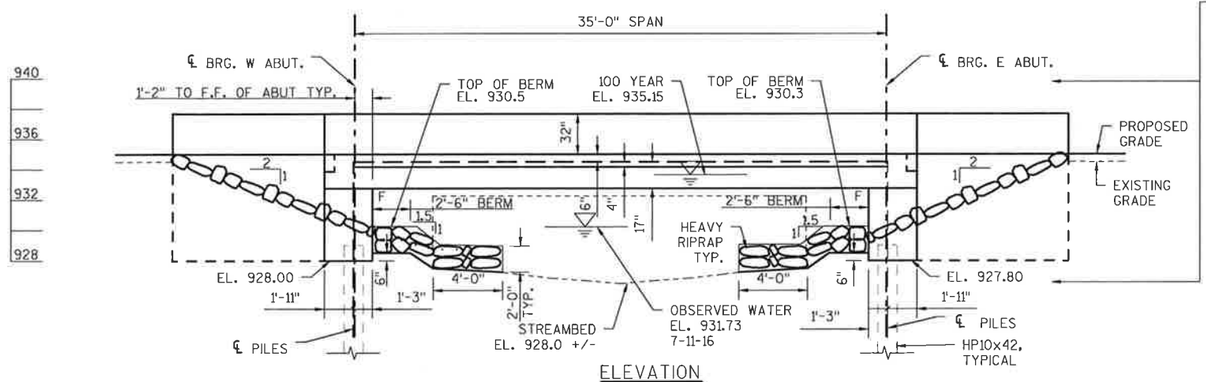
PROJECT NO: 2751-00-70	HWY: CTH Q	COUNTY: WAUKESHA	SIGN PLATE DETAILS	SHEET 57	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\070101_SD.DWG
LAYOUT NAME - 070105_sd
PLOT DATE : 10/24/2017 2:06 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET



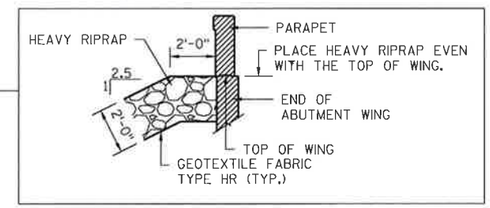
PLAN

SINGLE SPAN - 17" PRESTRESSED BOX GIRDERS



ELEVATION

(LOOKING NORTH)



TYPICAL WALL SECTION AT WING TIPS

DESIGN DATA:

LIVE LOAD:
DESIGN LOADING: HL-93

INVENTORY RATING FACTOR: RF=1.11

OPERATING RATING: RF=1.44

WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 220 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:
CONCRETE MASONRY SUPERSTRUCTURE.....f'c = 4,000 P.S.I.
ALL OTHER.....f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60.....f'y = 60,000 P.S.I.
17" PRESTRESSED BOX GIRDER, CONCRETE MASONRY.....f'c = 6,000 P.S.I.
STRANDS-0.5"DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 130 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 35 FEET LONG FOR THE EAST ABUTMENT.
ESTIMATED 35 FEET LONG FOR THE WEST ABUTMENT.

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

HYDRAULIC DATA:

100 YEAR FREQUENCY
Q_{100} = 920 C.F.S.
VEL. = 4.72 F.P.S.
HIGHWATER EL. = 935.15 FT
DRAINAGE AREA = 27.50 SQ. MI.
WATERWAY AREA = 194.86 SQ. FT.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY
Q_2 = 330 C.F.S.
VEL. = 1.70 F.P.S.
HIGHWATER EL. = 934.13 FT

TRAFFIC DATA:

CTH Q
A.D.T. = 3,200 (2018)
A.D.T. = 3,700 (2038)
RDS = 60 MPH

LIST OF DRAWINGS

WISCONSIN
KEVIN G. WOOD
E-32070
MILWAUKEE, WI
PROFESSIONAL ENGINEER
10-16-2017

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER, P.E. (608) 266-8489

CONSULTANT CONTACT:
KEVIN WOOD, P.E. (414) 266-9144

NO.	DATE	REVISION	BY

GRÄEF
One Honey Creek Corporate Center
125 South 84th Street,
Suite 401
Milwaukee, WI 53214-1470
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

ACCEPTED William C. Dreher SDR 11/08/17
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-67-373

CTH Q OVER OCONOMOWOC RIVER

COUNTY: WAUKESHA
TOWN: ~~CITY/VILLAGE~~ MERTON

DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
WR	KGW	AS	KGW

GENERAL PLAN & ELEVATION

SHEET 1 OF 13

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STATE PROJECT NUMBER
2751-00-70

8

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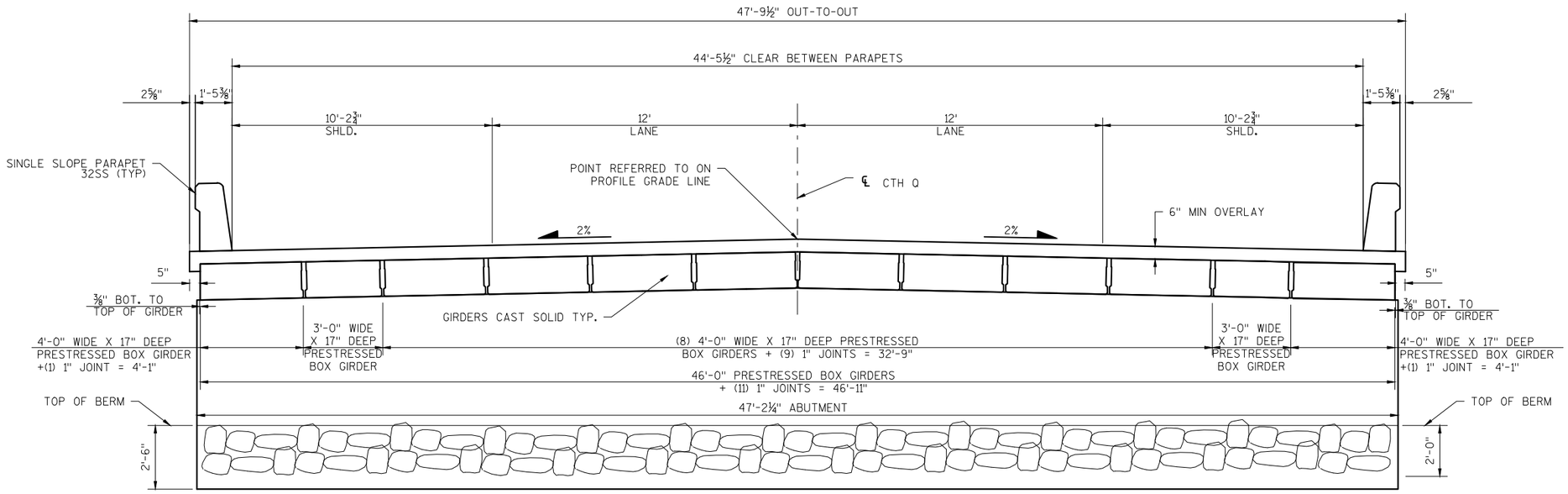
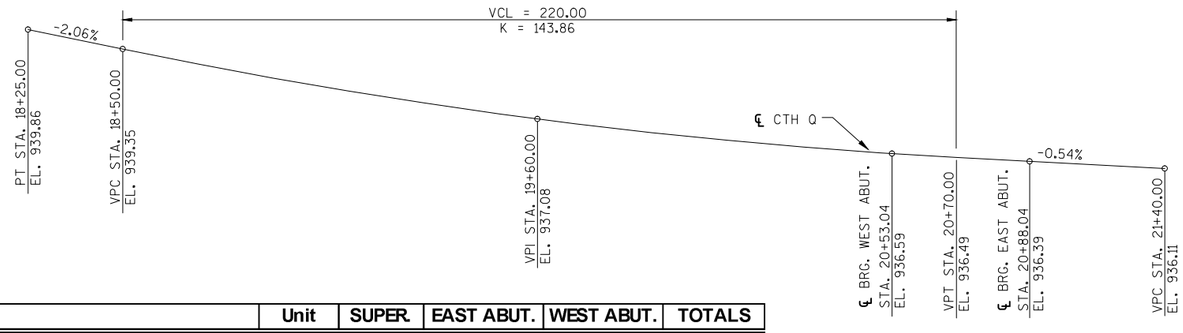


CROSS SECTION THRU ROADWAY

(LOOKING EAST)



PROFILE GRADE LINE CTH Q

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	Unit	SUPER.	EAST ABUT.	WEST ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 20+70.55	LS				1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-67-373	LS				1
206.5000	COFFERDAMS B-67-373	LS				1
210.1500	BACKFILL STRUCTURE TYPE A	TON		293	293	586
502.0100	CONCRETE MASONRY BRIDGES	CY	54	57	57	168
502.3200	PROTECTIVE SURFACE TREATMENT	SY	187			187
502.3210	PIGMENTED SURFACE SEALER	SY	33	9	9	51
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	6,480	5,590	5,590	17,660
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	24			24
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY		11	11	22
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF		280	280	560
606.0300	RIPRAP HEAVY	CY		61	61	122
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF		105	105	210
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH		2	2	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY		59	59	118
645.0120	GEOTEXTILE TYPE HR	SY		88	88	176
SPV.0090.02	PRESTRESSED GIRDER BOX TYPE 17-INCH	LF	428			428
	NON BID ITEMS					
	FILLER	SIZE				1/2"

BENCHMARK TABLE

POINT	DESCRIPTION	STATION	OFFSET	Y COORDINATE	X COORDINATE	ELEVATION
1355	BM RR SPIKE IN SW FACE PP 03-13498 AT GRADE	16+22.00	46.40' LT	227,318.84	654,373.00	948.24'
1701	BM FOUND CHISELED SQUARE	20+87.20	16.91' LT	227,286.98	654,838.04	935.73'
2094	BM SET RR SPIKE IN SW FACE PP 03-13411 AT GRADE	24+04.22	46.89' LT	227,315.64	655,155.13	934.60'
2182	BM FOUND CHISELED SQUARE	--	--	235,610.77	660,734.18	938.64'

STATE PROJECT NUMBER

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GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE

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

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

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIALS.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

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

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED ON WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

SUPERSTRUCTURE DIMENSIONS SHOWN ARE BASED ON 1" JOINTS BETWEEN GIRDERS. JOINTS ARE ALLOWED TO VARY FROM ¾" TO 1¼".

THE EXISTING STRUCTURE, P-67-78, IS A SINGLE SPAN, STEEL DECK GIRDER BRIDGE WITH AN OVERALL WIDTH OF 38 FEET AND AN OVERALL LENGTH OF 27'-1". THE ENTIRE STRUCTURE IS TO BE REMOVED.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-67-373" SHALL BE THE EXISTING GROUNDLINE.

NOTE: AN AVERAGE DECK THICKNESS OF 6¼" WAS USED IN THE QUANTITY MASONRY BRIDGES".

VARIATIONS TO THE GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-373

DRAWN BY AS | PLANS CK'D. KGW

CROSS SECTION & QUANTITIES

SHEET 2 OF 13

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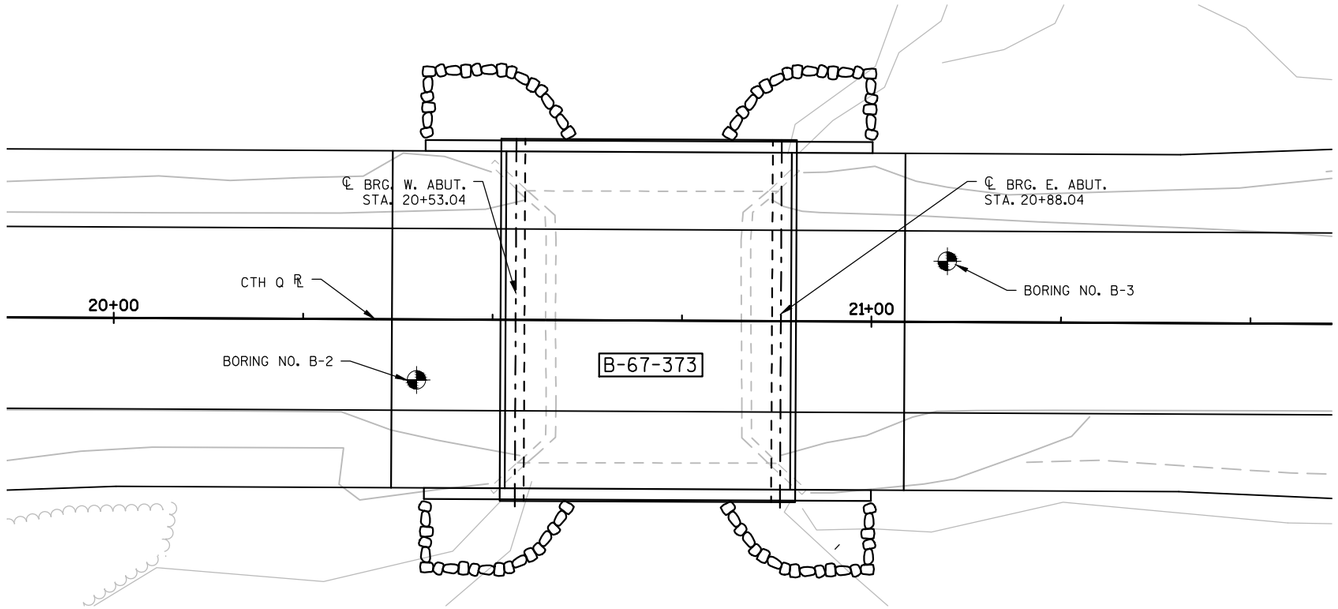
8

8



PLAN

SINGLE SPAN - 17" PRESTRESSED BOX GIRDERS

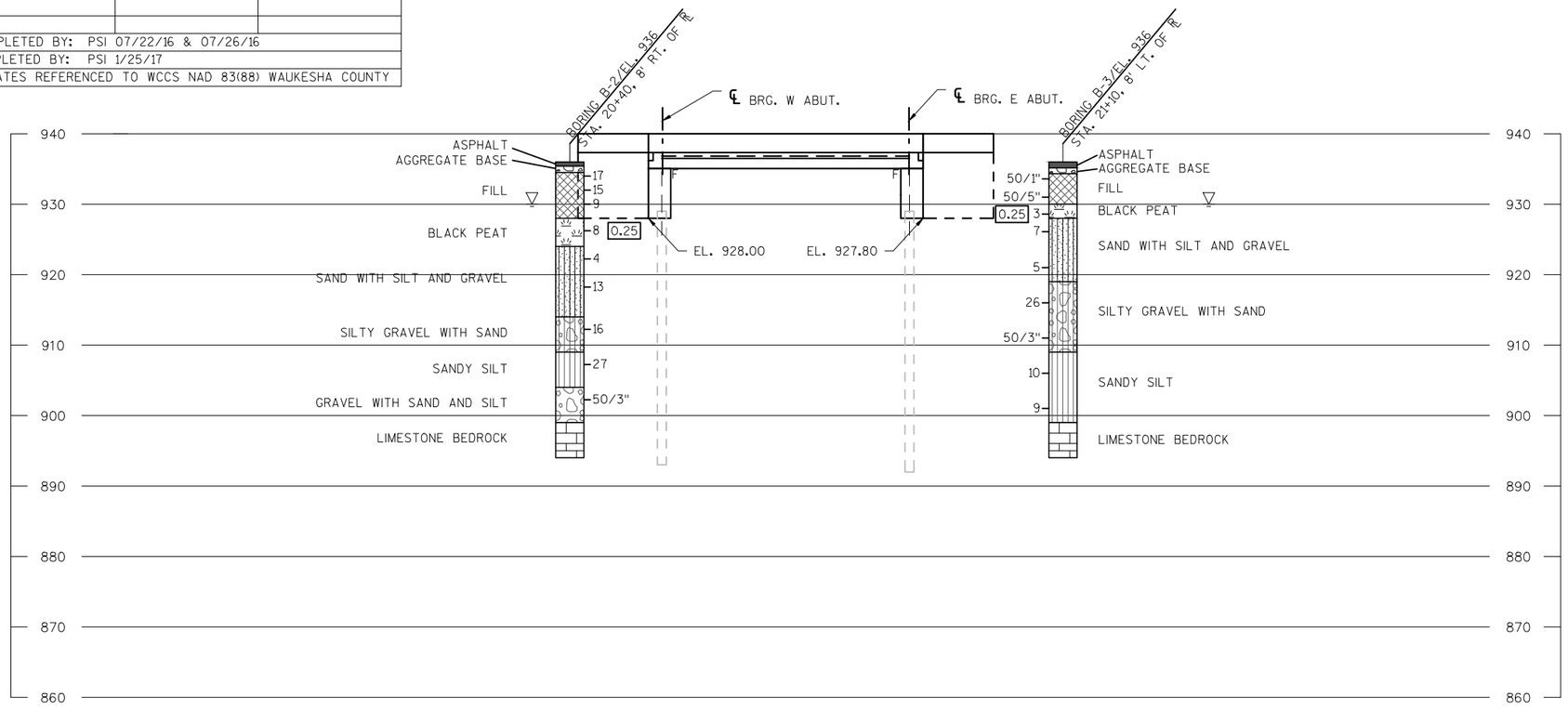
DENOTES SOIL BORING LOCATION

BORING	DATE COMPLETED	NORTHING (Y)	EASTING (X)
2	07/26/16	227262.3	654790.7
3	07/22/16	227277.9	654860.8

BORINGS COMPLETED BY: PSI 07/22/16 & 07/26/16

REPORT COMPLETED BY: PSI 1/25/17

ALL COORDINATES REFERENCED TO WCCS NAD 83(88) WAUKESHA COUNTY



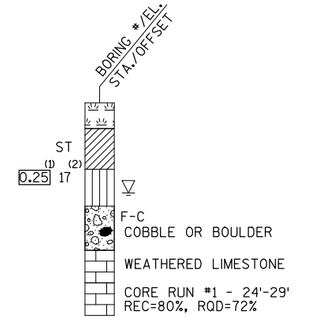
STATE PROJECT NUMBER

2751-00-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



(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-67-373

DRAWN BY AS | PLANS CK'D. KGW

SUBSURFACE EXPLORATION

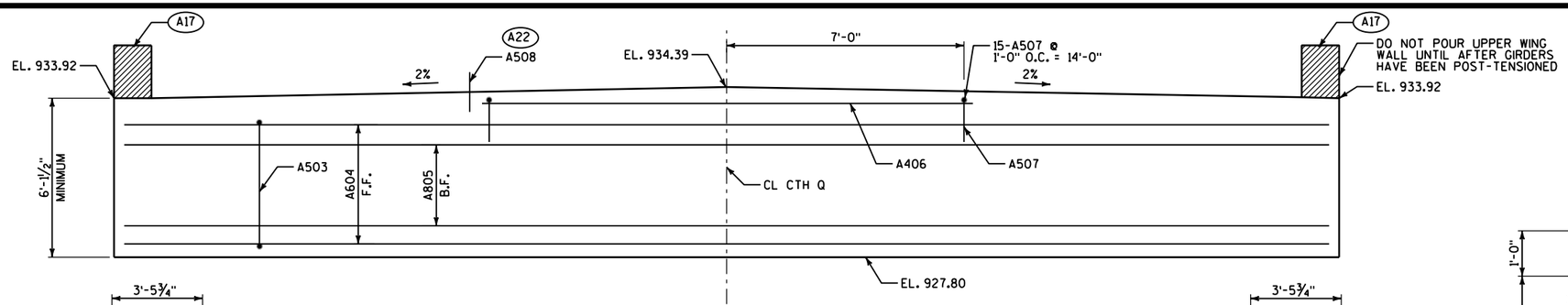
SHEET 3 OF 13

60

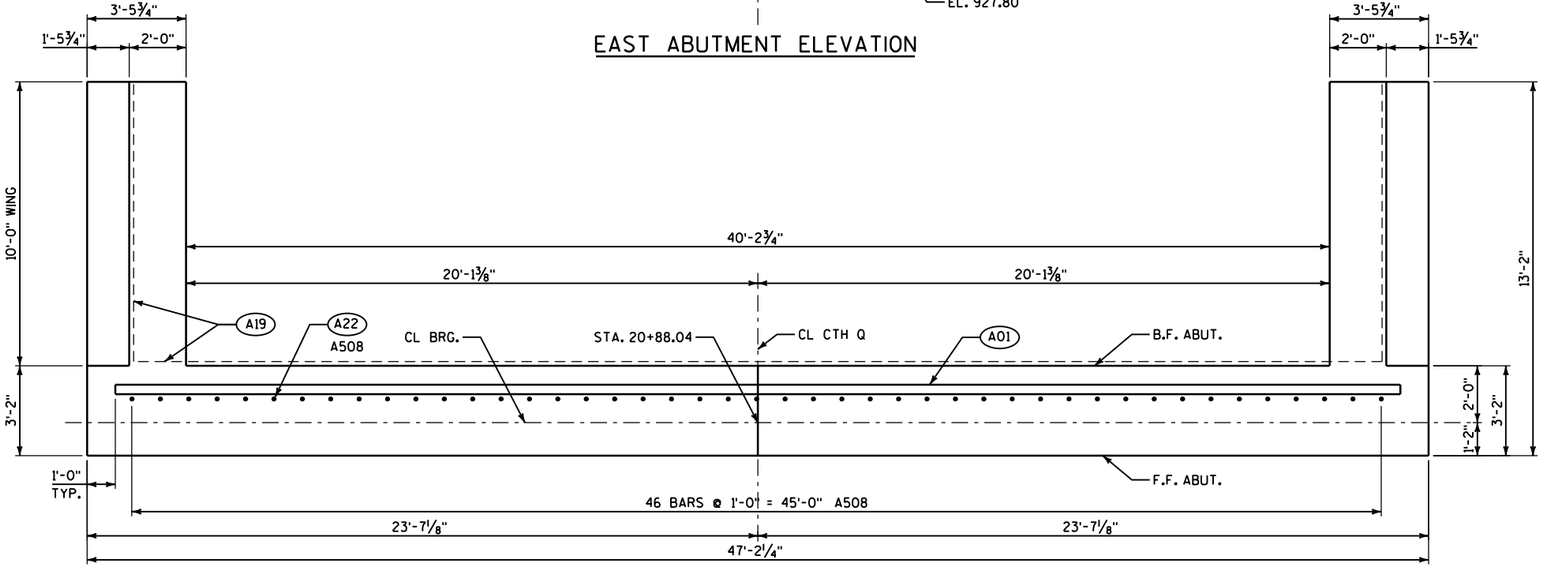
8

8

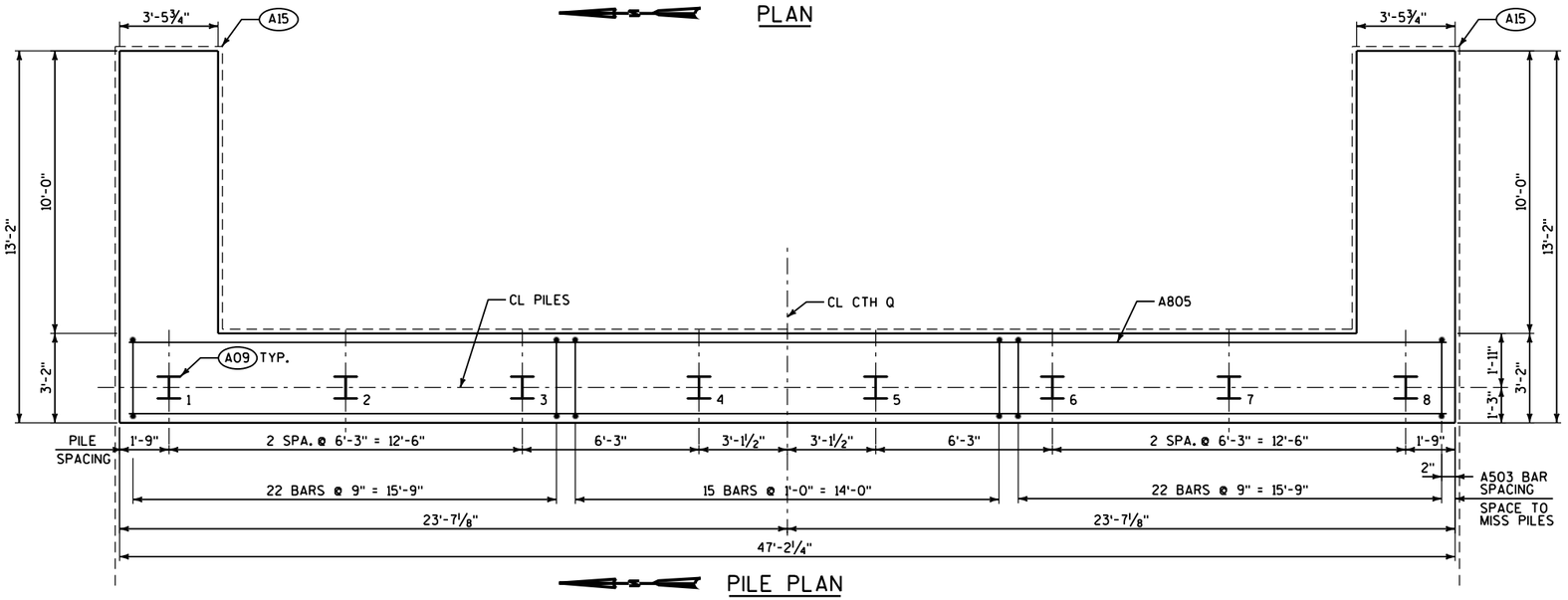
STATE PROJECT NUMBER
2751-00-70



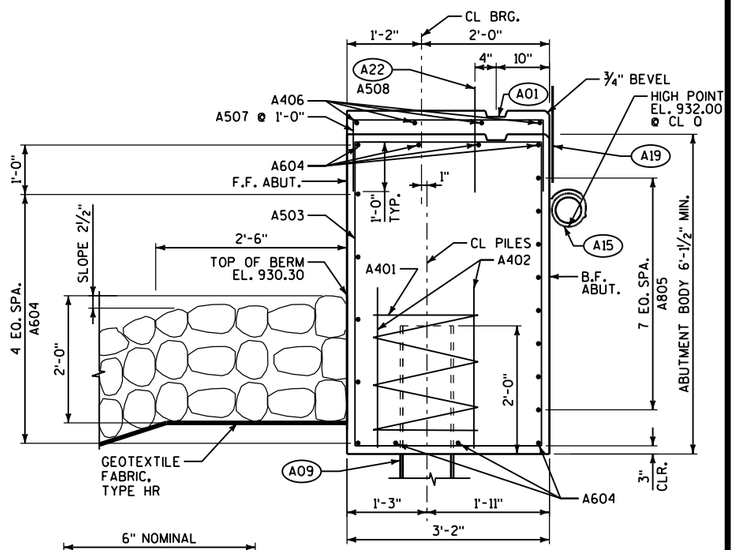
EAST ABUTMENT ELEVATION



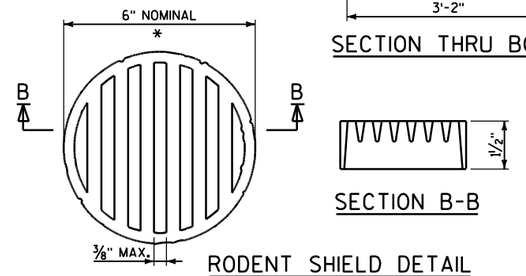
PLAN



PILE PLAN



SECTION THRU BODY



SECTION B-B

RODENT SHIELD DETAIL

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

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

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

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.

(A09) SUPPORT ABUTMENT ON HP10x42 PILING. ESTIMATED 35' LONG WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING AND NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A22) A508 BARS @ 1'-0" CTRS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NOTE

SEE SHEET 5 FOR "PILE SPLICE DETAILS"

SEE SHEET 7 FOR "TYPICAL SECTION THRU WING" & "ABUTMENT PLAN WITH WING" DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-373

DRAWN BY BLM | PLANS CK'D. KGW

EAST ABUTMENT

SHEET 4 OF 13

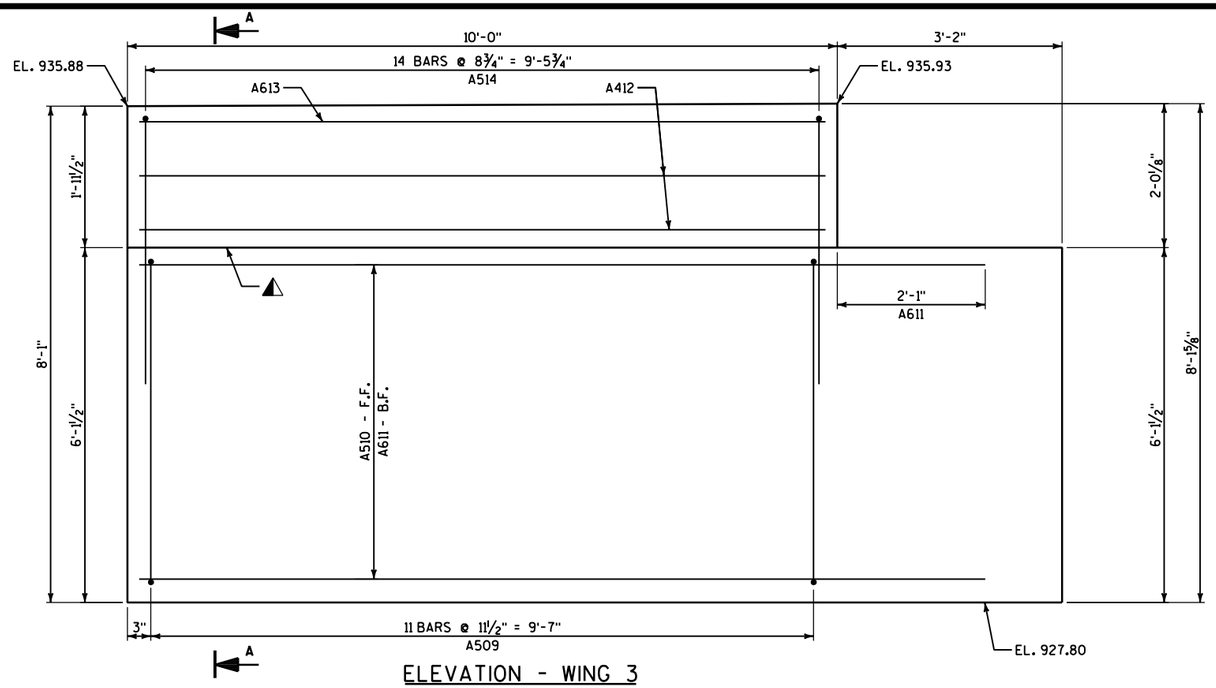
8

8

FILE NAME : X:\ML\2016\20160122\CAD\Structural\dgn\00\B-67-373_04.dgn
PLOT DATE : 8/30/2017
PLOT BY : GRAEF
PLOT NAME : $FILE$
PLOT SCALE : 2.0000 in / in.

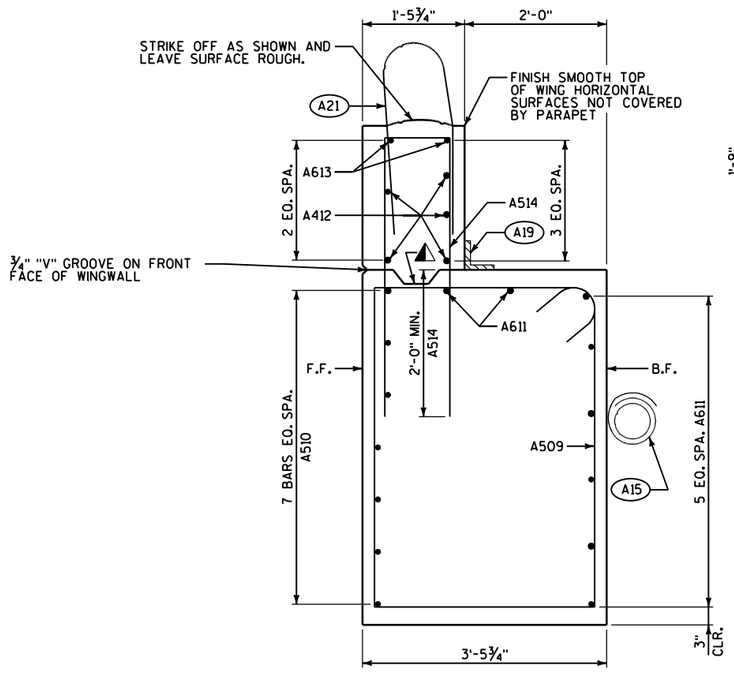
STATE PROJECT NUMBER

2751-00-70

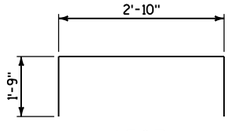


ELEVATION - WING 3

WING 4 SIMILAR



SECTION A-A



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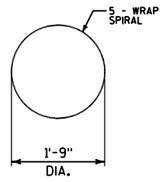

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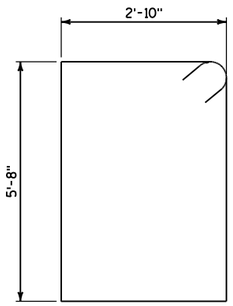

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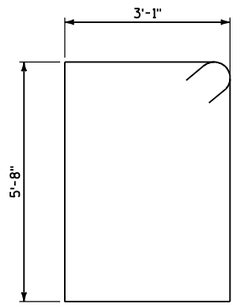

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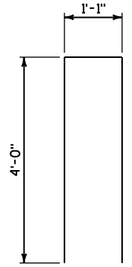
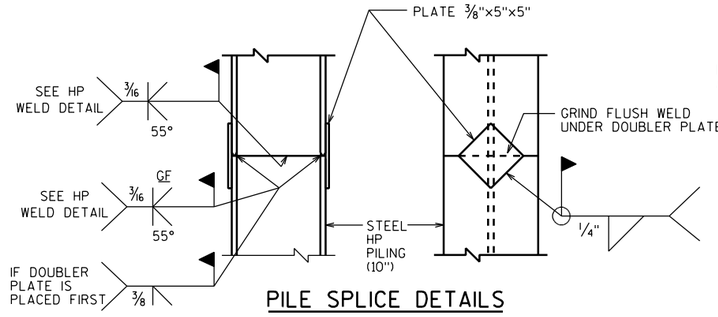


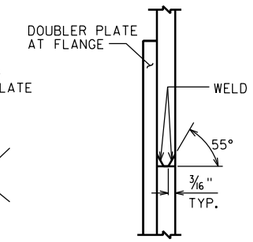
A514

BILL OF BARS

MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
A401	X	8	28'-0"		X	PILES -1 PER PILE
A402	X	16	2'-3"			PILES -2 PER PILE
A503	X	59	17'-8"		X	ABUT. BODY STIRRUPS
A604	X	12	46'-11"			ABUT. BODY HORIZONTAL
A805	X	8	46'-11"			ABUT. BODY HORIZONTAL BF
A406	X	4	14'-0"			ABUT. BODY HORIZONTAL TOP
A507	X	15	6'-1"		X	ABUT. BODY TOP TRANSVERSE
A508	X	48	2'-0"			ABUT. DOWELS
A509	X	22	18'-2"		X	WINGS 3 & 4 STIRRUPS
A510	X	14	12'-9"			WINGS 3 & 4 HORIZONTAL FF
A611	X	16	12'-1"			WINGS 3 & 4 HORIZONTAL BF/TOP
A412	X	10	9'-8"			WINGS 3 & 4 HORIZONTAL
A613	X	4	9'-8"			WINGS 3 & 4 HORIZONTAL TOP
A514	X	28	8'-10"		X	WINGS 3 & 4 STIRRUPS



PILE SPLICE DETAILS



HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

NOTE

SEE SHEET 7 FOR "TYPICAL SECTION THRU ABUTMENT" & "TYPICAL SECTION THRU WING" DETAILS

LEGEND

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHEET 13.

▲ CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6. DO NOT POUR UPPER WING WALLS UNTIL AFTER GIRDERS HAVE BEEN POST-TENSIONED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

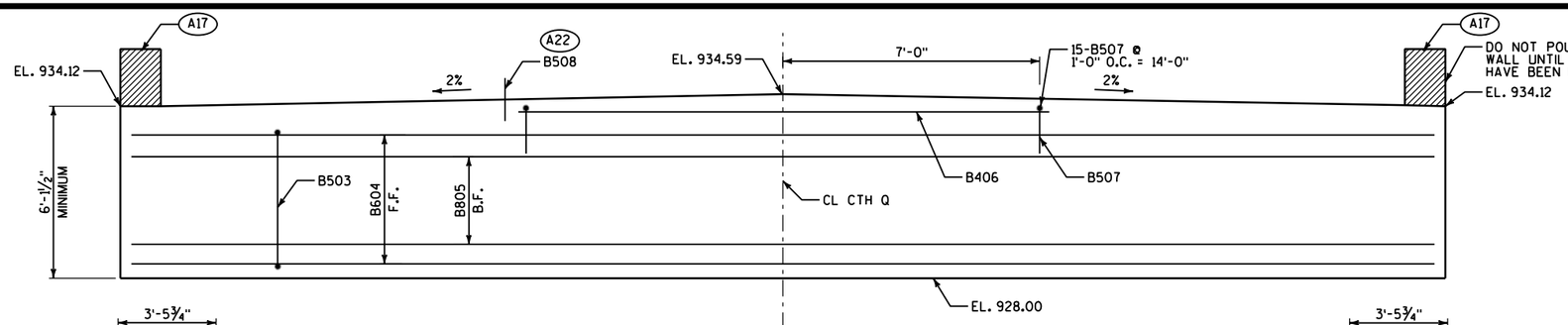
STRUCTURE B-67-373

DRAWN BY BLM | PLANS CK'D. KGW

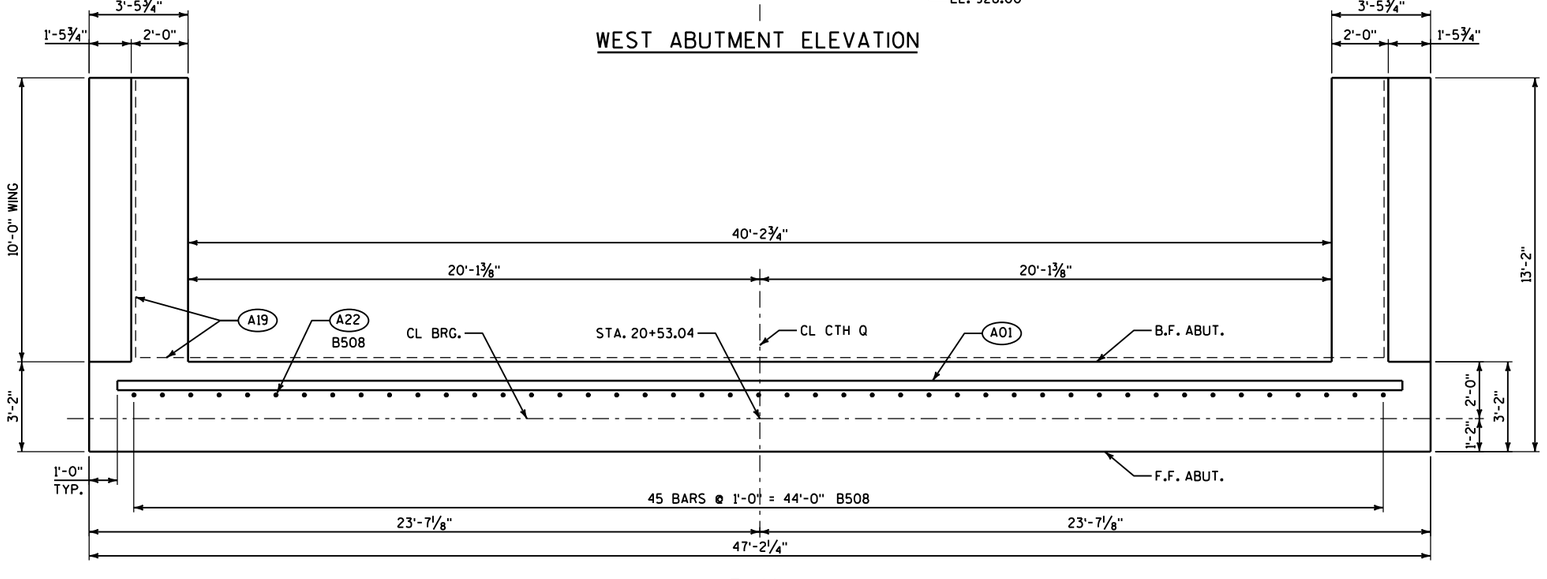
EAST ABUTMENT DETAILS

SHEET 5 OF 13

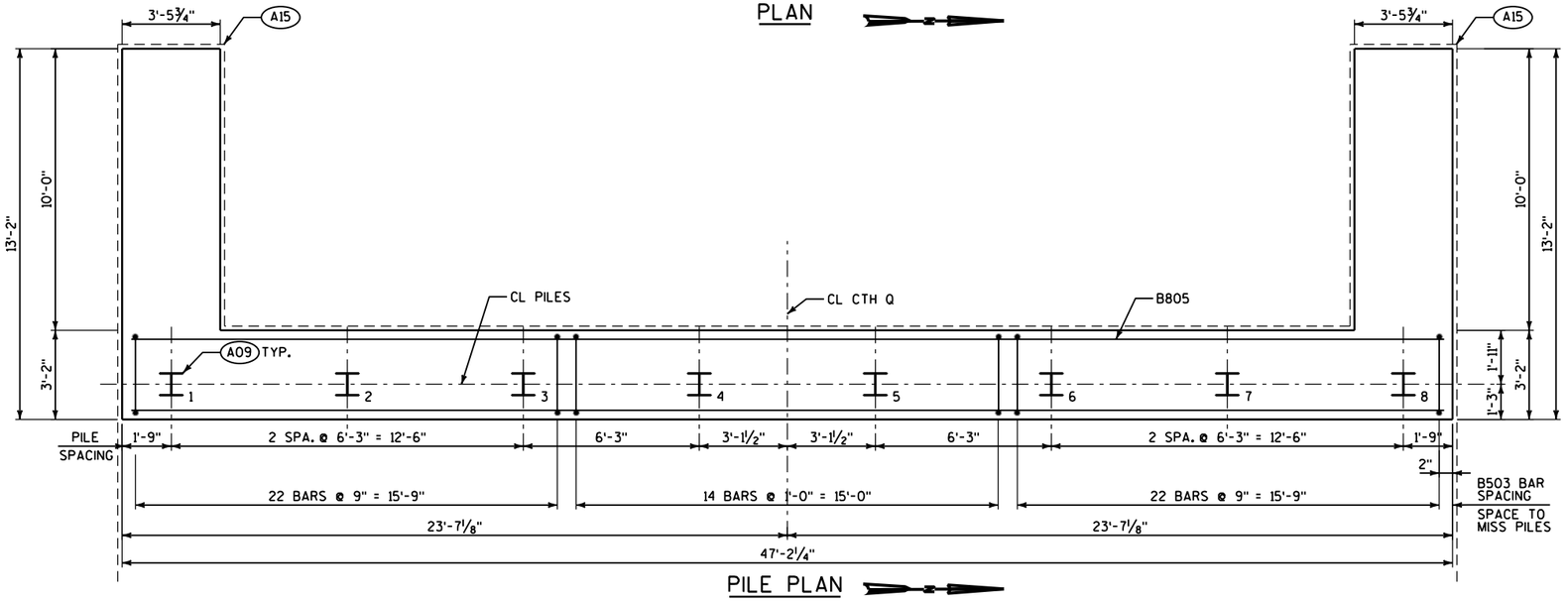
FILE NAME : X:\ML\2016\20160122\CAD\Structural\dgn\00\B-67-373_05.dgn
PLOT DATE : 8/30/2017
PLOT BY : GRAEF
PLOT NAME : $FILE$
PLOT SCALE : 2.0001 in / in.



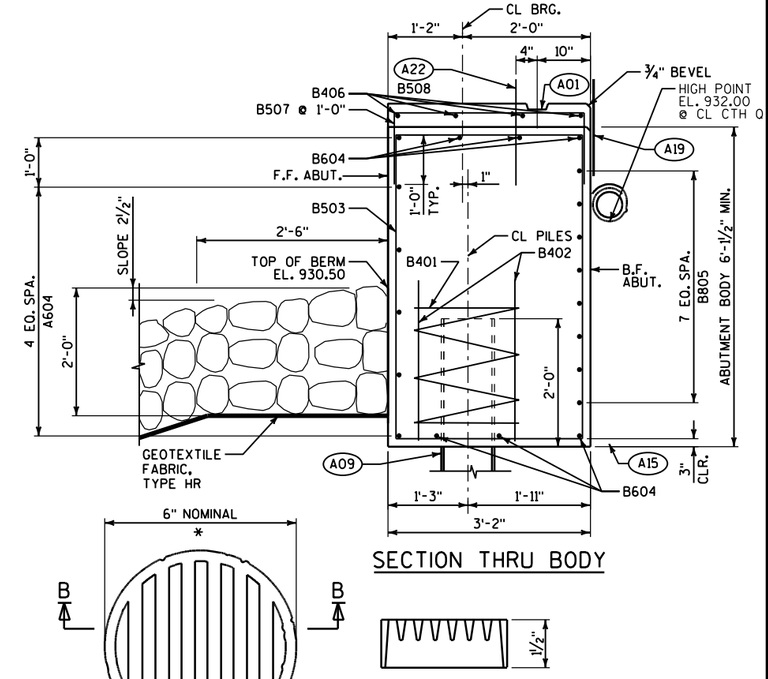
WEST ABUTMENT ELEVATION



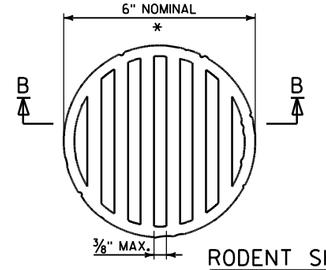
PLAN



PILE PLAN



SECTION THRU BODY



RODENT SHIELD DETAIL

SECTION B-B

* 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 INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.

(A09) SUPPORT ABUTMENT ON HP10x42 PILING. ESTIMATED 35' LONG WITH A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING AND NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A22) B508 BARS @ 1'-0" CTRS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NOTE

SEE SHEET 5 FOR "PILE SPLICE DETAILS"
SEE SHEET 7 FOR 'TYPICAL SECTION THRU WING" & "ABUTMENT PLAN WITH WING" DETAILS

STATE PROJECT NUMBER

2751-00-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-373

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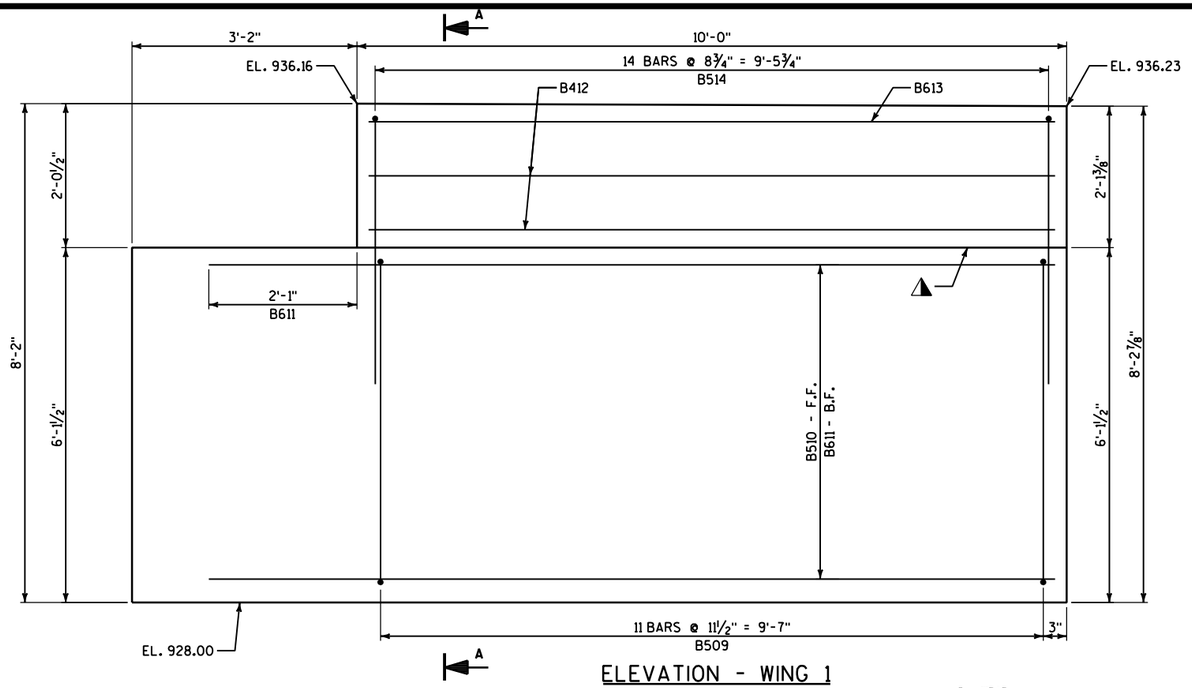
WEST ABUTMENT

SHEET 6 OF 13

FILE NAME : X:\ML\2016\20160122\CAD\Structural\dgn\00\B-67-373_06.dgn
PLOT DATE : 8/30/2017
PLOT BY : GRAEF
PLOT NAME : $FILE$
PLOT SCALE : 2.0000 in / in.

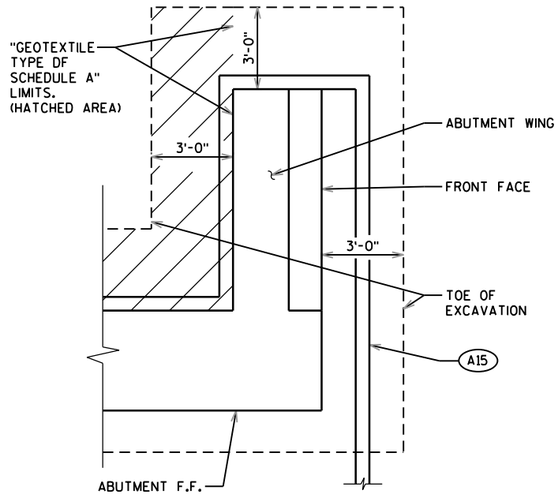
STATE PROJECT NUMBER

2751-00-70

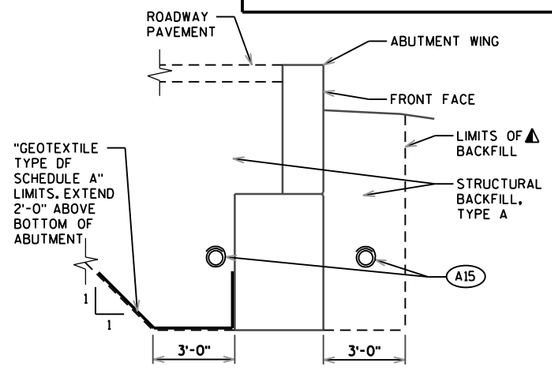


ELEVATION - WING 1

WING 2 SIMILAR



ABUTMENT PLAN WITH WING



TYPICAL SECTION THRU WING

NOTES

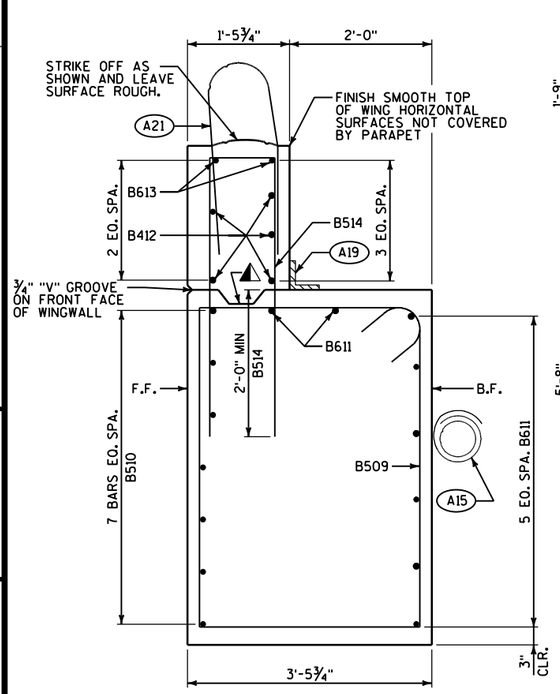
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-67-373 SHALL BE EXISTING GROUNDLINE.

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

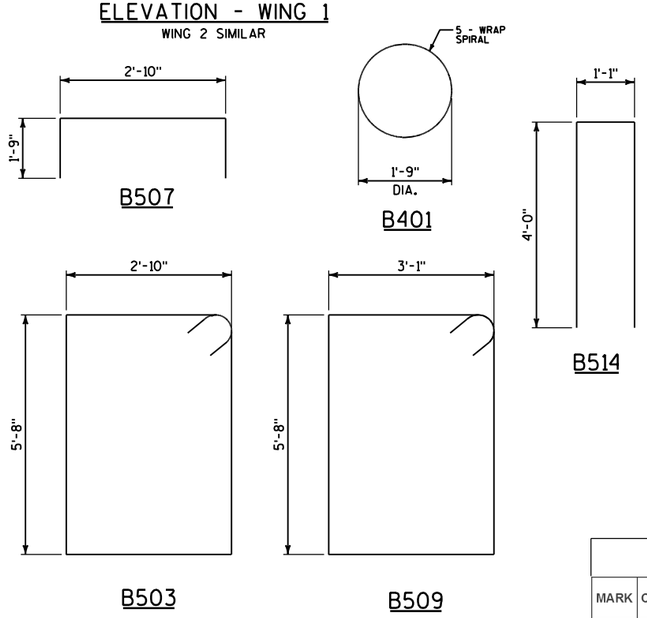
AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURAL BACKFILL.

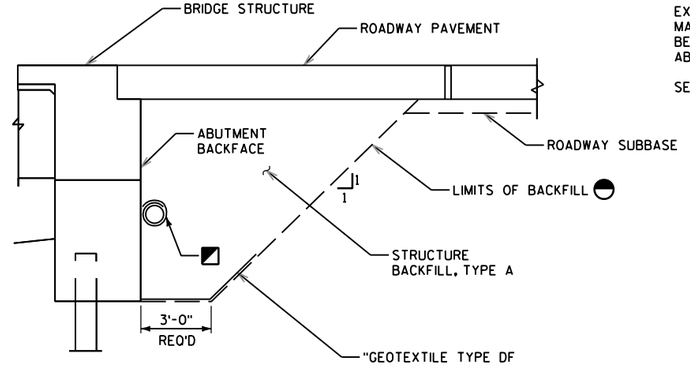
EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

SEE SHEET 5 FOR "TYPICAL SECTION THRU ABUTMENT"



SECTION A-A





TYPICAL THRU SECTION THRU ABUTMENT

LEGEND

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHEET 13.

⚠ CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6. DO NOT POUR UPPER WING WALLS UNTIL AFTER GIRDERS HAVE BEEN POST-TENSIONED.

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

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

BILL OF BARS

MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
B401	X	8	28'-0"		X	PILES -1 PER PILE
B402	X	16	2'-3"			PILES -2 PER PILE
B503	X	59	17'-8"		X	ABUT. BODY STIRRUPS
B604	X	12	46'-11"			ABUT. BODY HORIZONTAL
B805	X	8	46'-11"			ABUT. BODY HORIZONTAL BF
B406	X	4	14'-0"			ABUT. BODY HORIZONTAL TOP
B507	X	15	6'-1"		X	ABUT. BODY TOP TRANSVERSE
B508	X	48	2'-0"			ABUT. DOWELS
B509	X	22	18'-2"		X	WINGS 1 & 2 STIRRUPS
B510	X	14	12'-9"			WINGS 1 & 2 HORIZONTAL FF
B611	X	16	12'-1"			WINGS 1 & 2 HORIZONTAL BF/TOP
B412	X	10	9'-8"			WINGS 1 & 2 HORIZONTAL
B613	X	4	9'-8"			WINGS 1 & 2 HORIZONTAL TOP
B514	X	28	8'-10"		X	WINGS 1 & 2 STIRRUPS

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STRUCTURE B-67-373

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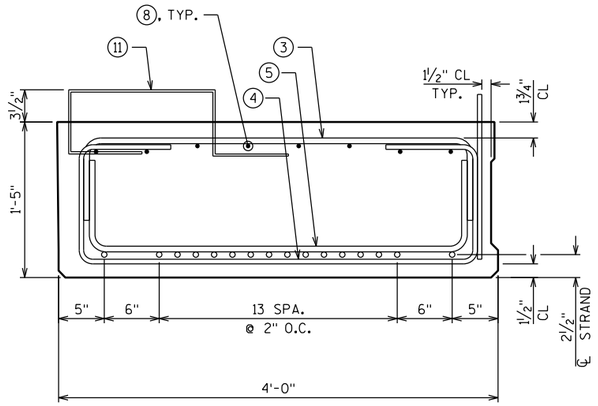
WEST ABUTMENT DETAILS

SHEET 7 OF 13

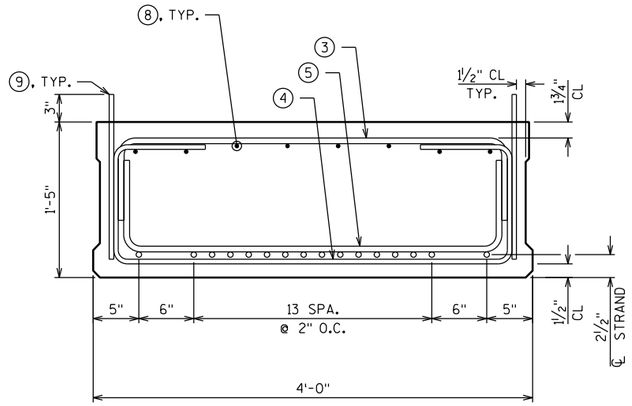
8

8

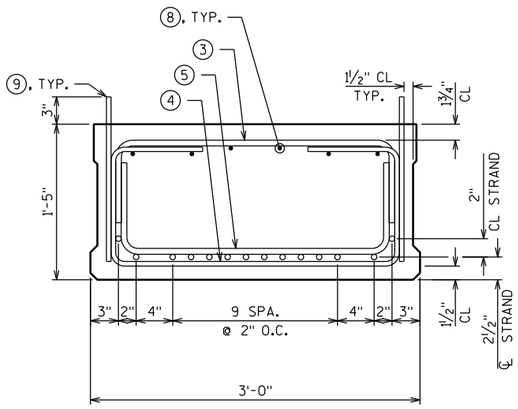
FILE NAME : X:\ML\2016\20160122\CAD\Structural\dgn\00\B-67-373_07.dgn PLOT DATE : 8/30/2017 PLOT BY : GRAEF PLOT NAME : $FILE$ PLOT SCALE : 2.0001 in / in.



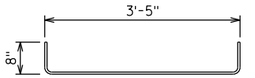
SECTION THRU 4'-0" EXTERIOR GIRDER



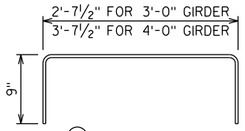
SECTION THRU 4'-0" INTERIOR GIRDER



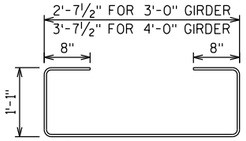
SECTION THRU 3'-0" INTERIOR GIRDER



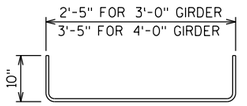
① BOTTOM ABUTMENT BAR
EPOXY COAT BARS
(4) #4 BARS FOR 3'-0" GIRDER
(5) #4 BARS FOR 4'-0" GIRDER



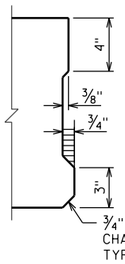
③ TOP STIRRUP
#5 AT 9" MAX.



④ BOTTOM STIRRUP
#5 AT 9" MAX.

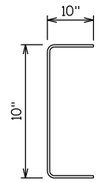


⑤ END BLOCK BOTTOM STIRRUP
#5 BARS
SEE ELEVATION FOR SPACING

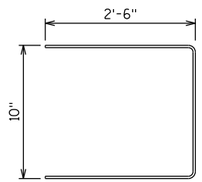


SHEAR KEY RECESS DETAIL

OMIT SHEAR KEY ON EXTERIOR FACE OF EXTERIOR GIRDERS.

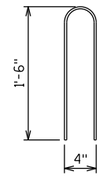


⑥ DUCT STIRRUP
#4 AT 9" MAX.
(5) EACH GIRDER END FOR 3'-0" GIRDER
(10) EACH GIRDER DUCT FOR 3'-0" GIRDER
(6) EACH GIRDER END FOR 4'-0" GIRDER
(12) EACH GIRDER DUCT FOR 4'-0" GIRDER

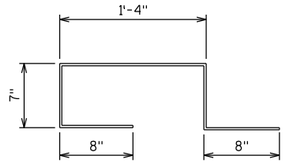


⑦ DUCT STIRRUP
#4 AT 9" MAX.
(5) EACH GIRDER END FOR 3'-0" GIRDER
(6) EACH GIRDER END FOR 4'-0" GIRDER

⑧ LONGITUDINAL BAR
(6) #4 BARS FOR 3'-0" GIRDER
(8) #4 BARS FOR 4'-0" GIRDER



⑨ SHEAR CONNECTOR
TIE ONE LEG OF BAR TO ③
EPOXY COAT BARS
#4 AT 2'-0" MAX.



⑪ EXTERIOR EDGE SHEAR CONNECTOR
#4 AT 2'-0" MAX.
EPOXY COAT BARS

NOTES

THE CONCRETE MIX FOR THE PRESTRESSED BOX GIRDERS SHALL CONFORM TO SECTION 503.2.2 OF THE STANDARD SPECIFICATIONS.

AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO THE BOTTOM OF THE GIRDERS AND THE EXTERIOR FACE OF EXTERIOR GIRDERS. DO NOT APPLY CONCRETE SEALER OR EPOXY TO THE SHEAR KEY OR THE TOP OF GIRDERS.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR CONCRETE ABUTMENTS, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER.

FOUR WAY SLING MUST BE USED TO ENGAGE ALL 4 LIFTING DEVICES ON BOTH ENDS OF UNITS.

POST-TENSIONING OF THE TRANSVERSE TENDONS SHALL NOT BEGIN UNTIL THE GROUT BETWEEN THE PRECAST BOX GIRDERS HAS BEEN ALLOWED TO CURE FOR 48 HOURS AND GROUT HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI.

SEAL WASHER SHALL BE SPONGE NEOPRENE GASKET 3¼" MIN. THICK. STRESS POCKETS SHALL BE FILLED WITH CHLORIDE FREE NON-SHRINK GROUT AFTER POST-TENSIONING.

TRANSITION BETWEEN CHANGING SLOPES OF POST-TENSIONING DUCTS SHALL BE PROVIDED BY EITHER A CIRCULAR OR PARABOLIC CURVE WITH A MINIMUM LENGTH OF 3'-0".

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STATE OF WISCONSIN
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STRUCTURE B-67-373

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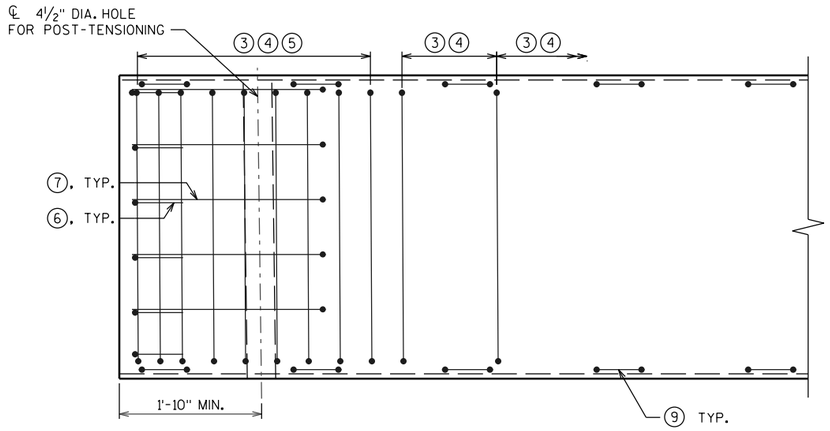
17" PRESTRESSED BOX GIRDER DETAILS 1

SHEET 8 OF 13

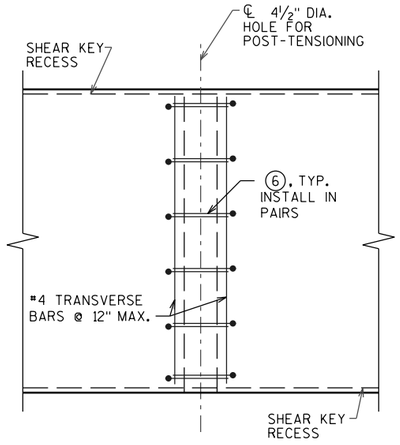
FILE NAME : X:\ML\2016\20160122\CAD\Structural\dgn\00\B-67-373_08.dgn
PLOT DATE : 10/13/2017
PLOT BY : GRAEF
PLOT NAME : $FILE$
PLOT SCALE : 1.3786 ' / in.

STATE PROJECT NUMBER
2751-00-70

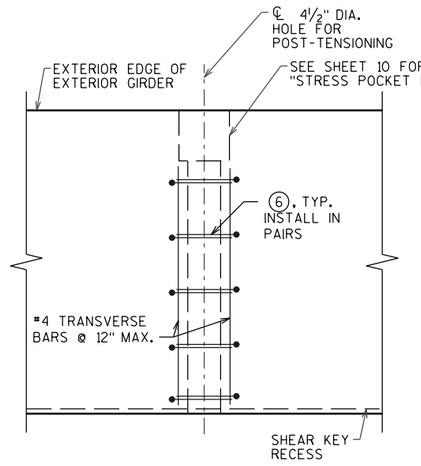


PART GIRDER PLAN

1 & #4 TRANSVERSE BARS NOT SHOWN FOR CLARITY



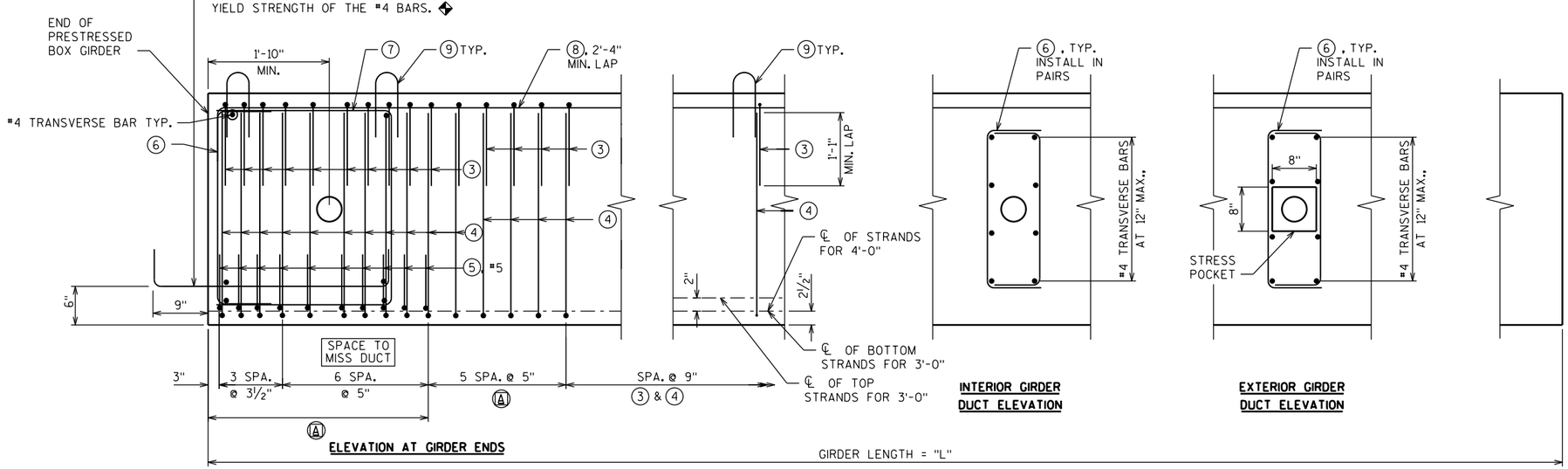
INTERIOR GIRDER DUCT PLAN



EXTERIOR GIRDER DUCT PLAN

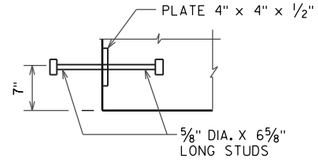
NOTE

◆ BARS PLACED PARALLEL TO GIRDERS. SPACING IS PERPENDICULAR TO THE ℄ OF THE GIRDERS.



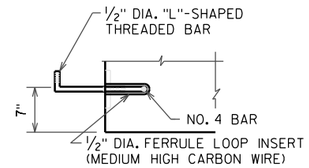
GIRDER ELEVATION

A DETAIL TYP. AT EACH END



WELDED PLATE DETAIL

(EQUIVALENT TO ONE #4 BAR)



LOOP INSERT DETAIL

GIRDER DATA

GIRDER WIDTH	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) ¼ PT.	DEAD LOAD DEFL. (IN.) ½ PT.	CONC. STRGTH. f'c (p.s.i.)	DIA. OF STRAND (IN.)	UNDRAPED PATTERN TOTAL NO. OF STRANDS	UNDRAPED PATTERN f'ci (P.S.I.) ✳
3'-0"	35'-8"	0.15	0.21	6000	0.5	14	5100
4'-0"	35'-8"	0.11	0.16	6000	0.5	16	5100

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

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STRUCTURE B-67-373

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17" PRESTRESSED BOX GIRDER DETAILS 2

SHEET 9 OF 13

FILE NAME : X:\ML\2016\20160122\CAD\Structural\dgn\00\B-67-373_09.dgn
PLOT DATE : 10/13/2017
PLOT BY : GRAEF
PLOT NAME : $FILE$
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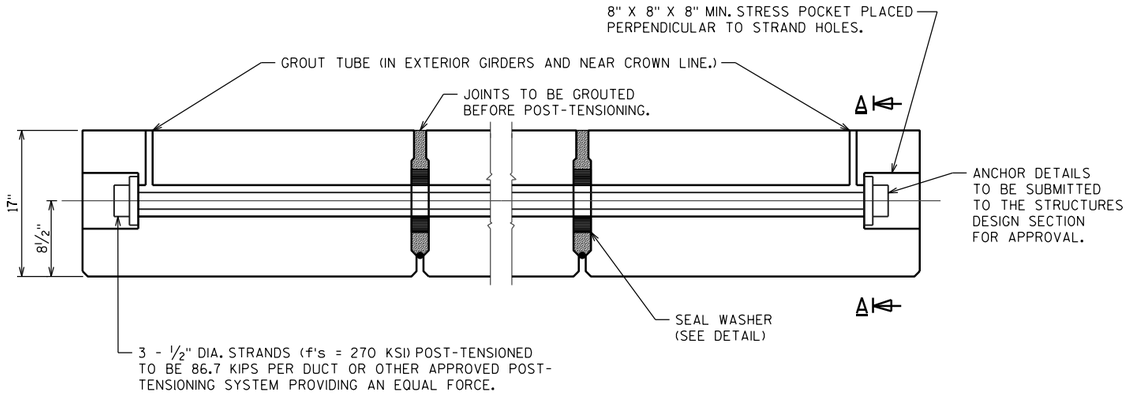
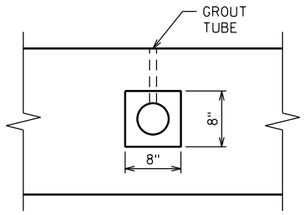


POST-TENSIONING DETAILS - ONE DUCT PER DIAPHRAGM

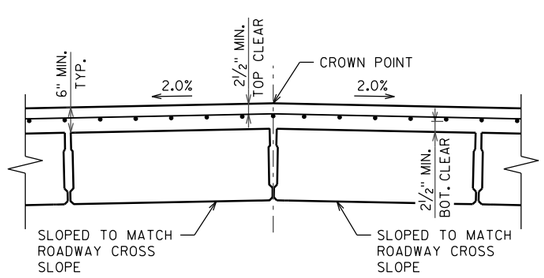


SECTION A-A

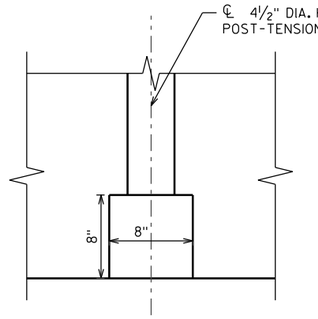
ELEVATIONS AT TOP OF DECK (T.D.)

LOCATION		C/L BRG WEST ABUT.	SPAN 1									C/L BRG EAST ABUT.
			0.1 SPAN	0.2 SPAN	0.3 SPAN	0.4 SPAN	0.5 SPAN	0.6 SPAN	0.7 SPAN	0.8 SPAN	0.9 SPAN	
*NORTH DECK EDGE	T.D.	936.15	936.13	936.10	936.08	936.06	936.05	936.03	936.01	935.99	935.97	935.95
CL & PGL CTH Q	T.D.	936.59	936.57	936.54	936.52	936.50	936.49	936.47	936.45	936.43	936.41	936.39
*SOUTH DECK EDGE	T.D.	936.15	936.13	936.10	936.08	936.06	936.05	936.03	936.01	935.99	935.97	935.95

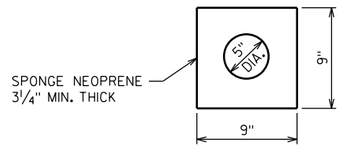
*ELEVATIONS BASED ON 1" JOINTS BETWEEN GIRDERS



CROWN DETAIL AT LOCATION OF MIN. DECK THICKNESS

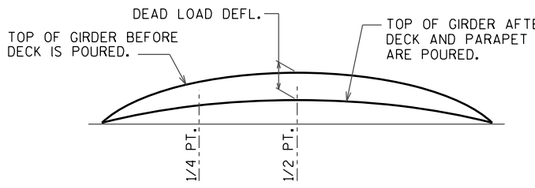


STRESS POCKET DETAIL



SEAL WASHER

(MAY ALSO BE ROUND)

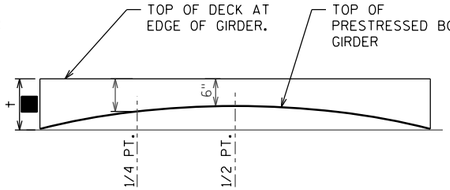


DEAD LOAD DEFLECTION DIAGRAM

■ TO DETERMINE DECK THICKNESS AT GIRDER ENDS FOLLOW THIS PROCESS:

6" MIN. DECK SLAB THICKNESS
+ FIELD MEASURED GIRDER CAMBER (AT MID SPAN)
- DEADLOAD DEFLECTION (AT MIDSPAN)
= DECK THICKNESS, †

NOTE: PLAN DECK THICKNESS BASED ON THEORETICAL INITIAL CAMBER VALUE. ¼ PT. MAY BE INTERPOLATED. USE FIELD MEASURED GIRDER CAMBER FOR ACTUAL DECK THICKNESS. THE ¼ PT. IS INTERPOLATED BETWEEN DECK THICKNESS AT THE END OF DECK AND MIDSPAN.



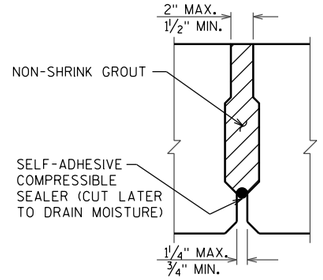
DECK THICKNESS DIAGRAM

**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	GIRDER WIDTH	CAMBER (IN.) **
1	3'-0"	0.70
1	4'-0"	0.59

THESE VALUES ARE NOT TO BE USED IN DETERMINING '+', USE FIELD MEASURED GIRDER CAMBER.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



SHEAR KEY DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

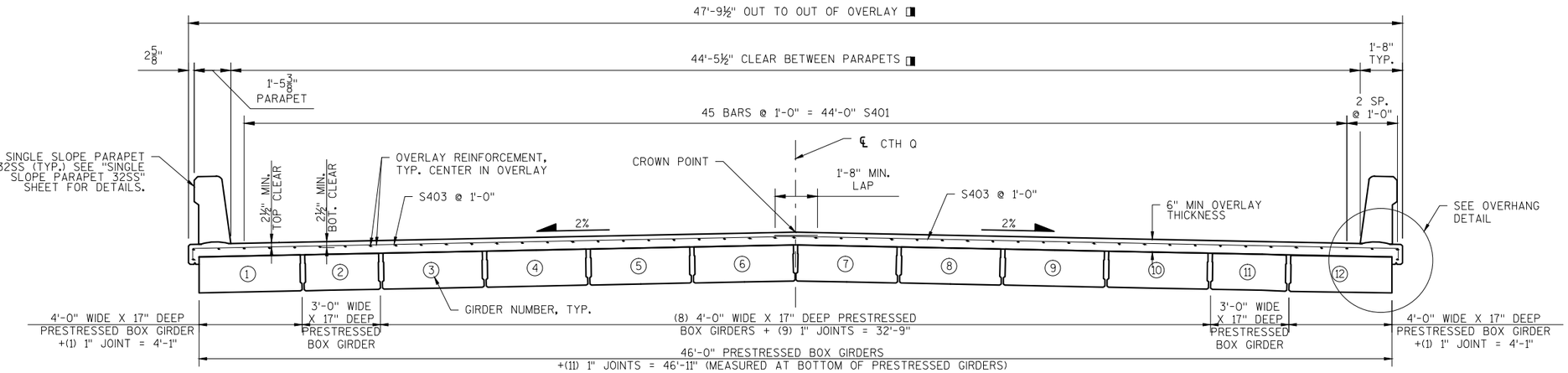
STRUCTURE B-67-373

DRAWN BY BLM | PLANS CK'D. KGW

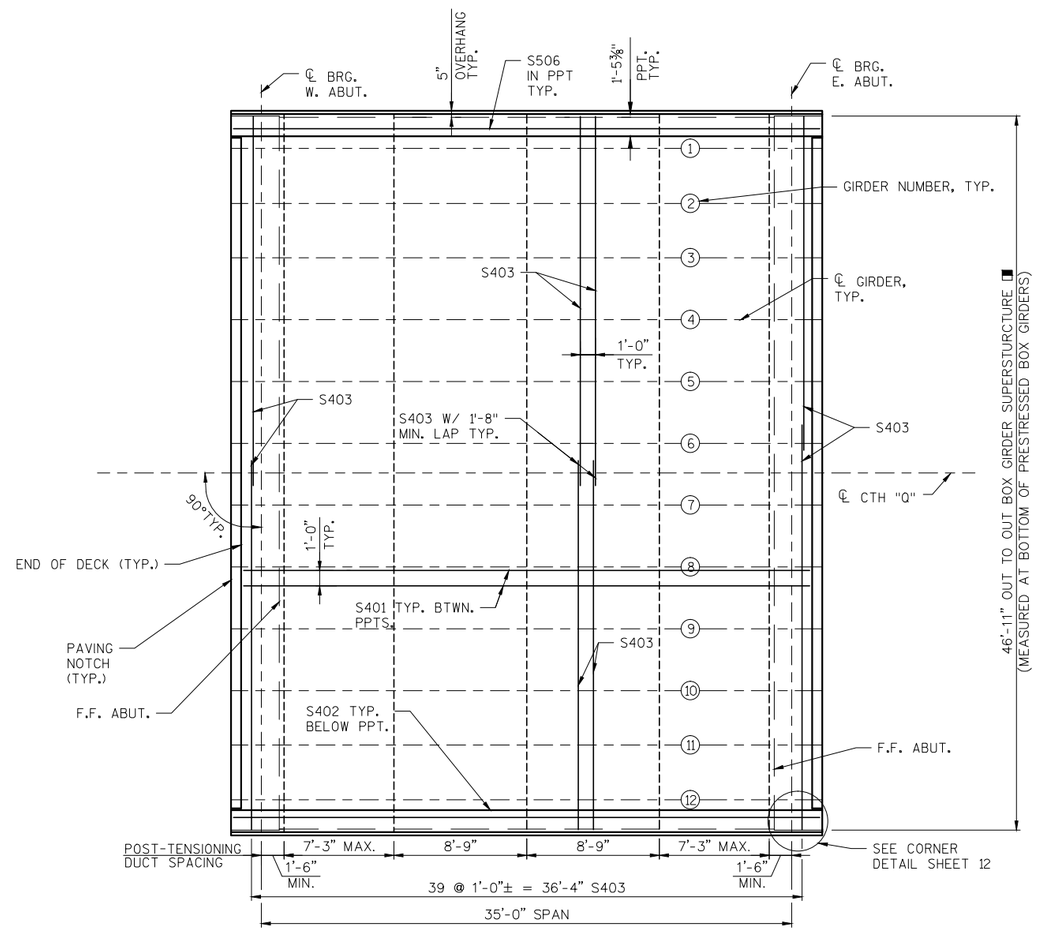
17" PRESTRESSED BOX GIRDER DETAILS 3

SHEET 10 OF 13

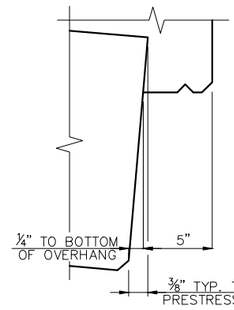
STATE PROJECT NUMBER
2751-00-70



CROSS SECTION
(LOOKING EAST)



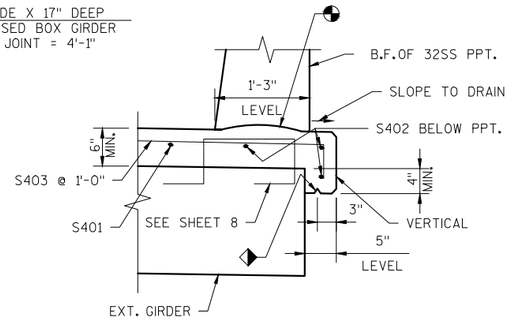
PLAN VIEW



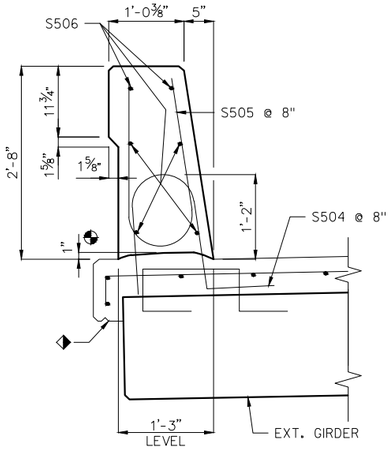
GIRDER EDGE DETAIL
(LOOKING EAST)

LEGEND

- CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH
- ¾" DRIP GROOVE EXTEND GROOVE TO 6" FROM FRONT FACE OF ABUT. DIAPHRAGM
- DIMENSION ASSUMES 1" JOINT WIDTH, JOINT DIMENSIONS MAY VARY DUE TO ±¼" JOINT TOLERANCES.



OVERHANG DETAIL
PARAPET REIN. NOT SHOWN FOR CLARITY



SECTION THRU PARAPERT ON BRIDGE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-373

DRAWN BY AS | PLANS CK'D. KGW

SUPERSTRUCTURE

SHEET 11 OF 13

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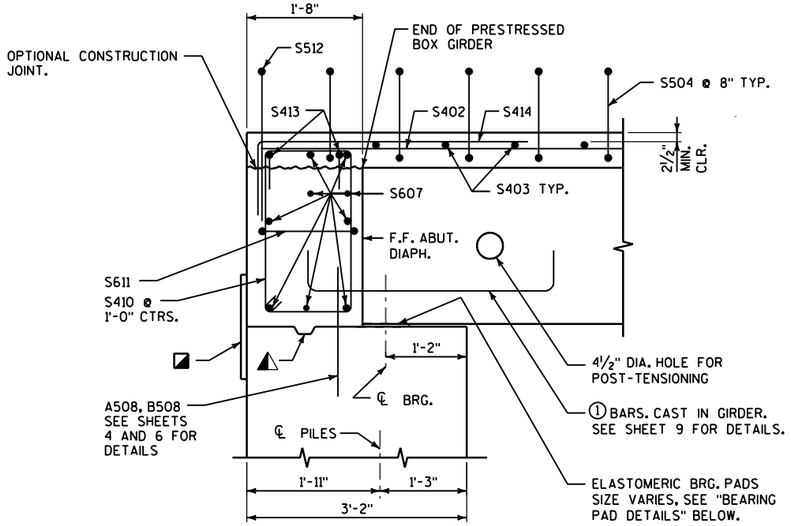
8

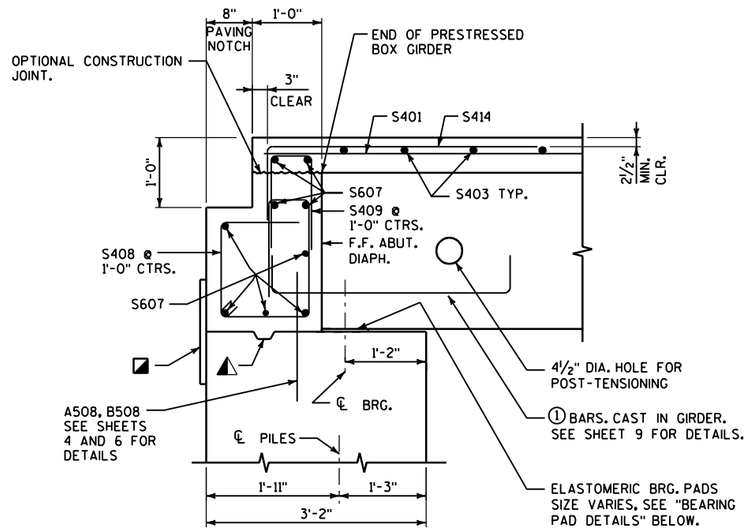
8

STATE PROJECT NUMBER

2751-00-70



SECTION THRU SUPERSTRUCTURE AT EXTERIOR CORNERS

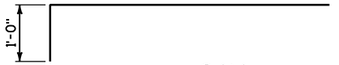


SECTION THRU SUPERSTRUCTURE AT ABUTMENT

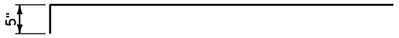
◪ 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING

◭ KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" × 6".

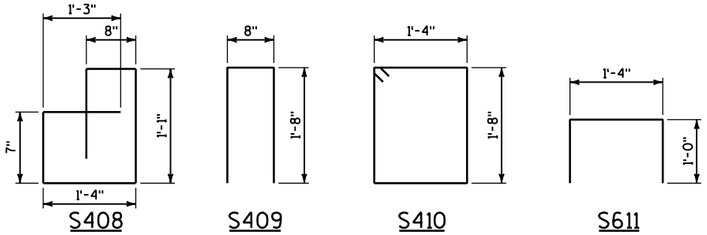
BILL OF BARS						
MARK	COATED	NO. REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
S401	X	45	37'-4"			DECK - LONGIT.
S402	X	6	38'-8"			DECK - LONGITUNAL UNDER PARAPET
S403	X	78	25'-6"		X	DECK -TRANSVERSE
S504	X	110	4'-5"		X	PARAPET HAIRPIN
S505	X	118	5'-0"		X	PARAPET VERTICAL
S506	X	12	38'-8"			PARAPET HORIZONTAL
S607	X	18	46'-7"			ABUT. DIAPH. - HORIZONTAL
S408	X	90	6'-2"		X	ABUT. DIAPH. - VERTICAL
S409	X	90	3'-10"		X	ABUT. DIAPH. & OVERLAY VERTICAL
S410	X	8	6'-6"		X	ABUT. DIAPH. - VERTICAL - EXT. CORNERS
S611	X	4	3'-0"		X	ABUT. DIAPH. - HORIZ - EXT. CORNERS
S512	X	8	5'-10"		X	PARAPET VERTICAL - EXT. CORNERS
S413	X	8	1'-8"		X	DECK TRANS. - EXT. CORNERS
S414	X	98	4'-7"		X	DECK & ENDS LONGITUDINAL

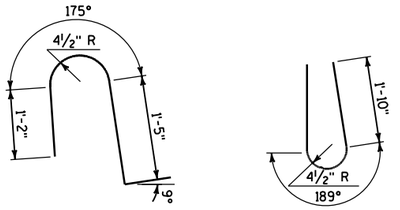


S414

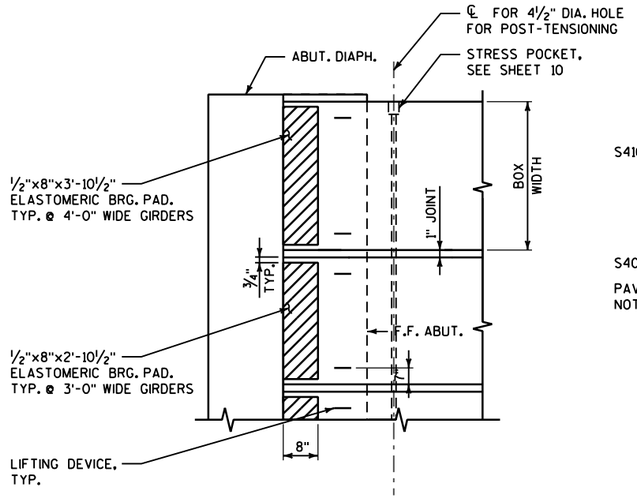


S403

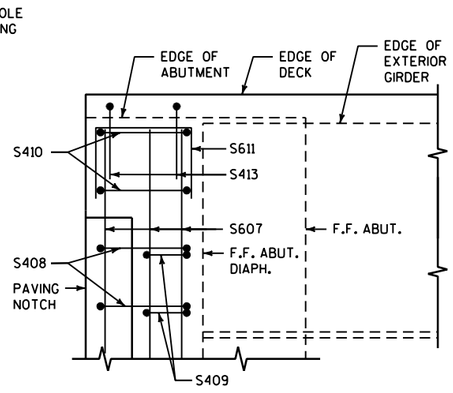




S413



BEARING PAD DETAILS



CORNER DETAIL

TYP. ALL CORNERS

PPT. NOT SHOWN FOR CLARITY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-373

DRAWN BY BLM | PLANS CK'D. KGW

SUPERSTRUCTURE DETAILS

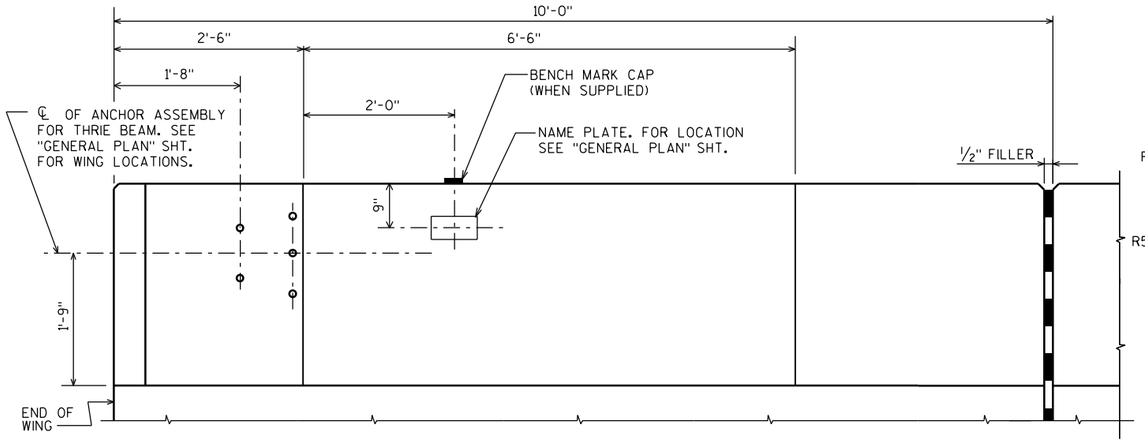
SHEET 12 OF 13

8

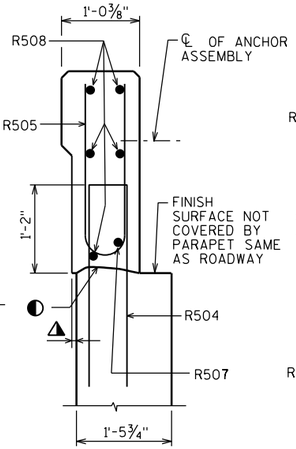
8

FILE NAME : X:\ML\2016\20160122\CAD\Structural\dgn\00\B-67-373_12.dgn PLOT DATE : 10/13/2017 PLOT BY : GRAEF PLOT NAME : $FILE$ PLOT SCALE : 2.0001 in / in.

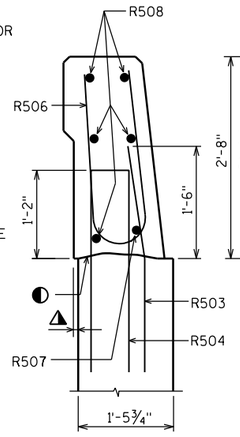
STATE PROJECT NUMBER
2751-00-70



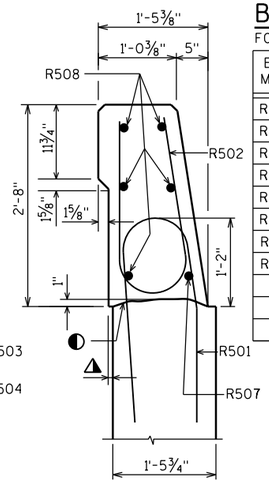
INSIDE ELEVATION



SECTION A*



SECTION B*

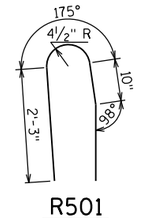


SECTION C*

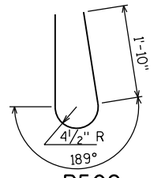
BILL OF BARS

FOR ABUTMENT PARAPETS

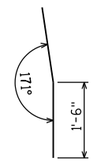
BAR MARK	COAT	SOUTH ABUT.	NORTH ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	36	36	5-10	X		PARAPET VERT.
R502	X	36	36	5-0	X		PARAPET VERT.
R503	X	24	24	3-0	X		PARAPET VERT.
R504	X	34	34	5-7	X		PARAPET VERT.
R505	X	22	22	4-9	X		PARAPET VERT.
R506	X	12	12	4-10	X		PARAPET VERT.
R507	X	2	2	9-8	X		PARAPET HORIZ.
R508	X	10	10	9-8			PARAPET HORIZ.



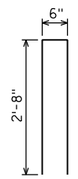
R501



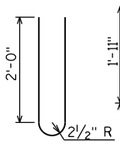
R502



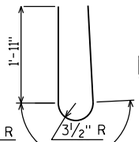
R503



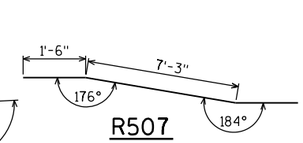
R504



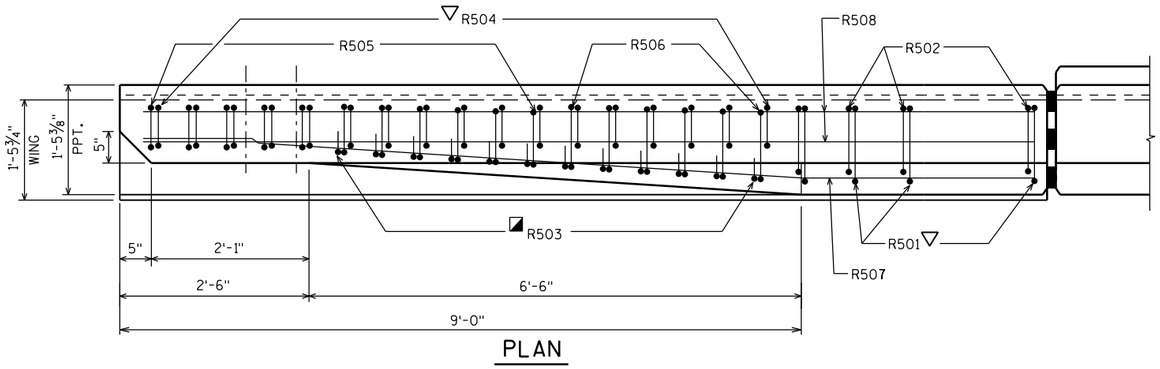
R505



R506

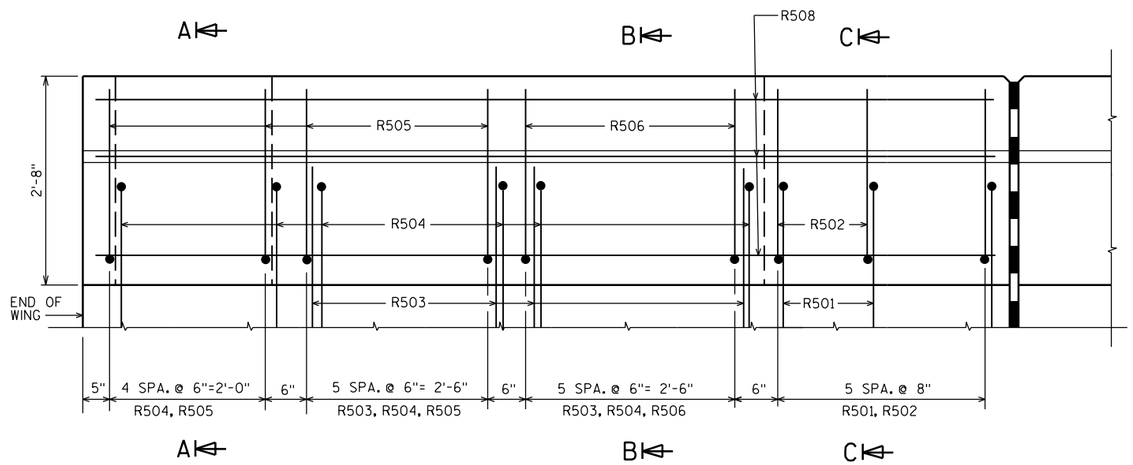


R507

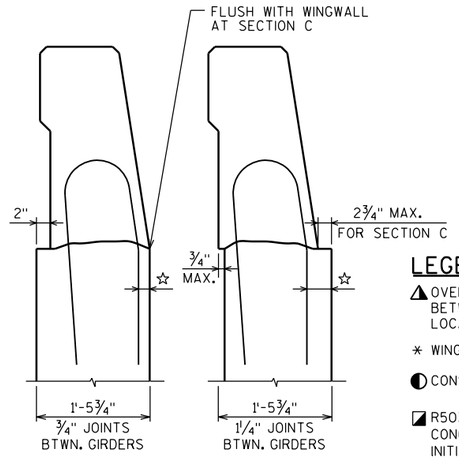


PLAN

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". DEFINE CONST. JOINT WITH A 3/4" - 'V' GROOVE.

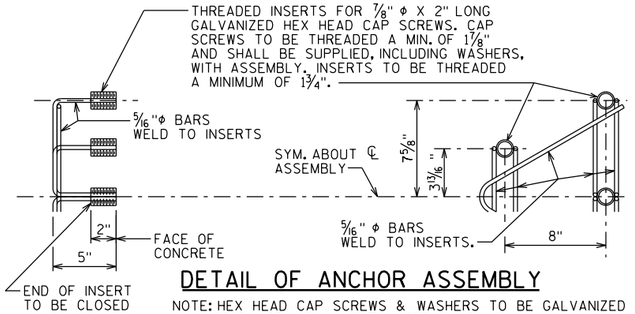


OUTSIDE ELEVATION



PARAPET LOCATION ON WING

☆ CONTRACTOR TO DETERMINE CLEAR DISTANCE TO REBAR BASED ON FINAL POST-TENSIONED SUPERSTRUCTURE WIDTH. MAINTAIN 2" MIN. CLR.



DETAIL OF ANCHOR ASSEMBLY

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

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

LEGEND

- ◭ OVERHANG IS BASED ON FINAL JOINTS BETWEEN GIRDERS. SEE "PARAPET LOCATION ON WING" DETAIL.
- * WING STEEL NOT SHOWN FOR CLARITY.
- ◐ CONST. JOINT - STRIKE OFF AS SHOWN.
- ◪ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 OR S503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.
- ▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-67-373

DRAWN BY	PLANS CK'D.

SINGLE SLOPE PARAPET 32SS

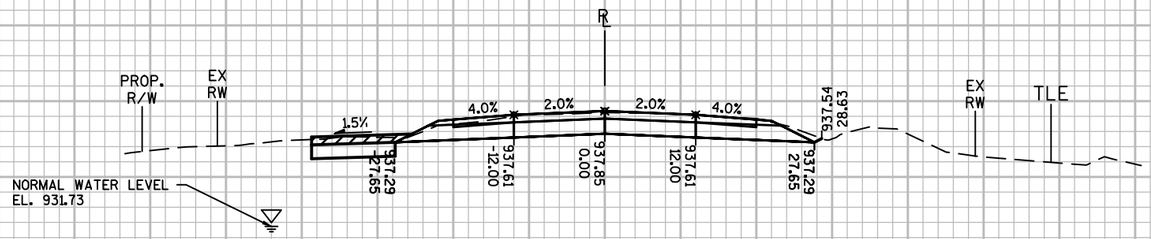
SHEET 13 OF 13
70

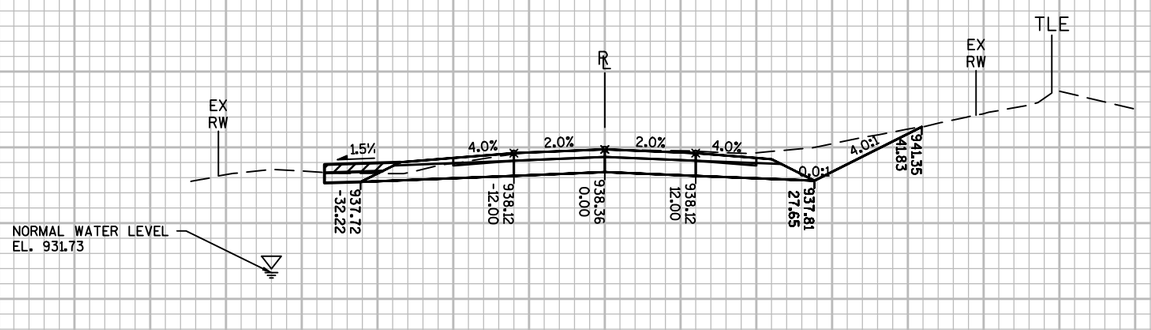
32SSWIN
1-14

SCALE = 1

8

13
7
1 2 3 4





940 930 950 930

50 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

18+50

18+25

9

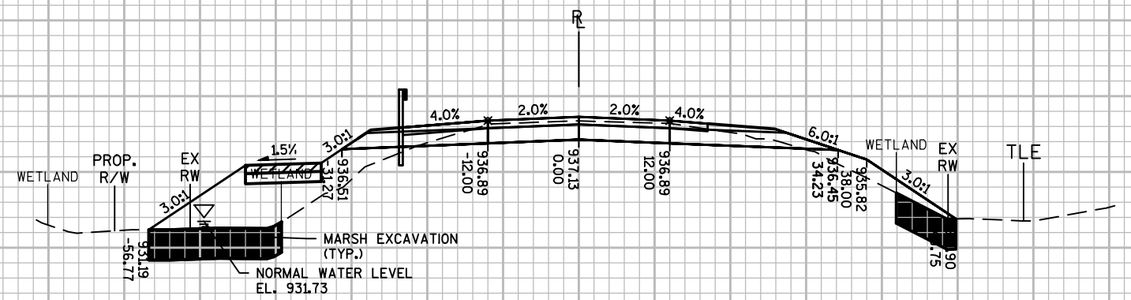
9

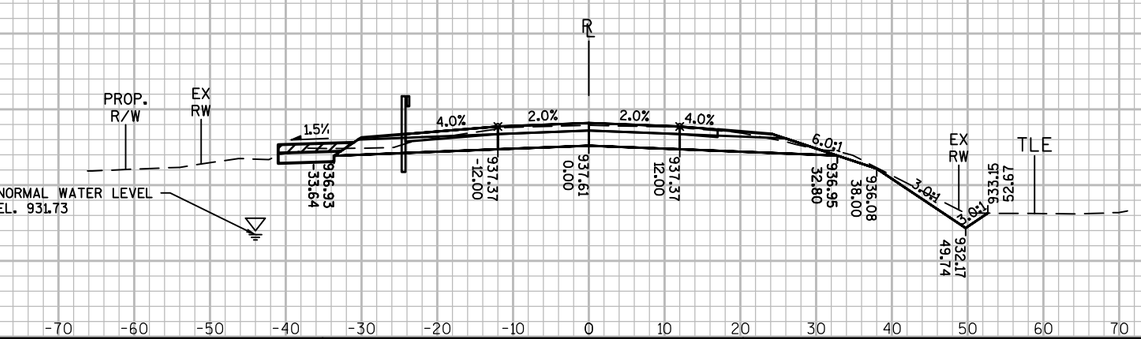
PROJECT NO: 2751-00-00	HWY: CTH Q	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 71	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090201_XS

PLOT DATE : 10/24/2017 2:06 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1:20_XREF

WISDOT/CADDS SHEET 49





50 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

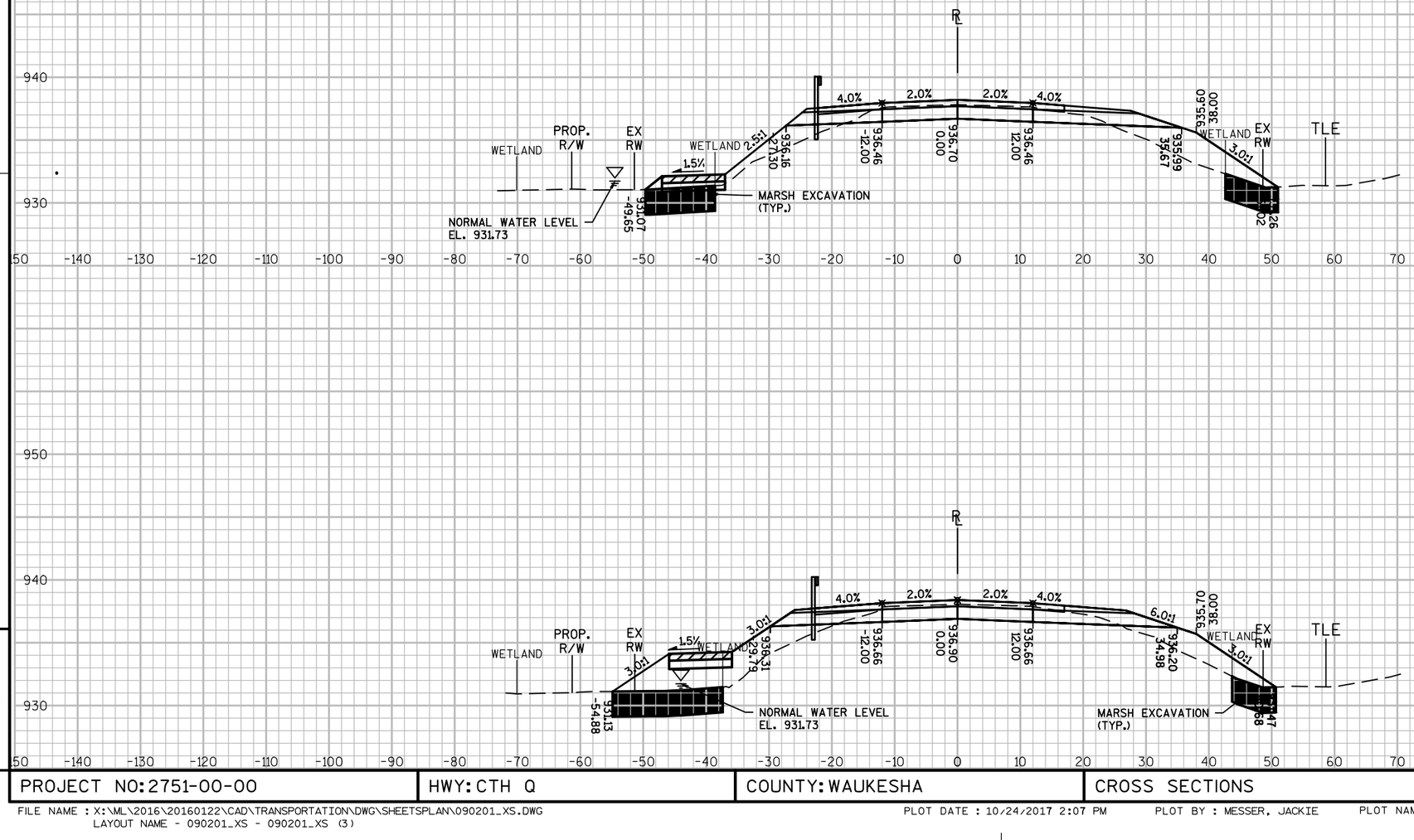
9

9

PROJECT NO: 2751-00-00	HWY: CTH Q	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 72	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090201_XS (2)

PLOT DATE : 10/24/2017 2:07 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1:20_XREF

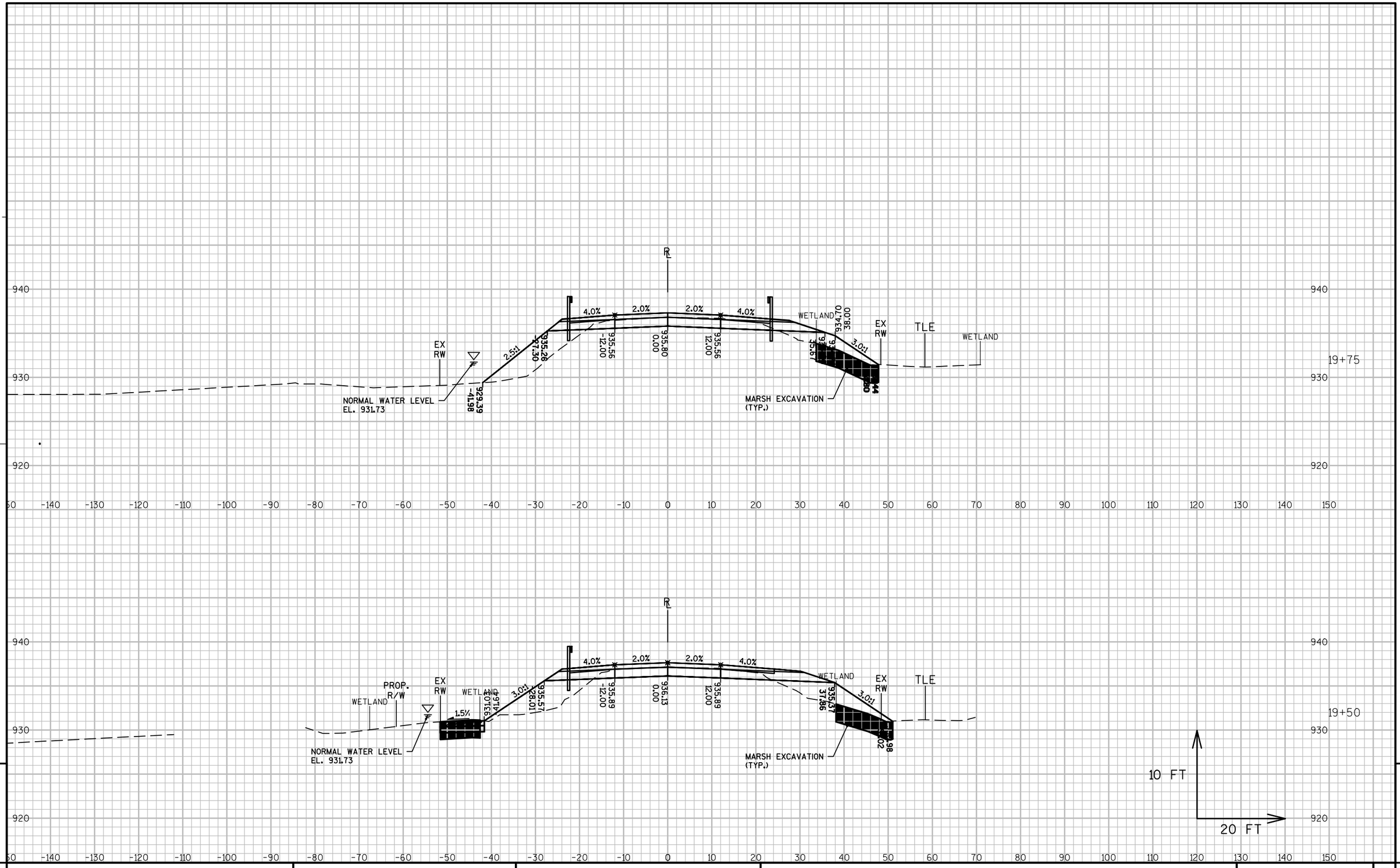


PROJECT NO: 2751-00-00	HWY: CTH Q	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 73	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090201_XS (3)

PLOT DATE : 10/24/2017 2:07 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1:20_XREF

WISDOT/CADDS SHEET 49



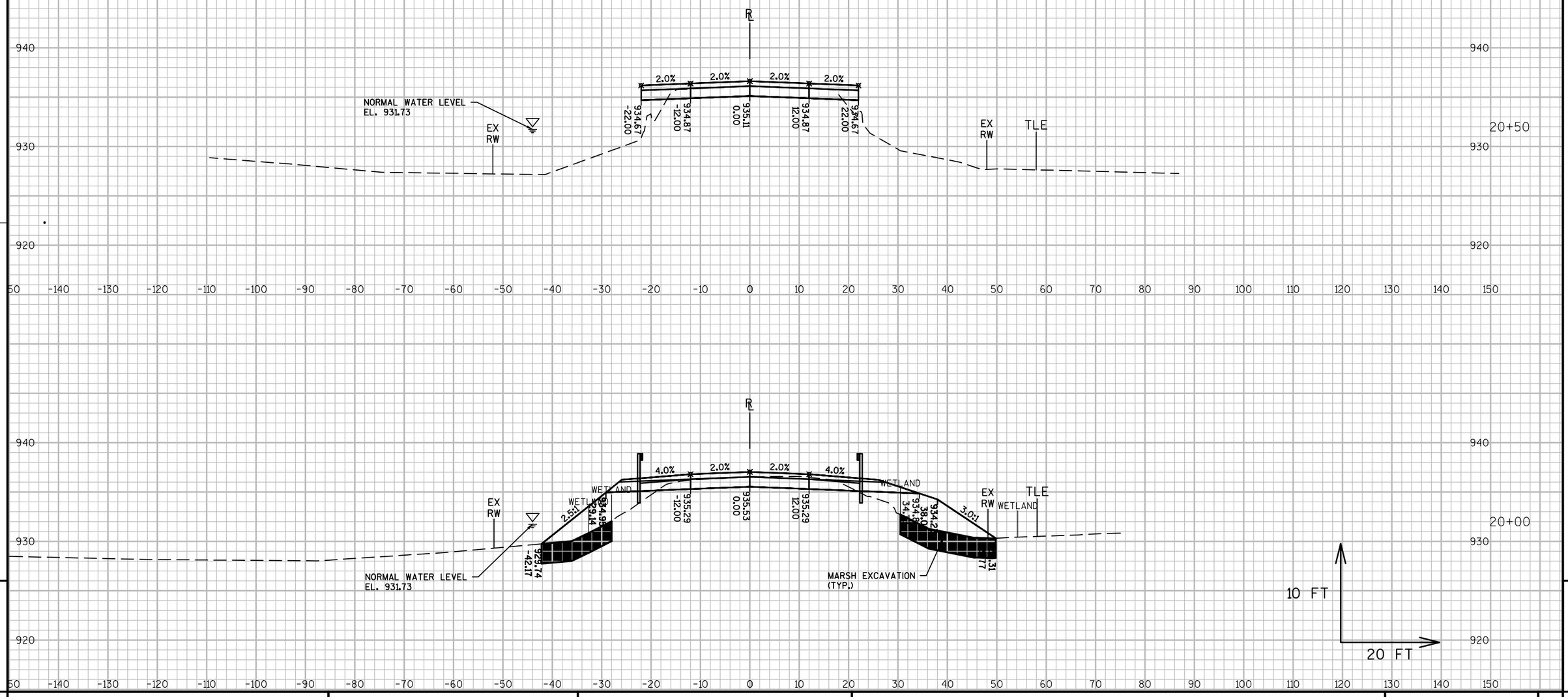
PROJECT NO: 2751-00-00	HWY: CTH Q	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 74	E

FILE NAME : X:\WL\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090201_XS (4)

PLOT DATE : 10/24/2017 2:07 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1:20_XREF

WISDOT/CADDS SHEET 49

STR. B-67-373



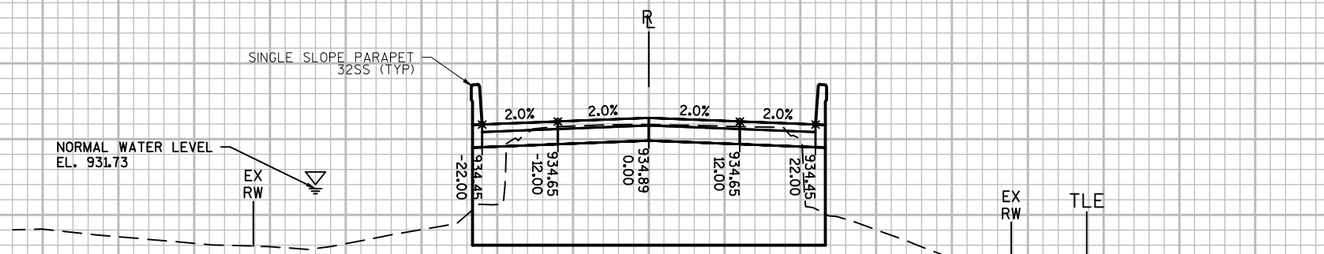
PROJECT NO: 2751-00-00	HWY: CTH Q	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 75	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090201_XS (5)

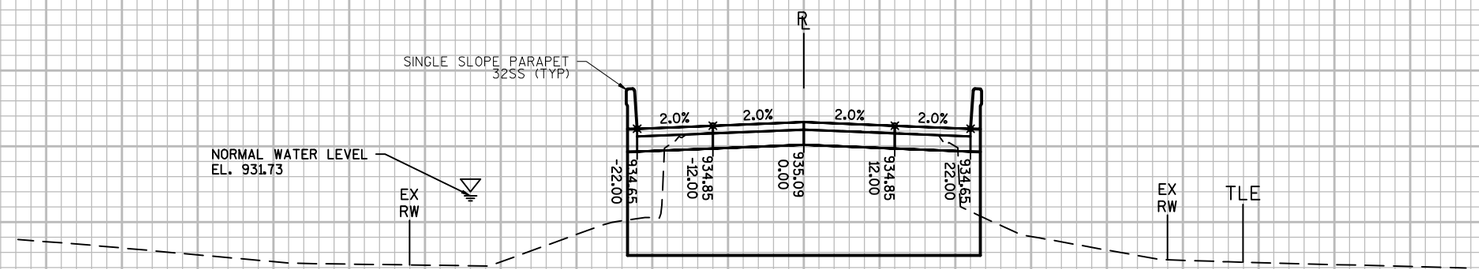
PLOT DATE : 10/24/2017 2:07 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1:20_XREF

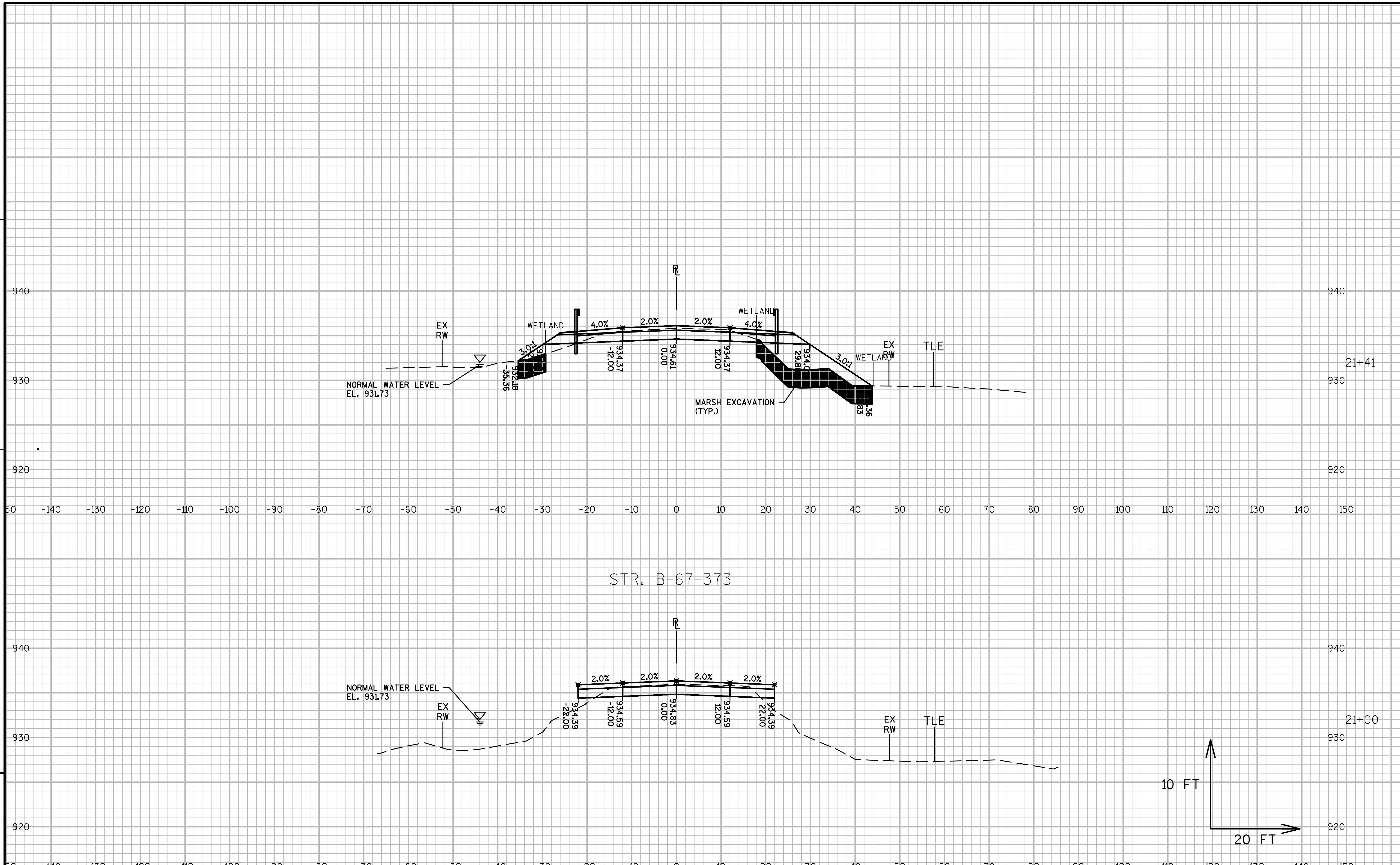
WISDOT/CADDS SHEET 49

STR. B-67-373
EAST ABUTMENT

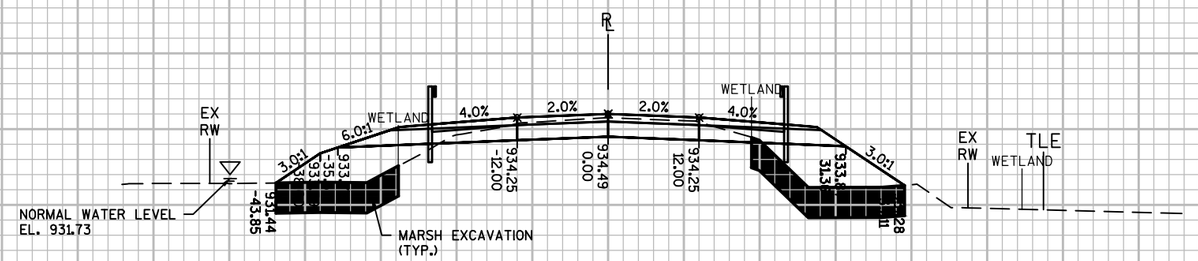


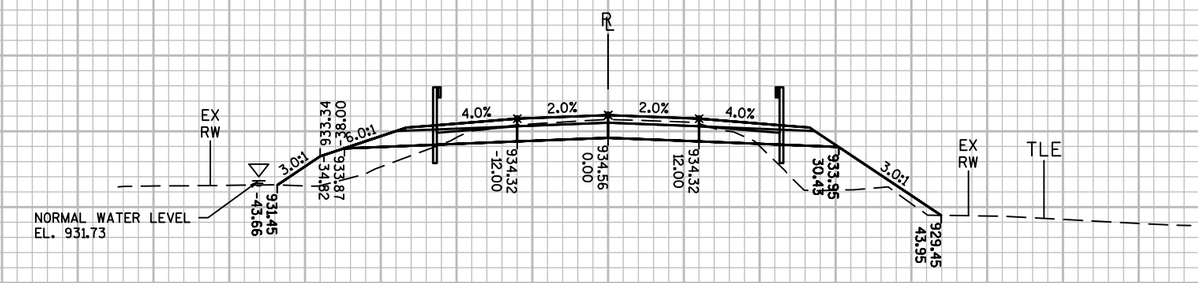
STR. B-67-373
WEST ABUTMENT





EX RW
WETLAND
4.0%
2.0%
3.0:1
NORMAL WATER LEVEL EL. 931.73
MARSH EXCAVATION (TYP.)
TLE
21+41
STR. B-67-373
21+00
934.61 0.00
934.37 -12.00
934.37 12.00
934.83 0.00
934.59 -12.00
934.59 12.00
934.39 -22.00
934.39 22.00
10 FT
20 FT





940 930 920

50 -140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

21+66

21+50

10 FT

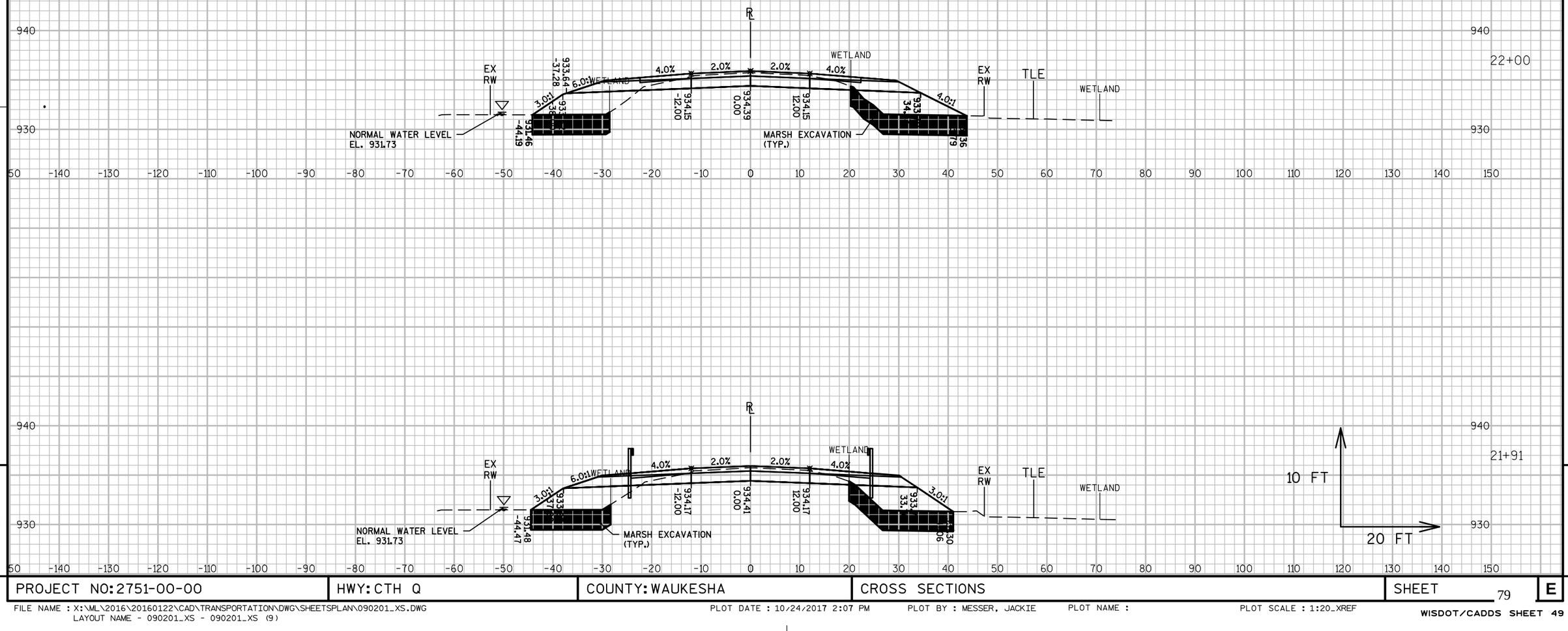
20 FT

9

PROJECT NO: 2751-00-00	HWY: CTH Q	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 78	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090201_XS (8)

PLOT DATE : 10/24/2017 2:07 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1:20_XREF

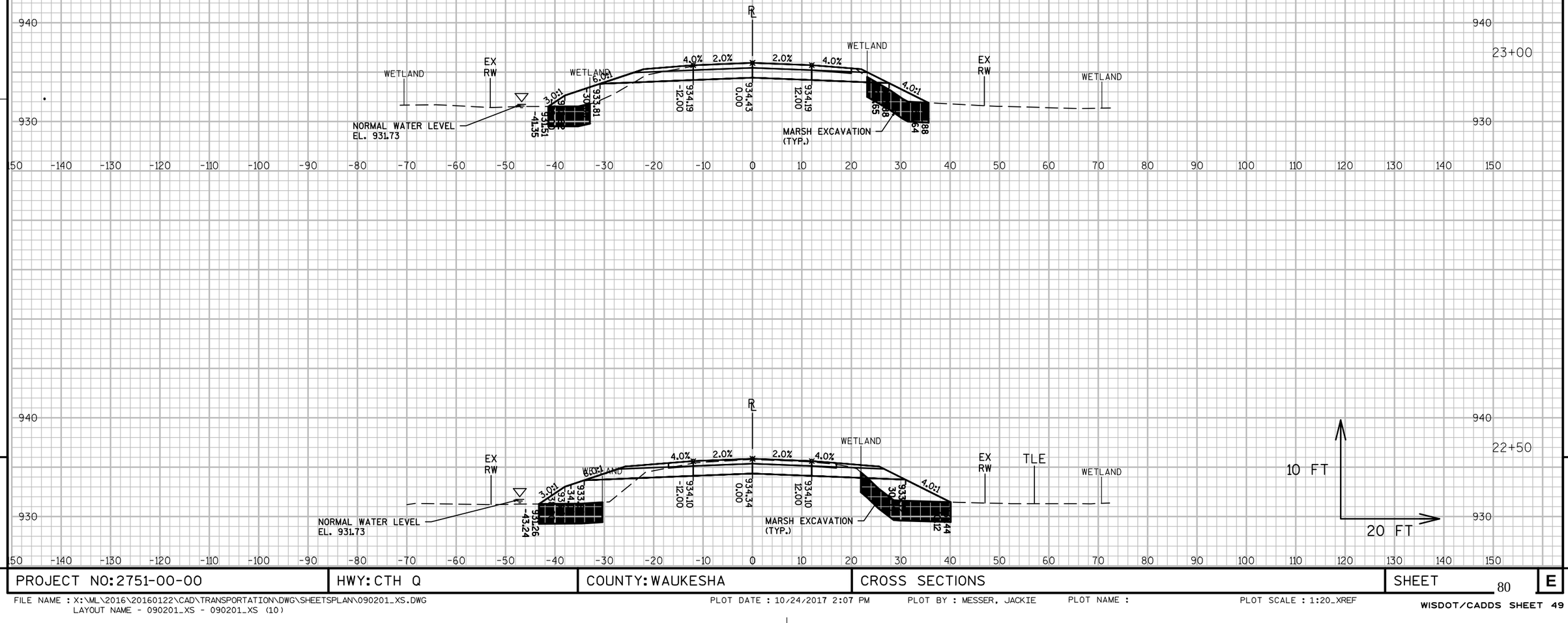


9 9

PROJECT NO: 2751-00-00	HWY: CTH Q	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 79	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090201_XS (9)

PLOT DATE : 10/24/2017 2:07 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1:20_XREF



9 9

PROJECT NO: 2751-00-00	HWY: CTH Q	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 80	E

FILE NAME : X:\ML\2016\20160122\CAD\TRANSPORTATION\DWG\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201_XS - 090201_XS (10)

PLOT DATE : 10/24/2017 2:07 PM PLOT BY : MESSER, JACKIE PLOT NAME : PLOT SCALE : 1:20_XREF

Notes

Wisconsin Department of Transportation

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