

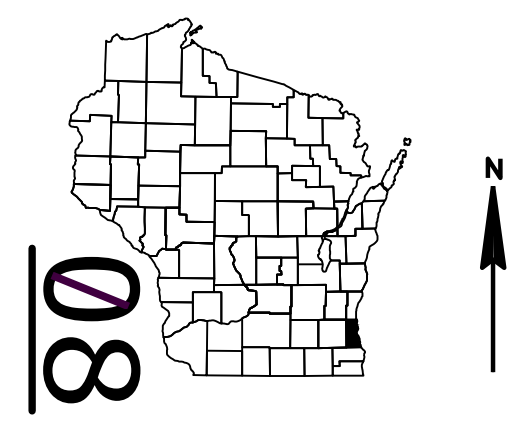
WKE
PROJECT ID:
WITH:
2235-00-74
COUNTY:
MILWAUKEE

OCTOBER 2024

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 104



DESIGN DESIGNATION

A.A.D.T.	(2009)	=	3300
A.A.D.T.	(2024)	=	3400
D.H.V.		=	
D.D.		=	
T.		=	
DESIGN SPEED		=	40 MPH
ESALS		=	

CONVENTIONAL SYMBOLS

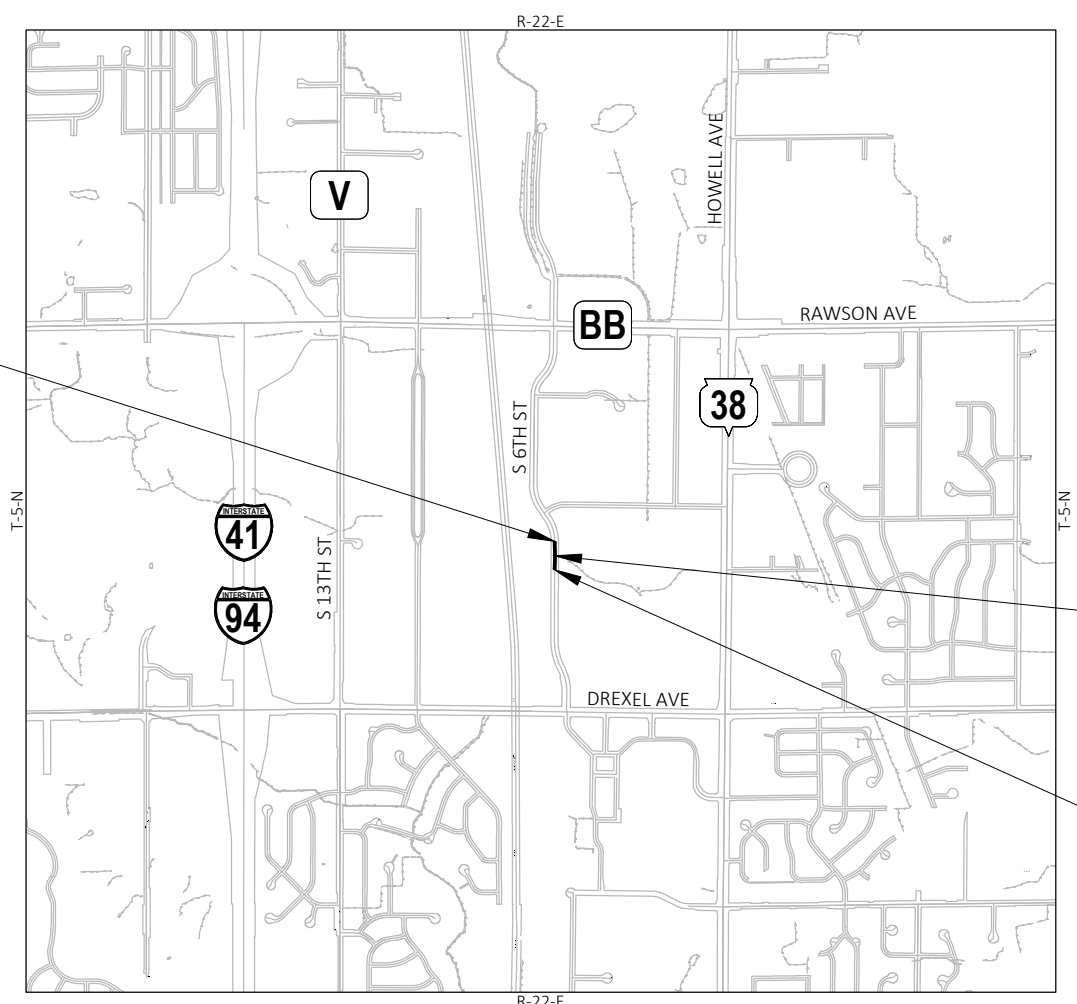
PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

	ROCK
	LABEL
	95.36
	E
	FO
	G
	SAN
	SS
	T
	W

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
C OAK CREEK S 6TH STREET
BRIDGE OVER BR OAK CREEK P-40-0558
LOCAL STREET
MILWAUKEE COUNTY

STATE PROJECT NUMBER
2235-00-74



END PROJECT
STA 102+09
X=2,525,691.50
Y=337,818.61

STRUCTURE B-40-1101
STA 99+59 - STA 100+41

BEGIN PROJECT
STA 97+80
X=2,525,690.79
Y=337,389.62

LAYOUT
SCALE 0 0.5 MI
TOTAL NET LENGTH OF CENTERLINE = 0.081 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN STATE PLANE, SOUTH ZONE, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.
ELEVATIONS ARE REFERENCED TO NAVD 88 (2018). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2235-00-74	WISC 2025006	1

ACCEPTED FOR
CITY OF OAK CREEK

DATE: 8/21/2024
CITY ENGINEER

ORIGINAL PLANS PREPARED BY
COLLINS ENGINEERS, INC.

DATE: 8/21/2024
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PREPARED BY
Surveyor COLLINS ENGINEERS INC.
Designer COLLINS ENGINEERS INC.
Project Manager MICHAEL BAIRD
Regional Examiner REGIONAL EXAMINER
Regional Supervisor BRIAN BOOTHBY

APPROVED FOR THE DEPARTMENT
DATE: 8/21/2024

(Signature)

GENERAL NOTES

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

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

MAINTAIN ACCESS TO PROPERTIES ADJACENT TO THE PROJECT AT ALL TIMES.

THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING MOTORISTS AND PEDESTRIANS THAT MAY ENTER THE WORK ZONE FROM POSSIBLE HAZARDS.

A SAWED JOINT WILL BE REQUIRED WHERE NEW PAVEMENT MEETS AN EXISTING PAVED SURFACE. SAWCUTS SHALL BE NEATLY DELINEATED THROUGH THE ASPHALT OR CONCRETE WITHOUT DAMAGING EXISTING PAVEMENT TO REMAIN. SAWCUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD.

TRAFFIC CONTROL DEVICES AS SHOWN IN THE PLAN ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

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

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

THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

DO NOT DRIVE OR STORE EQUIPMENT, OR STORE CONSTRUCTION MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS OR WATERWAYS.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOOD PLAINS, AND WATERWAYS. STOCKPILED SOIL SHALL IMMEDIATELY BE PROTECTED AGAINST EROSION WITH SILT FENCE, TEMPORARY SEED AND MULCH, OR AS DIRECTED BY THE ENGINEER. DO NOT STORE EQUIPMENT OR MATERIALS NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.

RE-TOPSOIL GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED IN THOSE AREAS. SEED, FERTILIZE, AND SOD/EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN THREE (3) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS WILL BE LEFT EXPOSED FOR MORE THAN SEVEN (7) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED AND MULCH/EROSION MAT WITHIN 24 HOURS.

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

CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC MONUMENT.

ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.

PROPERTY LINES AS SHOWN ARE APPROXIMATE.

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

ELEVATIONS SHOWN ON THE ROADWAY CROSS SECTIONS ARE SUBGRADE ELEVATIONS.

RADIUS DIMENSIONS FOR THE CURB AND GUTTER ARE TO THE FLANGE LINE UNLESS OTHERWISE NOTED.

CURB AND GUTTER PLAN GRADES ARE AT THE FLANGE LINE UNLESS OTHERWISE NOTED.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 115 LBS/SY/IN.

PIPE AND INLET ELEVATIONS AS SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS.

MANHOLE STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE FOR SOLID COVERS AND TO FLOWLINE AT CENTER OF GRATE FOR GRATED INLET COVERS.

IT IS IMPERATIVE THAT THE HIGHWAY CONTRACTOR CONTACT WE ENERGIES BEFORE REMOVING ANY GAS FACILITIES OR ELECTRICAL UNDERGROUND CABLES, TO VERIFY THAT THEY HAVE BEEN DISCONTINUED AND CARRY NO NATURAL GAS OR ELECTRICAL CURRENT. THE CONTRACTOR MUST NOT ASSUME THAT UNMARKED FACILITIES HAVE BEEN DISCONTINUED. AT NO TIME IS IT ACCEPTABLE TO PUSH, PULL, CUT OR DRILL AN UNMARKED FACILITY WITHOUT EXPLICIT CONSENT FROM WE ENERGIES. CONTRACTOR MUST CALL THE WE ENERGIES 24 HOUR DISPATCH LINES TO ARRANGE FOR THIS VERIFICATION.

ALL TYPES OF PAVEMENT SHALL BE CONSTRUCTED WITH THE FOLLOWING GRADATIONS:

	LOCATION	PAVEMENT TYPE	TOTAL THICKNESS	LAYERS
AP01	RECONSTRUCT	4 MT 58-28 H	5 1/2"	2" UPPER LAYER
		3 MT 58-28 H		3 1/2" LOWER LAYER
AP02	RESURFACE	4 MT 58-28 H	2"	2" UPPER LAYER

SECTION 2 ORDER OF SHEETS

GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL DETAILS
PLAN DETAILS
PAVING GRADES
CONTOUR MAPS
EROSION CONTROL
STORM SEWER PLAN
SANITARY SEWER PLAN
PERMANENT SIGNING
LIGHTING PLAN
PAVEMENT MARKING
TRAFFIC CONTROL
DETOUR PLAN
ALIGNMENT DETAIL

PROJECT CONTACTS

DNR LIAISON
RYAN PAPPAS
1027 W SAINT PAUL AVE
MILWAUKEE, WI 53233
PHONE: (414) 750-7495
RYAN.PAPPAS@WISCONSIN.GOV

WISDOT DESIGN
MICHAEL BAIRD
141 NW BARSTOW
WAUKESHA, WI 53188
PHONE: (262) 548-5918
MICHAEL.BAIRD@DOT.WI.GOV

SOUTHEASTERN WISCONSIN REGIONAL
PLANNING COMMISSION (SEWRPC)

ROB MERRY
W239 N1812 ROCKWOOD DRIVE
PO BOX 1607
WAUKESHA, WI 53187-1607
PHONE: (262) 953- 4289
CELL: (920) 912-1036
FAX: (262) 547-1103
RMERRY@SEWRPC.ORG

CITY OF OAK CREEK
ASHLEY KIEPCZYNSKI
170 W DREXEL AVENUE
PHONE: (414) 766-7002
OAK CREEK, WI 53154
AKIEPCZYNSKI@OAKCREEKWI.GOV

ABUT ABUTMENT
AC ACRE
AGG AGGREGATE
AH AHEAD
AADT ANNUAL AVERAGE DAILY TRAFFIC
AEW APRON ENDWALL
ASPH ASPHALTIC
AVG AVERAGE
BK BACK
BC BACK OF CURB
BAD BASE AGGREGATE DENSE
BL OR B/L BASE LINE
BM BENCH MARK
CB CATCH BASIN
CL OR C/L CENTER LINE
Δ CENTRAL ANGLE OR DELTA
CE COMMERCIAL ENTRANCE
CONC CONCRETE
CSW CONCRETE SIDEWALK
CONST CONSTRUCTION
CP CONTROL POINT
CO COUNTY
CTH COUNTY TRUCK HIGHWAY
CY CUBIC YARD
C & G CURB AND GUTTER
D DEGREE OF CURVE
DHV DESIGN HOUR VOLUME
DIA DIAMETER
DD DIRECTIONAL DISTRIBUTION
DE DRAINAGE EASEMENT
DWY DRIVEWAY
EA EACH
EB EASTBOUND
EL OR ELEV ELEVATION
EMB EMBANKMENT
EW ENDWALL
ESALS EQUIVALENT SINGLE AXLE LOADS
EXC EXCAVATION
EBS EXCAVATION BELOW SUBGRADE
EXIST EXISTING
FERT FERTILIZER
FO FIBER OPTIC
FL OR F/L FLOW LINE
FT FOOT
FTMS FREEWAY TRAFFIC MANAGEMENT SYSTEM
HES HIGH EARLY STRENGTH
CWT HUNDRED WEIGHT
HYD HYDRANT
IN DIA INCH DIAMETER
INL INLET
ID INSIDE DIAMETER
IH INTERSTATE HIGHWAY
INV INVERT
JT JOINT
LT LEFT
LHF LEFT HAND FORWARD
L LENGTH OF CURVE

STANDARD ABBREVIATIONS

LF LINEAR FOOT
LC LONG CHORD OF CURVE
LS LUMP SUM
MGAL ONE THOUSAND GALLONS
MH MANHOLE
ML OR M/L MATCH LINE
NOM NOMINAL
NC NORMAL CROWN
NB NORTHBOUND
NO NUMBER
OD OUTSIDE DIAMETER
PAVT PAVEMENT
PC POINT OF CURVATURE
PI POINT OF INTERSECTION
PT POINT OF TANGENCY
PCC PORTLAND CEMENT CONCRETE
LB POUND
PSI POUNDS PER SQUARE INCH
PE PRIVATE ENTRANCE
PROJ PROJECT
PL PROPERTY LINE
PRW PROPOSED RIGHT OF WAY
R RADIUS
RL OR R/L REFERENCE LINE
REQD REQUIRED
RT RIGHT
RHF RIGHT HAND FORWARD
R/W RIGHT OF WAY
RD ROAD
RDWY ROADWAY
SAN SANITARY SEWER
SHLD SHOULDER
SW SIDEWALK
SI SLOPE INTERCEPT
SB SOUTHBOUND
SPECS SPECIFICATIONS
SF SQUARE FEET
SY SQUARE YARD
SDD STANDARD DETAIL DRAWINGS
STH STATE TRUNK HIGHWAY
STA STATION
SS STORM SEWER
SSPRC STORM SEWER PIPE REINFORCED CONCRETE
SE SUPERELEVATION
SL OR S/L SURVEY LINE
TEMP TEMPORARY
TC TOP OF CURB
T TRUCKS (PERCENT OF)
TYP TYPICAL
USH UNITED STATES HIGHWAY
VAR VARIABLE
VC VERTICAL CURVE
VPC VERTICAL POINT OF CURVATURE
VPI VERTICAL POINT OF INTERSECTION
VPT VERTICAL POINT OF TANGENCY
W WEST
WB WESTBOUND

UTILITY CONTACTS

CHARTER COMMUNICATIONS

BEAU ABUYA
1320 N. MARTIN LUTHER KING JR DRIVE
MILWAUKEE, WI 53212
OFFICE: (414) 758-9241
BEAU.ABUYA@CHARTER.COM

WE ENERGIES - ELECTRIC

JACOB SCHOENUNG
500 S. 116TH STREET
WEST ALLIS, WI 53214
OFFICE: (262) 884-6738
CELL: (414) 416-3365
JACOB.SCHOENUNG@WE-ENERGIES.COM

CITY OF OAK CREEK - SEWER

BRIAN JOHNSTON
170 W. DREXEL AVENUE
OAK CREEK, WI 53154
OFFICE: (414) 766-6624
CELL: (414) 852-3910
BJOHNSTON@OAKCREEKWI.GOV

WE ENERGIES - GAS

WESLEY NUNN
7815 NORTHWESTERN AVENUE
RACINE, WI 53406
OFFICE: (262) 552- 3446
CELL: (414) 649-4933
WESLEY.NUNN@WE-ENERGIES.COM

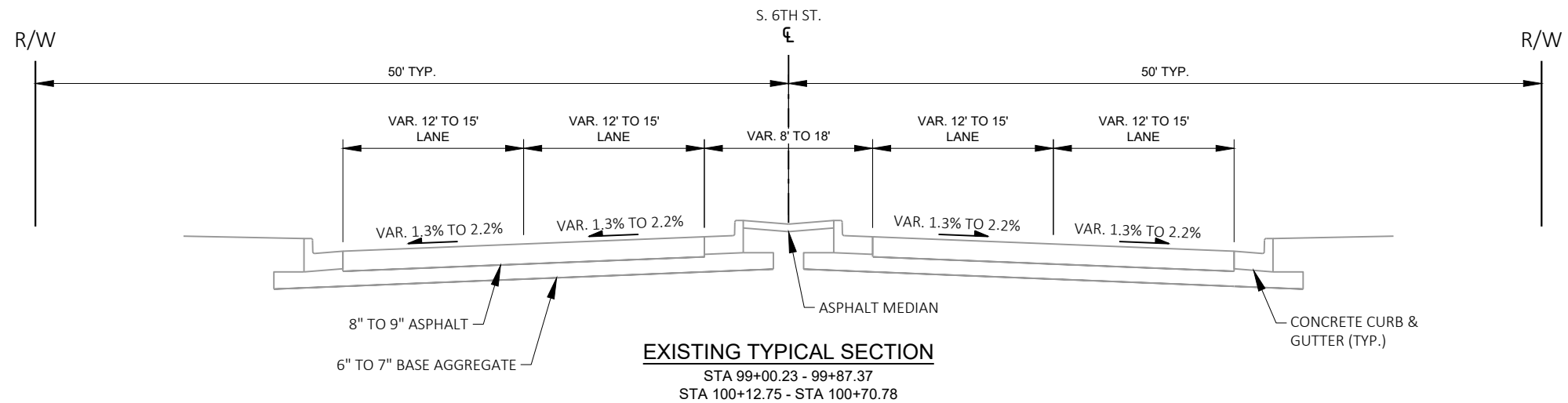
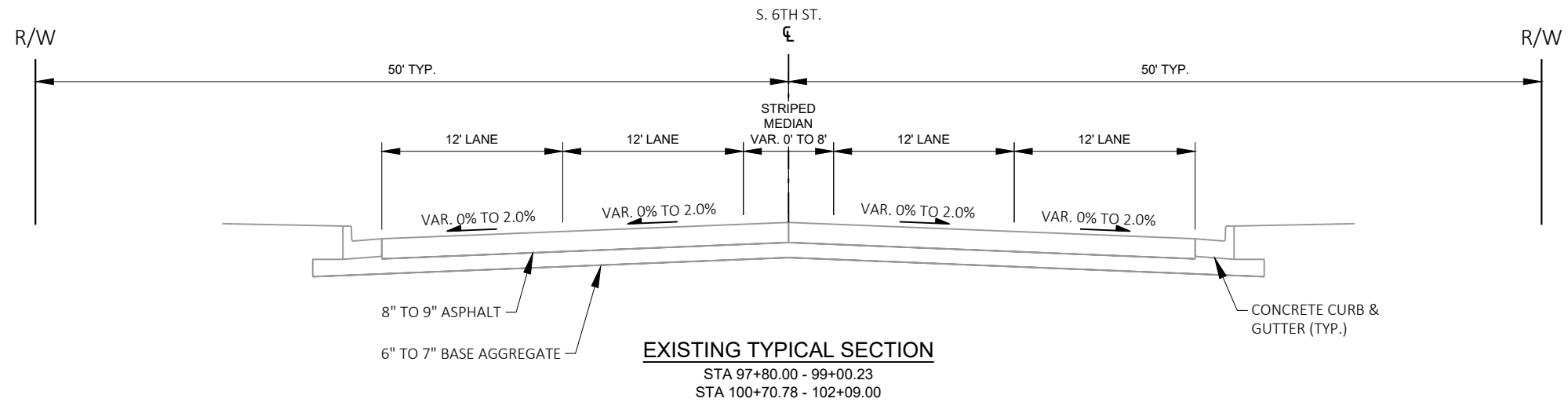
CITY OF OAK CREEK - WATER

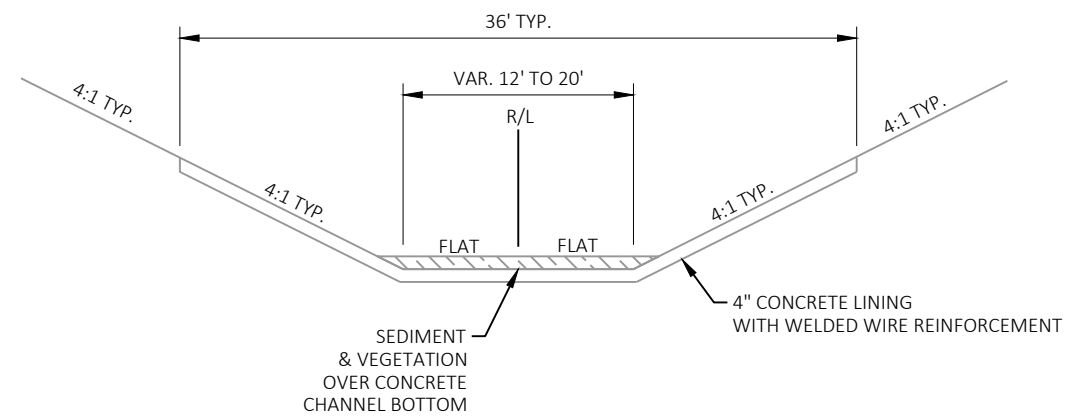
BRIAN JOHNSTON
170 W. DREXEL AVENUE
OAK CREEK, WI 53154
OFFICE: (414) 766-6624
CELL: (414) 852-3910
BJOHNSTON@OAKCREEKWI.GOV

DIGGERSHOTLINE

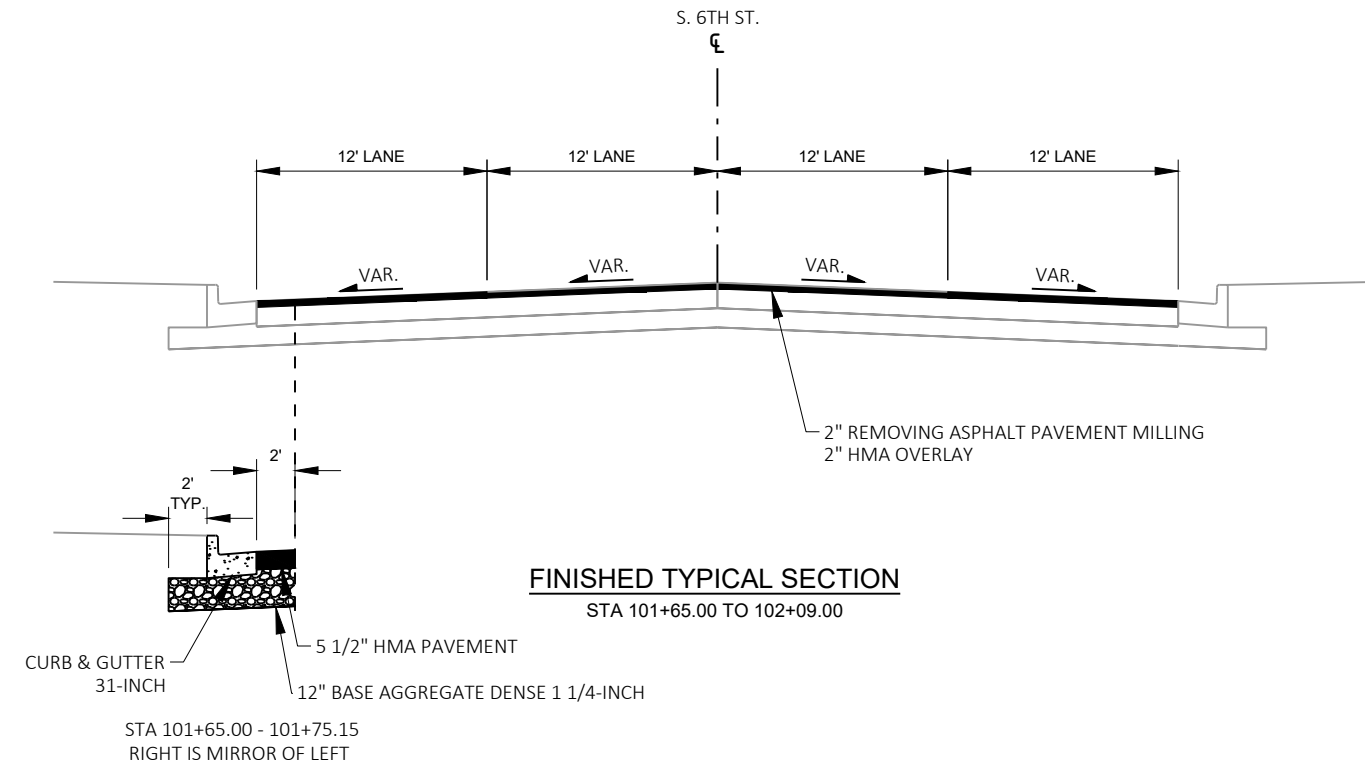
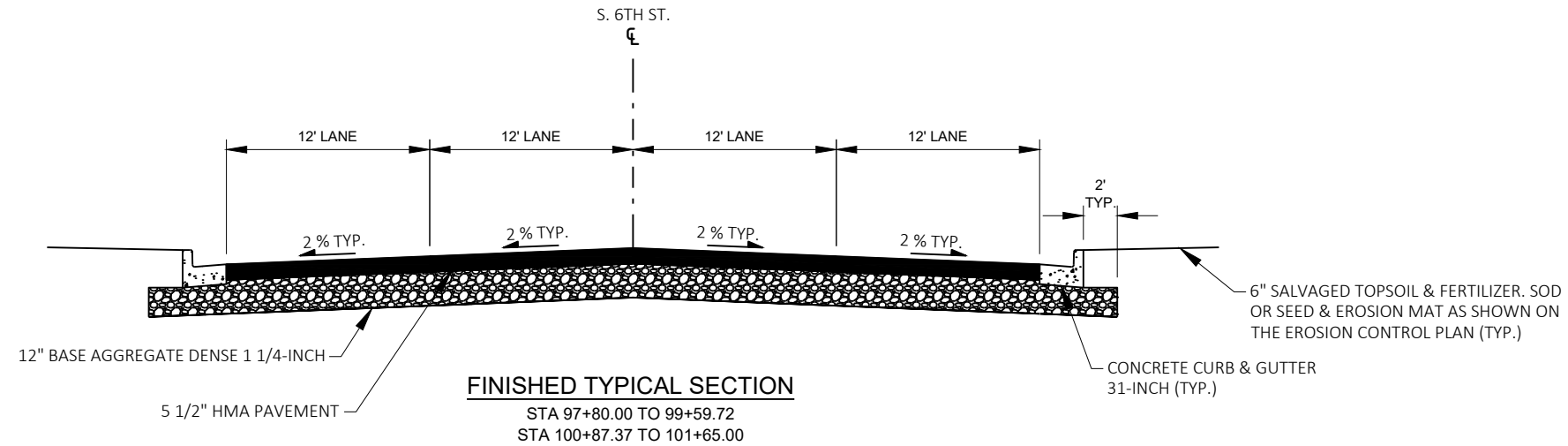
Dial 811 or (800)242-8511

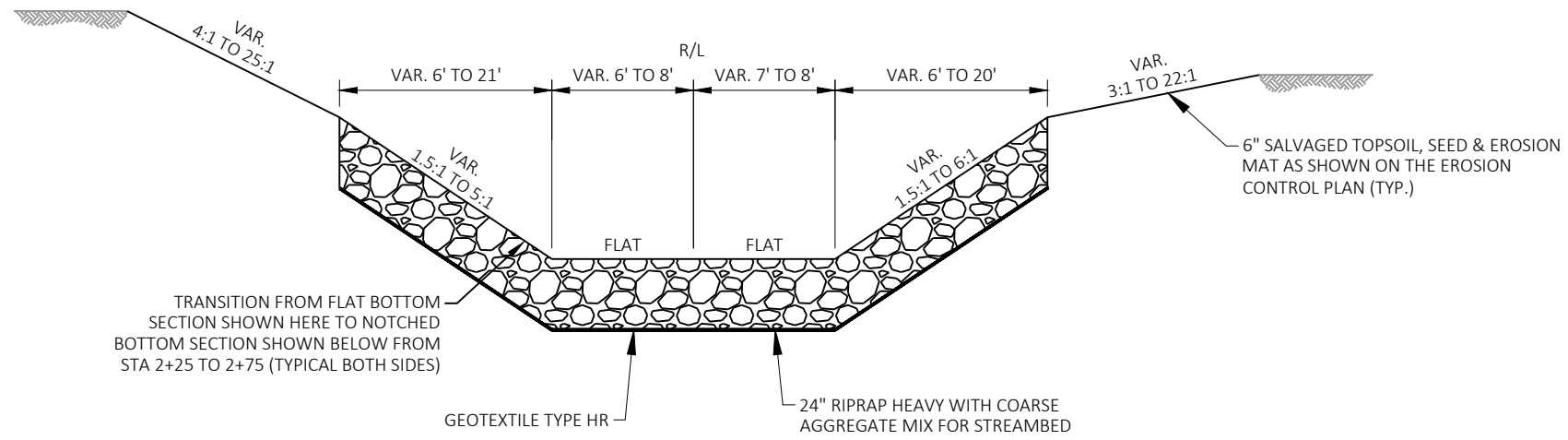
www.DiggersHotline.com





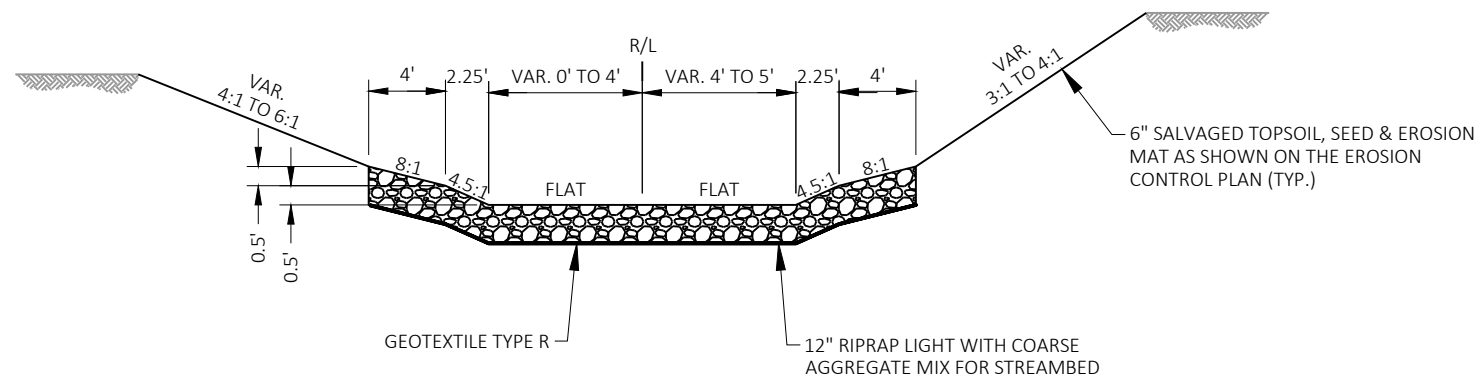
EXISTING TYPICAL SECTION
OAK CREEK
STA 0+48 TO 3+57





FINISHED TYPICAL SECTION

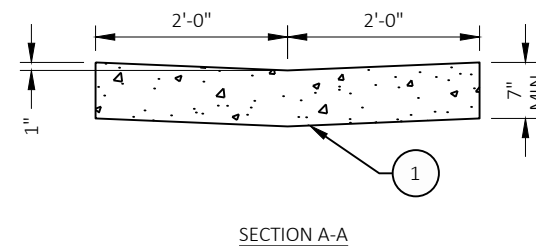
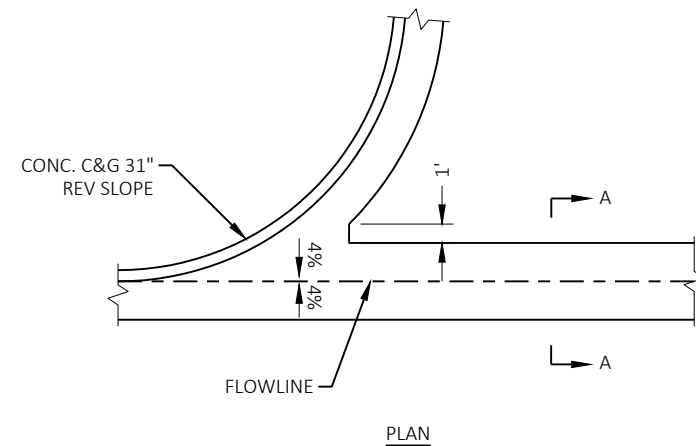
OAK CREEK
STA 0+48 TO 1+40
STA 2+10 TO 2+75



FINISHED TYPICAL SECTION

OAK CREEK
STA 2+75 TO 3+57

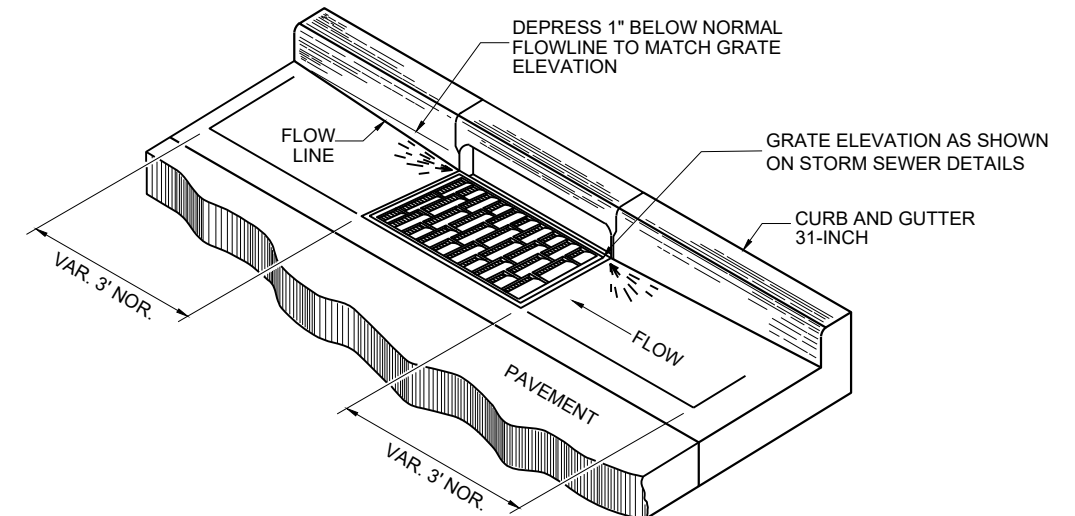
NOTE:
SEE STRUCTURE PLANS FOR
TYPICAL STREAM SECTION
FROM STA 1+40 TO 2+10.



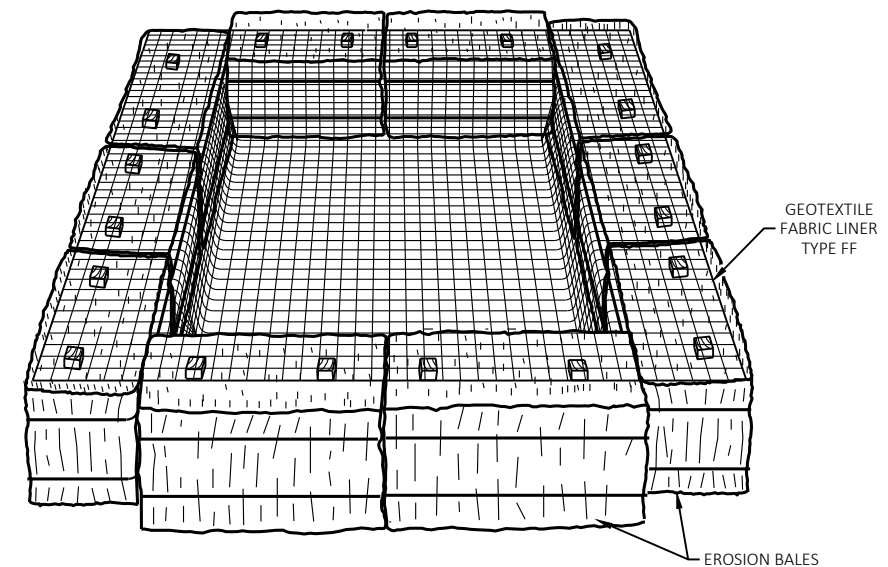
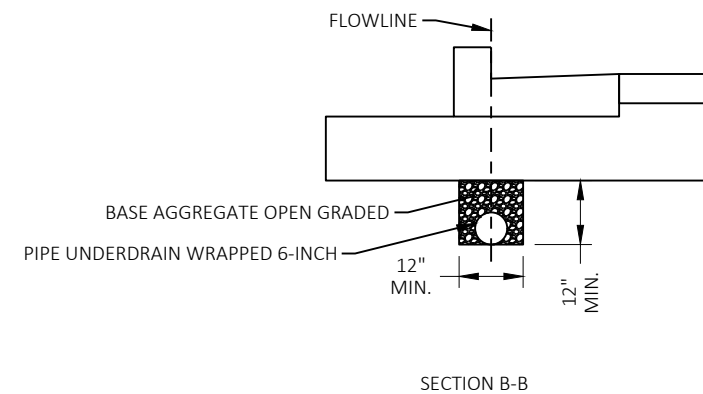
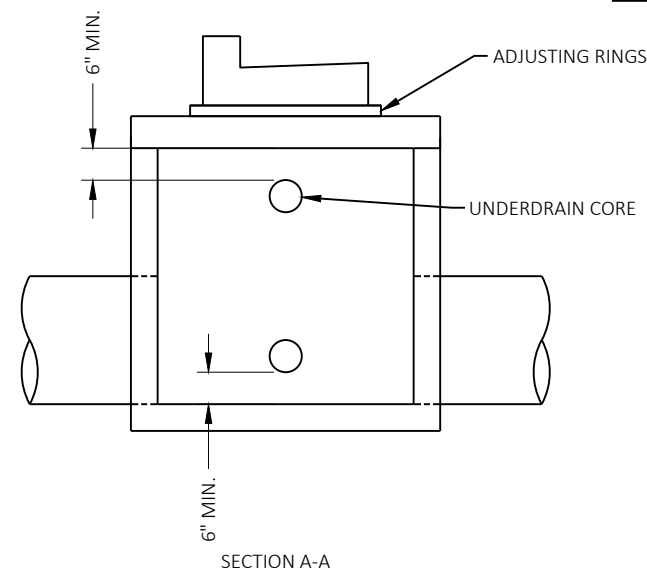
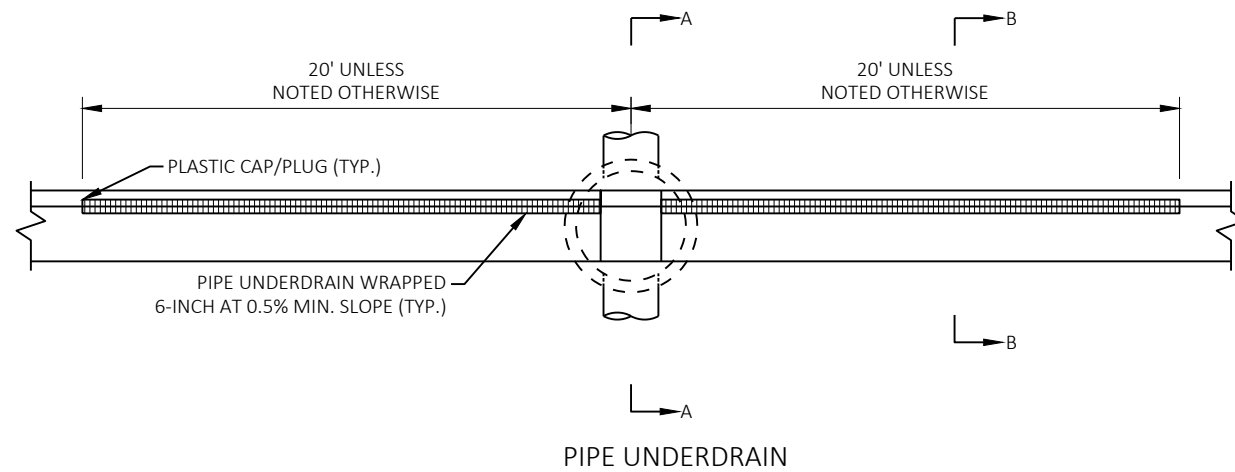
NOTES:

- 1 THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS MAINTAINED.

CONCRETE VALLEY GUTTER 48-INCH

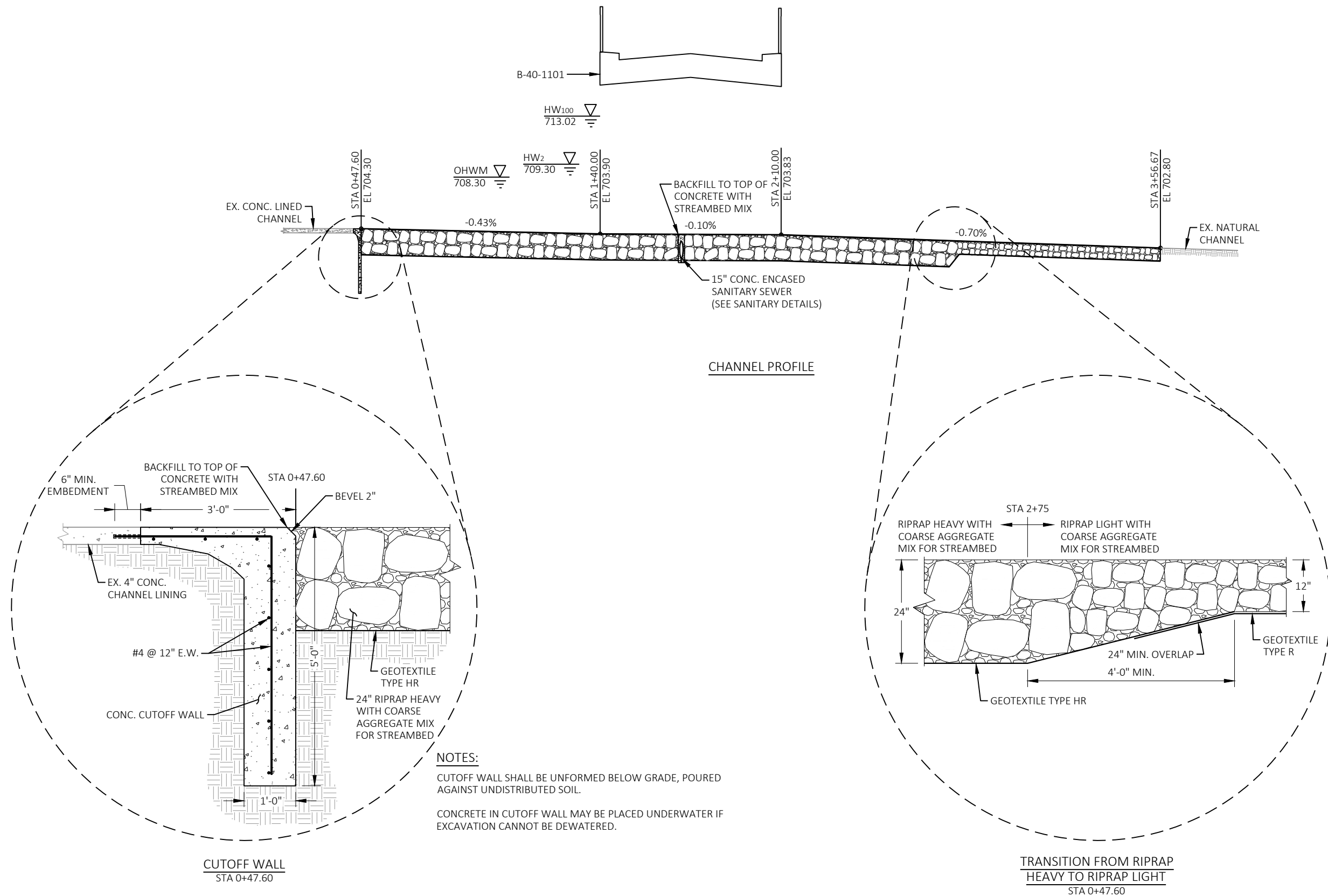


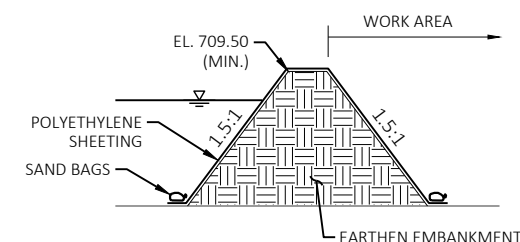
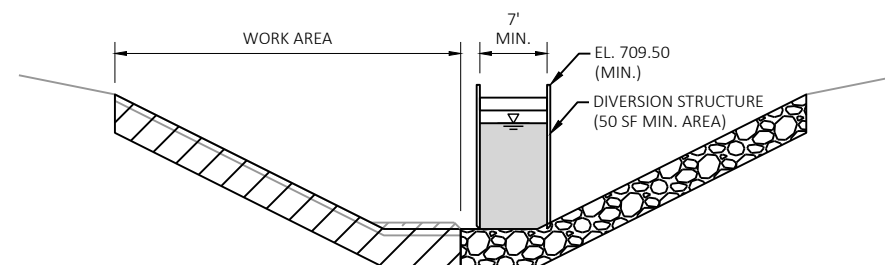
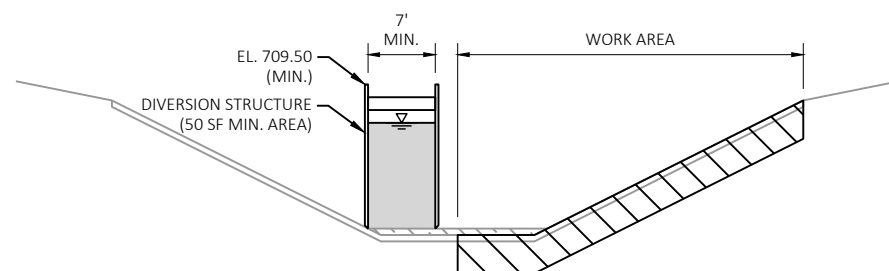
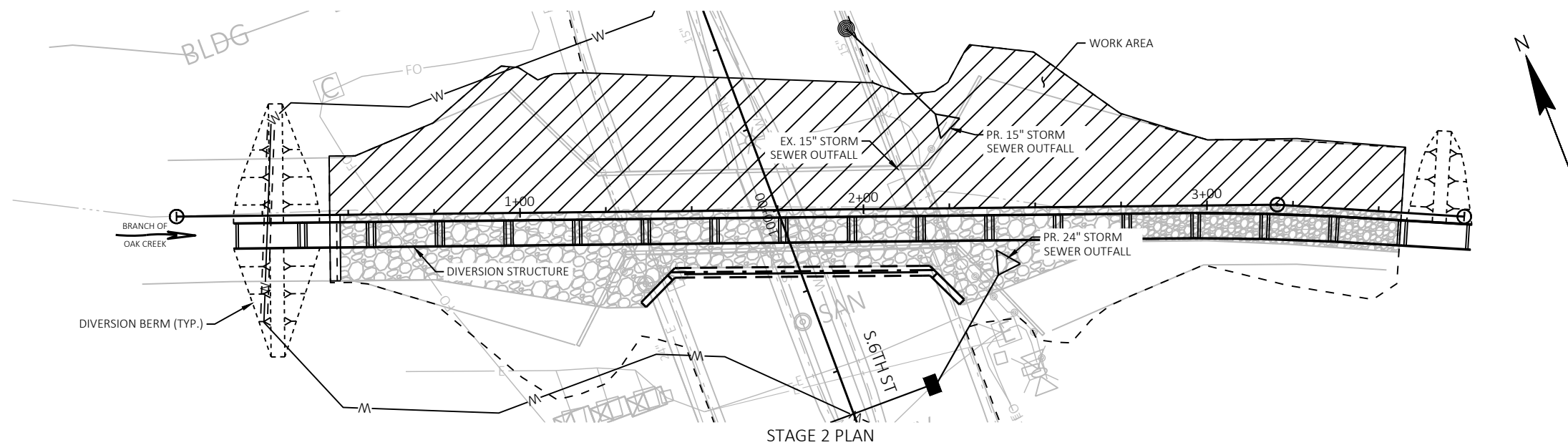
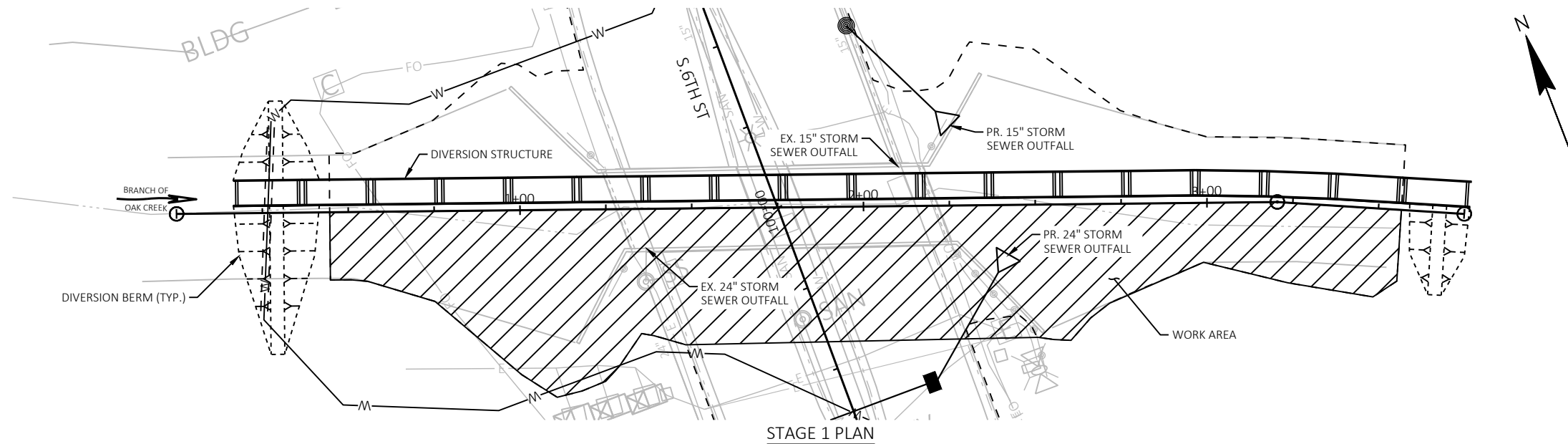
DETAIL OF CURB AND GUTTER AT INLETS

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

STORAGE VOLUME (CF) = 16 X GPM (PUMP RATE)

EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FTSOLUTION:
SV (CF) = 16 X 50
SV = 800 CF
 $\frac{800 \text{ CF}}{1.5 \text{ FT}} = 533 \text{ SF}$
USE A 20 FT X 27 FT BASIN

**CHANNEL LINING**



STREAM STAGING

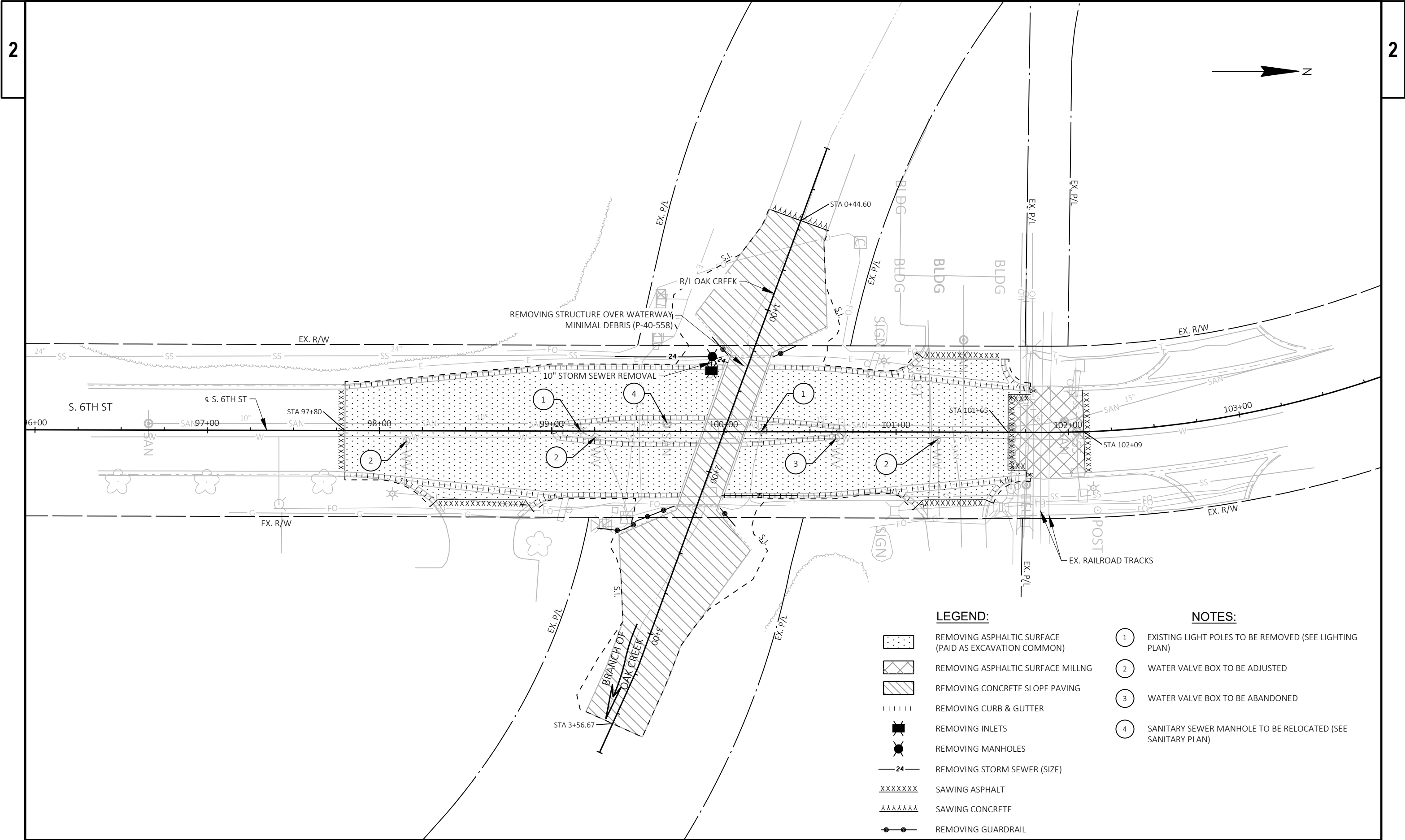
NOTES:

TRENCH BOX SYSTEM SHOWN FOR ILLUSTRATION. ALTERNATE DIVERSION STRUCTURE MAY BE PROPOSED BY CONTRACTOR.

CONTRACTOR SHALL PROVIDE FOR WATERTIGHT CONSTRUCTION AT BOTTOM OF DIVERSION STRUCTURE AND ALONG JOINTS BETWEEN INDIVIDUAL SECTIONS.

CONTRACTOR SHALL PROPOSE MEANS AND METHODS FOR HANDLING FLOWS FROM STORM SEWER OUTFALLS, WHICH MAY INCLUDE BYPASS PUMPING, EXCAVATION DEWATERING, DIVERSION DITCHES/DIKES, OR OTHER APPROVED METHODS.

DO NOT PUMP WATER FROM THE CONSTRUCTION SITE WITHOUT WATER FIRST PASSING THROUGH A SEDIMENT TRAP AND FILTER BAG IN ACCORDANCE WITH CONSTRUCTION DETAIL "TEMPORARY SETTLING BASIN".

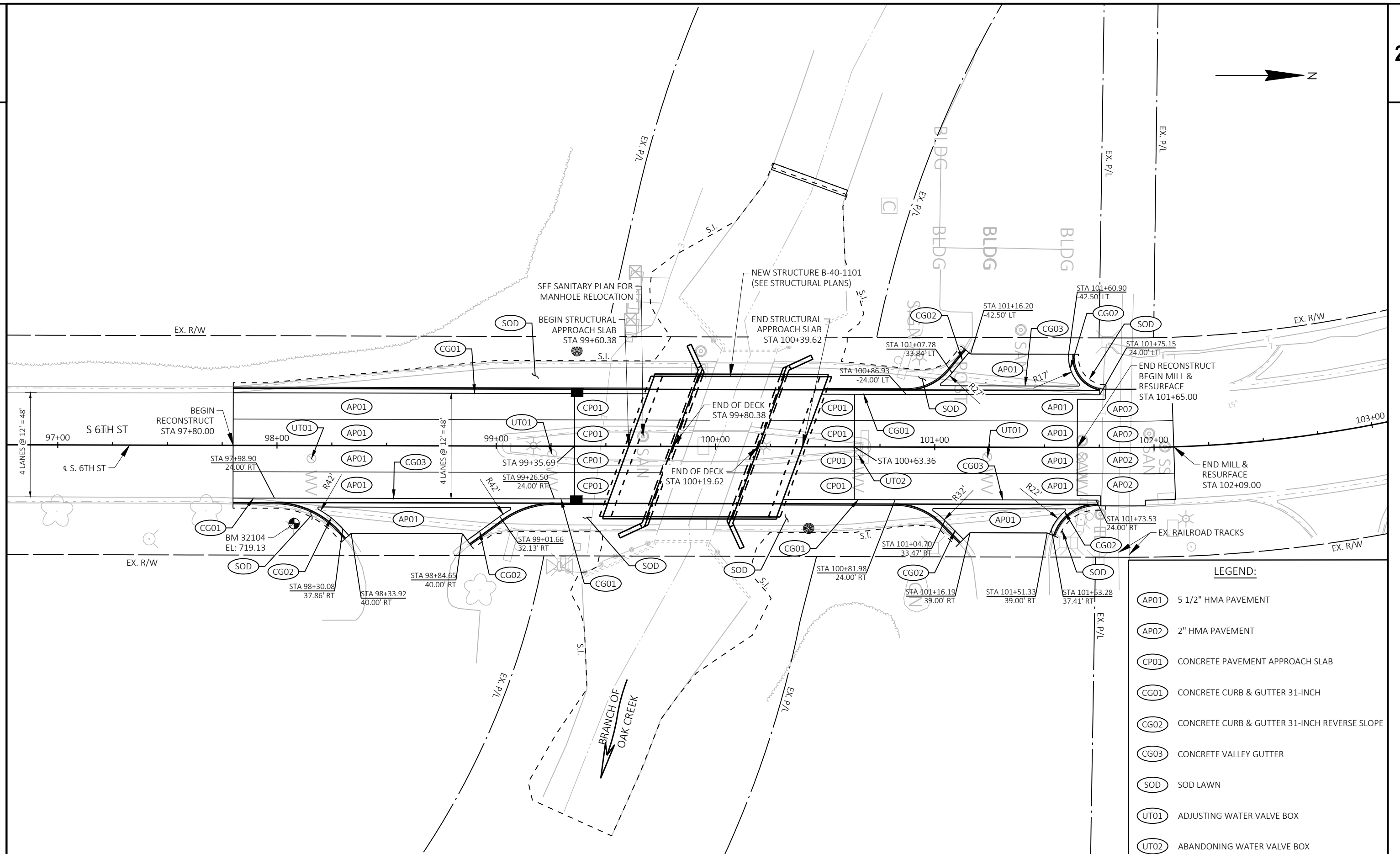


LEGEND:

- REMOVING ASPHALTIC SURFACE (PAID AS EXCAVATION COMMON)
- REMOVING ASPHALTIC SURFACE MILLING
- REMOVING CONCRETE SLOPE PAVING
- REMOVING CURB & GUTTER
- REMOVING INLETS
- REMOVING MANHOLES
- REMOVING STORM SEWER (SIZE)
- SAWING ASPHALT
- SAWING CONCRETE
- REMOVING GUARDRAIL

NOTES:

- EXISTING LIGHT POLES TO BE REMOVED (SEE LIGHTING PLAN)
- WATER VALVE BOX TO BE ADJUSTED
- WATER VALVE BOX TO BE ABANDONED
- SANITARY SEWER MANHOLE TO BE RELOCATED (SEE SANITARY PLAN)



PROJECT NO: 2235-00-74

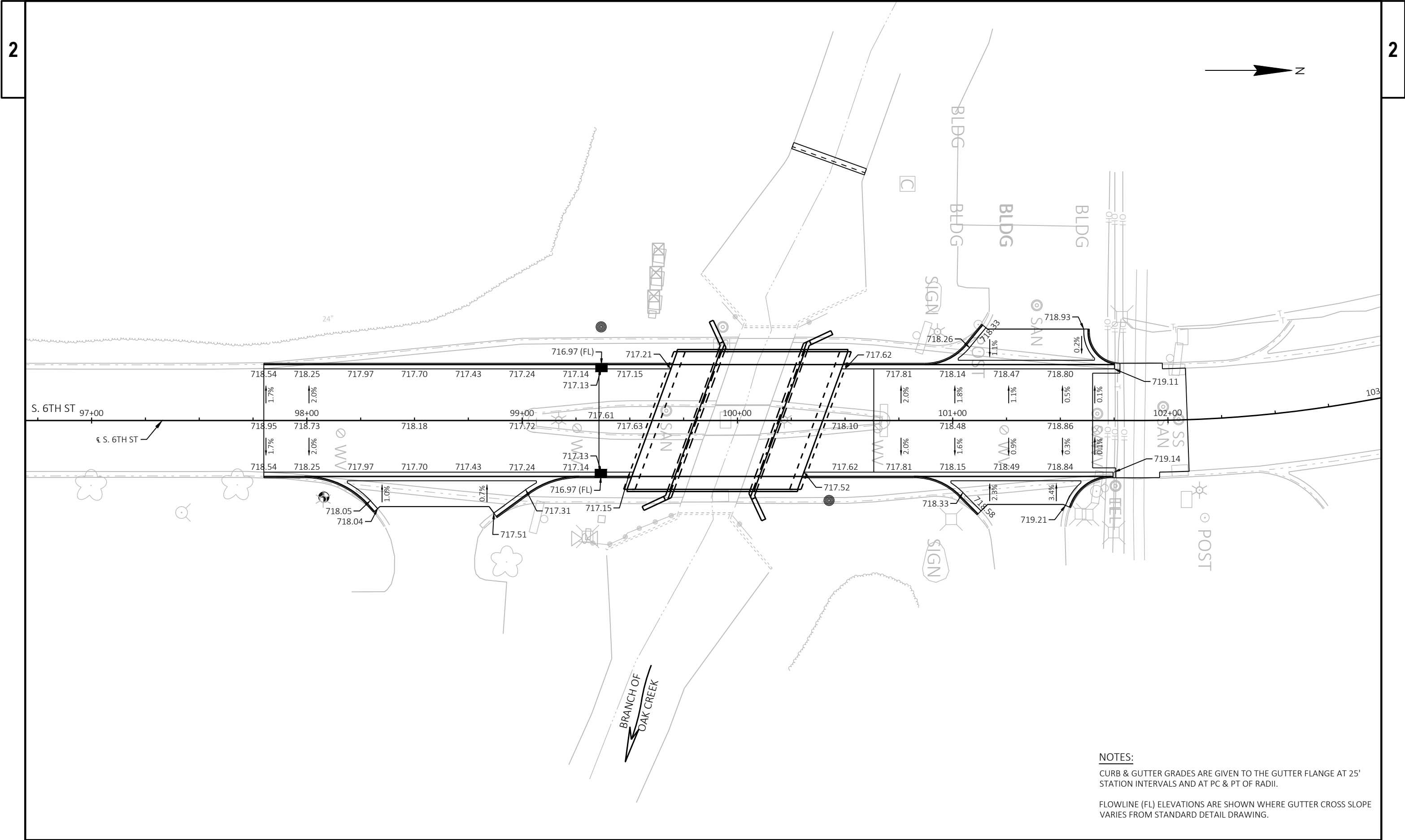
HWY: S. 6TH ST

COUNTY: MILWAUKEE

PLAN DETAILS

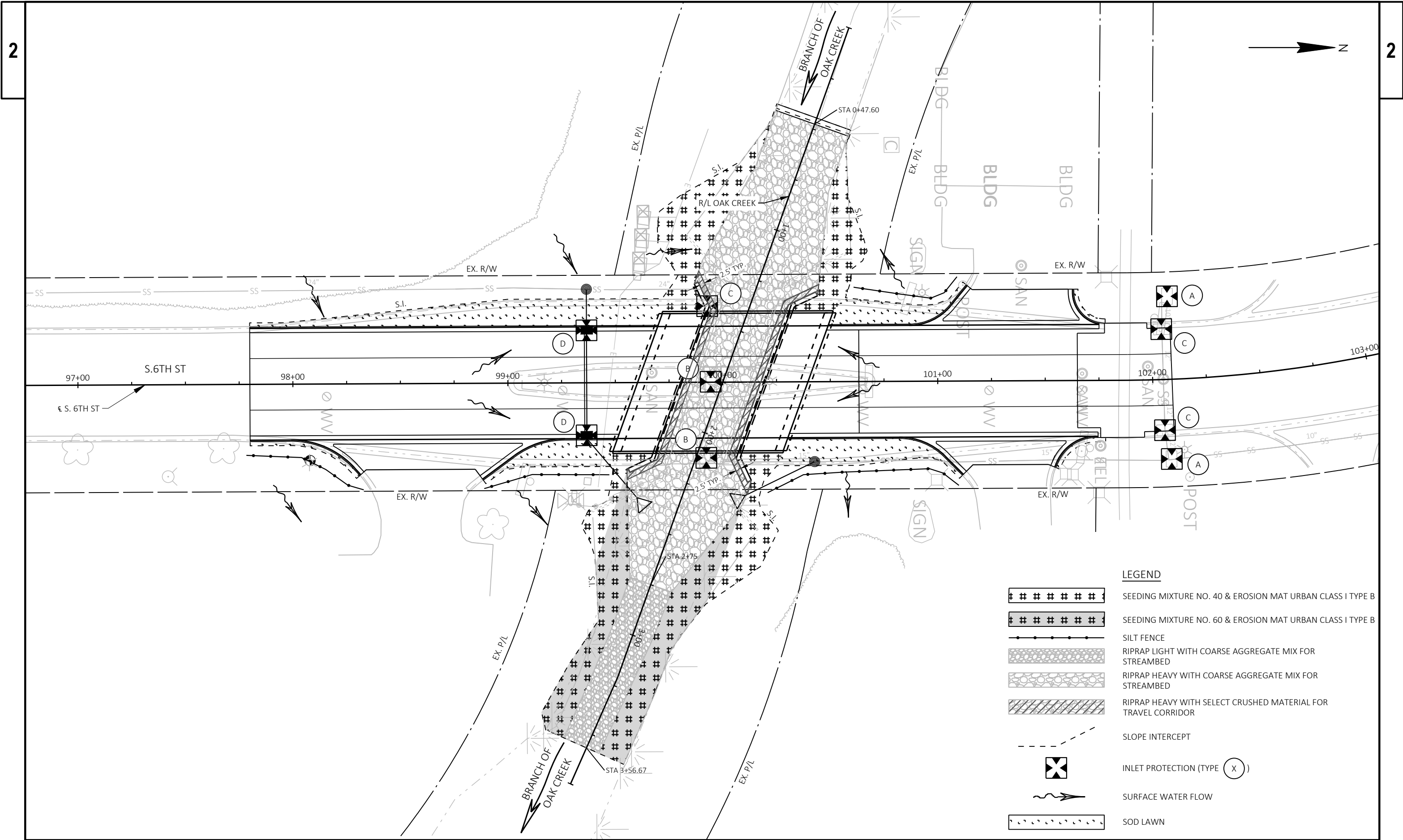
SHEET

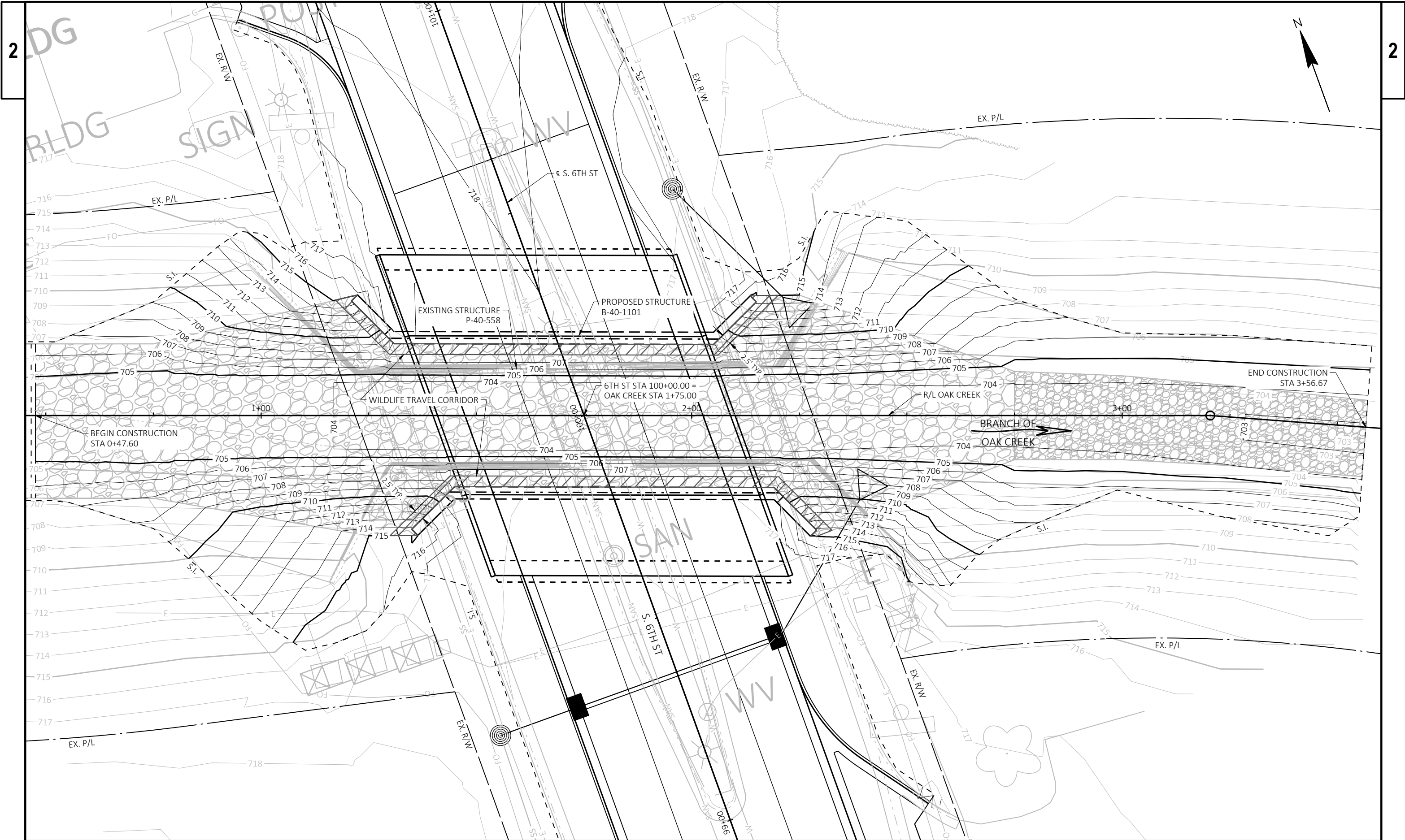
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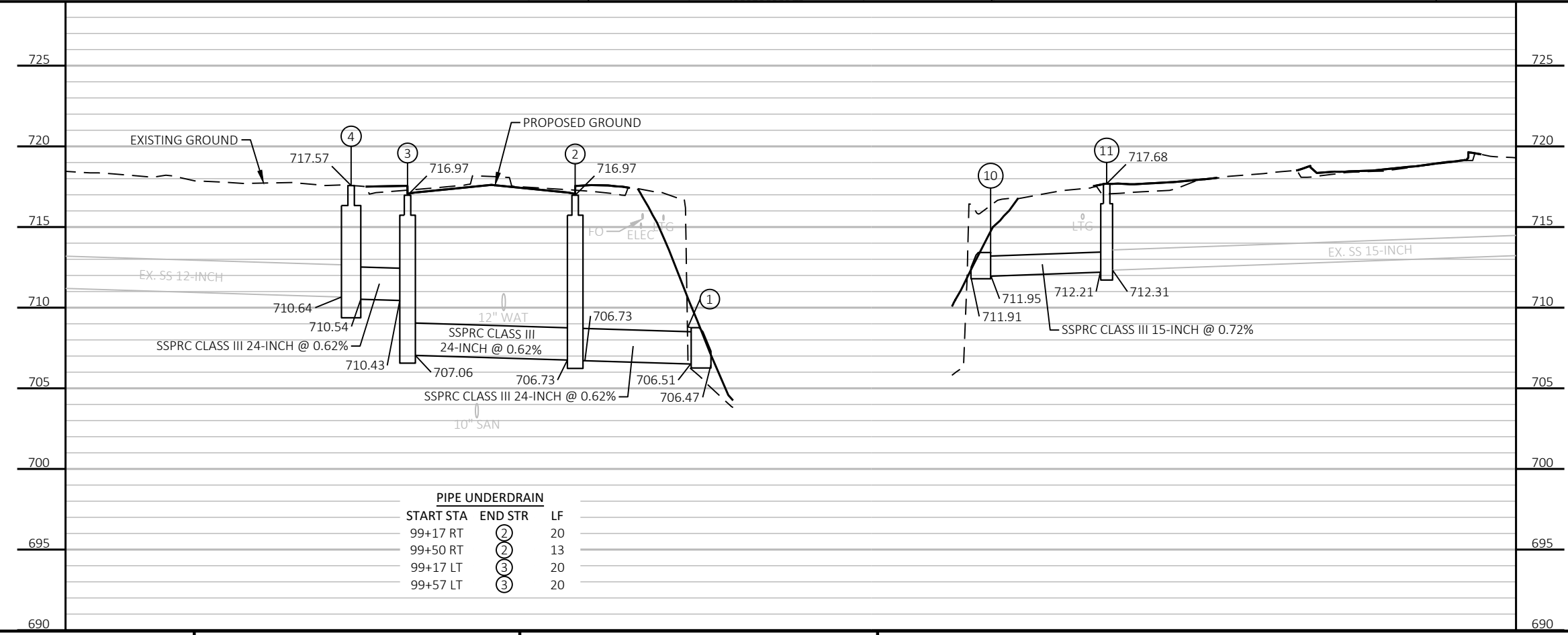
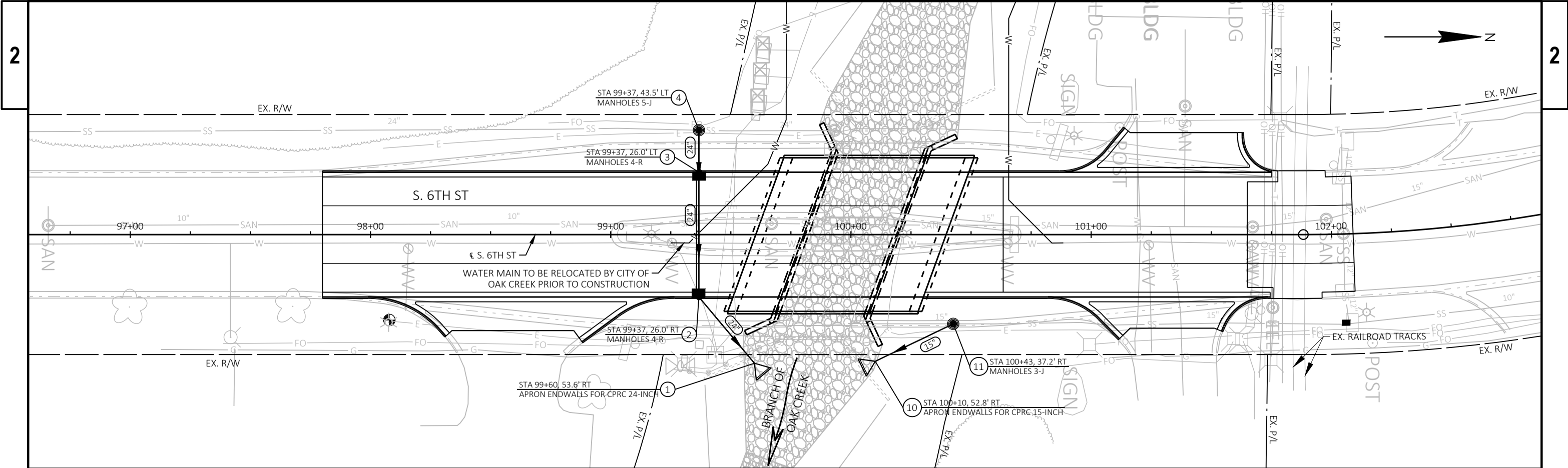
NOTES:
CURB & GUTTER GRADES ARE GIVEN TO THE GUTTER FLANGE AT 25' STATION INTERVALS AND AT PC & PT OF RADII.
FLOWLINE (FL) ELEVATIONS ARE SHOWN WHERE GUTTER CROSS SLOPE VARIES FROM STANDARD DETAIL DRAWING.

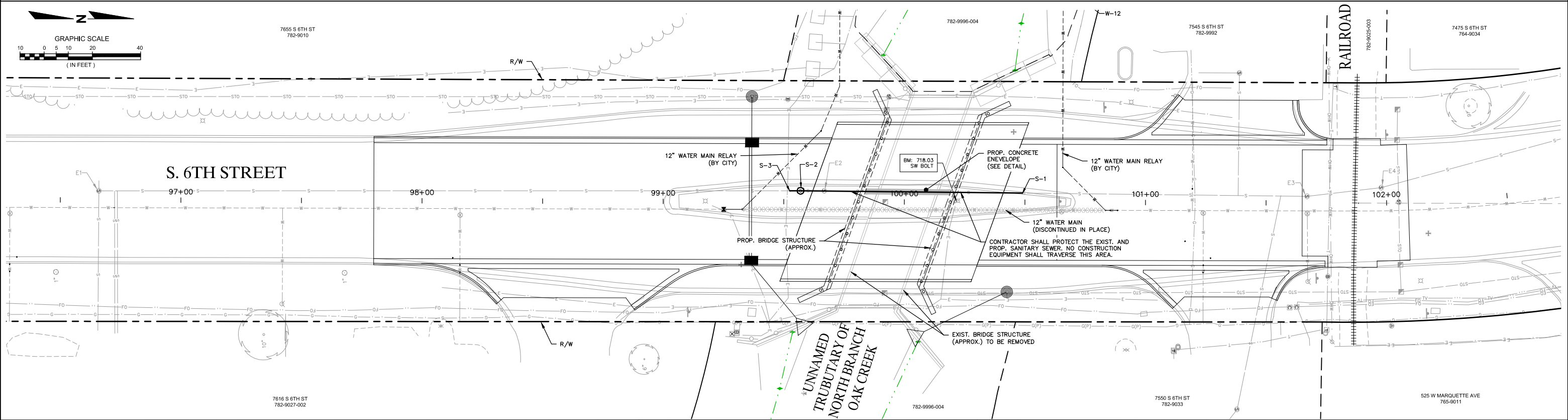
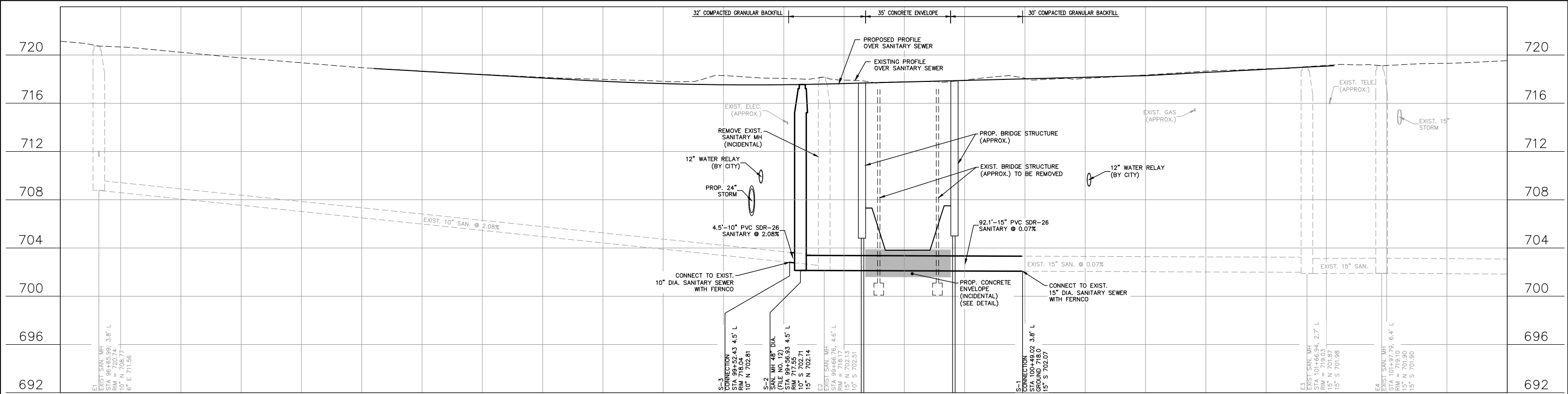
PROJECT NO: 2235-00-74	HWY: S. 6TH ST	COUNTY: MILWAUKEE	PAVING GRADES	SHEET	E
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PROJECT NO: 2235-00-74	HWY: S. 6TH ST	COUNTY: MILWAUKEE	CONTOUR MAP	SHEET	E
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Know what's below.
Call before you dig.

ESTIMATE OF QUANTITIES

10" DIA. PVC SDR-26 SANITARY SEWER RELAY	5	LF
15" DIA. PVC SDR-26 SANITARY SEWER RELAY	92	LF
SANITARY MANHOLE 48" DIA.	1	EA

This is to certify that this plan was approved by the Board of Public Works & Capital Assets of Oak Creek at a regular meeting

Utility Engineer _____ Date _____

PROJECT MANAGER: JASON M. FEUCHT, P.E.
raSmith PROJECT NO: 2224503



16745 W. Bluemound Road
Brookfield, WI 53005-5938
(262) 781-1000
rasmith.com

Brookfield, WI | Milwaukee, WI | Appleton, WI | Madison, WI
Cedarburg, WI | Neenah, WI | Irvine, CA

R.A. SMITH, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT THE EXPRESSED WRITTEN CONSENT OF R.A. SMITH, INC.

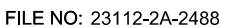


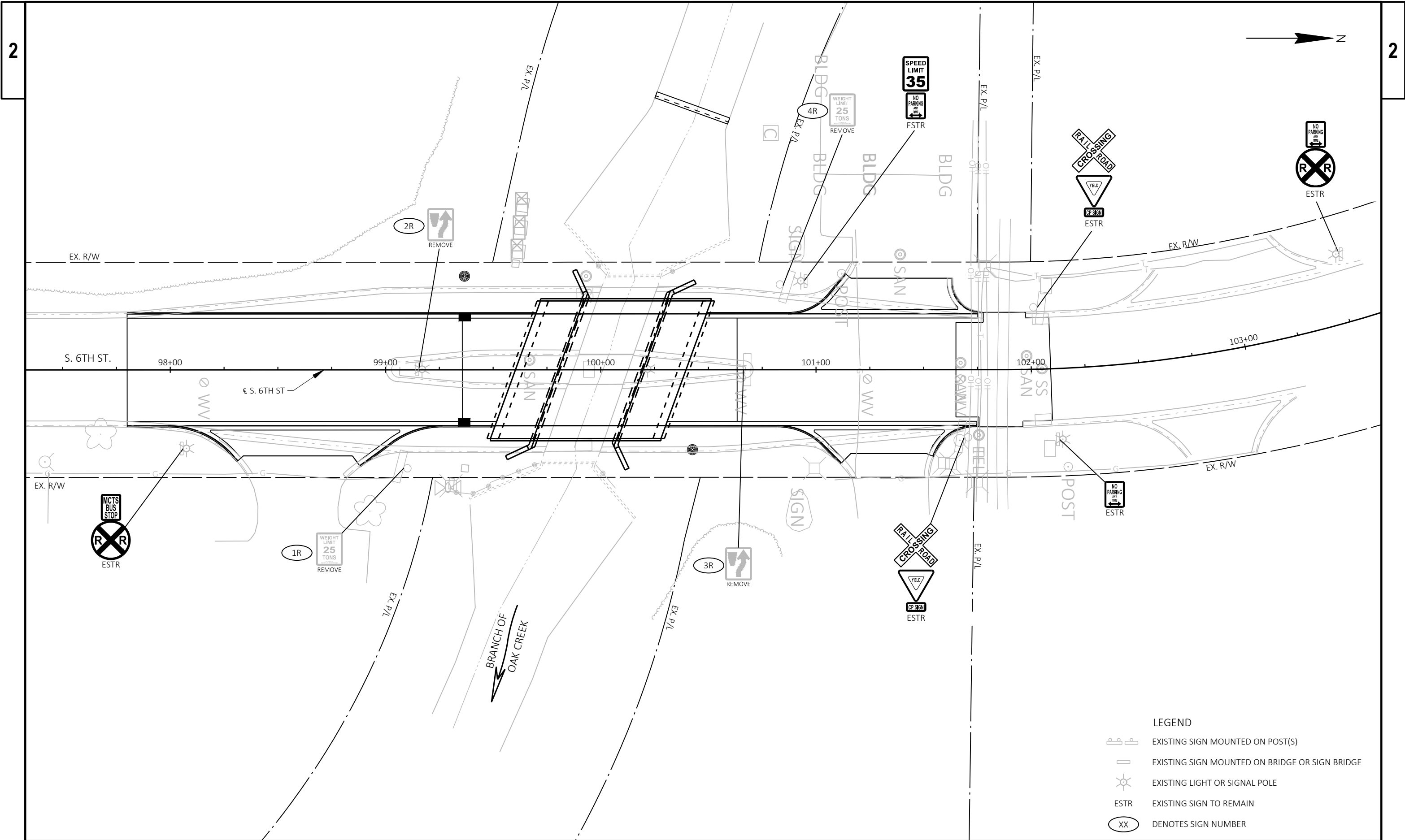
REVISION BY: _____ DATE: _____

SA.	CITY OF OAK CREEK - ENGINEERING DEPARTMENT			
ST.				
W.	DESIGNED BY	DATE	DRAWN BY	DATE
G.	PTA	04/10/2024	PTA	04/10/2024
E.	S. 6TH STREET & BRANCH OF OAK CREEK			
T.	SANITARY SEWER RELAY PROJECT			
I.	SANITARY SEWER PLAN & PROFILE			
TS.	IN:	S. 6TH STREET		
PP.	FROM:	700' SOUTH OF W. MARQUETTE AVENUE		
	TO:	500' SOUTH OF W. MARQUETTE AVENUE		
	APPROVED BY COUNCIL RESOLUTION NO.			

APPROVED BY	
CITY ENGINEER	DATE
SCALE	SHEET
PLAN HOR. 1" = 20'	1
PROFILE HOR. 1" = 20'	OF
VER. 1" = 4'	2

FILE NO: 23112-1A-2487





LEGEND

-  EXISTING SIGN MOUNTED ON POST(S)
-  EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
-  EXISTING LIGHT OR SIGNAL POLE
- ESTR EXISTING SIGN TO REMAIN
-  DENOTES SIGN NUMBER

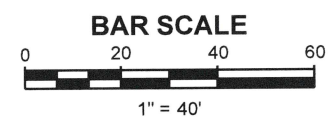
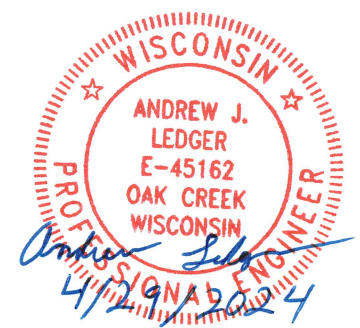
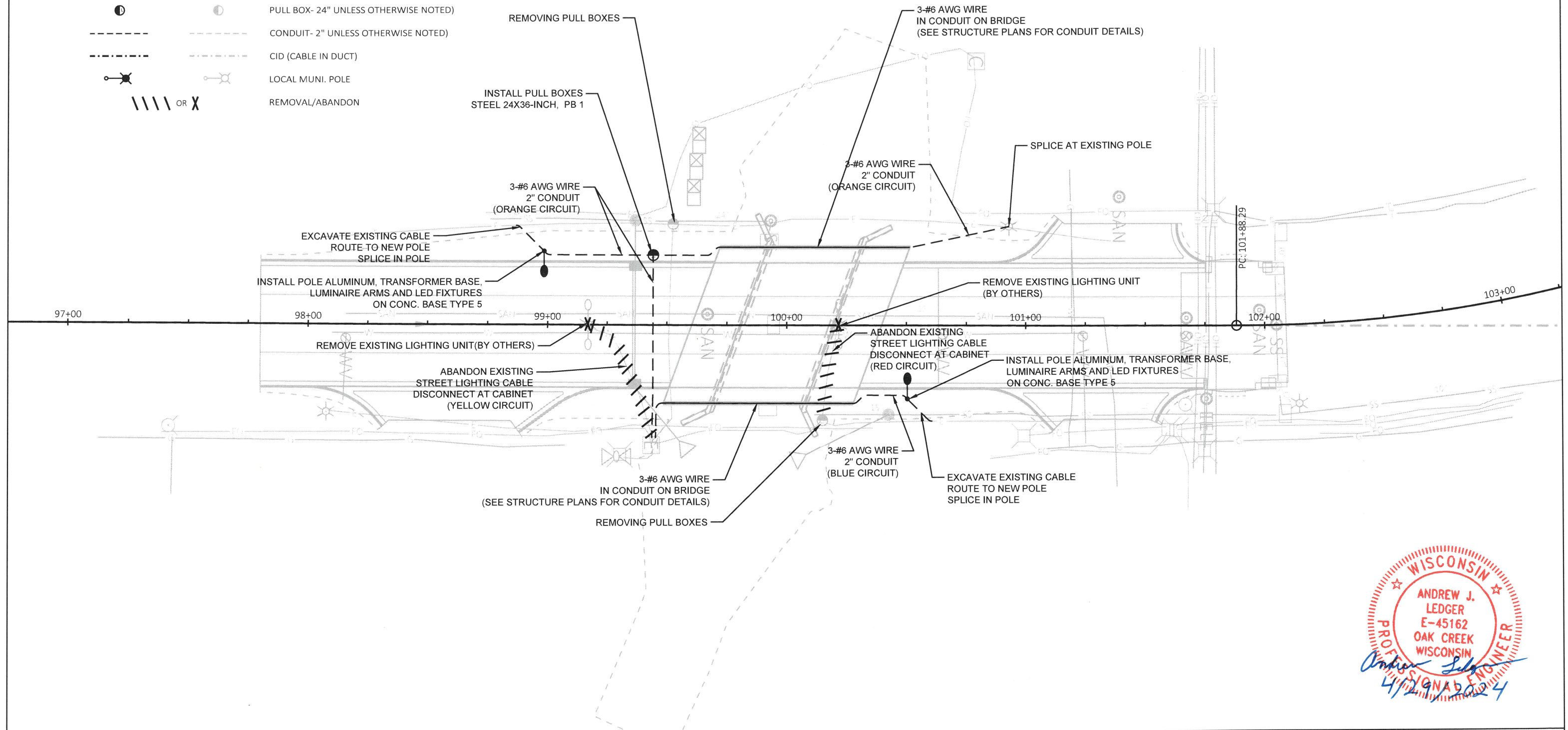
LIGHTING PLAN LEGEND

PROPOSED

EXISTING

-  DISTRIBUTION CENTER
-  PULL BOX- 24" UNLESS OTHERWISE NOTED)
-  CONDUIT- 2" UNLESS OTHERWISE NOTED)
-  CID (CABLE IN DUCT)
-  LOCAL MUNI. POLE
-  REMOVAL/ABANDON

-  DISTRIBUTION CENTER
-  PULL BOX- 24" UNLESS OTHERWISE NOTED)
-  CONDUIT- 2" UNLESS OTHERWISE NOTED)
-  CID (CABLE IN DUCT)
-  LOCAL MUNI. POLE
-  REMOVAL/ABANDON



SA.	CITY OF OAK CREEK - ENGINEERING DEPARTMENT					
ST.						
W.	DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
G.	A. LEDGER	4/2024	A. LEDGER	4/2024	A. KIEPCZYNSKI	4/2024
E.						
T.						
I.						
TS.						
PP.						
	STREET LIGHTING IN: S. 6TH STREET FROM: STA.97+00 TO: STA. 102+00					SCALE
						PLAN HOR. 1" = 40'
						PROFILE HOR. OF
						VER. 2
	APPROVED BY COUNCIL RESOLUTION NO. 12349-071922					FILE NO: 23008-1D-3547

LIGHTING UNIT ITEMS

	653.0135	654.0105	655.061	657.0255	657.0615	SPV.0060.06	SPV.0060.07
	PULL BOXES	CONCRETE BASES	ELECTRICAL WIRE	TRANSFORMER BASES	LUMINAIRE ARMS SINGLE MEMBER	LED LUMINAIRE	POLES ALUMINUM
STATION	STEEL 24X36-INCH	TYPE 5	LIGHTING 12 AWG	11 1/2-INCH BOLT CIRCLE	4 1/2-INCH CLAMP 8-FT	60 WATTS	HEIGHT 28-FT
98+98	-	1	115	1	1	1	1
99+44	1	-	-	-	-	-	-
100+50	-	1	115	1	1	1	1
TOTALS	1	2	230	2	2	2	2

REMOVING ITEMS

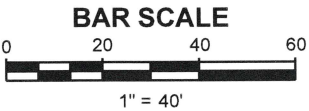
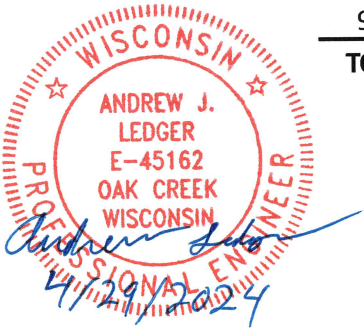
	653.0905
	REMOVING
STATION	PULL BOXES
99+52	1
100+15	1
TOTALS	2

CONDUIT ITEMS

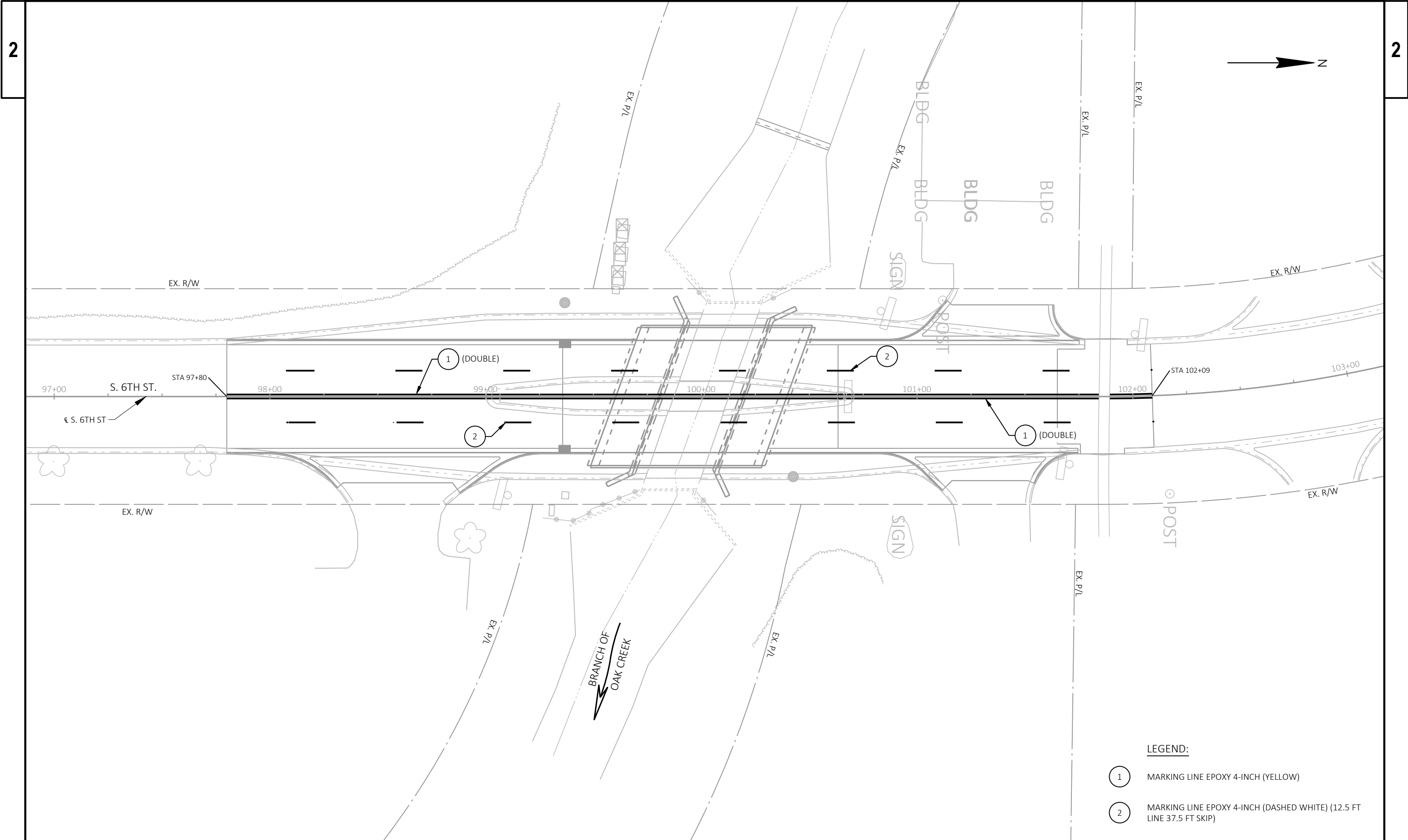
			652.0225
			CONDUIT RIGID NONMETALLIC
LOCATION	TO LOCATION	CIRCUIT	SCHEDULE 40 2-INCH
98+98	100+92	ORANGE	118
99+44	99+44	ORANGE	76
99+45	100+50	BLUE	41
TOTALS			235

WIRE ITEMS

			655.0625
			ELECTRICAL WIRE
LOCATION	TO LOCATION	CIRCUIT	LIGHTING 6 AWG
98+98	100+92	ORANGE	636
99+44	99+44	ORANGE	318
99+45	100+50	BLUE	405
TOTALS			1,359



SA.	CITY OF OAK CREEK - ENGINEERING DEPARTMENT					
ST.						
W.	DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
G.	A. LEDGER	4/2024	A. LEDGER	4/2024	A. KIEPCZYNSKI	4/2024
E.	ESTIMATE OF QUANTITIES IN: S. 6TH STREET STREET LIGHTING					
T.						SCALE
I.						SHEET
TS.						PLAN HOR. 1" = 40'
PP.						PROFILE HOR. _____ VER. _____
	APPROVED BY COUNCIL RESOLUTION NO. 12349-071922					FILE NO: 23008-2D-3548

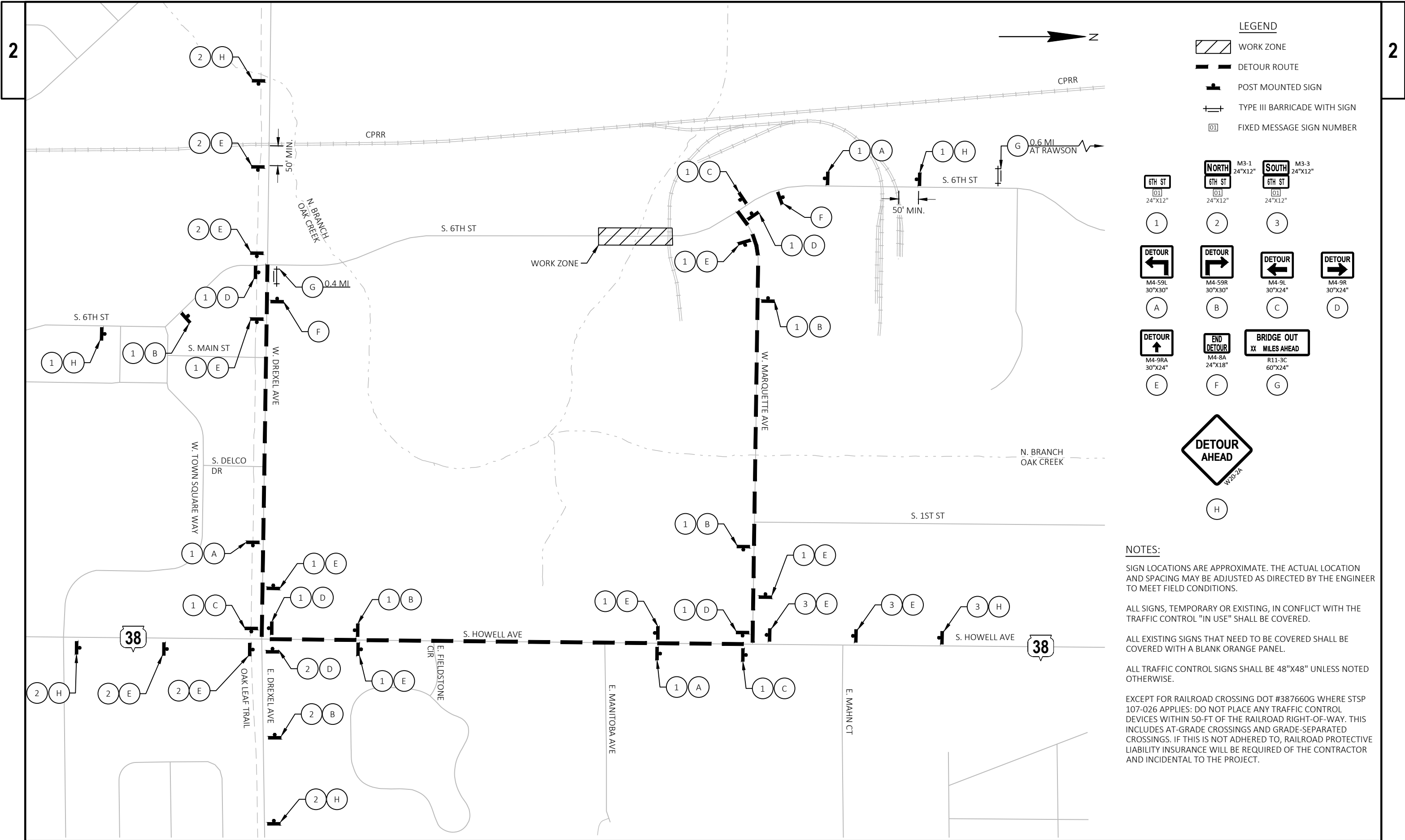


LEGEND:

- 1 MARKING LINE EPOXY 4-INCH (YELLOW)
- 2 MARKING LINE EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)

PROJECT NO: 2235-00-74	HWY: S. 6TH ST	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET	E
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PROJECT NO: 2235-00-74	HWY: S. 6TH ST	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SHEET	E
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LEGEND

- WORK ZONE
- DETOUR ROUTE
- POST MOUNTED SIGN
- TYPE III BARRICADE WITH SIGN
- FIXED MESSAGE SIGN NUMBER

6TH ST
24"x12"
[01]

1

DETOUR
M4-59L
30"x30"
A

DETOUR
M4-9RA
30"x24"
E

NORTH
6TH ST
24"x12"
[01]

2

DETOUR
M4-59R
30"x30"
B

END
DETOUR
M4-8A
24"x18"
F

SOUTH
6TH ST
24"x12"
[01]

3

DETOUR
M4-9L
30"x24"
C

BRIDGE OUT
XX MILES AHEAD
R11-3C
60"x24"
G

M3-1
24"x12"

M3-3
24"x12"



NOTES:

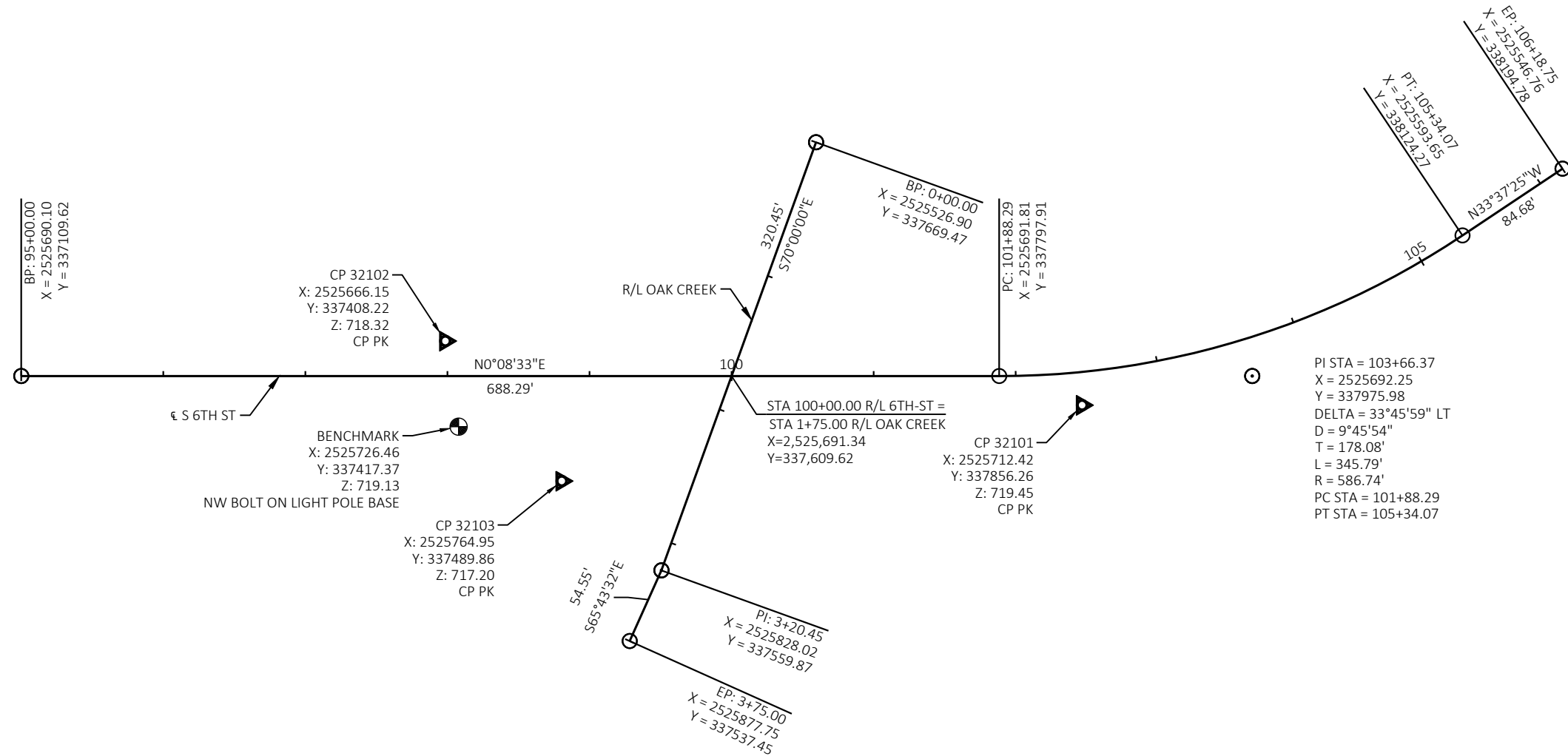
SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

ALL SIGNS, TEMPORARY OR EXISTING, IN CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE COVERED.

ALL EXISTING SIGNS THAT NEED TO BE COVERED SHALL BE COVERED WITH A BLANK ORANGE PANEL.

ALL TRAFFIC CONTROL SIGNS SHALL BE 48"x48" UNLESS NOTED OTHERWISE.

EXCEPT FOR RAILROAD CROSSING DOT #387660G WHERE STP 107-026 APPLIES: DO NOT PLACE ANY TRAFFIC CONTROL DEVICES WITHIN 50-FT OF THE RAILROAD RIGHT-OF-WAY. THIS INCLUDES AT-GRADE CROSSINGS AND GRADE-SEPARATED CROSSINGS. IF THIS IS NOT ADHERED TO, RAILROAD PROTECTIVE LIABILITY INSURANCE WILL BE REQUIRED OF THE CONTRACTOR AND INCIDENTAL TO THE PROJECT.



Estimate Of Quantities

2235-00-74

Line	Item	Item Description	Unit	Total	Qty
0002	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. P-40-0558	EACH	1.000	1.000
0004	204.0120	Removing Asphaltic Surface Milling	SY	250.000	250.000
0006	204.0150	Removing Curb & Gutter	LF	1,142.000	1,142.000
0008	204.0165	Removing Guardrail	LF	94.000	94.000
0010	204.0175	Removing Concrete Slope Paving	SY	1,394.000	1,394.000
0012	204.0210	Removing Manholes	EACH	1.000	1.000
0014	204.0220	Removing Inlets	EACH	1.000	1.000
0016	204.0245	Removing Storm Sewer (size) 01. 10-Inch	LF	6.000	6.000
0018	204.0245	Removing Storm Sewer (size) 02. 15-Inch	LF	44.000	44.000
0020	204.0245	Removing Storm Sewer (size) 03. 24-Inch	LF	67.000	67.000
0022	205.0100	Excavation Common	CY	2,705.000	2,705.000
0024	206.1001	Excavation for Structures Bridges (structure) 01. B-40-1101	EACH	1.000	1.000
0026	210.1500	Backfill Structure Type A	TON	1,052.000	1,052.000
0028	213.0100	Finishing Roadway (project) 01. 2235-00-74	EACH	1.000	1.000
0030	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,833.000	1,833.000
0032	310.0110	Base Aggregate Open-Graded	TON	8.000	8.000
0034	311.0110	Breaker Run	TON	90.000	90.000
0036	415.0410	Concrete Pavement Approach Slab	SY	259.000	259.000
0038	416.0610	Drilled Tie Bars	EACH	14.000	14.000
0040	455.0605	Tack Coat	GAL	1,178.000	1,178.000
0042	460.2000	Incentive Density HMA Pavement	DOL	350.000	350.000
0044	460.6423	HMA Pavement 3 MT 58-28 H	TON	329.000	329.000
0046	460.6424	HMA Pavement 4 MT 58-28 H	TON	215.000	215.000
0048	502.0100	Concrete Masonry Bridges	CY	605.000	605.000
0050	502.3200	Protective Surface Treatment	SY	620.000	620.000
0052	502.3210	Pigmented Surface Sealer	SY	80.000	80.000
0054	505.0400	Bar Steel Reinforcement HS Structures	LB	11,393.000	11,393.000
0056	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	83,216.000	83,216.000
0058	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	595.000	595.000
0060	516.0500	Rubberized Membrane Waterproofing	SY	332.000	332.000
0062	517.1050.S	Architectural Surface Treatment (structure) 01. B-40-1101	SF	392.000	392.000
0064	522.1015	Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	EACH	1.000	1.000
0066	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	1.000	1.000
0068	550.0010	Pre-Boring Unconsolidated Materials	LF	20.000	20.000
0070	550.2124	Piling CIP Concrete 12 3/4 X 0.25-Inch	LF	1,625.000	1,625.000
0072	601.0331	Concrete Curb & Gutter 31-Inch	LF	524.000	524.000
0074	606.0100	Riprap Light	CY	58.000	58.000
0076	606.0300	Riprap Heavy	CY	628.000	628.000
0078	608.0315	Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	LF	36.000	36.000
0080	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	106.000	106.000
0082	611.0530	Manhole Covers Type J	EACH	2.000	2.000
0084	611.0648	Inlet Covers Type R	EACH	2.000	2.000
0086	611.2003	Manholes 3-FT Diameter	EACH	1.000	1.000
0088	611.2004	Manholes 4-FT Diameter	EACH	2.000	2.000
0090	611.2005	Manholes 5-FT Diameter	EACH	1.000	1.000
0092	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	283.000	283.000
0094	618.0100	Maintenance and Repair of Haul Roads (project) 01. 2235-00-74	EACH	1.000	1.000
0096	619.1000	Mobilization	EACH	1.000	1.000
0098	624.0100	Water	MGAL	22.000	22.000

Estimate Of Quantities

2235-00-74

Line	Item	Item Description	Unit	Total	Qty
0100	625.0500	Salvaged Topsoil	SY	1,176.000	1,176.000
0102	627.0200	Mulching	SY	294.000	294.000
0104	628.1504	Silt Fence	LF	330.000	330.000
0106	628.1520	Silt Fence Maintenance	LF	330.000	330.000
0108	628.1905	Mobilizations Erosion Control	EACH	10.000	10.000
0110	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	6.000
0112	628.2008	Erosion Mat Urban Class I Type B	SY	1,237.000	1,237.000
0114	628.6510	Soil Stabilizer Type B	ACRE	0.200	0.200
0116	628.7005	Inlet Protection Type A	EACH	2.000	2.000
0118	628.7010	Inlet Protection Type B	EACH	4.000	4.000
0120	628.7015	Inlet Protection Type C	EACH	5.000	5.000
0122	628.7020	Inlet Protection Type D	EACH	4.000	4.000
0124	628.7560	Tracking Pads	EACH	2.000	2.000
0126	629.0210	Fertilizer Type B	CWT	1.000	1.000
0128	630.0140	Seeding Mixture No. 40	LB	12.000	12.000
0130	630.0160	Seeding Mixture No. 60	LB	7.000	7.000
0132	630.0200	Seeding Temporary	LB	27.000	27.000
0134	630.0500	Seed Water	MGAL	22.000	22.000
0136	631.0300	Sod Water	MGAL	13.000	13.000
0138	631.1000	Sod Lawn	SY	464.000	464.000
0140	638.2602	Removing Signs Type II	EACH	4.000	4.000
0142	638.3000	Removing Small Sign Supports	EACH	3.000	3.000
0144	643.0300	Traffic Control Drums	DAY	3,600.000	3,600.000
0146	643.0420	Traffic Control Barricades Type III	DAY	3,030.000	3,030.000
0148	643.0705	Traffic Control Warning Lights Type A	DAY	5,190.000	5,190.000
0150	643.0900	Traffic Control Signs	DAY	12,750.000	12,750.000
0152	643.0920	Traffic Control Covering Signs Type II	EACH	4.000	4.000
0154	643.1000	Traffic Control Signs Fixed Message	SF	82.000	82.000
0156	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0158	643.5000	Traffic Control	EACH	1.000	1.000
0160	645.0111	Geotextile Type DF Schedule A	SY	166.000	166.000
0162	645.0120	Geotextile Type HR	SY	950.000	950.000
0164	645.0130	Geotextile Type R	SY	174.000	174.000
0166	646.1020	Marking Line Epoxy 4-Inch	LF	1,083.000	1,083.000
0168	650.4000	Construction Staking Storm Sewer	EACH	6.000	6.000
0170	650.4500	Construction Staking Subgrade	LF	738.000	738.000
0172	650.5000	Construction Staking Base	LF	429.000	429.000
0174	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	832.000	832.000
0176	650.6501	Construction Staking Structure Layout (structure) 01. B-40-1101	EACH	1.000	1.000
0178	650.9911	Construction Staking Supplemental Control (project) 01. 2235-00-74	EACH	1.000	1.000
0180	650.9920	Construction Staking Slope Stakes	LF	738.000	738.000
0182	652.0125	Conduit Rigid Metallic 2-Inch	LF	24.000	24.000
0184	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	235.000	235.000
0186	652.0325	Conduit Rigid Nonmetallic Schedule 80 2-Inch	LF	156.000	156.000
0188	653.0135	Pull Boxes Steel 24x36-Inch	EACH	1.000	1.000
0190	653.0220	Junction Boxes 18x6x6-Inch	EACH	4.000	4.000
0192	653.0905	Removing Pull Boxes	EACH	2.000	2.000
0194	654.0105	Concrete Bases Type 5	EACH	2.000	2.000
0196	655.0610	Electrical Wire Lighting 12 AWG	LF	230.000	230.000

Estimate Of Quantities

2235-00-74

Line	Item	Item Description	Unit	Total	Qty
0198	655.0625	Electrical Wire Lighting 6 AWG	LF	1,359.000	1,359.000
0200	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	2.000	2.000
0202	657.0615	Luminaire Arms Single Member 4 1/2-Inch Clamp 8-FT	EACH	2.000	2.000
0204	690.0150	Sawing Asphalt	LF	316.000	316.000
0206	690.0250	Sawing Concrete	LF	56.000	56.000
0208	715.0502	Incentive Strength Concrete Structures	DOL	3,630.000	3,630.000
0210	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0212	999.1001.S	Seismograph	EACH	1.000	1.000
0214	999.1501.S	Crack and Damage Survey	EACH	1.000	1.000
0216	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	700.000	700.000
0218	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,800.000	1,800.000
0220	SPV.0035	Special 01. Cutoff Wall	CY	9.000	9.000
0222	SPV.0060	Special 01. Locate Utility Line	EACH	2.000	2.000
0224	SPV.0060	Special 02. Adjusting Water Valve Box	EACH	3.000	3.000
0226	SPV.0060	Special 03. Abandoning Water Valve Box	EACH	1.000	1.000
0228	SPV.0060	Special 04. Oak Creek Diversion Structure	EACH	1.000	1.000
0230	SPV.0060	Special 05. Sanitary Manhole 48" Dia.	EACH	1.000	1.000
0232	SPV.0060	Special 06. LED Luminaire 60 Watts	EACH	2.000	2.000
0234	SPV.0060	Special 07. Poles Aluminum Height 28-FT	EACH	2.000	2.000
0236	SPV.0090	Special 01. Concrete Valley Gutter 48-Inch	LF	308.000	308.000
0238	SPV.0090	Special 02. 10" Dia. PVC SDR-26 Sanitary Sewer Relay	LF	5.000	5.000
0240	SPV.0090	Special 03. 15" Dia. PVC SDR-26 Sanitary Sewer Relay	LF	92.000	92.000
0242	SPV.0195	Special 01. Select Crushed Material for Travel Corridor	TON	32.000	32.000
0244	SPV.0195	Special 02. Coarse Aggregate Mix for Stream Bed	TON	465.000	465.000

3

REMOVING ASPHALTIC SURFACE MILLING

			204.0120 REMOVING ASPHALTIC SURFACE MILLING SY
STA	TO	STA	
101+65		102+09	250
TOTAL			250

REMOVING CONCRETE SLOPE PAVING

			204.0175 REMOVING CONCRETE SLOPE PAVING SY
STA	TO	STA	
0+48		3+57	1394
TOTAL			1394

REMOVING GUARDRAIL

				204.0165 REMOVING GUARDRAIL LF
STA	TO	STA	LOCATION	
99+26		99+72	RT	49
99+93		100+02	LT	15
99+98		100+07	RT	15
100+28		100+42	LT	15
TOTAL				94

REMOVING CURB & GUTTER

				204.0150 REMOVING CURB & GUTTER LF
STA	TO	STA	LOCATION	
97+80		100+00	LT/RT	626
100+00		101+75	LT/RT	516
TOTAL				1142

REMOVING DRAINAGE ITEMS

				204.0210 REMOVING MANHOLES EACH	204.0220 REMOVING INLETS EACH	204.0245 REMOVING STORM SEWER (SIZE) 01. 10-INCH LF	204.0245 REMOVING STORM SEWER (SIZE) 02. 15-INCH LF	204.0245 REMOVING STORM SEWER (SIZE) 03. 24-INCH LF
STA	TO	STA	OFFSET					
99+37		100+02	LT	--	--	--	--	67
99+93		99+93	LT	--	--	6	--	--
	99+93		43' LT	1	--	--	--	--
	99+93		38' LT	--	1	--	--	--
99+99		100+43	RT	--	--	--	44	--
TOTAL				1	1	6	44	67

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED OTHERWISE.

3

3

EARTHWORK SUMMARY											
DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (6)	MASS ORDINATE +/- (7)	WASTE	COMMENT
			CUT (2)	EBS EXCAVATION (3)				FACTOR 1.20			
DIVISION 1											
6TH ST	97+80.00/101+74.50	LT/RT	1,475	0	683	792	73	80	721	721	
OAK CREEK	0+47.60/3+56.67	LT/RT	1,180	0	151	1,029	210	252	777	777	
DIVISION 1 SUBTOTAL			2,655	0	834	1,821	283	332	1,498	1,498	
GRAND TOTAL			2,655	0	834	1,821	283	332	1,498	1,498	
UNDISTRIBUTED			50								
TOTAL COMMON EXC			2,705								

NOTES:
(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 TO BE BACKFILLED WITH BREAKER RUN
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
(6) EXPANDED FILL FACTOR = 1.20 EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
(7) 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.
(8) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

AGGREGATE ITEMS						
			305.0120 BASE AGGREGATE DENSE 1 1/4-INCH *	311.0110 BREAKER RUN **	624.0100 WATER MGAL	
FROM	STATION TO	LOCATION	TON	TON		
97+80	102+09	LT/RT	1,403	--	22	
UNDISTRIBUTED			--	90	--	
TOTAL			1,403	90	22	
* ADDITIONAL QUANTITIES SHOWN ELSEWHERE - SEE STRUCURE ITEMS.						
** QUANTITY PROVIDED FOR BACKFILLING EBS.						

CONCRETE ITEMS						
FROM	STATION TO	LOCATION	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	416.0610 DRILLED TIE BARS EACH	601.0331 CONCRETE CURB & GUTTER 31-INCH LF	SPV.0090 SPECIAL 01. CONCRETE VALLEY GUTTER 48-INCH LF
97+80	99+70	LT/RT	132	8	315	128
100+30	102+09	LT/RT	127	6	209	180
TOTAL			259	14	524	308

ASPHALTIC PAVEMENT ITEMS						
FROM	STATION TO	LOCATION	455.0605 TACK COAT GAL	460.6423 HMA PAVEMENT 3 MT 58-28 H TON	460.6424 HMA PAVEMENT 4 MT 58-28 H TON	
97+80	99+70	LT/RT	586	188	107	
100+30	102+09	LT/RT	592	141	108	
TOTAL			1,178	329	215	

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED OTHERWISE.

STORM SEWER STRUCTURE ITEMS

STRUCTURE	STATION [1]	OFFSET [2]	522.1015	522.1024	611.0530	611.0648	611.2003	611.2004	611.2005	RIM [3] ELEVATION	INVERT [4] ELEVATION	DEPTH [5] FT
			APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	MANHOLE COVERS TYPE J EACH	INLET COVERS TYPE R EACH	MANHOLES 3-FT DIAMETER EACH	MANHOLES 4-FT DIAMETER EACH	MANHOLES 5-FT DIAMETER EACH			
1	99+60	53.6' RT	--	1	--	--	--	--	--	--	706.47	--
2	99+37	26.0' RT	--	--	--	1	--	1	--	716.97	706.73	9.15
3	99+37	26.0' LT	--	--	--	1	--	1	--	716.97	707.06	8.82
4	99+37	43.5' LT	--	--	1	--	--	--	1	717.57	710.54	5.79
10	100+10	52.8' RT	1	--	--	--	--	--	--	--	711.91	--
11	100+43	37.2' RT	--	--	1	--	1	--	--	717.68	712.21	4.23

TOTAL11221212

NOTES:

[1] STATION IS TO CENTER OF STRUCTURE FOR MANHOLES AND END OF PIPE FOR APRON ENDWALLS
[2] OFFSET IS TO CENTER OF STRUCTURE FOR TYPE J COVERS, TO FLOWLINE FOR TYPE R COVERS, AND TO END OF PIPE AT PIPE CENTERLINE FOR APRON ENDWALLS.
[3] RIM ELEVATION IS GIVEN AT THE FLOWLINE FOR TYPE J COVERS AND AT THE CENTER OF COVER FOR TYPE R COVERS.
[4] INVERT ELEVATION IS THE ELEVATION OF THE LOWEST PIPE FLOWLINE.
[5] DEPTH = RIM ELEV - FRAME HEIGHT - 0.5-FT (ASSUMED ADJUSTMENT RINGS) - INVERT ELEVATION

STORM SEWER PIPE ITEMS

STRUCTURE		608.0315	608.0324	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE [1]
FROM	TO	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH LF	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH LF			
4	3	--	18	710.54	710.43	0.62%
3	2	--	52	707.06	706.73	0.62%
2	1	--	36	706.73	706.51	0.62%
11	10	36	--	712.21	711.95	0.72%
TOTAL		36	106			

[1] PIPE SLOPE CALCULATED FROM CENTER-TO-CENTER OF STRUCTURE (OR TO END OF PIPE AT APRON ENDWALLS).

PIPE UNDERDRAIN ITEMS

START STA	END STA	LOCATION	310.0110	612.0406
			BASE AGGREGATE OPEN-GRADED TON	PIPE UNDERDRAIN WRAPPED 6-INCH * LF
99+17	99+37	RT	2	20
99+37	99+50	RT	2	13
99+17	99+37	LT	2	20
99+37	99+57	LT	2	20
TOTAL			8	73

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE - SEE STRUCTURE ITEMS.

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED OTHERWISE.

3

EROSION CONTROL ITEMS											
		628.1504	628.1520	628.1905	628.1910	628.651	628.7005	628.7010	628.7015	628.7020	628.7560
		SILT FENCE	SILT FENCE	MOBILIZATIONS	MOBILIZATIONS	SOIL STABILIZER	INLET	INLET	INLET	INLET	TRACKING
		LF	MAINTENANCE	EROSION	EROSION	TYPE B	PROTECTION	PROTECTION	PROTECTION	PROTECTION	PADS
		LF	LF	CONTROL	CONTROL	ACRE	TYPE A	TYPE B	TYPE C	TYPE D	EACH
STATION	LOCATION			EACH	EACH		EACH	EACH	EACH	EACH	EACH
FROM	TO	LT/RT									
97+80	102+09	LT/RT	264	10	6	--	2	2	3	2	2
UNDISTRIBUTED			66	--	--	0.20	--	2	2	2	--
		TOTAL	330	10	6	0.20	2	4	5	4	2

3

RESTORATION ITEMS											
		625.0500	627.0200	628.2008	629.0210	630.0140	632.0160	630.0200	630.0500	631.0300	631.1000
		SALVAGED	MULCHING	EROSION MAT	FERTILIZER TYPE	SEEDING MIXTURE	SEEDING	SEEDING	SEED WATER	SOD WATER	SOD LAWN
		TOPSOIL	SY	URBAN CLASS I	B	NO. 40	MIXTURE NO. 60	TEMPORARY	MGAL	MGAL	SY
		SY		TYPE B	CWT	LB	LB	LB			
LOCATION	STATION			SY							
FROM	TO										
OAK CREEK	0+48	3+57	754	--	754	0.5	9	5	21	17	--
S 6TH ST	97+80	102+09	422	--	--	0.3	--	--	--	--	422
UNDISTRIBUTED			--	294	189	0.2	3	2	6	5	42
		TOTAL	1176	294	1237	1.0	12	7	27	22	464

RIPRAP ITEMS									
		606.0100	606.0300	645.0120	645.0130	SPV.0035	SPV.0195	SPV.0195	
		RIPRAP LIGHT	RIPRAP HEAVY	GEOTEXTILE	GEOTEXTILE	SPECIAL 01.	SPECIAL 01.	SPECIAL 02.	
		CY	CY	TYPE HR	TYPE R	CUTOFF WALL	CRUSHED	COARSE	
				SY	SY	CY	MATERIAL FOR	AGGREGATE MIX	
							TRAVEL	FOR STREAM BED	
LOCATION	STATION						CORRIDOR	TON	
FROM	TO						TON		
OAK CREEK	0+48	2+75	--	628	950	9	32	423	
	2+75	3+57	58	--	--	--	--	42	
		TOTAL	58	628	950	9	32	465	

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED OTHERWISE.

PROJECT NO:	2235-00-74	HWY: S. 6TH ST	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET	E
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TYPE 2 SIGN REMOVAL

SIGN NO.	SIGN CODE	SIGN MESSAGE	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
1R	R12-1	25 TONS	1	1
2R	R4-7	--	1	--
3R	R4-7	--	1	1
4R	R12-1	25 TONS	1	1
TOTALS			4	3

		643.0300		643.0420		TRAFFIC CONTROL 643.0705		643.0900		643.0920	643.1000		643.1050		643.5000
		TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL COVERING SIGNS TYPE II	TRAFFIC CONTROL SIGNS FIXED MESSAGE		TRAFFIC CONTROL SIGNS PCMS		TRAFFIC CONTROL
LOCATION	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS		EACH	SF	EACH	DAYS	EACH
6TH ST CLOSURE	180	--	--	12	2,160	20	3,600	9	1,620	--	--	--	2	14	--
6TH ST DETOUR	180	--	--	2	360	4	720	50	9,000	--	34	68	--	--	--
UNDISTRIBUTED		20	3,600	--	510	--	870	--	2,130	4	--	14	--	14	1
TOTAL			3,600		3,030		5,190		12,750	4		82		28	1

PAVEMENT MARKING				
STATION		LOCATION	646.1020 MARKING LINE EPOXY 4-INCH LF	
FROM	TO		REMARKS	
97+80	102+09	C/L	858	DOUBLE YELLOW CENTERLINE
97+80	102+09	LT/RT	225	WHITE 12.5-FT LINE, 37.5-FT SKIP
TOTAL			1083	

SAWING ITEMS						
STATION		LOCATION	690.0150 SAWING ASPHALT LF		690.0250 SAWING CONCRETE LF	
FROM	TO		REMARKS			
S. 6TH ST	97+80	LT/RT	48	5	CONSTRUCTION LIMITS	
	98+31	RT	56	5	DRIVEWAY	
	101+11	RT	41	5	DRIVEWAY	
	101+13	LT	46	5	DRIVEWAY	
OAK CREEK	101+65	LT/RT	77	--	RECONSTRUCT LIMITS	
	102+09	LT/RT	48	--	CONSTRUCTION LIMITS	
	0+45	LT/RT	--	36	CHANNEL LINING	
TOTAL			316	56		

NOTE: ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED OTHERWISE.

CONSTRUCTION STAKING ITEMS

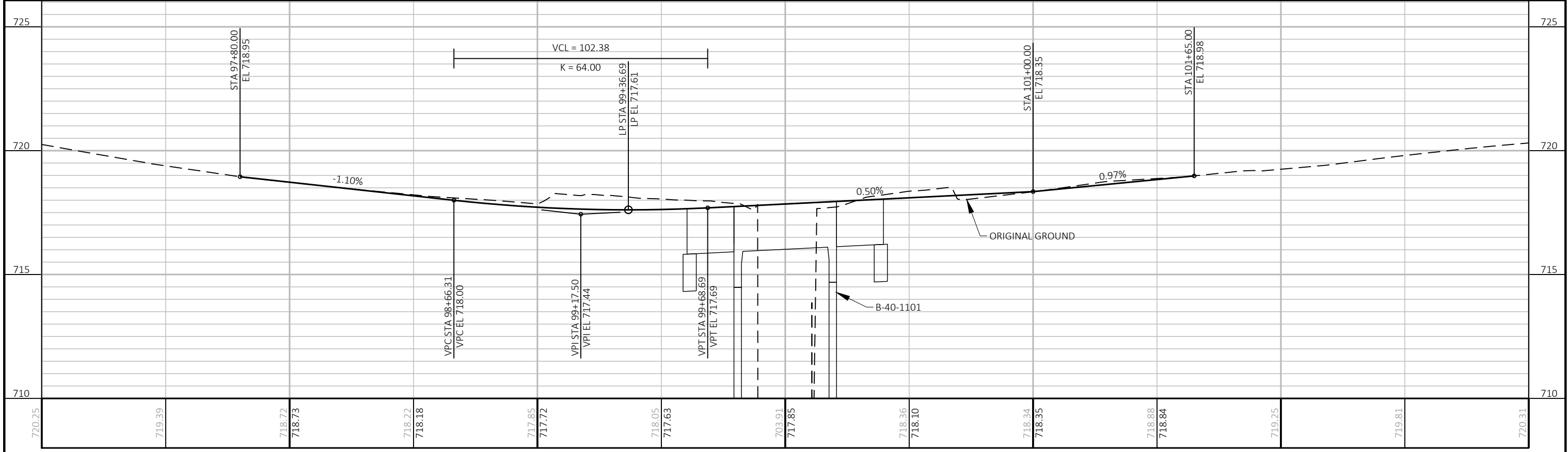
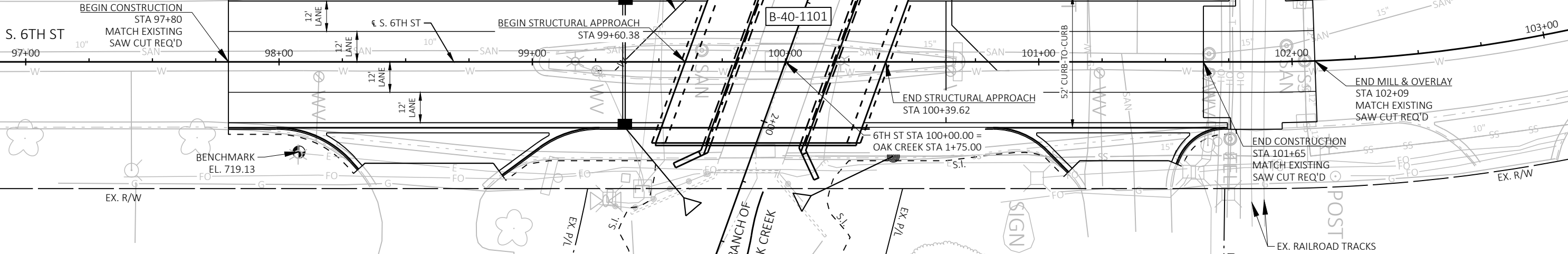
CATERGORY	LOCATION	STATION		LOCATION	650.4000	650.4500	650.5000	650.5500	650.6501	650.9911	650.9920
		FROM	TO		CONSTRUCTION STAKING STORM SEWER EACH	CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-40-1101 EACH	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 2235-00-74 EACH	CONSTRUCTION STAKING SLOPE STAKES LF
0010	S. 6TH ST OAK CREEK	97+80 0+48	102+09 3+57	LT/RT LT/RT	6 --	429 309	429 --	832 --	1 --	1 --	429 309
TOTAL					6	738	429	832	1	1	738

UTILITY ITEMS

CATEGORY	STATION	OFFSET	SPV.0060 SPECIAL 02. ADJUSTING WATER VALVE BOX EACH	SPV.0060 SPECIAL 03. ABANDONING WATER VALVE BOX EACH
0030	98+16	6' RT	1	--
	99+26	4' RT	1	--
	100+65	4' RT	--	1
	101+24	5' RT	1	--
TOTAL			3	1

BENCHMARK			
STATION	OFFSET	ELEV.	DESCRIPTION
98+07.84	35.60' RT	719.13	NW BOLT ON LIGHT POLE BASE

WATER MAIN TO BE RELOCATED BY CITY
OF OAK CREEK PRIOR TO CONSTRUCTION



PROJECT NO: 2235-00-74	HWY: S. 6TH ST	COUNTY: MILWAUKEE	PLAN AND PROFILE: S. 6TH ST	SHEET	E
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Standard Detail Drawing List

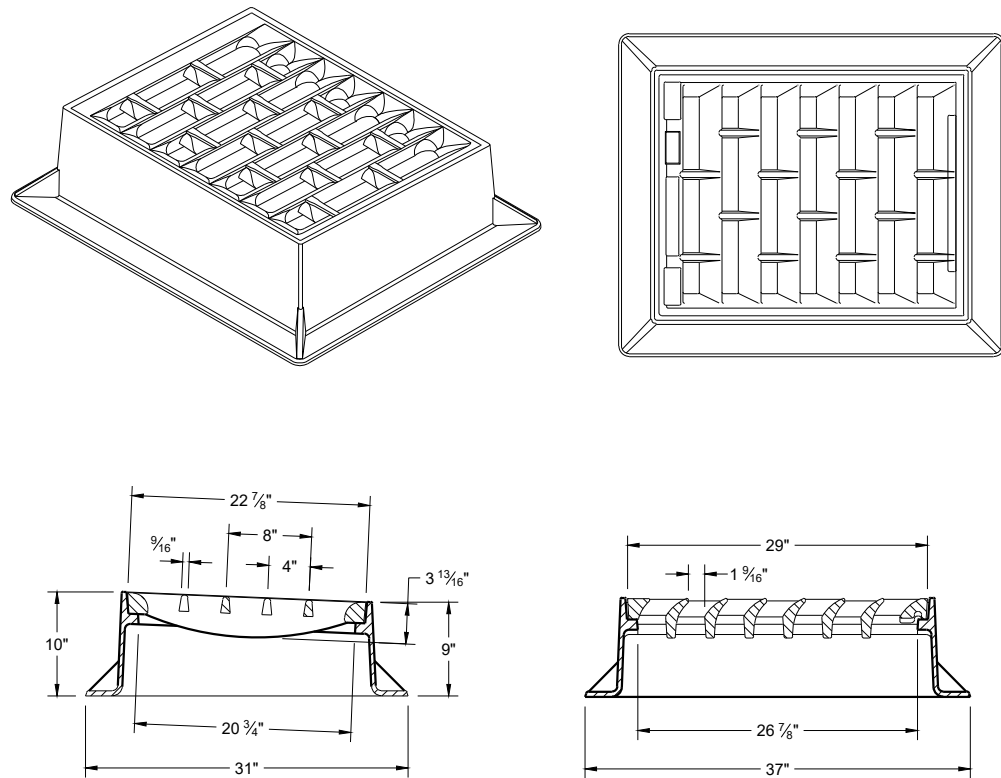
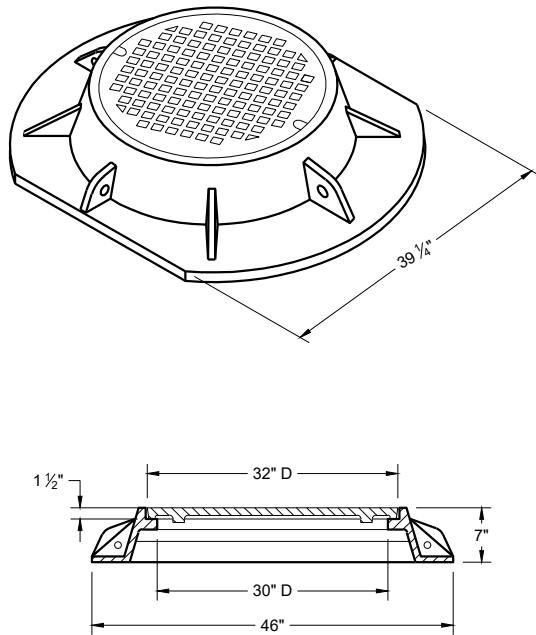
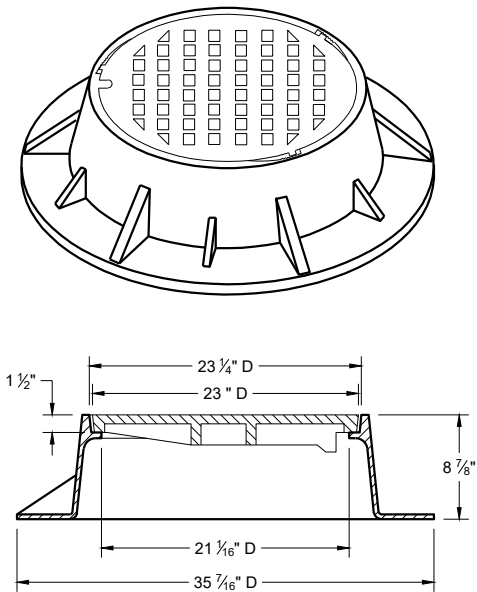
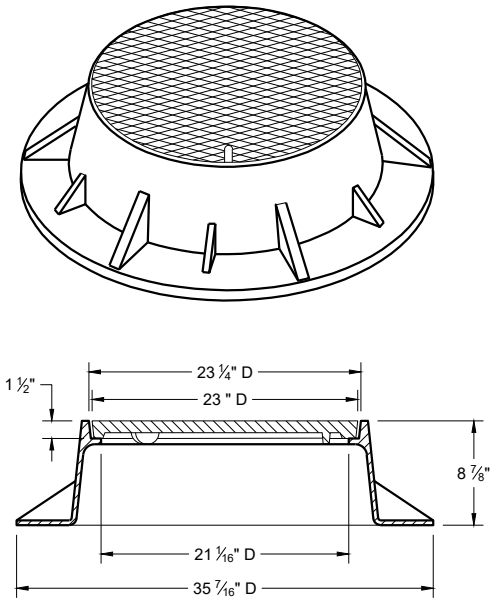
08A05-20D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-04	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08D16-11	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08D17-06	MANHOLES, MANHOLE & INLET COVERS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09B04-12	PULL BOX
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09E01-15D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
10A01-04	ELECTRICAL HANDHOLE WIRING
12A03-10	NAME PLATE (STRUCTURES)
13B01-11A	PAVEMENT DETAILS FOR RAILROAD APPROACH
13B01-11B	TYPICAL SECTIONS FOR RAILWAY APPROACH
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13B02-09B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C19-03	HMA LONGITUDINAL JOINTS
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

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.

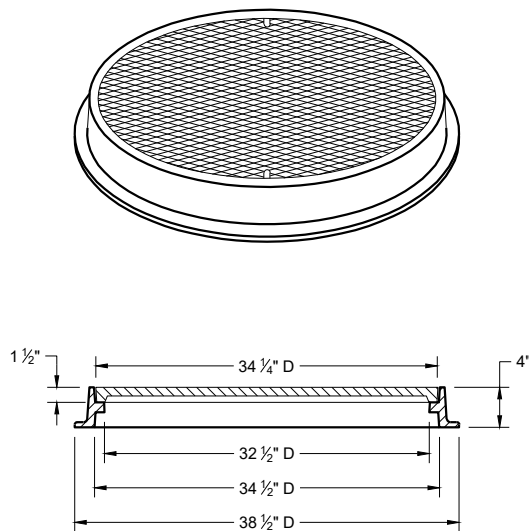
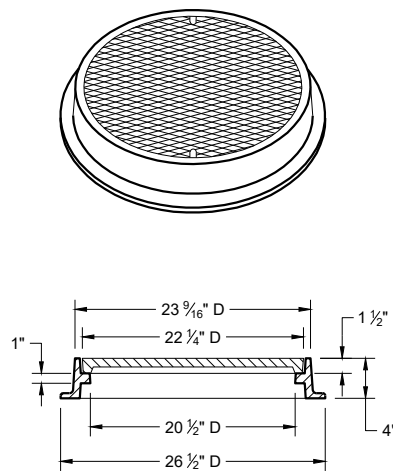
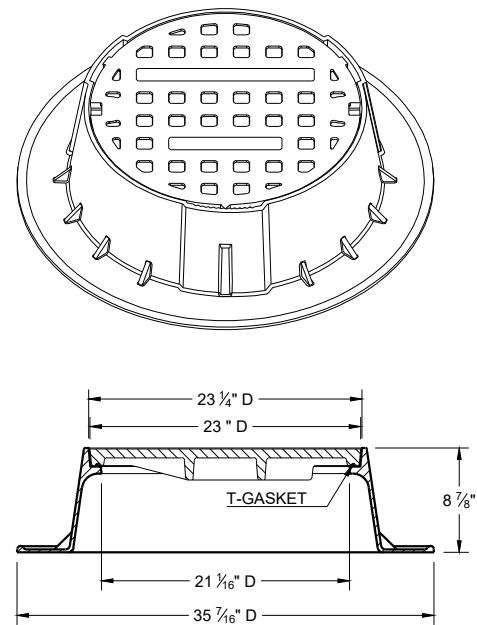
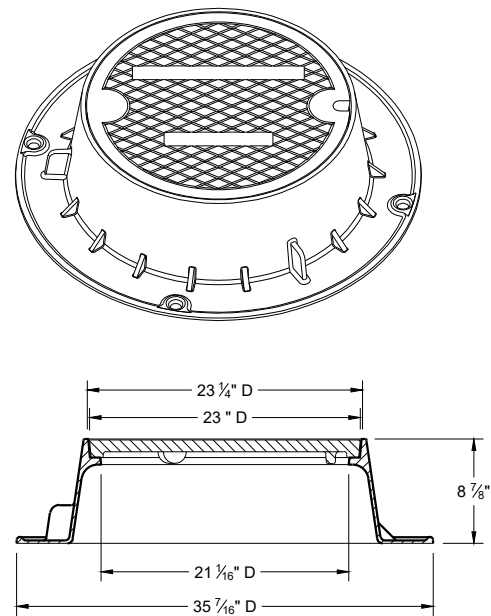
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



TYPE "K"

INLET COVER TYPE "BW"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

TYPE "J" SPECIAL

TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

NOTE: EITHER CASTING IS ACCEPTABLE

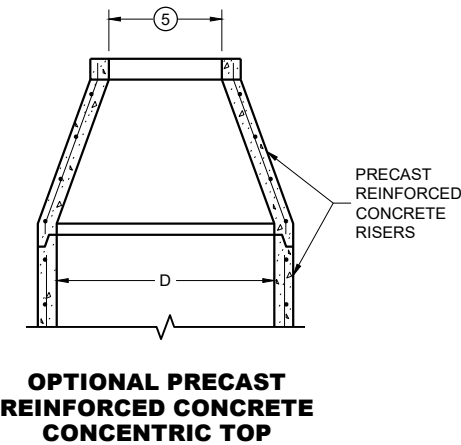
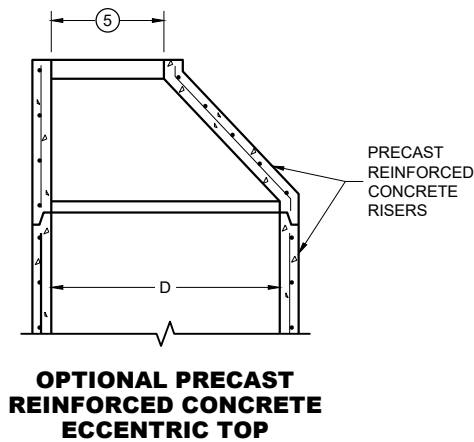
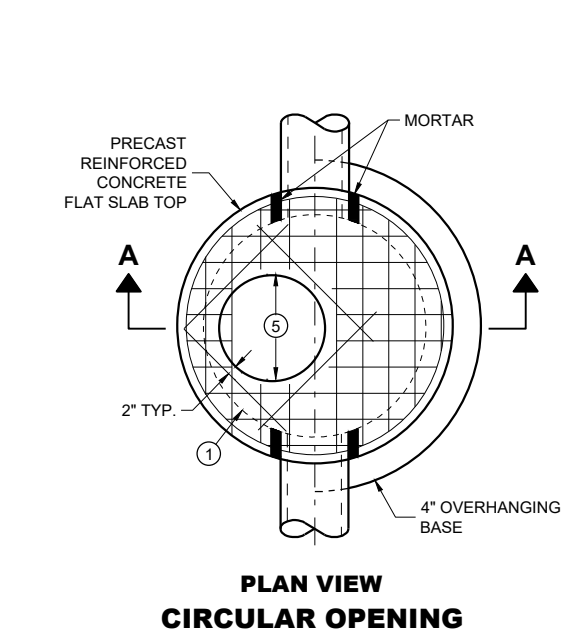
TYPE "L"

TYPE "M"

INLET COVERS TYPES BW
MANHOLE COVERS TYPES K,
J, J-S, L, AND M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



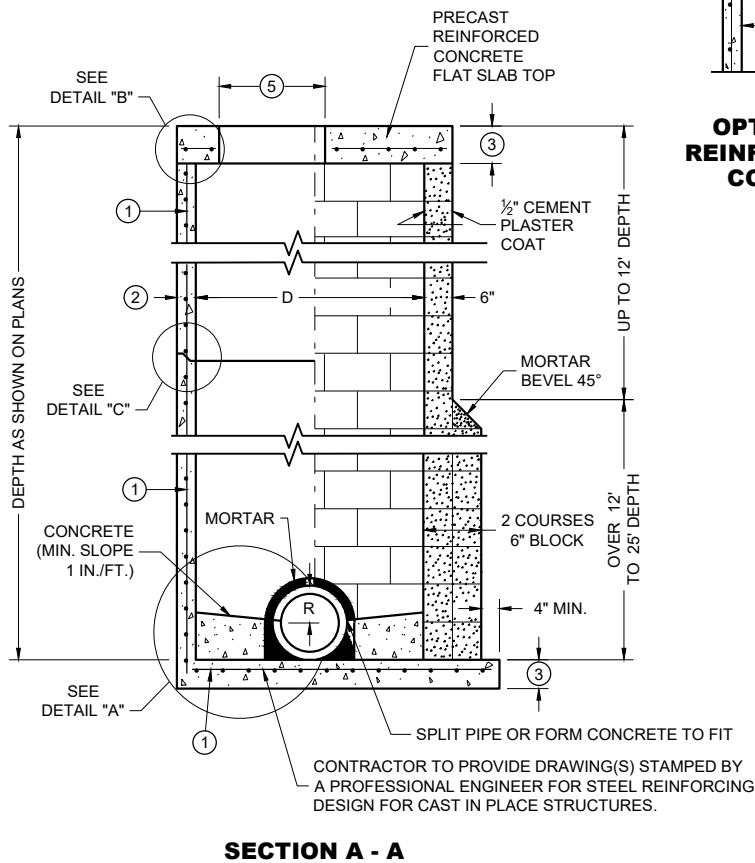
MANHOLE COVER OPENING MATRIX

MANHOLE COVER OPENING SIZE (FT.)	5	C	ALL JS	K	L	M
2 DIA.		X	X		X	
3 DIA.				X		X

PIPE MATRIX

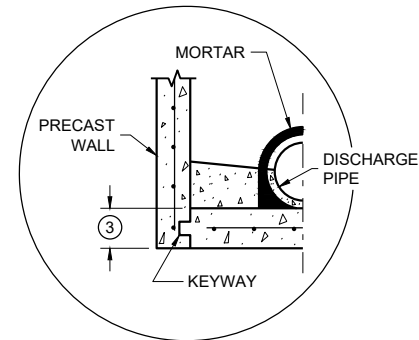
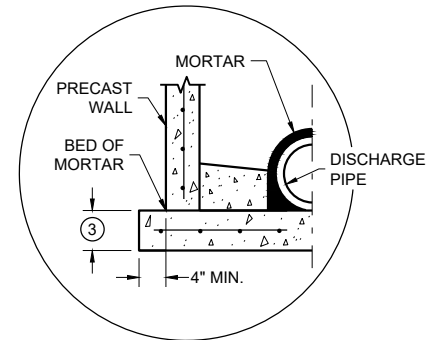
MANHOLE SIZE (DIA.)	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES		MINIMUM WALL THICKNESS (IN)	MINIMUM PRECAST FLAT SLAB TOP AND BASE THICKNESS
	180° SEPARATION (IN)	90° SEPARATION (IN)		
3-FT	15	12	4	6
4-FT	24	18	4	6
5-FT	36	24	5	8
6-FT	42	36	6	8
7-FT	48	36/42 *	7	8
8-FT	60	42	8	8
9-FT	66	54	9	10
10-FT	72	60	10	10

*A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES.
SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.

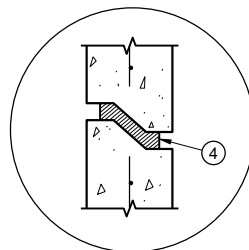
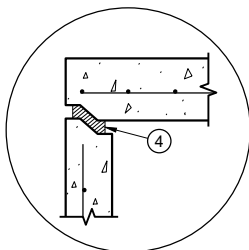
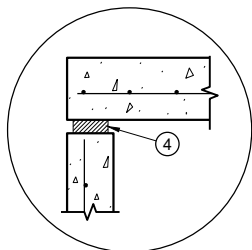


**PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE**

**CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE**

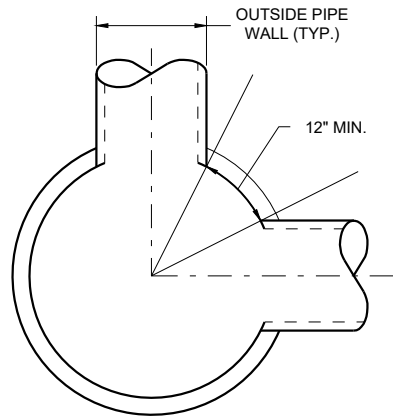


DETAIL "A"



DETAIL "B"

DETAIL "C"



DETAIL "D"

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES. CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL IMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2 INCH AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

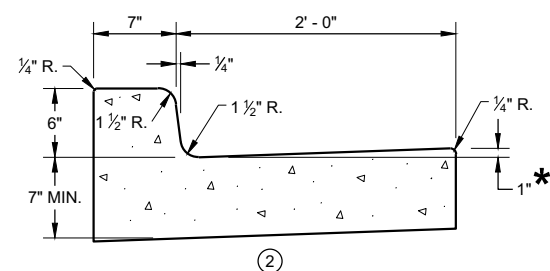
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "D".

- 1 FOR PRECAST MANHOLES AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- 2 SEE PIPE MATRIX TABLE FOR MINIMUM WALL THICKNESS FOR PRECAST MANHOLES
- 3 SEE PIPE MATRIX TABLE FOR MINIMUM THICKNESS OF PRECAST FLAT SLAB TOPS AND BASES.
- 4 JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 OR RUBBER GASKETS CONFORMING TO ASTM C443.
- 5 SEE MANHOLE COVER OPENING MATRIX.

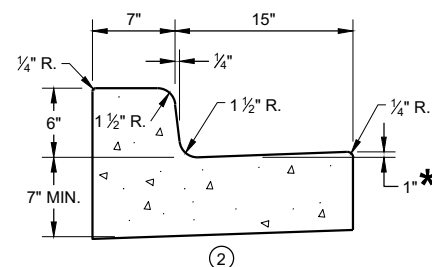
**MANHOLES, 3-FT, 4-FT
5-FT, 6-FT, 7-FT, 8-FT, 9-FT
AND 10-FT DIAMETER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

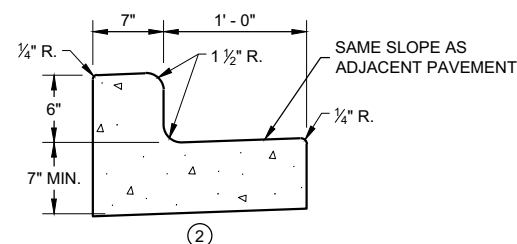
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



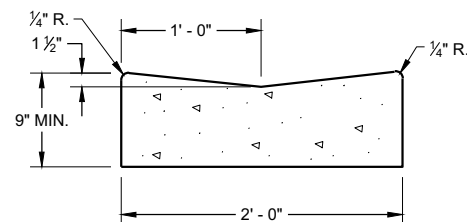
CONCRETE CURB AND GUTTER 31"



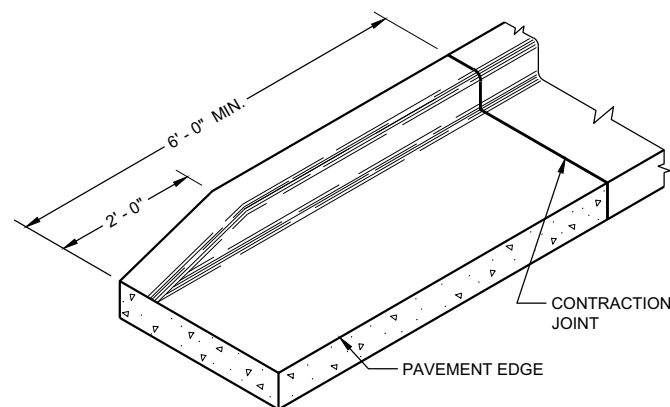
CONCRETE CURB AND GUTTER 22" ^①



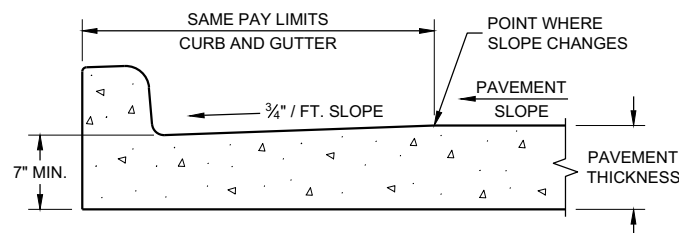
CONCRETE CURB AND GUTTER 19" ^①



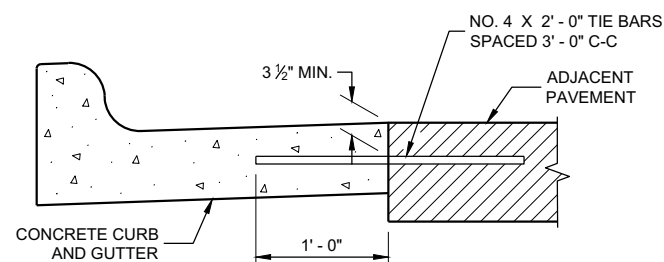
CONCRETE GUTTER 24" ^①



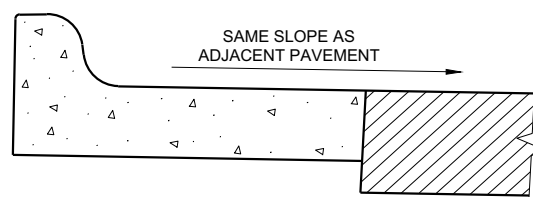
END SECTION CURB AND GUTTER



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB AND GUTTER



TYPICAL TIE BAR LOCATION ¹



HIGH SIDE SECTION ^③ (TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

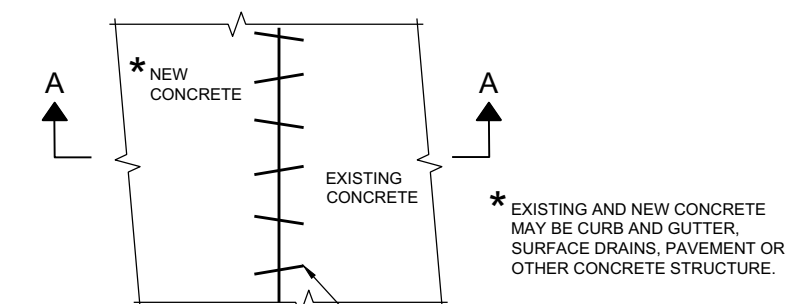
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

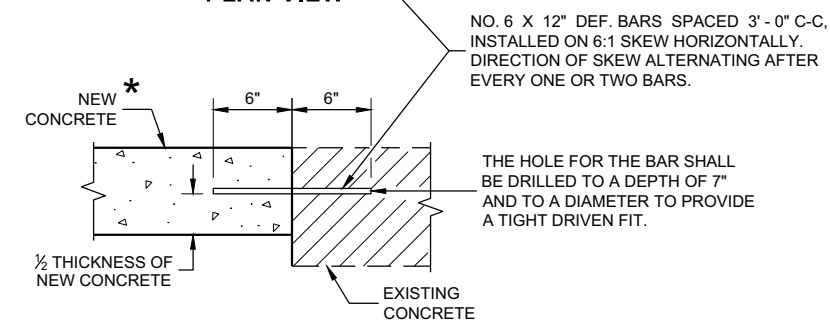
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

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

- ① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLANS



PLAN VIEW



SECTION A - A

PAVEMENT TIES

**CONCRETE GUTTER,
CURB AND GUTTER AND
PAVEMENT TIES**
For Optional use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

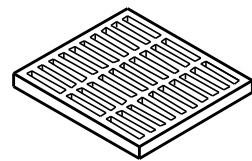
APPROVED
February 2020
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

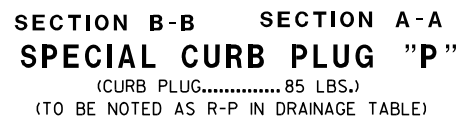
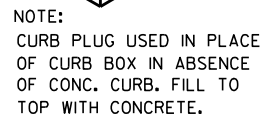
6



SHOWING SPECIAL GRATE NO. 1
(TO BE NOTED AS R-1 IN DRAINAGE TABLE)



A diagram of a beam element of length Δx . The left end is labeled 'A' and the right end is labeled 'B'. At the left end (A), there is an upward-pointing arrow labeled 'A' and a rightward-pointing arrow labeled 'B'. At the right end (B), there is a downward-pointing arrow labeled 'A' and a leftward-pointing arrow labeled 'B'. The beam is represented by a horizontal rectangle with a dashed line inside, indicating its internal structure.



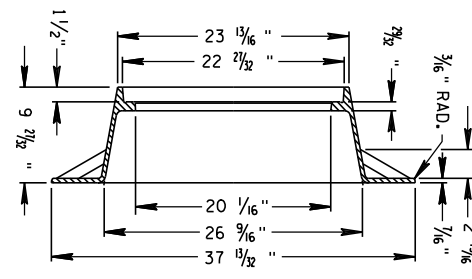
(GRATE..... 150 LBS.)
(TO BE USED UNLESS OTHERWISE NOTED IN DRAINAGE TABLE)

(APPROX. WEIGHT - 670 LBS.)	
FRAME.....	350 LBS.
CURB BOX.....	135 LBS.
GRATE.....	185 LBS.



(APPROX. WEIGHT - 470 LBS.)

6



(APPROX. WEIGHT - 290 LBS.)

TYPE	'A'	'B'	'C'
11	3'-6"	2'-8"	12" - 36"*
12	4'-0"	3'-8"	12" - 42"**
13	5'-0"	5'-8"	42" - 48"
14	6'-0"	7'-8"	54" - 60"

THE FIRST STEP SHALL BE PLACED
16" ABOVE THE BENCH.

S.D.D. 8 D 17-6



COVER				
TYPE	DESCRIPTION	OPENING	'E'	'F'
"O"	ROUND	2'-2" DIA.	—	—
"W"	CURB BOX	1'-8" X 2'-6"	—	1"
"X"	INLET	1'-10" X 2'-6"	—	—
"R"	CURB BOX	2'-0" X 2'-1"	4"	—

STRUCTURE WALL THICKNESS 'X' TO BE 8" BRICK, 6" CONCRETE BLOCK,
6" GRADE A CONCRETE OR 5" PRECAST REINFORCED CONCRETE.

STRUCTURE FOOTINGS ARE TO BE GRADE A CONCRETE OF THE THICKNESS SHOWN IN THE DETAIL OR 5" PRECAST REINFORCED CONCRETE.

STRUCTURE FOOTINGS ARE TO BE GRADE A CONCRETE OF THE THICKNESS SHOWN IN THE DETAIL OR 5" PRECAST REINFORCED CONCRETE.

REINFORCEMENT FOR 5" PRECAST REINFORCED CONCRETE SHALL BE 6" X 6"
W16 X W16 WELDED SREEL WIRE FABRIC AND SHALL BE EMBEDDED 2" CLEAR.

PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

PRECAST CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURES.
THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6" IN DEPTH, WHICH MEETS THE REQUIREMENTS FOR GRANULAR BACK-FILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

SET FRAME ELEVATION 0.03 FT. LOWER THAN ELEVATION INDICATED
ON THE PLANS.

THE CONTRACTOR MAY FORM AND POUR MONOLITHIC CONCRETE INVERT PROVIDED THE PIPE ENDS ARE EXTENDED INTO THE M.H. AND NOT TERMINATED WITHIN THE M.H. WALLS.

MANHOLE STEPS

STEPS MEETING THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH; 16 INCH C-C MAX. SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM WALL EMBEDMENT OF 3 INCHES IN PRECAST MANHOLE AND 6 INCHES IN 8 INCH BRICK OR 6 INCH BLOCK MANHOLE; TREAD OF STEP SHALL HAVE A NON-SKID SURFACE AND BE FLANKED BY CLEATS, WITH A MINIMUM OF 10 INCHES CLEAR BETWEEN CLEATS, TO PREVENT FOOT SLIPPING OFF THE EDGE CLEATS SHALL BE A MINIMUM OF $\frac{3}{4}$ INCH HIGH BY $\frac{3}{4}$ INCH WIDE HAVING A MINIMUM THICKNESS OF $\frac{3}{8}$ INCH. STEPS SHALL BE CAPABLE OF SUPPORTING A CONCENTRATED LOAD OF 300 LBS. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT. STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCING BAR WILL BE ACCEPTABLE.



TYPES 11, 12, 13 & 14

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

FHWA

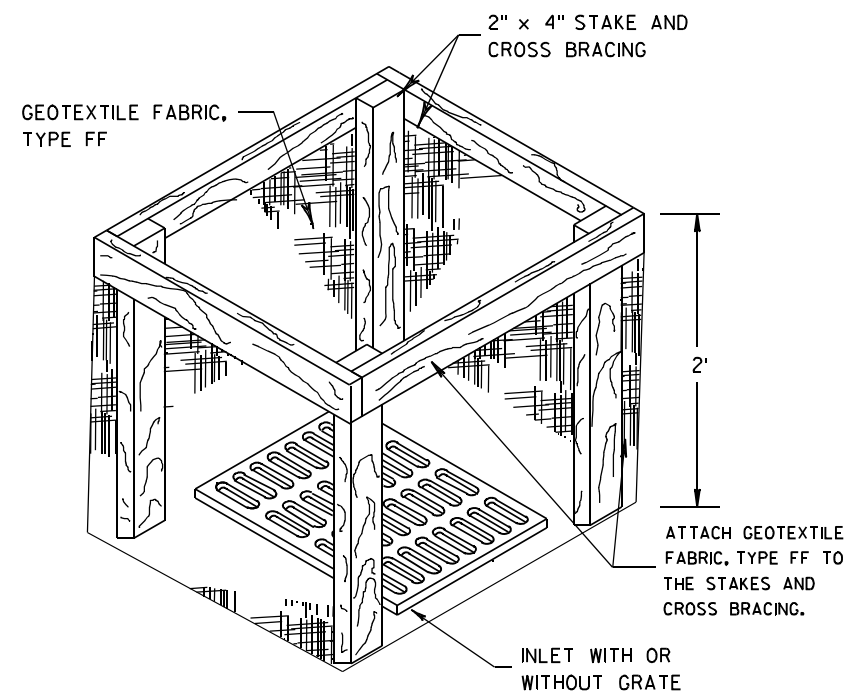
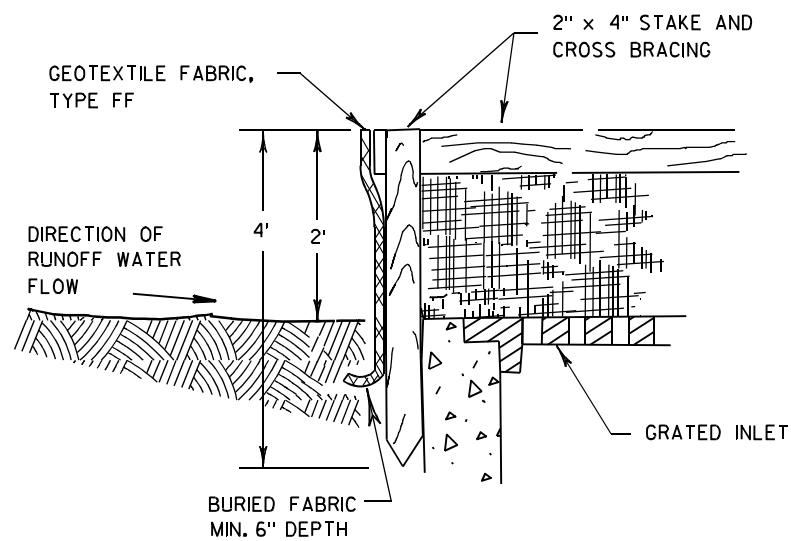
ENGINEER



- 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 1 1/8" X 1 1/8" 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.



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/s/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER



INLET PROTECTION, TYPE A

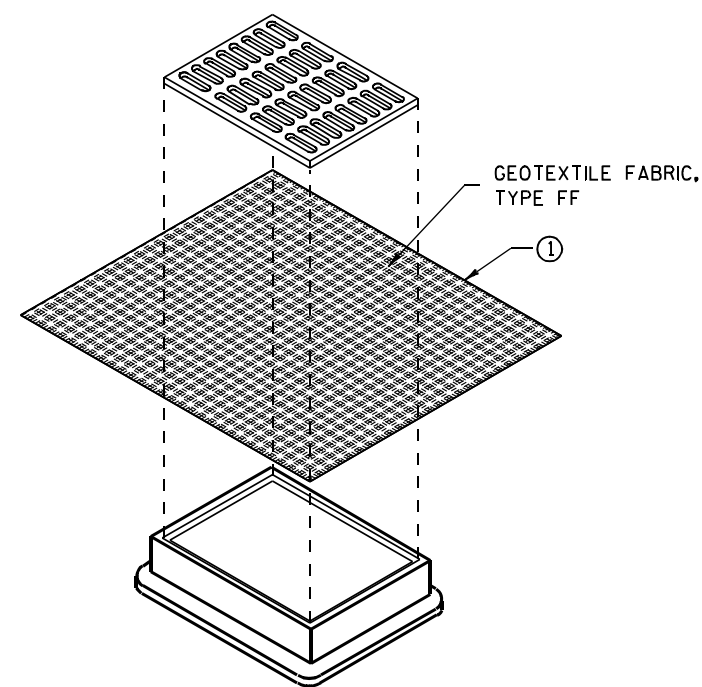
GENERAL NOTES

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

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

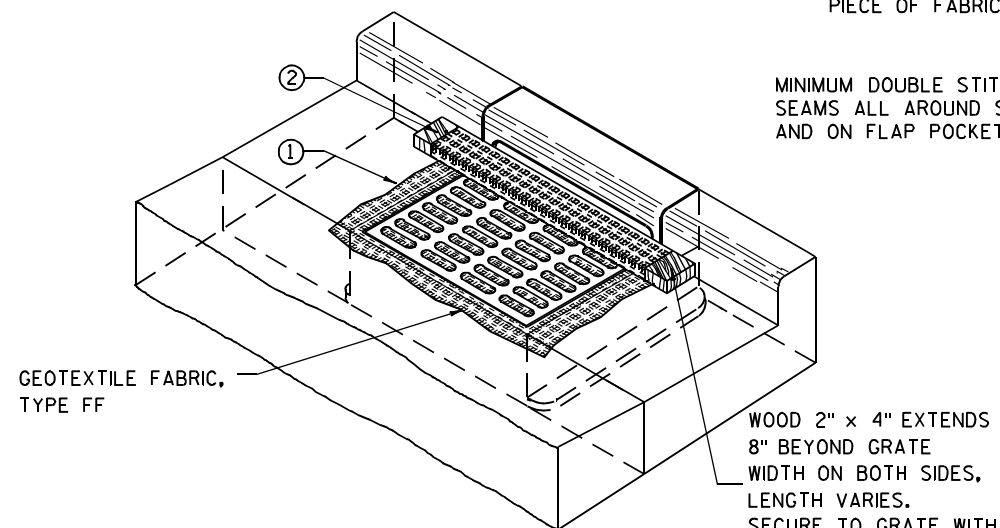
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

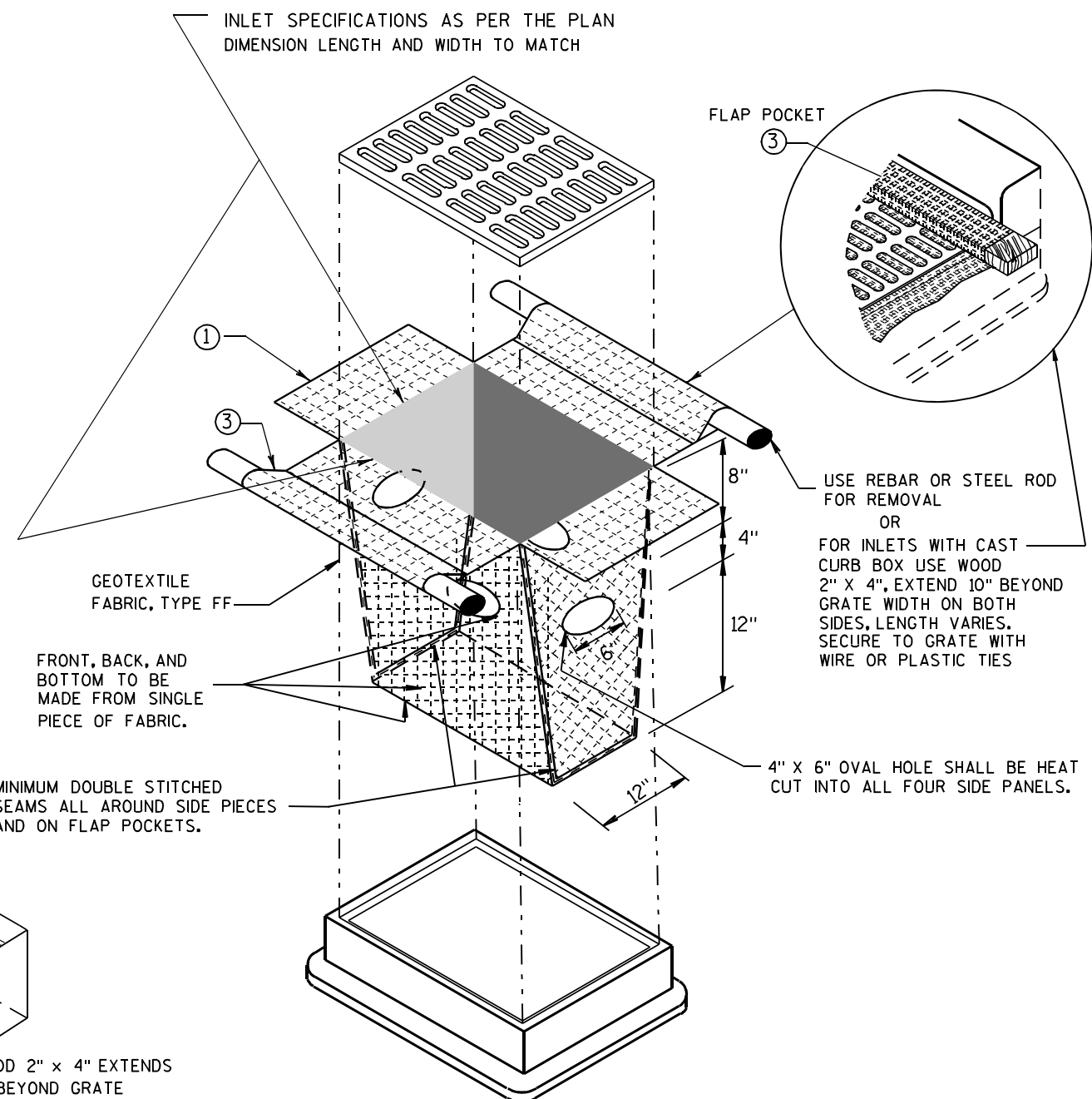
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

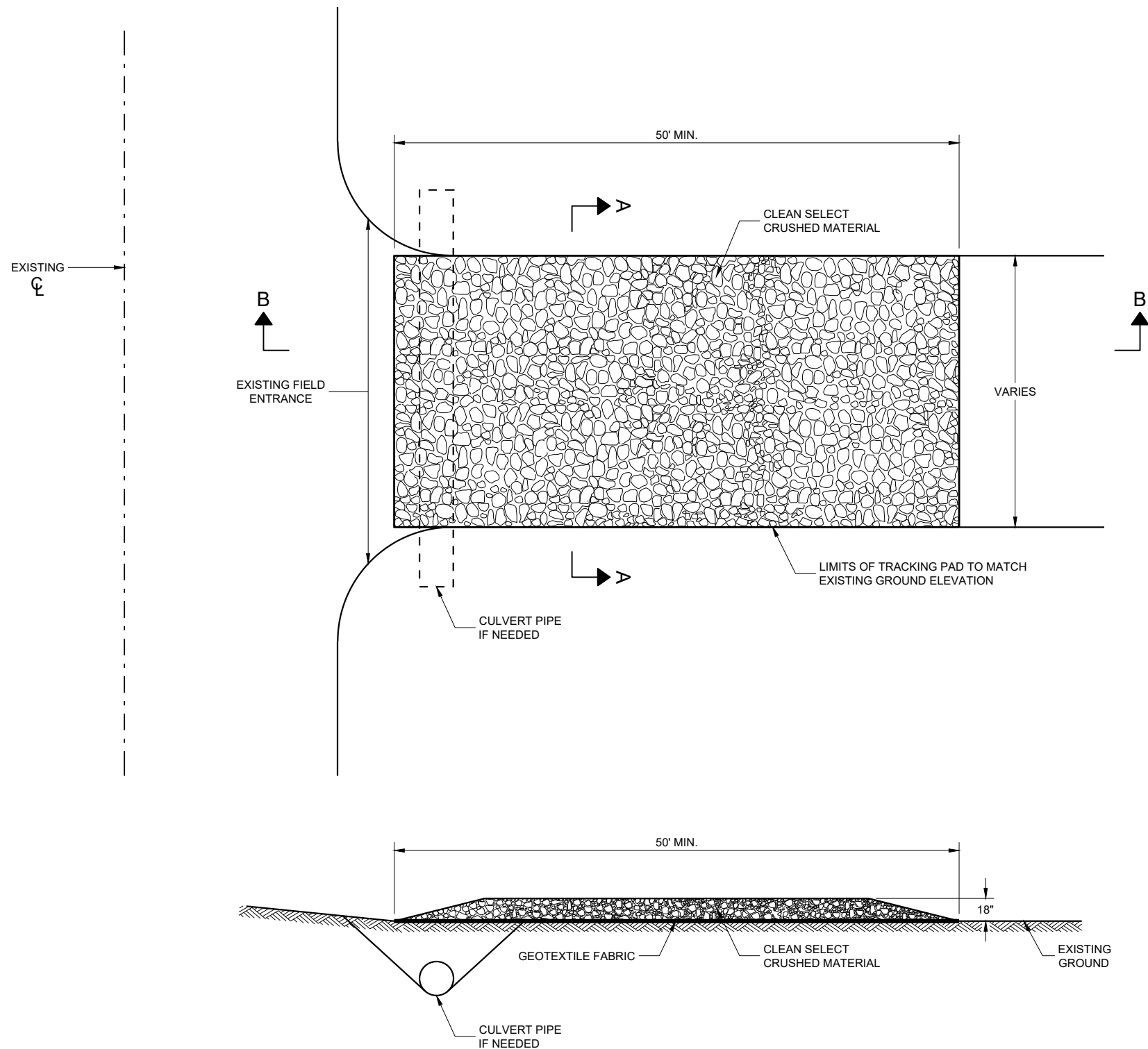
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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



INLET PROTECTION, TYPE D

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

INLET PROTECTION TYPE A, B, C, AND D	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/16/02 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



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.

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011

DATE

FHWA

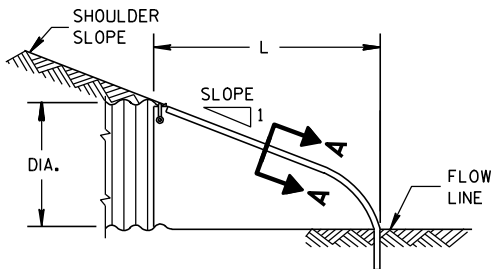
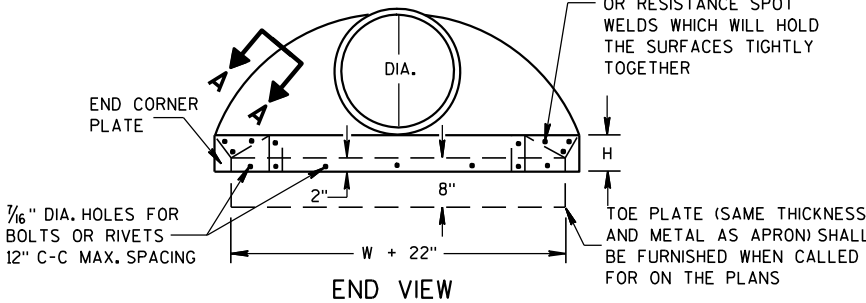
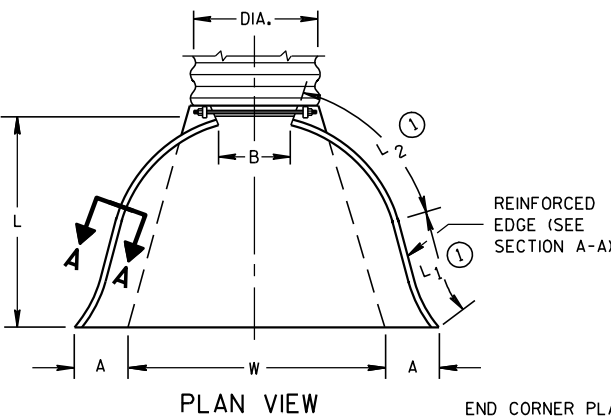
/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE		BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2	Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2	Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3	Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3	Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3	Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3	Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3	Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3	Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3	Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3	Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3	Pc.

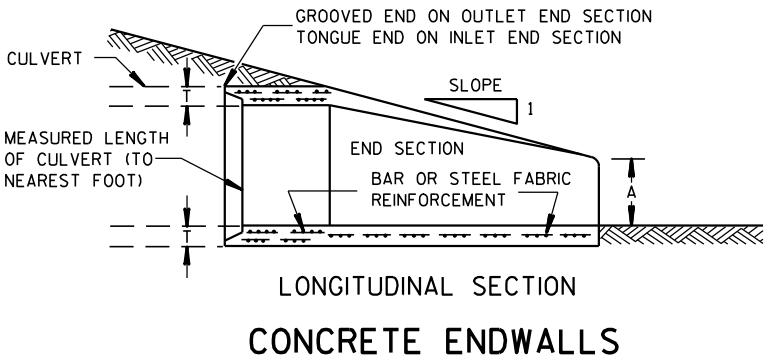
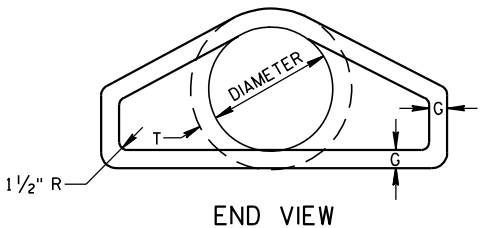
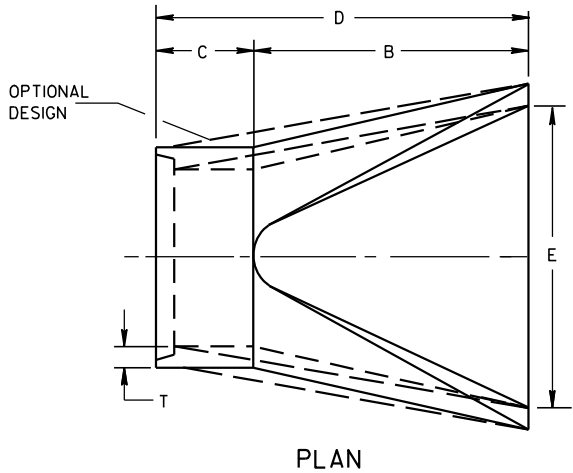
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

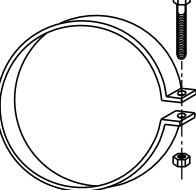
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1				
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1				
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1				
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1				
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1				
48	5	24	72	26	98	84	5	3 to 1				
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 to 1				
60	6	30-35	60	39	99	96	5	2 to 1				
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1				
72	7	24-36	78	21	99	108	6	2 to 1				
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1				
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1				
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1				

* MINIMUM
** MAXIMUM

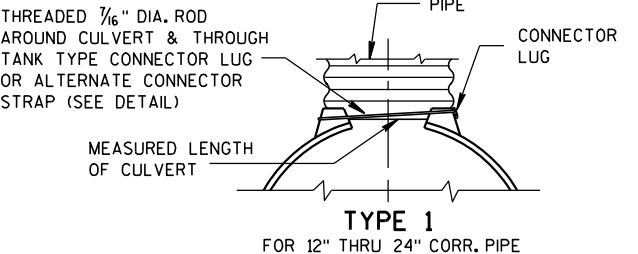


LONGITUDINAL SECTION
CONCRETE ENDWALLS

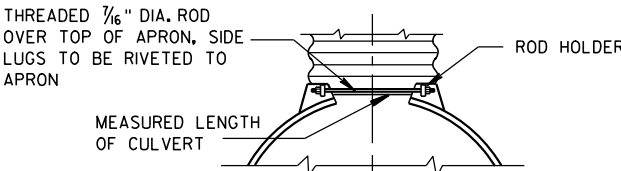
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



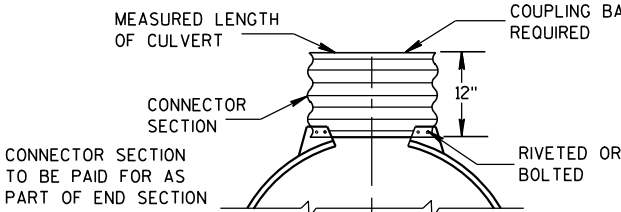
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



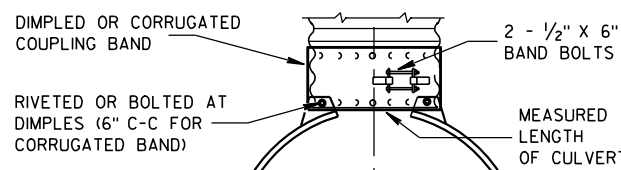
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

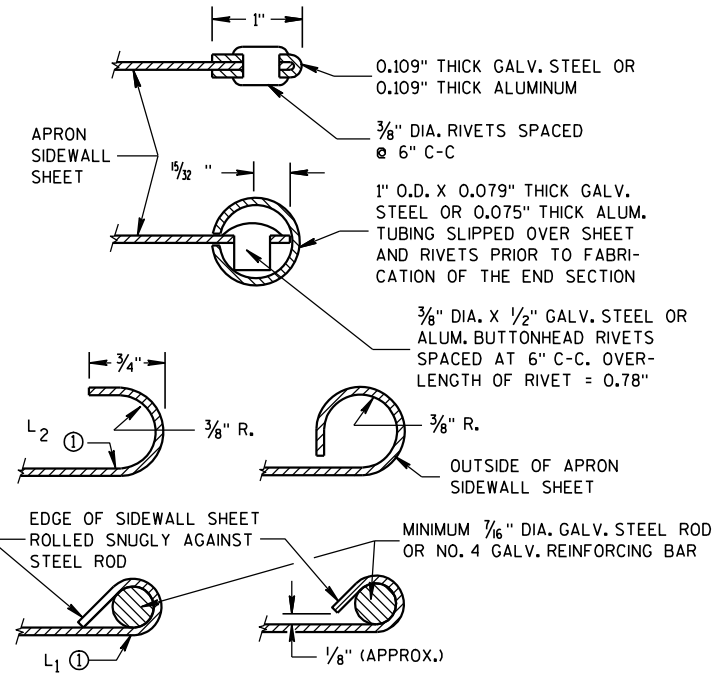
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

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.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



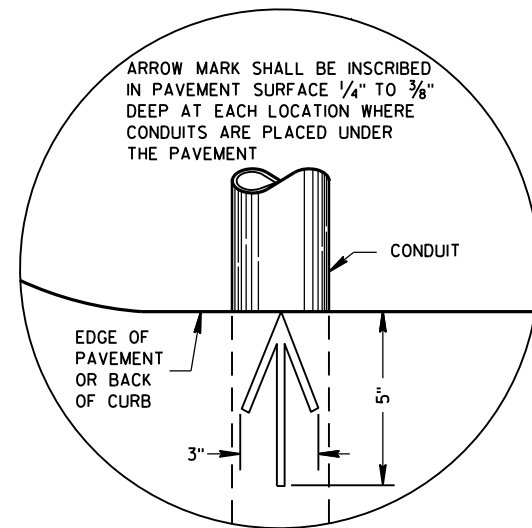
- ① CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.
- ⑦ EYE BOLT LENGTH DETERMINED BY WALL THICKNESS. BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.



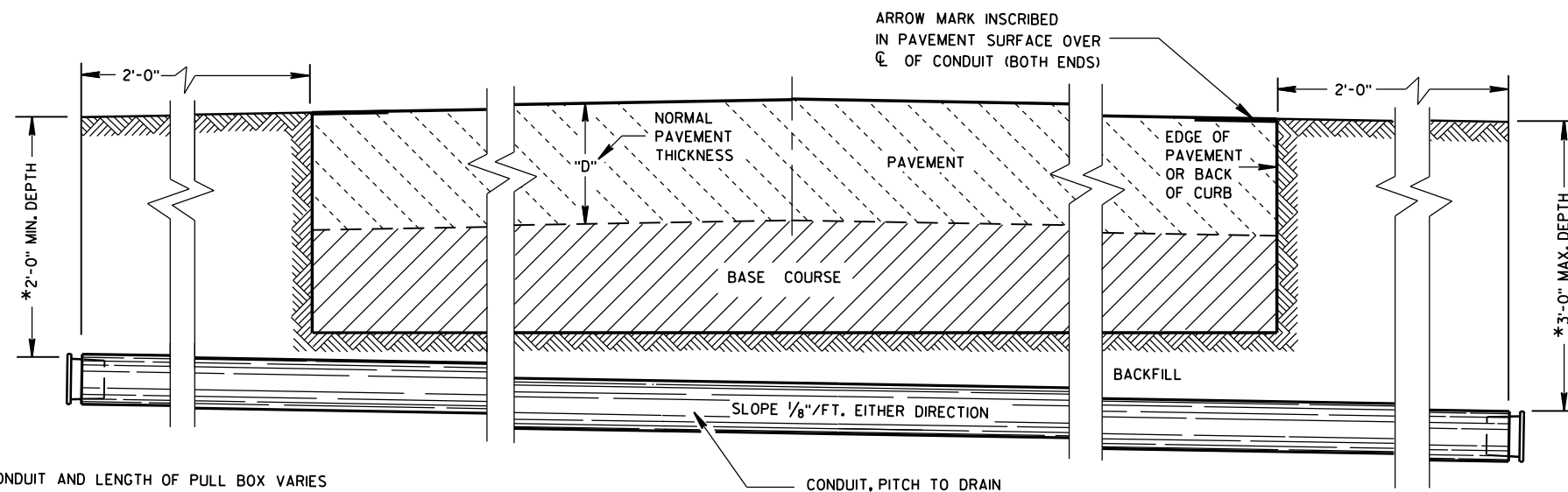
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

APPROVED
November 2021
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW
ARROW MARK



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

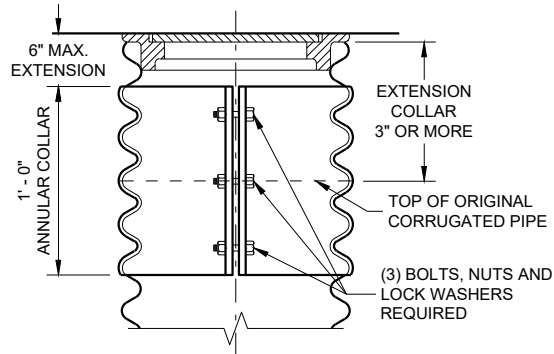
TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.

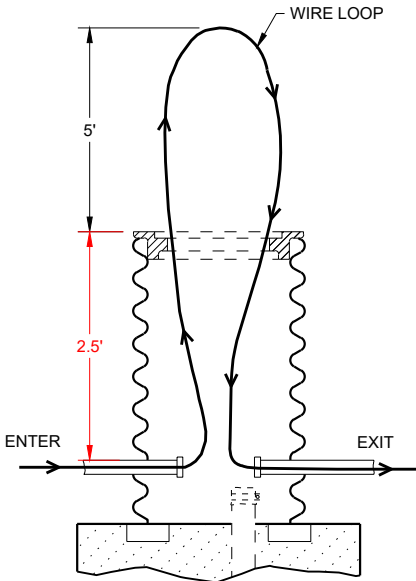
CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

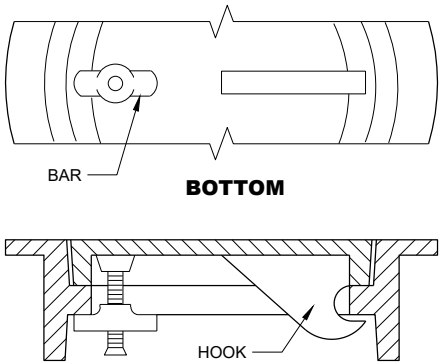
APPROVED
March, 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA



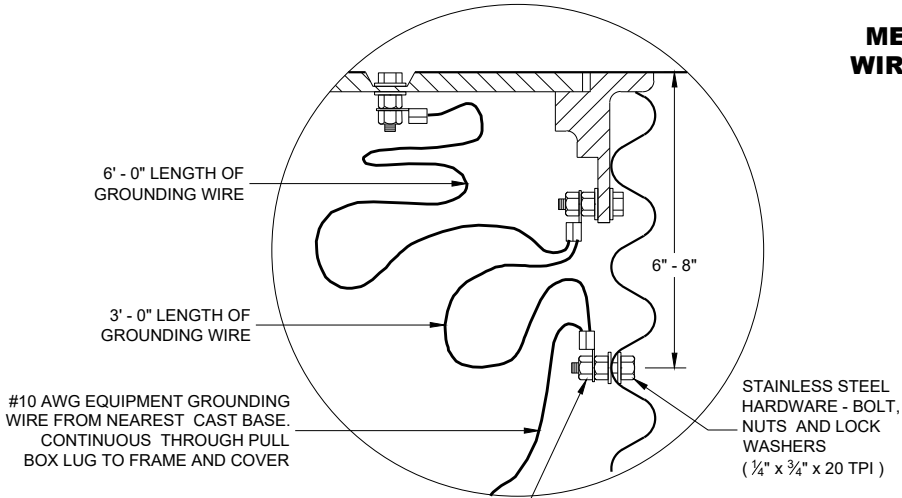
CORRUGATED PIPE EXTENDER



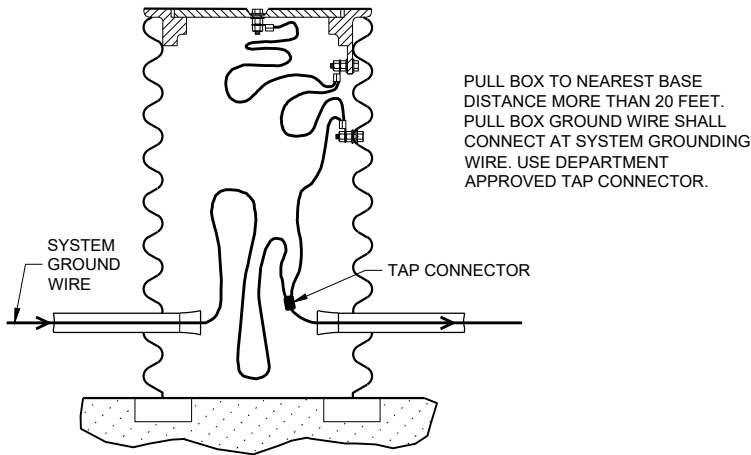
MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



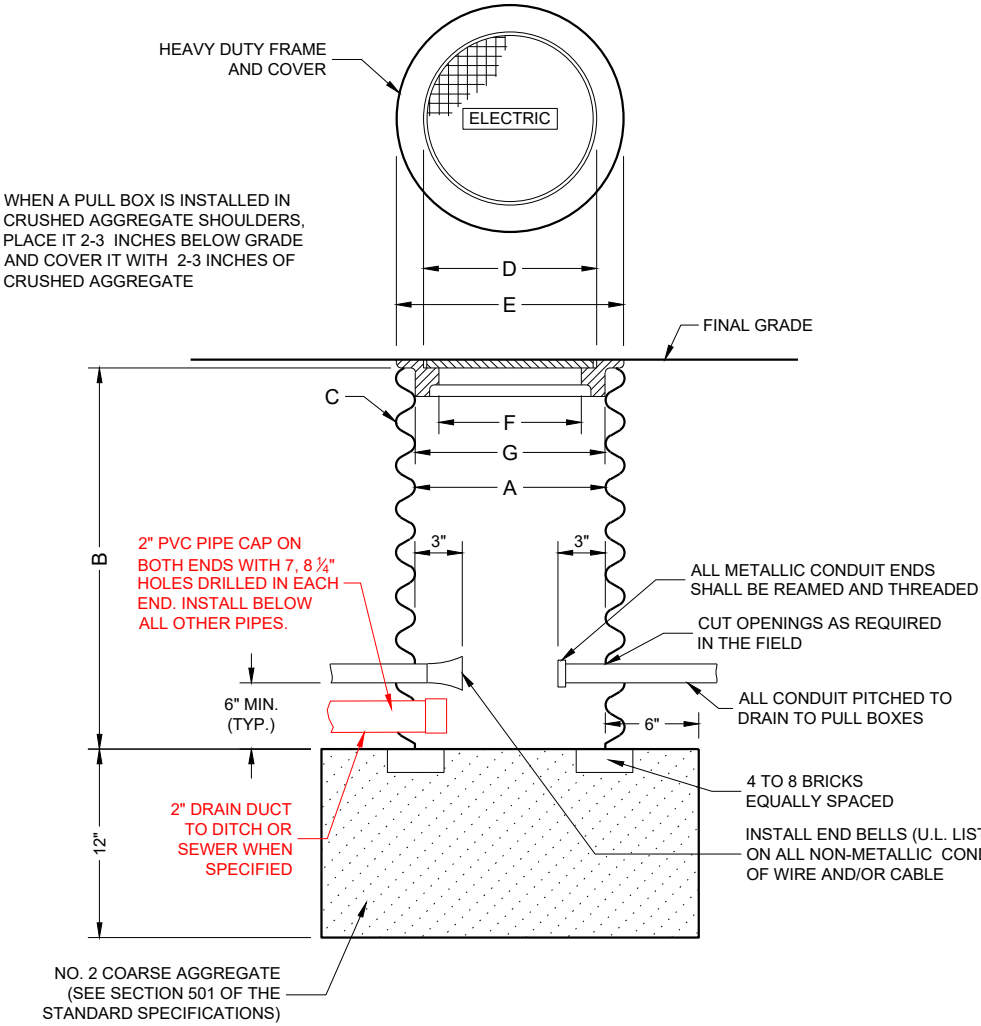
ALTERNATE COVER (LOCKING)
TIGHTENING BAR TYPE



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN ¼\"/>

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH**	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 ¼	10 ¼	10 ¼	16 ¼	16 ¼	16 ¼	22 ¼	22 ¼	22 ¼
FRAME	E	14 ½	14 ½	14 ½	20 ½	20 ½	20 ½	26 ½	26 ½	26 ½
FRAME	F	8 ½	8 ½	8 ½	14 ½	14 ½	14 ½	20 ½	20 ½	20 ½
FRAME	G	11 ½	11 ½	11 ½	17 ½	17 ½	17 ½	23 ½	23 ½	23 ½
WEIGHT IN POUNDS*										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.

PULL BOX

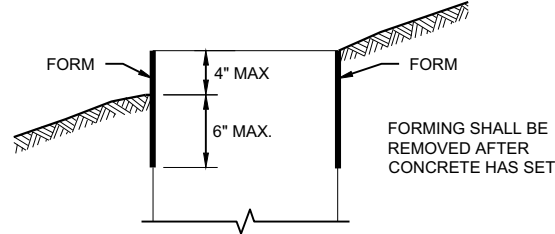
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER

FHWA

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION.

WHEN REQUIRED TO CONNECT NON-METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2, TYPE 5 AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER ALL BASE TYPES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

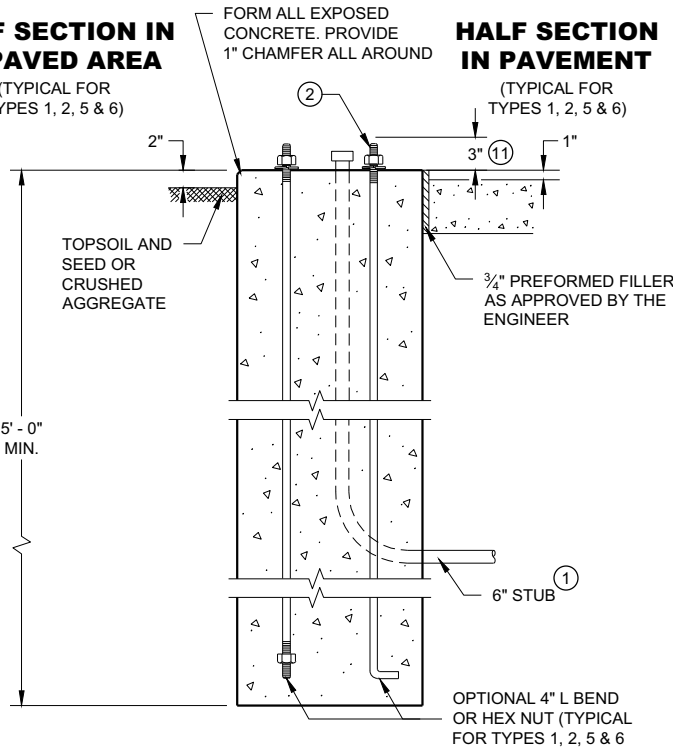
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

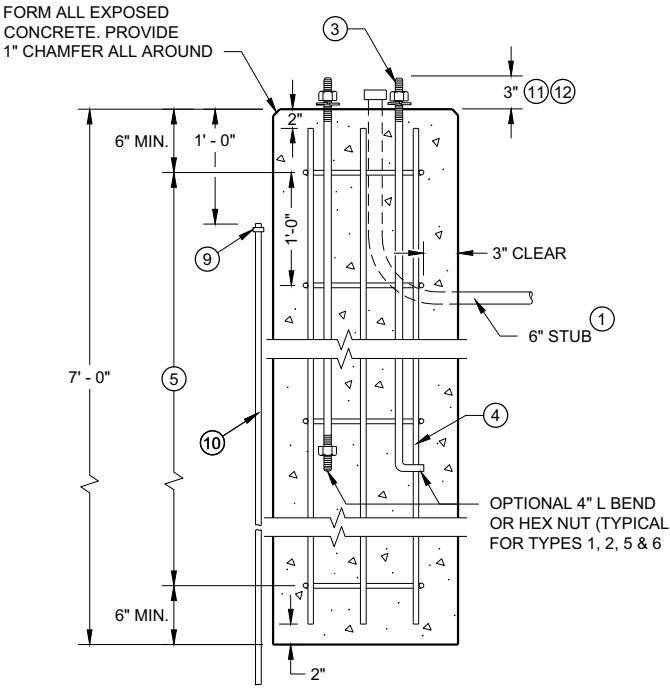
- 1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.
- 2 (4) 1" DIA. X 3' - 6" ANCHOR RODS.
- 3 (4) 1" DIA. X 5' - 0" ANCHOR RODS.
- 4 (6) NO. 6 X 6' - 8" BAR STEEL REINFORCEMENT.
- 5 (7) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
- 6 (4) 1" DIA. X 3' - 6" ANCHOR RODS.
- 7 (6) NO. 4 X 4' - 8" BAR STEEL REINFORCEMENT.
- 8 (5) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
- 9 EXOTHERMIC CONNECTION TO EQUIPMENT GROUNDING CONDUCTOR
- 10 5/8" DIA. X 8' - 0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED
- 11 ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/2" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- 12 FOR NON - BREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

HALF SECTION IN UNPAVED AREA



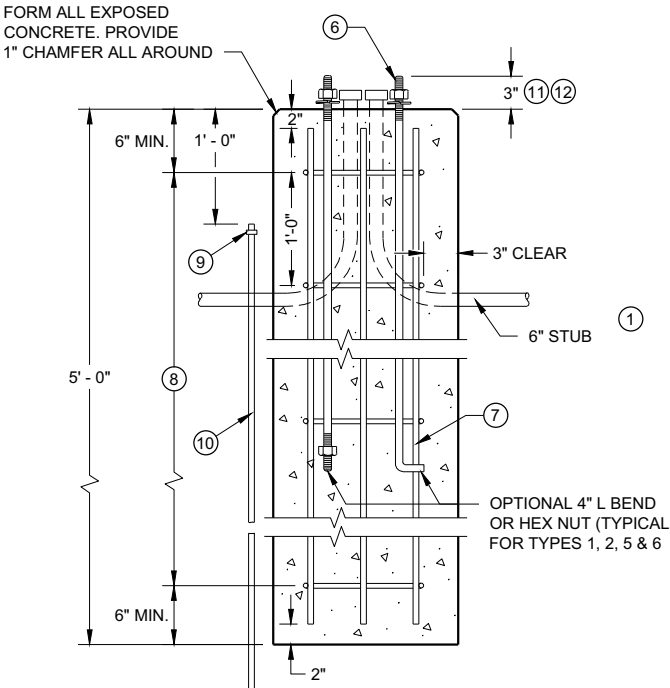
TYPE 1

HALF SECTION IN PAVEMENT



TYPE 2

CONCRETE BASES



TYPE 5 & 6

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

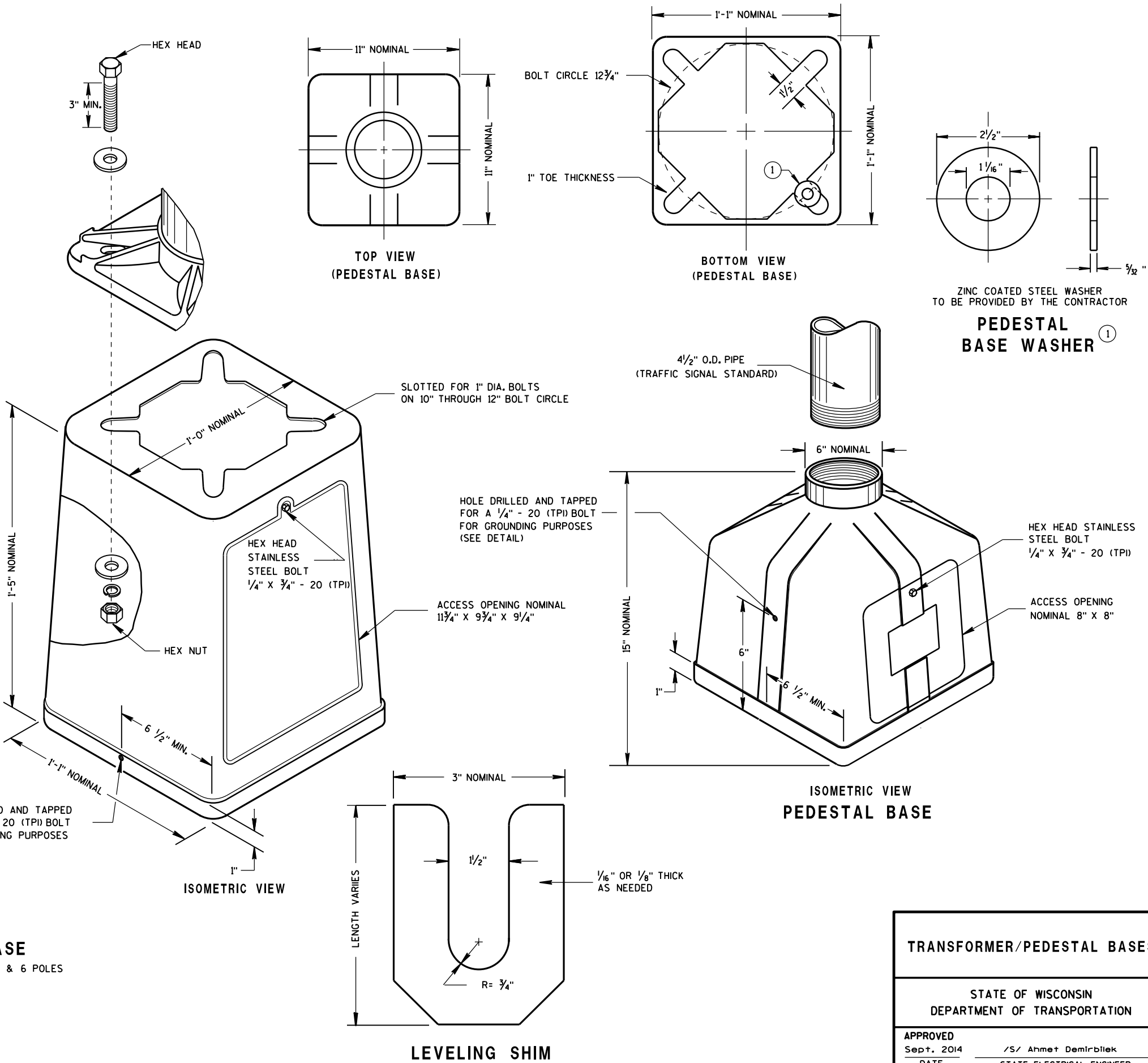
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.

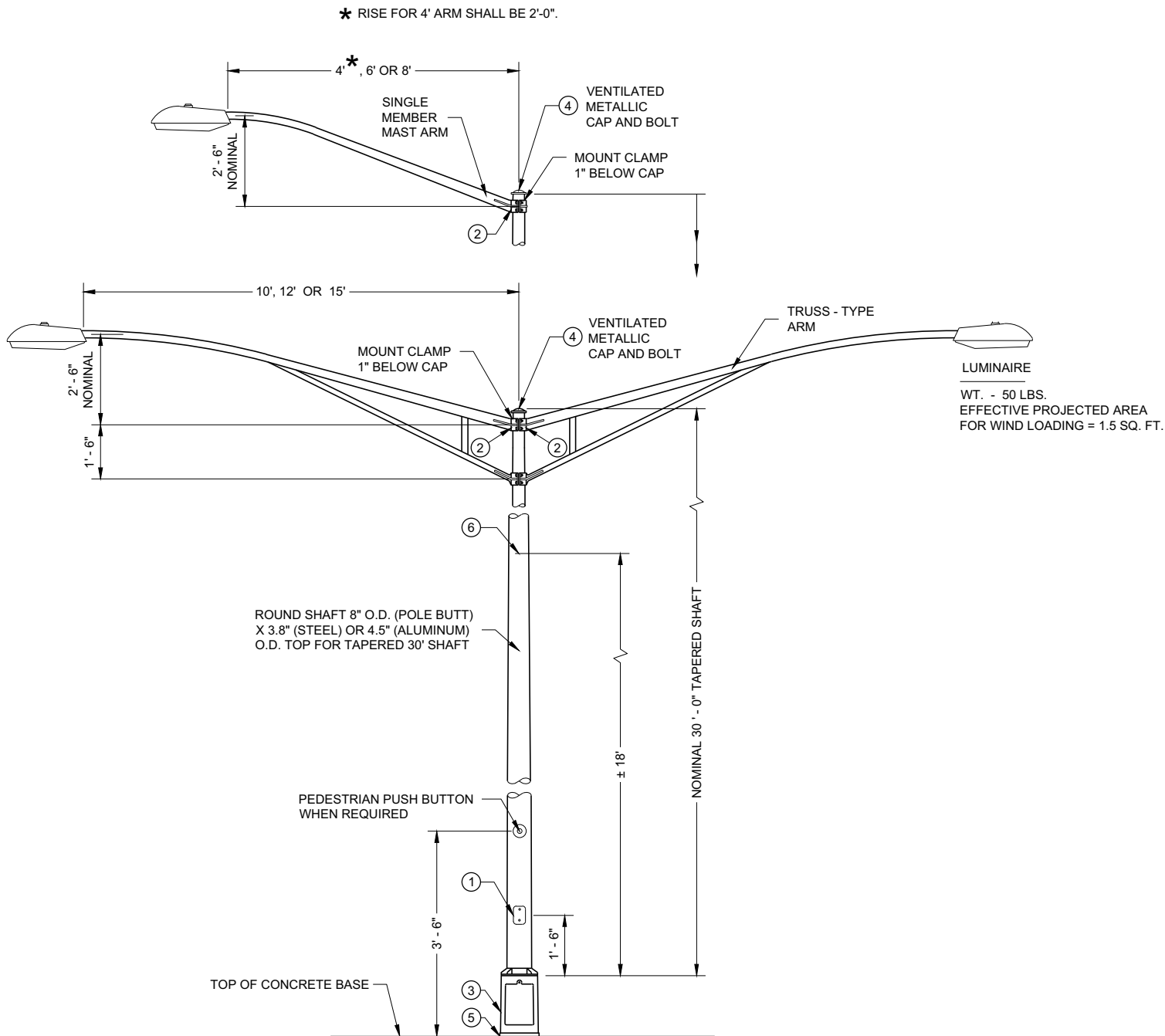


TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014
DATE
FWHA

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER



**TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY**

GENERAL NOTES

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

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVEING INSIDE THE POLE IS NOT ACCEPTABLE.

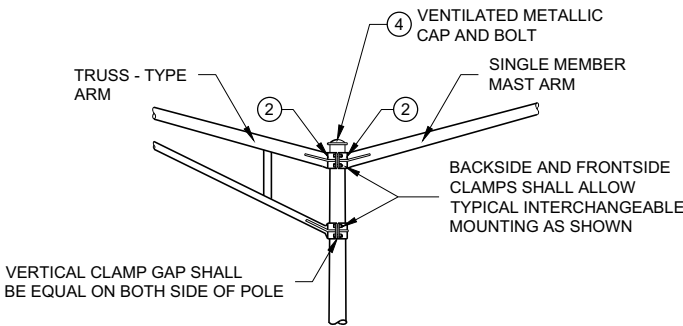
TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

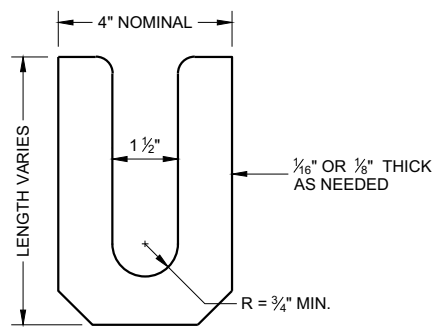
- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 3/4" X 3/4" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 3/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑥ INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.



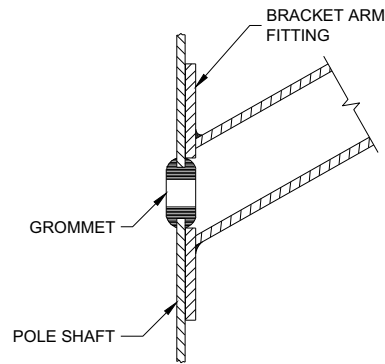
INTERCHANGEABLE MOUNTING DETAIL

**POLE MOUNTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)**

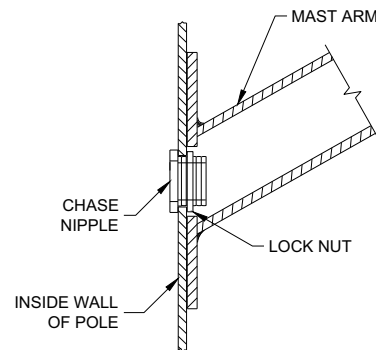
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



LEVELING SHIM
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



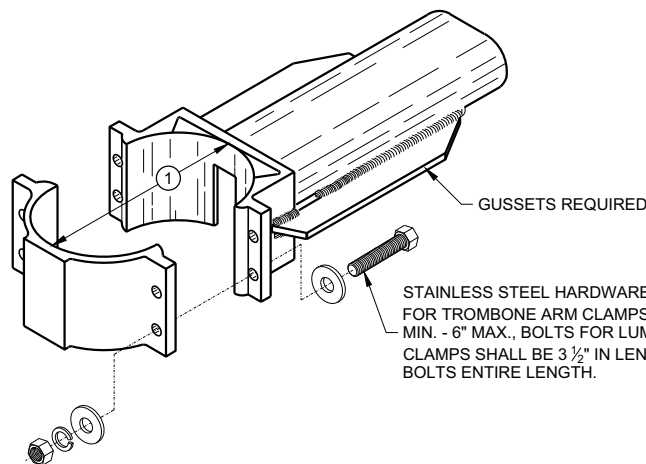
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

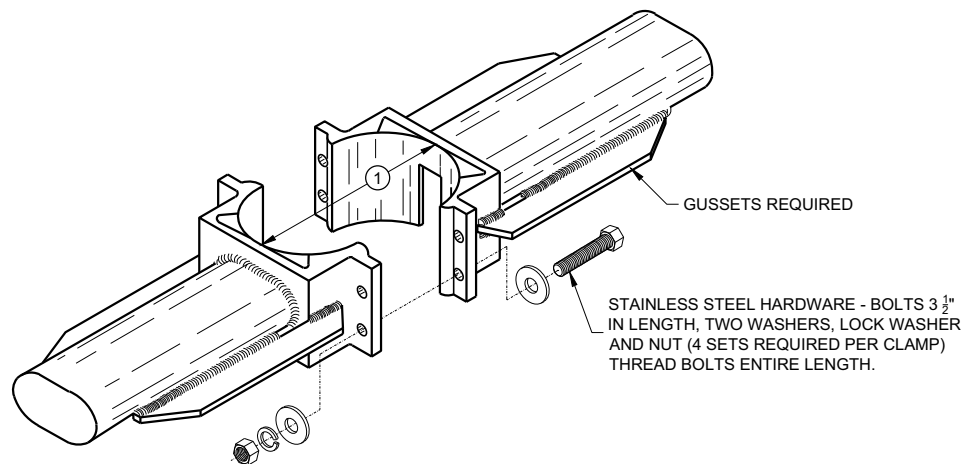
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- ① 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- ② INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- ③ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
- ④ LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

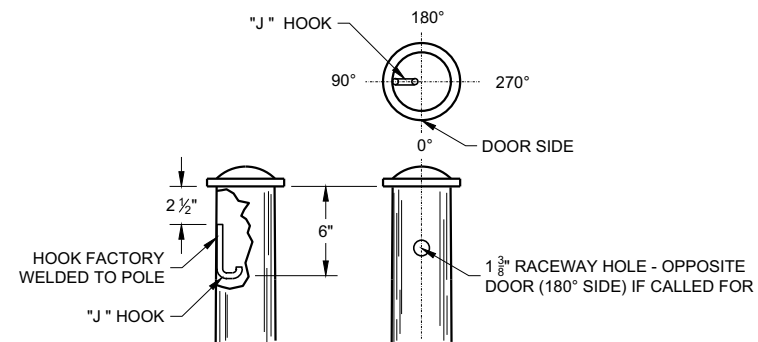
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



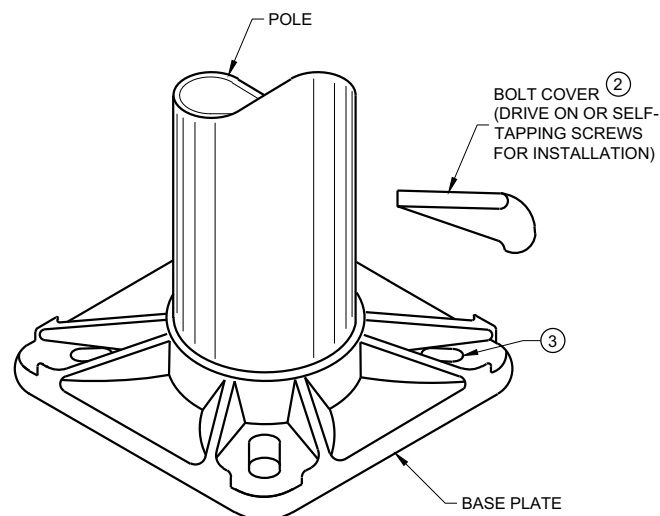
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



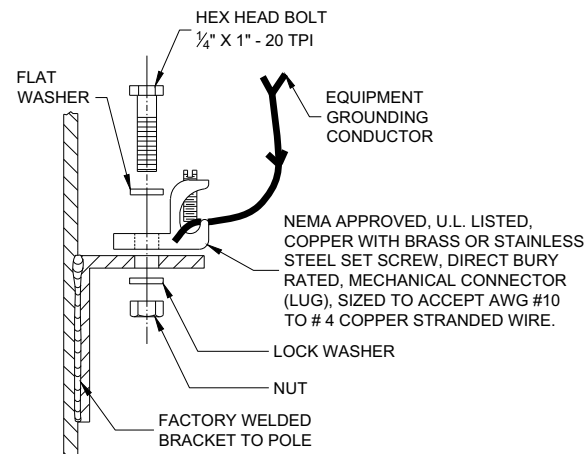
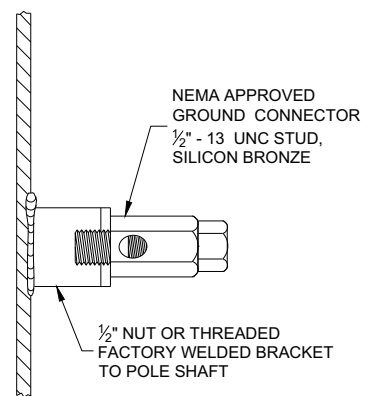
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



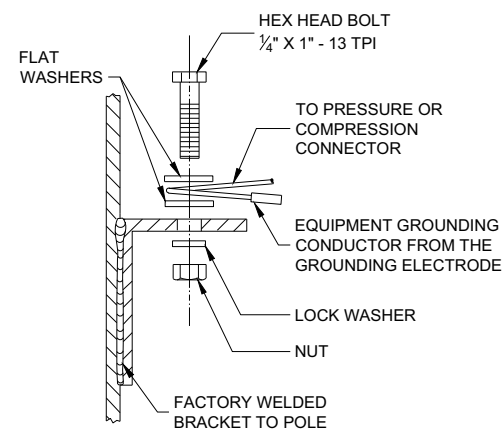
TYPICAL "J" HOOK LOCATION



BASE PLATE



TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



HARDWARE DETAILS FOR POLE MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER

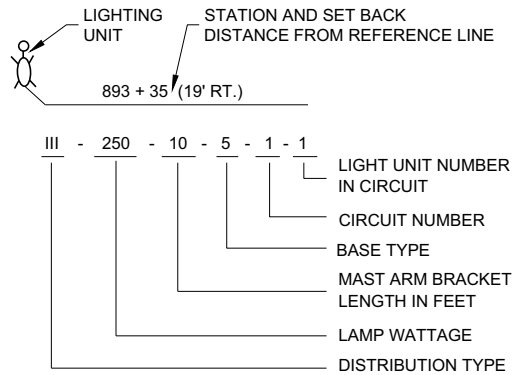
FHWA

GENERAL NOTES

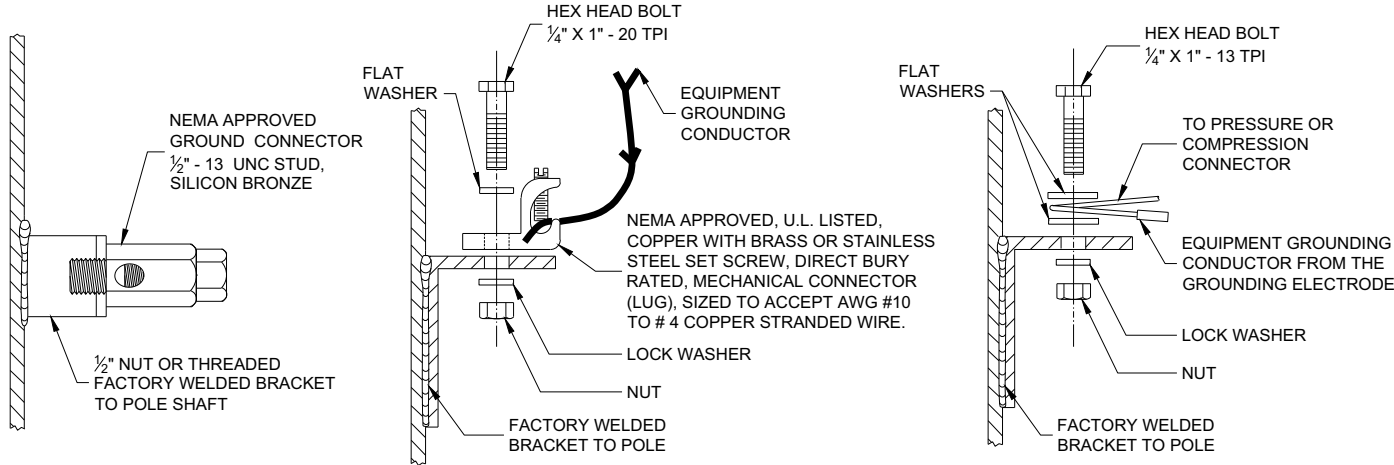
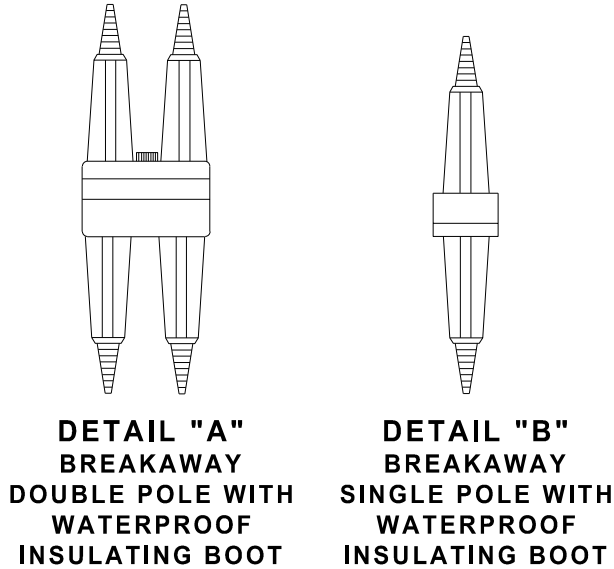
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

THE EQUIPMENT GROUND CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

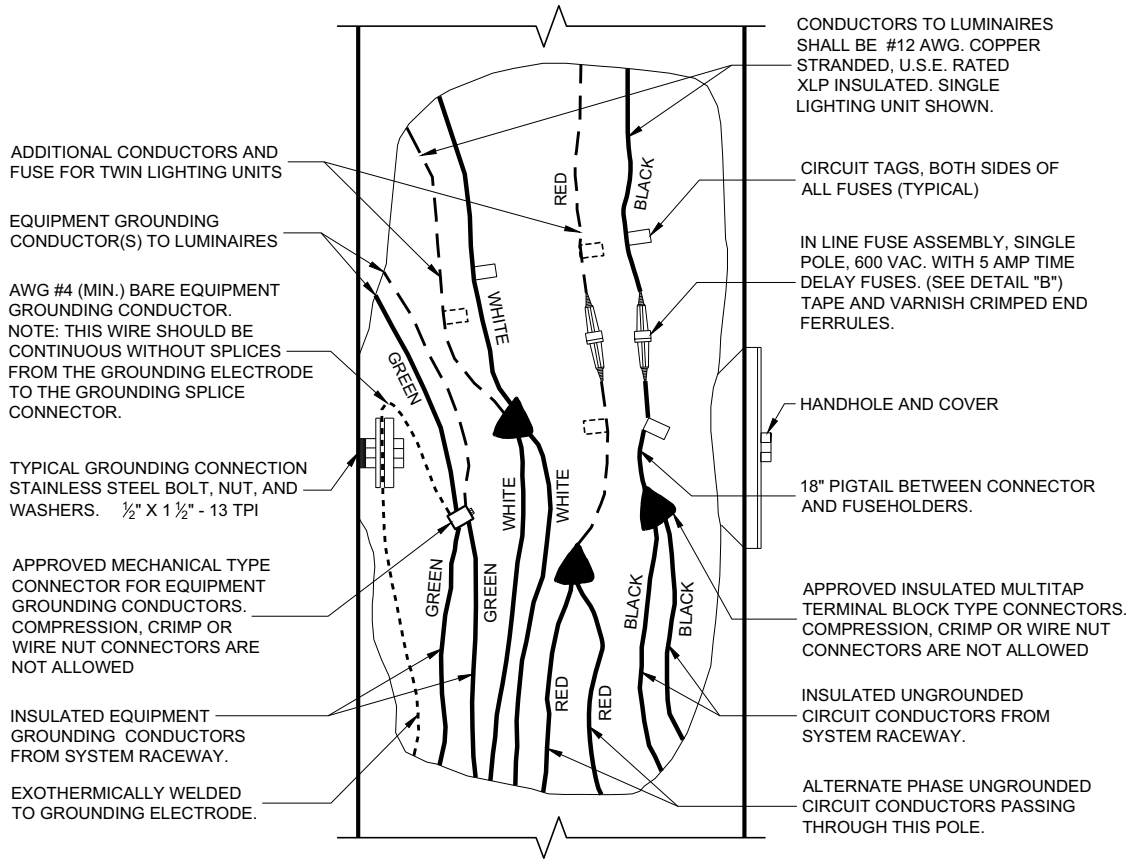


LIGHTING UNIT CODE
(TYPICAL)



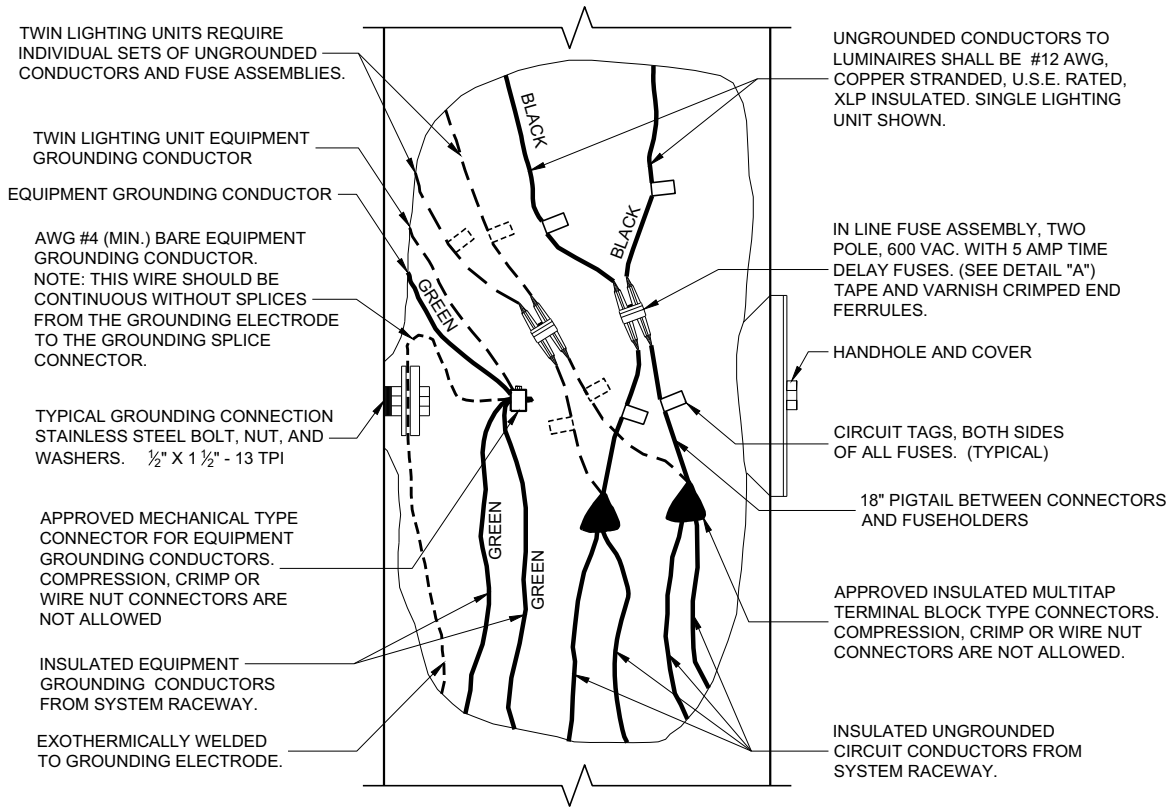
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

6



3 WIRE - 120, 240 OR 480 VAC (UNGROUNDED CONDUCTORS)
WITH GROUNDING CONDUCTOR AND
EQUIPMENT GROUNDING CONDUCTOR

6



2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS)
WITH EQUIPMENT GROUNDING CONDUCTOR

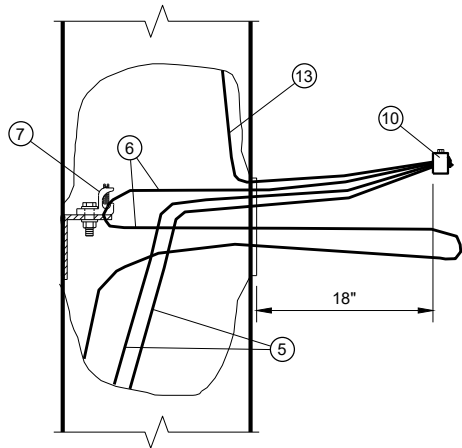
NON - FREEWAY LIGHTING UNIT
POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

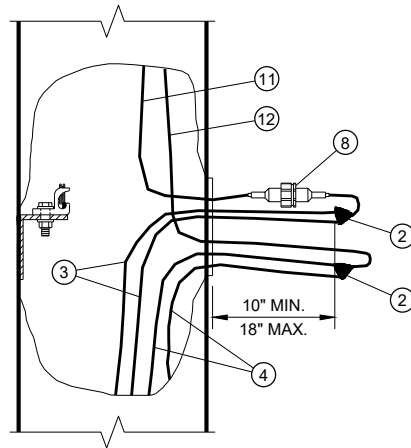
APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA

SDD 09E03 - 06

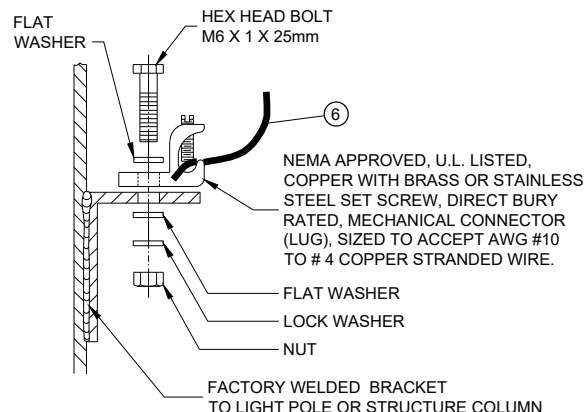
SDD 09E03 - 06



EQUIPMENT GROUNDING
CONDUCTOR SLACK



UNGROUND CONDUCTOR SLACK
(AND GROUNDED NEUTRAL SLACK
IN GROUNDED NEUTRAL SYSTEM)



HANDHOLE GROUNDING LUG
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

TYPICAL CONDUCTOR SLACK AT HANDHOLES

GENERAL NOTES

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

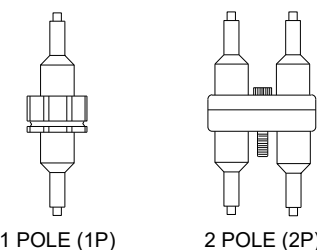
USE THIS DETAIL IN CONJUNCTION WITH THE ELECTRICAL DETAILS FOR THE APPLICATION, WHICH MAY BE A LIGHT POLE, SIGN BRIDGE, ETC.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

THREE POLE WIRES ARE SHOWN FOR A SINGLE LUMINAIRE LIGHT POLE. THREE ADDITIONAL POLE WIRES REQUIRED FOR TWIN LUMINAIRE LIGHT POLES ARE OMITTED FROM THE DRAWING FOR CLARITY. IN THE TWIN POLE CASE, BUNDLE EACH SET OF THREE WIRES WITH A NYLON CABLE TIE.

IN 3-PHASE SYSTEMS, THERE WILL BE ONE MORE UNGROUNDED LINE WIRE, WHICH IS OMITTED FROM THE DRAWING FOR CLARITY.

CIRCUIT TAGS SHALL BE INSTALLED ONLY WHERE REQUIRED IN THE SPECIAL PROVISIONS.

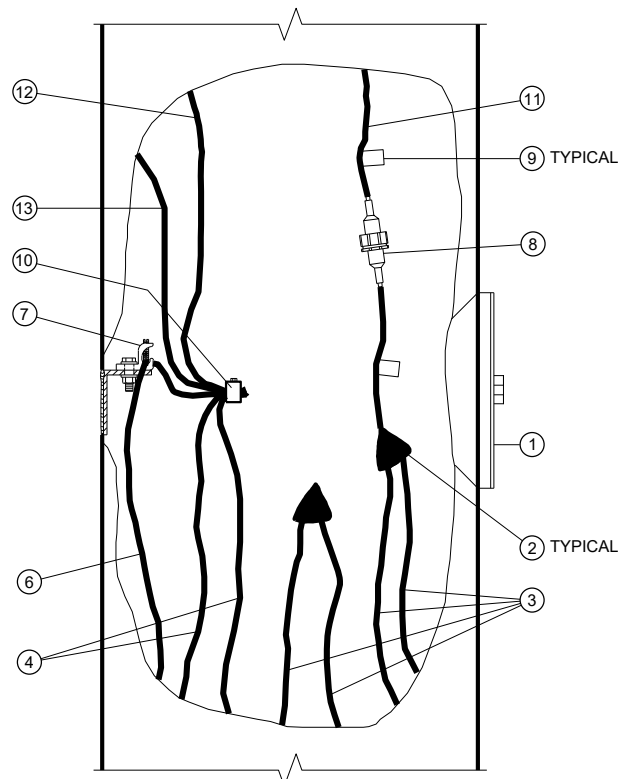


FUSE ASSEMBLIES

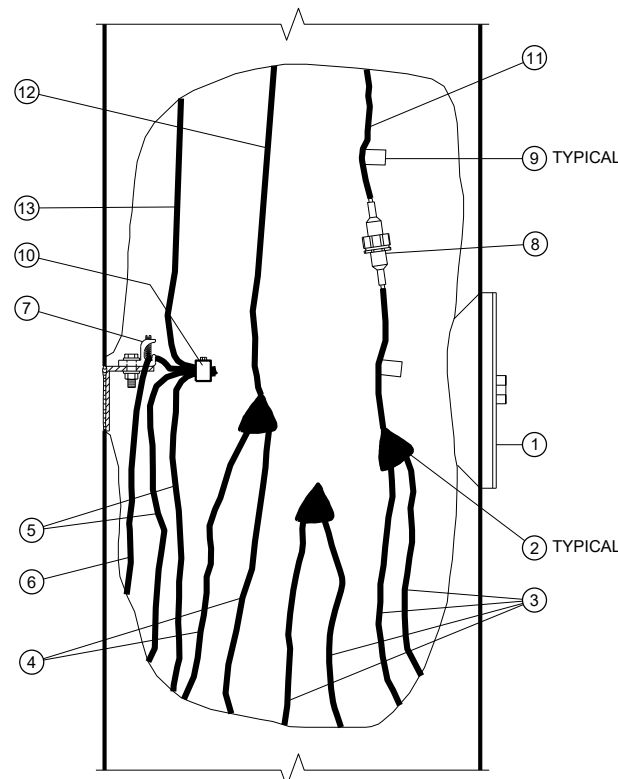
CONDUCTOR COLOR CODES

KEY	CONDUCTOR	COLOR
3	UNGROUND LINE WIRE	* WHITE
4	GROUNDED LINE WIRE	GREEN
5	SYSTEM GROUNDING LINE WIRE	BARE
6	GROUNDING ELECTRODE CONDUCTOR	* WHITE
11	UNGROUND POLE WIRE	GREEN
12	GROUNDED POLE WIRE	WHITE
13	EQUIPMENT GROUNDING POLE WIRE	GREEN

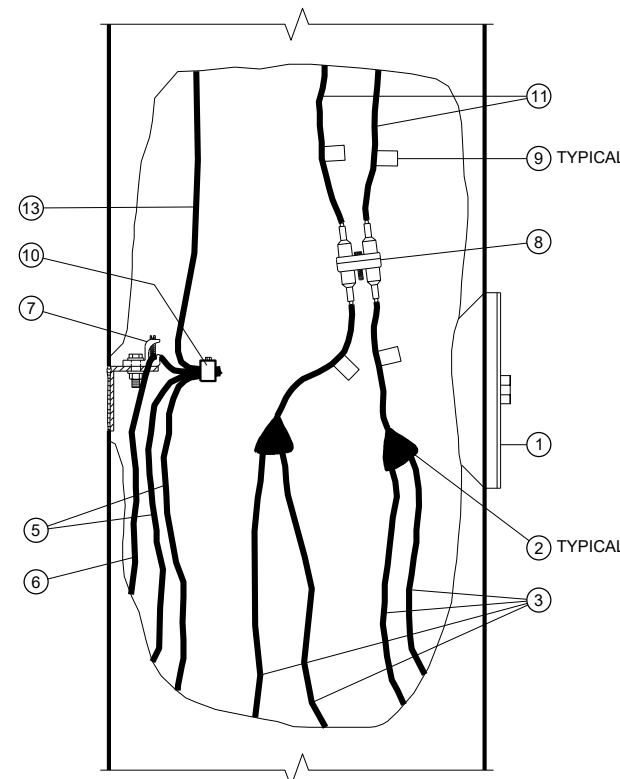
* FOLLOW COLOR CODING SHOWN IN THE PLANS. WHERE THE PLANS DO NOT SHOW COLOR CODING, USE BLACK FOR SINGLE LUMINAIRE POLES; BLACK AND RED FOR TWIN LUMINAIRE POLES.



CUTAWAY HANDHOLE DETAIL
GROUNDED NEUTRAL SYSTEMS
1-φ



CUTAWAY HANDHOLE DETAIL
ISOLATED NEUTRAL SYSTEMS
1-φ SHOWN; 3-φ WYE SIMILAR
(SEE GENERAL NOTE)



CUTAWAY HANDHOLE DETAIL
PHASE TO PHASE SYSTEMS
1-φ SHOWN; 3-φ DELTA SIMILAR
(SEE GENERAL NOTE)

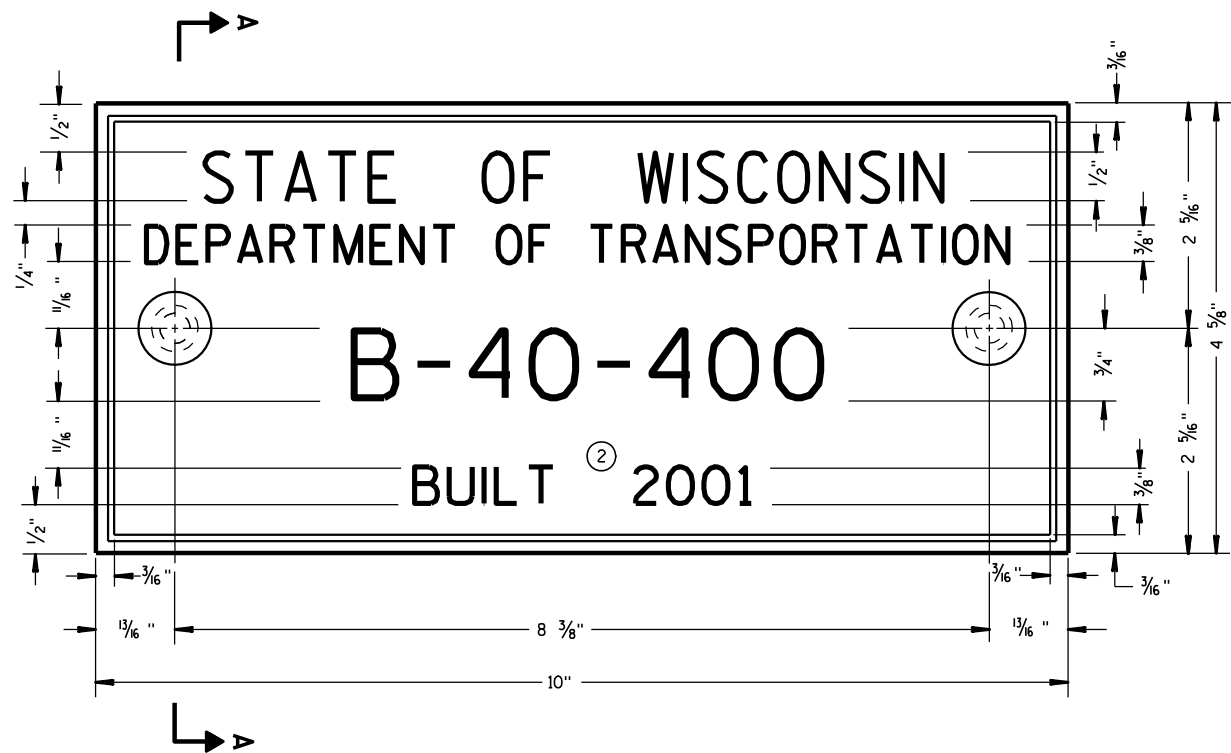
- ① HANDHOLE AND COVER
- ② INSULATED SPLICE
- ③ UNGROUNDED LINE WIRE
- ④ GROUNDED LINE WIRE
- ⑤ SYSTEM GROUNDING LINE WIRE
- ⑥ GROUNDING ELECTRODE CONDUCTOR
- ⑦ HANDHOLE GROUNDING LUG
- ⑧ FUSE ASSEMBLY, 1P OR 2P AS REQUIRED
- ⑨ CIRCUIT TAG (SEE GENERAL NOTE)
- ⑩ REVERSIBLE PRESSURE OR COMPRESSION GROUNDING CONNECTOR (NOT INSULATED)
- ⑪ UNGROUNDED POLE WIRE
- ⑫ GROUNDED POLE WIRE
- ⑬ EQUIPMENT GROUNDING POLE WIRE

ELECTRICAL HANDHOLE WIRING

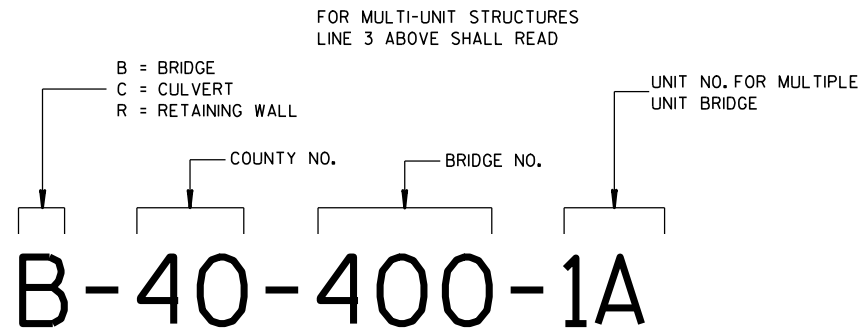
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA

NOTE: REQUIRED CONDUCTOR SLACK NOT SHOWN ON "CUTAWAY HAND HOLE" DETAILS FOR DRAWING CLARITY, SEE "TYPICAL CONDUCTOR SLACK AT HANDHOLES" ON THIS SHEET.



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



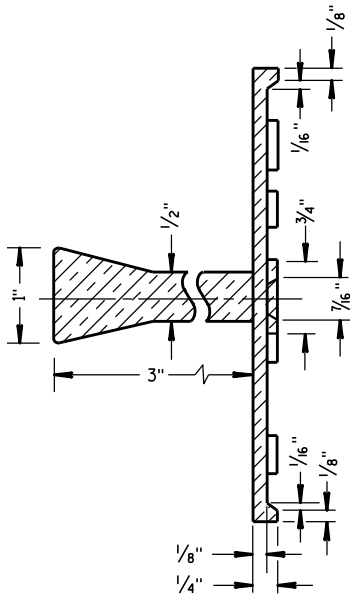
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

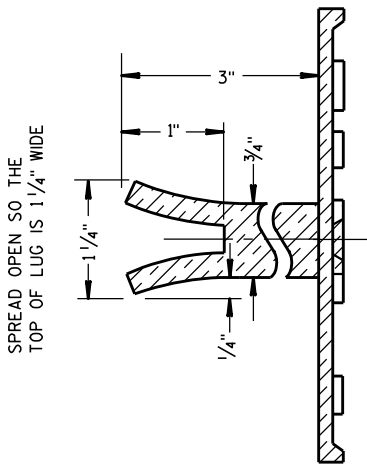
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

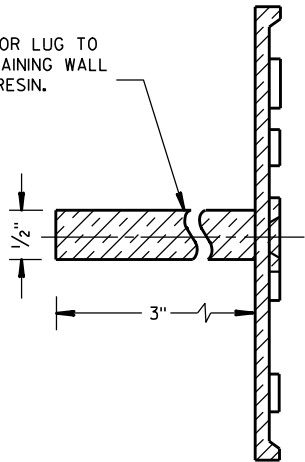


SECTION A-A



ALTERNATE LUG

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



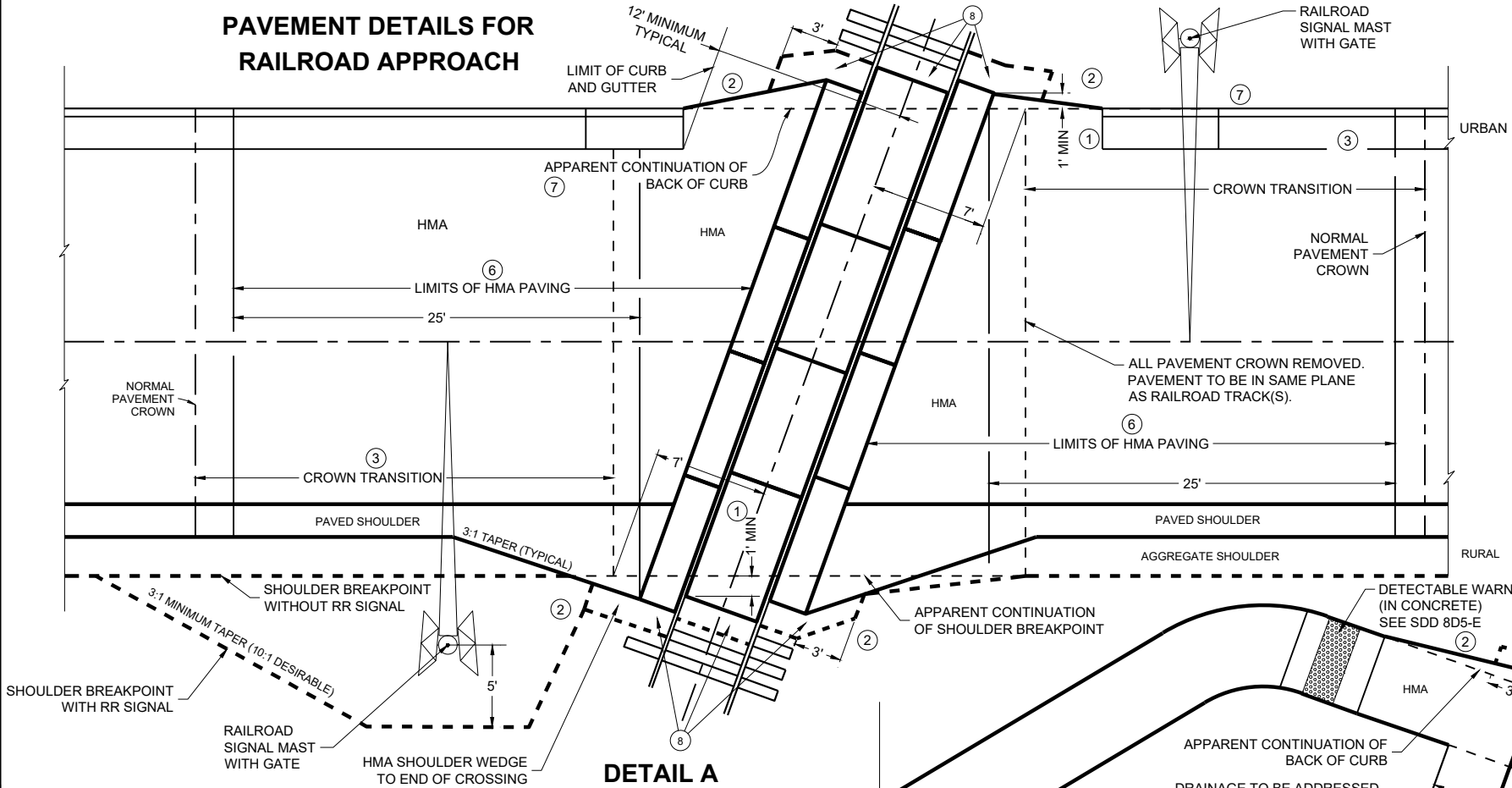
ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/26/10
DATE
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA

PAVEMENT DETAILS FOR RAILROAD APPROACH



DETAIL A
RAILROAD APPROACH

GENERAL NOTES CONTINUED

- 1' MINIMUM CROSSING SURFACE COVERAGE PAST THE APPARENT CONTINUATION OF SHOULDER BREAKPOINT, BACK OF CURB, OR OUTSIDE EDGE OF SIDEWALK/PATH. INDIVIDUAL RAILROADS MAY HAVE DIFFERENT MINIMUM STANDARDS.
- HMA FLARE FROM OUTSIDE EDGE OF SIDEWALK/PATH, BACK OF CURB, OR AGGREGATE SHOULDER BREAKPOINT TO THE END OF CROSSING SURFACE MATERIAL.
- CROWN TRANSITION LENGTH SHOWN ELSEWHERE IN THE PLAN.
- NEAR EDGE OF PATH TO THE CENTER OF SIGNAL OR GATE MAST SHOULD BE A MINIMUM OF 5'-0". FOR SIDEWALK, THE NEAR EDGE SHOULD BE A MINIMUM OF 3'-0" TO THE CENTER OF SIGNAL OR GATE. NEAR EDGE OF SIDEWALK TO A NON-GATED MAST OR CANTILEVER SHOULD BE A MINIMUM OF 2'-6". SEE PLAN FOR RAILROAD SIGNAL AND GATE LOCATION IF THEY ARE NOT ALREADY INSTALLED.
- TERRACE WIDTH VARIES. SEE PLAN FOR RAILROAD SIGNAL AND GATE LOCATIONS. PER PLAN OR PROJECT ENGINEER THE TERRACE AND SIDEWALK/PATH GRADES SHALL BE TRANSITIONED TO MATCH THE GRADE OF THE TRACK. FIELD FIT TO AVOID PONDING.
- 25' MINIMUM HMA PAVING MEASURED PARALLEL TO THE ROAD OR 10' MINIMUM MEASURED PERPENDICULAR TO THE TRACK FROM THE EDGE OF THE CROSSING SURFACE, WHICHEVER IS GREATER.
- REFERENCE SDD 8-D-01 END SECTION CURB AND GUTTER. MEDIAN END NEAR THE TRACK SHOULD BE PARALLEL TO THE TRACK. 6'-0" TAPER FOR A MEDIAN SHOULD BE REDUCED TO GET FULL HEIGHT CURB WHERE THE GATE COMES DOWN. DESIGN OPTION TO POUR MEDIAN TAPER IN ONE PIECE. BUILD PER PLAN UNLESS OTHERWISE APPROVED BY THE RAILROAD ENGINEER AND THE PROJECT ENGINEER.
- IF METAL END PLATES ARE NOT INSTALLED BY THE RAILROAD THEN HMA PAVEMENT WEDGE SHALL BE PLACED AT THE END OF THE LAST PANEL TAPERED TO BACK EDGE OF NEXT TIE AND THOROUGHLY COMPACTED. SEE DETAIL G.

GENERAL NOTES

PLANS AND SECTIONS ARE TYPICAL. DIMENSIONS VARY PER PROJECT.

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

CROSSING SURFACE MATERIAL, RAILS, TIES, BALLAST, AND CROSSING DRAINAGE SYSTEM BY OTHERS UNLESS DIRECTED OTHERWISE. IF THE FINAL GRADES DON'T MATCH TO THE PLAN GRADES THEN GRADE ADJUSTMENTS WILL BE NECESSARY. CONFIRM NEW GRADES WITH PROJECT ENGINEER.

HMA PAVEMENT APPROACHES, HMA PAVEMENT CROSSING SURFACES, AND HMA FLANGWAY/FIELD FILLERS TO BE REPLACED BY ROADWAY CONTRACTOR UNLESS DIRECTED OTHERWISE BY THE PLANS, SPECIAL PROVISIONS, RAILROAD ENGINEER, OR PROJECT ENGINEER.

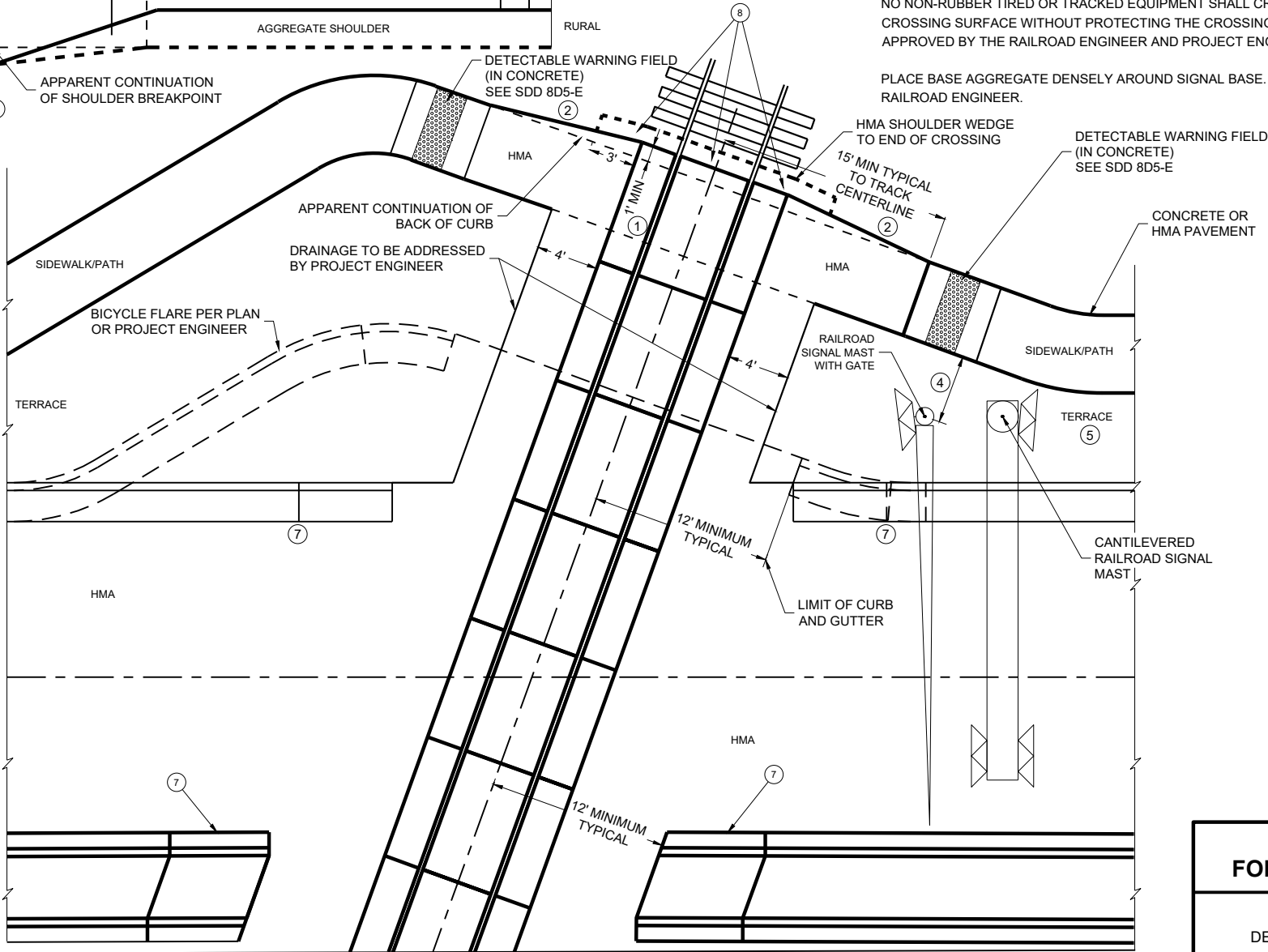
HMA PAVEMENT SHALL BE ROLLED PARALLEL TO THE TRACK.

WHEN THERE IS A SIDEWALK OR SHARED-USE PATH, ADD DETECTABLE WARNING FIELDS PER CURRENT STANDARD DETAIL DRAWING 8D5-E.

THE CROSSING SHALL NOT BE OPENED TO ANY TYPE OF TRAFFIC UNTIL IT IS FULLY PAVED AND COOLED SUFFICIENTLY UNLESS OTHERWISE APPROVED BY THE RAILROAD ENGINEER AND THE PROJECT ENGINEER.

NO NON-RUBBER TIRED OR TRACKED EQUIPMENT SHALL CROSS OR SIT ON THE CROSSING SURFACE WITHOUT PROTECTING THE CROSSING SURFACE WITH A METHOD APPROVED BY THE RAILROAD ENGINEER AND PROJECT ENGINEER.

PLACE BASE AGGREGATE DENSELY AROUND SIGNAL BASE. COORDINATE WITH THE RAILROAD ENGINEER.



DETAIL B

MEDIAN AND SIDEWALK/SHARED-USE PATH APPROACH

PAVEMENT DETAILS FOR RAILROAD APPROACH

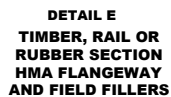
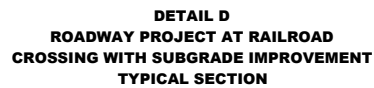
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2023
DATE

/S/ Kristen Sommers
STATE RAILROAD ENGINEERING
AND SAFETY SUPERVISOR

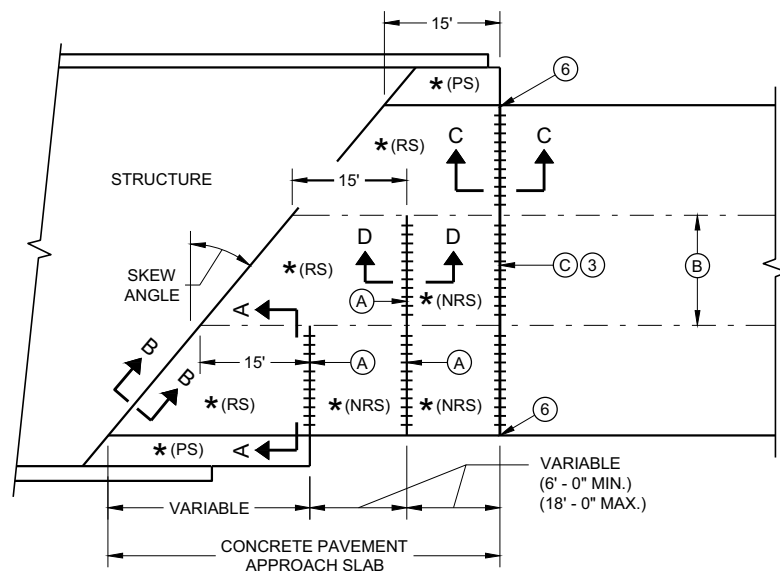
FHWA



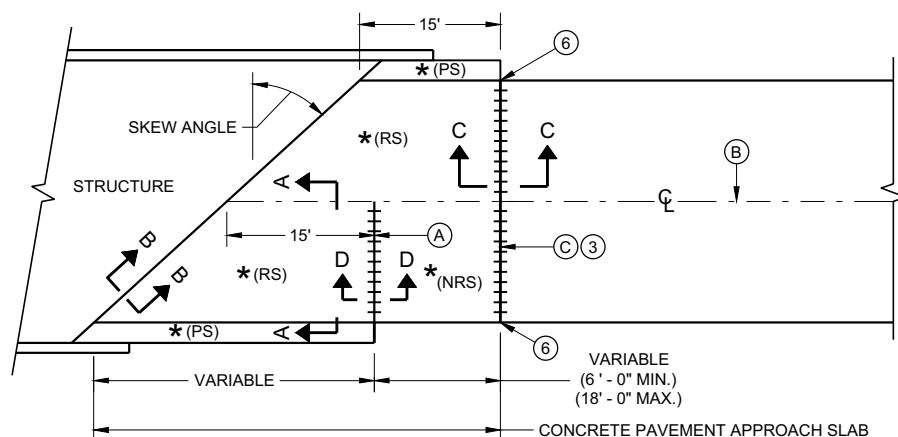
- 6

APPROVED
May 2023
DATE

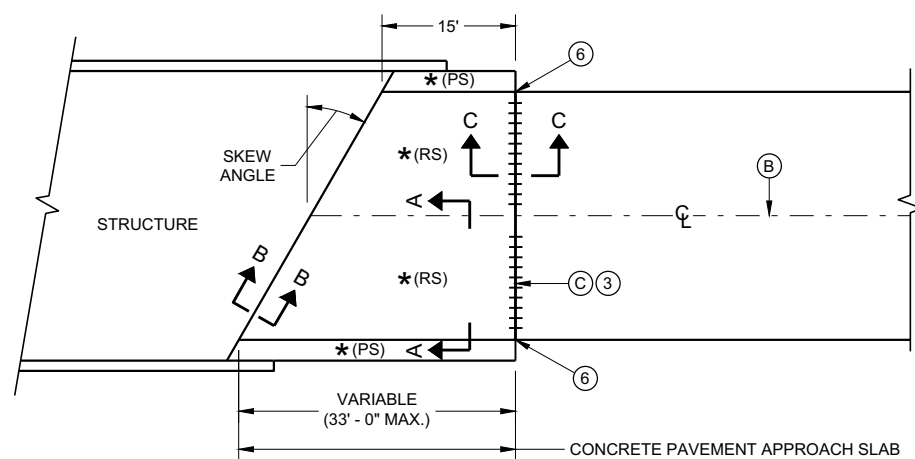
/s/ Kristen Sommers
STATE RAILROAD ENGINEERING
AND SAFETY SUPERVISOR



**SKewed APPROACH
(PAVEMENT MORE THAN TWO LANES)**



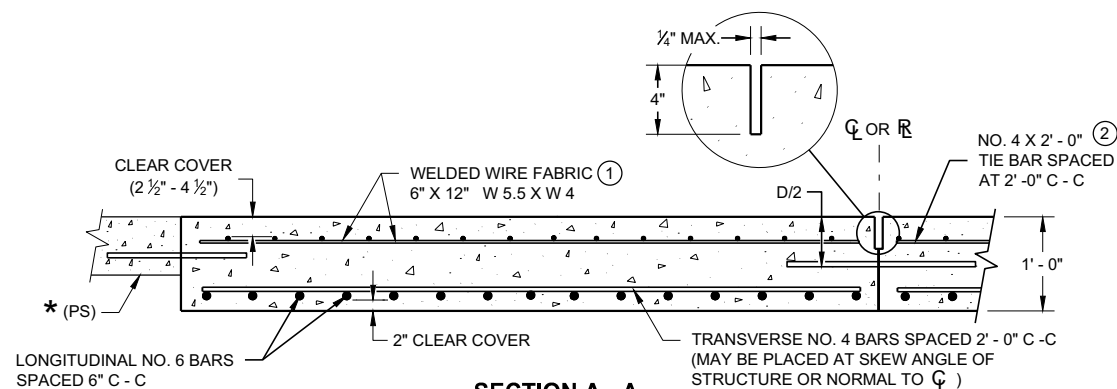
**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**



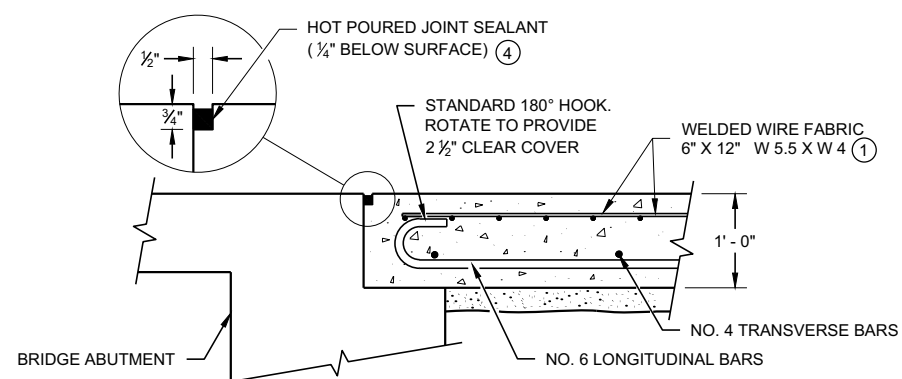
**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**

APPROACH SLAB AND ADJACENT PAVEMENT

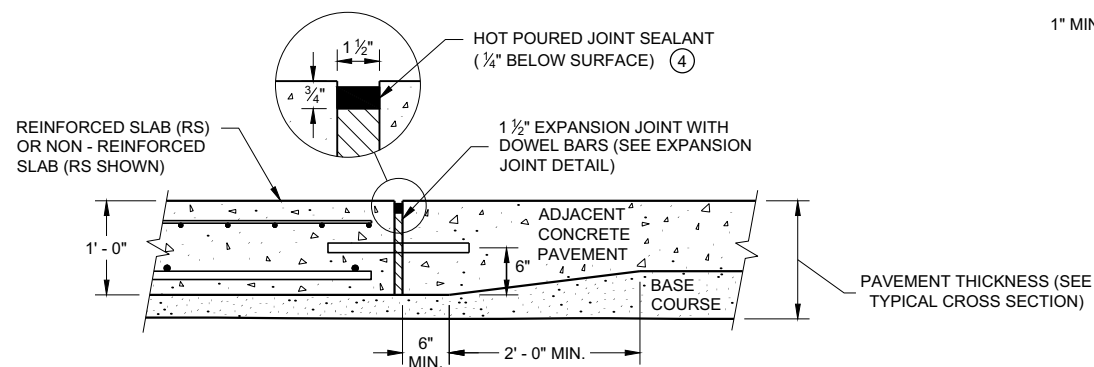
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



**SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT**



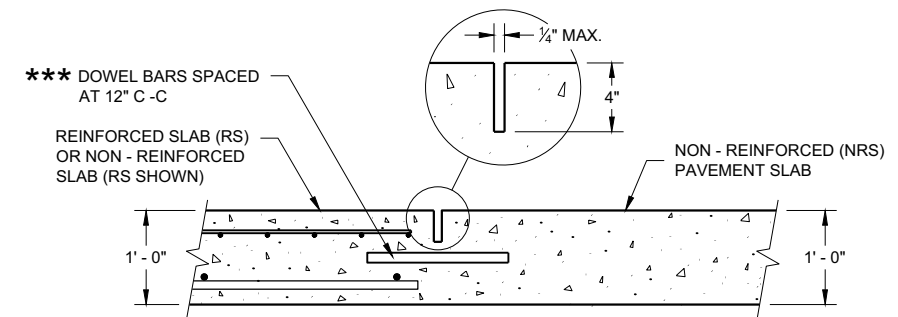
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

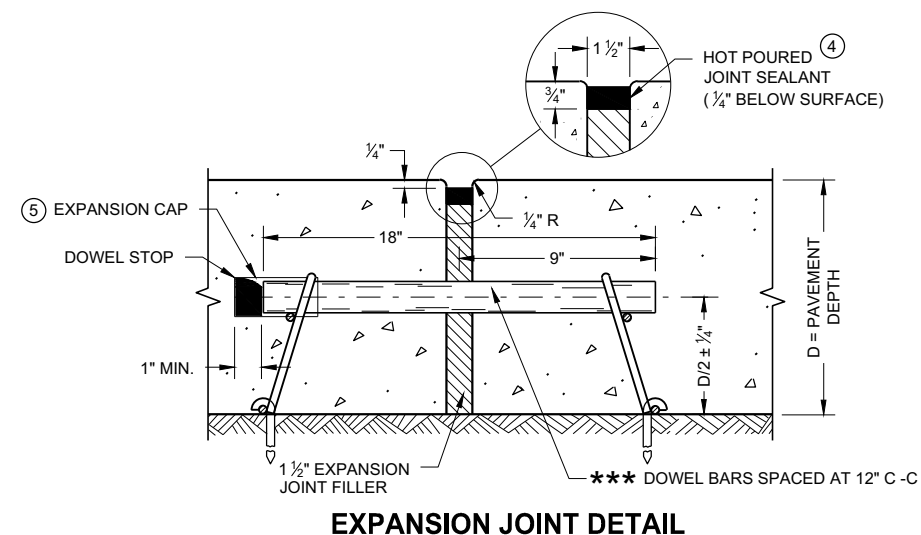
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

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 THE 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 CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- 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.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- A STANDARD CONTRACTION JOINT NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.
- B STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- C 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.



**SECTION D - D
CONTRACTION JOINT**

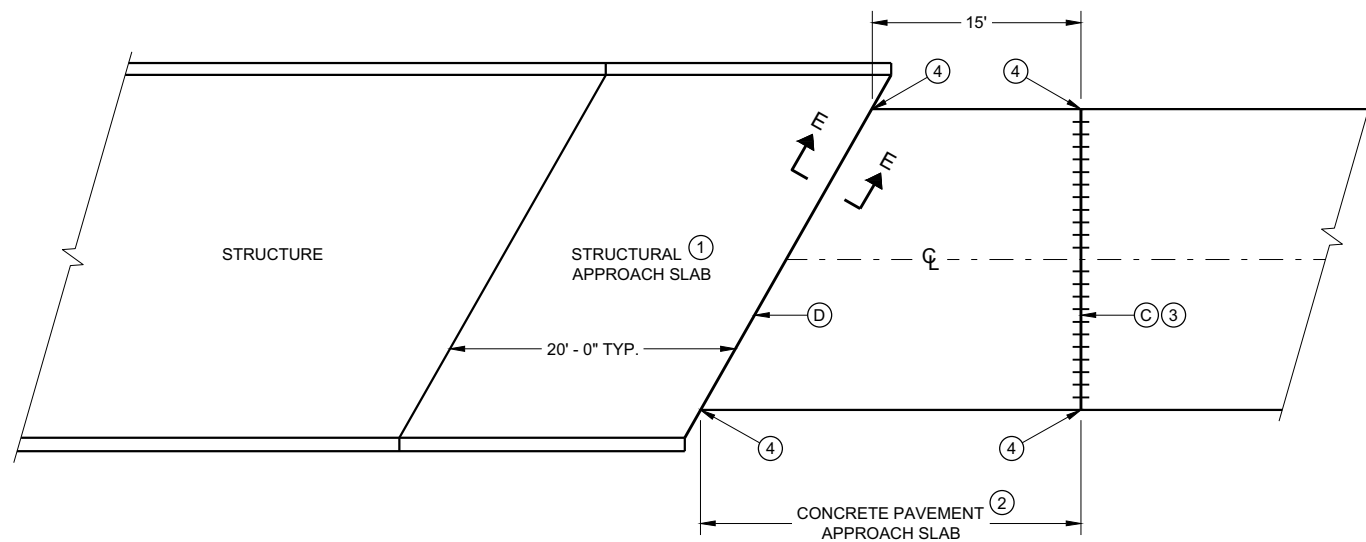


EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA

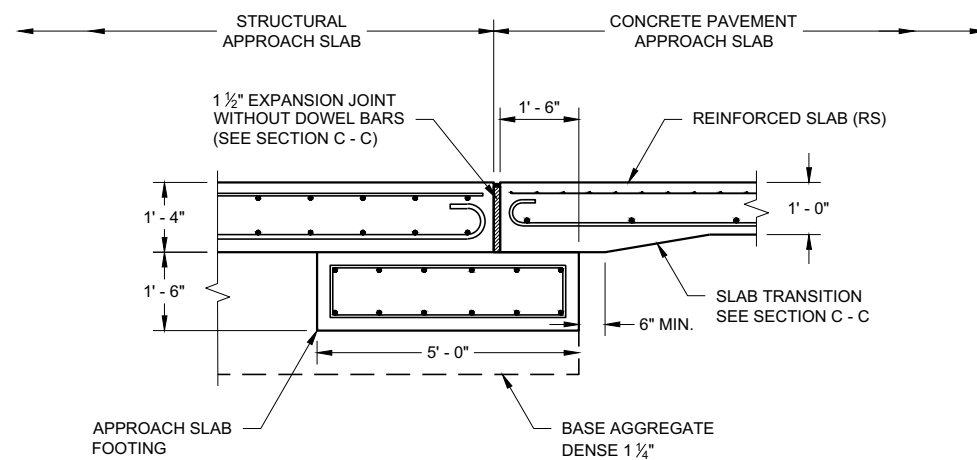


GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

- ① SEE BRIDGE PLAN.
- ② CONFORM TO SDD 13B02 SHEET A FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- Ⓒ 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO $\overleftrightarrow{CL}$ OR $\overleftrightarrow{RL}$.
- Ⓓ 1 ½" EXPANSION JOINT (NO DOWELS)

BRIDGE APPROACHES



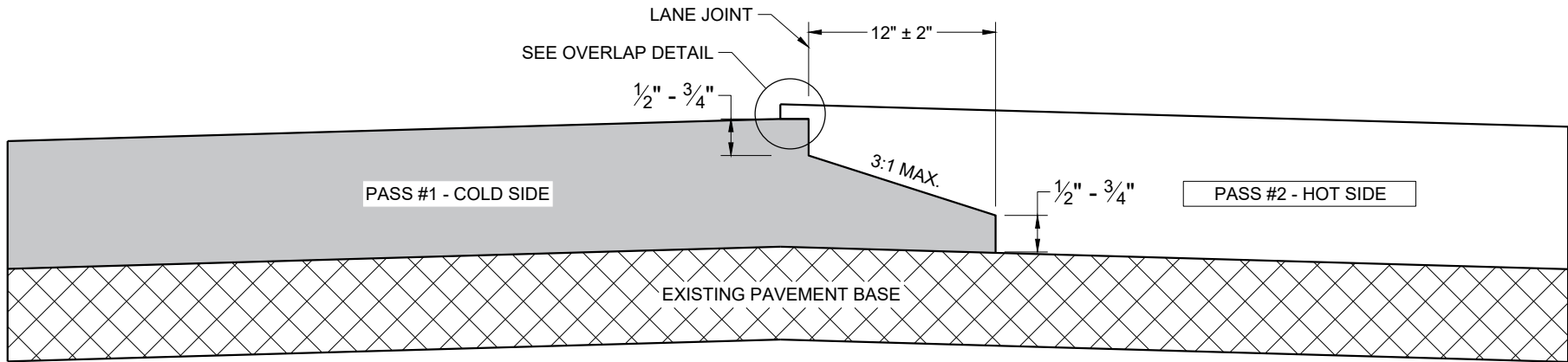
SECTION E - E FOOTING DETAIL STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB

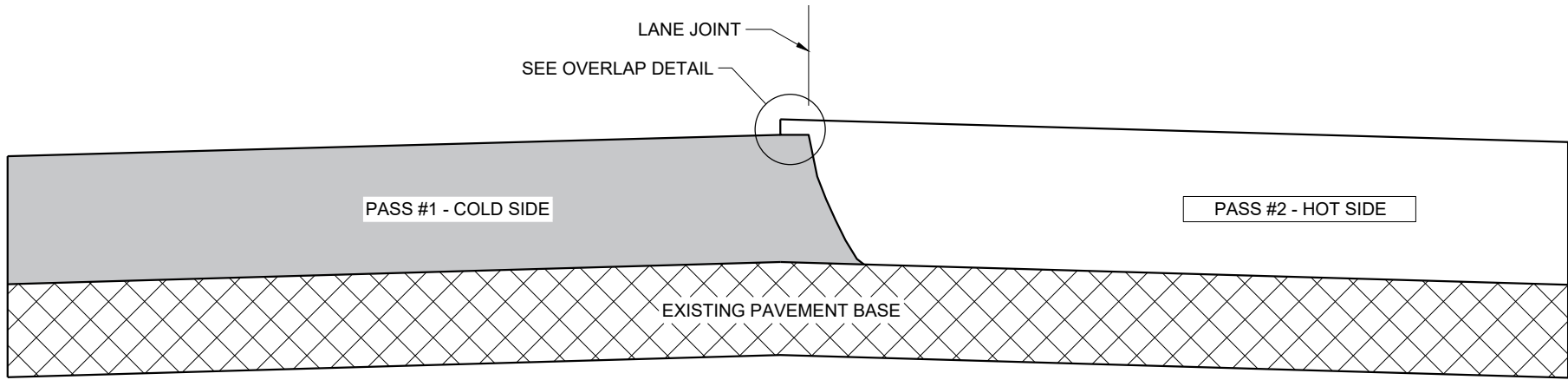
STATE OF WISCONSIN
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APPROVED
November 2018 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR

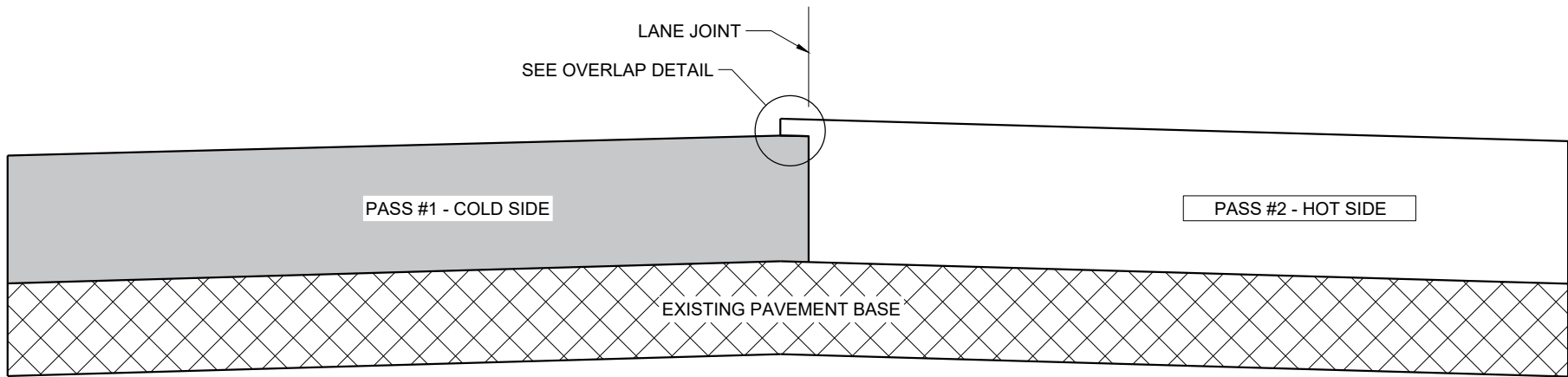
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TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

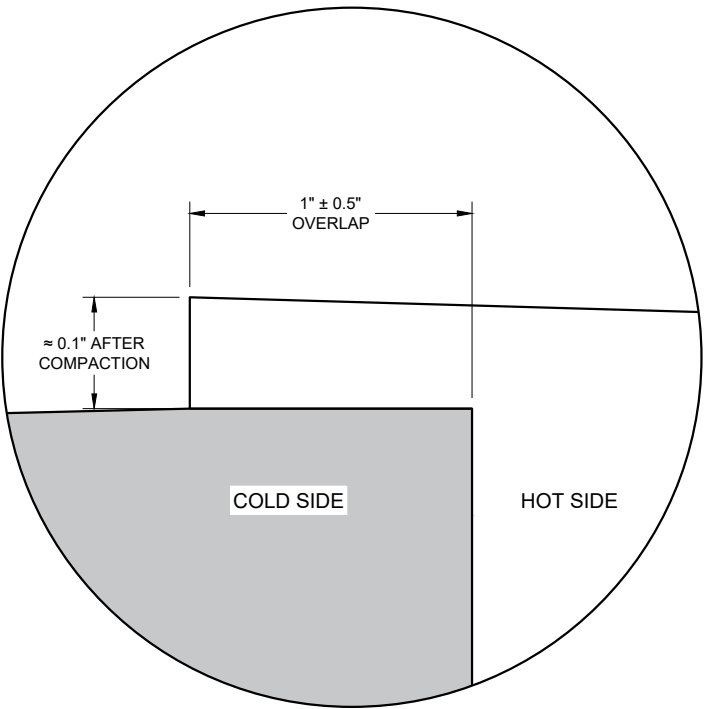
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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

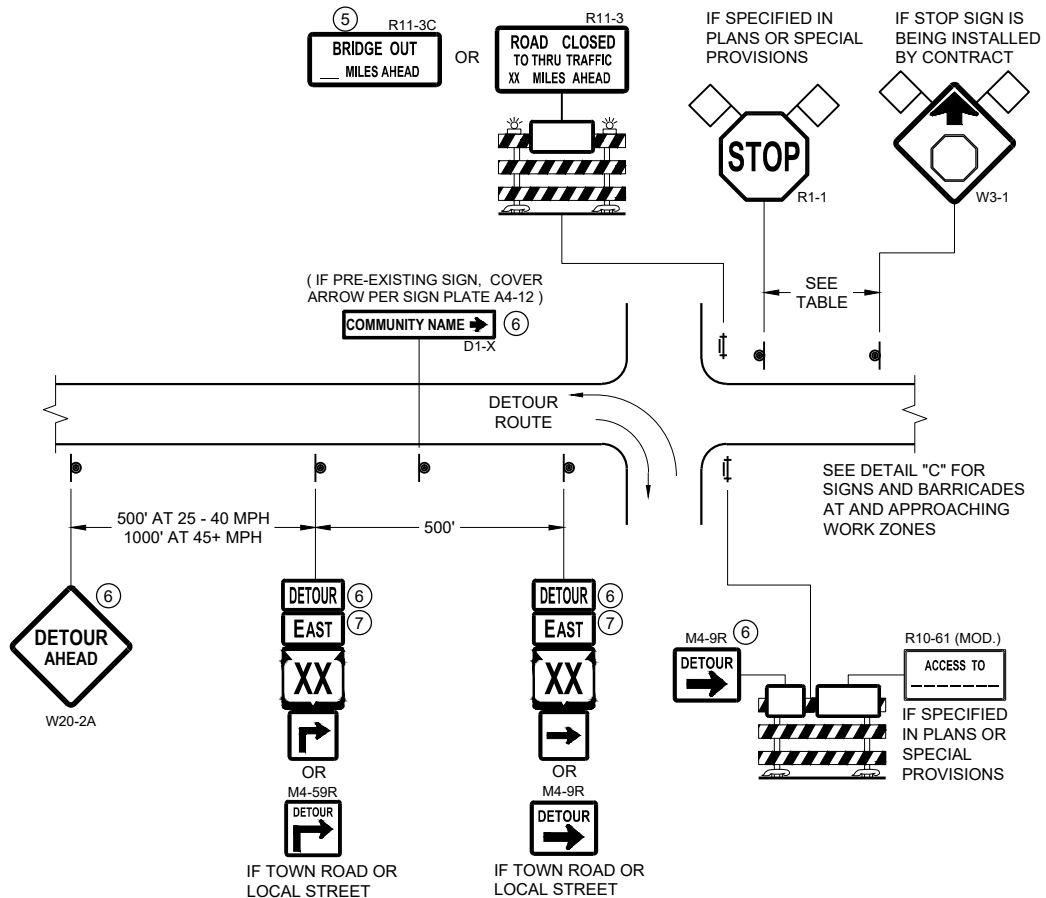


OVERLAP DETAIL (TYPICAL)

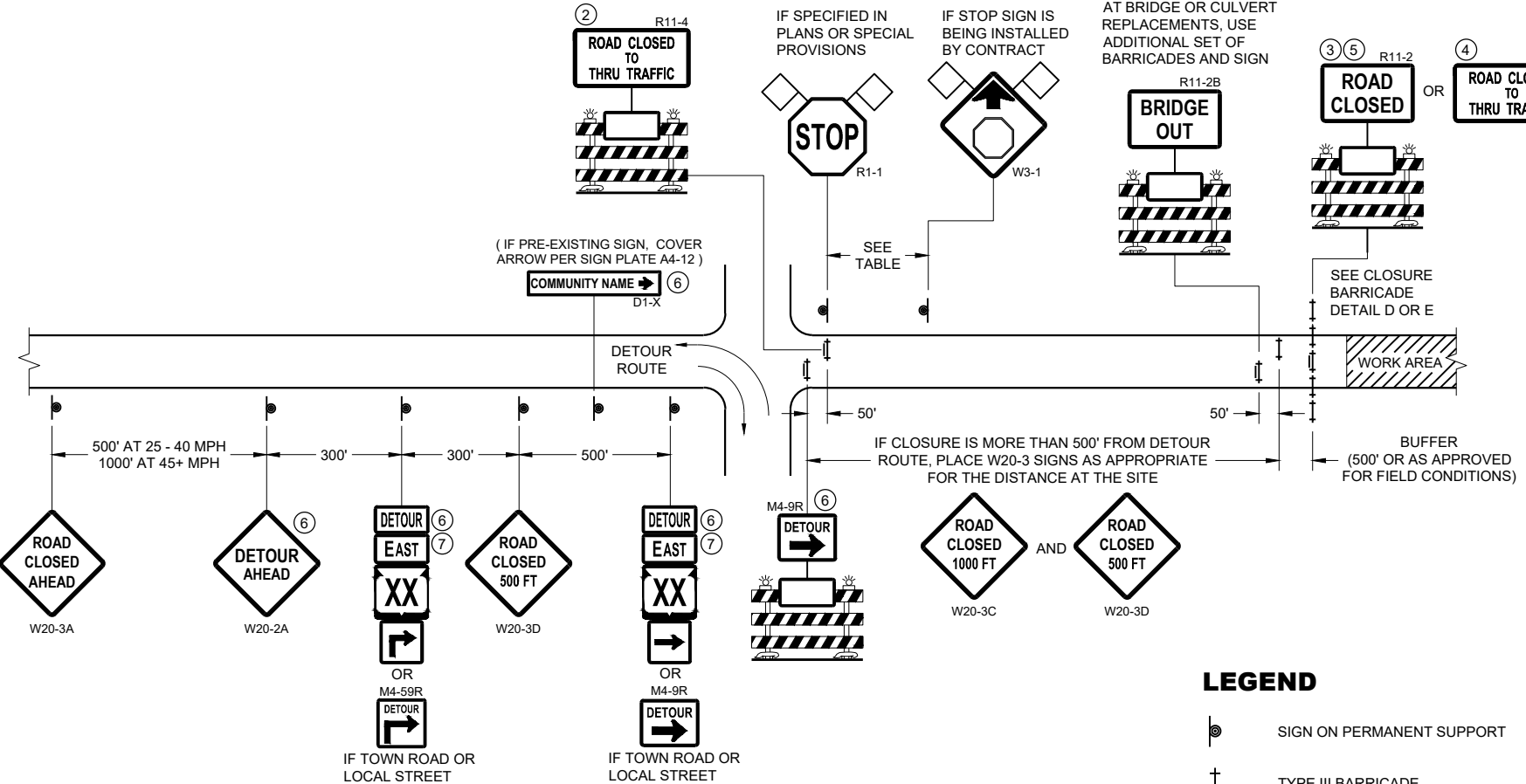
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

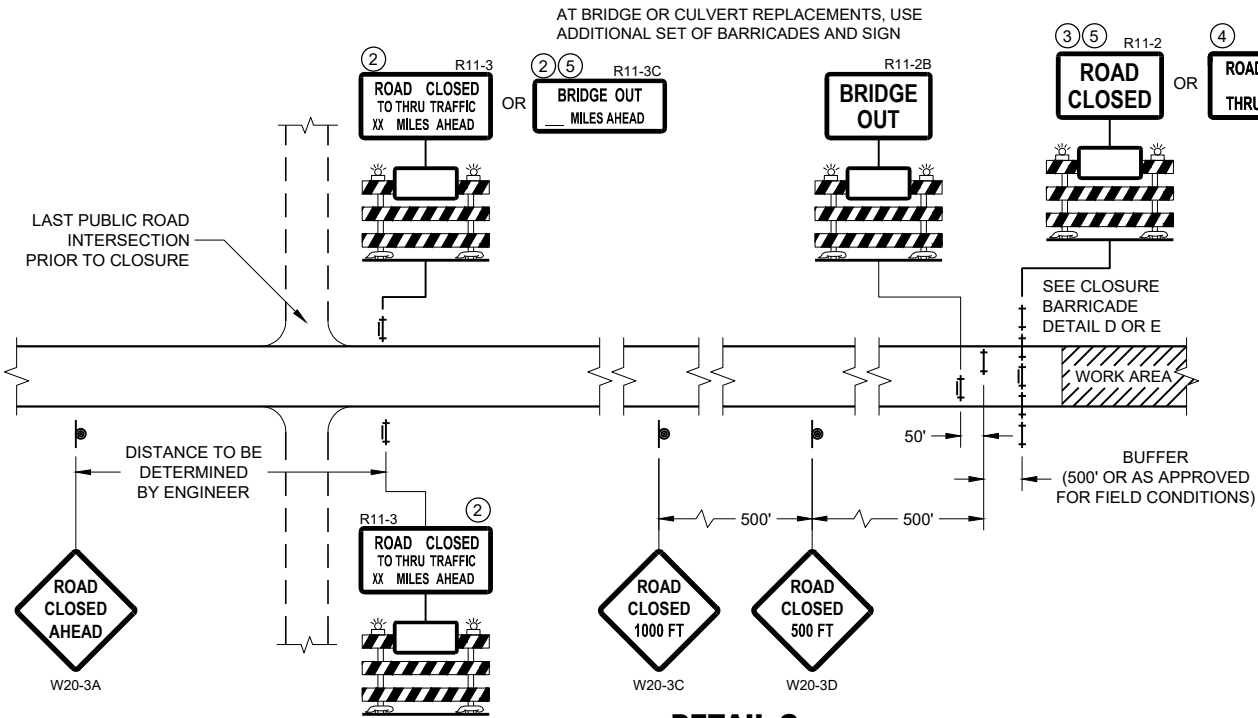
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER
FHWA



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

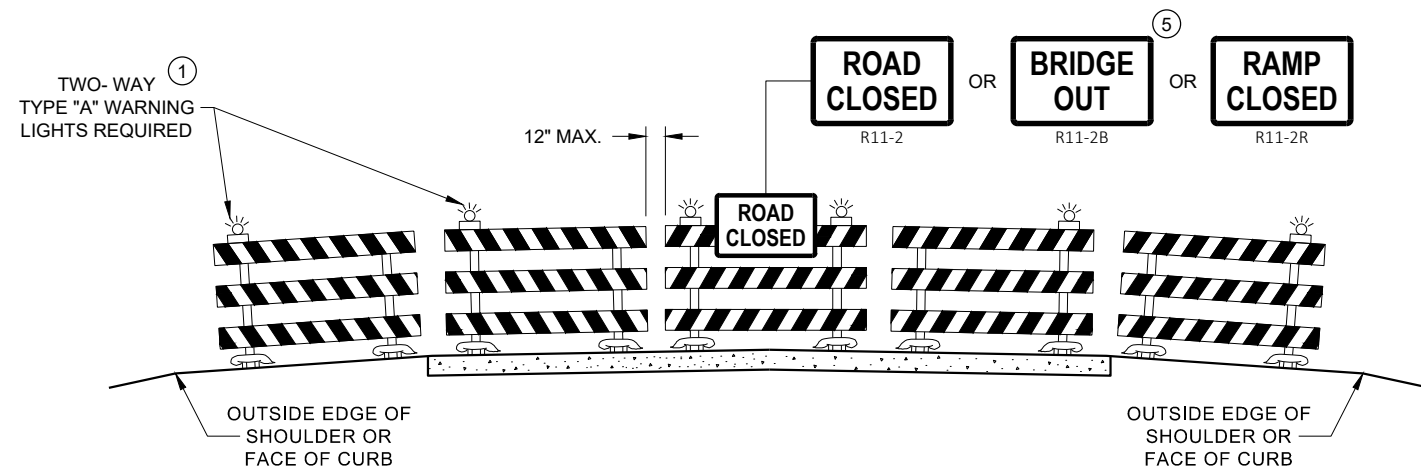
LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY M1 - 5A
- OR M05 - 1 OR M06 - 1

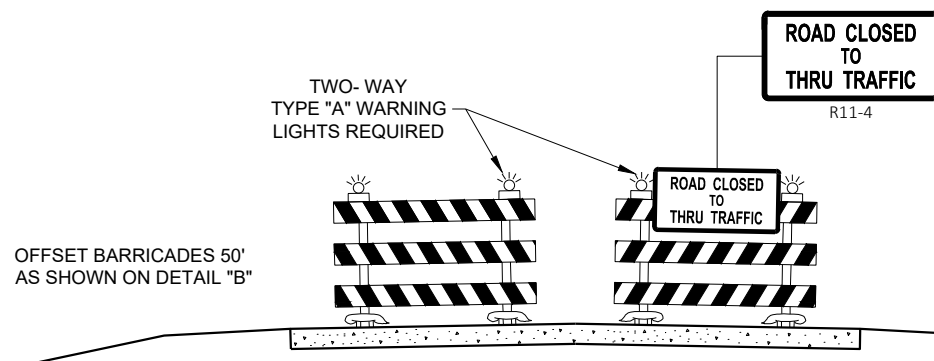
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



**DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW**



**DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

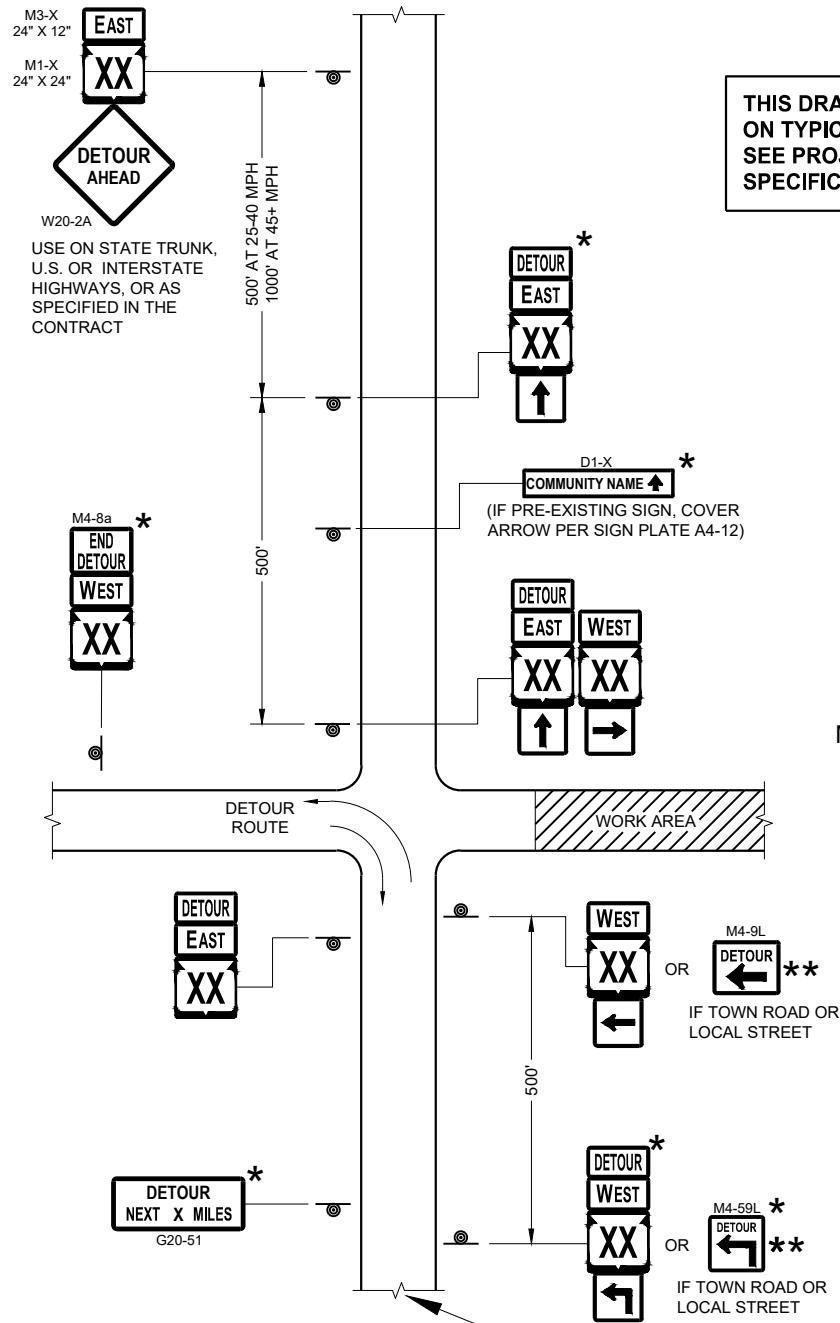
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE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

- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

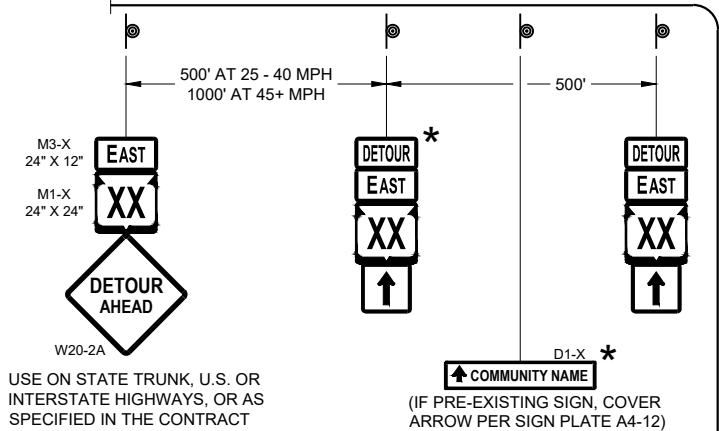
APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



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

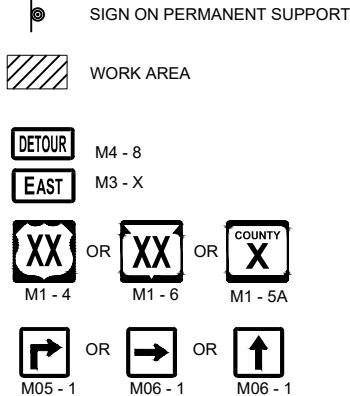
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

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

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

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

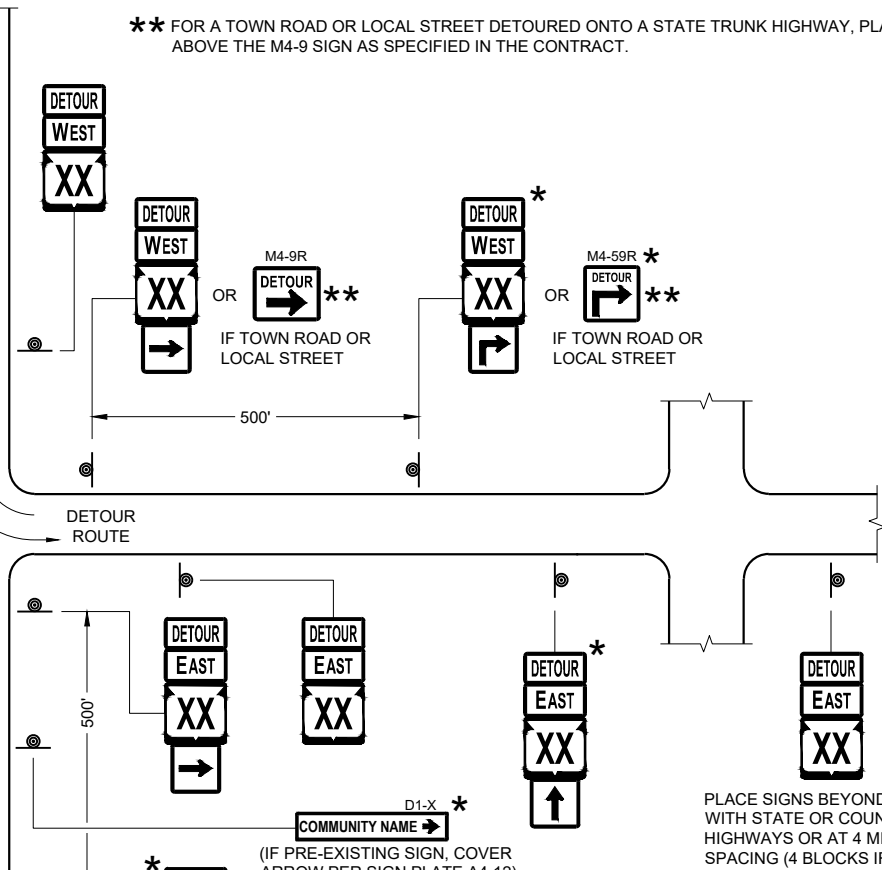
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



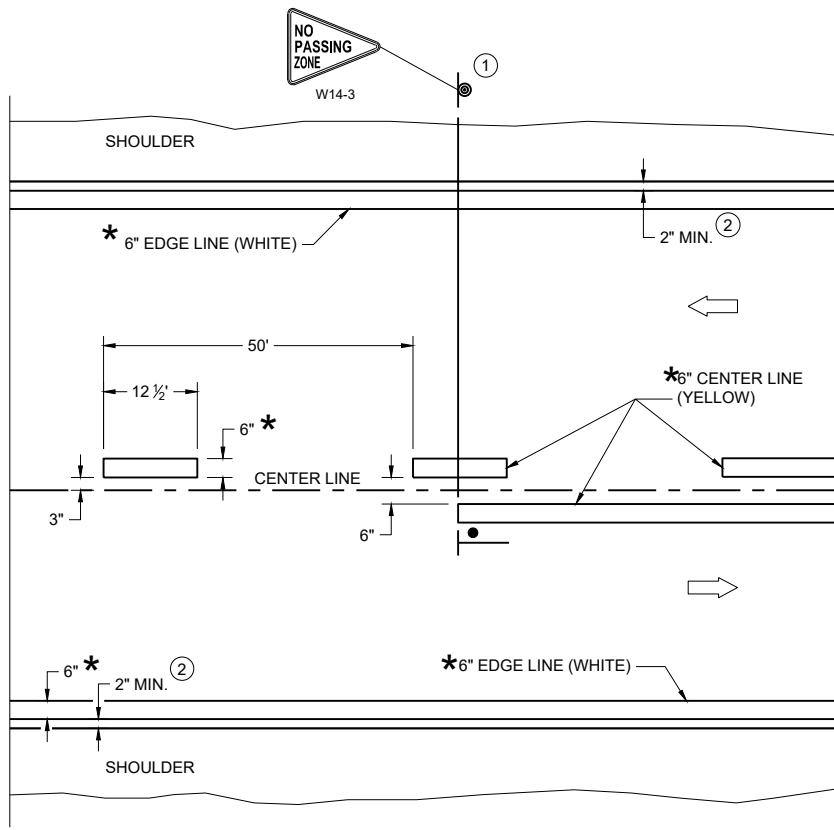
PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING
FOR MAINLINE CLOSURES

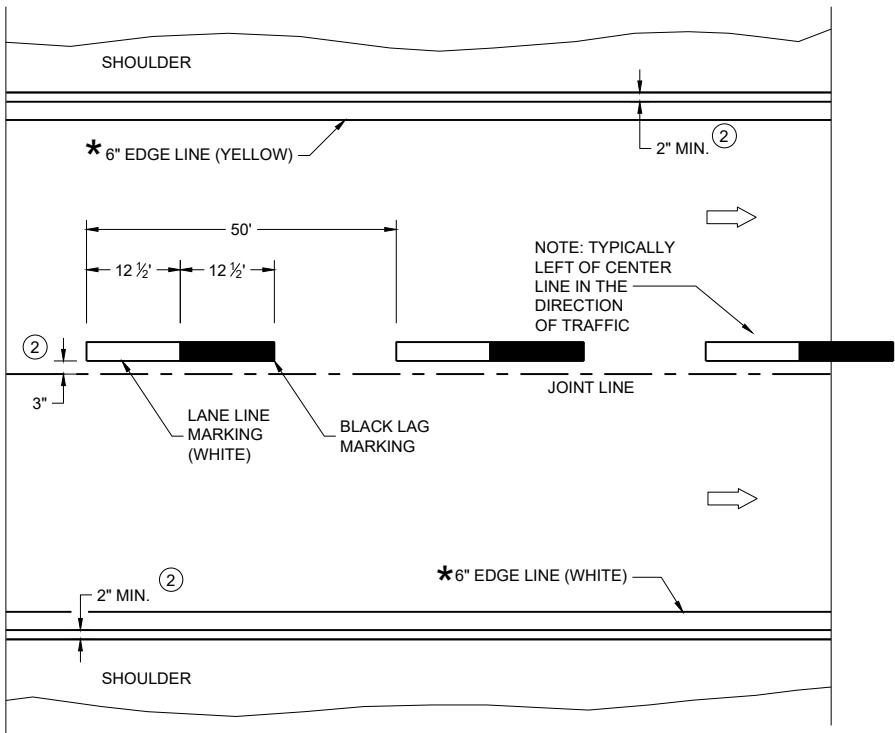
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

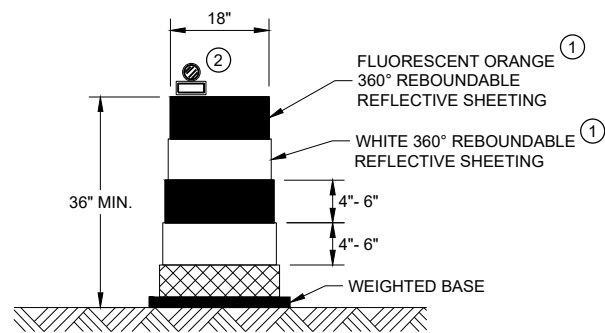
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

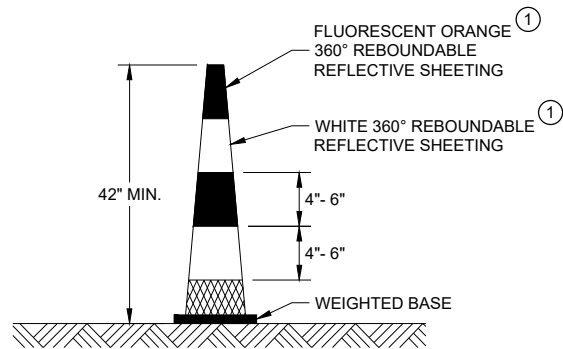
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer



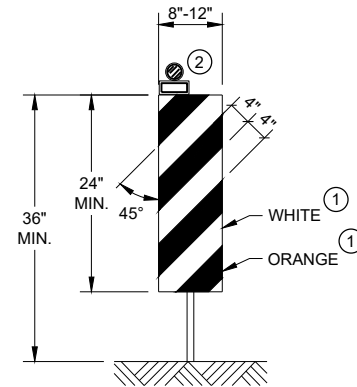
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



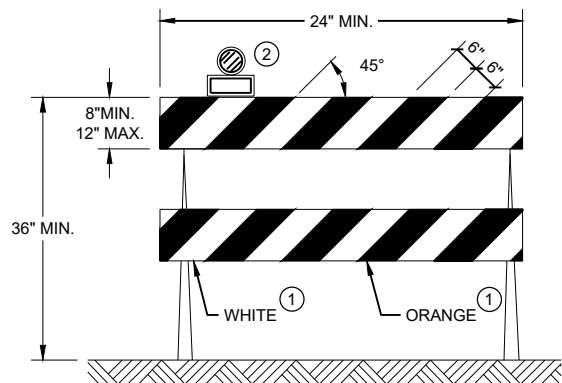
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



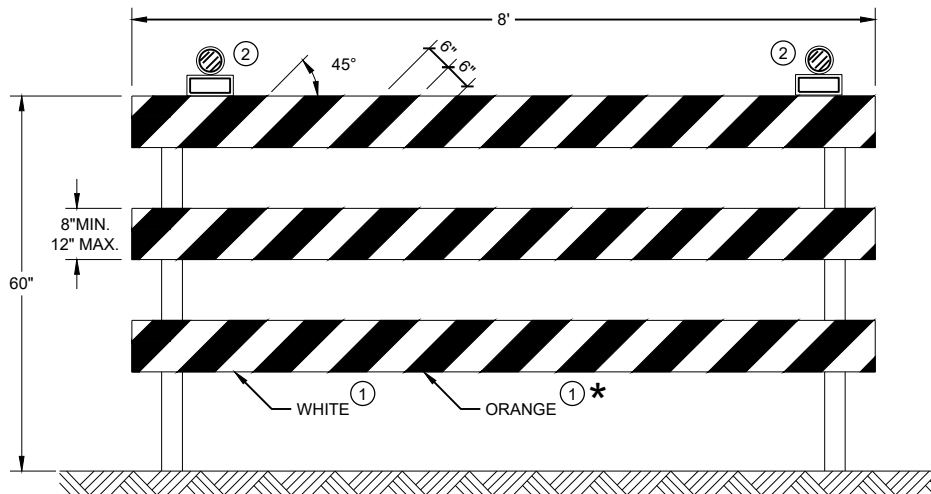
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

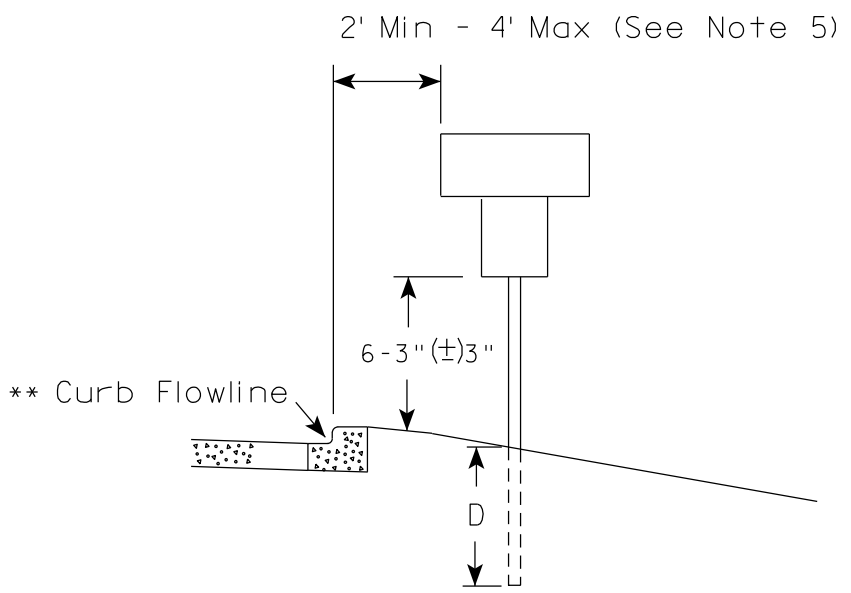
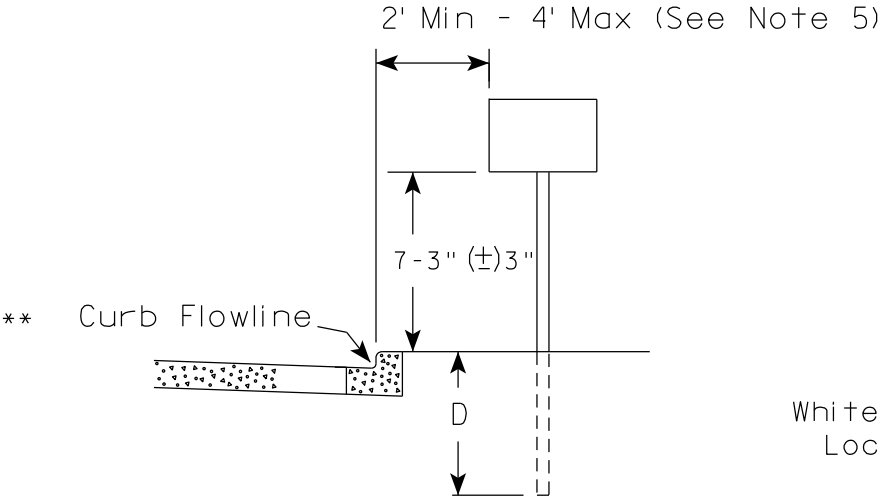
**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

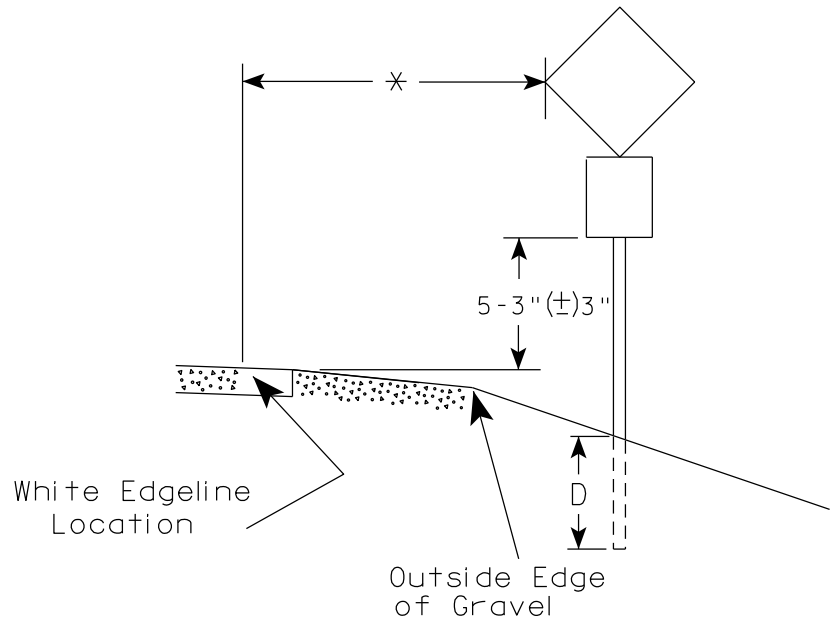
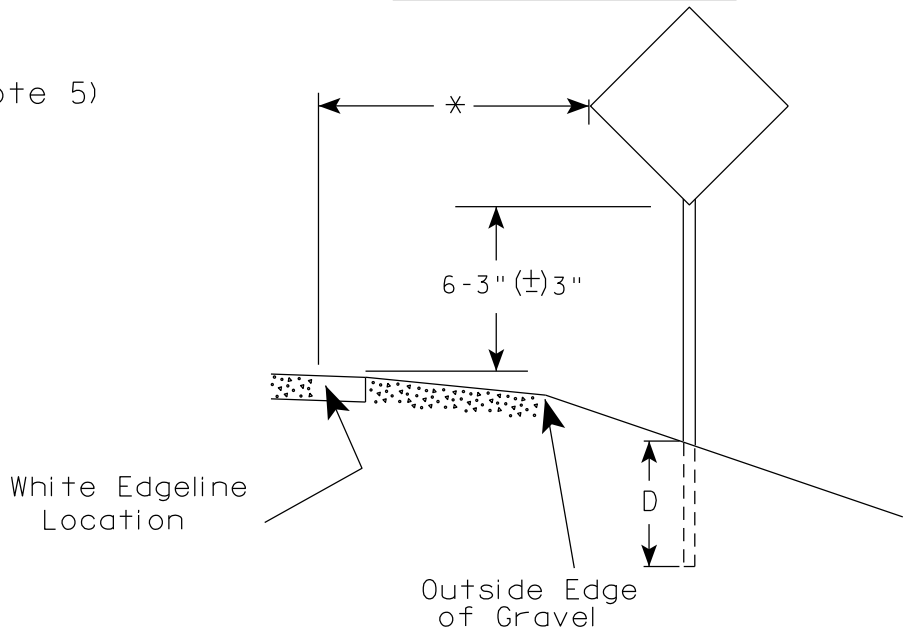
APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

URBAN AREA



RURAL AREA (See Note 2)



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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 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" (±) 3".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

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

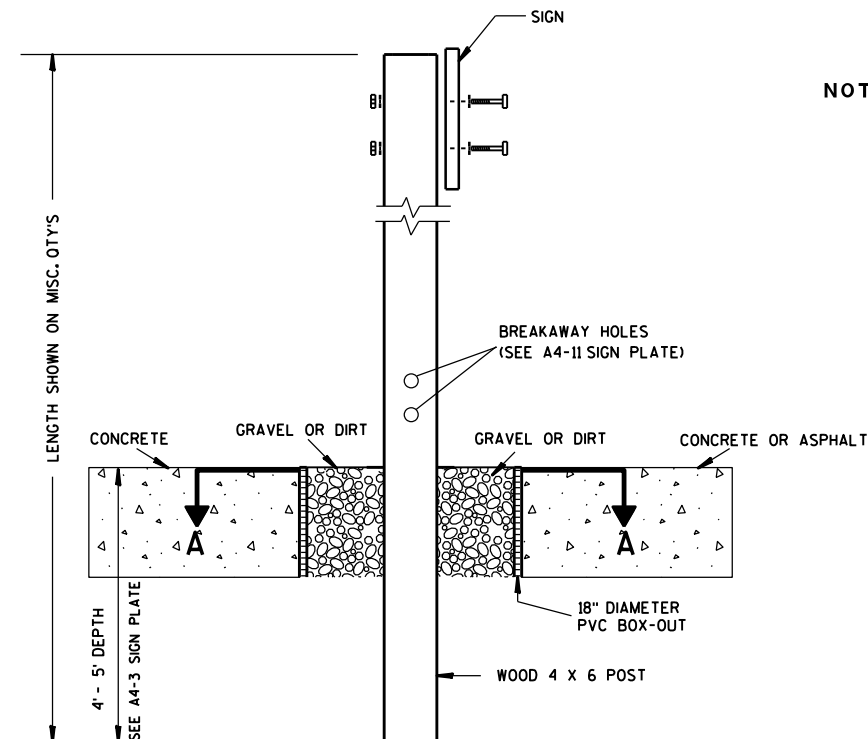
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED 
for State Traffic Engineer

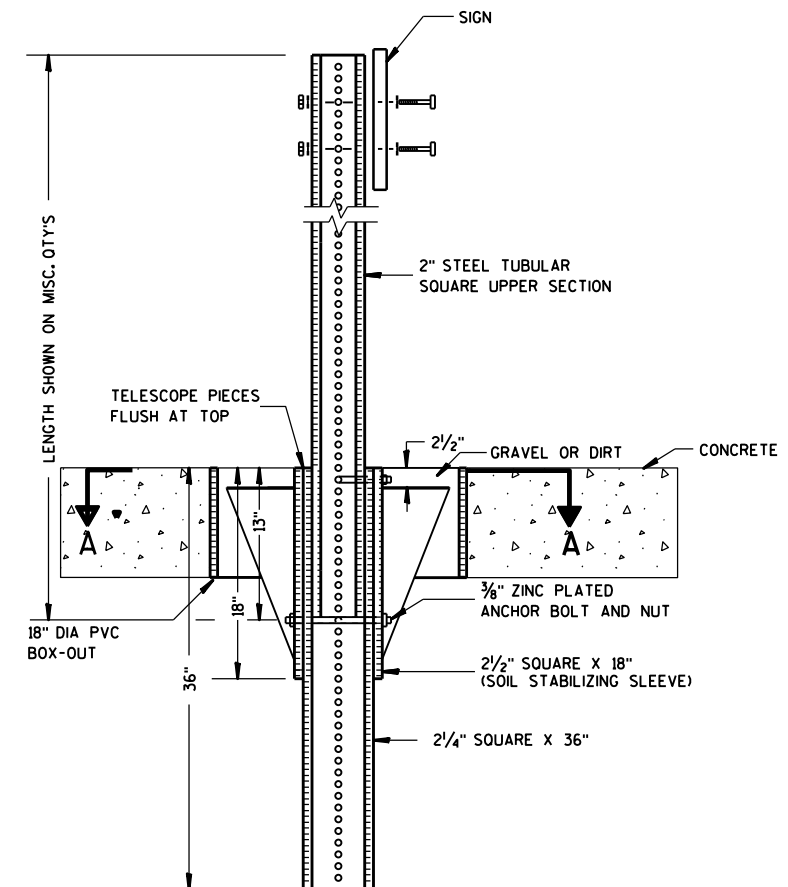
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

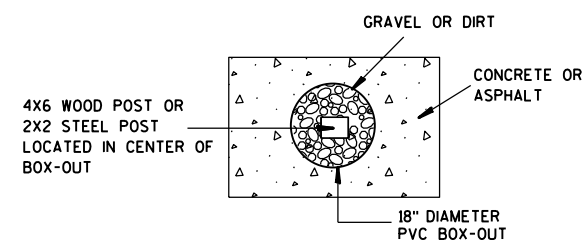
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

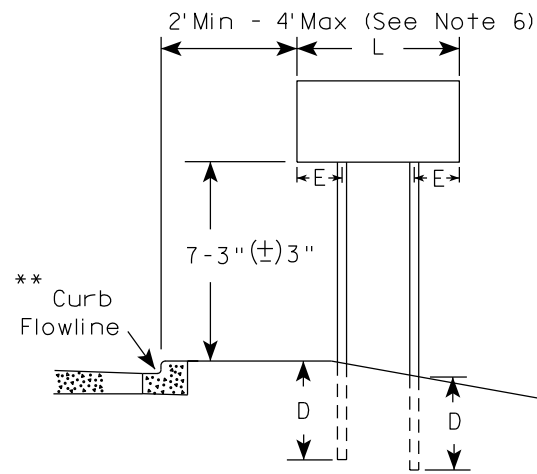
HWY:

COUNTY:

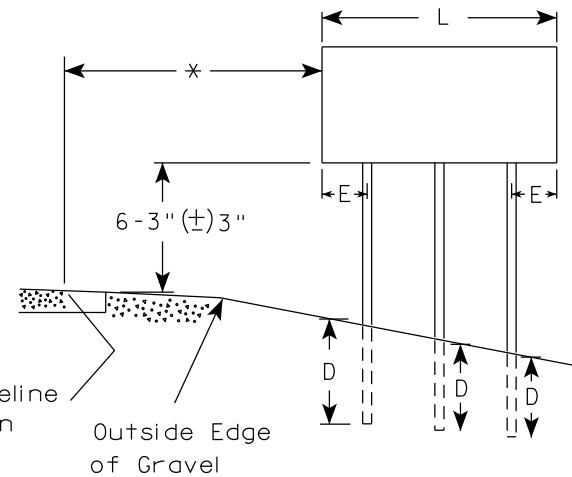
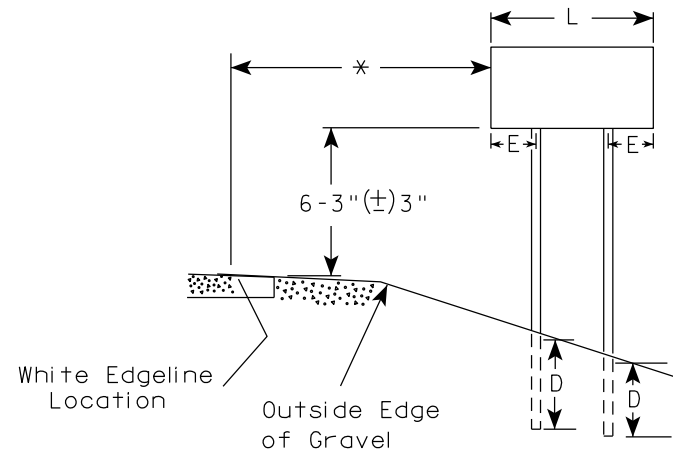
SHEET NO:

E

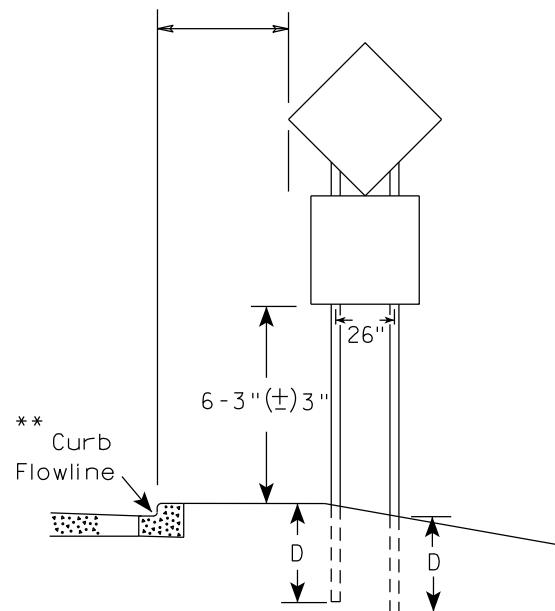
URBAN AREA



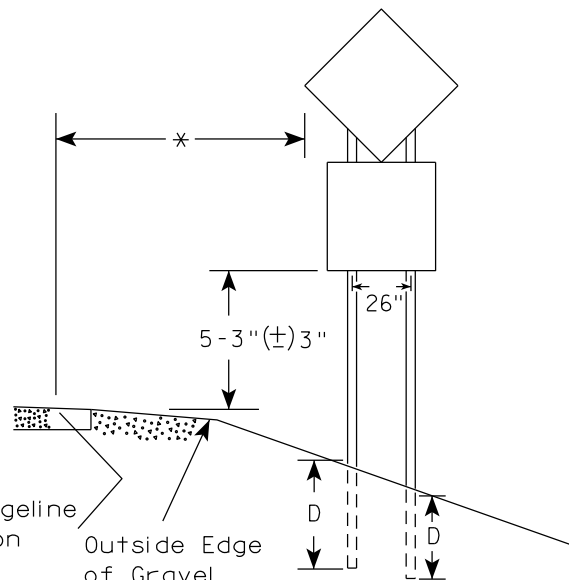
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

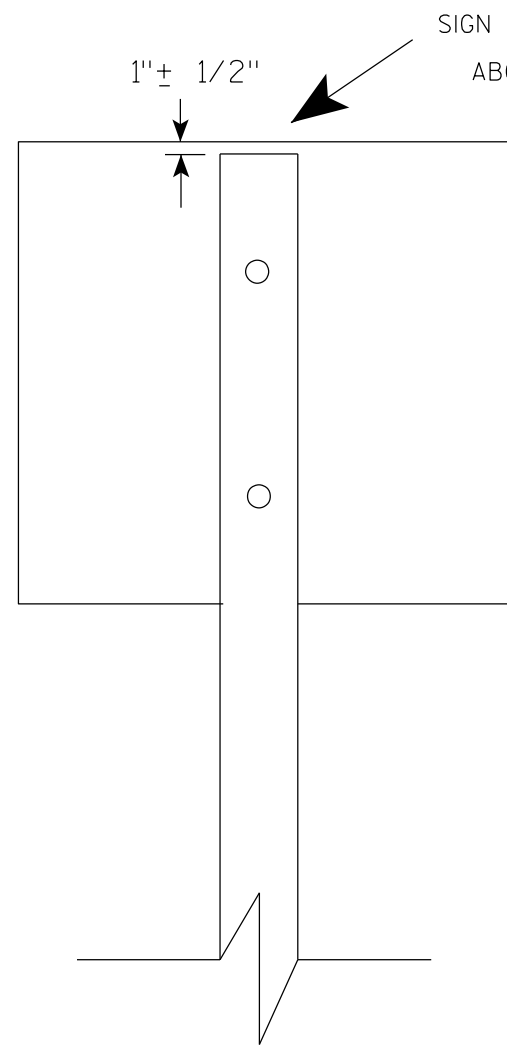
PROJECT NO:

HWY:

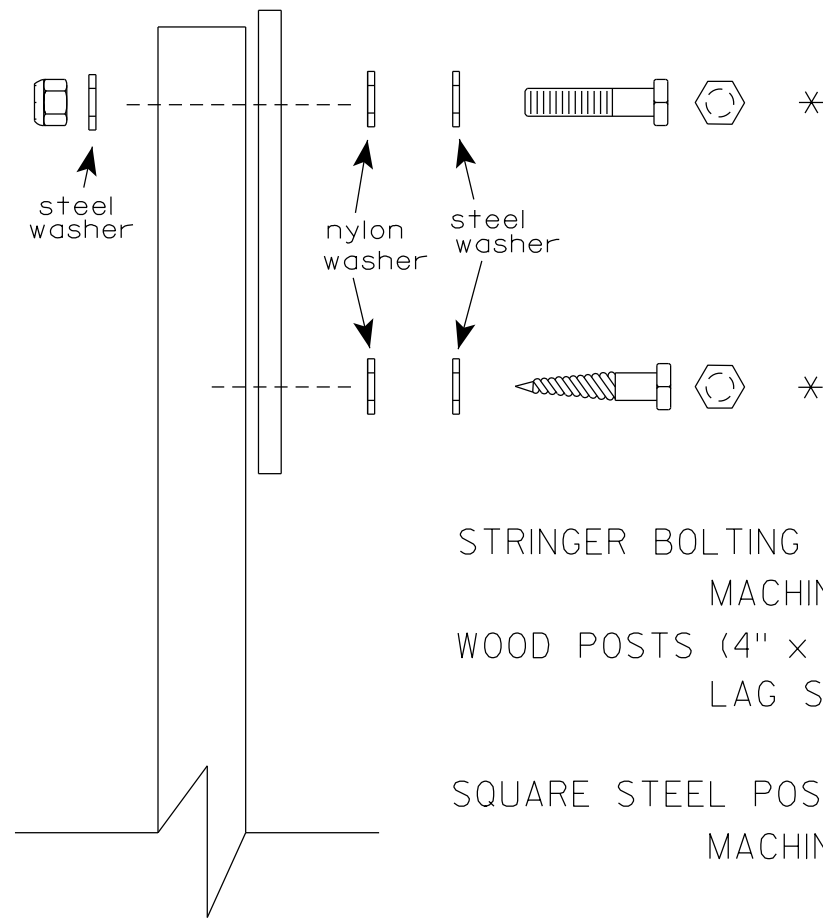
COUNTY:

SHEET NO:

E



SIGN SHALL BE MOUNTED TO PROJECT
ABOVE THE TOP OF THE POST



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 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.

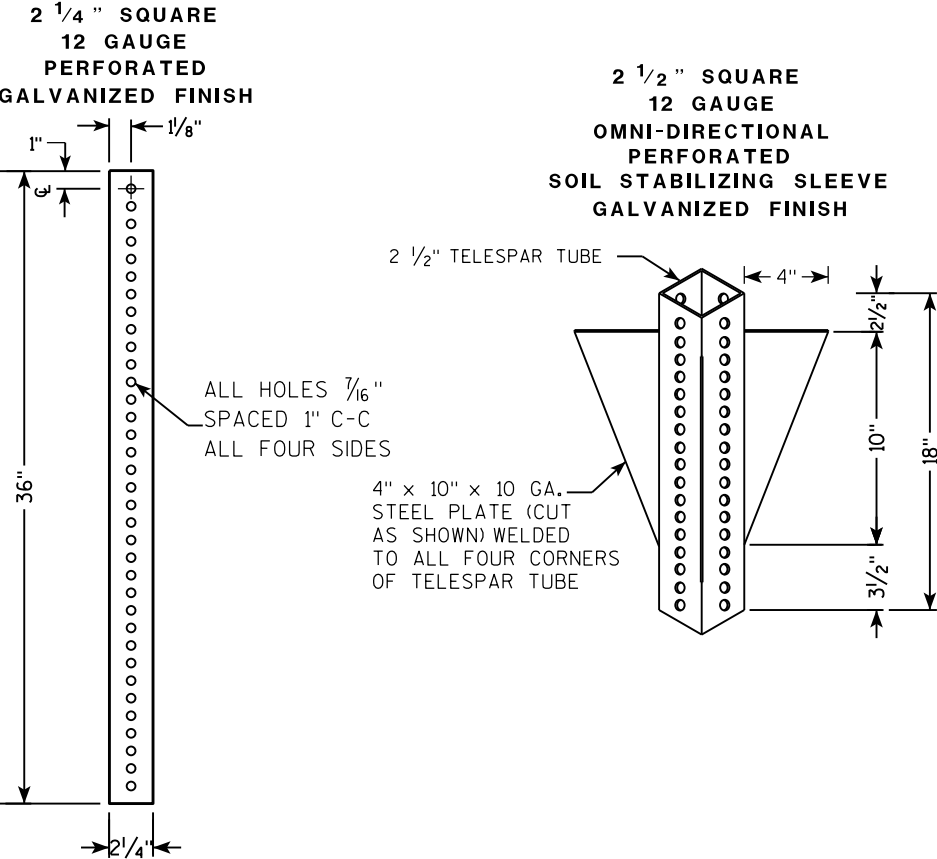
ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

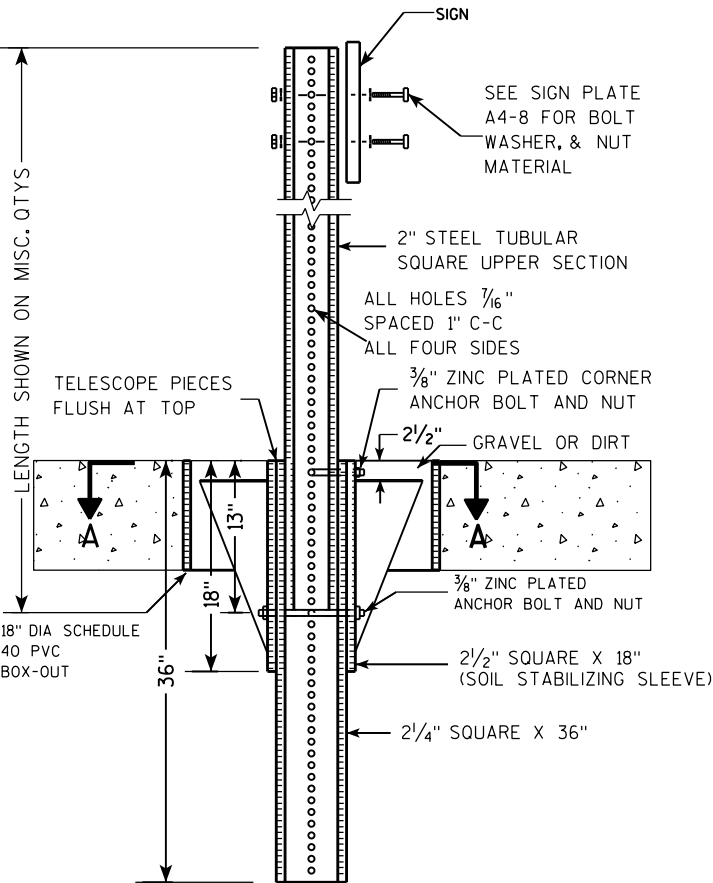
APPROVED Matthew R. Rauch
For State Traffic Engineer

DATE 4/1/2020 PLATE NO. A4-8.9

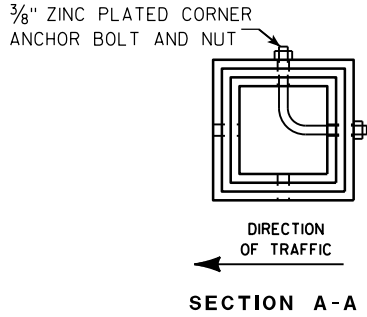
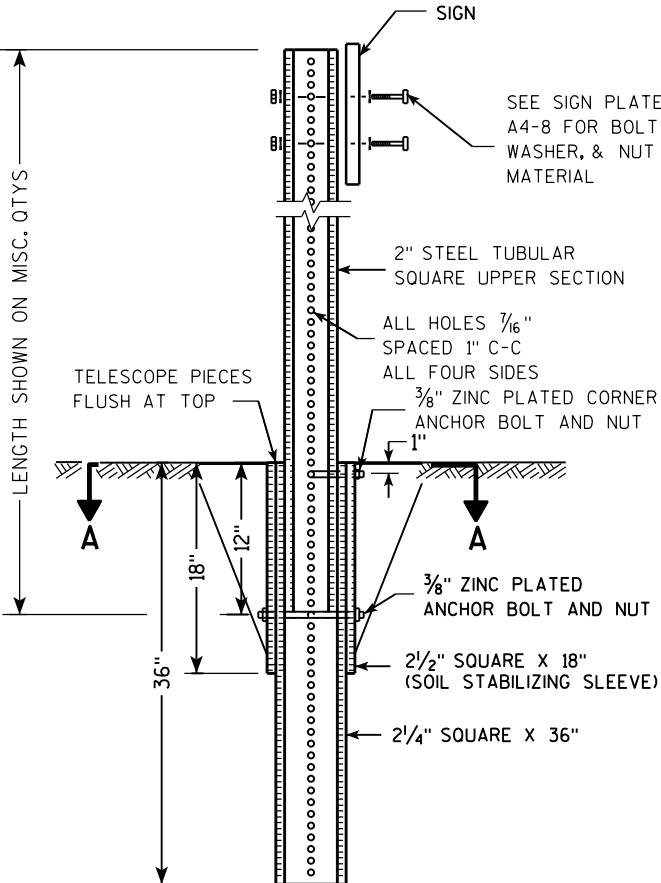
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

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

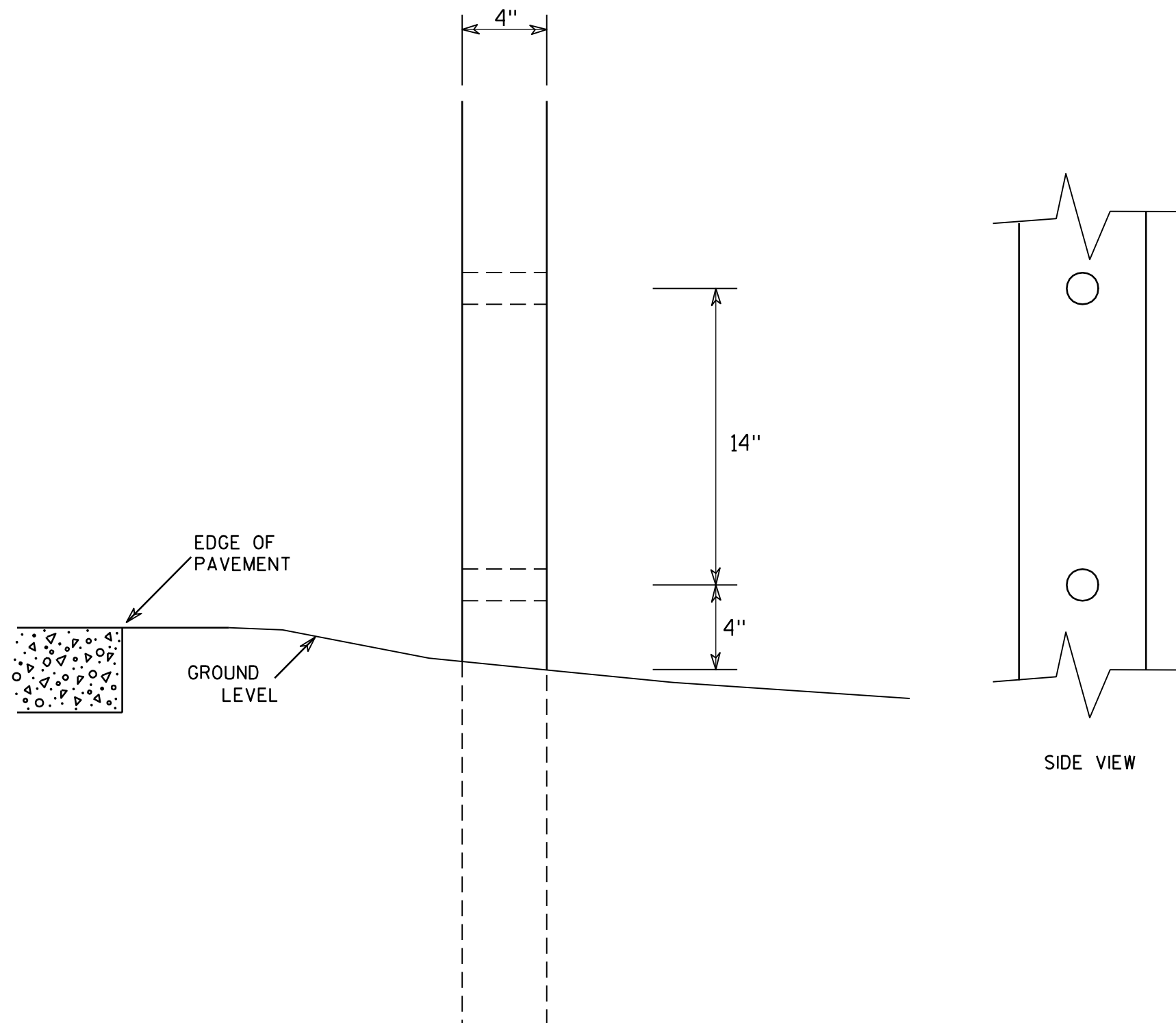
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

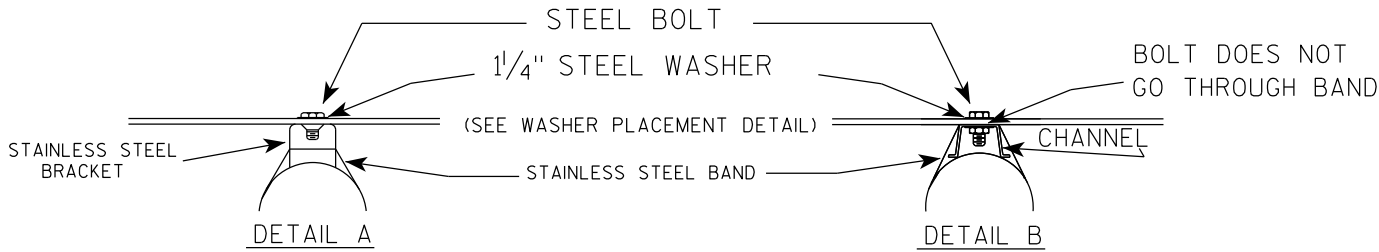
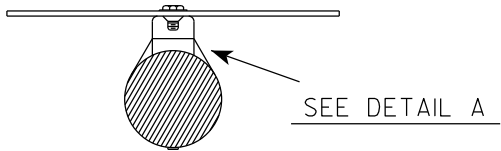
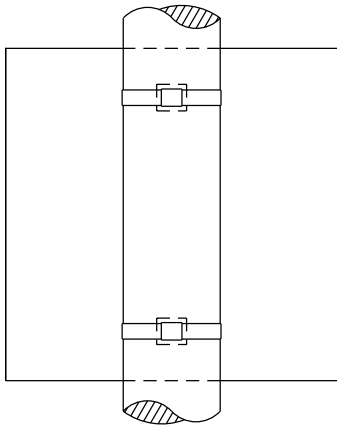
COUNTY:

SHEET NO:

E

BANDING

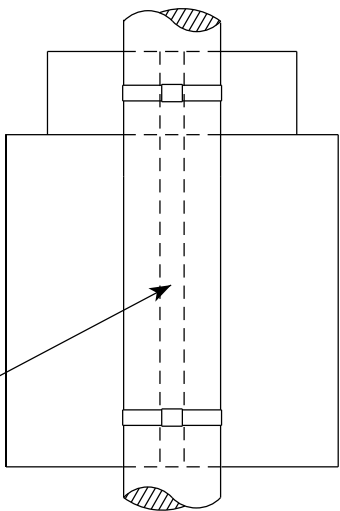
SINGLE SIGN



GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

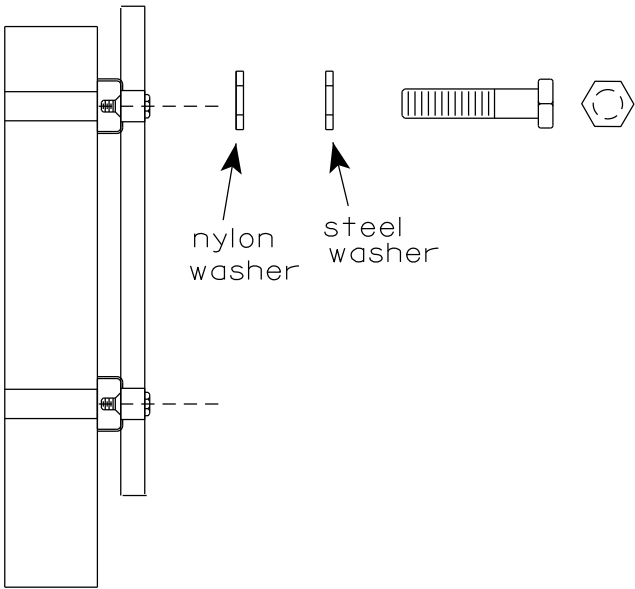
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

WASHER PLACEMENT

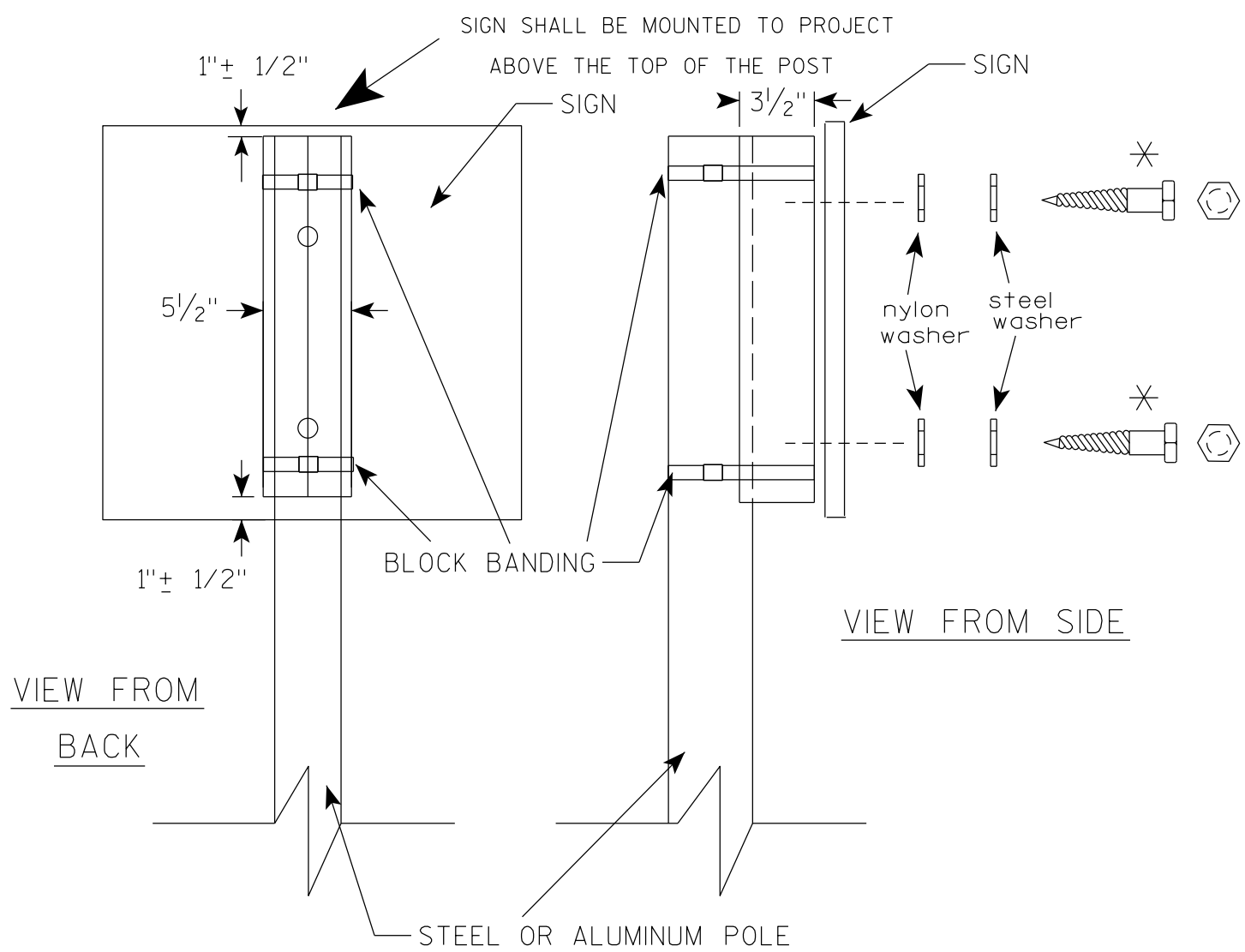


WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

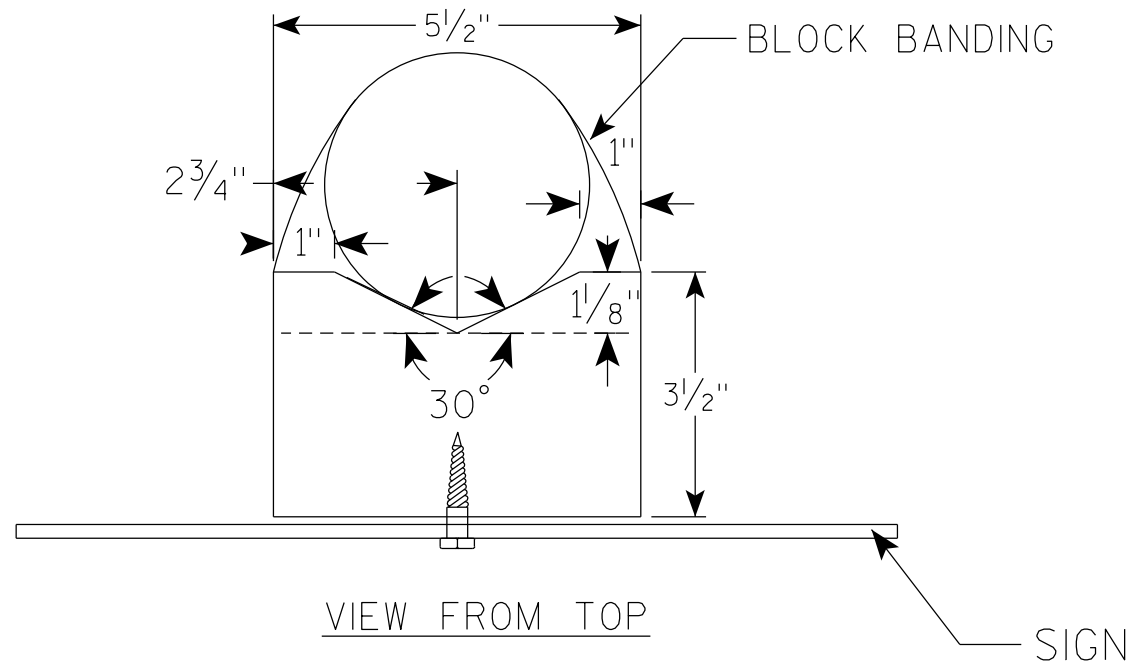
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

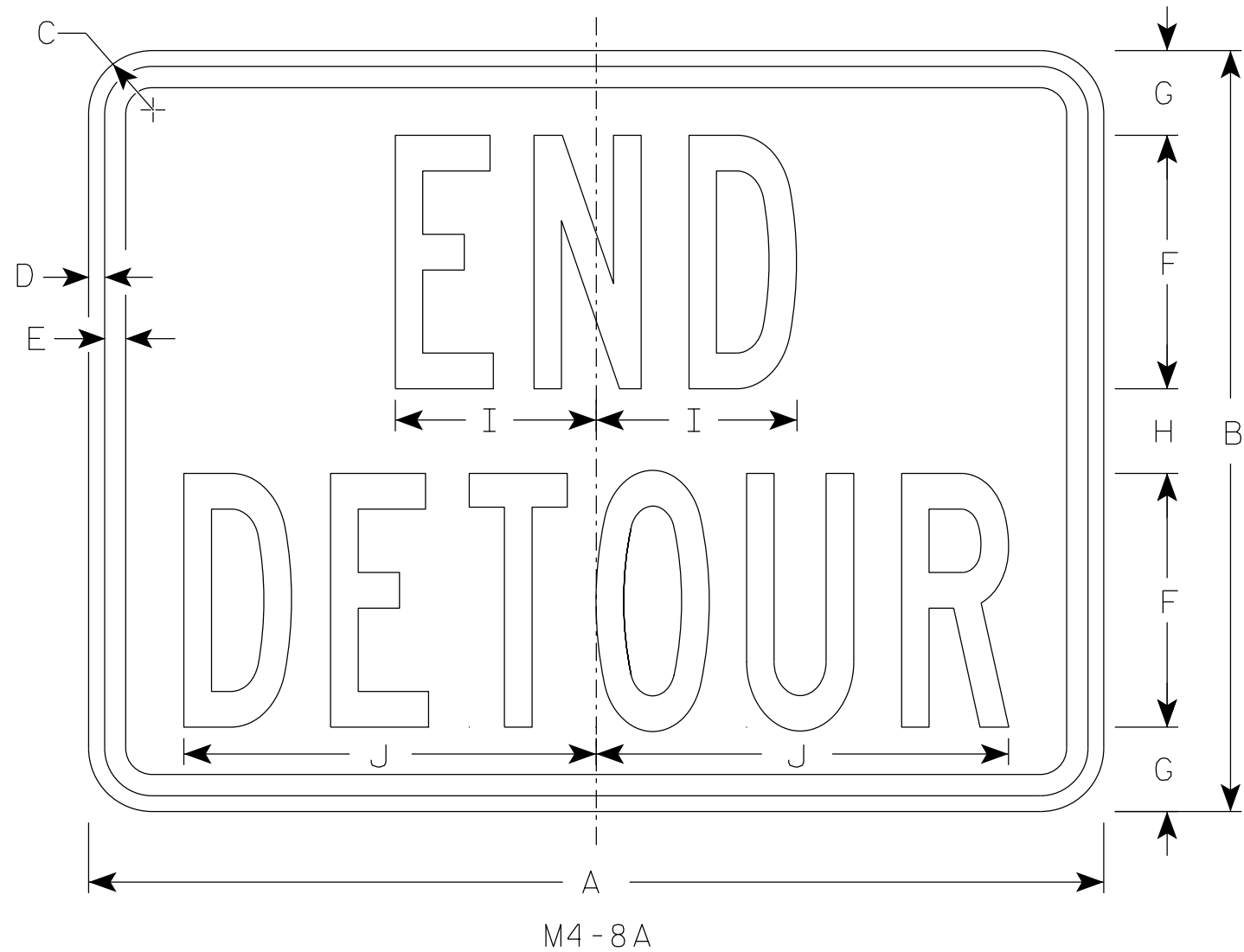
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO:

E

7



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - B
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.

7

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																											
2	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
2M	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
5	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0

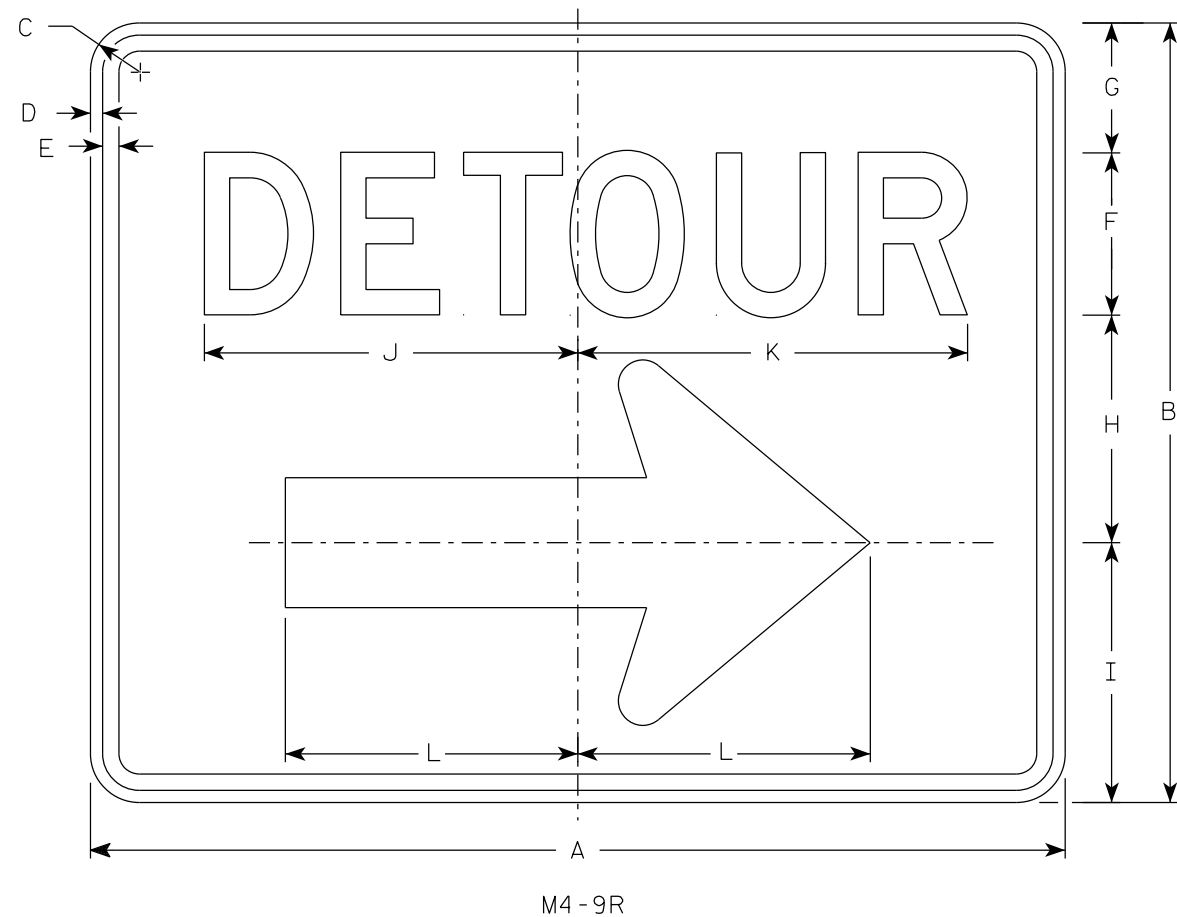
STANDARD SIGN

M4-8A

WISCONSIN DEPT OF TRANSPORTATION

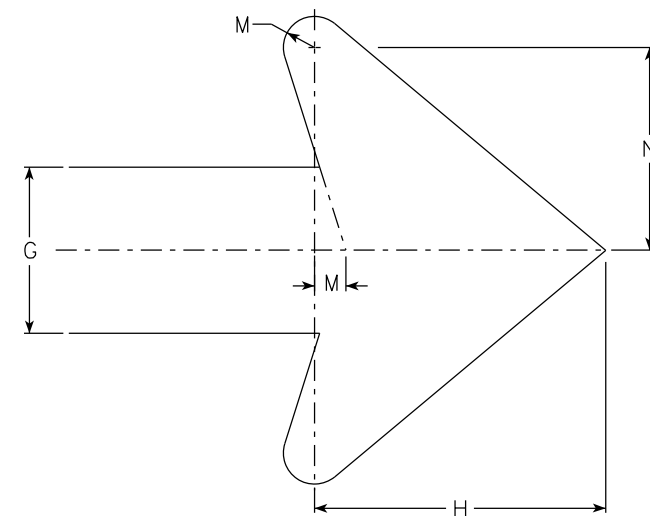
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8A.4



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D
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.
4. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
2M	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 7/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 7/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

STANDARD SIGN
M4-9 R & L

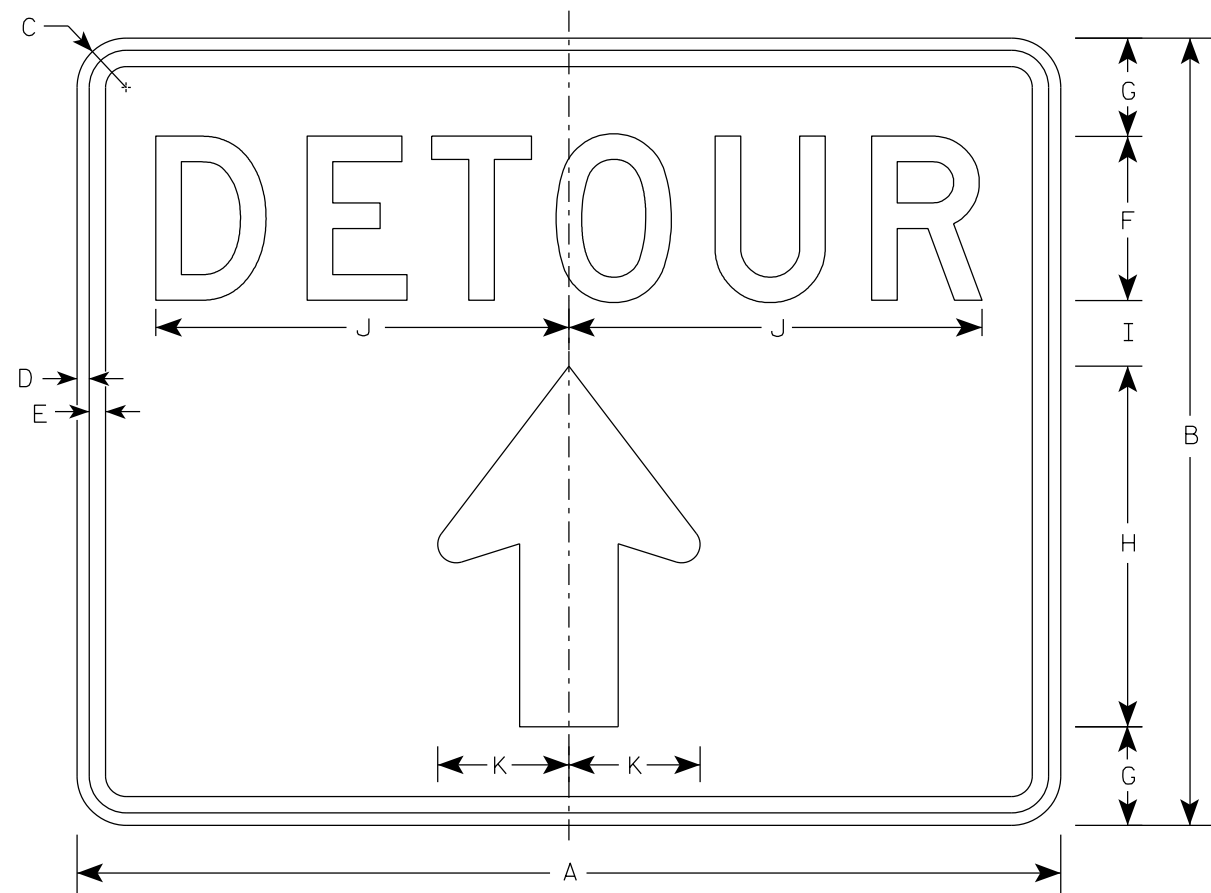
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-9R.6

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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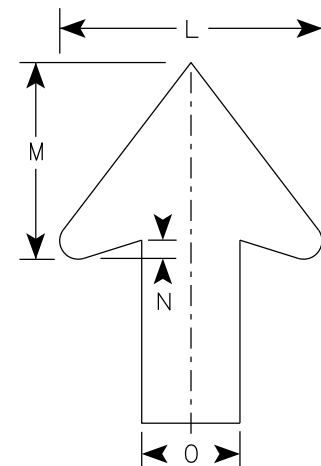
7



M4 - 9RA

NOTES

- 1. Sign is Type II-Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - D



Arrow Detail

7

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	30	24	1 1/2	3/8	1/2	5	3	11	2	12 5/8	4	8	6	1/2	3												5.00
2M	30	24	1 1/2	3/8	1/2	5	3	11	2	12 5/8	4	8	6	1/2	3												5.00
3																											
4																											
5																											

STANDARD SIGN

M4-9RA

WISCONSIN DEPT OF TRANSPORTATION

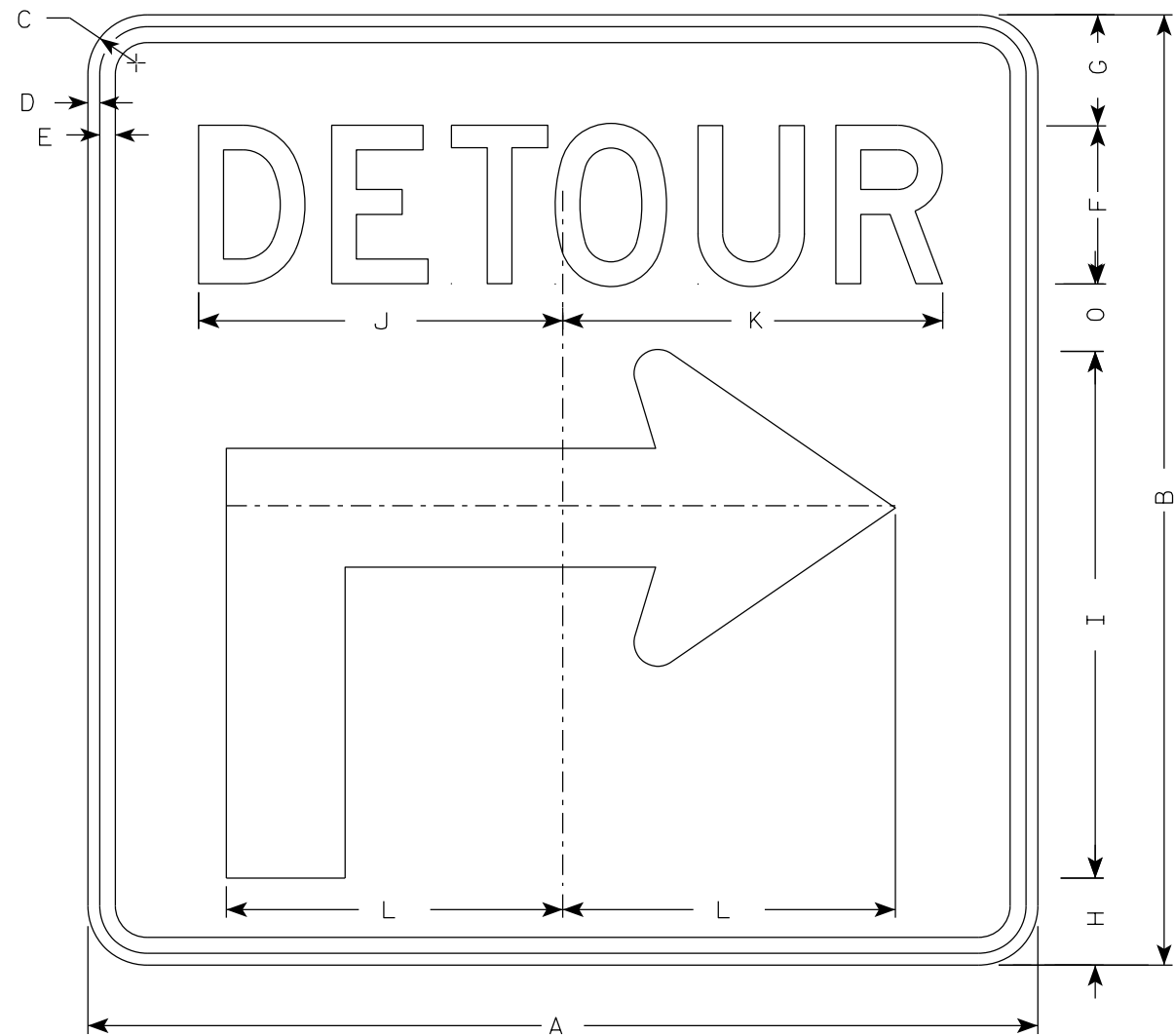
APPROVED *Matthew R. Rauch*

for State Traffic Engineer

DATE 2/9/2023

PLATE NO. M4-9RA.3

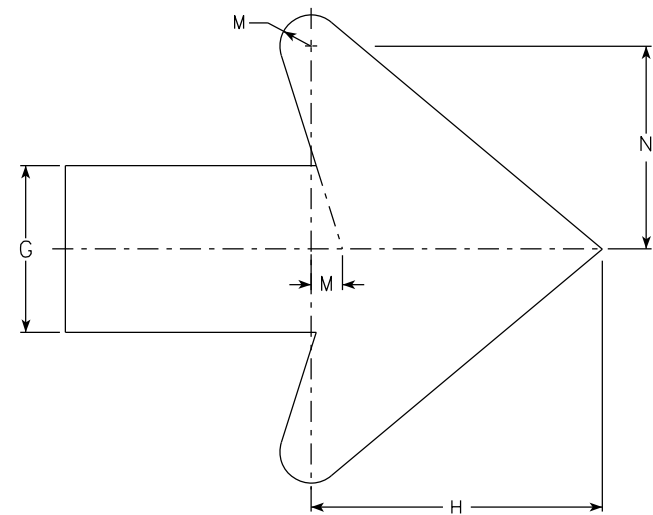
7



M4-59R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown when base material is metal.
5. M4-59L is the same as M4-59R except the arrow is reversed.



Arrow Detail

7

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	30	30	1 7/8	3/8	1/2	5	3 1/2	2 3/4	16 5/8	11 1/2	12	10 1/2	3/4	4 7/8	2 1/8												6.25
2M	30	30	1 7/8	3/8	1/2	5	3 1/2	2 3/4	16 5/8	11 1/2	12	10 1/2	3/4	4 7/8	2 1/8												6.25
3	30	30	1 7/8	3/8	1/2	5	3 1/2	2 3/4	16 5/8	11 1/2	12	10 1/2	3/4	4 7/8	2 1/8												6.25
4	48	48	2 1/4	1/2	5/8	8	5 5/8	4 3/8	26 5/8	20 5/8	20 1/2	17	1 1/8	6 7/8	3 3/8												16.0
5	48	48	2 1/4	1/2	5/8	8	5 5/8	4 3/8	26 5/8	20 5/8	20 1/2	17	1 1/8	6 7/8	3 3/8												16.0

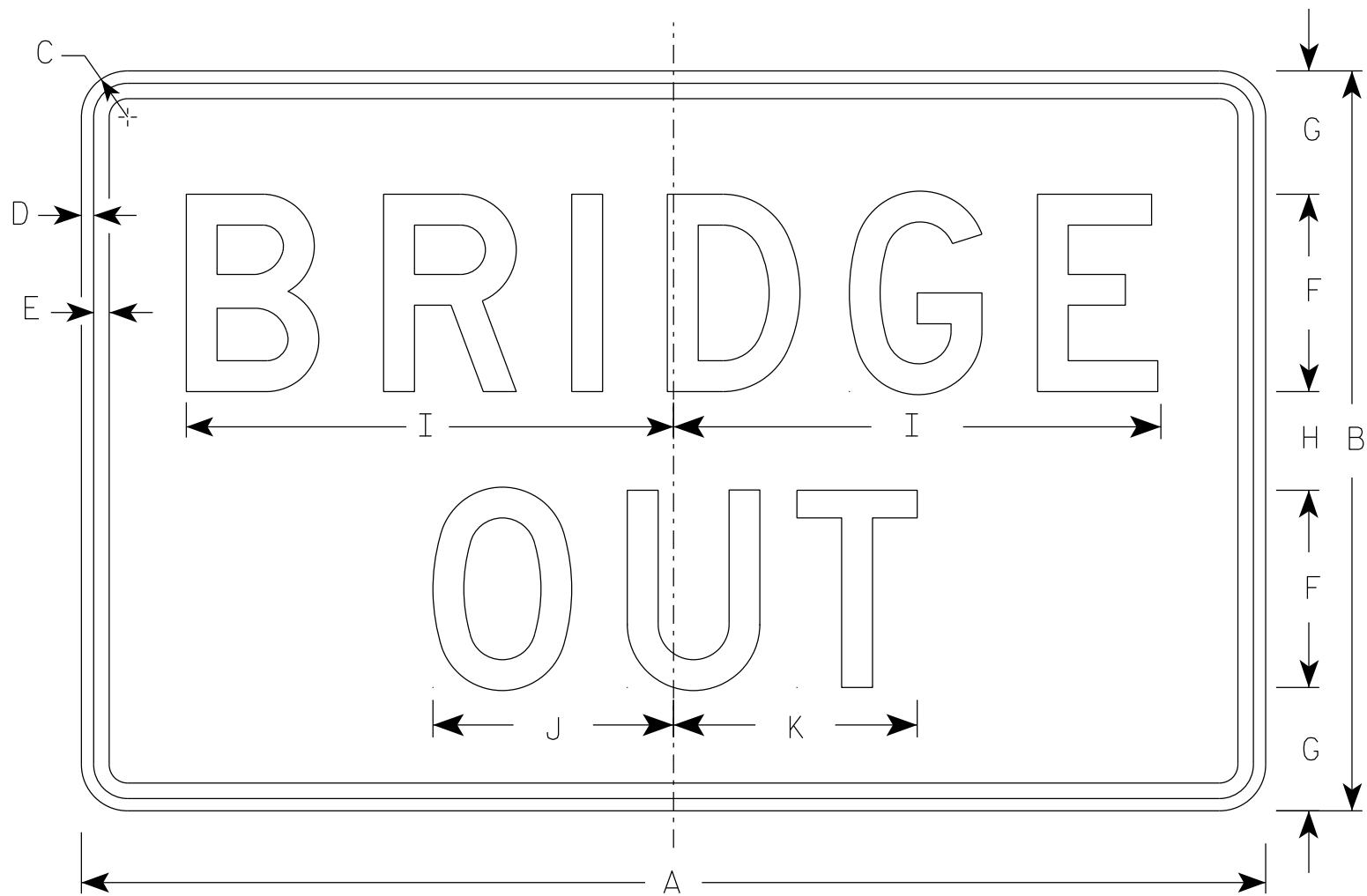
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



R11-2B

NOTES

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

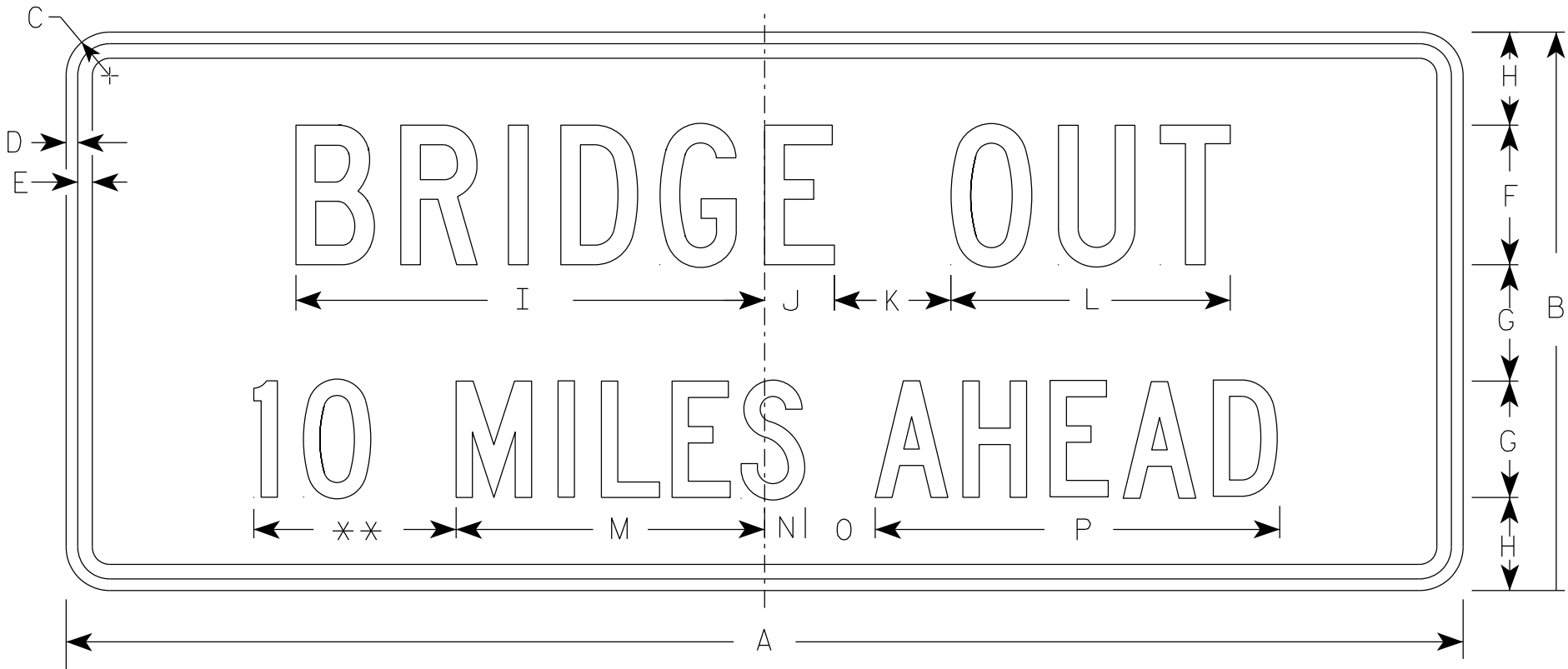
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 7/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

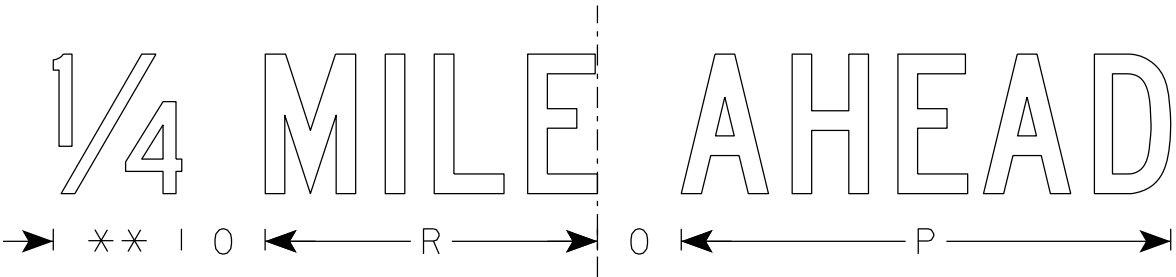
Background - White

Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3C

** See Note 5



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 1/2	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8									3.75
2S	60	24	1 7/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
2M	60	24	1 7/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

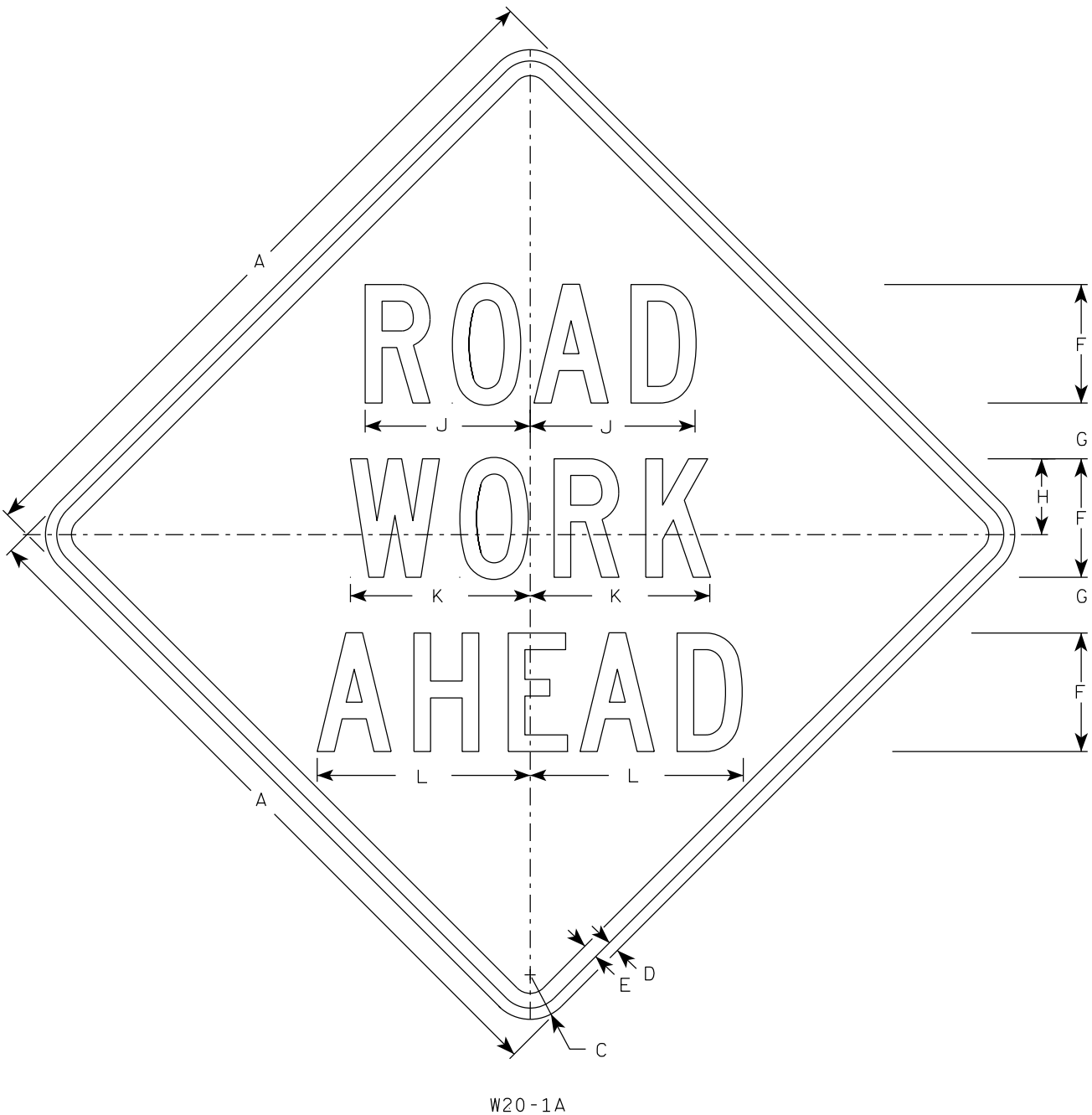
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-3C.4

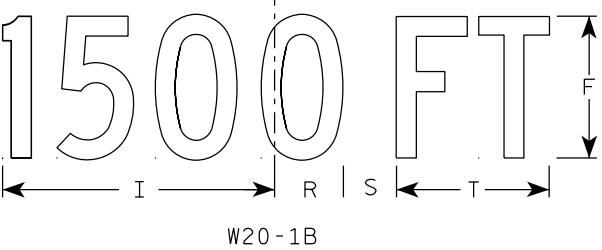
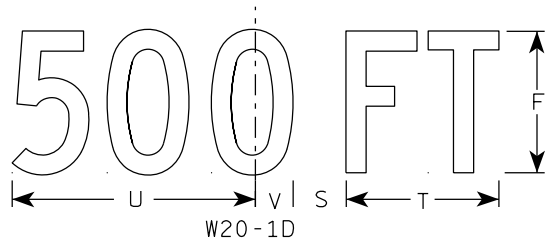
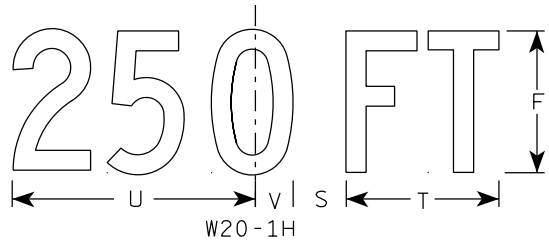
PROJECT NO:

SHEET NO:

E

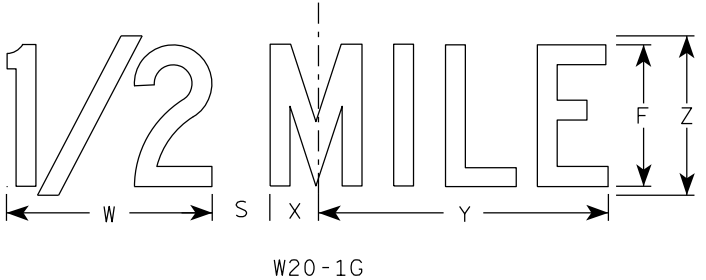


W20-1A

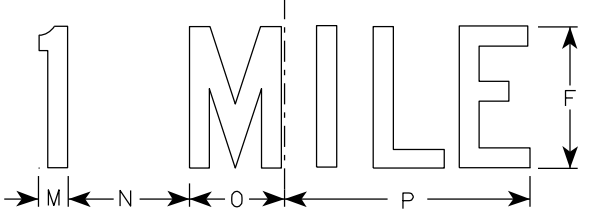


W20-1B

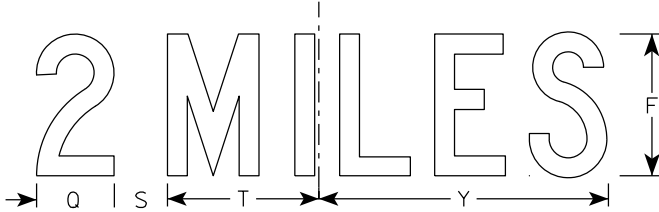
- NOTES
1. Sign is Type II - Type F Reflective
 2. Color:
Background - Orange
Message - Black
 3. Message Series - C
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G

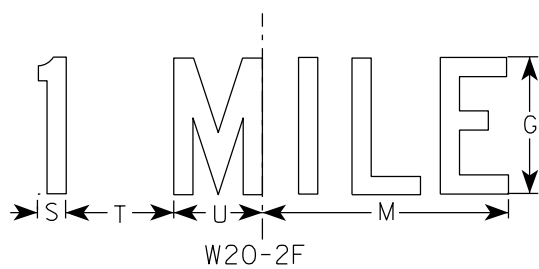
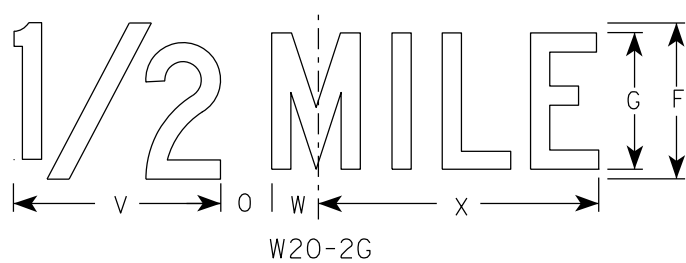
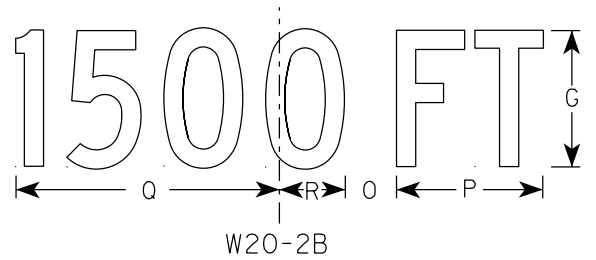
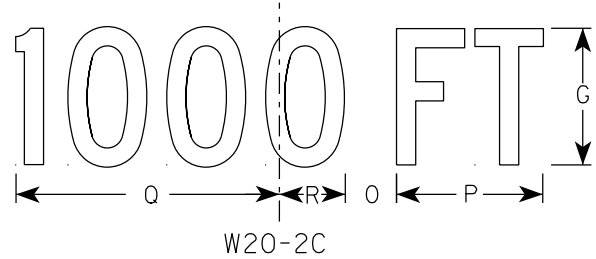
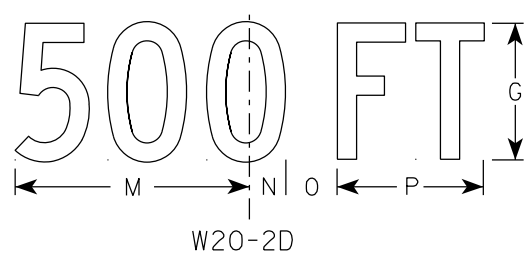
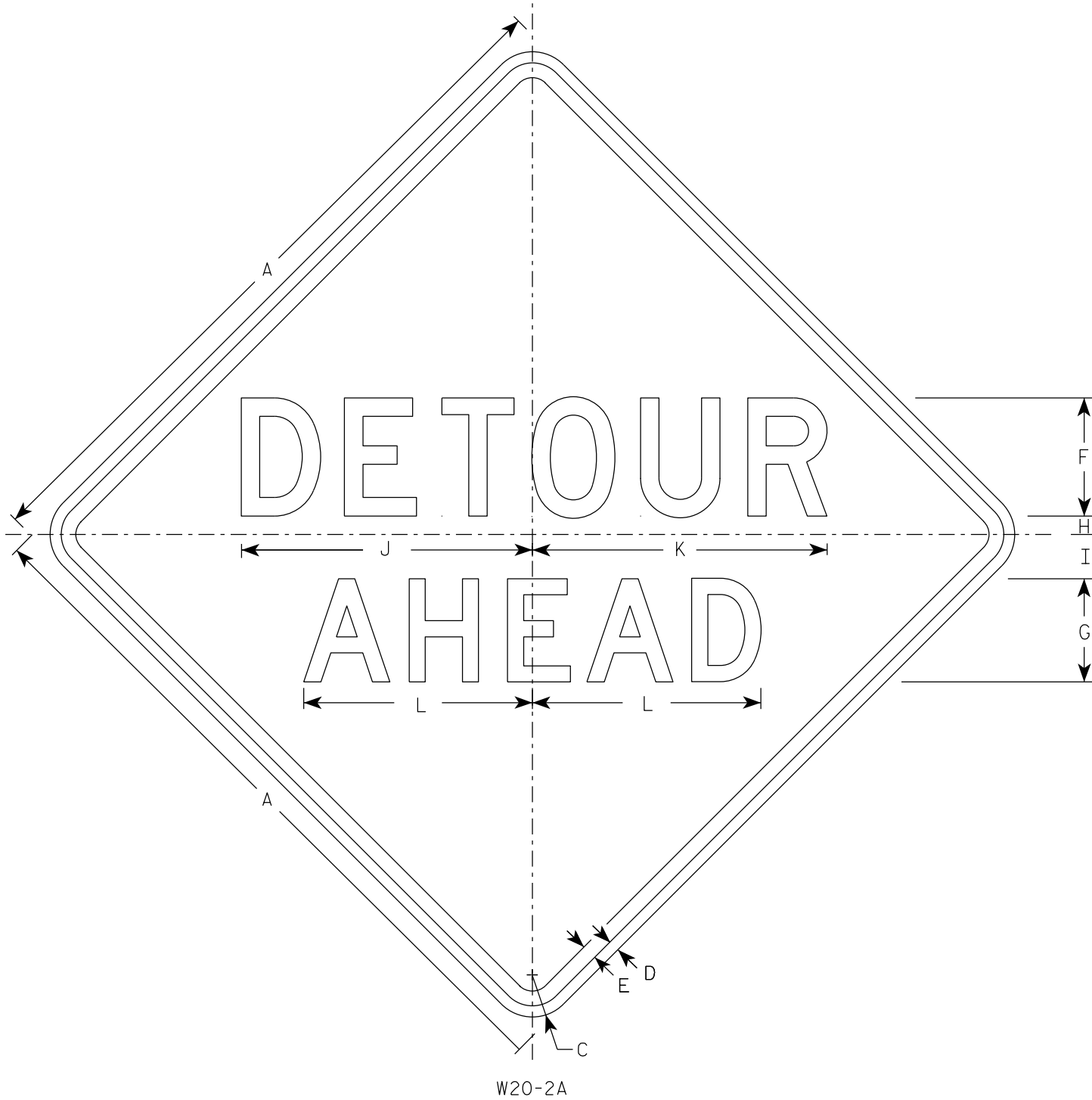


W20-1F



W20-1E

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



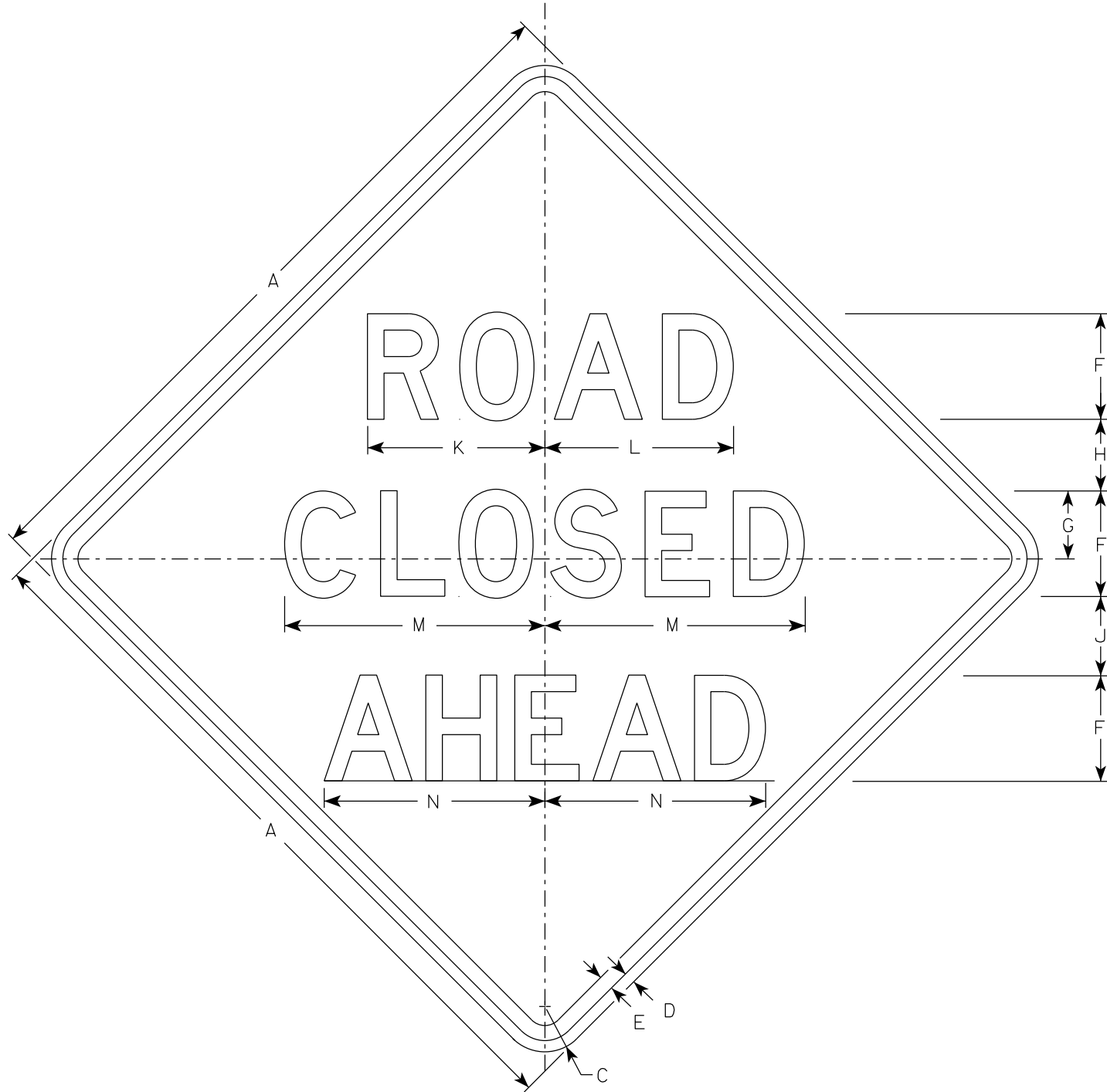
NOTES

- Sign is Type II - Type F Reflective
- Color:
Background - Orange
Message - Black
- Message Series - See note 5
- 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.
- Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

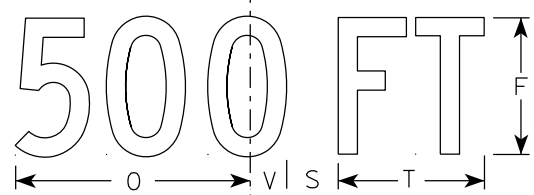
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	w	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN W20-2A,B,C,D,F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 1/10/2024	PLATE NO. W20-2.7

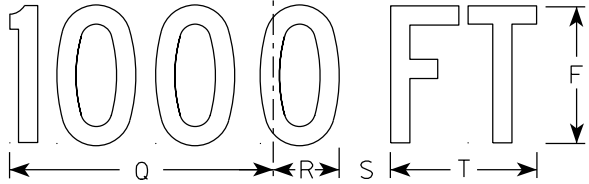
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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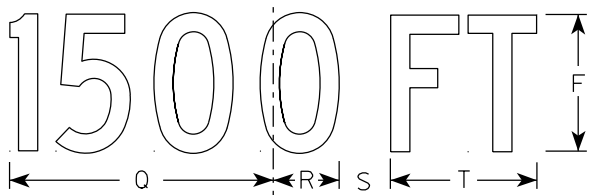
W20-3A



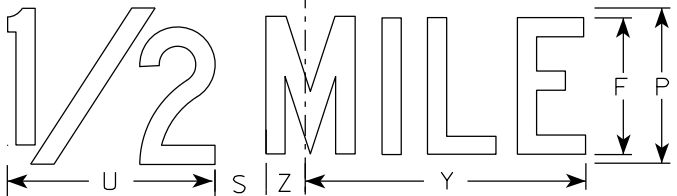
W20-3D



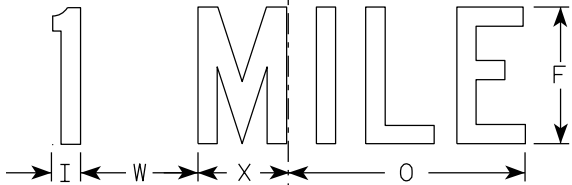
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

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

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-3.8

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE ¼" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-40-1101" SHALL BE THE EXISTING GROUND LINE.

AT THE BACKFACE OF THE ABUTMENT ALL VOLUME THAT CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A. ALSO EXCLUDED IS THE "BASE AGGREGATE DENSE 1 1/4-INCH" AS DETAILED ON THE STRUCTURAL APPROACH SLAB SHEETS.

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

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

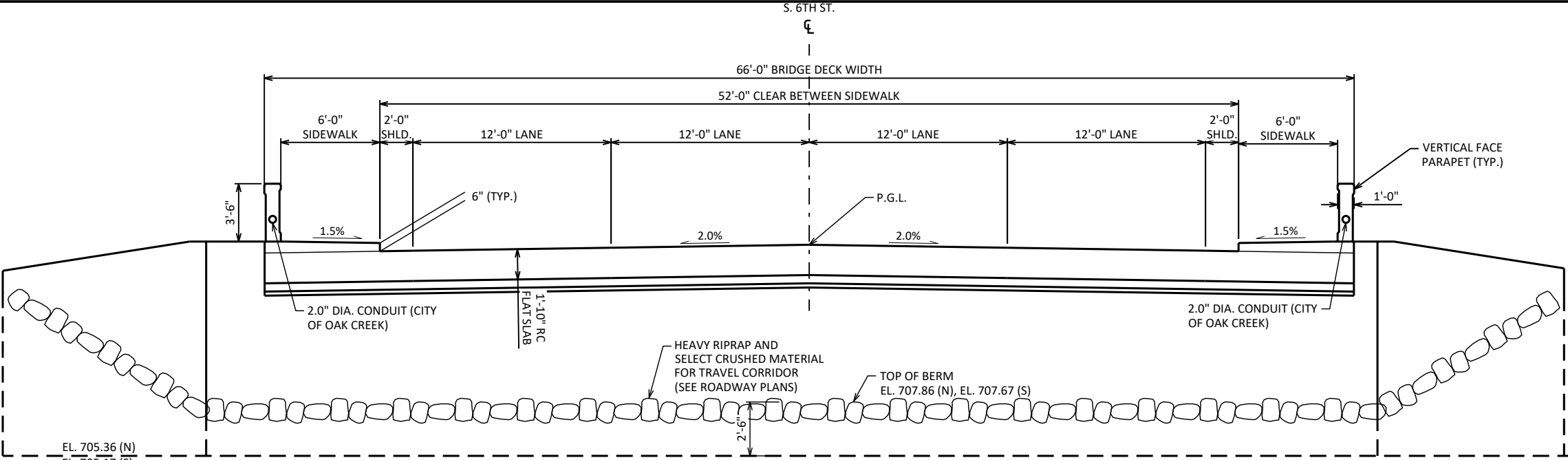
PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK AND APPROACH SLAB SURFACES AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.

PIGMENTED SURFACE SEALER TO BE APPLIED TO INSIDE AND TOP FACES OF PARAPETS.

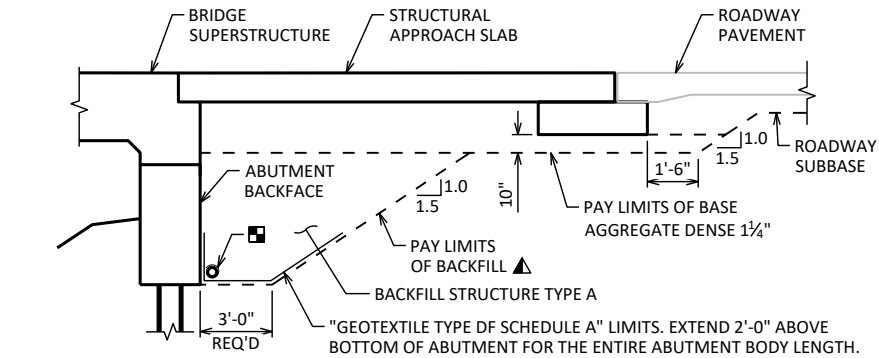
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIP RAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

AT ABUTMENTS, CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS

VERTICAL FACE PARAPET CONCRETE IS INCLUDED WITH AND PAID FOR WITH ITEM 502.0100 (TYP)



PROPOSED BRIDGE CROSS SECTION

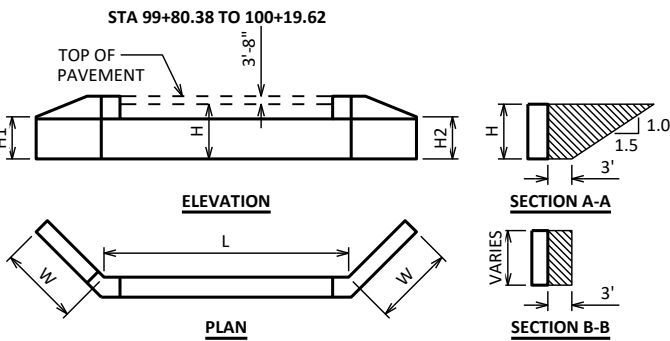


TYPICAL SECTION THRU ABUTMENT

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

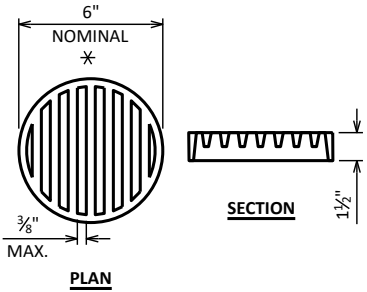
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	NORTH STRUCT. APP. SLAB	NORTH ABUT.	SOUTH ABUT.	SOUTH STRUCT. APP. SLAB	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (P-40-0558)	EA	-	-	-	-	-	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES (B-40-1101)	EA	-	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	-	-	526	526	-	1052
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	-	215	-	-	215	430
502.0100	CONCRETE MASONRY BRIDGES	CY	210.0	94.4	103.0	103.0	94.4	605
502.3200	PROTECTIVE SURFACE TREATMENT	SY	288	147	19	19	147	620
502.3210	PIGMENTED SURFACE SEALER	SY	40	20	-	-	20	80
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	-	-	5,676	5,717	-	11,393
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	41,030	19,093	2,000	2,000	19,093	83,216
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	595	-	-	-	-	595
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-	-	166	166	-	332
517.1050.S.01	ARCHITECTURAL SURFACE TREATMENT (B-40-1101)	SF	200	96	-	-	96	392
550.0010	PRE-BORING UNCONSOLIDATED MATERIALS	LF	-	-	10	10	-	20
550.2124	PILING CIP CONCRETE 12 3/4 X 0.25-INCH	LF	-	-	845	780	-	1,625
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-	-	105	105	-	210
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	-	-	83	83	-	166
652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	12	6	-	-	6	24
652.0325	CONDUIT RIGID NON-METALLIC SCHEDULE 80 2-INCH	LF	80	38	-	-	38	156
653.0220	JUNCTION BOXES 18X6X6-INCH	EA	4	-	-	-	-	4
999.1001.S	SEISMOGRAPH	EA	-	-	-	-	-	1
999.1501.S	CRACK AND DAMAGE SURVEY	EA	-	-	-	-	-	1
SPV.0060.01	LOCATE UTILITY LINE	EA	-	-	1	1	-	2
SPV.0060.04	OAK CREEK DIVERSION STRUCTURE	EA	-	-	-	-	-	1



ABUTMENT BACKFILL DIAGRAM

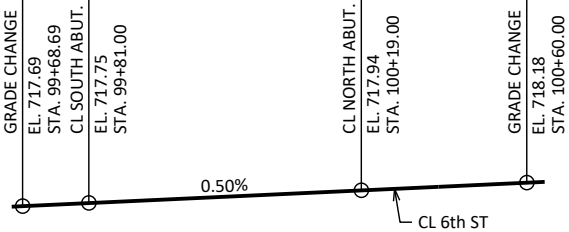
- L = ABUTMENT BODY LENGTH AT BACKFACE (FT)
- H = AVERAGE ABUTMENT FILL HEIGHT (FT)
- H1 = WING 1 HEIGHT AT TIP (FT)
- H2 = WING 2 HEIGHT AT TIP (FT)
- W = WING LENGTH (FT)
- EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
- $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)$
- $V_{CY} = V_{CF}(EF)/27$
- $V_{TON} = V_{CY}(2.0)$



RODENT SHIELD DETAIL

- * DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.
- THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".
- THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY 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.

NON-BID ITEMS	UNIT	SUPER	NORTH STRUCT. APP. SLAB	NORTH ABUT.	SOUTH ABUT.	SOUTH STRUCT. APP. SLAB	TOTALS
1/2" FILLER	SF	-	6	67	66	6	145
3/4" FILLER	SF	-	30	25	25	30	110
1 1/2" FILLER	SF	-	88	-	-	88	176



PROFILE GRADE LINE

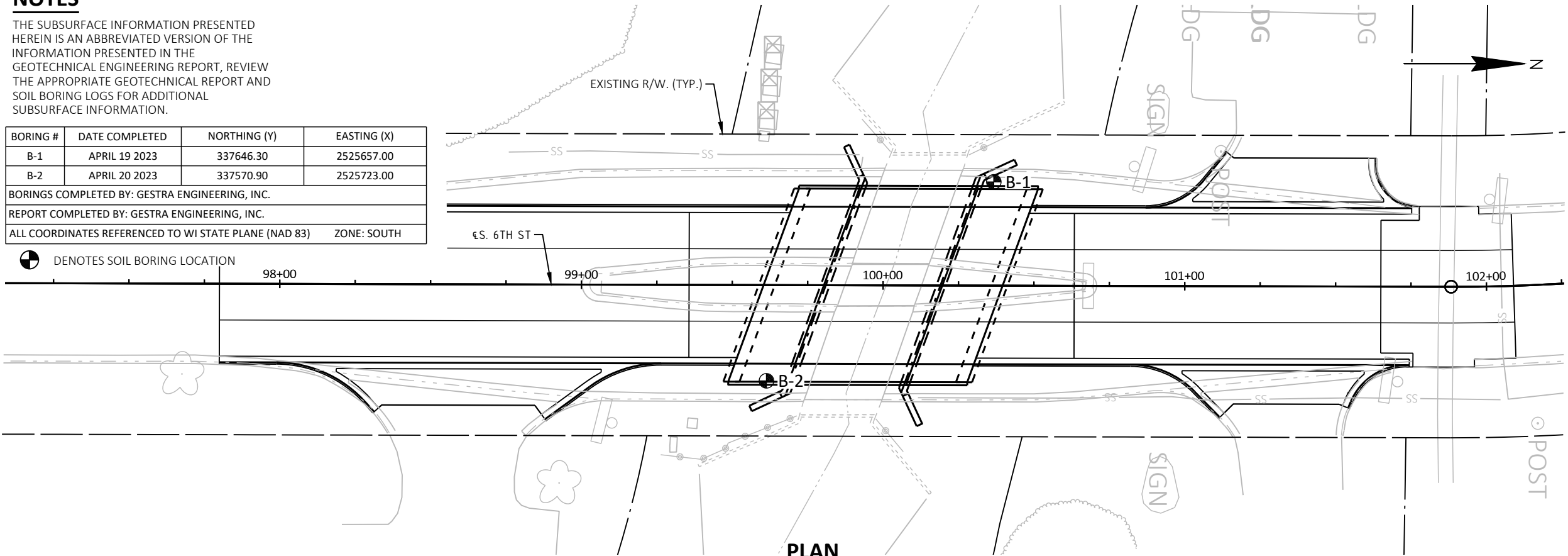
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-1101			
DRAWN BY		MDG	PLANS CK'D SJM
CROSS SECTION & QUANTITIES		SHEET 2 OF 13	

NOTES

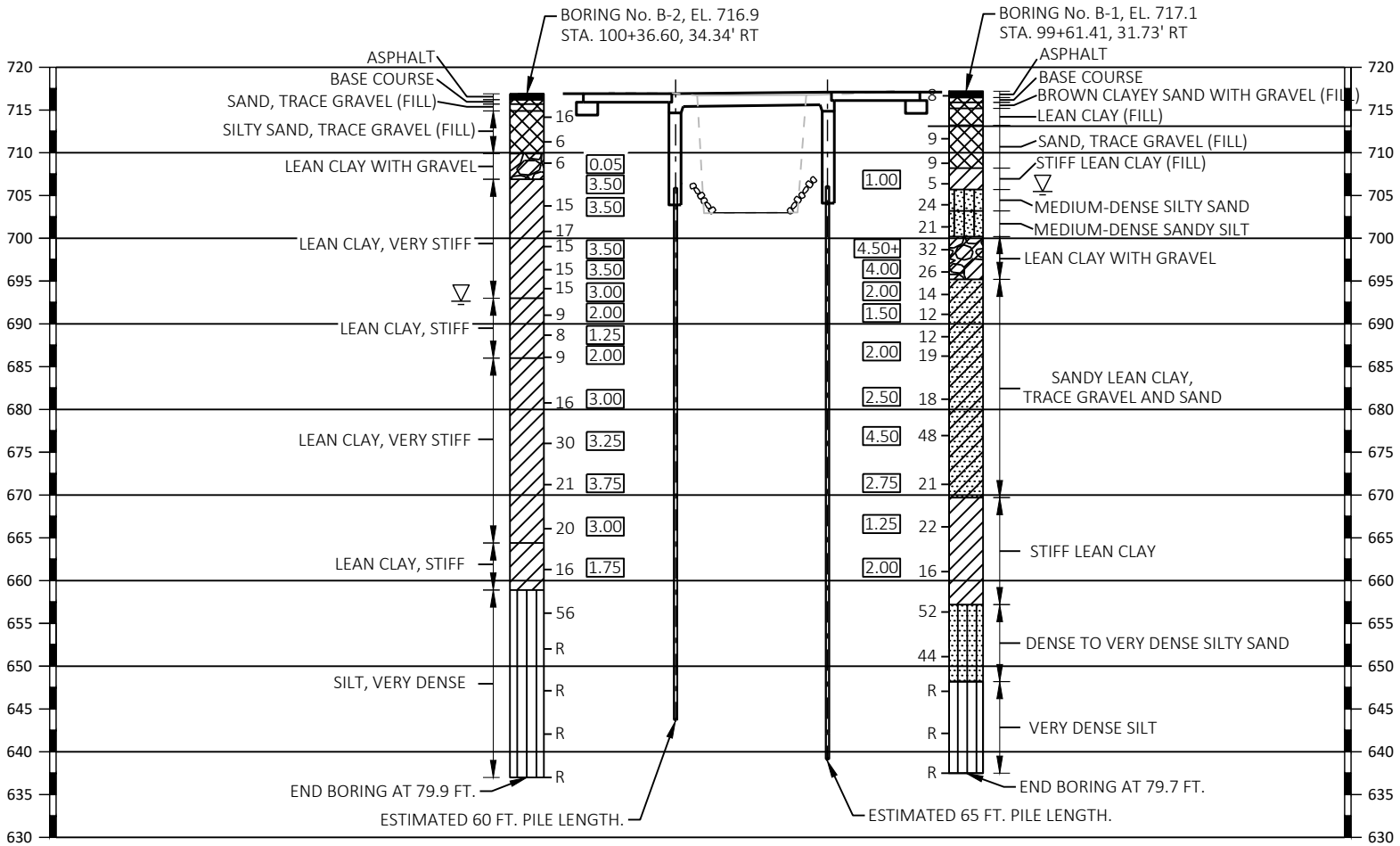
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT, REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
B-1	APRIL 19 2023	337646.30	2525657.00
B-2	APRIL 20 2023	337570.90	2525723.00
BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.			
REPORT COMPLETED BY: GESTRA ENGINEERING, INC.			
ALL COORDINATES REFERENCED TO WI STATE PLANE (NAD 83) ZONE: SOUTH			

DENOTES SOIL BORING LOCATION



PLAN



ELEVATION

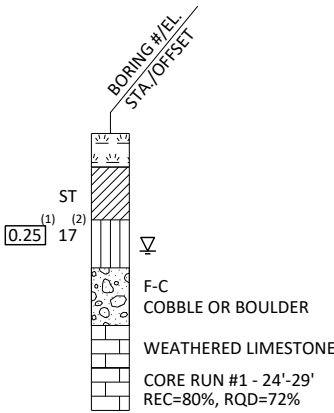
STATE PROJECT NUMBER

2235-00-74

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
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

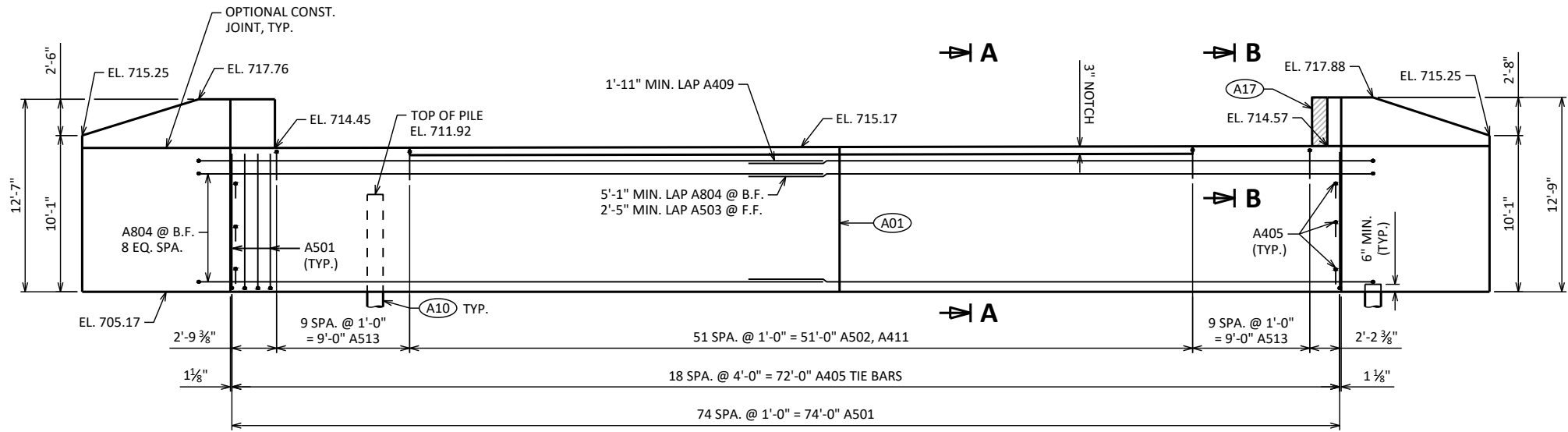
STRUCTURE B-40-1101

DRAWN BY	AMS	PLANS CK'D	SJM
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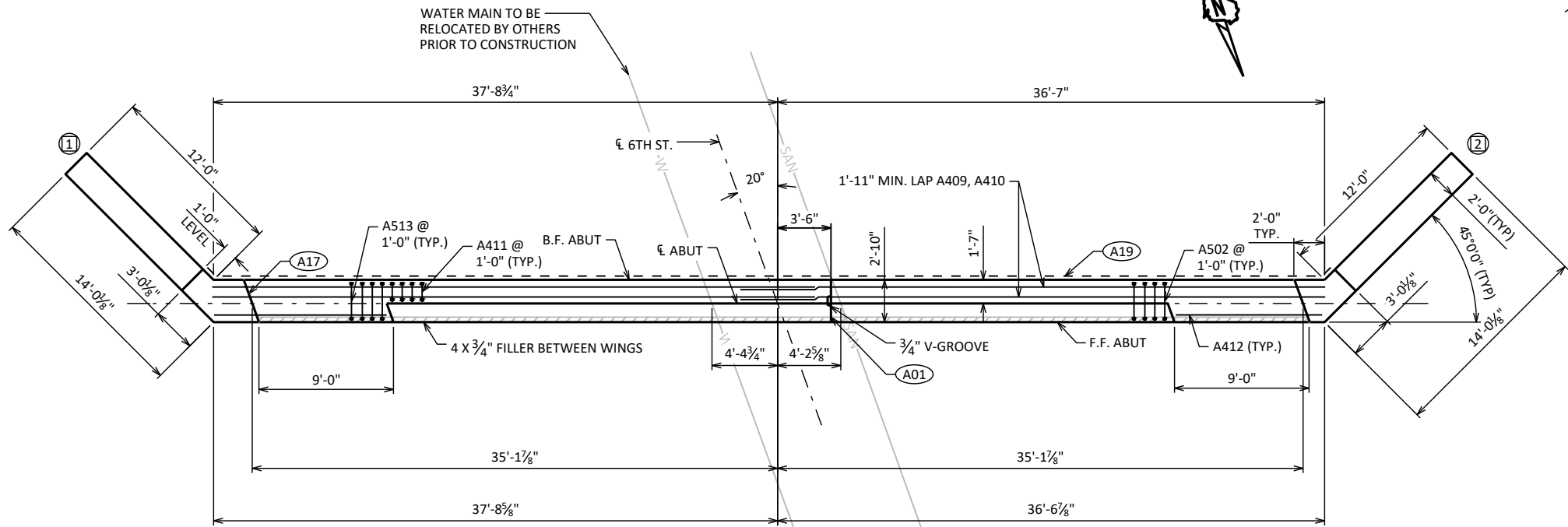
SUBSURFACE
EXPLORATION

SHEET 3 OF 13

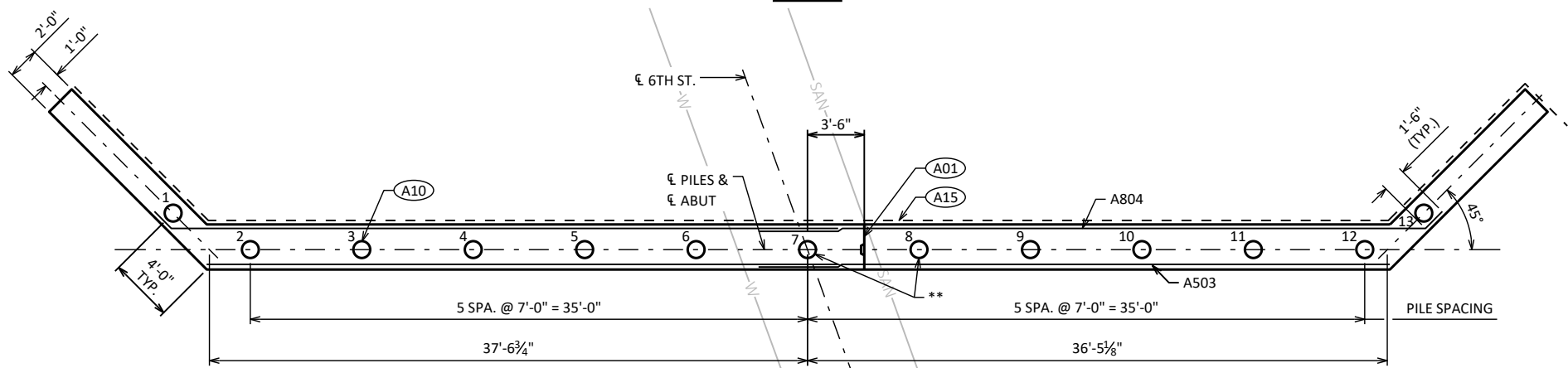
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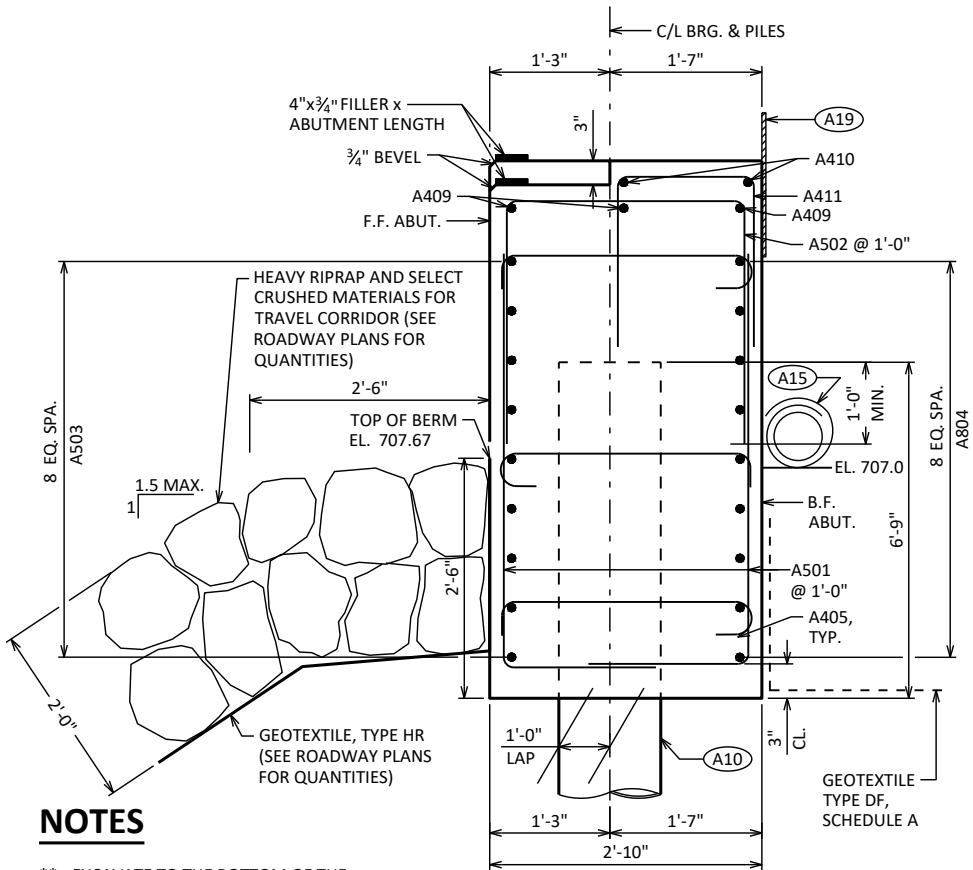
ELEVATION
(LOOKING DOWNSTATION)



PLAN



PILE PLAN



NOTES

** - EXCAVATE TO THE BOTTOM OF THE ABUTMENT BEFORE DRIVING PILES. PRIOR TO DRIVING PILING ADJACENT TO EXISTING UTILITIES, PHYSICALLY LOCATE UTILITIES AND PRE-BORE PILES TO A STARTING DEPTH BELOW THE UTILITY. IF UTILITY LOCATION CONFLICTS WITH PILE LOCATION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO RECEIVE WRITTEN INSTRUCTIONS TO MITIGATE CONFLICT.

CONTACT THE UTILITY PROVIDER A MINIMUM OF 7 DAYS PRIOR TO THE WORK AND COORDINATE THE WORK ADJACENT TO THE UTILITY WITH THE UTILITY PROVIDER.

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 5 FOR BILL OF BARS.

SPACE REINFORCEMENT TO MISS PILING

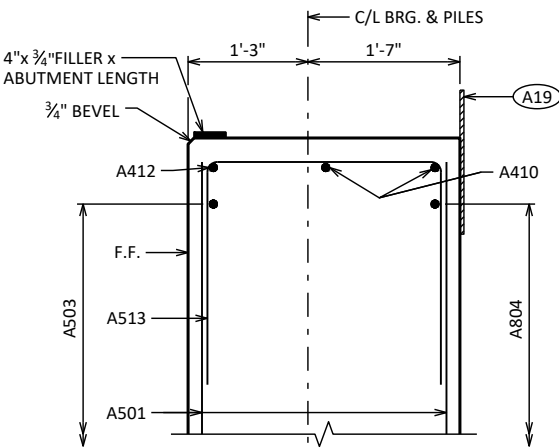
F.F. - FRONT FACE

B.F. - BACK FACE

⊗ INDICATES WING NUMBER

- (A01) VERT CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 8, 3/4" BEVELED "V" GROOVE AT THE FRONT FACE AND 18" RUBBERIZED MEMBRANE WATERPROOFING AT BACK FACE. FOR OPTIONAL JOINT DETAILS SEE SHEET 13.
- (A10) SUPPORT ABUTMENT ON 12 3/4" DIA. CIP CONCRETE PILING, ESTIMATED 60'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/2" 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.

SECTION A-A



SECTION B-B

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-1101			
DRAWN BY MDG		PLANS CK'D SJM	
SOUTH ABUTMENT		SHEET 4 OF 13	

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		150	10'-4"	X		ABUT BODY VERTICAL STIRRUPS
A502		52	9'-11"	X		ABUT BODY VERTICAL TOP
A503		18	38'-5"			ABUT BODY HORIZ. - F.F.
A804		18	44'-4"	X		ABUT BODY HORIZ. - B.F.
A405		57	3'-4"	X		ABUT BODY TIE BARS
AX06						VACANT
AX07						VACANT
AX08						VACANT
A409		6	26'-6"			ABUT BODY HORIZ. TOP
A410		4	38'-8"			ABUT BODY HORIZ. NOTCH
A411		52	3'-6"	X		ABUT BODY VERTICAL NOTCH
A412		2	10'-10"			ABUT BODY HORIZ. TOP - F.F.
A513		20	9'-5"	X		ABUT BODY VERTICAL TOP
A414	X	60	13'-8"	X	Δ	WING VERTICAL STIRRUPS
A415	X	8	13'-11"	X		WING CORNER STIRRUPS
A516	X	20	15'-0"	X		WING LOWER HORIZ. - F.F.
A817	X	20	16'-10"	X		WING LOWER HORIZ. - B.F.
A418	X	4	13'-3"			WING UPPER HORIZ.
A419	X	4	11'-1"			WING UPPER HORIZ.
A420	X	4	6'-9"			WING UPPER HORIZ.
A421	X	4	12'-6"	X		WING TOP HORIZ.
A422	X	4	8'-2"	X		WING 2 UPPER HORIZ. CORNER
A423	X	4	10'-1"	X		WING 1 UPPER HORIZ. CORNER

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

BAR SERIES TABLE

MARK	NO. REQ'D	LENGTH
A414	4 SERIES OF 15	12'-4" TO 14'-11"

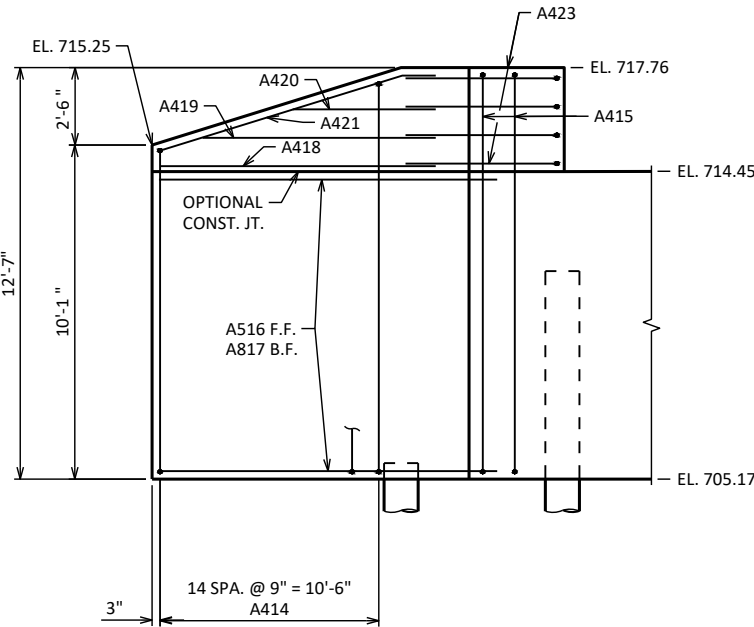
NOTES

SPACE REINFORCEMENT TO MISS PILING

F.F. - FRONT FACE

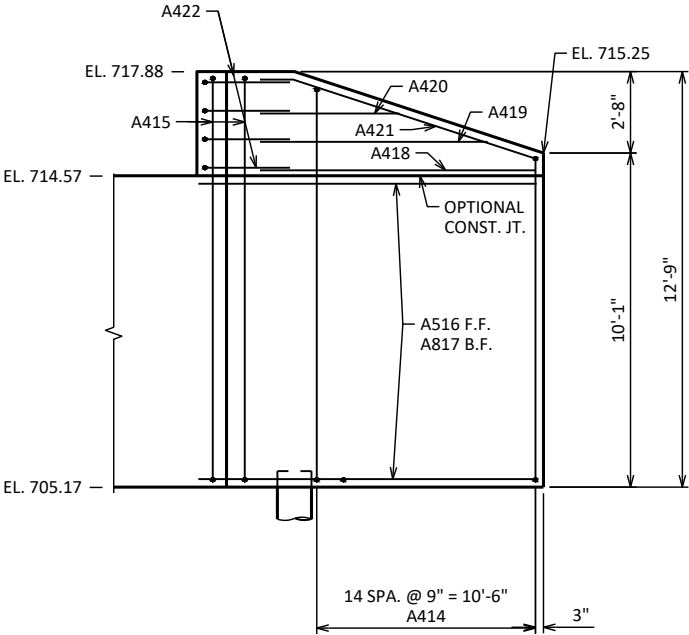
B.F. - BACK FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-1101			
DRAWN BY		MDG	PLANS CK'D SJM
SOUTH ABUTMENT DETAILS		SHEET 5 OF 13	



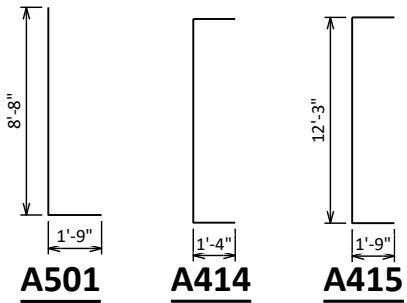
WING 1 ELEVATION

SHOWING F.F. WING

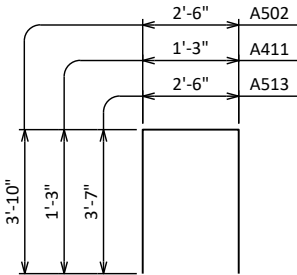


WING 2 ELEVATION

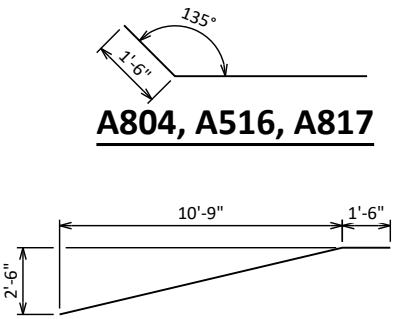
SHOWING F.F. WING



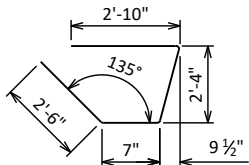
A502, A411, A513



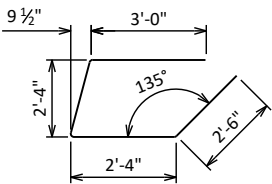
A804, A516, A817



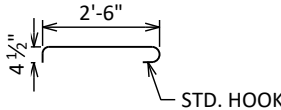
A421



A422

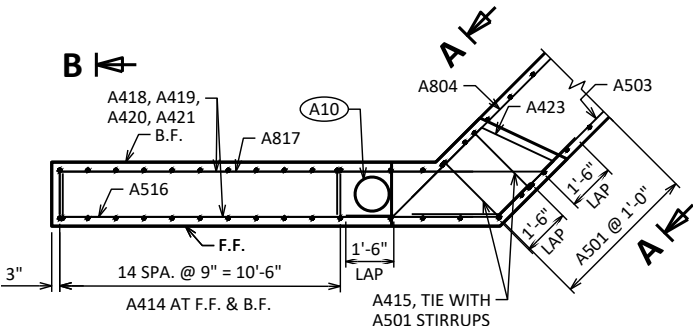


A423

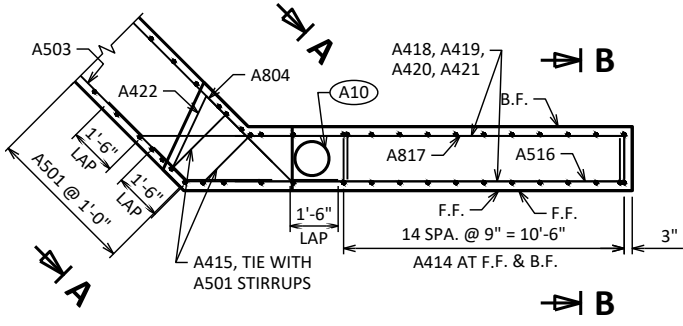


A405

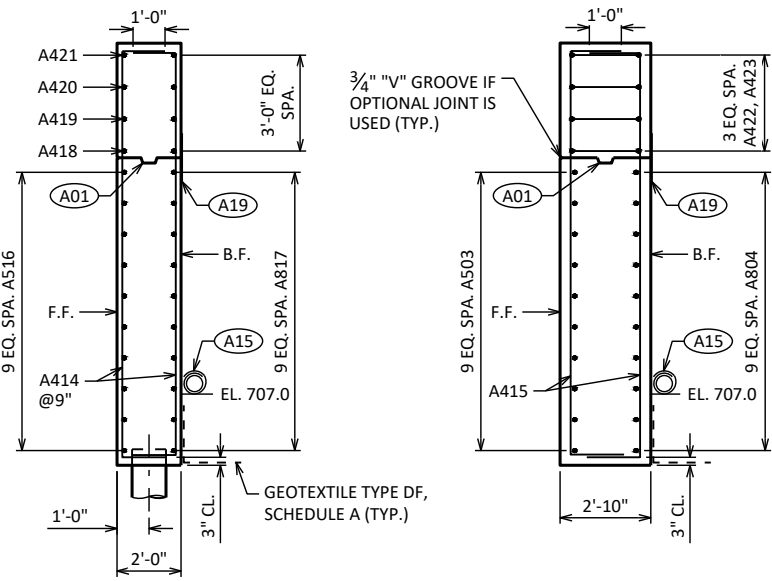
STD. HOOK



WING 1 PLAN

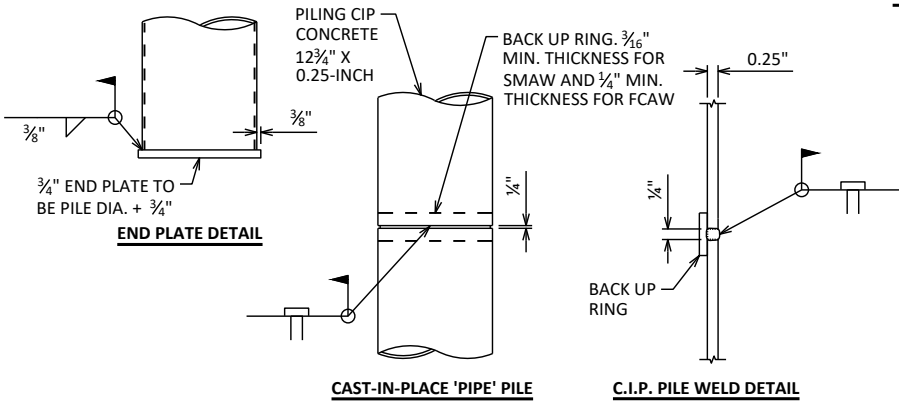


WING 2 PLAN



SECTION B-B

SECTION A-A



CIP PILE DETAILS

- A01 VERT CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 8. 3/4" BEVELED "V" GROOVE AT THE FRONT FACE AND 18" RUBBERIZED MEMBRANE WATERPROOFING AT BACK FACE. FOR OPTIONAL JOINT DETAILS SEE SHEET 13.
- A10 SUPPORT ABUTMENT ON 12 3/4" DIA. CIP CONCRETE PILING, ESTIMATED 60'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE.
- 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.



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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-40-1101	
	DRAWN BY	MDG	PLANS CK'D JIM
NORTH ABUTMENT		SHEET 6 OF 13	

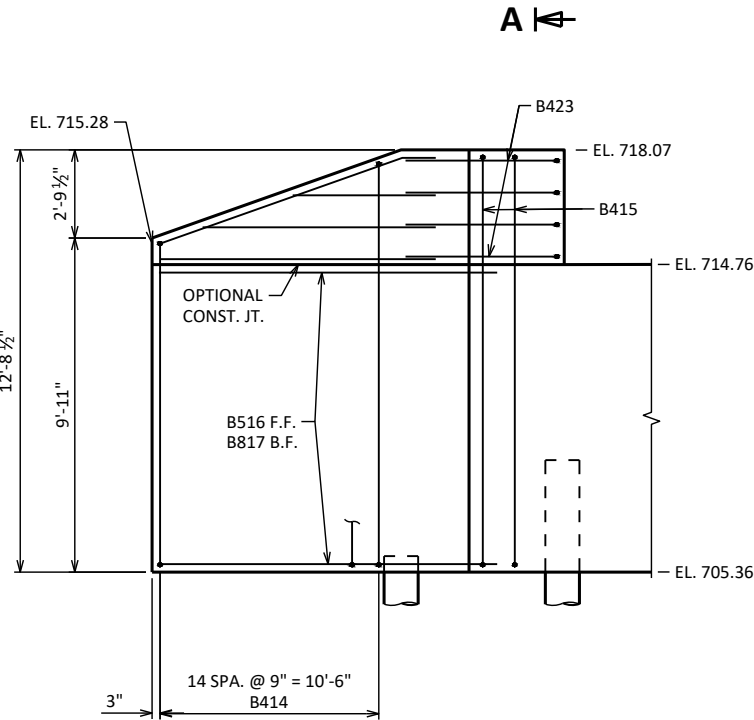
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		150	10'-4"	X		ABUT BODY VERTICAL STIRRUPS
B502		52	10'-5"	X		ABUT BODY VERTICAL TOP
B503		18	38'-5"			ABUT BODY HORIZ. - F.F.
B804		18	44'-4"	X		ABUT BODY HORIZ. - B.F.
B405		57	3'-4"	X		ABUT BODY TIE BARS
BX06						VACANT
BX07						VACANT
BX08						VACANT
B409		6	26'-6"			ABUT BODY HORIZ. TOP
B410		4	38'-8"			ABUT BODY HORIZ. NOTCH
B411		52	3'-6"	X		ABUT BODY VERTICAL NOTCH
B412		2	10'-10"			ABUT BODY HORIZ. TOP - F.F.
B513		20	10'-1"	X		ABUT BODY VERTICAL TOP
B414	X	60	13'-8"	X	Δ	WING VERTICAL STIRRUPS
B415	X	8	13'-11"	X		WING CORNER STIRRUPS
B516	X	20	15'-0"	X		WING LOWER HORIZ. - F.F.
B817	X	20	16'-10"	X		WING LOWER HORIZ. - B.F.
B418	X	4	13'-3"			WING UPPER HORIZ.
B419	X	4	11'-1"			WING UPPER HORIZ.
B420	X	4	6'-9"			WING UPPER HORIZ.
B421	X	4	12'-7"	X		WING TOP HORIZ.
B422	X	4	8'-2"	X		WING 3 UPPER HORIZ. CORNER
B423	X	4	10'-1"	X		WING 4 UPPER HORIZ. CORNER

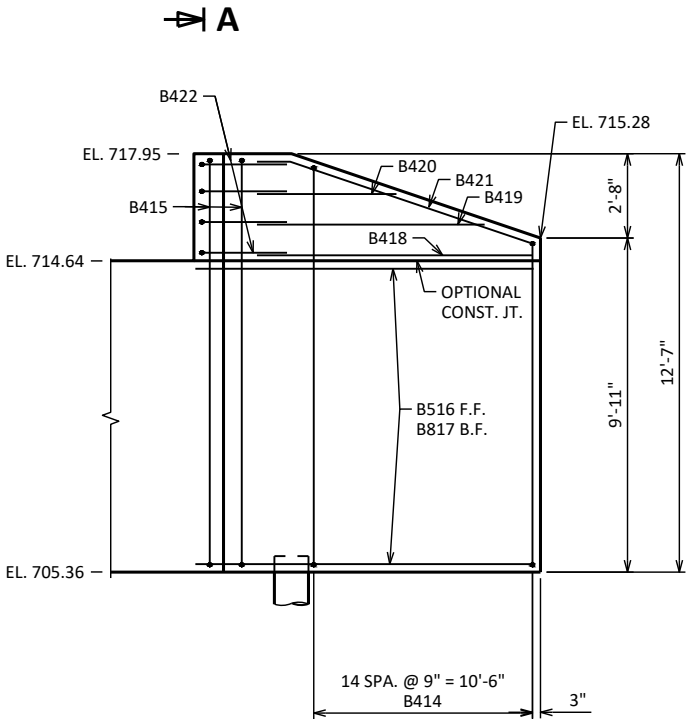
Δ LENGTH SHOWN FOR THE BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE		
MARK	NO. REQ'D	LENGTH
B414	4 SERIES OF 15	12'-4" TO 14'-11"



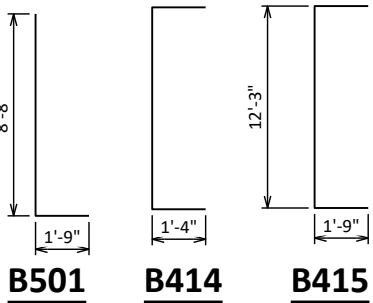
WING 3 ELEVATION

SHOWING F.F. WING

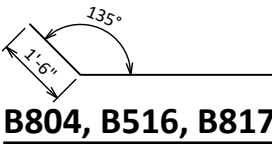
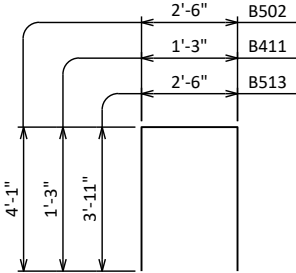


WING 4 ELEVATION

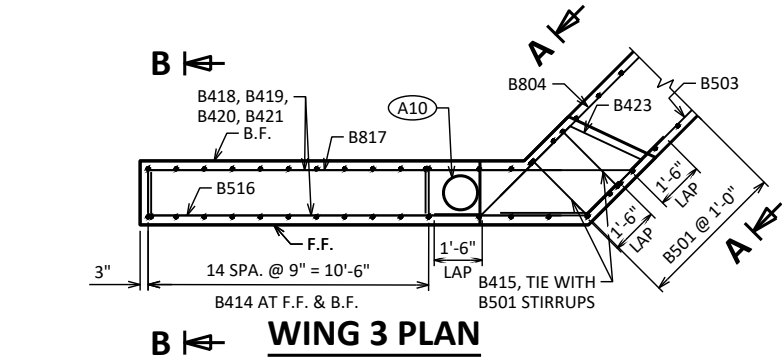
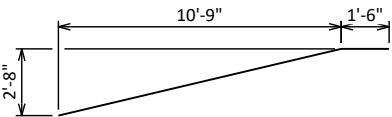
SHOWING F.F. WING



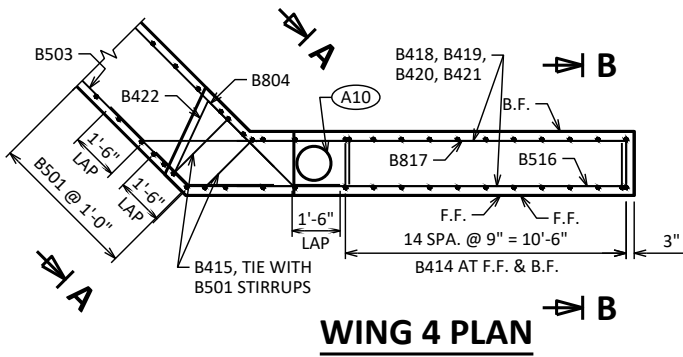
B502, B411, B513



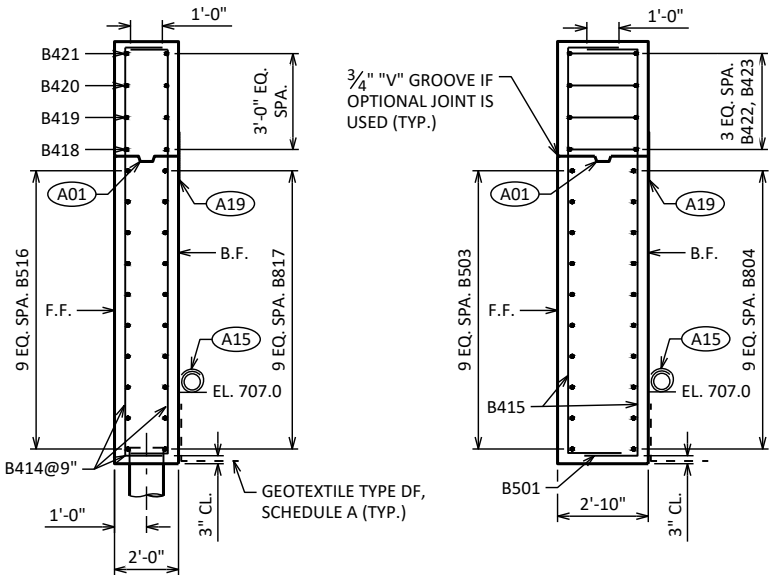
B421



WING 3 PLAN

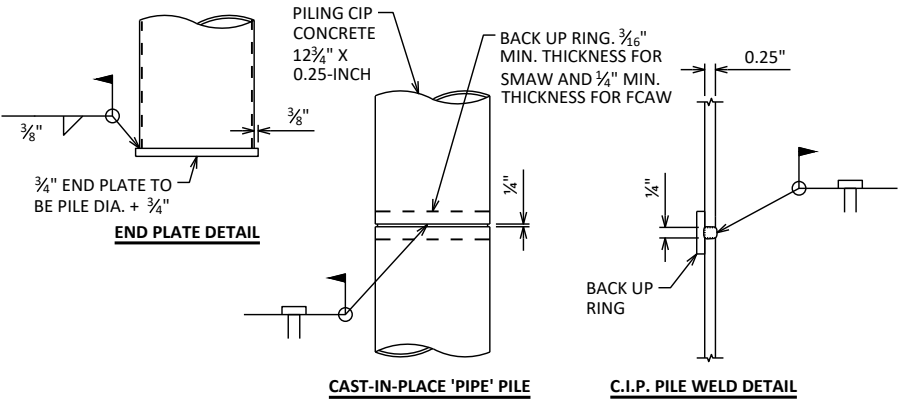


WING 4 PLAN

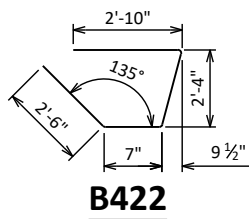


SECTION B-B

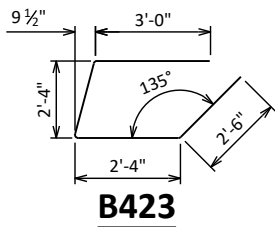
SECTION A-A



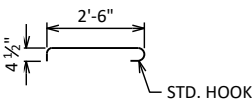
CIP PILE DETAILS



B422



B423

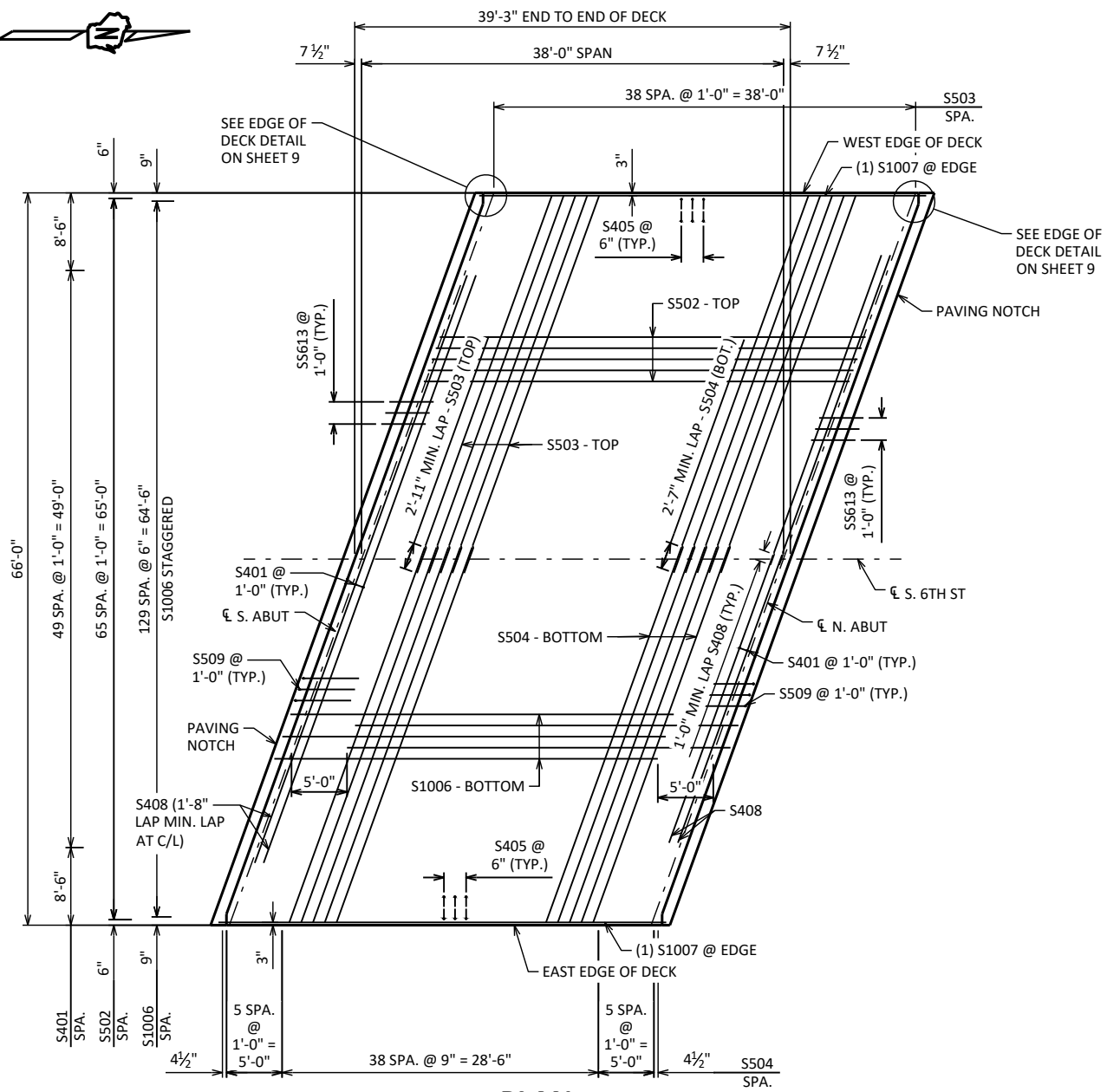


B405

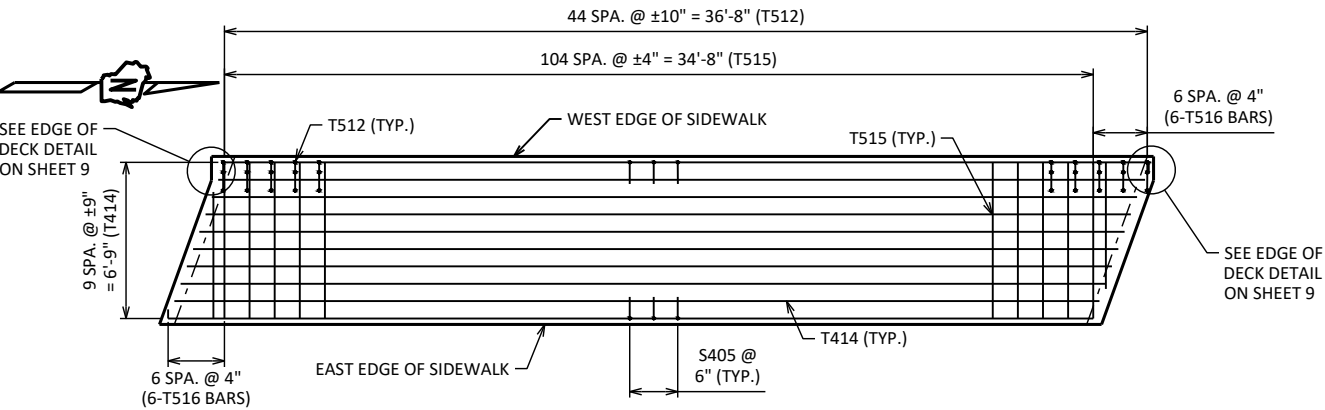
NOTES

SPACE REINFORCEMENT TO MISS PILING
F.F. - FRONT FACE
B.F. - BACK FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-1101			
DRAWN BY		MDG	PLANS CK'D SJM
NORTH ABUTMENT DETAILS		SHEET 7 OF 13	



PLAN

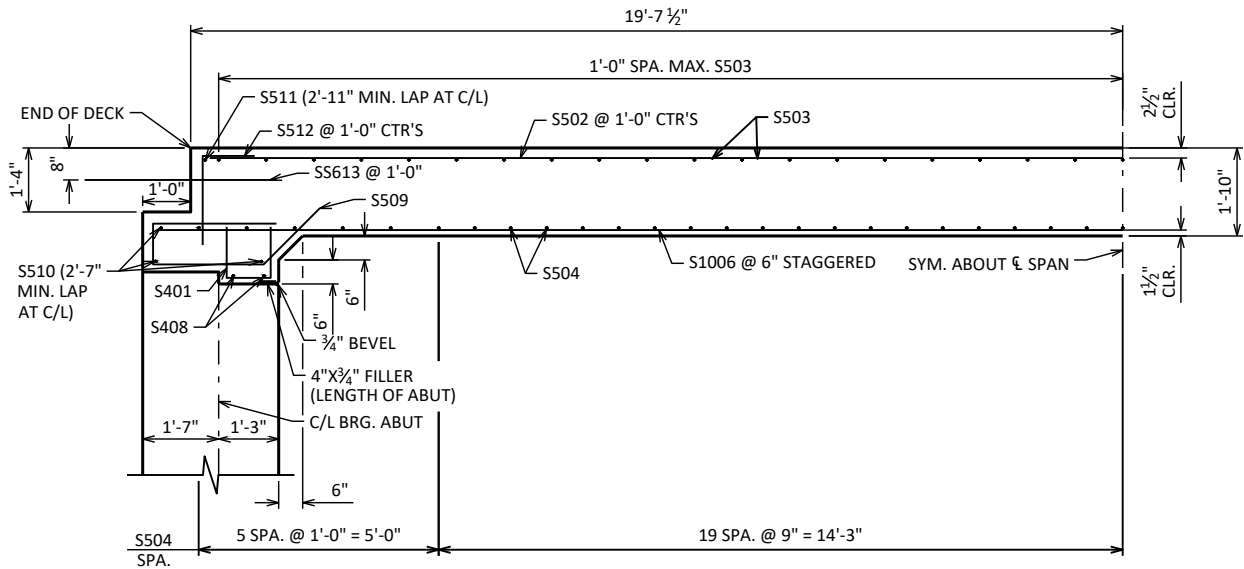


TYPICAL SIDEWALK PLAN
WEST SIDEWALK SHOWN - EAST SIDEWALK SIMILAR

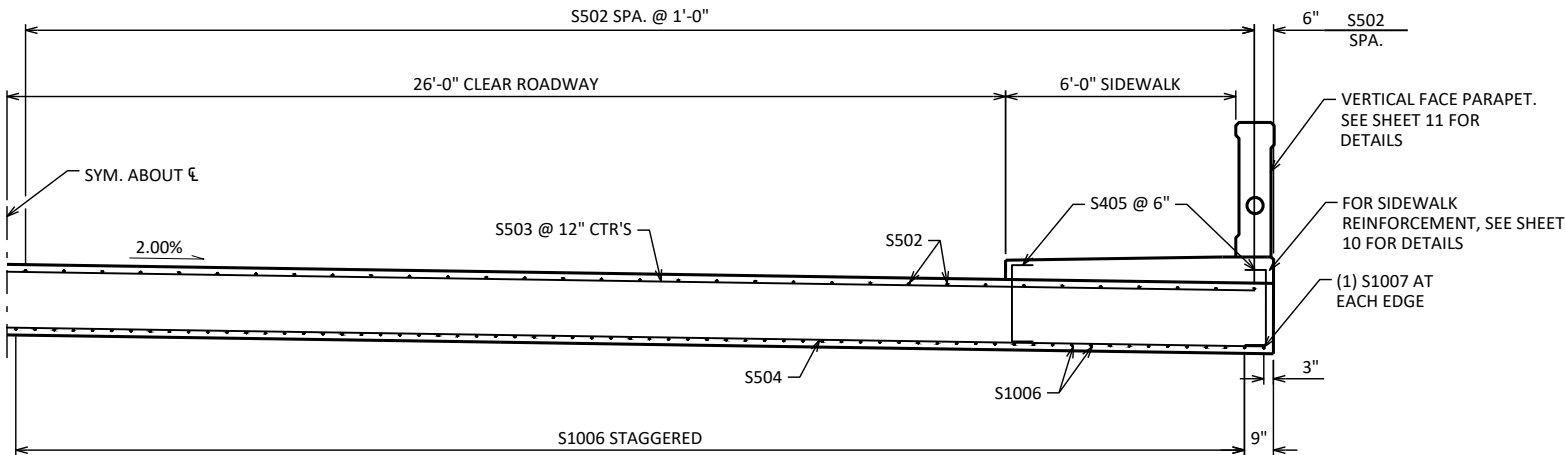
BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	100	3'-5"	X		DECK SLAB VERTICAL AT ABUT NOTCH
S502	X	66	38'-8"			DECK SLAB LONG. TOP
S503	X	78	36'-4"			DECK SLAB TRANSV. TOP
S504	X	98	36'-2"			DECK SLAB TRANSV. BOT.
S405	X	312	3'-10"	X		DECK SLAB SIDEWALK TIES
S1006	X	130	34'-6"			DECK SLAB LONG. BOT.
S1007	X	2	40'-11"			DECK SLAB LONG. BOT. AT EDGE
S408	X	8	26'-8"			DECK SLAB HORIZ. AT ABUT NOTCH
S509	X	132	7'-10"	X		DECK SLAB VERTICAL AT ENDS
S510	X	12	36'-2"			DECK SLAB TRANSV. BOT.
S511	X	4	36'-4"			DECK SLAB TRANSV. TOP
S512	X	132	3'-6"	X		DECK SLAB VERTICAL AT ENDS
S5613		132	3'-0"			DECK SLAB TO APPROACH SLAB DOWEL

NOTES: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
SS SIGNIFIES STAINLESS STEEL BARS.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



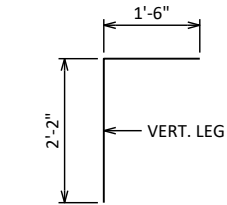
PARTIAL LONGITUDINAL SECTION THROUGH ROADWAY



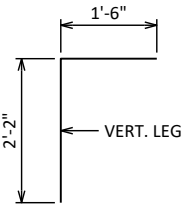
PARTIAL CROSS SECTION THROUGH ROADWAY

STATE PROJECT NUMBER

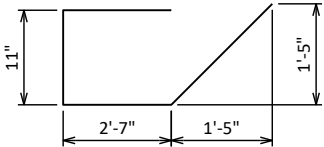
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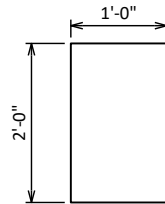
S401



S512



S509



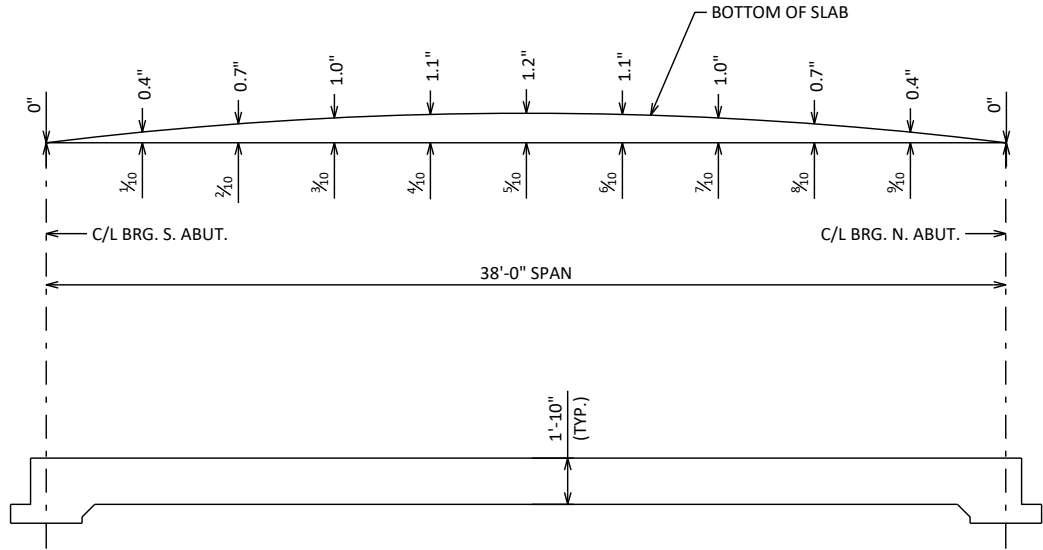
S405

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-1101			
DRAWN BY MDG		PLANS CK'D SJM	
SUPERSTRUCTURE		SHEET 8 OF 13	

SCALE =



CAMBER AND SLAB THICKNESS DIAGRAM

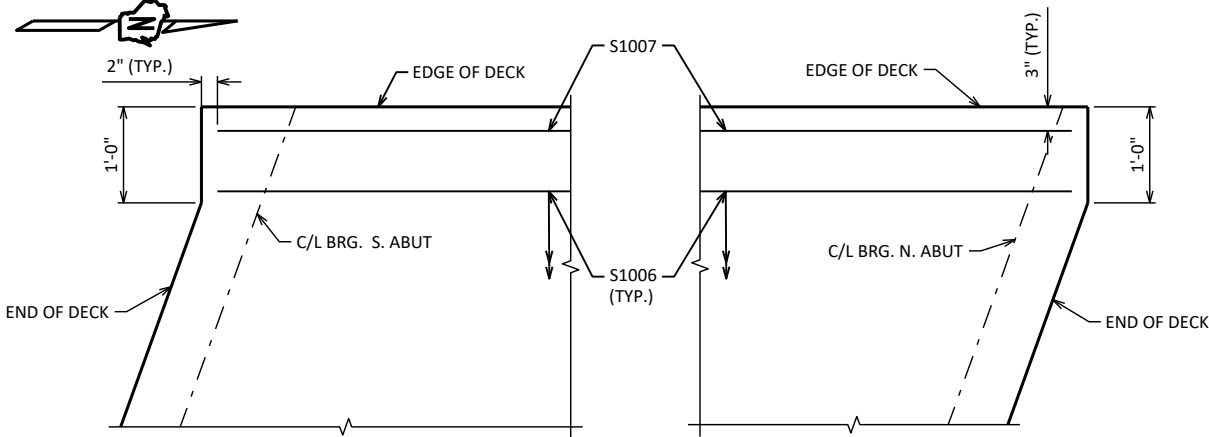
CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS.

CAMBER SPAN AS SHOWN TO PROVIDE FOR THEORETICAL DEAD LOAD DEFLECTION AND FUTURE PLASTIC FLOW. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PARAPETS, SIDEWALKS, AND MEDIANS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE FOLLOW THIS PROCEDURE:

MINUS.....	TOP OF SLAB ELEVATION AT FINAL GRADE
PLUS.....	SLAB THICKNESS
PLUS.....	CAMBER
PLUS.....	FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS...	TOP OF SLAB FALSEWORK ELEVATION



EDGE OF DECK DETAIL

WEST SIDE OF DECK SHOWN. EAST SIDE IS SIMILAR.

SURVEY TOP OF DECK ELEVATIONS

LOCATION	C/L BRG. S. ABUT.	5/10 PT.	C/L BRG. N. ABUT.
W EDGE OF DECK			
CROWN OR C/L			
E EDGE OF DECK			

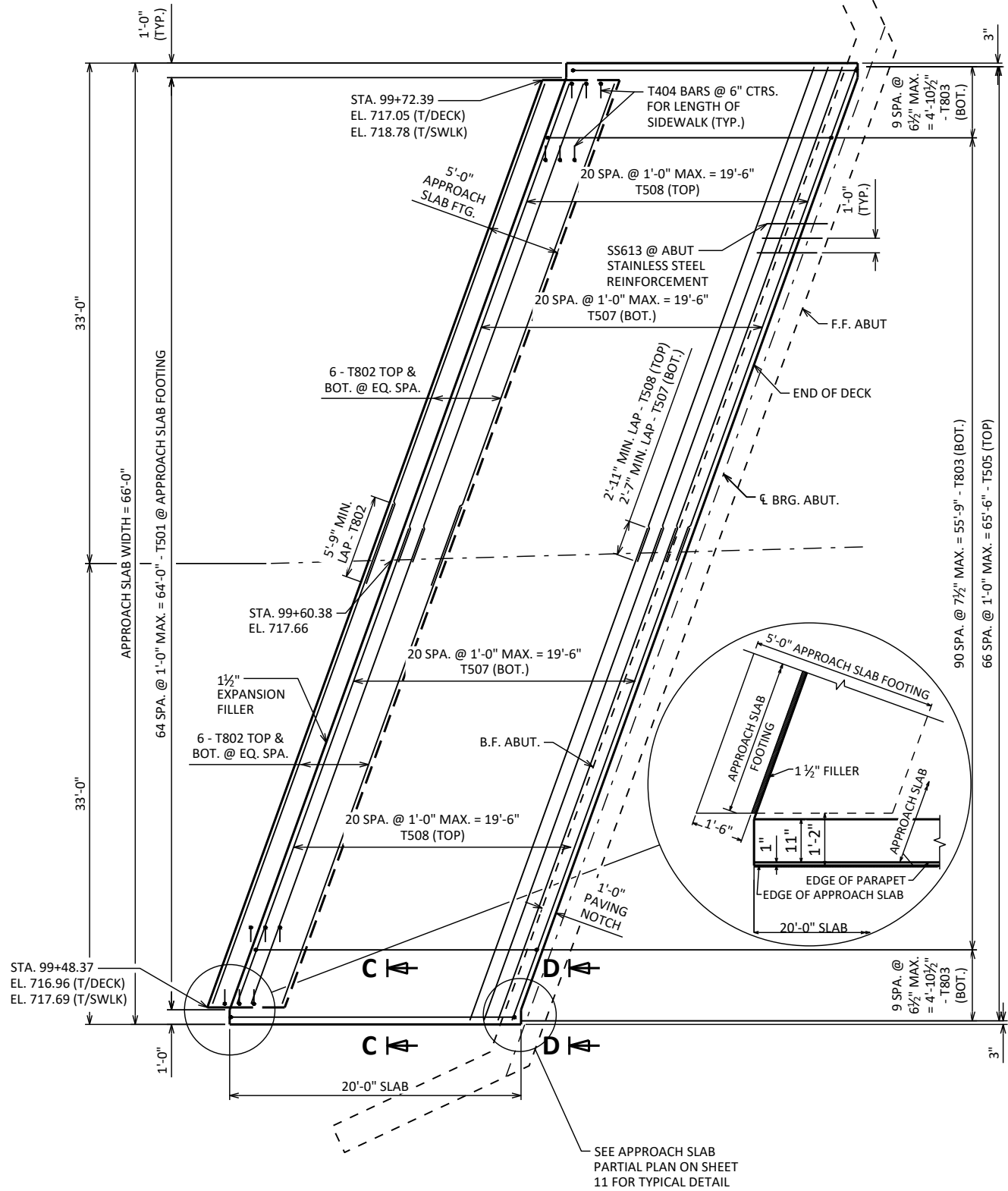
PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C/L OF ABUTMENTS, THE C/L OF PIERS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR R/L. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

TOP OF DECK ELEVATIONS

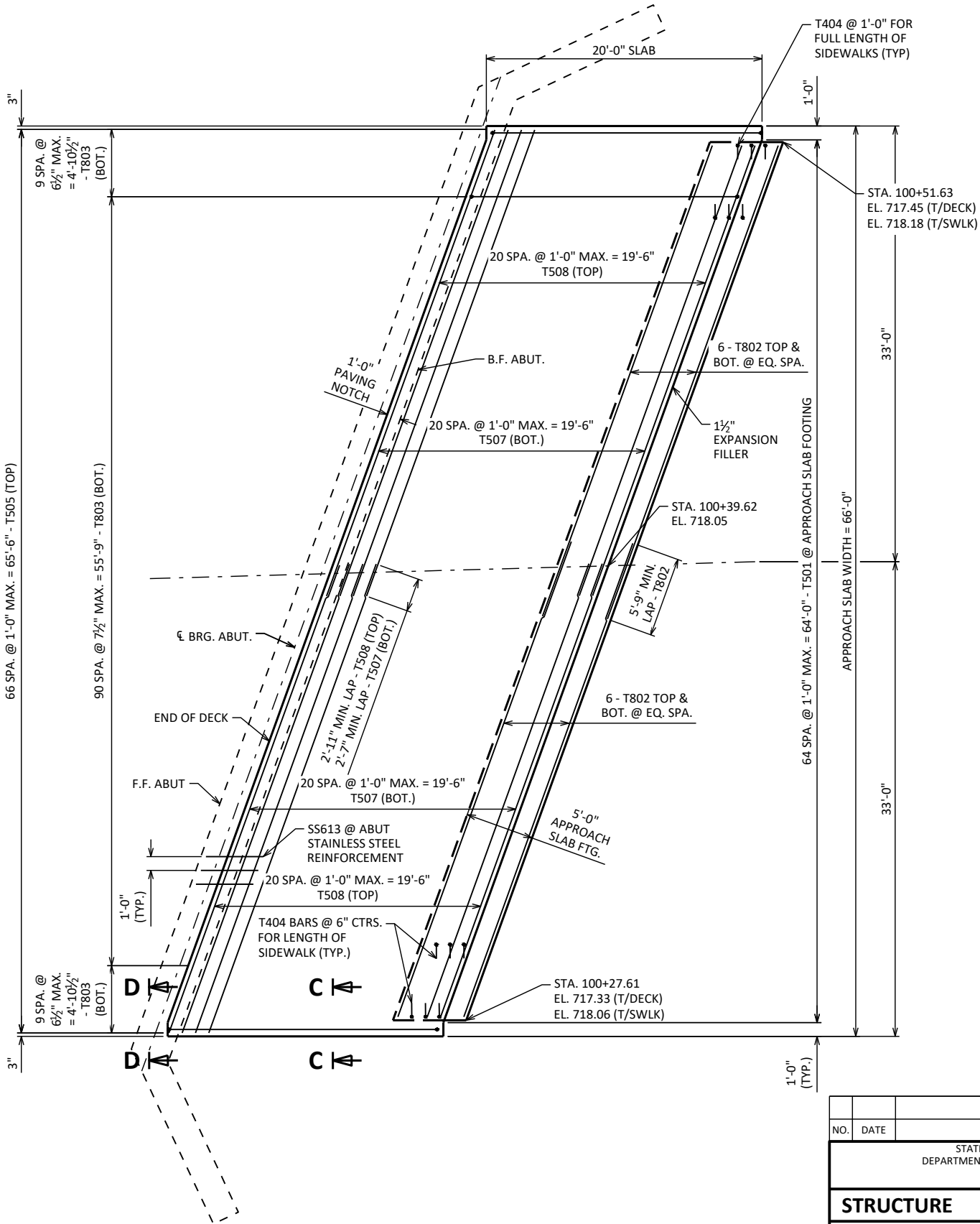
LOCATION	C/L BRG. S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	C/L BRG. N. ABUT.
W EDGE OF DECK	717.15	717.17	717.19	717.21	717.23	717.25	717.27	717.29	717.31	717.33	717.34
CROWN OR C/L	717.75	717.77	717.79	717.81	717.83	717.85	717.87	717.89	717.91	717.93	717.94
E EDGE OF DECK	717.03	717.05	717.07	717.09	717.11	717.13	717.15	717.17	717.19	717.21	717.22

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-1101			
DRAWN BY MDG		PLANS CK'D SJM	
CONCRETE SLAB DETAILS		SHEET 9 OF 13	

SCALE =



SOUTH ABUTMENT APPROACH SLAB PLAN

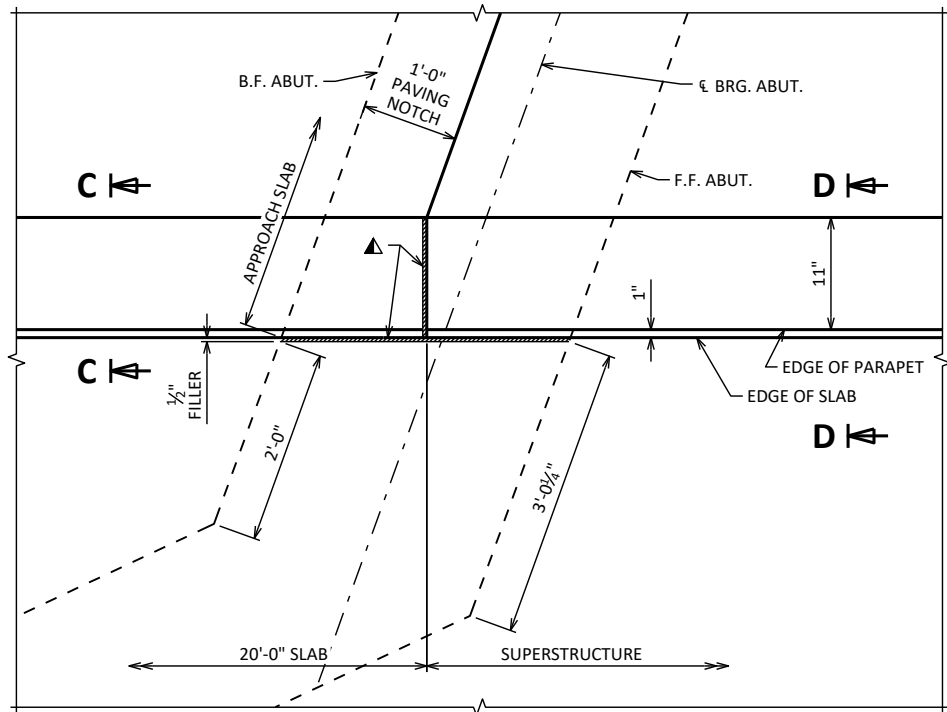
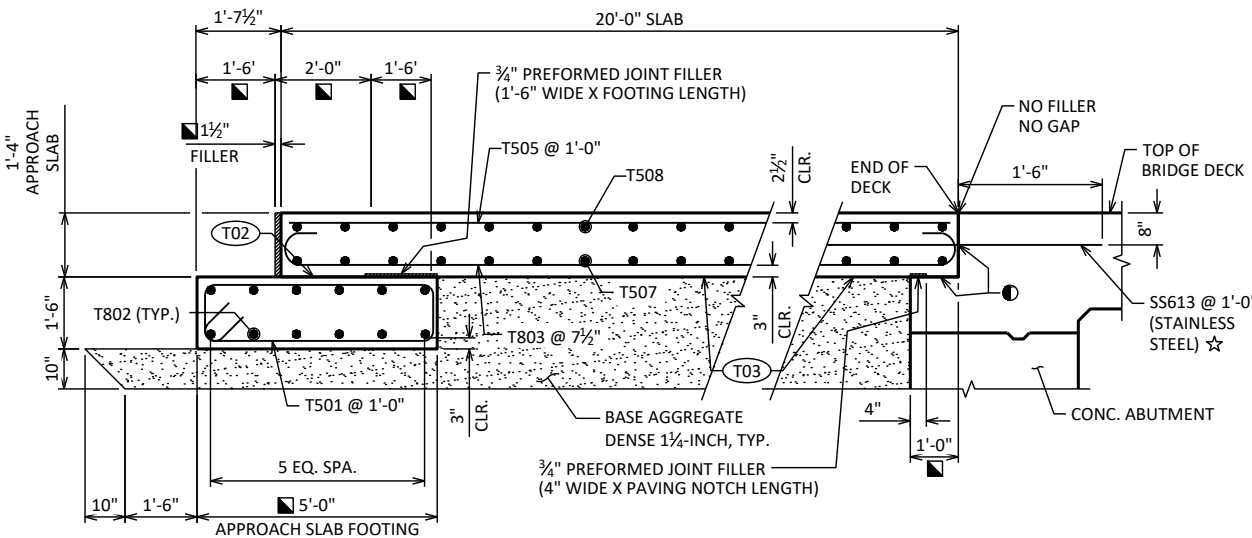


NORTH ABUTMENT APPROACH SLAB PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-1101			
DRAWN BY MDG		PLANS CK'D SJM	
STRUCTURAL APPROACH SLAB		SHEET 10 OF 13	

LEGEND

- (T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE FOOTING.
- (T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.
- APPLY PROTECTIVE SURFACE TREATMENT TO PAVING NOTCH SURFACES PRIOR TO POURING STRUCTURAL APPROACH SLAB.
- MEASURED NORMAL TO ABUTMENT
- ☒ CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR MATCH BRIDGE X-SLOPE.
- ☆ THE BID ITEM FOR SS611 BARS SHALL BE STANDARD SPECIAL PROVISION "BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES".
- ▲ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

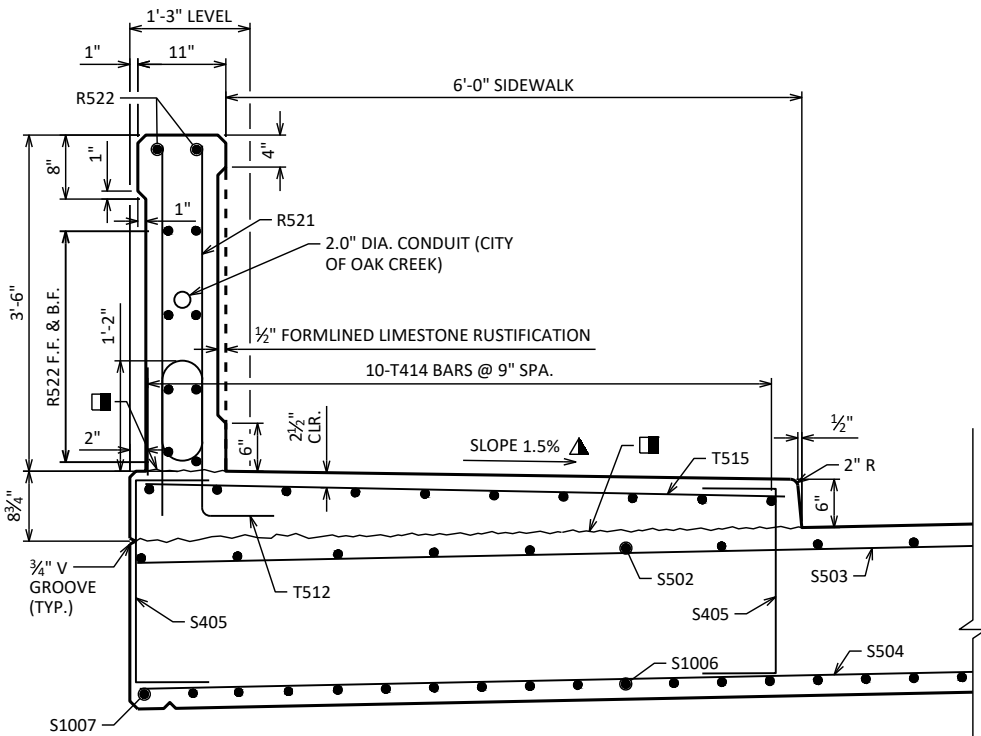
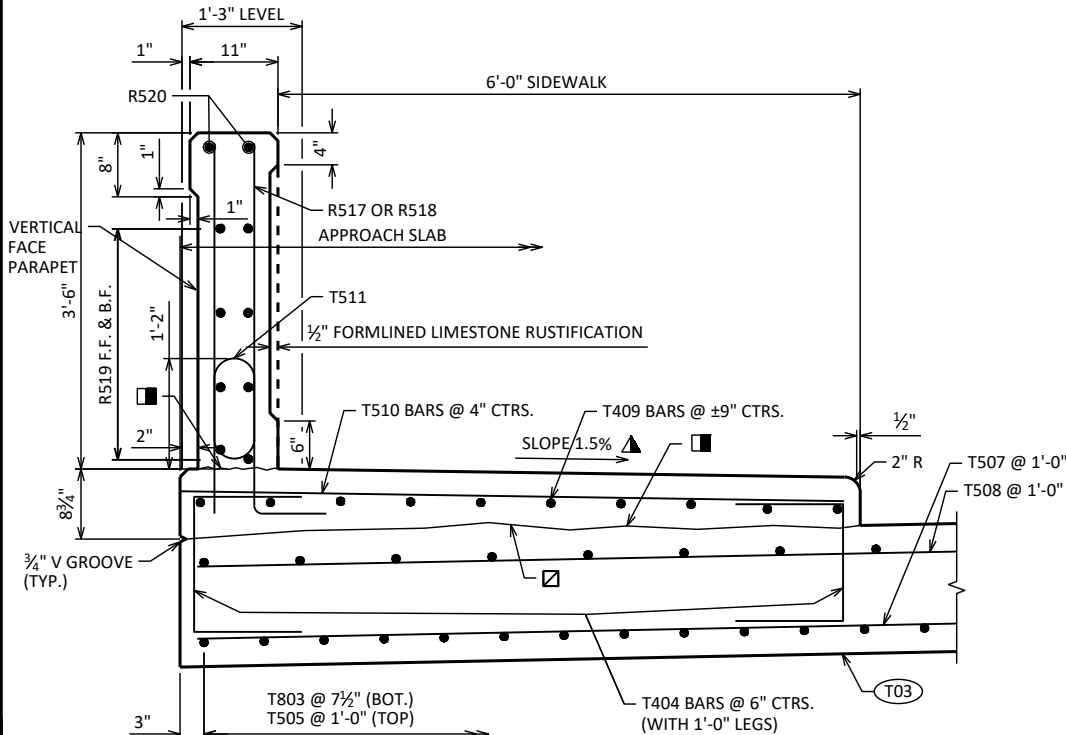


BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

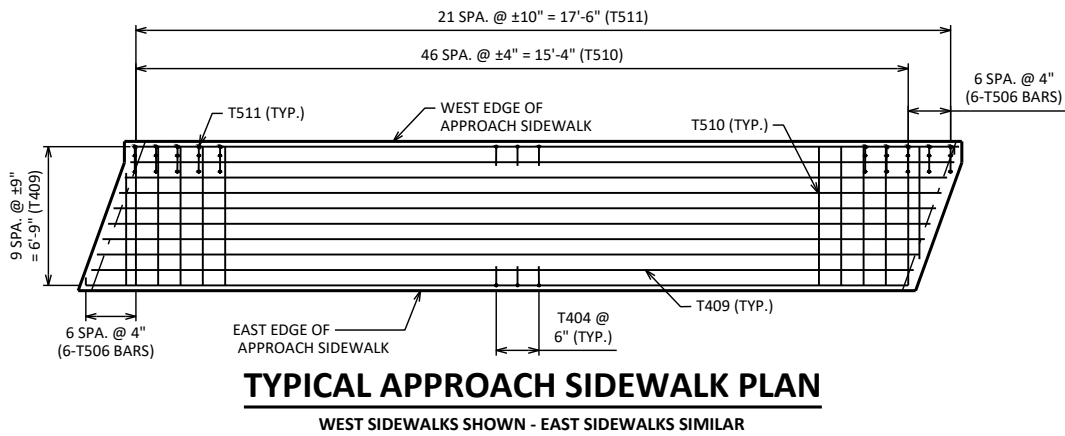
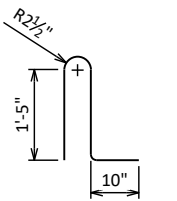
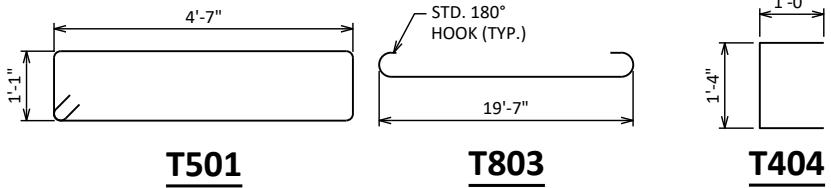
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
T501	X	132	11'-5"	X		APPROACH SLAB FTG. - STIRRUP
T802	X	48	36'-9"			APPROACH SLAB FTG. - TRANSV.
T803	X	218	21'-0"	X		APPROACH SLAB - LONG. - BOTTOM
T404	X	328	3'-2"	X		APPROACH SLAB SIDEWALK TIES
T505	X	134	19'-7"			APPROACH SLAB - LONG - TOP
T506	X	48	2'-11"		Δ	APPROACH SIDEWALK TRANSV.
T507	X	84	36'-2"			APPROACH SLAB - TRANS. - BOTTOM
T508	X	84	36'-4"			APPROACH SLAB - TRANS. - TOP
T409	X	40	19'-8"			APPROACH SIDEWALK LONG.
T510	X	188	6'-8"			APPROACH SIDEWALK TRANSV.
T511	X	88	4'-4"	X		APPROACH PARAPET VERTICAL
T512	X	90	4'-4"	X		BRIDGE PARAPET VERTICAL
T414	X	20	38'-11"			BRIDGE SIDEWALK LONG.
T515	X	210	6'-8"			BRIDGE SIDEWALK TRANSV.
T516	X	24	2'-11"		Δ	BRIDGE SIDEWALK TRANSV.

BAR SERIES TABLE		
MARK	NO. REQ'D	LENGTH
T506	8 SERIES OF 6	7" TO 5'-2"
T516	4 SERIES OF 6	7" TO 5'-2"



SECTION D-D

- CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.
- ▲ +/- 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK X-SLOPE. THE SIDEWALK X-SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL OF THE ENGINEER.



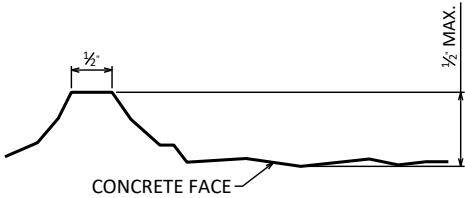
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-40-1101			
DRAWN BY MDG		PLANS CK'D SJM	
STRUCTURAL APPROACH SLAB DETAILS		SHEET 11 OF 13	

GENERAL NOTES

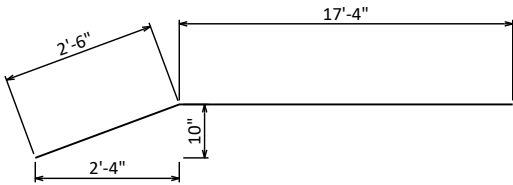
VERTICAL FACE PARAPET CONCRETE IS INCLUDED WITH AND PAID FOR UNDER ITEM 502.0100 CONCRETE MASONRY BRIDGES.

PARAPET AESTHETIC TREATMENT IS PAID FOR UNDER ITEM 517.1050.S.01 ARCHITECTURAL SURFACE TREATMENT B-40-1101.

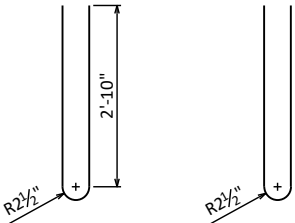
FOR JUNCTION BOX LOCATION REFER TO SHEET 13 ALTERNATE CONSTRUCTION JOINT AND JUNCTION BOX DETAILS.



LIMESTONE RUSTIFICATION DETAIL



R520



R517, R521

R518

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
R517	X	92	6'-5"	X		APPROACH PARAPET VERTICAL
R518	X	24	5'-7"	X	Δ	APPROACH PARAPET VERTICAL
R519	X	32	19'-8"			APPROACH PARAPET LONG.
R520	X	8	19'-10"	X		APPROACH PARAPET LONG. TOP
R521	X	96	6'-5"	X		BRIDGE PARAPET VERTICAL
R522	X	20	38'-11"			BRIDGE PARAPET LONG.

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

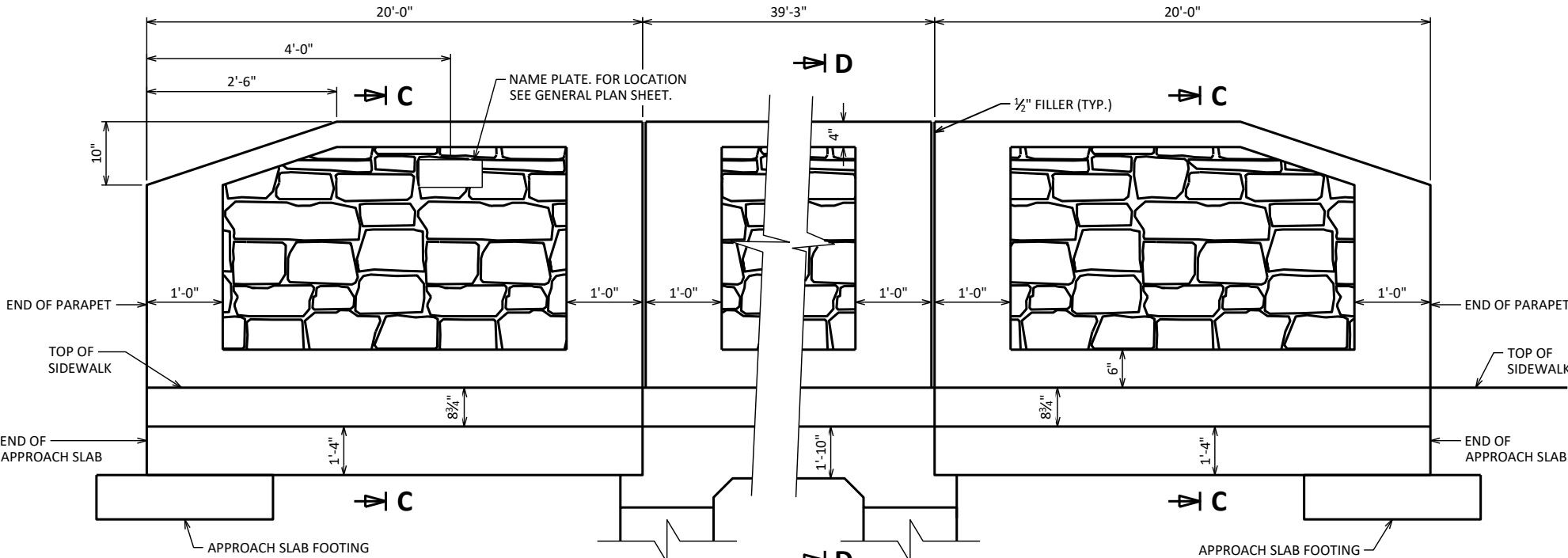
BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY.

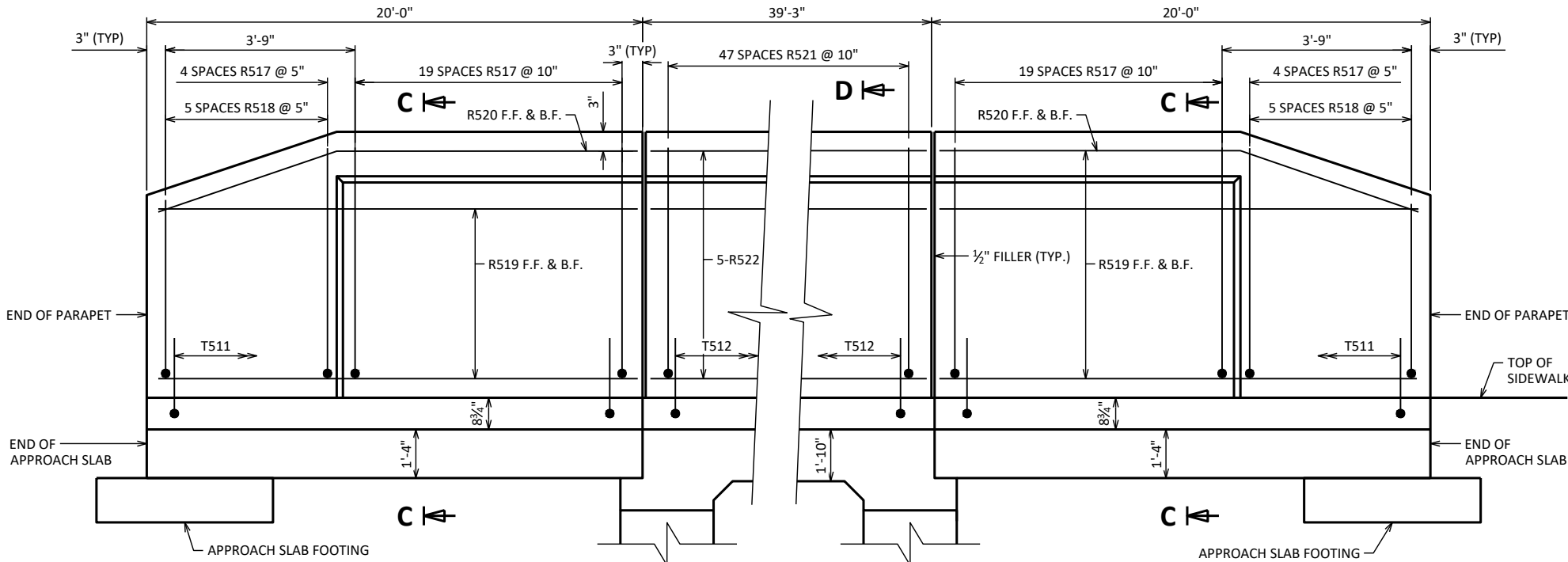
BAR MARK	NO. REQ'D.	LENGTH
R518	4 SERIES OF 6	4'-9" TO 6'-5"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-1101			
DRAWN BY		MDG	PLANS CK'D SJM
VERTICAL FACE PARAPET		SHEET 12 OF 13	

SCALE = NTS



INSIDE ELEVATION OF PARAPET



OUTSIDE ELEVATION OF PARAPET

NOTES

CONDUIT SHALL BE EMBEDDED 2" CLEAR.

USE 2" DIA. RIGID NONMETALLIC CONDUIT (PVC) UNLESS NOTED OTHERWISE.

CONDUIT FITTINGS, CONDUIT BENDS, AND ADAPTER FITTINGS INCIDENTAL TO CONDUIT WORK.

CONDUIT BENDS SHALL CONFORM TO THE NATIONAL ELECTRIC CODE.

2'-0" MIN. CONDUIT COVER UNDER ROADWAYS, 1'-6" OTHERWISE. CONDUIT COVER SHOULD NOT EXCEED 3'-0".

PROVIDE JUNCTION BOXES FROM THE APPROVED PRODUCTS LIST.

LEGEND

USE 2" DIA. RIGID METALLIC (RMC) CONDUIT AT FITTINGS. PROVIDE RMC FOR 3'-0" MIN. ON EACH SIDE OF JOINT OPENINGS UNLESS NOTED OTHERWISE.

NONMETALLIC CONDUIT TO METALLIC CONDUIT ADAPTER FITTING (UL OR NRTL LISTED FOR ELECTRICAL USE SHALL BE USED)

SPONGE RUBBER WRAP TO BE AASHTO M153, TYPE 1 OR EQUIVALENT - 3/4" MINIMUM THICKNESS. PROVIDE WRAP FOR THE ENTIRE LENGTH OF THE FITTING OR AS SHOWN. SPONGE RUBBER WRAP INCIDENTAL TO "CONDUIT RIGID METALLIC 2-INCH".

POSITION MOVABLE END OF CONDUIT INSIDE EXPANSION FITTING, SUCH THAT IT WILL HAVE THE SAME ALLOWANCE FOR MOVEMENT (EXPANSION/CONTRACTION) AS THE EXPANSION DEVICE SET IN PLACE IN THE DECK BELOW IT. TAKE CARE TO INSTALL EXPANSION FITTING AND CONDUIT EXACTLY PARALLEL TO BRIDGE MOVEMENT.

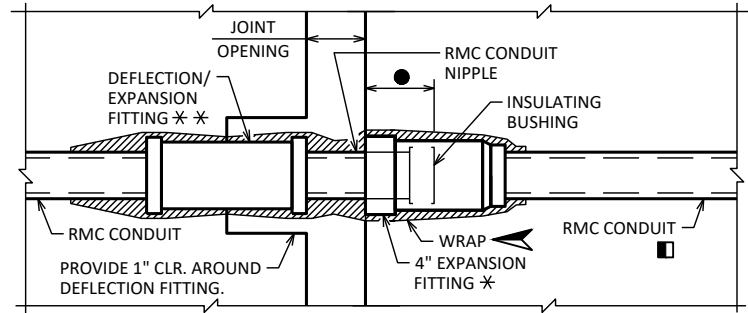
USE 2" DIA. RIGID NONMETALLIC CONDUIT EXCEPT AT THE EXPANSION FITTINGS. AT EXPANSION FITTINGS USE RIGID METALLIC CONDUIT 3'-0" INTO PARAPET ON DECK AND WING SIDES OF THE JOINT OPENING.

LOCATION OF CONDUIT IS MEASURED FROM THE OUTSIDE EDGE OF THE JUNCTION BOX.

EXPANSION FITTING REQUIREMENTS (IF USED):
4" TOTAL CONDUIT MOVEMENT WITH BONDING JUMPER

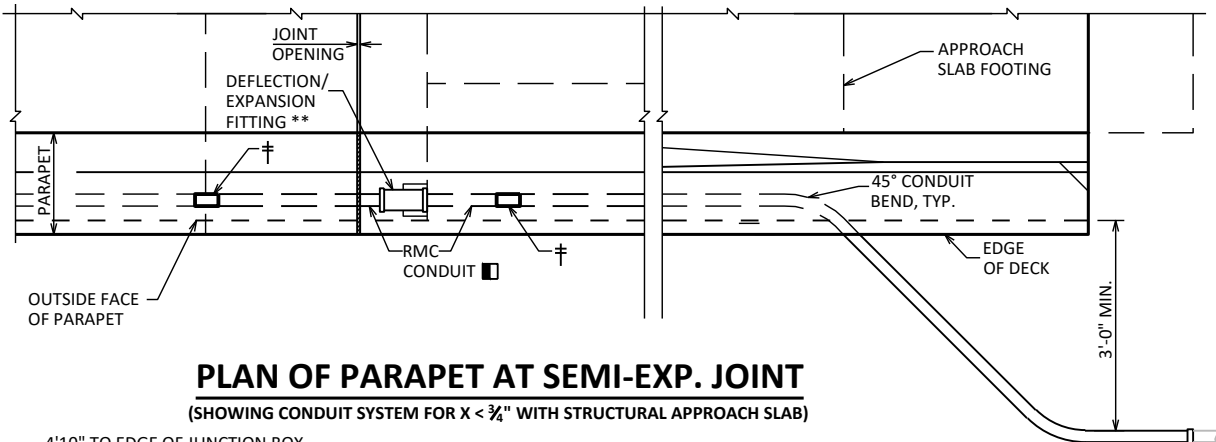
DEFLECTION/EXPANSION FITTING REQUIREMENTS (IF USED):
UP TO 3/4" CONDUIT CONTRACTION OR EXPANSION AND UP TO 30 DEGREES OF ANGULAR MISALIGNMENT IN ANY DIRECTION WITH BODING JUMPER

CUT OUT +/- 1" OF GASKET AT THE BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE.



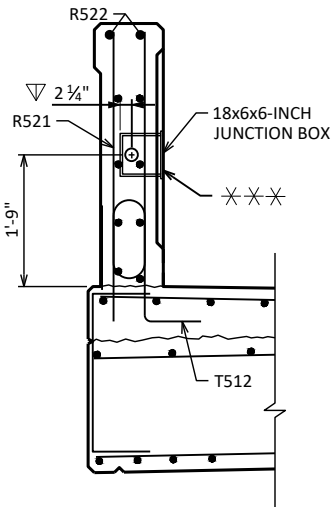
DEFLECTION/EXPANSION AND 4" EXPANSION FITTING

THIS DETAIL ACCOMMODATES A MAXIMUM OF 4" TOTAL MOVEMENT AND UP TO 30 DEGREES OF ANGULAR MISALIGNMENT IN ANY DIRECTION. BOND JUMPER NOT SHOWN FOR CLARITY.

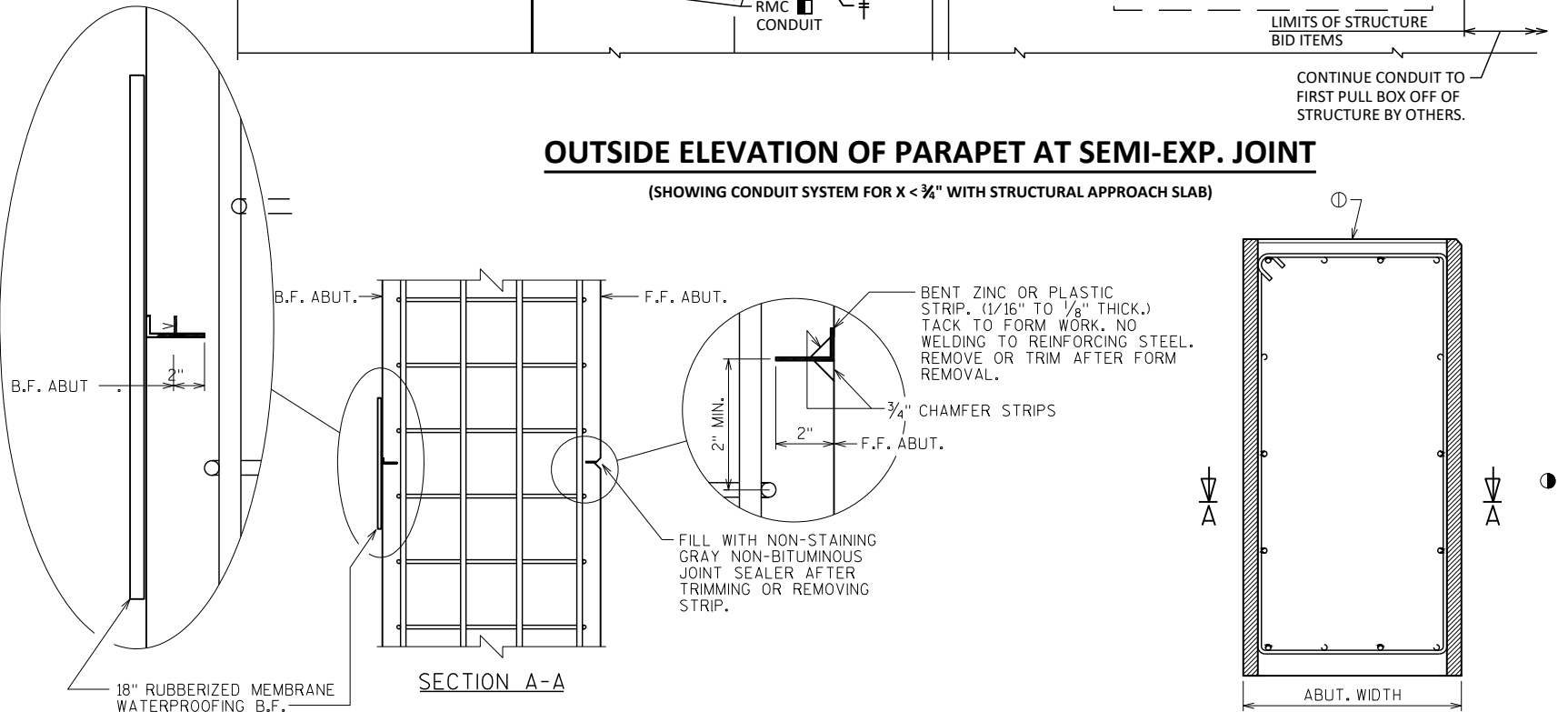


PLAN OF PARAPET AT SEMI-EXP. JOINT

(SHOWING CONDUIT SYSTEM FOR X < 3/4" WITH STRUCTURAL APPROACH SLAB)



SECTION THRU PARAPET AT JUNCTION BOX



OUTSIDE ELEVATION OF PARAPET AT SEMI-EXP. JOINT

(SHOWING CONDUIT SYSTEM FOR X < 3/4" WITH STRUCTURAL APPROACH SLAB)

ALT. CONSTRUCTION JOINT NOTE

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAWCUTTING THE CONSTRUCTION JOINT IS NOT ALLOWED

USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-40-1101			
DRAWN BY MDG		PLANS CK'D SJM	
ALT. CONST. JOINT AND JCT BOX DETAILS		SHEET 13 OF 13	

DIVISION 1 - 6TH-ST

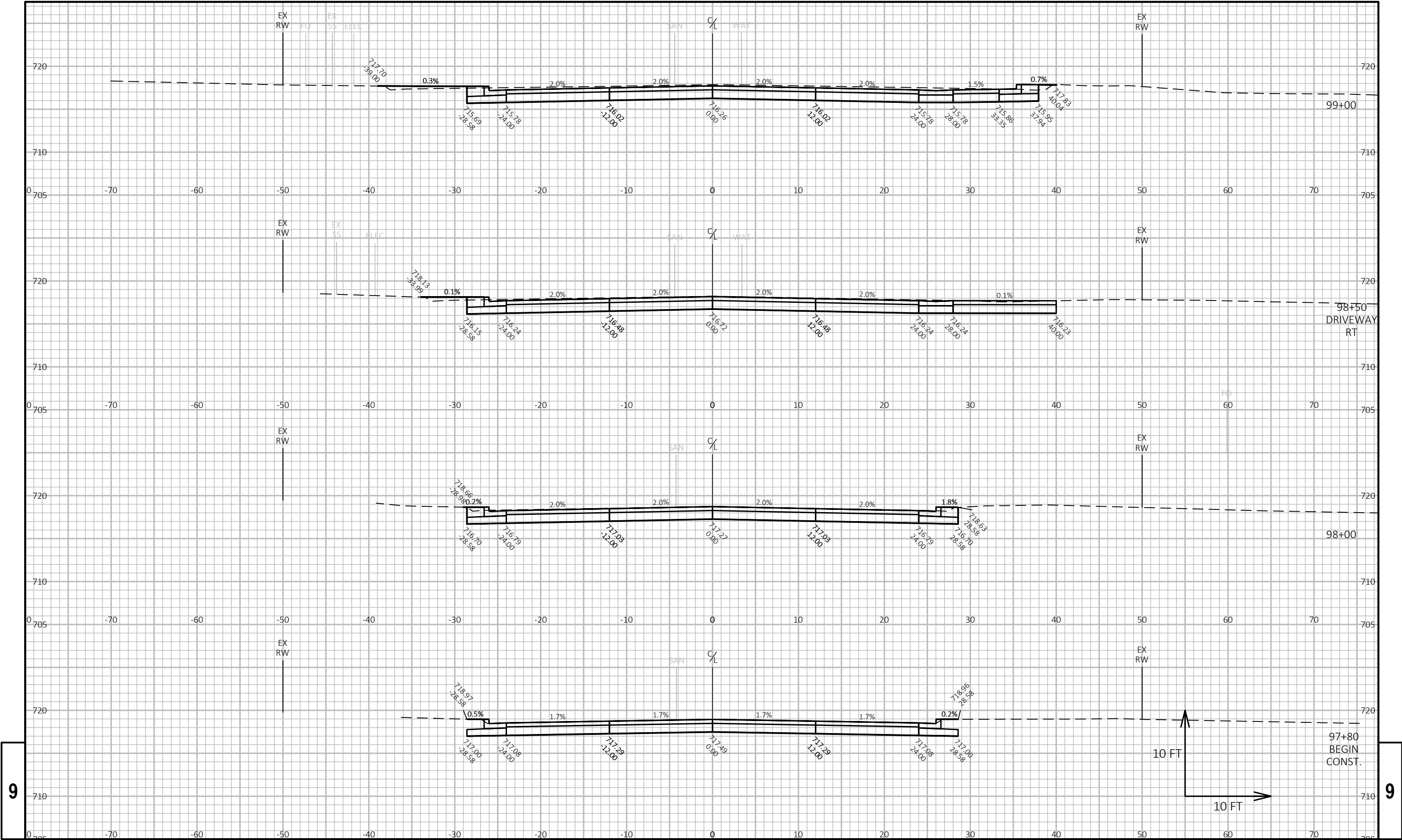
STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.20	NOTE 8
97+80.00	9780.00	0.00	85.32	34.00	0.00	0	0	0	0	0	0
98+00.00	9800.00	20.00	85.99	36.13	0.00	63	26	0	63	0	37
98+50.00	9850.00	50.00	104.27	43.21	1.84	176	73	2	239	2	138
99+00.00	9900.00	50.00	109.25	50.29	3.56	198	87	5	437	8	243
99+50.70	9950.70	50.70	95.18	38.25	7.83	192	83	11	629	22	338
99+92.01	9992.01	41.31	0.00	38.25	0.00	73	59	6	702	29	345
100+07.99	10007.99	15.98	0.00	38.25	0.00	0	23	0	702	29	322
100+49.30	10049.30	98.60	83.02	42.50	9.80	325	147	32	1,027	60	478
101+00.00	10100.00	50.70	93.99	44.63	4.09	166	82	13	1,193	76	546
101+50.00	10150.00	50.00	121.65	37.54	0.00	200	76	4	1,393	80	666
101+64.95	10164.95	14.95	93.46	36.13	0.27	60	20	0	1,453	80	706
101+74.50	10174.50	9.55	28.97	3.54	0.00	22	7	0	1,475	80	721

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	[CUT - SALVAGED PAVT - ((FILL) * FILL FACTOR)]

DIVISION 1 - OAK CREEK

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.20	NOTE 8
0+47.60	47.60	0.00	70.12	12.00	0.00	0	0	0	0	0	0
0+75.00	75.00	27.40	68.56	18.00	2.48	70	15	1	70	1	54
1+00.00	100.00	25.00	50.98	23.00	87.84	55	19	42	125	52	39
1+25.00	125.00	25.00	213.89	10.00	14.46	123	15	47	248	108	91
1+40.00	140.00	15.00	209.86	7.00	0.00	118	5	4	366	113	199
1+50.00	150.00	10.00	166.13	7.00	0.00	70	3	0	436	113	266
1+75.00	175.00	25.00	192.55	7.00	0.00	166	6	0	602	113	426
2+00.00	200.00	25.00	163.86	7.00	0.00	165	6	0	767	113	585
2+10.00	210.00	10.00	205.29	7.00	0.00	68	3	0	835	113	650
2+25.00	225.00	15.00	218.12	9.33	6.57	118	5	2	953	115	761
2+50.00	250.00	25.00	47.35	22.33	98.67	123	15	49	1,076	174	810
2+75.00	275.00	25.00	39.17	18.33	11.27	40	19	51	1,116	235	770
3+00.00	300.00	25.00	19.04	12.67	5.03	27	14	8	1,143	245	773
3+25.00	325.00	25.00	20.35	12.33	2.78	18	12	4	1,161	250	774
3+56.67	356.67	31.67	12.12	12.00	0.70	19	14	2	1,180	252	777

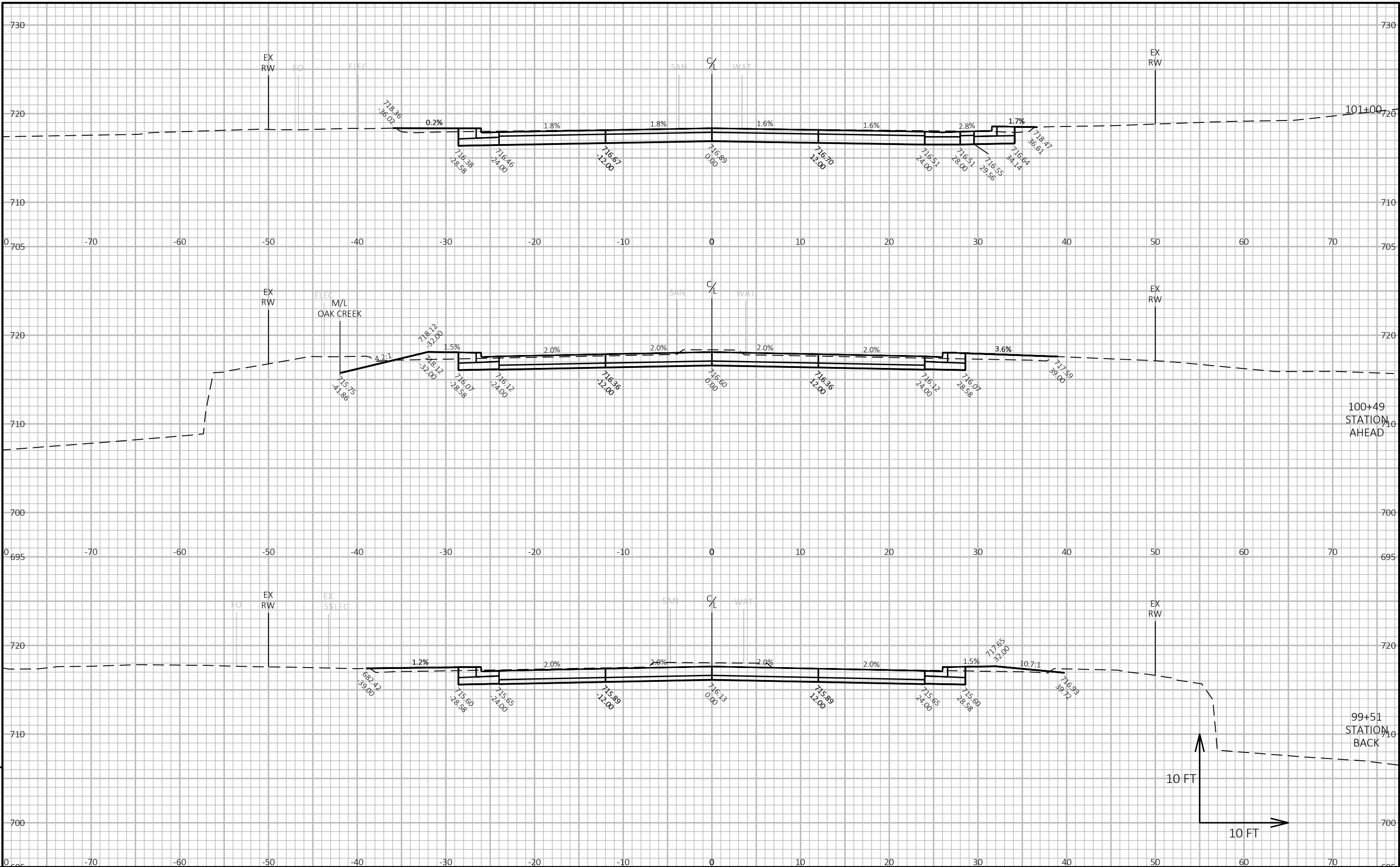
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	[CUT - SALVAGED PAVT - ((FILL) * FILL FACTOR)]

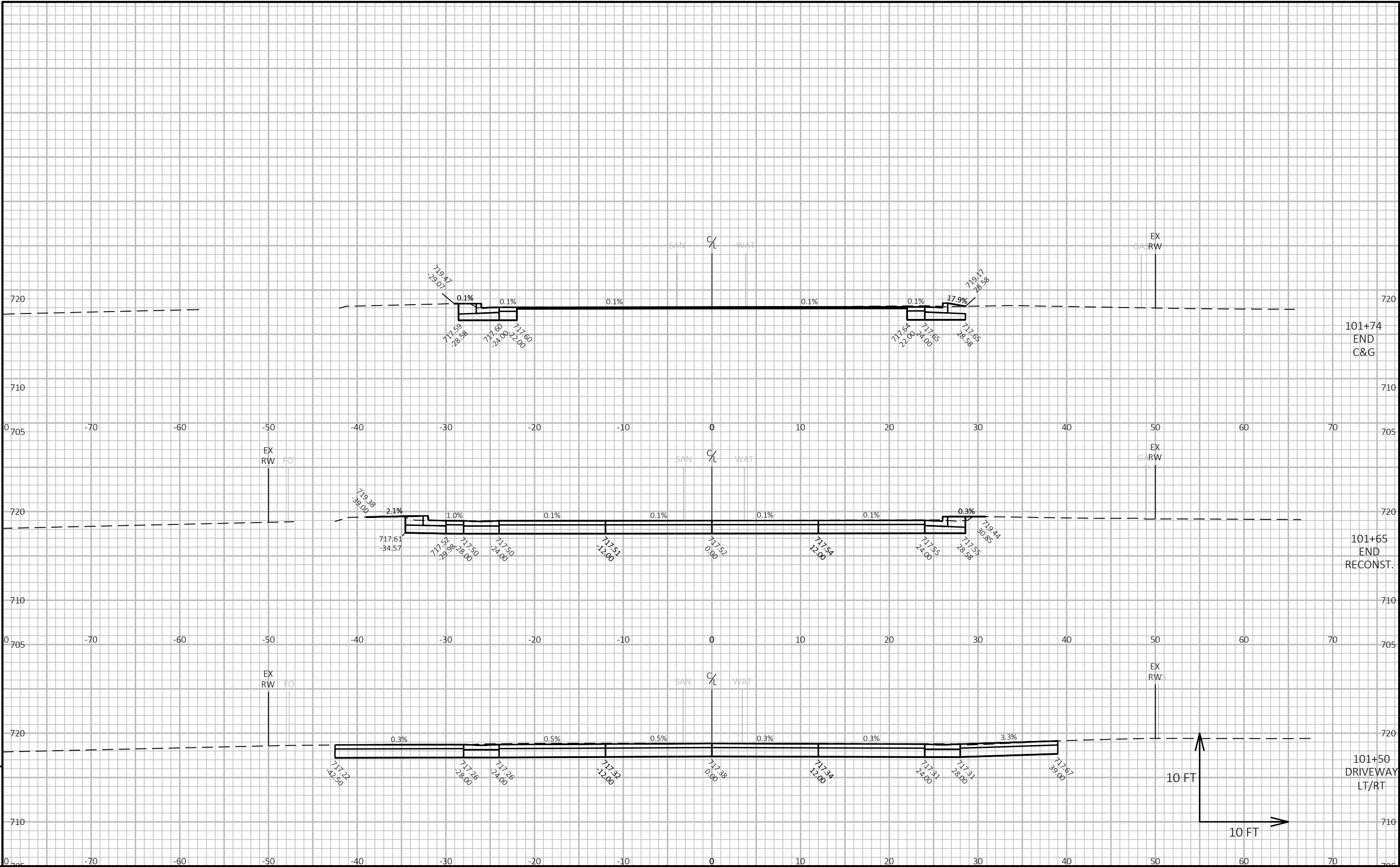


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PROJECT NO: 2235-00-74	HWY: S. 6TH ST	COUNTY: MILWAUKEE	CROSS SECTIONS: 6TH STREET	SHEET	E
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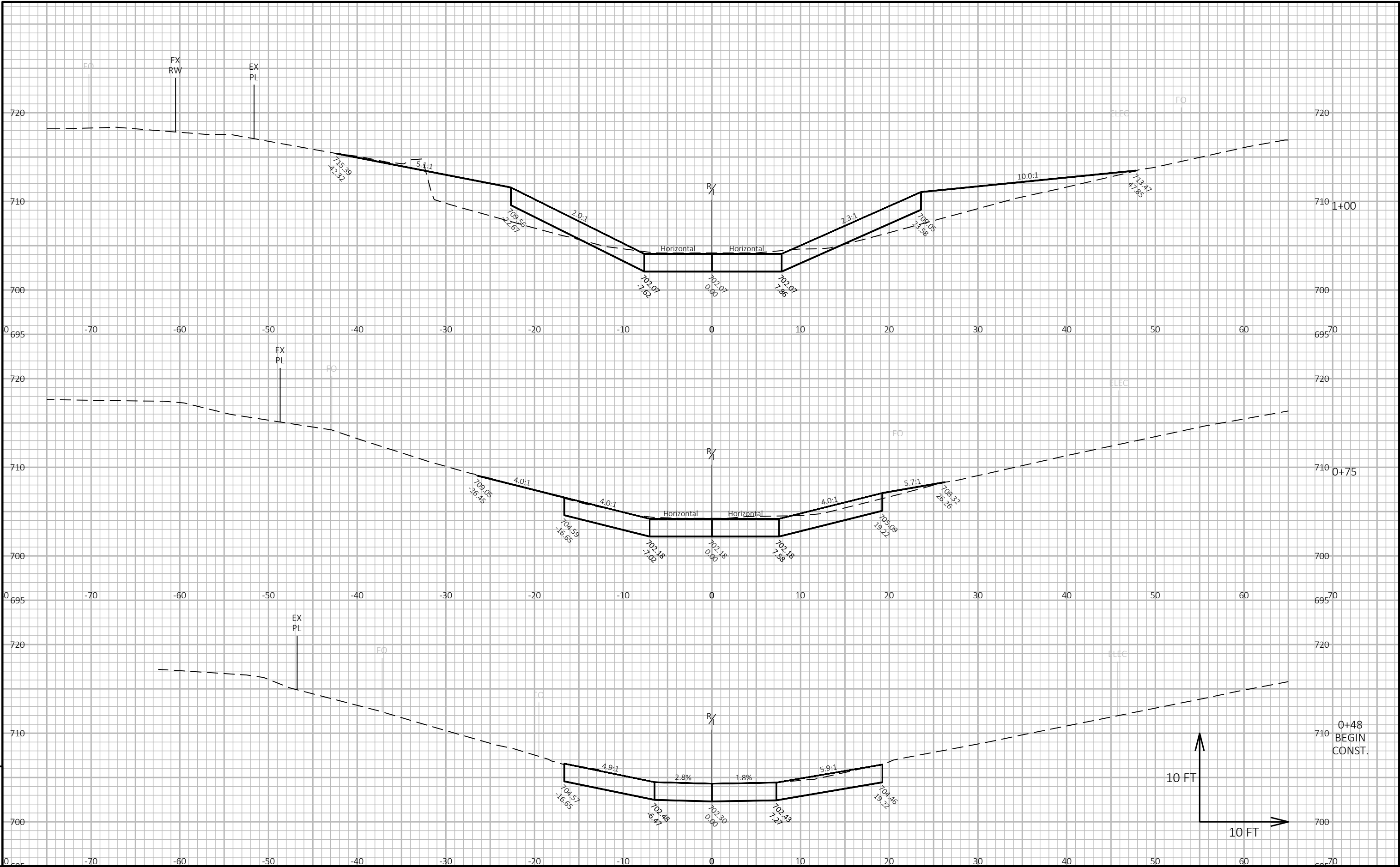


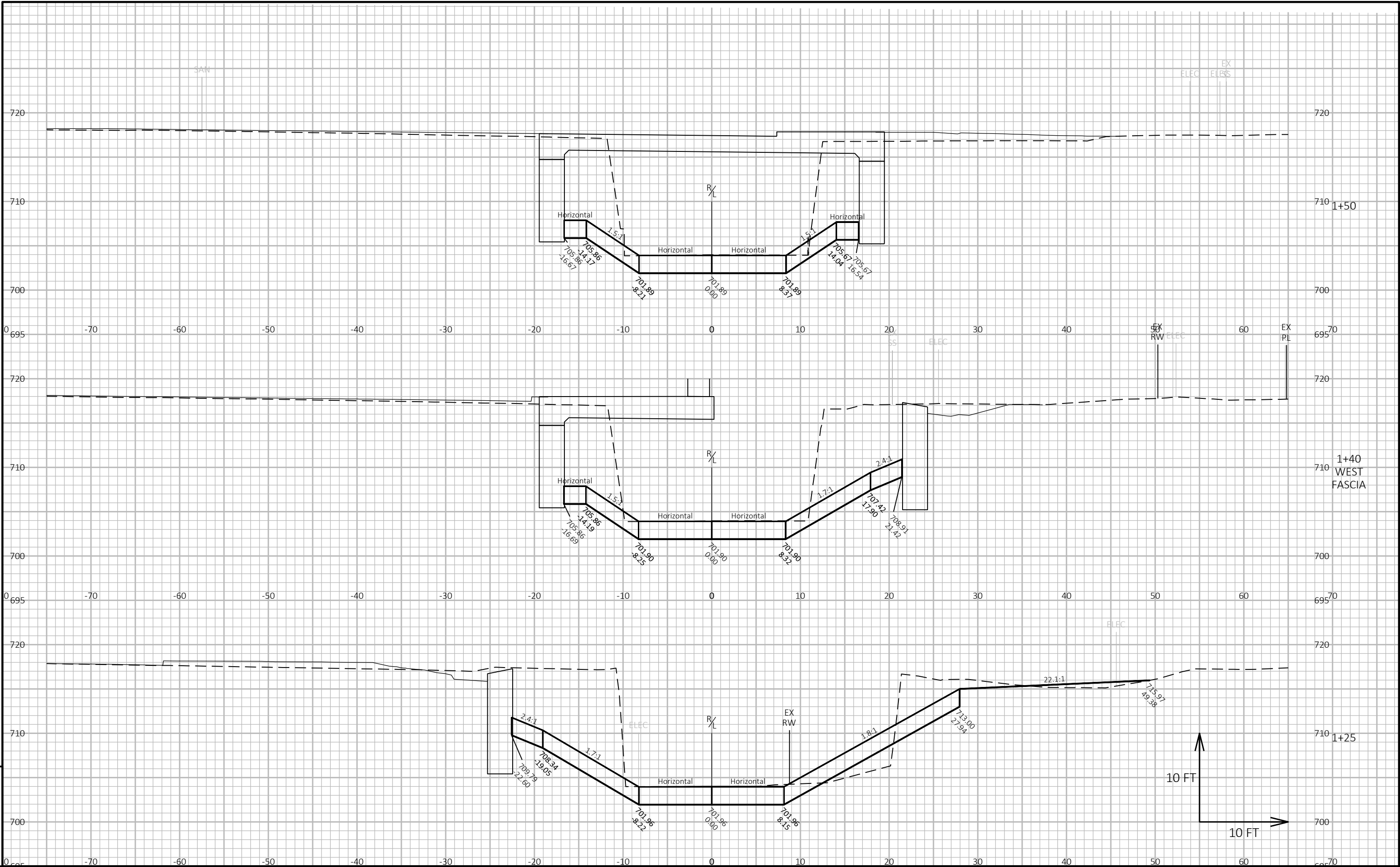


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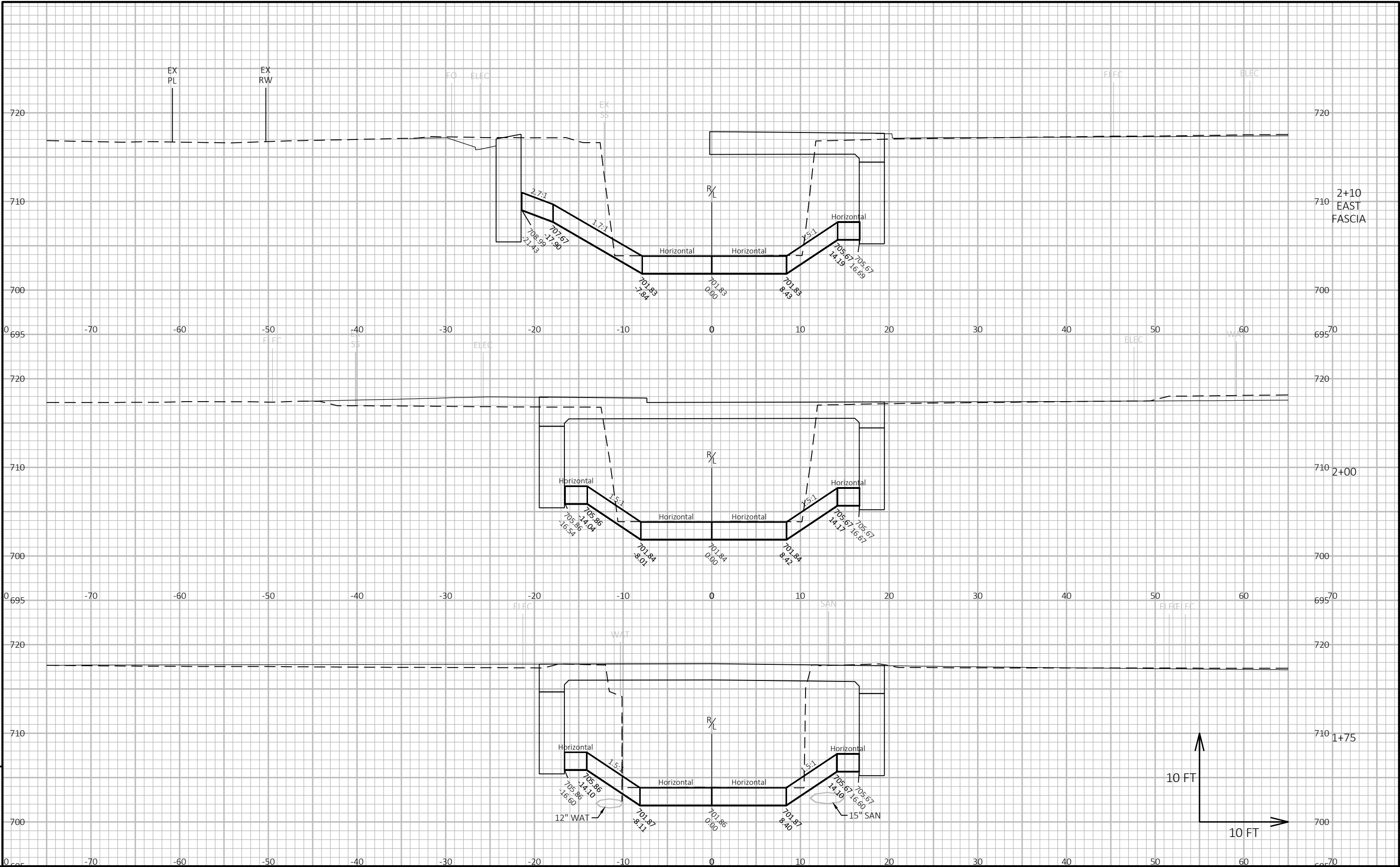
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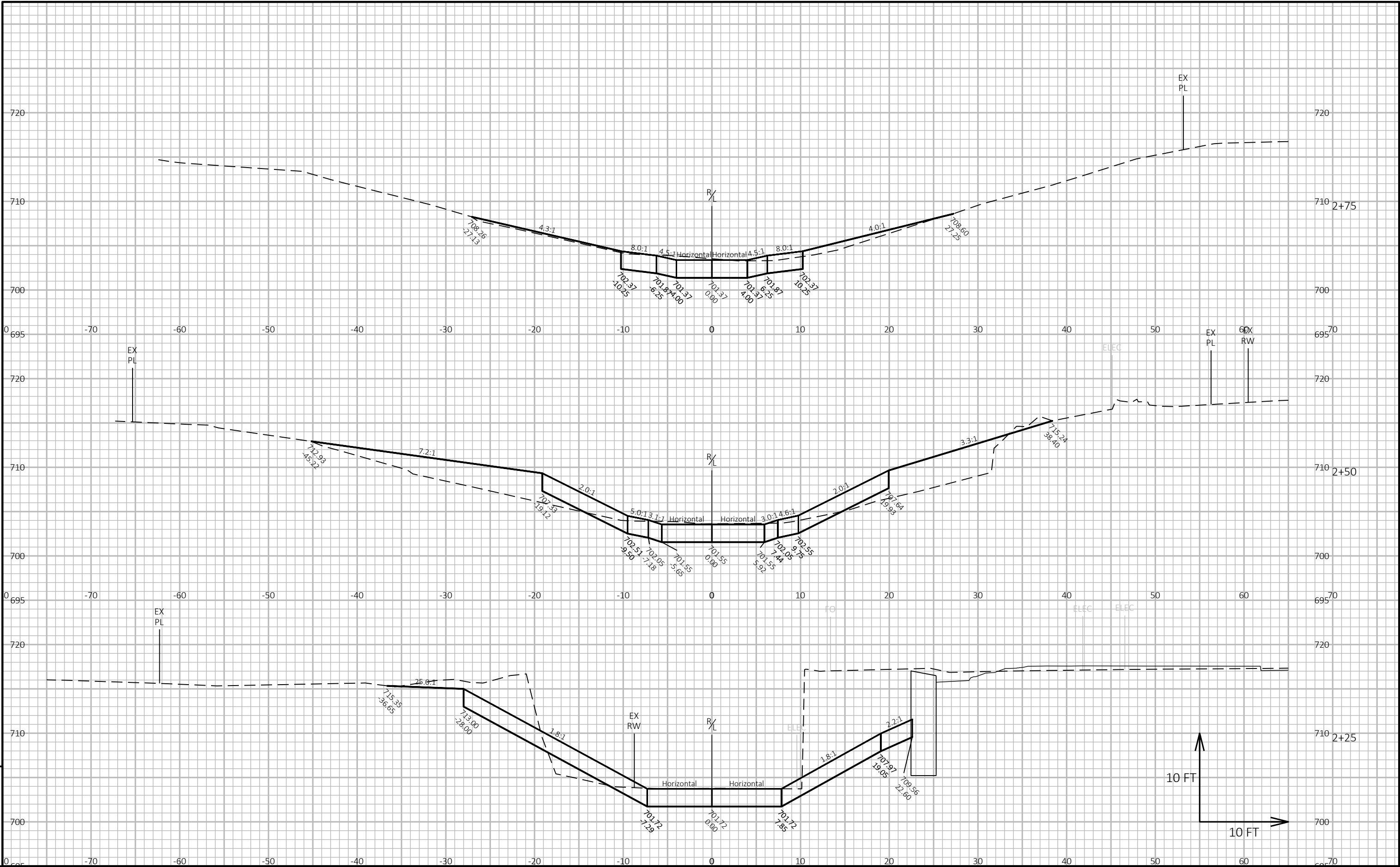
PROJECT NO: 2235-00-74	HWY: S. 6TH ST	COUNTY: MILWAUKEE	CROSS SECTIONS: 6TH STREET	SHEET	E
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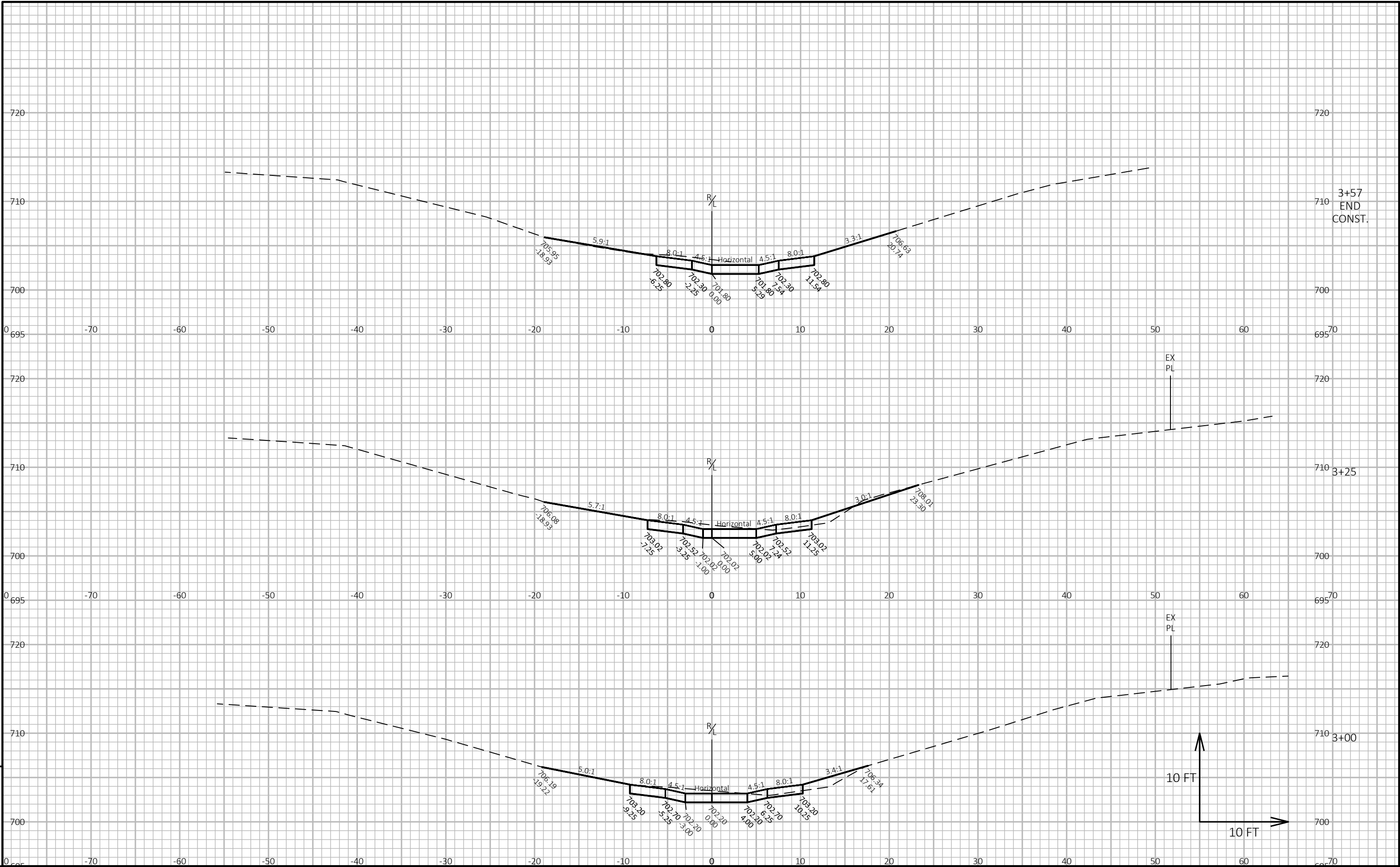


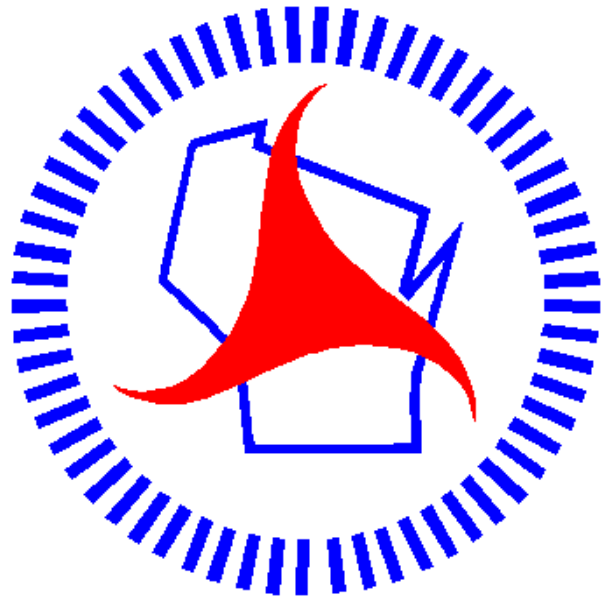
PROJECT NO: 2235-00-74	HWY: S. 6TH ST	COUNTY: MILWAUKEE	CROSS SECTIONS: OAK CREEK	SHEET E
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PROJECT NO: 2235-00-74	HWY: S. 6TH ST	COUNTY: MILWAUKEE	CROSS SECTIONS: OAK CREEK	SHEET E
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Wisconsin Department of Transportation

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