WKE Apr 12, 2022

PROJECT ID: 1360-12-70

WITH:

COUNTY: MILWAUKEE

37

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 = 294



N

DESIGN DESIGNATION N. 107TH ST

A.A.D.T.	2042	=	10,400
A.A.D.T.	2022	=	11,500
D.H.V.		=	-
D.D.		=	-
T.		=	-
DESIGN SPEED		=	-
ESALS		=	35 MPH

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

FOND DU LAC, CITY OF MILWAUKEE

107TH ST. BRIDGE

STH 145

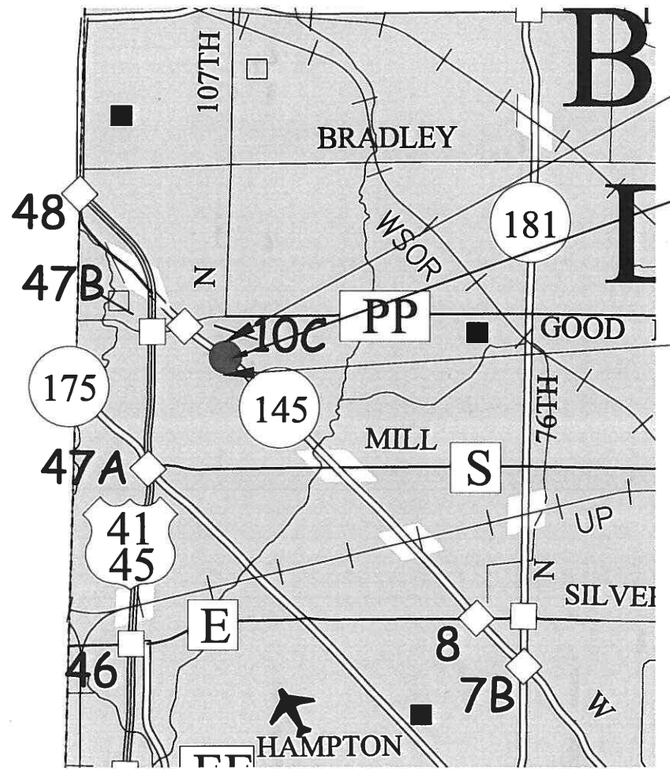
MILWAUKEE COUNTY

STATE PROJECT NUMBER
1360-12-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1360-12-70	WISC 2022326	1

R-21-E

T-8-N



END PROJECT
STA 115+79.17

STRUCTURE B-40-1004 (N 107TH ST)
STRUCTURE R-40-722 (NORTH ABUTMENT)
STRUCTURE R-40-723 (SOUTH ABUTMENT)
STA 110+30.52 - STA 115+79.17

BEGIN PROJECT
STA 110+30.52
X: 569,777.522
Y: 337,927.342

LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.104 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MILWAUKEE COUNTY, 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 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

ORIGINAL PLANS PREPARED BY

benesch
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-308-1310 Job No. 20289.00

WISCONSIN
BENJAMIN J. WEIGAND
E-39495
RACINE, WI
PROFESSIONAL ENGINEER

DATE: 1-19-2022 (Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	GRAEF
Designer	BENESCH
Project Manager	VIDA SHAFFER
Regional Examiner	
Regional Supervisor	REEM SHAHIN

APPROVED FOR THE DEPARTMENT

DATE: 1/20/2022 Vida Shaffer, PE (Signature)

E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\010101_TI.DWG PLOT DATE : 1/19/2022 4:22 PM PLOT BY : WEIGAND, BEN PLOT NAME :

2

GENERAL NOTES

1. 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. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
2. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPALITY OR PUBLIC AGENCY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
3. ALL ELEVATIONS AND OFFSETS SHOWN IN THE PLAN SHALL BE VERIFIED IN THE FIELD.
4. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
5. THE COST OF GRADING, CONSTRUCTING, MAINTAINING, AND REMOVING TEMPORARY ACCESS IS INCIDENTAL TO THE CONTRACT.
6. HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY-IN
7. THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING OR TURNING LANE.

EROSION CONTROL GENERAL NOTES

1. RE-TOPSOIL DISTURBED AREAS, AS DESIGNATED BY THE ENGINEER. SEED AND E-MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.
2. STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED.
3. QUANTITIES FOR EROSION CONTROL ITEMS HAVE BEEN INCLUDED IN THE PROJECT, BUT MAY NOT BE REPRESENTED ON THE PLAN. THE LOCATIONS AND TYPE OF EROSION CONTROL ITEMS WILL BE DETERMINED BY THE CONTRACTOR'S ECIP AND BY THE ENGINEER. EROSION CONTROL ITEMS SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE ITEMS IS NO LONGER REQUIRED.

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANCE (PERCENT)			SLOPE RANCE (PERCENT)			SLOPE RANCE (PERCENT)			SLOPE RANCE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	0.08 0.22	0.16 0.30	0.22 0.38	0.12 0.26	0.20 0.34	0.27 0.44	0.15 0.30	0.24 0.37	0.33 0.50	0.19 0.34	0.28 0.41	0.38 0.56
MEDIAN STRIP TURF	0.19 0.24	0.20 0.26	0.24 0.30	0.19 0.25	0.22 0.28	0.26 0.33	0.20 0.26	0.23 0.30	0.30 0.37	0.20 0.27	0.25 0.32	0.30 0.40
SIDE SLOPE TURF	0.25 0.34	0.27 0.36	0.25 0.32	0.30		0.27 0.34			0.28 0.36			0.30 0.38
PAVEMENT:												
ASPHALT	0.70 - 0.95											
CONCRETE	0.80 - 0.95											
BRICK	0.70 -0.80											
DRIVES, WALKS	0.75 - 0.85											
ROOFS	0.75 - 0.95											
GRAVEL ROADS, SHOULDERS	0.40 - 0.60											

TOTAL PROJECT AREA = 1.10 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.10 ACRES

DIGGERS HOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

PAVEMENT LOCATION	TOTAL PAVEMENT THICKNESS	LAYER	TYPE
107th ST	5"	1.75" UPPER 3.25" LOWER	4 LT 58-28 S
STH 145 SHOULDERS	5"	1.75" UPPER 3.25" LOWER	4 LT 58-28 S

UTILITIES

COMMUNICATIONS
AT&T WISCONSIN - COMMUNICATION LINE
JAY BULANEK
435 S 95th St
Milwaukee, WI 53214
PHONE: (414) 491-2855
EMAIL: JB5175@ATT.COM

COMMUNICATIONS
CITY OF MILWAUKEE - COMMUNICATIONS
JOE MACIEJEWSKI
EMAIL: JOE.MACIEJEWSKI@MILWAUKEE.GOV

UNDERGROUND CONDUIT
CITY OF MILWAUKEE - UNDERGROUND CONDUIT
ENG-KIE LEE
841 N BROADWAY
MILWAUKEE, WI 53202
PHONE: (414) 286-2174
EMAIL: ELEE@MILWAUKEE.GOV

ELECTRICITY
CITY OF MILWAUKEE - STREET LIGHTING
ENG-KIE LEE
841 N BROADWAY
MILWAUKEE, WI 53202
PHONE: (414) 286-2174
EMAIL: ELEE@MILWAUKEE.GOV

SEWER
CITY OF MILWAUKEE - SEWER
ZAFAR YOUSUF
841 N BROADWAY
MILWAUKEE, WI 53202
PHONE:
EMAIL: ZYOUSU@MILWAUKEE.GOV

WATER
CITY OF MILWAUKEE - MILWAUKEE WATER WORKS
DAVE GOLDAPP
841 N BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-708-2695
EMAIL: DAVE.GOLDAPP@MILWAUKEE.GOV

CITY SIGNALS
CITY OF MILWAUKEE - SIGNALS
SCOTT REINBACHER
841 N BROADWAY ST, RM 902
MILWAUKEE, WI 53202
PHONE:
EMAIL: SREINB@MILWAUKEE.GOV

COMMUNICATIONS
EVERSTREAM
SHAD GARCIA
324 E WISCONSIN AVE, SUITE 730
MILWAUKEE, WI 53202
PHONE: (414) 522-6685
EMAIL: SGARCIA@EVERSTREAM.NET

LEVEL 3
Brahim Gaddour
3235 Intertech Dr Suite 600
Brookfield WI 53045
PHONE: (414) 908-1027
EMAIL: brahim.gaddour@lumen.com

COMMUNICATIONS
SPECTRUM
BEAU ABUYA
1320 N DR MARTIN LUTHER KIND JR DR
MILWAUKEE, WI 53212
PHONE: (414) 758-9241
EMAIL: WIS.ENGINEERING@CHARTER.COM

VERIZON BUSINESS
RJ Cicatello Jr.
15725 West Ryerson Road
New Berlin, WI 53151
PHONE: (262) 232-1323
EMAIL: randy.cicatello@verizon.com

STH 145

GAS/PETROLEUM
WE ENERGIES - GAS
Jacob Hulbert
500 S 116TH STREET
WEST ALLIS, WI 53214
PHONE: (414) 944-5575
EMAIL: Jacob.hulbert@we-energies.com

ELECTRICITY
WE ENERGIES - ELECTRICITY
JOE FELLENZ
W140 N9100 LILLY ROAD
MENOMONEE FALLS, WI. 53051
PHONE: (414) 322-8928
EMAIL: Joseph.Fellenz@We-Energies.com

COMMUNICATIONS
WISDOT - COMMUNICATIONS
John Mittelstad
433 W. St. Paul Ave.
Milwaukee, WI 53203 -3007
PHONE: (608) 205-7859
EMAIL: john.mittelstadt@dot.wi.gov

ELECTRICITY
WISDOT - STREET LIGHTING
ERIC PEREA
141 NW BARSTOW STREET
WAUKESHA, WI 53188
PHONE: (262) 574-5422
EMAIL: ERICPEREA@DOT.WI.GOV

WISDOT - ATR
Russell Lewis
3633 Pierstorff St
Madison, WI 53704
PHONE: (608) 516-5754
EMAIL: russell.lewis@dot.wi.gov

OTHER AGENCIES

WISDOT CONTACT
Southeast Region
Vida Shaffer
141 NW BARSTOW ST
WAUKESHA, WI 53188
PHONE: (414) 333-9116
EMAIL: VIDA.SHAFFER@dot.wi.gov

DESIGN CONTACT
Alfred Benesch & Co
Bill Zippel
1300 W Canal St, Suite 150
Milwaukee, WI 53233
PHONE: (414) 308-1310
wzippel@benesch.com

DNR CONTACT
DNR - Southeast Region
Kristina Betzold
2300 N Martin Luther King Jr Dr
Milwaukee, WI 53212
PHONE: (414) 507-4946
EMAIL: kristina.betzold@wisconsin.gov

CITY FORESTRY
CITY OF MILWAUKEE - FORESTRY
JAMES KRINGER
EMAIL: JKRING@MILWAUKEE.GOV

ORDER OF SECTION 2 SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL PLAN
JOINT DETAILS
PLAN DETAILS
EROSION CONTROL
STORM SEWER
CURB RAMP DETAILS
PERMANENT SIGNING
UNDERDECK LIGHTING
CITY OF MKE LIGHTING
CITY OF MKE CUC
PAVEMENT MARKING
TRAFFIC CONTROL
ALIGNMENT PLAN

2

END PROJECT
STA 115+79.17
X: 569782.816
Y: 338475.968

END CONSTRUCTION
STA 18+50.00
X: 569882.735
Y: 338371.279

107TH ST

107th ST OFF RAMP

PC: 15+67.83

PT: 18+96.41

R-40-722

B-40-1004

R-40-723

STH 145 NB

STH 145 SB

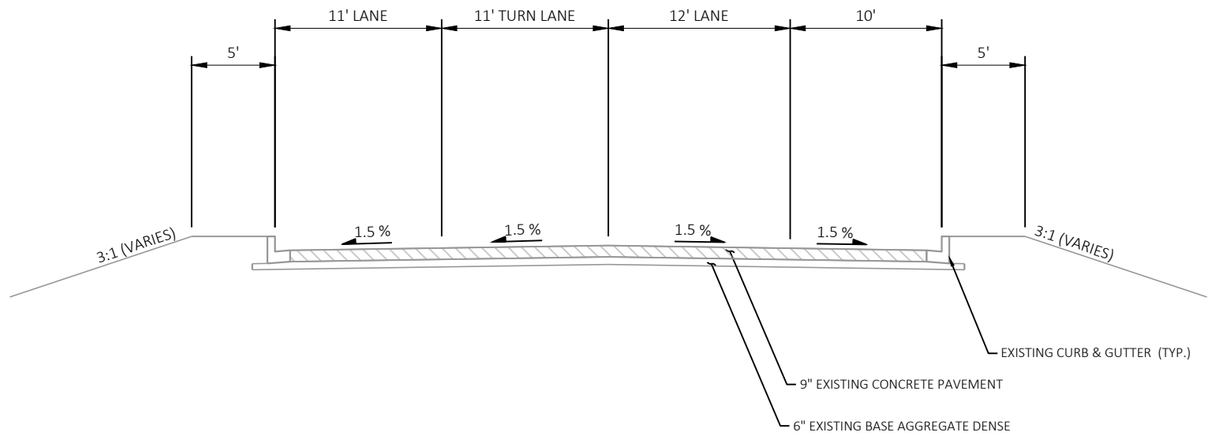
BEGIN PROJECT
STA 110+30.52
X: 569777.522
Y: 337927.342

W. FOND DU LAC AVE

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 3	E

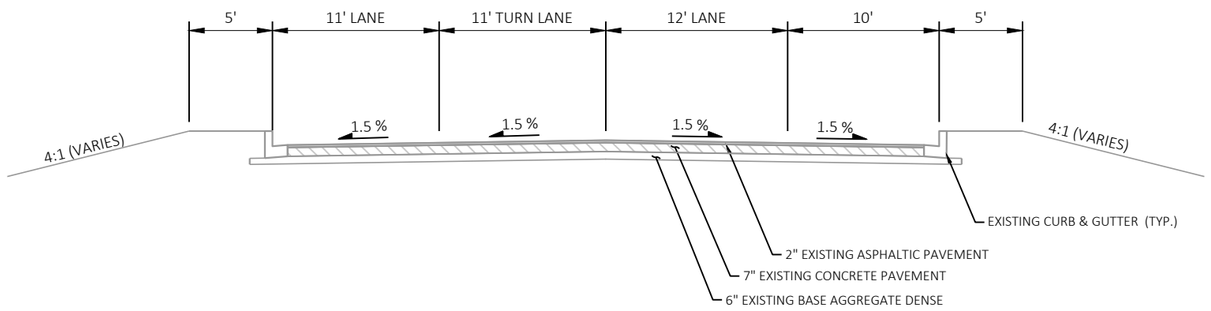
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LAYOUT NAME - 01
PLOT DATE : 1/19/2022 3:12 PM
PLOT BY : WEIGAND, BEN
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2



EXISTING TYPICAL SECTION

STA 111+36.24 - 111+65.12



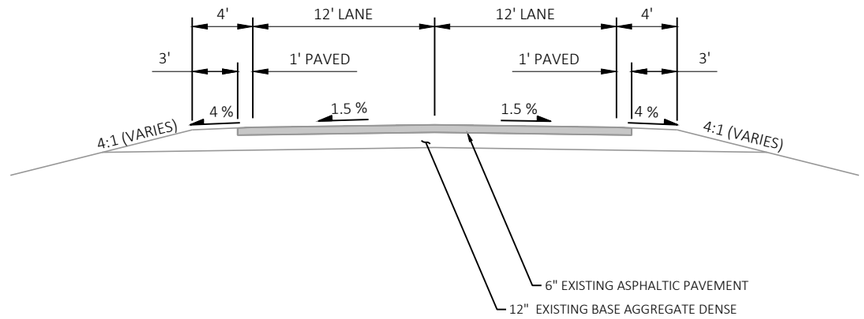
EXISTING TYPICAL SECTION

STA 110+30.52 - 111+36.24

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 4	E

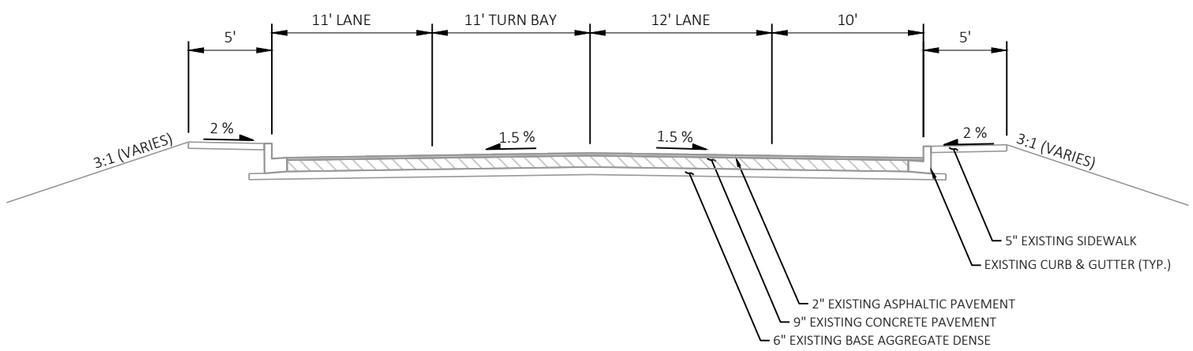
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LAYOUT NAME - 01-10ft
PLOT DATE : 1/19/2022 3:12 PM
PLOT BY : WEIGAND, BEN
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2



EXISTING TYPICAL SECTION

STA 114+59.36 - 115+79.17



EXISTING TYPICAL SECTION

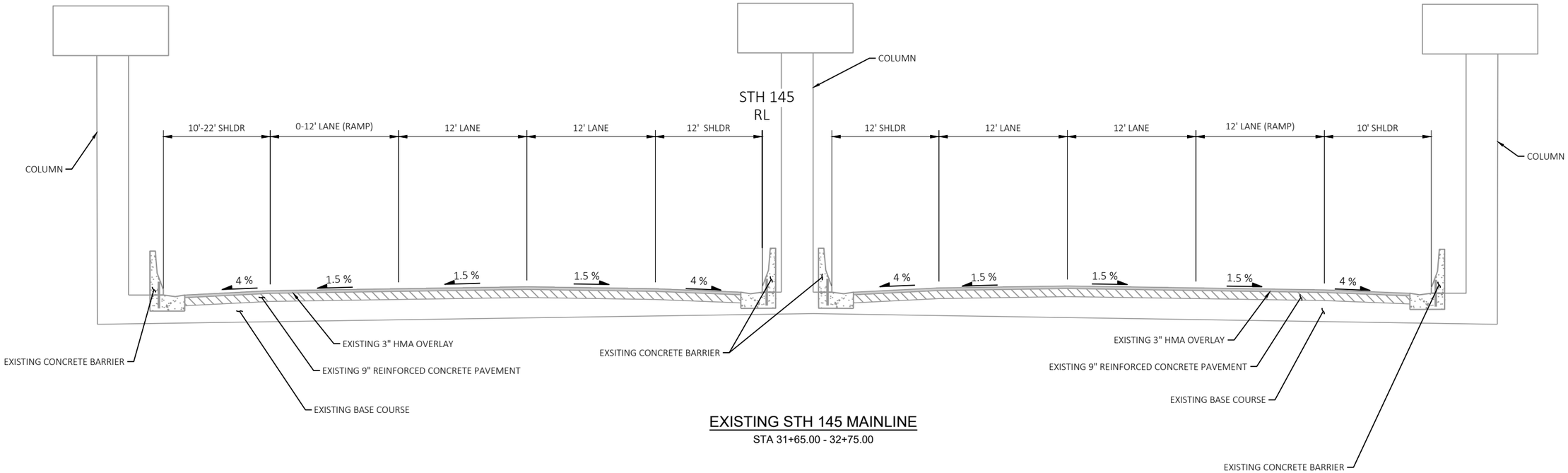
STA 114+14.50 - 114+59.36

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 5	E

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LAYOUT NAME - 02-10ft

PLOT DATE : 1/19/2022 3:12 PM PLOT BY : WEIGAND, BEN PLOT NAME : PLOT SCALE : 1 IN:10 FT

2

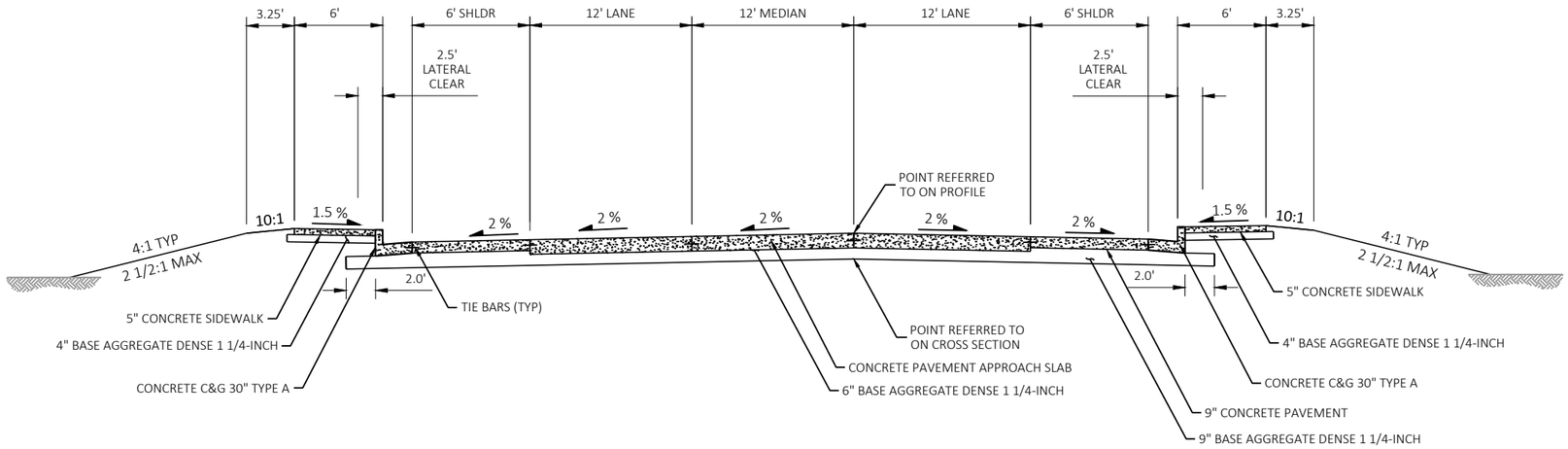


EXISTING STH 145 MAINLINE

STA 31+65.00 - 32+75.00

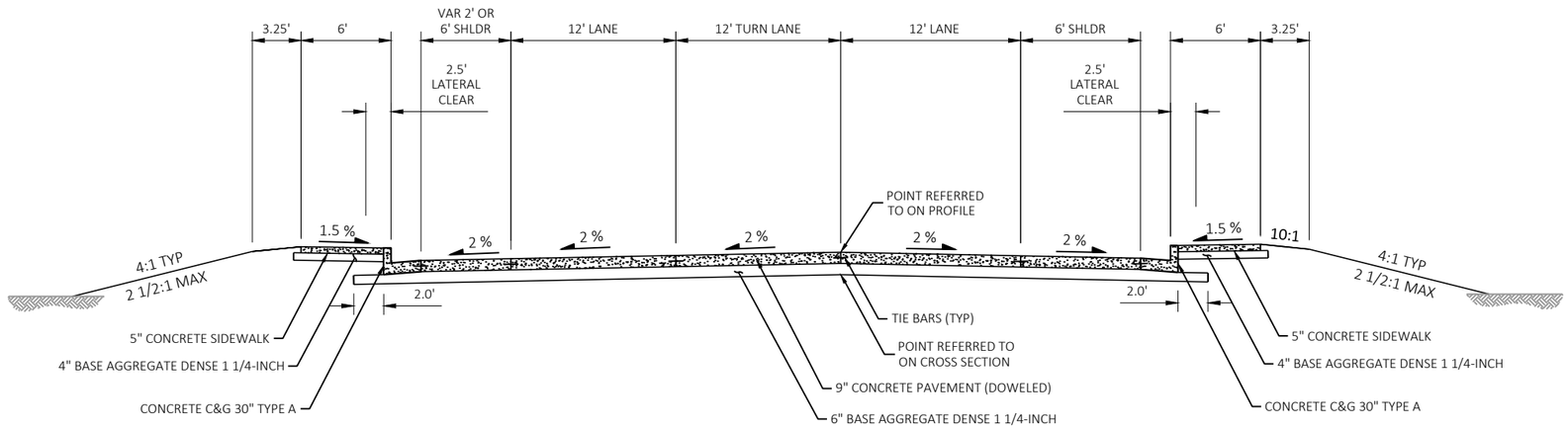
PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 6	E

2



FINISHED BRIDGE APPROACH TYPICAL SECTION

STA 111+63.67 - 111+87.00
STA 113+82.04 - 114+13.69

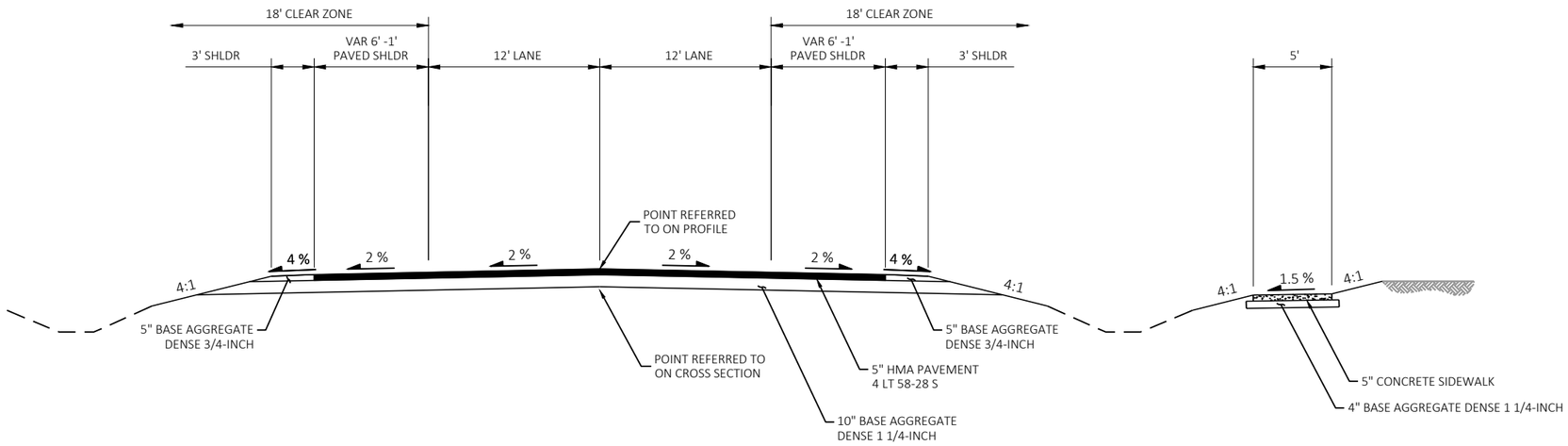


FINISHED TYPICAL SECTION

STA 110+30.52 - 111+63.67

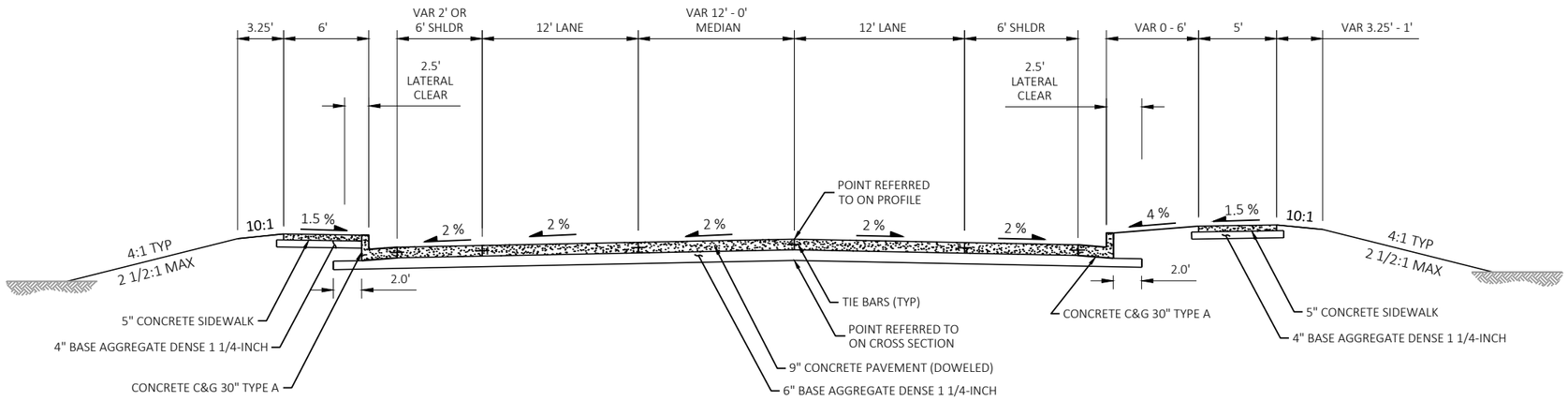
PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 7	E

2



FINISHED TYPICAL SECTION

STA 115+21.32 - 115+79.17

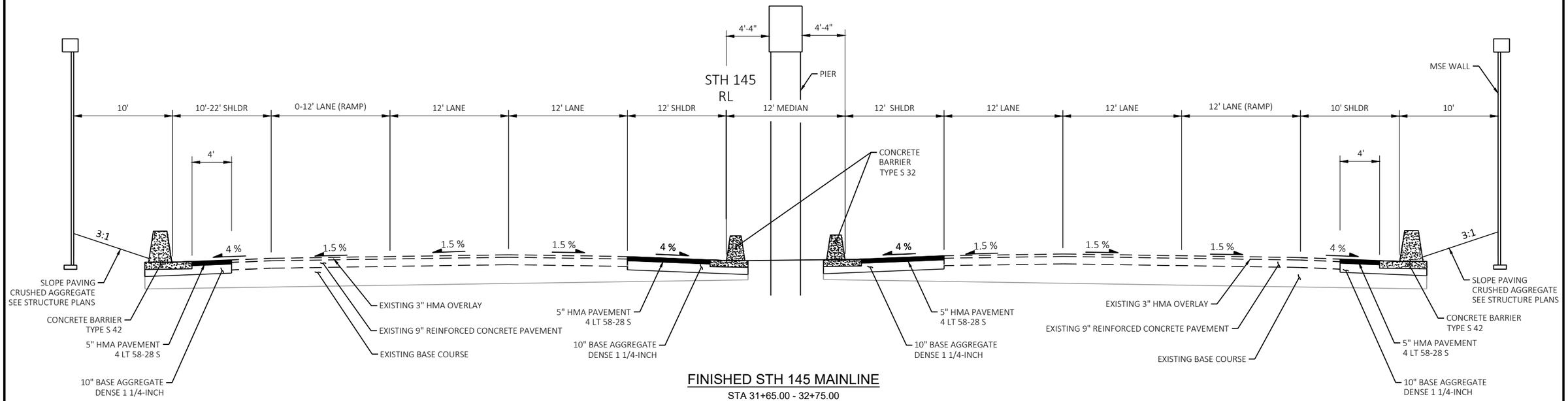


FINISHED TYPICAL SECTION

STA 114+13.69 - 115+21.32

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 8	E

2



FINISHED STH 145 MAINLINE

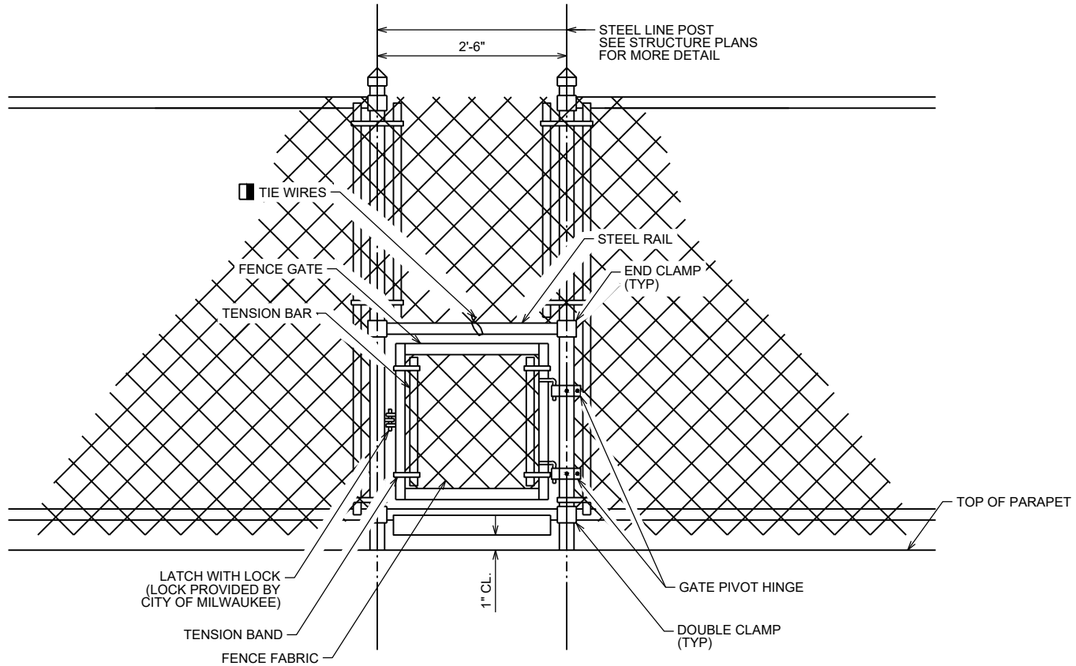
STA 31+65.00 - 32+75.00

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 9	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\020301_TS.DWG
LAYOUT NAME - 06-10ft

PLOT DATE : 1/19/2022 3:21 PM PLOT BY : WEIGAND, BEN PLOT NAME : PLOT SCALE : 1 IN:10 FT

2



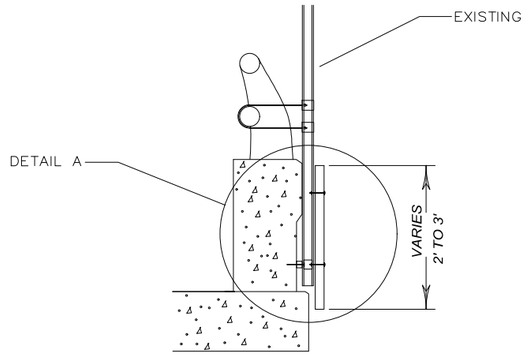
GATE DETAIL

TYPICAL AT LIGHT STANDARD BASES
(2 REQUIRED)

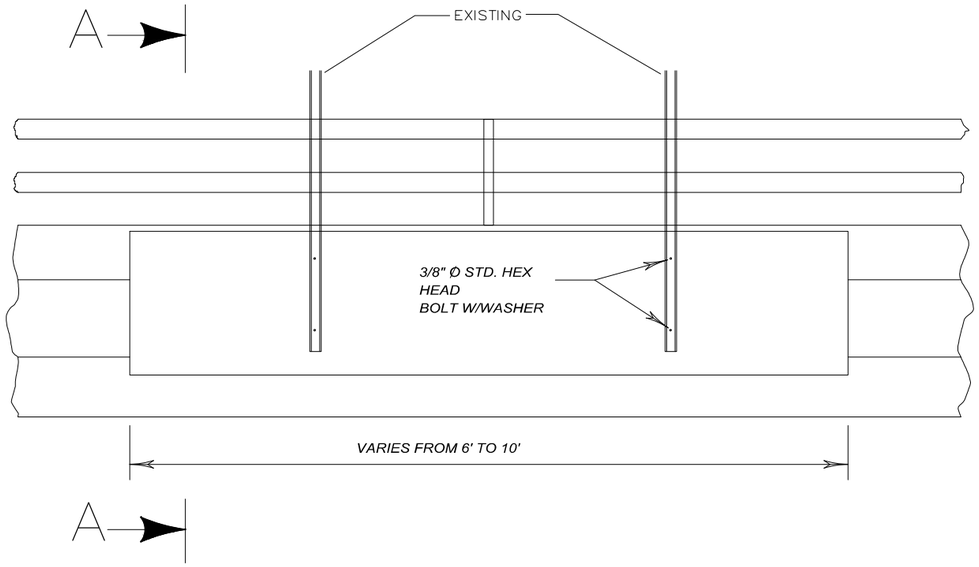
GATE ASSEMBLY & ALL REQUIRED HARDWARE
TO BE INCLUDED IN THE BID ITEM "GATE ASSEMBLY"

GATE ASSEMBLY TO BE APPROVED BY
THE ENGINEER PRIOR TO CONSTRUCTION

◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES(ROUND, 9-GAGE) SPACED AT 1'-0".



SECTION A–A
SIDE VIEW

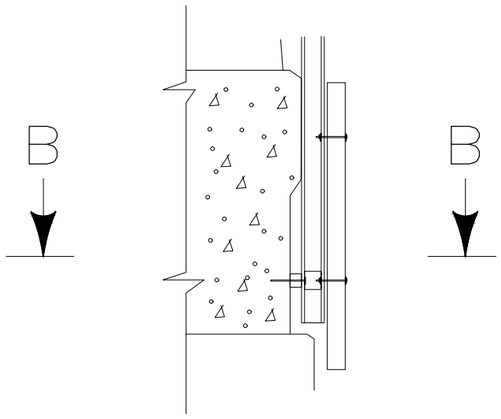


FRONT VIEW

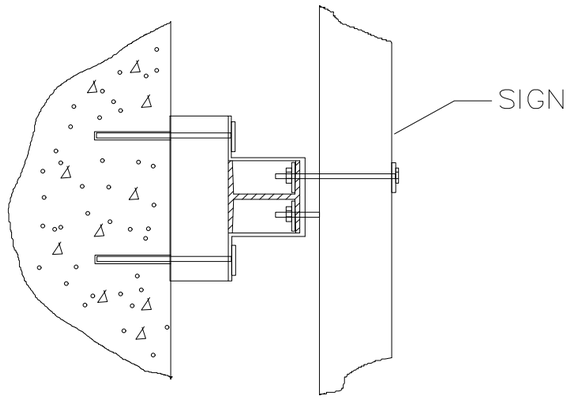
NOTES:

PROVIDE NEW BOLTS.

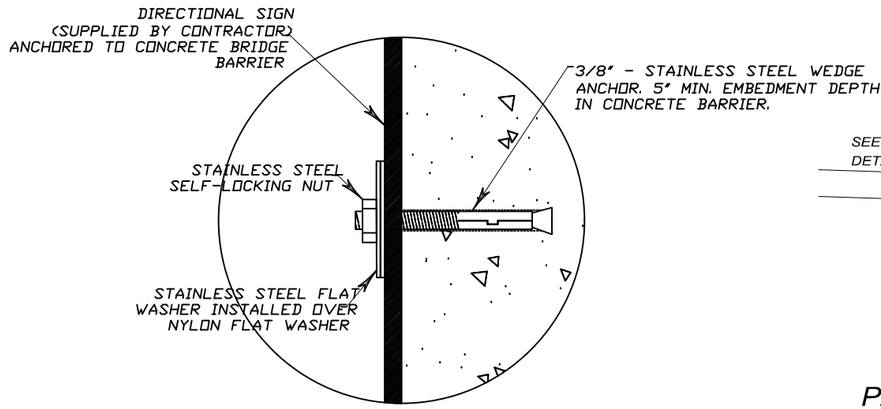
MOUNTING DETAIL COSTS ARE INCIDENTAL TO PAY ITEM "TYPE II SIGNS, REFLECTIVE".



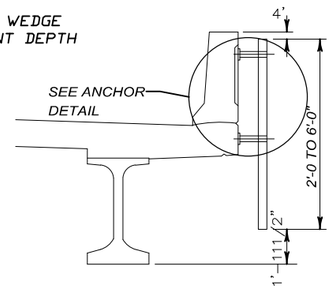
DETAIL A



SECTION B–B
TOP VIEW



ANCHOR DETAIL
N.T.S.



PARAPET OPTION
WITHOUT RAIL

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	SIGN MOUNTING DETAIL ON BRIDGE	SHEET 11 E

2

2

N

EXISTING R/W

W FOND DU LAC AVE

REMOVE CONCRETE PAVEMENT

R/L STH 145

REMOVE SMALL PIPE CULVERT

REMOVE STORM SEWER 8-INCH

REMOVE CURB & GUTTER

SI

REMOVE INLET

REMOVE INLET

REMOVE CURB & GUTTER

CLEARING AND GRUBBING*

REMOVE FENCE

REMOVE CONCRETE PAVEMENT

REMOVE ASPHALTIC SURFACE

EXISTING R/W

110+00

N 107th ST

111+00

112+00

113+00

C/L 107th ST

114+00

PT: 19+51.59

115+00

116+00

30+00

31+00

REMOVE ATT CONDUIT PACKAGE

ADJUSTING INLET COVERS

REMOVE ASPHALTIC SURFACE

REMOVE CURB & GUTTER

REMOVE FENCE

CLEARING AND GRUBBING*

REMOVE CONCRETE PAVEMENT

33+00

REMOVE CONCRETE BARRIER

REMOVE OLD STRUCTURE SEE STRUCTURE PLANS

SB STH 104

34+00

NB STH 104

REMOVE CONCRETE SIDEWALK

REMOVE CURB & GUTTER

REMOVE FENCE

REMOVE SMALL PIPE CULVERT

CLEARING AND GRUBBING*

MANHOLE TO REMAIN IN PLACE

PT: 18+96.41

18+00

REMOVE STORM SEWER 18-INCH

SI

EXISTING R/W

R/L 107th ST OFF RAMP

* CLEARING AND GRUBBING PAID FOR BY THE STA.
REMOVE ALL TREES INTERFERING WITH CONSTRUCTION ACTIVITIES
REMOVE DEAD ASH TREES WITHIN PROJECT AREA

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 12	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\021051_CD.DWG
LAYOUT NAME - 01

PLOT DATE : 3/1/2022 11:20 AM PLOT BY : WEIGAND, BEN PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

N

W. FOND DU LAC AVE

LOW POINT

2.6%

2.4%

1.5%

2.0%

R/L 107TH RT TURN

R/L RT TURN FLANGE

C/L 107TH ST

107TH ST

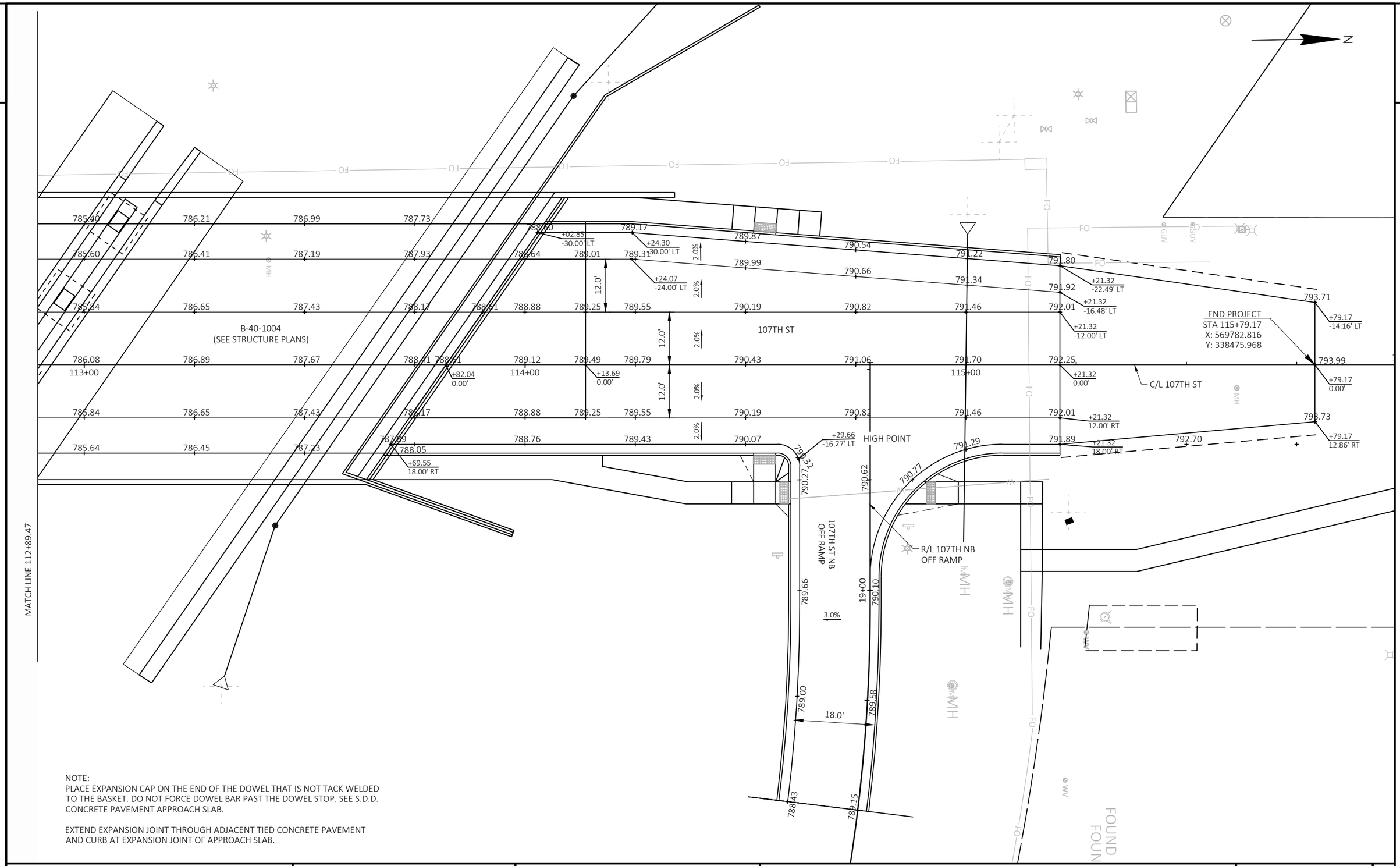
B-40-1004
(SEE STRUCTURE PLANS)

MATCH LINE 112+89.47

BEGIN PROJECT
STA 110+30.52
X: 569777.523
Y: 337927.342

| | | |

2



NOTE:
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. SEE S.D.D. CONCRETE PAVEMENT APPROACH SLAB.

EXTEND EXPANSION JOINT THROUGH ADJACENT TIED CONCRETE PAVEMENT AND CURB AT EXPANSION JOINT OF APPROACH SLAB.

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	JOINT DETAILS - 107TH ST	SHEET 14	E

2

N

CONCRETE CURB & GUTTER
30-INCH TYPE A

W. FOND DU LAC AVE

+05.88
-68.43' LT

5.3'

+11.09
-67.39' LT

CONCRETE
SIDEWALK 5-INCH

17.0'

CONCRETE CURB & GUTTER
30-INCH TYPE A

+68.01
-30.96' LT

5.4'

+70.05
-26.00' LT

+35.72
-30.95' LT

CONCRETE
PAVEMENT
9-INCH

5.4'

+33.62
-26.00' LT

+42.80
-24.00' LT

14.0'

12.0'

12.0'

107TH ST

C/L 107TH ST

BEGIN PROJECT
STA 110+30.52
X: 569777.523
Y: 337927.342

+45.05
-12.00' LT

+30.52
0.00'

110+00

111+00

+63.67
0.00'

+87
0.00'

112+00

CONCRETE
PAVEMENT
9-INCH

CONCRETE PAVEMENT
APPROACH SLAB
(SEE NOTE)

CONCRETE
SIDEWALK 5-INCH

+07.81
-30.00' LT

CONCRETE
BARRIER
TRANSITION TYPE
NJ32SF TO S32

CONCRETE
BARRIER
TRANSITION TYPE
S32 TO S36

CONCRETE
BARRIER
TRANSITION TYPE
S36 TO S42

+64.50
51.50' RT

+79.50
51.50' RT

+89.50
51.50' RT

+00
51.50' RT

MATCH LINE 112+89.47

B-40-1004
(SEE STRUCTURE PLANS)

10.2'

CONCRETE
BARRIER
TYPE S32

+15.99
12.00' RT

+06.24
20.04' RT

+74.51
18.00' RT

+60
1.00' LT

+75
10.00' RT

+75
-1.20' LT

+60
11.00' LT

CONCRETE
SIDEWALK 5-INCH

+83.64
40.74' RT

STA. 112+42.27
GATE ASSEMBLY

+15
51.50' RT

CONCRETE CURB & GUTTER
30-INCH TYPE A

SI

CONCRETE
BARRIER
TYPE S42

CONCRETE
BARRIER
TRANSITION TYPE
NJ32SF TO S32

+75
-11.41' LT

+75
-22.00' LT

33+00

FENCE CHAIN LINK 6-FT

NOTE:
EXPANSION CAP ON END OF DOWEL MUST BE INCLUDED PER STANDARD DETAIL DRAWING CONCRETE PAVEMENT APPROACH SLAB.

STAKING OF ALL POINTS FOR THE CURB RAMPS INCLUDING ADJACENT SIDEWALK IS INCLUDED AS PART OF THE PAY ITEM "CONSTRUCTION STAKING CURB RAMPS."

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	PLAN DETAILS - 107TH ST	SHEET 15	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\021201_PD.DWG
LAYOUT NAME - 01

PLOT DATE : 2/16/2022 1:30 PM PLOT BY : WEIGAND, BEN PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2

N

FENCE CHAIN LINK
6-FT

+93.77
-58.02' LT

CONCRETE
BARRIER
TYPE S42

STA. 113+42.25
GATE ASSEMBLY

CONCRETE CURB & GUTTER
30-INCH TYPE A

+65
10.00' RT

+65
-1.13' LT

+65
11.42' LT

+65
12.00' LT

+80
-1.00' LT

+80
11.00' LT

CONCRETE
BARRIER
TRANSITION TYPE
NJ32SF TO S32

+00
-64.00' LT

+02.85
-30.00' LT

+24.30
-30.00' LT

+24.07
-24.00' LT

12.0'

12.0'

12.0'

B-40-1004
(SEE STRUCTURE PLANS)

107TH ST

113+00

114+00

EP: 19+51.59

115+00

+21.32
-22.49' LT

+21.32
-16.48' LT

+21.32
-12.00' LT

END PROJECT
STA 115+79.17
X: 569782.816
Y: 338475.968

+79.17
-14.16' LT

10.0'

CONCRETE
BARRIER
TYPE S32

+82.04
0.00'

CONCRETE PAVEMENT APPROACH SLAB
(SEE NOTE)

+13.69
0.00'

CONCRETE
PAVEMENT
9-INCH

+21.32
0.00'

C/L 107TH ST

+79.17
0.00'

+21.32
12.00' RT

+21.32
18.00' RT

+69.55
18.00' RT

+79.17
12.86' RT

CONCRETE CURB & GUTTER
30-INCH TYPE A

MATCH LINE 112+89.47

+35
-64.00' LT

+45.50
-64.00' LT

+55.50
-64.00' LT

+70.50
-64.00' LT

CONCRETE CURB & GUTTER
30-INCH TYPE A

+07.25
41.76' RT

CONCRETE
SIDEWALK 5-INCH

SI

107TH ST NB
OFF RAMP

R/L 107TH NB
OFF RAMP

CONCRETE
SIDEWALK 5-INCH

PT: 18+96.41

+00
-16.00' LT

CONCRETE
BARRIER
TRANSITION TYPE
S36 TO S42

CONCRETE
BARRIER
TRANSITION TYPE
S32 TO S36

CONCRETE
BARRIER
TRANSITION TYPE
NJ32SF TO S32

FENCE CHAIN LINK
6-FT

18.0'

+49.19
-27.91' LT

+50.01
-8.00' LT

NOTE:
EXPANSION CAP ON END OF DOWEL MUST BE INCLUDED PER STANDARD DETAIL DRAWING CONCRETE PAVEMENT APPROACH SLAB.

STAKING OF ALL POINTS FOR THE CURB RAMPS INCLUDING ADJACENT SIDEWALK IS INCLUDED AS PART OF THE PAY ITEM "CONSTRUCTION STAKING CURB RAMPS."

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	PLAN DETAILS - 107TH ST	SHEET 16	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\021201_PD.DWG
LAYOUT NAME - 02

PLOT DATE : 2/16/2022 1:30 PM PLOT BY : WEIGAND, BEN PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

2

EXISTING R/W

W FOND DU LAC AVE

RESTORATION LIMITS

R/L STH 145

PERMANENT WETLAND
IMPACTS 105 SF

RESTORATION LIMITS

TLE

EXISTING R/W

C/L 107th ST

N 107th ST

110+00 111+00 112+00 113+00 114+00 115+00 116+00

30+00 31+00 33+00 34+00 18+00 19+00

SB STH 104

NB STH 104

PLACE INLET PROTECTION ON
NEXT DOWNSTREAM INLET
ON W FOND DU LAC AVE

PERMANENT WETLAND
IMPACTS 15 SF

EXISTING R/W

R/L 107th ST OFF RAMP

LEGEND

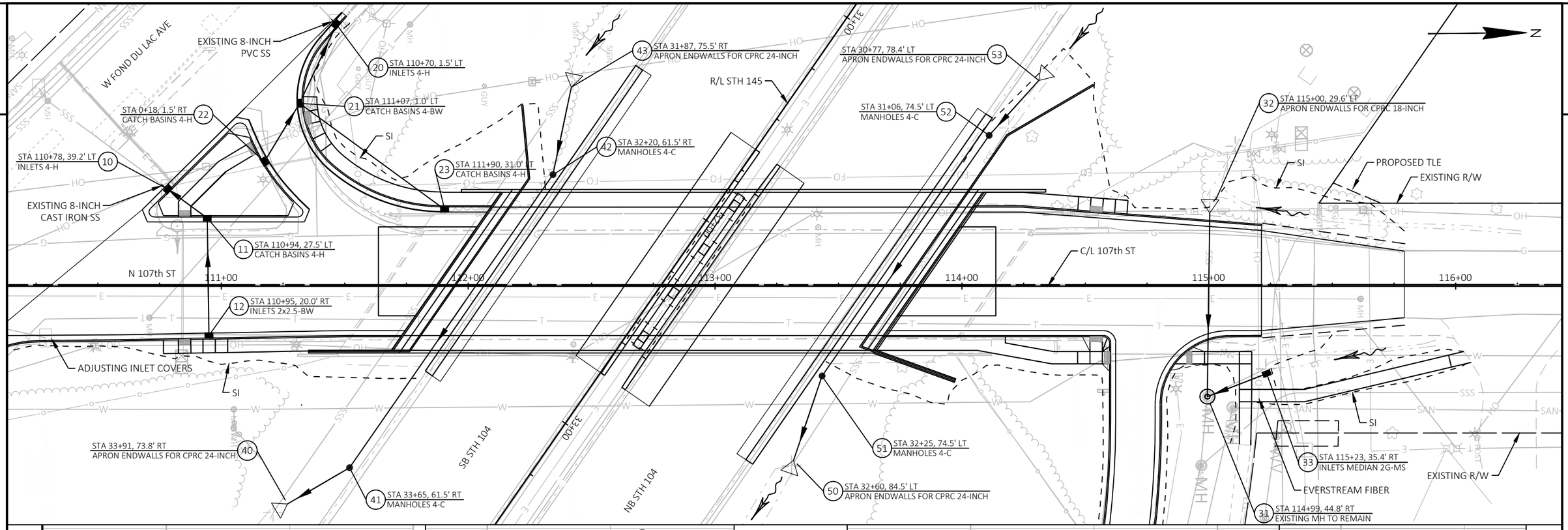
- EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- INLET PROTECTION
- A B C — INLET PROTECTION TYPE
- TEMPORARY DITCH CHECK
- CULVERT PIPE DITCH CHECK
- SURFACE WATER FLOW

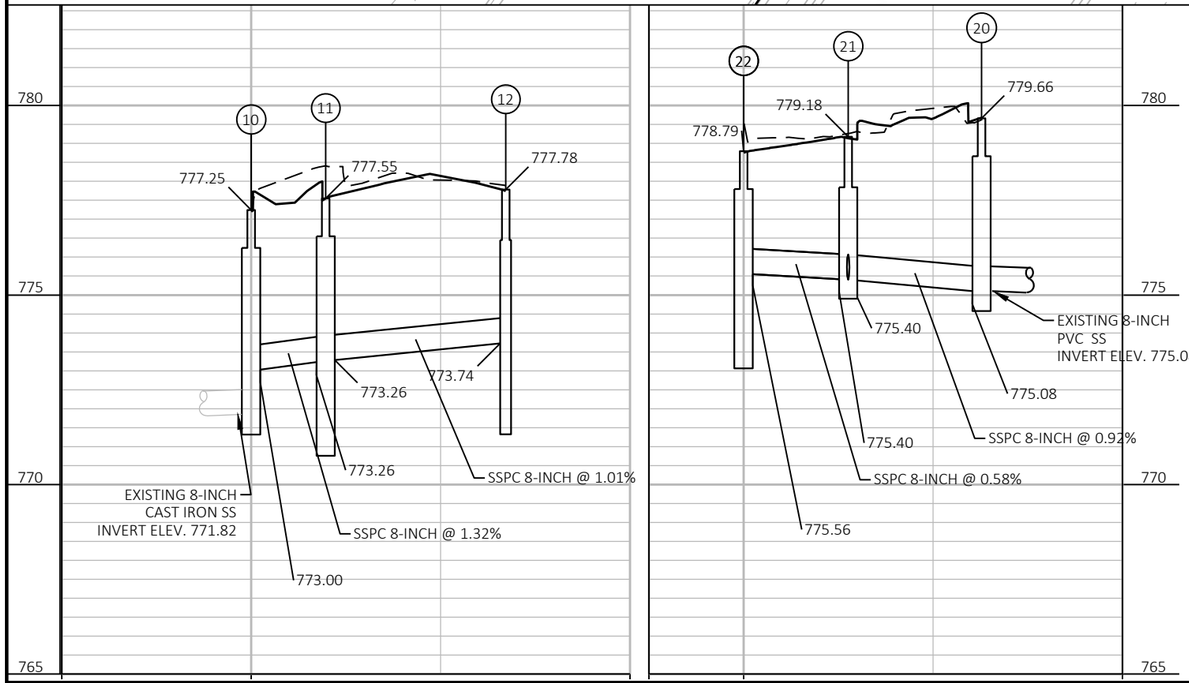
PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	EROSION CONTROL PLAN	SHEET 17	E

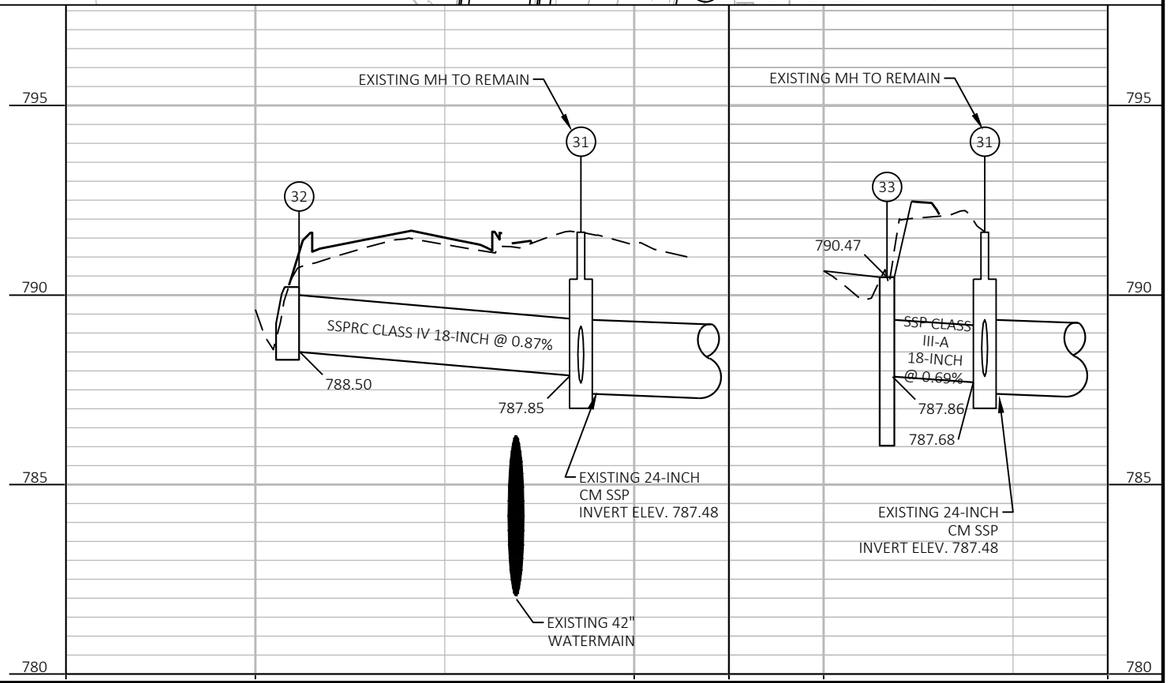
FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\022001_EC.DWG
LAYOUT NAME - 01

PLOT DATE : 1/19/2022 3:50 PM PLOT BY : WEIGAND, BEN PLOT NAME : PLOT SCALE : 1 IN:40 FT

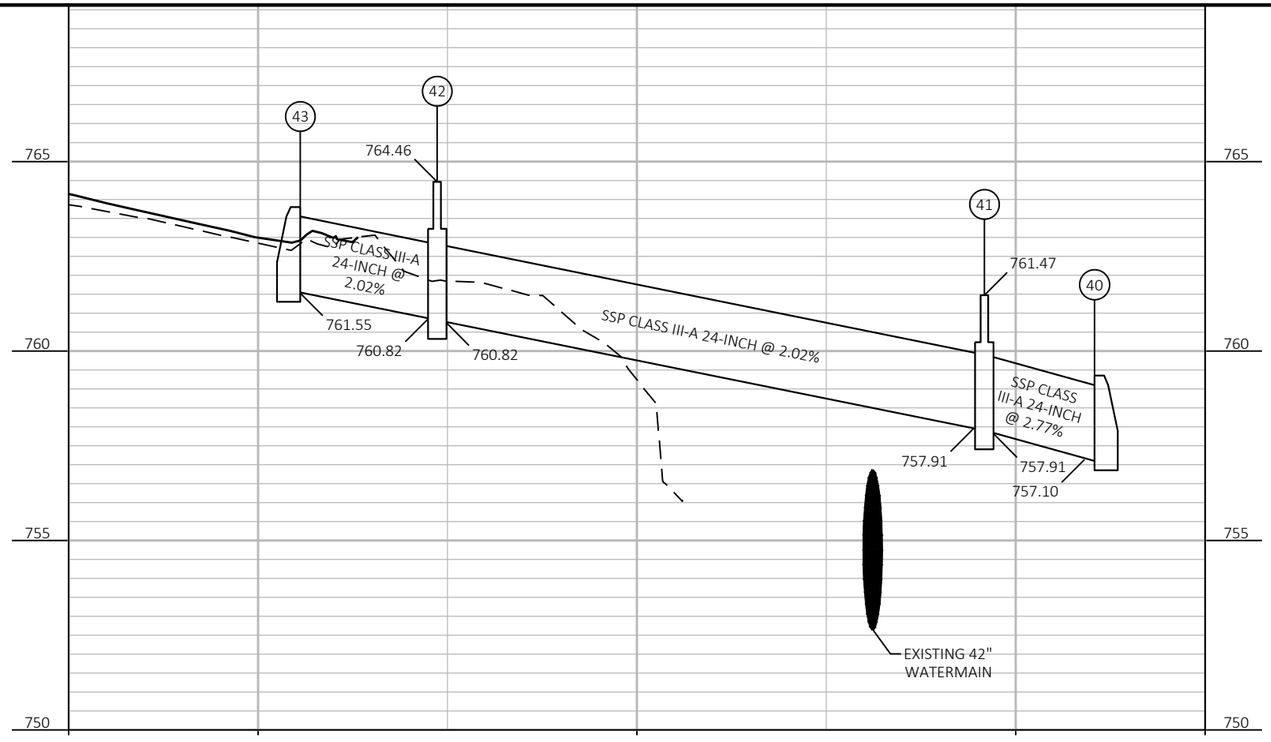
WISDOT/CADDS SHEET 42

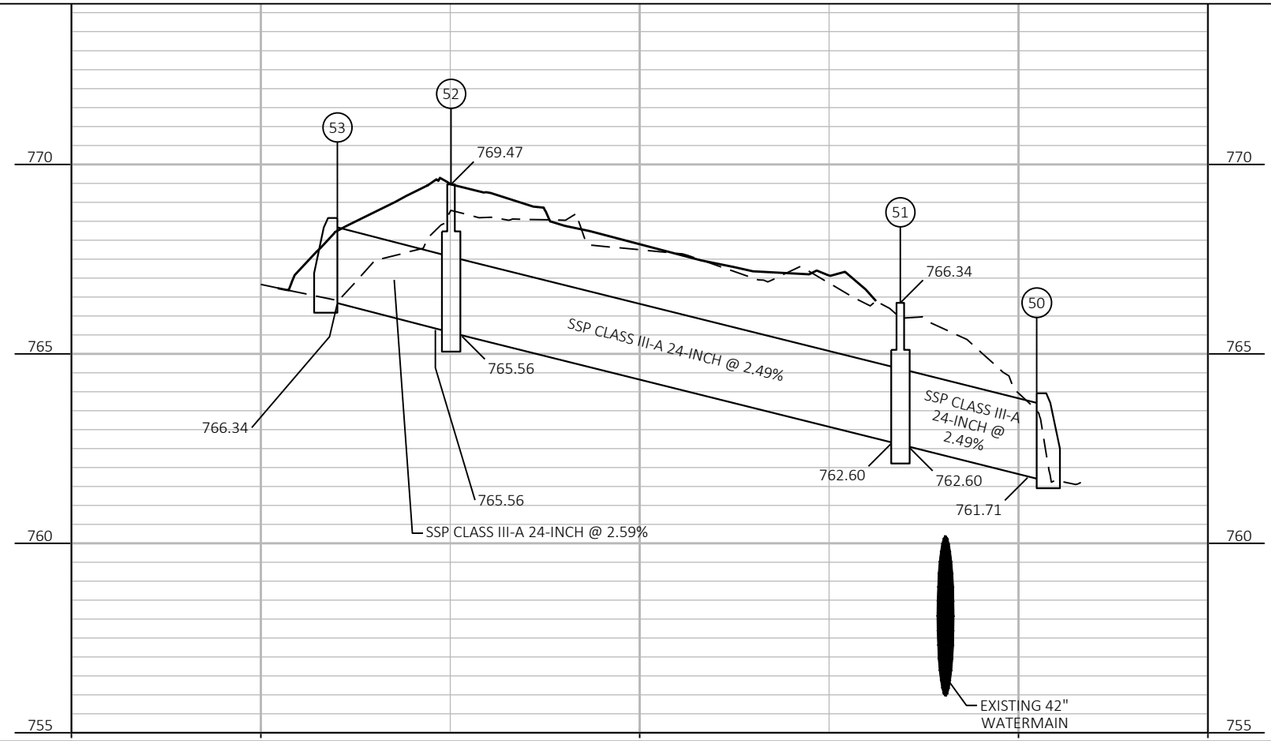


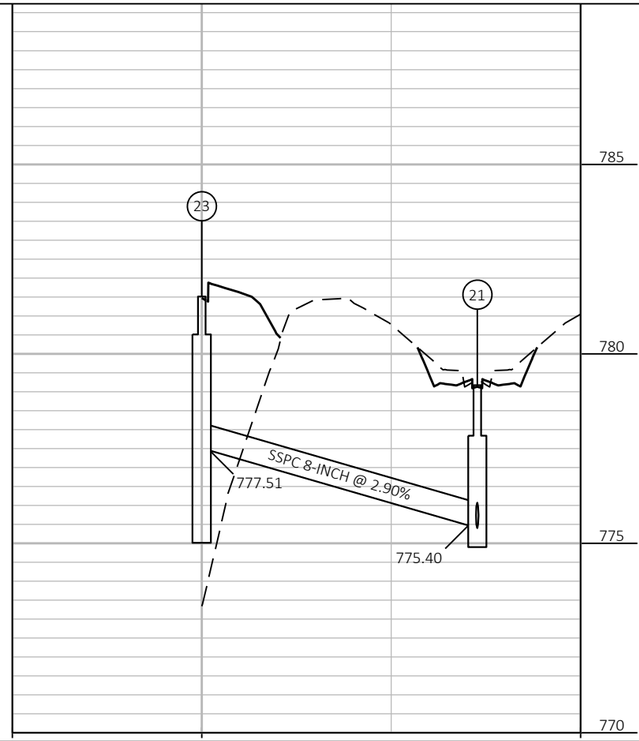


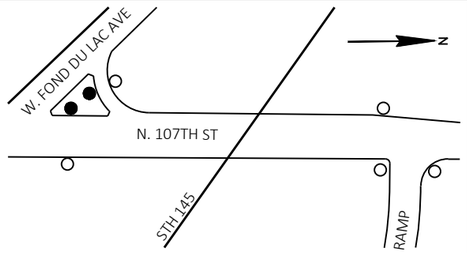


PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	STORM SEWER	SHEET 18	E


765
760
755
750
43
42
41
40
764.46
761.47
761.55
760.82
760.82
757.91
757.91
757.10
SSP CLASS III-A 24-INCH @ 2.02%
SSP CLASS III-A 24-INCH @ 2.02%
SSP CLASS III-A 24-INCH @ 2.77%
EXISTING 42" WATERMAIN


770
765
760
755
53
52
51
50
769.47
766.34
765.56
765.56
762.60
762.60
761.71
SSP CLASS III-A 24-INCH @ 2.49%
SSP CLASS III-A 24-INCH @ 2.49%
SSP CLASS III-A 24-INCH @ 2.59%
EXISTING 42" WATERMAIN

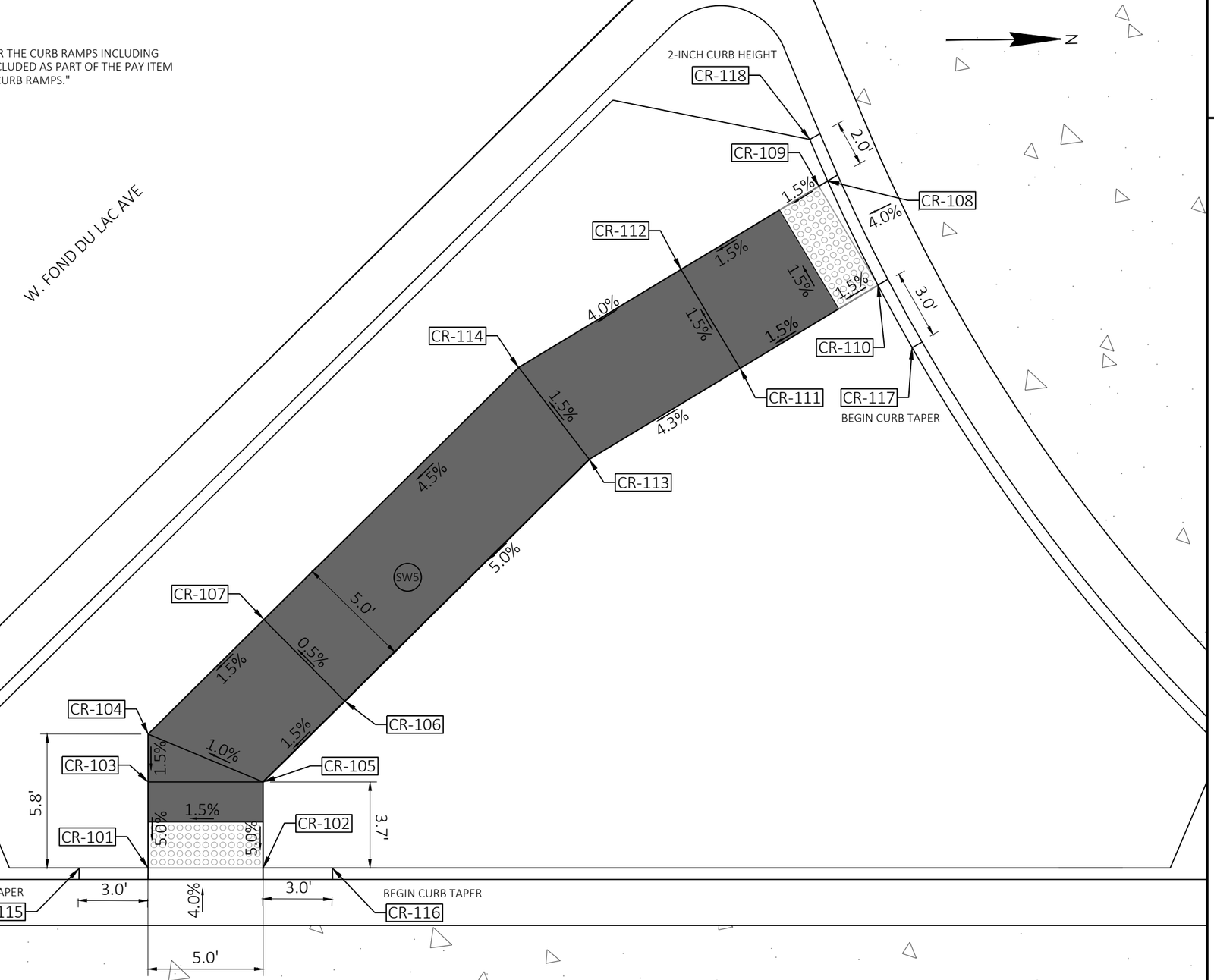

785
780
775
770
23
21
777.51
775.40
SSPC 8-INCH @ 2.90%

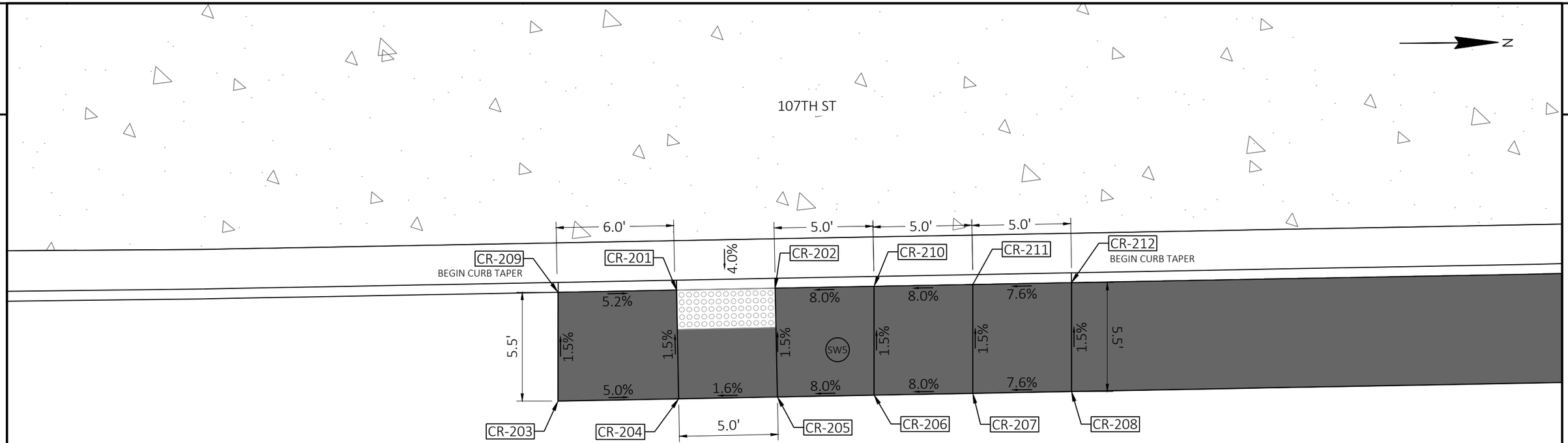


NOTES:
STAKING OF ALL POINTS FOR THE CURB RAMPS INCLUDING ADJACENT SIDEWALK IS INCLUDED AS PART OF THE PAY ITEM "CONSTRUCTION STAKING CURB RAMPS."

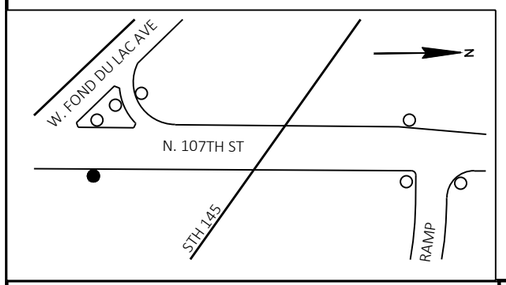
POINT TABLE

POINT NAME	STATION	OFFSET	ELEVATION	NORTHING	EASTING
cr-101	110+82.63	28.50' LT	777.16	337979.72	569749.53
cr-102	110+87.62	28.50' LT	777.25	337984.72	569749.57
cr-103	110+82.63	32.24' LT	777.35	337979.76	569745.78
cr-104	110+82.63	34.33' LT	777.38	337979.78	569743.70
cr-105	110+87.63	32.24' LT	777.44	337984.76	569745.83
cr-106	110+91.18	35.76' LT	777.51	337988.35	569742.35
cr-107	110+87.66	39.31' LT	777.48	337984.86	569738.76
cr-108	111+12.18	58.38' LT	778.62	338009.56	569719.93
cr-109	111+11.80	58.14' LT	778.62	338009.18	569720.17
cr-110	111+14.37	53.85' LT	778.69	338011.70	569724.48
cr-111	111+08.37	50.23' LT	778.59	338005.68	569728.04
cr-112	111+05.80	54.53' LT	778.51	338003.15	569723.72
cr-113	111+01.81	46.28' LT	778.26	337999.08	569731.94
cr-114	110+98.73	50.26' LT	778.18	337996.04	569727.92
cr-115	110+79.63	28.48' LT	777.57	337976.72	569749.51
cr-116	110+90.64	28.50' LT	777.85	337987.74	569749.61
cr-117	111+15.85	51.13' LT	779.18	338013.16	569727.22
cr-118	111+11.40	60.19' LT	778.84	338008.80	569718.11





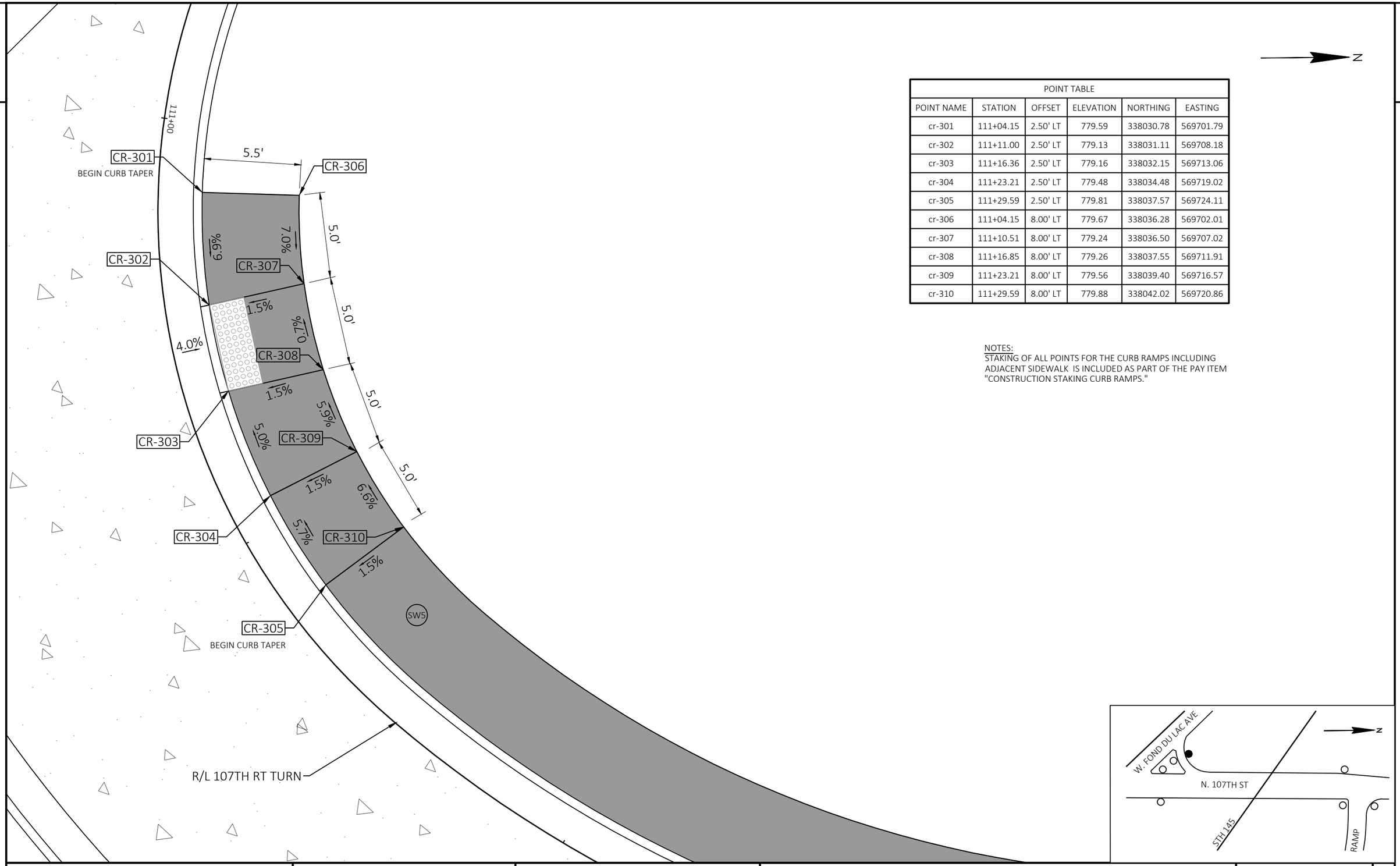
POINT TABLE					
POINT NAME	STATION	OFFSET	ELEVATION	NORTHING	EASTING
cr-201	110+82.58	21.75' RT	777.30	337979.20	569799.78
cr-202	110+87.58	21.65' RT	777.37	337984.20	569799.72
cr-203	110+76.58	27.37' RT	777.69	337973.14	569805.33
cr-204	110+82.70	27.25' RT	777.38	337979.26	569805.28
cr-205	110+87.70	27.16' RT	777.46	337984.26	569805.23
cr-206	110+92.58	27.05' RT	777.85	337989.14	569805.17
cr-207	110+97.58	26.98' RT	778.25	337994.15	569805.14
cr-208	111+02.58	26.88' RT	778.63	337999.15	569805.10
cr-209	110+76.58	21.87' RT	777.61	337973.19	569799.83
cr-210	110+92.58	21.57' RT	777.77	337989.20	569799.69
cr-211	110+97.58	21.48' RT	778.17	337994.20	569799.64
cr-212	111+02.58	21.38' RT	778.55	337999.20	569799.59



NOTES:
STAKING OF ALL POINTS FOR THE CURB RAMPS INCLUDING ADJACENT SIDEWALK IS INCLUDED AS PART OF THE PAY ITEM "CONSTRUCTION STAKING CURB RAMPS."

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	CURB RAMP DETAILS	SHEET 21	E

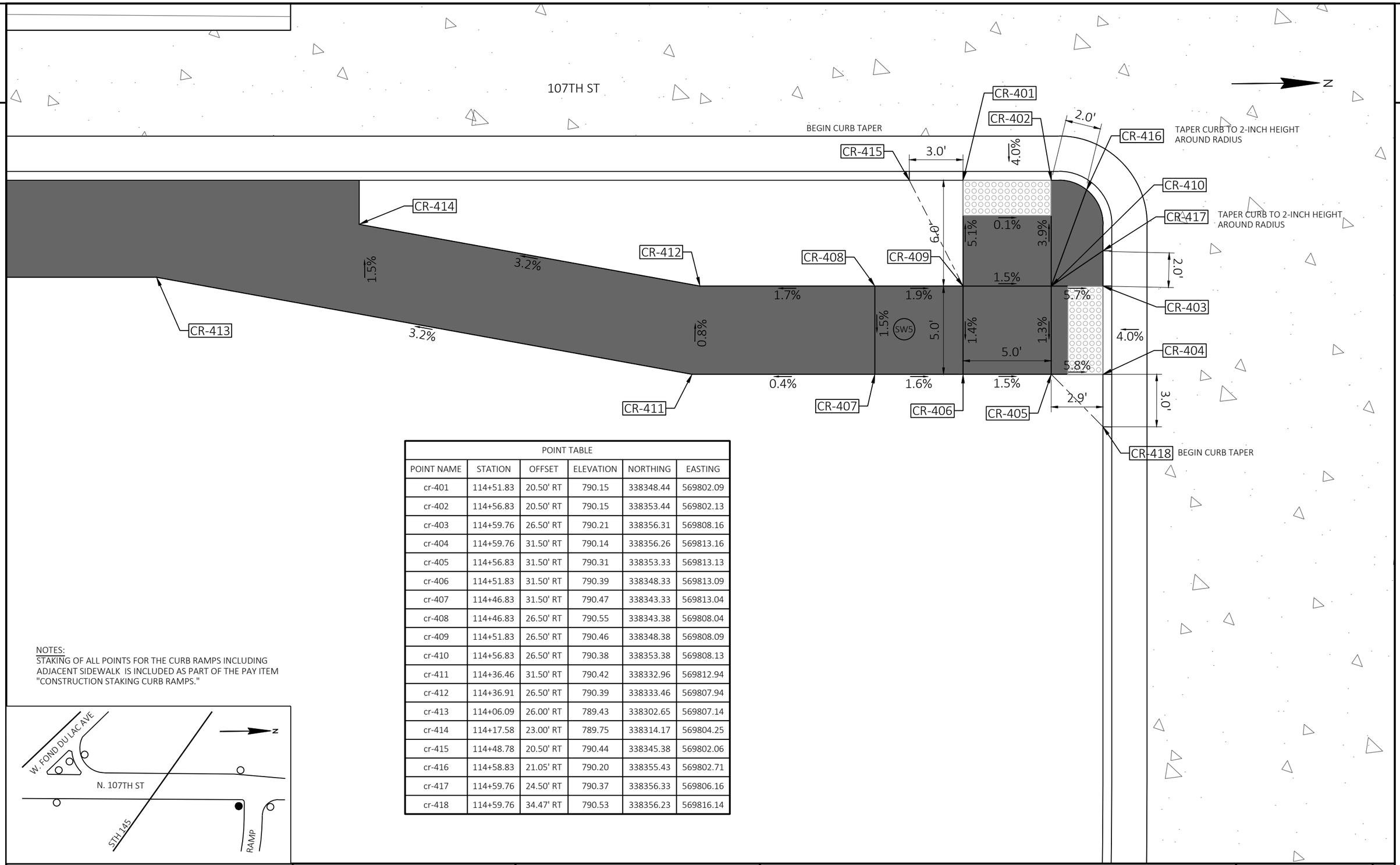
FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\023101_CR.DWG
LAYOUT NAME - 02
PLOT DATE : 1/19/2022 3:46 PM PLOT BY : WEIGAND, BEN PLOT NAME : PLOT SCALE : 1 IN:5 FT
WISDOT/CADDS SHEET 42



POINT TABLE					
POINT NAME	STATION	OFFSET	ELEVATION	NORTHING	EASTING
cr-301	111+04.15	2.50' LT	779.59	338030.78	569701.79
cr-302	111+11.00	2.50' LT	779.13	338031.11	569708.18
cr-303	111+16.36	2.50' LT	779.16	338032.15	569713.06
cr-304	111+23.21	2.50' LT	779.48	338034.48	569719.02
cr-305	111+29.59	2.50' LT	779.81	338037.57	569724.11
cr-306	111+04.15	8.00' LT	779.67	338036.28	569702.01
cr-307	111+10.51	8.00' LT	779.24	338036.50	569707.02
cr-308	111+16.85	8.00' LT	779.26	338037.55	569711.91
cr-309	111+23.21	8.00' LT	779.56	338039.40	569716.57
cr-310	111+29.59	8.00' LT	779.88	338042.02	569720.86

NOTES:
STAKING OF ALL POINTS FOR THE CURB RAMPS INCLUDING ADJACENT SIDEWALK IS INCLUDED AS PART OF THE PAY ITEM "CONSTRUCTION STAKING CURB RAMPS."

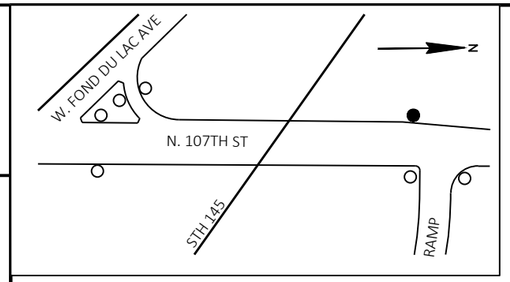
PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	CURB RAMP DETAILS	SHEET 22	E



POINT TABLE					
POINT NAME	STATION	OFFSET	ELEVATION	NORTHING	EASTING
cr-401	114+51.83	20.50' RT	790.15	338348.44	569802.09
cr-402	114+56.83	20.50' RT	790.15	338353.44	569802.13
cr-403	114+59.76	26.50' RT	790.21	338356.31	569808.16
cr-404	114+59.76	31.50' RT	790.14	338356.26	569813.16
cr-405	114+56.83	31.50' RT	790.31	338353.33	569813.13
cr-406	114+51.83	31.50' RT	790.39	338348.33	569813.09
cr-407	114+46.83	31.50' RT	790.47	338343.33	569813.04
cr-408	114+46.83	26.50' RT	790.55	338343.38	569808.04
cr-409	114+51.83	26.50' RT	790.46	338348.38	569808.09
cr-410	114+56.83	26.50' RT	790.38	338353.38	569808.13
cr-411	114+36.46	31.50' RT	790.42	338332.96	569812.94
cr-412	114+36.91	26.50' RT	790.39	338333.46	569807.94
cr-413	114+06.09	26.00' RT	789.43	338302.65	569807.14
cr-414	114+17.58	23.00' RT	789.75	338314.17	569804.25
cr-415	114+48.78	20.50' RT	790.44	338345.38	569802.06
cr-416	114+58.83	21.05' RT	790.20	338355.43	569802.71
cr-417	114+59.76	24.50' RT	790.37	338356.33	569806.16
cr-418	114+59.76	34.47' RT	790.53	338356.23	569816.14

NOTES:
STAKING OF ALL POINTS FOR THE CURB RAMPS INCLUDING ADJACENT SIDEWALK IS INCLUDED AS PART OF THE PAY ITEM "CONSTRUCTION STAKING CURB RAMPS."

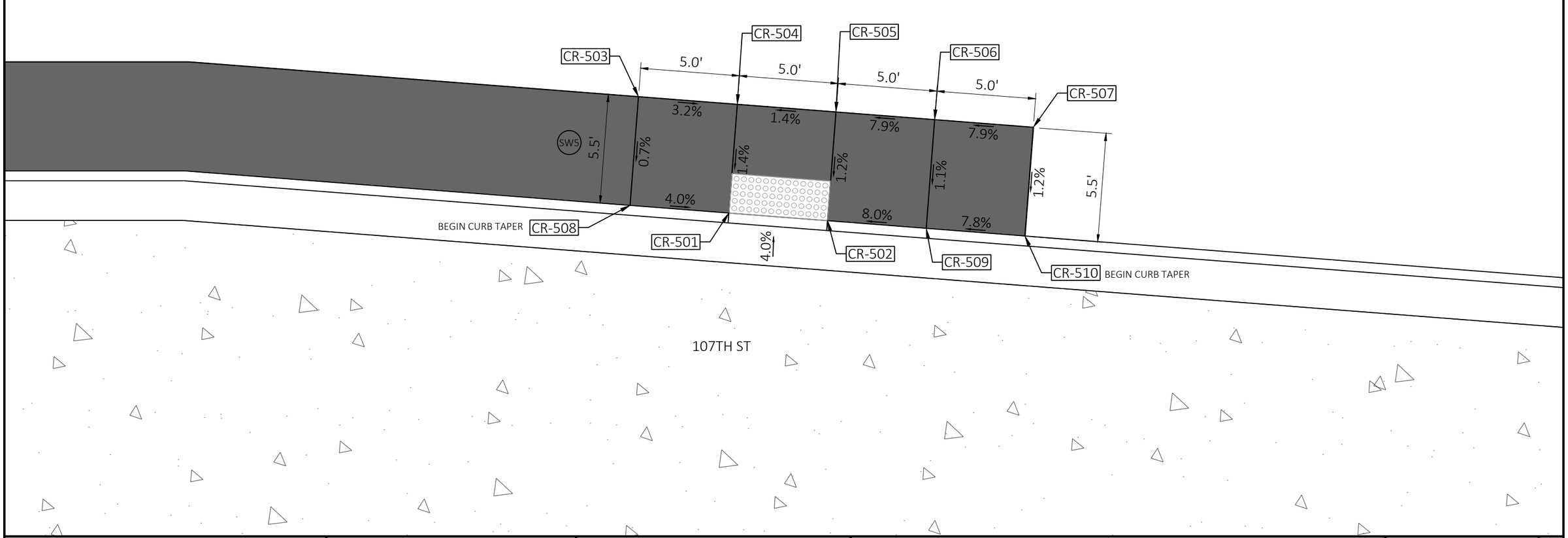
PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	CURB RAMP DETAILS	SHEET 23	E



NOTES:
STAKING OF ALL POINTS FOR THE CURB RAMPS INCLUDING ADJACENT SIDEWALK IS INCLUDED AS PART OF THE PAY ITEM "CONSTRUCTION STAKING CURB RAMPS."

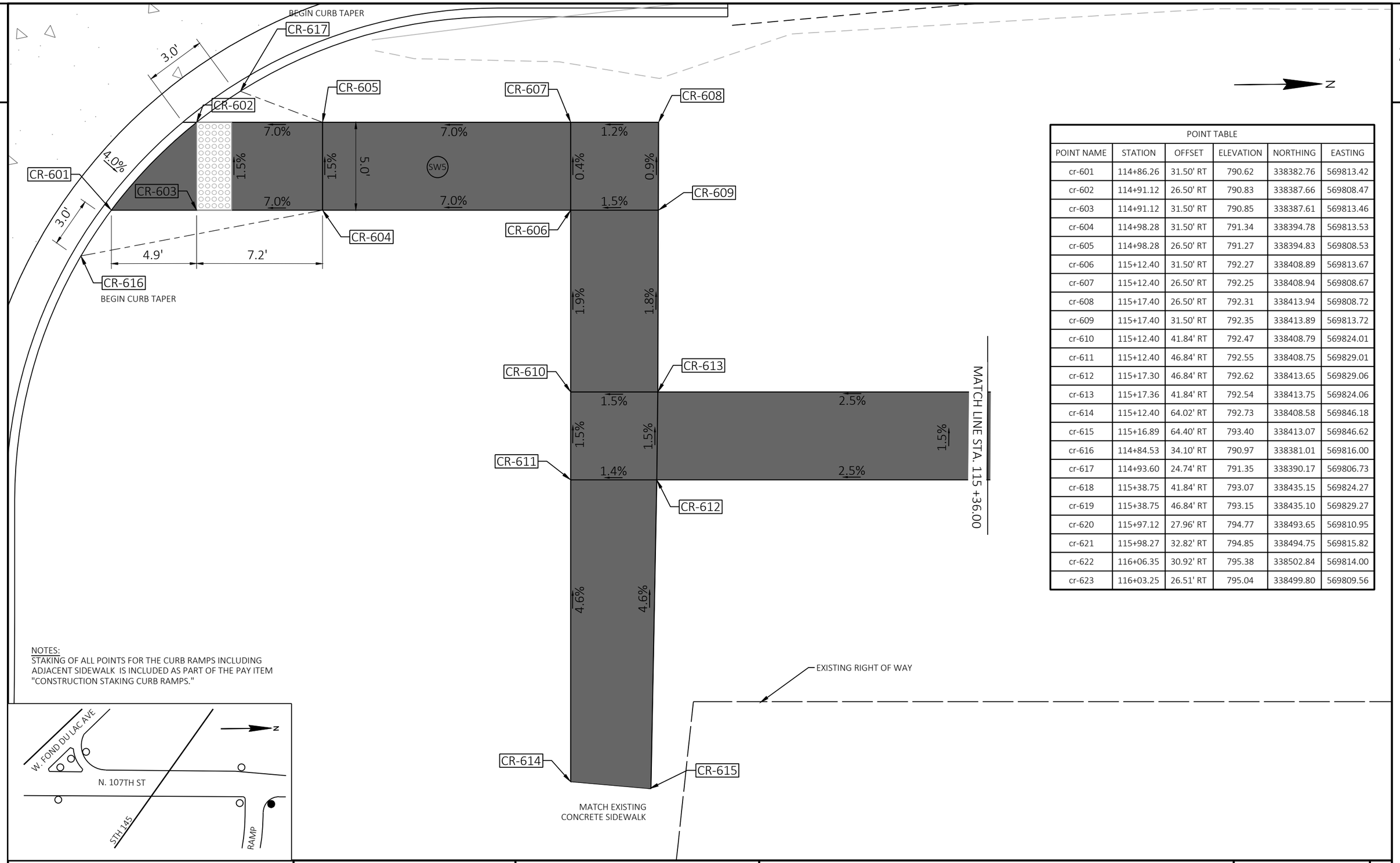
N

POINT TABLE					
POINT NAME	STATION	OFFSET	ELEVATION	NORTHING	EASTING
cr-501	114+51.89	30.38' LT	789.87	338348.98	569751.21
cr-502	114+56.87	29.99' LT	789.95	338353.96	569751.65
cr-503	114+47.32	36.24' LT	790.11	338344.48	569745.30
cr-504	114+52.31	35.86' LT	789.95	338349.46	569745.74
cr-505	114+57.29	35.47' LT	790.02	338354.44	569746.17
cr-506	114+62.28	35.09' LT	790.41	338359.42	569746.60
cr-507	114+67.26	34.70' LT	790.81	338364.40	569747.04
cr-508	114+46.90	30.76' LT	790.07	338344.00	569750.78
cr-509	114+61.85	29.60' LT	790.35	338358.94	569752.08
cr-510	114+66.84	29.22' LT	790.74	338363.92	569752.52



PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	CURB RAMP DETAILS	SHEET 24	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\023101_CR.DWG
LAYOUT NAME - 05
PLOT DATE : 1/19/2022 3:46 PM
PLOT BY : WEIGAND, BEN
PLOT NAME :
PLOT SCALE : 1 IN:5 FT

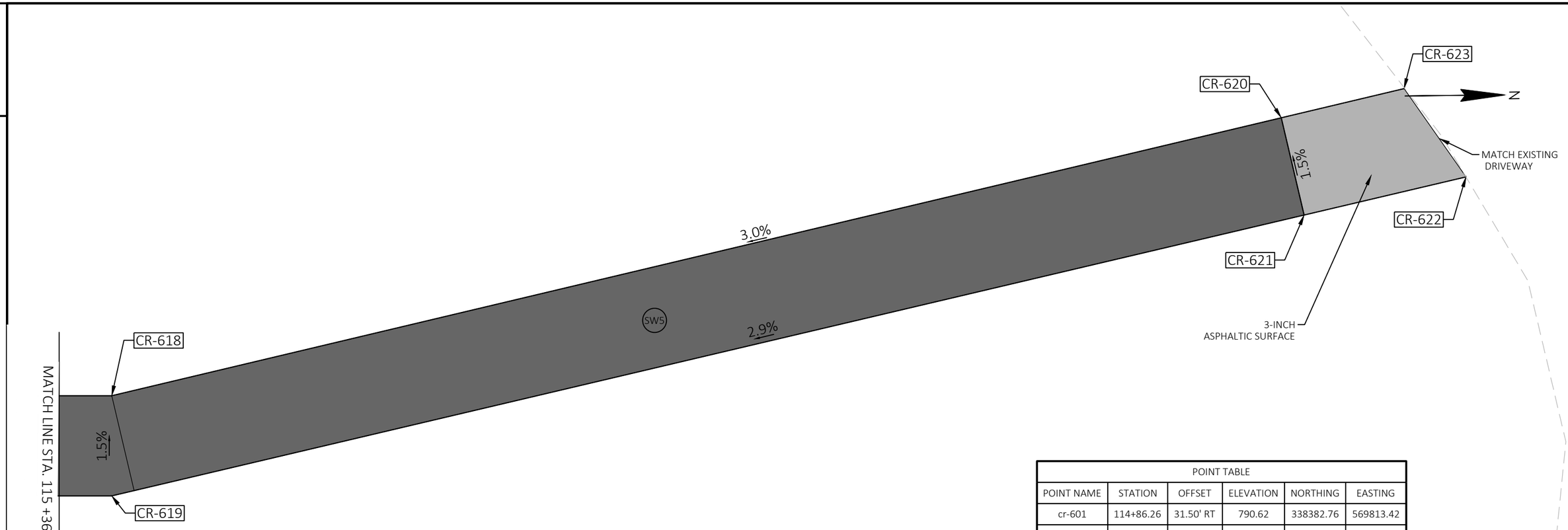


POINT TABLE					
POINT NAME	STATION	OFFSET	ELEVATION	NORTHING	EASTING
cr-601	114+86.26	31.50' RT	790.62	338382.76	569813.42
cr-602	114+91.12	26.50' RT	790.83	338387.66	569808.47
cr-603	114+91.12	31.50' RT	790.85	338387.61	569813.46
cr-604	114+98.28	31.50' RT	791.34	338394.78	569813.53
cr-605	114+98.28	26.50' RT	791.27	338394.83	569808.53
cr-606	115+12.40	31.50' RT	792.27	338408.89	569813.67
cr-607	115+12.40	26.50' RT	792.25	338408.94	569808.67
cr-608	115+17.40	26.50' RT	792.31	338413.94	569808.72
cr-609	115+17.40	31.50' RT	792.35	338413.89	569813.72
cr-610	115+12.40	41.84' RT	792.47	338408.79	569824.01
cr-611	115+12.40	46.84' RT	792.55	338408.75	569829.01
cr-612	115+17.30	46.84' RT	792.62	338413.65	569829.06
cr-613	115+17.36	41.84' RT	792.54	338413.75	569824.06
cr-614	115+12.40	64.02' RT	792.73	338408.58	569846.18
cr-615	115+16.89	64.40' RT	793.40	338413.07	569846.62
cr-616	114+84.53	34.10' RT	790.97	338381.01	569816.00
cr-617	114+93.60	24.74' RT	791.35	338390.17	569806.73
cr-618	115+38.75	41.84' RT	793.07	338435.15	569824.27
cr-619	115+38.75	46.84' RT	793.15	338435.10	569829.27
cr-620	115+97.12	27.96' RT	794.77	338493.65	569810.95
cr-621	115+98.27	32.82' RT	794.85	338494.75	569815.82
cr-622	116+06.35	30.92' RT	795.38	338502.84	569814.00
cr-623	116+03.25	26.51' RT	795.04	338499.80	569809.56

NOTES:
STAKING OF ALL POINTS FOR THE CURB RAMPS INCLUDING ADJACENT SIDEWALK IS INCLUDED AS PART OF THE PAY ITEM "CONSTRUCTION STAKING CURB RAMPS."

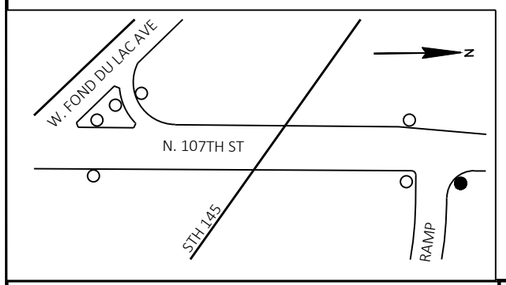
PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	CURB RAMP DETAILS	SHEET 25	E

2



POINT TABLE					
POINT NAME	STATION	OFFSET	ELEVATION	NORTHING	EASTING
cr-601	114+86.26	31.50' RT	790.62	338382.76	569813.42
cr-602	114+91.12	26.50' RT	790.83	338387.66	569808.47
cr-603	114+91.12	31.50' RT	790.85	338387.61	569813.46
cr-604	114+98.28	31.50' RT	791.34	338394.78	569813.53
cr-605	114+98.28	26.50' RT	791.27	338394.83	569808.53
cr-606	115+12.40	31.50' RT	792.27	338408.89	569813.67
cr-607	115+12.40	26.50' RT	792.25	338408.94	569808.67
cr-608	115+17.40	26.50' RT	792.31	338413.94	569808.72
cr-609	115+17.40	31.50' RT	792.35	338413.89	569813.72
cr-610	115+12.40	41.84' RT	792.47	338408.79	569824.01
cr-611	115+12.40	46.84' RT	792.55	338408.75	569829.01
cr-612	115+17.30	46.84' RT	792.62	338413.65	569829.06
cr-613	115+17.36	41.84' RT	792.54	338413.75	569824.06
cr-614	115+12.40	64.02' RT	792.73	338408.58	569846.18
cr-615	115+16.89	64.40' RT	793.40	338413.07	569846.62
cr-616	114+84.53	34.10' RT	790.97	338381.01	569816.00
cr-617	114+93.60	24.74' RT	791.35	338390.17	569806.73
cr-618	115+38.75	41.84' RT	793.07	338435.15	569824.27
cr-619	115+38.75	46.84' RT	793.15	338435.10	569829.27
cr-620	115+97.12	27.96' RT	794.77	338493.65	569810.95

EXISTING RIGHT OF WAY



NOTES:
STAKING OF ALL POINTS FOR THE CURB RAMPS INCLUDING ADJACENT SIDEWALK IS INCLUDED AS PART OF THE PAY ITEM "CONSTRUCTION STAKING CURB RAMPS."

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	CURB RAMP DETAILS	SHEET 26	E

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO REMAIN

Metro Auto Mall
Fond du Lac Av
ESTR

1 DO NOT PASS R4-1 (2S) — MOUNT ON LIGHT POLE
DO NOT PASS REMOVE

2 SPEED LIMIT 30 R2-1 (2S) — MOUNT ON LIGHT POLE
SPEED LIMIT 30 REMOVE

3 LEFT LANE MUST TURN LEFT REMOVE
LEFT LANE MUST TURN LEFT R3-7L (2S) — MOUNT ON SIGNAL POLE

4 LEFT LANE MUST TURN LEFT R3-7L (2S) — MOUNT ON SIGNAL POLE
LEFT LANE MUST TURN LEFT REMOVE

5 YIELD R1-2 (2S)
YIELD REMOVE

6 DO NOT ENTER R5-1C (2M)
DO NOT ENTER REMOVE

7 DO NOT ENTER R5-1C (2M)
DO NOT ENTER REMOVE

8 STOP R1-1 (2M)
STOP REMOVE

9 STOP R1-1 (2M)
STOP REMOVE

10 R3-1 (2S)
REMOVE

11 R3-2 (2S)
REMOVE

12 W1-7 (2S)

13 MOUNT NEW SIGN ON BRIDGE — 107th St M1-94

14 107th St M1-94 — MOUNT NEW SIGN ON BRIDGE

15 EXISTING SIGN ON BRIDGE COLUMN MOUNT NEW SIGN ON WOOD POSTS
EXIT 30 MPH REMOVE
EXIT 30 MPH W13-2D (2M)

R4-7 ESTR

W5-52L ESTR

W Metro Auto Mall — D1-1 ESTR

WRONG WAY R5-1A ESTR

WRONG WAY R5-1A ESTR

Fond du Lac Ave
Metro Blvd
Good Hope Rd
D1-3 ESTR

STOP R1-1 (2M)

SIGN

N 107TH ST

STH 145

34+00
33+00
32+00
110+00
111+00
112+00
113+00
114+00
115+00
18+00
19+00

PT: 18+96.41
EP: 19+51.59

MOUNT NEW SIGN ON BRIDGE — 107th St M1-94

TYPE II ALUMINUM SIGNS REMOVED UNDER THE CONTRACT SHALL BE DELIVERED TO THE COUNTY SIGN SHOP. CONTACT THE FOLLOWING INDIVIDUAL AT THE SIGN SHOP FOR DISTRIBUTION COUNTY LOCATION.

SIGNING COORDINATOR	COUNTIES	PHONE #
JENNY BUCKETT	MILWAUKEE, KENOSHA, WASHINGTON, OZAUKEE	414-750-2427
CHUCK SALDIVAR	RACINE, WALWORTH, WAUKESHA	414-750-1682

SIGNS SHALL BE CAREFULLY REMOVED FROM SIGN SUPPORTS. THE SIGNS SHALL BE PALLETIZED FOR HANDLING WITH A FORKLIFT (SEE STANDARD SPEC 638.3.4). THE REGIONAL SIGN SHOP (414-266-1165) SHALL BE NOTIFIED THREE WORKING DAYS PRIOR TO DELIVERY OF THE SIGNS.

WHEN AN EXISTING STOP SIGN SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERECTED, THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD BE DONE AS CONCURRENTLY AS POSSIBLE. IN NO CASE SHALL A NEW SIGN/SUPPORT BE DOWN FOR MORE THAN 24 HOURS AND THERE SHALL NOT BE MORE THAN ONE SIGN OF THE SAME LEGEND MISSING IN A ROW.

WOOD POST SIZES FOR TYPE II SIGNS ARE ESTIMATED LENGTHS AND THE ACTUAL LENGTH WILL BE DETERMINED IN THE FIELD.

STREET NAME SIGNS ARE PROPERTY OF THE MUNICIPALITY (CITY, VILLAGE OR TOWN). THE MUNICIPALITY SHALL BE CONTACTED TO REMOVE THEIR STREET NAME SIGNS PRIOR TO CONSTRUCTION AND IT IS THEIR RESPONSIBILITY TO REINSTALL THE OLD SIGNS OR REPLACE THEM FOLLOWING CONSTRUCTION. WISDOT DOES NOT FURNISH OR INSTALL STREET NAME SIGNS. THE STREET NAME SIGNS SHALL NOT BE PLACED ON TOP OF THE STOP SIGNS.

LOCATE NO PASSING PENNANTS BASED ON ESTABLISHING NO PASSING ZONES PAY ITEM. PLACE SIGNS BASED ON WHERE THE PAVEMENT MARKING FOR NO PASSING ZONES BEGIN.

BOX OUT CORING OF CONCRETE FOR SIGN POSTS IS INCIDENTAL TO THE POST.

SHEET 1 OF 1

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	PERMANENT SIGNING PLAN	SHEET 27	E

FILE NAME : N:\PDS\C3D\CAD\13601200\SIGN\023201_PS_20.DWG
LAYOUT NAME - 02
PLOT DATE : 10/20/2021 7:13 AM
PLOT BY : WAGNER, SCOTT H
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

HL-40-EG	
1,3,5	RED
4,6	BLACK
N	WHITE
GND	GREEN OR BARE
1,3,4	30 A
5,6	30 A
240/480 VAC 3 WIRE GROUNDED NEUTRAL	

N

STH 145

STH 145

W FOND DU LAC AVE

N 107TH ST

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 28	E

FILE NAME : W:\PROJECTS\19254\1360-12-00\05_CADD\CADD DRAWINGS\020201-PO.DWG
LAYOUT NAME - 020201-po

PLOT DATE : 10/4/2021 3:19 PM PLOT BY : WILLIAM NEAVE PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

GENERAL NOTES

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

LOCATIONS OF THE PVC CONDUITS ARE IDENTIFIED IN THE PLANS WHERE THEY ARE REQUIRED. APPROPRIATE ADJUSTMENT ON CONDUIT LOCATIONS MAY BE MADE IF THE FIELD CONDITIONS ARE SUCH THAT THE CONDUIT CANNOT BE INSTALLED AT THE SPECIFIED LOCATIONS. FIELD MARK EACH CONDUIT LOCATION IN RED.

ALL CONDUITS SHALL BE CAPPED OR PLUGGED WITH ENGINEER APPROVED FITTINGS IMMEDIATELY AFTER INSTALLATION. THE TRENCH SHALL NOT BE BACK FILLED PRIOR TO INSPECTION OF THE CONDUIT.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR IMMERSION 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 ALL CONDUITS. PRIOR TO CONDUIT ACCEPTANCE, ALL CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND BE CAPPED WITH THE APPROPRIATE CAST PLASTIC CAP WHICH FITS SNUGGLY ON THE CONDUIT, BUT EASILY REMOVED IN THE FUTURE. DUCT TAPE OR ANY OTHER CAPPING METHOD IS NOT ACCEPTABLE.

CONDUIT RUNS SHALL BE THE SAME SIZE PIPE FROM ONE END TO THE OTHER (FROM PULL BOX-TO-PULL BOX OR JUNCTION BOX OR BASE-TO-BASE, ETC.) UNLESS OTHERWISE NOTED ON PLANS.

PULL ROPE (3/8-INCH NYLON) SHALL BE INSTALLED IN ALL NEW CONDUITS.

CONTRACTOR SHALL SUPPLY AS-BUILT DRAWING FOR ALL THE WORK BEING DONE.

INSTALLATION OF LATERAL UNDERGROUND CONDUIT UNDER PAVEMENT SHALL BE INSTALLED MINIMUM 30 INCHES BELOW PROPOSED GRADE. CONDUIT LATERALS SHALL BE TRENCHED UNDER PAVEMENT BEFORE PAVEMENT CONSTRUCTION. CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ROADWAY CONSTRUCTION FOR CONDUIT LATERALS INSTALLATION.

PITCH ALL CONDUITS TOWARD PULL BOXES. INSTALL A 2" DRAIN DUCT TO STORM SEWER OR DRAIN SUMP AS REQUIRED FOR DRAINAGE. THE 2" DRAIN DUCT OR SUMP IS INCIDENTAL TO THE PULL BOX BID ITEM AND IS NOT SHOWN.

THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE, IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

HAND DIGGING MAY BE REQUIRED FOR LOCATIONS ADJACENT TO EXISTING GAS AND POWER LINES. HAND EXCAVATION SHOULD BE ANTICIPATED & WILL BE CONSIDERED INCIDENTAL TO THE CONCRETE BASES BID ITEM. COORDINATE ALL WORK NEAR GAS LINE WITH WE ENERGIES.

EXISTING CONDUIT AND CID NO LONGER BEING USED IS ABANDONED IN PLACE. THE CONTRACTOR MAY REMOVE ABANDONED WIRING AT THE CONTRACTOR'S EXPENSE. ABANDONED PULL BOX REMOVAL IS INCIDENTAL TO THE ROAD CONSTRUCTION.

ALL UNDERGROUND WIRING AND CONDUIT FOR POLES BEING REMOVED IS ABANDONED IN PLACE UNLESS NOTED OTHERWISE. CONTRACTOR MAY SALVAGE ABANDONED WIRING AT HIS OWN EXPENSE.

IF CID CONTAINS PHASE CONDUCTOR(S) THAT WILL NOT BE USED FOR FURTHER POLES, I.E. AT THE END OF A CIRCUIT, DO NOT ENERGIZE THE CONDUCTOR(S) LEAVING THE LAST POLE THE PHASE WAS UTILIZED. REMOVE EXCESS CONDUCTOR(S) IN ALL SUBSEQUENT POLES.

SEAL THE ENDS OF ALL CID RACEWAY WITH A UL RECOGNIZED CONDUIT SEALANT. PROVIDE A 1#2" NYLON ROPE EXTENDING BEYOND THE PLUG TO ASSIST IN REMOVING THE PLUG IN THE FUTURE.

SEE DETAIL "CONDUIT DETAILS AT STRUCTURE PARAPET TO ROADWAY BARRIER INTERFACE" WHEN CONDUIT EXITS TO GRADE FROM A BRIDGE PARAPET OR RETAINING WALL. RIGID METALLIC CONDUIT IN CONCRETE BARRIER IS INCIDENTAL TO THE RIGID NONMETALLIC CONDUIT.

PROVIDE MINIMUM CABLE SLACK AS NOTED BELOW:

PULL BOXES:	10-FT
POLES:	5-FT IN AND 5-FT OUT
CONDUCTOR COLORS:	240/480 VAC, 1 PHASE - RED/BLACK/WHITE(NEUTRAL)/GREEN OR BARE (GROUND)

STAGING NOTES

MAINTAIN LIGHTING AT ALL TIMES DURING CONSTRUCTION USING EXISTING LIGHTING, PROPOSED TEMPORARY, FINAL LIGHTING OR COMBINATIONS.

DO NOT REMOVE EXISTING LIGHTING UNTIL THE NEW OR TEMPORARY LIGHTING IS OPERATIONAL. REFER TO DRAWINGS FOR STAGING INFORMATION.

MAINTAINING SYSTEM CONTINUITY SHALL BE INCIDENTAL TO THE "REMOVE EXISTING STREET LIGHTS" BID ITEM.

DUE TO THE PHASING OF CONSTRUCTION SOME FINAL LIGHTING UNITS MAY BE ORPHANED UNTIL A LATER STAGE IS COMPLETE. IT IS AT THE DISCRETION OF THE CONTRACTOR TO SCHEDULE THESE ITEMS. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE PLACEMENT OF RACEWAY THAT SPANS TWO DIFFERENT PHASES OF CONSTRUCTION.

TEMPORARY OR FINAL LIGHTING MUST ILLUMINATE AN AREA BEFORE EXISTING LIGHTING UNITS IN AN AREA CAN BE REMOVED. THE SCHEDULING OF REMOVAL IS AT THE DISCRETION OF THE CONTRACTOR WITH THE PROVISION THAT LIGHTING OF THE ROADWAY IS PROVIDED AT ALL TIMES.

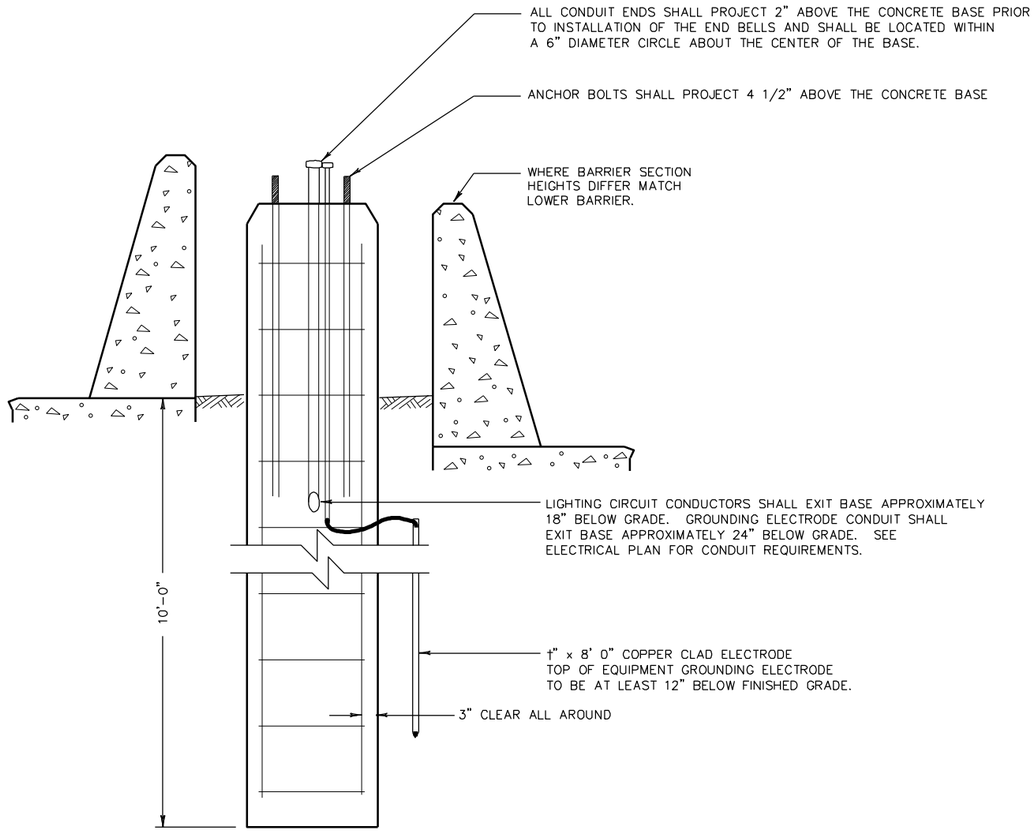
COORDINATE POLE REMOVAL WITH TRAFFIC CONTROL.

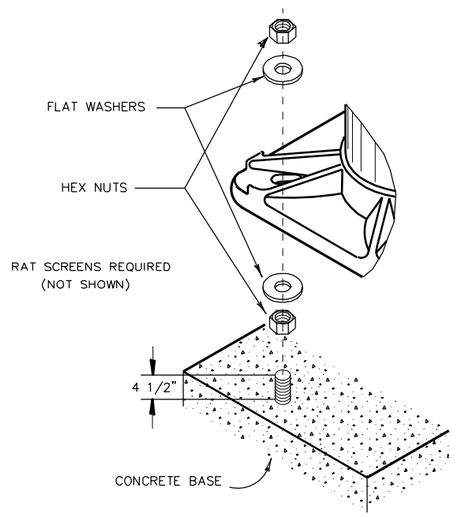
2

NOTES

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

DETAILS OF CONSTRUCTION WITH THE EXCEPTION OF HEIGHT ABOVE GRADE AND CONDUIT SIZE SHALL BE AS DEFINED IN THE STANDARD DETAIL FOR TYPE 8 BASE.

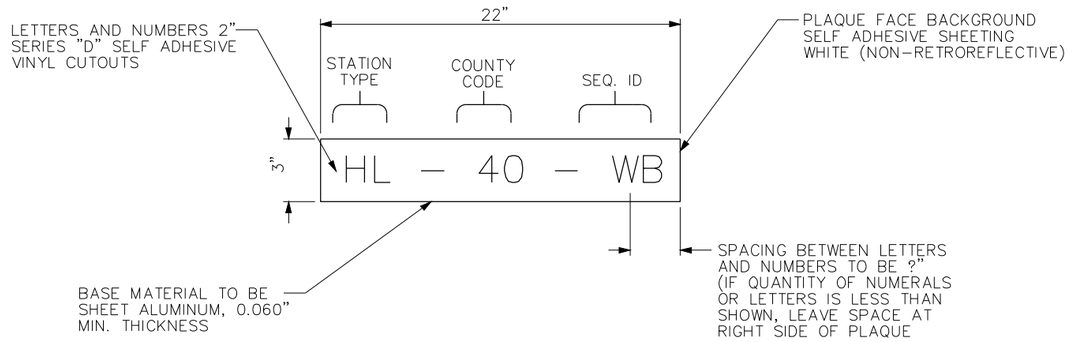




CONCRETE BASE, TYPE "B"

(1" ANCHOR RODS, 15" BOLT CIRCLE, 4 1/2" PROJECTION)

2



DISTRIBUTION CENTER IDENTIFICATION PLAQUE

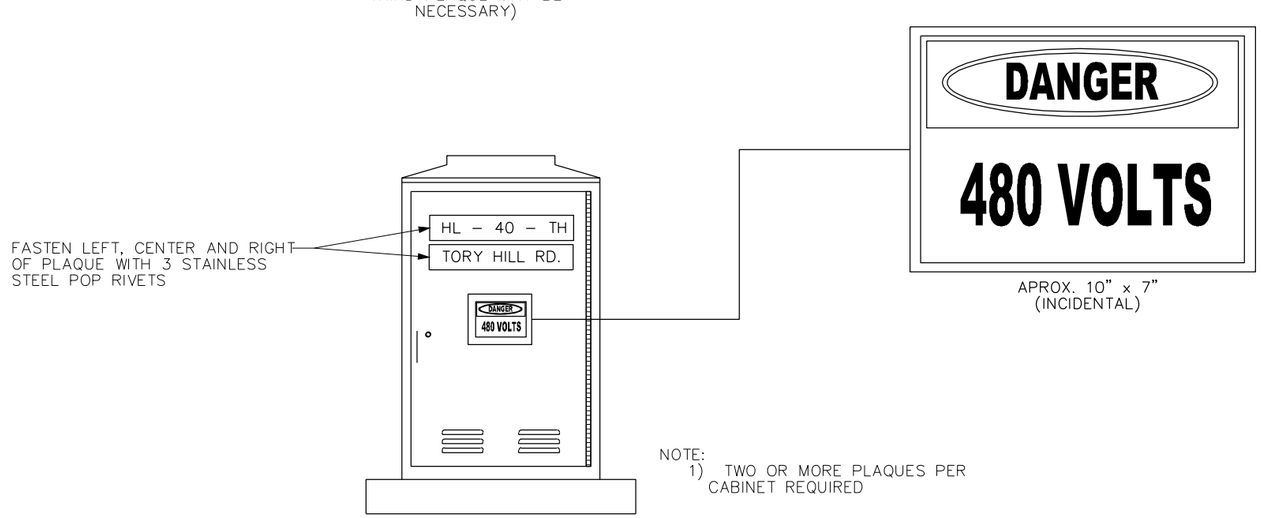
WISCONSIN AVE.

MNEMONIC

(SEE MISCELLANEOUS QUANTITIES)
(NUMBER OF CHARACTERS VARIES THIRD PLAQUE MAY BE NECESSARY)

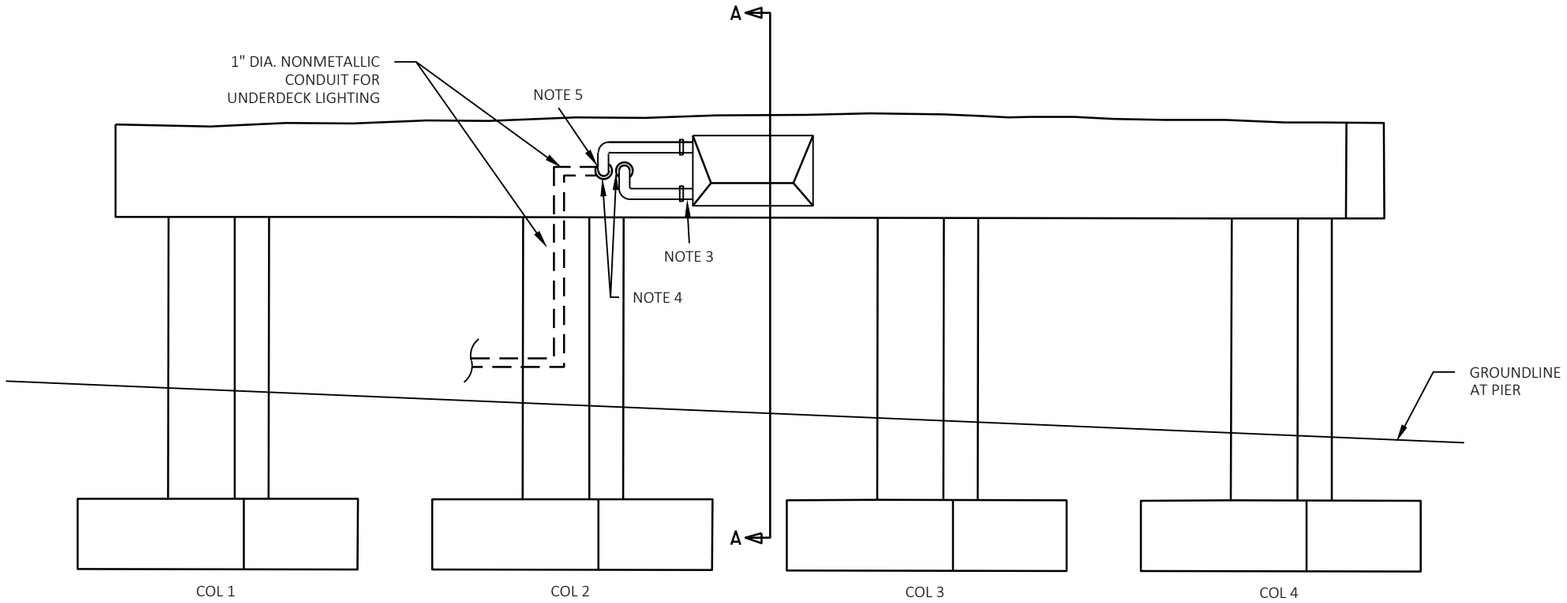
GENERAL NOTE:

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

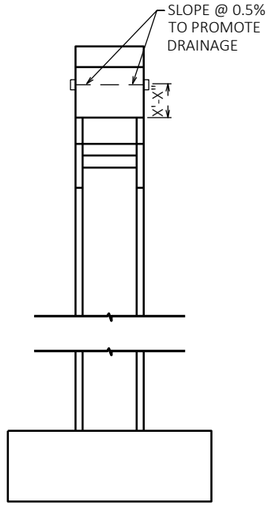


DISTRIBUTION CENTER IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS

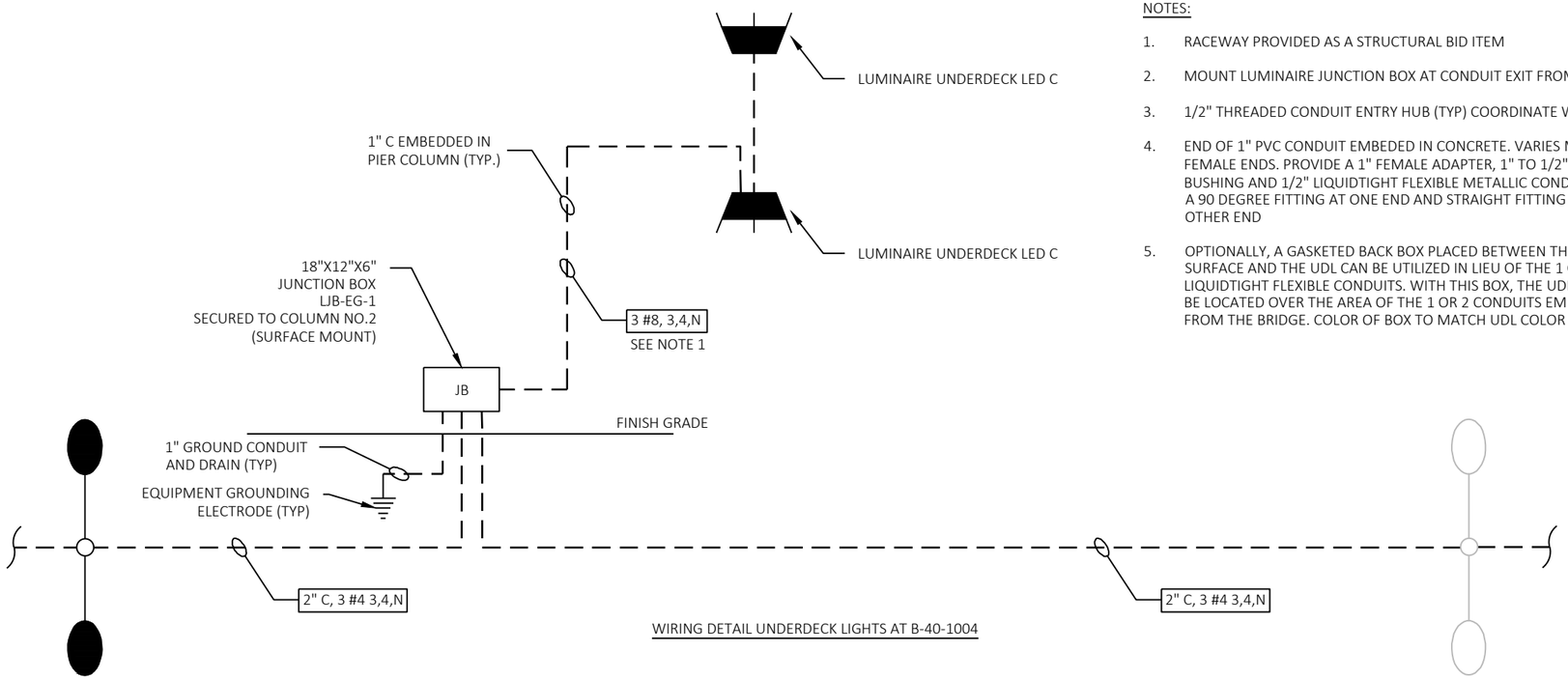
(TYPICAL ALL CONTROL CABINETS)



CROSS SECTION THRU BRIDGE LOOKING NORTH



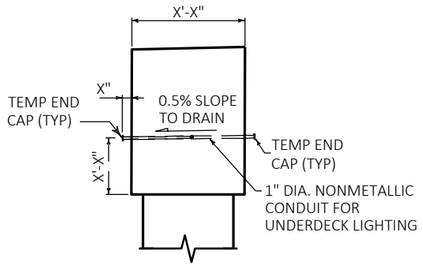
SECTION A-A



WIRING DETAIL UNDERDECK LIGHTS AT B-40-1004

NOTES:

1. RACEWAY PROVIDED AS A STRUCTURAL BID ITEM
2. MOUNT LUMINAIRE JUNCTION BOX AT CONDUIT EXIT FROM BRIDGE
3. 1/2" THREADED CONDUIT ENTRY HUB (TYP) COORDINATE WITH UDL
4. END OF 1" PVC CONDUIT EMBEDED IN CONCRETE. VARIES MALE AND FEMALE ENDS. PROVIDE A 1" FEMALE ADAPTER, 1" TO 1/2" REDUCING BUSHING AND 1/2" LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT WITH A 90 DEGREE FITTING AT ONE END AND STRAIGHT FITTING AT THE OTHER END
5. OPTIONALLY, A GASKETED BACK BOX PLACED BETWEEN THE BRIDGE SURFACE AND THE UDL CAN BE UTILIZED IN LIEU OF THE 1 OR 2 LIQUIDTIGHT FLEXIBLE CONDUITS. WITH THIS BOX, THE UDL WOULD BE LOCATED OVER THE AREA OF THE 1 OR 2 CONDUITS EMINATING FROM THE BRIDGE. COLOR OF BOX TO MATCH UDL COLOR



PIER CAP CONDUIT DETAIL

LOOKING NORTH (SECTION A-A)
FOR LOCATIONS, SEE PIER CAP PLAN AND ELEVATION
PIER REINFORCEMENT NOT SHOWN FOR CLARITY

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLANS - DETAILS	SHEET 32	E

HL-40-EG	
1,3,5	RED
4,5	BLACK
N	WHITE
GND	GREEN OR BARE
1,3,4	30 A
5,6	30 A
240/480VAC 3 WIRE GROUNDED NEUTRAL	

23+82, 105.3' LT
S-40-328
3MV-5/6/EG

21+30, 90.4' LT
1EG6

22+60, 85.9' LT
1EG5

24+20, 77.7' LT
1EG4

29+99, 174.6' LT
HL-40-EG

17+50, 8.0' RT
3EG16

16+09, 8.3' RT
3EG15

SEE NOTE 1

19+09, 8.8' RT
3EG17

21+41
6EG6

24+15
5EG7

27+02
6EG8

29+22
5EG9

31+50
4EG18

2 UDL
2EG

33+96
3EG19

STH 145 NB

STH 145 SB

MATCHLINE STA 35+75

N 107TH ST

W FOND DU LAC AVE

LEGEND

- CONDUIT
- EXISTING CONDUIT
- EXISTING CONTROL CABINET
- EXISTING DOUBLE ARM LIGHTING UNIT
- EXISTING SINGLE ARM LIGHTING UNIT
- EXISTING UDL (UNDER DECK LIGHTING)
- EXISTING PULL BOX

NOTES:

1. REMOVE WIRE FROM CONDUIT

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLAN - REMOVAL	SHEET 33	E

2

LEGEND

- CONDUIT
- EXISTING CONDUIT
- EXISTING CONTROL CABINET
- EXISTING DOUBLE ARM LIGHTING UNIT
- EXISTING SINGLE ARM LIGHTING UNIT
- EXISTING UDL (UNDER DECK LIGHTING)
- EXISTING PULL BOX

14+49, 8.4' RT
3EG14

12+90, 8.4' RT
3EG13

11+30, 8.0' RT
3EG12

9+70, 8.3' RT
3EG11

8+10, 8.3' RT
3EG10

6+50, 8.5' RT
3EG9

5+21, 8.5' RT
3EG28

3+50, 12.4' RT
3EG29

SEE NOTE 1

STH 145 NB

STH 145 SB

42+13
4EG22

3EG22

44+87
3EG23

4EG23

47+61
4EG24

3EG24

39+40
3EG21

4EG21

36+69
4EG20

3EG20

MATCHLINE STA 35+75

37+39, 84.5' RT
4EG5

38+98, 99.0' RT
4EG6

40+05, 155.3' RT
4EG7

40+88, 281.8' RT
4EG8

41+57, 236.7' RT
4EG13

42+57, 122.9' RT
4EG12

44+23, 83.2' RT
4EG14

W FOND DU LAC AVE

NOTES:

1. REMOVE WIRE FROM CONDUIT

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLANS - REMOVAL	SHEET 34	E

FILE NAME : W:\PROJECTS\19254\1360-12-00\05_CADD\CADD DRAWINGS\023401-LR.DWG
LAYOUT NAME - 2
PLOT DATE : 10/20/2021 9:15 AM PLOT BY : WILLIAM NEAVE PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

2

#4 3,4,N
NOTE 2

115+09, 33.7' RT
LPB-EG-1

#4 3,4,N
INTERCEPT EXISTING
CONDUIT AT POLE BASE

17+50, 7.9' RT
4EG16

16+09, 8.3' RT
3EG15

#4 3,4,N

29+99, 174.6' LT
HL-40-EG

19+09, 8.8' RT
3EG17

29+83, 157.4' LT
EX. LPB-EG-1

23+82, 105.3' LT
S-40-328
3MV-5/6/EG

21+30, 90.4' LT
1EG6

22+60, 85.9' LT
1EG5

24+20, 77.7' LT
1EG4

21+41
6EG6

24+15
5EG7

27+02
6EG8

29+22
5EG9

31+50
4EG18

2 UDL
2EG

33+96
3EG19

STH 145 NB

MATCHLINE STA 35+75

30+26
EX. LPB-EG-2

STH 145 SB

5EG6

6EG7

5EG8

6EG9

3EG18

4EG19

N 107TH ST

W FOND DU LAC AVE

LEGEND

- CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING CONTROL CABINET
- EXISTING DOUBLE ARM LIGHTING UNIT
- EXISTING SINGLE ARM LIGHTING UNIT
- EXISTING UDL (UNDER DECK LIGHTING)
- EXISTING PULL BOX
- PROPOSED PULL BOX

NOTES:

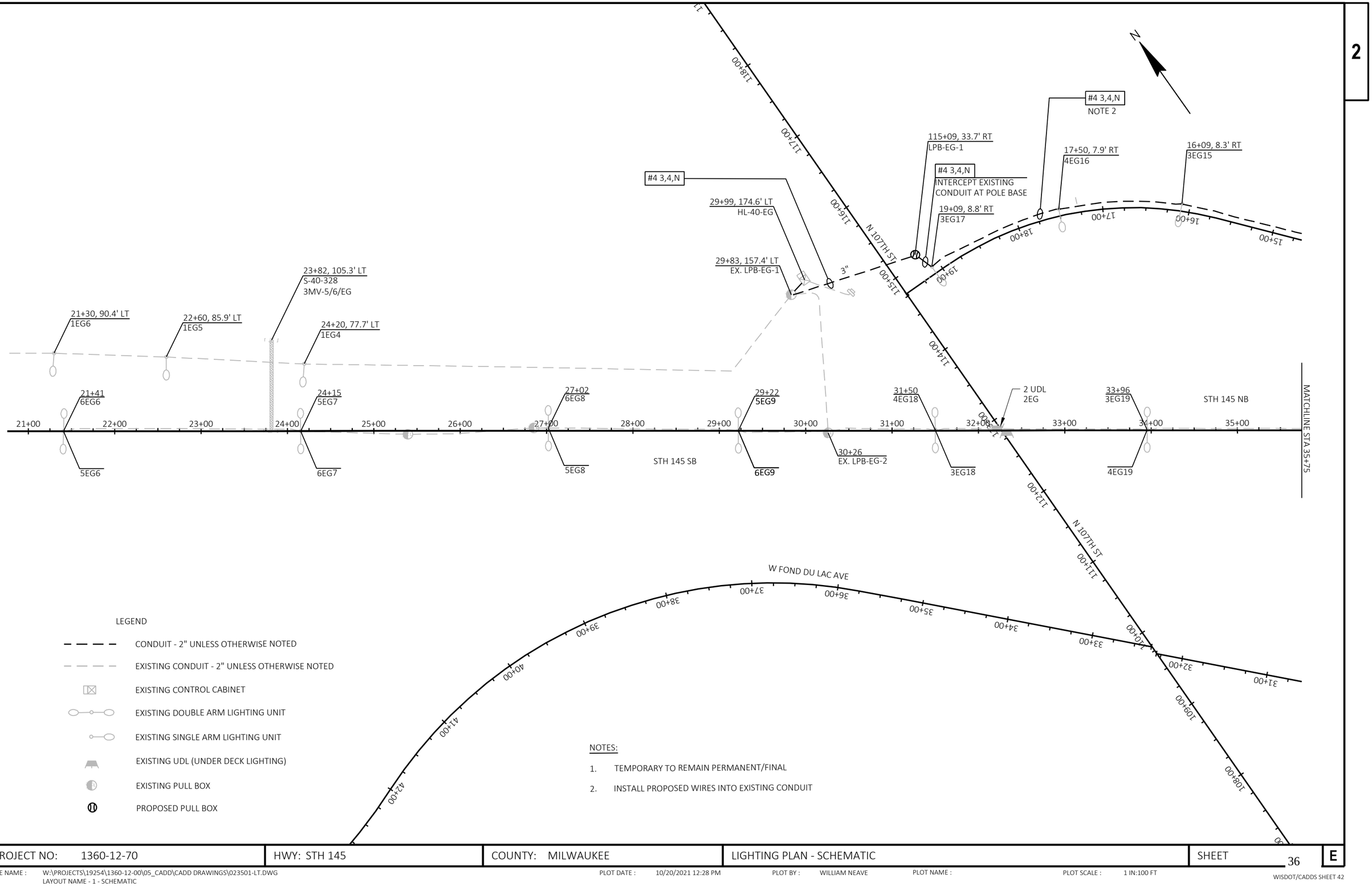
1. TEMPORARY TO REMAIN PERMANENT/FINAL
2. INSTALL PROPOSED WIRES INTO EXISTING CONDUIT

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLAN - TEMPORARY/PROPOSED	SHEET 35	E

FILE NAME : W:\PROJECTS\19254\1360-12-00\05_CADD\CADD DRAWINGS\023501-LT.DWG
LAYOUT NAME - 1

PLOT DATE : 10/20/2021 12:28 PM PLOT BY : WILLIAM NEAVE PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

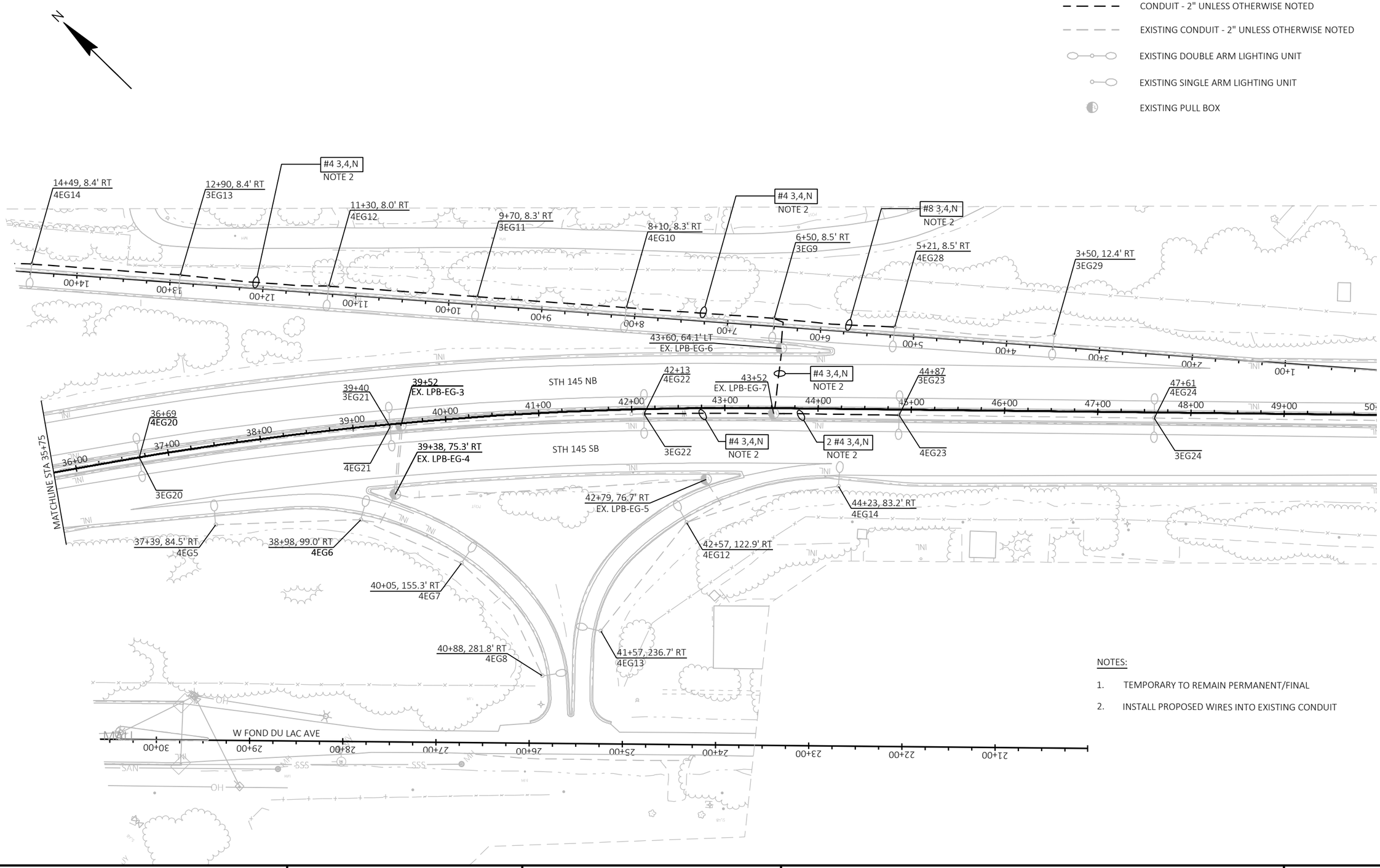


PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLAN - SCHEMATIC	SHEET 36	E

2

LEGEND

- CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING DOUBLE ARM LIGHTING UNIT
- EXISTING SINGLE ARM LIGHTING UNIT
- EXISTING PULL BOX



NOTES:

1. TEMPORARY TO REMAIN PERMANENT/FINAL
2. INSTALL PROPOSED WIRES INTO EXISTING CONDUIT

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLAN - TEMPORARY/PROPOSED	SHEET 37	E

FILE NAME : W:\PROJECTS\19254\1360-12-00\05_CADD\CADD DRAWINGS\023501-LT.DWG
LAYOUT NAME - 2

PLOT DATE : 10/20/2021 12:29 PM PLOT BY : WILLIAM NEAVE PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

LEGEND

- CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING DOUBLE ARM LIGHTING UNIT
- EXISTING SINGLE ARM LIGHTING UNIT
- EXISTING PULL BOX

N

14+49, 8.4' RT
4EG14

12+90, 8.4' RT
3EG13

#4 3,4,N
NOTE 2

11+30, 8.0' RT
4EG12

9+70, 8.3' RT
3EG11

8+10, 8.3' RT
4EG10

#4 3,4,N
NOTE 2

6+50, 8.5' RT
3EG9

#8 3,4,N
NOTE 2

5+21, 8.5' RT
4EG28

3+50, 12.4' RT
3EG29

14+00 13+00 12+00 11+00 10+00 9+00 8+00 7+00 6+00 5+00 4+00 3+00 2+00 1+00

43+60, 64.1' LT
EX. LPB-EG-6

STH 145 NB

42+13
4EG22

43+52
EX. LPB-EG-7

#4 3,4,N
NOTE 2

44+87
3EG23

47+61
4EG24

41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50-

39+40
3EG21

39+52
EX. LPB-EG-3

36+69
4EG20

39+38, 75.3' RT
EX. LPB-EG-4

STH 145 SB

3EG22

#4 3,4,N
NOTE 2

2 #4 3,4,N
NOTE 2

4EG23

3EG24

4EG21

3EG20

36+00 37+00 38+00 39+00 40+00

MATCHLINE STA 35+75

42+79, 76.7' RT
EX. LPB-EG-5

44+23, 83.2' RT
4EG14

37+39, 84.5' RT
4EG5

38+98, 99.0' RT
4EG6

42+57, 122.9' RT
4EG12

40+05, 155.3' RT
4EG7

40+88, 281.8' RT
4EG8

41+57, 236.7' RT
4EG13

W FOND DU LAC AVE

30+00 29+00 28+00 27+00 26+00 25+00 24+00 23+00 22+00 21+00

NOTES:

1. TEMPORARY TO REMAIN PERMANENT/FINAL
2. INSTALL PROPOSED WIRES INTO EXISTING CONDUIT

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLAN - SCHEMATIC	SHEET 38	E

2

2

#4 3,4,N

115+09, 33.7' RT
LPB-EG-1

#4 3,4,N
INTERCEPT EXISTING
CONDUIT AT POLE BASE

17+50, 7.9' RT
3EG16

16+09, 8.3' RT
3EG15

#4 3,4,N

29+99, 174.6' LT
HL-40-EG

19+09, 8.8' RT
3EG17

29+83, 157.4' LT
EX. LPB-EG-1

23+82, 105.3' LT
S-40-328
3MV-5/6/EG

21+30, 90.4' LT
1EG6

22+60, 85.9' LT
1EG5

24+20, 77.7' LT
1EG4

REFER TO LIGHTING PLAN DETAIL
SHEET - WIRING DETAIL - UNDERDECK
LIGHTING (UDL)

2 UDL
2EG

2 2" CONDUIT

21+41
6EG6

24+15
5EG7

27+02
6EG8

29+22
5EG9

31+50
4EG18

33+96
3EG19

STH 145 NB

MATCHLINE STA 35+75

21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00

5EG6 6EG7 5EG8 STH 145 SB 6EG9 3EG18 4EG19

#4 3,4,N
#8 3,4,N

#4 3,4,N

30+26
EX. LPB-EG-2

N 107TH ST

W FOND DU LAC AVE

LEGEND

- CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING CONTROL CABINET
- EXISTING DOUBLE ARM LIGHTING UNIT
- EXISTING SINGLE ARM LIGHTING UNIT
- EXISTING UDL (UNDER DECK LIGHTING)
- EXISTING PULL BOX
- PROPOSED PULL BOX

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLAN - PROPOSED	SHEET 39	E

FILE NAME : W:\PROJECTS\19254\1360-12-00\05_CADD\CADD DRAWINGS\023601-LP.DWG
LAYOUT NAME - 1

PLOT DATE : 10/20/2021 12:21 PM PLOT BY : WILLIAM NEAVE PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

2

N

#4 3,4,N

115+09, 33.7' RT
LPB-EG-1

#4 3,4,N
INTERCEPT EXISTING
CONDUIT AT POLE BASE

17+50, 7.9' RT
3EG16

16+09, 8.3' RT
3EG15

19+09, 8.8' RT
3EG17

#4 3,4,N

29+99, 174.6' LT
HL-40-EG

29+83, 157.4' LT
EX. LPB-EG-1

23+82, 105.3' LT
S-40-328
3MV-5/6/EG

21+30, 90.4' LT
1EG6

22+60, 85.9' LT
1EG5

24+20, 77.7' LT
1EG4

21+41
6EG6

24+15
5EG7

27+02
6EG8

29+22
5EG9

21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00

5EG6 6EG7 5EG8 6EG9

STH 145 SB

N 107TH ST

REFER TO LIGHTING PLAN DETAIL
SHEET - WIRING DETAIL - UNDERDECK
LIGHTING (UDL)

2 UDL
2EG

2 2" CONDUIT

31+50
4EG18

33+96
3EG19

STH 145 NB

MATCHLINE STA 35+75

3EG18

4EG19

#4 3,4,N
#8 3,4,N

#4 3,4,N

30+26
EX. LPB-EG-2

W FOND DU LAC AVE

LEGEND

- CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING CONTROL CABINET
- EXISTING DOUBLE ARM LIGHTING UNIT
- EXISTING SINGLE ARM LIGHTING UNIT
- EXISTING UDL (UNDER DECK LIGHTING)
- EXISTING PULL BOX
- PROPOSED PULL BOX

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLAN - SCHEMATIC	SHEET 40	E

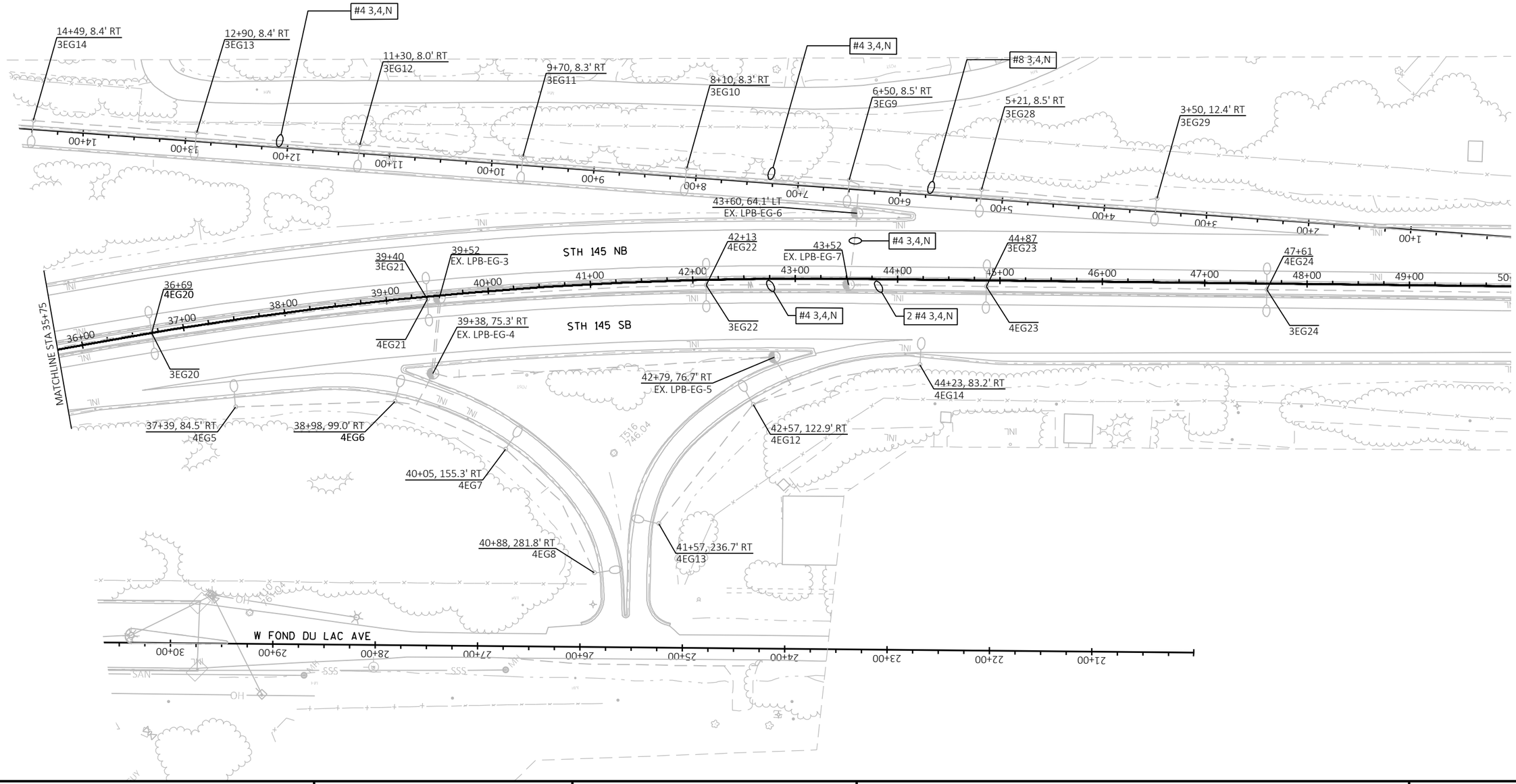
FILE NAME : W:\PROJECTS\19254\1360-12-00\05_CADD\CADD DRAWINGS\023601-LP.DWG
LAYOUT NAME - 1 - SCHEMATIC

PLOT DATE : 10/20/2021 12:21 PM PLOT BY : WILLIAM NEAVE PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

LEGEND

- CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING DOUBLE ARM LIGHTING UNIT
- EXISTING SINGLE ARM LIGHTING UNIT
- EXISTING PULL BOX



PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLANS - PROPOSED	SHEET 41	E

2

LEGEND

- CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING CONDUIT - 2" UNLESS OTHERWISE NOTED
- EXISTING DOUBLE ARM LIGHTING UNIT
- EXISTING SINGLE ARM LIGHTING UNIT
- EXISTING PULL BOX

N

14+49, 8.4' RT
3EG14

12+90, 8.4' RT
3EG13

#4 3,4,N

11+30, 8.0' RT
3EG12

9+70, 8.3' RT
3EG11

8+10, 8.3' RT
3EG10

#4 3,4,N

6+50, 8.5' RT
3EG9

#8 3,4,N

5+21, 8.5' RT
3EG28

3+50, 12.4' RT
3EG29

43+60, 64.1' LT
EX. LPB-EG-6

14+00 13+00 12+00 11+00 10+00 9+00 8+00 7+00 6+00 5+00 4+00 3+00 2+00 1+00

STH 145 NB

39+40
3EG21

39+52
EX. LPB-EG-3

42+13
4EG22

43+52
EX. LPB-EG-7

#4 3,4,N

44+87
3EG23

47+61
4EG24

41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50-

36+69
4EG20

38+00 37+00 36+00 39+00 40+00

MATCHLINE STA 35+75

3EG20

4EG21

39+38, 75.3' RT
EX. LPB-EG-4

STH 145 SB

#4 3,4,N

3EG22

2 #4 3,4,N

4EG23

3EG24

42+79, 76.7' RT
EX. LPB-EG-5

44+23, 83.2' RT
4EG14

37+39, 84.5' RT
4EG5

38+98, 99.0' RT
4EG6

42+57, 122.9' RT
4EG12

40+05, 155.3' RT
4EG7

40+88, 281.8' RT
4EG8

41+57, 236.7' RT
4EG13

W FOND DU LAC AVE

30+00 29+00 28+00 27+00 26+00 25+00 24+00 23+00 22+00 21+00

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	LIGHTING PLANS - SCHEMATIC	SHEET 42	E

FILE NAME : W:\PROJECTS\19254\1360-12-00\05_CADD\CADD DRAWINGS\023601-LP.DWG
LAYOUT NAME - 2 - SCHEMATIC

PLOT DATE : 10/20/2021 12:21 PM PLOT BY : WILLIAM NEAVE PLOT NAME : PLOT SCALE : 1 IN:100 FT

STREET LIGHTING GENERAL NOTES:

PRIOR TO CONSTRUCTION, THE LOCATION OF UNDERGROUND UTILITIES SHALL BE DETERMINED IN THE FIELD BY CONTACTING "DIGGERS HOTLINE."

THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE, IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

STREET LIGHTING SHALL BE INSTALLED IN COMPLIANCE WITH WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS SECTION 652 EXCEPT:

ALL CHANGES OR ANY DEVIATIONS FROM PLANS MUST BE APPROVED BY STREET LIGHTING ENGINEERING.

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

1 THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS INCLUDING REPAIRS, REPLACEMENT OR RELOCATION ETC. OF STREET LIGHTING FACILITIES IF THE CONTRACTOR DOES ANY DEVIATION FROM THE
2 STREET LIGHTING DESIGN WITHOUT THE STREET LIGHTING ENGINEERS SIGNED PERMISSION.

3 LOCATIONS OF THE HDPE AND NON-METALLIC PVC CONDUITS WHERE THEY ARE REQUIRED ARE IDENTIFIED IN THE PRINTS. HOWEVER, INSTALLATION MAY REQUIRE INTEGRATION WITH EXISTING FIELD CONDITIONS. APPROPRIATE ADJUSTMENT ON CONDUIT LOCATIONS MAY BE MADE IF THE FIELD CONDITIONS ARE SUCH THAT THE CONDUIT CANNOT BE INSTALLED AT THE SPECIFIED LOCATIONS. ANY RELOCATIONS MUST BE APPROVED BY THE ENGINEER.

4 CONDUIT INSTALLED BEHIND CURB, AND UNDER DRIVEWAYS SHALL BE INSTALLED AT A DISTANCE OF MINIMUM OF 6-INCHES AWAY FROM THE BACK OF CURB TO THE CENTER LINE OF CONDUIT, AND MINIMUM 24 INCHES DOWN MEASURED FROM THE TOP OF CURB OR FINISHED GRADE TO THE TOP OF CONDUIT.

5 DEPTH OF CONDUIT INSTALLED BELOW STREETS, HIGHWAYS, AND ALLEYS SHALL BE 24-INCHES MINIMUM AND 36-INCHES MAXIMUM. (MEASURED FROM FINISHED FLANGE LINE)
IF THE CONTRACTOR DOES ANY DEVIATION FROM THE STREET LIGHTING DESIGN WITHOUT THE STREET LIGHTING ENGINEERS SIGNED PERMISSION.

6 WHEN THERE IS MORE THAN ONE CONDUIT TO BE INSTALLED, PLACE ALL CONDUITS IN THE SAME TRENCH, OR BORE MULTIPLE CONDUITS TOGETHER AT THE SAME TIME.

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

8 BENDING OF NON-METALLIC PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR IMMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

9 ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON ALL CONDUITS. (PER NEC CODE)

10 PRIOR TO CONDUIT ACCEPTANCE, ALL CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND BE CAPPED IMMEDIATELY AFTER INSTALLATION WITH THE APPROPRIATE CAST PLASTIC CAP WHICH FITS SNUGGLY ON THE CONDUIT, BUT EASILY REMOVED IN THE FUTURE. DUCT TAPE OR ANY OTHER CAPPING METHOD IS NOT ACCEPTABLE.

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

12 3/8-INCH PULL ROPE SHALL BE INSTALLED IN ALL NEW AND EMPTY CONDUIT.

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

14 UNLESS THE CONDUIT IS DESIGNED AND SHOWN WITH BENDS ON THE PLANS, ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO CONCRETE BASE, AND PULL BOX TO ENCLOSURE. OTHERWISE IT MUST BE APPROVED BY THE STREET LIGHTING ENGINEER.

15 MINIMUM CONDUIT CLEARANCES FOR CONDUIT CROSSINGS AND PULL BOXES FROM THE FOLLOWING:
FIRE HYDRANTS: 6-FT TREE TRUNKS: 10-FT END OF DRIVEWAY FLARES: 6-FT
UNLESS NOTED OTHERWISE, OR APPROVED BY THE STREET LIGHTING ENGINEER.

16 HAND DIGGING MAY BE REQUIRED FOR LOCATIONS ADJACENT TO EXISTING GAS AND POWER LINES. HAND EXCAVATION SHOULD BE ANTICIPATED AND WILL BE CONSIDERED INCIDENTAL TO THE BID ITEM BEING INSTALLED. COORDINATE ALL WORK NEAR GAS LINES WITH WE ENERGIES.

STREET LIGHTING GENERAL NOTES:

17 TYPICAL RECTANGULAR PULL BOXES / VAULTS SHOULD BE INSTALLED AS SHOWN ON PLANS, BUT WHEN IT IS NOT POSSIBLE, A 5 FT. TO 6 FT. OFFSET FROM STREET LIGHT POLES, SIGNAL STANDARDS AND FIRE HYDRANTS SHOULD BE USED, OTHERWISE APPROVED BY THE STREET LIGHTING ENGINEER.

18 TYPICAL CONDUIT INSTALLATION FROM THE PULL BOX TO A DIRECT BURIED STREET LIGHT POLE IS AS FOLLOWS: USE A NYLON LIQUIDTIGHT CONNECTOR (UL APPROVED) TO CONNECT THE 1 1/2-INCH LIQUIDTIGHT FLEXIBLE NON-METALLIC CONDUIT LFNC-B (UL APPROVED) TO THE PULL BOX AND CONNECT TO STREET LIGHT POLE BY STUBBING UP A MINIMUM OF 6-INCHES OF THE LIQUIDTIGHT FLEXIBLE NON-METALLIC CONDUIT (LFNC-B) INTO THE CABLE SLOT.

19 ALL HDPE OR NON-METALLIC PVC CONDUITS THAT CONNECT TO PULL BOXES REQUIRE A PVC END BELL CONNECTOR INSIDE THE PULL BOX

20 PROVIDE REMOVABLE SEALANT SUCH AS DUCT SEAL IN THE CONDUITS AT THE CABINETS, PULL BOXES AND JUNCTION BOXES TO AVOID CONDENSATION CAUSED BY AIRFLOW THROUGH THE CONDUITS DUE TO TEMPERATURE DIFFERENCE. THIS WORK SHALL BE INCIDENTAL TO ASSOCIATED CONDUIT PAY ITEM.

21 CONDUCTOR COLORS: 240/480, 1 PHASE - BLACK / RED / WHITE (NEUTRAL) / GREEN (GROUND)

22 PROVIDE MINIMUM CABLE/CONDUCTOR(S) SLACK AS NOTED BELOW:
PULL BOXES: 3-FT EMBEDDED JUNCTION BOXES: 3-FT
DISTRIBUTION CENTER/LOAD CENTER: 10-FT BREAK AWAY TRANSFORMER BASE: 2-FT

23 UNDERGROUND WIRE & CONDUIT SHOWN ON PLANS TO BE ABANDONED IN PLACE UNLESS DIRECTED BY THE ENGINEER. CONTRACTOR MAY CHOOSE TO REMOVE CONDUCTOR AT THEIR OWN EXPENSE.

24 LIGHT POLES INSTALLED BEHIND THE CURB MUST MEET A MINIMUM DISTANCE OF 24 INCHES FROM THE FACE OF CURB TO THE CURB SIDE FACE OF THE POLE OR TRAFFIC STANDARD.

25 ON ALL NEW STREET LIGHT POLES A PLAQUE WITH THE POLE NUMBER AS SHOWN ON THE PLANS SHALL BE AFFIXED ONTO THE POLE SHAFT.

26 COORDINATE NEW CONDUIT CONNECTIONS WITH EXISTING CONDUIT, DUCT PACKAGES, AND PULL BOXES/ VAULTS/ MANHOLES WITH CITY OF MILWAUKEE STREET LIGHTING. THE CITY REQUIRES THREE WORKING DAYS ADVANCED NOTICE. CONTACT ELECTRICAL SUPERVISOR
STREET LIGHTING - NEAL KARWEIK (OFFICE 414-286-5943 (CELL) 414-708-4245
STREET LIGHTING - MARK MACRAE (OFFICE) 414-286-5928 (CELL) 414-708-0434
STREET LIGHTING - DISPATCHER @ 414-286-5944
TRAFFIC SIGNALS - RUDY GUTIERREZ (OFFICE) 414-286-5941 (CELL) 414-708-5148
TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687

27 IMMEDIATELY AFTER THE CONTRACTOR HAS COMPLETED ALL THE ELECTRICAL PULL BOXES / VAULTS, CONDUIT AND CONDUIT CONNECTIONS, AND JUST BEFORE ELECTRICAL WORK IS COVERED UP WITH CONRETE, SOIL, OR ETC. THE CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SHOP SUPERVISORS FOR FINAL INSPECTION AND APPROVAL OF ALL WORK.
STREET LIGHTING - NEAL KARWEIK (OFFICE) 414-286-5943 (CELL) 414-708-4245
STREET LIGHTING - MARK MACRAE (OFFICE) 414-286-5928 (CELL) 414-708-0434
STREET LIGHTING - THOMAS HUGHES (OFFICE) 414-286-3457 (CELL) 414-708-3175
STREET LIGHTING - DISPATCHER @ 414-286-5944
TRAFFIC SIGNALS - RUDY GUTIERREZ (OFFICE) 414-286-5941 (CELL) 414-708-5148
TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687

28 CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS DETAILING THE FINAL PLACEMENT OF CONDUIT, CABLING, EQUIPMENT, AND GEOMETRIC MODIFICATIONS UNDER THE CONTRACT. PROVIDE PDF COPY CONFORMING TO CMM 1-65.14, OR RECORD ALL CHANGES IN RED INK ONLY ON THE AS-LET (DESIGN) PAPER DRAWINGS. THE CITY OF MILWAUKEE DPW ENGINEER WILL REJECT AS-BUILTS WITH INCOMPLETE OR INCORRECT CONTENT OR NOT CONFORMING TO CMM STANDARDS.

29 CONTRACTOR TO DELIVER THE FOLLOWING REMOVED STREET LIGHTING MATERIALS:
-ALUMINUM AND WOOD POLES
-LUMINAIRE BRACKET ARMS
-LUMINAIRES
-BREAKAWAY TRANSFORMER PEDESTALS
-WIRING PEDESTALS (GREEN IN COLOR)
TO CITY OF MILWAUKEE STREET LIGHTING YARD AT 1540 W. CANAL ST.
CALL RICO LOPEZ AT 414-286-5983 (CANAL) OR 414-286-6123 N. 35th ST.)
OR ELSE DISPATCHER AT 414-286-5944, THREE (3) WORKING BEFORE TO COORDINATE DELIVERY OF MATERIALS

30 CONTRACTOR WILL BE RESPONSIBLE FOR THE DISPOSAL OF CONCRETE POLES, AND WIRING.

SHEET 10F 9

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - GENERAL NOTES & DETAILS	SHEET 43	E

STREET LIGHTING GENERAL NOTES:

AS-BUILT GUIDELINES:

PROVIDE AS-BUILT DRAWINGS DETAILING THE FINAL PLACEMENT OF CONDUIT, CABLING, EQUIPMENT, AND GEOMETRIC MODIFICATIONS UNDER THE CONTRACT. PROVIDE PDF COPY CONFORMING TO CMM 1-65.14, OR RECORD ALL CHANGES IN RED INK ONLY ON THE AS-LET (DESIGN) PAPER DRAWINGS. THE ENGINEER WILL REJECT AS-BUILTS WITH INCOMPLETE OR INCORRECT CONTENT OR NOT CONFORMING TO CMM STANDARDS.

IT IS CRITICAL THAT THE CONTRACTOR WORK ON THE AS-BUILT DRAWINGS WHILE THE JOB IS PROGRESSING, SO CHANGES ARE DOCUMENTED WHILE THEY ARE STILL FRESH IN YOUR MIND.

IF THERE IS A STRUCTURE DRAWING, INCLUDE ALL STRUCTURES DRAWING SHEETS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSERT ANY ADDENDUM OR REPLACEMENT DRAWING SHEETS. TO DO THIS, RENUMBER THEM SIMILARLY TO THE ORIGINAL DRAWING SHEET.

FOR EXAMPLE:
REVISED SHEET 5 WOULD REPLACE SHEET 5. HOWEVER, ALL THE ORIGINAL SHEETS SHALL REMAIN IN THE AS-BUILT. IF THE SHEET HAS BEEN REPLACED CROSS IT OUT WITH AN X AND INDICATE THE NUMBER OF ITS REPLACEMENT SHEET. IF ADDITIONAL SHEETS WERE ADDED, INSERT THEM IN THE ORIGINAL LOCATION AND LABEL THEM WITH THE PREVIOUS SHEET NUMBER FOLLOWED BY AN "A", "B", "C", ETC.

NOTE THE SHEET CHANGES ON THE TITLE SHEET UNDER THE ORDER OF SHEETS.

THE TITLE SHEET OF THE AS-BUILT DRAWING SHOULD INCLUDE THE FOLLOWING INFORMATION:
AS-BUILT DRAWING
SUPERVISOR:
PROJECT MANAGER:
CONTRACTOR LEADER:
CONTRACTOR COMAPNY:
WORK STARTED:
WORK COMPLETED:

LINE OUT OR CROSS OUT ALL CHANGED INFORMATION AND WRITE-IN THE CORRECTED INFORMATION ABOVE THE ORIGINAL OR CLOSE TO IT WHEREVER POSSIBLE. USE BLANK SPACES ON THE DRAWING SO NOTES ARE NOT SUPERIMPOSED. DRAWINGS WITH EXCESSIVE DETAIL MAY REQUIRE AN ALTERNATE APPROACH. NUMBERED CHANGES OR ADDITIONS MAY BE SHOWN ON SUPPLEMENTAL NON-DRAWING SHEETS.

- LOCATE AND CLEARLY LABEL ALL CONDUIT RUNS, FITTINGS, SPLICE VAULTS, PULL BOXES, METER PEDESTALS, CONCRETE BASES, TRANSFORMERS, POLES AND OTHER APPURTENANCES IN TWO DIRECTIONS. SWING TIES SHOULD BE MADE FROM THE OBJECTS THAT ARE PERMANENT IN NATURE AND VISIBLE ON THE FINISHED SURFACE.
- STREET NAMES SHALL BE ON ALL SHEETS.
- SHOW ALL SIZES AND MATERIAL TYPES OF PIPES AND CONDUITS, IF CHANGED OR MODIFIED FROM ORIGINAL DESIGN.
- ALL HORIZONTAL DISTANCES SHALL BE SHOWN TO THE NEAREST TENTH OF A FOOT (I.E., 205.3'). ALL VERTICAL DISTANCES SHALL BE TO THE NEAREST INCH (I.E., 24")
- SHOW LOCATION AND ELEVATIONS ON PIPES AND FITTINGS WHERE CHANGES OR DEFLECTIONS IN DIRECTION OCCUR.
- SPECIAL DETAIL DRAWINGS MAY BE REQUIRED WHERE INSTALLATIONS ARE NOT SHOWN ON APPROVED CONSTRUCTION DRAWINGS FOR WHATEVER REASON OR WHERE REQUIRED FOR CLARITY.
- TYPICAL SERVICE INSTALLATION DETAILS WITH DEVIATIONS FROM ORIGINAL PLANS OR STANDARD DETAILS SHALL BE NOTED ON AS-BUILT DRAWINGS.
- NO ARBITRARY MARK-UPS WILL BE PERMITTED.

IF THERE ARE NO CORRECTIONS OR ADDITIONS TO THE AS-LET PLAN(S) PUT "NO CHANGE" ON THE SHEET WITH ALL OTHER REQUIRED AS-BUILT INFORMATION.

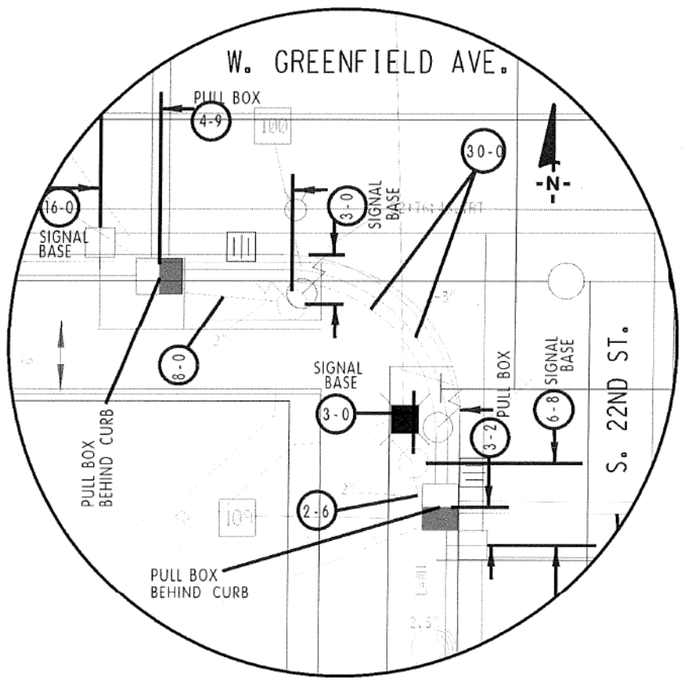
SEND TO:
CITY OF MILWAUKEE
INFRASTRUCTURE SERVICES DIVISION
TRANSPORTATION SECTION
STREET LIGHTING & CUC MANAGER
841 NORTH BROADWAY
ROOM 920
MILWAUKEE, WISCONSIN 53202

USE RED INK TO DO AS-BUILTS

SUPERVISOR:_____
PROJECT MANAGER:_____
CONTRACTOR LEADER:_____
CONTRACTOR COMPANY:_____
WORK STARTED:_____
WORK COMPLETED:_____

RECORD RETENTION GUIDELINES:

* CONTRACTOR TO LOCATE AND CLEARLY DIMENSION ALL OF THERE NEWLY INSTALLED CONDUIT RUNS, FITTINGS, SPLICE VAULTS, PULL BOXES, METER PEDESTALS, CONCRETE BASES, TRANSFORMERS, POLES AND OTHER APPURTENANCES IN TWO (2) DIRECTIONS. SWING TIES SHOULD BE MADE FROM OBJECTS THAT ARE PERMANENT IN NATURE AND VISIBLE ON THE FINISHED SURFACE.
* STREET NAMES SHALL BE ON ALL SHEETS.
* SHOW ALL SIZES AND MATERIAL TYPES OF PIPES AND CONDUITS, IF CHANGED OR MODIFIED FROM ORGINAL DESIGN.
* ALL HORIZONTAL DISTANCES SHALL BE SHOWN TO THE NEAREST TENTH OF A FOOT (I.E., 205.3'). ALL VERTICAL DISTANCES SHALL BE SHOWN TO THE NEAREST INCH (I.E. 24").
* SHOW LOCATION AND ELEVATIONS OF PIPES AND FITTINGS WHERE CHANGES OR DEFLECTIONS IN DIRECTION OCCUR.
* SPECIAL DETAIL DRAWINGS WILL BE SUPPLIED WHERE REQUIRED FOR CLARITY.
* DEVIATIONS FROM ORIGINAL PLANS OR STANDARD DETAILS SHALL BE NOTED ON AS-BUILT DRAWINGS.
* IF THERE ARE NO CORRECTIONS OR ADDITIONS TO THE AS-LET PLAN(S) PUT "NO CHANGE" ON THE SHEET.



FIELD RECORD EXAMPLE DETAIL NOT TO SCALE

TYPICAL DIMENSIONING OF CONDUIT, PULL BOXES, AND CONCRETE BASES

MEASURING GUIDE LINES

IF CONDUIT IS NOT PLACED DIRECTLY BEHIND THE CURB IN THE ISLANDS & SIDE TERRACE AREAS, A MEASURED DISTANCE FROM THE FACE OF CURB TO THE CONDUIT WILL NEED TO BE PROVIDED.

PROVIDE A MEASURED DISTANCE OF UNINTERRUPTED CONDUIT RUNS

USE PERMANENT OBJECTS LIKE HYDRANTS, CATCH BASINS, OR EVEN CURB FACE LINES EXTENED TO MEASURE OFF WHEN LOCATING CONDUIT, PULL BOXES AND CONCRETE BASES.

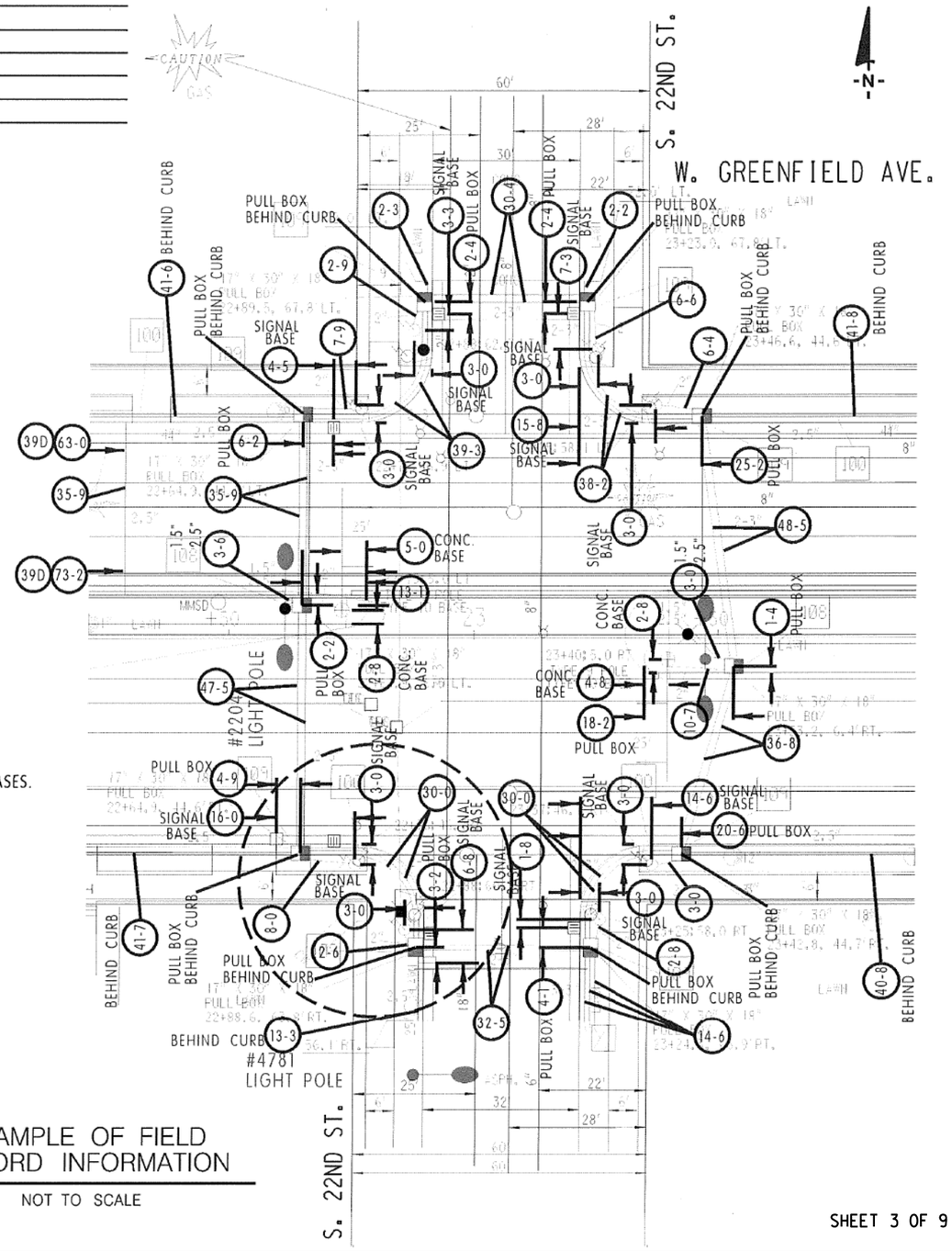
MEASURE TO OR FROM THE CENTERS OF OBJECTS FOR DISTANCE TAKING.

(39D) MEANS = CONDUIT IS 39" DEEP

(48-5) MEANS = LENGTH OF CONDUIT IS 48.5 FT. LONG (MEASURED TO NEAREST TENTH OF A FOOT)

OR

(25-6) MEANS = DISTANCE OF 25.6 FT. BETWEEN PERMANENT OBJECT OR CURB FACE TO CONDUIT, PULL BOX, AND CONCRETE BASE (MEASURED TO NEAREST TENTH OF A FOOT)



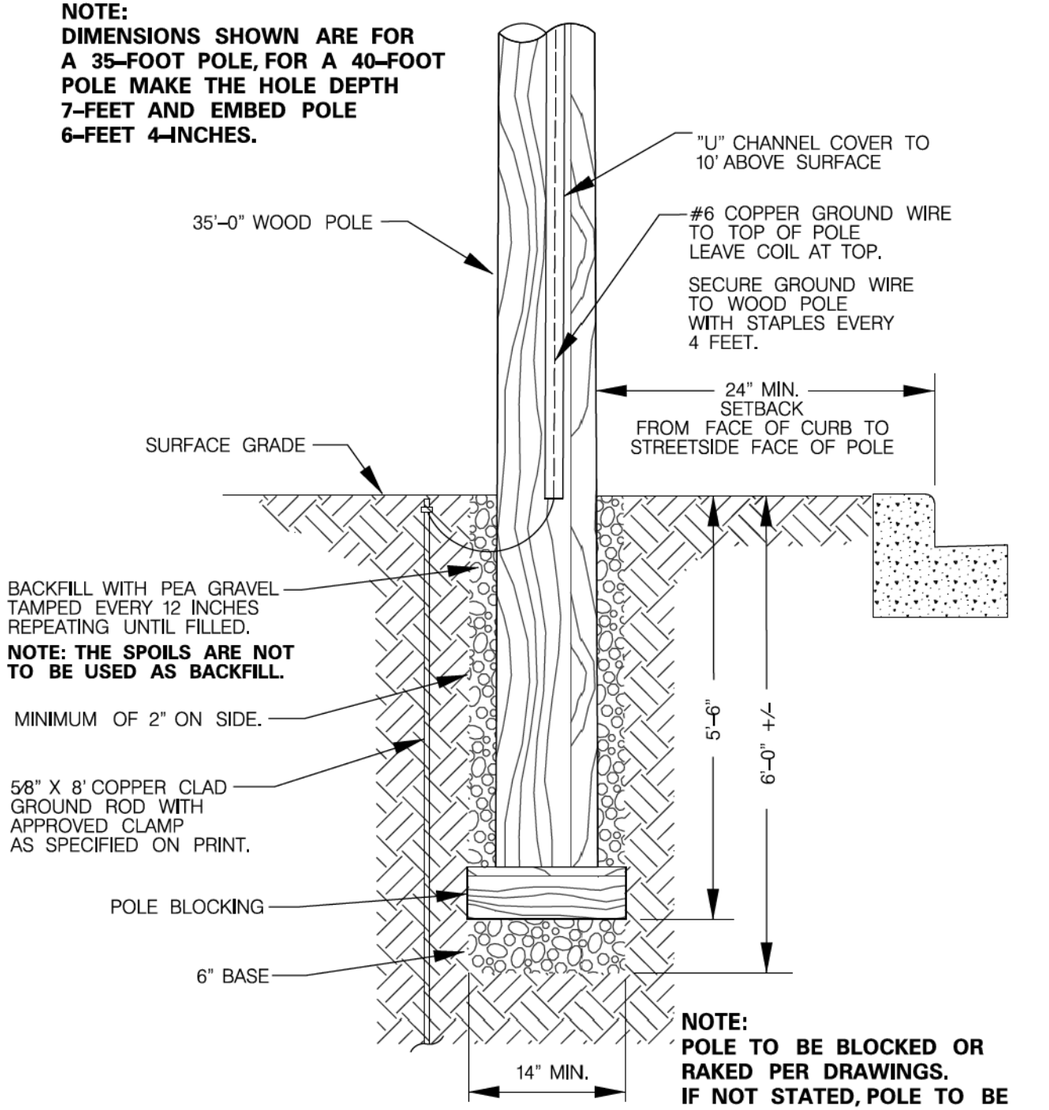
EXAMPLE OF FIELD RECORD INFORMATION

NOT TO SCALE

SHEET 3 OF 9

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - GENERAL NOTES & DETAILS	SHEET 45	E

NOTE:
DIMENSIONS SHOWN ARE FOR A 35–FOOT POLE, FOR A 40–FOOT POLE MAKE THE HOLE DEPTH 7–FEET AND EMBED POLE 6–FEET 4–INCHES.



NOTE:
POLE TO BE BLOCKED OR RAKED PER DRAWINGS.
IF NOT STATED, POLE TO BE PERPENDICULAR WITH GROUND

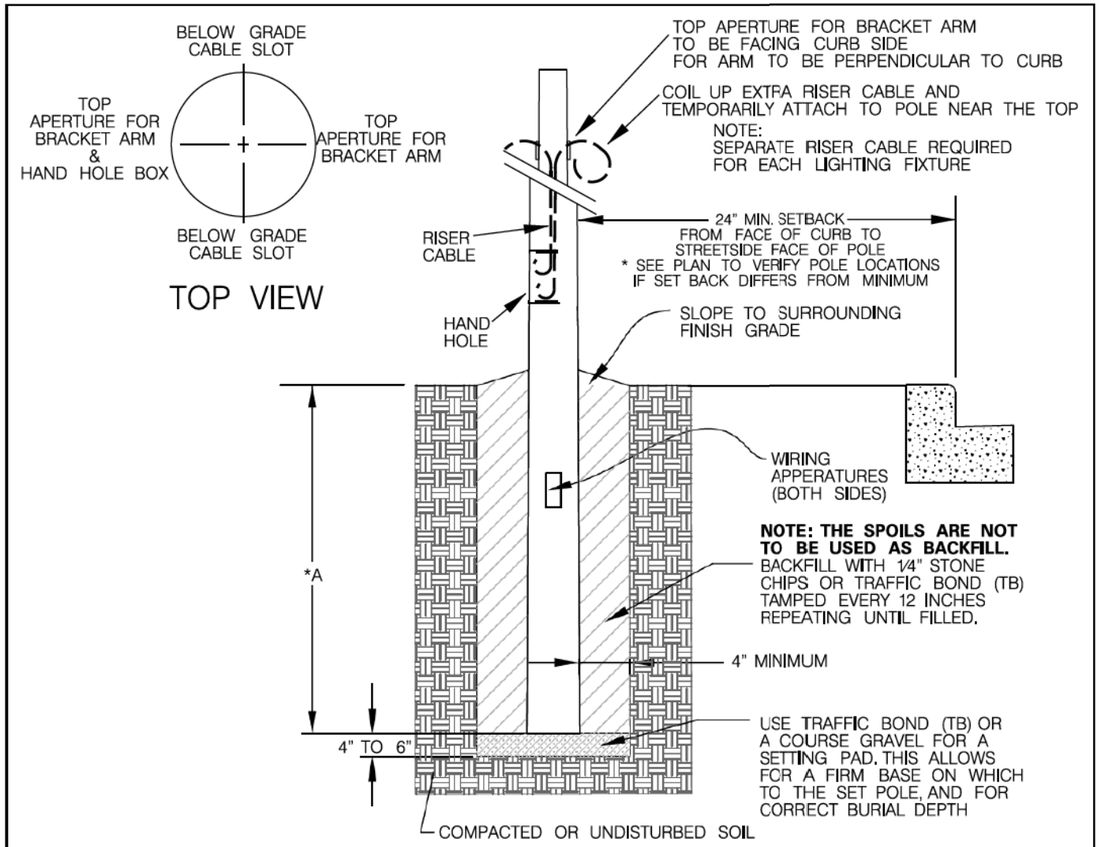
130 DETAIL — NOT TO SCALE

TYPICAL 35 FT.WOOD POLE INSTALLATION

SEE NOTE FOR 40 FOOT POLE

13-NOV-2021 08:55

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) (414) 286–5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



Pole Type Burial Depth Chart

FOR DIMENSION *A USE THE FOLLOWING BURIAL DEPTHS DEPENDING ON THE LENGTH OF THE POLE.

21 FT. AL. = 26 FT. POLE LENGTH
BURIED DEPTH = 5 FT.

26 FT. AL. = 31 FT. POLE LENGTH
BURIED DEPTH = 5 FT. – 6 INCHES

31 FT. AL. = 36 FT. 10 INCHES POLE LENGTH
BURIED DEPTH = 6 FT. – 4 INCHES

RISER CABLE LENGTH CHART

INTERNAL RISER CABLE IS COPPER 2#12UF WITH GROUND

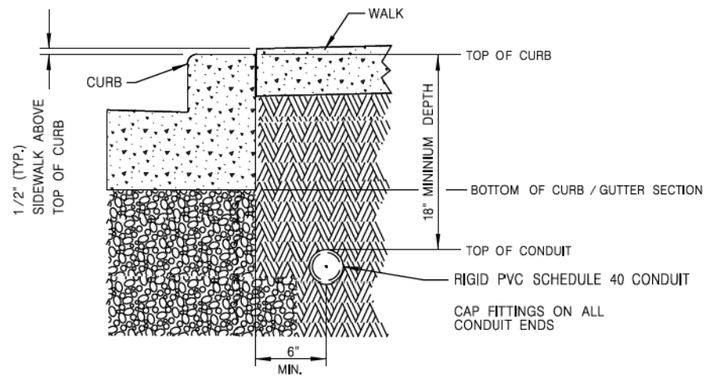
21 FT. =	30 FT. OF CABLE
26 FT. =	35 FT. OF CABLE
31 FT. =	40 FT. OF CABLE

130A DETAIL — NOT TO SCALE

TYPICAL POLE INSTALLATION

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) (414) 286–5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.
2.) CONDUIT TO BE PLACED 6 INCHES ON CENTER DIRECTLY BEHIND CURB, UNLESS NOTED OR APPROVED BY ENGINEER.



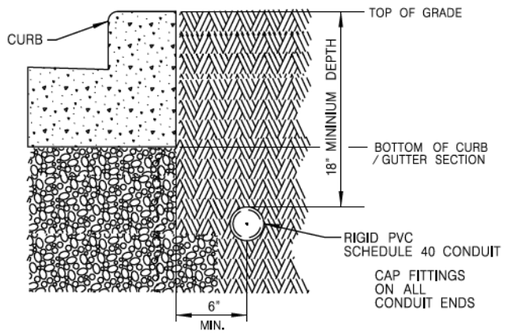
100 DETAIL "A"
TYPICAL CONDUIT INSTALLATION BEHIND CURB
NOT TO SCALE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

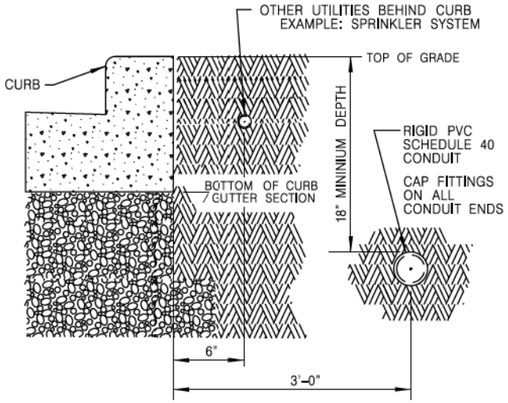
NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.

DETAIL "B"

CONDUIT TO BE PLACED 6" ON CENTER DIRECTLY BEHIND CURB, UNLESS NOTED OR APPROVED BY ENGINEER.

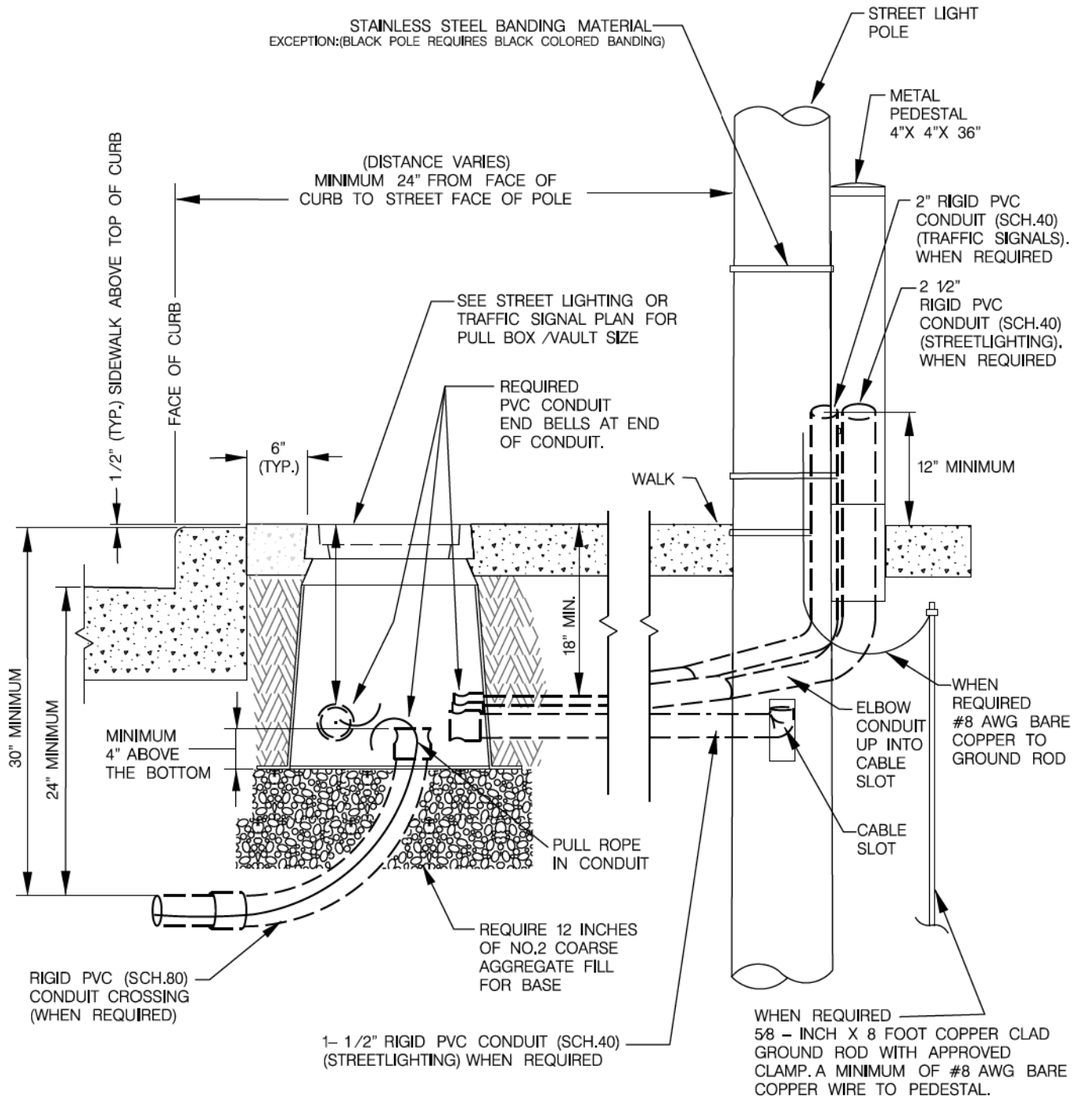


DETAIL "C"



100 DETAIL "B" & "C"
TYPICAL CONDUIT INSTALLATION BEHIND CURB
NOT TO SCALE

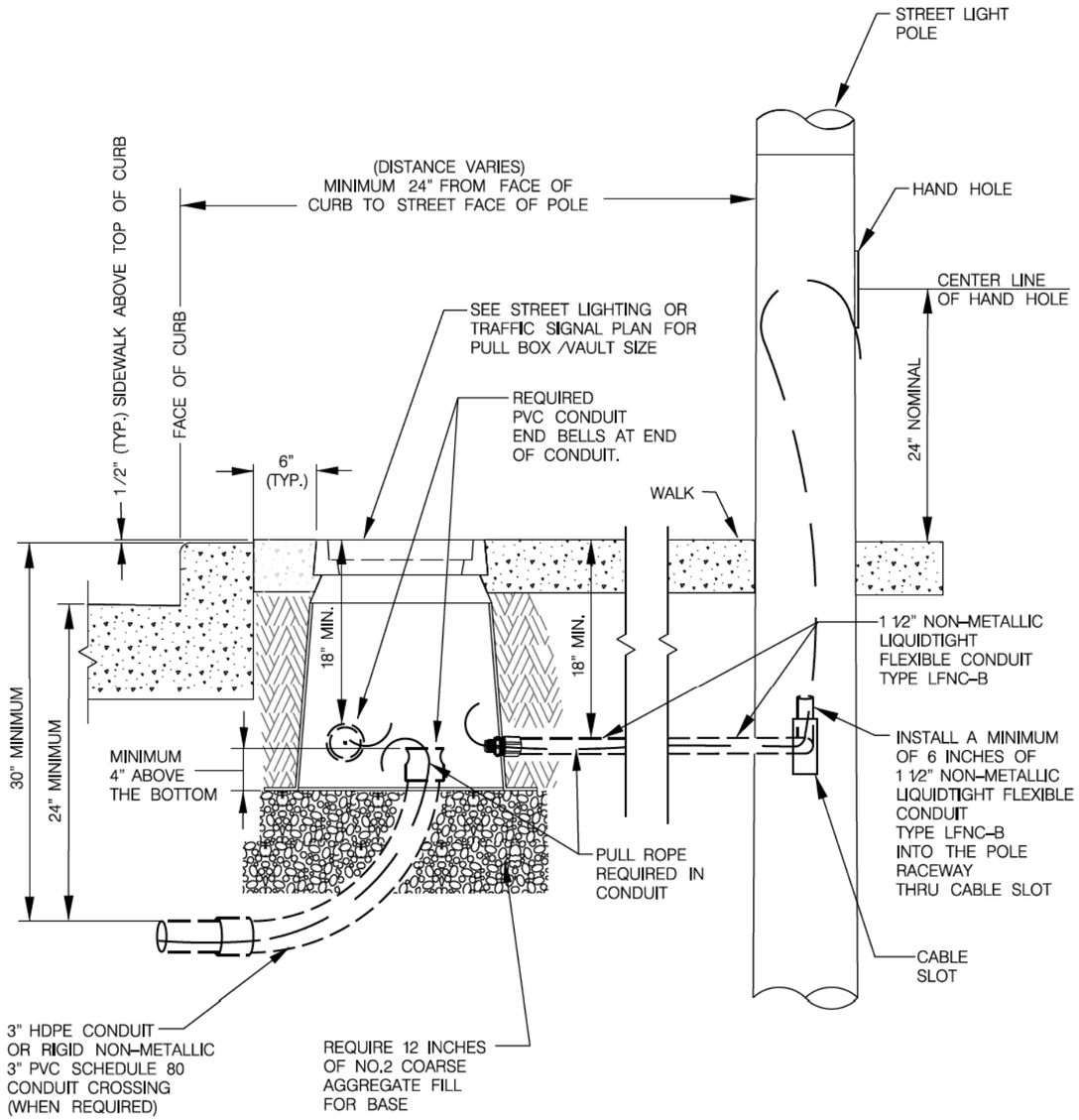
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



108 DETAIL VERSION
TYPICAL CONDUIT INSTALLATION FROM PULL BOX /VAULT TO POLE

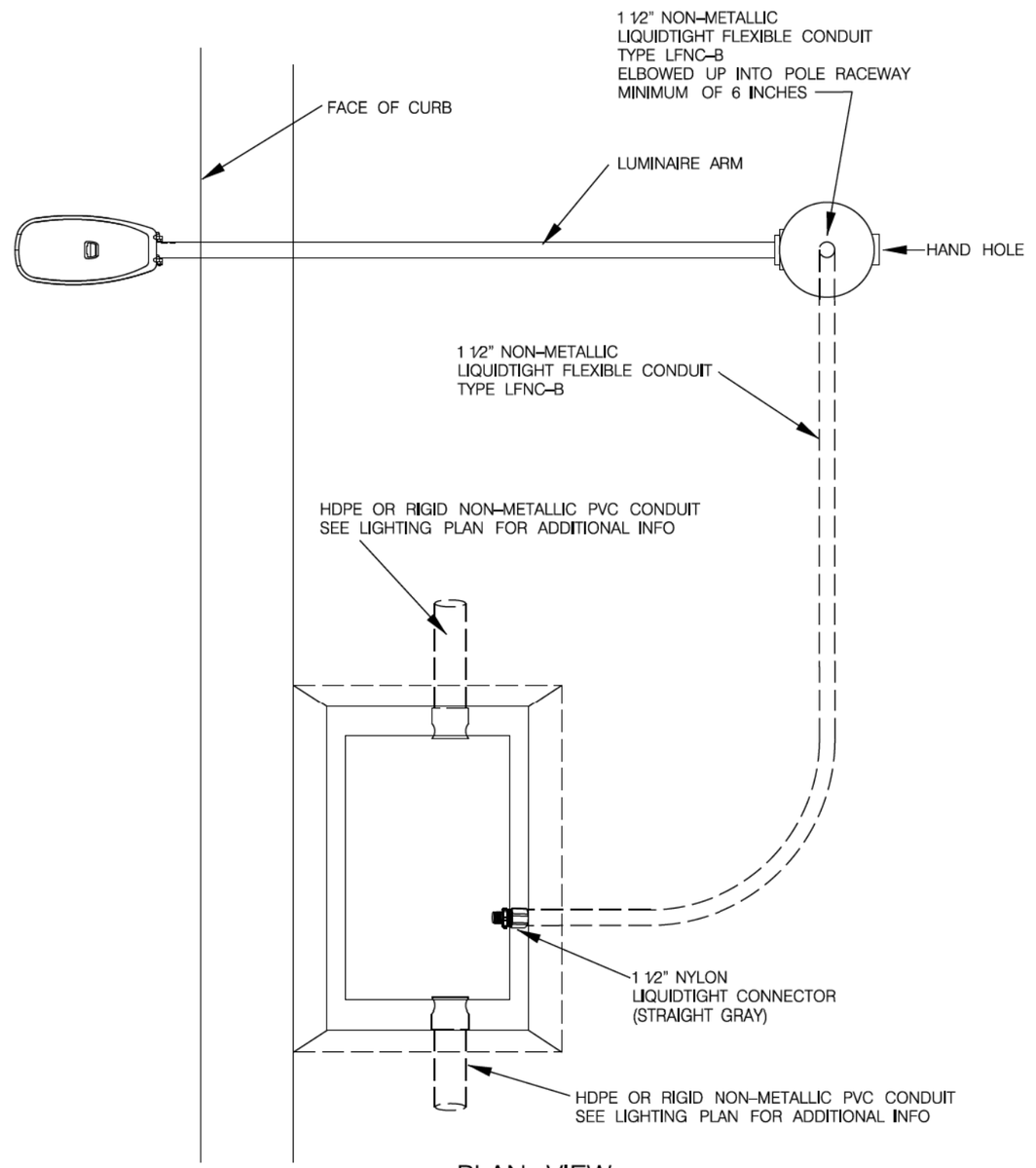
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

NOT TO SCALE



SECTION VIEW

NOT TO SCALE



PLAN VIEW

NOT TO SCALE

108B

DETAIL VERSION

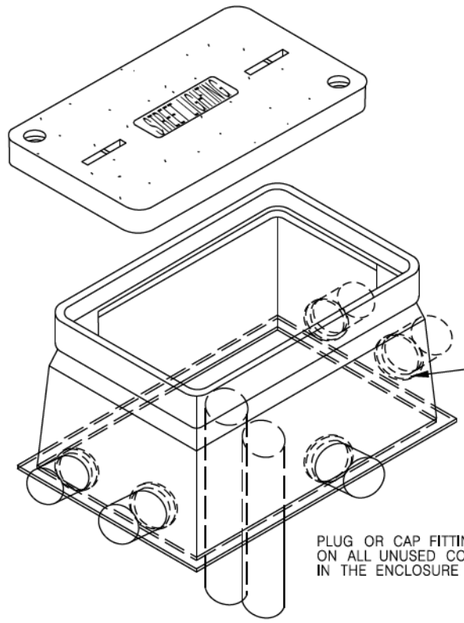
TYPICAL CONDUIT INSTALLATION FROM PULL BOX /VAULT TO POLE

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES. CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

NOT TO SCALE

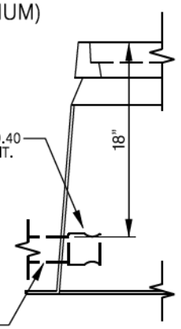
SHEET 6 OF 9

2

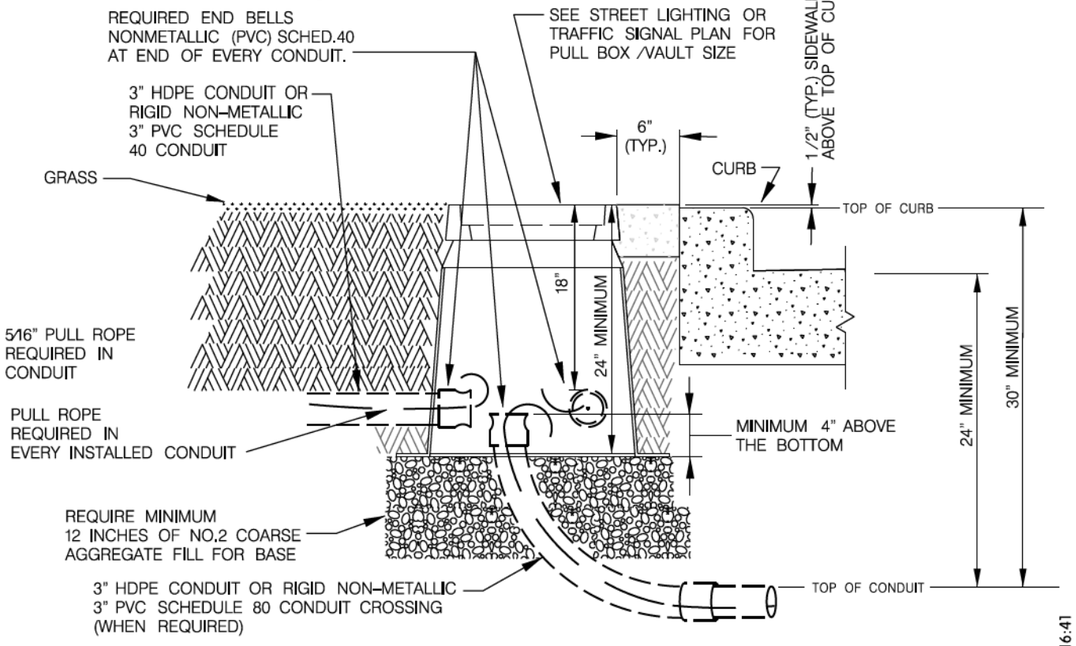


HEAVY DUTY COVER
W/ STREETLIGHTING LOGO
& W / 2 BOLTS
COLOR: GRAY
TIER 15 RATING (MINIMUM)

PULL BOX /VAULT
FLARED WALL
BOX W / NO BASE
COLOR: GRAY
TIER 15 RATING (MINIMUM)
(VARIOUS SIZES)



PLUG OR CAP FITTINGS
ON ALL UNUSED CONDUITS
IN THE ENCLOSURE



112 DETAIL

TYPICAL PULL BOX /VAULT INSTALLATION
IN EITHER PAVEMENT OR GRASS AREAS

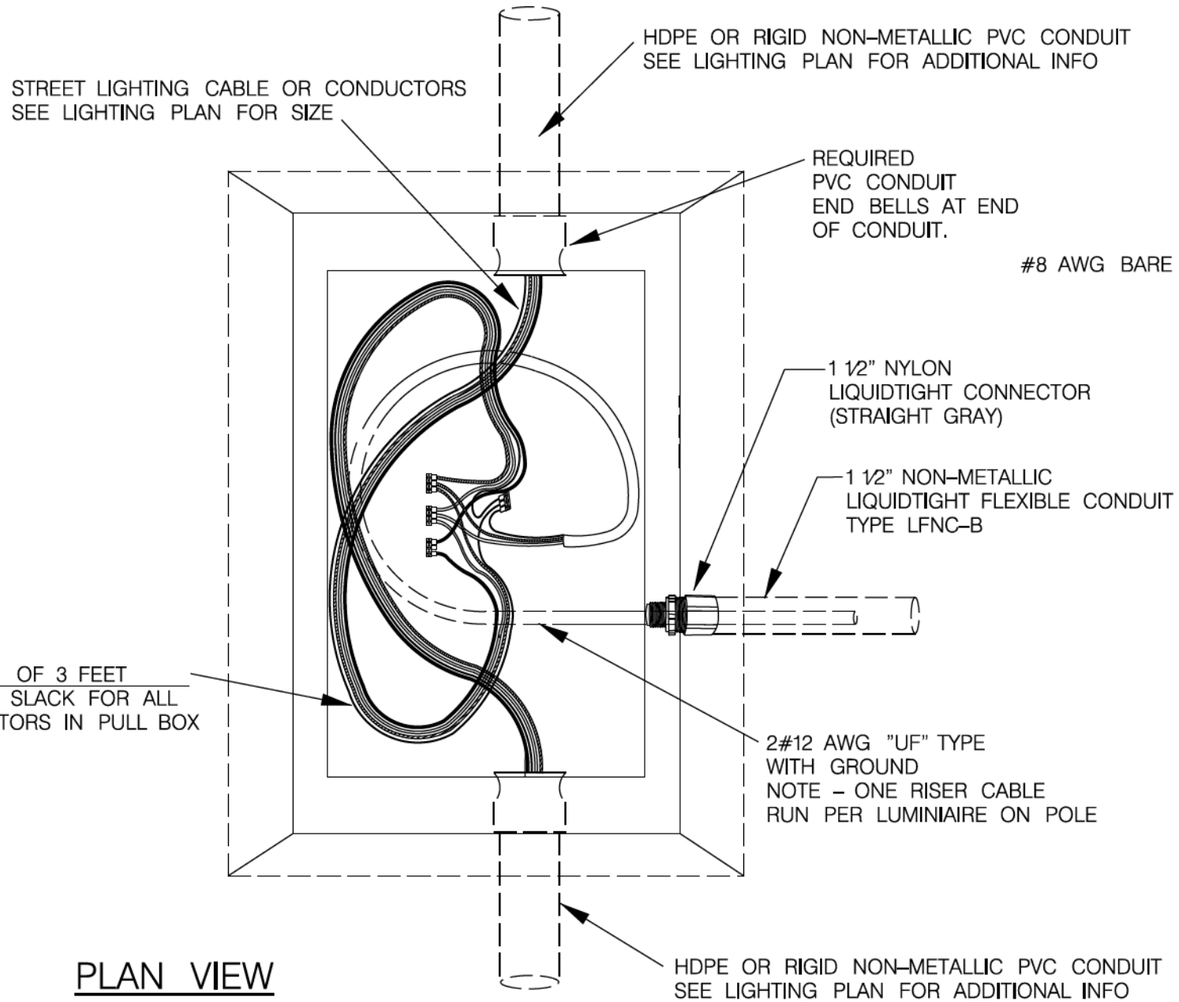
ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES.
CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

NOT TO SCALE

22-JAN-2022 16:41

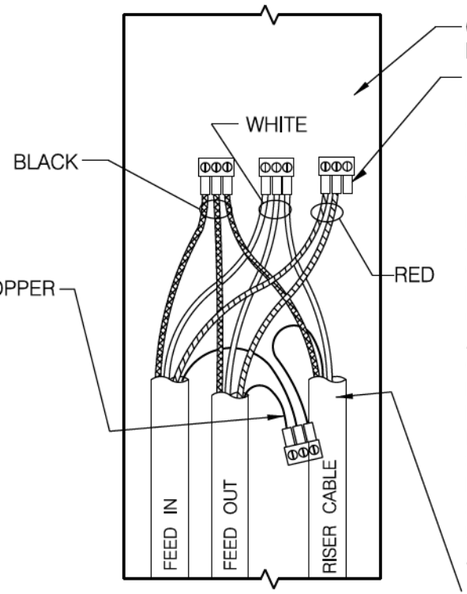
24-JAN-2022 06:42

SHEET 7 OF 9



PLAN VIEW

NOT TO SCALE



CIRCUIT SHOULD BE IDENTIFIED INSIDE PULL BOX

USE:
POLARIS EDGE CONNECTOR (ISPB2)
OR
MORRIS PRODUCTS SUBMERSIBLE INSULATED STREETLIGHTING CONNECTOR,
OR
EQUAL
3, 4, OR 6 PORT PRE–INSULATED CONNECTOR OR EQUAL.
DESIGNED FOR USE IN BELOW GRADE BOXES, DIRECT BURIAL AND SUBMERSIBLE
CONDUCTORS RANGE FROM #20–#14
RATED FOR 600 VOLTS
DUAL RATED FOR CU. OR AL.
INSULATED WITH HIGH DIELECTRIC STRENGTH ABRASION AND CHEMICAL RESISTANT RUBBER
SET SCREWS OR APPROVED EQUAL
UL 486D LISTED FOR DIRECT BURIAL AND SUBMERSIBLE APPLICATIONS

"RISER CABLE"
2#12 AWG TYPE "UF" WITH GROUND CABLE WITHOUT SPLICES TO HAND HOLE ON POLE (PER LUMINAIRE)

DETAIL "A"

CONNECTIONS WITHIN PULL BOX
NOT TO SCALE

NOTES:

PULL ROPE /TAPE SHALL BE INSTALLED IN ALL NEW CONDUITS.

CONTRACTOR SHALL SUPPLY AS–BUILT DRAWINGS (.PDF FORMAT) FOR ALL THE WORK BEING DONE.

PROVIDE MINIMUM WIRE SLACK FOR PULL BOXES: 3–FT ONE WAY IN OR OUT

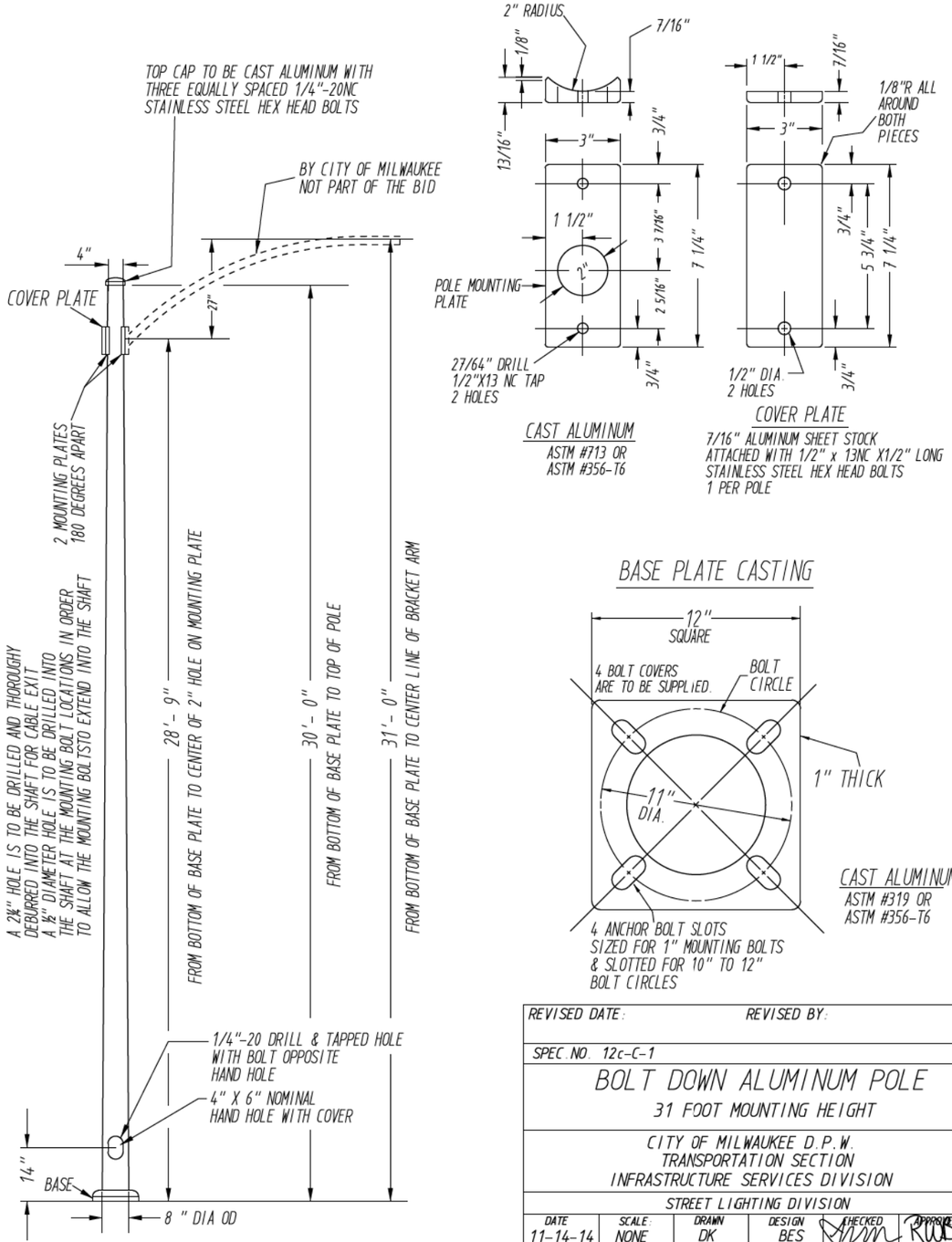
PROVIDE REMOVABLE SEALANT SUCH AS DUCT SEAL IN THE CONDUITS AT THE CABINETS, PULL BOXES AND JUNCTION BOXES TO AVOID CONDENSATION CAUSED BY AIRFLOW THROUGH THE CONDUITS DUE TO TEMPERATURE DIFFERENCE. THIS WORK SHALL BE INCIDENTAL TO ASSOCIATED CONDUIT PAY ITEM.

IMMEDIATELY AFTER THE CONTRACTOR HAS COMPLETED ALL THE ELECTRICAL PULL BOXES /VAULTS, CONDUIT AND CONDUIT CONNECTIONS, AND JUST BEFORE ELECTRICAL WORK IS COVERED UP WITH CONRETE, SOIL, OR ETC. THE CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SHOP MANAGERS FOR FINAL INSPECTION AND APPROVAL OF ALL WORK. THESE NAMES AND NUMBERS CAN BE FOUND ON THE STREET LIGHTING GENERAL NOTES SHEET, ITEM#23.

142 DETAIL

TYPICAL WATERTIGHT WIRING
SPLICING CONDUCTORS WITHIN THE PULL BOX

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES. CONTACT DISPATCHER AT (414) 286–5944 FOR THE APPROPRIATE SHOP SUPERVISOR.



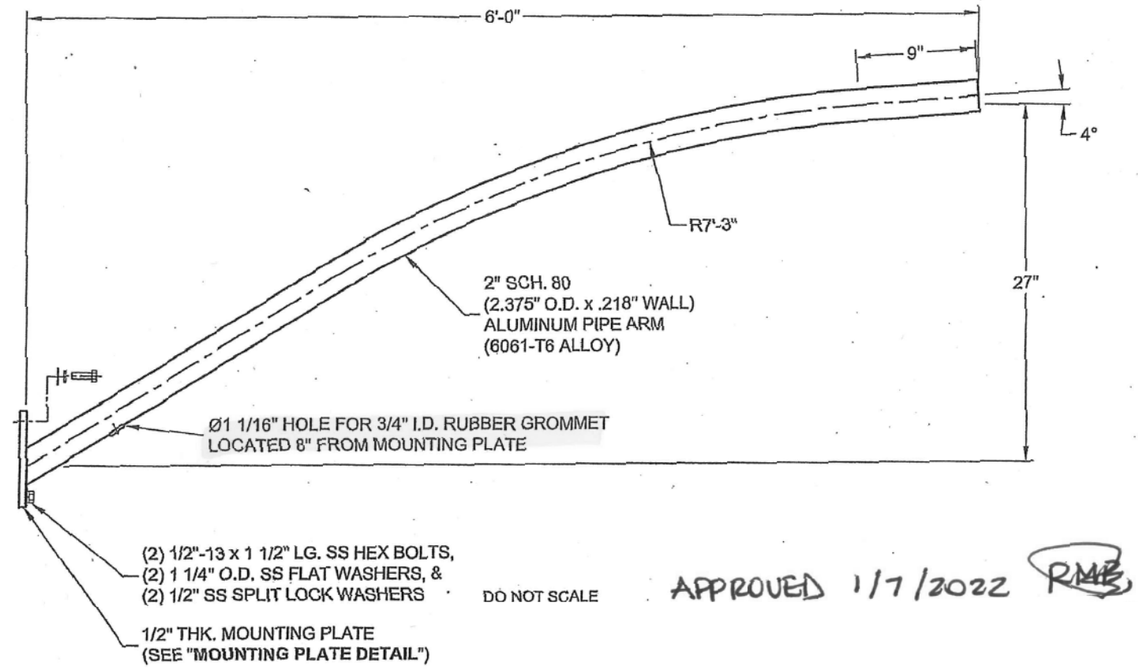
POLES TYPE 30-AL-BD

G:\Street Lighting Specs\Poles, Aluminum Bolt Down\B-14-14 31FT.dgn

BASE PLATE CASTING

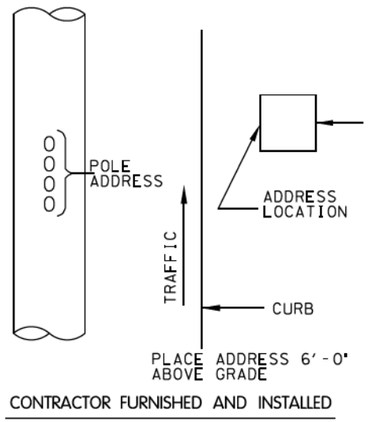
REVISED DATE:	REVISED BY:				
SPEC. NO. 12c-C-1					
BOLT DOWN ALUMINUM POLE 31 FOOT MOUNTING HEIGHT					
CITY OF MILWAUKEE D.P.W. TRANSPORTATION SECTION INFRASTRUCTURE SERVICES DIVISION					
STREET LIGHTING DIVISION					
DATE: 11-14-14	SCALE: NONE	DRAWN DK	DESIGN BES	CHECKED [signature]	APPROVED [signature]
SUPERSEDES		DRG. # B-14-14			
SUPERSEDED BY					

LUMINAIRE ARMS SINGLE MEMBER 6-Ft.

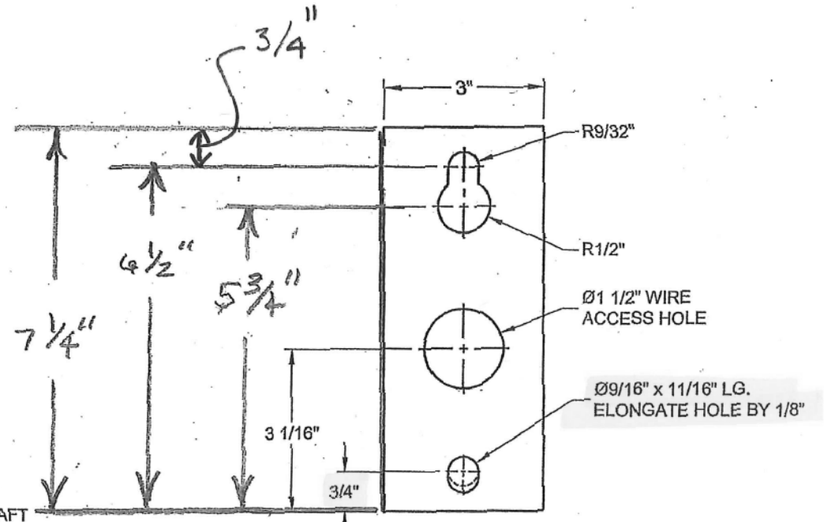


DO NOT SCALE

APPROVED 1/7/2022 RMB



CONTRACTOR FURNISHED AND INSTALLED



NOTE: 1" I.D. RUBBER GROMMET PROVIDED FOR USE IN POLE SHAFT

MOUNTING PLATE DETAIL

1/2" THK. ALUMINUM
(6061-T6 ALLOY)

SHEET 9 OF 9

LEGEND

- EXISTING POLE
- EXISTING POLE WITH LIGHT
- PROPOSED POLE
- PROPOSED POLE WITH LIGHT
- RELOCATE EXISTING POLE WITH LIGHT
- RELOCATED EXISTING POLE WITH LIGHT
- REMOVE POLE WITH LIGHT
- REMOVE POLE
- PROPOSED PULL BOX - (SEE NOTE)
- PROPOSED TEMPORARY OVERHEAD SECONDARY CABLE
- REMOVAL OF TEMPORARY OVERHEAD SECONDARY CABLE
- PR. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- PR. UNDERGROUND CONDUIT - (SEE NOTE)
- EX. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- EX. UNDERGROUND CONDUIT - (SEE NOTE)

ENLARGED DETAIL
NOT TO SCALE

ABANDON CABLE AND CONDUIT
CONTRACTOR TO LEAVE 3 FT. COIL AT TOP OF POLE CITY OF MILWAUKEE TO MAKE WIRING TERMINATIONS
ELECTRICAL CABLE TYPE 2#4/1#6 AL. CIR. N.S. MULTI.#7
35 FT. WOOD POLE
SPV.0090.319 - LIQUIDTIGHT FLEXIBLE NON-METALLIC CONDUIT 1 1/2- INCH FROM FROM PULL BOX TO CABLE SLOT ON POLE UNIT #0702
PULL BOXES 13-INCH X 24-INCH X 24-INCH
CONTRACTOR TO LEAVE 15 FT. COIL INSIDE PULL BOX CITY OF MILWAUKEE TO MAKE WIRING TERMINATIONS
CONDUIT SPECIAL 2 1/2-INCH
ELECTRICAL CABLE TYPE 3#2/1#8 XLP

N. 107th ST.

W. METRO BLVD.

#10729 31'S6'AL
SPV.0090.302 - ELECTRICAL CABLE TYPE 3#6 AL. CIR. N.S. MULTI.#7, MINIMUM CLEARANCE OF 18 FT ABOVE CROWN OR HIGH POINT OF ROADWAY
ABANDON CABLE 3#2/1#8LTP CIR.N.S.MULTI.#7 AND CONDUIT 2-2.5"
CONTRACTOR TO LEAVE 3 FT. COIL AT TOP OF POLE CITY OF MILWAUKEE TO INSTALL SECONDARY RISER AND MAKE WIRING TERMINATIONS
LIGHT POLE #10718 31'S6'AL,3LED3,B,PED
IN SERVICE 3#2/1#8LTP CABLE, CIR.N.S. MULTI.#7
SPV.0060.302 - PULL BOXES 13-INCH X 24-INCH X 24-INCH STA.111+67.5';123'LT. SEE DETAIL 108
CONTRACTOR TO LEAVE 15 FT. COIL INSIDE PULL BOX CITY OF MILWAUKEE TO MAKE WIRING TERMINATIONS INTO EXISTING CIRCUIT
652.0230 - CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH FROM PULL BOX TO GREEN METAL PEDESTAL ON UNIT #10718
SPV.0090.324 - ELECTRICAL CABLE TYPE 3#2/1#8 XLP INSTALLED IN CONDUIT, CIR.N.S. MULTI.#7
652.0610 - CONDUIT SPECIAL 2 1/2-INCH FROM PULL BOX TO PULL BOX SEE DETAIL 100
IN SERVICE 3#8/1#8LTP CABLE, CIR.N.S.MULTI.#7
#10712 AT31'D6,I2I3LED3,PED CONTRACTOR TO LEAVE 3 FT. COIL AT TOP OF POLE CITY OF MILWAUKEE TO NSTALL SECONDARY RISER AND MAKE WIRING TERMINATIONS
3#8/1#8LTP, CIR.N.S.MULTI.#7
SPV.0090.303 - ELECTRICAL CABLE TYPE 2#4/1#6 AL. CIR. N.S. MULTI.#7
#10701 35'WP.'6'U.B., 3LED3,PED.R
LIGHT POLE #6897 AT31'S6,3LED3,PED,B
3#8/1#8LTP, CIR.N.S. #7 MULTI.
SPV.0060.309 - RELOCATE POLES REMOVAL OF LIGHTING UNIT #10704 26 FT. ALUM. POLE, 6 FT. BRACKET ARM, LUMINAIRE 2LED3 REINSTALLATION OF RELOCATED POLE AND ACCESSORIES STA.111+18.9';37.9'LT. NEW LIGHTING UNIT #10702 ADDRESS, 26 FT. ALUM. POLE, 6 FT. BRACKET ARM, AND LUMINAIRE 2LED3 655.0305 - CABLE TYPE UF 2-12 AWG WITH GROUND LUMINAIRE TO BE WIRED FOR BLACK WIRE TO BE HOT SEE DETAIL 108B, 130A, & "OVERHEAD CIRCUIT LAYOUT"
204.9090.S.314 - REMOVE AERIAL CABLE 3#6AL, CIR. N.S. MULTI.#7, ABANDON CONDUIT 2.5"
CONTRACTOR TO LEAVE 3 FT. COIL AT TOP OF RELOCATED POLE. CITY OF MILWAUKEE TO NSTALL SECONDARY RISER AND MAKE WIRING TERMINATIONS
110+00
111+00
112+00
113+00

#6878 #22 WEP.CO.,WP. #8834562 6-0 U.B.,
3#6AL. CIR.N.S. MULTI.#7
#6886 W.P. 6-0 U.B.,2LED2,R
3#2/1#8LTP, CIR.N.S.,MULTI.#7
3#2/1#8LTP, CIR.N.S.,MULTI.#7
LIGHT POLE #10668 AT31'D6,I2I3LED3,PED
LIGHT POLE #10678 31'S6'AL,3LED3,R,PED
IN SERVICE 3#6AL, CIR.N.S. MULTI.#7
IN SERVICE 3#2/1#8LTP, CIR.N.S. MULTI.#7
3#2/1#8LTP CIR.N.S. MULTI.#7
LIGHT POLE #6904 AT31'S6,3LED3,PED,B
SPV.0090.303 - ELECTRICAL CABLE TYPE 2#4/1#6 AL, APPROXIMATE 95 FT., CIR. N.S. MULTI.#7 MINIMUM CLEARANCE OF 18 FT. ABOVE CROWN OR HIGH POINT OF ROADWAY
CONTRACTOR TO LEAVE 3 FT. COIL AT TOP OF POLE CITY OF MILWAUKEE TO MAKE WIRING TERMINATIONS
ABANDON CABLE 3#2/1#8LTP CIR.N.S. MULTI.#7, AND CONDUIT 3-2.5"
ABANDON CABLE 3#2/1#8LTP CIR.N.S. MULTI.#7, AND CONDUIT 2-2.5"
ABANDON CABLE 3#2/1#8LTP, CIR.N.S. #7 MULTI.
204.9090.S.314 - REMOVE AERIAL CABLE 3#6AL, CIR. N.S. MULTI.#7,
SPV.0060.323 - 35 FT. WOOD POLE STA.111+13.5';30.61'LT. SEE DETAIL 130
204.9060.S.310 - REMOVING POLES LIGHTING UNIT #6918 35 FT. WOOD POLE 6 FT. BRACKET ARM AND LUMINAIRE 3LED3 DELIVER POLE AND ACCESSORIES TO CITY OF MILWAUKEE STREET LIGHTING YARD AT 1540 W. CANAL ST.
CONTRACTOR TO LEAVE 15 FT. COIL INSIDE PULL BOX CITY OF MILWAUKEE TO MAKE WIRING TERMINATIONS
SPV.0060.302 - PULL BOXES 13-INCH X 24-INCH X 24-INCH STA.111+20.0';33.2'LT. SPV.0060.343 - WATER TIGHT SPLICES AND CONNECTIONS 652.0230 - CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH SEE DETAIL 108B
204.9090.S.314 - REMOVE AERIAL CABLE 3#6AL, CIR. N.S. MULTI.#7, ABANDON CONDUIT 2.5"
204.9060.S.310 - REMOVING POLES LIGHTING UNIT #6936 25'ALUM. BOLT DOWN POLE 6 FT. BRACK ARM, LUMINAIRE, AND TRANFORMER BREAKAWAY PED. CONTRACTOR TO DELIVER POLE AND ACCESSORIES TO CITY OF MILWAUKEE STREET LIGHTING YARD AT 1540 W. CANAL ST.
ABANDON CONDUIT 2.5"

SHEET 1 OF 4

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - TEMPORARY OVERHEAD	SHEET 52	E

2

N

204.9060.S.310 - REMOVING POLES
LIGHTING UNIT #6949
25'ALUMI. BOLT DOWN POLE
6 FT. BRACK ARM, LUMINARE AND TRANFORMER BREAKAWAY PED.
CONTRACTOR TO DELIVER POLE AND ACCESSORIES TO
CITY OF MILWAUKEE STREET LIGHTING
YARD AT 1540 W. CANAL ST.

ABANDON CONDUIT 2.5"

ABANDON CONDUIT 2.5"

204.9090.S.314 - REMOVE AERIAL CABLE
3#6AL, CIR. N.S. MULTI.#7,

CITY OF MILWAUKEE STREET LIGHT TO
REMAIN IN SERVICE DURING CONSTRUCTION
#7027
WEP CO. W.P. #80-04451
12-0 U.B.2.1.ED2.B

CITY OF MILWAUKEE STREET LIGHT CABLE TO
REMAIN IN SERVICE DURING CONSTRUCTION
3#6AL,
NEW CIR.T20NW-C
OLD CIR.N.S.MULTI.#7

CITY OF MILWAUKEE STREET LIGHT CABLE TO
REMAIN IN SERVICE DURING CONSTRUCTION
3#6AL,
NEW CIR.T20NW-C
OLD CIR.N.S.MULTI.#7

CITY OF MILWAUKEE STREET LIGHT TO
REMAIN IN SERVICE DURING CONSTRUCTION
#7047
WEP CO.,W.P. #83-06554
12-0 U.B.,2.1.ED2.R

CITY OF MILWAUKEE STREET LIGHT CABLE TO
REMAIN IN SERVICE DURING CONSTRUCTION
3#6AL,
NEW CIR.T20NW-C
OLD CIR.N.S.MULTI.#7

N. 107th

114+00

115+00

116+00

ST.

OFF RAMP

204.9090.S.314 - REMOVE AERIAL CABLE
3#6AL, CIR. N.S. MULTI.#7,

ABANDON CONDUIT 2.5"

SPV.0060.323 - 35 FT. WOOD POLE
STA.115+18.9' 24.3'RT.
THIS POLE IS A PERMANENT INSTALLATION
THAT WILL REMAIN AFTER THE PROJECT
IS COMPLETED

LEGEND

- EXISTING POLE
- EXISTING POLE WITH LIGHT
- PROPOSED POLE
- PROPOSED POLE WITH LIGHT
- RELOCATE EXISTING POLE WITH LIGHT
- RELOCATED EXISTING POLE WITH LIGHT
- REMOVE POLE WITH LIGHT
- REMOVE POLE
- PROPOSED PULL BOX - (SEE NOTE)
- PROPOSED TEMPORARY OVERHEAD SECONDARY CABLE
- REMOVAL OF TEMPORARY OVERHEAD SECONDARY CABLE
- PR. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- PR. UNDERGROUND CONDUIT - (SEE NOTE)
- EX. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- EX. UNDERGROUND CONDUIT - (SEE NOTE)

SHEET 2 OF 4

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - TEMPORARY OVERHEAD	SHEET 53	E

LEGEND

- EXISTING POLE
- EXISTING POLE WITH LIGHT
- PROPOSED POLE
- PROPOSED POLE WITH LIGHT
- RELOCATE EXISTING POLE WITH LIGHT
- RELOCATED EXISTING POLE WITH LIGHT
- REMOVE POLE WITH LIGHT
- REMOVE POLE
- PROPOSED PULL BOX - (SEE NOTE)
- PROPOSED TEMPORARY OVERHEAD SECONDARY CABLE
- REMOVAL OF TEMPORARY OVERHEAD SECONDARY CABLE
- PR. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- PR. UNDERGROUND CONDUIT - (SEE NOTE)
- EX. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- EX. UNDERGROUND CONDUIT - (SEE NOTE)

N

W. GOOD HOPE RD.

N. 107th ST.

3#6/1#8LTP, CIR.T20NW-B

3#6AL
OLD CIR.N.S.MULTI.#7
NEW CIR. T20NW-B

#7147
WG&E CO
W.P. #R4-2600
6-0 U.B.
MULTI RISER

CABLE NOT IN SERVICE
3#2/1#8LTP

#7185
WEP.CO.
W.P. #631453

LIGHT POLE
#10718
31'D6'AL
PED

LIGHT POLE
#10700
31'D6'AL
PED

3#6/1#8LTP CIR.T20NW-B

SPV.0090.303 - ELECTRICAL CABLE TYPE 3#6 AL,
APPROX. 100 FT. CIR. N.S. MULTI.#7
MINIMUM CLEARANCE OF 18 FT. ABOVE
CROWN OR HIGH POINT OF ROADWAY

CONTRACTOR TO LEAVE 3 FT. COIL AT TOP OF POLE
CITY OF MILWAUKEE TO NSTALL SECONDARY RISER
AND MAKE WIRING TERMINATIONS

LIGHT POLE
#7200
31'D6'AL PED.

3#6/1#8LTP, 3' BOC
CIR.T20NW-B

3#2/1#8LTP
OLD CIR.N.S.MULTI.#7
NEW CIR.T20NW-B

LIGHT POLE
#10640
AT31'D6'
PED

CONTRACTOR TO LEAVE 3 FT.
COIL AT TOP OF POLE
CITY OF MILWAUKEE TO NSTALL
SECONDARY RISER
AND MAKE WIRING TERMINATIONS

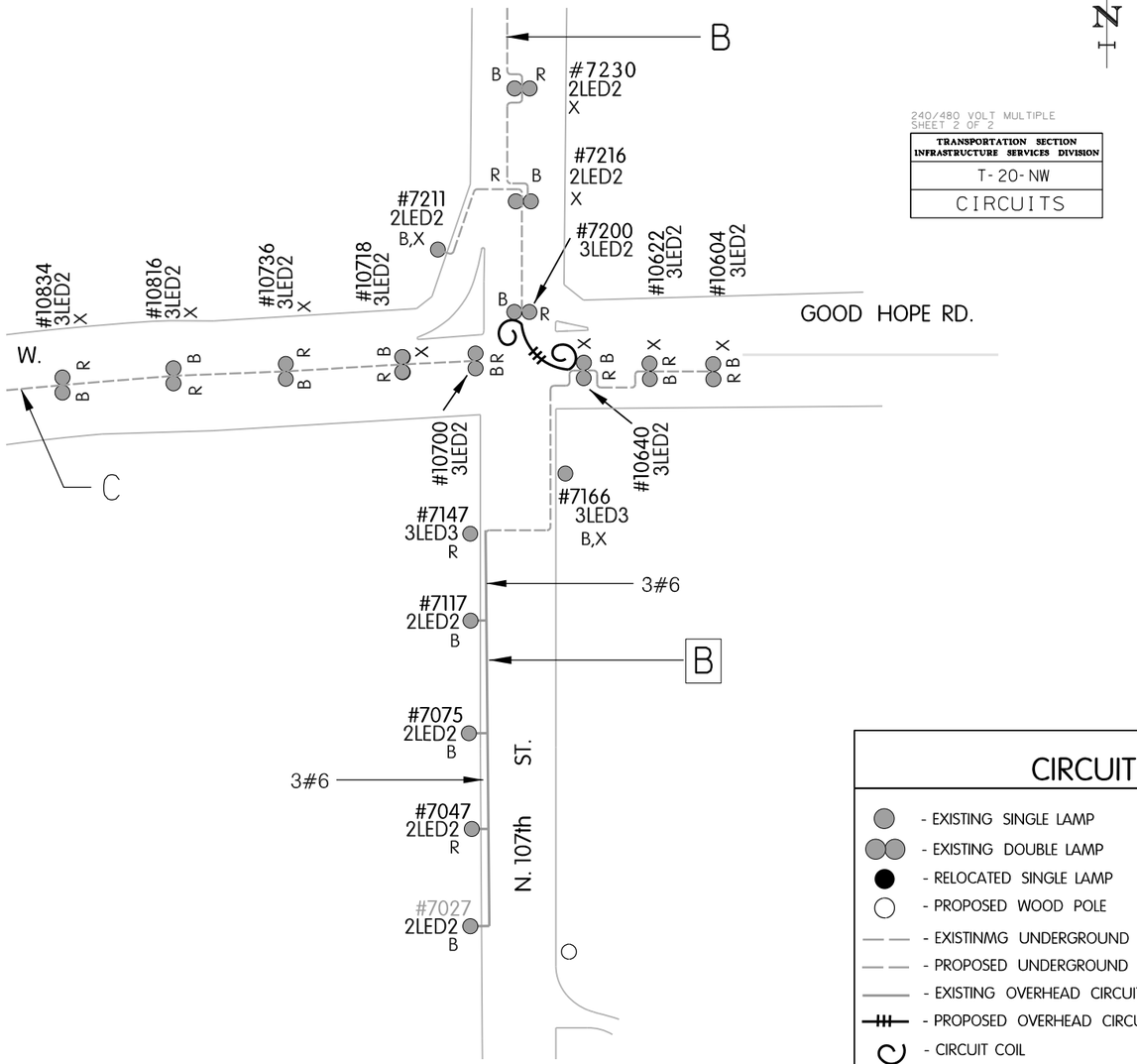
3#2/1#8LTP
OLD CIR.N.S.MULTI.#7
NEW CIR.T20NW-B

#7166
31'S6'AL
PED

LIGHT POLE
#10622
31'S6'AL
PED

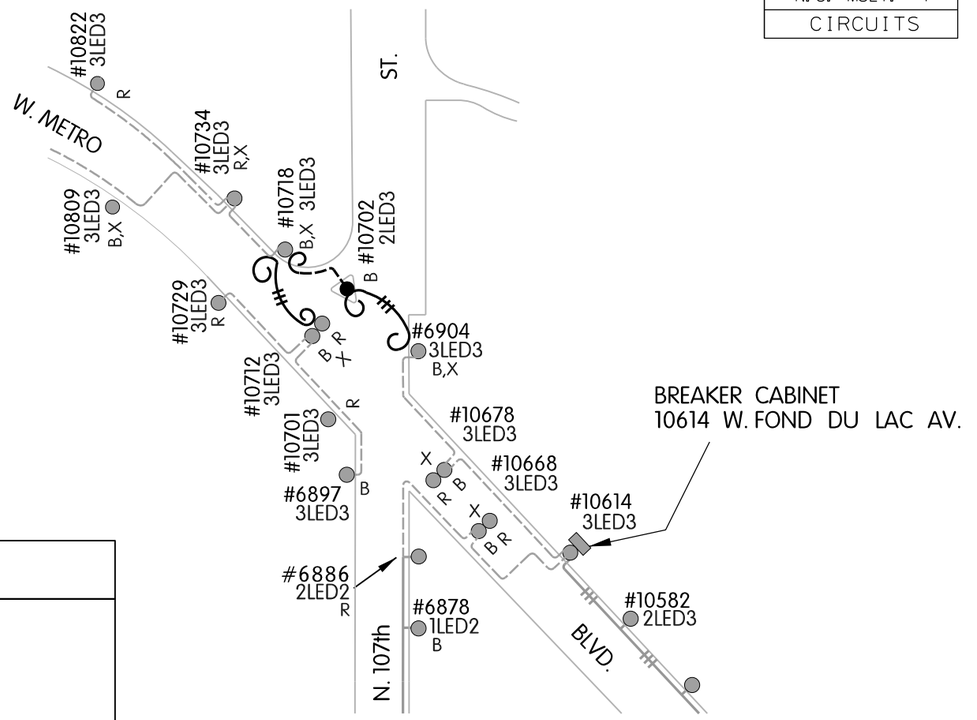
SHEET 3 OF 4

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - TEMPORARY OVERHEAD	SHEET 54	E



240/480 VOLT MULTIPLE
SHEET 2 OF 2

TRANSPORTATION SECTION INFRASTRUCTURE SERVICES DIVISION
T-20-NW
CIRCUITS



SHEET 1 OF 2

TRANSPORTATION SECTION INFRASTRUCTURE SERVICES DIVISION
N. S. MULT. • 7
CIRCUITS

CIRCUIT LEGEND

- - EXISTING SINGLE LAMP
- - EXISTING DOUBLE LAMP
- - RELOCATED SINGLE LAMP
- - PROPOSED WOOD POLE
- - EXISTINMG UNDERGROUND CIRCUIT
- - PROPOSED UNDERGROUND CIRCUIT
- - EXISTING OVERHEAD CIRCUIT
- - PROPOSED OVERHEAD CIRCUIT
- - CIRCUIT COIL

#6902 - POLE ADDRESS

1LED2 - 100W EQUIVALENT LED LUMINAIRE WITH TYPE 2 LIGHT DISTRIBUTION
2LED2 - 150W EQUIVALENT LED LUMINAIRE WITH TYPE 2 LIGHT DISTRIBUTION
2LED3 - 150W EQUIVALENT LED LUMINAIRE WITH TYPE 3 LIGHT DISTRIBUTION
3LED2 - 250W EQUIVALENT LED LUMINAIRE WITH TYPE 2 LIGHT DISTRIBUTION
3LED3 - 250W EQUIVALENT LED LUMINAIRE WITH TYPE 3 LIGHT DISTRIBUTION

B - LAMP CONNECTED TO BLACK WIRE
R - LAMP CONNECTED TO RED WIRE
X - PEDESTAL

SHEET 4 OF 4

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - TEMPORARY CIRCUIT LAYOUT	SHEET 55	E

LEGEND

- EXISTING POLE
- EXISTING POLE WITH LIGHT
- PROPOSED POLE
- PROPOSED POLE WITH LIGHT
- RELOCATE EXISTING POLE WITH LIGHT
- RELOCATED EXISTING POLE WITH LIGHT
- REMOVE POLE WITH LIGHT
- REMOVE POLE
- PROPOSED PULL BOX - (SEE NOTE)
- PROPOSED TEMPORARY OVERHEAD SECONDARY CABLE
- REMOVAL OF TEMPORARY OVERHEAD SECONDARY CABLE
- PR. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- PR. UNDERGROUND CONDUIT - (SEE NOTE)
- EX. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- EX. UNDERGROUND CONDUIT - (SEE NOTE)

CONTRACTOR REMOVAL WORK NEEDS TO BE COORDINATED WITH THE CITY OF MILWAUKEE DPW STREET LIGHTING

N. 107th ST.

W. METRO

BLVD.

N

CITY OF MILWAUKEE TO REMOVE SECONDARY RISER ON POLE AND MAKE WIRING TERMINATIONS

CITY OF MILWAUKEE STREET LIGHTING TO MAKE FINAL TERMINATION AT LIGHT POLE #10678

204.9060.S.310. - REMOVING POLES #6904, AT3156,3LED3,PED,B COORDINATE FOR THE REMOVAL OF THE TRAFFIC SIGNAL MAST ARM

204.9090.S.314. - REMOVE AERIAL CABLE 2#4/1#6AL., CIR. N.S. #7 MULT.

204.9090.S.314. - REMOVE AERIAL CABLE 3#6AL., CIR. 120NW-B

SPV.0060.310 - REMOVING POLES 35 FT. WOOD POLE

110+00 111+00 112+00 113+00

SHEET 1 OF 3

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - REMOVAL OF TEMOPORARY FACILITIES	SHEET 56	E

2

CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

ELECTRICAL CABLE TYPE 3#8/1#8 XLPE CIR.N.S.#7 MULTI.

#6949 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE POLES TYPE 30-AL-BD WATER TIGHT SPLICES & CONNECTIONS LUMINAIRE ARMS SINGLE MEMBER 6FT CITY FURNISHED LUMINAIRE UTILITY LED A (2LED2)

CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

PULL BOXES 13-INCH x 24INCH x 24-INCH

#7027 WEP.CO.,W.P. #80-04451 LIGHT POLE 12-0 U.B.252,B

STREET LIGHTING OVERHEAD CABLE 3#6AL, CIR.T20NW-C

#7047 WEP.CO.,W.P. #85-06554 STREET LIGHT 12-0 U.B.252,R

STREET LIGHTING OVERHEAD CABLE 3#6AL, CIR.T20NW-C

BRIDGE JUNCTION BOX

BRIDGE LIGHT BUSTER ANCHORAGE

N. 107th ST.

114+00

115+00

116+00

OH

OH

OFF RAMP

CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

ELECTRICAL CABLE TYPE 3#2/1#8 XLPE, CIR.N.S. #7 MULTI.

CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

PULL BOXES 13-INCH x 24INCH x 24-INCH

CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

PULL BOXES 13-INCH x 24INCH x 24-INCH

ELECTRICAL CABLE TYPE 3#2/1#8 XLPE, CIR.N.S. #7 MULTI.

CITY OF MILWAUKEE TO INSTALL CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

#7010, 35 FT. WOOD POLE, PEDESTAL

#7010, 35 FT. WOOD POLE CITY OF MILWAUKEE TO INSTALL PEDESTAL

CITY OF MILWAUKEE TO INSTALL OVERHEAD CABLE 3#6AL FOR FUTURE CIR. N.S. #7 MULT.

PRIVATE LIGHT

LEGEND

- EXISTING POLE
- EXISTING POLE WITH LIGHT
- PROPOSED POLE
- PROPOSED POLE WITH LIGHT
- RELOCATE EXISTING POLE WITH LIGHT
- RELOCATED EXISTING POLE WITH LIGHT
- REMOVE POLE WITH LIGHT
- REMOVE POLE
- PROPOSED PULL BOX - (SEE NOTE)
- PROPOSED TEMPORARY OVERHEAD SECONDARY CABLE
- REMOVAL OF TEMPORARY OVERHEAD SECONDARY CABLE
- PR. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- PR. UNDERGROUND CONDUIT - (SEE NOTE)
- EX. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- EX. UNDERGROUND CONDUIT - (SEE NOTE)

CONTRACTOR REMOVAL WORK NEEDS TO BE COORDINATED WITH THE CITY OF MILWAUKEE DPW STREET LIGHTING

SHEET 2 OF 3

2

N

W. GOOD HOPE

3#6/1#8LTP, CIR.T20NW-B

LIGHT POLE #10718 31'D6'AL PED

184-0 2"

133-0 2.5"

3#6/1#8LTP CIR.T20NW-B

LIGHT POLE #10700 31'D6'AL PED

133-0 2.5"

184-0 2"

18D 20-9

2.5"

13-4

31-6 30D

12-4 30D

CITY OF MILWAUKEE TO REMOVE SECONDARY RISER AND MAKE WIRING TERMINATIONS

204.9090.S.314. - REMOVE AERIAL CABLE 3#6AL, CIR. T20NW-B

ST.

LIGHT POLE #7200 31'D6'AL PED.

3#6/1#8LTP, 3' BOC CIR.T20NW-B

3#6AL OLD CIR.N.S.MULTI.#7 NEW CIR. T20NW-B

#7147 WG&E CO W.P. #R4-2600 6-0 U.B. MULTI RISER

℄ C.B.

27-6 2.5"

CABLE NOT IN SERVICE 3#2/1#8LTP

#7185 WEP.CO. W.P. #631453

℄ C.B.

48-6 2-2"

38D 9-5

2.5" 60-0

N. 107

3-2.5" 60-0

35D 11-1

38D 10-7

℄ C.B.

2.5"

3#2/1#8LTP OLD CIR.N.S.MULTI.#7 NEW CIR. T20NW-B

#7166 31'S6'AL PED

2-2.5"

℄ C.B.

46-6 2-2"

℄ C.B.

2-3 4-3 5-11 19-3 16-3 13-2

15D 18D 17D 20D 22D 21D

3-2.5"

LIGHT POLE #10640 AT31'D6' PED

CITY OF MILWAUKEE TO REMOVE SECONDARY RISER AND MAKE WIRING TERMINATIONS

3#2/1#8LTP OLD CIR.N.S.MULTI.#7 NEW CIR.T20NW-B

2-2.5"

RD.

2.5"

LIGHT POLE #10622 31'S6'AL PED

LEGEND

- EXISTING POLE
- EXISTING POLE WITH LIGHT
- PROPOSED POLE
- PROPOSED POLE WITH LIGHT
- RELOCATE EXISTING POLE WITH LIGHT
- RELOCATED EXISTING POLE WITH LIGHT
- REMOVE POLE WITH LIGHT
- REMOVE POLE
- PROPOSED PULL BOX - (SEE NOTE)
- PROPOSED TEMPORARY OVERHEAD SECONDARY CABLE
- REMOVAL OF TEMPORARY OVERHEAD SECONDARY CABLE
- PR. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- PR. UNDERGROUND CONDUIT - (SEE NOTE)
- EX. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- EX. UNDERGROUND CONDUIT - (SEE NOTE)

CONTRACTOR REMOVAL WORK NEEDS TO BE COORDINATED WITH THE CITY OF MILWAUKEE DPW STREET LIGHTING

SHEET 3 OF 3

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - REMOVAL OF TEMOPORARY FACILITIES	SHEET 58	E

LEGEND

- EXISTING POLE
- EXISTING POLE WITH LIGHT
- PROPOSED POLE
- PROPOSED POLE WITH LIGHT
- RELOCATE EXISTING POLE WITH LIGHT
- RELOCATED EXISTING POLE WITH LIGHT
- REMOVE POLE WITH LIGHT
- REMOVE POLE
- PROPOSED PULL BOX - (SEE NOTE)
- PROPOSED TEMPORARY OVERHEAD SECONDARY CABLE
- REMOVAL OF TEMPORARY OVERHEAD SECONDARY CABLE
- PR. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- PR. UNDERGROUND CONDUIT - (SEE NOTE)
- EX. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- EX. UNDERGROUND CONDUIT - (SEE NOTE)

N

N. 107th

W. METRO

BLVD.

ST.

#10729
31'S6'AL

EXISTING PULL BOX 13" X 24"X 24"

3#2/1#8LTP, CIR.N.S. #7 MULTI.

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH INSTALLED BY BRIDGE CONTRACTOR

SPV.0090.305 ELECTRICAL CABLE TYPE 3#8/1#8 XLPE CIR.N.S. #7 MULTI.

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH CONNECTS TO PULL BOX AND RUNS TO WE ENERGIES WOOD POLE

SPV.0090.308 ELECTRICAL CABLE TYPE 3#2/1#8 XLPE LEAVE 10 FT. COIL IN PULL BOX CIR.N.S. #7 MULTI.

WHEN PULLING CONDUCTORS THROUGH PULL BOX LEAVE 3'SLACK COIL FOR EACH CIRCUIT CONDUCTOR RUN

SPV.0060.303 PULL BOXES 17-INCH x 30-INCH x 24-INCH STA.111+00.0';29.5'LT

EXISTING WE ENERGIES WOOD POLE

#10718
31'S6'AL,
3LED3,B,PED

CONTRACTOR INSTALLED CABLE 3#2/1#8XLPE, CIR.N.S. #7 MULTI.

CONTRACTOR TO BORE 2.5" PVC CONDUIT FROM PULL BOX TO UNIT #10718 BEFORE CONSTRUCTION

CAP CONDUIT END AT STA.111+35.0';71'LT

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

SPV.0090.305 ELECTRICAL CABLE TYPE 3#8/1#8 XLPE CIR.N.S. #7 MULTI.

3#8/1#8LTP, CIR.N.S. #7 MULTI.

SPV.0060.303 PULL BOXES 17-INCH x 30-INCH x 24-INCH STA.110+84.7';40'LT

3#8/1#8LTP, CIR.N.S. #7 MULTI.

3#2/1#8LTP, CIR.N.S. #7 MULTI.

#6897
AT31'S6.3LED3,PED.B

#10701
35'WP.'6'U.B.,
3LED3,PED.R

#10712
AT31'D6,(2)3LED3,PED
SECONDARY RISER

SPV.0060.302 PULL BOXES 13-INCH x 24INCH x 24-INCH STA.111+46.6';47.1'LT

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

CONNECT WITH BRIDGE CONDUIT

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

SPV.0090.305 ELECTRICAL CABLE TYPE 3#8/1#8 XLPE LEAVE 10 FT. COIL IN PULL BOX, CIR.N.S. #7 MULTI.

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

TRAFFIC SIGNAL STANDARD BASE SEE TRAFFIC SIGNAL PLAN

CONTRACTOR TO HAVE INSTALLED BEFORE CONSTRUCTION PULL BOX 13" X 24" X 24"

EXISTING OVERHEAD CABLE 3#6AL, CIR.N.S. #7 MULTI.

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH CONNECTS PULL BOX TO SIGNAL BASE

652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

EXISTING OVERHEAD CABLE 3#6AL, CIR.N.S. #7 MULTI.

#6878
#22
WEP.CO.W.P. #68134562
6-0 U.B.,

3#6AL, CIR.N.S. #7 MULTI.

#6886
W.P.
6-0 U.B.,2LED2.R

3#2/1#8LTP, CIR.N.S. #7 MULTI.

#10668
AT31'D6,(2)3LED3,PED

3#2/1#8LTP, CIR.N.S. #7 MULTI.

3#2/1#8LTP, CIR.N.S. #7 MULTI.

SPV.0090.319 LIQUIDTIGHT FLEXIBLE NON-METALLIC CONDUIT 1 1/2- INCH

SPV.0060.302 PULL BOXES 17-INCH x 30-INCH x 24-INCH STA.110+35.1';26.2'RT

#6902
654.0105 CONCRETE BASES TYPE 5 (WISDOT) STA.110+35.1';26.2'RT
655.0305 CABLE TYPE UF 2-12 AWG GROUNDED (INTERNAL RISER)
657.0255 TRANSFORMER BASE BREAKAWAY WITH 11 1/2-INCH BOLT CIRCLE
SPV.0060.321 POLES TYPE 30-AL-BD
SPV.0060.343 WATER TIGHT SPLICES & CONNECTIONS (INSIDE PULL BOX)
SPV.0060.345 LUMINAIRE ARMS SINGLE MEMBER 6FT (SPECIAL)
SPV.0060.371 INSTALLING CITY FURNISHED LUMINAIRE UTILITY LED B (3LED3)

SPV.0090.308 ELECTRICAL CABLE TYPE 3#2/1#8 XLPE LEAVE 10 FT. COIL IN PULL BOX CIR.N.S. #7 MULTI.

SPV.0060.302 PULL BOXES 13-INCH x 24INCH x 24-INCH STA.109+98.4';41.9'RT

EXISTING #10678, 3156'AL.3LED3,R.PED

LIGHT POLE TO BE REMOVED WITH REMOVAL STAGE OF TEMPORARY FACILITIES
#6904, AT31'S6.3LED3,PED.B

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH

SPV.0090.305 ELECTRICAL CABLE TYPE 3#8/1#8 XLPE INSTALLED IN CONDUIT CIR.N.S. #7 MULTI

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH

TRAFFIC SIGNAL MONOTUBE SEE TRAFFIC SIGNAL PLAN

652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH CONNECTS TO MONOTUBE BASE

EXISTING CITY OF MILWAUKEE TRAFFIC CONTROL SIGNAL CABINET

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

SPV.0090.319 LIQUIDTIGHT FLEXIBLE NON-METALLIC CONDUIT 1 1/2- INCH

SPV.0060.302 PULL BOXES 13-INCH x 24INCH x 24-INCH STA.111+24.3';27.8'RT

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

SPV.0090.308 ELECTRICAL CABLE TYPE 3#2/1#8 XLPE, CIR.N.S. #7 MULTI

SPV.0060.302 PULL BOXES 17-INCH x 30-INCH x 24-INCH STA.111+00.0';28.5'RT

652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH

SPV.0090.308 ELECTRICAL CABLE TYPE 3#2/1#8 XLPE CIR.N.S. #7 MULTI

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

#6936
655.0305 CABLE TYPE UF 2-12 AWG GROUNDED (INTERNAL RISER)
657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE
SPV.0060.321 POLES TYPE 30-AL-BD
SPV.0060.343 WATER TIGHT SPLICES & CONNECTIONS (INSIDE JUNCTION BOX)
SPV.0060.345 LUMINAIRE ARMS SINGLE MEMBER 6FT (SPECIAL)
SPV.0060.371 INSTALLING CITY FURNISHED LUMINAIRE UTILITY LED A (2LED2)

BRIDGE JUNCTION BOX INSTALLED BY BRIDGE CONTRACTOR

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH INSTALLED BY BRIDGE CONTRACTOR

BRIDGE LIGHT BLISTER ANCHORAGE INSTALLED BY BRIDGE CONTRACTOR

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH INSTALLED BY BRIDGE CONTRACTOR

SPV.0090.305 ELECTRICAL CABLE TYPE 3#8/1#8 XLPE CIR.N.S. #7 MULTI

SHEET 1 OF 3

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - PERMANENT UNDERGROUND	SHEET 59	E

2

N

#6949
655.0305 CABLE TYPE UF 2-12 AWG GROUNDED (INTERNAL RISER)
657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE
SPV.0060.321 POLES TYPE 30-AL-BD
SPV.0060.343 WATER TIGHT SPLICES & CONNECTIONS (INSIDE JUNCTION BOX)
SPV.0060.345 LUMINAIRE ARMS SINGLE MEMBER 6FT (SPECIAL)
SPV.0060.371 INSTALLING CITY FURNISHED LUMINAIRE UTILITY LED A (2LED2)

652.0230
CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH
INSTALLED BY BRIDGE CONTRACTOR

652.0230
CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH
INSTALLED BY BRIDGE CONTRACTOR

SPV.0090.305 ELECTRICAL CABLE TYPE 3#8/#8 XLPE
CIR.N.S. #7 MULTI.

BRIDGE JUNCTION BOX
INSTALLED BY
BRIDGE CONTRACTOR

BRIDGE LIGHT BUSTER
ANCHORAGE INSTALLED
BY BRIDGE CONTRACTOR

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

SPV.0060.302 PULL BOXES 13-INCH x 24INCH x 24-INCH STA.114+43.8;32.5LT

#7027
WEP.CO. W.P. #80-04451
STREET LIGHT
12-0 U.B.252.B

STREET LIGHTING OVERHEAD CABLE
3#6AL, CIR.T20NW-C

#7047
WEP.CO.,W.P. #85-06554
STREET LIGHT
12-0 U.B.252.R

STREET LIGHTING OVERHEAD CABLE
3#6AL, CIR.T20NW-C

N. 107th

ST.

114+00

115+00

116+00

OH

OH

652.0230
CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH INSTALLED BY BRIDGE CONTRACTOR

SPV.0090.308 ELECTRICAL CABLE TYPE 3#2/1#8 XLPE
CIR.N.S. #7 MULTI

CONNECT WITH BRIDGE CONDUIT

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

SPV.0060.302 PULL BOXES 13-INCH x 24INCH x 24-INCH STA.114+43.8;22.5RT

OFF RAMP

652.0230 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH

SPV.0060.302 PULL BOXES 13-INCH x 24INCH x 24-INCH STA.115+11.8;22.5RT

SPV.0090.308 ELECTRICAL CABLE TYPE 3#2/1#8 XLPE LEAVE 5 FT. COIL IN PULL BOX
CIR.N.S. #7 MULTI.

#7010, 35 FT. WOOD POLE.
THIS POLE IS A PERMANENT INSTALLATION
THAT WILL REMAIN AFTER THE PROJECT
IS COMPLETED

PRIVATE LIGHT POLE

LEGEND

- EXISTING POLE
- EXISTING POLE WITH LIGHT
- PROPOSED POLE
- PROPOSED POLE WITH LIGHT
- RELOCATE EXISTING POLE WITH LIGHT
- RELOCATED EXISTING POLE WITH LIGHT
- REMOVE POLE WITH LIGHT
- REMOVE POLE
- PROPOSED PULL BOX - (SEE NOTE)
- PROPOSED TEMPORARY OVERHEAD SECONDARY CABLE
- REMOVAL OF TEMPORARY OVERHEAD SECONDARY CABLE
- PR. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- PR. UNDERGROUND CONDUIT - (SEE NOTE)
- EX. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- EX. UNDERGROUND CONDUIT - (SEE NOTE)

SHEET 2 OF 3

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - PERMANENT UNDERGROUND	SHEET 60	E

LEGEND

- EXISTING POLE
- EXISTING POLE WITH LIGHT
- PROPOSED POLE
- PROPOSED POLE WITH LIGHT
- RELOCATE EXISTING POLE WITH LIGHT
- RELOCATED EXISTING POLE WITH LIGHT
- REMOVE POLE WITH LIGHT
- REMOVE POLE
- PROPOSED PULL BOX - (SEE NOTE)
- PROPOSED TEMPORARY OVERHEAD SECONDARY CABLE
- REMOVAL OF TEMPORARY OVERHEAD SECONDARY CABLE
- PR. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- PR. UNDERGROUND CONDUIT - (SEE NOTE)
- EX. UNDERGROUND SECONDARY CABLE - (SEE NOTE)
- EX. UNDERGROUND CONDUIT - (SEE NOTE)

N

W. GOOD HOPE RD.

N. 107 ST.

#10718
31'D6'AL
PED

LIGHT POLE
#10718
31'D6'AL
PED

184-0
2"

133-0
2.5"

3#6/1#8LTP CIR.T20NW-B

3#6/1#8LTP, CIR.T20NW-B

133-0
2.5"

184-0
2"

LIGHT POLE
#10700
31'D6'AL
PED

18D
20-9
13-4
2.5"

31-6
30D

CABLE 3#6AL, CIR. T20NW-B

12-4
30D

LIGHT POLE
#7200
31'D6'AL PED.

3#6/1#8LTP, 3' BOC
CIR.T20NW-B

3#6AL
CIR. T20NW-B

#7147
WG&E CO
W.P. #R4-2600
6-0 U.B.
MULTI RISER

H0

35D
62-0

2.5"
60-0

35D
11-1

℄ C.B.

℄ C.B.

27-6
2.5"

CABLE NOT IN SERVICE
3#2/1#8LTP

#7166
31'S6'AL
PED

3#2/1#8LTP
CIR.T20NW-B

2-2.5"

℄ C.B.

#7185
WEP.CO.
W.P. #631453

℄ C.B.

48-6
2-2"

38D
9-5

3-2.5"
60-0

38D
10-7

℄ C.B.

46-6
2-2"

℄ C.B.

2-3
4-3
5-11
19-3
16-8
13-2
15D
18D
17D
20D
22D
21D
3-2.5"

LIGHT POLE
#10640
AT31'D6'
PED

3#2/1#8LTP
CIR.T20NW-B

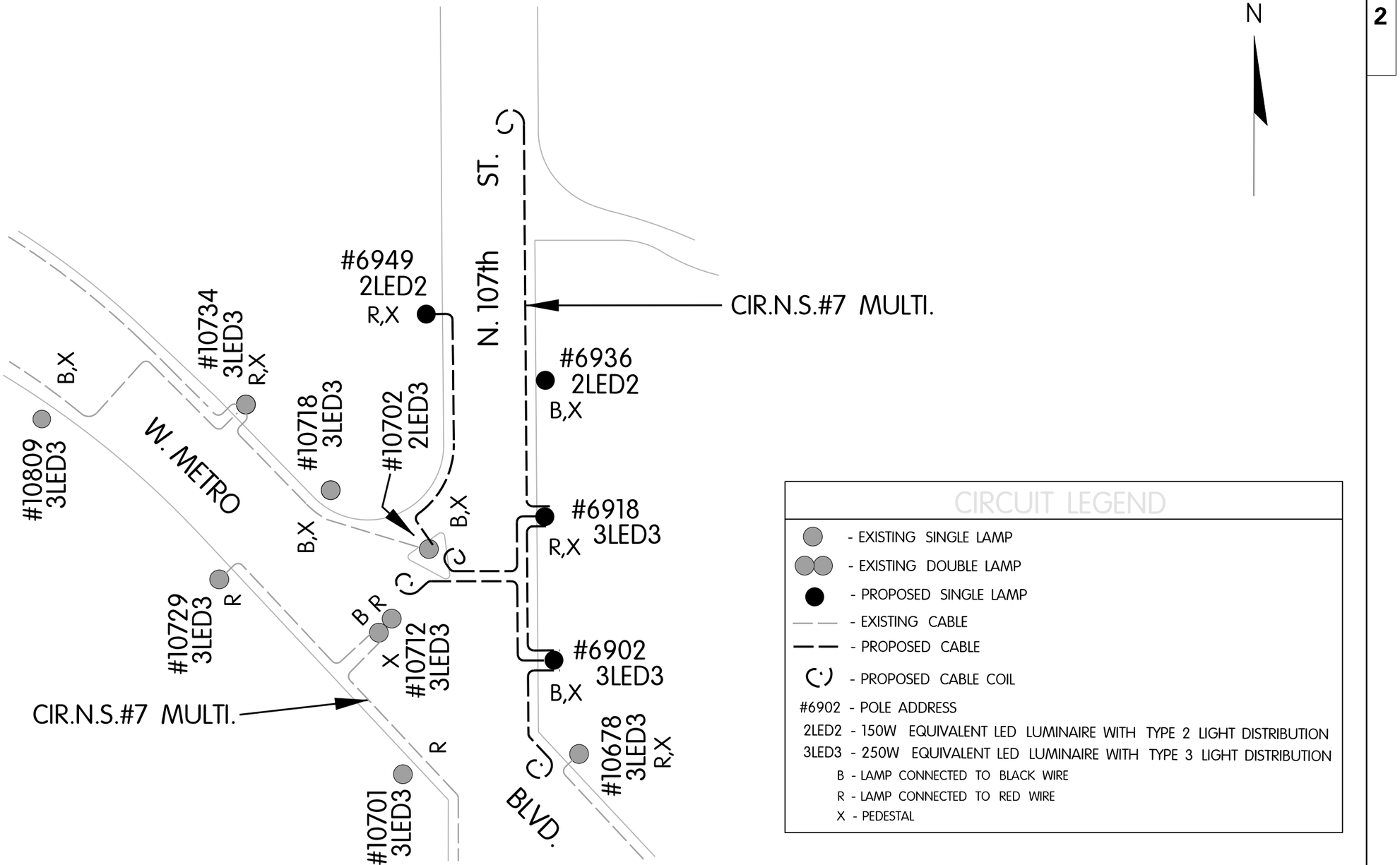
2-2.5"

2.5"

LIGHT POLE
#10622
31'S6'AL
PED

SHEET 3 OF 4

PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - PERMANENT UNDERGROUND	SHEET 61	E



CIRCUIT LEGEND

- - EXISTING SINGLE LAMP
- - EXISTING DOUBLE LAMP
- - PROPOSED SINGLE LAMP
- - EXISTING CABLE
- - PROPOSED CABLE
- - PROPOSED CABLE COIL

#6902 - POLE ADDRESS

2LED2 - 150W EQUIVALENT LED LUMINAIRE WITH TYPE 2 LIGHT DISTRIBUTION

3LED3 - 250W EQUIVALENT LED LUMINAIRE WITH TYPE 3 LIGHT DISTRIBUTION

B - LAMP CONNECTED TO BLACK WIRE

R - LAMP CONNECTED TO RED WIRE

X - PEDESTAL

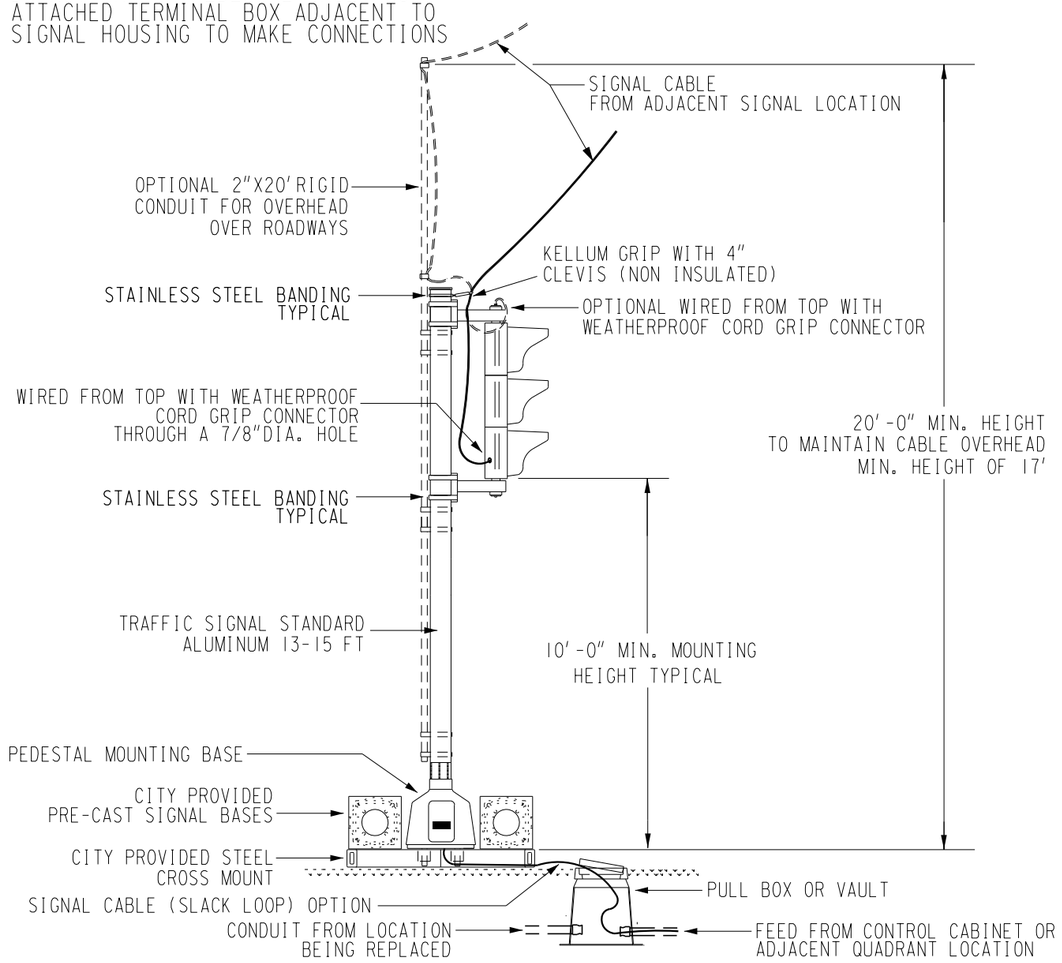
PROJECT NO. 1360-12-70	STH 145	COUNTY: MILWAUKEE	STREET LIGHTING - PERMANENT CIRCUIT LAYOUT	SHEET 62	E

FILE NAME : W:\bes_WisDot\2022\(1360-12-70) Good Hope Rd & 107th Over STH 145\SL Conduit & Cable\SL 107th Conduit Master - Re-Revised 2-16-22.dgn PLOT DATE : 16-FEB-2022 14:26 PLOT BY : dkozel PLOT NAME : PLOT SCALE : 1:40
WISDOT/CADDS SHEET 42

NOTES:

CITY OF MILWAUKEE ELBOWS CANNOT BE ACCESSED FROM THE TOP, INSTALL 7/8" DIA. HOLE IN LOWEST HOUSING.

CITY OF MILWAUKEE SIGNAL STANDARDS DO NOT HAVE A PEDESTAL BASE. USE ATTACHED TERMINAL BOX ADJACENT TO SIGNAL HOUSING TO MAKE CONNECTIONS

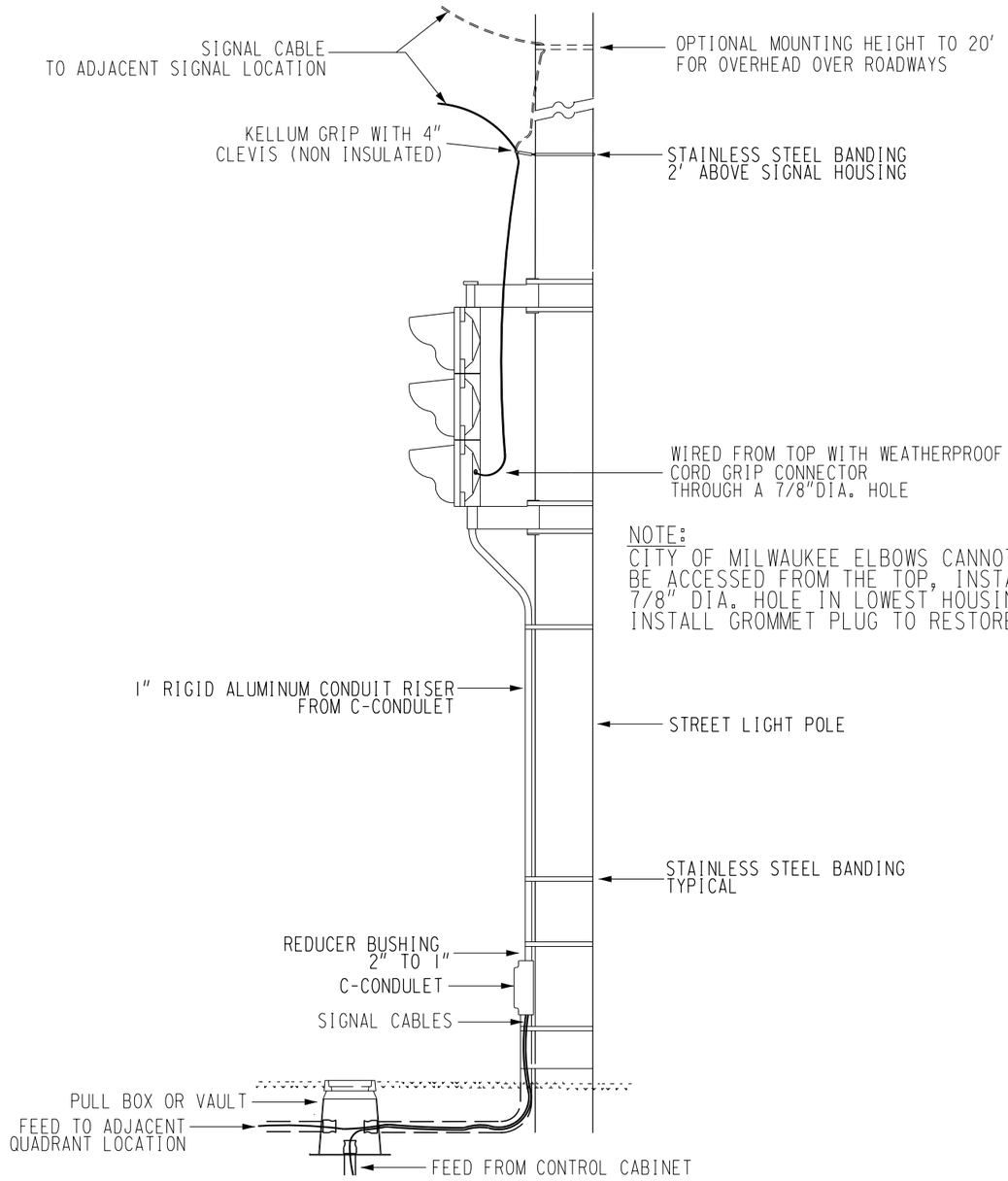


1xx DETAIL

TYPICAL TRAFFIC SIGNAL
TEMPORARY CRIB

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM TRAFFIC SIGNAL FORCES.
CONTACT DISPATCHER AT (414) 286-3687 FOR SHOP SUPERVISOR.

PLOTDATE

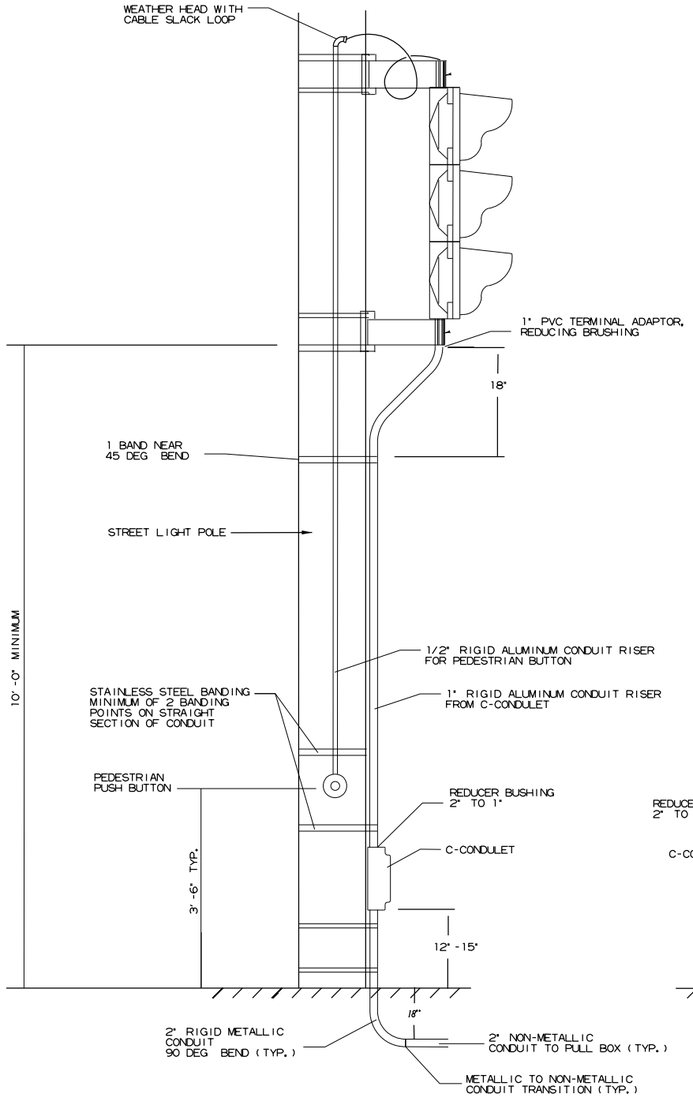


1xx DETAIL

TYPICAL TRAFFIC SIGNAL
FEED TO TEMPORARY CRIB

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM TRAFFIC SIGNAL FORCES.
CONTACT DISPATCHER AT (414) 286-3687 FOR SHOP SUPERVISOR.

PLOTDATE



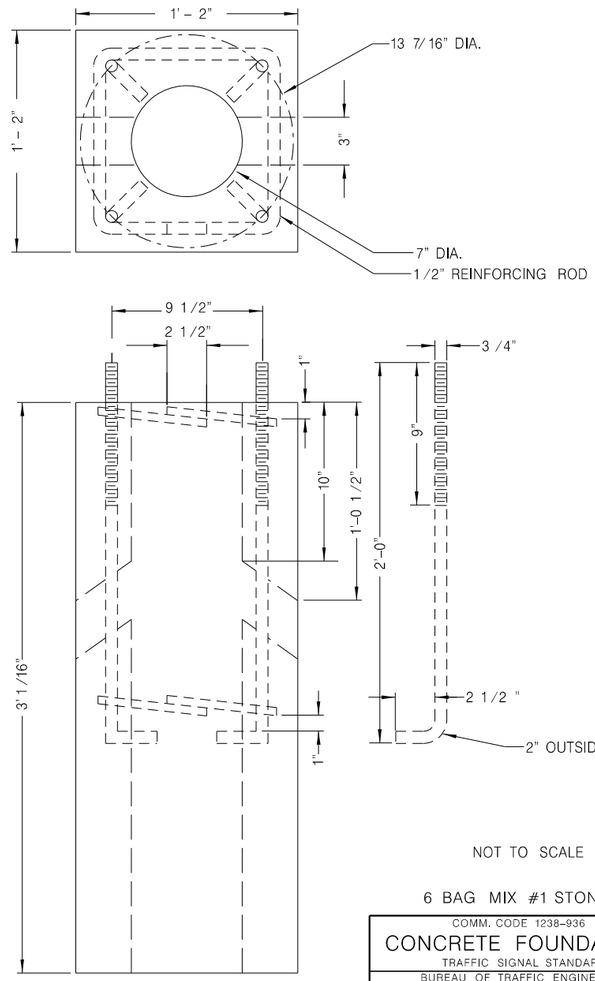
OPTION 1 OPTION 2

ELECTRICAL RISER

NTS

NOTE: SHOWN FOR CONNECTING TO EXISTING

2



NOT TO SCALE

6 BAG MIX #1 STONE

DETAIL

126

TYPICAL TRAFFIC SIGNAL
STANDARD CONCRETE FOUNDATION

COMM. CODE 1238-936

CONCRETE FOUNDATION

TRAFFIC SIGNAL STANDARD

BUREAU OF TRAFFIC ENGINEERING AND ELECTRICAL SERVICES
D.P.W. CITY OF MILWAUKEE

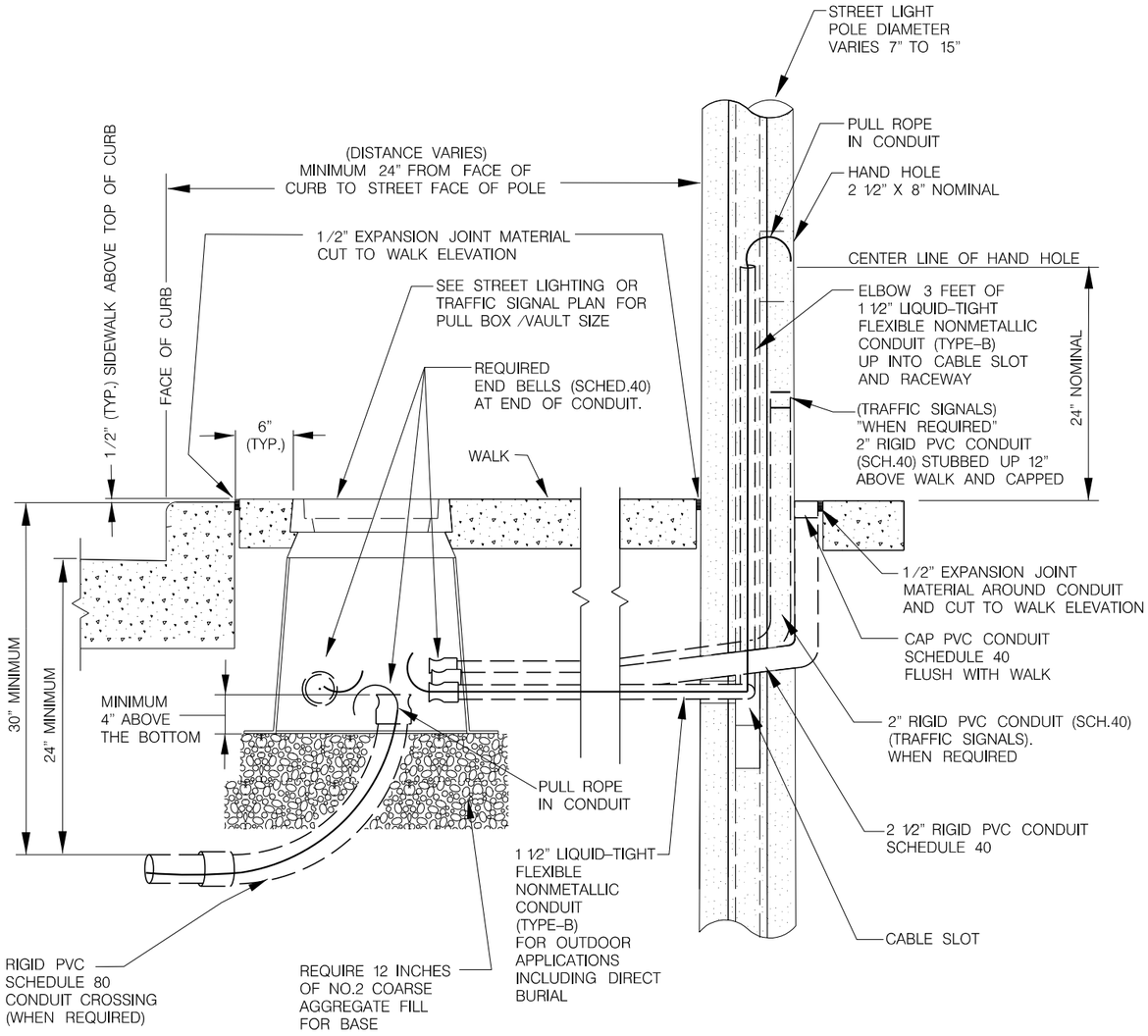
TRAFFIC CONTROL MATERIAL

DATE	SCALE	DRAWN	CHECKED	APPROVED
4-16-75	Not To Scale	J.H.S.	B.J.T.	R.J.B.
SUPERSEDES	REVISED DATE 07-29-03	DRG.	C-75-563-T	
SUPERSEDED BY	NEW DRG.	F-82-535-T		

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM TRAFFIC SIGNAL FORCES.
CONTACT DISPATCHER AT (414) 286-3687 FOR SHOP SUPERVISOR.

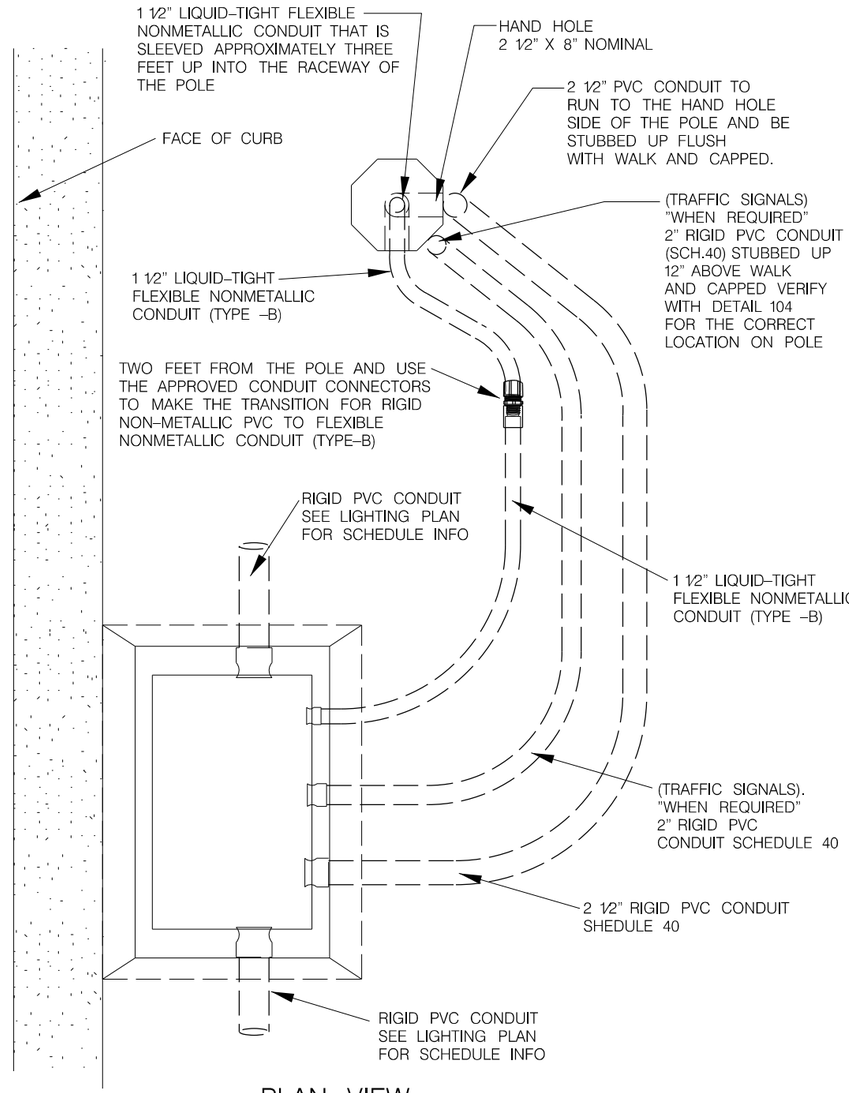
PLOTDATE

NOTE: SHOWN FOR CONNECTING TO EXISTING AND REMOVAL



SECTION VIEW

NOT TO SCALE



PLAN VIEW

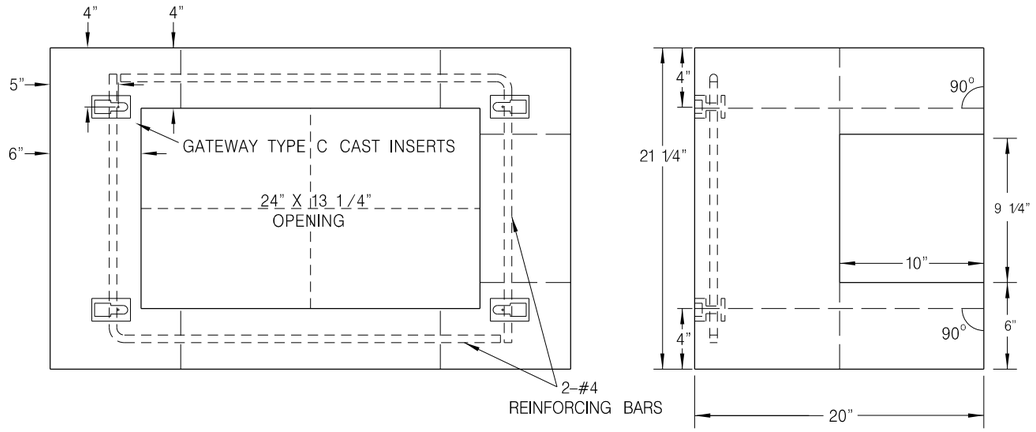
NOT TO SCALE

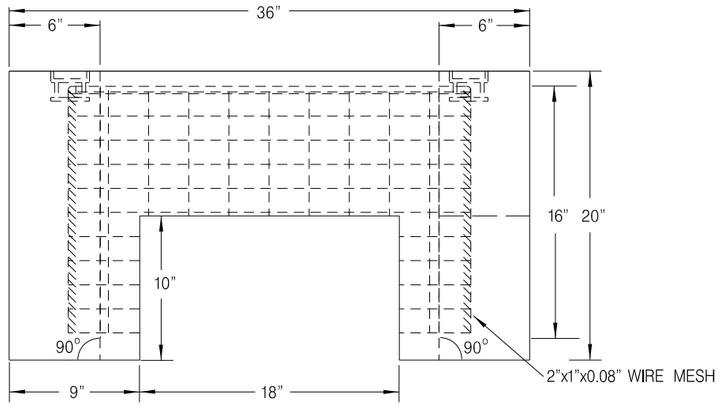
108A

DETAIL VERSION

TYPICAL CONDUIT INSTALLATION FROM PULL BOX / VAULT TO POLE

NOTE: SHOWN FOR CONNECTING TO EXISTING





NOT TO SCALE

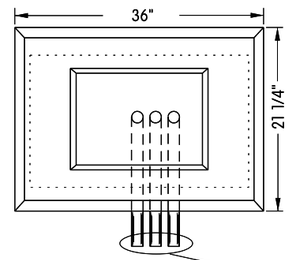
6 BAG MIX #1 STONE

COMM. CODE XXXX–XXX				
PRE–CAST CONCRETE FOUNDATION				
TRAFFIC SIGNAL CABINETS P1 AND P2				
TRAFFIC ENGINEERING AND ELECTRICAL SERVICES D.P.W. CITY OF MILWAUKEE				
TRAFFIC CONTROL MATERIAL				
DATE 8–30–16	SCALE N.T.S.	DRAWN JAB/JO	CHECKED SCR	APPROVED JCB
SUPERSEDES	REVISED DATE	DRG.		
SUPERSEDED BY	NEW DRG.	C–16–500–T		

125 DETAIL

TYPICAL TRAFFIC CONTROL CABINET CONCRETE FOUNDATION

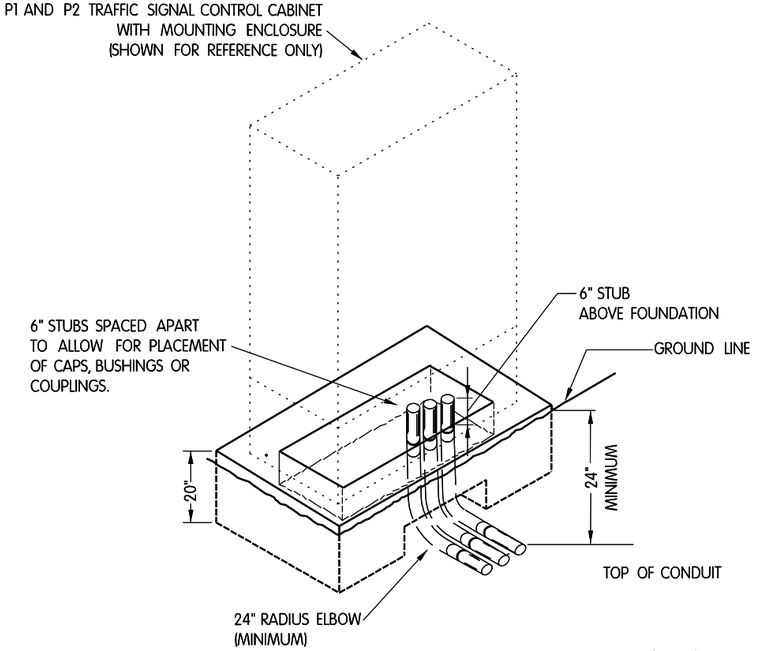
NOTE: SHOWN FOR CONNECTING TO EXISTING



NOTE:
CONDUIT SHOWN ON PLAN INCIDENTAL. REFER TO STREET LIGHTING AND TRAFFIC SIGNAL CONDUIT PLAN FOR THE QUANTITY & SIZE OF CONDUIT REQUIRED IN THE CONCRETE CONTROL CABINET BASE

PLAN VIEW

STYLE P1 AND P2 TRAFFIC SIGNAL CONTROL CABINET WITH MOUNTING ENCLOSURE (SHOWN FOR REFERENCE ONLY)

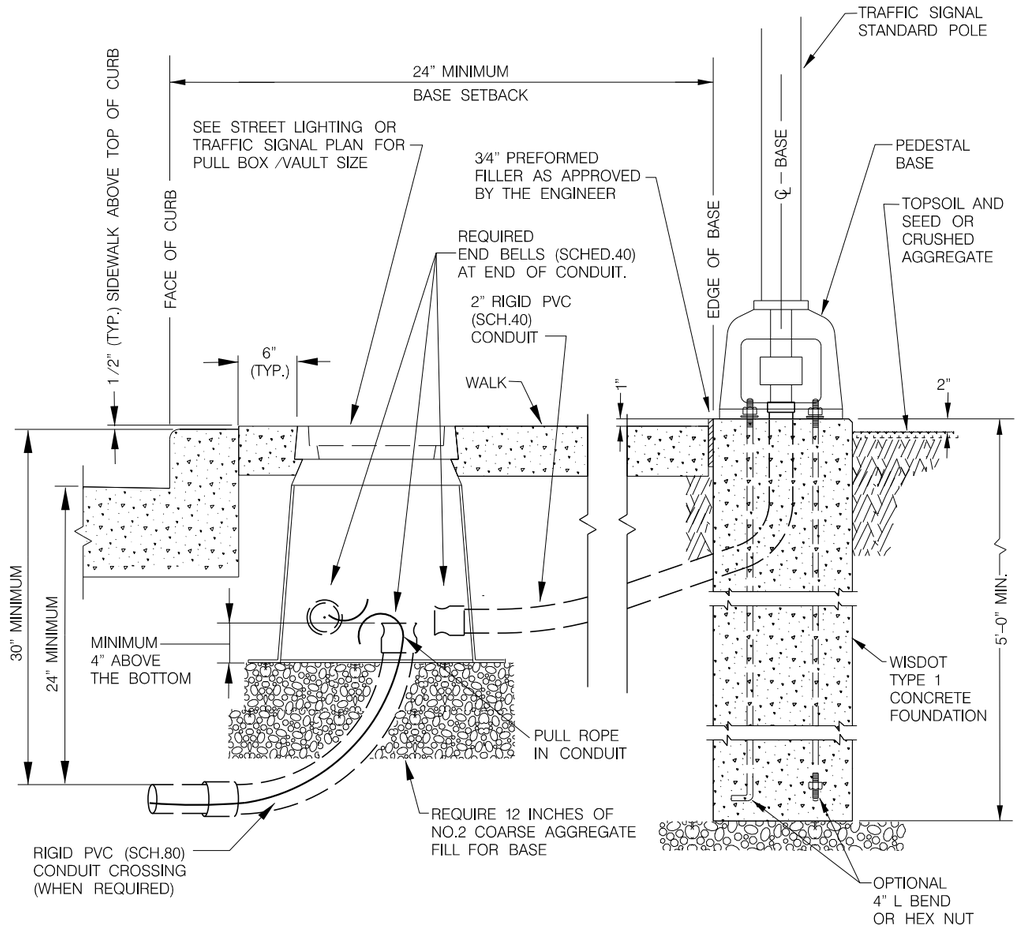


ISOMETRIC VIEW

125B TYPICAL DETAIL

CONDUIT INSTALLATION TO TRAFFIC CONTROL CABINET CONCRETE FOUNDATION

NOTE: SHOWN FOR CONNECTING TO EXISTING



109 DETAIL

TYPICAL CONDUIT INSTALLATION FROM PULL BOX / VAULT TO SIGNAL STANDARD AND TYPICAL BASE INSTALLATION

ANY DEVIATIONS FROM DETAIL WILL REQUIRE PERMISSION FROM STREET LIGHTING FORCES. CONTACT DISPATCHER AT (414) 286-5944 FOR THE APPROPRIATE SHOP SUPERVISOR.

GENERAL NOTES:

ALL SERVICE TERMINATIONS BY CITY OF MILWAUKEE DPW

ALL VEHICLE HOUSINGS 12"

ALL UNDERGROUND TRAFFIC AND LOOP DETECTORS TO BE ABANDONDED

STREET LIGHTING ON SEPERATE CIRCUITRY

LEGEND

- CONTROL CABINET
- EXISTING SIGNAL STANDARD
- WOOD POLE
- MOVEABLE SIGNAL STANDARD
- UNDERGROUND CABLE IN SERVICE
- OVERHEAD TRAFFIC CABLE 12-14 AWG
- OVERHEAD SERVICE CABLE 3#6AL TRIPLEX
- DON'T WALK/WALK INDICATOR & COUNTDOWN TIMER INDICATOR 12-IN.
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- LUMINAIRE, LIGHT POLE
- CONFIRMATION LIGHT
- SIGNAL HEAD NUMBER
- TRAFFIC SIGNAL HEAD

W. METRO BLVD.

W. FOND DU LAC AVE.

S.T.H. 145

N. 107 ST.

110+00 111+00 112+00 113+00

#10729 31'S6'AL

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION 3#6AL, CIR. N.S. #7 MULTI.

3#2/1#8LTP, CIR.N.S. #7 MULTI.

3#8/1#8LTP, CIR.N.S. #7 MULTI.

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION 13"X 24"X24" PULL BOX STA.111+67.5';123'LT.

#10718 31'S6'AL,3LED3,B,PED

CONTRACTOR TO BORE 2.5" PVC CONDUIT FROM PULL BOX TO UNIT #10718 BEFORE CONSTRUCTION

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION #10702 26'S6'AL.,2LED3,PED.,B STA.111+18.9';37.9'LT.

CITY OF MILWAUKEE TO ABANDON CONDUIT 2.5"

CONTRACTOR TO REMOVE STREET LIGHTING CABLE BEFORE CONSTRUCTION 3#6AL., CIR. N.S. #7 MULTI.

20'=14 LTP C.C. to "I" 3#8/1#8LTP, CIR.N.S. #7 MULTI.

COVER

#10712 AT31'D6,(2)3LED3,PED SECONDARY PIER

REMOVE #10701 35'WP.'6'U.B., 3LED3,PED.R

3#8/1#8LTP, CIR.N.S. #7 MULTI.

#6897 AT31'S6,3LED3,PED,B

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION 2#4/1#6AL., CIR. N.S. #7 MULTI.

WP SERV. POLE

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION 13"X 24"X24" PULL BOX STA.111+20.0';33.2'LT.

#6886 W.P. 6-0 U.B.,2LED2,R

20' MAST

#10668 AT31'D6,(2)3LED3,PED

#10678 31'S6'AL,3LED3,R.PED

LIGHT TO REMAIN #6904 AT31'S6,3LED3 PED.B

TCB1 WITH M.P. SUPPLIED BY CITY OF MILWAUKEE DPW

CB1 BASE, METER PEDESTAL AND CONDUIT TO REMAIN DURING CONSTRUCTION

CONTRACTOR TO REMOVE STREET LIGHTING CABLE BEFORE CONSTRUCTION 3#6AL, CIR. N.S. #7 MULTI.

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION 35'WOOD POLE STA.111+13.5';30.6'LT.

CONTRACTOR TO REMOVE LIGHT POLE BEFORE CONSTRUCTION #6918 35'W.P.,6-0 U.B.,3LED3,PED.,R

CITY OF MILWAUKEE TO ABANDON CONDUIT 2.5"

CONTRACTOR TO REMOVE STREET LIGHTING CABLE BEFORE CONSTRUCTION 3#6AL, CIR. N.S. #7 MULTI.

CITY OF MILWAUKEE TO REMOVE LIGHT POLE BEFORE CONSTRUCTION #6936 25'S6'AL BD.,2LED2,B TRANFORMER BREAKAWAY PED.

CITY OF MILWAUKEE TO ABANDON CONDUIT 2.5"

3#2/1#8LTP, CIR.N.S. #7 MULTI.

3#6AL, CIR.N.S. #7 MULTI.

3#2/1#8LTP, CIR.N.S. #7 MULTI.

3#2/1#8LTP, CIR.N.S. #7 MULTI.

3#2/1#8LTP, CIR.N.S. #7 MULTI.

3#2/1#8LTP, CIR.N.S. #7 MULTI.

TRAFFIC CONTROL SIGNAL
W. FOND DU LAC AVE., W. METRO BLVD. & N. 107TH ST.
LOCAL STREET
CITY OF MILWAUKEE,MILWAUKEE COUNTY

MUNICIPAL CONTACT: SCOTT REINBACHER
DESIGNED BY: CITY OF MILWAUKEE-DPW
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1360–12–72	HWY: S.T.H. 145	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN	SCALE FEET 0 40	SHEET 68	E

FILE NAME : W:\bte\signals\PAVING AND DESIGN\State Projects–LFA\Preliminary Engineering\1360–12–70 107th\TS Temporary.dgn

PLOT DATE : 17–NOV–2021 12:21 PLOT BY : jbondo PLOT NAME : PLOT SCALE : 1:39.9999

WISDOT/CADDS SHEET 42

GENERAL NOTES:

ALL TERMINATIONS BY CITY OF MILWAUKEE DPW

ALL VEHICLE HOUSINGS 12"

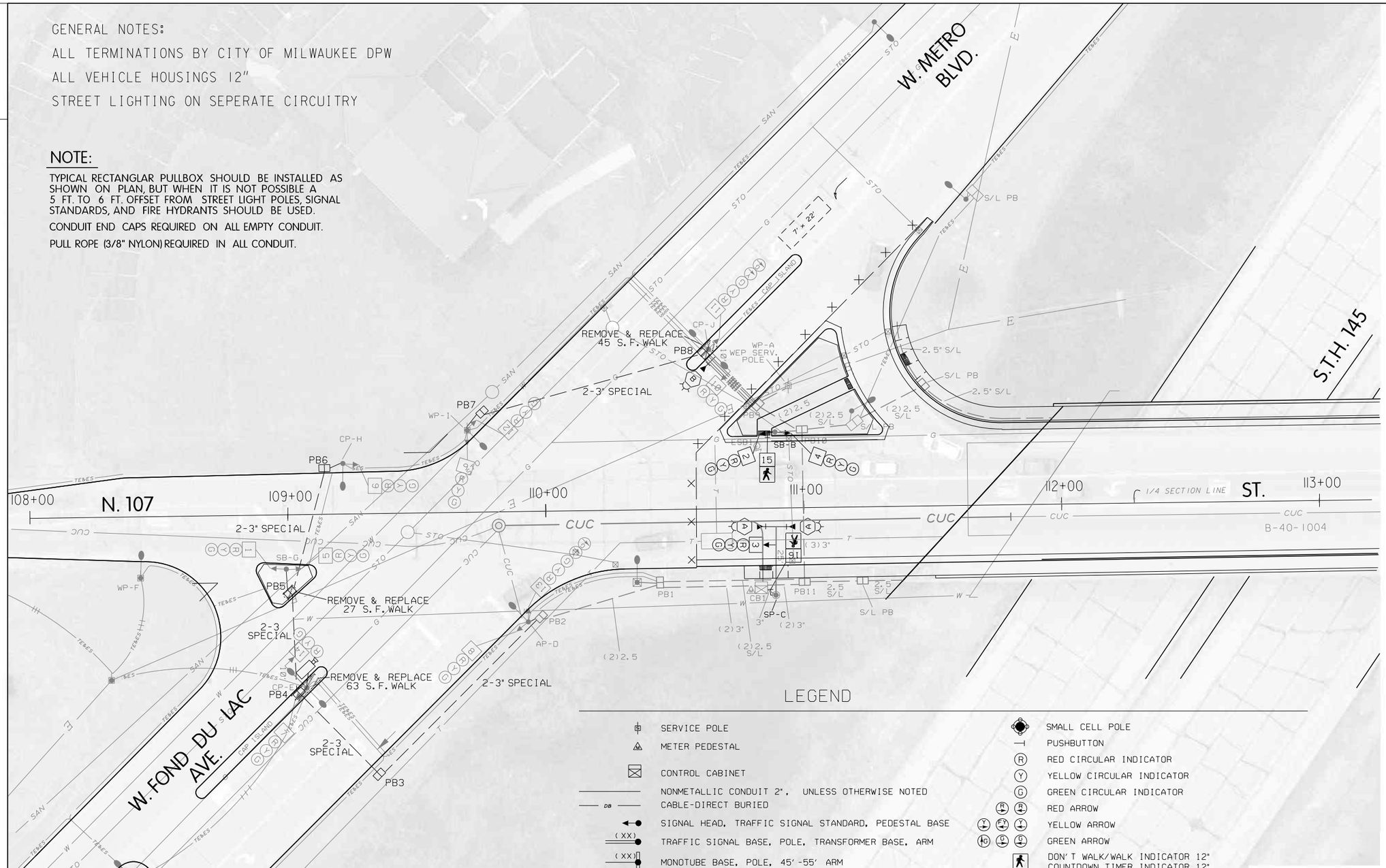
STREET LIGHTING ON SEPERATE CIRCUITRY

NOTE:

TYPICAL RECTANGLAR PULLBOX SHOULD BE INSTALLED AS SHOWN ON PLAN, BUT WHEN IT IS NOT POSSIBLE A 5 FT. TO 6 FT. OFFSET FROM STREET LIGHT POLES, SIGNAL STANDARDS, AND FIRE HYDRANTS SHOULD BE USED.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.



LEGEND

- SERVICE POLE
- METER PEDESTAL
- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- CABLE-DIRECT BURIED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- TRAFFIC SIGNAL BASE, POLE, TRANSFORMER BASE, ARM
- MONOTUBE BASE, POLE, 45'-55' ARM
- MONOTUBE BASE, POLE, 15'-40' ARM
- LUMINAIRE, LIGHT POLE
- CONFIRMATION LIGHT
- SIGNAL HEAD NUMBER
- TRAFFIC SIGNAL HEAD
- PULL BOX OR VAULT POLYMER CONCRETE
- CAMERA
- SMALL CELL POLE
- PUSHBUTTON
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- DON'T WALK/WALK INDICATOR 12" COUNTDOWN TIMER INDICATOR 12"
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- LANE DESIGNATION FOR INFO ONLY

NOTES: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING
ALL STREET CROSSING CONDUIT SCHEDULE 80 OPEN CUT OR TRENCH.
ALL SPECIAL CONDUIT HDPE

MONOTUBE STRUCTURE
S40-XXXX-XX
TYPE 10 BASE
TYPE 9 POLE
25' MAST ARM

TRAFFIC CONTROL SIGNAL
W. FOND DU LAC AVE., W. METRO BLVD. & N. 107TH ST.
LOCAL STREET
CITY OF MILWAUKEE, MILWAUKEE COUNTY

MUNICIPAL CONTACT: SCOTT REINBACHER
DESIGNED BY: CITY OF MILWAUKEE-DPW
REVISED BY:

PROJECT NO: 1360-12-72	HWY: S.T.H. 145	COUNTY: MILWAUKEE	PERMANENT TRAFFIC SIGNAL PLAN	SCALE FEET 0 40	SHEET 69	E

FILE NAME : W:\bte\signals\PAVING AND DESIGN\State Projects-LFA\Preliminary Engineering\1360-12-70 107th\TS Permanent.dgn
PLOT DATE : 17-NOV-2021 12:25
PLOT BY : jbondo
PLOT NAME :
PLOT SCALE : 1:39.9999

GENERAL NOTES:

ALL SERVICE TERMINATIONS BY CITY OF MILWAUKEE DPW

ALL VEHICLE HOUSINGS 12"

ALL UNDERGROUND TRAFFIC AND LOOP DETECTORS TO BE ABANDONDED

STREET LIGHTING ON SEPERATE CIRCUITRY

LEGEND

- CONTROL CABINET
- EXISTING SIGNAL STANDARD
- WOOD POLE
- MOVEABLE SIGNAL STANDARD
- UNDERGROUND CABLE IN SERVICE
- OVERHEAD TRAFFIC CABLE
- OVERHEAD SERVICE CABLE
- DON'T WALK/WALK INDICATOR & COUNTDOWN TIMER INDICATOR 12-IN.
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- LUMINAIRE, LIGHT POLE
- CONFIRMATION LIGHT
- SIGNAL HEAD NUMBER
- TRAFFIC SIGNAL HEAD

W. METRO BLVD.

W. FOND DU LAC AVE.

S.T.H. 145

N. 107 ST.

110+00 111+00 112+00 113+00

#10729 31'S6'AL

3#2/1#8LTP, CIR.N.S. #7 MULTI.

3#8/1#8LTP, CIR.N.S. #7 MULTI.

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION 3#6AL, CIR. N.S. #7 MULTI.

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION 13"X 24"X24" PULL BOX STA.111+67.5';123'LT.

#10718 31'S6'AL,3LED3,B,PED

CONTRACTOR TO BORE 2.5" PVC CONDUIT FROM PULL BOX TO UNIT #10718 BEFORE CONSTRUCTION

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION #10702 26'S6'AL.,2LED3,PED.,B STA.111+18.9';37.9'LT.

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION 13"X 24"X24" PULL BOX STA.111+20.0';33.2'LT.

CITY OF MILWAUKEE TO ABANDON CONDUIT 2.5"

CONTRACTOR TO REMOVE STREET LIGHTING CABLE BEFORE CONSTRUCTION 3#6AL, CIR. N.S. #7 MULTI.

20=14 LTP C.C. to "I" 3#8/1#8LTP, CIR.N.S. #7 MULTI.

20=14 LTP C.C. to "J" 3#8/1#8LTP, CIR.N.S. #7 MULTI.

#10712 AT31'D6,(2)3LED3,PED SECONDARY PIER

#10701 35'WP.'6'U.B., 3LED3,PED.R

3#8/1#8LTP, CIR.N.S. #7 MULTI.

#6897 AT31'S6,3LED3,PED,B

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION 2#4/1#6AL., CIR. N.S. #7 MULTI.

WP-A WP-B WP-I WP-F WP-H WP-C WP-D WP-E

WEP SERV. POLE

35' WOOD POLE

#6886 W.P. 6-0 U.B.,2LED2,R

SB-G 20' MAST

AT31 CONC. POLE

TCB1 WITH M.P.Y SUPPLIED BY CITY OF MILWAUKEE DPW

LIGHT TO REMAIN #6904 AT31'S6,3LED3,PED.B

#10678 31'S6'AL,3LED3,R,PED

20=14 LTP C.C. to "G" 17=14 LTP C.C. to "D" 20=14 LTP C.C. to "E"

3#6AL, CIR.N.S. #7 MULTI.

3#2/1#8LTP, CIR.N.S. #7 MULTI.

3#6AL, CIR.N.S. #7 MULTI.

3#2/1#8LTP, CIR.N.S. #7 MULTI.

3#2/1#8LTP, CIR.N.S. #7 MULTI.

#10668 AT31'D6,(2)3LED3,PED

CB1 METER PEDESTAL AND CONCRETE FOUNDATION DURING CONSTRUCTION

CONTRACTOR TO REMOVE STREET LIGHTING CABLE BEFORE CONSTRUCTION 3#6AL, CIR. N.S. #7 MULTI.

CONTRACTOR TO INSTALL BEFORE CONSTRUCTION 35'MOOD POLE STA.111+13.5';30.6'LT.

CONTRACTOR TO REMOVE LIGHT POLE BEFORE CONSTRUCTION #6918 35'W.P.,6-0 U.B.3LED3,PED.R

CITY OF MILWAUKEE TO ABANDON CONDUIT 2.5"

CONTRACTOR TO REMOVE STREET LIGHTING CABLE BEFORE CONSTRUCTION 3#6AL, CIR. N.S. #7 MULTI.

CITY OF MILWAUKEE TO REMOVE LIGHT POLE BEFORE CONSTRUCTION #6936 25'S6'AL BD.,2LED2,B TRANFORMER BREAKAWAY PED.

CITY OF MILWAUKEE TO ABANDON CONDUIT 2.5"

TRAFFIC CONTROL SIGNAL
W. FOND DU LAC AVE., W. METRO BLVD. & N. 107TH ST.
LOCAL STREET
CITY OF MILWAUKEE,MILWAUKEE COUNTY

MUNICIPAL CONTACT: SCOTT REINBACHER
DESIGNED BY: CITY OF MILWAUKEE-DPW
REVISED BY:

PAGE 1 OF 1

PROJECT NO: 1360–12–72	HWY: S.T.H. 145	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL REMOVAL PLAN	SCALE FEET 0 40	SHEET 70	E

FILE NAME : W:\bte\signals\PAVING AND DESIGN\State Projects–LFA\Preliminary Engineering\1360–12–70 107th\TS Temporary.dgn

PLOT DATE : 17–NOV–2021 12:22 PLOT BY : jbondo PLOT NAME : PLOT SCALE : 1:39.9999

WISDOT/CADDS SHEET 42

2

SIGNAL EQUIPMENT PER LOCATION	TS2 CONTROL CABINET	ALUMINUM RISER	PEDESTAL BASE	STREET LTG. POLE	SIGNAL STANDARD 13'	TYPE 9 POLE	10' MAST ARM	25' MAST ARM	3S SIGNAL HOUSING	5S SIGNAL HOUSING	12" WALK DON'T WALK	12" COUNTDOWN TIMER	EVP 721 DETECTOR	EVP 711 DETECTOR	CONFIRMATION LIGHT	VIDEO CAMERA DETECTION	4 CHANNEL DETECTOR CARD	METER PEDESTAL
CB1	EXISTING																1	EXISTING
APD		EXISTING		EXISTING					EXISTING	EXISTING								
CPE		EXISTING		EXISTING			EXISTING		2 - EXISTING							1		
SBG					EXISTING				2 - EXISTING									
CPH		EXISTING		EXISTING														
WPI		EXISTING		EXISTING					2- EXISTING									
CPJ		EXISTING		EXISTING					EXISTING	EXISTING				1	1			
WPA SERVICE POLE		EXISTING																
SBB (NEW)			1		1				2		1	1						
SPC (NEW)						1		1	1		1	1	1		2			

PULLBOX LOCATIONS

PB #	LOCATION
PB1	LIGHTING PLAN
PB2	LIGHTING PLAN
PB3	109+35; 102.3' RT
PB4	109+04; 69.4' RT
PB5	109+00; 30.3' RT
PB6	109+14; 17.6' LT
PB7	109+75; 38.6' LT
PB8	110+61; 60.2' LT
PB9	LIGHTING PLAN
PB10	LIGHTING PLAN
PB11	LIGHTING PLAN

CABLE INSTALL
TRAFFIC SIGNAL FROM CB1

LOCATION	CABLE TYPE	QUANTITY
WPA	3#8/1#8 XLPE	125 LF
SBB	12-14 AWG	100 LF
SPC	12-14 AWG	70 LF
SPC	EVP CABLE	70 LF
SPC	2#12 UF	70 LF
APD	12-14 AWG	200 LF
CPE	12-14 AWG	230 LF
CPE	VIDEO DETECTION CABLE	255 LF
SBG	12-14 AWG	283 LF
CPH	12-14 AWG	332 LF
WPI	12-14 AWG	234 LF
CPJ	12-14 AWG	142 LF
CPJ	EVP CABLE	162 LF
CPJ	2#12 UF	162 LF

CABLE INSTALL
#10 AWG (GROUND) GRN

LOCATION	TO	LOCATION	QUANTITY
CB1		PB1	41 LF
PB1		APD	55 LF
APD		CPE	145 LF
CPE		SBG	60 LF
SBG		CPH	70 LF
WPI		CPJ	101 LF
CPJ		SBB	63 LF
SBB		SPC	96 LF
SPC		CB1	8 LF

CONDUIT INSTALL
CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH, 2.5-INCH, 3-INCH
CONDUIT SPECIAL 3-INCH HDPE

LOCATION	TO	LOCATION	2" LF	2.5" LF	3" LF	3" SPECIAL LF
CB1		PB1			LIGHTING PLAN	
PB1		PB2		LIGHTING PLAN		
PB2		APD	5			
PB2		PB3				176
PB3		PB4				90
PB4		CPE	5			
PB4		PB5				80
PB5		SBG	10			
PB5		PB6				102
PB6		CPH	5			
PB7		WPI	5			
PB7		PB8				182
PB8		CPJ	5			
PB8		PB9		EXISTING		
PB9		WPA	LIGHTING PLAN			
PB9		PB10		LIGHTING PLAN		
PB10		SBB	LIGHTING PLAN			
PB10		PB11			LIGHTING PLAN	
PB11		PB1		LIGHTING PLAN		
PB11		CB1			LIGHTING PLAN	
CB1		SPC			LIGHTING PLAN	

BASE LOCATIONS

BASE #	LOCATION
CB1	EXISTING
SBB	LIGHTING PLAN
SPC	LIGHTING PLAN

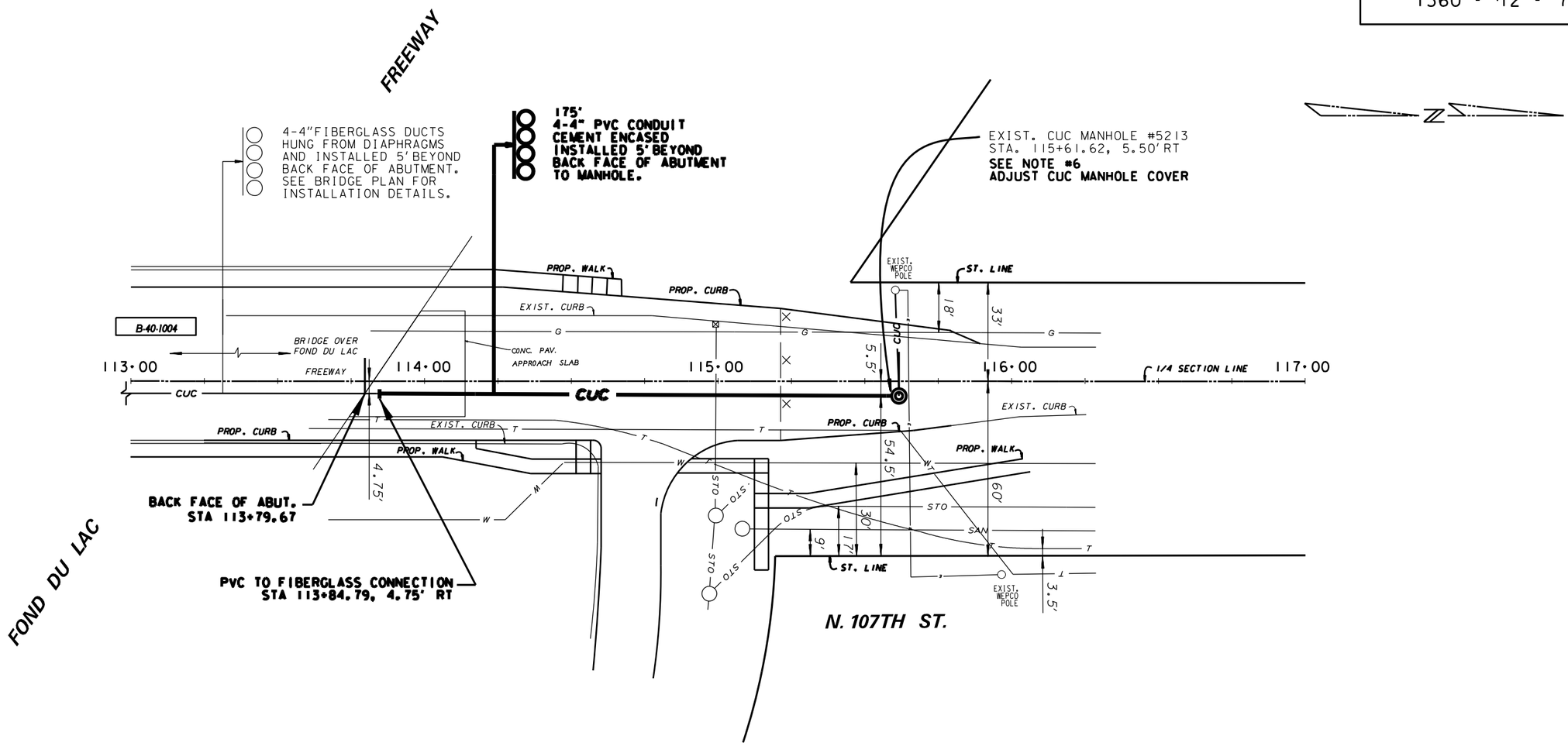
BASE REMOVAL LOCATIONS

ESB #	LOCATION
1	110+82, 64.4' RT

TRAFFIC CONTROL SIGNAL
W. FOND DU LAC AVE., W. METRO BLVD. & N. 107TH ST.
LOCAL STREET
CITY OF MILWAUKEE,MILWAUKEE COUNTY
MUNICIPAL CONTACT: SCOTT REINBACHER
DESIGNED BY: CITY OF MILWAUKEE-DPW
REVISED BY:
PAGE 2 OF 2

STATE PROJECT NUMBER
1360 - 12 - 70

2



NOTES:

1) CONSTRUCTION STAKING FOR THE CITY UNDERGROUND CONDUIT (CUC) FACILITIES IS TO BE INCLUDED IN AND PAID FOR UNDER THE BID ITEM 650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS
2) THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
3) THE LOCATION OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
4) DIMENSIONS SHOWN ARE TO CENTER OF MANHOLE, DUCT PACKAGE OR UTILITY.
5) MAINTAIN A STANDARD DEPTH OF 39-INCHES BETWEEN FINISHED GRADE AND TOP OF CONDUIT.
6) REMOVE ABANDONED CONDUIT FROM MANHOLE WALL AND INSTALL THE PROPOSED CONDUIT INTO THE MANHOLE AT SAME LOCATION.
7) REMOVE ABANDONED CONDUIT AS NEEDED FOR PROPOSED INSTALLATION.

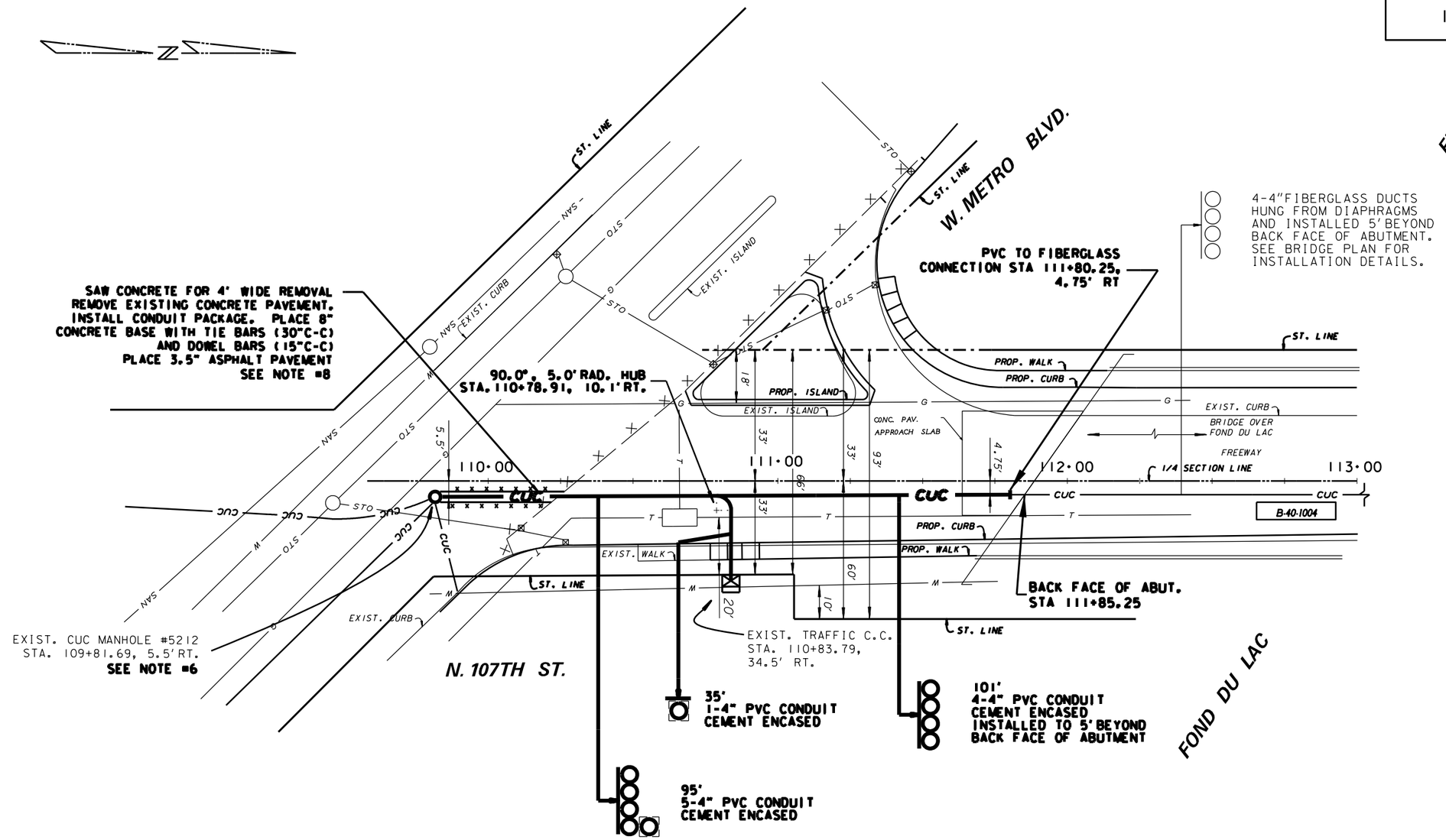
LEGEND

— CUC —	PROPOSED 4-INCH CEMENT ENCASED NONMETALLIC CONDUIT & NUMBER OF RUNS AS NOTED.
●	PROPOSED CUC MANHOLE
◎	EXISTING CUC MANHOLE
—— CUC ——	EXISTING CONDUIT
— — — —	ABANDONED CONDUIT

STATE PROJECT NO.: 1360-12-70	HWY: S.T.H. 145	COUNTY: MILWAUKEE	CITY UNDERGROUND CONDUIT BRIDGE APPROACH(CUC)	SCALE FEET 0' 40'	SHEET 72	E

STATE PROJECT NUMBER
1360 - 12 - 70

2



NOTES:

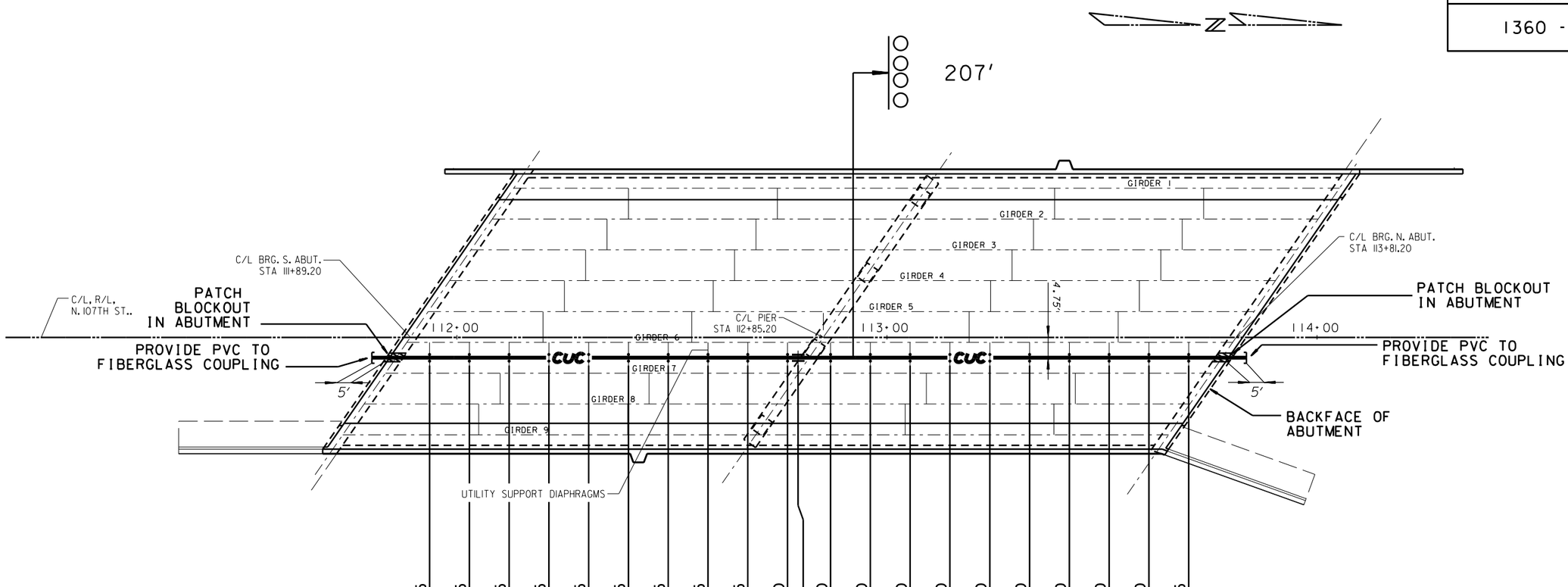
1) CONSTRUCTION STAKING FOR THE CITY UNDERGROUND CONDUIT (CUC) FACILITIES IS TO BE INCLUDED IN AND PAID FOR UNDER THE BID ITEM 650.8500 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS
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3) THE LOCATION OF THE EXISTING AND PROPOSED UTILITY INSTALLATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
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5) MAINTAIN A STANDARD DEPTH OF 39-INCHES BETWEEN FINISHED GRADE AND TOP OF CONDUIT.
6) REMOVE ABANDONED CONDUIT FROM MANHOLE WALL AND INSTALL THE PROPOSED CONDUIT INTO THE MANHOLE AT SAME LOCATION.
7) REMOVE ABANDONED CONDUIT AS NEEDED FOR PROPOSED INSTALLATION.
8) CONCRETE BASE MAY BE CONSTRUCTED IN TWO STAGES. PROTECT THE WORK ZONE USING STANDARD DETAIL DRAWINGS OF TRAFFIC CONTROL FOR INTERSECTION WITHIN SINGLE RIGHT LANE (AND LEFT LANE) CLOSURE.

LEGEND

— CUC —	PROPOSED 4-INCH CEMENT ENCASED NONMETALLIC CONDUIT & NUMBER OF RUNS AS NOTED.
●	PROPOSED CUC MANHOLE
○	EXISTING CUC MANHOLE
—— CUC ——	EXISTING CONDUIT
— — — —	ABANDONED CONDUIT

STATE PROJECT NO.: 1360-12-70	HWY: S.T.H. 145	COUNTY: MILWAUKEE	CITY UNDERGROUND CONDUIT BRIDGE APPROACH(CUC)	SCALE FEET 0' 40'	SHEET 73	E

STATE PROJECT NUMBER
1360 - 12 - 70



GENERAL NOTES

DRAWINGS IS NOT TO SCALE.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

ALL STATIONS ARE IN FEET AND ARE ALONG THE C/L OF N 107TH ST.

ALL COMPONENTS SHALL HAVE A MINIMUM 75 YEAR DESIGN LIFE.

EACH 4" DIA. CONDUIT WEIGHTS 9 PLF.

ALL HORIZONTAL SUPPORT MEMBERS TO BE MADE OF BLACK FIBERGLASS PULTRUDED MATERIAL.

FIBERGLASS MEMBERS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM E-84, CLASS I FLAME RATING AND SELF-EXTINGUISHING REQUIREMENTS OF ASTM D-635, A SURFACE VEIL SHALL BE APPLIED DURING PULTRUSION TO INSURE A RESIN RICH SURFACE AND ULTRAVIOLET RESISTANCE.

ALL CUTS AND HOLES SHOULD BE PROPERLY SEALED PER MANUFACTURERS RECOMMENDATIONS TO PREVENT CORROSION.

ALL STEEL MEMBERS AND HARDWARE SHALL BE 304 STAINLESS STEEL.

FURNISH CONCRETE FOR BRIDGES CONFORMING TO SECTION 501. GRADE E. CONTRACTOR MAY USE PREMIXED BAG CEMENT PER ENGINEER'S APPROVAL.

SPACE HANGERS A MAXIMUM 10'-0". LOCATE CONDUIT HANGERS BETWEEN GIRDERS 6 & 7. SEE BRIDGE PLANS.

ALL FIBERGLASS JOINTS SHALL BE EPOXIED PER MANUFACTURER'S SPECIFICATIONS.

EXTEND CONDUIT 5'-0" FROM BACK FACE OF ABUTMENT. PROVIDE FIBERGLASS TO PVC COUPLING.

FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.

INSTALL EXPANSION JOINT PER LOCATION SHOWN ON BRIDGE PLAN.

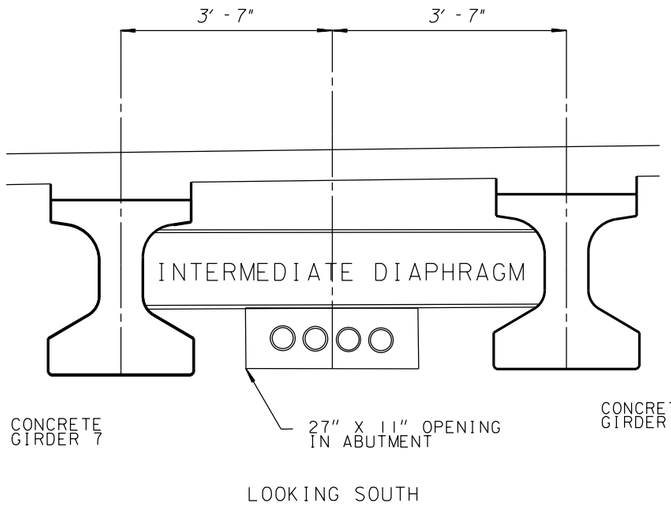
1 - 4 DUCT CITY COMMUNICATIONS PACKAGE - 207' - 5' BEYOND ABUTMENT TO 5' BEYOND ABUTMENT

8

8

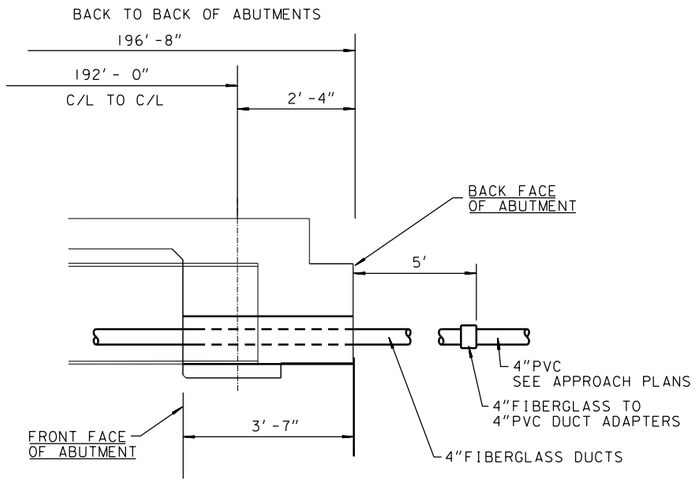
STATE PROJECT NO.: 1360-12-70	HWY: S.T.H. 145	COUNTY: MILWAUKEE	CITY UNDERGROUND CONDUIT BRIDGE INSTALLATION (CUC)	SCALE FEET NTS	SHEET 74	E

STATE PROJECT NUMBER
1360 - 12 - 70



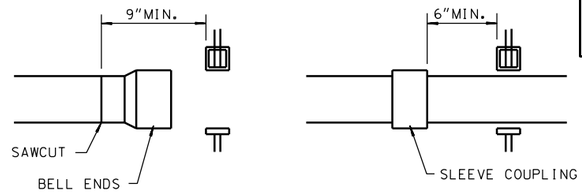
LOOKING SOUTH

DIAPHRAGM DETAIL



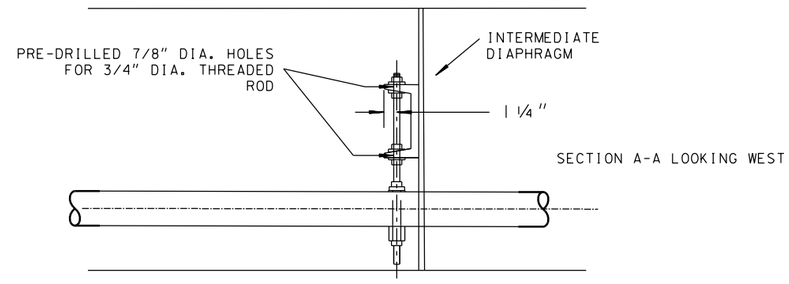
LOOKING WEST

TYPICAL SECTION AT ABUTMENT

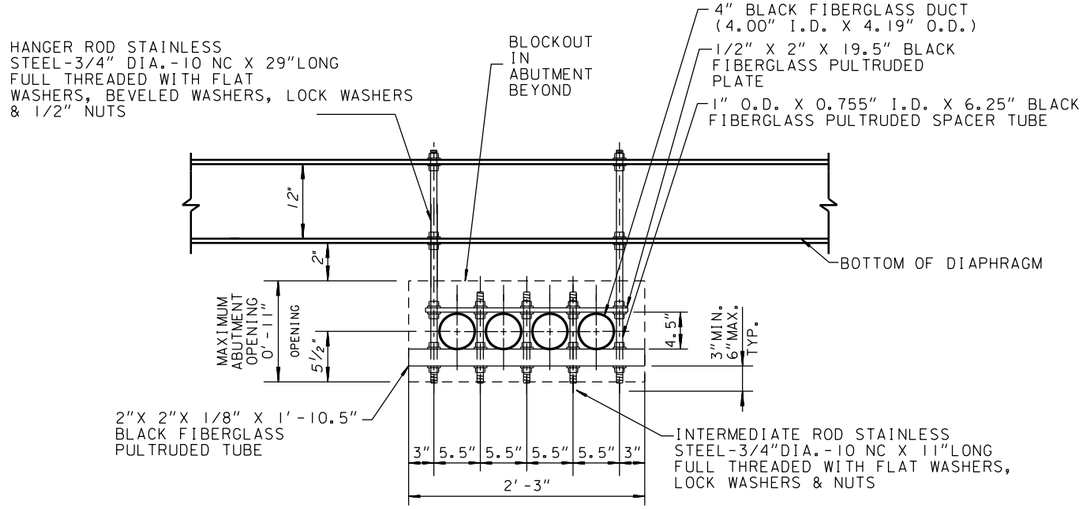


CLEARANCES FOR SLEEVE COUPLINGS AND BELL ENDS

NOTES:
A BELLED END OR COUPLING SHOULD BE NO CLOSER THAN 6" ON EITHER SIDE OF A SUPPORT AS SHOWN ABOVE. A TAPE MEASURE CAN BE USED TO PREDETERMINE THESE LOCATIONS AND THE CONDUIT CAN BE SAW CUT TO THE PROPER LENGTH BEFORE IT IS THREADED THROUGH THE HANGERS AS SHOWN ABOVE.

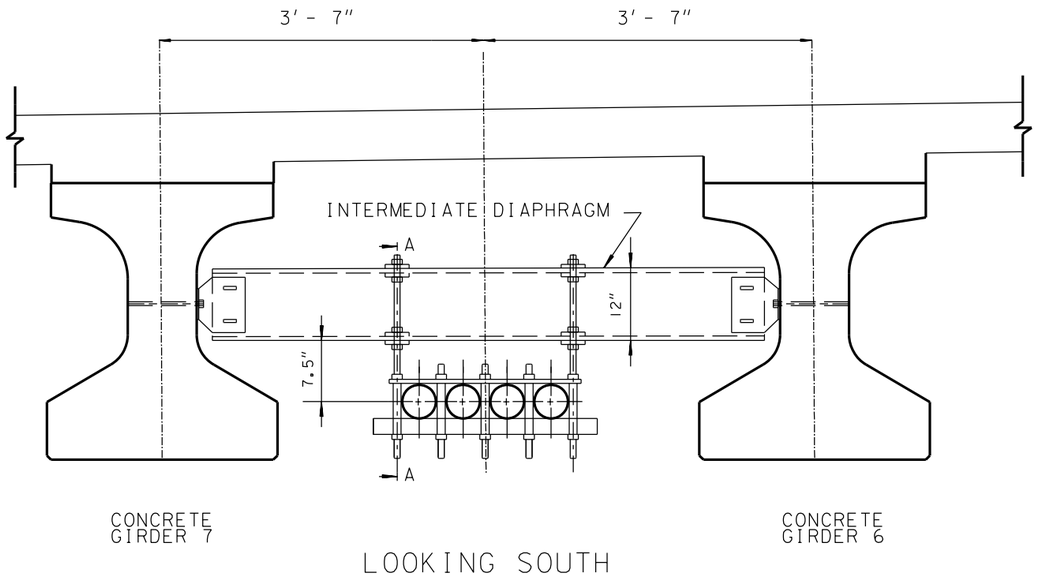


INTERMEDIATE DIAPHRAGM SECION A-A



4 DUCT CITY COMMUNICATION HANGER PACKAGE DETAIL

* THE CONTRACTOR SHALL FIELD VERIFY HANGER LENGTHS IN ORDER TO AVOID CONFLICTS WITH DIAPHRAM CROSSING.



LOOKING SOUTH

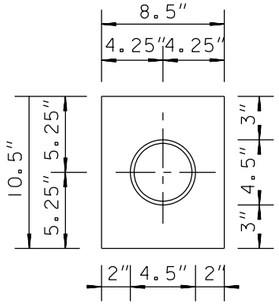
4 DUCT CITY COMMUNICATION HANGER PACKAGE THROUGH INTERMEDIATE DIAPHRAGM

8

8

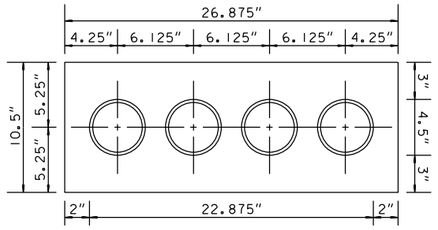
STATE PROJECT NO.: 1360-12-70	HWY: S.T.H. 145	COUNTY: MILWAUKEE	CITY UNDERGROUND CONDUIT BRIDGE APPROACH DETAILS (CUC)	SCALE FEET NTS	SHEET 75	E

FILE NAME : W:\ugd\Conduit Work Files\uconduit\2021\107TH STREET BRIDGE\CO-B-40-1004_LAYOUT_2
PLOT DATE : 10/20/2021
PLOT BY : Hazem Ramadan
PLOT NAME : _____
PLOT SCALE : NTS
WISDOT/CADDS SHEET



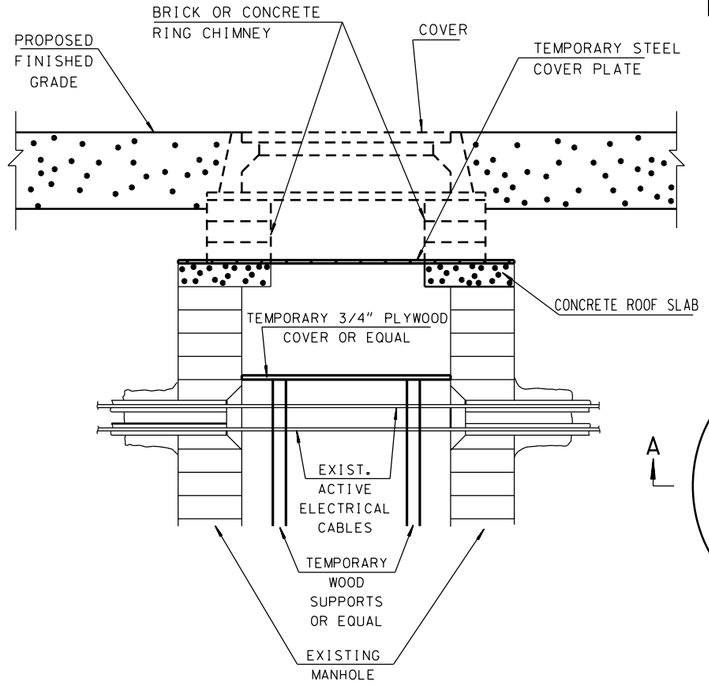
1-DUCT CROSS SECTION VIEW

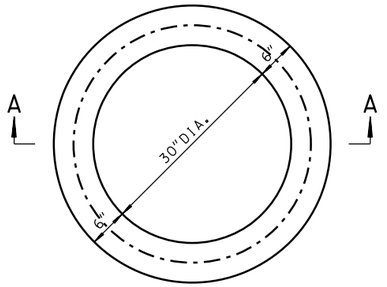
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4-DUCT CROSS SECTION VIEW

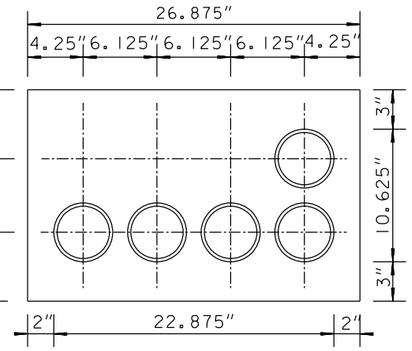
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PLAN

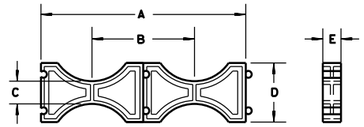
BLOCK OR PRECAST MANHOLE



5-DUCT CROSS SECTION VIEW

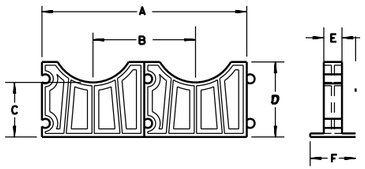
N.T.S.

COND.	3"	4"
A	10"	12 ¼"
B	5"	6 ⅛"
C	1 ½"	1 ½"
D	5.13"	6.13"
E	1"	1"



INTERMEDIATE SPACER DETAIL

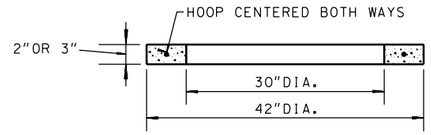
COND.	3"	4"
A	10 ¼"	12 ¼"
B	5.13"	6.13"
C	3"	3"
D	4 ¾"	5.31"
E	1"	1"
F	3"	3"



BASE SPACER DETAIL

INTERMEDIATE AND BASE SPACER DETAIL

N.T.S.



SECTION A-A

THE ADJUSTING RING SHALL BE 2" OR 3" IN HEIGHT.

THE CIRCUMFERENTIAL STEEL SHALL BE CENTERED WITHIN THE RING.

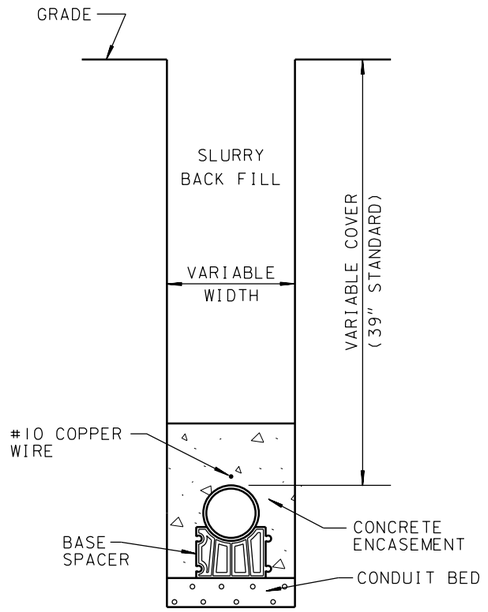
AREA OF CIRCUMFERENTIAL STEEL = 0.07 SQ. INCH PER VERTICAL FOOT WITH A MINIMUM OF .024 SQ. INCH IN ANY ONE RING.

THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE CORE SHALL BE 4000 P.S.I.

CONCRETE ADJUSTING RING

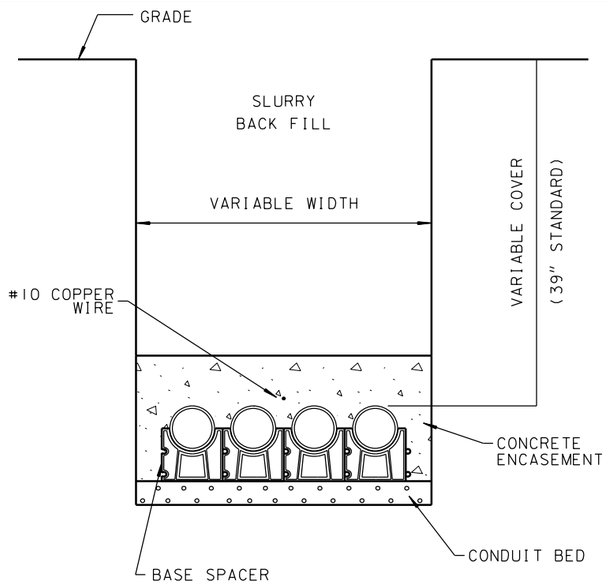
ADJUSTING CUC MANHOLES

STATE PROJECT NUMBER
1360 - 12 - 70



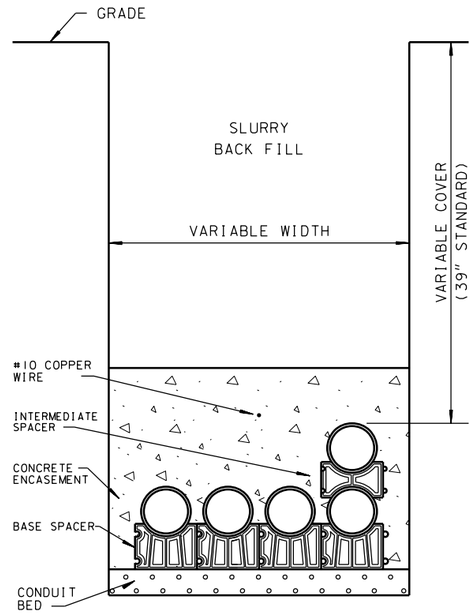
TRENCH AND 1-DUCT CROSS-SECTION VIEW

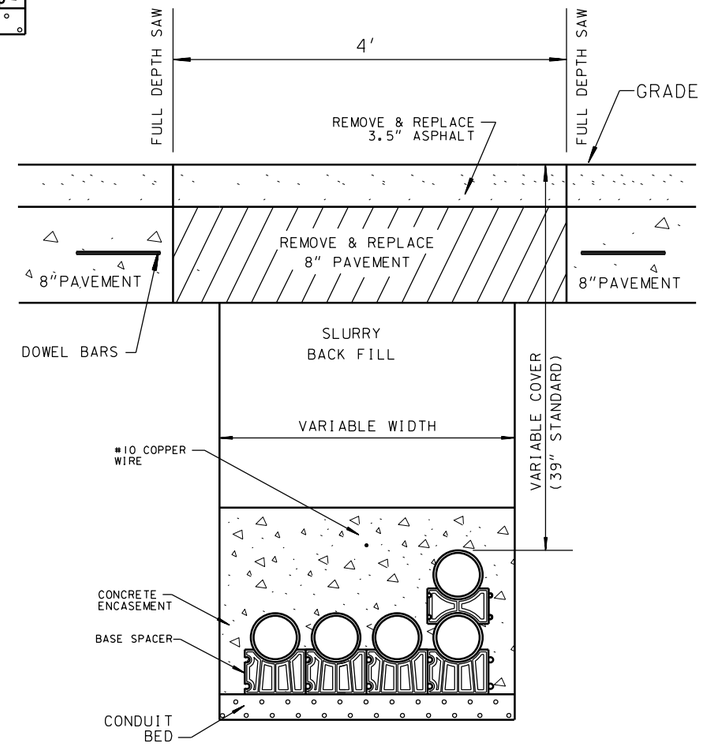
N.T.S.



TRENCH AND 4-DUCT CROSS-SECTION VIEW

N.T.S.





TRENCH AND 5-DUCT CROSS-SECTION VIEW

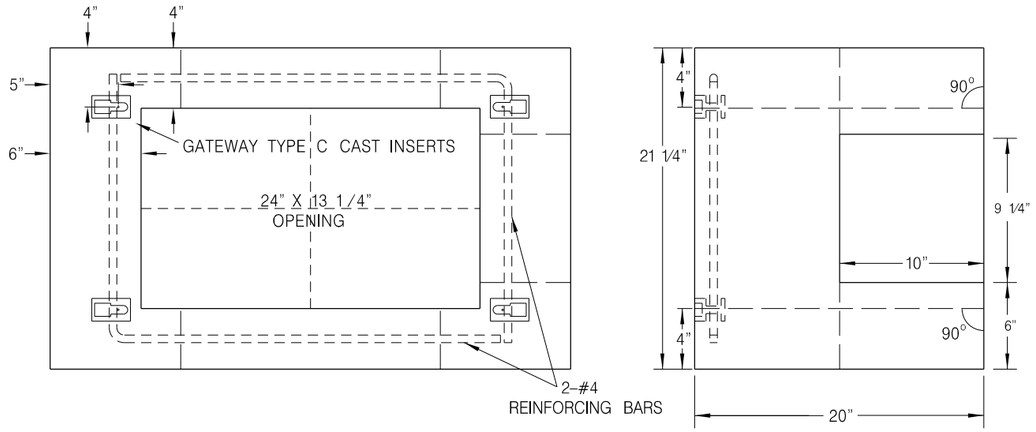
N.T.S.

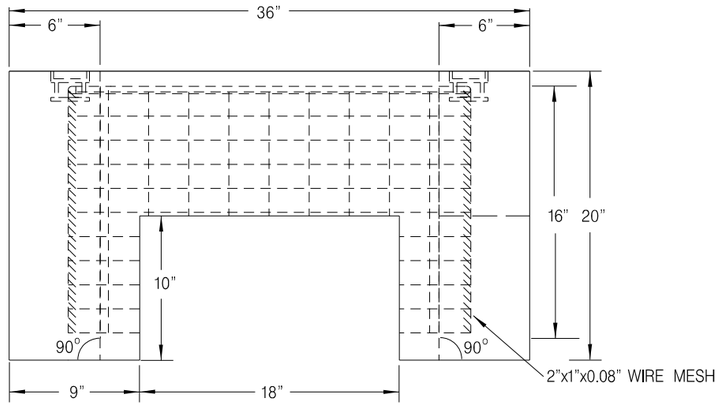
STATE PROJECT NUMBER

1360 - 12 - 70

2

STATE PROJECT NO.: 1360-12-70	HWY: S.T.H. 145	COUNTY: MILWAUKEE	CITY UNDERGROUND CONDUIT DETAILS (CUC)	SCALE FEET NTS	SHEET 77	E





NOT TO SCALE

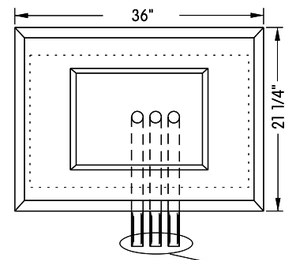
6 BAG MIX #1 STONE

COMM. CODE XXXX–XXX				
PRE–CAST CONCRETE FOUNDATION				
TRAFFIC SIGNAL CABINETS P1 AND P2				
TRAFFIC ENGINEERING AND ELECTRICAL SERVICES D.P.W. CITY OF MILWAUKEE				
TRAFFIC CONTROL MATERIAL				
DATE 8–30–16	SCALE N.T.S.	DRAWN JAB/JO	CHECKED SCR	APPROVED JCB
SUPERSEDES	REVISED DATE	DRG.		
SUPERSEDED BY	NEW DRG.	C–16–500–T		

125 DETAIL

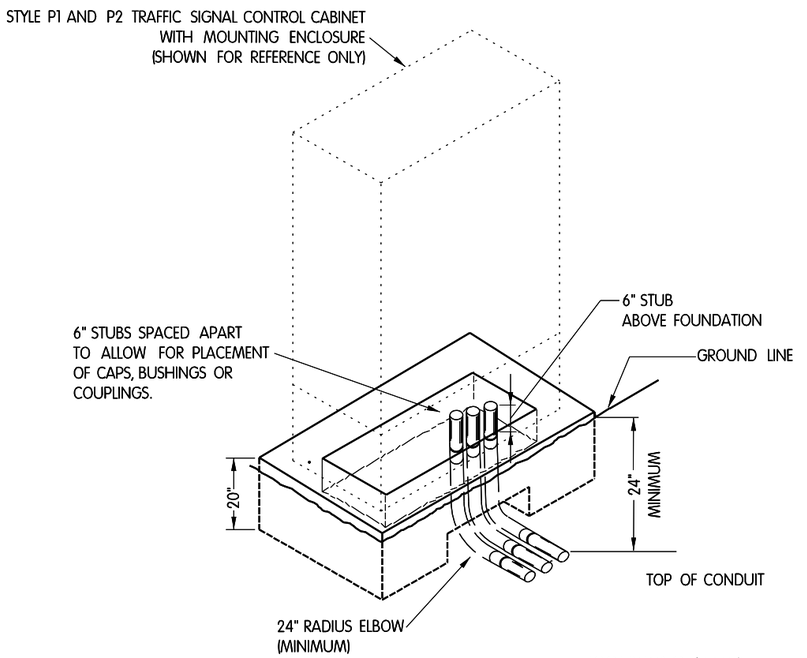
TYPICAL TRAFFIC CONTROL CABINET CONCRETE FOUNDATION

NOTE: SHOWN FOR CONNECTING TO EXISTING



NOTE:
CONDUIT SHOWN ON PLAN INCIDENTAL. REFER TO STREET LIGHTING AND TRAFFIC SIGNAL CONDUIT PLAN FOR THE QUANTITY & SIZE OF CONDUIT REQUIRED IN THE CONCRETE CONTROL CABINET BASE

PLAN VIEW

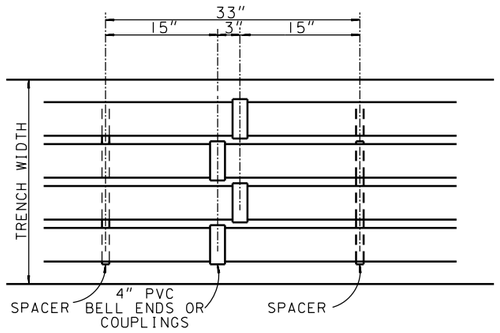


ISOMETRIC VIEW

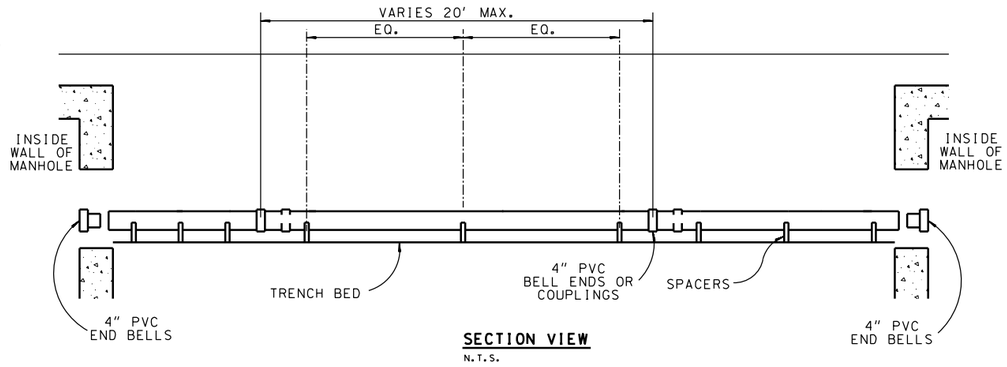
125B TYPICAL DETAIL

CONDUIT INSTALLATION TO TRAFFIC CONTROL CABINET CONCRETE FOUNDATION

NOTE: SHOWN FOR CONNECTING TO EXISTING



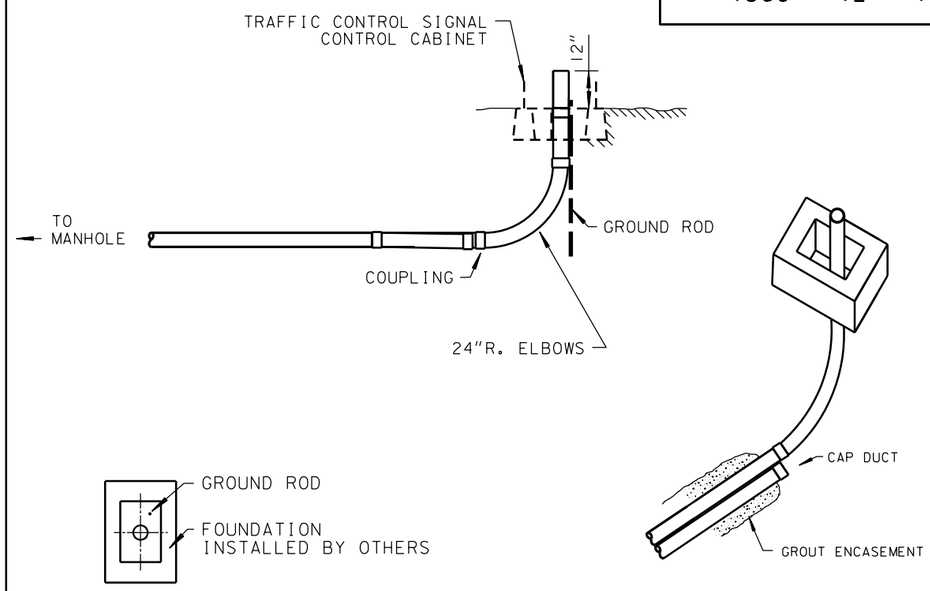
PLAN VIEW
N.T.S.



SECTION VIEW
N.T.S.

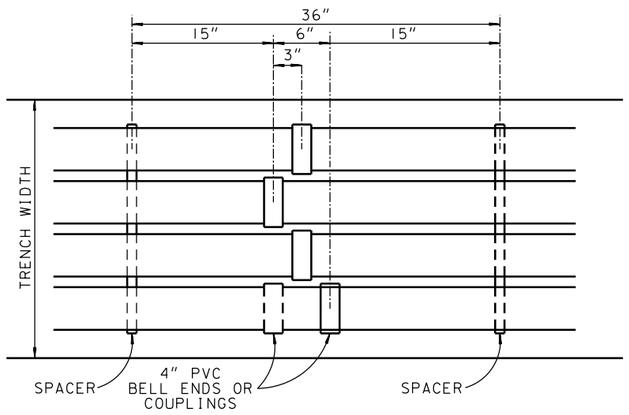
DUCT INSTALLATION DETAIL

STATE PROJECT NUMBER
1360 - 12 - 70

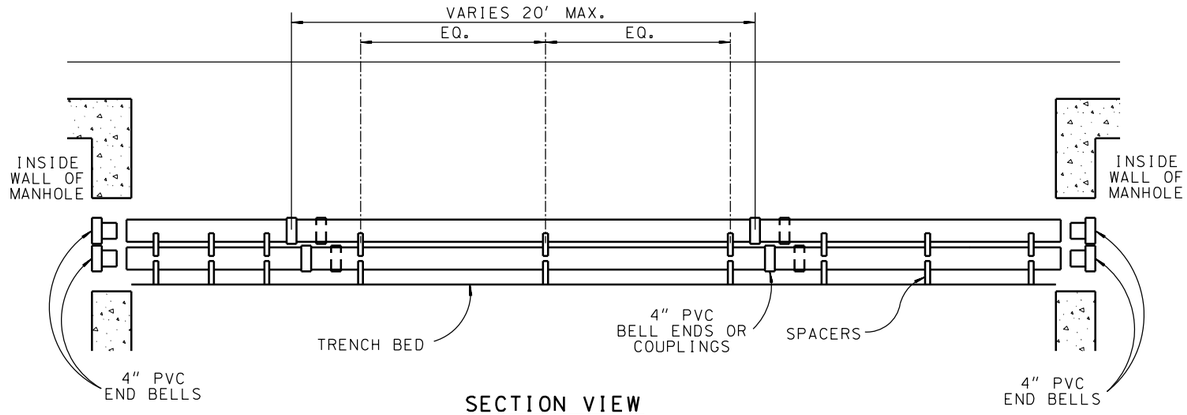


TRAFFIC CONTROL CABINET DETAIL

FOR REFERENCE ONLY



PLAN VIEW
N.T.S.

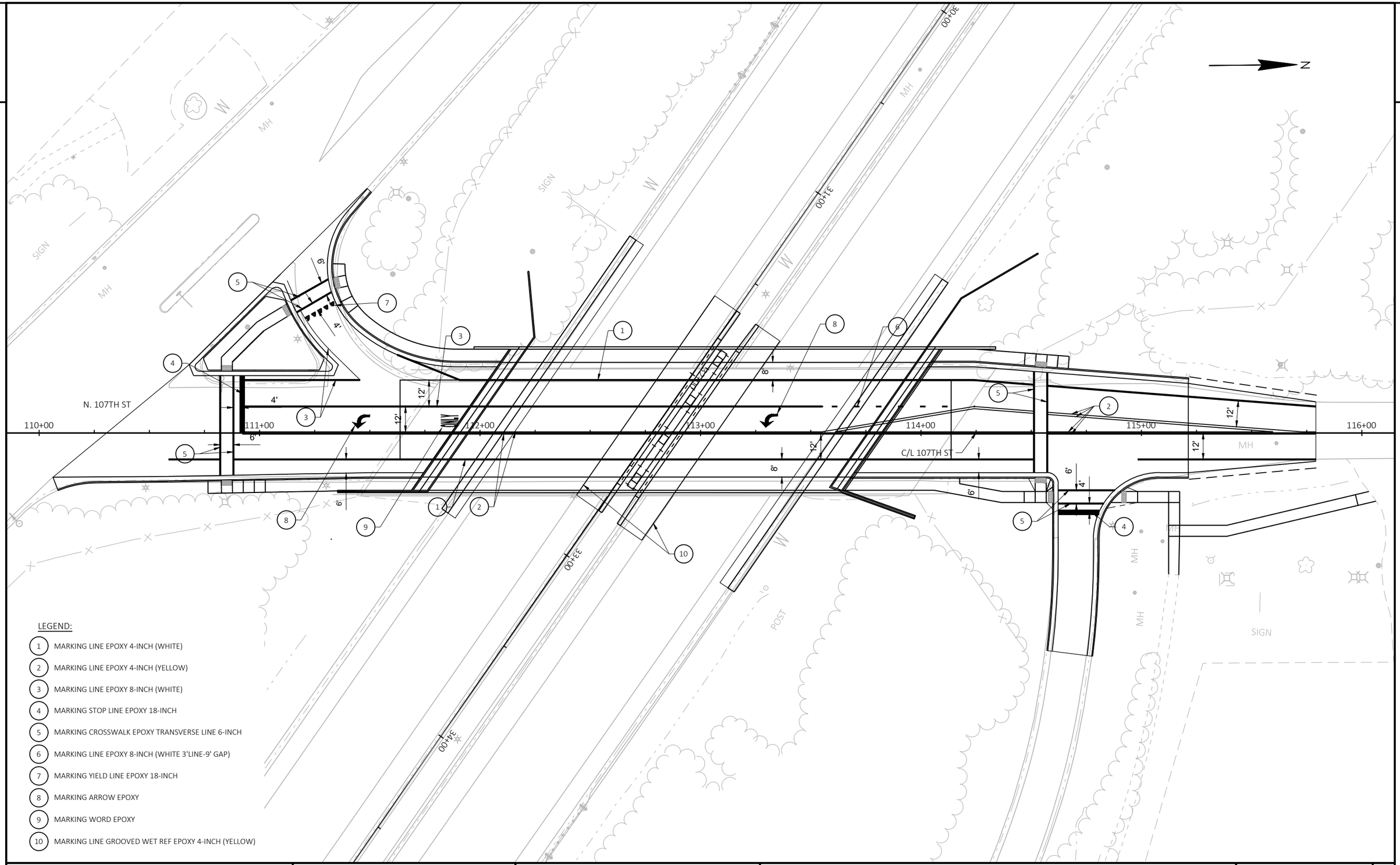


SECTION VIEW
N.T.S.

DUCT INSTALLATION DETAIL

STATE PROJECT NO.: 1360-12-70	HWY: S.T.H. 145	COUNTY: MILWAUKEE	CITY UNDERGROUND CONDUIT DETAILS (CUC)	SCALE FEET NTS	SHEET 79	E

2



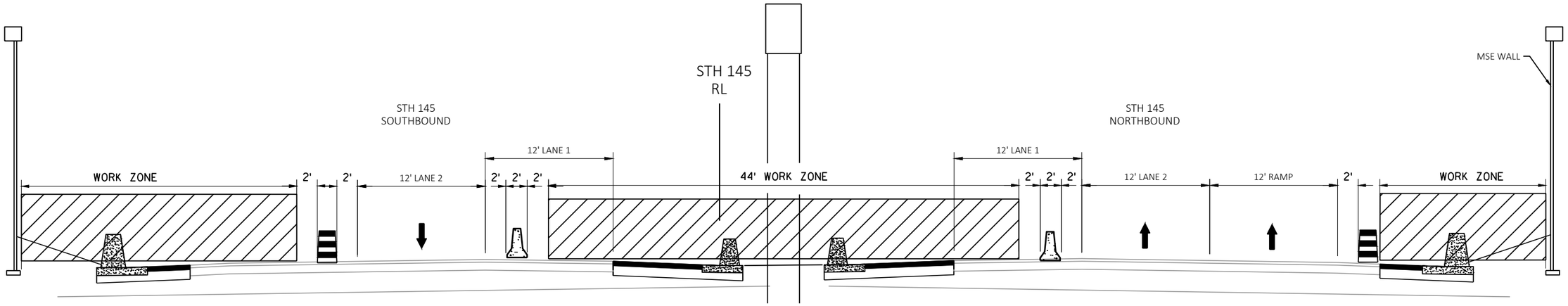
LEGEND:

1. MARKING LINE EPOXY 4-INCH (WHITE)
2. MARKING LINE EPOXY 4-INCH (YELLOW)
3. MARKING LINE EPOXY 8-INCH (WHITE)
4. MARKING STOP LINE EPOXY 18-INCH
5. MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH
6. MARKING LINE EPOXY 8-INCH (WHITE 3'LINE-9' GAP)
7. MARKING YIELD LINE EPOXY 18-INCH
8. MARKING ARROW EPOXY
9. MARKING WORD EPOXY
10. MARKING LINE GROOVED WET REF EPOXY 4-INCH (YELLOW)

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 80	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\024501_PM.DWG
LAYOUT NAME - 01
PLOT DATE : 1/19/2022 3:54 PM
PLOT BY : WEIGAND, BEN
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2



WORK:

1. COMPLETE WORK ON INSIDE BARRIER WALL, SHOULDERS AND PIERS UTILIZING INSIDE SINGLE LANE CLOSURES ON STH 145 IN BOTH DIRECTIONS.

2. COMPLETE MSE WALL AND SLOPE PAVING ON OUTSIDE OF STH 145 UTILIZING OUTSIDE SHOULDER CLOSURES. THIS WORK WILL BE BEHIND AND PROTECTED BY THE EXISTING BARRIER WALL ON STH 145.

3. OVERNIGHT FULL CLOSURES OF STH 145 BETWEEN 8PM AND 6AM WILL BE REQUIRED IN SEPERATE STAGES TO REMOVE THE EXISTING BRIDGE GIRDERS AND SET NEW BRIDGE GIRDERS. PLACE PORTABLE CHANGEABLE MESSAGE SIGNS ALONG STH 145 7 DAYS PRIOR TO CLOSURE. DISPLAY THE FOLLOWING MESSAGE:

STH 145	[DAY]
TO	8PM-6AM
CLOSE	

4. SEE TYPICAL SECTION ABOVE FOR TRAFFIC CONTROL CONFIGURATION ADJACENT TO WORK ZONE

5. SEE TRAFFIC CONTROL DETAIL SHEETS FOR TRAFFIC CONTROL LAYOUT PRIOR TO WORK ZONE

TRAFFIC CONTROL NOTES:

A. UTILIZE SDD TRAFFIC CONTROL, LANE CLOSURE FOR LANE 1 (INSIDE LANE) SINGLE LANE CLOSURES

B. UTILIZE SDD TRAFFIC CONTROL.,SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH FOR OUTSIDE SHOULDER CLOSURES

C. CLOSE NB OFF RAMP TO 107TH ST. UTILIZE SDD TRAFFIC CONTROL, EXIT RAMP CLOSURE.

D. NB ON RAMP FROM FRONTAGE ROAD REMAINS OPEN. UTILIZE SDD TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE.

2

2

MATCH LINE 16+00

N

BP 10+27.46

TEMPORARY
MARKING LINE
REMOVABLE TAPE
4-INCH (YELLOW)

RL STH 145

STH 145 NB

STH 145 SB

500' PRIOR TO LANE CLOSURE TAPER
SEE NOTE 1

720' SINGLE LANE CLOSURE TAPER
SEE NOTE 1

SEE NOTE 1 FOR ADVANCED WARNING
SIGNS AND THEIR LOCATIONS

GOOD HOPE RD

LEGEND

- TYPE III BARRICADE WITH TWO TYPE A LIGHTS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TWO TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA

STANDARD DETAIL DRAWINGS:
1. SEE SDD TRAFFIC CONTROL, LANE CLOSURE
2. SEE SDD TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
3. SEE SDD CRASH CUSHIONS/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TRAFFIC CONTROL - 107TH ST & STH 145	SHEET 82	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\025101_TC.DWG
LAYOUT NAME - 09
PLOT DATE : 1/20/2022 1:48 PM
PLOT BY : PAYNE, GREGORY
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

2

MATCH LINE 30+70

N

107TH ST

STH 145 NB

STH 145 SB

PC: 17+15.54

PT: 20+82.21

TEMPORARY
MARKING LINE
REMOVABLE TAPE
4-INCH (YELLOW)

R11-2L
48"x 30"
LANE
CLOSED

TYPE III BARRICADE

RL STH 145

END
ROAD WORK
G20-2A
48"X24"

360'
SEE NOTE 1

18 20 22 24 26 28 30

720' SINGLE LANE CLOSURE TAPER CONTINUED
SEE NOTE 1

OUTSIDE SHOULDER
CLOSURE
SEE NOTE 2FOR
LAYOUT AND
ADVANCED SIGNING

40

PCC: 38+95.08

PC: 35+79.93

PRC: 41+99.97

LEGEND

- TYPE III BARRICADE WITH TWO TYPE A LIGHTS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TWO TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA

STANDARD DETAIL DRAWINGS:

1. SEE SDD TRAFFIC CONTROL, LANE CLOSURE
2. SEE SDD TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
3. SEE SDD CRASH CUSHIONS/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TRAFFIC CONTROL - 107TH ST & STH 145	SHEET 83	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\025101_TC.DWG
LAYOUT NAME - 10
PLOT DATE : 1/20/2022 1:48 PM
PLOT BY : PAYNE, GREGORY
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

2

8:1 TAPER RATE FOR TEMPORARY CONCRETE BARRIER, SEE NOTE 3

WO5-52L
18"X54"

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW)

R11-2L
48" X 30"
LANE CLOSED
TYPE III BARRICADE

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)

COVER EXISTING EXIT SIGN

R11-2R
48" X 30"
RAMP CLOSED
TYPE III BARRICADE

W LEON TERRACE

107TH ST

RL 107TH ST

C: 36+17.76

PT: 13+48.88

STH 145 NB

STH 145 SB

RL STH 145

34 36 38 40 42 44

CC

360'
SEE NOTE 1

END ROAD WORK
G20-2A
48"X24"

WO5-52L
18"X54"

W METRO AUTO MALL

W FOND DU LAC AVE

35 30 25

PI: 35+24.66

BP: 32+30.43
EP: 32+36.43

MATCH LINE 30+70

STANDARD DETAIL DRAWINGS:
1. SEE SDD TRAFFIC CONTROL, LANE CLOSURE
2. SEE SDD TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
3. SEE SEE TRAFFIC CONTROL, INGRESS EGRESS WITH BARRIER
4. SEE SDD CRASH CUSHIONS/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

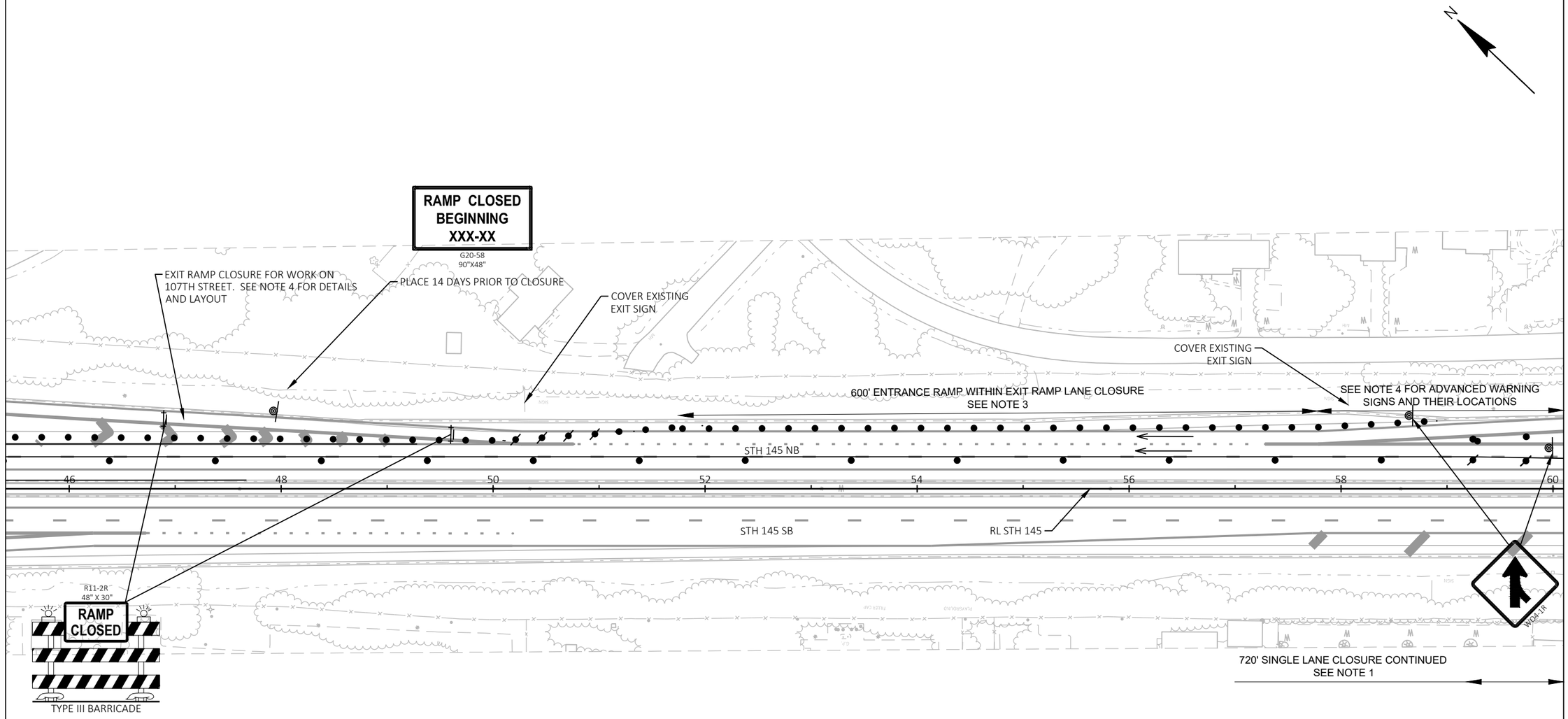
LEGEND
- TYPE III BARRICADE WITH TWO TYPE A LIGHTS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TWO TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- CC — TEMPORARY CRASH CUSHION

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TRAFFIC CONTROL - 107TH ST & STH 145	SHEET 84	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\025101_TC.DWG
LAYOUT NAME - 11
PLOT DATE : 1/20/2022 1:48 PM PLOT BY : PAYNE, GREGORY PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

MATCH LINE 60+10



MATCH LINE 45+40

BP: 20+00.53

STANDARD DETAIL DRAWINGS:
1. SEE SDD TRAFFIC CONTROL, LANE CLOSURE
2. SEE SDD TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
3. SEE SDD TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE
4. SEE SDD TRAFFIC CONTROL, EXIT RAMP CLOSURE

LEGEND

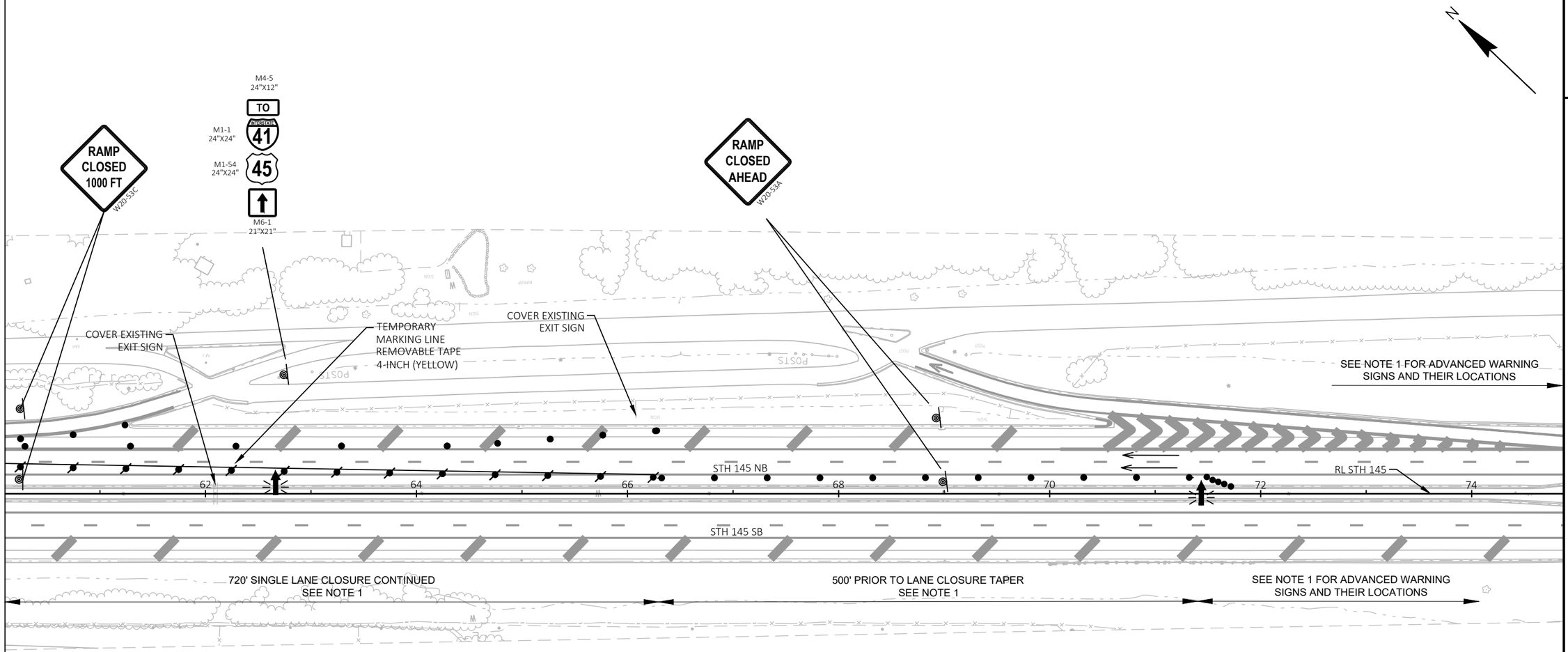
- TYPE III BARRICADE WITH TWO TYPE A LIGHTS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TWO TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TRAFFIC CONTROL - 107TH ST & STH 145	SHEET 85	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\025101_TC.DWG
LAYOUT NAME - 12
PLOT DATE : 1/20/2022 1:48 PM
PLOT BY : PAYNE, GREGORY
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

2



MATCH LINE 60+10

STANDARD DETAIL DRAWINGS:

1. SEE SDD TRAFFIC CONTROL LANE CLOSURE, SPEEDS GREATER THAN 40 MPH WITH BARRIER
2. SEE SDD TRAFFIC CONTROL.,SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
3. SEE SDD TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE
4. SEE SDD TRAFFIC CONTROL, EXIT RAMP CLOSURE

LEGEND

- TYPE III BARRICADE WITH TWO TYPE A LIGHTS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TWO TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TRAFFIC CONTROL - 107TH ST & STH 145	SHEET 86	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\025101_TC.DWG
LAYOUT NAME - 13
PLOT DATE : 1/20/2022 1:49 PM PLOT BY : PAYNE, GREGORY PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

R9-9
30" X 18"
SIDEWALK CLOSED
TYPE II BARRICADE

W LEON TERRACE

PLACE FIXED MESSAGE SIGN
14 DAYS PRIOR TO CLOSURE

C: 36+17.76

STH 145 NB

STH 145 SB

28 30 32 34 36 38 40 42

R11-2B
48" X 30"
BRIDGE OUT
TYPE III BARRICADE

R11-2L
48" X 30"
LANE CLOSED
TYPE III BARRICADE

M4-5
24"X12"
TO
INTERSTATE 41
M1-1
24"X24"
M1-54
24"X24"
45
M6-1
21"X21"

END ROAD WORK
G20-2A
48"X24"

W METRO AUTO MALL

107TH ST

W FOND DU LAC AVE

ROAD WORK AHEAD
W20-1A

M4-5
24"X12"
TO
INTERSTATE 41
M1-1
24"X24"
M1-54
24"X24"
45

R11-2L
48" X 30"
LANE CLOSED
TYPE III BARRICADE

MAINTAIN LEFT AND
RIGHT TURN LANE

M4-5
24"X12"
TO
INTERSTATE 41
M1-1
24"X24"
M1-54
24"X24"
45
M6-1
21"X21"

END ROAD WORK
G20-2A
48"X24"

500'
500'
500'

ROAD CLOSED 500 FT
W20-3D

ROAD CLOSED 1000 FT
W20-3C

END ROAD WORK
G20-2A
48"X24"

ROAD WORK AHEAD
W20-1A

LEGEND

- TYPE III BARRICADE WITH TWO TYPE A LIGHTS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TWO TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TRAFFIC CONTROL - W FOND DU LAC AVE	SHEET 87	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\025102_TC.DWG
LAYOUT NAME - 01
PLOT DATE : 1/20/2022 1:49 PM
PLOT BY : PAYNE, GREGORY
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

PLACE FIXED MESSAGE SIGN
14 DAYS PRIOR TO CLOSURE

ROAD CLOSED 500 FT
W20-3D

ROAD CLOSED 1000 FT
W20-3C

R11-3B
60" X 30"
BRIDGE OUT
1/4 MILES AHEAD
LOCAL TRAFFIC ONLY

TYPE III BARRICADE

ROAD WORK AHEAD
W20-1A

W GOOD HOPE ROAD

N

114 116 118 107TH ST 120 122 124 126

500'

EP: 127+32.44

R11-2B
48" X 30"
BRIDGE OUT

TYPE III BARRICADE

R11-2B
48" X 30"
BRIDGE OUT

TYPE III BARRICADE

LEGEND

- TYPE III BARRICADE WITH TWO TYPE A LIGHTS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TWO TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TRAFFIC CONTROL - W GOOD HOPE RD	SHEET 88	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\025102_TC.DWG
LAYOUT NAME - 02

PLOT DATE : 1/20/2022 1:49 PM PLOT BY : PAYNE, GREGORY PLOT NAME : PLOT SCALE : 1 IN:100 FT

2

2

M4-5
24"X12"
TO
M1-1
24"X24"
41
M1-54
24"X24"
45

W LEON TERRACE

PC: 80+56.57

PT: 83+10.12

STH 145 NB

78 80 82 84 86 88 90

STH 145 SB

M4-5
24"X12"
TO
M1-1
24"X24"
41
M1-54
24"X24"
45
M6-1
21"X21"

M4-5
24"X12"
TO
M1-1
24"X24"
41
M1-54
24"X24"
45
M5-1L
21"X21"

M4-5
24"X12"
TO
M1-1
24"X24"
41
M1-54
24"X24"
45
M5-1L
21"X21"

M4-5
24"X12"
TO
M1-1
24"X24"
41
M1-54
24"X24"
45
M6-1
21"X21"

CTH S

W FOND DU LAC AVE

LEGEND

- TYPE III BARRICADE WITH TWO TYPE A LIGHTS
- TYPE III BARRICADE WTH ATTACHED SIGN AND TWO TYPE A LIGHTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA

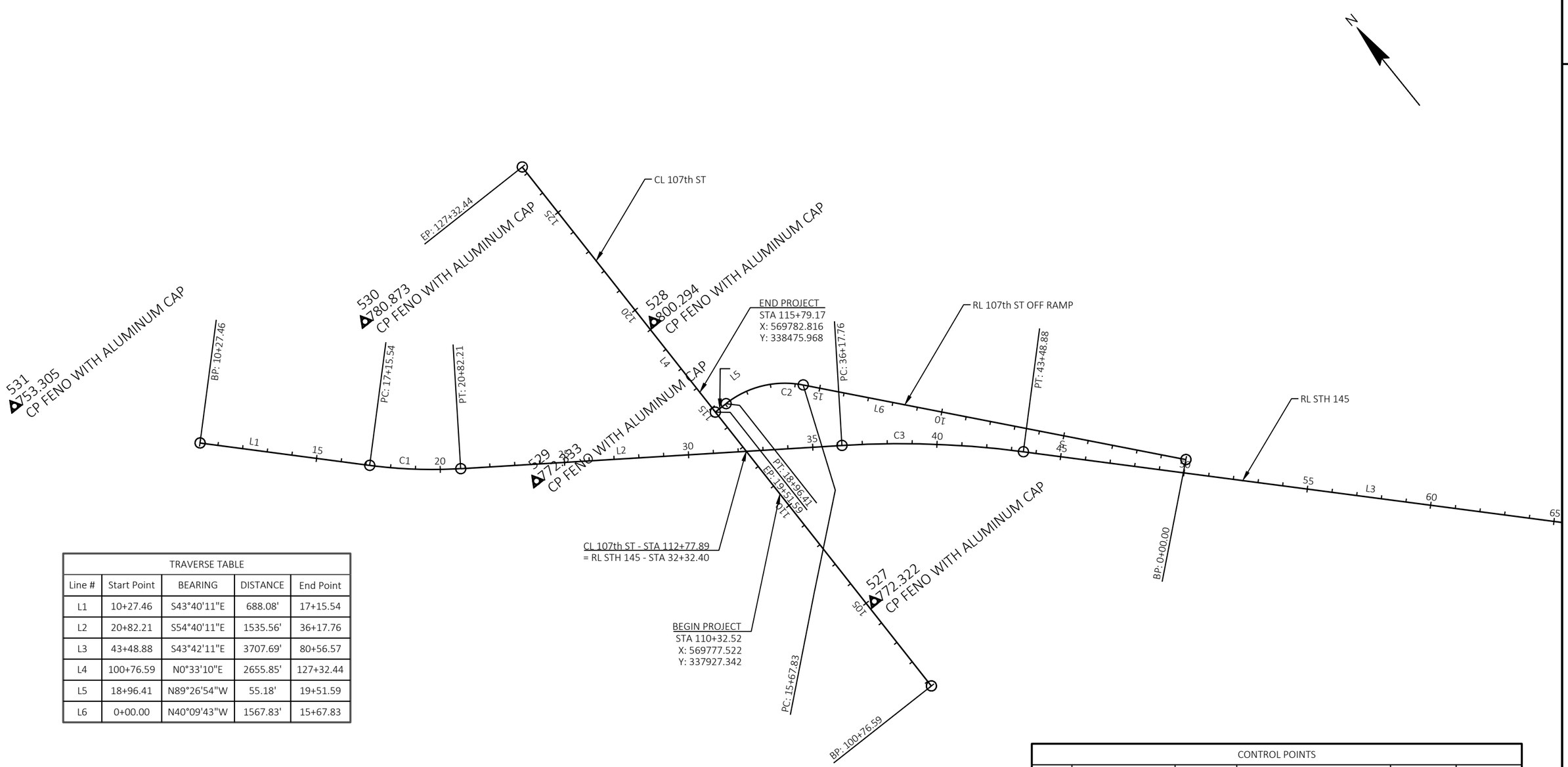
PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	TRAFFIC CONTROL - CTH S	SHEET 89	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\025102_TC.DWG
LAYOUT NAME - 03

PLOT DATE : 1/20/2022 1:50 PM PLOT BY : PAYNE, GREGORY PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2



TRAVERSE TABLE				
Line #	Start Point	BEARING	DISTANCE	End Point
L1	10+27.46	S43°40'11"E	688.08'	17+15.54
L2	20+82.21	S54°40'11"E	1535.56'	36+17.76
L3	43+48.88	S43°42'11"E	3707.69'	80+56.57
L4	100+76.59	N0°33'10"E	2655.85'	127+32.44
L5	18+96.41	N89°26'54"W	55.18'	19+51.59
L6	0+00.00	N40°09'43"W	1567.83'	15+67.83

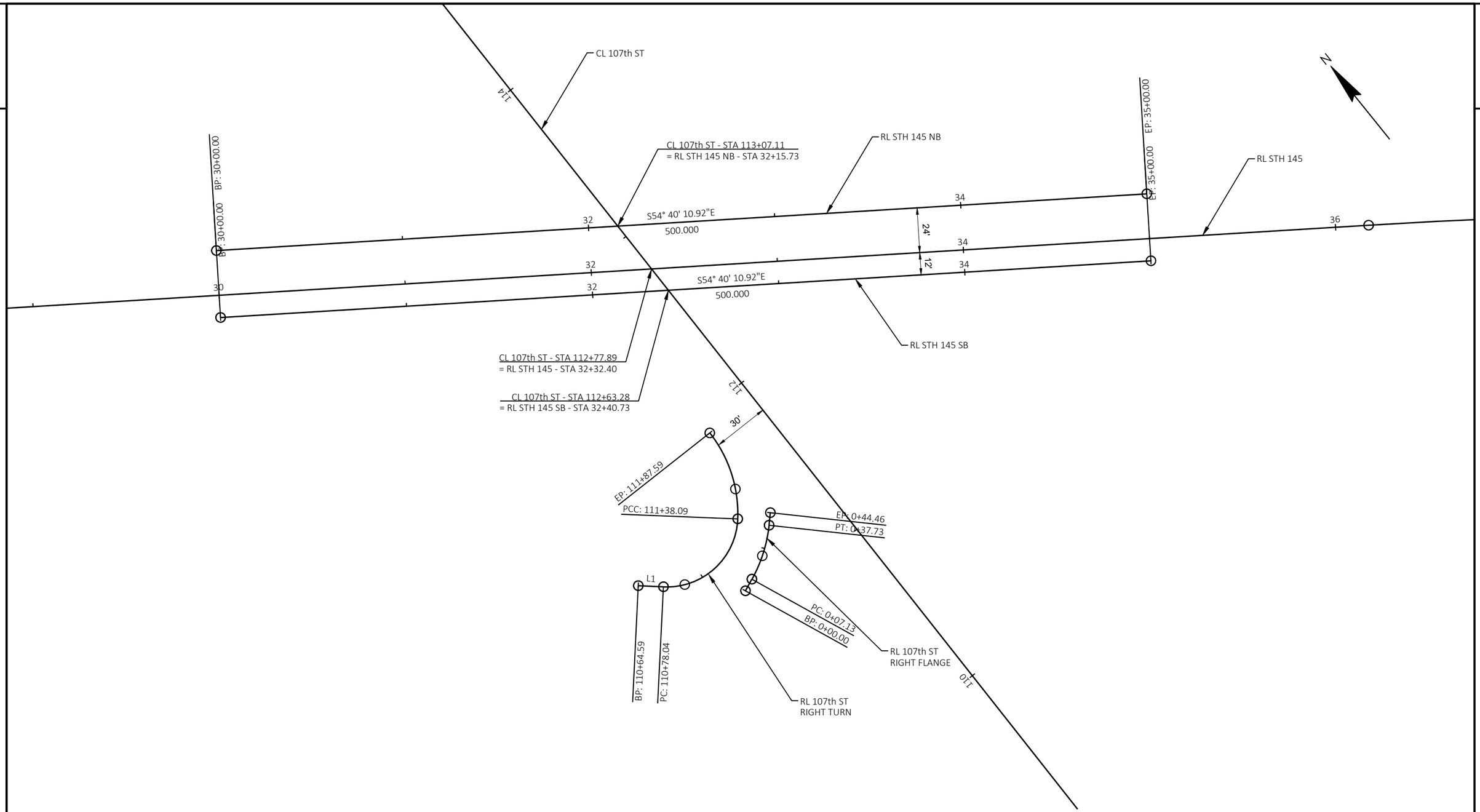
Curve Table: Alignments						
CURVE	CH DISTANCE	CH BEARING	RADIUS	ARC LENGTH	PI X COORDINATE	PI Y COORDINATE
C1	366.10	S49° 10' 11"E	1909.860	366.67	568691.52	338946.19
C3	730.00	S49° 11' 11"E	3819.720	731.11	570393.45	337739.81
C2	318.54	N64° 48' 19"W	381.970	328.57	570011.70	338372.85

CONTROL POINTS					
NAME	STATION	ELEVATION	DESCRIPTION	Y	X
527	104+85.94 28.76' RT	772.32	CP FENO WITH ALUMINUM CAP	337382.516	569801.029
528	119+16.09 28.41' RT	800.29	CP FENO WITH ALUMINUM CAP	338812.597	569814.479
529	23+81.44 68.84' RT	772.33	CP FENO WITH ALUMINUM CAP	338610.645	569045.862
530	16+19.62 570.36' LT	780.87	CP FENO WITH ALUMINUM CAP	339542.433	568910.864
531	0+00.00 0.00'	753.30	CP FENO WITH ALUMINUM CAP	340160.253	567599.639

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	ALIGNMENT PLAN	SHEET 90	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\027201_AD.DWG
LAYOUT NAME - 01
PLOT DATE : 1/19/2022 4:03 PM
PLOT BY : WEIGAND, BEN
PLOT NAME :
PLOT SCALE : 1 IN:400 FT
WISDOT/CADDS SHEET 42

2



PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	ALIGNMENT PLAN	SHEET 91	E

1360-12-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	3.000	3.000
0004	201.0205	Grubbing	STA	3.000	3.000
0006	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0008	203.0211.S	Abatement of Asbestos Containing Material (structure) 001. B-40-252	EACH	1.000	1.000
0010	203.0220	Removing Structure (structure) 001. B-40-252	EACH	1.000	1.000
0012	204.0100	Removing Concrete Pavement	SY	1,642.000	1,642.000
0014	204.0110	Removing Asphaltic Surface	SY	790.000	790.000
0016	204.0150	Removing Curb & Gutter	LF	737.000	737.000
0018	204.0155	Removing Concrete Sidewalk	SY	22.000	22.000
0020	204.0157	Removing Concrete Barrier	LF	496.000	496.000
0022	204.0170	Removing Fence	LF	205.000	205.000
0024	204.0195	Removing Concrete Bases	EACH	2.000	2.000
0026	204.0220	Removing Inlets	EACH	4.000	4.000
0028	204.0245	Removing Storm Sewer (size) 001. 8-Inch	LF	61.000	61.000
0030	204.0245	Removing Storm Sewer (size) 002. 18-Inch	LF	105.000	105.000
0032	204.9060.S	Removing (item description) 101. Underdeck Lighting (B-40-1004)	EACH	1.000	1.000
0034	204.9060.S	Removing (item description) 102. Sign Lighting	EACH	1.000	1.000
0036	204.9060.S	Removing (item description) 310. Poles	EACH	4.000	4.000
0038	204.9060.S	Removing (item description) 500. ATT Conduit Package	EACH	1.000	1.000
0040	204.9090.S	Removing (item description) 101. Electrical Wires from Conduit	LF	1,740.000	1,740.000
0042	204.9090.S	Removing (item description) 314. Aerial Cable	LF	970.000	970.000
0044	205.0100	Excavation Common	CY	887.000	887.000
0046	206.1000	Excavation for Structures Bridges (structure) 001. B-40-1004	LS	1.000	1.000
0048	208.0100	Borrow	CY	630.000	630.000
0050	209.2500	Backfill Granular Grade 2	TON	986.000	986.000
0052	210.1500	Backfill Structure Type A	TON	880.000	880.000
0054	213.0100	Finishing Roadway (project) 001. 1360-12-70	EACH	1.000	1.000
0056	305.0110	Base Aggregate Dense 3/4-Inch	TON	18.000	18.000
0058	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,247.000	1,247.000
0060	320.0145	Concrete Base 8-Inch	SY	18.000	18.000
0062	415.0090	Concrete Pavement 9-Inch	SY	1,580.000	1,580.000
0064	415.0410	Concrete Pavement Approach Slab	SY	220.000	220.000
0066	416.0610	Drilled Tie Bars	EACH	32.000	32.000
0068	416.0620	Drilled Dowel Bars	EACH	64.000	64.000
0070	455.0605	Tack Coat	GAL	84.000	84.000
0072	460.2000	Incentive Density HMA Pavement	DOL	124.000	124.000
0074	460.5224	HMA Pavement 4 LT 58-28 S	TON	194.000	194.000
0076	465.0105	Asphaltic Surface	TON	6.000	6.000
0078	502.0100	Concrete Masonry Bridges	CY	795.000	795.000
0080	502.3200	Protective Surface Treatment	SY	1,441.000	1,441.000
0082	502.3210	Pigmented Surface Sealer	SY	206.000	206.000
0084	503.0137	Prestressed Girder Type I 36W-Inch	LF	1,736.000	1,736.000
0086	504.0500	Concrete Masonry Retaining Walls	CY	30.000	30.000
0088	505.0400	Bar Steel Reinforcement HS Structures	LB	13,420.000	13,420.000
0090	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	141,755.000	141,755.000
0092	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	36.000	36.000
0094	506.4000	Steel Diaphragms (structure) 001. B-40-1004	EACH	48.000	48.000
0096	513.2001	Railing Pipe	LF	262.000	262.000
0098	516.0500	Rubberized Membrane Waterproofing	SY	40.000	40.000

1360-12-70

Line	Item	Item Description	Unit	Total	Qty
0100	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	1.000	1.000
0102	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	4.000	4.000
0104	531.8990	Anchor Assemblies Poles on Structures	EACH	2.000	2.000
0106	550.0010	Pre-Boring Unconsolidated Materials	LF	308.000	308.000
0108	550.2108	Piling CIP Concrete 10 3/4 X 0.50-Inch	LF	2,175.000	2,175.000
0110	550.2128	Piling CIP Concrete 12 3/4 X 0.50-Inch	LF	2,080.000	2,080.000
0112	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	873.000	873.000
0114	602.0410	Concrete Sidewalk 5-Inch	SF	2,756.000	2,756.000
0116	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	80.000	80.000
0118	603.1132	Concrete Barrier Type S32	LF	160.000	160.000
0120	603.1142	Concrete Barrier Type S42	LF	250.000	250.000
0122	603.3111	Concrete Barrier Transition Type NJ32SF to S32	EACH	6.000	6.000
0124	603.3513	Concrete Barrier Transition Type S32 to S36	EACH	2.000	2.000
0126	603.3535	Concrete Barrier Transition Type S36 to S42	EACH	2.000	2.000
0128	603.8000	Concrete Barrier Temporary Precast Delivered	LF	460.000	460.000
0130	603.8125	Concrete Barrier Temporary Precast Installed	LF	460.000	460.000
0132	604.0400	Slope Paving Concrete	SY	50.000	50.000
0134	604.0500	Slope Paving Crushed Aggregate	SY	182.000	182.000
0136	608.0418	Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	LF	74.000	74.000
0138	608.3018	Storm Sewer Pipe Class III-A 18-Inch	LF	26.000	26.000
0140	608.3024	Storm Sewer Pipe Class III-A 24-Inch	LF	394.000	394.000
0142	608.6008	Storm Sewer Pipe Composite 8-Inch	LF	204.000	204.000
0144	611.0610	Inlet Covers Type BW	EACH	2.000	2.000
0146	611.0612	Inlet Covers Type C	EACH	4.000	4.000
0148	611.0624	Inlet Covers Type H	EACH	5.000	5.000
0150	611.0642	Inlet Covers Type MS	EACH	2.000	2.000
0152	611.1004	Catch Basins 4-FT Diameter	EACH	4.000	4.000
0154	611.2004	Manholes 4-FT Diameter	EACH	4.000	4.000
0156	611.3004	Inlets 4-FT Diameter	EACH	2.000	2.000
0158	611.3225	Inlets 2x2.5-FT	EACH	1.000	1.000
0160	611.3902	Inlets Median 2 Grate	EACH	1.000	1.000
0162	611.8115	Adjusting Inlet Covers	EACH	1.000	1.000
0164	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	380.000	380.000
0166	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	2.000	2.000
0168	614.0905	Crash Cushions Temporary	EACH	2.000	2.000
0170	616.0206	Fence Chain Link 6-FT	LF	197.000	197.000
0172	618.0100	Maintenance And Repair of Haul Roads (project) 001. 1360-12-70	EACH	1.000	1.000
0174	619.1000	Mobilization	EACH	1.000	1.000
0176	620.0300	Concrete Median Sloped Nose	SF	175.000	175.000
0178	624.0100	Water	MGAL	26.000	26.000
0180	625.0500	Salvaged Topsoil	SY	2,055.000	2,055.000
0182	628.1504	Silt Fence	LF	822.000	822.000
0184	628.1520	Silt Fence Maintenance	LF	822.000	822.000
0186	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0188	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0190	628.2008	Erosion Mat Urban Class I Type B	SY	2,055.000	2,055.000
0192	628.7005	Inlet Protection Type A	EACH	7.000	7.000
0194	628.7010	Inlet Protection Type B	EACH	10.000	10.000
0196	628.7015	Inlet Protection Type C	EACH	4.000	4.000

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Line	Item	Item Description	Unit	Total	Qty
0198	628.7504	Temporary Ditch Checks	LF	24.000	24.000
0200	628.7555	Culvert Pipe Checks	EACH	12.000	12.000
0202	629.0210	Fertilizer Type B	CWT	1.300	1.300
0204	630.0140	Seeding Mixture No. 40	LB	37.000	37.000
0206	630.0200	Seeding Temporary	LB	55.000	55.000
0208	630.0500	Seed Water	MGAL	46.000	46.000
0210	633.5200	Markers Culvert End	EACH	5.000	5.000
0212	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	9.000	9.000
0214	637.2210	Signs Type II Reflective H	SF	93.500	93.500
0216	637.2230	Signs Type II Reflective F	SF	48.000	48.000
0218	638.2602	Removing Signs Type II	EACH	11.000	11.000
0220	638.3000	Removing Small Sign Supports	EACH	5.000	5.000
0222	642.5001	Field Office Type B	EACH	1.000	1.000
0224	643.0300	Traffic Control Drums	DAY	49,486.000	49,486.000
0226	643.0420	Traffic Control Barricades Type III	DAY	7,072.000	7,072.000
0228	643.0705	Traffic Control Warning Lights Type A	DAY	14,088.000	14,088.000
0230	643.0715	Traffic Control Warning Lights Type C	DAY	4,794.000	4,794.000
0232	643.0800	Traffic Control Arrow Boards	DAY	600.000	600.000
0234	643.0900	Traffic Control Signs	DAY	16,544.000	16,544.000
0236	643.0910	Traffic Control Covering Signs Type I	EACH	4.000	4.000
0238	643.1000	Traffic Control Signs Fixed Message	SF	30.000	30.000
0240	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0242	643.5000	Traffic Control	EACH	1.000	1.000
0244	646.1020	Marking Line Epoxy 4-Inch	LF	2,810.000	2,810.000
0246	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	220.000	220.000
0248	646.3020	Marking Line Epoxy 8-Inch	LF	384.000	384.000
0250	646.5020	Marking Arrow Epoxy	EACH	2.000	2.000
0252	646.5120	Marking Word Epoxy	EACH	1.000	1.000
0254	646.6120	Marking Stop Line Epoxy 18-Inch	LF	45.000	45.000
0256	646.6220	Marking Yield Line Epoxy 18-Inch	EACH	9.000	9.000
0258	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	261.000	261.000
0260	646.9010	Marking Removal Line Water Blasting 4-Inch	LF	1,530.000	1,530.000
0262	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	8,228.000	8,228.000
0264	650.4000	Construction Staking Storm Sewer	EACH	17.000	17.000
0266	650.4500	Construction Staking Subgrade	LF	585.000	585.000
0268	650.5000	Construction Staking Base	LF	585.000	585.000
0270	650.6500	Construction Staking Structure Layout (structure) 001. B-40-1004	LS	1.000	1.000
0272	650.6500	Construction Staking Structure Layout (structure) 002. R-40-722	LS	1.000	1.000
0274	650.6500	Construction Staking Structure Layout (structure) 003. R-40-723	LS	1.000	1.000
0276	650.7000	Construction Staking Concrete Pavement	LF	475.000	475.000
0278	650.8500	Construction Staking Electrical Installations (project) 001. 1360-12-70	LS	1.000	1.000
0280	650.9000	Construction Staking Curb Ramps	EACH	8.000	8.000
0282	650.9910	Construction Staking Supplemental Control (project) 001. 1360-12-70	LS	1.000	1.000
0284	650.9920	Construction Staking Slope Stakes	LF	505.000	505.000
0286	652.0130	Conduit Rigid Metallic 2 1/2-Inch	LF	24.000	24.000
0288	652.0210	Conduit Rigid Nonmetallic Schedule 40 1-Inch	LF	35.000	35.000
0290	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	2,640.000	2,640.000
0292	652.0230	Conduit Rigid Nonmetallic Schedule 40 2 1/2-Inch	LF	1,297.000	1,297.000
0294	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	455.000	455.000

1360-12-70

Line	Item	Item Description	Unit	Total	Qty
0296	652.0610	Conduit Special 2 1/2-Inch	LF	120.000	120.000
0298	652.0615	Conduit Special 3-Inch	LF	690.000	690.000
0300	653.0140	Pull Boxes Steel 24x42-Inch	EACH	1.000	1.000
0302	653.0222	Junction Boxes 18x12x6-Inch	EACH	2.000	2.000
0304	654.0101	Concrete Bases Type 1	EACH	1.000	1.000
0306	654.0105	Concrete Bases Type 5	EACH	2.000	2.000
0308	654.0110	Concrete Bases Type 10	EACH	1.000	1.000
0310	655.0230	Cable Traffic Signal 5-14 AWG	LF	60.000	60.000
0312	655.0260	Cable Traffic Signal 12-14 AWG	LF	1,591.000	1,591.000
0314	655.0305	Cable Type UF 2-12 AWG Grounded	LF	457.000	457.000
0316	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	639.000	639.000
0318	655.0610	Electrical Wire Lighting 12 AWG	LF	171.000	171.000
0320	655.0615	Electrical Wire Lighting 10 AWG	LF	50.000	50.000
0322	655.0620	Electrical Wire Lighting 8 AWG	LF	520.000	520.000
0324	655.0630	Electrical Wire Lighting 4 AWG	LF	8,160.000	8,160.000
0326	655.0640	Electrical Wire Lighting 1 AWG	LF	18.000	18.000
0328	655.0900	Traffic Signal EVP Detector Cable	LF	232.000	232.000
0330	657.0100	Pedestal Bases	EACH	1.000	1.000
0332	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	4.000	4.000
0334	657.0345	Poles Type 9	EACH	1.000	1.000
0336	657.0420	Traffic Signal Standards Aluminum 13-FT	EACH	1.000	1.000
0338	657.0525	Monotube Arms 25-FT	EACH	1.000	1.000
0340	658.0173	Traffic Signal Face 3S 12-Inch	EACH	3.000	3.000
0342	658.0412	Pedestrian Signal Face 12-Inch	EACH	2.000	2.000
0344	658.5069	Signal Mounting Hardware (location) 001. W Fond du Lac Ave & N 107th St	LS	1.000	1.000
0346	659.0600	Underdeck Lighting (location) 001. B-40-1004	LS	1.000	1.000
0348	661.0200	Temporary Traffic Signals for Intersections (location) 001. W Fond du Lac Ave & N 107th St	LS	1.000	1.000
0350	690.0150	Sawing Asphalt	LF	90.000	90.000
0352	690.0250	Sawing Concrete	LF	905.000	905.000
0354	715.0502	Incentive Strength Concrete Structures	DOL	4,770.000	4,770.000
0356	715.0603	Incentive Strength Concrete Barrier	DOL	205.000	205.000
0358	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	540.000	540.000
0360	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,200.000	1,200.000
0362	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	3,600.000	3,600.000
0364	SPV.0060	Special 001. Seismograph/Vibration Monitoring	EACH	1.000	1.000
0366	SPV.0060	Special 002. Gate Assembly	EACH	2.000	2.000
0368	SPV.0060	Special 101. Lighting Units Salvaged	EACH	1.000	1.000
0370	SPV.0060	Special 102. Underdeck Lighting Units Salvaged	EACH	2.000	2.000
0372	SPV.0060	Special 103. Concrete Bases Type B	EACH	1.000	1.000
0374	SPV.0060	Special 104. Replace Plaque Sequence Identification for Existing Poles	EACH	13.000	13.000
0376	SPV.0060	Special 105. Maintenance of Lighting Systems	EACH	1.000	1.000
0378	SPV.0060	Special 106. Lamp Ballast LED Switch Disposal By Contractor	EACH	6.000	6.000
0380	SPV.0060	Special 218. EVP 1-Direction Detector	EACH	1.000	1.000
0382	SPV.0060	Special 219. EVP 2-Direction Detector	EACH	1.000	1.000
0384	SPV.0060	Special 221. EVP Selector Card 4-Channel	EACH	1.000	1.000
0386	SPV.0060	Special 223. EVP Confirmation Light	EACH	3.000	3.000
0388	SPV.0060	Special 224. Video Detection System 1-Camera	EACH	1.000	1.000
0390	SPV.0060	Special 267. Pedestrian Countdown Signal Face 12”	EACH	2.000	2.000

1360-12-70

Line	Item	Item Description	Unit	Total	Qty
0392	SPV.0060	Special 302. Pull Boxes 13-Inch x 24-Inch x 24-Inch	EACH	14.000	14.000
0394	SPV.0060	Special 303. Pull Boxes 17-Inch x 30-Inch x 24-Inch	EACH	4.000	4.000
0396	SPV.0060	Special 309. Relocate Poles	EACH	1.000	1.000
0398	SPV.0060	Special 321. Poles Type 30-AL-BD	EACH	4.000	4.000
0400	SPV.0060	Special 323. 35 Ft. Wood Pole	EACH	2.000	2.000
0402	SPV.0060	Special 343. Water Tight Splices and Connections	EACH	4.000	4.000
0404	SPV.0060	Special 345. Luminaire Arms Single Member 6-Ft. Special	EACH	4.000	4.000
0406	SPV.0060	Special 371. Installing City Furnished Luminaire Utility LED	EACH	4.000	4.000
0408	SPV.0060	Special 400. Adjusting CUC Manhole Covers	EACH	1.000	1.000
0410	SPV.0060	Special 401. Underdeck Util Struct B-40-1004 City of MKE Comm Conduit	EACH	1.000	1.000
0412	SPV.0060	Special 425. Installing Conduit into Existing Manhole	EACH	2.000	2.000
0414	SPV.0090	Special 001. Fence Chain Link 6-FT (Structure)	LF	499.000	499.000
0416	SPV.0090	Special 302. Electrical Cable Type 3#6 AL	LF	240.000	240.000
0418	SPV.0090	Special 303. Electrical Cable Type 2#4/1#6 AL	LF	110.000	110.000
0420	SPV.0090	Special 305. Electrical Cable Type 3#8/1#8xLPE	LF	915.000	915.000
0422	SPV.0090	Special 308. Electrical Cable Type 3#2/1#8xLPE	LF	970.000	970.000
0424	SPV.0090	Special 319. Liquidtight Flexible Non-Metallic Conduit 1 1/2-INCH	LF	50.000	50.000
0426	SPV.0090	Special 401. 1 - 4" Conduit Cement Encased DB-60	LF	35.000	35.000
0428	SPV.0090	Special 404. 4 - 4" Conduit Cement Encased DB-60	LF	276.000	276.000
0430	SPV.0090	Special 405. 5 - 4" Conduit Cement Encased DB-60	LF	95.000	95.000
0432	SPV.0165	Special 001. Wall Concrete Panel Mechanically Stabilized Earth R-40-722	SF	2,210.000	2,210.000
0434	SPV.0165	Special 002. Wall Concrete Panel Mechanically Stabilized Earth R-40-723	SF	1,505.000	1,505.000

REMOVALS

LOCATION			203.0100 REMOVING SMALL PIPE CULVERTS (EACH)	204.0100 REMOVING CONCRETE PAVEMENT (SY)	204.0110 REMOVING ASPHALTIC SURFACE (SY)	204.0150 REMOVING CURB & GUTTER (LF)	204.0155 REMOVING CONCRETE SIDEWALK (SY)	204.0157 REMOVING CONCRETE BARRIER (LF)	204.0170 REMOVING FENCE (LF)	204.0220 REMOVING INLET (EACH)	204.0245 REMOVING STORM SEWER (8-INCH) (LF)	204.0245 REMOVING STORM SEWER (18-INCH) (LF)
PROJECT			-	1361	-	692	22	-	-	-	-	-
110+30	to	111+87	1	-	452	-	-	-	61	4	61	-
113+82	to	115+21	1	-	338	-	-	-	144	-	-	105
STH 145			-	262	-	45	-	496	-	-	-	-
			2	**1624**	**790**	**737**	**22**	**496**	**205**	**4**	**61**	**105**

ATT

LOCATION	CATEGORY	204.9060.S.500 REMOVING ATT CONDUIT PACKAGE (EACH)
B-40-252	0060	1
		1

CLEARING AND GRUBBING

LOCATION			201.0105 CLEARING (STA.)	201.0205 GRUBBING (STA.)
110+00 RT	to	112+00 RT	2	2
114+00 LT& RT	to	115+00 LT & RT	1	1
			3	**3**

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1) CUT (2)	205.0100 COMMON EXCAVATION (1) EBS EXCAVATION (3)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13) FACTOR 1.20	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW	COMMENT
DIVISION 1												
SOUTH OF BRIDGE	110+00/111+75		459	0	0	459	168	202	257	257	0	
NORTH OF BRIDGE	114+00/116+00		428	0	0	428	882	1,058	-630	0	630	
DIVISION 1 SUBTOTAL			887	0	0	887	1,050	1,260	-373	257	630	
GRAND TOTAL			887	0	0	887	1,050	1,260	-373	257	630	
TOTAL COMMON EXC			887									

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 SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.

(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL

5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL

(13) EXPANDED FILL FACTOR = 1.20

DEPENDING ON SELECTIONS: **EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) * FILL FACTOR**

OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) * FILL FACTOR

OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) * FILL FACTOR

OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) * FILL FACTOR

(14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

(15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010 UNLESS NOTED

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BASE AGGREGATE DENSE

LOCATION				305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)	624.0100 WATER (MGAL)
110+59	to	111+64	Base	-	329	6.6
111+64	to	111+87	Base	-	32	0.7
113+82	to	114+14	Base	-	49	1.0
114+14	to	115+21	Base	-	319	6.4
115+21	to	115+79	Base	-	156	3.2
115+21	to	115+79	Shoulder	18	-	0.4
All Sidew alk			Base	-	69	1.4
031+00	to	033+15	STH 145	-	243	4.9
Undistributed				-	50	1.0
TOTALS				**18**	**1247**	**26**

PAVEMENT

LOCATION			415.0090 CONCRETE PAVEMENT 9-INCH (SY)	415.0410 CONCRETE PAVEMENT APPROACH SLAB (SY)
110+59	to	111+64	801	-
111+64	to	111+87	41	110
113+82	to	114+14	36	110
114+14	to	115+21	702	-
TOTALS			**1580**	**220**

CONCRETE BARRIER

LOCATION	603.1132 CONCRETE BARRRIER TYPE S32 (LF)	603.1142 CONCRETE BARRRIER TYPE S42 (LF)	603.3111 CONCRETE BARRRIER TRANSITION TYPE NJ32SF TO S32 (EACH)	603.3513 CONCRETE BARRRIER TRANSITION TYPE S32 TO S36 (EACH)	603.3535 CONCRETE BARRRIER TRANSITION TYPE S36 TO S42 (EACH)
31+65 to 32+75 LT	80	-	2	-	-
31+65 to 32+75 RT	80	-	2	-	-
31+00 to 32+70.5 LT	-	135	1	1	1
31+64.5 to 33+15 RT	-	115	1	1	1
	160	**250**	**6**	**2**	**2**

3

CURB AND SIDEWALK

LOCATION			601.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A (LF)	602.0410 CONCRETE SIDEWALK 5-INCH (SF)	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW (SF)	620.0300 CONCRETE MEDIAN SLOPE NOSE (SF)	650.9000 CONSTRUCTION STAKING CURB RAMPS (EACH)	NOTES
Project Wide			-	2756	80	-	8	
Pork Chop Island			160	-	-	175	-	Type I
110+59 to	111+87	LT	141	-	-	-	-	
110+59 to	111+87	RT	168	-	-	-	-	
114+82 to	115+21	LT	119	-	-	-	-	
114+82 to	115+21	RT	285	-	-	-	-	
TOTALS			**873**	**2756**	**80**	**175**	**8**	

HMA PAVEMENT

LOCATION				455.0605 TACK COAT (GAL)	460.5224 HMA PAVEMENT 4 LT 58-28 S (TON)	465.0105 ASPHALTIC SURFACE (TON)
115+21 to	115+79		107th ST	31	71	
116+00 RT			Sidew alk Terminal			1
031+65 to	032+75		STH 145	53	123	
TOTALS				**84**	**194**	**1**

* ASSUMES 0.070 GAL/SY betw een lifts and 0.050 GAL/SY on milled surfaces

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

STORM SEWER PIPE

FROM	-	TO	608.0418 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV (LF)	608.3018 STORM SEWER PIPE CLASS III-A 18-INCH (LF)	608.3024 STORM SEWER PIPE CLASS III-A 24-INCH (LF)	608.6008 STORM SEWER PIPE COMPOSITE 8-INCH (LF)	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT
11	-	10	-	-	-	20	773.26	773.00	0.0132
12	-	11	-	-	-	48	773.74	773.26	0.0101
21	-	20	-	-	-	35	775.40	775.08	0.0092
22	-	21	-	-	-	28	775.56	775.40	0.0058
23	-	21	-	-	-	73	777.51	775.40	0.0290
32	-	31	74	-	-	-	788.50	787.85	0.0087
33	-	31	-	26	-	-	787.86	787.68	0.0069
41	-	40	-	-	29	-	757.91	757.10	0.0277
42	-	41	-	-	144	-	760.82	757.91	0.0202
43	-	42	-	-	36	-	761.55	760.82	0.0202
51	-	50	-	-	36	-	762.60	761.71	0.0249
52	-	51	-	-	119	-	765.56	762.60	0.0249
53	-	52	-	-	30	-	766.34	765.56	0.0259
TOTALS			74	26	394	204			

CULVERT MARKERS

STRUCTURE	STATION	OFFSET*	633.5200 MARKERS CULVERT END (EACH)
32	115+00.36	29.58' LT	1
40	33+91.03	73.79' RT	1
43	31+86.88	75.53' RT	1
50	32+59.56	84.51' LT	1
53	30+76.64	78.42' LT	1
			5

FENCE

LOCATION	616.0206 FENCE CHAIN LINK 6-FT (LF)	SPV.0060.001 GATE ASSEMBLY (EACH)
NE	80	
NW	63	1
SE	54	1
TOTALS	197	2

STORM SEWER STRUCTURES

STRUCTURE	STATION	OFFSET*	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH 18-INCH (EACH)	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH 24-INCH (EACH)	611.061 INLET COVERS TYPE BW (EACH)	611.0612 INLET COVERS TYPE C (EACH)	611.0624 INLET COVERS TYPE H (EACH)	611.0642 INLET COVERS TYPE MS (EACH)	611.1004 CATCH BASINS 4-FT DIAMETER (EACH)	611.2004 MANHOLES 4-FT DIAMETER (EACH)	611.3004 INLETS 4-FT DIAMETER (EACH)	611.3225 INLETS 2X2.5-FT (EACH)	611.3902 INLETS MEDIAN 2 GRATE (EACH)	611.8115 ADJUSTING INLET COVERS (EACH)	650.4000 CONSTRUCTION STAKING STORM SEWER (EACH)	RIM** ELEVATION	INVERT*** ELEVATION	DEPTH**** FT	NOTES
--	110+29.00	20.00 RT												1					
10	110+78.42	39.15' LT					1				1				1	777.25	771.82	4.43	
11	110+94.30	27.50' LT					1		1						1	777.55	771.26	5.29	
12	110+95.00	20.00' RT			1							1			1	777.78	771.74	4.71	
20	110+69.74	1.50' LT					1				1				1	779.66	775.08	3.58	
21	111+07.00	1.00' LT			1				1						1	779.18	773.40	4.44	
22	0+18.00	1.50' RT					1		1						1	778.79	773.56	4.23	
23	111+90.43	31.00' LT					1		1						1	781.51	775.51	5.00	
31	114+99.40	44.77' RT														791.66	787.68		EXISTING MH TO REMAIN
32	115+00.36	29.58' LT	1												1		788.50		
33	115+23.42	35.41' RT						2					1		1	790.47	786.69	3.78	
40	33+91.03	73.79' RT		1											1		757.10		
41	33+64.65	61.50' RT				1				1					1	761.47	757.91	2.58	
42	32+20.23	61.50' RT				1				1					1	764.46	760.82	2.66	
43	31+86.88	75.53' RT		1											1		761.55		
50	32+59.56	84.51' LT		1											1		761.71		
51	32+25.00	74.50' LT				1				1					1	766.34	762.60	2.75	
52	31+06.40	74.50' LT				1				1					1	769.47	765.56	2.92	
53	30+76.64	78.42' LT		1											1		766.34		
			1	4	2	4	5	2	4	4	2	1	1	1	17				

REMARKS:
*STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE
**RIM ELEV IS AT THE INLET COVER FLANGE LOCATION
***FOR STRUCTURES WITH SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE SUMP. FOR STRUCTURES WITHOUT SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE LOWEST PIPE FLOW LINE
****DEPTH = RIM ELEV - TOP OF STRUCTURE BASE ELEV - COVER HEIGHT - 6-INCH ADJUSTMENT RING HEIGHT

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

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EROSION CONTROL

LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)	628.2008 EROSION MAT URBAN CLASS I TYPE B (SY)	628.7005 INLET PROTECTION TYPE A (EACH)	628.7010 INLET PROTECTION TYPE B (EACH)	628.7015 INLET PROTECTION TYPE C (EACH)	628.7504 TEMPORARY DITCH CHECKS (LF)	628.7555 CULVERT PIPE CHECK (EACH)
Project Wide	802	802	5	5	1957	7	10	4	24	12
Undistributed	20	20	-	-	98	-	-	-	-	-
TOTALS	**822**	**822**	**5**	**5**	**2055**	**7**	**10**	**4**	**24**	**12**

PAVEMENT MARKING

LOCATION	646.1020 MARKING LINE EPOXY 4-INCH *YELLOW* (LF)	646.1020 MARKING LINE EPOXY 4-INCH *WHITE* (LF)	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH *YELLOW* (LF)	646.3020 MARKING LINE EPOXY 8-INCH *WHITE* (LF)	646.5020 MARKING ARROW EPOXY (EA)	646.5120 MARKING WORD EPOXY (EA)	646.6120 MARKING STOP LINE EPOXY 18-INCH (LF)	646.6220 MARKING YIELD LINE EPOXY *18-INCH* (EA)	646.7420 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (LF)
107th St	1928	882	-	384	2	1	45	9	261
STH 145	-	-	220	-	-	-	-	-	-
TOTALS	**2810**		**220**	**384**	**2**	**1**	**45**	**9**	**261**

LANDSCAPING

LOCATION	625.0500 SALVAGED TOPSOIL (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0140 SEEDING MIXTURE NO. 40 (LB)	630.0200 SEEDING TEMPORARY (LB)	630.0500 SEED WATER (MGAL)
Project Wide	1957	1.2	35	53	44
Undistributed	98	0.1	2	3	2
TOTALS	**2055**	**1.3**	**37**	**55**	**46**

TEMPORARY MARKING

LOCATION	646.9010 MARKING REMOVAL LINE WATER BLASTING 4-INCH (LF)	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH WHITE (LF)	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH YELLOW (LF)
STH 145 SB	765	-	*2060*
STH 145 NB	765	2338	*3830*
TOTALS	**1,530**	**8,228**	

CONSTRUCTION STAKING

LOCATION			650.4500 CONSTRUCTION STAKING SUBGRADE (LF)	650.5000 CONSTRUCTION STAKING BASE (LF)	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT (LF)	650.9920 CONSTRUCTION STAKING SLOPE STAKES (LF)
110+30	to	111+87	157	157	157	187
113+82	to	116+00	218	218	218	218
31+65	to	32+75	110	110	-	-
18+50	to	19+50	100	100	100	100
TOTALS			**585**	**585**	**475**	**505**

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

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TRAFFIC CONTROL

LOCATION	DURATION CALANDAR DAYS	603.8000 CONCRETE BARRRIER TEMPORARY PRECAST DELIVERED (LF)	603.8125 CONCRETE BARRRIER TEMPORARY PRECAST INSTALLED (LF)	614.0905 CRASH CUSHION TEMPORARY (EACH)	643.0300 TC DRUMS #	643.0300 TC DRUMS (DAY)	643.0420 TC BARRICADES TYPE III #	643.0420 TC BARRICADES TYPE III (DAY)	643.0705 TC WARNING LIGHTS TYPE A #	643.0705 TC WARNING LIGHTS TYPE A (DAY)	643.0715 TC WARNING LIGHTS TYPE C #	643.0715 TC WARNING LIGHTS TYPE C (DAY)	643.0800 TC ARROW BOARDS #	643.0800 TC ARROW BOARDS (DAY)	643.0900 TC SIGNS #	643.0900 TC SIGNS (DAY)	643.0910 TC COVERING SIGNS TYPE 1 (CYCLE)	643.0910 TC COVERING SIGNS TYPE 1 #	643.0910 TC COVERING SIGNS TYPE 1 (EACH)	643.1000 TC SIGNS FIXED MESSAGE (SF)	643.1050 TC SIGNS PCMS #	643.1050 TC SIGNS PCMS (DAY)
STH 145 SB	120	180	180	1	*60*	7200	*1*	120	*2*	240	14	1680	*3*	360	*13*	1560	-	-	-	-	-	-
STH 145 NB	120	280	280	1	*122*	14640	*1*	120	*2*	240	15	1800	*2*	240	*17*	2040	-	-	-	-	-	-
Overnight STH 145 Closure	7	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*4*	28
107th Ramp Closure	180	-	-	-	*35*	6300	*4*	720	*8*	1440	4	720	-	-	*4*	720	1	4	4	30	-	-
W Fond Du Lac Ave	180	-	-	-	*40*	7200	*15*	2700	*30*	5400	-	-	-	-	*12*	2160	-	-	-	-	-	-
IH 41/US 45 Trailblazing	180	-	-	-	-	-	-	-	-	-	-	-	-	-	*34*	6120	-	-	-	-	-	-
W Fond Du Lac Ave (CUC)	180	-	-	-	*40*	7200	*15*	2700	*30*	5400	-	-	-	-	*12*	2160	-	-	-	-	-	-
W Good Hope Rd	14	-	-	-	*50*	700	*2*	28	-	-	-	-	-	-	*4*	56	-	-	-	-	-	-
Undistributed	180	-	-	-	*35*	6246	*4*	684	*8*	1368	*3*	594	-	-	*10*	1728	-	-	-	-	-	-
TOTALS		**460**	**460**	**2**		**49,486**		**7,072**		**14,088**		**4,794**		**600**		**16,544**			**4**	**30**		**28**

SAWING

LOCATION			690.0150 SAWING ASPHALT (LF)	690.0250 SAWING CONCRETE (LF)
110+30			63	166
115+79			27	-
107th St Off Ramp			-	21
31+00	to	32+75		195
31+65	to	33+15		175
31+65	to	32+75	-	134
31+65	to	32+75	-	134
TOTALS			**90**	**825**

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

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SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	**637.2210** SIGNS TYPE II REFLC H [SF]	**637.2230** SIGNS TYPE II REFLC F [SF]	**638.2602** REMOVING SIGNS TYPE II [EA]	**638.3000** REMOVING SMALL SIGN SUPPORTS [EA]	**634.0618** WOOD POSTS 4"X 6"x18' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
1	-- R4-1(2S)	--	24	x	30	5.000		1	--	--	--	MOUNT ON LIGHT POST
2	-- R2-1 (2S)	SPEED LIMIT 30	24	x	30	5.000		1	--	--	--	MOUNT ON LIGHT POST
3	-- R3-7L(2S)	--	30	x	30	6.250		1	--	--	--	MOUNT ON SIGNAL POST
4	-- R3-7L(2S)	--	30	x	30	6.250		1	--	--	--	MOUNT ON SIGNAL POST
5	-- R1-2 (2S)	--	36	x	31	3.880		1	1	1	--	--
6	-- R5-1C(2M)	--	36	x	36	7.460		1	1	1	--	--
7	-- R5-1C(2M)	--	36	x	36	7.460		1	1	1	--	--
8	-- R1-1(2M)	--	36	x	36	7.460		--	--	--	7	Removal part of # 7
9	-- R1-1(2M)	--	36	x	36	7.460		--	--	--	6	Removal part of # 6
10	-- R3-1(2S)	--	24	x	24	4.000		1	1	1	--	--
11	-- R3-2(2S)	--	24	x	24	4.000		1	1	1	--	--
12	-- W1-7(2S)	--	48	x	24		8.000	--	--	1	--	--
13	-- M1-94	107th St	66	x	21	9.625		--	--	--	--	Mount sign on new bridge-Mounting Incidental
14	-- M1-94	107th St	66	x	21	9.625		--	--	--	--	Mount sign on new bridge-Mounting Incidental
15	-- W13-2D(2M)	EXIT 30 M P H	48	x	90		30.000	1	--	--	--	REMV. EXISTING SIGN FROM BRIDGE COLUMN
--	--	--	--	x	--	--	--	--	--	2	--	MOUNT ON NEW POSTS
UNDISTRIBUTED						10.000	10.000	1		1		
TOTALS						93.5	48.0	11	5	9		

SHEET 1

PROJECT NO:1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	MISC. QUANTITIES - PERMANENT SIGNING	SHEET:	E

FILE NAME : _
N:\SPO\Operations\Signing\Miscellaneous Quantities\1360-12-70\030501

PLOT DATE : 10/19/21 PLOT BY : __D. STEEL_____ PLOT NAME D. STEEL PLOT SCALE : 1:1

3

LIGHTING - REMOVALS

204.0195 REMOVING CONCRETE BASES
204.9060.S.101 REMOVING UNDERDECK LIGHTING (B-40-1004)
204.9060.S.102 REMOVING SIGN LIGHTING
SPV.0060.101 LIGHTING UNITS SALVAGED
SPV.0060.102 UNDERDECK LIGHTING UNITS SALVAGED
SPV.0060.106 LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	STAGE	SYSTEM	CIRCUIT	DESCRIPTION	LOCATION	OFFSET	204.0195 REMOVING CONCRETE BASES	204.9060.S.101 REMOVING UNDERDECK LIGHTING (B-40-1004)	204.9060.S.102 REMOVING SIGN LIGHTING	SPV.0060.101 LIGHTING UNITS SALVAGED	SPV.0060.102 UNDERDECK LIGHTING UNITS SALVAGED	SPV.0060.106 LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR	COMMENTS
							EACH	EACH	EACH	EACH	EACH	EACH	
0010	2	HL-40-EG	3,4,N	4EG18/3EG18	31+50	R/L	1	--	--	1	--	2	--
			3,4,N	UDL - EG	32+27	R/L	--	1	--	--	2	2	107TH ST. BRIDGE (B-40-1004) OVER STH 145
			5,6,N	S-40-328	23+82	105.3' LT	--	--	1	--	--	2	SIGN LIGHTING ONLY
0010						TOTALS	1	1	1	1	2	6	

LIGHTING - CONTROL, SERVICES AND SYSTEMS
240/480 VAC 3-WIRE (GROUNDED NEUTRAL)

655.0640 ELECTRICAL WIRE LIGHTING 1 AWG
SPV.0060.105 MAINTENANCE OF LIGHTING SYSTEMS (1360-12-70)

CATEGORY	STAGE	DESCRIPTION	SYSTEM	LOCATION	655.0640 ELECTRICAL WIRE LIGHTING 1 AWG	SPV.0060.105 MAINTENANCE OF LIGHTING SYSTEMS (1360-12-70)	COMMENTS
					LF	EACH	
0010	1 - 3	PROJECT (1360-12-70)	HL-40-EG	STH 145	18	1	EXISTING CABINET TO REMAIN
0010		PROJECT (1360-12-70)		TOTALS	18	1	

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

FILE NAME : 030201_mq_ltg.pptx - PLOT DATE : 03-MAR-2022 PLOT BY : SINGH PLOT NAME : 030201_mq_ltg PLOT SCALE : 1:1

3

LIGHTING - TEMPORARY TO REMAIN ITEMS

204.9090.S.101 REMOVING ELECTRICAL WIRES FROM CONDUIT

CATEGORY	STAGE	SYSTEM	CIRCUIT	FROM	TO	LOCATION	OFFSET	204.9090.S.101 REMOVING ELECTRICAL WIRES FROM CONDUIT LF	COMMENTS
0010	1	HL-40-EG	3,4,N	3EG17	4EG16	--	--	160	REMOVE WIRE ONLY
				4EG16	3EG15	--	--	140	"
				3EG15	4EG14	--	--	160	"
				4EG14	3EG13	--	--	160	"
				3EG13	4EG12	--	--	160	"
				4EG12	3EG11	--	--	160	REMOVE WIRE ONLY
				3EG11	4EG10	--	--	160	"
				4EG10	3EG9	--	--	160	"
				3EG9	4EG28	--	--	130	"
				3EG9	EX. LPB-EG-6	--	--	30	"
				EX. LPB-EG-6	EX. LPB-EG-7	--	--	60	REMOVE WIRE ONLY
				EX. LPB-EG-7	4EG22/3EG22	--	--	130	"
				EX. LPB-EG-7	3EG23/4EG23	--	--	130	"
0010							TOTALS	1,740	

3

LIGHTING - TEMPORARY TO REMAIN CONDUIT AND WIRES

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH*
652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH*
652.0615 CONDUIT SPECIAL 3-INCH
655.0620 ELECTRICAL WIRE LIGHTING 8 AWG*
655.0630 ELECTRICAL WIRE LIGHTING 4 AWG*

CATEGORY	STAGE	SYSTEM	CIRCUIT	FROM	TO	652.0225* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	652.0235* CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	652.0615 CONDUIT SPECIAL 3-INCH	655.0620* ELECTRICAL WIRE LIGHTING 8 AWG	655.0630* ELECTRICAL WIRE LIGHTING 4 AWG	COMMENTS
						LF	LF	LF	LF	LF	
0010	1	HL-40-EG	3,4,N	HL-40-EG	EX. LPB-EG-1	--	--	--	--	65	EXISTING CONDUIT
				EX. LPB-EG-1	LPB-EG-1	--	85	60	--	455	--
				LPB-EG-1	3EG17	20	--	--	--	75	--
				3EG17	4EG16	160	--	--	--	490	--
				4EG16	3EG15	140	--	--	--	430	--
				3EG15	4EG14	160	--	--	--	490	--
				4EG14	3EG13	160	--	--	--	490	--
				3EG13	4EG12	160	--	--	--	490	--
				4EG12	3EG11	160	--	--	--	490	--
				3EG11	4EG10	160	--	--	--	490	--
				4EG10	3EG9	160	--	--	--	490	--
				3EG9	4EG28	130	--	--	400	--	--
				3EG9	EX. LPB-EG-6	30	--	--	--	105	--
				EX. LPB-EG-6	EX. LPB-EG-7	60	--	--	--	200	--
				EX. LPB-EG-7	3EG23/4EG23	130	--	--	--	405	--
				3EG23/4EG23	EX. LPB-EG-7	130	--	--	--	405	--
				EX. LPB-EG-7	4EG22/3EG22	130	--	--	--	405	--
0010					TOTALS	1,890	85	60	400	5,975	

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

3

3

LIGHTING - CONDUIT AND WIRE

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH*
655.0620 ELECTRICAL WIRE LIGHTING 8 AWG*
655.0630 ELECTRICAL WIRE LIGHTING 4 AWG*

CATEGORY	STAGE	SYSTEM	CIRCUIT	FROM	TO	652.0225* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	655.0620* ELECTRICAL WIRE LIGHTING 8 AWG	655.0630* ELECTRICAL WIRE LIGHTING 4 AWG	COMMENTS
						LF	LF	LF	
0010	1	HL-40-EG	3,4,N	HL-40-EG	EX. LPB-EG-1	15	--	65	EMPTY CONDUIT
				EX. LPB-EG-1	EX. LPB-EG-2	180	--	560	--
				EX. LPB-EG-2	5EG9/6EG9	100	--	315	--
				EX. LPB-EG-2	4EG18/3EG18	120	--	375	--
				4EG18/3EG18	LJB-EG-1	100	--	315	--
				LJB-EG-1	3EG19/4EG19	180	--	555	--
				LJB-EG-1	UDL-EG	--	120	--	IN EMBEDDED CONDUIT
0010					TOTALS	695	120	2,185	

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

LIGHTING - PULL BOXES

653.0140 PULL BOXES STEEL 24X42-INCH
655.0615 ELECTRICAL WIRE LIGHTING 10 AWG (GROUNDING WIRE)

CATEGORY	STAGE	SYSTEM	DESCRIPTION	LOCATION	OFFSET	653.0140 PULL BOXES STEEL 24X42-INCH	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG	COMMENTS
						EACH	LF	
0010	1	HL-40-EG	LPB-EG-1	115+09	33.7' RT	1	50	--
0010					TOTALS	1	50	

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

3

LIGHTING - LUMINAIRE ARMS AND POLES

655.0610 ELECTRICAL WIRE LIGHTING 12 AWG
659.0600 UNDERDECK LIGHTING (B-40-1004)
SPV.0060.103 CONCRETE BASES TYPE B
SPV.0060.104 REPLACE PLAQUE SEQUENCE IDENTIFICATION FOR EXISTING POLES

CATEGORY	STAGE	SYSTEM	CIRCUIT	DESCRIPTION / SEQUENCE	LOCATION STATION	LOCATION OFFSET	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG	659.0600 UNDERDECK LIGHTING (B-40-1004)	SPV.0060.103 CONCRETE BASES TYPE B	SPV.0060.104 REPLACE PLAQUE SEQUENCE IDENTIFICATION FOR EXISTING POLES	COMMENTS
							LF	LS	EACH	EACH	
0010	1	HL-40-EG	3,4,N	4EG18/3EG18	31+50	R/L	171	--	1	2	--
				UDL - EG	32+27	R/L	--	1	--	--	107TH ST. BRIDGE (B-40-1004) OVER STH 145
				3EG17	19+09	8.8' RT	--	--	--	1	--
				3EG16	17+50	7.9' RT	--	--	--	1	--
				3EG15	16+09	8.3' RT	--	--	--	1	--
				3EG14	14+49	8.4' RT	--	--	--	1	--
				3EG13	12+90	8.4' RT	--	--	--	1	--
				3EG12	11+30	8.0' RT	--	--	--	1	--
				3EG11	9+70	8.3' RT	--	--	--	1	--
				3EG10	8+10	8.3' RT	--	--	--	1	--
				3EG9	6+50	8.5' RT	--	--	--	1	--
				3EG28	5+21	8.5' RT	--	--	--	1	--
				3EG29	3+50	12.4' RT	--	--	--	1	--
0010						TOTALS	171	1	1	13	--

ESTIMATE OF TOTAL QUANTITIES ; STREET LIGHTING
MILWAUKEE COUNTY

	Std.Bid Item No.	Description	Unit	Quantity
-	204.9060.S.310.	REMOVING POLES	EACH	4
-	204.9090.S.314.	REMOVE AERIAL CABLE	LF	970
-	650.8500	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS	LS	1
-	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 -INCH	LF	20
-	652.0230	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH	LF	795
-	652.0610	CONDUIT SPECIAL 2 1/2-INCH	LF	120
-	652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	LF	370
-	654.0105	CONCRETE BASES TYPE 5	EACH	2
-	655.0305	CABLE TYPE UF 2-12 AWG GROUNDED	LF	225
-	657.0255	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	EACH	4
-	SPV.0060.302	PULL BOXES 13-INCH x 24-INCH x 24-INCH	EACH	8
-	SPV.0060.303	PULL BOXES 17-INCH x 30-INCH x 24-INCH	EACH	4
-	SPV.0060.309	RELOCATE POLES	EACH	1
-	SPV.0060.321	POLES TYPE 30-AL-BD	EACH	4
-	SPV.0060.323	35 FT. WOOD POLE	EACH	2
-	SPV.0060.343	WATER TIGHT SPLICES AND CONNECTIONS	EACH	4
-	SPV.0060.345	LUMINAIRE ARMS SINGLE MEMBER 6-Ft. (SPECIAL)	EACH	4
-	SPV.0060.371	INSTALLING CITY FURNISHED LUMINAIRE UTILITY LED	EACH	4
		Total Number of Luminaire Utility LED (2LED2) = 2 Total Number of Luminaire Utility LED (3LED3) = 2		
-	SPV.0090.302	ELECTRICAL CABLE TYPE 3#6 AL	LF	240
-	SPV.0090.303	ELECTRICAL CABLE TYPE 2#4/1#6 AL	LF	110
-	SPV.0090.305	ELECTRICAL CABLE TYPE 3#8/1#8XLPE	LF	525
-	SPV.0090.308	ELECTRICAL CABLE TYPE 3#2/1#8XLPE	LF	970
-	SPV.0090.319	LIQUIDTIGHT FLEXIBLE NON-METALLIC CONDUIT 1 ½- INCH	LF	50

ALL ITEMS CATEGORY 0050

(THESE QUANTITIES DO NOT INCLUDE THE MATERIALS IN/ON THE BRIDGE) SUCH AS: CONDUIT, JUNCTION BOXES, AND LIGHT POLE ANCHORAGE

TRAFFIC SIGNALS TOTALS

204.0195 REMOVING CONCRETE BASES	654.0101 CONCRETE BASES TYPE 1	654.0110 CONCRETE BASES TYPE 10	657.0100 PEDESTAL BASES	657.0345 POLES TYPE 9	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT	657.0525 MONOTUBE ARMS 25-FT	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH	658.0412 PEDESTRIAN SIGNAL FACE 12-INCH	658.5069 SIGNAL MOUNTING HARDWARE
EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
1	1	1	1	1	1	1	3**	2	1

SPV.0060.218 EVP 1 DIRECTION DETECTOR	SPV.0060.219 EVP 2 DIRECTION DETECTOR	SPV.0060.221 EVP PHASE SELECTOR CARD 4 CHANNEL	SPV.0060.223 EVP CONFIRMATION LIGHT	SPV.0060.224 VEHICULAR VIDEO DETECTION SYSTEM- 1 CAMERA	SPV.0060.267 PEDESTRIAN COUNTDOWN SIGNAL FACE 12-INCH	SPV.0060.302 PULL BOXES 13-INCH X24-INCH X 24-INCH	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	652.0615* CONDUIT SPECIAL 3-INCH	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG
EACH	EACH	EACH	EACH	EACH	EACH	EACH	LF	LF	LF
1	1	1	3	1	2	6	35*	630	60

655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG	655.0305* CABLE TYPE UF 2-12 AWG GROUNDED	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE	SPV.0090.305 ELECTRICAL CABLE TYPE 3 #8/1#8 XLPE	661.0200 TEMPORARY TRAFFIC SIGNALS (FOND DU LAC & 107TH)
LF	LF	LF	LF	LF	LS
1591	232	639	232	390*	1

*NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

NOTE: CAT 0050

TRAFFIC CONTROL SIGNAL
W. FOND DU LAC AVE., W. METRO BLVD. & N. 107TH ST.
LOCAL STREET
CITY OF MILWAUKEE,MILWAUKEE COUNTY

STATE PROJECT NUMBER

1360 - 12 - 70

3

3

CITY UNDERGROUND CONDUIT

MISCELLANEOUS QUANTITIES

LOCATION	204.0100 REMOVING PAVEMENT SY	320.0145 CONCRETE BASE 8-INCH SY	465.0105 ASPHALTIC SURFACE TONS	416.0620 DRILLED DOWEL BARS EACH	416.0610 DRILLED TIE BARS EACH	690.025 SAWING CONCRETE LF	SPV.0060.400 ADJUSTING CUC MANHOLE COVER EACH	SPV.0060.425 INSTALLING CONDUIT INTO EXISTING MANHOLE EACH	SPV.0090.401 1-4" CONDUIT CEMENT ENCASED DB-60	SPV.0090.405 5-4" CONDUIT CEMENT ENCASED DB-60	SPV.0090.404 4-4" CONDUIT CEMENT ENCASED DB-60 LF	SPV.0060.401 UNDERDECK UTILITY STRUCTURE B-40-1004, CITY OF MILWAUKEE COMMUNICATIONS CONDUIT EACH
MANHOLE 5213 - STA 115+61.62, 5.5' RT							1	1				
MANHOLE 5213 TO 5' NORTH OF ABUTMENT											175	
5' NORTH OF ABUTMENT TO 5' SOUTH OF ABUTMENT												1
5' SOUTH OF ABUTMENT TO STA 110+78.91, 5.1' RT											101	
STA 110+78.91, 5.1' RT TO STA 110+83.79, 34.5' RT									35			
STA 110+78.91, 5.1' RT TO MANHOLE 5212	18	18	5	64	32	80				95		
MANHOLE 5212 - STA 109+81.69, 5.5' RT								1				
TOTAL	18	18	5	64	32	80	1	2	35	95	276	1

ALL ITEMS CATEGORY 0050

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

THIS MAP PREPARED BY THE SIGMA GROUP FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

SURVEY BASIS: WISCONSIN COORDINATE REFERENCE SYSTEM - MILWAUKEE COUNTY DATUM.

R/W PROJECT NUMBER: 1360-12-20	SHEET NUMBER: 1

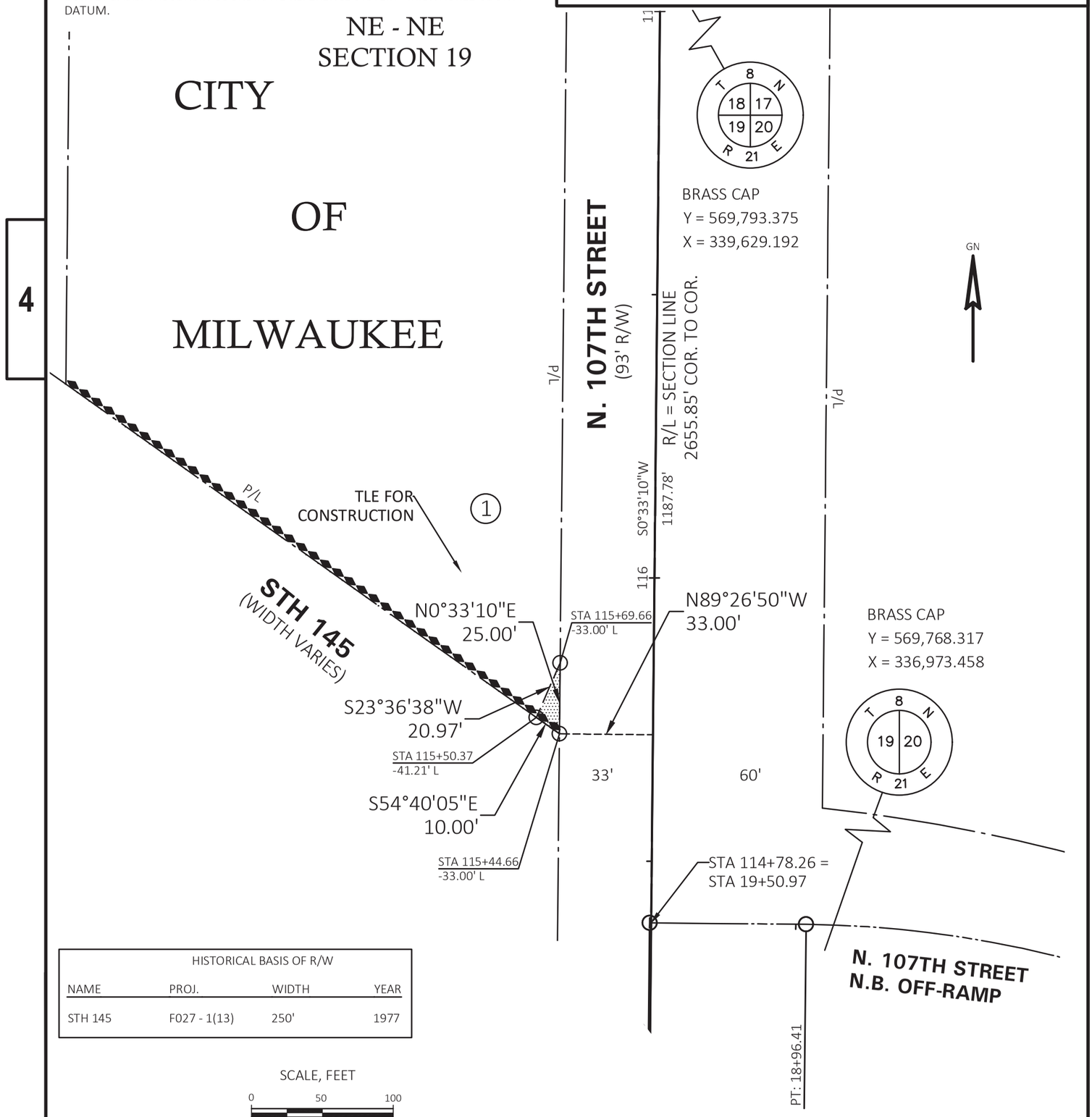
TLE ACQUISITION EXHIBIT

N 107TH STREET BRIDGE OVER STH 145

N. 107TH ST. MILWAUKEE COUNTY

NE - NE SEC. 19, T8N, R21E, CITY OF MILWAUKEE MILWAUKEE COUNTY, WI

4



HISTORICAL BASIS OF R/W

NAME	PROJ.	WIDTH	YEAR
STH 145	F027 - 1(13)	250'	1977

SCALE, FEET

0 50 100

SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE S.F.
1	SAMUAL M WEBSTER & GENNISA MARY GEHLER	TLE	103

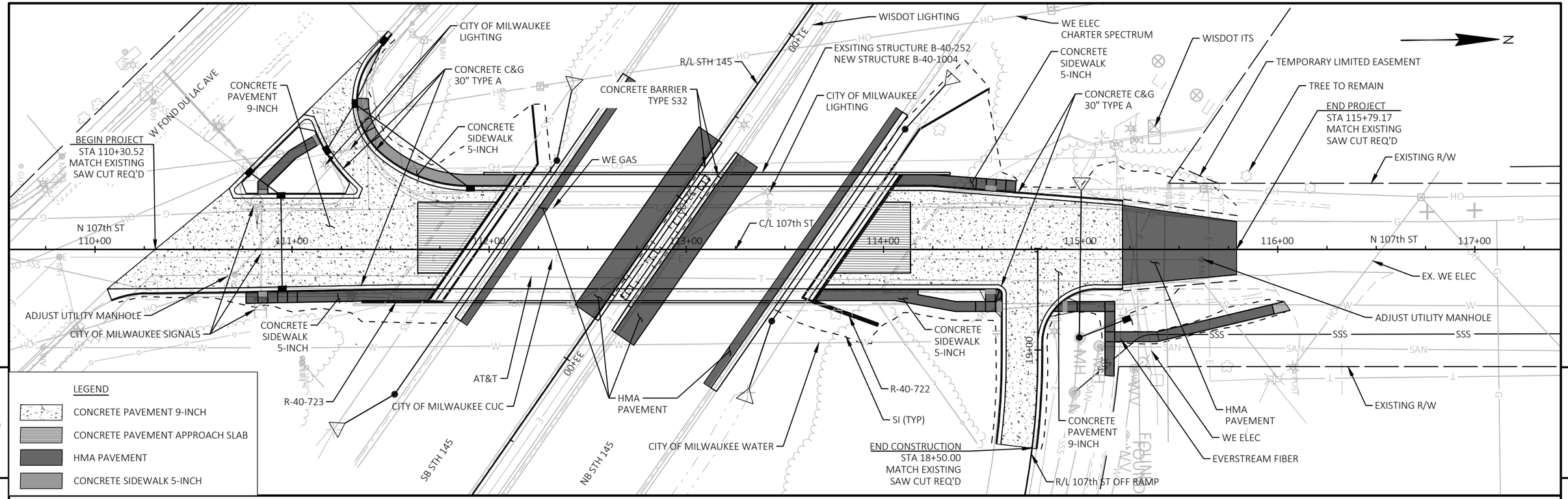
Prepared by B. Rozite

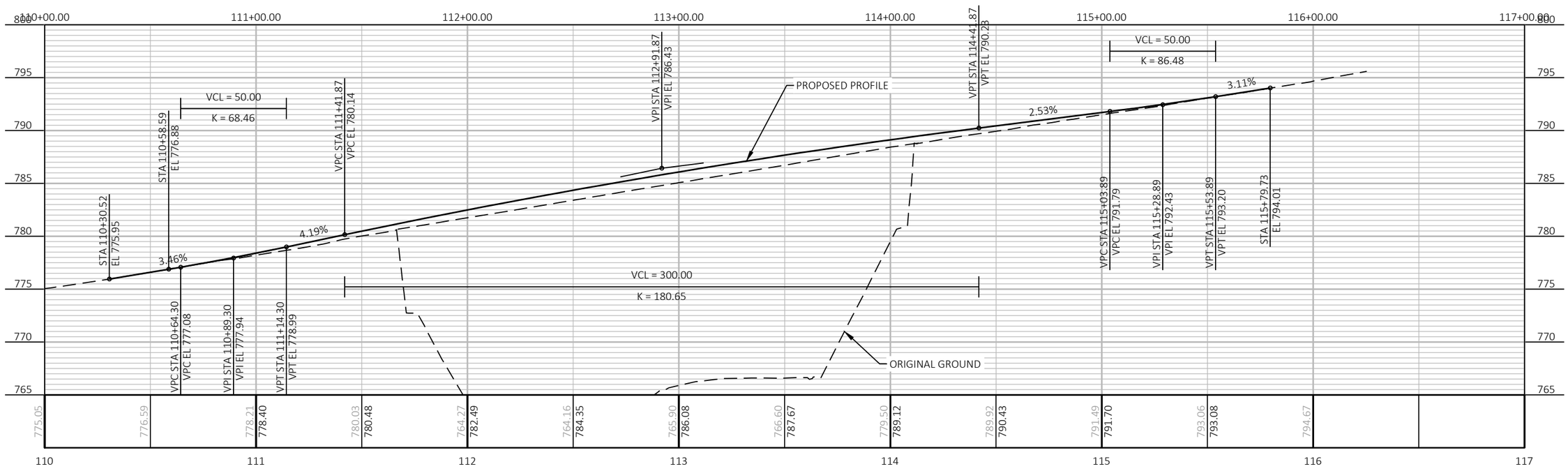
THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION
SOUTHEAST REGION OFFICE

SIGNATURE: Robert L Dufflocks DATE: 06/22/2021

PRINT NAME:

FILE NAME : 1360-12-20TLE.DWG PLOT DATE : 7/1/2021 8:31 AM R/W PROJECT: R/W PROJ NO





PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	PLAN AND PLOTTING: 107TH ST	SHEET 112	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\050101_PP.DWG
LAYOUT NAME - 01
PLOT DATE : 2/16/2022 1:24 PM
PLOT BY : WEIGAND, BEN
PLOT NAME :
PLOT SCALE : 1 IN:50 FT
WISDOT/CADDS SHEET 44

LEGEND

- CONCRETE PAVEMENT 9-INCH
- CONCRETE PAVEMENT APPROACH SLAB
- HMA PAVEMENT
- CONCRETE SIDEWALK 5-INCH

R/L 107TH OFF RAMP

17+00

18+00

19+00

11+00

SI

SI

PI: 18+96.41

EC 19+51.69

C/L 107th ST

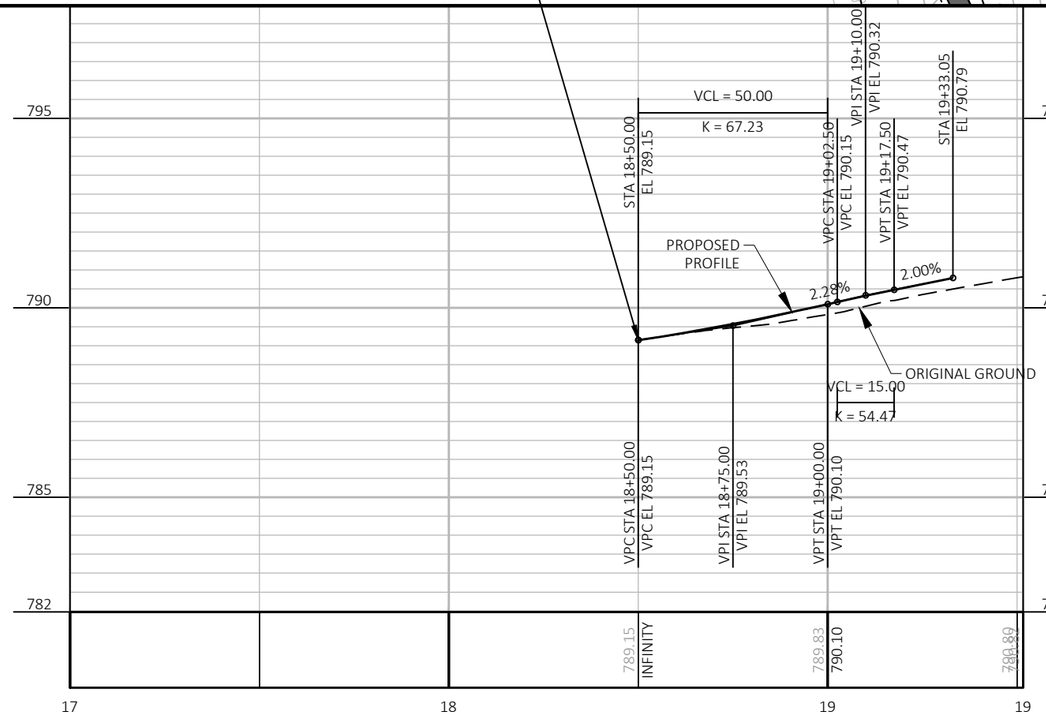
N 107th ST

TLE

EXISTING R/W

EXISTING R/W

END CONSTRUCTION
STA 18+50.00
MATCH EXISTING
SAW CUT REQ'D



PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	PLAN AND PROFILE: 107TH NB OFF RAMP	SHEET 113	E

FILE NAME : Y:\MILWAUKEE\20200S\20288.00\ENG_DOCS\13601270\SHEETSPLAN\13601200\050102_PP.DWG
LAYOUT NAME - 01

PLOT DATE : 1/19/2022 4:17 PM PLOT BY : WEIGAND, BEN PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

Standard Detail Drawing List

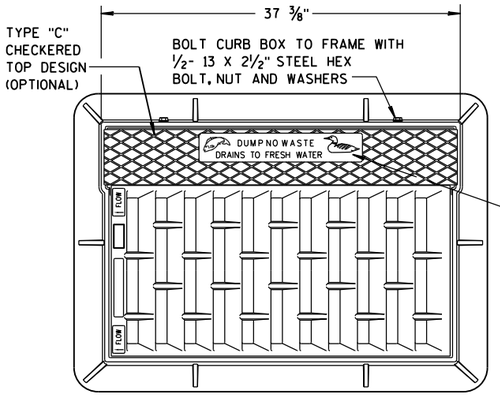
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08A08-02	CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER
08B09-03	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-02	INLETS MEDIAN 1 AND 2 GRATE
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D05-20A	CURB RAMPS TYPES 1 AND 1-A
08D05-20B	CURB RAMPS TYPES 2 AND 3
08D05-20C	CURB RAMPS TYPES 4A AND 4A1
08D05-20D	CURB RAMPS TYPE 4B AND 4B1
08D05-20E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-20F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-20G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09B04-11	PULL BOX
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C11-10	CONCRETE BASE TYPE 10
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E07-06	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09G01-04A	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04B	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04C	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04D	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04E	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04F	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04G	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
10A01-03	ELECTRICAL HANDHOLE WIRING
10A02-03	IDENTIFICATION PLAQUES LIGHT POLES
10A04-03	IDENTIFICATION PLAQUES UNDERDECK AND HIGH MAST LIGHTING
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C13-09	URBAN DOWELED CONCRETE PAVEMENT
13C15-06A	CONCRETE BASE
13C15-06B	CONCRETE BASE
13C16-02A	DETAIL FOR RIGHT TURN LANE/TEE INTERSECTION BYPASS LANE ON A CONRETE ROADWAY
13C16-02B	DETAIL FOR RIGHT TURN LANE/TEE INTERSECTION BYPASS LANE ON A CONRETE ROADWAY
13C18-07A	CONCRETE PAVEMENT JOINTING
13C18-07B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-07C	CONCRETE PAVEMENT JOINT TYPES
13C18-07D	CONCRETE PAVEMENT JOINT TYPES AT UTILITY FIXTURES
13C18-07F	CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

6

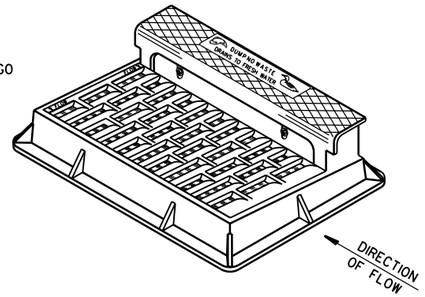
Standard Detail Drawing List

14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B34-02A	32", 36" & 42" CONCRETE BARRIER SINGLE SLOPE CLASS B
14B34-02C	CONCRETE BARRIER SINGLE SLOPE CLASS B
14B35-02A	32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SSCB TRANSITION
14B35-02B	32-INCH SINGLE-FACED NJ SHAPE CONCRETE BARRIER TO 32-INCH SSCB TRANSITION
14B36-02C	32-INCH SINGLE-FACED F SHAPE CONCRETE BARRIER TO 36-INCH SSCB TRANSITION
14B36-02D	32-INCH SINGLE-FACED F SHAPE CONCRETE BARRIER TO 36-INCH SSCB TRANSITION
14B39-02A	32-INCH SSCB TO 36-INCH SSCB HEIGHT TRANSITION
14B39-02B	36-INCH SSCB TO 42-INCH SSCB HEIGHT TRANSITION
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C07-15B	PAVEMENT MARKING WORDS
15C07-15C	PAVEMENT MARKING ARROWS
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C20-02	YIELD MARKING
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D12-09A	TRAFFIC CONTROL, LANE CLOSURE
15D15-05E	TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE
15D16-04	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

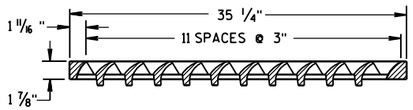
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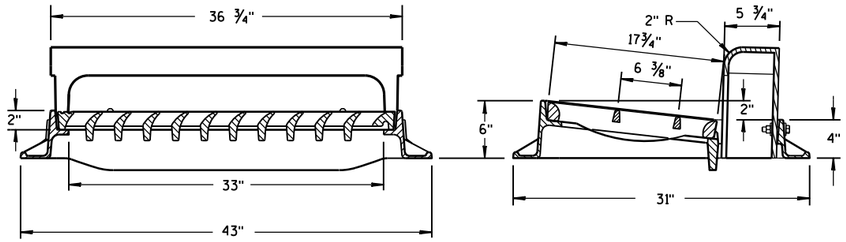


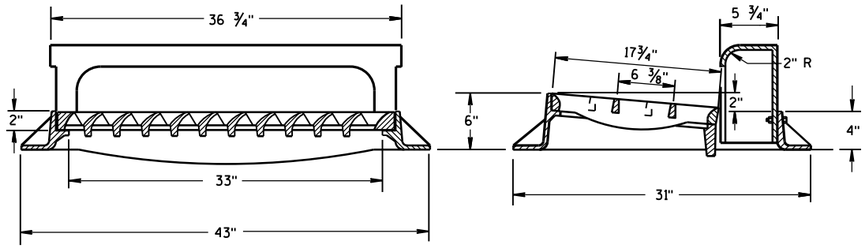
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

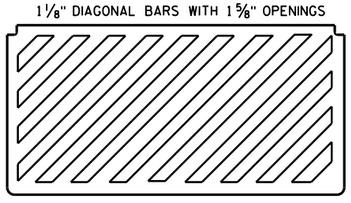






TYPE "H"

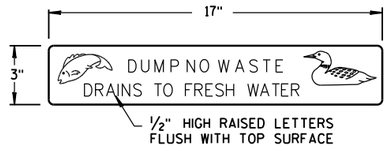
NOTE: EITHER CASTING IS ACCEPTABLE



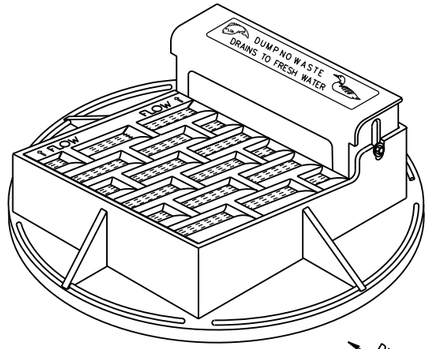
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)



LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

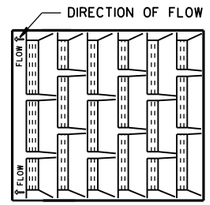
NOTE:
GRATE IS REVERSIBLE.

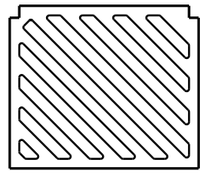
GENERAL NOTES

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 CATCH BASIN, MANHOLE AND INLET 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.

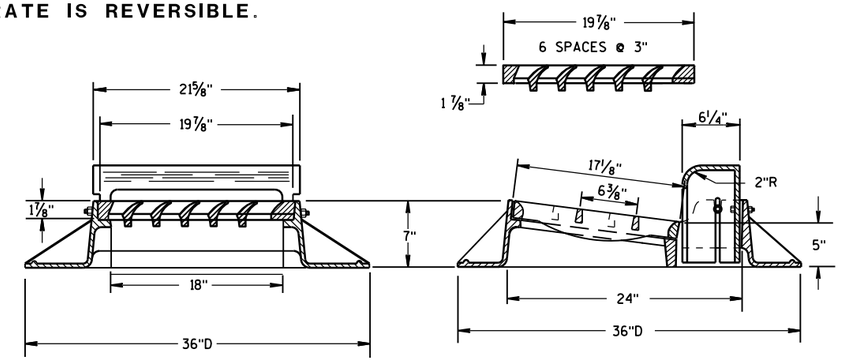




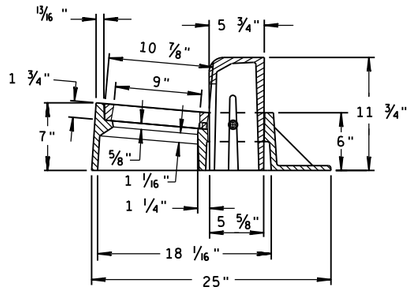
SPECIAL GRATE FOR TYPE "A" COVER

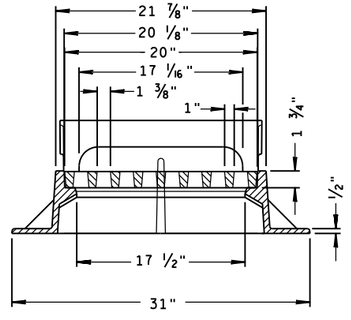
(MEASURES 19 3/4" X 17" X 1 7/8")

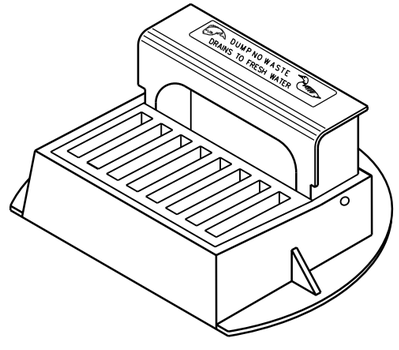
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



TYPE "A"







TYPE "Z"

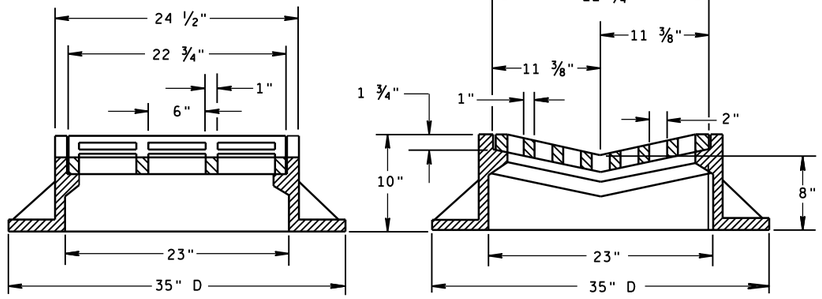
INLET COVERS
TYPE A, H, A-S, H-S & Z

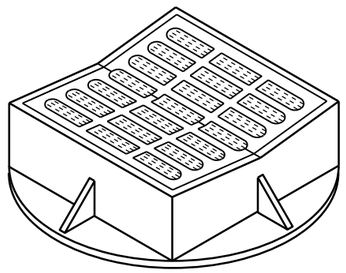
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

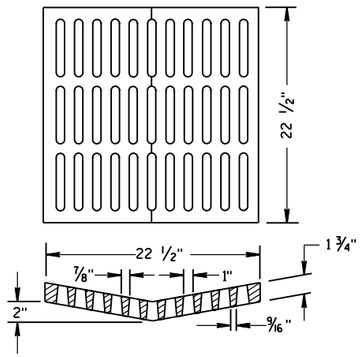
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S.D.D. 8 A 5-19a



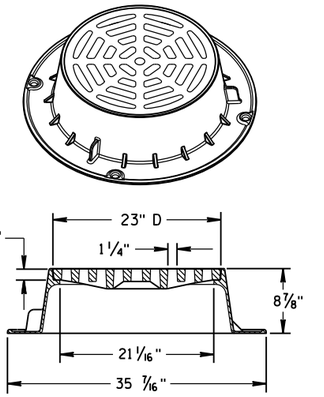


TYPE "B"



ALTERNATIVE GRATE FOR TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

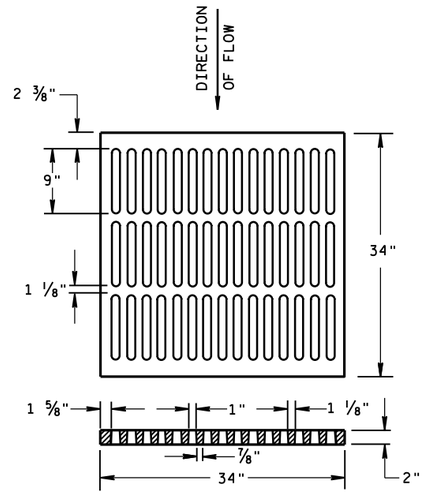
NOTE: EITHER CASTING IS ACCEPTABLE

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.

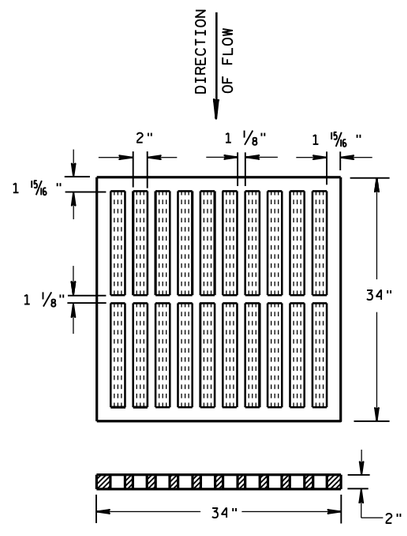
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



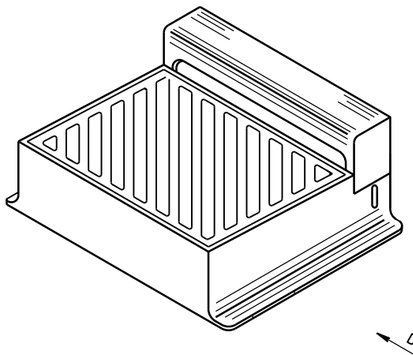
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE

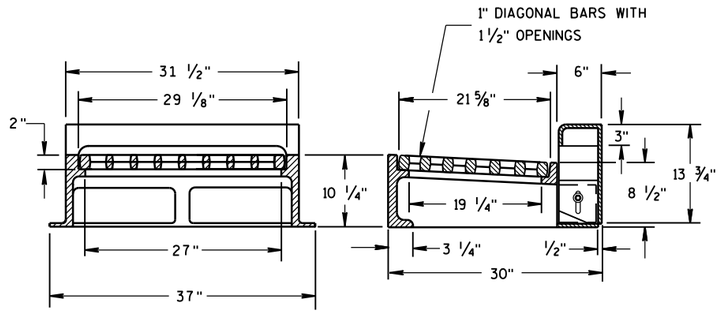


TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON DRAINAGE TABLE



DIAGONAL SLOTS, SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

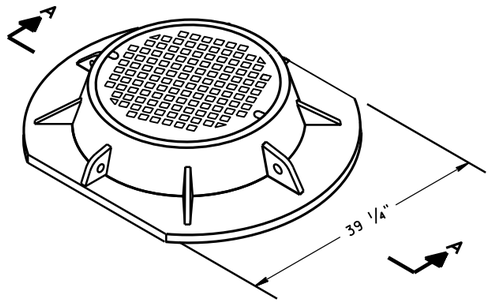
INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM

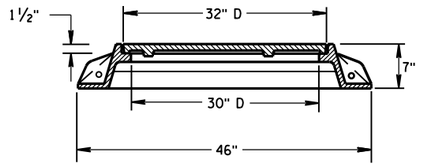
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

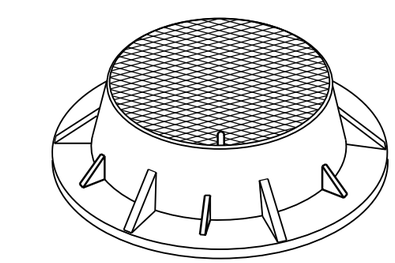
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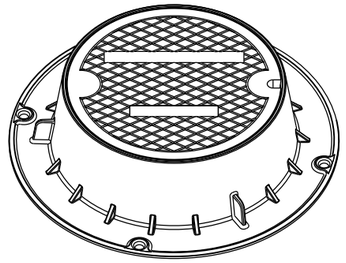
S.D.D. 8 A 5-19b

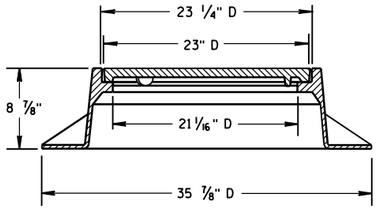


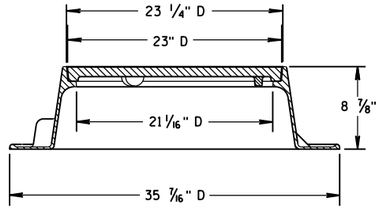


SECTION A-A
TYPE "K"









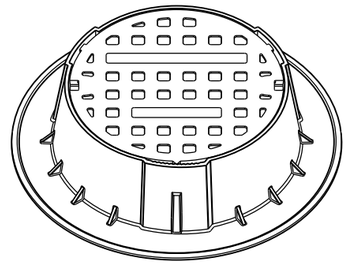
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

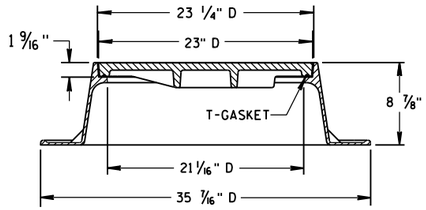
GENERAL NOTES

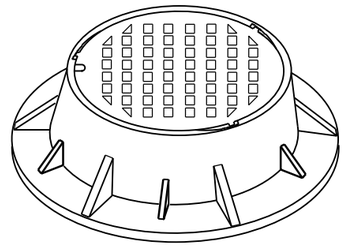
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

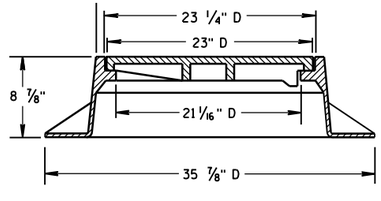
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

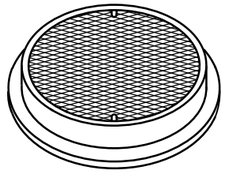


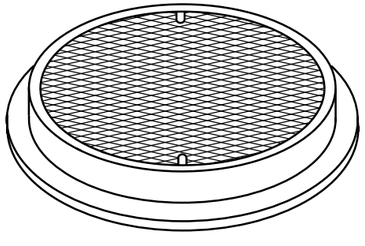


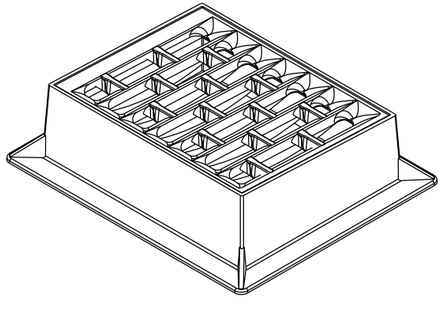


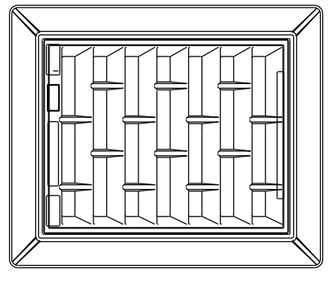


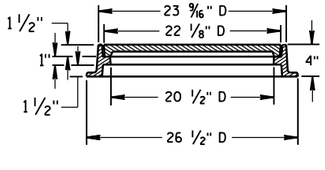
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE



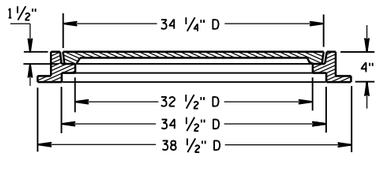




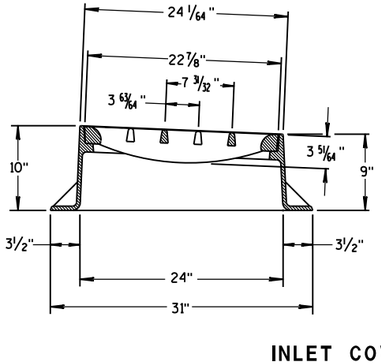


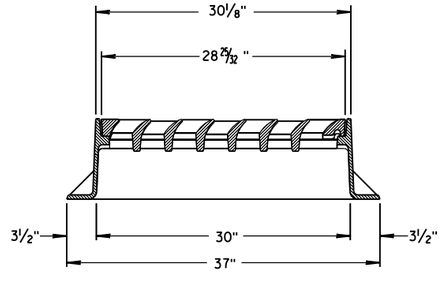


TYPE "L"



TYPE "M"





INLET COVER TYPE "BW"

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K, J, J-S, L & M

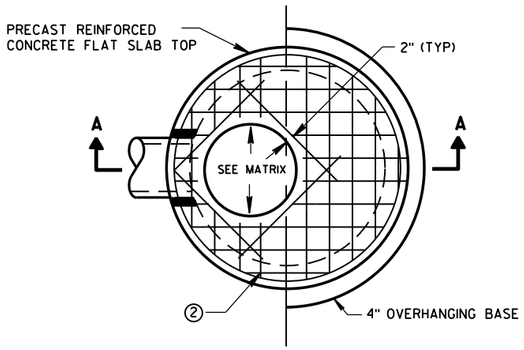
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

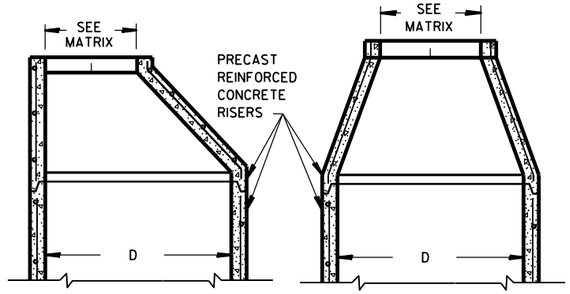
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

6

S.D.D. 8 A 5-19d

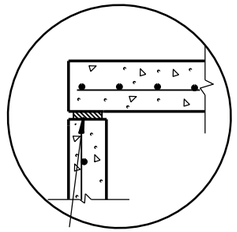


PLAN VIEW CIRCULAR OPENING

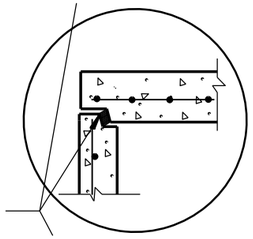


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

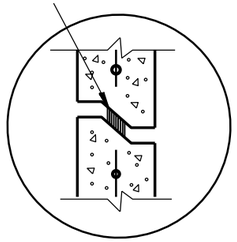
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT

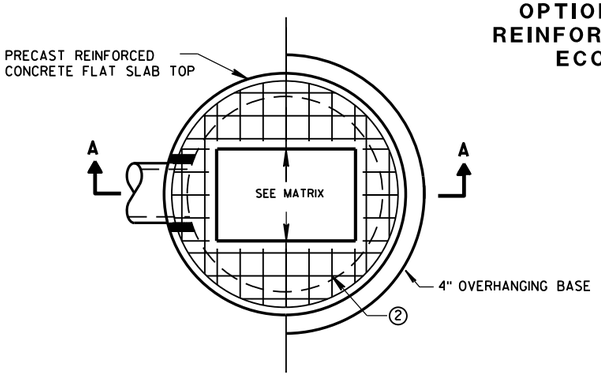


TOP WITH TONGUE AND GROOVE JOINT

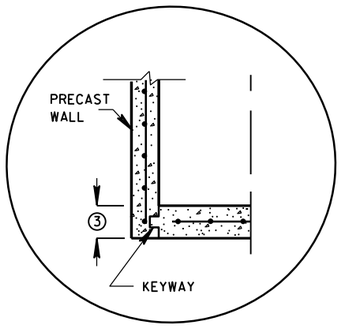


RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

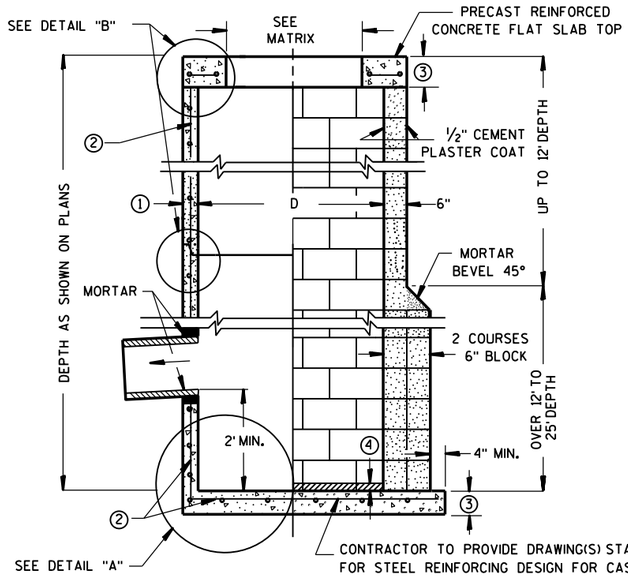


PLAN VIEW RECTANGULAR OPENING



PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

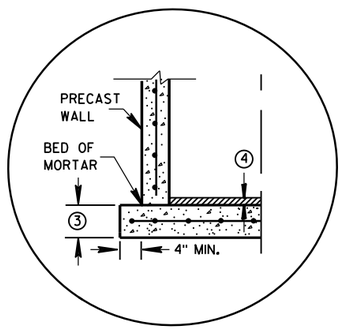
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



SECTION A-A

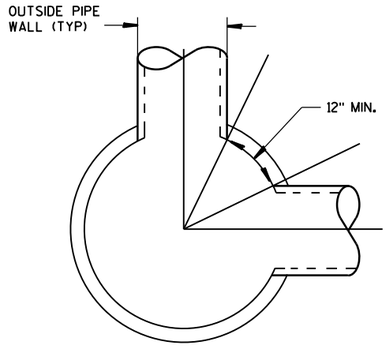
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

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 CATCH BASIN 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.

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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 DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½ INCH AND MEET THE REQUIREMENTS OF ASTM A615.

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

ALL PRECAST INLET 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.

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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 "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT AND 7 INCHES FOR 6-FT DIAMETER PRECAST CATCH BASINS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

④ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER OPENING MATRIX

CATCH BASIN SIZE	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
	OPENING SIZE (FT)											
3-FT	2X2	X	X					X		X		
	2 DIA.				X							X
4-FT-6-FT	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2 DIA.				X							X
	2X3						X					
	2.5X3					X						

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	30

CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

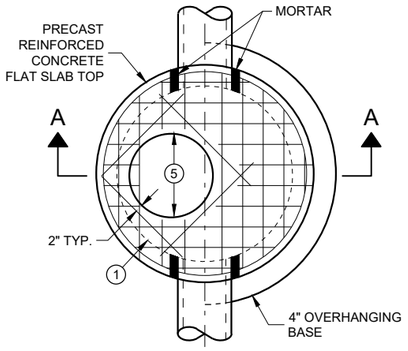
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

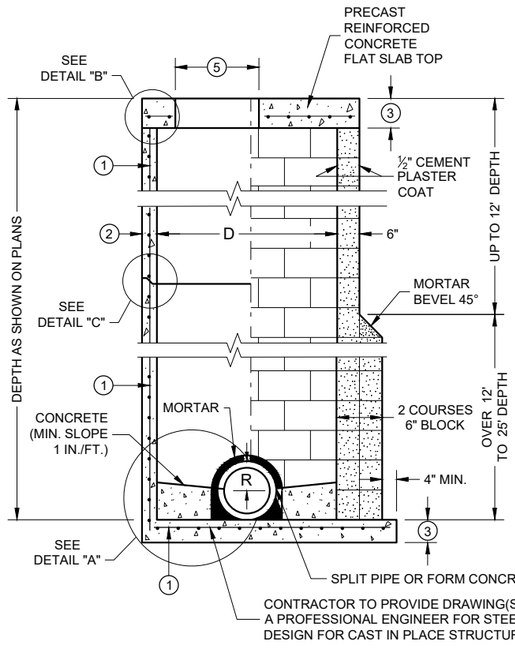
CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

S.D.D. 8 A 8-2

S.D.D. 8 A 8-2



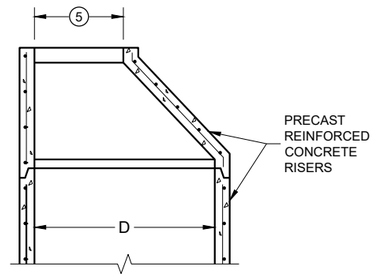
PLAN VIEW
CIRCULAR OPENING



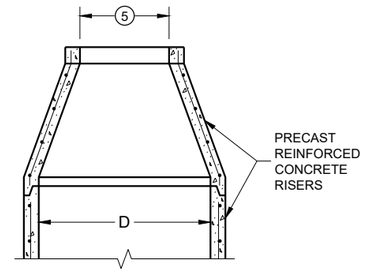
SECTION A - A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE (1)



OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP



OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

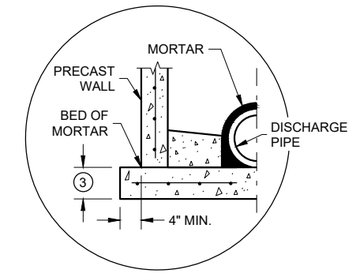
MANHOLE COVER OPENING MATRIX

OPENING SIZE (FT.) \ MANHOLE COVER TYPE	C	ALL J'S	K	L	M
2 DIA.	X	X		X	
3 DIA.			X		X

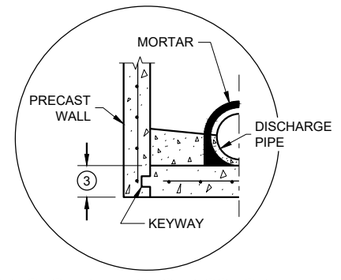
PIPE MATRIX

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.

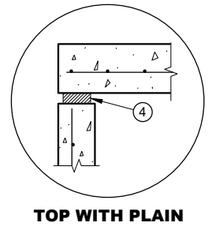


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

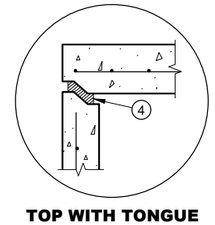


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

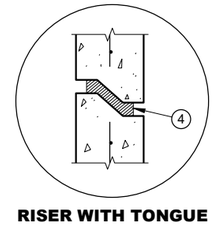
DETAIL "A"



TOP WITH PLAIN END JOINT



TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B" **DETAIL "C"**

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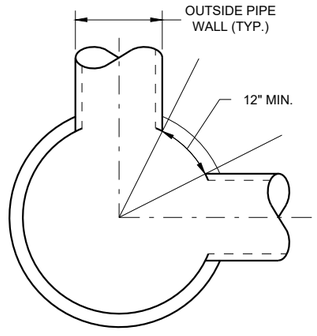
(1) FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

(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 (TYP.).

(5) SEE MANHOLE COVER OPENING MATRIX.



MINIMUM HORIZONTAL PIPE SEPARATION

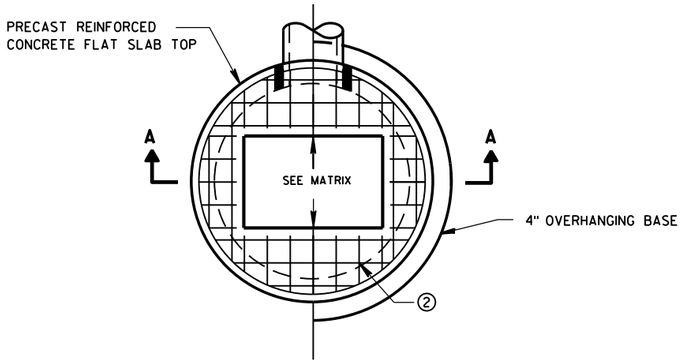
MANHOLES, 3-FT, 4-FT 5-FT, 6-FT, 7-FT, 8-FT, 9-FT AND 10-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

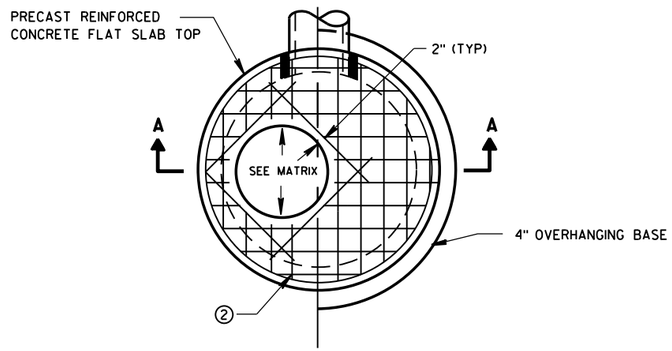
APPROVED
November 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

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

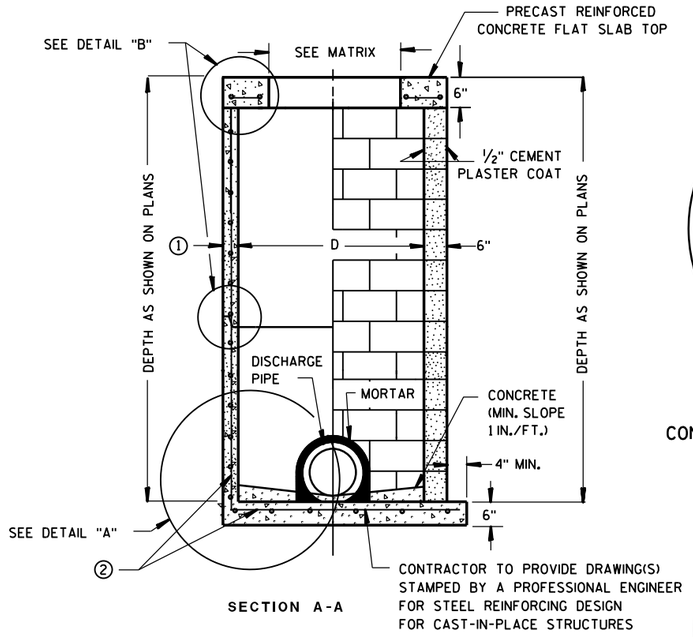
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PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

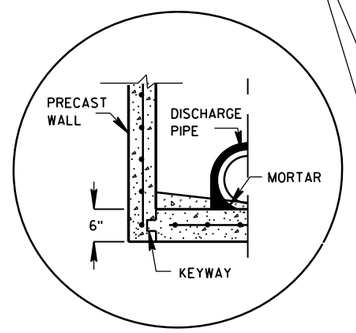


SECTION A-A

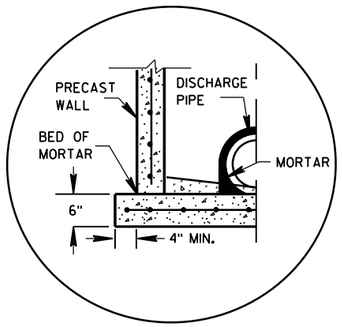
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

CIRCULAR INLETS W/ FLAT TOP

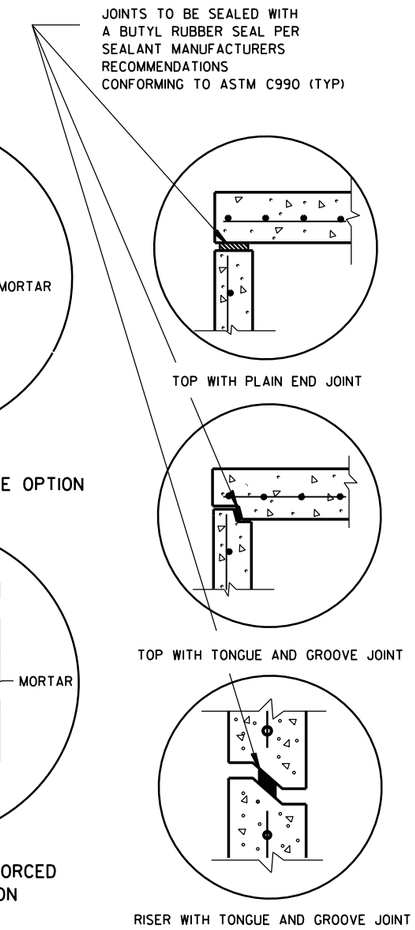


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



TOP WITH PLAIN END JOINT

TOP WITH TONGUE AND GROOVE JOINT

RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

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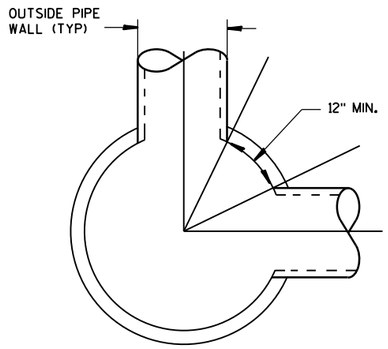
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① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
INLET SIZE	OPENING SIZE (FT)											
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2X3						X					
	2.5X3					X						



DETAIL "C"

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

INLETS 3-FT AND 4-FT DIAMETER

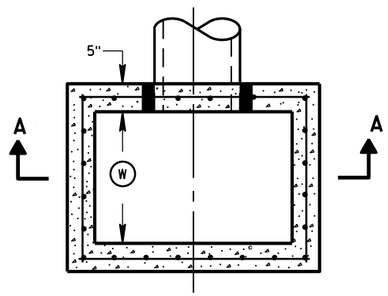
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FHWA

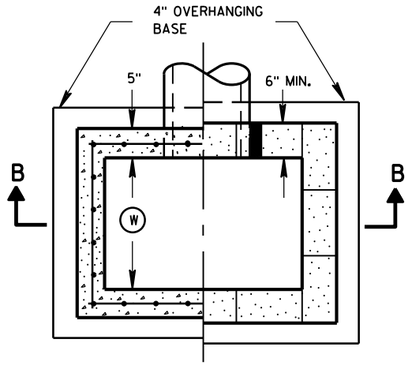
INLETS 3-FT AND 4-FT DIAMETER

6

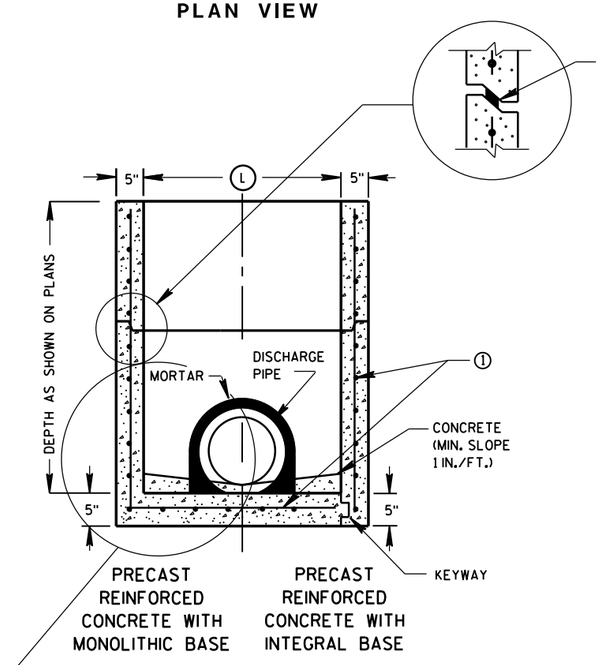
S.D.D. 8 C 6-2



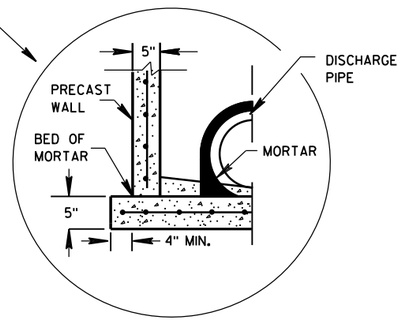
PLAN VIEW



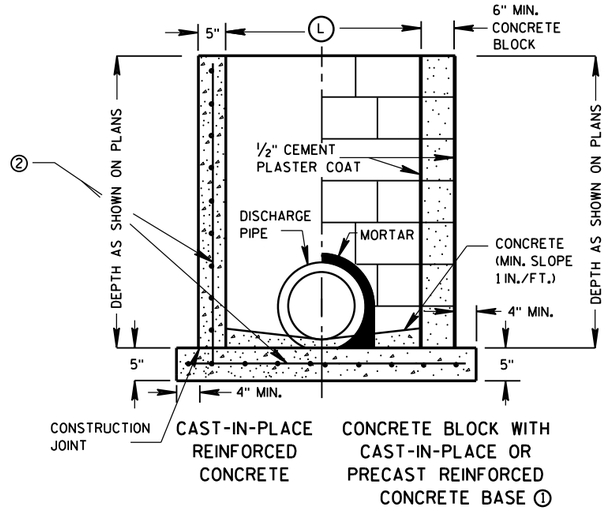
PLAN VIEW



SECTION A-A



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION



SECTION B-B

GENERAL NOTES

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

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET 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 PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES 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.

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

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

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND 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.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

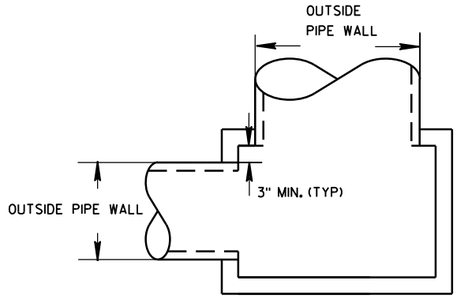
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



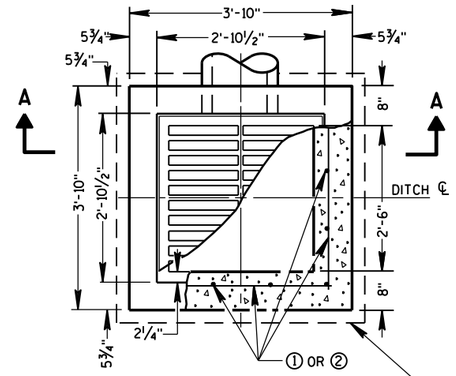
DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

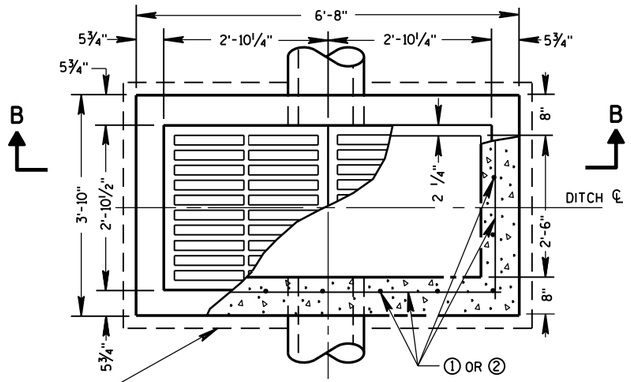
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Sept., 2016
DATE
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ROADWAY STANDARDS D IT
UNIT SUPERVIS
FHWA

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

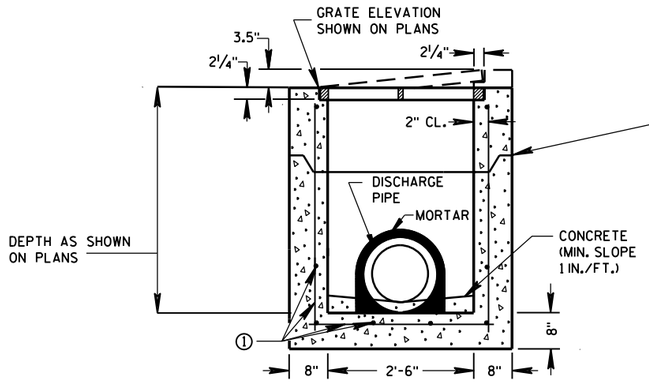


PLAN VIEW

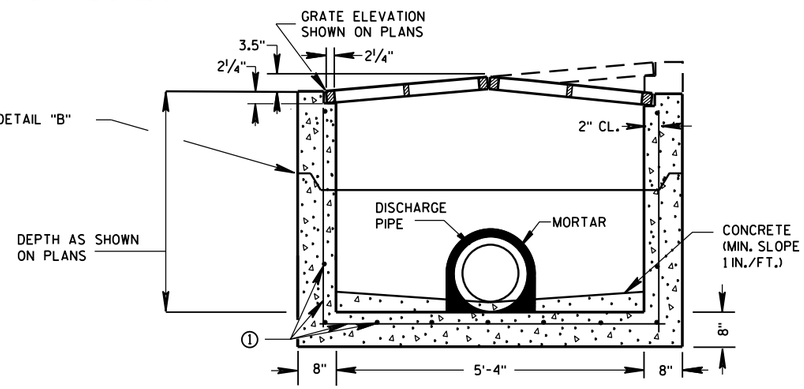


PLAN VIEW

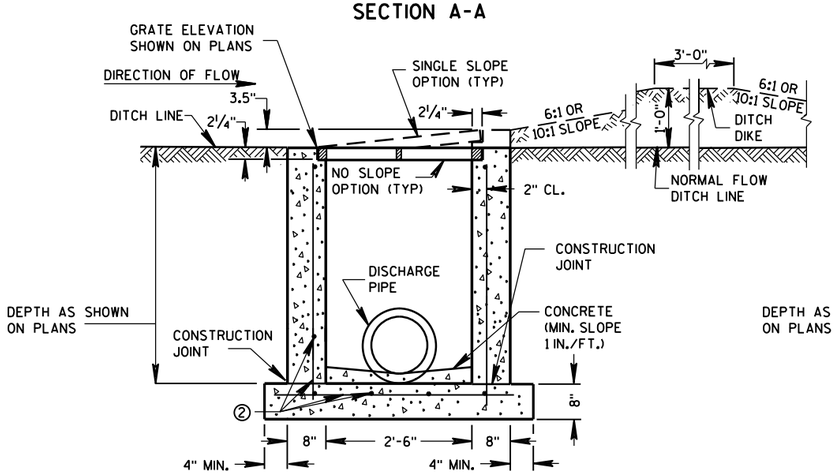
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



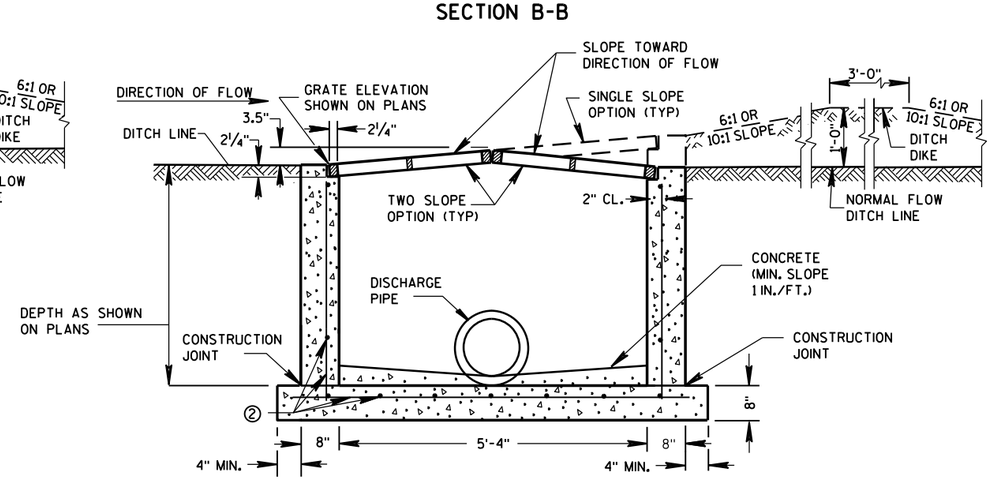
PRECAST REINFORCED CONCRETE SECTION A-A



PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 1 GRATE

INLETS MEDIAN 2 GRATE

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 INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 1G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE 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.

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

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

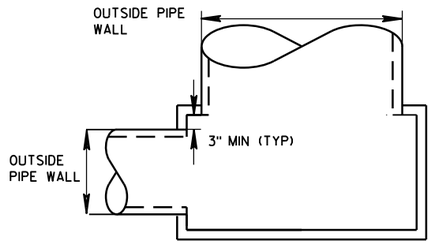
MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

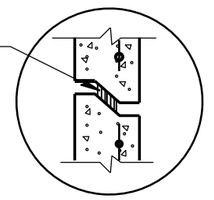
PIPE MATRIX

	MAXIMUM INSIDE PIPE DIAMETER	
INLET SIZE	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



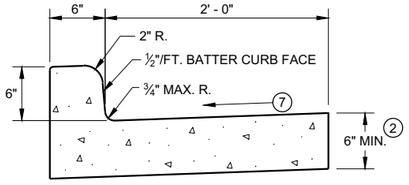
DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

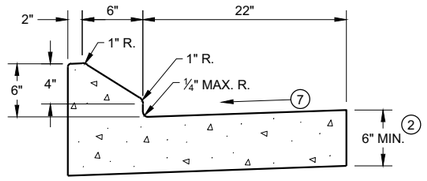
STATE OF WISCONSIN
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FHWA

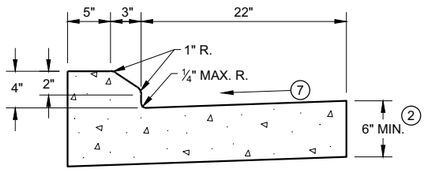
6
S.D.D. 8 C 8-2



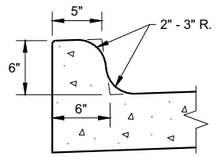
TYPES A (1) & D



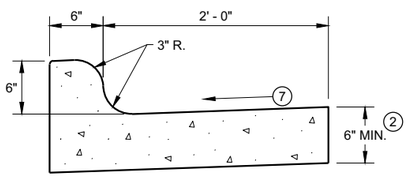
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

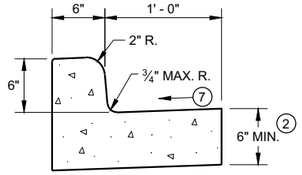


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



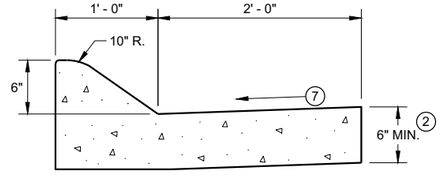
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

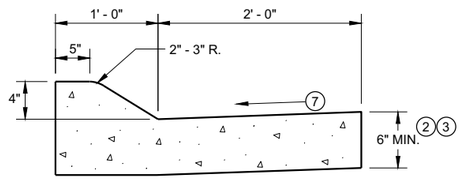


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

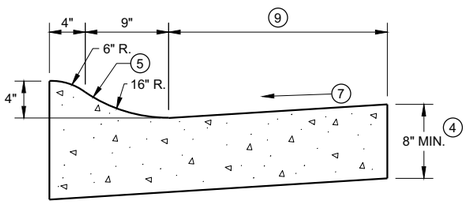


6" SLOPED CURB TYPES A (1) & D



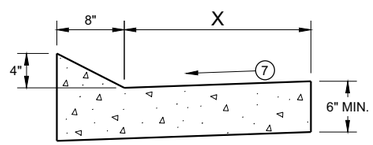
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

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

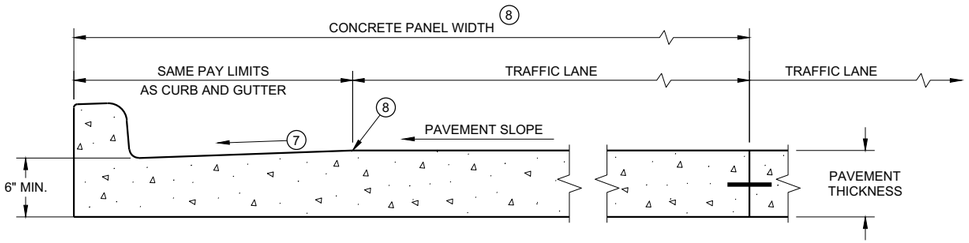


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

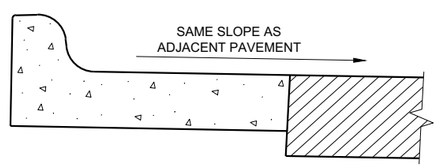
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER (6)
(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.

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

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

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

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

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

(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

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

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

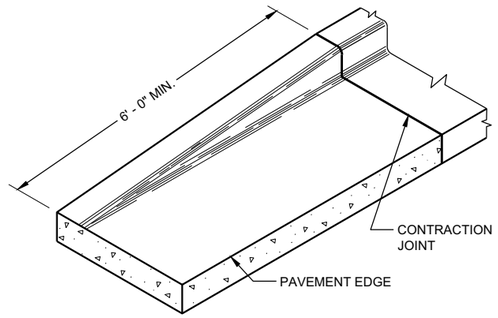
(9) CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

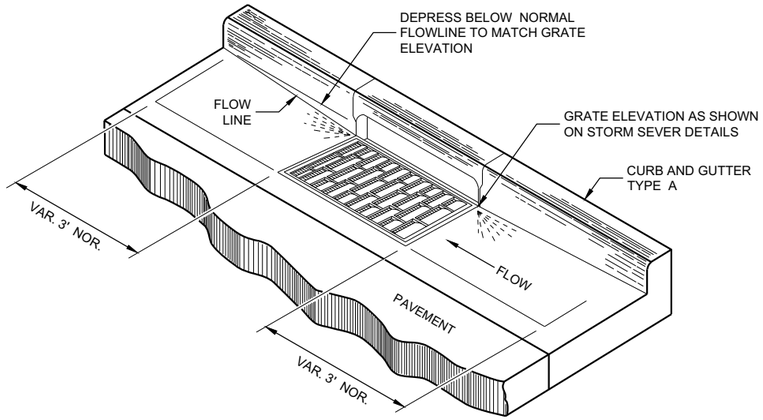
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D01 - 22a
SDD 08D01 - 22a



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

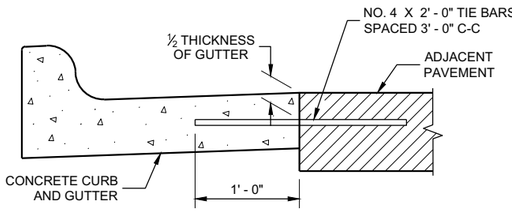
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

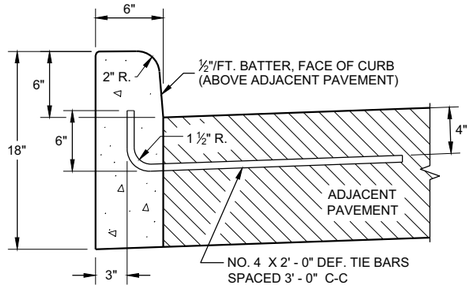
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

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

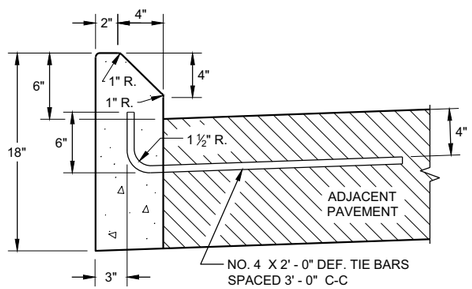
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

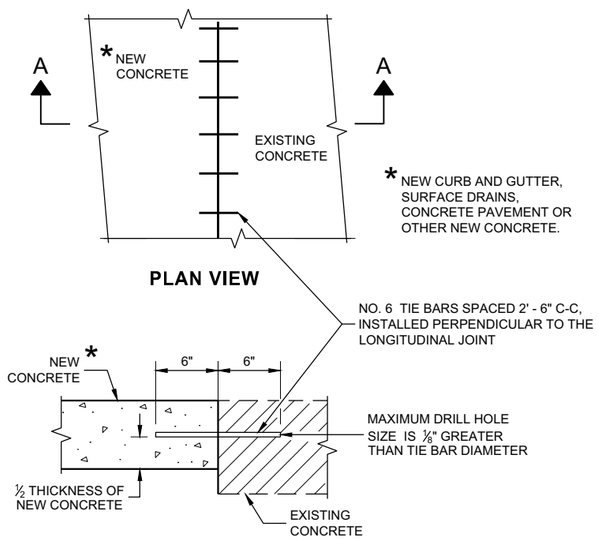


TYPES A (1) & D



TYPES G (1) & J

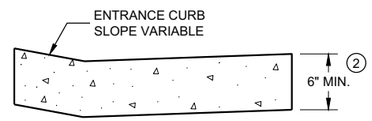
CONCRETE CURB



PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)
(WHEN DIRECTED BY THE ENGINEER)

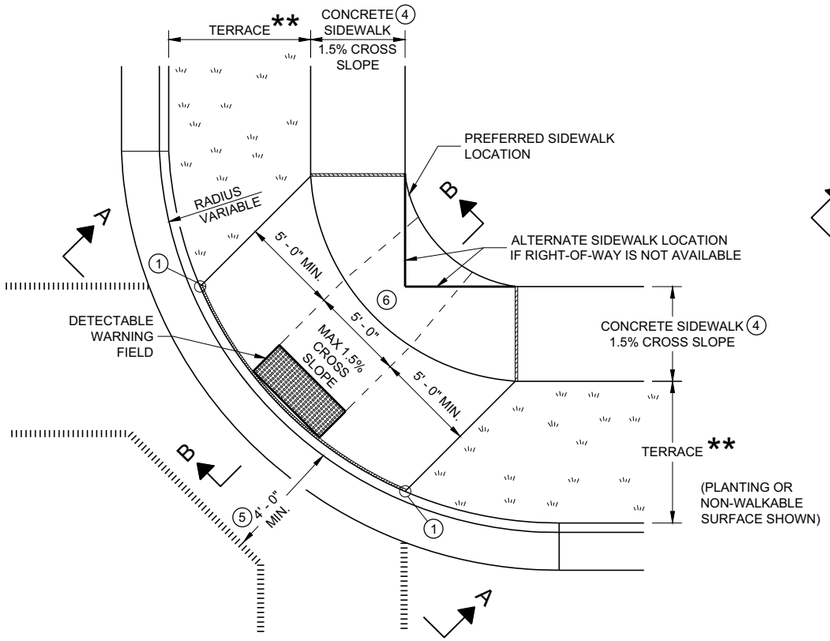
CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

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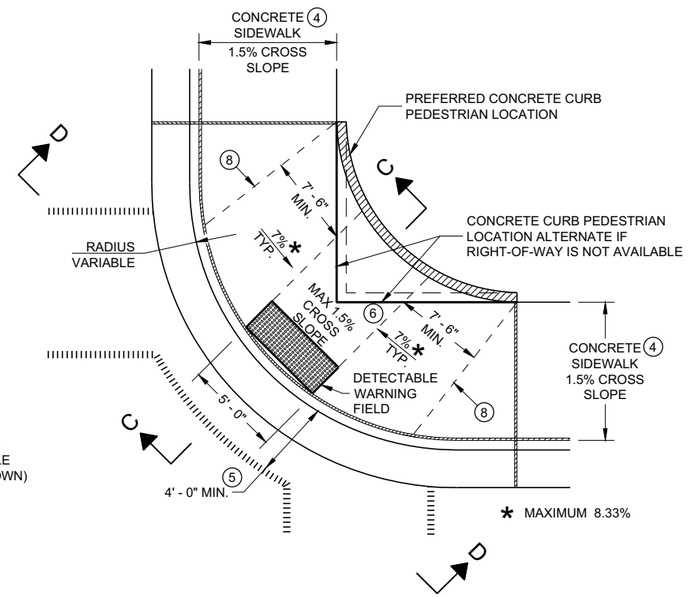
SDD08D01 - 22b



PLAN VIEW

CURB RAMP TYPE 1

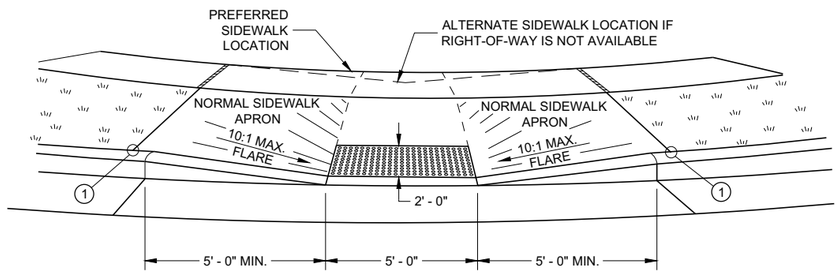
(CENTER OF CORNER RADIUS)



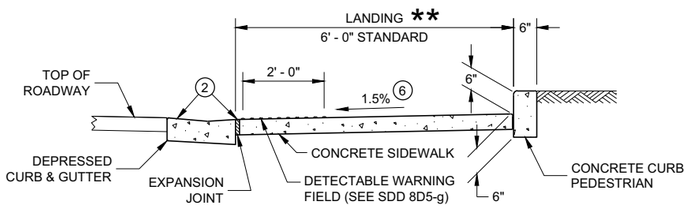
PLAN VIEW

CURB RAMP TYPE 1 - A

(NO TERRACE)

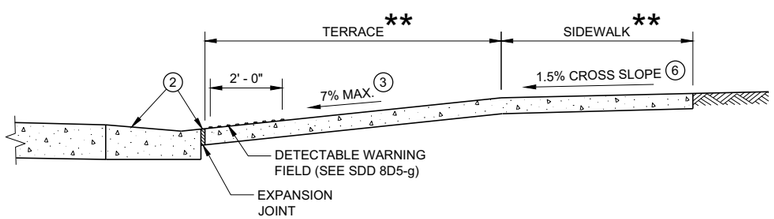


VIEW A - A FOR TYPE 1

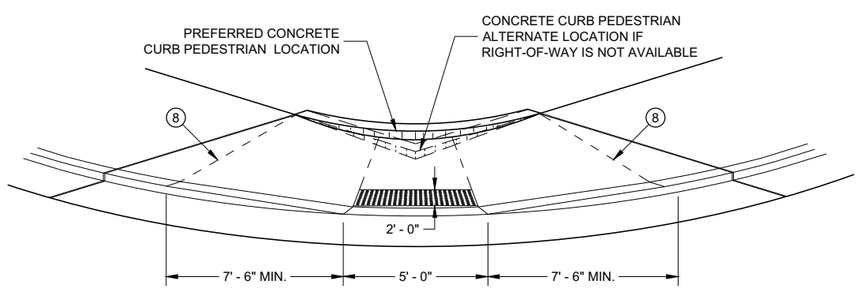


SECTION C - C FOR TYPE 1 - A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B - B FOR TYPE 1



VIEW D - D FOR TYPE 1 - A

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 CURB RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FILED SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAR FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD"

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

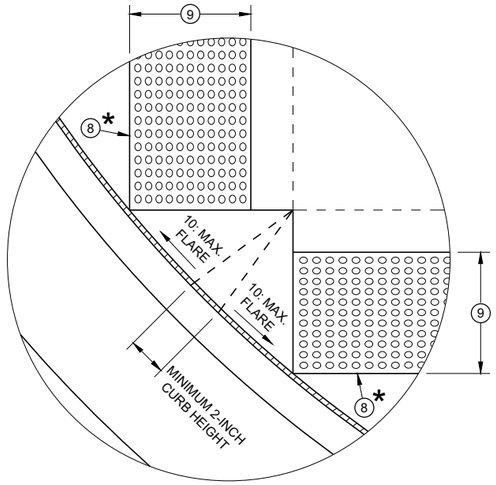
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPE 1 AND 1-A

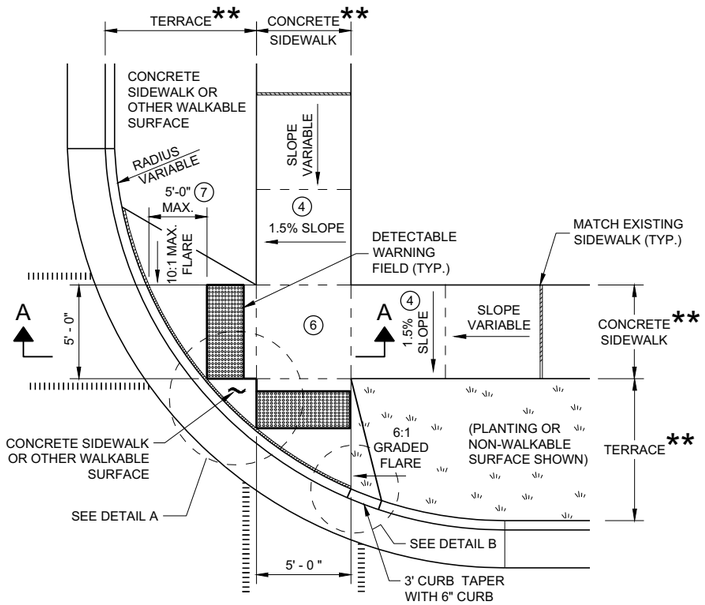
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 08D05 - 20a



DETAIL A



PLAN VIEW
CURB RAMP TYPE 2
(CENTER OF CORNER RADIUS)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.

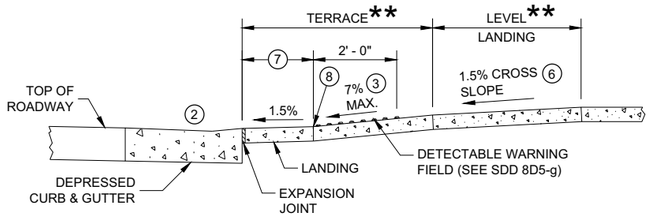
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.

(7) WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

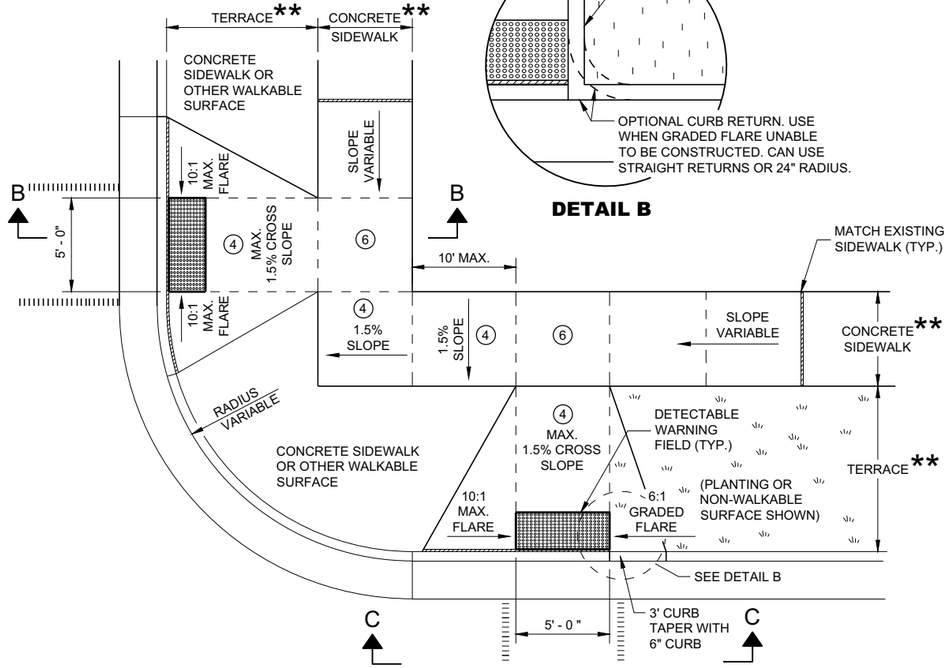
(9) WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.



SECTION A - A FOR TYPE 2

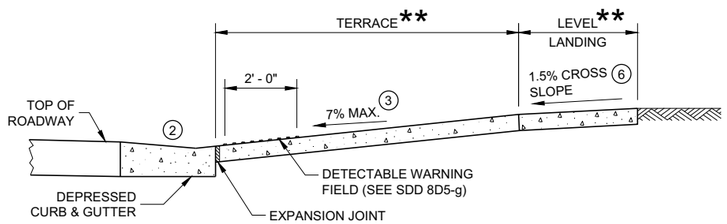
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS



DETAIL B

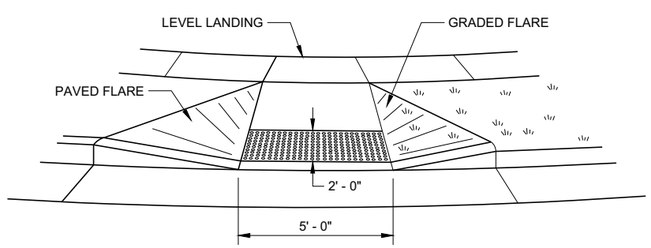
PLAN VIEW
CURB RAMP TYPE 3
(OUTSIDE OF CROSSWALK AREA)



SECTION B - B FOR TYPE 3

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)



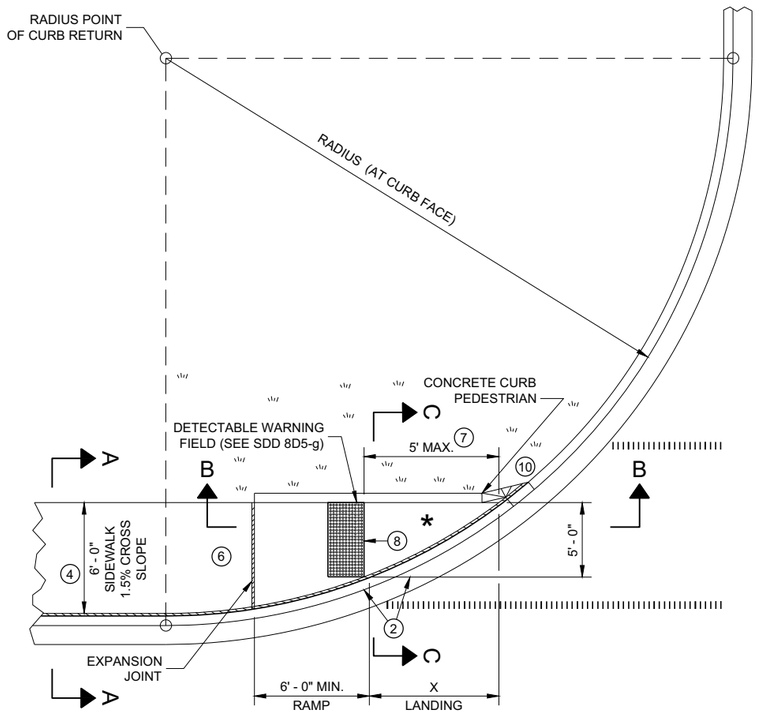
VIEW C - C FOR TYPE 3

CURB RAMPS TYPE 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 08D05 - 20b

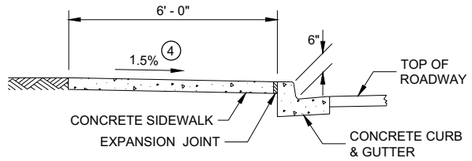


PLAN VIEW

CURB RAMP TYPE 4A

RADIUS (AT CURB FACE)	X
10 FEET	4' - 7"
15 FEET	6' - 5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A - A FOR TYPE 4A

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

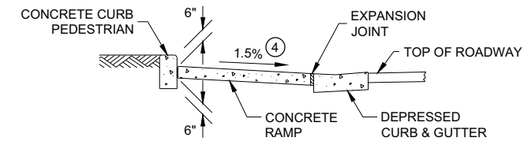
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

LEGEND

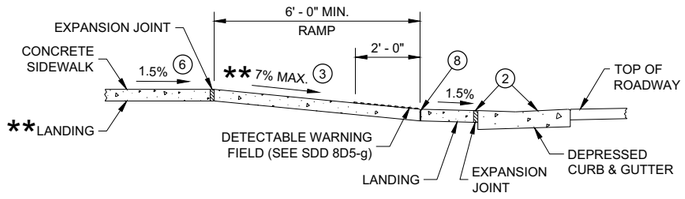
½" EXPANSION JOINT SIDEWALK

CONTRACTION JOINT SIDEWALK

PAVEMENT MARKING CROSSWALK (WHITE)



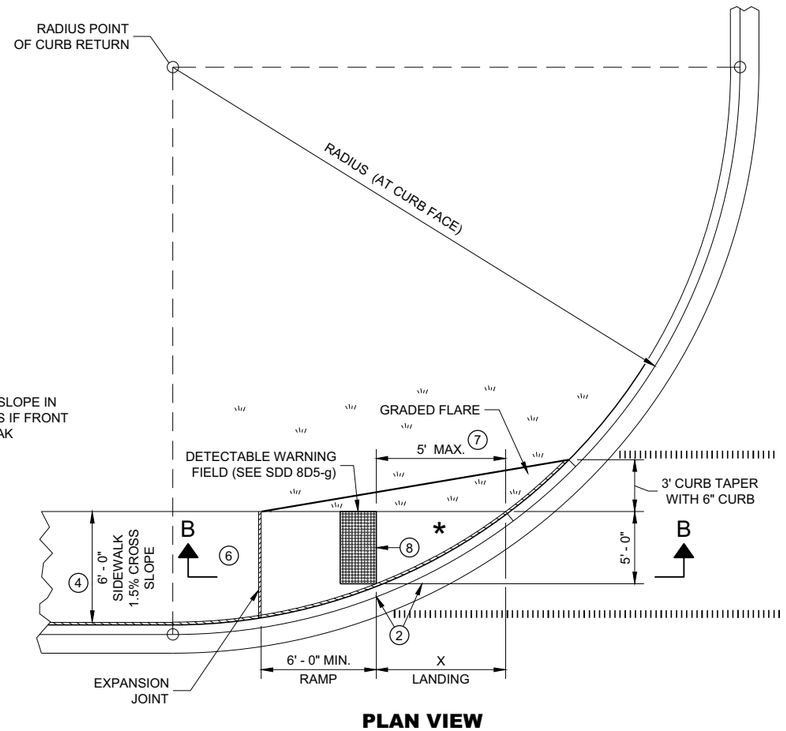
SECTION C - C FOR TYPE 4A



SECTION B - B FOR TYPE 4A AND TYPE 4A1

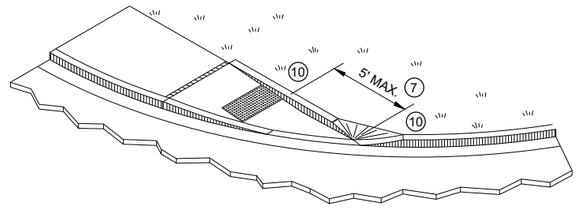
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

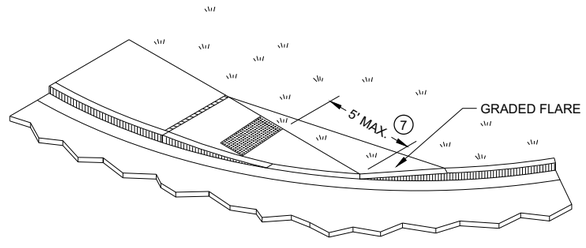


PLAN VIEW

CURB RAMP TYPE 4A1



ISOMETRIC VIEW FOR TYPE 4A



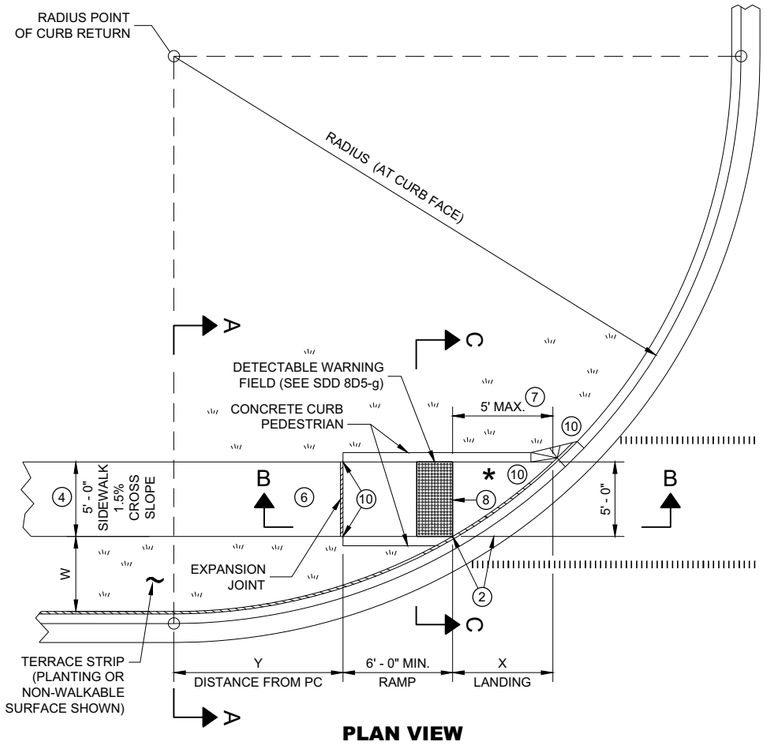
ISOMETRIC VIEW FOR TYPE 4A1

CURB RAMPS
TYPE 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 08D05 - 20c



PLAN VIEW

CURB RAMP TYPE 4B

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2' - 10 ¼"	0' - 5"	2' - 1"	1' - 4 ½"	1' - 5"	2' - 1"	0' - 10"	2' - 7 ½"	0' - 3 ¼"	3' - 0 ¼"						
15 FEET	4' - 6 ¾"	2' - 1 ¾"	3' - 9"	3' - 5 ¾"	3' - 1 ¼"	4' - 6"	2' - 6 ¾"	5' - 4 ½"	2' - 1"	6' - 1"	1' - 8"	6' - 8 ½"	1' - 3 ¼"	7' - 2 ½"	0' - 10 ¾"	7' - 7 ¼"
20 FEET	5' - 9 ¾"	3' - 6 ½"	4' - 11 ½"	5' - 1 ¾"	4' - 3 ¼"	6' - 5 ½"	3' - 8 ¾"	7' - 7"	3' - 3"	8' - 6 ½"	2' - 10"	9' - 4 ½"	2' - 5 ½"	10' - 1 ¼"	2' - 1 ¼"	10' - 9"
30 FEET			6' - 9 ¼"	7' - 11 ¼"	6' - 0 ¼"	9' - 8"	5' - 5"	11' - 1 ¾"	4' - 10 ¾"	12' - 5 ¾"	4' - 5 ½"	13' - 7 ¾"	4' - 0 ¾"	14' - 8 ½"	3' - 8 ½"	15' - 8 ¼"
40 FEET									6' - 1 ¾"	15' - 8 ½"	5' - 8"	17' - 2"	5' - 3"	18' - 5 ¾"	4' - 10 ¾"	19' - 8 ¼"
50 FEET															5' - 10 ¼"	23' - 2"

INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

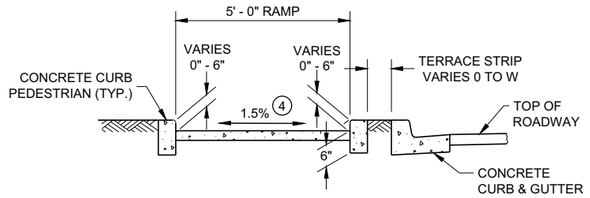
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

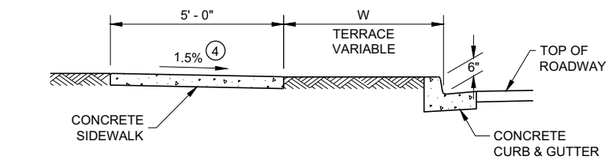
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

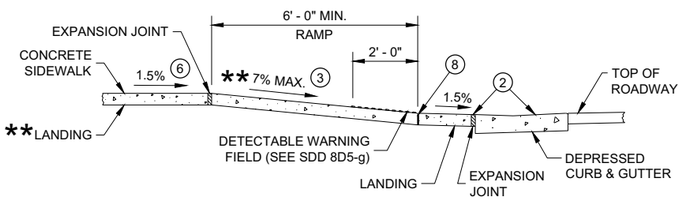
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



SECTION C - C FOR TYPE 4B



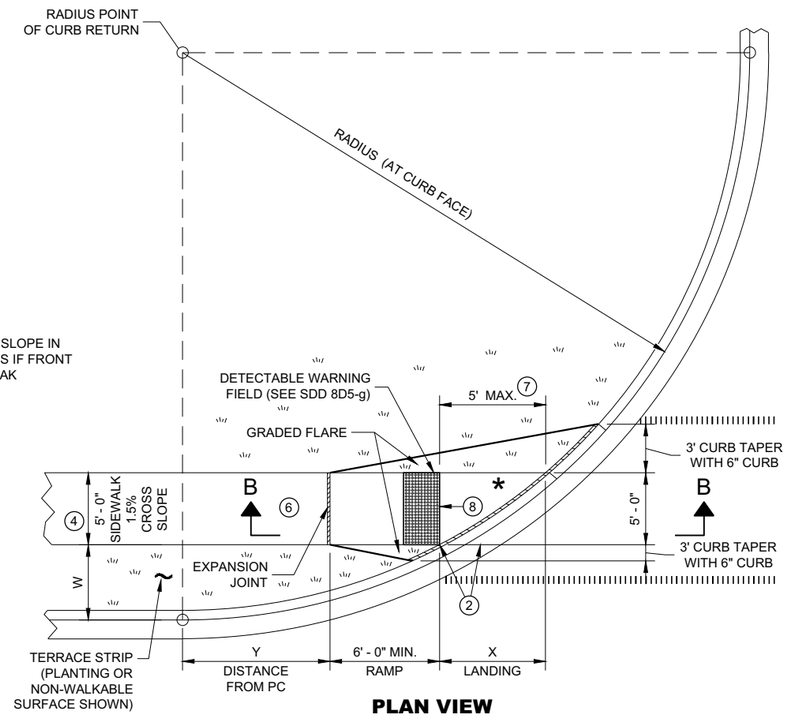
SECTION A - A FOR TYPE 4B



SECTION B - B FOR TYPE 4B AND TYPE 4B1

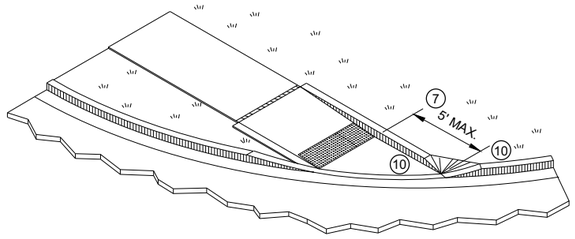
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

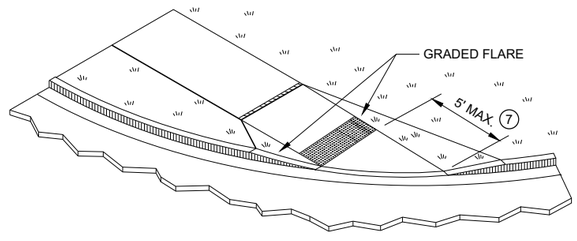


PLAN VIEW

CURB RAMP TYPE 4B1



ISOMETRIC VIEW FOR TYPE 4B



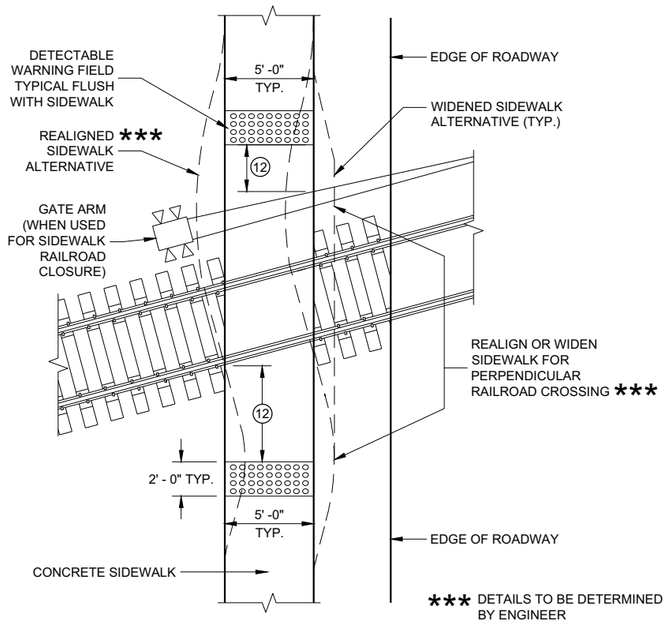
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

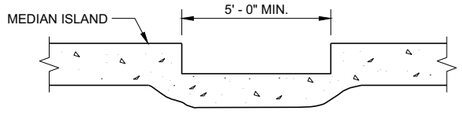
6

SDD 08D05 - 20d

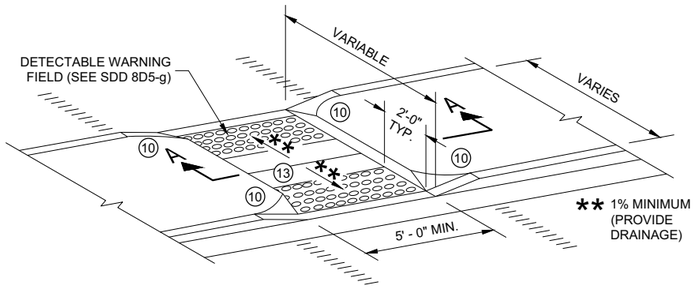


CURB RAMP TYPE 8

DETECTABLE WARNINGS AT RAILROAD CROSSING



SECTION A - A FOR TYPE 5



CURB RAMP TYPE 5

MEDIAN ISLAND NON-ELEVATED PEDESTRIAN CROSSING

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

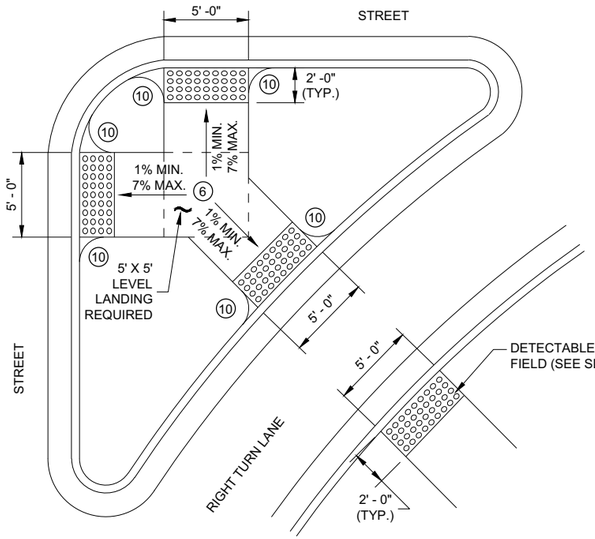
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

LEGEND

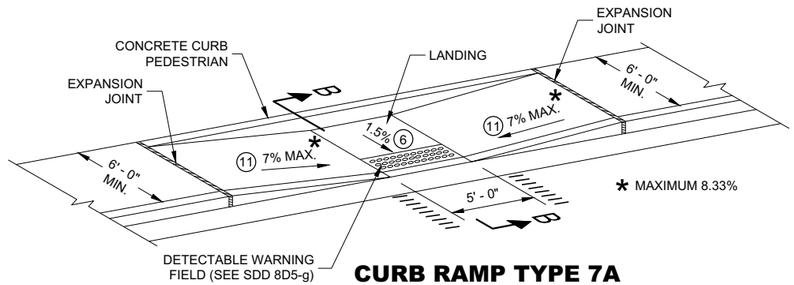
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)



CURB RAMP TYPE 6

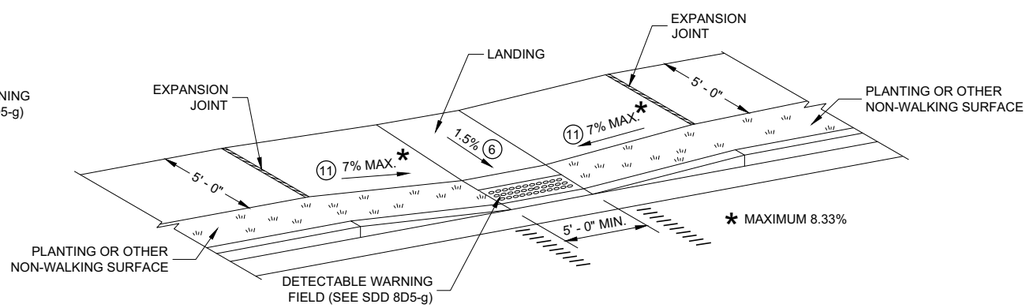
DETECTABLE WARNING AT ISLANDS

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



CURB RAMP TYPE 7A

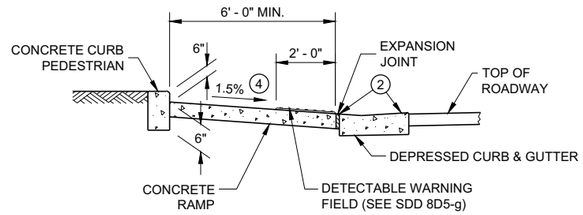
MID BLOCK CROSSING



CURB RAMP TYPE 7B

MID BLOCK CROSSING

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.



SECTION B - B FOR TYPE 7A

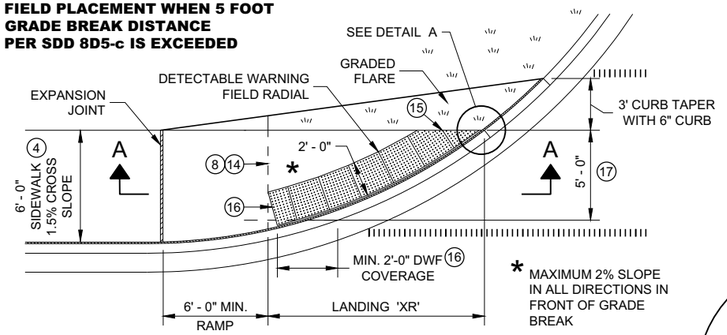
CURB RAMPS TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D05 - 20e

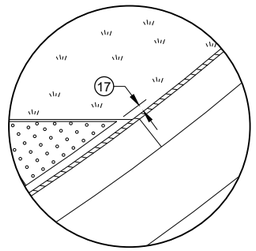
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED



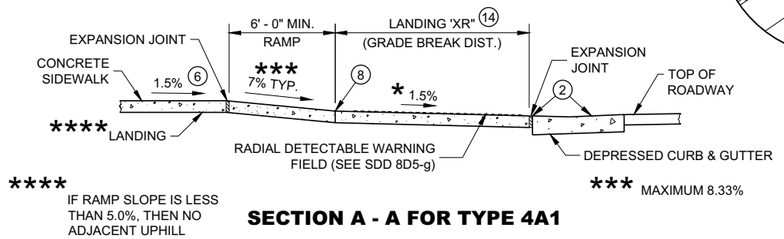
PLAN VIEW

CURB RAMP TYPE 4A1

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



DETAIL A

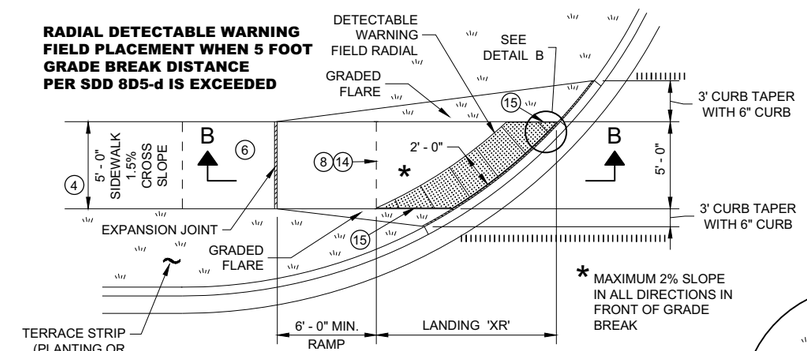


**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

SECTION A - A FOR TYPE 4A1

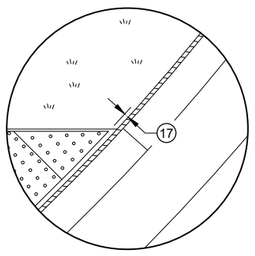
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



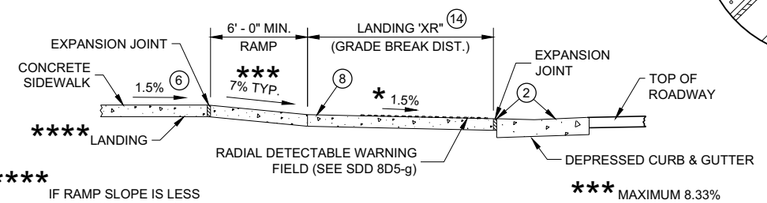
PLAN VIEW

CURB RAMP TYPE 4B1

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



DETAIL B



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

SECTION B - B FOR TYPE 4B1

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AD ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

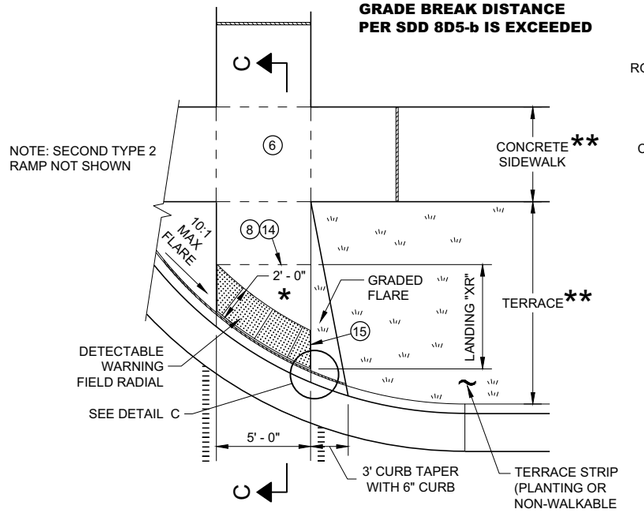
(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

(17) A MAXIMUM 3 INCH CONCRETE BORDER WITH IS ALLOWABLE IN FROM OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-b IS EXCEEDED

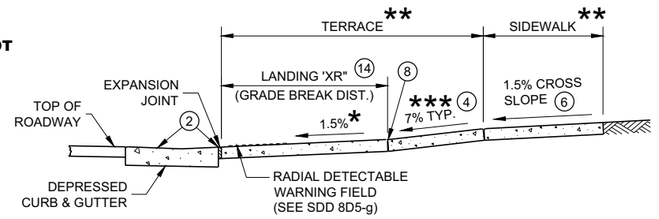


PLAN VIEW

CURB RAMP TYPE 2

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

(ON LINE WITH SIDEWALK)

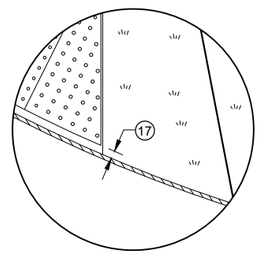


SECTION C - C FOR TYPE 2

* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** MAXIMUM 8.33%



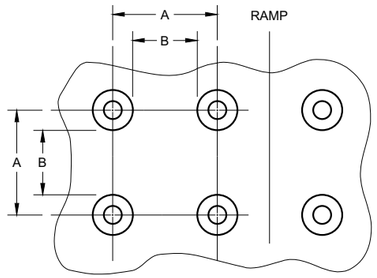
DETAIL C

CURB RAMPS
RADIAL DETECTABLE WARNING FIELD APPLICATIONS

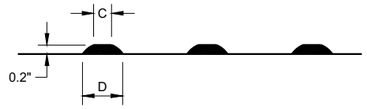
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

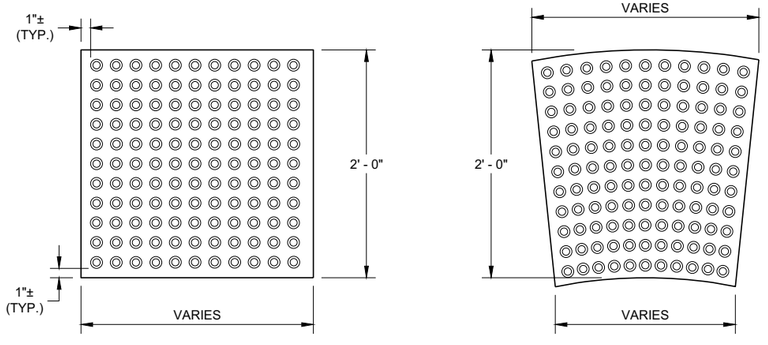


PLAN VIEW



ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



RECTANGULAR PLATES

RADIAL PLATES

PLAN VIEW
DETECTABLE WARNING FIELDS (TYPICAL)

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

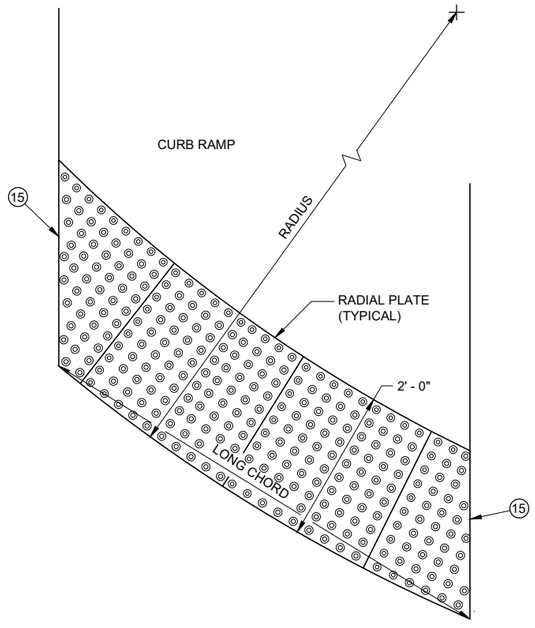
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGE PLATES IN COMBINATION WITH SQUARE PLATES ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

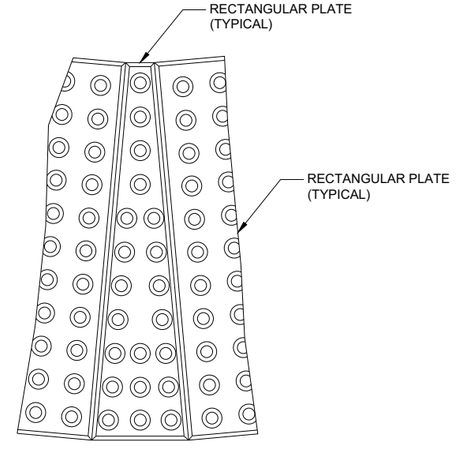
REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.



PLAN VIEW
RADIAL DETECTABLE WARNING FIELD ATTRIBUTES



PLAN VIEW
RADIAL WEDGE PLATE CONNECTION DETAIL

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

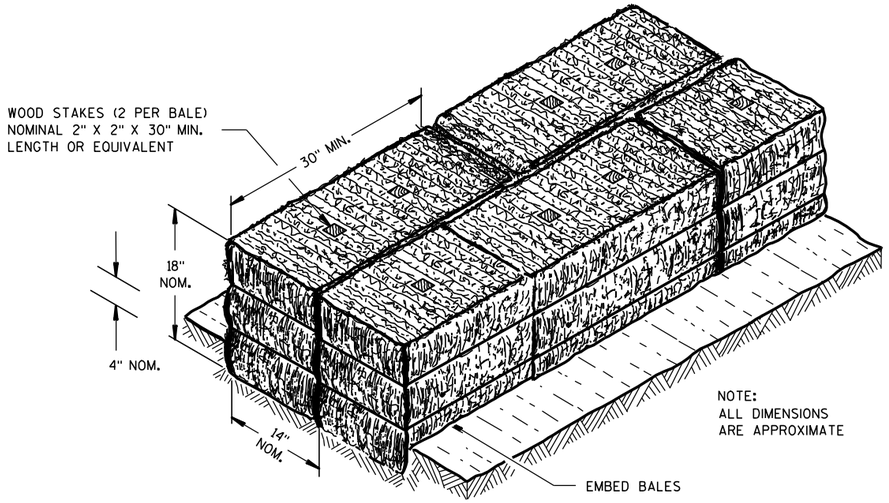
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR

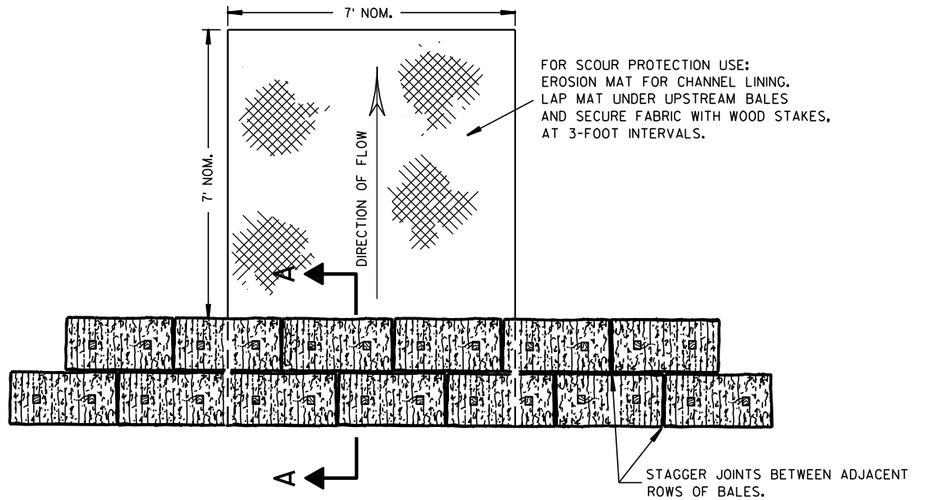
FHWA

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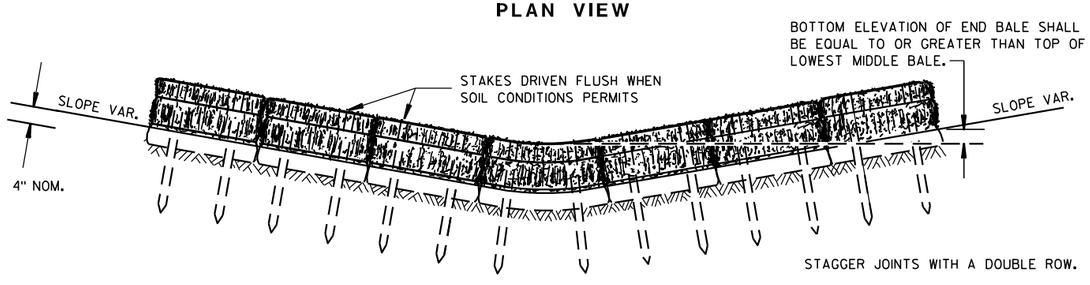
SDD 08D05 - 20g



SECTION A-A



PLAN VIEW



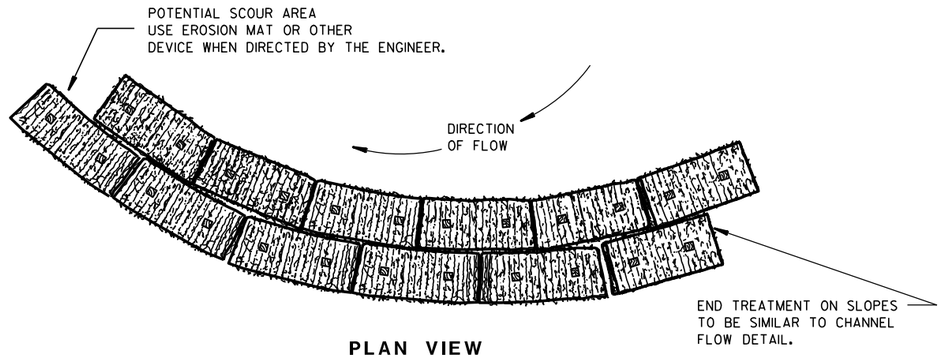
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

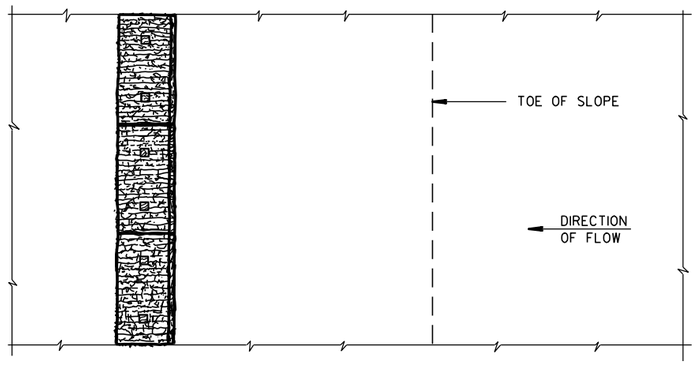
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

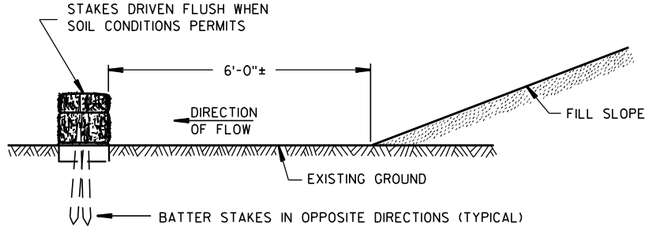


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

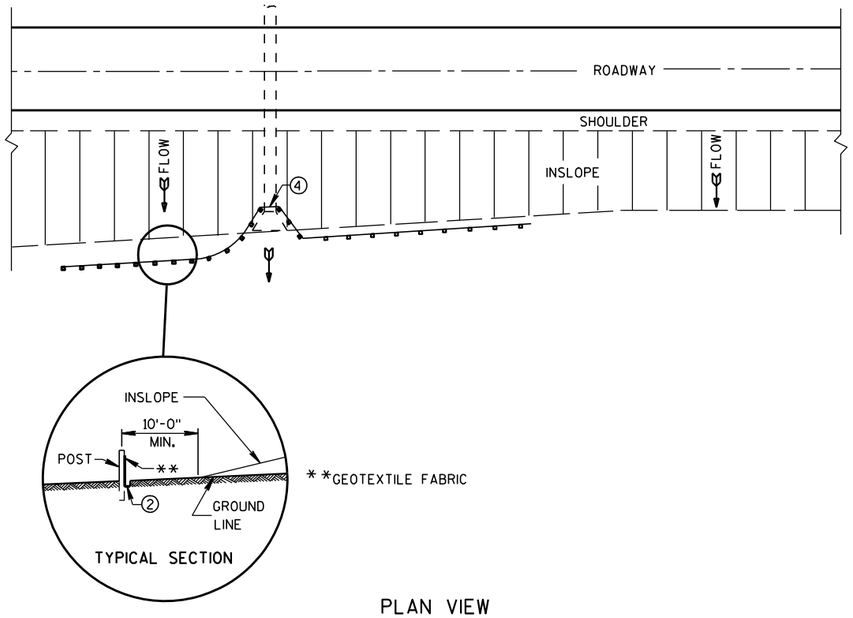
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 — DATE

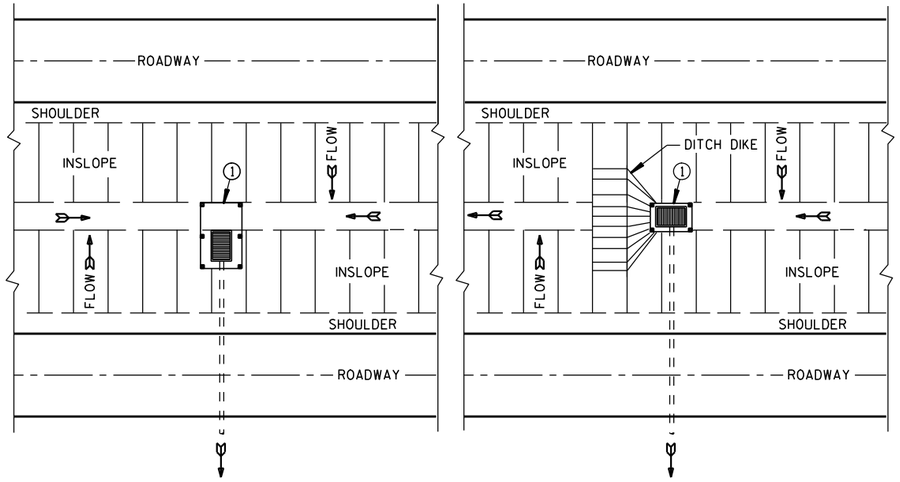
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



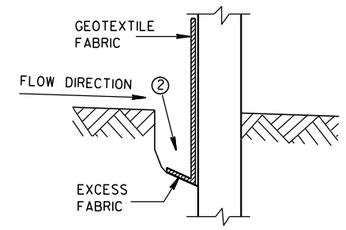
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

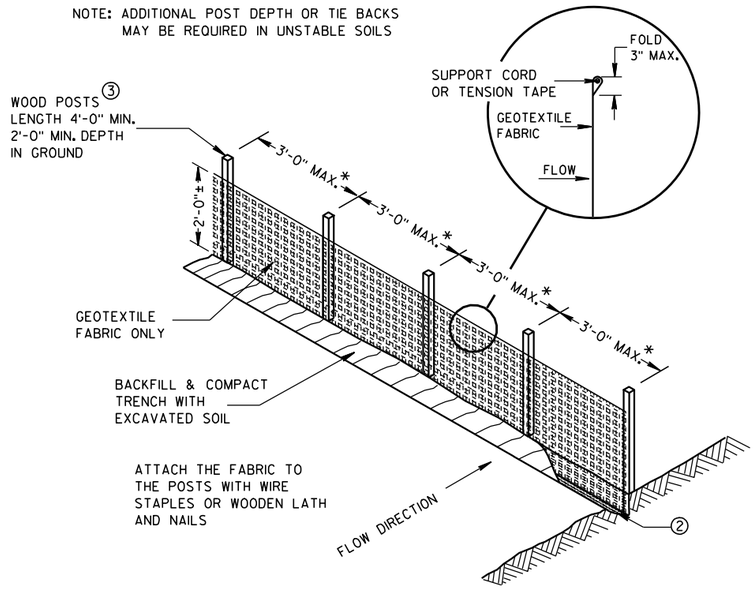
GENERAL NOTES

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

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

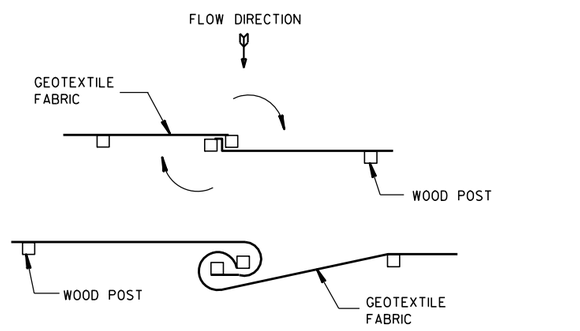


TRENCH DETAIL

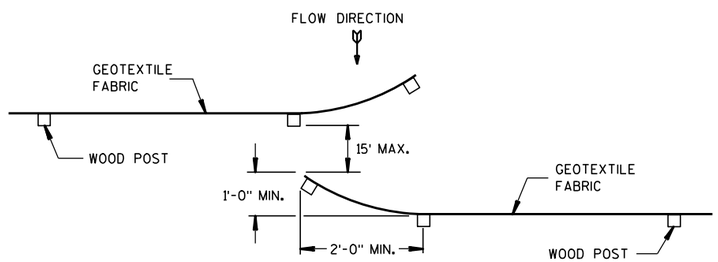


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

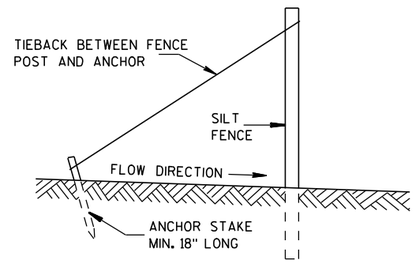


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

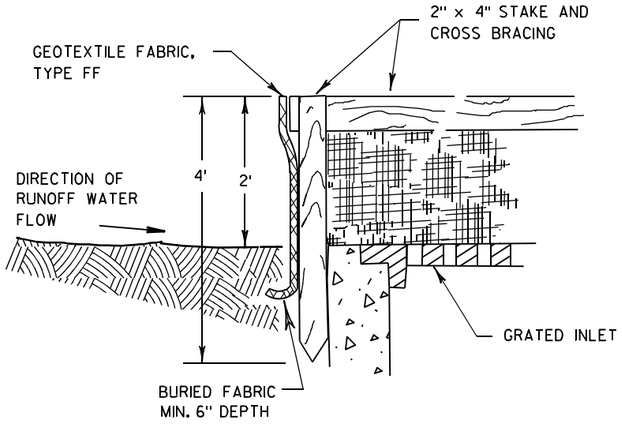
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

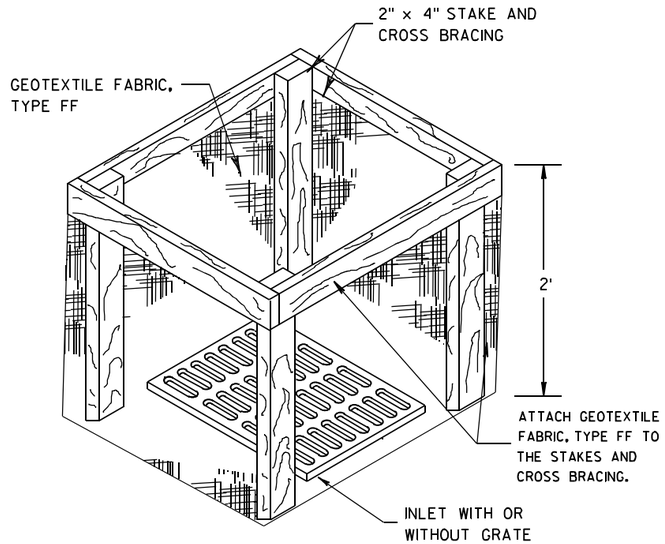
6

S.D.D. 8 E 9-6

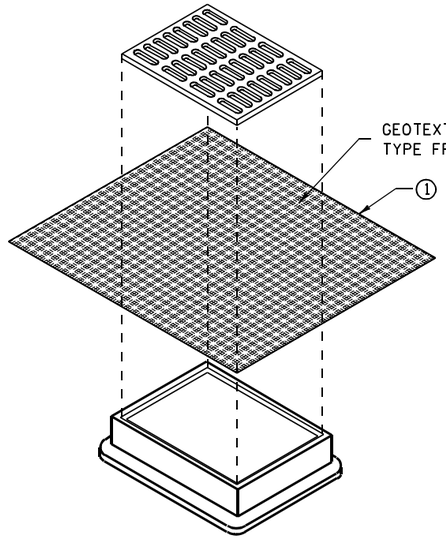
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S.D.D. 8 E 9-6



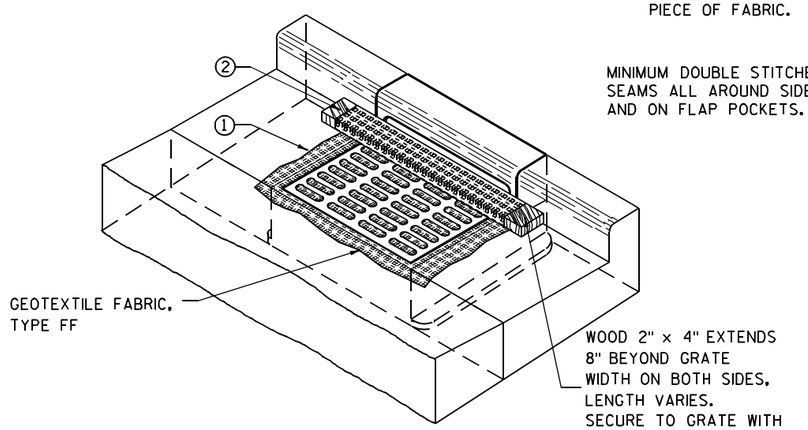


INLET PROTECTION, TYPE A

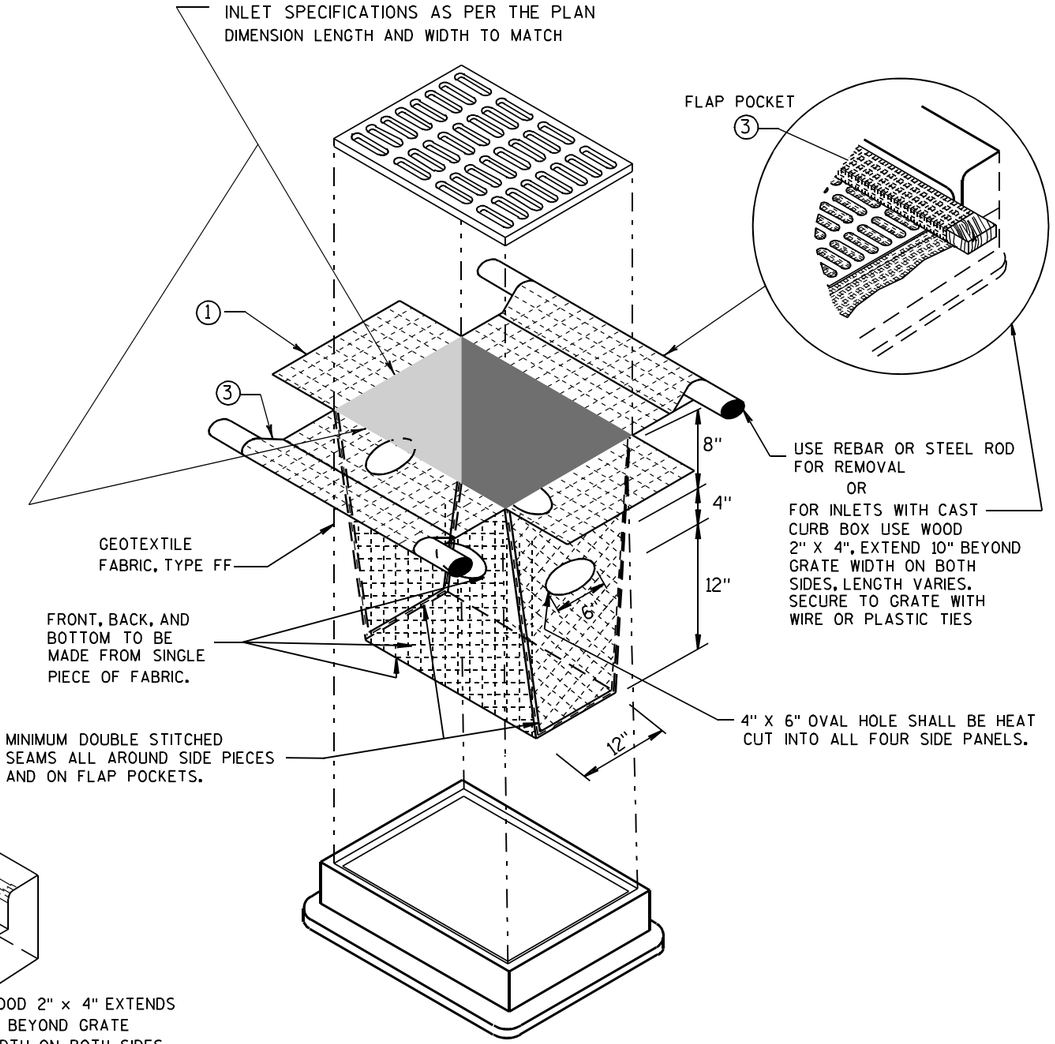


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

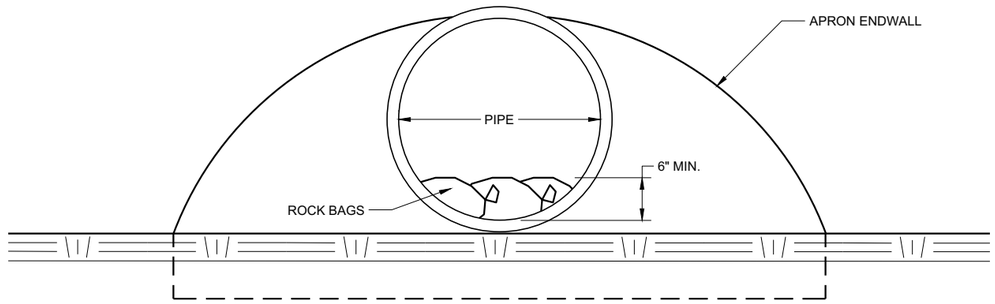
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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

INLET PROTECTION
TYPE A, B, C, AND D

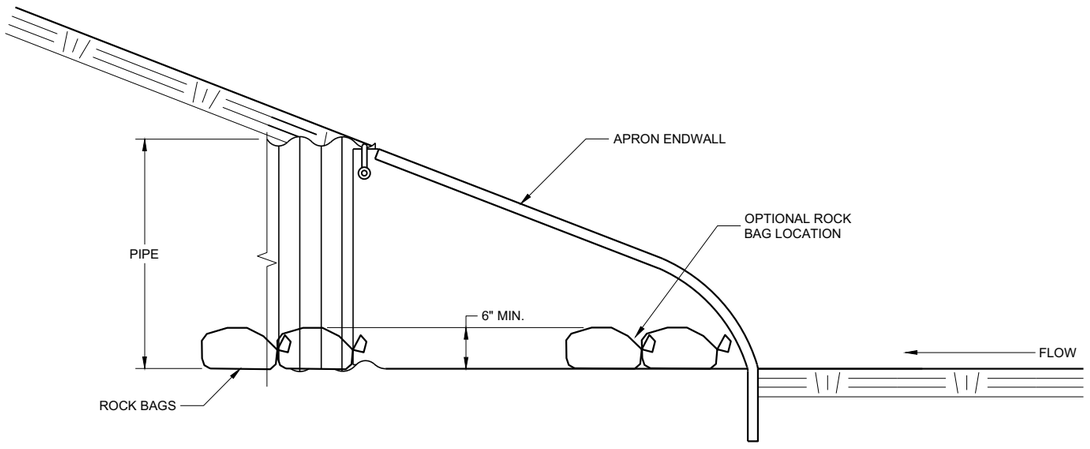
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 E 10-2



END VIEW



SIDE VIEW

CULVERT PIPE CHECK

(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI
FHWA	

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SDD 08E15 - 01

METAL APRON ENDWALLS

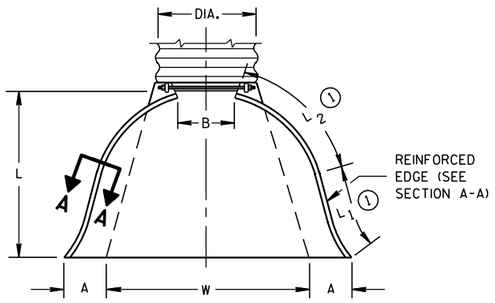
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

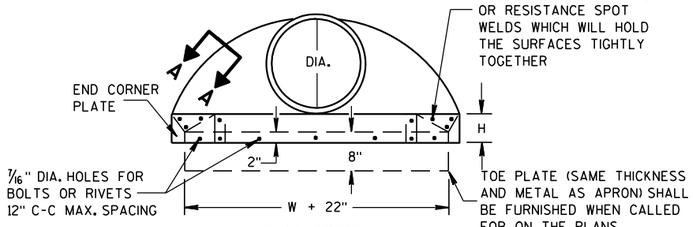
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	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 2/5 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

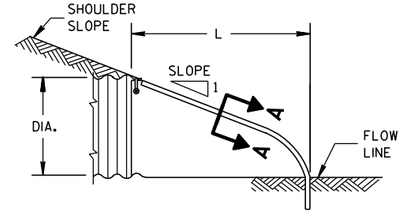
*MINIMUM
**MAXIMUM



PLAN VIEW

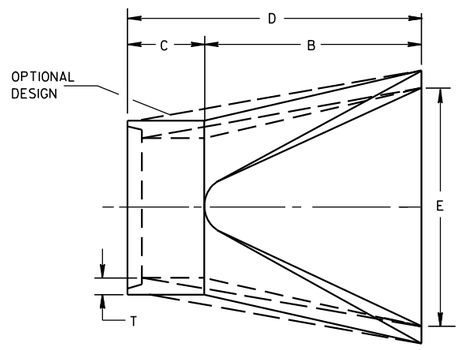


END VIEW

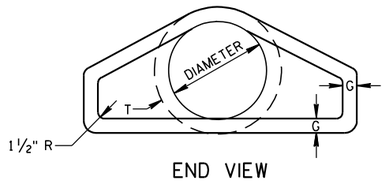


SIDE ELEVATION

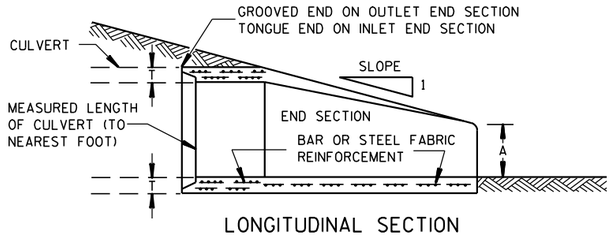
METAL ENDWALLS



PLAN

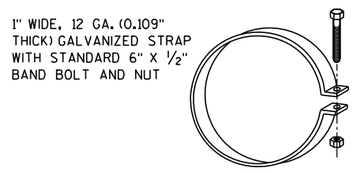


END VIEW



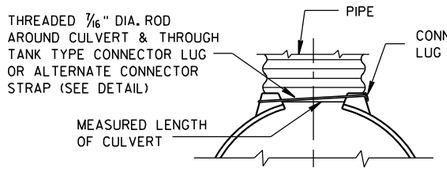
LONGITUDINAL SECTION

CONCRETE ENDWALLS

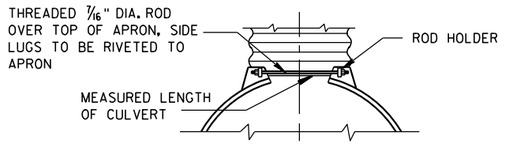


ALTERNATE FOR TYPE 1 CONNECTION

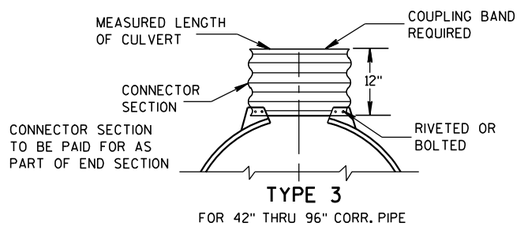
END SECTION CONNECTOR STRAP



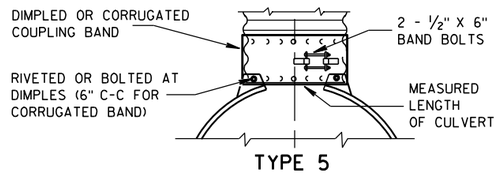
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

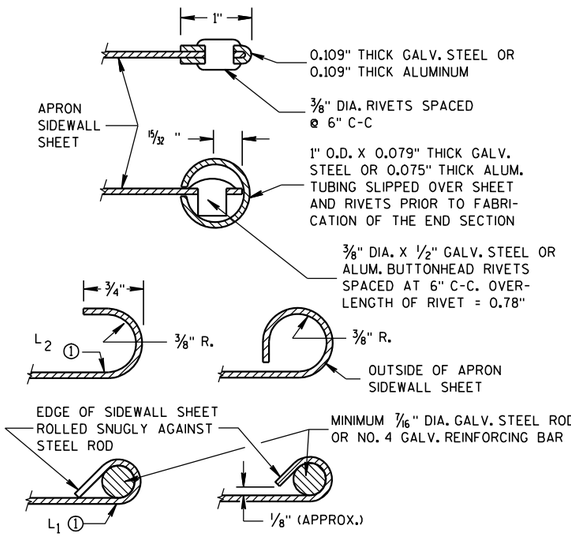
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

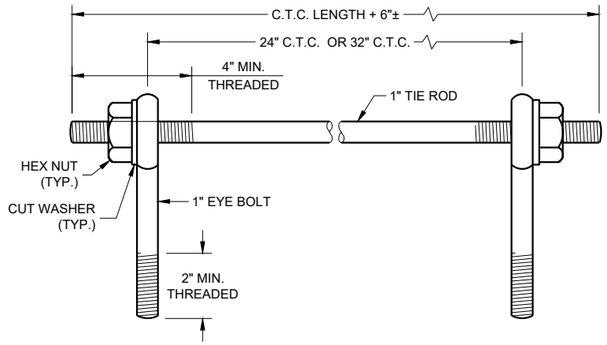
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

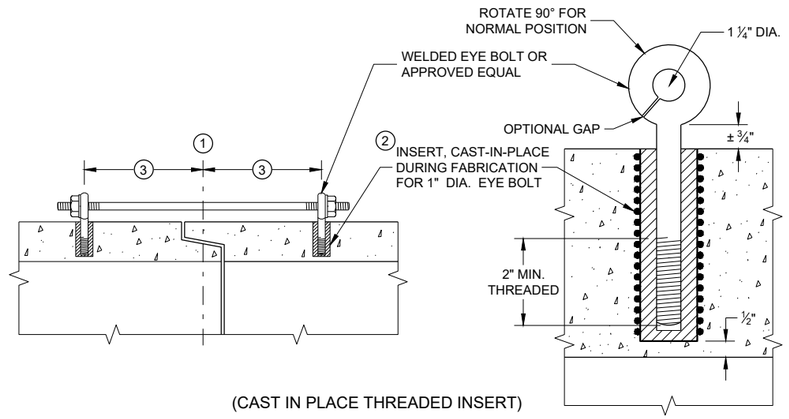
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

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

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

(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.

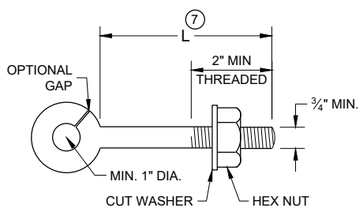
(3) HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.

(4) BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

(5) OPENING TO BE ROD DIAMETER PLUS 1 INCH.

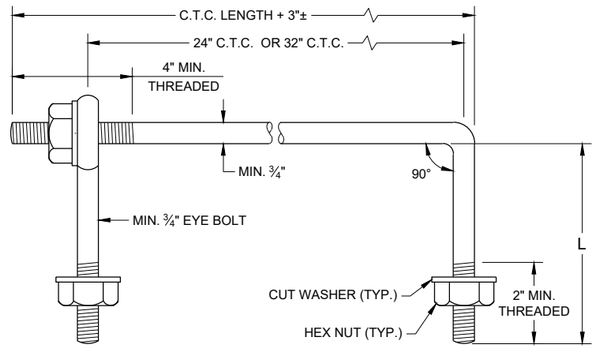
(6) LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.

(7) EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

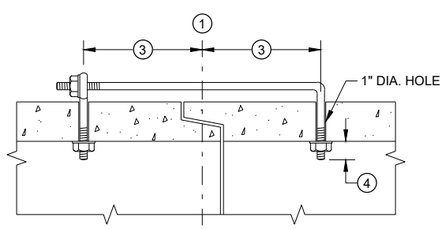


EYE BOLT (7)

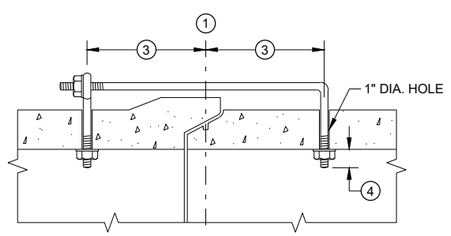
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

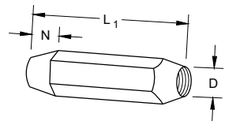
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

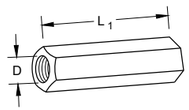
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12 - 60	⅝	⅝	5	½
66 - 84	¾	¾	5	½
90 - 144	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES



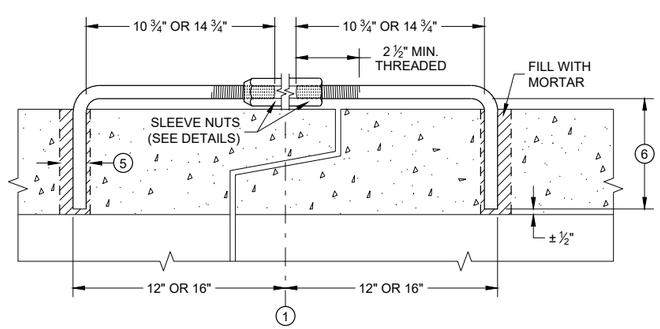
TAPERED



PLAIN

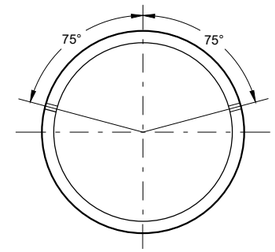
RIGHT AND LEFT THREADS

SLEEVE NUTS



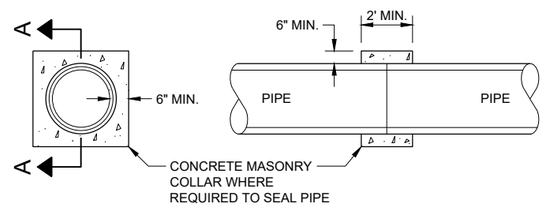
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

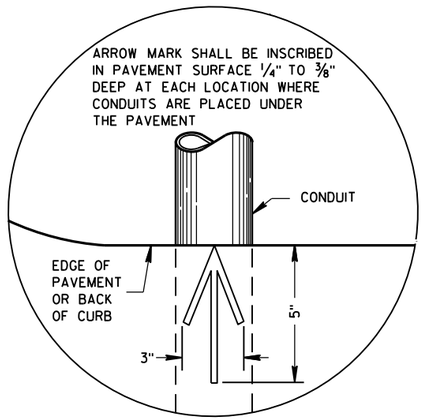
JOINT TIES FO CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

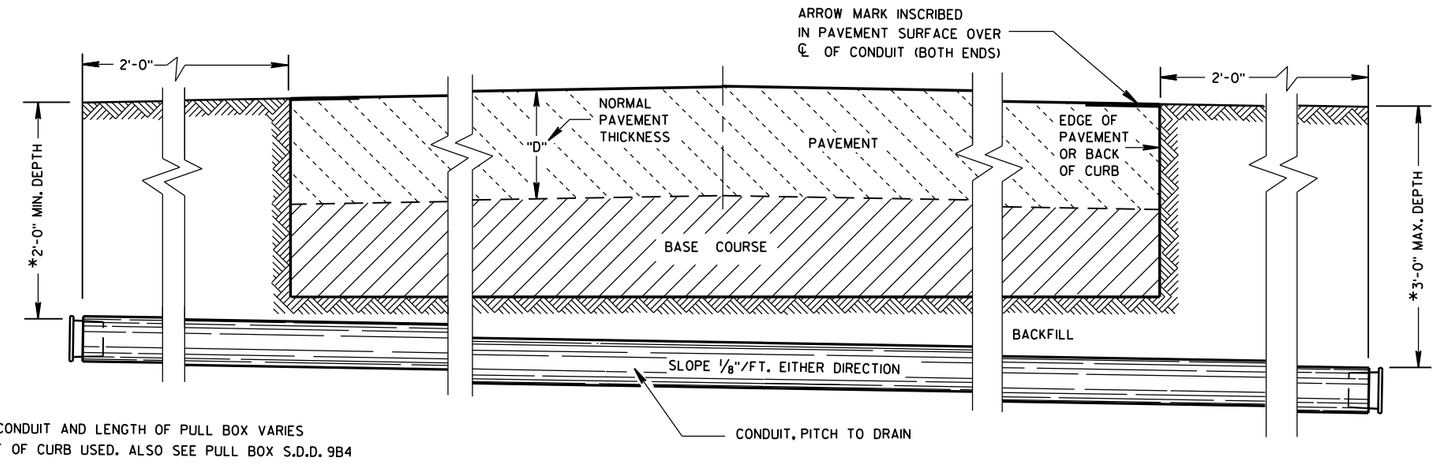
SDD 08F04 - 08

SDD 08F04 - 08



PLAN VIEW

ARROW MARK



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

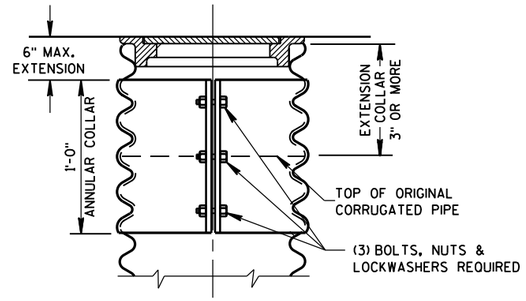
S.D.D. 9 B 2-10

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

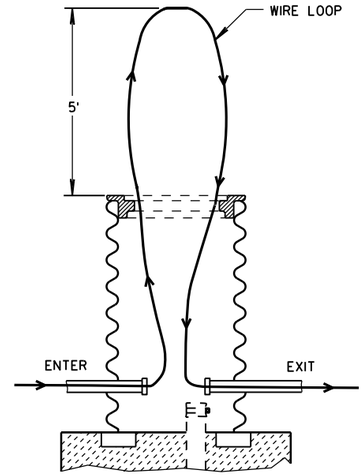
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
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.

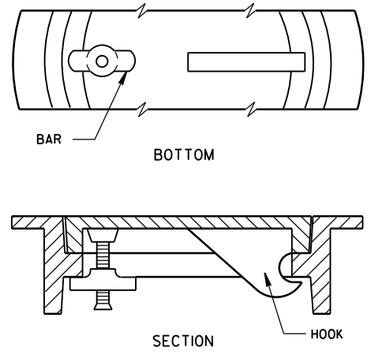
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

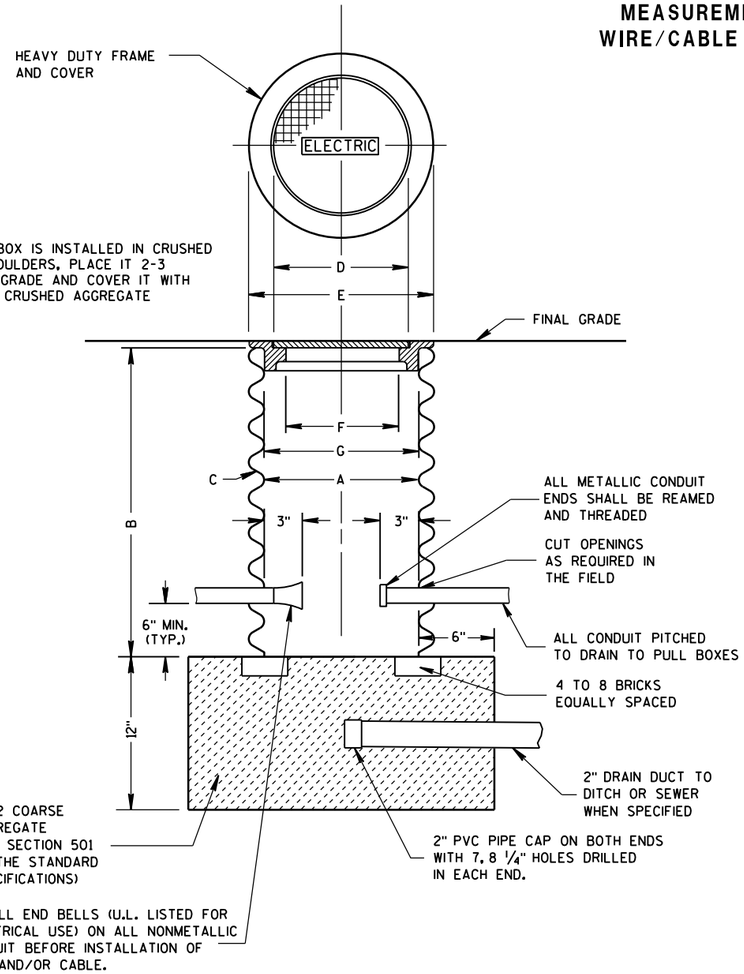


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



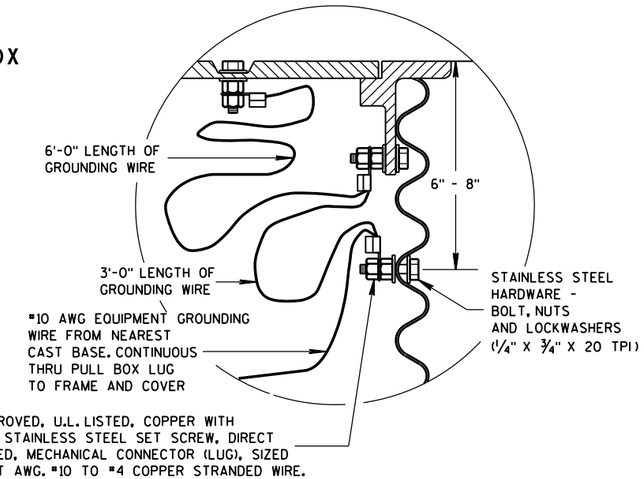
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE



WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

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.

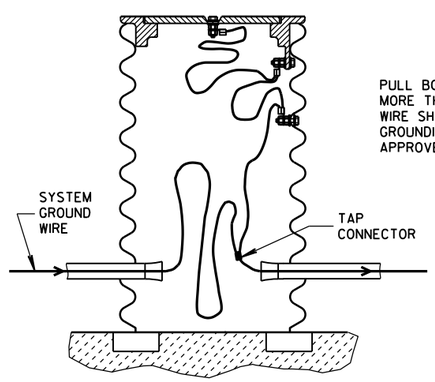
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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.



PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

PULL BOX

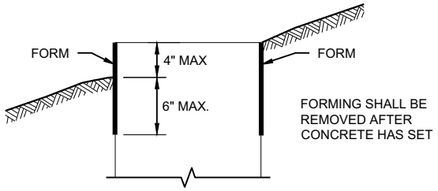
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 B 4-11

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

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWINGSHALL 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 A THE ENTRANCE OF THE BASE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FRO 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.

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.

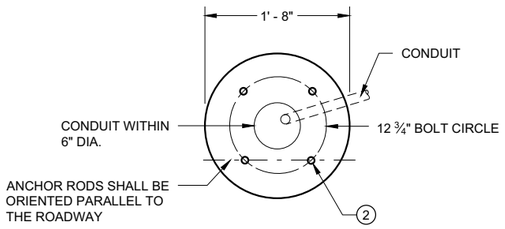
WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

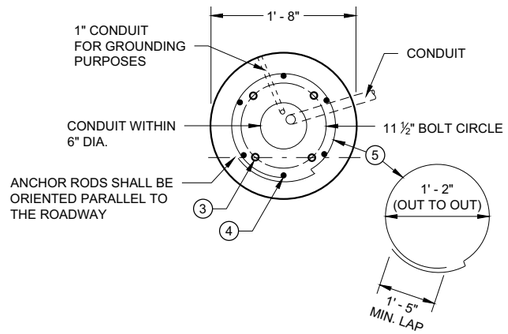
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH"L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

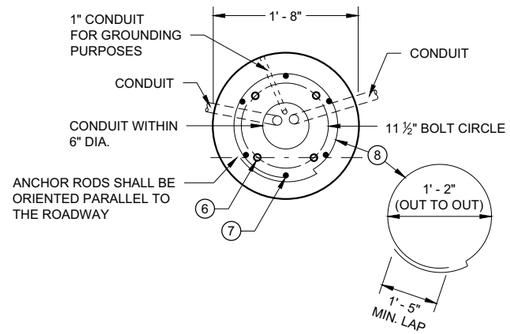
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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 STELL REINFORCEMENT @ 1' - 0" C -C.

(9) EXOTHERMIC CONNECTION TO EUIPMENT GROUNDING CONDUCTOR

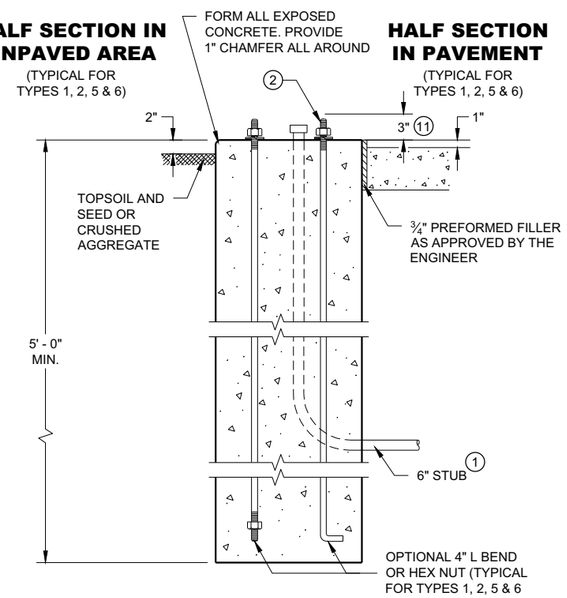
(10) ⅝" DIA. X 8' -0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED

(11) ANY ANCHOR ROD PROJECTION SHORTER THAN 2 ¾" OR LONGER THAN 3 ¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

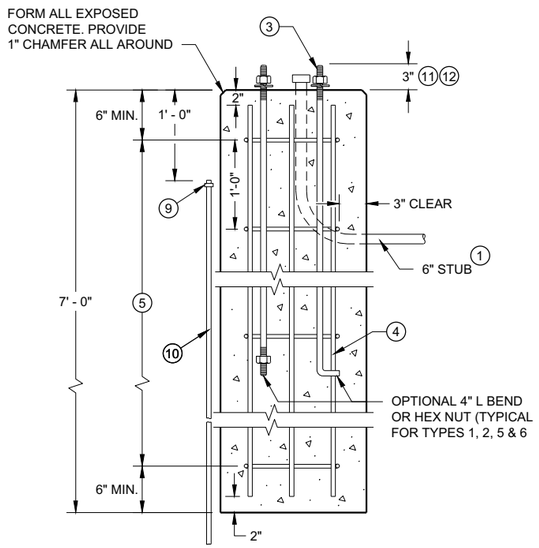
(12) FOR NON - BREAKAWAY INSTALLATIONS, 4 ½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2, 5 & 6)

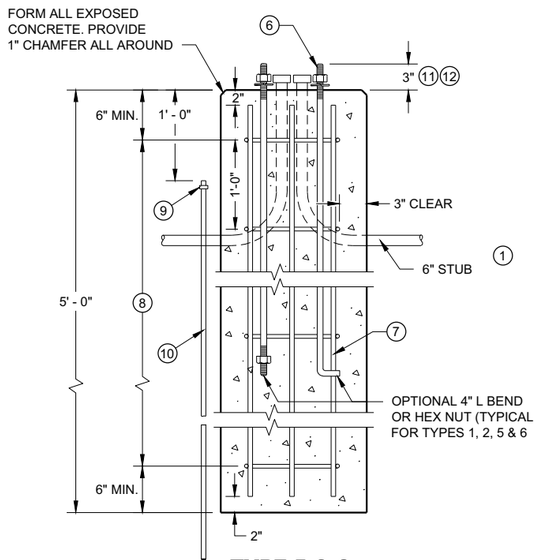
HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2, 5 & 6)



TYPE 1



TYPE 2



TYPE 5 & 6

CONCRETE BASES

CONCRETE BASES TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

FHWA

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.

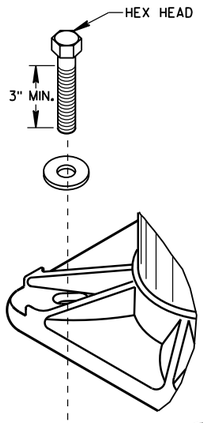
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

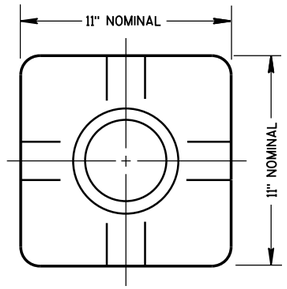
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

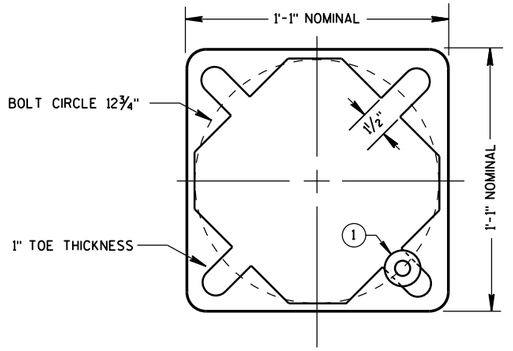
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

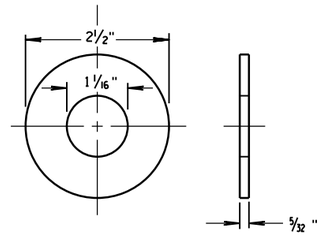




TOP VIEW
(PEDESTAL BASE)

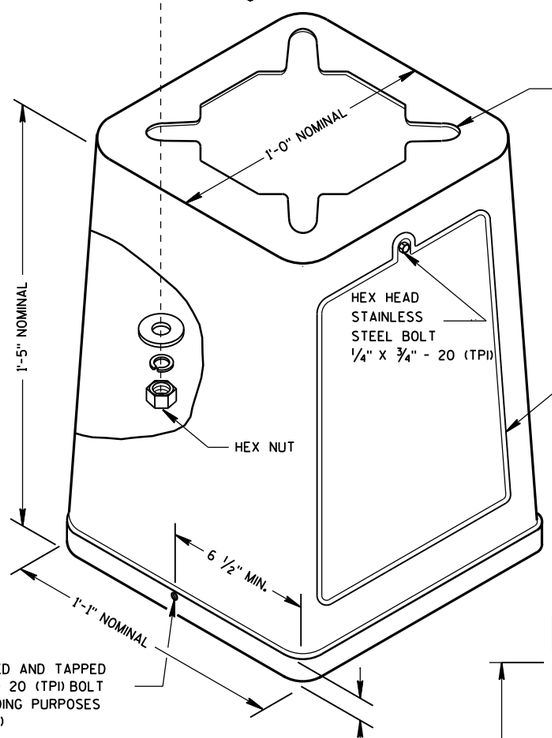


BOTTOM VIEW
(PEDESTAL BASE)

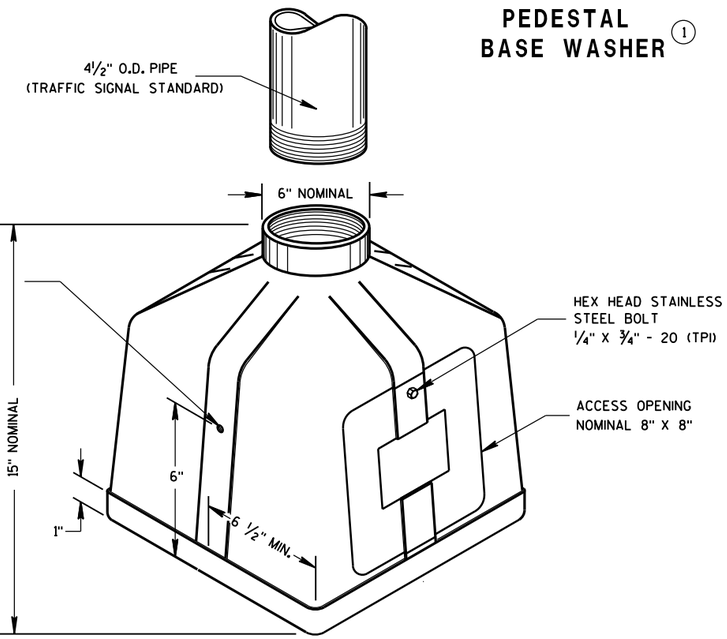


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

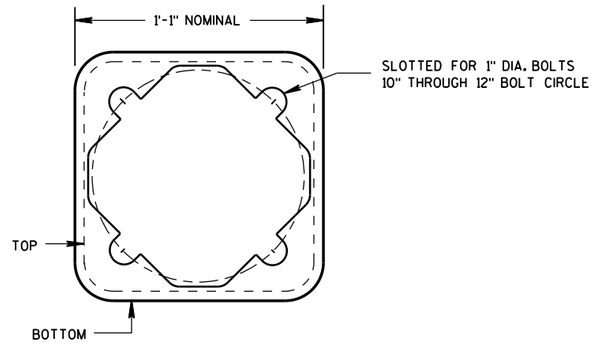


ISOMETRIC VIEW

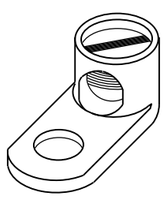


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

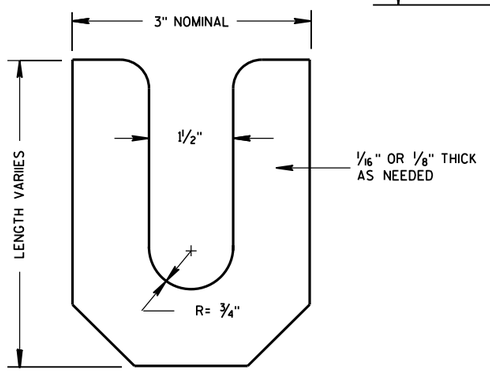


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 C 3-4

GENERAL NOTES

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 AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS 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.

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4 INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL END INSTALLED. ALL CONDUIT SHALL BE SLOPED TO PULL BOX.

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

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

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

WHEN REQUIRED TO CONNECT NONMETALLIC 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).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL ENTER THE BASE 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.

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

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

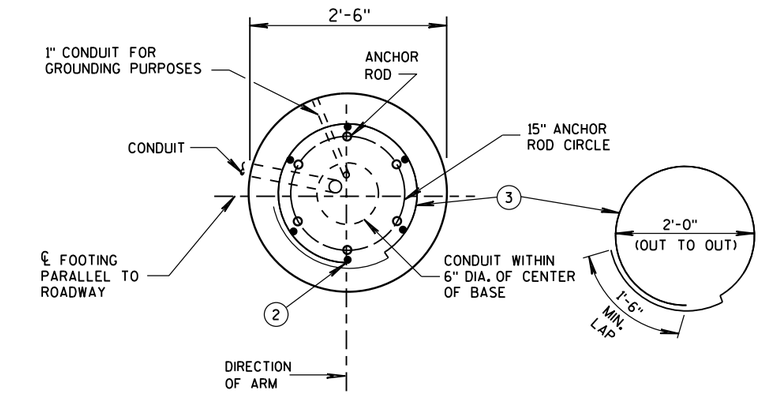
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

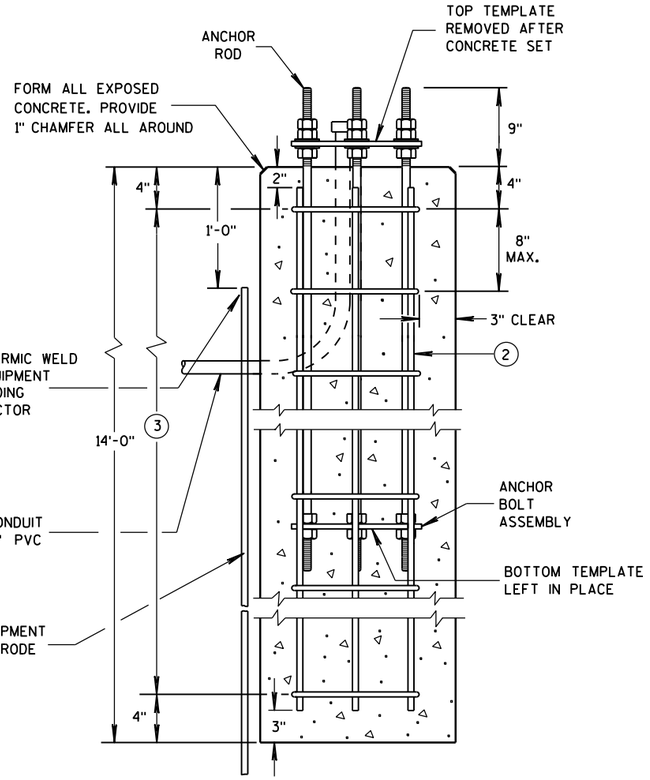
(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES, (GREATER THAN 36 INCHES IF INSTALLED IN BREAKER-RUN), EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) (6) NO. 6 X 13'-7" BAR STEEL REINFORCEMENT.

(3) (21) NO. 5 X 7'-10" BAR STEEL REINFORCEMENT @ 8" MAX. C-C.

CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION)	fy=55,000 p.s.i.
TEMPLATES, ASTM, A709 GRADE 36	fy=36,000 p.s.i.

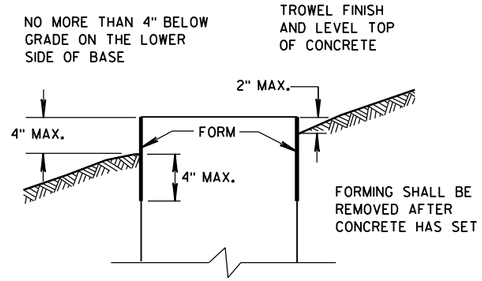




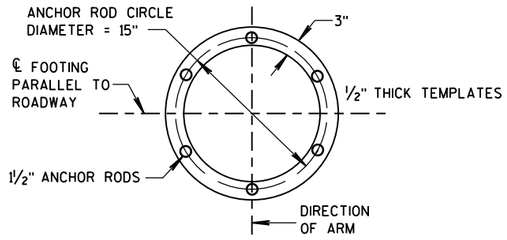
CONCRETE BASE TYPE 10

(FOR TYPE 9 & 10 & OVER HEIGHT (OH) POLES)

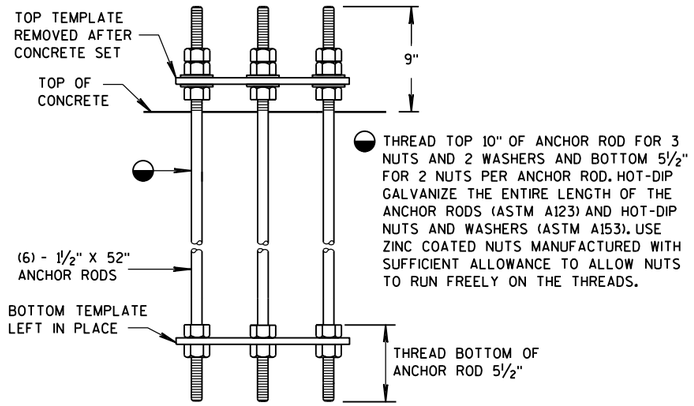
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 10 ANCHOR ASSEMBLY

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	172
LBS. OF VERTICAL BAR STEEL	122

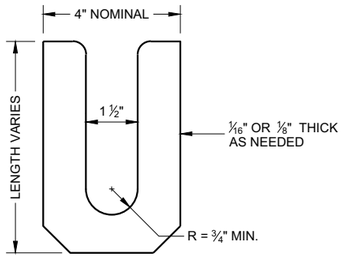
CONCRETE BASE TYPE 10

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

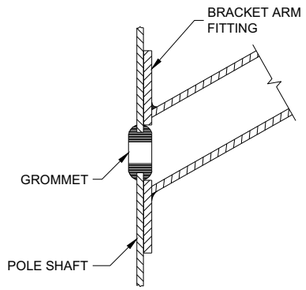
APPROVED
May 2017 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

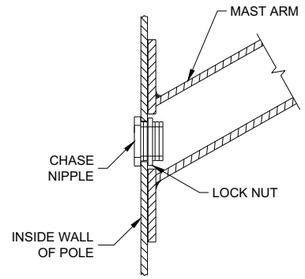
S.D.D. 9 C 11-10



LEVELING SHIM (1)
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.

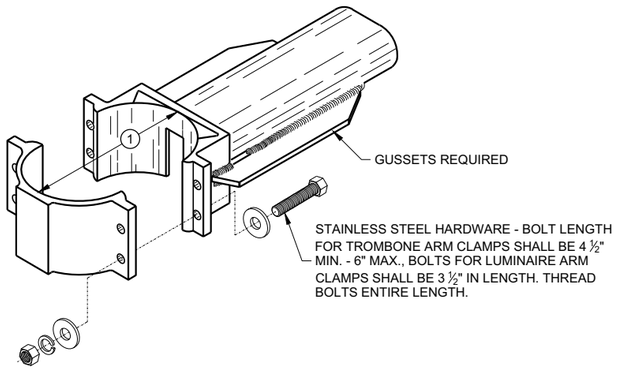
(1) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(2) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

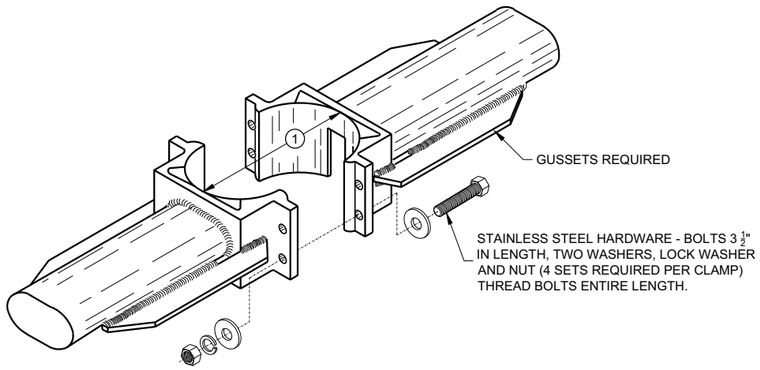
(3) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(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.

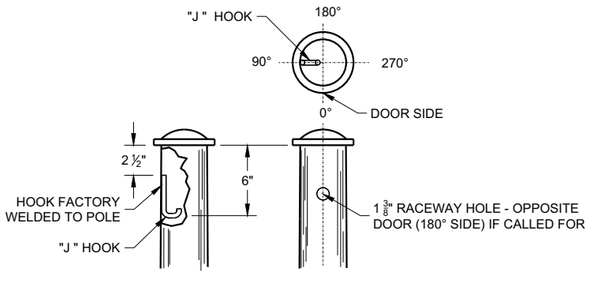
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



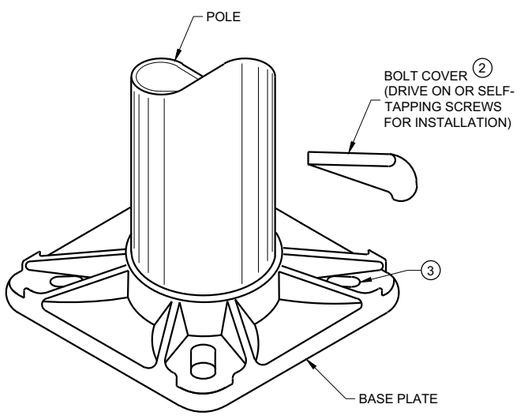
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



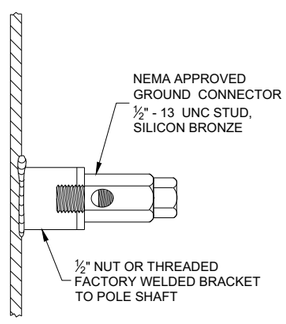
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

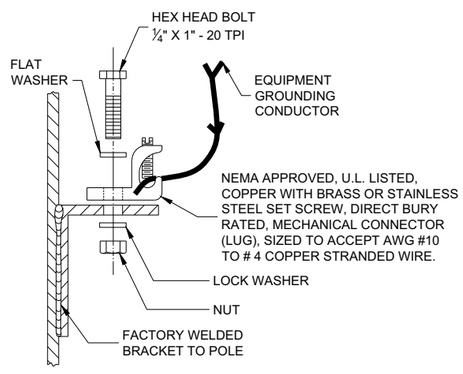


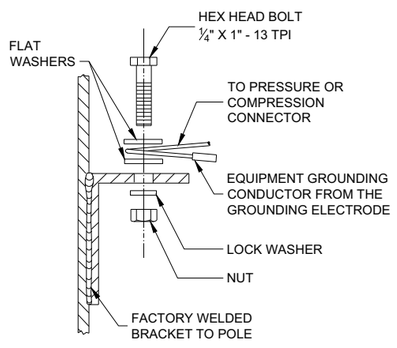
TYPICAL "J" HOOK LOCATION



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
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI 144

FHWA

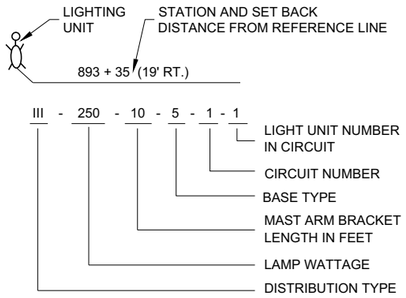
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SDD09A01 - 15g

GENERAL NOTES

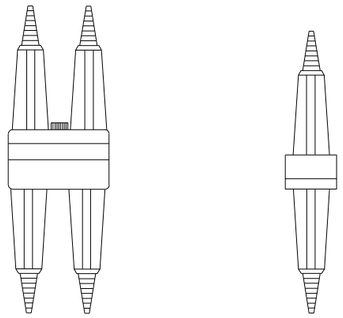
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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.

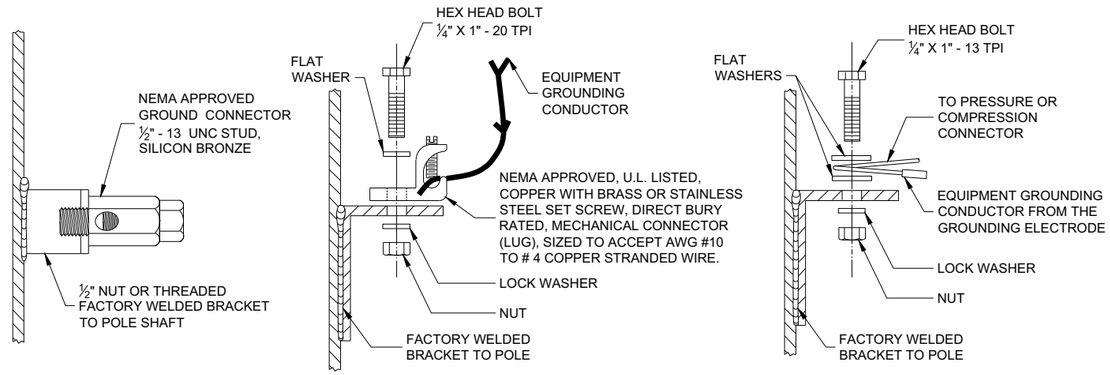


LIGHTING UNIT CODE
(TYPICAL)

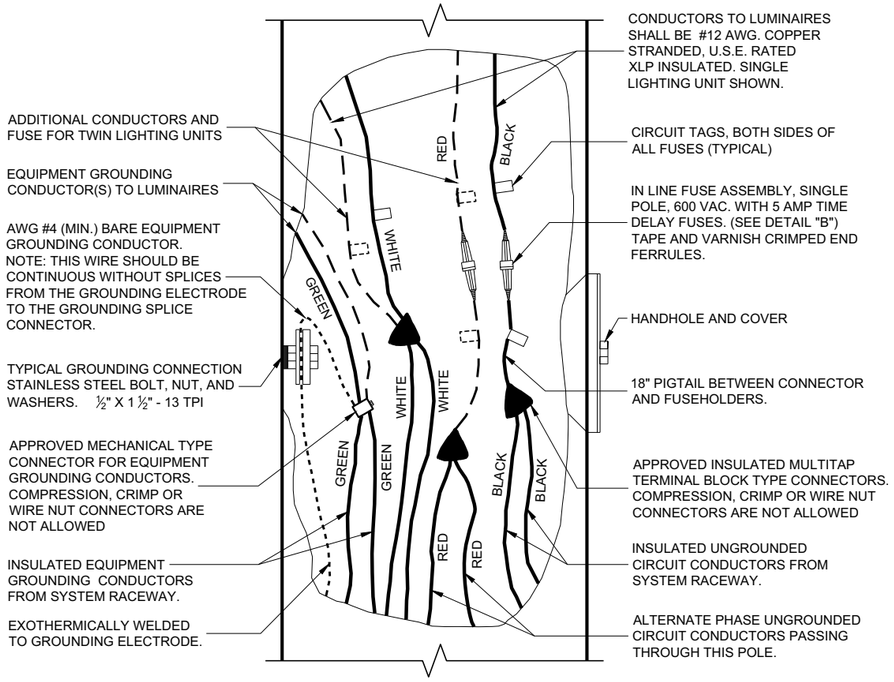


DETAIL "A"
BREAKAWAY DOUBLE POLE WITH WATERPROOF INSULATING BOOT

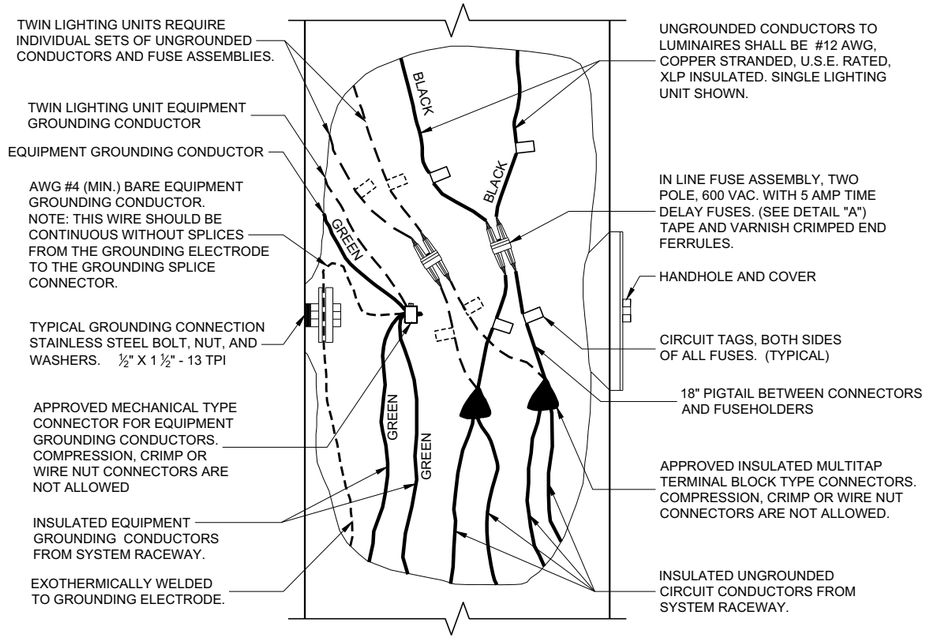
DETAIL "B"
BREAKAWAY SINGLE POLE WITH WATERPROOF INSULATING BOOT



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



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



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
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

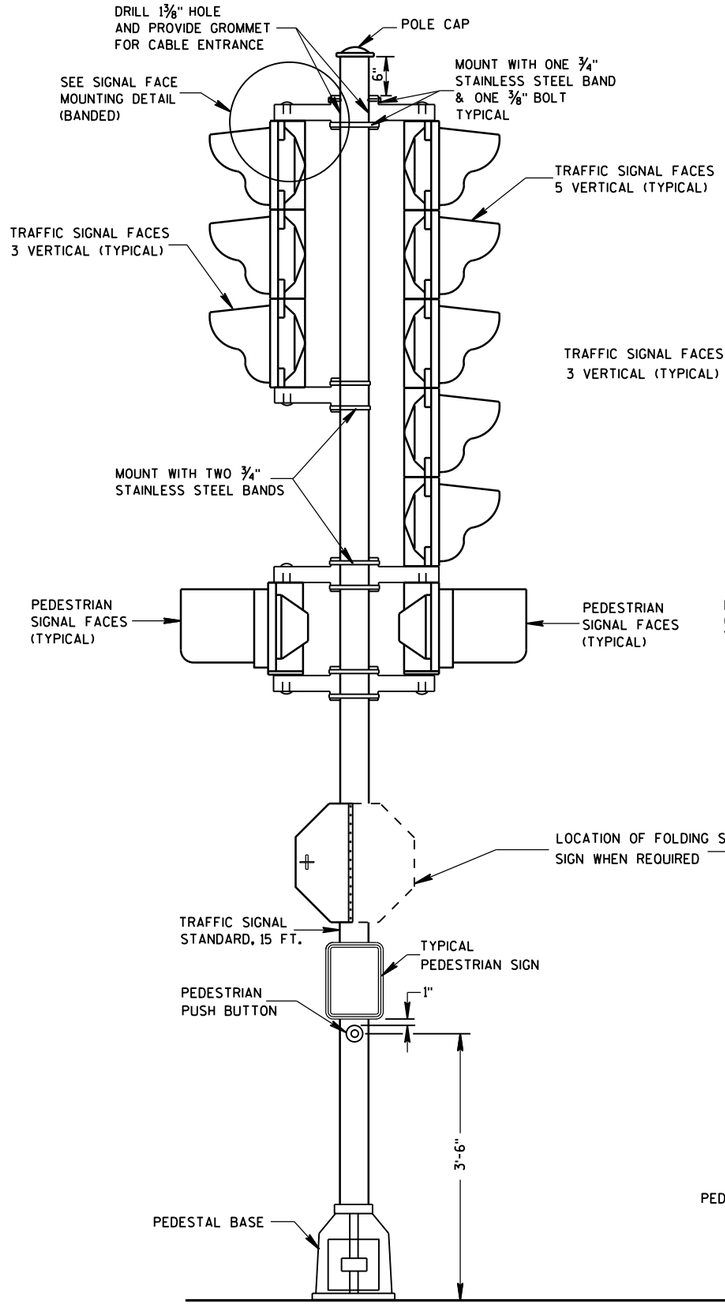
FHWA

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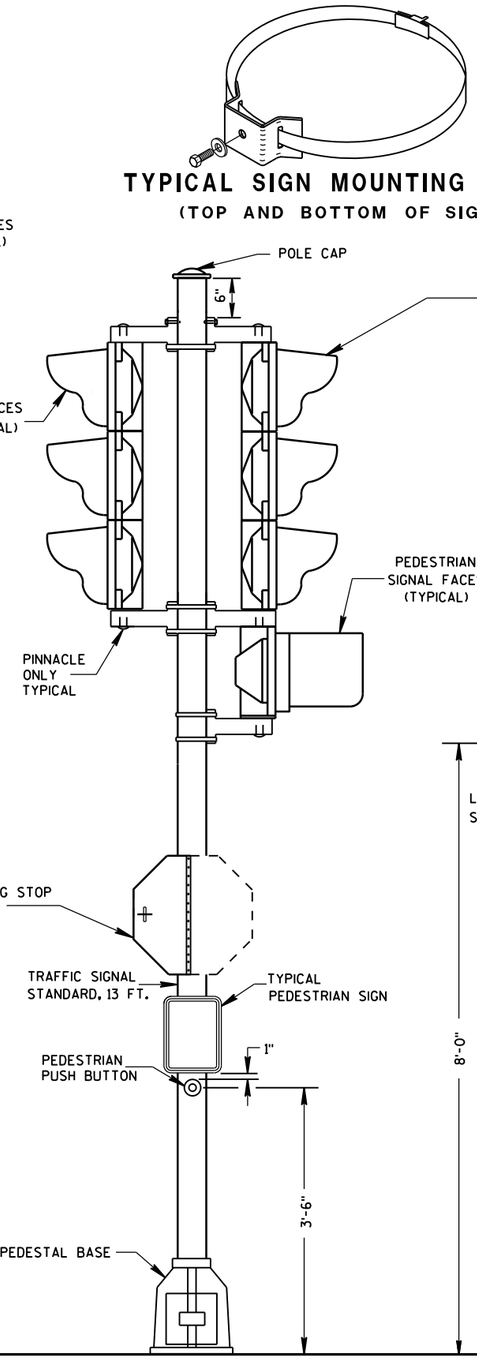
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SDD 09E03 - 06

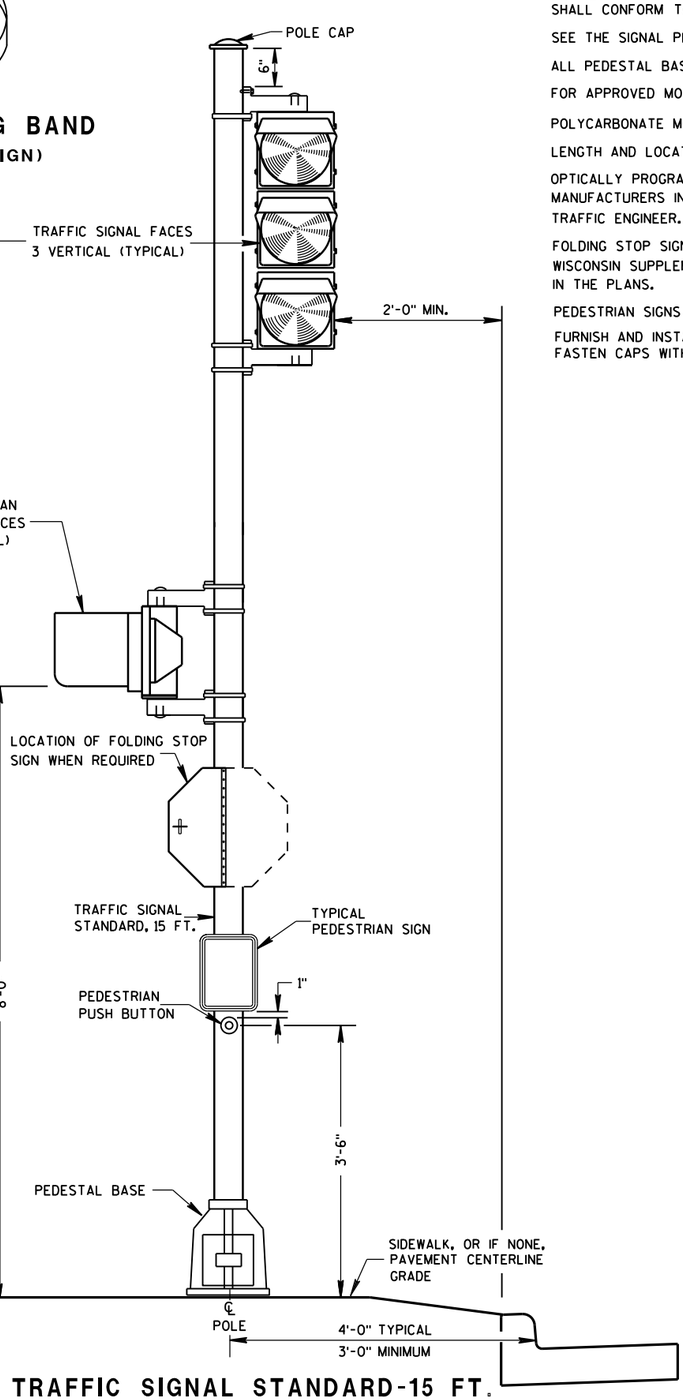


TRAFFIC SIGNAL STANDARD-15 FT.



TRAFFIC SIGNAL STANDARD-13 FT.

TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



TRAFFIC SIGNAL STANDARD-15 FT.
3M MOUNTING (TYPICAL)

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

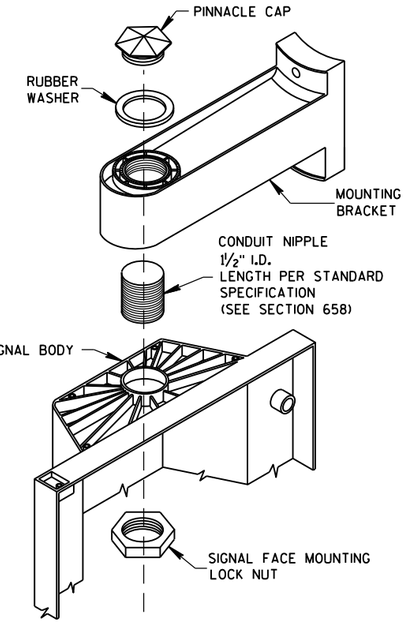
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



SIGNAL FACE MOUNTING DETAIL
(BANDED)

TRAFFIC SIGNAL STANDARD
POLY BRACKET MOUNTINGS
(TYPICAL) 13 FT. OR 15 FT.

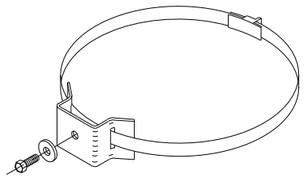
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/28/2013 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

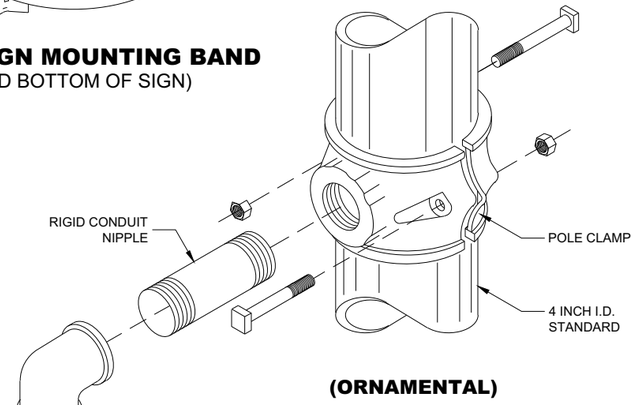
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S.D.D. 9 E 6-5

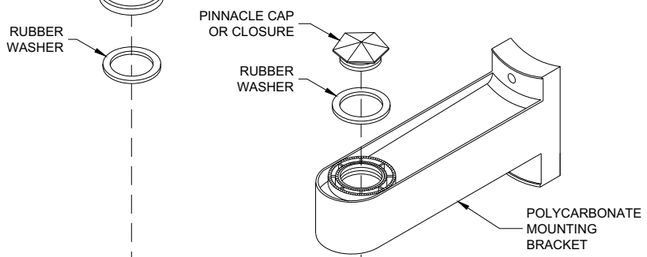
S.D.D. 9 E 6-5



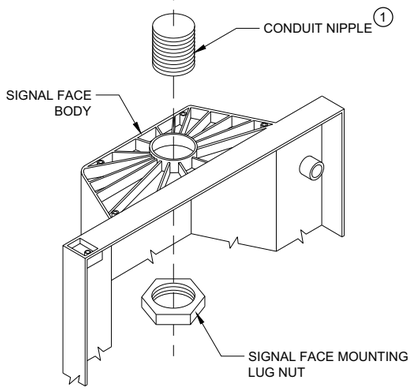
TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



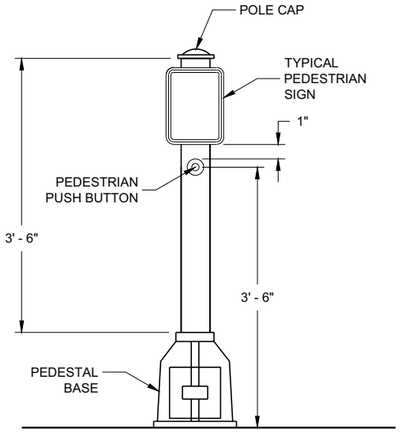
(ORNAMENTAL)



(BANDED)



SIGNAL FACE MOUNTING DETAILS



PEDESTRIAN PUSH BUTTON TYPICAL MOUNTING

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS, UNLESS APPROVED BY THE ENGINEER IN THE FIELD.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

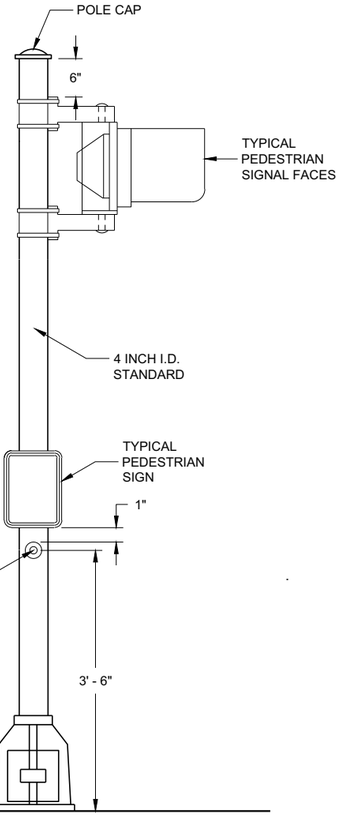
LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE REGION TRAFFIC ENGINEER).

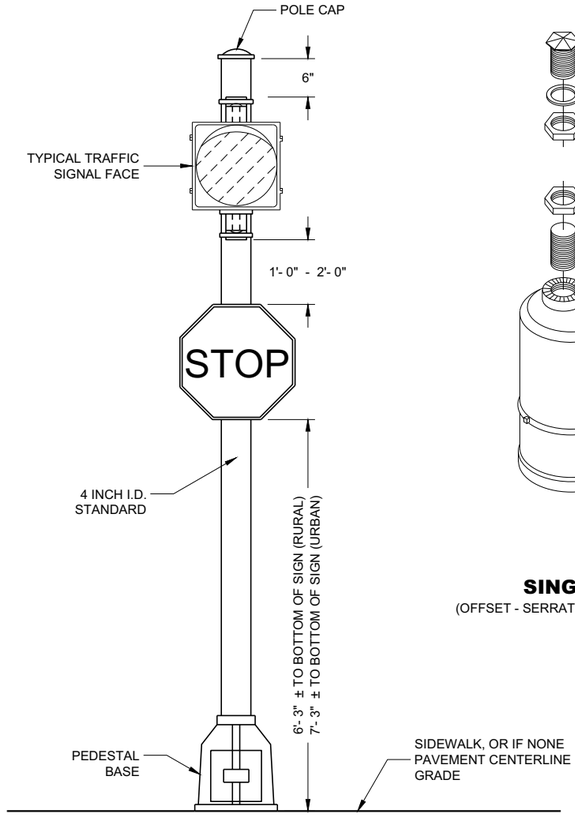
PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

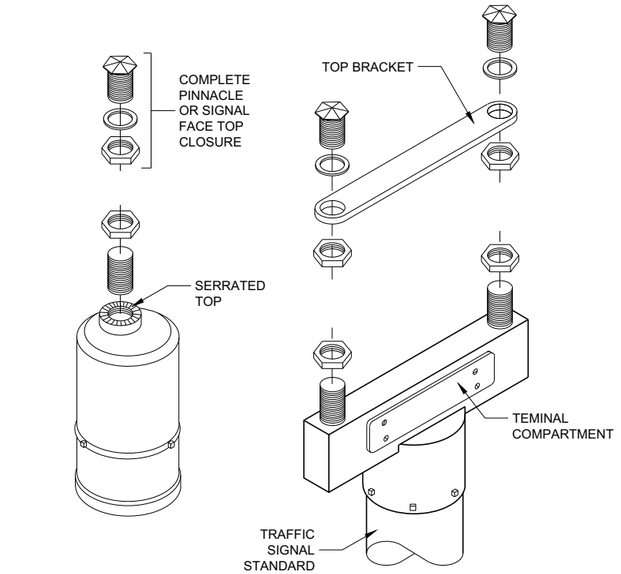
(1) USE 1 ½" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 ½" OPENING IN SIGNAL FACESAND BRACKET ENDS.



PEDESTRIAN FACE STANDARD - 10 FT.
(WALK - DON'T WALK)



STANDARD FLASHER
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED



SINGLE
(OFFSET - SERRATED MOUNTING)

DOUBLE
(SERRATED MOUNTING)

SLIPFITTERS

TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

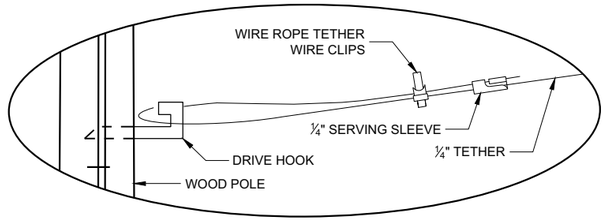
FHWA

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SDD 09E07 - 06

SDD 09E07 - 06

MINIMUM POLE LENGTHS	POLE BURIAL DEPTHS
25'	5'
30'	6'
35'	7'
40'	8'
45'	9'

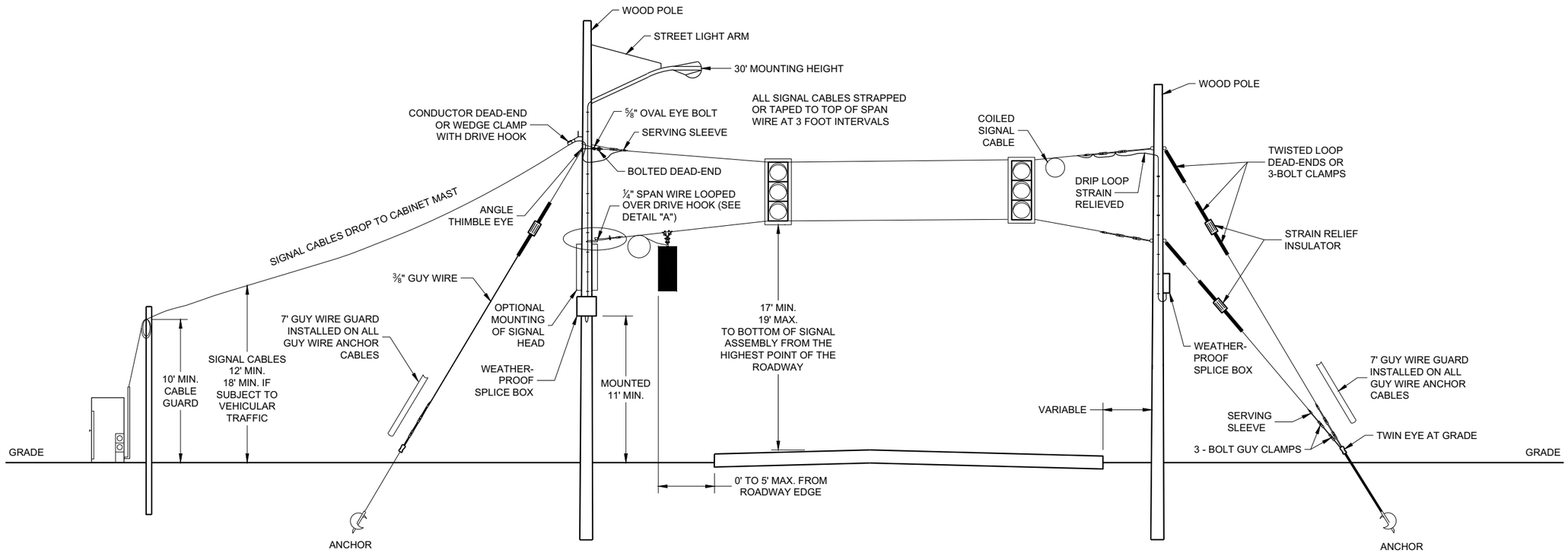


DETAIL "A"

GENERAL NOTES

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

1. WOOD POLES SHALL BE CLASS 4. LENGTH DETERMINED BY SIGNAL PLAN.
2. SIGNAL FACES:
   A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.
   B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.
   C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.
   D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.
3. SPAN WIRE:
   A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED
   B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
   C. THE SIGNAL ASSEMBLY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.



SPAN WIRE
TEMPORARY SIGNALS

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2015
DATE
/S/ Ahmet Demerbilek
STATE ELECTRICAL ENGI

FHWA

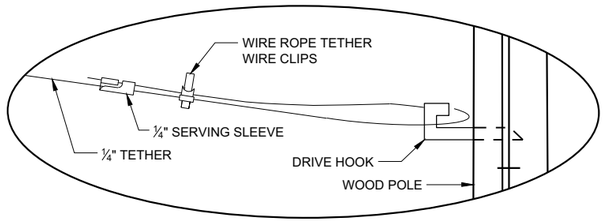
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SDD09G01 - 04a

6

SDD09G01 - 04a

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



DETAIL "A"

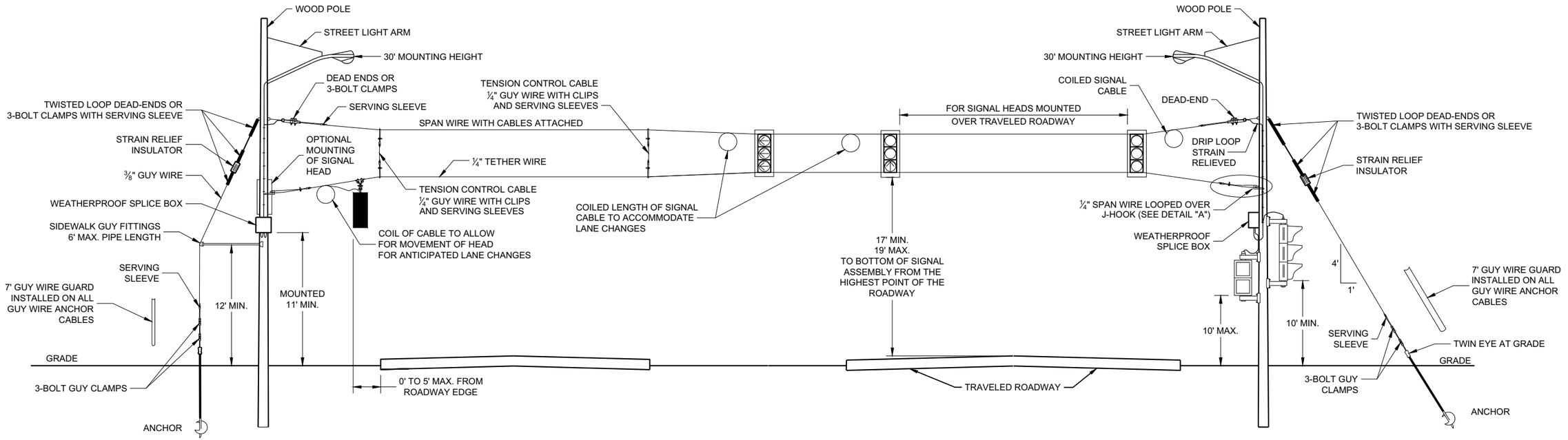
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   - E. FAR INDICATION SHALL BE MAINTAINED OVER CENTER OF TRAFFIC LANE.

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SPAN WIRE
TEMPORARY SIGNALS
4 LANE ROADWAYS

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2015
DATE

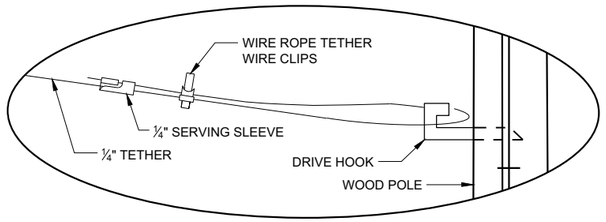
/S/ Ahmet Demerbilek
STATE ELECTRICAL ENGI

FHWA

SDD09G01 - 04b

SDD09G01 - 04b

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

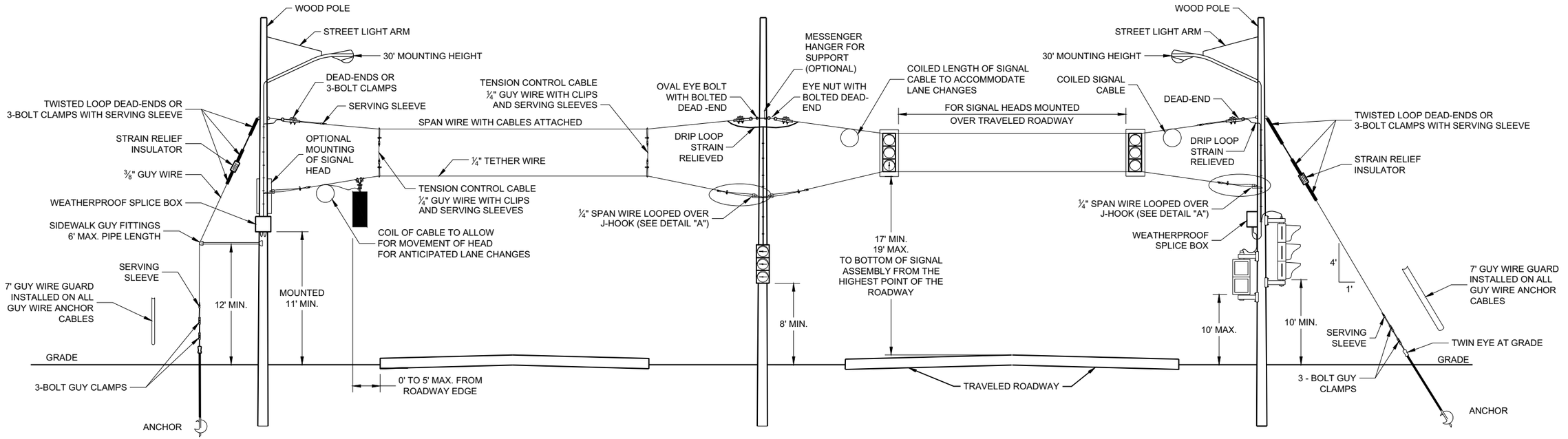


DETAIL "A"

GENERAL NOTES

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SPAN WIRE
TEMPORARY SIGNALS
4 LANE ROADWAYS

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

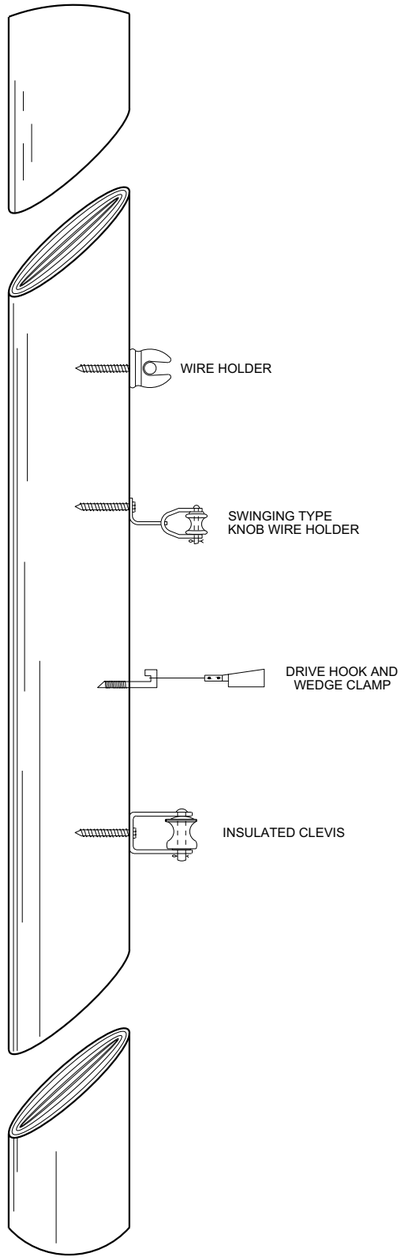
APPROVED
June 2015
DATE

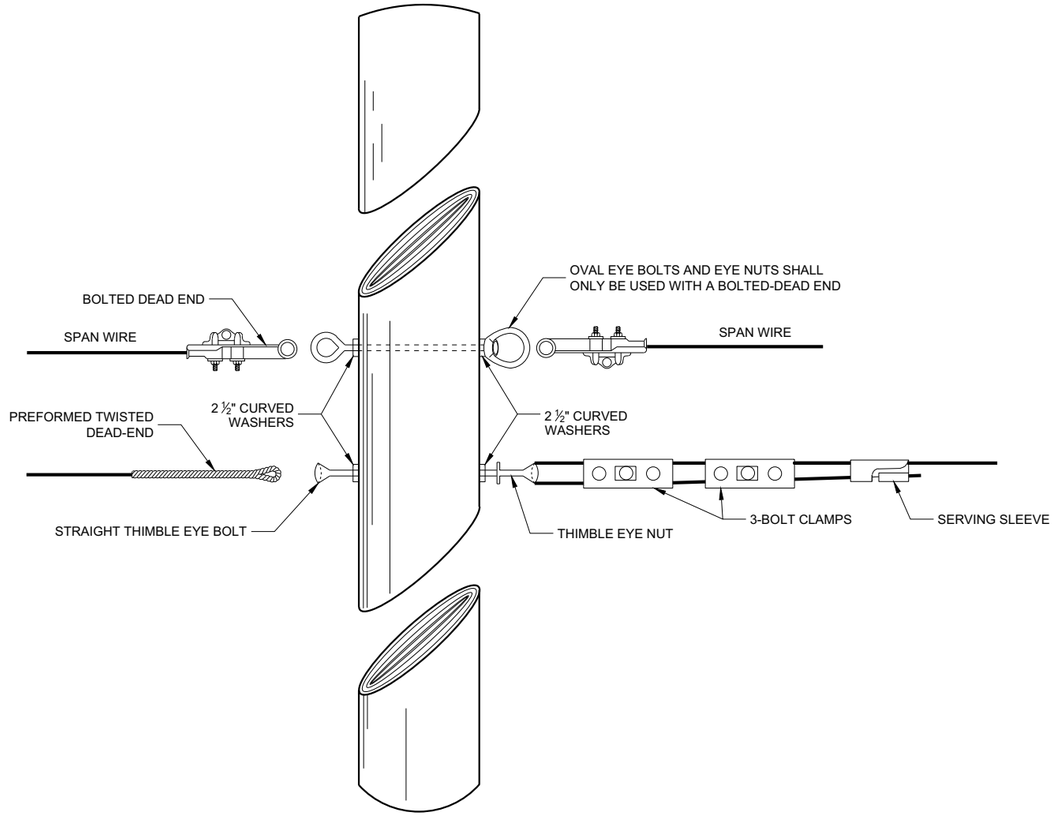
/S/ Ahmet Demerbilek
STATE ELECTRICAL ENGI

FHWA

SDD09G01 - 04c

SDD09G01 - 04c





SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2015
DATE

/S/ Ahmet Demerbilek
ROADWAY STANDARDS DEVE ENGINEER

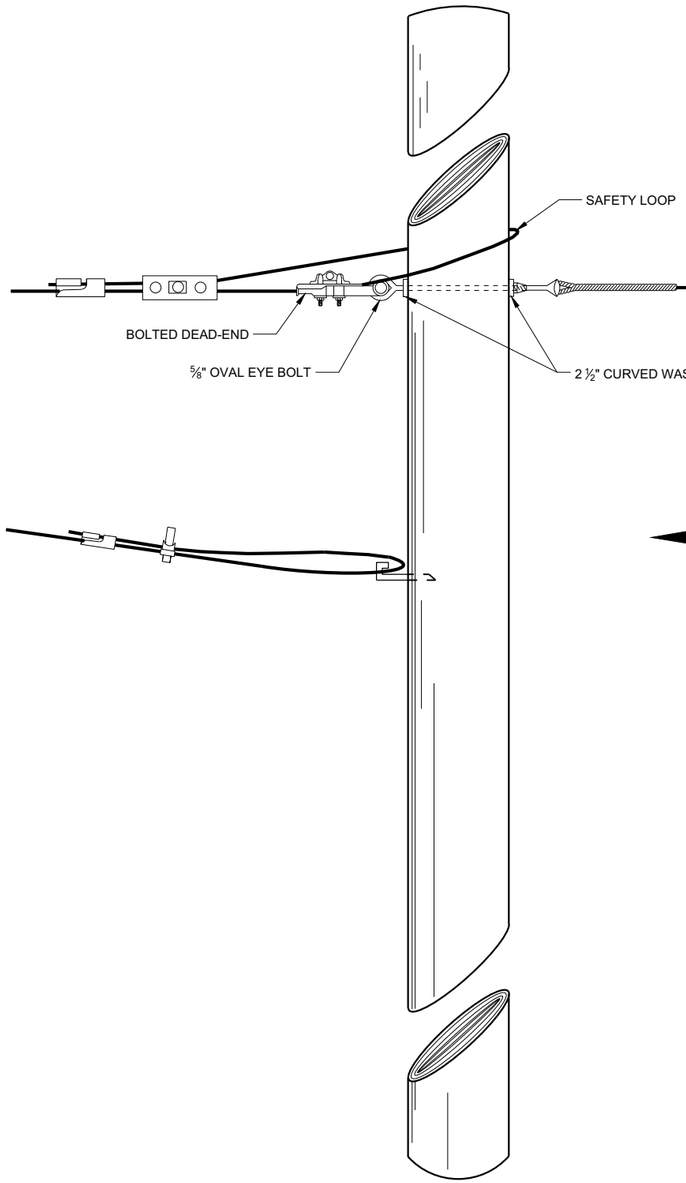
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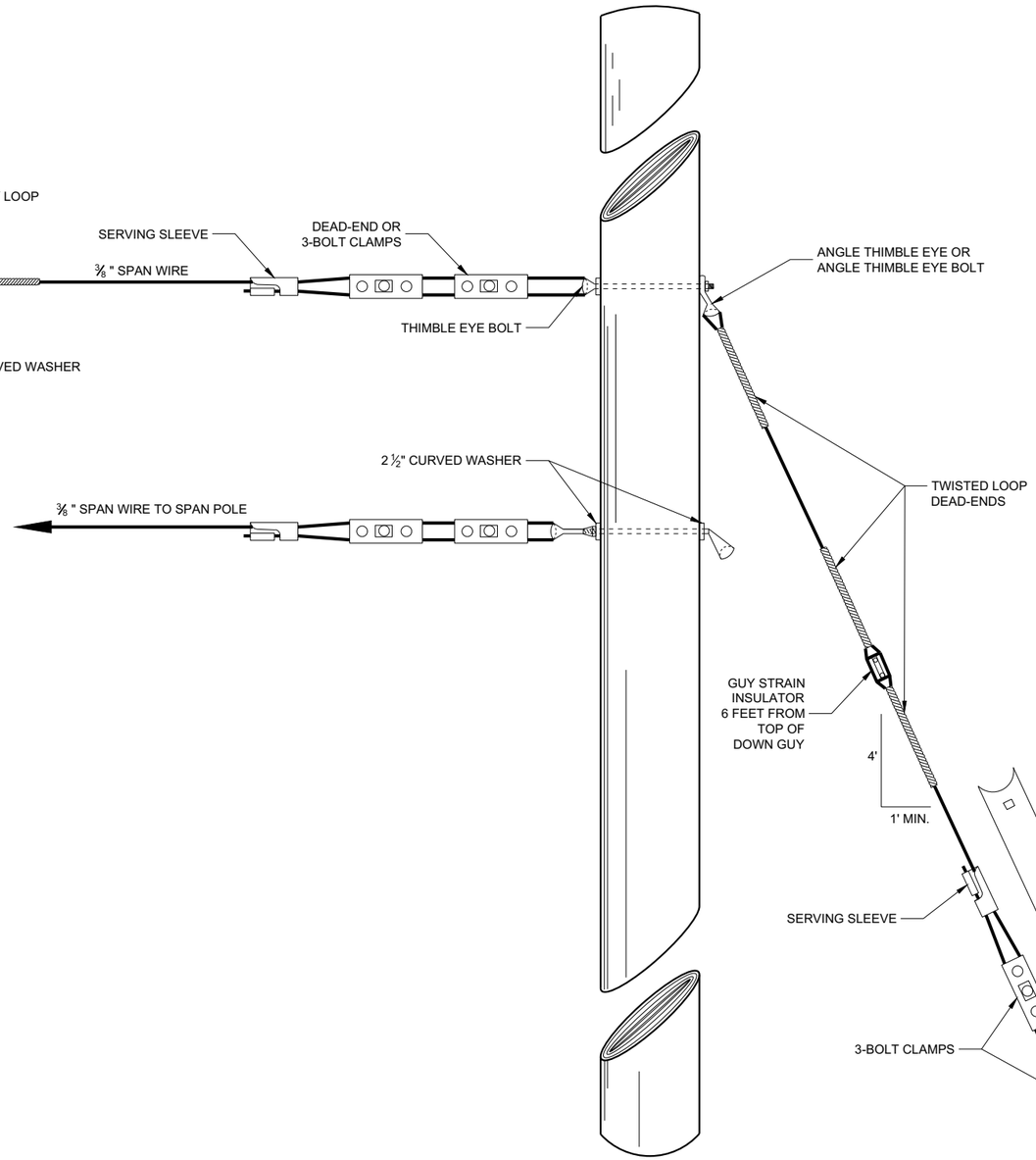
SDD 09G01 - 4d

GENERAL NOTES

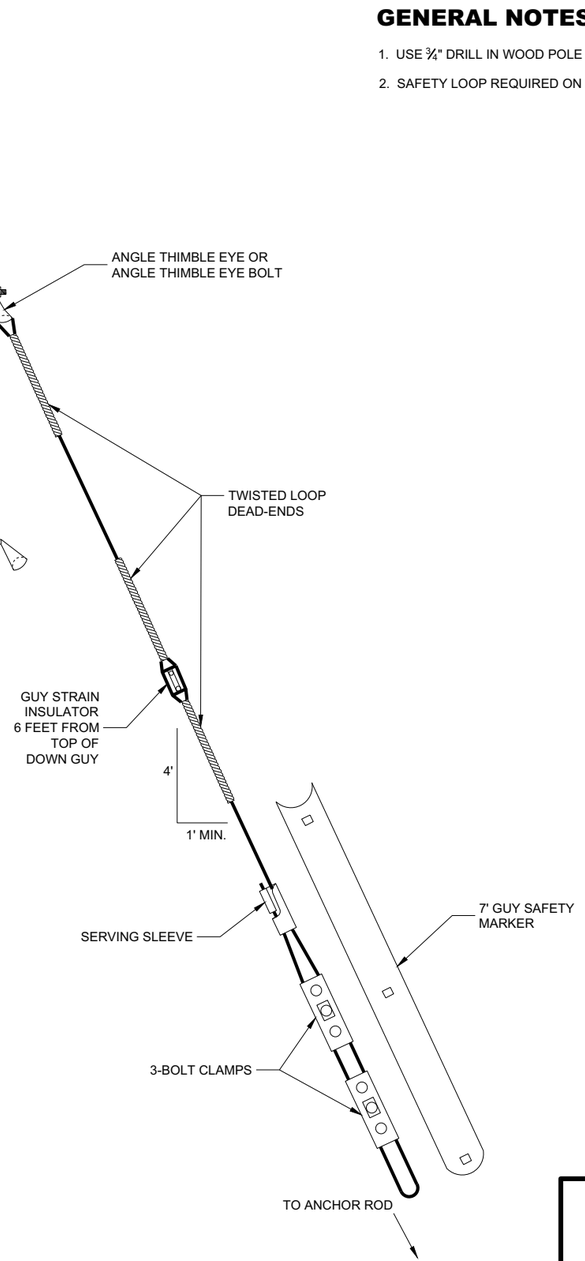
1. USE ¾" DRILL IN WOOD POLE TO PROVIDE FOR ⅝" BOLTS.
2. SAFETY LOOP REQUIRED ON EACH END OF ALL SPAN WIRES.



SPAN WIRE POLE



GUY POLE



TYPICAL DEAD-ENDINGS OR GUYING

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2015 — DATE
/S/ Ahmet Demerbilek — ROADWAY STANDARDS DEVE ENGINEER

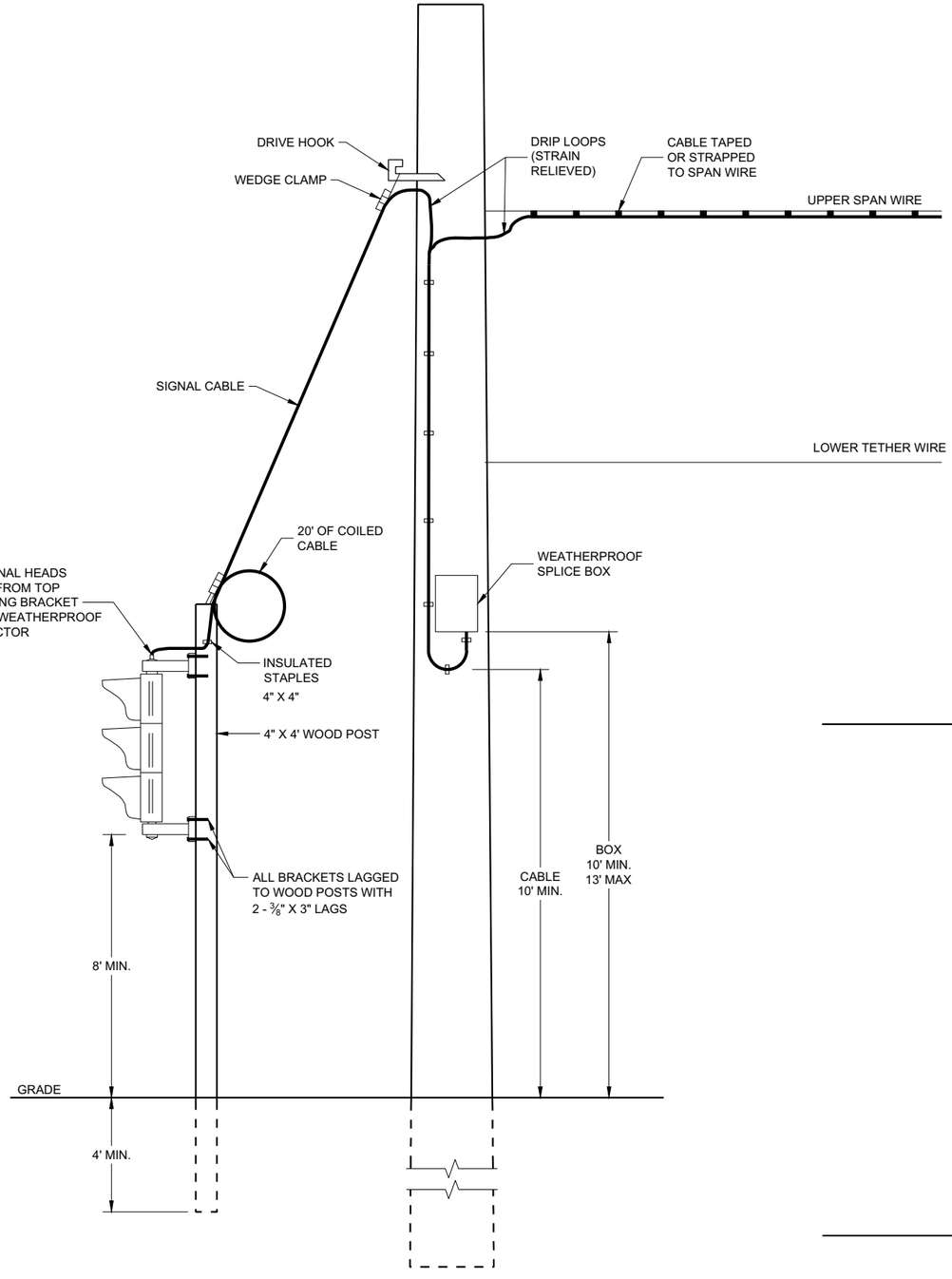
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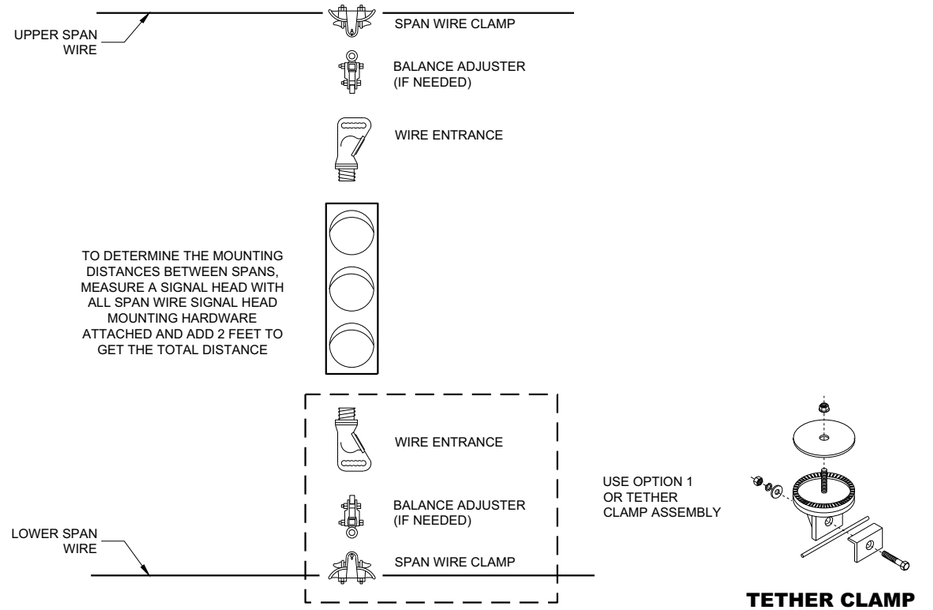
SDD 09G01 - 4e

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SDD 09G01 - 4e



TYPICAL DROP TO TEMPORARY MOVEABLE SIGNAL

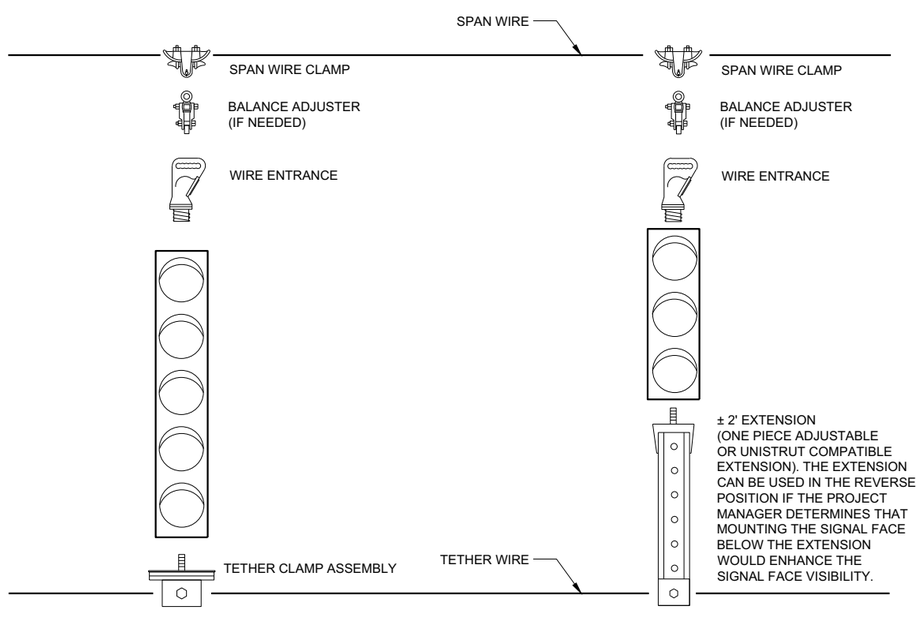


OPTION 1

USE OPTION 1 OR TETHER CLAMP ASSEMBLY

TETHER CLAMP ASSEMBLY OPTION

TYPICAL SPAN WIRE MOUNTING HARDWARE



5 SECTION VERTICAL WITH 3 SECTION VERTICAL ON ONE SPAN WIRE

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

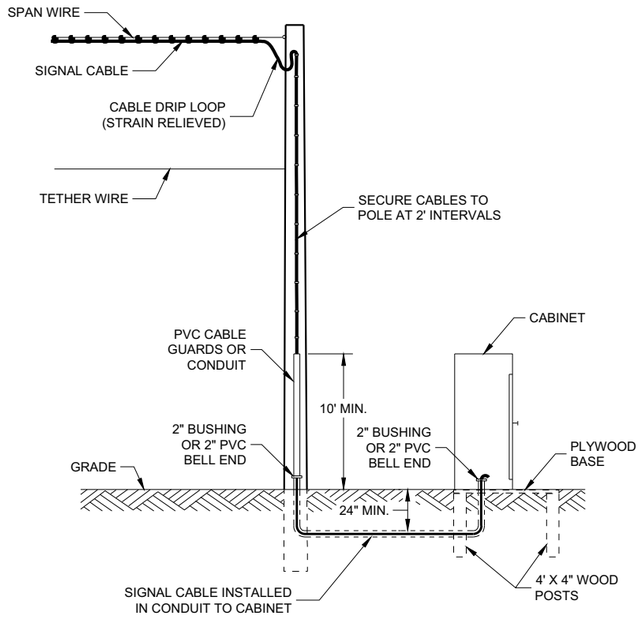
APPROVED
June 2015
DATE

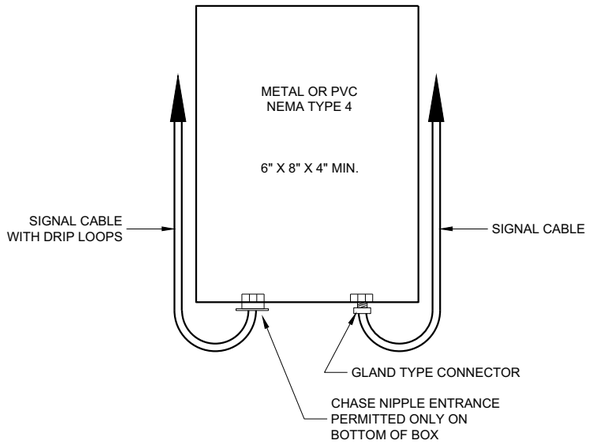
/S/ Ahmet Demerbilek
ROADWAY STANDARDS DEVE ENGINEER

FHWA

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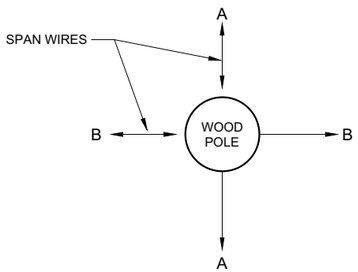
SDD 09G01 - 4f





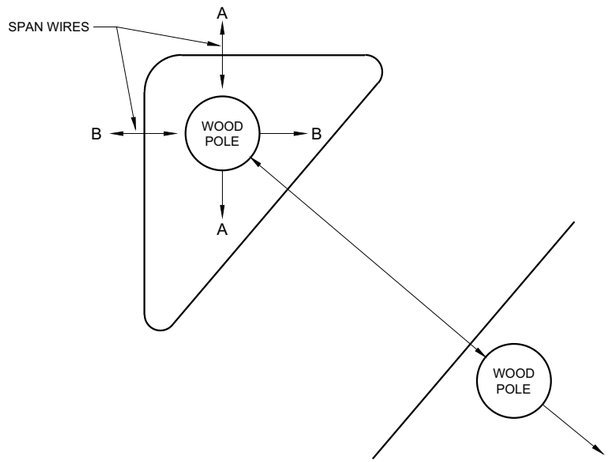
SPLICE BOX

TYPICAL SKID TYPE TEMPORARY

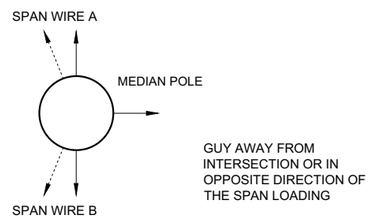


ALL DOWN OR SIDEWALK GUYS SHALL BE INSTALLED IN THE OPOSITE DIRECTION OF THE STRAIN OF THE SPAN WIRE

CORNER POLES



ISLAND POLES



GUY AWAY FROM
INTERSECTION OR IN
OPPOSITE DIRECTION OF
THE SPAN LOADING

MEDIAN POLES

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

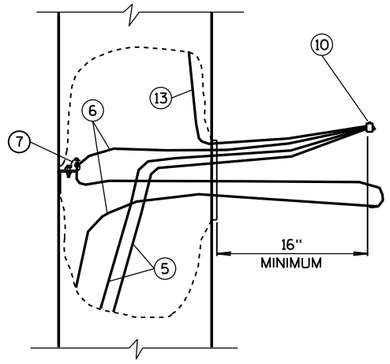
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June 2015
DATE

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ROADWAY STANDARDS DEVE ENGINEER

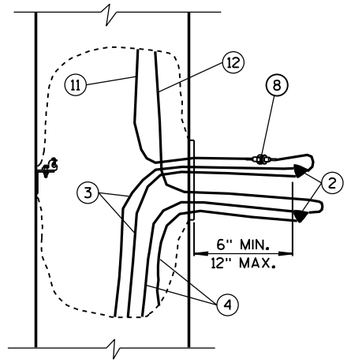
FHWA

SDD 09G01 - 4g

SDD 09G01 - 4g

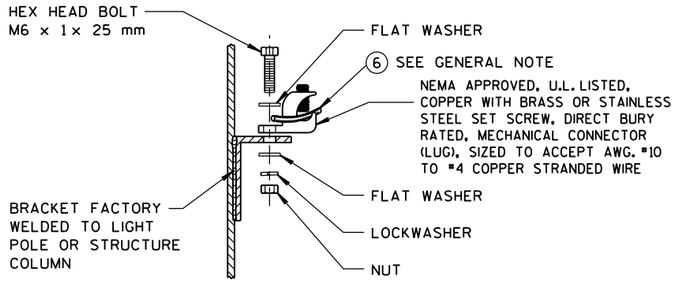


EQUIPMENT GROUNDING CONDUCTOR SLACK



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

TYPICAL CONDUCTOR SLACK AT HANDHOLES



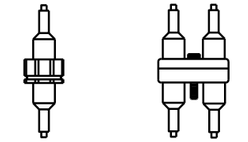
HANDHOLE GROUNDING LUG

(NUT, BOLT, WASHERS, AND LOCK WASHERS SHALL BE STAINLESS STEEL)

CONDUCTOR COLOR CODES

KEY	CONDUCTOR	COLOR
3	UNGROUNDED LINE WIRE	*
4	GROUNDED LINE WIRE	WHITE
5	SYSTEM GROUNDING LINE WIRE	GREEN
6	GROUNDING ELECTRODE CONDUCTOR	BARE
11	UNGROUNDED POLE WIRE	*
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.



FUSE ASSEMBLIES

GENERAL NOTES

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

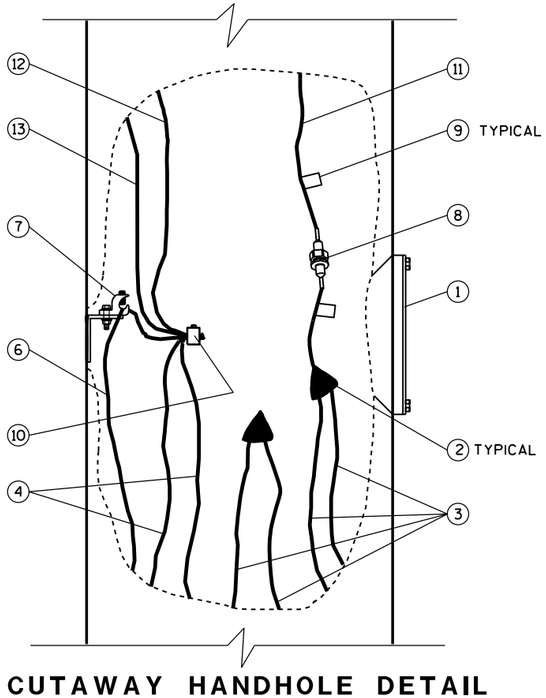
USE THIS DETAIL IN CONJUNCTION WITH THE ELECTRICAL DETAILS FOR THE APPLICATION, WHICH MAY BE A LIGHT POLE, SIGN BRIDGE, ETC.

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.

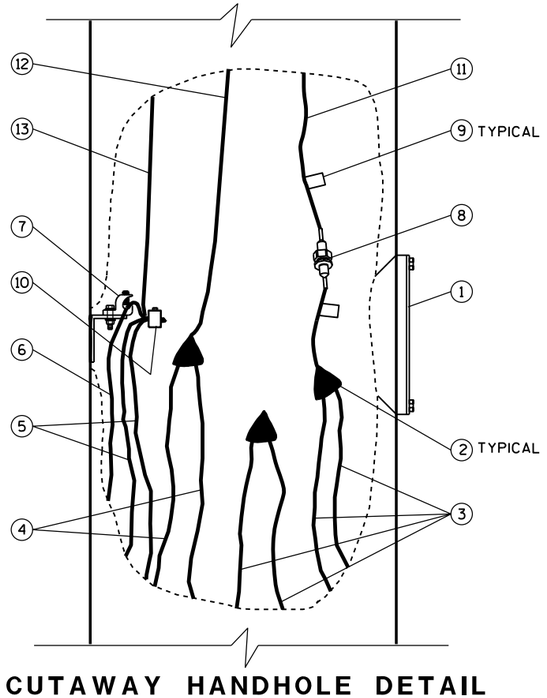
IN 3-PHASE SYSTEMS, THERE WILL BE ONE MORE UNGROUNDED LINE WIRE, WHICH IS OMITTED FROM THE DRAWING FOR CLARITY.

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



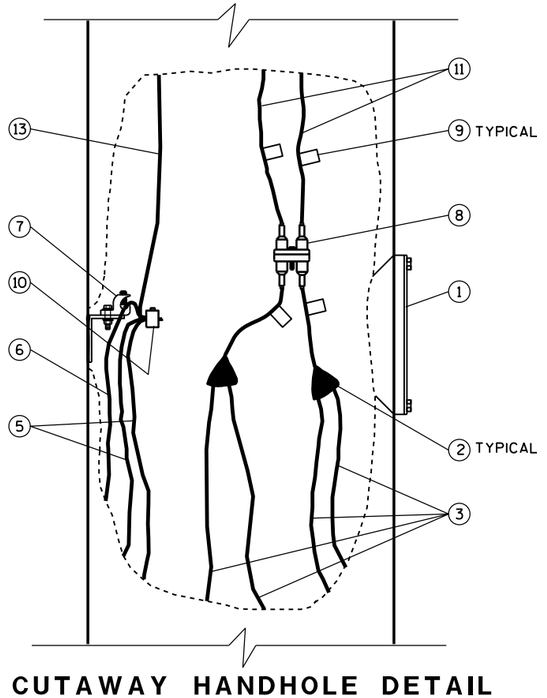
CUTAWAY HANDHOLE DETAIL

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)

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

(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

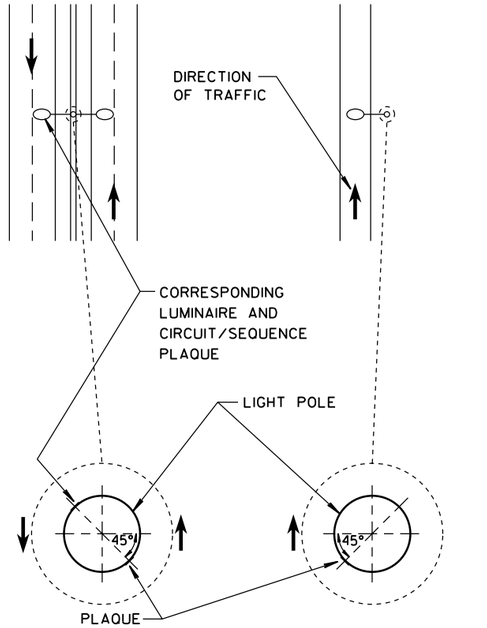
ELECTRICAL HANDHOLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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S.D.D. 10 A 1-3



MEDIAN POLE SINGLE ARM POLE

LOCATION OF LIGHT POLE CIRCUIT/SEQUENCE PLAQUE

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

WHERE SHOWN IN THE PLANS, REPLACEMENT PLAQUES WILL BE MEASURED AND PAID SEPARATELY.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

GALVANIZED STEEL SHAFT - STAINLESS STEEL POP RIVETS

A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS

ALUMINUM SHAFTS - ALUMINUM POP RIVETS

MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETRORFLECTIVE

LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE

CHARACTERS - BLACK, SELF-ADHESIVE, SERIES "D", SIZE AS SHOWN

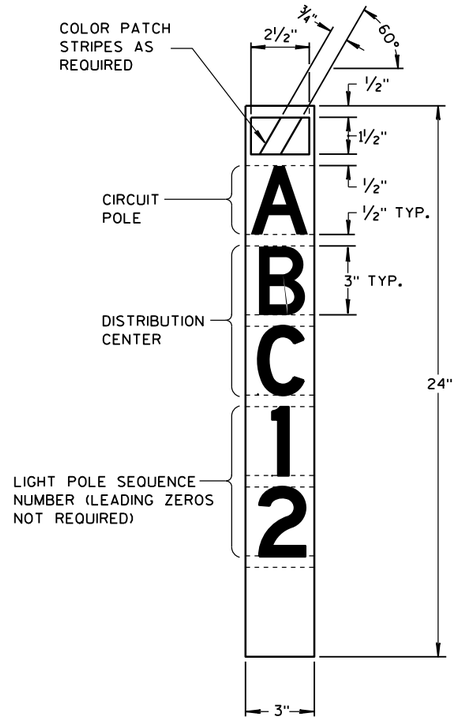
COLOR PATCHES - VARIOUS COLORS, SELF-ADHESIVE VINYL SHEETING

WITH THE APPROVAL OF THE ENGINEER, THE BASE MATERIAL MAY BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE SURFACE, IN CASES SUCH AS SMOOTH, CLEAN ALUMINUM POLES.

ALTERNATIVE COMPUTER-GENERATED SIGN LETTERING MAY BE ACCEPTED IF THE ENGINEER FINDS IT TO BE EQUIVALENT.

COLOR PATCH CODE FOR HPS AND LED LUMINAIRES

HPS	LED	COLOR PATCH CODE
1000 WATT		NO PATCH
400 WATT	CATEGORY D	ORANGE
310 WATT		BLUE
250 WATT	CATEGORY C	ORANGE WITH WHITE STRIPE
200 WATT		RED
150 WATT	CATEGORY B	GREEN
100 WATT	CATEGORY A	BROWN
70 WATT	CATEGORY UDL	BROWN WITH WHITE STRIPE



LIGHT POLE CIRCUIT/SEQUENCE PLAQUE

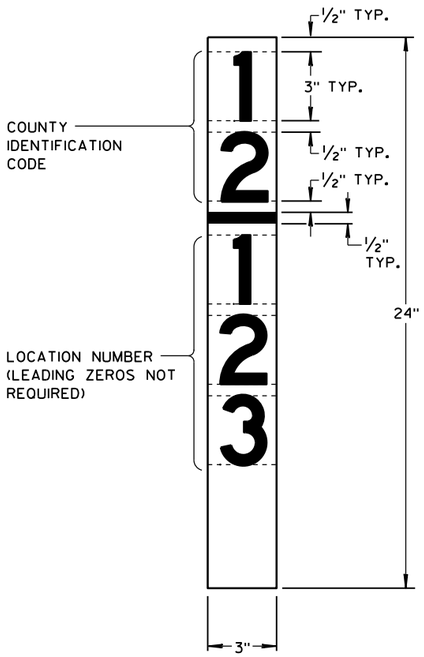
IDENTIFICATION PLAQUES LIGHT POLES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

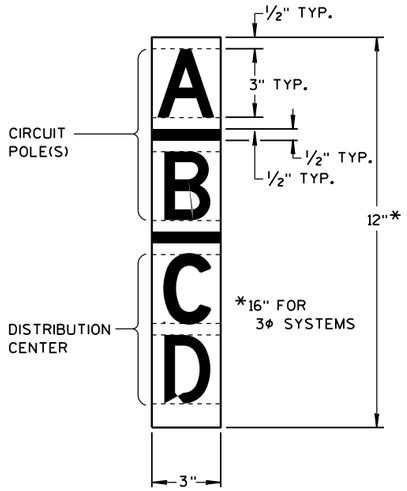
APPROVED
Feb. 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

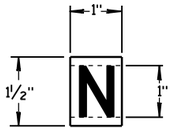
S.D.D. 10 A 2-3



HIGH MAST LIGHT TOWER STRUCTURE PLAQUE

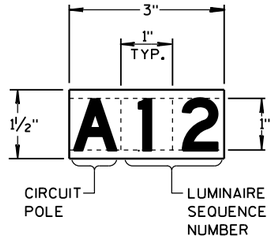


UNDERDECK LIGHTING OR HIGH MAST LIGHT TOWER CIRCUIT PLAQUE



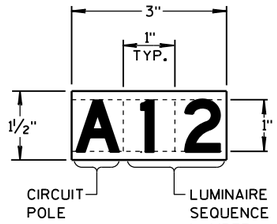
HIGH MAST LIGHT TOWER NORTH PLAQUE

(MOUNT ON LOWERING RING - INDICATING NORTH HEADING ^{2} ± 10^{o3} WHEN RING IS RAISED AND LATCHED)



HIGH MAST LIGHT TOWER LUMINAIRE SEQUENCE PLAQUE

(MOUNT ON LUMINAIRE RING)



UNDER DECK LUMINAIRE SEQUENCE DECAL

(MOUNT ON LUMINAIRE)

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

CONCRETE SURFACE - MASONRY ANCHORS

GALVANIZED STEEL SHAFT - STAINLESS STEEL POP RIVETS

A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS

PLAQUE MATERIALS:

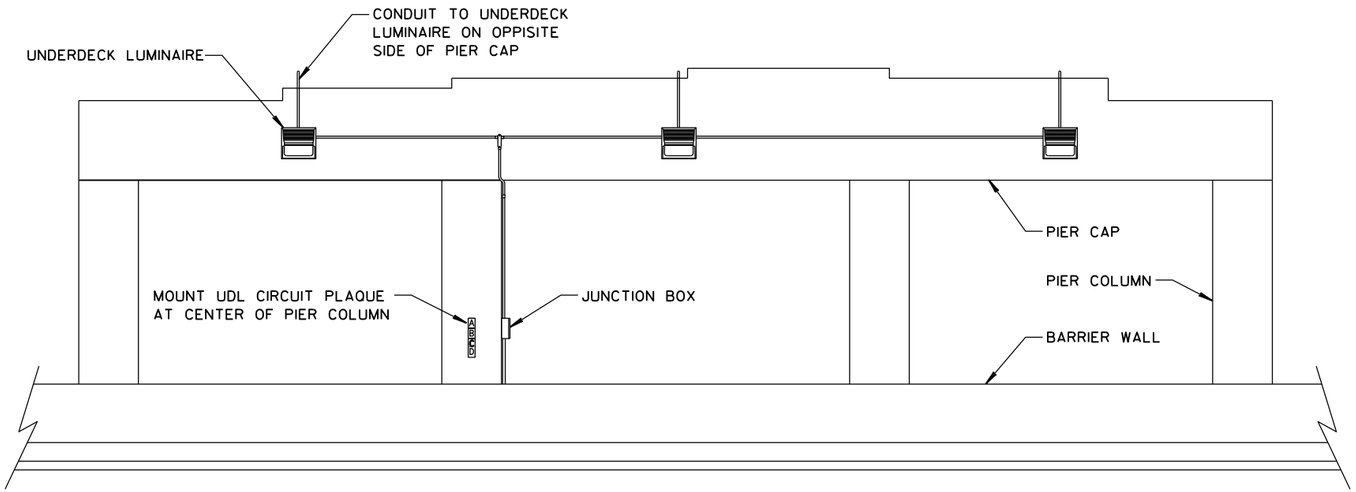
BASE - SHEET ALUMINUM, 0.060" THICK.

FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETRORFLECTIVE

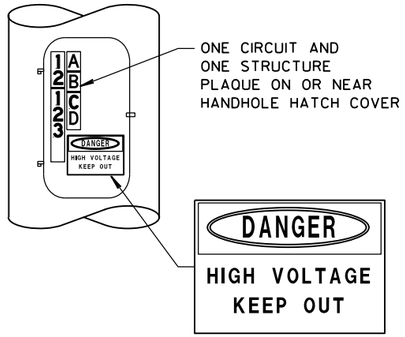
LINES - BLACK, ½" WIDE, SELF-ADHESIVE

CHARACTERS - BLACK, SELF-ADHESIVE, SERIES "D", SIZE AS SHOWN

ALTERNATIVE COMPUTER-GENERATED SIGN LETTERING MAY BE ACCEPTED IF THE ENGINEER FINDS IT TO BE EQUIVALENT.



LOCATION OF UNDERDECK LIGHTING CIRCUIT PLAQUE

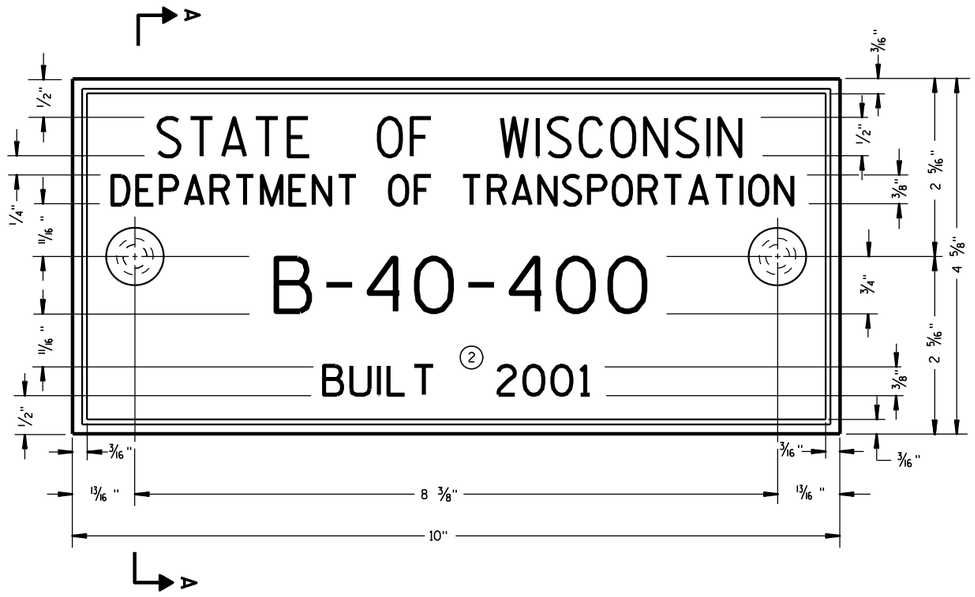


NOTE: NEMA PLAQUE SHOWN ABOVE IS REQUIRED ONLY IN PARK AND RIDE LOTS OR IN OTHER PEDESTRIAN ACCESSIBLE AREAS.

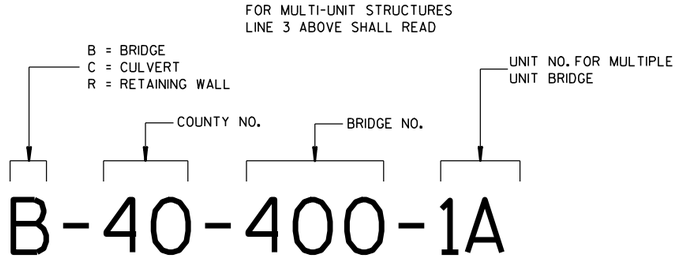
LOCATION OF HIGH MAST LIGHT TOWER STRUCTURE PLAQUE AND CIRCUIT PLAQUE

IDENTIFICATION PLAQUES UNDERDECK AND HIGH MAST LIGHTING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
June, 2015 (DATE)	/S/ Ahmet Demriblek (STATE ELECTRICAL)
FHWA	157

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S.D.D. 10 A 4-3



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



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

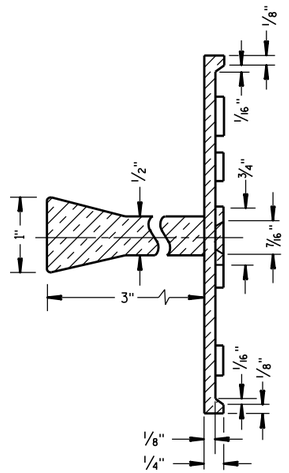
GENERAL NOTES

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

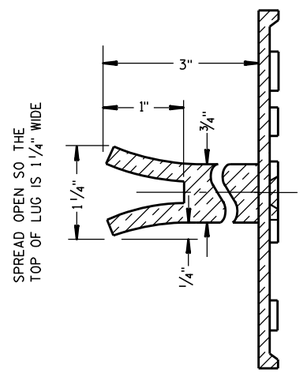
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

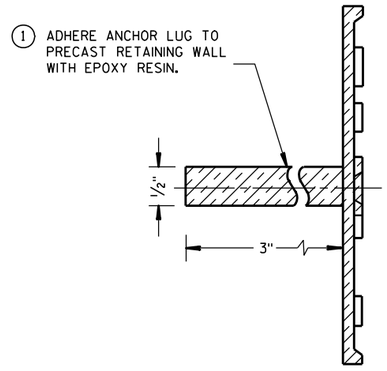
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck-- CHIEF STRUCTURAL DEVELOP ENGINEER

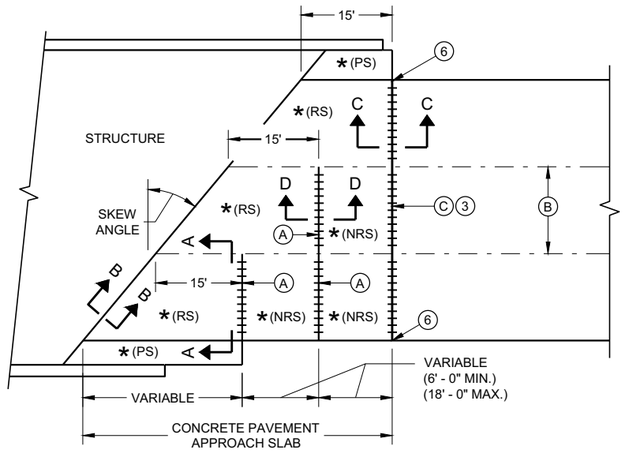
FHWA

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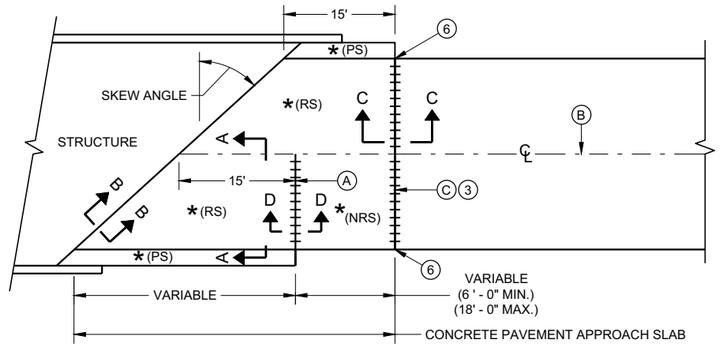
S.D.D. 12 A 3-10

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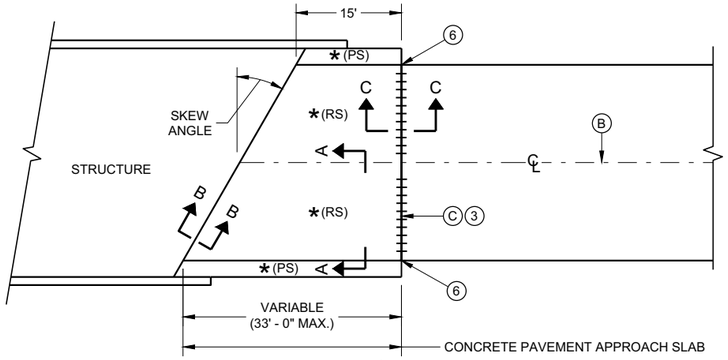
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

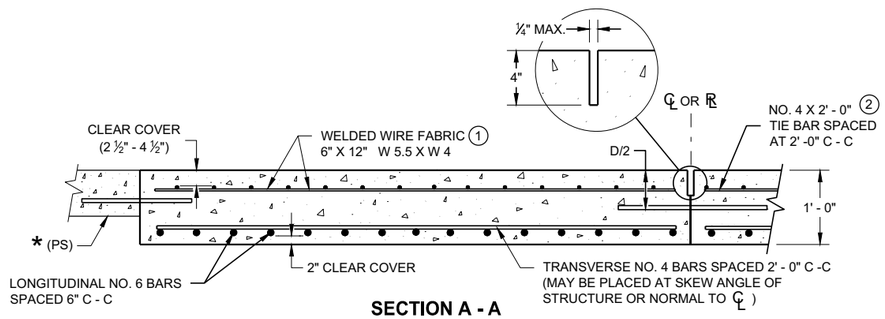
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

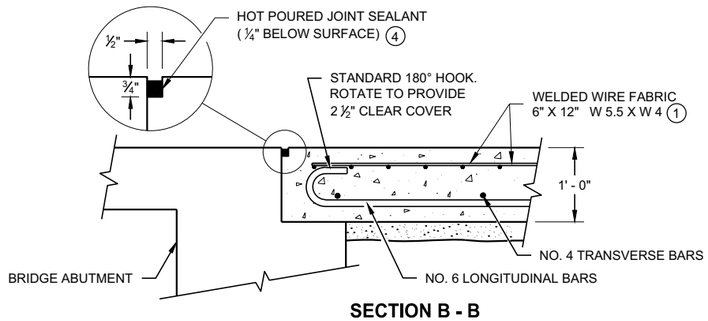
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

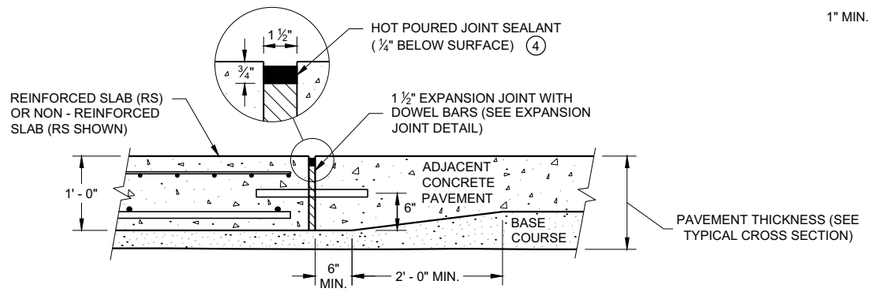
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



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.

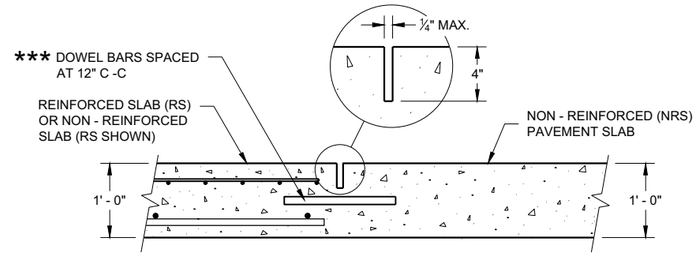
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

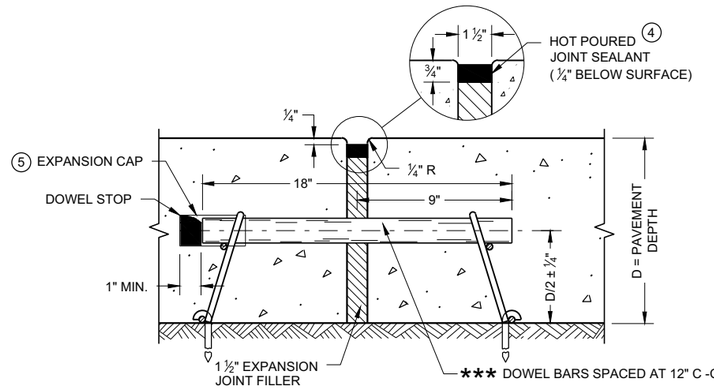
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞ .



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

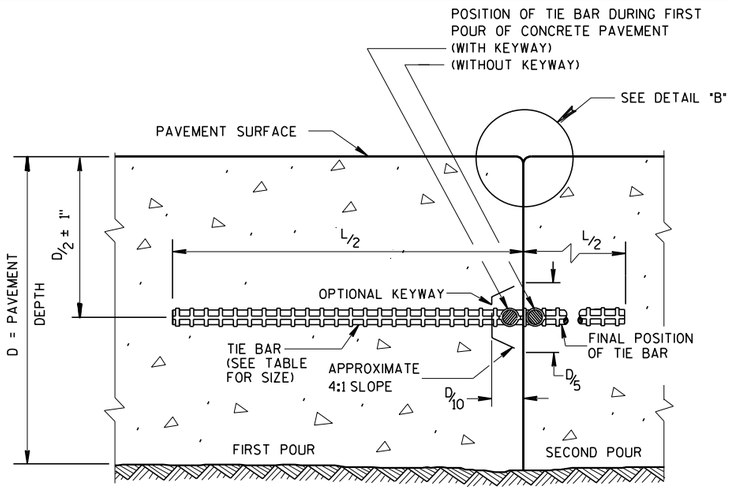
APPROVED
November 2018
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPERVIS

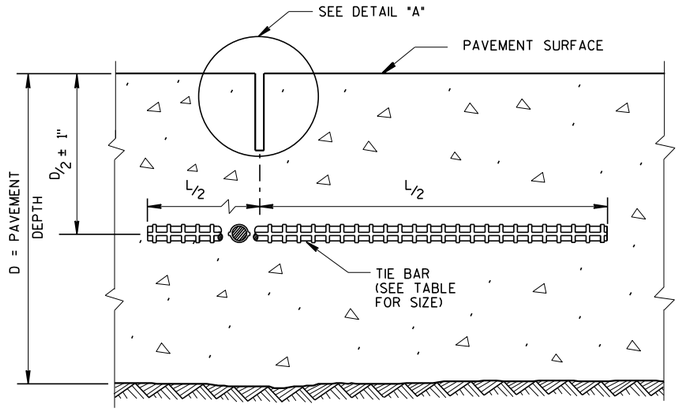
FHWA

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SDD 13B02 - 09a



CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

PLAN VIEW

SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT

DETAIL "A"

DETAIL "B"

DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

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

PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

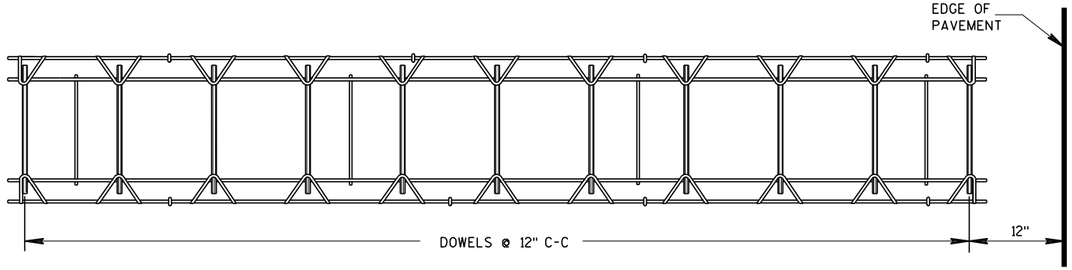
APPROVED
March 2018
DATE
/S/ Peter Kemp, PE
PAVEMENT SUPE
FHWA

6

S.D.D. 13 C 1-19

6

S.D.D. 13 C 1-19



PLAN VIEW



SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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

GENERAL NOTES

CONTRACTION JOINTS

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

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

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

CONSTRUCTION JOINTS

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

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

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

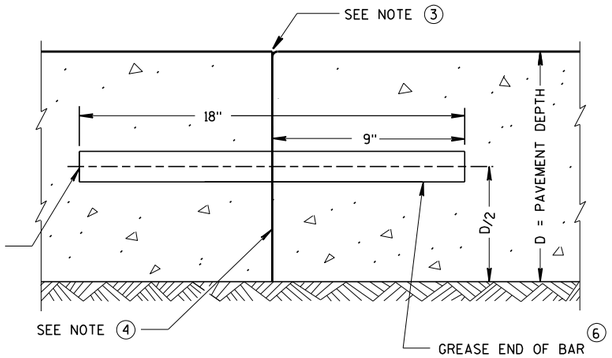
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

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

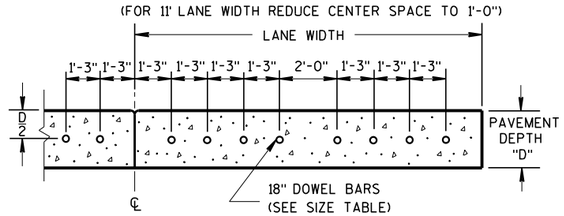
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL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

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

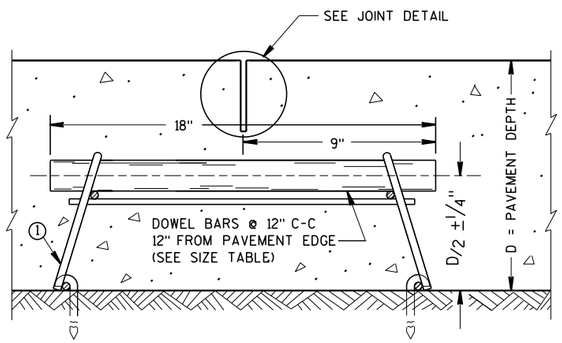
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



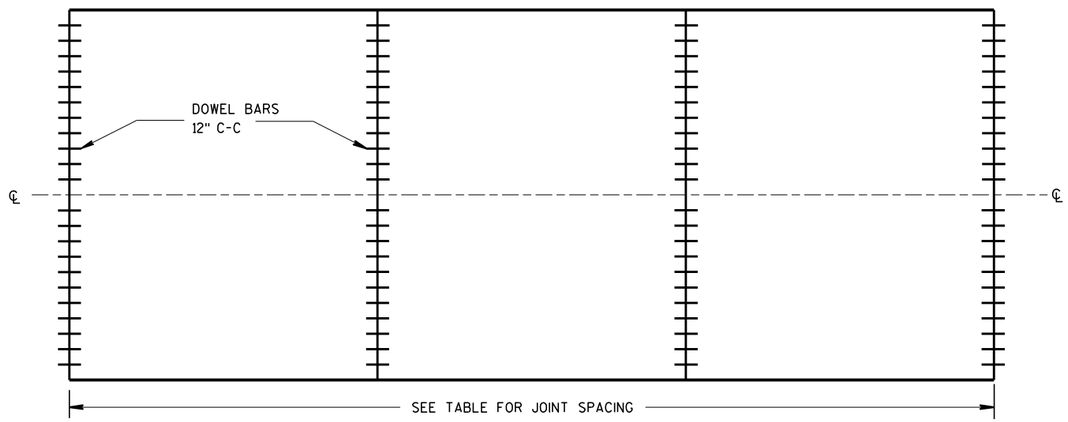
TRANSVERSE CONSTRUCTION JOINT



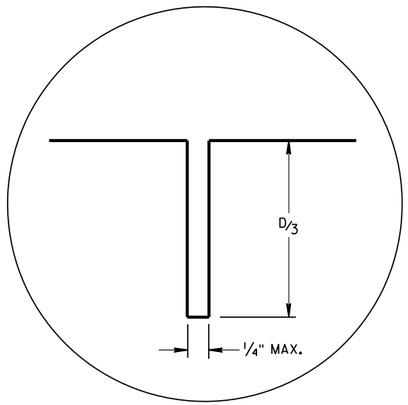
DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



DOWELED CONTRACTION JOINT



CONTRACTION JOINT LOCATIONS



JOINT DETAIL

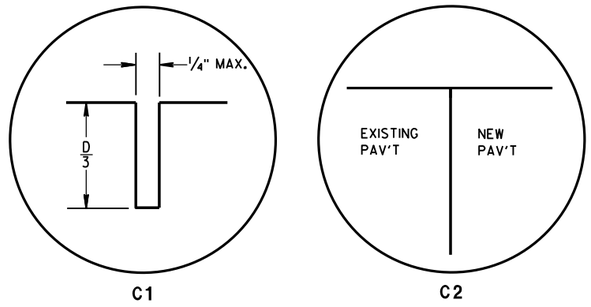
URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

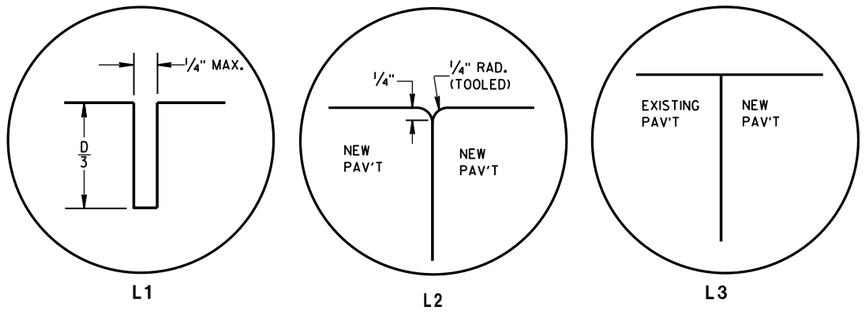
APPROVED
March 2018 — DATE
/S/ Peter Kemp P.E. — PAVEMENT SUP
FHWA

6

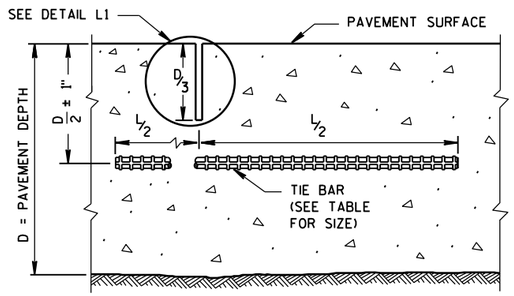
S.D.D. 13 C 13-9



TRANSVERSE JOINTS

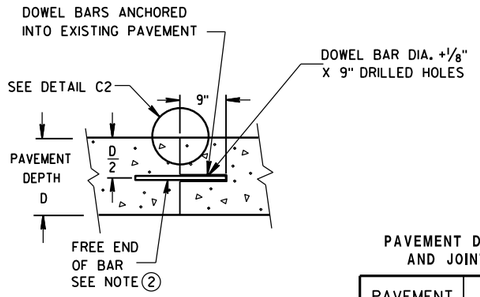


LONGITUDINAL JOINTS



SECTION C-C

SAWED JOINT



SECTION D-D

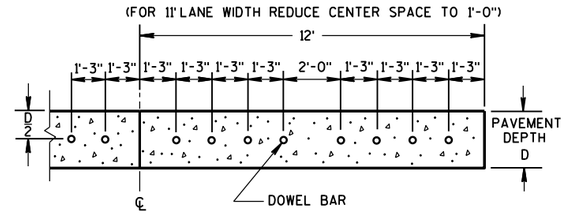
GENERAL NOTES

ANCHOR TIE BARS AND DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

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



SECTION E-E

SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

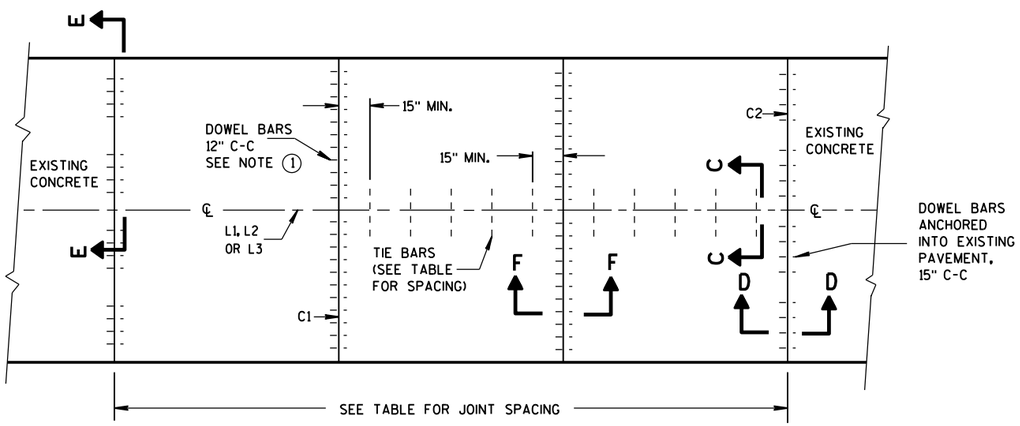
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5½", 6, 6 ½"	NONE	12'
7, 7 ½"	1"	14'
8, 8 ½"	1 ¼"	15'
9, 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

TIE BAR TABLE

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

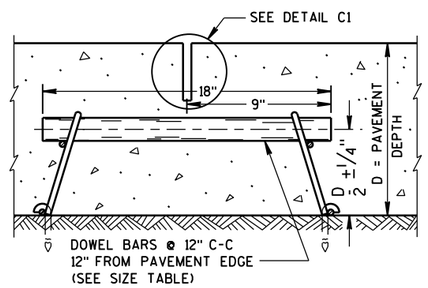
* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

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



PLAN VIEW

CONCRETE BASE CONTRACTION JOINT LOCATIONS



SECTION F-F

CONTRACTION JOINT

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

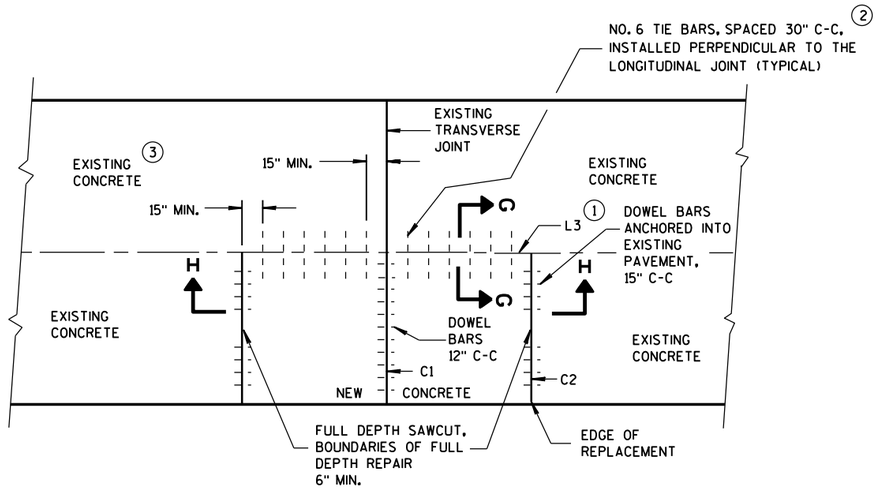
6
S.D.D. 13 C 15-6a

GENERAL NOTES

(1) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) AT THE LONGITUDINAL JOINT IN LIEU OF TIE BARS FOR SINGLE LANE CONCRETE BASE REPAIRS UP TO 15 FEET IN LENGTH.

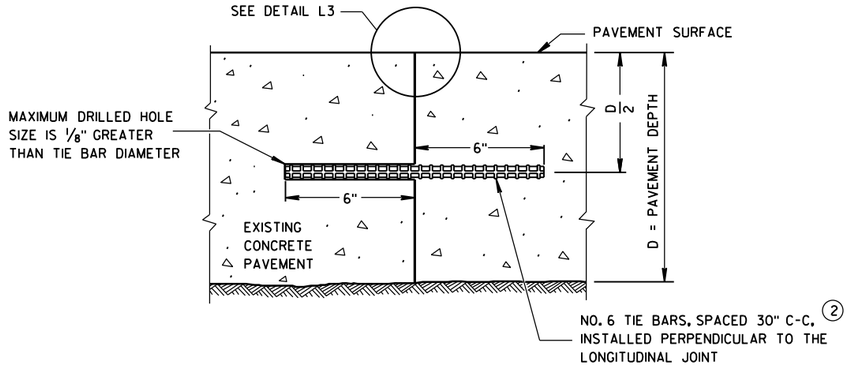
(2) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(3) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



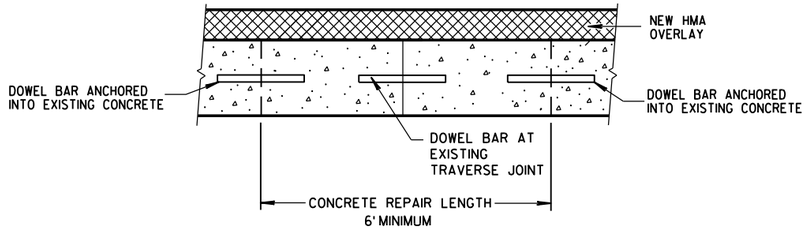
PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR



SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H-H

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 13 C 15-6b

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S.D.D. 13 C 15-6b

GENERAL NOTES

PCCP = PORTLAND CEMENT CONCRETE PAVEMENT.

SHLDR = SHOULDER.

CONTINUE SAW CUT CONTRACTION JOINT ACROSS TURN LANE, EXIT TAPER AND PASSING LANE.

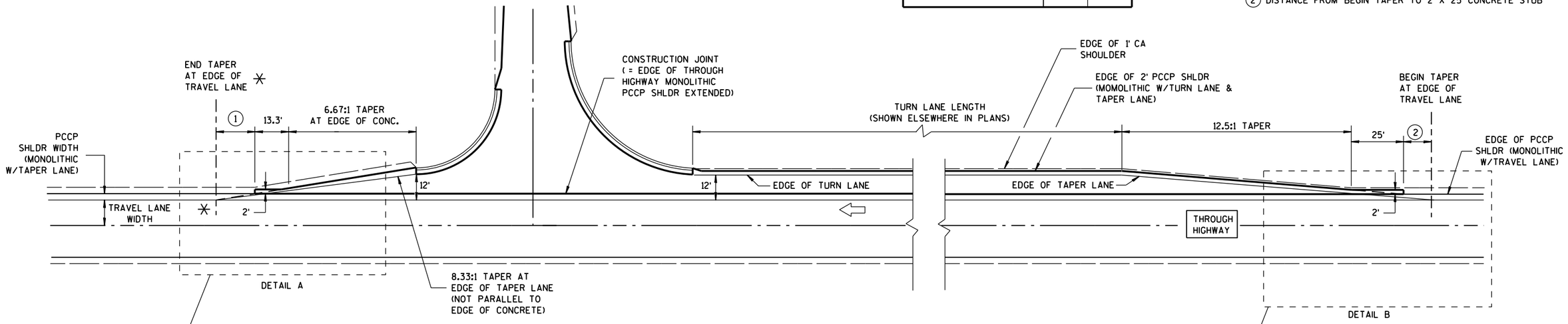
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

THROUGH HIGHWAY LANE WIDTH AND PCCP SHOULDER WIDTH ARE SHOWN ELSEWHERE IN PLANS

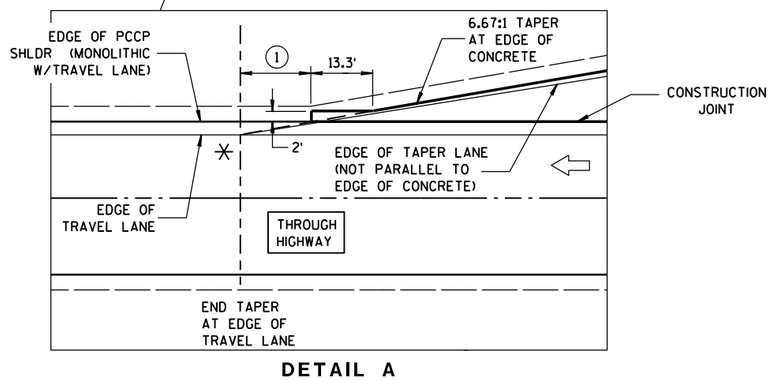
(1) DISTANCE FROM END TAPER TO 2' X 13.3' CONCRETE STUB

(2) DISTANCE FROM BEGIN TAPER TO 2' X 25' CONCRETE STUB

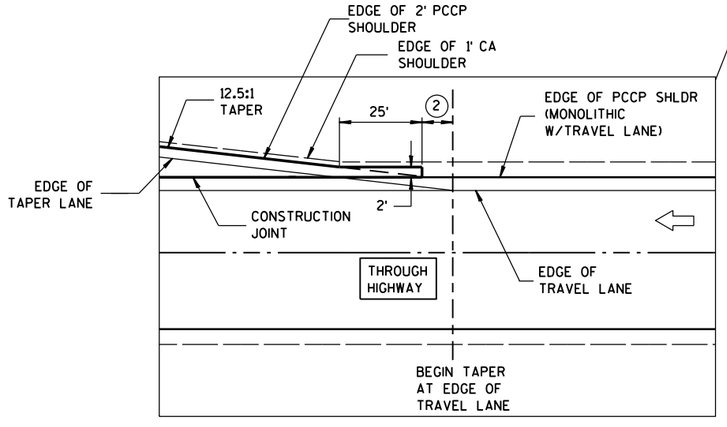
THROUGH HIGHWAY MONOLITHIC PCCP SHOULDER WIDTH (FEET)	DISTANCE (FEET) (1)	DISTANCE (FEET) (2)
2	13.3	0.0
3	20.0	12.5
TAPER RATE : 1	6.67	12.5



✳ NOTE: EDGE OF CONCRETE TAPER (EXTENDED) & EDGE OF TAPER LANE CONVERGE



DETAIL A



DETAIL B

RIGHT TURN LANE AND EXIT TAPER

DETAIL FOR RIGHT TURN LANE/ TEE INTERSECTION BYPASS LANE ON A CONCRETE ROADWAY

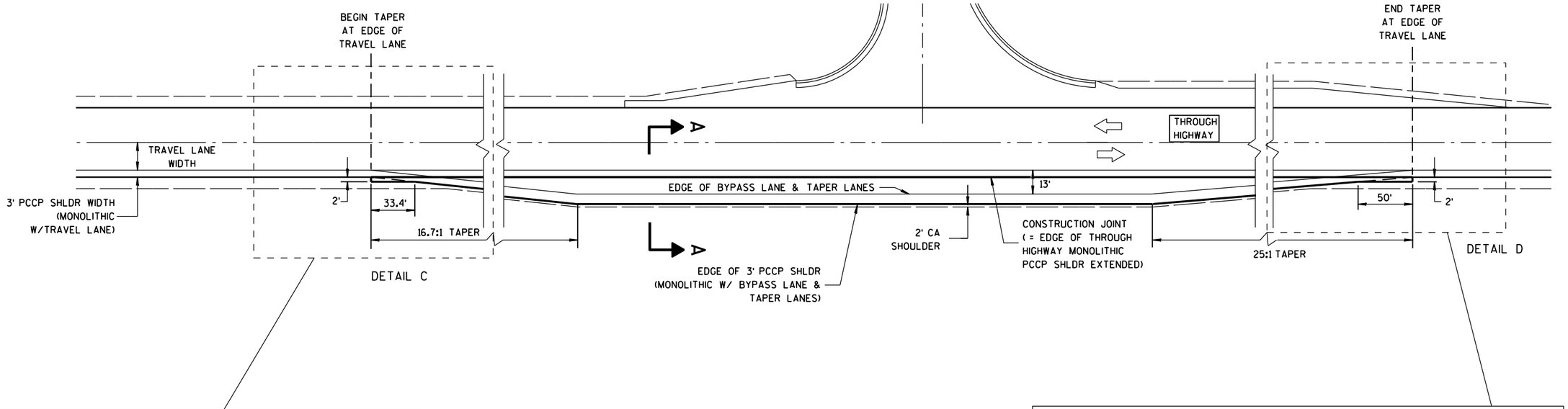
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

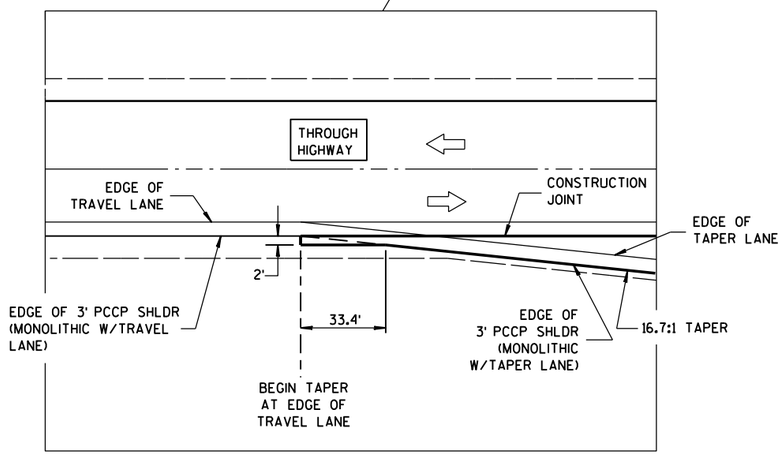
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S.D.D. 13 C 16-2a

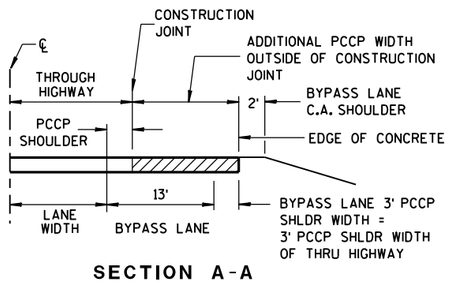
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S.D.D. 13 C 16-2a



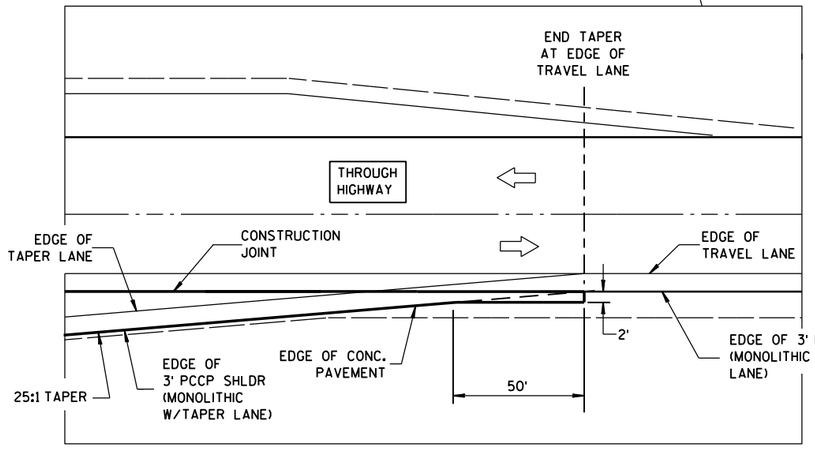


DETAIL C



SECTION A-A

(SHOWING BYPASS LANE AND SHOULDER)



DETAIL D

TWO LANE UNDIVIDED HIGHWAY TEE INTERSECTION BYPASS LANE

DETAIL FOR RIGHT TURN LANE/ TEE INTERSECTION BYPASS LANE ON A CONCRETE ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/18/12
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

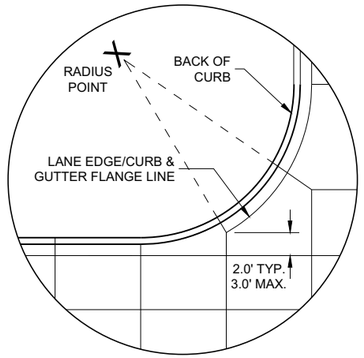
FHWA

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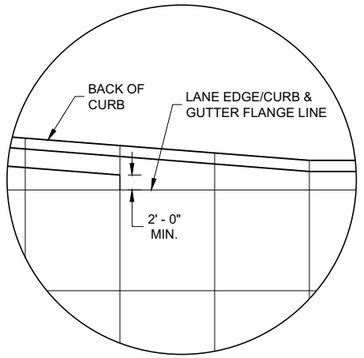
S.D.D. 13 C 16-2b

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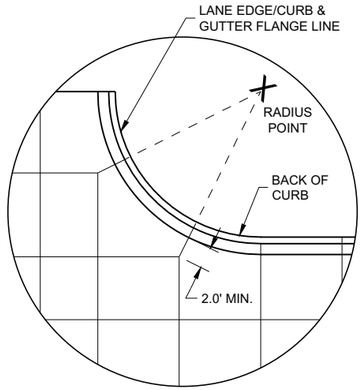
S.D.D. 13 C 16-2b



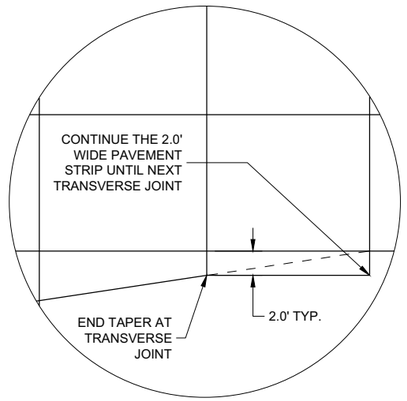
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

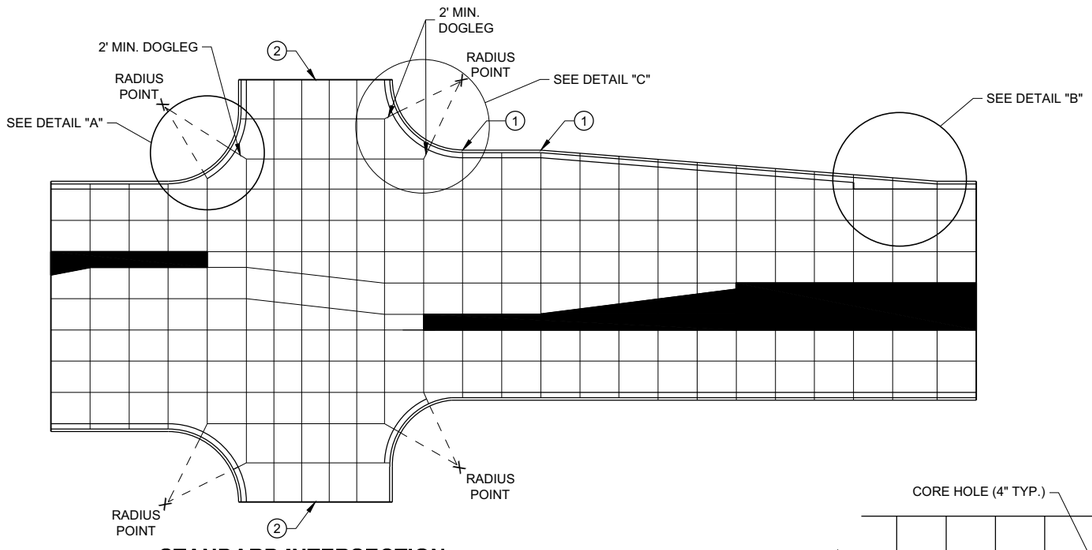
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.

(2) CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITHEDGE OF RADIUS.

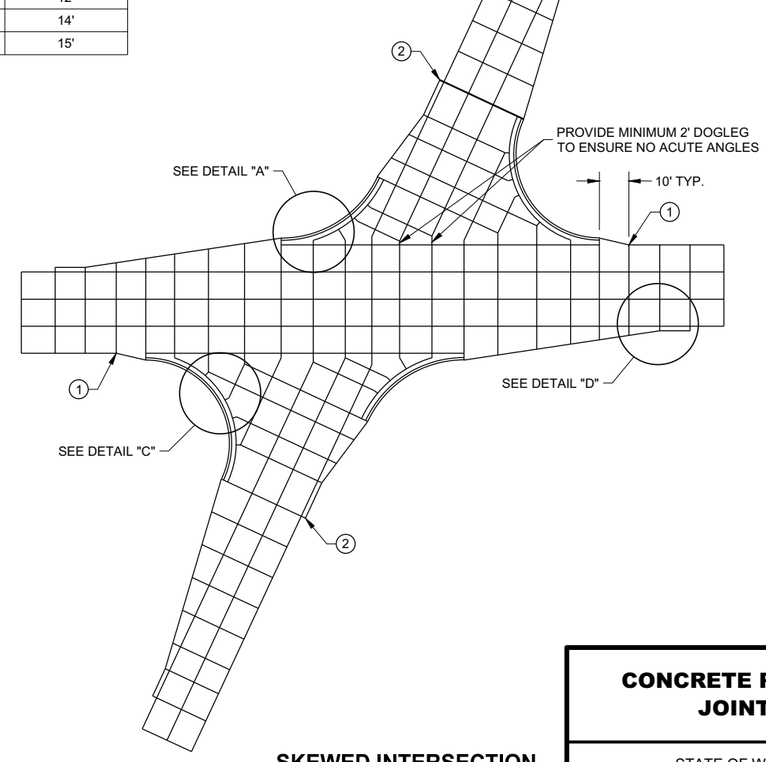
(3) THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



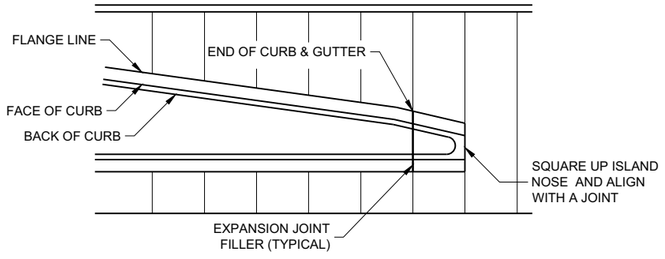
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

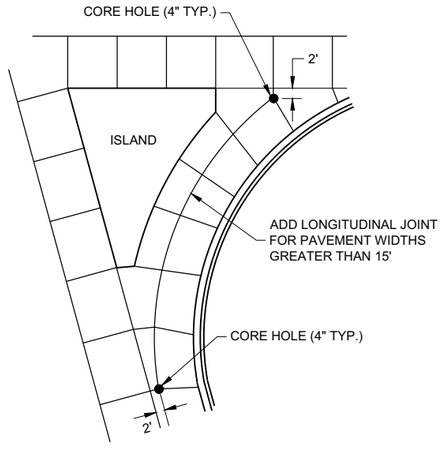
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 ½"	12'
7", 7 ½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTAT

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SDD 13C18 - 07a

6

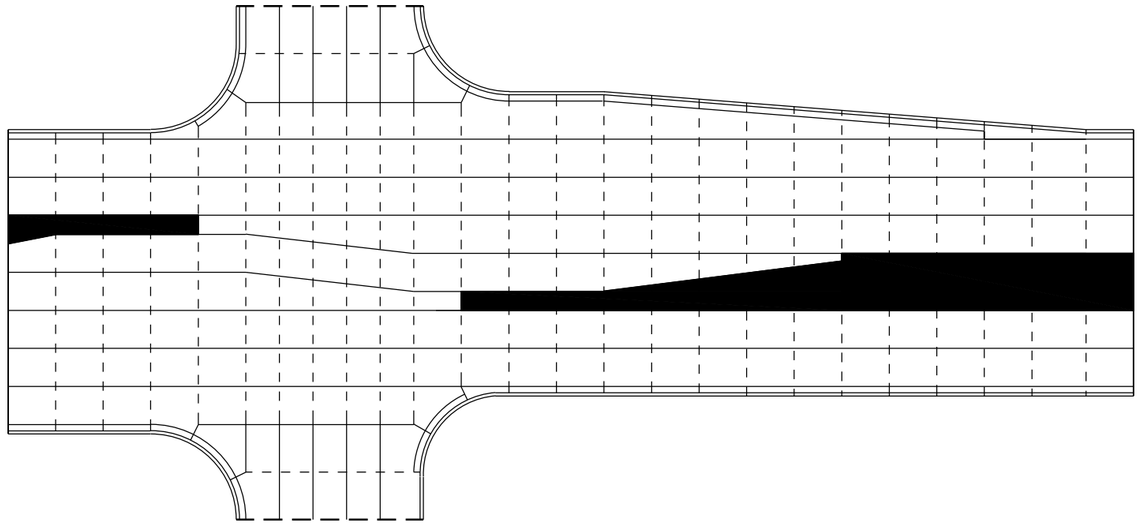
SDD 13C18 - 07a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

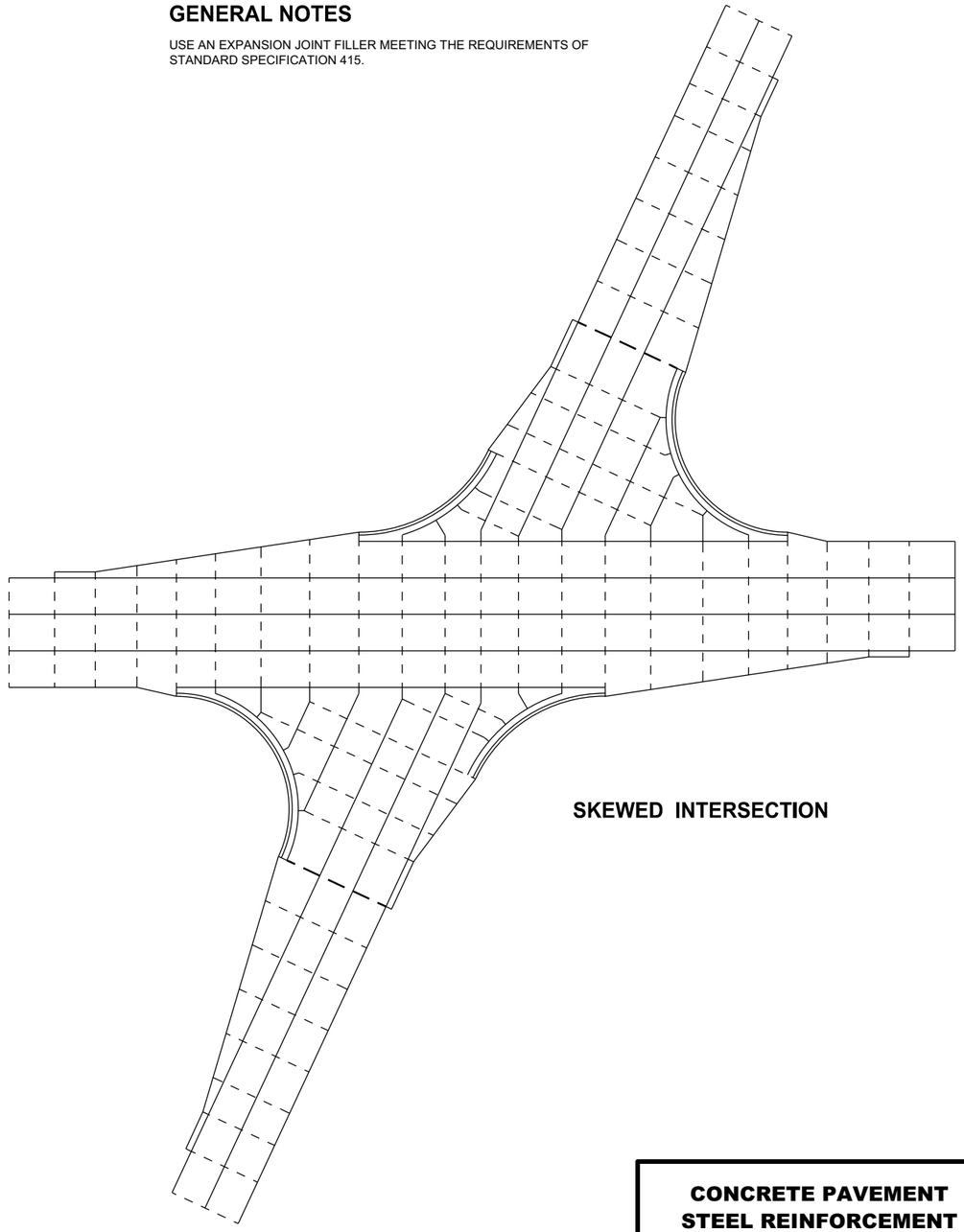
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

6

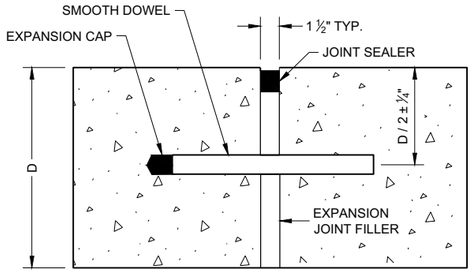
SDD 13C18 - 07b

CONCRETE PAVEMENT
STEEL REINFORCEMENT

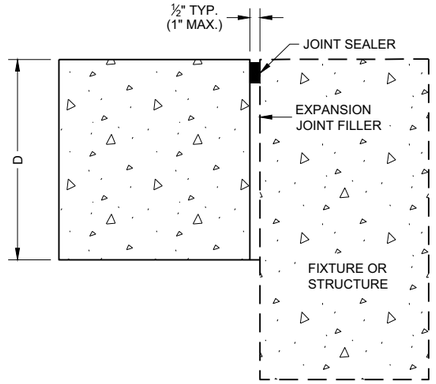
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 13C18 - 07b



DOWELED TRANSVERSE (1)



UNTIED - LONGITUDINAL

EXPANSION JOINTS

TIE BAR TABLE

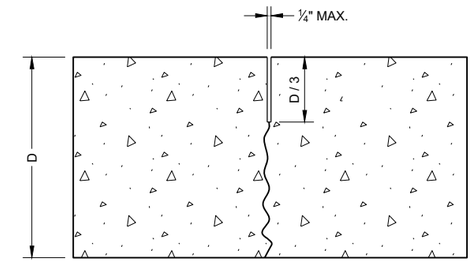
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4*	30"	24"**

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

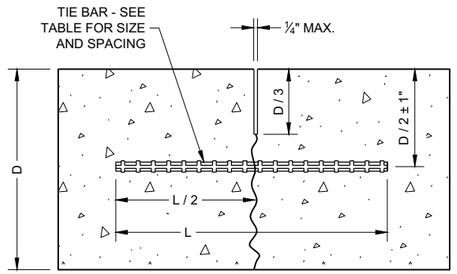
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

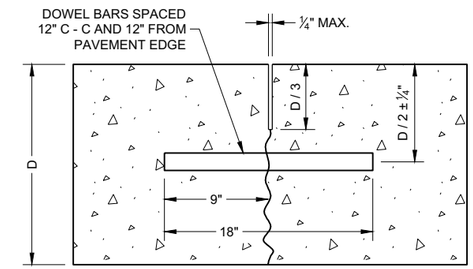
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATETHE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A ¼" RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



UNDOWELED TRANSVERSE

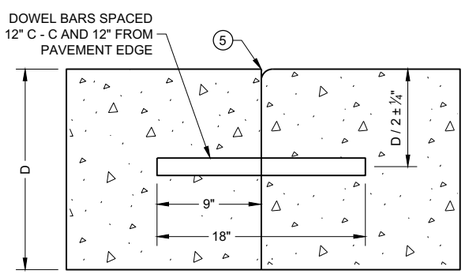


TIED LONGITUDINAL

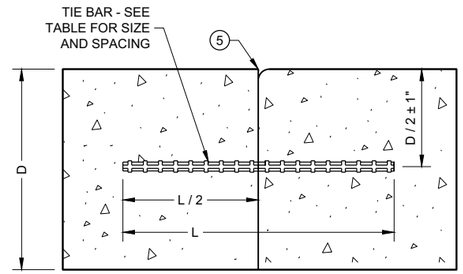


DOWELED TRANSVERSE

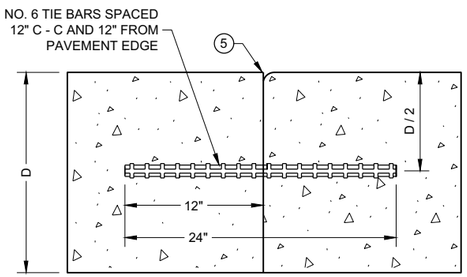
CONTRACTION JOINTS (2)



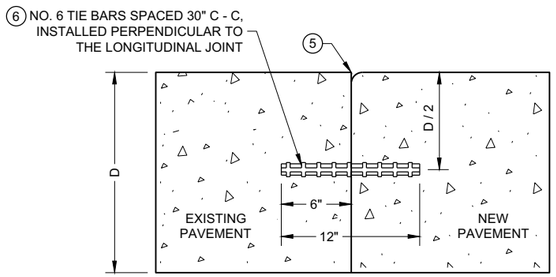
DOWELED TRANSVERSE (3)



TIED LONGITUDINAL



TIED TRANSVERSE (3)
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

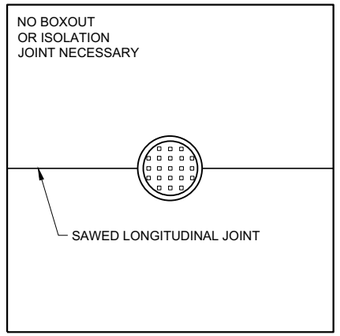
CONSTRUCTION JOINTS (4)

CONCRETE PAVEMENT JOINT TYPES

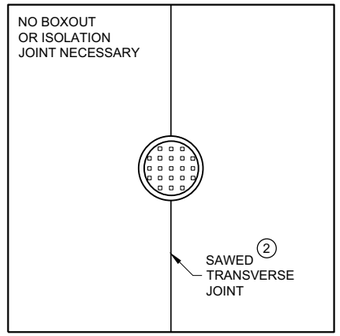
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

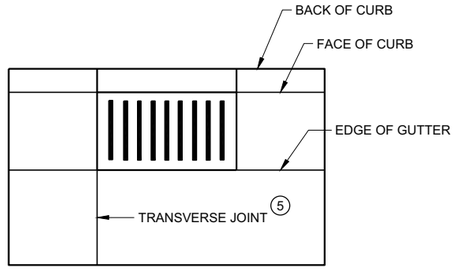
SDD 13C18 - 07c



MANHOLE WITH LONGITUDINAL JOINT



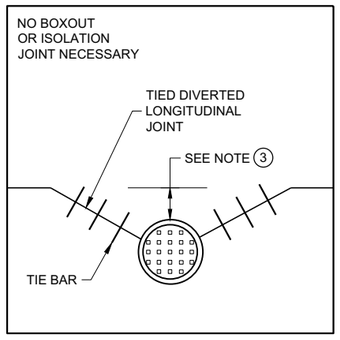
MANHOLE WITH TRANSVERSE JOINT



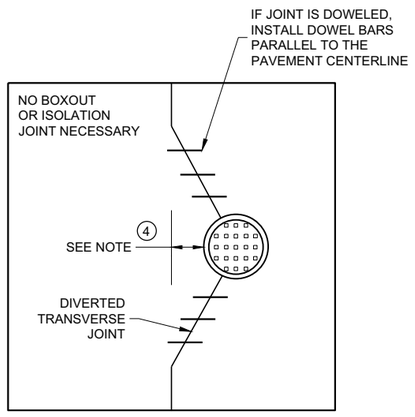
INLET WITH TRANSVERSE JOINT

GENERAL NOTES

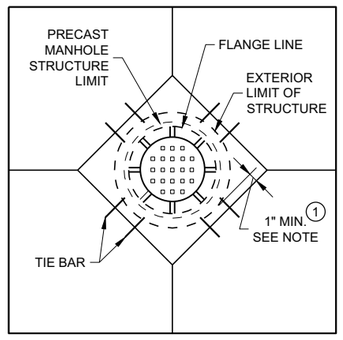
1. USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
2. ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
3. IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
4. IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
5. ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT



DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE
/S/ Peter Kemp P.E.
PAVEMENT SUPERVIS

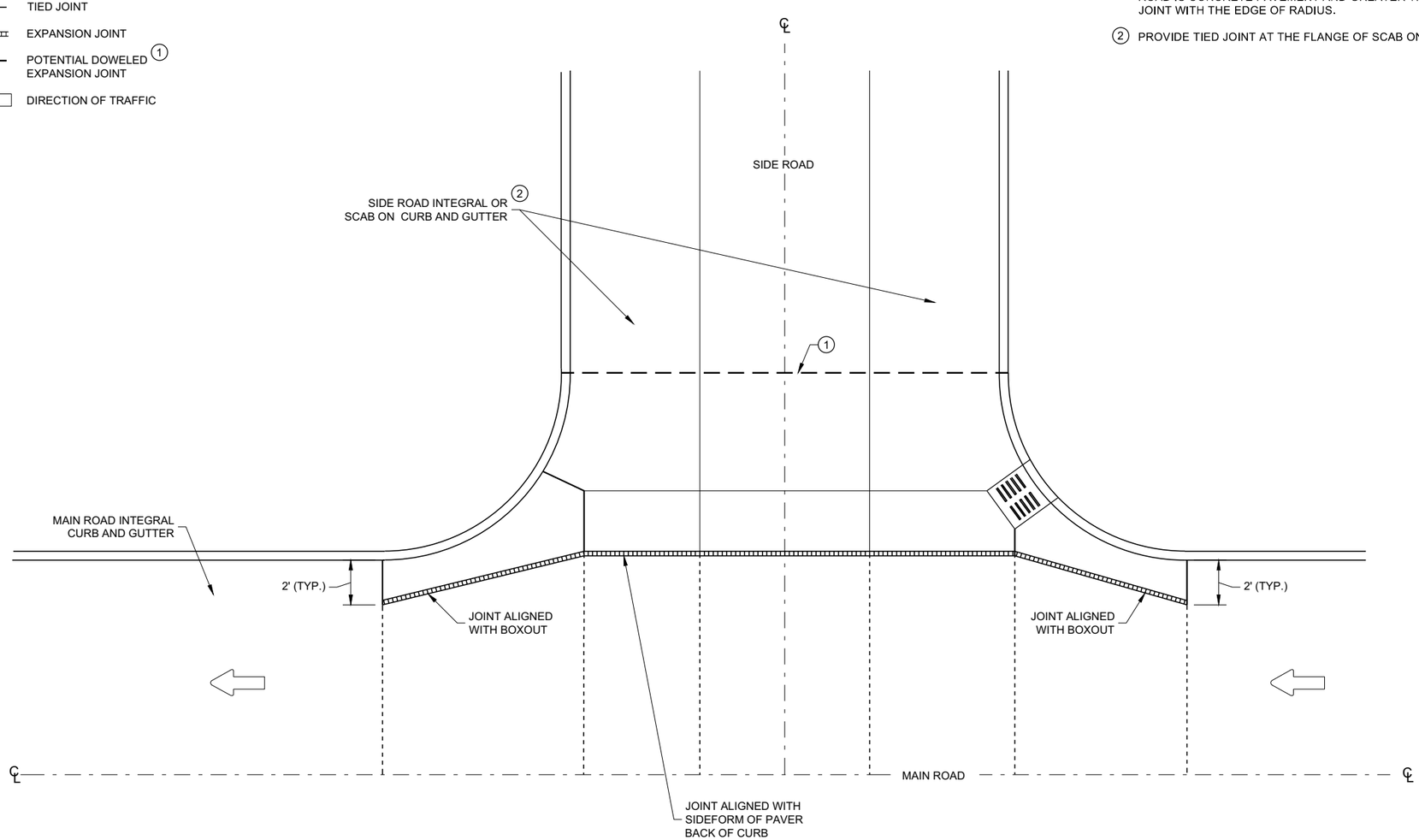
FHWA

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SDD 13C18 - 07d

LEGEND

- DOWELED JOINT
- TIED JOINT
- EXPANSION JOINT
- POTENTIAL DOWELED EXPANSION JOINT (1)
- DIRECTION OF TRAFFIC



GENERAL NOTES

(1) CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH THE EDGE OF RADIUS.

(2) PROVIDE TIED JOINT AT THE FLANGE OF SCAB ON CURB IF SCAB ON CURB AND GUTTER IS USE.

INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

6

SDD 13C18 - 07f

CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

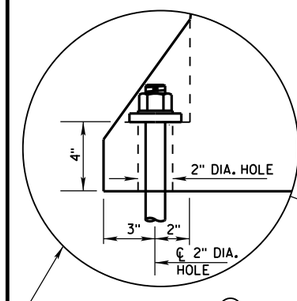
November 2018
DATE

/S/ Peter Kemp P.E.
ROADWAY STANDARDS DEVE ENGINEER

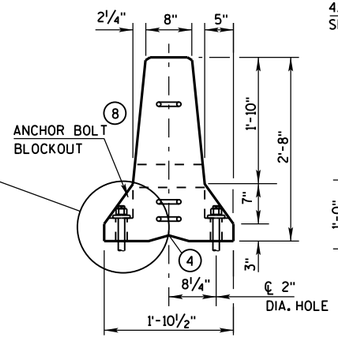
FHWA

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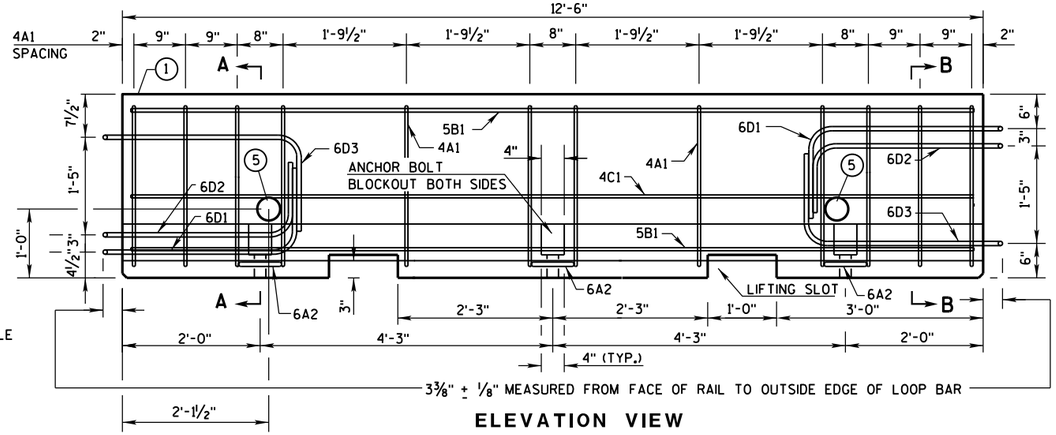
SDD 13C18 - 07f



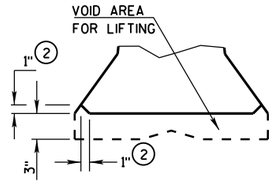
ANCHOR ON TRAFFIC SIDE (8) ONLY WHEN REQUIRED (SEE SHEET D FOR ADDITIONAL ANCHOR DETAIL)



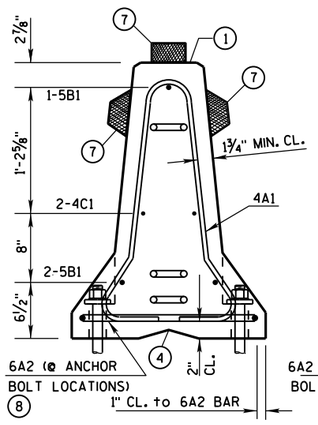
END VIEW



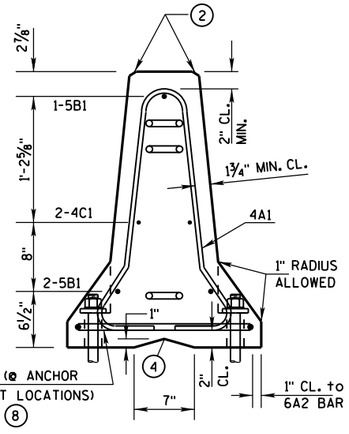
ELEVATION VIEW



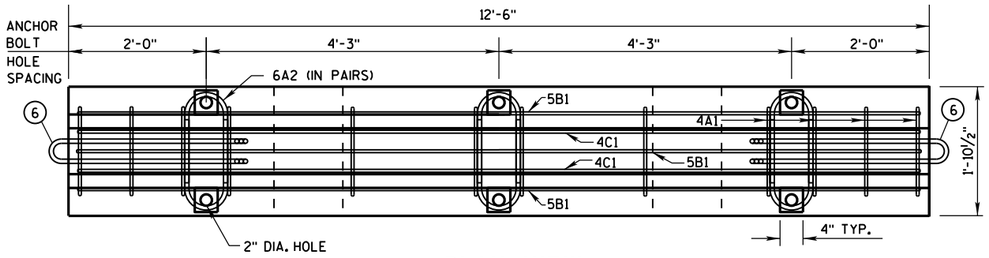
DETAIL "B" LIFTING SLOT DETAIL



SECTION A-A (STIRRUP PLACEMENT)

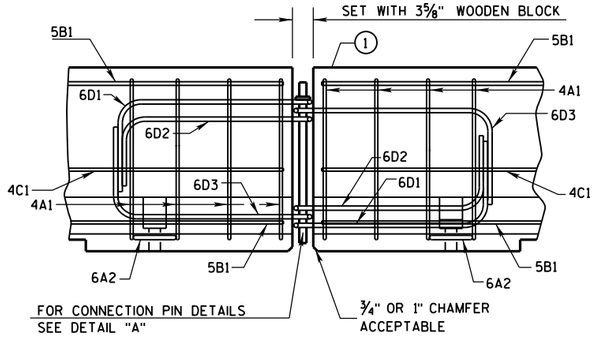


SECTION B-B (STIRRUP PLACEMENT)

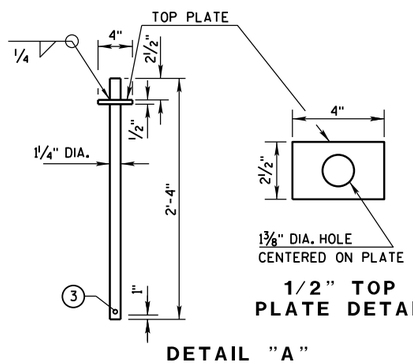


PLAN VIEW

DETAILS OF BARRIER SECTION

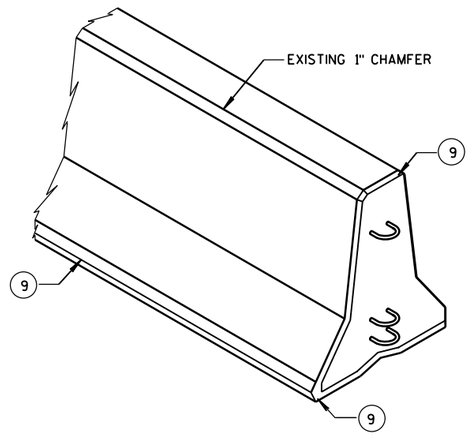


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

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



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(a) THRU 14B7-15(i).

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

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

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

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

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

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

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

(2) 1" CHAMFER TO PREVENT SPALLING.

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

(4) "V" NOTCH IS OPTIONAL.

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

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

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

(8) SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.

(9) 1" CHAMFER OPTIONAL.

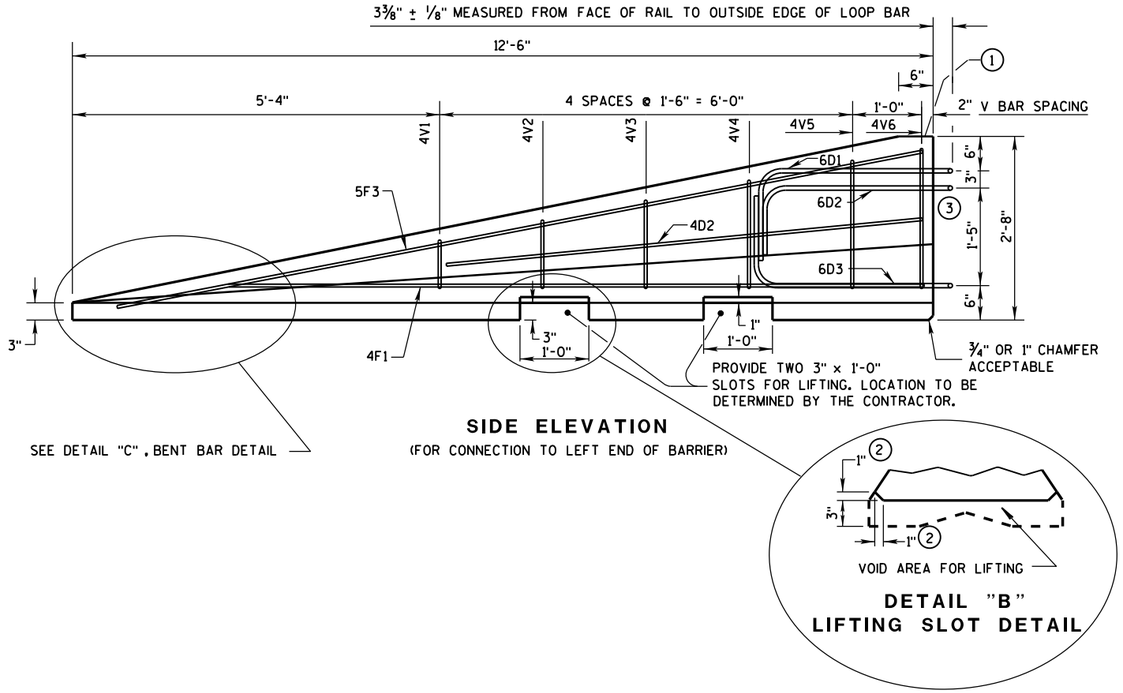
f'c = 4,000 psi

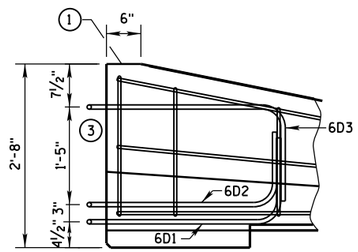
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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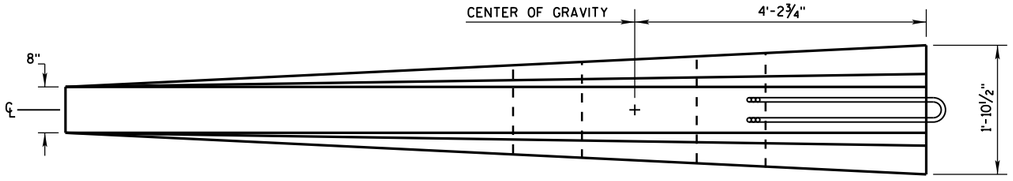
S.D.D. 14 B 7-15a

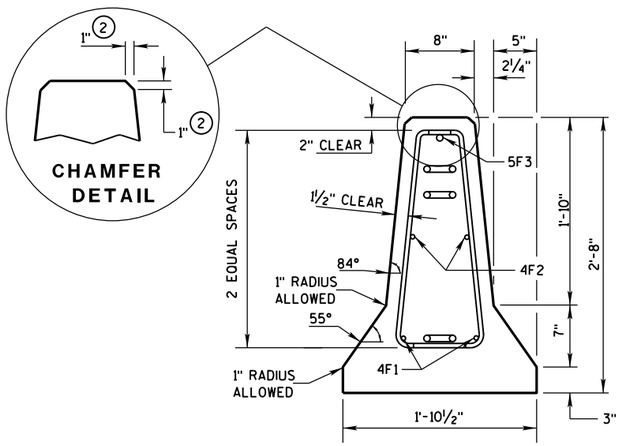


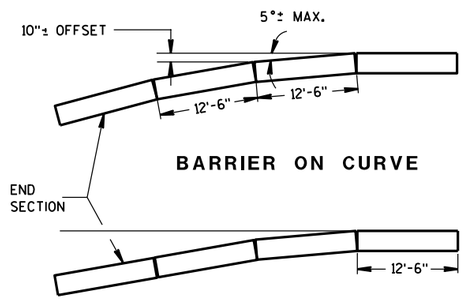


GENERAL NOTES

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







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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

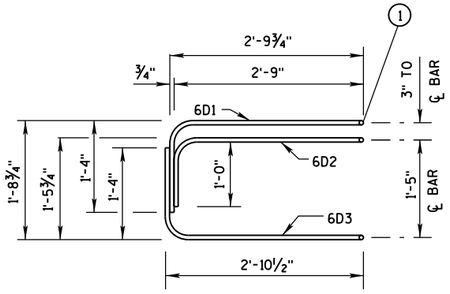
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S.D.D. 14 B 7-15b

BARRIER TAPER SECTION BILL OF MATERIALS

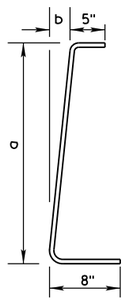
(PER 12'-6" BARRIER TAPER SECTION)

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



DETAIL "C"
BENT BAR DETAIL

ELEVATION
LOOP BAR ASSEMBLY



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

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

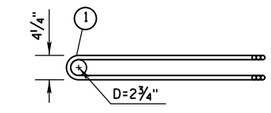
GENERAL NOTES

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

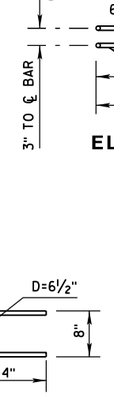
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

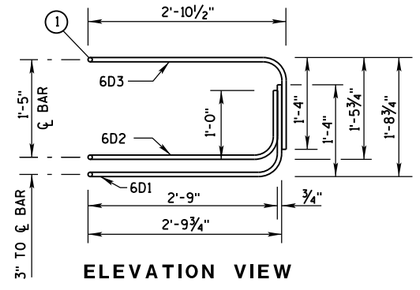
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



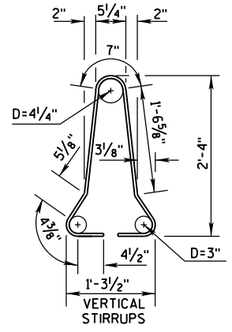
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



ELEVATION VIEW



4A1

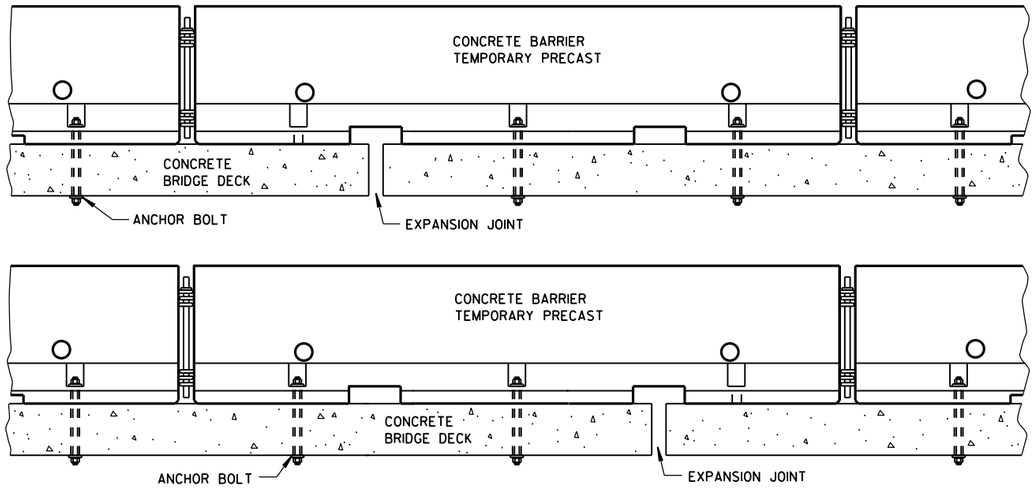
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 14 B 7-15c



TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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

GENERAL NOTES

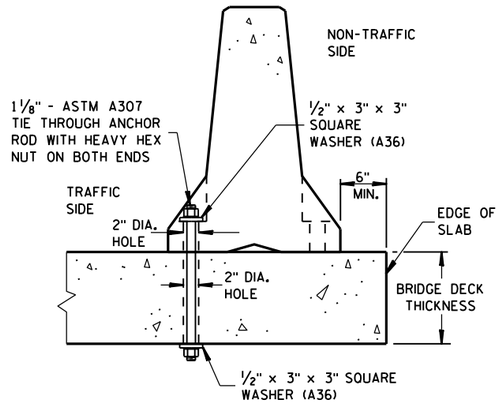
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERICAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

(1) 1⅛" DIAMENTER A307 THREADED ROD. ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL. ASTM A563A HEAVY HEX NUT.

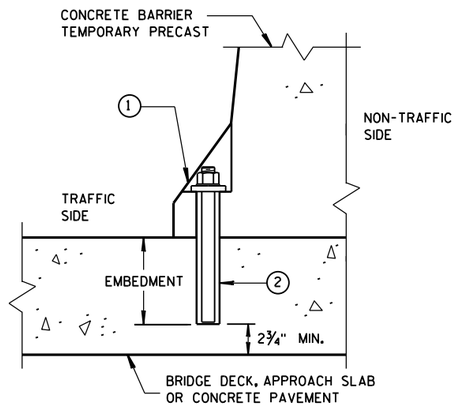
(2) ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

(3) ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THAN DRIVE ASPHALT ANCHOR PIN.



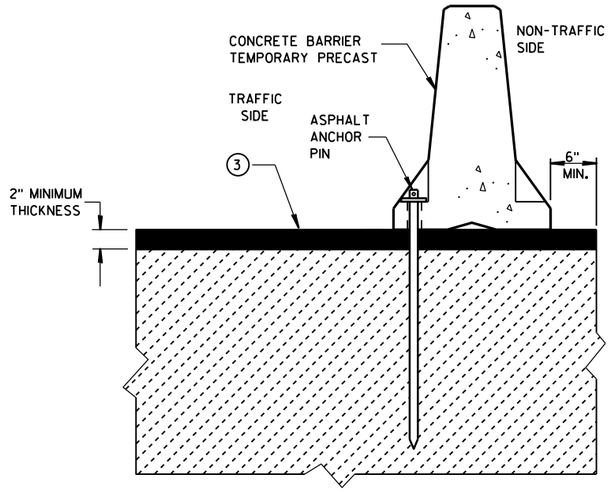
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

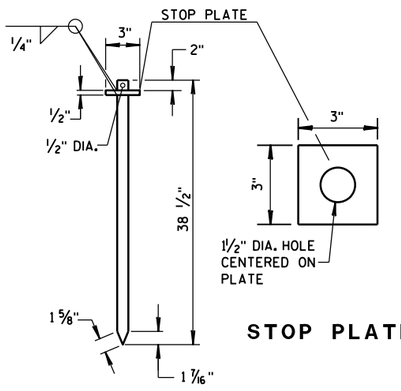


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



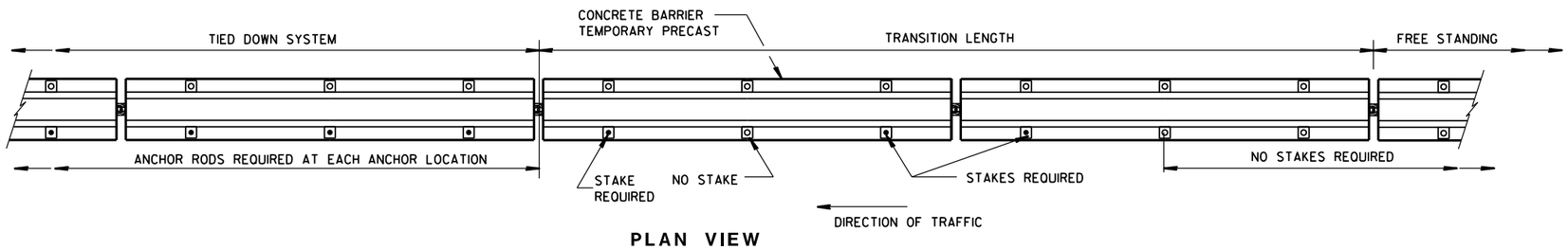
STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



STOP PLATE

ASPHALT ANCHOR PIN

(ASTM A36 STEEL)



PLAN VIEW

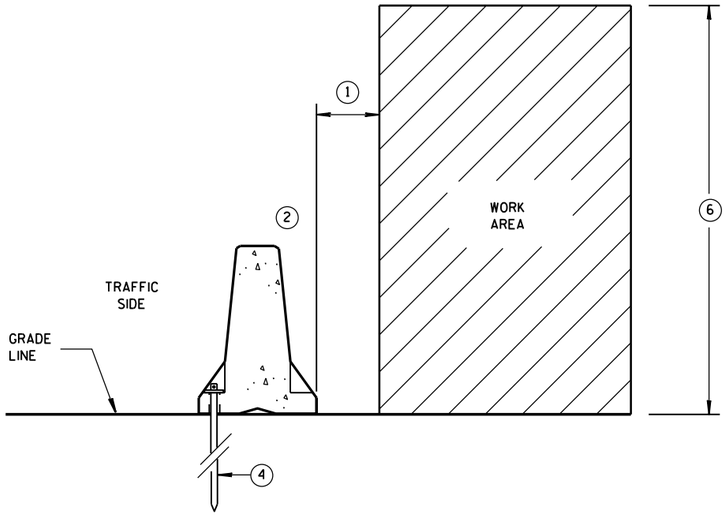
FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

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

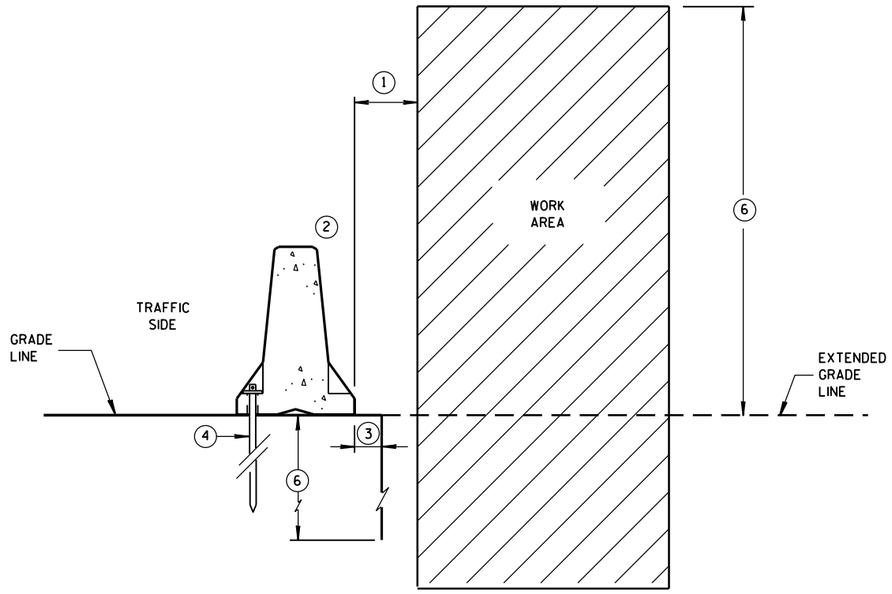
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

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ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

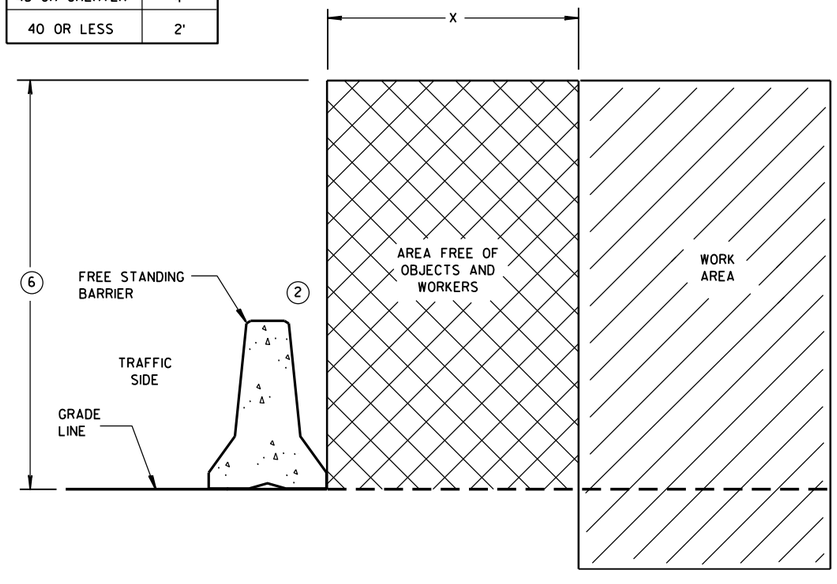


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

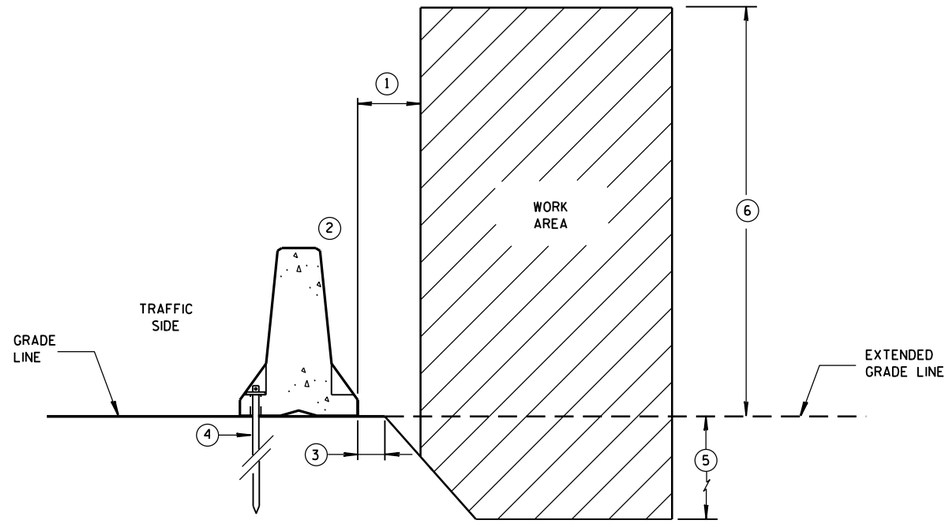
GENERAL NOTES

1. WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
2. OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
3. SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
4. SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
5. DEPTH OF 3 FEET OR MORE.
6. Y = 6'-6".

POSTED SPEED MPH	X
45 OR GREATER	4'
40 OR LESS	2'



FREE STANDING BARRIER SPACE REQUIREMENTS



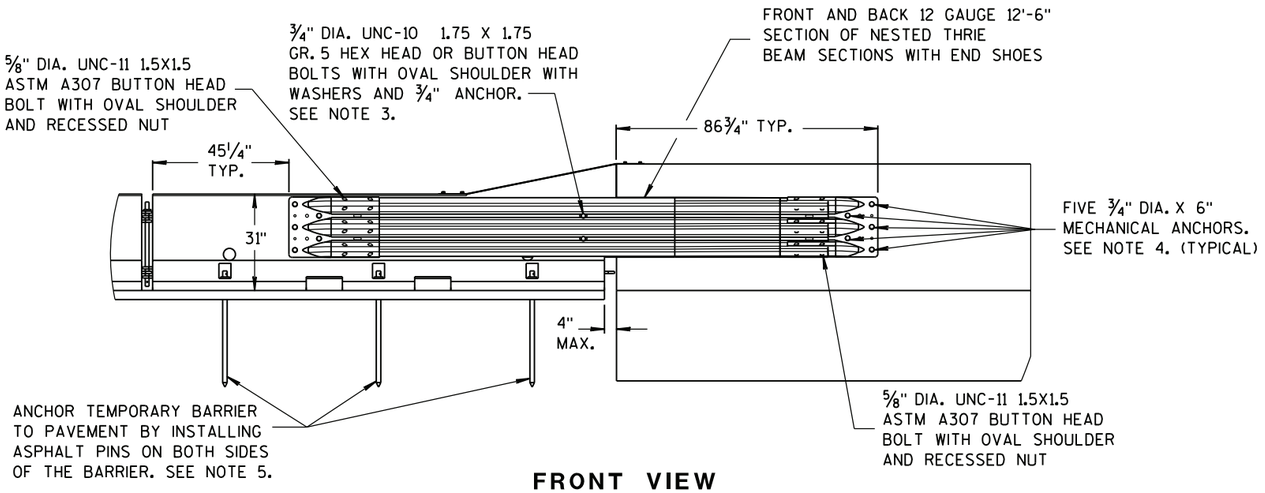
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

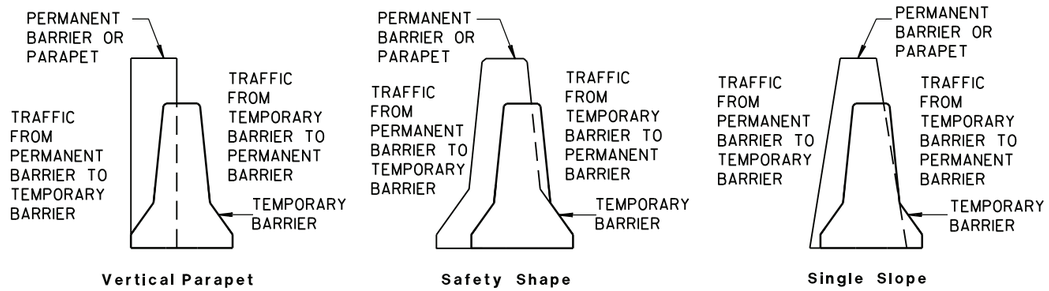
STATE OF WISCONSIN
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FRONT VIEW

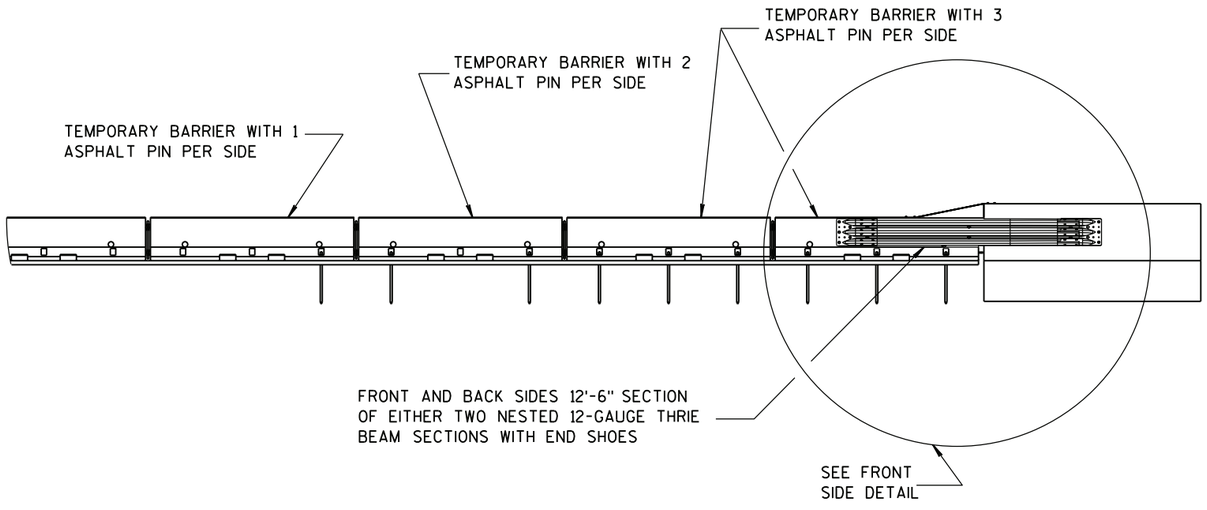


TEMPORARY BARRIER PLACEMENT FOR TRANSITION TO TIED DOWN SYSTEM

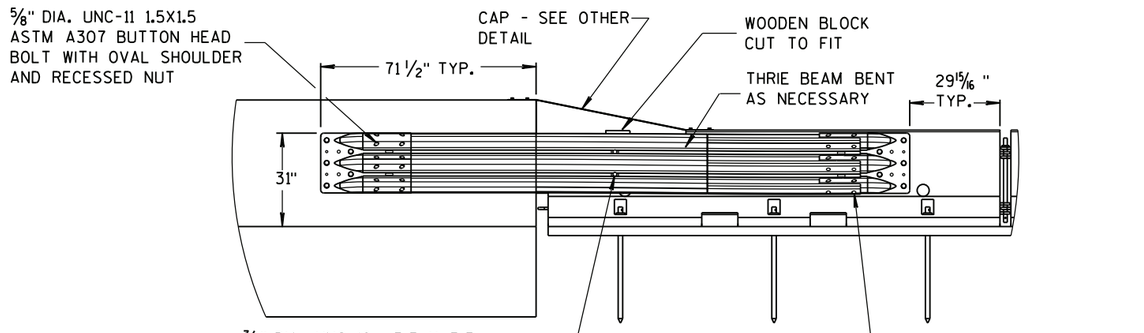
NOTES

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

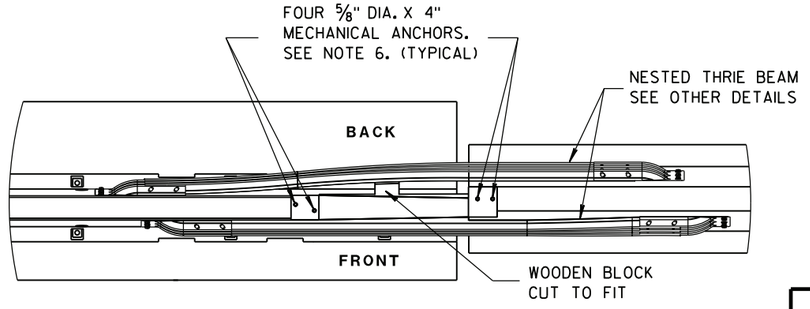
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD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



FRONT VIEW



BACK VIEW



PLAN VIEW

TRANSITION TO TIED DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

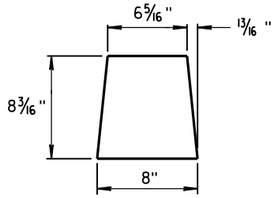
STATE OF WISCONSIN
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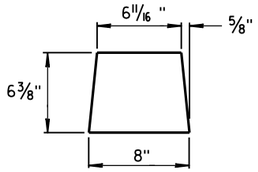
S.D.D. 14 B 7-15f

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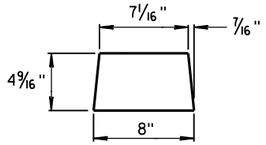
S.D.D. 14 B 7-15f



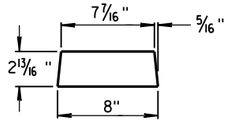
GUSSET 1



GUSSET 2

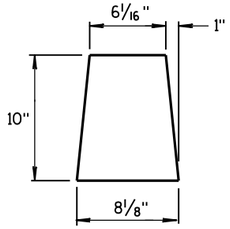


GUSSET 3

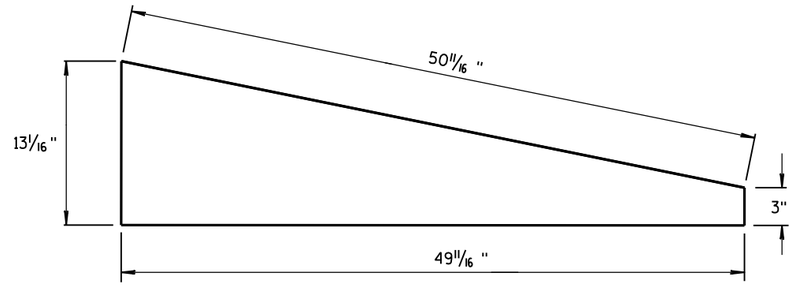


GUSSET 4

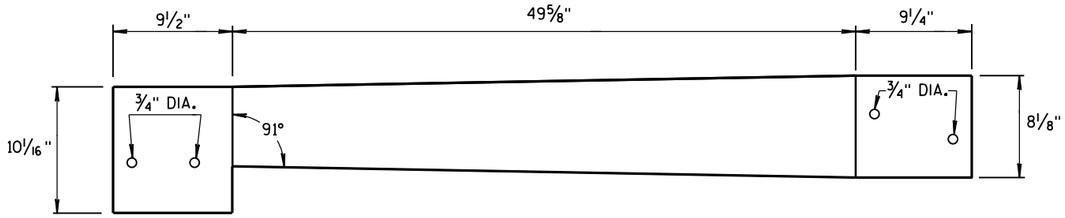
GUSSETS

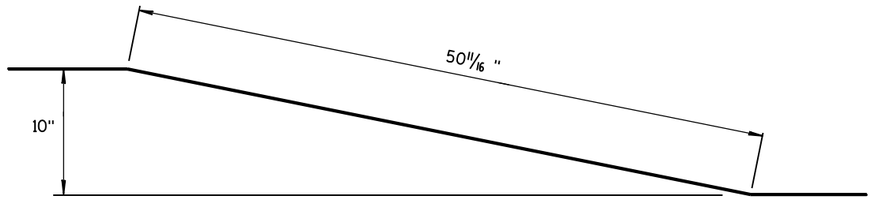


END PLATE



SIDE PLATE

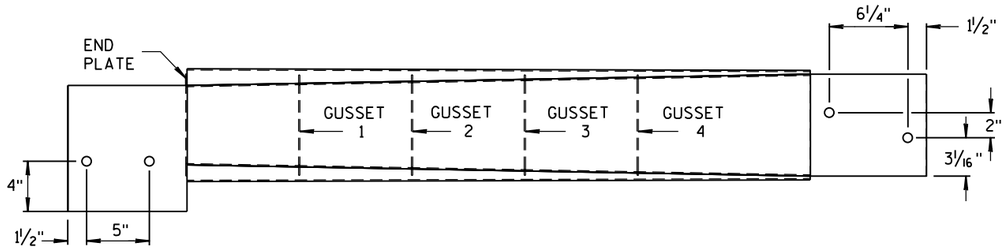


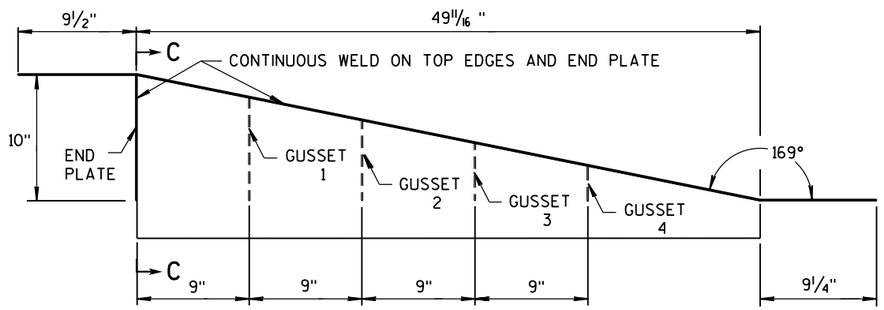


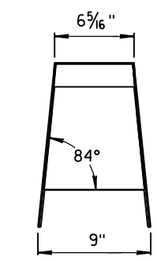
TOP PLATE

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

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







SECTION C-C

NOTES

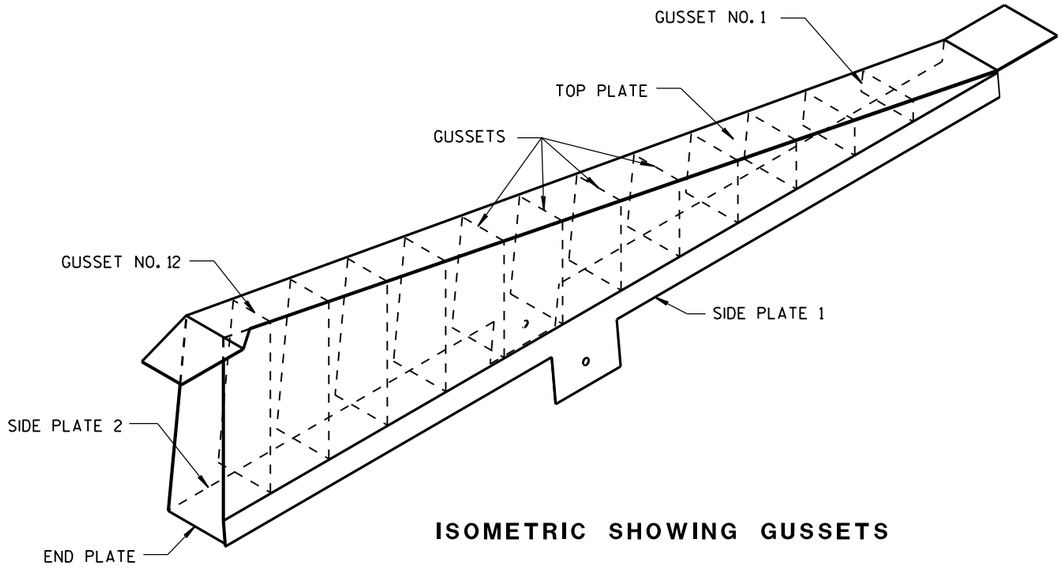
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

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

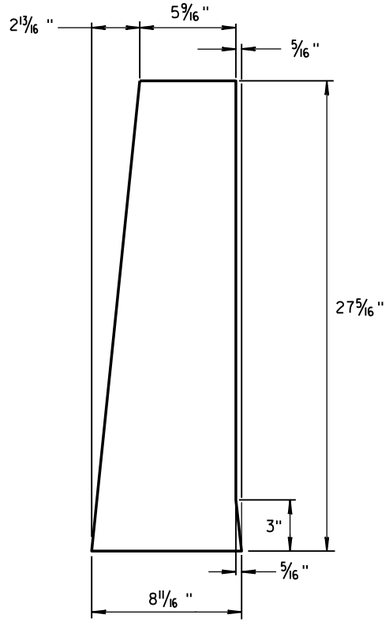
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 7-15g

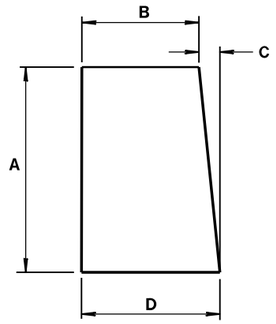


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



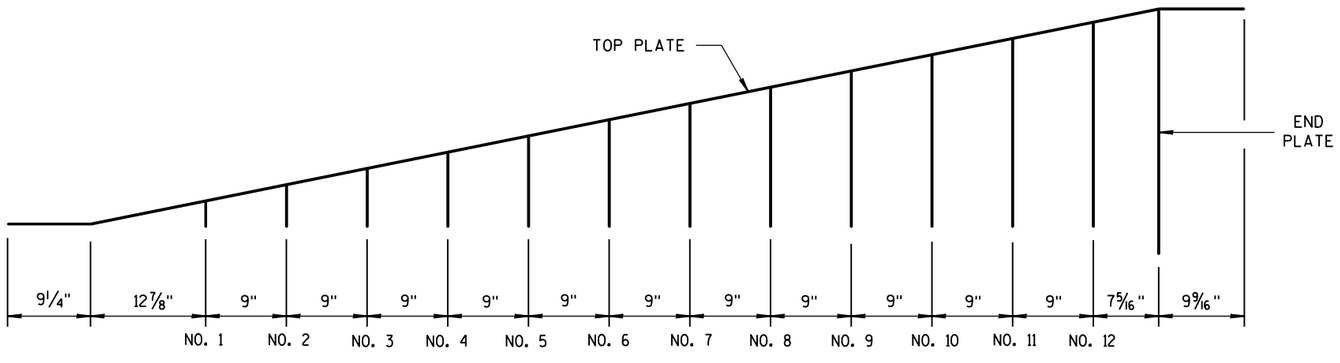
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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



GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

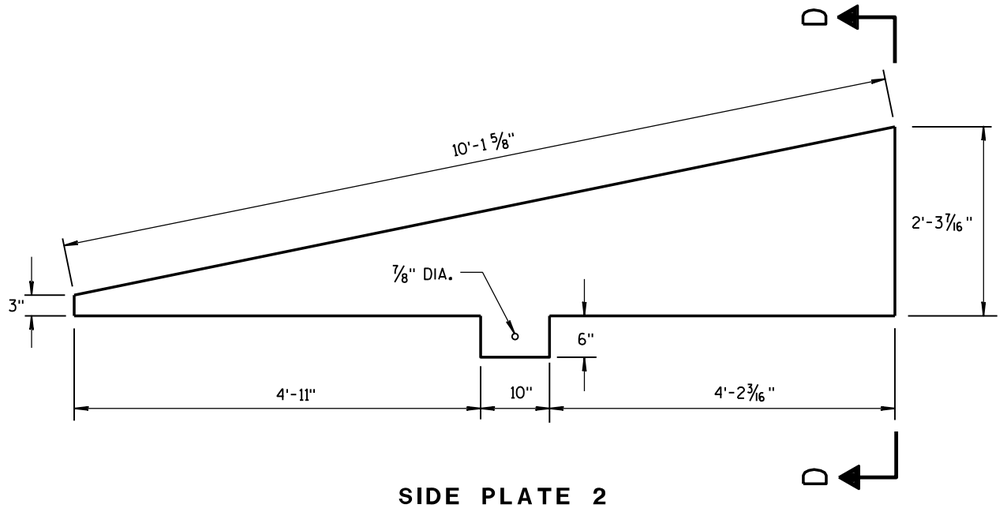
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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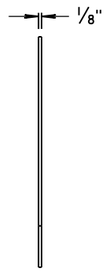
S.D.D. 14 B 7-15h

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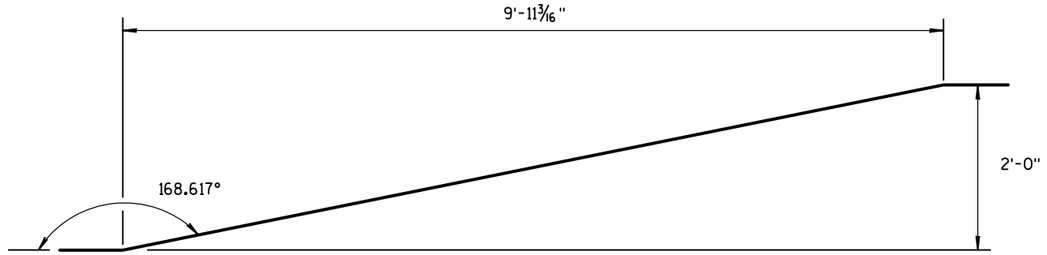
S.D.D. 14 B 7-15h



SIDE PLATE 2

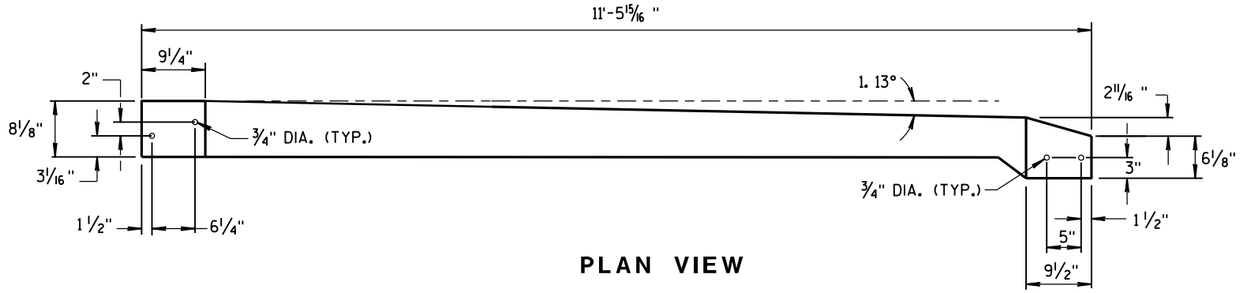


END VIEW



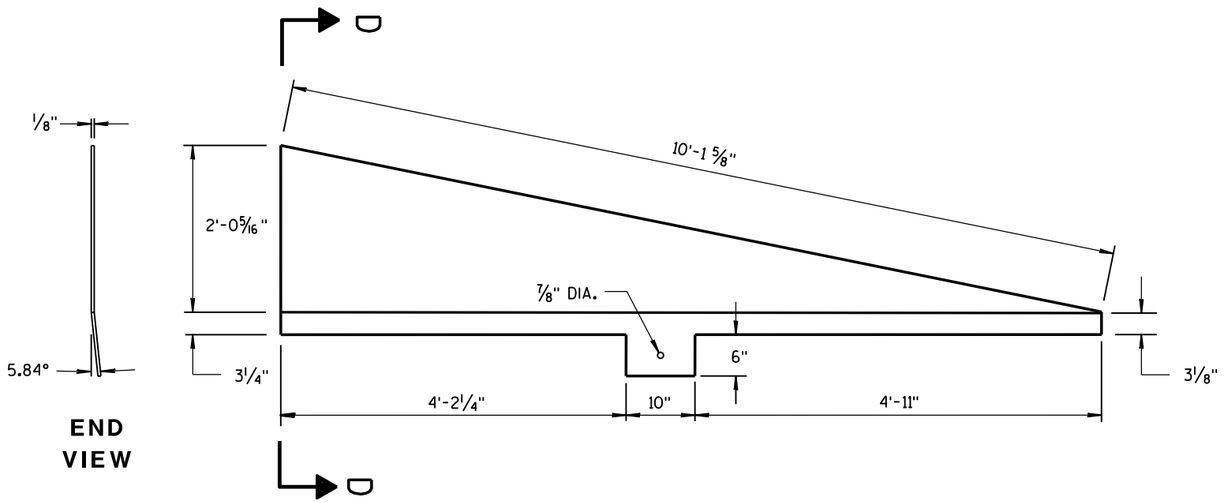
SIDE VIEW

TOP PLATE



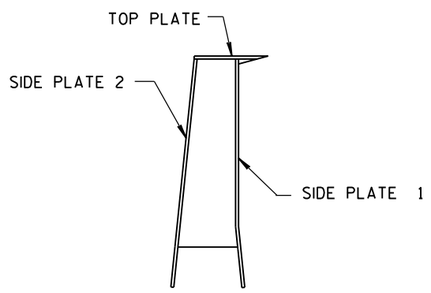
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

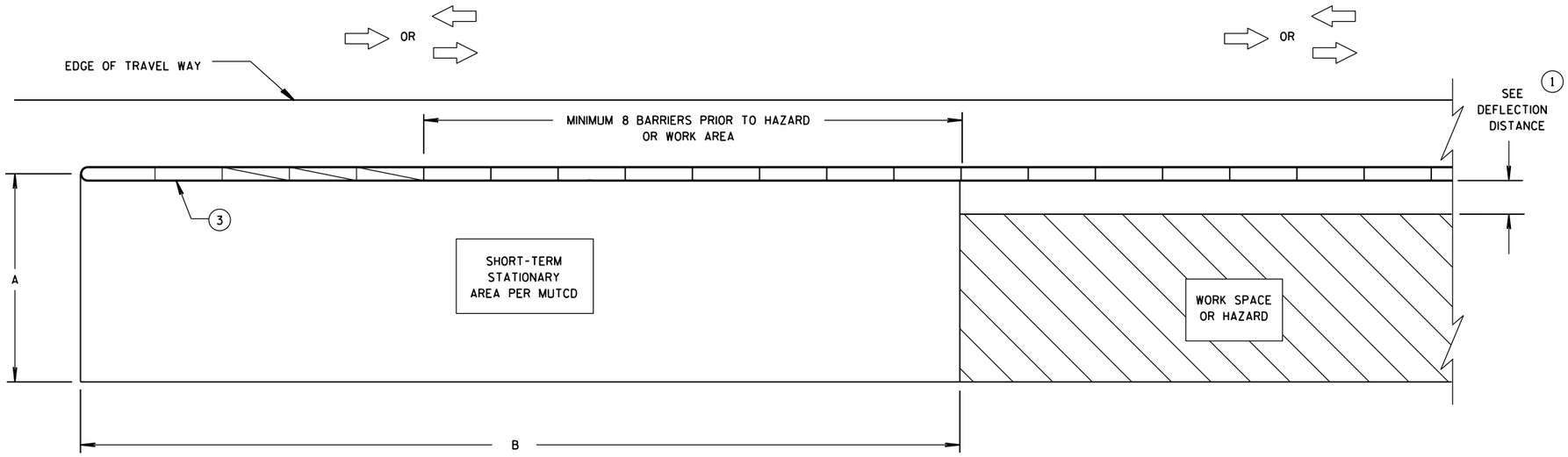
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S.D.D. 14 B 7-15i

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S.D.D. 14 B 7-15i



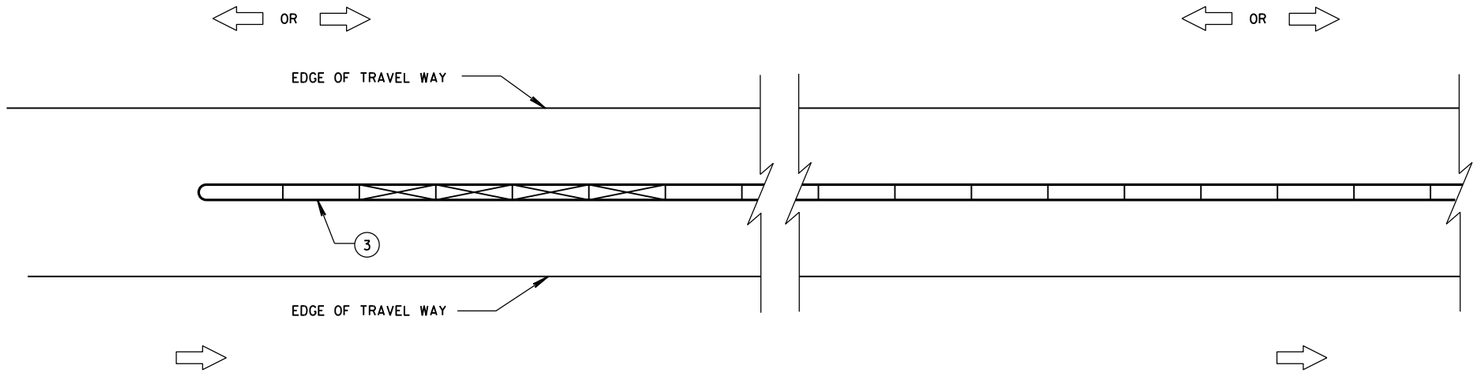
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE (2)

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

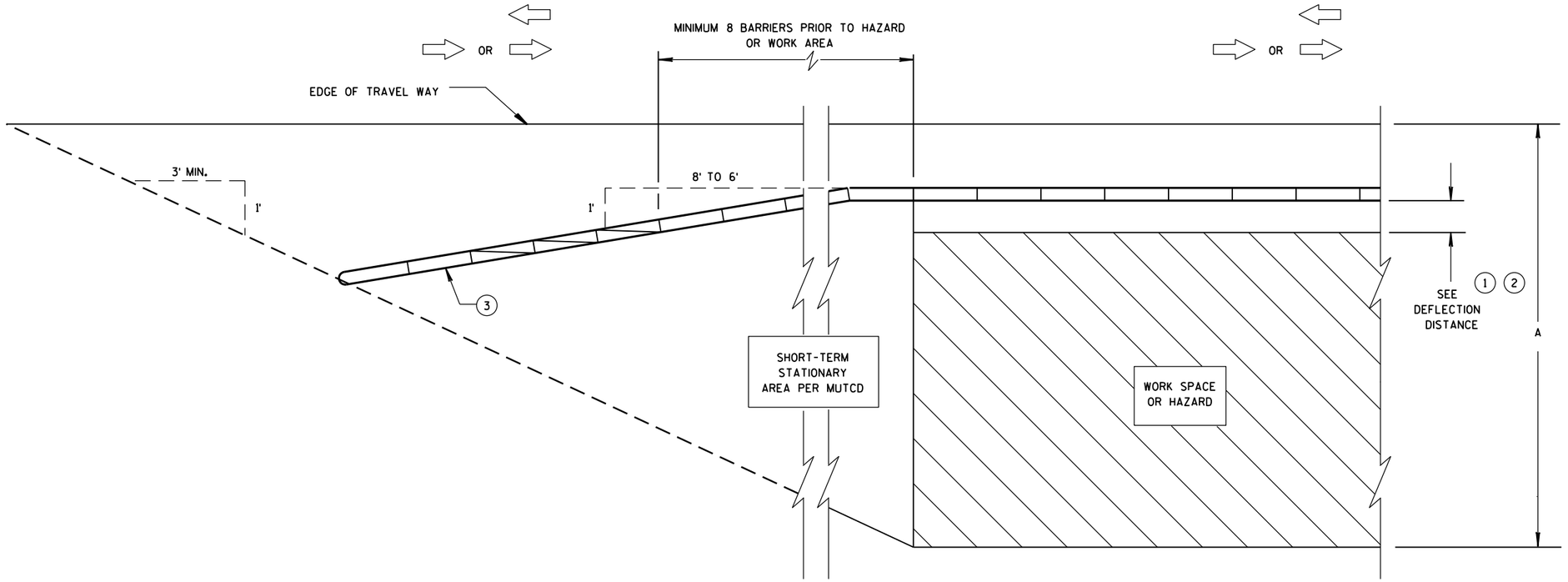
(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

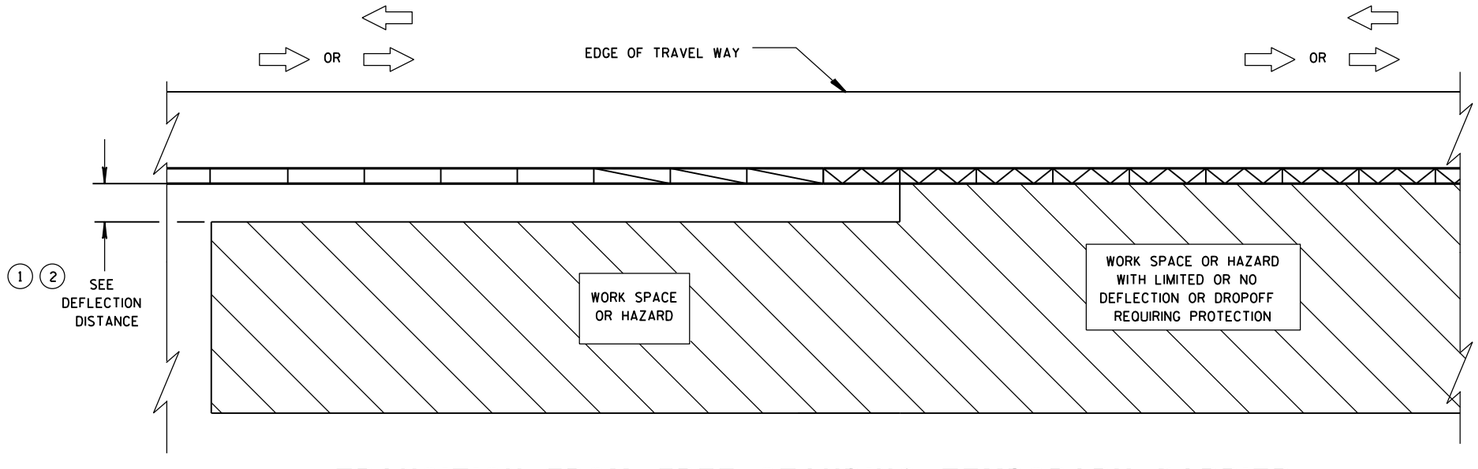
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

S.D.D. 14 B 8-2a



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

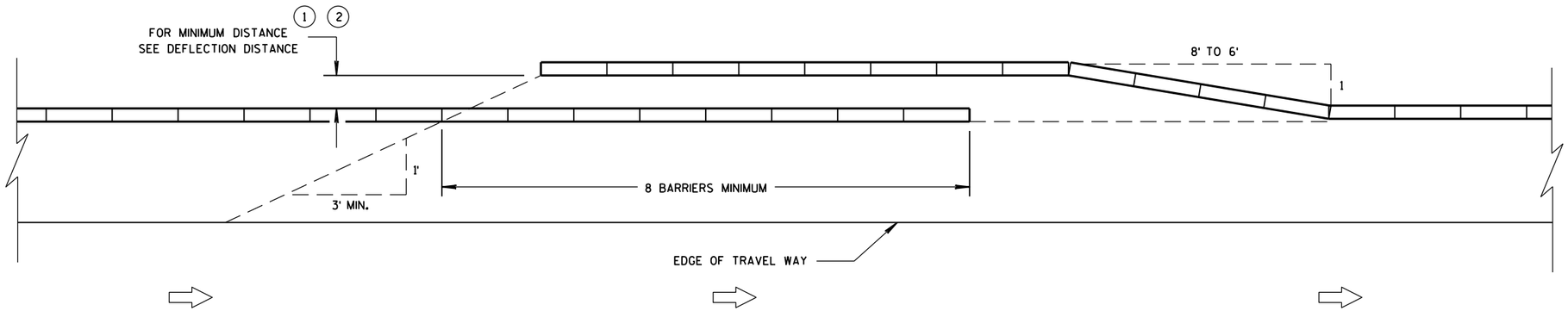
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

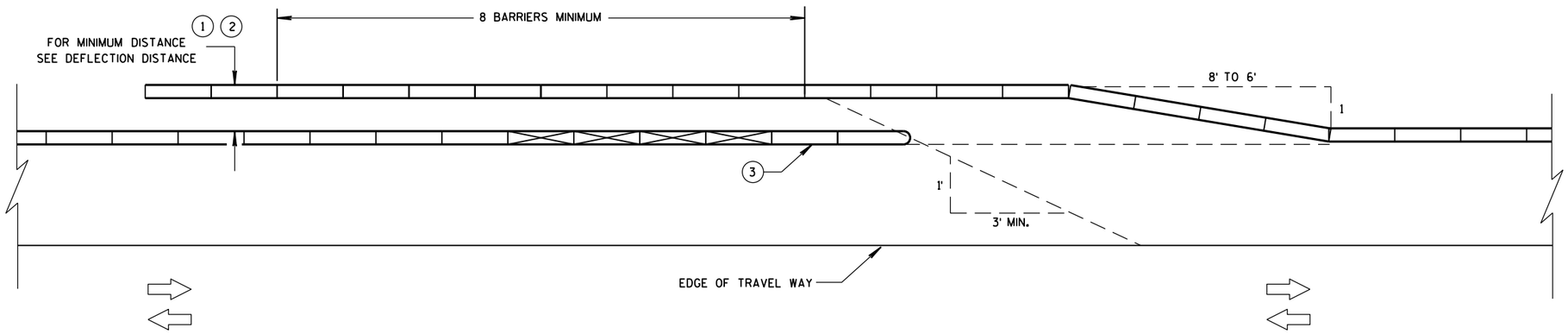
S.D.D. 14 B 8-2b

6

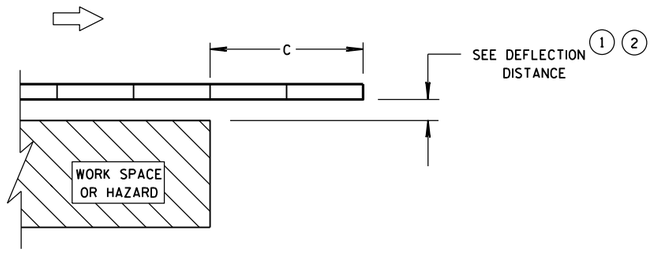
S.D.D. 14 B 8-2b



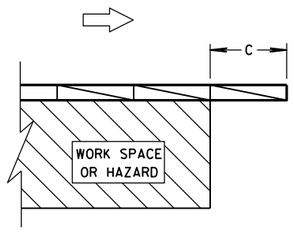
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

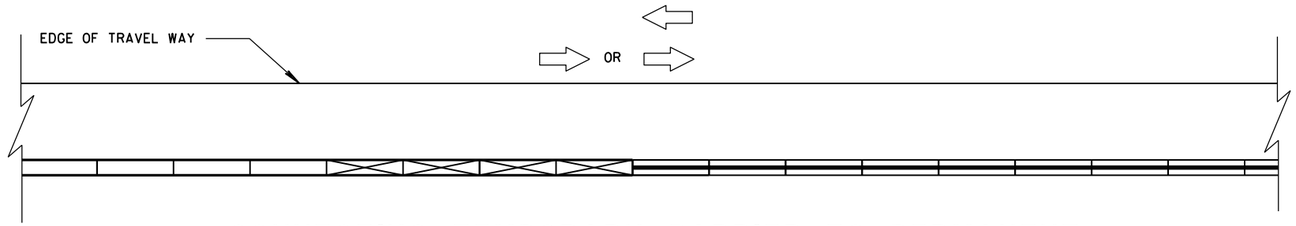
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

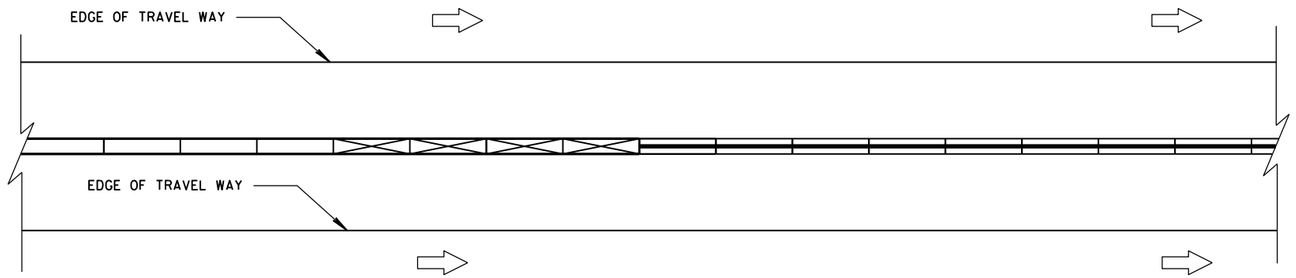
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 8-2c



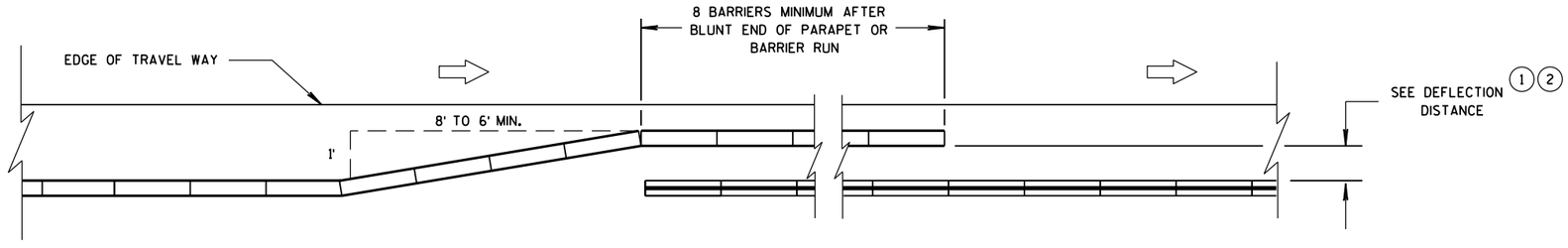
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



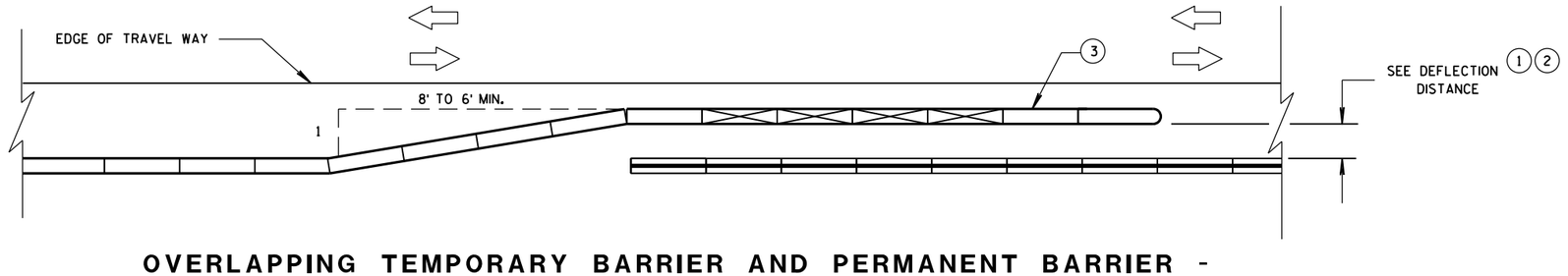
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 8-2d

6

S.D.D. 14 B 8-2d

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

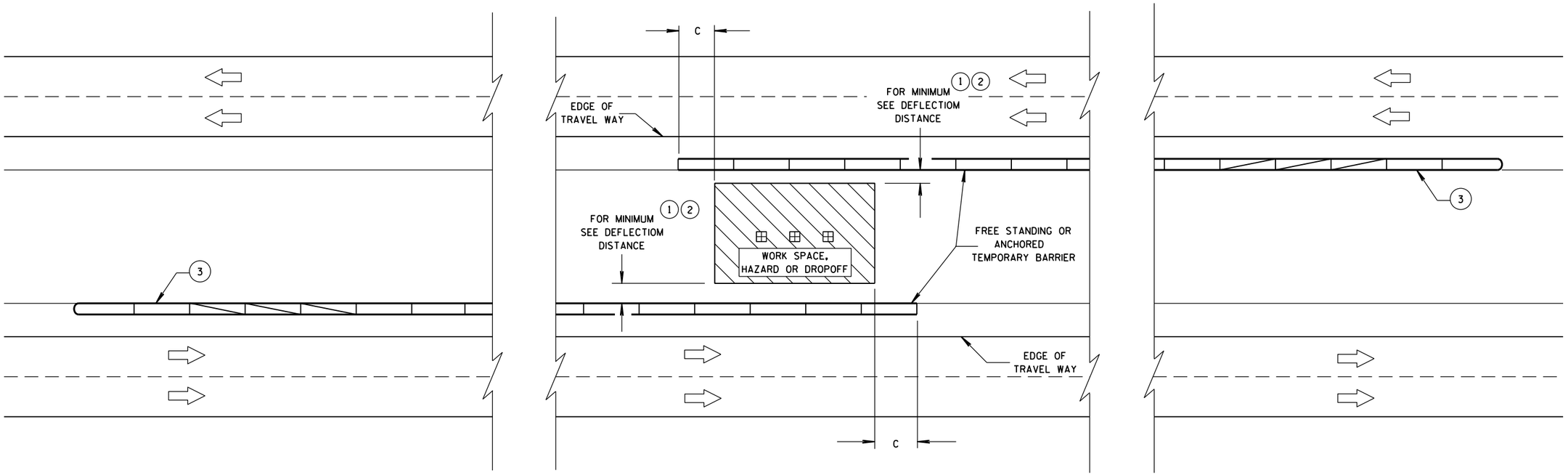
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

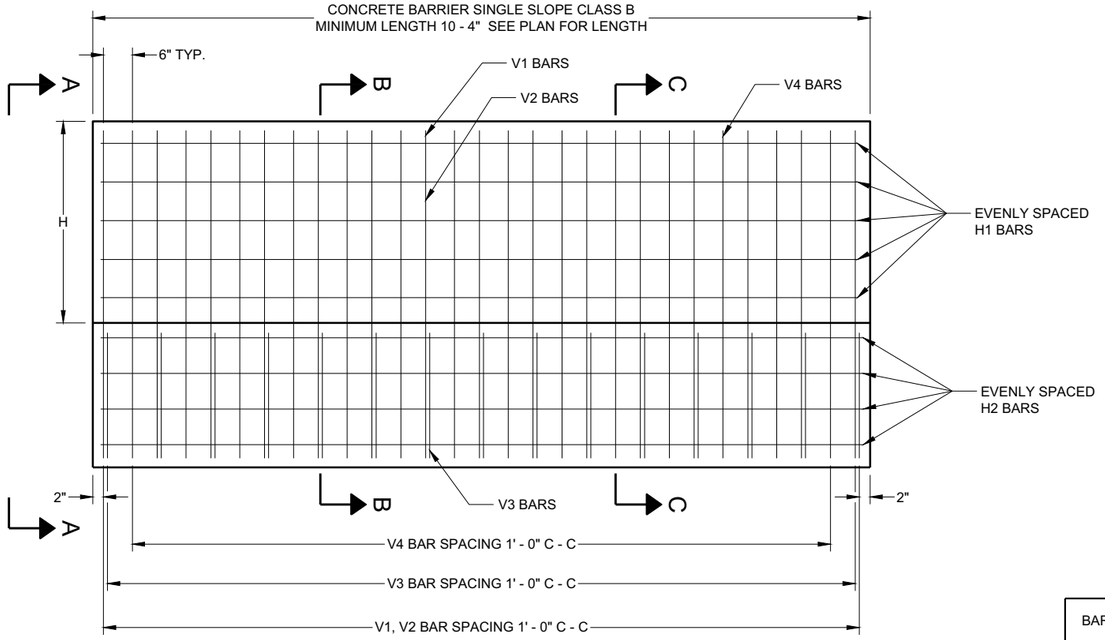
APPROVED
June, 2015
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER
FHWA

6

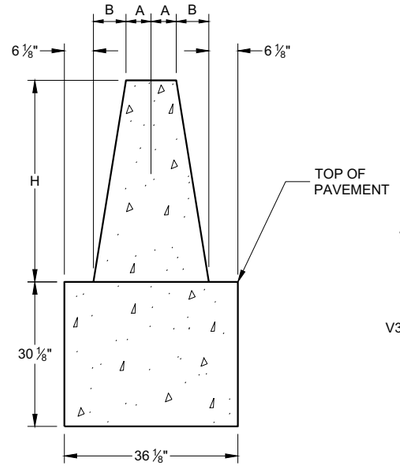
S.D.D. 14 B 8-2e

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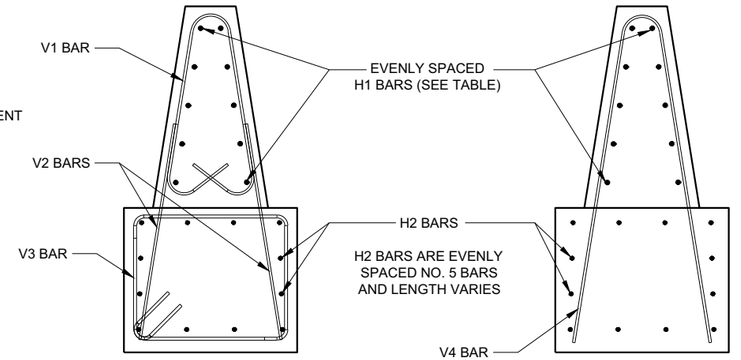
S.D.D. 14 B 8-2e



ELEVATION VIEW



SECTION A - A

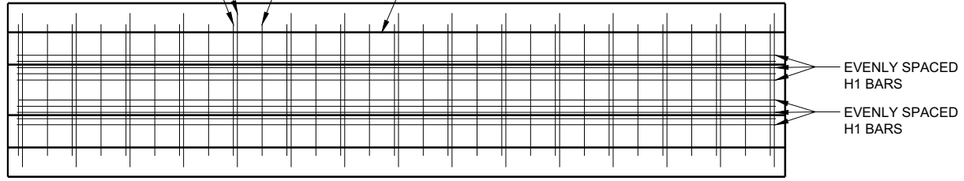


SECTION B - B

SECTION C - C

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF H1 BARS EACH
32	7	5	8
36	6 ¼	5 ¾	8
42	5 ¼	6 ¾	10

BARRIER HEIGHT H INCHES	V1 BAR		V4 BAR	
	C RAD. INCHES	D INCHES	E RAD. INCHES	F INCHES
32	5 ⅝	18 ¾	5 ½	53 ¾
36	4 ¾	23 ¾	4 ⅞	58 ⅜
42	3 ⅝	30 ½	3 ⅝	65 ⅜



PLAN VIEW

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE ¾ " BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

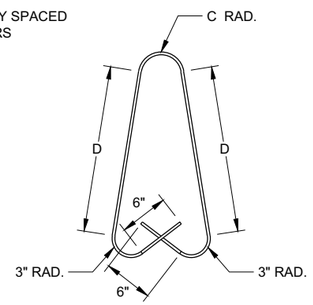
WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.

PAVEMENT AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL.

PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.

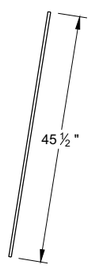
WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.

IF REQUIRED USE THRIE BEAM ANCHOR. NO OTHER ANCHOR REQUIRED.



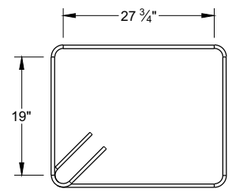
V1 BAR BENDING DETAIL

V1 BARS ARE NO. 4 BARS



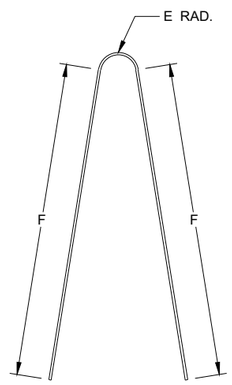
V2 BAR DETAIL

V2 BARS ARE NO. 5 BARS



V3 BAR BENDING DETAIL

V3 BARS ARE NO. 6 BARS



V4 BAR BENDING DETAIL

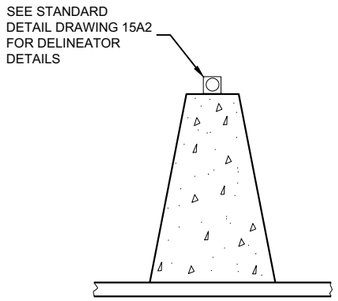
V4 BARS ARE NO. 6 BARS

32", 36", & 42"
CONCRETE BARRIER
SINGLE SLOPE CLASS B

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 14B34 - 02a
SDD 14B34 - 02a



DELINEATION

DELINEATOR SPACING ON HORIZONTAL CURVES

RADIUS OF CURVE	APPROXIMATE SPACING ON CURVE
50 FEET	20 FEET
115 FEET	25 FEET
180 FEET	35 FEET
250 FEET	40 FEET
300 FEET	50 FEET
400 FEET	55 FEET
500 FEET	65 FEET
600 FEET	70 FEET
700 FEET	75 FEET
800 FEET	80 FEET
900 FEET	85 FEET
1000 FEET	90 FEET

DELINEATOR SPACING ON RADIUS GREATER THAN 1000 FEET OR TANGENT SECTIONS

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

6

6

SDD 14B34 - 02c

SDD 14B34 - 02c

CONCRETE BARRIER
SINGLE SLOPE CLASS B

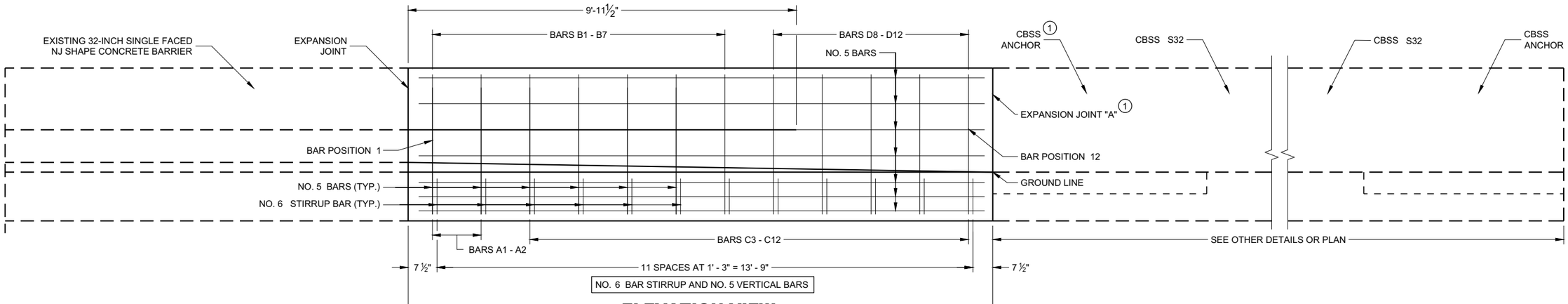
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

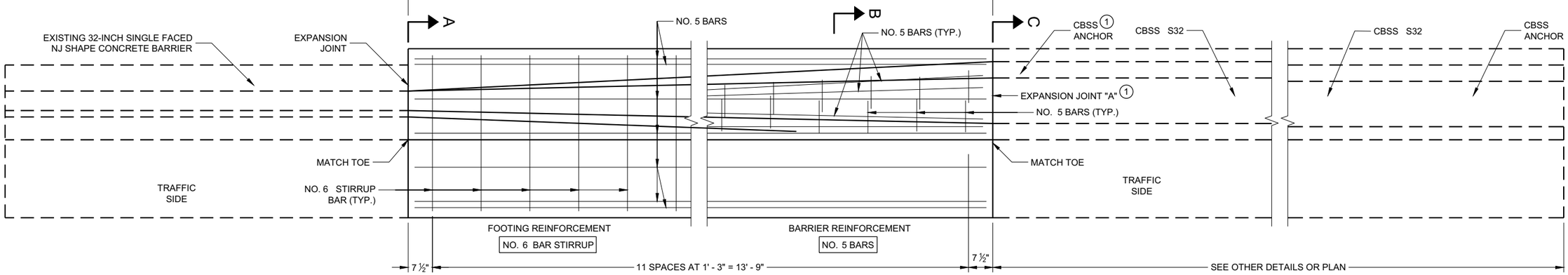
07/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
UNIT SUPERVISOR

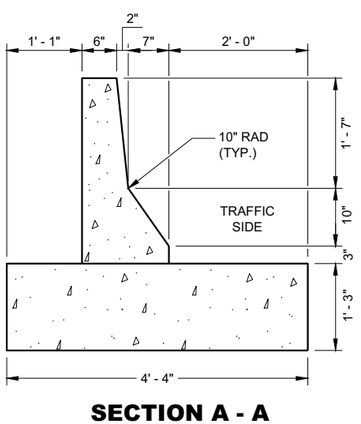
FHWA



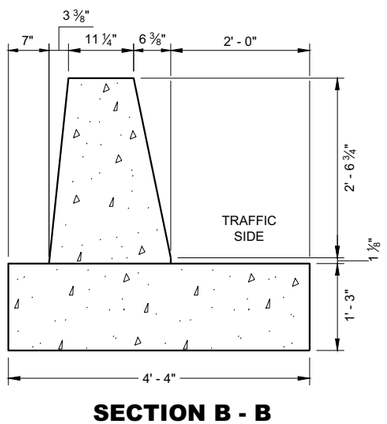
ELEVATION VIEW



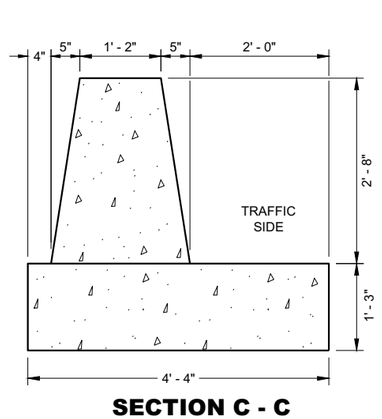
PLAN VIEW



SECTION A - A



SECTION B - B



SECTION C - C

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS OTHERWISE NOTED.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD JOINT IS USED, ANCHOR IS NOT REQUIRED.

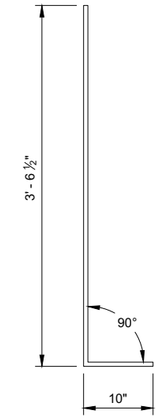
32 - INCH SINGLE FACED NJ SHAPE CONCRETE BARRER TO 32 - INCH SINGLE SLOPE CONCRETE BARRIER TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B35 - 02a

SDD 14B35 - 02a

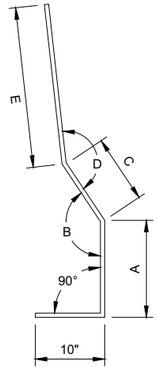
"A" BAR POSITIONS 1 - 2



"A" BAR BENDING DETAIL

"B" BAR CHART BAR POSITIONS 1 - 7

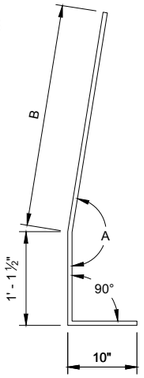
BAR	A	B	C	D	E
B1	1' - 2 ¼"	148°	1' - 1 ¼"	154°	1' - 5"
B2	1' - 2 ¼"	151°	1' - 1"	158°	1' - 5"
B3	1' - 2"	154°	1' - ¾"	161°	1' - 5 ¼"
B4	1' - 2"	157°	1' - ½"	164°	1' - 5 ¼"
B5	1' -1 ½"	159°	1' - ¼"	168°	1' - 5 ¼"
B6	1' -1 ½"	162°	1' - ¼"	173°	1' - 5 ¼"
B7	1' -1 ½"	165°	1' - ¼"	176°	1' - 5 ¼"



"B" BAR BENDING DETAIL

"C" BAR CHART BAR POSITIONS 3 - 12

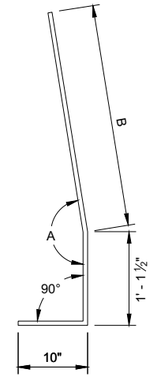
BAR	A
C3	178°
C4	178°
C5	177°
C6	176°
C7	174°
C8	174°
C9	174°
C10	173°
C11	173°
C12	172°



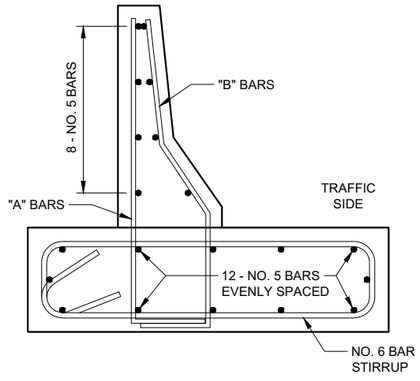
"C" BAR BENDING DETAIL

"D" BAR CHART BAR POSITIONS 8 - 12

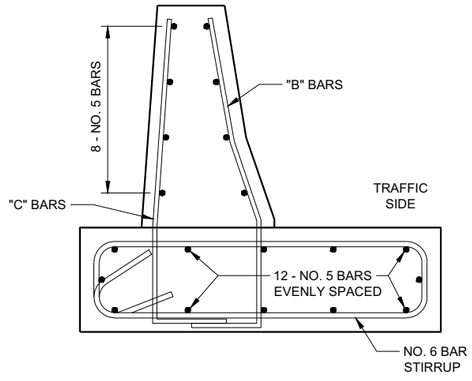
BAR	A
D8	169°
D9	170°
D10	170°
D11	171°
D12	171°



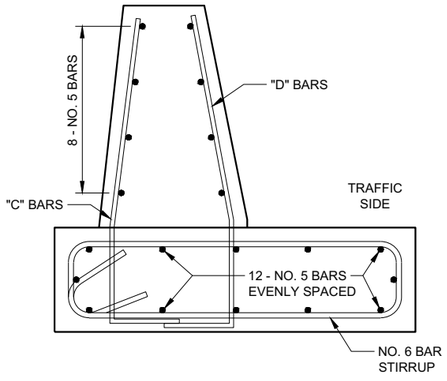
"D" BAR BENDING DETAIL



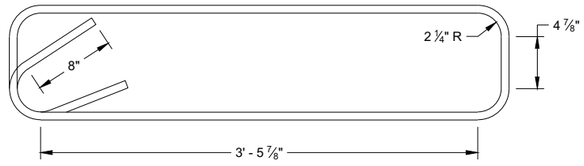
BAR DETAIL BAR POSITIONS 1 - 2



BAR DETAIL BAR POSITIONS 3 - 7



BAR DETAIL BAR POSITIONS 8 - 12



STIRRUP BAR BENDING DETAIL

32 - INCH SINGLE FACED NJ SHAPE CONCRETE BARRIER TO 32 - INCH SINGLE SLOPE CONCRETE BARRIER TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

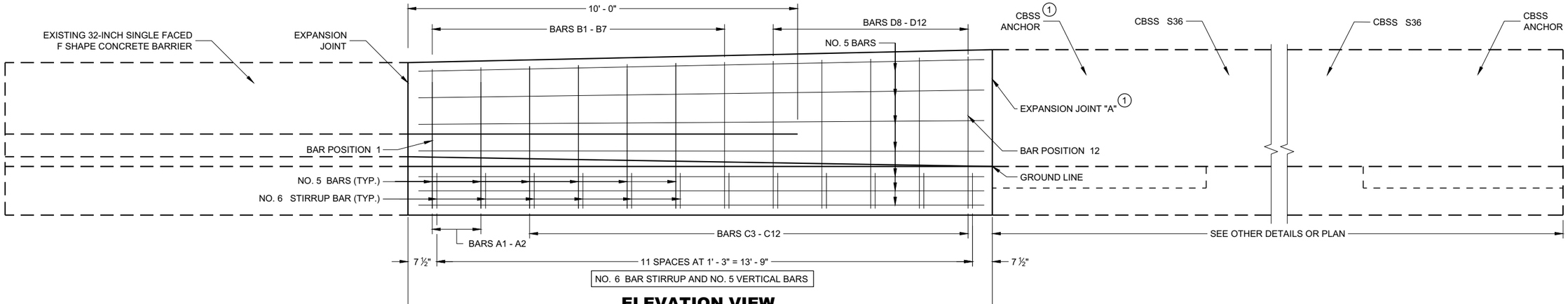
APPROVED
February 2020
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

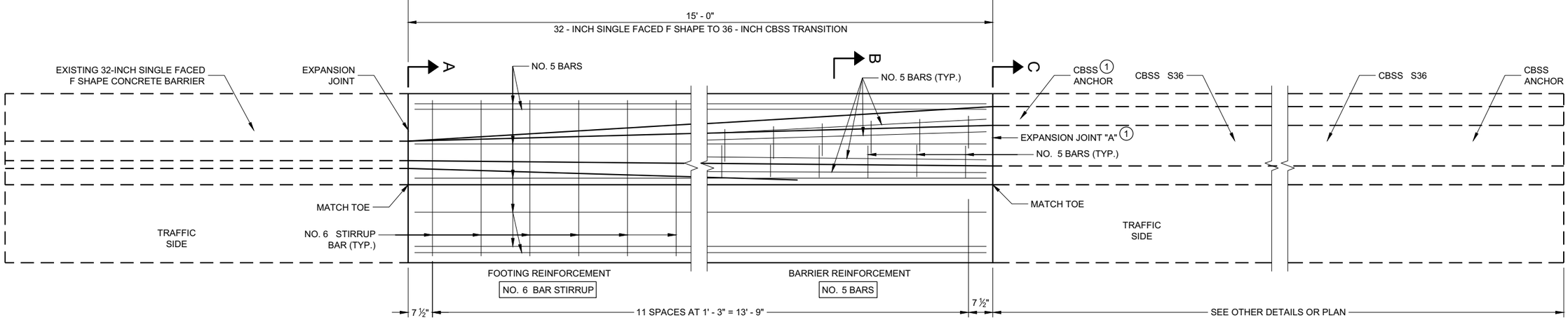
FHWA

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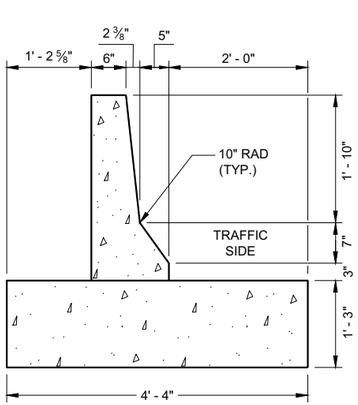
SDD 14B35 - 02b
SDD 14B35 - 02b



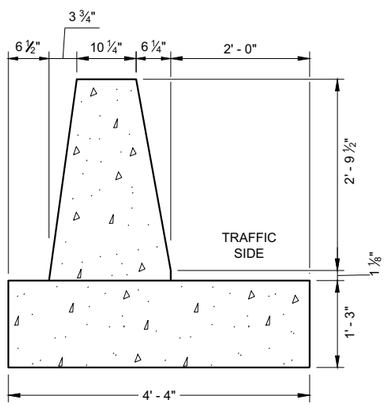
ELEVATION VIEW



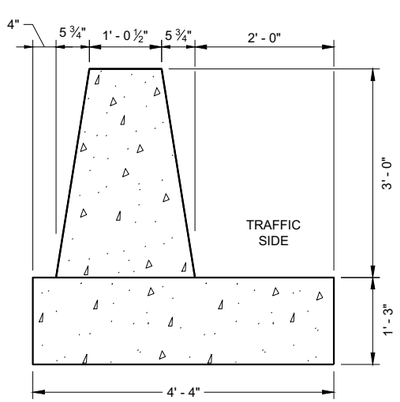
PLAN VIEW



SECTION A - A



SECTION B - B



SECTION C - C

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS OTHERWISE NOTED.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

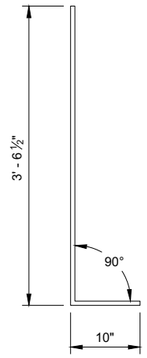
(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD JOINT IS USED, ANCHOR IS NOT REQUIRED.

32 - INCH SINGLE FACED F SHAPE CONCRETE BARRER TO 36 - INCH SINGLE SLOPE CONCRETE BARRIER TRANSITION

SDD 14B36 - 02c

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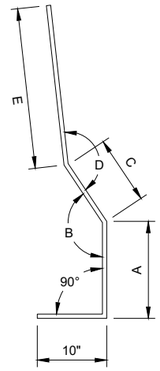
"A" BAR POSITIONS 1 - 2



"A" BAR
BENDING DETAIL

"B" BAR CHART
BAR POSITIONS
1 - 7

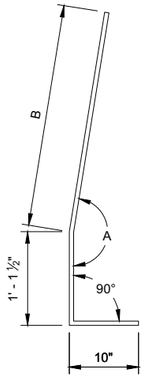
BAR	A	B	C	D	E
B1	1' - 2"	148°	10"	154°	1' - 8 ¼"
B2	1' - 2"	154°	9 ¾"	162°	1' - 8 ½"
B3	1' - 2"	154°	9 ¾"	163°	1' - 8 ¾"
B4	1' - 2"	157°	9 ¾"	165°	1' - 9"
B5	1' -1 ½"	161°	10"	169°	1' - 9 ¼"
B6	1' -1 ½"	163°	10"	172°	1' - 9 ½"
B7	1' -1 ½"	166°	10"	175°	1' - 10"



"B" BAR
BENDING DETAIL

"C" BAR CHART
BAR POSITIONS
3 - 12

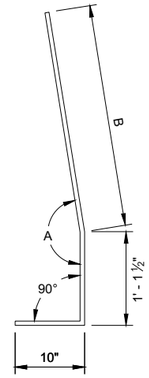
BAR	A	B
C3	177°	2' - 6"
C4	177°	2' - 6 ½"
C5	176°	2' - 6 ¾"
C6	176°	2' - 7"
C7	174°	2' - 7 ½"
C8	174°	2' - 7 ¾"
C9	173°	2' - 8 ½"
C10	173°	2' - 8 ½"
C11	173°	2' - 9"
C12	172°	2' - 9 ½"



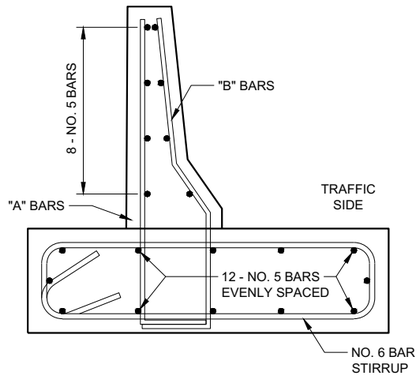
"C" BAR
BENDING DETAIL

"D" BAR CHART
BAR POSITIONS
8 - 12

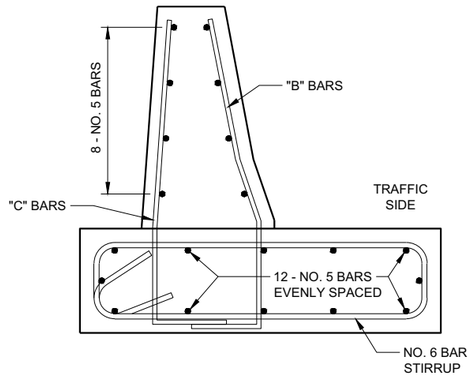
BAR	A	B
D8	170°	2' - 7 ¾"
D9	170°	2' - 8 ½"
D10	170°	2' - 8 ½"
D11	171°	2' - 9"
D12	171°	2' - 9 ½"



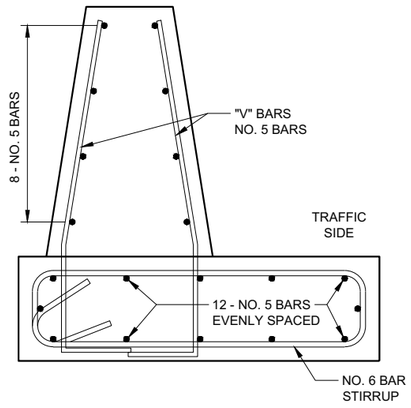
"D" BAR
BENDING DETAIL



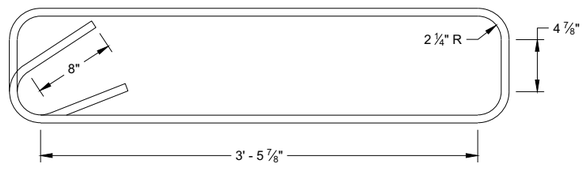
BAR DETAIL
BAR POSITIONS 1 - 2



BAR DETAIL
BAR POSITIONS 3 - 7



BAR DETAIL
BAR POSITIONS 8 - 12



STIRRUP BAR
BENDING DETAIL

32 - INCH SINGLE FACED F SHAPE CONCRETE BARRIER TO 36 - INCH SINGLE SLOPE CONCRETE BARRIER TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

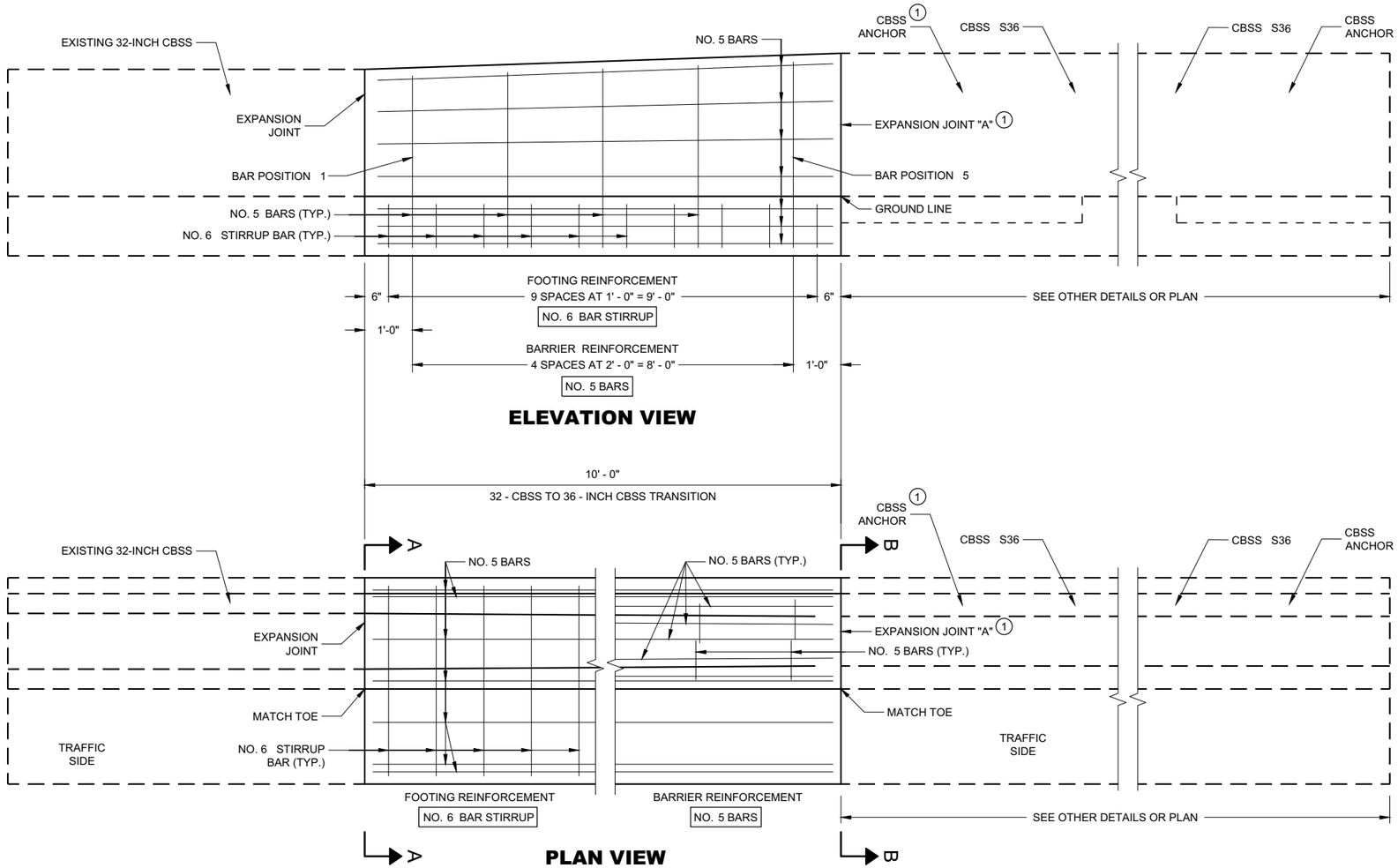
FHWA

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SDD 14B36 - 02d

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SDD 14B36 - 02d



ELEVATION VIEW

PLAN VIEW

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2' LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS OTHERWISE NOTED.

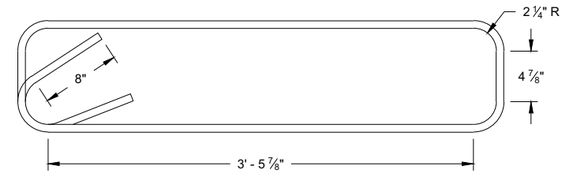
4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.

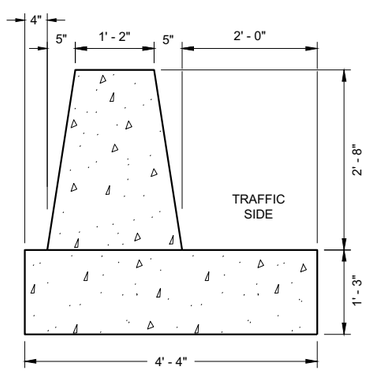
THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

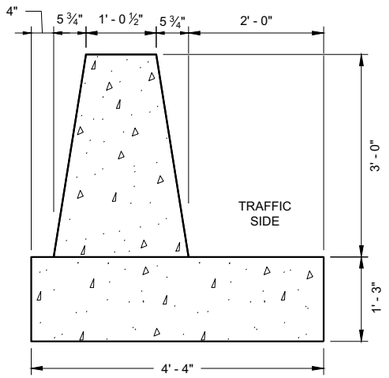
(1) EXPANSION JOINT "A" MAY BE REPLACED WITH A COLD JOINT PROVIDED THAT 3 FEET OF LAP OF LONGITUDINAL STEEL IS PROVIDED. IF COLD JOINT IS USED, ANCHOR IS NOT REQUIRED.



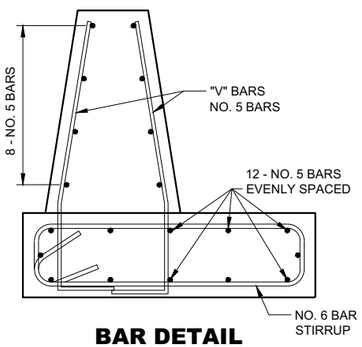
STIRRUP BAR BENDING DETAIL



SECTION A - A



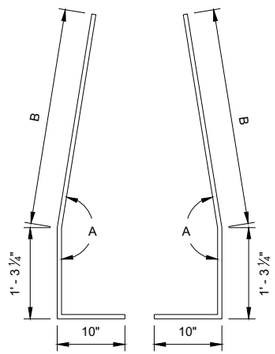
SECTION B - B



BAR DETAIL BAR POSITIONS V1 - V5

BAR CHART BAR POSITIONS V1 - V5

BAR	A	B
V1	170°	2' - 4"
V2	170°	2' - 5 ¼"
V3	170°	2' - 6 ¼"
V4	170°	2' - 7"
V5	170°	2' - 7 ¾"



BENDING DETAIL FOR BARS V1 - V5

32" SINGLE SLOPE CONCRETE BARRIER TO 36" SINGLE SLOPE CONCRETE BARRIER HEIGHT TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

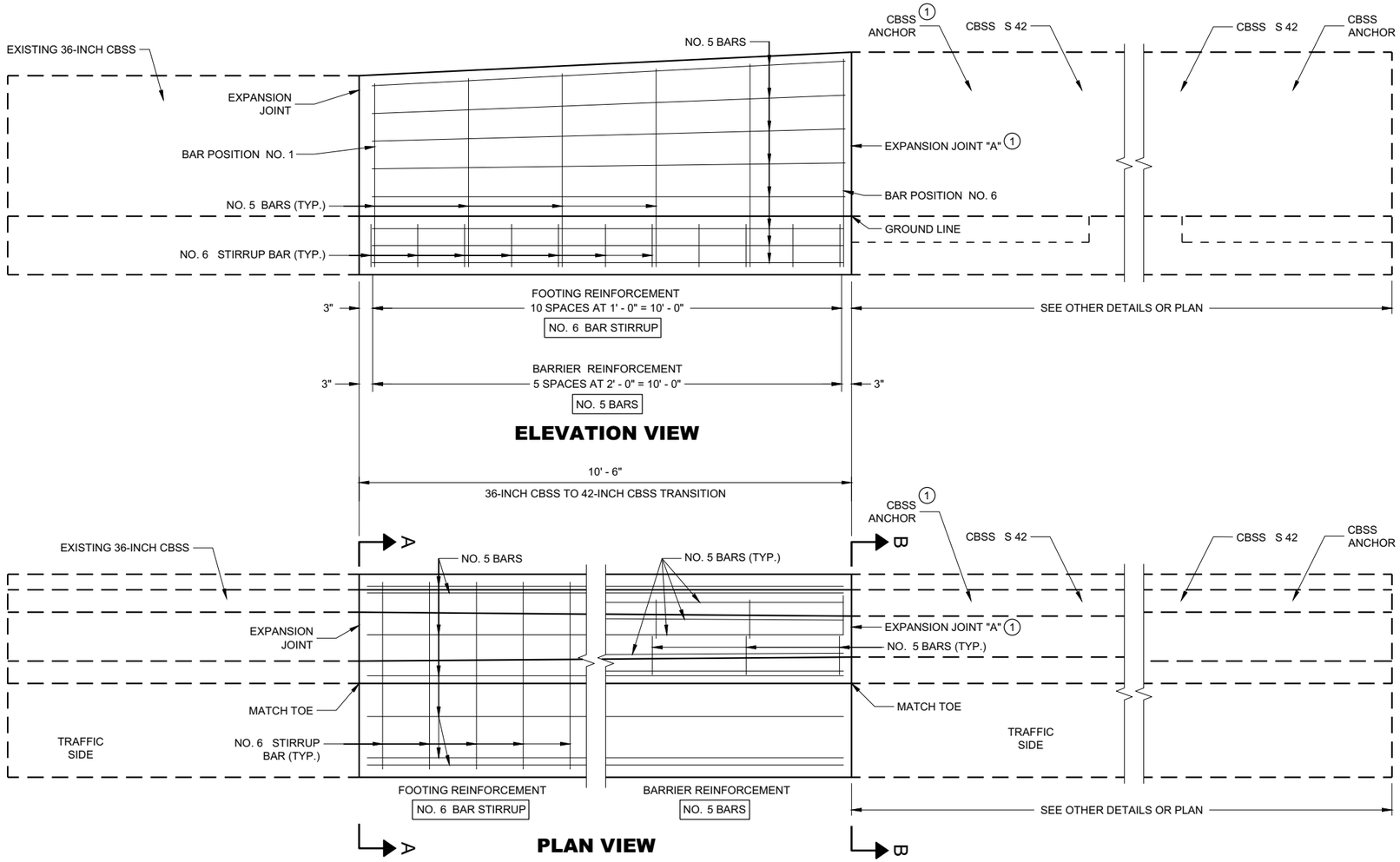
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE
ENGINEER

FHWA

SDD 14B39 - 02a

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SDD 14B39 - 02a



ELEVATION VIEW

PLAN VIEW

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

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2" CLEAR COVER TYPICAL.

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STIRRUP BAR BENDING DETAIL

SECTION A - A

SECTION B - B

BAR DETAIL
BAR POSITIONS V1 - V6

BAR CHART
BAR POSITIONS
V1 - V6

BAR	A	B
V1	170°	2' - 7 ½"
V2	170°	2' - 9"
V3	170°	2' - 9 ¾"
V4	170°	2' - 11 ¼"
V5	170°	3' - 0 ½"
V6	170°	3' - 2"

BENDING DETAIL
FOR BARS V1 - V6

36" SINGLE SLOPE CONCRETE BARRIER TO 42" SINGLE SLOPE CONCRETE BARRIER HEIGHT TRANSITION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

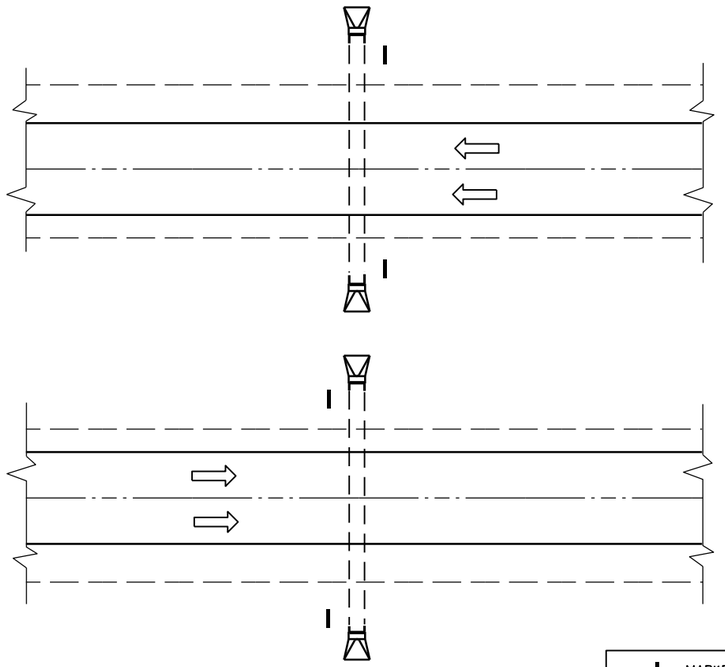
FHWA

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SDD 14B39 - 02b

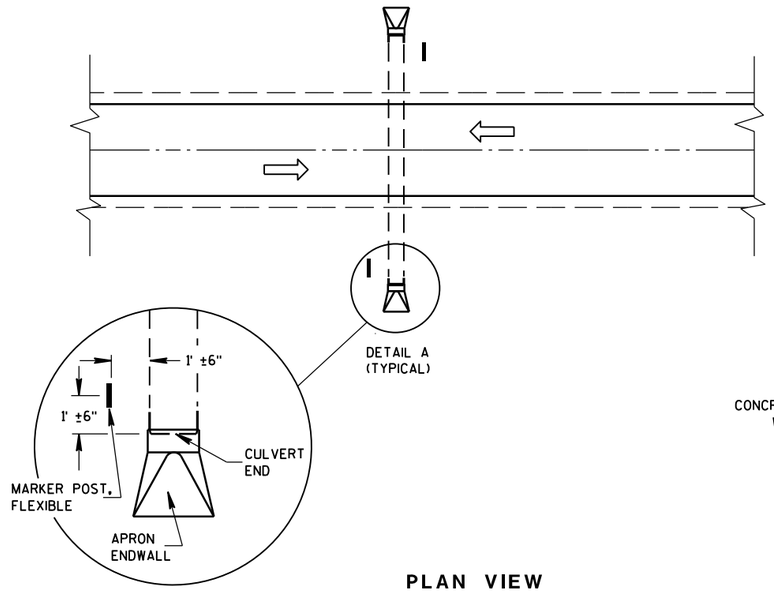
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SDD 14B39 - 02b



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

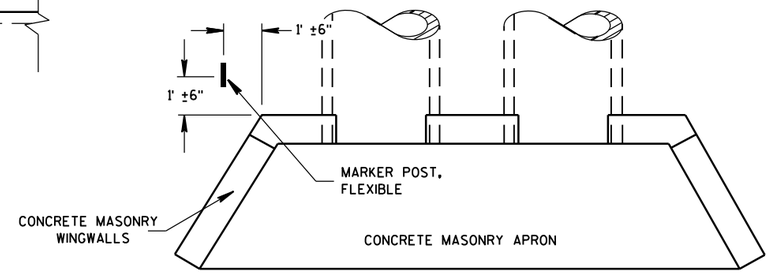
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

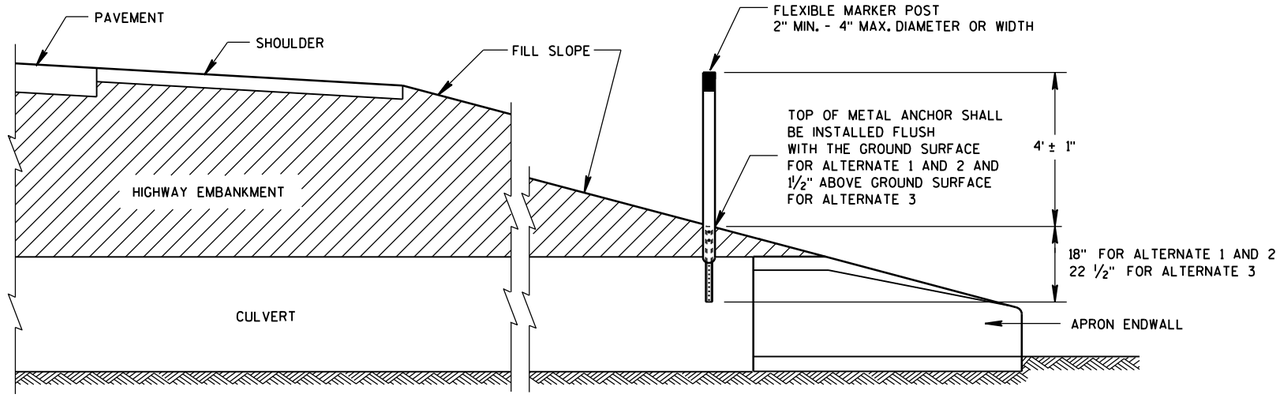
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

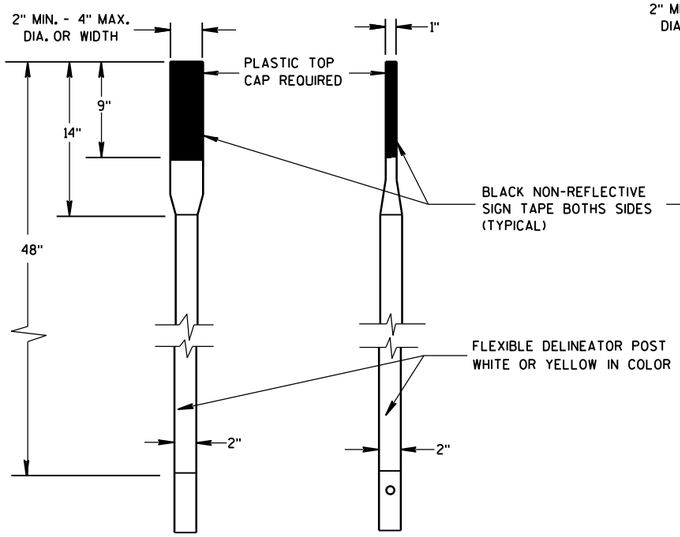
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

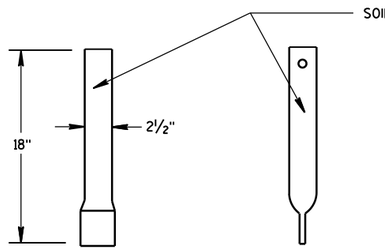
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S.D.D. 15 A 3-2a

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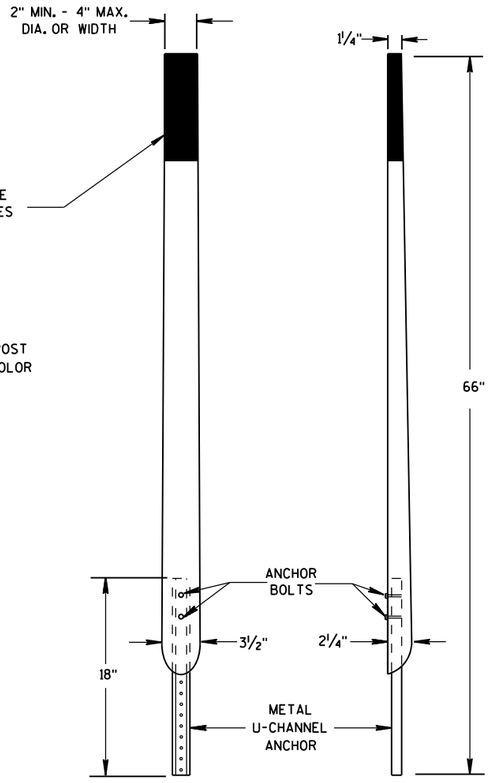
S.D.D. 15 A 3-2a





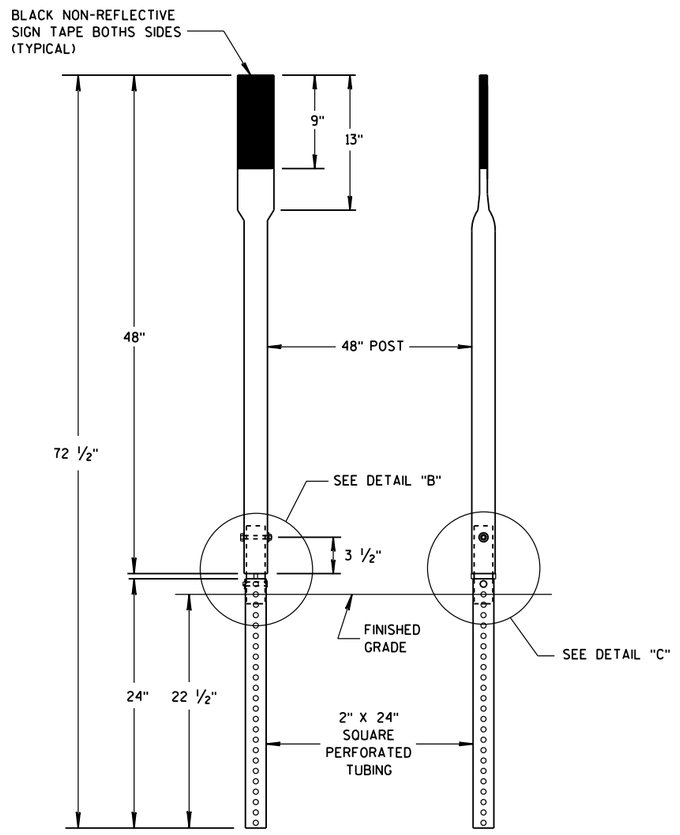
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

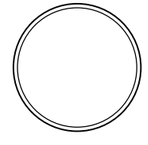
ALTERNATE 2



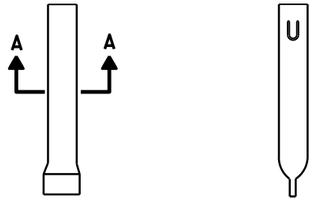
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POSTS

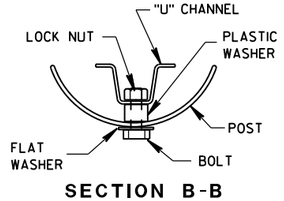


SECTION A-A

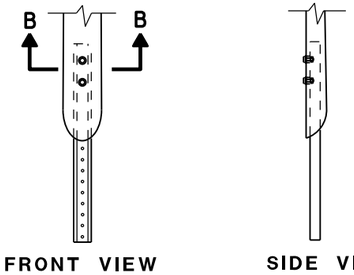


FRONT VIEW SIDE VIEW

ALTERNATE 1

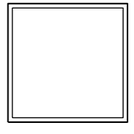


SECTION B-B

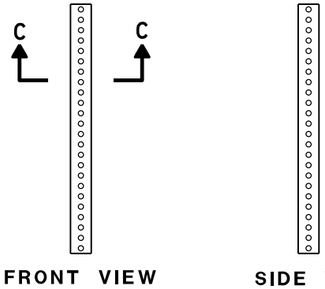


FRONT VIEW SIDE VIEW

ALTERNATE 2



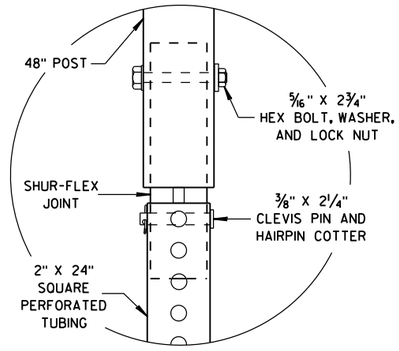
SECTION C-C



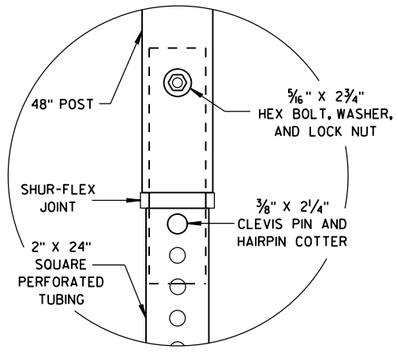
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

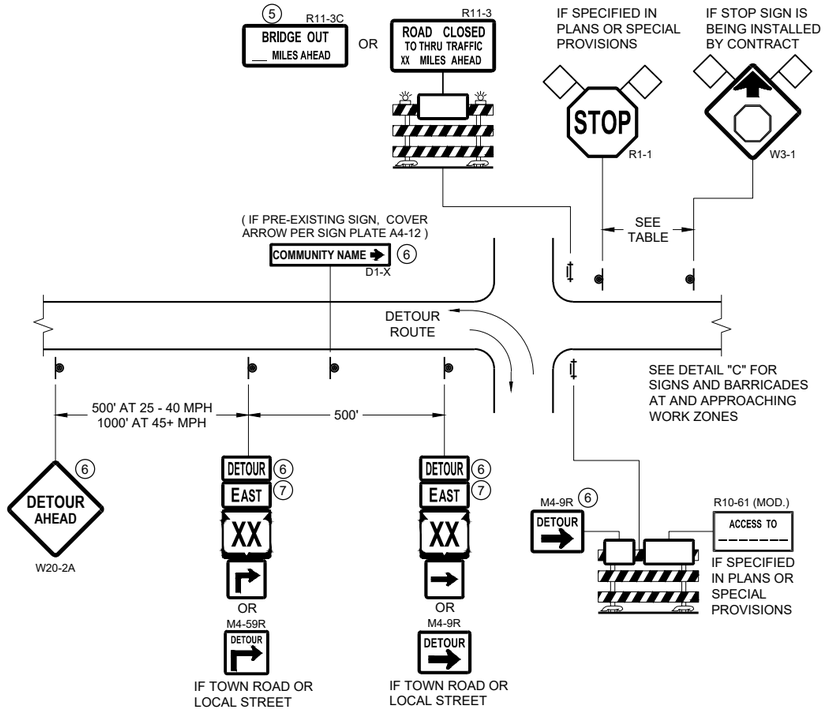
APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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S.D.D. 15 A 3-2b

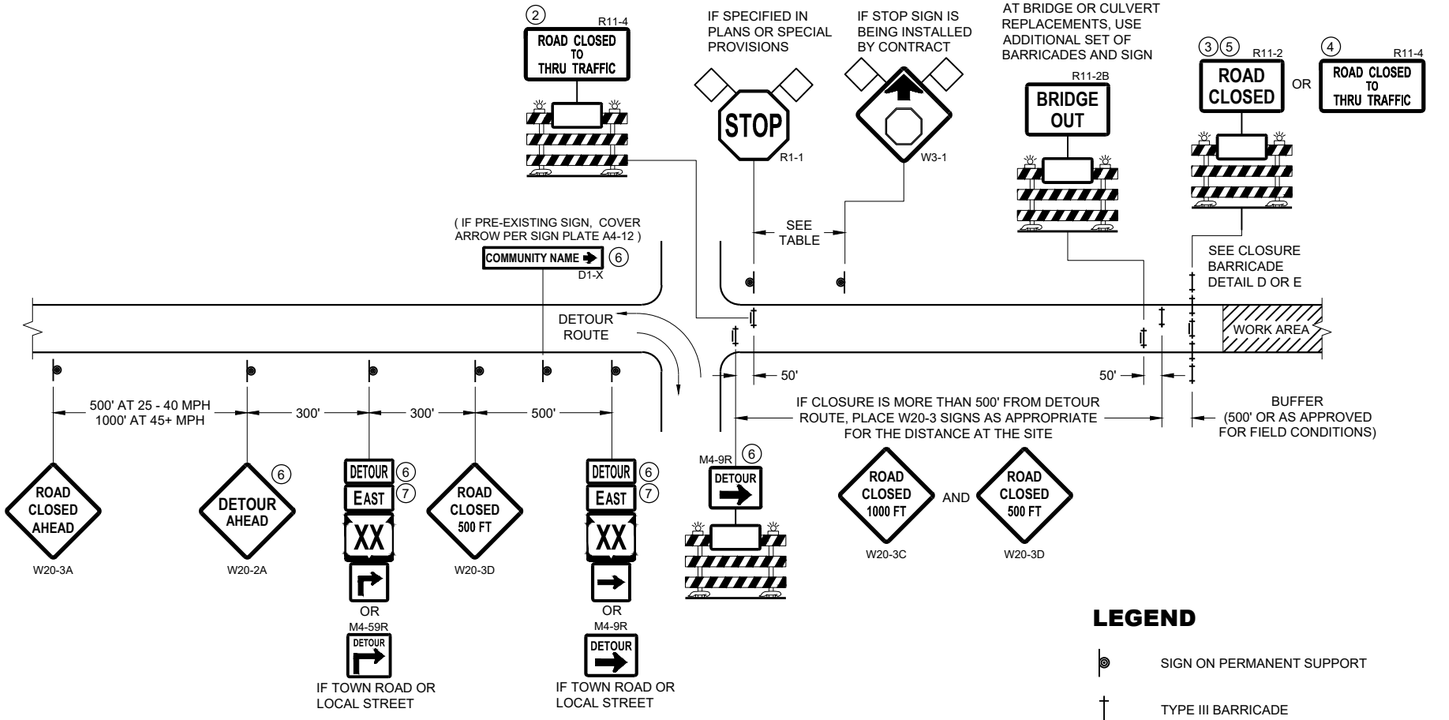
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S.D.D. 15 A 3-2b



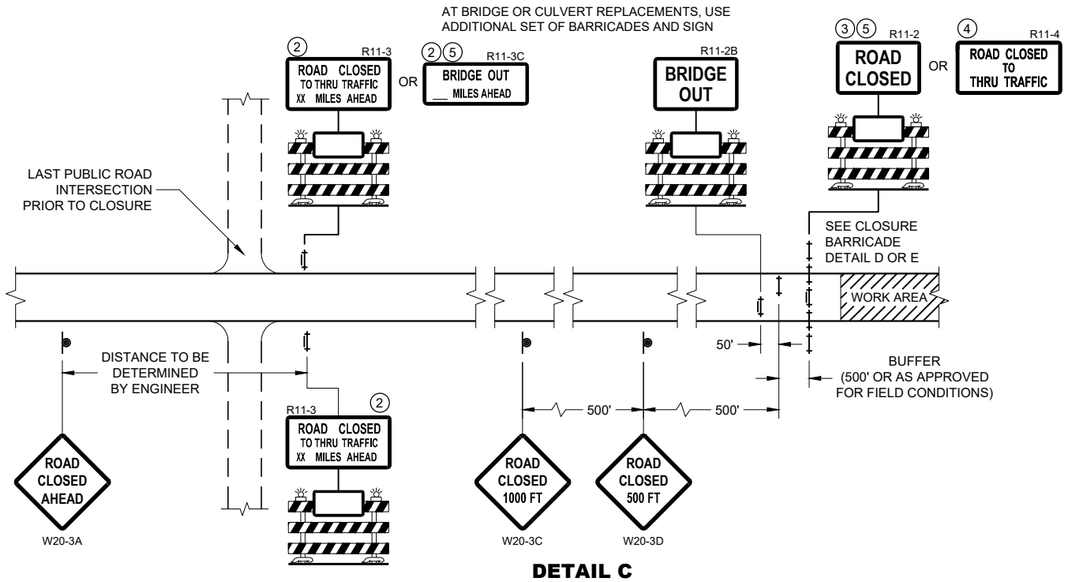
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

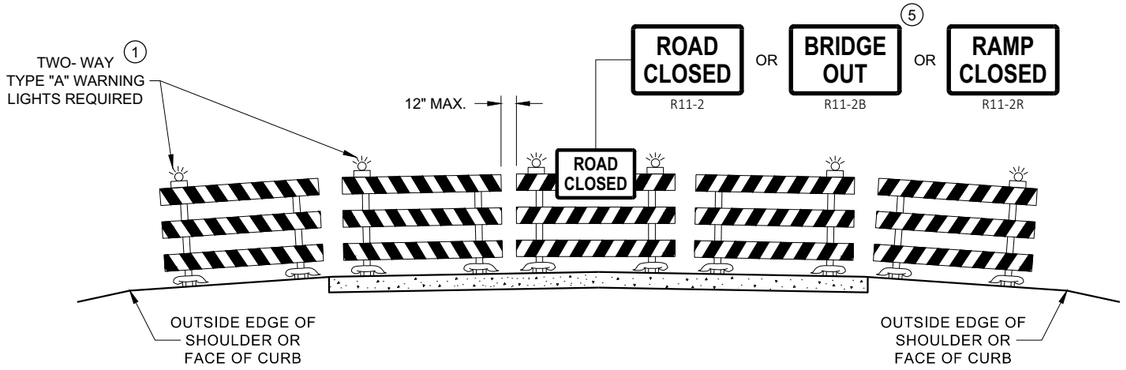
APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

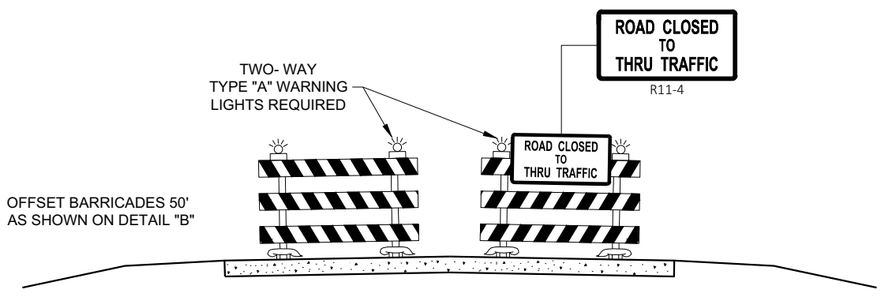
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SDD 15C02 - 08a

SDD 15C02 - 08a



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.

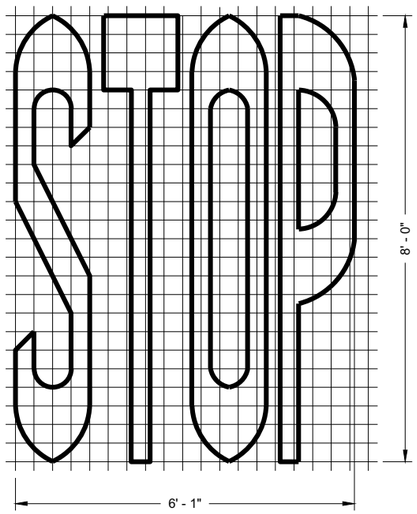
BARRICADES AND SIGNS FOR VARIOUS CLOSURES

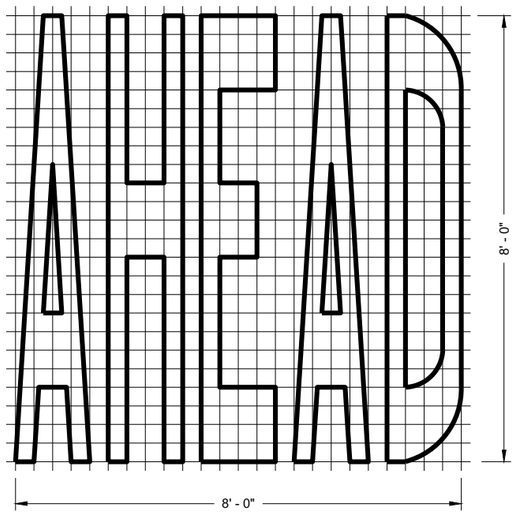
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

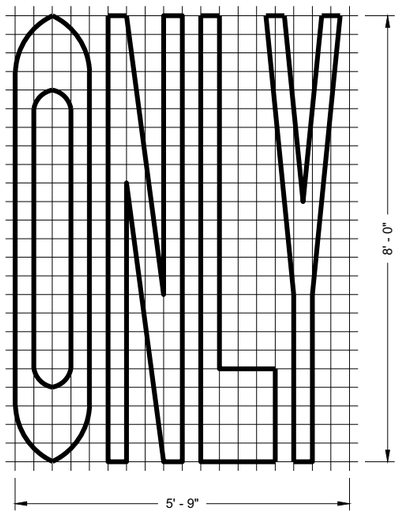
APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE
FHWA

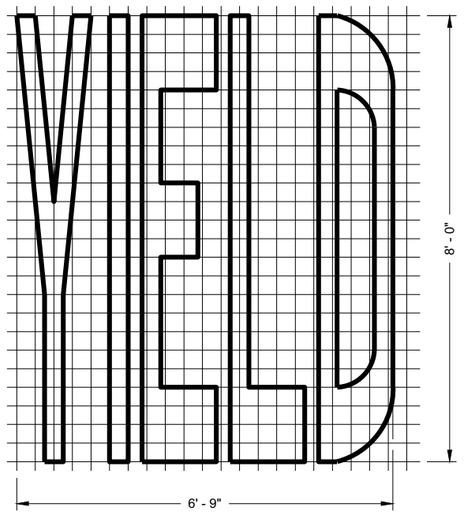
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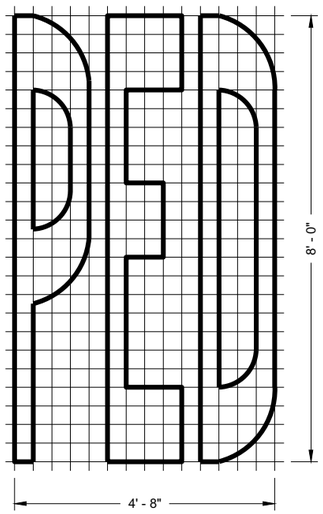
SDD 15C02 - 08b

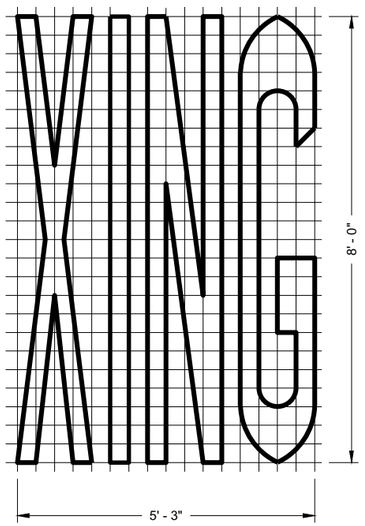


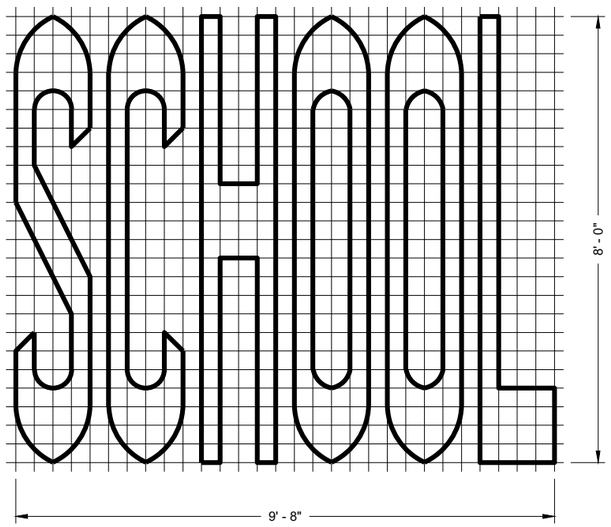




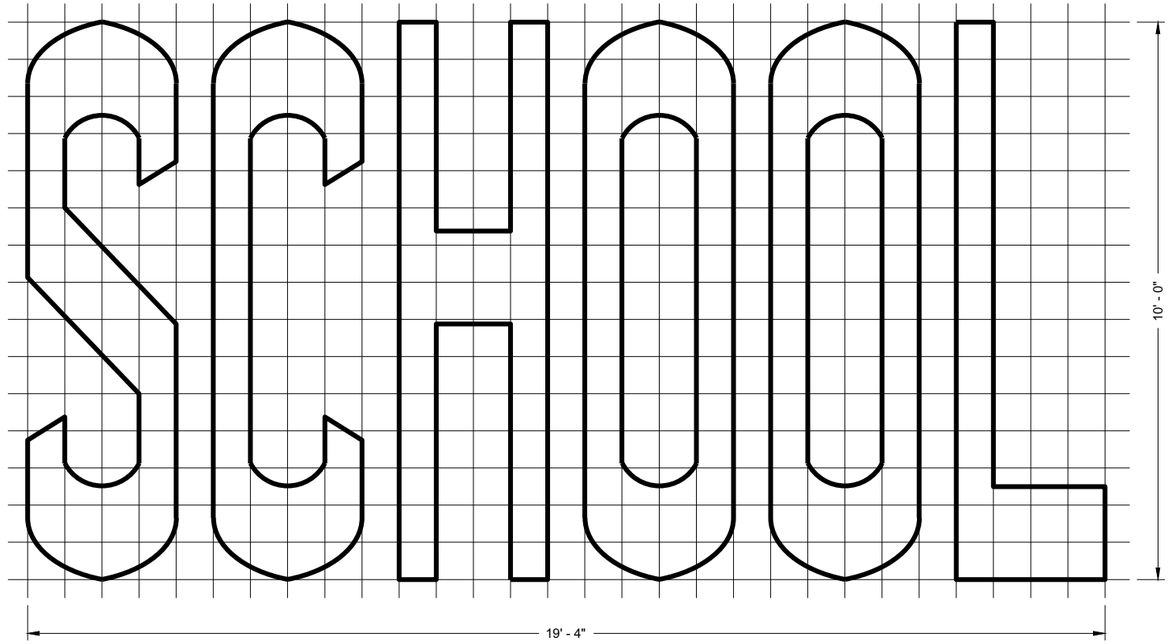








SINGLE LANE



TWO - LANE

GENERAL NOTES

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

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

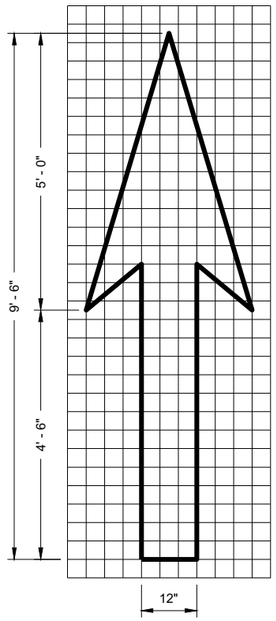
/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

FHWA

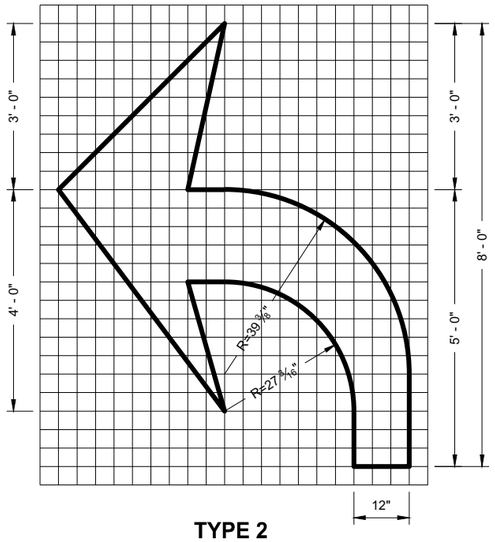
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SDD 15C07 - 15b

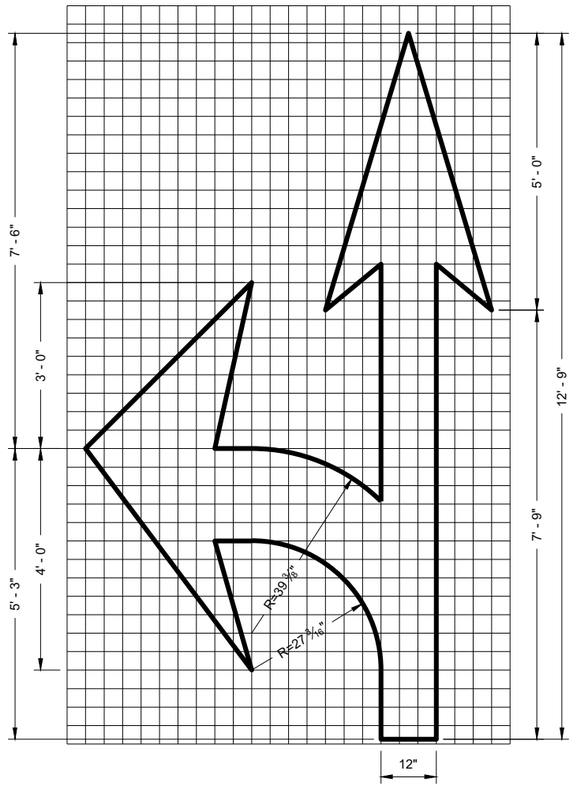
SDD 15C07 - 15b



TYPE 1



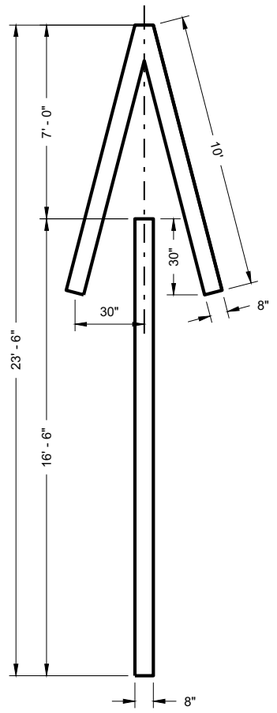
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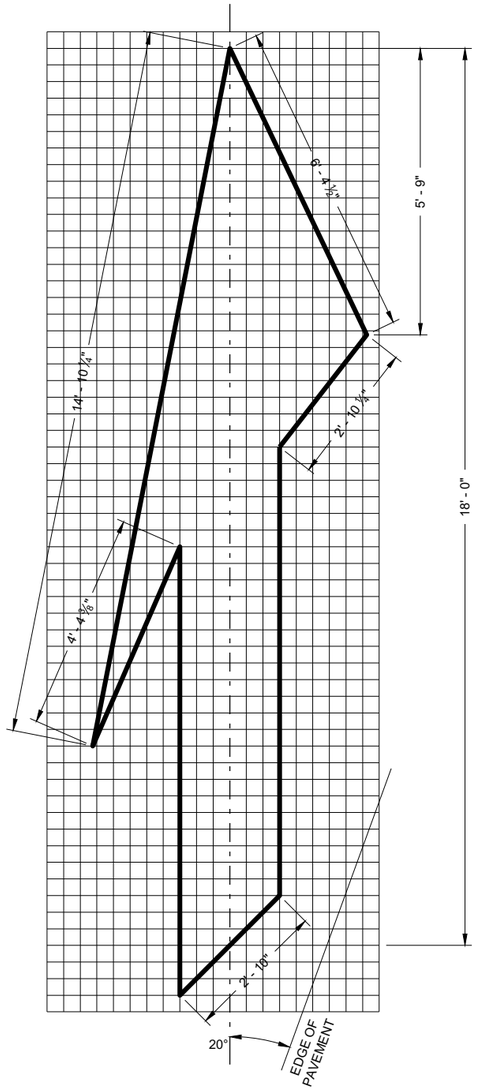
TYPE 3

GENERAL NOTES

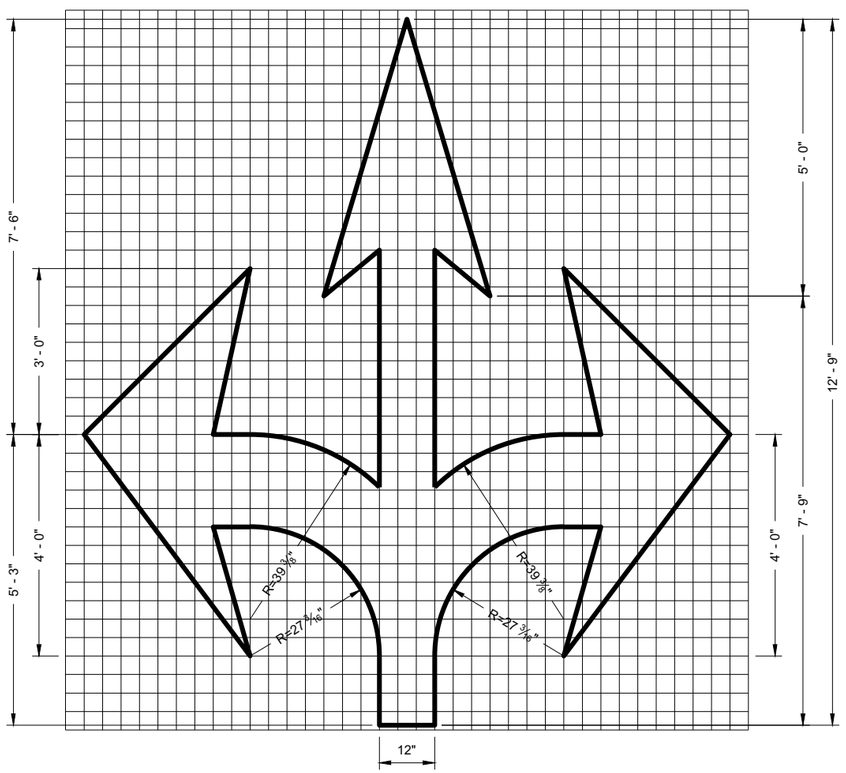
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



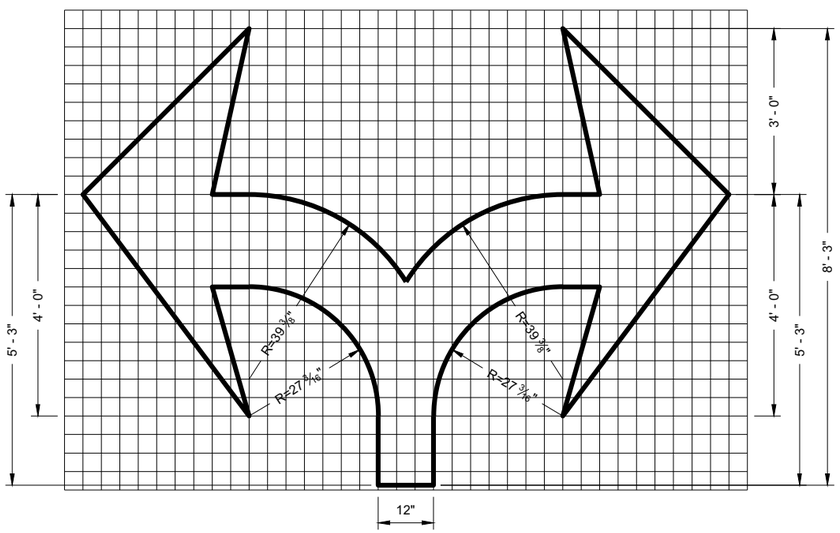
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

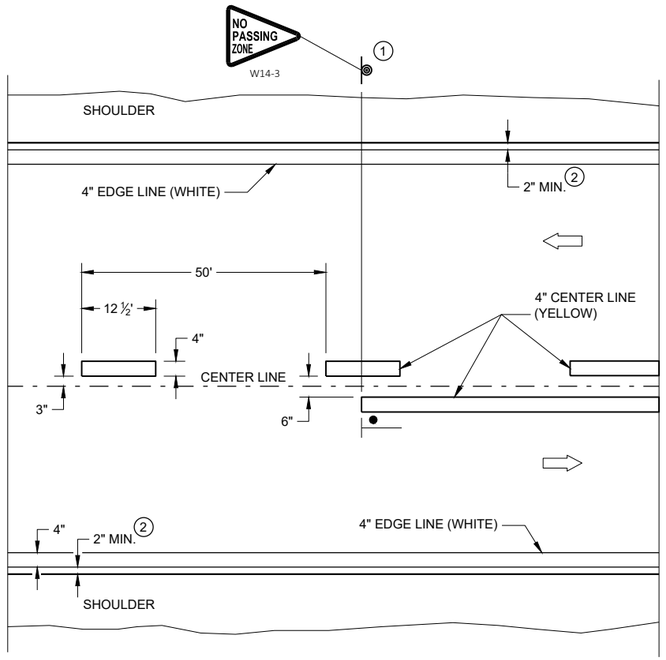
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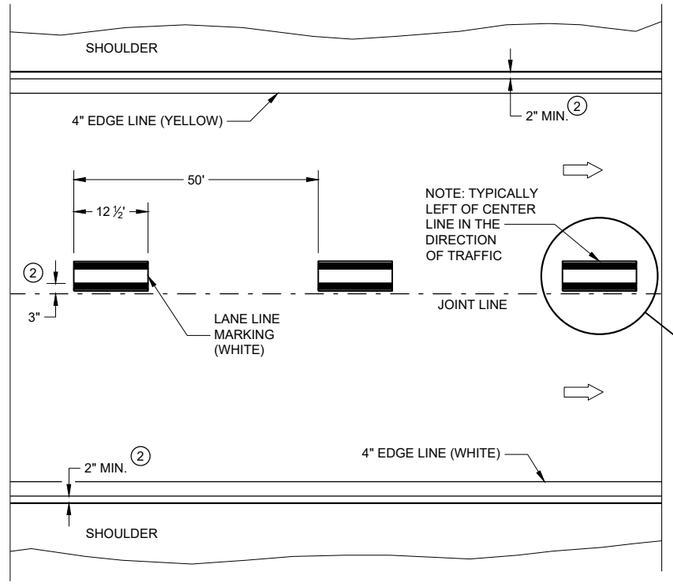
SDD 15C07 - 15c

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SDD 15C07 - 15c

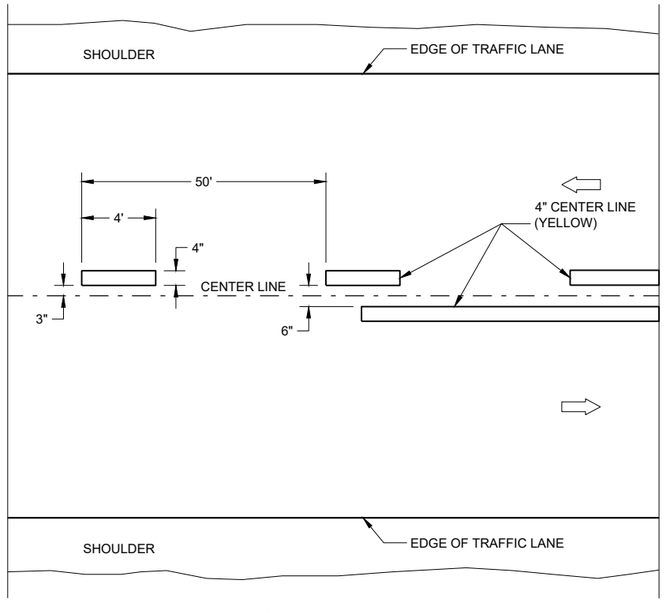


TWO WAY TRAFFIC

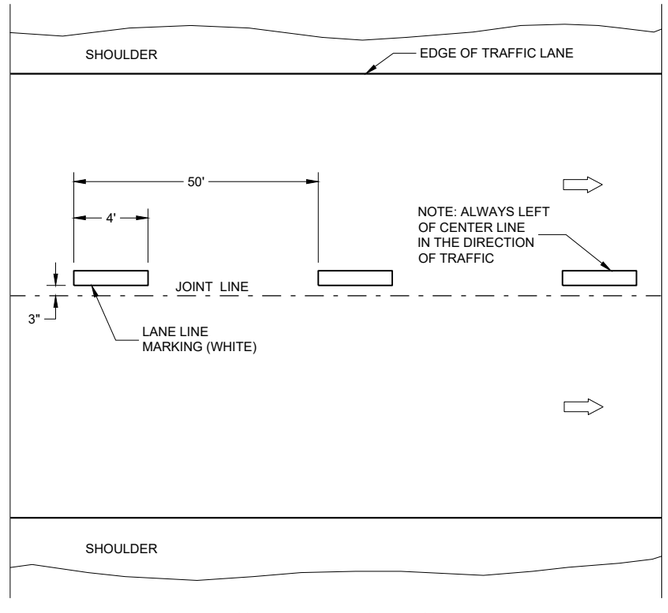


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

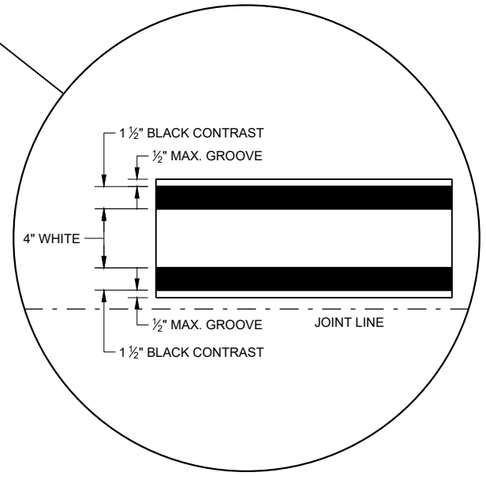
1. LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
2. MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 — DATE
/S/ Matthew Rauch — STATEWIDE SIGNING AND M ENGINEER

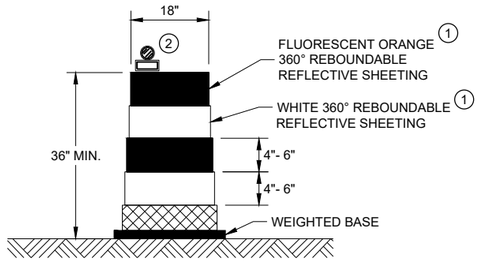
FHWA

SDD 15C08 - 20a

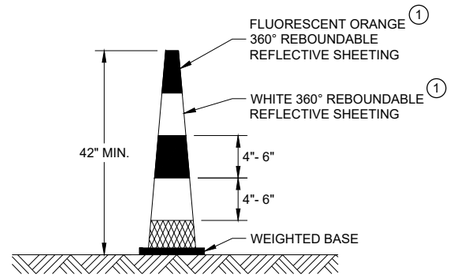
SDD 15C08 - 20a

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.

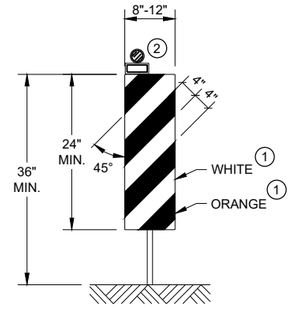


DRUM



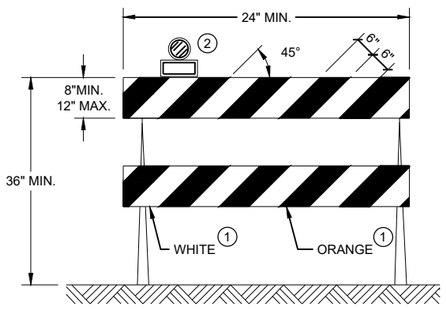
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



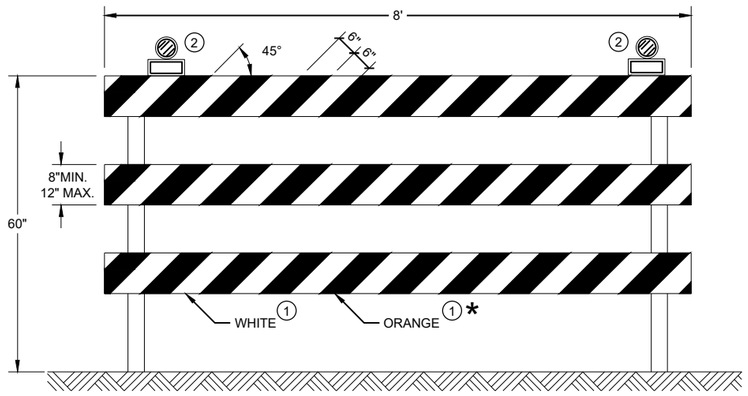
VERTICAL PANEL

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.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

200

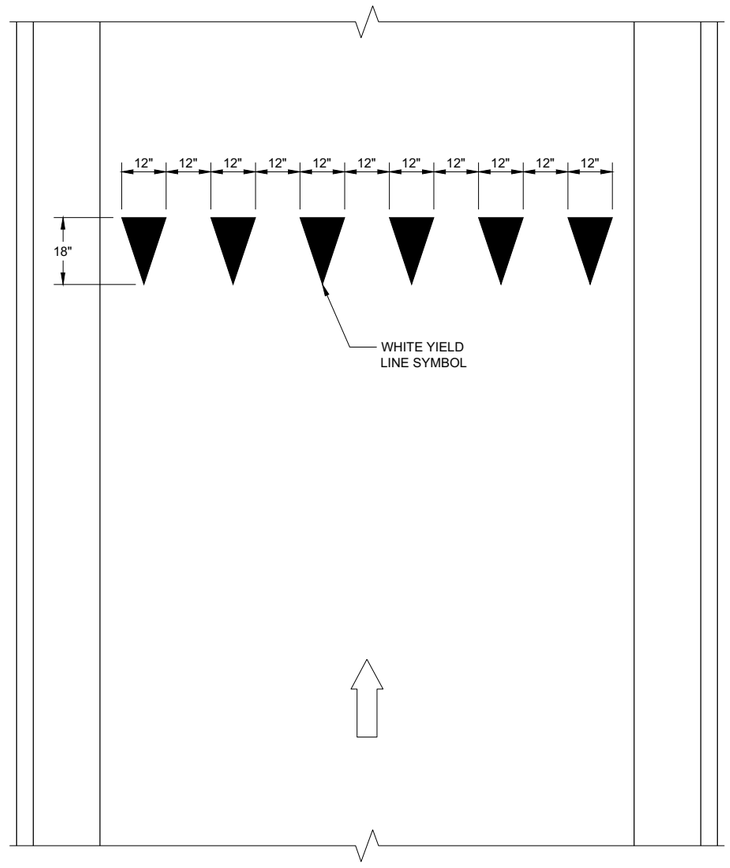
FHWA

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SDD15C11 - 09b

SDD15C11 - 09b

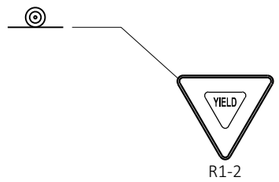


YIELD LINE

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAVEL



R1-2

YIELD MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-81-2016
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAR ENGINEER

FHWA

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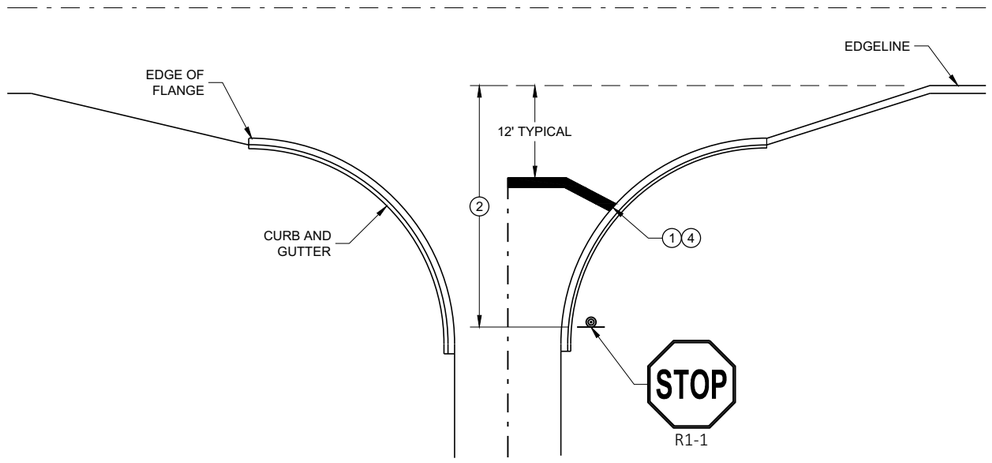
SDD 15C20 - 02

SDD 15C20 - 02

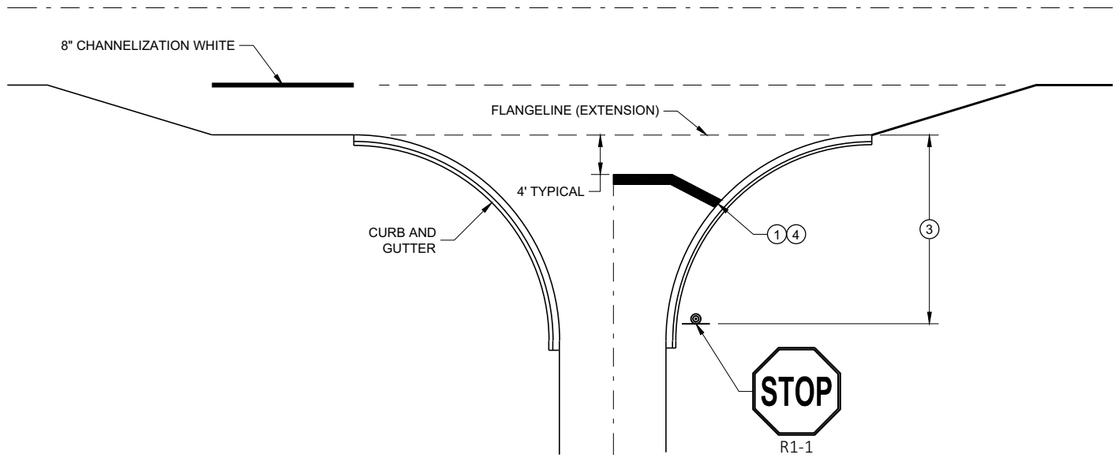
GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

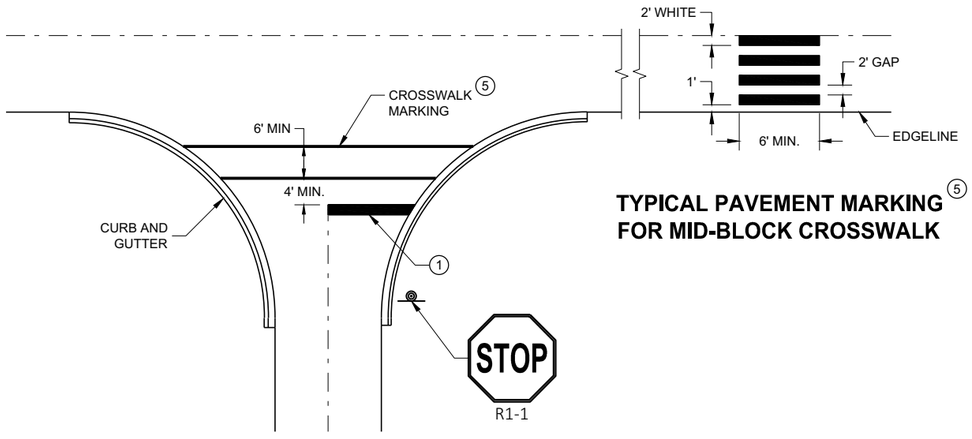
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
4. MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
5. LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

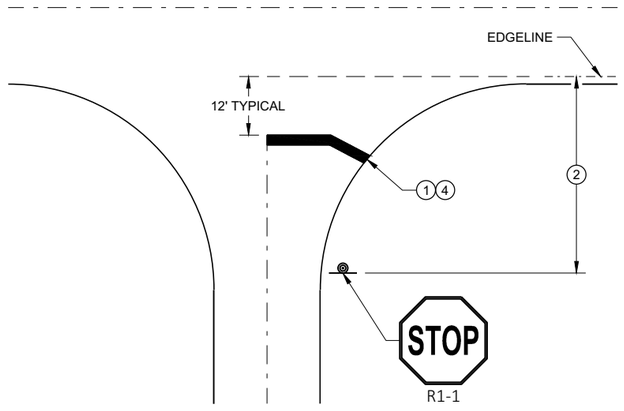


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK 5

TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 — DATE
/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA

6

SDD 15C33 - 04

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SDD 15C33 - 04

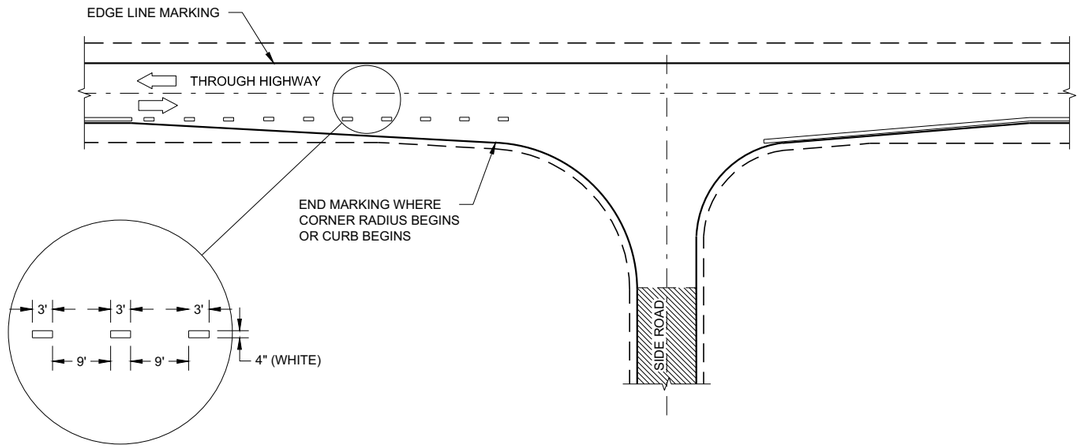
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

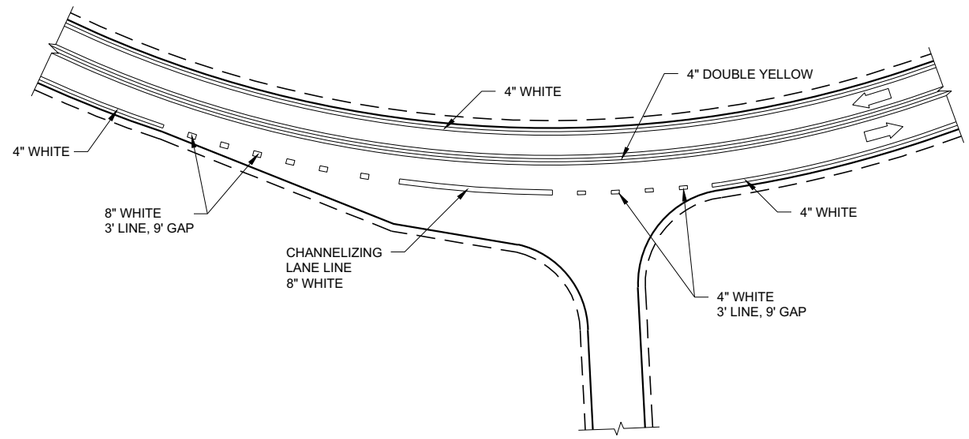
1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

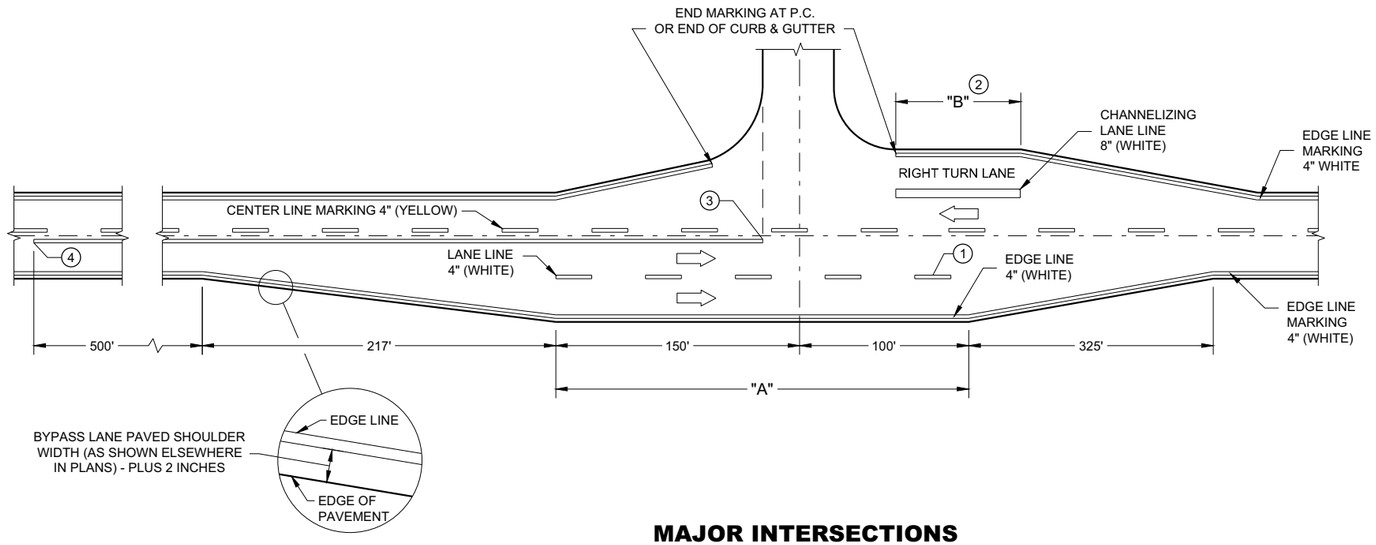
DIRECTION OF TRAVEL



MINOR INTERSECTION



INTERSECTION ON OUTSIDE OF CURVE



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

PAVEMENT MARKING (INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 15C35 - 04a

6

SDD 15C35 - 04a

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

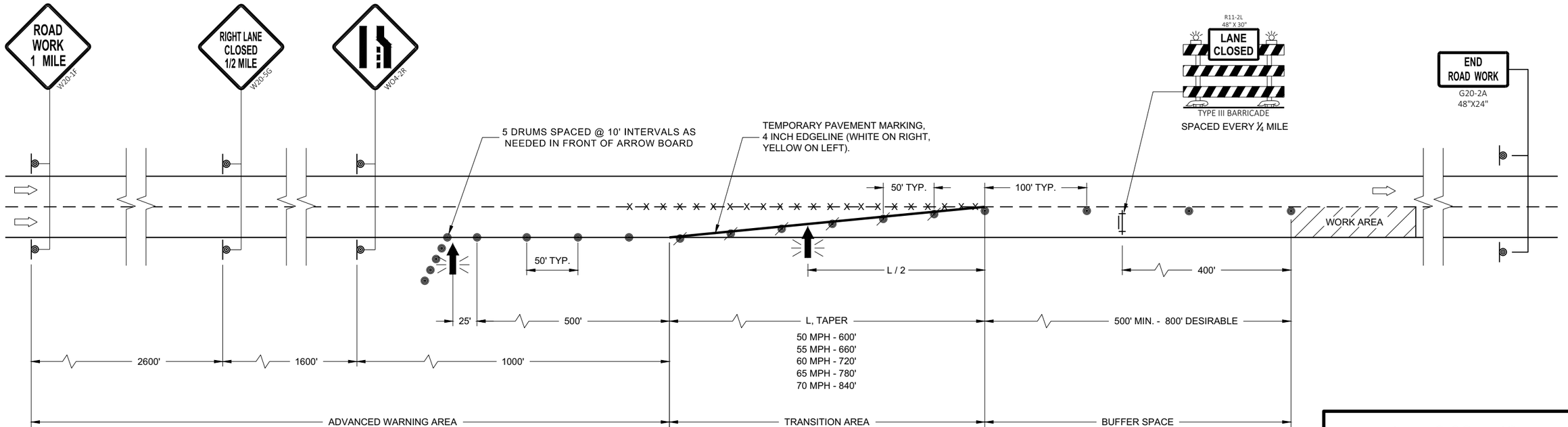
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- FLASHING ARROW BOARD



TRAFFIC CONTROL LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15D12 - 09a

6

SDD 15D12 - 09a

LEGEND

SIGN ON PERMANENT SUPPORT

SIGN ON TEMPORARY SUPPORT

TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)

TYPE III BARRICADE WITH ATTACHED SIGN

DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

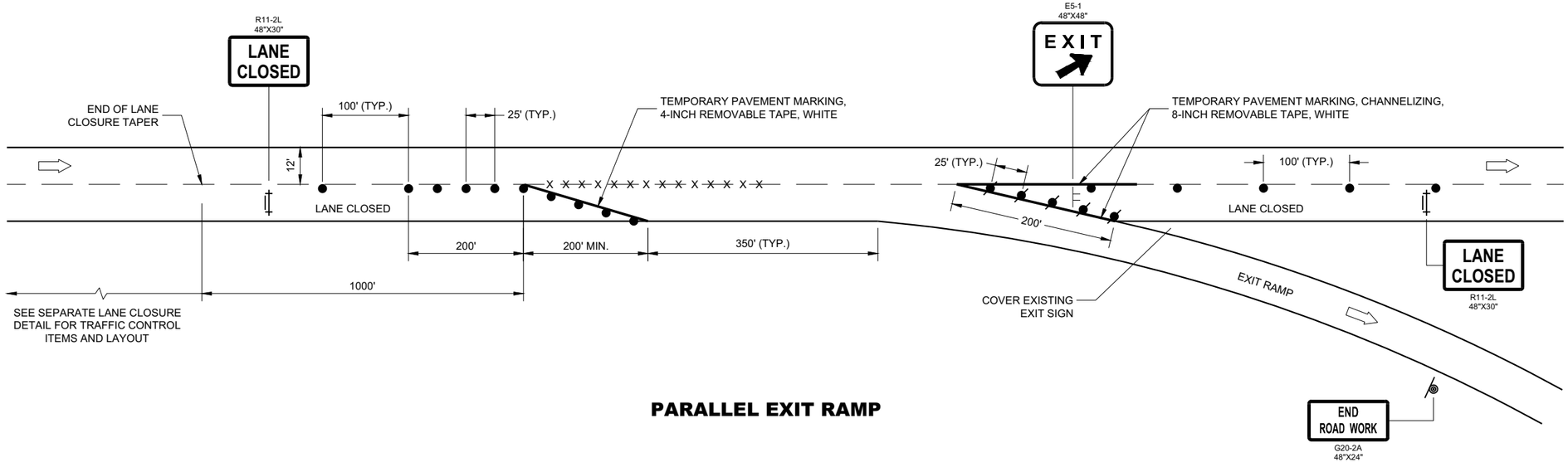
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE EXIT RAMP AND MAINLINE TRAFFIC.

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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.



PARALLEL EXIT RAMP

TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

6

SDD 15D15 - 05e

6

SDD15D15 - 05e

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC

GENERAL NOTES

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

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

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

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

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

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

PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROP OFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN WORK IS NOT IN PROGRESS.

WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12 - HOUR DURATION.

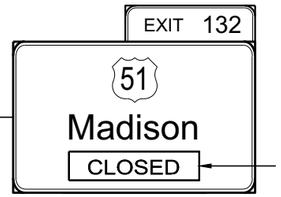
* W20 - 1A AND G20 - 2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

** PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



G20 - 60
108" X 24"

OR



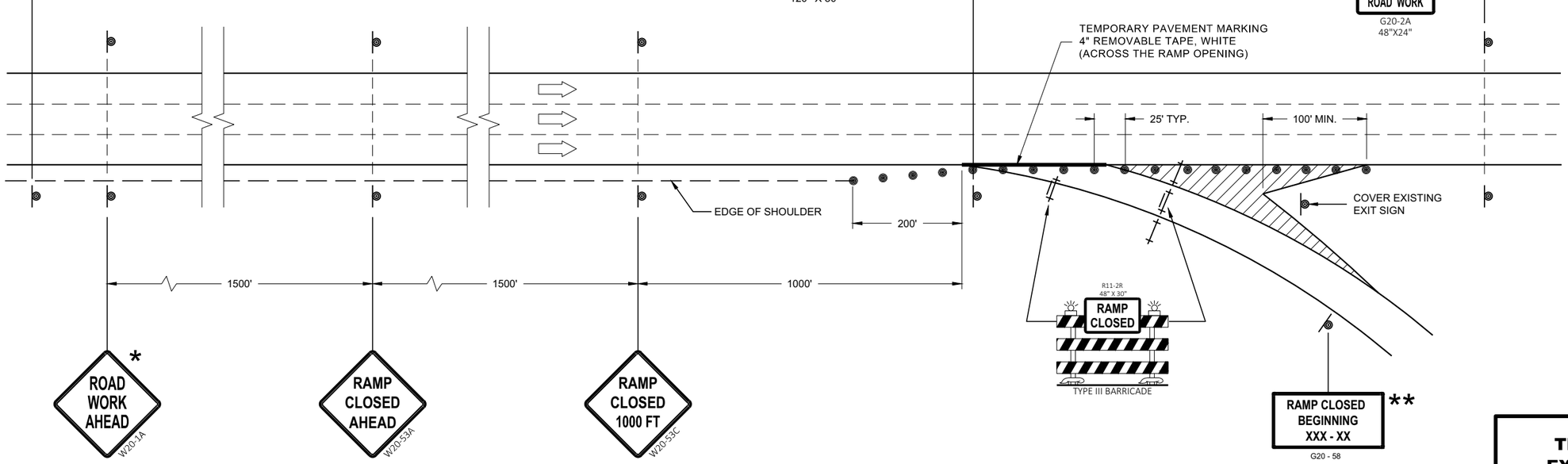
G20 - 60
108" X 24"

PLACE SIGN G20 - 60 OVER MILEAGE ON EXISTING E1 - 1A SIGN



COVER ARROW ON EXISTING E4 - 1 SIGN (COVERING SIGNS TYPE I)

G20 - 61
120 ' X 30"



OR

PCMS MESSAGING

FRAME 1	FRAME 2
RAMP TO CLOSE	XXXDAY XX XX XX

TRAFFIC CONTROL, EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Andrew Heidtke
ROADWAY STANDARDS DEVE ENGINEER

FHWA

SDD 15D16 - 04

6

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

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

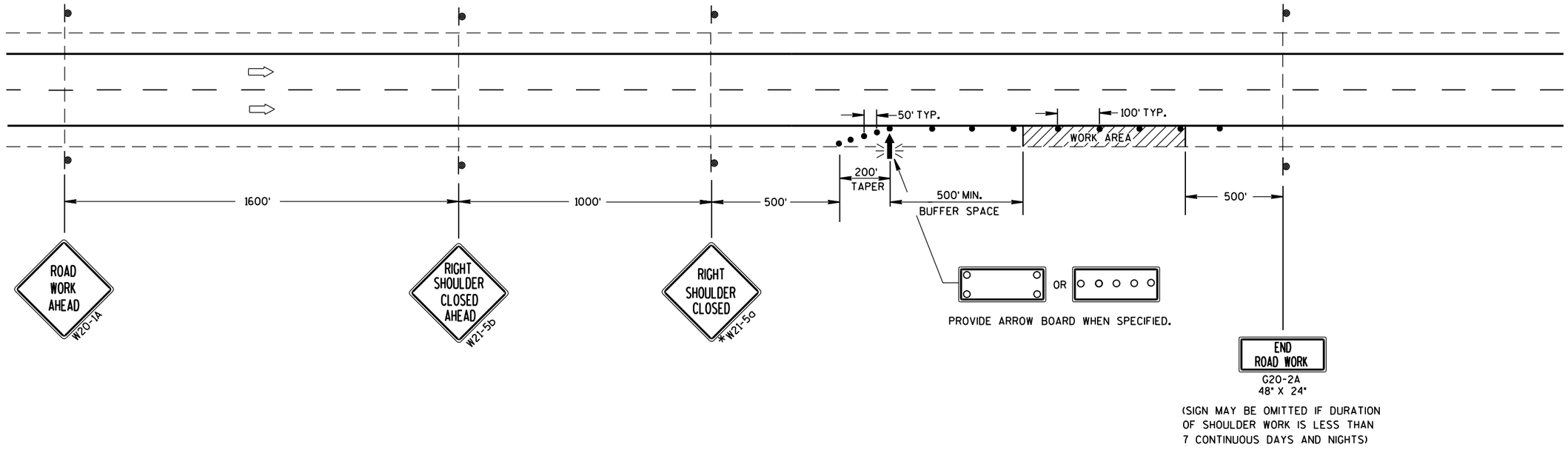
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible] SAFETY ENGI[illegible]

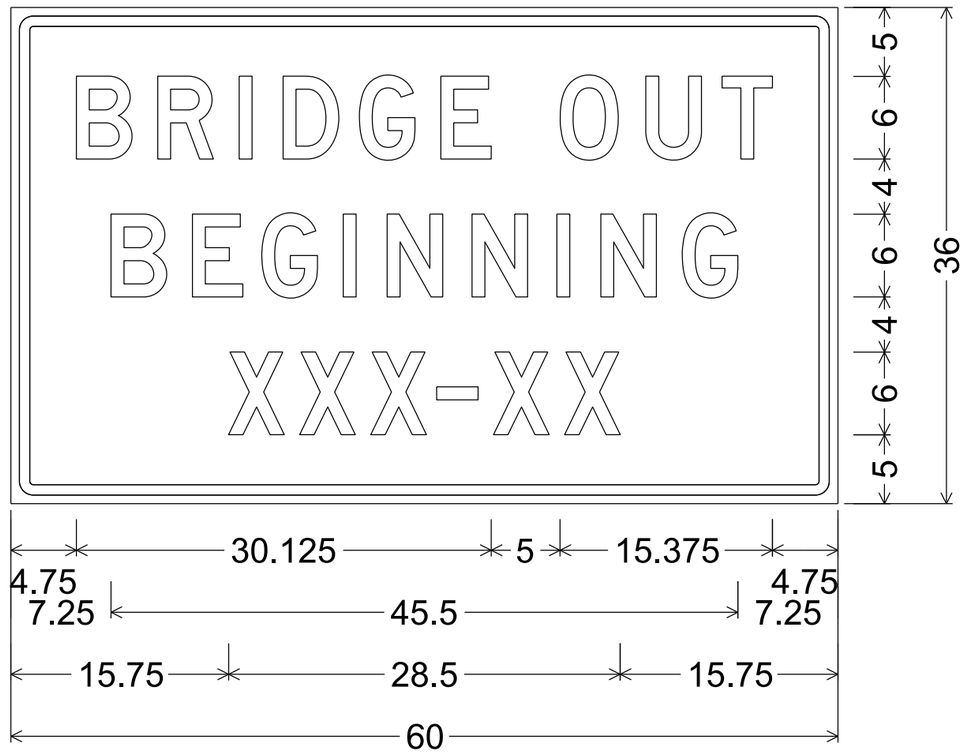
FHWA

6

S.D.D. 15 D 27-3

NOTES

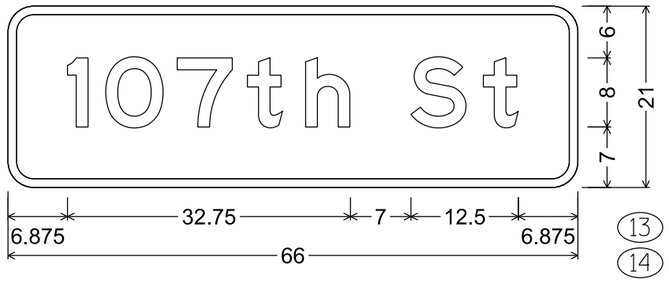
1. Fixed Message Sign - Type II Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D



1.625" Radius, 0.750" Border, 0.625" Indent

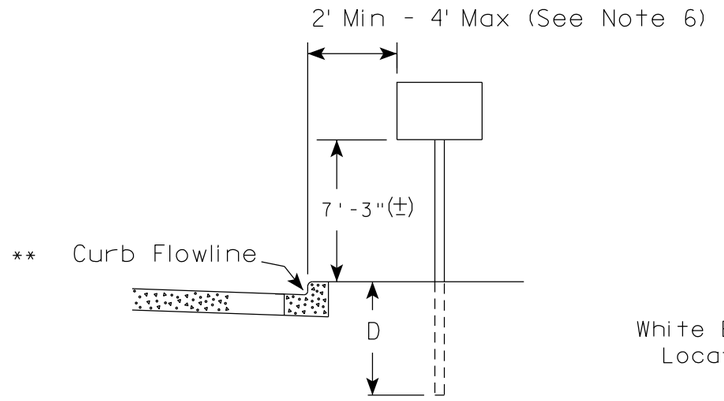
NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E

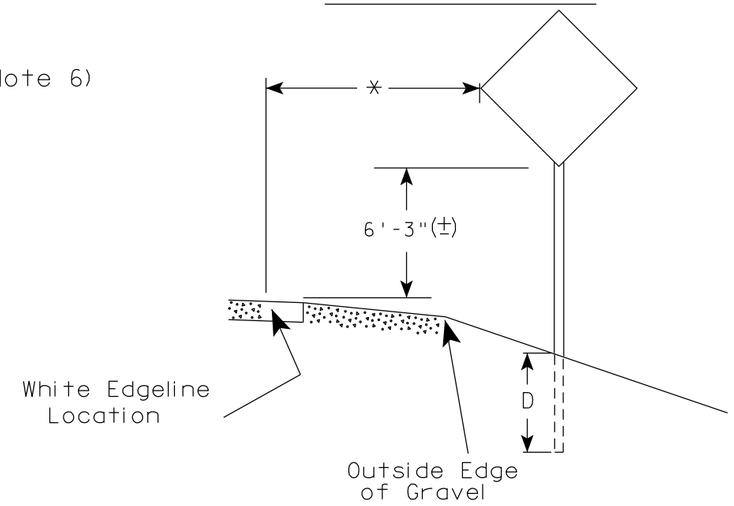


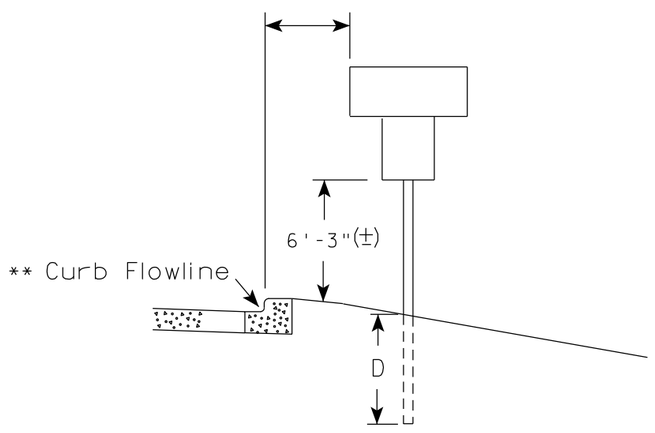
M1-94; 3.000" Radius, 1.000" Border

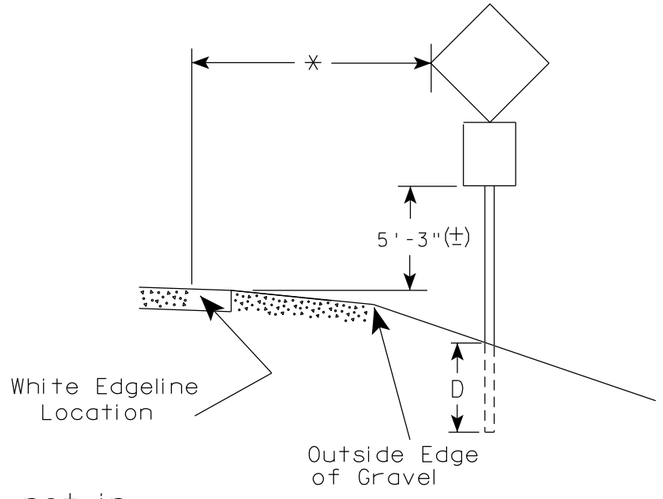
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

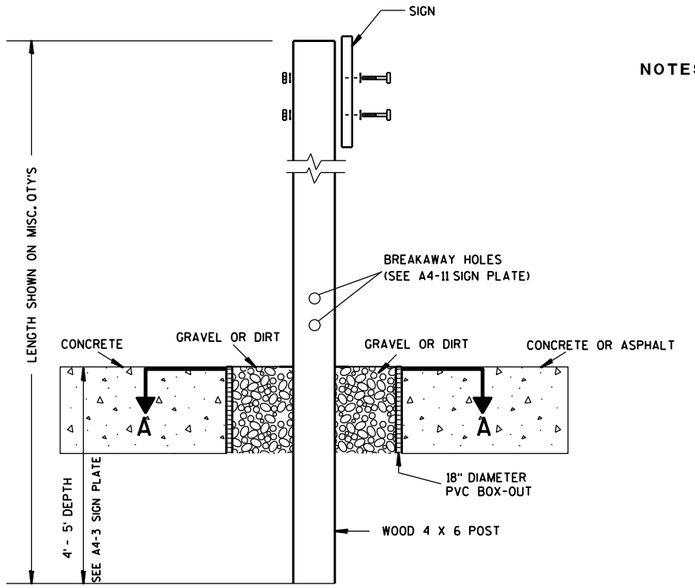
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

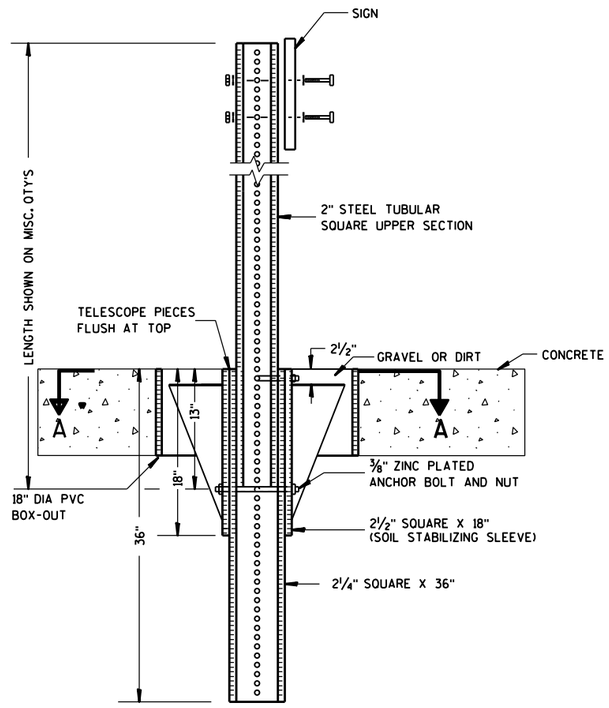
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 210	E



ELEVATION VIEW

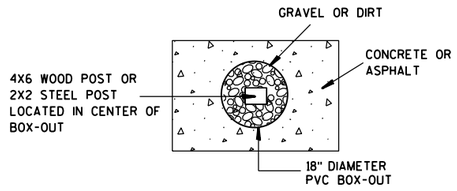
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

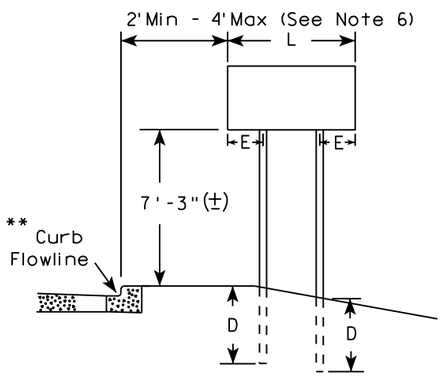
APPROVED Matthew R Rauch
for State Traffic Engineer

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

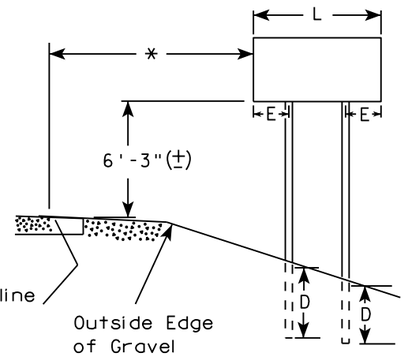
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

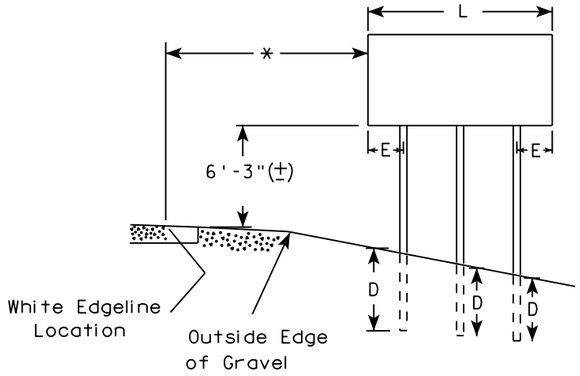
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

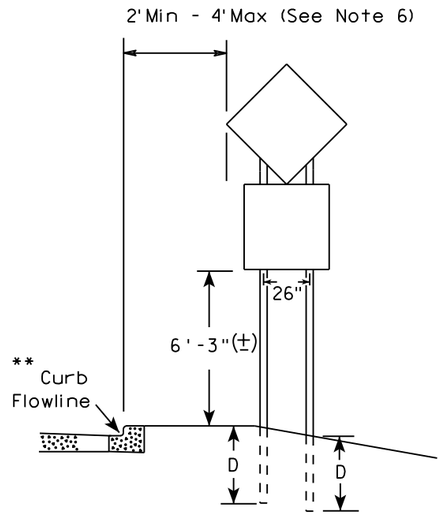
URBAN AREA



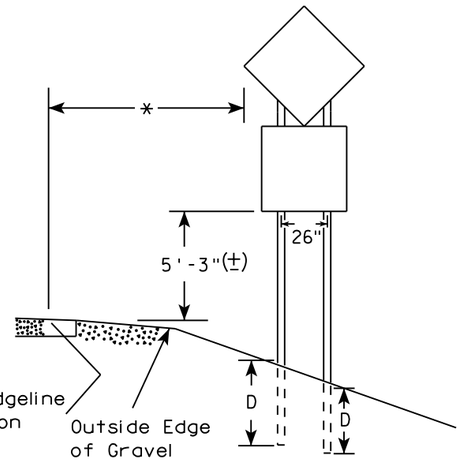
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

GENERAL NOTES

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

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

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

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

POST EMBEDMENT DEPTH

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

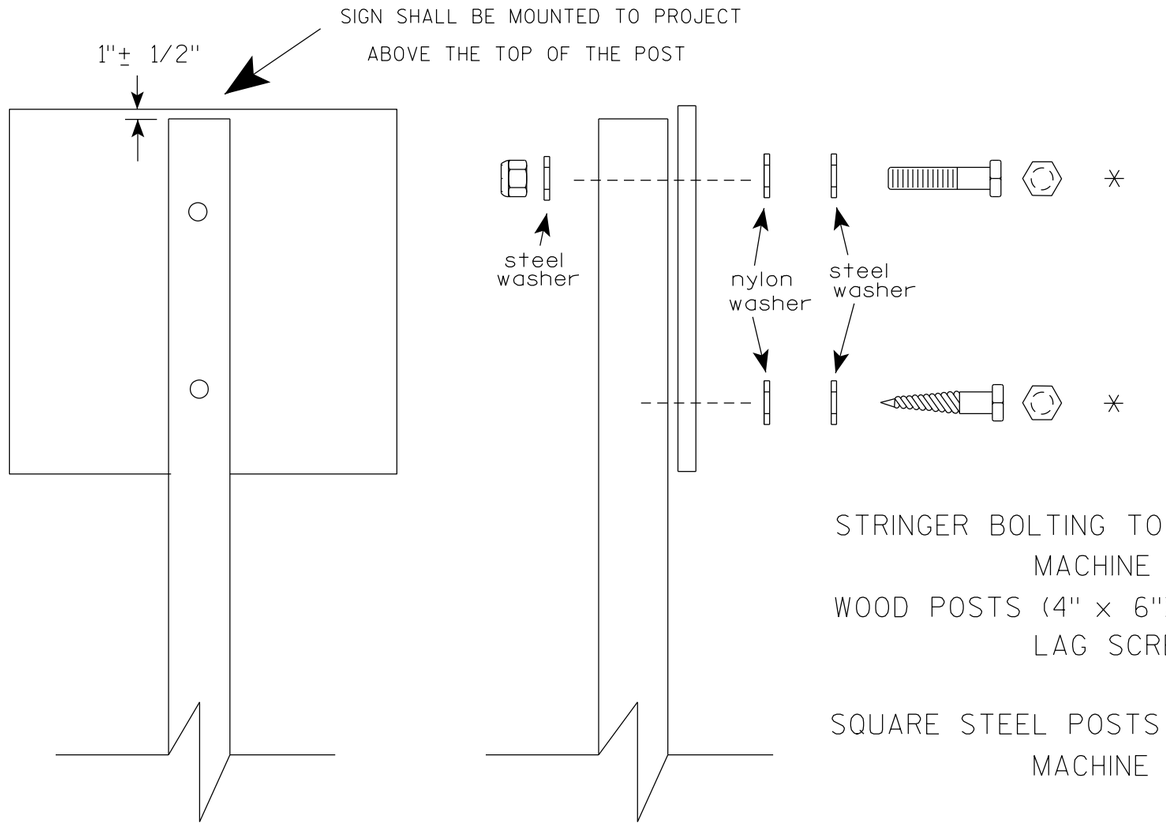
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 212	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

WOOD POSTS (4" x 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

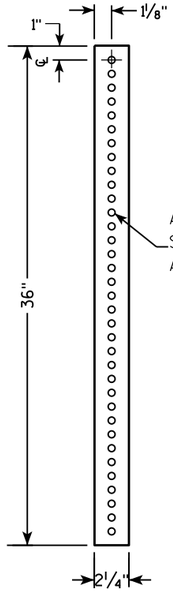
DATE 4/1/2020 PLATE NO. A4-8.9

PROJECT NO:

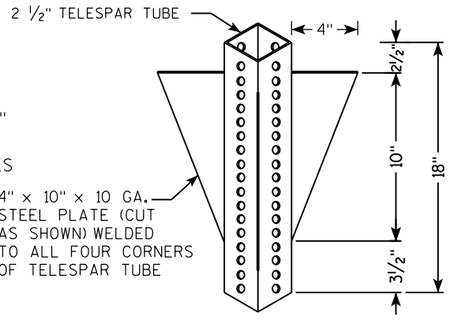
SHEET NO: 213 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

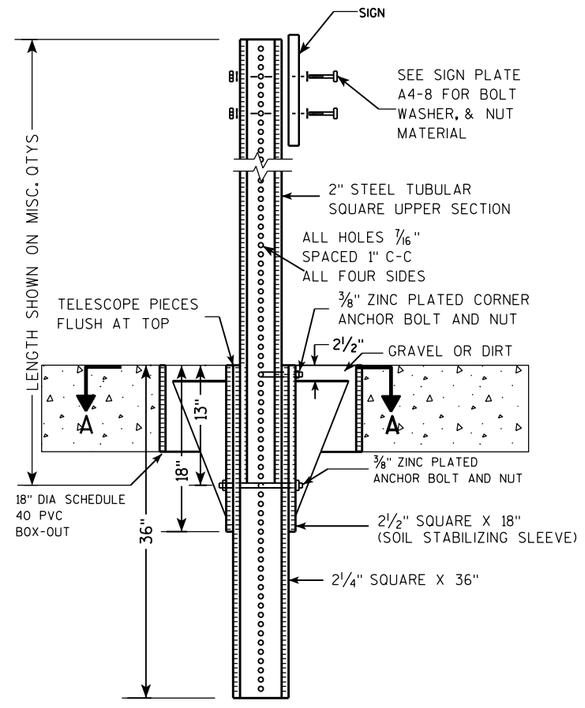
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



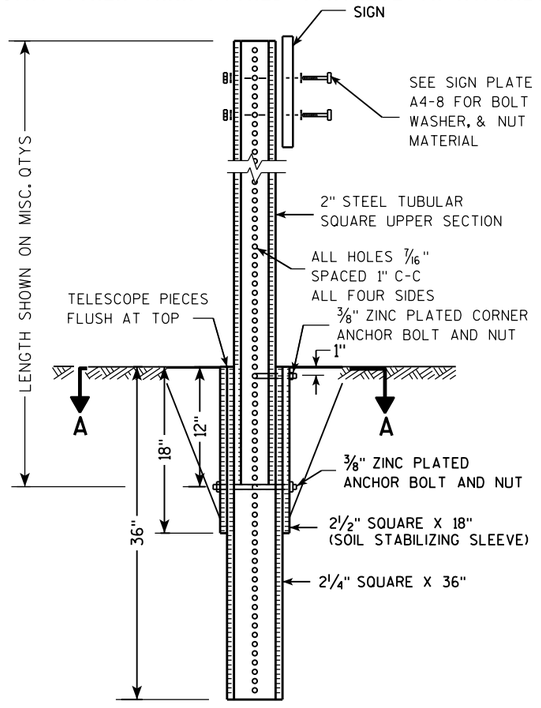
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

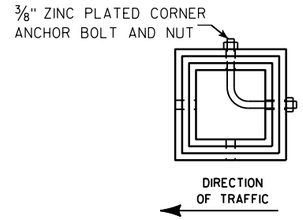


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

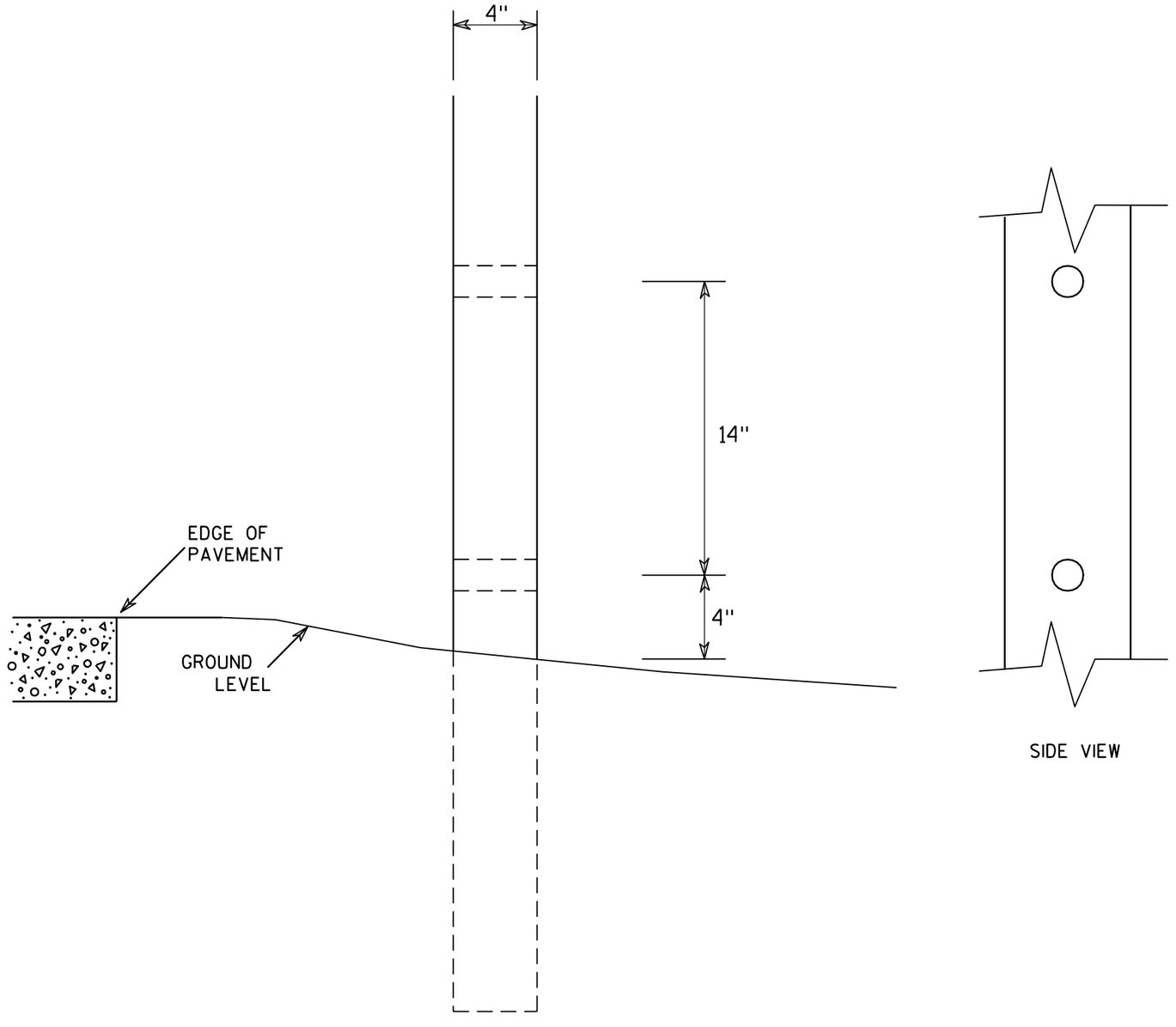
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 214 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



SIDE VIEW

GENERAL NOTES

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

7

7

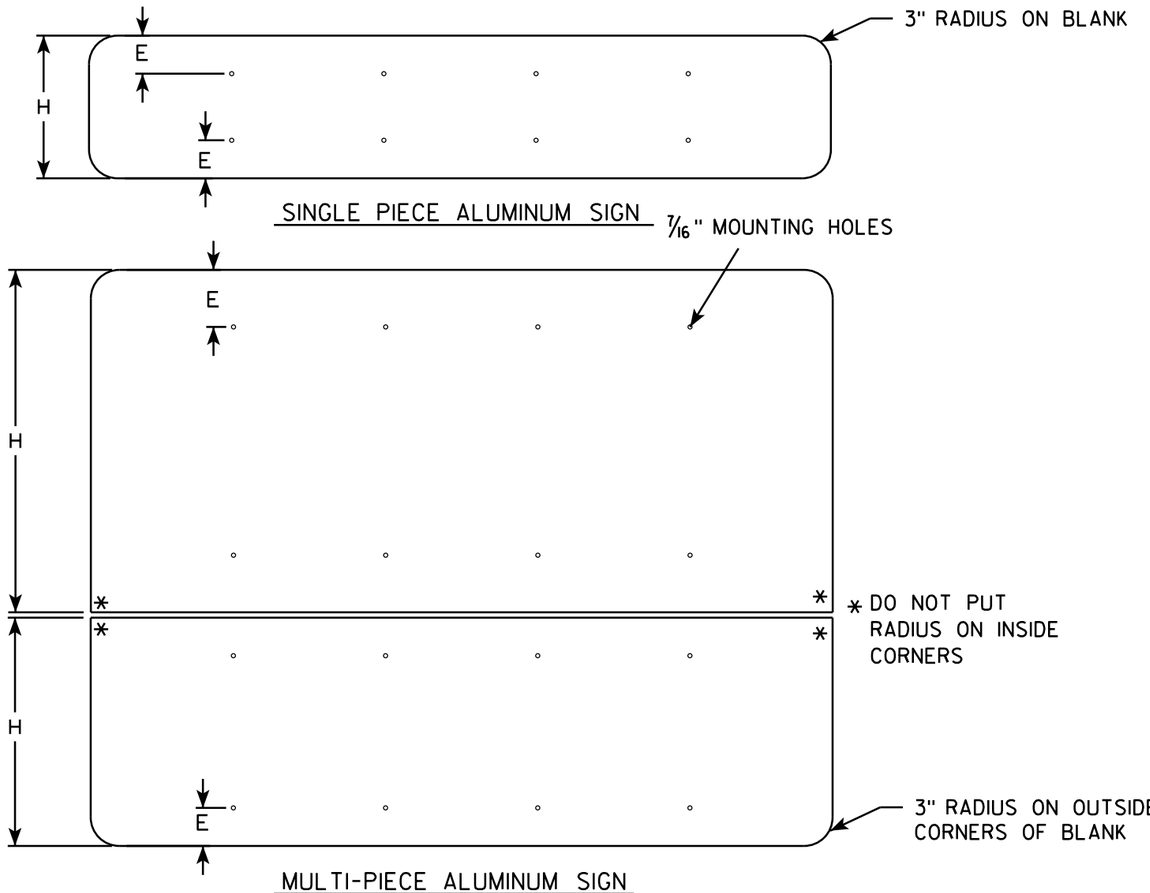
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

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

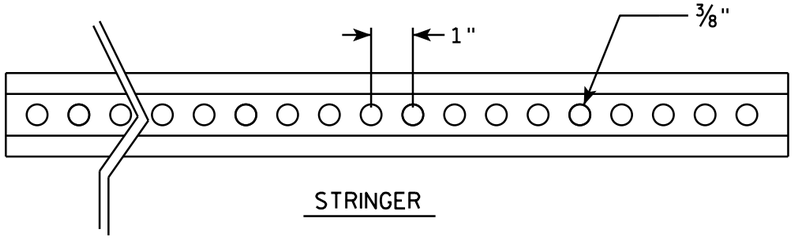
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 215	E



GENERAL NOTES

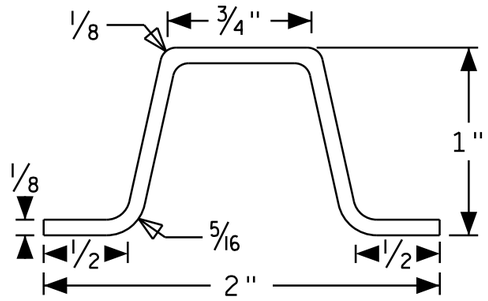
- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES
78"	72"	2	16"	15" 31" 47" 63"
84"	72"	2	17"	16½" 33½" 50½" 67½"
90"	72"	2	18"	18" 36" 54" 72"
96"	90"	2	19"	19½" 38½" 57½" 76½"
102"	90"	2	20"	21" 41" 61" 81"
108"	90"	2	21"	22½" 43½" 64½" 85½"
114"	108"	3	15"	12" 27" 42" 57" 72" 87" 102"
120"	108"	3	16"	12" 28" 44" 60" 76" 92" 108"
126"	108"	3	17"	12" 29" 46" 63" 80" 97" 114"
132"	126"	3	18"	12" 30" 48" 66" 84" 102" 120"
138"	126"	3	19"	12" 31" 50" 69" 88" 107" 126"
144"	126"	3	20"	12" 32" 52" 72" 92" 112" 132"

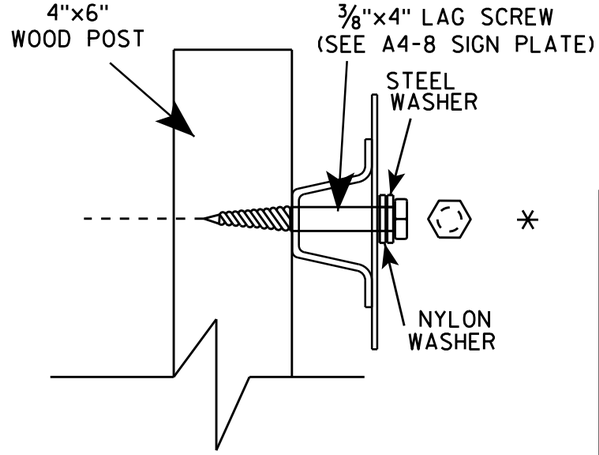


STRINGER

CROSS SECTION VIEW OF CHANNEL



POST MOUNTING



SIGN STRINGER MOUNTING REQUIREMENTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

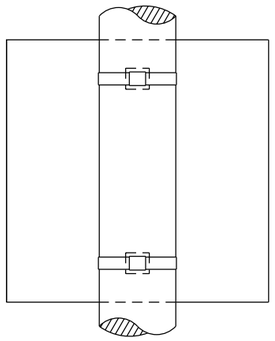
DATE 4/26/16 PLATE NO A4-18.1

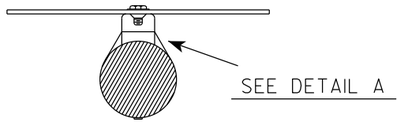
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

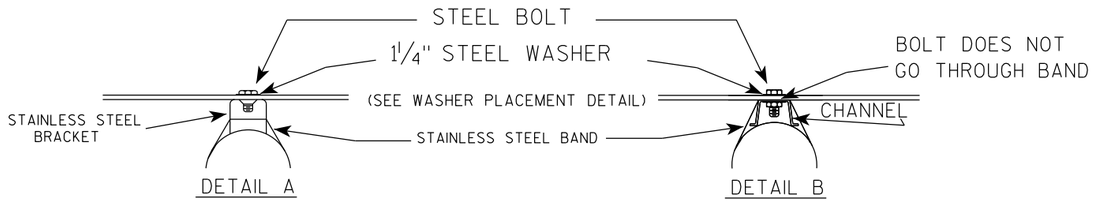
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A418.dgn PLOT DATE : 27-APR-2016 13:56 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 41.805205:1.000000

BANDING

SINGLE SIGN



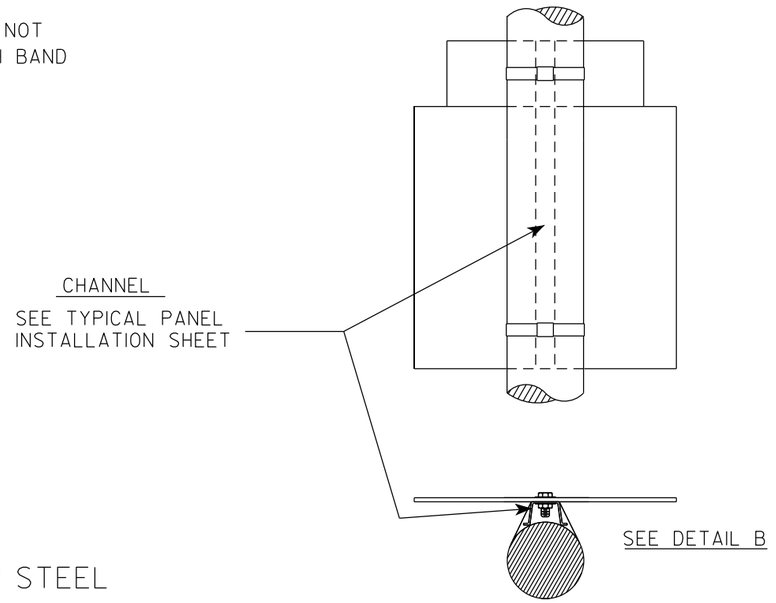




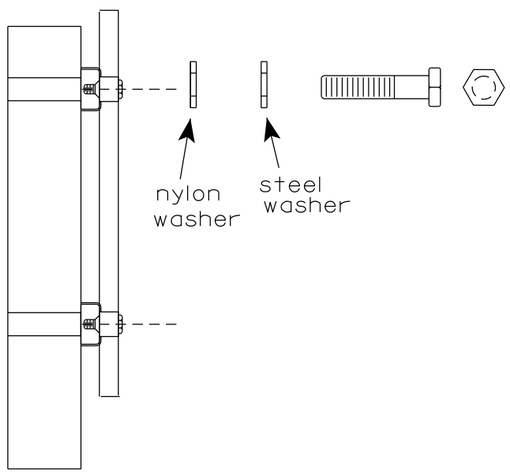
GENERAL NOTES

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 ¾" 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



WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X ⅜" I.D. X 1/16" STEEL
1-1/4" O.D. X ⅜" 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

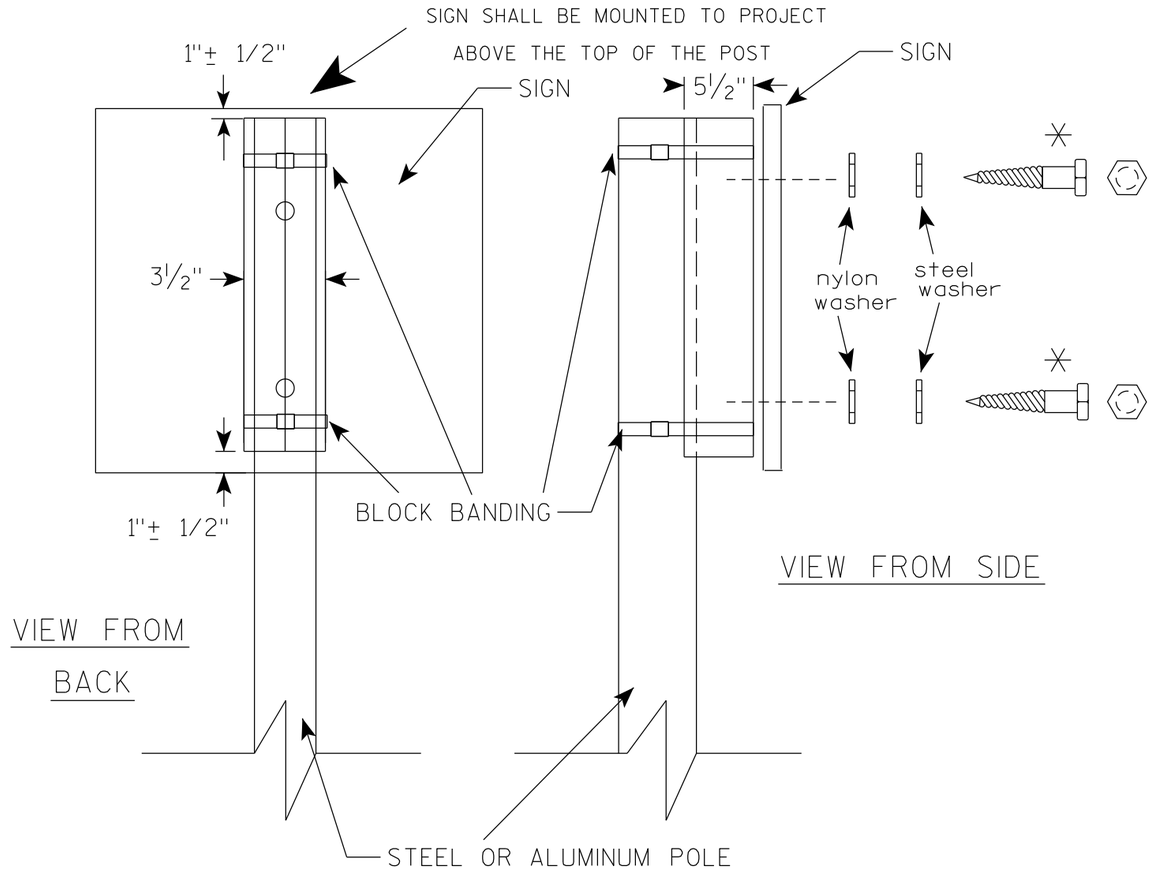
DATE 6/10/19 PLATE NO. A5-9.4

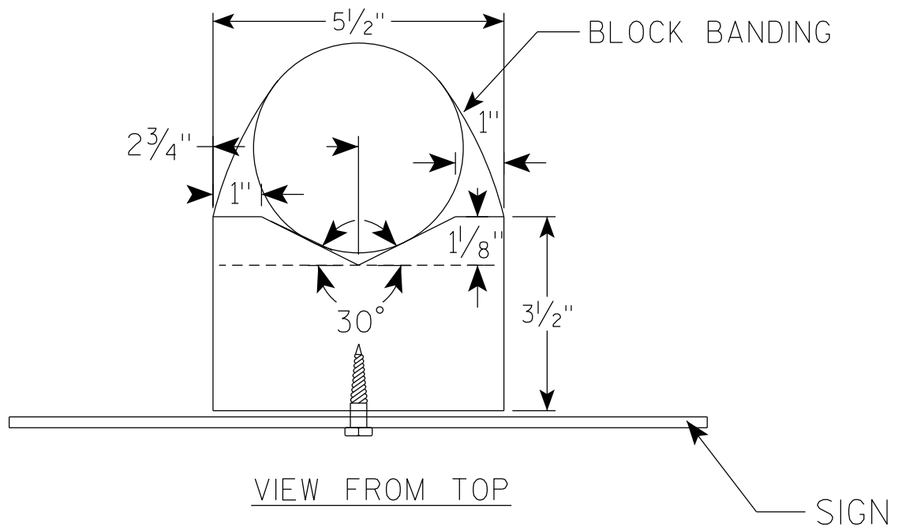
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 217	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

7





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, ¾" 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 NORNALLY 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 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

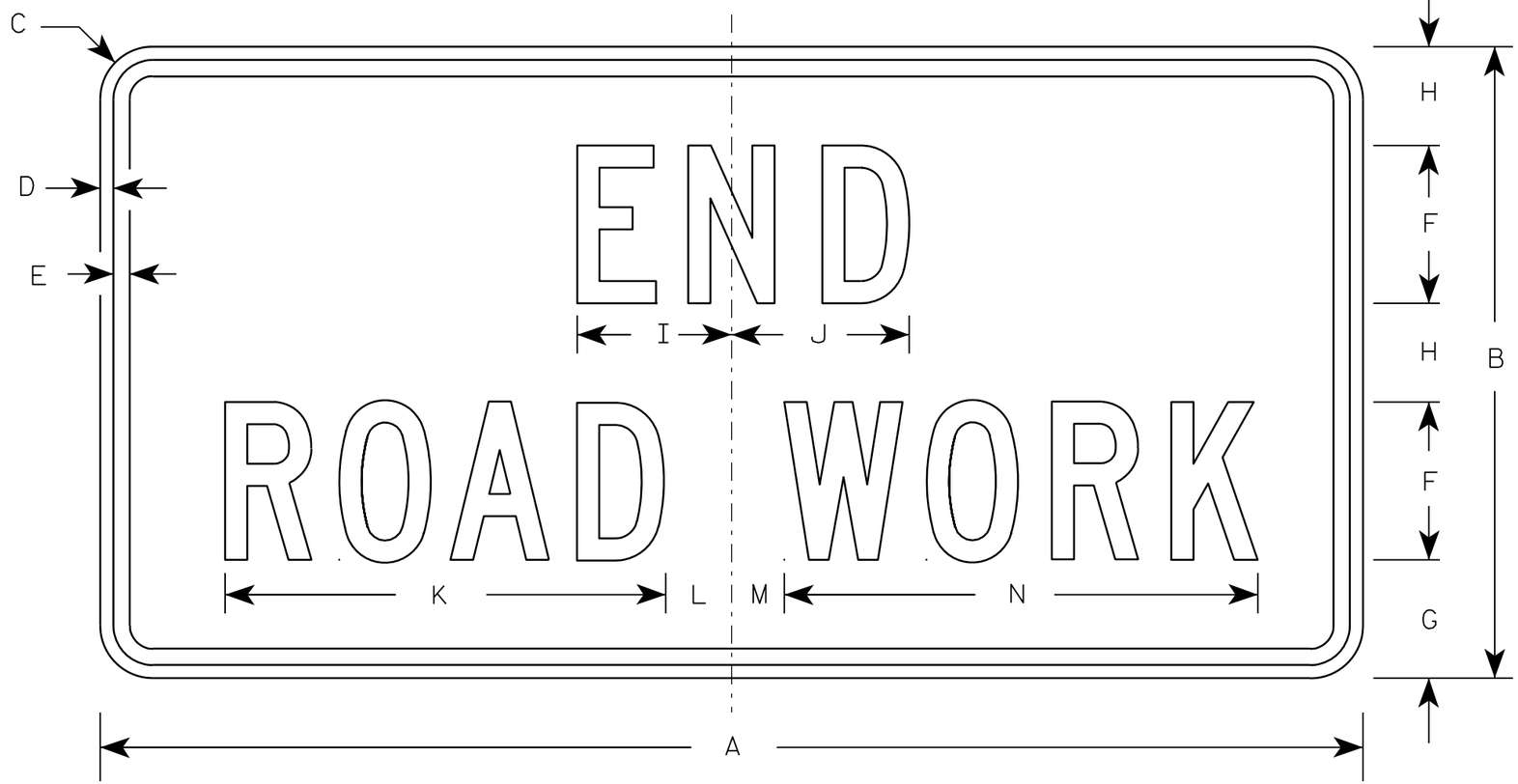
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO: | SHEET NO: 218 | E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A510.dgn PLOT DATE : 10-JUN 2019 4:15 PLOT BY : mscj9h

WISDOT/CADDS SHEET 42



G20-2A

NOTES

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

Metric equivalent for this sign is:

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

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

STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

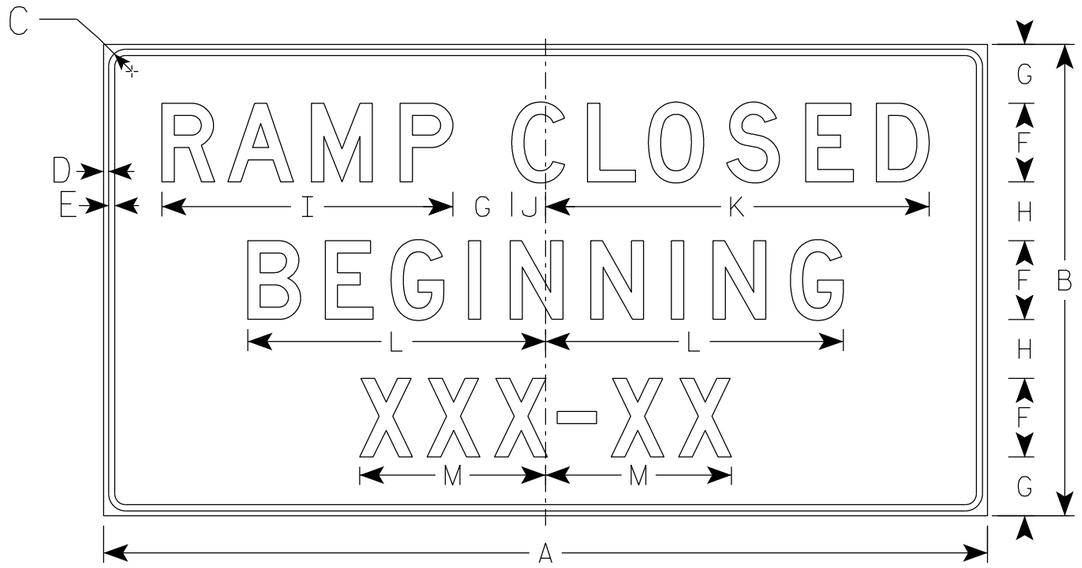
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 219	E

NOTES

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



G20-58

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	72	36	1 5/8	5/8	3/4	6	5	4	22 1/4	2 3/8	29 1/2	22 3/4	14 1/4														18.0
3	90	48	1 5/8	5/8	3/4	8	6	6	29 5/8	3 3/8	39	30 3/8	19														30.0
4																											
5																											

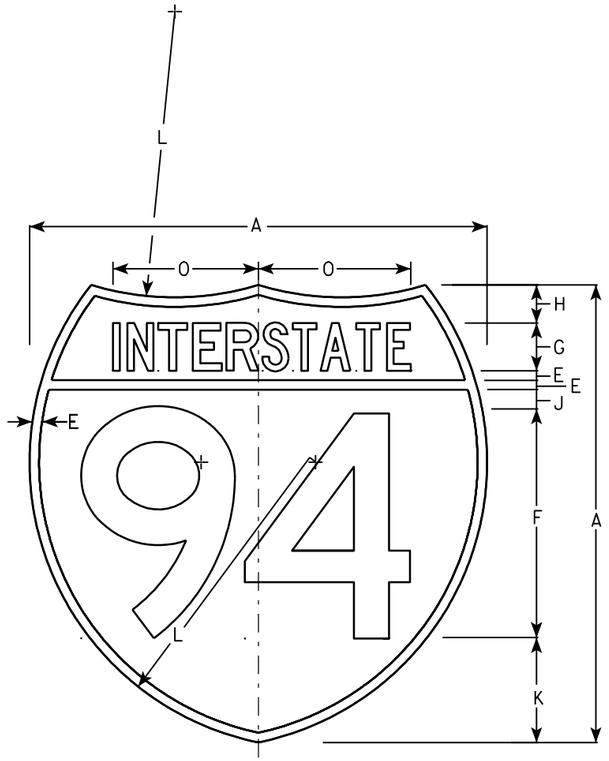
STANDARD SIGN
G20-58

WISCONSIN DEPT OF TRANSPORTATION

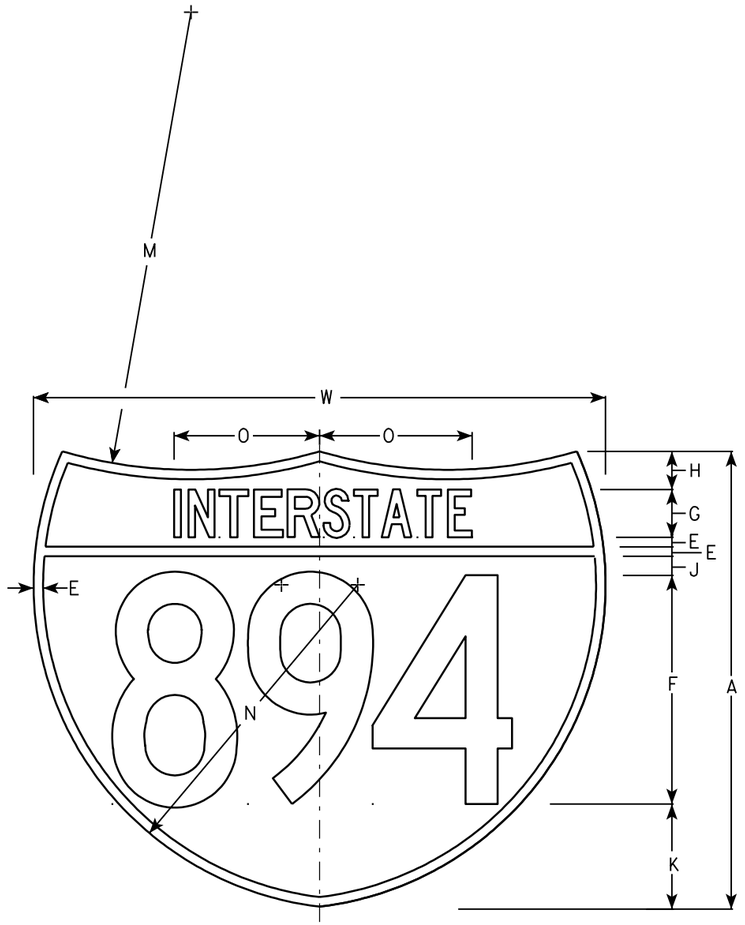
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/19/2020 PLATE NO. G20-58.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 220 | E



M1-1



M1-1A

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Top Red - Bottom Blue (See Note 6)
   Message - White - See Note 6
3. Message Series - See note 5
4. Substitute appropriate numerals & ajust spacing as per plate A10-1.
5. M1-1 - Numerals - D
   Interstate - C
   M1-1A - All copy - C
6. Permanent Signs
   Message - Type H Reflective
   Detour or other temporary signs
   Background - Reflective
   Message - Reflective

Metric equivalent for these signs are:

SIZE	M1-1	SIZE	M1-1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	M1-1 Area sq. ft.	M1-1A Area sq. ft.	M1-1 Area m2	M1-1A Area m2
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

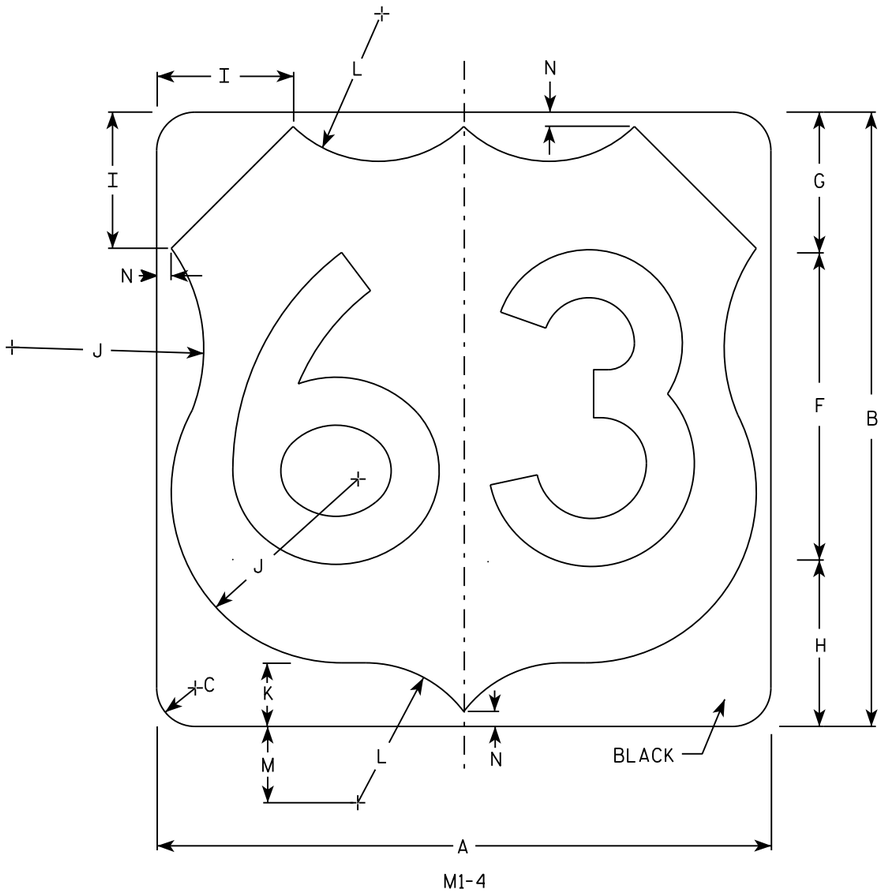
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 08/23/05 PLATE NO. M1-1.8

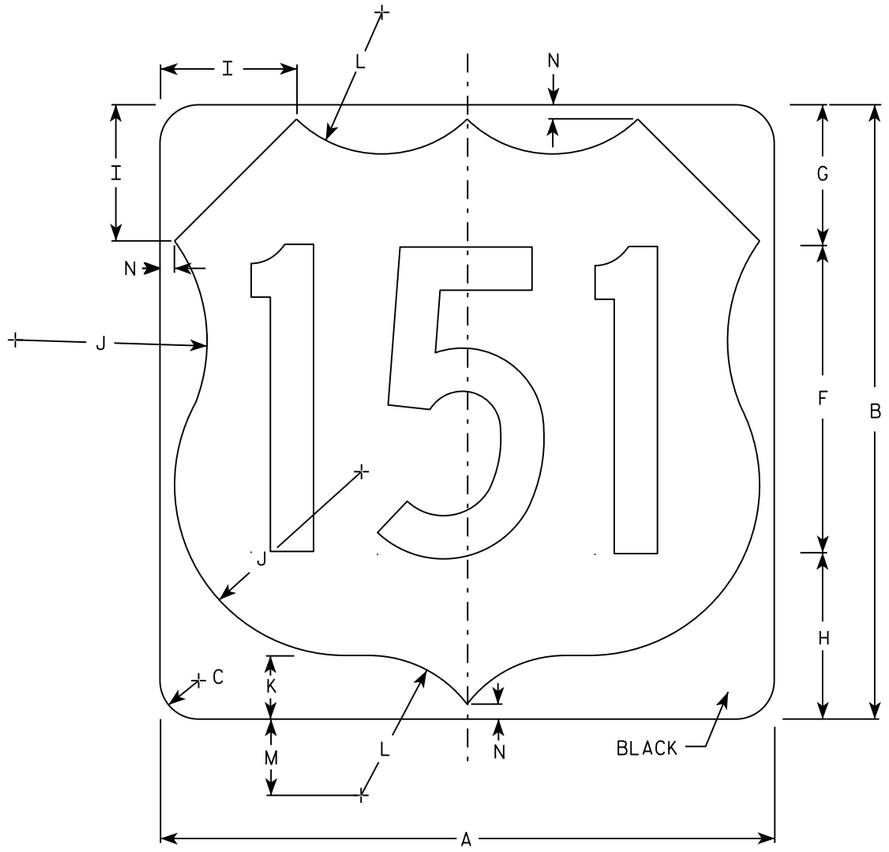
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 221	E

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D except 3 number signs 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.



M1-4



M1-4

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	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

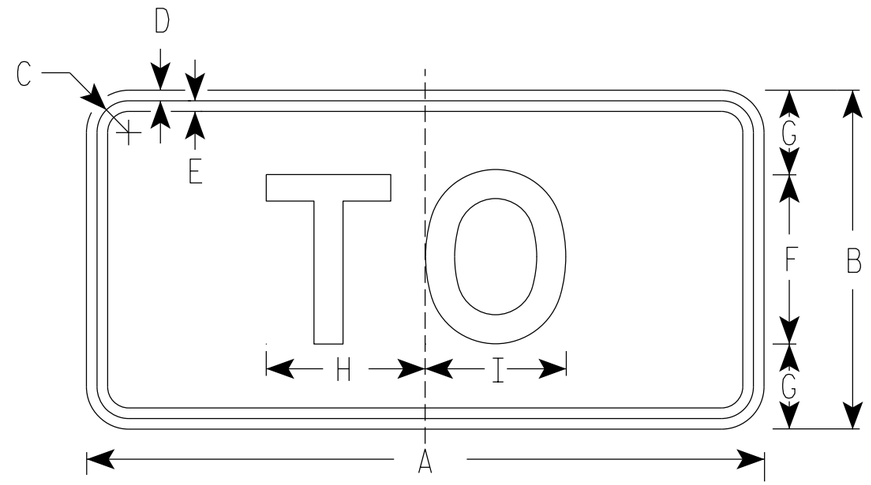
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

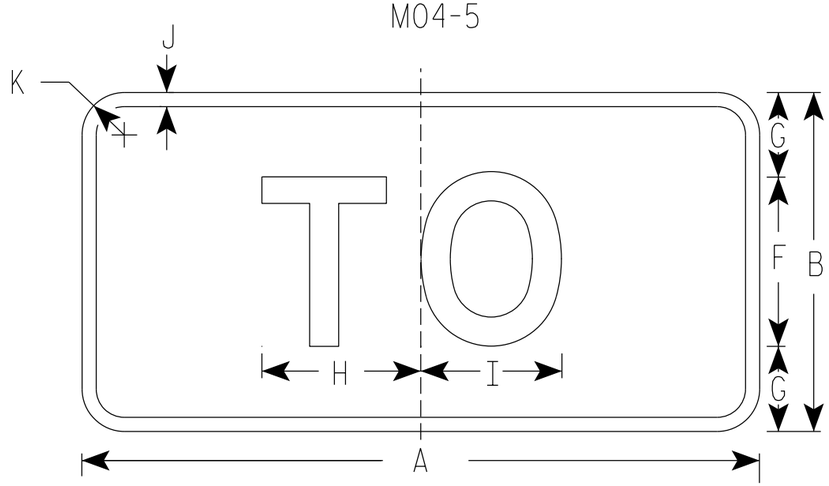
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-4.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 222	E



M4-5
MM4-5
MP4-5
M04-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
   Message - Black

   MB4-5 Background - Blue
   Message - White

   MK4-5 Background - Green
   Message - White

   MM4-5 Background - White
   Message - Green

   MN4-5 Background - Brown
   Message - White

   MP4-5 Background - White
   Message - Blue

   M04-5 Background - Orange Type F Reflective
   Message - Black

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	12	1 1/8	3/8	3/8	6	3	5 3/8	5 1/4	1/2	1 1/2																2.00
3	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
4	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
5	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5

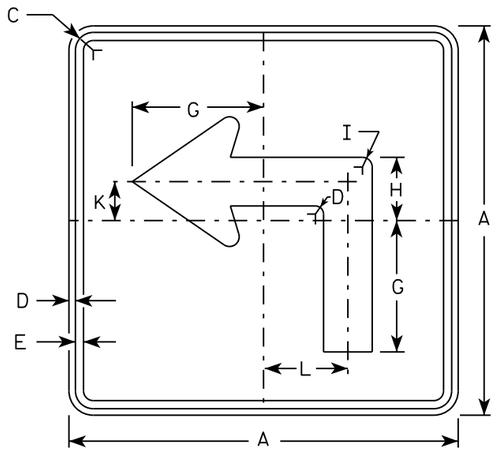
STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

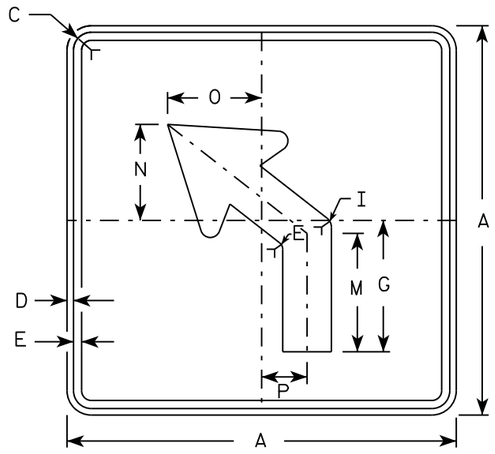
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/7/19 PLATE NO. M4-5.9

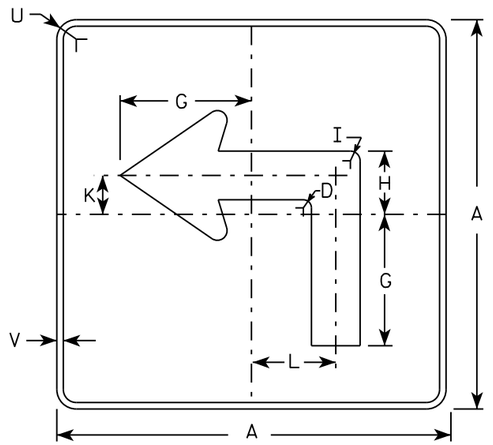
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 223 | E



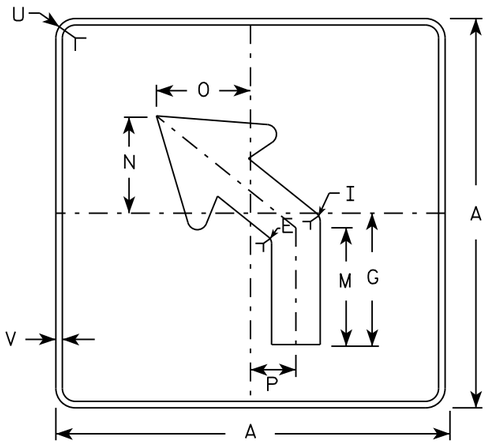
M5-1L
MM5-1L
MO5-1L
MP5-1L



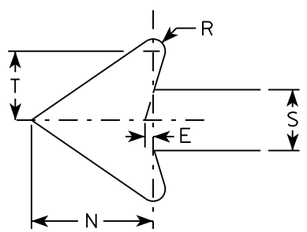
M5-2L
MM5-2L
MO5-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

1. Signs are Type II - Type H reflective except as shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

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	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

STANDARD SIGN
M5-1 & M5-2

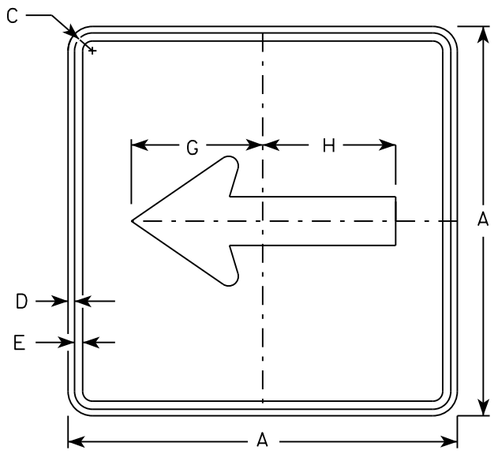
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

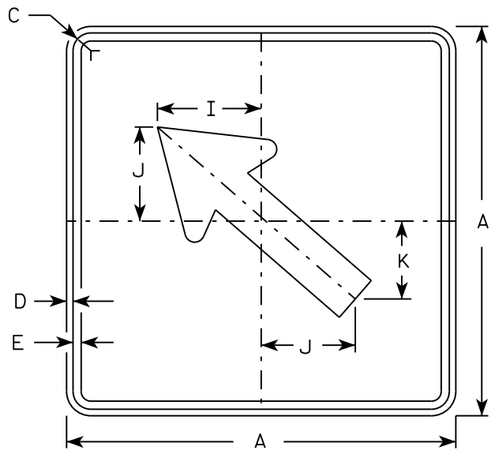
DATE 10/15/15 PLATE NO. M5-1.13

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



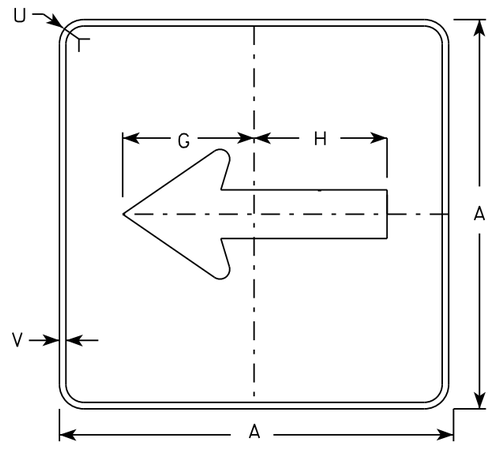
M6-1
MM6-1
MO6-1
MP6-1



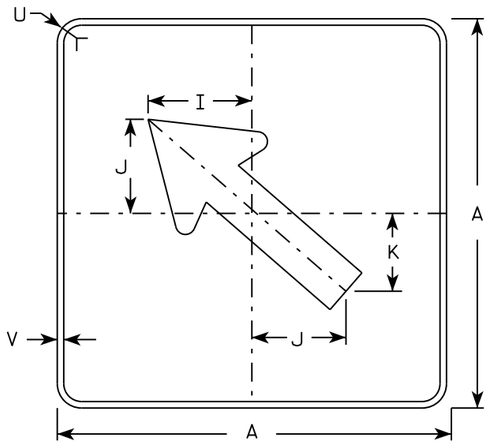
M6-2
MM6-2
MO6-2
MP6-2

NOTES

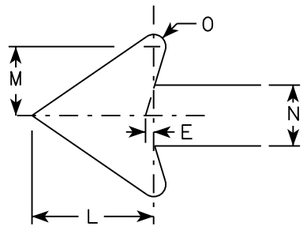
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



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	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2						3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25

STANDARD SIGN
M6-1 & M6-2
SERIES

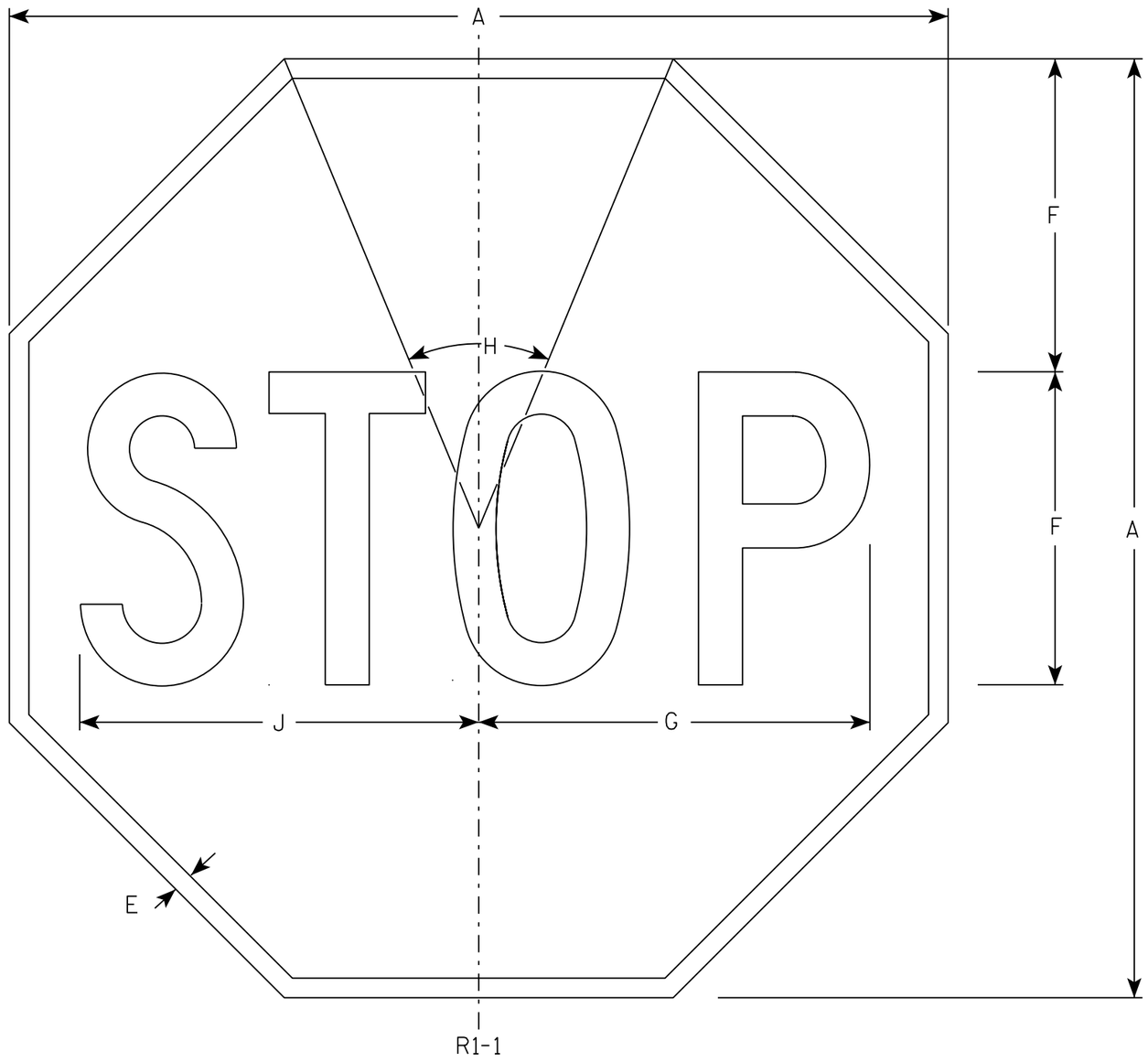
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATI 225 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



NOTES

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

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

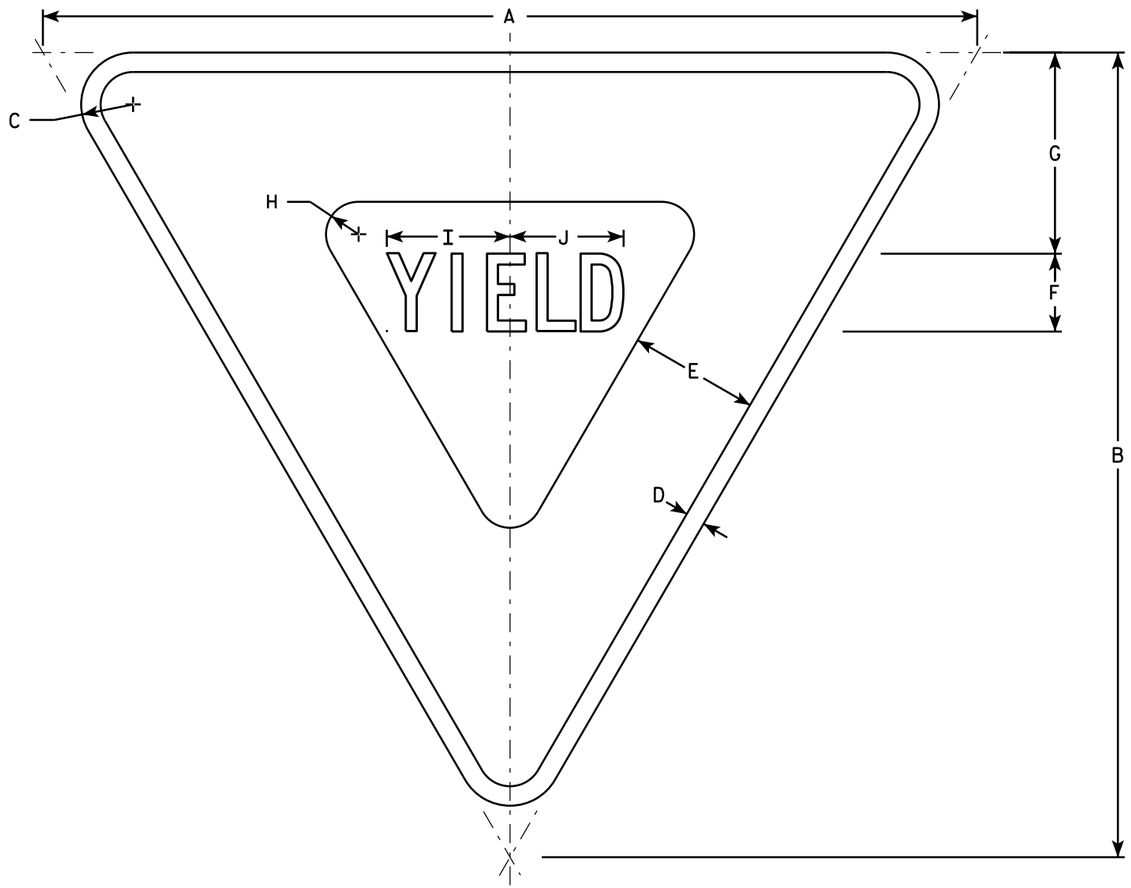
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 226	E



R1-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 5
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. The border strip and word message are reflectorized red.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

STANDARD SIGN
R1-2

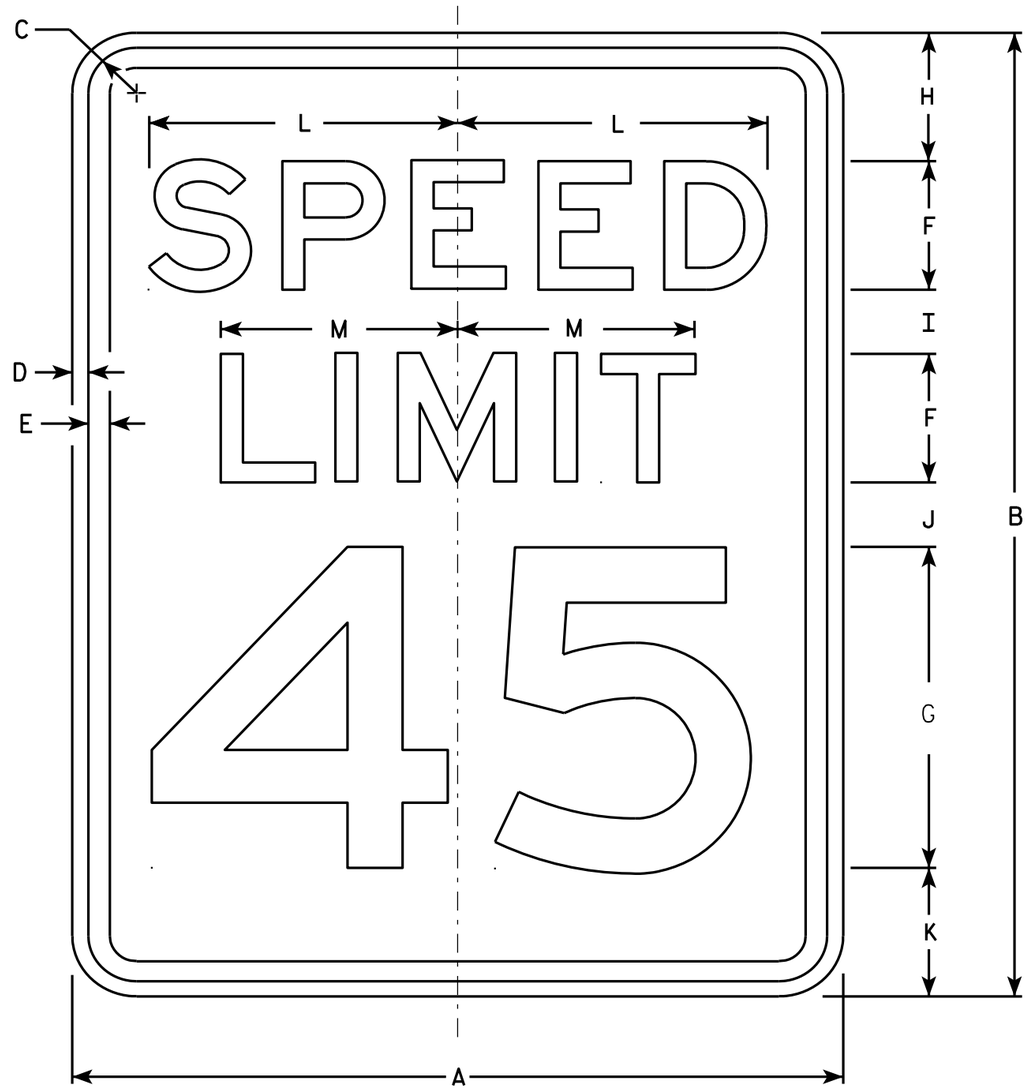
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/13/14 PLATE R1-2.12

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R12.DGN PLOT DATE : 13-OCT-2014 15:12 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.837526:1.000000
WISDOT/CADDS SHEET 42



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

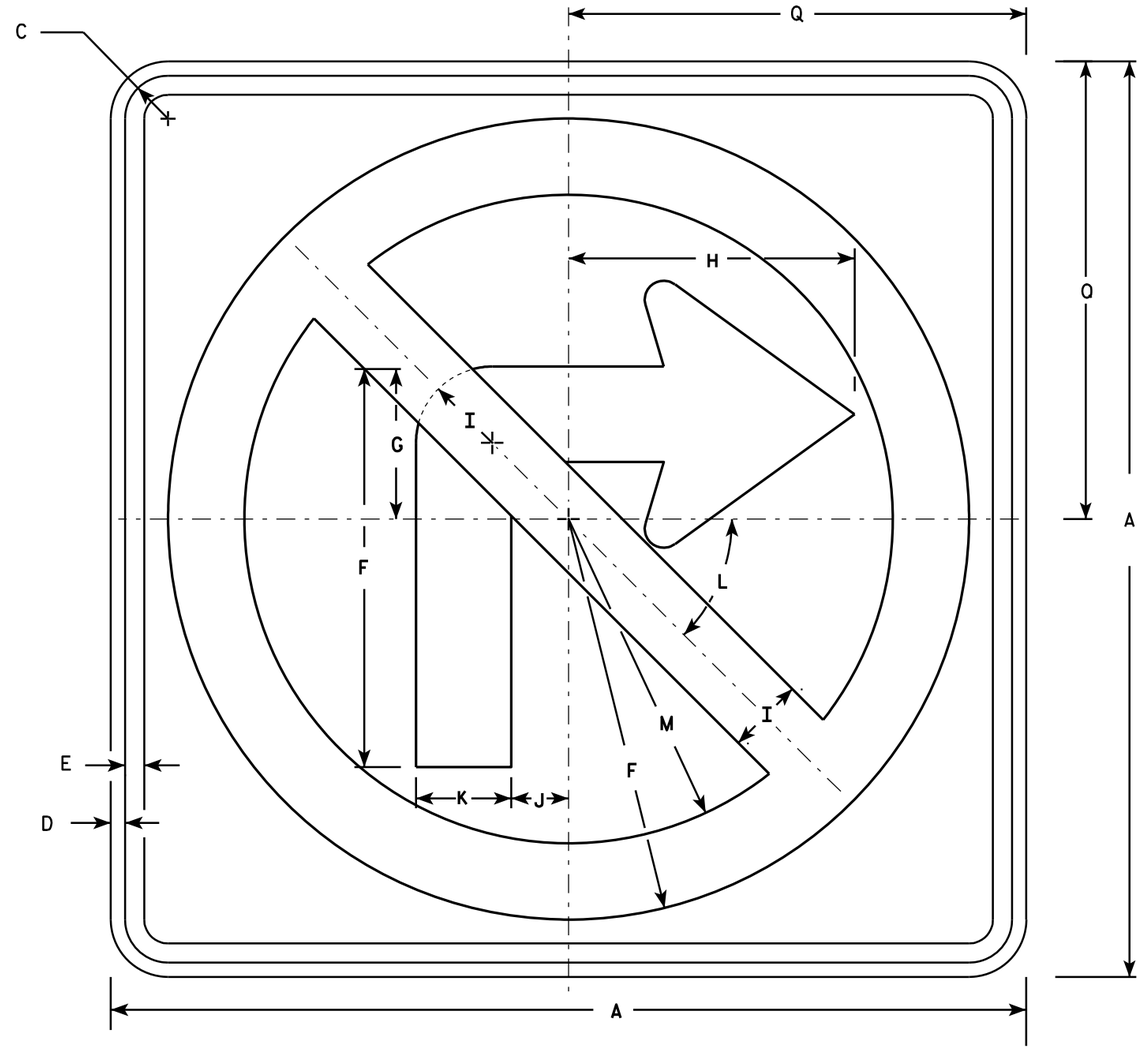
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

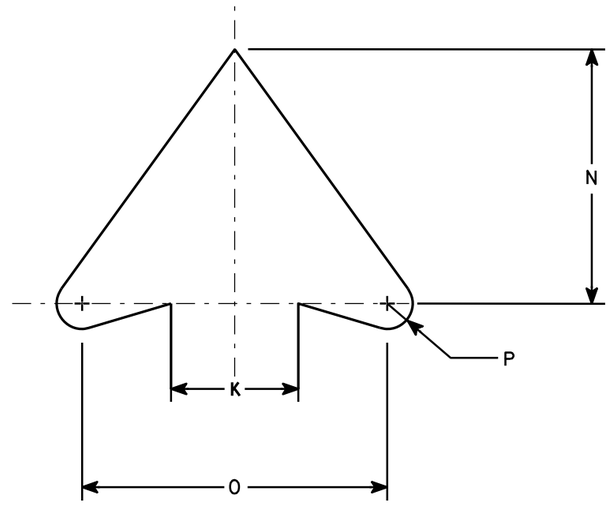
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 228 | E



R3-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



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	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

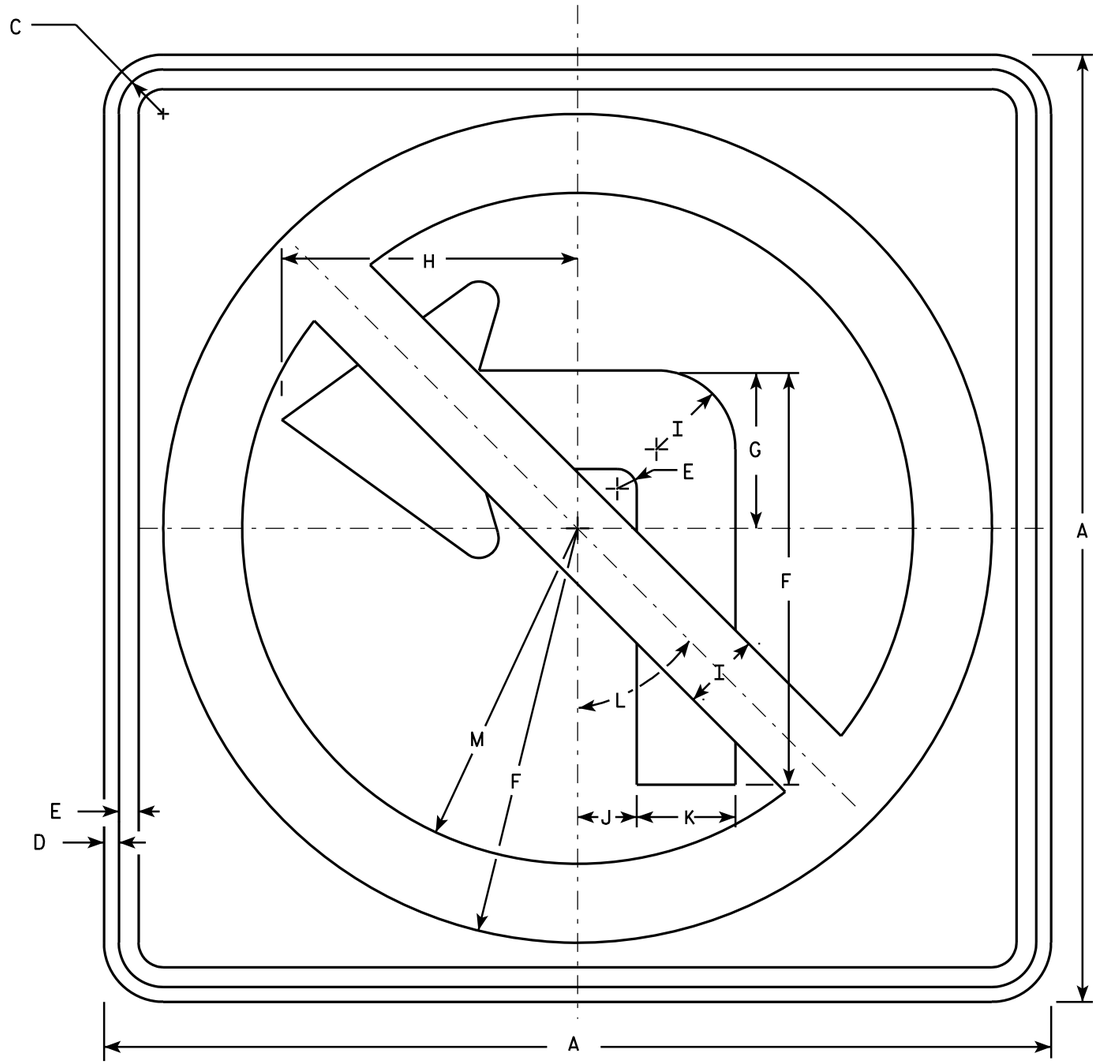
STANDARD SIGN
R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

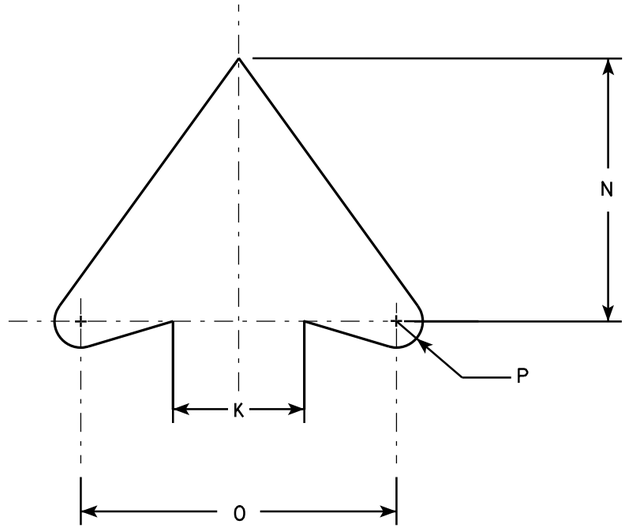
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 229	E



R3-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



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	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

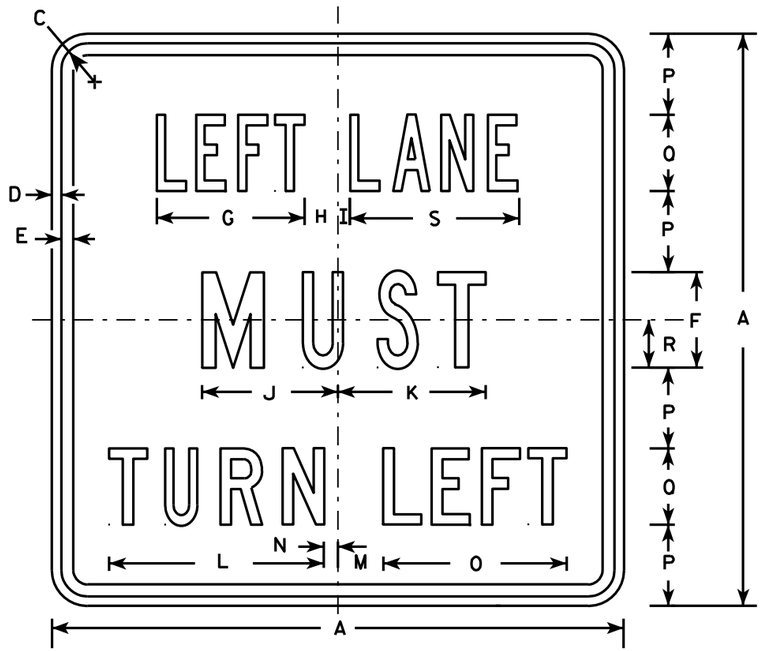
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

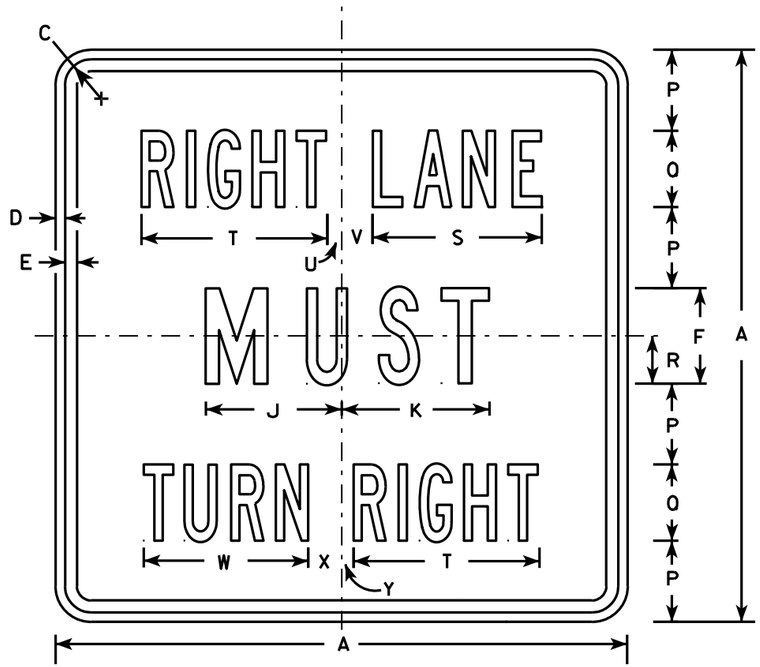
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 230	E



R3-7L



R3-7R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - Line 1 is Series B.
   Line 2 is Series C.
   Line 3 on plate R3-7R is Series B and Series C on plate R3-7L.
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	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2S	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
2M	30		1 3/8	1/2	5/8	5	7 3/4	1 3/4	5/8	7 1/8	7 3/4	11 1/4	2 3/8	3/4	9 5/8	4 1/4	4	2 1/2	8 7/8	9 3/4	3/4	1 5/8	8 5/8	1 5/8	5/8		6.25
3	36		1 5/8	5/8	3/4	6	9 5/8	2	1 1/8	8 3/4	9	13 1/2	3 7/8	1 1/2	12 1/2	5	5	3	10 5/8	12	7/8	2 1/4	10 5/8	2 1/8	1		9.00
4	48		2 1/4	3/4	1	8	13 1/2	2 3/8	1 1/2	11 1/2	11 7/8	17 3/4	3 5/8	2 1/2	16 3/8	6 1/2	7	4	14 3/8	16 7/8	5/8	3 1/4	15 1/8	2 3/4	1 1/8		16.00
5																											

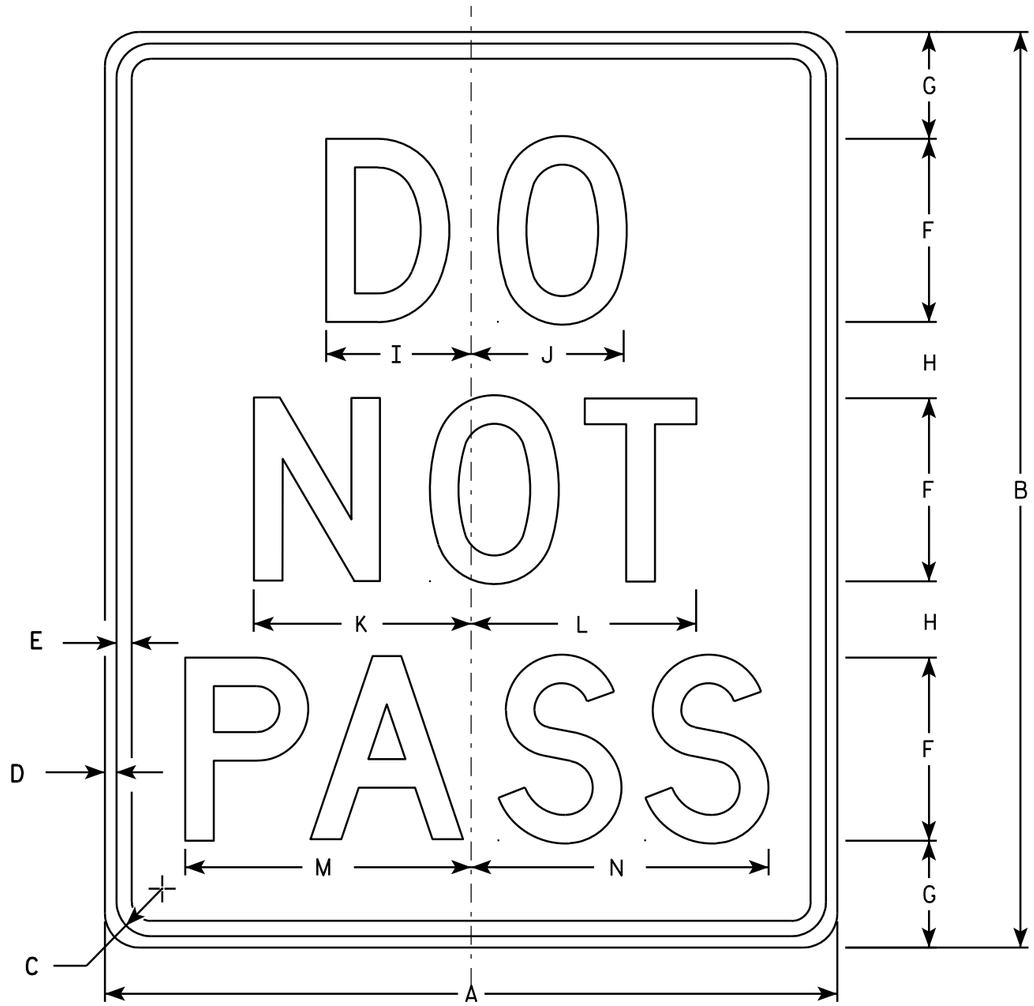
STANDARD SIGN
R3-7L & R3-7R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-7.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 231 | E



R4-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - 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	18	24	1 1/8	3/8	1/2	4	3 1/2	2 1/2	3 1/8	3 1/4	4 3/4	4 7/8	6 1/4	6 1/2													3.0
2S	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
2M	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
3																											
4	36	48	1 5/8	5/8	3/4	8	7	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	13													12.0
5	48	60	2 1/4	3/4	1	10	8	7	7 3/4	8 3/8	11 7/8	12 1/4	15 5/8	16 1/4													20.0

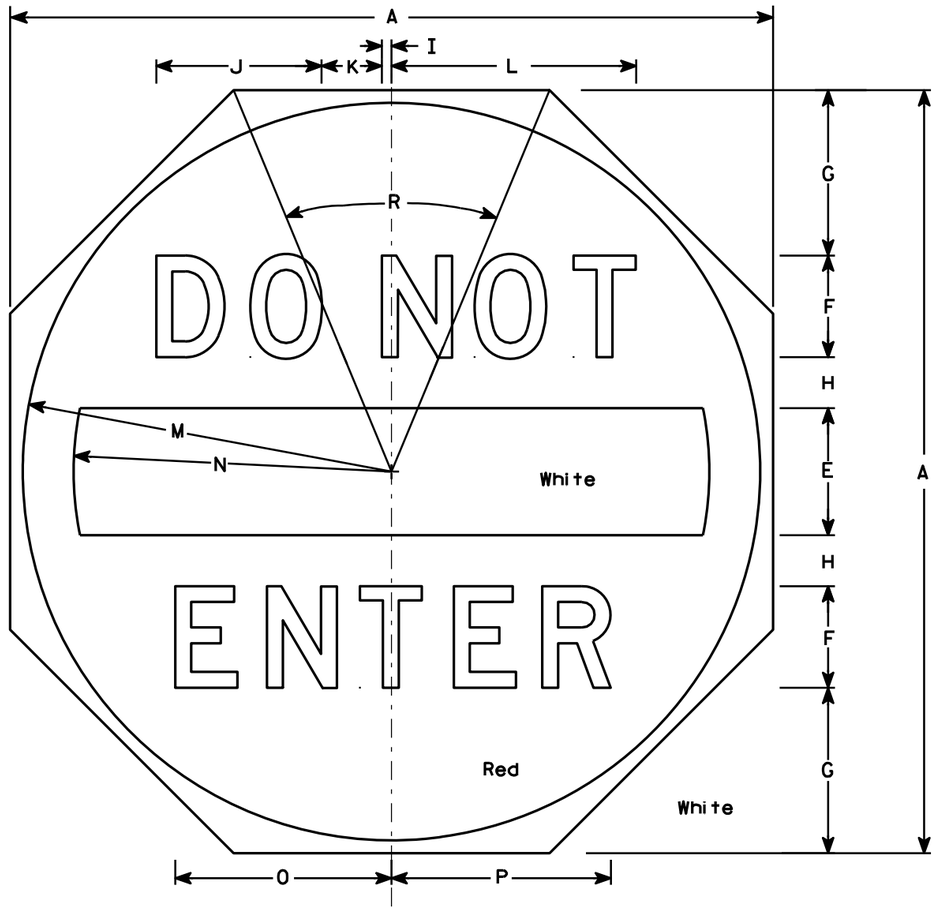
STANDARD SIGN
R4-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-1.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 232 | E



R5-1C

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See detail
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the cornors 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	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8		45°									5.18
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4		45°									7.46
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4		45°									7.46
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4		45°									13.25
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8		45°									13.25

STANDARD SIGN
R5-1C

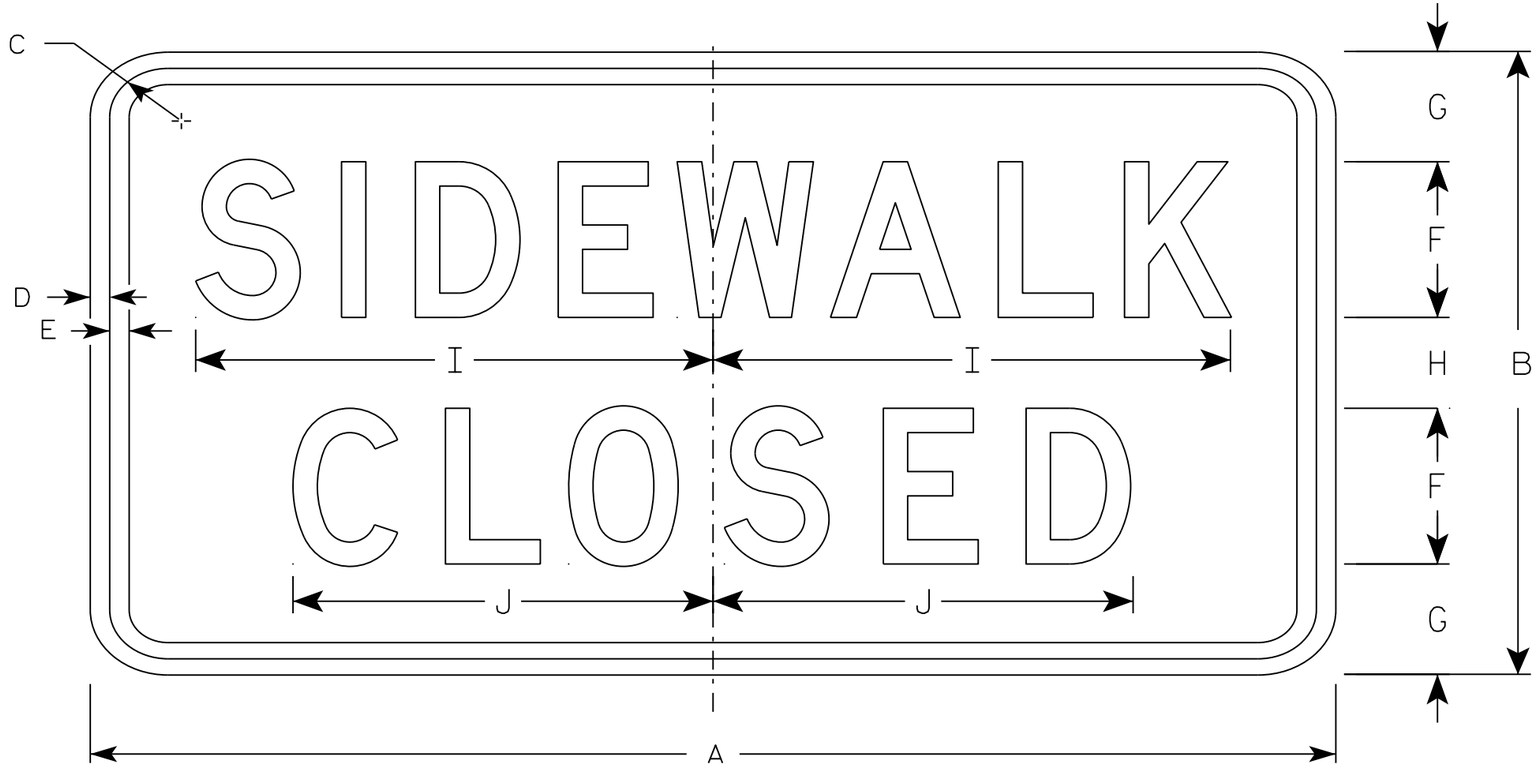
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

State Traffic Engineer

DATE 3/23/11 PLATE NO. R5-1C.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 233 | E



R9-9

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - 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. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.

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	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 3/4	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

STANDARD SIGN
R9-9

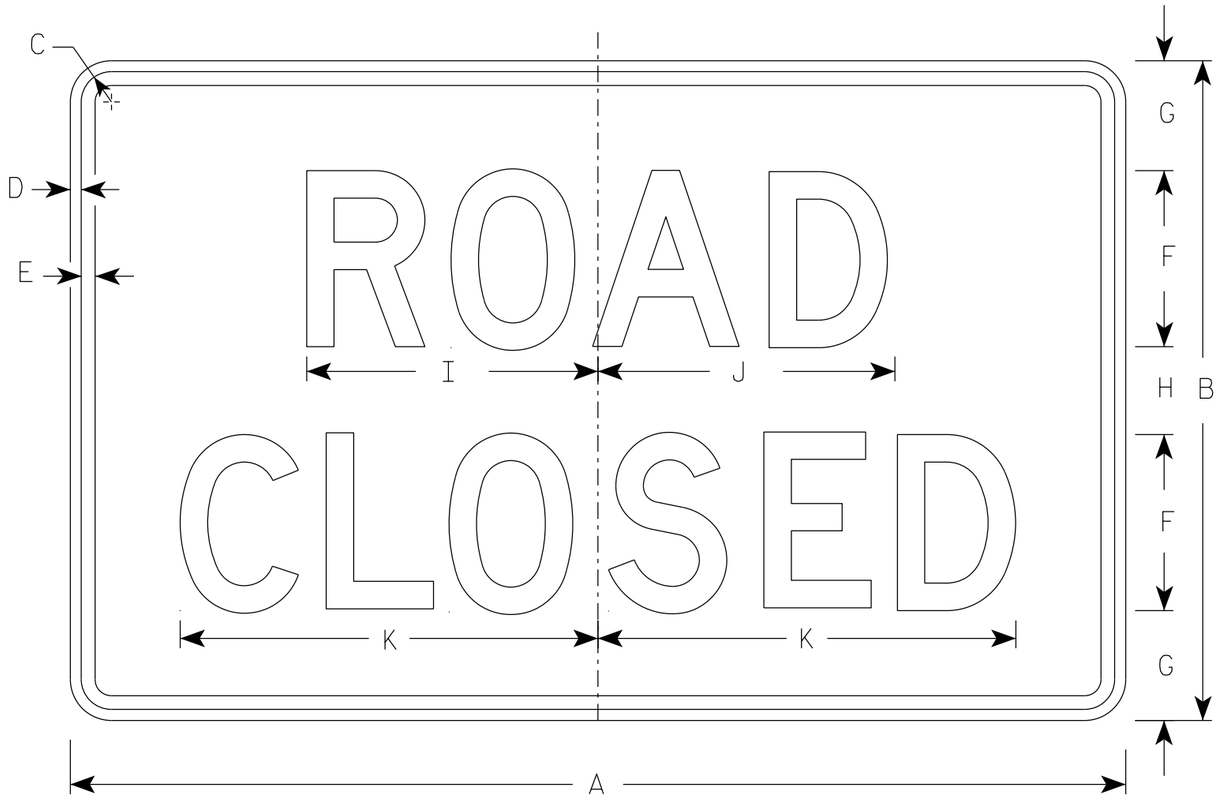
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/11/16 PLATE 234 R9-9.6

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

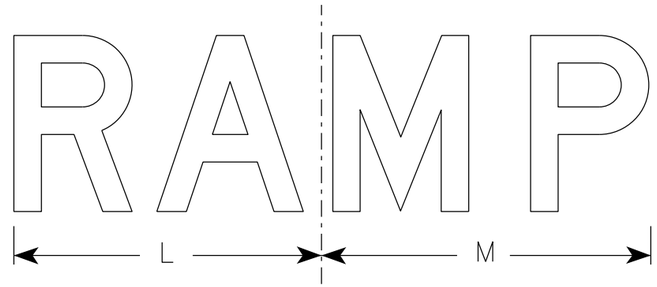
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\R99.DGN PLOT DATE : 11-AUG-2016 11:33 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 2.918761:1.000000



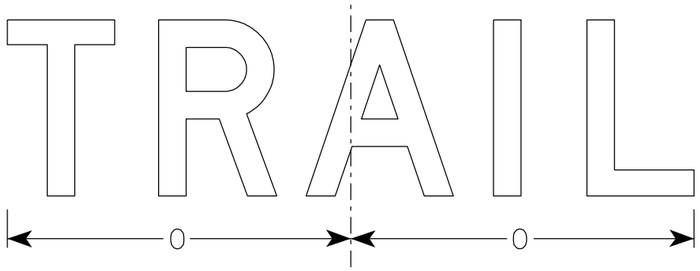
R11-2

NOTES

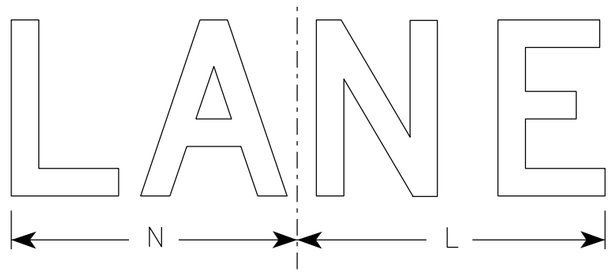
1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the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



R11-2R



R11-2T



R11-2L

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 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

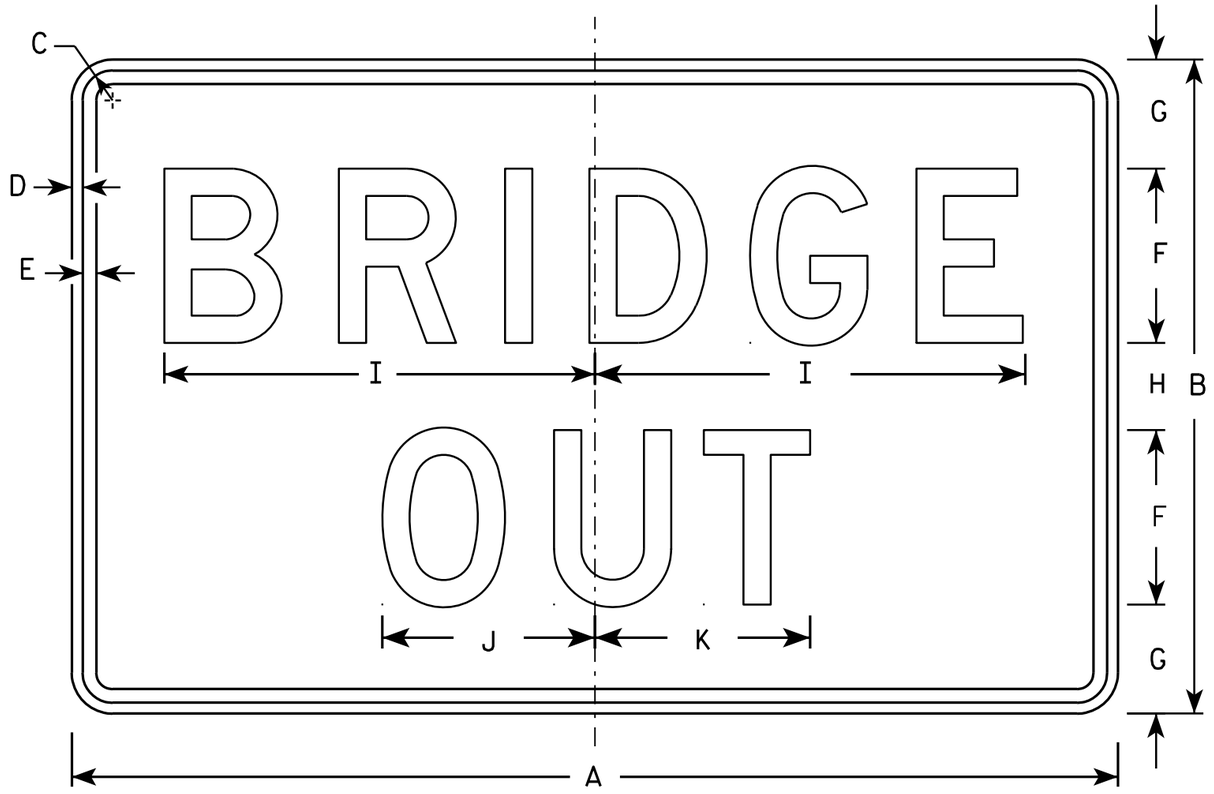
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 235	E



R11-2B

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - 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 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

STANDARD SIGN
R11-2B

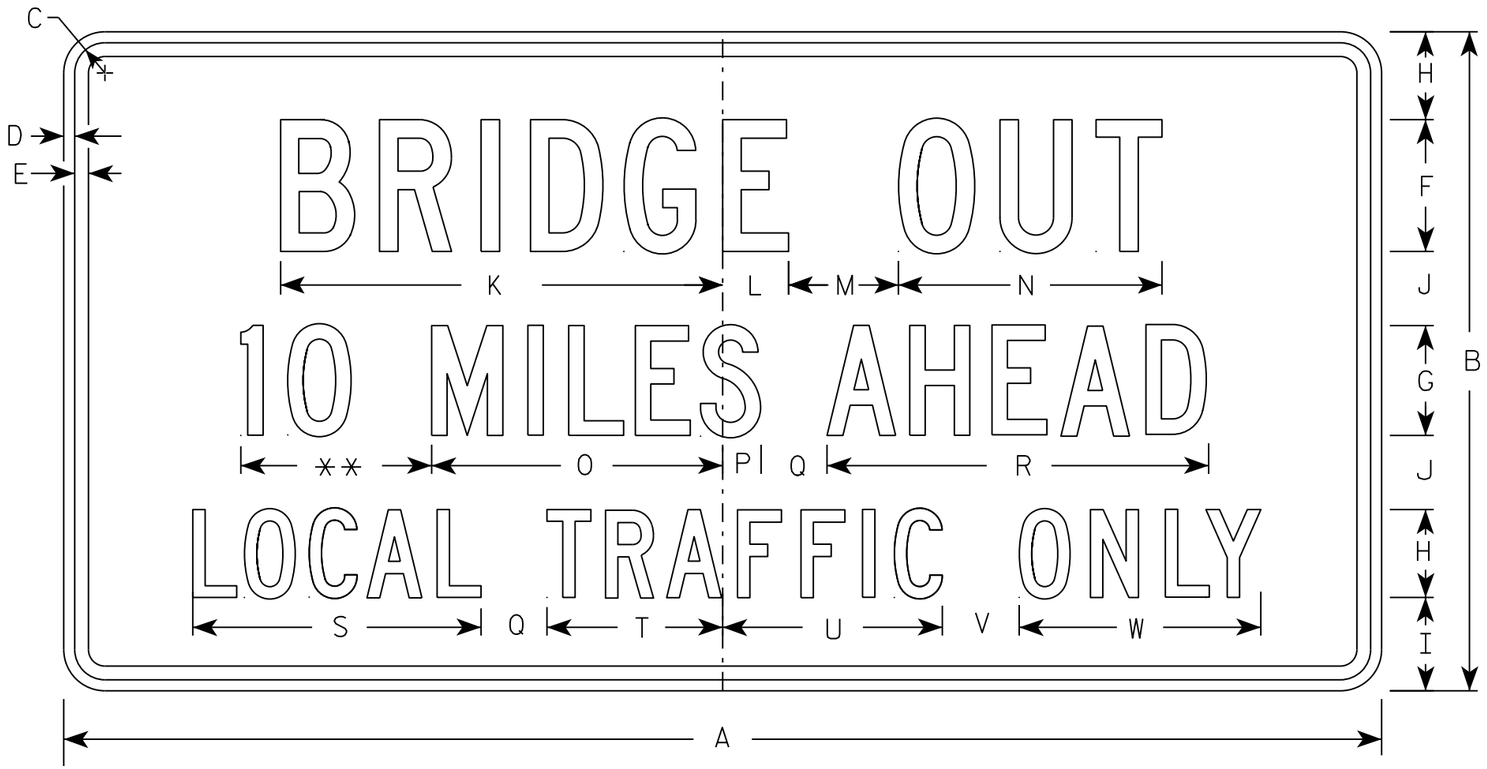
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2B.2

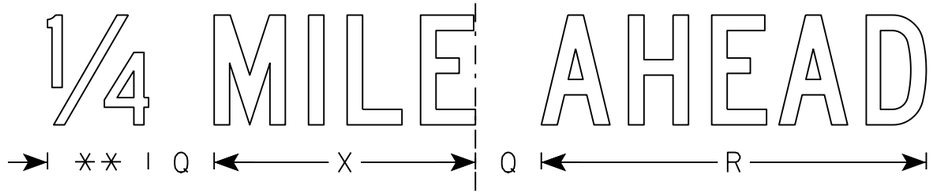
PROJECT NO:

SHEET NO: 236 E



R11-3B

** See Note 5



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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 3/8	1/2	5/8	4	3	2 1/2	2	2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4	8 3/8	4 3/4	6 1/2	2	6 3/4	7 1/8			4.5
2S	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8			12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8			12.5
3																											
4																											
5																											

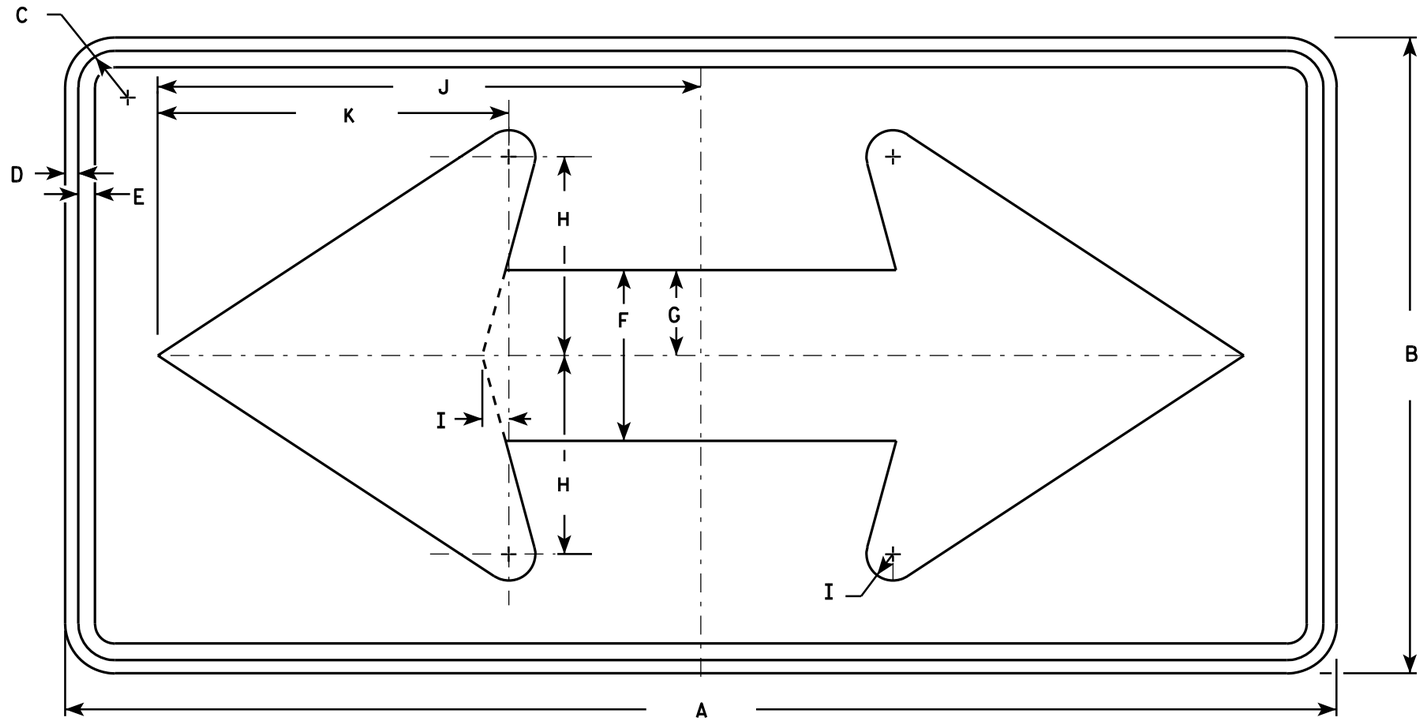
STANDARD SIGN
R11-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/17 PLATE NO. R11-3B.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 237	E



W1-7

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

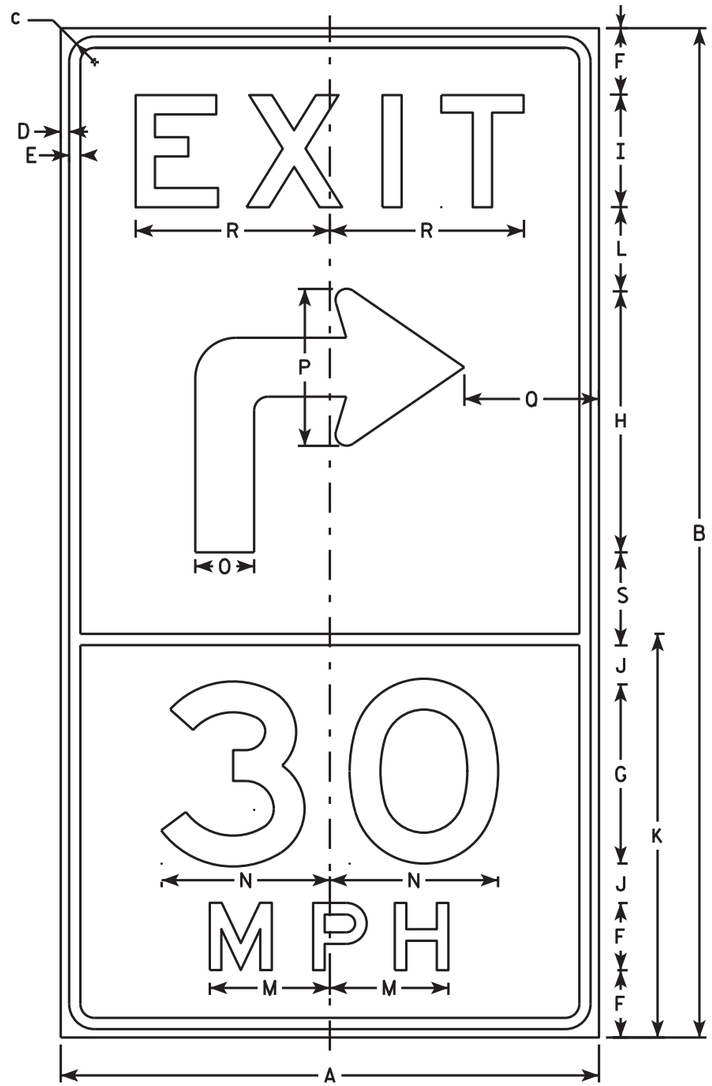
STANDARD SIGN
W1-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 238 | E



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	90	2 1/4	3/4	1	6	16	23 1/4	10	3 1/2	36	7 1/2	10 3/4	15	5 1/4	14	12	17 3/8	8 1/4								30
2M	48	90	2 1/4	3/4	1	6	16	23 1/4	10	3 1/2	36	7 1/2	10 3/4	15	5 1/4	14	12	17 3/8	8 1/4								30
3																											
4																											
5																											

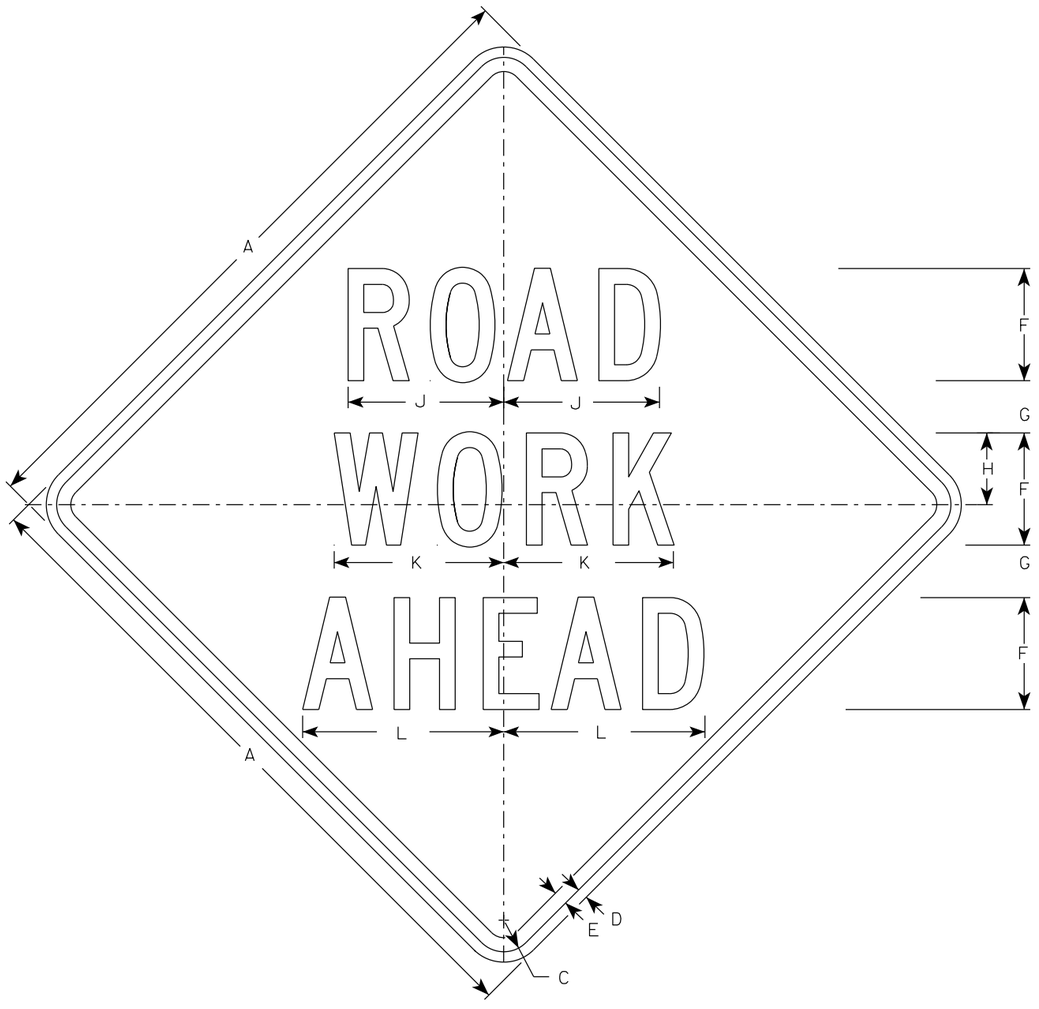
STANDARD SIGN
W13-2D

WISCONSIN DEPT OF TRANSPORTATION

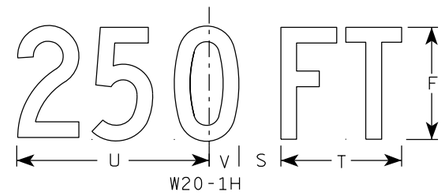
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/12/13 PLATE NO. W13-2D.1

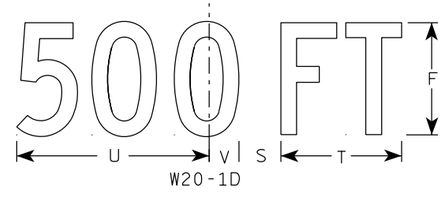
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



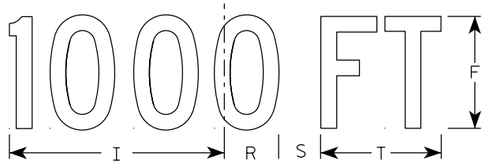
W20-1A



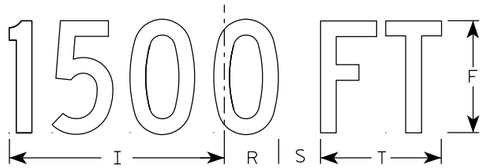
W20-1H



W20-1D



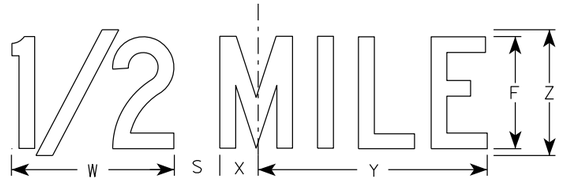
W20-1C



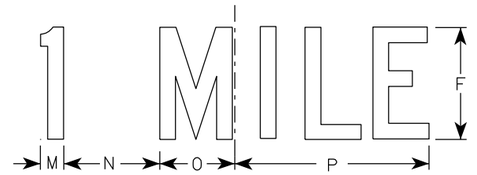
W20-1B

NOTES

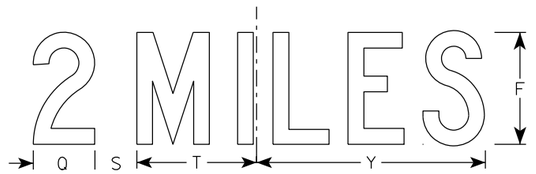
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



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		1 5/8	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		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2020 PLATE NO. W20-1.11

PROJECT NO:

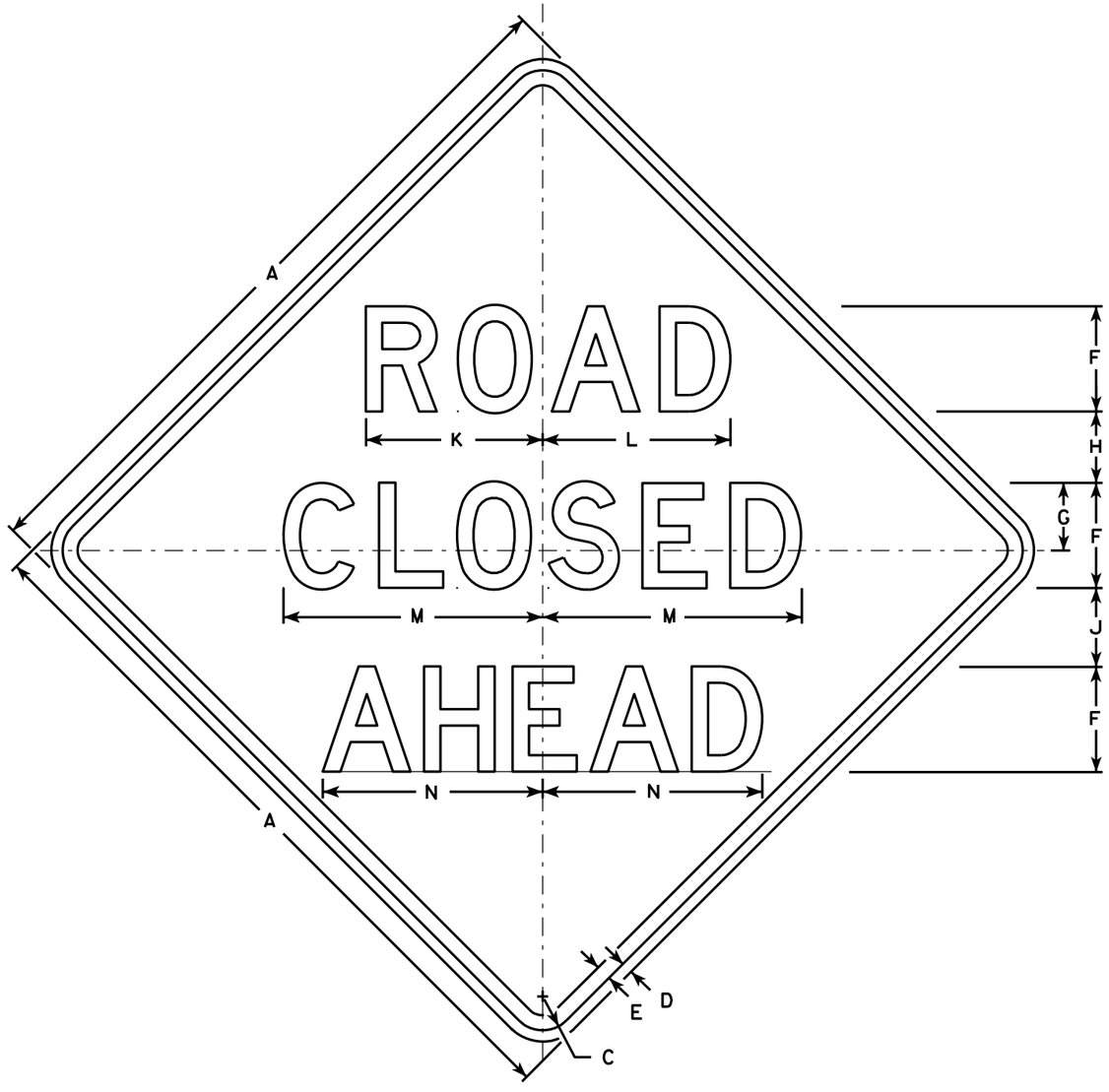
SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 25-MARCH-2020 PLOT BY : dotc4c

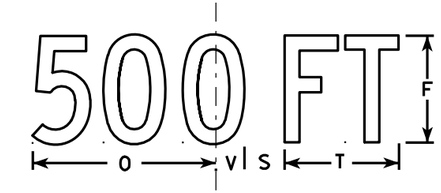
WISDOT/CADDS SHEET 42

7

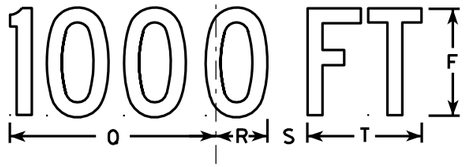
7



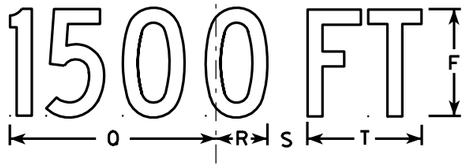
W20-3A



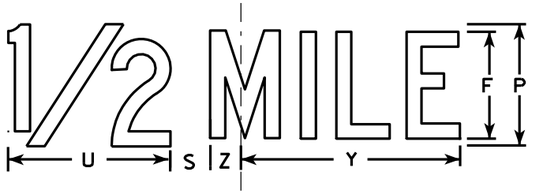
W20-3D



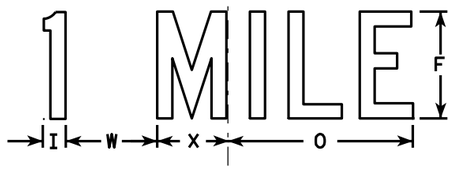
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. 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		1 5/8	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		2 1/4	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		2 1/4	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		2 1/4	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		2 1/4	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		2 1/4	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

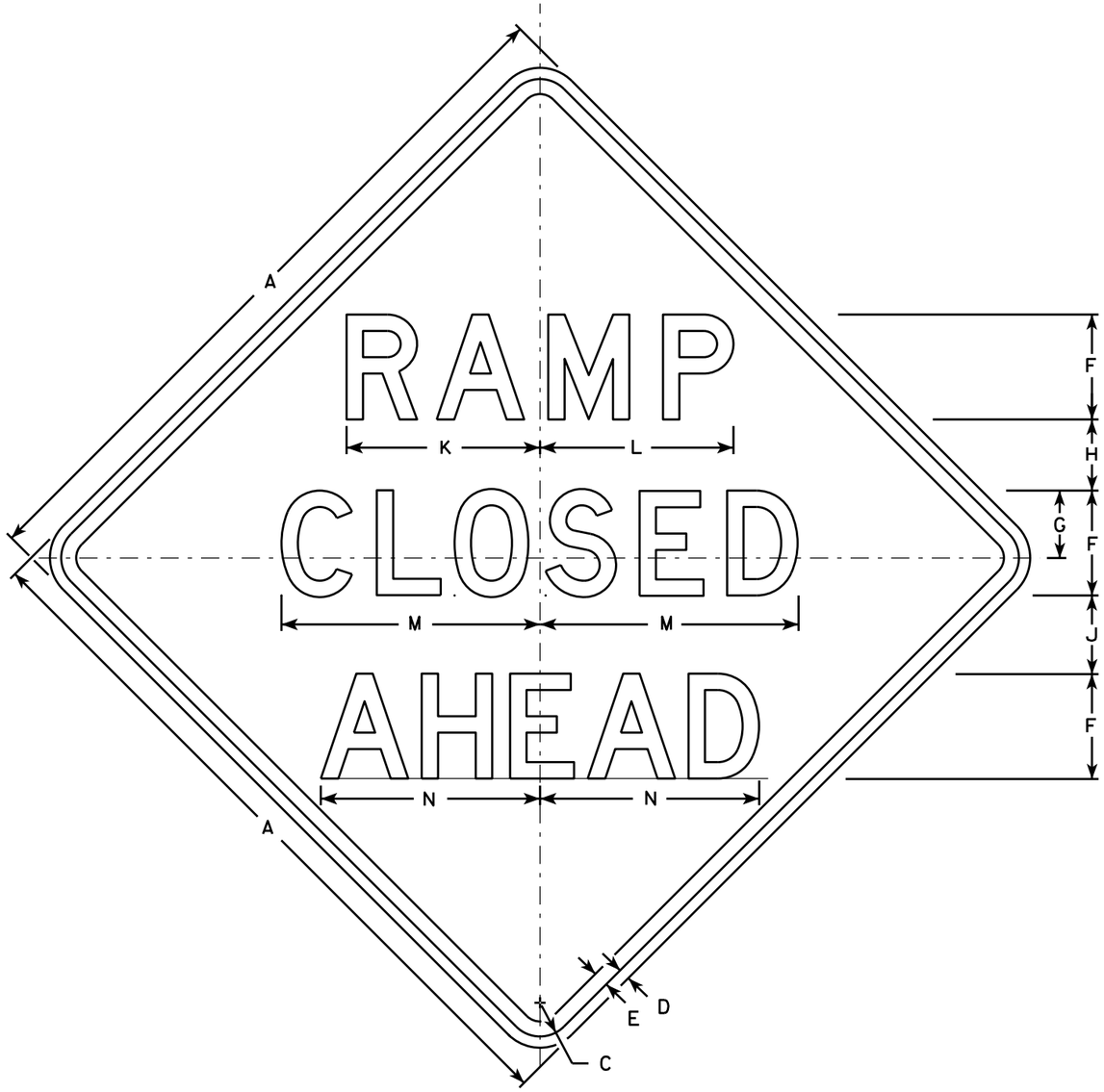
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

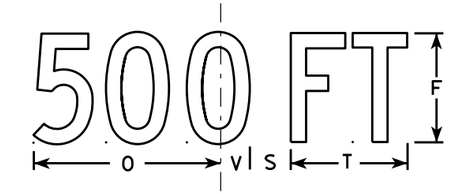
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 241 | E

7

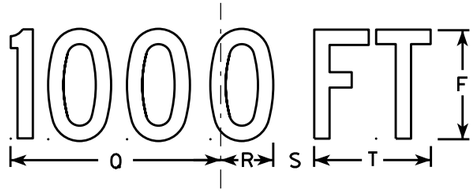
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W203.DGN PLOT DATE : 18-MAR-2011 12:08 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42



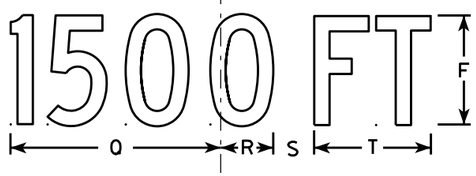
W20-53A



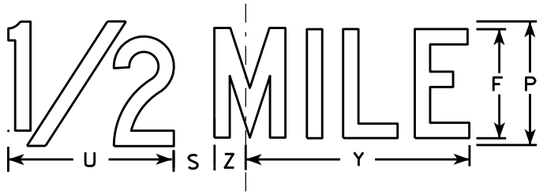
W20-53D



W20-53C



W20-53B



W20-53G



W20-53F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. 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		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	9 1/4	9 1/4	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		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	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		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	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		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	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		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	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		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	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
W20-53A,B,C,D,F,G

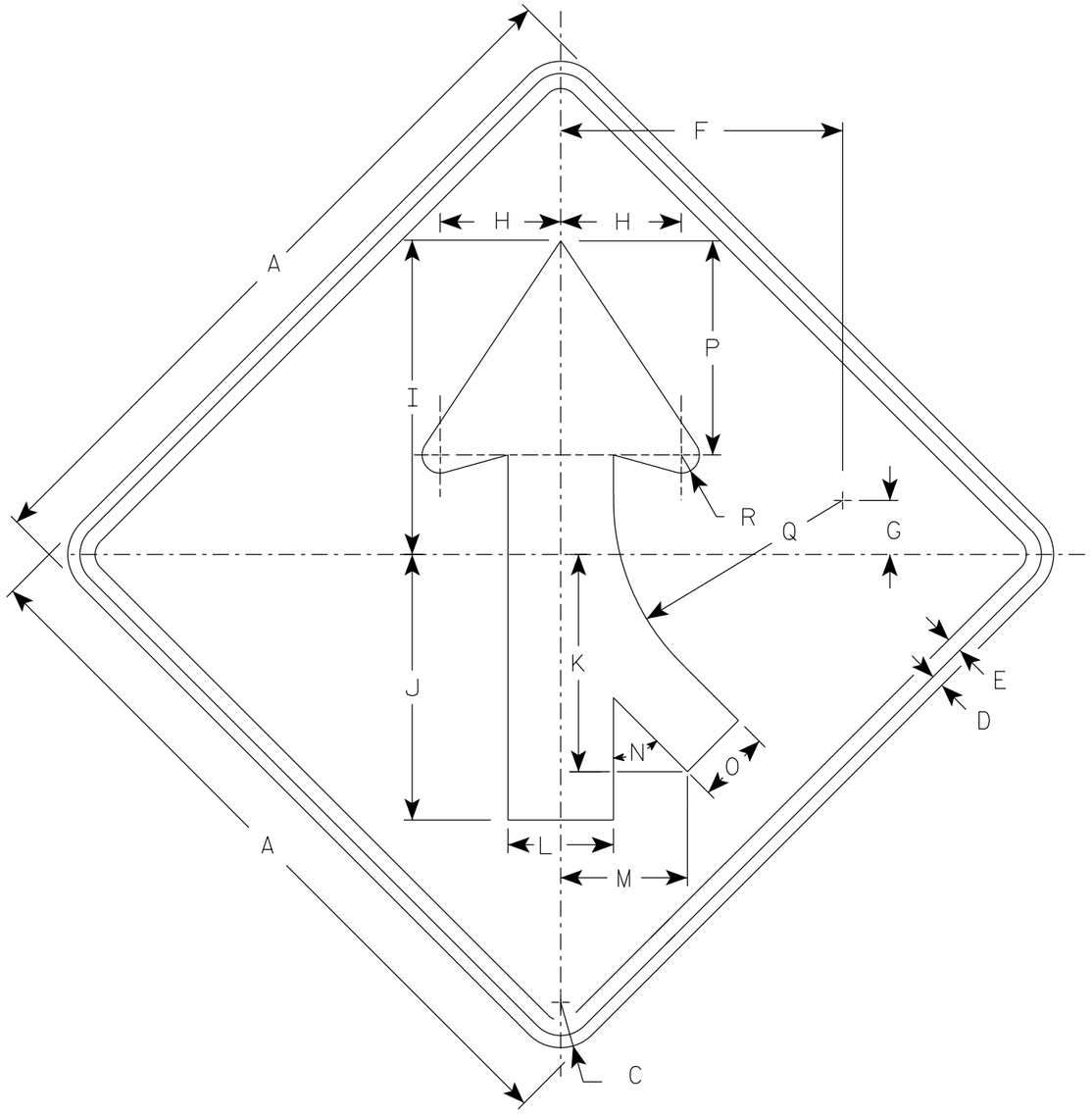
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/27/15 PLATE NO. W20-53.1

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W2053.DGN PLOT DATE : 27-MAY-2015 19:40 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.729210:1.000000
WISDOT/CADDS SHEET 42



W04-1R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-1L is the same as W04-1R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
2S	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
2M	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
3	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
4	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
5	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0

STANDARD SIGN
W04-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2021 PLATE NO. W04-1.2

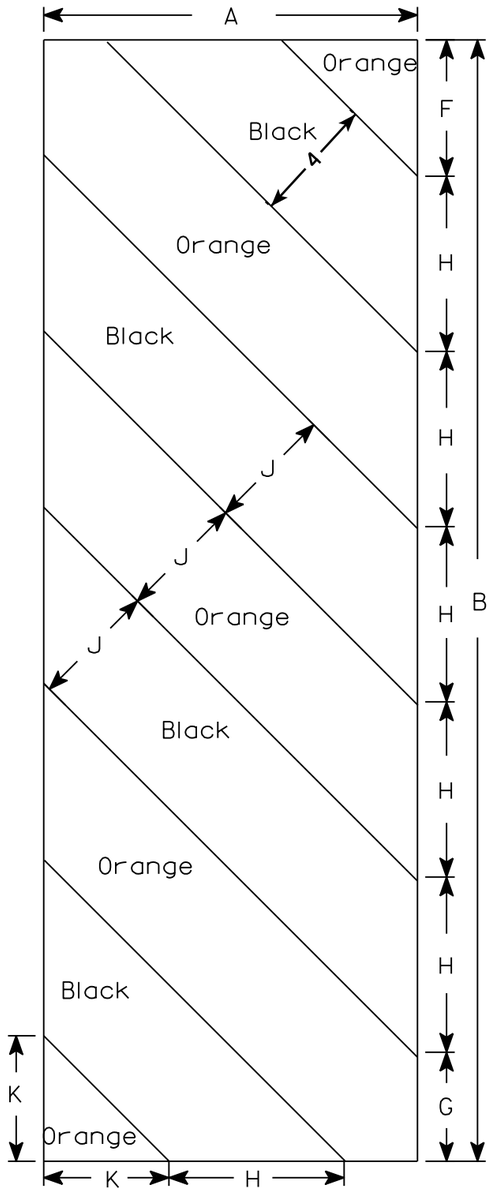
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W041.dgn PLOT DATE : 30-MAR 2021 8:25 PLOT BY : dotc4c PLOT NAME : PLOT SCALE :

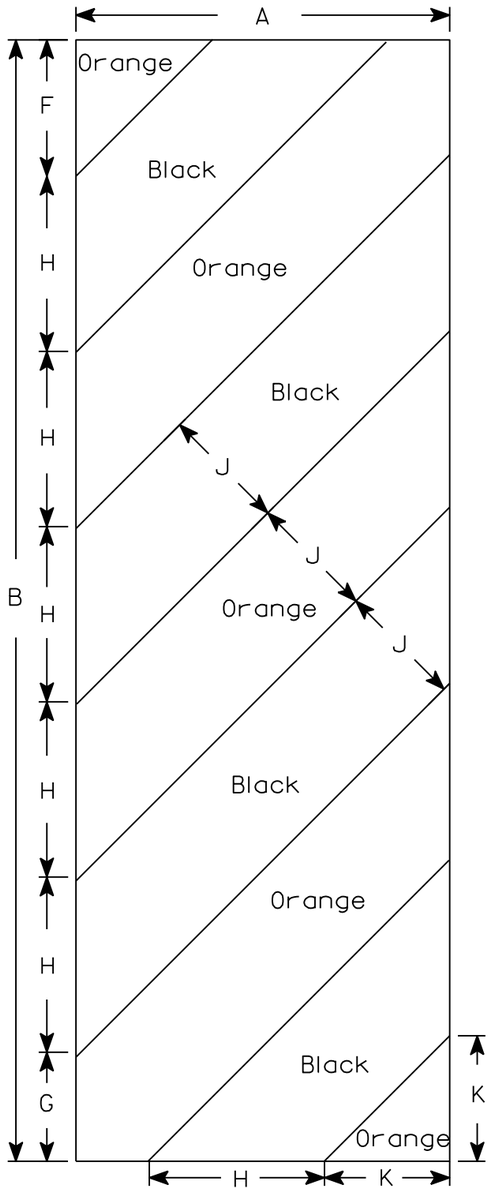
WISDOT/CADDS SHEET 42

7

7



W05-52L



W05-52R

NOTES

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

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

STANDARD SIGN

W05-52L & W05-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W05-52.1

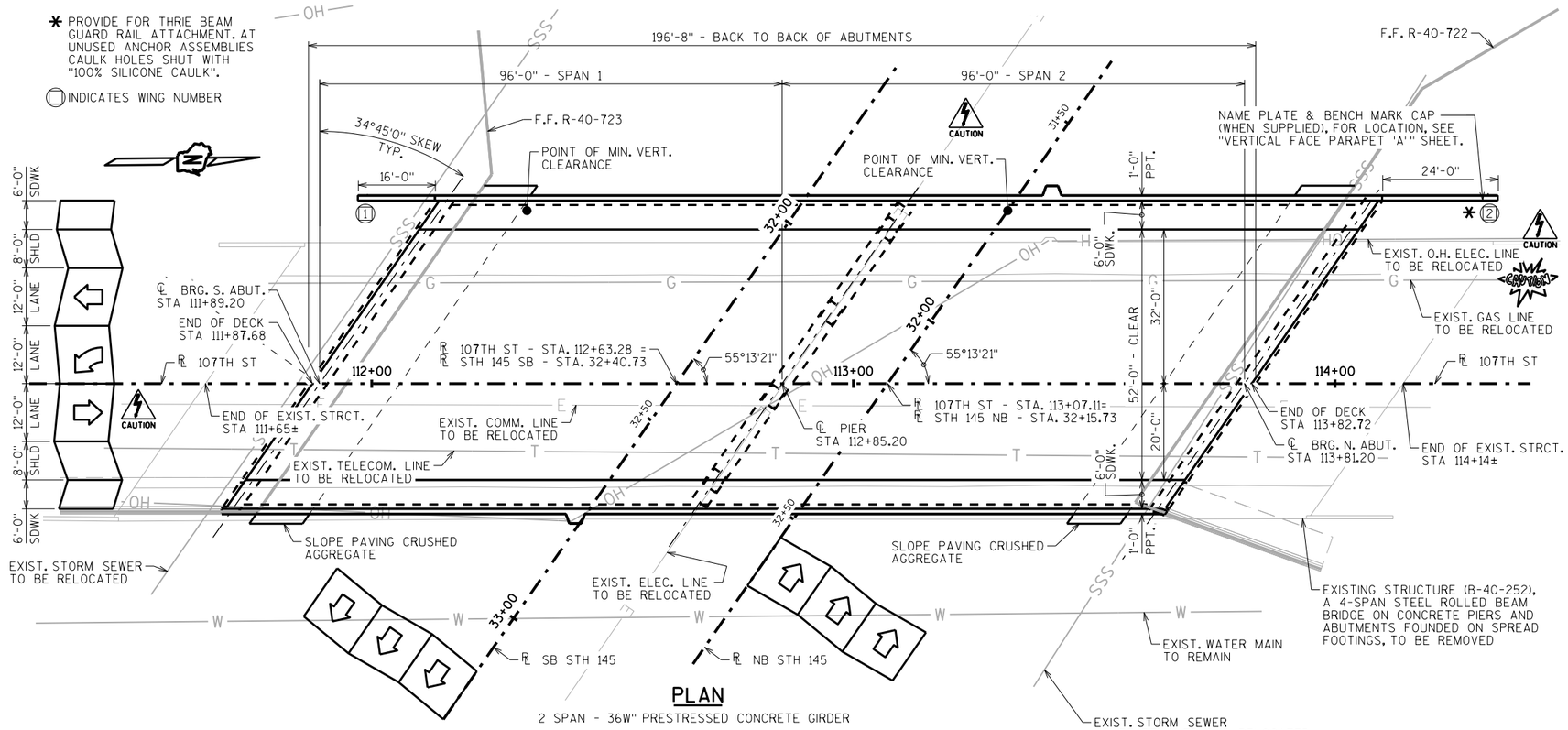
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

STATE PROJECT NUMBER

1360-12-70

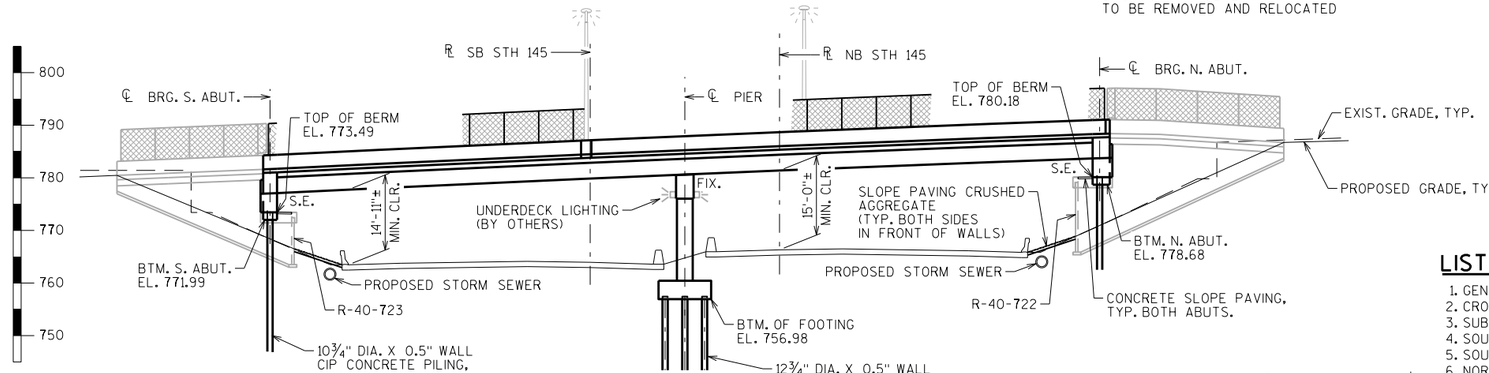
* PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

(1) INDICATES WING NUMBER



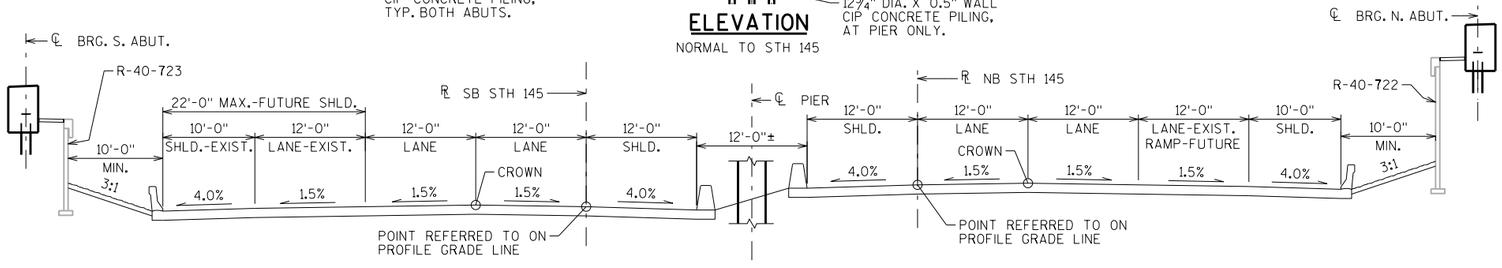
PLAN

2 SPAN - 36W" PRESTRESSED CONCRETE GIRDER



ELEVATION

NORMAL TO STH 145



TYPICAL SECTION - STH 145 LOOKING WEST

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.12
OPERATING RATING FACTOR: RF = 1.46
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250(KIPS)

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

MATERIAL PROPERTIES:

CONCRETE MASONRY:
SUPERSTRUCTURE, SIDEWALKS, & PARAPETS — f'c = 4,000 P.S.I.
ALL OTHER — f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT:
GRADE 60 — fy = 60,000 P.S.I.

36W" PRESTRESSED GIRDERS:
CONCRETE MASONRY — f'c = 8,000 P.S.I.
STRANDS: 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

STRUCTURAL CARBON STEEL:
ASTM A709, GRADE 36 — Fy = 36,000 P.S.I.

FOUNDATION DATA

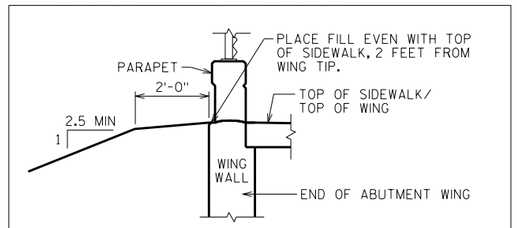
ABUTMENTS TO BE SUPPORTED ON 10¾" DIA. X 0.5" WALL C.I.P. CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 145 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 65'-0" LONG AT SOUTH ABUTMENT.
ESTIMATED 80'-0" LONG AT NORTH ABUTMENT.

PIER TO BE SUPPORTED ON 12¾" DIA. X 0.5" WALL C.I.P. CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 65'-0" LONG.

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

TRAFFIC VOLUME

FEATURE ON (107TH ST)	FEATURE UNDER (STH 145)
ADT = 11,500	ADT = 11,285 EACH DIRECTION (2038)
R.D.S. = 35 M.P.H.	R.D.S. = 60 M.P.H.



TYPICAL FILL SECTION AT WING TIPS

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. PIER
9. PIER DETAILS
10. 36W" PRESTRESSED GIRDER DETAILS 1
11. 36W" PRESTRESSED GIRDER DETAILS 2
12. STEEL DIAPHRAGM
13. SUPERSTRUCTURE LAYOUT
14. SUPERSTRUCTURE CROSS SECTIONS
15. PIER AND ABUTMENT DIAPHRAGM DETAILS
16. ABUTMENT DIAPHRAGM DETAILS (WEST CORNERS)
17. ABUTMENT DIAPHRAGM DETAILS (EAST CORNERS)
18. DECK PLAN (BOTTOM STEEL REINFORCEMENT)
19. DECK PLAN (TOP STEEL REINFORCEMENT)
20. SUPERSTRUCTURE BAR DETAILS
21. VERTICAL FACE PARAPET "A"
22. LIGHT STD. DETAILS
23. CONDUIT DETAILS
24. FENCING DETAILS
25. SLOPE PAVING (CRUSHED AGGREGATE)
26. ALTERNATE CONSTRUCTION JOINT

STRUCTURE DESIGN CONTACTS:
CHRISTOPHER DOLL (608) 266-3229
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED LLS 2/28/22
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-40-1004

107TH ST OVER STH 145

COUNTY: MILWAUKEE | CITY: MILWAUKEE

DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	CAD	DESIGNED CK'D.	ARC	DRAWN BY	WWR	PLANS CK'D.	CAD

GENERAL PLAN

SHEET 1 OF 26

245

I.D. 1360-12-00C DATE: NOV. 2021

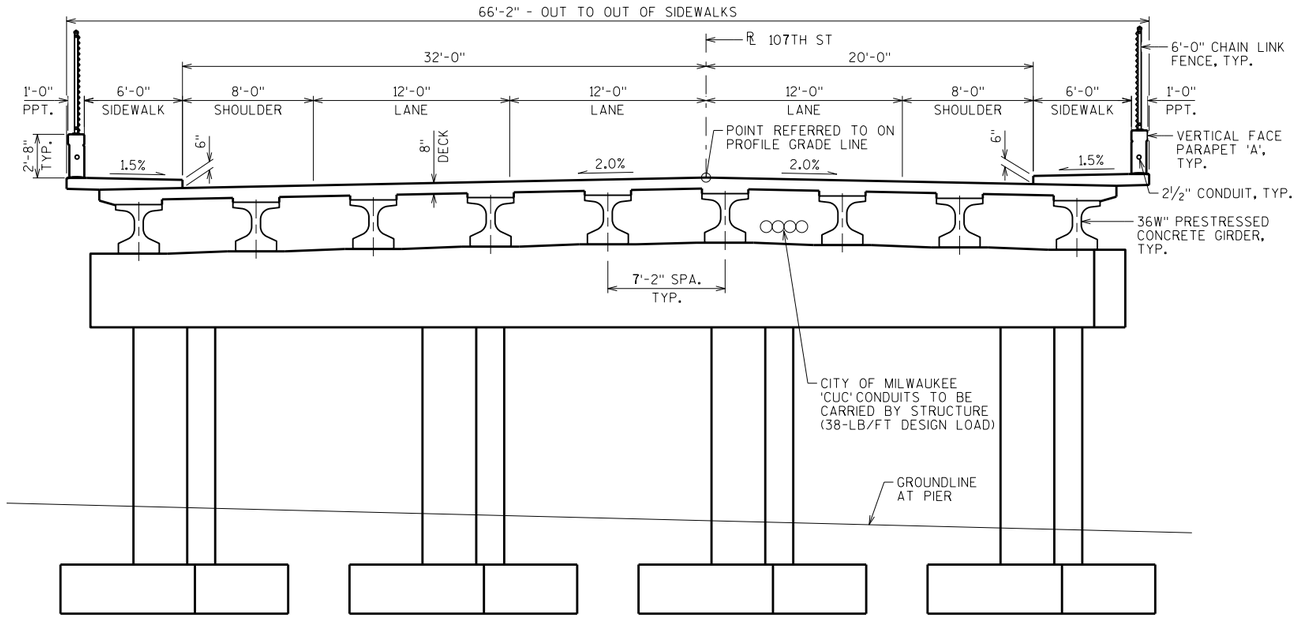
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STATE PROJECT NUMBER

1360-12-70



CROSS SECTION THRU BRIDGE LOOKING NORTH

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-40-1004" SHALL BE THE EXISTING GROUNDLINE.

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

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

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

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

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "36W" PRESTRESSED GIRDER DETAILS 2" SHEET.

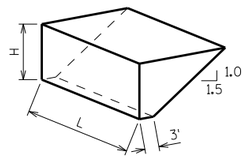
THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF THE BRIDGE ABUTMENTS WITH RETAINING WALLS R-40-722 & R-40-723. PRIOR TO DRIVING BRIDGE PILING AT ABUTMENTS, ENSURE EXISTING PIPE CULVERTS/STORM SEWERS BELOW THE PROPOSED WALLS HAVE BEEN REMOVED AND "BACKFILL GRANULAR GRADE 2" HAS BEEN PLACED. SEE WALL PLANS FOR DETAILS.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	PIER	NORTH ABUT.	CAT. 0020 ★	TOTALS
203.0211.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-40-252	EACH	———	———	———	———	———	1
203.0220	REMOVING STRUCTURE B-40-252	EACH	———	———	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-40-1004	LS	———	———	———	———	———	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	———	450	———	430	———	880
502.0100	CONCRETE MASONRY BRIDGES	CY	522.5	71.4	125.2	75.3	———	795
502.3200	PROTECTIVE SURFACE TREATMENT	SY	1437	———	———	———	———	1437
502.3210	PIGMENTED SURFACE SEALER	SY	161	7	———	10	———	178
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	1736	———	———	———	———	1736
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	———	5195	2210	6015	———	13,420
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	113,695	1355	20,640	2590	———	138,280
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	———	9	18	9	———	36
506.4000	STEEL DIAPHRAGMS B-40-1004	EACH	32	———	———	———	16	48
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	19	———	21	———	40
531.8990	ANCHOR ASSEMBLIES POLES ON STRUCTURES	EACH	2	———	———	———	———	2
550.0010	PRE-BORING (UNCONSOLIDATED MATERIALS)	LF	———	72	152	84	———	308
550.2108	PILING CIP CONCRETE 10 3/4 X 0.50-INCH	LF	———	975	———	1200	———	2175
550.2128	PILING CIP CONCRETE 12 3/4 X 0.50-INCH	LF	———	———	2080	———	———	2080
604.0400	SLOPE PAVING CONCRETE	SY	———	25	———	25	———	50
604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY	———	91	———	91	———	182
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	———	———	———	1	———	1
652.0130	CONDUIT RIGID METALLIC 2 1/2-INCH	LF	12	3	———	3	———	18
652.0210	CONDUIT RIGID NONMETALLIC SCHEDULE 40 1-INCH	LF	———	———	35	———	———	35
652.0230	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH	LF	382	20	———	30	———	432
653.0222	JUNCTION BOXES 18X12X6-INCH	EACH	2	———	———	———	———	2
SPV.0090	FENCE CHAIN LINK 6-FT. B-40-1004	LF	391	16	———	24	———	431
	NON-BID ITEMS							
	FILLER	SIZE	———	———	———	———		½"

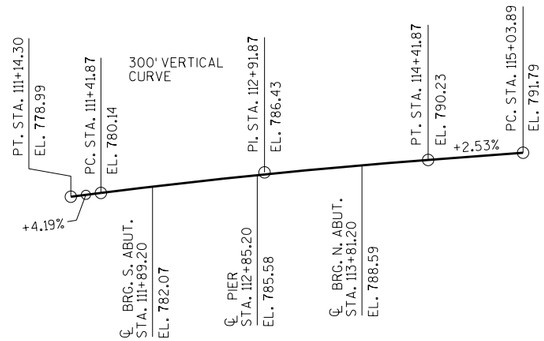
★ CAT. 0020 ITEMS ARE SOLELY REQUIRED TO CARRY THE CITY OF MILWAUKEE'S 'CUC' CONDUITS/UTILITY ON THE BRIDGE STRUCTURE



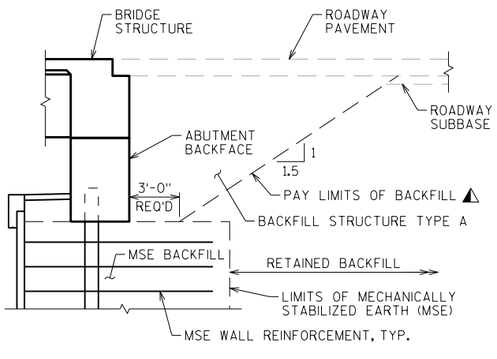
ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
V_{CF} = (L-10.0')(3.0')(H) + (L-10.0')(0.5)(1.5H)(H)
V_{CY} = V_{CF} (EF)/27
V_{TON} = V_{CY} (2.0)

10'-0" HAS BEEN REMOVED FROM ABUTMENT LENGTH TO APPROXIMATELY ACCOUNT FOR OVERLAP WITH MSE WALL BACKFILL AT EACH ABUTMENT.

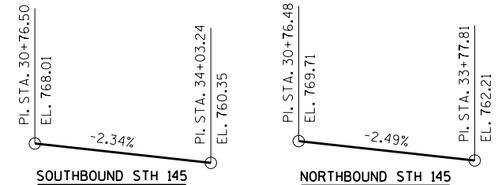


PROFILE GRADE LINE - 107TH ST



TYPICAL SECTION THRU ABUTMENT

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



PROFILE GRADE LINES - STH 145

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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CROSS SECTION & QUANTITIES

SHEET 2

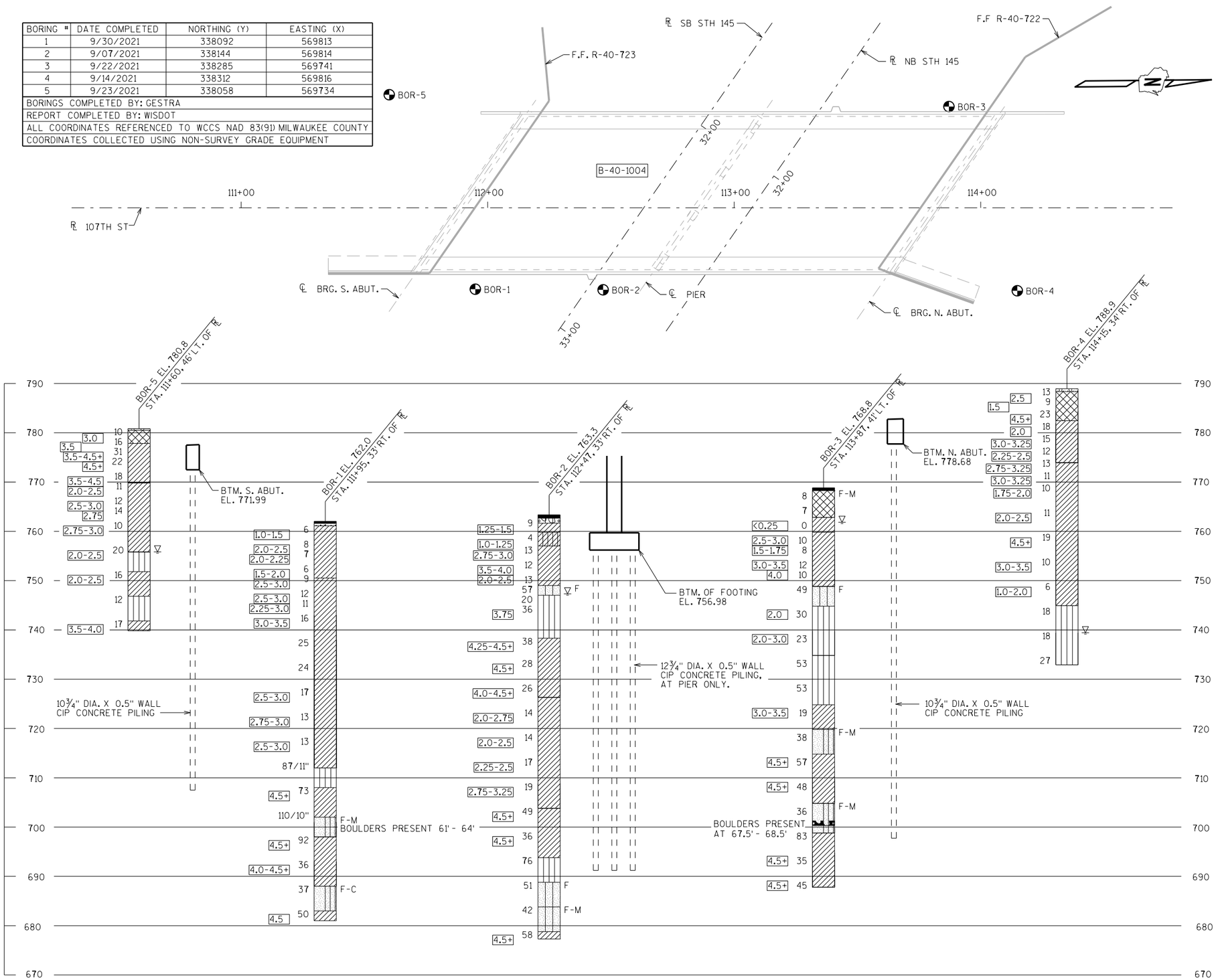
246

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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	9/30/2021	338092	569813
2	9/07/2021	338144	569814
3	9/22/2021	338285	569741
4	9/14/2021	338312	569816
5	9/23/2021	338058	569734
BORINGS COMPLETED BY: GESTRA			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			



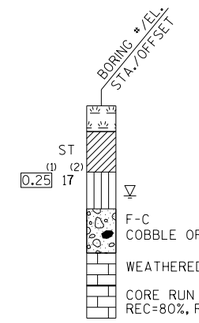
STATE PROJECT NUMBER

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MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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SUBSURFACE EXPLORATION

SHEET 3

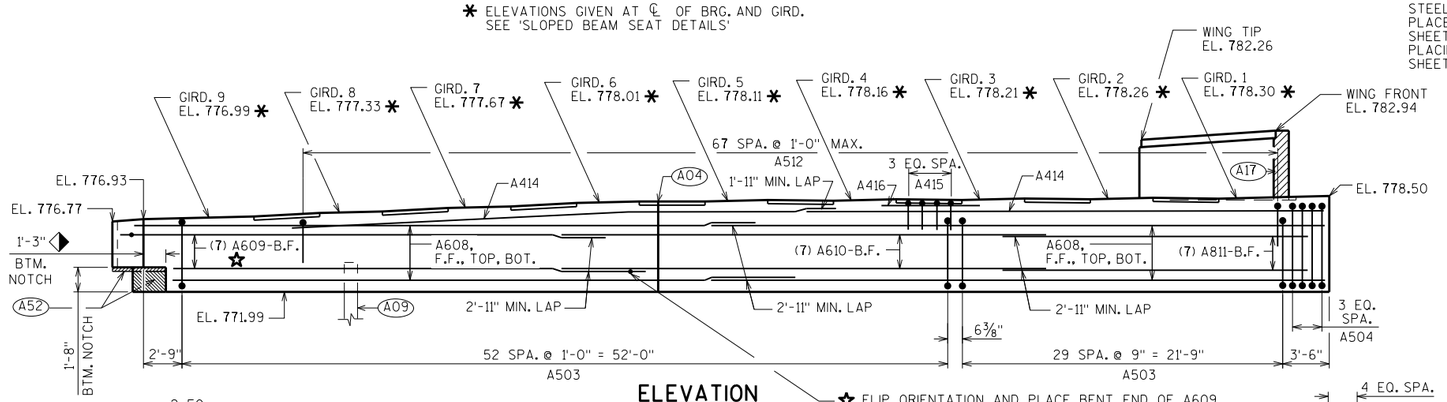
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STATE PROJECT NUMBER

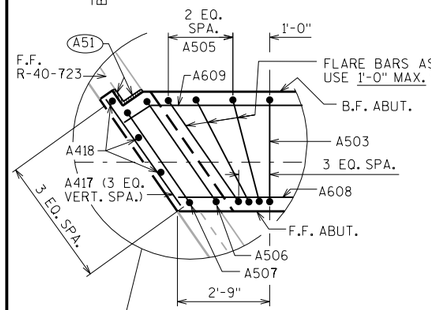
1360-12-70

✱ ELEVATIONS GIVEN AT ℄ OF BRG. AND GIRD. SEE 'SLOPED BEAM SEAT DETAILS'



ELEVATION
LOOKING SOUTH

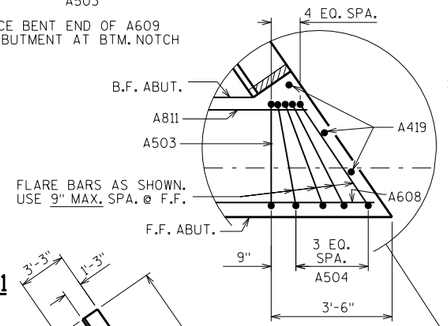
☆ FLIP ORIENTATION AND PLACE BENT END OF A609 BAR TOWARDS MIDDLE OF ABUTMENT AT BTM. NOTCH



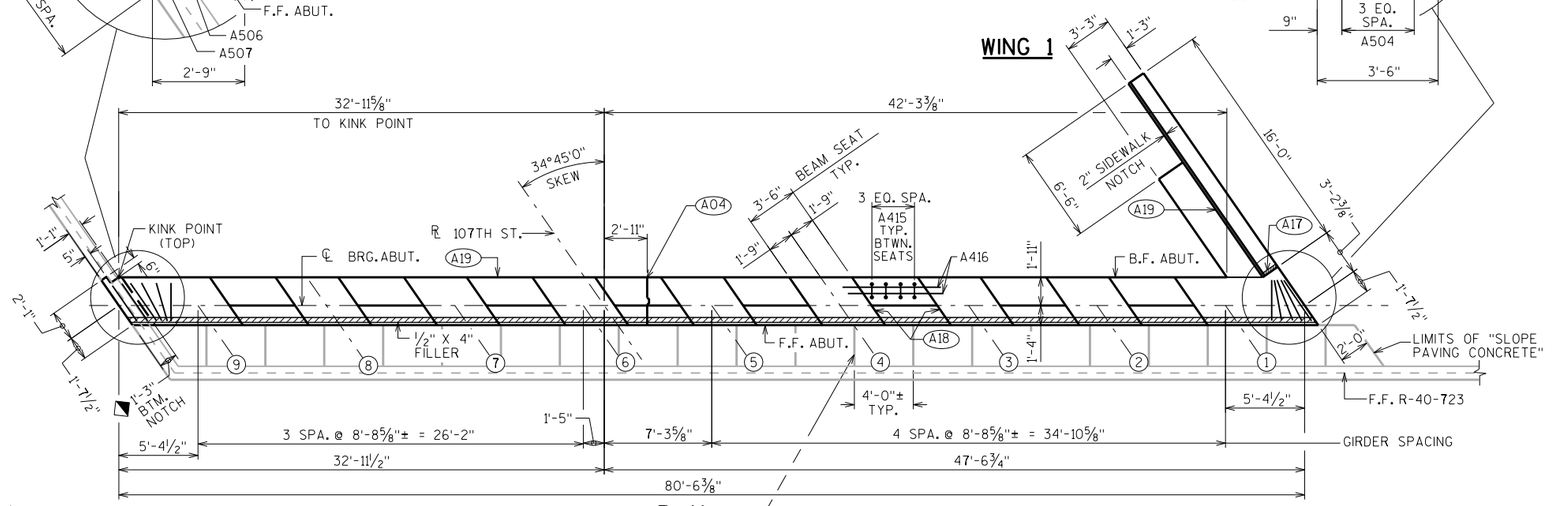
◆ DIMENSION IS PERP. TO SKEW/SIDE FACE, ADJUST AS REQ'D BASED ON MSE WALL PANEL THICKNESS (7" ASSUMED)

(A51) 1" EXPANDED POLYSTYRENE FILLER BETWEEN WALL PANELS AND ABUTMENT. SEAL EXPOSED FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, 1-INCH DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

(A52) 2" PREFORMED HORIZONTAL & VERTICAL FILLER BETWEEN WALL COPING AND ABUTMENT. SEAL EXPOSED FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, 1-INCH DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

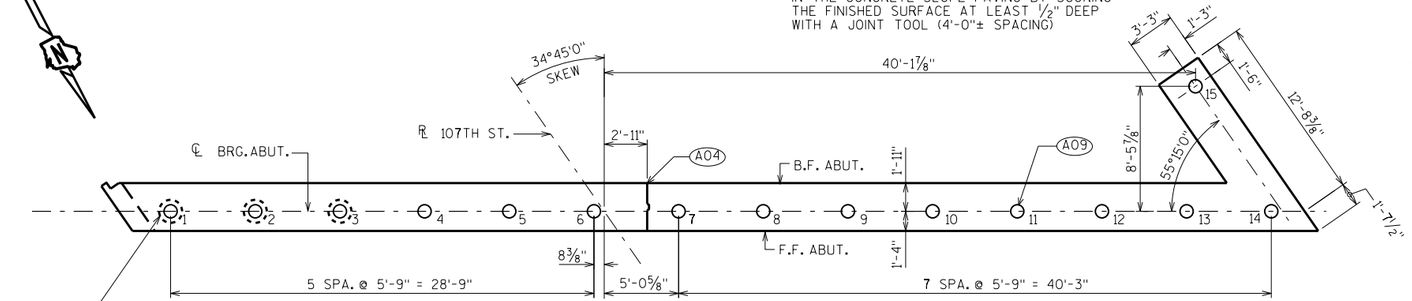


WING 1



PLAN

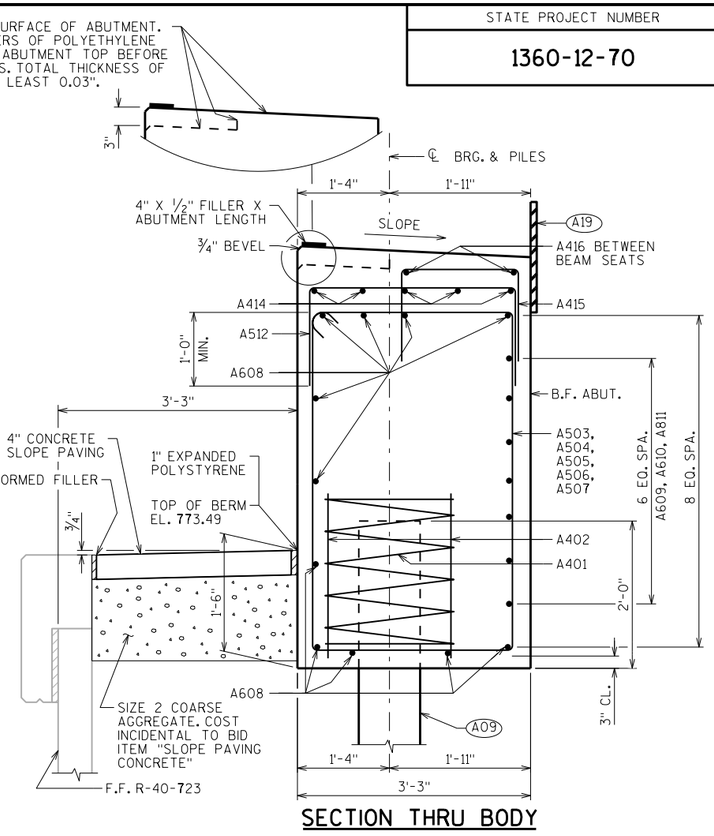
FORM PLANES OF WEAKNESS OR FALSE JOINTS IN THE CONCRETE SLOPE PAVING BY SCORING THE FINISHED SURFACE AT LEAST 1/2" DEEP WITH A JOINT TOOL (4'-0"± SPACING)



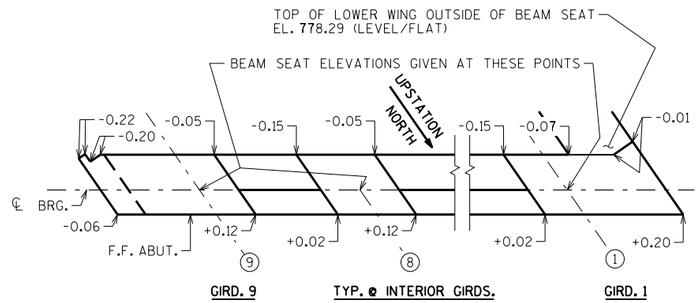
PRE-BORING REQ'D AT PILES 1 THRU 3.
PRE-BORE DOWN TO EL. 738.00 (24'-0"± PREBORING LENGTH PER PILE BASED ON MSE WALL SUBGRADE EL. 762.00±)

PILE PLAN

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



SECTION THRU BODY



GIRD. 9 — TYP. @ INTERIOR GIRDS. — GIRD. 1

SLOPED BEAM SEAT DETAILS

BEAM SEATS SHALL BE LEVEL IN THE DIRECTION PERPENDICULAR TO THE GIRDERS

(A04) VERT. CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 8, 3/4" "V" GROOVE @ THE FRONT FACE AND 18" RMW @ BACKFACE. FOR OPTIONAL DETAILS SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.5" WALL CIP CONCRETE PILING, ESTIMATED 65'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 145 TONS PER PILE.

(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 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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SOUTH ABUTMENT

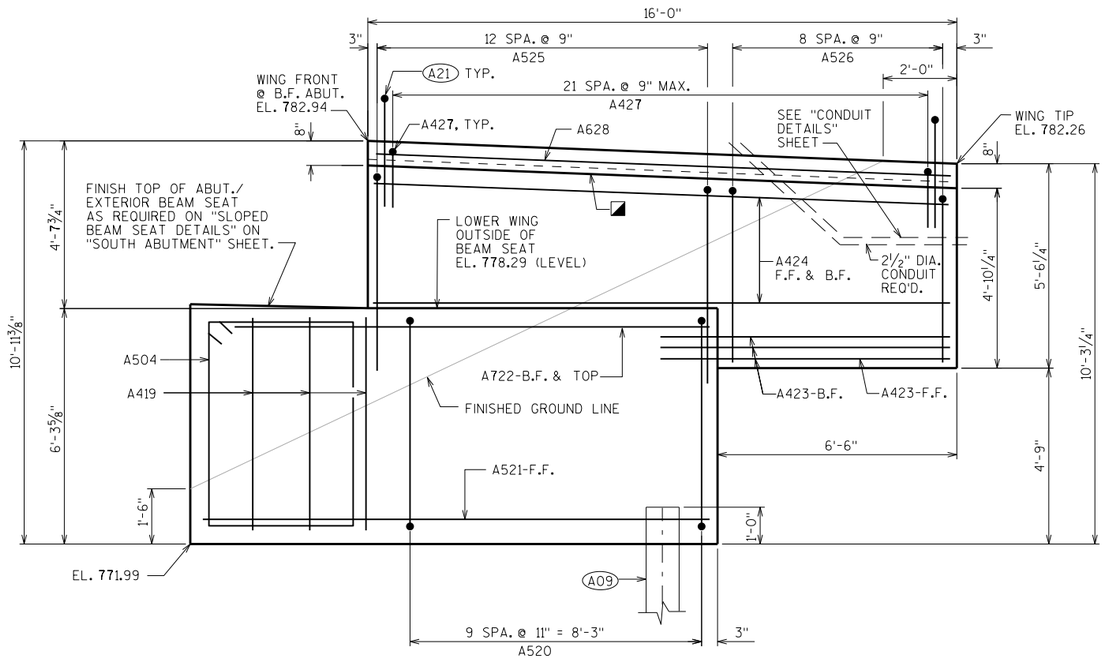
SHEET 4

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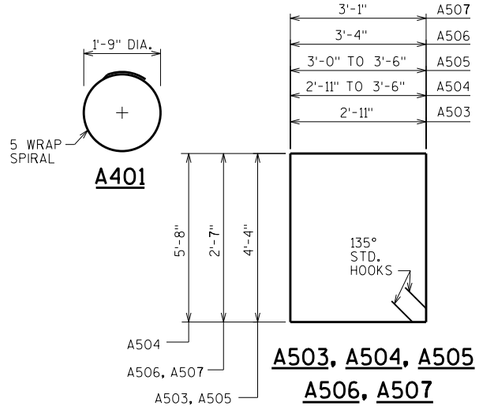
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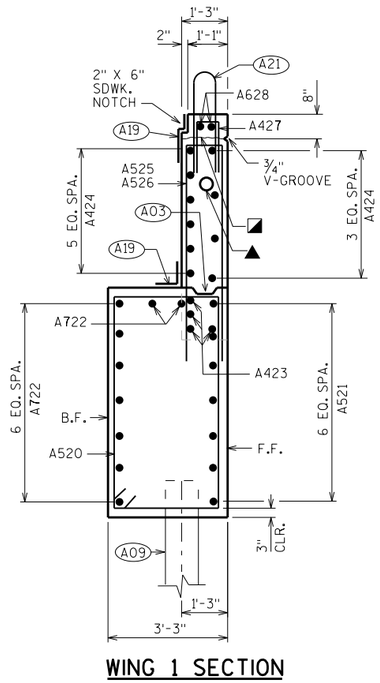
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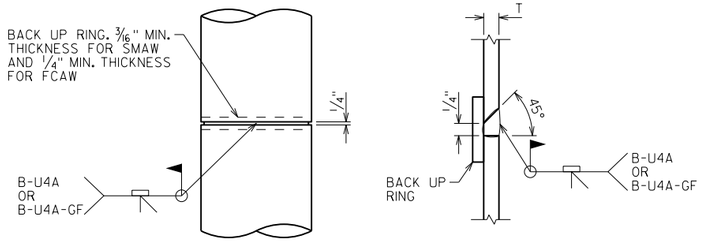


WING 1 ELEVATION



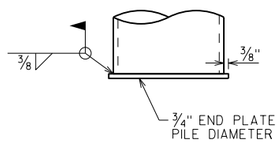


WING 1 SECTION

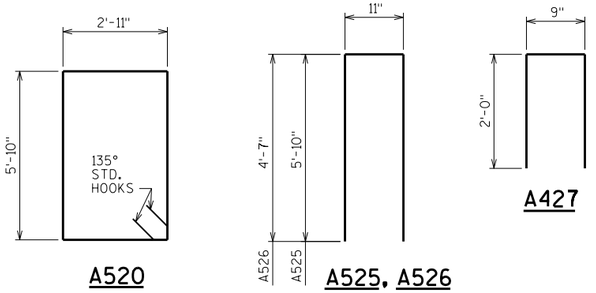


CAST-IN-PLACE 'PIPE PILE' C.I.P. PILE WELD DETAIL

PILE DETAILS



END PLATE DETAIL



STATE PROJECT NUMBER

1360-12-70

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A401		14	28'-0"	X		BODY-1 PER BODY PILE
A402		28	2'-3"			BODY-2 PER BODY PILE
A503		83	15'-2"	X		BODY-VERT.STIRRUP
A504		4	18'-5"	X	⚠	BODY-VERT.STIRRUP
A505		3	15'-10"	X	⚠	BODY-VERT.STIRRUP
A506		1	12'-6"	X		BODY-VERT.STIRRUP
A507		1	12'-0"	X		BODY-VERT.STIRRUP
A608		22	41'-7"			BODY-HORIZ.
A609		7	30'-0"	X		BODY-HORIZ.-B.F.
A610		7	35'-9"			BODY-HORIZ.-B.F.
A811		7	20'-0"			BODY-HORIZ.-B.F.
A512		68	7'-10"	X		BODY-VERT. U-BAR
~~A513~~		NOT	USED			~~BODY-VERT. U-BAR~~
A414		10	36'-3"			BODY-HORIZ.-TOP
A415		32	4'-5"	X		BODY-VERT. U-BAR BTWN. BEAM SEATS
A416		16	6'-4"			BODY-HORIZ. BTWN. BEAM SEATS
A417		4	3'-4"			BODY-HORIZ. END @ WALL NOTCH
A418		3	2'-10"			BODY-VERT. END @ WALL NOTCH
A419		3	6'-2"			BODY-VERT. END @ WING
A520	X	10	18'-2"	X		WING 1 BODY-VERT. STIRRUP
A521	X	7	13'-10"			WING 1 BODY-HORIZ.
A722	X	9	11'-8"			WING 1 BODY-HORIZ.
A423	X	4	7'-9"			WING 1 BODY/WINGWALL-HORIZ.
A424	X	10	15'-8"			WINGWALL 1-HORIZ.
A525	X	13	12'-4"	X		WINGWALL 1-VERT. U-BAR
A526	X	9	9'-10"	X		WINGWALL 1-VERT. U-BAR
A427	X	22	4'-7"	X		WINGWALL 1-VERT. U-BAR
A628	X	2	15'-8"			WINGWALL 1-HORIZ. TOP

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

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A504	1 SERIES OF 4	17'-10" TO 19'-0"
A505	1 SERIES OF 3	15'-4" TO 16'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY.

▲ SEE "CONDUIT DETAILS" SHEET FOR CONDUIT EMBEDED IN WING.

◪ CONST. JOINT. LEAVE ROUGH. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE. ¾" V-GROOVE @ THE FRONT FACE AND R.M.W. @ BACK FACE.

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 X 6. (18" R.M.W. @ B.F. & ¾" V-GROOVE @ F.F. IF JOINT IS USED).

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.5" WALL CIP CONCRETE PILING, ESTIMATED 65'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 145 TONS PER PILE.

(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 1/8" 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.

(A21) FOR PPT. BARS & DIMENSIONS SEE "VERTICAL FACE PARAPET 'A' " SHEET.

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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SOUTH ABUTMENT DETAILS

SHEET 5

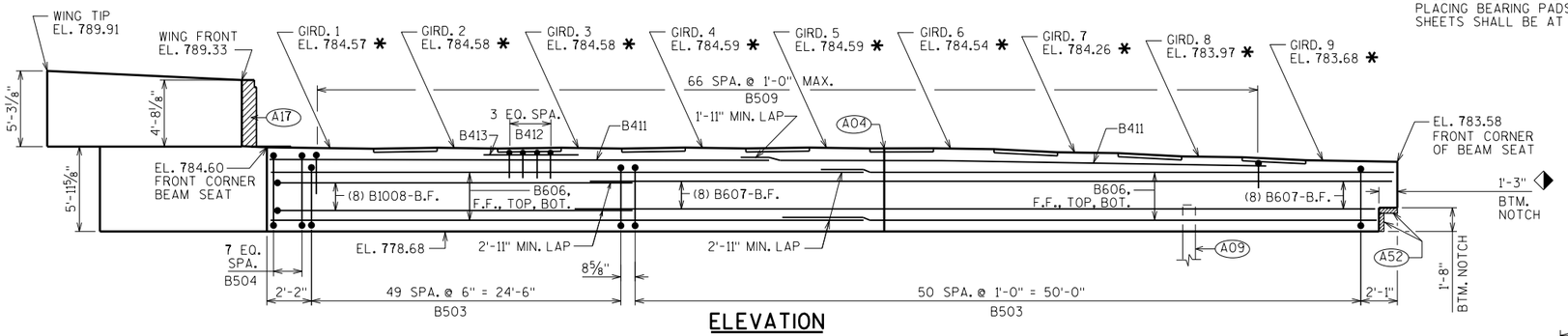
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STATE PROJECT NUMBER

1360-12-70

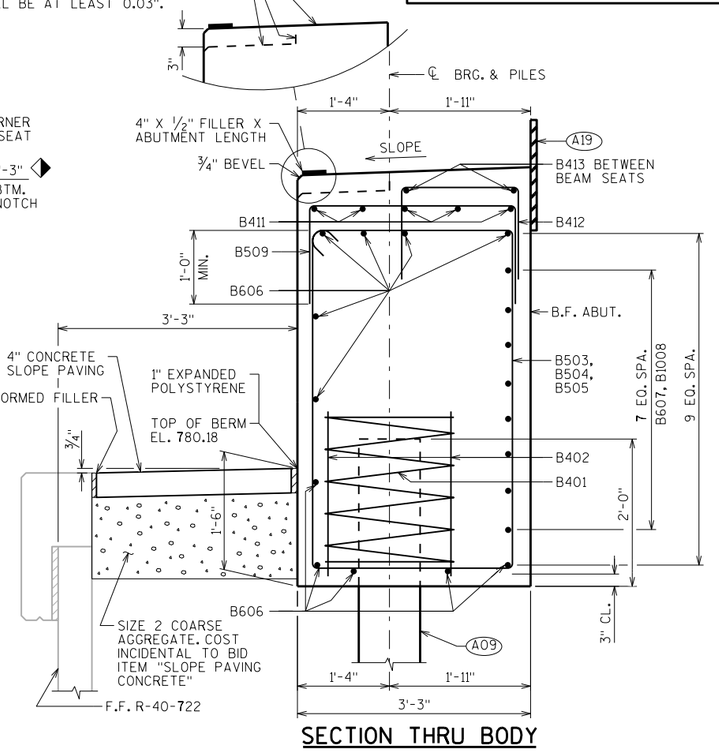
✱ ELEVATIONS GIVEN AT ℄ OF BRG. AND GIRD. SEE 'SLOPED BEAM SEAT DETAILS'



ELEVATION

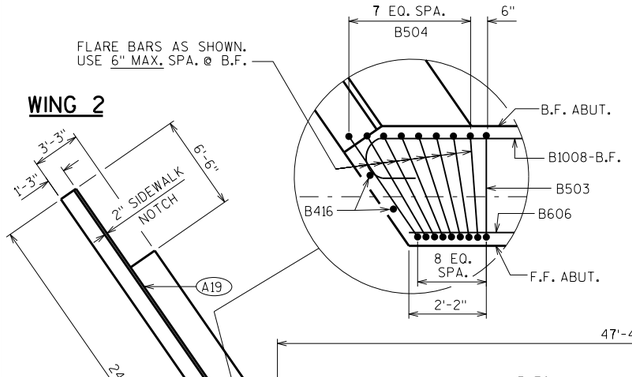
LOOKING NORTH

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



SECTION THRU BODY

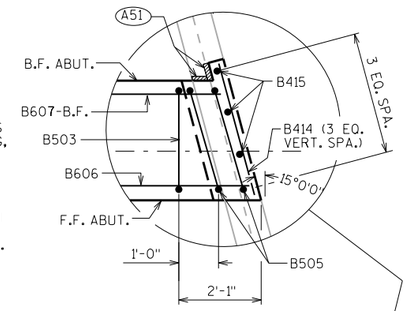
WING 2

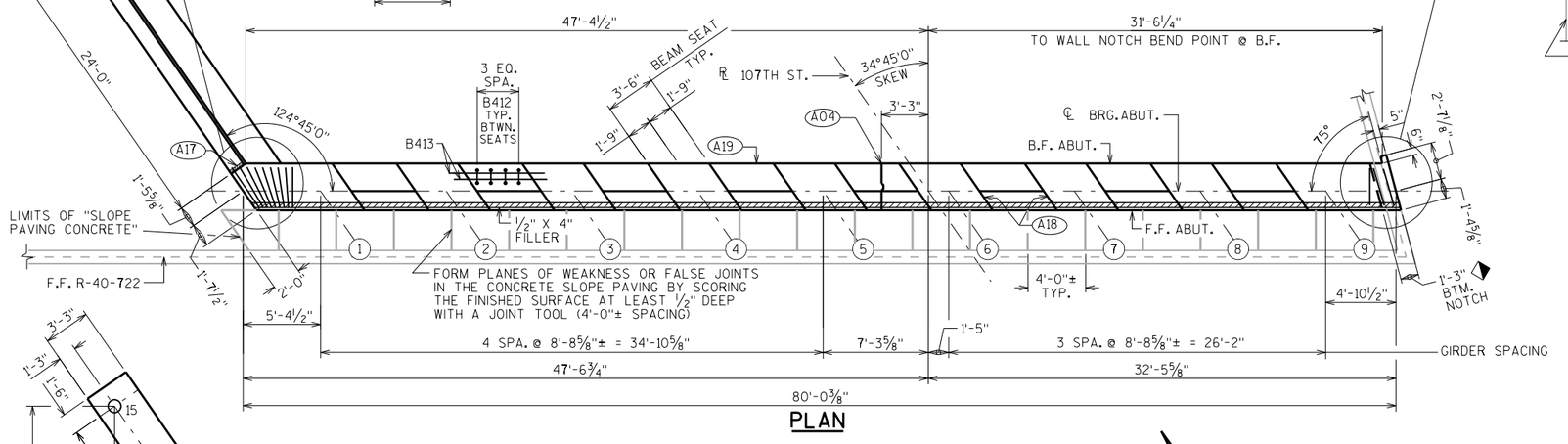


◆ DIMENSION IS PERP. TO SIDE FACE, ADJUST AS REQ'D BASED ON MSE WALL PANEL THICKNESS (7" ASSUMED)

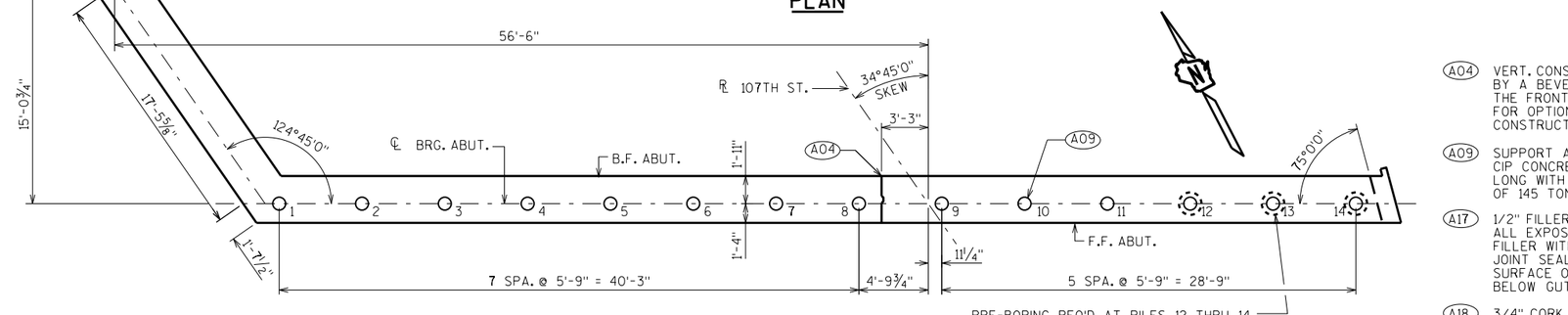
(A51) 1" EXPANDED POLYSTYRENE FILLER BETWEEN WALL PANELS AND ABUTMENT. SEAL EXPOSED FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, 1-INCH DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.

(A52) 2" PREFORMED HORIZONTAL & VERTICAL FILLER BETWEEN WALL COPING AND ABUTMENT. SEAL EXPOSED FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, 1-INCH DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.



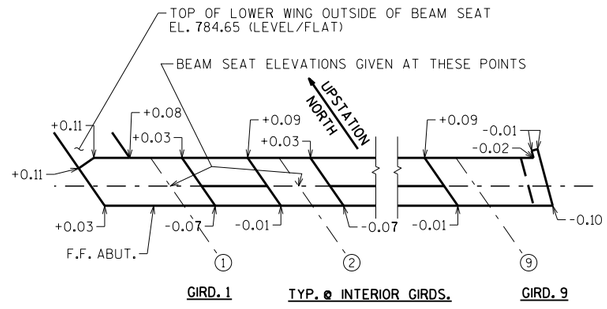


PLAN



PILE PLAN

PRE-BORING REQ'D AT PILES 12 THRU 14. PRE-BORE DOWN TO EL. 738.00 (28'-0"± PREBORING LENGTH PER PILE BASED ON MSE WALL SUBGRADE EL. 766.00±)



GIRD. 1 — TYP. @ INTERIOR GIRDS. — GIRD. 9

SLOPED BEAM SEAT DETAILS

BEAM SEATS SHALL BE LEVEL IN THE DIRECTION PERPENDICULAR TO THE GIRDERS

(A04) VERT. CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 8. 3/4" "V" GROOVE @ THE FRONT FACE AND 18" RMW @ BACKFACE. FOR OPTIONAL DETAILS SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.5" WALL CIP CONCRETE PILING, ESTIMATED 80'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 145 TONS PER PILE.

(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 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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NORTH ABUTMENT

SHEET 6

250

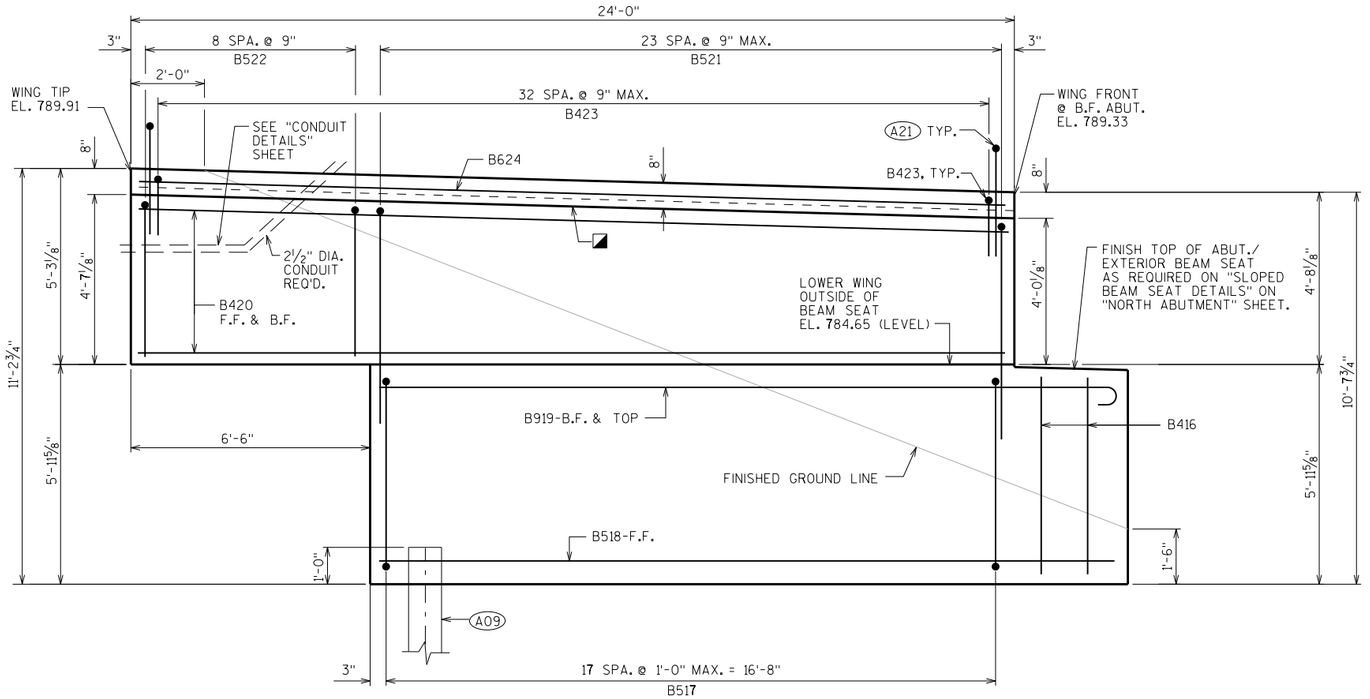
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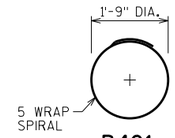
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STATE PROJECT NUMBER

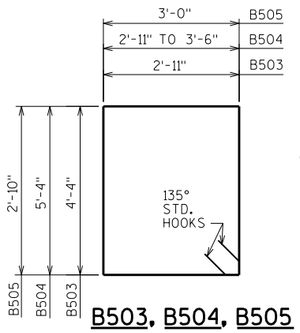
1360-12-70



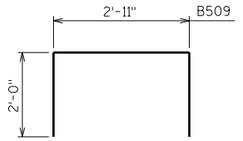
WING 2 ELEVATION



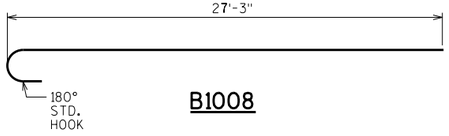
B401



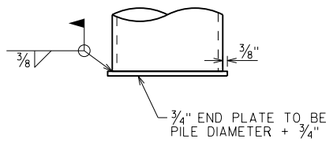
B503, B504, B505



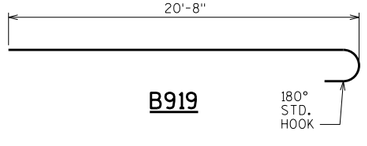
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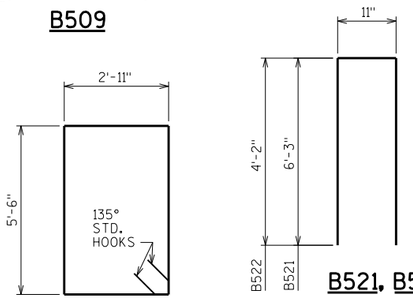
B1008



END PLATE DETAIL

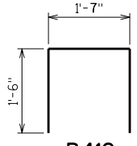


B919

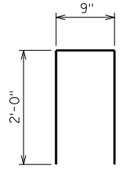


B517

B521, B522



B412



B423

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

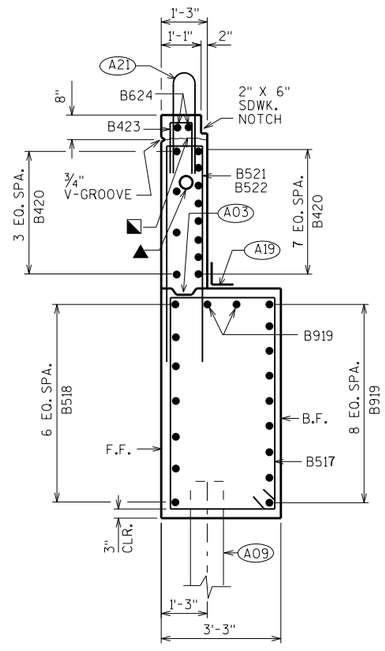
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B401		14	28'-0"	X		BODY-1 PER BODY PILE
B402		28	2'-3"			BODY-2 PER BODY PILE
B503		101	15'-2"	X		BODY-VERT.STIRRUP
B504		8	17'-9"	X	⚠	BODY-VERT.STIRRUP
B505		2	12'-4"	X		BODY-VERT.STIRRUP
B606		22	41'-4"			BODY-HORIZ.
B607		8	57'-9"			BODY-HORIZ.-B.F.
B1008		8	28'-8"	X		BODY-HORIZ.-B.F.
B509		67	6'-8"	X		BODY-VERT. U-BAR
~~B510~~		NOT	USED			~~BODY VERT. U BAR~~
B411		10	36'-3"			BODY-HORIZ.-TOP
B412		32	4'-5"	X		BODY-VERT. U-BAR BTWN. BEAM SEATS
B413		16	6'-4"			BODY-HORIZ. BTWN. BEAM SEATS
B414		4	3'-7"			BODY-HORIZ. END @ WALL NOTCH
B415		3	2'-10"			BODY-VERT. END @ WALL NOTCH
B416		2	5'-6"			BODY-VERT. END @ WING
B517	X	18	17'-6"	X		WING 2 BODY-VERT. STIRRUP
B518	X	7	20'-3"			WING 2 BODY-HORIZ.
B919	X	11	21'-11"	X		WING 2 BODY-HORIZ.
B420	X	12	23'-8"			WINGWALL 2-HORIZ.
B521	X	24	13'-2"	X		WINGWALL 2-VERT. U-BAR
B522	X	9	9'-0"	X		WINGWALL 2-VERT. U-BAR
B423	X	33	4'-7"	X		WINGWALL 2-VERT. U-BAR
B624	X	2	23'-8"			WINGWALL 2-HORIZ. TOP

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

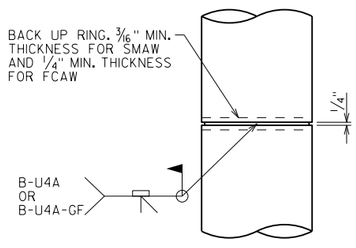
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
B504	1 SERIES OF 8	17'-2" TO 18'-4"

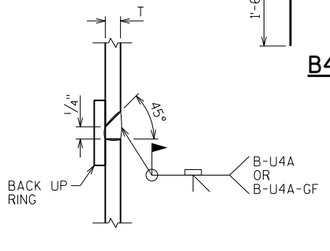
BUNDLE AND TAG EACH SERIES SEPARATELY.



WING 2 SECTION



CAST-IN-PLACE 'PIPE PILE'



C.I.P. PILE WELD DETAIL

PILE DETAILS

▲ SEE "CONDUIT DETAILS" SHEET FOR CONDUIT EMBEDED IN WING.

◪ CONST. JOINT. LEAVE ROUGH. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE. ¾" V-GROOVE @ THE FRONT FACE AND R.M.W. @ BACK FACE.

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 X 6. (18" R.M.W. @ B.F. & ¾" V-GROOVE @ F.F. IF JOINT IS USED).

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.5" WALL CIP CONCRETE PILING, ESTIMATED 80'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 145 TONS PER PILE.

(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 1/8" 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.

(A21) FOR PPT. BARS & DIMENSIONS SEE "VERTICAL FACE PARAPET 'A'" SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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NORTH ABUTMENT DETAILS

SHEET 7

251

SCALE = 2.00

8

8

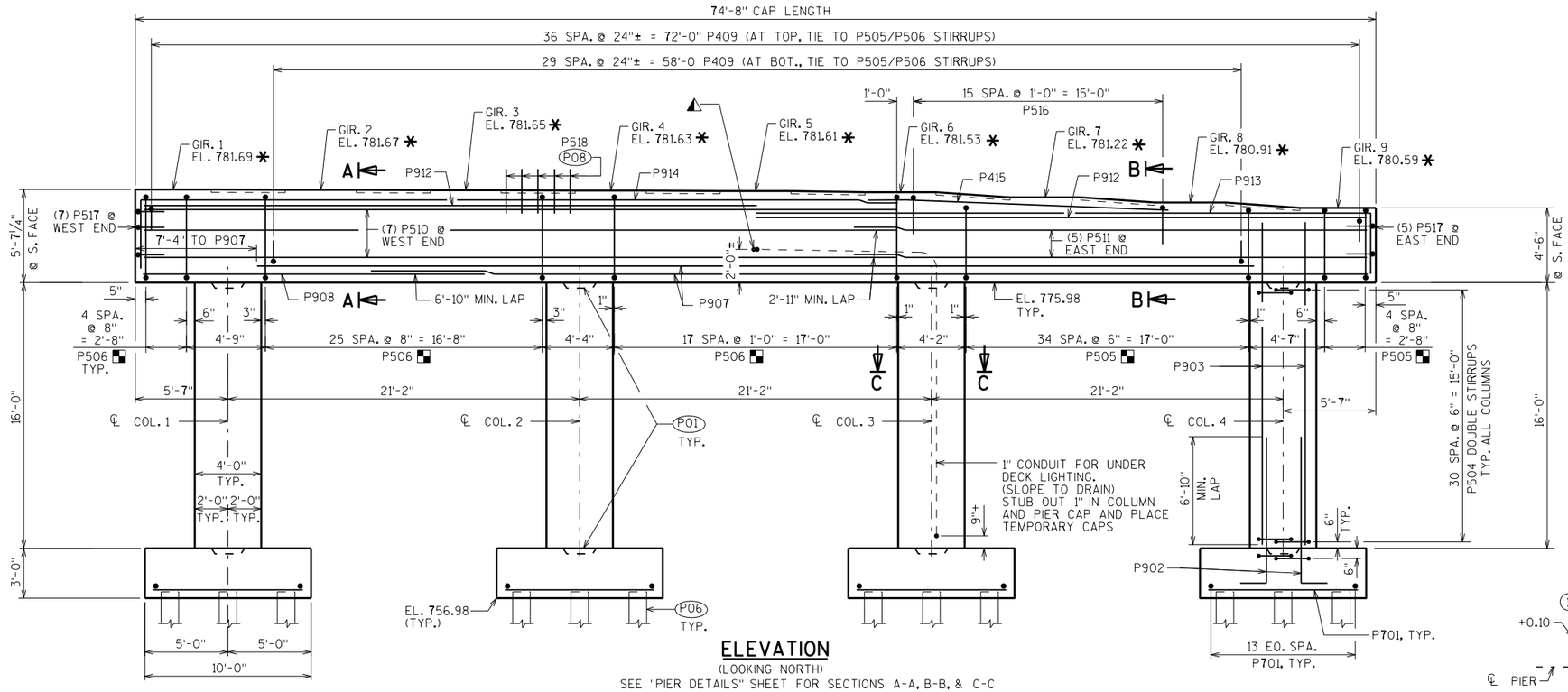
STATE PROJECT NUMBER

1360-12-70

✱ ELEVATIONS GIVEN AT ℄ OF CAP AND GIRD. SEE "SLOPED BEAM SEAT DETAILS"

◭ SEPARATE/ADDITIONAL 1" CONDUIT THRU PIER CAP (SLOPE TO DRAIN). STUB OUT 1" FROM BOTH FACES AND PLACE TEMPORARY CAPS. CENTER ALONG CAP LENGTH.

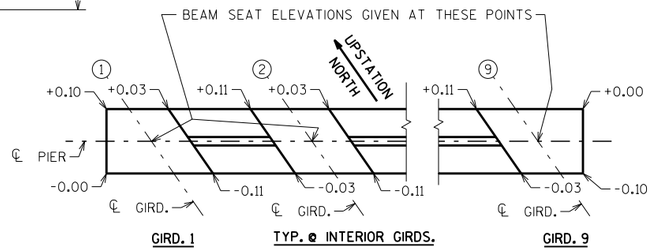
▪▪ DOUBLE STIRRUPS



ELEVATION

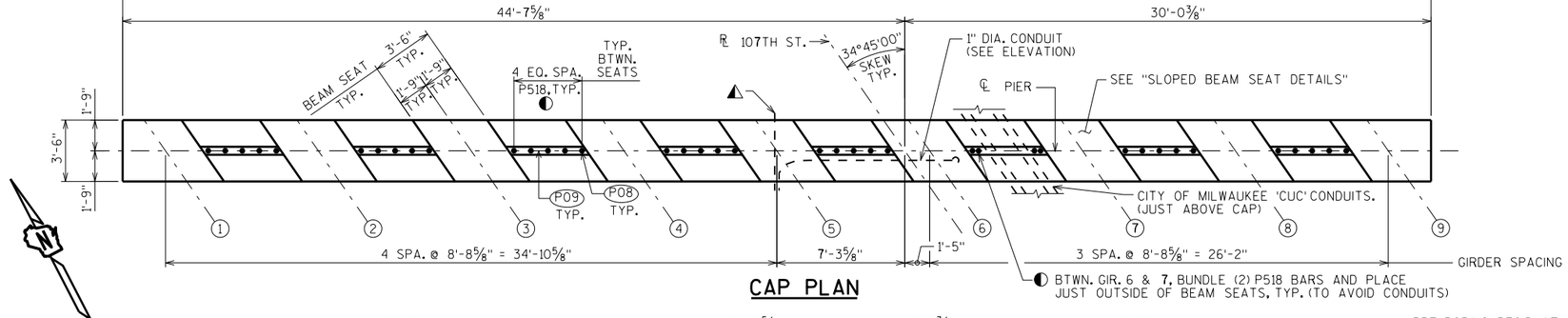
(LOOKING NORTH)

SEE "PIER DETAILS" SHEET FOR SECTIONS A-A, B-B, & C-C

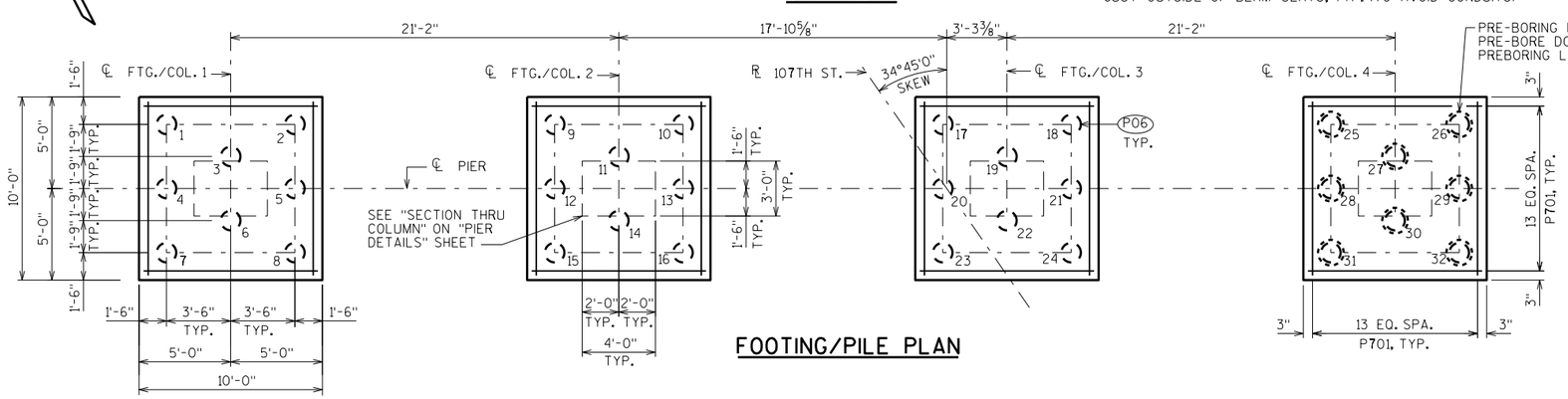


SLOPED BEAM SEAT DETAILS

BEAM SEATS SHALL BE LEVEL IN THE DIRECTION PERPENDICULAR TO THE GIRDERS



CAP PLAN



FOOTING/PILE PLAN

(P01) 1'-3" x 2'-0" x 4" CONST. JOINT FORMED BY BEVELED KEYWAY.

(P06) SUPPORT PIER ON 12 3/4" DIA. X 0.5" CIP CONCRETE PILING, ESTIMATED 65'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.

(P08) P518 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

(P09) KEYED CONST. JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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PIER

SHEET 8

252

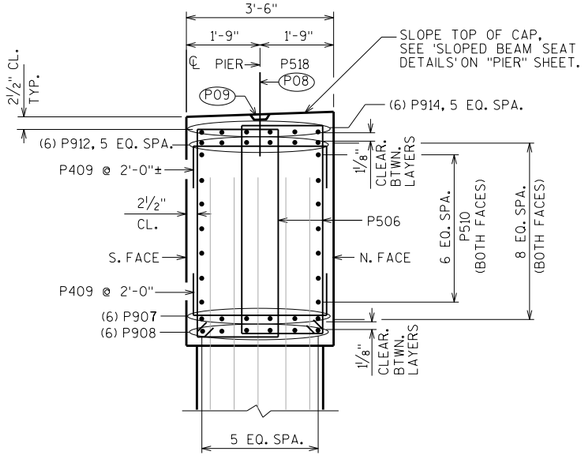
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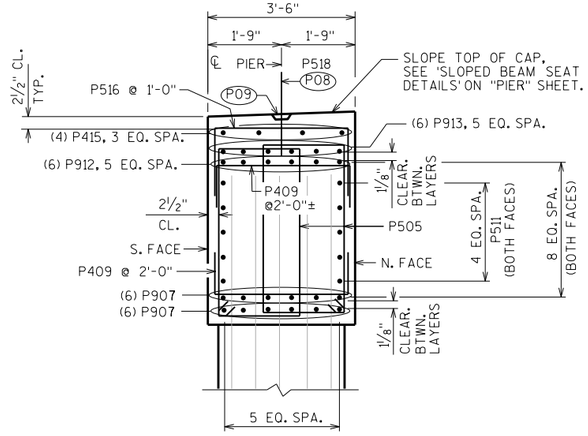
STATE PROJECT NUMBER

1360-12-70



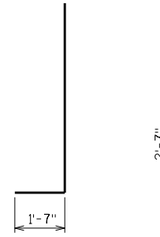
SECTION A-A - THRU CAP

APPLIES TO SECTION OF CAP WEST OF COLUMN 3

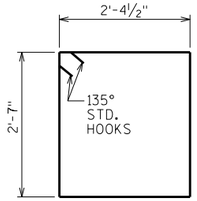


SECTION B-B - THRU CAP

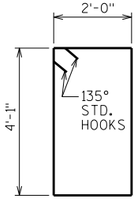
APPLIES TO SECTION OF CAP EAST OF COLUMN 3



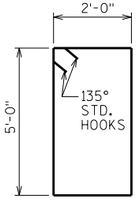
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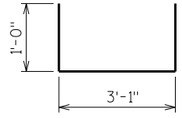
P504



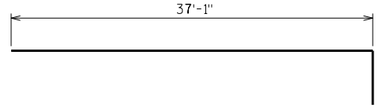
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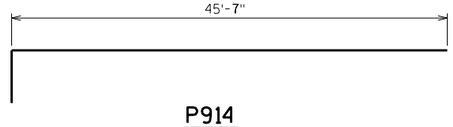
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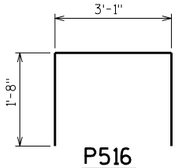
P409



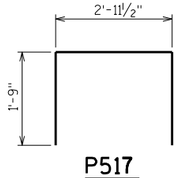
P913



P914



P516

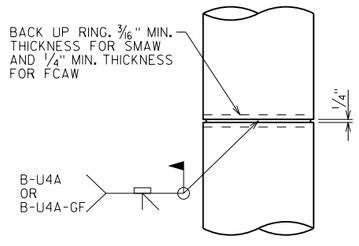


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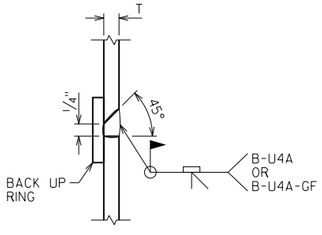
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P701		112	9'-8"			FOOTING-HORIZ.
P902	X	72	10'-7"	X		FOOTING/COLUMN-VERT.
P903	X	72	20'-0"			COLUMN-VERT.
P504	X	256	10'-7"	X		FOOTING/COLUMN-HORIZ.-STIRRUP
P505	X	80	12'-10"	X		CAP-VERT. STIRRUP
P506	X	98	14'-8"	X		CAP-VERT. STIRRUP
P907	X	12	60'-0"			CAP-HORIZ.-BOT.
P908	X	6	20'-10"			CAP-HORIZ.-BOT.
P409	X	67	4'-11"	X		CAP-VERT.-LAYER STEEL SUPPORT BAR
P510	X	14	45'-7"			CAP-HORIZ.-SIDE FACES
P511	X	10	31'-0"			CAP-HORIZ.-SIDE FACES
P912	X	12	37'-0"			CAP-HORIZ.-TOP
P913	X	6	40'-9"	X		CAP-HORIZ.-TOP
P914	X	6	50'-3"	X		CAP-HORIZ.-TOP
P415	X	4	18'-0"			CAP-HORIZ.TOP
P516	X	16	6'-2"	X		CAP-VERT.-TOP
P517	X	12	6'-3"	X		CAP-HORIZ END U-BAR
P518	X	39	2'-0"			CAP-VERT. DOWEL

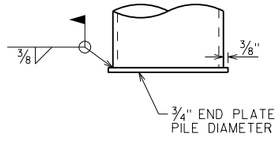


CAST-IN-PLACE 'PIPE PILE'

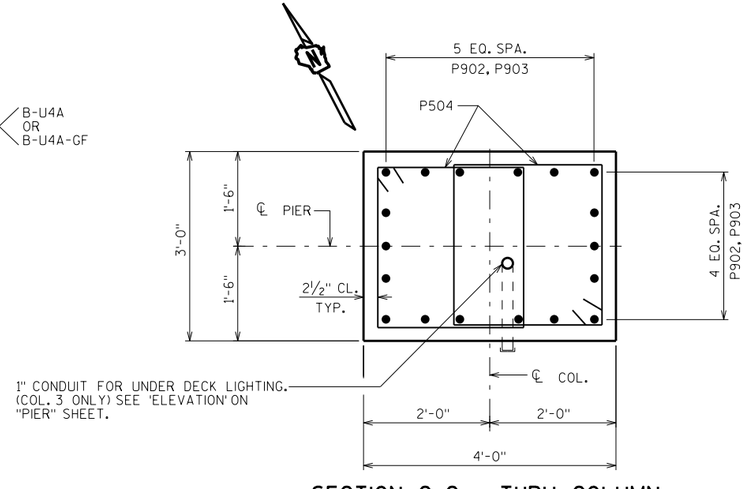


C.I.P. PILE WELD DETAIL

PILE DETAILS



END PLATE DETAIL



SECTION C-C - THRU COLUMN

(P08) P519 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

(P09) KEYED CONST. JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

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PIER DETAILS

SHEET 9

253

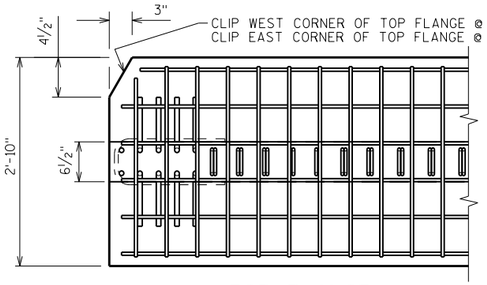
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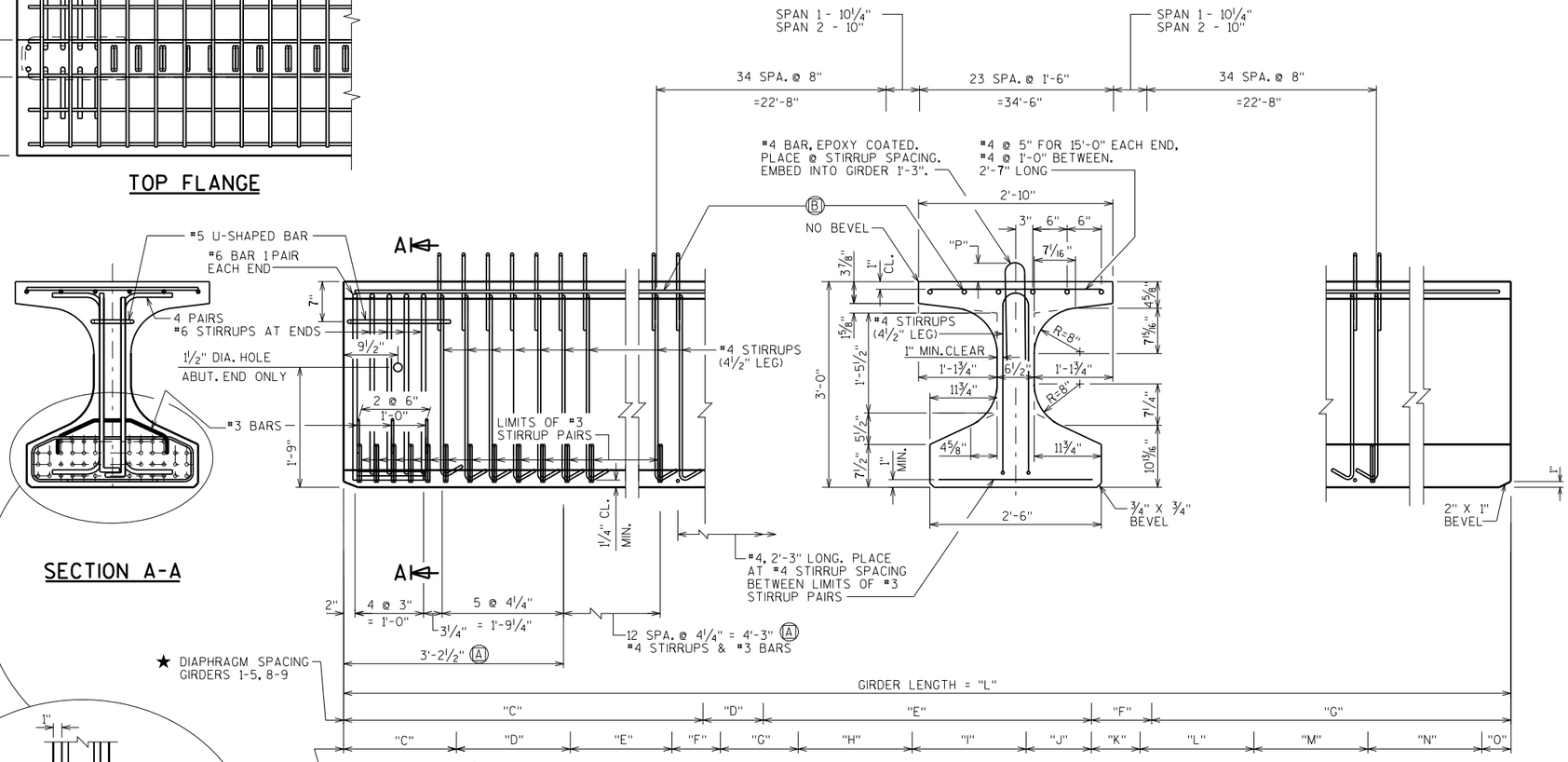
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STATE PROJECT NUMBER

1360-12-70



TOP FLANGE



SECTION A-A

SIDE VIEW & TYPICAL SECTION IN SPAN

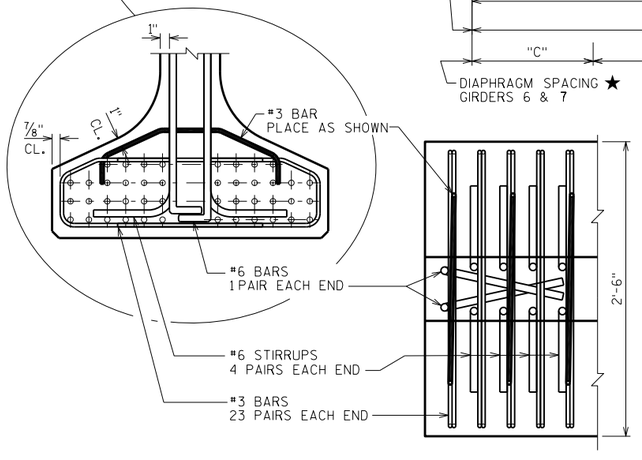
Ⓐ DETAIL TYP. AT EACH END

Ⓑ (6) #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"

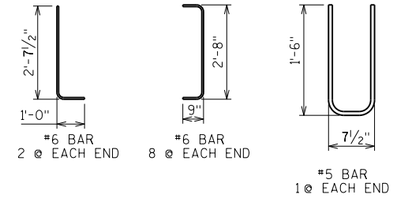
		"C" (S. END)	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"	"M"	"N"	"O"	
SPAN 1	GIRDER 1 (WEST)	29'-8"	0"	32'-1½"	0"	34'-8"	-	-	-	-	-	-	-	-	← INSERTS @ EAST FACE
	GIRDERS 2-5 & 8	29'-8"	4'-11¹¹⁄₁₆"	27'-1⁵⁄₁₆"	4'-11¹¹⁄₁₆"	29'-8⅝"	-	-	-	-	-	-	-	-	
	GIRDER 6	4'-4³⁄₁₆"	9'-5"	9'-5"	9'-5"	2'-0½"	7'-4½"	9'-5"	9'-5"	5'-11"	3'-6"	9'-5"	9'-5"	7'-4⁵⁄₁₆"	
	GIRDER 7	9'-3¹³⁄₁₆"	9'-5"	9'-5"	1'-6³⁄₁₆"	7'-10¹³⁄₁₆"	9'-5"	9'-5"	5'-4¹¹⁄₁₆"	4'-0⁵⁄₁₆"	9'-5"	9'-5"	9'-5"	2'-4¹¹⁄₁₆"	
	GIRDER 9 (EAST)	34'-7¹¹⁄₁₆"	0"	32'-1½"	0"	29'-8⅝"	-	-	-	-	-	-	-	-	← INSERTS @ WEST FACE

		"C" (S. END)	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"	"M"	"N"	"O"	
SPAN 2	GIRDER 1 (WEST)	29'-8⅝"	0"	32'-1"	0"	34'-7¹¹⁄₁₆"	-	-	-	-	-	-	-	-	← INSERTS @ EAST FACE
	GIRDERS 2-5 & 8	29'-8⅝"	4'-11¹¹⁄₁₆"	27'-1⅝"	4'-11¹¹⁄₁₆"	29'-8"	-	-	-	-	-	-	-	-	
	GIRDER 6	2'-4¹¹⁄₁₆"	9'-5"	9'-5"	9'-5"	4'-0⁵⁄₁₆"	5'-4¹¹⁄₁₆"	9'-5"	9'-5"	7'-10⁵⁄₁₆"	1'-6¹¹⁄₁₆"	9'-5"	9'-5"	9'-3⁵⁄₁₆"	
	GIRDER 7	7'-4⅝"	9'-5"	9'-5"	3'-6"	5'-11"	9'-5"	9'-5"	7'-4"	2'-1"	9'-5"	9'-5"	9'-5"	4'-3¹¹⁄₁₆"	
	GIRDER 9 (EAST)	34'-8"	0"	32'-1"	0"	29'-8"	-	-	-	-	-	-	-	-	← INSERTS @ WEST FACE

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



BOTTOM FLANGE



GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (P.S.I.)	"P" (IN.) 1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳
1	1-9	96.4583	0.8	1.6	2.1	2.5	2.6	2.5	2.1	1.5	0.8	8,000	7.5	7	7.5	0.6	36	6,800	31.0	11.5	14.5	5.0		
2	1-9	96.4167	0.8	1.5	2.1	2.5	2.6	2.5	2.1	1.6	0.8	8,000	7.5	7	7.5	0.6	36	6,800	31.0	11.5	14.5	5.0		

GIRDER LENGTHS HAVE BEEN ADJUSTED TO ACCOUNT FOR GRADE, TYP.

NOTES

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

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

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

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

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

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

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

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36W" PRESTRESSED GIRDER DETAILS 1

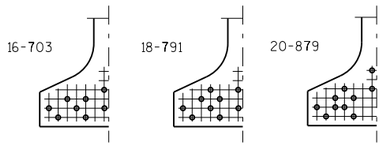
SHEET 10

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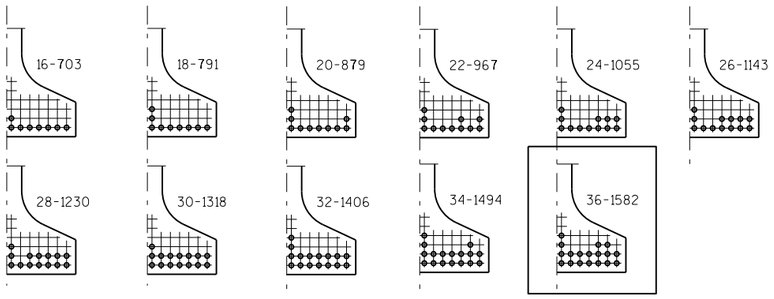
STATE PROJECT NUMBER

1360-12-70



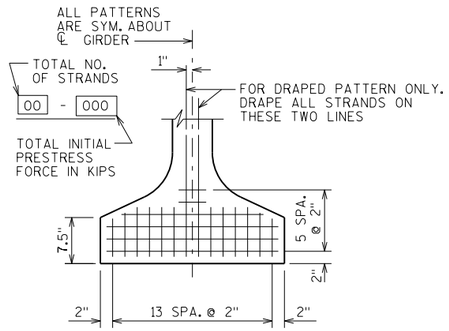
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6" DIA. STRANDS

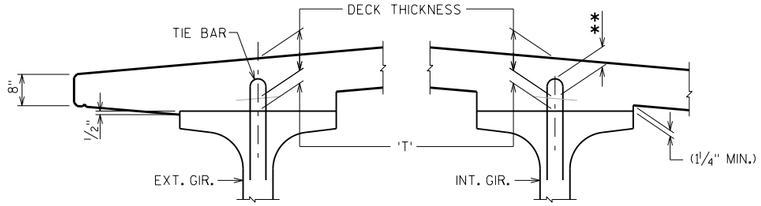


ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" DIA. STRANDS



TYP. STRAND PATTERN



DECK HAUNCH DETAIL

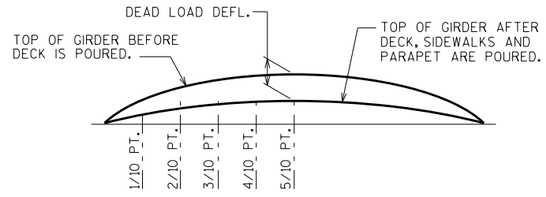
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

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

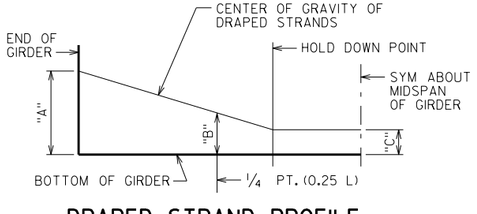
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

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

NOTE: AN AVERAGE HAUNCH ('T') OF 2.9" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

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

SPAN	CAMBER (IN.) *
1 & 2	4.5

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

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36W" PRESTRESSED GIRDER DETAILS 2

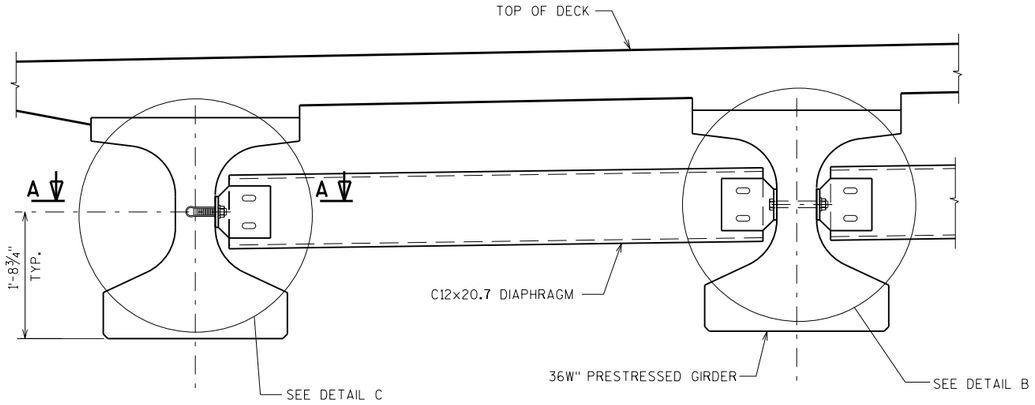
SHEET 11

255

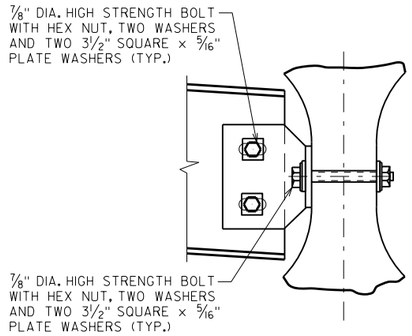
SCALE =

STATE PROJECT NUMBER

1360-12-70



PART TRANSVERSE SECTION AT DIAPHRAGM



SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°

NOTES

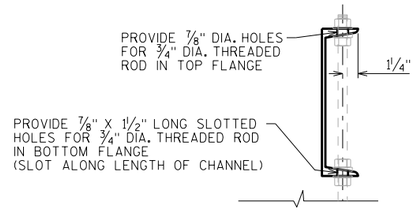
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-40-1004", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

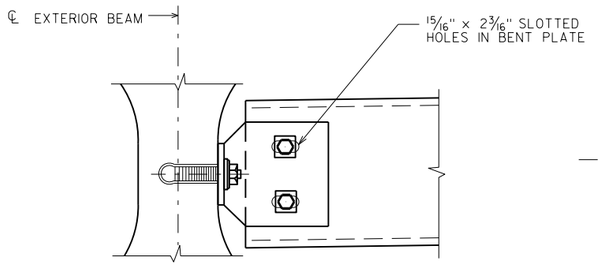
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

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

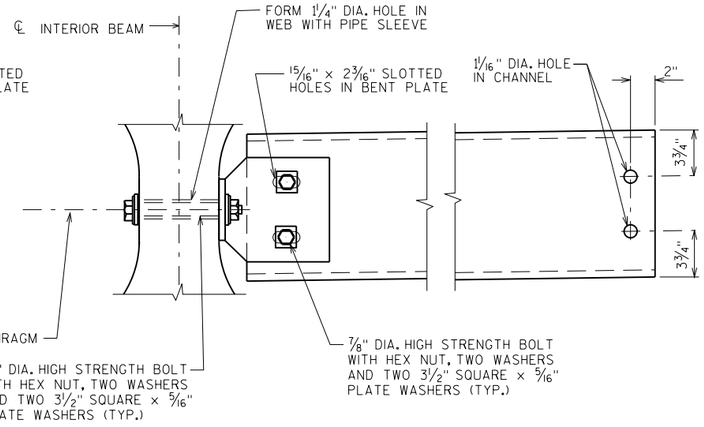
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



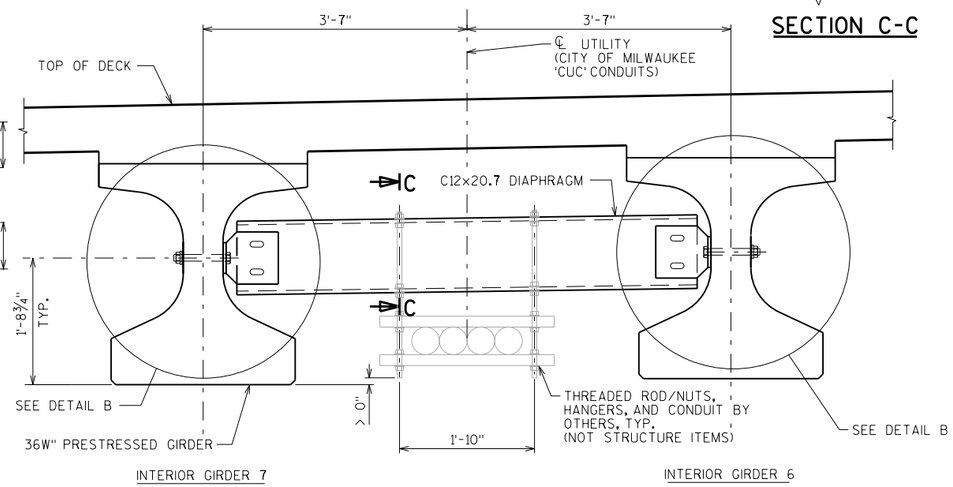
SECTION C-C



DETAIL C

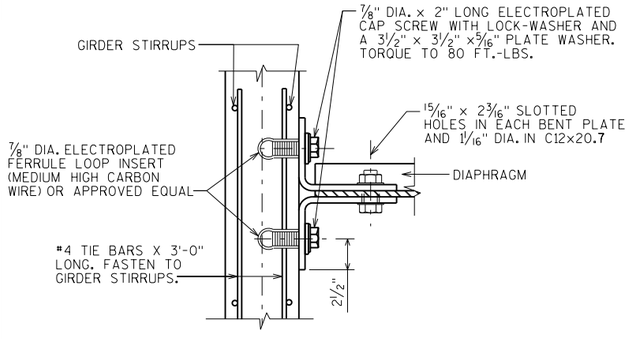


DETAIL B



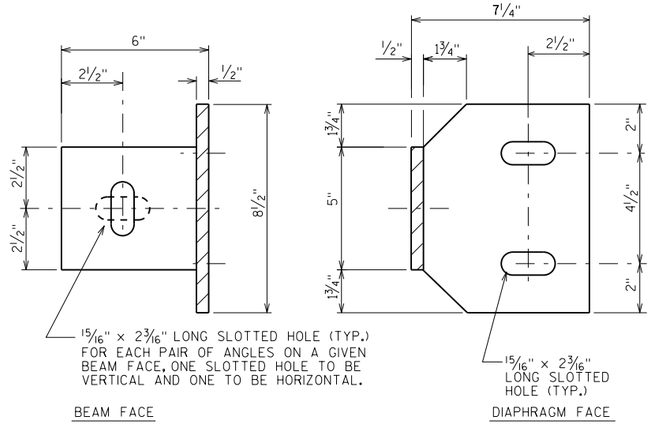
PART TRANSVERSE SECTION AT UTILITY SUPPORT DIAPHRAGMS

TYPICAL AT ALL 20 DIAPHRAGMS BTWN. GIRDERS 6 & 7 ONLY



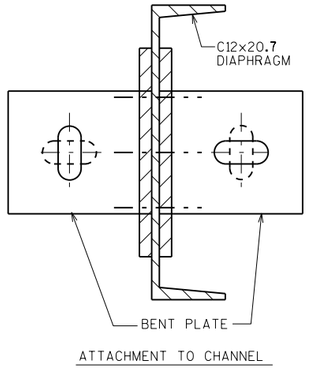
SECTION A-A

(FOR EXTERIOR ATTACHMENT)



BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

DRAWN BY: WWR | PLANS CK'D.: CAD

STEEL DIAPHRAGM

SHEET 12

256

8

8

SCALE =

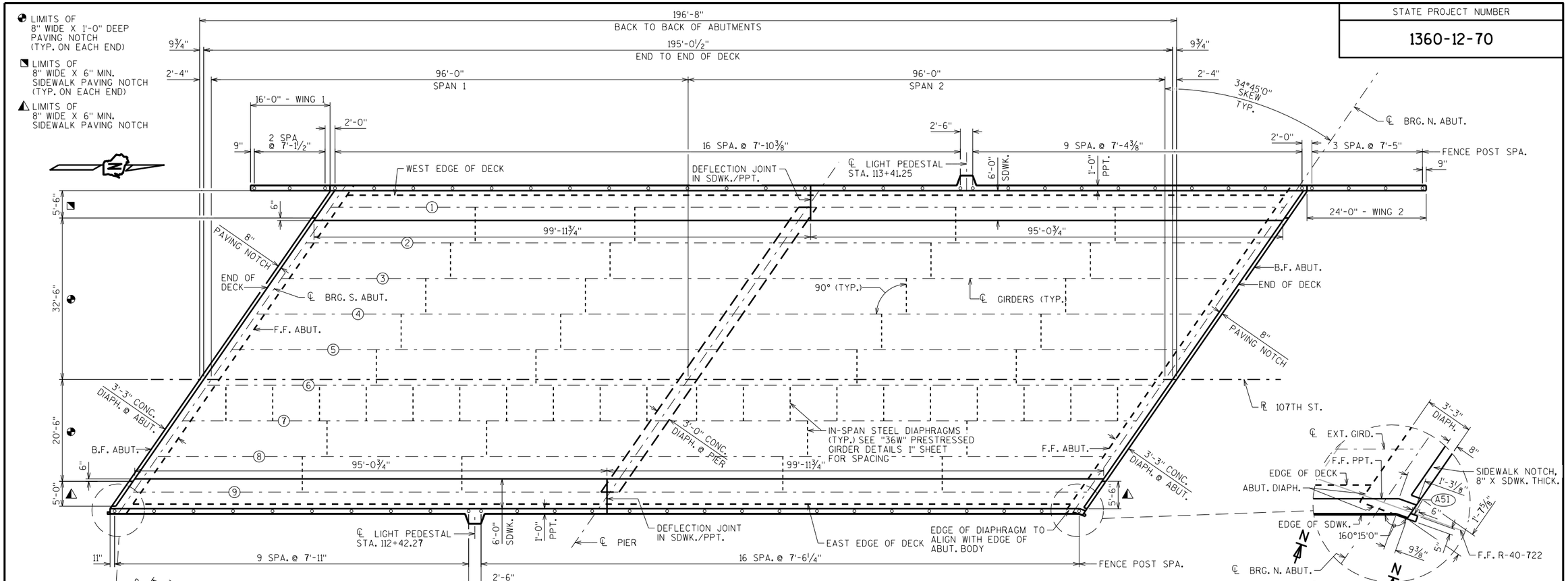
STATE PROJECT NUMBER

1360-12-70

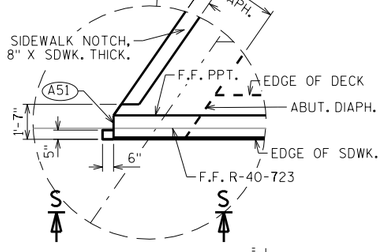
◕ LIMITS OF 8" WIDE X 1'-0" DEEP PAVING NOTCH (TYP. ON EACH END)

◥ LIMITS OF 8" WIDE X 6" MIN. SIDEWALK PAVING NOTCH (TYP. ON EACH END)

◭ LIMITS OF 8" WIDE X 6" MIN. SIDEWALK PAVING NOTCH

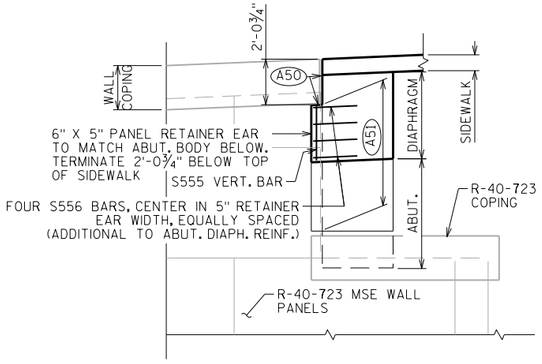


PLAN



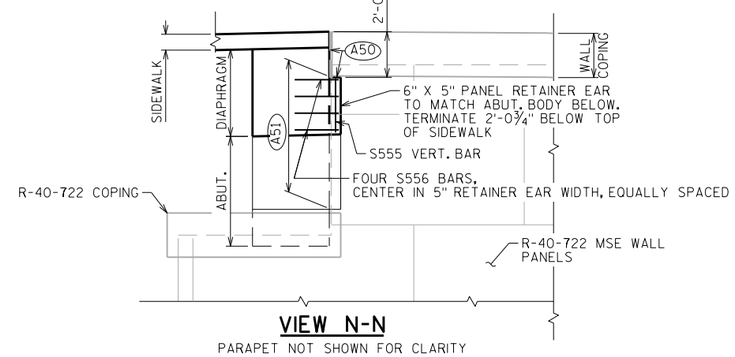
VIEW S-S

PARAPET NOT SHOWN FOR CLARITY



VIEW S-S

PARAPET NOT SHOWN FOR CLARITY



VIEW N-N

PARAPET NOT SHOWN FOR CLARITY

(#) INDICATES GIRDER NUMBER

(A50) 1 1/2" VERTICAL FILLER AND 3/4" HORIZ. FILLER BETWEEN BRIDGE ELEMENTS AND RETAINING WALL COPING. SEAL ALL EXPOSED SURFACES OF FILLER WITH GRAY NON-BITUMINOUS JOINT SEALER, 1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

(A51) 1" EXPANDED POLYSTYRENE FILLER BETWEEN WALL PANELS AND PANEL RETAINER EARS ON ABUTMENT/DIAPH. SEAL ALL EXPOSED SURFACES OF FILLER WITH GRAY NON-BITUMINOUS JOINT SEALER, 1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

DRAWN BY JPH | PLANS CK'D. CAD

SUPERSTRUCTURE LAYOUT

SHEET 13

257

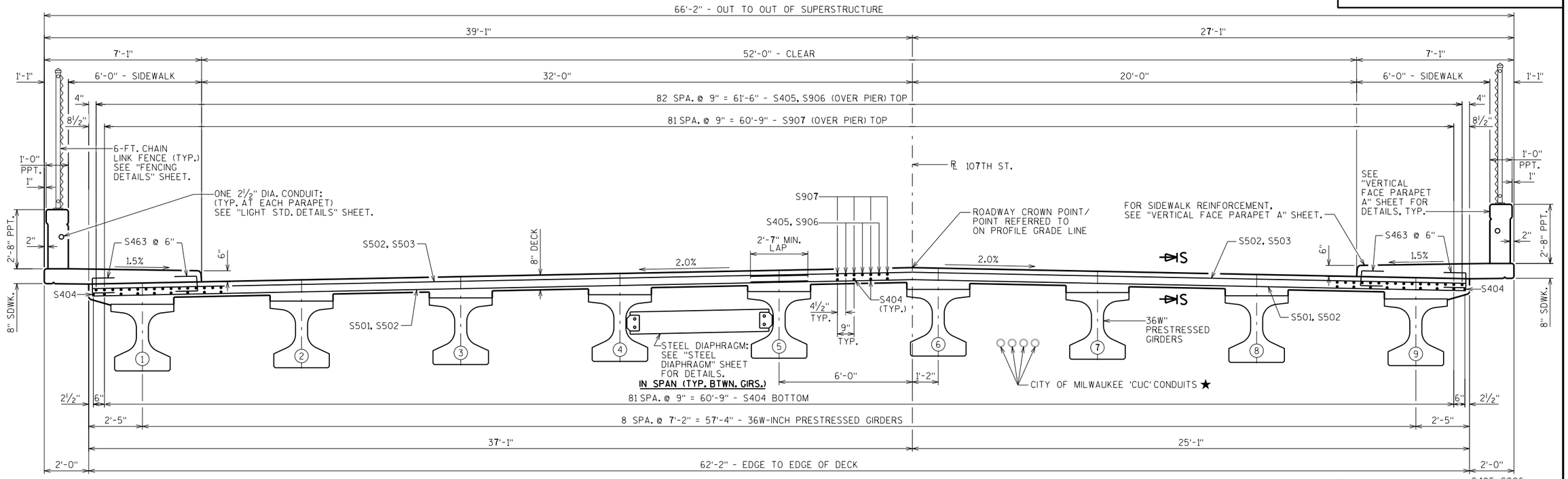
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8

8

STATE PROJECT NUMBER

1360-12-70



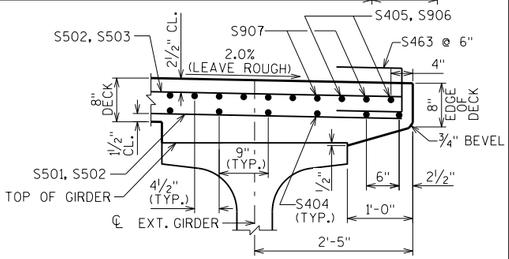
CROSS SECTION THRU BRIDGE

(LOOKING NORTH)

◯ INDICATES GIRDER NUMBER

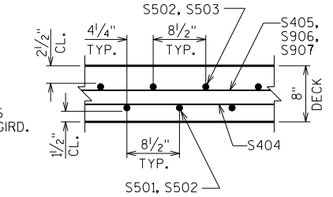
★ CONTRACTOR TO COORDINATE BLOCKOUT IN PIER/ABUT. DIAPHRAGMS AS REQUIRED FOR CITY OF MILWAUKEE 'CUC' CONDUITS. WRAP EACH INDIVIDUAL CONDUIT IN ⅜" THICK COMPRESSIBLE EXPANSION MATERIAL AT CONCRETE DIAPHRAGMS, AND GROUT BLOCKOUTS FULL AFTER INSTALLATION OF CONDUITS, INCIDENTAL TO "CONCRETE MASONRY BRIDGES". USE NON-SHRINK GROUT FROM THE DEPARTMENT'S APPROVED LIST.

NOTE:
FOR SECTIONS THRU THE ABUTMENT DIAPHRAGMS AND ABUTMENT DIAPHRAGM CORNER DETAILS, SEE THE NEXT 3 SHEETS.

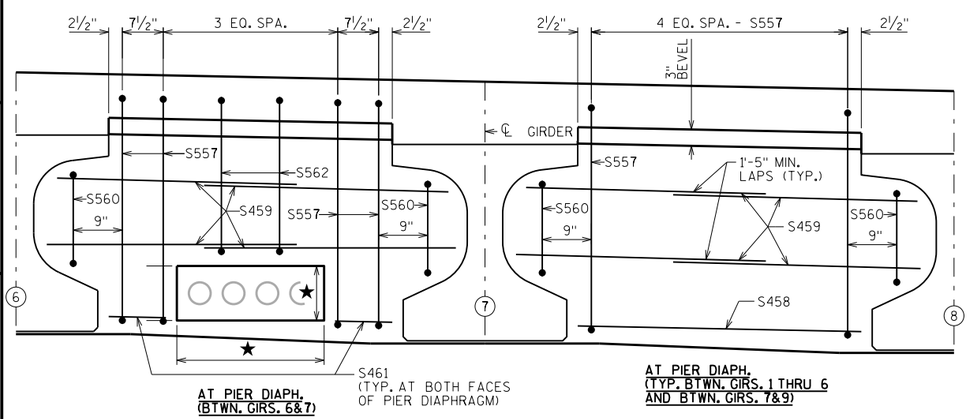


EDGE OF DECK DETAIL

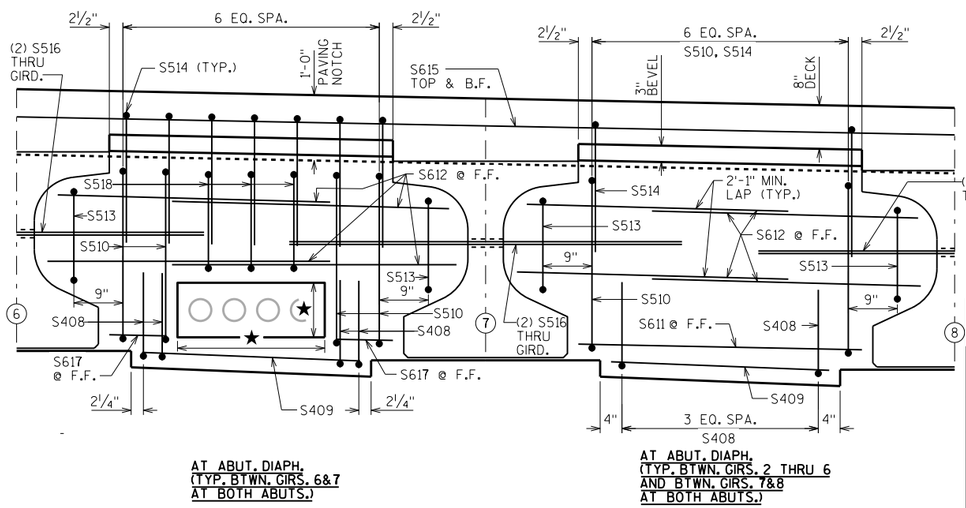
(TYP. @ BOTH SIDES)



SECTION S-S



PARTIAL CROSS SECTION AT PIER DIAPHRAGM



AT ABUT. DIAPH. (TYP. BTWN. GIRS. 6&7 AT BOTH ABUTS.)

AT ABUT. DIAPH. (TYP. BTWN. GIRS. 2 THRU 6 AND BTWN. GIRS. 7&8 AT BOTH ABUTS.)

PARTIAL CROSS SECTION AT ABUT. DIAPHRAGMS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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SUPERSTRUCTURE CROSS SECTIONS

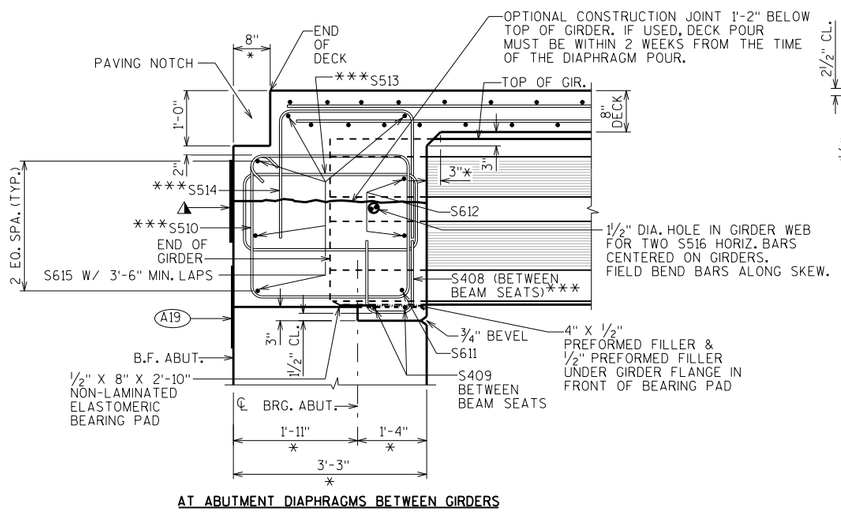
SHEET 14

258

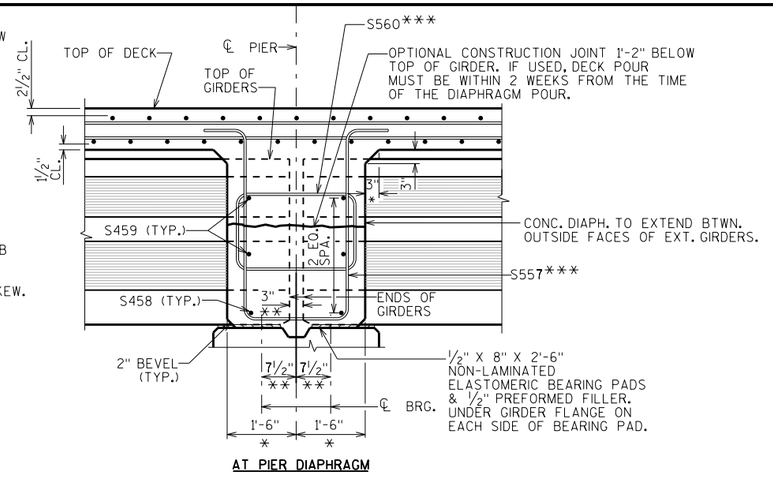
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STATE PROJECT NUMBER

1360-12-70

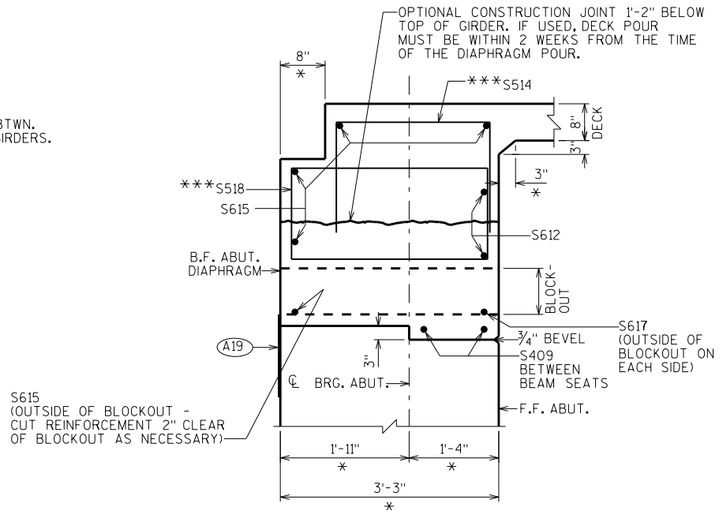


AT ABUTMENT DIAPHRAGMS BETWEEN GIRDERS

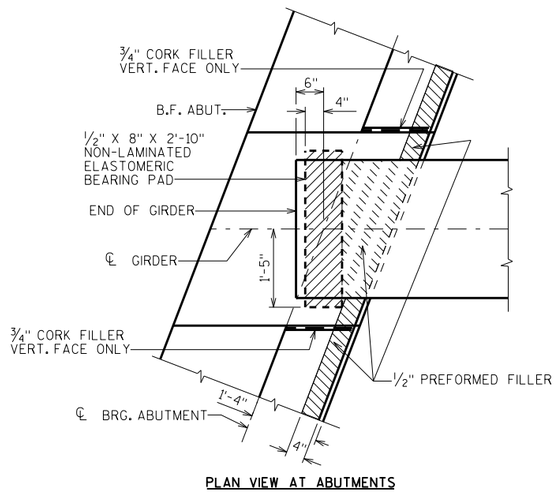


AT PIER DIAPHRAGM

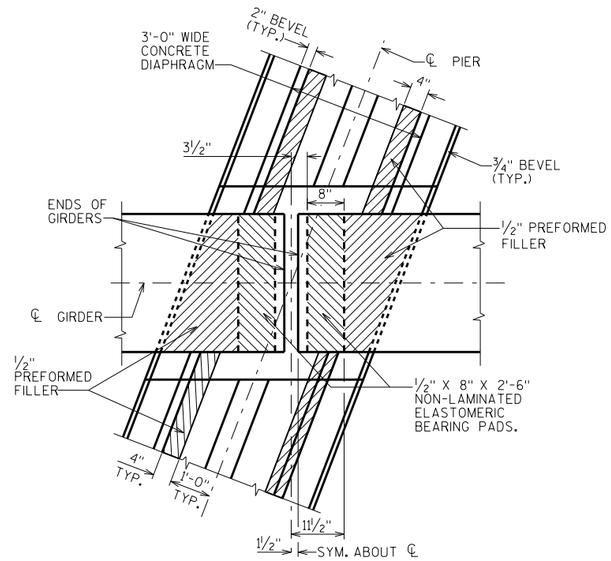
PART LONGIT. SECTION



SECTION THRU ABUT. DIAPHRAGMS AT UTILITY BLOCKOUTS



PLAN VIEW AT ABUTMENTS



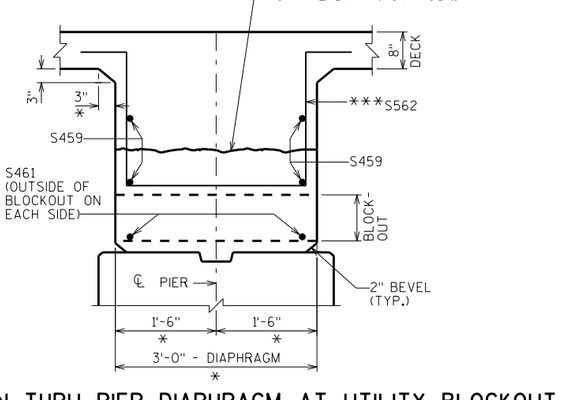
PLAN VIEW AT PIER

BEARING PAD DETAILS

TOP OF DECK ELEVATIONS

EOD = EDGE OF DECK

	S. ABUT	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N. ABUT	
W. EOD	782.32	782.68	783.03	783.38	783.73	784.07	784.41	784.74	785.06	785.38	785.70	786.01	786.31	786.61	786.91	787.20	787.48	787.76	788.03	788.30	788.57	W. EOD
℄ GIR. 1	782.30	782.66	783.02	783.37	783.72	784.06	784.40	784.73	785.05	785.37	785.69	786.00	786.31	786.61	786.90	787.19	787.48	787.76	788.03	788.30	788.57	℄ GIR. 1
℄ GIR. 2	782.26	782.62	782.98	783.33	783.68	784.03	784.37	784.70	785.03	785.35	785.67	785.98	786.29	786.60	786.89	787.19	787.48	787.76	788.04	788.31	788.58	℄ GIR. 2
℄ GIR. 3	782.21	782.58	782.94	783.29	783.65	783.99	784.33	784.67	785.00	785.33	785.65	785.97	786.28	786.58	786.88	787.18	787.47	787.76	788.04	788.31	788.58	℄ GIR. 3
℄ GIR. 4	782.16	782.53	782.89	783.25	783.61	783.96	784.30	784.64	784.97	785.30	785.63	785.95	786.26	786.57	786.87	787.17	787.46	787.75	788.04	788.31	788.59	℄ GIR. 4
℄ GIR. 5	782.11	782.48	782.85	783.21	783.57	783.92	784.27	784.61	784.95	785.28	785.60	785.93	786.24	786.55	786.86	787.16	787.46	787.75	788.03	788.31	788.59	℄ GIR. 5
RL/PGL	782.07	782.44	782.81	783.17	783.53	783.89	784.24	784.58	784.92	785.25	785.58	785.91	786.22	786.54	786.85	787.15	787.45	787.74	788.03	788.31	788.59	RL/PGL
℄ GIR. 6	782.01	782.39	782.76	783.12	783.48	783.84	784.18	784.53	784.87	785.20	785.53	785.86	786.17	786.49	786.80	787.10	787.40	787.69	787.98	788.26	788.54	℄ GIR. 6
℄ GIR. 7	781.67	782.05	782.42	782.79	783.15	783.51	783.86	784.21	784.55	784.89	785.22	785.55	785.87	786.18	786.49	786.80	787.10	787.40	787.69	787.98	788.26	℄ GIR. 7
℄ GIR. 8	781.33	781.71	782.09	782.46	782.82	783.18	783.54	783.89	784.23	784.57	784.90	785.23	785.56	785.88	786.19	786.50	786.80	787.10	787.40	787.68	787.97	℄ GIR. 8
℄ GIR. 9	780.99	781.37	781.75	782.12	782.49	782.85	783.21	783.56	783.91	784.25	784.59	784.92	785.25	785.57	785.89	786.20	786.50	786.81	787.10	787.39	787.68	℄ GIR. 9
E. EOD	780.87	781.26	781.64	782.01	782.38	782.74	783.10	783.45	783.80	784.14	784.48	784.81	785.14	785.46	785.78	786.09	786.40	786.70	787.00	787.29	787.58	E. EOD



SECTION THRU PIER DIAPHRAGM AT UTILITY BLOCKOUT

*DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

**DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

***BARS PLACED PARALLEL TO ℄ GIRDERS. BARS SPACING PERPENDICULAR TO ℄ GIRDERS

⚠ 18" R.M.W.: SEAL ONLY IF OPT. CONST. JT. IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES")

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

DRAWN BY JPH | PLANS CK'D. CAD

PIER AND ABUTMENT DIAPHRAGM DETAILS

SHEET 15

259

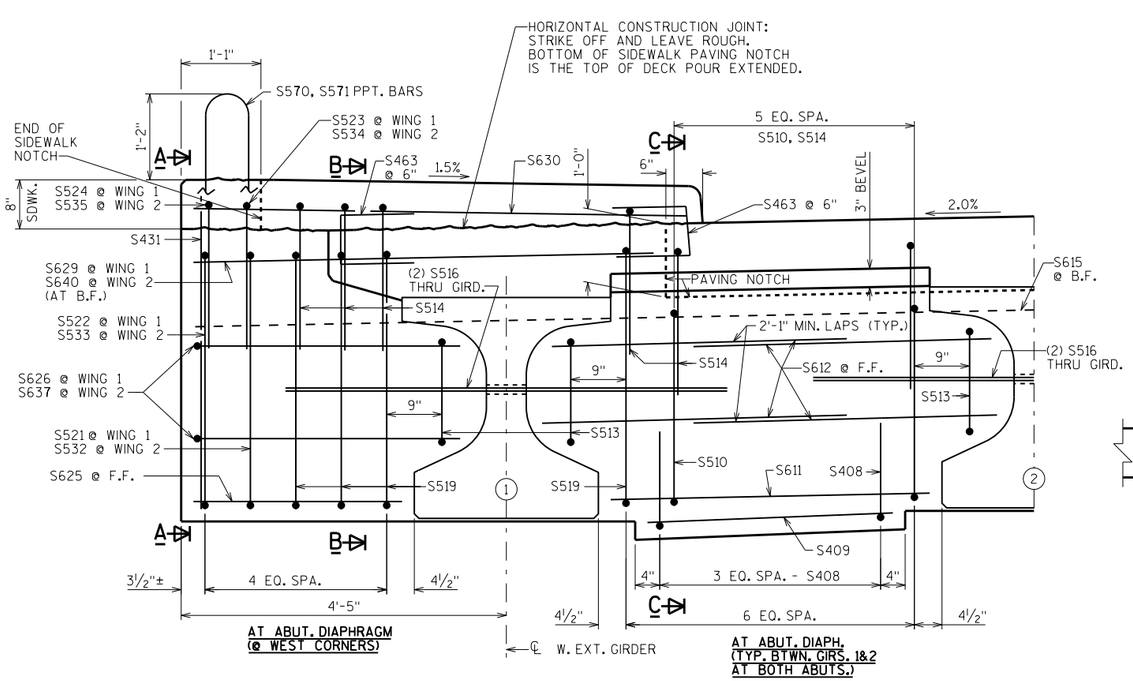
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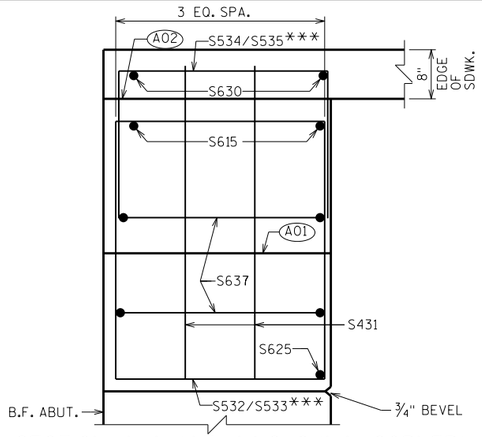
STATE PROJECT NUMBER

1360-12-70



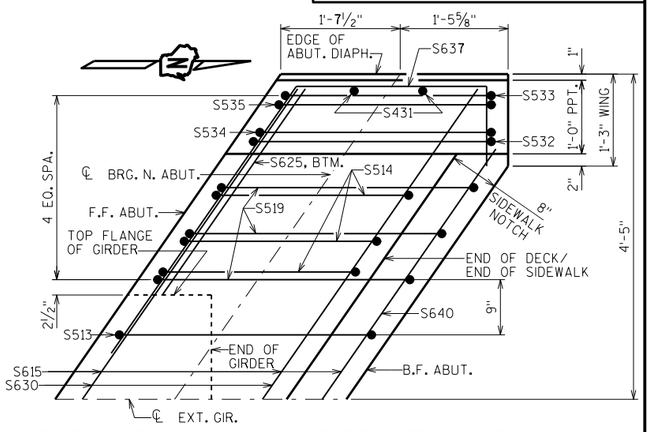
PARTIAL CROSS SECTION THRU WEST SIDE OF BRIDGE AT ABUT. DIAPHRAGMS

(SIDEWALK BARS NOT SHOWN CLARITY)

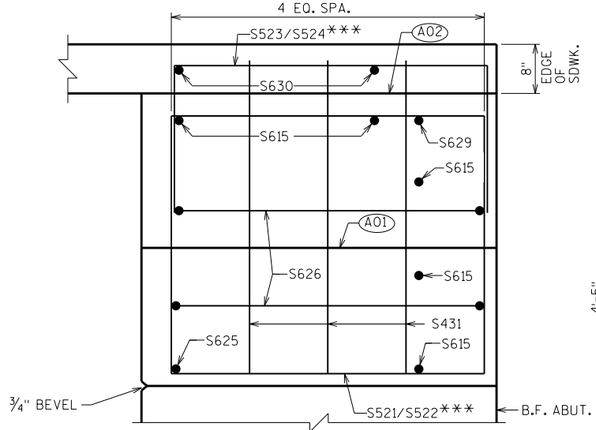


SECTION A-A (AT WING 2/NW CORNER)

(BELOW PARAPET)

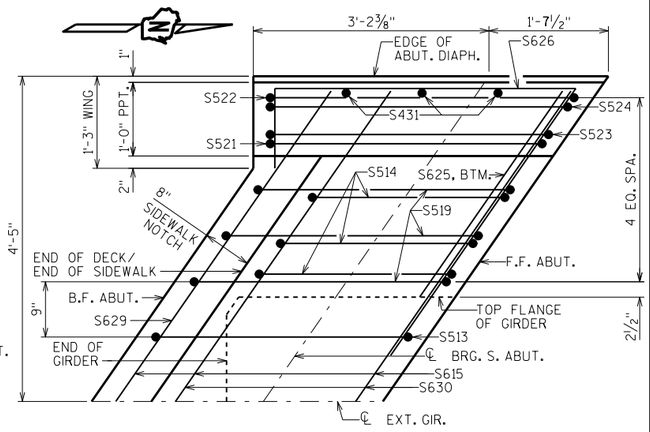


ABUT. DIAPHRAGM NW CORNER DETAIL AT WING 2

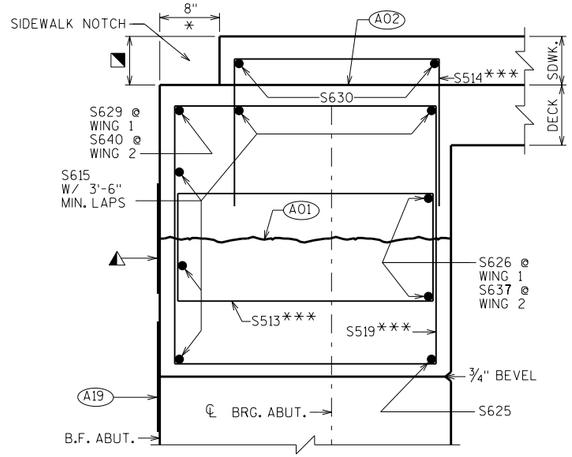


SECTION A-A (AT WING 1/SW CORNER)

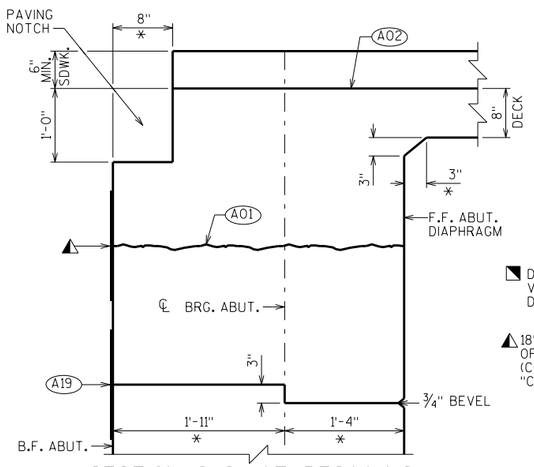
(BELOW PARAPET)



ABUT. DIAPHRAGM SW CORNER DETAIL AT WING 1



SECTION B-B (AT SIDEWALK NOTCH)



SECTION C-C (AT BEGINNING OF PAVING NOTCH/SIDEWALK)

(REINFORCEMENT NOT SHOWN)

DEPTH OF SIDEWALK NOTCH VARIES. MATCH SIDEWALK DEPTH ON BRIDGE.

⚠ 18" R.M.W.: SEAL ONLY IF OPT. CONST. JT. IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES")

*DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

***BARS PLACED PARALLEL TO ℄ GIRDERS. BARS SPACING PERPENDICULAR TO ℄ GIRDERS

(A01) OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

(A02) CONSTRUCTION JOINT: STRIKE OFF AND LEAVE ROUGH. BOTTOM OF SIDEWALK PAVING NOTCH IS THE TOP OF DECK POUR EXTENDED.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

DRAWN BY JPH | PLANS CK'D. CAD

ABUTMENT DIAPHRAGM DETAILS (WEST CORNERS)

SHEET 16

260

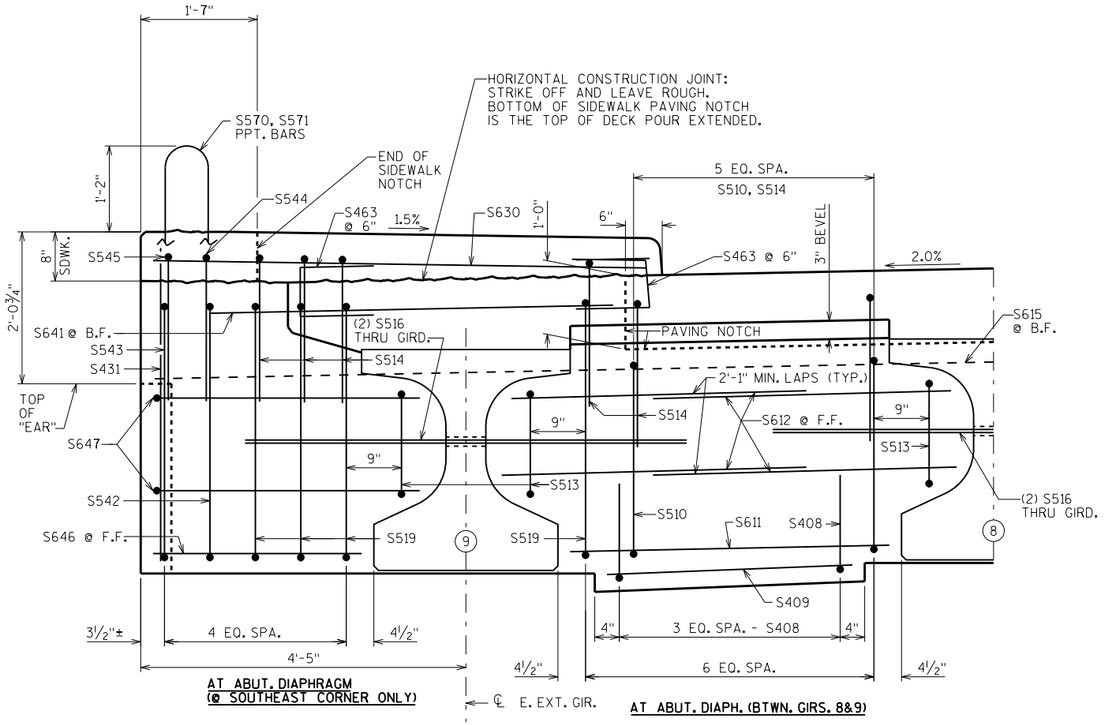
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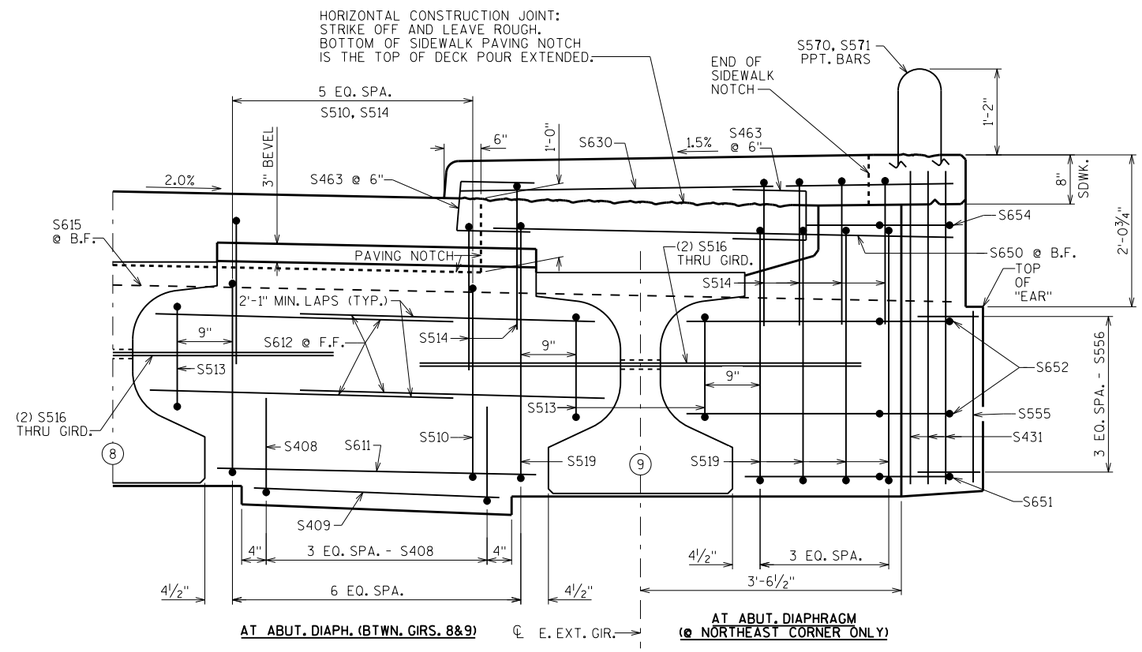
STATE PROJECT NUMBER

1360-12-70



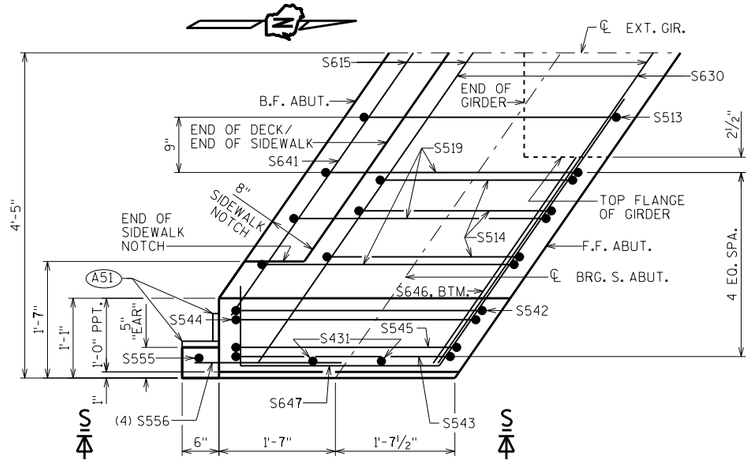
PARTIAL CROSS SECTION THRU EAST SIDE OF BRIDGE AT SOUTH ABUT. DIAPHRAGM LOOKING SOUTH

(SIDEWALK BARS NOT SHOWN FOR CLARITY)



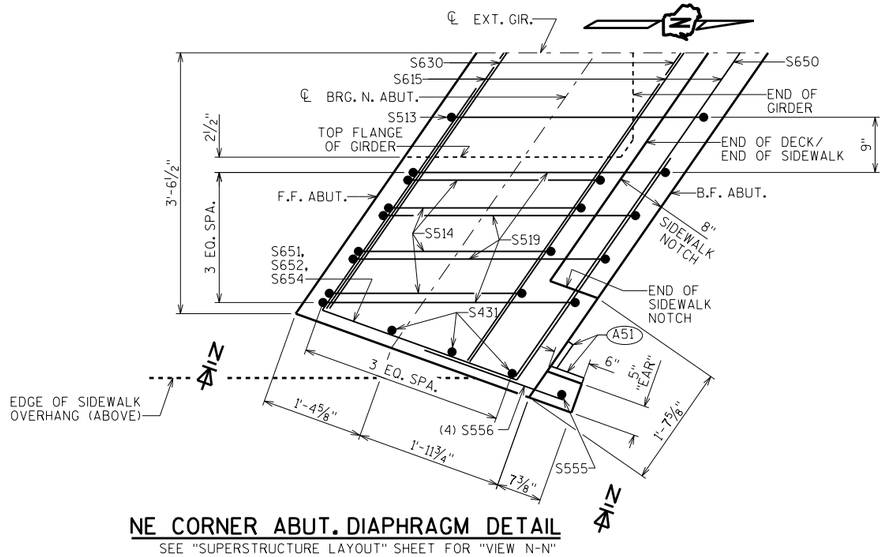
PARTIAL CROSS SECTION THRU EAST SIDE OF BRIDGE AT NORTH ABUT. DIAPHRAGM LOOKING NORTH

(SIDEWALK BARS NOT SHOWN FOR CLARITY)



SE CORNER ABUT. DIAPHRAGM DETAIL

SEE "SUPERSTRUCTURE LAYOUT" SHEET FOR "VIEW S-S"



NE CORNER ABUT. DIAPHRAGM DETAIL

SEE "SUPERSTRUCTURE LAYOUT" SHEET FOR "VIEW N-N"

(A51) 1" EXPANDED POLYSTYRENE FILLER BETWEEN WALL PANELS AND PANEL RETAINER EARS ON ABUTMENT/DIAPH. SEAL ALL EXPOSED SURFACES OF FILLER WITH GRAY NON-BITUMINOUS JOINT SEALER, 1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.

NOTE:
SEE SECTIONS A-A THRU C-C ON "ABUTMENT DIAPHRAGM DETAILS (WEST CORNERS)" SHEET FOR SIMILAR 'SECTION THRU' DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

DRAWN BY JPH | PLANS CK'D. CAD

ABUTMENT DIAPHRAGM DETAILS (EAST CORNERS)

SHEET 17

261

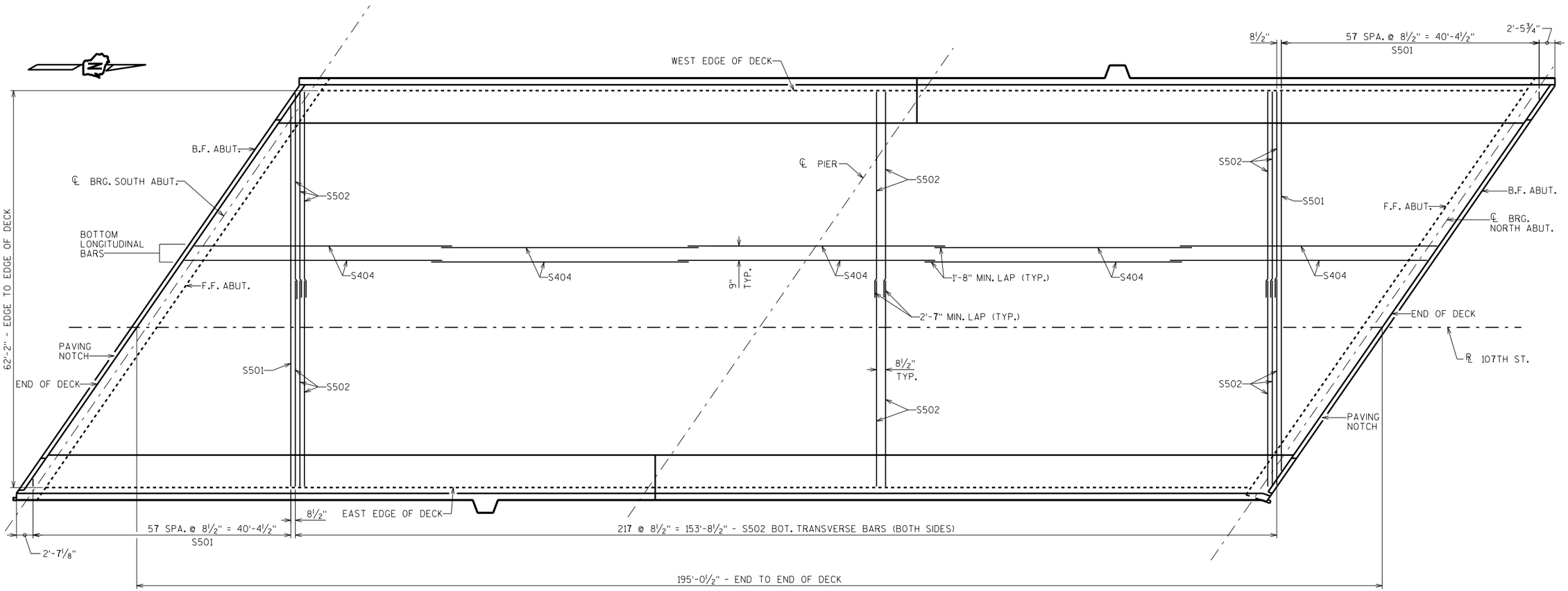
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8

STATE PROJECT NUMBER

1360-12-70



PLAN

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

DRAWN BY JPH | PLANS CK'D. CAD

DECK PLAN (BOTTOM STEEL REINFORCEMENT)

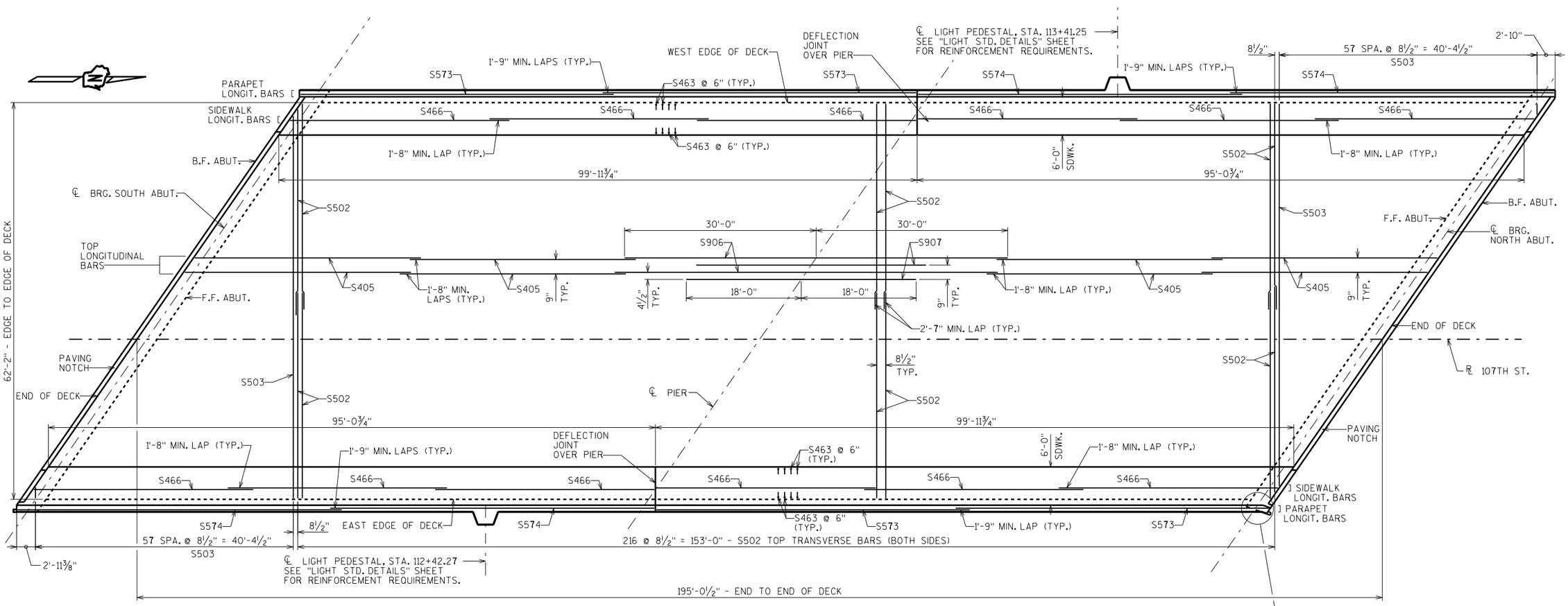
SHEET 18

262

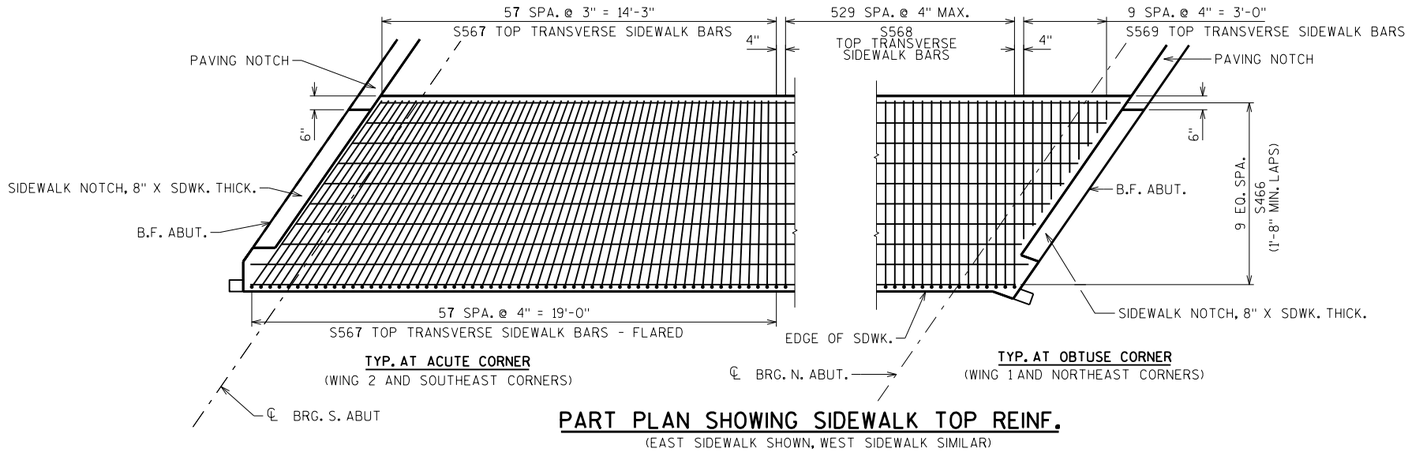
SCALE = 8.00

STATE PROJECT NUMBER

1360-12-70



PLAN

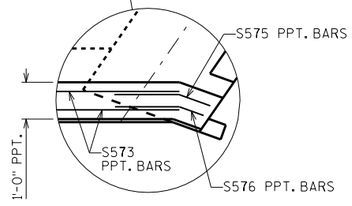


TYP. AT ACUTE CORNER
(WING 2 AND SOUTHEAST CORNERS)

TYP. AT OBTUSE CORNER
(WING 1 AND NORTHEAST CORNERS)

PART PLAN SHOWING SIDEWALK TOP REINF.

(EAST SIDEWALK SHOWN, WEST SIDEWALK SIMILAR)



8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

DRAWN BY JPH | PLANS CK'D. CAD

DECK PLAN (TOP STEEL REINFORCEMENT)

SHEET 19

263

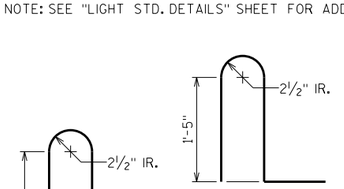
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BILL OF BARS

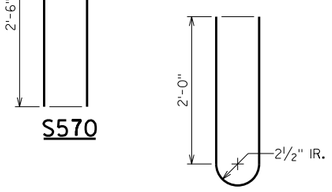
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	116	30'-3"		⚠	DECK-BOTTOM-TRANSVERSE-AT ENDS
S502	X	870	32'-3"			DECK-TOP & BOTTOM-TRANSVERSE
S503	X	116	30'-9"		⚠	DECK-TOP-TRANSVERSE-AT ENDS
S404	X	420	40'-4"			DECK-BOTTOM-LONGITUDINAL
S405	X	332	35'-5"			DECK-TOP-LONGIT.
S906	X	83	60'-0"			DECK-TOP-LONGITUDINAL-OVER PIER
S907	X	82	36'-0"			DECK-TOP-LONGITUDINAL-OVER PIER
S408	X	64	3'-8"	X		ABUT. DIAPHS.-F.F.-BOT.-VERT.-BTWN. BEAM SEATS
S409	X	32	3'-11"			ABUT. DIAPHS.-F.F.-BOT.-HORIZ.-BTWN. BEAM SEATS
S510	X	102	12'-11"	X		ABUT. DIAPHS.-VERTICAL-BELOW PAVING NOTCHES
S611	X	14	5'-3"			ABUT. DIAPHS.-F.F.-BOT.-HORIZ.-BTWN. GIRS.
S612	X	64	4'-11"			ABUT. DIAPHS.-F.F.-HORIZ.-BTWN. GIRS.
S513	X	36	10'-8"	X		ABUT. DIAPHS.-VERT.-UNDER GIR. TOP FLANGES
S514	X	125	6'-6"	X		ABUT. DIAPHS.-TOP-VERT.-BETWEEN PARAPETS
S615	X	20	41'-10"			ABUT. DIAPHS. B.F. & TOP-HORIZ.
S516	X	36	6'-0"			ABUT. DIAPHS.-HORIZ.-THRU GIRDERS
S617	X	4	1'-1"			ABUT. DIAPHS.-F.F.-BOT.-HORIZ.-ON EACH SIDE OF UTILITY BLOCKOUTS
S518	X	6	10'-10"	X		ABUT. DIAPHS.-VERTICAL-ABOVE UTILITY BLOCKOUTS
S519	X	17	14'-7"	X		ABUT. DIAPHRAGMS-VERT.-UNDER SIDEWALKS
S520		--	----			NOT USED
S521	X	1	15'-1"	X		SOUTH ABUT. DIAPHRAGM-VERT.-WEST CORNER
S522	X	1	16'-0"	X		SOUTH ABUT. DIAPHRAGM-VERT.-WEST CORNER
S523	X	1	7'-7"	X		SOUTH ABUT. DIAPHRAGM/SDWK.-VERT.-WEST CORNER
S524	X	1	8'-0"	X		SOUTH ABUT. DIAPHRAGM/SDWK.-VERT.-WEST CORNER
S625	X	2	3'-4"			ABUT. DIAPH.-BOT.-HORIZ.-F.F.-WEST CORNERS
S626	X	2	9'-5"	X		SOUTH ABUT. DIAPH.-HORIZ.-WEST CORNER
S627		--	----			NOT USED
S628		--	----			NOT USED
S629	X	1	7'-7"			SOUTH ABUT. DIAPHRAGM-TOP-B.F.-HORIZ.-WEST CORNER
S630	X	8	8'-2"			SIDEWALKS-ABOVE ABUT. DIAPHRAGMS-TOP-HORIZ.-FOUR CORNERS
S431	X	10	4'-3"			ABUT. DIAPH.-VERT.-ALL FOUR CORNERS
S532	X	1	14'-5"	X		NORTH ABUT. DIAPHRAGM-VERT.-WEST CORNER
S533	X	1	13'-6"	X		NORTH ABUT. DIAPHRAGM-VERT.-WEST CORNER
S534	X	1	7'-1"	X		NORTH ABUT. DIAPHRAGM/SDWK.-VERT.-WEST CORNER
S535	X	1	6'-8"	X		NORTH ABUT. DIAPHRAGM/SDWK.-VERT.-WEST CORNER
S636		--	----			NOT USED
S637	X	2	8'-1"	X		NORTH ABUT. DIAPH.-HORIZ.-WEST CORNER
S638		--	----			NOT USED
S639		--	----			NOT USED
S640	X	1	6'-6"			NORTH ABUT. DIAPHRAGM-TOP-B.F.-HORIZ.-WEST CORNER
S641	X	1	6'-8"			SOUTH ABUT. DIAPHRAGM-TOP-B.F.-HORIZ.-EAST CORNER
S542	X	1	14'-9"	X		SOUTH ABUT. DIAPHRAGM-VERT.-EAST CORNER
S543	X	1	13'-11"	X		SOUTH ABUT. DIAPHRAGM-VERT.-EAST CORNER
S544	X	1	7'-2"	X		SOUTH ABUT. DIAPHRAGM/SDWK.-VERT.-EAST CORNER
S545	X	1	6'-10"	X		SOUTH ABUT. DIAPHRAGM/SDWK.-VERT.-EAST CORNER
S646	X	1	3'-4"			SOUTH ABUT. DIAPH.-BOT.-HORIZ.-F.F.-EAST CORNER
S647	X	2	8'-0"	X		SOUTH ABUT. DIAPH.-HORIZ.-EAST CORNER
S648		--	----			NOT USED
S649		--	----			NOT USED
S650	X	1	7'-10"			NORTH ABUT. DIAPHRAGM-TOP-B.F.-HORIZ.-EAST CORNER
S651	X	1	7'-6"	X		NORTH ABUT. DIAPH.-BOT.-HORIZ.-EAST CORNER
S652	X	2	9'-10"	X		NORTH ABUT. DIAPH.-HORIZ.-EAST CORNER
S653		--	----			NOT USED
S654	X	1	5-6"	X		NORTH ABUT. DIAPH.-TOP-HORIZ.-AT NORTHEAST GIR. EXTERIOR CORNER ONLY
S555	X	2	2'-3"			ABUT. DIAPHRAGMS RETAINER EAR-VERT.-EAST CORNERS
S556	X	8	2-0"			ABUT. DIAPHRAGMS RETAINER EAR-HORIZ.-EAST CORNERS
S557	X	39	11'-1"	X		PIER DIAPHRAGM-VERT.-BTWN. GIRS.
S458	X	14	5'-3"			PIER DIAPHRAGM-BOT.-HORIZ.
S459	X	64	4'-7"			PIER DIAPHRAGM-HORIZ.
S560	X	16	10'-1"	X		PIER DIAPHRAGM-VERT.-UNDER GIR. TOP FLANGES
S461	X	4	1'-1"			PIER DIAPH.-BOT.-HORIZ.-ON EACH SIDE OF UTILITY BLOCKOUT
S562	X	2	9'-3"	X		PIER DIAPHRAGM-VERT.-ABOVE UTILITY BLOCKOUT
S463	X	1560	2'-6"	X		DECK/SIDEWALKS-VERT.-TRANSVERSE
S464		--	----			NOT USED
S465	X	264	2'-10"			SIDEWALKS-BOT.-TRANSVERSE
S466	X	156	34'-4"			SIDEWALKS-TOP & BOTTOM-LONGITUDINAL
S567	X	116	8'-0"	X	⚠	SIDEWALKS-TOP-TRANSVERSE-AT SOUTHEAST AND NORTHWEST CORNERS
S568	X	1060	7'-3"	X		SIDEWALKS-TOP-TRANSVERSE
S569	X	20	2'-11"		⚠	SIDEWALKS-TOP-TRANSVERSE-AT SOUTHWEST AND NORTHEAST CORNERS ONLY
S570	X	8	5'-9"	X		PARAPET-VERT.-2 PER CORNER @ ENDS
S571	X	466	4'-4"	X		SIDEWALKS/PARAPETS-VERTICAL
S572	X	474	4'-9"	X		PARAPETS-VERTICAL
S573	X	32	49'-2"			WEST PARAPET/SPAN 1 & EAST PARAPET/SPAN 2-LONGITUDINAL
S574	X	32	50'-9"			EAST PARAPET/SPAN 1 & WEST PARAPET/SPAN 2-LONGITUDINAL
S575	X	4	3'-8"	X		EAST PARAPET-LONGITUDINAL-INSIDE FACE-NORTH END
S576	X	4	3'-5"	X		EAST PARAPET-LONGITUDINAL-OUTSIDE FACE-NORTH END

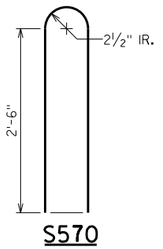
NOTE: SEE "LIGHT STD. DETAILS" SHEET FOR ADDITIONAL BARS REQUIRED AT LIGHT SUPPORTS.



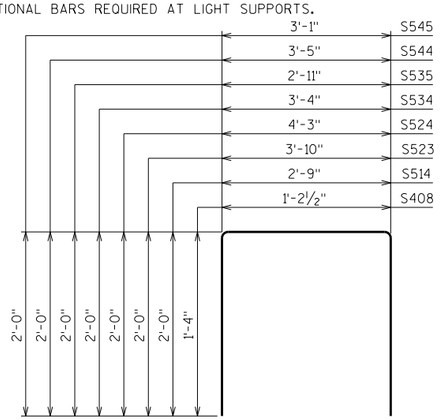
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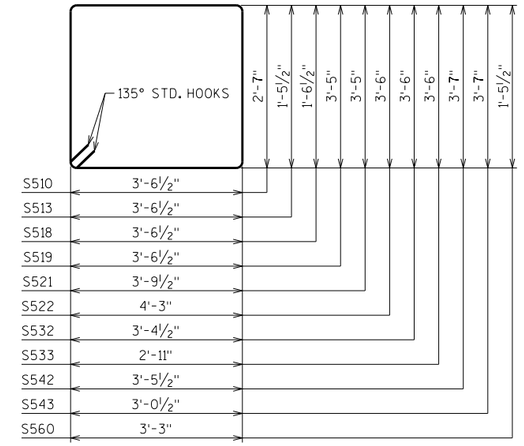
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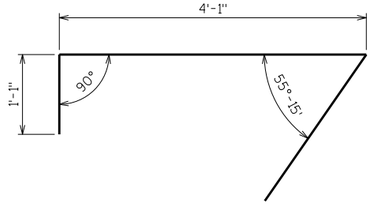
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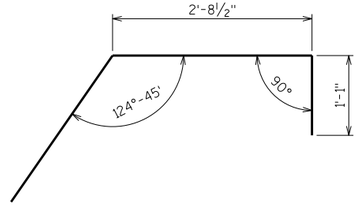
S408 S514 S523 S524
S534 S535 S544 S545



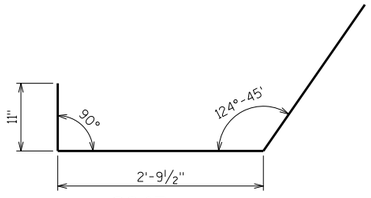
S510 S513 S518 S519 S521 S522
S532 S533 S542 S543 S560



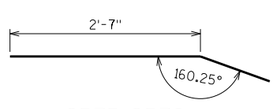
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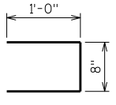
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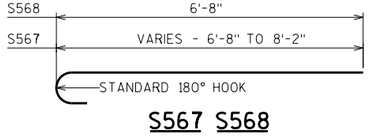
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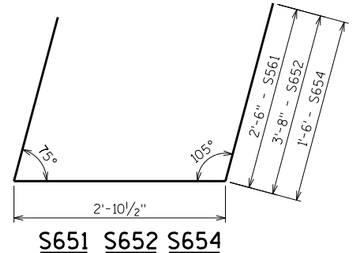
S575 S576



S463



S567 S568



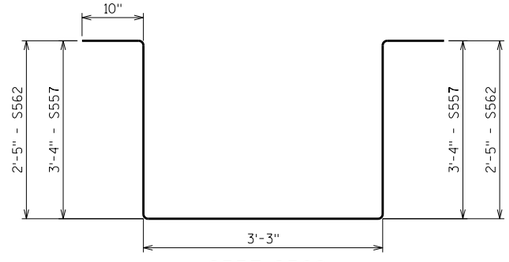
S651 S652 S654

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

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
S501	2 SERIES OF 58 BARS	1'-2" TO 59'-4"
S503	2 SERIES OF 58 BARS	1'-8" TO 59'-10"
S567	2 SERIES OF 58 BARS	7'-3" TO 8'-9"
S569	2 SERIES OF 10 BARS	0'-9" TO 5'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.



S557 S562

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1360-12-70

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STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

DRAWN BY JPH | PLANS CK'D. CAD

SUPERSTRUCTURE BAR DETAILS

SHEET 20

264

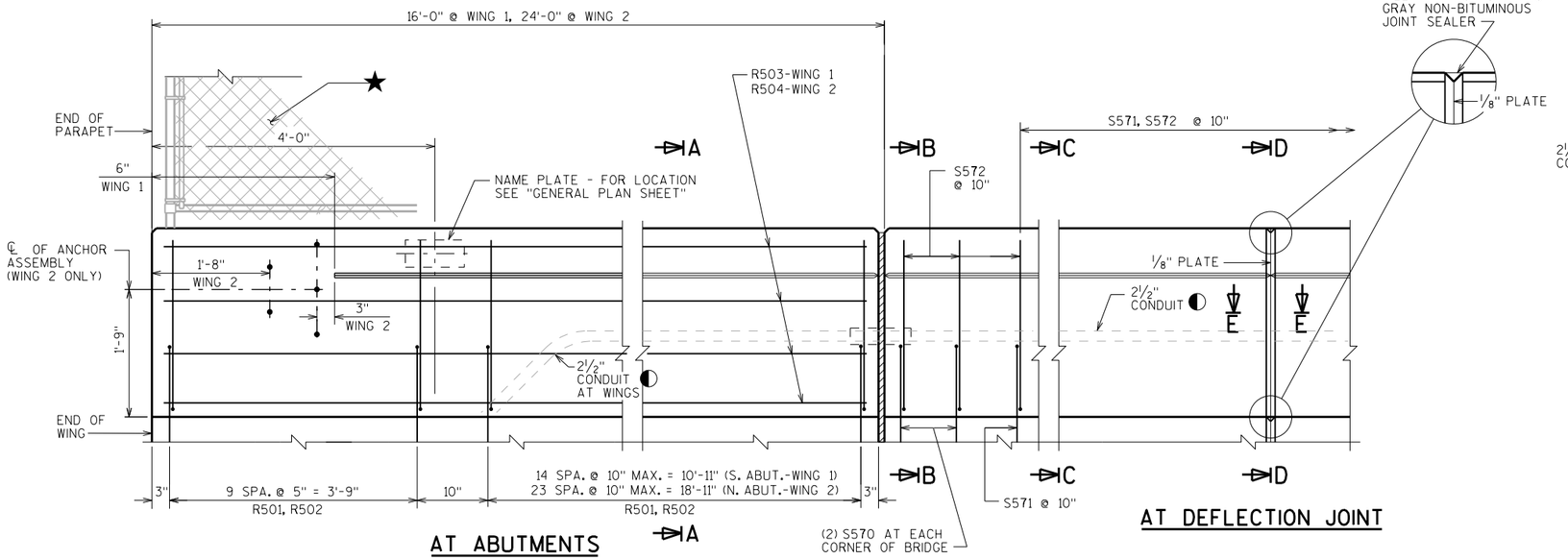
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STATE PROJECT NUMBER

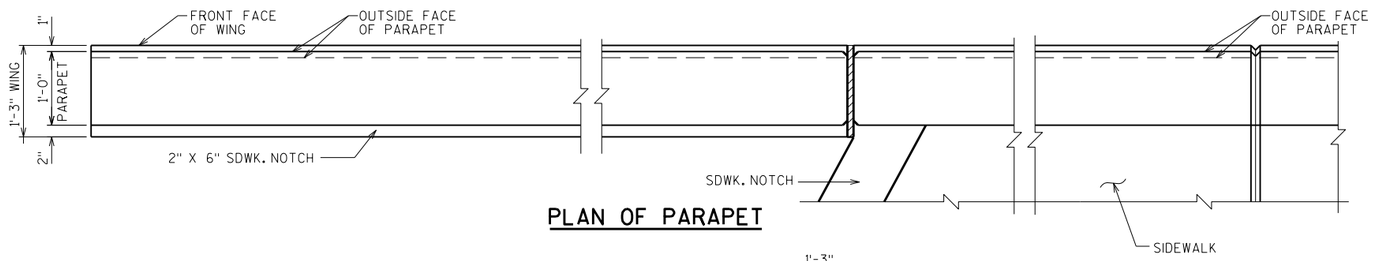
1360-12-70



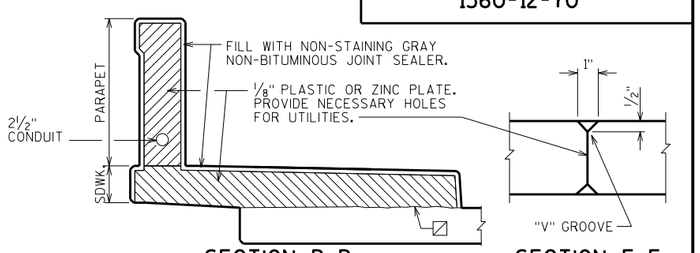
AT ABUTMENTS

AT DEFLECTION JOINT

INSIDE ELEVATION OF PARAPET



PLAN OF PARAPET

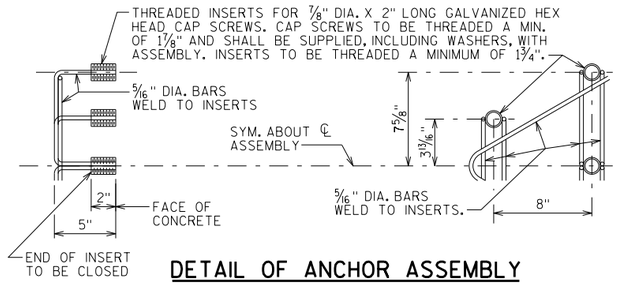


SECTION D-D

SECTION E-E

(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK.)

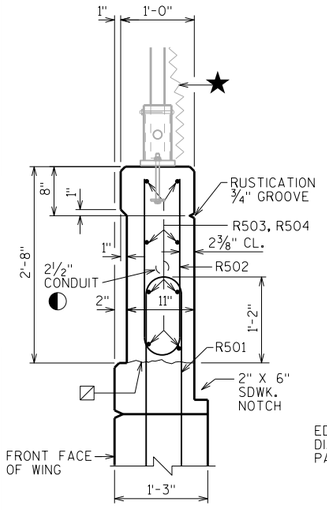
WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION B-B BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.



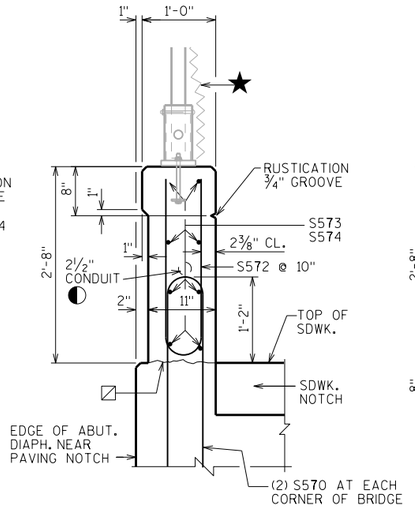
DETAIL OF ANCHOR ASSEMBLY

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

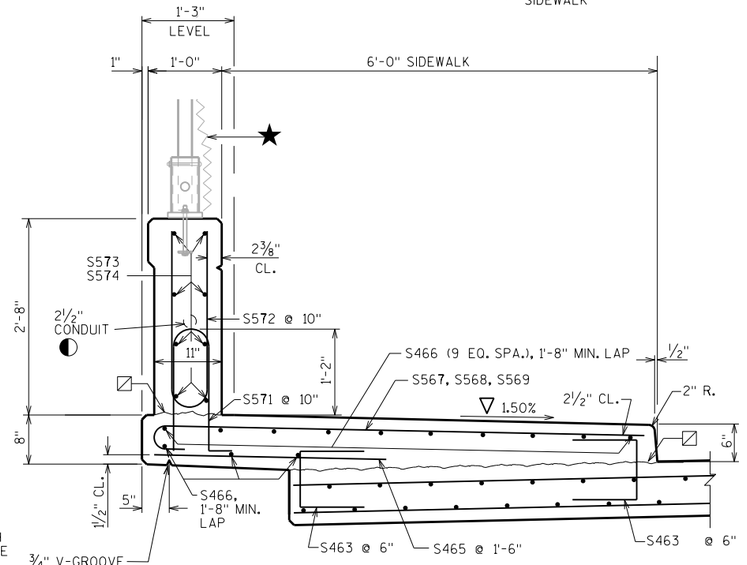
ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.



SECTION A-A

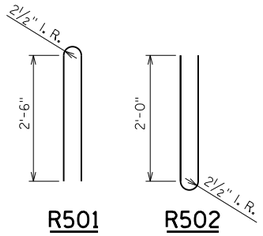


SECTION B-B AT SDWK. NOTCH

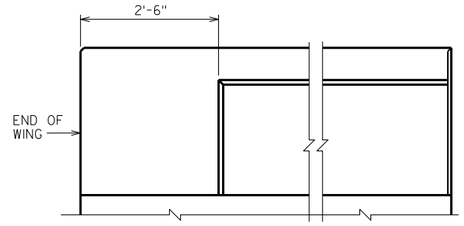


SECTION C-C

▽ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



R501 R502



OUTSIDE FACE OF PARAPET

◐ SEE "LIGHT STD. DETAILS" SHEET & "CONDUIT DETAILS" SHEET.

☒ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

★ SEE "FENCING DETAILS" SHEET FOR DETAILS.

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	49	5'-9"	X		PARAPET VERT.
R502	X	49	4'-9"	X		PARAPET VERT.
R503	X	8	15'-8"			PARAPET HORIZ. WING 1
R504	X	8	23'-8"			PARAPET HORIZ. WING 2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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VERTICAL FACE PARAPET "A"

SHEET 21

265

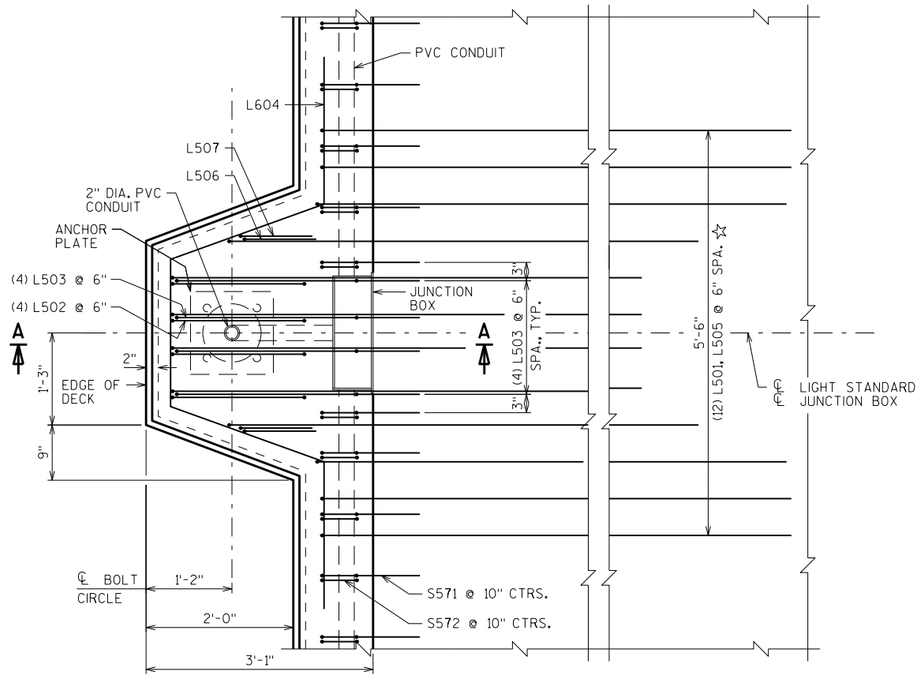
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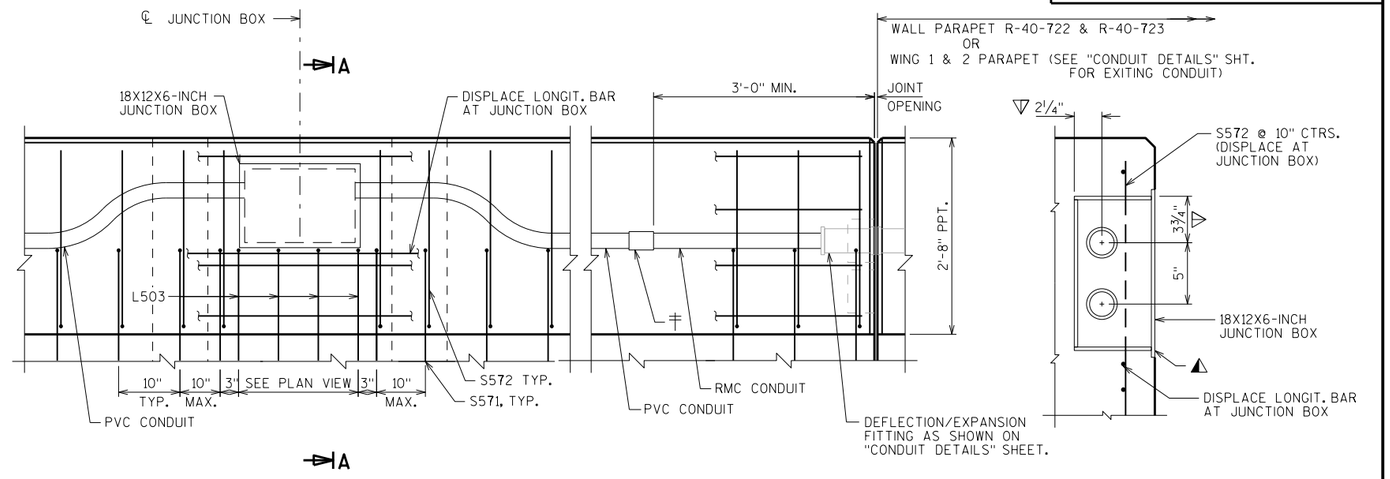
STATE PROJECT NUMBER

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PLAN AT LIGHT STANDARD

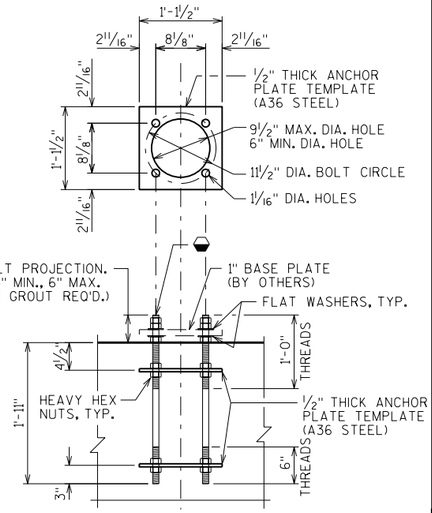
(DECK STEEL NOT SHOWN FOR CLARITY)



INSIDE ELEVATION AT JUNCTION BOX

(DECK STEEL NOT SHOWN FOR CLARITY)

JUNCTION BOX DETAIL



ANCHOR ROD ASSEMBLY DETAIL

(2 REQ'D.)

(4) - ANCHOR RODS REQUIRED PER ASSEMBLY

NOTE: BID ITEM SHALL BE "ANCHOR ASSEMBLIES POLES ON STRUCTURES", EACH

NOTES

CONDUIT SHALL BE EMBEDDED 2" CLEAR.

USE 2½" DIA. RIGID NONMETALLIC CONDUIT (PVC) UNLESS NOTED OTHERWISE.

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

PROVIDE JUNCTION BOXES FROM THE APPROVED PRODUCTS LIST.

SEE "CONDUIT DETAILS" SHEET FOR ADDITIONAL INFORMATION.

LEGEND

◐ CONSTRUCTION JOINT, STRIKE OFF AS SHOWN.

◭ CUT OUT ± 1" OF GASKET AT BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE.

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

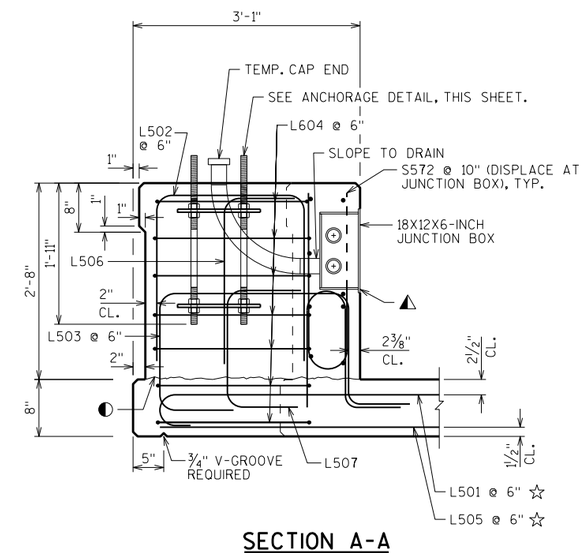
⫩ NONMETALLIC CONDUIT TO METALLIC CONDUIT ADAPTER FITTING (UL OR NRTL LISTED FOR ELECTRICAL USE SHALL BE USED).

PVC = POLYVINYL CHLORIDE (RIGID NONMETALLIC) CONDUIT

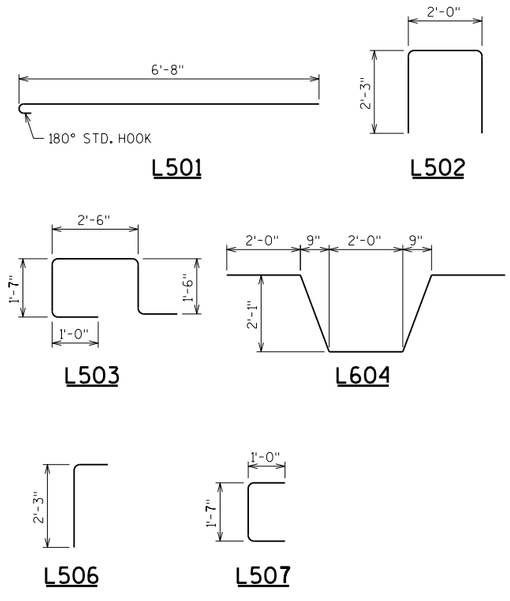
RMC = RIGID METALLIC CONDUIT

☆ THESE BARS ARE IN ADDITION TO STANDARD TRANSVERSE BARS IN SIDEWALK.

◒ 1" DIA. ANCHOR RODS ASTM F1554 GR 55, HEAVY HEX NUTS ASTM A563, AND WASHERS ASTM F436. ANCHOR ASSEMBLIES SHALL BE GALVANIZED PER SECTION 531 OF THE STANDARD SPECIFICATION. PROVIDE (2) WASHERS AND (7) NUTS PER ANCHOR ROD.



SECTION A-A



BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
L501	X	24	7'-3"	X		LIGHT STD. - TRANS. - SDWK. - TOP
L502	X	8	6'-3"	X		LIGHT STD. - VERT. - PARAPET
L503	X	8	7'-0"	X		LIGHT STD. - VERT. - PARAPET
L604	X	14	10'-3"	X		LIGHT STD. - HORIZ. - PARAPET
L505	X	24	6'-8"			LIGHT STD. - TRANS. - SDWK. - BOT
L506	X	4	3'-2"	X		LIGHT STD. - VERT. - PARAPET
L507	X	4	3'-4"	X		LIGHT STD. - VERT. - PARAPET

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

DRAWN BY: WWR | PLANS CK'D.: CAD

LIGHT STD. DETAILS

SHEET 22

266

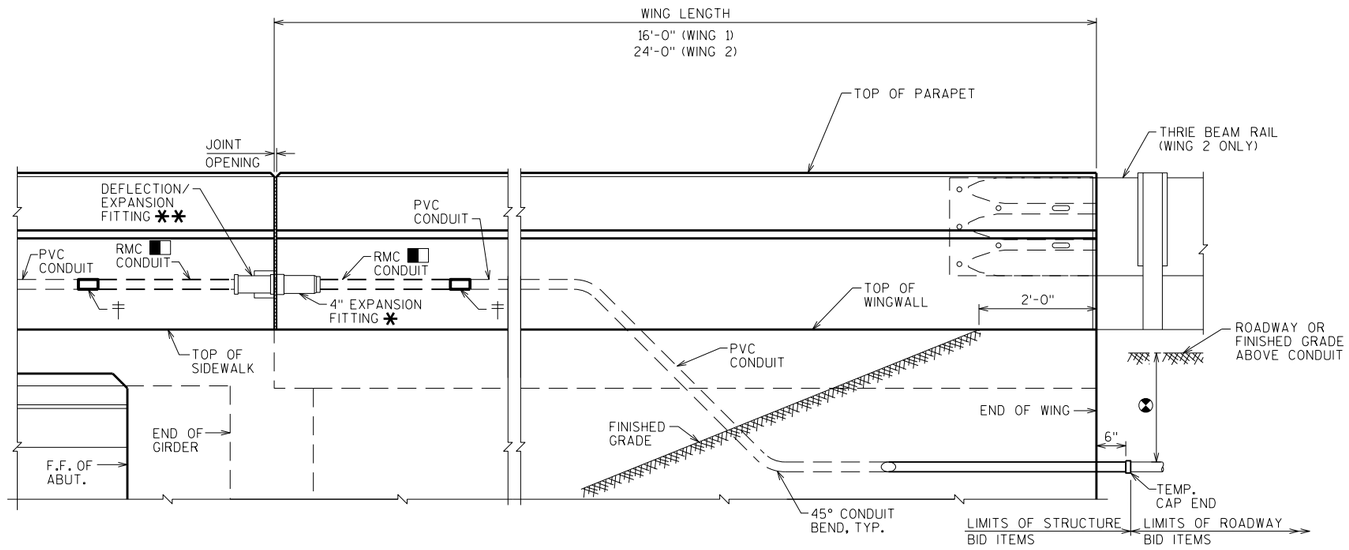
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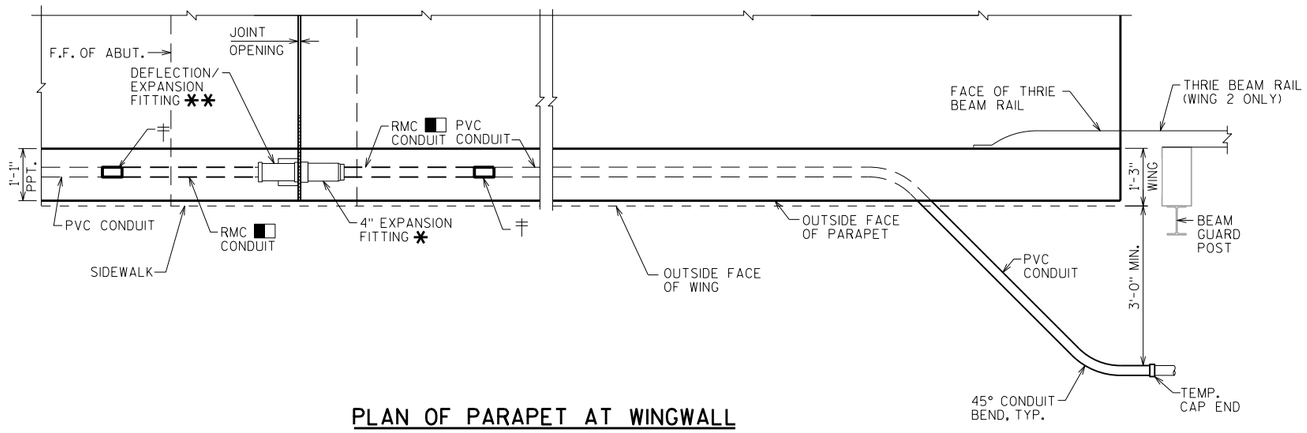
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STATE PROJECT NUMBER

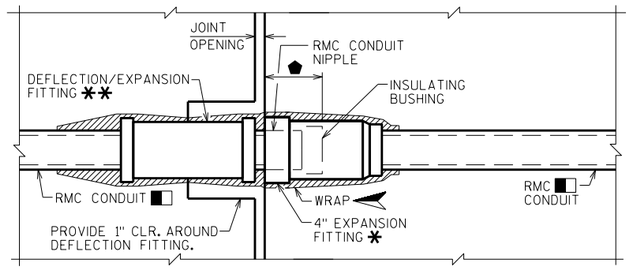
1360-12-70



OUTSIDE ELEVATION OF PARAPET AT WINGWALL



PLAN OF PARAPET AT WINGWALL



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

LEGEND

- ■ USE 2½" 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 - ¼" 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.
- ⊖ 2'-0" MIN. CONDUIT COVER UNDER ROADWAYS, 1'-6" OTHERWISE. CONDUIT COVER SHOULD NOT EXCEED 3'-0".
- * EXPANSION FITTING REQUIREMENTS (IF USED):
  - 4" TOTAL MOVEMENT WITH BONDING JUMPER
- ** DEFLECTION/EXPANSION FITTING REQUIREMENTS (IF USED):
  - UP TO ¾" CONDUIT CONTRACTION OR EXPANSION AND UP TO 30° OF ANGULAR MISALIGNMENT IN ANY DIRECTION WITH BONDING JUMPER

NOTES

CONDUIT SHALL BE EMBEDDED 2" CLEAR.

USE 2½" 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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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CONDUIT DETAILS

SHEET 23

267

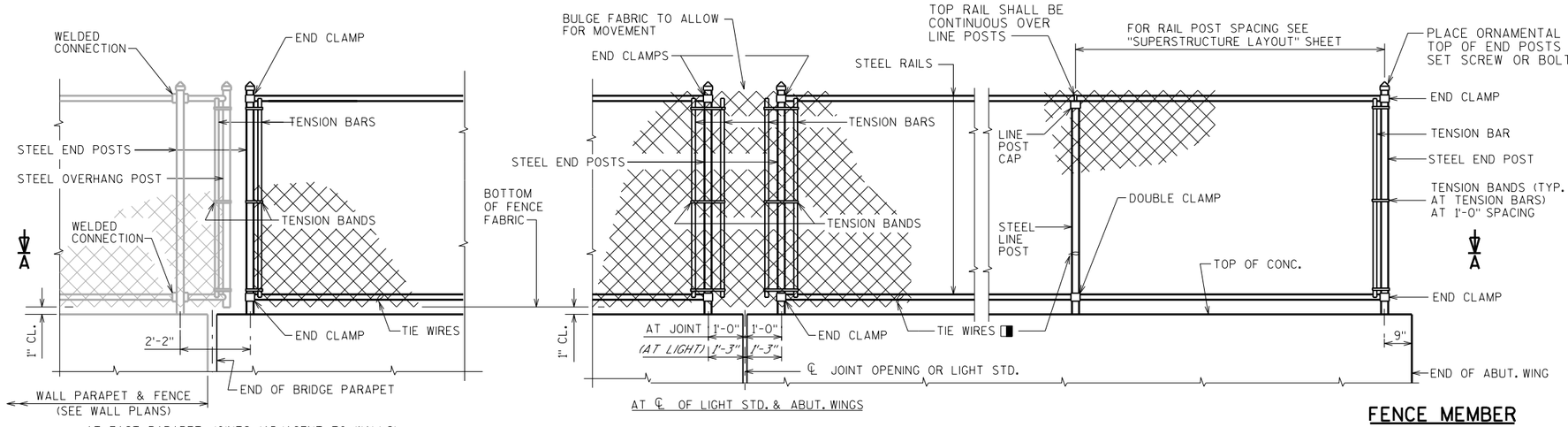
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STATE PROJECT NUMBER

1360-12-70



FENCE PART ELEVATION

VIEWING FABRIC SIDE

NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL, EXCEPT THE FENCE FABRIC WHICH MAY BE ALUMINUM-COATED STEEL OR GALVANIZED STEEL.

FABRIC SHALL CONFORM TO ASTM A491 OR A392, CLASS 2. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626.

THE BID ITEM SHALL BE "FENCE CHAIN LINK 6-FT. B-40-1004"

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

◪ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

◭ 1/2" DIA. X 6 7/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER.✪

✪ ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHORS 1/2-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS, AND BE FULLY THREADED ROD. ASTM F1554-GRADE 36(MIN.)

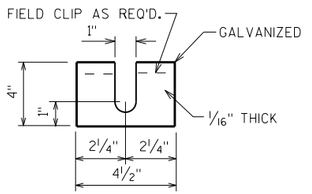
◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◥ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.

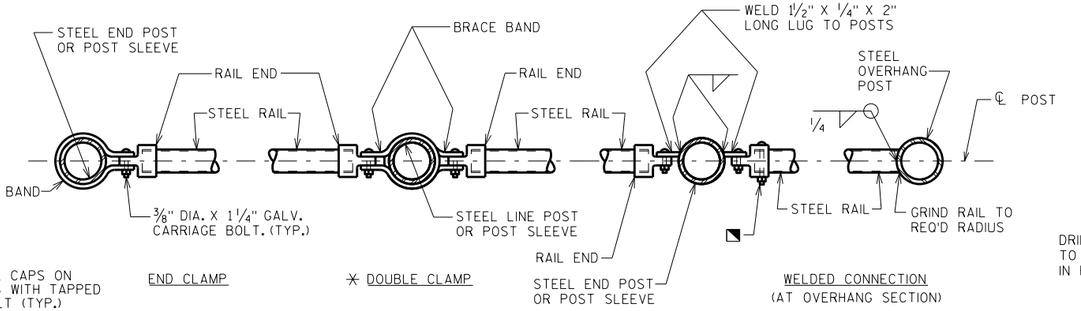
FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12



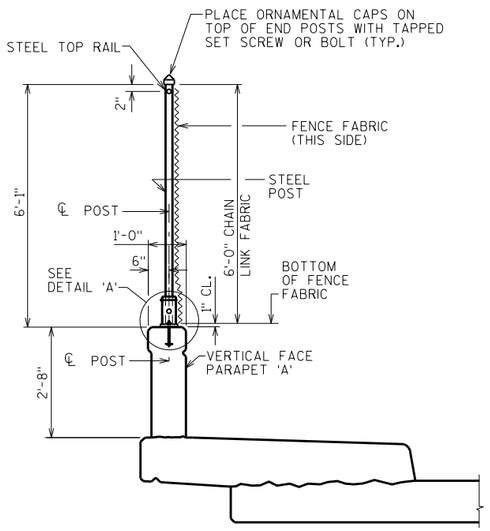
POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.

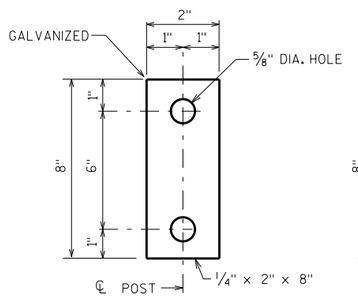


SECTION A-A

NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS

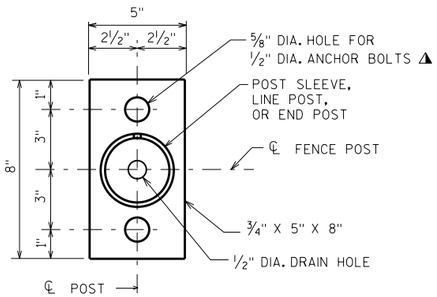


SECTION THRU FENCE

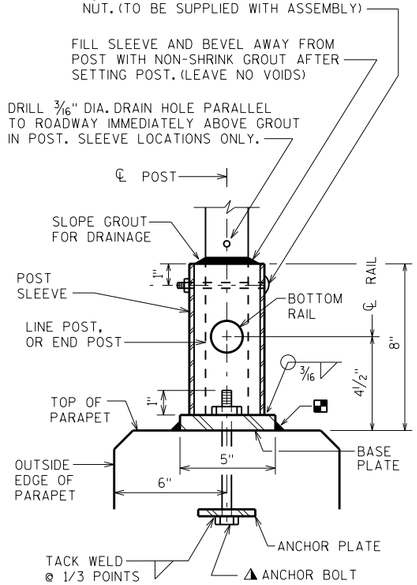


ANCHOR PLATE

✪NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.



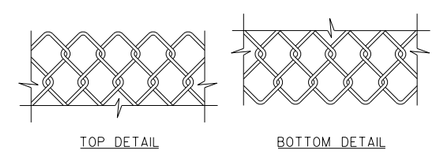
BASE PLATE



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.



FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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FENCING DETAILS

SHEET 24

268

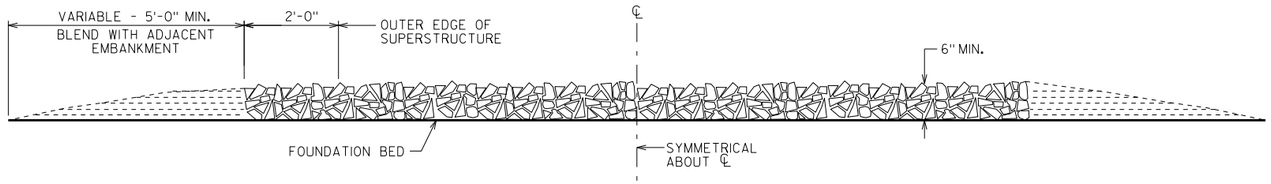
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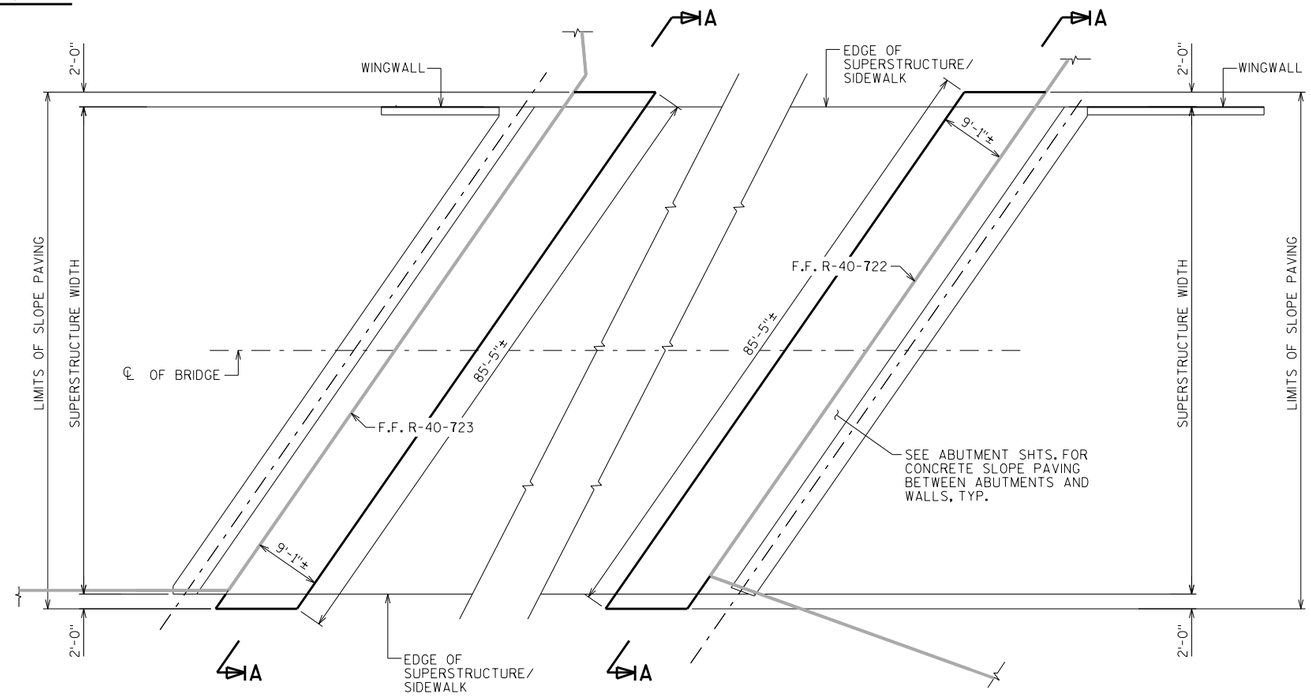
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STATE PROJECT NUMBER

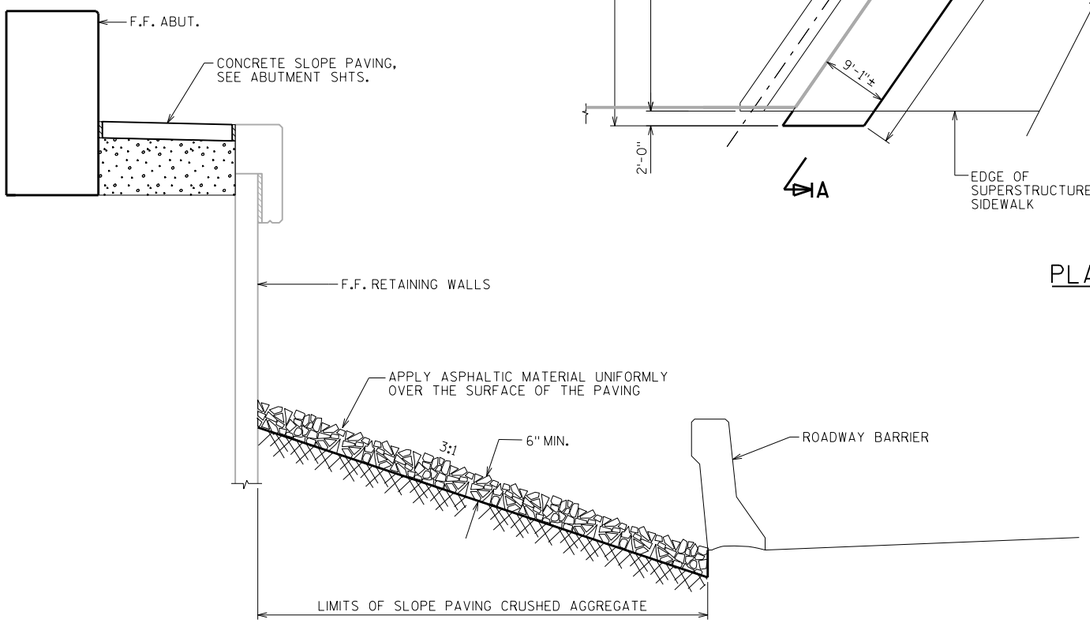
1360-12-70



SECTION A-A



PLAN



TYPICAL SECTION

NOTES

BID ITEM SHALL BE "SLOPE PAVING CRUSHED AGGREGATE"

WOOD FORMS MAY BE LEFT IN PLACE WHEN OF A QUALITY ACCEPTABLE TO THE ENGINEER.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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SLOPE PAVING (CRUSHED AGGREGATE)

SHEET 25

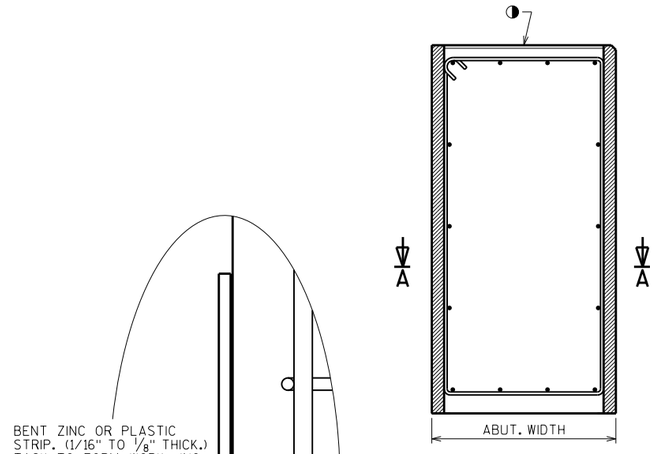
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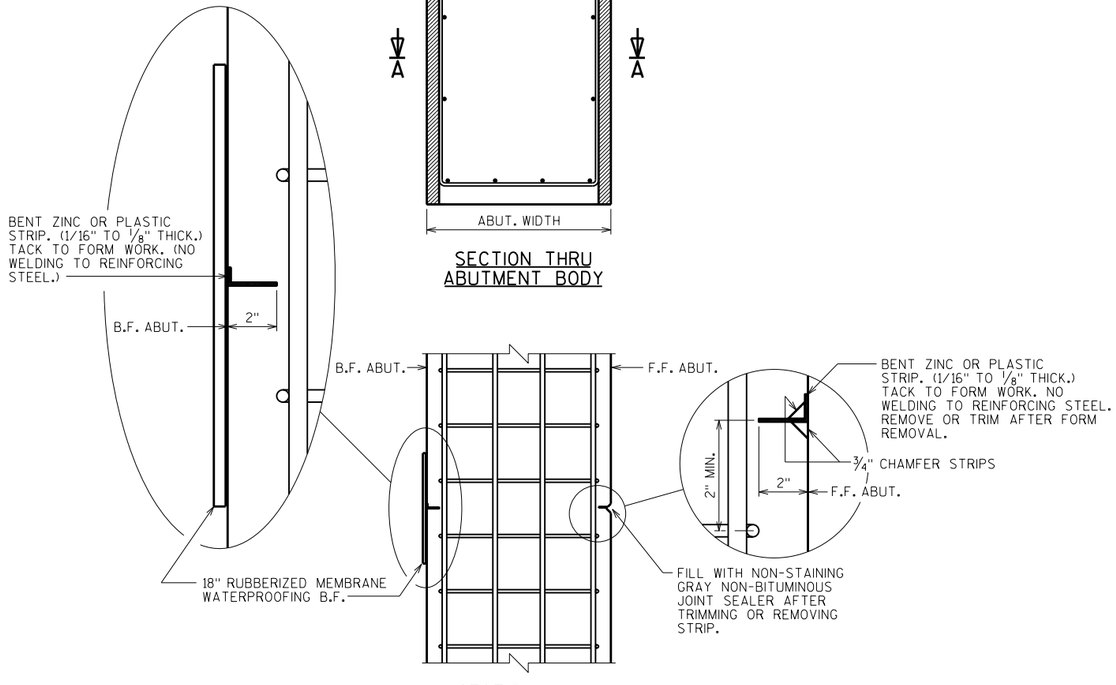
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STATE PROJECT NUMBER
1360-12-70



SECTION THRU ABUTMENT BODY



SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

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.

SAW CUTTING JOINT IS NOT ALLOWED.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-40-1004

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ALTERNATE CONSTRUCTION JOINT

SHEET 26

270

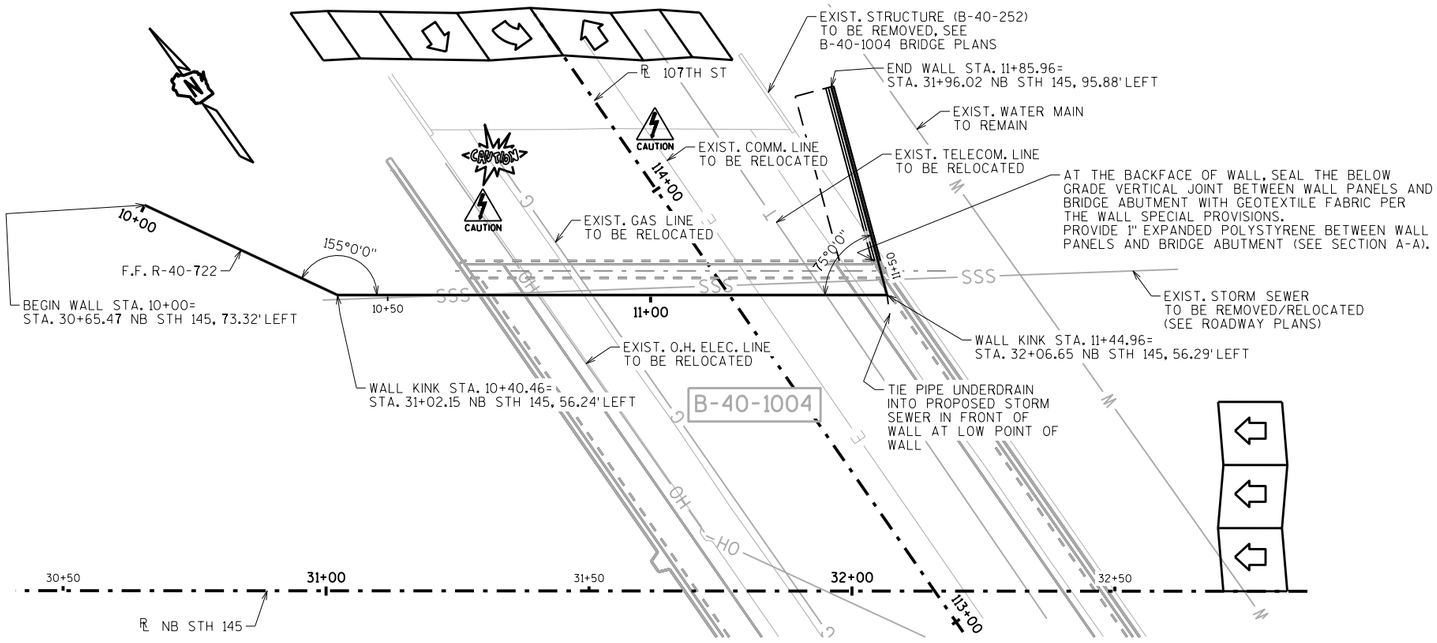
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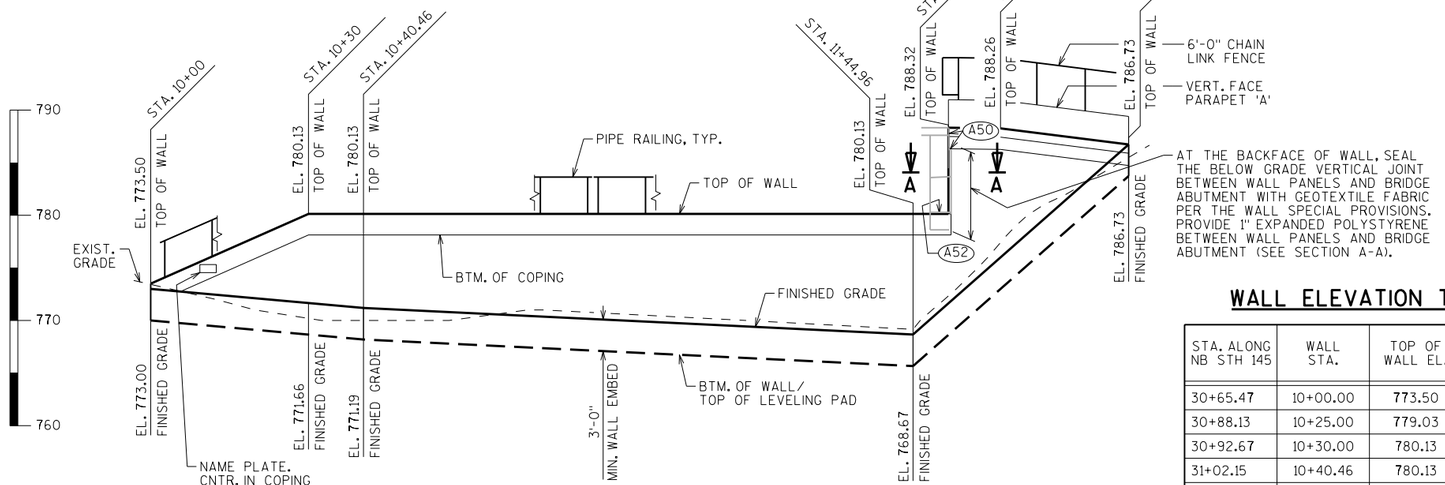
STATE PROJECT NUMBER

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WALL PLAN

MSE RETAINING WALL



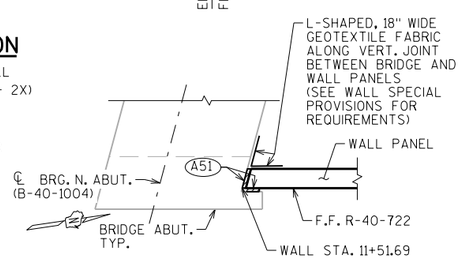
WALL ELEVATION

LOOKING AT F.F. OF WALL
(VERTICAL EXAGGERATION - 2X)

(A50) 1½" VERTICAL FILLER AND ¾" HORIZ. FILLER BETWEEN BRIDGE ELEMENTS AND RETAINING WALL ANCHOR SLAB COPING. SEAL ALL EXPOSED SURFACES OF FILLER WITH GRAY NON-BITUMINOUS JOINT SEALER, 1-INCH DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

(A51) 1" EXPANDED POLYSTYRENE FILLER BETWEEN WALL PANELS AND ABUT. SEAL EXPOSED FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, 1-INCH DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

(A52) 2" PREFORMED HORIZONTAL & VERT. FILLER BETWEEN WALL COPING AND ABUT. SEAL EXPOSED FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, 1-INCH DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.



SECTION A-A

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-722."

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL SHALL BE DESIGNED USING ELEVATIONS GIVEN ON THIS SHEET.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE LOAD OF 240 PSF.

THE DESIGN OF THE WALL IN FRONT OF THE ABUTMENT SHALL INCLUDE THE HORIZONTAL EARTH LOADS AND 240 PSF LIVE LOAD SURCHARGE ACTING ON THE BACK OF THE ABUTMENT BELOW THE BEAM SEATS.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

MATERIAL PROPERTIES:

CONCRETE MASONRY: CAST-IN-PLACE COPING ——— f'c = 3,500 P.S.I.
ANCHOR SLAB AND PARAPET ——— f'c = 4,000 P.S.I.

BAR STEEL REINFORCEMENT: GRADE 60 ——— fy = 60,000 P.S.I.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
209.2500	BACKFILL GRANULAR GRADE 2	TON	638
502.3200	PROTECTIVE SURFACE TREATMENT	SY	2
502.3210	PIGMENTED SURFACE SEALER	SY	14
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	15
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1725
513.2001	RAILING PIPE	LF	146
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	200
652.0130	CONDUIT RIGID METALLIC 2 1/2-INCH	LF	3
652.0230	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH	LF	35
SPV.0090	FENCE CHAIN LINK 6-FT. R-40-722	LF	34
SPV.0165	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-722	SF	2210
	NON-BID ITEMS		
	EXPANDED POLYSTYRENE	SIZE	1"
	FILLER	SIZE	¾", 1½", 2"
	NON-BITUMINOUS JOINT SEALER		

WALL ELEVATION TABLE

STA. ALONG NB STH 145	WALL STA.	TOP OF WALL EL.	FINISHED GRADE EL.
30+65.47	10+00.00	773.50	773.00
30+88.13	10+25.00	779.03	771.88
30+92.67	10+30.00	780.13	771.66
31+02.15	10+40.46	780.13	771.19
31+11.69	10+50.00	780.13	770.94
31+36.69	10+75.00	780.13	770.35
31+61.69	11+00.00	780.13	769.75
31+86.69	11+25.00	780.13	769.15
32+06.65	11+44.96	780.13	768.67
32+05.34	11+50.00	780.13	770.89
32+04.90	11+51.68	780.13	771.63
32+04.90	11+51.69	788.32	771.63
32+02.31	11+61.59	788.26	776.00
31+98.86	11+75.00	787.42	781.90
31+96.02	11+85.96	786.73	786.73

LIST OF DRAWINGS

1. GENERAL PLAN
2. TYPICAL SECTIONS
3. WALL DETAILS
4. ANCHOR SLAB
5. CONDUIT DETAILS
6. FENCING DETAILS
7. PIPE RAILING
8. SUBSURFACE EXPLORATION

STRUCTURE DESIGN CONTACTS:

CHRISTOPHER DOLL (608) 266-3229
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED LLS 2/28/22
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE R-40-722

WALL ALONG STH 145 NB AT 107TH ST

COUNTY	CITY
MILWAUKEE	MILWAUKEE

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	CAD	DESIGNED CK'D.	ARC	DRAWN BY	CAD	PLANS CK'D.	ARC

GENERAL PLAN

SHEET 1 OF 8

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I.D. 1360-12-00D DATE: NOV. 2021

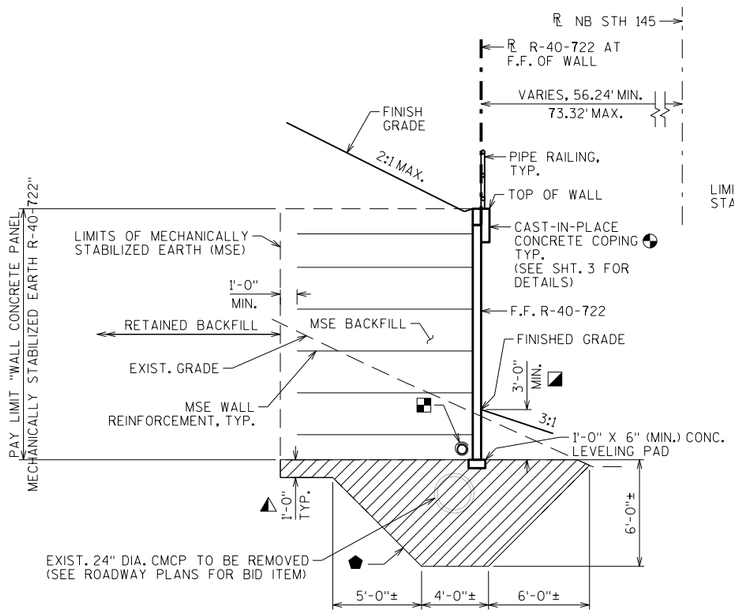
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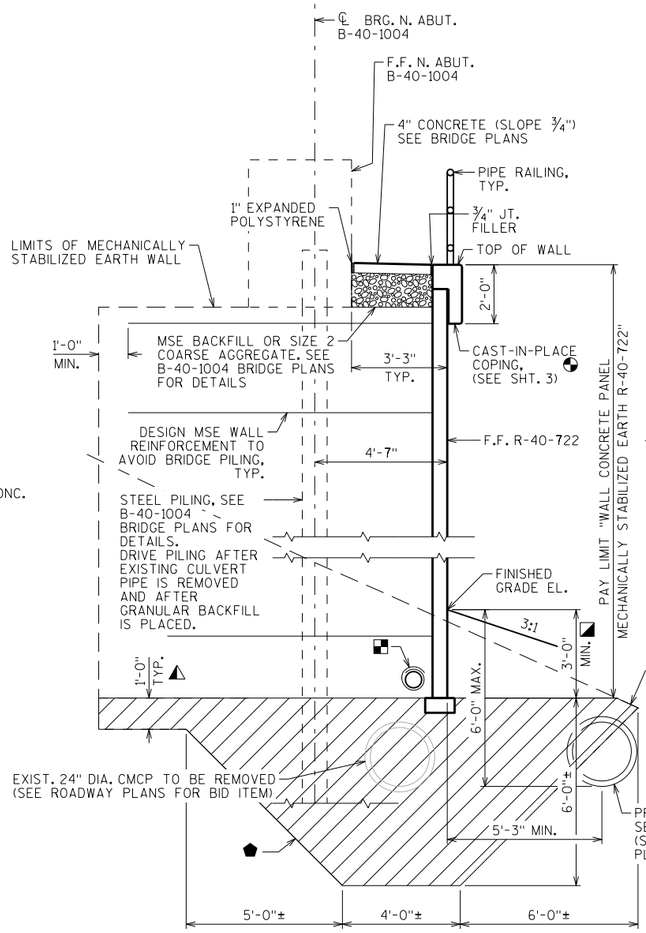
STATE PROJECT NUMBER

1360-12-70



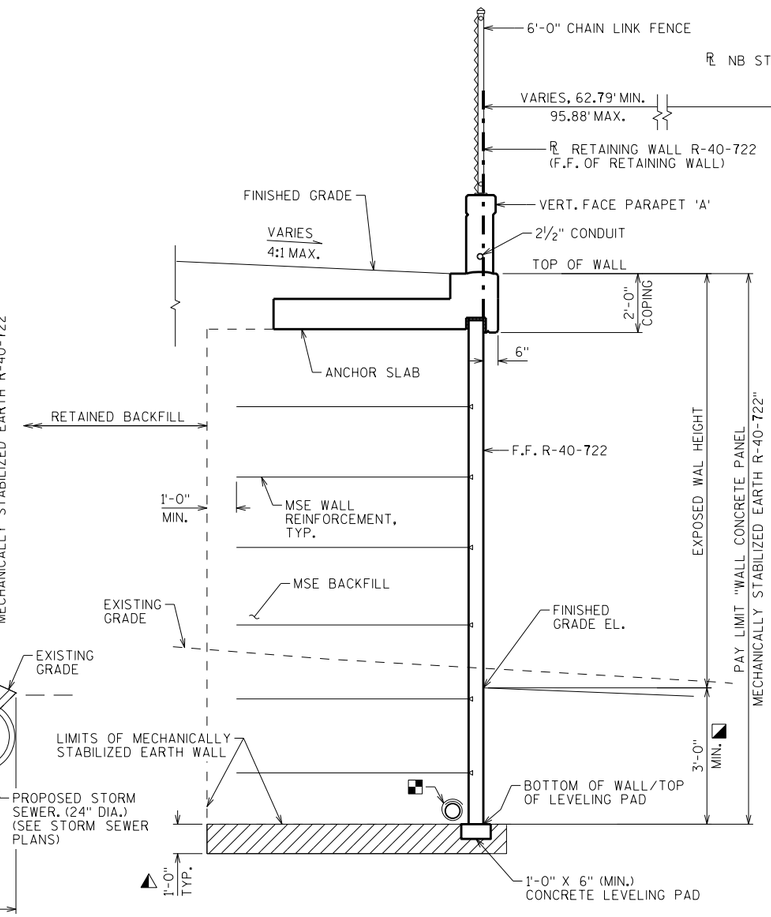
TYPICAL SECTION THRU MSE RETAINING WALL

WALL STA. 10+00 TO 10+64.96



TYPICAL SECTION AT ABUTMENT

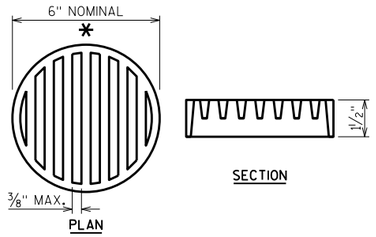
WALL STA. 10+64.96 TO 11+51.69



TYPICAL SECTION AT ANCHOR SLAB

WALL STA. 11+51.69 TO 11+85.96

- ⚠ OVER-EXCAVATE 1'-0" MIN. BELOW WALL LIMITS/REINFORCED ZONE IN AREAS OUTSIDE OF EXISTING CULVERT PIPE. EXTEND THIS OVER-EXCAVATION A MINIMUM OF 6" BEYOND THE FRONT OF THE LEVELING PAD. REPLACE WITH "BACKFILL GRANULAR GRADE 2". OVER-EXCAVATION CONSIDERED INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-722" BID ITEM.
- ⬟ REMOVE LOOSE AND POORLY COMPACTED CULVERT PIPE BACKFILL AND SOFT CLAYS BELOW PIPE. REPLACE WITH "BACKFILL GRANULAR GRADE 2" BELOW THE WALL AS DIRECTED BY ENGINEER TO 5'-0" OUTSIDE OF THE WALL EXTENTS/FRONT FACE. DIMENSIONS SHOWN ARE APPROXIMATE AND ARE USED FOR QUANTITY PURPOSES ONLY, AND MAY VARY FROM ACTUAL CONDITIONS ENCOUNTER. OVER-EXCAVATION CONSIDERED INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-722" BID ITEM.
- ◪ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED IF OUTFALL IS EXPOSED.
- ◔ COST OF C.I.P. COPING AND REINFORCING SHALL BE INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-722"
- ◪ MINIMUM EMBEDMENT BASED ON SITE SPECIFIC PARAMETERS. FIELD EMBEDMENTS SHALL MEET OR EXCEED THE MINIMUM EMBEDMENT. FIELD EMBEDMENTS BELOW MINIMUM EMBEDMENT SHALL NOT BE INCLUDED IN THE PAY LIMITS.



RODENT SHIELD DETAIL

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

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-40-722

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TYPICAL SECTIONS

SHEET 2

272

SCALE = 14.00

8

8

SOIL PARAMETERS

STRATUM LOCATIONS & SOIL DESCRIPTIONS	FRICTION ANGLE (DEGREES)	COHESION (PSF)	UNIT WEIGHT (PCF)
GRANULAR BACKFILL - WITHIN THE WALL REINFORCED ZONE	30	0	120
RETAINED SOIL - EXISTING CLAY EMBANKMENT (CLAY FILL)	29	0	125
BORING 3 - (FOR WALL STA 10+50, 10+75)			
ENGINEERED GRANULAR BACKFILL (SPECIAL COMPACTION) AFTER EBS OF SOFT CLAY BELOW BOTTOM OF WALL FACE AND REINFORCED ZONE (ELEVATION 768.8± FEET - 759.8± FEET)	32	0	120
LEAN CLAY, GRAY, TRACE SAND (ELEVATION 759.8± FEET - 748.8 FEET)	0 (ST) 30 (LT)	2,500 (ST) 0 (LT)	125
FINE SAND, BROWNISH GRAY, LITTLE SILT, SCATTERED THIN SILT SEAMS AND SILT, GRAY, FEW SAND, TRACE GRAVEL, SC. THIN FINE SAND SEAMS (ELEVATION 748.8 FEET - 734.8 FEET)	36	0	125
SANDY SILT, GRAY (ELEVATION 734.8 FEET - 724.8 FEET)	38	0	130
LEAN CLAY, GRAY, TRACE SAND, SC. SILT SEAMS (ELEVATION 724.8 FEET - 719.8 FEET)	0 (ST) 30 (LT)	3,000 (ST) 0 (LT)	130
FINE TO MEDIUM SAND, GRAY, FEW SILT (ELEVATION 719.8 FEET - 714.8 FEET)	36	0	130
LEAN CLAY, GRAY, FEW SAND, TRACE GRAVEL (ELEVATION 714.8 FEET - 704.8 FEET)	0 (ST) 31 (LT)	4,500 (ST) 0 (LT)	135
FINE TO MEDIUM SAND, GRAY, TRACE TO FEW SILT, SC. BOULDERS (ELEVATION 704.8 FEET - 698.8 FEET)	38	0	130
LEAN CLAY, GRAY, FEW SAND, TRACE TO FEW GRAVEL (ELEVATION 698.8 FEET - 687.8 FEET)	0 (ST) 31 (LT)	4,500 (ST) 0 (LT)	135
BORING 4 - (FOR WALL STA 11+50, 11+51.69)			
LEAN CLAY, BROWN/DARK BROWN, SOME SAND, FEW GRAVEL, TRACE ROOTS/ORGANICS (FILL) (ELEVATION 788.3 FEET - 782.4 FEET)	0 (ST) 29 (LT)	2,000 (ST) 0 (LT)	120
LEAN CLAY, BROWN TO BROWN/GRAY (MOTTLED), TRACE SAND AND GRAVEL (ELEVATION 782.4 FEET - 773.9 FEET)	0 (ST) 30 (LT)	2,250 (ST) 0 (LT)	125
LEAN CLAY, GRAY, TRACE SAND AND GRAVEL (ELEVATION 773.9 FEET - 744.4 FEET)	0 (ST) 30 (LT)	2,250 (ST) 0 (LT)	125
SANDY SILT, GRAY, SCATTERED THIN FINE SAND SEAMS (ELEVATION 744.4 FEET - 732.9 FEET)	33	0	125

NOTES: LT = LONG-TERM STRENGTH PARAMETER
ST = SHORT-TERM STRENGTH PARAMETER

WALL EXTERNAL STABILITY EVALUATION

DIMENSIONS				
WALL HEIGHT (FEET) [1]	12.2	12.8	12.2	19.7
EXPOSED WALL HEIGHT (FEET)	9.2	9.8	9.2	16.7
FEATURE BEHIND WALL	2H:1V SLOPE	ABUTMENT	ABUTMENT	ROAD
LENGTH OF REINFORCEMENT (FEET) [2]	16.3	17.9	17.4	13.85
LENGTH OF REIN./WALL HT.	1.34	1.40	1.42	0.71
WALL STATION	10+50	10+75	11+50	11+51.69
BORING USED	3	3	4	4
CAPACITY TO DEMAND RATIO (CDR) [6]				
SLIDING (CDR > 1.0) [5]	1.13	1.09	1.07	1.10
ECCENTRICITY (CDR > 1.0)	3.55	1.57	1.51	1.36
GLOBAL STABILITY (CDR > 1.0) [4]	--	1.02 (LT) 2.23 (ST)	--	--
BEARING RESISTANCE (CDR > 1.0)	1.0	1.0	1.0	1.0
REQUIRED BEARING RESISTANCE (PSF)	4,100	4,200	4,000 [5]	5,400
ESTIMATED SETTLEMENT (IN.)	1.5	1.4	2.0	2.0

1. THE TOTAL WALL HEIGHT INCLUDES AN EMBEDMENT OF 3.0 FEET.
2. THE LENGTH OF REINFORCEMENT IS THE MINIMUM REQUIRED LENGTH.
3. REINFORCEMENT LENGTH CONTROLLED BY MINIMUM REINFORCEMENT CRITERIA OF 0.7H OR 8 FEET.
4. CDR FOR GLOBAL STABILITY BASED ON RESISTANCE FACTOR (PHI) OF 0.65.
5. SLIDING CDR (OR REQ'D BEARING RESISTANCE) ASSUMES 1 FOOT OF CLAY WILL BE REMOVED BELOW THE REINFORCED ZONE AND REPLACED WITH COMPACTED GRANULAR BACKFILL.
6. CDR REQUIREMENTS AND LOAD & RESISTANCE FACTORS ARE PRESENTED IN CHAPTER 14 OF THE BRIDGE MANUAL.

NOTE:
FOR ADDITIONAL ASSUMPTIONS USED IN THE WALL EXTERNAL STABILITY EVALUATION, SEE THE GEOTECHNICAL SITE INVESTIGATION REPORT FOR R-40-722.

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GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS OTHERWISE SHOWN OR NOTED.

ALL BAR STEEL IN CAST-IN-PLACE CONCRETE COPING SHALL BE EPOXY COATED.

ALL WALL STATIONING AND OFFSETS ARE GIVEN AT THE FRONT FACE OF THE WALL (R-40-722).

EXPANSION AND CONTRACTION JOINT LOCATIONS AND DIMENSIONS ARE FOR INFORMATIONAL USE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE JOINTS.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-722" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF WALL TO THE TOP OF LEVELING PAD, SET A CONSTANT DEPTH OF 3'-0" BELOW FINISHED GRADE.

THE SOIL AT THE BASE OF THE WALL SHOULD BE REVIEWED BY SOUTHEAST REGION WAUKESHA OFFICE SOILS ENGINEER TO DETERMINE IF THE SOILS HAVE ADEQUATE STRENGTH TO SUPPORT THE MSE WALL WITH PRECAST CONCRETE PANEL FACING.

THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF RETAINING WALL R-40-722 WITH THE ABUTMENT OF BRIDGE B-40-1004. PRIOR TO DRIVING BRIDGE PILING AT ABUTMENTS, ENSURE EXISTING PIPE CULVERTS/STORM SEWERS BELOW THE PROPOSED WALLS HAVE BEEN REMOVED AND "BACKFILL GRANULAR GRADE 2" HAS BEEN PLACED.

THE QUANTITIES OF CONCRETE MASONRY & REINFORCING STEEL FOR THE CAST-IN-PLACE ANCHOR SLAB ARE PAID FOR UNDER THE BID ITEMS "CONCRETE MASONRY RETAINING WALLS" AND "BAR STEEL REINFORCEMENT HS COATED STRUCTURES".

THE CONCRETE MASONRY & REINFORCING STEEL FOR THE CAST-IN-PLACE COPING ARE INCLUDED WITH THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-722".

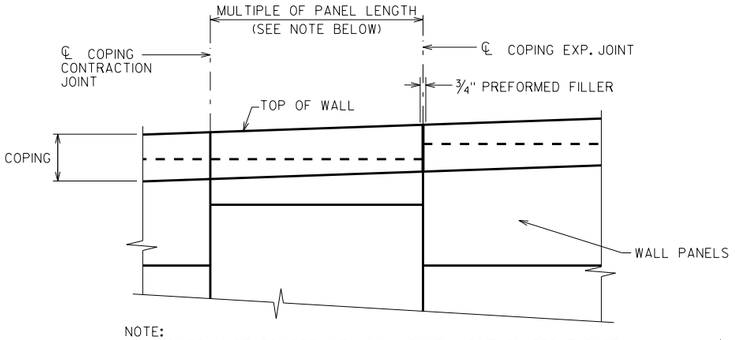
THE QUANTITIES AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 5½". FOR PANEL THICKNESSES OTHER THAN 5½", THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

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

PROTECTIVE SURFACE TREATEMENT TO BE APPLIED TO THE TRAFFIC SIDE OF THE EXPOSED ANCHOR SLAB SURFACE.

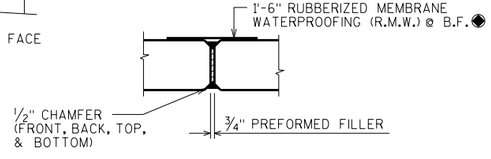
PIGMENTED SURFACE SEALER TO BE APPLIED TO THE TRAFFIC SIDE AND THE TOP OF THE PARAPET.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.



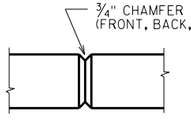
NOTE:
ALL JOINTS MUST COINCIDE WITH WALL PANEL JOINT ON FRONT FACE WHERE BOTTOM OF LIP INTERSECTS WITH WALL PANEL JOINT.

WALL & COPING PARTIAL ELEVATION



SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH A NON-STAINING, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONRETE).

R.M.W. TO EXTEND FROM TOP OF COPING TO 6" BELOW BOTTOM OF COPING AT THE BACK FACE OF THE WALL.



COPING CONTRACTION JOINT PLAN

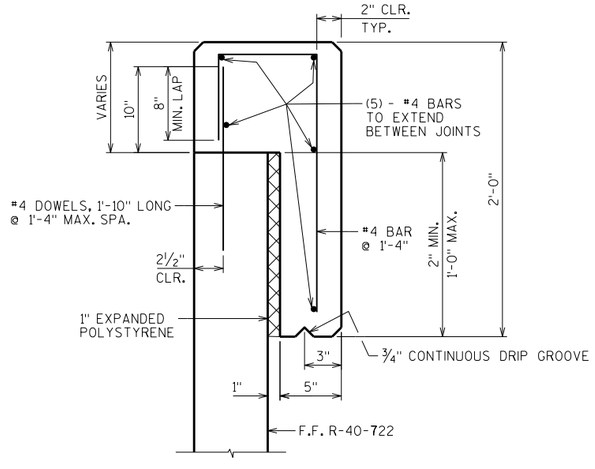
MAX. SPA. OF JOINT = 12'-0"

COPING EXPANSION JOINT PLAN

MAX. SPA. OF JOINT = 50'-0"

NOTES:
DO NOT RUN ANY BAR STEEL THRU JOINTS.
ALL JOINTS TO EXTEND FULL DEPTH OF COPING.

◆ COST OF R.M.W. SHALL BE INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-722".



SECTION THRU COPING

COST OF C.I.P. COPING AND REINFORCING SHALL BE INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-722"

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STATE OF WISCONSIN
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WALL DETAILS

SHEET 3

273

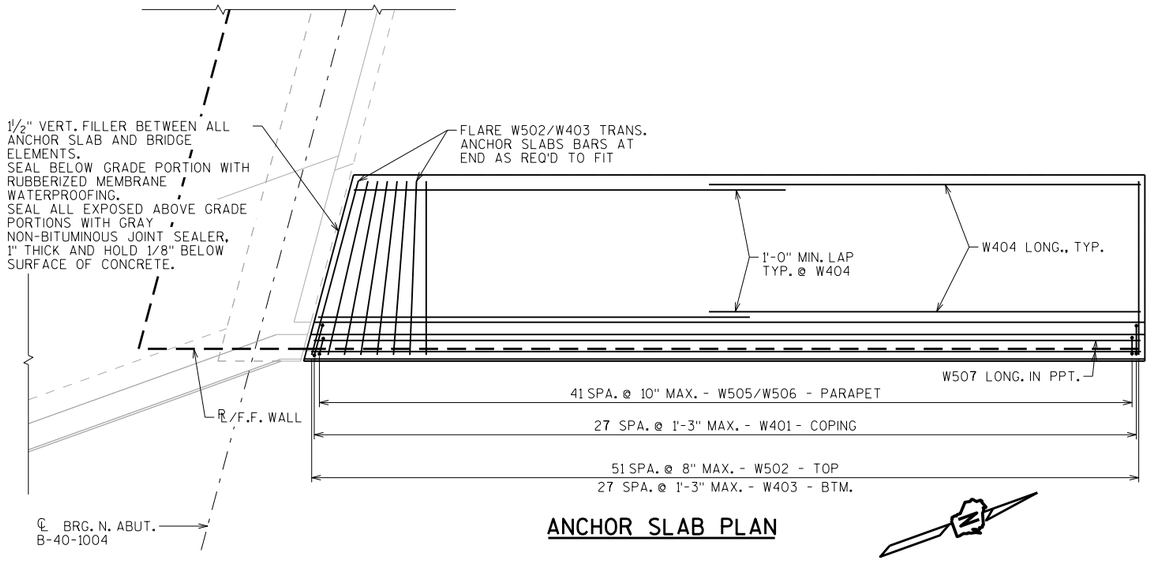
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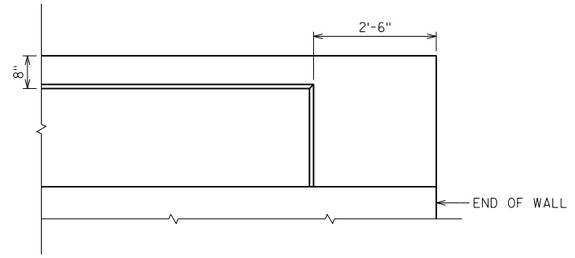
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ANCHOR SLAB PLAN

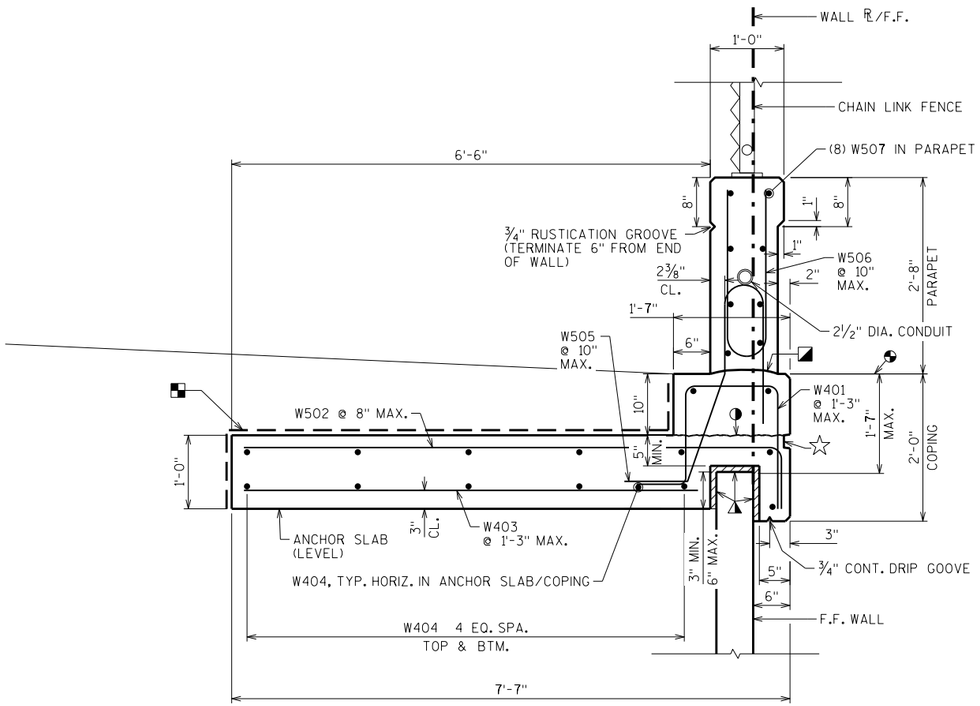


VIEW SHOWING OUTSIDE FACE OF PARAPET

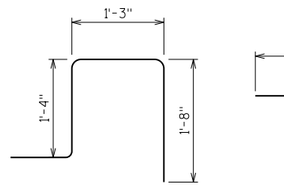
BILL OF BARS

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

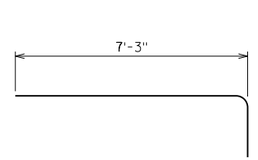
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
W401	X	28	4'-8"	X		CONC. COPING - TRANS. - VERT.
W502	X	52	7'-11"	X		CONC. ANCHOR SLAB - TRANS. - HORIZ. - TOP
W403	X	28	6'-1"			CONC. ANCHOR SLAB - TRANS. - HORIZ. - BTM.
W404	X	30	17'-8"			LONGIT. - HORIZ. - ANCHOR SLAB & COPING
W505	X	42	5'-9"	X		ANCHOR SLAB & PARAPET - VERT.
W506	X	42	4'-9"	X		PARAPET - VERT.
W507	X	8	33'-9"			PARAPET - HORIZ.



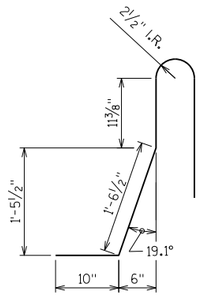
SECTION THRU ANCHOR SLAB



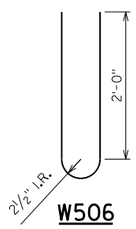
W401



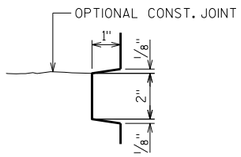
W502



W505



W506



☆RUSTICATION DETAIL

(PROVIDE IF OPTIONAL CONST. JOINT IS USED)

LEGEND

- ◪ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH
- ◭ EXPANDED POLYSTYRENE (1 INCH) TYPICAL OF EACH SIDE
- ◑ OPT. CONST. JOINT, LEAVE SURFACE ROUGHENED. PROVIDE RUSTICATION IF USED. SEE 'RUSTICATION DETAIL'. IF OPT. CONST. JOINT IS USED, PLACE 18" MEMBRANE WATERPROOFING ALONG THE ENTIRE LONGITUDINAL JOINT. THE MEMBRANE WATERPROOFING SEALING OF THE OPT. CONST. JOINT IS INCIDENTAL TO BID ITEM "CONCRETE MASONRY RETAINING WALLS".
- ◓ TOP OF WALL ELEVATION
- ◩ L-SHAPED 18" RUBBERIZED MEMBRANE WATERPROOFING TO BE PLACED ON THESE SURFACES AT THE JOINT BETWEEN THE ANCHOR SLAB AND BRIDGE ABUTMENT. (MEMBRANE WATERPROOFING INCIDENTAL TO "CONCRETE MASONRY RETAINING WALLS")

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STRUCTURES DESIGN SECTION

STRUCTURE R-40-722

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ANCHOR SLAB

SHEET 4

274

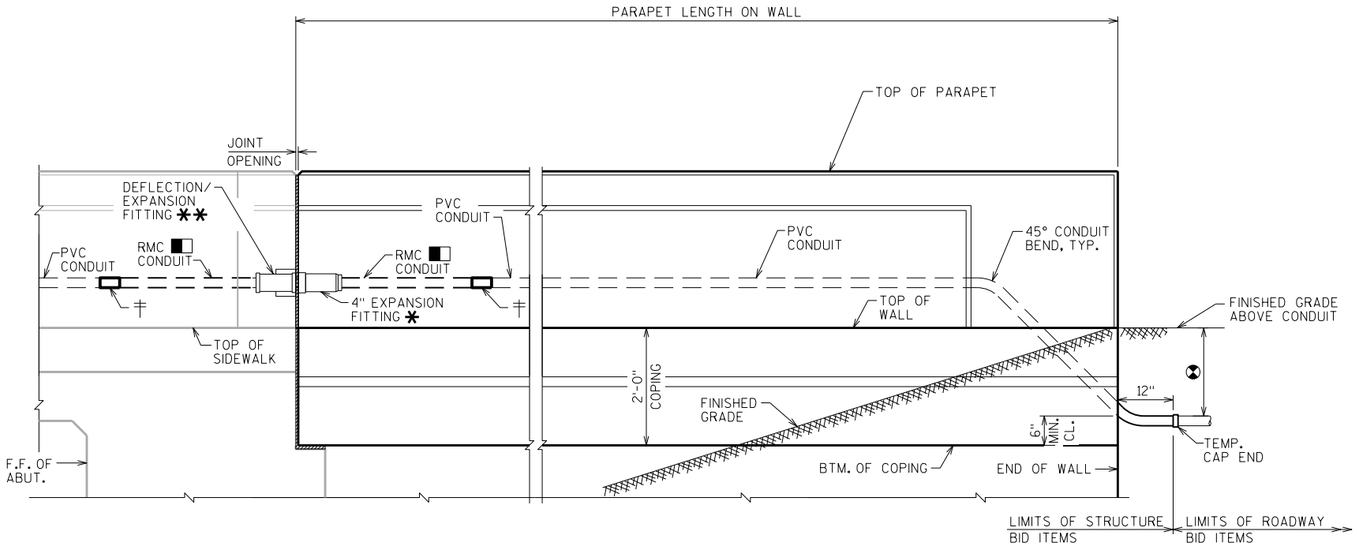
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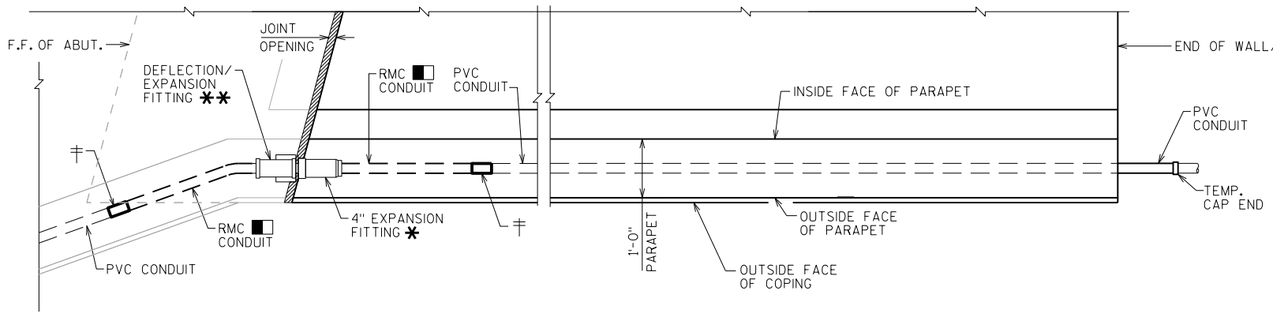
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STATE PROJECT NUMBER

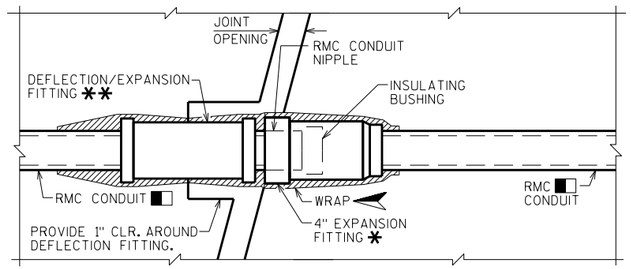
1360-12-70



OUTSIDE ELEVATION OF PARAPET AT ANCHOR SLAB



PLAN OF PARAPET AT ANCHOR SLAB



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

LEGEND

- ■ USE 2½" 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 - ¼" MINIMUM THICKNESS. PROVIDE WRAP FOR THE ENTIRE LENGTH OF THE FITTING OR AS SHOWN. SPONGE RUBBER WRAP INCIDENTAL TO "CONDUIT RIGID METALLIC 2 1/2-INCH".
- ⊖ 2'-0" MIN. CONDUIT COVER UNDER ROADWAYS, 1'-6" OTHERWISE. CONDUIT COVER SHOULD NOT EXCEED 3'-0".
- * EXPANSION FITTING REQUIREMENTS (IF USED):
  - 4" TOTAL MOVEMENT WITH BONDING JUMPER
- ** DEFLECTION/EXPANSION FITTING REQUIREMENTS (IF USED):
  - UP TO ¾" CONDUIT CONTRACTION OR EXPANSION AND UP TO 30° OF ANGULAR MISALIGNMENT IN ANY DIRECTION WITH BONDING JUMPER

NOTES

CONDUIT SHALL BE EMBEDDED A MINIMUM OF 2" CLEAR.

USE 2½" 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.

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STRUCTURES DESIGN SECTION

STRUCTURE R-40-722

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CONDUIT DETAILS

SHEET 5

275

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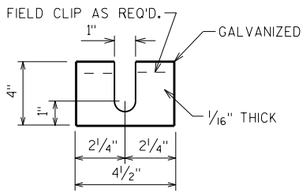
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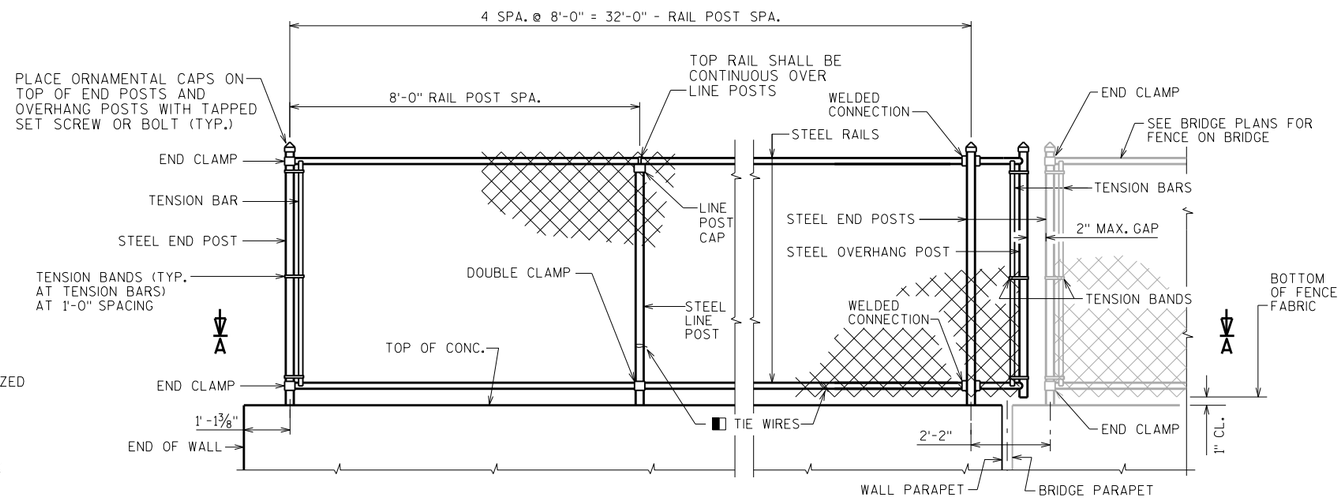
FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12



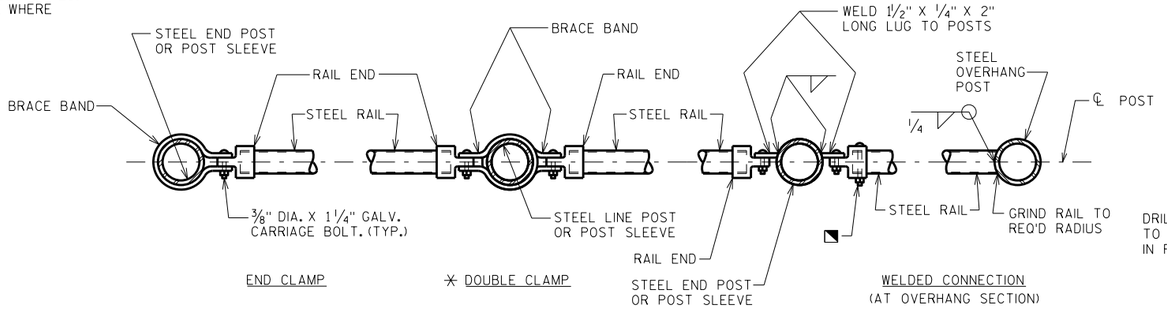
POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.



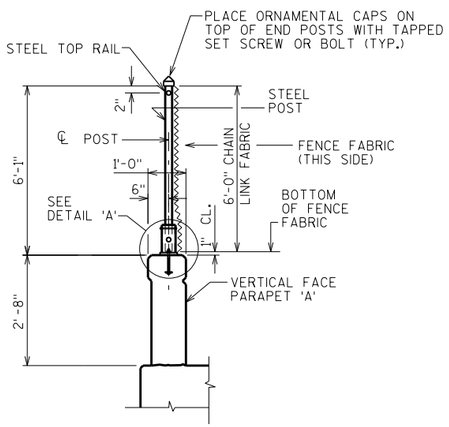
FENCE PART ELEVATION

VIEWING FABRIC SIDE

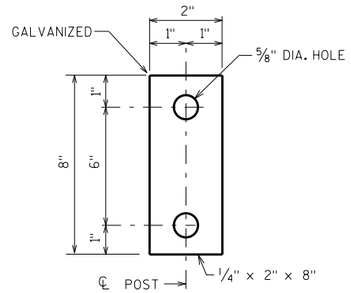


SECTION A-A

NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS

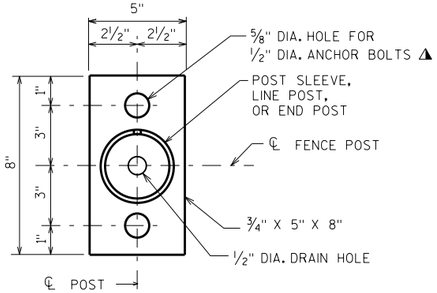


SECTION THRU FENCE

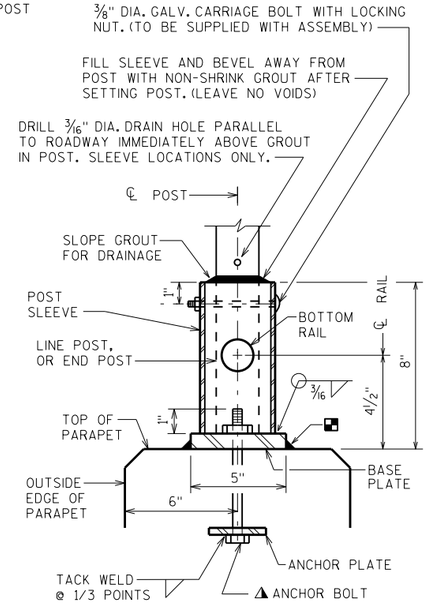


ANCHOR PLATE

✿NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.



BASE PLATE



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.

NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL, EXCEPT THE FENCE FABRIC WHICH MAY BE ALUMINUM-COATED STEEL OR GALVANIZED STEEL.

FABRIC SHALL CONFORM TO ASTM A491 OR A392, CLASS 2. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626.

THE BID ITEM SHALL BE "FENCE CHAIN LINK 6- FT R-40-722."

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

■ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

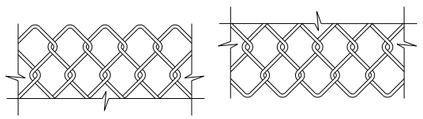
◭ 1/2" DIA. X 6 7/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER.✿

✿ ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHORS 1/2-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS, AND BE FULLY THREADED ROD, ASTM F1554-GRADE 36(MIN.).

◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◥ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.



TOP DETAIL BOTTOM DETAIL

FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-40-722

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FENCING DETAILS

SHEET 6

276

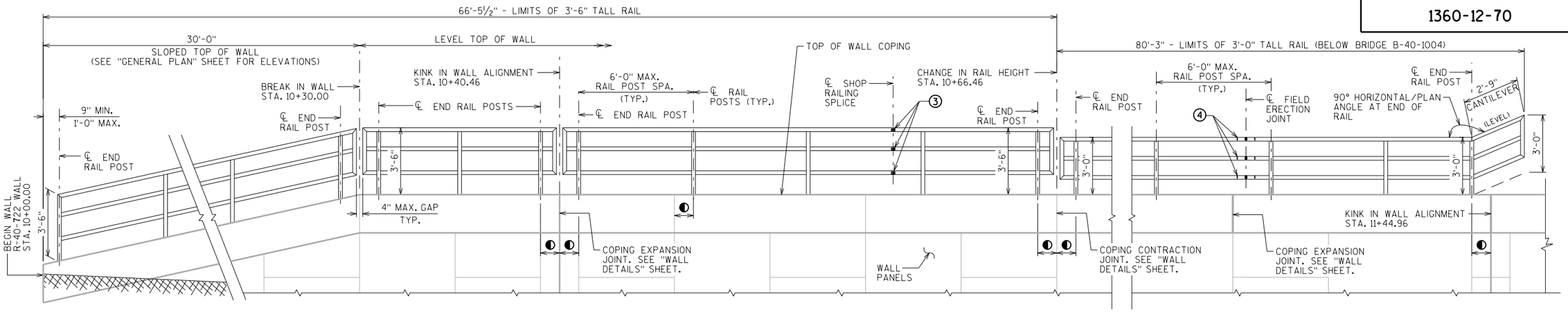
SCALE = 5.33333

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STATE PROJECT NUMBER

1360-12-70



PARTIAL ELEVATION OF WALL COPING & RAILING

(LOOKING @ F.F. OF WALL)

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS AND ℄ OF RAIL POSTS. (APPLICABLE TO BOTH EXPANSION AND CONTRACTION JOINTS)

NOTES

BID ITEM SHALL BE "RAILING PIPE", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 7) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

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

GALVANIZED STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D, FOR ALIGNMENT.

ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF POSTS.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

◪ CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS IN POST SHIMS AND BASE PLATES WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER.

ALL RAILINGS, POSTS, GATES AND ASSOCIATED HARDWARE SHALL BE PAINTED BLACK (AMS STANDARD COLOR NO. 27038).

LEGEND

① 2" DIA. NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. POSTS ARE TO BE SET VERTICAL.

② 2" DIA. NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1

③ 1½" DIA. PIPE SLEEVE FOR NO. 2. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 2 1/16".

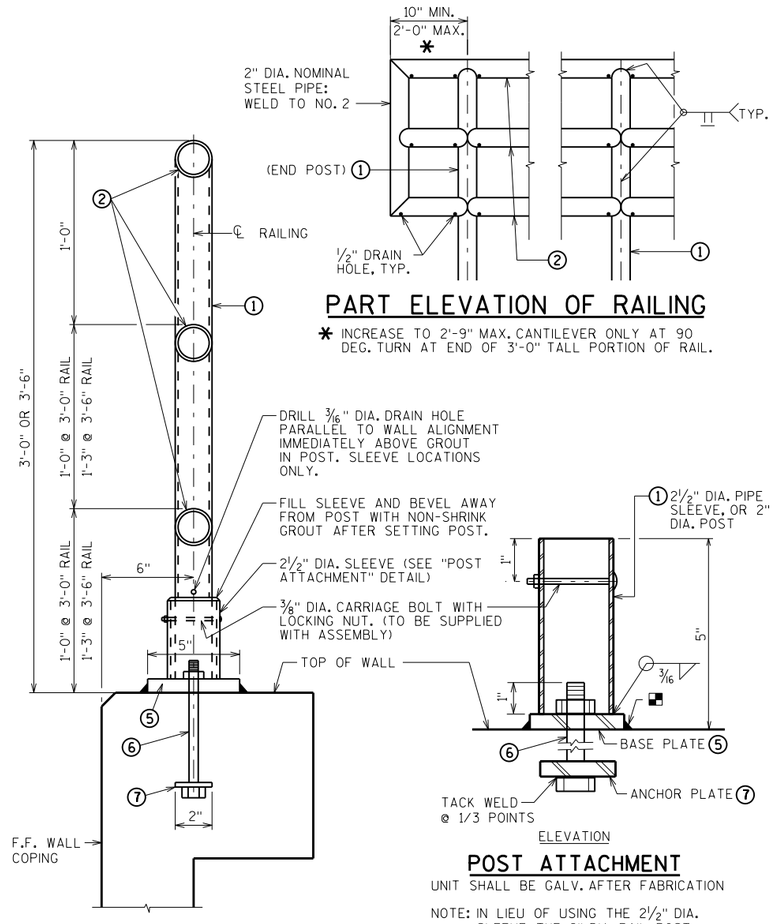
④ 1½" DIA. PIPE SLEEVE X 1'-10" LONG FOR NO. 2. PROVIDE ½" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE ⅜" DIA. X ½" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

⑤ PLATE ¾" X 5" X 8", WITH ⅝" DIA. HOLE FOR ANCHOR BOLTS NO. 6. WELD TO NO. 1. OR PIPE SLEEVE AS SHOWN.

⑥ ½" DIA. X 6⅞" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. ☆

☆ ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHORS ½-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS, AND BE FULLY THREADED ROD, ASTM F1554-GRADE 36(MIN.).

⑦ ¼" X 2" X 8" FLAT BAR, WITH ⅝" DIA. HOLES FOR ANCHOR BOLTS NO. 6.



PART ELEVATION OF RAILING

* INCREASE TO 2'-9" MAX. CANTILEVER ONLY AT 90 DEG. TURN AT END OF 3'-0" TALL PORTION OF RAIL.

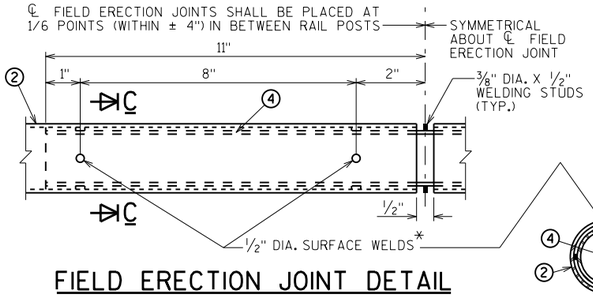
SECTION THRU RAILING

ELEVATION

POST ATTACHMENT

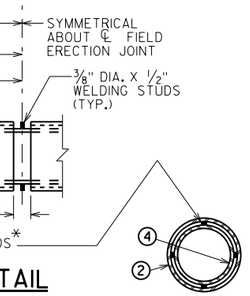
UNIT SHALL BE GALV. AFTER FABRICATION

NOTE: IN LIEU OF USING THE 2½" DIA. SLEEVE, THE 2" DIA. RAIL POST MAY BE WELDED TO THE BASE PLATE.

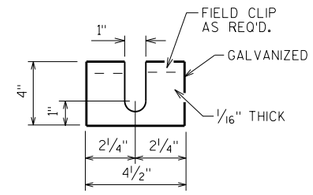


FIELD ERECTION JOINT DETAIL

*MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

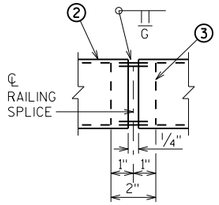


SECTION C-C



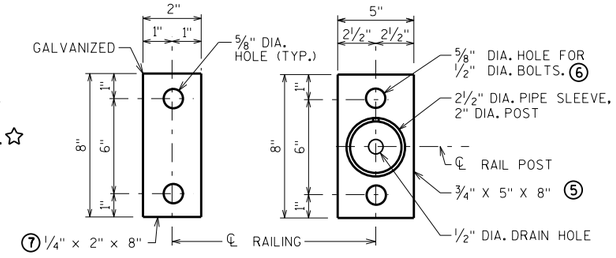
POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST.



SHOP RAILING SPLICE DETAIL

(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



ANCHOR PLATE

BASE PLATE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-40-722

DRAWN BY	CAD	PLANS CK'D.	ARC

PIPE RAILING

SHEET 7

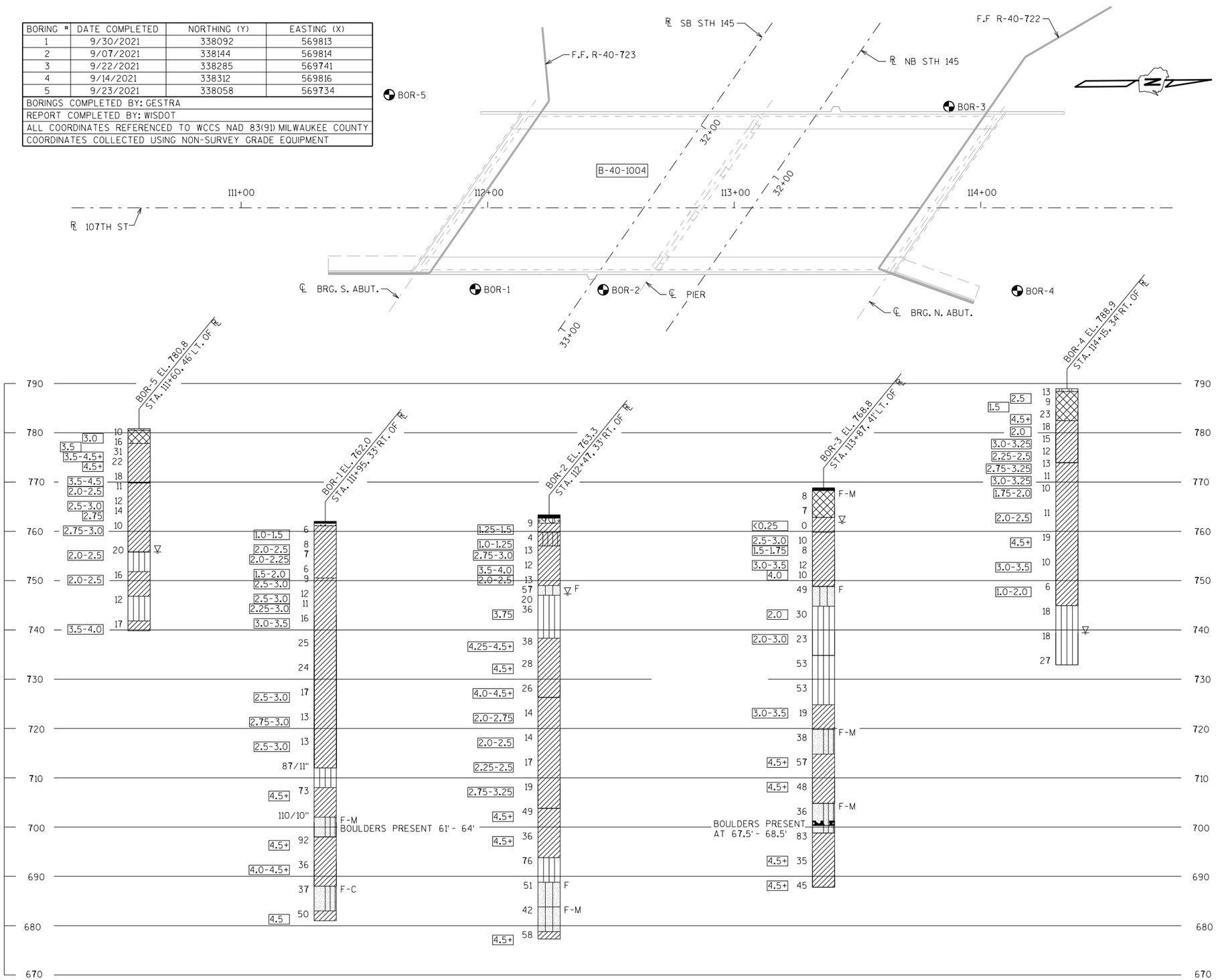
277

SCALE = 5.333

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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	9/30/2021	338092	569813
2	9/07/2021	338144	569814
3	9/22/2021	338285	569741
4	9/14/2021	338312	569816
5	9/23/2021	338058	569734
BORINGS COMPLETED BY: GESTRA			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			



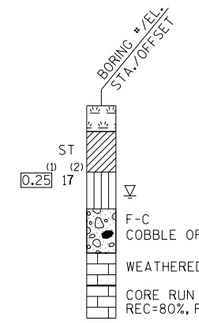
STATE PROJECT NUMBER

1360-12-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-40-722

DRAWN BY TLP/CAD | PLANS CK'D. ARC

SUBSURFACE EXPLORATION

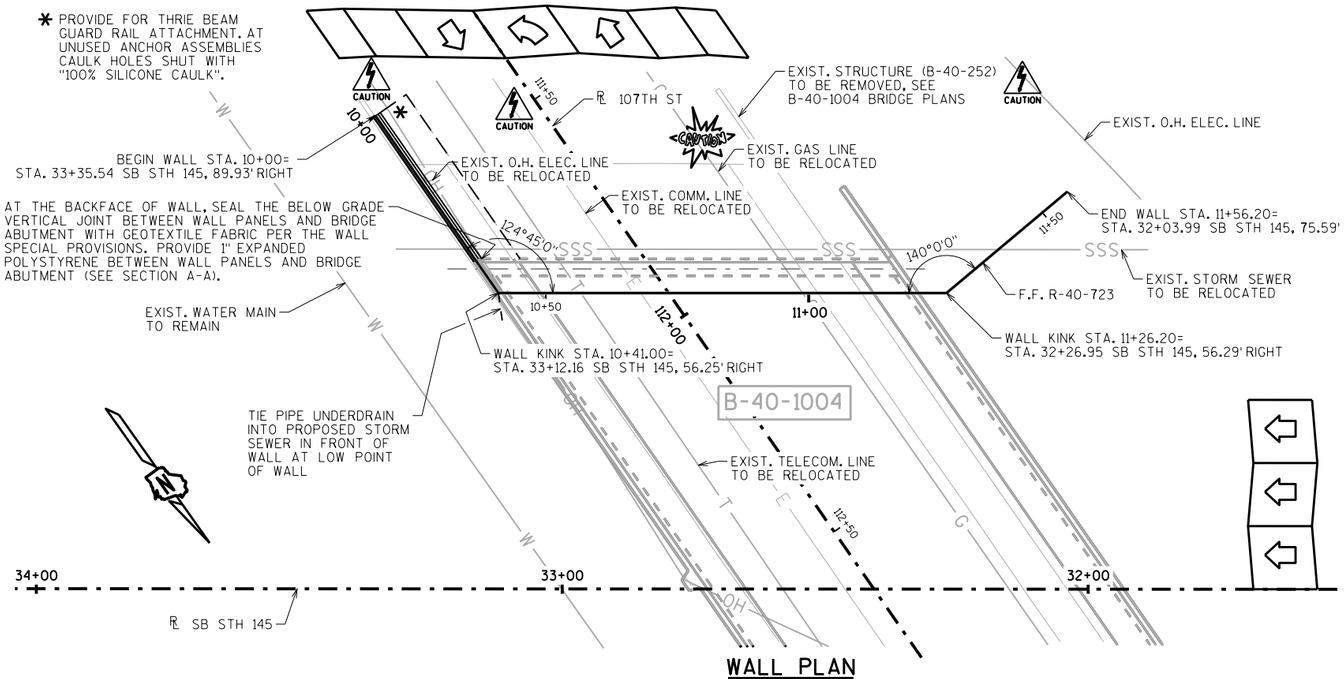
SHEET 8

278

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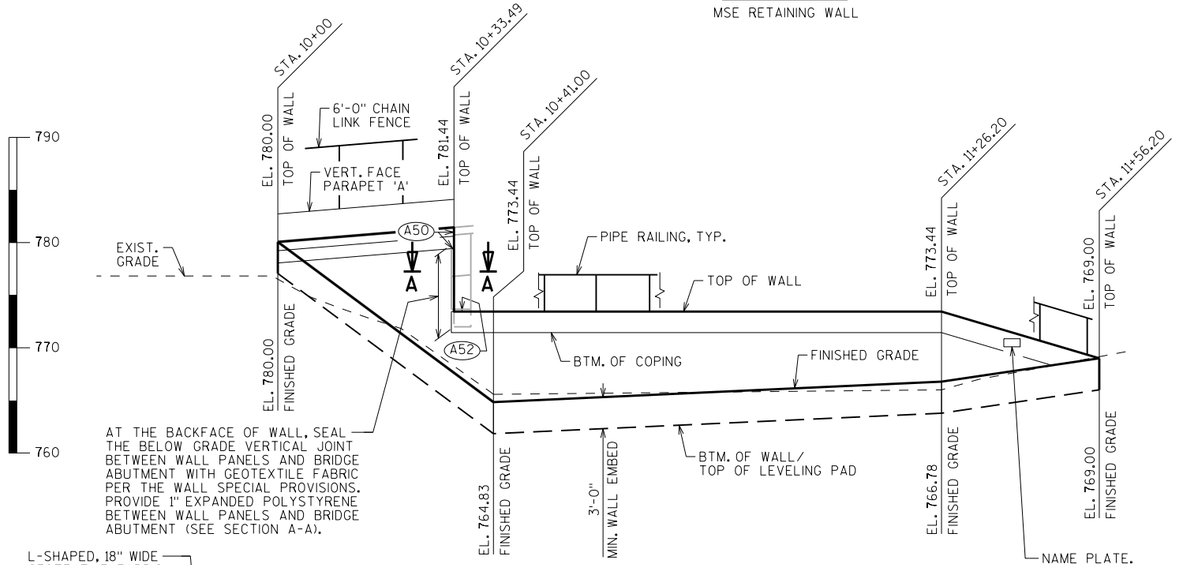
STATE PROJECT NUMBER

1360-12-70



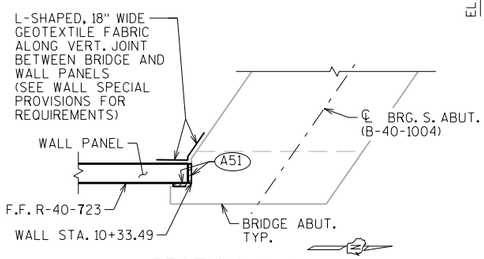
WALL PLAN

MSE RETAINING WALL



WALL ELEVATION

LOOKING AT F.F. OF WALL
(VERTICAL EXAGGERATION - 2X)



SECTION A-A

(A50) 1½" VERTICAL FILLER AND ¾" HORIZ. FILLER BETWEEN BRIDGE ELEMENTS AND RETAINING WALL ANCHOR SLAB COPING. SEAL ALL EXPOSED SURFACES OF FILLER WITH GRAY NON-BITUMINOUS JOINT SEALER, 1-INCH DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

(A51) 1" EXPANDED POLYSTYRENE FILLER BETWEEN WALL PANELS AND ABUT. SEAL EXPOSED FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, 1-INCH DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

(A52) 2" PREFORMED HORIZONTAL & VERT. FILLER BETWEEN WALL COPING AND ABUT. SEAL EXPOSED FILLER WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER, 1-INCH DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-723."

PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL SHALL BE DESIGNED USING ELEVATIONS GIVEN ON THIS SHEET.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE LOAD OF 240 PSF.

THE DESIGN OF THE WALL IN FRONT OF THE ABUTMENT SHALL INCLUDE THE HORIZONTAL EARTH LOADS AND 240 PSF LIVE LOAD SURCHARGE ACTING ON THE BACK OF THE ABUTMENT BELOW THE BEAM SEATS.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

MATERIAL PROPERTIES:

CONCRETE MASONRY: CAST-IN-PLACE COPING ——— f'c = 3,500 P.S.I.
ANCHOR SLAB AND PARAPET ——— f'c = 4,000 P.S.I.

BAR STEEL REINFORCEMENT: GRADE 60 ——— fy = 60,000 P.S.I.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
209.2500	BACKFILL GRANULAR GRADE 2	TON	348
502.3200	PROTECTIVE SURFACE TREATMENT	SY	2
502.3210	PIGMENTED SURFACE SEALER	SY	14
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	15
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1750
513.2001	RAILING PIPE	LF	116
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	180
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	1
652.0130	CONDUIT RIGID METALLIC 2 1/2-INCH	LF	3
652.0230	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 1/2-INCH	LF	35
SPV.0090	FENCE CHAIN LINK 6-FT. R-40-723	LF	34
SPV.0165	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-723	SF	1505
	NON-BID ITEMS		
	EXPANDED POLYSTYRENE	SIZE	1"
	FILLER	SIZE	¾", 1½", 2"
	NON-BITUMINOUS JOINT SEALER		

WALL ELEVATION TABLE

STA. ALONG SB STH 145	WALL STA.	TOP OF WALL EL.	FINISHED GRADE EL.
33+35.54	10+00.00	780.00	780.00
33+21.28	10+25.00	781.07	770.78
33+16.44	10+33.49	781.44	767.62
33+16.44	10+33.50	773.44	767.62
33+12.16	10+41.00	773.44	764.83
33+03.16	10+50.00	773.44	765.04
32+78.16	10+75.00	773.44	765.61
32+53.16	11+00.00	773.44	766.18
32+28.16	11+25.00	773.44	766.75
32+26.95	11+26.20	773.44	766.78
32+08.73	11+50.00	769.92	768.54
32+03.99	11+56.20	769.00	769.00

LIST OF DRAWINGS

1. GENERAL PLAN
2. TYPICAL SECTIONS
3. WALL DETAILS
4. ANCHOR SLAB
5. CONDUIT DETAILS
6. FENCING DETAILS
7. PIPE RAILING
8. SUBSURFACE EXPLORATION

STRUCTURE DESIGN CONTACTS:

CHRISTOPHER DOLL (608) 266-3229
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED LLS 2/28/22
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE R-40-723

WALL ALONG STH 145 SB AT 107TH ST

COUNTY	CITY
MILWAUKEE	MILWAUKEE

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	CAD	DESIGNED CK'D.	ARC	DRAWN BY	CAD	PLANS CK'D.	ARC

GENERAL PLAN

SHEET 1 OF 8

279

I.D. 1360-12-00E DATE: NOV. 2021

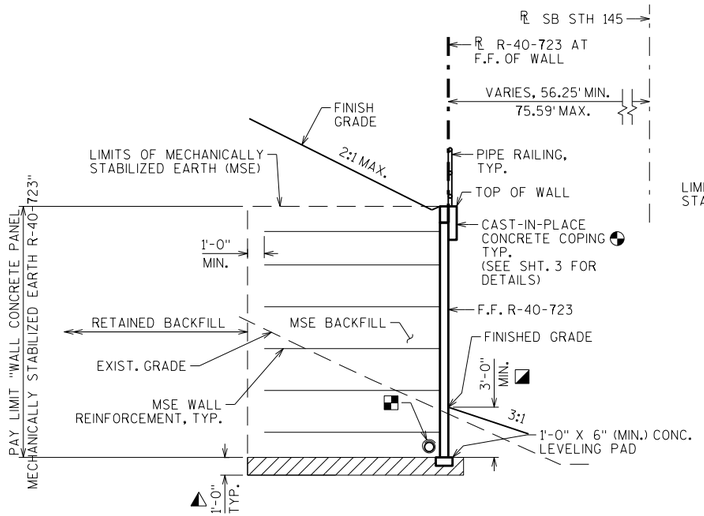
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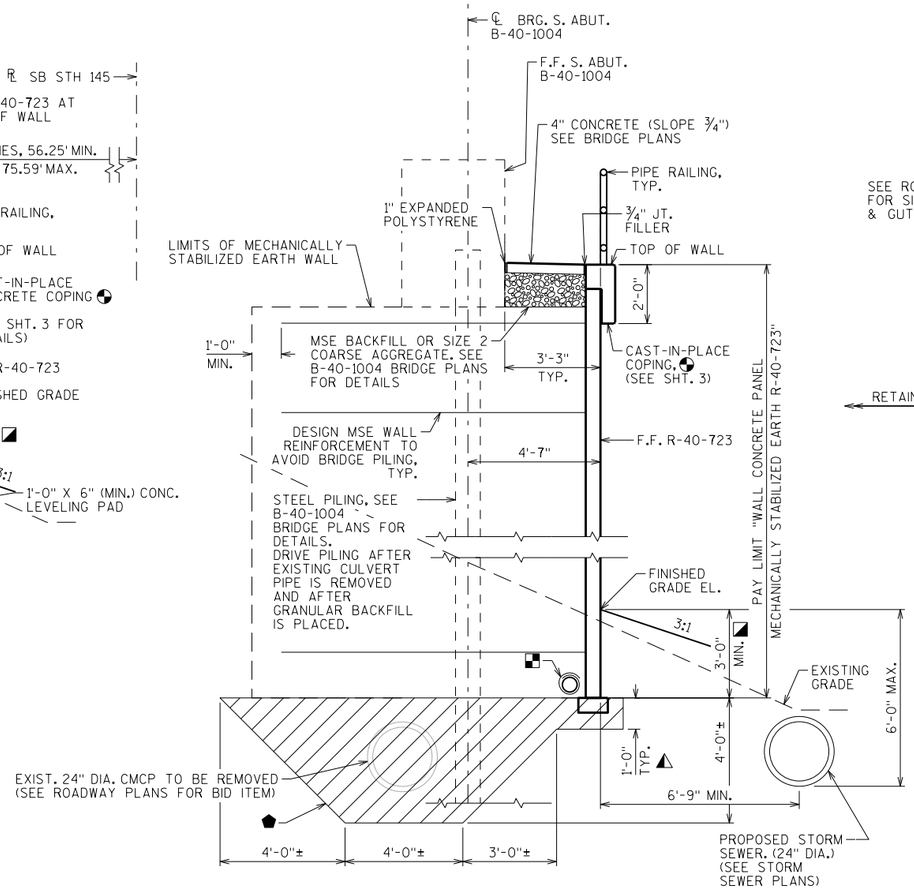
STATE PROJECT NUMBER

1360-12-70



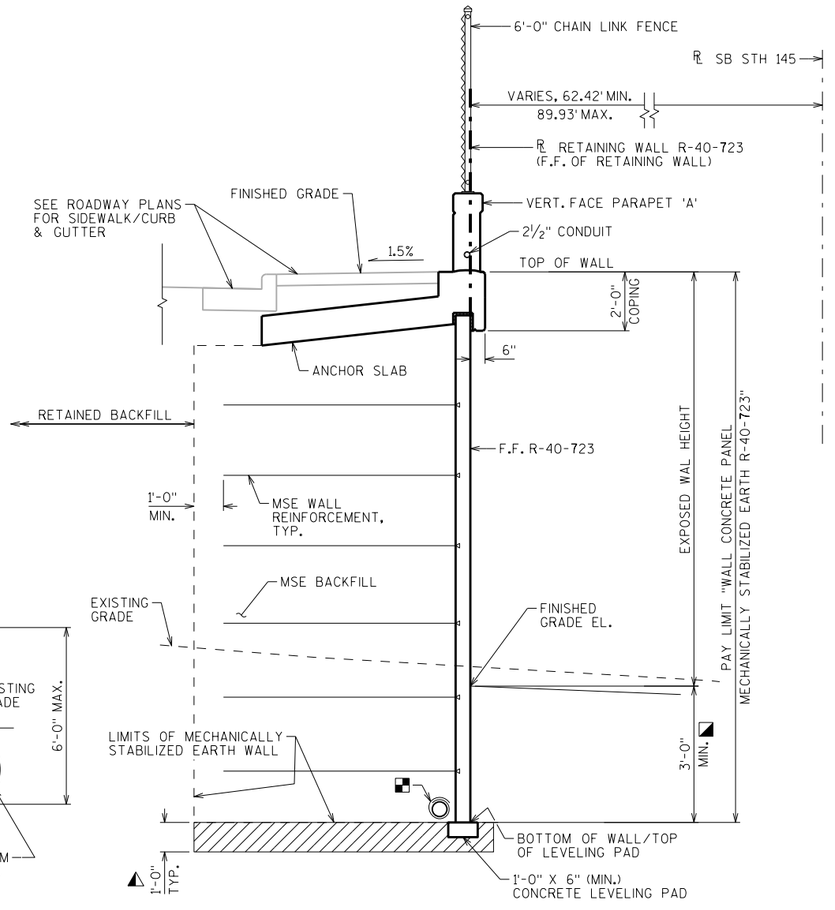
TYPICAL SECTION THRU MSE RETAINING WALL

WALL STA. 11+23.36 TO 11+56.20



TYPICAL SECTION AT ABUTMENT

WALL STA. 10+33.49 TO 11+23.36



TYPICAL SECTION AT ANCHOR SLAB

WALL STA. 10+00 TO 10+33.49

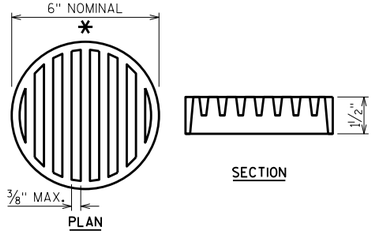
▲ OVER-EXCAVATE 1'-0" MIN. BELOW WALL LIMITS/REINFORCED ZONE IN AREAS OUTSIDE OF EXISTING CULVERT PIPE. EXTEND THIS OVER-EXCAVATION A MINIMUM OF 6" BEYOND THE FRONT OF THE LEVELING PAD. REPLACE WITH "BACKFILL GRANULAR GRADE 2". OVER-EXCAVATION CONSIDERED INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-723" BID ITEM.

⬟ REMOVE LOOSE AND POORLY COMPACTED CULVERT PIPE BACKFILL AND SOFT CLAYS BELOW PIPE. REPLACE WITH "BACKFILL GRANULAR GRADE 2" BELOW THE WALL AS DIRECTED BY ENGINEER TO 5'-0" OUTSIDE OF THE WALL EXTENTS/FRONT FACE. DIMENSIONS SHOWN ARE APPROXIMATE AND ARE USED FOR QUANTITY PURPOSES ONLY, AND MAY VARY FROM ACTUAL CONDITIONS ENCOUNTER. OVER-EXCAVATION CONSIDERED INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-723" BID ITEM.

▪ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED IF OUTFALL IS EXPOSED.

◔ COST OF C.I.P. COPING AND REINFORCING SHALL BE INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-723"

◪ MINIMUM EMBEDMENT BASED ON SITE SPECIFIC PARAMETERS. FIELD EMBEDMENTS SHALL MEET OR EXCEED THE MINIMUM EMBEDMENT. FIELD EMBEDMENTS BELOW MINIMUM EMBEDMENT SHALL NOT BE INCLUDED IN THE PAY LIMITS.



RODENT SHIELD DETAIL

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

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

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-40-723

DRAWN BY CAD | PLANS CK'D. ARC

TYPICAL SECTIONS

SHEET 2

280

SCALE = 14.00

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STATE PROJECT NUMBER

1360-12-70

SOIL PARAMETERS

STRATUM LOCATIONS & SOIL DESCRIPTIONS	FRICTION ANGLE (DEGREES)	COHESION (PSF)	UNIT WEIGHT (PCF)
GRANULAR BACKFILL - WITHIN THE WALL REINFORCING ZONE	30	0	120
RETAINED SOIL - EXISTING CLAY EMBANKMENT	30	0	125
BORING 1 - FOR WALL STA 10+33.49, 10+41			
LEAN CLAY, GRAY, TRACE TO FEW SAND AND GRAVEL (ELEVATION 761.8± FEET - 750.5 FEET)	0 (ST) 30(LT)	2,000 (ST) 0 (LT)	125
LEAN CLAY, GRAY, TRACE TO FEW SAND AND GRAVEL (ELEVATION 750.5 FEET - 729.0 FEET)	0 (ST) 30(LT)	2,750 (ST) 0 (LT)	125
LEAN CLAY, GRAY, TRACE TO FEW SAND AND GRAVEL (ELEVATION 729.0 FEET - 712.0 FEET)	0 (ST) 30 (LT)	2,750 (ST) 0 (LT)	125
SILT, GRAY, LITTLE SAND (ELEVATION 712.0 FEET - 708.0 FEET)	40	0	135
LEAN CLAY, GRAY, FEW SAND AND GRAVEL (ELEVATION 708.0 FEET - 702.0 FEET)	0 (ST) 30 (LT)	4,500 (ST) 0 (LT)	135
FINE TO MEDIUM SAND, GRAY, FEW SILT, TRACE CLAY, POSS. COBBLES/BOULDERS (ELEVATION 702.0 FEET - 698.0 FEET)	40	0	135
LEAN CLAY, GRAY, TRACE TO LITTLE SAND, TRACE TO FEW GRAVEL (ELEVATION 698.0 FEET - 688.0 FEET)	0 (ST) 30 (LT)	4,500 (ST) 0 (LT)	135
FINE TO COARSE SAND, GRAY, SOME GRAVEL, FEW SILT (ELEVATION 688.0 FEET - 683.0 FEET)	36	0	130
LEAN CLAY, GRAY, SOME SAND, FEW GRAVEL (ELEVATION 683.0 FEET - 681.0 FEET)	0 (ST) 30 (LT)	4,500 (ST) 0 (LT)	135
BORING 5 - FOR WALL STA 11+00, 11+26.2			
LEAN CLAY, BROWN/DARK BROWN, SOME SAND, FEW GRAVEL, FEW ROOTS/ORGANICS (FILL) (ELEVATION 780.5± FEET - 777.8 FEET)	0 (ST) 30 (LT)	3,000 (ST) 0 (LT)	125
LEAN CLAY, BROWN/GRAY(MOTTLED), TRACE SAND AND GRAVEL (ELEVATION 777.8 FEET - 769.8 FEET)	0 (ST) 30 (LT)	4,000 (ST) 0 (LT)	125
LEAN CLAY, GRAY, TRACE SAND AND GRAVEL (ELEVATION 769.8 FEET - 755.8 FEET)	0 (ST) 30 (LT)	2,500 (ST) 0 (LT)	125
SILT, GRAY/DARK BROWN, FEW SAND, SC. CLAY SEAMS (ELEVATION 755.8 FEET - 751.8 FEET)	33	0	125
LEAN CLAY, GRAY, TRACE SAND (ELEVATION 751.8 FEET - 746.8 FEET)	0 (ST) 30 (LT)	2,250 (ST) 0 (LT)	125
SILT, GRAY, FEW TO LITTLE SAND (ELEVATION 746.8 FEET - 741.8 FEET)	31	0	120
LEAN CLAY, GRAY, TRACE SAND (ELEVATION 741.8 FEET - 739.8 FEET)	0 (ST) 30(LT)	3,000 (ST) 0 (LT)	125

NOTES: LT = LONG-TERM STRENGTH PARAMETER
ST = SHORT-TERM STRENGTH PARAMETER

WALL EXTERNAL STABILITY EVALUATION

DIMENSIONS				
WALL HEIGHT (FEET) [1]	16.8	11.6	10.3	9.7
EXPOSED WALL HEIGHT (FEET)	13.8	8.6	7.3	6.7
FEATURE BEHIND WALL	SLOPE/ROAD	ABUTMENT	ABUTMENT	SLOPE
LENGTH OF REINFORCEMENT (FEET) [2]	11.9	16.9	15.7	13.3
LENGTH OF REIN./WALL HT.	0.71	1.45	1.52	1.36
WALL STATION	10+33.49	10+41	11+00	11+26.20
BORING USED	1	1	5	5
CAPACITY TO DEMAND RATIO (CDR) [6]				
SLIDING (CDR > 1.0) [5]	1.11	1.08	1.02	1.01
ECCENTRICITY (CDR > 1.0)	1.36	1.46	1.31	2.49
GLOBAL STABILITY (CDR > 1.0) [4]	--	1.04 (LT) 2.56 (ST)	--	--
BEARING RESISTANCE (CDR > 1.0)	1.00	1.00	1.00	1.00
REQUIRED BEARING RESISTANCE (PSF)	4,600	3,900	3,600	3,400
ESTIMATED SETTLEMENT (IN.)	1.5	2.0	1.7	1.6

1. THE TOTAL WALL HEIGHT INCLUDES AN EMBEDMENT OF 3.0 FEET.
2. THE LENGTH OF REINFORCEMENT IS THE MINIMUM REQUIRED LENGTH.
3. REINFORCEMENT LENGTH CONTROLLED BY MINIMUM REINFORCEMENT CRITERIA OF 0.7H OR 8 FEET.
4. CDR FOR GLOBAL STABILITY BASED ON RESISTANCE FACTOR (PHI) OF 0.65.
5. SLIDING CDR ASSUMES 1 FOOT OF CLAY WILL BE REMOVED BELOW THE REINFORCED ZONE AND REPLACED WITH COMPACTED GRANULAR BACKFILL.
6. CDR REQUIREMENTS AND LOAD & RESISTANCE FACTORS ARE PRESENTED IN CHAPTER 14 OF THE BRIDGE MANUAL.

NOTE:
FOR ADDITIONAL ASSUMPTIONS USED IN THE WALL EXTERNAL STABILITY EVALUATION, SEE THE GEOTECHNICAL SITE INVESTIGATION REPORT FOR R-40-723.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS OTHERWISE SHOWN OR NOTED.

ALL BAR STEEL IN CAST-IN-PLACE CONCRETE COPING SHALL BE EPOXY COATED.

ALL WALL STATIONING AND OFFSETS ARE GIVEN AT THE FRONT FACE OF THE WALL (R-40-723).

EXPANSION AND CONTRACTION JOINT LOCATIONS AND DIMENSIONS ARE FOR INFORMATIONAL USE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE JOINTS.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-723" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF WALL TO THE TOP OF LEVELING PAD, SET A CONSTANT DEPTH OF 3'-0" BELOW FINISHED GRADE.

THE SOIL AT THE BASE OF THE WALL SHOULD BE REVIEWED BY SOUTHEAST REGION WAUKESHA OFFICE SOILS ENGINEER TO DETERMINE IF THE SOILS HAVE ADEQUATE STRENGTH TO SUPPORT THE MSE WALL WITH PRECAST CONCRETE PANEL FACING.

THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF RETAINING WALL R-40-723 WITH THE ABUTMENT OF BRIDGE B-40-1004. PRIOR TO DRIVING BRIDGE PILING AT ABUTMENTS, ENSURE EXISTING PIPE CULVERTS/STORM SEWERS BELOW THE PROPOSED WALLS HAVE BEEN REMOVED AND "BACKFILL GRANULAR GRADE 2" HAS BEEN PLACED.

THE QUANTITIES OF CONCRETE MASONRY & REINFORCING STEEL FOR THE CAST-IN-PLACE ANCHOR SLAB ARE PAID FOR UNDER THE BID ITEMS "CONCRETE MASONRY RETAINING WALLS" AND "BAR STEEL REINFORCEMENT HS COATED STRUCTURES".

THE CONCRETE MASONRY & REINFORCING STEEL FOR THE CAST-IN-PLACE COPING ARE INCLUDED WITH THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-723".

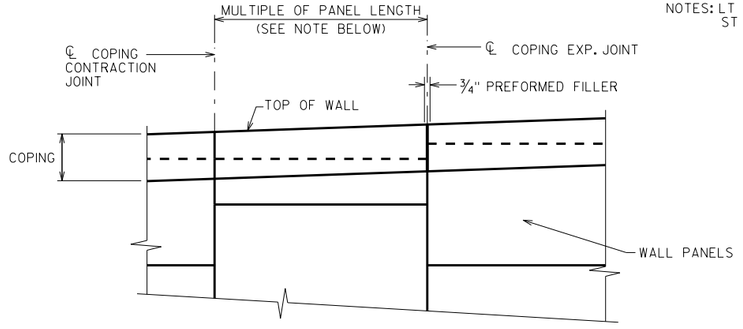
THE QUANTITIES AND REINFORCEMENT DETAILS ARE BASED ON AN ASSUMED CONCRETE WALL PANEL THICKNESS OF 5 1/2". FOR PANEL THICKNESSES OTHER THAN 5 1/2", THE CONTRACTOR SHALL VERIFY REINFORCEMENT BAR DETAILS AND QUANTITIES AND WILL BE RESPONSIBLE FOR ANY QUANTITY VARIATIONS.

SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF JOINT FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD 1/8" BELOW THE SURFACE OF CONCRETE.

PROTECTIVE SURFACE TREATEMENT TO BE APPLIED TO THE TRAFFIC SIDE OF THE EXPOSED ANCHOR SLAB SURFACE.

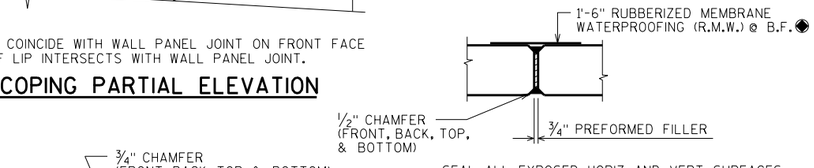
PIGMENTED SURFACE SEALER TO BE APPLIED TO THE TRAFFIC SIDE AND THE TOP OF THE PARAPET.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.



NOTE:
ALL JOINTS MUST COINCIDE WITH WALL PANEL JOINT ON FRONT FACE WHERE BOTTOM OF LIP INTERSECTS WITH WALL PANEL JOINT.

WALL & COPING PARTIAL ELEVATION



SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH A NON-STAINING, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONRETE).

R.M.W. TO EXTEND FROM TOP OF COPING TO 6" BELOW BOTTOM OF COPING AT THE BACK FACE OF THE WALL.

COPING CONTRACTION JOINT PLAN

MAX. SPA. OF JOINT = 12'-0"

COPING EXPANSION JOINT PLAN

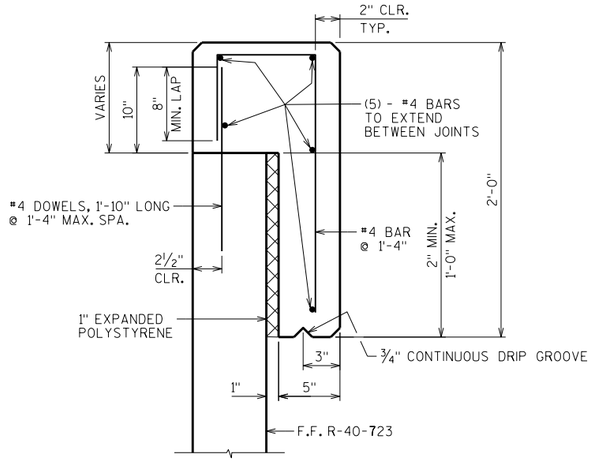
MAX. SPA. OF JOINT = 50'-0"

NOTES:

DO NOT RUN ANY BAR STEEL THRU JOINTS.

ALL JOINTS TO EXTEND FULL DEPTH OF COPING.

◆ COST OF R.M.W. SHALL BE INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-723".



SECTION THRU COPING

COST OF C.I.P. COPING AND REINFORCING SHALL BE INCIDENTAL TO BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH R-40-723"

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STRUCTURE R-40-723

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WALL DETAILS

SHEET 3

281

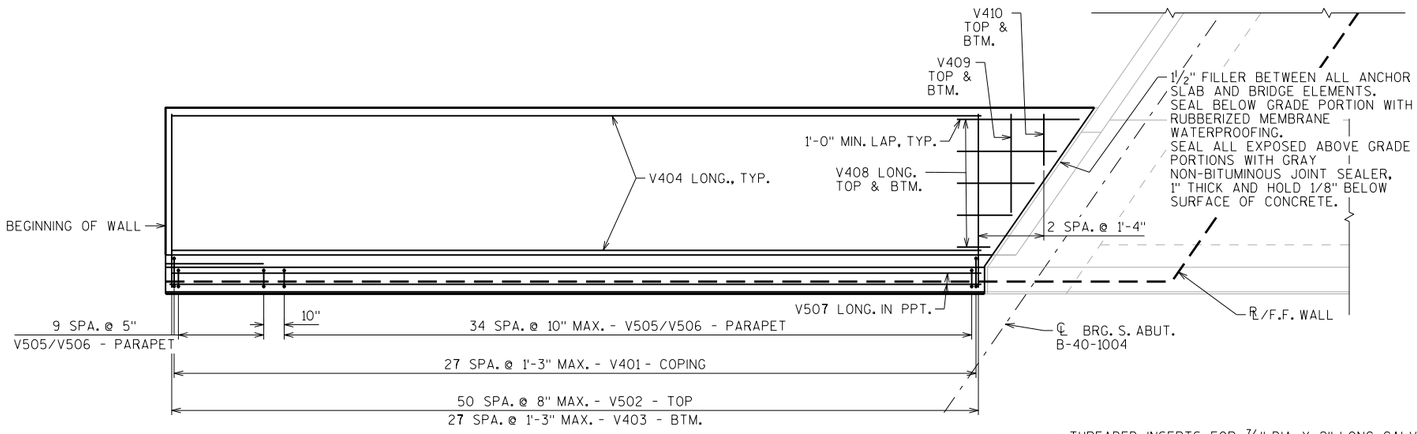
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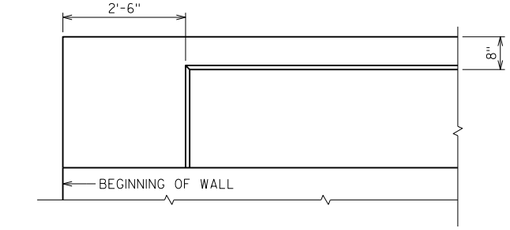
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STATE PROJECT NUMBER

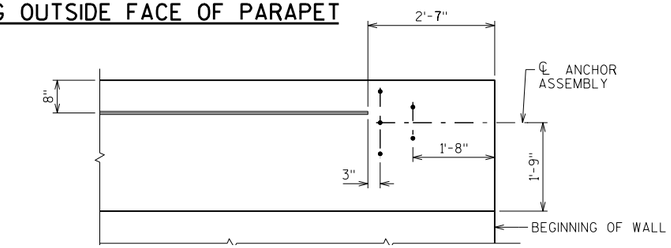
1360-12-70



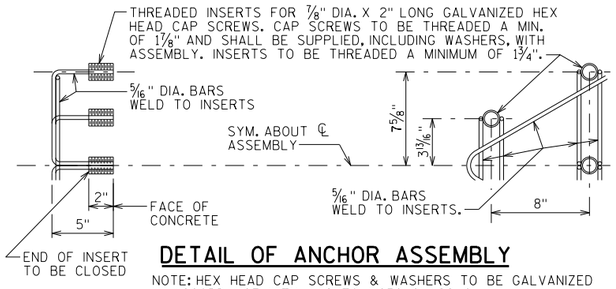
ANCHOR SLAB PLAN



VIEW SHOWING OUTSIDE FACE OF PARAPET



VIEW SHOWING INSIDE FACE OF PARAPET



DETAIL OF ANCHOR ASSEMBLY

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

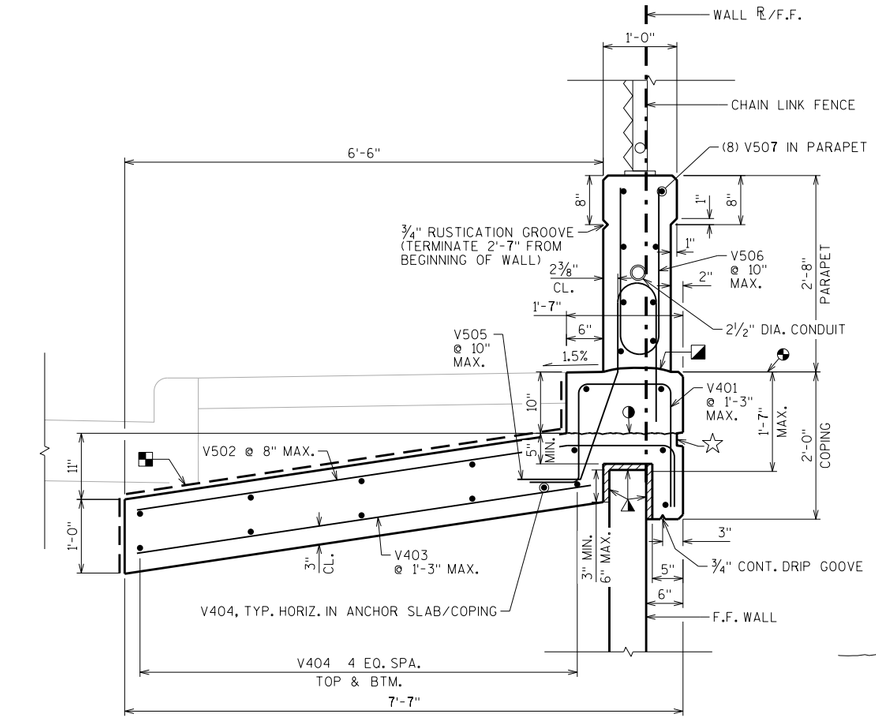
ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

BILL OF BARS

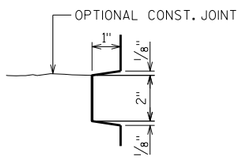
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
V401	X	28	4'-8"	X		CONC. COPING - TRANS. - VERT.
V502	X	51	7'-11"	X		CONC. ANCHOR SLAB - TRANS. - HORIZ. - TOP
V403	X	28	6'-1"			CONC. ANCHOR SLAB - TRANS. - HORIZ. - BTM.
V404	X	15	33'-0"			LONGIT. - HORIZ. - ANCHOR SLAB & COPING
V505	X	45	5'-9"	X		ANCHOR SLAB & PARAPET - VERT.
V506	X	45	4'-9"	X		PARAPET - VERT.
V507	X	8	33'-0"			PARAPET - HORIZ.
V408	X	10	3'-1"		⚠	ANCHOR SLAB - LONG.
V409	X	2	4'-5"			ANCHOR SLAB - TRANS.
V410	X	2	2'-6"			ANCHOR SLAB - TRANS.

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

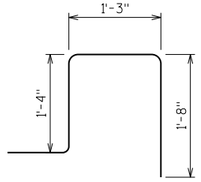


SECTION THRU ANCHOR SLAB



☆RUSTICATION DETAIL

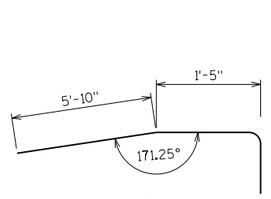
(PROVIDE IF OPTIONAL CONST. JOINT IS USED)



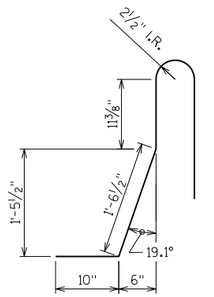
V401

LEGEND

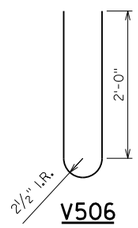
- ◪ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH
- ⚠ EXPANDED POLYSTYRENE (1 INCH) TYPICAL OF EACH SIDE
- ◑ OPT. CONST. JOINT, LEAVE SURFACE ROUGHENED. PROVIDE RUSTICATION IF USED. SEE 'RUSTICATION DETAIL'. IF OPT. CONST. JOINT IS USED, PLACE 18" MEMBRANE WATERPROOFING ALONG THE ENTIRE LONGITUDINAL JOINT. THE MEMBRANE WATERPROOFING SEALING OF THE OPT. CONST. JOINT IS INCIDENTAL TO BID ITEM "CONCRETE MASONRY RETAINING WALLS".
- ◒ TOP OF WALL ELEVATION
- ◪ L-SHAPED 18" RUBBERIZED MEMBRANE WATERPROOFING TO BE PLACED ON THESE SURFACES AT THE JOINT BETWEEN THE ANCHOR SLAB AND BRIDGE ABUTMENT. (MEMBRANE WATERPROOFING INCIDENTAL TO "CONCRETE MASONRY RETAINING WALLS")



V502



V505



V506

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
V408	2 SERIES OF 5	1'-2" TO 5'-0"

BUNDLE AND TAG EACH SERIES SEPARATELY.

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE R-40-723

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ANCHOR SLAB

SHEET 4

282

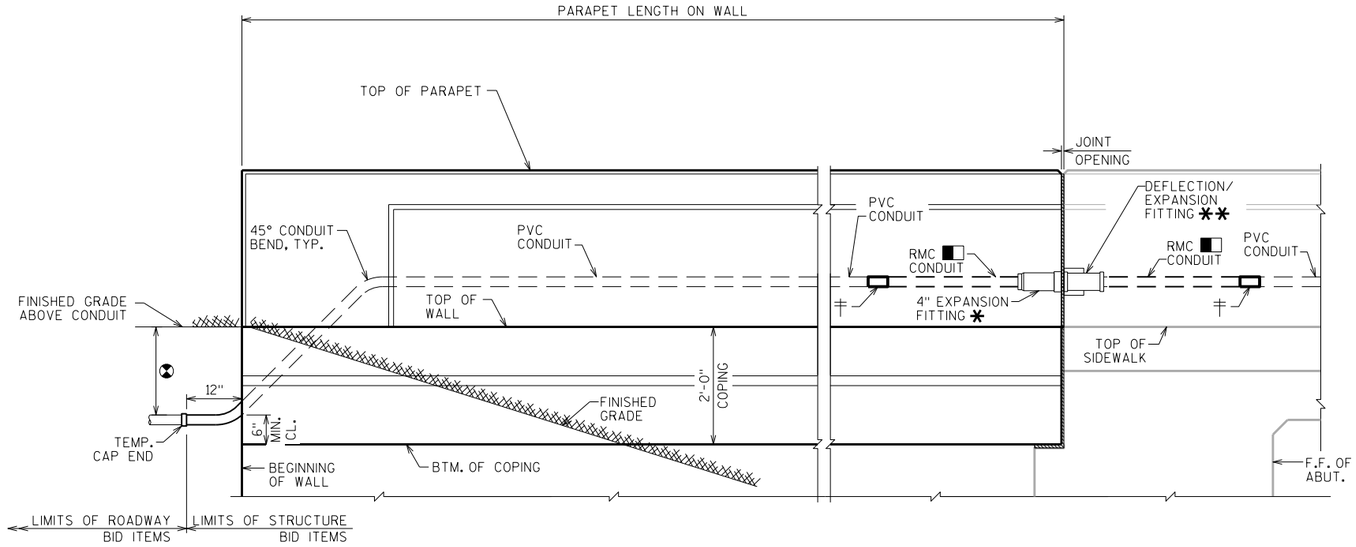
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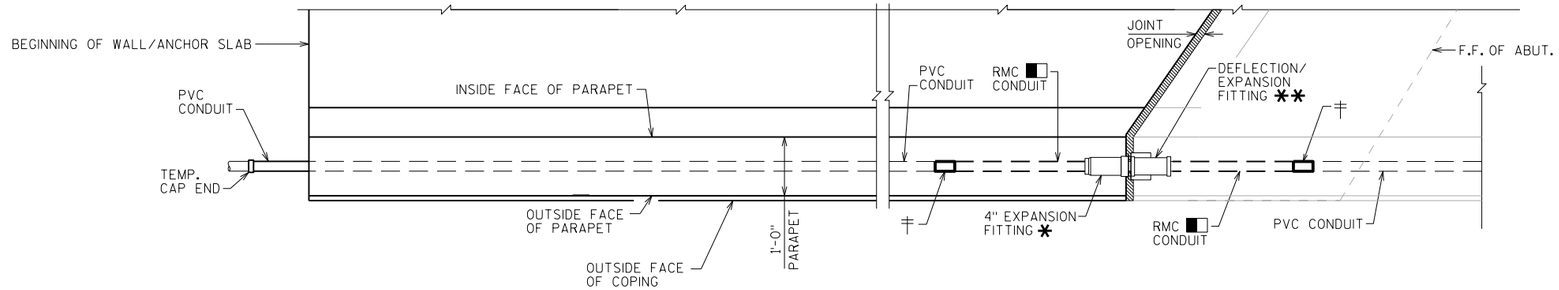
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STATE PROJECT NUMBER

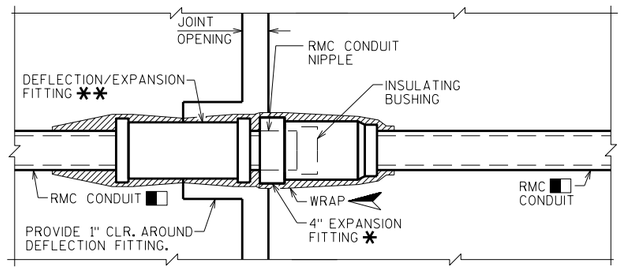
1360-12-70



OUTSIDE ELEVATION OF PARAPET AT ANCHOR SLAB



PLAN OF PARAPET AT ANCHOR SLAB



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

LEGEND

- ■ USE 2½" 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 - ¼" MINIMUM THICKNESS. PROVIDE WRAP FOR THE ENTIRE LENGTH OF THE FITTING OR AS SHOWN. SPONGE RUBBER WRAP INCIDENTAL TO "CONDUIT RIGID METALLIC 2 1/2-INCH".
- ☢ 2'-0" MIN. CONDUIT COVER UNDER ROADWAYS, 1'-6" OTHERWISE. CONDUIT COVER SHOULD NOT EXCEED 3'-0".
- * EXPANSION FITTING REQUIREMENTS (IF USED):
  - 4" TOTAL MOVEMENT WITH BONDING JUMPER
- ** DEFLECTION/EXPANSION FITTING REQUIREMENTS (IF USED):
  - UP TO ¾" CONDUIT CONTRACTION OR EXPANSION AND UP TO 30° OF ANGULAR MISALIGNMENT IN ANY DIRECTION WITH BONDING JUMPER

NOTES

CONDUIT SHALL BE EMBEDDED A MINIMUM OF 2" CLEAR.

USE 2½" 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.

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CONDUIT DETAILS

SHEET 5

283

8

8

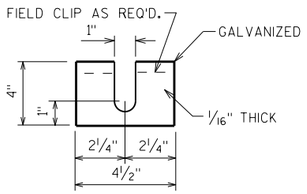
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STATE PROJECT NUMBER

1360-12-70

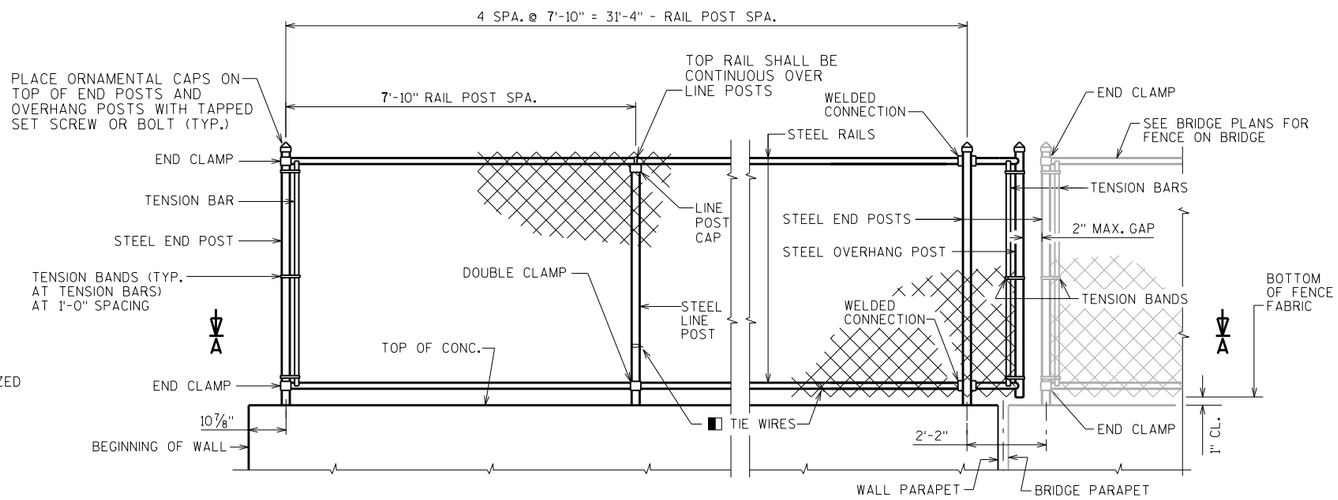
FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12



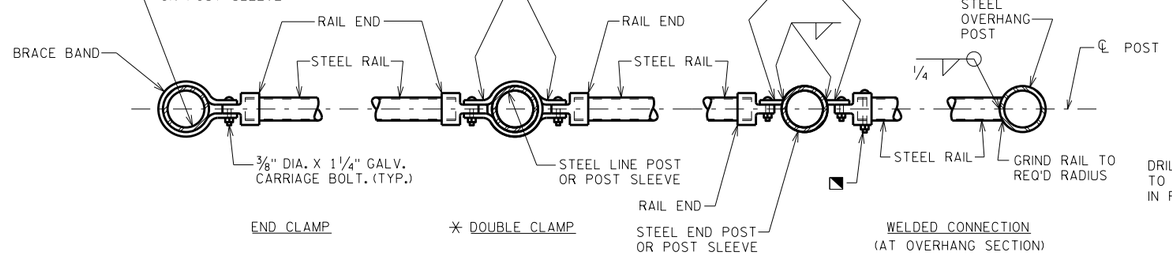
POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.



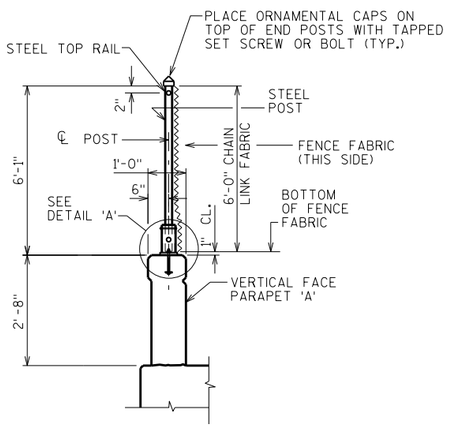
FENCE PART ELEVATION

VIEWING OUTSIDE FACE OF PARAPET

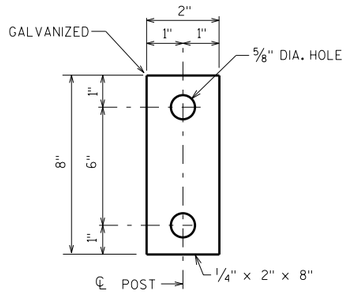


SECTION A-A

NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS

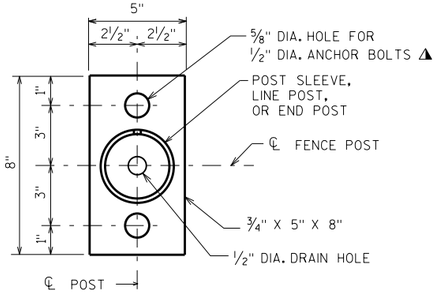


SECTION THRU FENCE

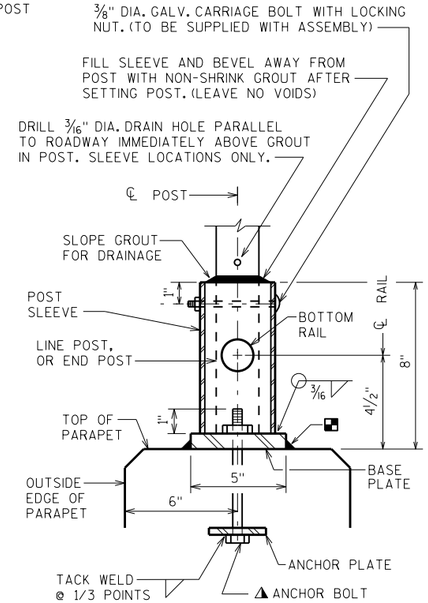


ANCHOR PLATE

✿NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.



BASE PLATE



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.

NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL, EXCEPT THE FENCE FABRIC WHICH MAY BE ALUMINUM-COATED STEEL OR GALVANIZED STEEL.

FABRIC SHALL CONFORM TO ASTM A491 OR A392, CLASS 2. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626.

THE BID ITEM SHALL BE "FENCE CHAIN LINK 6- FT R-40-723."

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

■ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

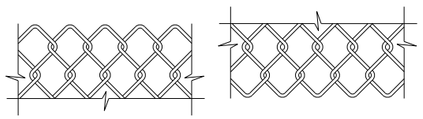
◭ 1/2" DIA. X 6 7/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER.✿

✿ ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHORS 1/2-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS, AND BE FULLY THREADED ROD, ASTM F1554-GRADE 36(MIN.).

◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◥ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.



TOP DETAIL BOTTOM DETAIL

FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-40-723

DRAWN BY | CAD | PLANS CK'D. ARC

FENCING DETAILS

SHEET 6

284

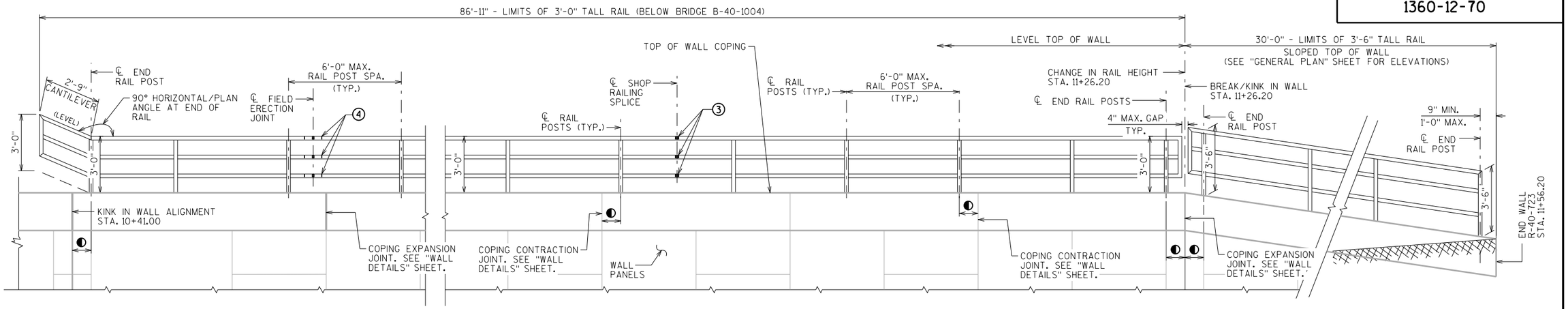
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STATE PROJECT NUMBER

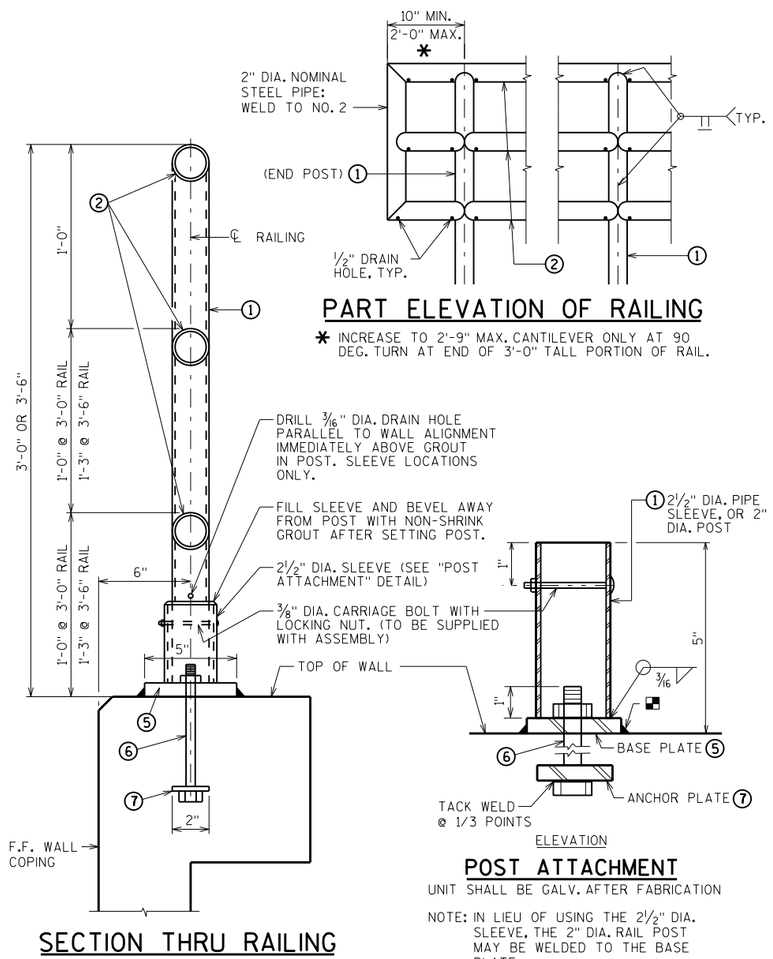
1360-12-70



◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS AND ℄ OF RAIL POSTS. (APPLICABLE TO BOTH EXPANSION AND CONTRACTION JOINTS)

PARTIAL ELEVATION OF WALL COPING & RAILING

(LOOKING @ F.F. OF WALL)



PART ELEVATION OF RAILING

* INCREASE TO 2'-9" MAX. CANTILEVER ONLY AT 90 DEG. TURN AT END OF 3'-0" TALL PORTION OF RAIL.

SECTION THRU RAILING

ELEVATION

POST ATTACHMENT

UNIT SHALL BE GALV. AFTER FABRICATION

NOTE: IN LIEU OF USING THE 2½" DIA. SLEEVE, THE 2" DIA. RAIL POST MAY BE WELDED TO THE BASE PLATE.

NOTES

BID ITEM SHALL BE "RAILING PIPE", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 7) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

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

GALVANIZED STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF POSTS.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

◪ CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS IN POST SHIMS AND BASE PLATES WITH NON-STAINING, GRAY, NON-BITUMINOUS JOINT SEALER.

ALL RAILINGS, POSTS, GATES AND ASSOCIATED HARDWARE SHALL BE PAINTED BLACK (AMS STANDARD COLOR NO. 27038).

LEGEND

① 2" DIA. NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. POSTS ARE TO BE SET VERTICAL.

② 2" DIA. NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1

③ 1½" DIA. PIPE SLEEVE FOR NO. 2. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 2 1/16".

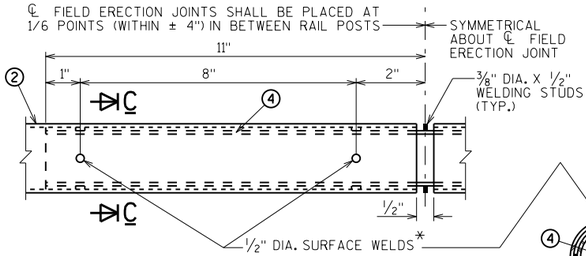
④ 1½" DIA. PIPE SLEEVE X 1'-10" LONG FOR NO. 2. PROVIDE ½" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE ⅜" DIA. X ½" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

⑤ PLATE ¾" X 5" X 8", WITH ⅝" DIA. HOLE FOR ANCHOR BOLTS NO. 6. WELD TO NO. 1. OR PIPE SLEEVE AS SHOWN.

⑥ ½" DIA. X 6⅞" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. ☆

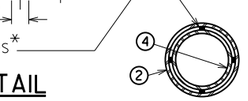
☆ ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHORS ½-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS, AND BE FULLY THREADED ROD, ASTM F1554-GRADE 36(MIN.).

⑦ ¼" X 2" X 8" FLAT BAR, WITH ⅝" DIA. HOLES FOR ANCHOR BOLTS NO. 6.

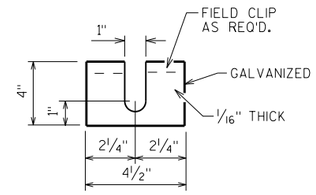


FIELD ERECTION JOINT DETAIL

*MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

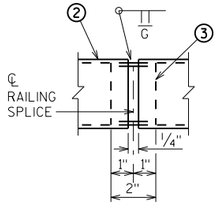


SECTION C-C



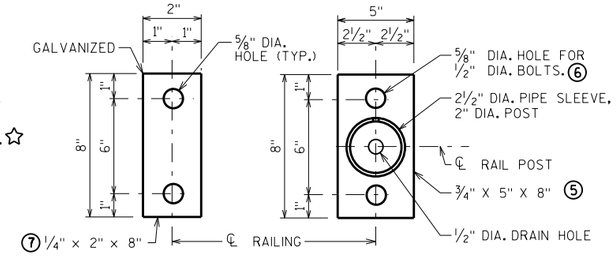
POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST.



SHOP RAILING SPLICE DETAIL

(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



ANCHOR PLATE

BASE PLATE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-40-723

DRAWN BY CAD | PLANS CK'D. ARC

PIPE RAILING

SHEET 7

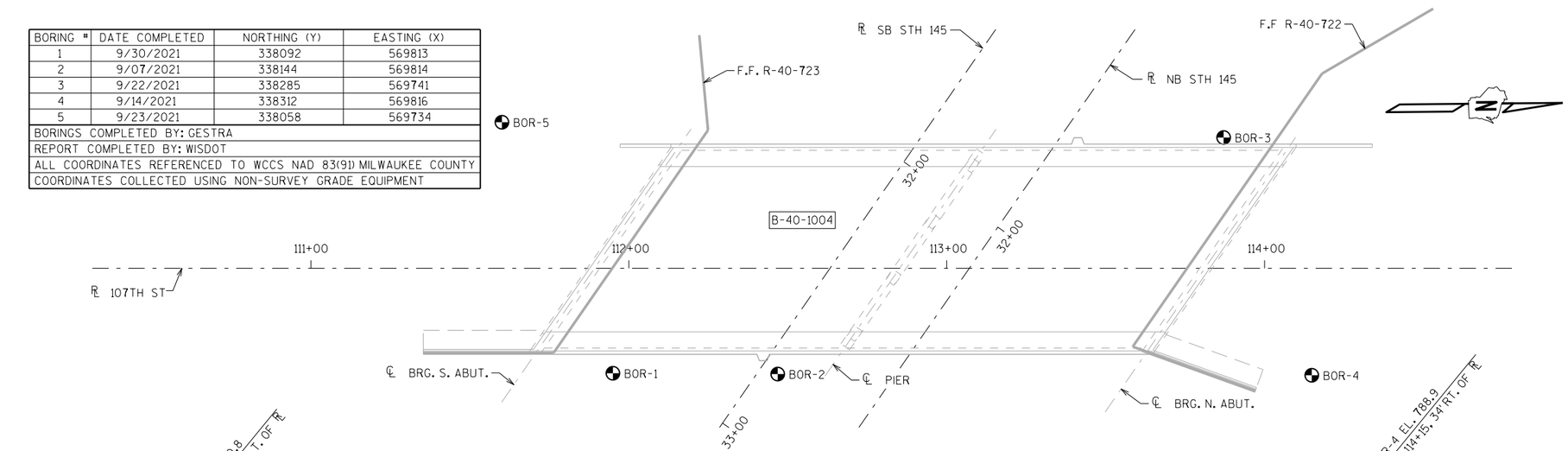
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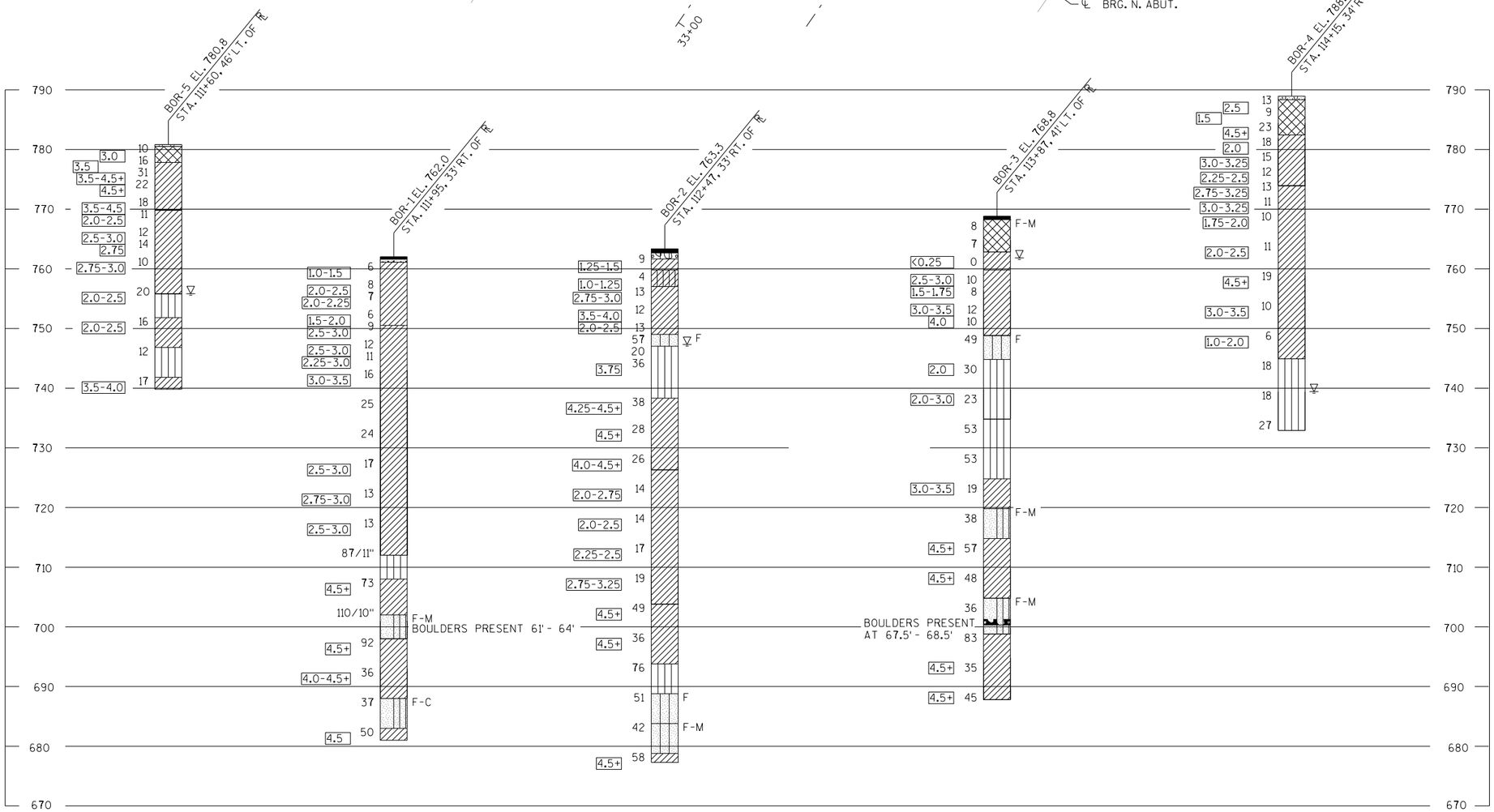
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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	9/30/2021	338092	569813
2	9/07/2021	338144	569814
3	9/22/2021	338285	569741
4	9/14/2021	338312	569816
5	9/23/2021	338058	569734
BORINGS COMPLETED BY: GESTRA			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) MILWAUKEE COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			





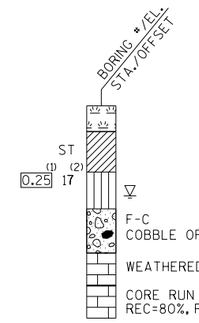
STATE PROJECT NUMBER

1360-12-70

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-40-723

DRAWN BY TLP/CAD | PLANS CK'D. ARC

SUBSURFACE EXPLORATION

SHEET 8

286

SCALE =

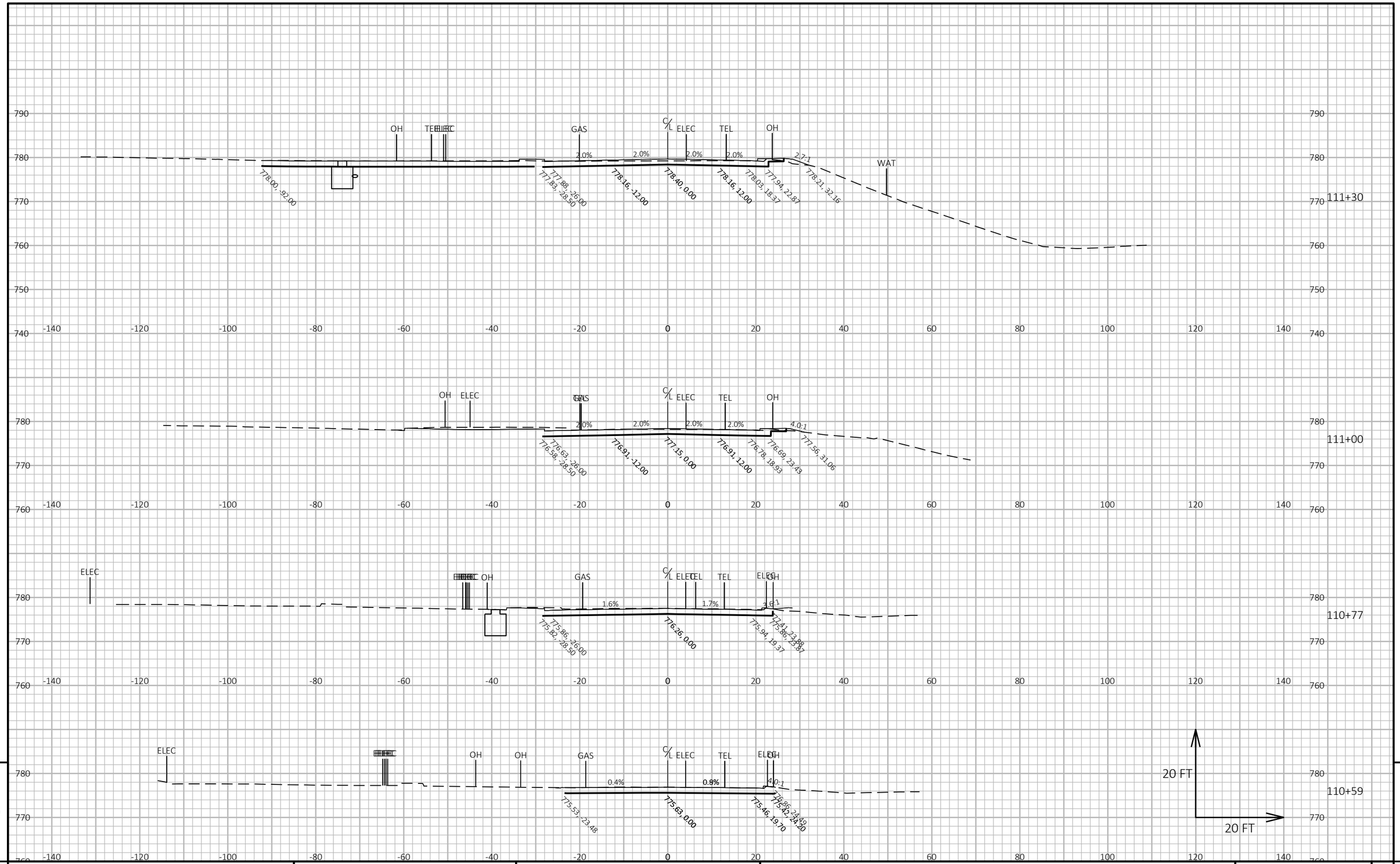
DIVISION 1 - 107TH-PR

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
									1.00	1.20	
						NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
110+00	11000.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0
110+25	11025.00	25.00	24.66	0.00	0.00	11	0	0	11	0	11
110+50	11050.00	25.00	53.18	0.00	0.00	36	0	0	47	0	47
110+75	11075.00	25.00	79.24	0.00	0.86	61	0	0	108	0	108
111+00	11100.00	25.00	96.08	0.00	1.24	81	0	1	189	1	188
111+25	11125.00	25.00	144.23	0.00	0.84	111	0	1	300	2	298
111+50	11150.00	25.00	89.56	0.00	3.04	108	0	2	408	5	403
111+75	11175.00	25.00	20.17	0.00	350.79	51	0	164	459	202	257

DIVISION 1 - 107TH-PR

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
									1.00	1.20	
						NOTE 1	NOTE 2	NOTE 3	NOTE 1		NOTE 8
114+00	11400.00	0.00	5.41	0.00	760.65	0	0	0	0	0	0
114+25	11425.00	25.00	30.46	0.00	476.51	17	0	573	17	688	-671
114+50	11450.00	25.00	47.74	0.00	90.67	36	0	263	53	1,003	-950
114+75	11475.00	25.00	135.37	0.00	0.00	85	0	42	138	1,054	-916
115+00	11500.00	25.00	61.90	0.00	0.36	91	0	0	229	1,054	-825
115+25	11525.00	25.00	68.37	0.00	1.51	60	0	1	289	1,055	-766
115+50	11550.00	25.00	63.26	0.00	0.06	61	0	1	350	1,056	-706
115+75	11575.00	25.00	50.68	0.00	1.53	53	0	1	403	1,057	-654
116+00	11600.00	25.00	3.08	0.00	0.18	25	0	1	428	1,058	-630

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
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - EXPANDED ROCK) * FILL FACTOR)]



9

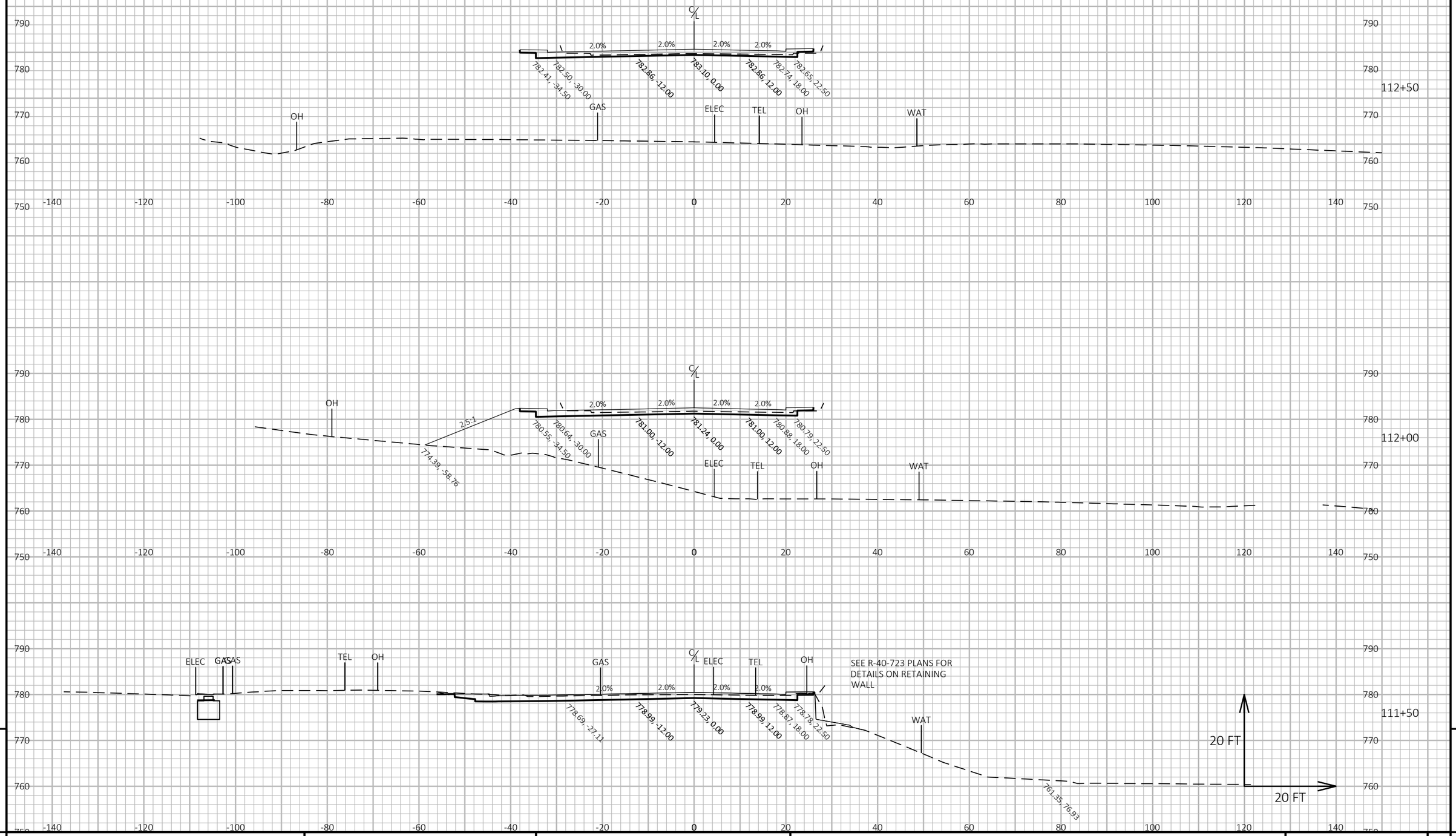
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PLOT DATE : 10/5/2021 5:02 PM PLOT BY : PAYNE, GREGORY PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	CROSS SECTIONS: 107TH ST	SHEET 289	E

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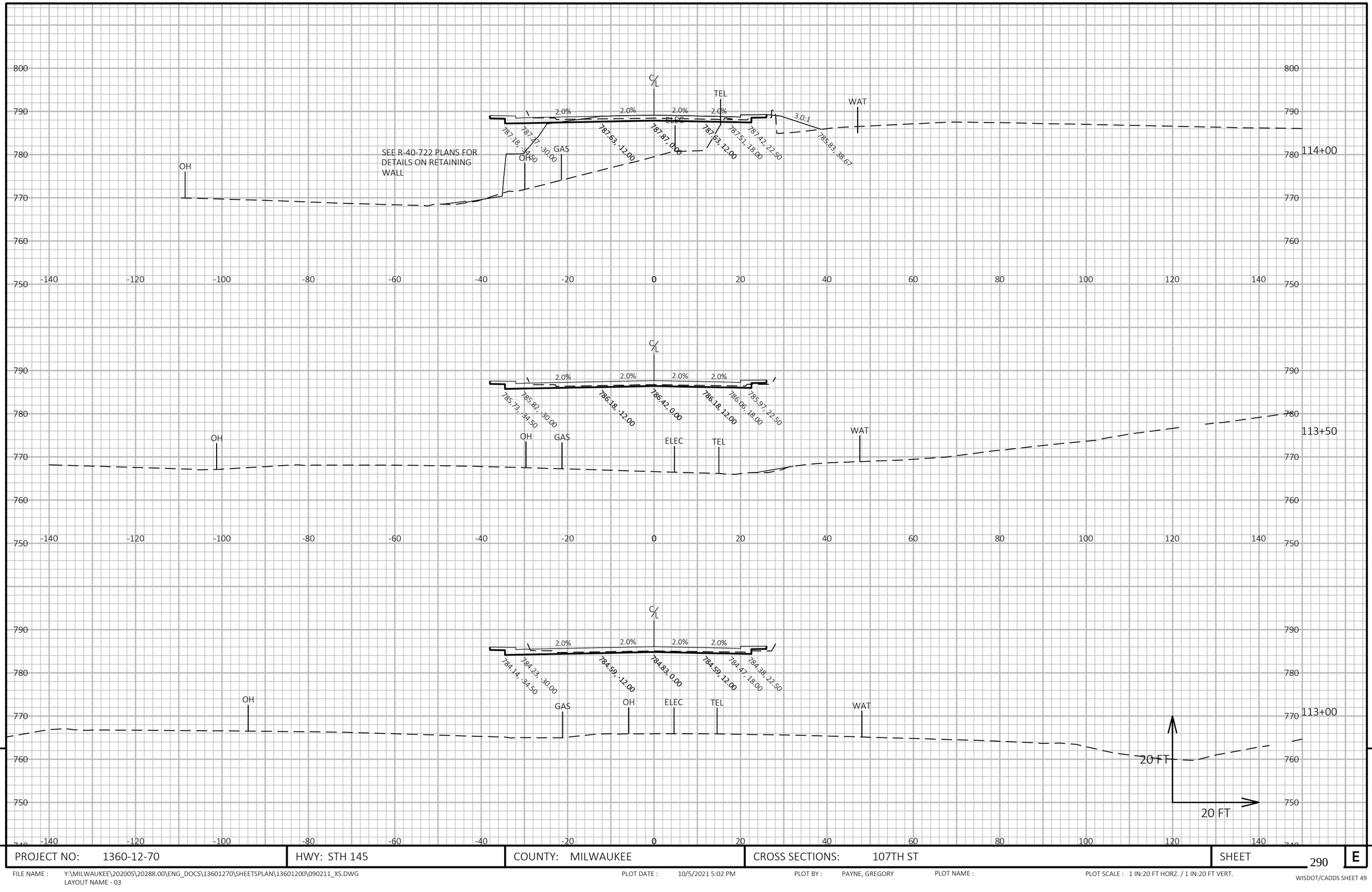
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PLOT BY : PAYNE, GREGORY

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



9

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PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	CROSS SECTIONS: 107TH ST	SHEET 290	E

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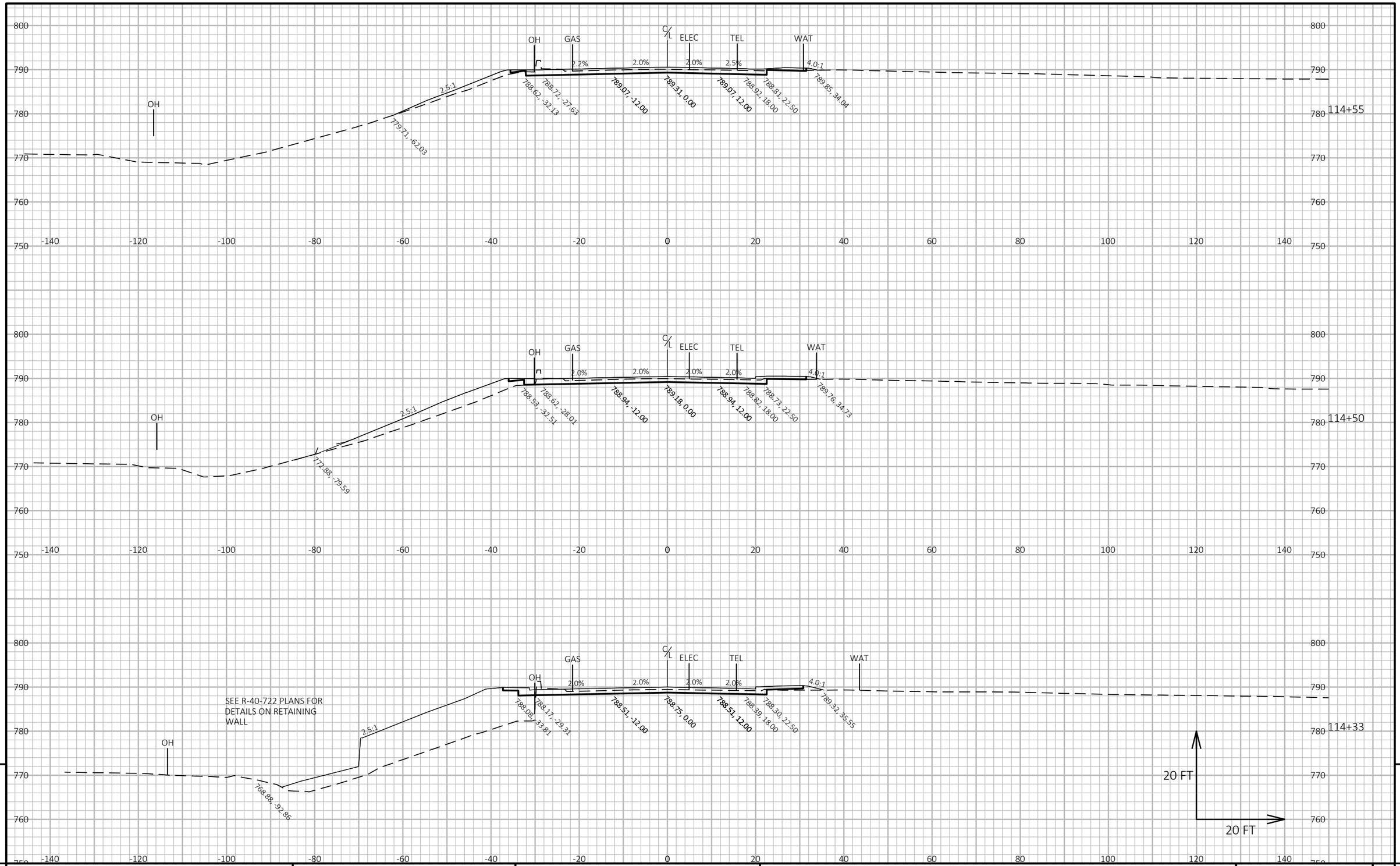
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PLOT BY : PAYNE, GREGORY

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



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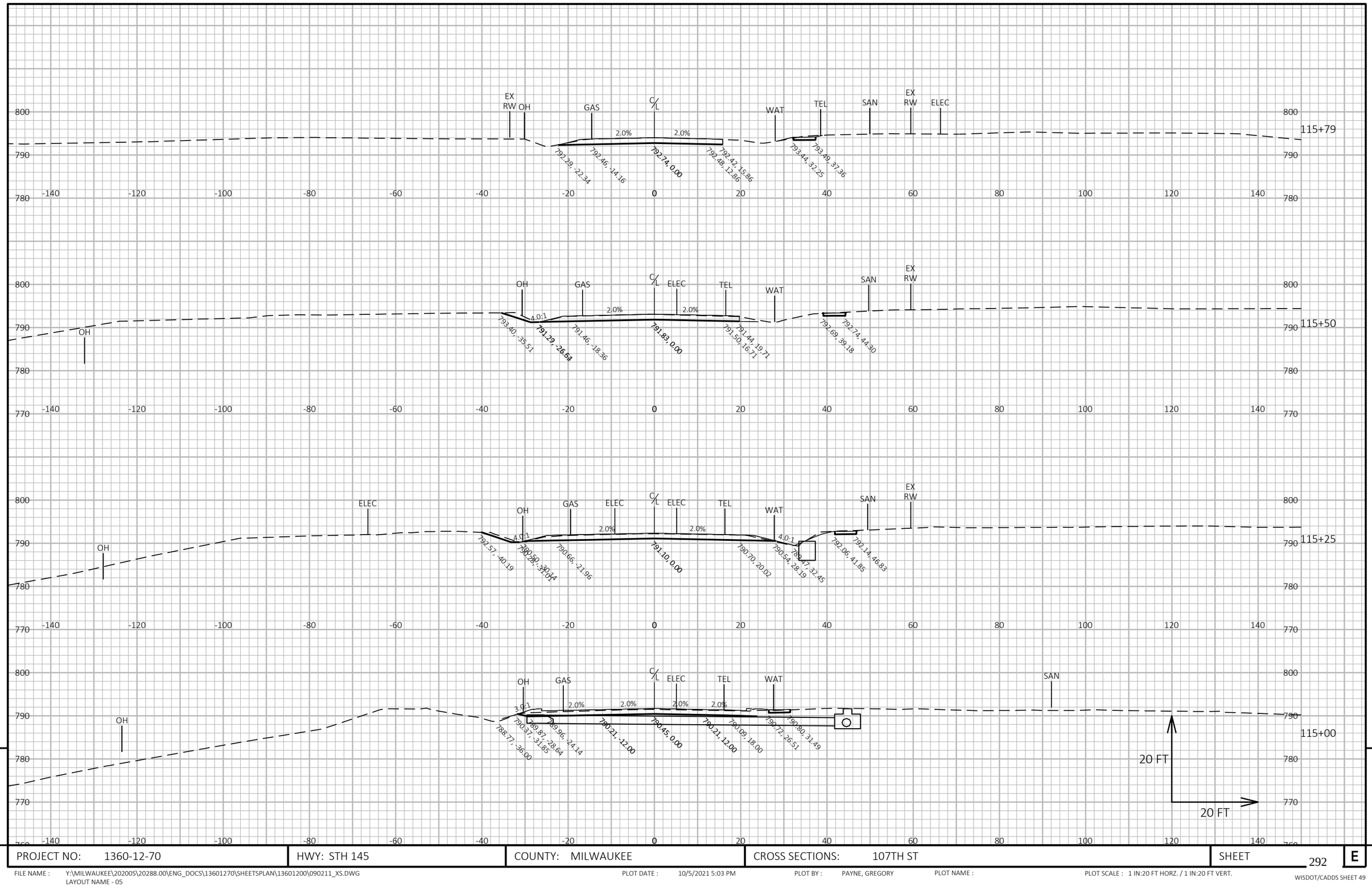
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WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	CROSS SECTIONS: 107TH ST	SHEET 292	E

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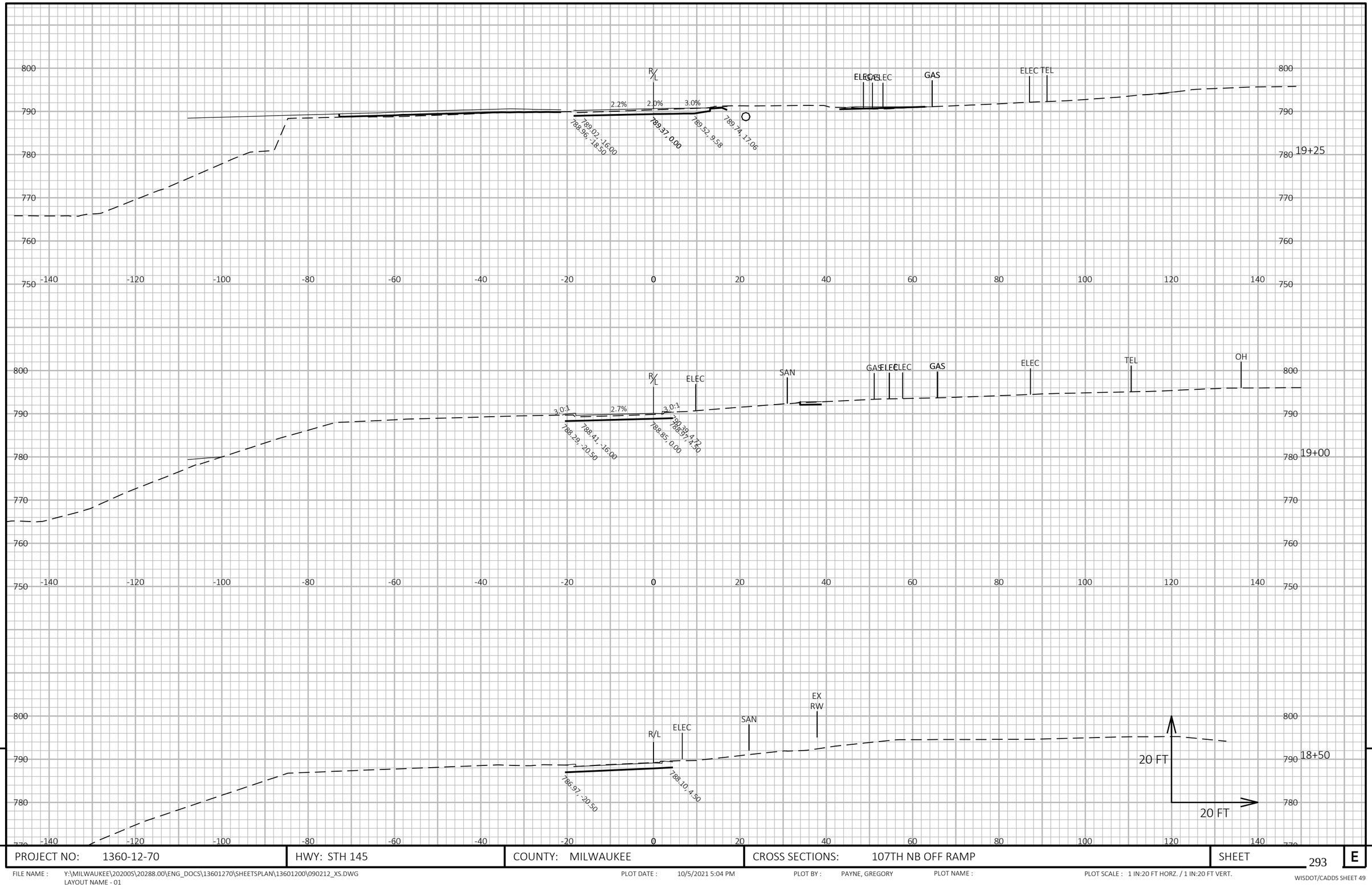
PLOT DATE : 10/5/2021 5:03 PM

PLOT BY : PAYNE, GREGORY

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 1360-12-70	HWY: STH 145	COUNTY: MILWAUKEE	CROSS SECTIONS: 107TH NB OFF RAMP	SHEET 293 E

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LAYOUT NAME - 01

PLOT DATE : 10/5/2021 5:04 PM PLOT BY : PAYNE, GREGORY PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

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through innovation and exceptional service.

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