WKE NOVEMBER 2023

PROJECT ID 2090-16-70
WITH: 2984-15-71

ORDER OF SHEETS

SECTION NO.	1	TITLE
SECTION NO.	2	TYPICAL 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 SECTION~~

TOTAL SHEETS = 152



17

DESIGN DESIGNATION

A.D.T. (CURRENT)	=	30,300-34,000
A.D.T.	=	N/A
D.H.V.	=	N/A
D.	=	N/A
T.	=	N/A
DESIGN SPEED	=	40 MPH
ESALS	=	N/A

CONVENTIONAL SYMBOLS

PLAN

- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- CORPORATE OR CITY LIMITS
- PROPERTY LINE — P.L.
- STANDARD BENCH MARK
- EXISTING RIGHT OF WAY LINE — R/W
- PROPOSED SEWER LATERAL — (SIZE)
- BASE OF SURVEY LINE
- CONCRETE WALK/DWY. REMOVAL
- LIMITS OF CONCRETE PAVEMENT REMOVAL — X X X X X X
- CATCH BASIN OR INLET — EXISTING ▣ PROPOSED ⊕

- COMBUSTIBLE FLUIDS UNDER PRESSURE — CAUTION
- RAILROADS
- FENCE — (TYPE)
- FIRE & POLICE CALL BOX
- LIGHT POLE
- POWER POLE
- TELEPHONE OR TELEGRAPH POLE
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL CONTROL BOX
- HYDRANT
- GAS OR WATER GATE VALVE
- MANHOLES - SEWER ○ UTILITY (TYPE) □
- TREES - EXISTING ◑ TO BE REMOVED

COUNTY MILWAUKEE

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

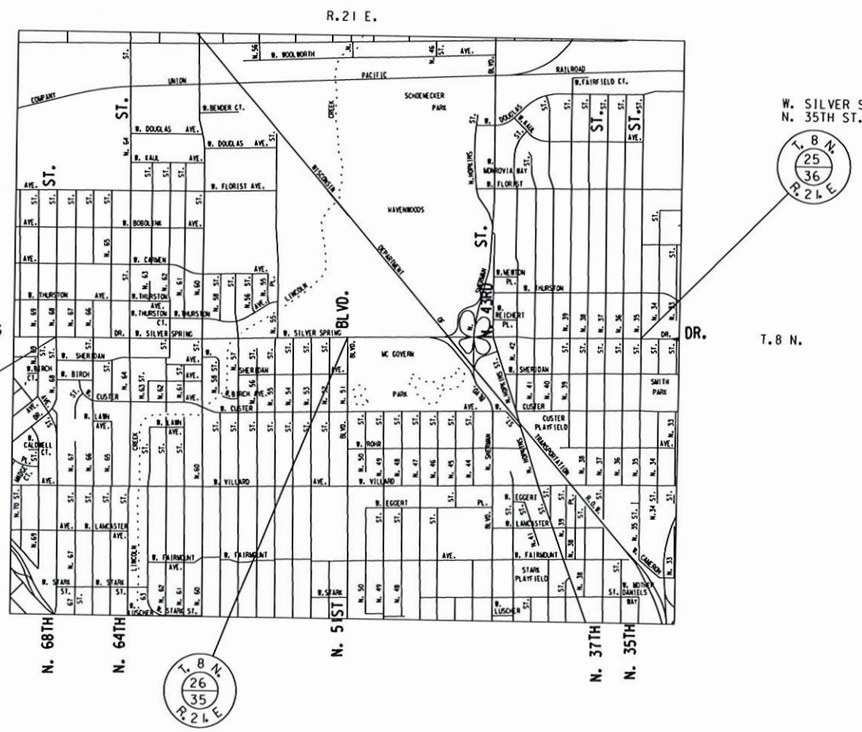
C MILWAUKEE W SILVER SPRING DRIVE

6 LOCAL INTERSECTIONS

LOCAL STREET
MILWAUKEE COUNTY

STATE PROJECT NUMBER
2090-16-70

N



LAYOUT

SCALE: 1 INCH = 1/2 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI (URBAN)

POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), MILWAUKEE COUNTY, NAD 83-2011 IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE CITY OF MILWAUKEE DATUM.

TO CONVERT ELEVATIONS SHOWN ON THIS PLAN TO NATIONAL GEODEDIC VERTICAL DATUM OF 1929, ADD 580.603 TO ELEVATIONS SHOWN ON THIS PLAN.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2090-16-70	WISC 2024041	1

Accepted For
City of Milwaukee

7/20/2023
(Date) Commissioner of Public Works

Original Plans Prepared By

WISCONSIN
KEVIN J. MUHS
46391-6
MILWAUKEE WI
PROFESSIONAL ENGINEER
07/18/2023

(Date) City Engineer

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	CITY OF MILWAUKEE
Designer	CITY OF MILWAUKEE
Project Manager	GREGORY HAFEMAN
Region Examiner	
Region Supervisor	BRIAN BOOTHBY

APPROVED FOR THE DEPARTMENT

DATE: 07/28/2023

(Signature)

E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\TITLE.DGN

PLOT DATE:

REVISED DATE: 06-22-2023 BY SLB

GENERAL NOTES

1. ALL OPENINGS BELOW SUBGRADE, RESULTING FROM REMOVALS OR ABANDONMENTS, SHALL BE BACKFILLED WITH BASE AGGREGATE DENSE 1-1/4". BACKFILL MATERIAL SHALL BE INCIDENTAL TO THE ASSOCIATED REMOVAL OR ABANDON PAY ITEM.
2. ALL DISTURBED AREAS, NOT SURFACED, ARE TO BE COVERED WITH 4-INCHES OF TOPSOIL, SODDED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. TOPSOIL AREAS SHALL BE SODDED WITHIN 5 CALENDAR DAYS.
3. ALL STATION AND OFFSET OF CURB REFERENCED IN THE PLANS ARE TO THE FACE OF THE CURB.
4. ANY MESH OR REINFORCEMENT FOUND DURING REMOVAL OF THE PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO THE ITEM “REMOVING PAVEMENT”
5. THERE MAY BE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE HIS 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.
6. THESE PLANS SHOW UTILITY FACILITIES EXISTING AT THE TIME OF THE ORIGINAL SURVEY IN SEPTEMBER OF YEAR 2021. CONTRACTOR IS ENCOURAGED TO CONTACT CITY OF MILWAUKEE PLANNING & PERMITS SECTION AT (414) 286-2487 TO IDENTIFY FACILITIES INSTALLED AFTER THIS DATE.

STANDARD ABBREVIATIONS

ASPH.	- ASPHALT
B.M.	- BENCH MARK
CTR.	- CENTER
C/L	- CENTER LINE
COMB.	- COMBINED
CONC.	- CONCRETE
C.W.	- CONCRETE WALK
COR.	- CORNER
C	- CURB
ELEV.	- ELEVATION
ENT.	- ENTRANCE
EXIST.	- EXISTING
F	- FLANGE
G	- GUTTER, OR GAS
HYD.	- HYDRANT
LT	- LEFT
MMSD	- MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
NB	- NORTHBOUND
P/L	- PROPERTY LINE
PGL	- PROFILE GRADE LINE
R OR RAD.	- RADIUS
RET.	- RETAINING
RT	- RIGHT
R/W	- RIGHT OF WAY
SB	- SOUTHBOUND
TEL	- AMERITECH
TES	- TRAFFIC ENGINEERING, AND ELECTRICAL SERVICES
T/L	- TRANSIT LINE
V.T. 0R VT	- VARIABLE THICKNESS
WEP	- WISCONSIN ELECTRIC POWER

3” ASPHALT AT THE MILLING AREAS
SINGLE LIFT OVERLAY

ORDER OF SECTION 2 SHEETS

General Notes
Utility Contacts
Project Overview
Construction Details
Removal Plans
Contaminated Soil Limits
Plan Detail
Curb Ramp Detail
Erosion Control Plan
Permanent Sign Plan
Street Lighting & CUC Plan
Traffic Signal Plan
Pavement Marking
Traffic Control
Alignment

UTILITY CONTACTS

AT&T WISCONSIN
JAY C BULANEK
435 S 95th St,
MILWAUKEE, WI 53214
PHONE: 414-491-2855
EMAIL: JB5175@ATT.COM

CHARTER/SPECTRUM
CHARLES BRASILE
1320 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
PHONE: 414-277-4045
EMAIL:CHARLES.BRASILE@CHARTER.COM

CITY OF MILWAUKEE, COMMUNICATIONS
JOE MACIEJEWSKI
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-286 3640
EMAIL: JOE,MACIEJEWSKI@MILWAUKEE.GOV

CITY OF MILWAUKEE, CUC
KAREN ROGNEY
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-286-3243
EMAIL: KROGNEY@MILWAUKEE.GOV

CITY OF MILWAUKEE, WATER WORKS
JOSH IWEN
841 N. BROADWAY, ROOM 409
MILWAUKEE, WI 53202
PHONE: 414-286-3640
EMAIL:JOSHUA.IWEN@MILWAUKEE.GOV

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
MICHELLE KLAPPA-SULLIVAN
260 W. SEEBOTH AVE.
MILWAUKEE, WI 53204-1446
PHONE: 414-225-2241
CELL: 414-617-1429

VERIZON WIRELESS
MARC FISHER
2415 INDUSTRIAL DRIVE
MONONA, WI53713
PHONE; 262-349-5861

WE ENERGIES – ALL CORRESPONDENCE
KRISTEN RONGHOLT
500 S. 116TH STREET
WEST ALLIS, WI 53214
PHONE: 414-221-2738
EMAIL: WE-UTILITY-RELOCATIONS@WE-ENERGIES.COM

WE ENERGIES - ELECTRIC
JAKE CHRISTENSEN
PHONE: 262-502-6819
CELL: 414-750-8548
EMAIL: JACOB.CHRISTENSEN@WE-ENERGIES.COM

WE ENERGIES – GAS
ALEX DANTINNE
500 S. 116TH ST.
WEST ALLIS, WI 53214
PHONE: 920-621-6903
EMAIL: ALEX.DANTINNE@WE-ENERGIES.COM

OTHER CONTACTS

CITY OF MILWAUKEE, FORESTRY
JAMES KRINGER
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-708-2428

CITY OF MILWAUKEE, SEWERS
ZAFAR YOUSUF
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-286-2467
EMAIL: ZYOUSU@MILWAUKEE.GOV

CITY OF MILWAUKEE, STREET LIGHTING
LISA HICKMAN
841 N. BROADWAY
MILWAUKEE, WI. 53202
PHONE: 414-286-3270
EMAIL: LHICKM@ MILWAUKEE.GOV

CITY OF MILWAUKEE, TRAFFIC SIGNALS
SCOTT REINBACHER
841 NORTH BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-286-3232
EMAIL: SREINB@MILWAUKEE.GOV

CITY OF MILWAUKEE, UTILITY COORDINATOR
ELLIOT SMYTH
841 N. BROADWAY, ROOM 710
MILWAUKEE, WI 53202
PHONE: 414-286-0488
CELL: 414-704-0468
EMAIL: ESMYTH@MILWAUKEE.GOV

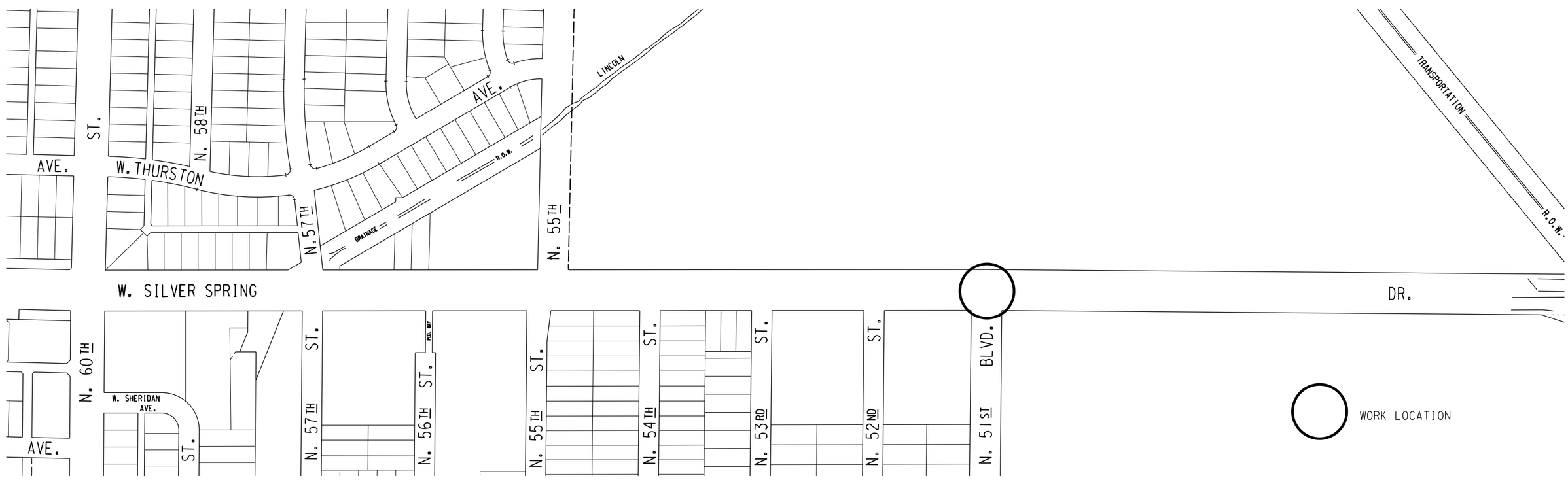
MILWAUKEE COUNTY TRANSIT SYSTEM
ARMOND SENSABAUGH
1942 N. 17TH ST.
MILWAUKEE, WI 53205
PHONE: 414-343-1728
EMAIL: ASENSABAUGH@MCTS.ORG

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
JOHN WASHBURN
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187-1607
PHONE: 262-547-6721

WISCONSIN DEPT. OF NATURAL RESOURCES
RYAN PAPPAS
1027 WEST ST PAUL AVENUE
MILWAUKEE, WI 53233
PHONE: 414-750-7495
EMAIL: RYAN.PAPPAS@WISCONSIN.GOV

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

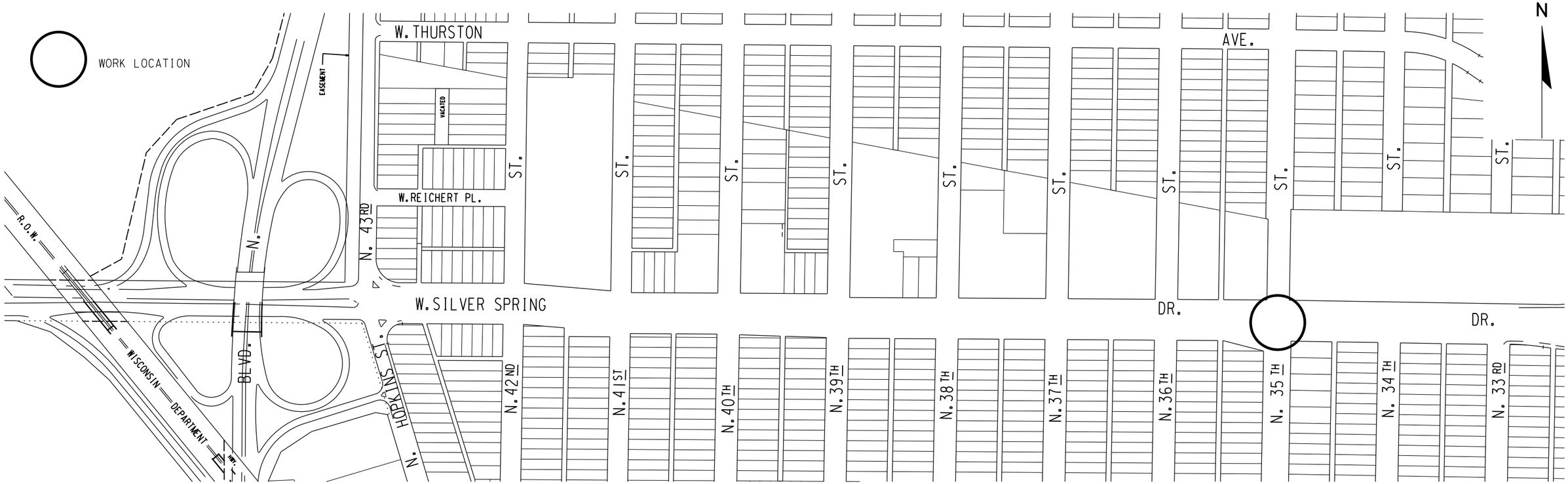




STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SCALE FEET 0' 20'	SHEET NO: 4	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\EXISTING\PROJECT OVERVIEW.DGN

REVISED DATE: 06-22-2023 BY SLB

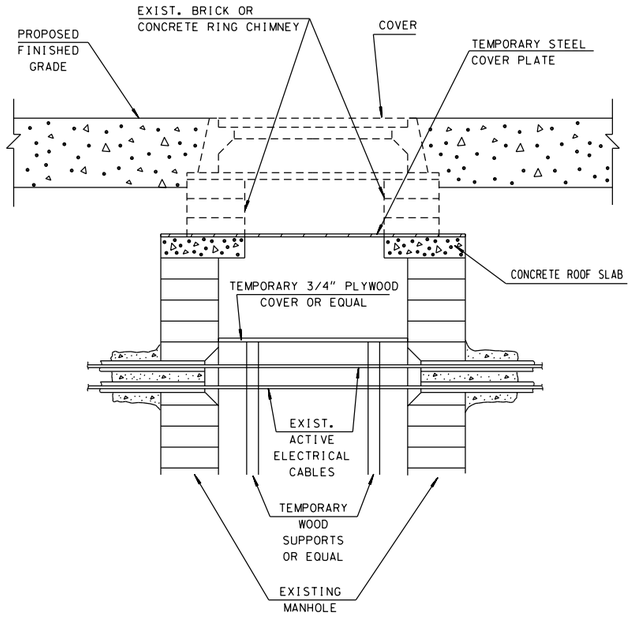


STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SCALE FEET 0' 20'	SHEET NO: 5	E

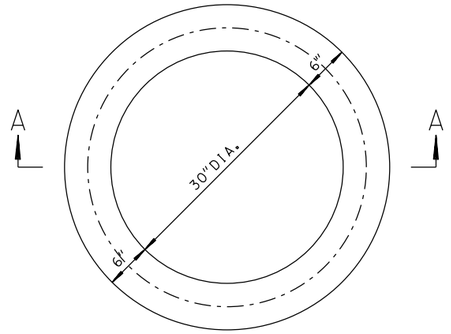
FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\EXISTING\PROJECT OVERVIEW.DGN

REVISED DATE: 06-22-2023 BY SLB

2



BLOCK OR PRECAST MANHOLE



PLAN

SECTION A-A

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

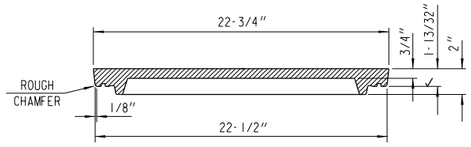
THE CIRCUMFERENTIAL STEEL SHALL BE CENTERED WITHIN THE RING.

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

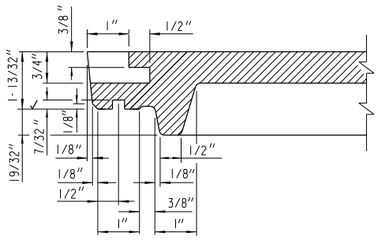
THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE CORE SHALL BE 4000 P.S.I.

CONCRETE ADJUSTING RING

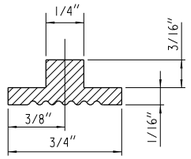
STATE PROJECT NUMBER 2090-16-70	HWY: W SILVER SPRING DR	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET	SHEET NO: 6	E

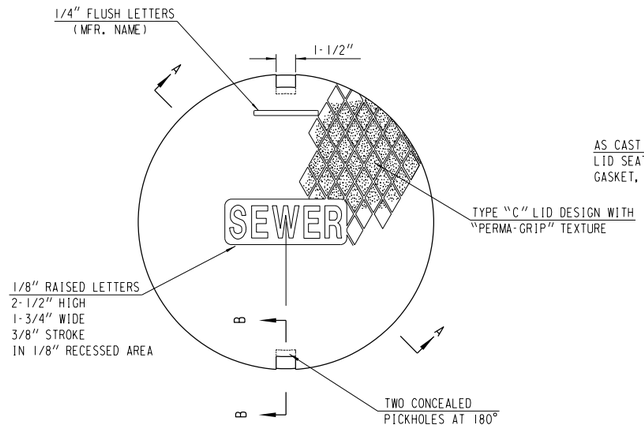


SECTION A-A

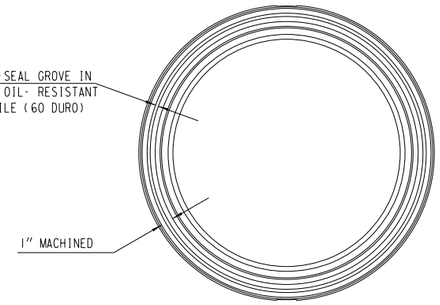


SECTION B-B





TOP VIEW



BOTTOM VIEW

MANHOLE COVER - TYPE MS58A

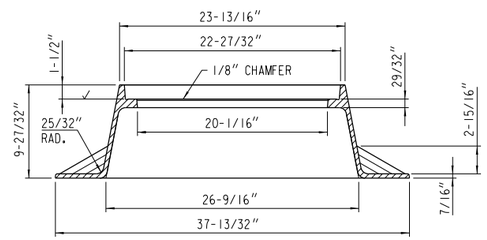
LID - 107 LBS.

NOTE:

ALL CASTINGS SHALL BEAR THE FOLLOWING IDENTIFICATION MARKS IN THE FORM OF LEGIBLE LETTERS OR NUMERALS RAISED 1/8" HAVING A DIGIT OR LETTER HEIGHT OF ONE INCH ON LOWER FACE OF LID:

1. THE INITIALS OR MONOGRAM OF THE FOUNDRY.
2. THE CONTRACT NUMBER AND YEAR MADE.
3. THE CASTING IDENTIFICATION NUMBER.
4. THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.

NOTE: ALL EXTERIOR EDGES SHALL BE GROUND.



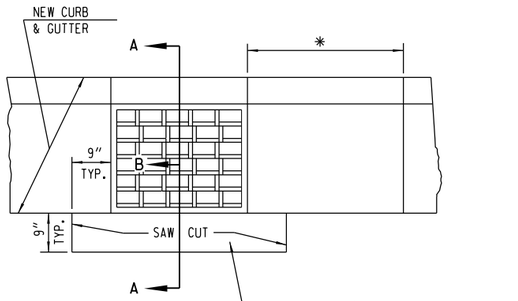
MANHOLE FRAME - TYPE MS21

FRAME - 182 LBS.

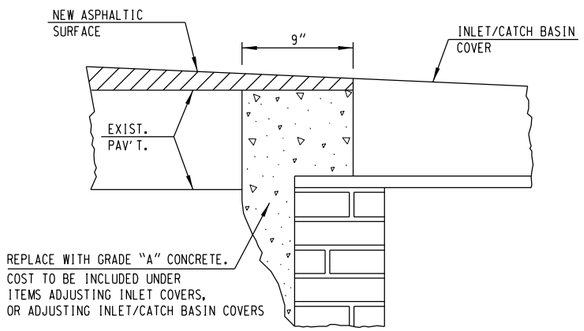
STATE PROJECT NUMBER 2090-16-70	HWY: W SILVER SPRING DR	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET	SHEET NO: 7	E

2

* REMOVE 3'-0" CURB & GUTTER MIN. OR TO THE NEAREST JOINT, 6'-0" MAX. UNLESS OTHERWISE DIRECTED ON THE PLAN.

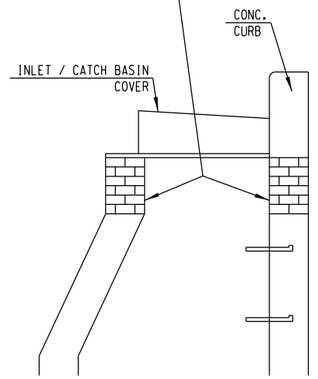


PLAN VIEW



SECTION A-B

REPAIR BY REMOVING & REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO DEPTH AS DIRECTED BY ENGINEER. WORK UNDER ADJUSTING CATCH BASIN/ INLET COVERS SHALL BE CONFINED TO THE BRICK SHIMMING ABOVE THE STRUCTURE CORBEL. THIS SHIMMING SHALL NOT EXCEED 1 FOOT BETWEEN THE TOP OF THE CORBEL AND THE FRAME BOTTOM.



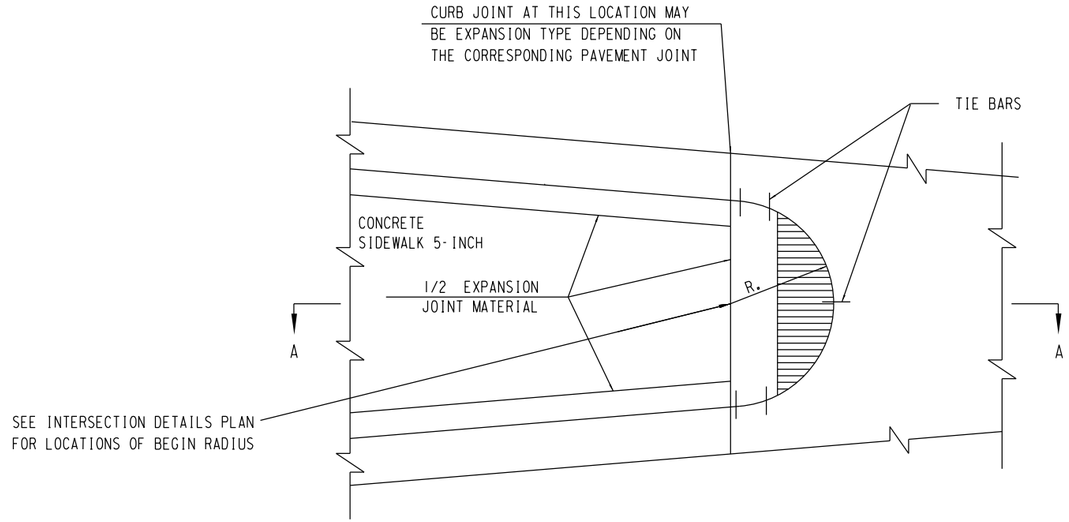
SECTION A-A

ADJUSTING INLET / CATCH BASIN COVERS

NOTE: ADJUSTMENT WORK INCIDENTAL WITH PLACING NEW COVER.

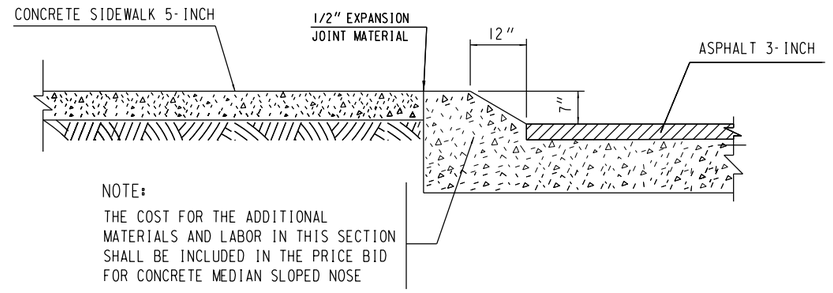
STATE PROJECT NUMBER 2090-16-70	HWY: W SILVER SPRING DR	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET	SHEET NO: 8	E

2



SPN CONCRETE MEDIAN SLOPED NOSE

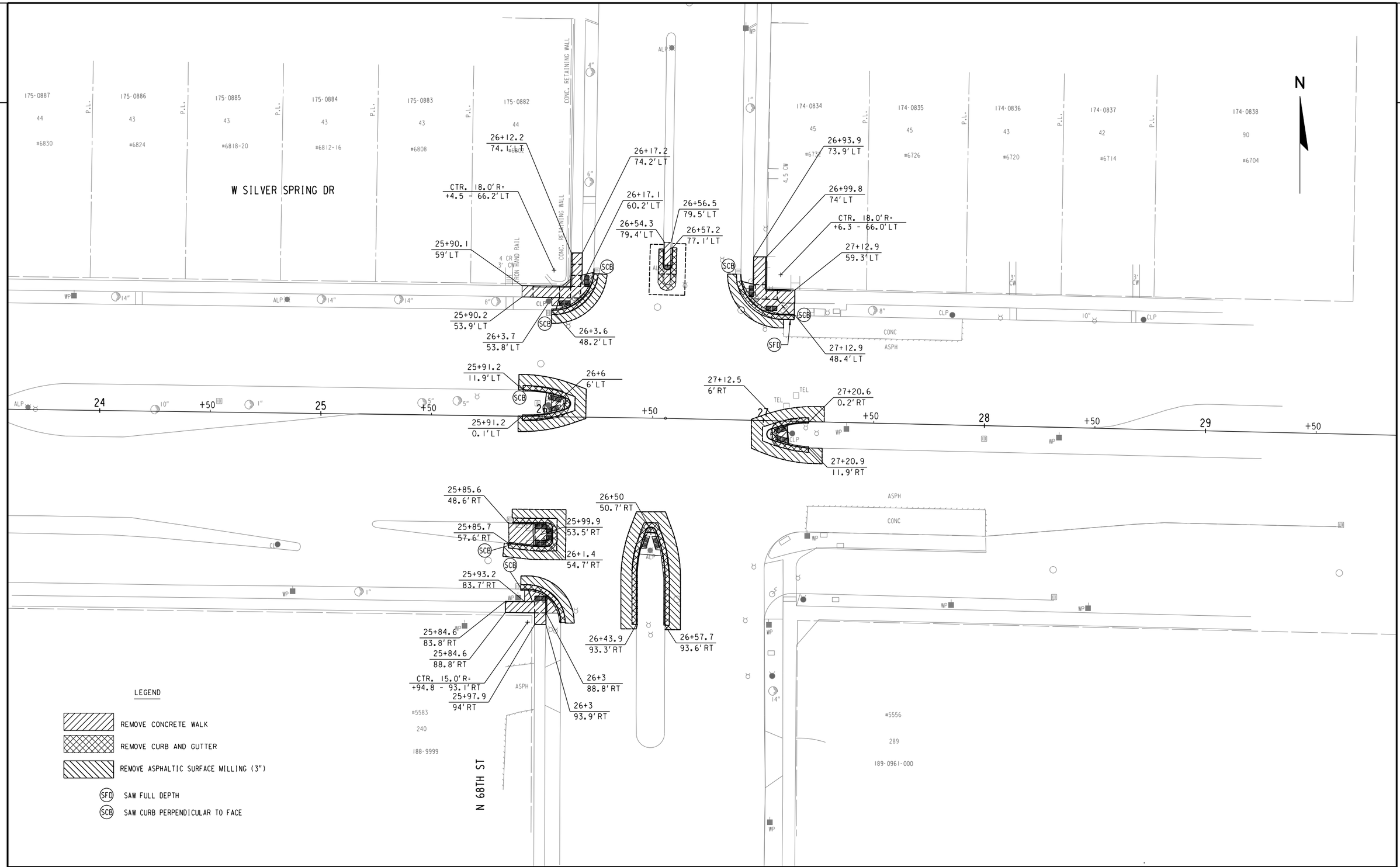
(TYPICAL SECTION OF CONCRETE CURB & GUTTER
TO BE CONSTRUCTED AT END OF MEDIAN ISLAND)



SECTION A-A

STATE PROJECT NUMBER 2090-16-70	HWY: W SILVER SPRING DR	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SCALE FEET	SHEET NO: 9	E

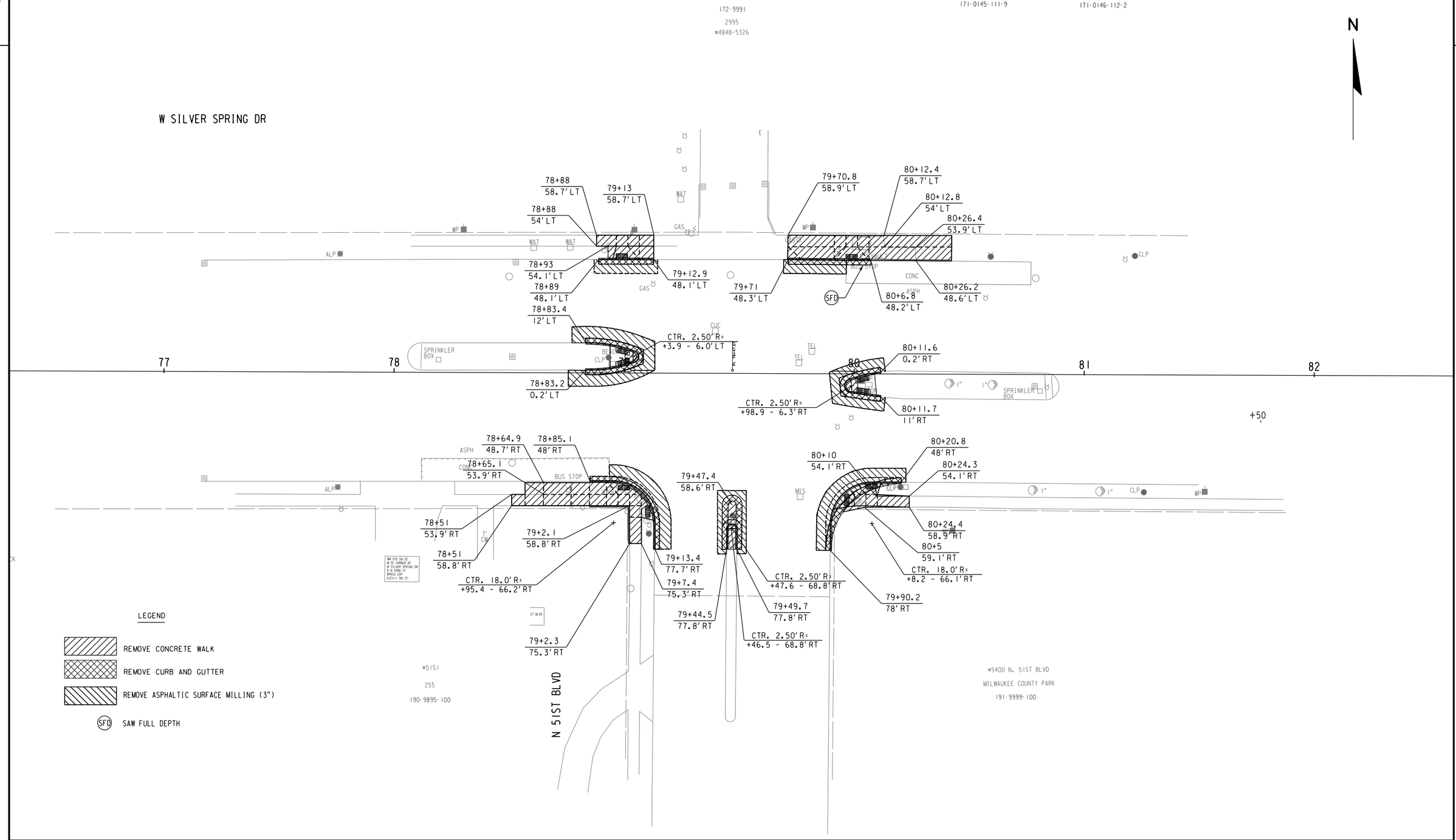
2



STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	REMOVAL PLAN - N. 68TH ST.	SCALE FEET 0' 40'	SHEET NO: 10	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MONOTUBES - 2090-16-00\DESIGN\REMOVAL N 68TH ST.DGN

REVISED DATE: 11-17-2022 BY EMC



STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	REMOVAL PLAN - N. 51ST BLVD.	SCALE FEET 0' 40'	SHEET NO: 11	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\DESIGN\REMOVAL N 51ST ST.DGN

REVISED DATE: 01-06-2023 BY AA

W SILVER SPRING DR

N

132+46.4
46'LT

CTR. 18.0'R=
+39.2 - 30.7'LT

132+56.9
45.9'LT

132+32.5
32.1'LT

132+56.9
44.1'LT

132+32.5
23.7'LT

132+20.3
23.7'LT

132+20.5
13.4'LT

132+46.3
32.1'LT

133+11.1
43.8'LT

133+1.1
43.5'LT

133+11.1
23.7'LT

CTR. 18.0'R=
+19 - 31.0'LT

133+32.6
23.8'LT

133+32.7
13.1'LT

SFD ALONG FLANGE-LINE

132+16.3
21.4'RT

CTR. 2.50'R=
+11.1 - 41.6'RT

133+6.6
38.7'RT

133+30.1
35.3'RT

133+6.7
44.9'RT

133+28.4
46.9'RT

132+16.3
37'RT

133+5.9
98.6'RT

133+28.6
83.4'RT

133+28.7
94'RT

133+12
94.2'RT

132+98.7
106.4'RT

CTR. 18.0'R=
+16.6 - 101.3'RT

133+6.1
106.6'RT

133+11.9
106.7'RT

N 35TH ST

130 +50 131 +50 132 +50 133 +50 134 +50 135 +50 136

171-9852-100 | 22 | #3514
171-9853-100 | 48 | #3510-12
171-9854 | 57 | #3500-02
170-9976-100 | 120 | #3442
170-9977-100 | #3410 | 153
#3519-31 | 120 | 192-0612-100
#5566 | 123 | 192-0585-100
#3425 | 120 | 193-0604-100
#5571 | 120 | 193-0203

LEGEND

- REMOVE CONCRETE WALK
- REMOVE CURB AND GUTTER
- REMOVE ASPHALTIC SURFACE MILLING (3")
- SFD SAW FULL DEPTH
- SCB SAW CURB PERPENDICULAR TO FACE

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	REMOVAL PLAN - N. 35TH ST.	SCALE FEET 0' 40'	SHEET NO: 12	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MONOTUBES - 2090-16-00\DESIGN\REMOVAL N 35TH ST.DGN

REVISED DATE: 07-17-2023 BY SLB

2

2

W SILVER SPRING DR

N

171-9852-100
22
#3514

171-9853-100
48
#3510-12

171-9854
57
#3500-02

170-9976-100
120
#3442

170-9977-100
#3440
155

P.L.

CLP

8"

DWY

SILL

CONC APEX

NOS

ASPH

SIGN

BUS STOP

TEL

CONC

130 131 132 133 134 135

BEGIN STA. 133 +05.00
BEGIN OF CONTAMINATED SOIL

5 TO 8+ FT BELOW GRADE

END STA. 133+40.00
END OF CONTAMINATED SOIL

+05.00

+40.00

35'

35'

4"

ASPH
CONC

BUS STOP

OLD

#3519-31
120
192-0612-100

#5566
123
192-0585-100

#3425
120
193-0604-100

#5571
120
193-0203

N 35TH ST

6"

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	CONTAMINATED SOIL LIMITS	SCALE FEET 0' 40'	SHEET NO: 13	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\DESIGN\HAZMAT N 35TH ST.DGN

REVISED DATE: 11-17-2022 BY ECM

W SILVER SPRING DR

25 +50 26 +50 27 +50 28

N

BM STD 59-32 IN EASTERLY MEDIAN
W SILVER SPRING DR & N 68TH ST
BRASS CAP
ELEV.: 123.00'

CTR. 2.5' R=
+2.9 - 50.5' RT

26+2.6, 48' RT
122.50C
122.17G
122.13F

26+47.7, 50.6' RT
124.43C
124.10G
124.06F

CTR. 2.5' R=
+49.9 - 51.9' RT

25+97.5, 48' RT
124.55C
124.22G
124.18F

26+5.4, 50.8' RT
124.45C
124.12G
124.08F

26+52, 50.6' RT
124.33C
124.00G
123.96F

CTR. 2.5' R=
+3 - 56.1' RT

26+46.8, 53.1' RT
124.38C
124.05G
124.01F

26+53.2, 53.6' RT
124.28C
123.95G
123.91F

25+96.5, 58.7' RT
124.42C
124.09G
124.05F

26+45.1, 59' RT
124.33C
124.00G
123.96F

26+55, 59.7' RT
124.23C
123.90G
123.86F

25+97.6, 58.7' RT
124.40C
124.07G
124.03F

26+5.4, 55.9' RT
124.40C
124.07G
124.03F

26+56.7, 65.9' RT
124.06C
124.73G
123.69F

26+2.7, 58.6' RT
124.35C
124.02G
123.98F

26+2.8, 80.4' RT
123.58C
123.25G
123.29F

26+44, 65.5' RT
124.28C
123.95G
123.91F

CLOSE
MAINTENANCE
RAMPS

26+57.2, 72.1' RT
123.88C
123.55G
123.51F

26+43.6, 72.1' RT
124.23C
123.90G
123.86F

25+94.8, 78.1' RT
123.77C
123.35G
123.39F

26+3.3, 83.8' RT
123.73C
123.40W

25+96.8, 83.8' RT
123.46

26+3.3, 88.8' RT
123.78C
123.45W

CTR. 15.0' R=
+94.8 - 93.1' RT

13.25'
5.25'
4'
2'
5'
1.5'
1'
1"
5"
14"

R/W

N 68TH ST

ASPH

CONC

WP

CLP

ALP

TEL

TYP 3 HYD
@ S/S OF
W SILVER SPRING DR
& N 67TH ST
NW BOLT, 2020, MUELLER
ELEV.: 120.19'

#5583

240

188-9999

#5556

289

189-0961-000

LEGEND

- (II) TYPE 2 PEDESTRIAN RAMP
- (V) TYPE 5 PEDESTRIAN RAMP
- (IVB) TYPE 4B PEDESTRIAN RAMP
- (VI) TYPE 6 PEDESTRIAN RAMP
- (CWS) CONSTRUCT 5" THICK CONC. WALK
- (31E) CONSTRUCT 31" VERTICAL FACE CONC. CURB & GUTTER (FLANGE)
- (R31E) CONSTRUCT 31" VERTICAL FACE CONC. CURB & GUTTER (REVERSE FLANGE)
- (PC) CONSTRUCT PEDESTRIAN CURB
- (RGS) GRADE, TOPSOIL & SOD
- (S) SUMMIT
- (SPN) CONSTRUCT SNOW PLOWABLE NOSE
- (AS) ASPHALTIC SURFACE, 3"

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PLAN DETAIL - N. 68TH ST.	SCALE FEET 0' 20	SHEET NO: 14	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\DESIGN\N 68TH ST - SOUTH.DGN

REVISED DATE: 01-04-2023 BY AA

175-0884 | 175-0883 | 175-0882 | 174-0834 | 174-0835

P.L. | P.L. | P.L. | P.L. | P.L.

43 | 43 | 44 | 45 | 45

#6812-16 | #6808 | #6802 | #6732 | #6726

N

WEST SILVER SPRING

NORTH 68TH STREET

DRIVE

CONC. RETAINING WALL

CONCRETE RETAINING WALL

4.5 CMP

LEGEND

II	TYPE II PEDESTRIAN RAMP
V	TYPE V PEDESTRIAN RAMP
31E	CONSTRUCT 31" VERTICAL FACE CONC. CURB & GUTTER (EXPOSED FLANGE)
R31E	CONSTRUCT 31" VERTICAL FACE CONC. CURB & GUTTER (EXPOSED REVERSE FLANGE)
CWS	CONSTRUCT 5" THICK CONC. WALK
PC	CONSTRUCT PEDESTRIAN CURB
RGS	GRADE, TOPSOIL & SOD
SPN	CONSTRUCT SNOW PLOWABLE NOSE
AS	ASPHALTIC SURFACE, 3"

26+12.2, 69.1'LT
124.21

26+12.2, 64.1'LT
124.40C
123.90W

CTR. 18.0'R=
+4.5 - 66.2'LT

25+95.8, 59.1'LT
124.72

26+17.2, 69.1'LT
124.13

26+47.9
78.6'LT

26+16.7, 64.1'LT
123.85

26+53.8, 69.2'LT
124.68C
124.35G
124.31F

CTR. 2.5'R=
+55.8 - 69.2'LT

26+47.6
55.9'LT

26+63.2
79.1'LT

26+94, 61.3'LT
123.40

26+57.1, 69.2'LT
124.63C
124.30G
124.26F

26+63.2
55.8'LT

R&R 3" ASP OVER 8" CONC BASE

26+22.5, 65'LT

26+88.3, 65.9'LT

73.9'
LT

27+00, 61.4'LT
123.68C
123.35W

CTR. 18.0'R=
+6.3 - 66.0'LT

27+5, 59.4'LT
123.61C
123.28W

27+5, 54.9'LT
123.23

27+6.3, 48'LT
123.31C
122.88G
122.92F

25+95.8, 53.9'LT
124.64

26+4.6, 48.2'LT
124.45C
124.03G
124.07F

CONC

ASPH

26+2.8, 10.7'LT
125.68C
125.35G
125.31F

26+8.7, 9.2'LT
125.63C
125.30G
125.26F

26+11.5, 8.2'LT
125.58C
125.25G
125.21F

25+89.3
18.9'LT

26+19.8
12.7'LT

CTR. 2.5'R=
+10.3 - 6.0'LT

26+11.5, 3.9'LT
125.48C
125.15G
124.11F

26+19.8
0.6'RT

25+89.2
6.9'RT

26+8.1, 2.7'LT
125.53C
125.20G
125.16F

26+1.9, 1.2'LT
125.58C
125.25G
125.21F

25 +50 26 +50 27 +50 28

26+94.6
0.5'LT

27+27.4
6.9'LT

26+94.9
12.6'RT

27+27.1
18.9'RT

TEL

WP

BM STD 59-32 IN EASTERLY MEDIAN
W SILVER SPRING DR & N 68TH ST
BRASS CAP
ELEV.: 123.00'

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PLAN DETAIL - N. 68TH ST.	SCALE FEET 0' 20	SHEET NO: 15	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\DESIGN\N 68TH ST - NORTH.DGN

REVISED DATE: 01-04-2023 BY AA

2

W SILVER SPRING DR

N

78+96.4, 10.8' LT
96.79C
96.46G
96.42F

79+2.4, 9.2' LT
96.73C
96.40G
96.36F

79+3.9, 8.7' LT
96.71C
96.38G
96.34F

CTR. 2.5' R=
+3.9 - 6.0' LT

79+3.9, 3.3' LT
96.85C
96.52G
96.48F

79+2.4, 2.7' LT
96.87C
96.54G
96.58F

78+96.4, 1' LT
96.93C
96.60G
96.64F

78+86.8, 0.1' LT
96.98C
96.65G
96.61F

78 +50 79 +50 PI= 79+47.07 81

79+98.5, 3.3' RT
99.63C
99.30G
99.26F

80+0.5, 2.7' RT
99.58C
99.35G
99.31F

80+6.4, 1.1' RT
99.58C
99.25G
99.21F

CTR. 3.0' R=
+98.9 - 6.3' RT

79+99.1, 9.4' RT
99.83C
99.20G
99.16F

80+7.3, 10.5' RT
99.43C
99.10G
99.06F

80+1.2, 9.7' RT
99053C
99.20G
99.16F

80

78+95.4, 48.2' RT
98.71C
98.46G
98.50F

79+15.4, 66.2' RT
98.30C
98.05G
98.09F

80+8.1, 48.1' RT
98.22C
97.80G
97.84F

78+56.9, 53.9' RT
98.79

98.79 98.83 98.89

±5.5' 8' 12' 8' 7.4' 5' 5' 5'

78+56.9, 58.8' RT
98.87

STA 78+50, 55'RT
N: 328,949.25
E: 588,064.73

78+64.9, 58.8' RT
98.87

78+76.9, 58.8' RT
98.91

78+84.9, 58.8' RT
98.89C
98.97W

CTR. 18.0' R=
+95.4 - 66.2' RT

98.50C
98.60W

CTR. 2.0' R=
+46.5 - 68.8' RT

79+44.5, 68.8' RT
99.01C
98.68G
98.64F

2' 8.5' 2' R&R 3" ASP OVER 8" CONC. BASE

CTR. 2.0' R=
+47.6 - 68.8' RT

79+49.7, 68.8' RT
99.01C
98.68G
98.64F

79+90.2, 66.1' RT
98.00C
97.50G
97.54F

25.5'

5' 5' 13.75'

STA 80+50, 55'RT
N: 328,948.55
E: 588,264.24

CTR. 18.0' R=
+8.2 - 66.1' RT

R/W

BM STD 58-32
@ SE CORNER OF
W SILVER SPRING DR
& N 52ND ST
BRASS CAP
ELEV.: 98.72'

TYP 3 HYD @ SW CORNER OF
W SILVER SPRING DR & N 51ST BLVD
NW BOLT, 2018, MUELLER
ELEV.: 100.27'

N 51ST BLVD

#5151

255

190-9895-100

#5400 N. 51ST BLVD

MILWAUKEE COUNTY PARK

191-9999-100

GAS ASPH CONC BUS STOP VAULT CUC CLP BEACON SPRINKLER BOX TEL MIS WP

LEGEND

II	TYPE II PEDESTRIAN RAMP
V	TYPE V PEDESTRIAN RAMP
31E	CONSTRUCT 31" VERTICAL FACE CONC. CURB & GUTTER (FLANGE)
R31E	CONSTRUCT 31" VERTICAL FACE CONC. CURB & GUTTER (REVERSE FLANGE)
CWS	CONSTRUCT 5" THICK CONC. WALK
GS	ZERO FACE CURB
M	MATCH PROPOSED SURFACE TO EXISTING SURFACE
PC	CONSTRUCT PEDESTRIAN CURB
RGS	GRADE, TOPSOIL & SOD
S	SUMMIT
SPN	CONSTRUCT SNOW PLOWABLE NOSE
AS	ASPHALTIC SURFACE, 3"

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PLAN DETAIL - N 51ST BLVD	SCALE FEET 0' 20	SHEET NO: 16	E

172-9991

2995

#4848-5326

N

LEGEND

(II) TYPE II PEDESTRIAN RAMP

(III) TYPE III PEDESTRIAN RAMP

(31E) CONSTRUCT 31" VERTICAL FACE CONC. CURB & GUTTER (FLANGE)

(CW5) CONSTRUCT 5" THICK CONC. WALK

(RGS) GRADE, TOPSOIL & SOD

(S) SUMMIT

(AS) ASPHALTIC SURFACE, 3"

W SILVER SPRING DR

STA 78+50, 55'LT
N: 329,059.29
E: 568,064.64

8.6' 5' 5' 6.26'

2' 2' 4' 2' 4'

80+13.9, 59.1'LT
98.71

80+21.9, 59.2'LT
98.69

80+33.9, 59.3'LT
98.61

80+41.9, 59.3'LT
98.58

80+42, 54.3'LT
98.50

19.15' 5' 5' 5' 8' 8' 12' 8'

98.63 98.61 98.53

STA 80+50, 48.50'LT
N: 329,052.03
E: 568,265.06

WP WAT GAS E TEL CUC VAULT BUS STOP CONC ASPH SPRINKLER BOX BEACON CLP

78 +50 79 +50 80 +50 81

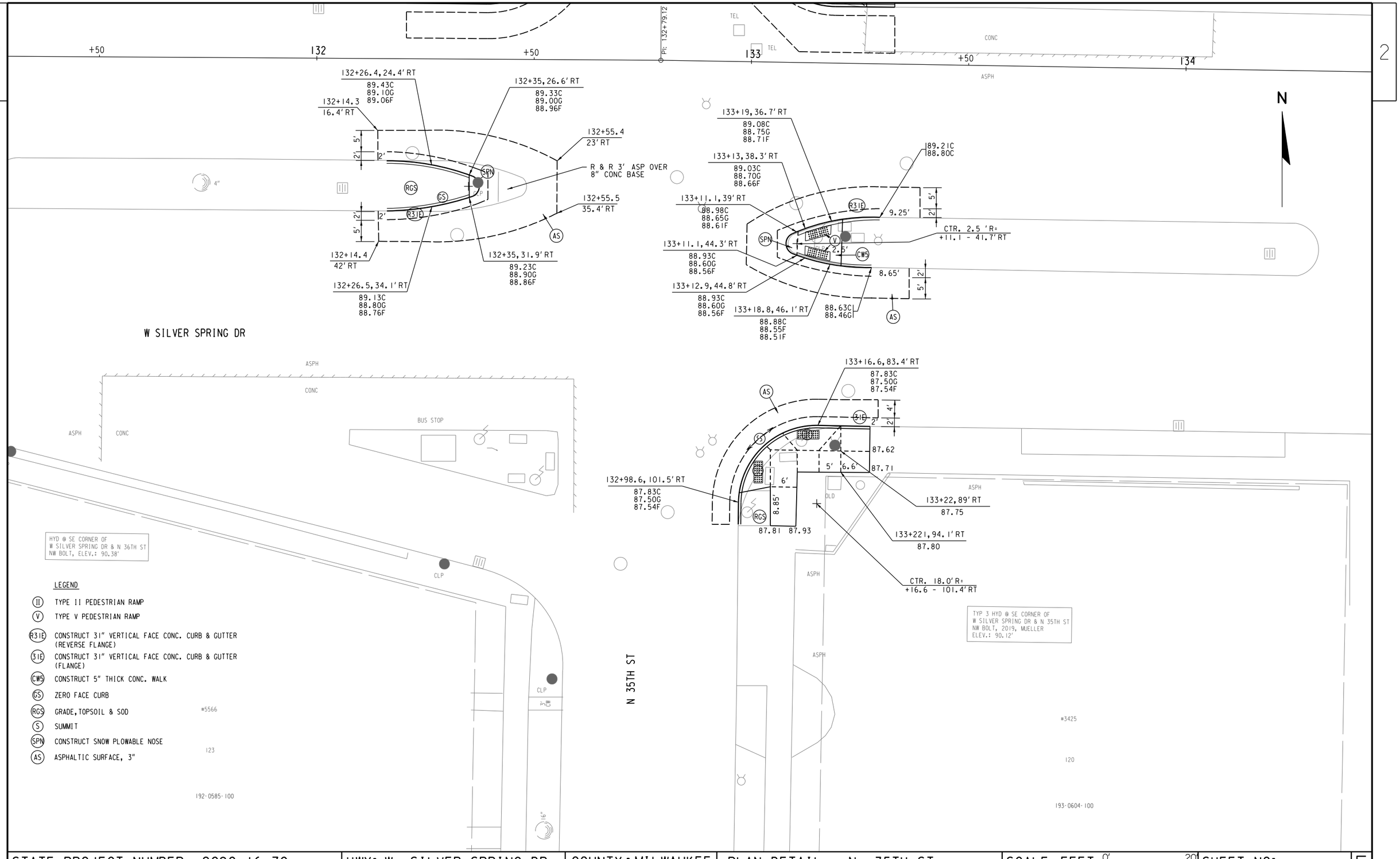
PI: 79+47.07

N 51ST BLVD

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PLAN DETAIL - N 51ST BLVD	SCALE FEET 0' 20	SHEET NO: 17	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\DESIGN\N 51ST ST - NORTH.DGN

REVISED DATE: 01-06-2023 BY AA



STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PLAN DETAIL - N. 35TH ST.	SCALE FEET 0' 20'	SHEET NO: 18	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\DESIGN\N 35TH ST - SOUTH.DGN

REVISED DATE: 01-04-2023 BY AA

2

171-9852-100

171-9853-100

171-9854

22

48

57

#3510-12

#3500-02

P.L.

P.L.

W SILVER SPRING DR

N 35TH ST

8"

132+52.4, 34.6'LT
89.03

132+46.3, 34.6'LT
89.13

CTR. 18.0'R=
+39.2 - 30.7'LT

132+36.1, 23.5'LT
88.87

132+36.1, 18.5'LT
88.82

89.24

89.01

89.30

SILL

CONC

APEX

11.4'

6'

6'

6'

M

89.12

88.85

88.84

15.75'

5'

5'

88.78

CWS

SIE

6'

88.65C
88.31G

AS

132+57.2, 30.5'LT
88.90C
88.65G
88.69F

+50

132

+50

132+39.2, 12.7'LT
88.83C
88.58G
88.62F

ASPH

133+12.1, 44.6'LT
SFD
1' B
R & R 3" ASP OVER
AGGREGATE BASE

133+12., 33.6'LT
89.12

133+12, 24.5'LT
SFD
1' B
R & R 3" ASP OVER
AGGREGATE BASE

CTR. 18.0'R=
+19.1 - 31.0'LT

133+26.1, 23.8'LT
88.93

133+33.4, 24.6'LT
SFD
1' B
R & R 3" ASP OVER
AGGREGATE BASE

BENCHMARK:
HYD I @ SE CORNER OF
N. 35TH ST. & W. SILVERSPRING DR.
NW BOLT, 1957, WFS
ELEV.:89.860'

6'

5' 14.5'

5' 5'

5.2'

SIE

PC

CURB

PC

SIGN

133+1.1, 31'LT
89.00C
88.75G
88.79F

132+95.1, 21'LT

133+20.8, 12.5'LT

PI: 132+79.12

TEL

TEL

133

7.7'

6.5'

89.06

CWS

88.24

133+26.2, 18.9'LT
88.85

BUS STOP

8.25'

ALONG FLANGE-LINE

CONC

+50

134

ASPH

133+10.9, 2.5'LT

AS

133+19.1, 13'LT
C
88.45C
88.49F

170-9976-100

120

#3442

P.L.

N

LEGEND

II	TYPE II PEDESTRIAN RAMP
IVA	TYPE 4A PEDESTRIAN RAMP
31E	CONSTRUCT 31" VERTICAL FACE CONC. CURB & GUTTER (FLANGE)
CWS	CONSTRUCT 5" THICK CONC. WALK
M	MATCH
PC	CONSTRUCT PED CURB
S	SUMMIT
AS	ASPHALTIC SURFACE, 3"

4"

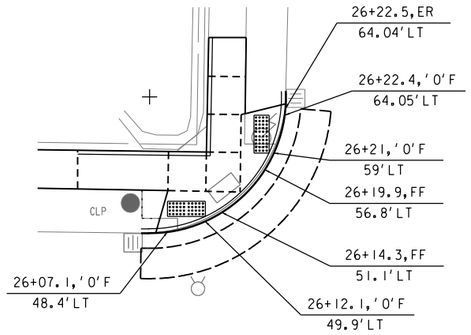
AS

AS

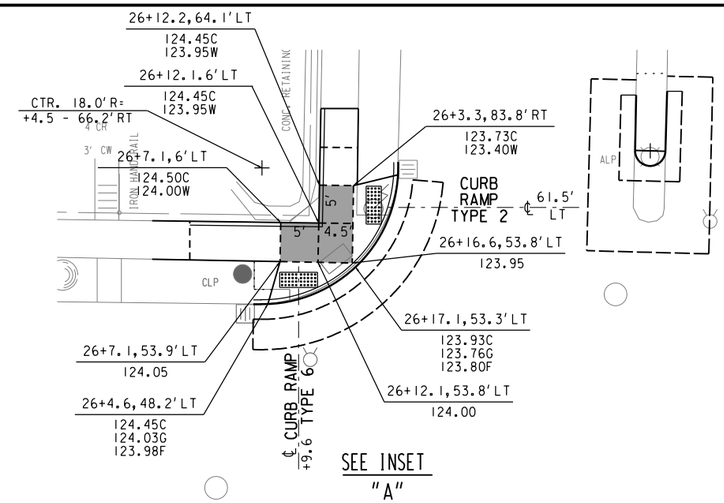
STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PLAN DETAIL - N. 35TH ST.	SCALE FEET 0' 20'	SHEET NO: 19	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\DESIGN\N 35TH ST - NORTH.DGN

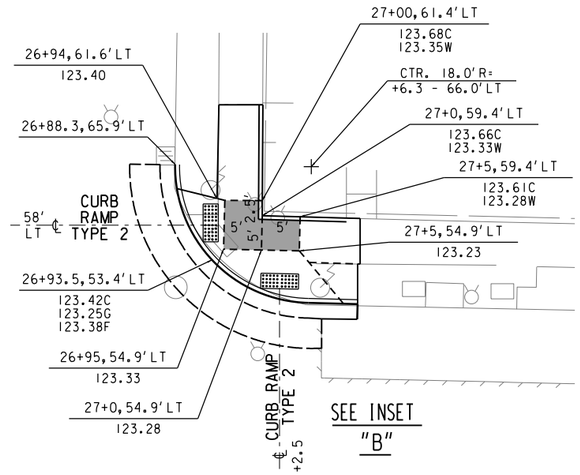
REVISED DATE: 01-06-2023 BY AA



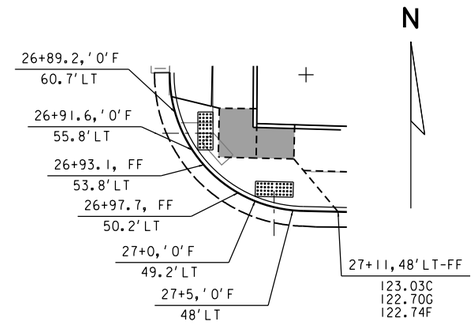
INSET "A"



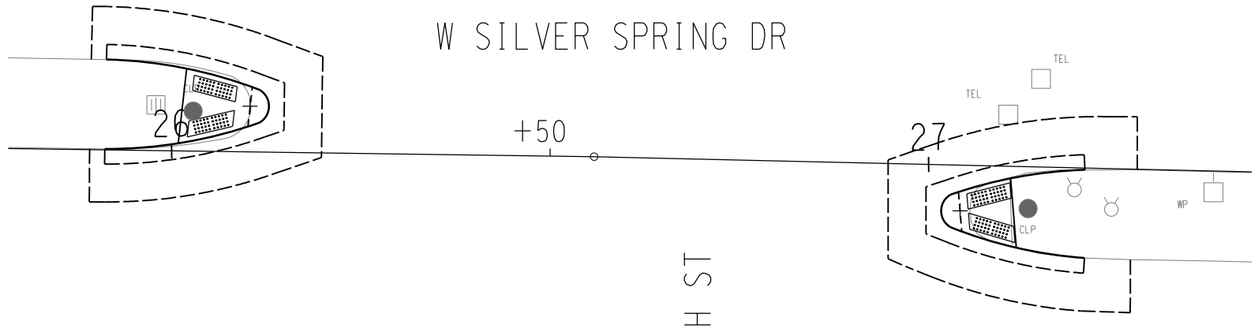
SEE INSET "A"

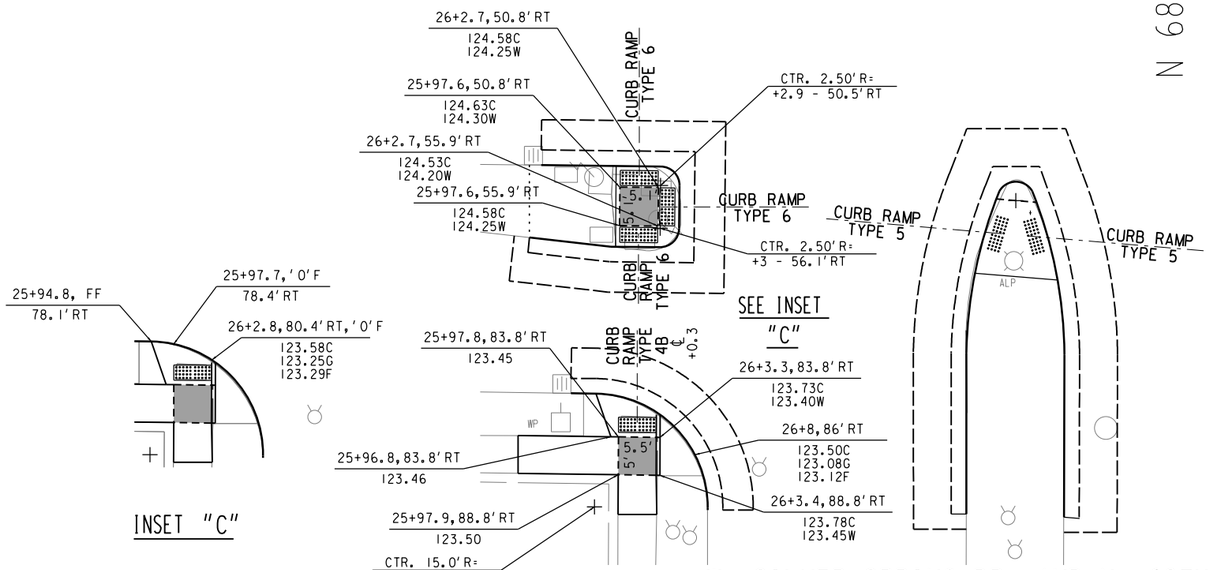


SEE INSET "B"



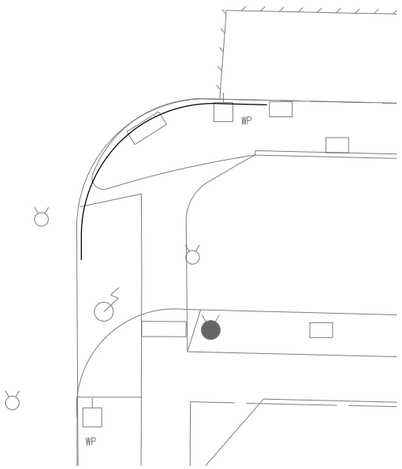
INSET "B"





INSET "C"

SEE INSET "C"



W. SILVER SPRING DR. AND N. 68TH ST.

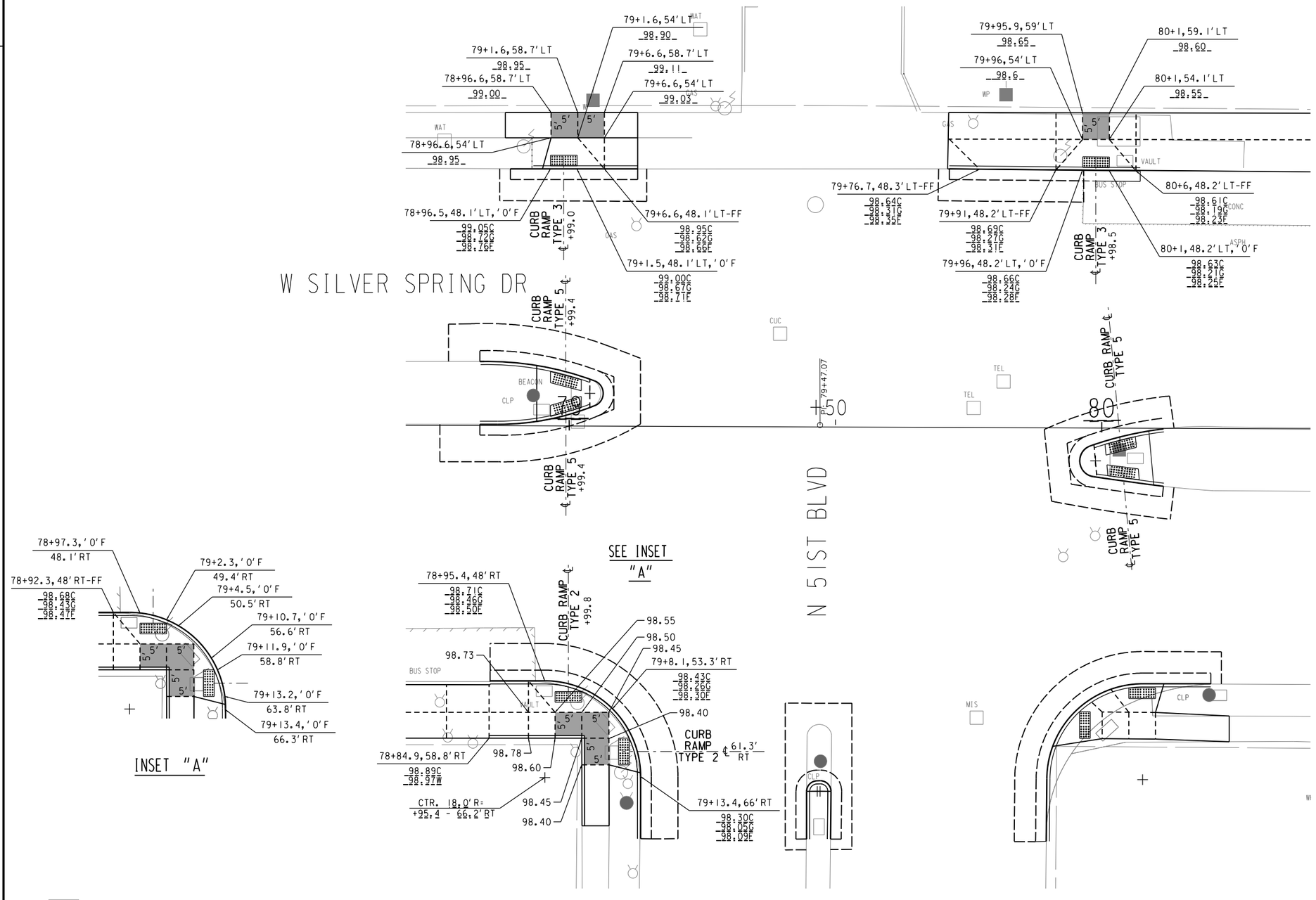
LANDING AREA

DETECTABLE WARNING FIELD

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	CURB RAMP DETAILS	SCALE FEET 0' 20	SHEET NO: 20	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\RAMP DETAILS\N 68TH ST - RAMP.DGN

REVISED DATE: 01-12-2023 BY AA

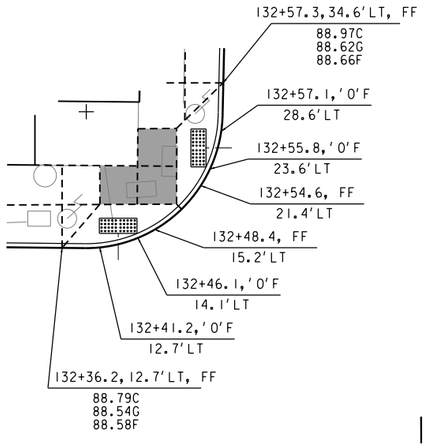


W. SILVER SPRING DR. AND N. 51ST BLVD.

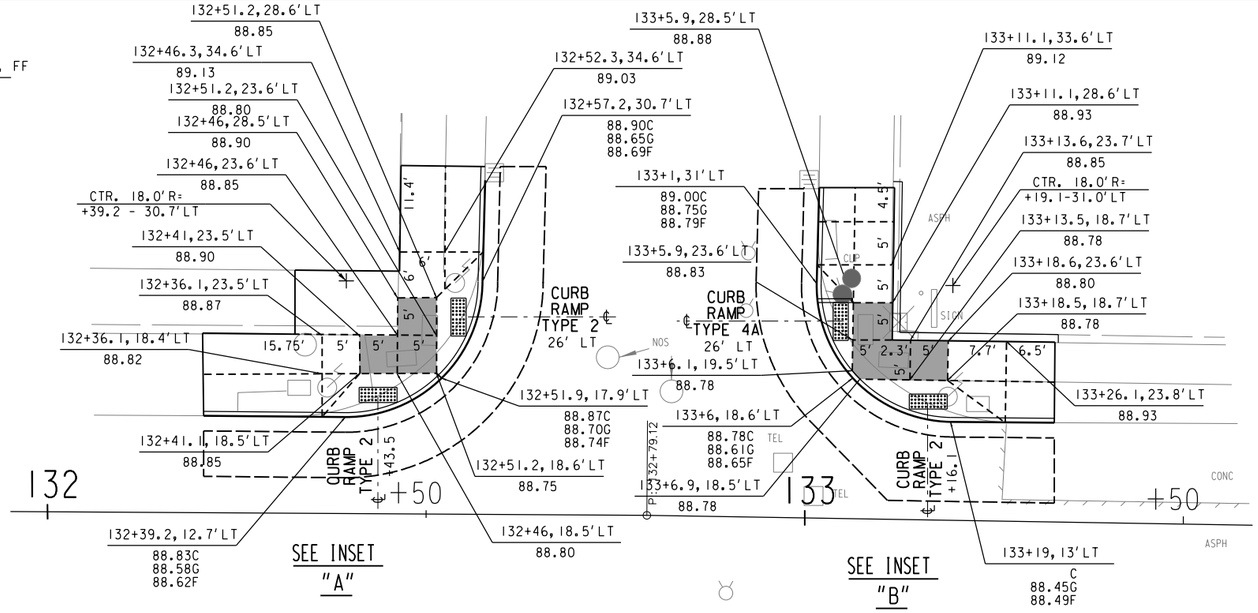
STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	CURB RAMP DETAILS	SCALE FEET 0' 20'	SHEET NO: 21	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\RAMP DETAILS\N 51ST ST - RAMP.DGN

REVISED DATE: 06-27-2022 BY JC

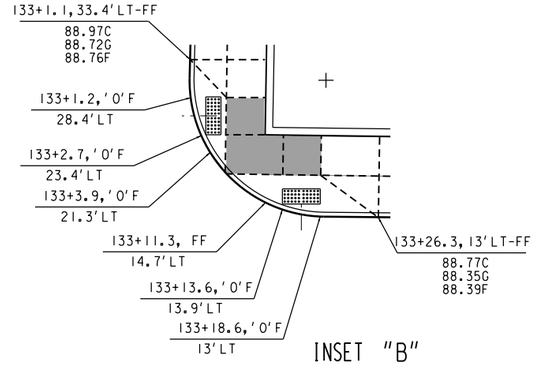


INSET "A"



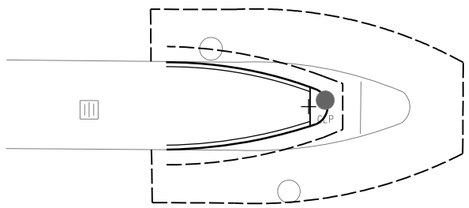
SEE INSET "A"

SEE INSET "B"



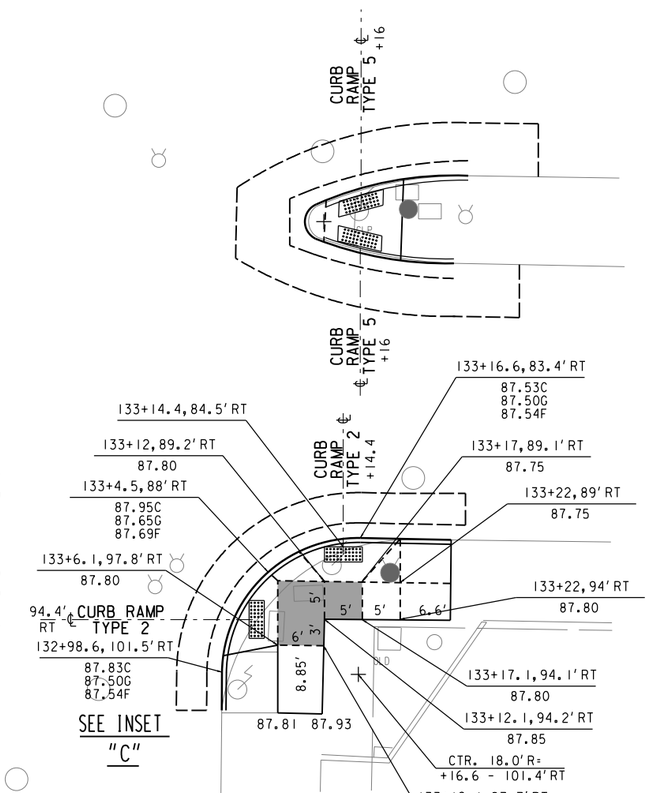
INSET "B"

N

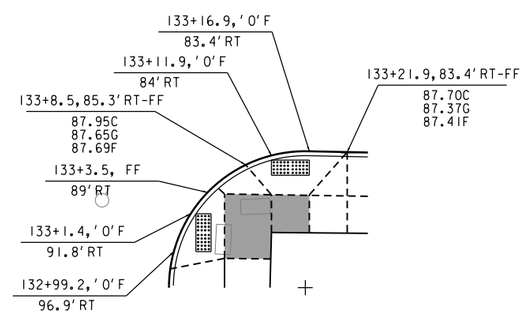


W SILVER SPRING DR

N 35TH ST



SEE INSET "C"



INSET "C"

LANDING AREA

DETECTABLE WARNING FIELD

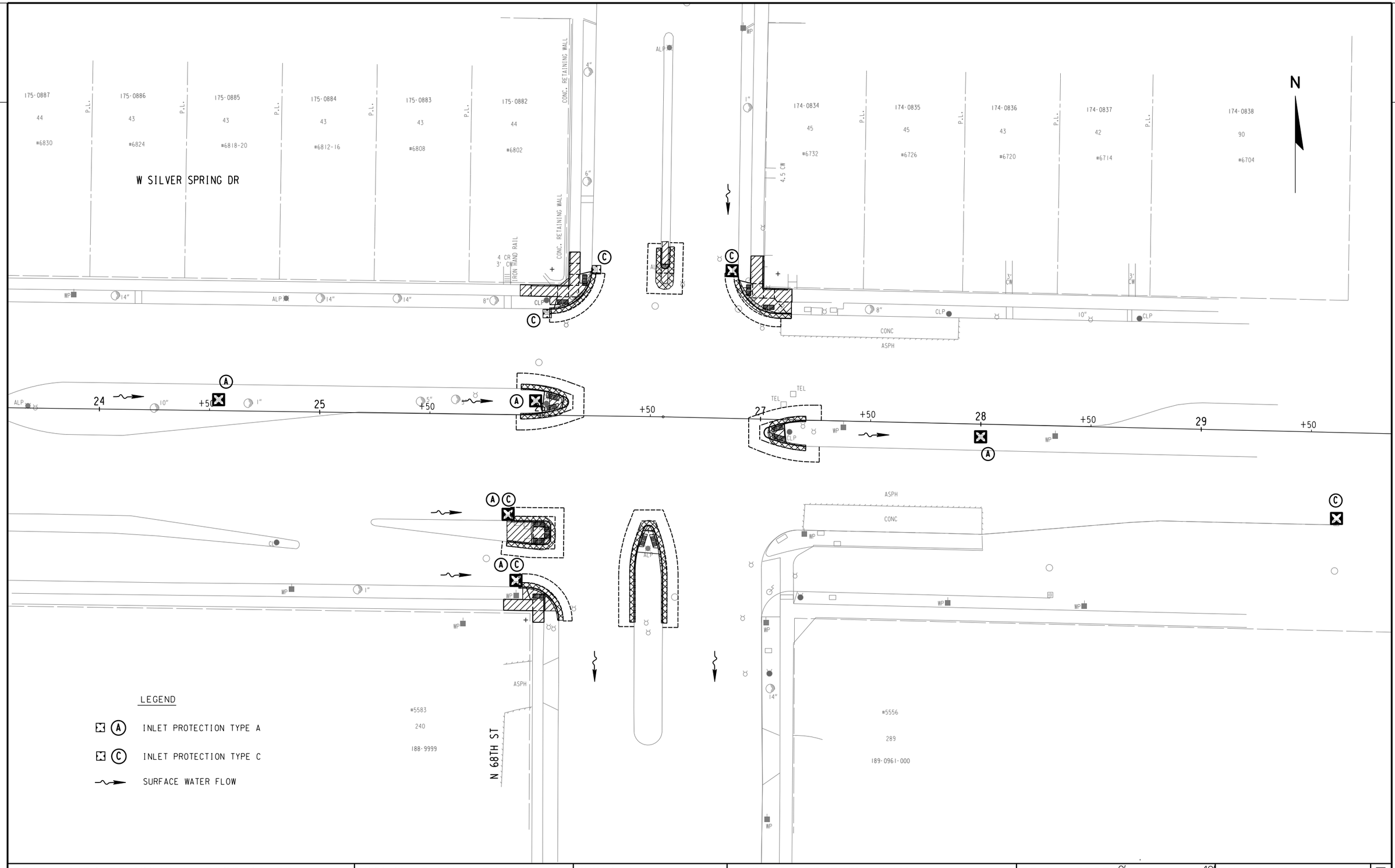
W. SILVER SPRING DR. AND N. 35TH ST.

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	CURB RAMP DETAIL	SCALE FEET 0' 20'	SHEET NO: 22	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\RAMP DETAILS\N 35TH ST - RAMP.DGN

REVISED DATE: 10-05-2022 BY JC

2



STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	EROSION CONTROL PLAN	SCALE FEET 0' 40'	SHEET NO: 23	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\DESIGN\EROSION N 68TH ST.DGN

REVISED DATE: 01-13-2023 BY AA

2

172-9991
2995
#4848-5326

N

W SILVER SPRING DR

WP
WAT
WAT
GAS
ALP
GAS
E
WAT
WP
CLP
BUS STOP
CONC
ASPH
CLP
SPRINKLER BOX
CLP
CLP
TEL
TEL
77
78
80
81
82
SPRINKLER BOX
1"
1"
ASPH
CONC
BUS STOP
ALP
7' CW
MLS
CLP
1"
1"
CLP
WP
WP
N 51ST BLVD
#5151
255
190-9895-100
#5400 N. 51ST BLVD
MILWAUKEE COUNTY PARK
191-9999-100

LEGEND

- (A) INLET PROTECTION TYPE A
- (C) INLET PROTECTION TYPE C
- SURFACE WATER FLOW

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	EROSION CONTROL PLAN	SCALE FEET 0' 40'	SHEET NO: 24	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\DESIGN\EROSION N 51ST ST.DGN

REVISED DATE: 01-13-2023 BY AA

2

W SILVER SPRING DR

171-9852-100
22
#3514

171-9853-100
48
#3510-12

171-9854
57
#3500-02

170-9976-100
120
#3442

170-9977-100
#3440
155

P.L.

CLP

8"

DWY

SILL

CONC APEX

SILL

ASPH

SIGN

NOS

BUS STOP

TEL

CONC

TP

130 +50 131 +50 132 +50 133 +50 134 +50 135 +50 136

4"

ASPH

CONC

#3519-31
120
192-0612-100

#5566
123
192-0585-100

N 35TH ST

3.5' CW

16"

#3425
120
193-0604-100

#5571
120
193-0203

N

LEGEND

- (A) INLET PROTECTION TYPE A
- (C) INLET PROTECTION TYPE C
- SURFACE WATER FLOW

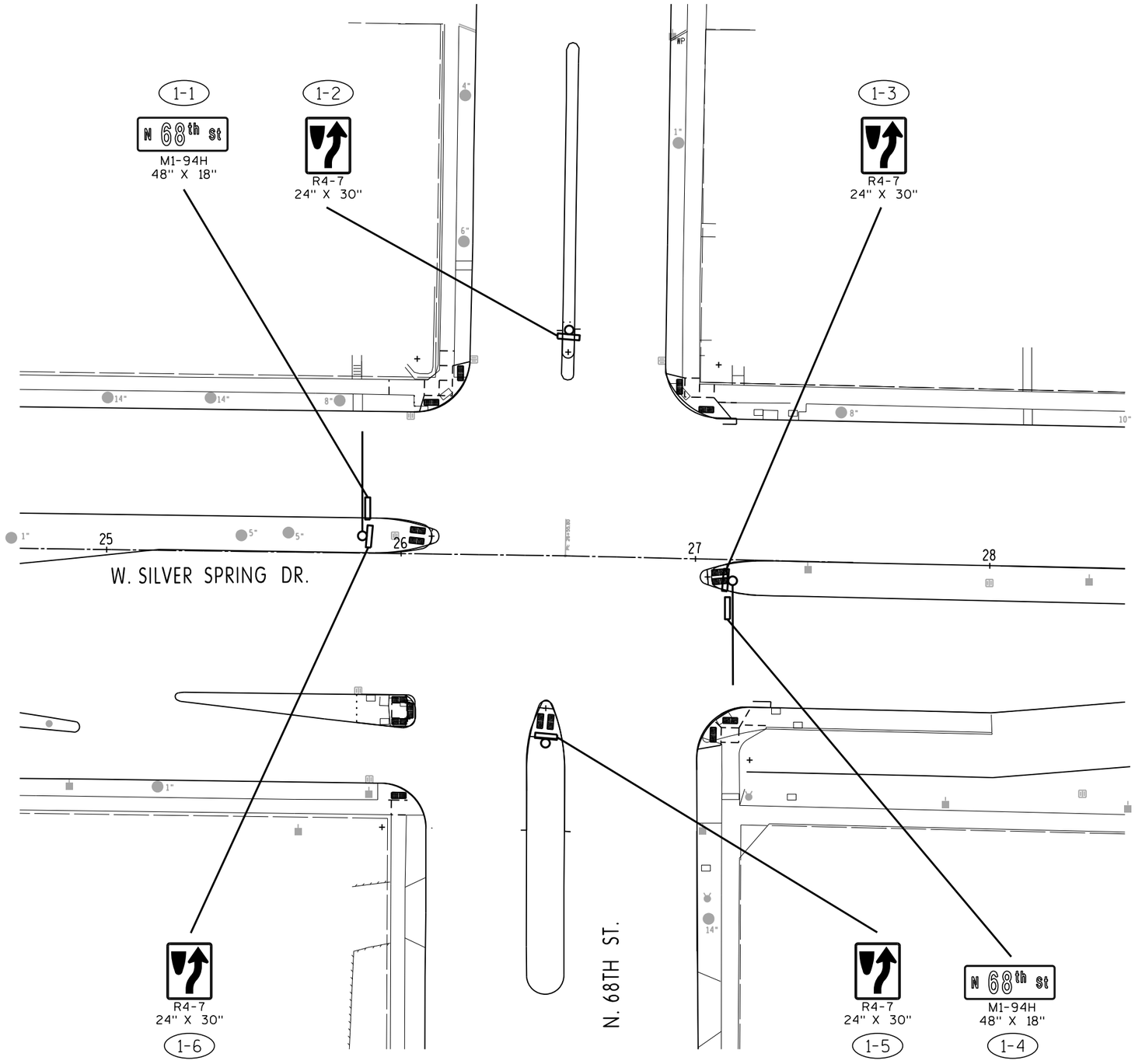
STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	EROSION CONTROL PLAN	SCALE FEET 0' 40'	SHEET NO: 25	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\DESIGN\EROSION N 35TH ST.DGN

REVISED DATE: 01-13-2023 BY AA

2

N



SCALE, FEET 0 40

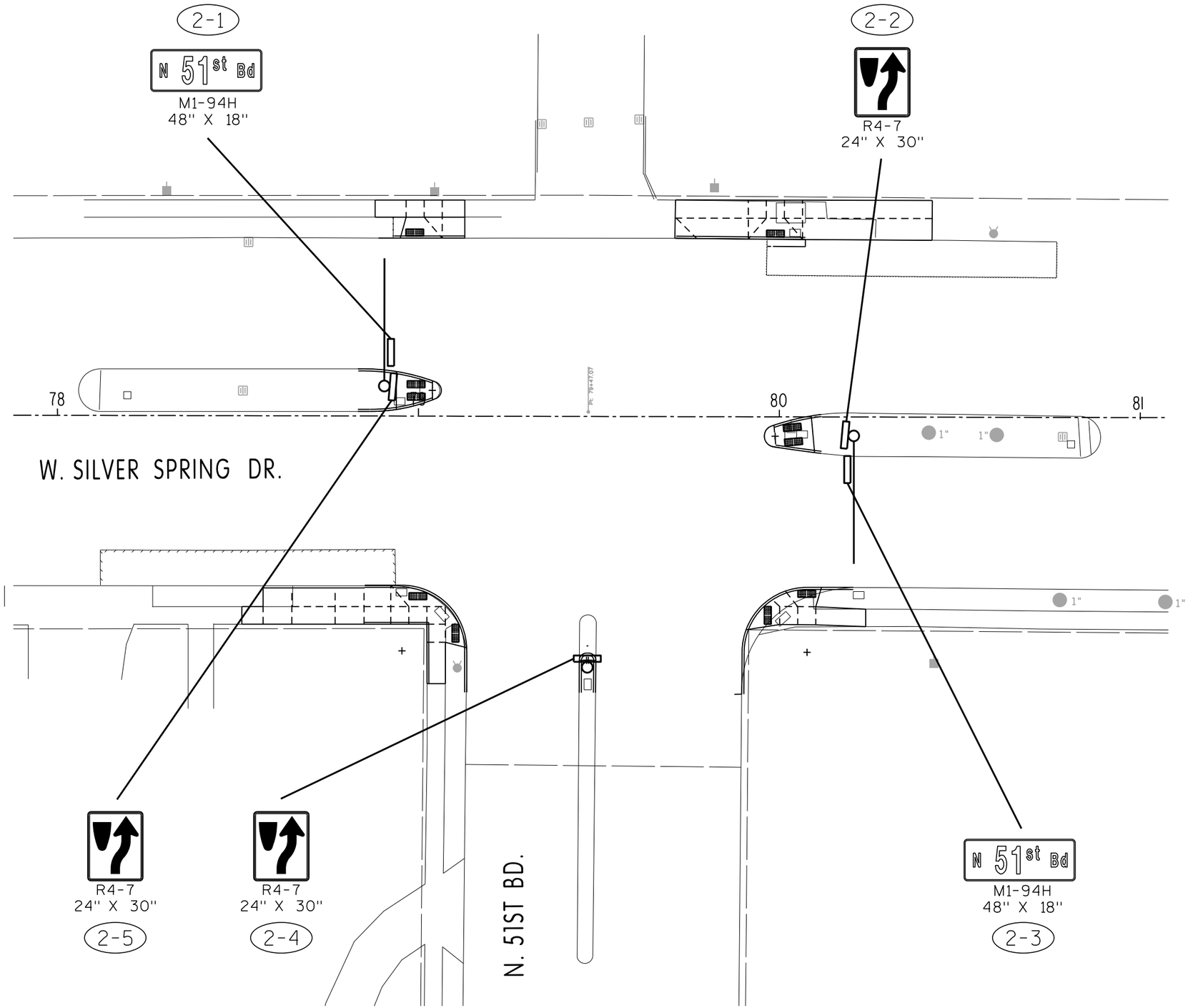
SHEET 1 OF 3

STATE PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PERMANENT SIGN PLAN	SHEET 26	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 42

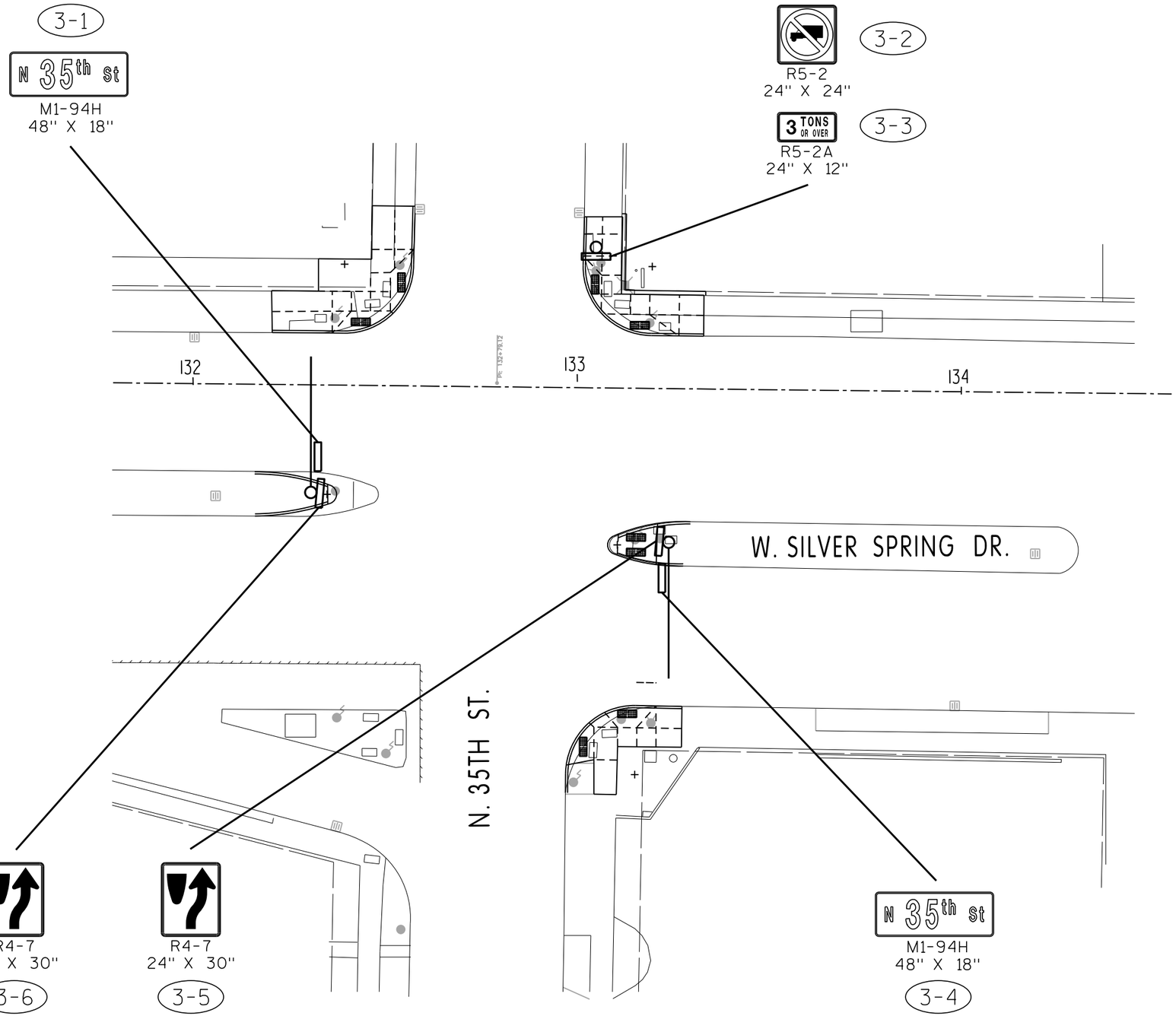
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SHEET 2 OF 3

STATE PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PERMANENT SIGN PLAN	SHEET 27	E

2



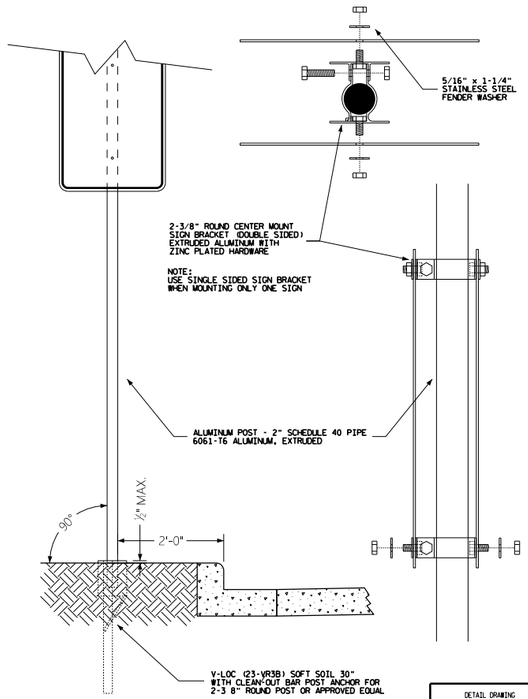
SCALE, FEET 0 30

SHEET 3 OF 3

STATE PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PERMANENT SIGN PLAN	SHEET 28	E

2

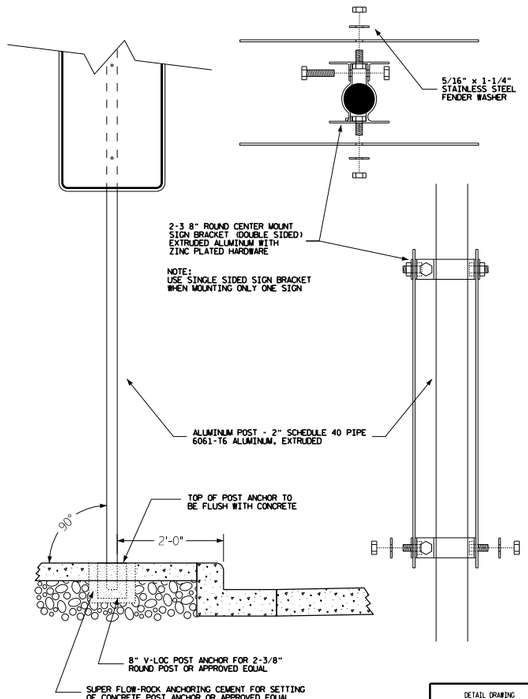
ROUND ALUMINUM SIGN POST SYSTEM FOR SOFT SURFACE INSTALLATION



DETAIL DRAWING SD-101

CITY OF MILWAUKEE DPW-INFRASTRUCTURE SERVICES TRANSPORTATION OPERATIONS

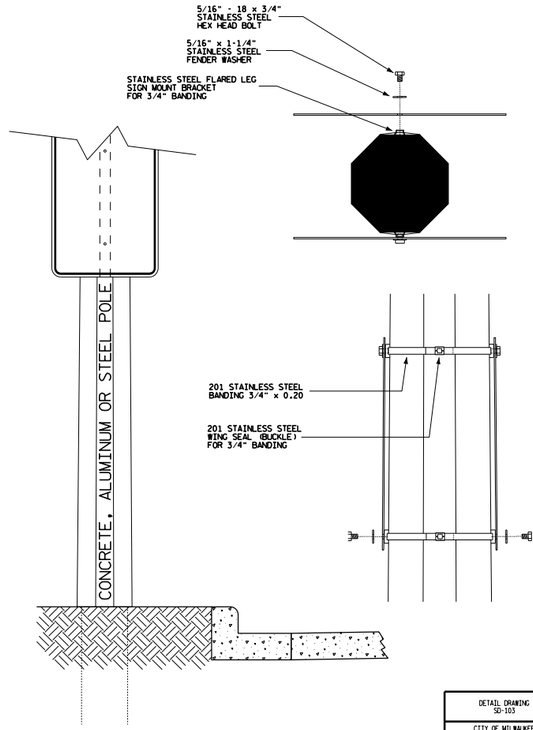
ROUND ALUMINUM SIGN POST SYSTEM FOR CONCRETE INSTALLATION



DETAIL DRAWING SD-102

CITY OF MILWAUKEE DPW-INFRASTRUCTURE SERVICES TRANSPORTATION OPERATIONS

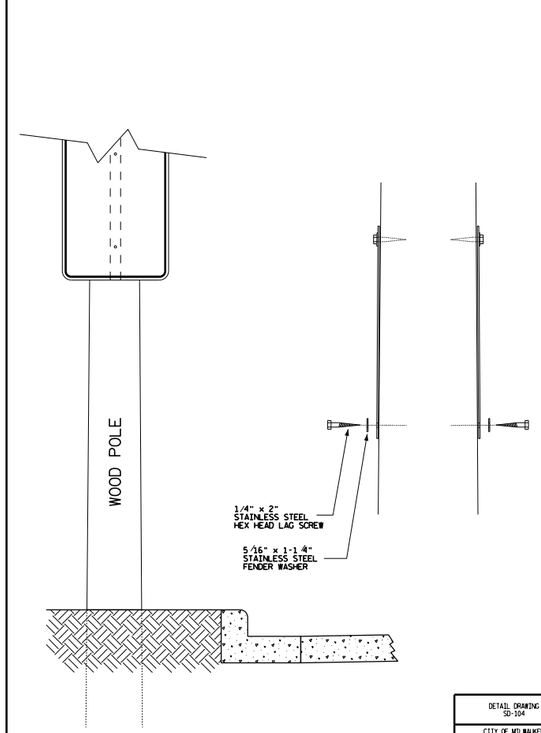
EXISTING CONCRETE, ALUMINUM OR STEEL POLE SIGN SYSTEM INSTALLATION



DETAIL DRAWING SD-103

CITY OF MILWAUKEE DPW-INFRASTRUCTURE SERVICES TRANSPORTATION OPERATIONS

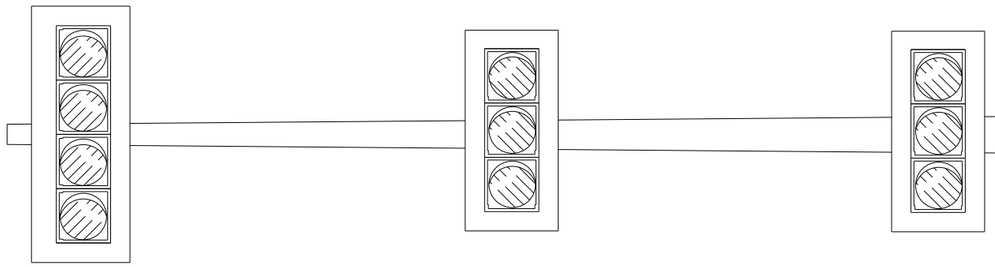
EXISTING WOOD POLE SIGN SYSTEM INSTALLATION

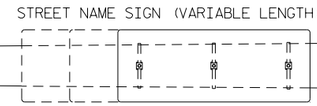


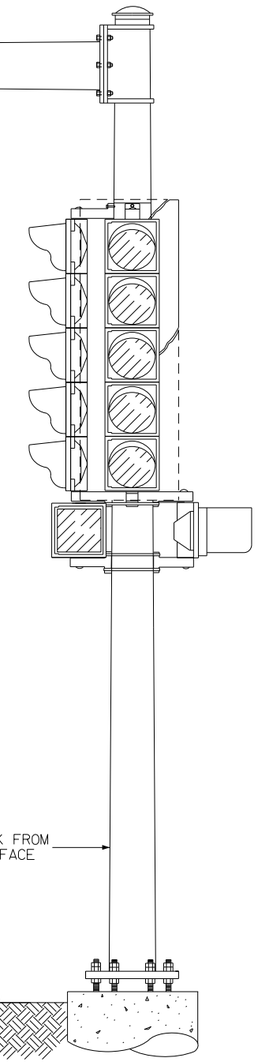
DETAIL DRAWING SD-104

CITY OF MILWAUKEE DPW-INFRASTRUCTURE SERVICES TRANSPORTATION OPERATIONS

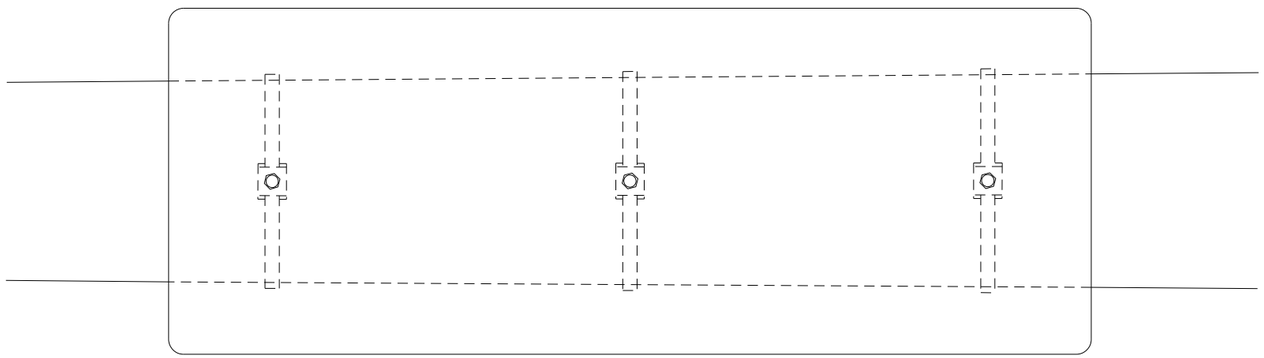
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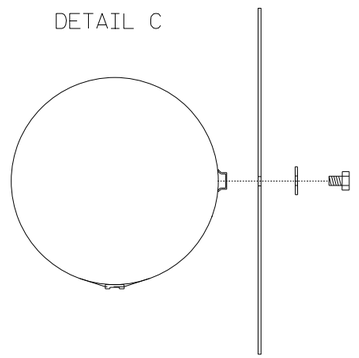




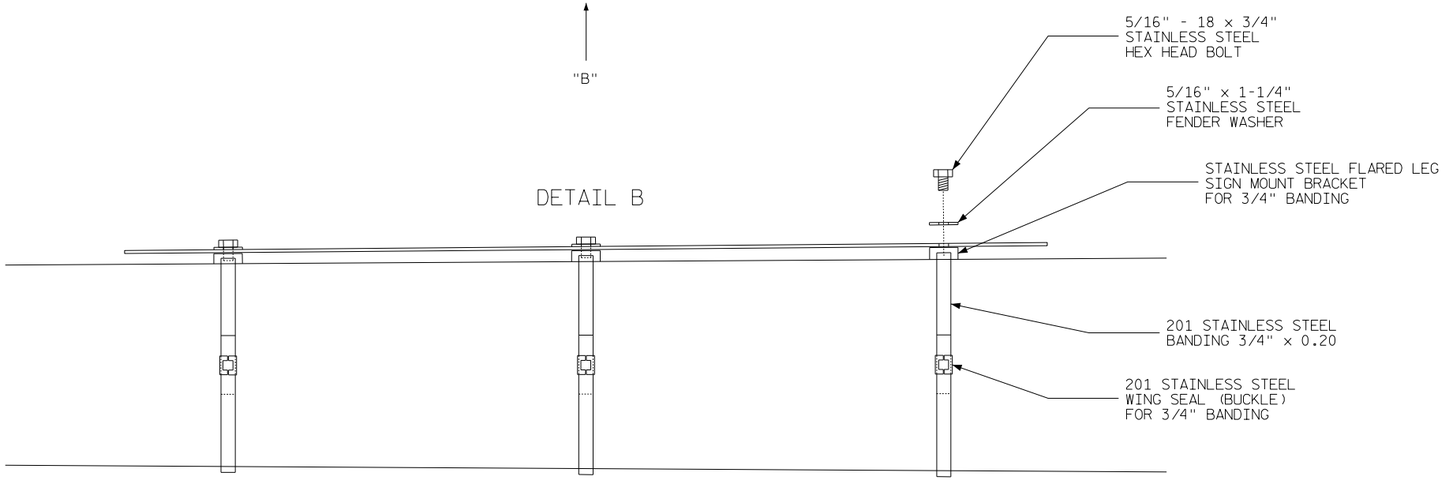
DETAIL A



DETAIL C



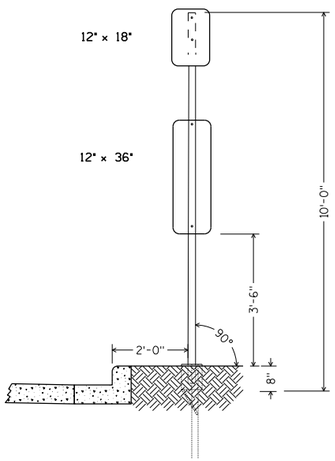
DETAIL B

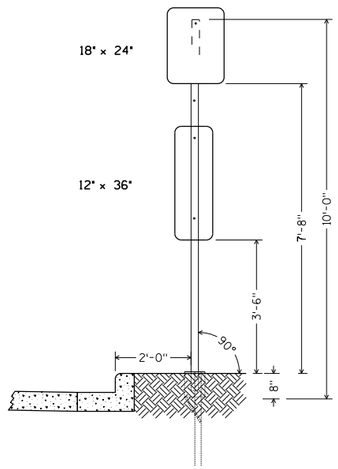


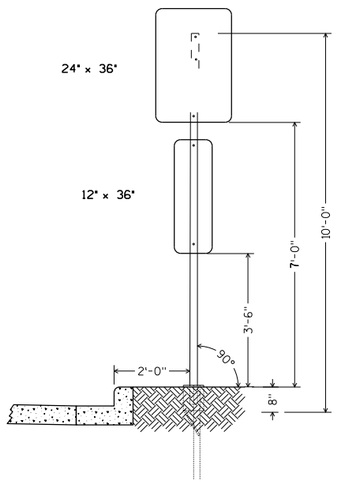
PROJECT NO: 2090–16–70	HWY: SILVER SPRING DR	COUNTY: MILWAUKEE	STREET NAME SIGN INSTALLATION ON MAST ARM	SHEET 30	E

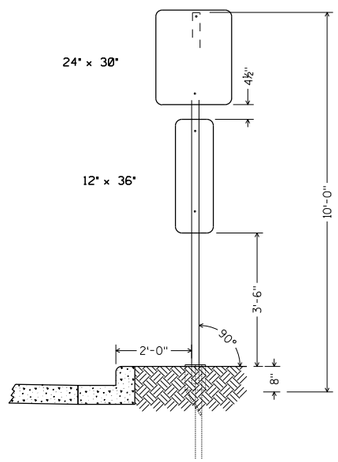
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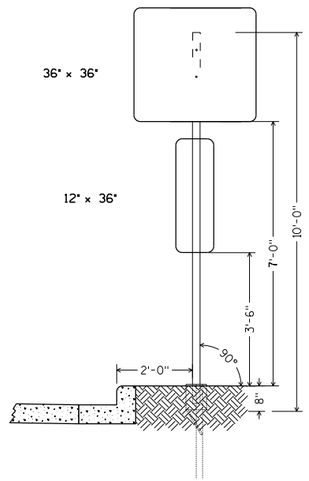
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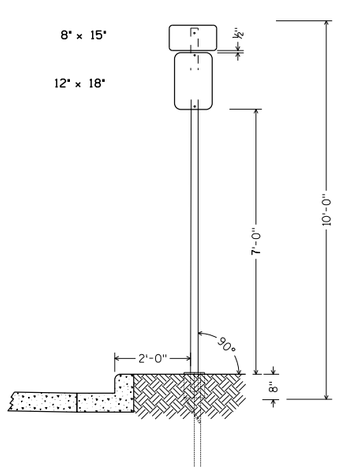


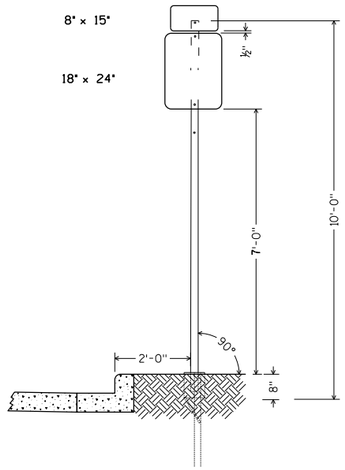


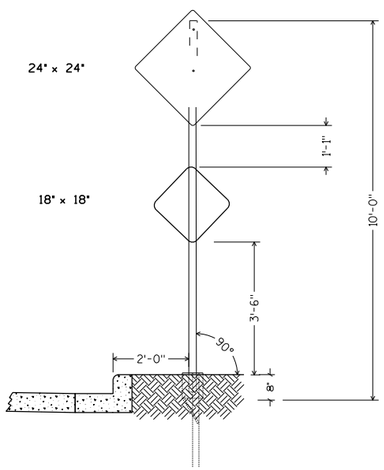


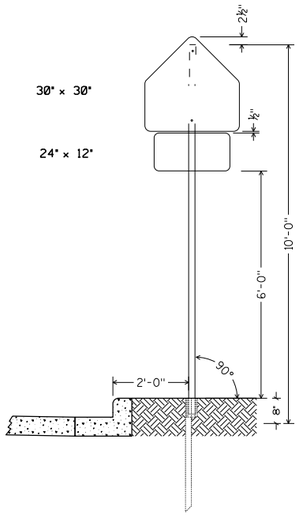






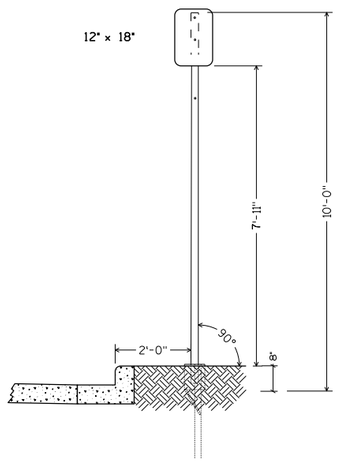


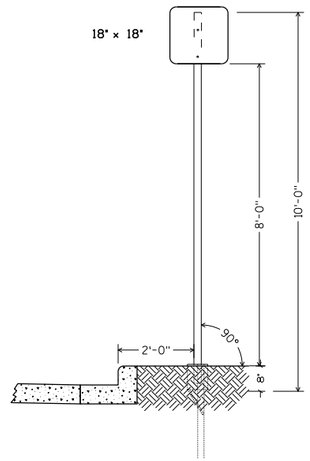


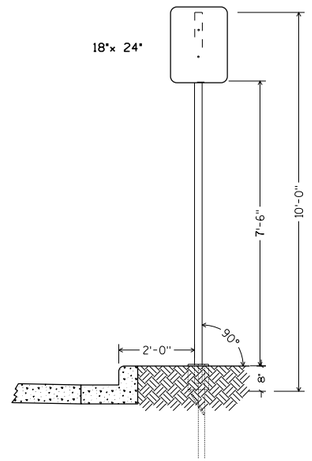


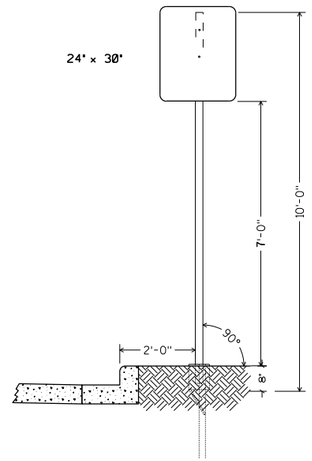
PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR	COUNTY: MILWAUKEE	10'–0" PIPE ASSEMBLIES	SHEET 31	E

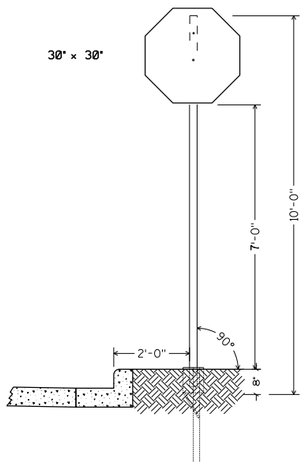
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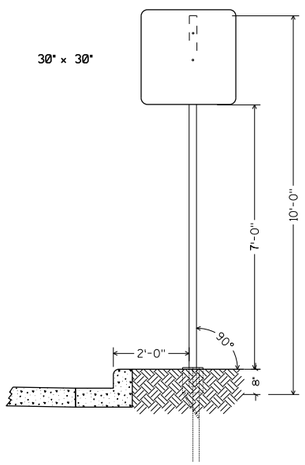


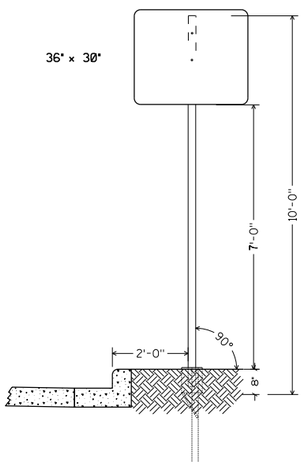


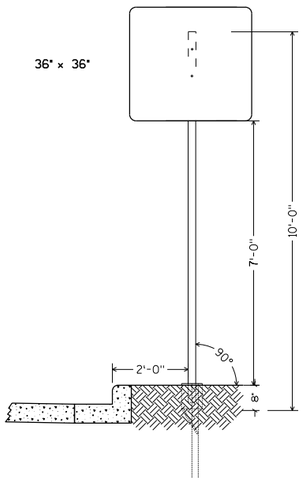






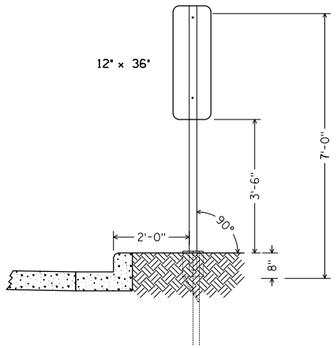


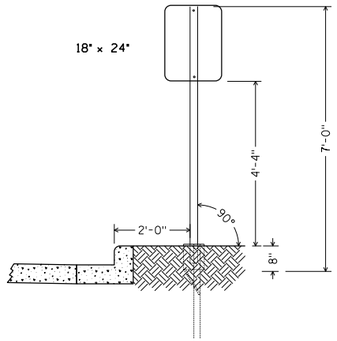


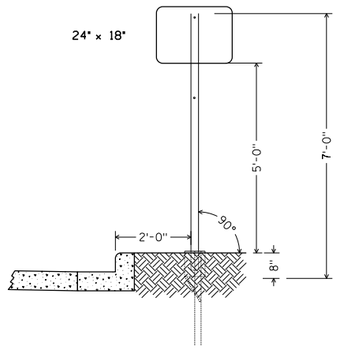


PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR	COUNTY: MILWAUKEE	10'–0" PIPE ASSEMBLIES	SHEET 32	E

2







PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR	COUNTY: MILWAUKEE	7'–0" PIPE ASSEMBLIES	SHEET 33	E

NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

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

SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SEE UTILITY HDPES FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS.

CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SERVICES FOR FINAL INSPECTION AND APPROVAL OF ALL ELECTRICAL WORK BEFORE ANY MATERIALS ARE COVERED UP OR BACKFILLED.

TYPICAL RECTANGLAR VAULT 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.

ALL PURPOSE ANTISEIZE (OR EQUIV) TO BE APPLIED ON ALL BOLTS AND SCREWS EHDPELY THE LIGHT POLE HAND HOLE PANEL. OXIDE INHIBITOR OX-4 (OR EQUIV) TO BE APPLIED ON ALL WIRE CONNECTION AND WIRE NUTS. TAG ALL CABLE DIRECTION IN VAULT AND HAND HOLE PANEL.

TYPE 4 LIGHT DISTRIBUTION ON HARPS AND LANTERNS UNLESS OTHERWISE SPECIFIED.

ALL NEW LIGHT UNITS TO BE EQUIPPED WITH 5 AMP INLINE FUSE LOAD SIDE ONLY.

LEGEND

- EXISTING LIGHT POLE
- NEW LIGHT POLE 2LED LUMINAIRE 2#12UF W/GND RISER CABLE
- NEW LIGHT POLE 2 - 2#12UF W/G RISERS 2 - LUMINAIRE ARMS 2 - 2LED LUMINAIRE
- NEW LIGHT POLE 3LED LUMINAIRE 2#12UF W/GND RISER CABLE
- NEW LIGHT POLE 2 - 2#12UF W/G RISERS 2 - LUMINAIRE ARMS 2 - 3LED LUMINAIRE
- DOUBLE LUMINAIRE & ARMS (BY CONTRACTOR) MOUNTED ON MONOTUBE
- NEW LIGHT POLE 80W SCREW-IN LED LANTERN 2#12UF W/GND RISER CABLE
- NEW LIGHT POLE 2 - 2#12UF W/G RISERS 2 - 80W SCREW-IN LED LANTERNS
- TRAFFIC SIGNAL MOUNTED ON LIGHT POLE
- EXISTING SIGNAL STANDARD
- EXISTING PULL BOX OR INSTALLED BY (TR) TRAFFIC
- PULL BOX TO BE INSTALLED
- TRAFFIC CONTROL CABINET
- STREET LIGHTING ENCLOSURE
- PVC CONDUIT SCH 40 UNLESS SPECIFIED
- TRAFFIC SIGNAL BASE TO BE INSTALLED
- MONOTUBE MAST ARM BASE TO BE INSTALLED WITH 8 FT STEEL ARM
- 35' MAST ARM
- S40-1111 STRUCTURE NUMBER
- (K) (B) RED/BLACK WIRE TERMINATION
- LED HARP MH070HP-MT-2B-4-AG-S LUNIMAIRE

N

W. SILVER SPRING DR.

N. 68TH ST.

CAUTION 2200V PRI.

PROTECT & ADJUST #8HIGHLEAD CIR.NP7 TO REMAIN IN SERVICE

31' ALUMINUM BOLT DOWN POLE 2EA. - 6' ARMS 2EA. - 250W HPS COBRAS REMOVED BY CITY FORCES CONCRETE BASE TO BE REMOVED BY CONTRACTOR

31' DIRECT BURY CONCRETE POLE TO BE REMOVED BY CITY FORCES

#6819 31' DIRECT BURY AL TO REMAIN

#6816 26' DIRECT BURY AL TO REMAIN

#6802 TYPE 10 MONOTUBE TYPE 10 BASE 2EA - 3LED4 HISTORIC LANTERN 2EA.- 2#12UF W/GND INT. RISERS

AT26R W/15' MAST ARM TO BE REMOVE BY CITY FORCES

1#8 HIGHLEAD CIR.NP8 2200V/6.6A PROTECT FOR REUSE

1#8 HIGHLEAD CIR.NP-18 2200V/6.6A PROTECT FOR REUSE

4 CR 3" CPVC IRON HAND RAIL

CONC. RETAINING WALL

3#2/1#8XLP CIR.150N-D

2EA.-2#12UF W/GND TO LUMS.

40' ARM

30' ARM

3" HDPE 102 INTERCEPT EXIST. ITEM (PULLBOX) AS SHOWN

3" HDPE 101

3" HDPE 100 DETAIL B

3" HDPE 100 DETAIL B

3" HDPE 113 INTERCEPT EXIST. ITEM (PULLBOX)

112 13"X24"X24" PULL BOX STA.26.0+57,370.0'RT

EXISTING 13"X24"X24" PULL BOX

50'-3#2/1#8XLP CIR.150N-D COILED/TAGGED IN PULLBOX

CONNECTION BY CITY

#5516 30' AL BOLT DOWN TYPE 5 CONC. BASE TO REMAIN

3#2/1#8XLP CIR.150N-D

#5540 30' AL BOLT DOWN TYPE 5 CONC. BASE TO REMAIN

112 13"X24"X24" PULL BOX STA.26.0+52,175.0'RT

142 CONNECTIONS VIA SUBMERSIBLE MULTITAPS IN PULLBOX

#5562 TYPE 10 MONOTUBE TYPE 10 BASE 2EA.- 3LED4 HISTORIC LANTERN 2EA.-2#12UF W/GND INT. RISERS

3#2/1#8XLP CIR.150N-D

AT26R W/15' MAST ARM REMOVED BY CITY

2EA-2#12UF W/GND TO LUMS.

142 CONNECTIONS VIA SUBMERSIBLE MULTITAPS IN PULLBOX (TR)

1#6PRI CIR.NP6-5

2#8HIGHLEAD CIR.NP13,NP14

31' DIRECT BURY CONCRETE POLE 4"X4"X36" WIRING PED. 2EA. - 250W HPS HISTORIC LANTERNS REMOVED BY CITY FORCES

PROTECT & ADJUST 2200V/6.6A TO REMAIN IN SERVICE

#6740 TYPE 10 MONOTUBE TYPE 10 BASE 2EA.- 3LED4 HISTORIC LANTERN 2EA.- 2#12UF W/GND INT. RISERS

#6725 15' CONC. PEDEST. TO REMAIN

#8HIGHLEAD CIR.NP2

3#2/1#8XLP CIR.150N-D

124 #5602 30' AL BOLT DOWN TYPE 5 BASE XFMR BASE 2EA - 3LED4 HISTORIC LANTERN 2EA - 2#12UF W/GND INT. RISERS STA.26.0+26,55.0'LT

#8HIGHLEAD CIR.NP1

#5608 30' AL BOLT DOWN TYPE 5 CONC. BASE TO REMAIN

SCALE, FEET 0 40

SHEET 1 OF 3

STATE PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	STREET LIGHTING & CUC PLAN	SHEET 34	E

FILE NAME : W:\bes_WisDot\2023\(2090–16–00) Silver Spring Dr – 68th to 35th\SL Conduit\design 100% 1–22.dgn | PLOT DATE : 24–JAN–2023 14:01 | PLOT BY : lhickm | PLOT NAME : | PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

PULL ROPE (3/8" NYLON) REQUIRED IN ALL CONDUIT.
SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
SEE UTILITY HDPES FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS.
CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SERVICES FOR FINAL INSPECTION AND APPROVAL OF ALL ELECTRICAL WORK BEFORE ANY MATERIALS ARE COVERED UP OR BACKFILLED.
TYPICAL RECTANGLAR VAULT 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.

ALL PURPOSE ANTISEIZE (OR EQUIV) TO BE APPLIED ON ALL BOLTS AND SCREWS EHDPELY THE LIGHT POLE HAND HOLE PANEL. OXIDE INHIBITOR OX-4 (OR EQUIV) TO BE APPLIED ON ALL WIRE CONNECTION AND WIRE NUTS. TAG ALL CABLE DIRECTION IN VAULT AND HAND HOLE PANEL.

TYPE 2 LIGHT DISTRIBUTION ON LED COBRA UNITS UNLESS OTHERWISE SPECIFIED.

ALL NEW LIGHT UNITS TO BE EQUIPPED WITH 5 AMP INLINE FUSE LOAD SIDE ONLY.

ALL NEW DIRECT BURY POLES TO BE EQUIPPED WITH GROUNDING ELCTRODE PER SPV.0060.353

LEGEND

- EXISTING LIGHT POLE
- NEW LIGHT POLE 2LED LUMINAIRE 2#12UF W/GND RISER CABLE
- NEW LIGHT POLE 2 - 2#12UF W/G RISERS 2 - LUMINAIRE ARMS 2 - 3LED LUMINAIRE
- REMOVE COMPLETE EXISTING LIGHT POLE
- DOUBLE LUMINAIRE & ARMS (BY CONTRACTOR) MOUNTED ON MONOTUBE
- NEW LIGHT POLE 80W SCREW-IN LED LANTERN 2#12UF W/GND RISER CABLE
- NEW LIGHT POLE 2 - 2#12UF W/G RISERS 2 - 80W SCREW-IN LED LANTERNS
- LED HARP MH070HP-MT-2B-4-AG-S LUMINAIRE
- TRAFFIC SIGNAL MOUNTED ON LIGHT POLE
- EXISTING SIGNAL STANDARD
- EXISTING PULL BOX OR INSTALLED BY (TR) TRAFFIC
- PULL BOX TO BE INSTALLED
- TRAFFIC CONTROL CABINET
- STREET LIGHTING ENCLOSURE
- PVC CONDUIT SCH 40 UNLESS SPECIFIED
- TRAFFIC SIGNAL BASE TO BE INSTALLED
- XX' ARM - MAST ARM
- S40-XXXX - STRUCTURE NUMBER
- R B - RED/BLACK WIRE TERMINATION 120/240V
- R B - RED/BLACK WIRE TERMINATION 240/480V

SHEET 2 OF 3

SCALE, FEET 0 40

STATE PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	STREET LIGHTING & CUC PLAN	SHEET 35	E

FILE NAME : W:\bes_WisDot\2023\(2090–16–00) Silver Spring Dr – 68th to 35th\SL Conduit\design 100% 1–22.dgn
PLOT DATE : 24–JAN–2023 14:02
PLOT BY : lhickm
PLOT NAME :
PLOT SCALE : 1:40
WISDOT/CADDS SHEET 42

2

NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

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

SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SEE UTILITY HDPES FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS.

CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SERVICES FOR FINAL INSPECTION AND APPROVAL OF ALL ELECTRICAL WORK BEFORE ANY MATERIALS ARE COVERED UP OR BACKFILLED.

TYPICAL RECTANGLAR VAULT 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.

ALL PURPOSE ANTISEIZE (OR EQUIV) TO BE APPLIED ON ALL BOLTS AND SCREWS EHDPELY THE LIGHT POLE HAND HOLE PANEL. OXIDE INHIBITOR OX-4 (OR EQUIV) TO BE APPLIED ON ALL WIRE CONNECTION AND WIRE NUTS. TAG ALL CABLE DIRECTION IN VAULT AND HAND HOLE PANEL.

TYPE 2 LIGHT DISTRIBUTION ON LED COBRA UNITS UNLESS OTHERWISE SPECIFIED.

ALL NEW LIGHT UNITS TO BE EQUIPPED WITH 5 AMP INLINE FUSE LOAD SIDE ONLY.

ALL NEW DIRECT BURY POLES TO BE EQUIPPED WITH GROUNDING ELECTRODE PER SPV.0060.353

LEGEND

- EXISTING LIGHT POLE
- NEW LIGHT POLE 2LED LUMINAIRE 2#12UF W/GND RISER CABLE
- NEW LIGHT POLE 2 - 2#12UF W/G RISERS 2 - LUMINAIRE ARMS 2 - 2LED LUMINAIRE
- NEW LIGHT POLE 3LED LUMINAIRE 2#12UF W/GND RISER CABLE
- NEW LIGHT POLE 2 - 2#12UF W/G RISERS 2 - LUMINAIRE ARMS 2 - 3LED LUMINAIRE
- DOUBLE LUMINAIRE & ARMS (BY CONTRACTOR) MOUNTED ON MONOTUBE
- NEW LIGHT POLE 80W SCREW-IN LED LANTERN 2#12UF W/GND RISER CABLE
- NEW LIGHT POLE 2 - 2#12UF W/G RISERS 2 - 80W SCREW-IN LED LANTERNS
- TRAFFIC SIGNAL MOUNTED ON LIGHT POLE
- EXISTING SIGNAL STANDARD
- EXISTING PULL BOX OR INSTALLED BY (TR) TRAFFIC
- PULL BOX TO BE INSTALLED
- TRAFFIC CONTROL CABINET
- STREET LIGHTING ENCLOSURE
- PVC CONDUIT SCH 40 UNLESS SPECIFIED
- TRAFFIC SIGNAL BASE TO BE INSTALLED
- MONOTUBE MAST ARM BASE TO BE INSTALLED WITH 8 FT STEEL ARM
- XX' ARM - MAST ARM
- S40-XXXX - STRUCTURE NUMBER
- (K) (B) - RED/BLACK WIRE TERMINATION
- LED - LED HARP MH070HP-MT-2B-4-AG-S LUNIMAIRE

SCALE, FEET 0 40

SHEET 3 OF 3

STATE PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	STREET LIGHTING & CUC PLAN	SHEET 36	E

FILE NAME : W:\bes_WisDot\2023\(2090–16–00) Silver Spring Dr – 68th to 35th\SL Conduit\design 100% 1–22.dgn PLOT DATE : 24–JAN–2023 14:05 PLOT BY : lhickm PLOT NAME : PLOT SCALE : 1:40

TRAFFIC & STREET LIGHTING GENERAL NOTES:

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

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

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

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

2 LOCATIONS OF THE 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. FIELD MARK EACH CONDUIT LOCATION BY STAMPING AND PAINTING WITH RED PAINT ON TOP AND BACKSIDE OF CURB.

3 TYPICAL CONDUIT INSTALLED UP TO DIRECT BURIED STREET LIGHT POLES IS AS FOLLOWS 3-INCH OR 2.5-INCH (AS NOTED) SCHEDULE 40 RIGID PVC TO STREET LIGHTING METAL HOUSING (PEDESTAL), THE 1.5-INCH SCHEDULE 40 RIGID PVC TO STREET LIGHT POLE CABLE SLOT, AND THE 2-INCH SCHEDULE 40 RIGID PVC TO SIGNAL STANDARD BASE AND RISER FOR TRAFFIC SIGNAL ON STREET LIGHT POLE.

4 DEPTH OF CONDUIT INSTALLED BELOW THE STREETS, HIGHWAYS, ROADS, AND ALLEYS SHALL BE 24-INCHES MINIMUM AND 36-INCHES MAXIMUM. (MEASURED FROM FINISHED FLANGE LINE)

5 CONDUIT INSTALLED BEHIND CURB, AND UNDER DRIVEWAYS SHALL BE INSTALLED AT A DISTANCE OF 6 INCHES AWAY FROM THE BACK OF CURB TO THE CENTER LINE OF CONDUIT, AND 18 INCHES DOWN MEASURED FROM THE TOP OF CURB OR FINISHED GRADE TO THE TOP OF CONDUIT.

6 WHEN THERE IS MORE THAN ONE CONDUIT TO BE INSTALLED, PLACE ALL CONDUITS IN THE SAME TRENCH.

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

8 THE CONTRACTOR OR HIS SUBCONTRACTOR MUST MAKE SURE THE AREA BEHIND CURB AND/OR TRENCH SHALL BE FREE OF DEBRIS AND OVERPOUR AND SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

9 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.

10 ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON ALL CONDUITS. (SEE NEC 352.28 2008 CODE)

11 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.

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

13 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.).

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

15 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 UNLESS OTHERWISE APPROVED BY THE STREET LIGHTING ENGINEER.

16 WHEN ENDS OF CONDUIT DO NOT CONNECT TO A PULL BOX / VAULT AND WILL END UP UNDER CONCRETE WALK. THE CONTRACTOR IS REQUIRED TO LEAVE A 24" X 24" BOX FORM CENTERED OVER THE END OF CONDUIT AND FILL THE BOXFORM WITH CRUSHED GRAVEL. (PER WISDOT SPEC 209.2.1(1) GRANULAR BACKFILL)

17 ALL PIPE CROSSINGS AND PULL BOXES / VAULTS SHALL BE AT LEAST SIX (6) FEET AWAY FROM FIRE HYDRANTS, UNLESS NOTED OTHERWISE, OR APPROVED BY THE STREET LIGHTING ENGINEER.

18 ALL POLES AND TRAFFIC STANDARDS IN CONCRETE ARE REQUIRED TO HAVE A 30"X30" BOX SHAPED JOINT PLACED AROUND THEM USING AN EXPANSION JOINT FILLER. UNLESS NOTED OTHERWISE (SEE DETAIL 122)

19 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.

20 LIGHT POLES AND TRAFFIC STANDARDS 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.

21 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 - DENNIS MILLER (OFFICE) 414-286-5942 (CELL) 414-708-4251 OR DISPATCHER @ 414-286-5944
TRAFFIC SIGNALS - AL NICHOLS (OFFICE) 414-286-3687 (CELL) 414-708-5148 OR DISPATCHER @ 414-286-3687

22 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 - DENNIS MILLER (OFFICE) 414-286-5942 (CELL) 414-708-4251
STREET LIGHTING - NEAL KARWEIK (OFFICE) 414-286-5943 (CELL) 414-708-4245
STREET LIGHTING - THOMAS HUGHES (OFFICE) 414-286-3457 (CELL) 414-708-3175
STREET LIGHTING - DISPATCHER @ 414-286-5944
TRAFFIC SIGNALS - AL NICHOLS (OFFICE) 414-286-5941 (CELL) 414-708-5148
TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687

23 CONDUIT WILL ONLY BE INSTALLED AFTER THE CURB IS POURED, UNLESS APPROVED BY BOTH THE ENGINEER & STREET LIGHTING SHOP SUPERVISOR.

24 CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

25 CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SERVICES FOR FINAL INSPECTION AND APPROVAL OF ALL ELECTRICAL WORK BEFORE ANY MATERIALS ARE COVERED UP OR BACKFILLED.

26 ALL PURPOSE ANTISEIZE (OR EQUIV) TO BE APPLIED ON ALL BOLTS AND SCREWS ESPECIALLY THE LIGHT POLE HAND HOLE PANEL. OXIDE INHIBITOR OX-4 (OR EQUIV) TO BE APPLIED ON ALL WIRE CONNECTION AND WIRE NUTS. TAG ALL CABLE DIRECTION IN VAULT AND HAND HOLE PANEL.

27 PROVIDE THREE SETS OF AS-BUILT DRAWINGS DETAILING THE FINAL PLACEMENT OF CONDUIT, CABLING, EQUIPMENT, AND GEOMETRIC MODIFICATIONS UNDER THE CONTRACT. PROVIDE PDF COPY OCNFORMING TO CMM 1-65-14, OR RECORD ALL CHANGES IN RED INK ONLY ON THE AS-LET (DESIGN) PAPER DRAWINGS. THE CITY WILL REJECT AS-BUILTS WITH INCOMPLETE OR INCORRECT CONTENT OR NOT CONFORMING TO CMM STANDARDS.

28 RETURN ALL REMOVED STREET LIGHTING FIXTURES TO STREET LIGHTING FIELD OFFICE
(ATTN: MIKE GUERRERO)
1540 W. CANAL ST. MILWAUKEE WI 53233

UTILITY LINE CODE

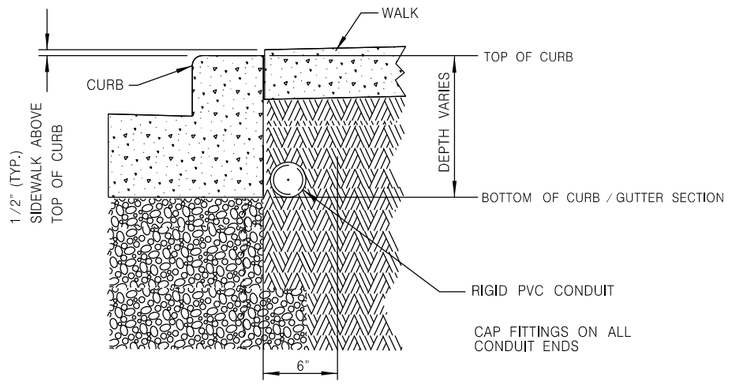
SAN	SANITARY SEWER
STO	STORM SEWER
W	WATER
G	GAS
G	PROPOSED GAS
E	ELECTRIC
TE&ES	TRAFFIC & STREET LIGHTING
	OLD CITY UNDERGROUND CONDUIT
CUC	PROPOSED CITY UNDERGROUND CONDUIT
T	TELEPHONE
TV	CABLE

PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SCALE FEET 0 40	SHEET 37	E

FILE NAME : W:\bte\signals\PAVING AND DESIGN\State Projects–LFA\Preliminary Engineering\2090–16–70 HSIP Silver Spring – 68th to 35th\2090–16–70 Signals.dgn PLOT DATE : 13–JUL–2023 07:28 PLOT BY : jaortiz PLOT NAME : PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

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



100 DETAIL "A"

TYPICAL CONDUIT INSTALLATION
BEHIND CURB

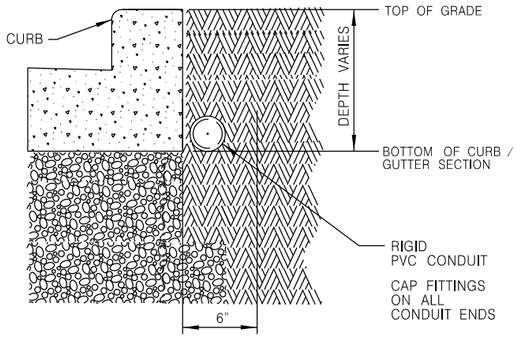
NOT TO SCALE

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

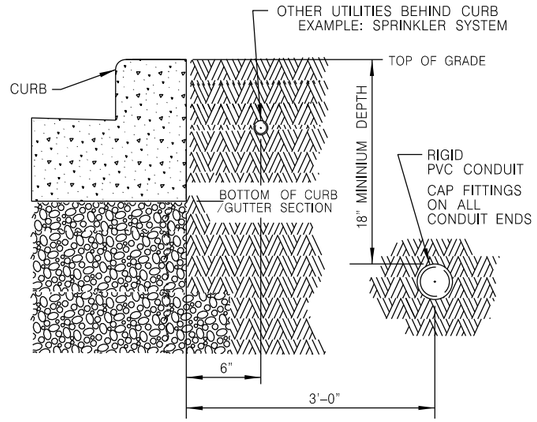
NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.

DETAIL "B"

CONDUIT TO BE PLACED WITHIN A 6" AREA DIRECTLY BEHIND CURB,
UNLESS NOTED OR APPROVED BY ENGINEER.



DETAIL "C"

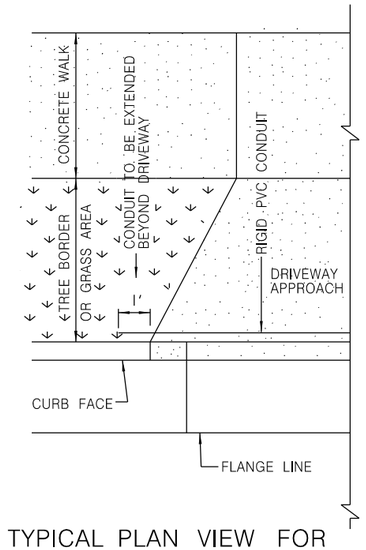


100 DETAIL "B" & "C"

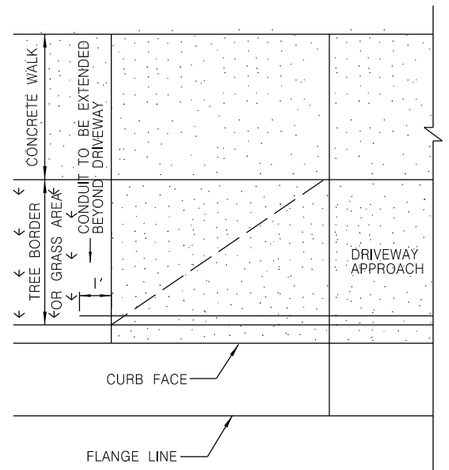
TYPICAL CONDUIT INSTALLATION
BEHIND CURB

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.

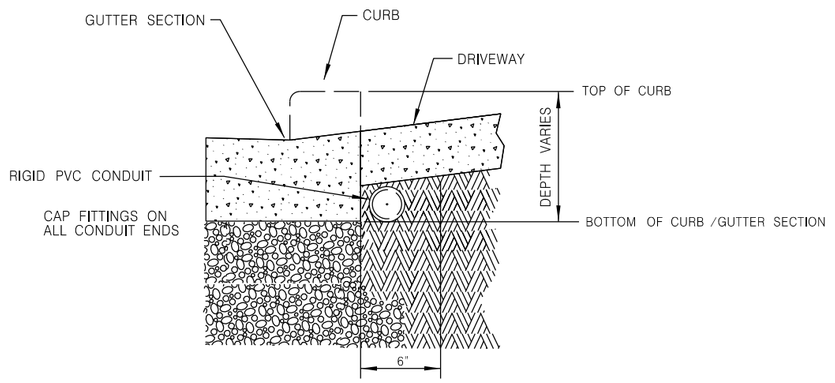


TYPICAL PLAN VIEW FOR
FLARED DRIVEWAY



TYPICAL PLAN VIEW FOR
DEPRESSED DRIVEWAY

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

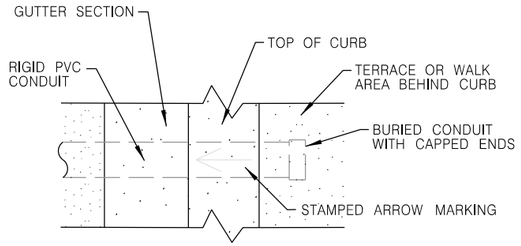


101 DETAIL

TYPICAL CONDUIT INSTALLATION
UNDER DRIVEWAYS OR PEDESTRIAN RAMPS

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.

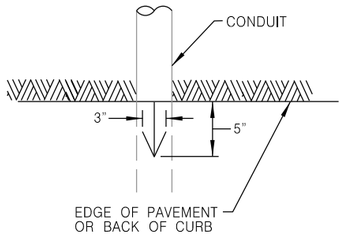


TOP VIEW OF CURB STAMPING

NOT TO SCALE

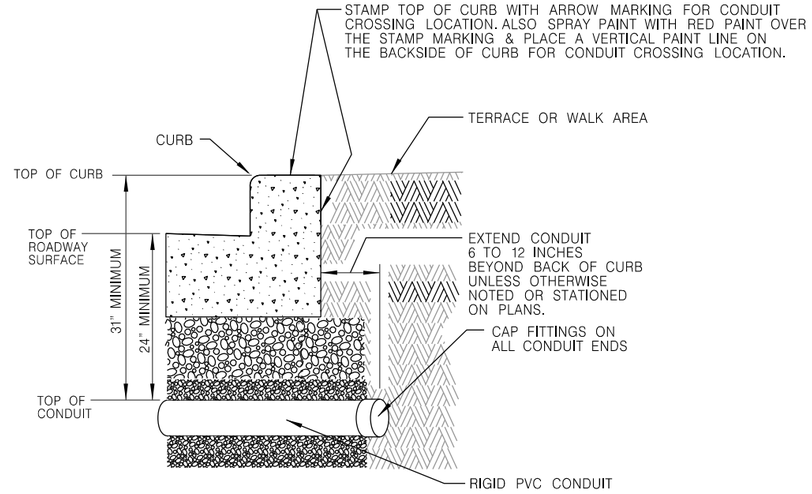
NOTE:

ARROW MARK SHALL BE INSCRIBED IN PAVEMENT SURFACE 1/4–INCH TO 3/8–INCH DEEP AT EACH LOCATION WHERE CONDUITS ARE PLACED UNDER THE PAVEMENT.



ARROW MARK

NOT TO SCALE



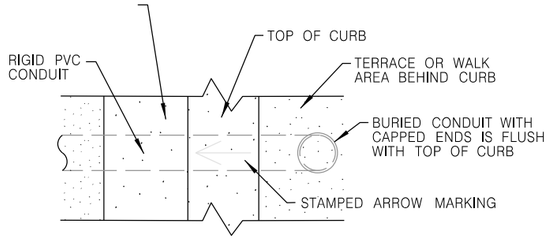
102 DETAIL VERSION 1

TYPICAL CONDUIT INSTALLATION FOR CROSSING ROADWAYS

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.

2

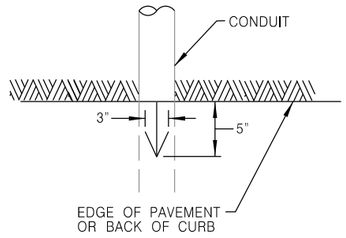


TOP VIEW OF CURB STAMPING

NOT TO SCALE

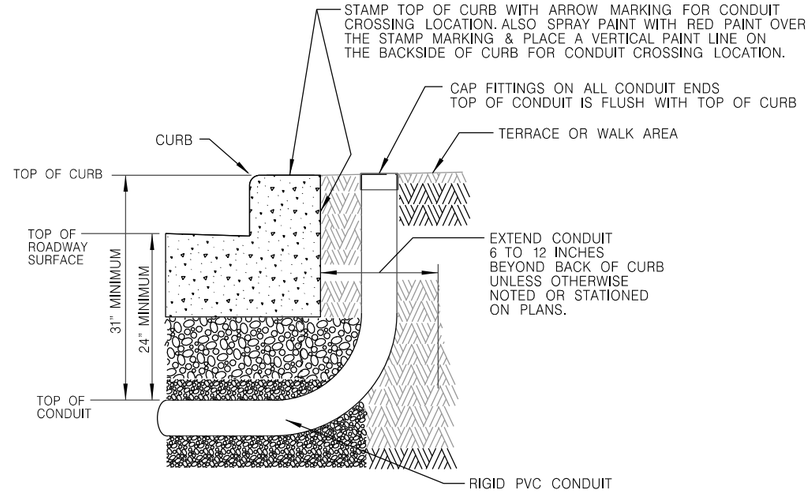
NOTE:

ARROW MARK SHALL BE INSCRIBED IN PAVEMENT SURFACE 1/4–INCH TO 3/8–INCH DEEP AT EACH LOCATION WHERE CONDUITS ARE PLACED UNDER THE PAVEMENT.



ARROW MARK

NOT TO SCALE



102 DETAIL VERSION 2

TYPICAL CONDUIT INSTALLATION FOR CROSSING ROADWAYS

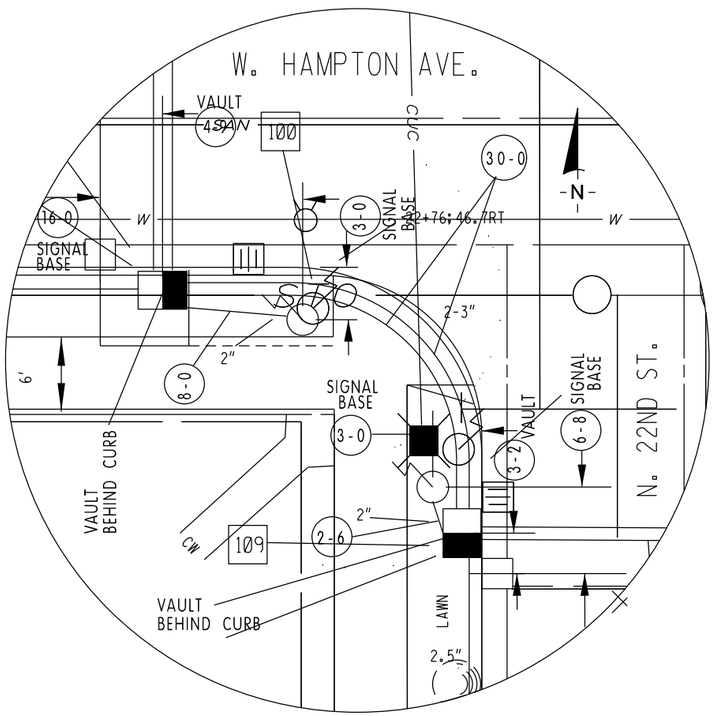
NOT TO SCALE

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

RECORD RETENTION REQUIREMENTS:

- 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.

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



FIELD RECORD EXAMPLE DETAIL NOT TO SCALE

TYPICAL DIMENSIONING OF CONDUIT, VAULTS, 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, VAULTS AND CONCRETE BASES.

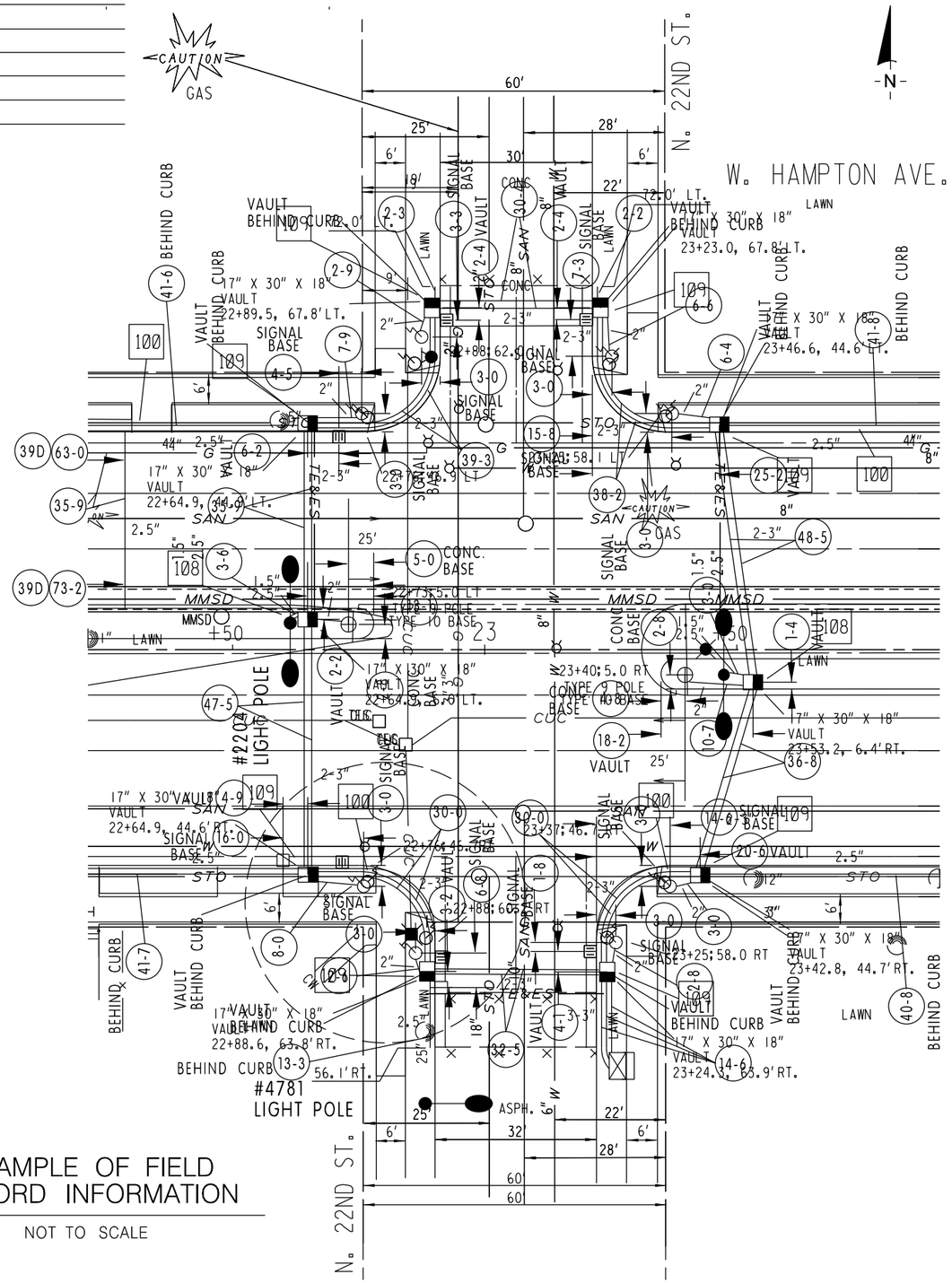
MEASURE TO OR FROM THE CENTERS OF OBJECTS FOR DISTANCE TAKING.

(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

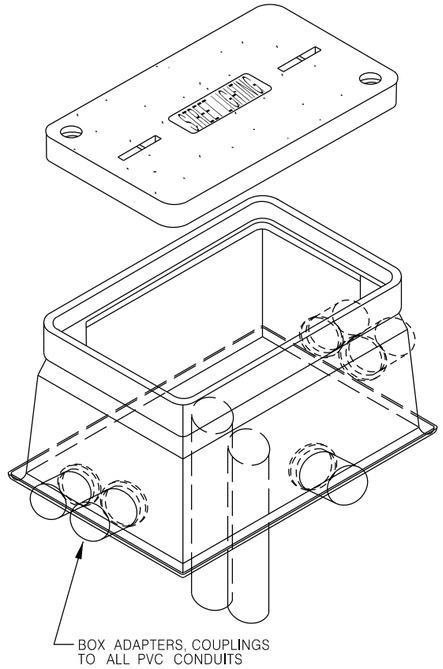
(25-6) MEANS = DISTANCE OF 25.6 FT. BETWEEN PERMANENT OBJECT OR CURB FACE TO CONDUIT, VAULT, AND CONCRETE BASE (MEASURED TO NEAREST TENTH OF A FOOT)



EXAMPLE OF FIELD RECORD INFORMATION

NOT TO SCALE

PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	STREET LIGHTING & TRAFFIC SIGNAL DETAILS	SHEET OF 40	E



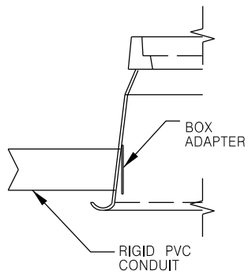
HEAVY DUTY COVER
W/ STREETLIGHTING LOGO
& W / 2 BOLTS
COLOR: GRAY

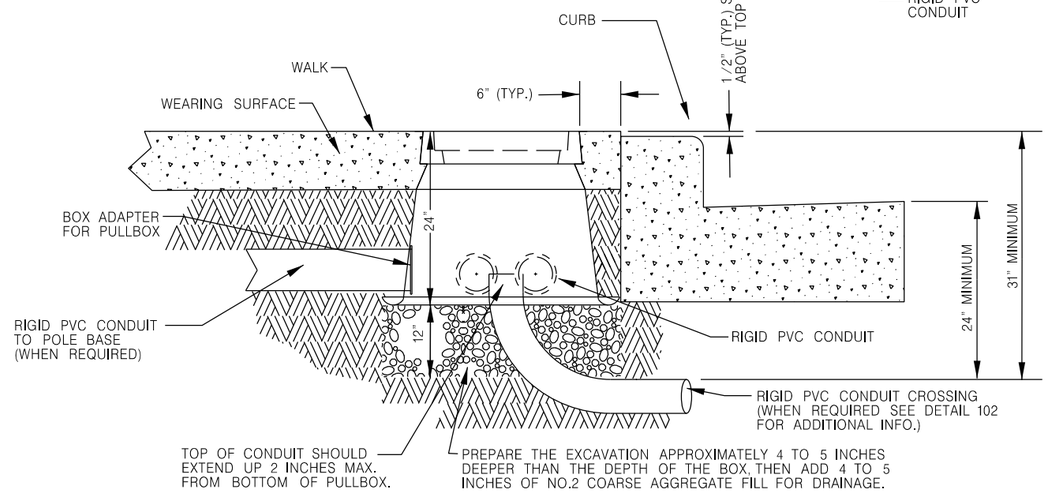
ELECTRICAL PULLBOX
FLARED WALL
BOX W / NO BASE
COLOR: GRAY

(VARIOUS SIZES)

PLUG OR CAP FITTINGS ON ALL
UNUSED CONDUITS IN THE ENCLOSURE

BOX ADAPTERS, COUPLINGS
TO ALL PVC CONDUITS

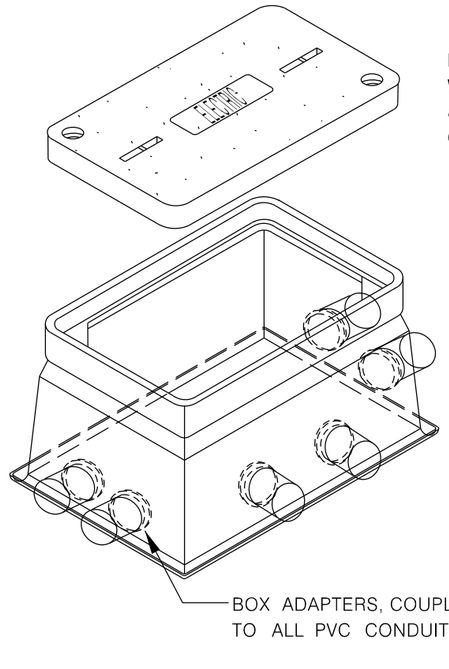




112 DETAIL — TYPICAL PULLBOX INSTALLATION IN WALK — NOT TO SCALE

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

2

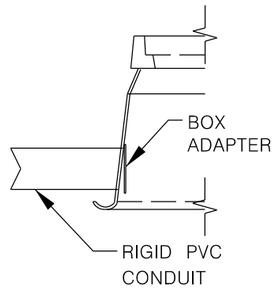


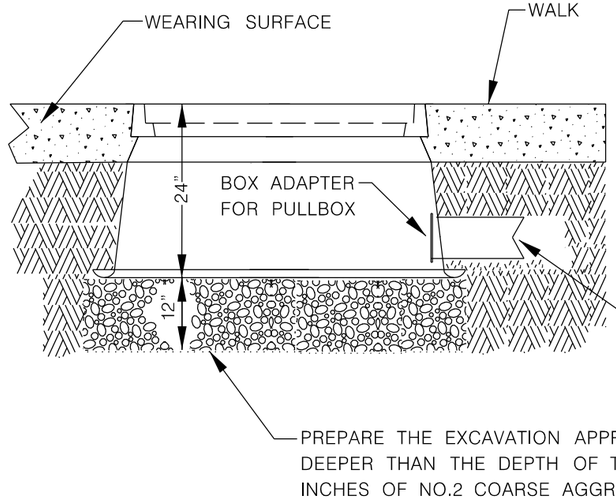
HEAVY DUTY COVER
W/ ELECTRIC LOGO
& W / 2 BOLTS
COLOR: GRAY

ELECTRICAL PULLBOX
FLARED WALL
BOX W / NO BASE
COLOR: GRAY
(VARIOUS SIZES)

PLUG OR CAP FITTINGS ON ALL
UNUSED CONDUITS IN THE ENCLOSURE

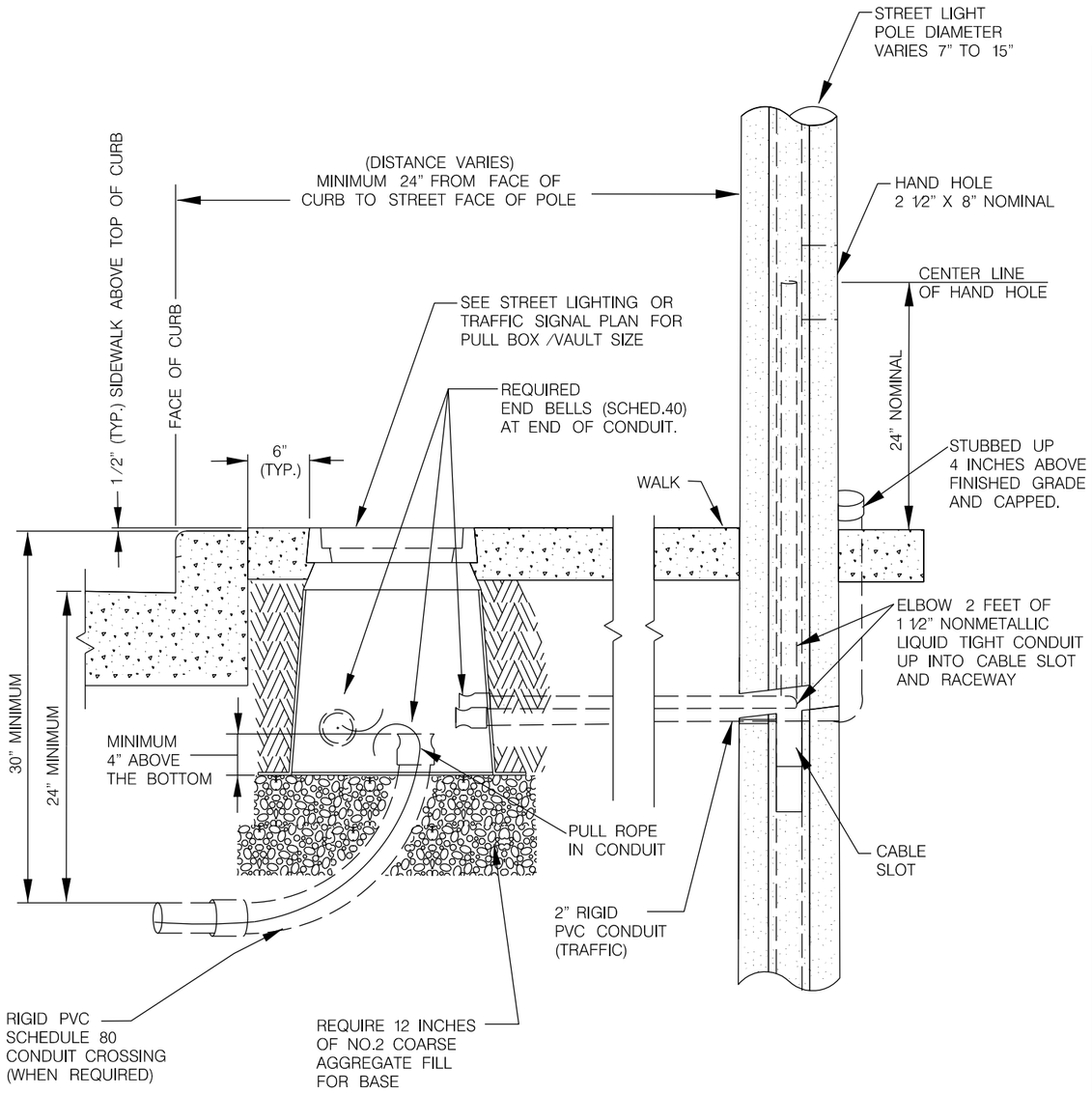
BOX ADAPTERS, COUPLINGS
TO ALL PVC CONDUITS





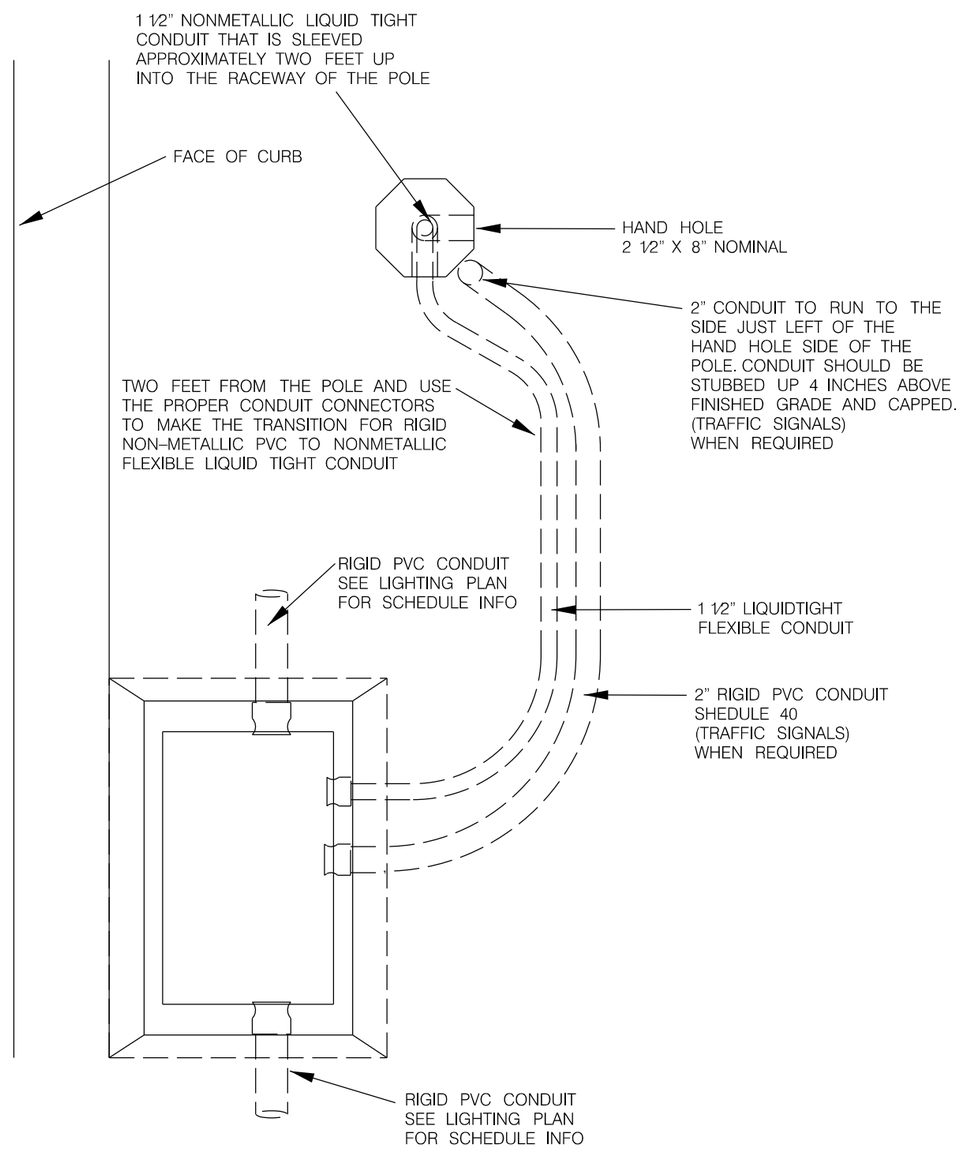
113 DETAIL — TYPICAL PULLBOX INSTALLATION IN SIDEWALK — NOT TO SCALE

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



SECTION VIEW

NOT TO SCALE



PLAN VIEW

NOT TO SCALE

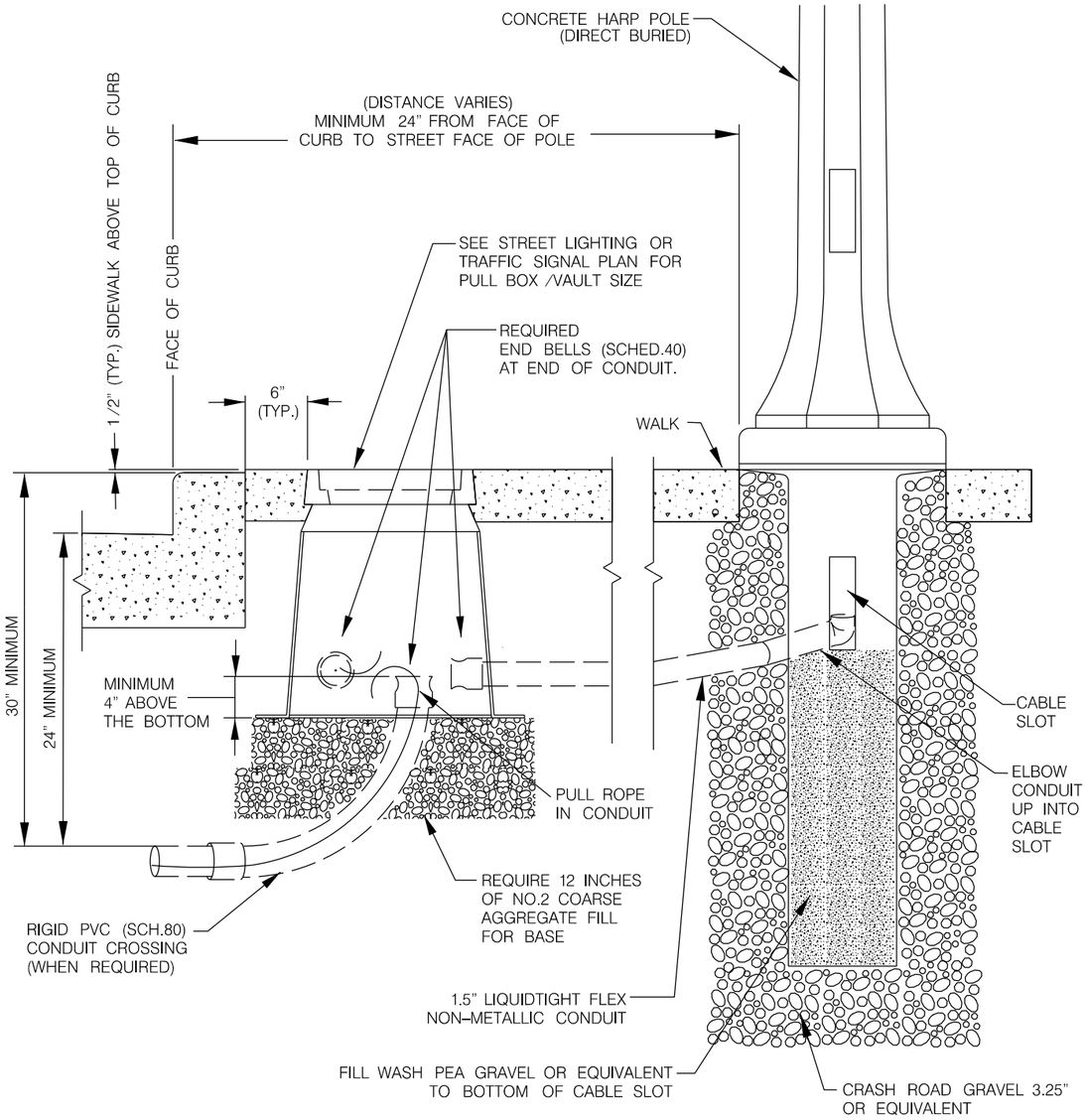
108A

DETAIL VERSION

TYPICAL CONDUIT INSTALLATION FROM PULL BOX / VAULT TO POLE

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.



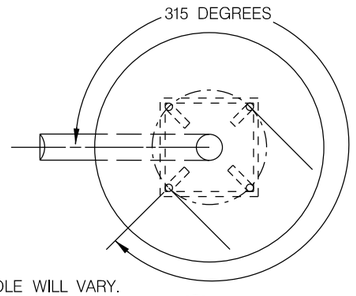
123 DETAIL

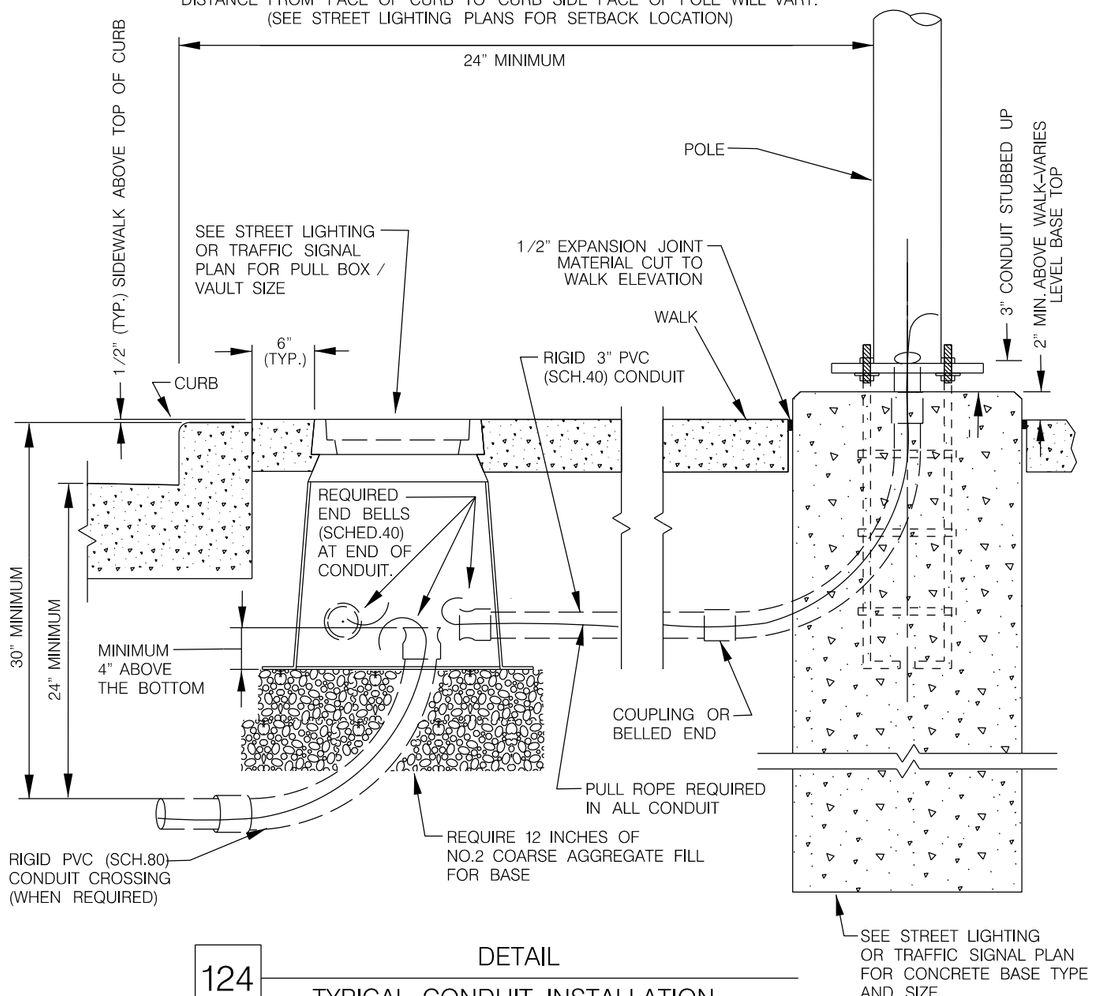
TYPICAL CONDUIT INSTALLATION
FROM PULL BOX TO CONCRETE HARP POLE

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

BOLT CIRCLE
TOP VIEW



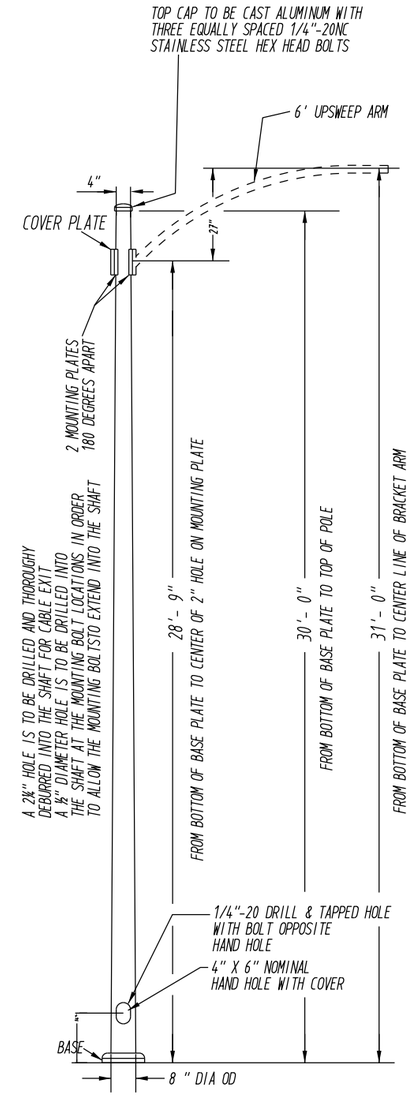


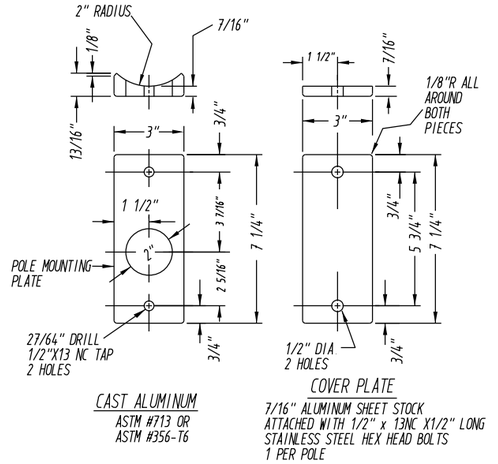
124 DETAIL

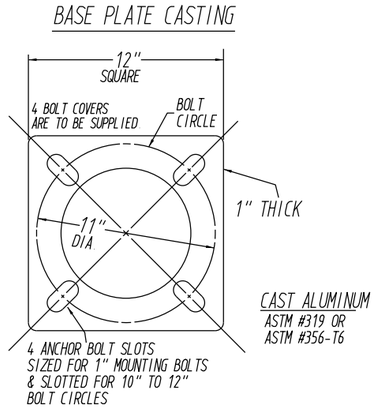
TYPICAL CONDUIT INSTALLATION
FROM PULL BOX / VAULT
TO CONCRETE BASE

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

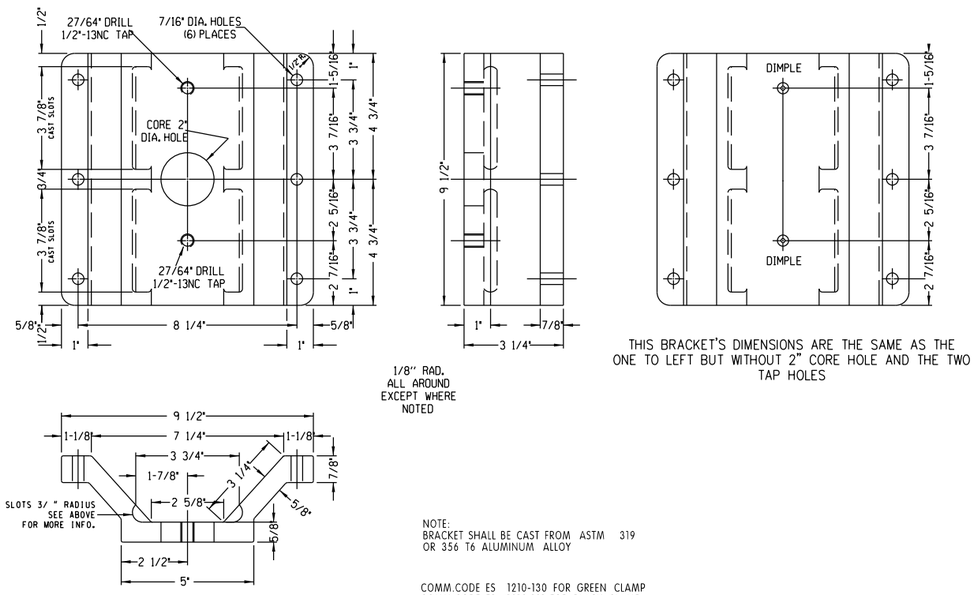






DETAIL

BOLT DOWN 30' ALUMINUM POLE



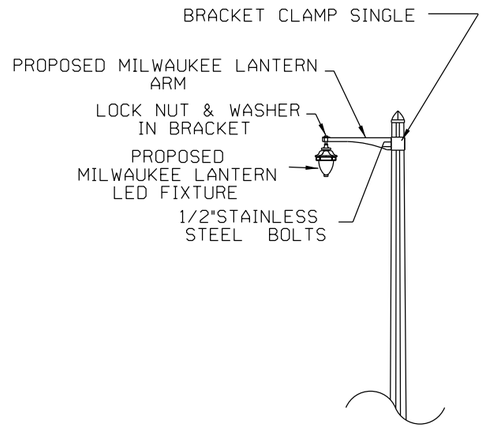
NOTE:
BRACKET SHALL BE CAST FROM ASTM 319 OR 356 T6 ALUMINUM ALLOY

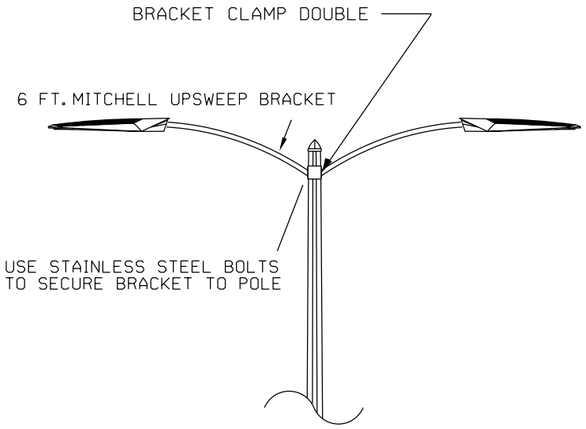
COMM.CODE ES 1210-130 FOR GREEN CLAMP
COMM.CODE ES 1210-131 FOR BLACK CLAMP

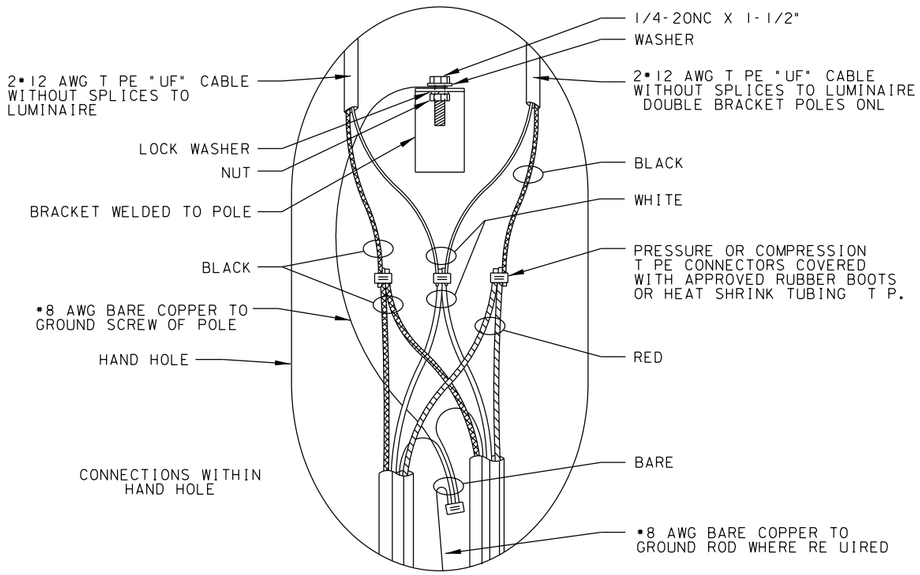
DETAIL

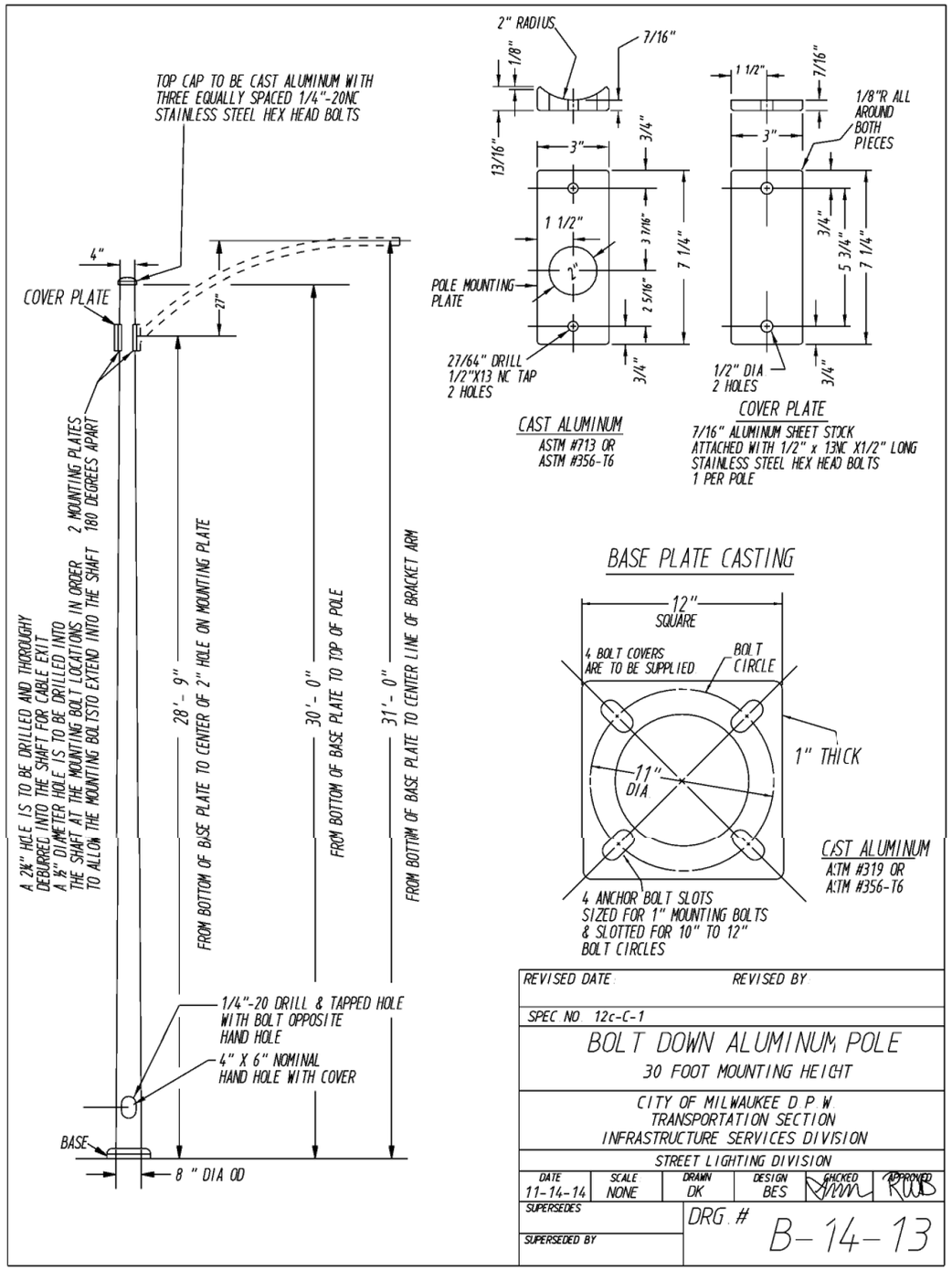
CITY SUPPLIED HEAVY DUTY BRACKET CLAMP FOR 31' CONCRETE POLE

NOT TO SCALE









REVISED DATE	REVISED BY
SPEC NO 12c-C-1	

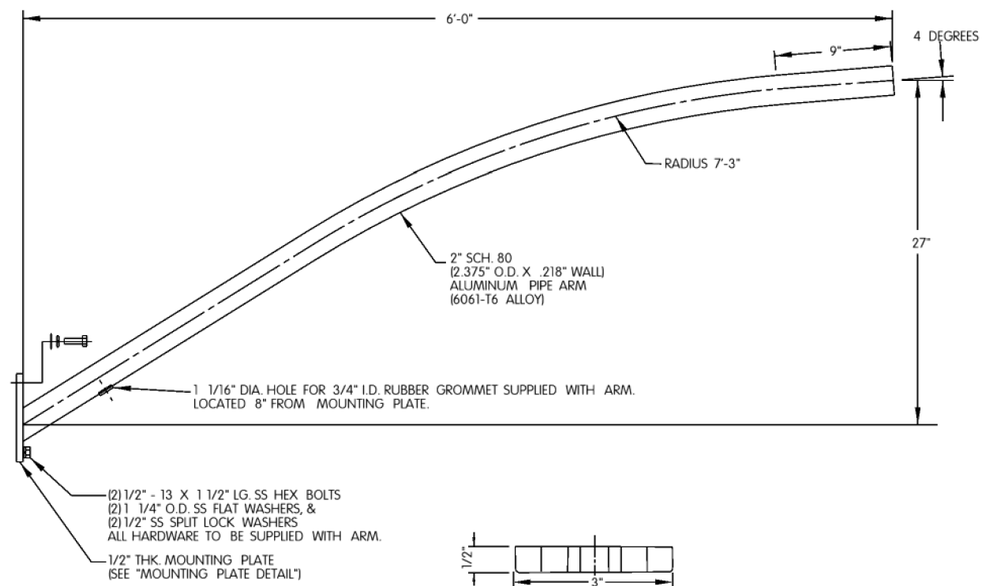
BOLT DOWN ALUMINUM POLE
30 FOOT MOUNTING HEIGHT

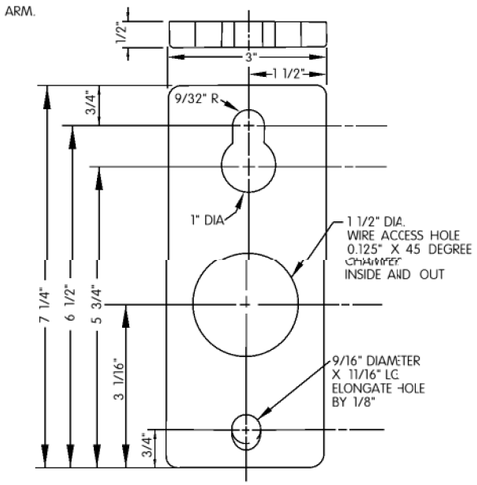
CITY OF MILWAUKEE D.P.W.
TRANSPORTATION SECTION
INFRASTRUCTURE SERVICES DIVISION
STREET LIGHTING DIVISION

DATE	SCALE	DRAWN	DESIGN	CHECKED	APPROVED
11-14-14	NONE	DK	BES		

SUPERSEDES
SUPERSEDED BY

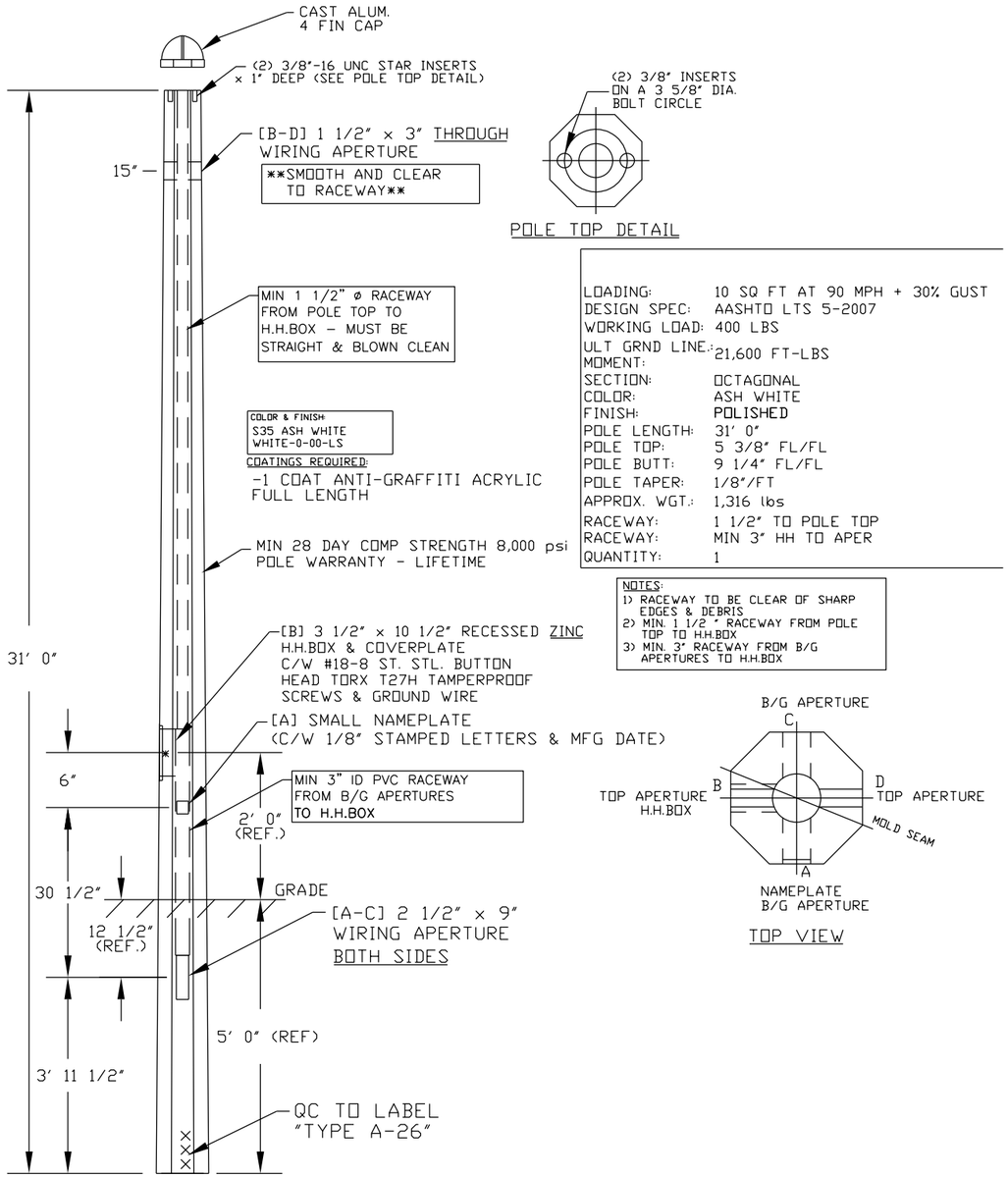
DRG. # B-14-13



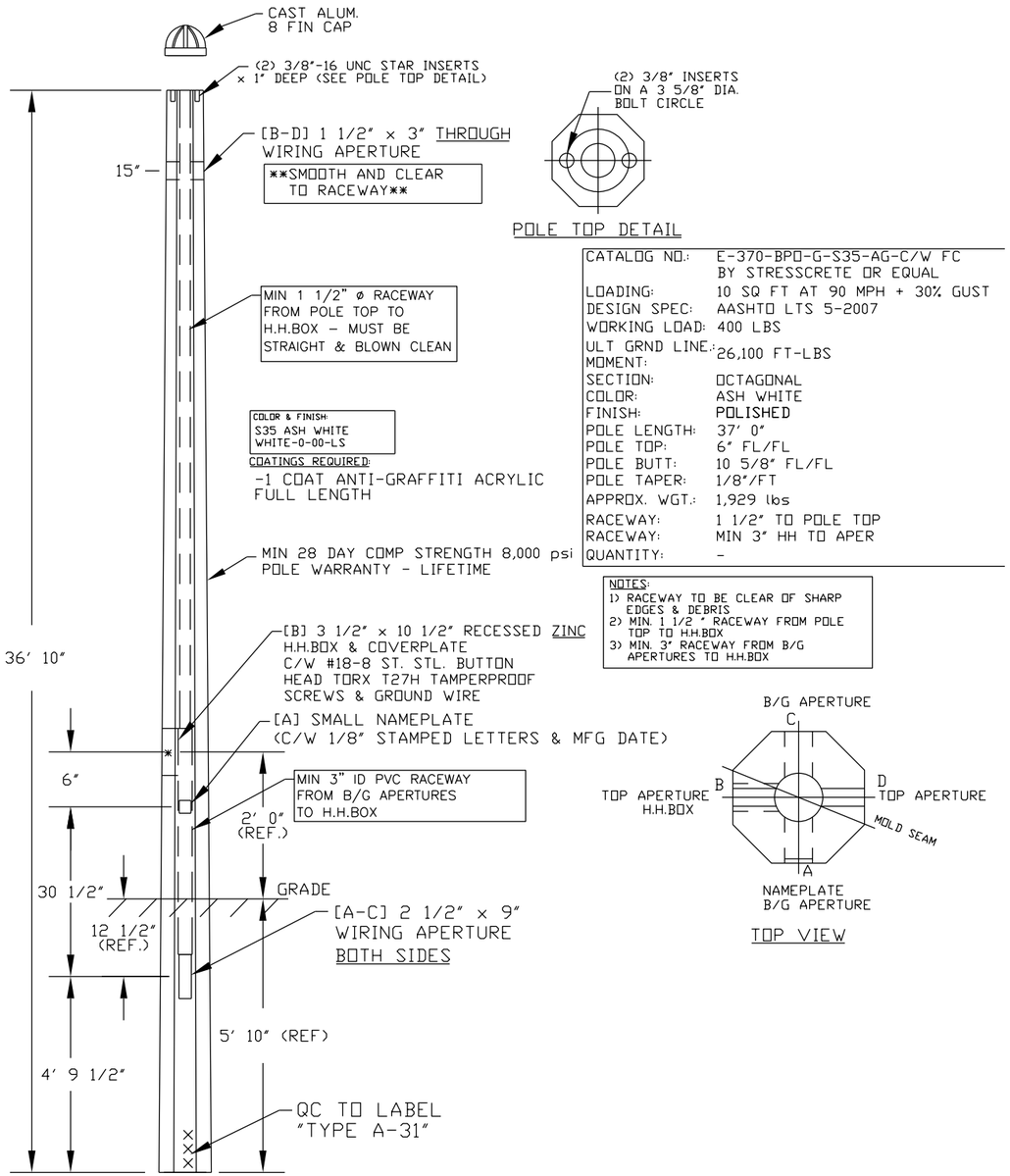


MOUNTING PLATE DETAIL "ES #436"
1/2" THK. ALUMINUM
(6061-T6 ALLOY)

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

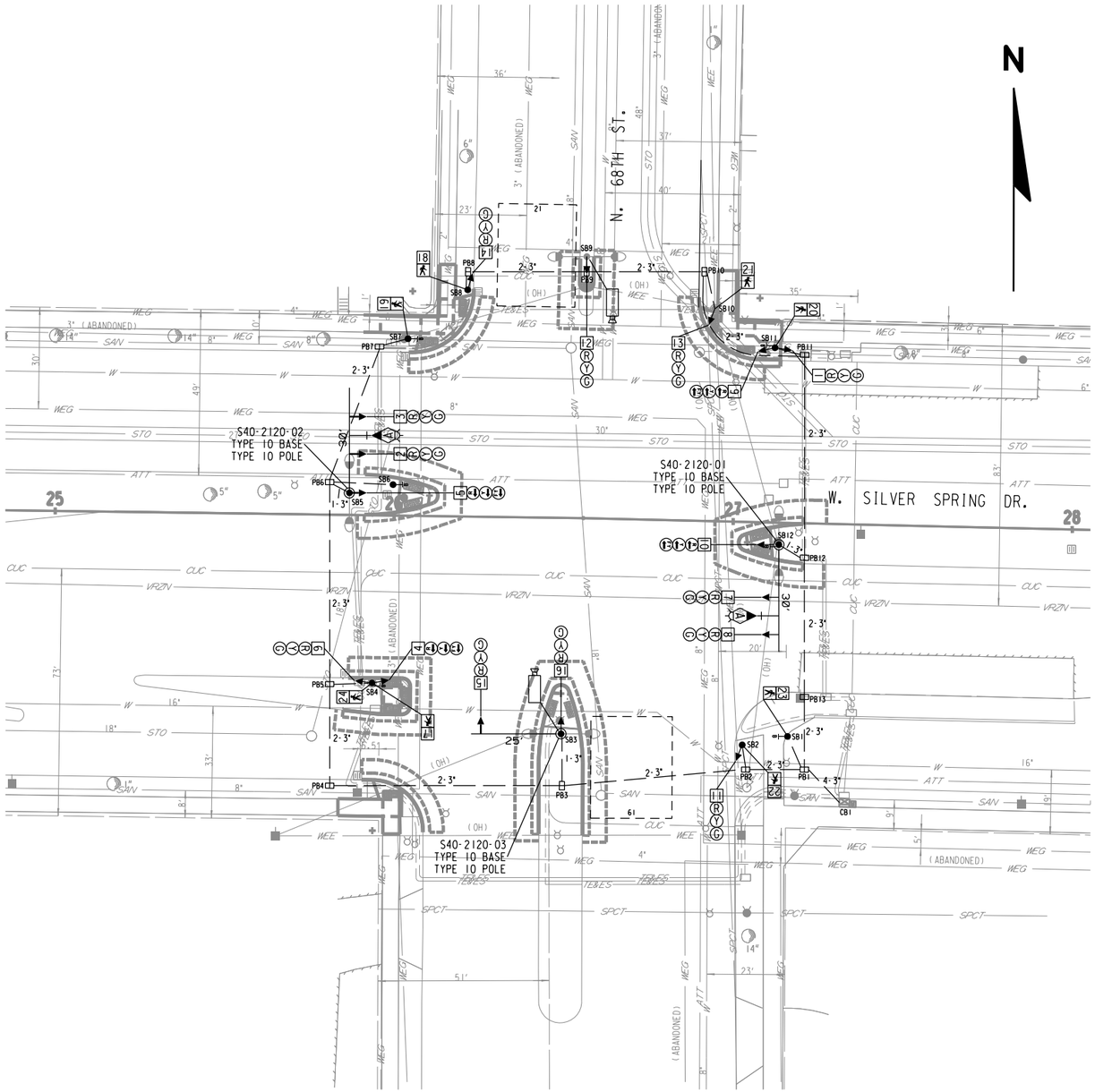


26' DIRECT BURY CONCRETE POLE



31' DIRECT BURY CONCRETE POLE

2



LEGEND

- CABINET
- (XX) MONOTUBE BASE, POLE, 15'-40' ARM
- CONFIRMATION LIGHT
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONCRETE POLYMER PULL BOX 17"X30"X24"
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE
- M METER PEDESTAL
- X SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- RED ARROWS
- YELLOW ARROWS
- GREEN ARROWS
- WALK-DON'T WALK INDICATOR 12" COUNTDOWN TIMER 12"
- PEDESTRIAN PUSH BUTTON
- CAMERA

TRAFFIC CONTROL SIGNAL
W. SILVER SPRING DR. & N. 68TH ST.
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.

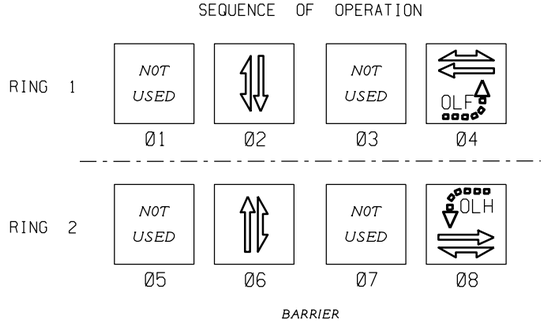
CONTROLLER TYPE: ECONOLITE COBALT

DATE PAGE OF

PROJECT NO: 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SCALE FEET 0 40	SHEET 48	E

2

SEQUENCE OF OPERATION



	HEAD NUMBERS	FLASH
Ø2	14.15.16	R
OLF	9.10	R
Ø4	1.2.3	R
Ø6	11.12.13	R
OLH	4.5	R
Ø8	6.7.8	R
Ø2P	17.18	
Ø4P	19.20	
Ø6P	21.22	
Ø8P	23.24	

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC	
RADIO	
*LOCATION OF MASTER CONTROLLER NO: S.	
SIGNAL SYSTEM *: SS. .	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY Y / Ø	PHASE RECALL	PHASE ACTIVE
1				
2		6		
3				
4		8	COORD.	x
5				
6		2		
7				
8		4	COORD.	x

OVERLAPS

O.L. "F" - EB FYA
O.L. "H" - WB FYA

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL
	A
MOVEMENT	← →
PHASE	4-8

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE LIGHTING CABINET	X

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR								
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR		21		61				
CALLED PHASE		2		6				
CALL OPTION		x		x				
DELAY TIME								
EXTENTION OPTION		x		x				
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

TRAFFIC CONTROL SIGNAL
W. SILVER SPRING DR. & N. 68TH ST.
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.

CONTROLLER TYPE: ECONOLITE COBALT

DATE PAGE OF

PROJECT NO: 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET 49	E

2

PROJECT ID:	2090-16-70
INTERSECTION:	W. SILVER SPRING DR. & N. 68TH ST.

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

DATE: 1/17/2023

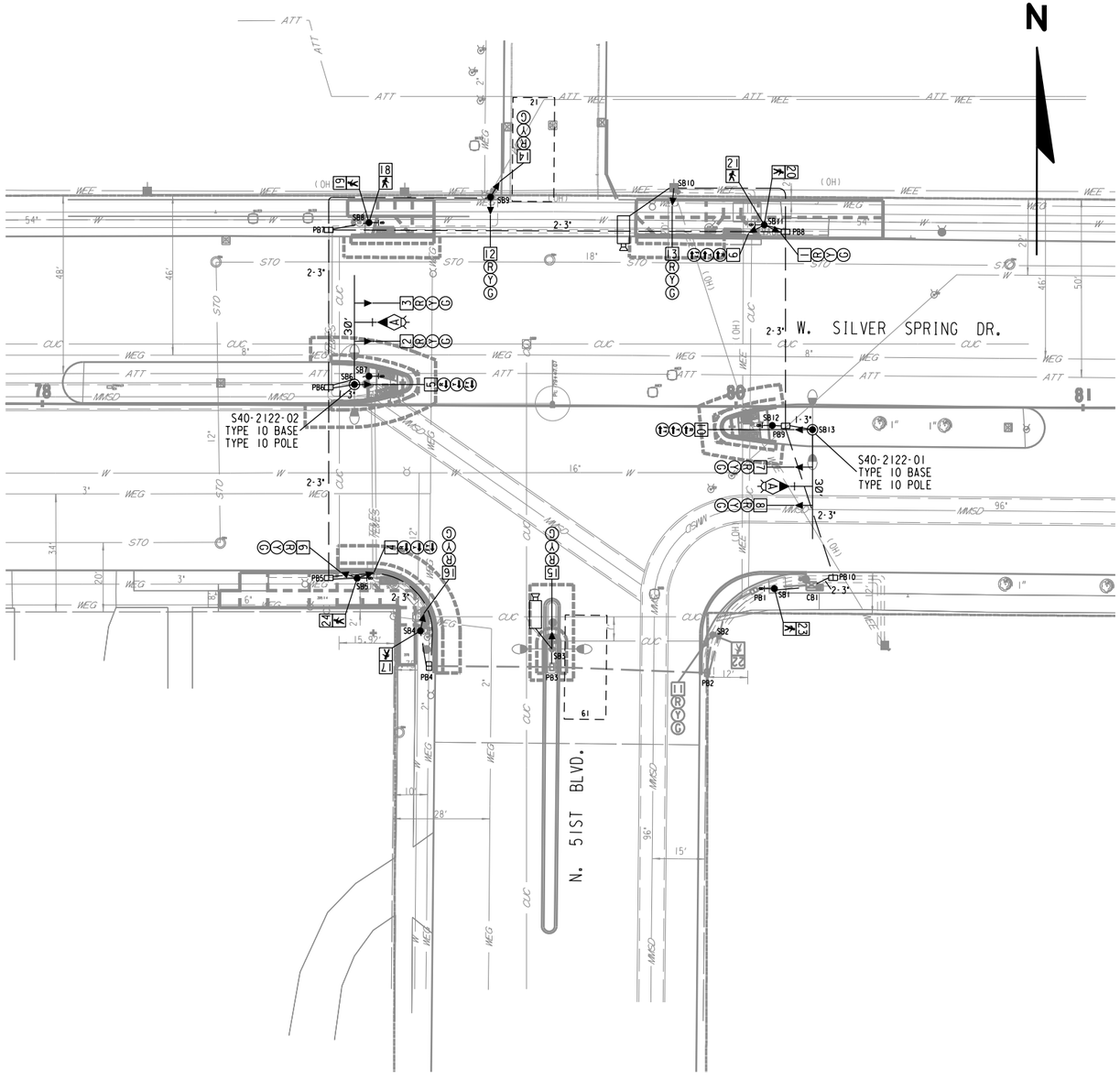
CB TO	JUMPER	# OF COND.	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR RED	YELLOW	GREEN	<RED	<YELLOW>	<FLASH YELLOW>	D/WALK	WALK	PED BUTTON	OTHER
SB1		5	23								RED	GRN		
			PUSH BUTTON										BLK	
SB2		9	11		RED	ORG	GRN							
			22								BLU	BLK		
SB3		12	15		RED	ORG	GRN							
			16		RED/BLK	ORG/BLK	GRN/BLK							
SB4		19	4					RED	ORG	GRN				
			6		RED/BLK	ORG/BLK	GRN/BLK							
			17								BLU	BLK		
			24								BLU/BLK	BLK/WHT		
			PUSH BUTTON										WHT/BLK	
SB5		19	2		RED	ORG	GRN							
			3		RED/BLK	ORG/BLK	GRN/BLK							
			5					RED/WHT	BLU/WHT	GRN/WHT				
	SB6	5	PUSH BUTTON										WHT/BLK	
SB7		12	14		RED	ORG	GRN							
			18								BLU	BLK		
	SB8	5	19								BLU/BLK	BLK/WHT		
			PUSH BUTTON										WHT/BLK	
SB9		5	12		RED	ORG	GRN							
SB10		9	13		RED	ORG	GRN							
			21								BLU	BLK		
SB11		12	1		RED	ORG	GRN							
			9					RED/BLK	ORG/BLK	GRN/BLK				
			20								BLU	BLK		
			PUSH BUTTON										WHT/BLK	
SB12		19	7		RED	ORG	GRN							
			8		RED/BLK	ORG/BLK	GRN/BLK							
			10					RED/WHT	BLU/WHT	GRN/WHT				
			PUSH BUTTON										WHT/BLK	

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	CB1

EMERGENCY VEHICLE PREEMPTION AND UF 2-12 CONFIRMATION	
FROM	TO
CB1	SB4
SB4	HEAD A
CB1	SB11
SB11	HEAD A

NOTES:
1. USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS
2. ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 12" LONGER THAN THE UNGROUNDED CONDUCTORS.
3. AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS. TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED C(
4. "OTHER" COLUMN MAY INCLUDE SHADOW BOX (BLANK OUT) SIGN.
5. SPV.0090.307 IS WIRED FROM CONTROLLER CABINET TO METER PEDESTAL

2



LEGEND

- CABINET
- (XX) MONOTUBE BASE, POLE, 15'-40' ARM
- CONFIRMATION LIGHT
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONCRETE POLYMER PULL BOX 17"X30"X24"
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE
- [M] METER PEDESTAL
- [X] SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- RED ARROWS
- YELLOW ARROWS
- GREEN ARROWS
- WALK-DON'T WALK INDICATOR 12" COUNTDOWN TIMER 12"
- PEDESTRIAN PUSH BUTTON
- CAMERA

TRAFFIC CONTROL SIGNAL

W. SILVER SPRING DR. & N. 51ST BLVD.
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.

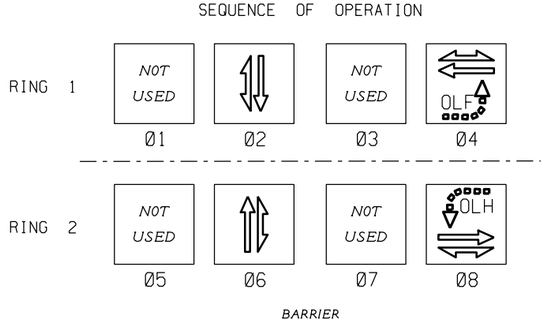
CONTROLLER TYPE: ECONOLITE COBALT

DATE PAGE OF

PROJECT NO: 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SCALE FEET 0 40	SHEET 51	E

2

SEQUENCE OF OPERATION



	HEAD NUMBERS	FLASH
Ø2	14.15.16	R
OLF	9.10	R
Ø4	1.2.3	R
Ø6	11.12.13	R
OLH	4.5	R
Ø8	6.7.8	R
Ø2P	17.18	
Ø4P	19.20	
Ø6P	21.22	
Ø8P	23.24	

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC	
RADIO	
*LOCATION OF MASTER CONTROLLER NO: S.	
SIGNAL SYSTEM *: SS. .	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY Y / Ø	PHASE RECALL	PHASE ACTIVE
1				
2		6		
3				
4		8	COORD.	x
5				
6		2		
7				
8		4	COORD.	x

OVERLAPS

O.L. "F" - EB FYA
O.L. "H" - WB FYA

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL
	A
MOVEMENT	← →
PHASE	4.8

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE LIGHTING CABINET	X

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR								
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR		21		61				
CALLED PHASE		2		6				
CALL OPTION		x		x				
DELAY TIME								
EXTENTION OPTION		x		x				
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

TRAFFIC CONTROL SIGNAL
W. SILVER SPRING DR. & N. 51ST BLVD.
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.

CONTROLLER TYPE: ECONOLITE COBALT

DATE PAGE OF

2

PROJECT ID: 2090-16-70
INTERSECTION: W. SILVER SPRING DR. & N. 51ST BLVD.

SIGNAL WIRE COLOR CODING			
	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

DATE: 1/17/2023

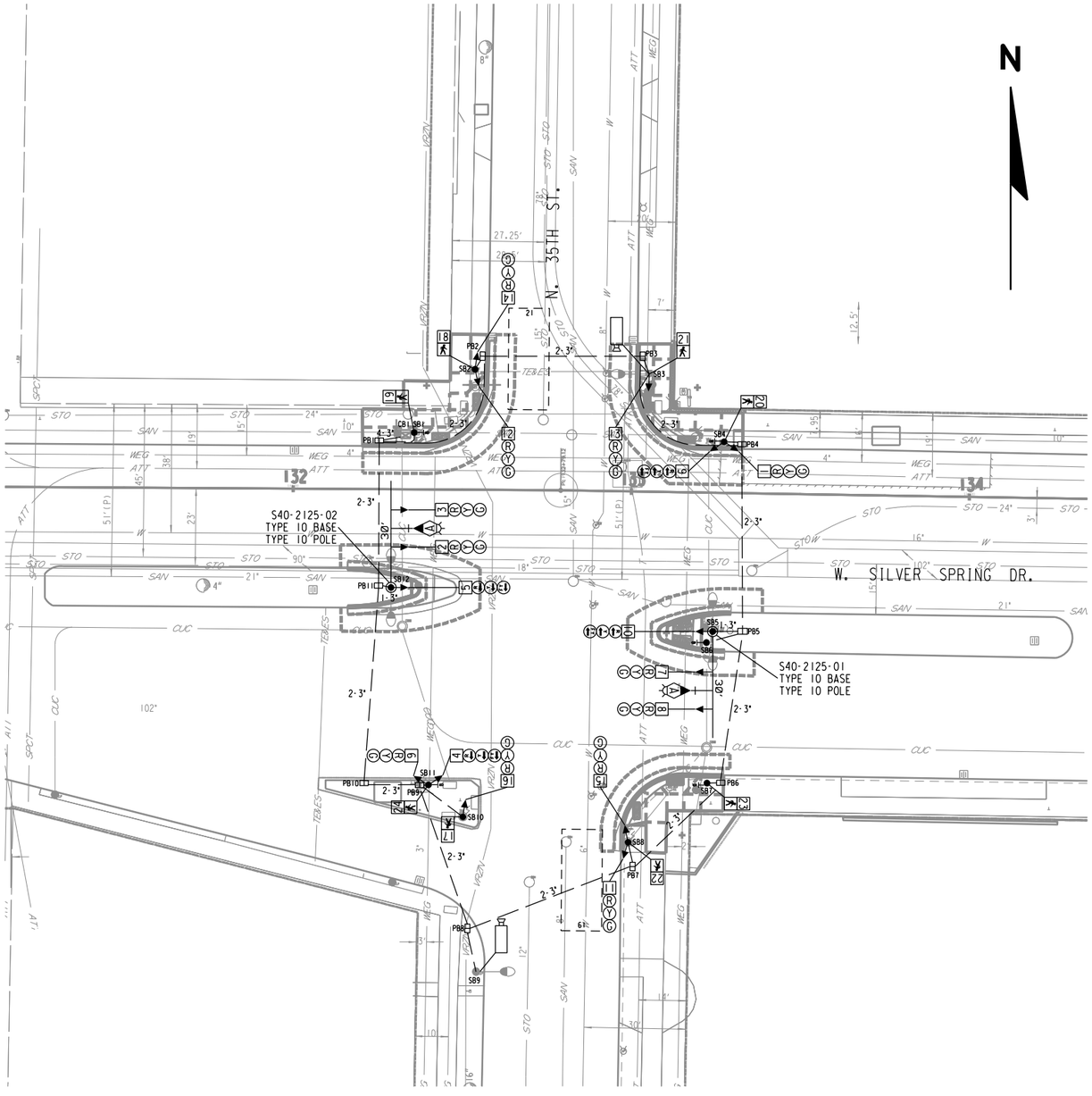
CB TO	JUMPER	# OF COND.	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR								PED BUTTON	OTHER
					RED	YELLOW	GREEN	<RED	<YELLOW>	<FLASH YELLOW>	D/WALK	WALK		
SB1		5	23								RED	GRN		
			PUSH BUTTON										BLK	
SB2		9	11		RED	ORG	GRN							
			22								BLU	BLK		
SB3		9	15		RED	ORG	GRN				BLU	BLK		
SB4		9	16		RED	ORG	GRN							
			17								BLU	BLK		
SB5		12	4					RED	ORG	GRN				
			6		RED/BLK	ORG/BLK	GRN/BLK							
			24								BLU	BLK		
			PUSH BUTTON										WHT/BLK	
SB6		19	2		RED	ORG	GRN							
			3		RED/BLK	ORG/BLK	GRN/BLK				BLU	BLK		
			5					RED/WHT	BLU/WHT	GRN/WHT				
	SB7	5	PUSH BUTTON										WHT/BLK	
SB8		9	18								RED	GRN		
			19								BLU	BLK		
			PUSH BUTTON										WHT	
SB9		12	12		RED	ORG	GRN							
			14		RED/BLK	ORG/BLK	GRN/BLK							
SB10		9	13		RED	ORG	GRN							
SB11		19	1		RED	ORG	GRN							
			9					RED/BLK	ORG/BLK	GRN/BLK				
			20								BLU	BLK		
			21								BLK/WHT	BLU/BLK		
			PUSH BUTTON										WHT/BLK	
SB13		19	7		RED	ORG	GRN							
			8		RED/BLK	ORG/BLK	GRN/BLK							
			10					RED/WHT	BLU/WHT	GRN/WHT				
	SB12	5	PUSH BUTTON										WHT/BLK	

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB8
SB8	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	SB13
SB13	CB1

EMERGENCY VEHICLE PREEMPTION AND UF 2-12 CONFIRMATION	
FROM	TO
CB1	SB6
SB6	HEAD A
CB1	SB13
SB13	HEAD A

NOTES:
1. USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS
2. ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 12" LONGER THAN THE UNGROUNDED CONDUCTORS.
3. AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS. TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED COI
4. "OTHER" COLUMN MAY INCLUDE SHADOW BOX (BLANK OUT) SIGN.
5. SPV.0090.307 IS WIRED FROM CONTROLLER CABINET TO METER PEDESTAL

2



LEGEND

- CABINET
- (XX) MONOTUBE BASE, POLE, 15'-40' ARM
- CONFIRMATION LIGHT
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONCRETE POLYMER PULL BOX 17"X30"X24"
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE
- [M] METER PEDESTAL
- [X] SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- RED ARROWS
- YELLOW ARROWS
- GREEN ARROWS
- WALK-DON'T WALK INDICATOR 12" COUNTDOWN TIMER 12"
- PEDESTRIAN PUSH BUTTON
- CAMERA

TRAFFIC CONTROL SIGNAL
W. SILVER SPRING DR. & N. 35TH ST.
CITY OF MILWAUKEE
MILWAUKEE COUNTY

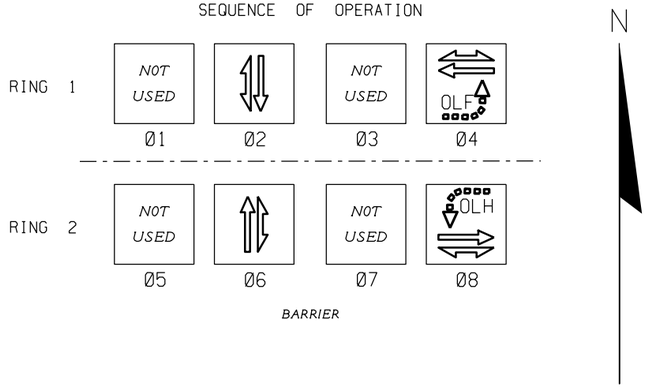
SIGNAL NO.

CONTROLLER TYPE: ECONOLITE COBALT

DATE PAGE OF

PROJECT NO: 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SCALE FEET 0 40	SHEET 54	E

SEQUENCE OF OPERATION



	HEAD NUMBERS	FLASH
Ø2	14,15,16	R
OLF	9,10	R
Ø4	1,2,3	R
Ø6	11,12,13	R
OLH	4,5	R
Ø8	6,7,8	R
Ø2P	17,18	
Ø4P	19,20	
Ø6P	21,22	
Ø8P	23,24	

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC	
RADIO	
*LOCATION OF MASTER CONTROLLER NO: S.	
SIGNAL SYSTEM *: SS. .	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY Y / Ø	PHASE RECALL	PHASE ACTIVE
1				
2		6		
3				
4		8	COORD.	x
5				
6		2		
7				
8		4	COORD.	x

OVERLAPS

O.L. "F" - EB FYA
O.L. "H" - WB FYA

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL
	A
MOVEMENT	← →
PHASE	4-8

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE LIGHTING CABINET	X

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR								
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR		21		61				
CALLED PHASE		2		6				
CALL OPTION		x		x				
DELAY TIME								
EXTENTION OPTION		x		x				
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

TRAFFIC CONTROL SIGNAL
W. SILVER SPRING DR. & N. 35TH ST.
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.

CONTROLLER TYPE: ECONOLITE COBALT

DATE PAGE OF

PROJECT NO: 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET 55	E

2

PROJECT ID:	2090-16-70
INTERSECTION:	W. SILVER SPRING DR. & N. 35TH ST.

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

DATE: 11/30/2022

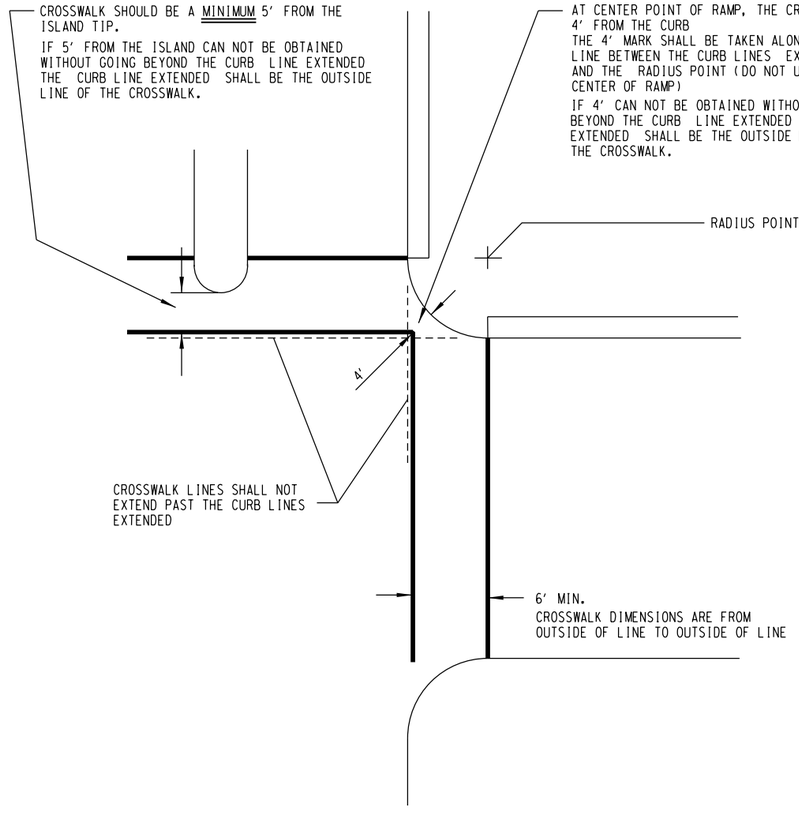
CB TO	JUMPER	# OF COND.	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR								PED BUTTON	OTHER
					RED	YELLOW	GREEN	<RED	<YELLOW>	<FLASH YELLOW>	D/WALK	WALK		
SB1		5	19								RED	GRN		
			PUSH BUTTON										BLK	
SB2		12	12		RED	ORG	GRN							
			14		RED/BLK	ORG/BLK	GRN/BLK							
			18								BLU	BLK		
SB3		9	13		RED	ORG	GRN							
			21								BLU	BLK		
SB4		12	1		RED	ORG	GRN							
			9					RED/BLK	ORG/BLK	GRN/BLK				
			20								BLU	BLK		
			PUSH BUTTON										WHT/BLK	
SB5		19	7		RED	ORG	GRN							
			8		RED/BLK	ORG/BLK	GRN/BLK							
			10					RED/WHT	BLU/WHT	GRN/WHT				
	SB6	5	PUSH BUTTON										WHT/BLK	
SB7		9	23								RED	GRN		
			PUSH BUTTON										BLK	
SB8		12	11		RED	ORG	GRN							
			15		RED/BLK	ORG/BLK	GRN/BLK							
			22								BLU	BLK		
SB10		9	16		RED	ORG	GRN							
			17								BLU	BLK		
SB11		12	4					RED	ORG	GRN				
			6		RED/BLK	ORG/BLK	GRN/BLK							
			24								BLU	BLK		
			PUSH BUTTON										WHT/BLK	
SB12		19	2		RED	ORG	GRN							
			3		RED/BLK	ORG/BLK	GRN/BLK							
			5					RED/WHT	BLU/WHT	GRN/WHT				

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	CB1

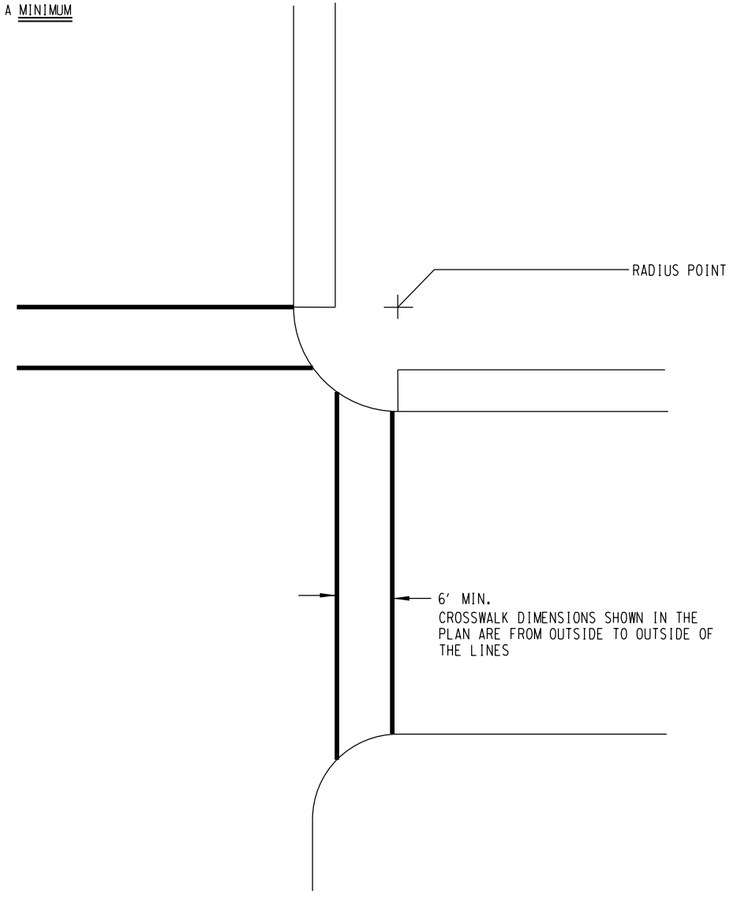
EMERGENCY VEHICLE PREEMPTION AND UF 2-12 CONFIRMATION	
FROM	TO
CB1	SB5
SB5	HEAD A
CB1	SB12
SB12	HEAD A

NOTES:
1. USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS
2. ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 12" LONGER THAN THE UNGROUNDED CONDUCTORS.
3. AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS. TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CON
4. "OTHER" COLUMN MAY INCLUDE SHADOW BOX (BLANK OUT) SIGN.
5. SPV.0090.307 IS WIRED FROM CONTROLLER CABINET TO METER PEDESTAL

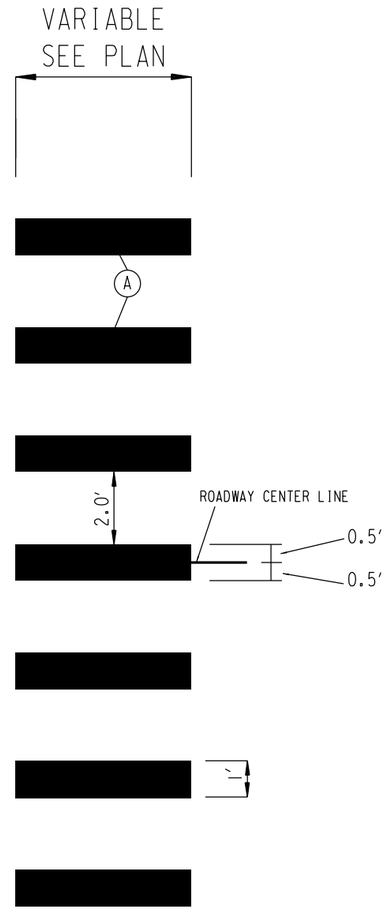
2



TYPICAL CROSS WALK INSTALLATION
WITH TYPE 1 RAMP
(PLASTIC, EPOXY, PAINT)



WITH TYPE 2 RAMP
(PLASTIC, EPOXY, PAINT)



CONTINENTAL CROSSWALK
DETAIL

NOTE: PAVEMENT MARKINGS SHOULD BE PARALLEL TO DIRECTION OF TRAVEL EVEN WHEN CROSSWALK IS SKEWED

(A) MARKING CROSSWALK EPOXY, BLOCK STYLE 12-INCH (SEE DETAIL)
(B) MARKING STOP LINE EPOXY, 24-INCH

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PAVEMENT MARKING DETAILS	SCALE FEET 0' 20'	SHEET NO: E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\TRAFFIC & PAVEMARK\2090-16-70 - SILVER SPRING MONOTUBES - PAVEMENT MARKINGS.DGN

2

N. 68TH ST.

W. SILVER SPRING DR.

A MARKING REMOVAL LINE, WIDE

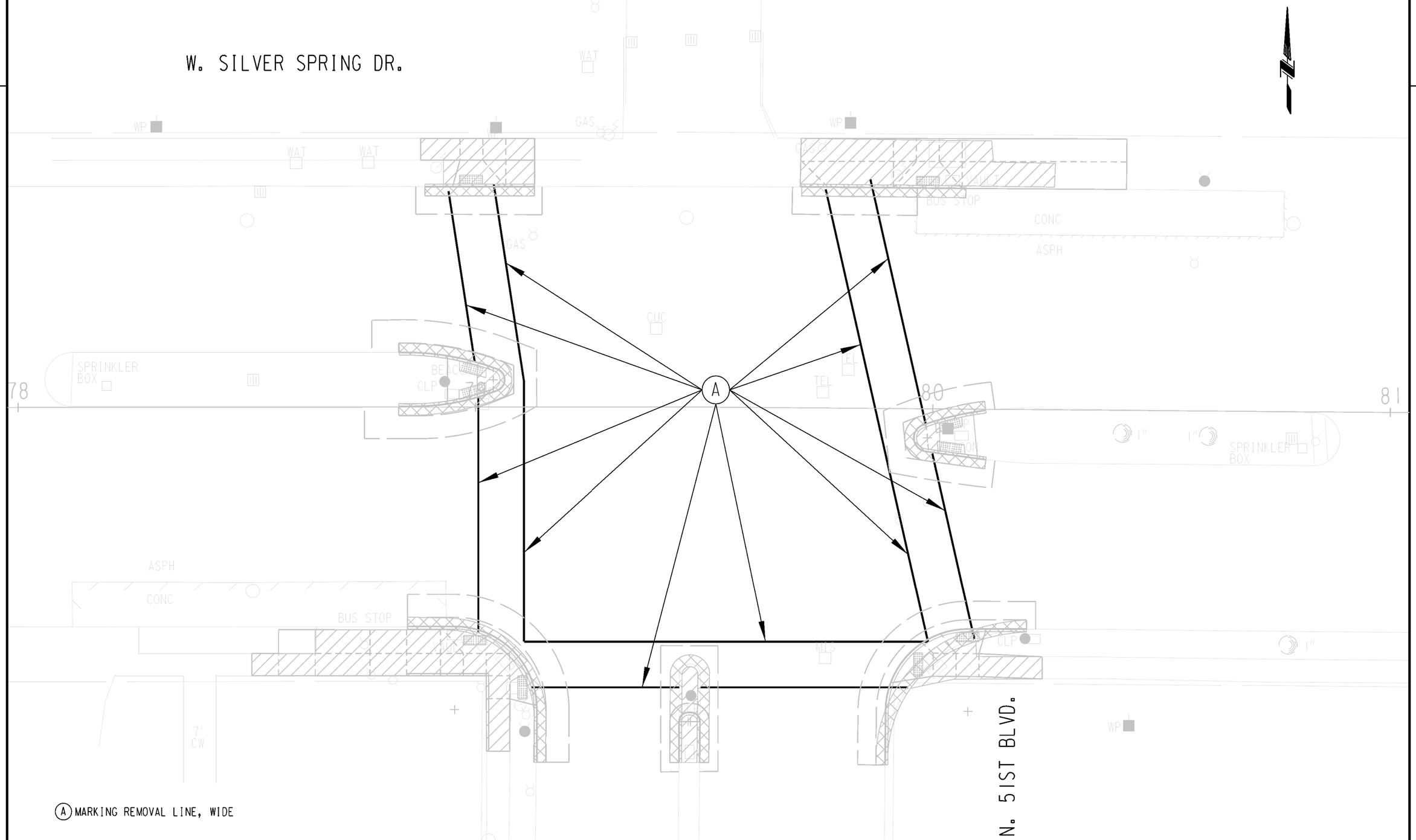
STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PAVEMENT MARKING REMOVAL	SCALE FEET 0' 20'	SHEET NO: E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\TRAFFIC & PAVEMARK\2090-16-70 - SILVER SPRING MONOTUBES - PAVEMENT MARKINGS.DGN

2

2

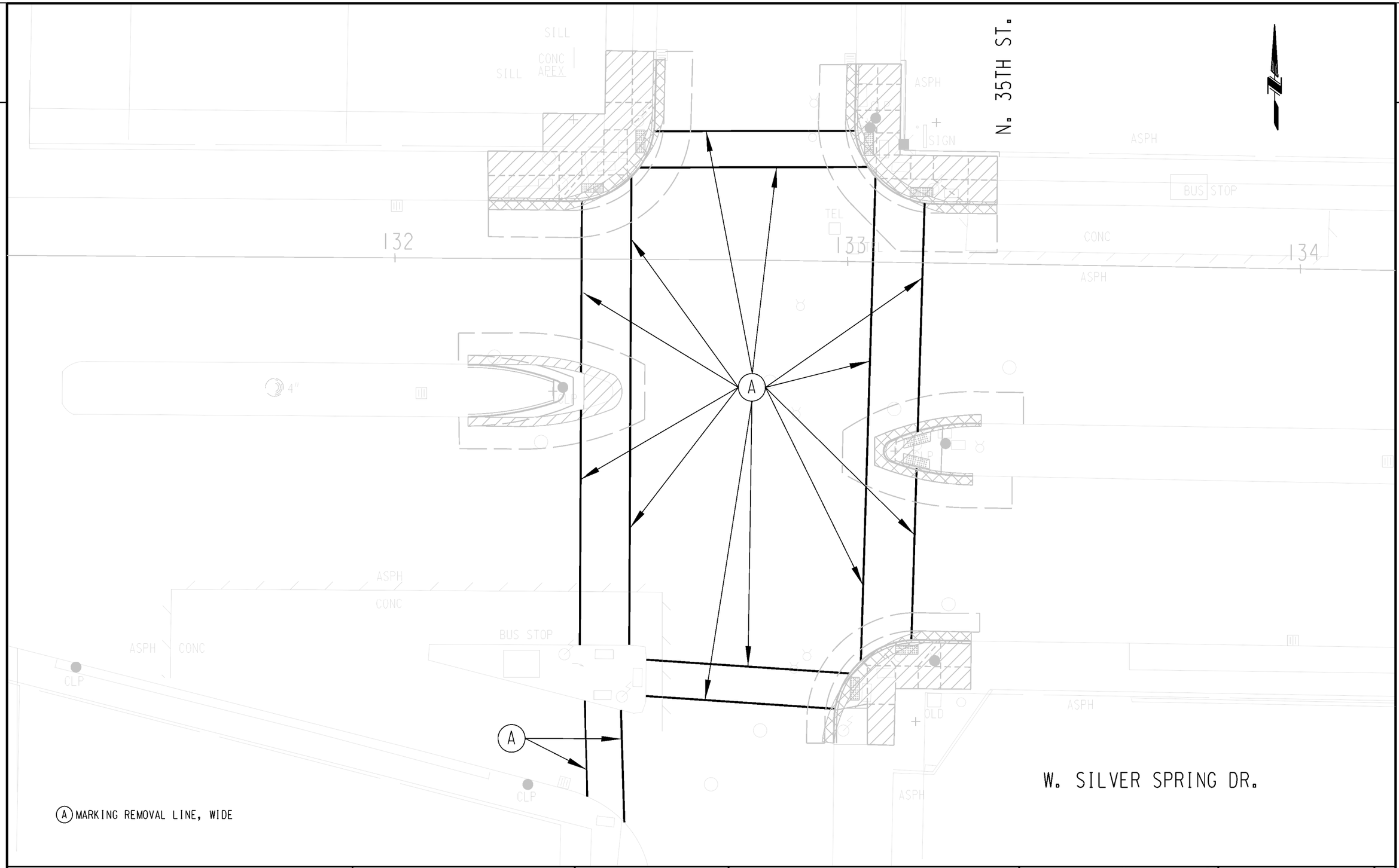
W. SILVER SPRING DR.



(A) MARKING REMOVAL LINE, WIDE

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PAVEMENT MARKING REMOVAL	SCALE FEET 0' 20'	SHEET NO: E

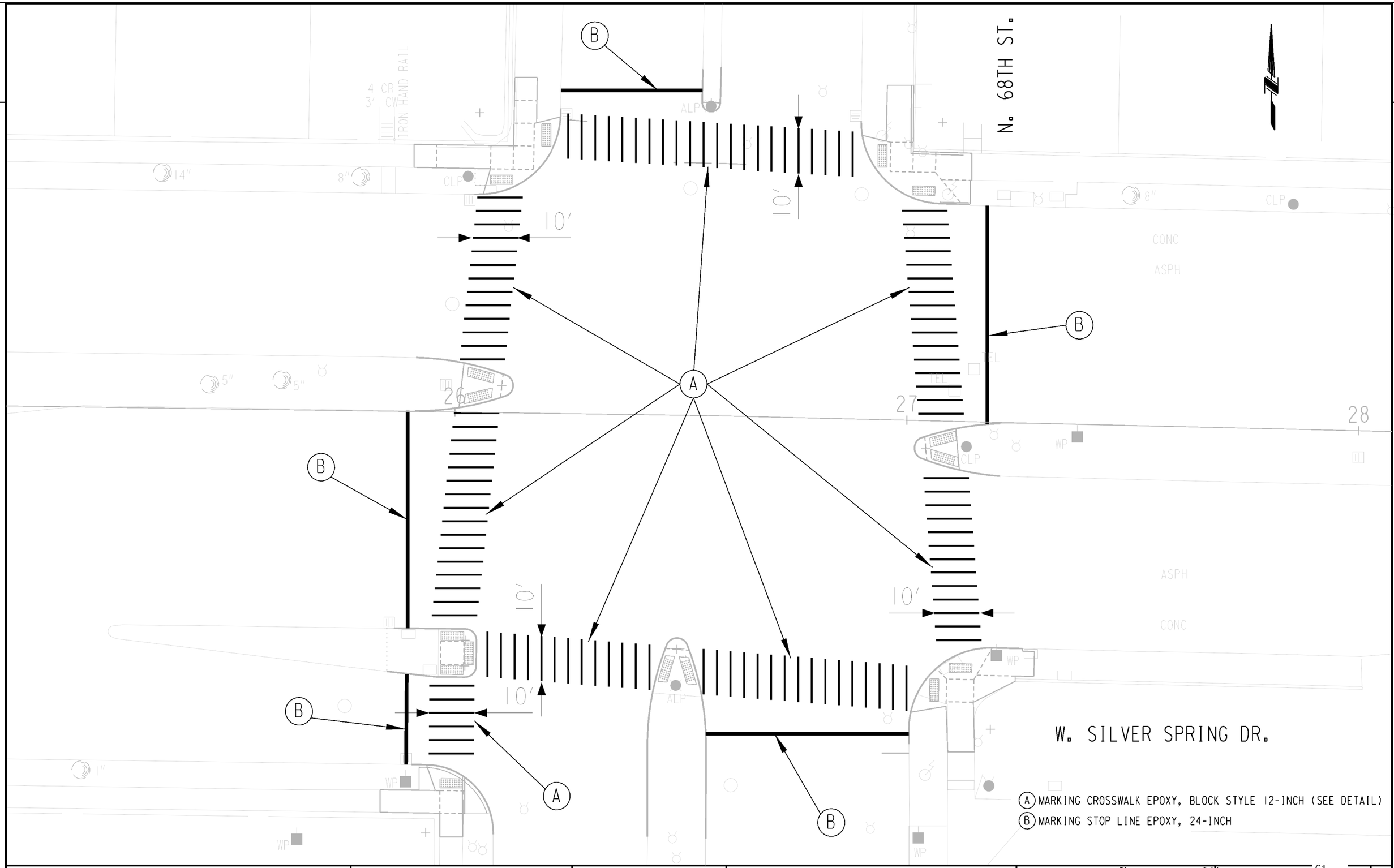
FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\TRAFFIC & PAVEMARK\2090-16-70 - SILVER SPRING MONOTUBES - PAVEMENT MARKINGS.DGN



(A) MARKING REMOVAL LINE, WIDE

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PAVEMENT MARKING REMOVAL	SCALE FEET 0' 20'	SHEET NO: E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\TRAFFIC & PAVEMARK\2090-16-70 - SILVER SPRING MONOTUBES - PAVEMENT MARKINGS.DGN



STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET 0' 20'	SHEET NO: 61	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\TRAFFIC & PAVEMARK\2090-16-70 - SILVER SPRING MONOTUBES - PAVEMENT MARKINGS.DGN

REVISED DATE: 01-18-2023 BY CP

2

W. SILVER SPRING DR.

N. 51ST BLVD.

78

80

81

10′

10′

10′

10′

10′

A

B

B

B

WP

WAT

WAT

WAT

GAS

GAS

GAS

VAULT

BUS STOP

CONC

ASPH

CUC

TEL

TEL

SPRINKLER BOX

SPRINKLER BOX

CLP

CLP

1″

1″

1″

ASPH

CONC

7′ CW

WP

(A) MARKING CROSSWALK EPOXY, BLOCK STYLE 12-INCH (SEE DETAIL)

(B) MARKING STOP LINE EPOXY, 24-INCH

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET 0′ 20′	SHEET NO: 62	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\TRAFFIC & PAVEMARK\2090-16-70 - SILVER SPRING MONOTUBES - PAVEMENT MARKINGS.DGN

REVISED DATE: 01-18-2023 BY CP

N. 35TH ST.

W. SILVER SPRING DR.

(A) MARKING CROSSWALK EPOXY, BLOCK STYLE 12-INCH (SEE DETAIL)

(B) MARKING STOP LINE EPOXY, 24-INCH

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	PAVEMENT MARKING	SCALE FEET 0' 20'	SHEET NO: 63	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\TRAFFIC & PAVEMARK\2090-16-70 - SILVER SPRING MONOTUBES - PAVEMENT MARKINGS.DGN

REVISED DATE: 01-18-2023 BY CP

PEDESTRIAN TRAFFIC CONTROL NOTES

ALL PEDESTRIAN TRAFFIC CONTROL MUST BE PLACED PRIOR TO THE START OF ANY SIDEWALK WORK FOR EACH STAGE.

ANY MID-BLOCK SIDEWALK REMOVALS MUST HAVE TEMPORARY ACCOMODATIONS PLACED IMMEDIATELY UPON REMOVAL. SEE SDD 15D30: TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION.

TEMPORARY OR PERMANANT ACCOMODATIONS MUST BE PLACED AT ANY AREA OF SIDEWALK REMOVALS BEFORE ANOTHER AREA OF REMOVALS MAY BEGIN.

PEDESTRIAN ACCOMODATIONS MUST BE PROVIDED TO ALL RESIDENCES AND BUSINESSES USING EXISTING, NEWLY CONSTRUCTED OR TEMPORARY ACCOMODATIONS DURING ALL STAGES OF CONSTRUCTION,

A SIGNED PEDESTRIAN DETOUR TO ROUTE PEDESTRIAN TRAFFIC AROUND THE WORK ZONE IS SHOWN ON THE FOLLOWING CONSTRUCTION STAGING PEDESTRIAN RAMPS SHEETS. FOR PEDESTRIANS WITH TRIPS STARTING OR ENDING INSIDE THE WORK ZONE, NO SIGNED DETOUR IS PLANNED.

LOCATIONS

N. 68TH ST. NORTH MEDIAN
N. 68TH ST. SOUTH MEDIAN
N. 68TH ST. EAST MEDIAN
N. 68TH ST. WEST MEDIAN

N. 51ST ST. SOUTH MEDIAN
N. 51ST ST. EAST MEDIAN
N. 51ST ST. WEST MEDIAN

LOCATIONS (CONT'D)

N. 35TH ST. EAST MEDIAN
N. 35TH ST. WEST MEDIAN

TRAFFIC CONTROL NOTES

1) MAINTAIN ONE 11' MINIMUM LANE IN BOTH DIRECTIONS AT ALL TIMES.

2) TRAFFIC CONTROL DRUMS ARE SPACED AT 25' O.C. EXCEPT AT DRIVEWAYS AND INTERSECTIONS, WHERE THE SPACING IS 10'.

3) THE CONTRACTOR SHALL REMOVE ALL EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH THE TRAFFIC CONTROL. PAVEMENT MARKING SHOWN IS EXISTING.

4) THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY BARRICADES, SIGNS, DIRECTIONAL ARROWS, LIGHTS, TEMPORARY MARKINGS, FLAGMEN, AND SAFETY DEVICES AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

5) DRAWINGS SHOW TRAFFIC CONTROL FOR A TYPICAL SITUATION. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND /OR LAYOUT DETAILS MODIFIED DEPENDING ON CONTRACTORS METHOD OR SEQUENCES OF OPERATION.

6) 'W0' SIGNS ARE THE SAME AS 'W' SIGNS EXCEPT THE BACKGROUND IS ORANGE.

7) ALL SIGNS ARE 48" X 48" EXCEPT OTHERWISE NOTED.

8) ANY 'STOP' SIGNS THAT ARE REMOVED FOR A CONSTRUCTION OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED.

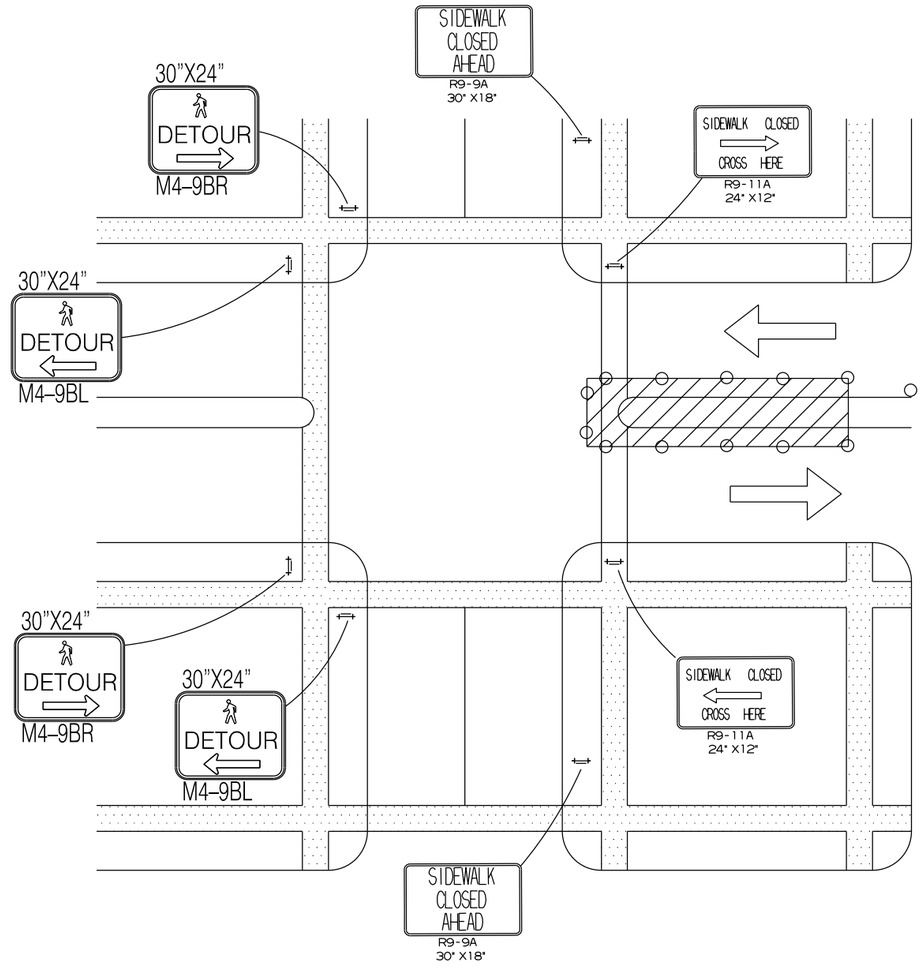
9) THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD LOCATIONS AS APPROVED BY THE ENGINEER IN THE FIELD.

10) BOTH STEADY BURN LIGHTS AND FLASHING LIGHTS SHALL BE ONE WAY WITH THE LIGHT SOURCE SHOWING TOWARDS ADJACENT APPROACHING TRAFFIC.

11) CHANNELIZING DEVICES SHALL BE DRUMS WITH ATTACHED TYPE 'C' STEADY BURN LIGHT.

12) THE CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY NO PARKING SIGNAGE WITHIN THE WORK ZONE REQUIREMENTS IN 100-FT INCREMENTS.

W. SILVER SPRING DR.
CROSSWALK CLOSURE DETAIL



N

NOTE: CONSTRUCT ONE MEDIAN AT A TIME

WORK AREA

UNDER PEDESTRIAN TRAFFIC

TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)

DIRECTION OF TRAFFIC

TRAFFIC CONTROL DRUM

2

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	CROSSWALK CLOSURE DETAIL	SCALE FEET 0' 40'	SHEET NO: 64	E

FILENAME: W:\BTE\CITYPAV\TRAFFIC CONTROL PLANS\2090-16-70 SILVER SPRING MONOTUBES\SILVER SPRING TCP.DGN

REVISED DATE: 01-05-2023 BY CP

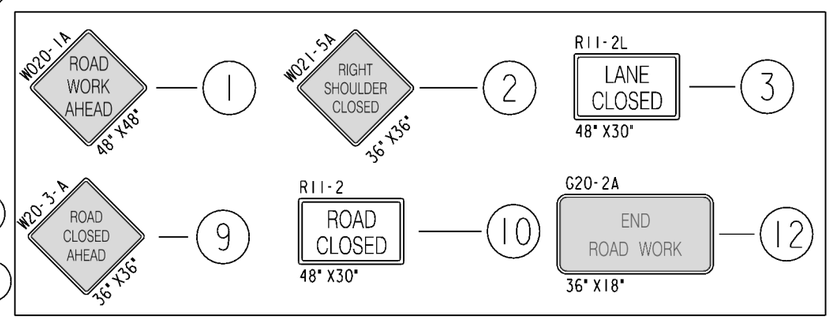
STAGE 1

W. SILVER SPRING DR.

N. 68TH ST.

N

DRUMS W/LIGHTS 25' SPACING	(13)
TYPE III BARRICADES	(14)
TYPE III BARRICADES W/ SIGN	(14) + (X)
TEMPORARY PEDESTRIAN ACCOMMODATION FOR ALL SIDEWALK AND CROSSWALK REMOVALS	(15)
WORK AREA	
DIRECTION OF TRAFFIC	



STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	TRAFFIC CONTROL PLAN	SCALE FEET 0' 40'	SHEET NO: 65 E

FILENAME: W:\BTE\CITYPAV\TRAFFIC CONTROL PLANS\2090-16-70 SILVER SPRING MONOTUBES\SILVER SPRING TCP.DGN

REVISED DATE: 01-04-2023 BY CP

2

STAGE 2

2

N

W. SILVER SPRING DR.

N. 67TH ST.

N. 69TH ST.

N. 68TH ST.

200' 200' 200'

245'

100'

80'

35'

115'

150'

12'

DRUMS W/LIGHTS 25' SPACING

TYPE III BARRICADES

TYPE III BARRICADES W/ SIGN — (14) + (X)

TEMPORARY PEDESTRIAN ACCOMMODATION FOR ALL SIDEWALK AND CROSSWALK REMOVALS — (15)

WORK AREA

DIRECTION OF TRAFFIC

(1) W020-1A ROAD WORK AHEAD 48" X48"

(3) R11-2L LANE CLOSED 48" X30"

(4) W020-55A LEFT LANE CLOSED AHEAD 36" X36"

(5) W04-2L 36" X36"

(6) R3-2 24" X24"

(12) G20-2A END ROAD WORK 36" X18"

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	TRAFFIC CONTROL PLAN	SCALE FEET 0' 80'	SHEET NO: 66	E

FILENAME: W:\BTE\CITYPAV\TRAFFIC CONTROL PLANS\2090-16-70 SILVER SPRING MONOTUBES\SILVER SPRING TCP.DGN

REVISED DATE: 01-04-2023 BY CP

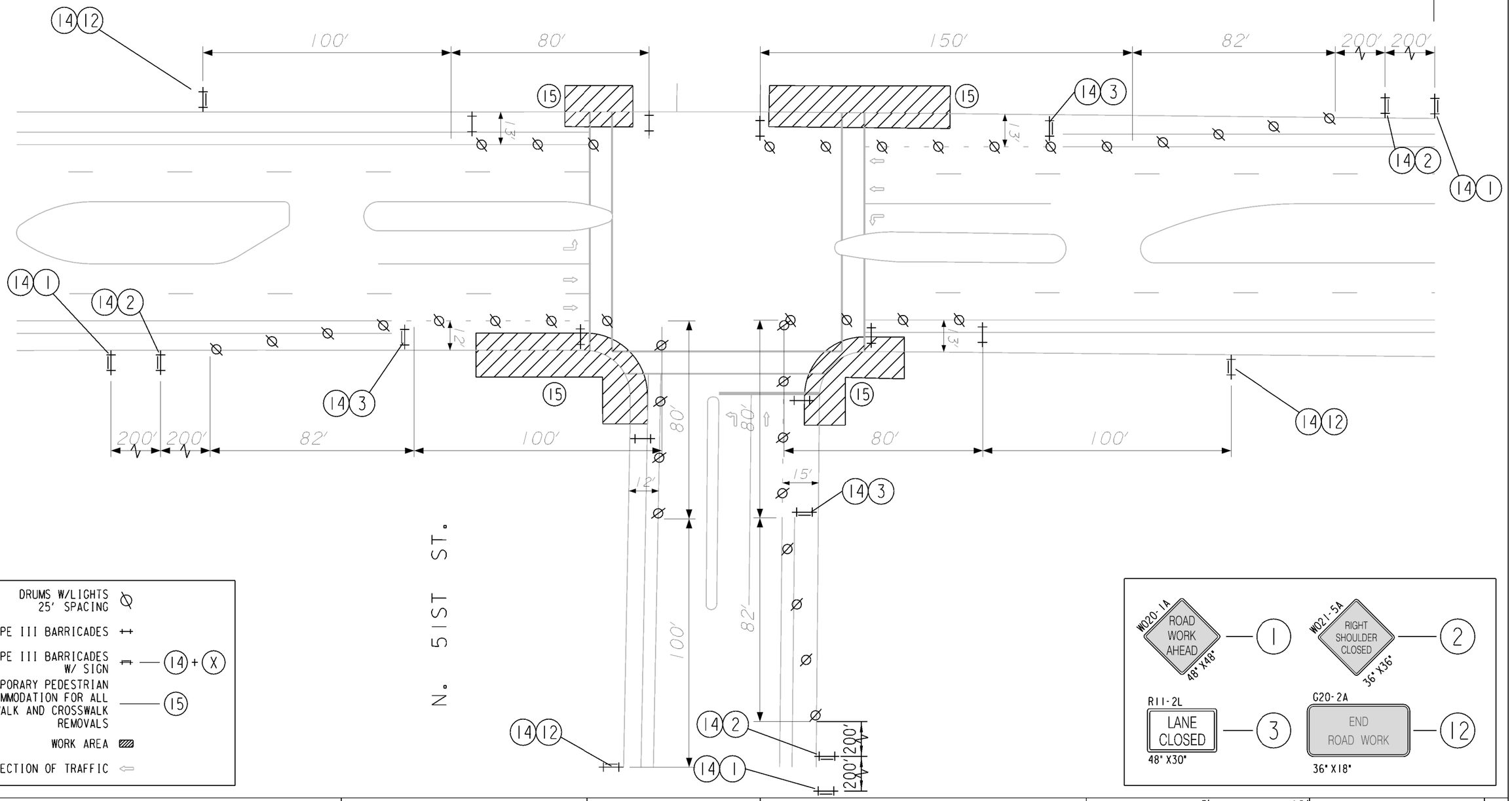
2

STAGE 1

2

N

W. SILVER SPRING DR.



N. 51ST ST.

DRUMS W/LIGHTS 25' SPACING

TYPE III BARRICADES

TYPE III BARRICADES W/ SIGN — 14 + X

TEMPORARY PEDESTRIAN ACCOMMODATION FOR ALL SIDEWALK AND CROSSWALK REMOVALS — 15

WORK AREA

DIRECTION OF TRAFFIC

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	TRAFFIC CONTROL PLAN	SCALE FEET 0' 40'	SHEET NO: 67	E

FILENAME: W:\BTE\CITYPAV\TRAFFIC CONTROL PLANS\2090-16-70 SILVER SPRING MONOTUBES\SILVER SPRING TCP.DGN

REVISED DATE: 01-04-2023 BY CP

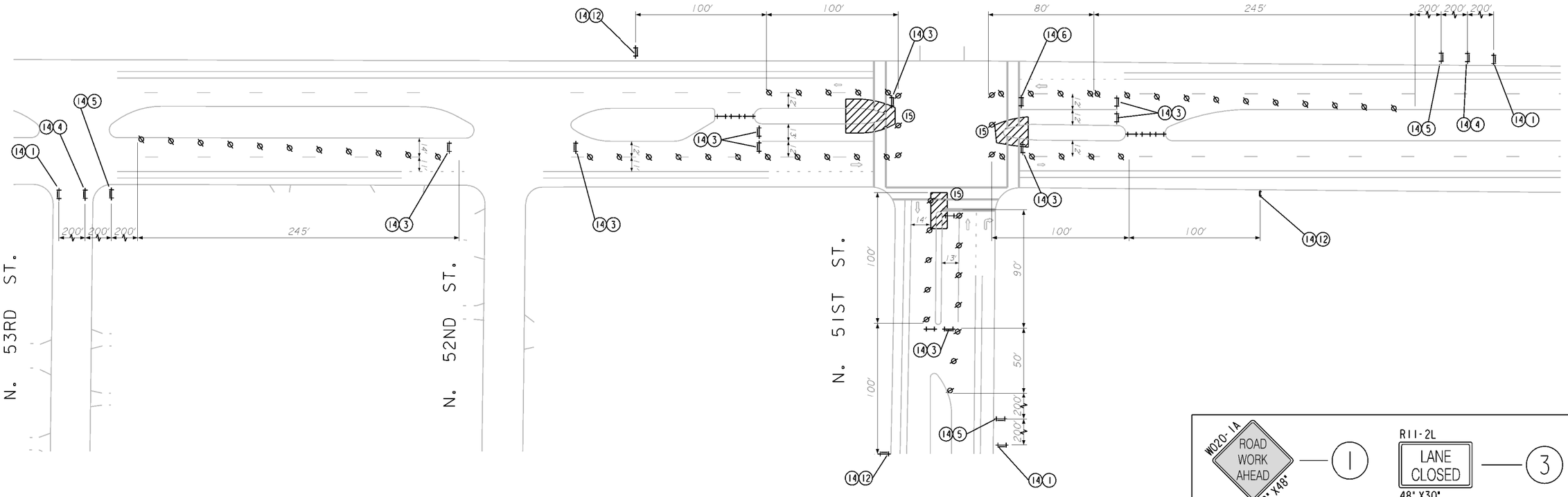
2

STAGE 2

2

N

W. SILVER SPRING DR.



DRUMS W/LIGHTS 25' SPACING

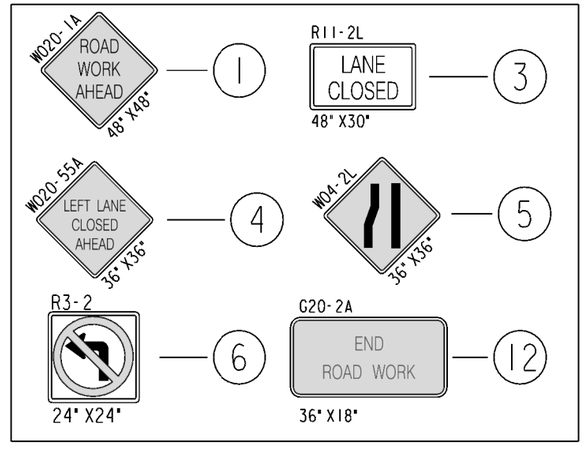
TYPE III BARRICADES

TYPE III BARRICADES W/ SIGN — (14) + (X)

TEMPORARY PEDESTRIAN ACCOMMODATION FOR ALL SIDEWALK AND CROSSWALK REMOVALS — (15)

WORK AREA

DIRECTION OF TRAFFIC



STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	TRAFFIC CONTROL PLAN	SCALE FEET 0' 80'	SHEET NO: 68	E

FILENAME: W:\BTE\CITYPAV\TRAFFIC CONTROL PLANS\2090-16-70 SILVER SPRING MONOTUBES\SILVER SPRING TCP.DGN

REVISED DATE: 01-04-2023 BY CP

2

STAGE I

N

2

W. SILVER SPRING DR.

N. 35TH ST.

14 1 · 14 2 · 14 3 · 14 12 · 15

200′ · 200′ · 60′ · 50′ · 100′ · 80′ · 9′ · 82′ · 13′ · 10′

DRUMS W/LIGHTS 25′ SPACING

TYPE III BARRICADES

TYPE III BARRICADES W/ SIGN — 14 + X

TEMPORARY PEDESTRIAN ACCOMMODATION FOR ALL SIDEWALK AND CROSSWALK REMOVALS — 15

WORK AREA

DIRECTION OF TRAFFIC

W020-1A ROAD WORK AHEAD 48" X48" — 1

W021-5A RIGHT SHOULDER CLOSED 36" X36" — 2

R11-2L LANE CLOSED 48" X30" — 3

G20-2A END ROAD WORK 36" X18" — 12

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	TRAFFIC CONTROL PLAN	SCALE FEET 0′ 40′	SHEET NO: 69	E

FILENAME: W:\BTE\CITYPAV\TRAFFIC CONTROL PLANS\2090-16-70 SILVER SPRING MONOTUBES\SILVER SPRING TCP.DGN

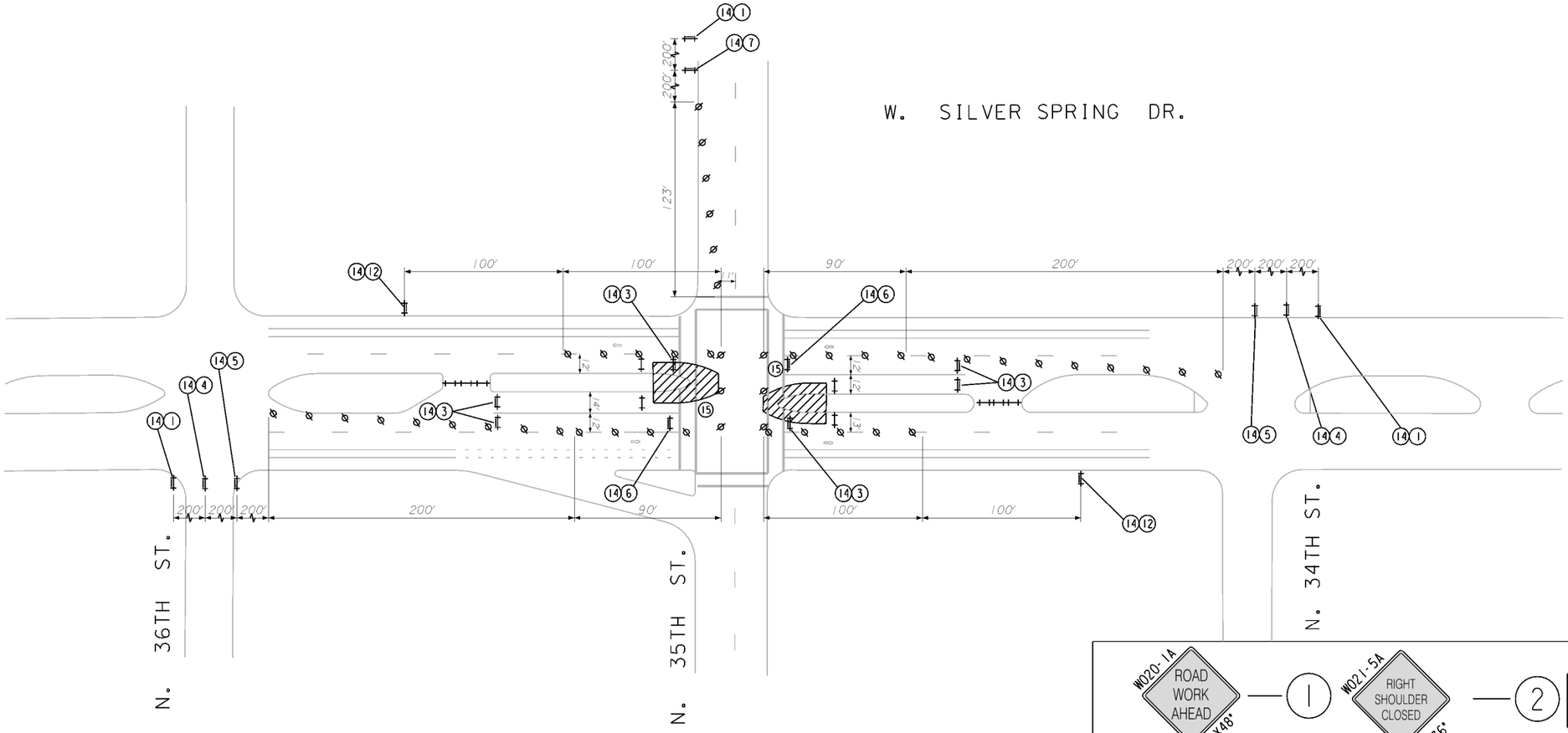
REVISED DATE: 01-03-2023 BY CP

2

STAGE 2

N

2



DRUMS W/LIGHTS 25' SPACING

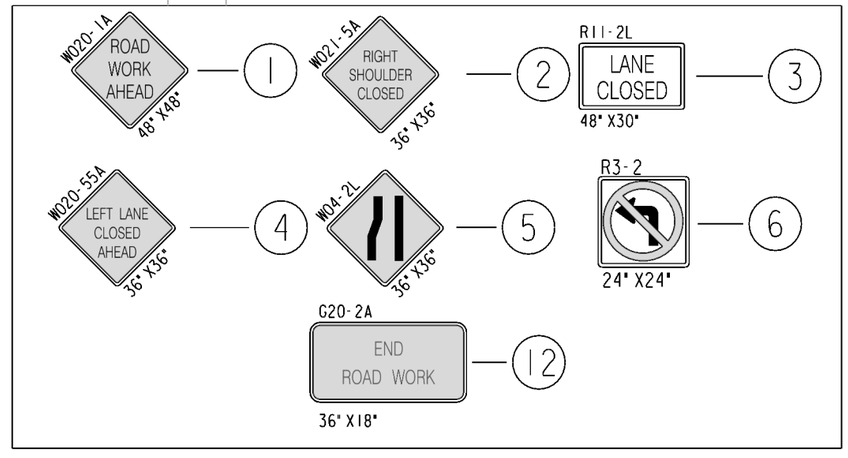
TYPE III BARRICADES

TYPE III BARRICADES W/ SIGN — (14) + (X)

TEMPORARY PEDESTRIAN ACCOMMODATION FOR ALL SIDEWALK AND CROSSWALK REMOVALS — (15)

WORK AREA

DIRECTION OF TRAFFIC



STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	TRAFFIC CONTROL PLAN	SCALE FEET 0' 80'	SHEET NO: 70	E

FILENAME: W:\BTE\CITYPAV\TRAFFIC CONTROL PLANS\2090-16-70 SILVER SPRING MONOTUBES\SILVER SPRING TCP.DGN

REVISED DATE: 01-03-2023 BY CP

2

N

SEC LINE

N01°08'52"W
2657.04

N01°00'06"W
2659.73

N. 76TH ST.

T.8 N.
28 27
33 34
R.21E.

TOWNSHIP 8 NORTH, RANGE 21 EAST
MILWAUKEE COUNTY, WISCONSIN
CONCRETE MONUMENT W/ BRASS CAP
SECTION CORNER COORDINATE REFERENCED TO WISCONSIN
COORDINATE REFERENCE SYSTEM (WISCRS), MILWAUKEE COUNTY
(Y) NORTH: 329,100.53
(X) EAST: 580,215.66

SEC LINE & T/L W. SILVER SPRING DR.

S89°12'55"E
2655.80

23

1/4 SEC LINE

N00°36'41"W
2650.71

N01°11'57"W
2671.89

N. 68TH ST.

180°32'57"

26

29

S88°39'58"E
2650.18

37

40

43

T.8 N.
27
34
R.21E.

TOWNSHIP 8 NORTH, RANGE 21 EAST
MILWAUKEE COUNTY, WISCONSIN
CONCRETE MONUMENT W/ BRASS CAP
SECTION CORNER COORDINATE REFERENCED TO WISCONSIN
COORDINATE REFERENCE SYSTEM (WISCRS), MILWAUKEE COUNTY
(Y) NORTH: 329,064.16
(X) EAST: 582,871.21

SEC LINE & T/L W. SILVER SPRING DR.

40

43

S88°39'58"E
2650.18

178°37'31"

1/4 SEC LINE

N00°00'40"W
2659.76

N01°01'25"W
2658.50

N. 60TH ST.

T.8 N.
27 26
34 35
R.21E.

TOWNSHIP 8 NORTH, RANGE 21 EAST
MILWAUKEE COUNTY, WISCONSIN
CONCRETE MONUMENT W/ BRASS CAP
SECTION CORNER COORDINATE REFERENCED TO WISCONSIN
COORDINATE REFERENCE SYSTEM (WISCRS), MILWAUKEE COUNTY
(Y) NORTH: 329,002.47
(X) EAST: 585,520.67

S89°57'33"E
2641.10

75

1/4 SEC LINE

N00°23'10"W
2655.30

N00°55'00"W
2679.55

N. 51ST ST.

180°29'26"

80

83

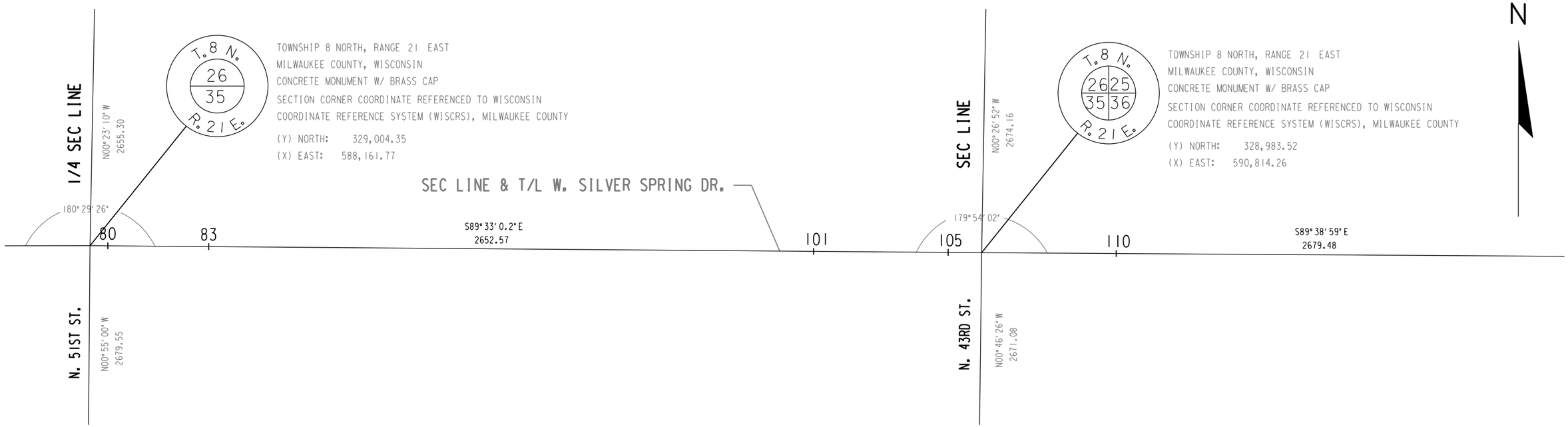
TOWNSHIP 8 NORTH, RANGE 21 EAST
MILWAUKEE COUNTY, WISCONSIN
CONCRETE MONUMENT W/ BRASS CAP
SECTION CORNER COORDINATE REFERENCED TO WISCONSIN
COORDINATE REFERENCE SYSTEM (WISCRS), MILWAUKEE COUNTY
(Y) NORTH: 329,004.35
(X) EAST: 588,161.77

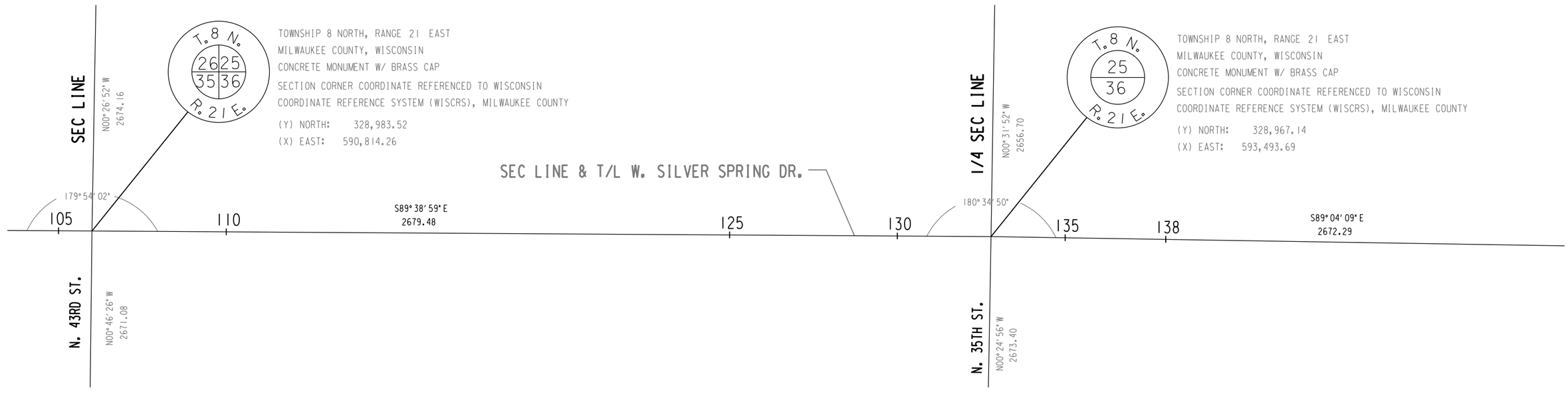
T.8 N.
26
35
R.21E.

STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	ALIGNMENT	SCALE FEET 0' 300'	SHEET NO: 71	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\EXISTING\ALIGNMENT.DGN

REVISED DATE: 10-4-2021 BY DB





STATE PROJECT NUMBER 2090-16-70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	ALIGNMENT	SCALE FEET 0' 300'	SHEET NO: 72	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\SILVER SPRING DR MOMOTUBES - 2090-16-00\EXISTING\ALIGNMENT.DGN

REVISED DATE: 10-4-2021 BY DB

2090-16-70

Line	Item	Item Description	Unit	Total	Qty
0002	204.0100	Removing Concrete Pavement	SY	37.000	37.000
0004	204.0120	Removing Asphaltic Surface Milling	SY	664.000	664.000
0006	204.0150	Removing Curb & Gutter	LF	893.000	893.000
0008	204.0155	Removing Concrete Sidewalk	SY	463.000	463.000
0010	204.0195	Removing Concrete Bases	EACH	18.000	18.000
0012	204.0260	Abandoning Inlets	EACH	1.000	1.000
0014	205.0100	Excavation Common	CY	1.560	1.560
0016	205.0501.S	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	TON	617.000	617.000
0018	213.0100	Finishing Roadway (project) 001. 2090-16-70	EACH	1.000	1.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	115.000	115.000
0024	320.0145	Concrete Base 8-Inch	SY	36.000	36.000
0028	416.0610	Drilled Tie Bars	EACH	288.000	288.000
0032	455.0605	Tack Coat	GAL	43.000	43.000
0034	465.0105	Asphaltic Surface	TON	120.000	120.000
0038	601.0331	Concrete Curb & Gutter 31-Inch	LF	888.000	888.000
0040	601.0600	Concrete Curb Pedestrian	LF	115.000	115.000
0042	602.0410	Concrete Sidewalk 5-Inch	SF	4,464.000	4,464.000
0044	602.0515	Curb Ramp Detectable Warning Field Natural Patina	SF	190.000	190.000
0052	619.1000	Mobilization	EACH	0.600	0.600
0054	620.0300	Concrete Median Sloped Nose	SF	230.000	230.000
0056	624.0100	Water	MGAL	2.500	2.500
0058	625.0100	Topsoil	SY	113.000	113.000
0060	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0062	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0064	628.2008	Erosion Mat Urban Class I Type B	SY	113.000	113.000
0066	628.7005	Inlet Protection Type A	EACH	9.000	9.000
0068	628.7015	Inlet Protection Type C	EACH	13.000	13.000
0070	631.0300	Sod Water	MGAL	1.280	1.280
0072	631.1000	Sod Lawn	SY	113.000	113.000
0074	637.2220	Signs Type II Reflective SH	SF	87.000	87.000
0076	642.5201	Field Office Type C	EACH	0.600	0.600
0078	643.0300	Traffic Control Drums	DAY	22,156.000	22,156.000
0080	643.0410	Traffic Control Barricades Type II	DAY	2,856.000	2,856.000
0082	643.0420	Traffic Control Barricades Type III	DAY	8,894.000	8,894.000
0084	643.0705	Traffic Control Warning Lights Type A	DAY	17,788.000	17,788.000
0086	643.0715	Traffic Control Warning Lights Type C	DAY	25,012.000	25,012.000
0088	643.0900	Traffic Control Signs	DAY	8,424.000	8,424.000
0090	643.1050	Traffic Control Signs PCMS	DAY	21.000	21.000
0092	643.5000	Traffic Control	EACH	0.600	0.600
0094	644.1410	Temporary Pedestrian Surface Asphalt	SF	2,676.000	2,676.000
0096	644.1430	Temporary Pedestrian Surface Plate	SF	2,676.000	2,676.000
0098	644.1440	Temporary Pedestrian Surface Matting	SF	2,676.000	2,676.000
0100	644.1601	Temporary Pedestrian Curb Ramp	DAY	24.000	24.000
0110	646.8220	Marking Island Nose Epoxy	EACH	16.000	16.000
0114	646.9100	Marking Removal Line 8-Inch	LF	840.000	840.000
0120	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	888.000	888.000
0122	650.8501	Construction Staking Electrical Installations (project) 001. 2090-16-70	EACH	1.000	1.000
0126	650.9000	Construction Staking Curb Ramps	EACH	26.000	26.000
0128	650.9500	Construction Staking Sidewalk (project) 001. 2090-16-70	EACH	1.000	1.000

2090-16-70

Line	Item	Item Description	Unit	Total	Qty
0132	650.9911	Construction Staking Supplemental Control (project) 001. 2090-16-70	EACH	1.000	1.000
0136	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	365.000	365.000
0138	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	1,010.000	1,010.000
0140	652.0615	Conduit Special 3-Inch	LF	1,970.000	1,970.000
0142	653.0905	Removing Pull Boxes	EACH	13.000	13.000
0144	654.0101	Concrete Bases Type 1	EACH	23.000	23.000
0146	654.0105	Concrete Bases Type 5	EACH	4.000	4.000
0148	654.0110	Concrete Bases Type 10	EACH	7.000	7.000
0152	655.0230	Cable Traffic Signal 5-14 AWG	LF	2,635.000	2,635.000
0154	655.0250	Cable Traffic Signal 9-14 AWG	LF	1,315.000	1,315.000
0156	655.0260	Cable Traffic Signal 12-14 AWG	LF	1,780.000	1,780.000
0158	655.0280	Cable Traffic Signal 19-14 AWG	LF	1,360.000	1,360.000
0160	655.0305	Cable Type UF 2-12 AWG Grounded	LF	2,525.000	2,525.000
0162	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	2,420.000	2,420.000
0164	655.0900	Traffic Signal EVP Detector Cable	LF	1,355.000	1,355.000
0166	657.0100	Pedestal Bases	EACH	23.000	23.000
0168	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	4.000	4.000
0170	657.0350	Poles Type 10	EACH	7.000	7.000
0174	657.0405	Traffic Signal Standards Aluminum 3.5-FT	EACH	4.000	4.000
0176	657.0420	Traffic Signal Standards Aluminum 13-FT	EACH	13.000	13.000
0178	657.0430	Traffic Signal Standards Aluminum 10-FT	EACH	6.000	6.000
0180	657.0525	Monotube Arms 25-FT	EACH	1.000	1.000
0182	657.0530	Monotube Arms 30-FT	EACH	6.000	6.000
0186	658.0173	Traffic Signal Face 3S 12-Inch	EACH	47.000	47.000
0188	658.0412	Pedestrian Signal Face 12-Inch	EACH	23.000	23.000
0190	658.0500	Pedestrian Push Buttons	EACH	17.000	17.000
0192	658.5070	Signal Mounting Hardware (location) 001. W. Silver Spring Dr. & N. 68th St.	EACH	1.000	1.000
0194	658.5070	Signal Mounting Hardware (location) 002. W. Silver Spring Dr. & N. 51st Blvd.	EACH	1.000	1.000
0196	658.5070	Signal Mounting Hardware (location) 003. W. Silver Spring Dr. & N. 35th St.	EACH	1.000	1.000
0202	659.5000.S	Lamp, Ballast, LED, Switch Disposal by Contractor	EACH	1.000	1.000
0204	674.0300	Remove Cable	LF	825.000	825.000
0206	690.0150	Sawing Asphalt	LF	1,467.000	1,467.000
0208	690.0250	Sawing Concrete	LF	1,000.000	1,000.000
0210	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,200.000	1,200.000
0212	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	2,400.000	2,400.000
0214	SPV.0060	Special 001. Utility Line Opening	EACH	3.000	3.000
0216	SPV.0060	Special 002. Adjusting Water Valve Boxes	EACH	1.000	1.000
0218	SPV.0060	Special 010. Temporary No Parking Signs	EACH	12.000	12.000
0220	SPV.0060	Special 103. Manhole Cover Type MS 58-A	EACH	2.000	2.000
0222	SPV.0060	Special 104. Internal Sanitary Manhole Seals	EACH	1.000	1.000
0232	SPV.0060	Special 218. EVP 1 Direction Detector	EACH	6.000	6.000
0234	SPV.0060	Special 221. EVP Phase Selector Card 4 Channel	EACH	3.000	3.000
0236	SPV.0060	Special 223. EVP Confirmation Light	EACH	6.000	6.000
0238	SPV.0060	Special 225. Vehicular Video Detection System-2 Cameras	EACH	6.000	6.000
0240	SPV.0060	Special 228. Electrical Riser	EACH	6.000	6.000
0242	SPV.0060	Special 267. Pedestrian Countdown Signal Face 12-Inch	EACH	23.000	23.000
0244	SPV.0060	Special 291. Street Name Sign Mounting Hardware on Mast Arm	EACH	6.000	6.000
0246	SPV.0060	Special 302. Pull Boxes 13-Inch x 24-Inch x 24-Inch	EACH	19.000	19.000
0248	SPV.0060	Special 303. Fiberglass/Polymer Concrete Pull Box 17-Inch x 30-Inch x 24-Inch	EACH	31.000	31.000

2090-16-70

Line	Item	Item Description	Unit	Total	Qty
0250	SPV.0060	Special 312. Pole Type A-26	EACH	2.000	2.000
0252	SPV.0060	Special 325. Poles Type (30-Ft Aluminum, Bolt Down)	EACH	4.000	4.000
0254	SPV.0060	Special 343. Water Tight Splices and Connections	EACH	39.000	39.000
0256	SPV.0060	Special 345. Luminaire Arm Single Member 6-ft	EACH	12.000	12.000
0258	SPV.0060	Special 353. Install Equipment Grounding Electrode	EACH	4.000	4.000
0260	SPV.0060	Special 355. Install A21-A26 City Furnished Mounting Clamp (Single Bracket)	EACH	2.000	2.000
0262	SPV.0060	Special 375. Luminaire Utility 2LED	EACH	5.000	5.000
0264	SPV.0060	Special 376. Luminaire Utility 3LED	EACH	10.000	10.000
0266	SPV.0060	Special 387. Remove Luminaire Complete	EACH	1.000	1.000
0268	SPV.0060	Special 400. Adjusting CUC Manhole Covers	EACH	1.000	1.000
0270	SPV.0060	Special 866. Luminaire Historic Milwaukee Lantern S3LED	EACH	8.000	8.000
0274	SPV.0090	Special 004. Marking Stop Line Epoxy 24-Inch	LF	391.000	391.000
0278	SPV.0090	Special 302. Cable Type 1#8 AWG 5kV Concentric City Furnished	LF	2,300.000	2,300.000
0280	SPV.0090	Special 319. Liquidtight Flexible Nonmetallic Conduit 1 1/2-Inch	LF	60.000	60.000
0282	SPV.0090	Special 323. Electrical Cable 3#4/1#8 XLPE USE-2	LF	175.000	175.000
0284	SPV.0090	Special 324. Electrical Cable 3#2/1#8 XLPE USE-2	LF	2,000.000	2,000.000
0286	SPV.0090	Special 325. 3-Inch HDPE Conduit	LF	2,420.000	2,420.000
0288	SPV.0090	Special 705. Marking Crosswalk Epoxy Block Style 12-Inch	LF	2,642.000	2,642.000

3

REMOVALS

CATEGORY 0010

ITEM NO.	204.0100 REMOVING CONCRETE PAVEMENT	204.0120 REMOVING ASPHALTIC SURFACE MILLING	204.0150 REMOVING CURB & GUTTER	204.0155 REMOVING CONCRETE SIDEWALK	690.0150 SAWING ASPHALT	690.0250 SAWING CONCRETE
LOCATION	SY	SY	LF	SY	LF	LF
N 68TH ST	37	266	293	102	548	355
N 51ST ST	-	179	307	200	470	307
N 35TH ST	-	219	293	161	449	338
PROJECT TOTAL	37	664	893	463	1467	1000

3

EXCAVATION COMMON

CATEGORY 0010

ITEM NO.	205.0100 EXCAVATION COMMON
LOCATION	CY
N 68TH ST	1.00
N 51ST ST	0.15
N 35TH ST	0.41
PROJECT TOTAL	1.56

CONTAMINATED SOILS

CATEGORY 0010

ITEM NO.	205.0501.S EXCAVATION, HAULING, AND DISPOSAL OF PETROLEUM CONTAMINATED SOIL
LOCATION	TON
N.35TH ST	617
PROJECT TOTAL	617

FINISHING ROADWAY

CATEGORY 0010

ITEM NO.	213.0100 FINISHING ROADWAY (2090-16-70)
LOCATION	EACH
2090-16-70	1
PROJECT TOTAL	1

UTILITY LINE OPENING

CATEGORY 0010

ITEM NO.	SPV.0060.001 UTILITY LINE OPENING
LOCATION	EACH
N 68TH ST	1
N 51ST ST	1
N 35TH ST	1
PROJECT TOTAL	3

WATER VALVE BOXES

CATEGORY 0020

ITEM NO.	SPV.0060.002 ADJUSTING WATER VALVE BOXES
LOCATION	EACH
STA 26+65, 60' LT	1
PROJECT TOTAL	1

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

3

ROADWAY CONSTRUCTION ITEMS

CATEGORY 0010

ITEM NO.	305.0120 BASE AGGREGATE DENSE 1-1/4 INCH	320.0145 CONCRETE BASE 8-INCH	416.0610 DRILLED TIE BARS	601.0331 CONCRETE CURB & GUTTER 31-INCH	601.0600 CONCRETE CURB PEDESTRIAN	602.0410 CONCRETE SIDEWALK 5-INCH	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA	620.0300 CONCRETE MEDIAN SLOPED NOSE	624.0100 WATER
LOCATION	TON	SY	EACH	LF	LF	SF	SF	SF	MGAL
N 68TH ST	22	3	93	303	35	1163	100	186	0.5
N 51ST ST	55	26	102	307	34	1849	50	24	1
N 35TH ST	38	7	93	278	46	1452	40	20	1
PROJECT TOTAL	115	36	288	888	115	4,464	190	230	2.5

3

LANDSCAPE ITEMS

CATEGORY 0010

ITEM NO.	625.0105 TOPSOIL	631.0300 SOD WATER	631.1000 SOD LAWN
LOCATION	SY	Mgal	SY
N 68TH ST	28	0.32	28
N 51ST ST	62	0.70	62
N 35TH ST	23	0.26	23
PROJECT TOTAL	113	1.28	113

FIELD OFFICE

CATEGORY 0010

ITEM NO.	642.5201 FILED OFFICE TYPE C
LOCATION	EACH
2090-16-70	0.60
PROJECT TOTAL	0.60

3

ASPHALT ITEMS

CATEGORY 0010

ITEM NO.	455.0605	465.0105
	TACK COAT	ASPHALTIC SURFACE
LOCATION	GAL	TON
N 68TH ST	17	49
N 51ST ST	12	33
N 35TH ST	14	38
PROJECT TOTAL	43	120

MOBILIZATION

CATEGORY 0010

ITEM NO.	619.1000
	MOBILIZATION
LOCATION	EACH
2090-16-70	0.60
PROJECT TOTAL	0.60

3

MOBILIZATIONS EROSION CONTROL

CATEGORY 0010

ITEM NO.	628.1905	628.1910
	MOBILIZATIONS EROSION CONTROL	MOBILIZATIONS EMERGENCY EROSION CONTROL
LOCATION	EACH	EACH
2090-16-70	3	3
PROJECT TOTAL	3	3

EROSION CONTROL

CATEGORY 0010

ITEM NO.	628.2008	628.7005	628.7015
	EROSION MAT URBAN CLASS I TYPE B	INLET PROTECTION TYPE A	INLET PROTECTION TYPE C
LOCATION	SY	EACH	EACH
N 68TH ST	28	3	4
N 51ST ST	62	2	2
N 35TH ST	23	4	7
PROJECT TOTAL	113	9	13

3

STORM INLET & MANHOLE COVERS

STRUCTURE NUMBER	STATION	CENTERLINE OFFSET	COVER ELEV.	CATEGORY 0010 SPV.0060.103* MANHOLE COVER TYPE MS-58A EACH
104	132+33.9	22.5' LT	88.87	1
			TOTAL	1

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

3

SANITARY SEWER STRUCTURES

STRUCTURE NUMBER	STATION	CENTERLINE OFFSET	COVER ELEV.	CATEGORY 0020 SPV.0060.103* MANHOLE COVERS TYPE MS 58-A EACH	CATEGORY 0020 SPV.0060.104 INTERNAL SANITARY MANHOLE SEALS EACH
403	133+10.8	32.3' RT	88.82	1	1
			TOTAL	1	1

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

STORM INLET ABANDONMENT

STRUCTURE NUMBER	STATION	CENTERLINE OFFSET	CATEGORY 0010 204.0260 ABANDONING INLETS EACH
501	25+97.8	9.0' LT	1
		TOTAL	1

LOCATION: W. SILVER SPRING DRIVE

EXISTING SEWER STRUCTURES								SEWER PIPES								
STRUCTURE NUMBER	STRUCTURE TYPE	STATION	CENTERLINE OFFSET	COVER ELEV.	DEPTH[a] (FT)	FRAME & LID	STRUCTURE REMARKS	FROM STRUCTURE	TO STRUCTURE	INVERTS INLET	INVERTS OUTLET	SLOPE (FT/FT)	PLAN LENGTH (FT)	PIPE SIZE (IN)	PIPE MATERIAL	PIPE REMARKS
104	4'-0" DIA. STORM MANHOLE	132+33.9	22.5' RT	88.87		MS-58A	NEW FRAME & LID ONLY									

CATEGORY 0010

ITEM NO.	644.1601
	TEMPORARY PEDESTRIAN CURB RAMP
LOCATION	DAYS
2090-16-70	24
PROJECT TOTAL	24

CATEGORY 0010

ITEM NO.	646.8220
	MARKING ISLAND NOSE EPOXY
LOCATION	EACH
2090-16-70	16
PROJECT TOTAL	16

PEDESTRIAN ACCOMMODATIONS SURFACES

CATEGORY 0010

ITEM NO.	644.1410	644.1430	644.1440
	TEMPORARY PEDESTRIAN SURFACE ASPHALT	TEMPORARY PEDESTRIAN SURFACE PLATE	TEMPORARY PEDESTRIAN SURFACE MATTING
LOCATION	SF	SF	SF
N 68TH ST	535	535	535
N 51ST ST	1104	1104	1104
N 35TH ST	1037	1037	1037
PROJECT TOTAL	2676	2676	2676

PAVEMENT MARKING

CATEGORY 0010

ITEM NO.	646.9100	SPV.0090.004	SPV.0090.705
	MARKING REMOVAL LINE 8-INCH	MARKING STOP LINE EPOXY 24-INCH	MARKING CROSSWALK EPOXY BLOCK STYLE 12-INCH
LOCATION	LF	LF	LF
N 68TH ST	280	161	930
N 51ST ST	280	130	800
N 35TH ST	280	100	912
PROJECT TOTAL	840	391	2642

CONSTRUCTION STAKING

CATEGORY 0010

ITEM NO.	650.5500	650.9000
	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	CONSTRUCTION STAKING CURB RAMP
LOCATION	LF	EACH
N 68TH ST	303	12
N 51ST ST	307	8
N 35TH ST	278	6
PROJECT TOTAL	888	26

CATEGORY 0010

ITEM NO.	650.9500
	CONSTRUCTION STAKING SIDEWALK (PROJECT) 2090-16-70
LOCATION	EACH
2090-16-70	1
PROJECT TOTAL	1

CATEGORY 0010

ITEM NO.	650.9911
	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 2090-16-70
LOCATION	EACH
2090-16-70	1
PROJECT TOTAL	1

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

TRAFFIC CONTROL DEVICES

LOCATION	DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH	643.0300 TRAFFIC CONTROL DRUMS TOTAL	643.0410 TRAFFIC CONTROL BARRICADES TYPE II EACH	643.0410 TRAFFIC CONTROL BARRICADES TYPE II TOTAL	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III TOTAL	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A TOTAL	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C TOTAL	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS TOTAL
Stage 1													
N. 68th St.	58	51	2,958	8	464	29	1,682	58	3,364	59	3,422	23	1,334
N. 51st St.	58	48	2,784	8	464	20	1,160	40	2,320	56	3,248	18	1,044
N. 35th St.	58	39	2,262	8	464	16	928	32	1,856	47	2,726	18	1,044
Stage 2													
N. 68th St.	61	101	6,161	8	488	27	1,647	54	3,294	109	6,649	32	1,952
N. 51st St.	61	74	4,514	8	488	29	1,769	58	3,538	82	5,002	26	1,586
N. 35th St.	61	57	3,477	8	488	28	1,708	56	3,416	65	3,965	24	1,464
PROJECT TOTAL			22,156		2,856		8,894		17,788		25,012		8,424

(1) All Drums have one Type C Steady Burn Light
(2) All Type III Barricades have two Type A Flashing Lights
(3) All Type II Barricades have one Type A Flashing Light

TRAFFIC CONTROL SIGNS

CATEGORY 0010

ITEM NO.	643.1050 TRAFFIC CONTROL SIGNS PCMS

LOCATION	EACH	DAY
N 68TH ST	1	7
N 51ST ST	1	7
N 35TH ST	1	7
PROJECT TOTAL		21

TRAFFIC CONTROL

CATEGORY 0010

ITEM NO.	643.5000 CONTROL
LOCATION	EACH
2090-16-70	0.60
PROJECT TOTAL	0.60

TRAFFIC CONTROL SIGNS

CATEGORY 0010

ITEM NO.	SPV.0060.010 TEMPORARY NO PARKING SIGNS
LOCATION	EACH
N 68TH ST	4
N 51ST ST	4
N 35TH ST	4
PROJECT TOTAL	12

SIGN INSTALLATION

SIGN NO.	SIGN CODE	MESSAGE	SIZE			STREET NAME SIGN MOUNTING HARDWARE ON MAST ARM SPV.0060.291 EACH	637.2220 SIGNS TYPE II REFLECTIVE SH SF	REMARKS
			INCHES	X	INCHES			
1-1	M1-94H	N 68TH ST	48	X	18	1	6.00	
1-2	R4-7	KEEP RIGHT	24	X	30	-	5.00	ATTACH TO LIGHT POLE
1-3	R4-7	KEEP RIGHT	24	X	30	-	5.00	ATTACH TO MAST ARM POLE
1-4	M1-94H	N 68TH ST	48	X	18	1	6.00	
1-5	R4-7	KEEP RIGHT	24	X	30	-	5.00	ATTACH TO LIGHT POLE
1-6	R4-7	KEEP RIGHT	24	X	30	-	5.00	ATTACH TO MAST ARM POLE
2-1	M1-94H	N 51ST BD	48	X	18	1	6.00	
2-2	R4-7	KEEP RIGHT	24	X	30	-	5.00	ATTACH TO MAST ARM POLE
2-3	M1-94H	N 51ST BD	48	X	18	1	6.00	
2-4	R4-7	KEEP RIGHT	24	X	30	-	5.00	ATTACH TO LIGHT POLE
2-5	R4-7	KEEP RIGHT	24	X	30	-	5.00	ATTACH TO MAST ARM POLE
3-1	M1-94H	N 35TH ST	48	X	18	1	6.00	
3-2	R5-2	NO TRUCKS	24	X	24	-	4.00	ATTACH TO LIGHT POLE
3-3	R5-2A	3 TONS OR OVER	24	X	12	-	2.00	ON POLE WITH 3-2
3-4	M1-94H	N 35TH ST	48	X	18	1	6.00	
3-5	R4-7	KEEP RIGHT	24	X	30	-	5.00	ATTACH TO MAST ARM POLE
3-6	R4-7	KEEP RIGHT	24	X	30	-	5.00	ATTACH TO MAST ARM POLE
PROJECT TOTALS						6	87.00	

3

STREET LIGHTING AND CUC ITEMS

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

ITEM NO.	650.8501 CONSTRUCTION STAKING ELECTRICAL INSTALLATION Project (2090-16-70)
UNIT PAY LOCATION	EACH
2090-16-70	1
PROJECT TOTAL	1

ITEM NO.	SPV.0060.302 PULL BOXES 13-INCH x 24-INCH x 24-INCH	SPV.0060.312 POLE TYPE A-26	SPV.0060.400 ADJUSTING CUC MANHOLE COVERS
UNIT PAY LOCATION	EACH	EACH	EACH
N 68TH ST	2	-	-
N 51ST ST	9	-	-
N 35TH ST	8	2	1
PROJECT TOTAL	19	2	1

ITEM NO.	654.0105 CONCRETE BASE TYPE 5	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	659.5000.S LAMP BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR	SPV.0060.387 REMOVE LUMINAIRE	SPV.0060.866 LUMINAIRE HISTORIC MILWAUKEE LANTERN S3LED
UNIT PAY LOCATION	EACH	EACH	EACH	EACH	EACH
N 68TH ST	1	1	-	-	8
N 51ST ST	3	3	-	-	-
N 35TH ST	-	-	1	1	-
PROJECT TOTAL	4	4	1	1	8

STREET LIGHTING AND CUC ITEMS

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

ITEM NO.	SPV.0060.325	SPV.0060.343	SPV.0060.345	SPV.0060.353	SPV.0060.355	SPV.0060.375	SPV.0060.376
	POLES TYPE (30-FT ALUMINUM, BOLT DOWN)	WATERTIGHT SPLICES & CONNECTIONS	LUMINAIRE ARM SINGLE MEMBER 6-FOOT	INSTALL EQUIPMENT GROUNDING ELECTRODE	INSTALL A21-A26 CITY FURNISHED MOUNTING CLAMP (SINGLE BRACKET)	LUMINAIRE UTILITY 2LED	LUMINAIRE UTILITY 3LED
UNIT PAY	EACH	EACH	EACH	EACH	EACH	EACH	EACH
LOCATION							
N 68TH ST	1	24	-	-	-	-	-
N 51ST ST	3	-	6	-	-	3	6
N 35TH ST	-	15	6	4	2	2	4
PROJECT TOTAL	4	39	12	4	2	5	10

ITEM NO.	655.0305*	SPV.0090.302	SPV.0090.319	SPV.0090.324	SPV.0090.325
	CABLE TYPE UF 2#12 AWG GROUNDED	CABLE TYPE 1#8 AWG 5kV CONCENTRIC CITY FURNISHED	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT 1 1/2-INCH	ELECTRICAL CABLE 3#2/1#8 XLPE USE-2	3-INCH HDPE COUNDUIT
UNIT PAY	LF	LF	LF	LF	LF
LOCATION					
N 68TH ST	480	-	-	1000	420
N 51ST ST	450	1150	-	-	1050
N 35TH ST	240	1150	60	1000	950
PROJECT TOTAL	1,170	2,300	60	2,000	2,420

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

TRAFFIC SIGNALS W. SILVER SPRING DR. & N. 68TH ST.

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

LOCATION	TO	LOCATION	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	TO	PB1	-	60	-
PB1	TO	SB1	15	-	-
PB1	TO	PB2	-	35	-
PB2	TO	SB2	10	-	-
PB2	TO	PB3	-	-	110
PB3	TO	SB3	15	-	-
PB3	TO	PB4	-	-	140
PB4	TO	PB5	-	-	60
PB5	TO	SB4	15	-	-
PB5	TO	PB6	-	-	120
PB6	TO	SB5	-	10	-
PB6	TO	SB6	20	-	-
PB6	TO	PB7	-	-	85
PB7	TO	SB7	10	-	-
PB8	TO	SB8	5	-	-
PB8	TO	PB9	-	-	70
PB9	TO	SB9	5	-	-
PB9	TO	PB10	-	-	70
PB10	TO	SB10	10	-	-
PB10	TO	PB11	-	100	-
PB11	TO	SB11	10	-	-
PB11	TO	PB12	-	-	120
PB12	TO	SB12	-	10	-
PB12	TO	PB13	-	-	85
PB13	TO	PB1	-	40	-
		SUBTOTAL	115	255	860

SIGNAL BASE NO.	LOCATION	204.0195 REMOVING CONCRETE BASES EACH
SB1A	26+01', 55' R	1
SB3A	25+93', 55' R	1
SB10A	27+18', 52' R	1
	SUBTOTAL	3

PULL BOX NUMBER	LOCATION	653.0905 REMOVING PULL BOXES
PB2A	27+02', 104' R	1
PB3A	26+53', 105' R	1
PB5A	25+94', 57' R	1
PB5B	25+89', 49' R	1
PB7A	25+98', 52' L	1
PB8A	26+22', 71' L	1
PB11A	27+21', 50' L	1
PB12A	27+21', 2' R	1
PB13A	27+27', 51' R	1
PB13B	26+34', 55' R	1
	SUBTOTAL	10

SIGNAL BASE NUMBER	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0110 CONCRETE BASES TYPE 10 EACH
SB1	27+15', 63' R	1	-
SB2	27+02', 66' R	1	-
SB3	26+49, 64' R	-	1
SB4	25+93', 50' R	1	-
SB5	25+87', 7' L	-	1
SB6	26+00', 9' l	1	-
SB7	26+03', 52' L	1	-
SB8	26+22', 67' L	1	-
SB11	27+13', 52' L	1	-
SB12	27+14', 7' R		1
	SUBTOTAL	7	3

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

TRAFFIC SIGNALS W. SILVER SPRING DR. & N. 68TH ST.

SIGNAL BASE NUMBER	657.0100 PEDESTAL BASES EACH	657.0350 POLES TYPE 10 EACH	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	657.0525 MONOTUBE ARMS 25-FT EACH	657.0530 MONOTUBE ARMS 30-FT EACH	SPV.0060.218 EVP 1 DIRECTION DETECTOR EACH	SPV.0060.223 EVP CONFIRMATION LIGHT EACH	SPV.0060.228 ELECTRICAL RISER EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH
SB1	1	-	-	-	1	-	-	-	-	-	1
SB2	1	-	-	1	-	-	-	-	-	-	-
SB3	-	1	-	-	-	1	-	-	-	-	-
SB4	1	-	-	1	-	-	-	-	-	-	1
SB5	-	1	-	-	-	-	1	1	1	-	-
SB6	1	-	1	-	-	-	-		-	-	1
SB7	1	-	-	-	1	-	-	-	-	-	1
SB8	1	-	-	1	-	-	-	-	-	-	-
SB9	-	-	-	-	-	-	-	-	-	1	-
SB10	-	-	-	-	-	-	-	-	-	1	-
SB11	1	-	-	1	-	-	-	-	-	-	1
SB12	-	1	-	-	-	-	1	1	1	-	1
SUBTOTAL	7	3	1	4	2	1	2	2	2	2	6

SUMMARY OF MAJOR ITEMS FOR TRAFFIC SIGNAL CABLING

	DESCRIPITON	L.F
655.0230	CABLE TRAFFIC SIGNAL 5-14 AWG	1015
655.0250	CABLE TRAFFIC SIGNAL 9-14 AWG	270
655.0260	CABLE TRAFFIC SIGNAL 12-14 AWG	555
655.0280	CABLE TRAFFIC SIGNAL 19-14-AWG	585
655.0305	CABLE TYPE UF 2-12 AWG GROUNDED	485
655.0515	ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	845
655.0900	TRAFFIC SIGNAL EVP DETECTOR CABLE	485
674.0300	REMOVE CABLE	45

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

TRAFFIC SIGNALS W. SILVER SPRING DR. & N. 68TH ST.

SIGNAL HEAD NUMBER	SIGNAL BASE NUMBER	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH EACH	658.0412 PEDESTRIAN SIGNAL FACE 12-INCH EACH	SPV.0060.267 PEDESTRIAN COUNTDOWN SIGNAL FACE 12-INCH EACH
1	SB11	1	-	-
2	SB5	1	-	-
3	SB5	1	-	-
4	SB4	1	-	-
5	SB5	1	-	-
6	SB4	1	-	-
7	SB12	1	-	-
8	SB12	1	-	-
9	SB11	1	-	-
10	SB12	1	-	-
11	SB2	1	-	-
12	SB9	1	-	-
13	SB10	1	-	-
14	SB8	1	-	-
15	SB3	1	-	-
16	SB3	1	-	-
17	SB4	-	1	1
18	SB8	-	1	1
19	SB7	-	1	1
20	SB11	-	1	1
21	SB10	-	1	1
22	SB2		1	1
23	SB1	-	1	1
24	SB4	-	1	1
	SUBTOTAL	16	8	8

SIGNAL BASE NUMBER	LOCATION	SPV.0060.221 EVP PHASE SELECTOR CARD 4 CHANNEL EACH
CB1	27+32', 82' R	1
	SUBTOTAL	1

	SPV.0060.225 VEHICULAR VIDEO DETECTION SYSTEM- 2 CAMERAS EACH
SUBTOTAL	2

PULL BOX NUMBER	LOCATION	SPV.0060.303 FIBERGLASS/POLYMER CONCRETE PULL BOX 17-INCHX30-INCHX24-INCH EACH
PB1	27+20', 73' R	1
PB2	27+03', 73' R	1
PB3	26+49', 79' R	1
PB4	25+80', 80' R	1
PB5	25+80', 50' R	1
PB6	25+80', 9' L	1
PB7	25+96', 50' L	1
PB8	26+22', 72' L	1
PB9	26+57', 72' L	1
PB10	26+92', 73' L	1
PB11	27+21', 50' L	1
PB12	27+21', 10' R	1
PB13	27+21', 51' R	1
	SUBTOTAL	13

	658.5070 SIGNAL MOUNTING HARDWARE (LOCATION) 001. W. Silver Spring Dr. & N. 68th St. EACH
	1
68TH STREET	1

LOCATION	TO	LOCATION	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	TO	SB1	-	15	-
PB3	TO	SB3	5	-	-
PB4	TO	SB4	15	-	-
PB4	TO	PB5	-	100	-
PB5	TO	SB5	10	-	-
PB5	TO	PB6	-	-	110
PB6	TO	SB6	-	10	-
PB6	TO	SB7	10	-	-
PB6	TO	PB7	-	-	90
PB7	TO	SB8	10	-	-
PB7	TO	SB9	55	-	-
PB7	TO	PB8	-	260	-
PB8	TO	SB10	5	-	-
PB8	TO	SB11	45	-	-
PB8	TO	PB9	-	-	110
PB9	TO	SB12	-	10	-
PB9	TO	SB13	5	-	-
PB9	TO	PB10	-	-	90
PB10	TO	CB1	-	10	-
		SUBTOTAL	160	405	400

SIGNAL BASE NUMBER	LOCATION	204.0195 REMOVING CONCRETE BASES EACH
SB1A	80+20', 50' R	1
SB4A	79+09', 65' R	1
SB5A	79+01', 52' R	1
SB8A	78+93', 52' L	1
SB9A	79+30', 59' L	1
SB11A	79+93', 51' L	1
	SUBTOTAL	6

PULL BOX NUMBER	LOCATION	653.0905 REMOVING PULL BOXES
PB4A	79+10', 78' R	1
	SUBTOTAL	1

SIGNAL BASE NUMBER	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0110 CONCRETE BASES TYPE 10 EACH
SB1	80+12', 51' R	1	-
SB4	79+08', 66' R	1	-
SB5	78+90', 50' R	1	-
SB6	78+90', 5' L		1
SB7	78+94', 8' L	1	-
SB8	78+93', 52' L	1	-
SB9	79+30', 59' L	1	-
SB11	80+08', 52' L	1	-
SB12	80+10', 6' R	1	-
SB13	80+22', 7' R		1
	SUBTOTAL	8	2

SUMMARY OF MAJOR ITEMS FOR TRAFFIC SIGNAL CABLING

	DESCRIPITON	L.F
655.0230	CABLE TRAFFIC SIGNAL 5-14 AWG	990
655.0250	CABLE TRAFFIC SIGNAL 9-14 AWG	535
655.0260	CABLE TRAFFIC SIGNAL 12-14 AWG	565
655.0280	CABLE TRAFFIC SIGNAL 19-14-AWG	470
655.0305	CABLE TYPE UF 2-12 AWG GROUNDED	450
655.0515	ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	895
655.0900	TRAFFIC SIGNAL EVP DETECTOR CABLE	450
SPV.0090.323	ELECTRICAL CABLE 3#4/1#8 XLPE USE-2	175
674.0300	REMOVE CABLE	780

SIGNAL BASE NUMBER	657.0100 PEDESTAL BASES EACH	657.0350 POLES TYPE 10 EACH	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	657.0530 MONOTUBE ARMS 30-FT EACH	SPV.0060.218 EVP 1 DIRECTION DETECTOR EACH	SPV.0060.223 EVP CONFIRMATION LIGHT EACH	SPV.0060.228 ELECTRICAL RISER EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH
SB1	1	-	-	-	1	-	-	-	-	1
SB3		-	-	-	-	-	-	-	1	
SB4	1	-	-	1	-	-	-	-	-	
SB5	1	-	-	1	-	-	-	-	-	1
SB6		1	-		-	1	1	1		
SB7	1	-	1	-	-	-	-	-	-	1
SB8	1	-	-	-	1	-	-	-	-	1
SB9	1	-	-	1	-	-	-	-	-	
SB10		-	-	-	-	-	-	-	1	
SB11	1	-	-	1	-	-	-	-	-	1
SB12	1		1	-	-	-	-	-	-	1
SB13		1	-	-	-	1	1	1	-	
SUBTOTAL	8	2	2	4	2	2	2	2	2	6

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

TRAFFIC SIGNALS W. SILVER SPRING DR. & N. 51ST BLVD.

3

SIGNAL HEAD NUMBER	SIGNAL BASE NUMBER	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH EACH	658.0412 PEDESTRIAN SIGNAL FACE 12-INCH EACH	SPV.0060.267 PEDESTRIAN COUNTDOWN SIGNAL FACE 12-INCH EACH
1	SB11	1	-	-
2	SB6	1	-	-
3	SB6	1	-	-
4	SB5	1	-	-
5	SB6	1	-	-
6	SB5	1	-	-
7	SB13	1	-	-
8	SB13	1	-	-
9	SB11	1	-	-
10	SB13	1	-	-
12	SB9	1	-	-
13	SB10	1	-	-
14	SB9	1	-	-
15	SB3	1	-	-
16	SB4	1		
17	SB4	-	1	1
18	SB8	-	1	1
19	SB8	-	1	1
20	SB11	-	1	1
21	SB11	-	1	1
23	SB1	-	1	1
24	SB5	-	1	1
	SUBTOTAL	15	7	7

	658.5070 SIGNAL MOUNTING HARDWARE (LOCATION) 002. W. Silver Spring Dr. & N. 51st Blvd. EACH
	1
51ST BLVD	1

SIGNAL BASE NUMBER	LOCATION	SPV.0060.221 EVP PHASE SELECTOR CARD 4 CHANNEL EACH
CB1	80+22', 52' R	1
	SUBTOTAL	1

	SPV.0060.225 VEHICULAR VIDEO DETECTION SYSTEM- 2 CAMERA EACH
SUBTOTAL	2

PULL BOX NUMBER	LOCATION	SPV.0060.303 FIBERGLASS/POLYMER CONCRETE PULL BOX 17-INCHX30-INCHX24-INCH EACH
PB4	79+10', 78' R	1
PB5	78+84', 50' R	1
PB6	78+83', 5' L	1
PB7	78+83', 50' L	1
PB8	80+15', 50' L	1
PB9	80+15', 6' R	1
PB10	80+27', 50' R	1
	SUBTOTAL	7

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

TRAFFIC SIGNALS W. SILVER SPRING DR. & N. 35TH ST.

3

LOCATION	TO	LOCATION	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	TO	PB1	-	30	-
PB1	TO	SB1	10	-	-
PB1	TO	PB2	-	100	-
PB2	TO	SB2	5	-	-
PB2	TO	PB3	-	-	100
PB3	TO	SB3	10	-	-
PB3	TO	PB4	-	100	-
PB4	TO	SB4	5	-	-
PB5	TO	PB5	-	-	110
PB5	TO	SB5	-	10	-
PB5	TO	SB6	10	-	-
PB5	TO	PB6	-	-	90
PB6	TO	SB7	5	-	-
PB6	TO	PB7	-	75	-
PB7	TO	SB8	10	-	-
PB7	TO	PB8	-	-	110
PB8	TO	SB9	15	-	-
PB8	TO	PB9	-	-	90
PB9	TO	SB10	15	-	-
PB9	TO	SB11	5	-	-
PB9	TO	PB10	-	30	-
PB10	TO	PB11	-	-	120
PB11	TO	SB12	-	5	-
PB11	TO	PB1	-	-	90
		SUBTOTAL	90	350	710

SIGNAL BASE NUMBER	LOCATION	204.0195 REMOVING CONCRETE BASES EACH
SB1A	132+37', 17' L	1
SB2A	132+54', 29' L	1
SB4A	133+19', 16' L	1
SB6A	133+15', 40' L	1
SB7A	133+11', 87' L	1
SB8A	132+99', 104' R	1
SB10A	132+49', 97' R	1
SB11A	132+36', 87' R	1
SB12A	132+39', 28' R	1
	SUBTOTAL	9

PULL BOX NUMBER	LOCATION	653.0905 REMOVING PULL BOXES
PB5A	133+24', 41' R	1
PB9A	132+35', 87' R	1
	SUBTOTAL	2

SIGNAL BASE NUMBER	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0110 CONCRETE BASES TYPE 10 EACH
SB1	132+36', 17' L	1	-
SB2	132+54', 36' L	1	-
SB4	133+28', 15' L	1	-
SB5	133+23', 41' R	-	1
SB6	133+21', 44' R	1	-
SB7	133+21', 86' R	1	-
SB8	132+99', 104' R	1	-
SB10	132+49', 97' R	1	-
SB11	132+39', 87' R	1	-
SB12	132+29', 29' R	-	1
	SUBTOTAL	8	2

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

TRAFFIC SIGNALS W. SILVER SPRING DR. & N. 35TH ST.

3

3

SUMMARY OF MAJOR ITEMS FOR TRAFFIC SIGNAL CABLING

	DESCRIPITON	L.F
655.0230	CABLE TRAFFIC SIGNAL 5-14 AWG	630
655.0250	CABLE TRAFFIC SIGNAL 9-14 AWG	510
655.0260	CABLE TRAFFIC SIGNAL 12-14 AWG	660
655.0280	CABLE TRAFFIC SIGNAL 19-14-AWG	305
655.0305	CABLE TYPE UF 2-12 AWG GROUNDED	420
655.0515	ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	680
655.0900	TRAFFIC SIGNAL EVP DETECTOR CABLE	420

SIGNAL BASE NUMBER	657.0100 PEDESTAL BASES EACH	657.0350 POLES TYPE 10- EACH	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	657.0530 MONOTUBE ARMS 30-FT EACH	SPV.0060.218 EVP 1 DIRECTION DETECTOR EACH	SPV.0060.223 EVP CONFIRMATION LIGHT EACH	SPV.0060.228 ELECTRICAL RISER EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH
SB1	1	-	-	-	1	-	-	-	-	1
SB2	1	-	-	1	-	-	-	-	-	-
SB3	-	-	-	-	-	-	-	-	1	-
SB4	1	-	-	1	-	-	-	-	-	1
SB5		1	-	-	-	1	1	1	-	-
SB6	1	-	1	-	-	-	-	-	-	1
SB7	1	-	-	-	1	-	-	-	-	1
SB8	1	-	-	1	-	-	-	-	-	-
SB9		-	-		-	-	-	-	1	-
SB10	1	-	-	1	-	-	-	-	-	-
SB11	1	-	-	1	-	-	-	-	-	1
SB12		1	-	-	-	1	1	1	-	-
SUBTOTAL	8	2	1	5	2	2	2	2	2	5

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

TRAFFIC SIGNALS W. SILVER SPRING DR. & N. 35TH ST.

3

SIGNAL HEAD NUMBER	SIGNAL BASE NUMBER	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH EACH	658.0412 PEDESTRIAN SIGNAL FACE 12-INCH EACH	SPV.0060.267 PEDESTRIAN COUNTDOWN SIGNAL FACE 12-INCH EACH
1	SB4	1	-	-
2	SB12	1	-	-
3	SB12	1	-	-
4	SB11	1	-	-
5	SB12	1	-	-
6	SB11	1	-	-
7	SB5	1	-	-
8	SB5	1	-	-
9	SB4	1	-	-
10	SB5	1	-	-
11	SB8	1	-	-
12	SB2	1	-	-
13	SB3	1	-	-
14	SB2	1	-	-
15	SB8	1	-	-
16	SB10	1	-	-
17	SB10	-	1	1
18	SB2	-	1	1
19	SB1	-	1	1
20	SB4	-	1	1
21	SB3	-	1	1
22	SB8	-	1	1
23	SB7	-	1	1
24	SB11	-	1	1
	SUBTOTAL	16	8	8

	658.5070 SIGNAL MOUNTING HARDWARE (LOCATION) 003. W. Silver Spring Dr. & N. 35th St. EACH
	1
N 35TH STREET	1

SIGNAL BASE NUMBER	LOCATION	SPV.0060.221 EVP PHASE SELECTOR CARD 4 CHANNEL EACH
CB1	132+33', 16.5' L	1
	SUBTOTAL	1

	SPV.0060.225 VEHICULAR VIDEO DETECTION SYSTEM- 2 CAMERAS EACH
SUBTOTAL	2

PULL BOX NUMBER	LOCATION	SPV.0060.303 FIBERGLASS/POLYMER CONCRETE PULL BOX 17-INCHX30-INCHX24-INCH EACH
PB1	132+26', 15' L	1
PB2	132+56', 39' L	1
PB3	133+04', 39' L	1
PB4	133+33', 15' L	1
PB5	133+33', 41' R	1
PB6	133+26', 86' R	1
PB7	133+99', 111' R	1
PB8	133+50', 130' R	1
PB9	132+36', 87' R	1
PB10	132+20', 87' R	1
PB11	132+25', 28' L	1
	SUBTOTAL	11

TRAFFIC SIGNALS TOTAL

ALL ITEMS IN THIS SHEET ARE CATEGORY 0010

204.0195 REMOVING CONCRETE BASES	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	652.0615 CONDUIT SPECIAL 3-INCH	653.0905 REMOVING PULL BOXES	654.0101 CONCRETE BASES TYPE 1	654.0110 CONCRETE BASES TYPE 10	657.0100 PEDESTAL BASES	657.0350 POLES TYPE 10
EACH	LF	LF	LF	EACH	EACH	EACH	EACH	EACH
18	365	1010	1970	13	23	7	23	7

657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT	657.0525 MONOTUBE ARMS 25-FT	657.0530 MONOTUBE ARMS 30-FT	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH	658.0412 PEDESTRIAN SIGNAL FACE 12-INCH	658.0500 PEDESTRIAN PUSH BUTTONS	SPV.0060.267 PEDESTRIAN COUNTDOWN SIGNAL FACE 12-INCH
EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
4	13	6	1	6	47	23	17	23

SPV.0060.218 EVP 1 DIRECTION DETECTOR	SPV.0060.221 EVP PHASE SELECTOR CARD 4 CHANNEL	SPV.0060.223 EVP CONFIRMATION LIGHT	SPV.0060.225 VEHICULAR VIDEO DETECTION SYSTEM- 2 CAMERAS	SPV.0060.228 ELECTRICAL RISER	SPV.0060.303 FIBERGLASS/POLYMER CONCRETE PULL BOX 17-INCHX30-INCHX24-INCH
EACH	EACH	EACH	EACH	EACH	EACH
6	3	6	6	6	31

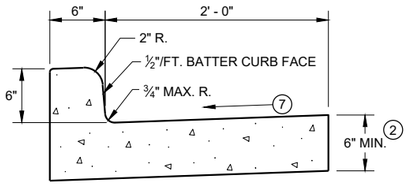
655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG	655.0250 CABLE TRAFFIC SIGNAL 9-14 AWG	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG	655.0280 CABLE TRAFFIC SIGNAL 19-14 AWG	655.0305* CABLE TYPE UF 2-12 AWG GROUNDED	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE	658.5070 SIGNAL MOUNTING HARDWARE (LOCATION)	674.0300 REMOVE CABLE	SPV.0090.323 ELECTRICAL CABLE 3 #4/1#8 XLPE TYPE USE-2
LF	LF	LF	LF	LF	LF	LF	EACH	LF	LF
2635	1315	1780	1360	1355	2420	1355	3	825	175

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

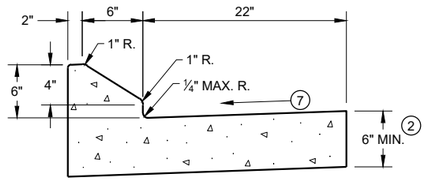
Standard Detail Drawing List

08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	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
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C11-10	CONCRETE BASE TYPE 10
09E01-15A	POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2
09E01-15B	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)
09E01-15C	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4
09E01-15D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E08-09E	TYPE 10 POLE 15'-30' MONOTUBE ARM
09E12-01E	GENERAL NOTES AND HARDWARE DETAILS FOR OVER HEIGHT TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13C15-08A	CONCRETE BASE
13C15-08B	CONCRETE BASE
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D30-09A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09B	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

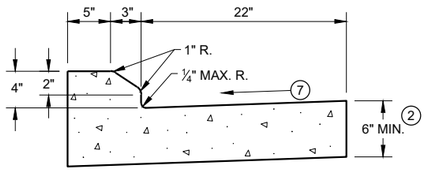
6



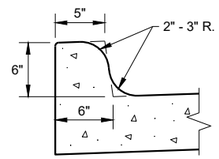
TYPES A (1) & D



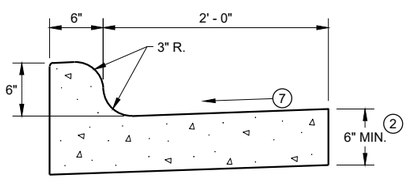
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

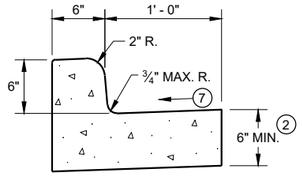


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



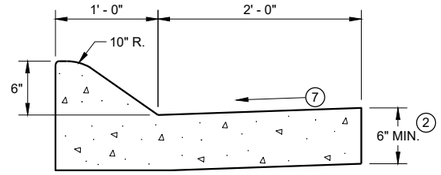
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

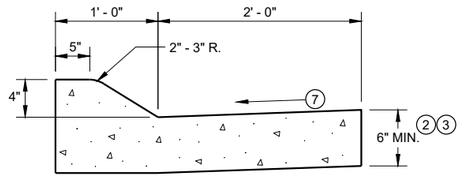


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

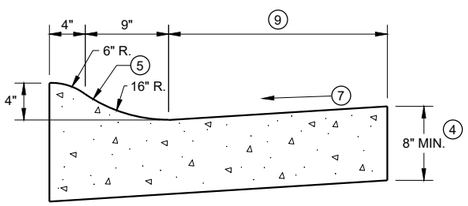


6" SLOPED CURB TYPES A (1) & D



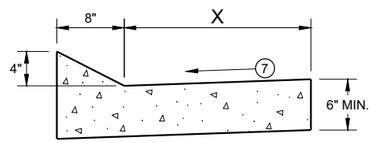
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

TBT & TBTT	X
30"	22"
36"	28"

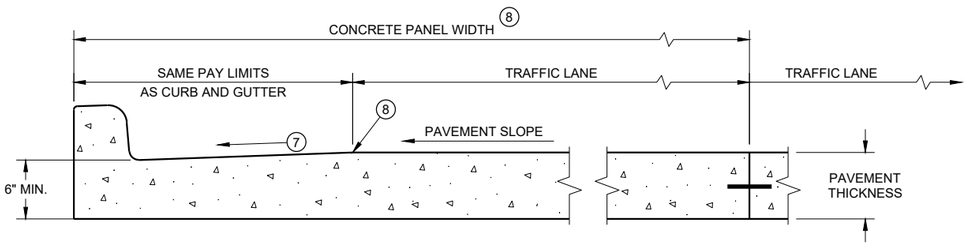


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

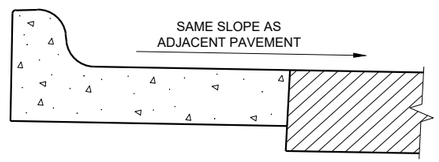
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

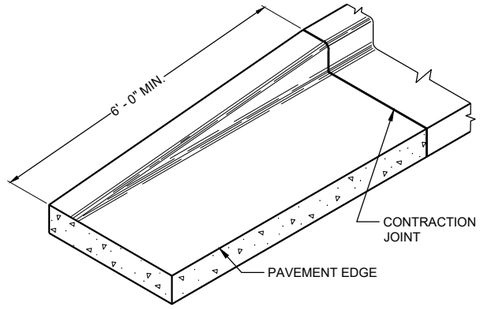
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

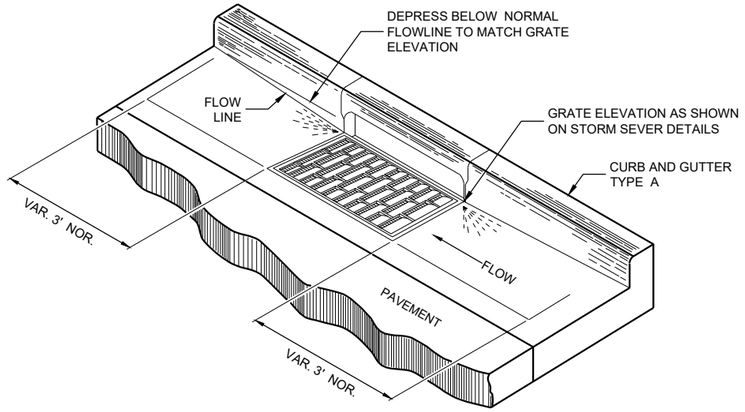
6

SDD 08D01 - 23a

SDD 08D01 - 23a



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.

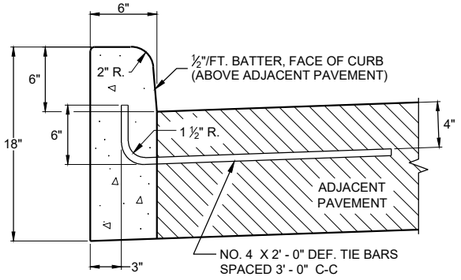
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

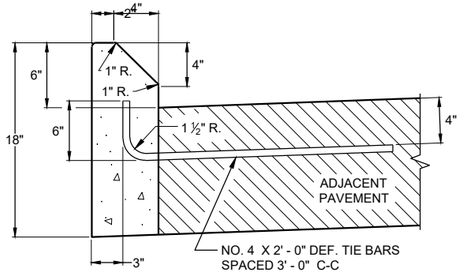
(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(10) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

(11) PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.

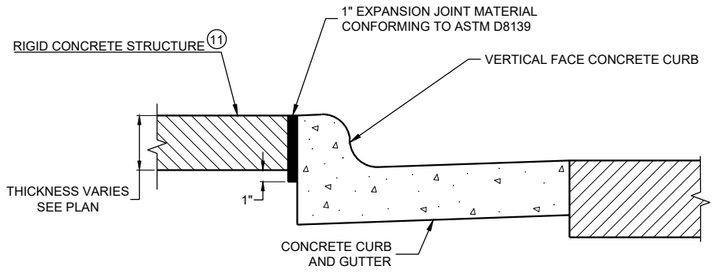


TYPES A (1) & D

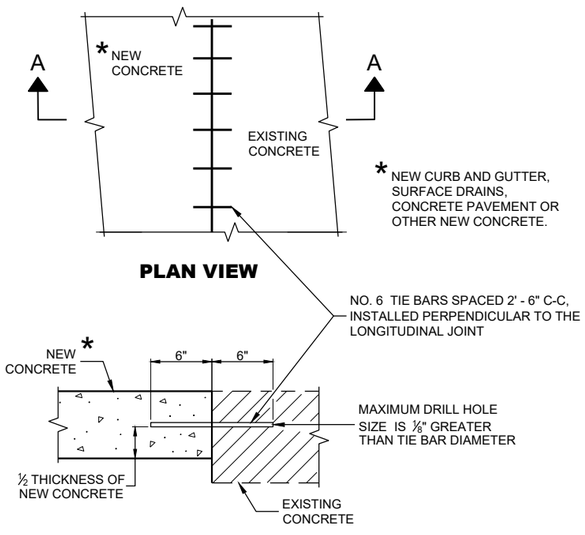


TYPES G (1) & J

CONCRETE CURB



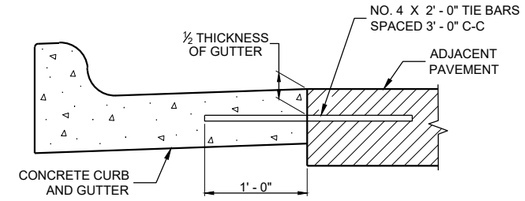
EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE (11)



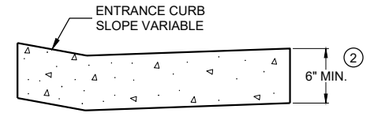
PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (10)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

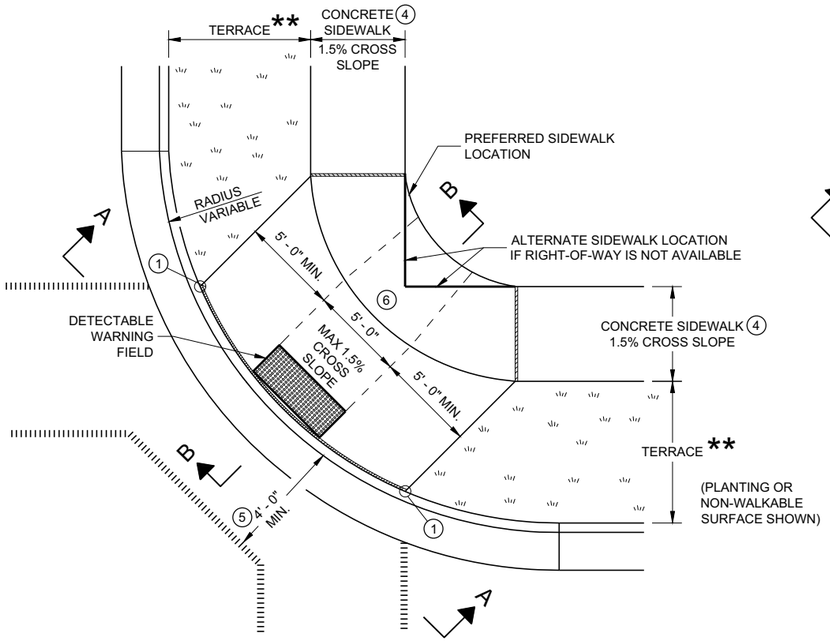
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

6

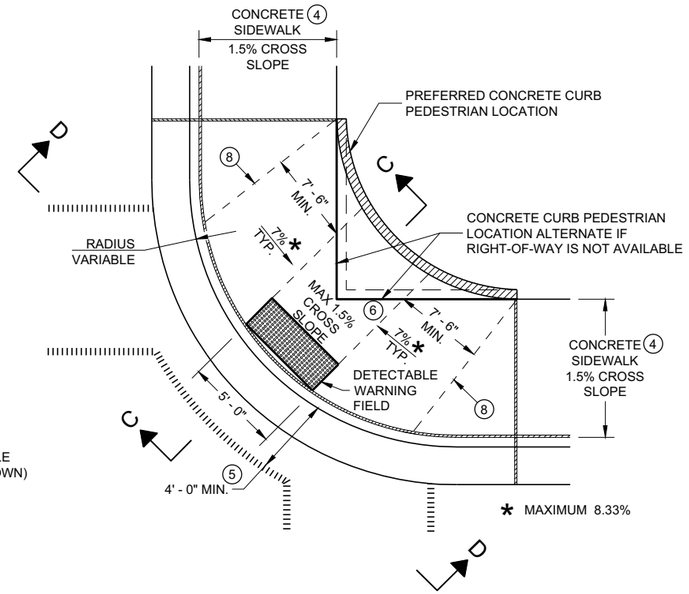
SDD08D01 - 23b



PLAN VIEW

CURB RAMP TYPE 1

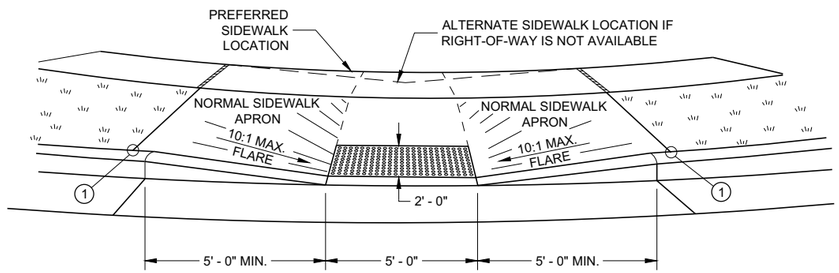
(CENTER OF CORNER RADIUS)



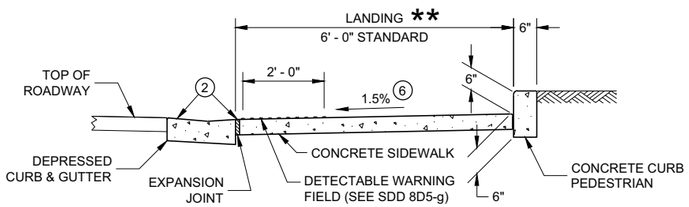
PLAN VIEW

CURB RAMP TYPE 1 - A

(NO TERRACE)

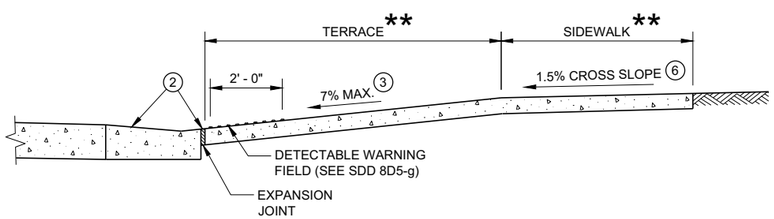


VIEW A - A FOR TYPE 1

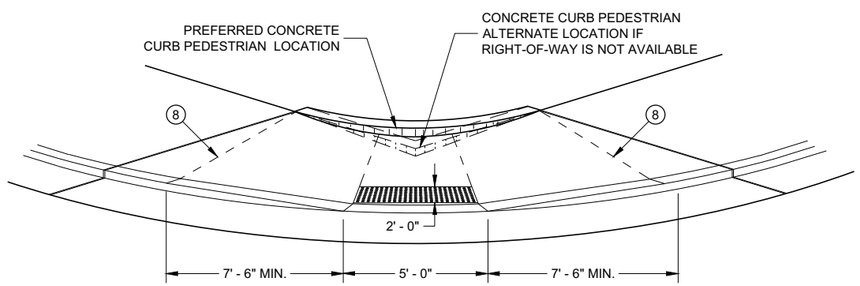


SECTION C - C FOR TYPE 1 - A

** 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.

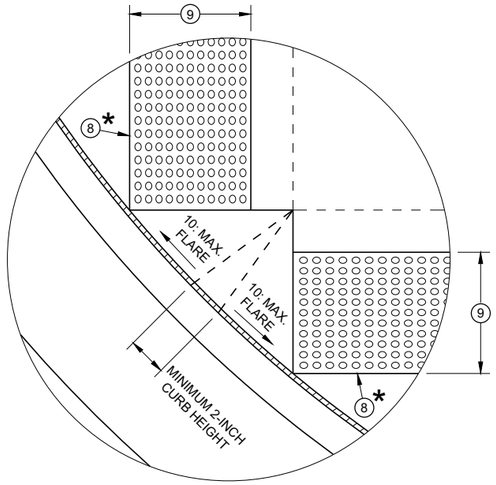
LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

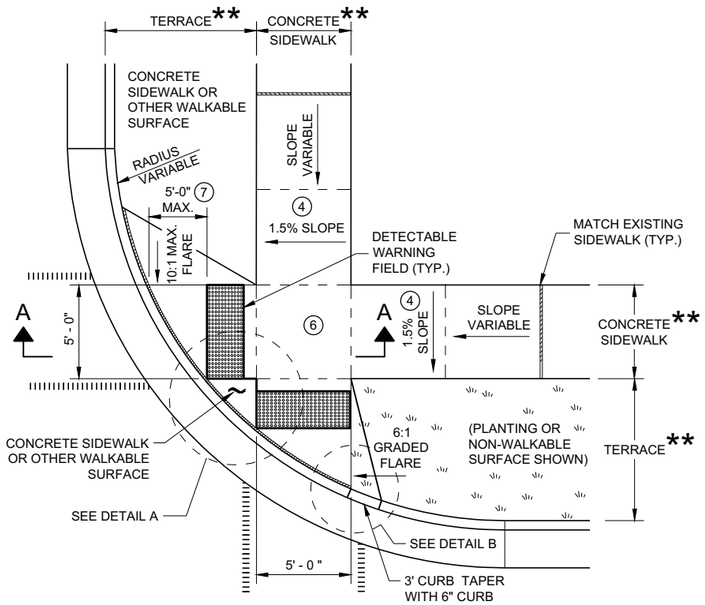
CURB RAMPS
TYPE 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
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.

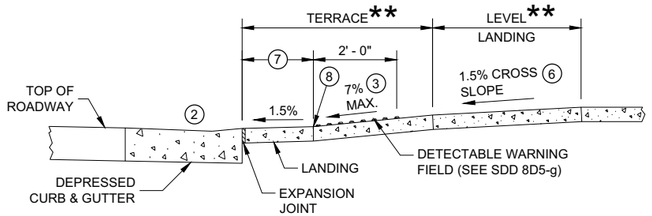
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(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.

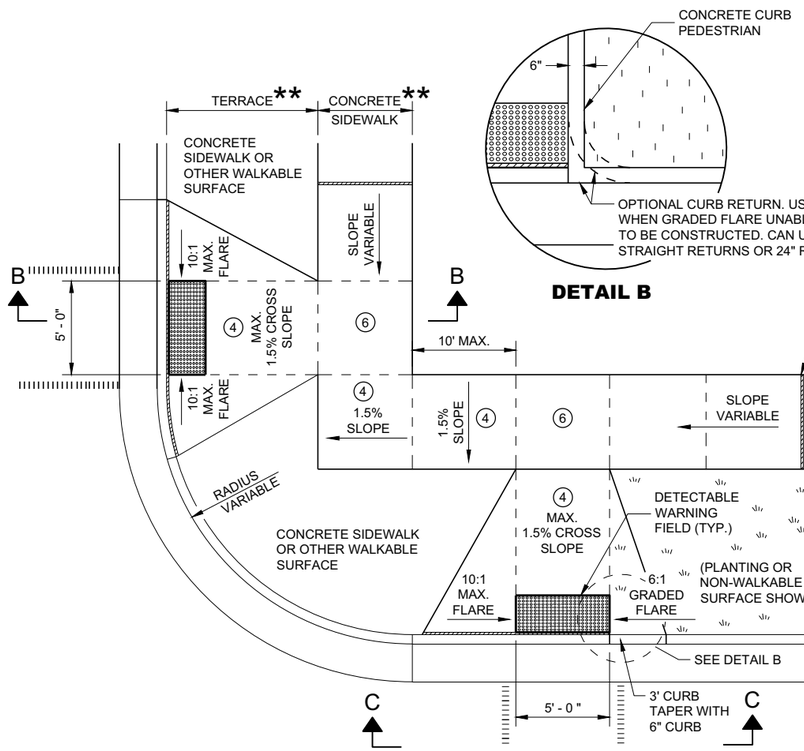
(9) WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.



SECTION A - A FOR TYPE 2

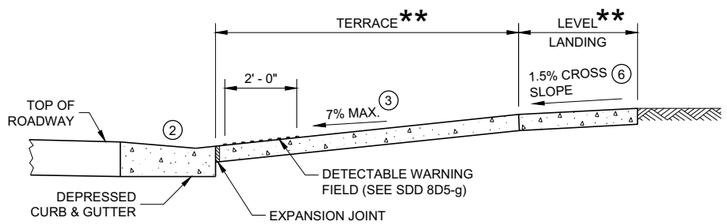
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS



DETAIL B

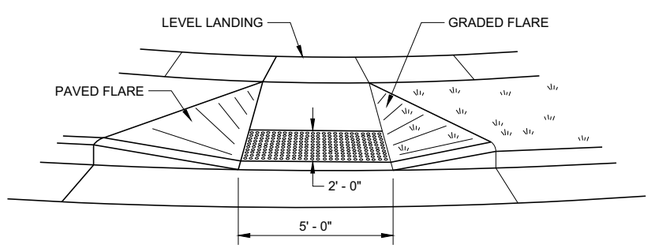
PLAN VIEW
CURB RAMP TYPE 3
(OUTSIDE OF CROSSWALK AREA)



SECTION B - B FOR TYPE 3

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)



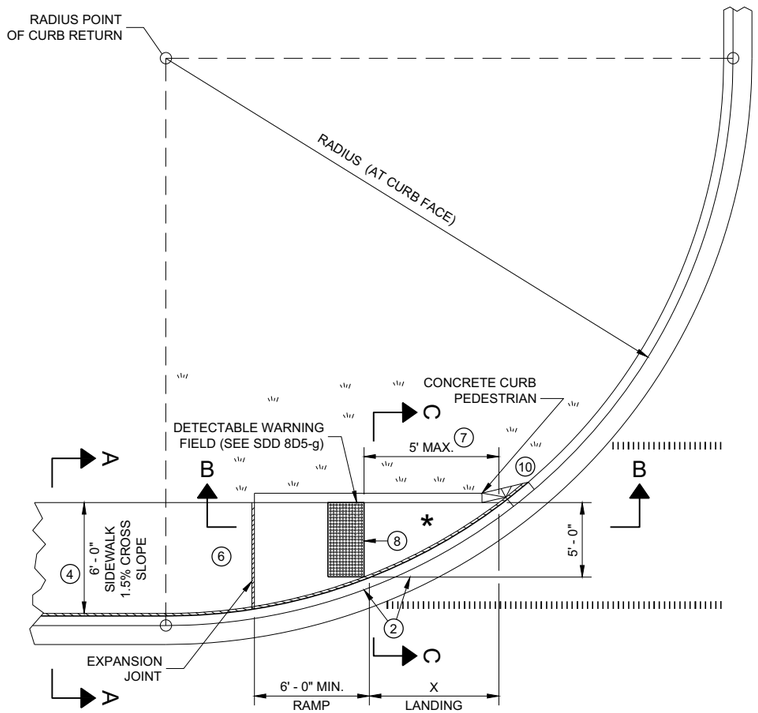
VIEW C - C FOR TYPE 3

CURB RAMPS TYPE 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 08D05 - 20b

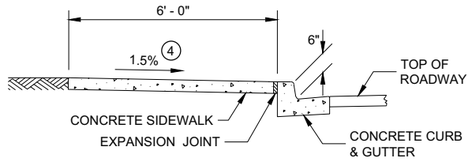


PLAN VIEW

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.

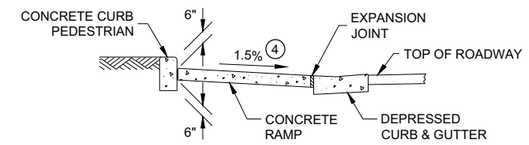
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

LEGEND

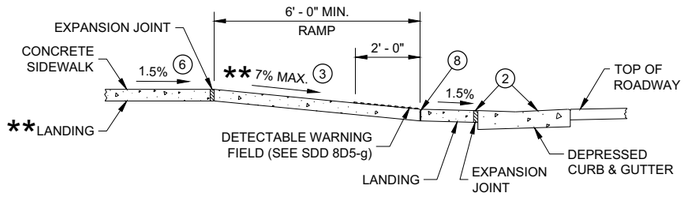
½" EXPANSION JOINT SIDEWALK

CONTRACTION JOINT SIDEWALK

PAVEMENT MARKING CROSSWALK (WHITE)



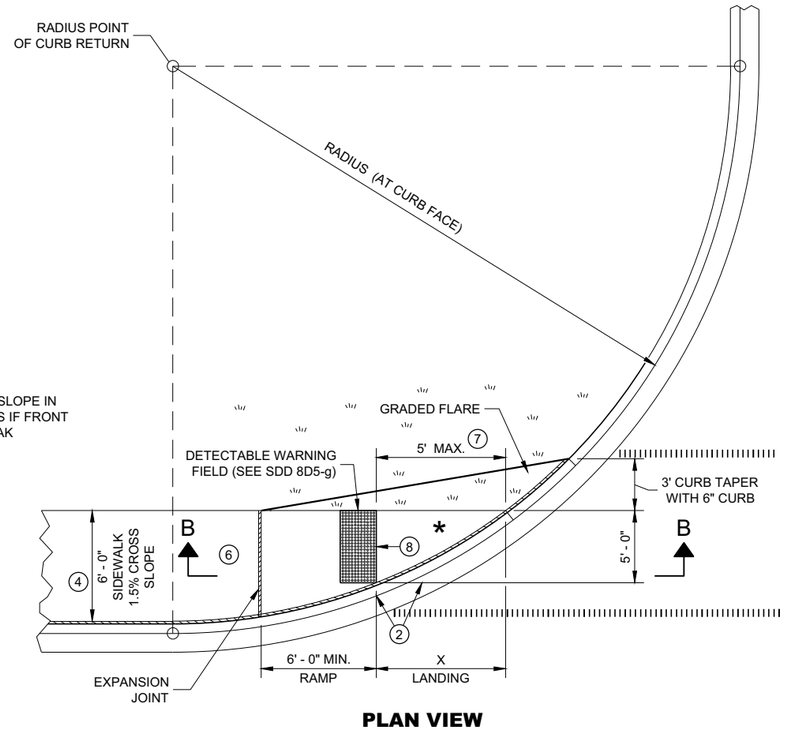
SECTION C - C FOR TYPE 4A



SECTION B - B FOR TYPE 4A AND TYPE 4A1

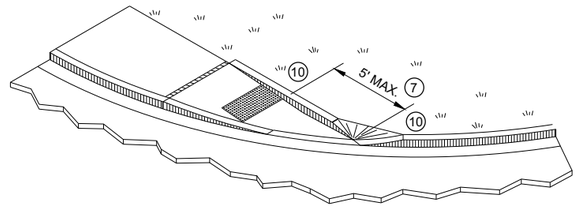
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

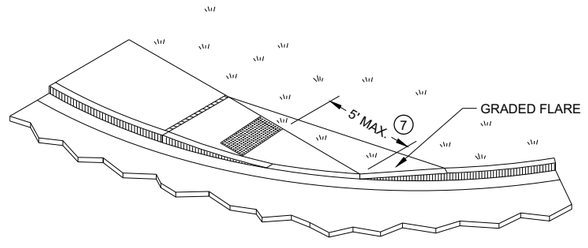


PLAN VIEW

CURB RAMP TYPE 4A1



ISOMETRIC VIEW FOR TYPE 4A



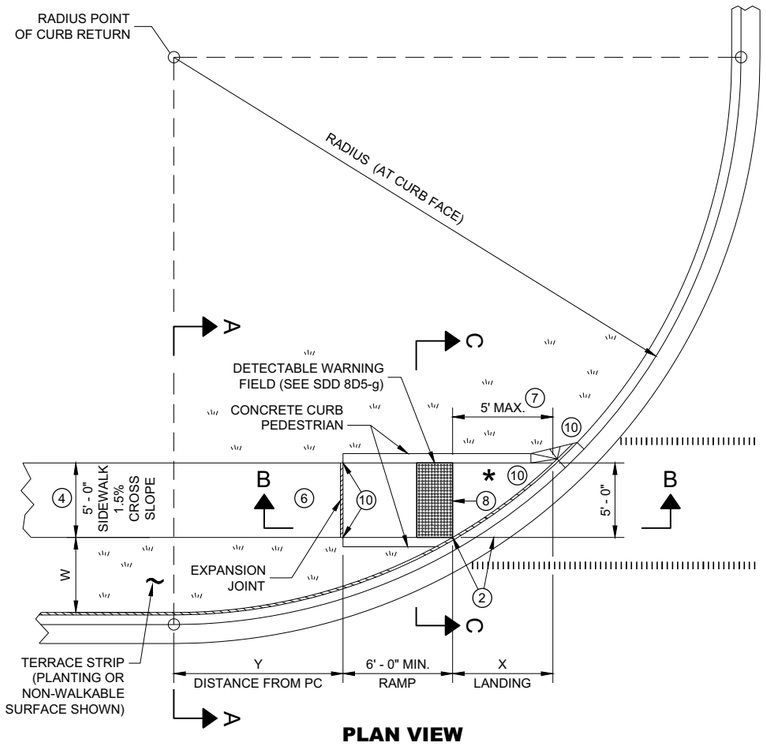
ISOMETRIC VIEW FOR TYPE 4A1

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.

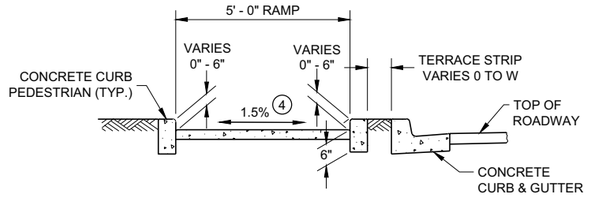
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

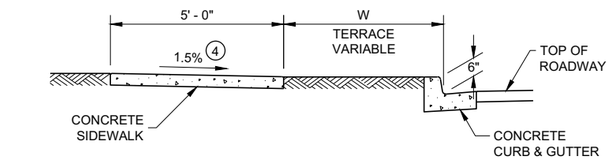
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

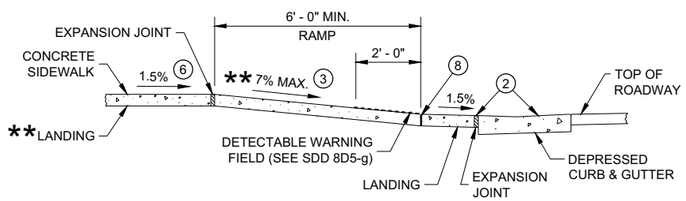
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



SECTION C - C FOR TYPE 4B



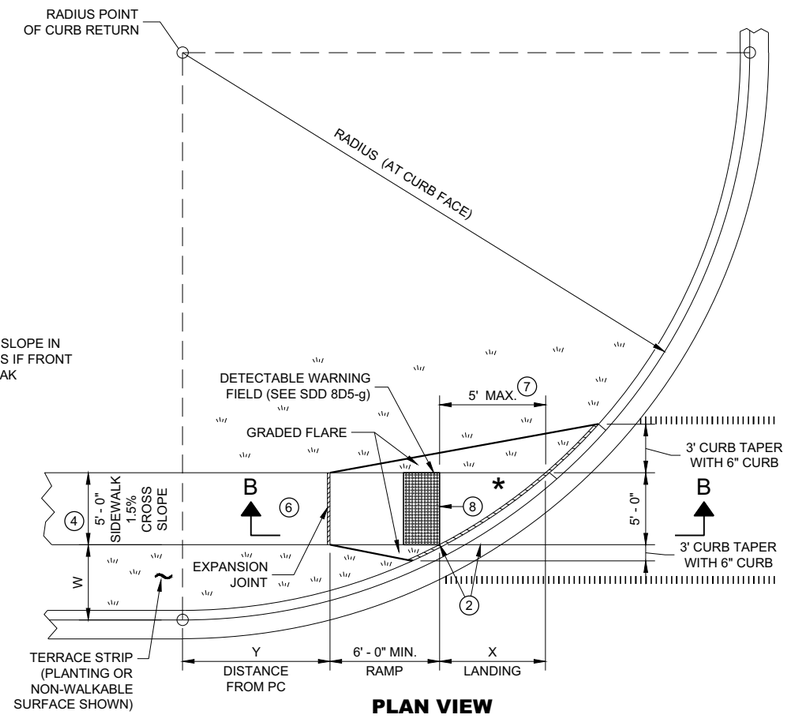
SECTION A - A FOR TYPE 4B



SECTION B - B FOR TYPE 4B AND TYPE 4B1

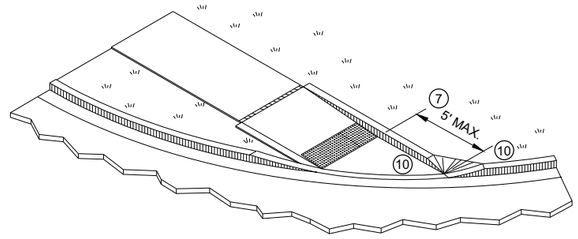
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

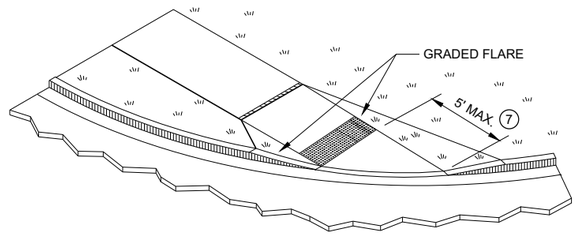


PLAN VIEW

CURB RAMP TYPE 4B1



ISOMETRIC VIEW FOR TYPE 4B



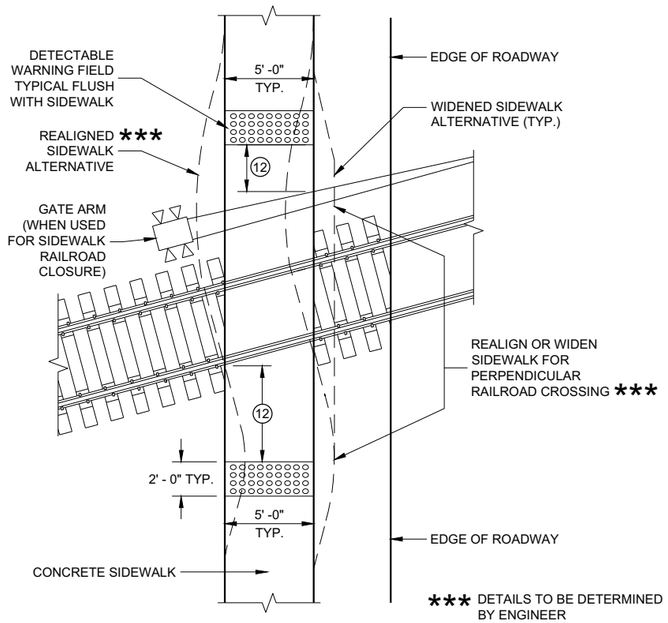
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

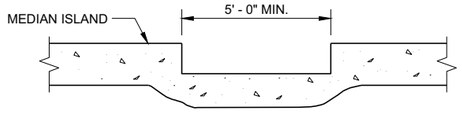
6

SDD 08D05 - 20d

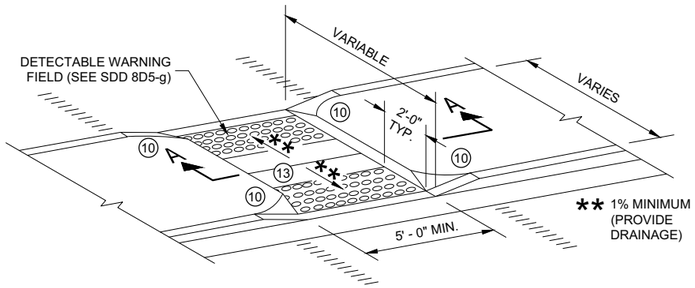


CURB RAMP TYPE 8

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 ½ - 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.

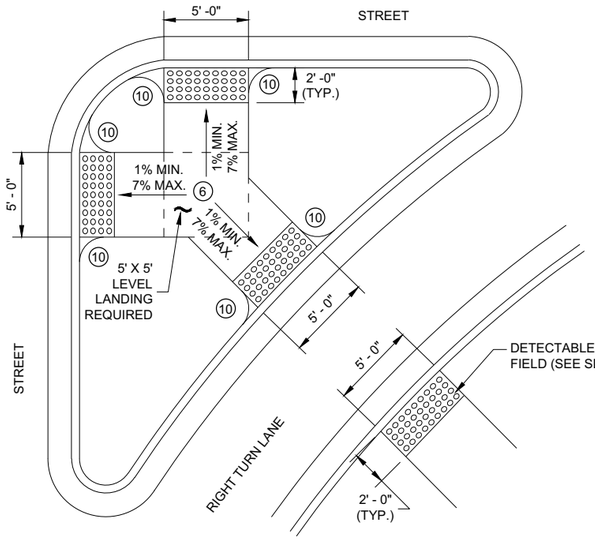
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(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

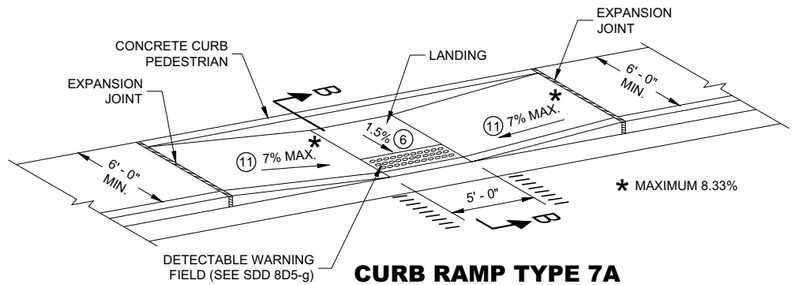
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)



CURB RAMP TYPE 6

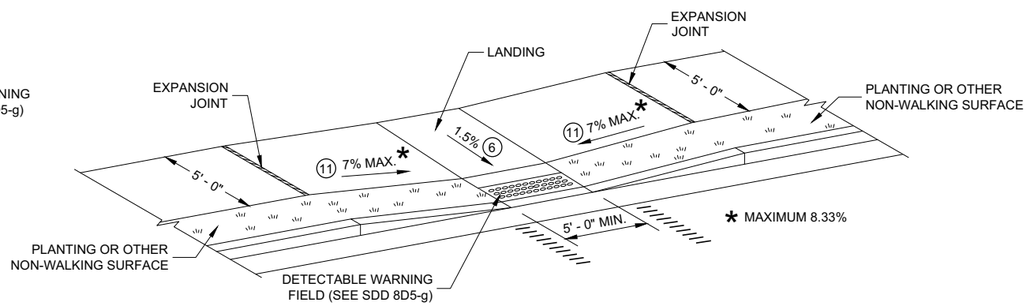
DETECTABLE WARNING AT ISLANDS

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



CURB RAMP TYPE 7A

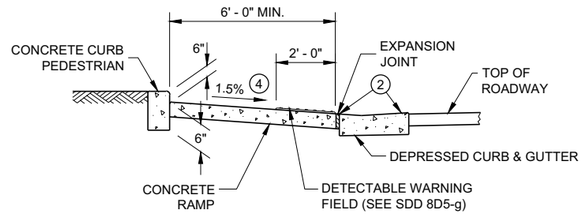
MID BLOCK CROSSING



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

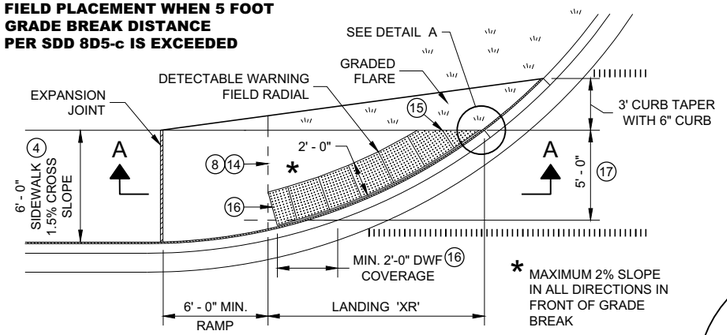
CURB RAMPS TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D05 - 20e

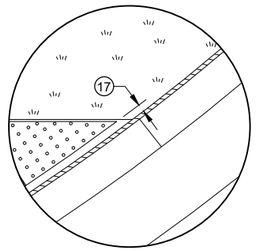
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED



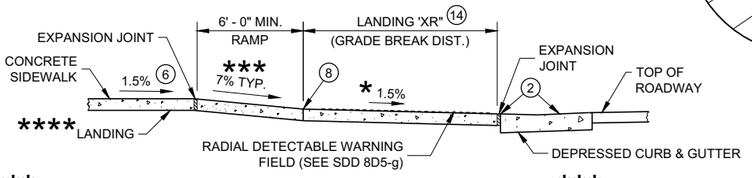
PLAN VIEW

CURB RAMP TYPE 4A1

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



DETAIL A

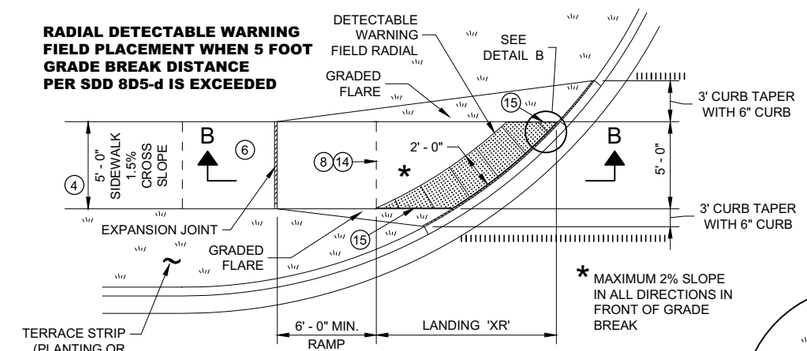


**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

SECTION A - A FOR TYPE 4A1

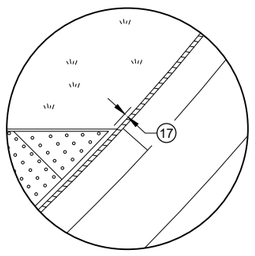
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



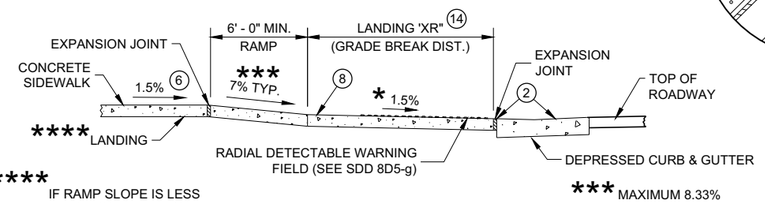
PLAN VIEW

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.

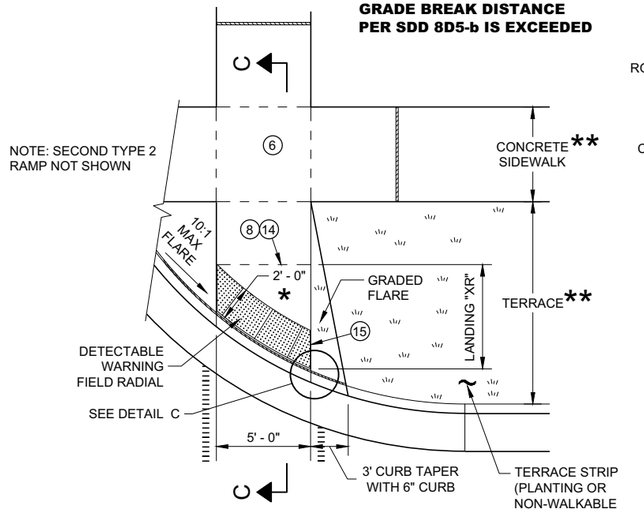
(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

(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

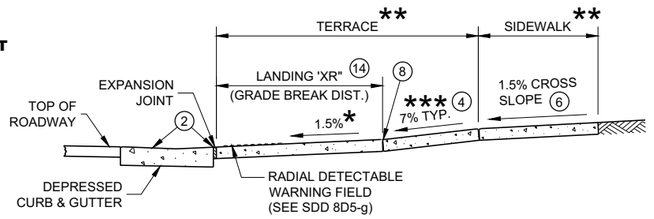


PLAN VIEW

CURB RAMP TYPE 2

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

(ON LINE WITH SIDEWALK)

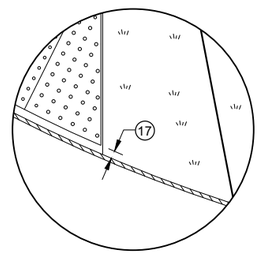


SECTION C - C FOR TYPE 2

* 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

6

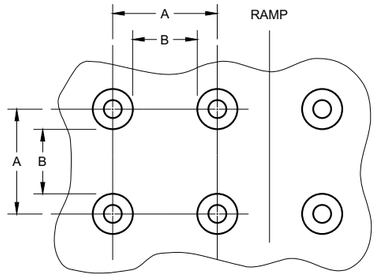
SDD 08D05 - 20f

6

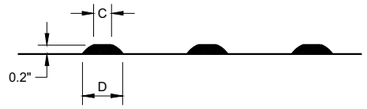
SDD 08D05 - 20f

	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.

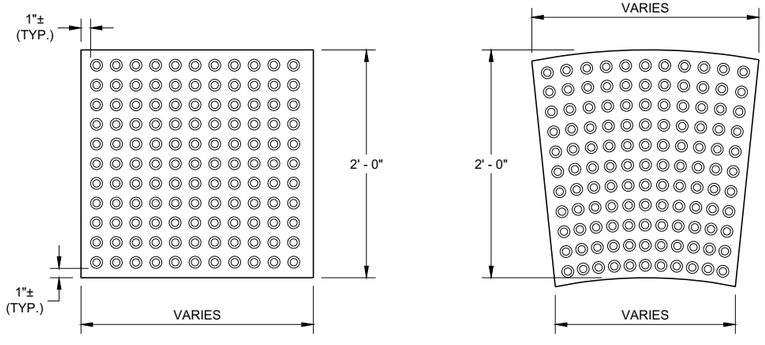


PLAN VIEW



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.

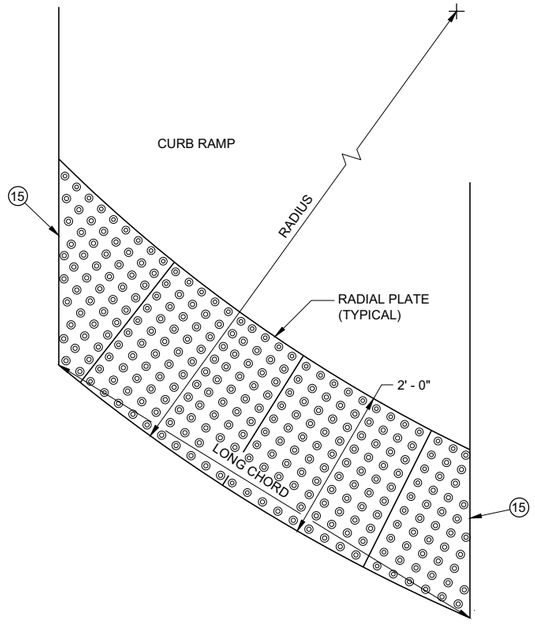
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

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.

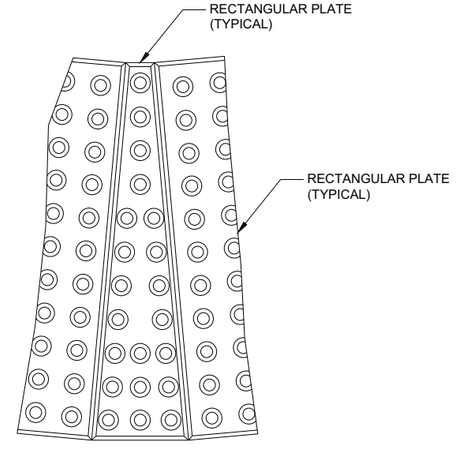
REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

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

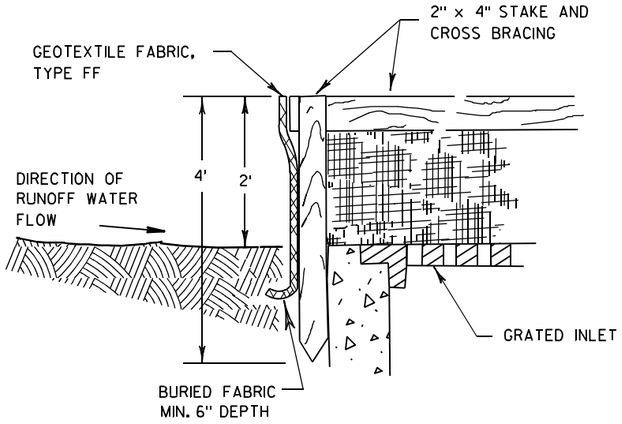
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

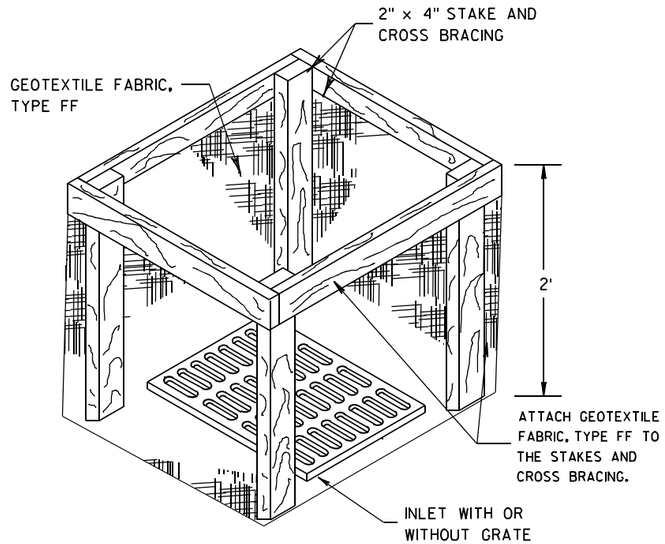
APPROVED
May 2019 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR

FHWA

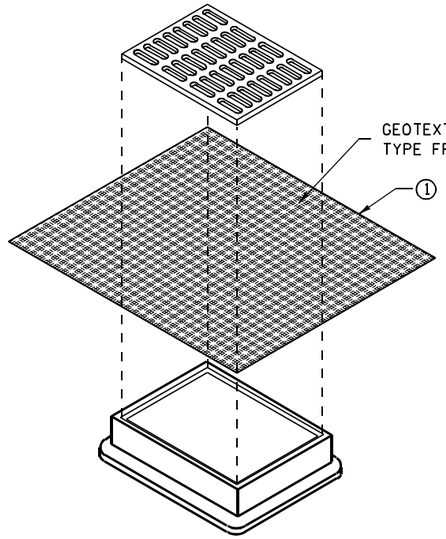
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SDD 08D05 - 20g



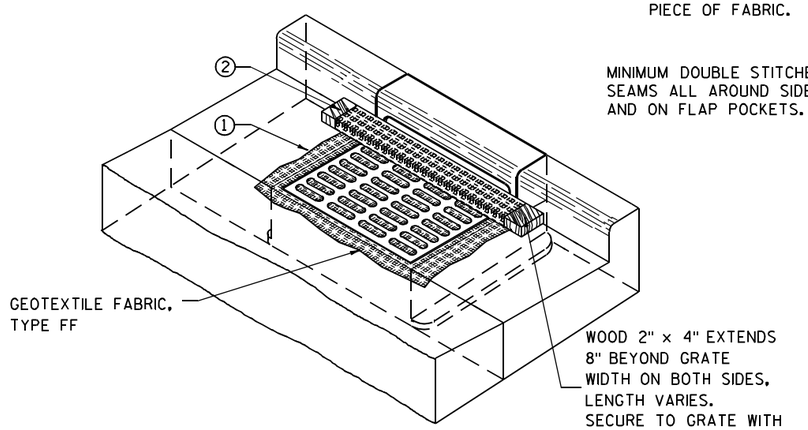


INLET PROTECTION, TYPE A

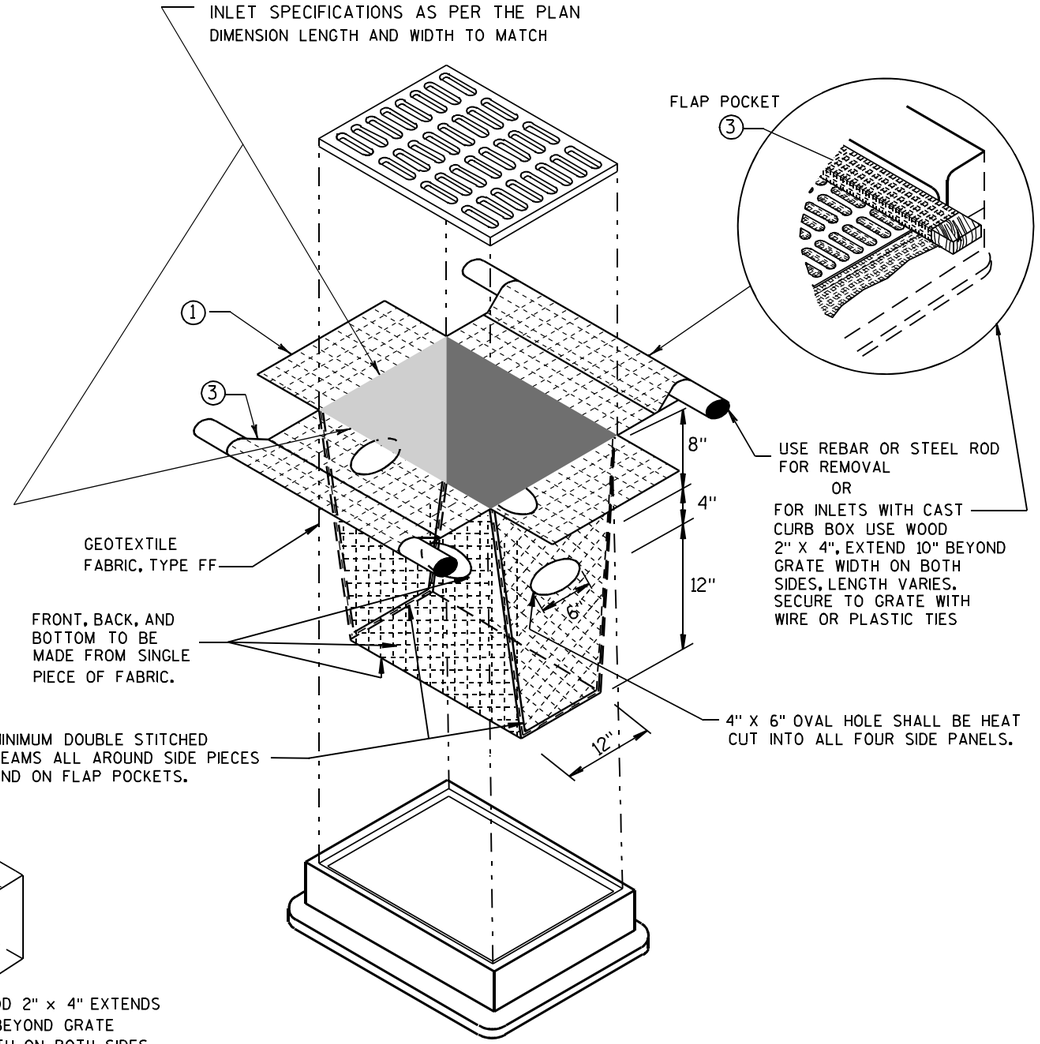


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(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.

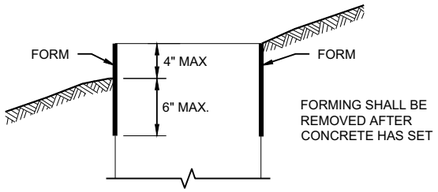
INLET PROTECTION
TYPE A, B, C, AND D

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

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.

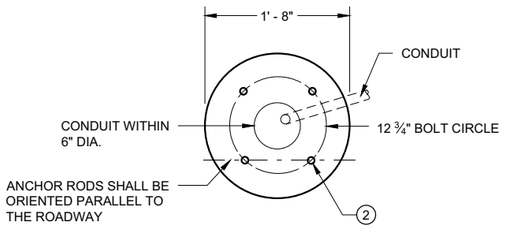
WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

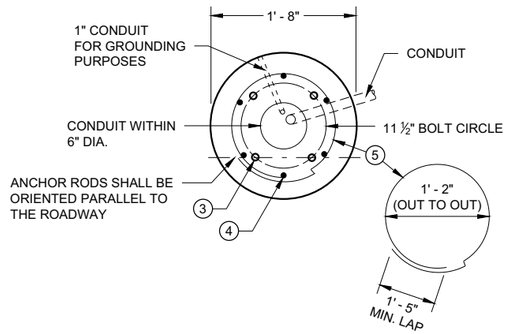
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH"L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

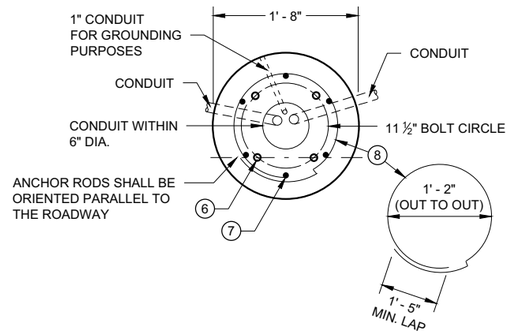
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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

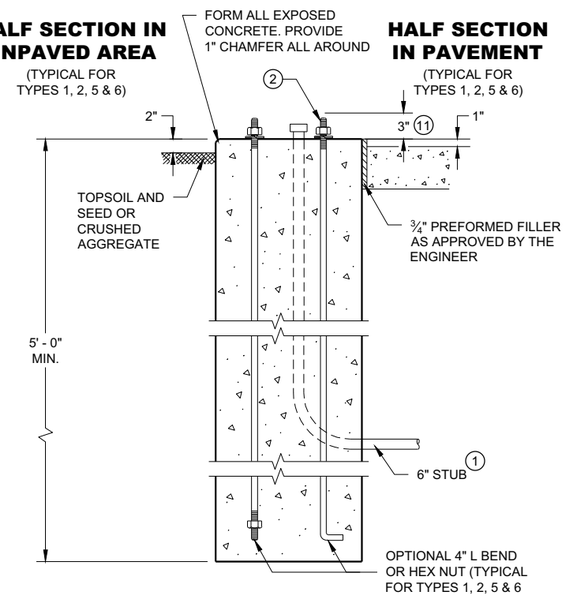
10 ⅝" DIA. X 8' -0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED

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.

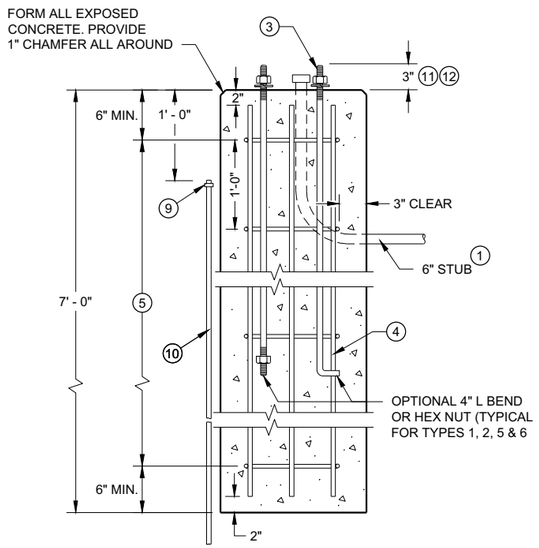
12 FOR NON - BREAKAWAY INSTALLATIONS, 4 ½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2, 5 & 6)

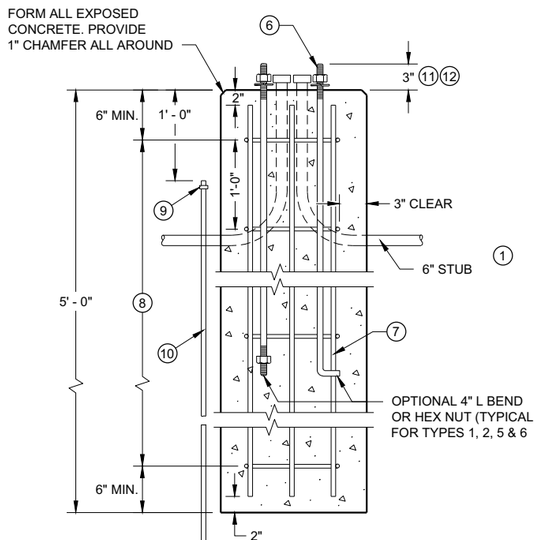
HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2, 5 & 6)



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

6
SDD 09C02 - 09

GENERAL NOTES

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

BASES (SHAFT) SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING. A STEEL CASING OR CORRUGATED METAL PIPE IS ALLOWED TO REMAIN. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BASE IN LAYERS OF ONE FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

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

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

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

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS.

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NON-METALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

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 OF CABLE OR WIRE.

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

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

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 BE FURNISHED AND INSTALLED TO 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.

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.

(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 OF THE ENGINEER.

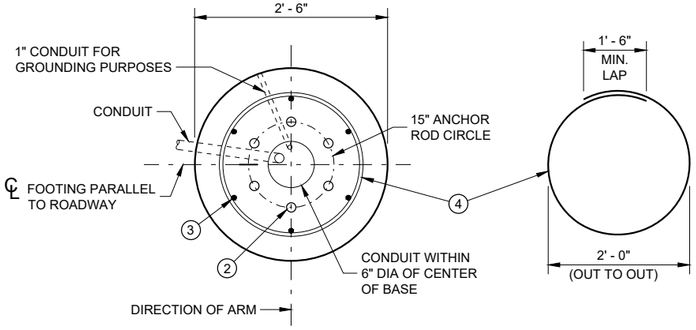
(2) (6) 1 ½ DIA. X 4' - 4" ANCHOR RODS

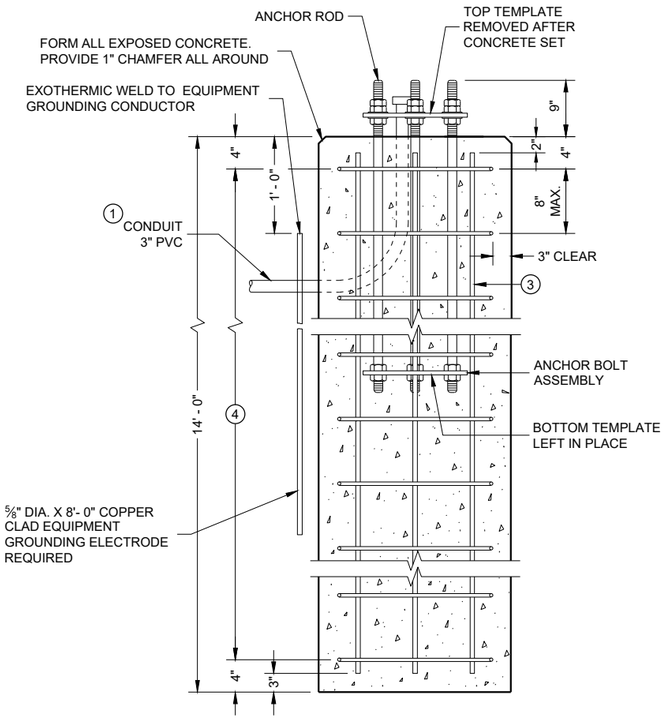
(3) (6) NO. 6 X 13' - 7" BAR STEEL REINFORCEMENT.

(4) (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 .....fy = 55,000 p.s.i.
WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION)
TEMPLATES, ASTM A709, GRADE 36.....fy = 36,000 p.s.i.

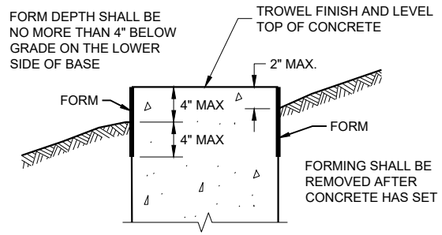
QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	172
LBS. OF VERTICAL BAR STEEL	122



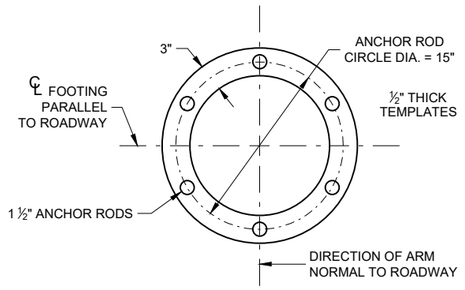


CONCRETE BASE, TYPE 10
(FOR TYPE 9, TYPE 10 AND OVER HEIGHT (OH) POLES)

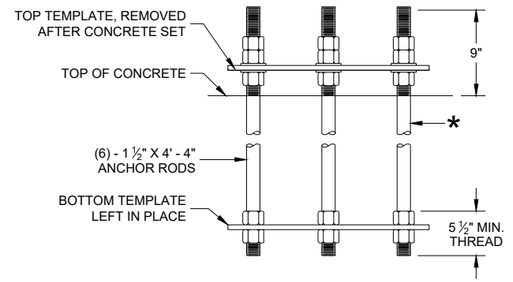
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE SDD 9C13 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATE



ANCHOR ROD ASSEMBLY DETAILS

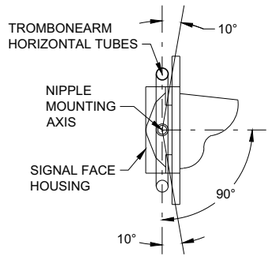
* THREAD TOP 10" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 ½" FOR 2 NUTS PER ANCHOR ROD. HOT DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR ROD (ASTM A123) AND HOT DIP NUTS AND WASHERS (ASTM A153. USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

CONCRETE BASE TYPE 10

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2017 — DATE
/S/ Ahmet Demerbilek — WIND LOADED STRUCTU PROGRAM LEADER
FHWA

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SDD 09C11 - 10

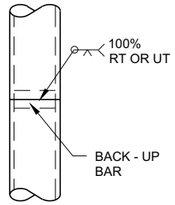


SECTION A-A

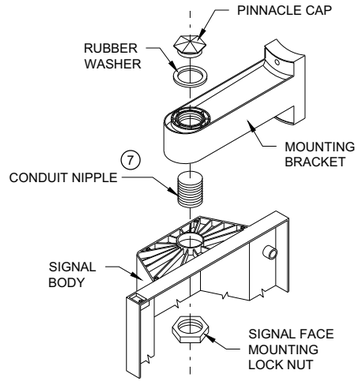
(10 DEGREES TILT REQUIREMENT OF FACE(S) IN THE TROMBONE MOUNTING)

FOR MANUFACTURERS USE ONLY

WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN / BRIDGE FOR VERIFICATION AND APPROVAL.



POLE SPLICE DETAIL



SIGNAL FACE MOUNTING DETAIL

(BANDED)

GENERAL NOTES

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

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

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

A PULL WIRE / ROPE SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

TYPE 2 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

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

(1) 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) ¼" X ¾" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING.

(3) GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 ⅜" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING,PER MANUFACTURER'S RECOMMENDATIONS.

(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE ONE OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) ASREQUIRED, TO PLUMB THE SIGNAL FACES.

(6) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

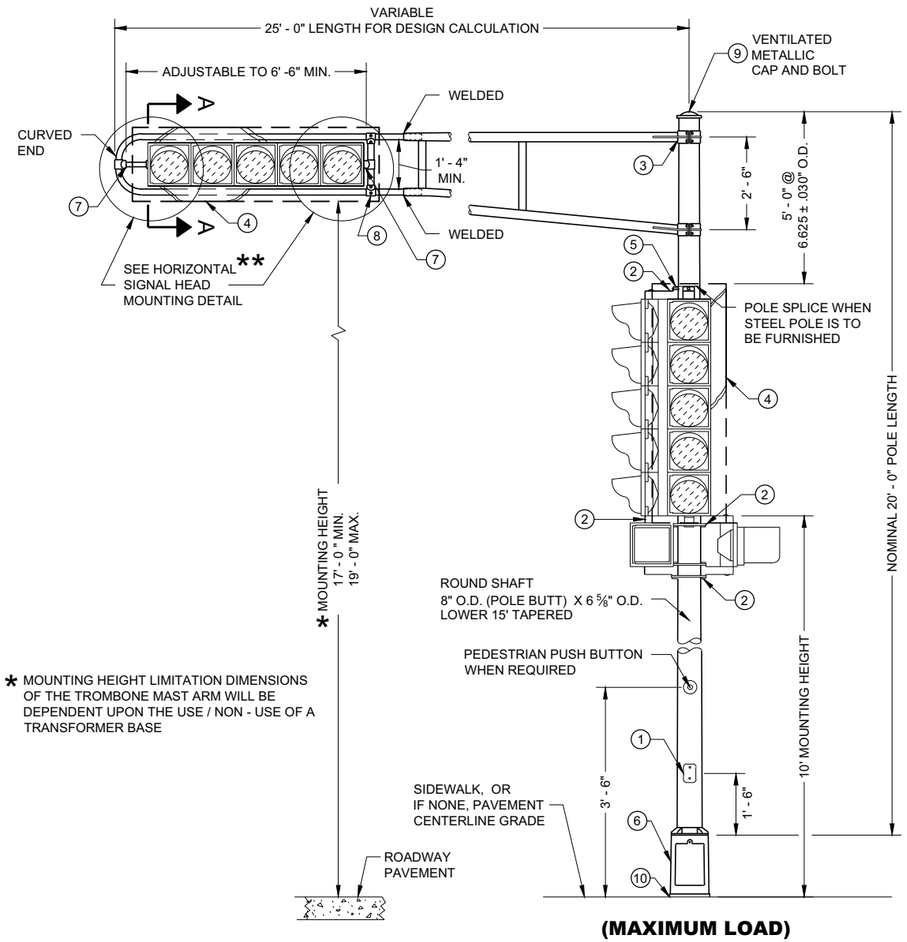
(7) USE 1 ½" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOTINTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 ½" OPENING IN SIGNAL FACES AND BRACKET ENDS.

(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUTIS THE SLIDING TYPE.

(9) FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

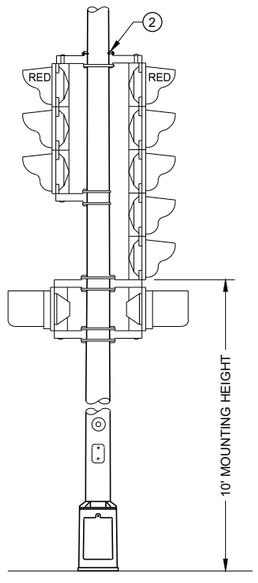
(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

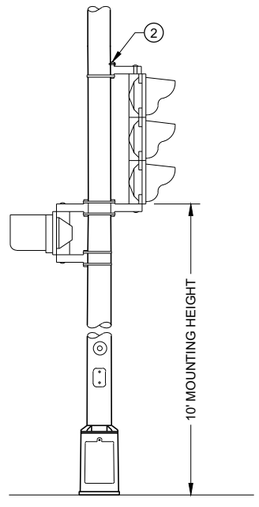


* MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE / NON - USE OF A TRANSFORMER BASE

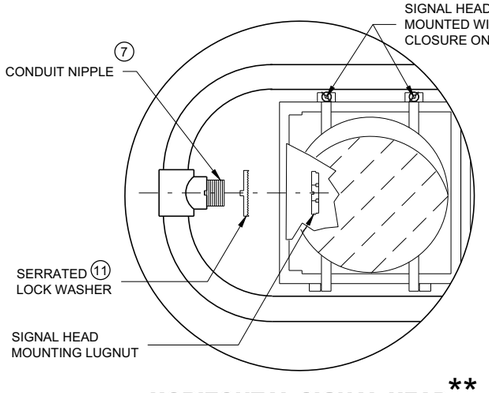
(MAXIMUM LOAD)



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE



HORIZONTAL SIGNAL HEAD MOUNTING DETAIL **

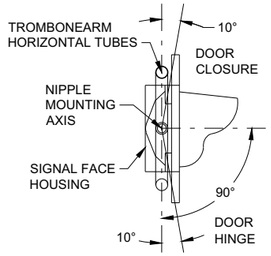
** SIGNAL HEAD ATTACHMENT ALSO APPLIES TO MOUNTING AT CROSS BAR

TYPE 2 POLE MOUNTING CONFIGURATION

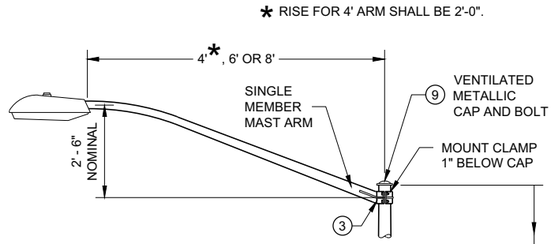
POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2

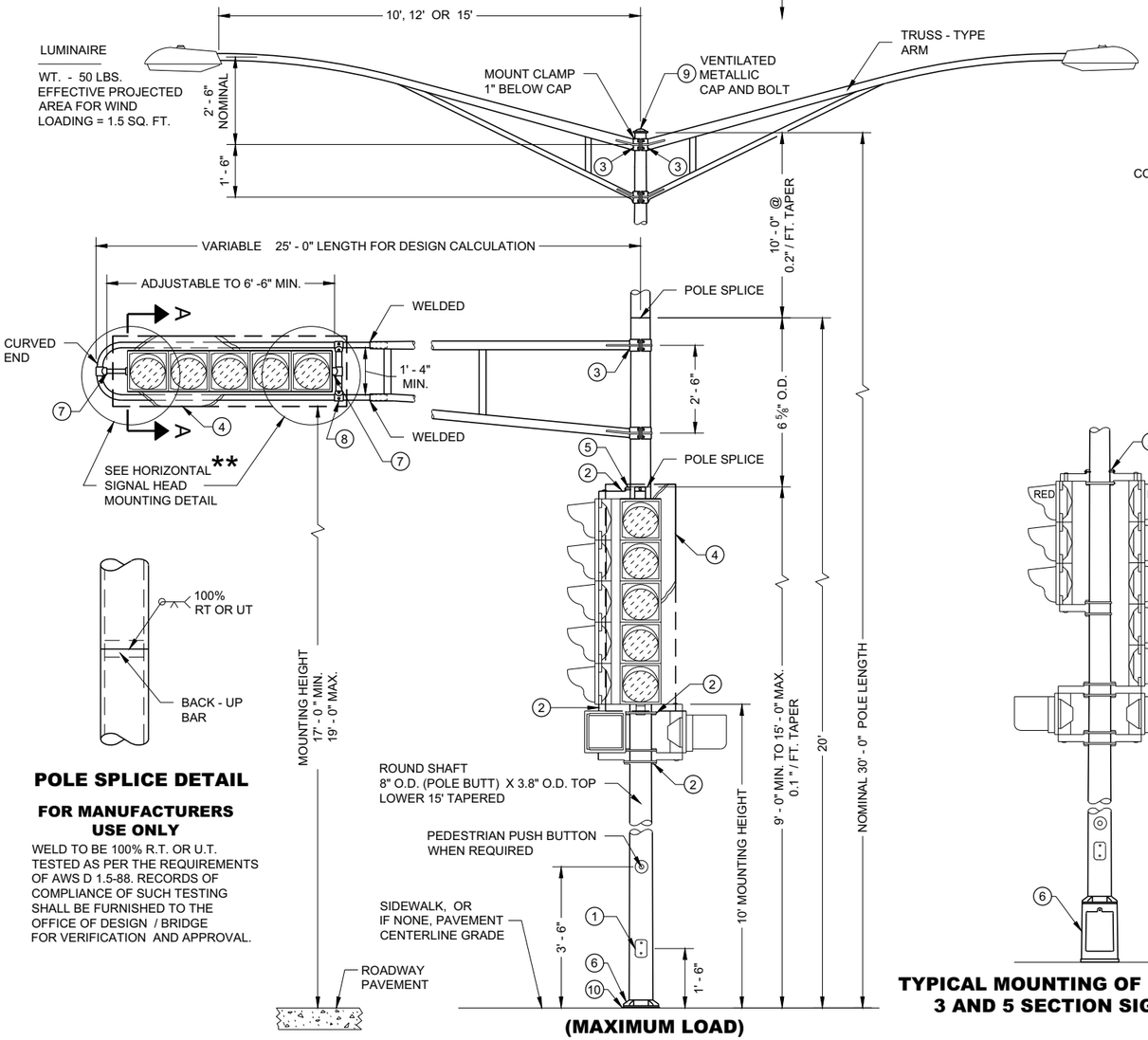
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SECTION A-A



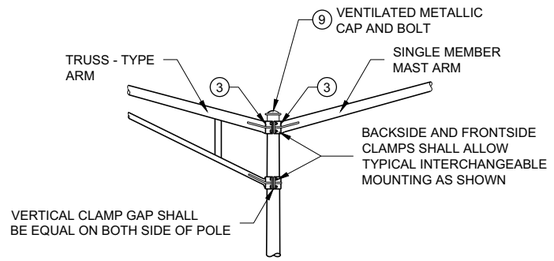


POLE SPLICE DETAIL

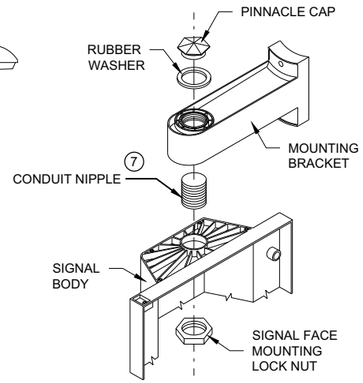
FOR MANUFACTURERS USE ONLY

WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN / BRIDGE FOR VERIFICATION AND APPROVAL.

(MAXIMUM LOAD)

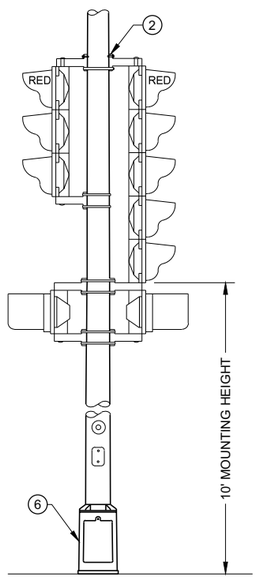


INTERCHANGEABLE MOUNTING DETAIL

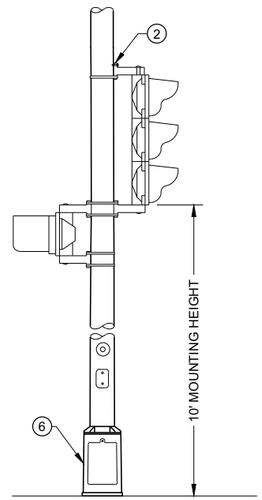


SIGNAL FACE MOUNTING DETAIL

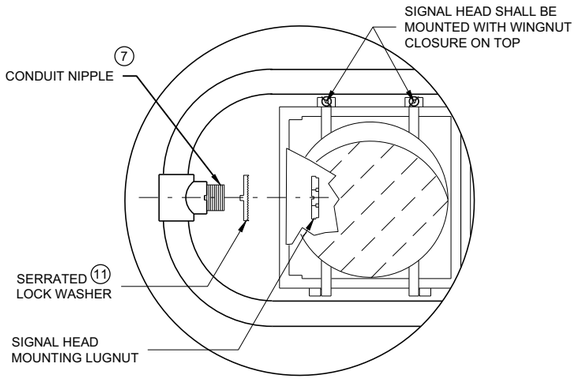
(BANDED)



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE



HORIZONTAL SIGNAL HEAD ** MOUNTING DETAIL

** SIGNAL HEAD ATTACHMENT ALSO APPLIES TO MOUNTING AT CROSS BAR

TYPE 3 POLE MOUNTING CONFIGURATION

GENERAL NOTES

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

ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL.

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

A PULL WIRE / ROPE SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

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

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

(1) 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) ¼" X ¾" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING.

(3) GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE ONE OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.

(6) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED. UNDER MAX LOADING, TYPE 3 POLE SHALL BE MOUNTED DIRECTLY TO ITS CONCRETE BASE.

(7) 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 FACES AND BRACKET ENDS.

(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.

(9) FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

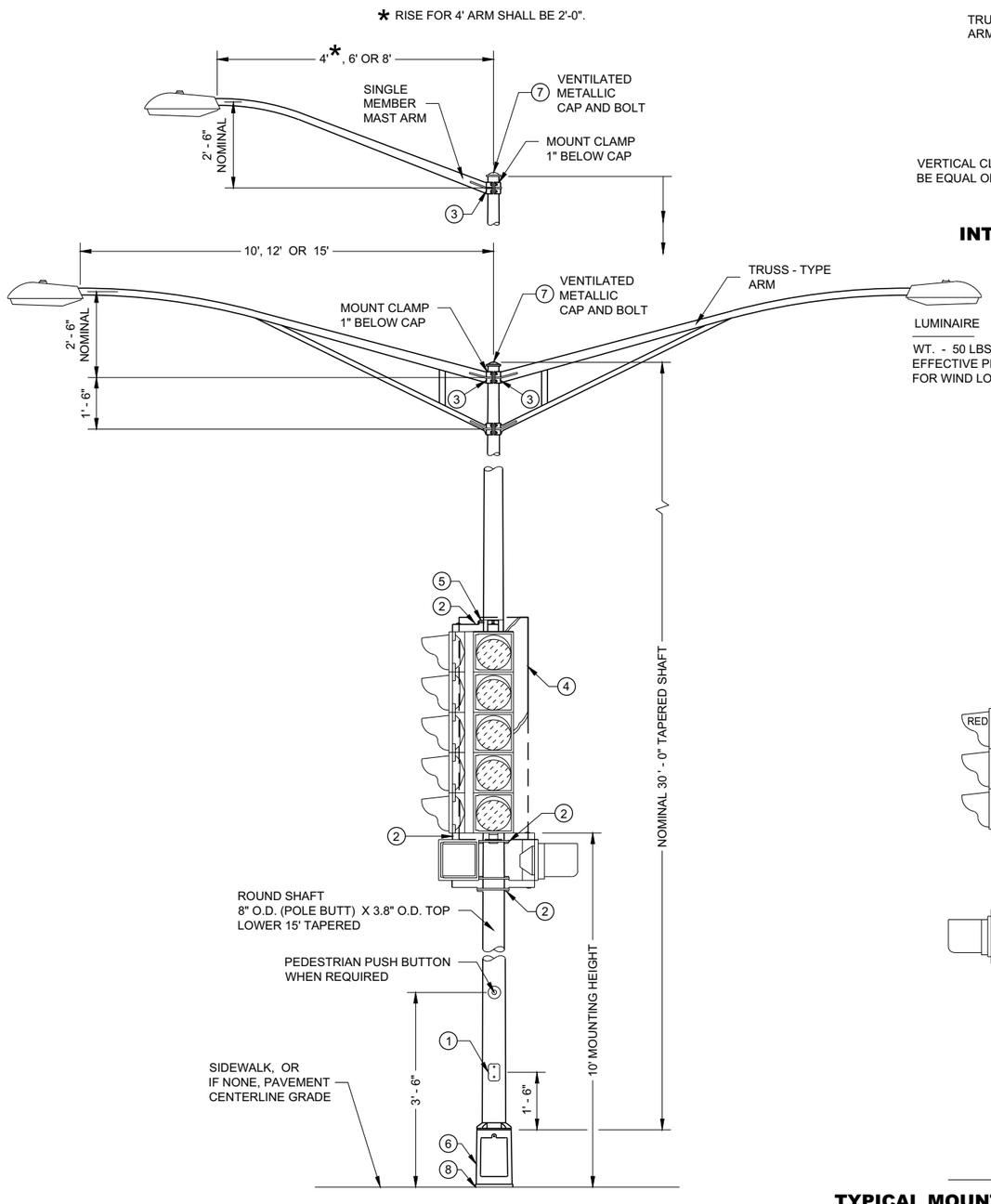
(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

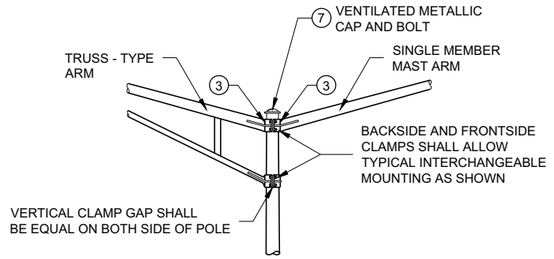
POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS TYPE 3 (HEAVY DUTY)

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(MAXIMUM LOAD)



INTERCHANGEABLE MOUNTING DETAIL

GENERAL NOTES

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

ALL TYPE 4 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL WITH A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

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

A PULL WIRE / ROPE SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 ⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

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

(1) 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) ¼" X ¾" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING.

(3) GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 ⅜" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

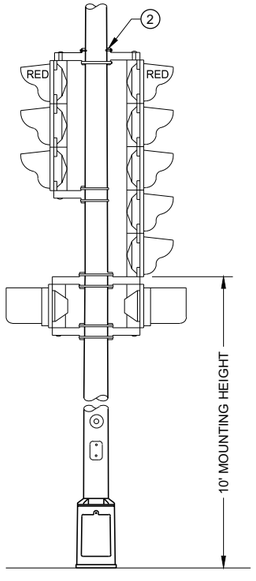
(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE ONE OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.

(6) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

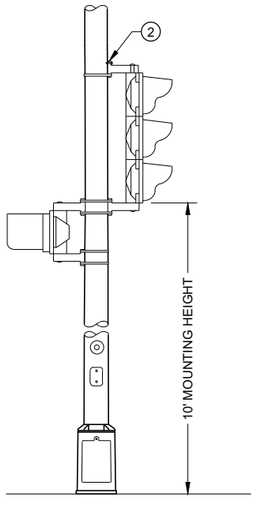
(7) FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(8) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.

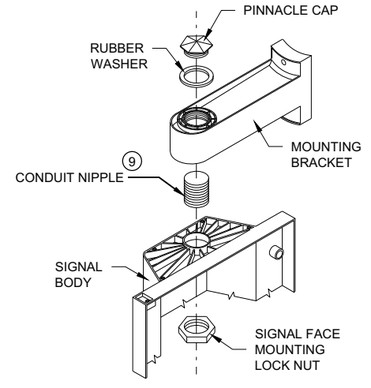
(9) USE 1 ½" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 ½" OPENING IN SIGNAL FACES AND BRACKET ENDS.



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE



SIGNAL FACE MOUNTING DETAIL
(BANDED)

TYPE 4 POLE MOUNTING CONFIGURATION

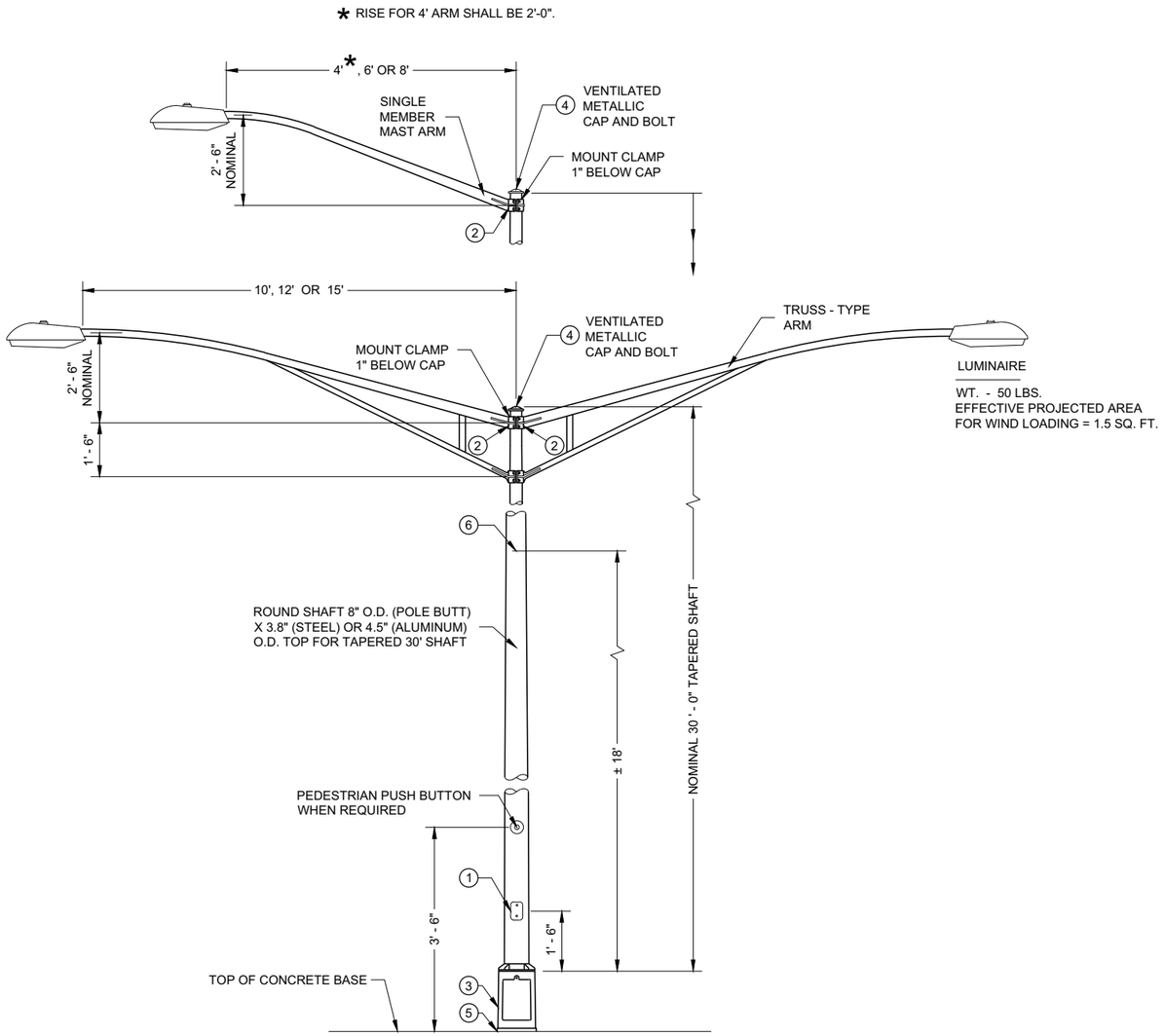
POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4

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TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY

GENERAL NOTES

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

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

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

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

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

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

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

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 ⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

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

(1) 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) ¼" X ¾" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.

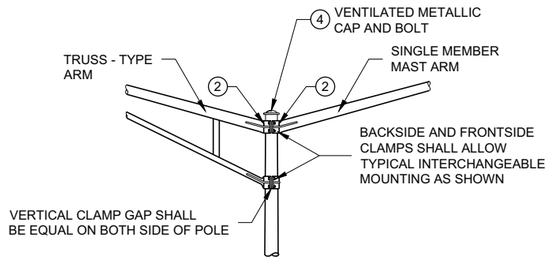
(2) GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 ⅜" HOLE IN POLE SHAFT FOR WIRING.

(3) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

(4) FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(5) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.

(6) INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.



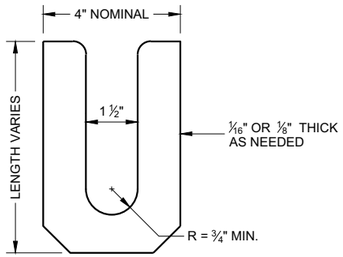
INTERCHANGEABLE MOUNTING DETAIL

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

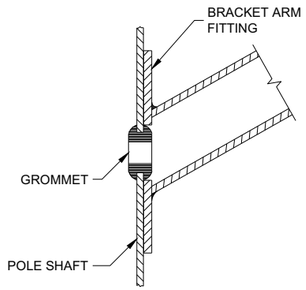
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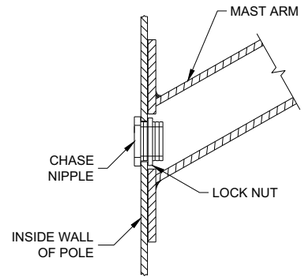
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LEVELING SHIM (1)
SHALL BE ALUMINUM



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.

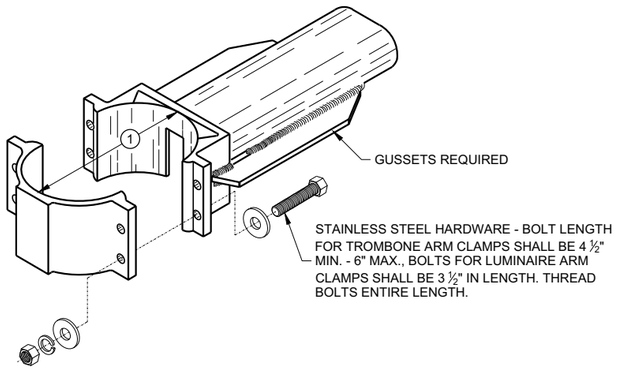
(1) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(2) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

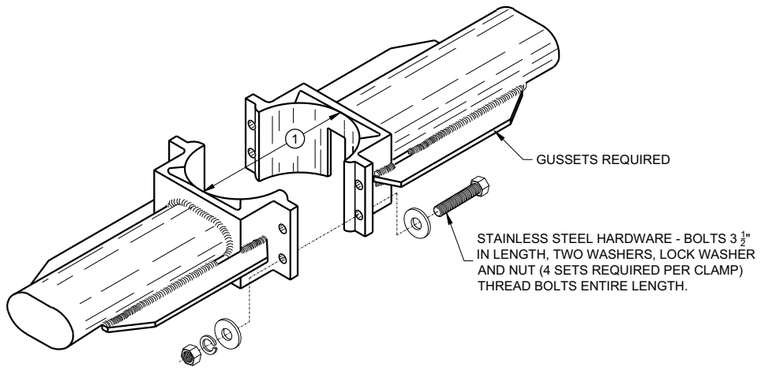
(3) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(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.

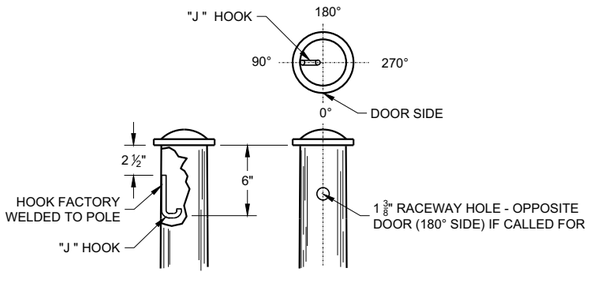
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



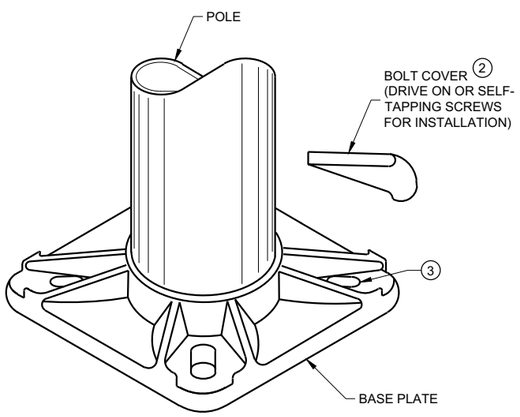
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



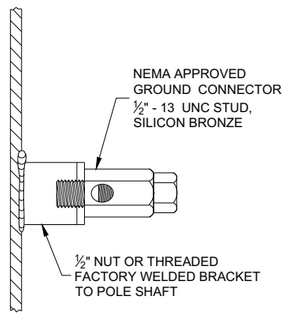
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

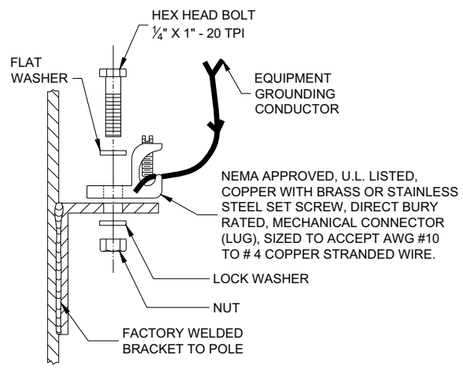


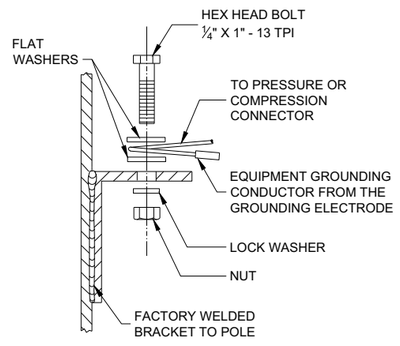
TYPICAL "J" HOOK LOCATION



BASE PLATE







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

HARDWARE DETAILS FOR POLE MOUNTING

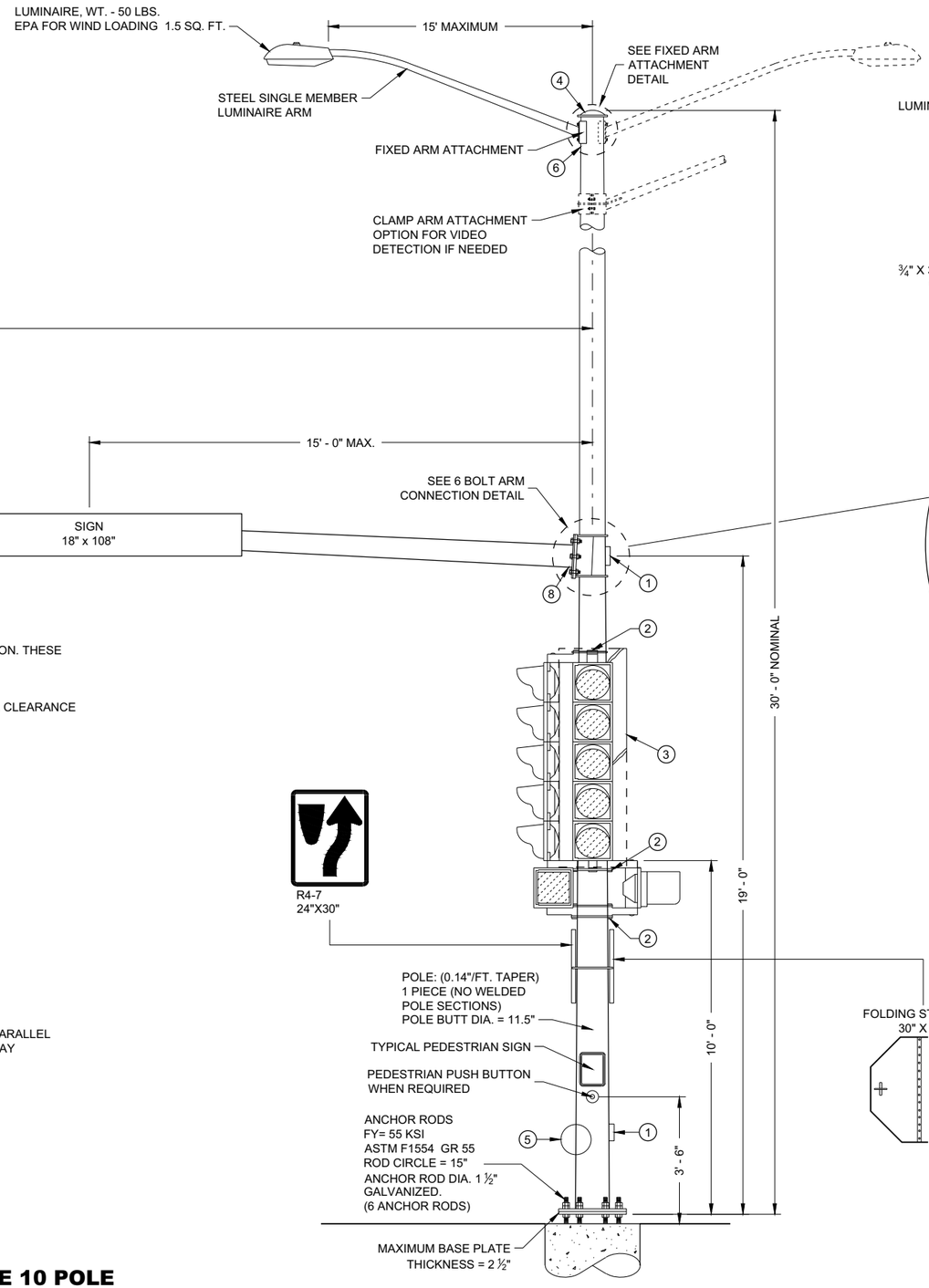
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI 113

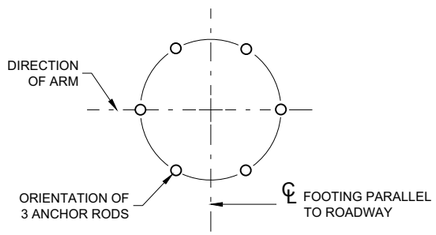
FHWA

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SDD 09E01 - 15g

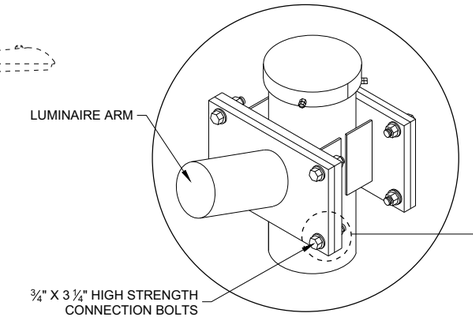


* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

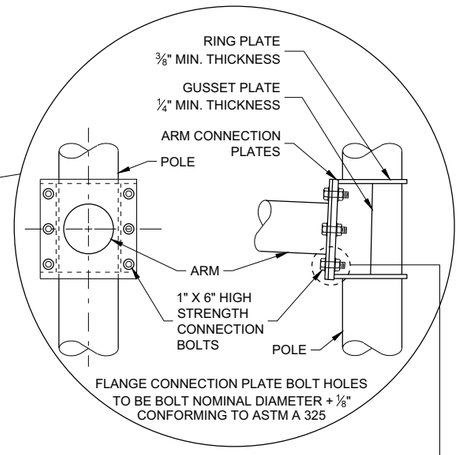
** SIGNALS MAY BE ADJUSTED ±1' - 0" MAXIMUM TO ACCOMMODATE FOR VERTICAL CLEARANCE



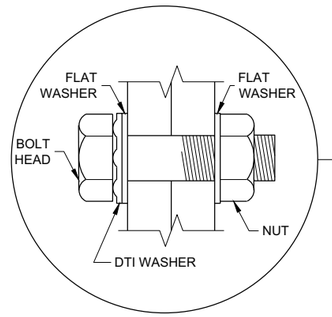
ANCHOR ROD LOCATION



FIXED ARM ATTACHMENT DETAIL



6 BOLT ARM CONNECTION DETAIL



RECOMMENDED BOLT ASSEMBLY DETAIL

TYPE 10 POLE
15' - 30' MONOTUBE ARM
(MAXIMUM LOAD)

TYPE 10 POLE
15' - 30' MONOTUBE ARM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

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SDD 09E08 - 09e

GENERAL NOTES

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

OVER HEIGHT POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

OVER HEIGHT POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35-FOOT TO 55-FOOT.

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

RING-STIFFENED BUILT-UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE (1) PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

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

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNAL 2015 1ST EDITION (INCLUDING 2017 INTERIM REVISIONS) AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" S.S. BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEADS AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

(1) DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

(2) SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).

(3) SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.

(4) THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.

(5) FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.

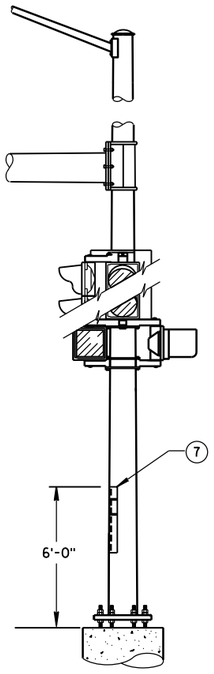
(6) FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.

(7) INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

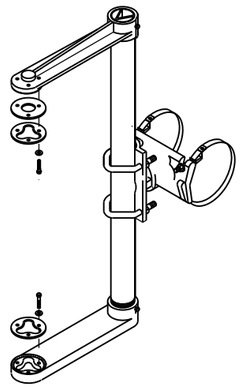
STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

MOUNTING HEIGHT SHALL BE 6'-0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

(8) FACTORY DRILLED ½" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

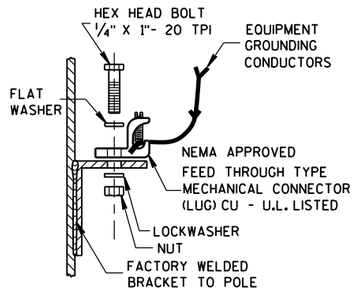


STRUCTURAL IDENTIFICATION PLAQUE PLACEMENT



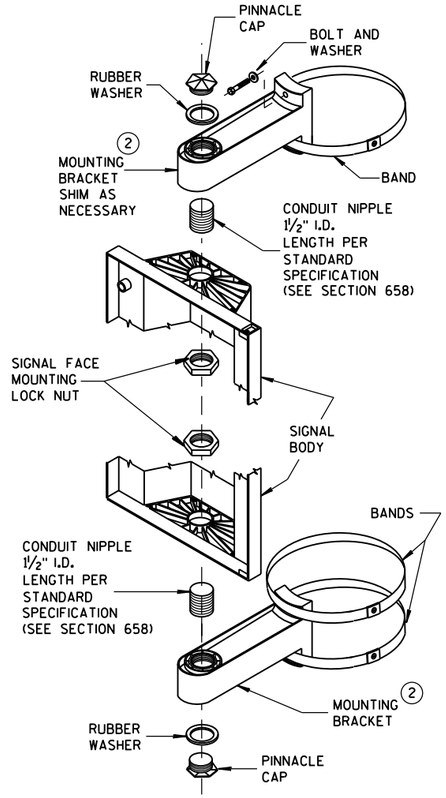
SIGNAL FACE MOUNTING BRACKET DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

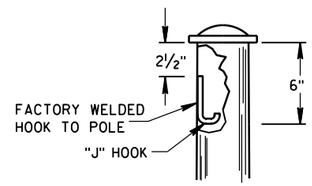


TYPICAL GROUNDING CONNECTIONS (5)

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



SIGNAL FACE VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT (6)

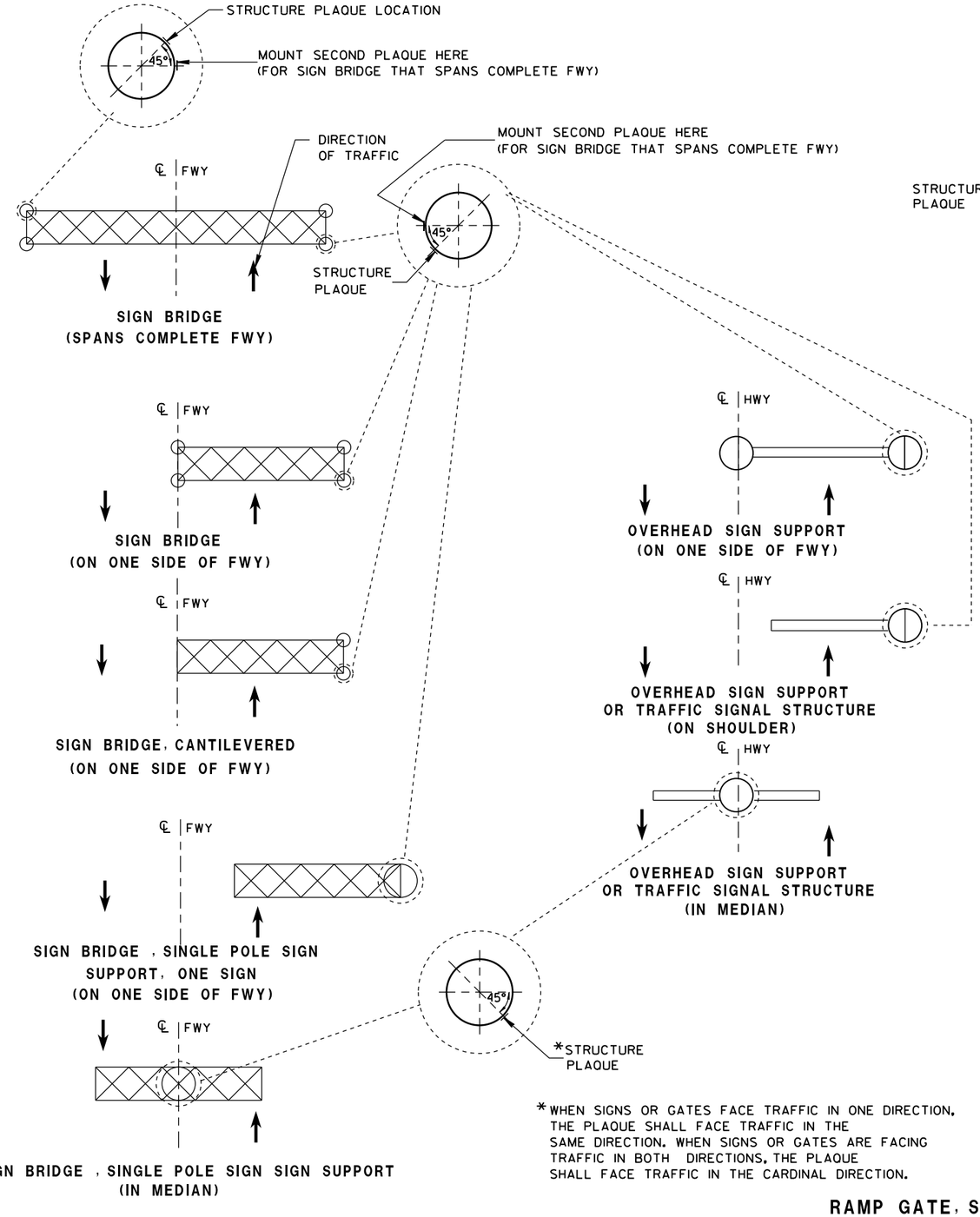
GENERAL NOTES AND HARDWARE DETAILS FOR OVER HEIGHT TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2017 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

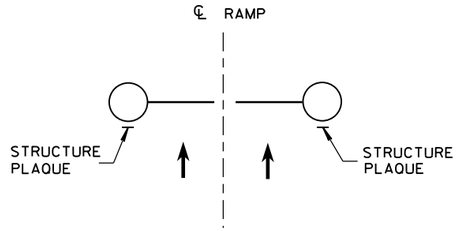
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S.D.D. 9 E 12-1e

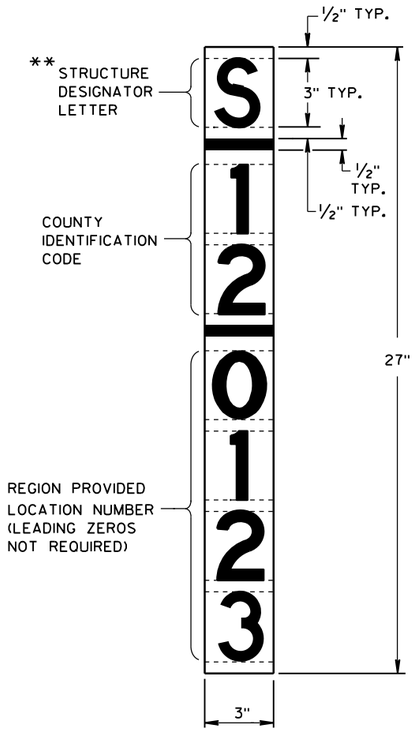


* WHEN SIGNS OR GATES FACE TRAFFIC IN ONE DIRECTION, THE PLAQUE SHALL FACE TRAFFIC IN THE SAME DIRECTION. WHEN SIGNS OR GATES ARE FACING TRAFFIC IN BOTH DIRECTIONS, THE PLAQUE SHALL FACE TRAFFIC IN THE CARDINAL DIRECTION.

LOCATION OF RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT & TRAFFIC SIGNAL STRUCTURE PLAQUES



**RAMP GATE
(ACROSS FWY ON-RAMP)**



** LETTER "G" UTILIZED FOR RAMP GATES. LETTER "S" UTILIZED FOR SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, AND TRAFFIC SIGNALS.

RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT AND TRAFFIC SIGNAL STRUCTURE PLAQUE FOR SIGN BRIDGES AND OVERHEAD SIGN SUPPORT WHICH ARE NOT STRUCTURE MOUNTED

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.

IF THE PROPOSED SIGN BRIDGE OR OVERHEAD SIGN SUPPORT IS REPLACING AN EXISTING SIGN BRIDGE OR OVERHEAD SIGN SUPPORT, A NEW IDENTIFICATION PLAQUE WILL BE REQUIRED.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS

A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS

ALUMINUM SHAFTS - 3 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.

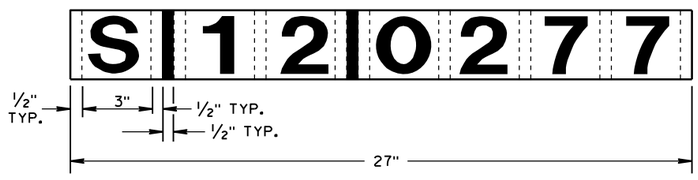
FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE

LINES - BLACK, ½" WIDE, SELF-ADHESIVE

CHARACTERS:- BLACK, SELF ADHESIVE, SERIES "D", SIZE AS SHOWN.

FOR SIGN BRIDGES, STRUCTURE MOUNTED, THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY AS SHOWN ON THE DRAWING. THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY TO THE BACK OF THE SIGN, BETWEEN THE ALUMINUM EXTRUSIONS, NEAR THE TOP LEFT HAND CORNER OF THE SIGN. THE BASE MATERIAL SHALL BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE ALUMINUM SURFACE. PRIOR TO ADHERING THE MATERIAL, THE ALUMINUM SURFACE SHALL BE SMOOTH, CLEAN AND DRY.

WHERE SIGN BRIDGE ILLUMINATION IS PROVIDED, THE STRUCTURE MUST ALSO HAVE A SIGN BRIDGE CIRCUIT PLAQUE AS SHOWN IN THE ELECTRICAL DETAILS.



IDENTIFICATION PLAQUE FOR SIGN BRIDGE, STRUCTURE MOUNTED

STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, & TRAFFIC SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

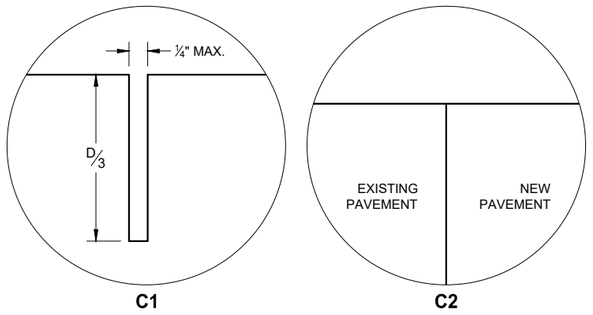
APPROVED
12/4/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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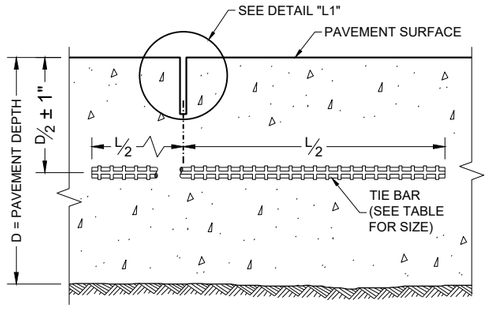
S.D.D. 12 A 4-3

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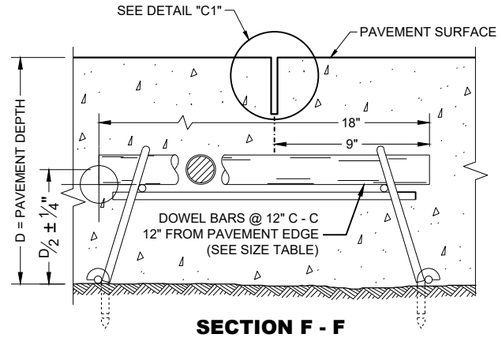
S.D.D. 12 A 4-3



TRANSVERSE JOINTS



SECTION C - C
SAWED JOINT



SECTION F - F
CONTRACTION JOINT

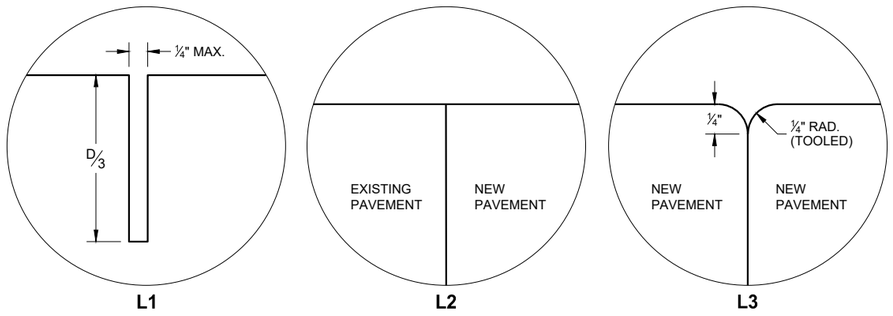
GENERAL NOTES

ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

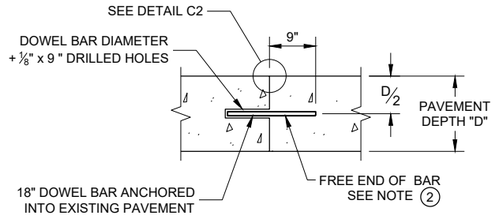
PROVIDE A MIMIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

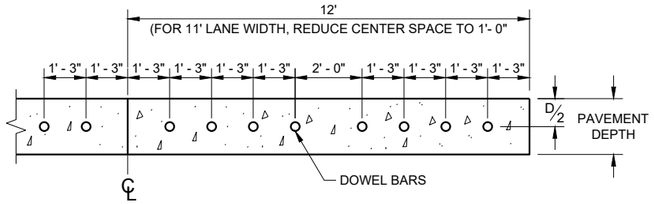
(2) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



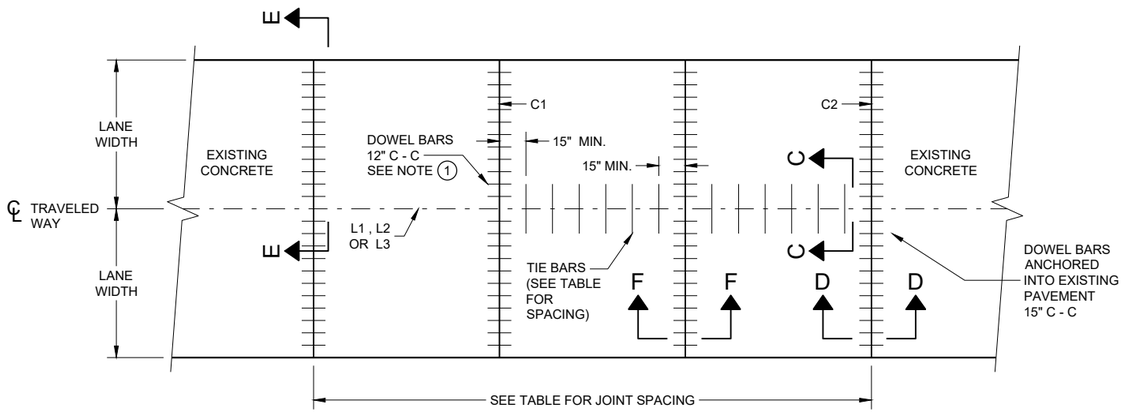
LONGITUDINAL JOINTS



SECTION D - D



SECTION E - E
SPACING OF DOWEL BARS
ANCHORED INTO EXISTING PAVEMENT



PLAN VIEW
CONCRETE BASE
CONTRACTION JOINT LOCATIONS

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.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8" & ABOVE	1 ¼"	15'

CONCRETE BASE

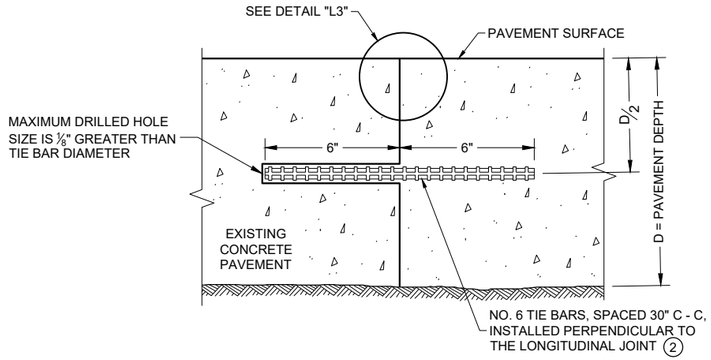
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 13C15 - 08a
SDD 13C15 - 08a

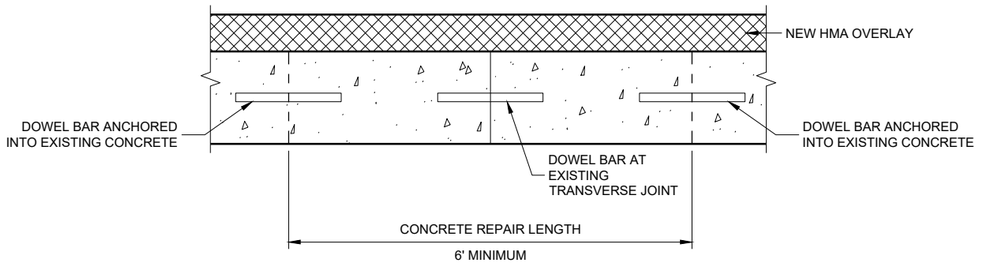
GENERAL NOTES

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.

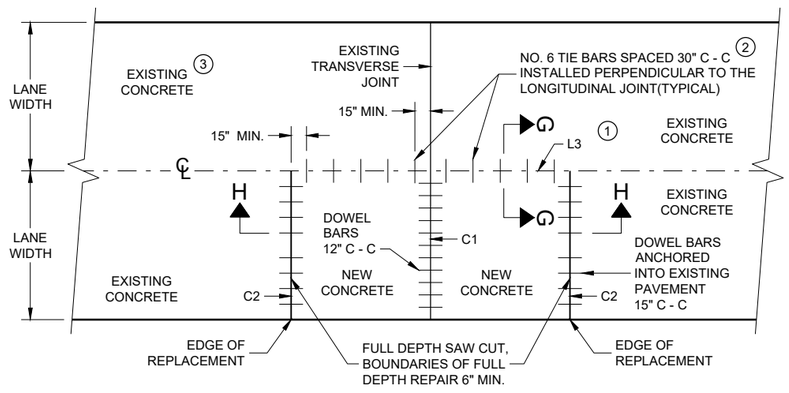


SECTION G - G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H - H



PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR

6

SDD 13C15 - 08b

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Peter Kemp P.E.
PAVEMENT SUPERVIS

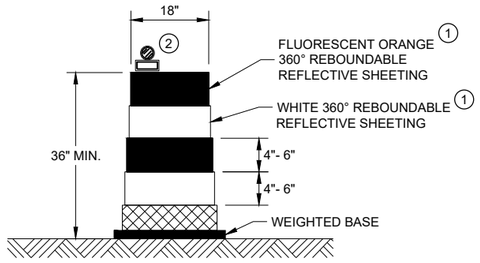
FHWA

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SDD 13C15 - 08b

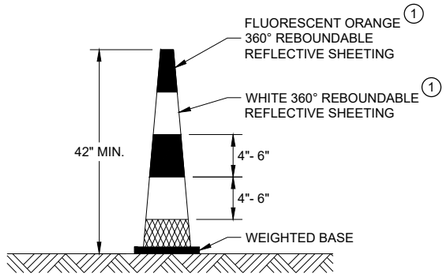
GENERAL NOTES

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

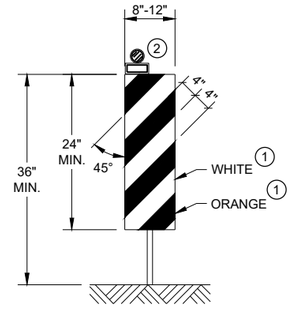
BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

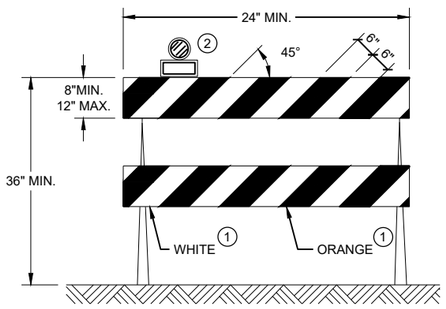
DO NOT USE IN TAPERS
½ SPACING OF DRUMS

BALLAST WIDTHS
RANGE FROM 14"-20"



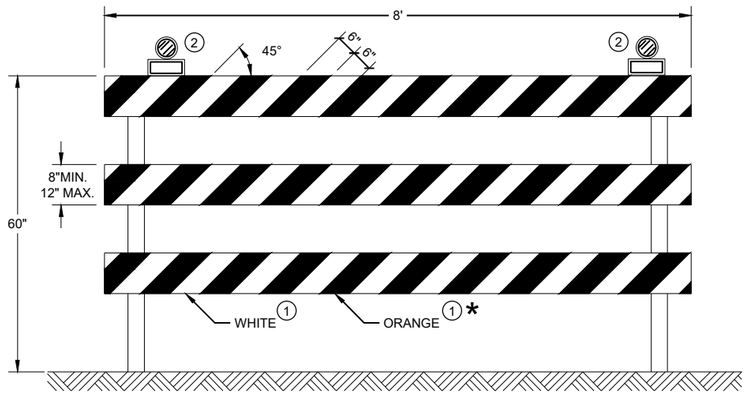
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

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SDD 15C11 - 10b

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SDD 15C11 - 10b

GENERAL NOTES

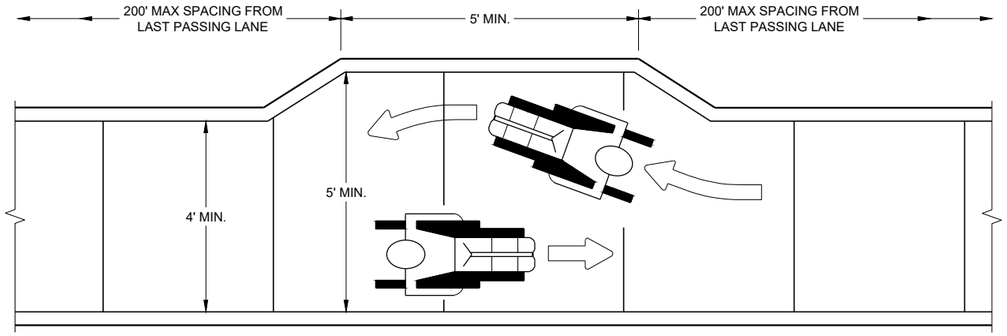
BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST

(1) REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

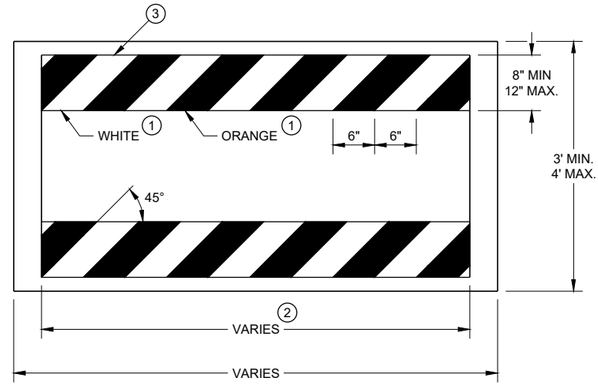
(2) SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.

(3) PLACE SHEETING ON BOTH SIDES OF THE BARRICADE.

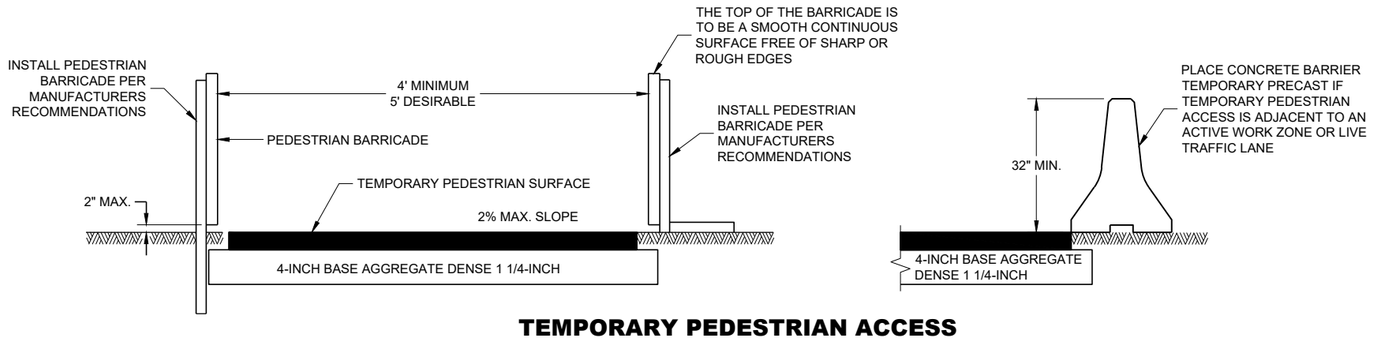
* USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.



NARROW SIDEWALK PASSING DETAIL



TEMPORARY PEDESTRIAN BARRICADE*

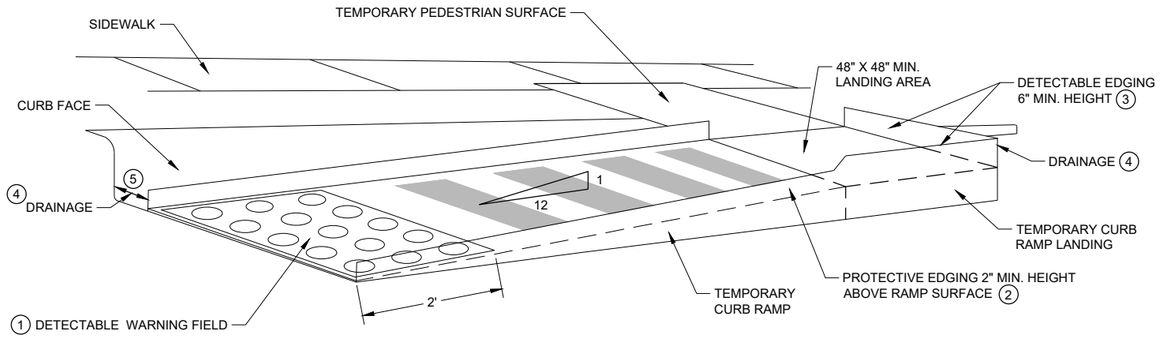


TEMPORARY PEDESTRIAN ACCESS

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

6

SDD 15D30 - 09a



PERSPECTIVE VIEW

GENERAL NOTES

CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN ½" WIDTH.

CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED ½". LATERAL EDGES MAY BE VERTICAL UP TO ¼" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN ¼" AND ½".

(1) INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS.

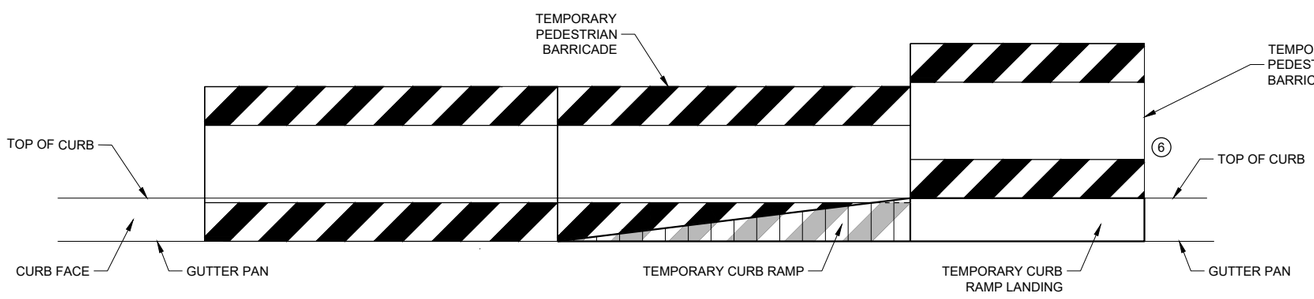
(2) PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

(3) DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

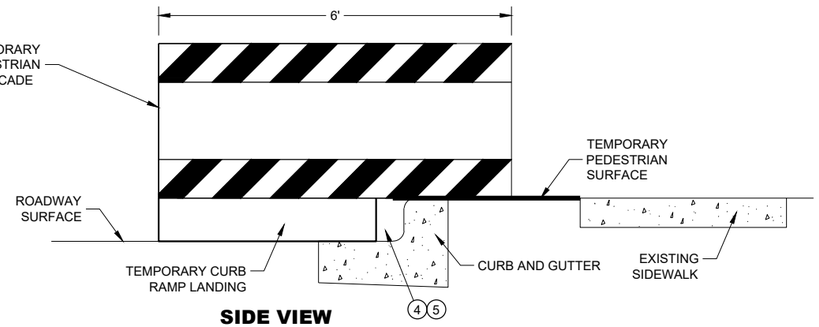
(4) DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

(5) ENSURE CURB RAMP IS OUT OF THE GUTTER PAN.

(6) IF ONLY PART OF THE END PANEL OF TEMPORARY PEDESTRIAN BARRICADE PANEL IS NEEDED, EXTEND EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL HERE.



FRONT VIEW



SIDE VIEW

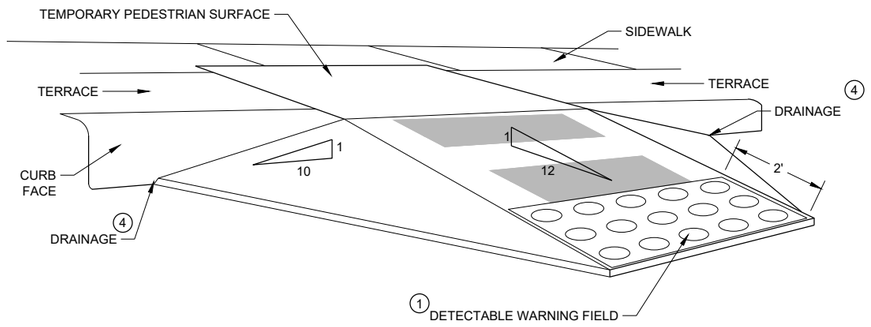
TEMPORARY CURB RAMP PARALLEL TO CURB

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

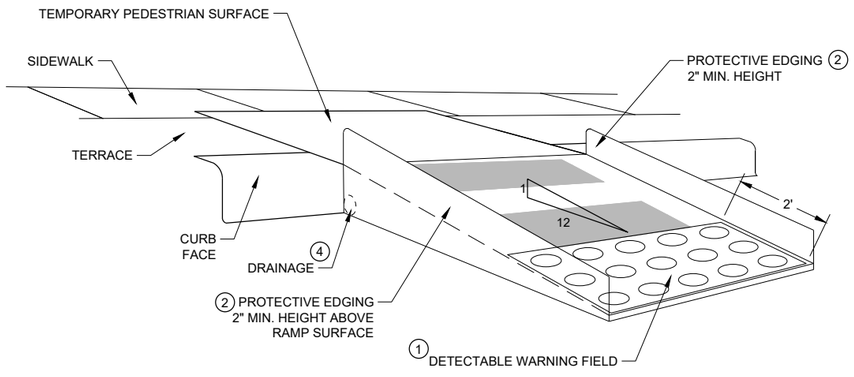
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 15D30 - 09b



WITH SIDE APRON (5)



WITH PROTECTIVE EDGE

TEMPORARY CURB RAMP PERPENDICULAR TO CURB

GENERAL NOTES

CURB RAMPS SHALL BE 48" MINIMUM WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN ½" WIDTH.

CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED ½". LATERAL EDGES MAY BE VERTICAL UP TO ¼" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN ¼" AND ½".

(1) INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS

(2) PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

(3) DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

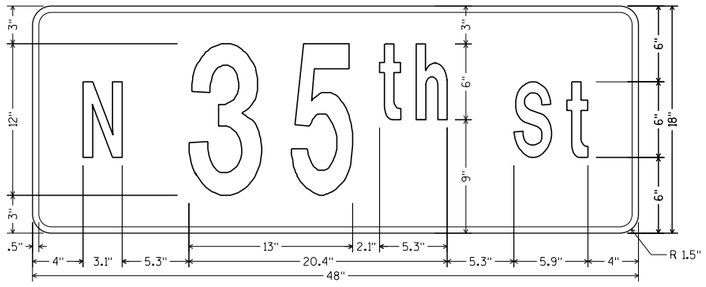
(4) DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

(5) CAN ONLY BE USED FOR RAMPS WITH 6" OR LESS OF VERTICAL CHANGE.

6

SDD 15D30 - 09c

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION



NOTES

1. All Signs Type II
   - Type SH Reflective
2. Color:
   Background - Green
   Message - White
3. All Signs 1/2 Inch White Border
4. All Signs 1 Inch Radius

Message Series - C

7

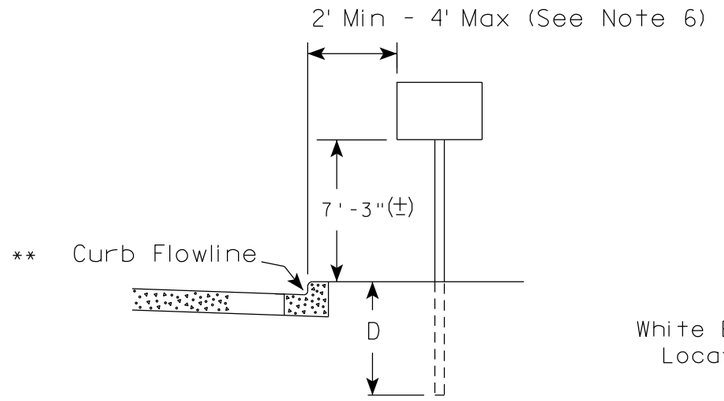
7

PROJECT NO: 2090–16–70	HWY: W. SILVER SPRING DR.	COUNTY: MILWAUKEE	SIGN DETAILS	SHEET 123	E

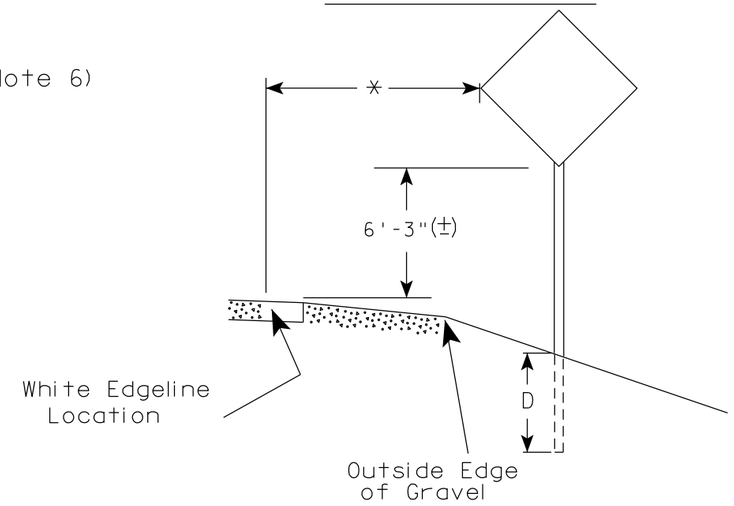
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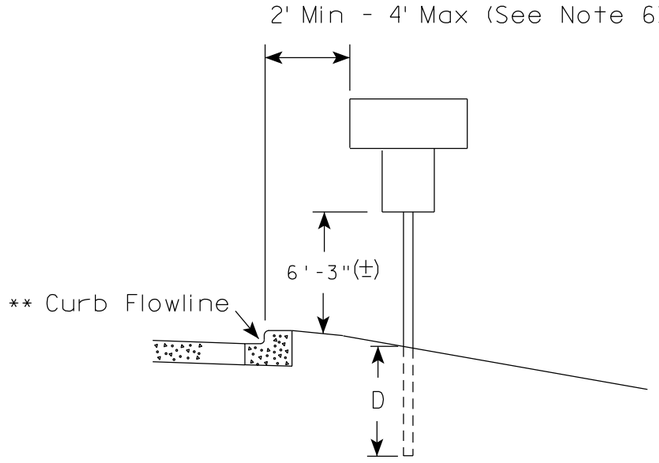
WISDOT/CADDS SHEET 42

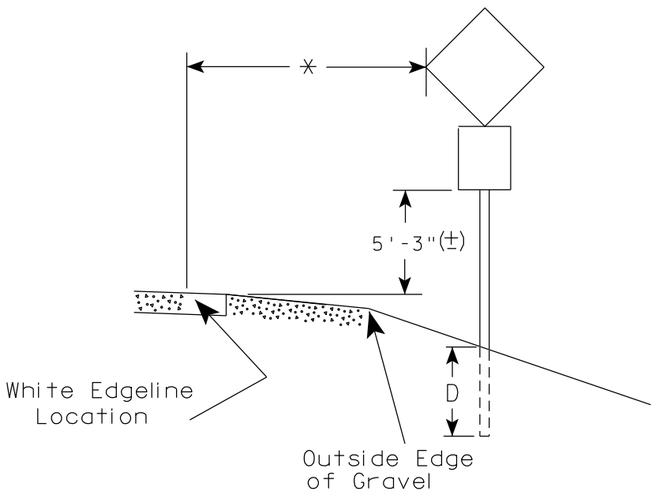
URBAN AREA



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.

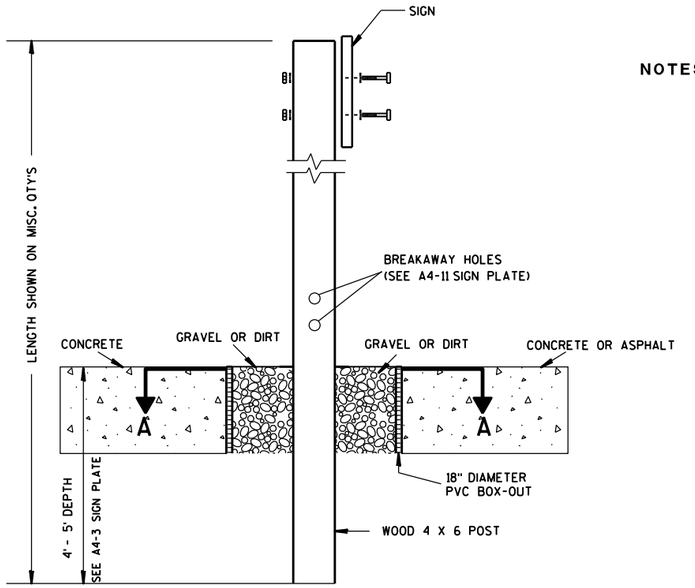
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

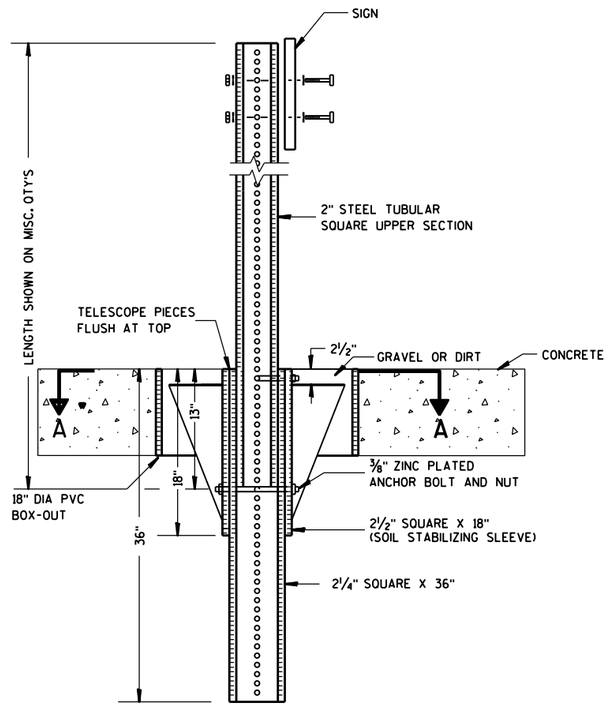
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 124	E



ELEVATION VIEW

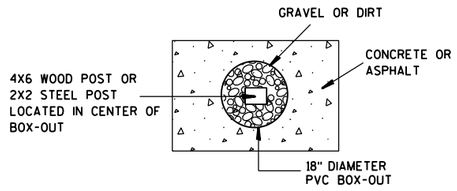
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

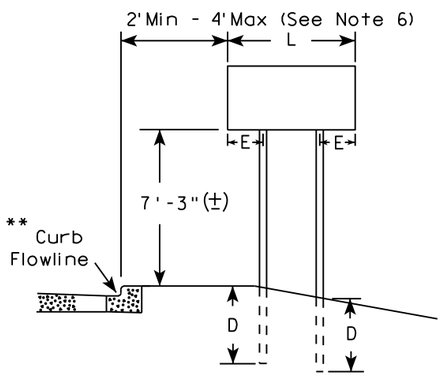
APPROVED Matthew R Rauch
for State Traffic Engineer

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

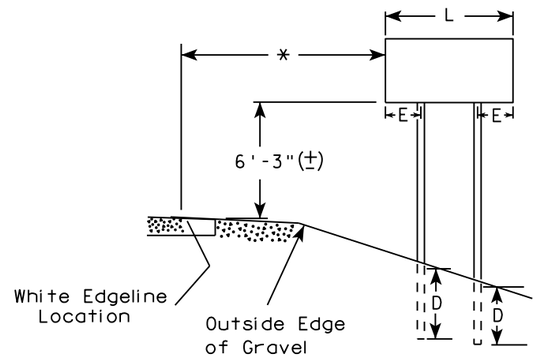
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

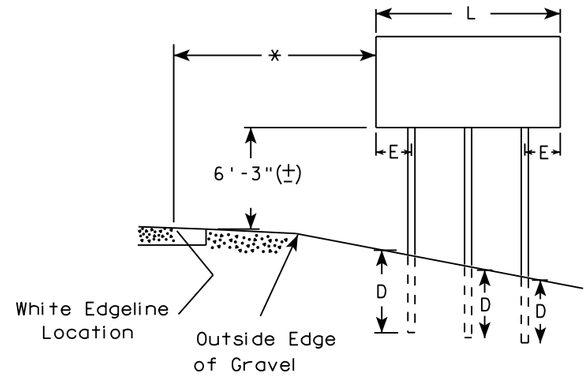
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

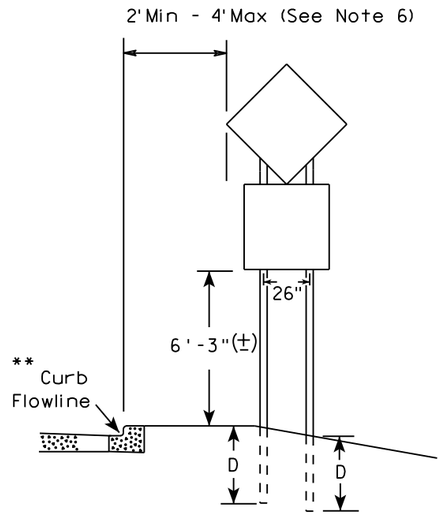
URBAN AREA



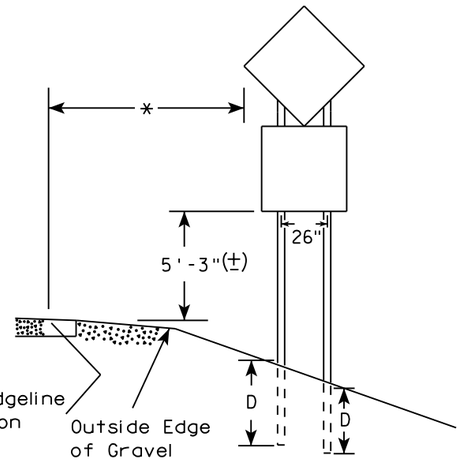
RURAL AREA (See Note 3)







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'

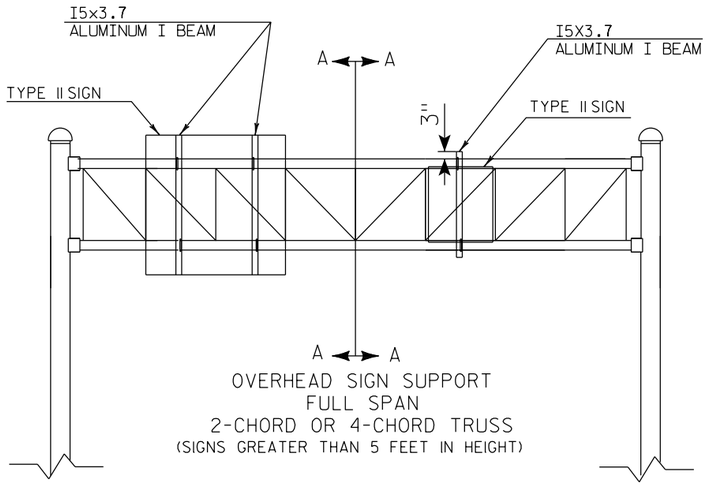
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

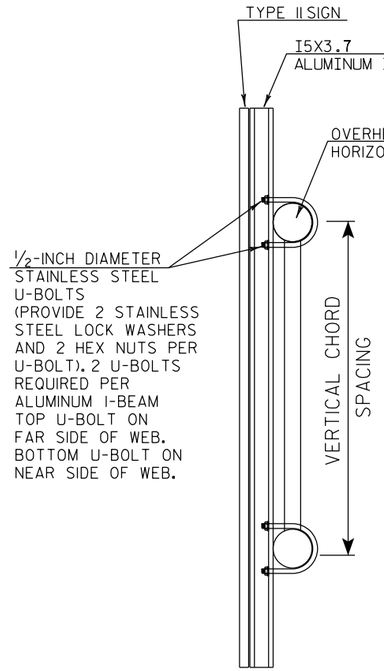
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

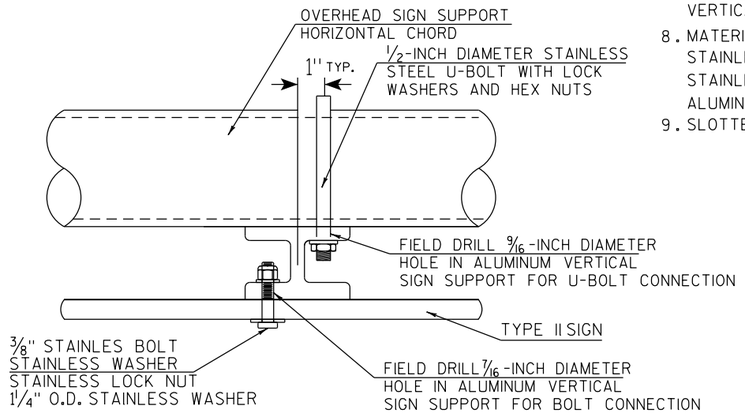
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 126	E



OVERHEAD SIGN SUPPORT
FULL SPAN
2-CHORD OR 4-CHORD TRUSS
(SIGNS GREATER THAN 5 FEET IN HEIGHT)



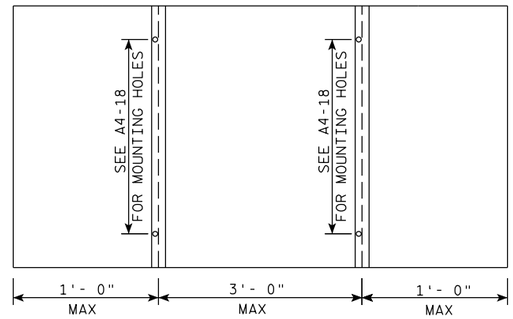
CUT SECTION A-A



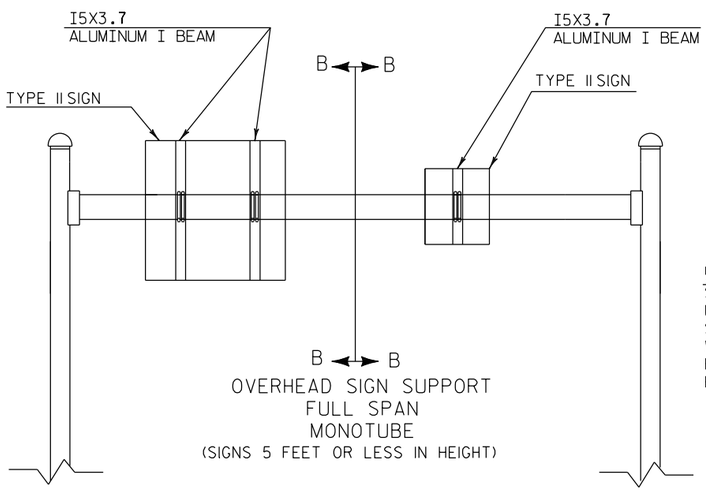
TYPICAL SIGN CONNECTION FOR
2-CHORD OR 4-CHORD TRUSS
PLAN VIEW

GENERAL NOTES

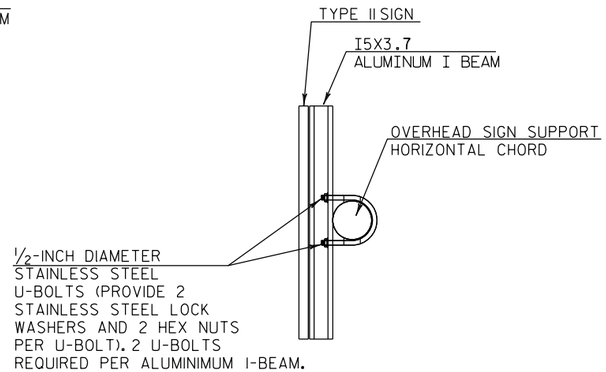
1. USE STAINLESS STEEL U-BOLTS, WASHERS, AND NUTS.
2. USE STAINLESS BOLTS AT BOLT HOLES IN SIGN PANEL PER SIGN PLATE A4-18.
3. USE ALUMINUM VERTICAL SIGN SUPPORT BEAMS HAVING A 5 INCH BEAM DEPTH AND WEIGHT OF 3.7 LBS PER FOOT.
4. U-BOLTS SHALL BE STAINLESS STEEL AND MANUFACTURED TO THE PROPER SIZE TO FIT THE CHORDS OF THE OVERHEAD SIGN STRUCTURE.
5. DIAMETER OF U-BOLTS SHALL BE AS SHOWN.
6. THE LENGTH OF THE ALUMINUM VERTICAL SIGN SUPPORT BEAMS SHALL BE THE SAME AS THE HEIGHT OF THE SIGN THEY ARE SUPPORTING. BEAM LENGTHS MAY BE LONGER FOR PROPER ATTACHMENT TO CHORDS.
7. SEE DETAIL BELOW FOR SPACING OF ALUMINUM VERTICAL SIGN SUPPORTS
8. MATERIAL NOTES:
   STAINLESS STEEL U-BOLTS, BOLTS, AND LOCKWASHERS ASTM 304.
   STAINLESS STEEL HEX NUTS ASTM A276.
   ALUMINUM I-BEAMS ARE 6061-T6.
9. SLOTTED HOLES IN I-BEAMS ARE NOT ALLOWED



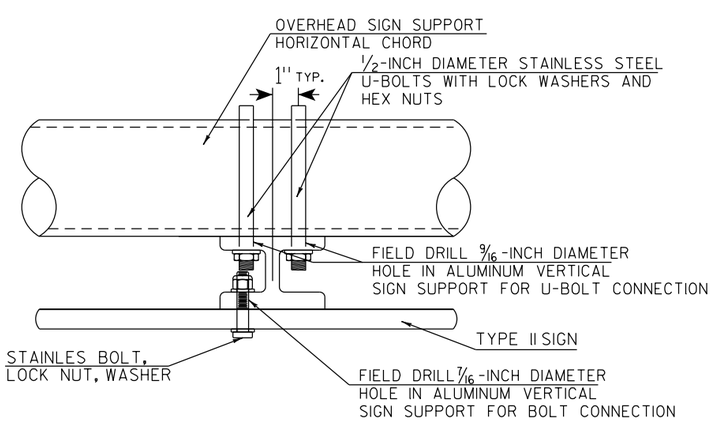
SPACING OF I5X3.7 ALUMINUM
MULTIPLE VERTICAL SIGN SUPPORTS



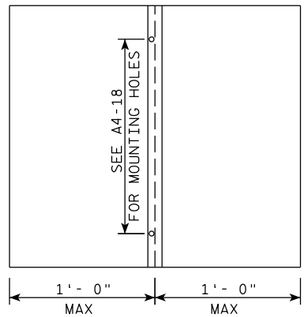
OVERHEAD SIGN SUPPORT
FULL SPAN
MONOTUBE
(SIGNS 5 FEET OR LESS IN HEIGHT)



CUT SECTION B-B



TYPICAL SIGN CONNECTION FOR
MONOTUBE
PLAN VIEW



SPACING OF I5X3.7 ALUMINUM
SINGLE VERTICAL SIGN SUPPORT

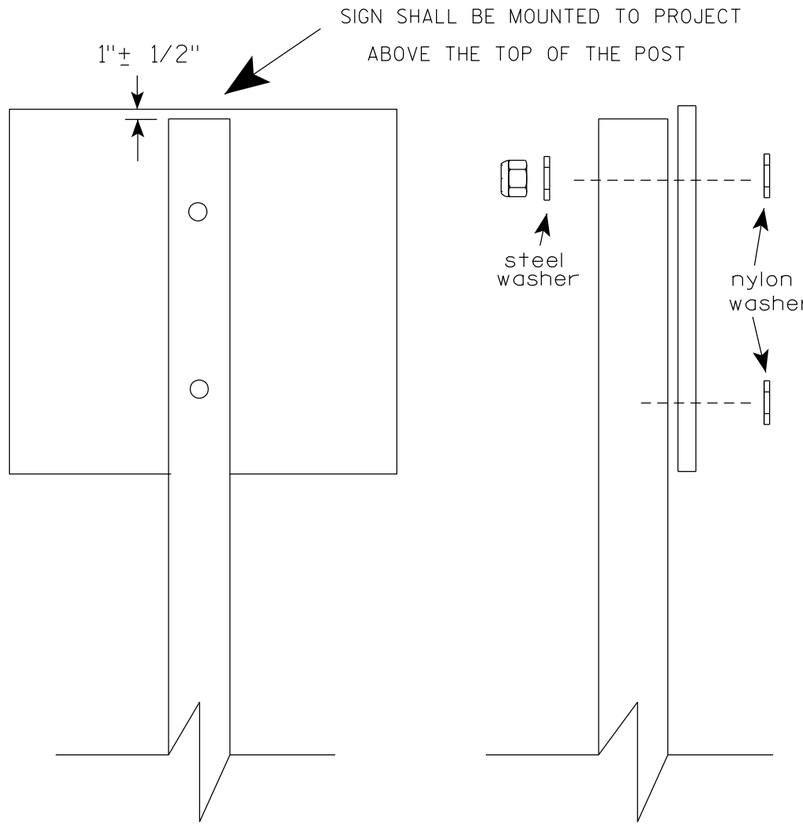
TYPE II SIGN CONNECTION
TO OVERHEAD SIGN SUPPORT

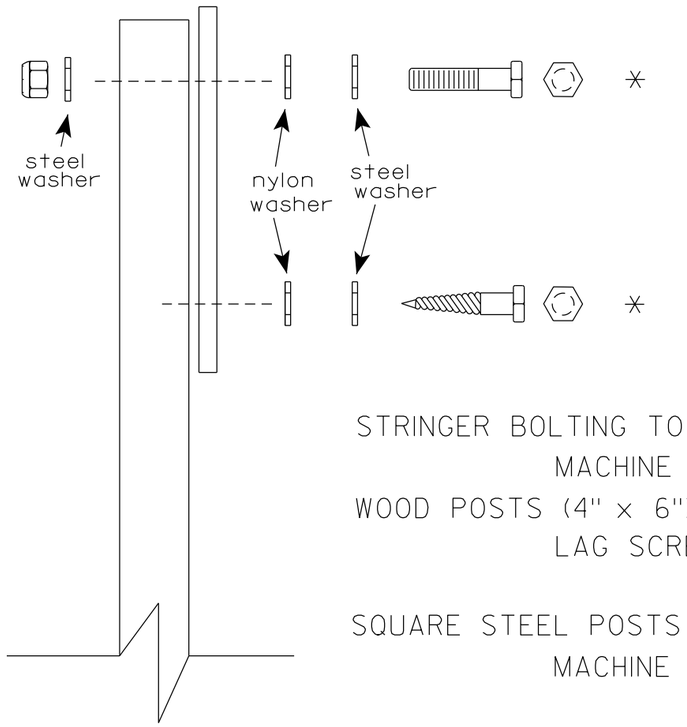
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/07/20 PLATE NO. A4-7B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 127	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

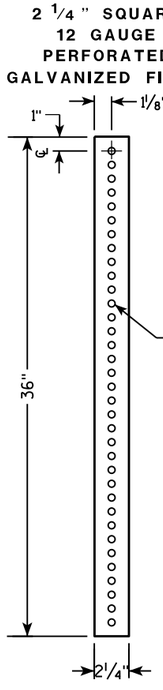
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

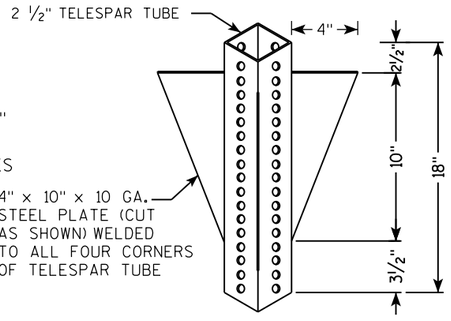
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

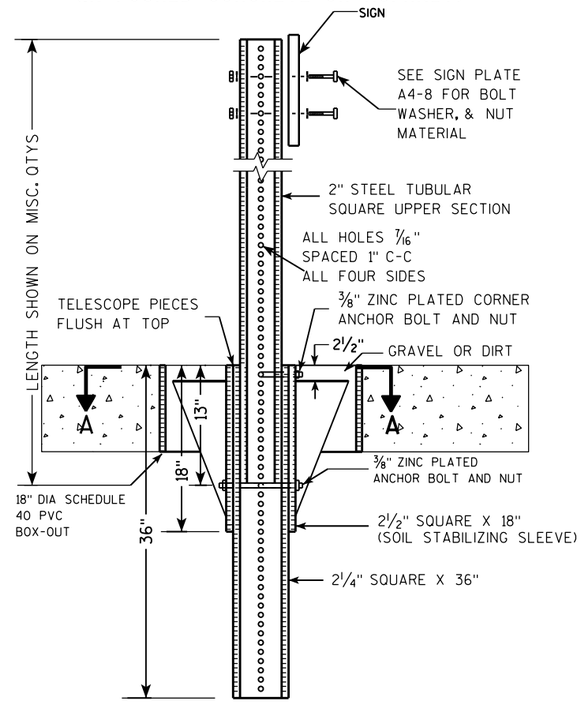
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



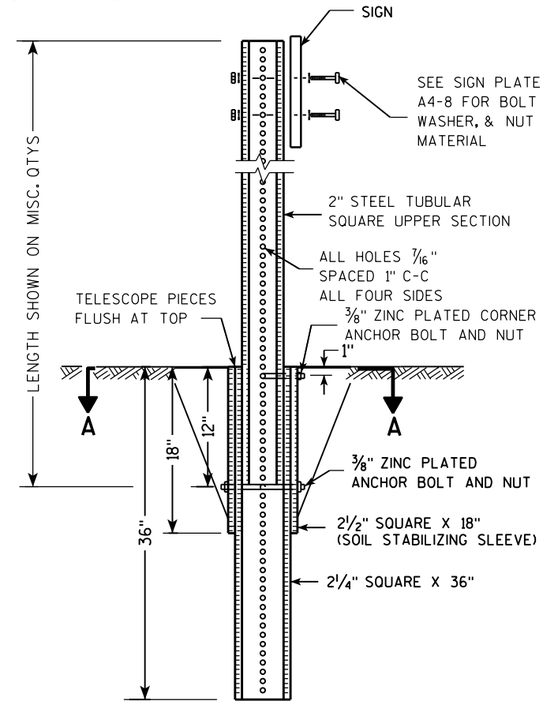
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

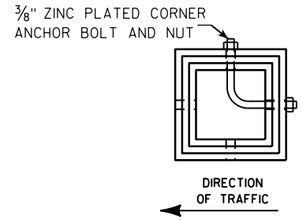


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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

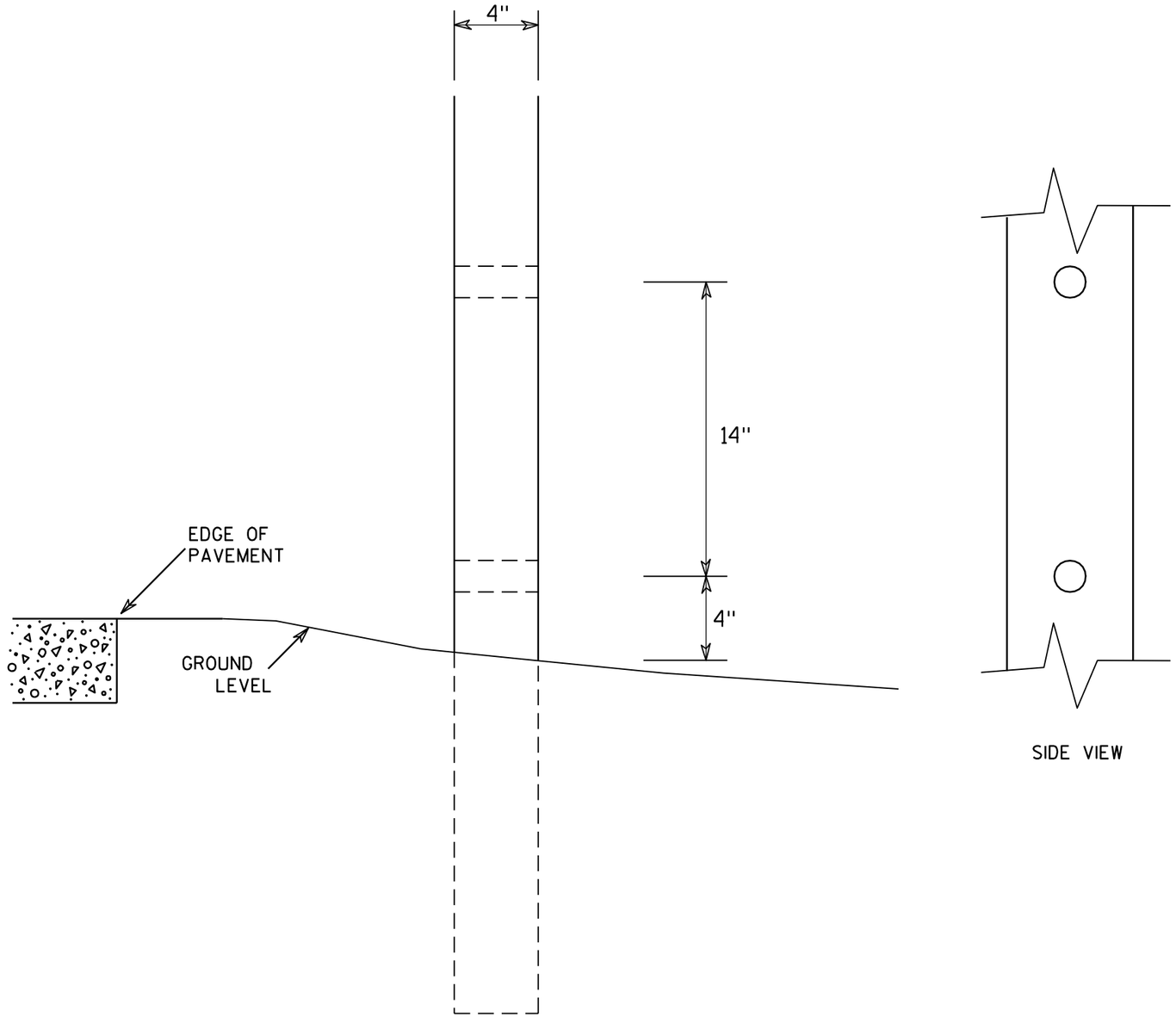
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000
WISDOT/CADDS SHEET 42



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

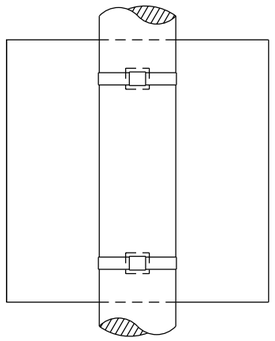
APPROVED Chester J Spang for State Traffic Engineer

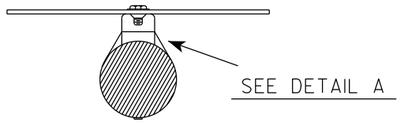
DATE 3/27/97 PLATE NO. A4-11.2

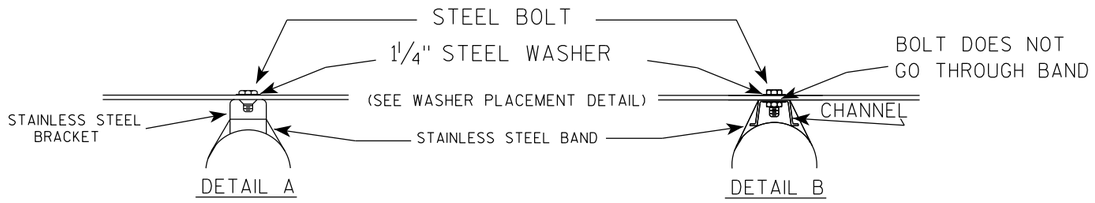
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 130	E

BANDING

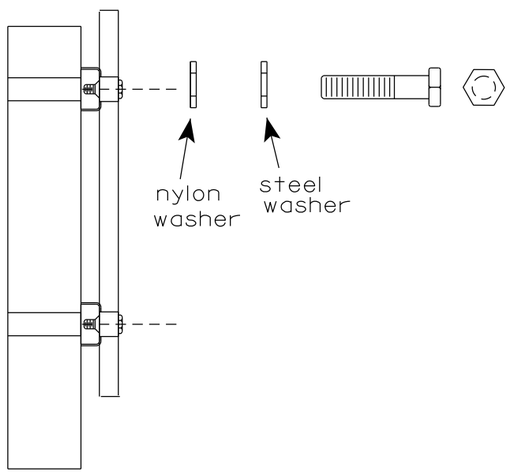
SINGLE SIGN







WASHER PLACEMENT

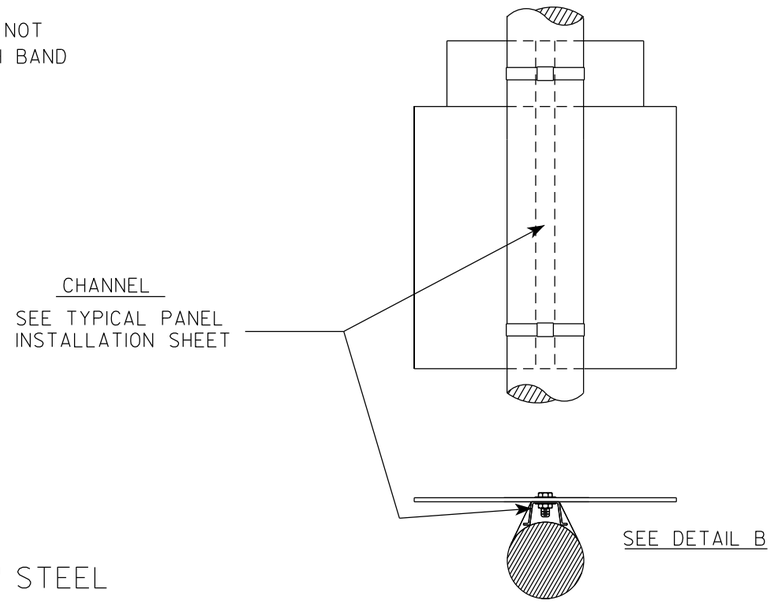


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

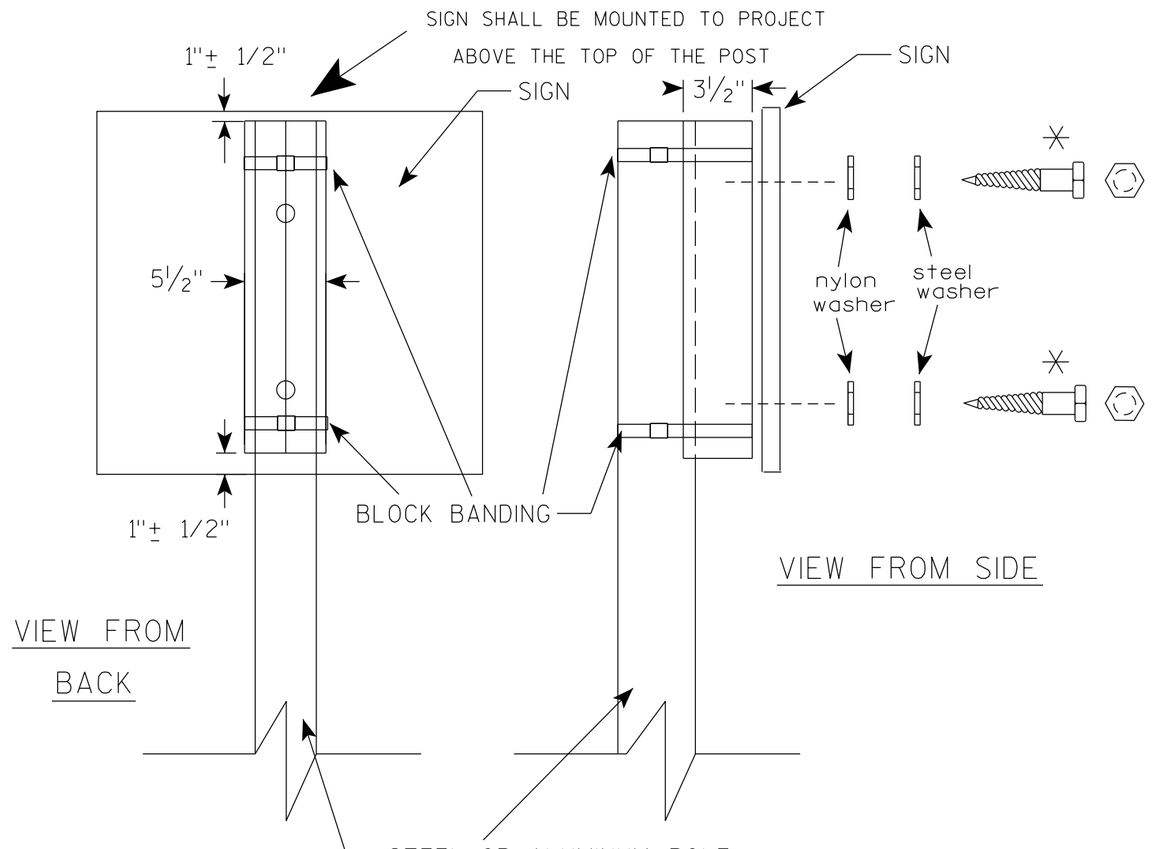
DATE 6/10/19 PLATE NO. A5-9.4

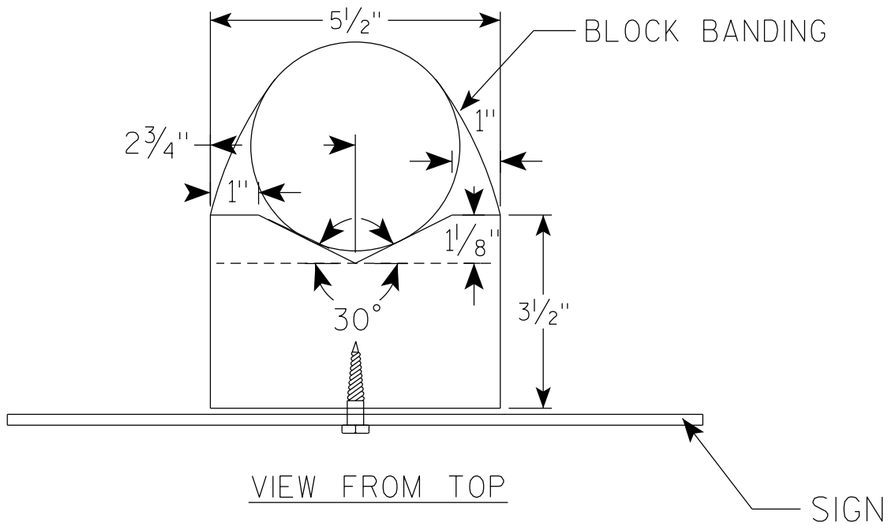
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 131	E

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)

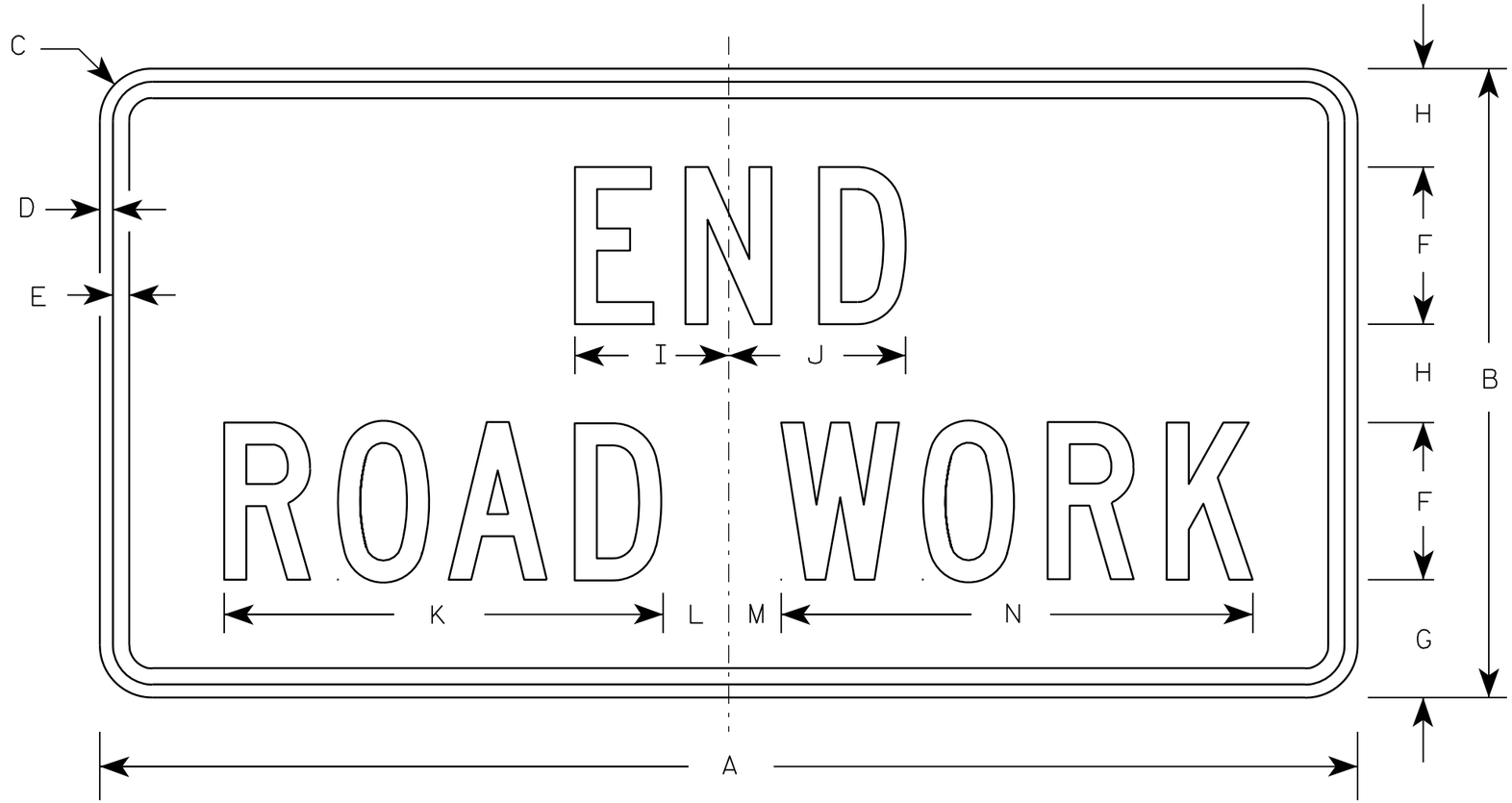
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 132 E



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

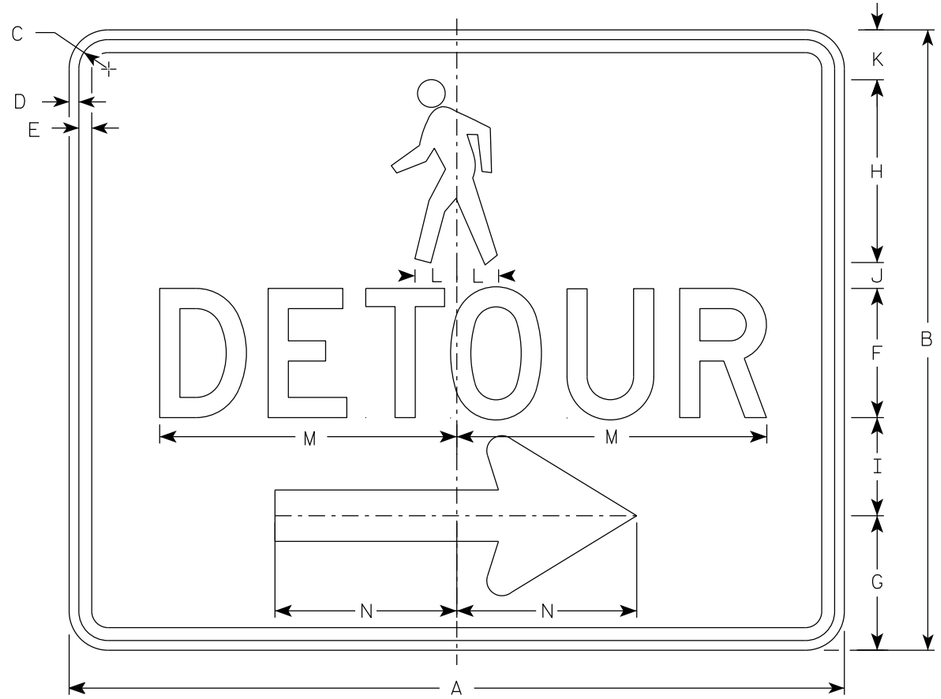
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

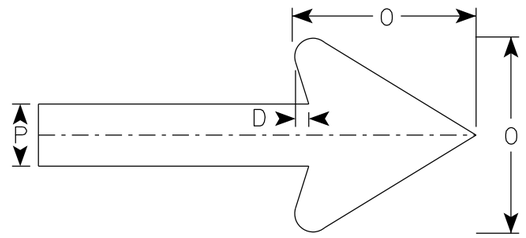
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 133	E



M4-9BR

NOTES

1. Sign is Type II-Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9BL is the same as M4-9BR except the arrow is reversed.



Arrow Detail

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

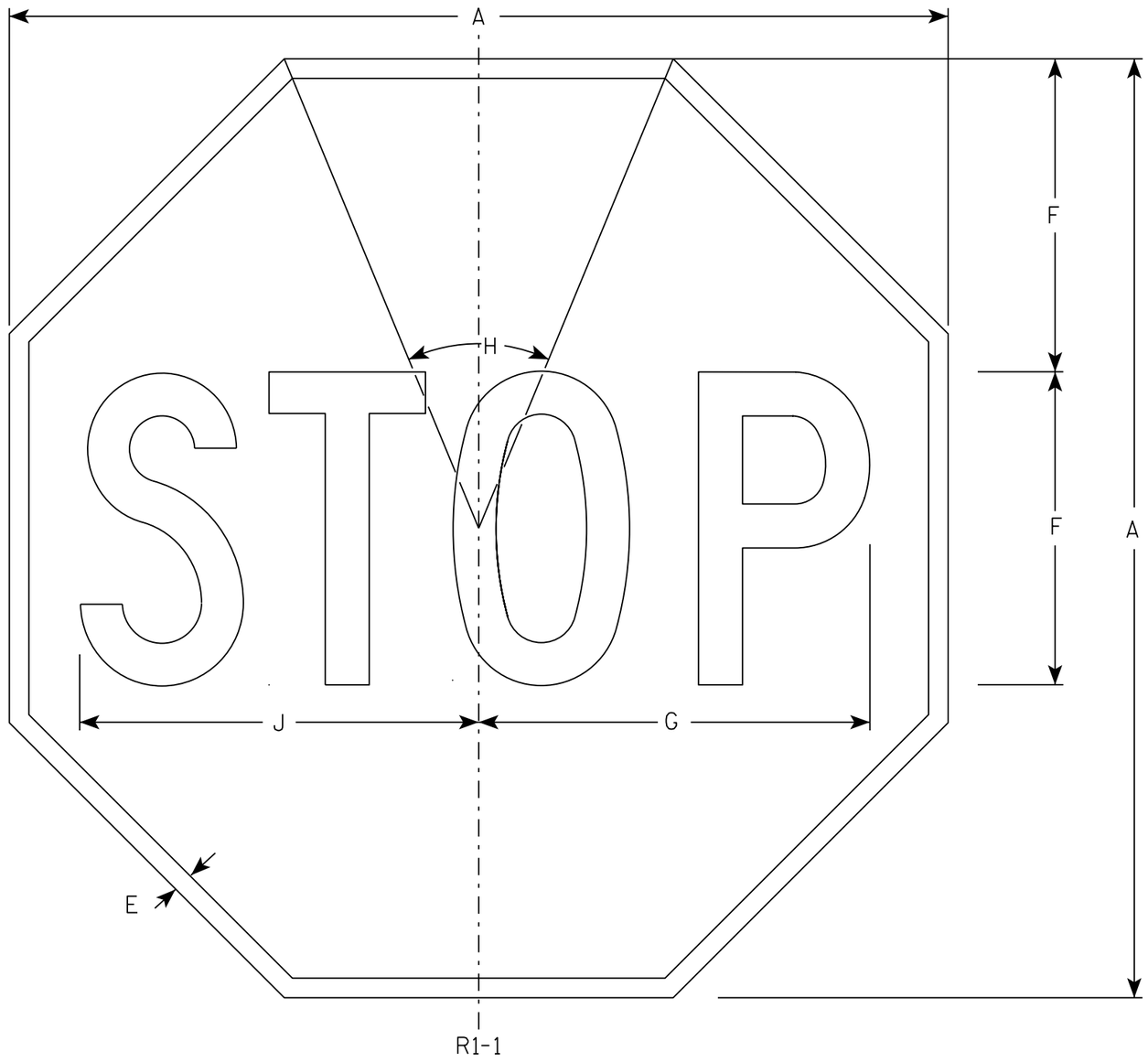
STANDARD SIGN
M4-9B L&R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 7/1/19 PLATE NO. M4-9B.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 134 | E



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

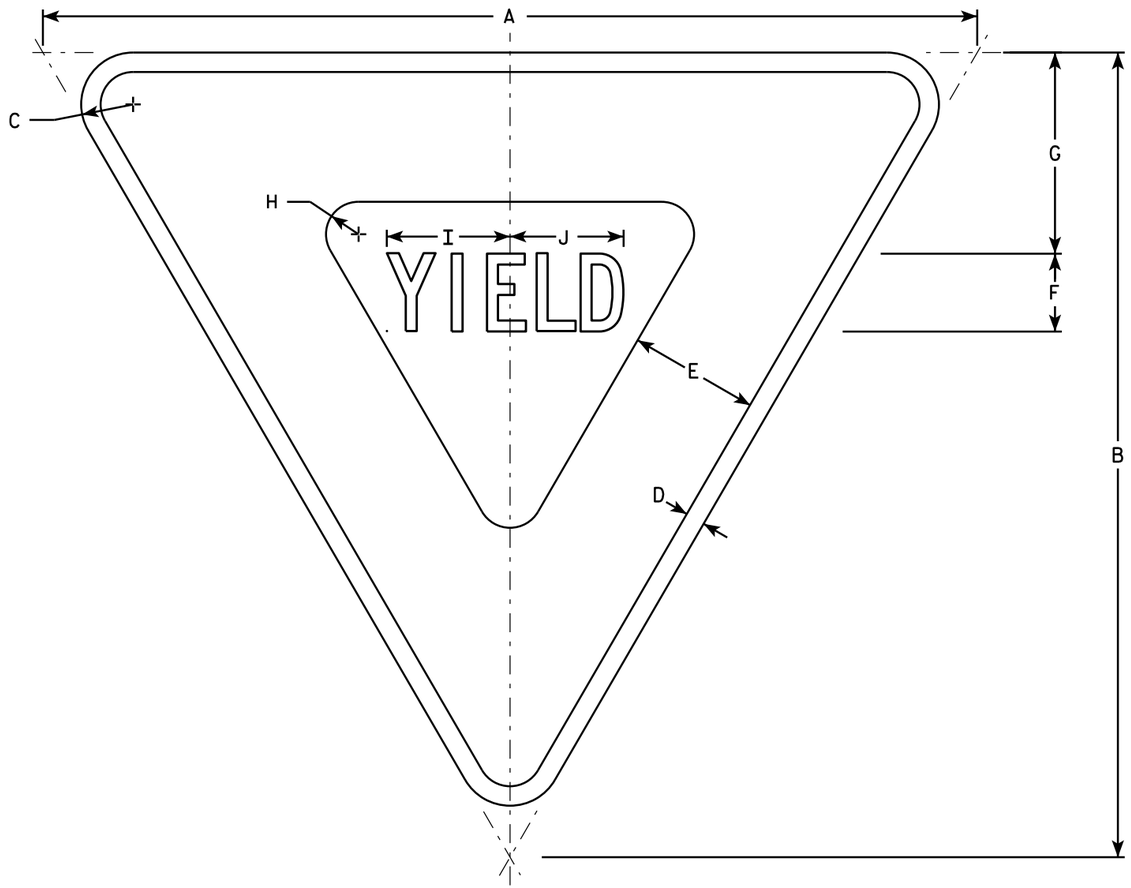
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 135	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

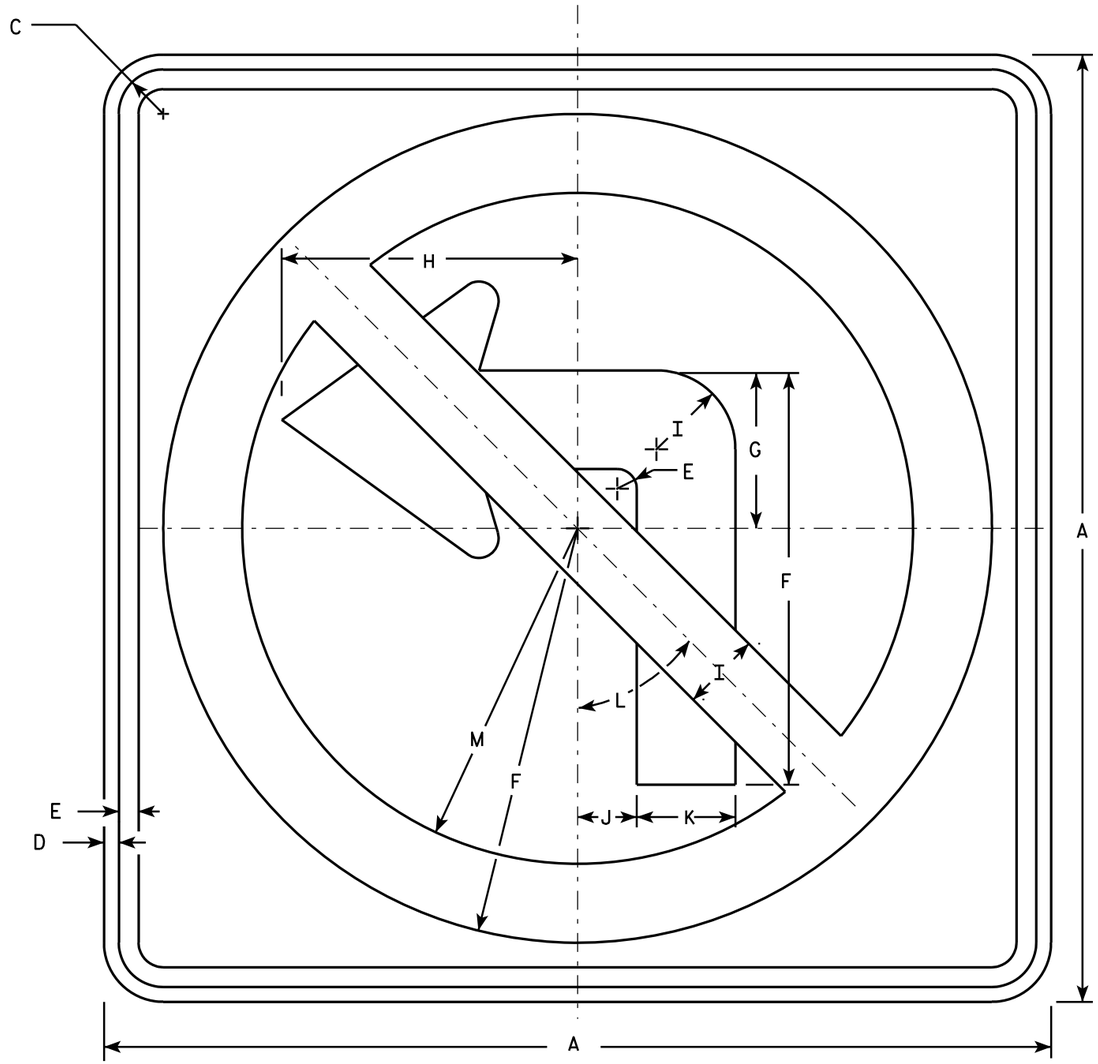
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/13/14 PLATE R1-2.12

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

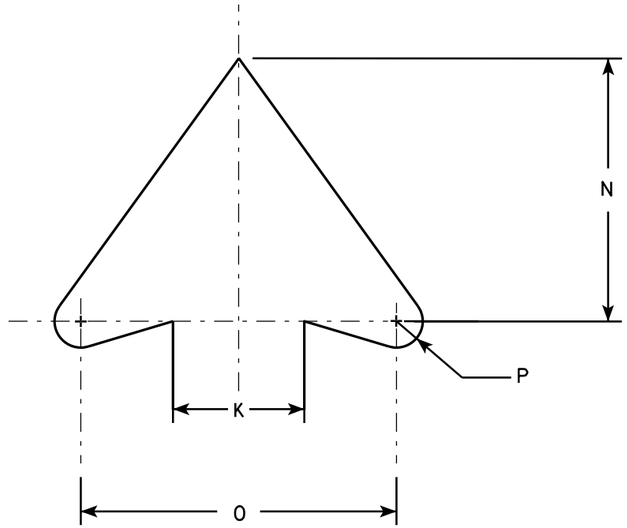
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R12.DGN PLOT DATE : 13-OCT-2014 15:12 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.837526:1.000000



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

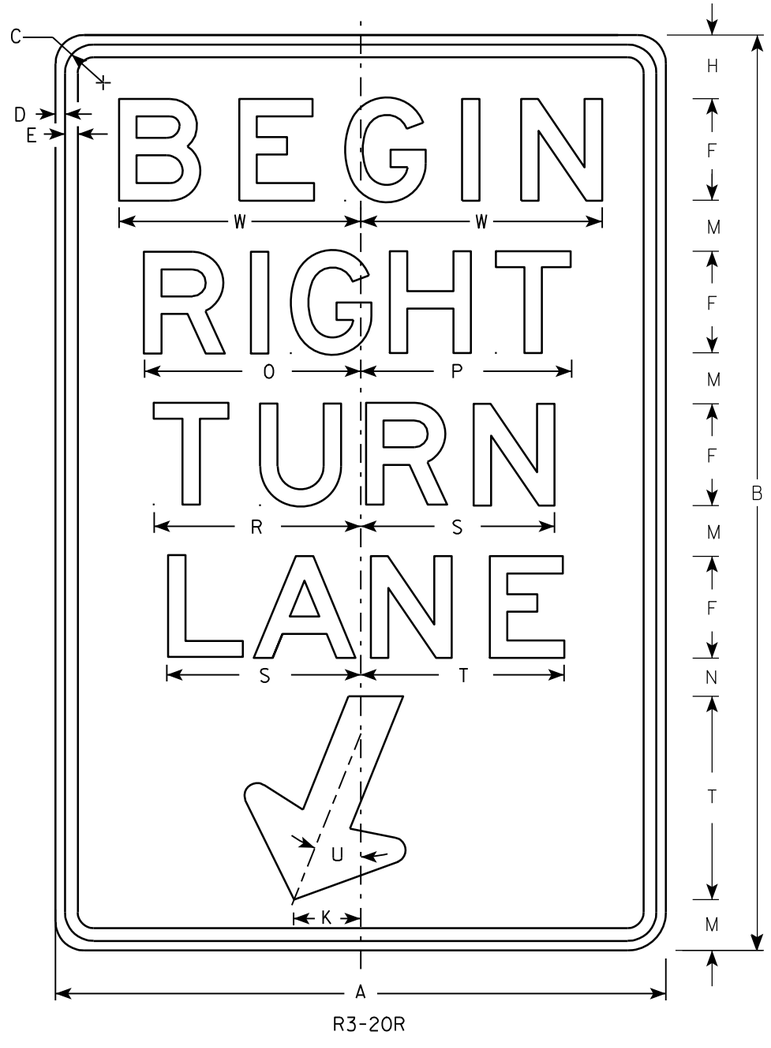
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

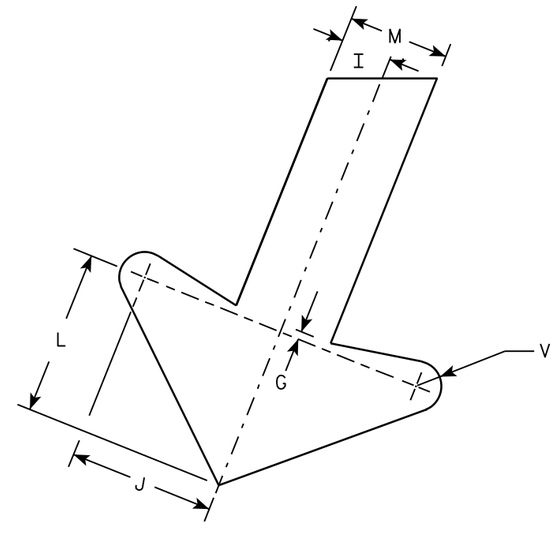
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 137	E



R3-20R

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.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

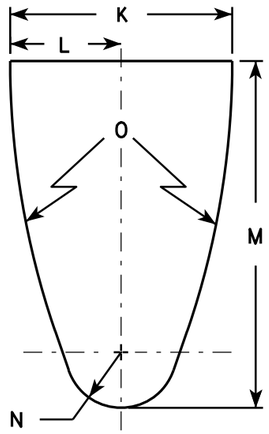
STANDARD SIGN
R3-20R

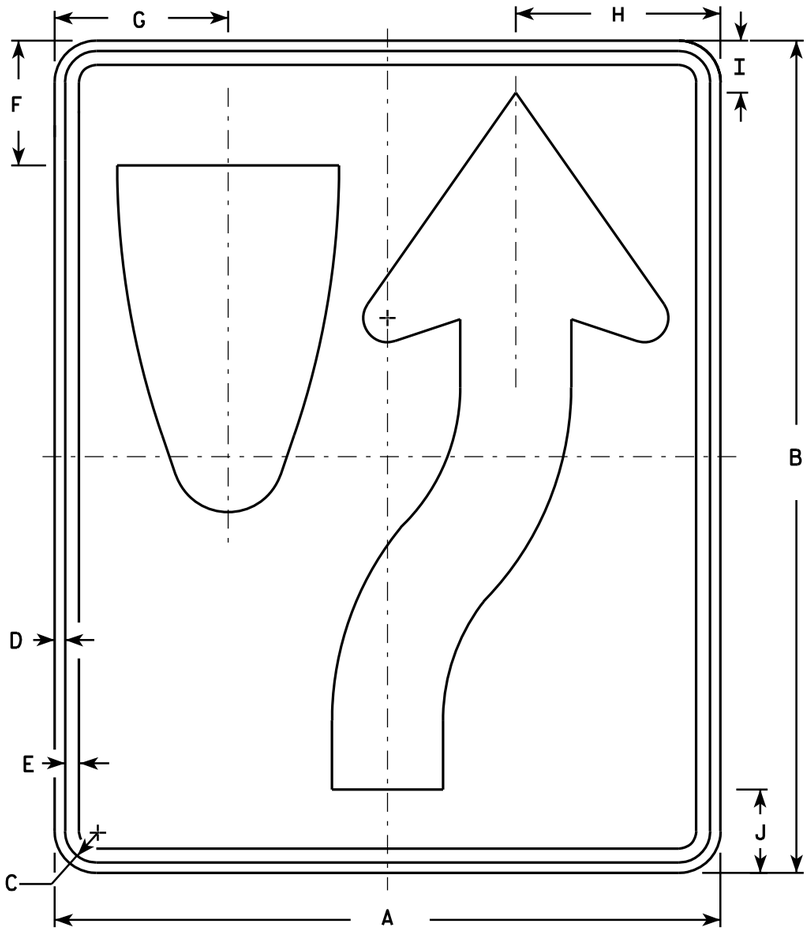
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 138 | E

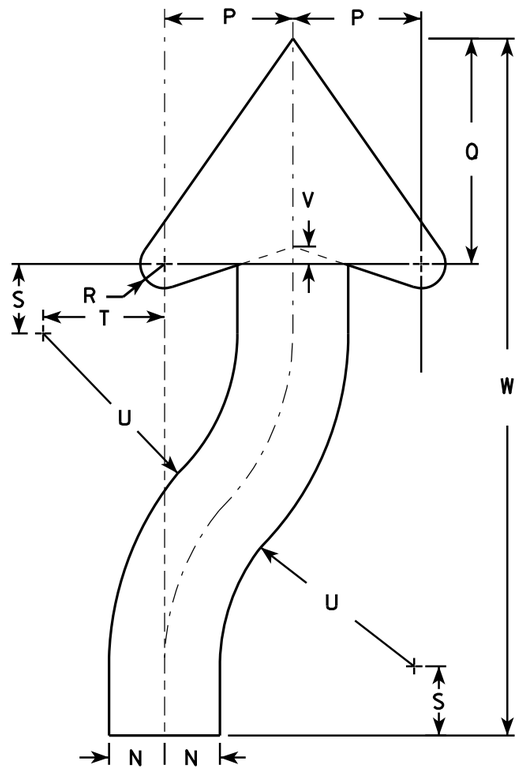




R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

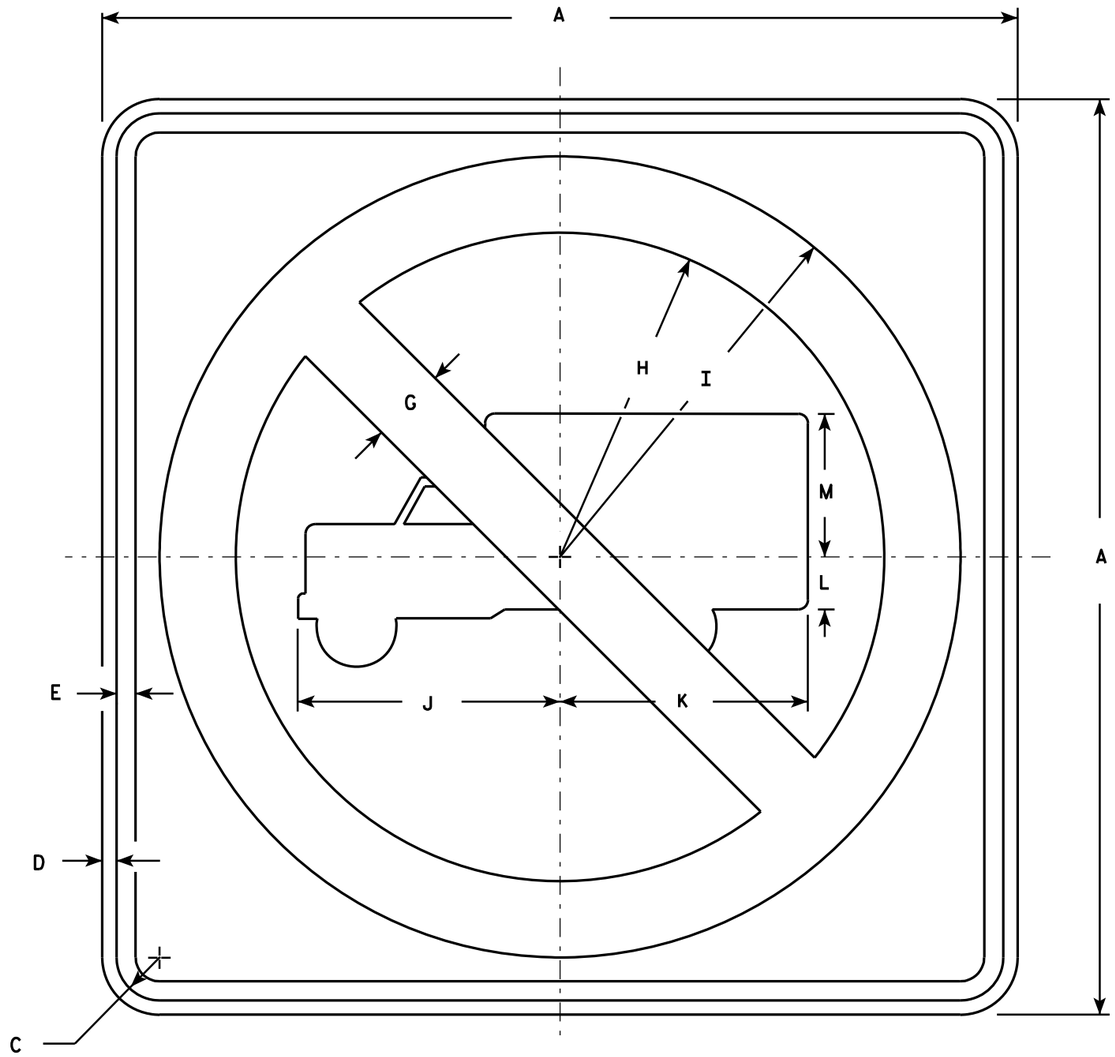
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 139	E



R5-2

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. Circle & Diagonal - Reflective red.
   Truck Symbol & Border - Non-reflective 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																											
2S	24		1 1/8	3/8	1/2		2	8 1/2	10 1/2	6 7/8	6 1/2	1 3/8	3 3/4														4.0
2M	24		1 1/8	3/8	1/2		2	8 1/2	10 1/2	6 7/8	6 1/2	1 3/8	3 3/4														4.0
3	30		1 3/8	1/2	5/8		2 1/2	10 5/8	13 1/8	8 1/2	8 1/8	1 5/8	4 3/4														6.25
4	36		1 5/8	5/8	3/4		3	12 3/4	15 3/4	10 1/4	9 3/4	2	5 3/4														9.0
5	48		2 1/4	3/4	1		4	17	21	13 5/8	13	2 5/8	7 5/8														16.0

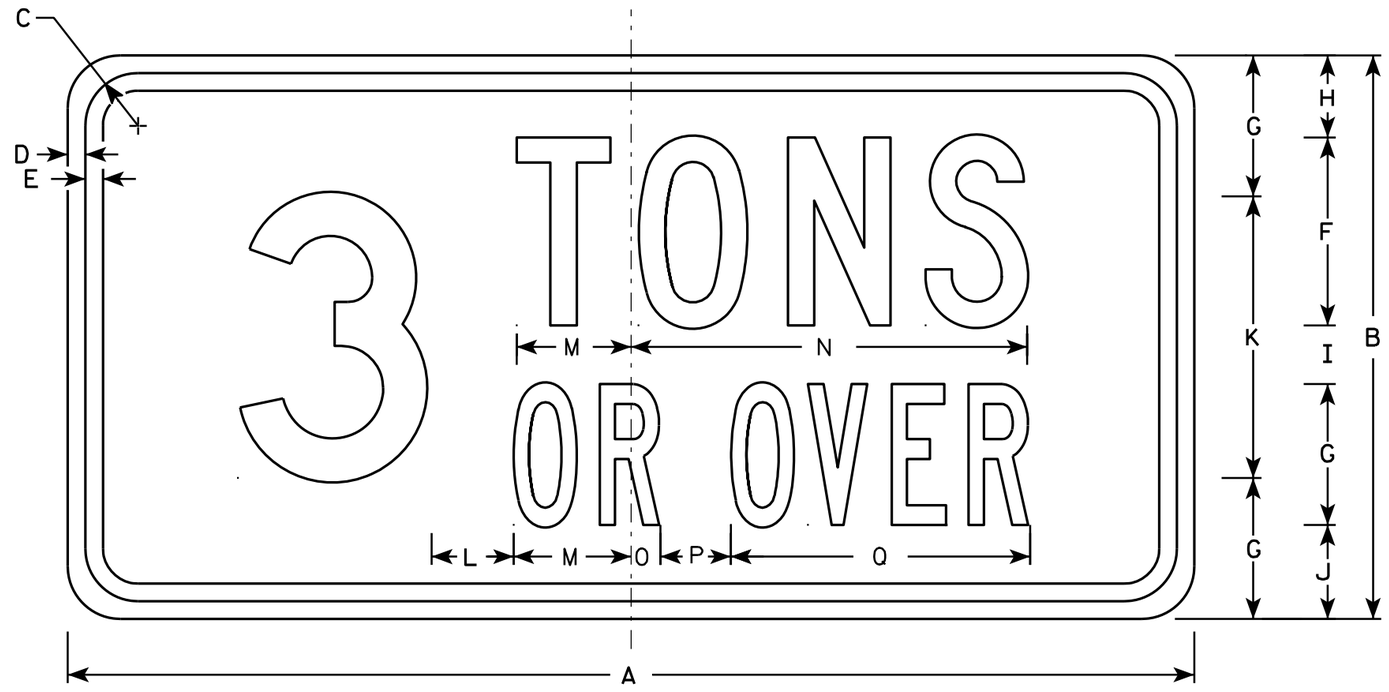
STANDARD SIGN
R5-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-2.6

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 140	E



R5-2A

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 - 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. Line 1 is Series "C"
   Line 2 is Series "B"
   Numeral is Series "D"
6. Substitute appropriate numerals.

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 1/8	3/8	3/8	4	3	1 3/4	1 1/4	2	6	1 3/4	2 1/2	8 1/2	5/8	1 1/2	6 3/8										2.0
2M	24	12	1 1/8	3/8	3/8	4	3	1 3/4	1 1/4	2	6	1 3/4	2 1/2	8 1/2	5/8	1 1/2	6 3/8										2.0
3	30	15	1 1/8	3/8	1/2	5	4	2 1/8	1 3/8	2 1/2	7	2 1/4	3 1/8	10 1/2	1	2 3/8	8 1/2										2.25
4	36	18	1 1/8	3/8	1/2	6	5	2 5/8	1 3/8	3	9	2 1/2	3 3/4	12 5/8	1 3/8	3 1/8	10 1/2										4.5
5	48	24	1 3/8	3/8	5/8	8	6	3 1/2	2 1/2	4	12	3 1/2	4 7/8	16 7/8	1 1/4	3	12 3/4										8.0

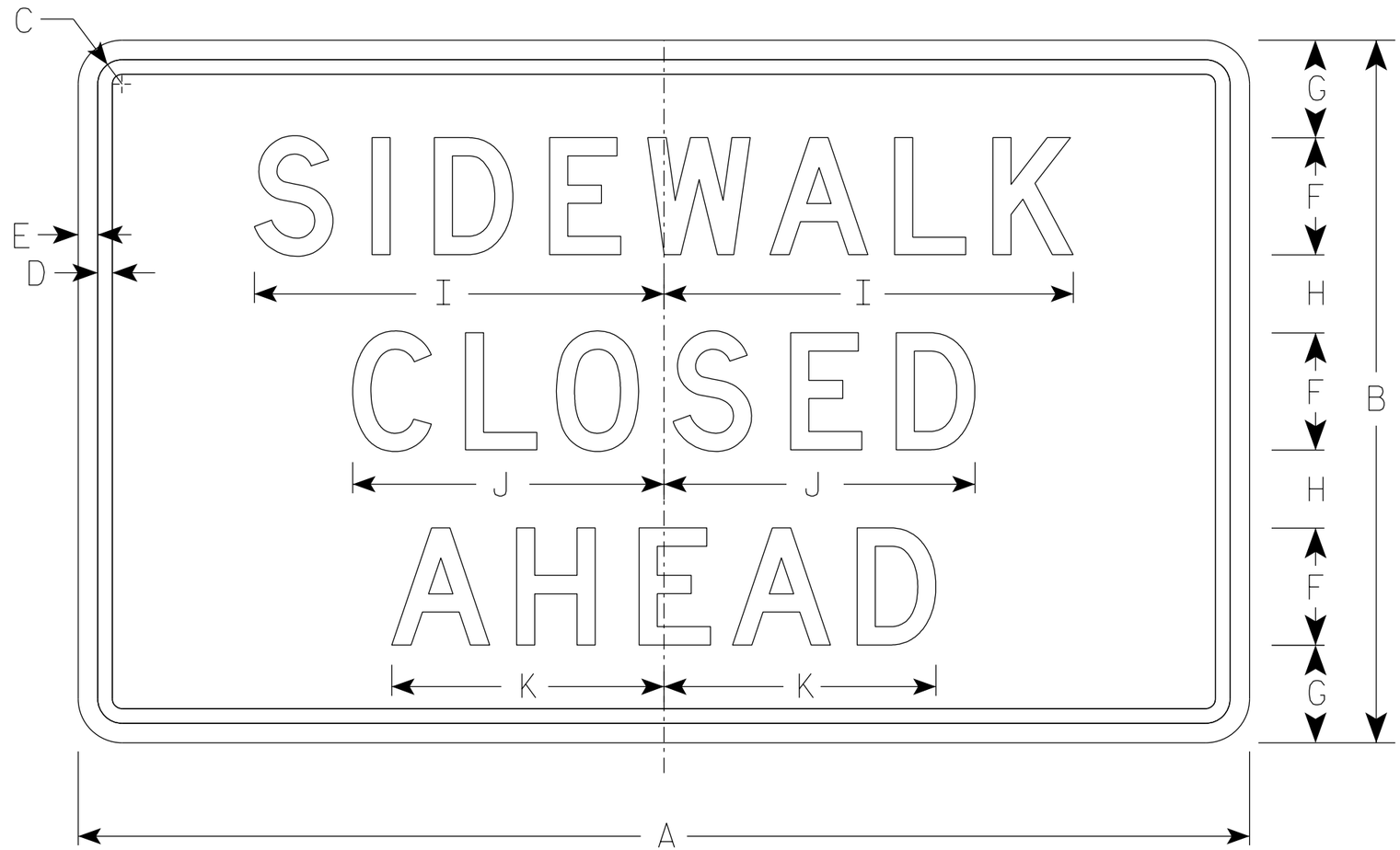
STANDARD SIGN
R5-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-2A.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 141 | E



R9-9A

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	18	1 1/8	3/8	1/2	3	2 1/2	2	10 1/2	8	7																3.75
2M	30	18	1 1/8	3/8	1/2	3	2 1/2	2	10 1/2	8	7																3.75
3																											
4																											
5																											

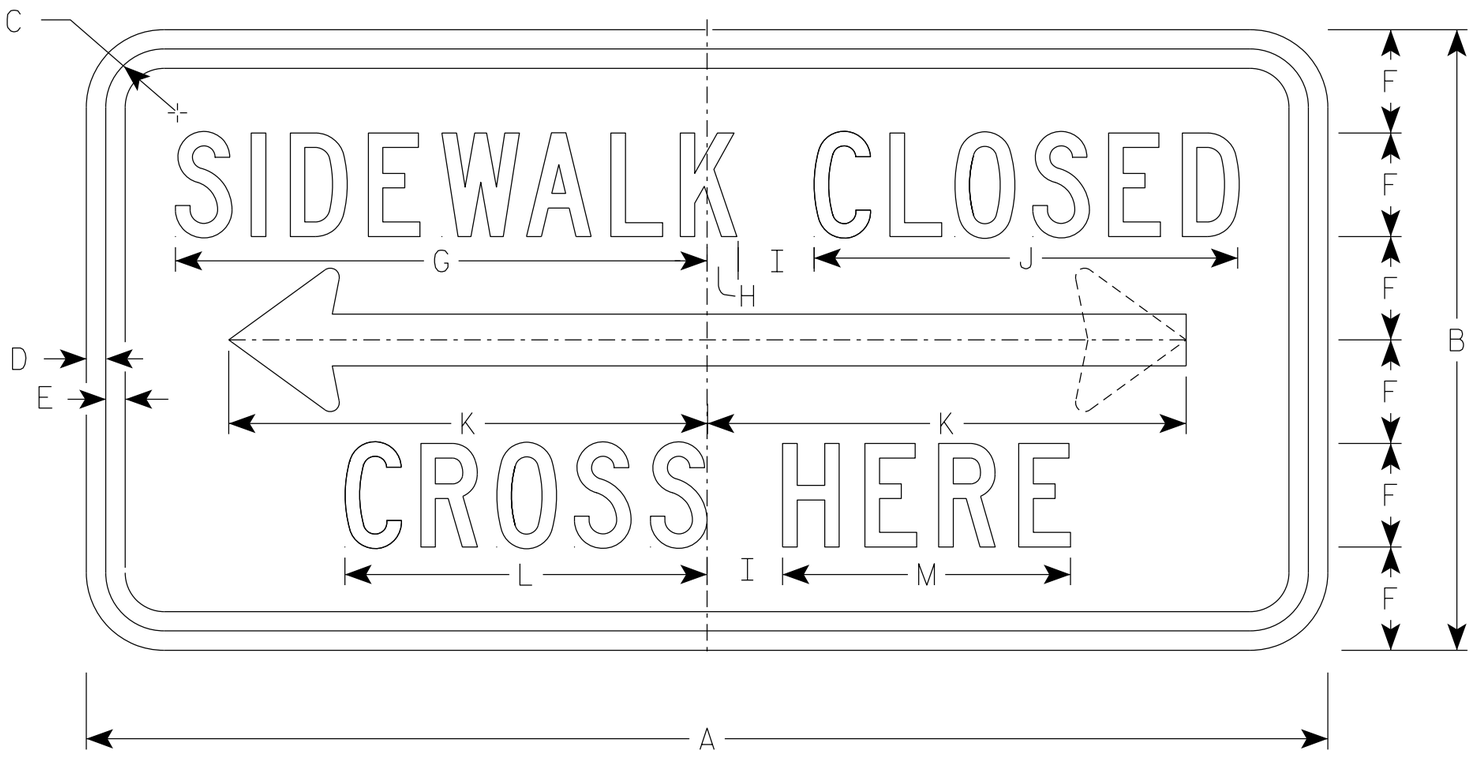
STANDARD SIGN
R9-9A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/31/2020 PLATE NO. R9-9A.1

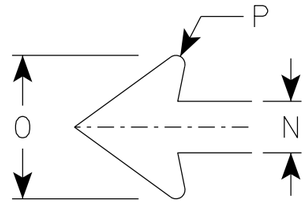
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 142 | E



R9-11A

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. Use Size 2 for Sidewalks. Use Size 3 for paths and Trails.
6. R9-11AD (double arrow)
   R9-11AL (left arrow)
   R9-11AR (right arrow)



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
2M	24	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
3	30	15	1 1/8	3/8	1/2	2 1/2	12 3/4	1/2	2	10 1/4	12 3/8	8 5/8	6 3/4	1 1/4	3 5/8	1/4											3.125
4																											
5																											

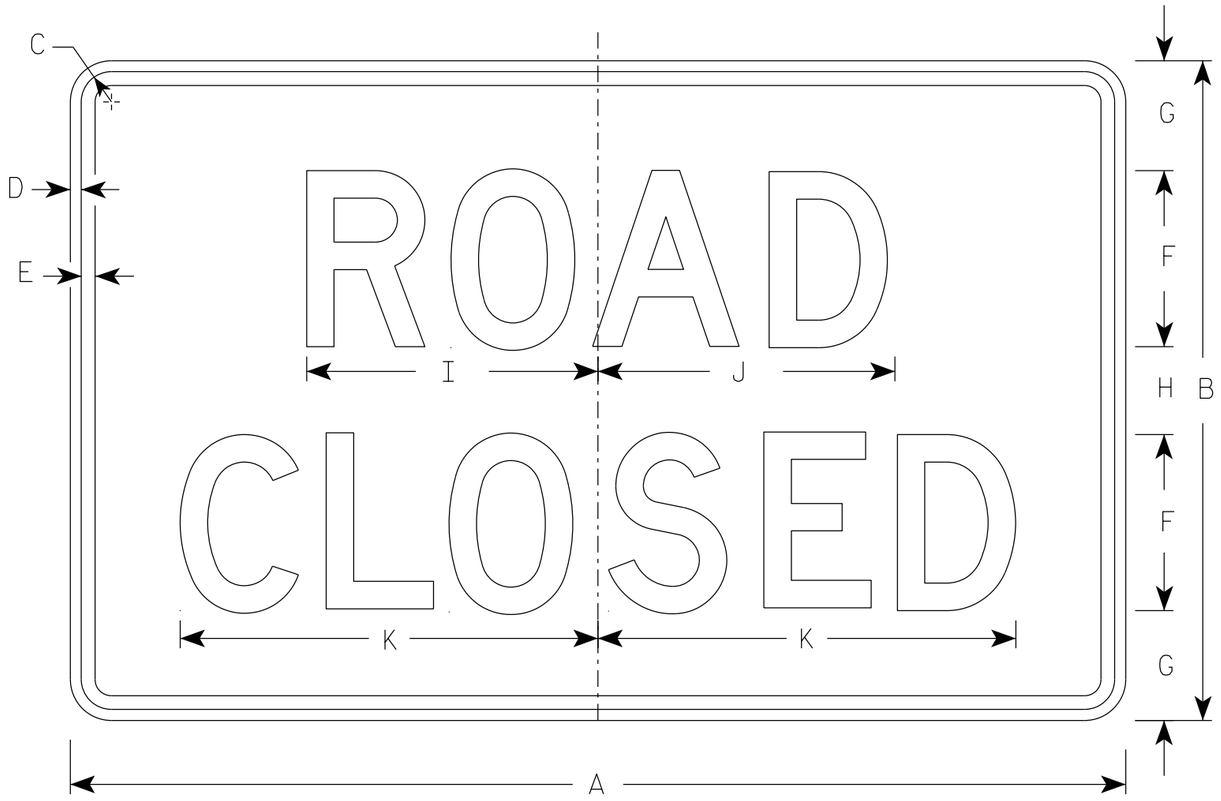
STANDARD SIGN
R9-11A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2021 PLATE NO. R9-11A.5

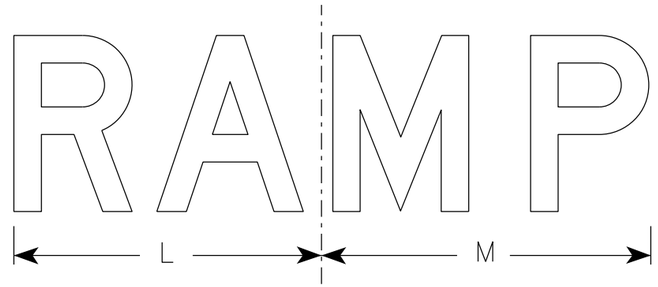
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 143 | E



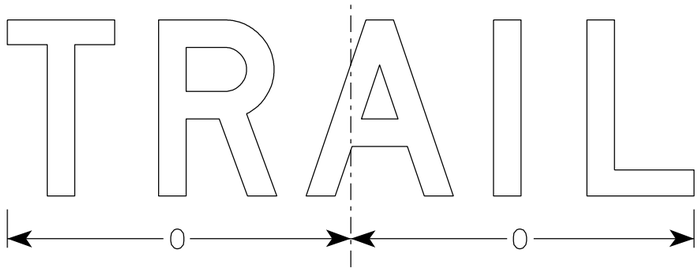
R11-2

NOTES

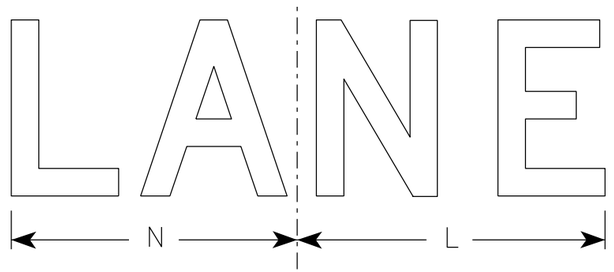
1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the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

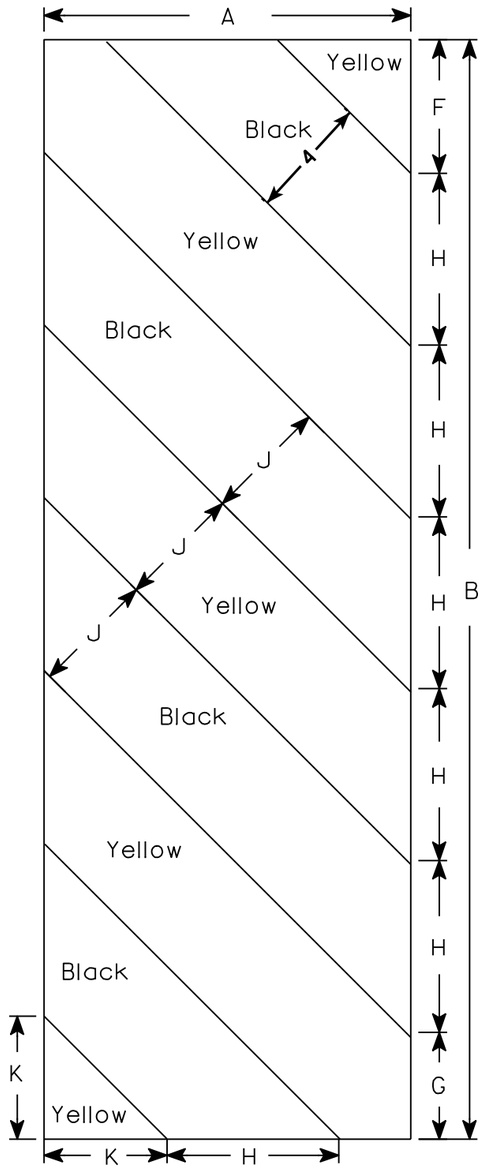
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

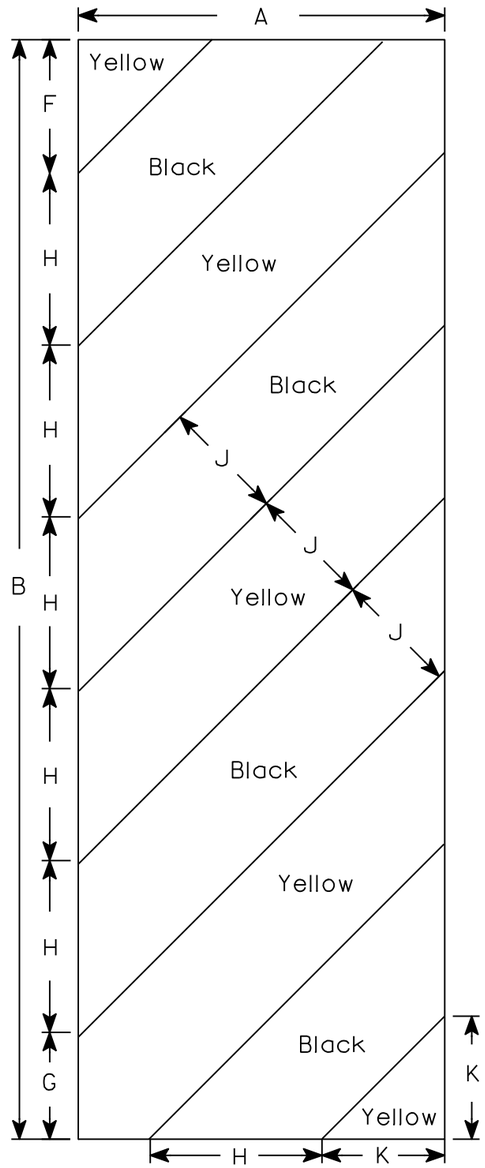
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 144	E



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

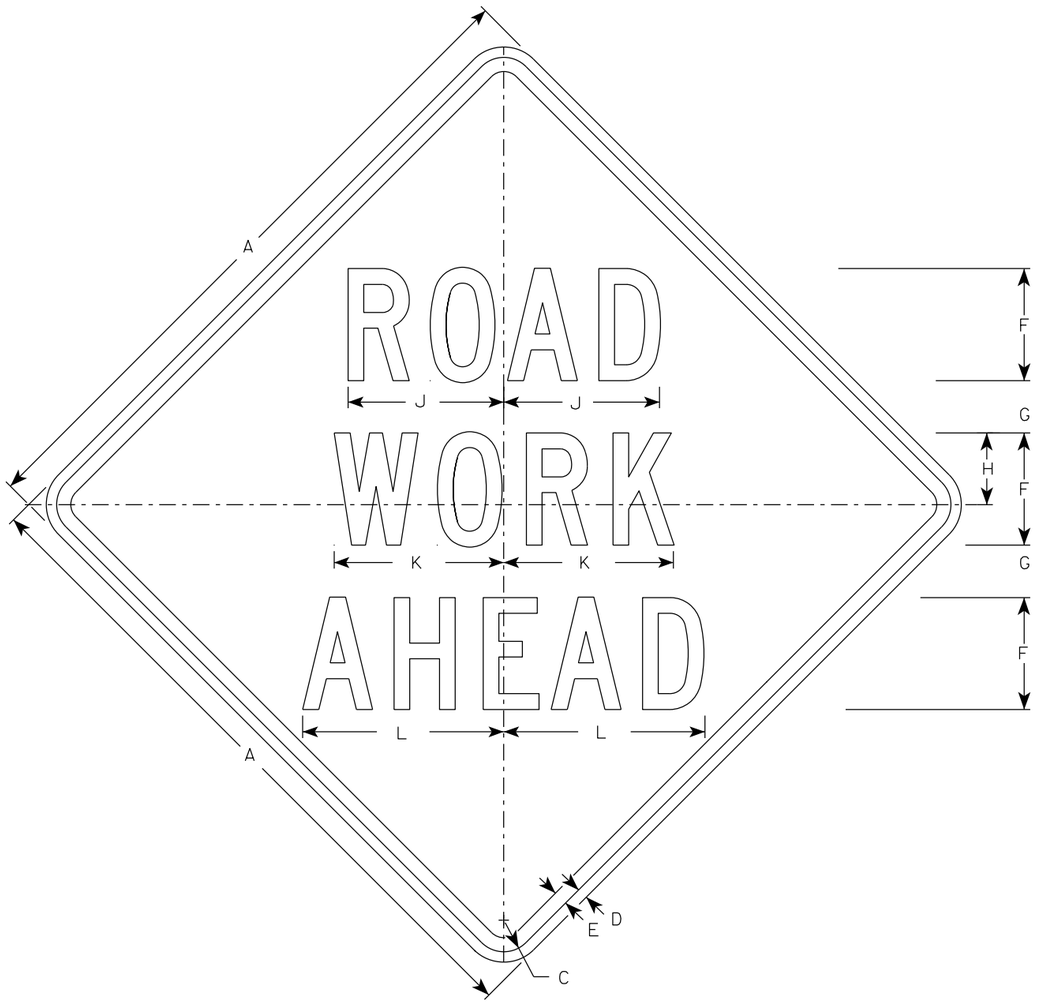
APPROVED Matthew R Rauch
for State Traffic Engineer

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

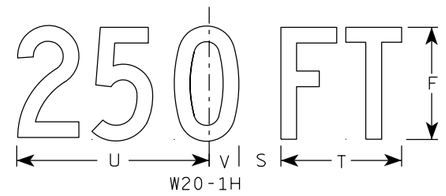
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 145 | E

NOTES

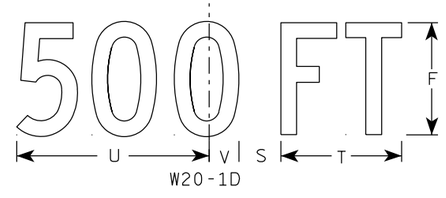
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1A



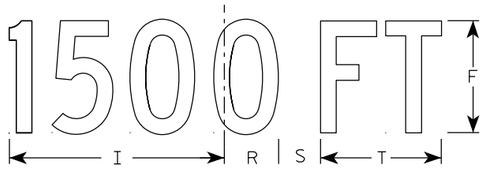
W20-1H



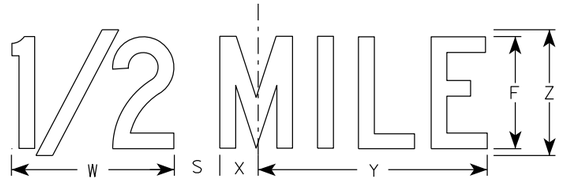
W20-1D



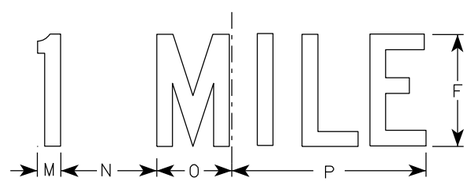
W20-1C



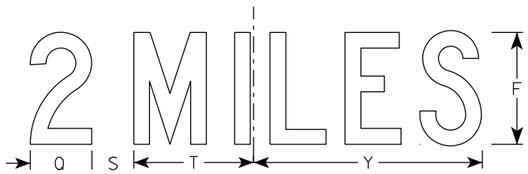
W20-1B



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

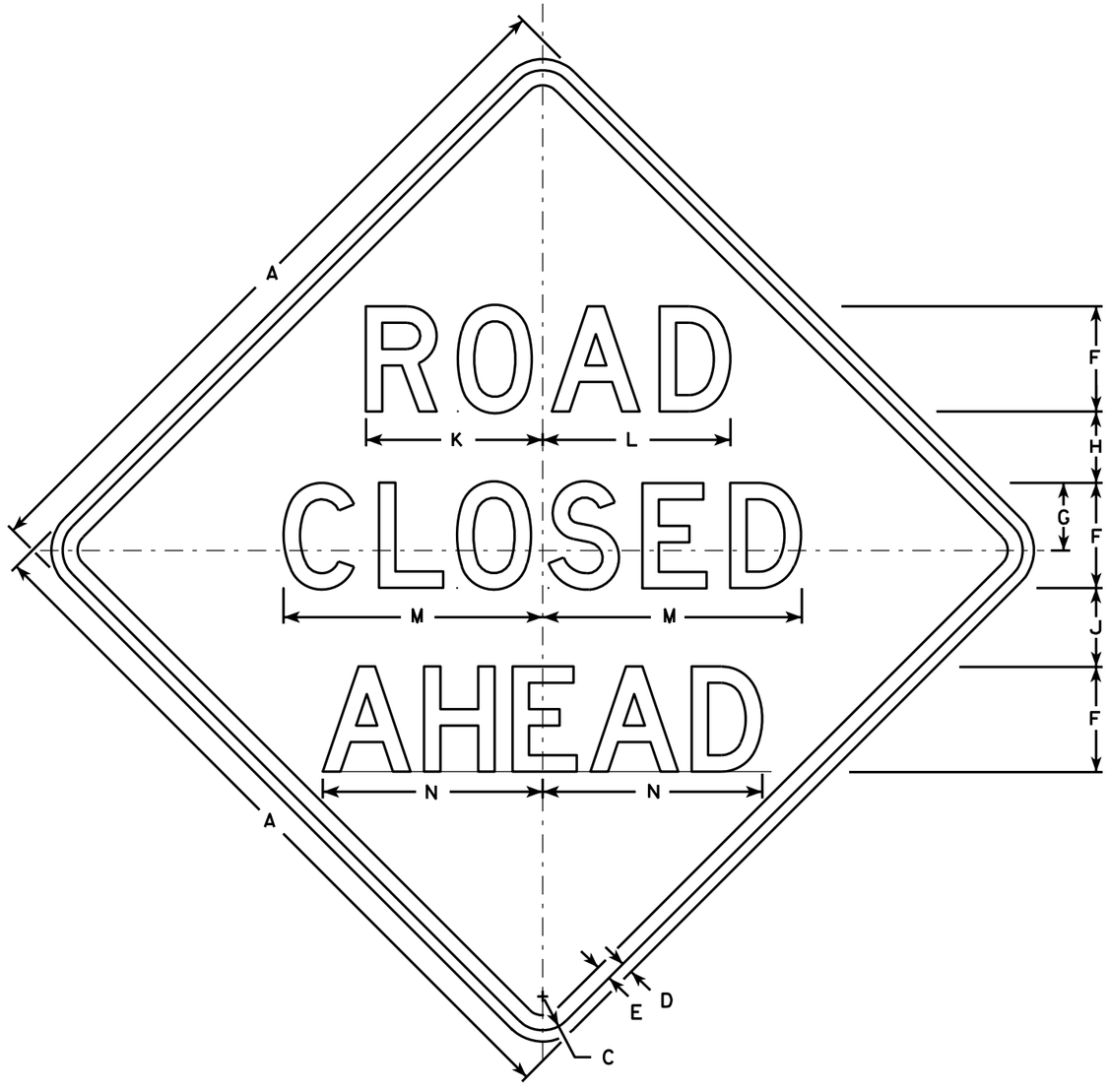
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

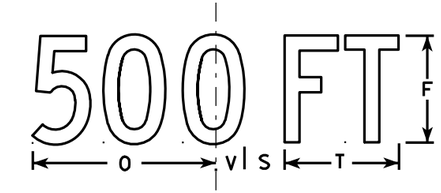
DATE 3/25/2020 PLATE NO. W20-1.11

PROJECT NO:

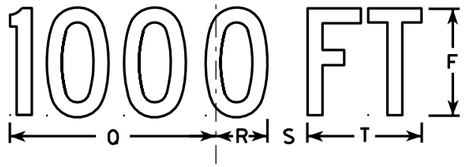
SHEET NO: E



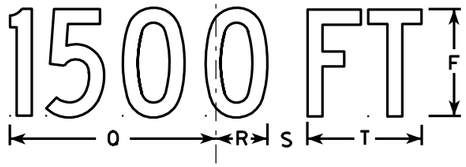
W20-3A



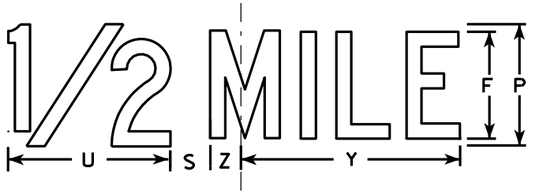
W20-3D



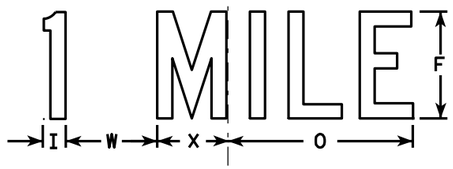
W20-3C



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

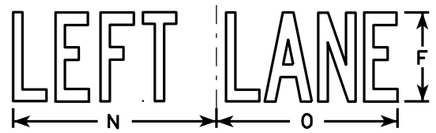
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 147 | E

7

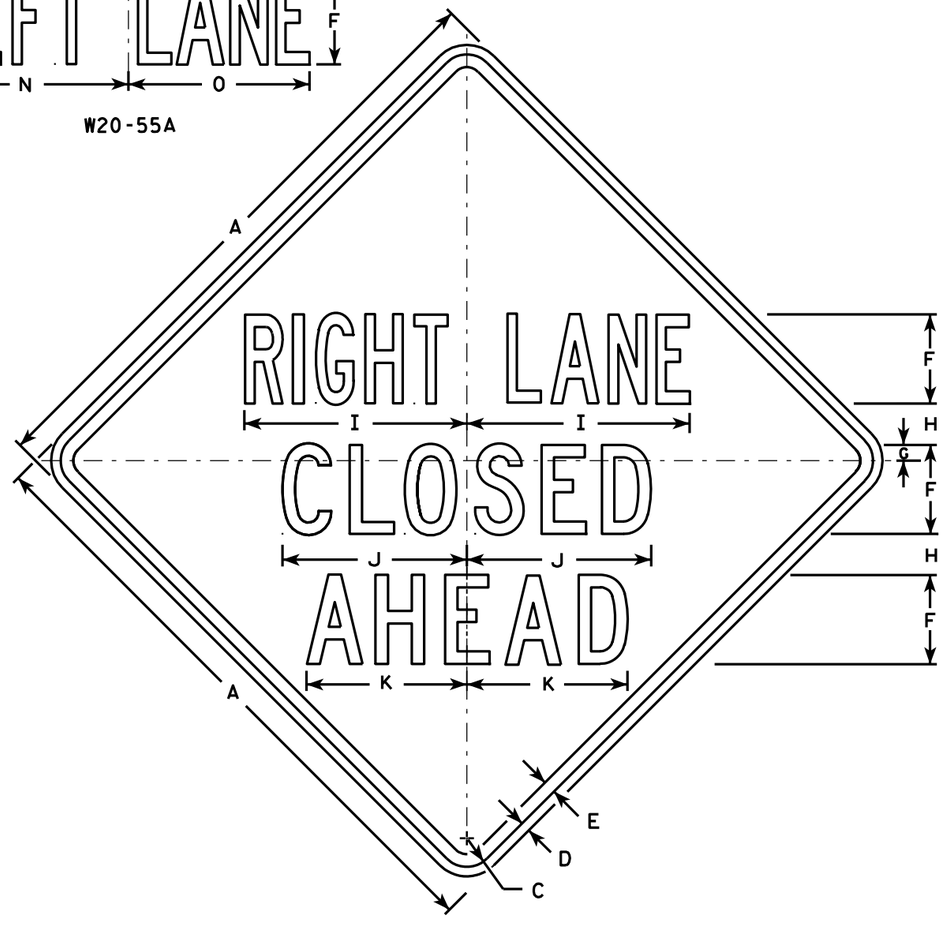
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W203.DGN PLOT DATE : 18-MAR-2011 12:08 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42



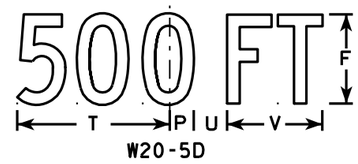
W20-56A



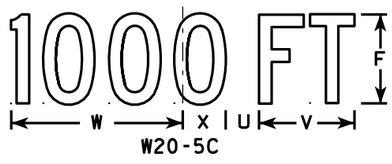
W20-55A



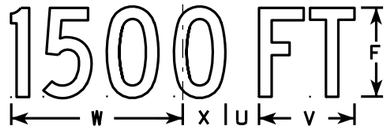
W20-5A



W20-5D



W20-5C



W20-5B



W20-5G



W20-5F

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. " _____ LANE" is Series B.
   All other copy is 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	36	6	1 5/8	5/8	3/4	5	1/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 1/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

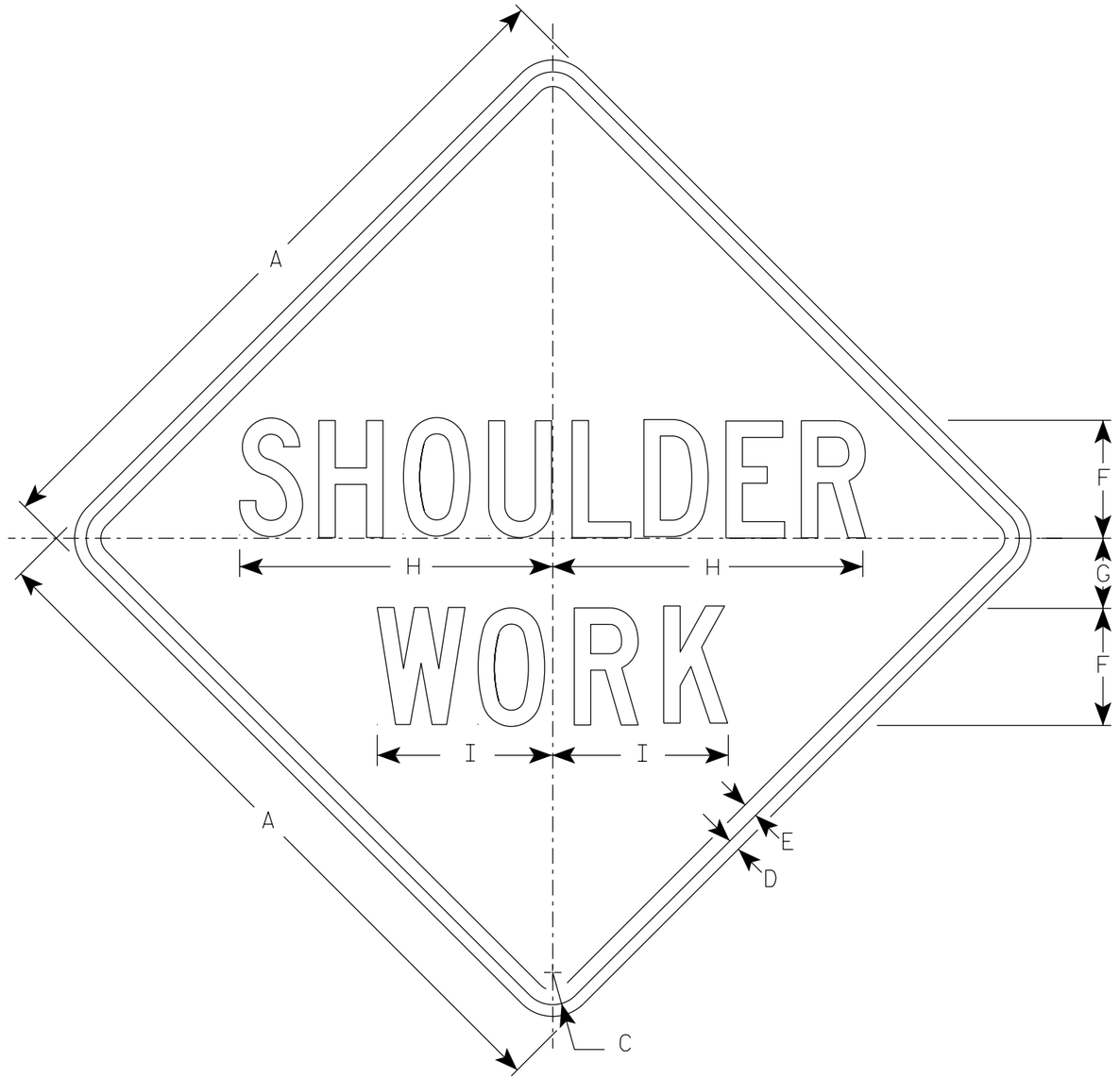
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 148 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W205.DGN PLOT DATE : 18-MAR-2011 12:15 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 11.918087:1.000000
WISDOT/CADDS SHEET 42



W21-5

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.

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	6	3 1/2	16	9																		9.0
2S	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
2M	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
3	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
4	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
5	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0

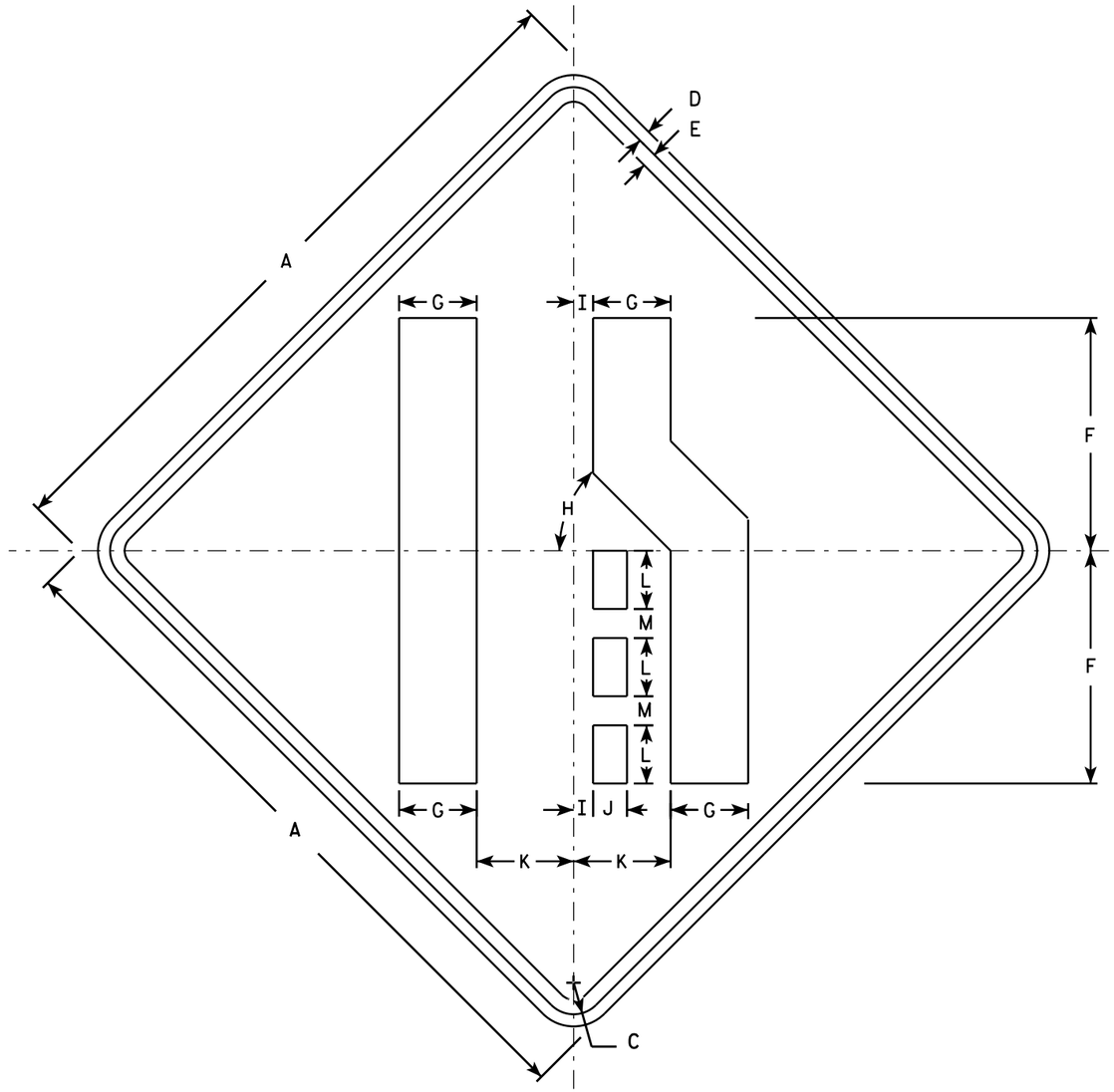
STANDARD SIGN
W21-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/30/2020 PLATE NO. W21-5.6

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 149	E



W04-2R

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. W04-2L is the same as W04-2R except the symbol 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	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W04-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 150 W04-2.1

PROJECT NO:

SHEET NO: E

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

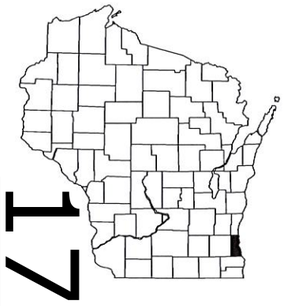
WKE NOVEMBER 2023

PROJECT ID 2984-15-71
WITH: 2090-16-70

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 = 128



DESIGN DESIGNATION

		N 60TH ST.	N 51ST ST.
A.D.T. (CURRENT)	=	27,800	19,000
A.D.T. (2044)	=	N/A	N/A
D.H.V.	=	N/A	N/A
D.	=	N/A	N/A
T.	=	N/A	N/A
DESIGN SPEED	=	30 MPH	30 MPH
ESALS	=	N/A	N/A

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

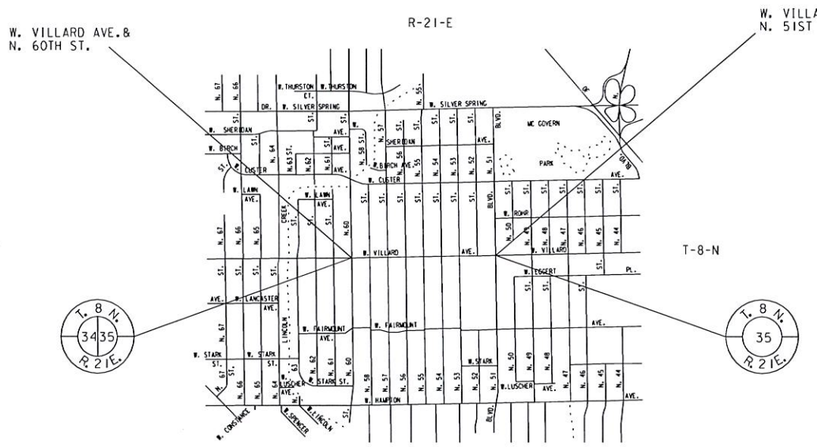
PLAN OF PROPOSED IMPROVEMENT

C MILWAUKEE W VILLARD AVENUE

INTERSECTIONS OF N 60TH AND N 51ST ST

LOCAL STREET
MILWAUKEE COUNTY

STATE PROJECT NUMBER
2984-15-71



STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2984-15-71	WISC 2024042	1

Accepted For
City of Milwaukee

11/15/2023 (Date) Commissioner of Public Works

Original Plans Prepared By

WISCONSIN
KEVIN J. MUHS
46391-6
MILWAUKEE, WI
PROFESSIONAL ENGINEER

1/17/23 (Date) City Engineer

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	CITY OF MILWAUKEE
Designer	CITY OF MILWAUKEE
Project Manager	GREGORY HAFEMAN
Region Examiner	
Region Supervisor	BRIAN BOOTHBY

APPROVED FOR THE DEPARTMENT

DATE: 01/18/23

(Signature)

E

CONVENTIONAL SYMBOLS

PLAN

- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- CORPORATE OR CITY LIMITS
- PROPERTY LINE — P.L.
- STANDARD BENCH MARK
- EXISTING RIGHT OF WAY LINE — R/W
- PROPOSED SEWER LATERAL — (SIZE)
- BASE OF SURVEY LINE
- CONCRETE WALK/DWY. REMOVAL
- LIMITS OF CONCRETE PAVEMENT REMOVAL — X X X X X X
- CATCH BASIN OR INLET — EXISTING PROPOSED
- COMBUSTIBLE FLUIDS UNDER PRESSURE — CAUTION
- RAILROADS
- FENCE — (TYPE)
- FIRE & POLICE CALL BOX
- LIGHT POLE
- POWER POLE
- TELEPHONE OR TELEGRAPH POLE
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL CONTROL BOX
- HYDRANT
- GAS OR WATER GATE VALVE
- MANHOLES - SEWER — UTILITY (TYPE)
- TREES - EXISTING — TO BE REMOVED

LAYOUT
SCALE 1/2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI. (URBAN)

POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), MILWAUKEE COUNTY, NAD 83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE CITY OF MILWAUKEE DATUM.

TO CONVERT ELEVATIONS SHOWN ON THIS PLAN TO NATIONAL GEODEDIC VERTICAL DATUM OF 1929, ADD 580.603 TO ELEVATIONS SHOWN ON THIS PLAN.

COUNTY MILWAUKEE

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\TITLE.DGN

PLOT DATE:

GENERAL NOTES

1. ALL OPENINGS BELOW SUBGRADE, RESULTING FROM REMOVALS OR ABANDONMENTS, SHALL BE BACKFILLED WITH BASE AGGREGATE DENSE, UNLESS OTHERWISE NOTED ON THE PLAN.

2. ALL DISTURBED AREAS, NOT SURFACED, ARE TO BE COVERED WITH 4" OF TOPSOIL, AND SODDED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. TOPSOILED AREAS SHALL BE SODDED WITHIN 5 CALENDAR DAYS.

3. TRANSVERSE JOINTS IN THE CONCRETE WALK SHALL BE CONSTRUCTED AT INTERVALS EQUAL TO THE WIDTH OF THE CONCRETE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

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

5. FOR ANY EXCAVATION OF SIX FEET OR MORE IN THE CITY OF MILWAUKEE, THE CONTRACTOR, WHEN REQUESTING A UTILITY LOCATE TICKET FROM DIGGER'S HOTLINE, SHALL SPECIFICALLY ASK FOR THE LOCATION TICKET TO INCLUDE THE MARKING OF ALL THE EXISTING SEWER FACILITIES WITHIN THE LIMITS REQUESTED.

6. CONTRACTOR MUST CONTACT THE PROJECT ENGINEER AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION (SEWRPC), AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

7. ALL DIMENSIONS ARE FROM THE FACE OF CURB TO THE CENTER OF THE MARKING UNLESS OTHERWISE NOTED.

8. ALL RADII IN THE PLANS ARE REFERENCED TO THE FACE OF CURB.

9. TRAFFIC CONTROL DEVICES SHOWN AT SUGGESTED LOCATIONS.

10. EROSION CONTROL DEVICES ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL DEVICES SHALL BE MANTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE DEVICE IS NO LONGER REQUIRED.

STANDARD ABBREVIATIONS

ASPH.	- ASPHALT
B.M.	- BENCH MARK
CTR.	- CENTER
COMB.	- COMBINED
CONC.	- CONCRETE
C.W.	- CONCRETE WALK
COR.	- CORNER
C	- CURB
DOT	- DEPARTMENT OF TRANSPORTATION
ELEV.	- ELEVATION
ENT.	- ENTRANCE
EXIST.	- EXISTING
F	- FLANGE
G	- GUTTER, OR GAS
HYD.	- HYDRANT
LT.	- LEFT
MMSD	- MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
NB	- NORTHBOUND
PG/L.	- PROFILE GRADE LINE
P/L.	- PROPERTY LINE
R/L.	- REFERENCE LINE
R OR RAD.	- RADIUS
RET.	- RETAINING
RT.	- RIGHT
R/W	- RIGHT OF WAY
SB	- SOUTHBOUND
STA	- STATION
TEL	- AMERITECH
TES	- TRAFFIC ENGINEERING, AND ELECTRICAL SERVICES
T/L	- TRANSIT LINE
WEP	- WISCONSIN ELECTRIC POWER

ORDER OF SECTION 2 SHEETS

GENERAL NOTES
UTILITY CONTACTS
PROJECT OVERVIEW
CONSTRUCTION DETAILS
CURB RAMP DETAILS
REMOVAL PLAN
EROSION CONTROL
SIGNING
STREET LIGHTING
TRAFFIC SIGNALS
PAVEMENT MARKING
TRAFFIC CONTROL
ALIGNMENT PLAN

2

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	GENERAL NOTES	SCALE FEET	SHEET NO: 2	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\GEN NOTES.DGN

REVISED DATE: 3-17-2023 BY AA

UTILITY CONTACTS

AT&T WISCONSIN
JAY BULANEK
435 S 95TH ST.
MILWAUKEE, WI 53214
PHONE: 414-491-2855
EMAIL: JB5175@ATT.COM

CHARTER/ SPECTRUM
CHARLES BRASILE
1320 N DR. MARTIN LUTHER KING JR.
MILWAUKEE, WI 53212
PHONE: 414-908-4822
EMAIL: CHARLES.BRASILE@CHARTER.COM

CITY OF MILWAUKEE, CUC
HAZEM RAMADAN
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-286-3242
EMAIL: HRAMA@MILWAUKEE.GOV

CITY OF MILWAUKEE, WATER WORKS
DAVE GOLDAPP
841 N. BROADWAY, ROOM 409
WAUKESHA, WI 54188
PHONE: 414-286-6301
MOBILE: 414-708-2695

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
MICKI KLAPPA-SULLIVAN
260 W. SEEBOTH ST.
MILWAUKEE, WI 53204
PHONE: 414-225-2178
EMAIL: MKLAPPASULLIVAN@MMSD.COM

WE ENERGIES - ALL CORRESPONDENCE
KRISTEN RONGHOLT
500 S. 116TH STREET
WEST ALLIS, WI 53214
PHONE: 414-221-2738
EMAIL: WE-UTILITY-RELOCATIONS@WE-ENERGIES.COM

WE ENERGIES - ELECTRIC
JAKE CHRISTENSEN
PHONE: 262-502-6819
CELL: 414-750-8548
EMAIL: JACOB.CHRISTENSEN@WE-ENERGIES.COM

WE ENERGIES - GAS
ALEX DANTINNE
500 S. 116TH ST.
WEST ALLIS, WI 53214
PHONE: 920-621-6903
EMAIL: ALEX.DANTINNE@WE-ENERGIES.COM

OTHER CONTACTS

CITY OF MILWAUKEE, FORESTRY
JAMES KRINGER
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-708-2428
EMAIL: JKRING@MILWAUKEE.GOV

CITY OF MILWAUKEE, STREET LIGHTING
LISA HICKMAN
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-286-3270
EMAIL: LHICKM@MILWAUKEE.GOV

CITY OF MILWAUKEE, UTILITY COORDINATOR
MOHAMMAD ABULUGHOD
UTILITY COORDINATOR-CONSTRUCTION
841 N. BROADWAY, ROOM 710
MILWAUKEE, WI 53202
PHONE: 414-708-3085
EMAIL: MABULU@MILWAUKEE.GOV

CITY OF MILWAUKEE, SEWERS
ZAFAR YOUSUF
841 N. BROADWAY
MILWAUKEE, WI 53202
PHONE: 414-286-2467
EMAIL: ZYOUSU@MILWAUKEE.GOV

CITY OF MILWAUKEE, TRAFFIC SIGNALS
RUDY GUTIERREZ
1540 W CANAL STREET
PHONE: 414-286-5941
MOBILE: 414-708-5148
EMAIL: RGUTIE@MILWAUKEE.GOV

MILWAUKEE COUNTY TRANSIT SYSTEM (MCTS)
ARMOND SENSABAUGH
TRANSPORTATION COORDINATOR (DETOURS)
1942 N 17TH ST
MILWAUKEE, WI 53205
PHONE: 414-343-1728
EMAIL: ASENSABAUGH@MCTS.ORG

DAVID LOCHER
TRANSPORTATION MANAGER (BUS STOPS)
1942 N 17TH ST
MILWAUKEE, WI 53205
PHONE: 414-343-1727

SEWRPC
ROB MERRY (CHIEF SURVEYOR)
P.O. BOX 1607
WAUKESHA, WI 53187-4289
PHONE: 262-953-4289
EMAIL: RMERRY@SEWRPC.ORG

ANDY TRAEGER (CONSTRUCTION COORDINATOR)
P.O. BOX 1607
WAUKESHA, WI 53187-1607
PHONE: 262-953-4296
EMAIL: ATRAEGER@SEWRPC.ORG

WISCONSIN DEPT. OF NATURAL RESOURCES
SHELLEY NELSON
141 NW BARSTOW ST, ROOM 180.
MILWAUKEE, WI 53188
PHONE: 608-444-2835
EMAIL: SHELLEY.NELSON@WISCONSIN.GOV

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

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	UTILITY CONTACTS	SCALE FEET	SHEET NO: 3	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\CONTACTS.DGN

REVISED DATE: 01-30-2023 BY AA

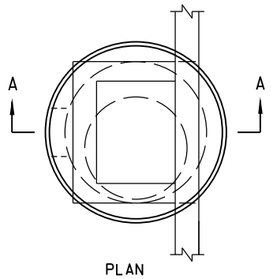
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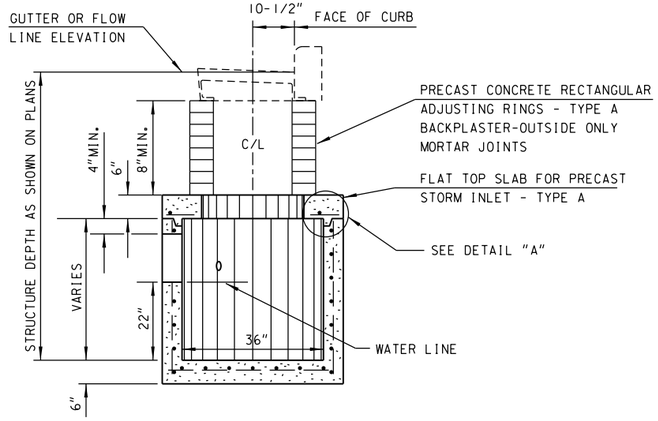
STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SCALE FEET 0' 300'	SHEET NO: 4	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\EXISTING\PROJECT OVERVIEW.DGN

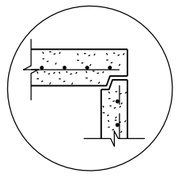
REVISED DATE: 10-08-2021 BY DB



PLAN



SECTION A-A



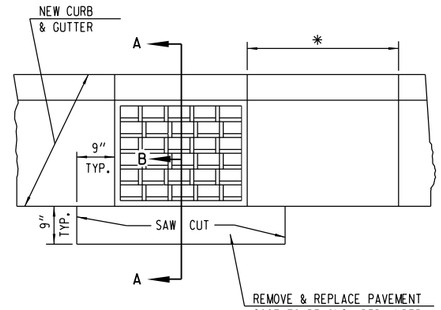
DETAIL "A"
TOP WITH TONGUE AND GROOVE JOINT

STORM INLET - TYPE 45A

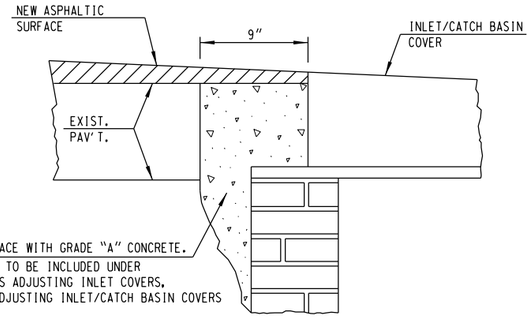
GENERAL NOTES

1. PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199 AND ASTM DESIGNATION C-478 AND THESE DETAILED REQUIREMENTS WHICH SHALL GOVERN WHERE THEY ALTER THE AASHTO AND ASTM STANDARDS.
2. ALL REINFORCEMENT STEEL SHALL BE GRADE 60 OR GREATER AND EMBEDDED AT LEAST 1" CLEAR.
3. PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 4 IN DEPTH WHICH MEETS REQUIREMENTS FOR GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.
4. SET FRAME ELEVATION 0.03 FT. LOWER THAN ELEVATION INDICATED ON PLAN.

* REMOVE 3'-0" CURB & GUTTER MIN. OR TO THE NEAREST JOINT, 6'-0" MAX. UNLESS OTHERWISE DIRECTED ON THE PLAN.

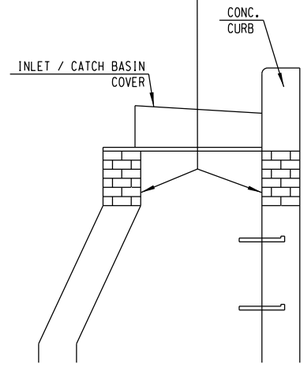


PLAN VIEW



SECTION A-B

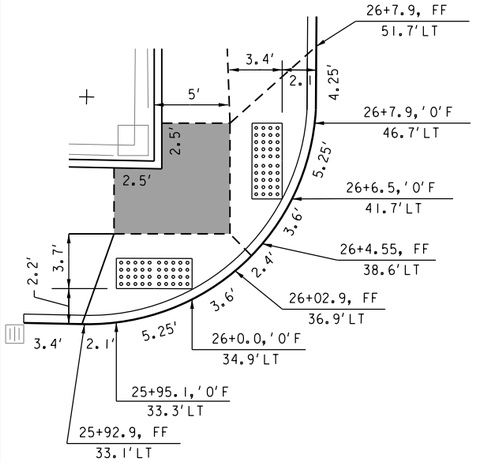
REPAIR BY REMOVING & REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO DEPTH AS DIRECTED BY ENGINEER. WORK UNDER ADJUSTING CATCH BASIN/ INLET COVERS SHALL BE CONFINED TO THE BRICK SHIMMING ABOVE THE STRUCTURE CORBEL. THIS SHIMMING SHALL NOT EXCEED 1 FOOT BETWEEN THE TOP OF THE CORBEL AND THE FRAME BOTTOM.



SECTION A-A

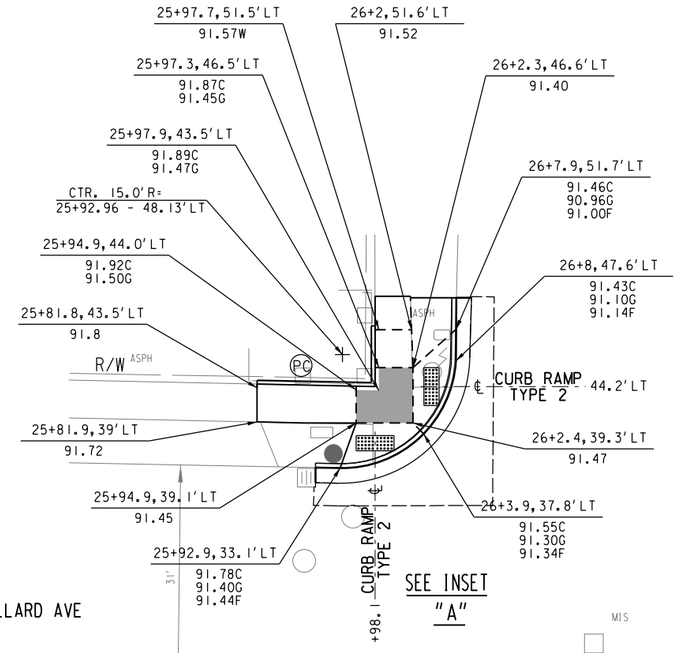
ADJUSTING INLET / CATCH BASIN COVERS

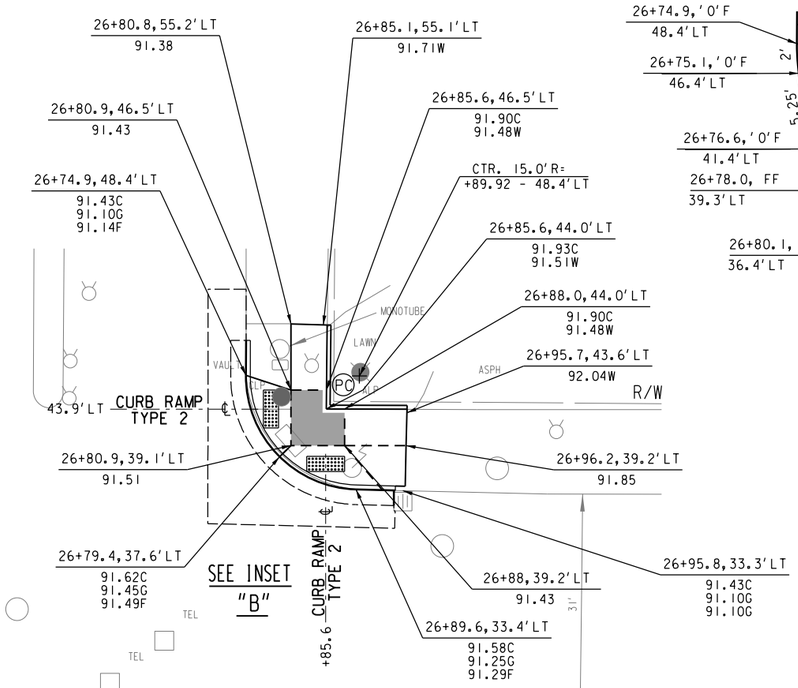
NOTE: ADJUSTMENT WORK INCIDENTAL WITH PLACING NEW COVER.

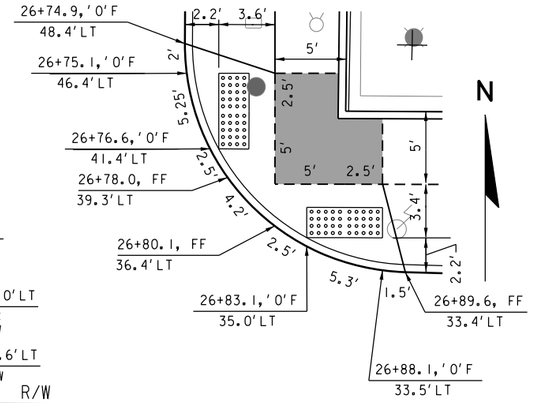


INSET "A"

SCALE: 1" = 10'





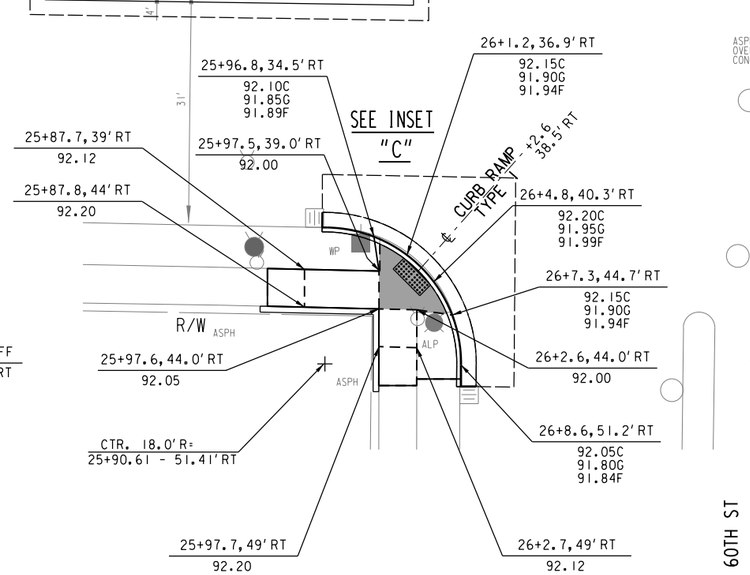


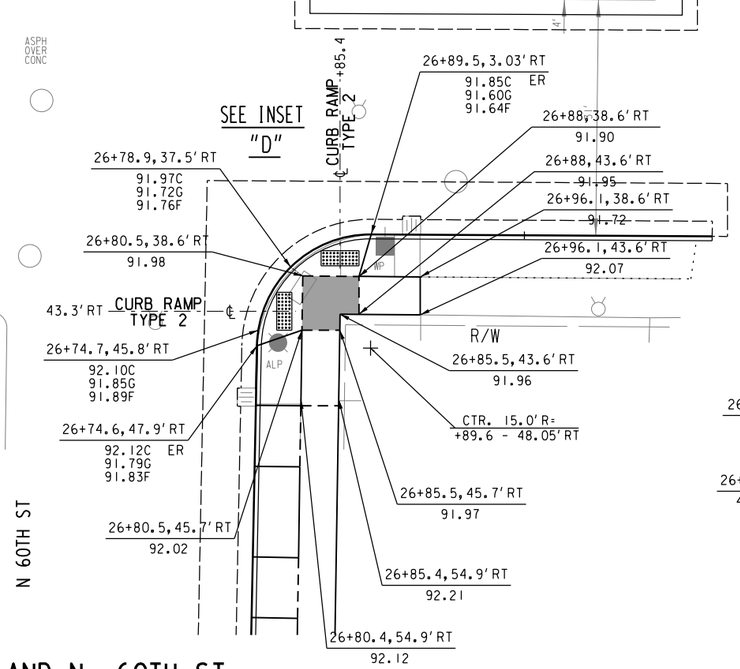
INSET "B"

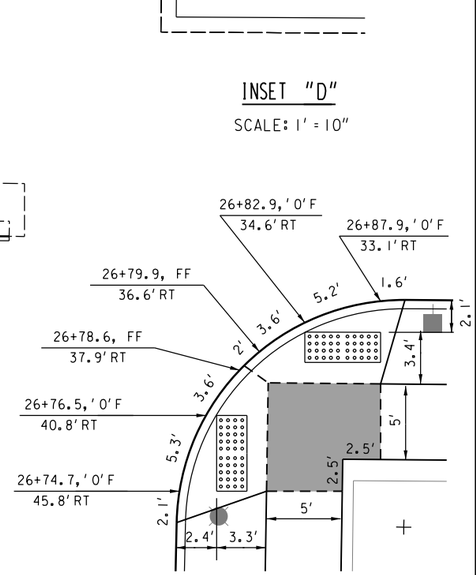
SCALE: 1" = 10'

W VILLARD AVE



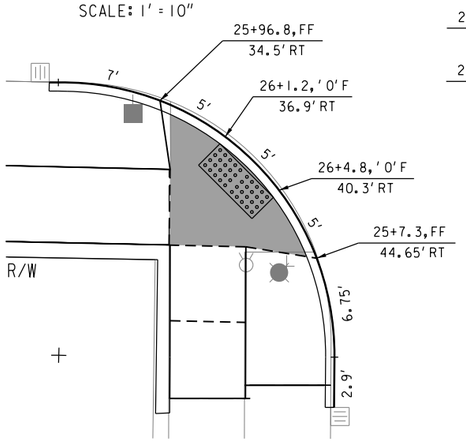






INSET "C"

SCALE: 1" = 10'



INSET "D"

SCALE: 1" = 10'

LANDING AREA

(PC) CONST. CONC. PEDESTRIAN CURB

DETECTABLE WARNING FIELD

W. VILLARD AVE. AND N. 60TH ST.

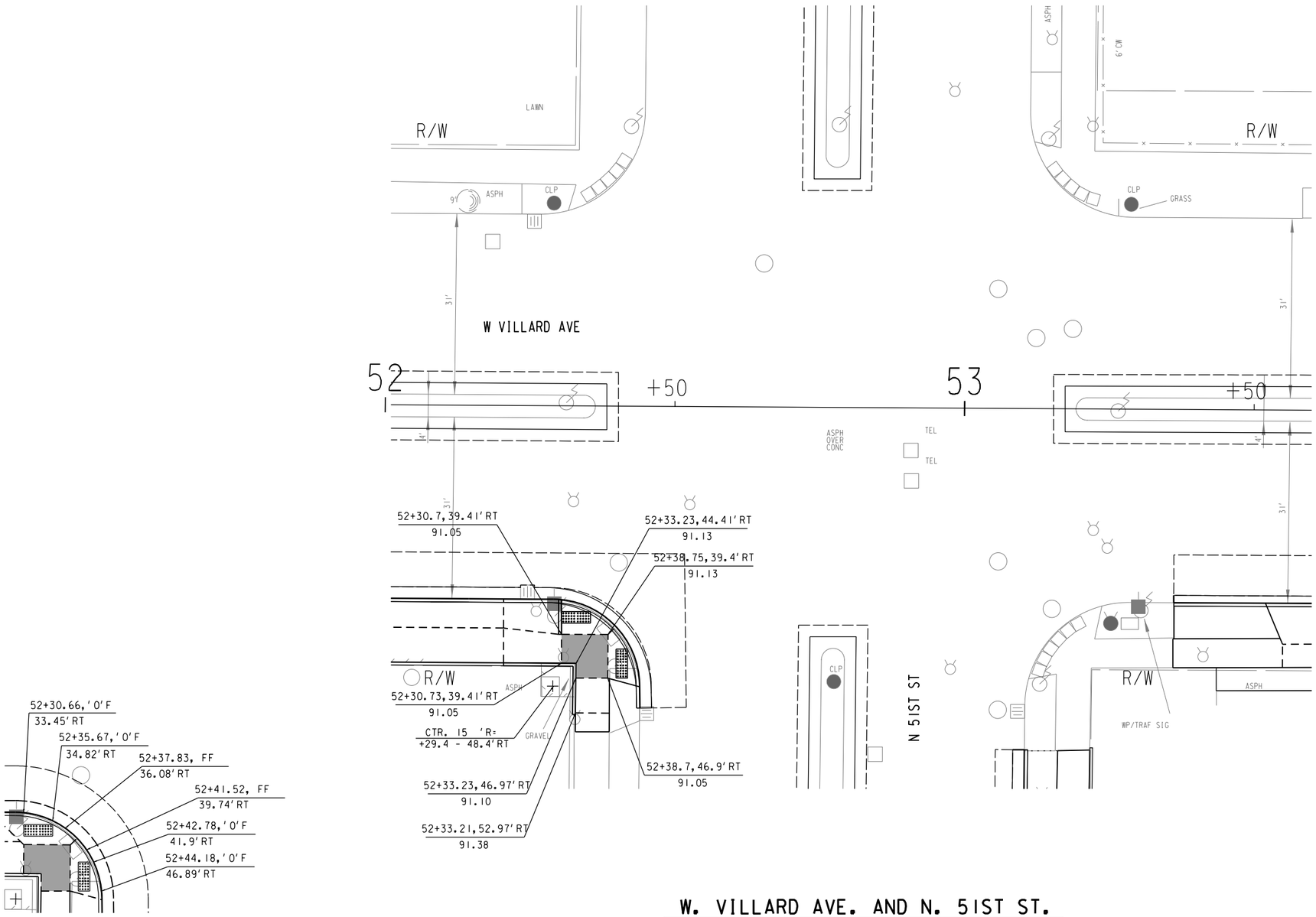
STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	CURB RAMP DETAIL	SCALE FEET 0' 20'	SHEET NO: 6	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\RAMP DETAIL\N 60TH ST - RAMP DETAIL.DGN

REVISED DATE: 06-07-2022 BY SDB

2

N



W. VILLARD AVE. AND N. 51ST ST.

LANDING AREA

DETECTABLE WARNING FIELD

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY MILWAUKEE	CURB RAMP DETAIL	SCALE FEET 0' 20	SHEET NO: 7	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\RAMP DETAIL\N 51ST - RAMP DETAIL.DGN

REVISED DATE: 03-10-2022 BY ES

2

N

W VILLARD AVE

189-0240-100
135

189-0239
120

190-2121
259.64

#6130 W. VILLARD AVE.

#6000 W. VILLARD AVE.

#5834 W. VILLARD AVE.

#6027 W. VILLARD AVE.

#6003 W. VILLARD AVE.

#5829 W. VILLARD AVE.

#5815-17 W. VILLARD AVE.

#5801 W. VILLARD AVE.

N 60TH ST

24 | 25 | 26 | 27 | 28 | 29

26+1.8 / 55.8'LT
25+97.1 / 55.9'LT
CTR. 15.0'R= +93 - 48.1'LT
25+97.3 / 39'LT
25+81.8 / 44'LT
26+7.9 / 55.9'LT
25+81.9 / 39'LT
25+89.7 / 33.1'LT
25+89.9 / 33.4'RT
25+82.8 / 39'RT
25+97.6 / 39'RT
25+82.9 / 44'RT
25+97.6 / 44'RT
CTR. 18.0'R= +90.6 - 51.4'RT
25+97.8 / 54.1'RT
26+8.4 / 53.1'RT
26+2.8 / 53.2'RT

26+80.8 / 55.2'LT
26+85.6 / 55.1'LT
26+85.6 / 44'LT
CTR. 15.0'R= +89.9 - 48.4'LT
26+74.9 / 53'LT
26+96.2 / 44'LT
26+94.6 / 33.3'LT
27+34.6 / 33.6'RT
27+32.5 / 33.6'RT
26+96.1 / 38.6'RT
26+96.1 / 43.6'RT
27+31.8 / 38.6'RT
CTR. 15.0'R= +89.6 - 48.0'RT
26+74.6 / 90.4'RT
26+85.5 / 43.6'RT
26+80.2 / 85.4'RT
26+85.1 / 91.1'RT
26+80.1 / 91.3'RT

LANNON-STONE

MONOTUBE

ASPH OVER CONC

12" PROPOSED

140
211-0148

120
211-0192-100

119
210-0001-100

93.60
210-0005-100

47
210-0005-100

210-0008-100

LEGEND

- REMOVE ASPHALTIC SURFACE MILLING
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- (SA) SAW ASPHALT
- (SC) SAW CONCRETE

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	REMOVAL PLAN - N 60TH ST	SCALE FEET 0' 40'	SHEET NO: 8	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\N 60TH ST -REMOVAL.DGN

REVISED DATE: 11-29-2022 BY AA

W VILLARD AVE

N

45
#5214

190-9921-100-0
90

190-9999
120

191-0422-100
105

191-0234
165

#5118 W. VILLARD AVE.

#5229 N. 51ST BLVD.

#5200 N. 51ST BLVD.

#5000 W. VILLARD AVE.

P.L.

BENCHMARK:
BM=STA 50+26
N. 51ST ST. & W. VILLARD AVE.
2.0' NORTH & 43.7' WEST OF CURB
ELEV.= 91.073'

CNTR "I"
STA 51+90. 40' LT
N 326,365.75
E 588,099.51

CNTR "I"
STA 53+66. 40' LT
N 326,364.81
E 588,719.16

LAWN

ASPH

CLP

WP

GRASS

TEBES

51+92.7
0.1' RT

51+75.7
33.4' RT

51+84.1
38.5' RT

51+83.9
44.4' RT

CTR. 15.0' R=
+29.3 - 48.4' RT

52+0.2
38.5' RT

52+33.2
56.3' RT

52+39.1
56.2' RT

52+44.3
52' RT

53+36.3
33.4' RT

53+36.3
39.6' RT

53+10.6
58.9' RT

53+21.9
58.9' RT

53+15.5
98.8' RT

53+10.3
108.9' RT

53+21.5
109.1' RT

53+15.6
109.1' RT

53+36.2
44.6' RT

53+78.5
33.4' RT

53+74.8
39.3' RT

53+79.8
39.3' RT

53+79.8
44.3' RT

#5135 W. VILLARD AVE.

#5123 W. VILLARD AVE.

#5031 W. VILLARD AVE.

#4949 W

143
210-9993-100

140
210-9994-100

200
209-0019-120

209

N 51ST ST

BENCHMARK:
MMSD 111 N SIDE OF W. 51ST ST.
& N. VILLARD AVE.
NO BOLT
ELEV.=110.930'

LEGEND

- REMOVE CONCRETE WALK
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE DRIVEWAY
- REMOVE ASPHALTIC SURFACE MILLING

(SA) SAW ASPHALT
(SC) SAW CONCRETE

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	REMOVAL PLAN - N 51ST ST	SCALE FEET 0' 40'	SHEET NO: 9	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\N 51ST BLVD_REMOVAL.DGN

REVISED DATE: 11-29-2022 BY AA

2

#6000 W. VILLARD AVE.

90'

4'

38'

24'

CHIS 'T'
STA 25+35, 40'LT
N: 326,385.90
E: 585,395.01

CHIS 'T'
STA 27+15, 40'LT
N: 326,383.48
E: 585,574.57

W VILLARD AVE

LANNON-STONE

5"

ASPH

MONOTUBE

LAWN

ALP

VAULT

CLP

1"

45'

31'

66'

90'

69'

+50

26

27

MIS

TEL

ASPH OVER CONC

4'

5'

WP

R/W

N 60TH ST

CHIS 'T'
STA 25+45, 40'RT
N: 326,305.74
E: 585,403.52

CHIS 'T'
STA 27+15, 40'RT
N: 326,303.48
E: 585,573.98

LEGEND

- (A) INLET PROTECTION TYPE A
- (C) INLET PROTECTION TYPE C
- SURFACE WATER FLOW
- EROSION MAT URBAN CLASS I TYPE B

#6003 W. VILLARD AVE.

#5829 W. VILLARD AVE.

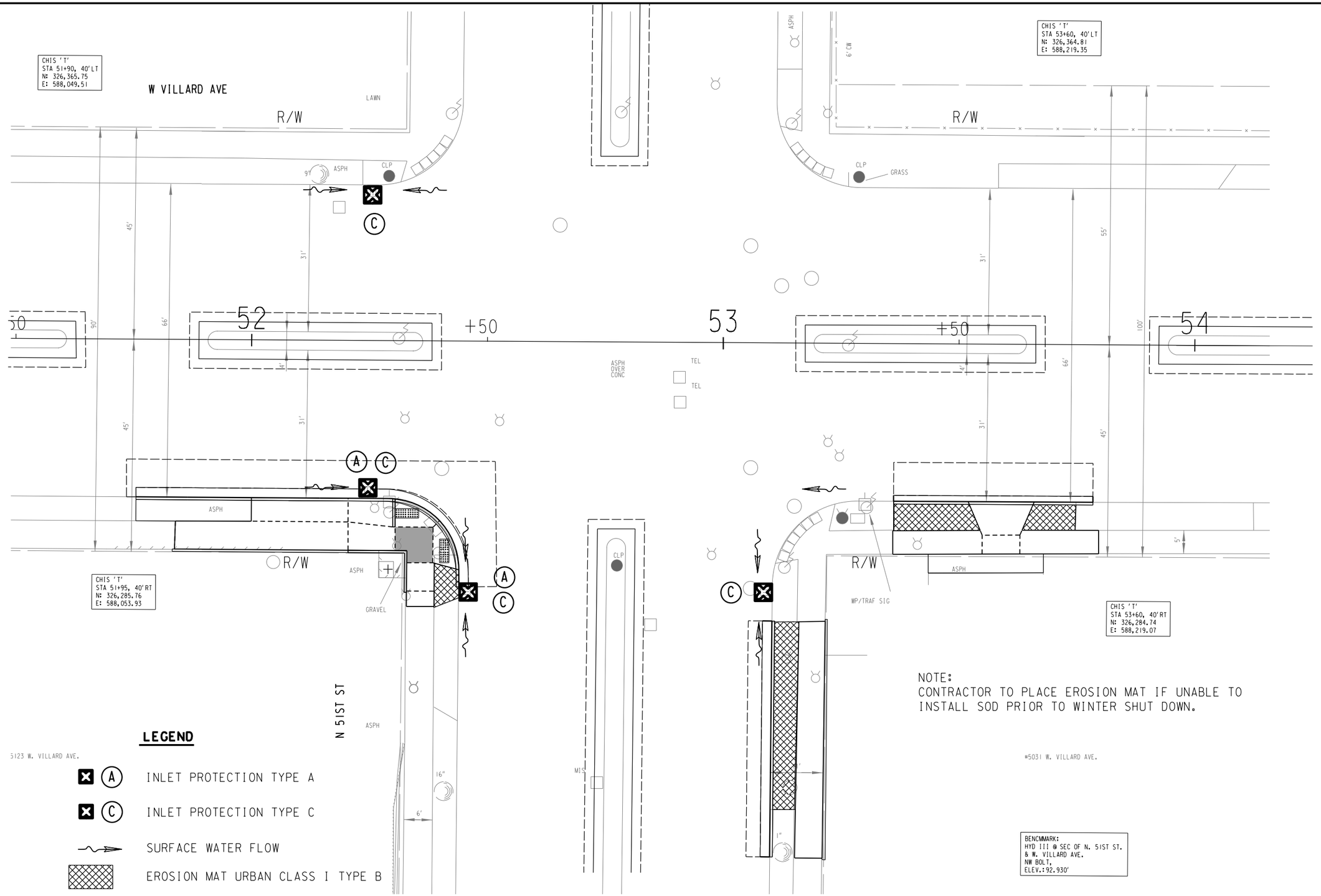
NOTE:
CONTRACTOR TO PLACE EROSION MAT IF UNABLE TO INSTALL SOD PRIOR TO WINTER SHUT DOWN.

N

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	EROSION CONTROL PLAN - N 60TH ST	SCALE FEET 0' 20'	SHEET NO: 10	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\N 60TH ST - EROSION.DGN

REVISED DATE: 08-16-2022 BY AA

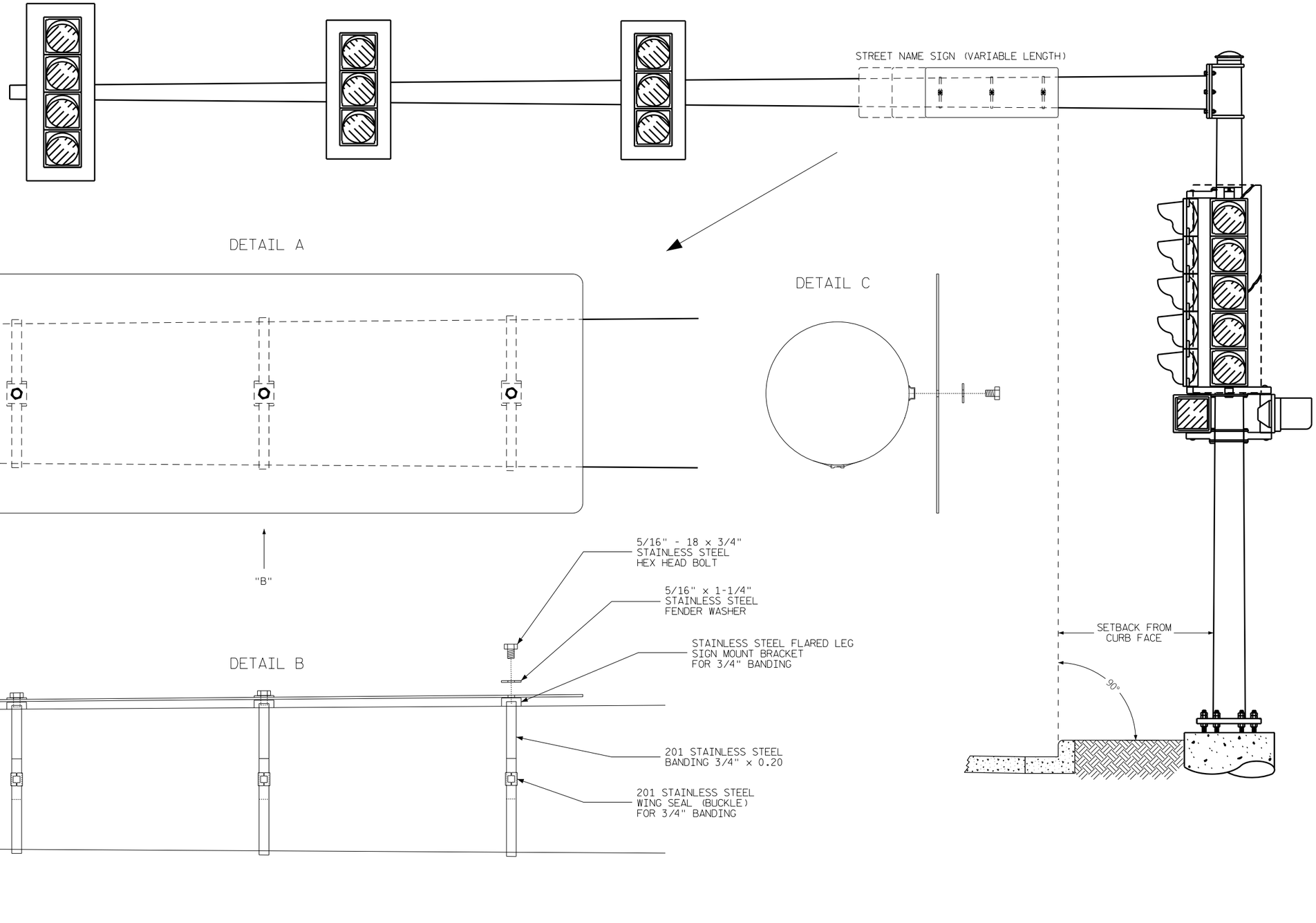


STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY MILWAUKEE	EROSION CONTROL PLAN - N 51ST ST	SCALE FEET 0' 20'	SHEET NO: 11	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\N 51ST - EROSION CONTROL PLAN.DGN

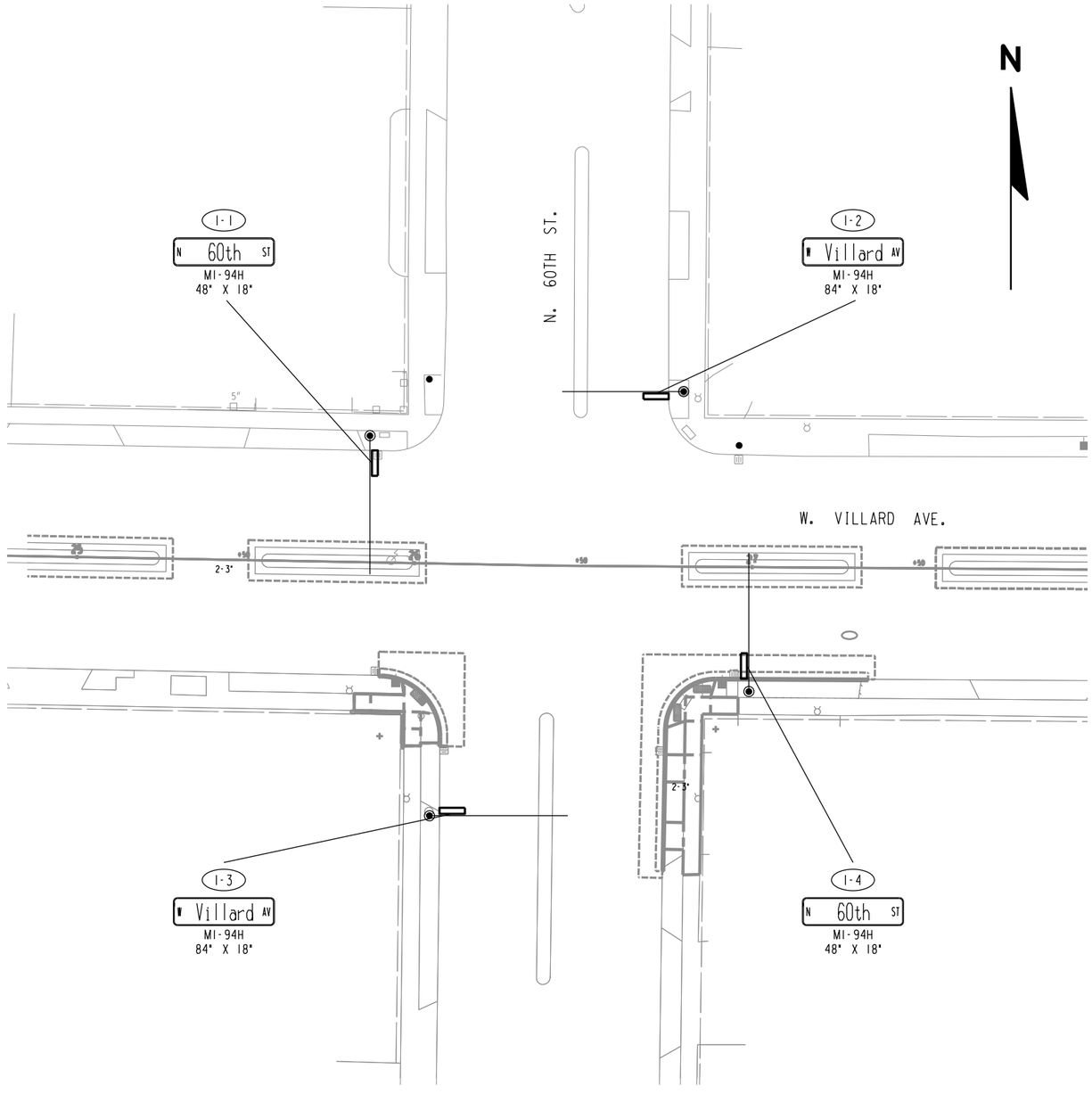
REVISED DATE: 08-16-2022 BY AA

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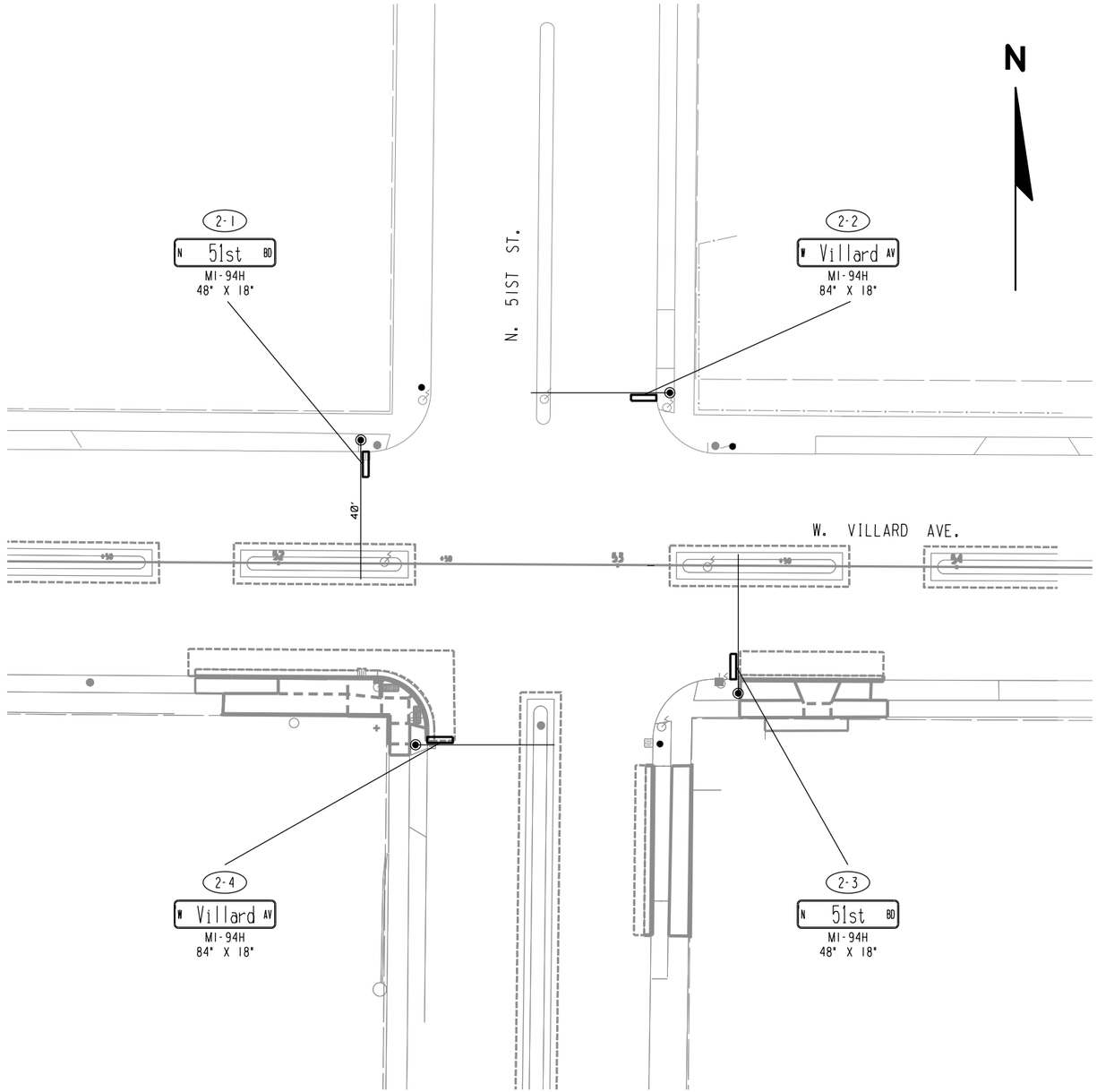
PROJECT NO: 2984–15–71	HWY: VILLARD AV	COUNTY: MILWAUKEE	STREET NAME SIGN INSTALLATION ON MAST ARM	SHEET 12	E

2

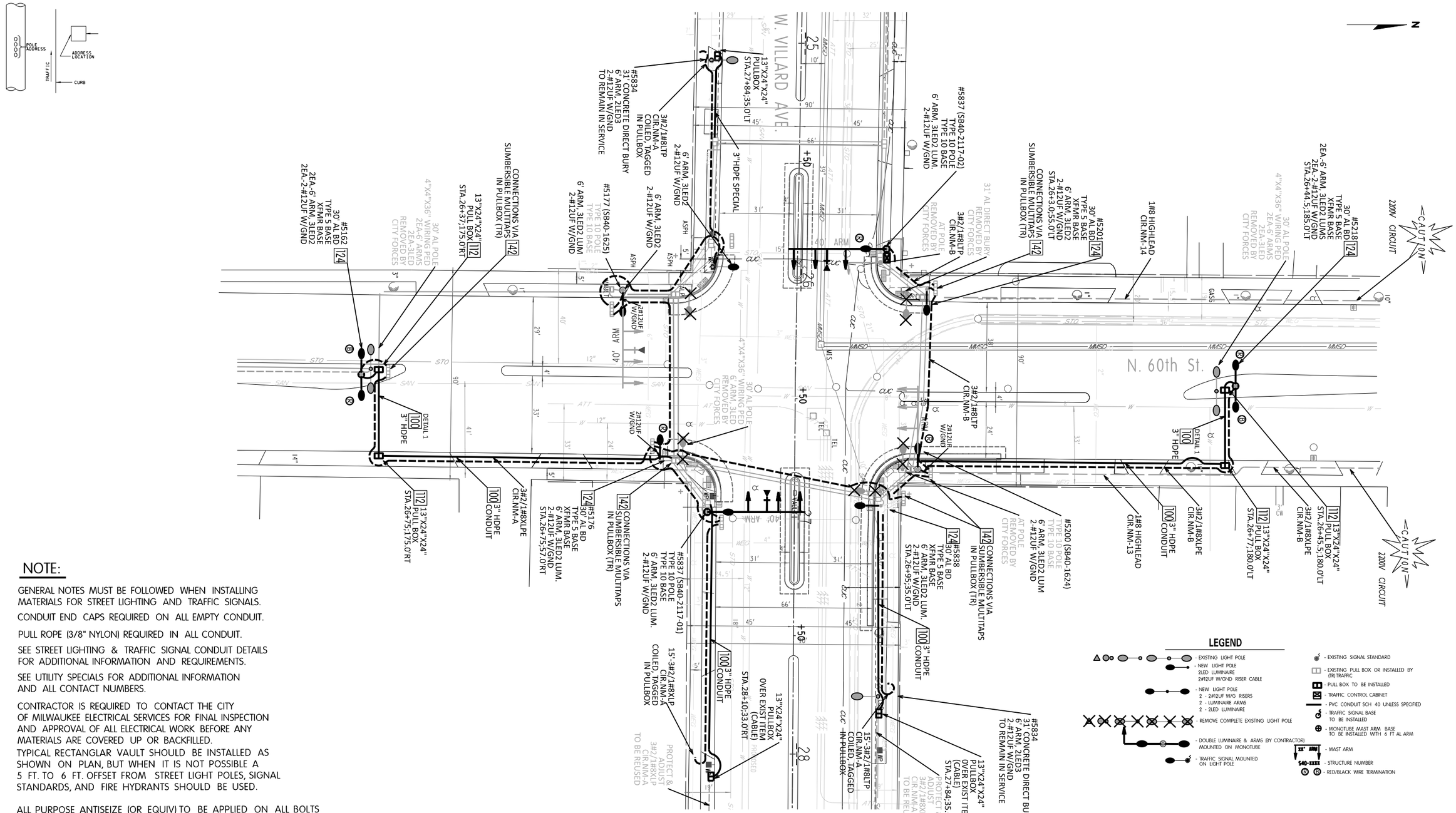


PROJECT NO: 2984–15–71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	SIGN INSTALLATION PLAN	SHEET 13	E

2



PROJECT NO: 2984–15–71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	SIGN INSTALLATION PLAN	SHEET 14	E



NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

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

SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SEE UTILITY SPECIALS FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS.

CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SERVICES FOR FINAL INSPECTION AND APPROVAL OF ALL ELECTRICAL WORK BEFORE ANY MATERIALS ARE COVERED UP OR BACKFILLED.

TYPICAL RECTANGLAR VAULT 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.

ALL PURPOSE ANTISEIZE (OR EQUIV) TO BE APPLIED ON ALL BOLTS AND SCREWS ESPECIALLY THE LIGHT POLE HAND HOLE PANEL. OXIDE INHIBITOR OX-4 (OR EQUIV) TO BE APPLIED ON ALL WIRE CONNECTION AND WIRE NUTS. TAG ALL CABLE DIRECTION IN VAULT AND HAND HOLE PANEL.

TYPE 2 LIGHT DISTRIBUTION THIS INTERSECTION UNLESS OTHERWISE SPECIFIED.

ALL NEW LIGHT UNITS TO BE EQUIPPED WITH 5 AMP INLINE FUSE LOAD SIDE ONLY.

STATE PROJECT NO: 2984–15–71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	STREET LIGHTING PLAN	SHEET 15	E

EXIST. 3EA.-3#2/1#8XLP CIR.NM-A,D,E TO REMAIN

EXIST. 2-#8HIGHLEAD CIR.NM-9,10 TO REMAIN

CONNECTIONS 142 TO MONOTUBE VIA SUMBERSIBLE MULTITAPS IN PULLBOX (TR)

13"X24"X24" PULLBOX OVER EXIST ITEM (3" CUC STUB) EXTEND CUC STUB INTO GRAVEL BASE OF PULLBOX 3" HDPE INTERCONNECT BETWEEN PULL BOXES AS SHOWN STA.52+42.0';55.0'RT

#5101 WEPCO WP 3LED2 LUM. TO REMAIN IN SERVICE STA.52+30.0';35.0'RT

3#2/1#8XLP CIR.NM-A TO #5201 VIA EXIST. PEDESTAL

EXIST. 3#2/1#8XLP CIR.NM-A TO REMAIN

EXIST. 3#2/1#8XLP CIR.NM-D TO REMAIN

#5200 (SB40-1624) TYPE 10 POLE TYPE 10 BASE 6' ARM, 3LED2 LUM 2-#12UF W/GND

15'-3#2/1#8LTP CIR.NM-A COILED, TAGGED IN PULLBOX

15'-3#2/1#8LTP CIR.NM-D COILED, TAGGED IN PULLBOX

#5102 (SB40-2118-03) TYPE 10 POLE TYPE 10 BASE 6' ARM, 3LED2 2-#12UF W/GND

#5177 (SB-40-2118-02) TYPE 10 POLE TYPE 10 BASE 6' ARM, 3LED2 2-#12UF W/GND

13"X24"X24" PULLBOX 113 OVER EXIST ITEM (CONDUIT) GRND ROD STA.52+42.0';185.0'LT

142 CONNECTIONS TO MONOTUBE VIA SUMBERSIBLE MULTITAPS IN PULLBOX (TR)

124 #5203 30' AL BD TYPE 5 BASE XFMR BASE 6' ARM, 3LED2 2-#12UF W/GND STA.52+42.0';55.0'LT

15'-3#2/1#8LTP CIR.NM-D COILED, TAGGED IN PULLBOX

#5157 26" CONC. DIRECT BURY 6' ARM, 250W HPS TO REMAIN

EXIST. 13"X24"X24" PULLBOX TO REMAIN

15'-3#2/1#8LTP CIR.NM-D COILED, TAGGED

3#2/1#8XLP CIR.NM-A

DETAIL B 100 2EA-3" HDPE

2#12UF W/GND

2#12UF W/GND

3#2/1#8XLP CIR.NM-E

2-#8CONC. CIR.NM-3,4

2-#8CONC. CIR.NM-1,2

3#2/1#8LTP CIR.NM-D

3#2/1#8LTP CIR.NM-D

DETAIL B 100 3" HDPE

#5225 26" CONC. DIRECT BURY 6' ARM, 250W HPS TO REMAIN

#5216 26" CONC. DIRECT BURY 6' ARM, 250W HPS TO REMAIN

DETAIL B 100 3" HDPE

3#2/1#8LTP CIR.NM-D COILED, TAGGED IN PULLBOX

EXIST. 1#8HIGHLEAD CIR.NM-14 TO REMAIN

EXIST. 2-#8HIGHLEAD CIR.NM-3,4 TO REMAIN

#5156 26" CONC. DIRECT BURY 6' ARM, 250W HPS TO REMAIN

EXIST. 13"X24"X24" PULLBOX TO REMAIN

13"X24"X24" PULLBOX 113 OVER EXIST ITEM (3" CUC STUB) EXTEND CUC STUB INTO GRAVEL BASE OF PULLBOX 3" HDPE INTERCONNECT BETWEEN PULL BOXES AS SHOWN

#5176 30' AL BD TYPE 5 BASE XFMR BASE 6' ARM, 3LED2 2-#12UF W/GND STA.53+18.0';58.0'RT

WEPCO WP 6' ARM, 3LED2 2-#12UF W/GND ALL TO BE REMOVED

#5037 (SB-40-2118-01) TYPE 10 POLE TYPE 10 BASE 6' ARM, 3LED2 2-#12UF W/GND

DETAIL B 100 3" HDPE

WEPCO WP RELOCATION

13"X24"X24" PULLBOX OVER EXIST ITEM (2200V CABLE) 3" HDPE INTERCONNECT TO PULLBOX AT MONOTUBE #5037 AS SHOWN STA.53+94.5'36.5'RT

#5038 30' AL BD TYPE 5 BASE XFMR BASE 6' ARM, 3LED2 2-#12UF W/GND STA.53+32.0';35.0'RT

#5204 (SB40-2118-03) TYPE 10 POLE TYPE 10 BASE 6' ARM, 3LED2 2-#12UF W/GND

13"X24"X24" PULLBOX 113 OVER EXIST ITEM (CONDUIT) GRND ROD STA.52+42.0'185.0'LT

3#2/1#8LTP CIR.NM-D

CAUTION 2200V CIRCUIT

CAUTION 2200V CIRCUIT

W. VILLARD AVE.

N. 51st ST.

N. 51st ST.

52+50

53+00

POLE ADDRESS

ADDRESS LOCATION

TRAFFIC

CURB

LEGEND

- EXISTING LIGHT POLE
- NEW LIGHT POLE 2LED LUMINAIRE 2#12UF W/GND RISER CABLE
- NEW LIGHT POLE 2 - 2#12UF W/G RISERS 2 - LUMINAIRE ARMS 2 - 2LED LUMINAIRE
- REMOVE COMPLETE EXISTING LIGHT POLE
- DOUBLE LUMINAIRE & ARMS (BY CONTRACTOR) MOUNTED ON MONOTUBE
- TRAFFIC SIGNAL MOUNTED ON LIGHT POLE
- EXISTING SIGNAL STANDARD
- EXISTING PULL BOX OR INSTALLED BY (TR) TRAFFIC
- PULL BOX TO BE INSTALLED
- TRAFFIC CONTROL CABINET
- PVC CONDUIT SCH 40 UNLESS SPECIFIED
- TRAFFIC SIGNAL BASE TO BE INSTALLED
- MONOTUBE MAST ARM BASE TO BE INSTALLED WITH 6 FT AL ARM
- MAST ARM
- STRUCTURE NUMBER
- RED/BLACK WIRE TERMINATION

NOTE:

GENERAL NOTES MUST BE FOLLOWED WHEN INSTALLING MATERIALS FOR STREET LIGHTING AND TRAFFIC SIGNALS.

CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

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

SEE STREET LIGHTING & TRAFFIC SIGNAL CONDUIT DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SEE UTILITY SPECIALS FOR ADDITIONAL INFORMATION AND ALL CONTACT NUMBERS.

CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SERVICES FOR FINAL INSPECTION AND APPROVAL OF ALL ELECTRICAL WORK BEFORE ANY MATERIALS ARE COVERED UP OR BACKFILLED.

TYPICAL RECTANGLAR VAULT 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.

ALL PURPOSE ANTISEIZE (OR EQUIV) TO BE APPLIED ON ALL BOLTS AND SCREWS ESPECIALLY THE LIGHT POLE HAND HOLE PANEL. OXIDE INHIBITOR OX-4 (OR EQUIV) TO BE APPLIED ON ALL WIRE CONNECTION AND WIRE NUTS. TAG ALL CABLE DIRECTION IN VAULT AND HAND HOLE PANEL.

TYPE 2 LIGHT DISTRIBUTION THIS INTERSECTION UNLESS OTHERWISE SPECIFIED. ALL NEW UNITS TO BE EQUIPPED WTIH 5 AMP INLINE FUSE LOAD SIDE ONLY.

SCALE, FEET 0 30

STATE PROJECT NO: 2984–15–71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	STREET LIGHTING PLAN	SHEET 16	E

2

TRAFFIC & STREET LIGHTING GENERAL NOTES:

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

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

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

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

2 LOCATIONS OF THE 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. FIELD MARK EACH CONDUIT LOCATION BY STAMPING AND PAINTING WITH RED PAINT ON TOP AND BACKSIDE OF CURB.

3 TYPICAL CONDUIT INSTALLED UP TO DIRECT BURIED STREET LIGHT POLES IS AS FOLLOWS 3-INCH OR 2.5-INCH (AS NOTED) SCHEDULE 40 RIGID PVC TO STREET LIGHTING METAL HOUSING (PEDESTAL), THE 1.5-INCH LIQUID TIGHT FLEXIBLE CONDUIT TO STREET LIGHT POLE CABLE SLOT, AND THE 2-INCH SCHEDULE 40 RIGID PVC TO SIGNAL STANDARD BASE AND RISER FOR TRAFFIC SIGNAL ON STREET LIGHT POLE.

4 DEPTH OF CONDUIT INSTALLED BELOW THE STREETS, HIGHWAYS, ROADS, AND ALLEYS SHALL BE 24-INCHES MINIMUM AND 36-INCHES MAXIMUM. (MEASURED FROM FINISHED FLANGE LINE)

5 CONDUIT INSTALLED BEHIND CURB, AND UNDER DRIVEWAYS SHALL BE INSTALLED AT A DISTANCE OF 6 INCHES AWAY FROM THE BACK OF CURB TO THE CENTER LINE OF CONDUIT, AND 18 INCHES DOWN MEASURED FROM THE TOP OF CURB OR FINISHED GRADE TO THE TOP OF CONDUIT.

6 WHEN THERE IS MORE THAN ONE CONDUIT TO BE INSTALLED, PLACE ALL CONDUITS IN THE SAME TRENCH.

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

8 THE CONTRACTOR OR HIS SUBCONTRACTOR MUST MAKE SURE THE AREA BEHIND CURB AND/OR TRENCH SHALL BE FREE OF DEBRIS AND OVERPOUR AND SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

9 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.

10 ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON ALL CONDUITS. (SEE NEC 352.28 2008 CODE)

11 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.

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

13 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.).

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

15 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 UNLESS OTHERWISE APPROVED BY THE STREET LIGHTING ENGINEER.

16 WHEN ENDS OF CONDUIT DO NOT CONNECT TO A PULL BOX / VAULT AND WILL END UP UNDER CONCRETE WALK. THE CONTRACTOR IS REQUIRED TO LEAVE A 24" X 24" BOX FORM CENTERED OVER THE END OF CONDUIT AND FILL THE BOXFORM WITH CRUSHED GRAVEL. (PER WISDOT SPEC 209.2.1(1) GRANULAR BACKFILL)

17 ALL PIPE CROSSINGS AND PULL BOXES / VAULTS SHALL BE AT LEAST SIX (6) FEET AWAY FROM FIRE HYDRANTS, UNLESS NOTED OTHERWISE, OR APPROVED BY THE STREET LIGHTING ENGINEER.

18 ALL POLES AND TRAFFIC STANDARDS IN CONCRETE ARE REQUIRED TO HAVE A 30"X30" BOX SHAPED JOINT PLACED AROUND THEM USING AN EXPANSION JOINT FILLER. UNLESS NOTED OTHERWISE (SEE DETAIL 122)

19 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.

20 LIGHT POLES AND TRAFFIC STANDARDS 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.

21 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 - MARK MACRAE (OFFICE) 414-286-5928 (CELL) 414-708-0434
TRAFFIC SIGNALS - RUDY GUTIERREZ (OFFICE) 414-286-3687 (CELL) 414-708-5148 OR DISPATCHER @ 414-286-3687

22 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 - DISPATCHER @ 414-286-3015
TRAFFIC SIGNALS - RUDY GUTIERREZ (OFFICE) 414-286-5941 (CELL) 414-708-5148
TRAFFIC SIGNALS - DISPATCHER @ 414-286-3687

23 CONDUIT WILL ONLY BE INSTALLED AFTER THE CURB IS POURED, UNLESS APPROVED BY BOTH THE ENGINEER & STREET LIGHTING SHOP SUPERVISOR.

24 CONDUIT END CAPS REQUIRED ON ALL EMPTY CONDUIT.

25 CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF MILWAUKEE ELECTRICAL SERVICES FOR FINAL INSPECTION AND APPROVAL OF ALL ELECTRICAL WORK BEFORE ANY MATERIALS ARE COVERED UP OR BACKFILLED.

26 ALL PURPOSE ANTISEIZE (OR EQUIV) TO BE APPLIED ON ALL BOLTS AND SCREWS ESPECIALLY THE LIGHT POLE HAND HOLE PANEL. OXIDE INHIBITOR OX-4 (OR EQUIV) TO BE APPLIED ON ALL WIRE CONNECTION AND WIRE NUTS. TAG ALL CABLE DIRECTION IN VAULT AND HAND HOLE PANEL.

27 Provide three sets 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 will reject as-builts with incomplete or incorrect content or not conforming to CMM standards.

28 RETURN ALL REMOVED STREET LIGHTING FIXTURES TO STREET LIGHTING FIELD OFFICE
(ATTN: MIKE GUERRERO)
1540 W. CANAL ST. MILWAUKEE WI 53233

UTILITY LINE CODE

SAN	SANITARY SEWER
STO	STORM SEWER
W	WATER
G	GAS
G	PROPOSED GAS
E	ELECTRIC
TE&ES	TRAFFIC & STREET LIGHTING
	OLD CITY UNDERGROUND CONDUIT
CUC	PROPOSED CITY UNDERGROUND CONDUIT
T	TELEPHONE
TV	CABLE

TRAFFIC & 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.

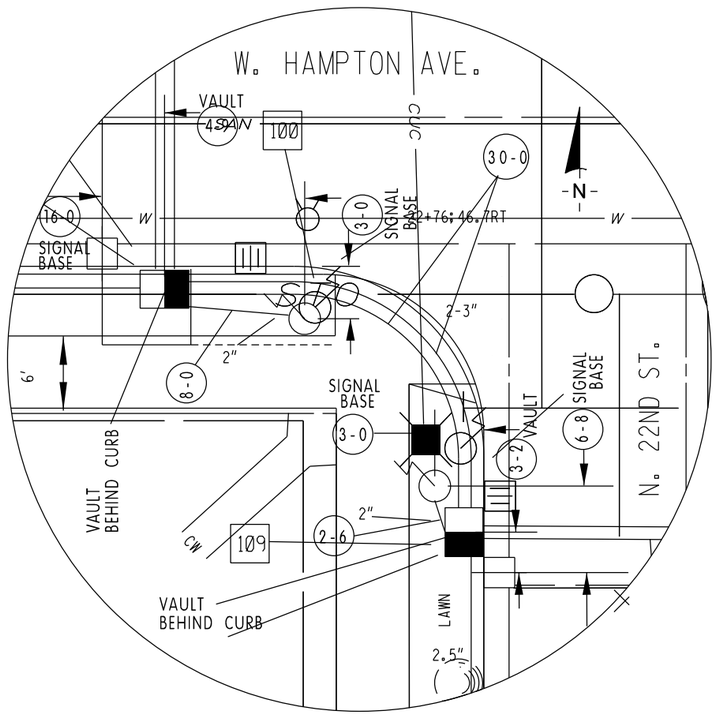
IF THERE ARE NO CORRECTIONS OR ADDITIONS TO THE AS-LET PLAN(S) PUT "NO CHANGE" ON THE SHEET WITH ALL OTHER REQUIRED AS-BUILT INFORMATION.

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

RECORD RETENTION REQUIREMENTS:

- 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.

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



FIELD RECORD EXAMPLE DETAIL NOT TO SCALE

TYPICAL DIMENSIONING OF CONDUIT, VAULTS, 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, VAULTS AND CONCRETE BASES.

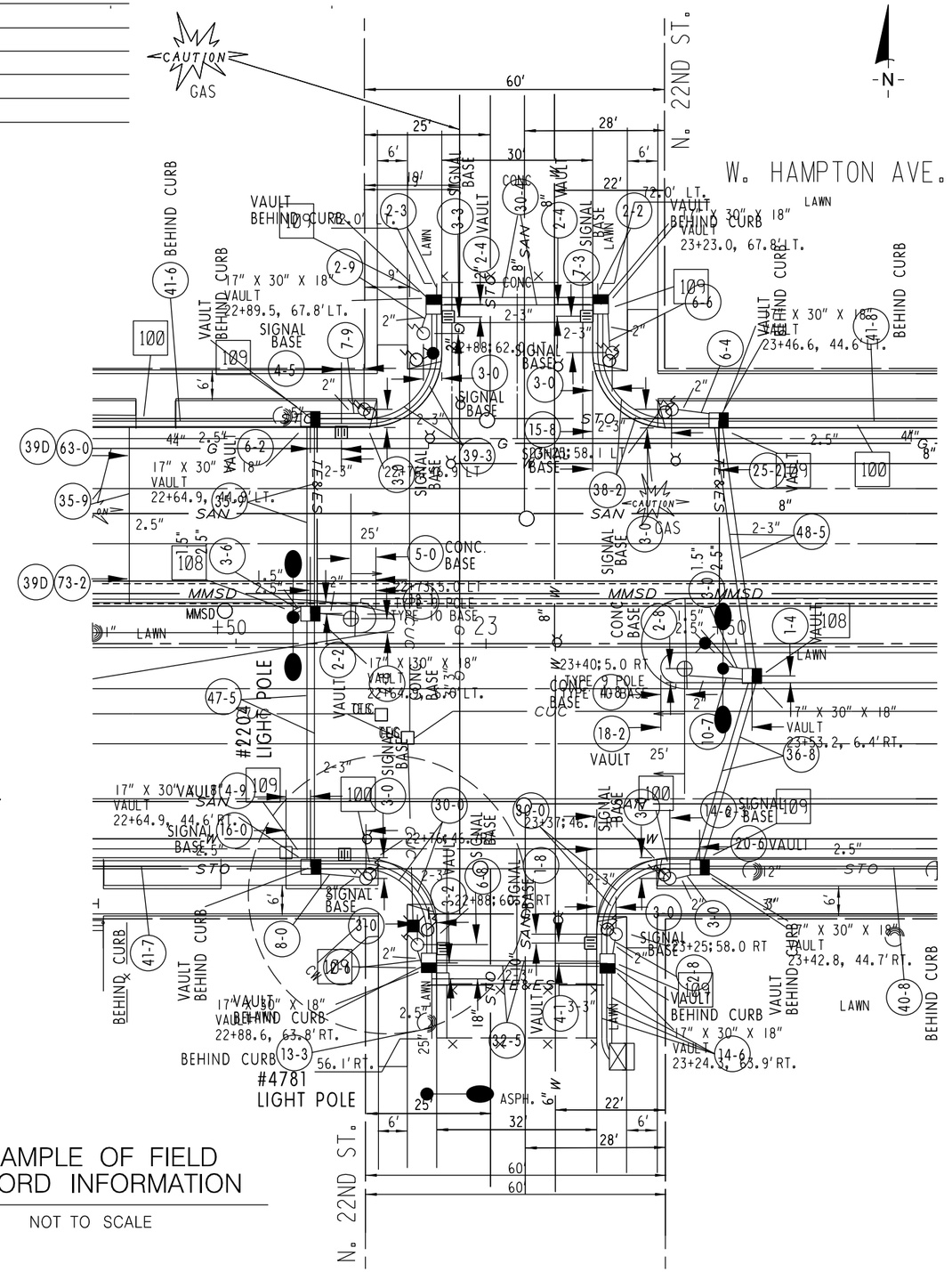
MEASURE TO OR FROM THE CENTERS OF OBJECTS FOR DISTANCE TAKING.

(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, VAULT, AND CONCRETE BASE (MEASURED TO NEAREST TENTH OF A FOOT)



EXAMPLE OF FIELD RECORD INFORMATION

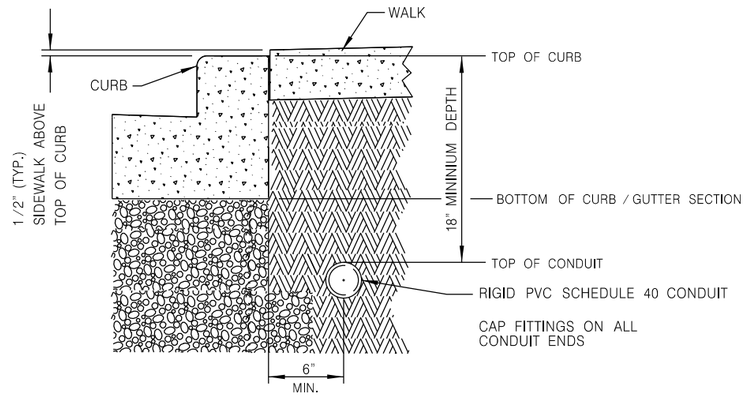
NOT TO SCALE

PROJECT NO: 2984–15–71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	STREET LIGHTING DETAILS	SHEET OF 19	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 42

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" NOT TO SCALE

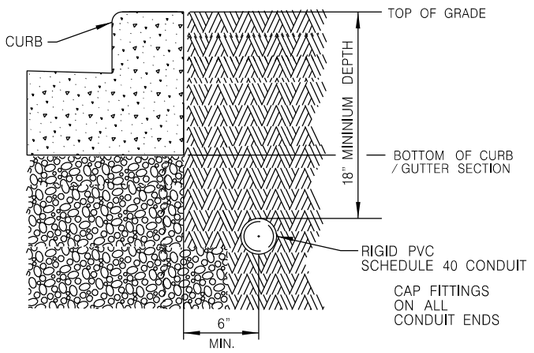
TYPICAL CONDUIT INSTALLATION
BEHIND CURB

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

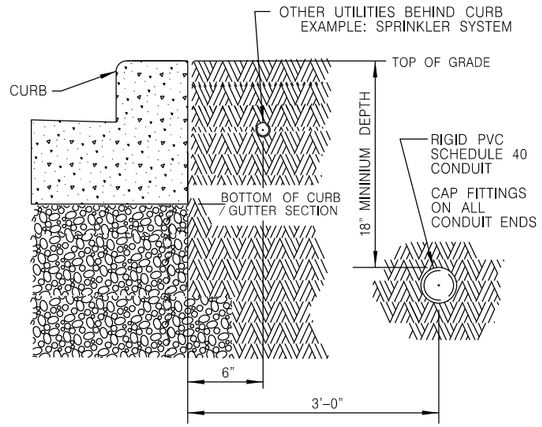
NOTE: 1.) KEEP AREA BEHIND CURB FREE OF DEBRIS AND CONCRETE OVERPOUR.

DETAIL "B"

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



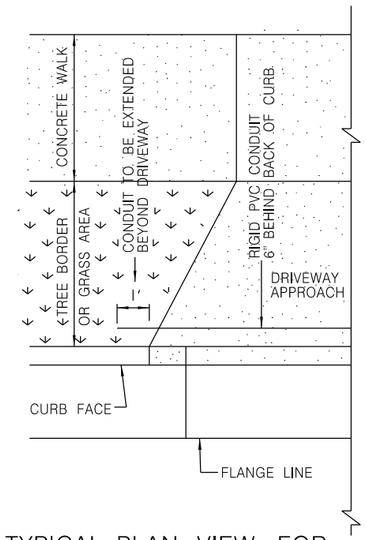
DETAIL "C"



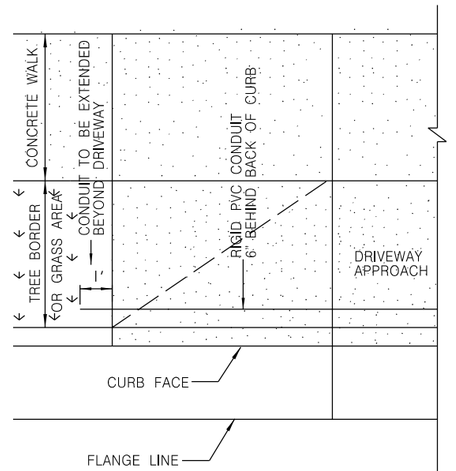
100 DETAIL "B" & "C" NOT TO SCALE

TYPICAL CONDUIT INSTALLATION
BEHIND CURB

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

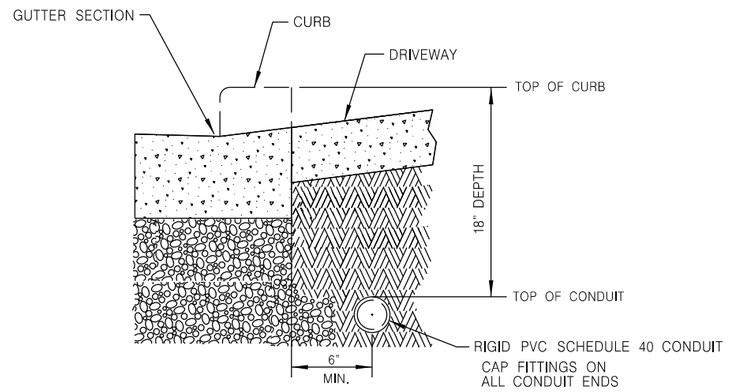


TYPICAL PLAN VIEW FOR
FLARED DRIVEWAY



TYPICAL PLAN VIEW FOR
DEPRESSED DRIVEWAY

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.



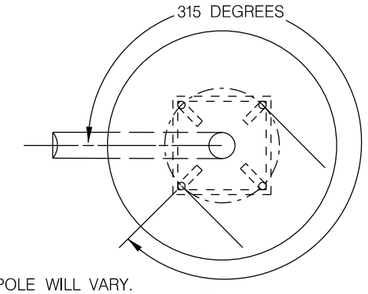
101 DETAIL NOT TO SCALE

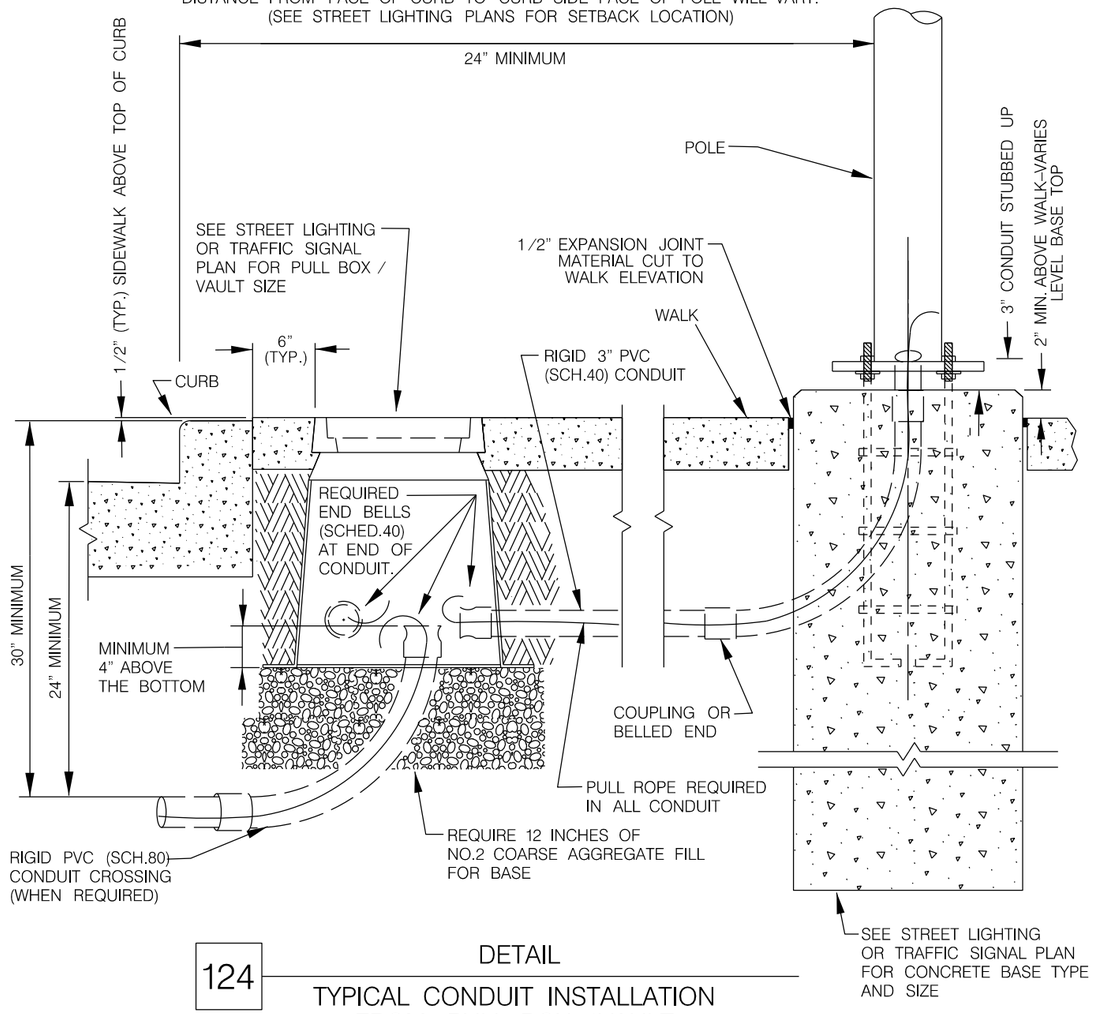
TYPICAL CONDUIT INSTALLATION
UNDER DRIVEWAYS OR PEDESTRIAN RAMPS

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

2

BOLT CIRCLE
TOP VIEW



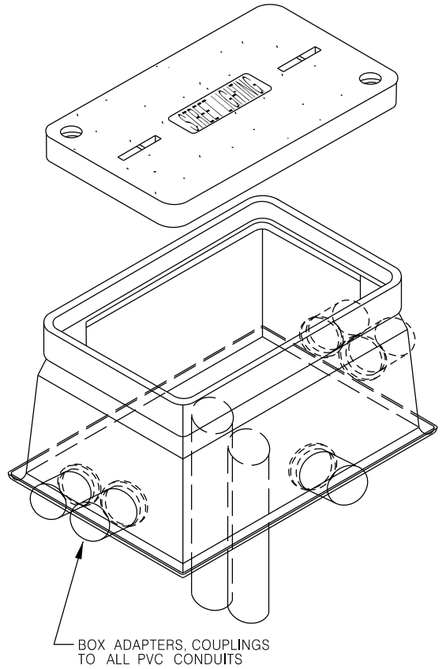


124 DETAIL

TYPICAL CONDUIT INSTALLATION
FROM PULL BOX / VAULT
TO CONCRETE BASE

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



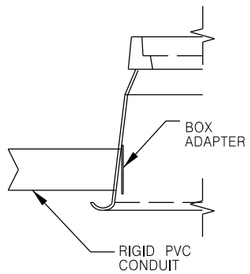
HEAVY DUTY COVER
W/ STREETLIGHTING LOGO
& W / 2 BOLTS
COLOR: GRAY

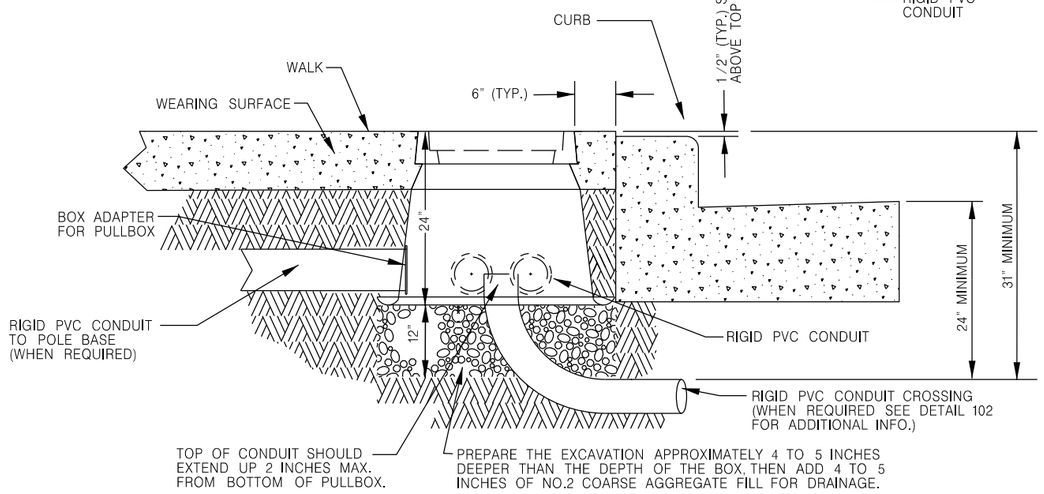
ELECTRICAL PULLBOX
FLARED WALL
BOX W / NO BASE
COLOR: GRAY

(VARIOUS SIZES)

PLUG OR CAP FITTINGS ON ALL
UNUSED CONDUITS IN THE ENCLOSURE

BOX ADAPTERS, COUPLINGS
TO ALL PVC CONDUITS





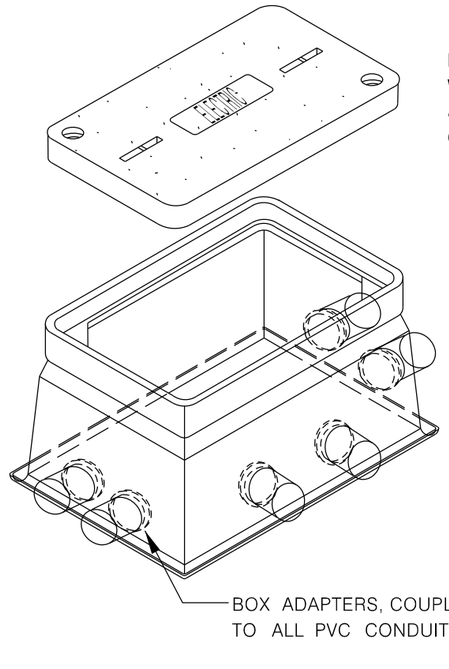
112 DETAIL

TYPICAL PULLBOX INSTALLATION IN WALK

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.

2

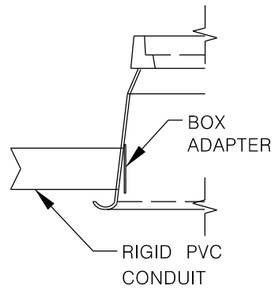


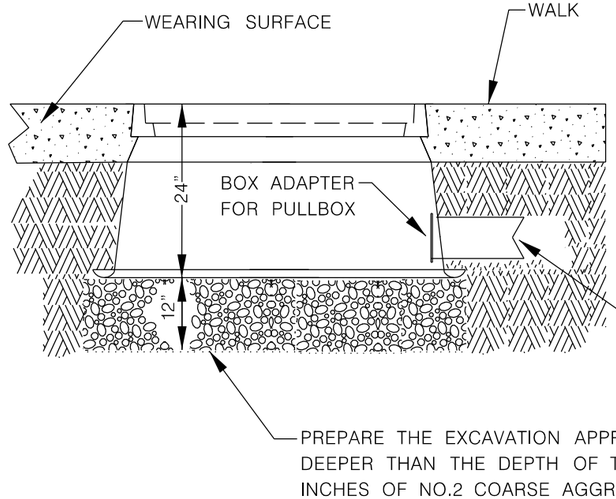
HEAVY DUTY COVER
W/ ELECTRIC LOGO
& W / 2 BOLTS
COLOR: GRAY

ELECTRICAL PULLBOX
FLARED WALL
BOX W / NO BASE
COLOR: GRAY
(VARIOUS SIZES)

PLUG OR CAP FITTINGS ON ALL
UNUSED CONDUITS IN THE ENCLOSURE

BOX ADAPTERS, COUPLINGS
TO ALL PVC CONDUITS



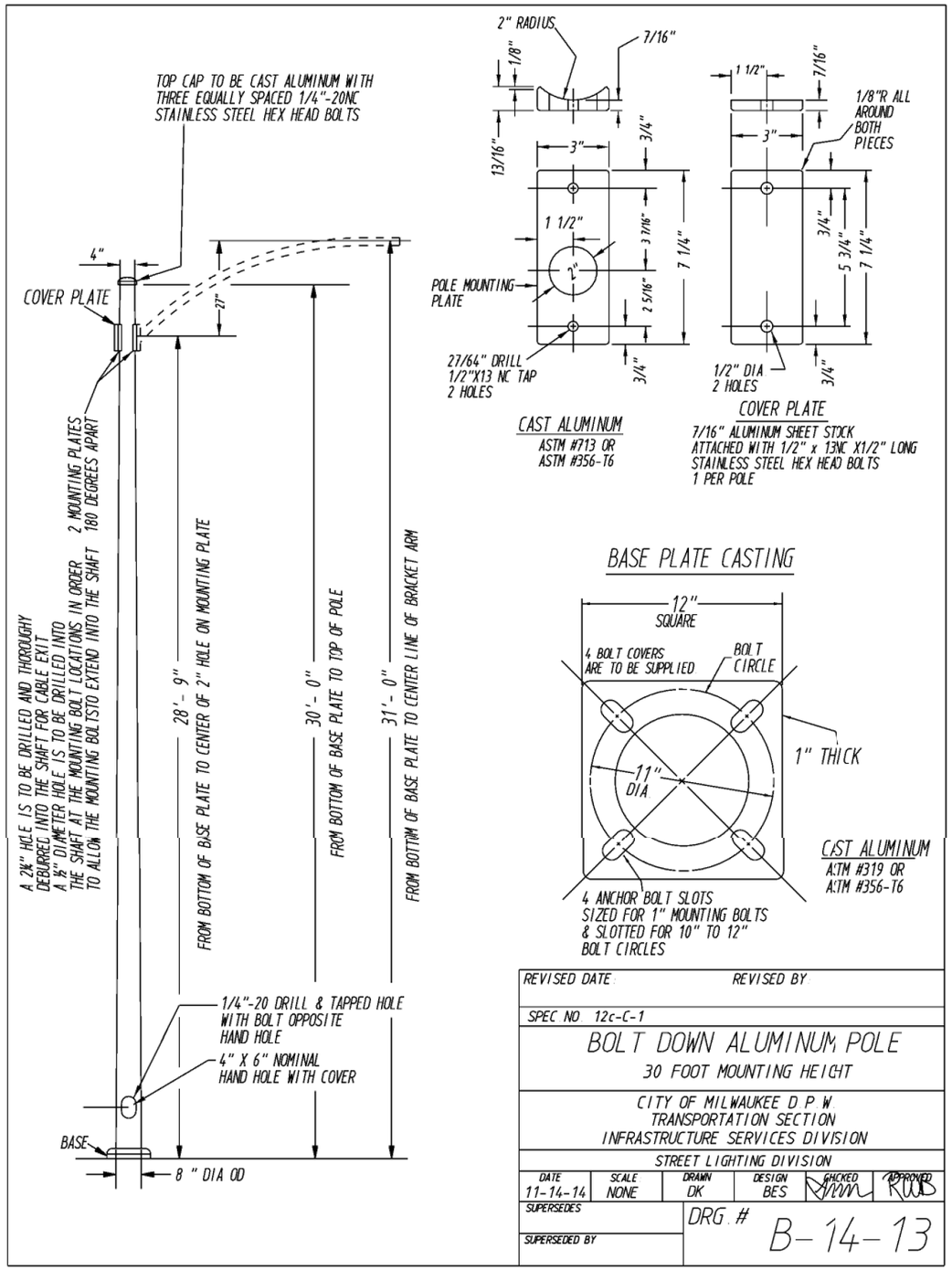


113 DETAIL

TYPICAL PULLBOX INSTALLATION
IN SIDEWALK

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.



REVISED DATE	REVISED BY
SPEC NO 12c-C-1	

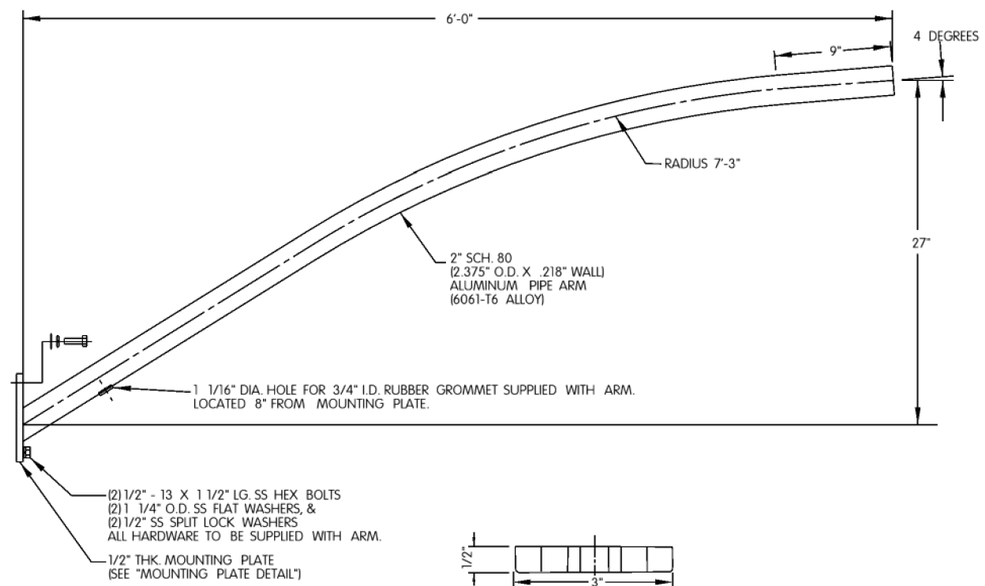
BOLT DOWN ALUMINUM POLE
30 FOOT MOUNTING HEIGHT

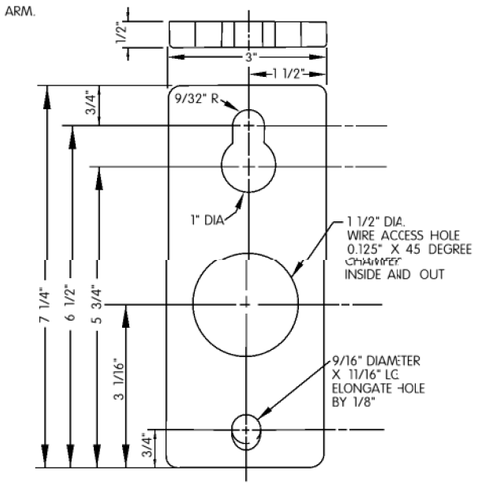
CITY OF MILWAUKEE D.P.W.
TRANSPORTATION SECTION
INFRASTRUCTURE SERVICES DIVISION
STREET LIGHTING DIVISION

DATE	SCALE	DRAWN	DESIGN	CHECKED	APPROVED
11-14-14	NONE	DK	BES		

SUPERSEDES
SUPERSEDED BY

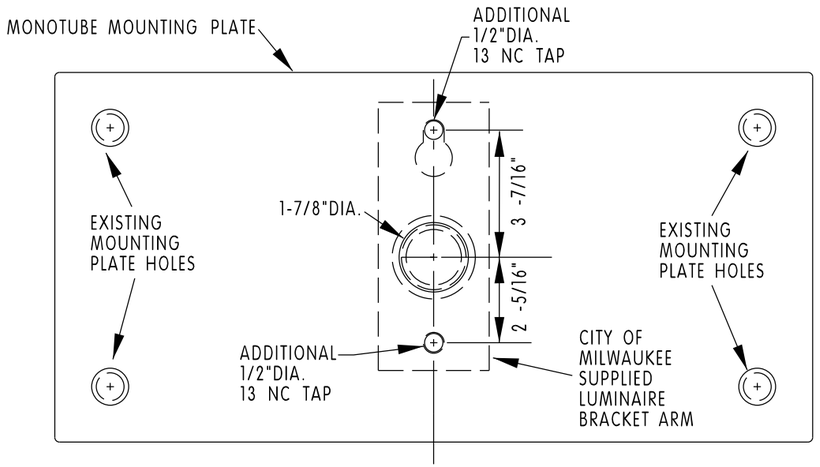
DRG. # B-14-13





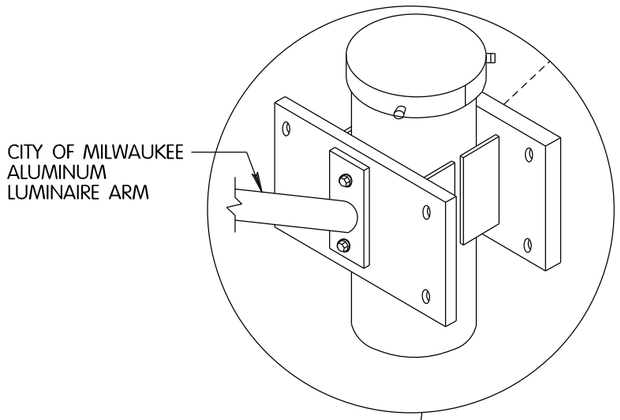
MOUNTING PLATE DETAIL "ES #436"
1/2" THK. ALUMINUM
(6061-T6 ALLOY)

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

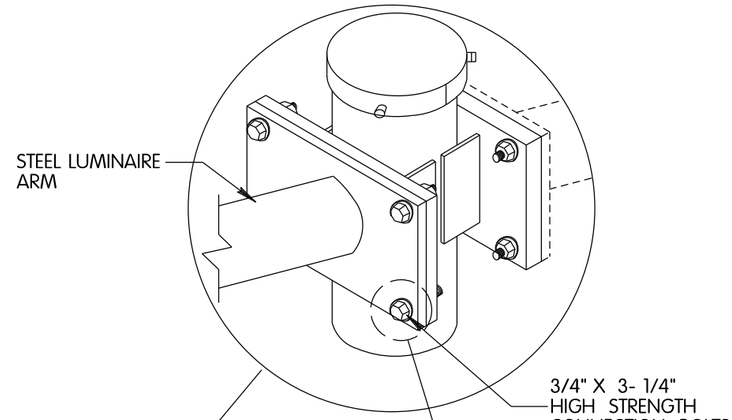


ADDITIONAL MOUNTING HOLES IN LUMINAIRE MOUNTING PLATE

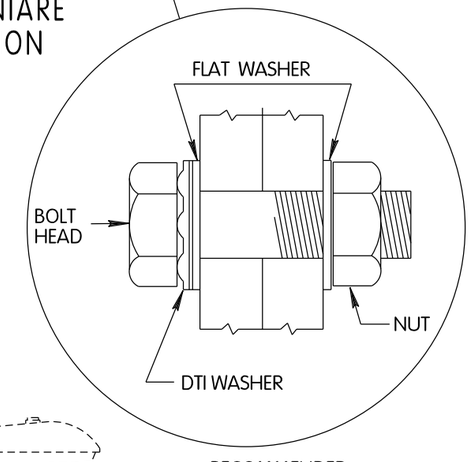
NOT TO SCALE



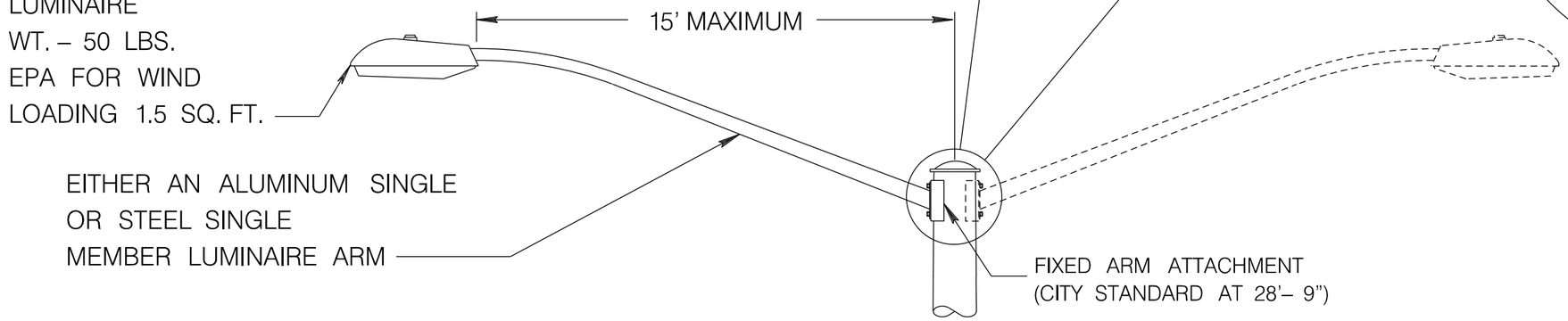
ALUMINUM LUMINIARE ARM OPTION



STEEL LUMINIARE ARM OPTION

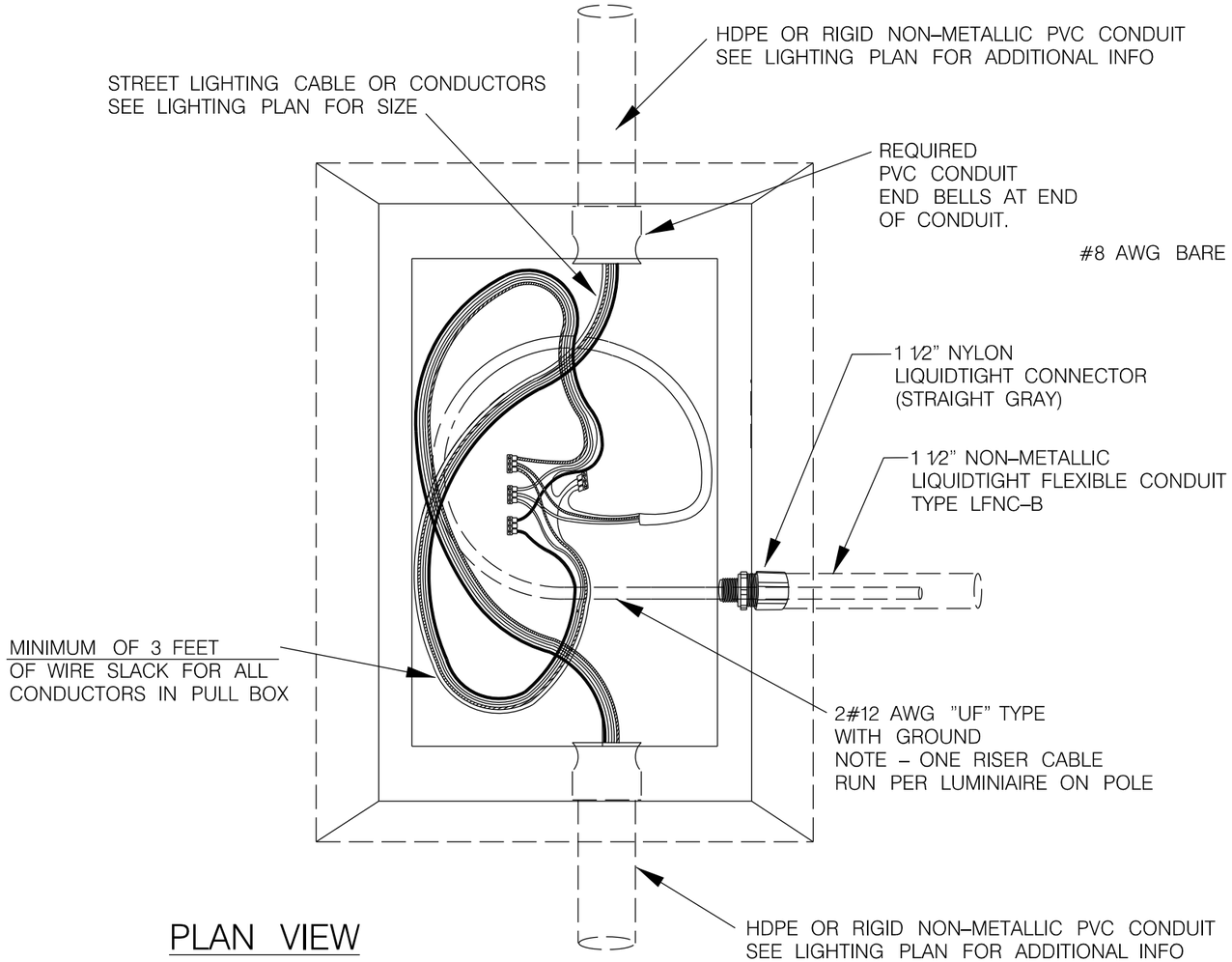


RECOMMENDED BOLT ASSEMBLY DETAIL



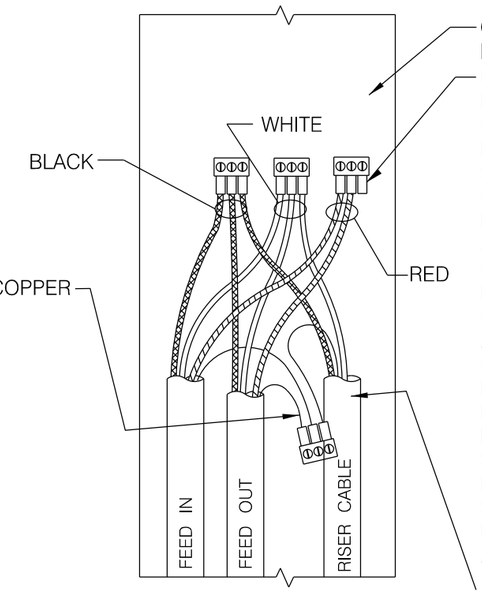
ADDITIONAL MOUNTING HOLES IN LUMINAIRE MOUNTING PLATE FOR WISDOT POLES: TYPE 10 (Bid Item: 657.1350) & TYPE 13(Bid Item: 657.1360)

NOT TO SCALE



PLAN VIEW

NOT TO SCALE



DETAIL "A"

CONNECTIONS WITHIN PULL BOX

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 #2/0–#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)

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.

142A

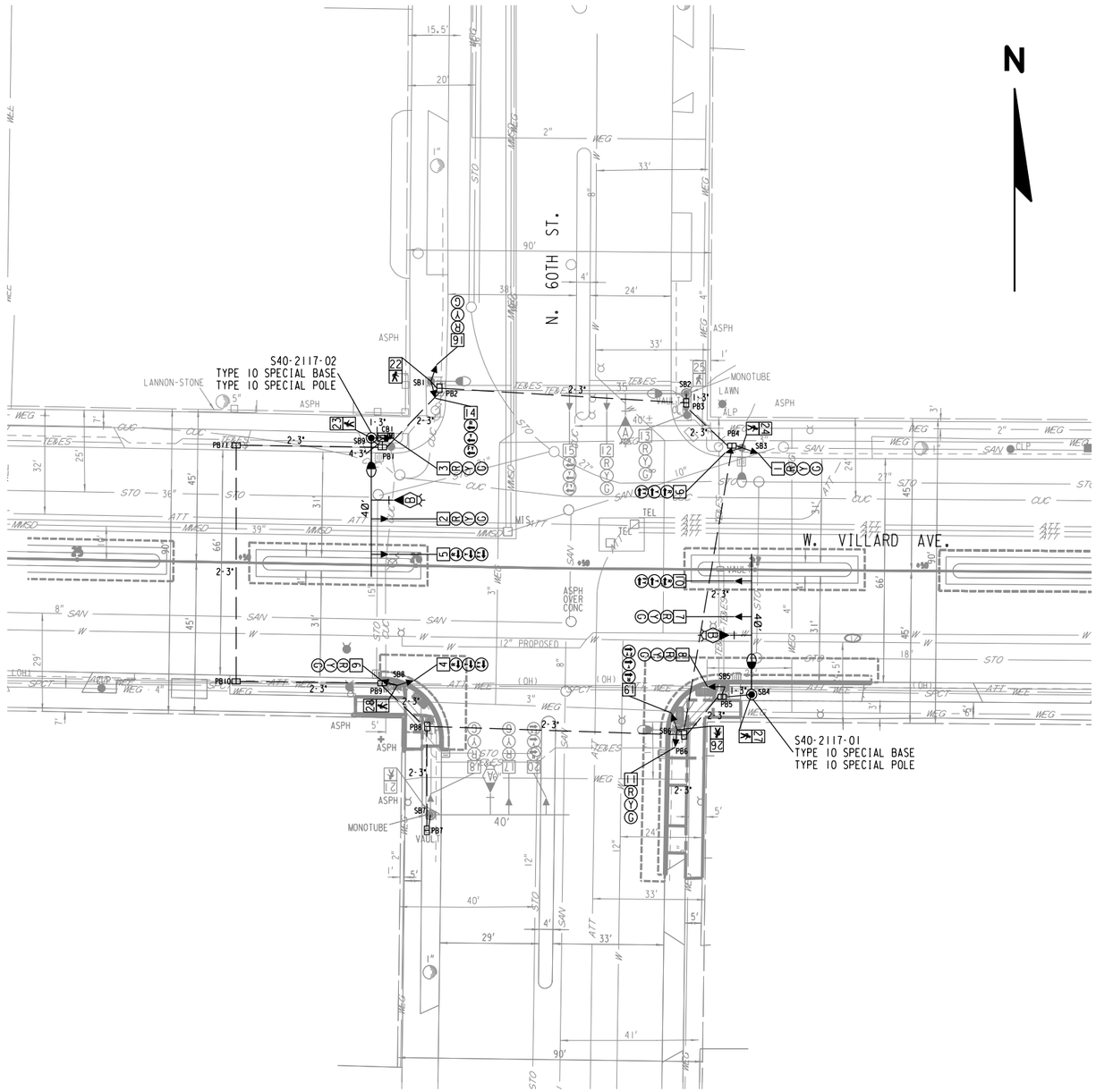
DETAIL

TYPICAL WATERTIGHT MULTI–PORT CONNECTIONS

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.

2



LEGEND

- CABINET
- (XX) MONOTUBE BASE, POLE, 15'-40' ARM
- CONFIRMATION LIGHT
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONCRETE POLYMER PULL BOX 17"X30"X24"
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE
- [M] METER PEDESTAL
- [X] SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- RED ARROWS
- YELLOW ARROWS
- GREEN ARROWS
- WALK-DON'T WALK INDICATOR 12" COUNTDOWN TIMER 12"

TRAFFIC CONTROL SIGNAL
W. VILLARD AVE. & N. 60TH ST.
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.

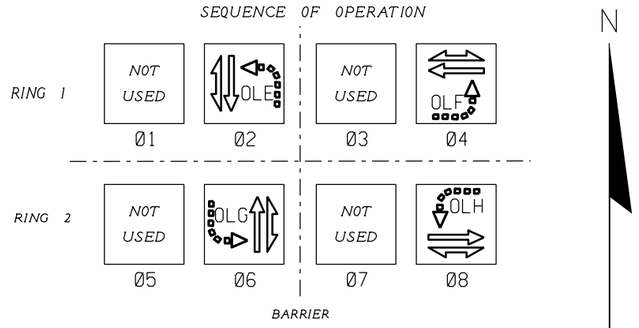
CONTROLLER TYPE: ECONOLITE COBALT

DATE PAGE OF

PROJECT NO: 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SCALE FEET 0 40	SHEET 26	E

FILE NAME : W:\bte\signals\PAVING AND DESIGN\State Projects-LFA\Preliminary Engineering\2984-15-71 HSIP Villard 51st and 60th\2984-15-71 Background.dgn PLOT DATE : 18-JAN-2023 07:07 PLOT BY : jaortiz PLOT NAME : PLOT SCALE : 1:40

SEQUENCE OF OPERATION



	HEAD NUMBERS	FLASH
OLE	14,15	R
Ø2	16,17,18	R
OLF	9,10	R
Ø4	1,2,3	R
OLG	19,20	R
Ø6	11,12,13	R
OLH	4,5	R
Ø8	6,7,8	R
Ø2P	21,22	
Ø4P	23,24	
Ø6P	25,26	
Ø8P	27,28	

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC	
RADIO	
*LOCATION OF MASTER CONTROLLER NO: S.	
SIGNAL SYSTEM *: SS.	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2		6	PED	X
3				
4		8	COORD.	X
5				
6		2	PED	X
7				
8		4	COORD.	X

OVERLAPS

O.L. "E" : NB FYA
O.L. "F" : EB FYA
O.L. "G" : SB FYA
O.L. "H" : WB FYA

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B
MOVEMENT	↓↑	← →
PHASE	2-6	4-8

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR								
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR								
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE LIGHTING CABINET	X

TRAFFIC CONTROL SIGNAL
W. VILLARD AVE. & N. 60TH ST.
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.

CONTROLLER TYPE: ECONOLITE COBALT

DATE PAGE OF

2

PROJECT ID:	2984-15-71
INTERSECTION:	W VILLARD AVE & N 60TH ST

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

DATE: 10/12/2022

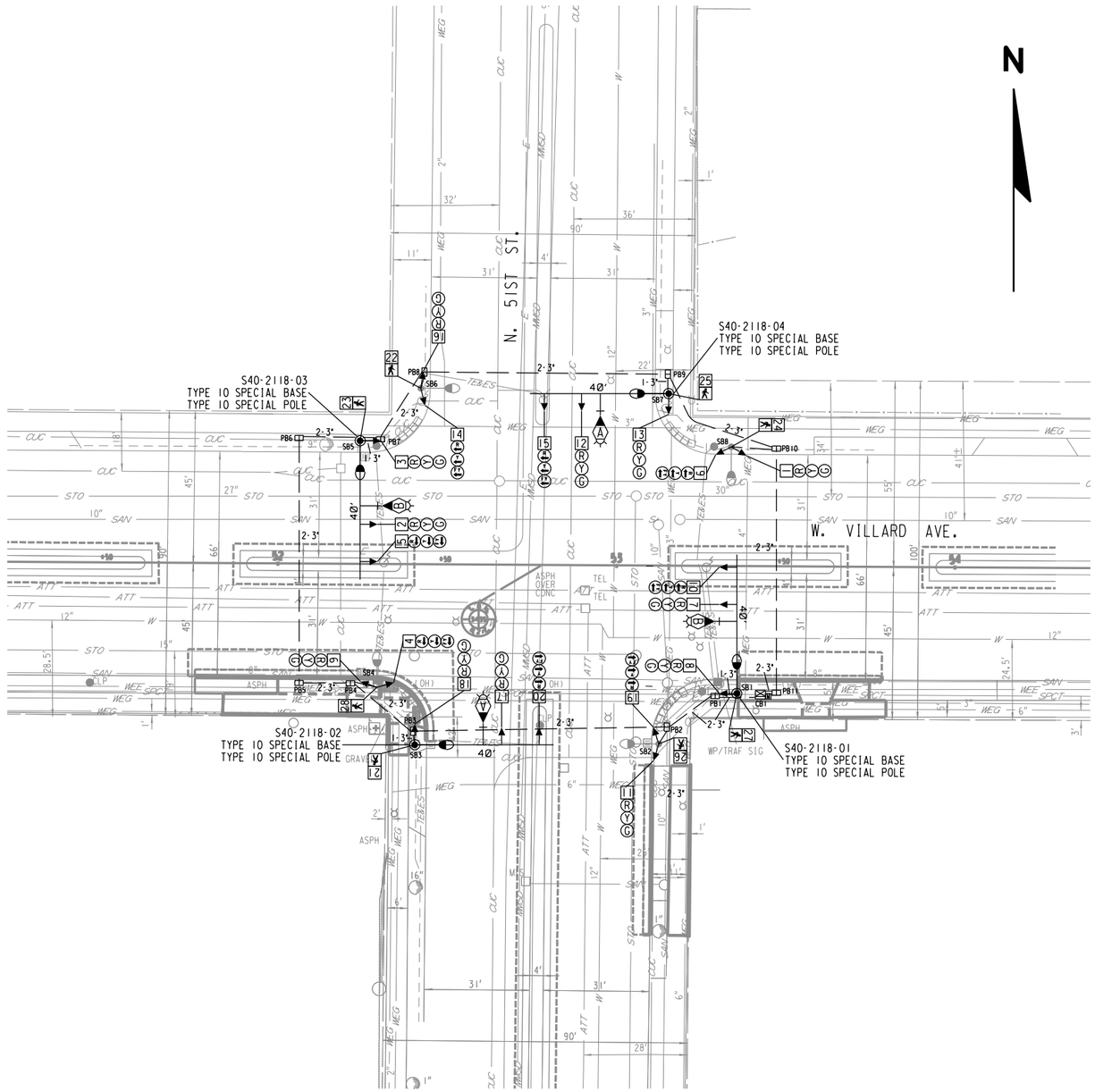
CB TO	JUMPER	# OF COND.	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR								PED BUTTON	OTHER
					RED	YELLOW	GREEN	<RED>	<YELLOW>	<FLASH YELLOW>	D/WALK	WALK		
SB1		12	14	OLE				RED	ORG	GRN				
			16	2	RED/BLK	ORG/BLK	GRN/BLK							
			22	2							BLU	BLK		
SB2		19	12	6	RED	ORG	GRN							
			13	6	RED/BLK	ORG/BLK	GRN/BLK							
			15	OLE				RED/WHT	BLU/WHT	GRN/WHT				
			25	6							BLU	BLK		
SB3		12	1	4	RED	ORG	GRN							
			9	OLF				RED/BLK	ORG/BLK	GRN/BLK				
			24	4							BLU	BLK		
SB4		19	7	8	RED/BLK	ORG/BLK	GRN/BLK							
			10	OLF				RED/WHT	BLU/WHT	GRN/WHT				
			27	8							BLU	BLK		
	SB5	5	8	8	RED	ORG	GRN							
SB6		12	11	6	RED	ORG	GRN							
			19	OLE				RED/BLK	ORG/BLK	GRN/BLK				
			26	6							BLU	BLK		
SB7		19	17	2	RED	ORG	GRN							
			18	2	RED/BLK	ORG/BLK	GRN/BLK							
			20	OLG				RED/WHT	BLU/WHT	GRN/WHT				
			21	2							BLU	BLK		
SB8		12	4	OLH	RED	ORG	GRN							
			6	8				RED/BLK	ORG/BLK	GRN/BLK				
			28	8							BLU	BLK		
SB9		19	2	4	RED	ORG	GRN							
			3	4	RED/BLK	ORG/BLK	GRN/BLK							
			5	OLH				RED/WHT	BLU/WHT	GRN/WHT				
			23	4							BLU	BLK		

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	CB1

EMERGENCY VEHICLE PREEMPTION AND UF 2-12 CONFIRMATION	
FROM	TO
CB1	SB2
SB2	HEAD A
CB1	SB4
SB4	HEAD B
CB1	SB7
SB7	HEAD A
CB1	SB9
SB9	HEAD B

NOTES:
1. USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS
2. ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 12" LONGER THAN THE UNGROUNDED CONDUCTORS.
3. AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS. TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.
4. "OTHER" COLUMN MAY INCLUDE SHADOW BOX (BLANK OUT) SIGN.
5. SPV.0090.307 IS WIRED FROM CONTROLLER CABINET TO METER PEDESTAL

2



LEGEND

- CABINET
- (XX) MONOTUBE BASE, POLE, 15'-40' ARM
- CONFIRMATION LIGHT
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONCRETE POLYMER PULL BOX 17"X30"X24"
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE
- M METER PEDESTAL
- X SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- RED ARROWS
- YELLOW ARROWS
- GREEN ARROWS
- WALK-DON'T WALK INDICATOR 12" COUNTDOWN TIMER 12"

TRAFFIC CONTROL SIGNAL

W. VILLARD AVE. & N. 51ST ST.
CITY OF MILWAUKEE
MILWAUKEE COUNTY

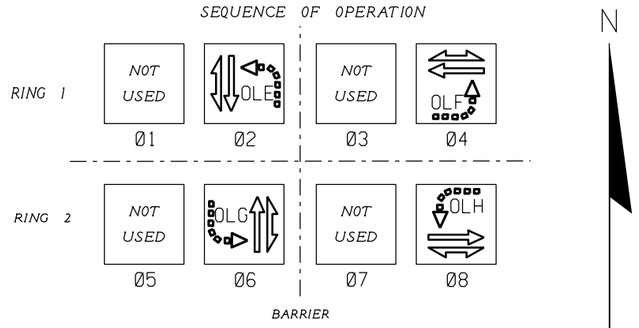
SIGNAL NO.

CONTROLLER TYPE: ECONOLITE COBALT

DATE PAGE OF

PROJECT NO: 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SCALE FEET 0 40	SHEET 29	E

SEQUENCE OF OPERATION



	HEAD NUMBERS	FLASH
OLE	14,15	R
Ø2	16,17,18	R
OLF	9,10	R
Ø4	1,2,3	R
OLG	19,20	R
Ø6	11,12,13	R
OLH	4,5	R
Ø8	6,7,8	R
Ø2P	21,22	
Ø4P	23,24	
Ø6P	25,26	
Ø8P	27,28	

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC	
RADIO	
*LOCATION OF MASTER CONTROLLER NO: S.	
SIGNAL SYSTEM *: SS.	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B
MOVEMENT	↓↑	← →
PHASE	2-6	4-8

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2		6	PED	X
3				
4		8	COORD.	X
5				
6		2	PED	X
7				
8		4	COORD.	X

OVERLAPS

O.L. "E" - NB FYA
O.L. "F" - EB FYA
O.L. "G" - SB FYA
O.L. "H" - WB FYA

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR								
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR								
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE LIGHTING CABINET	X

TRAFFIC CONTROL SIGNAL
W. VILLARD AVE. & N. 51ST ST.
CITY OF MILWAUKEE
MILWAUKEE COUNTY

SIGNAL NO.

CONTROLLER TYPE: ECONOLITE COBALT

DATE PAGE OF

2

PROJECT ID:	2984-15-71
INTERSECTION:	W VILLARD AVE & N 51ST ST

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

DATE: 10/12/2022

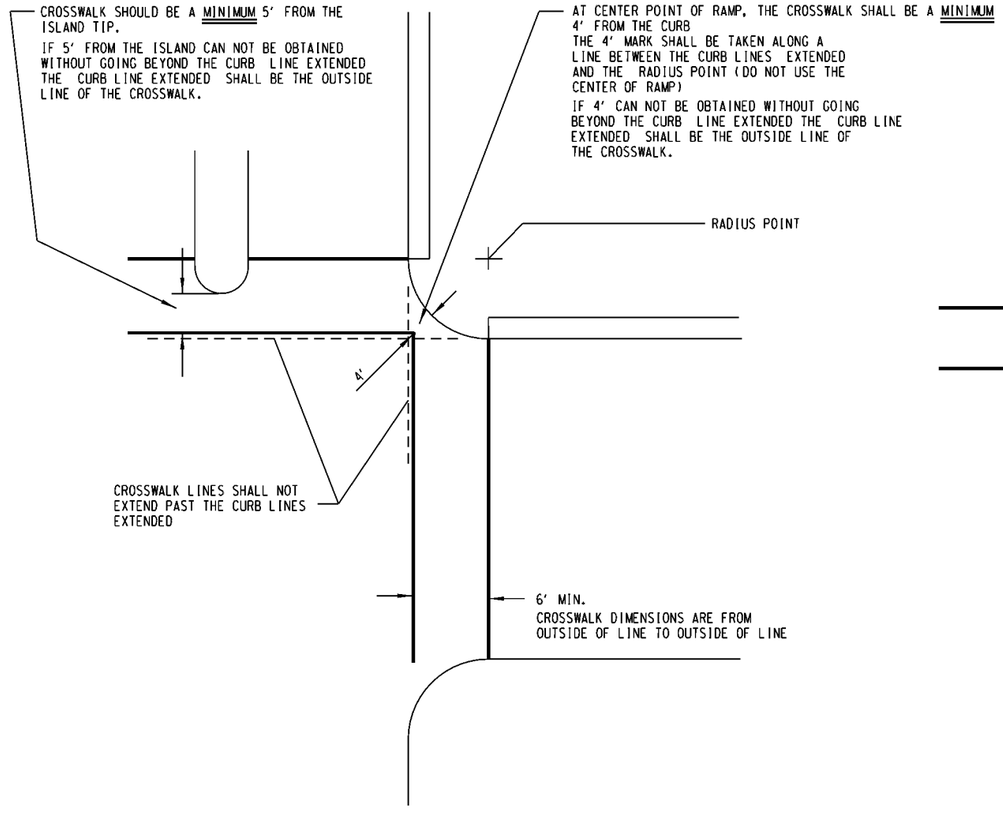
CB TO	JUMPER	# OF COND.	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR								PED BUTTON	OTHER
					RED	YELLOW	GREEN	<RED	<YELLOW>	<FLASH YELLOW>	D/WALK	WALK		
SB1		19	7	8	RED	ORG	GRN							
			8	8	RED/BLK	ORG/BLK	GRN/BLK							
			10	OLF				RED/WHT	BLU/WHT	GRN/WHT				
			27	8							BLU	BLK		
SB3		12	11	6	RED	ORG	GRN							
			19	OLG				RED/BLK	ORG/BLK	GRN/BLK				
			26	6							BLU	BLK		
SB4		19	17	2	RED	ORG	GRN							
			18	2	RED/BLK	ORG/BLK	GRN/BLK							
			20	OLG				RED/WHT	BLU/WHT	GRN/WHT				
			21	2							BLU	BLK		
SB5		12	4	OLH	RED	ORG	GRN							
			6	8				RED/BLK	ORG/BLK	GRN/BLK				
			28	8							BLU	BLK		
SB6		19	2	4	RED	ORG	GRN							
			3	4	RED/BLK	ORG/BLK	GRN/BLK							
			5	OLH				RED/WHT	BLU/WHT	GRN/WHT				
			23	4							BLU	BLK		
SB7		12	14	OLE	RED	ORG	GRN							
			16	2				RED/BLK	ORG/BLK	GRN/BLK				
			22	2							BLU	BLK		
SB8		19	12	6	RED	ORG	GRN							
			13	6	RED/BLK	ORG/BLK	GRN/BLK							
			15	OLE				RED/WHT	BLU/WHT	GRN/WHT				
			25	6							BLU	BLK		
SB9		12	1	4	RED	ORG	GRN							
			9	OLF				RED/BLK	ORG/BLK	GRN/BLK				
			24	4							BLU	BLK		

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	CB1

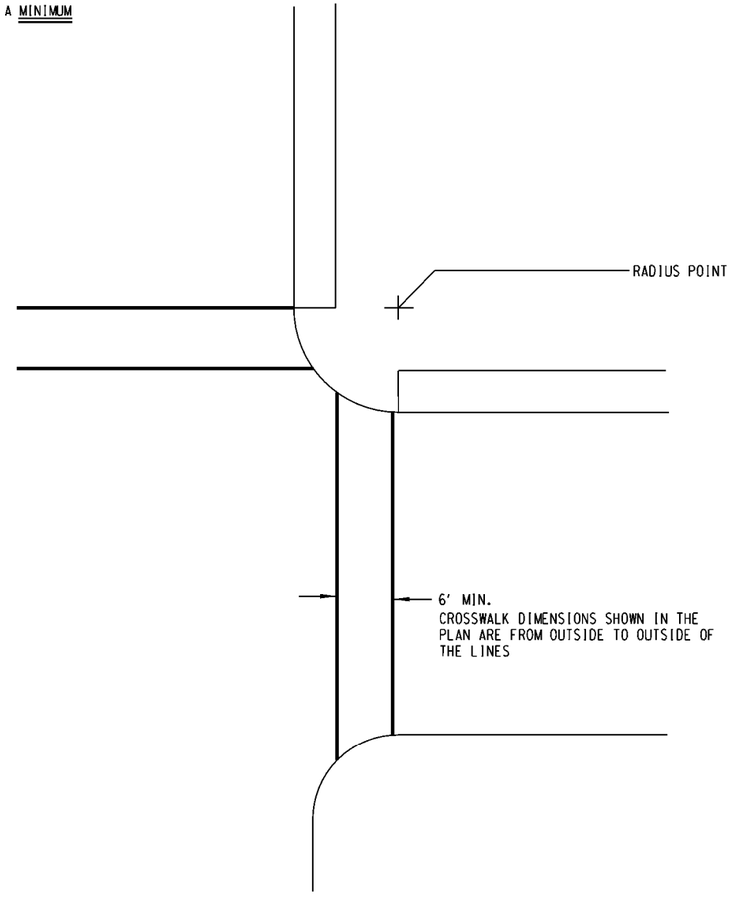
EMERGENCY VEHICLE PREEMPTION AND UF 2-12 CONFIRMATION	
FROM	TO
CB1	SB1
SB1	HEAD B
CB1	SB4
SB4	HEAD A
CB1	SB6
SB6	HEAD B
CB1	SB8
SB8	HEAD A

NOTES:
1. USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS
2. ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 12" LONGER THAN THE UNGROUNDED CONDUCTORS.
3. AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS. TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.
4. "OTHER" COLUMN MAY INCLUDE SHADOW BOX (BLANK OUT) SIGN.
5. SPV.0090.307 IS WIRED FROM CONTROLLER CABINET TO METER PEDESTAL

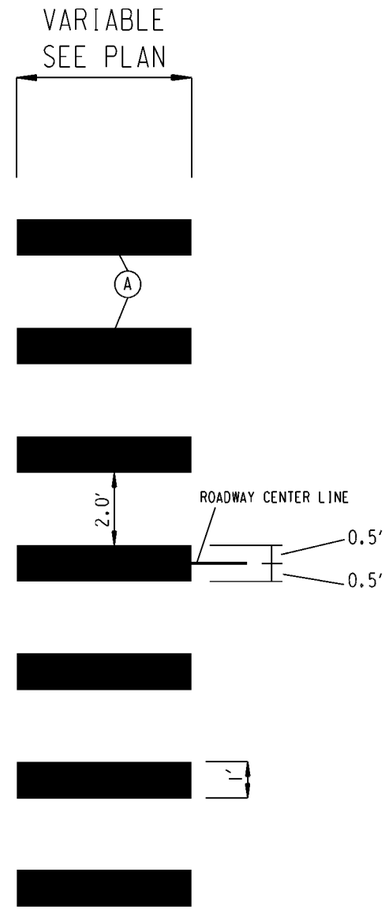
2



TYPICAL CROSS WALK INSTALLATION
WITH TYPE I RAMP
(PLASTIC, EPOXY, PAINT)



WITH TYPE 2 RAMP
(PLASTIC, EPOXY, PAINT)



CROSSWALK 12"
BLOCK STYLE

NOTE: PAVEMENT MARKINGS SHOULD BE PARALLEL TO DIRECTION OF TRAVEL EVEN WHEN CROSSWALK IS SKEWED

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	PAVEMENT MARKING DETAIL	SCALE FEET 0' 40'	SHEET NO: 32	E

2

N

WEST VILLARD AVENUE

189-0240-100
135

189-0239
120

190-2121
259.64

#6130 W. VILLARD AVE.

#6000 W. VILLARD AVE.

#5834 W. VILLARD AVE.

#6027 W. VILLARD AVE.

#6003 W. VILLARD AVE.

#5829 W. VILLARD AVE.

#5815-17 W. VILLARD AVE.

#5801 W. VILLARD AVE.

NORTH 60TH STREET

175'

180'

90'

38'

24'

29'

33'

LEGEND

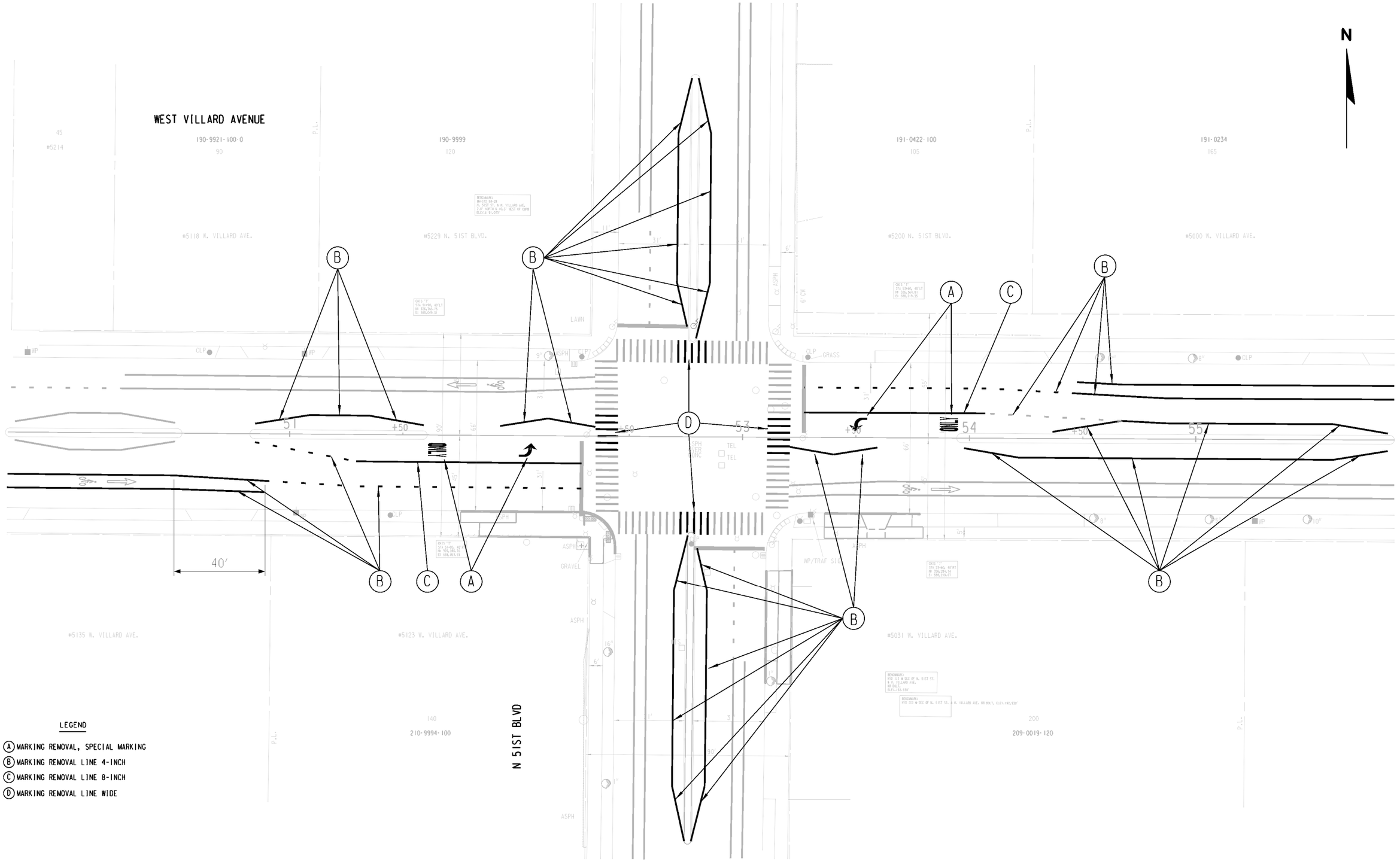
- (A) MARKING REMOVAL, SPECIAL MARKING
- (B) MARKING REMOVAL LINE 4-INCH
- (C) MARKING REMOVAL LINE 8-INCH
- (D) MARKING REMOVAL LINE WIDE

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	MARKING REMOVAL PLAN - N 60TH ST	SCALE FEET 0' 40'	SHEET NO: 33	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\TRAFFIC & PAVEMARK\2984-15-71 - VILLARD MONOTUBES - PAVEMENT MARKING.DGN

REVISED DATE: 11-29-2022 BY CP

2



LEGEND

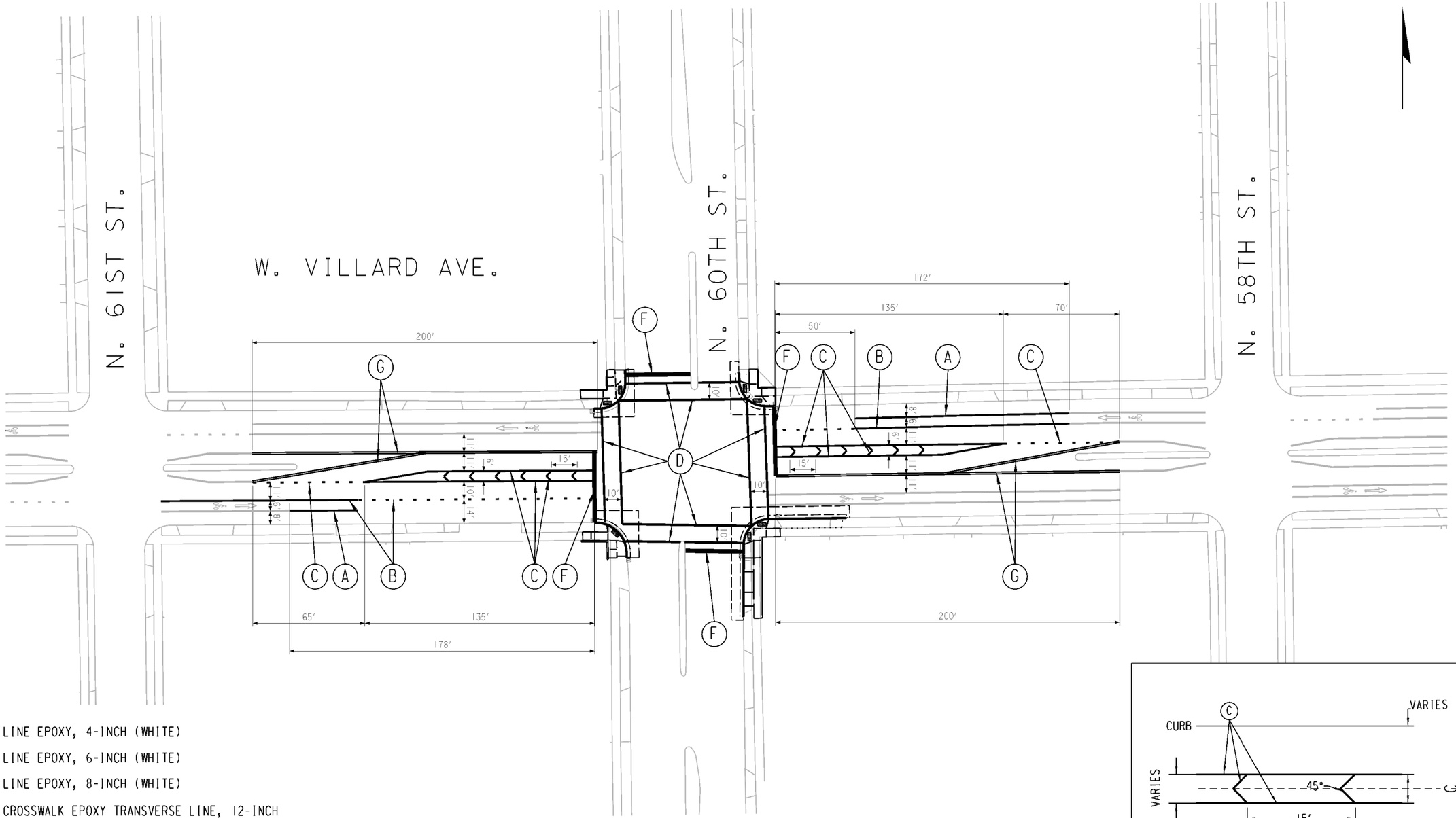
- (A) MARKING REMOVAL, SPECIAL MARKING
- (B) MARKING REMOVAL LINE 4-INCH
- (C) MARKING REMOVAL LINE 8-INCH
- (D) MARKING REMOVAL LINE WIDE

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	MARKING REMOVAL PLAN - N 51ST ST	SCALE FEET 0' 40'	SHEET NO: 34	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\TRAFFIC & PAVEMARK\2984-15-71 - VILLARD MONOTUBES - PAVEMENT MARKING.DGN

REVISED DATE: 01-04-2023 BY CP

2



(A) MARKING LINE EPOXY, 4-INCH (WHITE)

(B) MARKING LINE EPOXY, 6-INCH (WHITE)

(C) MARKING LINE EPOXY, 8-INCH (WHITE)

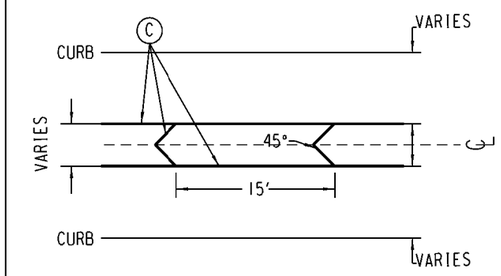
(D) MARKING CROSSWALK EPOXY TRANSVERSE LINE, 12-INCH

(E) MARKING CROSSWALK EPOXY BLOCK STYLE, 12-INCH

(F) MARKING STOP LINE EPOXY, 24-INCH

(G) MARKING LINE EPOXY, 4-INCH (DOUBLE YELLOW)

SEE CROSSWALK DETAIL SHEET FOR INSTALLATION TYPE



GORE DETAIL

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	PAVEMENT MARKING PLAN - N 60TH ST	SCALE FEET 0' 60'	SHEET NO: 35	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\TRAFFIC & PAVEMARK\2984-15-71 - VILLARD MONOTUBES - PAVEMENT MARKING.DGN

REVISED DATE: 01-04-2023 BY CP

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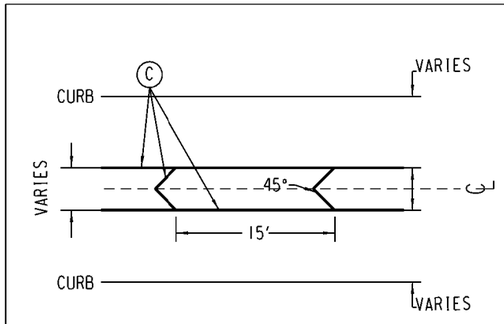
N

W VILLARD AVE

N 52ND ST

N 51ST BLVD

(A) MARKING LINE EPOXY, 4-INCH (WHITE)
(B) MARKING LINE EPOXY, 6-INCH (WHITE)
(C) MARKING LINE EPOXY, 8-INCH (WHITE)
(D) MARKING CROSSWALK EPOXY TRANSVERSE LINE, 12-INCH
(E) MARKING CROSSWALK EPOXY BLOCK STYLE, 12-INCH
(F) MARKING STOP LINE EPOXY, 24-INCH
(G) MARKING LINE EPOXY, 4-INCH (DOUBLE YELLOW)
SEE CROSSWALK DETAIL SHEET FOR INSTALLATION TYPE



GORE DETAIL

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	PAVEMENT MARKING PLAN - N 51ST ST	SCALE FEET 0' 60'	SHEET NO: 36	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\TRAFFIC & PAVEMARK\2984-15-71 - VILLARD MONOTUBES - PAVEMENT MARKING.DGN

REVISED DATE: 01-04-2023 BY CP

2

PEDESTRIAN TRAFFIC CONTROL NOTES

GENERAL

ALL PEDESTRIAN TRAFFIC CONTROL MUST BE PLACED PRIOR TO THE START OF ANY SIDEWALK WORK. TEMPORARY BUS LOADING PLATFORMS MUST BE PLACED WHERE NOTED IN TRAFFIC CONTROL PLANS.

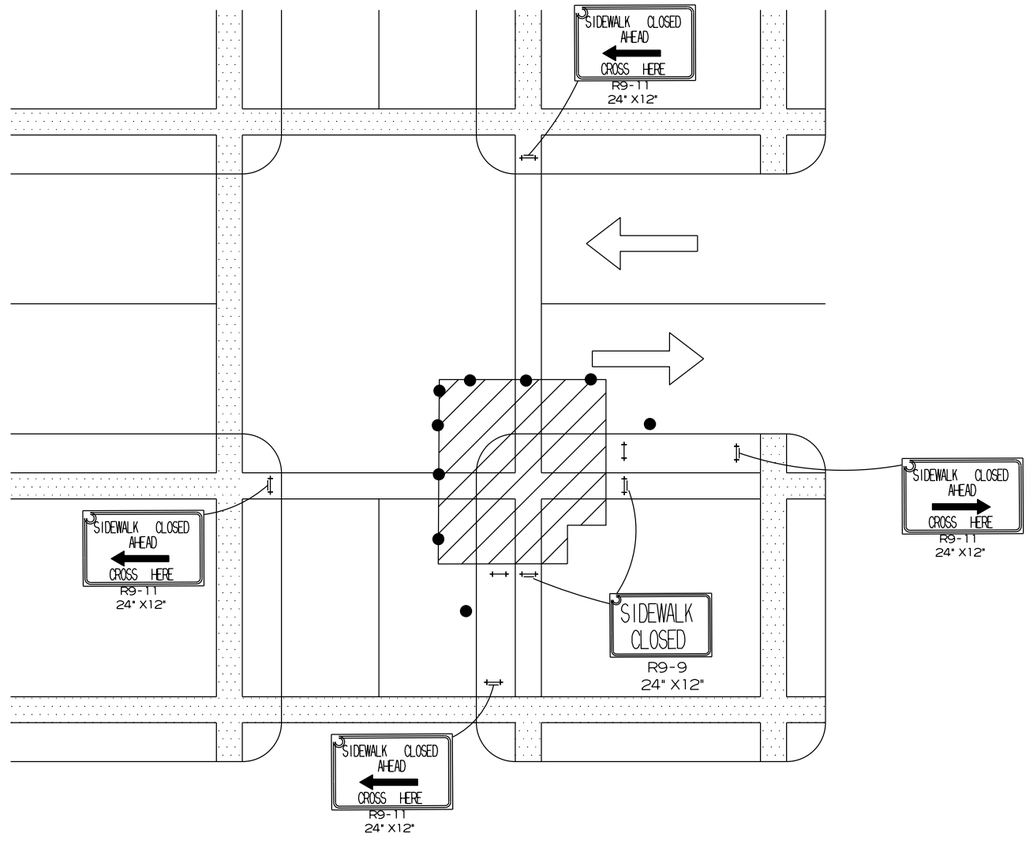
ANY SIDEWALK REMOVALS, TEMPORARY OR PERMANENT, MUST HAVE TEMPORARY ACCOMMODATIONS PLACED IMMEDIATELY UPON REMOVAL; AND MUST BE PLACE AT ANY AREA OF SIDEWALK REMOVALS BEFORE ANOTHER AREA OF REMOVALS MAY BEGIN.

PEDESTRIAN ACCOMMODATIONS MUST BE PROVIDED TO ALL RESIDENCES AND BUSINESSES USING EXISTING, NEWLY CONSTRUCTED OR TEMPORARY ACCOMMODATIONS DURING ALL STAGES OF CONSTRUCTION,

STAGE 1 WILL INCLUDE THE REMOVAL OF EXISTING CURB RAMPS AND THE CONSTRUCTION OF PROPOSED CURB RAMPS. PLACE TEMPORARY RAMPS IMMEDIATELY ON ALL RAMPS REMOVED, AND ONLY 1 PERMANENT RAMP CAN BE BUILT AT A TIME. SEE THE WEST VILLARD AVENUE INTERSECTION DETAIL ON THIS SHEET.

SIDEWALKS TO BE DONE ONE SIDE AT A TIME AFTER STAGE 1 IS COMPLETED. STAGE 2 CANNOT BEGIN UNTIL ALL SIDEWALKS ARE COMPLETED. PLACE TEMPORART PEDESTRIAN SURFACE IMMEDIATELY ON ALL SIDEWALK REMOVED UNTIL THE PERMANENT SIDEWALK IS IN PLACE.

N 51ST ST/N 60TH ST/W VILLARD AVE INTERSECTION DETAIL



STAGE 1

W VILLARD AVE

N

N 60TH ST

G20-2-A
END
ROAD WORK
36" X18" CR

W20-1A
ROAD
WORK
AHEAD
36" X36"

R11-2L
LANE
CLOSED
48" X30"

R4-11
30" X30"
MAY USE
FULL LANE

W11-4R
36" X36"

R3-17
24" X18"
BIKE LANE

ENDS

R3-17OP
24" X8"

85'
BUFFER

75'
SHIFT
TAPER

100'

200'

25'
TYP

PROVIDE A 15' MIN
CLEAR WIDTH
TRAVEL LANE

LEGEND

- WORK AREA
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE III BARRICADE WITHOUT SIGN

GENERAL NOTES:

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

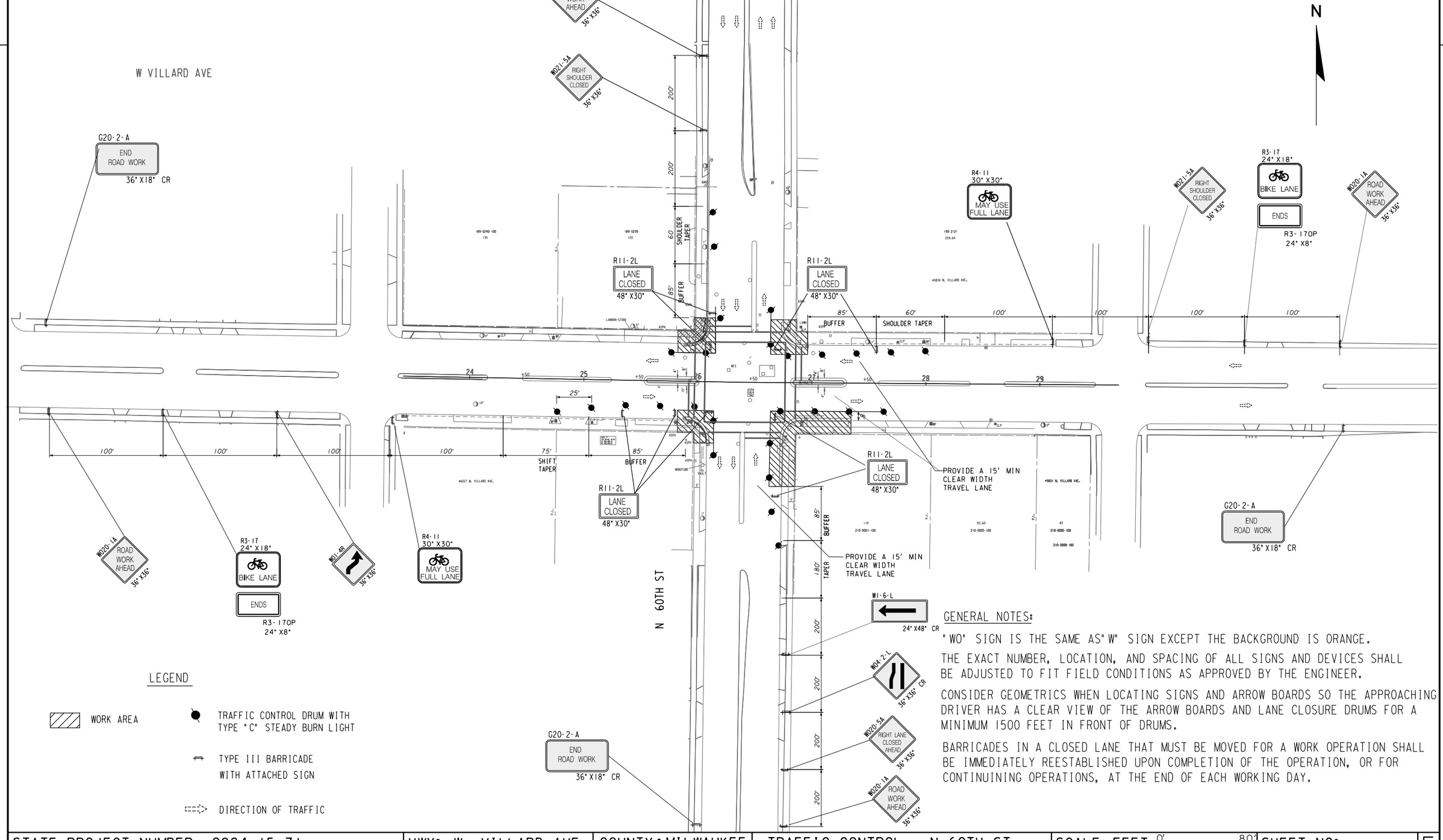
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUINING OPERATIONS, AT THE END OF EACH WORKING DAY.

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	TRAFFIC CONTROL - N 60TH ST	SCALE FEET 0' 80'	SHEET NO: 38	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\TRAFFIC & PAVEMARK\2984-15-71 - VILLARD MONOTUBES - TRAFFIC CONTROL - AA.DGN

REVISED DATE: 11-17-2022 BY AA

STAGE 2



LEGEND

- WORK AREA
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC

GENERAL NOTES:

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUINING OPERATIONS, AT THE END OF EACH WORKING DAY.

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	TRAFFIC CONTROL - N 60TH ST	SCALE FEET 0' 80'	SHEET NO: 39	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\TRAFFIC & PAVEMARK\2984-15-71 - VILLARD MONOTUBES - TRAFFIC CONTROL - AA.DGN

REVISED DATE: 11-17-2022 BY AA

STAGE 1

N 51ST ST

W VILLARD AVE

G20-2-A
END ROAD WORK
36" X18" CR

R3-17
24" X18"
BIKE LANE

ENDS
R3-17OP
24" X8"

W01-4R
36" X36"

R4-11
30" X30"
MAY USE FULL LANE

W01-6-R
24" X48" CR

R11-2L
LANE CLOSED
48" X30"

W020-1A
ROAD WORK AHEAD
36" X36"

W020-55A
LEFT LANE CLOSED AHEAD
36" X36"

MIN USE FULL LANE

PROVIDE A 15' MIN CLEAR WIDTH TRAVEL LANE

100' 100' 100' 100' 75' SHIFT TAPER 85' BUFFER

25'

180' 50' 180'

100' 100' 100' 100' 75' SHIFT TAPER 85' BUFFER

A A B B

N

LEGEND

- WORK AREA
- DIRECTION OF TRAFFIC
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE III BARRICADE WITHOUT SIGN

GENERAL NOTES:

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUINING OPERATIONS, AT THE END OF EACH WORKING DAY.

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	TRAFFIC CONTROL - N 51ST ST	SCALE FEET 0' 80'	SHEET NO: 40	E

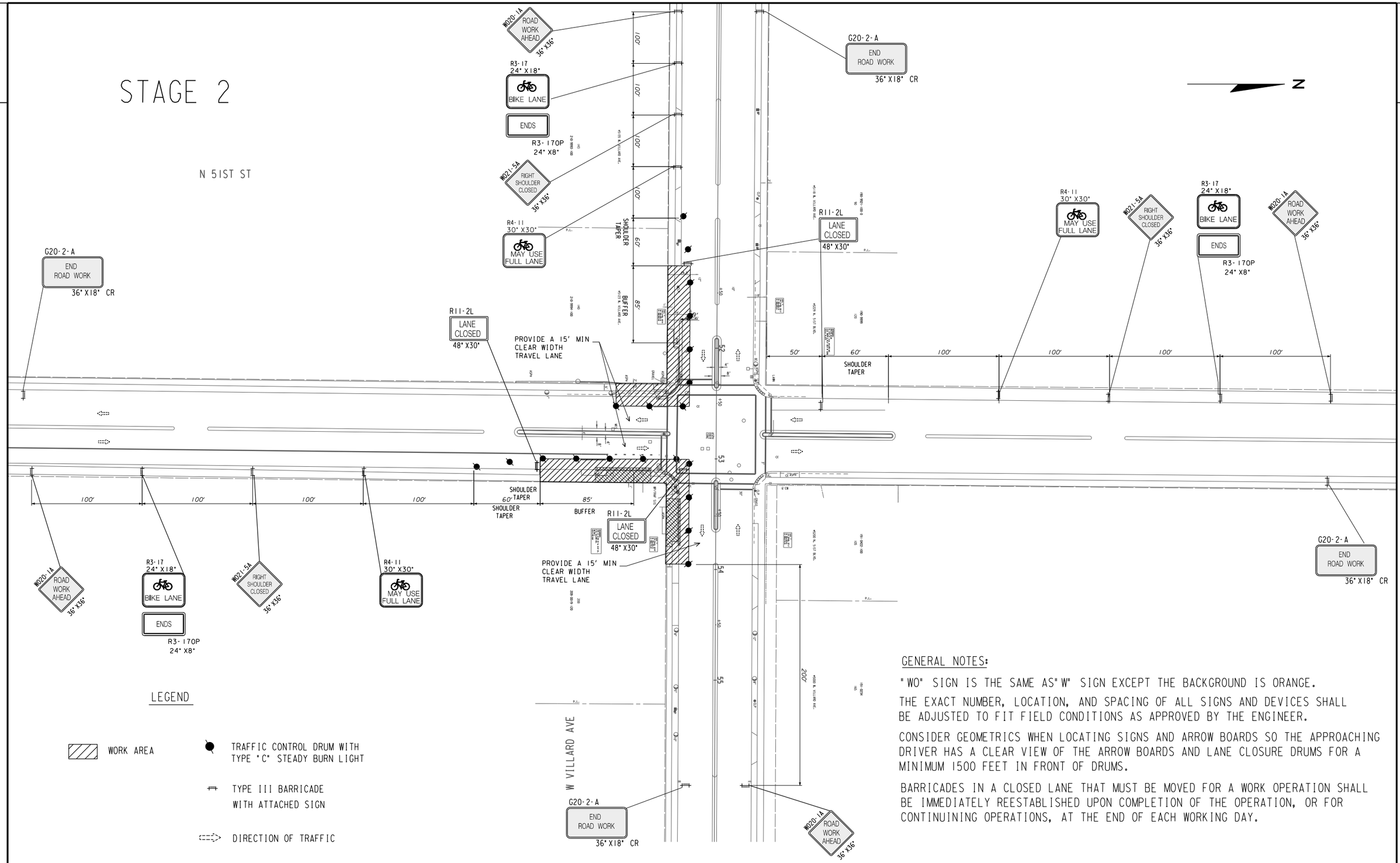
FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\TRAFFIC & PAVEMARK\2984-15-71 - VILLARD MONOTUBES - TRAFFIC CONTROL - AA.DGN

REVISED DATE: 11-17-2022 BY AA

2

STAGE 2

N 51ST ST



LEGEND

- WORK AREA
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC

GENERAL NOTES:

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

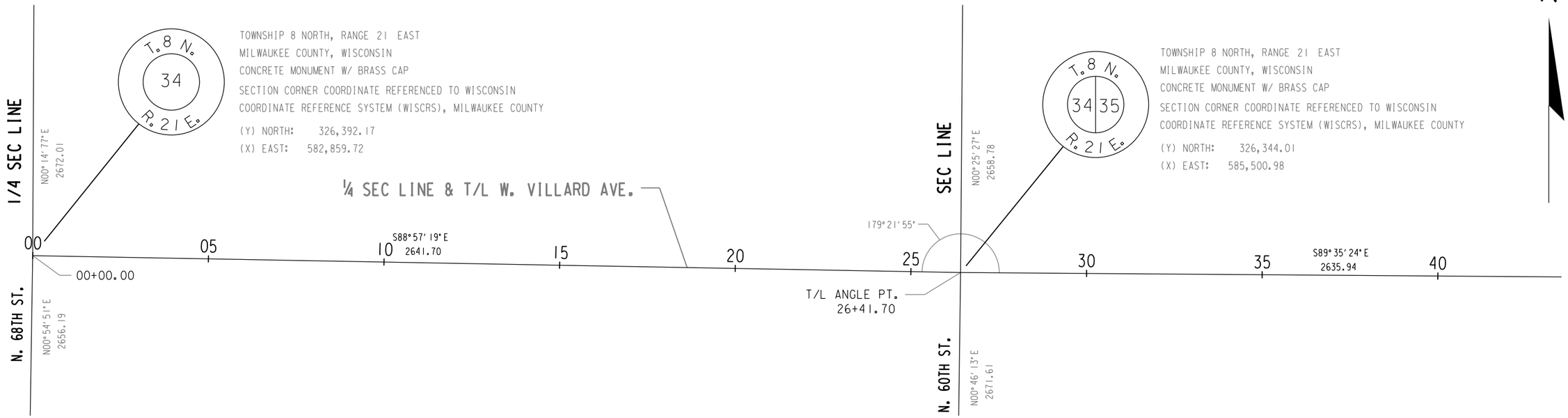
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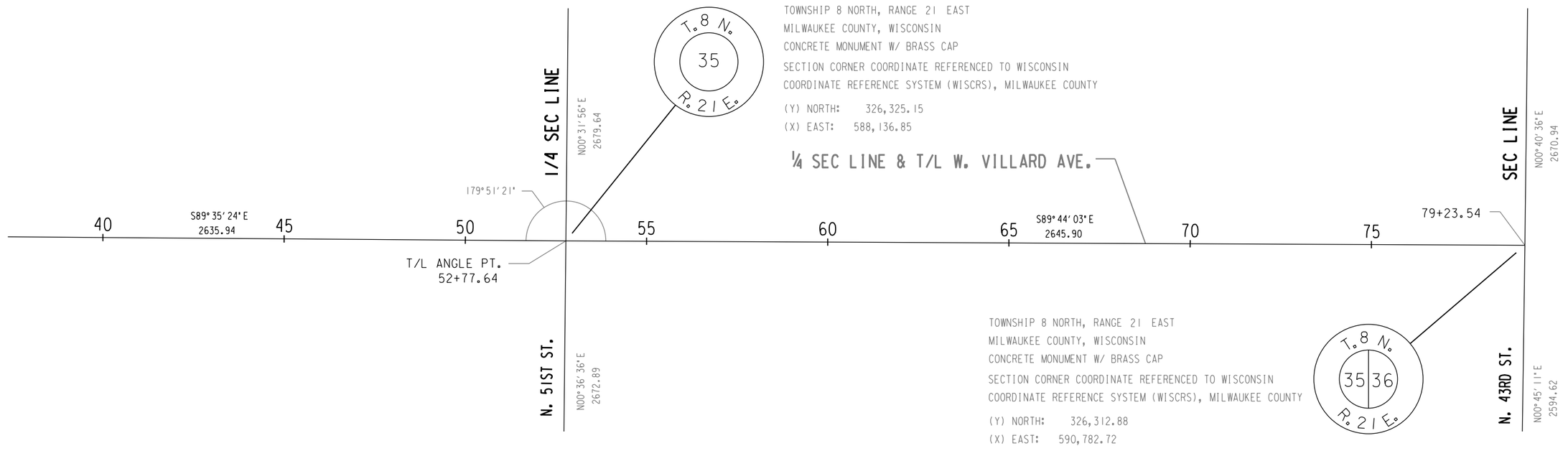
STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	TRAFFIC CONTROL - N 51ST ST	SCALE FEET 0' 80'	SHEET NO: 41	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\TRAFFIC & PAVEMARK\2984-15-71 - VILLARD MONOTUBES - TRAFFIC CONTROL - AA.DGN

REVISED DATE: 11-17-2022 BY AA

2





STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	ALIGNMENT	SCALE FEET 0' 300'	SHEET NO: 42	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\EXISTING\ALIGNMENT.DGN

REVISED DATE: 10-22-2021 BY SB

2984-15-71

Line	Item	Item Description	Unit	Total	Qty
0002	204.0100	Removing Concrete Pavement	SY	151.000	151.000
0004	204.0120	Removing Asphaltic Surface Milling	SY	717.000	717.000
0006	204.0150	Removing Curb & Gutter	LF	2,201.000	2,201.000
0008	204.0155	Removing Concrete Sidewalk	SY	766.000	766.000
0010	204.0195	Removing Concrete Bases	EACH	8.000	8.000
0014	205.0100	Excavation Common	CY	370.000	370.000
0020	213.0100	Finishing Roadway (project) 002. 2984-15-71	EACH	1.000	1.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	357.000	357.000
0026	320.0155	Concrete Base 9-Inch	SY	854.000	854.000
0028	416.0610	Drilled Tie Bars	EACH	804.000	804.000
0030	416.0620	Drilled Dowel Bars	EACH	96.000	96.000
0032	455.0605	Tack Coat	GAL	91.000	91.000
0034	465.0105	Asphaltic Surface	TON	267.000	267.000
0036	601.0322	Concrete Curb & Gutter 22-Inch	LF	42.000	42.000
0038	601.0331	Concrete Curb & Gutter 31-Inch	LF	333.000	333.000
0040	601.0600	Concrete Curb Pedestrian	LF	177.000	177.000
0042	602.0410	Concrete Sidewalk 5-Inch	SF	2,248.000	2,248.000
0044	602.0515	Curb Ramp Detectable Warning Field Natural Patina	SF	72.000	72.000
0046	602.0815	Concrete Driveway 7-Inch	SY	11.000	11.000
0048	611.8115	Adjusting Inlet Covers	EACH	2.000	2.000
0050	611.9710	Salvaged Inlet Covers	EACH	1.000	1.000
0052	619.1000	Mobilization	EACH	0.400	0.400
0056	624.0100	Water	MGAL	11.000	11.000
0058	625.0100	Topsoil	SY	80.000	80.000
0060	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0062	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0064	628.2008	Erosion Mat Urban Class I Type B	SY	80.000	80.000
0066	628.7005	Inlet Protection Type A	EACH	8.000	8.000
0068	628.7015	Inlet Protection Type C	EACH	10.000	10.000
0070	631.0300	Sod Water	MGAL	0.900	0.900
0072	631.1000	Sod Lawn	SY	80.000	80.000
0074	637.2220	Signs Type II Reflective SH	SF	60.000	60.000
0076	642.5201	Field Office Type C	EACH	0.400	0.400
0078	643.0300	Traffic Control Drums	DAY	12,887.000	12,887.000
0080	643.0410	Traffic Control Barricades Type II	DAY	1,416.000	1,416.000
0082	643.0420	Traffic Control Barricades Type III	DAY	9,099.000	9,099.000
0084	643.0705	Traffic Control Warning Lights Type A	DAY	17,954.000	17,954.000
0086	643.0715	Traffic Control Warning Lights Type C	DAY	10,527.000	10,527.000
0088	643.0900	Traffic Control Signs	DAY	7,651.000	7,651.000
0090	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0092	643.5000	Traffic Control	EACH	0.400	0.400
0094	644.1410	Temporary Pedestrian Surface Asphalt	SF	1,440.000	1,440.000
0096	644.1430	Temporary Pedestrian Surface Plate	SF	1,440.000	1,440.000
0098	644.1440	Temporary Pedestrian Surface Matting	SF	1,440.000	1,440.000
0102	646.1020	Marking Line Epoxy 4-Inch	LF	3,750.000	3,750.000
0104	646.2020	Marking Line Epoxy 6-Inch	LF	240.000	240.000
0106	646.3020	Marking Line Epoxy 8-Inch	LF	1,709.000	1,709.000
0108	646.5220	Marking Symbol Epoxy	EACH	8.000	8.000
0112	646.9000	Marking Removal Line 4-Inch	LF	2,164.000	2,164.000

2984-15-71

Line	Item	Item Description	Unit	Total	Qty
0114	646.9100	Marking Removal Line 8-Inch	LF	380.000	380.000
0116	646.9200	Marking Removal Line Wide	LF	200.000	200.000
0118	646.9300	Marking Removal Special Marking	EACH	8.000	8.000
0120	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	552.000	552.000
0124	650.8501	Construction Staking Electrical Installations (project) 002. 2984-15-71	EACH	1.000	1.000
0126	650.9000	Construction Staking Curb Ramps	EACH	9.000	9.000
0130	650.9500	Construction Staking Sidewalk (project) 002. 2984-15-71	EACH	1.000	1.000
0134	650.9911	Construction Staking Supplemental Control (project) 002. 2984-15-71	EACH	1.000	1.000
0136	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	60.000	60.000
0138	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	760.000	760.000
0140	652.0615	Conduit Special 3-Inch	LF	1,210.000	1,210.000
0142	653.0905	Removing Pull Boxes	EACH	3.000	3.000
0146	654.0105	Concrete Bases Type 5	EACH	8.000	8.000
0150	654.0120	Concrete Bases Type 10-Special	EACH	6.000	6.000
0152	655.0230	Cable Traffic Signal 5-14 AWG	LF	1,915.000	1,915.000
0156	655.0260	Cable Traffic Signal 12-14 AWG	LF	1,110.000	1,110.000
0158	655.0280	Cable Traffic Signal 19-14 AWG	LF	1,140.000	1,140.000
0160	655.0305	Cable Type UF 2-12 AWG Grounded	LF	2,615.000	2,615.000
0162	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	1,205.000	1,205.000
0164	655.0900	Traffic Signal EVP Detector Cable	LF	1,675.000	1,675.000
0168	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	8.000	8.000
0172	657.0352	Poles Type 10-Special	EACH	6.000	6.000
0184	657.0541	Monotube Arms 40-FT-Special	EACH	6.000	6.000
0186	658.0173	Traffic Signal Face 3S 12-Inch	EACH	34.000	34.000
0188	658.0412	Pedestrian Signal Face 12-Inch	EACH	14.000	14.000
0198	658.5070	Signal Mounting Hardware (location) 004. W. Villard Ave. & N. 60th St.	EACH	1.000	1.000
0200	658.5070	Signal Mounting Hardware (location) 005. W. Villard Ave. & N. 51st St.	EACH	1.000	1.000
0206	690.0150	Sawing Asphalt	LF	2,909.000	2,909.000
0208	690.0250	Sawing Concrete	LF	2,368.000	2,368.000
0210	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	400.000	400.000
0212	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	900.000	900.000
0214	SPV.0060	Special 001. Utility Line Opening	EACH	6.000	6.000
0218	SPV.0060	Special 010. Temporary No Parking Signs	EACH	12.000	12.000
0224	SPV.0060	Special 112. Storm Inlet Type 45A	EACH	1.000	1.000
0226	SPV.0060	Special 201. Install City Precast Controller Base	EACH	2.000	2.000
0228	SPV.0060	Special 205. ATC Controller and Cabinet Installed	EACH	2.000	2.000
0230	SPV.0060	Special 215. Electrical Service Pedestal	EACH	2.000	2.000
0232	SPV.0060	Special 218. EVP 1 Direction Detector	EACH	6.000	6.000
0234	SPV.0060	Special 221. EVP Phase Selector Card 4 Channel	EACH	2.000	2.000
0236	SPV.0060	Special 223. EVP Confirmation Light	EACH	6.000	6.000
0240	SPV.0060	Special 228. Electrical Riser	EACH	9.000	9.000
0242	SPV.0060	Special 267. Pedestrian Countdown Signal Face 12-Inch	EACH	14.000	14.000
0244	SPV.0060	Special 291. Street Name Sign Mounting Hardware on Mast Arm	EACH	8.000	8.000
0246	SPV.0060	Special 302. Pull Boxes 13-Inch x 24-Inch x 24-Inch	EACH	9.000	9.000
0248	SPV.0060	Special 303. Fiberglass/Polymer Concrete Pull Box 17-Inch x 30-Inch x 24-Inch	EACH	22.000	22.000
0252	SPV.0060	Special 325. Poles Type (30-Ft Aluminum, Bolt Down)	EACH	8.000	8.000
0254	SPV.0060	Special 343. Water Tight Splices and Connections	EACH	18.000	18.000
0256	SPV.0060	Special 345. Luminaire Arm Single Member 6-ft	EACH	18.000	18.000
0258	SPV.0060	Special 353. Install Equipment Grounding Electrode	EACH	4.000	4.000

2984-15-71

Line	Item	Item Description	Unit	Total	Qty
0264	SPV.0060	Special 376. Luminaire Utility 3LED	EACH	18.000	18.000
0272	SPV.0090	Special 003. Marking Crosswalk Epoxy Transverse Line 12-Inch	LF	200.000	200.000
0274	SPV.0090	Special 004. Marking Stop Line Epoxy 24-Inch	LF	316.000	316.000
0276	SPV.0090	Special 102. Storm Sewer Pipe Corrugated PVC 8-Inch	LF	5.000	5.000
0280	SPV.0090	Special 319. Liquidtight Flexible Nonmetallic Conduit 1 1/2-Inch	LF	60.000	60.000
0282	SPV.0090	Special 323. Electrical Cable 3#4/1#8 XLPE USE-2	LF	90.000	90.000
0284	SPV.0090	Special 324. Electrical Cable 3#2/1#8 XLPE USE-2	LF	2,930.000	2,930.000
0286	SPV.0090	Special 325. 3-Inch HDPE Conduit	LF	2,230.000	2,230.000
0288	SPV.0090	Special 705. Marking Crosswalk Epoxy Block Style 12-Inch	LF	200.000	200.000

3

REMOVALS

CATEGORY 0010

ITEM NO.	204.0100 REMOVING CONCRETE PAVEMENT	204.0120 REMOVING ASPHALTIC SURFACE MILLING	204.0150 REMOVING CURB & GUTTER	204.0155 REMOVING CONCRETE SIDEWALK	690.0150 SAWING ASPHALT	690.0250 SAWING CONCRETE
LOCATION	SY	SY	LF	SY	LF	LF
N 60TH ST	91	287	709	285	1057	812
N 51ST ST	60	430	1492	482	1852	1556
PROJECT TOTAL	151	717	2201	766	2909	2368

EXCAVATION COMMON

CATEGORY 0010

ITEM NO.	205.0100 EXCAVATION COMMON
LOCATION	CY
N 60TH ST	116
N 51ST ST	254
PROJECT TOTAL	370

FINISHING ROADWAY

CATEGORY 0010

ITEM NO.	213.0100 FINISHING ROADWAY (PROJECT) 002. 2984-15-71
LOCATION	EACH
2984-15-71	1
PROJECT TOTAL	1

3

UTILITY LINE OPENING

CATEGORY 0010

ITEM NO.	SPV.0060.001 UTILITY LINE OPENING
LOCATION	EACH
N 60TH ST	3
N 51ST ST	3
PROJECT TOTAL	6

ROADWAY CONSTRUCTION ITEMS

CATEGORY 0010

ITEM NO.	305.0120 BASE AGGREGATE DENSE 1-1/4 INCH	320.0155 CONCRETE BASE 9-INCH	416.0610 DRILLED TIE BARS	416.0620 DRILLED DOWEL BARS	601.0322 CONCRETE CURB & GUTTER 22-INCH	601.0331 CONCRETE CURB & GUTTER 31-INCH	601.0600 CONCRETE CURB PEDESTRIAN	602.0410 CONCRETE SIDEWALK 5-INCH	602.0815 CONCRETE DRIVEWAY 7-INCH	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA	624.0100 WATER
LOCATION	TON	SY	EACH	EACH	LF	LF	LF	SF	SY	SF	MGAL
N 60TH ST	124	270	224	36	-	205	70	1269	-	56	4
N 51ST ST	233	584	580	60	42	128	107	979	11	16	7
PROJECT TOTAL	357	854	804	96	42	333	177	2,248	11	72	11

PROJECT NO: 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET: 46	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

3

ASPHALT ITEMS

CATEGORY 0010

ITEM NO.	455.0605 TACK COAT	465.0105 ASPHALTIC SURFACE
LOCATION	GAL	TON
N 60TH ST	31	90
N 51ST ST	60	178
PROJECT TOTAL	91	267

MOBILIZATION

CATEGORY 0010

ITEM NO.	619.1000 MOBILIZATION
LOCATION	EACH
2984-15-71	0.40
PROJECT TOTAL	0.40

LANDSCAPE ITEMS

CATEGORY 0010

ITEM NO.	625.0105 TOPSOIL	631.1000 SOD LAWN	631.0300 SOD WATER
LOCATION	SY	SY	MGAL
N 60TH ST	37	37	0.4
N 51ST ST	43	43	0.5
PROJECT TOTAL	80	80	0.9

3

MOBILIZATIONS EROSION CONTROL

CATEGORY 0010

ITEM NO.	628.1905 MOBILIZATIONS EROSION CONTROL	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL
LOCATION	EACH	EACH
N 60TH ST	1	1
N 51ST ST	1	1
PROJECT TOTAL	2	2

EROSION CONTROL

CATEGORY 0010

ITEM NO.	628.2008 EROSION MAT URBAN CLASS I TYPE B	628.7005 INLET PROTECTION TYPE A	628.7015 INLET PROTECTION TYPE C
LOCATION	SY	EACH	EACH
N 60TH ST	37	6	6
N 51ST ST	43	2	4
PROJECT TOTAL	80	8	10

FIELD OFFICE

CATEGORY 0010

ITEM NO.	642.5201 FILED OFFICE TYPE C
LOCATION	EACH
2984-15-71	0.40
PROJECT TOTAL	0.40

EXISTING AND PROPOSED SEWER STRUCTURES								SEWER PIPES								
STRUCTURE NUMBER	STRUCTURE TYPE	STATION	CENTERLINE OFFSET	COVER ELEV.	DEPTH* (FT)	FRAME & COVER	STRUCTURE REMARKS	FROM STRUCTURE	TO STRUCTURE	PIPE SIZE (IN)	PLAN LENGTH (FT)	INVERTS		SLOPE (FT/FT)	PIPE MATERIAL	PIPE REMARKS
												INLET	OUTLET			
101	EXISTING STORM INLET	26+74	55' RT	91.61			ADJUST ONLY									
102	EXISTING STORM INLET	26+95	33' RT	91.55			ADJUST ONLY									
103	STORM INLET- 45A	52+25	33' RT	90.65	5.10	SALVAGE		103	EXISTING DRAIN	8	5	85.55	85.45	0.02000	PVC	CONNECT TO EXISTING DRAIN

611.8115 ADJUSTING INLET COVERS	SPV.0060.112 STORM INLET TYPE 45A	SPV.0090.102 STORM SEWER PIPE CORRUGATED PVC 8-INCH	611.9710 SALVAGED INLET COVERS
EACH	EACH	LF	EACH
2	1	5	1

CONSTRUCTION STAKING

CATEGORY 0010

ITEM NO.	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB AND GUTTER	650.9000 CONSTRUCTION STAKING CURB RAMP	650.9500 CONSTRUCTION STAKING SIDEWALK (PROJECT) 002. 2984-15-71	650.9911 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 002. 2984-15-71
LOCATION	LF	EACH	EACH	EACH
N 60TH ST	275	7	1	1
N 51ST ST	277	2		
PROJECT TOTAL	552	9	1	1

3

PAVEMENT MARKING

CATEGORY 0010

ITEM NO.	646.1020		646.2020	646.3020	646.5220	646.9000	646.9100	646.9200	646.9300	SPV.0090.003	SPV.0090.004	SPV.0090.705
	MARKING LINE EPOXY 4-INCH (WHITE)	MARKING LINE EPOXY 4-INCH (YELLOW)	MARKING LINE EPOXY 6-INCH	MARKING LINE EPOXY 8-INCH (WHITE)	MARKING SYMBOL EPOXY	MARKING REMOVAL LINE 4-INCH	MARKING REMOVAL LINE 8-INCH	MARKING REMOVAL LINE WIDE	MARKING REMOVAL SPECIAL MARKING	MARKING CROSSWALK EPOXY TRANSVERSE LINE 12-INCH	MARKING STOP LINE EPOXY 24-INCH	MARKING CROSSWALK LINE EPOXY BLOCK STYLE 12-INCH
LOCATION	LF	LF	LF	LF	EACH	LF	LF	LF	EACH	LF	LF	LF
N 60TH ST	40	1,120	120	630	4	679	200	-	4	-	154	-
N 51ST ST	40	2,550	120	1,079	4	1,485	180	200	4	200	162	200
SUB-TOTAL	80	3,670	240	1,709	8	2,164	380	200	8	200	316	200
PROJECT TOTAL	3,750		240	1,709	8	2,164	380	200	8	200	316	200

TRAFFIC CONTROL DEVICES

CATEGORY 0010

ITEM NO.		643.0300		643.0410		643.0420		643.0705		643.0715		643.0900		643.1050	
		TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE II		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL SIGNS PCMS	
LOCATION		DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS
N 60TH ST	STAGE 1	59	32	1,888	16	944	26	1,534	52	3,068	18	1,062	20	1,180	1	7
	STAGE 2	61	63	3,843	0	0	58	3,538	112	6,832	63	3,843	45	2,745	1	7
N 51ST ST	STAGE 1	59	82	4,838	8	472	30	1,770	60	3,540	56	3,304	28	1,652	1	7
	STAGE 2	61	38	2,318	0	0	37	2,257	74	4,514	38	2,318	34	2,074	1	7
PROJECT TOTAL				12,887		1,416		9,099		17,954		10,527		7,651		28

(1) All Drums have one Type C Steady Burn Light

(2) All Type III Barricades have two Type A Flashing Lights

TRAFFIC CONTROL

CATEGORY 0010

ITEM NO.	643.5000
	TRAFFIC CONTROL
LOCATION	EACH
2984-15-71	0.40
PROJECT TOTAL	0.40

PEDESTRIAN ACCOMMODATIONS SURFACES

CATEGORY 0010

ITEM NO.	644.1410	644.1430	644.1440
	TEMPORARY PEDESTRIAN SURFACE ASPHALT	TEMPORARY PEDESTRIAN SURFACE PLATE	TEMPORARY PEDESTRIAN SURFACE MATTING
LOCATION	SF	SF	SF
N 60TH ST	1120	1120	1120
N 51ST ST	320	320	320
PROJECT TOTAL	1,440	1,440	1,440

CATEGORY 0010

ITEM NO.	SPV.0060.010
	TEMPORARY NO PARKING SIGNS
LOCATION	EACH
N 60TH ST	6
N 51ST ST	6
PROJECT TOTAL	12

SIGN INSTALLATION

SIGN NO.	SIGN CODE	MESSAGE	SIZE INCHES	X	SIZE INCHES	STREET NAME SIGN MOUNTING HARDWARE ON MAST ARM SPV.0060.291 EACH	637.2220 SIGNS TYPE II REFLECTIVE SH SF	REMARKS
1-1	M1-94H	N 60TH ST	48	X	18	1	6.0	ATTACH TO MAST ARM
1-2	M1-94H	W VILLARD AV	72	X	18	1	9.0	ATTACH TO MAST ARM
1-3	M1-94H	N 60TH ST	48	X	18	1	6.0	ATTACH TO MAST ARM
1-4	M1-94H	W VILLARD AV	72	X	18	1	9.0	ATTACH TO MAST ARM
2-1	M1-94H	N 51ST BD	48	X	18	1	6.0	ATTACH TO MAST ARM
2-2	M1-94H	W VILLARD AV	72	X	18	1	9.0	ATTACH TO MAST ARM
2-3	M1-94H	N 51ST BD	48	X	18	1	6.0	ATTACH TO MAST ARM
2-4	M1-94H	W VILLARD AV	72	X	18	1	9.0	ATTACH TO MAST ARM
		PROJECT TOTALS				8	60.0	

3

ITEM NO.	650.8501 CONSTRUCTION STAKING ELECTRICAL INSTALLATION Project (2090-16-70)
UNIT PAY	EACH
LOCATION	
2090-16-70	1
PROJECT TOTAL	1

STREET LIGHTING ITEMS

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

ITEM NO.	SPV.0060.302 PULL BOXES 13-INCH x 24-INCH x 24-INCH	SPV.0090.319 LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT 1 1/2-INCH	SPV.0090.324 CAT 10 ELECTRICAL CABLE 3#2/1#8 XLPE USE 2	SPV.0090.325 3-INCH HDPE CONDUIT
LOCATION	EACH	LF	LF	LF
N. 51st STREET	2	30	1480	1080
N. 60th STREET	7	30	1450	1,150
PROJECT TOTAL	9	60	2930	2,230

3

ITEM NO.	654.0105 CONCRETE BASES TYPE 5	655.0305* CABLE TYPE UF 2#12 AWG GROUNDED	657.0255 TRANSFORMER BASE BREAKAWAY 11 1/2-INCH BOLT CIRCLE	SPV.0060.325 POLES TYPE (30 FT ALUMINUM, BOLT DOWN)	SPV.0060.343 WATER TIGHT SPLICES AND CONNECTIONS	SPV.0060.345 LUMINAIRE ARM SINGLE MEMBER 6-FT	SPV.0060.353 INSTALL EQUIPMENT GROUNDING ELECTRODE	SPV.0060.376 LUMINAIRE UTILITY 3LED
UNIT PAY	EACH	LF	EACH	EACH				
LOCATION					EACH	EACH	EACH	EACH
N. 51st STREET	3	440	3	3	12	7	2	7
N. 60th STREET	5	500	5	5	6	11	2	11
PROJECT TOTAL	8	940	8	8	18	18	4	18

*ADDITIONAL QUANTITIES LISTED ELSEWHERE

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

TRAFFIC SIGNALS W. VILLARD AVE. & N. 60TH ST.

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

LOC.	TO	LOC.	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	TO	PB1	-	10	-
PB1	TO	PB2	-	50	-
PB2	TO	SB1	5	-	-
PB2	TO	PB3	-	-	150
PB3	TO	SB2	-	5	-
PB3	TO	PB4	-	40	-
PB4	TO	SB3	5	-	-
PB4	TO	PB6	-	-	170
PB6	TO	PB5	-	30	-
PB5	TO	SB4	-	10	-
PB5	TO	SB5	5	-	-
PB6	TO	SB6	5	-	-
PB6	TO	PB8	-	-	150
PB8	TO	PB7	-	60	-
PB7	TO	SB7	-	5	-
PB8	TO	PB9	-	30	-
PB9	TO	SB8	5	-	-
PB9	TO	PB10	-	85	-
PB10	TO	PB11	-	-	140
PB11	TO	PB1	-	85	-
PB1	TO	SB9	-	5	-
		SUBTOTAL	25	415	610

SIGNAL BASE NO.	LOCATION	204.0195 REMOVING CONCRETE BASES EACH	654.0120 CONCRETE BASE TYPE 10 SPECIAL EACH
SB1A	25+92', 35' R	1	-
SB4	26+99', 37' R	-	1
SB9	25+87', 37' L	-	1
SB10A	25+93', 1' L	1	-
	SUBTOTAL	2	2

PULL BOX NO.	LOCATION	653.0905 REMOVING PULL BOXES EACH
PB2A	6+6.5', 51' L	1
PB3A	26+80', 49' L	1
PB7A	26+04', 78' R	1
	SUBTOTAL	3

SUMMARY OF MAJOR ITEMS FOR TRAFFIC SIGNAL CABLING

	DESCRIPITON	L.F
655.0230	CABLE TRAFFIC SIGNAL 5-14 AWG	970
655.0260	CABLE TRAFFIC SIGNAL 12-14 AWG	590
655.0280	CABLE TRAFFIC SIGNAL 19-14 AWG	620
655.0305*	CABLE TYPE UF 2-12 AWG GROUNDED	885
655.0515	ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	640
655.0900	TRAFFIC SIGNAL EVP DETECTOR CABLE	885
SPV.0090.323	ELECTRICAL CABLE 3#4/1#8 XLPE USE-2	15

*ADDITIONAL QUANTITIES LISTED ELSEWHERE

LOCATION	SPV.0060.215 ELECTRICAL SERVICE PEDESTAL EACH
105+42', 37' L	1
SUBTOTAL	1

	658.5070 SIGNAL MOUNTING HARDWARE (004. W VILLARD AVE. & N. 60th ST.) 2984-15-71 EACH
	1
West	1

TRAFFIC SIGNALS W. VILLARD AVE. & N. 60TH ST.

SIGNAL BASE NUMBER	657.0352 POLES TYPE 10-SPECIAL EACH	657.0541 MONOTUBE ARMS 40-FT SPECIAL EACH	SPV.0060.218 EVP 1 DIRECTION DETECTOR EACH	SPV.0060.223 EVP CONFIRMATION LIGHT EACH	SPV.0060.228 ELECTRICAL RISER EACH
SB1	-	-	-	-	1
SB3	-	-	-	1	1
SB4	1	1	1	-	-
SB5	-	-	-	-	1
SB6	-	-	-	-	1
SB8	-	-	-	-	1
SB9	1	1	1	1	-
SUBTOTAL	2	2	2	2	5

PULL BOX NO.	LOCATION	SPV.0060.303 FIBERGLASS/POLYMER CONCRETE PULL BOX 17-INCH X 30-INCH X 24-INCH EACH
PB1	25+90', 35' L	1
PB2	26+6.5', 53' L	1
PB3	26+80', 49' L	1
PB4	26+97', 37' L	1
PB5	26+92', 37.5' R	1
PB6	26+79', 49' R	1
PB7	26+04', 78' R	1
PB8	26+04'. 47.5' R	1
PB9	25+90. 35' R	1
PB10	25+47. 35' R	1
PB11	25+47. 35' L	1
	SUBTOTAL	11

SIGNAL HEAD NUMBER	SIGNAL BASE NUMBER	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH EACH	658.0412 PEDESTRIAN SIGNAL FACE 12-INCH EACH	SPV.0060.267 PEDESTRIAN COUNTDOWN SIGNAL FACE 12-INCH EACH
1	SB3	1	-	-
2	SB9	1	-	-
3	SB9	1	-	-
4	SB8	1	-	-
5	SB9	1	-	-
6	SB8	1	-	-
7	SB4	1	-	-
8	SB5	1	-	-
9	SB3	1	-	-
10	SB4	1	-	-
11	SB6	1	-	-
14	SB1	1	-	-
16	SB1	1	-	-
19	SB6	1	-	-
22	SB1	-	1	1
23	SB9	-	1	1
24	SB3	-	1	1
26	SB6	-	1	1
27	SB4	-	1	1
28	SB8	-	1	1
	SUBTOTAL	14	6	6

LOCATION	SPV.0060.201 INSTALL CITY PRECAST CONTROLLER BASE EACH	SPV.0060.205 ATC CONTROLLER AND CABINET INSTALLED EACH	SPV.0060.221 EVP PHASE SELECTOR CARD 4 CHANNEL EACH
25+91', 37' L	1	1	1
SUBTOTAL	1	1	1

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

TRAFFIC SIGNALS W. VILLARD AVE. & N. 51ST ST.

LOC.	TO	LOC.	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	TO	PB1	-	30	-
PB1	TO	SB1	-	5	-
PB1	TO	PB2	-	30	-
PB2	TO	SB2	5	-	-
PB2	TO	PB3	-	-	150
PB3	TO	SB3	-	5	-
PB3	TO	PB4	-	45	-
PB4	TO	SB4	10	-	-
PB4	TO	PB5	-	30	-
PB5	TO	PB6	-	-	150
PB6	TO	PB7	-	50	-
PB7	TO	SB5	-	5	-
PB7	TO	PB8	-	50	-
PB8	TO	SB6	5	-	-
PB8	TO	PB9	-	-	150
PB9	TO	SB7	-	5	-
PB9	TO	PB10	-	80	-
PB10	TO	SB8	15	-	-
PB10	TO	PB11	-	-	150
PB11	TO	CB1	-	10	-
		SUBTOTAL	35	345	600

SIGNAL BASE NUMBER	657.0352 POLES TYPE 10- SPECIAL EACH	657.0541 MONOTUBE ARMS 40-FT SPECIAL EACH	SPV.0060.218 EVP 1 DIRECTION DETECTOR EACH	SPV.0060.223 EVP CONFIRMATION LIGHT EACH	SPV.0060.228 ELECTRICAL RISER EACH
SB1	1	1	1	1	-
SB3	-	-	-	-	1
SB4	1	1	1	1	-
SB5	-	-	-	-	1
SB6	1	1	1	1	-
SB7	-	-	-	-	1
SB8	1	1	1	1	-
SB9	-	-	-	-	1
SUBTOTAL	4	4	4	4	4

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

SIGNAL BASE NO.	LOCATION	204.0195 REMOVING CONCRETE BASES EACH	654.0120 CONCRETE BASE TYPE 10 SPECIAL EACH
SB1	53+35', 37.5 R'	-	1
SB2A	53+15', 47' R	1	-
SB3A	53+78', 47' R	1	-
SB4	52+41', 49' R	-	1
SB4A	52+40', 45' R	1	-
SB6	52+24', 36' L	-	1
SB6A	52+31', 1' L	1	-
SB8	53+15', 51' L	-	1
SB8A	52+42', 48' L	1	-
SB10A	53+15', 47' L	1	-
	SUBTOTAL	6	4

SIGNAL HEAD NUMBER	SIGNAL BASE NUMBER	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH EACH	658.0412 PEDESTRIAN SIGNAL FACE 12-INCH EACH	SPV.0060.267 PEDESTRIAN COUNTDOWN SIGNAL FACE 12-INCH EACH
1	SB9	1	-	-
2	SB6	1	-	-
3	SB6	1	-	-
4	SB5	1	-	-
5	SB6	1	-	-
6	SB5	1	-	-
7	SB1	1	-	-
8	SB1	1	-	-
9	SB9	1	-	-
10	SB1	1	-	-
11	SB3	1	-	-
12	SB8	1	-	-
13	SB8	1	-	-
14	SB7	1	-	-
15	SB8	1	-	-
16	SB7	1	-	-
17	SB4	1	-	-
18	SB4	1	-	-
19	SB3	1	-	-
20	SB4	1	-	-
21	SB4	-	1	1
22	SB7	-	1	1
23	SB6	-	1	1
24	SB9	-	1	1
25	SB8	-	1	1
26	SB3	-	1	1
27	SB1	-	1	1
28	SB5	-	1	1
	SUBTOTAL	20	8	8

3

	DESCRIPITON	L.F
655.0230	CABLE TRAFFIC SIGNAL 5-14 AWG	945
655.0260	CABLE TRAFFIC SIGNAL 12-14 AWG	520
655.0280	CABLE TRAFFIC SIGNAL 19-14-AWG	520
655.0305*	CABLE TYPE UF 2-12 AWG GROUNDED	790
655.0515	ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	565
655.0900	TRAFFIC SIGNAL EVP DETECTOR CABLE	790
SPV.0090.323	ELECTRICAL CABLE 3#4/1#8 XLPE USE-2	75

*ADDITIONAL QUANTITIES LISTED ELSEWHERE

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

PULL BOX NO.	LOCATION	SPV.0060.303 FIBERGLASS/POLYMER CONCRETE PULL BOXES 17-INCHX30-INCHX24-INCH EACH
PB1	53+29', 38' R	1
PB2	53+15', 48' R	1
PB3	52+40', 49" R	1
PB4	52+22', 35.5' R	1
PB5	52+06', 35.5' R	1
PB6	52+06', 37' L	1
PB7	52+31', 37' L	1
PB8	52+43', 57' L	1
PB9	53+15', 57' L	1
PB10	53+47', 35' L	1
PB11	53+47', 37' R	1
	SUBTOTAL	11

LOCATION	SPV.0060.201 INSTALL CITY PRECAST CONTROLLER BASE EACH	SPV.0060.205 ATC CONTROLLER AND CABINET INSTALLED EACH	SPV.0060.221 EVP PHASE SELECTOR CARD 4 CHANNEL EACH
53+43', 38' R	1	1	1
SUBTOTAL	1	1	1

	658.5070 SIGNAL MOUNTING HARDWARE (005. W.VILLARD AVE. & N. 51st ST.) 2984-15-71 EACH
	1
West	1

LOCATION	SPV.0060.215 ELECTRICAL SERVICE PEDESTAL EACH
53+43', 38' R	1
SUBTOTAL	1

TRAFFIC SIGNALS TOTALS

ALL ITEMS ON THIS PAGE ARE CATEGORY 0010

204.0195 REMOVING CONCRETE BASES	653.0905 REMOVING PULL BOXES	654.0120 CONCRETE BASES TYPE 10 SPECIAL	657.0352 POLES TYPE 10 SPECIAL	657.0541 MONOTUBE ARMS 40-FT SPECIAL	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH	658.0412 PEDESTRIAN SIGNAL FACE 12-INCH	658.5070 SIGNAL MOUNTING HARDWARE (004. W.VILLARD AVE. & N. 60th ST.) 2984-15-71	658.5070 SIGNAL MOUNTING HARDWARE (005. W.VILLARD AVE. & N.51st ST.) 2984-15-71
EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
8	3	6	6	6	34	14	1	1

SPV.0060.201 INSTALL CITY PRECAST CONTROLLER BASE	SPV.0060.205 ATC CONTROLLER AND CABINET INSTALLED	SPV.0060.215 ELECTRICAL SERVICE PEDESTAL	SPV.0060.218 EVP 1 DIRECTION DETECTOR	SPV.0060.221 EVP PHASE SELECTOR CARD 4 CHANNEL	SPV.0060.223 EVP CONFIRMATION LIGHT	SPV.0060.228 ELECTRICAL RISER	SPV.0060.267 PEDESTRIAN COUNTDOWN SIGNAL FACE 12-INCH	SPV.0060.303 FIBERGLASS/POLYMER CONCRETE PULLBOXES 17-INCHX30-INCHX24-INCH	SPV.0090.323 ELECTRICAL CABLE 3 #4/1 #8 XLPE USE-2
EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LF
2	2	2	6	2	6	9	14	22	90

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	652.0615 CONDUIT SPECIAL 3-INCH	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG	655.0280 CABLE TRAFFIC SIGNAL 19-14 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
LF	LF	LF	LF	LF	LF	LF	LF	LF
60	760	1210	1915	1110	1140	1675	1205	1675

*NOTE: ADDITIONAL QUANTITIES SHOWN ELSEWHERE

3

EARTH WORK SUMMARY

FROM/TO STATION	LOCATION	EXCAVATION COMMON (1) (ITEM # 205.0100)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	MASS ORDINATE +/- (7)	WASTE	COMMENT
		Cut (2)	EBS Excavation (3)					
		CY	CY	CY	CY	CY	CY	
	N 60TH ST	116			116			
	N 51ST ST	254	0	0	254	0	0	SEE NOTE 6

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.

4) Salvaged/Unusable Pavement Material

5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Expanded Fill Factor = 1.20; Imported fill conversion to compacted fill is 15% for granular soils. Granular soils is used in estimated borrow.
7) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division.

- (2) CONST. TYPE 2 CURB RAMP
- (31E) 31" VERTICAL FACE CONC. CURB & GUTTER (EXPOSED FLANGE)
- (AC) R & R 3" ASPH. OVER 9" CONC. BASE
- (AV) R & R 3" ASPH. OVER VARIABLE THICKNESS CONC. BASE
- (CW5) SAW & REPLACE 5" THICK CONC. WALK
- (PC) CONST. PEDESTRIAN CURB

W VILLARD AVE

P.L.

#6000 W. VILLARD AVE.

N 60TH ST

SEE 60TH ST CONST DETAIL SHEET
FOR ADDITIONAL INFORMATION
ON CURB RAMPS

N

BENCHMARK:
HYD III @ SW CORNER OF
N. 60TH ST. & W. VILLARD AVE.
NW BOLT, 2018, MUELLER
ELEV.: 94.399'

CHIS 'T'
STA 25+35, 40'LT
N: 326,385.90
E: 585,395.01

CHIS 'T'
STA 27+15, 40'LT
N: 326,383.48
E: 585,574.57

GASS
CLP
ALP
WP
10"
1"
5"
R/W
LANNON-STONE
ASPH
MONOTUBE
LAWN
VAULT
TEL
MIS
ASPH OVER CONC
T. 8 N.
35
R. 21 E.

90'
38'
24'
4'
45'
66'
31'

91.40
26+1.8
56'LT

26+7.9
55.9'LT

91.67
25+97.1
55.9'LT

CTR. 15.0'R=
+93 - 48.1'LT

25+97.9
43.5'LT

91.8
25+81.8
43.5'LT

91.46C
90.96G
91.00F
26+7.9
51.7'LT

26+12.9
56.1'LT

ER
91.43C
91.10G
91.14F
26+8
47.6'LT

91.72
25+81.9
39'LT

25+89.5
33.1'LT

25+89.5
28.1'LT

ER
91.78C
91.40G
91.44F
25+92.9
33.1'LT

91.55C
91.30G
91.34F
26+3.9
37.8'LT

26+74.9
53'LT

26+80.8
55.2'LT

26+85.6
55.1'LT

26+69.9
59.7'LT

26+80.9
46.5'LT

CTR. 15.0'R=
+89.9 - 48.4'LT

26+96.2
44'LT

ER
91.43C
91.10G
91.14F
26+74.9
48.4'LT

26+94.8
33.3'LT

26+94.7
28.3'LT

27+12.5,0'LT
92.65

ER
91.58C
91.25G
91.29F
26+89.6
33.4'LT

26+87.5,0'LT
92.55

27+00,0'LT
92.60

26+81.2
4.2'LT

27+25,0'LT
92.70

27+30.4
4.3'LT

27+30.4
3.8'RT

26+81.3
3.9'RT

24+44
4'LT

24+44
3.9'RT

25+26.4
4'LT

25+26.4
3.9'RT

25+52.6
4'LT

25+52.8
3.9'RT

25+62.5,0'LT
92.65

25+75,0'LT
92.58

25+87.5,0'LT
92.51

26+1.3
4'LT

26+00,0'LT
92.45

26+1.5
3.9'RT

+50
25
26
27

(AV) (AC) (2) (3IE) (CW5) (PC)

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	PLAN: N 60TH ST	SCALE FEET 0' 20	SHEET NO: 59	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\N 60TH ST - NORTHWEST.DGN

REVISED DATE: 11-21-2022 BY SDB

W VILLARD AVE

N 60TH ST

SEE 60TH ST CONST DETAIL SHEET
FOR ADDITIONAL INFORMATION
ON CURB RAMPS

GASS

10"

1"

5"

90'

4'

38'

24'

3'

45'

66'

90'

31'

ASPH

MONOTUBE

LAWN

ALP

VAULT

TEL

MIS

ASPH OVER CONC

CLP

WP

R/W

+50

T. 8 N.
R. 21 E.
35

N

(2) CONST. TYPE 2 CURB RAMP

(31E) 31" VERTICAL FACE CONC. CURB & GUTTER (EXPOSED FLANGE)

(AC) R & R 3" ASPH. OVER 9" CONC. BASE

(AV) R & R 3" ASPH. OVER VARIABLE THICKNESS CONC. BASE

(CW5) SAW & REPLACE 5" THICK CONC. WALK

(PC) CONST. PEDESTRIAN CURB

BENCHMARK:
HYD III @ SW CORNER OF
N. 60TH ST. & W. VILLARD AVE.
NW BOLT, 2018, MUELLER
ELEV.: 94.399'

CHIS 'T'
STA 27+15, 40'LT
N: 326,383.48
E: 585,574.57

40'LT
.90
.01

91.40
26+1.8
56'LT

91.67
25+97.1
55.9'LT

91.46C
90.96G
91.00F
26+7.9
51.7'LT

26+7.9
55.9'LT

CTR. 15.0'R=
+93 - 48.1'LT

25+97.9
43.5'LT

26+12.9
56.1'LT

91.8
25+81.8
43.5'LT

ER
91.43C
91.10G
91.14F
26+8
47.6'LT

91.72
25+81.9
39'LT

25+89.5
33.1'LT

25+89.5
28.1'LT

ER
91.78C
91.40G
91.44F
25+92.9
33.1'LT

91.55C
91.30G
91.34F
26+3.9
37.8'LT

25+87.5,0'LT
92.51

25+52.6
4'LT

25+62.5,0'LT
92.65

26+1.3
4'LT

26+00,0'LT
92.45

25+52.8
4'RT

25+75,0'LT
92.58

26+1.5
4'RT

26

26+74.9
53'LT

26+80.8
55.2'LT

26+85.6
55.1'LT

26+69.9
59.7'LT

26+80.9
46.5'LT

CTR. 15.0'R=
+89.9 - 48.4'LT

26+96.2
44'LT

ER
91.43C
91.10G
91.14F
26+74.9
48.4'LT

26+94.8
33.3'LT

26+94.7
28.3'LT

26+87.5,0'LT
92.55

ER
91.58C
91.25G
91.29F
26+89.6
33.4'LT

26+81.2
4.2'LT

27+12.5,0'LT
92.65

27+25,0'LT
92.70

27+30.4
4.2'LT

26+81.3
3.8'RT

27+00,0'LT
92.60

27+30.4
3.8'RT

27

27+56.4
4.2'LT

27+40.8
4.2'LT

27+56.4
3.8'RT

28+40.8
3.8'RT

28

5834 W. VILLARD AVE.

VILLARD AVE.

5

5

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	PLAN: N 60TH ST	SCALE FEET 0' 20	SHEET NO: 60	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\N 60TH ST - NORTHEAST.DGN

REVISED DATE: 11-21-2022 BY SDB

W VILLARD AVE

SEE 60TH ST NORTH SIDE PLAN

AVENUE

N

25

26

27

+50

+50

+50

T. 8 N. R. 21 E. 35

ASPH OVER CONC

MIS

TEL

TEL

VAULT

45'

66'

31'

90'

4'

14'

5'

CLP

R/W

92.10C
91.85G
91.89F
25+96.8
34.5'RT

25+89.9
33.4'RT

25+89.8
26.4'RT

92.10
25+82.8
39'RT

92.28
25+82.9
44'RT

WP

AV

3IE

1

AA

CW5

ASPH

ALP

+81.9

1'

26+15.6
54'RT

25+97.6
44'RT

55'RT

CTR. 18.0'R=
+90.6 - 51.4'RT

ER
92.05C
91.80G
91.84F
26+8.6
51.2'RT

26+8.6
54.1'RT

26+2.8
53.2'RT

92.04
26+2.8
54.1'RT

92.45
25+97.8
54.1'RT

ASPH

MONOTUBE

VAULT

CHIS 'T'
STA 25+45, 40'RT
N: 326,305.74
E: 585,403.52

BENCHMARK:
HYD III @ SW CORNER OF
N. 60TH ST. & W. VILLARD AVE.
NW BOLT, 2018, MUELLER
ELEV.: 94.399'

#6003 W. VILLARD AVE.

N 60TH ST

29'

33'

4'

1"

SEE 60TH ST CONST DETAIL SHEET
FOR ADDITIONAL INFORMATION
ON CURB RAMPS

ER
91.85C
91.60G
91.64F
26+89.5
33.0'RT

26+88
38.6'RT

91.88C
91.55G
26+94.8
33.0'RT

27+36.5
26'RT

3IC

RGS

2

26+80.5
45.7'RT

ER
92.12C
91.79G
91.83F
26+74.6
47.9'RT

10'

8'

12'

91.72
26+96.1
38.6'RT

92.08
26+96.1
43.6'RT

26+85.5
43.6'RT

27+34.6
33'RT

CHIS 'T'
STA 27+15, 40'RT
N: 326,303.48
E: 585,573.98

91.97C
91.64G
26+89.5
33.0'RT

92.03C
91.61G
26+74.5
54.6'RT

BS

92.12
26+80.3
55.7'RT

CTR. 15.0'R=
+89.6 - 48.05'RT

92.27
26+80.2
63.8'RT

92.18C
91.85G
26+74.4
63.7'RT

26+74
90.2'RT

3IE

92.44
26+80.1
75.8'RT

92.35C
92.10G
26+74.2
75.7'RT

26+67
92.1'RT

92.62
26+80.0
83.8'RT

26+85.1
91.1'RT

26+80.1
91.3'RT

#5829 W. VILLARD AVE.

(1) CONST. TYPE 1 CURB RAMP

(2) CONST. TYPE 2 CURB RAMP

(3IC) 31" VERTICAL FACE CONC. CURB & GUTTER (COVERED FLANGE)

(3IE) 31" VERTICAL FACE CONC. CURB & GUTTER (EXPOSED FLANGE)

(AA) R & R 3" ASPH. OVER AGGREGATE BASE

(AV) R & R 3" ASPH. OVER VARIABLE THICKNESS CONC. BASE

(BS) BUS STOP

(CW5) SAW & REPLACE 5" THICK CONC. WALK

(PC) CONST. PEDESTRIAN CURB

(RGS) REMOVE, GRADE, & SOD

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	PLAN: N 60TH ST	SCALE FEET 0' 20'	SHEET NO: 61	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\N 60TH ST - SOUTH.DGN

REVISED DATE: 11-21-2022 BY SB

(AC) 3" ASPHALT SURFACE OVER 9" CONC. BASE OVER 6" BAD I 1/4"

(AV) 3" ASPHALT SURFACE OVER VARIABLE THICKNESS CONCRETE BASE

BENCHMARK:
BM-STD 58-28
N. 51ST ST. & W. VILLARD AVE.
2.8' NORTH & 40.3' WEST OF CURB
ELEV.: 91.073'

#5229 N. 51ST BLVD.

#5200 N.

W VILLARD AVE

N 51ST BLVD

CHIS 'T'
STA 51+90, 40'LT
N: 326,365.75
E: 588,049.51

P.L.

R/W

LAWN

WP

ASPH

CLP

GRASS

6' CW

52+74.4
161.9'LT

52+82.5
161.9'LT

52+78.4, 150'LT
90.40

52+78.3, 125'LT
90.45

52+78.2, 100'LT
90.68

52+78, 75'LT
90.85

52+77.9, 50'LT
91.05

52+73.6
39.4'LT

52+81.6
39.4'LT

52+12.5, 0'LT
91.60

52+25, 0'LT
91.55

52+38.3
3.9'LT

52+37.5, 0'LT
91.45

52+38.3
4'RT

52+0, 0'LT
91.70

51+88.5
3.9'LT

51+88.5
4'RT

50+80.5
4'LT

50+80.5
4'RT

51+62.7
4'LT

51+62.7
4'RT

53+50, 0'LT
91.32

53+62.5, 0'LT
91.23

53+37.5, 0'LT
91.40

53+25, 0'LT
91.48

53+66.3
4.1'LT

53+17
4'LT

53+17
4'RT

53+66.3
4'RT

T. 8 N.
R. 21 E.
34 35

ASPH OVER CONC

TEL

TEL

N

90'

11'

4'

31'

31'

6'

2'

2'

45'

45'

31'

31'

31'

31'

66'

90'

4'

4'

51

52

53

+50

+50

+50

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	PLAN: N 51ST ST	SCALE FEET 0' 20'	SHEET NO: 62	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\N 51ST - NORTH WEST.DGN

REVISED DATE: 11-23-2022 BY AA

N

(AA) R & R 3" ASPHALT SURFACE OVER AGGREGATE BASE

(AC) 3" ASPHALT SURFACE OVER 9" CONC. BASE OVER 6" BAD I 1/4"

N 51ST ST

P.L.

#5200 N. 51ST BLVD.

#5000 W. VILLARD AVE.

5

5

90'

31'

6'

2'

ASPH

6' CIW

W VILLARD AVE

CHIS 'T'
STA 53+60, 40'LT
N: 326,364.81
E: 588,219.35

R/W

CLP

GRASS

12"

8"

CLP

55'

31'

100'

66'

4'

53+50, 0'LT
91.32

53+37.5, 0'LT
91.40

53+25, 0'LT
91.48

53+62.5, 0'LT
91.23

53+17
4'LT

53+66.3
4'LT

53+92.4
4'LT

55+89.6
4'LT

53
T

+50

54
T

+50

55
T

+50

53+17
4'RT

53+66.3
4'RT

53+92.4
4'RT

55+89.6
4'RT

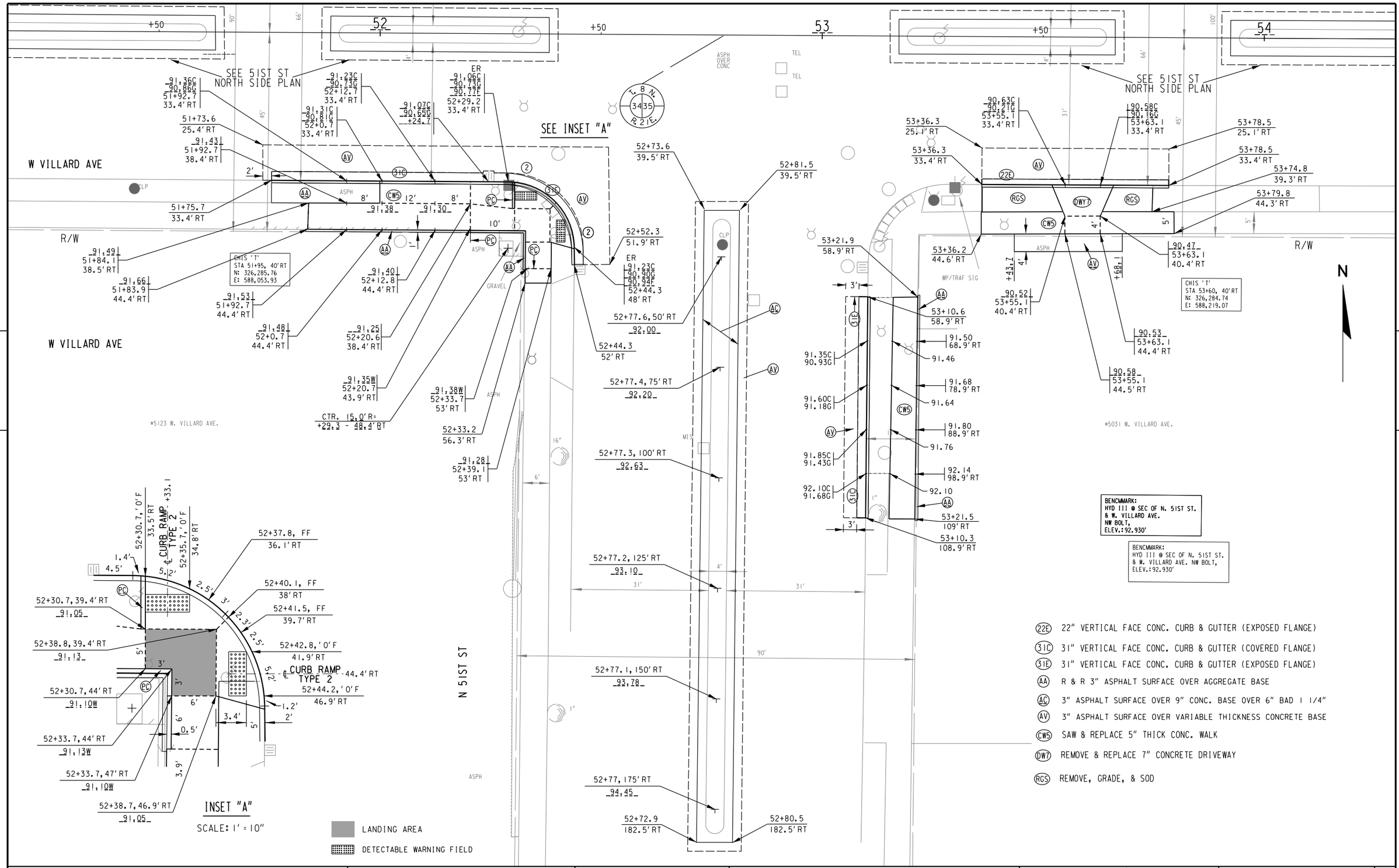
TEL

TEL

STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	PLAN: N 51ST ST	SCALE FEET 0' 20'	SHEET NO: 63	E

FILENAME: W:\SPR\MONOTUBE PROJECTS\VILLARD_51ST_60TH MONOTUBES\DESIGN\N 51ST - NORTH EAST.DGN

REVISED DATE: 11-23-2022 BY AA



STATE PROJECT NUMBER 2984-15-71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	PLAN: N 51ST ST	SCALE FEET 0' 20'	SHEET NO: 64	E

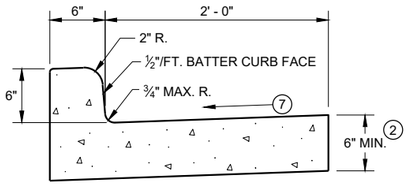
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REVISED DATE: 08-09-2022 BY AA

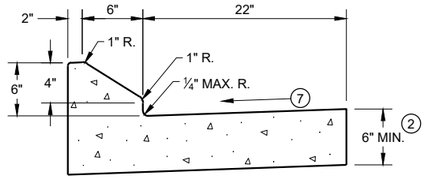
Standard Detail Drawing List

08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	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
08D16-11	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08D19-03	DRIVEWAY AND SIDEWALK RAMPS TYPE Z
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B04-12	PULL BOX
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C11-10	CONCRETE BASE TYPE 10
09C16-01	CONCRETE BASE TYPE 10 SPECIAL EXTENSION
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D02-03	SIGNAL CONTROL CABINET
09D03-03	POST MOUNTED CONTROLLER SERVICE INSTALLATION
09D04-03	LIGHTING CONTROL CABINET 120/240 VOLT
09E01-15D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E08-09G	TYPE 10 SPECIAL POLE 40' MONOTUBE ARM
09E08-09K	GENERAL NOTES,HARDWARE DETAILS FOR TYPE 9/10,9/10 SPECIAL,12 & 13 POLES W/MONOTUBE ARMS
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C15-08A	CONCRETE BASE
13C15-08B	CONCRETE BASE
13C18-07A	CONCRETE PAVEMENT JOINTING
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C07-15A	PAVEMENT MARKING SYMBOLS
15C07-15E	PAVEMENT MARKING FOR BIKE LANES
15C08-23C	PAVEMENT MARKING (TURN LANES)
15C08-23D	PAVEMENT MARKING (TURN LANES)
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C29-08B	PAVEMENT MARKING FOR SHARED LANE 35 MPH OR LESS
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D30-09A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09B	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

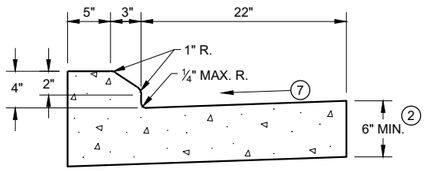
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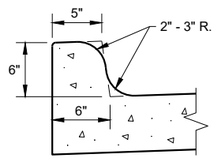
TYPES A (1) & D



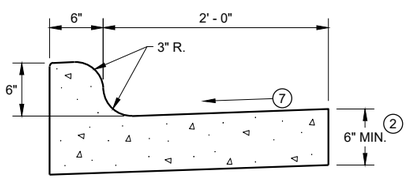
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

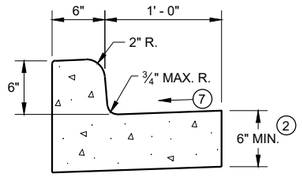


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



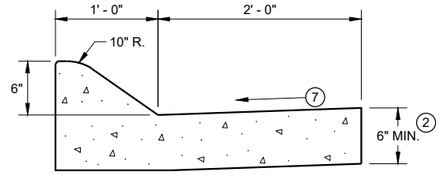
TYPES K (1) & L

CONCRETE CURB AND GUTTER 30"

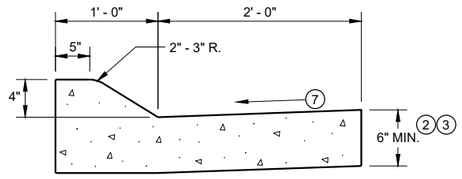


TYPES A (1) & D

CONCRETE CURB AND GUTTER 18"

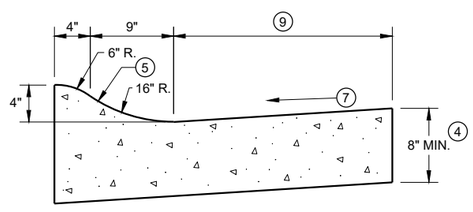


6" SLOPED CURB TYPES A (1) & D



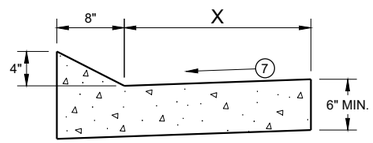
4" SLOPED CURB TYPES A (1) & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R (1) & T

TBT & TBTT	X
30"	22"
36"	28"

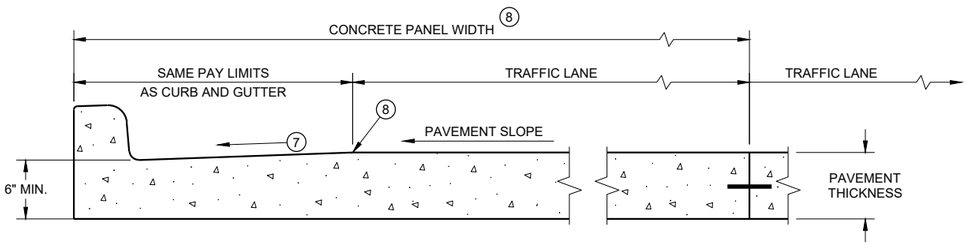


TYPES TBT & TBTT (1)

CONCRETE CURB AND GUTTER

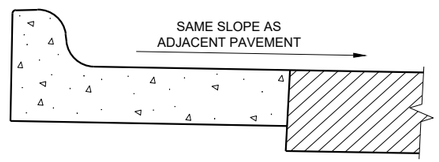
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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.

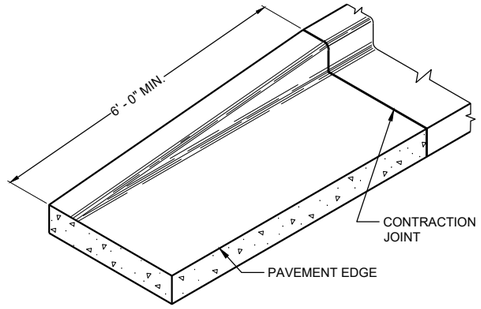
(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

(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

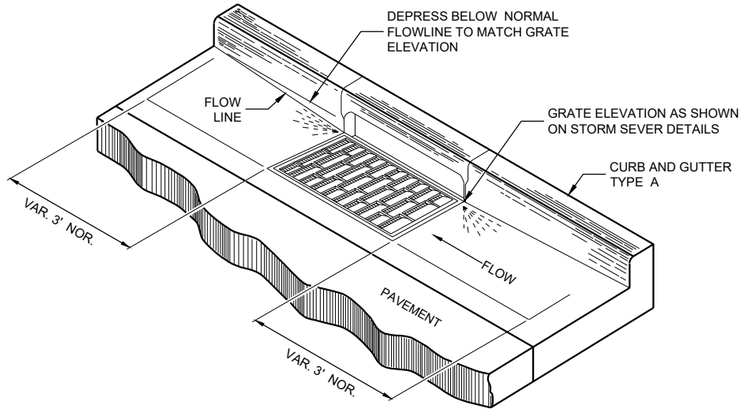
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 08D01 - 23a



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.

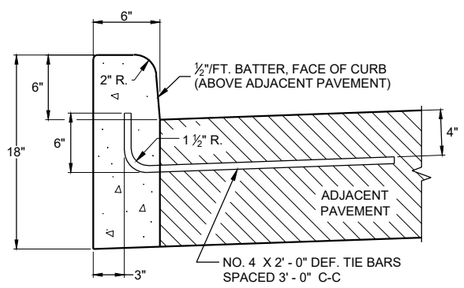
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

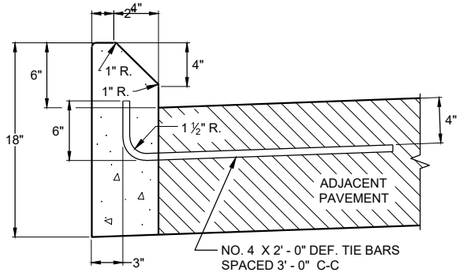
(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(10) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

(11) PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.

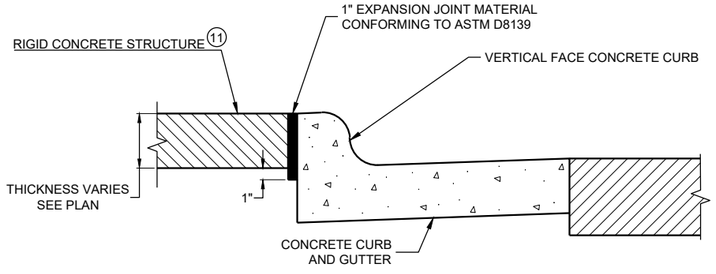


TYPES A (1) & D

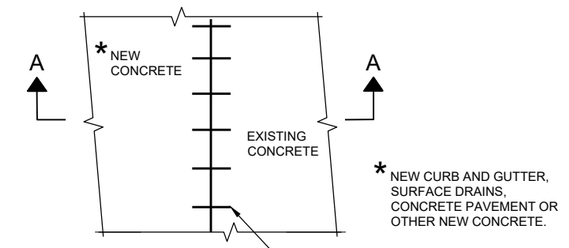


TYPES G (1) & J

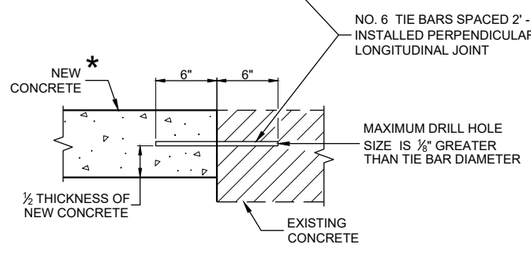
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE (11)

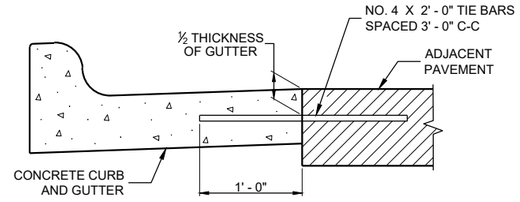


PLAN VIEW

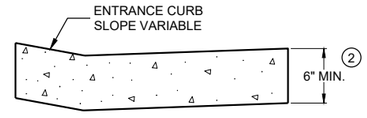


SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (10)

(WHEN DIRECTED BY THE ENGINEER)

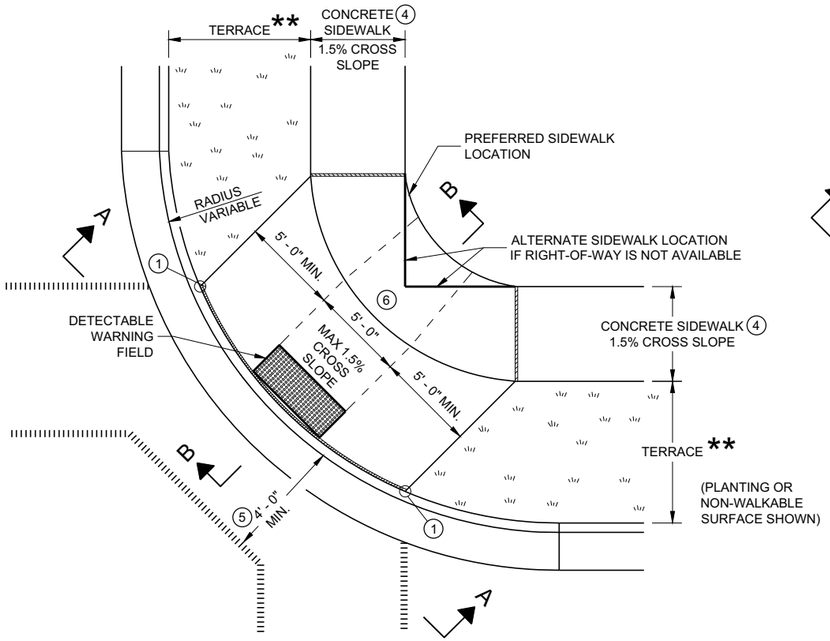
CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

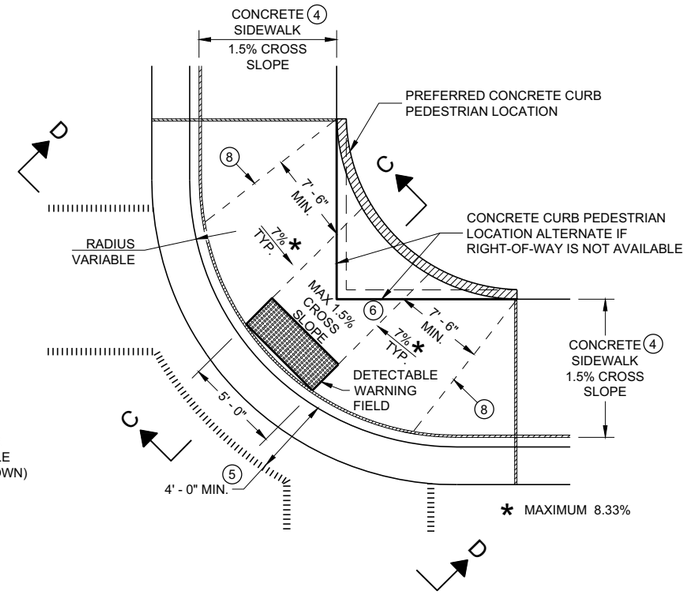
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SDD08D01 - 23b



PLAN VIEW

CURB RAMP TYPE 1

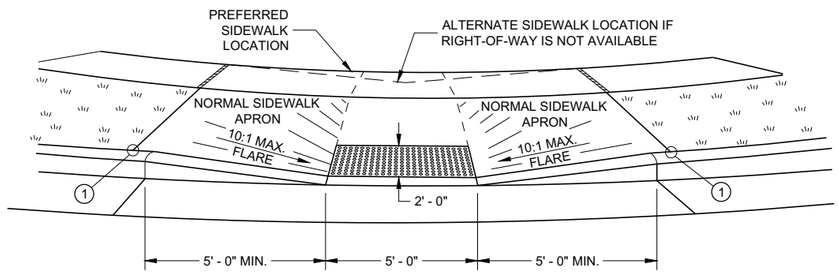
(CENTER OF CORNER RADIUS)



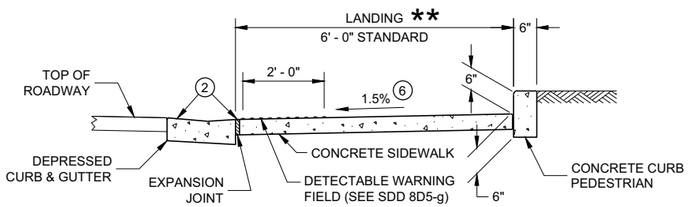
PLAN VIEW

CURB RAMP TYPE 1 - A

(NO TERRACE)

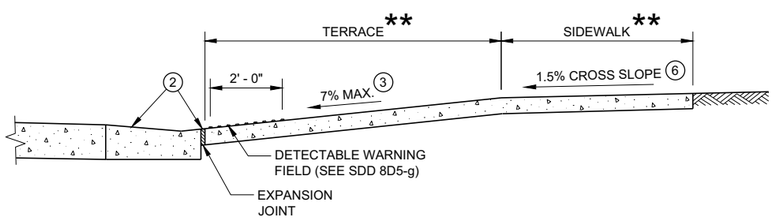


VIEW A - A FOR TYPE 1

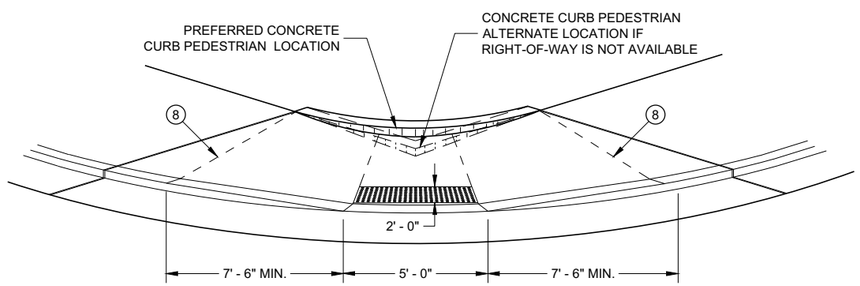


SECTION C - C FOR TYPE 1 - A

** 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

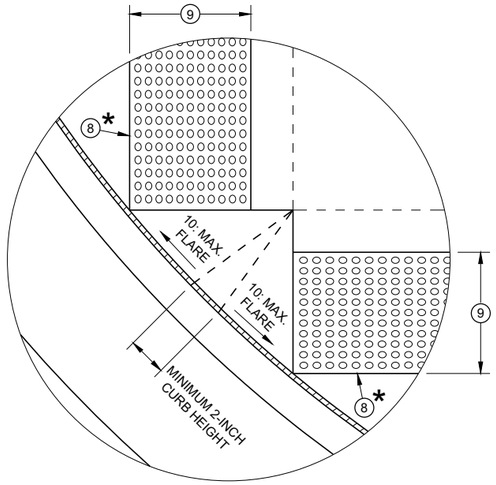
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPE 1 AND 1-A

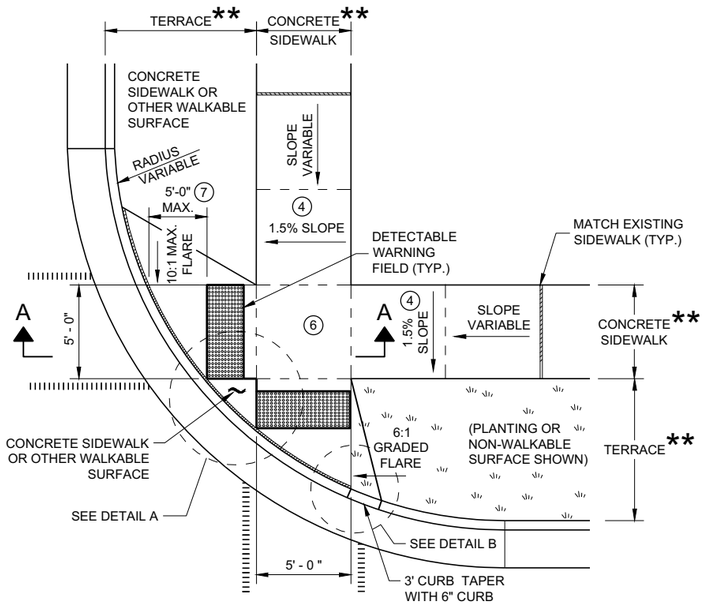
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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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.

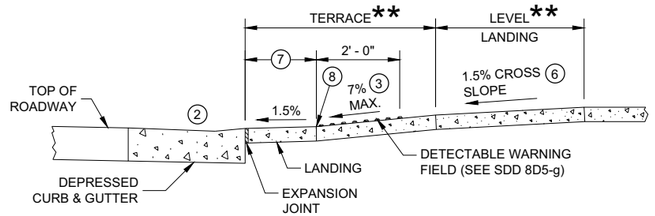
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(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.

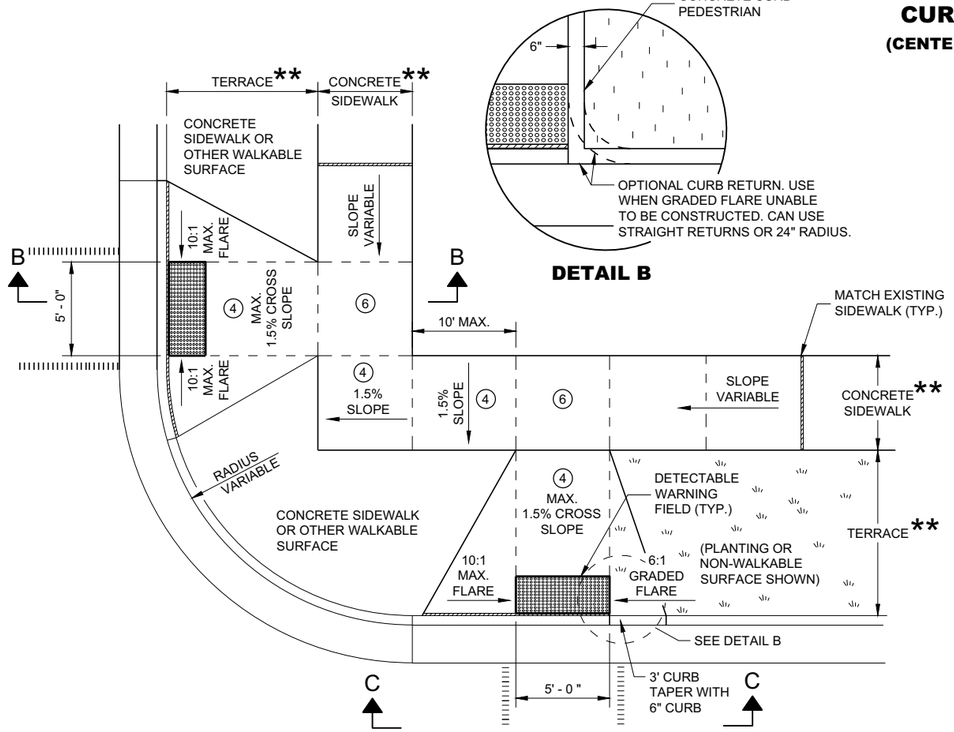
(9) WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.



SECTION A - A FOR TYPE 2

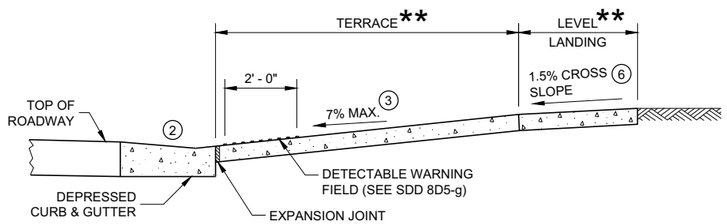
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS

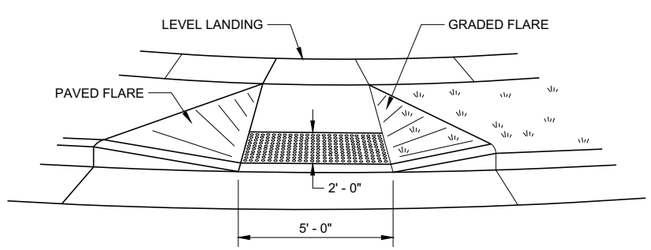


DETAIL B

PLAN VIEW
CURB RAMP TYPE 3
(OUTSIDE OF CROSSWALK AREA)



SECTION B - B FOR TYPE 3



VIEW C - C FOR TYPE 3

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPE 2 AND 3

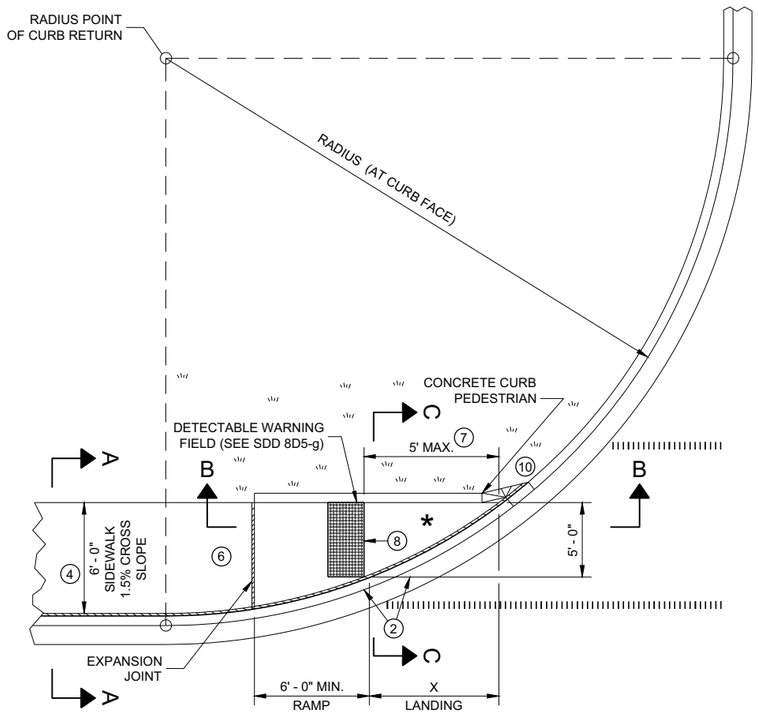
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D05 - 20b

6

SDD 08D05 - 20b

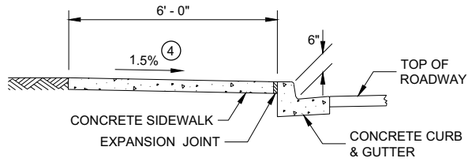


PLAN VIEW

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.

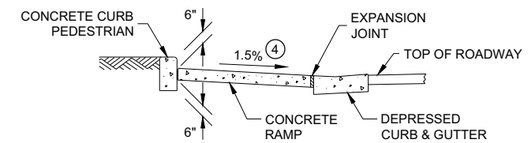
(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

LEGEND

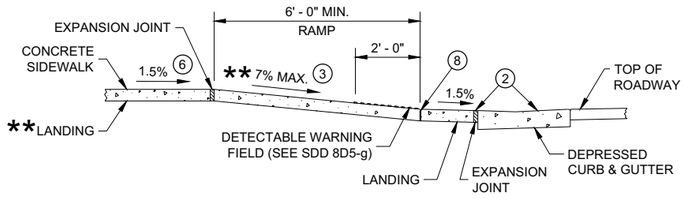
½" EXPANSION JOINT SIDEWALK

CONTRACTION JOINT SIDEWALK

PAVEMENT MARKING CROSSWALK (WHITE)



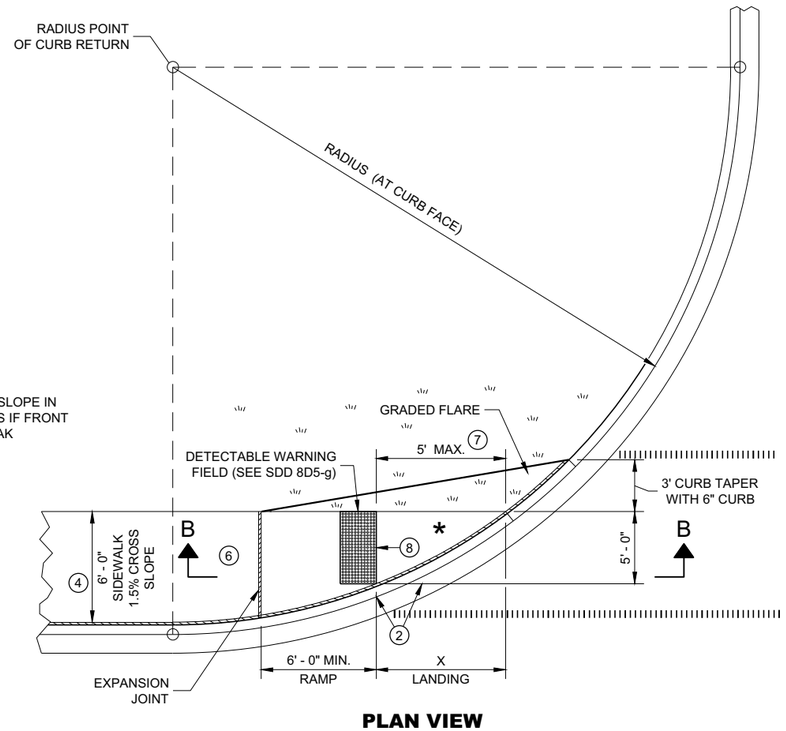
SECTION C - C FOR TYPE 4A



SECTION B - B FOR TYPE 4A AND TYPE 4A1

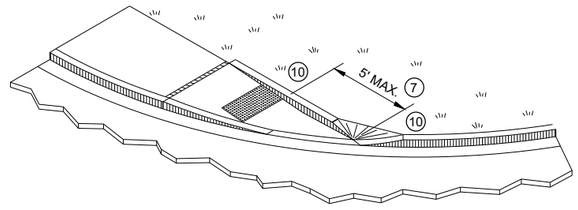
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

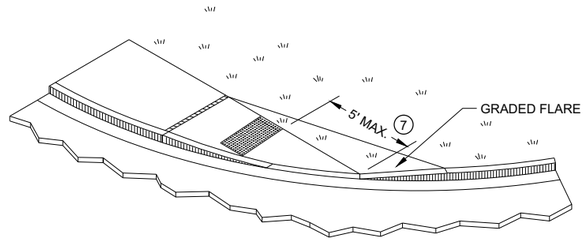


PLAN VIEW

CURB RAMP TYPE 4A1



ISOMETRIC VIEW FOR TYPE 4A



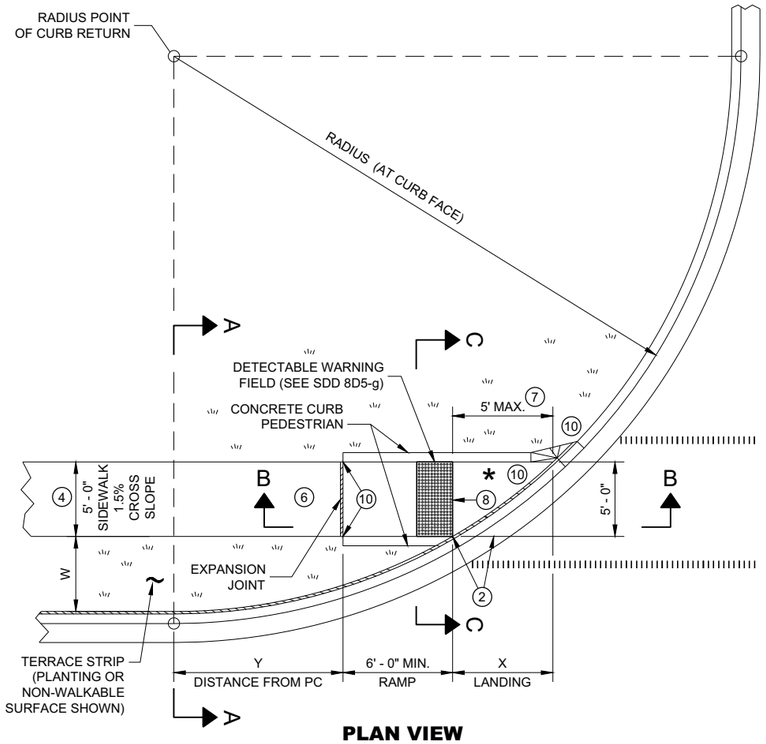
ISOMETRIC VIEW FOR TYPE 4A1

CURB RAMPS
TYPE 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

SDD 08D05 - 20c

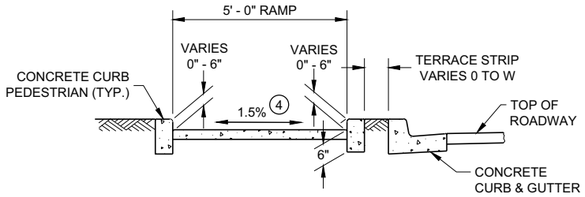


PLAN VIEW

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



SECTION C - C FOR TYPE 4B

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.

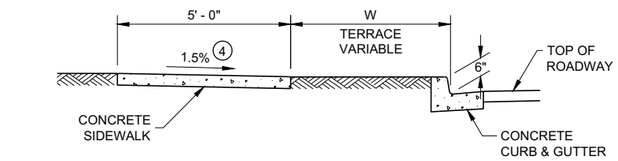
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

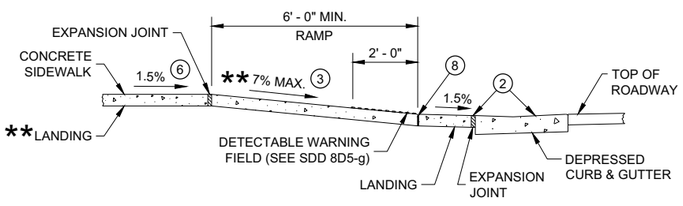
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

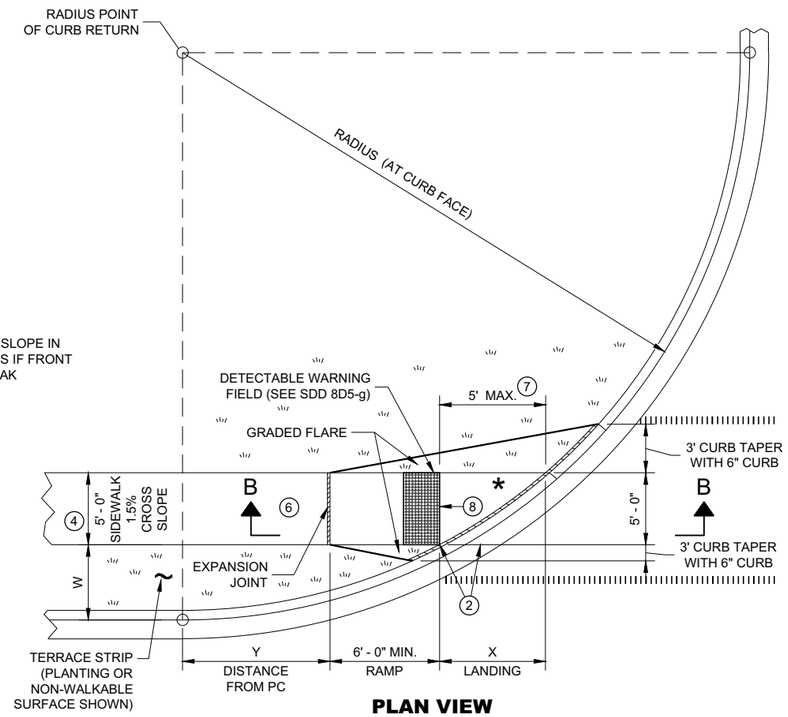


SECTION A - A FOR TYPE 4B



SECTION B - B FOR TYPE 4B AND TYPE 4B1

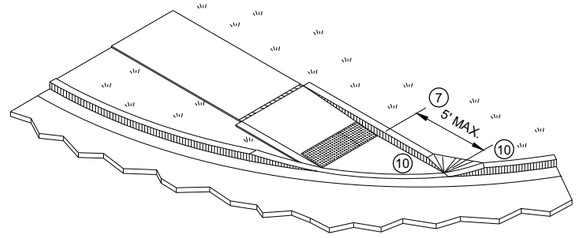
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED



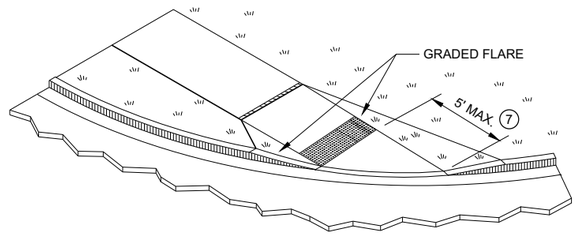
PLAN VIEW

CURB RAMP TYPE 4B1

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK



ISOMETRIC VIEW FOR TYPE 4B



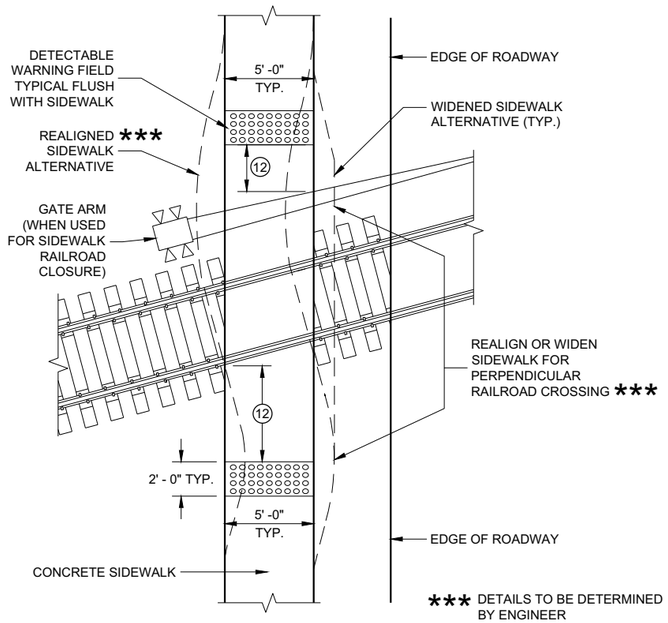
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

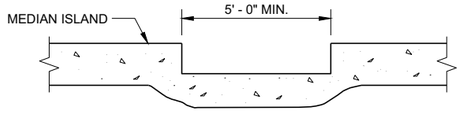
6

SDD 08D05 - 20d

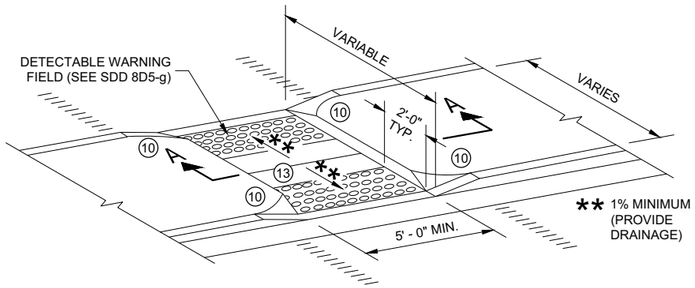


CURB RAMP TYPE 8

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 ½ - 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.

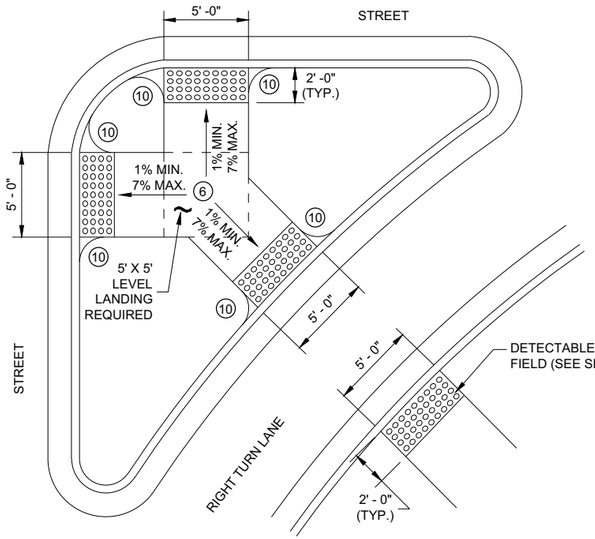
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(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

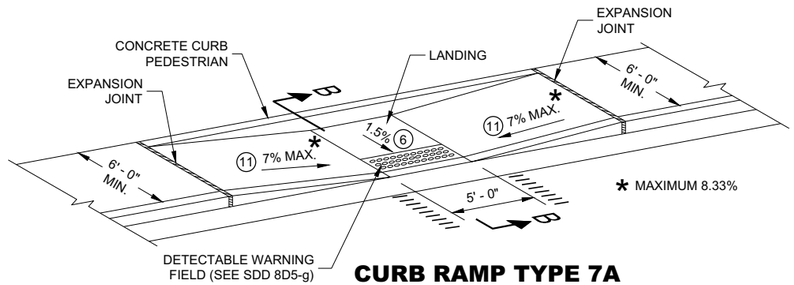
- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)



CURB RAMP TYPE 6

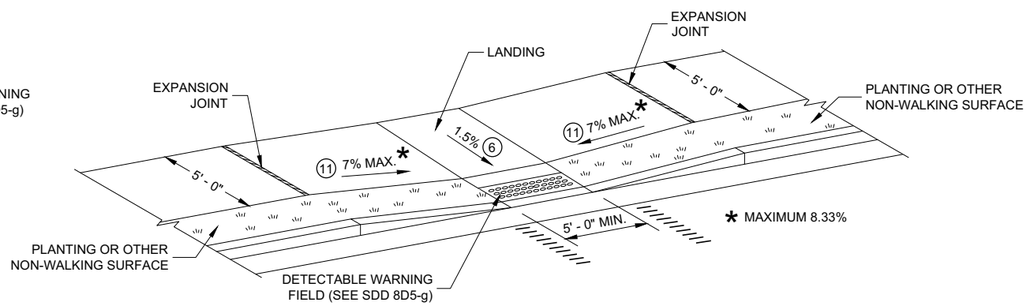
DETECTABLE WARNING AT ISLANDS

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



CURB RAMP TYPE 7A

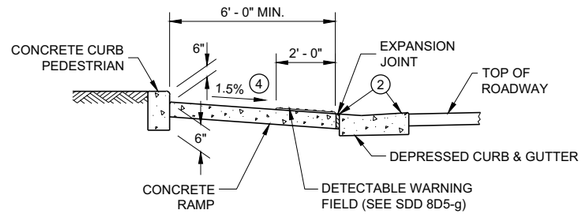
MID BLOCK CROSSING



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

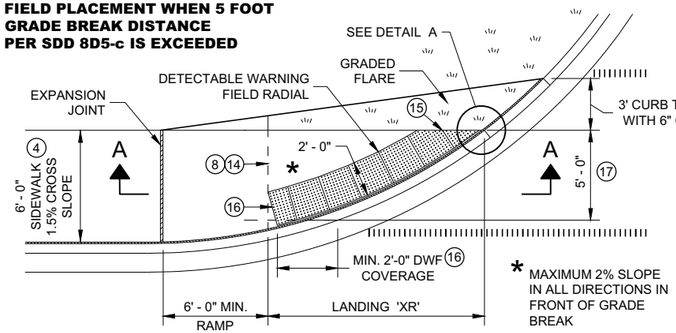
CURB RAMPS TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D05 - 20e

SDD 08D05 - 20e

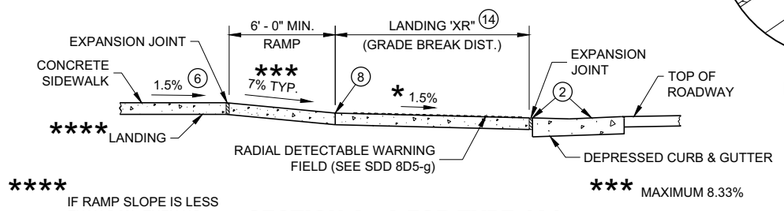
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED



PLAN VIEW

CURB RAMP TYPE 4A1

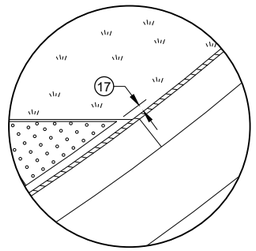
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

SECTION A - A FOR TYPE 4A1



DETAIL A

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.

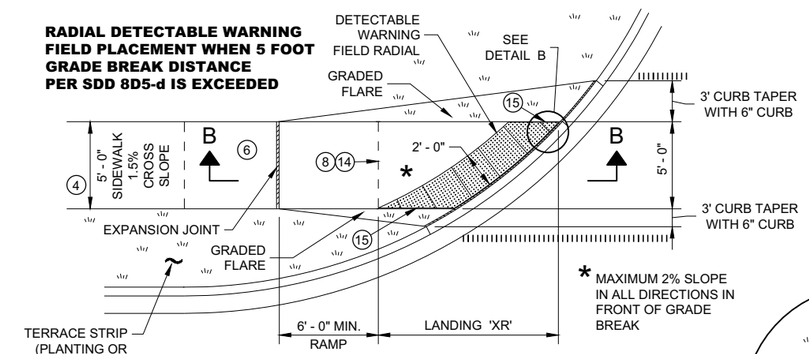
(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

(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.

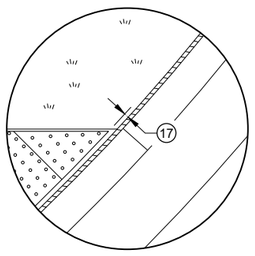
RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



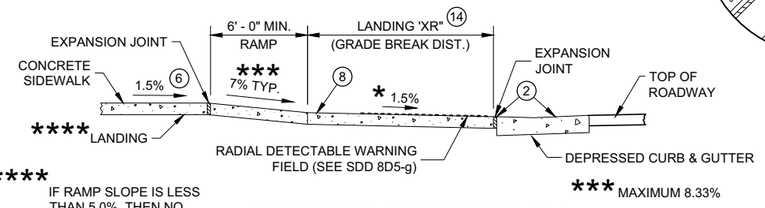
PLAN VIEW

CURB RAMP TYPE 4B1

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



DETAIL B

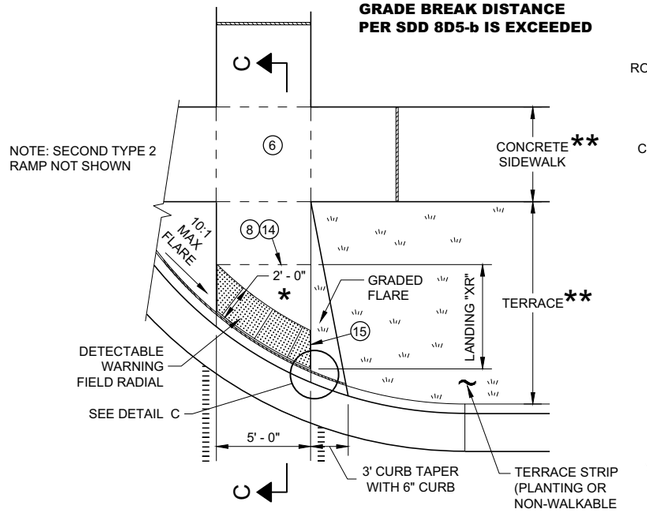


**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** MAXIMUM 8.33%

SECTION B - B FOR TYPE 4B1

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5 FOOT GRADE BREAK DISTANCE PER SDD 8D5-b IS EXCEEDED

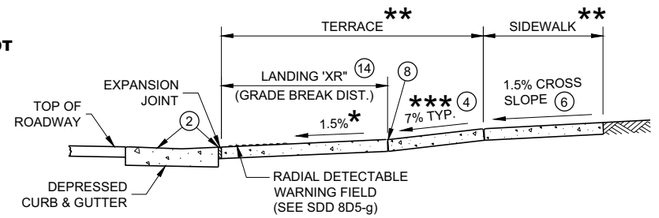


PLAN VIEW

CURB RAMP TYPE 2

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

(ON LINE WITH SIDEWALK)

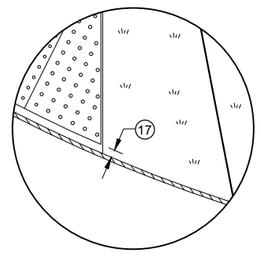


SECTION C - C FOR TYPE 2

* MAXIMUM 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** MAXIMUM 8.33%



DETAIL C

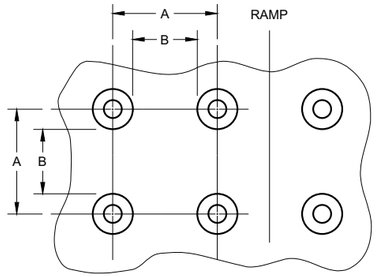
CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

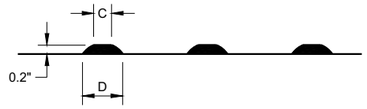
SDD 08D05 - 20f

	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.

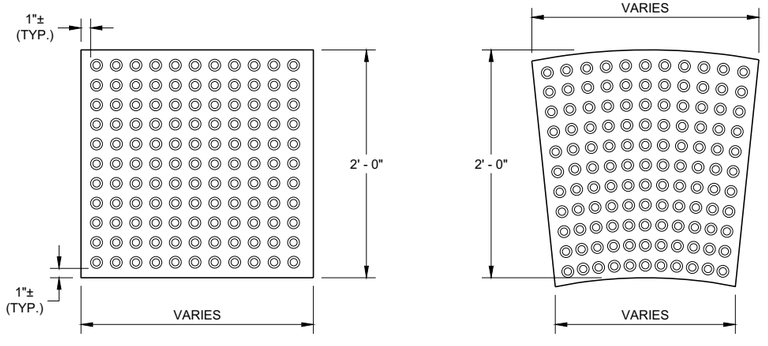


PLAN VIEW



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.

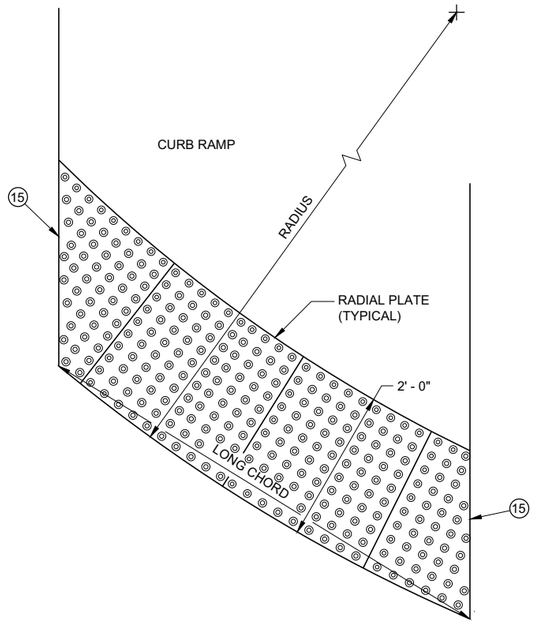
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

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.

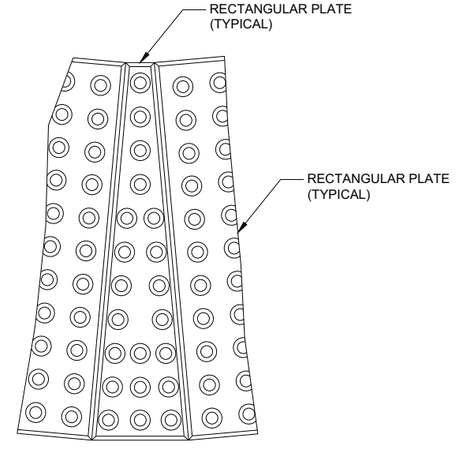
REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

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

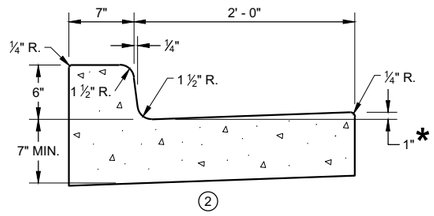
FHWA

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SDD 08D05 - 20g

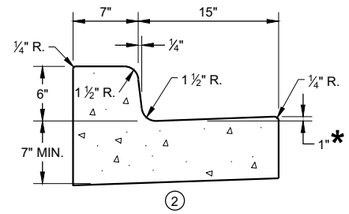
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SDD 08D05 - 20g

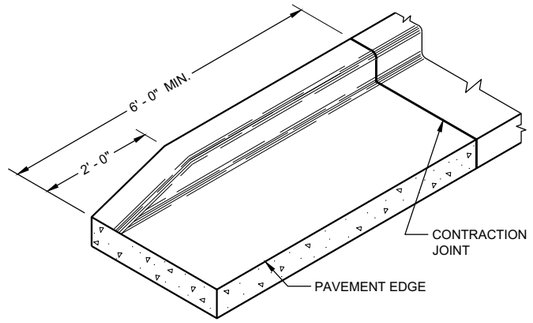


CONCRETE CURB AND GUTTER 31" ①

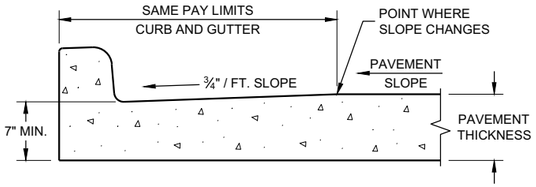
*TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



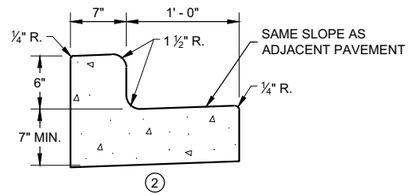
CONCRETE CURB AND GUTTER 22" ①



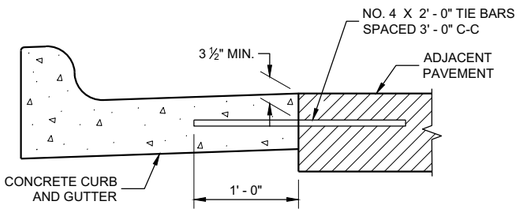
END SECTIONCURB AND GUTTER



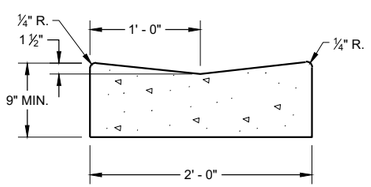
PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB AND GUTTER



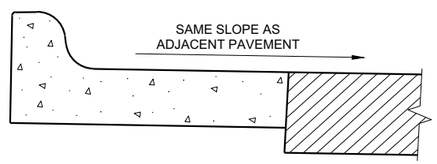
CONCRETE CURB AND GUTTER 19" ①



TYPICAL TIE BAR LOCATION ①



CONCRETE GUTTER 24" ①



HIGH SIDE SECTION ③

(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

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

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

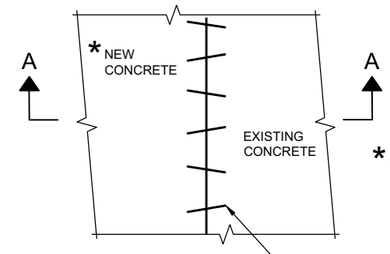
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

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

① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUITED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".

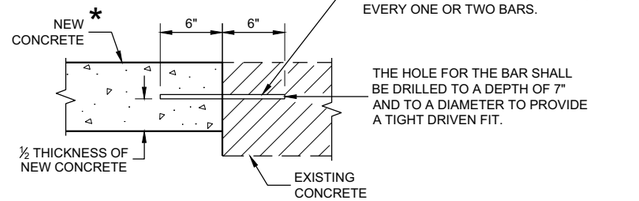
② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.

③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLANS



PLAN VIEW

*EXISTING AND NEW CONCRETE MAY BE CURB AND GUTTER, SURFACE DRAINS, PAVEMENT OR OTHER CONCRETE STRUCTURE.



SECTION A - A

PAVEMENT TIES

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

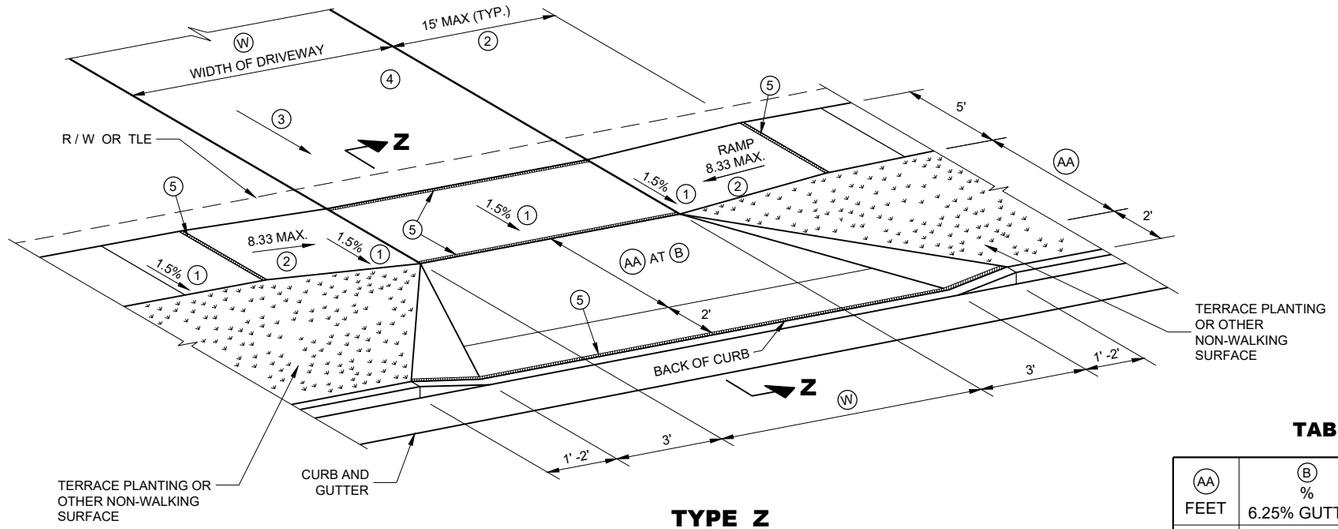
(For Optional use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER
FHWA

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SDD 08D16 - 11
SDD 08D16 - 11



TYPE Z
SIDEWALK WITH WIDER TERRACE
TERRACE VARIES 7 TO 12 FEET

GENERAL NOTES

PROVIDE CONSTRUCTION JOINTS ALONG THE CENTER OF THE CONCRETE FOR DRIVEWAYS UNDER 20 FEET IN WIDTH AND AT THE THIRD POINTS OVER 20 FEET IN WIDTH.

(W) IS SHOWN ON PLAN AND PROFILE SHEETS.

OFFSETS, ELEVATIONS, AND PERCENT GRADE ARE SHOWN ON THE CROSS SECTIONS.

(1) CONSTRUCTION TOLERANCE OF 0.5%± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

(2) THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE SIDEWALK SHALL BE AS FLAT AS FEASIBLE AND NOT EXCEED THE LONGITUDINAL GRADE OF THE ROADWAY.

(3) DRIVEWAY SLOPES: DESIRABLE MAXIMUM
10.5% UP AWAY FROM SIDEWALK (SAG)
8.5% DOWN AWAY FROM SIDEWALK (CREST)
ABSOLUTE MAXIMUM 15% FOR BOTH CREST AND SAG

(4) DRIVEWAY TYPES
- 6-INCH CONCRETE DRIVEWAY PAVEMENT OVER 6-INCH BASE AGGREGATE
- 2-INCH TO 3-INCH ASPHALTIC SURFACE OVER 6-INCH BASE AGGREGATE
- 6-INCH BASE AGGREGATE (MAY BE INCREASED FOR CLAY SUBGRADES.)

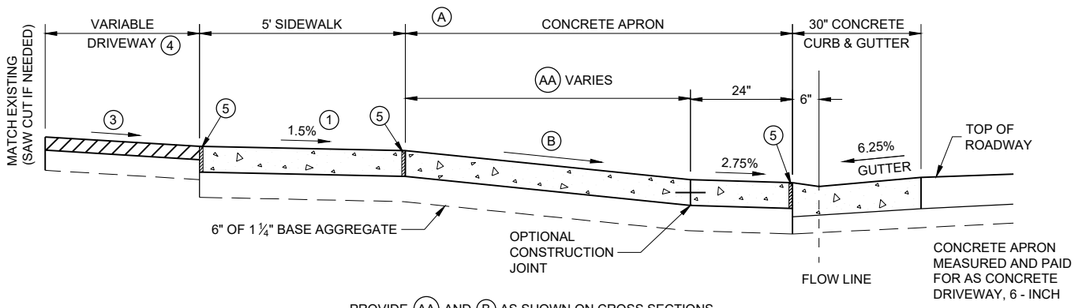
(5) ½" EXPANSION JOINT FILLER.

TABLE Z

(AA) FEET	(B) % 6.25% GUTTER	(B) % 4% GUTTER
4.5'	11.5%	9% TO 11.5%
5.5'	9% TO 11.5%	8% TO 11.5%
6.5'	8% TO 11.5%	6% TO 11.5%
7.5'	7% TO 11.5%	6% TO 11.5%
8.5'	6% TO 11.5%	5% TO 11.5%
9.5'	5% TO 11.5%	4% TO 11.5%

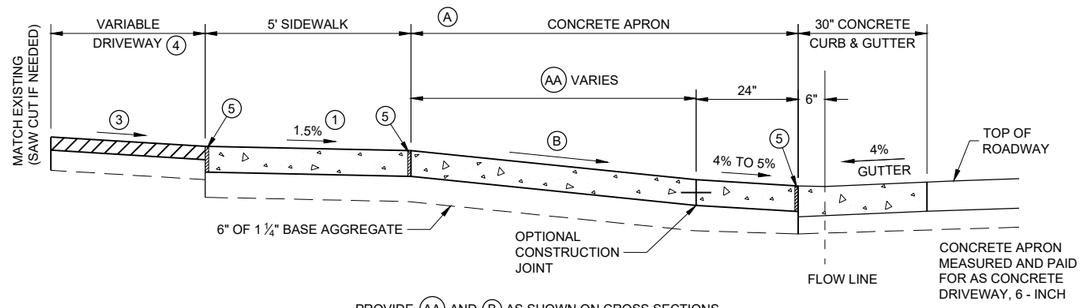
(W): 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)

16' MIN. - 35' MAX. COMMERCIAL (CE)



PROVIDE (AA) AND (B) AS SHOWN ON CROSS SECTIONS.

6.25% GUTTER SLOPE



PROVIDE (AA) AND (B) AS SHOWN ON CROSS SECTIONS.

4% GUTTER SLOPE

NOTE: SIDEWALK MY BE DEPRESSED IN DRIVEWAY AREAS FOR (B) VALUES NOT SHOWN IN TABLE Z.

SIDEWALK WITHIN THE LIMITS OF THE DRIVEWAY PAID FOR AS CONCRETE DRIVEWAY 6-INCH.

SEPARATE PAYMENT FOR BASE AGGREGATE WILL BE MADE.

SECTION Z - Z

DRIVEWAY DETAIL WITH CONCRETE CURB AND GUTTER

(URBAN AND SUBURBAN)

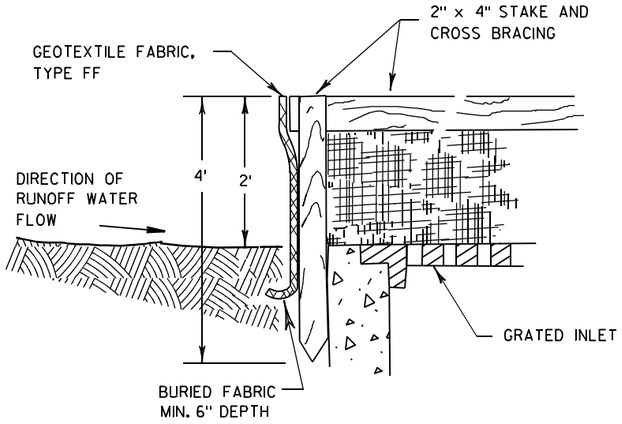
DRIVEWAY AND SIDEWALK RAMPS TYPE Z

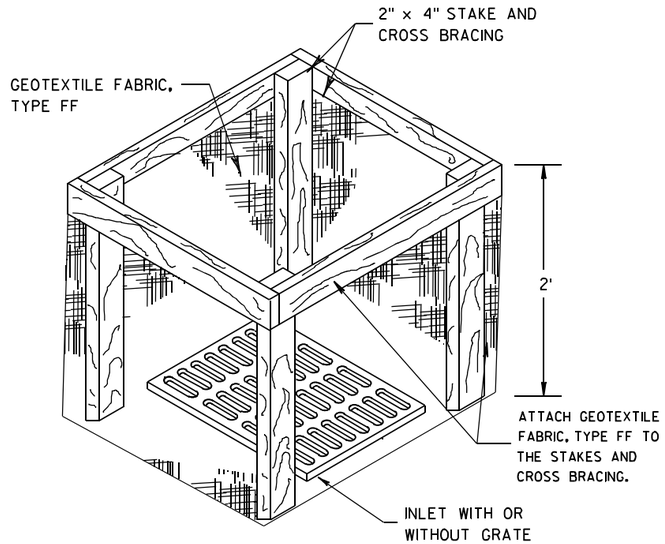
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

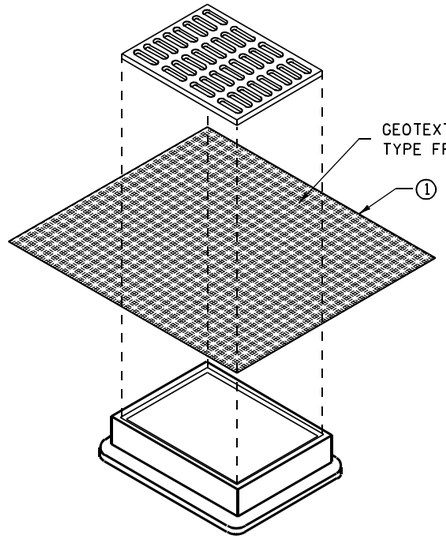
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SDD 08D19 - 03



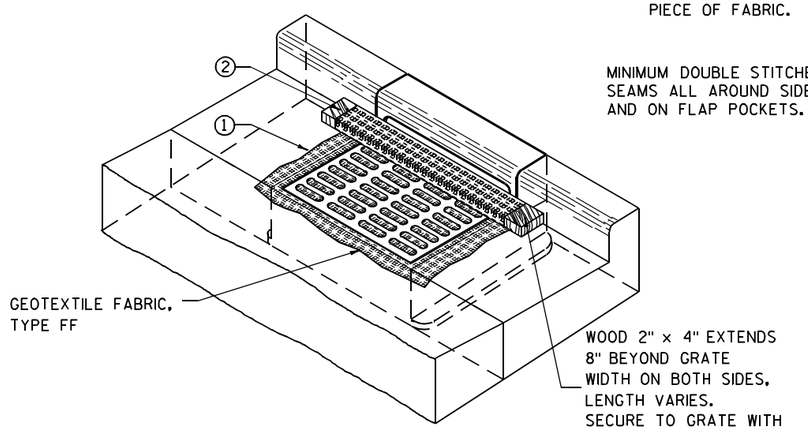


INLET PROTECTION, TYPE A

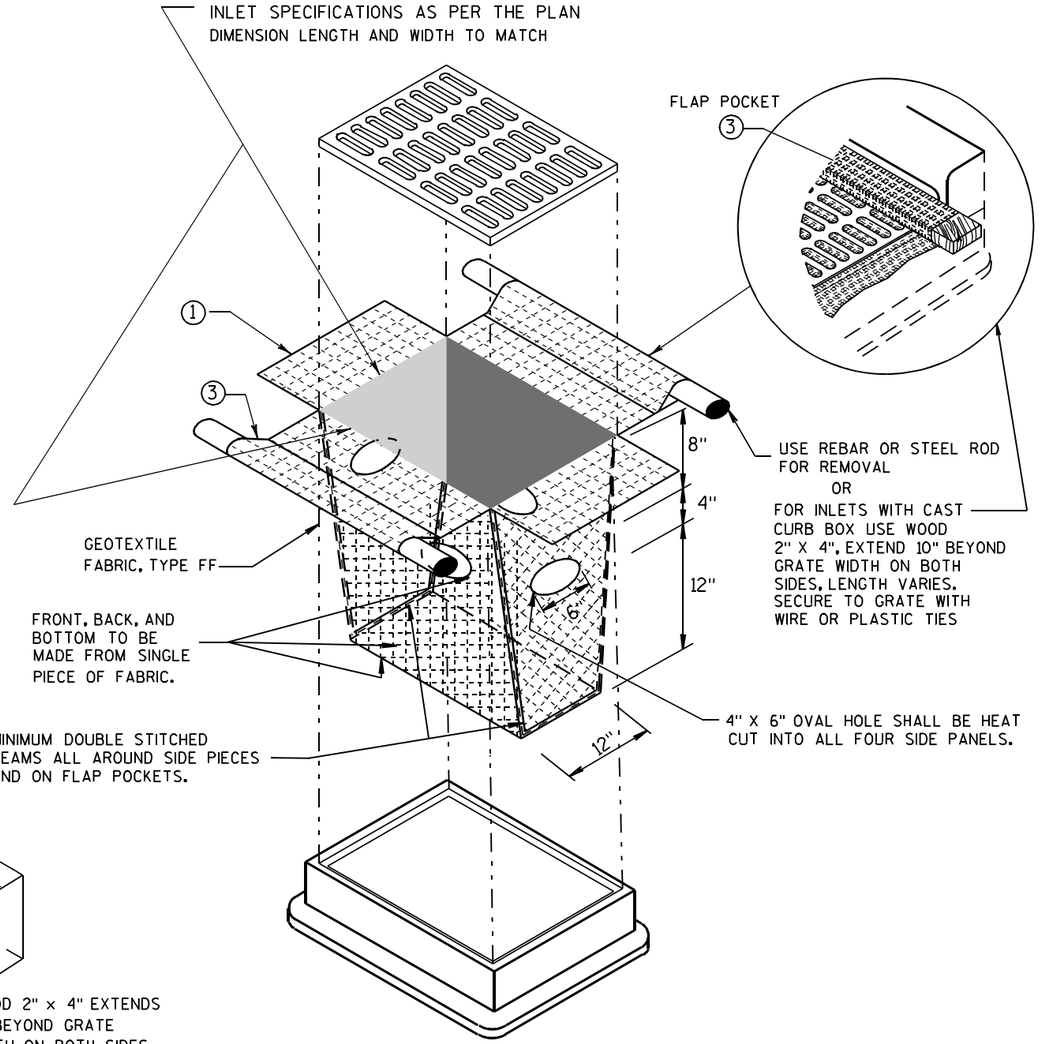


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(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

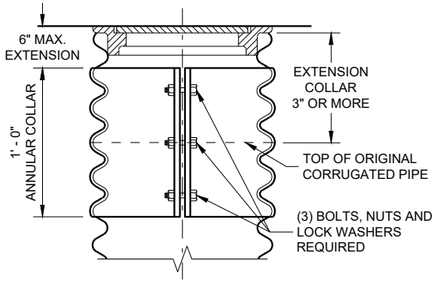
FHWA

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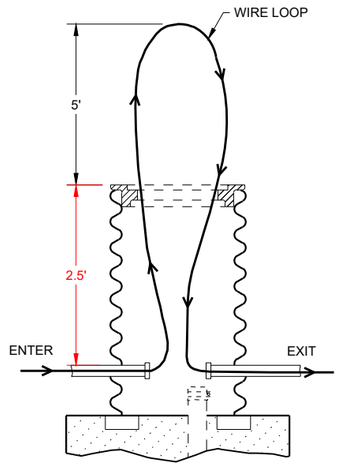
S.D.D. 8 E 10-2

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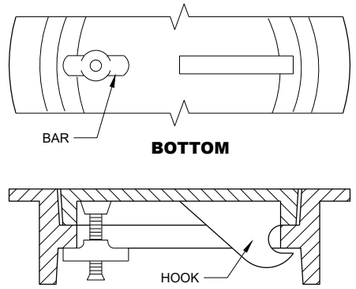
S.D.D. 8 E 10-2



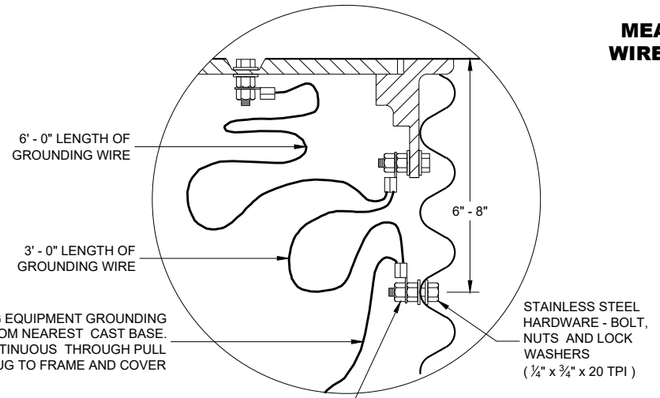
CORRUGATED PIPE EXTENDER



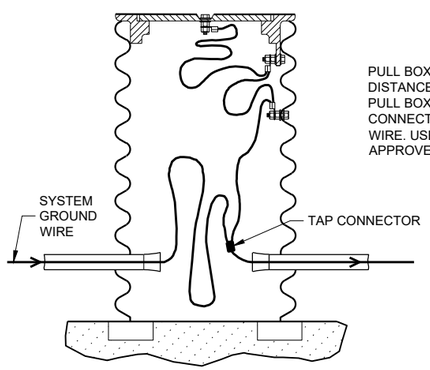
MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



ALTERNATE COVER (LOCKING)
TIGHTENING BAR TYPE

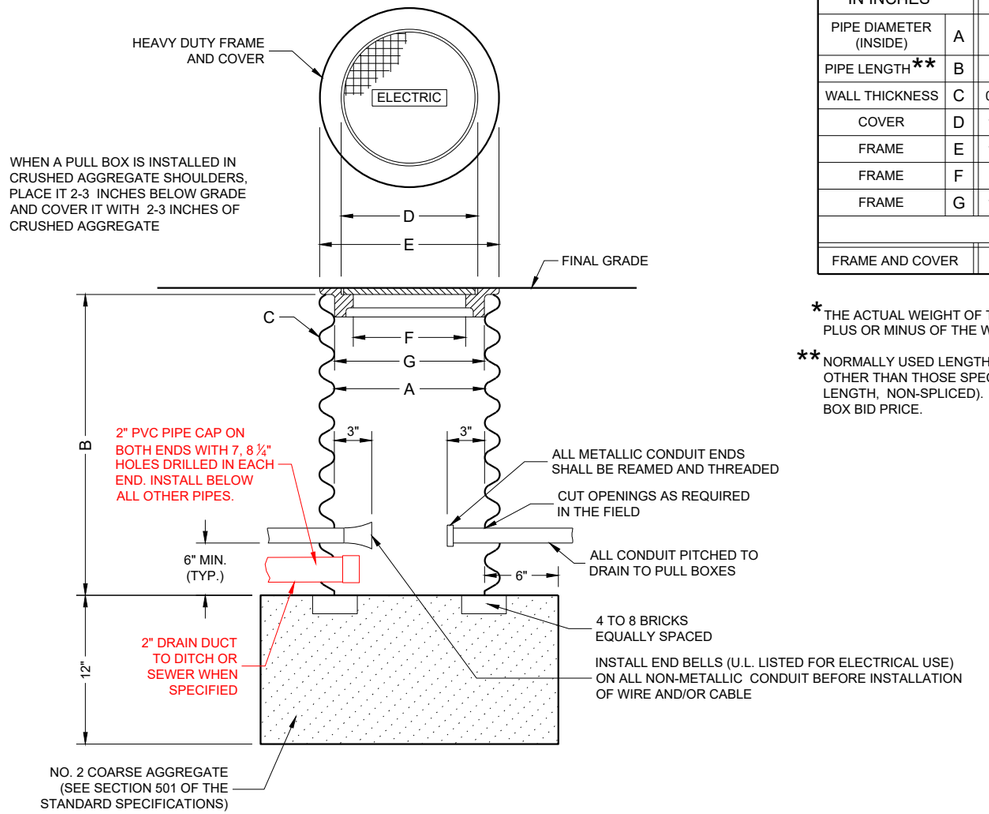


EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



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

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

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

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

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

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

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

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

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

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

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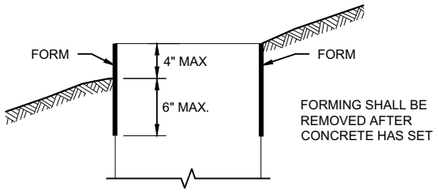
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SDD 09B04-12

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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.

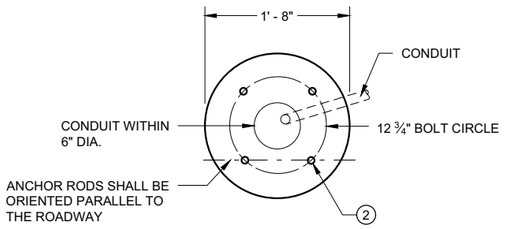
WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

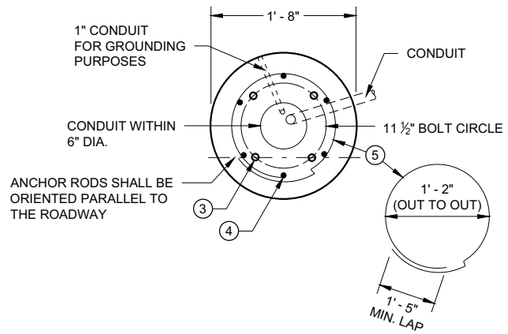
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH"L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

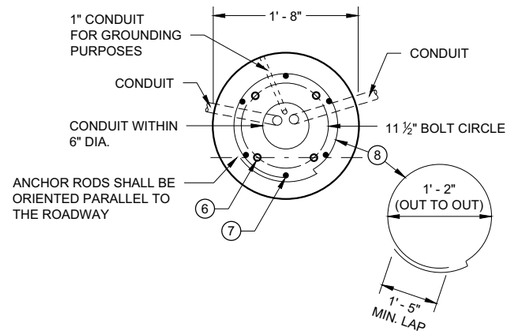
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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

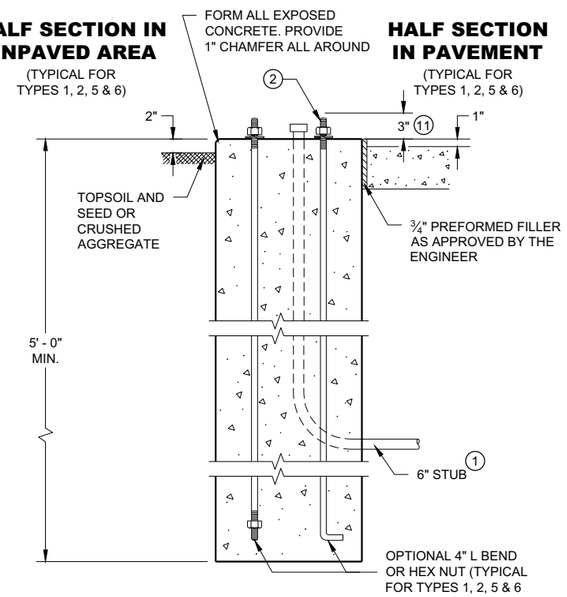
10 ⅝" DIA. X 8' -0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED

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.

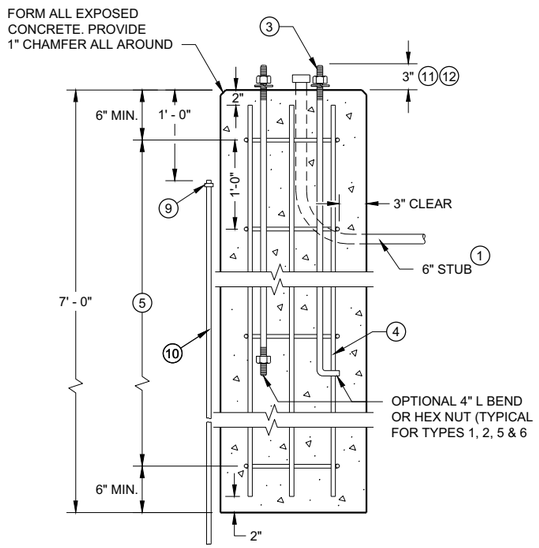
12 FOR NON - BREAKAWAY INSTALLATIONS, 4 ½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2, 5 & 6)

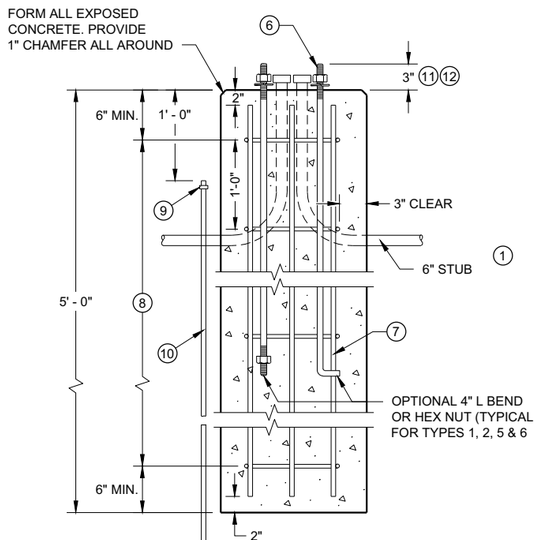
HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2, 5 & 6)



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

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SDD 09C02 - 09

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.

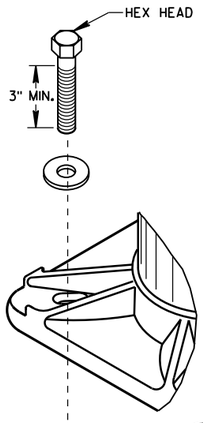
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

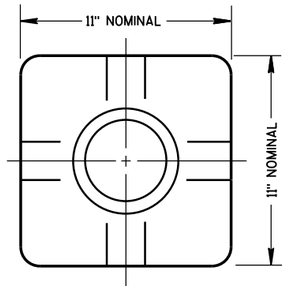
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

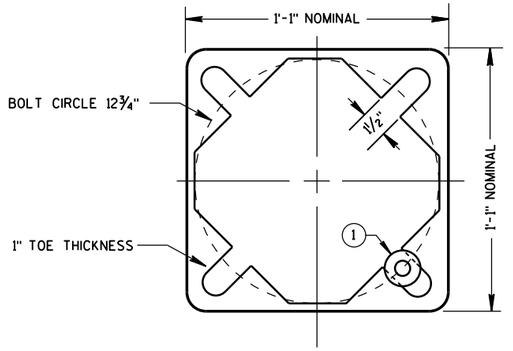
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

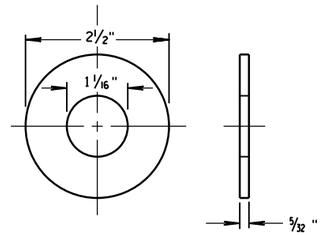




TOP VIEW
(PEDESTAL BASE)

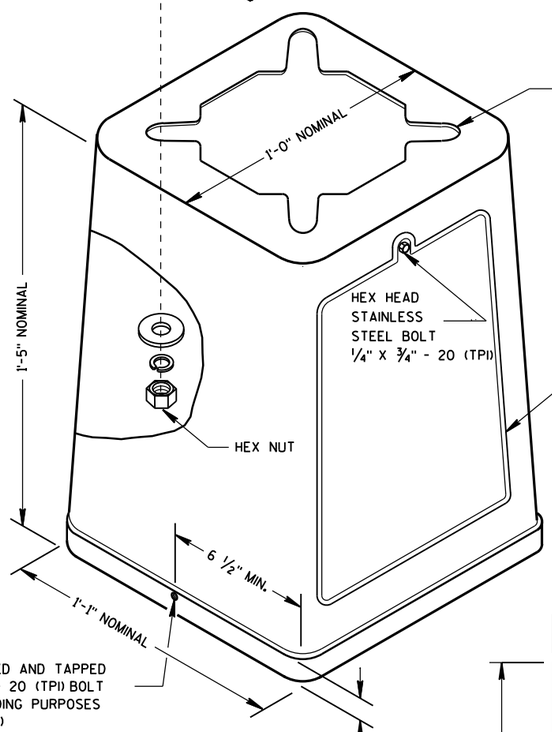


BOTTOM VIEW
(PEDESTAL BASE)

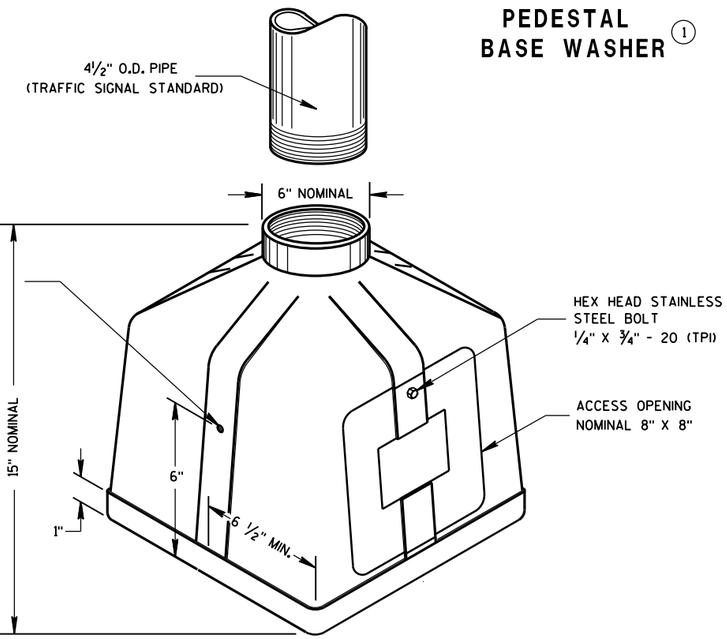


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

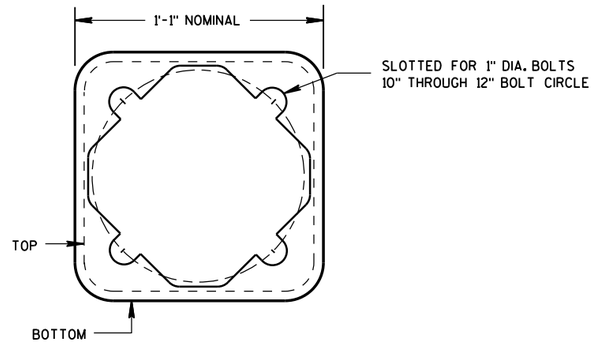


ISOMETRIC VIEW

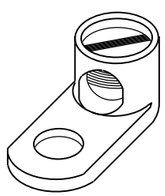


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

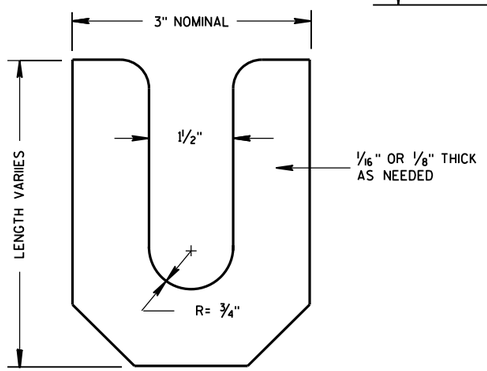


TYPICAL MECHANICAL CONNECTOR LUG

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

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S.D.D. 9 C 3-4

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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 (SHAFT) SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING. A STEEL CASING OR CORRUGATED METAL PIPE IS ALLOWED TO REMAIN. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BASE IN LAYERS OF ONE FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

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

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

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

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS.

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NON-METALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

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 OF CABLE OR WIRE.

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

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

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 BE FURNISHED AND INSTALLED TO 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.

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.

(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 OF THE ENGINEER.

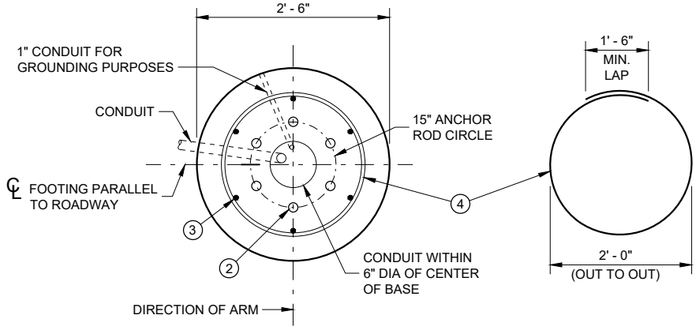
(2) (6) 1 ½ DIA. X 4' - 4" ANCHOR RODS

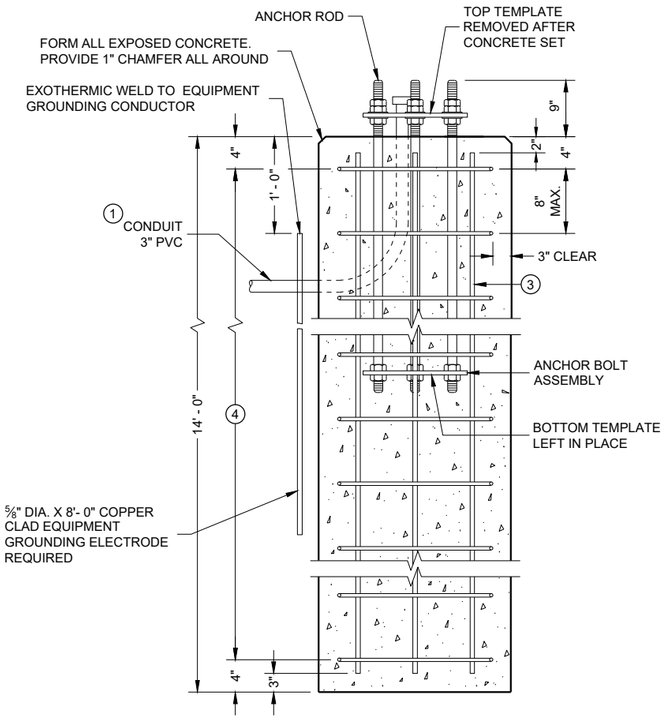
(3) (6) NO. 6 X 13' - 7" BAR STEEL REINFORCEMENT.

(4) (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 .....fy = 55,000 p.s.i.
WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION)
TEMPLATES, ASTM A709, GRADE 36.....fy = 36,000 p.s.i.

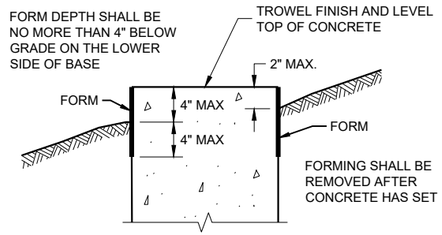
QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	172
LBS. OF VERTICAL BAR STEEL	122



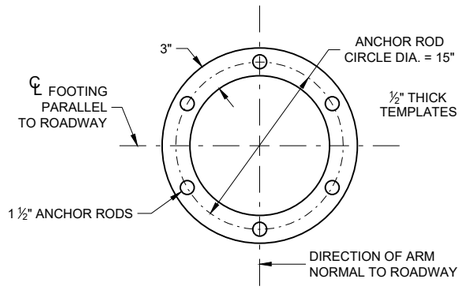


CONCRETE BASE, TYPE 10
(FOR TYPE 9, TYPE 10 AND OVER HEIGHT (OH) POLES)

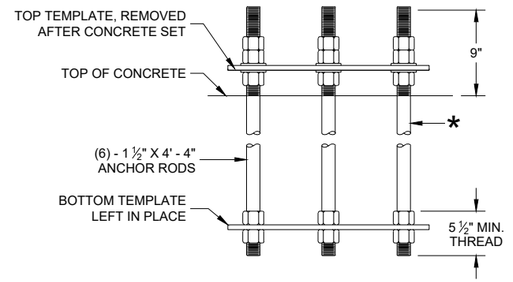
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE SDD 9C13 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATE



ANCHOR ROD ASSEMBLY DETAILS

* THREAD TOP 10" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 ½" FOR 2 NUTS PER ANCHOR ROD. HOT DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR ROD (ASTM A123) AND HOT DIP NUTS AND WASHERS (ASTM A153. USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

CONCRETE BASE TYPE 10

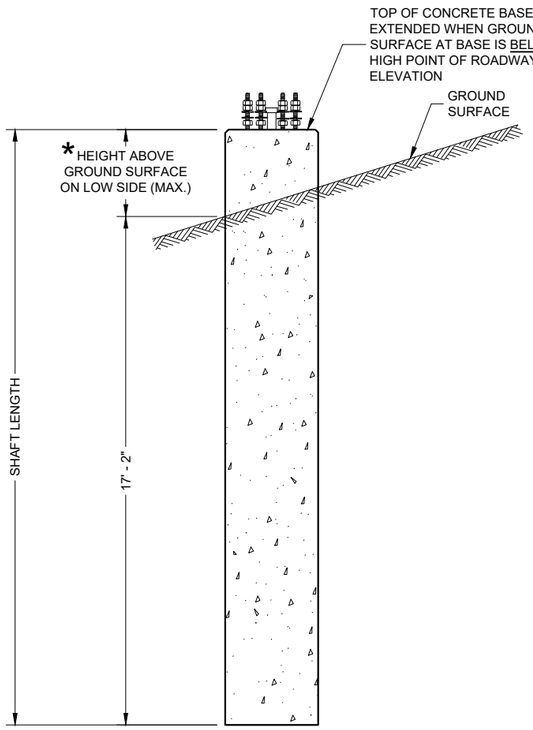
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DEPARTMENT OF TRANSPORTATION

APPROVED
May 2017 — DATE
/S/ Ahmet Demerbilek — WIND LOADED STRUCTU PROGRAM LEADER
FHWA

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REINFORCEMENT AND CONCRETE QUANTITIES
ADJUSTED FOR EXTENDED TYPE 10 SPECIAL CONCRETE BASE

HEIGHT INCREASE REQUIRED	*HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAX.)	SHAFT LENGTH	LENGTH OF #8 VERTICAL REINF.	NO. OF #5 HOOPS	CU. YD. OF CONCRETE	LBS. OF HOOP BAR STEEL	LBS. OF VERTICAL STEEL
>0" TO 6"	10"	18' - 0"	17' - 7"	25	4.7	241	563
>6" TO 1' - 0"	1' - 4"	18' - 6"	18' - 1"	25	4.8	241	579
>1' - 0" TO 1' - 6"	1' - 10"	19' - 0"	18' - 7"	26	5.0	251	595
>1' - 6" TO 2 - 0"	2' - 4"	19' - 6"	19' - 1"	27	5.1	260	611



CONCRETE BASE TYPE 10 SPECIAL (EXTENDED)

CONCRETE BASE TYPE 10 SPECIAL EXTENSION

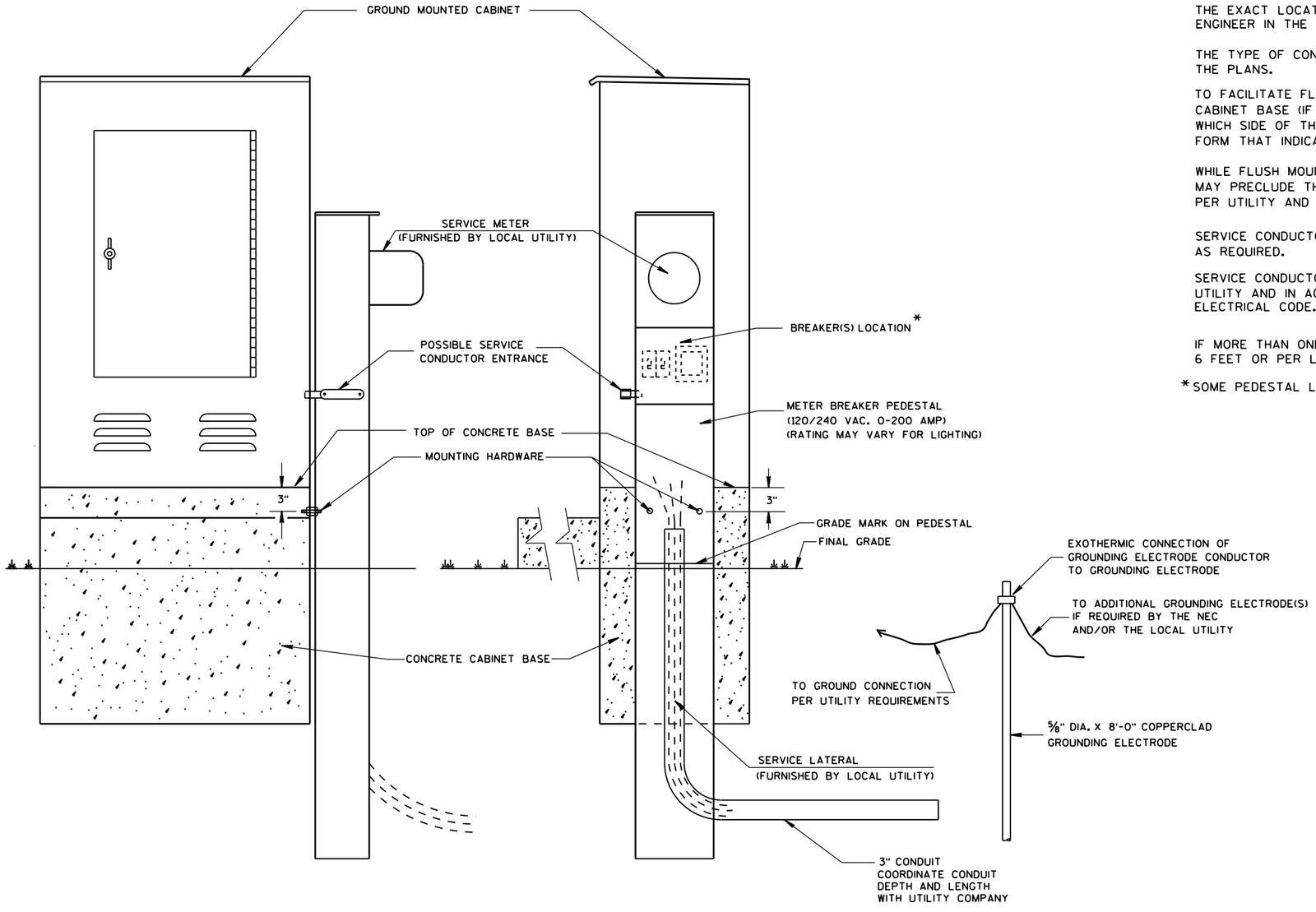
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023
DATE

/S/ Ahmet Demirbilek
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TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE. CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH. THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

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S.D.D. 9 D 1-5

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S.D.D. 9 D 1-5

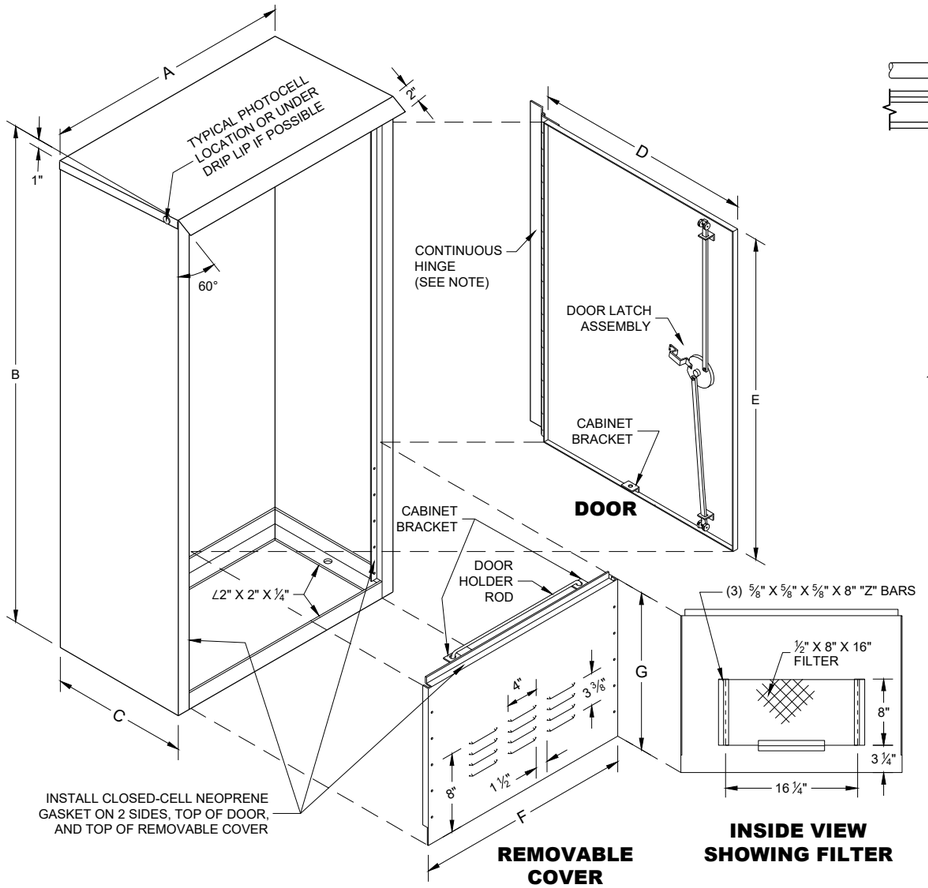
CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)

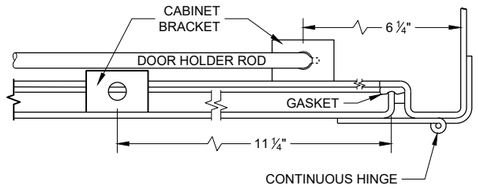
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014
DATE

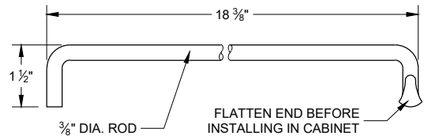
/S/ Ahmet Demirbilek
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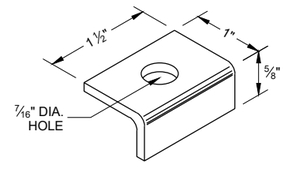




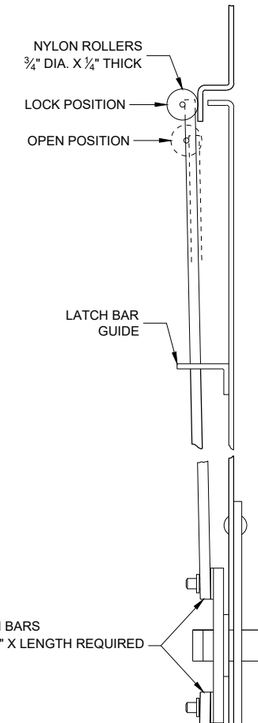
HINGE AND DOOR HOLDER



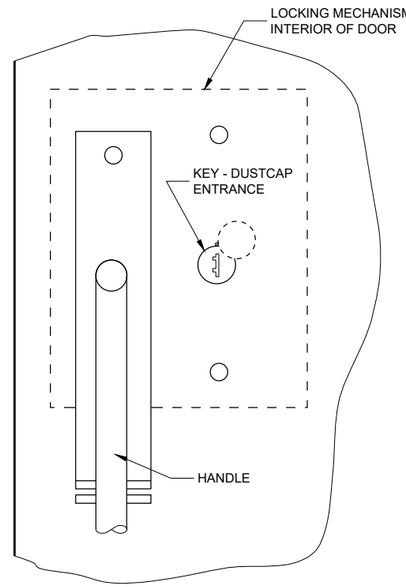
HOLDER ROD



CABINET BRACKET



SIDE VIEW



FRONT VIEW

LATCH ASSEMBLY

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.

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

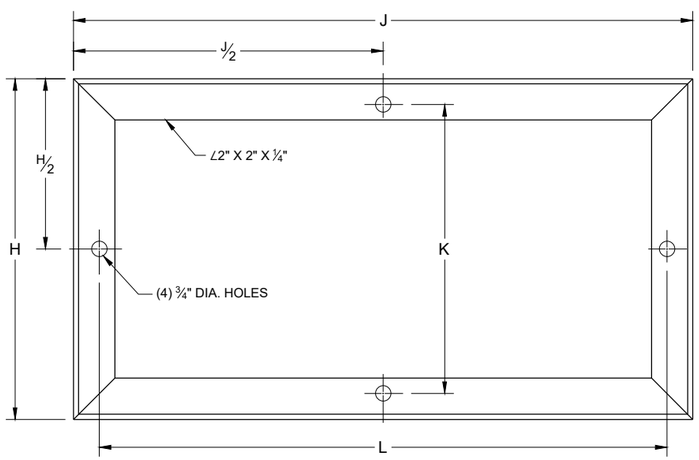
ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH ¼" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH ¼" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH - NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST.

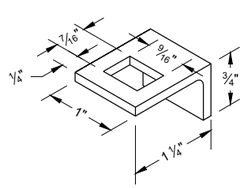
DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.



MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 ½	16 ½	24
D	26 ½	34 ¾	33 ¾
E	38 ¾	38 ¾	38 ¾
F	26 ½	34 ¾	33 ¾
G	19	19	25
H	16 ½	16 ½	24
H/2	8 ¼	8 ¼	12
J	30	38	38
J/2	15	19	19
K	13 ¾	13 ¾	21 ¼
L	27 ½	35 ½	35 ½



LATCH BAR GUIDE

SIGNAL CONTROL CABINET

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
September 2014
DATE

/S/ Ahmet Demerbilek
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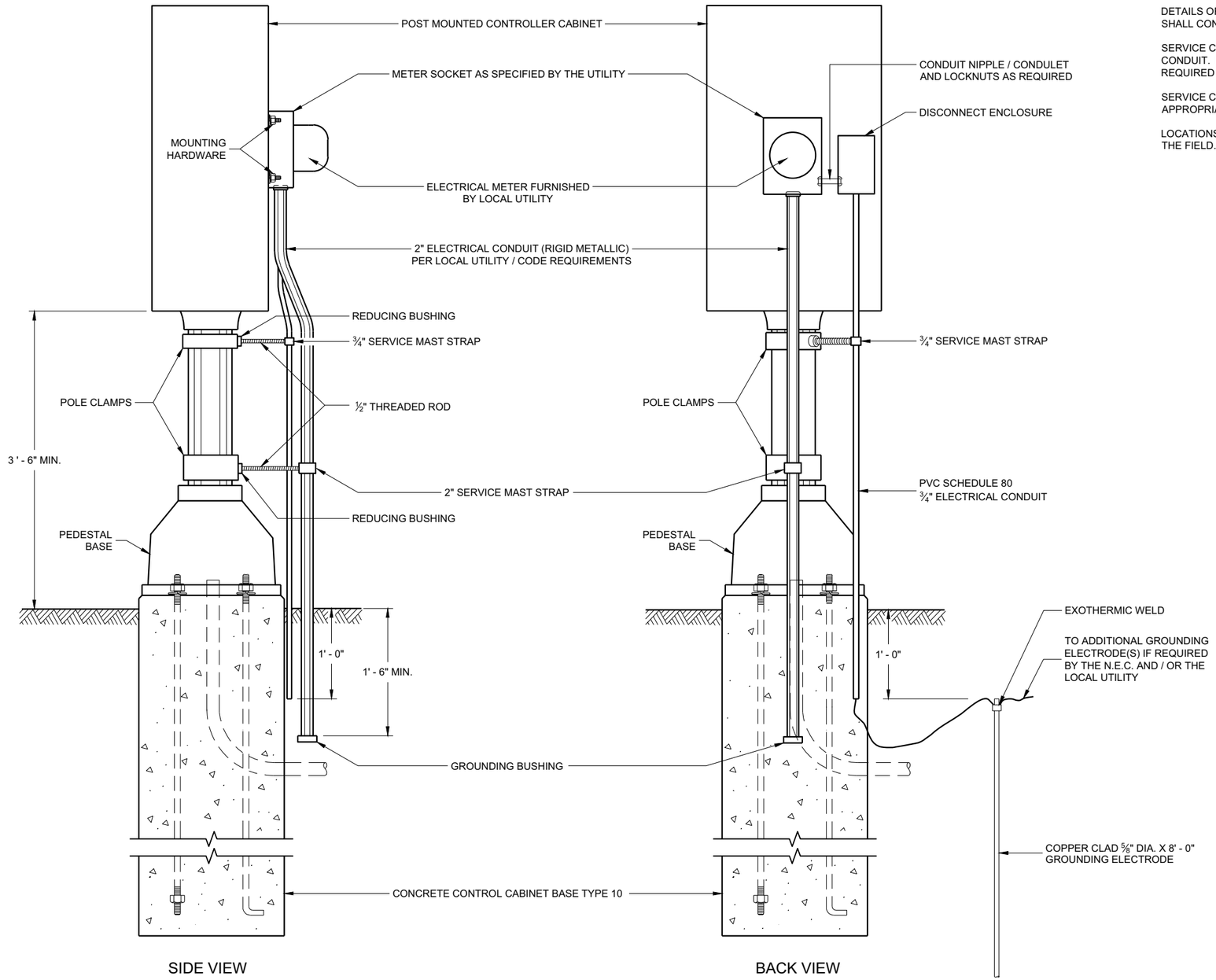
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POST MOUNTED CONTROLLER SERVICE INSTALLATION

GENERAL NOTES

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

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID STEEL OR SCHEDULE 80 PVC ELECTRICAL CONDUIT. NIPPLES AND/OR CONDULETS, WITH LOCK NUTS AND GROUNDING BUSHINGS AS REQUIRED BY THE N.E.C. OR THE LOCAL UTILITY.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AS REQUIRED AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED ELECTRICAL CODE.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS UNLESS DETERMINED BY THE ENGINEER IN THE FIELD.

POST MOUNTED CONTROLLER SERVICE INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

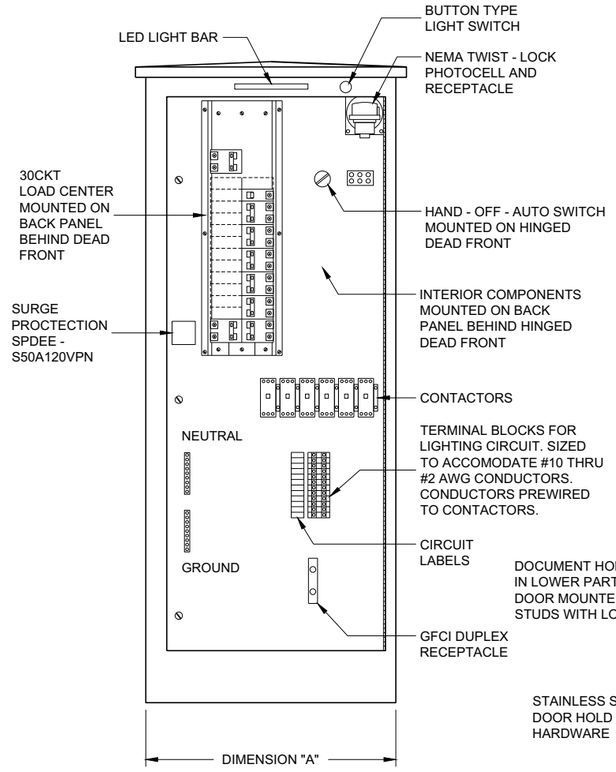
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

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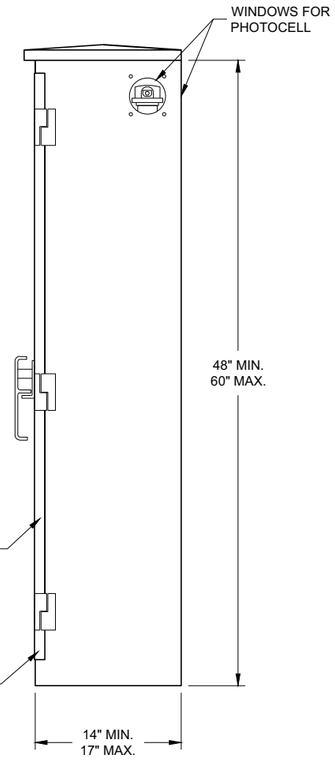
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SDD 09D03 - 03

FRONT INTERIOR ELEVATION



SIDE VIEW



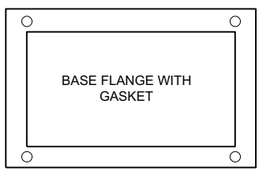
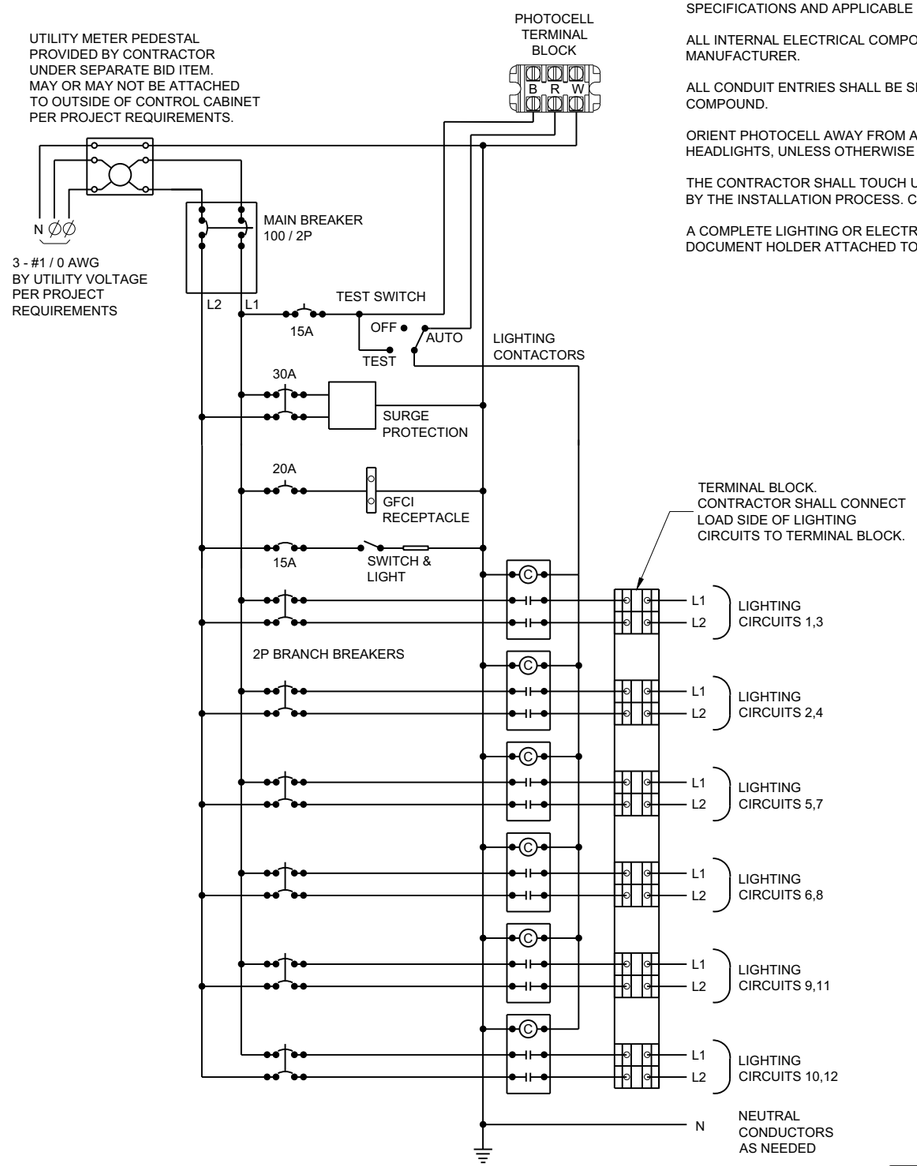


TABLE OF DIMENSIONS (INCHES)		
CONCRETE BASE TYPE	CABINET WIDTH	DIMENSION "A"
L24	24"	24"
L30	30"	30"

LIGHTING CONTROL CABINET



CONTROL CABINET SCHEMATIC

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.

ALL INTERNAL ELECTRICAL COMPONENTS WILL BE PRE - WIRED BY THE CABINENT MANUFACTURER.

ALL CONDUIT ENTRIES SHALL BE SEALED WITH AN APPROPRIATE DUCT SEALING COMPOUND.

ORIENT PHOTOCELL AWAY FROM AMBIENT LIGHT SOURCES AND ONCOMING TRAFFIC HEADLIGHTS, UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISION.

THE CONTRACTOR SHALL TOUCH UP ANY DAMAGE TO THE ANODIZED FINISH CAUSED BY THE INSTALLATION PROCESS. COLOR MATCH PAINT SHALL BE USED.

A COMPLETE LIGHTING OR ELECTRICAL PLAN SHALL BE SECURELY PLACED IN THE DOCUMENT HOLDER ATTACHED TO THE DOOR.

LIGHTING CONTROL CABINET
120 / 240 VOLT

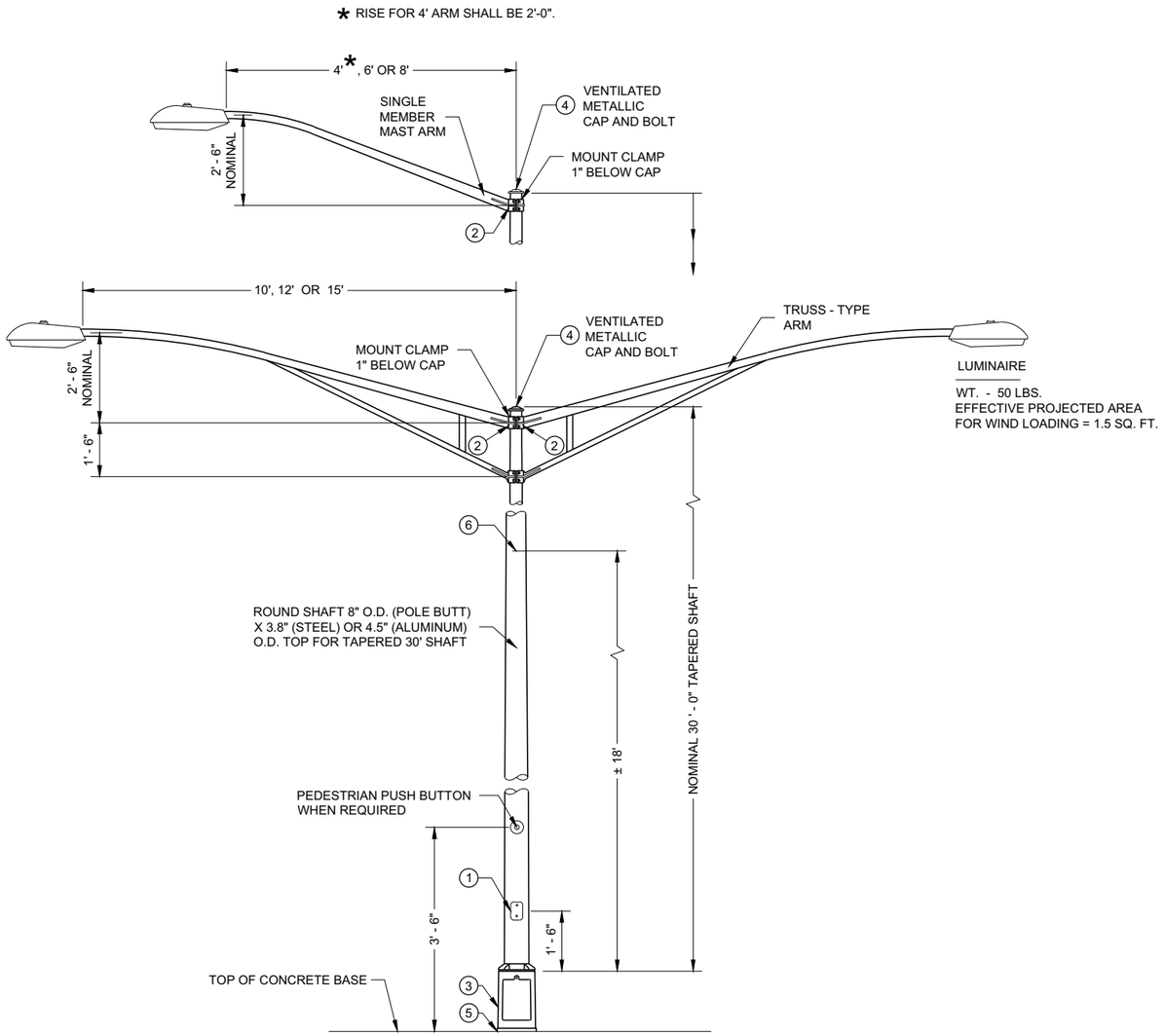
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November 2018
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TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY

GENERAL NOTES

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

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

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

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

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

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

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

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 ⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

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

(1) 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) ¼" X ¾" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.

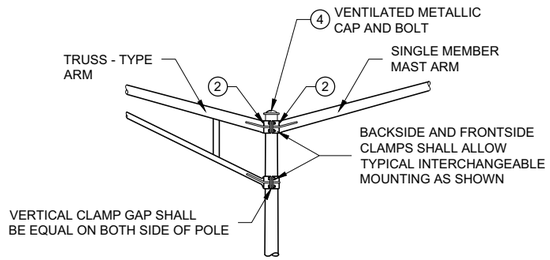
(2) GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 ⅜" HOLE IN POLE SHAFT FOR WIRING.

(3) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

(4) FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

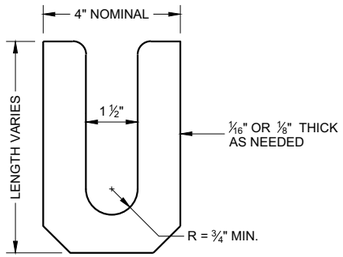
(5) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.

(6) INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.

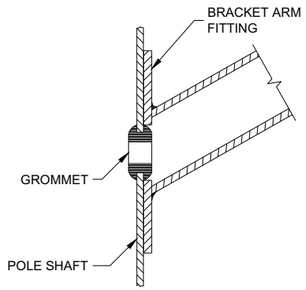


INTERCHANGEABLE MOUNTING DETAIL

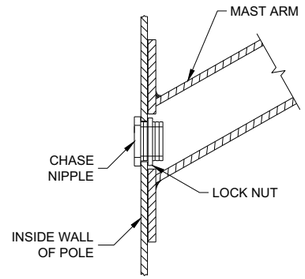
POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)



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.

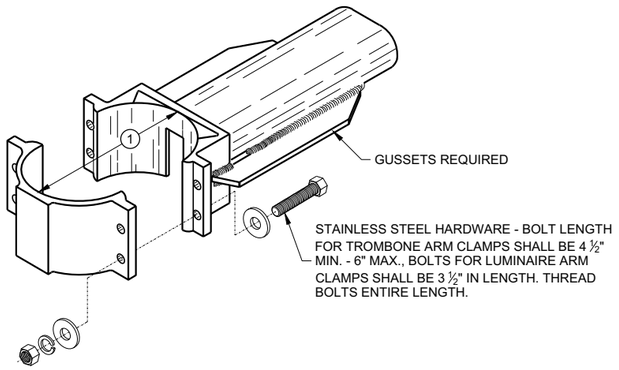
(1) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(2) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

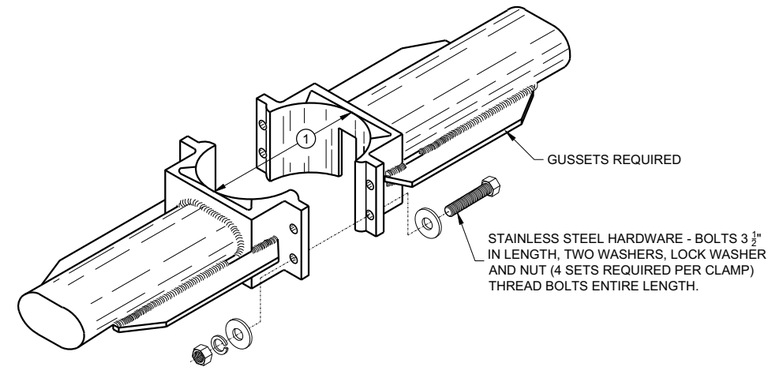
(3) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(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.

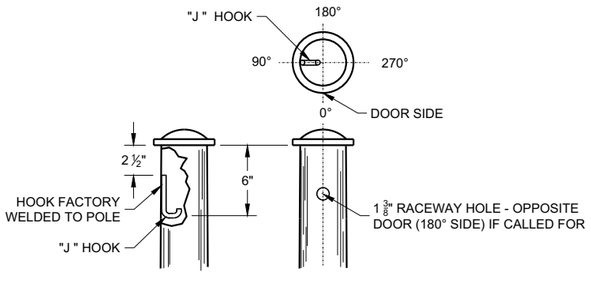
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



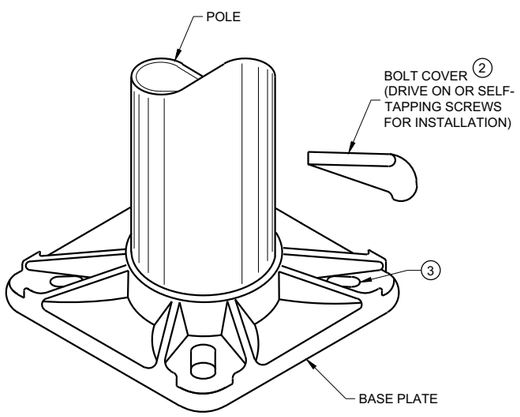
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



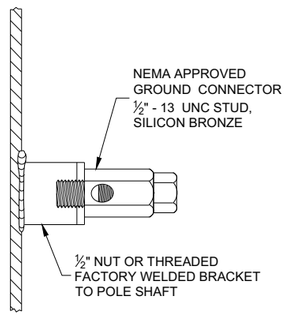
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

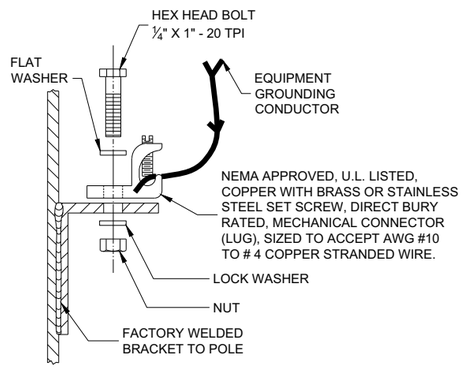


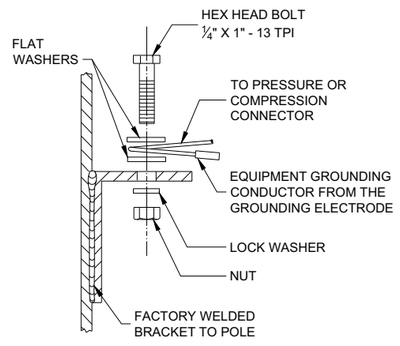
TYPICAL "J" HOOK LOCATION



BASE PLATE







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

HARDWARE DETAILS FOR POLE MOUNTING

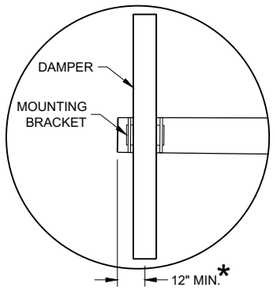
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

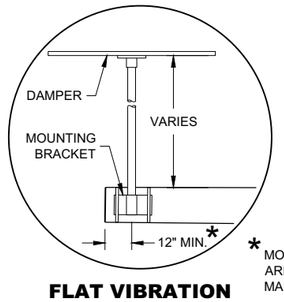
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

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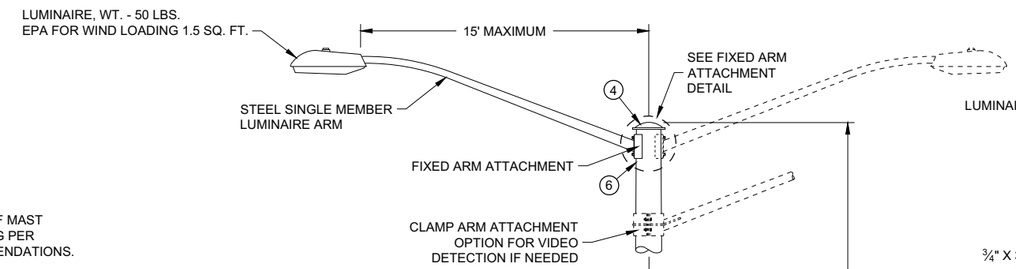


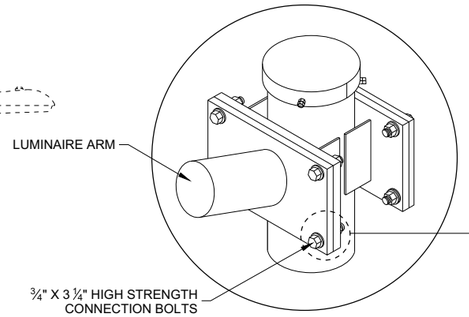
DUMBBELL VIBRATION DAMPER



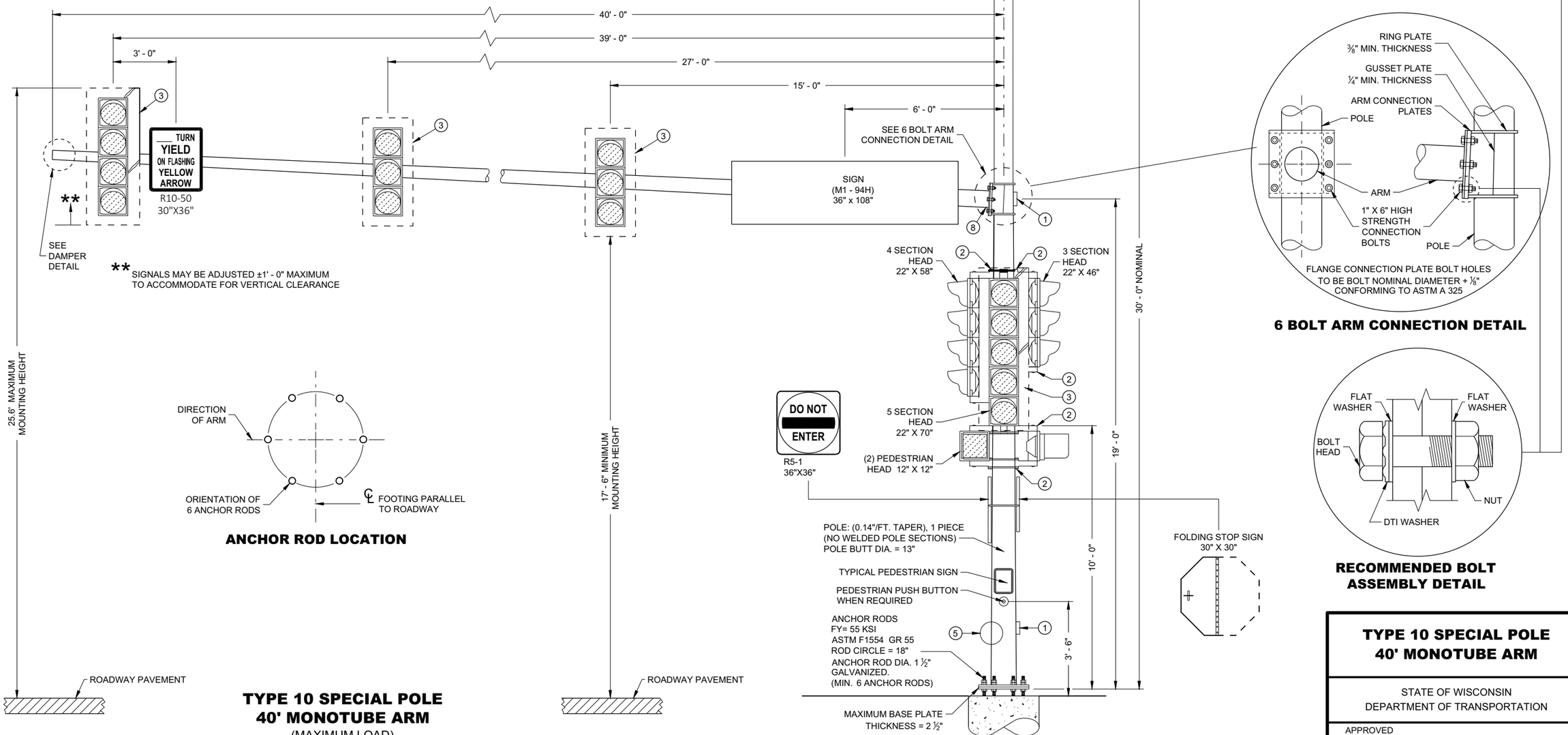
FLAT VIBRATION DAMPER

* MOUNT AS CLOSE TO END OF MAST ARM FOR MAXIMUM DAMPING PER MANUFACTURER'S RECOMMENDATIONS.





FIXED ARM ATTACHMENT DETAIL



** SIGNALS MAY BE ADJUSTED ±1' - 0" MAXIMUM TO ACCOMMODATE FOR VERTICAL CLEARANCE

ANCHOR ROD LOCATION

6 BOLT ARM CONNECTION DETAIL

RECOMMENDED BOLT ASSEMBLY DETAIL

TYPE 10 SPECIAL POLE
40' MONOTUBE ARM
(MAXIMUM LOAD)

TYPE 10 SPECIAL POLE
40' MONOTUBE ARM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
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/S/ Ahmet Demirbilek
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GENERAL NOTES

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

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15 FOOT TO 30 FOOT.

POLE TYPES 9 SPECIAL AND 10 SPECIAL ARE FOR ARM LENGTHS 35 FOOT, 40 FOOT, AND 45 FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35 FOOT TO 55 FOOT.

MONOTUBE POLES AND ARMS SHALL BE GALVANIZED STEEL.

RING STIFFENED BUILT UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3% ± RISE).

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

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO "LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNAL 2015 1ST EDITION (INCLUDING INTERIM REVISIONS)" AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR THE LIGHTING STRUCTURES AS FOLLOWS:

CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.

CATEGORY II FATIGUE LOADS OF TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 SPECIAL AND TYPE 10 SPECIAL STRUCTURES. IN LIEU OF DESIGNING FOR GALLOPING, A VIBRATION DAMPER MITIGATION DEVICE IS REQUIRED TO BE SUPPLIED AND INSTALLED AT THE END OF THE MAST ARM.

CATEGORY II FATIGUE FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE12 AND TYPE 13 STRUCTURES.

115 MPH (700 YEAR MRI BASIC WIND SPEED).

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" STAINLESS STEEL BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR A S DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEAD AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

(1) DESIGN FOR MAXIMUM ALLOWABLE HAND HOLE WITH COVER ASSEMBLY WITH TWO ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

(2) SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING (SEE SPECIFICATION SECTION 658).

(3) SECURELY MOUNT BACK PLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.

(4) THE TOP OF THE POLE SHAFT AND THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.

(5) FACTORY WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HAND HOLD, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.

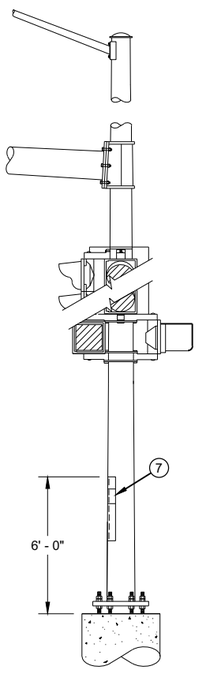
(6) FACTORY WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.

(7) INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

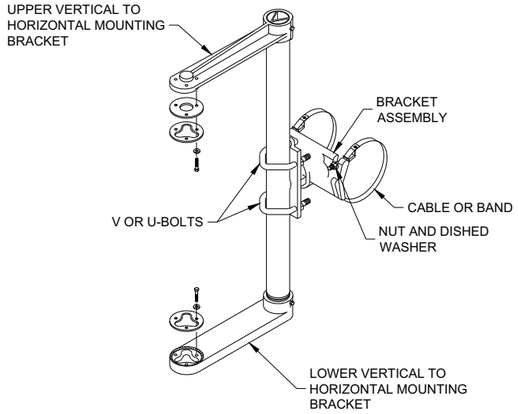
STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

MOUNTING HEIGHT SHALL BE 6' - 0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

(8) FACTORY DRILLED ½" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.



STRUCTURAL IDENTIFICATION PLAQUE PLACEMENT

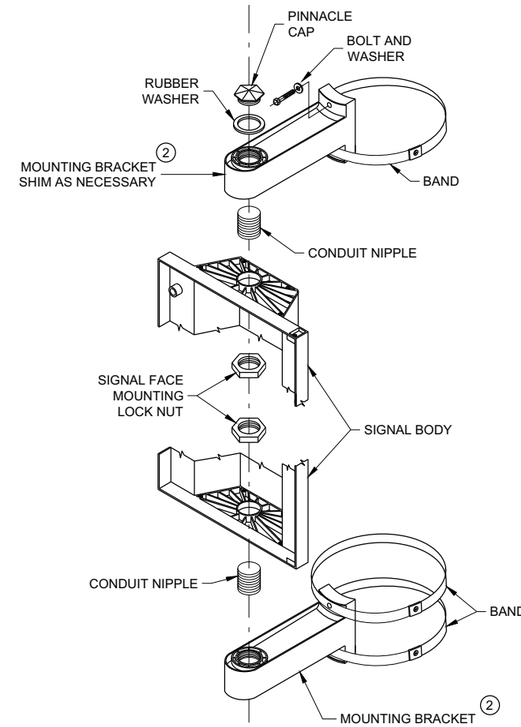


SIGNAL FACE MOUNTING BRACKET DETAIL FOR MONOTUBE ARM

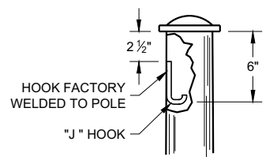
(MOUNT PER MANFACTURER'S RECOMMENDATION)

TYPICAL GROUNDING (5) CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



SIGNAL FACE VERTICAL MOUNTING DETAIL



TYPICAL "J" HOOK (6) WIRE SUPPORT

GENERAL NOTES AND HARDWARE FOR TYPES 9,10, 9/10 SPECIAL, 12 AND 13 POLES WITH MONOTUBE ARMS

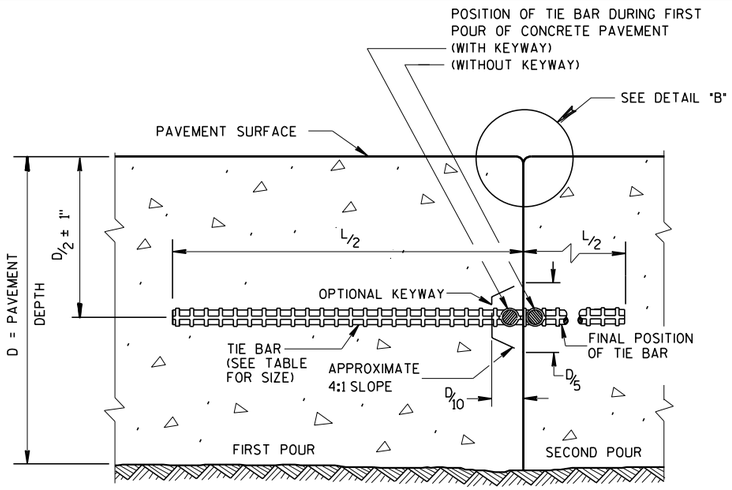
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL ENGINEER

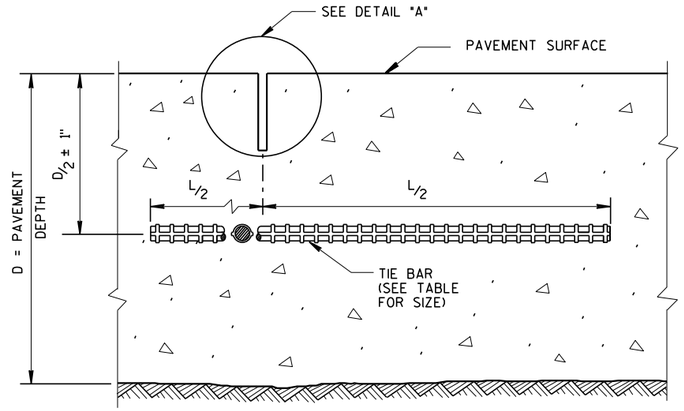
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CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

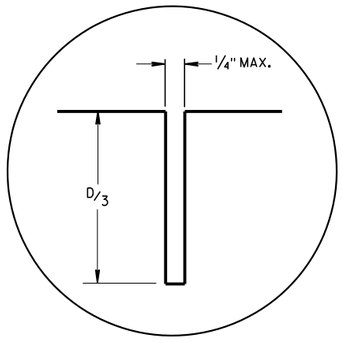
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

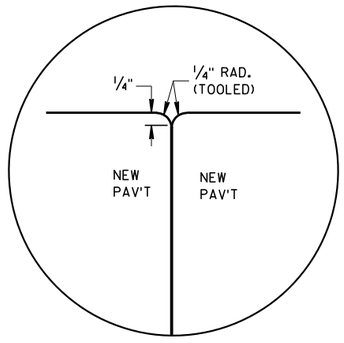
PLAN VIEW

SECTION A-A

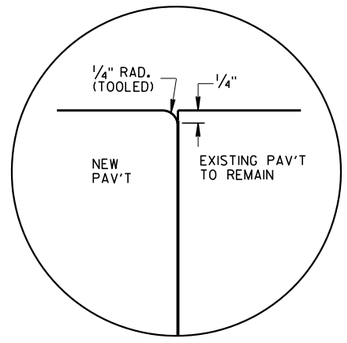
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



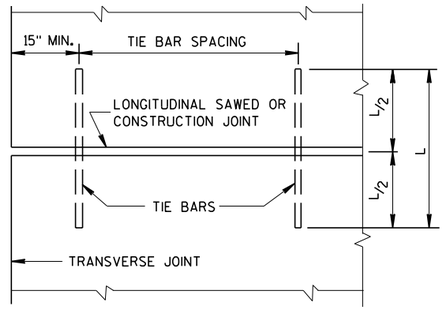
DETAIL "C"

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

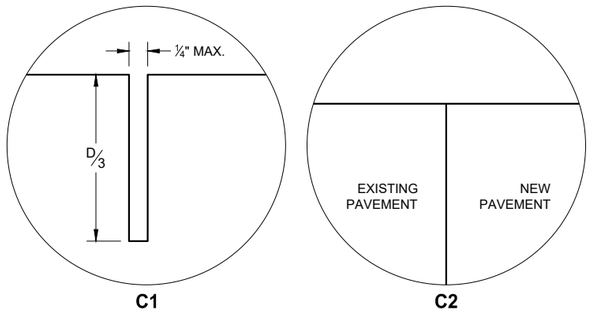
APPROVED
March 2018 — DATE
/S/ Peter Kemp — PAVEMENT SUPE
FHWA

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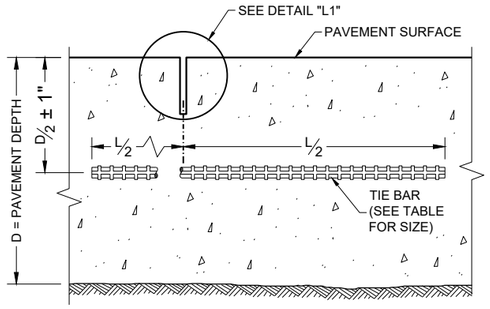
S.D.D. 13 C 1-19

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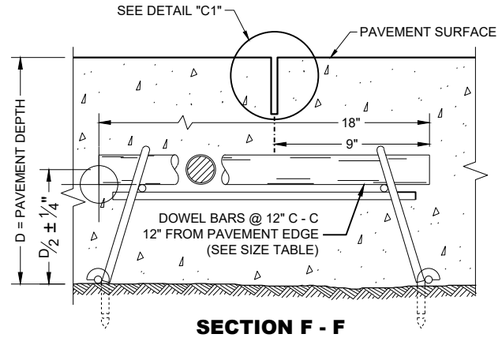
S.D.D. 13 C 1-19



TRANSVERSE JOINTS



SECTION C - C
SAWED JOINT



SECTION F - F
CONTRACTION JOINT

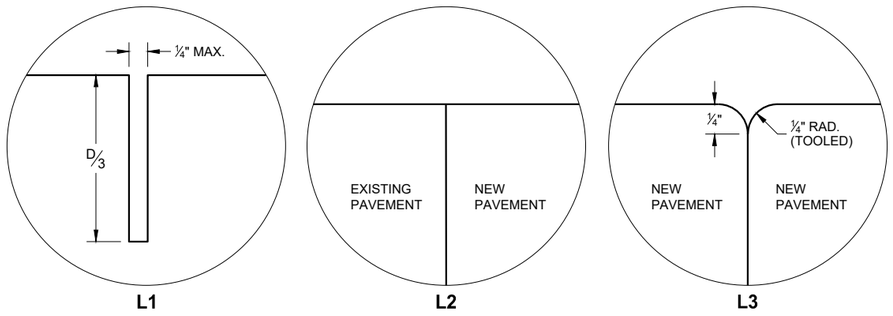
GENERAL NOTES

ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

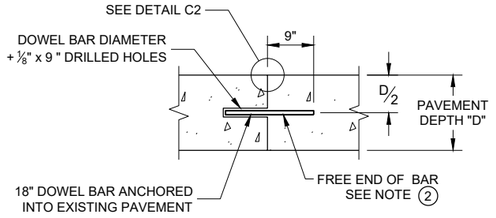
PROVIDE A MIMIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

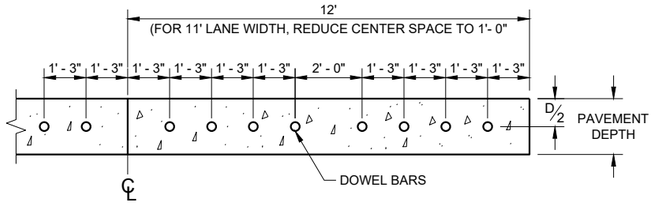
(2) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



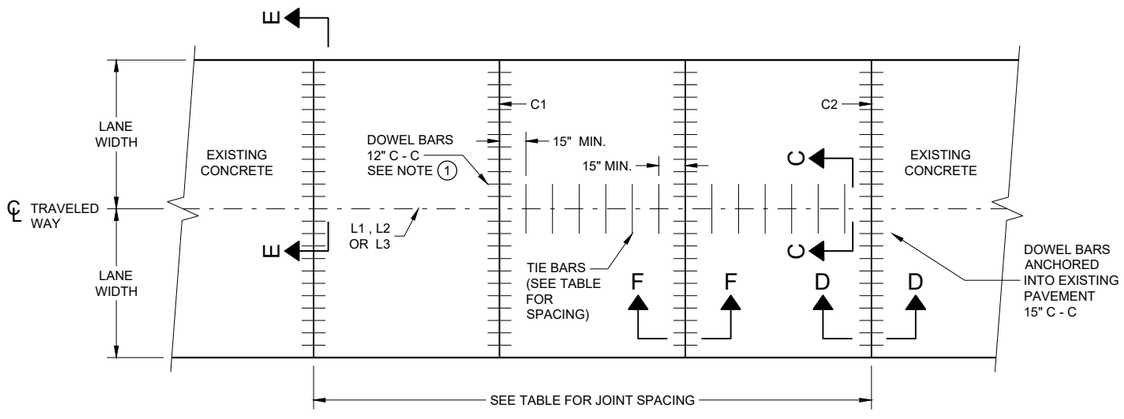
LONGITUDINAL JOINTS



SECTION D - D



SECTION E - E
SPACING OF DOWEL BARS
ANCHORED INTO EXISTING PAVEMENT



PLAN VIEW
CONCRETE BASE
CONTRACTION JOINT LOCATIONS

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.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8" & ABOVE	1 ¼"	15'

CONCRETE BASE

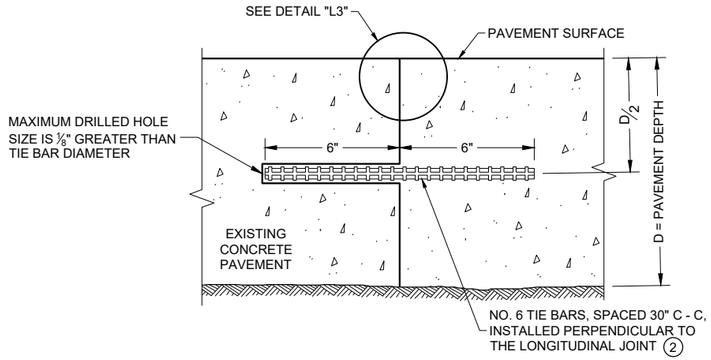
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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SDD 13C15 - 08a
SDD 13C15 - 08a

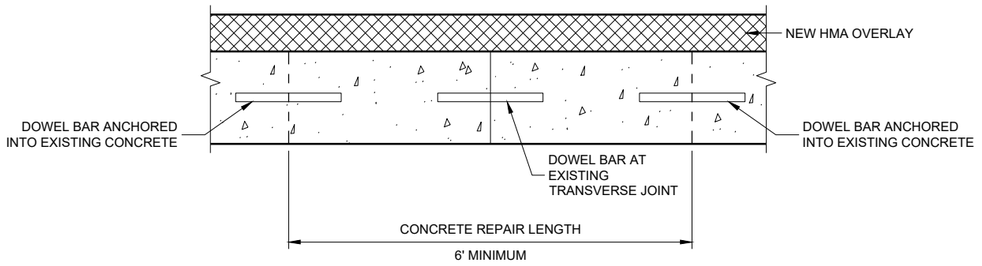
GENERAL NOTES

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.

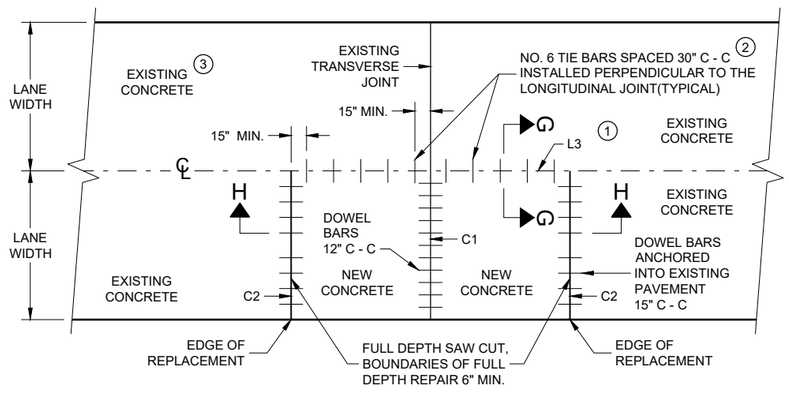


SECTION G - G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H - H



PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR

CONCRETE BASE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

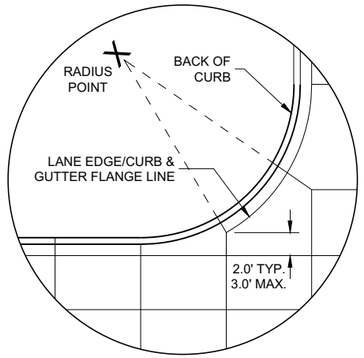
APPROVED
November 2022
DATE

/S/ Peter Kemp P.E.
PAVEMENT SUPERVIS

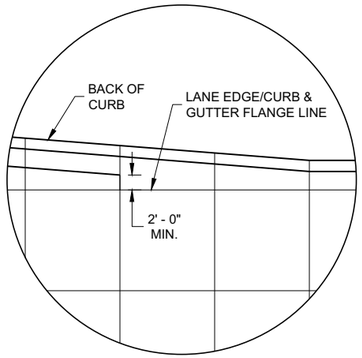
FHWA

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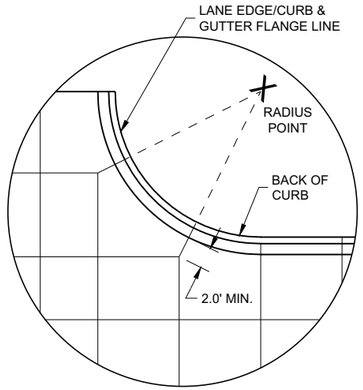
SDD 13C15 - 08b
SDD 13C15 - 08b



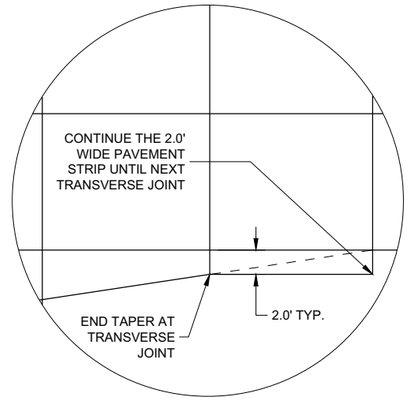
DETAIL "A"



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.

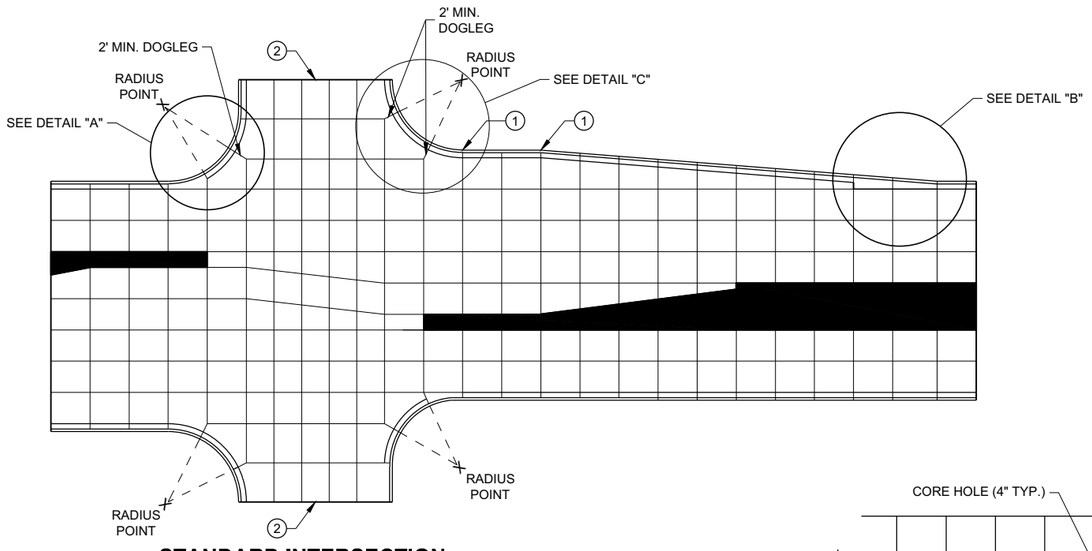
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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.

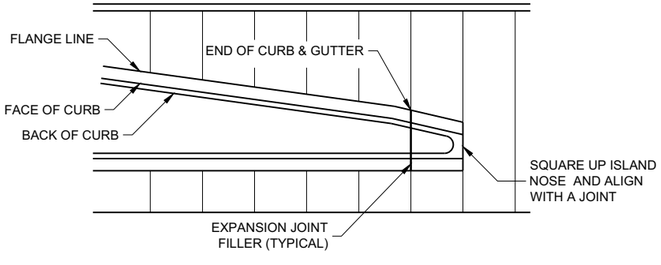


STANDARD INTERSECTION

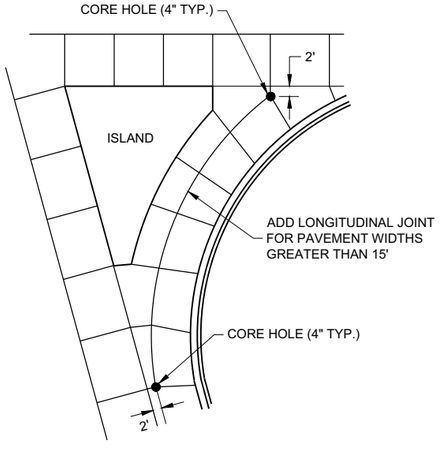
PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 ½"	12'
7", 7 ½"	14'
8" & ABOVE	15'

SKEWED INTERSECTION



APPROACH TO MEDIAN



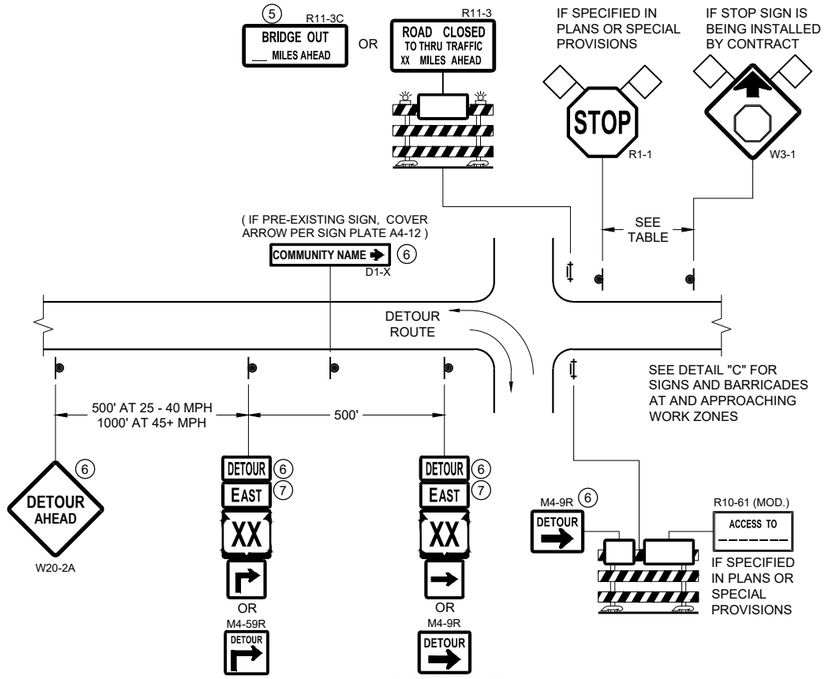
LARGE RIGHT TURN

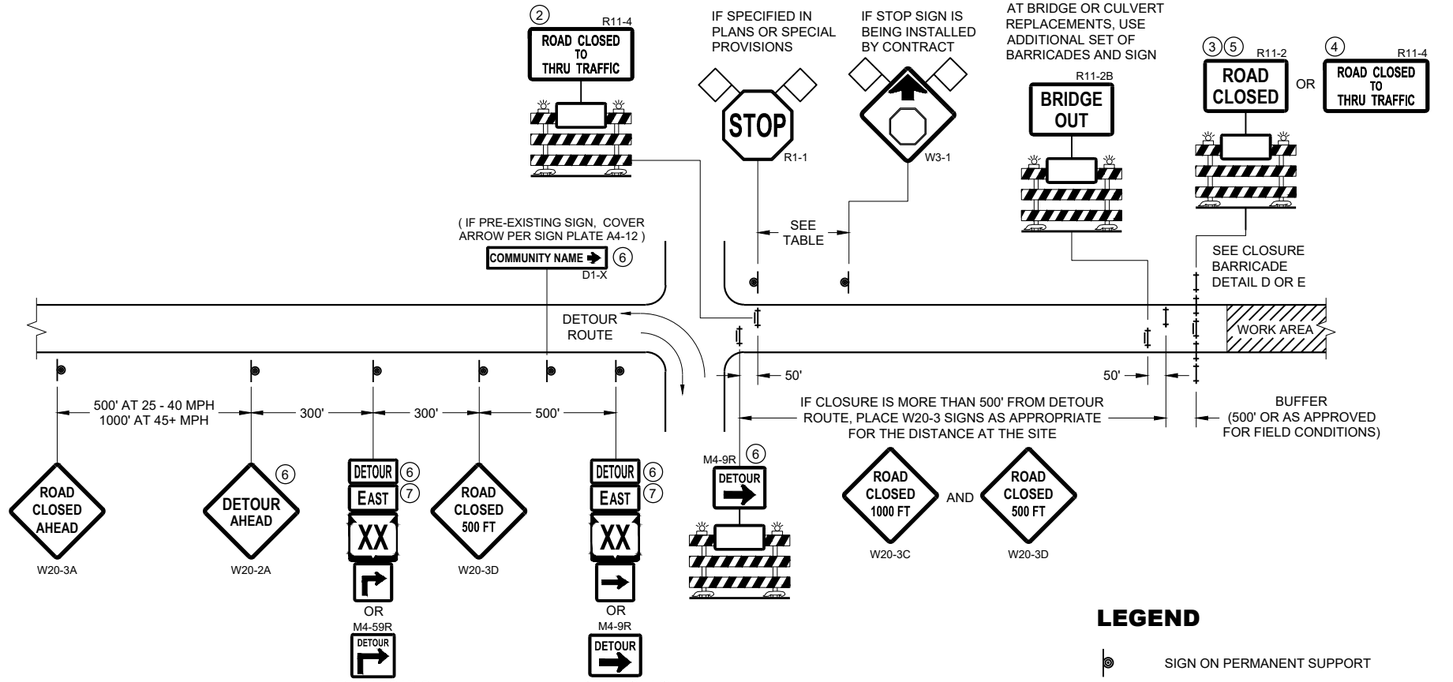
CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 13C18 - 07a

SDD 13C18 - 07a



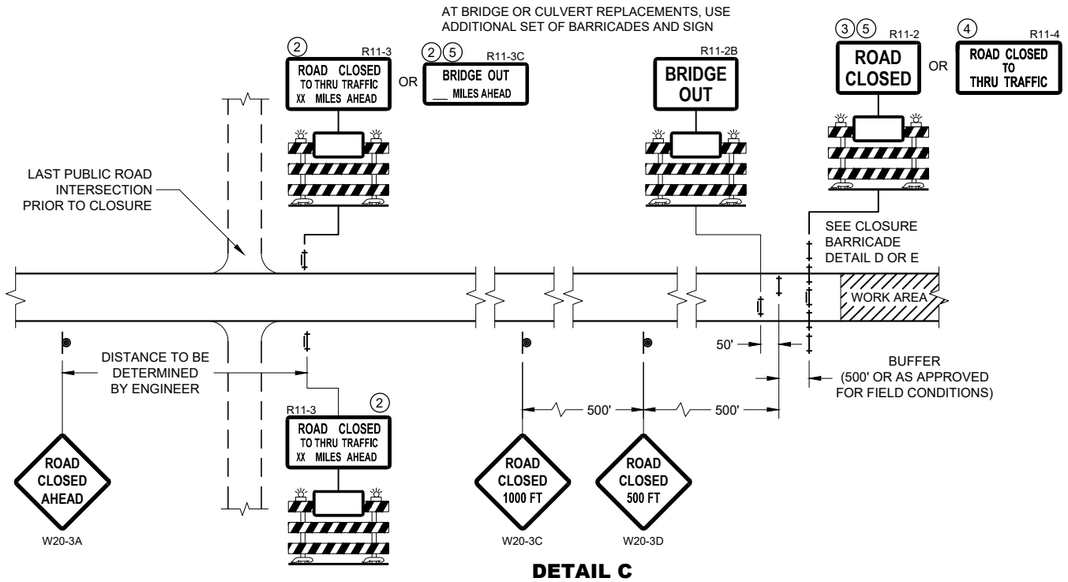


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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
May 2023
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

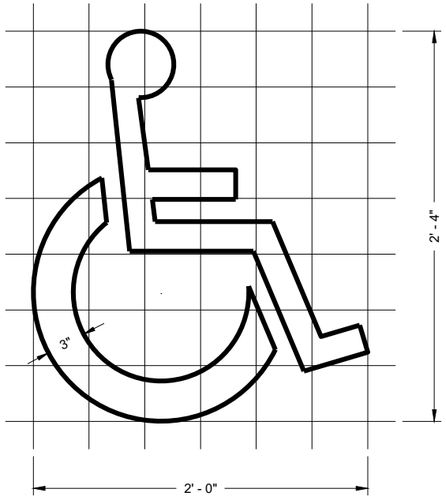
FHWA

6

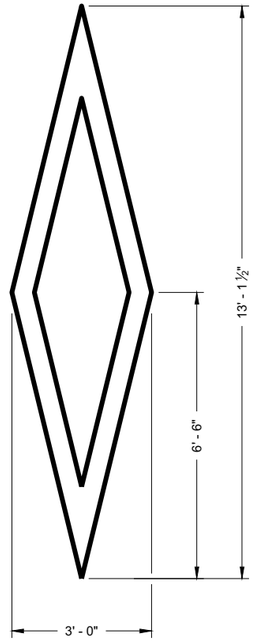
SDD 15C02 - 09a

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.



HANDICAP SYMBOL



PREFERENTIAL LANE SYMBOL

6

6

SDD 15C07 - 15a

SDD 15C07 - 15a

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

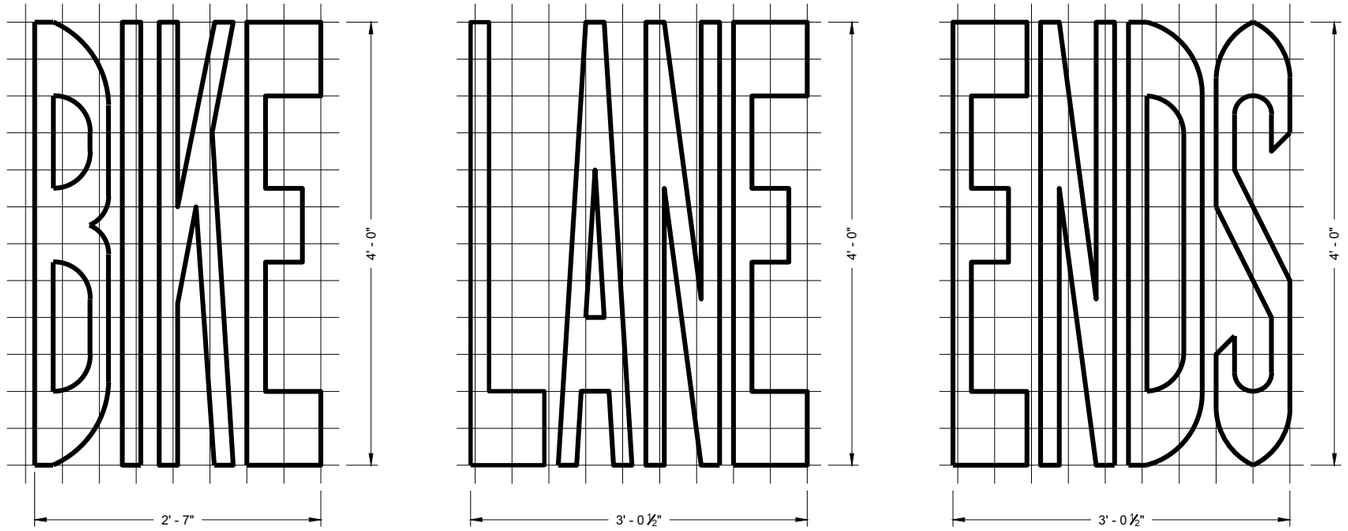
APPROVED

November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF
ENGINEER

FHWA

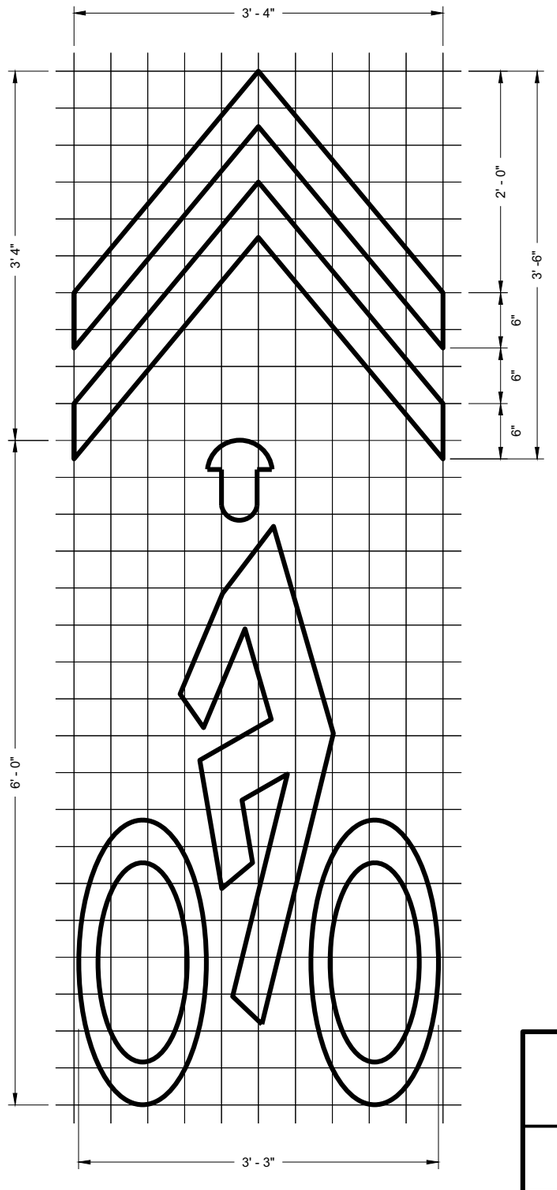
SDD 15C7-e Pavement Marking For Bike Lanes

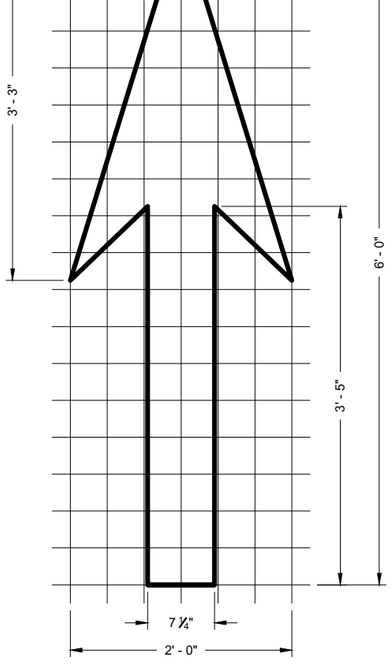


BIKE LANE WORDS

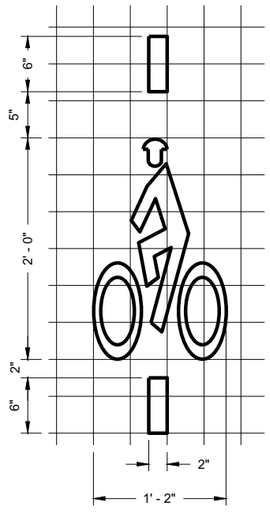
GENERAL NOTES

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.

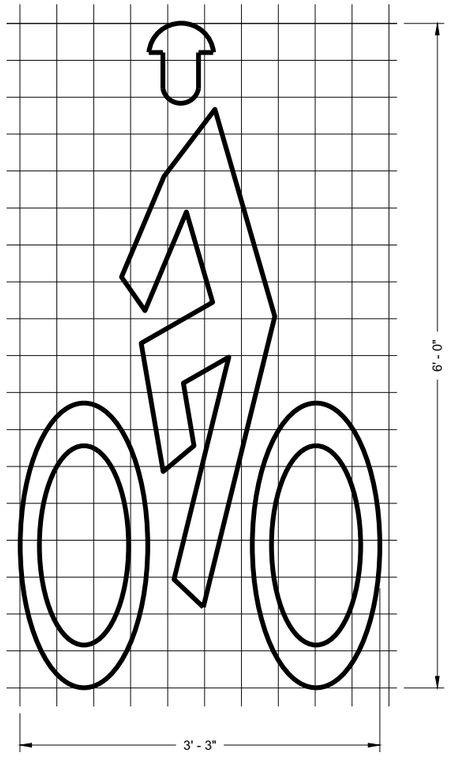




BIKE LANE ARROW



BICYCLE DETECTOR PAVEMENT MARKING



BIKE LANE SYMBOL

BIKE LANE SYMBOL FOR SHARED LANE

PAVEMENT MARKING FOR BIKE LANES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

FHWA

SDD 15C07 - 15e

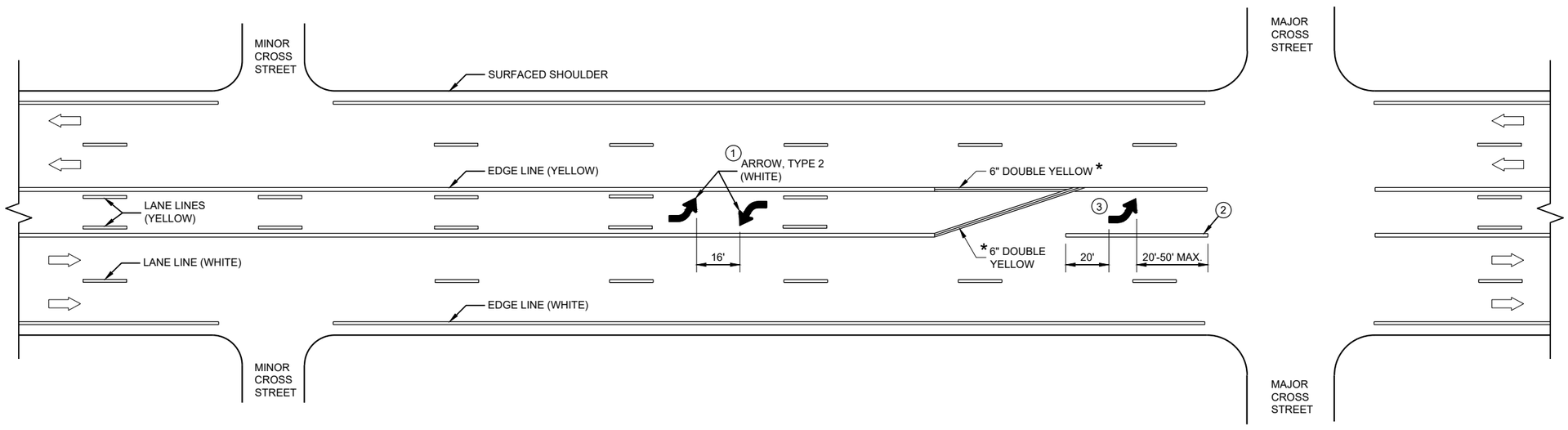
SDD15C07 - 15e

GENERAL NOTES

1. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
2. 10" WHITE
3. TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

⇨ DIRECTION OF TRAFFIC

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY LEFT TURN LANE

6

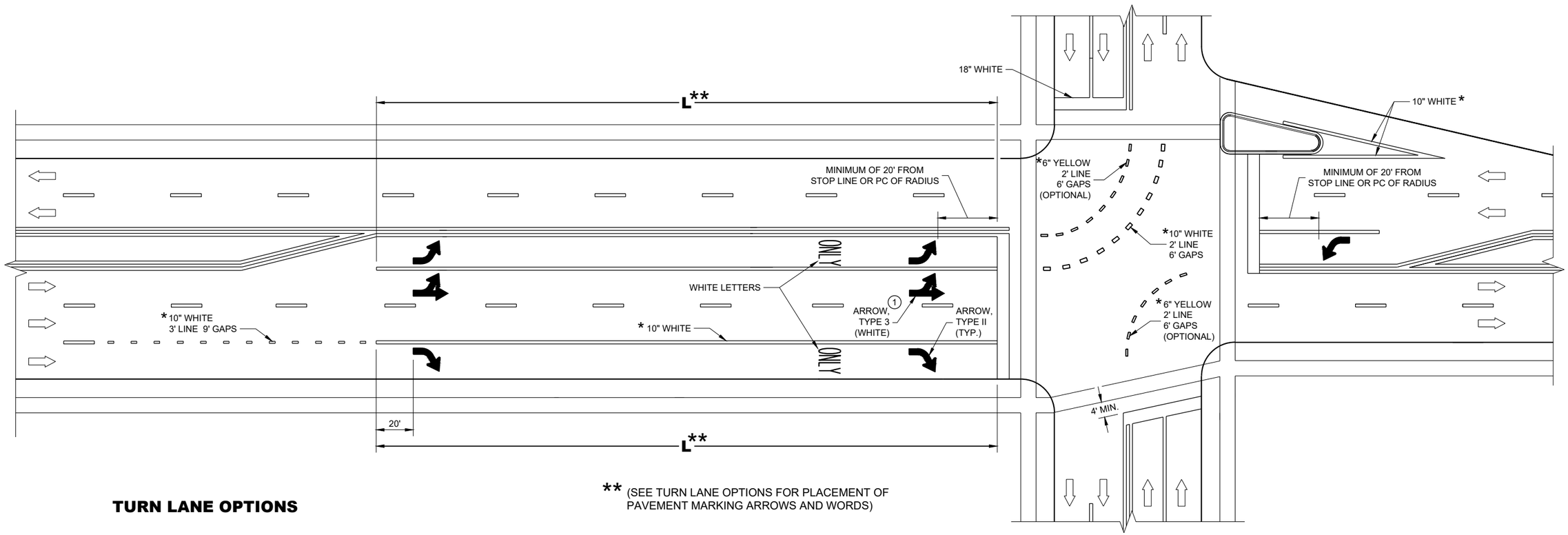
SDD 15C08-23c

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA· 98

6

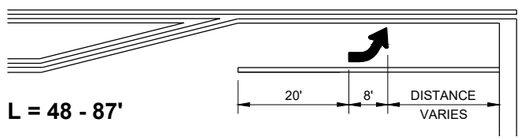
SDD 15C08-23c



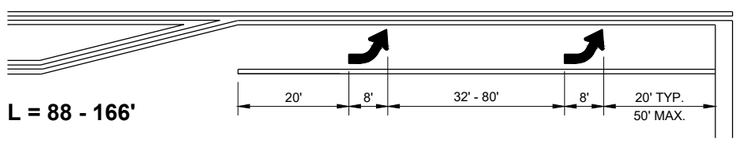
** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

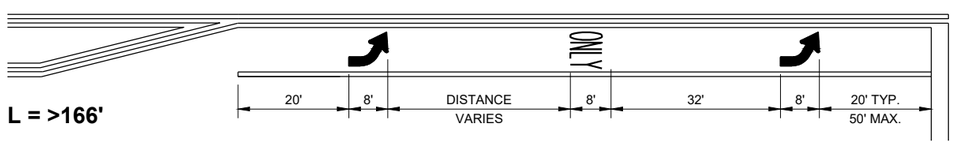
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

(1) QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

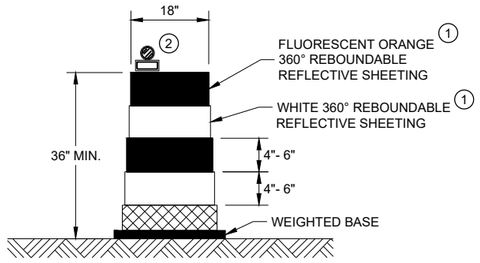
6

SDD 15C08-23d

SDD 15C08-23d

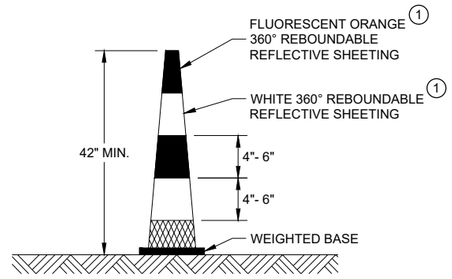
GENERAL NOTES

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

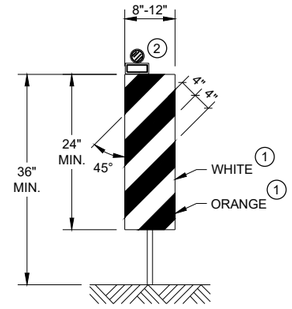
BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

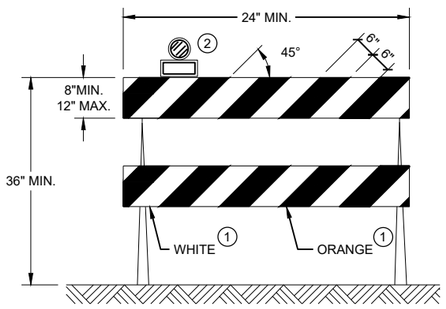
DO NOT USE IN TAPERS
½ SPACING OF DRUMS

BALLAST WIDTHS
RANGE FROM 14"-20"



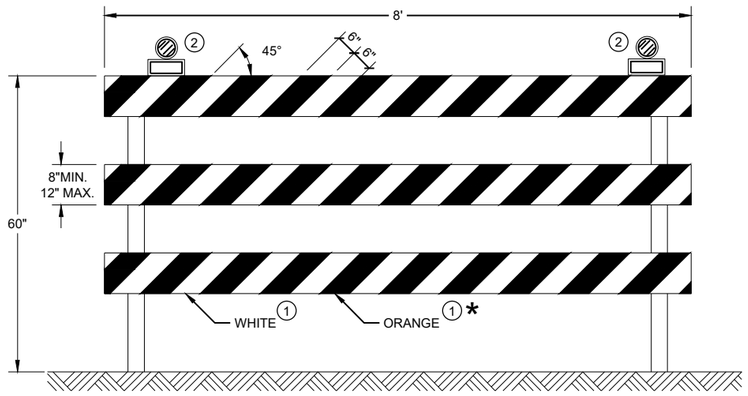
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C11 - 10b

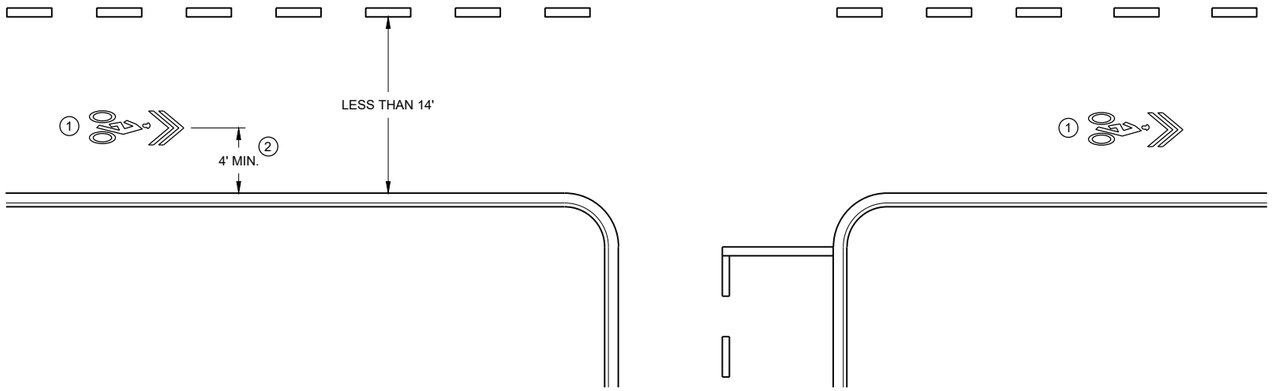
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SDD 15C11 - 10b

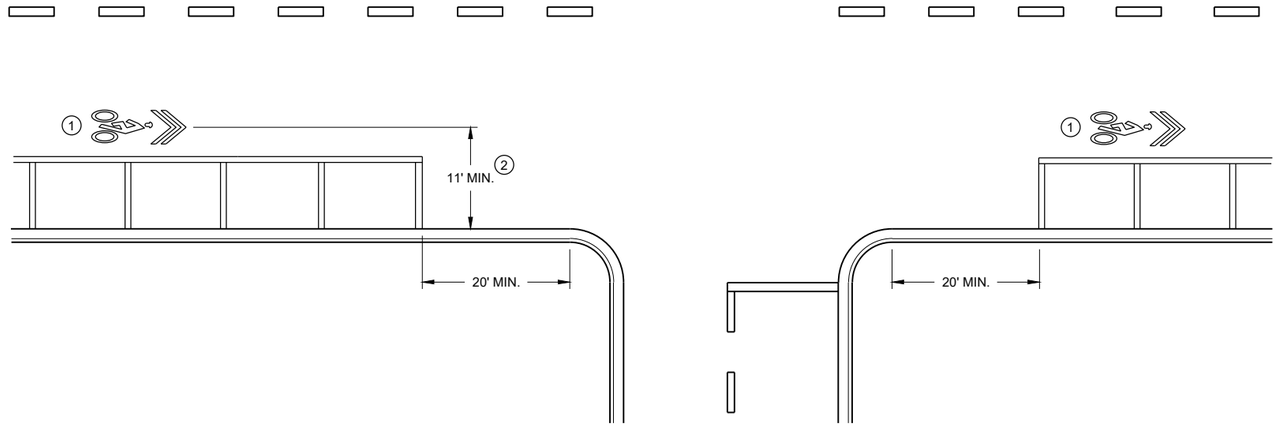
GENERAL NOTES

(1) MINIMUM OF ONE PER BLOCK, MAXIMUM OF 250 FEET.

(2) OR TO EDGE OF PAVEMENT WITHOUT CURB.



WITHOUT PARKING



WITH PARKING

PAVEMENT MARKING FOR SHARED LANE 35 MPH OR LESS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2023
DATE

/S/ Matthew Rauch
STATE SIGNING AND MAF ENGINEER

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SDD 15C29-08b

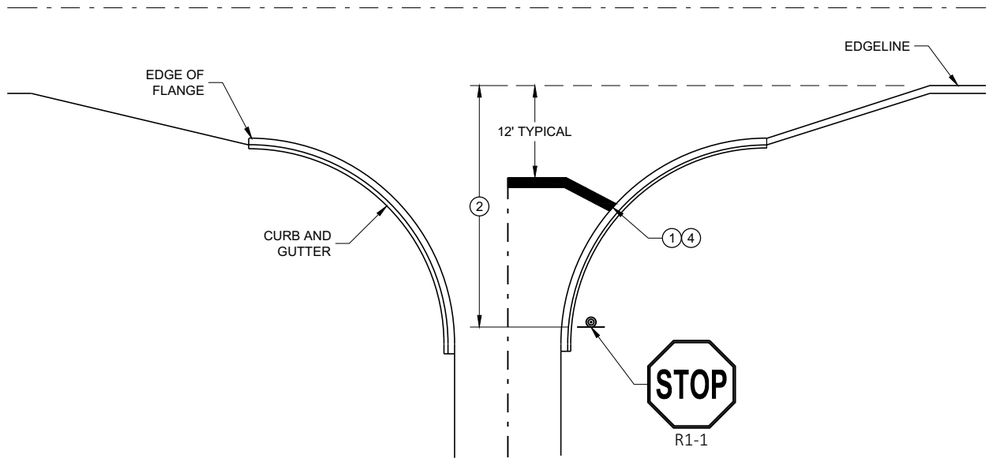
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SDD 15C29-08b

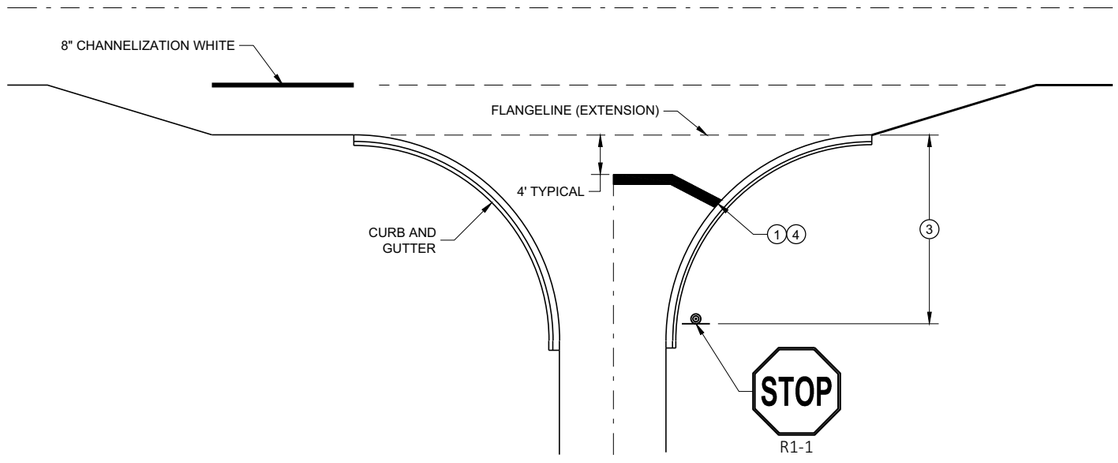
GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

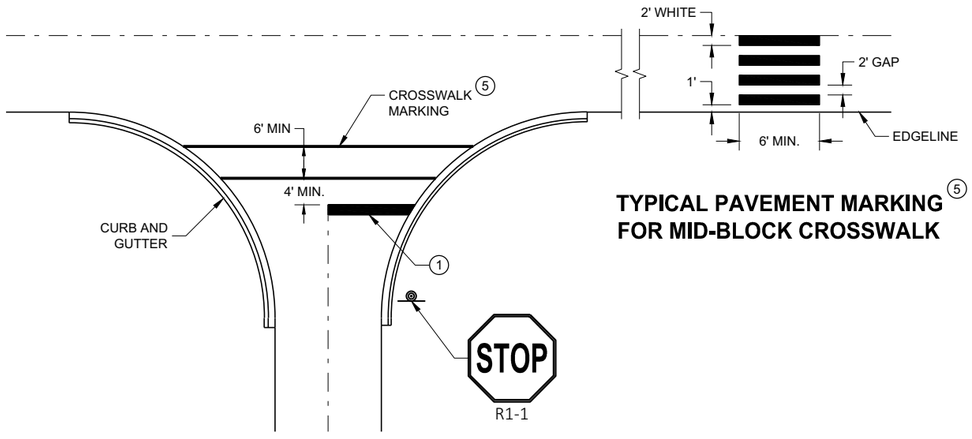
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE 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

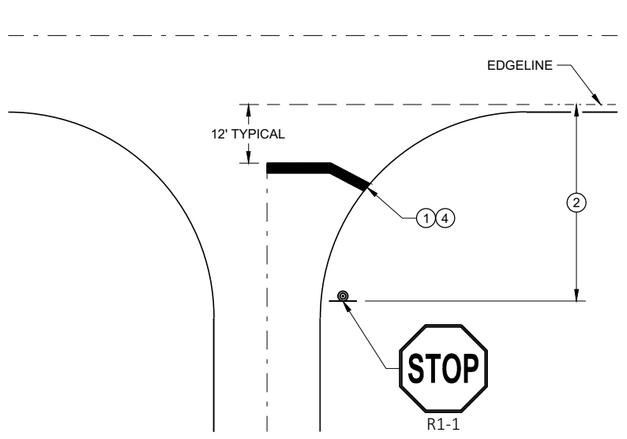


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING

TYPICAL PAVEMENT MARKING 5 FOR MID-BLOCK CROSSWALK



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING

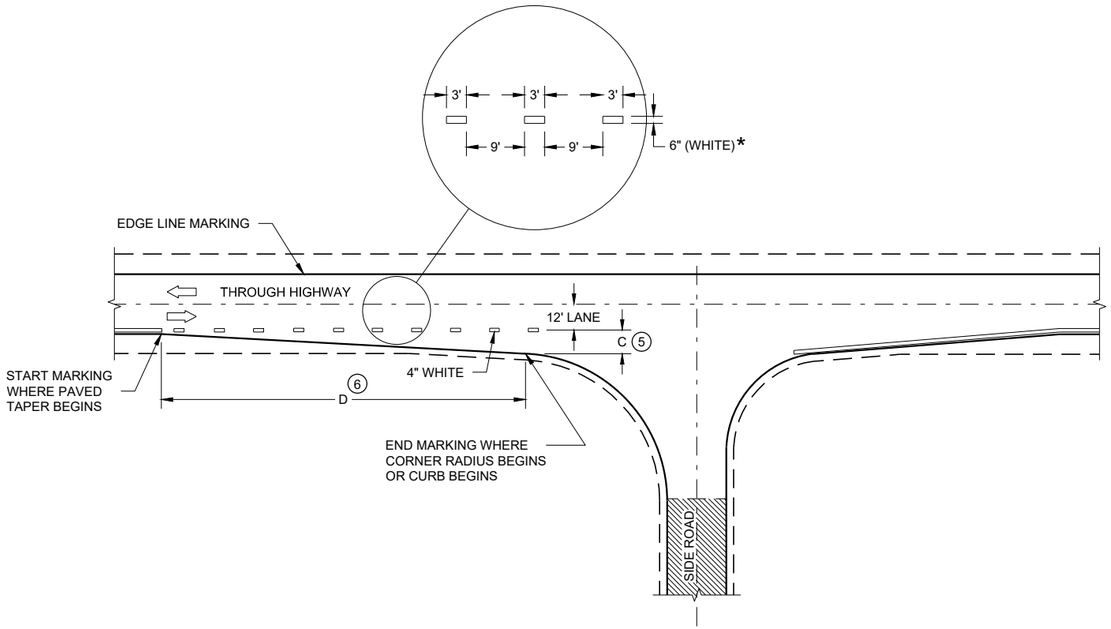
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 — DATE
/S/ Matthew Rauch — STATE SIGNING AND MAF ENGINEER

FHWA

SDD 15C33 - 04

SDD 15C33 - 04



MINOR INTERSECTION

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

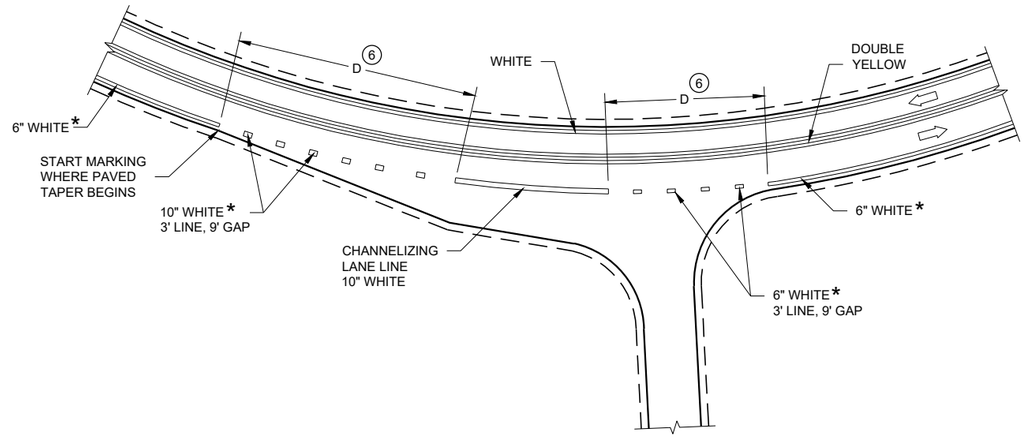
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

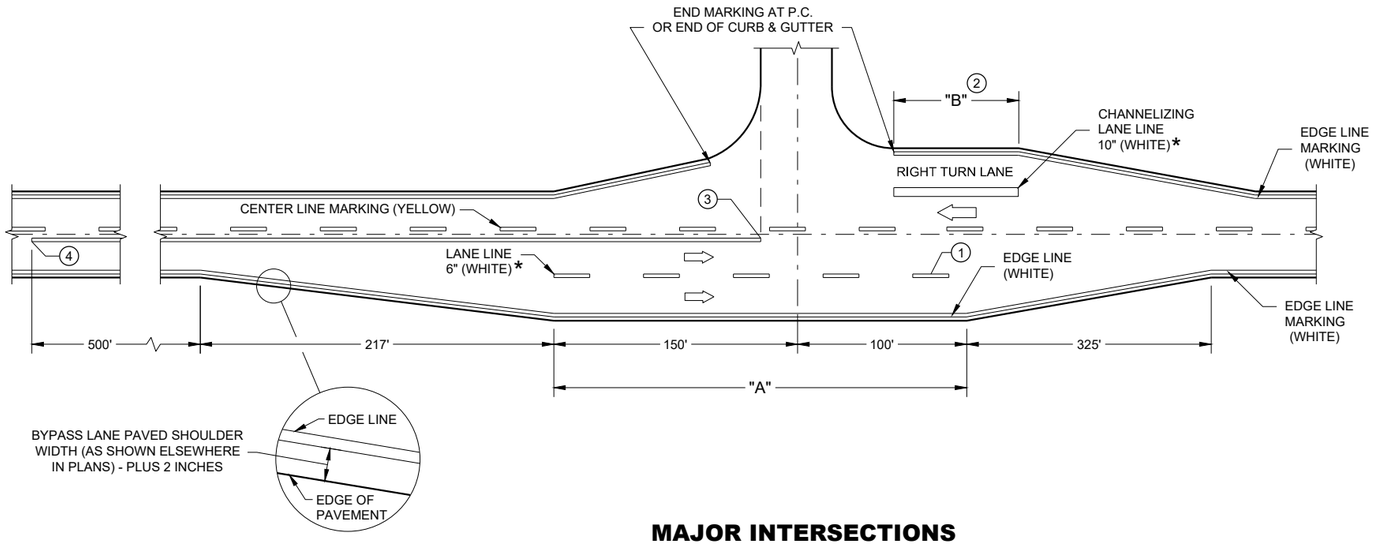
1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
5. WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
6. WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

PAVEMENT MARKING (INTERSECTIONS)

GENERAL NOTES

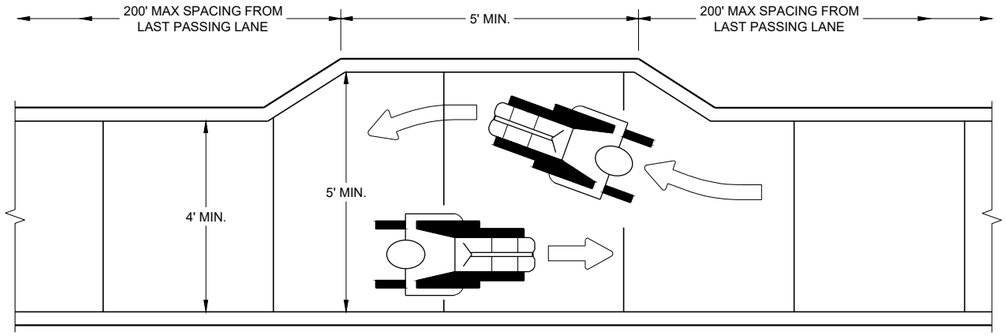
BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST

(1) REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

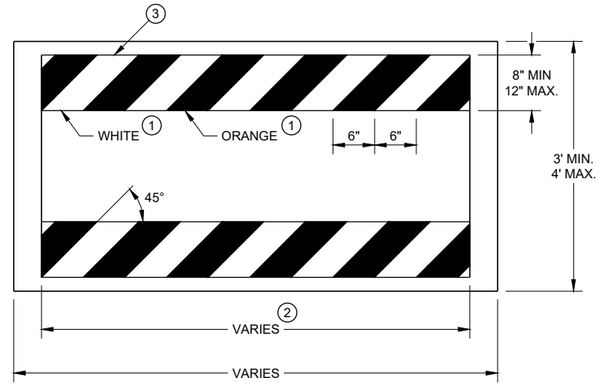
(2) SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.

(3) PLACE SHEETING ON BOTH SIDES OF THE BARRICADE.

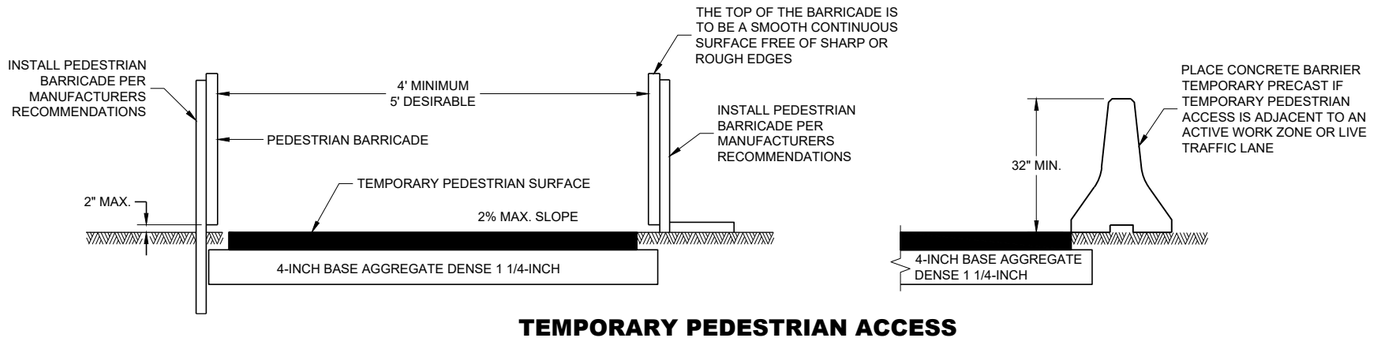
* USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.



NARROW SIDEWALK PASSING DETAIL



TEMPORARY PEDESTRIAN BARRICADE*

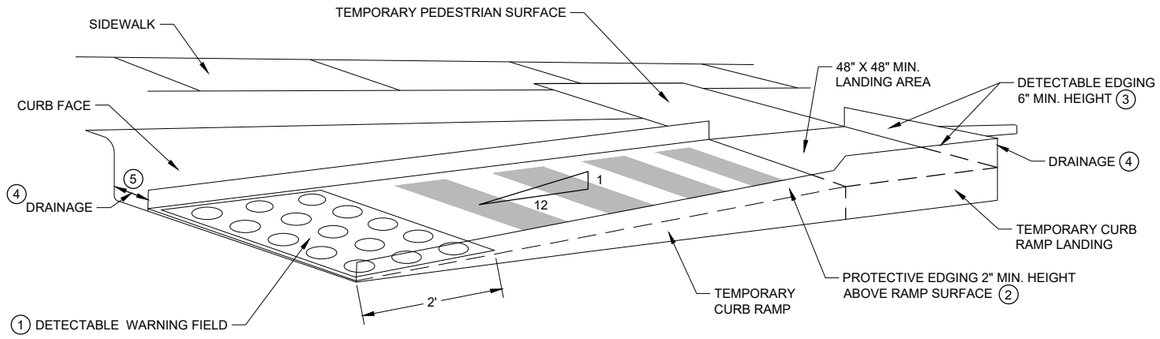


TEMPORARY PEDESTRIAN ACCESS

6

SDD 15D30 - 09a

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION



PERSPECTIVE VIEW

GENERAL NOTES

CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN ½" WIDTH.

CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED ½". LATERAL EDGES MAY BE VERTICAL UP TO ¼" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN ¼" AND ½".

(1) INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS.

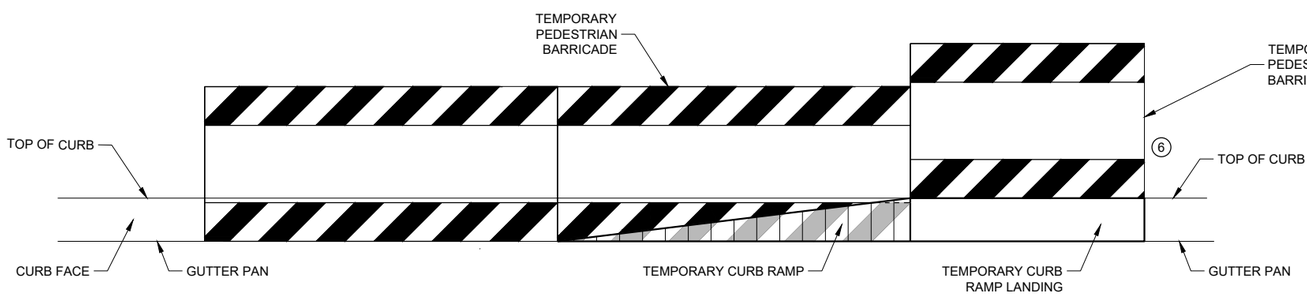
(2) PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

(3) DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

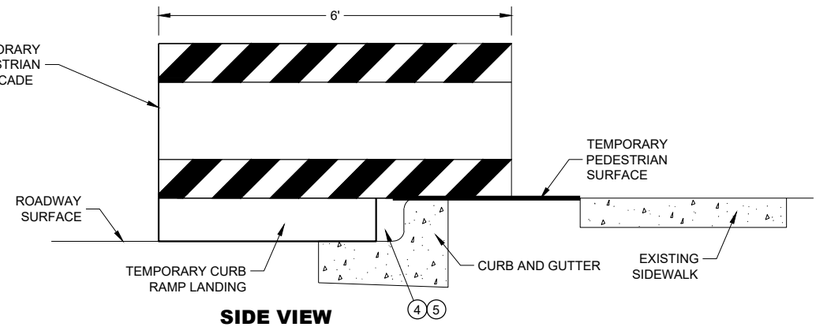
(4) DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

(5) ENSURE CURB RAMP IS OUT OF THE GUTTER PAN.

(6) IF ONLY PART OF THE END PANEL OF TEMPORARY PEDESTRIAN BARRICADE PANEL IS NEEDED, EXTEND EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL HERE.



FRONT VIEW



SIDE VIEW

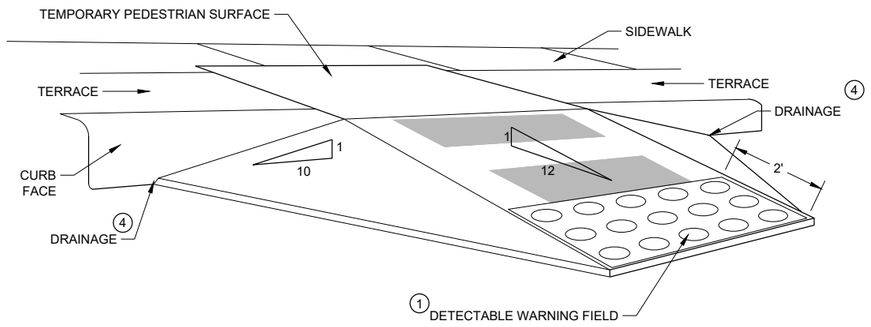
TEMPORARY CURB RAMP PARALLEL TO CURB

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

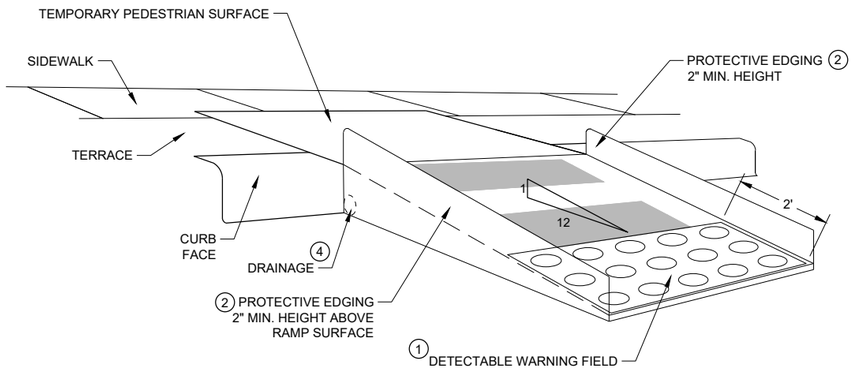
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA

6

SDD 15D30 - 09b



WITH SIDE APRON (5)



WITH PROTECTIVE EDGE

TEMPORARY CURB RAMP PERPENDICULAR TO CURB

GENERAL NOTES

CURB RAMPS SHALL BE 48" MINIMUM WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN ½" WIDTH.

CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED ½". LATERAL EDGES MAY BE VERTICAL UP TO ¼" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN ¼" AND ½".

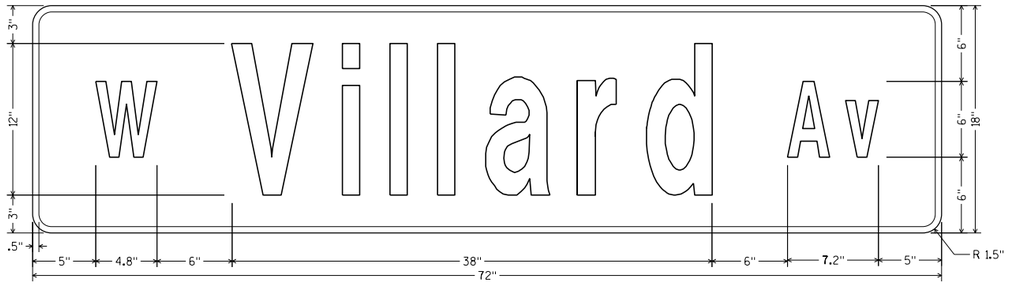
(1) INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS

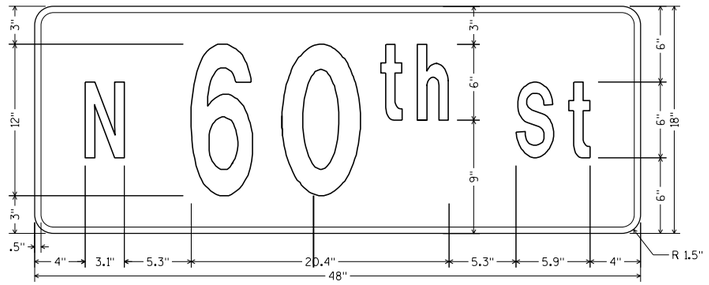
(2) PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

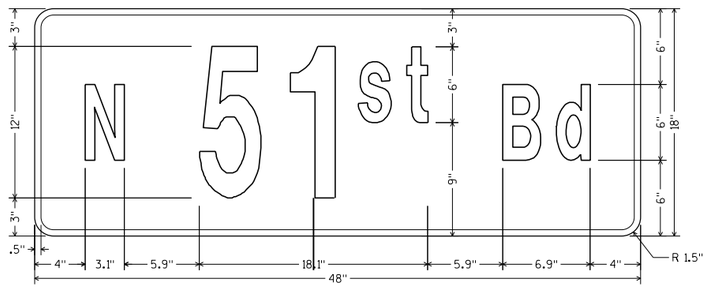
(3) DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

(4) DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

(5) CAN ONLY BE USED FOR RAMPS WITH 6" OR LESS OF VERTICAL CHANGE.







NOTES

1. All Signs Type II
   - Type SH Reflective
2. Color:
   Background - Green
   Message - White
3. All Signs 1/2 Inch White Border
4. All Signs 1 Inch Radius

Message Series - C

7

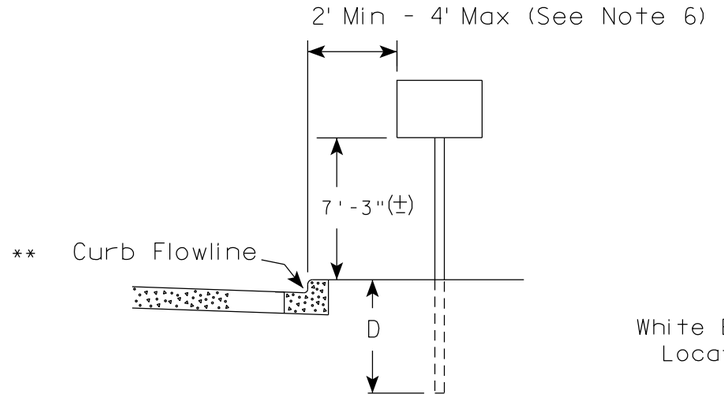
7

PROJECT NO: 2984–15–71	HWY: W. VILLARD AVE.	COUNTY: MILWAUKEE	SIGN DETAILS	SHEET 107	E

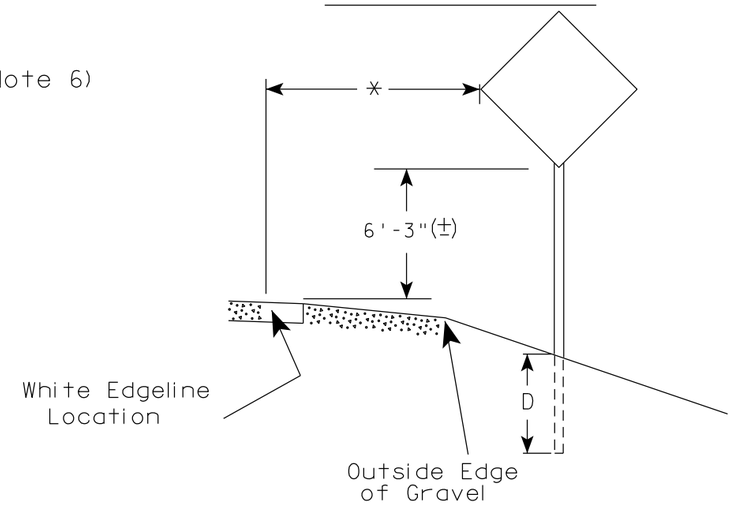
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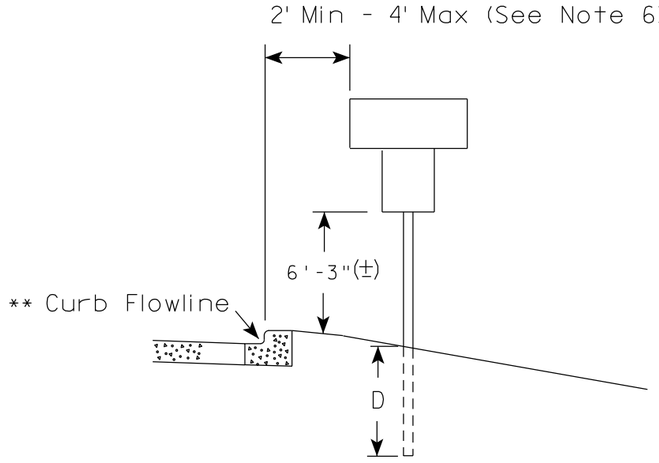
WISDOT/CADDS SHEET 42

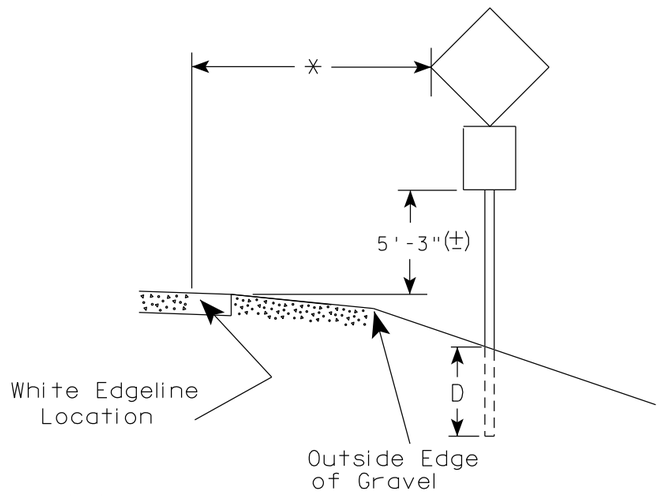
URBAN AREA



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.

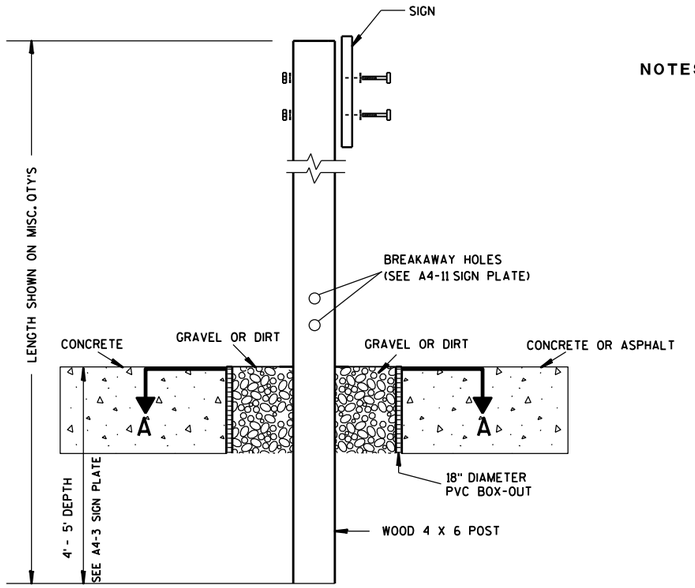
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

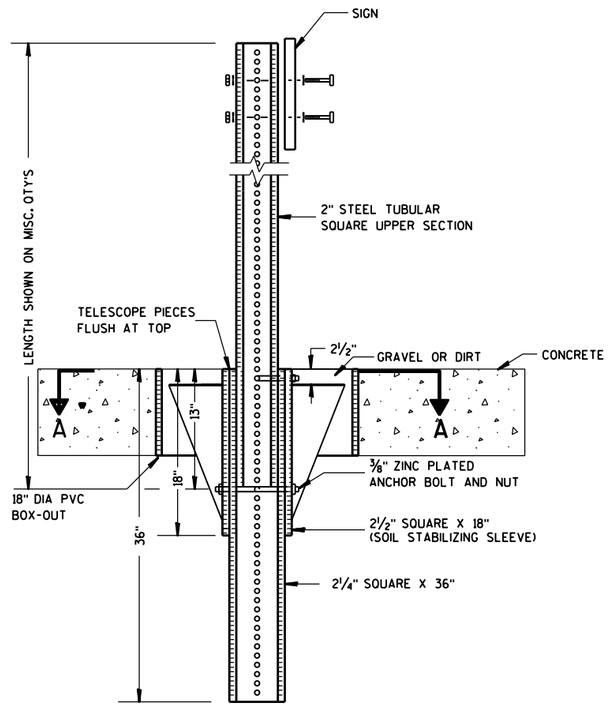
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 108	E



ELEVATION VIEW

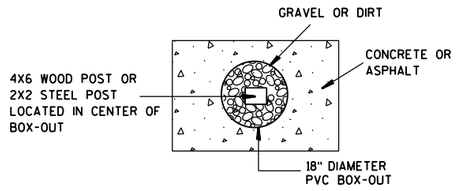
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

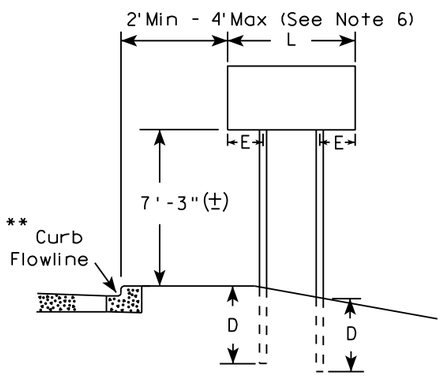
APPROVED Matthew R Rauch
for State Traffic Engineer

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

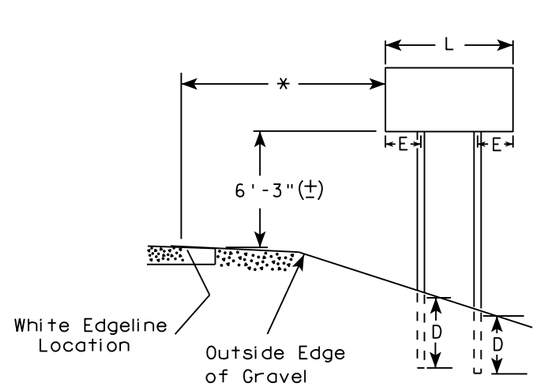
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

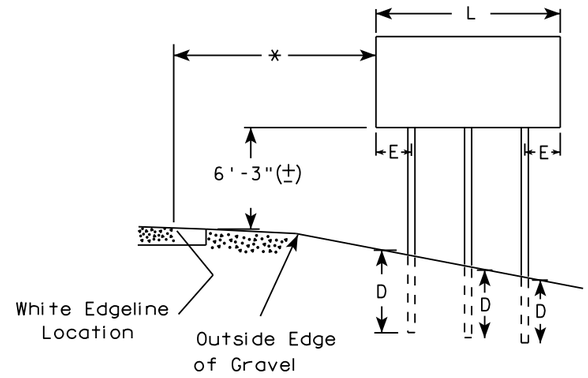
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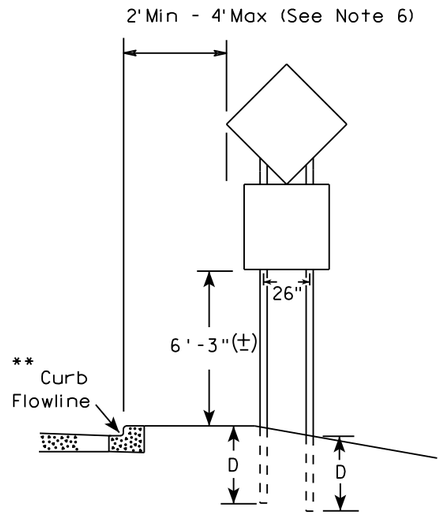
URBAN AREA



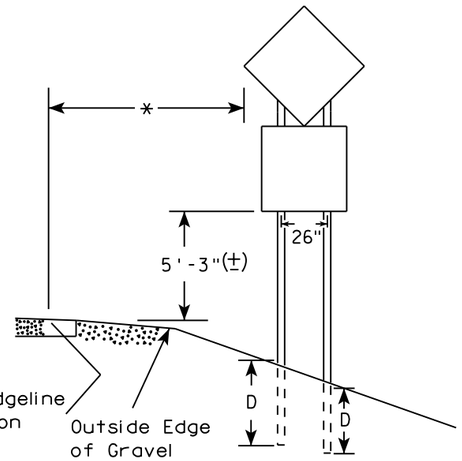
RURAL AREA (See Note 3)







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

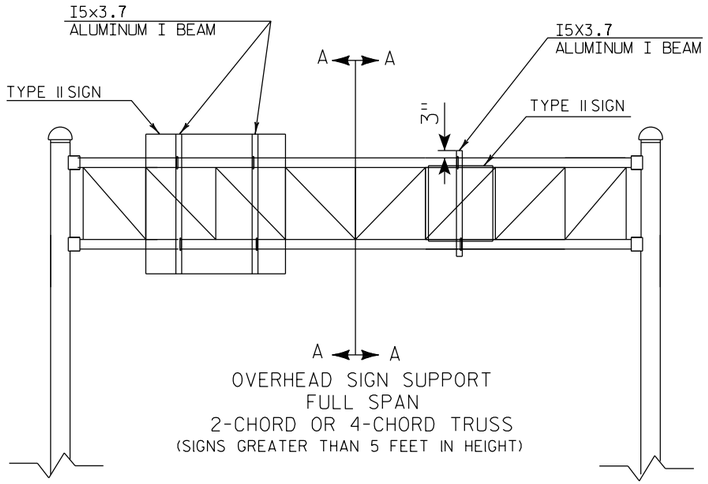
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

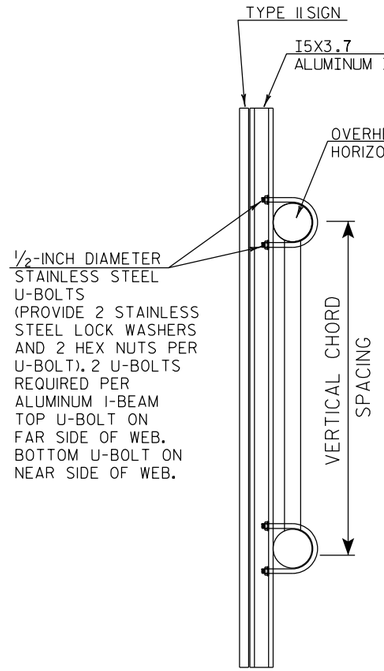
DATE 8/21/17 PLATE NO. A4-4.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 110	E

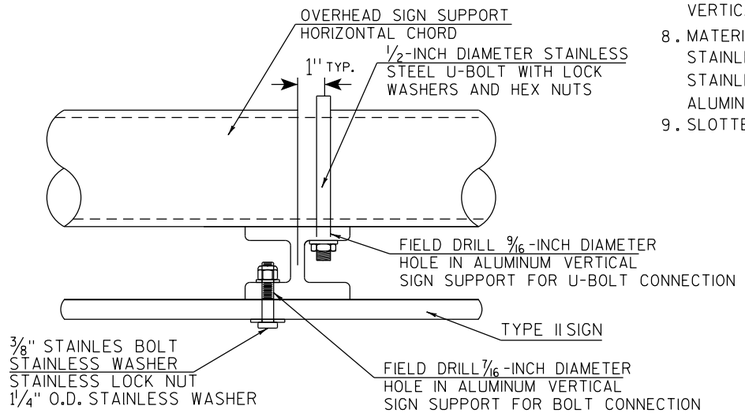
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OVERHEAD SIGN SUPPORT
FULL SPAN
2-CHORD OR 4-CHORD TRUSS
(SIGNS GREATER THAN 5 FEET IN HEIGHT)



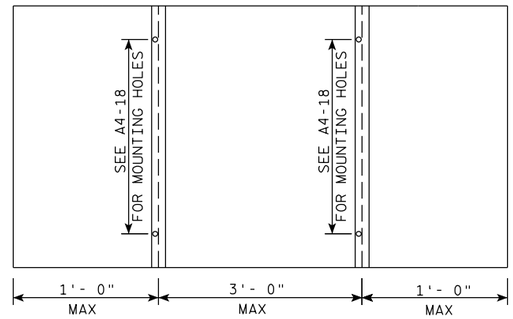
CUT SECTION A-A



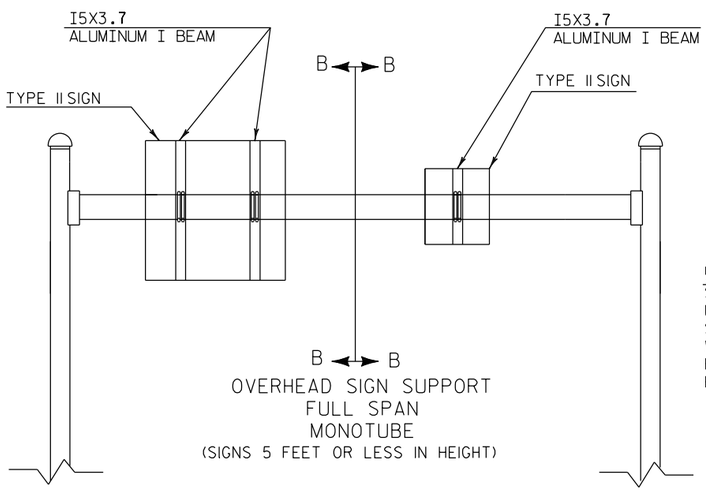
TYPICAL SIGN CONNECTION FOR
2-CHORD OR 4-CHORD TRUSS
PLAN VIEW

GENERAL NOTES

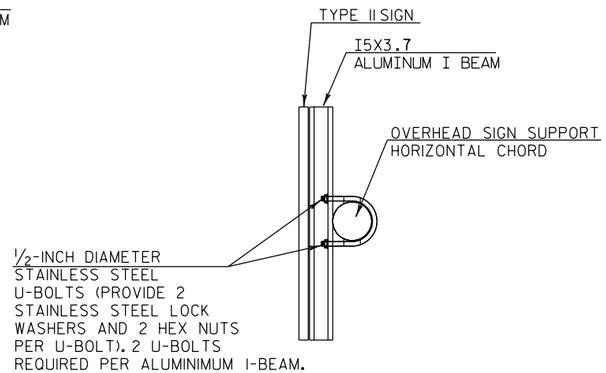
1. USE STAINLESS STEEL U-BOLTS, WASHERS, AND NUTS.
2. USE STAINLESS BOLTS AT BOLT HOLES IN SIGN PANEL PER SIGN PLATE A4-18.
3. USE ALUMINUM VERTICAL SIGN SUPPORT BEAMS HAVING A 5 INCH BEAM DEPTH AND WEIGHT OF 3.7 LBS PER FOOT.
4. U-BOLTS SHALL BE STAINLESS STEEL AND MANUFACTURED TO THE PROPER SIZE TO FIT THE CHORDS OF THE OVERHEAD SIGN STRUCTURE.
5. DIAMETER OF U-BOLTS SHALL BE AS SHOWN.
6. THE LENGTH OF THE ALUMINUM VERTICAL SIGN SUPPORT BEAMS SHALL BE THE SAME AS THE HEIGHT OF THE SIGN THEY ARE SUPPORTING. BEAM LENGTHS MAY BE LONGER FOR PROPER ATTACHMENT TO CHORDS.
7. SEE DETAIL BELOW FOR SPACING OF ALUMINUM VERTICAL SIGN SUPPORTS
8. MATERIAL NOTES:
   STAINLESS STEEL U-BOLTS, BOLTS, AND LOCKWASHERS ASTM 304.
   STAINLESS STEEL HEX NUTS ASTM A276.
   ALUMINUM I-BEAMS ARE 6061-T6.
9. SLOTTED HOLES IN I-BEAMS ARE NOT ALLOWED



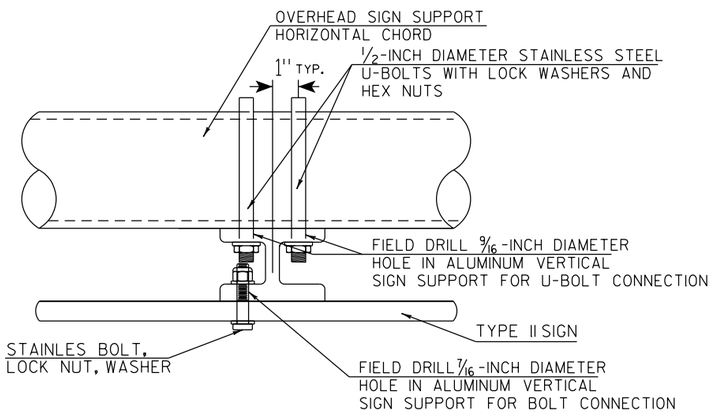
SPACING OF I5X3.7 ALUMINUM
MULTIPLE VERTICAL SIGN SUPPORTS



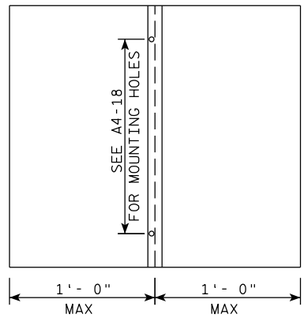
OVERHEAD SIGN SUPPORT
FULL SPAN
MONOTUBE
(SIGNS 5 FEET OR LESS IN HEIGHT)



CUT SECTION B-B



TYPICAL SIGN CONNECTION FOR
MONOTUBE
PLAN VIEW



SPACING OF I5X3.7 ALUMINUM
SINGLE VERTICAL SIGN SUPPORT

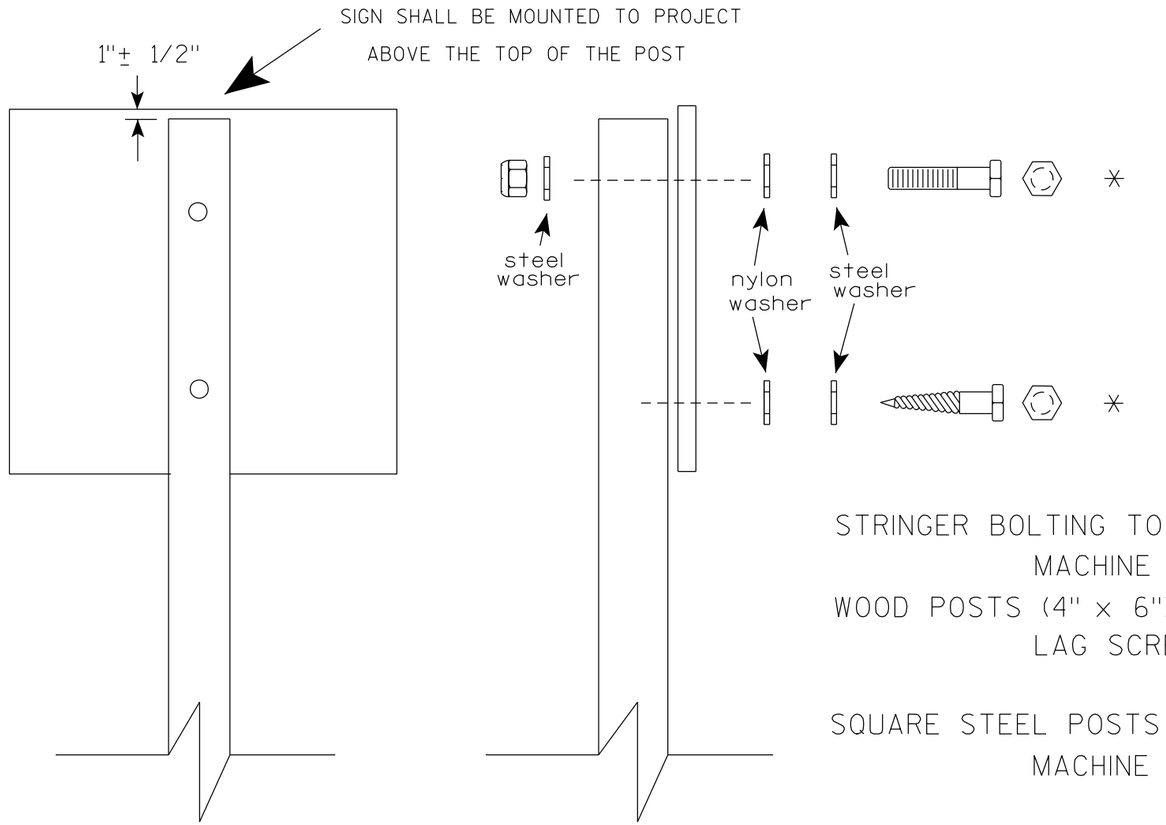
TYPE II SIGN CONNECTION
TO OVERHEAD SIGN SUPPORT

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/07/20 PLATE NO. A4-7B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 111	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:

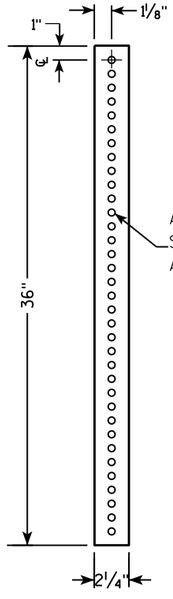
SHEET NO: 112 E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 01-APRIL-2020 PLOT BY : dotc4c

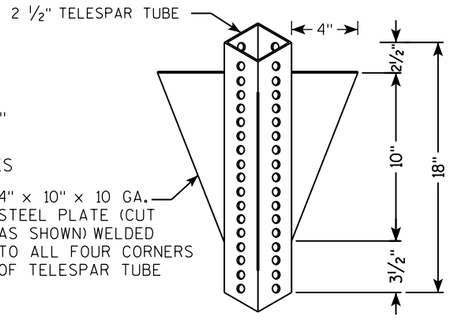
WISDOT/CADDS SHEET 42

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

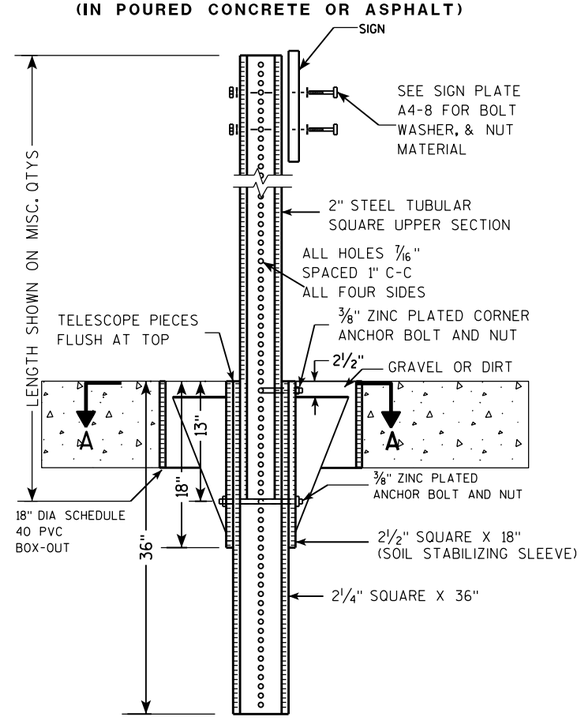
2 ¼ " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



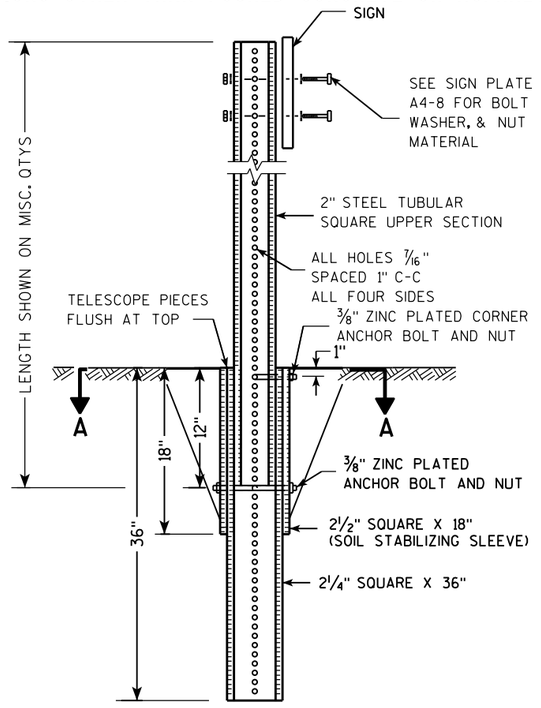
2 ½ " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

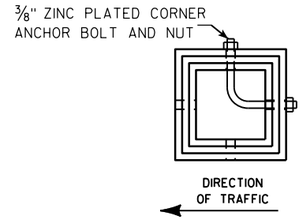


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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

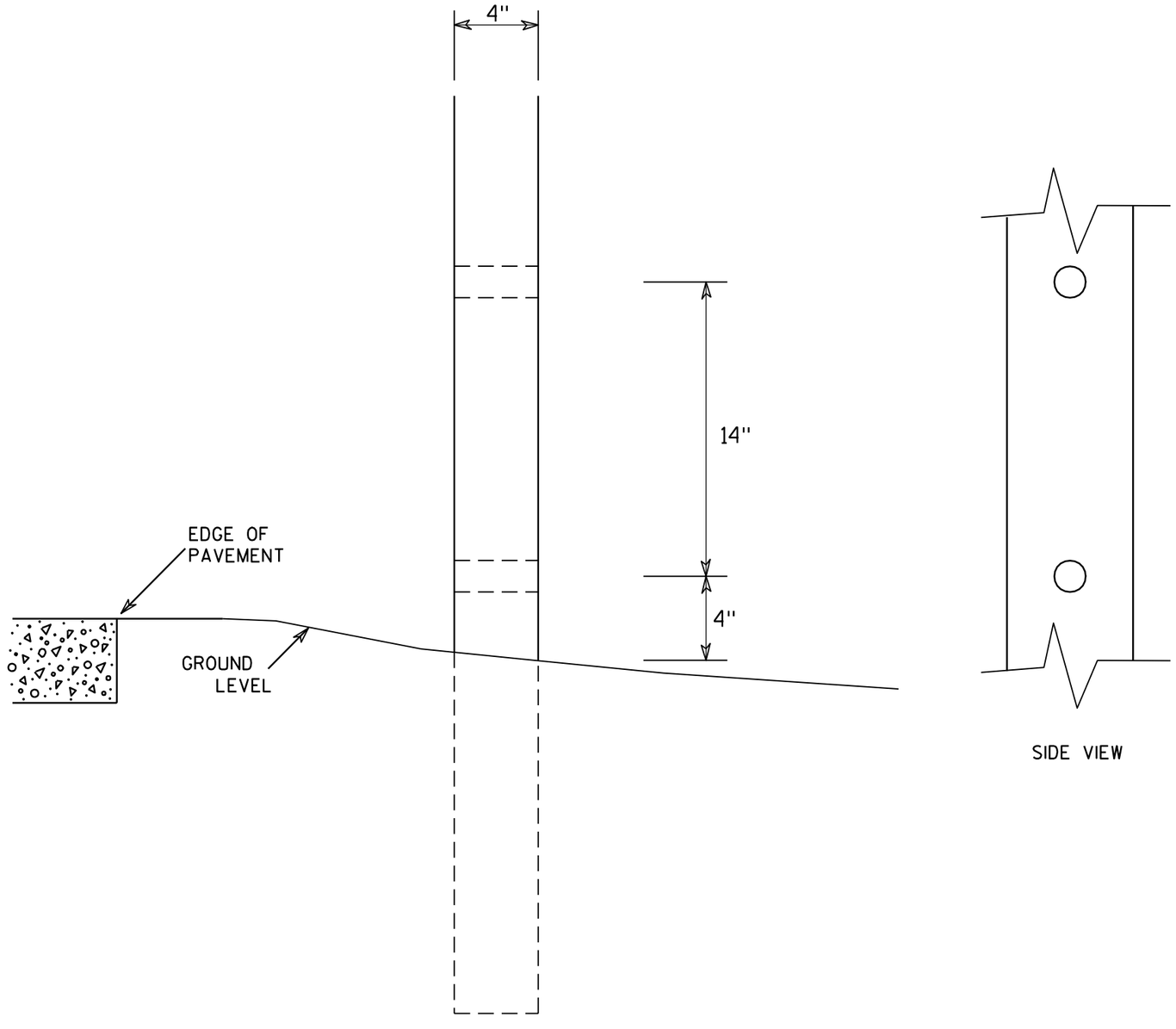
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000
WISDOT/CADDS SHEET 42



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

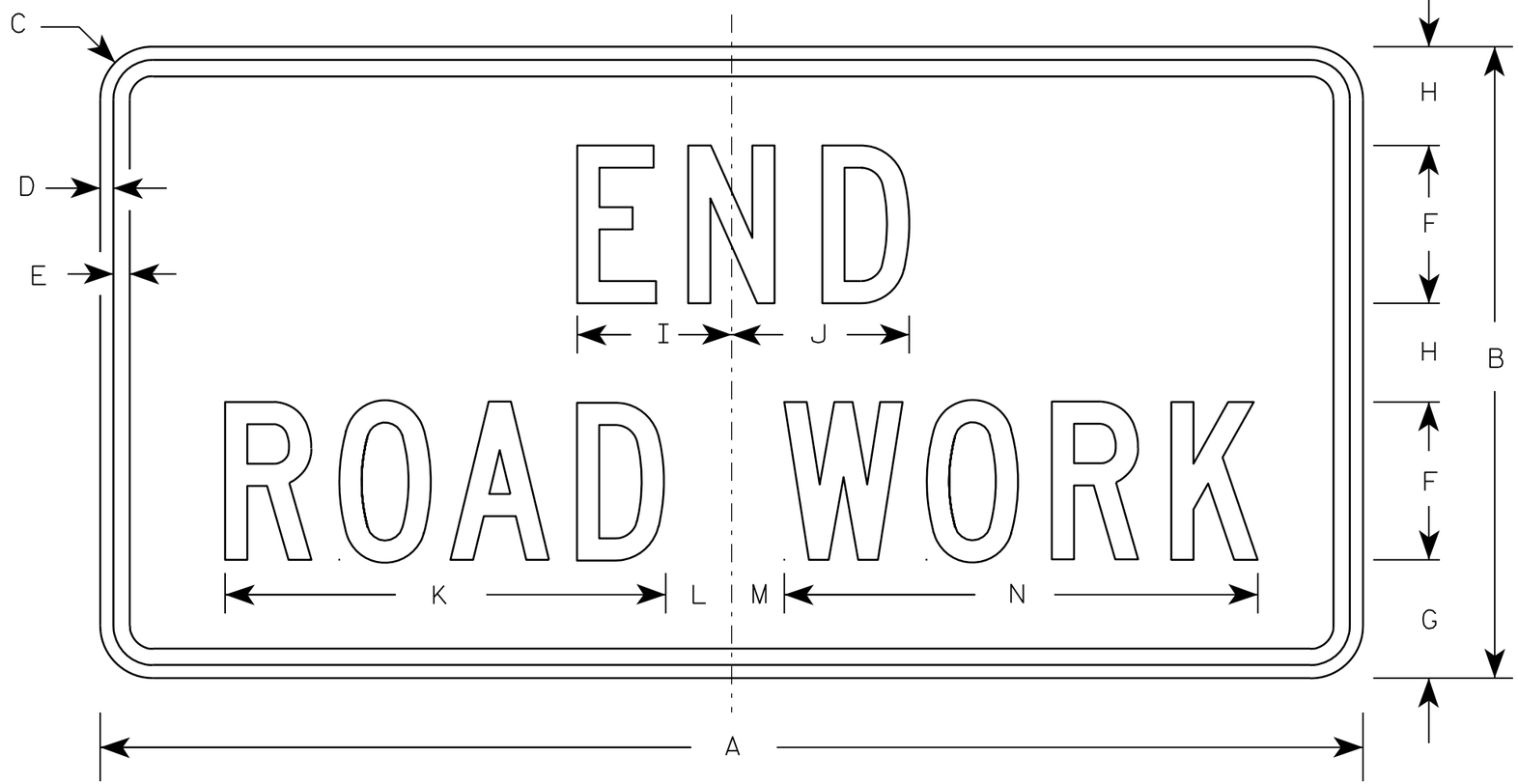
4 X 6 WOOD POST MODIFICATIONS

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: 114	E



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

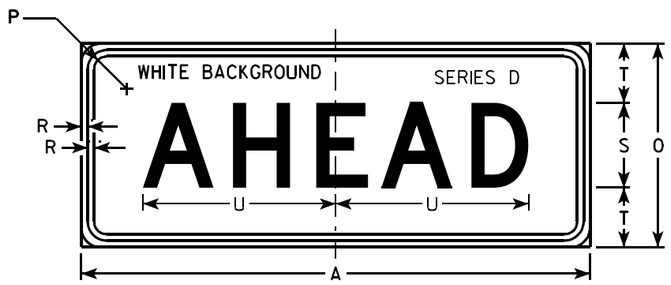
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 115	E



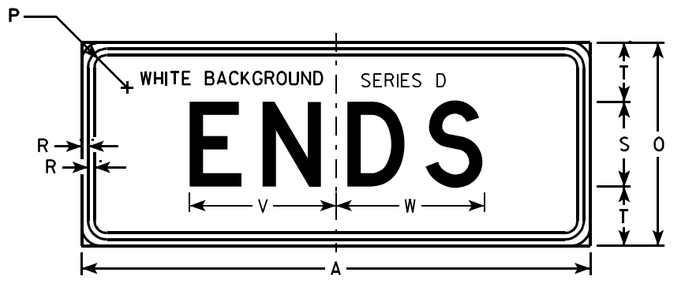
R3-17

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - AS SHOWN
   Message - BLACK
3. Message Series - C or as noted on the Signs.
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.



R3-17ap



R3-17bp

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	R3-17 Area sq. ft.	R3-17ap Area sq. ft.	R3-17bp Area sq. ft.
1																													
2S	30	24	1 1/8	3/8	1/2	2	4	4 1/8	7 7/8	6 3/8	9 1/2	2 5/8	7/8	13	12	1 1/8	3 3/8	3/8	5	3 1/2	11 3/8	8 5/8	8 3/4	2 3/8	15 5/8	8	5.0	2.5	2.5
2M	30	24	1 1/8	3/8	1/2	2	4	4 1/8	7 7/8	6 3/8	9 1/2	2 5/8	7/8	13	12	1 1/8	3 3/8	3/8	5	3 1/2	11 3/8	8 5/8	8 3/4	2 3/8	15 5/8	8	5.0	2.5	2.5
3																													
4																													
5																													

STANDARD SIGN
R3-17 & R3-17a&bp

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/12/2011 PLATE NO. R3-17.2

PROJECT NO:

SHEET NO: 116 E



R4-11

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.

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 3/8	1/2	5/8	4	3 1/8	10	2 1/2	3 7/8	8 5/8	8 3/4	8 1/2	1 1/4	1 3/4	7 7/8		10 3/8	2	1	11 1/4						6.25
2M	30		1 3/8	1/2	5/8	4	3 1/8	10	2 1/2	3 7/8	8 5/8	8 3/4	8 1/2	1 1/4	1 3/4	7 7/8		10 3/8	2	1	11 1/4						6.25
3																											
4																											
5																											

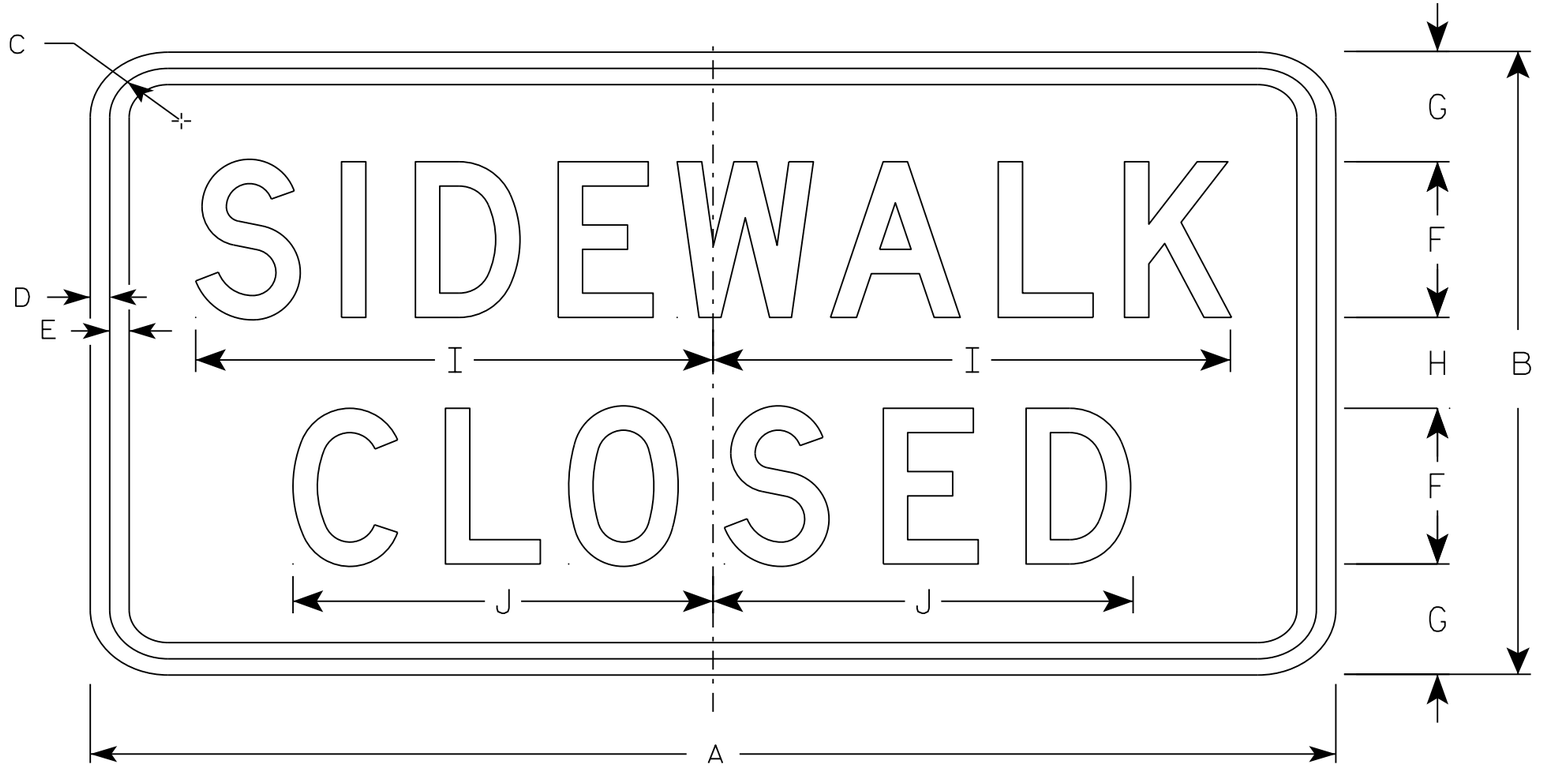
STANDARD SIGN
R4-11

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/16/15 PLATE R4-11.1

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

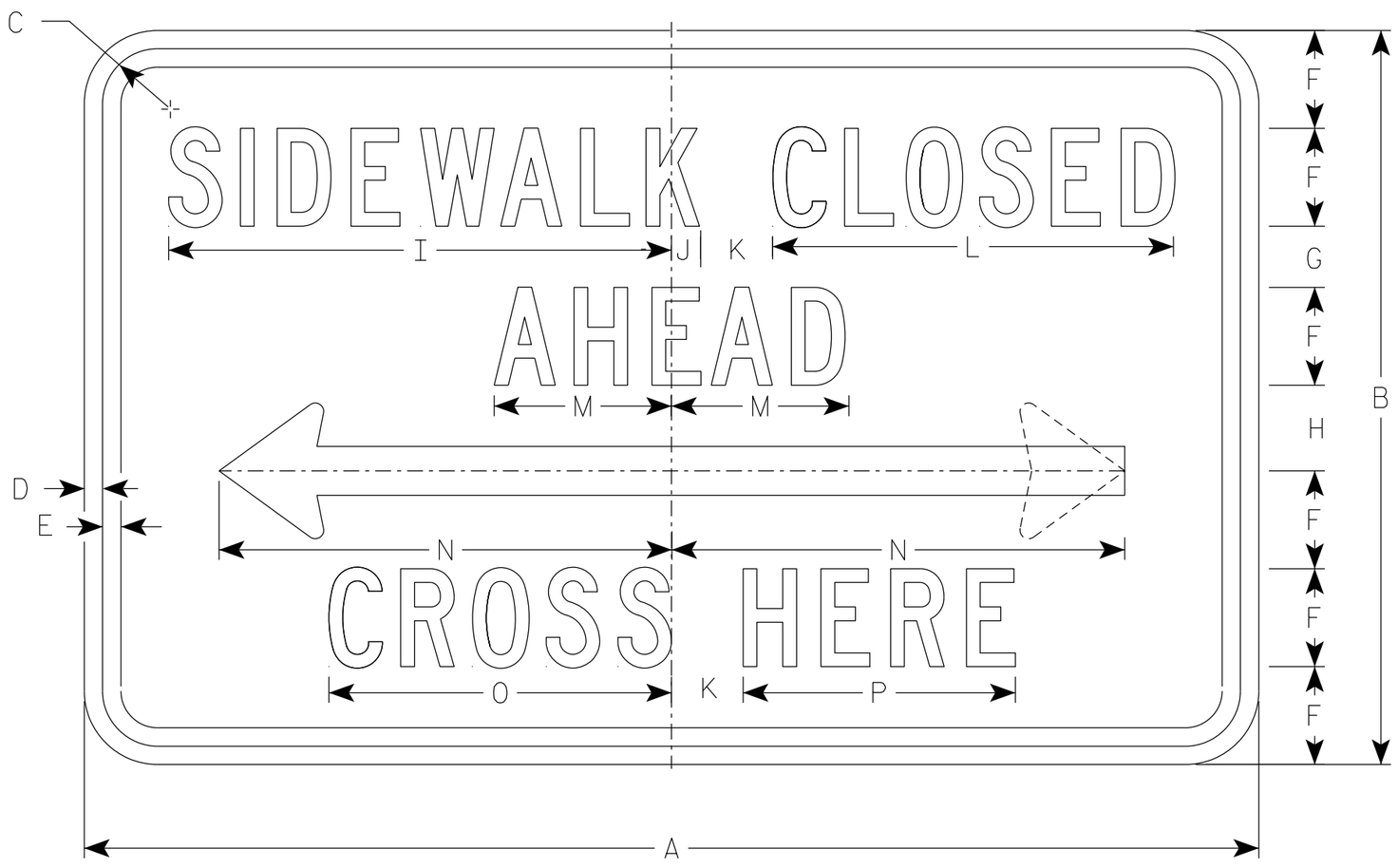
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

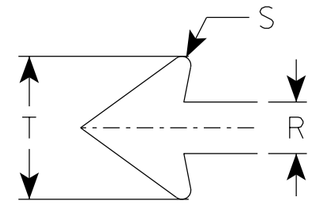
DATE 8/11/16 PLATE 118 R9-9.6

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



R9-11



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - C except Size 1 is 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. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.
6. R9-11 D (double arrow)
   R9-11 L (left arrow)
   R9-11 R (right arrow)

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
2M	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
3	30	15	1 1/8	3/8	1/2	2	1 1/2	1 1/2	13	3/4	2	10 1/4	4 5/8	12 3/8	8 7/8	6 7/8		1 1/4	1/4	3 5/8							3.125
4																											
5																											

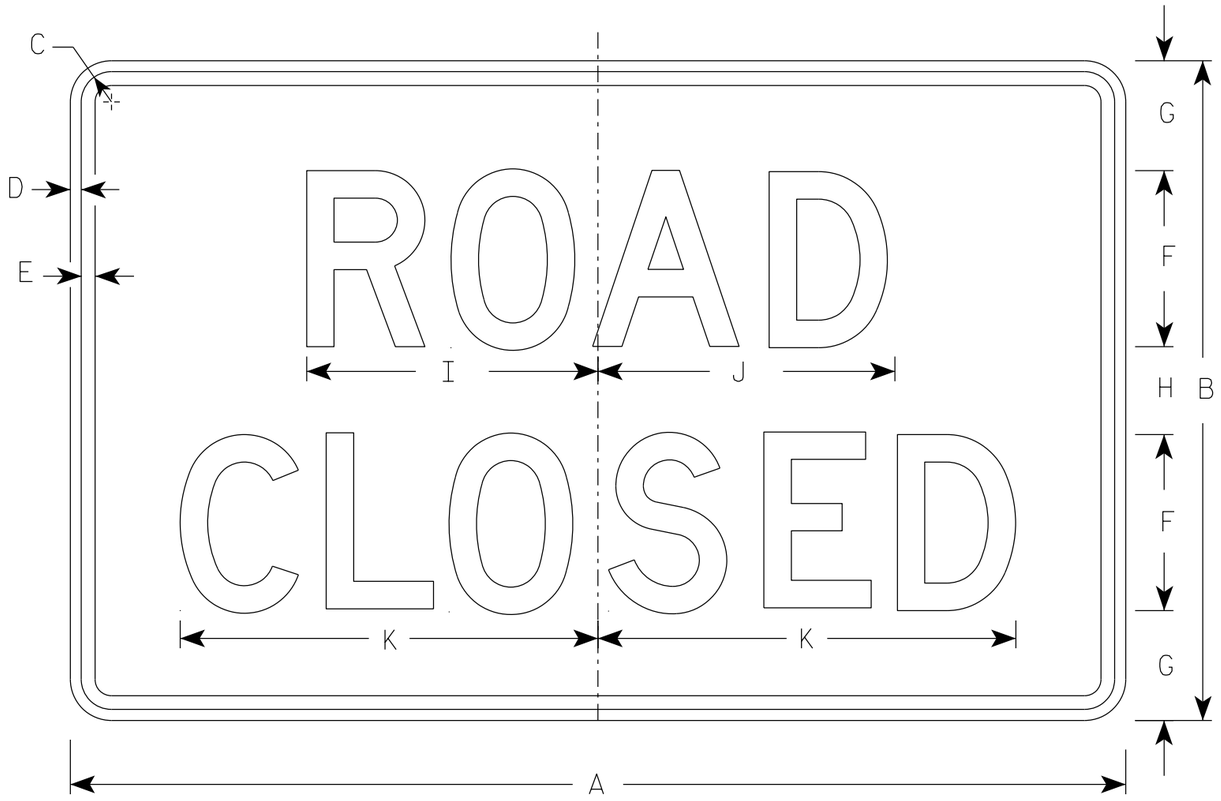
STANDARD SIGN
R9-11

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 3/30/2021 PLATE NO. R9-11.4

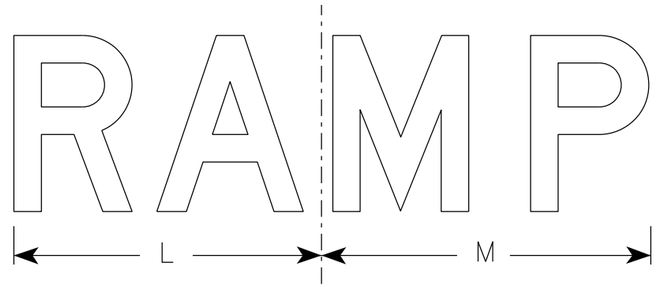
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 119 | E



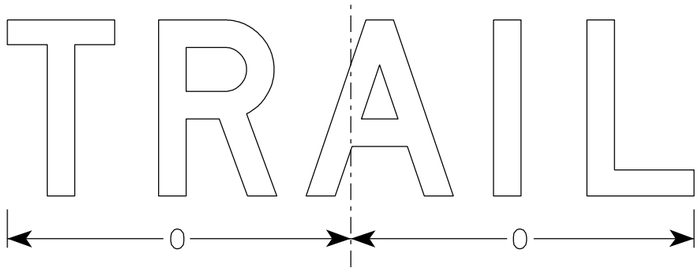
R11-2

NOTES

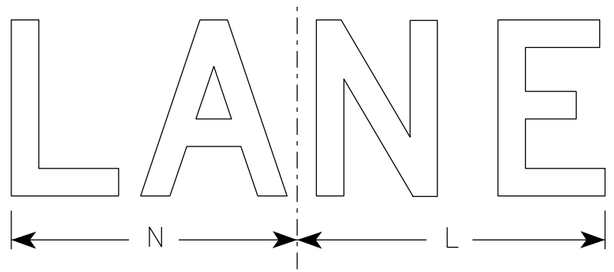
1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the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

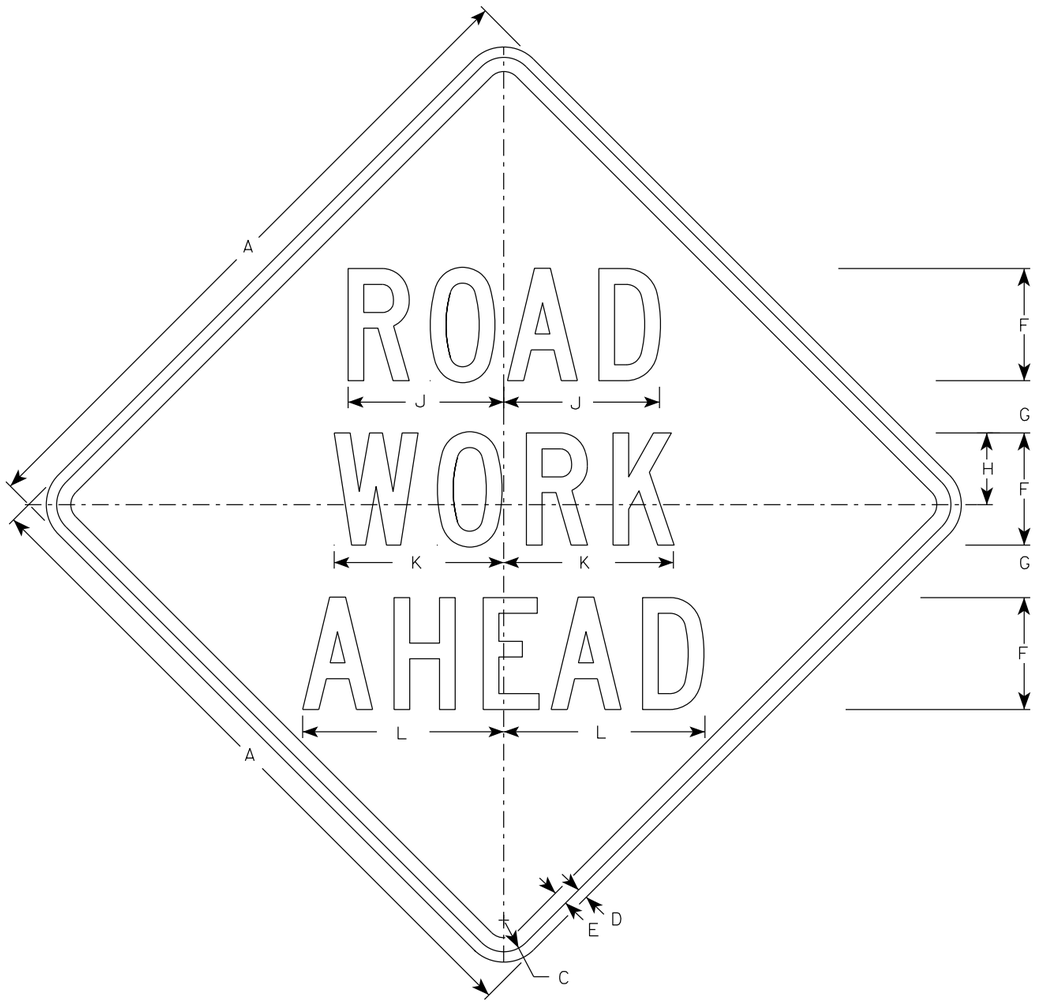
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

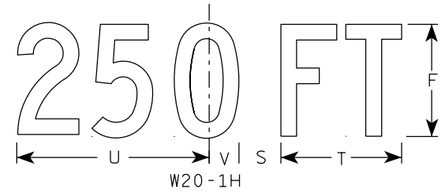
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

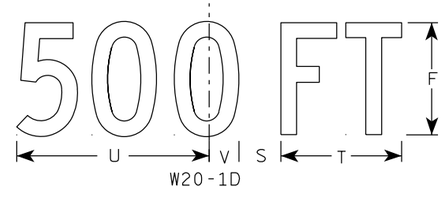
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 120	E



W20-1A



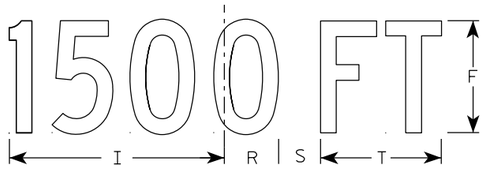
W20-1H



W20-1D



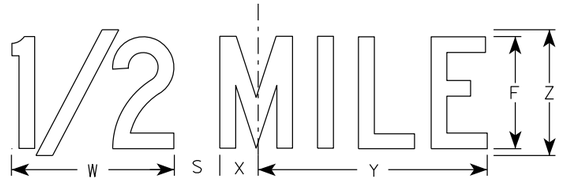
W20-1C



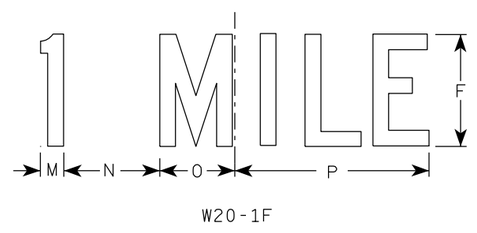
W20-1B

NOTES

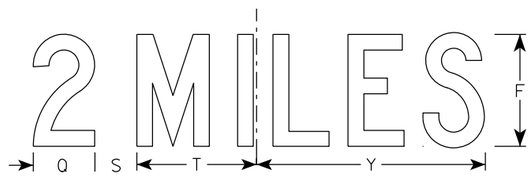
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



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

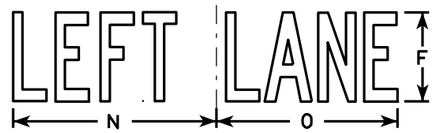
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 25-MARCH-2020 PLOT BY : dotc4c

WISDOT/CADDS SHEET 42

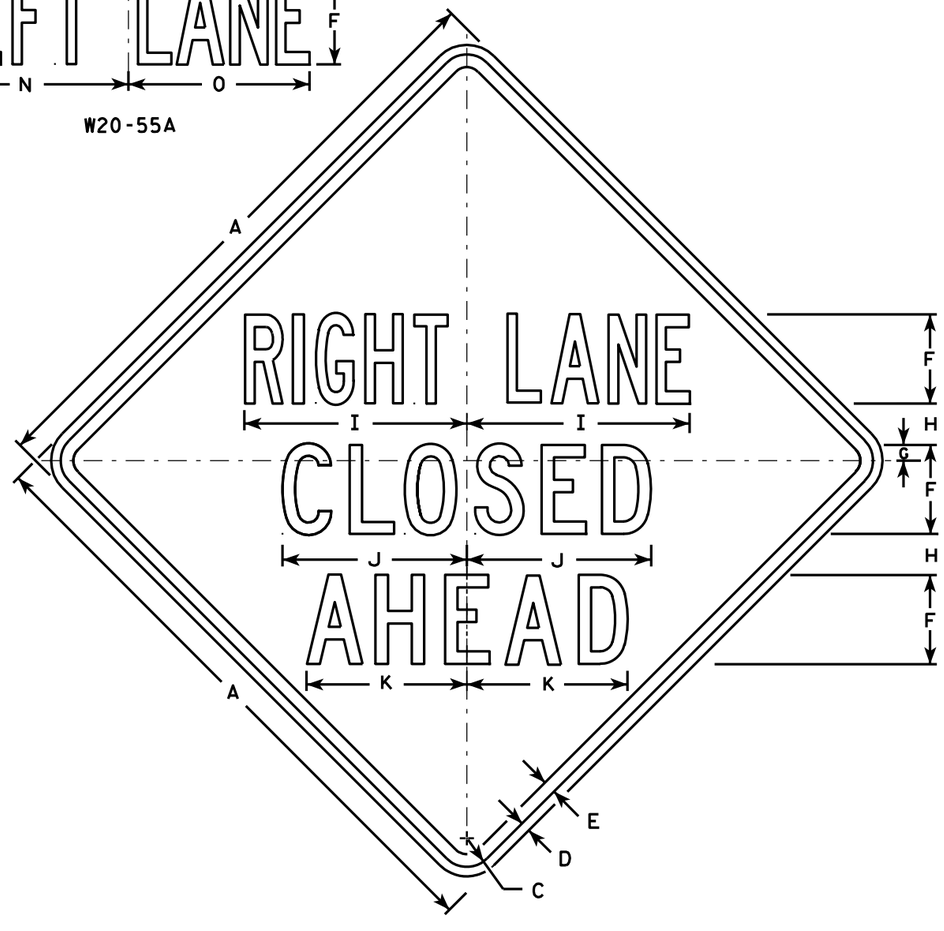
7



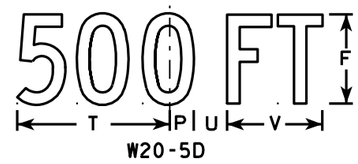
W20-56A



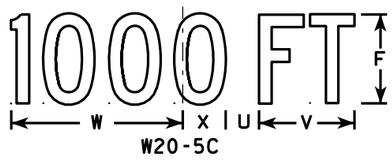
W20-55A



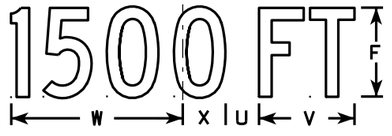
W20-5A



W20-5D



W20-5C



W20-5B



W20-5G



W20-5F

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. " _____ LANE" is Series B.
   All other copy is 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	36	6	1 5/8	5/8	3/4	5	1/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 1/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

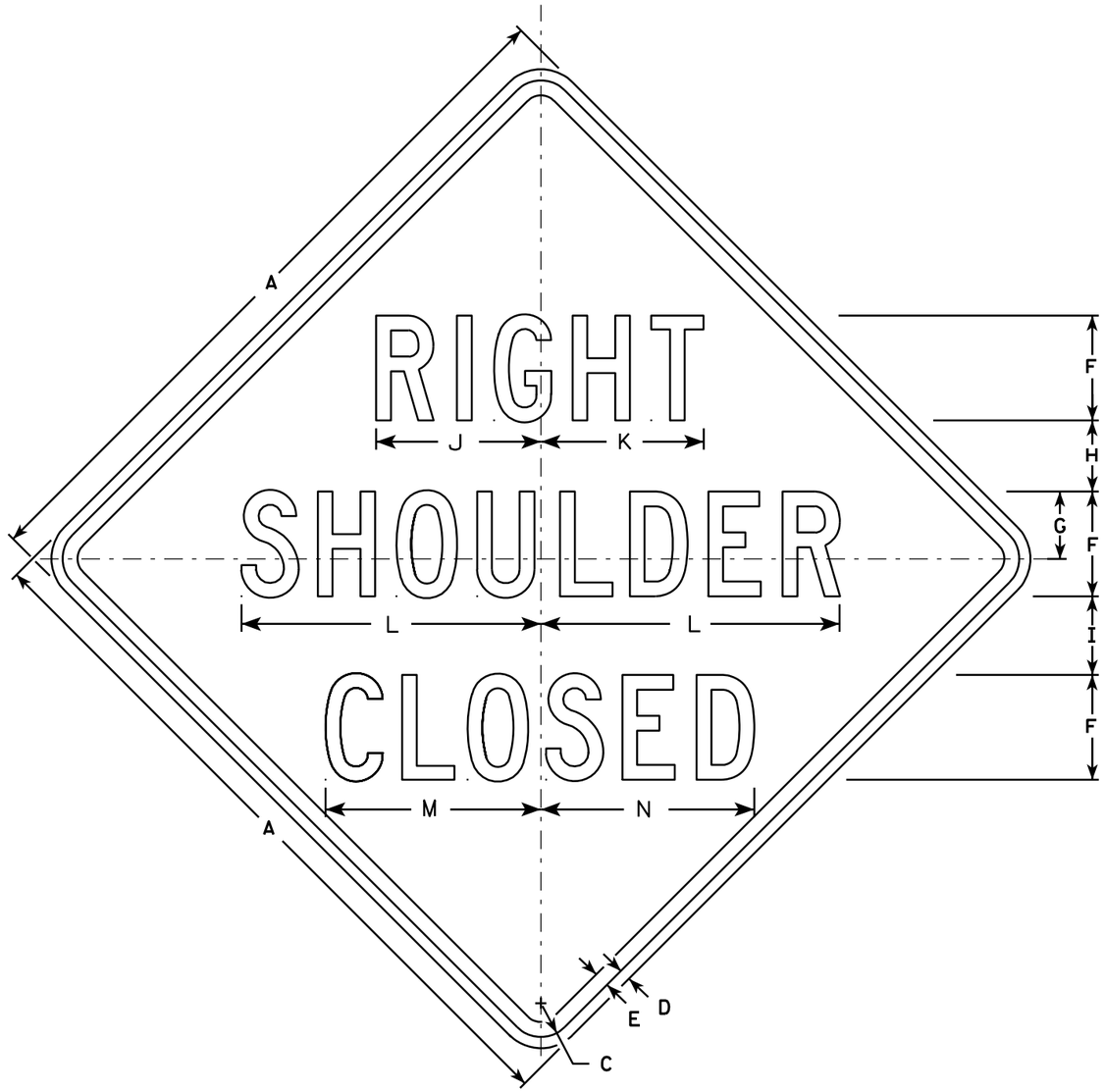
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 122 | E

7

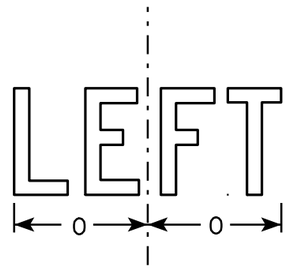
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W205.DGN PLOT DATE : 18-MAR-2011 12:15 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 11.918087:1.000000
WISDOT/CADDS SHEET 42



W21-5A

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 - 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.



W21-5AL

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	4	7 7/8	7 3/4	14 1/4	10 1/4	10 1/8	6 1/4												9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0

STANDARD SIGN
W21-5A

WISCONSIN DEPT OF TRANSPORTATION

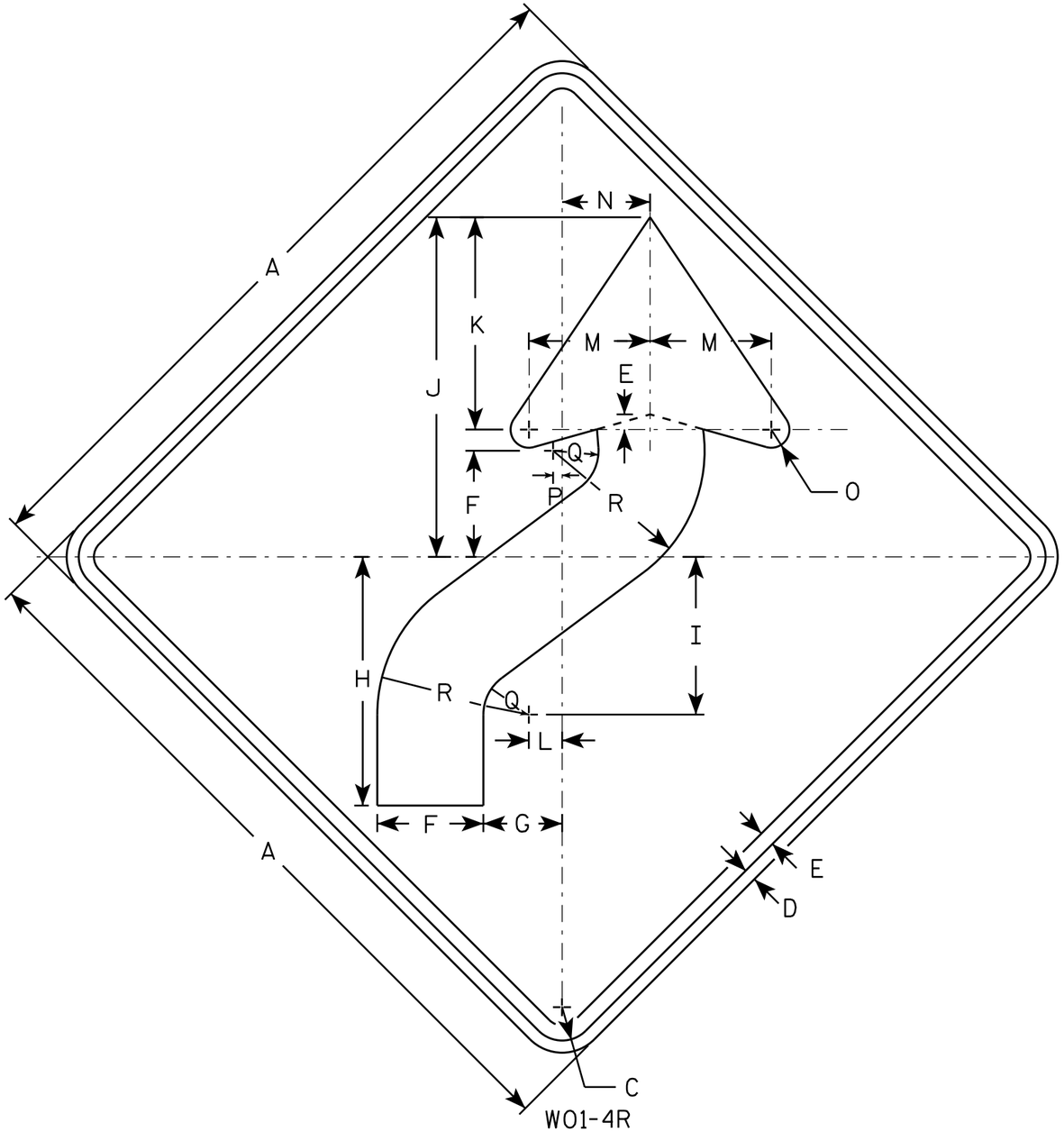
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-5A.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 123 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W215A.DGN PLOT DATE : 21-MAR-2011 09:02 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42



W01-4R

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. W01-4L is the same as W01-4R 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	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN
W01-4

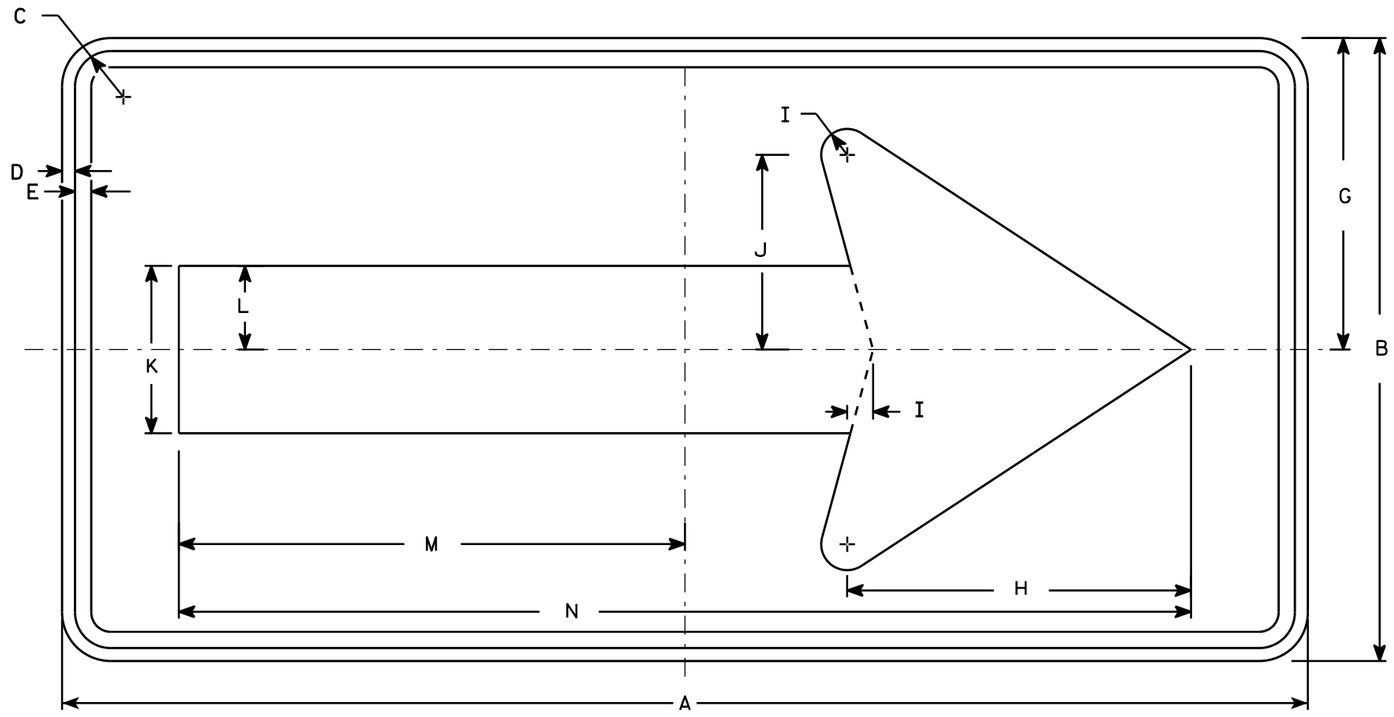
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO W01-4.1

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W014.DGN PLOT DATE : 28-FEB-2014 11:35 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 6.755110:1.000000
WISDOT/CADDS SHEET 42



W01-6

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - 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.

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	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

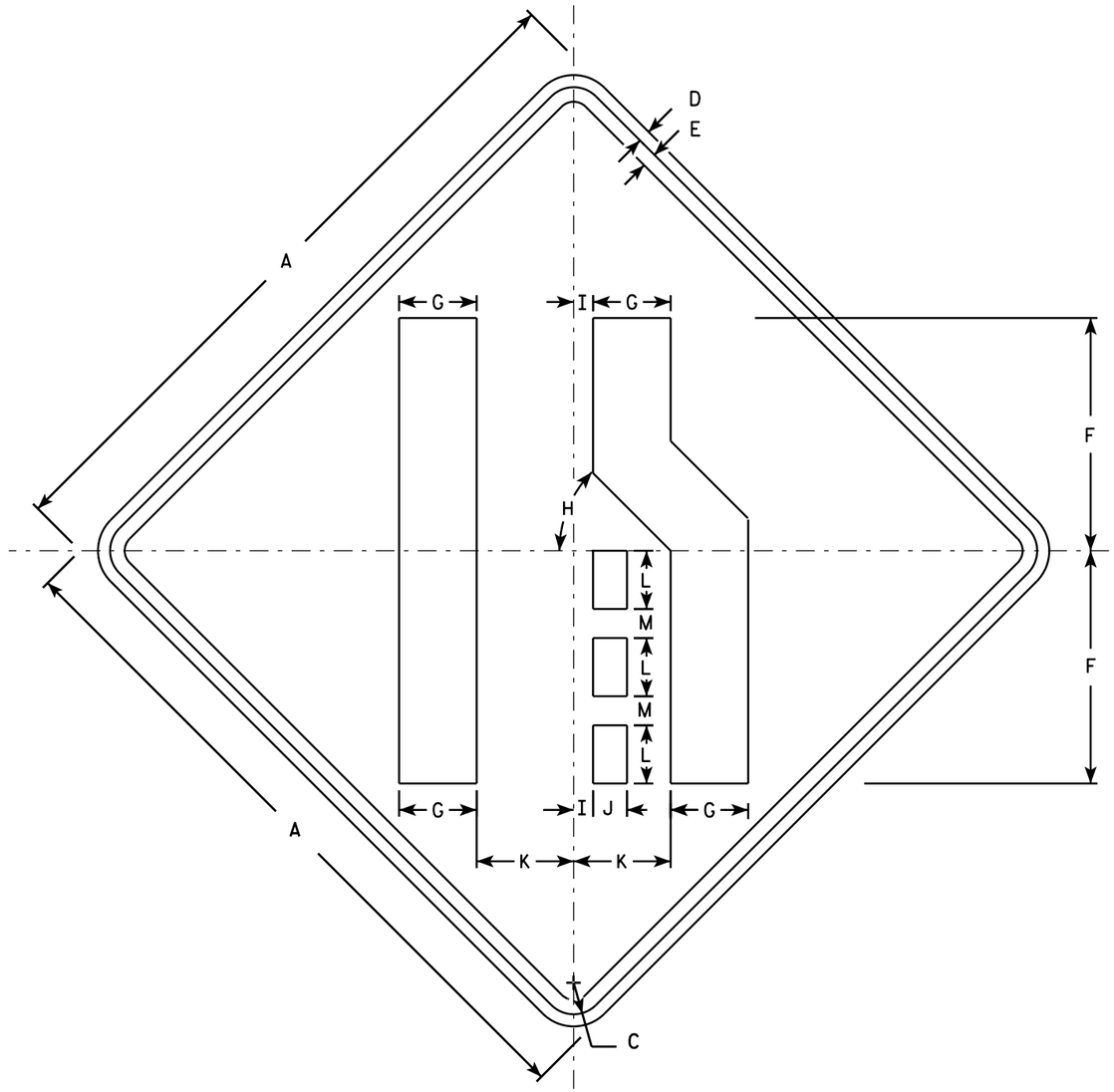
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE W01-6.1

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W016.DGN PLOT DATE : 28-FEB-2014 11:37 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000 WISDOT/CADDS SHEET 42



W04-2R

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. W04-2L is the same as W04-2R except the symbol 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	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W04-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W04-2.1

PROJECT NO: | SHEET NO: E

Notes

Wisconsin Department of Transportation

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